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

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Addendum I

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

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

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

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

The following example illustrates the changes :-

September 2002

*NEIC **01** 18:45:41.7±1.7,21°.70S×179°.55W,h600km,mb4.6/6,*
Error ellipse: s-maj=75.5km s-min=25.7km az=151.0
*IDC **01** 18:45:46.3±2.6,21°.76S×179°.70W,h627km±37km,mb3.5/4,*
mb1 3.7/4,mb1mx3.2/14,Error ellipse: s-maj=83.2km
s-min=20.6km az=159.0
ISC 01 18:45:43.1±2.7,22°.3S±0°.2×179°.6W±0°.3,h613km±42km,
n22,σ1°.15/21,mb4.4/9,1C,South of Fiji Islands

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

Epicentral Estimates

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

Observational Data

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

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

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

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

Addendum II

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

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

Addendum III

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

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

*NIED **01** 00:02:00,37.°10N×140.°80E,h5km,Mw3.7 Best double couple: M0=4.69000×10^14 NP1:φ=218.00000°,δ47.00000°, λ-115.00000°. NP2:φ=72.00000°,δ49.00000°, λ-66.00000°.*

*ISCJB **01** 00:02:31.3±0.8,37.°08N±0.°03×140.°97E±0.°05,h11km±3km, mb3.8/19,Error ellipse: s-maj=7.0km s-min=5.0km az=24.3*

*IDC **01** 00:02:31.5±0.7,37.°15N×140.°81E,h0km,mb3.8/15, mb1 3.9/17,mb1mx3.8/43,mbtmp3.8/17,ML3.3/2,MS2.2/2, Ms1 2.2/2,ms1mx2.1/34,Error ellipse: s-maj=18.5km s-min=14.1km az=142.0*

*JMA **01** 00:02:32.9,37.°10N×140.°85E,h9km±1km,M3.7 Broadband fault plane solution: P waves. NP1: φ=62.00000°,δ50.00000°,λ-79.00000°. NP2:φ=225.00000°, δ42.00000°,λ-102.00000°. Principal axes: T Plg4.0000°, Azm144.0000°; N Plg8.0000°, Azm235.0000°; P Plg81.0000°, Azm28.0000°;*

JMA Felt III J1.

*NEIC **01** 00:02:36.8±3.3,37.°17N×140.°89E,h35km±22km,mb4.4/3 Error ellipse: s-maj=16.7km s-min=10.2km az=135.0*

NEIC Recorded [3 JMA] in Fukushima.

ISC 01 00:02:32.6±0.9,37.°11N±0.°04×140.°85E±0.°06,h7km±4km, n45,σ0=82/47,mb3.8/19,6C-1D,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.04**	**262**	||P	**Pg**	**00 02 34.4**	**+0.1**
ONAJ				S	**Sg**	**00 02 35.6**	**+0.2**
JFK	**Kawauchi**	**0.26**	**4**	↑P	**Pg**	**00 02 38.3**	**+0.5**
JFK				S	**Sg**	**00 02 42.4**	**+1.1**
JHO	**Hitachi**	**0.55**	**205**	↑P	**Pg**	**00 02 43.0**	**-0.2**
JHO				S	**Sg**	**00 02 50.4**	**+0.1**
JFT	**Otama**	**0.58**	**315**	↑P	**Pb**	**00 02 44.5**	**-0.6**
JFT				S	**Sb**	**00 02 52.7**	**-0.9**
JMM	**Marumori**	**0.76**	**356**	↑P	**Pb**	**00 02 47.3**	**-0.8**
JMM				S	**Sb**	**00 02 57.7**	**-0.9**
JSB	**Shiboa**	**0.76**	**260**	↑P	**Pb**	**00 02 47.9**	**-0.3**
JSB				S	**Sb**	**00 02 58.5**	**-0.2**
JFY	**Yanaizu**	**0.96**	**288**	↑P	**Pb**	**00 02 51.3**	**-0.3**
JFY				S	**Sb**	**00 03 03.9**	**-0.7**
MJAR	**Matsushiro Arr**	**2.20**	**256**	Pn	**Pn**	**00 03 10.5**	**+1.0**
	11nm,0.3s,baz=78,slow=16,SNR=56						
MJAR				Lg	Lg	00 03 40.5	
	10nm,0.3s,baz=79,slow=30,SNR=14						
MJAR				LR	LR	00 04 03.8	
	comp=Z,38nm,20.5s,baz=125,slow=43						
MAT	**Matsushiro**	**2.20**	**256**	P	**Pb**	**00 03 11.2**	**-1.5**
MAT				S	**Sb**	**00 03 41.0**	**+0.9**
ERM	**Erimo**	**5.21**	**19**	*e*Pn	**Pn**	**00 03 51.1**	**+0.2**
	16nm,1.1s						
ASAJ	**Asahikawa**	**7.12**	**10**	Pn	**Pn**	**00 04 16.8**	**-0.4**
	0.5nm,0.3s,baz=308,slow=17,SNR=4.4						
USRK	**Ussuriysk Ar.**	**9.77**	**319**	Pn	Pn	00 05 00.0	+6.6
	0.2nm,0.3s,baz=148,slow=38,SNR=4.0						
KSRS	**Korea Array**	**10.31**	**276**	Pn	Pn	00 05 05.8	+5.0
	0.1nm,0.3s,baz=90,slow=14,SNR=5.1						
KSRS				LR	LR	00 08 53.3	
	comp=Z,20nm,21.4s,baz=121,slow=37						
KSAR	**Wonju Array Be**	**10.34**	**276**	Pn	Pn	00 05 05.8	+4.5
YAK	**Yakutsk**	**25.90**	**348**	*e*P	**P**	**00 08 04.8**	**0.0**
	3.7nm,0.3s						
ENH	**Enshi**	**26.89**	**265**	*e*P	**P**	**00 08 14.1**	**-0.1**
	2.6nm,0.4s						
SONM	**Songino Array**	**27.37**	**304**	P	**P**	**00 08 20.3**	**+1.8**
	0.8nm,0.6s,baz=98,slow=8.6,SNR=6.1						
H11N2	**WAKE ISLAND Hy**	**28.57**	**120**	T	T	00 38 12.7	
	baz=313,slow=75,SNR=38						
H11N1	**WAKE ISLAND Hy**	**28.58**	**120**	T	T	00 38 13.4	
	baz=313,slow=75,SNR=17						
H11N3	**WAKE ISLAND Hy**	**28.59**	**120**	T	T	00 38 14.8	
	baz=313,slow=75,SNR=31						
H11S1	**WAKE ISLAND Hy**	**29.28**	**122**	T	T	00 39 05.7	
	baz=314,slow=75,SNR=14						
H11S3	**WAKE ISLAND Hy**	**29.28**	**122**	T	T	00 39 14.5	
	baz=314,slow=75,SNR=15						
H11S2	**WAKE ISLAND Hy**	**29.29**	**122**	T	T	00 39 16.4	
	baz=314,slow=75,SNR=13						
ZALV	**Zalesovo Beam**	**41.53**	**312**	P	**P**	**00 10 19.5**	**-0.8**
	1.4nm,0.6s,baz=101,slow=6.9,SNR=6.6						
ZALV				PcP	**PcP**	**00 12 18.0**	**+0.4**
	0.6nm,0.7s,baz=155,slow=4.9,SNR=4.3						
NRIK	**Noril'sk**	**43.01**	**335**	P	**P**	**00 10 31.4**	**-0.7**
	0.9nm,0.5s,baz=112,slow=6.9,SNR=4.2						
MKAR	**Makanchi Array**	**43.70**	**302**	P	**P**	**00 10 37.3**	**-0.8**
	0.4nm,0.6s,baz=86,slow=8.7,SNR=6.0						
MKAR				PcP	**PcP**	**00 12 24.7**	**-0.3**
	0.3nm,0.8s,baz=80,slow=2.1,SNR=3.6						
KURK	**Kurchatov**	**45.53**	**308**	*e*P	**P**	**00 10 51.9**	**-0.7**
	3.4nm,0.6s						
ILAR	**Eielson Array**	**49.67**	**32**	P	**P**	**00 11 25.4**	**+0.8**
	0.8nm,0.9s,baz=274,slow=6.2,SNR=8.5						
BVAR	**Borovoye Array**	**50.19**	**312**	P	**P**	**00 11 28.5**	**-0.2**
	0.5nm,0.5s,baz=85,slow=7.8,SNR=4.8						
BVAR				PcP	**PcP**	**00 12 47.5**	**-0.4**
	0.7nm,0.6s,baz=46,slow=4.4,SNR=5.3						
WRA	**Warramunga Arr**	**57.07**	**187**	P	**P**	**00 12 19.0**	**-0.4**
	1.1nm,0.7s,baz=4.7,slow=7.4,SNR=19						
ASAR	**Alice Springs**	**60.80**	**187**	P	**P**	**00 12 44.9**	**-0.4**
	0.3nm,0.7s,baz=16,slow=6.5,SNR=6.7						
ARCES	**ARCESS Array B**	**63.77**	**339**	P	**P**	**00 13 03.0**	**-1.6**
	2.3nm,0.8s,baz=31,slow=7.3,SNR=4.9						
YKA	**Yellowknife Ar**	**63.97**	**30**	P	**P**	**00 13 05.5**	**-0.5**
	0.2nm,0.7s,baz=301,slow=6.9,SNR=4.3						
FINES	**FINESS Array B**	**68.54**	**332**	P	**P**	**00 13 35.0**	**-0.4**
	3.5nm,0.7s,baz=46,slow=5.5,SNR=13						
NB2	**NORSAR Subarra**	**73.94**	**337**	P	P	00 14 03.4	-4.8
	comp=Z,1.1nm,0.7s,baz=43,slow=6.2						
NOA	**NORSAR Array B**	**73.94**	**337**	P	**P**	**00 14 07.8**	**-0.4**
	comp=Z,1.2nm,0.8s,baz=43,slow=5.4,SNR=4.7						
AKASG	**Malin Array Be**	**73.97**	**322**	P	**P**	**00 14 07.5**	**-0.9**
	comp=Z,0.3nm,0.3s,baz=47,slow=6.2,SNR=7.1						
BRTR	**Keskin Array B**	**78.47**	**311**	P	**P**	**00 14 35.1**	**+0.7**
	comp=Z,0.5nm,0.9s,baz=99,slow=3.9,SNR=3.5						
DPC	**Dobruska-Polom**	**80.16**	**328**	*e*P	**P**	**00 14 45.4**	**+2.1**
PRU	**Pruhonice**	**81.19**	**328**	*e*P	**P**	**00 14 49.4**	**+0.6**
KHC	**Kasperske Hory**	**82.25**	**328**	*e*P	**P**	**00 14 54.5**	**+0.1**
KHC				*e*PCP	**pP**	**00 14 56.7**	**-0.2**
GERES	**GERESS Array B**	**82.41**	**328**	P	**P**	**00 14 54.9**	**-0.5**
	comp=Z,0.3nm,0.4s,baz=31,slow=6.2,SNR=5.9						
TXAR	**Lajitas Array**	**90.43**	**52**	P	**P**	**00 15 36.5**	**+1.4**
	comp=Z,0.3nm,0.7s,baz=347,slow=3.7,SNR=3.1						
TORD	**Torodi Ar. Bea**	**116.96**	**314**	PKP	**PKPdf**	**00 21 19.6**	**+1.0**
	comp=Z,0.2nm,0.8s,baz=171,slow=10,SNR=2.0						
LPAZ	**La Paz**	**147.04**	**59**	PKPbc	**PKPab**	**00 22 18.3**	**-0.5**
	comp=Z,0.5nm,0.5s,baz=340,slow=9.5,SNR=3.0						

*NEIC **01** 00:11:02.3,45.°02S×167.°40E,h130km,MG4.0(WEL), After WEL.*

WEL 01 00:11:03.2±0.2,45.°05S×167.°43E,h122km±1km,ML3.9/14, 7C-1D,Error ellipse: s-maj=1.7km s-min=1.1km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DCZ	**Deep Cove**	**0.46**	**205**	PN	Pn	00 11 20.9	-0.2
DCZ				SN	Sn	00 11 33.8	-0.9
DCZ				AML	AML	00 11 34.3	
DCZ				AML	AML	00 11 34.4	
DCZ				AML	AML	00 11 34.9	
DCZ	**Deep Cove**	**0.46**	**205**	Pn	Pn	00 11 20.9	-0.2
DCZ				Sn	Sn	00 11 33.8	-0.9
MSZ	**Milford Sound**	**0.52**	**43**	↑PN	Pn	00 11 21.7	+0.2
MSZ				SN	Sn	00 11 35.0	-0.3
MSZ				AML	AML	00 11 35.8	
MSZ				AML	AML	00 11 35.8	
MSZ				AML	AML	00 11 51.0	
MSZ	**Milford Sound**	**0.52**	**43**	Pn	Pn	00 11 21.7	+0.2
MSZ				Sn	Sn	00 11 35.0	-0.3
MLZ	**Mavora Lakes**	**0.58**	**123**	↑PN	Pn	00 11 22.0	0.0
MLZ				SN	Sn	00 11 36.0	-0.2
MLZ				AML	AML	00 11 37.5	
MLZ	**Mavora Lakes**	**0.58**	**123**	Pn	Pn	00 11 22.0	0.0
WHZ	**Wether Hill Ro**	**0.92**	**157**	PN	Pn	00 11 24.6	0.0
WHZ				SN	Sn	00 11 40.5	-0.4
WHZ				AML	AML	00 11 40.8	
WHZ	**Wether Hill Ro**	**0.92**	**157**	↓*i*Pn	Pn	00 11 24.7	+0.1
WHZ				*e*Sn	Sn	00 11 40.5	-0.4
WKZ	**Wanaka**	**1.15**	**79**	PN	Pn	00 11 27.1	+0.1
WKZ				SN	Sn	00 11 44.4	-0.6
WKZ				AML	AML	00 11 45.8	
WKZ	**Wanaka**	**1.15**	**79**	Pn	Pn	00 11 27.1	+0.1
PYZ	**Puysegur Point**	**1.23**	**205**	PN	Pn	00 11 27.8	0.0
PYZ				SN	Sn	00 11 46.1	-0.4
PYZ	**Puysegur Point**	**1.23**	**205**	Pn	Pn	00 11 27.8	0.0
EAZ	**Earnscleugh**	**1.34**	**98**	↑PN	Pn	00 11 28.8	-0.2
EAZ				AML	AML	00 11 47.3	
EAZ				AML	AML	00 11 47.3	
EAZ				AML	AML	00 11 47.5	
EAZ				AML	AML	00 11 47.5	
EAZ	**Earnscleugh**	**1.34**	**98**	Pn	Pn	00 11 28.8	-0.2
JCZ	**Jackson Bay**	**1.38**	**45**	PN	Pn	00 11 28.8	-0.8
JCZ				AML	AML	00 11 50.1	
JCZ				AML	AML	00 11 52.3	
JCZ	**Jackson Bay**	**1.38**	**45**	Pn	Pn	00 11 28.8	-0.8
TUZ	**Tuapeka**	**1.79**	**121**	PN	Pn	00 11 34.1	-0.1
TUZ				AML	AML	00 11 56.2	
TUZ				AML	AML	00 11 56.2	
TUZ				AML	AML	00 11 57.2	
TUZ				AML	AML	00 11 57.2	
TUZ	**Tuapeka**	**1.79**	**121**	Pn	Pn	00 11 34.1	-0.1
APZ	**The Paps**	**1.82**	**168**	PN	Pn	00 11 34.4	-0.2
APZ				AML	AML	00 12 00.7	
APZ				AML	AML	00 12 01.4	
APZ	**The Paps**	**1.82**	**168**	Pn	Pn	00 11 34.4	-0.2
SYZ	**Scrubby Hill**	**1.91**	**142**	PN	Pn	00 11 35.6	0.0
SYZ				AML	AML	00 11 59.4	
SYZ				AML	AML	00 11 59.5	
SYZ				AML	AML	00 12 00.9	
SYZ				AML	AML	00 12 00.9	
SYZ	**Scrubby Hill**	**1.91**	**142**	Pn	Pn	00 11 35.6	0.0
LBZ	**Lake Benmore**	**2.08**	**72**	↑PN	Pn	00 11 36.2	-1.6
LBZ				AML	AML	00 12 01.4	
LBZ				AML	AML	00 12 01.4	
LBZ				AML	AML	00 12 01.7	
LBZ				AML	AML	00 12 01.8	
LBZ	**Lake Benmore**	**2.08**	**72**	Pn	Pn	00 11 36.1	-1.6
ODZ	**Otahua Downs**	**2.28**	**91**	↑PN	Pn	00 11 39.1	-1.1
ODZ				AML	AML	00 12 05.4	
ODZ				AML	AML	00 12 06.0	
ODZ				AML	AML	00 12 06.0	
ODZ				AML	AML	00 12 06.6	
ODZ	**Otahua Downs**	**2.28**	**91**	↑*i*Pn	Pn	00 11 39.2	-1.1
ODZ				*e*Sn	Sn	00 12 05.3	-3.4
FOZ	**Fox Glacier**	**2.29**	**49**	PN	Pn	00 11 38.5	-1.9
FOZ				AML	AML	00 12 07.1	
FOZ				AML	AML	00 12 07.1	
FOZ				AML	AML	00 12 08.8	
FOZ				AML	AML	00 12 08.9	
FOZ	**Fox Glacier**	**2.29**	**49**	Pn	Pn	00 11 38.5	-1.9
HHSZ	**Highcliff Hill**	**2.38**	**112**	PN	Pn	00 11 41.1	-0.5
HHSZ	**Highcliff Hill**	**2.38**	**112**	Pn	Pn	00 11 41.1	-0.5
RPZ	**Rata Peaks**	**2.92**	**64**	↑PN	Pn	00 11 46.3	-2.3
RPZ				AML	AML	00 12 22.7	
RPZ				AML	AML	00 12 23.1	
RPZ	**Rata Peaks**	**2.92**	**64**	Pn	Pn	00 11 46.3	-2.3
WVZ	**Waitaha Valley**	**3.10**	**52**	PN	Pn	00 11 48.4	-2.4
WVZ	**Waitaha Valley**	**3.10**	**52**	Pn	Pn	00 11 48.4	-2.4
INZ	**Inchbonnie**	**3.72**	**53**	PN	Pn	00 11 56.8	-2.3
OXZ	**Oxford**	**3.74**	**64**	PN	Pn	00 11 56.3	-3.0
OXZ				SN	Sn	00 12 37.3	-5.5
OXZ	**Oxford**	**3.74**	**64**	Pn	Pn	00 11 56.3	-3.0
MQZ	**McQueen's Vall**	**3.98**	**72**	PN	Pn	00 11 59.8	-2.7
MQZ				SN	Sn	00 12 43.4	-5.0
MQZ	**McQueen's Vall**	**3.98**	**72**	Pn	Pn	00 12 00.1	-2.4
LTZ	**Lake Taylor**	**4.17**	**59**	PN	Pn	00 12 02.0	-3.1
LTZ				SN	Sn	00 12 48.9	-4.2
LTZ	**Lake Taylor**	**4.17**	**59**	Pn	Pn	00 12 02.1	-3.0
DSZ	**Denniston Nort**	**4.59**	**46**	PN	Pn	00 12 07.8	-3.0
DSZ	**Denniston Nort**	**4.59**	**46**	Pn	Pn	00 12 08.3	-2.5

MAN 01 00:12:23,11.°06N×124.°61E,h19km,mb4.2,ML3.0,MS2.8, 2C,Leyte

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OCLP	**Ormoc**	**0.01**	**189**	*e*P	Pg	00 12 26.6	+0.3
OCLP				*e*S	Sg	00 12 29.8	+1.3
TBP	**Tagbilaran**	**1.54**	**209**	↑*i*P	Pn	00 12 49.5	0.0
RCP	**Roxas**	**1.90**	**285**	↑*e*P	Pn	00 12 55.1	+0.7
GUIM	**Jordan**	**2.03**	**258**	*e*P	Pn	00 12 56.9	+0.7
GUIM				*e*S	Sn	00 13 21.7	+0.6

*DDA **01** 00:17:24.6,40.°39N×34.°36E,h8km,Ml3.6*

*CSEM **01** 00:17:25.7±0.1,40.°42N×34.°31E,h2km,ML3.2,Error ellipse: s-maj=3.4km s-min=3.2km az=176.0*

*ISK **01** 00:17:25.4,40.°42N×34.°30E,h5km,ML3.2*

ISC 01 00:17:25.4±1.2,40.°41N±0.°02×34.°33E±0.°02,h0km±11km, n95,σ0=85/117,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CORM	**Corum**	**0.33**	**135**	*e*PG	**Pg**	**00 17 32.2**	**+0.6**
CORM	**Corum**	**0.33**	**135**	*e*Pg	**Pg**	**00 17 32.2**	**+0.6**
COAL	**Corum-Alaca**	**0.53**	**107**	P	**Pg**	**00 17 34.8**	**-0.7**
COAL				S	**Sg**	**00 17 43.2**	**+0.9**
COAL	**Corum-Alaca**	**0.53**	**107**	*i* P	**Pg**	**00 17 34.8**	**-0.7**
COAL				*i* S	**Sg**	**00 17 43.2**	**+0.9**
CANT	**Cankiri**	**0.57**	**290**	*e*PG	**Pg**	**00 17 36.5**	**+0.1**
TOS	**Tosya**	**0.67**	**340**	*e*PG	**Pg**	**00 17 38.0**	**-0.2**
TOS	**Tosya**	**0.67**	**340**	*e*Pg	**Pg**	**00 17 38.0**	**-0.2**
ELDT	**Eldivan**	**0.69**	**277**	P	**Pg**	**00 17 38.4**	**-0.2**
ELDT				S	**Sg**	**00 17 49.0**	**+1.3**
ELDT	**Eldivan**	**0.69**	**277**	*i* P	**Pg**	**00 17 38.4**	**-0.2**
ELDT				*i* S	**Sg**	**00 17 49.0**	**+1.3**
CDAG	**Cicekdag**	**0.79**	**178**	P	**Pg**	**00 17 39.8**	**-0.6**
CDAG				S	**Sb**	**00 17 52.5**	**-0.7**
CDAG	**Cicekdag**	**0.79**	**178**	*i* P	**Pg**	**00 17 39.8**	**-0.6**
CDAG				*i* S	**Sb**	**00 17 52.5**	**-0.7**
ILGA	**Ilgaz**	**0.79**	**324**	P	**Pg**	**00 17 40.4**	**-0.2**
ILGA				S	**Sb**	**00 17 52.3**	**-1.2**
ILGA	**Ilgaz**	**0.79**	**324**	*i* P	**Pg**	**00 17 40.4**	**-0.2**
ILGA				*i* S	**Sb**	**00 17 52.3**	**-1.2**
BOYT	**Boyabat**	**1.10**	**23**	P	**Pg**	**00 17 45.4**	**-1.0**
BOYT				S	**Sb**	**00 18 01.8**	**-0.3**
BOYT	**Boyabat**	**1.10**	**23**	*i* P	**Pg**	**00 17 45.4**	**-1.0**
BOYT				*i* S	**Sb**	**00 18 01.8**	**-0.3**
BYBT	**Boyabat**	**1.11**	**17**	*e*PN	**Pg**	**00 17 46.5**	**-0.1**
BYBT	**Boyabat**	**1.11**	**17**	*e*Pn	**Pg**	**00 17 46.5**	**-0.1**
KAST	**KASTAMONU**	**1.12**	**344**	P	**Pg**	**00 17 46.5**	**-0.4**
KAST				S	**Sb**	**00 18 02.9**	**+0.1**
KAST	**KASTAMONU**	**1.12**	**344**	*i* P	**Pg**	**00 17 46.5**	**-0.4**
KAST				*i* S	**Sb**	**00 18 02.9**	**+0.1**
HAVZ	**Havza**	**1.25**	**57**	P	**Pg**	**00 17 48.0**	**-1.3**
HAVZ				S	**Sb**	**00 18 06.3**	**-0.1**
HAVZ	**Havza**	**1.25**	**57**	*i* P	**Pg**	**00 17 48.0**	**-1.3**
HAVZ				*i* S	**Sb**	**00 18 06.3**	**-0.1**
BBAL	**Bala**	**1.27**	**227**	P	**Pg**	**00 17 48.4**	**-1.3**
BBAL	**Bala**	**1.27**	**227**	*i* P	**Pg**	**00 17 48.4**	**-1.3**
AFSR	**Af¨ar-Bala (A**	**1.36**	**226**	*e*PN	**Pg**	**00 17 51.6**	**+0.1**
AFSR				*e*SN	**Sn**	**00 18 10.4**	**-0.1**
AFSR	**Af¨ar-Bala (A**	**1.36**	**226**	*e*Pn	**Pg**	**00 17 51.6**	**+0.1**
AFSR				*e*Sn	**Sn**	**00 18 10.4**	**-0.1**
DIKM	**Dikmen**	**1.42**	**29**	*e*PN	**Pn**	**00 17 52.5**	**+0.1**
DIKM				*e*SN	**Sn**	**00 18 12.4**	**+0.6**
DIKM	**Dikmen**	**1.42**	**29**	*e*Pn	**Pn**	**00 17 52.5**	**+0.1**
DIKM				*e*Sn	**Sn**	**00 18 12.4**	**+0.6**
KVT	**Kavak**	**1.47**	**62**	*e*PN	**Pg**	**00 17 53.4**	**-0.1**
KVT				*e*SN	**Sn**	**00 18 13.4**	**+0.4**
KVT	**Kavak**	**1.47**	**62**	*e*Pn	**Pg**	**00 17 53.4**	**-0.1**
KVT				*e*Sn	**Sn**	**00 18 13.4**	**+0.4**
SAFT	**Safranbolu**	**1.50**	**304**	*e*PN	**Pn**	**00 17 53.4**	**-0.1**
SAFT	**Safranbolu**	**1.50**	**304**	*e*Pn	**Pn**	**00 17 53.4**	**-0.1**
BZK	**Bozkurt**	**1.57**	**351**	*e*PN	**Pn**	**00 17 54.6**	**+0.2**
BZK	**Bozkurt**	**1.57**	**351**	*e*Pn	**Pn**	**00 17 54.6**	**+0.2**
SERE	**Sereflikochisa**	**1.58**	**202**	*e*PN	**Pn**	**00 17 54.5**	**-0.2**
SERE	**Sereflikochisa**	**1.58**	**202**	*e*Pn	**Pn**	**00 17 54.5**	**-0.2**
TOKA	**Tokat**	**1.65**	**92**	P	**Pn**	**00 17 55.4**	**-0.1**
TOKA	**Tokat**	**1.65**	**92**	*i* P	**Pn**	**00 17 55.4**	**-0.1**
AVNS	**Nevsehir-Avano**	**1.65**	**166**	P	**Pn**	**00 17 54.5**	**-1.2**
AVNS	**Nevsehir-Avano**	**1.65**	**166**	*i* P	**Pn**	**00 17 54.5**	**-1.2**
TOKT	**Tokat**	**1.70**	**92**	*e*PN	**Pn**	**00 17 56.2**	**0.0**
TOKT	**Tokat**	**1.70**	**92**	*e*Pn	**Pn**	**00 17 56.2**	**0.0**
SAMS	**Samsun-Alacam**	**1.70**	**55**	P	**Pn**	**00 17 56.3**	**+0.1**
SAMS				S	**Sg**	**00 18 21.3**	**+1.3**
SAMS	**Samsun-Alacam**	**1.70**	**55**	*i* P	**Pn**	**00 17 56.3**	**+0.1**
SAMS				*i* S	**Sg**	**00 18 21.3**	**+1.3**
BCAM	**Yenicaga**	**1.77**	**284**	P	**Pn**	**00 17 56.4**	**-0.9**
BCAM	**Yenicaga**	**1.77**	**284**	*i* P	**Pn**	**00 17 56.4**	**-0.9**
CUSAR	**Sarkisla-SIVAS**	**1.78**	**123**	P	**Pn**	**00 17 57.2**	**-0.2**
CUSAR	**Sarkisla-SIVAS**	**1.78**	**123**	*i* P	**Pn**	**00 17 57.2**	**-0.2**
AKSY	**AKSARAY - Alti**	**1.81**	**194**	P	**Pn**	**00 17 58.0**	**+0.1**
AKSY	**AKSARAY - Alti**	**1.81**	**194**	*i* P	**Pn**	**00 17 58.0**	**+0.1**
ERBA	**Erbaa**	**1.87**	**81**	P	**Pn**	**00 17 58.4**	**-0.2**
ERBA	**Erbaa**	**1.87**	**81**	*i* P	**Pn**	**00 17 58.4**	**-0.2**
BNN	**Bunyan**	**1.95**	**143**	*e*PN	**Pn**	**00 17 59.8**	**0.0**
BNN	**Bunyan**	**1.95**	**143**	*e*Pn	**Pn**	**00 17 59.8**	**0.0**
BTIN	**Bart¨–n**	**1.99**	**309**	P	**Pb**	**00 18 02.2**	**-0.3**
BTIN	**Bart¨–n**	**1.99**	**309**	*i* P	**Pb**	**00 18 02.2**	**-0.3**
SVSK	**Karacayir**	**2.10**	**103**	*e*PN	**Pb**	**00 18 03.3**	**-1.1**
SVSK	**Karacayir**	**2.10**	**103**	*e*Pn	**Pb**	**00 18 03.3**	**-1.1**
CHBY	**Cihanbeyli**	**2.14**	**212**	*e*PN	**Pn**	**00 18 02.8**	**+0.5**
CHBY	**Cihanbeyli**	**2.14**	**212**	*e*Pn	**Pn**	**00 18 02.8**	**+0.5**
RSDY	**Resadiye-TOKAT**	**2.29**	**89**	*e*PN	**Pn**	**00 18 05.8**	**+1.4**
RSDY	**Resadiye-TOKAT**	**2.29**	**89**	*e*Pn	**Pn**	**00 18 05.8**	**+1.4**
NIG	**Nigde**	**2.31**	**174**	*e*PN	**Pn**	**00 18 05.0**	**+0.2**
NIG	**Nigde**	**2.31**	**174**	*e*Pn	**Pn**	**00 18 05.0**	**+0.2**
SVRH	**Sivrihisar-ESK**	**2.36**	**247**	*e*PN	**Pn**	**00 18 05.8**	**+0.4**
SVRH	**Sivrihisar-ESK**	**2.36**	**247**	*e*Pn	**Pn**	**00 18 05.8**	**+0.4**
MDUB	**Mudurnu**	**2.39**	**272**	*e*PN	**Pn**	**00 18 06.0**	**+0.2**
MDUB	**Mudurnu**	**2.39**	**272**	*e*Pn	**Pn**	**00 18 06.0**	**+0.2**
KIZT	**Kizilcal**	**2.43**	**232**	*e*PN	**Pn**	**00 18 06.2**	**-0.2**
KIZT	**Kizilcal**	**2.43**	**232**	*e*Pn	**Pn**	**00 18 06.2**	**-0.2**
LADK	**Ladik-KONYA**	**2.68**	**215**	*e*PN	**Pn**	**00 18 10.4**	**+0.5**
LADK	**Ladik-KONYA**	**2.68**	**215**	*e*Pn	**Pn**	**00 18 10.4**	**+0.5**
CUZAR	**Zara_SIVAS**	**2.69**	**100**	P	**Pn**	**00 18 10.6**	**+0.6**
CUZAR	**Zara_SIVAS**	**2.69**	**100**	*i* P	**Pn**	**00 18 10.6**	**+0.6**
ORDU	**Ordu-Boztepe**	**2.74**	**77**	P	**Pb**	**00 18 13.5**	**-1.8**
ORDU	**Ordu-Boztepe**	**2.74**	**77**	*i* P	**Pb**	**00 18 13.5**	**-1.8**
KONT	**Konya--Tatoy**	**2.90**	**212**	*e*PN	**Pn**	**00 18 14.0**	**+1.3**
KONT	**Konya--Tatoy**	**2.90**	**212**	*e*Pn	**Pn**	**00 18 14.0**	**+1.3**
GULT	**Gulveren**	**2.91**	**272**	*e*PN	**Pn**	**00 18 12.7**	**-0.3**
GULT	**Gulveren**	**2.91**	**272**	*e*Pn	**Pn**	**00 18 12.7**	**-0.3**
GRSN	**GIRESUNGRSN**	**3.04**	**79**	P	**Pb**	**00 18 18.9**	**-1.4**
GRSN	**GIRESUNGRSN**	**3.04**	**79**	*i* P	**Pb**	**00 18 18.9**	**-1.4**
DARE	**Darende-Malaty**	**3.06**	**126**	*e*PN	**Pn**	**00 18 16.3**	**+1.4**
DARE	**Darende-Malaty**	**3.06**	**126**	*e*Pn	**Pn**	**00 18 16.3**	**+1.4**
KARA	**Karaisali**	**3.20**	**170**	*e*PN	**Pn**	**00 18 18.7**	**+1.9**
KARA	**Karaisali**	**3.20**	**170**	*e*Pn	**Pn**	**00 18 18.7**	**+1.9**
ESPY	**Espiye-Giresun**	**3.38**	**80**	*e*PN	**Pn**	**00 18 21.3**	**+1.9**
ESPY	**Espiye-Giresun**	**3.38**	**80**	*e*Pn	**Pn**	**00 18 21.3**	**+1.9**
ADVT	**Abdulvahap**	**3.50**	**272**	*e*PN	**Pn**	**00 18 22.3**	**+1.3**
ADVT	**Abdulvahap**	**3.50**	**272**	*e*Pn	**Pn**	**00 18 22.3**	**+1.3**
KMRS	**Kahramanmaras**	**3.53**	**145**	*e*PN	**Pn**	**00 18 23.0**	**+1.6**
KMRS	**Kahramanmaras**	**3.53**	**145**	*e*Pn	**Pn**	**00 18 23.0**	**+1.6**
MERS	**Mersin**	**3.54**	**177**	*e*PN	**Pn**	**00 18 22.6**	**+1.1**
MERS	**Mersin**	**3.54**	**177**	*e*Pn	**Pn**	**00 18 22.7**	**+1.1**
TVSB	**Tavsanli**	**3.86**	**257**	*e*PN	**Pn**	**00 18 26.7**	**+0.6**
TVSB	**Tavsanli**	**3.86**	**257

MBDF	Montbardon	1.38	296	eP	Pg	00 19 29.3 -0.2
MBDF				eSg	Sb	00 19 46.0 +0.4
16nm,0.4s						
FRF	La Foret Royal	1.47	248	ePn	Pn	00 19 28.6 +0.3
FRF	La Foret Royal	1.47	248	ePg	Pg	00 19 30.9 -0.2
FRF				eSg	Sg	00 19 50.0 -0.2
20nm,0.2s						
FRF	La Foret Royal	1.47	248	ePn	Pn	00 19 28.6 +0.3
FRF	La Foret Royal	1.47	248	ePg	Pg	00 19 30.9 -0.2
FRF				eSg	Sg	00 19 50.0 -0.2
10.0nm,0.2s						
TRAV	Traversella	1.49	339	Pg	Pg	00 19 31.5 0.0
9.0nm,0.3s						
TRAV	Traversella	1.49	339	Pg	Pg	00 19 31.5 0.0
9.0nm,0.3s						
BDI	Bagni Di Lucca	1.50	92	Pg	Pb	00 19 30.8 +0.6
BDI	Bagni Di Lucca	1.50	92	Pg	Pb	00 19 30.8 +0.6
PGF	Pioggiola	1.62	167	ePn	Pn	00 19 30.3 -0.3
PGF				eSn	Sn	00 19 49.2 -1.8
3.5nm,0.3s						
PGF	Pioggiola	1.62	167	ePn	Pn	00 19 30.3 -0.3
PGF				eSn	Sn	00 19 49.2 -1.8
1.8nm,0.3s						
LMR	La Mourre	1.66	242	ePn	Pn	00 19 31.2 +0.3
LMR	La Mourre	1.66	242	ePg	Pg	00 19 34.1 -0.6
LMR				eSg	Sg	00 19 55.8 -0.4
8.9nm,0.2s						
LMR	La Mourre	1.66	242	ePn	Pn	00 19 31.2 +0.3
LMR	La Mourre	1.66	242	ePg	Pg	00 19 34.1 -0.6
LMR				eSg	Sg	00 19 55.8 -0.4
4.4nm,0.2s						
LPG	La Plagne	1.85	318	ePn	Pn	00 19 34.3 +0.3
LPG	La Plagne	1.85	318	ePg	Pg	00 19 38.5 0.0
LPG				eSg	Sg	00 20 02.5 -0.2
12nm,0.5s						
LPG	La Plagne	1.85	318	ePn	Pn	00 19 34.3 +0.3
LPG	La Plagne	1.85	318	ePg	Pg	00 19 38.5 0.0
LPG				eSg	Sg	00 20 02.5 -0.2
5.9nm,0.5s						
LPL	La Plagne	1.88	318	ePn	Pn	00 19 34.4 +0.2
LPL	La Plagne	1.88	318	ePg	Pg	00 19 38.7 -0.3
LPL				eSg	Sg	00 20 03.2 -0.2
7.7nm,0.3s						
LPL	La Plagne	1.88	318	ePn	Pn	00 19 34.4 +0.2
LPL	La Plagne	1.88	318	ePg	Pg	00 19 38.7 -0.3
LPL				eSg	Sg	00 20 03.2 -0.2
3.8nm,0.3s						
ORIF	Oris-en-Rattie	2.04	294	eP	Pb	00 19 38.8 -0.6
ORIF	Oris-en-Rattie	2.04	294	ePg	Pg	00 19 41.7 -0.3
ORIF				eSg	Sg	00 20 08.1 -0.5
8.3nm,0.3s						
ORIF	Oris-en-Rattie	2.04	294	eP	Pb	00 19 38.8 -0.6
ORIF	Oris-en-Rattie	2.04	294	ePg	Pg	00 19 41.7 -0.3
ORIF				eSg	Sg	00 20 08.1 -0.5
4.2nm,0.3s						
SMRF	Simiane la Rot	2.12	267	ePn	Pn	00 19 37.4 0.0
SMRF	Simiane la Rot	2.12	267	ePg	Pg	00 19 43.1 -0.5
SMRF				eSg	Sg	00 20 10.4 -0.8
17nm,0.4s						
SMRF	Simiane la Rot	2.12	267	ePn	Pn	00 19 37.4 0.0
SMRF	Simiane la Rot	2.12	267	ePg	Pg	00 19 43.1 -0.5
SMRF				eSg	Sg	00 20 10.4 -0.8
8.4nm,0.4s						
VIVF	Saint-Julien-l	2.84	286	ePn	Pn	00 19 47.8 +0.5
VIVF	Saint-Julien-l	2.84	286	ePg	Pg	00 19 55.5 -1.8
VIVF				eSn	Sn	00 20 19.7 -1.4
VIVF				eSg	Sg	00 20 32.8 -1.4
2.0nm,0.4s						
VIVF	Saint-Julien-l	2.84	286	ePn	Pn	00 19 47.8 +0.5
VIVF	Saint-Julien-l	2.84	286	ePg	Pg	00 19 55.5 -1.8
VIVF				eSn	Sn	00 20 19.7 -1.4
VIVF				eSg	Sg	00 20 32.8 -1.4
1.0nm,0.4s						
CABF	La Chapelle	3.01	326	ePn	Pn	00 19 49.7 0.0
CABF	La Chapelle	3.01	326	ePg	Pg	00 19 58.8 -1.8
CABF	La Chapelle	3.01	326	ePn	Pn	00 19 49.7 0.0
CABF	La Chapelle	3.01	326	ePg	Pg	00 19 58.8 -1.8
LASF	Ste Croix	3.35	271	ePn	Pn	00 19 54.2 -0.1
LASF	Ste Croix	3.35	271	eP	Pn	00 19 57.2 +2.9
LASF	Ste Croix	3.35	271	ePg	Pg	00 20 05.9 -1.2
LASF				eSn	Sn	00 20 31.8 -1.9
0.5nm,0.2s						
LASF	Ste Croix	3.35	271	ePn	Pn	00 19 54.2 -0.1
LASF	Ste Croix	3.35	271	eP	Pn	00 19 57.2 +2.9
LASF	Ste Croix	3.35	271	ePg	Pg	00 20 05.9 -1.2
LASF				eSn	Sn	00 20 31.8 -1.9
0.2nm,0.2s						
CDF	Champ du Feu	4.37	349	ePn	Pn	00 20 09.0 +0.7
CDF	Champ du Feu	4.37	349	ePn	Pn	00 20 09.0 +0.7
AVF	Avril sur Loir	4.50	308	ePn	Pn	00 20 09.7 -0.3
AVF	Avril sur Loir	4.50	308	eP	Pn	00 20 13.8 +3.8
AVF	Avril sur Loir	4.50	308	ePn	Pn	00 20 09.7 -0.3
AVF	Avril sur Loir	4.50	308	eP	Pn	00 20 13.8 +3.8
LOR	Lormes	4.53	316	ePn	Pn	00 20 11.0 +0.6
LOR	Lormes	4.53	316	ePn	Pn	00 20 11.0 +0.6
BGF	Bois d'Agland	4.67	303	ePn	Pn	00 20 13.6 +1.2
BGF	Bois d'Agland	4.67	303	ePn	Pn	00 20 13.6 +1.2

IDC 01 00:49:31.8±5.8, 4°92S×151°98E, h0km, mb3.1/3, mb1 3.3/3, mb1mx3.2/33, mbtmp3.1/3, Error ellipse: s-maj=178.8km s-min=35.4km az=106.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	22.76	227	P	P	00 54 34.8	-1.1
0.2nm,0.5s,baz=55,slow=11,SNR=6.0							
ASAR	Alice Springs	25.51	221	P	P	00 55 03.4	+1.1
0.4nm,0.7s,baz=55,slow=9.3,SNR=5.0							
MKAR	Makanchi Array	79.88	319	P	P	01 01 42.5	-0.1
0.1nm,0.5s,baz=112,slow=7.8,SNR=2.3							

KRSC 01 00:51:17.1±0.6, 53°58N×160°79E, h48km±16km, ML3.6, Near east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KII	Karymskiy	0.92	301	i P	Pn	00 51 34.9	+1.2
KII				i S	Sn	00 51 46.6	+0.8
NLC	Nalytchevo	0.95	245	i P	Pn	00 51 35.6	+1.5
NLC				eS	Sn	00 51 47.7	+1.1
MKZ	Mys Kozlova	1.13	29	eP	Pn	00 51 38.2	+1.8
MKZ				eS	Sn	00 51 52.5	+1.7
SDLR	Sedlovina	1.18	256	i P	Pn	00 51 39.0	+1.7
SDLR				eS	Sn	00 51 53.2	+1.0
UGLR	Uglovaya	1.23	253	i P	Pn	00 51 40.0	+2.0
UGLR				eS	Sn	00 51 55.3	+1.8
KRER	Koryakskii	1.25	258	i P	Pn	00 51 40.5	+2.2
KRER				eS	Sn	00 51 55.9	+1.8
AVH	Avacha	1.27	256	eP	Pn	00 51 40.5	+2.1
AVH				eS	Sn	00 51 56.1	+1.8
KRX	Arik	1.30	261	i P	Pn	00 51 40.7	+1.8
KRX				eS	Sn	00 51 56.2	+1.0
KOK	Koryaka	1.32	258	eP	Pn	00 51 41.1	+1.9
KOK				eS	Sn	00 51 56.6	+1.0
DALK	Dalny	1.34	247	eP	Pn	00 51 41.1	+1.8
DALK				eS	Sn	00 51 57.0	+1.1
PET	Petropavlovsk	1.40	247	eP	Pn	00 51 42.1	+2.0
PET				eS	Sn	00 51 58.7	+1.4
TUMD	Tumrok D	1.64	352	eS	Sn	00 52 05.0	+1.5
GNL	Ganaly	1.70	275	eP	Pn	00 51 46.5	+2.1
KRMR	Karymshinskiy	1.77	246	eP	Pn	00 51 47.5	+2.4
KRMR				eS	Sn	00 52 08.3	+1.9
RUS	Russkaya	1.79	231	eP	Pn	00 51 47.7	+2.2
RUS				eS	Sn	00 52 08.7	+1.7
MTVR	Mutnovka	1.92	236	eP	Pn	00 51 50.4	+3.0
MTVR				eS	Sn	00 52 12.1	+1.7
ASAK	Asacha	2.12	237	eP	Pn	00 51 53.3	+3.2
ASAK				eS	Sn	00 52 18.3	+3.1
APC	Apacha	2.28	255	eP	Pn	00 51 55.4	+3.3
APC				eS	Sn	00 52 21.8	+2.9
ZLN	Zelenaya	2.44	0	eP	Pn	00 51 58.8	+4.2
LGNR	Loginova	2.51	359	eP	Pn	00 51 58.0	+2.4
CIRR	Tsirk	2.54	360	eP	Pn	00 51 59.6	+3.7
ESO	Esso	2.64	334	eP	Pn	00 51 59.7	+2.5
KRSR	Krestovskiy	2.65	357	eP	Pn	00 52 01.7	+4.4
KBG	Krutoberegovo	2.90	22	eS	Sn	00 52 37.0	+2.7
BDR	Baidarnaya	3.01	4	eP	Pn	00 52 06.9	+4.7
SMKR	Semkarok	3.04	7	eP	Pn	00 52 05.5	+2.9
SRKR	Sorokina	3.09	4	eP	Pn	00 52 07.1	+3.7
BKI	Bering	3.44	60	eP	Pn	00 52 11.2	+3.1
BKI				eS	Sn	00 52 49.1	+1.5

IDC 01 01:00:27.4±2.4, 53°07N×87°46E, h0km, mb3.3/1, mb1 3.3/4, mb1mx3.0/44, mbtmp3.3/4, ML3.0/3, Error ellipse: s-maj=23.3km s-min=12.4km az=70.0
NNC 01 01:00:28.9±5.4, 52°88N×87°38E, h0km, mb3.5, mpv3.0, Error ellipse: s-maj=42.0km s-min=32.3km az=38.0
ISC 01 01:00:31.1±2.5, 53°11N±0°09×87°5E±0°2, h35km, n8, σ0§86/12, 5C-3D, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZALV	Zalesovo Beam	1.80	299	Pg	Pn	01 00 59.1	-0.6
17nm,0.3s,baz=116,slow=15,SNR=233							
ZALV				Lg	Lg	01 01 24.0	
20nm,0.3s,baz=123,slow=27,SNR=36							
ZALV				Rg	Rg	01 01 38.0	
9.0nm,0.4s,baz=115,slow=29,SNR=3.7							
KURK	Kurchatov	5.99	250	⇓Pn	Pn	01 01 56.3	-0.9
1.6nm,0.6s							
KURK				⇑Lg	Lg	01 03 38.4	
8.7nm,0.7s							
KURBB	Kurchatov Arra	6.08	249	Pn	Pn	01 01 58.8	+0.3
0.1nm,0.3s,baz=66,slow=15,SNR=4.8							
KURBB				Sn	Sn	01 03 07.6	+0.8
0.0nm,0.3s,baz=54,slow=22,SNR=3.3							
KURBB				Lg	Lg	01 03 37.1	
0.1nm,0.3s,baz=62,slow=35,SNR=7.2							
KURBB	Kurchatov Arra	6.08	249	⇑Pn	Pn	01 01 57.9	-0.6
0.1nm,0.1s							
KURBB				⇓Sn	Sn	01 03 06.2	-0.5
3.6nm,0.7s							
KURBB				⇓Lg	Lg	01 03 38.8	
11nm,0.7s							
MK31	Makanchi Array	7.15	210	⇑Pn	Pn	01 02 13.7	+0.5
0.4nm,0.3s,baz=27,slow=13,SNR=39							
MK31				⇑Sn	Sn	01 03 31.9	-1.3
2.1nm,0.7s,baz=31,slow=26,SNR=7.5							
MK31				⇑Lg	Lg	01 04 11.6	
2.5nm,0.8s,baz=26,slow=33,SNR=4.1							
MKAR	Makanchi Array	7.15	210	Pn	Pn	01 02 13.9	+0.7
0.8nm,0.3s,baz=26,slow=13,SNR=31							
MKAR				Sn	Sn	01 03 34.4	+1.1
0.5nm,0.3s,baz=31,slow=26,SNR=8.8							
MKAR				Lg	Lg	01 04 11.9	
0.3nm,0.3s,baz=33,slow=29,SNR=6.0							
BVAR	Borovoye Array	10.30	276	Pn	Pn	01 02 56.9	+0.6
0.1nm,0.3s,baz=81,slow=14,SNR=2.9							
AKASG	Malin Array Be	35.18	290	P	P	01 07 21.4	+0.1
0.2nm,0.3s,baz=64,slow=5.1,SNR=2.7							

IDC 01 01:03:35.1±3.4, 21°05S×176°31W, h0km, mb3.5/2, mb1 3.8/2, mb1mx3.5/22, mbtmp3.5/2, Error ellipse: s-maj=206.5km s-min=43.2km az=152.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	Alice Springs	45.93	257	P	P	01 12 01.2	+1.2
0.6nm,0.5s,baz=99,slow=7.8,SNR=9.4							
ASAR				PcP	PcP	01 13 35.5	-1.7
0.3nm,0.6s,baz=109,slow=3.4,SNR=5.2							
WRA	Warramunga Arr	46.09	262	P	P	01 12 00.2	-1.1
0.4nm,0.9s,baz=97,slow=7.6,SNR=5.6							
AKASG	Malin Array Be	144.25	332	PKP	PKPbc	01 23 11.6	+0.5
0.3nm,0.4s,baz=45,slow=4.3,SNR=10							
BRTR	Keskin Array B	148.37	313	PKPbc	PKPbc	01 23 23.6	-0.4
0.6nm,0.6s,baz=127,slow=4.0,SNR=5.7							
GERES	GERESS Array B	151.13	346	PKPbc	PKPbc	01 23 30.7	+0.3
0.3nm,0.6s,baz=64,slow=2.3,SNR=3.2							

IDC 01 01:07:02.1±3.0, 2°03N×30°62W, h0km, mb3.6/8, mb1 3.9/8, mb1mx3.7/37, mbtmp3.6/8, MS3.5/10, Ms1 3.6/10, ms1mx3.2/28, Error ellipse: s-maj=98.4km s-min=27.0km az=172.0, Central Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H10N3	ASCENSION HYDR	18.83	122	T	T	01 31 18.4	
baz=301,slow=75,SNR=65							
H10N2	ASCENSION HYDR	18.84	121	T	T	01 31 18.8	
baz=301,slow=75,SNR=66							
H10N1	ASCENSION HYDR	18.85	122	T	T	01 31 19.9	
baz=301,slow=75,SNR=80							
H10S3	ASCENSION HYDR	19.29	125	T	T	01 31 49.0	
baz=304,slow=74,SNR=34							
H10S1	ASCENSION HYDR	19.29	125	T	T	01 31 49.3	
baz=304,slow=74,SNR=40							
H10S2	ASCENSION HYDR	19.30	125	T	T	01 31 49.4	
baz=304,slow=74,SNR=27							
DBIC	Dimbokro	26.09	79	LR	LR	01 21 36.0	
comp=Z,93nm,18.3s,baz=238,slow=34							
TORD	Torodi Ar. Bea	33.83	69	P	P	01 13 46.3	-0.2
1.0nm,0.8s,baz=252,slow=8.3,SNR=5.5							
TORD				LR	LR	01 25 34.1	
comp=Z,103nm,19.6s,baz=250,slow=33							
CPUP	Villa Florida	38.22	221	LR	LR	01 29 48.3	
comp=Z,89nm,18.3s,baz=64,slow=36							
LPAZ	La Paz	41.27	242	LR	LR	01 31 51.1	
comp=Z,115nm,18.1s,baz=79,slow=36							
ROSC	El Rosal	43.70	275	LR	LR	01 32 29.3	
comp=Z,29nm,19.3s,baz=74,slow=35							
ESDC	Sonseca Array	44.63	30	P	P	01 15 16.8	+0.3
0.1nm,0.4s,baz=210,slow=7.4,SNR=4.0							
LVC	Limon Verde	44.65	235	LR	LR	01 33 53.1	
comp=Z,229nm,18.1s,baz=96,slow=36							
NNA	Nana	47.99	252	LR	LR	01 35 18.6	
comp=Z,45nm,18.6s,baz=106,slow=35							
ATAH	Atahualpa	48.53	259	LR	LR	01 35 56.3	
comp=Z,76nm,21.7s,baz=75,slow=36							
GERES	GERESS Array B	60.09	32	P	P	01 17 11.4	+0.2
0.1nm,0.5s,baz=174,slow=2.7,SNR=3.9							
NOA	NORSAR Array B	66.85	21	LR	LR	01 44 14.9	
comp=Z,7.5nm,19.8s,baz=65,slow=33							
BRTR	Keskin Array B	69.08	48	P	P	01 18 10.6	+0.3
0.2nm,0.4s,baz=242,slow=6.2,SNR=3.5							
AKASG	Malin Array Be	69.74	36	P	P	01 18 13.5	-0.4
0.2nm,0.3s,baz=247,slow=6.8,SNR=2.5							
TXAR	Lajitas Array	74.24	300	P	P	01 18 42.3	+0.7
0.9nm,1.1s,baz=108,slow=8.0,SNR=4.1							
PDAR	Pinedale Array	80.50	313	LR	LR	01 49 55.5	
comp=Z,26nm,21.8s,baz=41,slow=32							
YKA	Yellowknife Ar	85.43	332	P	P	01 19 40.4	-0.9
0.5nm,1.0s,baz=93,slow=4.9,SNR=6.9							
NVAR	Mina Array Bea	86.93	308	P	P	01 19 49.6	0.0
0.3nm,0.5s,baz=62,slow=14,SNR=3.1							

KRSC 01 01:16:18.9±2.1, 49°50N×157°19E, h55km±49km, ML3.9
IDC 01 01:16:18.0±2.2, 49°85N×159°13E, h0km, mb3.3/4, mb1 3.5/5, mb1mx3.2/37, mbtmp3.3/5, ML1.9/1, MS3.4/2, Ms1 3.4/2, ms1mx2.5/25, Error ellipse: s-maj=47.5km s-min=29.7km az=22.0
ISC 01 01:16:19.0±1.3, 49°86N±0°08×158°75E±0°09, h10km, n31, σ1§84/26, mb3.2/4, East of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	Severo-Kuril's	1.88	297	i P	Pn	01 16 42.6	-8.5
SKR				eS	Sn	01 17 01.4	-13
PAU	Pauzhetka	2.03	323	eP	Pn	01 16 51.7	-1.4
PAU				eS	Sn	01 17 16.6	-1.9
RUS	Russkaya	2.58	357	eP	Pg	01 17 09.1	+0.7
ASAK	Asacha	2.58	348	eP	Pb	01 17 06.0	+0.6
MTVR	Mutnovka	2.65	352	eS	Sg	01 17 44.0	-0.1
KRMR	Karymshinskiy	3.00	353	eP	Pb	01 17 13.7	+1.3
KRMR				eS	Sg	01 17 53.7	-1.5
DALK	Dalny	3.18	0	eP	Pb	01 17 16.5	+1.1
DALK				eS	Sg	01 17 59.6	-1.3
APC	Apacha	3.23	343	eP	Pb	01 17 14.1	-2.2
PETK	Petropavlovsk-	3.32	349	Pn	Pn	01 17 13.6	+2.6
0.6nm,0.3s,baz=158,slow=12,SNR=17							
PETK				Sn	Sn	01 17 54.5	+4.1
0.3nm,0.3s,baz=149,slow=16,SNR=2.7							
NLC	Nalytchevo	3.34	6	eS	Sg	01 18 04.2	-1.8
UGLR	Uglovaya	3.35	1	eP	Pb	01 17 20.0	+1.5
SMAR	Somma	3.41	1	eP	Pb	01 17 20.4	+0.9
AVH	Avacha	3.41	360	eP	Pb	01 17 19.7	+0.2
SDLR	Sedlovina	3.42	1	eP	Pb	01 17 20.1	+0.4
KRER	Koryakskii	3.45	360	eP	Pb	01 17 20.7	+0.5
KRX	Arik	3.50	359	eP	Pb	01 17 20.5	-0.6
GNL	Ganaly	3.87	353	eP	Pn	01 17 21.8	+3.2
MKZ	Mys Kozlova	5.05	20	eP	Pb	01 17 47.2	-0.1
BKI	Bering	6.93	37	eS	Sb	01 19 38.8	-3.2
JHJ	Hachijo jima 2	21.84	227	LR	LR	01 29 47.1	
comp=Z,270nm,20.7s,baz=359,slow=37							
KDAK	Kodiak Island	29.23	55	LR	LR	01 34 26.1	
comp=Z,21nm,18.4s,baz=92,slow=38							
H11N2	WAKE ISLAND Hy	30.76	165	T	T	01 56 37.6	
baz=331,slow=76,SNR=12							
H11N3	WAKE ISLAND Hy	30.77	165	T	T	01 56 39.0	
baz=331,slow=76,SNR=9.6							
H11N1	WAKE ISLAND Hy	30.77	165	T	T	01 56 19.0	
baz=331,slow=76,SNR=12							
H11S1	WAKE ISLAND Hy	31.92	166	T	T	01 57 28.3	
baz=332,slow=76,SNR=16							
H11S3	WAKE ISLAND Hy	31.93	166	T	T	01 57 31.3	
baz=332,slow=76,SNR=7.9							
H11S2	WAKE ISLAND Hy	31.94	166	T	T	01 57 33.5	
baz=332,slow=76,SNR=9.5							
INK	Inuvik	36.98	35	P	P	01 23 25.9	-2.0
0.2nm,0.4s,baz=270,slow=4.4,SNR=3.9							
ZALV	Zalesovo Beam	43.88	305	P	P	01 24 27.0	+1.8
0.4nm,0.6s,baz=104,slow=9.1,SNR=2.3							
YKA	Yellowknife Ar	46.15	40	P	P	01 24 42.1	-1.0
0.2nm,0.6s,baz=296,slow=7.1,SNR=3.8							
TXAR	Lajitas Array	72.72	65	P	P	01 27 47.6	+0.3
0.1nm,0.5s,baz=298,slow=1.9,SNR=3.3							

JMA 01 01:19:55.0±0.2, 43°54N×147°38E, h28km, M3.1
SKHL 01 01:19:55.7±0.1, 43°70N×147°50E, h33km±2km, mb4.6/3
ISC 01 01:19:54.8±2.6, 43°63N±0°10×147°5E±0°1, h35km±8km, n12, σ0§90/20, 2D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHO	Shikotan	0.56	295	⇓i P	Pb	01 20 06.2	-0.2
SHO				AMB	AMB	01 20 08.7	
400nm,0.5s							
SHO				i S	Sb	01 20 14.1	-0.3
SHO				A	A	01 20 14.6	
2μm,0.5s							
SHO				A	A	01 20 14.6	
3μm,0.5s							
YUK	Yuzh-Kuril'sk	1.27	289	⇓i P	Pn	01 20 15.9	-0.1
YUK				AMB	AMB	01 20 16.3	
120nm,0.2s							
YUK				AMB	AMB	01 20 16.3	
160nm,0.2s							
YUK				AMB	AMB	01 20 16.3	
480nm,0.2s							
YUK				i S	Sn	01 20 31.0	-0.9
YUK				A	A	01 20 31.9	
730nm,0.4s							
YUK				A	A	01 20 31.9	
620nm,0.4s							
NEM2	Nemuro 2	1.33	259	P	Pn	01 20 16.3	-0.5
NEM2				eS	Sn	01 20 31.6	-1.6
KUR	Kuril'sk	1.62	8	eP	Pn	01 20 20.8	0.0
KUR				AMB	AMB	01 20 24.1	
10.0nm,0.2s							
KUR				AMB	AMB	01 20 24.1	
50nm,0.2s							
KUR				eS	Sn	01 20 39.7	-0.7
KUR				A	A	01 20 41.7	
200nm,0.2s							
KUR				A	A	01 20 41.7	
120nm,0.2s							
JRA	Rausu	1.77	281	P	Pn	01 20 23.2	+0.3
JRA				eS	Sn	01 20 44.1	0.0
JNK	Nakash	2.04	270	P	Pn	01 20 26.6	0.0
JNK				eS	Sn	01 20 50.7	-0.2
JAK	Akkeshi	2.16	254	P	Pn	01 20 28.7	+0.4
JAK				eS	Sn	01 20 53.0	-0.8
JTKR	Abashiri--Toko	2.64	279	P	Pn	01 20 36.1	+1.2
JAR	Ashorobuto	2.76	264	P	Pn	01 20 37.3	+0.8
JCH	Churui	3.22	253	P	Pn	01 20 43.7	+0.9
JCH				eS	Sn	01 21 19.9	+0.1
JNBK	Urakawa-nobuka	3.76	251	P	Pn	01 20 51.4	+1.2
YSS	Yuzh-Sakhalins	4.73	316	eP	Pn	01 21 05.3	+1.8

ISCJB 01 01:22:42.9±1.3, 33°35S±0°08×70°38W±0°08, h105km±8km, Error ellipse: s-maj=14.8km s-min=8.3km az=143.2
GUC 01 01:22:43.8±0.4, 33°33S×70°41W, h102km±3km, ML2.8
SJA 01 01:22:43.0±1.1, 33°27S×70°39W, h102km±8km, ML1.5, MW2.5
ISC 01 01:22:42.2±3.2, 33°4S±0°1×70°43W±0°08, h111km±19km, n14, σ0§87/25, 2C-1D, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CLCH	Cerro Calan	0.10	248	⇓eP	Pn	01 22 57.8	+0.2
CLCH				eS	Sn	01 23 08.4	-0.7
CLCH				IAML		01 23 09.6	
comp=N,594nm,0.6s							
ANTU	Antumapu	0.27	220	eP	Pn	01 22 58.2	+0.2
ANTU				eS	Sn	01 23 09.0	-0.9
ANTU				IAML		01 23 10.5	
comp=N,317nm,0.7s							
PEL	Peldehue	0.30	315	⇑eP	Pn	01 22 58.3	+0.2
PEL				eS	Sn	01 23 09.2	-0.8
PEL				IAML		01 23 10.4	
comp=N,471nm,0.5s							
RCDM	Rinconada Maip	0.34	248	eP	Pn	01 22 58.7	+0.4
RCDM				eS	Sn	01 23 10.1	-0.2
RCDM				IAML		01 23 11.5	
comp=N,838nm,0.1s							
ROCH	El Roble	0.62	308	⇑eP	Pn	01 23 00.9	+0.6
ROCH				eS	Sn	01 23 14.1	+0.3
ROC1	El Roble	0.62	308	eP	Pn	01 23 00.9	+0.6
ROC1				eS	Sn	01 23 14.0	+0.1
ARCO	CERRO ARCO	1.36	68	eP	Pn	01 23 07.9	+0.4
ARCO				IAML		01 23 29.4	
comp=Z,6.4nm,0.3s							
AUSP	Uspallata	1.43	38	eP	Pn	01 23 09.1	+0.5
AUSP				eS	Sn	01 23 27.6	-0.8
ASAL	Salagasta	1.54	61	eP	Pn	01 23 10.6	+1.0
ASAL				eS	Sn	01 23 30.4	0.0
RTLS	Leoncito	1.82	32	eP	Pn	01 23 14.5	+1.2
RTLS				eS	Sn	01 23 37.8	+0.8
RTLL	Cerro Villicun	2.61	40	eP	Pn	01 23 23.6	+0.4
RTLL				eS

BSO4 Boso 4 1.04 209 ⇓P **Pb 01 28 05.0 +1.0**
BSO3 Boso 3 1.15 199 P **Pb 01 28 06.8 +1.0**
MJAR Matsushiro Arr 2.31 287 P **Pn 01 28 21.4 +0.8**
60nm,0.3s,baz=104,slow=8.9,SNR=239
MJAR S **Sn 01 28 48.4 +0.4**
38nm,0.3s,baz=99,slow=14,SNR=6.2
MJAR LR LR 01 29 22.3
comp=Z,2μm,20.4s,baz=115,slow=44
MAJO Matsushiro 2.32 287 *d P* **Pn 01 28 21.8 +1.2**
MAJO Matsushiro 2.32 287 *e*Pn **Pn 01 28 21.7 +1.1**
MAT Matsushiro 2.32 287 P **Pn 01 28 21.5 +0.9**
MAT *e*S **Sn 01 28 47.9 -0.1**
MJB9 Matsu-Tunnel 2.32 287 *e*Pn Pn 01 28 14.8 -5.8
JHJ2 Mitsune 2.93 199 *e*Pn **Pn 01 28 29.4 +0.3**
JHJ2 *e*Sn **Sn 01 29 01.4 -1.7**
JHJ Hachijo jima 2 2.94 200 P **Pn 01 28 29.8 +0.7**
96nm,0.3s,baz=75,slow=18,SNR=19
JHJ S **Sn 01 29 03.4 +0.1**
300nm,0.3s,baz=287,slow=22,SNR=14
INU Inuyama 3.26 261 *e*Pg **Pn 01 28 36.1 +2.6**
ERM Erimo 6.34 15 *c e*P **Pn 01 29 16.6 +0.7**
ERM Erimo 6.34 15 *e*Pn **Pn 01 29 16.2 +0.3**
ERM *e*Sn **Sn 01 30 24.3 -3.0**
ASAJ Asahikawa 8.31 8 P **Pn 01 29 43.0 +0.2**
11nm,0.3s,baz=214,slow=10.0,SNR=28
ASAJ LR LR 01 33 58.9
comp=Z,183nm,18.6s,baz=185,slow=44
ASAJ Asahikawa 8.31 8 *e*Pn **Pn 01 29 42.1 -0.7**
JNU Nakatsue 8.77 255 P Pn 01 29 54.1 +4.9
0.6nm,0.3s,baz=61,slow=6.4,SNR=4.4
JNU LR LR 01 33 31.0
comp=Z,2μm,18.3s,baz=116,slow=40
JNU Nakatsue 8.77 255 *e*Pn **Pn 01 29 45.3 -3.9**
CBIJ Chichi jima 8.84 173 *e*Pn **Pn 01 29 47.9 -2.3**
JCJ Chichijima 8.84 173 P **Pn 01 29 48.3 -1.9**
46nm,0.3s,baz=322,slow=8.5,SNR=28
YUK Yuzh-Kuril'sk 8.96 23 *e*P **Pn 01 29 51.4 -0.3**
YUK pmax pmax
comp=N,72nm,0.3s
YUK pmax pmax
comp=Z,106nm,0.3s
YUK pmax pmax
comp=E,48nm,0.6s
YUK MLR MLR
comp=Z,280nm,11.0s
SHO Shikotan 9.15 28 *e*P **Pn 01 29 52.8 -1.6**
SHO pmax pmax
comp=Z,39nm,0.5s
SHO pmax pmax
comp=E,22nm,0.4s
SHO pmax pmax
comp=N,30nm,0.5s
VLA Vladivostok 10.05 319 ⇑ *i P* **Pn 01 30 10.2 +3.4**
VLA pmax pmax
comp=Z,17nm,0.9s
KSRS Korea Array 10.59 282 P Pn 01 30 18.6 +4.6
comp=Z,0.9nm,0.3s,baz=97,slow=14,SNR=10.0
KSRS LR LR 01 34 21.7
comp=Z,474nm,21.1s,baz=104,slow=38
KSAR Wonju Array Be 10.62 282 P **Pn 01 30 18.7 +4.2**
KSAR Wonju Array Be 10.62 282 P **Pn 01 30 18.6 +4.2**
KUR Kuril'sk 10.70 27 *e*P **Pn 01 30 15.5 -0.1**
KUR *e*S **Sn 01 32 07.5 -6.7**
KUR pmax pmax
comp=Z,21nm,0.6s
KUR smax smax
comp=N,33nm,0.6s
KUR smax smax
comp=E,24nm,0.6s
USRK Ussuriysk Ar. 10.77 323 P **Pn 01 30 19.9 +3.3**
comp=E,0.6nm,0.3s,baz=131,slow=12,SNR=22
USRK LR LR 01 34 09.5
comp=E,595nm,20.0s,baz=132,slow=36
YSS Yuzh-Sakhalins 11.13 6 ⇓ *e*P **Pn 01 30 21.6 +0.1**
YSS *e*S **Sn 01 32 22.8 -1.9**
YSS pmax pmax
comp=Z,30nm,0.5s
YSS MLR MLR
comp=Z,400nm,15.0s
YSS Yuzh-Sakhalins 11.13 6 *e*Pn **Pn 01 30 19.9 -1.5**
MDJ Mudanjiang 12.29 319 P **Pn 01 30 33.2 -4.1**
MDJ pmax pmax
comp=Z,7.0nm,1.2s
MDJ pmax pmax
comp=Z,69nm,4.3s
KLR Kul'dur 14.94 336 P **Pn 01 31 14.0 +0.6**
comp=Z,0.3nm,0.3s,baz=192,slow=6.2,SNR=5.9
KLR Kul'dur 14.94 336 P **Pn 01 31 14.0 +0.6**
TYV Tymovskoe 15.01 4 *e*P **Pn 01 31 12.5 -1.8**
TYV pmax pmax
comp=Z,11nm,0.8s
NKL Nikolayevsk 17.25 359 *e*P **Pn 01 31 39.0 -4.0**
BJI Beijing 19.95 289 P **P 01 32 12.7 -1.3**
BJI S **S 01 35 53.3 -3.4**
BJI pmax pmax
comp=Z,15nm,1.3s
BJI LR LR
comp=N,180nm,14.0s
BJI LR LR
comp=E,150nm,18.9s
PETK Petropavlovsk- 20.86 29 P Pn 01 32 26.4 +0.1
comp=E,3.9nm,0.8s,baz=219,slow=7.9,SNR=7.2
PETK LR LR 01 40 23.9
comp=E,49nm,21.6s,baz=222,slow=36
SSLB Suanglung 21.09 241 *e*P **P 01 32 23.6 -2.9**
comp=E,4.8nm,0.4s
YULB Yu-li 21.10 239 *e*P **P 01 32 23.5 -3.0**
comp=E,22nm,1.2s
TPUB Ta-pu 21.63 240 *e*P **P 01 32 28.8 -3.4**
comp=E,11nm,0.7s
QZH Quanzhou 22.11 247 P **P 01 32 38.0 +0.6**
QZH *e*S **S 01 36 37.1 -2.3**
QZH LR LR
comp=Z,780nm,17.9s
HHC Hu-ho-hao-te 23.51 291 *e*P **P 01 32 50.8 -1.1**
HHC sP sP 01 33 05.4 +0.7
HHC PP **PnPn 01 33 29.4 +10**
HHC S **S 01 36 58.3 -5.4**
HHC pmax pmax
comp=Z,36nm,0.8s
HHC pmax pmax
comp=Z,210nm,4.8s
HHC LR LR
comp=N,920nm,12.5s
HHC LR LR
comp=E,920nm,11.2s
HHC LR LR
comp=Z,940nm,11.5s
MA2 Magadan 24.54 12 P **P 01 33 02.8 +1.6**
comp=Z,9.1nm,0.5s,baz=232,slow=8.5,SNR=7.8
XAN Xi'an 26.26 275 P **P 01 33 13.9 -3.2**
XAN pP pP 01 33 23.0 -3.2
XAN sP sP 01 33 28.2 -1.8
XAN S S 01 37 34.3 -13
XAN pmax pmax
comp=Z,12nm,0.7s
XAN pmax pmax
comp=Z,32nm,4.2s
XAN LR LR
comp=N,130nm,19.7s
XAN LR LR
comp=E,180nm,19.8s
XAN LR LR
comp=Z,230nm,17.8s
ENH Enshi 26.89 267 *e*P **P 01 33 20.4 -2.3**
comp=Z,15nm,0.7s
YAK Yakutsk 27.10 348 P **P 01 33 24.5 +0.3**
comp=Z,13nm,0.5s,baz=305,slow=0.9,SNR=6.4
YAK Yakutsk 27.10 348 *e*P **P 01 33 23.8 -0.5**
YAK pmax pmax
comp=Z,17nm,0.9s
YAK pmax pmax
comp=N,19nm,1.3s
YAK pmax pmax
comp=E,4.0nm,0.9s
ULN Ulaanbaatar 27.71 306 ⇓ *i P* **P 01 33 29.5 -0.6**
ULN pmax pmax
comp=Z,6.0nm,0.8s
ULN Ulaanbaatar 27.71 306 *e*P **P 01 33 29.0 -1.1**
comp=Z,6.6nm,1.0s
H11N2 WAKE ISLAND Hy 27.91 118 T T 02 02 31.8
baz=311,slow=75,SNR=143
H11N1 WAKE ISLAND Hy 27.91 118 T T 02 02 44.4
baz=311,slow=75,SNR=108
H11N3 WAKE ISLAND Hy 27.92 118 T T 02 02 45.6
baz=311,slow=75,SNR=130

SEY Seymchan 27.98 11 P **P 01 33 34.1 +2.0**
comp=Z,1.9nm,0.7s,baz=29,slow=4.4,SNR=3.9
SEY Seymchan 27.98 11 ⇓ *e*P **P 01 33 35.6 +3.5**
SONA1 Songino Array 28.13 306 *e*P **P 01 33 33.3 -0.6**
SONM Songino Array 28.13 306 P **P 01 33 33.3 -0.5**
comp=Z,4.5nm,0.6s,baz=104,slow=8.8,SNR=16
SONM LR LR 01 45 11.8
comp=Z,216nm,19.4s,baz=106,slow=37
BOD Bodaibo 28.31 329 *e*P **P 01 33 34.7 -0.4**
BOD pmax pmax
comp=Z,10.0nm,0.8s
H11S1 WAKE ISLAND Hy 28.57 120 T T 02 03 33.0
baz=312,slow=75,SNR=162
H11S3 WAKE ISLAND Hy 28.57 121 T T 02 03 33.0
baz=312,slow=75,SNR=114
H11S2 WAKE ISLAND Hy 28.59 121 T T 02 03 34.2
baz=312,slow=75,SNR=116
LZH Lanzhou 29.91 281 *e*P **P 01 33 50.3 +0.5**
LZH pP pP 01 33 58.8 -0.2
LZH sP sP 01 34 02.6 -0.2
LZH PP **PnPn 01 34 51.0 +4.4**
LZH *e*S **S 01 38 42.1 -3.2**
LZH sS sS 01 38 55.4 -5.0
LZH SS **SnSn 01 40 17.7 +0.1**
LZH pmax pmax
comp=Z,25nm,1.0s
LZH pmax pmax
comp=Z,78nm,4.7s
LZH LR LR
comp=N,1μm,12.2s
LZH LR LR
comp=E,1μm,14.2s
LZH LR LR
comp=Z,1μm,15.1s
GYA Guiyang 30.68 262 *e*P **P 01 33 54.8 -1.8**
GYA pmax pmax
comp=Z,10.0nm,0.8s
TLY Talaya 30.81 313 *e*P **P 01 34 00.2 +2.8**
TLY pmax pmax
comp=Z,2.0nm,0.5s
TLY MLR MLR
comp=Z,119nm,14.0s
TLY Talaya 30.81 313 *e*P **P 01 33 56.6 -0.9**
comp=Z,3.0nm,0.7s
CD2 Chengdu 31.32 272 P **P 01 33 59.5 -2.7**
CD2 pmax pmax
comp=Z,2.0nm,0.6s
GTA Gaotai 32.56 289 P **P 01 34 13.4 +0.3**
GTA pP pP 01 34 20.5 -1.8
GTA sP sP 01 34 24.4 -1.7
GTA S **S 01 39 26.6 0.0**
GTA sS sS 01 39 39.0 -2.8
GTA SS **SnSn 01 41 24.2 +2.3**
GTA pmax pmax
comp=Z,11nm,0.8s
GTA pmax pmax
comp=Z,23nm,5.7s
GTA LR LR
comp=N,82nm,20.4s
GTA LR LR
comp=E,110nm,17.1s
GTA LR LR
comp=Z,140nm,20.0s
KMI Kunming 34.44 263 P **P 01 34 28.1 -1.6**
KMI pP pP 01 34 36.1 -2.8
KMI sP sP 01 34 40.1 -2.6
KMI S **S 01 39 54.4 -1.7**
KMI pmax pmax
comp=Z,18nm,1.0s
KMI pmax pmax
comp=Z,51nm,4.3s
KMI LR LR
comp=N,180nm,19.9s
KMI LR LR
comp=E,160nm,20.4s
KMI LR LR
comp=Z,190nm,21.9s
BILL Bilibino 35.22 16 ⇓ *e*P **P 01 34 36.4 +0.8**
BILL *e* 01 35 51.0
BILL *e*PPP PPP 01 36 11.9
BILL pmax pmax
comp=Z,6.0nm,1.0s
BILL MLR MLR
comp=Z,102nm,23.0s
BILL Bilibino 35.22 16 *e*P **P 01 34 36.7 +1.1**
comp=Z,5.6nm,1.0s
TIXI Tiksi 36.38 354 ⇑ *i P* **P 01 34 45.5 +0.1**
TIXI pmax pmax
comp=Z,4.0nm,0.8s
TIXI Tiksi 36.38 354 *e*P **P 01 34 45.5 +0.1**
comp=Z,6.1nm,1.0s
CHTO Chiang Mai 40.66 257 *e*P **P 01 35 21.0 -1.2**
CHTO pmax pmax
comp=Z,2.0nm,0.6s
CHTO Chiang Mai 40.66 257 *e*P **P 01 35 21.0 -1.2**
comp=Z,1.9nm,0.6s
CMAR Chiang Mai Arr 40.86 256 P **P 01 35 22.7 -1.1**
comp=Z,0.3nm,0.3s,baz=226,slow=39,SNR=2.9
CMAR LR LR 01 53 55.7
comp=Z,143nm,18.7s,baz=54,slow=38
WMQ Urumqi 41.04 298 ⇑ *i P* **P 01 35 25.3 +0.3**
WMQ pP pP 01 35 32.3 -2.1
WMQ sP sP 01 35 37.6 -0.6
WMQ PP **PnPn 01 37 06.0 +1.7**
WMQ pmax pmax
comp=Z,13nm,0.8s
WMQ pmax pmax
comp=Z,35nm,3.6s
WMQ LR LR
comp=N,26nm,14.2s
WMQ LR LR
comp=E,36nm,26.8s
WMQ LR LR
comp=Z,40nm,21.4s
TNA Tin City 42.02 29 *e*P **P 01 35 34.0 +1.3**
comp=Z,6.5nm,1.0s
ZAA0 Zalesovo Array 42.42 313 *e*P **P 01 35 36.3 +0.2**
ZALV Zalesovo Beam 42.42 313 P **P 01 35 36.2 +0.1**
comp=Z,3.4nm,0.4s,baz=96,slow=7.0,SNR=25
ZALV PcP **PcP 01 37 28.6 -0.2**
comp=Z,2.3nm,0.5s,baz=111,slow=3.3,SNR=4.2
ZALV LR LR 01 54 04.3
comp=Z,88nm,19.1s,baz=70,slow=37
ZALV Zalesovo Beam 42.42 313 P **P 01 35 36.2 +0.1**
ZALV 01 37 28.6
ZALV pmax pmax
comp=Z,4.0nm,0.4s
ZALV pmax pmax
comp=Z,2.0nm,0.5s
ZALV MLR MLR
comp=Z,88nm,19.1s
NVS Novosibirsk 43.37 315 *e*P **P 01 35 43.6 -0.1**
NRIK Noril'sk 44.15 336 P **P 01 35 50.4 +0.5**
comp=Z,6.5nm,0.8s,baz=107,slow=9.6,SNR=9.2
NRIK LR LR 01 55 16.4
comp=Z,98nm,18.2s,baz=115,slow=37
MK01 Makanchi Array 44.42 303 *e*P **P 01 35 52.2 -0.2**
MK31 Makanchi Array 44.42 303 P **P 01 35 51.9 -0.5**
MK31 pmax pmax
comp=Z,17nm,0.7s
MK31 Makanchi Array 44.42 303 *e*P **P 01 35 51.8 -0.5**
MKAR Makanchi Array 44.42 303 P **P 01 35 52.3 -0.1**
comp=Z,17nm,0.6s,baz=89,slow=9.7,SNR=196
MKAR PcP **PcP 01 37 35.5 -0.1**
comp=Z,1.9nm,0.9s,baz=80,slow=7.5,SNR=2.4
MKAR LR LR 01 54 56.8
comp=Z,143nm,19.1s,baz=96,slow=37
MKAR Makanchi Array 44.42 303 *c e*P **P 01 35 52.2 -0.2**
MKAR pmax pmax
comp=Z,17nm,0.6s
MKAR Makanchi Array 44.42 303 *e*P **P 01 35 51.8 -0.6**
MKAR PcP **PcP 01 37 35.5 -0.1**
MAKZ Makanchi 44.63 303 *e*P **P 01 35 54.1 0.0**
MAKZ pmax pmax
comp=Z,20nm,0.8s
MAKZ Makanchi 44.63 303 *e*P **P 01 35 54.1 0.0**
comp=Z,20nm,0.8s
KURK Kurchatov 46.35 309 P **P 01 36 06.9 -0.7**
KURK pmax pmax
comp=Z,55nm,0.9s
KURK Kurchatov 46.35 309 *e*P **P 01 36 06.9 -0.7**
comp=Z,29nm,0.9s
GUN Gumba 46.91 276 *e*P **P 01 36 13.0 +0.3**
comp=Z,24nm,0.8s
PDGK Podgornoye 46.99 299 P **P 01 36 12.5 -0.2**
PDGK pmax pmax
comp=Z,26nm,1.0s
DMN Daman 47.66 276 *e*P **P 01 36 17.9 -0.5**
comp=Z,9.1nm,0.6s
MMRI Maumere 47.68 205 *e*P **P 01 36 17.8 -0.5**
GKN Gorkha 47.87 277 *e*P **P 01 36 19.7 -0.3**
SOEI Soe 48.06 202 *e*P **P 01 36 20.0 -1.3**
comp=Z,45nm,0.9s
KDAK Kodiak Island 48.19 41 *c e*P **P 01 36 25.3 +3.5**
IPM Ipoh 48.24 239 *e*P **P 01 36 20.3 -2.4**
comp=Z,6.2nm,0.5s
CAST Castle Rocks 48.37 34 *e*P **P 01 36 26.0 +2.9**
comp=Z,4.4nm,1.0s
KOLN Koldanda 48.81 277 *e*P **P 01 36 26.7 -0.5**
comp=Z,11nm,0.6s
BPAW Bear Paw Mtn. 48.88 33 *e*P **P 01 36 28.6 +1.5**
comp=Z,0.5nm,0.7s
KTH Kantishna Hill 48.90 33 *e*P **P 01 36 27.0 -0.3**
comp=Z,11nm,1.3s
MLY Manley 49.01 32 *e*P **P 01 36 30.9 +2.9**
comp=Z,7.8nm,1.2s
PYUN Piuthan 49.16 278 *e*P **P 01 36 29.5 -0.4**
comp=Z,56nm,0.9s
TRF Thorofare Moun 49.18 34 *e*P **P 01 36 31.3 +1.8**
comp=Z,23nm,1.6s
COEN Coen 49.63 177 *e*P **P 01 36 33.4 +0.2**
MCK McKinley 49.78 33 *e*P **P 01 36 36.9 +2.9**
MCK pmax pmax
comp=Z,6.0nm,1.0s
MCK McKinley 49.78 33 *e*P **P 01 36 36.9 +2.9**
comp=Z,6.0nm,1.0s
TKM2 Tokmak 2 49.85 299 P **P 01 36 35.5 +0.5**
TKM2 pmax pmax
comp=Z,14nm,0.7s
TKM2 Tokmak 2 49.85 299 *e*P **P 01 36 35.8 +0.7**
comp=Z,63nm,1.6s
MDM Murphy Dome 50.07 32 *e*P **P 01 36 38.8 +2.7**
comp=Z,7.6nm,0.8s
SML Sawmill 50.13 36 *e*P **P 01 36 38.4 +1.8**
SML pmax pmax
comp=Z,1.0nm,0.7s
SML Sawmill 50.13 36 *e*P **P 01 36 38.4 +1.8**
comp=Z,1.4nm,0.7s
WRH Wood River Hil 50.14 32 *e*P **P 01 36 39.6 +3.0**
comp=Z,3.7nm,0.8s
KSH Kashi 50.54 295 P **P 01 36 43.8 +3.6**
KSH *e*pP pP 01 36 51.2 +1.5
KSH *e*sP sP 01 36 54.4 +0.9
KSH *e*PcP **PcP 01 38 00.7 +2.9**
KSH *e*ScP **ScP 01 41 54.6 +3.2**
KSH PcS **PcS 01 41 57.2 +2.0**
KSH S **S 01 43 55.1 +2.7**
KSH ScS **ScS 01 46 31.4 +2.5**
KSH Kashi 50.54 295 SS **SS 01 47 27.3 +0.9**
KSH pmax pmax
comp=Z,75nm,4.4s
KSH LR LR
comp=N,64nm,4.5s
KSH LR LR
comp=E,58nm,5.2s
KSH LR LR
comp=Z,120nm,5.1s
IL1 Eielson Array 50.65 32 *e*P **P 01 36 40.9 +0.4**
ILAR Eielson Array 50.65 32 P **P 01 36 41.9 +1.4**
comp=Z,3.4nm,0.9s,baz=268,slow=6.1,SNR=22
ILB Eielson Array 50.65 32 *e*P **P 01 36 41.9 +1.4**
AAK Ala-Archa 50.71 299 *e*P **P 01 36 41.5 0.0**
AAK pmax pmax
comp=Z,8.0nm,1.0s
AAK Ala-Archa 50.71 299 *e*P **P 01 36 41.5 0.0**
comp=Z,8.0nm,1.0s
OTUK Ortayu 50.80 307 P **P 01 36 41.5 -0.4**
OTUK pmax pmax
comp=Z,21nm,1.1s
CHKZ Chkalovo 50.83 314 P **P 01 36 41.5 -0.4**
CHKZ pmax pmax
comp=Z,12nm,0.6s
BVA0 Borovoye Array 51.07 313 P **P 01 36 43.3 -0.5**
BVA0 pmax pmax
comp=Z,5.0nm,0.7s
BRVK Borovoye 51.13 313 *c e*P **P 01 36 44.4 +0.2**
BRVK pmax pmax
comp=Z,14nm,1.2s
BRVK Borovoye 51.13 313 *e*P **P 01 36 44.2 0.0**
comp=Z,7.7nm,0.7s
EKS2 Erkin-Say 51.22 299 *e*P **P 01 36 44.4 -0.8**
EKS2 pmax pmax
comp=Z,4.0nm,0.8s
EKS2 Erkin-Say 51.22 299 *e*P **P 01 36 44.4 -0.8**
comp=Z,4.2nm,0.8s
ZRNK Zerenda 51.91 313 P **P 01 36 49.9 -0.2**
ZRNK pmax pmax
comp=Z,32nm,1.5s
ZRNK Zerenda 51.91 313 *e*P **P 01 36 49.8 -0.2**
comp=Z,23nm,1.1s
DOT Dot Lake 51.95 33 *e*P **P 01 36 51.0 +0.7**
comp=Z,9.4nm,0.7s
MNAS Manas 52.17 299 P **P 01 36 52.4 +0.1**
MNAS pmax pmax
comp=Z,8.0nm,0.7s
GSI Gunungsitoli 52.91 239 *e*P **P 01 36 56.0 -1.9**
comp=Z,16nm,0.6s
EGAK Eagle 53.10 32 *e*P **P 01 36 59.9 +1.3**
comp=Z,2.3nm,0.6s
KK31 Karatay Array 53.38 301 *i* P **P 01 37 00.8 -0.4**
KK31 pmax pmax
comp=Z,6.0nm,0.8s
KKAR Karatay Array 53.38 301 *e*P **P 01 37 00.7 -0.5**
KKAR pmax pmax
comp=Z,7.0nm,0.8s
KKAR Karatay Array 53.38 301 *e*P **P 01 37 00.7 -0.5**
comp=Z,7.3nm,0.8s
INK Inuvik 55.56 27 P **P 01 37 18.3 +1.7**
comp=Z,2.8nm,0.6s,baz=298,slow=6.6,SNR=28
INK Inuvik 55.56 27 *e*P **P 01 37 18.6 +2.0**
INK pmax pmax
comp=Z,4.0nm,0.8s
INK Inuvik 55.56 27 *e*P **P 01 37 18.6 +2.0**
comp=Z,4.3nm,0.8s
FITZ Fitzroy Crossi 55.63 198 *e*P **P 01 37 17.7 +0.2**
comp=Z,6.3nm,0.7s
SVE Sverdlovsk 55.76 319 ⇓ *e*P **P 01 37 18.7 +0.6**
SVE pmax pmax
comp=Z,18nm,1.0s
WRAB Tennant Creek 55.88 188 *c e*P **P 01 37 19.1 -0.2**
WRAB pmax pmax
comp=Z,35nm,1.2s
WRAB Tennant Creek 55.88 188 *e*P **P 01 37 18.6 -0.8**
comp=Z,12nm,1.0s
WB2 Warramunga Arr 55.88 188 *e*P **P 01 37 18.9 -0.5**
WRA Warramunga Arr 55.89 188 P **P 01 37 18.5 -0.9**
comp=Z,8.4nm,0.8s,baz=3.4,slow=7.6,SNR=89
ARU Arti 56.97 319 *c i P* **P 01 37 26.5 -0.3**
ARU 01 38 21.0
ARU 01 39 32.1
ARU S **S 01 45 20.6 +1.9**
ARU SS **SS 01 49 05.1 -1.7**
ARU pmax pmax
comp=Z,26nm,1.0s
ARU Arti 56.97 319 *e*P **P 01 37 26.8 0.0**
comp=Z,44nm,1.3s
HYB Hyderabad 57.81 269 *i* P **P 01 37 32.5 -0.8**
AB31 Akbulak array 58.40 311 P **P 01 37 36.4 -0.5**
AB31 pmax pmax
comp=Z,5.0nm,0.5s
ABKAR Akbulak array 58.40 311 *e*P **P 01 37 36.6 -0.3**
AKTO Aktyubinsk 59.16 312 P **P 01 37 41.2 -1.0**
AKTO pmax pmax
comp=Z,6.0nm,0.8s
AS01 Alice Springs 59.61 187 *e*P **P 01 37 44.7 -0.8**
AS31 Alice Springs 59.61 188 *e*P **P 01 37 45.5 0.0**
comp=Z,1.6nm,0.6s
ASAR Alice Springs 59.61 188 P **P 01 37 45.2 -0.4**
comp=Z,3.4nm,0.8s,baz=14,slow=7.4,SNR=32
DLBC Dease Lake 59.75 38 *e*P **P 01 37 46.2 -0.1**
comp=Z,2.1nm,0.6s
MBWA Marble Bar 60.20 203 *e*P **P 01 37 48.7 -0.9**
comp=Z,12nm,0.6s
RES Resolute Bay 63.79 14 *e*P **P 01 38 13.8 +0.7**
RES pmax pmax
comp=Z,8.0nm,1.1s
RES Resolute Bay 63.79 14 *e*P **P 01 38 13.8 +0.7**
comp=Z,8.3nm,1.1s
GEYT Alibeck 64.07 299 P **P 01 38 15.3 -0.2**
comp=Z,5.1nm,1.0s,baz=31,slow=3.5,SNR=13
GEYT LR LR 02 07 58.6
comp=Z,69nm,19.9s,baz=120,slow=38

HAMF	Hammerfest	64.77	341	eP	P	01 38 19.9	+0.4
ARCES	ARCESS Array B	64.93	339	P	P	01 38 21.3	+0.7
	comp=Z,4.9nm,0.8s,baz=54,slow=8.7,SNR=23						
ARCES				LR	LR	02 09 52.6	
	comp=Z,78nm,19.4s,baz=60,slow=39						
ARE0	ARCESS Array S	64.93	339	eP	P	01 38 21.3	+0.7
YKA	Yellowknife Ar	64.97	30	P	P	01 38 21.8	+0.8
	comp=Z,0.9nm,0.8s,baz=305,slow=7.6,SNR=28						
YKB5	Yellowknife Ar	64.97	30	eP	P	01 38 21.5	+0.5
KIF	Kilpisjarvi	66.58	340	eP	P	01 38 31.7	+0.5
TRO	Tromso	66.67	341	eP	P	01 38 32.3	+0.5
TRO				IAmb	IAmb	01 38 35.7	
	comp=Z,18nm,1.4s						
STKA	Stephens Creek	67.42	179	P	P	01 38 37.0	0.0
	comp=Z,2.2nm,0.8s,baz=42,slow=3.5,SNR=5.2						
STKA	Stephens Creek	67.42	179	P	P	01 38 37.0	0.0
STKA				pmax	pmax		
	comp=Z,2.0nm,0.8s						
VRH	Novokhopyorsk	68.18	318	eP	P	01 38 39.8	-1.8
VRH				pmax	pmax		
	comp=Z,10.0nm,0.6s						
BBOO	Buckleboo	68.50	184	eP	P	01 38 43.2	-0.5
OBN	Obninsk	68.79	323	ceP	P	01 38 45.7	+0.4
OBN				e		01 38 53.1	
OBN				e		01 39 06.5	
OBN				e		01 41 18.5	
OBN				ePPP	PPP	01 42 55.0	
OBN				pmax	pmax		
	comp=Z,13nm,1.7s						
OBN				MLR	MLR		
	comp=Z,79nm,15.0s						
LPSR	Galich'ya Gora	68.94	320	eP	P	01 38 45.7	-0.7
LPSR				pmax	pmax		
	comp=Z,10.0nm,1.0s						
VSR	Storozhevoye	69.55	319	eP	P	01 38 49.1	-1.0
VSR				pmax	pmax		
	comp=Z,10.0nm,0.6s						
FIA1	FINESS Array S	69.65	332	eP	P	01 38 50.5	-0.1
FINES	FINESS Array B	69.65	332	P	P	01 38 50.5	-0.1
	comp=Z,7.1nm,0.8s,baz=57,slow=7.0,SNR=22						
FINES				LR	LR	02 10 55.7	
	comp=Z,79nm,18.7s,baz=48,slow=37						
GOF	Gofitskoye	70.58	312	ceP	P	01 38 55.1	-1.5
WSAR	Wadi Sarin	70.81	285	LR	LR	02 12 34.3	
	comp=Z,42nm,21.6s,baz=69,slow=38						
GUDG	Gudauri	71.04	309	P	P	01 39 00.3	+0.5
ZEI	Tsey	71.24	310	eP	P	01 38 57.4	-3.5
ZEI				pmax	pmax		
	comp=Z,11nm,0.8s						
VSU	Vasula	71.25	330	ceP	P	01 39 01.3	+0.9
VSU				pmax	pmax		
	comp=Z,49nm,1.7s						
KBZ	Khabaz	71.36	311	P	P	01 39 01.6	+0.3
	comp=Z,5.2nm,0.8s,baz=33,slow=2.7,SNR=16						
KIV	Kislovodsk	71.37	311	ceP	P	01 39 02.7	+1.1
KIV				e		01 39 18.6	
KIV				e		01 41 39.7	
KIV				ePPP	PPP	01 43 22.8	
KIV				pmax	pmax		
	comp=Z,23nm,1.2s						
KIV				MLR	MLR		
	comp=Z,38nm,18.0s						
KIV	Kislovodsk	71.37	311	eP	P	01 39 02.1	+0.6
	comp=Z,13nm,0.8s						
SUMG	Summit	71.82	360	i P	P	01 39 04.3	+0.2
	comp=Z,5.4nm,1.0s						
SUMG	Summit	71.82	360	i P	P	01 39 04.3	+0.2
SUMG				pmax	pmax		
	comp=Z,5.0nm,1.0s						
SUMG	Summit	71.82	360	eP	P	01 39 05.5	+1.3
	comp=Z,10.0nm,1.3s						
GNI	Garni	72.09	307	ceP	P	01 39 07.1	+1.0
GNI				pmax	pmax		
	comp=Z,39nm,1.2s						
GNI	Garni	72.09	307	eP	P	01 39 06.9	+0.8
	comp=Z,51nm,1.9s						
NC405	NORSAR Array S	74.88	337	eP	P	01 39 22.5	+0.6
AKASG	Malin Array Be	74.97	322	P	P	01 39 22.1	-0.4
	comp=Z,3.9nm,0.6s,baz=47,slow=6.1,SNR=27						
KIEV	Kiev	74.98	322	eP	P	01 39 22.2	-0.4
KIEV				pmax	pmax		
	comp=Z,7.0nm,0.7s						
KIEV	Kiev	74.98	322	eP	P	01 39 22.1	-0.4
	comp=Z,6.9nm,0.7s						
AK11	Malin Array Si	75.01	322	eP	P	01 39 22.6	-0.2
NC204	NORSAR Array S	75.05	338	eP	P	01 39 23.8	+0.9
NB2	NORSAR Subarra	75.09	337	P	P	01 39 22.6	-0.5
	comp=Z,4.9nm,0.8s,baz=41,slow=5.9						
NB2	NORSAR Subarra	75.09	337	P	P	01 39 22.6	-0.5
	baz=41,slow=5.9						
NOA	NORSAR Array B	75.09	337	P	P	01 39 23.2	+0.1
	comp=Z,6.6nm,1.0s,baz=40,slow=5.8,SNR=13						
NOA				LR	LR	02 15 24.5	
	comp=Z,71nm,19.7s,baz=90,slow=38						
FCC	Fort Churchill	75.18	26	eP	P	01 39 23.2	-0.4
FCC				pmax	pmax		
	comp=Z,7.0nm,1.2s						
FCC	Fort Churchill	75.18	26	eP	P	01 39 23.2	-0.4
	comp=Z,7.0nm,1.2s						
NBO02	NORSAR Array S	75.20	337	eP	P	01 39 23.9	+0.2
LRM	Limekiln Ridge	75.22	44	eP	P	01 39 26.0	+1.6
DLMT	Dillon	75.41	44	eP	P	01 39 26.8	+1.4
	comp=Z,3.7nm,0.8s						
BOZ	Bozeman (W)	75.78	44	eP	P	01 39 29.4	+1.9
BOZ				pmax	pmax		
	comp=Z,3.0nm,1.0s						
BOZ	Bozeman (W)	75.78	44	eP	P	01 39 29.4	+1.9
	comp=Z,3.3nm,1.0s						
NVAR	Mina Array Bea	75.97	53	P	P	01 39 30.9	+2.1
	comp=Z,0.5nm,0.4s,baz=297,slow=6.3,SNR=4.9						
NVAR				LR	LR	02 08 25.9	
	comp=Z,26nm,21.9s,baz=246,slow=32						
SORM	Soroca	77.04	321	⇑iP	P	01 39 34.0	-0.4
SORM	Soroca	77.04	321	⇑P	P	01 39 34.0	-0.4
H17A	Grant Village	77.14	44	eP	P	01 39 36.9	+1.6
	comp=Z,5.8nm,1.1s						
IMW	Indian Meadow	77.23	45	eP	P	01 39 38.7	+2.7
	comp=Z,7.0nm,1.4s						
BW06	Boulder Array	78.73	45	eP	P	01 39 45.0	+0.8
PDAR	Pinedale Array	78.73	45	P	P	01 39 45.4	+1.2
	comp=Z,0.6nm,0.6s,baz=307,slow=0.5,SNR=7.0						
KWP	Kalwaria Pacla	78.84	324	eP	P	01 39 45.4	+0.9
KWP	Kalwaria Pacla	78.84	324	⇑iP	P	01 39 45.3	+0.9
KWP	Kalwaria Pacla	78.84	324	⇑P	P	01 39 45.3	+0.9
BUR08	Bucovina Ar. S	78.96	322	eP	P	01 39 45.8	+0.6
TESR	Tescani	78.97	320	⇑iP	P	01 39 45.0	-0.2
BURAR	Bucovina Array	78.97	322	⇑iP	P	01 39 45.6	+0.3
BURAR	Bucovina Array	78.97	322	⇑P	P	01 39 45.6	+0.3
BR131	Keskin Array S	79.33	311	eP	P	01 39 47.7	+0.3
BRTR	Keskin Array B	79.33	311	P	P	01 39 47.6	+0.1
	comp=Z,3.4nm,0.9s,baz=82,slow=3.6,SNR=18						
VRI	Vrincioaia	79.35	320	⇑iP	P	01 39 48.2	+0.9
VRI	Vrincioaia	79.35	320	⇑P	P	01 39 48.2	+0.9
KOLS	Kolonicke sedl	79.53	324	eP	P	01 39 48.4	+0.2
KOLS				pmax	pmax		
	comp=Z,4.0nm,1.3s						
KOLS	Kolonicke sedl	79.53	324	eP	P	01 39 48.4	+0.2
STHS	Stebnicka Huta	79.68	325	eP	P	01 39 50.3	+1.3
STHS				pmax	pmax		
	comp=Z,2.0nm,0.8s						
STHS	Stebnicka Huta	79.68	325	eP	P	01 39 50.3	+1.3
ARCR	ARCALIA	79.77	322	⇓iP	P	01 39 50.8	+1.3
OJC	Ojcow	79.78	326	eP	P	01 39 50.1	+0.6
OJC	Ojcow	79.78	326	eP	P	01 39 50.1	+0.6
OJC	Ojcow	79.78	326	eP	P	01 39 50.0	+0.6
	comp=Z,12nm,1.3s						
BR231	Keskin MP Arra	79.78	312	eP	P	01 39 48.4	-1.5
RAR	Rarotonga	79.80	125	P	P	01 39 49.1	-0.8
	comp=Z,6.7nm,0.5s						
CRVS	Cervenica-Dubn	79.93	324	eP	P	01 39 50.8	+0.4
CRVS	Cervenica-Dubn	79.93	324	eP	P	01 39 50.8	+0.4
NIE	Niedzica	80.11	325	eP	P	01 39 52.1	+0.7
NIE	Niedzica	80.11	325	eP	P	01 39 52.1	+0.7
SRU	San Rafael Swe	80.44	48	eP	P	01 39 54.7	+1.2
SRU				pmax	pmax		
	comp=Z,6.0nm,0.6s						
SRU	San Rafael Swe	80.44	48	eP	P	01 39 54.7	+1.2
	comp=Z,6.1nm,0.6s						
ULM	Lac du Bonnet	80.65	33	LR	LR	02 15 16.5	
	comp=Z,21nm,21.7s,baz=164,slow=35						
KECS	Kecovo	80.69	324	eP	P	01 39 54.9	+0.5
KECS				pmax	pmax		
	comp=Z,2.0nm,1.0s						
KECS	Kecovo	80.69	324	eP	P	01 39 54.9	+0.5
LANS	Liptovska Anna	80.69	325	eP	P	01 39 56.1	+1.6
LANS	Liptovska Anna	80.69	325	eP	P	01 39 56.1	+1.6
ARR	Arges	80.78	320	⇓iP	P	01 39 56.4	+1.3
KSP	Ksiaz	80.87	328	eP	P	01 39 55.9	+0.5
KSP	Ksiaz	80.87	328	eP	P	01 39 55.9	+0.5
MORC	Moravsky Berou	81.11	327	eP	P	01 39 57.5	+0.8
MORC				pmax	pmax		
	comp=Z,24nm,1.2s						
MORC	Moravsky Berou	81.11	327	eP	P	01 39 57.5	+0.8
	comp=Z,24nm,1.2s						
DPC	Dobruska-Polom	81.22	328	eP	P	01 39 57.8	+0.5
DPC				esP	sP	01 40 11.5	+0.5
DPC	Dobruska-Polom	81.22	328	eP	P	01 39 57.8	+0.5
DPC				e		01 40 11.5	
KRLC	Kraliky	81.23	327	eP	P	01 39 57.8	+0.5
KRLC	Kraliky	81.23	327	eP	P	01 39 57.8	+0.5
UPC	Upice	81.24	328	eP	P	01 39 57.7	+0.3
UPC	Upice	81.24	328	eP	P	01 39 57.7	+0.3
PSZ	Piszkesteto	81.37	324	⇑iP	P	01 39 58.3	+0.1
PSZ	Piszkesteto	81.37	324	⇑P	P	01 39 58.3	+0.1
PSZ	Piszkesteto	81.37	324	eP	P	01 39 58.6	+0.5
	comp=Z,7.0nm,1.3s						
VYHS	Vyhne	81.45	325	eP	P	01 39 59.0	+0.5
VYHS				pmax	pmax		
	comp=Z,2.0nm,0.8s						
VYHS	Vyhne	81.45	325	eP	P	01 39 59.0	+0.5
PVCC	Panska Ves	81.84	329	eP	P	01 40 00.7	+0.2
PVCC	Panska Ves	81.84	329	eP	P	01 40 00.7	+0.2
BRG	Berggiesshubel	81.84	329	eP	P	01 40 00.7	+0.2
	comp=Z,3.1nm,0.9s						
BRG	Berggiesshubel	81.84	329	eP	P	01 40 00.7	+0.2
BRG				pmax	pmax		
	comp=Z,3.0nm,0.9s						
VRAC	Vranov	81.87	327	⇑iP	P	01 40 01.5	+0.8
VRAC	Vranov	81.87	327	⇑P	P	01 40 01.5	+0.8
CLL	Collm	81.90	330	⇑iP	P	01 40 00.7	-0.1
	comp=Z,8.0nm,0.9s						
CLL				e		01 40 13.0	
CLL	Collm	81.90	330	⇑iP	P	01 40 00.7	-0.1
CLL				e		01 40 13.0	
CLL				pmax	pmax		
	comp=Z,8.0nm,0.9s						
CLL	Collm	81.90	330	eP	P	01 40 01.0	+0.2
	comp=Z,8.1nm,0.8s						
PRU	Pruhonice	82.26	328	eP	P	01 40 03.2	+0.5
PRU	Pruhonice	82.26	328	eP	P	01 40 03.2	+0.5
MDVR	Moldovita	82.69	321	⇓iP	P	01 39 57.2	-7.9
PKSM	Moragy	83.19	324	⇑iP	P	01 40 07.1	-0.5
PKSM	Moragy	83.19	324	⇑P	P	01 40 07.1	-0.5
KHC	Kasperske Hory	83.32	328	eP	P	01 40 08.9	+0.6
KHC				esP	sP	01 40 21.7	-0.3
KHC	Kasperske Hory	83.32	328	eP	P	01 40 08.9	+0.6
KHC				e		01 40 21.7	
KHC	Kasperske Hory	83.32	328	eP	P	01 40 07.5	-0.8
	comp=Z,1.8nm,1.0s						
GERES	GERESS Array B	83.48	328	P	P	01 40 09.1	-0.1
	comp=Z,1.1nm,0.6s,baz=47,slow=5.9,SNR=11						
GEA0	GERESS Array S	83.49	328	eP	P	01 40 09.0	-0.3
GRFO	Grafenberg	83.87	330	eP	P	01 40 10.7	-0.4
GRFO				pmax	pmax		
	comp=Z,7.0nm,0.8s						
GRFO	Grafenberg	83.87	330	eP	P	01 40 10.7	-0.4
	comp=Z,7.3nm,0.8s						
PPT	Papeete	84.46	116	LR	LR	02 09 18.9	
	comp=Z,65nm,21.6s,baz=325,slow=30						
PPT2	Papeete2	84.47	116	eLR	LR	02 06 57.1	
	comp=Z,109nm,22.2s						
ANMO	Albuquerque	85.60	50	ceP	P	01 40 23.0	+2.7
ANMO				pmax	pmax		
	comp=Z,6.0nm,2.5s						
BFO	Black Forest	86.11	331	ceP	P	01 40 22.8	+0.4
BFO	Black Forest	86.11	331	eP	P	01 40 22.2	-0.2
	comp=Z,5.8nm,0.9s						
TAOE	Nuku Hiva Isla	86.26	104	eLR	LR	02 07 47.7	
	comp=Z,207nm,25.6s						
SCHQ	Schefferville	86.53	16	LR	LR	02 23 33.2	
	comp=Z,23nm,18.1s,baz=64,slow=39						
FUORN	Ofenpass-Fuorn	86.67	328	eP	P	01 40 25.9	+0.4
	comp=Z,4.3nm,0.8s						
TXAR	Lajitas Array	91.11	52	P	P	01 40 47.4	+0.8
	comp=Z,0.3nm,0.4s,baz=298,slow=3.2,SNR=9.0						
TXAR				LR	LR	02 15 39.9	
	comp=Z,24nm,21.8s,baz=0.0,slow=32						
H06N1	SOCORRO T-PHAS	92.91	64	T	T	03 24 21.3	
	SNR=5.9						
KEST	Kesra	95.70	322	LR	LR	02 27 53.5	
	comp=Z,92nm,18.2s,baz=270,slow=38						
RKT	Rikitea	98.67	112	eLR	LR	02 13 33.5	
	comp=Z,152nm,28.8s						
TORD	Torodi Ar. Bea	117.86	314	PKP	PKPdf	01 46 27.6	-0.8
	comp=Z,0.4nm,0.5s,baz=38,slow=1.4,SNR=20						
TORD				PKKPbc	PKKPbc	01 56 50.5	+2.7
	comp=Z,0.2nm,0.5s,baz=224,slow=3.0,SNR=6.5						
SNAA	Sanae	139.56	197	ePKIKP	PKPdf	01 47 07.7	-0.2
SNAA	Sanae	139.56	197	ePKPdf	PKPdf	01 47 07.7	-0.2
VNA2	Neumayer--Watz	141.13	196	PKP	PKPdf	01 47 28.1	-1.0
	baz=103,slow=2.5						
VNA3	Neumayer Olymp	141.38	195	PKP	PKPdf	01 47 08.0	-3.2
SAML	Samuel	145.31	45	ePKPbc	PKPbc	01 47 19.6	+0.1
LPAZ	La Paz	147.58	61	PKPbc	PKPab	01 47 28.1	-1.0
	comp=Z,3.3nm,0.7s,baz=288,slow=2.3,SNR=15						
LVC	Limon Verde	150.90	71	PKPbc	PKPbc	01 47 36.0	+1.1
	comp=Z,14nm,0.8s,baz=261,slow=4.4,SNR=4.1						
LVC	Limon Verde	150.90	71	ePKPdf	PKPdf	01 47 29.9	+0.7
LVC				ePKPbc	PKPbc	01 47 36.0	+1.1
SIV	San Ignacio	152.09	50	PKPbc	PKPbc	01 47 38.3	+1.0
LCO	Las Campanas	152.50	85	ePKPbc	PKPbc	01 47 39.1	+0.9

*IDC **01** 01:28:45.2±5.5, 5°.01N×77°.34W, h0km, mb3.1/3, mb1 3.4/4, mb1mx3.3/26, mbtmp3.2/4, ML2.2/1, Error ellipse: s-maj=201.1km s-min=22.4km az=21.0*
*ISCJB **01** 01:28:51.1±1.1, 2°.44N±0°.05×75°.37W±0°.07, h15km±13km, mb3.2/1, Error ellipse: s-maj=11.3km s-min=8.6km az=20.1*
*RSNC **01** 01:28:51.9±1.2, 2°.46N×75°.42W, h15km±5km, ML3.3*
ISC 01 01:28:51.4±1.3, 2°.41N±0°.05×75°.43W±0°.06, h11km±9km, n8, σ1968/13, 1C, Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BETC	Betania	0.27	358	eP	Pg	01 28 57.2	+0.2
BETC				eS	Sg	01 29 00.9	+0.3
BETC				i		01 29 02.7	
	comp=Z,896nm,0.1s						
FLOC	Florencia	0.85	195	⇑iP	Pg	01 29 07.5	-0.4
FLOC				i		01 29 21.5	
	comp=Z,853nm,0.1s						
POPC	Popayan, Colom	1.25	276	eP	Pn	01 29 14.1	-1.0
POPC				eS	Sg	01 29 31.6	-0.2
POPC				i		01 29 34.2	
	comp=Z,209nm,0.3s						
SJAC	San Juan de Ar	1.71	60	eP	Pn	01 29 20.1	-1.1
SJAC				eS	Sn	01 29 40.8	-2.4
SJAC				i		01 29 42.7	
	comp=Z,848nm,0.4s						
TOLC	Tolima	2.16	3	eP	Pn	01 29 26.2	-1.5
TOLC				eS	Sn	01 29 53.0	-1.7
VILC	Villavicencio,	2.42	46	eP	Pn	01 29 30.0	-1.1
VILC				i		01 30 04.9	
	comp=Z,216nm,0.4s						
ROSC	El Rosal	2.65	25	Pn	Pn	01 29 33.9	-0.7
	comp=Z,7.1nm,0.3s,baz=302,slow=11,SNR=10.0						
ROSC				Sn	Sb	01 30 12.7	+0.7
	comp=Z,13nm,0.3s,baz=220,slow=20,SNR=6.0						
TORD	Torodi Ar. Bea	76.92	77	P	P	01 40 47.7	+3.1
	comp=Z,0.3nm,0.9s,baz=284,slow=5.8,SNR=3.7						

*GUC **01** 01:31:14.6±0.4, 34°.75S×71°.68W, h34km±2km, ML3.5*
*ISCJB **01** 01:31:15.5±0.9, 34°.76S±0°.03×71°.66W±0°.08, h14km±8km, Error ellipse: s-maj=11.4km s-min=4.5km az=6.3*
ISC 01 01:31:14.0±3.4, 34°.74S±0°.03×71°.64W±0°.06, h4km±27km, n14, σ1966/26, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHPI	Pichilemu	0.46	319	eP	Pb	01 31 24.6	0.0
CHPI				eS	Sb	01 31 32.4	+0.6
TALC	Talca	0.66	179	eP	Pb	01 31 27.7	-0.4
TALC				eS	Sb	01 31 38.0	+0.5
RCDM	Rinconada Maip	1.43	29	eP	Pn	01 31 39.7	-1.0
RCDM				eS	Sn	01 31 56.0	-3.9
ANTU	Antumapu	1.44	36	eP	Pn	01 31 40.5	-0.4
ANTU				eS	Sb	01 32 00.4	+0.4
FSR	Penalolen	1.56	37	eP	Pn	01 31 42.7	+0.1
FSR				eS	Sb	01 32 03.9	+0.2
FSR				eS	Sn	01 32 04.2	+0.9
CLCH	Cerro Calan	1.62	35	eP	Pn	01 31 43.3	-0.2
CLCH				eS	Sb	01 32 05.7	+0.3
CLCH				IAML		01 32 10.1	
	comp=E,926nm,0.8s						
PEL	Peldehue	1.78	27	eP	Pn	01 31 45.6	0.0
PEL				eS	Sb	01 32 09.6	-0.4
PEL				IAML		01 32 14.3	
	comp=N,548nm,0.3s						
ROC1	El Roble	1.83	17	eP	Pn	01 31 46.5	0.0
ROC1				eS	Sb	01 32 11.7	+0.1
ROCH	El Roble	1.84	17	eP	Pn	01 31 46.8	+0.2
ROCH				eS	Sb	01 32 11.8	0.0
ROCH				IAML		01 32 19.2	
	comp=N,643nm,0.5s						
CCHI	Chillan	1.89	191	eP	Pn	01 31 46.6	-0.5
CCHI				eS	Sn	01 32 11.4	0.0
ARCO	CERRO ARCO	2.95	51	eP	Pb	01 32 05.0	-2.2
ARCO				IAML		01 32 22.4	
	comp=Z,56nm,0.5s						
AUSP	Uspallata	3.14	38	eP	Pn	01 32 07.1	+2.6
ASAL	Salagasta	3.17	48	eP	Pn	01 32 07.7	+2.9
RTLS	Leoncito	3.53	34	eP	Pn	01 32 12.2	+2.3
RTLS				eS	Sb	01 33 04.7	+4.2

IDC 01 01:34:17.3±1.4, 31°.95N×140°.34E, h0km, mb3.3/4, mb1 3.5/4, mb1mx3.3/38, mbtmp3.3/4, Error ellipse: s-maj=56.8km s-min=29.2km az=90.0, Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H11N2	WAKE ISLAND Hy	26.74	111	T	T	02 07 46.3	
	baz=302,slow=75,SNR=65						
H11N1	WAKE ISLAND Hy	26.75	111	T	T	02 07 46.7	
	baz=302,slow=75,SNR=104						
H11N3	WAKE ISLAND Hy	26.76	111	T	T	02 07 47.6	
	baz=302,slow=75,SNR=70						
H11S3	WAKE ISLAND Hy	27.26	113	T	T	02 08 23.1	
	baz=304,slow=75,SNR=1595						
H11S1	WAKE ISLAND Hy	27.26	113	T	T	02 08 23.6	
	baz=304,slow=75,SNR=1196						
H11S2	WAKE ISLAND Hy	27.27	113	T	T	02 08 23.5	
	baz=304,slow=75,SNR=1483						
MKAR	Makanchi Array	46.23	306	P	P	01 42 44.7	+0.5
	0.1nm,0.3s,baz=105,slow=9.7,SNR=2.8						
WRA	Warramunga Arr	51.91	187	P	P	01 43 26.7	-1.2
	0.4nm,0.5s,baz=1.1,slow=7.6,SNR=7.9						
ASAR	Alice Springs	55.64	187	P	P	01 43 56.3	+1.1
	0.3nm,0.5s,baz=8.9,slow=7.4,SNR=4.6						
YKA	Yellowknife Ar	68.66	29	P	P	01 45 21.7	-0.4
	0.1nm,0.8s,baz=301,slow=6.3,SNR=2.7						

IDC 01 01:43:05.4±2.9, 17°.17S×175°.63W, h182km±43km, mb3.6/3, mb1 3.7/4, mb1mx3.2/35, mbtmp4.1/4, Error ellipse: s-maj=144.1km s-min=28.2km az=139.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	Afiamalu	4.93	49	P	Pn	01 44 20.6	+1.9
	3.4nm,0.3s,baz=24,slow=18,SNR=2.6						
AFI				S	Sn	01 45 15.5	-0.7
	27nm,0.3s,baz=212,slow=15,SNR=15						
STKA	Stephens Creek	41.30	241	P	P	01 50 32.5	-0.8
	0.6nm,0.5s,baz=107,slow=11,SNR=2.4						
WRA	Warramunga Arr	47.37	258	P	P	01 51 22.0	+0.4
	0.5nm,0.4s,baz=91,slow=7.7,SNR=22						
ASAR	Alice Springs	47.54	253	P	P	01 51 22.4	-0.4
	5.9nm,0.6s,baz=90,slow=8.3,SNR=97						
BRTR	Keskin Array B	146.09	317	PKPbc	PKPdf	02 02 23.8	+0.5
	0.3nm,0.6s,baz=140,slow=5.1,SNR=2.6						

*NIED **01** 01:45:00.35°.90N×139°.80E, h80km, Mw4.2 Best double couple: M0=2.16000×10^15 NP1:φ0=177.00000°, δ29.00000°, λ81.00000°. NP2:φ0=7.00000°, δ61.00000°, λ95.00000°.*
*ISCJB **01** 01:45:16.4±0.4, 35°.86N±0°.03×139°.79E±0°.06, h89km±3km, mb3.9/21, Error ellipse: s-maj=8.1km s-min=4.8km az=159.2*
*JMA **01** 01:45:17.6±0.1, 35°.92N×139°.83E, h77km±2km, M4.2 Broadband fault plane solution: P waves. NP1: φ0=9.00000°, δ64.00000°, λ92.00000°. NP2:φ0=184.00000°, δ26.00000°, λ86.00000°. Principal axes: T Plg71.0000°, Azm283.0000°; N Plg2.0000°, Azm188.0000°; P Plg19.0000°, Azm97.0000°;*
JMA Felt III J1.
*IDC **01** 01:45:18.3±0.8, 35°.77N×139°.70E, h94km±7km, mb3.7/20, mb1 3.9/24, mb1mx3.8/41, mbtmp4.0/24, MS3.0/3, Ms1 3.1/3, ms1mx2.5/65 Error ellipse: s-maj=14.6km s-min=6.3km az=67.0*
ISC 01 01:45:17.3±0.7, 35°.88N±0°.04×139°.79E±0°.06, h82km±6km, n50, σ0997/60, mb4.0/21, 2C-5D, Near south coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TOK	Tokyo	0.20	188	⇑P	Pn	01 45 30.3	+1.0
JAG	Ashikaga	0.61	333	⇓P	Pn	01 45 32.0	-0.3
JAG				S	Sn	01 45 42.6	-0.8
JRY	Ryogami san	0.73	281	⇓P	Pn	01 45 34.0	+0.5
JRY				S	Sn	01 45 46.1	+0.5
JOD2	Odawara 2	0.84	223	⇓P	Pn	01 45 34.4	-0.3
JOD2				S	Sn	01 45 46.9	-0.7
JKT	Katashina	0.99	334	⇓P	Pn	01 45 36.1	-0.3
JKT				S	Sn	01 45 50.1	-0.6
JYN	Shimob	1.08	250	⇓P	Pn	01 45 37.8	+0.2
JYN				S	Sn	01 45 52.8	+0.1
JIM2	Oshima 3	1.20	194	P	Pn	01 45 38.4	-0.5
JIM2				S	Sn	01 45 54.6	-0.5
BSO3	Boso 3	1.23	151	⇑P	Pn	01 45 38.9	-0.1
BSO3				S	Sn	01 45 56.8	+1.5
MJAR	Matsushiro Arr	1.44	298	P	Pn	01 45 41.6	-0

ILAR	**Eielson Array**	**51.16**	**32**	P	**P**	**01 54 11.6**	**0.0**
	0.4nm,0.8s,baz=274,slow=6.3,SNR=4.6						
WRA	**Warramunga Arr**	**55.76**	**186**	P	**P**	**01 54 44.5**	**-1.1**
	2.7nm,0.4s,baz=0.8,slow=7.6,SNR=95						
INK	**Inuvik**	**56.01**	**27**	P	**P**	**01 54 47.6**	**+0.8**
	0.5nm,0.4s,baz=305,slow=7.5,SNR=9.9						
ASAR	**Alice Springs**	**59.48**	**186**	P	**P**	**01 55 11.3**	**-0.5**
	1.5nm,0.5s,baz=11,slow=7.6,SNR=37						
GEYT	**Alibeck**	**63.25**	**299**	P	**P**	**01 55 37.4**	**+0.2**
	3.0nm,0.9s,baz=98,slow=3.3,SNR=6.3						
ARCES	**ARCESS Array B**	**64.61**	**339**	P	**P**	**01 55 45.4**	**-0.2**
	0.8nm,0.4s,baz=51,slow=7.6,SNR=10						
YKA	**Yellowknife Ar**	**65.46**	**29**	P	**P**	**01 55 50.8**	**-0.3**
	0.2nm,0.8s,baz=305,slow=6.5,SNR=6.4						
FINES	**FINESS Array B**	**69.22**	**332**	P	**P**	**01 56 14.4**	**-0.5**
	1.2nm,0.5s,baz=69,slow=6.1,SNR=24						
KBZ	**Khabaz**	**70.66**	**310**	P	**P**	**01 56 24.2**	**+0.2**
	2.4nm,0.8s,baz=31,slow=4.7,SNR=7.8						
AKASG	**Malin Array Be**	**74.40**	**322**	P	**P**	**01 56 45.3**	**-0.8**
	1.9nm,0.6s,baz=46,slow=5.7,SNR=7.2						
NB2	**NORSAR Subarra**	**74.74**	**337**	P	**P**	**01 56 47.3**	**-0.6**
	comp=Z,0.7nm,0.5s,baz=41,slow=5.9						
NOA	**NORSAR Array B**	**74.74**	**337**	P	**P**	**01 56 47.6**	**-0.3**
	comp=Z,0.3nm,0.5s,baz=58,slow=6.9,SNR=6.4						
NVAR	**Mina Array Bea**	**76.73**	**52**	P	**P**	**01 57 01.5**	**+1.5**
	comp=Z,0.5nm,0.5s,baz=298,slow=6.2,SNR=4.5						
BRTR	**Keskin Array B**	**78.63**	**311**	P	**P**	**01 57 10.2**	**-0.2**
	comp=Z,1.0nm,0.7s,baz=90,slow=3.0,SNR=9.2						
PDAR	**Pinedale Array**	**79.41**	**45**	P	**P**	**01 57 15.3**	**+0.6**
	comp=Z,0.2nm,0.6s,baz=355,slow=1.8,SNR=3.0						
DPC	**Dobruska-Polom**	**80.73**	**327**	*e*P	**P**	**01 57 21.8**	**+0.4**
PRU	**Pruhonice**	**81.77**	**328**	*e*P	**P**	**01 57 26.8**	**-0.1**
KHC	**Kasperske Hory**	**82.83**	**328**	*e*P	**P**	**01 57 31.1**	**-1.4**
GERES	**GERESS Array B**	**82.99**	**327**	P	**P**	**01 57 32.8**	**-0.6**
	comp=Z,0.4nm,0.4s,baz=43,slow=6.0,SNR=4.6						
SCHQ	**Schefferville**	**86.80**	**15**	P	**P**	**01 57 52.4**	**+0.2**
	comp=Z,1.4nm,0.6s,baz=215,slow=17,SNR=3.2						
TXAR	**Lajitas Array**	**91.86**	**51**	P	**P**	**01 58 17.5**	**+0.8**
	comp=Z,0.5nm,0.6s,baz=299,slow=2.6,SNR=9.3						
TORD	**Torodi Ar. Bea**	**117.19**	**313**	PKP	**PKPdf**	**02 03 52.5**	**-1.0**
	comp=Z,0.3nm,0.5s,baz=27,slow=1.3,SNR=13						
LPAZ	**La Paz**	**148.41**	**59**	PKPbc	**PKPbc**	**02 04 56.1**	**+0.5**
	comp=Z,1.9nm,0.6s,baz=325,slow=2.4,SNR=12						

*ISN **01** 01:50:46.3±0.3, 37.05°N×44.31°E, h0km, ML2.9*
*CSEM **01** 01:50:47.2±0.2, 37.19°N×45.12°E, h5km, ML2.7, Error ellipse: s-maj=7.6km s-min=4.9km az=155.0*

TEH 01 01:50:48.4, 37.16°N×45.16°E, h5km, ML2.7, Northwestern Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ISHB	**Shabestar**	**1.18**	**18**	*e*AMB	AMB	01 51 13.4	
	comp=Z,2μm,0.1s						
ISHB				*e*Pg	Pg	01 51 09.7	-1.3
ITBZ	**Tabriz**	**1.33**	**36**	*e*Pg	Pn	01 51 12.2	-1.6
ITBZ				*e*AMB	AMB	01 51 15.3	
	comp=Z,964nm,0.1s						
ITBZ	**Tabriz**	**1.33**	**36**	*e*Pg	Pn	01 51 12.2	-1.6
IBST	**Bostanabad**	**1.48**	**68**	*e*Sg	Sb	01 51 35.0	-0.8
IBST				*e*AMB	AMB	01 51 38.7	
	comp=Z,1μm,0.2s						
IBST	**Bostanabad**	**1.48**	**68**	*e*Sg	Sb	01 51 35.0	-0.8
IMRD	**Marand**	**1.61**	**15**	*e*Pn	Pn	01 51 17.6	-1.0
IMRD				*e*AMB	AMB	01 51 23.8	
	comp=Z,671nm,0.1s						
IMRD	**Marand**	**1.61**	**15**	*e*Pn	Pn	01 51 17.6	-0.1
IVIS	**Veis**	**2.97**	**152**	*e*Pn	Pn	01 51 35.7	-0.5
IVIS				*e*AMB	AMB	01 51 46.5	
	comp=Z,162nm,0.2s						
IVIS	**Veis**	**2.97**	**152**	*e*Pn	Pn	01 51 35.7	-0.5
IGHG	**Ghaleghazi**	**3.05**	**157**	*e*Pn	Pn	01 51 37.4	-0.1
IGHG				*e*AMB	AMB	01 52 27.3	
	comp=Z,408nm,0.2s						
IGHG	**Ghaleghazi**	**3.05**	**157**	*e*Pn	Pn	01 51 37.4	-0.1
KBSD	**Kabsdagh**	**3.69**	**269**	*e*P	Pn	01 51 44.7	-1.5
KBSD				*e*S	Sn	01 52 27.7	-2.4
	comp=Z,13nm,0.5s						
MZRK	**Al-Mazaregh**	**3.87**	**251**	*e*P	Pn	01 51 47.3	-1.2
MZRK				*e*S	Sn	01 52 32.6	-1.8
	comp=Z,7.0nm,0.4s						
SFNV	**Sufian**	**4.12**	**261**	*e*P	Pn	01 51 49.8	-2.2
SFNV				*e*S	Sn	01 52 39.0	-1.6
	comp=Z,6.0nm,0.7s						

*ISCJB **01** 01:52:33.1±0.5, 37.92°N±0.03×27.32°E±0.04, h8km±5km, Error ellipse: s-maj=5.7km s-min=3.8km az=152.9*
*ISK **01** 01:52:33.4, 37.95°N×27.35°E, h5km, MD2.5*
*CSEM **01** 01:52:33.3±0.2, 37.92°N×27.35°E, h2km, MD2.6, Error ellipse: s-maj=5.7km s-min=3.9km az=65.0*
*DDA **01** 01:52:33.2, 37.89°N×27.28°E, h7km, Md2.6*

ISC 01 01:52:33.0±0.9, 37.90°N±0.02×27.31°E±0.03, h12km±8km, n27, σ0°37/42, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GCAM	**G?zelcaml?**	**0.20**	**197**	P	**Pg**	**01 52 37.4**	**-0.1**
GCAM				S	**Sg**	**01 52 40.8**	**+0.3**
GCAM	**G?zelcaml?**	**0.20**	**197**	*i* P	**Pg**	**01 52 37.4**	**-0.1**
GCAM				*i* S	**Sg**	**01 52 40.8**	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**0.46**	**84**	*e*PG	**Pg**	**01 52 42.5**	**+0.3**
AYDB				*e*SG	**Sg**	**01 52 48.3**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**0.46**	**84**	*e*Pg	**Pg**	**01 52 42.5**	**+0.3**
AYDB				*e*Sg	**Sg**	**01 52 48.3**	**-0.1**
IZM	**Izmir**	**0.50**	**356**	*e*PG	**Pg**	**01 52 43.2**	**+0.3**
IZM				*e*SG	**Sg**	**01 52 49.6**	**0.0**
IZM	**Izmir**	**0.50**	**356**	*e*Pg	**Pg**	**01 52 43.2**	**+0.3**
IZM				*e*Sg	**Sg**	**01 52 49.6**	**0.0**
AYDN	**Tasoluk**	**0.51**	**117**	P	**Pb**	**01 52 43.8**	**-0.1**
AYDN				S	**Sb**	**01 52 51.3**	**0.0**
AYDN	**Tasoluk**	**0.51**	**117**	*i* P	**Pb**	**01 52 43.8**	**-0.1**
AYDN				*i* S	**Sb**	**01 52 51.3**	**0.0**
BLCB	**Balcova**	**0.53**	**337**	*e*PG	**Pg**	**01 52 43.4**	**-0.1**
BLCB				*e*SG	**Sg**	**01 52 50.5**	**0.0**
BLCB	**Balcova**	**0.53**	**337**	*e*Pg	**Pg**	**01 52 43.4**	**-0.1**
BLCB				*e*Sg	**Sg**	**01 52 50.5**	**0.0**
ZEY	**¨zmir**	**0.72**	**298**	*i* P	**Pg**	**01 52 47.0**	**0.0**
ZEY				*i* S	**Sb**	**01 52 57.1**	**-0.2**
URLA	**Izmir**	**0.73**	**310**	P	**Pg**	**01 52 47.1**	**-0.1**
URLA				S	**Sb**	**01 52 57.6**	**0.0**
URLA	**Izmir**	**0.73**	**310**	*i* P	**Pg**	**01 52 47.1**	**-0.1**
URLA				*i* S	**Sb**	**01 52 57.6**	**0.0**
BODT	**Bodrum**	**0.83**	**180**	*e*PG	**Pn**	**01 52 50.8**	**+0.2**
BODT	**Bodrum**	**0.83**	**180**	*e*Pg	**Pn**	**01 52 50.8**	**+0.2**
BDRM	**Kayabasi**	**0.84**	**173**	P	**Pg**	**01 52 48.7**	**-0.5**
BDRM				S	**Sb**	**01 53 00.5**	**-0.2**
BDRM	**Kayabasi**	**0.84**	**173**	*i* P	**Pg**	**01 52 48.7**	**-0.5**
BDRM				*i* S	**Sb**	**01 53 00.5**	**-0.2**
AKS	**Akhisar**	**1.06**	**22**	*e*PG	**Pb**	**01 52 52.3**	**-1.0**
AKS	**Akhisar**	**1.06**	**22**	*e*Pg	**Pb**	**01 52 52.3**	**-1.0**
YER	**Yerkesik**	**1.08**	**134**	*e*PN	**Pn**	**01 52 54.2**	**+0.1**
YER	**Yerkesik**	**1.08**	**134**	*e*Pn	**Pn**	**01 52 54.2**	**+0.1**
DKL	**Dikili**	**1.22**	**345**	*e*PN	**Pg**	**01 52 57.0**	**+0.6**
DKL	**Dikili**	**1.22**	**345**	*e*Pn	**Pg**	**01 52 57.0**	**+0.6**
KULA	**Kula-Manisa**	**1.23**	**60**	*e*PN	**Pb**	**01 52 56.4**	**+0.1**
KULA	**Kula-Manisa**	**1.23**	**60**	*e*Pn	**Pb**	**01 52 56.4**	**+0.1**
APE	**Apeiranthos**	**1.64**	**240**	*e*PN	**Pg**	**01 53 05.3**	**+0.8**
APE	**Apeiranthos**	**1.64**	**240**	*e*Pn	**Pg**	**01 53 05.3**	**+0.8**

*NIED **01** 01:56:00, 37.20°N×141.50°E, h50km, Mw4.0 Best double couple: M0:1.25000×10^15 NP1:φ±195.00000°, δ62.00000°, λ28.00000°. NP2:φ±91.00000°, δ65.00000°, λ149.00000°.*
*ISCJB **01** 01:56:01.8±0.7, 37.09°N±0.03×141.51°E±0.06, h41km±6km, mb4.0/25, Error ellipse: s-maj=8.0km s-min=5.0km az=11.3*
*NEIC **01** 01:56:03.5±0.7, 37.10°N×141.52°E, h37km±7km, mb4.3/8, Error ellipse: s-maj=8.3km s-min=6.6km az=125.0*
NEIC Recorded [3 JMA] in Fukushima.
*IDC **01** 01:56:03.3±3.0, 37.15°N×141.42°E, h33km±23km, mb3.6/15, mb1 3.9/19, mb1mx3.6/49, mbtmp3.9/19, ML3.9/3, MS2.6/3, Ms1 2.6/3, ms1mx2.3/55, Error ellipse: s-maj=17.9km s-min=15.5km az=135.0*
*JMA **01** 01:56:03.5±0.1, 37.15°N×141.37°E, h49km±1km, M4.1*
JMA Felt III J1.

ISC 01 01:56:01.6±1.4, 37.06°N±0.04×141.53°E±0.06, h26km±10km, n55, σ1°69/56, mb4.0/25, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.58**	**274**	P	**Pb**	**01 56 14.3**	**+1.0**
ONAJ				S	**Sb**	**01 56 21.7**	**+0.4**
JFK	**Kawauchi**	**0.60**	**300**	P	**Pb**	**01 56 14.0**	**+0.4**
JFK				S	**Sb**	**01 56 21.1**	**-0.7**
JHO	**Hitachi**	**0.89**	**240**	P	**Pb**	**01 56 18.6**	**+0.2**
JHO				S	**Sb**	**01 56 29.4**	**-0.5**
JMM	**Marumori**	**0.99**	**324**	P	**Pn**	**01 56 19.2**	**-0.6**
JMM				S	**Sb**	**01 56 30.4**	**-2.4**
JFT	**Otama**	**1.05**	**296**	P	**Pn**	**01 56 20.8**	**+0.1**
JFT				S	**Sn**	**01 56 32.9**	**-1.6**
JIO	**Ouri**	**1.40**	**354**	P	**Pn**	**01 56 25.1**	**-0.3**
JOU	**Okura**	**1.47**	**332**	P	**Pn**	**01 56 26.5**	**+0.1**
JOU				*e*S	**Sn**	**01 56 44.6**	**-0.2**
MJAR	**Matsushiro Arr**	**2.71**	**260**	Pn	**Pn**	**01 56 44.8**	**+1.3**
	9.8nm,0.3s,baz=80,slow=15,SNR=48						
MJAR				Pg		01 56 51.4	
	24nm,0.3s,baz=90,slow=15,SNR=54						
MJAR				Lg	Lg	01 57 27.0	
	29nm,0.3s,baz=79,slow=28,SNR=9.8						
MAJO	**Matsushiro**	**2.71**	**260**	*e*Pn	**Pn**	**01 56 44.9**	**+1.3**
MAT	**Matsushiro**	**2.71**	**260**	P	**Pn**	**01 56 45.1**	**+1.6**
MAT				S	**Sn**	**01 57 13.3**	**-2.2**
JHJ2	**Mitsune**	**4.18**	**200**	*e*Pn	**Pn**	**01 57 05.7**	**+2.0**
JHJ	**Hachijo jima 2**	**4.19**	**200**	Pn	**Pn**	**01 57 05.9**	**+2.1**
	35nm,0.3s,baz=319,slow=17,SNR=23						
JHJ				Sn	**Sn**	**01 57 53.0**	**+1.3**
	84nm,0.3s,baz=80,slow=21,SNR=7.2						
ERM	**Erimo**	**5.10**	**14**	*e*Pn	**Pn**	**01 57 16.2**	**-0.1**
ASAJ	**Asahikawa**	**7.09**	**6**	Pn	**Pn**	**01 57 45.2**	**+1.5**
	2.1nm,0.3s,baz=206,slow=9.6,SNR=11						
ASAJ				Sn	**Sn**	**01 59 04.6**	**+1.3**
	1.1nm,0.3s,baz=94,slow=28,SNR=3.0						
ASAJ				LR	LR	02 00 54.0	
	comp=Z,43nm,19.2s,baz=164,slow=42						
CBIJ	**Chichi jima**	**9.95**	**177**	*e*Pn	**Pn**	**01 58 23.4**	**+0.5**
CBIJ				Sn	**Sn**	**02 00 07.7**	**-6.0**
JCJ	**Chichijima**	**9.95**	**177**	Pn	**Pn**	**01 58 22.3**	**-0.6**
	7.8nm,0.3s,baz=289,slow=20,SNR=5.5						
JCJ				Sn	**Sn**	**02 00 07.7**	**-6.0**
	6.4nm,0.3s,baz=286,slow=22,SNR=4.0						
USRK	**Ussuriysk Ar.**	**10.16**	**318**	Pn	Pn	01 58 31.2	+5.5
	0.7nm,0.3s,baz=130,slow=12,SNR=22						
KSRS	**Korea Array**	**10.85**	**276**	Pn	Pn	01 58 41.5	+6.3
	0.2nm,0.3s,baz=88,slow=14,SNR=5.8						
KSRS				LR	LR	02 02 36.5	
	comp=Z,32nm,19.3s,baz=32,slow=36						
KSAR	**Wonju Array Be**	**10.88**	**276**	Pn	Pn	01 58 41.5	+5.9
KLR	**Kul'dur**	**14.09**	**333**	Pn	**P**	**01 59 26.9**	**+0.1**
	0.2nm,0.3s,baz=127,slow=14,SNR=7.1						
PETK	**Petropavlovsk-**	**19.62**	**30**	P	**Pn**	**02 00 28.8**	**-0.6**
	0.1nm,0.3s,baz=209,slow=12,SNR=4.3						
PETK				LR	LR	02 07 27.2	
	comp=Z,17nm,20.3s,baz=162,slow=35						
ULN	**Ulaanbaatar**	**27.41**	**304**	*e*P	**P**	**02 01 45.6**	**+0.5**
	2.7nm,0.6s						
SONM	**Songino Array**	**27.84**	**304**	P	**P**	**02 01 49.1**	**+0.2**
	2.4nm,0.5s,baz=103,slow=8.8,SNR=13						
H11N2	**WAKE ISLAND Hy**	**28.08**	**121**	T	T	02 31 41.0	
	baz=313,slow=76,SNR=72						
H11N1	**WAKE ISLAND Hy**	**28.09**	**121**	T	T	02 32 07.2	
	baz=313,slow=76,SNR=106						
H11N3	**WAKE ISLAND Hy**	**28.10**	**121**	T	T	02 32 04.6	
	baz=313,slow=76,SNR=93						
H11S1	**WAKE ISLAND Hy**	**28.80**	**123**	T	T	02 32 46.8	
	baz=315,slow=76,SNR=34						
H11S3	**WAKE ISLAND Hy**	**28.80**	**123**	T	T	02 32 48.6	
	baz=315,slow=76,SNR=39						
H11S2	**WAKE ISLAND Hy**	**28.81**	**123**	T	T	02 32 42.9	
	baz=315,slow=76,SNR=29						
ZALV	**Zalesovo Beam**	**41.96**	**312**	P	**P**	**02 03 48.9**	**-1.2**
	1.5nm,0.6s,baz=87,slow=6.4,SNR=6.7						
MKAR	**Makanchi Array**	**44.18**	**302**	P	**P**	**02 04 07.4**	**-0.8**
	0.7nm,0.7s,baz=88,slow=11,SNR=5.7						
KURK	**Kurchatov**	**45.99**	**308**	*e*P	**P**	**02 04 23.1**	**+0.8**
	7.5nm,0.7s						
KURBB	**Kurchatov Arra**	**46.06**	**308**	P	**P**	**02 04 22.1**	**-0.9**
	2.4nm,0.6s,baz=83,slow=8.1,SNR=20						
KTH	**Kantishna Hill**	**47.67**	**34**	*e*P	**P**	**02 04 35.0**	**-0.5**
	4.5nm,1.0s						
ILAR	**Eielson Array**	**49.42**	**32**	P	**P**	**02 04 49.5**	**+0.6**
	1.7nm,0.6s,baz=268,slow=6.7,SNR=20						
TKM2	**Tokmak 2**	**49.70**	**298**	*e*P	**P**	**02 04 53.8**	**+2.3**
	2.4nm,0.6s						
DIV	**Divide**	**50.20**	**37**	*e*P	**P**	**02 04 55.0**	**+0.2**
	4.7nm,0.7s						
AAK	**Ala-Archa**	**50.56**	**298**	P	**P**	**02 05 02.1**	**+4.1**
	0.7nm,0.3s,baz=128,slow=3.7,SNR=3.7						
BVAR	**Borovoye Array**	**50.62**	**312**	P	**P**	**02 04 58.4**	**+0.3**
	0.6nm,0.7s,baz=60,slow=8.8,SNR=4.1						
BRVK	**Borovoye**	**50.68**	**312**	*e*P	**P**	**02 04 59.5**	**+1.0**
	0.9nm,0.6s						
DOT	**Dot Lake**	**50.73**	**34**	*e*P	**P**	**02 04 59.1**	**+0.3**
	3.7nm,0.7s						
INK	**Inuvik**	**54.32**	**27**	P	**P**	**02 05 26.2**	**+1.0**
	0.6nm,0.4s,baz=258,slow=4.4,SNR=7.2						
ARU	**Arti**	**56.40**	**319**	*e*P	**P**	**02 05 40.3**	**-0.1**
	1.6nm,0.5s						
WRA	**Warramunga Arr**	**57.10**	**188**	P	**P**	**02 05 47.3**	**+1.6**
	1.6nm,1.0s,baz=9.2,slow=5.1,SNR=4.2						
ABKAR	**Akbulak array**	**57.99**	**310**	*e*P	**P**	**02 05 50.7**	**-1.1**
	0.8nm,0.5s						
YKA	**Yellowknife Ar**	**63.74**	**30**	P	**P**	**02 06 30.6**	**+0.1**
	0.4nm,0.8s,baz=303,slow=6.6,SNR=11						
ARCES	**ARCESS Array B**	**64.00**	**339**	P	**P**	**02 06 32.4**	**+0.1**
	1.9nm,1.1s,baz=70,slow=11,SNR=3.8						
FINES	**FINESS Array B**	**68.83**	**332**	P	**P**	**02 07 04.2**	**+1.0**
	0.6nm,0.6s,baz=40,slow=7.9,SNR=5.8						
AKASG	**Malin Array Be**	**74.33**	**322**	P	**P**	**02 07 34.9**	**-1.7**
	0.2nm,0.3s,baz=46,slow=6.0,SNR=2.8						
NVAR	**Mina Array Bea**	**74.90**	**53**	P	**P**	**02 07 39.7**	**-0.6**
	0.5nm,0.8s,baz=267,slow=5.6,SNR=3.7						
PDAR	**Pinedale Array**	**77.58**	**46**	P	**P**	**02 07 56.2**	**+0.6**
	0.4nm,0.6s,baz=235,slow=1.1,SNR=5.0						
TXAR	**Lajitas Array**	**90.03**	**52**	P	**P**	**02 09 00.1**	**+0.8**
	0.5nm,0.6s,baz=287,slow=2.1,SNR=6.5						
H06S1	**SOCORRO T**	**92.09**	**65**	T	T	03 50 48.3	
	SNR=8.9						
LPAZ	**La Paz**	**146.60**	**60**	PKPbc	**PKPbc**	**02 15 42.5**	**+0.6**
	1.6nm,0.5s,baz=341,slow=1.2,SNR=14						
LCO	**Las Campanas**	**151.91**	**83**	*e*PKPbc	**PKPbc**	**02 15 55.4**	**+0.7**

MEX 01 02:01:29.7±0.5, 28.97°N×113.20°W, h12km±11km, MD3.8, Baja California

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SRIG	**Santa Rosalia**	**1.85**	**153**	*e*P	Pn	02 01 58.1	-3.2
SRIG				*e*S	Sn	02 02 19.6	-5.0
HSIG		**1.97**	**88**	*e*P	Pn	02 01 59.9	-3.1
HSIG				*i* S	Sn	02 02 23.1	-4.5

*PRU **01** 02:24:05.4, 45.49°N×27.95°E, h109km, M4.7*
*BEO **01** 02:24:12.6±2.1, 45.56°N×26.52°E, h0km, M4.8/1*
*PDG **01** 02:24:14.7±0.7, 45.59°N×26.40°E, h150km±2km, ML4.4/13, Error ellipse: s-maj=0.8km s-min=1.6km az=0.0*
*SOF **01** 02:24:14.9, 45.53°N×26.35°E, h141km, MD4.4*
*MOS **01** 02:24:14.6±0.9, 45.58°N×26.44°E, h135km, mb4.7/47, Error ellipse: s-maj=4.1km s-min=3.1km az=105.1*
MOS Felt (IV) at Kishinev.
*SIGU **01** 02:24:14.3, 45.60°N×26.53°E, h157km, mb4.5*
*CSEM **01** 02:24:15.9±0.1, 45.58°N×26.41°E, h141km, mb4.6/61, Ms3.2, Error ellipse: s-maj=1.7km s-min=1.5km az=40.0*
*BUC **01** 02:24:15.8±0.6, 45.58°N×26.44°E, h146km±6km, MD5.3/15, Error ellipse: s-maj=3.8km s-min=3.4km az=355.0*
*ISCJB **01** 02:24:15.1±0.1, 45.577°N±0.009×26.41°E±0.01, h141km±1km, mb4.4/110, Error ellipse: s-maj=1.5km s-min=1.3km az=43.9*
*NEIC **01** 02:24:16.1, 45.58°N×26.46°E, h138km, mb4.6/55, After BUC.*
NEIC Felt [II] at Bucharest. Also felt at Barcani, Tecuci, Vaslui and Voluntari. Felt at Ruse and Silistra, Bulgaria and at Cahul and Ialoveni, Moldova.
*IDC **01** 02:24:16.3±0.3, 45.61°N×26.26°E, h139km±2km, mb4.1/32, mb1 4.1/41, mb1mx4.1/50, mbtmp4.5/41, MS3.2/10, Ms1 3.2/10, ms1mx2.9/61, Error ellipse: s-maj=8.4km s-min=6.3km az=163.0*
*ISK **01** 02:24:27.4, 44.44°N×27.07°E, h5km, ML4.5*

ISC 01 02:24:16.5±0.2, 45.62°N±0.02×26.42°E±0.02, h140km±2km, n238, σ1°48/1481, mb4.6/112, 136C-119D, Romania

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLOR	**Plostina**	**0.29**	**35**	↑*iP*	**Pn**	**02 24 35.3**	**-0.6**
PLOR	**Plostina**	**0.29**	**35**	↑*iP*	**Pn**	**02 24 35.3**	**-0.6**
PLOR	**Plostina**	**0.29**	**35**	↑*iP*	**Pn**	**02 24 35.3**	**-0.6**
VRI	**Vrincioaia**	**0.33**	**41**	↑*iP*	**Pn**	**02 24 35.7**	**-0.3**
VRI	**Vrincioaia**	**0.33**	**41**	↑*iP*	**Pn**	**02 24 35.7**	**-0.3**
VRI				*i* S	**Sn**	**02 24 49.8**	**-1.1**
VRI	**Vrincioaia**	**0.33**	**41**	↑*iP*	**Pn**	**02 24 35.7**	**-0.3**
VRI				*i* S	**Sn**	**02 24 49.8**	**-1.1**
MLR	**Muntele Rosu**	**0.35**	**249**	LR	LR	02 24 35.0	
	comp=Z,46nm,20.2s,baz=197,slow=74						
MLR				P	**Pn**	**02 24 35.6**	**-0.7**
	1μm,0.3s,baz=31,slow=1.6						
MLR				S	**Sn**	**02 24 50.5**	**-0.8**
	981nm,0.3s,baz=156,slow=19,SNR=3.3						
MLR	**Muntele Rosu**	**0.35**	**249**	↓*iP*	**Pn**	**02 24 35.8**	**-0.5**
MLR	**Muntele Rosu**	**0.35**	**249**	↓*iP*	**Pn**	**02 24 35.8**	**-0.5**
MLR				*i* S	**Sn**	**02 24 50.4**	**-0.8**
GRER		**0.46**	**121**	↑*iP*	**Pn**	**02 24 37.0**	**+0.5**
GRER		**0.46**	**121**	↑*iP*	**Pn**	**02 24 37.0**	**+0.5**
GRER		**0.46**	**121**	↑*iP*	**Pn**	**02 24 37.0**	**+0.5**
ODBI	**Odobesti**	**0.47**	**72**	↑*iP*	**Pn**	**02 24 37.1**	**+0.5**
ODBI	**Odobesti**	**0.47**	**72**	↑*iP*	**Pn**	**02 24 37.1**	**+0.5**
ODBI				*i* S	**Sn**	**02 24 52.1**	**+0.3**
ODBI	**Odobesti**	**0.47**	**72**	↑*iP*	**Pn**	**02 24 37.1**	**+0.5**
ODBI				*i* S	**Sn**	**02 24 52.1**	**+0.3**
ISR	**Istrita**	**0.51**	**170**	↑*iP*	**Pn**	**02 24 36.5**	**-0.4**
ISR	**Istrita**	**0.51**	**170**	↑*iP*	**Pn**	**02 24 36.5**	**-0.4**
ISR				*i* S	**Sn**	**02 24 52.5**	**+0.2**
ISR	**Istrita**	**0.51**	**170**	↑*iP*	**Pn**	**02 24 36.5**	**-0.4**
ISR				*i* S	**Sn**	**02 24 52.5**	**+0.2**
PETR	**Petresti**	**0.58**	**79**	↑*iP*	**Pn**	**02 24 37.3**	**+0.2**
PETR	**Petresti**	**0.58**	**79**	↑*iP*	**Pn**	**02 24 37.3**	**+0.2**
PETR				*i* S	**Sn**	**02 24 52.8**	**0.0**
PETR	**Petresti**	**0.58**	**79**	↑*iP*	**Pn**	**02 24 37.3**	**+0.2**
PETR				*i* S	**Sn**	**02 24 52.8**	**0.0**
SECR		**0.63**	**203**	↑*iP*	**Pn**	**02 24 37.4**	**-0.1**
SECR		**0.63**	**203**	↑*iP*	**Pn**	**02 24 37.4**	**-0.1**
SECR				*i* S	**Sn**	**02 24 53.0**	**-0.5**
SECR		**0.63**	**203**	↑*iP*	**Pn**	**02 24 37.4**	**-0.1**
SECR				*i* S	**Sn**	**02 24 53.0**	**-0.5**
PLAR	**PLOIESTI**	**0.75**	**201**	↑*iP*	**Pn**	**02 24 38.3**	**0.0**
PLAR	**PLOIESTI**	**0.75**	**201**	↑*iP*	**Pn**	**02 24 38.3**	**0.0**
PLAR				*i* S	**Sn**	**02 24 55.3**	**+0.4**
PLAR	**PLOIESTI**	**0.75**	**201**	↑*iP*	**Pn**	**02 24 38.3**	**0.0**
PLAR				*i* S	**Sn**	**02 24 55.3**	**+0.4**
DOPR	**Dopca**	**0.80**	**296**	↑*iP*	**Pn**	**02 24 38.4**	**-0.3**
DOPR	**Dopca**	**0.80**	**296**	↑*iP*	**Pn**	**02 24 38.4**	**-0.3**
DOPR				*i* S	**Sn**	**02 24 55.2**	**-0.4**
DOPR	**Dopca**	**0.80**	**296**	↑*iP*	**Pn**	**02 24 38.4**	**-0.3**
DOPR				*i* S	**Sn**	**02 24 55.2**	**-0.4**
PGOR	**Pogoanele**	**0.81**	**150**	↑*iP*	**Pn**	**02 24 38.5**	**-0.3**
PGOR	**Pogoanele**	**0.81**	**150**	↑*iP*	**Pn**	**02 24 38.5**	**-0.3**
PGOR				*i* S	**Sn**	**02 24 55.4**	**-0.3**
PGOR	**Pogoanele**	**0.81**	**150**	↑*iP*	**Pn**	**02 24 38.5**	**-0.3**
PGOR				*i* S	**Sn**	**02 24 55.4**	**-0.3**
TESR	**Tescani**	**0.91**	**10**	↓*iP*	**Pn**	**02 24 39.1**	**-0.5**
TESR	**Tescani**	**0.91**	**10**	↓*iP*	**Pn**	**02 24 39.1**	**-0.5**
TESR	**Tescani**	**0.91**	**10**	↓*iP*	**Pn**	**02 24 39.1**	**

ARCR	ARCALIA	2.05 317	⇓iP	Pn	02 24 51.4	-0.2
ARCR	ARCALIA	2.05 317	⇓iP	Pn	02 24 51.4	-0.2
ARCR			i S	Sn	02 25 17.8	-0.8
ARCR	ARCALIA	2.05 317	⇓iP	Pn	02 24 51.4	-0.2
ARCR			i S	Sn	02 25 17.8	-0.8
ZIMR		2.10 201	⇑iP	Pn	02 24 51.3	-0.9
ZIMR		2.10 201	⇑iP	Pn	02 24 51.3	-0.9
ZIMR			i S	Sn	02 25 16.9	-2.6
MILM	Milestii Mici	2.11 51	⇓iP	Pn	02 24 52.0	-0.3
MILM	Milestii Mici	2.11 51	⇓iP	Pn	02 24 52.0	-0.3
MILM			i S	Sn	02 25 17.8	-2.1
MILM	Milestii Mici	2.11 51	⇓iP	Pn	02 24 52.0	-0.3
MILM			i S	Sn	02 25 17.8	-2.1
BURAR	Bucovina Array	2.16 338	⇑iP	Pn	02 24 54.5	+1.4
BURAR	Bucovina Array	2.16 338	⇑iP	Pn	02 24 54.5	+1.4
BURAR			i S	Sn	02 25 19.6	-1.6
BURAR	Bucovina Array	2.16 338	⇑iP	Pn	02 24 54.5	+1.4
BURAR			i S	Sn	02 25 19.6	-1.6
KIS	Kishinev	2.16 49	⇓iP	Pn	02 24 53.0	+0.1
	14µm,0.5s					
KIS			i S	Sn	02 25 20.0	-1.0
	78µm,0.5s					
KIS	Kishinev	2.16 49	⇑iP	Pn	02 24 52.7	-0.2
KIS	Kishinev	2.16 49	⇑iP	Pn	02 24 52.7	-0.2
KIS			i S	Sn	02 25 19.3	-1.7
KIS	Kishinev	2.16 49K	iP	Pn	02 24 53.0	+0.1
KIS			i S	Sn	02 25 20.0	-1.0
KIS			pmax	pmax		
	comp=E,12µm,0.5s					
KIS			pmax	pmax		
	comp=Z,14µm,0.5s					
KIS			pmax	pmax		
	comp=N,12µm,0.5s					
KIS			pmax	pmax		
	comp=Z,13µm,0.5s					
KIS			smax	smax		
	comp=E,78µm,0.5s					
KIS	Kishinev	2.16 49	⇓iP	Pn	02 24 53.0	+0.1
KIS			Pm		02 24 53.5	
KIS			i S	Sn	02 25 20.0	-1.0
KIS			Sm		02 25 20.5	
KIS			Sm		02 25 20.5	
KIS	Kishinev	2.16 49	⇑iP	Pn	02 24 52.7	-0.2
KIS			i S	Sn	02 25 20.0	-1.0
BUR08	Bucovina Ar. S	2.19 338	ePn	Pn	02 24 54.4	+1.0
BUR08	Bucovina Ar. S	2.19 338	ePn	Pn	02 24 54.4	+1.0
EFOR	EFORIE	2.20 133	⇓iP	Pn	02 24 52.8	-0.6
EFOR	EFORIE	2.20 133	⇓iP	Pn	02 24 52.8	-0.6
EFOR			i S	Sn	02 25 19.1	-2.7
EFOR	EFORIE	2.20 133	⇓iP	Pn	02 24 52.8	-0.6
EFOR			i S	Sn	02 25 19.1	-2.7
CJR	Cluj-Napoca	2.24 300	⇑iP	Pn	02 24 54.0	0.0
CJR	Cluj-Napoca	2.24 300	⇑iP	Pn	02 24 54.0	0.0
CJR			i S	Sn	02 25 21.1	-1.7
CJR	Cluj-Napoca	2.24 300	⇑iP	Pn	02 24 54.0	0.0
CJR			i S	Sn	02 25 21.1	-1.7
CRAR	CRAIOVA	2.26 236	⇑iP	Pn	02 24 53.2	-1.0
CRAR	CRAIOVA	2.26 236	⇑iP	Pn	02 24 53.2	-1.0
CRAR			i S	Sn	02 25 20.3	-2.8
CRAR	CRAIOVA	2.26 236	⇑iP	Pn	02 24 53.2	-1.0
CRAR			i S	Sn	02 25 20.3	-2.8
MANR	Mangalia	2.37 139	⇓iP	Pn	02 24 54.7	-0.8
MANR	Mangalia	2.37 139	⇓iP	Pn	02 24 54.7	-0.8
MANR			i S	Sn	02 25 23.0	-2.6
MANR	Mangalia	2.37 139	⇓iP	Pn	02 24 54.7	-0.8
MANR			i S	Sn	02 25 23.0	-2.6
SRE	Strehaia	2.46 248	⇓iP	Pn	02 24 56.0	-0.7
SRE	Strehaia	2.46 248	⇓iP	Pn	02 24 56.0	-0.7
SRE			i S	Sn	02 25 26.0	-1.6
SRE	Strehaia	2.46 248	⇓iP	Pn	02 24 56.0	-0.7
SRE			i S	Sn	02 25 26.0	-1.6
DEV	Deva	2.47 277	⇓iP	Pn	02 24 57.1	+0.3
DEV	Deva	2.47 277	⇓iP	Pn	02 24 57.1	+0.3
DEV			i S	Sn	02 25 26.1	-1.7
DEV	Deva	2.47 277	⇓iP	Pn	02 24 57.1	+0.3
DEV			i S	Sn	02 25 26.1	-1.7
PRD	Provadia	2.52 163	P	Pn	02 24 57.0	-0.3
PVL	Pavlikeni	2.52 198	P	Pn	02 24 58.0	+0.6
CHRU	Chernivtsi	2.70 353	⇑iP	Pn	02 24 58.8	-0.8
CHRU			i S	Sn	02 25 32.6	-0.4
RMGR	Halanga-Turnu	2.80 251	⇓iP	Pn	02 25 00.0	-0.9
RMGR	Halanga-Turnu	2.80 251	⇓iP	Pn	02 25 00.0	-0.9
RMGR			i S	Sn	02 25 32.6	-2.5
RMGR	Halanga-Turnu	2.80 251	⇓iP	Pn	02 25 00.0	-0.9
RMGR			i S	Sn	02 25 32.6	-2.5
DRGR		2.83 296	⇑iP	Pn	02 25 00.8	-0.5
DRGR		2.83 296	⇑iP	Pn	02 25 00.8	-0.5
DRGR			i S	Sn	02 25 33.0	-2.9
DRGR		2.83 296	⇑iP	Pn	02 25 00.8	-0.5
SORM	Soroca	2.85 27	⇓iP	Pn	02 25 00.8	-0.6
SORM	Soroca	2.85 27	⇓iP	Pn	02 25 00.8	-0.6
SORM			i S	Sn	02 25 33.9	-2.3
SORM	Soroca	2.85 27	⇓iP	Pn	02 25 00.8	-0.6
SORM			i S	Sn	02 25 33.9	-2.3
KSV	Kosov	2.85 342	eP	Pn	02 25 01.9	+0.3
KSV			Pm		02 25 04.9	
KSV			i S	Sn	02 25 36.9	+0.5
KSV			Sm		02 25 42.5	
RAKU	Rahkiv	2.86 328	⇓iP	Pn	02 25 02.3	+0.6
RAKU			Pm		02 25 04.1	
RAKU			i S	Sn	02 25 37.9	+1.3
RAKU			Sm		02 25 46.7	
BMR	Baia Mare	2.88 317	⇓iP	Pn	02 25 02.3	+0.5
BMR	Baia Mare	2.88 317	⇓iP	Pn	02 25 02.3	+0.5
BMR	Baia Mare	2.88 317	⇓iP	Pn	02 25 02.3	+0.5
NSLU	Nyzhne Selyshc	2.91 333	⇓iP	Pn	02 25 07.7	+5.4
NSLU			Pm		02 25 09.4	
NSLU			i S	Sn	02 25 47.7	+10
NSLU			Sm		02 26 04.0	
KMPD	K-Podol'skiy	2.95 1	iP	Pn	02 25 01.0	-1.7
KMPD			i S	Sn	02 25 35.8	-2.7
MPEP	Malo Peshtene	2.96 221	P	Pn	02 25 02.1	-0.9
NDNU	Novodnistrovsk	3.05 12	⇓iP	Pn	02 25 03.5	-0.5
NDNU			Pm		02 25 04.3	
NDNU			i S	Sn	02 25 40.8	0.0
NDNU			Sm		02 25 42.6	
NDNU			Sm		02 25 42.6	
JMB	Yambol	3.15 178	P	Pn	02 25 04.1	-1.3
STNU	Starunia	3.36 338	eP	Pn	02 25 08.5	+0.5
STNU			i S	Sn	02 25 49.5	+1.5
BZS	Buzias	3.37 272	⇓iP	Pn	02 25 07.5	-0.7
BZS	Buzias	3.37 272	⇓iP	Pn	02 25 07.5	-0.7
BZS	Buzias	3.37 272	⇓iPn	Pn	02 25 07.5	-0.7
BZS	Buzias	3.37 272	⇓iP	Pn	02 25 07.5	-0.7
SIRR	Siria	3.38 283	⇓iP	Pn	02 25 08.4	0.0
SIRR	Siria	3.38 283	⇓iP	Pn	02 25 08.4	0.0
SIRR			i S	Sn	02 25 46.1	-2.4
SIRR	Siria	3.38 283	⇓iP	Pn	02 25 08.4	0.0
SIRR			i S	Sn	02 25 46.1	-2.4
KORU	Korolevo	3.39 320	⇑iP	Pn	02 25 08.9	+0.4
KORU			Pm		02 25 11.7	
KORU			i S	Sn	02 25 50.5	+1.7
KORU			Sm		02 25 54.3	
MDVR	Moldovita	3.43 258	⇑iP	Pn	02 25 08.0	-1.0
MDVR	Moldovita	3.43 258	⇑iP	Pn	02 25 08.0	-1.0
MDVR			i S	Sn	02 25 46.7	-2.9
MDVR	Moldovita	3.43 258	⇑iP	Pn	02 25 08.0	-1.0
TRSU	Trosnyk	3.43 318	⇓iP	Pn	02 25 10.0	+1.0
TRSU			Pm		02 25 11.0	
TRSU			i S	Sn	02 25 51.8	+2.2
TRSU			Sm		02 26 12.6	
PGB	Panagyurishte	3.47 209	P	Pn	02 25 09.3	-0.3
MEZ	Mezhgor'ye	3.51 327	iP	Pn	02 25 10.6	+0.6
MEZ			Pm		02 25 13.8	
MEZ			i S	Sn	02 25 52.9	+1.3
MEZ			Sm		02 25 56.6	
KUBS	Kucevo	3.57 252	iPn	Pn	02 25 08.3	-2.5
KUBS	Kucevo	3.57 252	iPn	Pn	02 25 08.3	-2.5
BRIU	Brid	3.58 321	⇑iP	Pn	02 25 12.0	+1.1
BRIU			Pm		02 25 13.1	
BRIU			eS	Sn	02 25 54.4	+1.3
BRIU			Sm		02 25 58.8	
ZAPS	Zavoj	3.58 230	ePn	Pn	02 25 10.2	-0.8
ZAPS	Zavoj	3.58 230	ePn	Pn	02 25 10.2	-0.8
HORU	Horodok	3.60 0	iP	Pn	02 25 10.2	-1.0
HORU			i S	Sn	02 25 53.6	0.0
DIM	Dimitrovgrad	3.62 190	P	Pn	02 25 10.4	-1.1
TIM	Timisoara	3.64 274	⇑iP	Pn	02 25 12.3	+0.6
TIM	Timisoara	3.64 274	⇑iP	Pn	02 25 12.3	+0.6
TIM	Timisoara	3.64 274	⇑iP	Pn	02 25 12.3	+0.6
BOLS	Boljevac	3.65 242	ePn	Pn	02 25 08.9	-2.9
BOLS	Boljevac	3.65 242	ePn	Pn	02 25 08.9	-2.9
TRPA	Tarpa	3.66 315	⇓ePn	Pn	02 25 11.3	-0.6
BERU	Beregovo	3.68 317	⇑iP	Pn	02 25 12.7	+0.5
BERU			eS	Sn	02 25 57.5	+2.1
BANR	Banloc	3.72 268	⇓iP	Pn	02 25 12.8	+0.1
BANR	Banloc	3.72 268	⇓iP	Pn	02 25 12.8	+0.1
BANR			i S	Sn	02 25 54.6	-1.7
BANR	Banloc	3.72 268	⇓iP	Pn	02 25 12.8	+0.1
BANR			i S	Sn	02 25 54.6	-1.7
PLD	Plovdiv	3.72 200	P	Pn	02 25 10.9	-1.9
EDRB	Edirne	3.78 176	ePN	Pn	02 25 12.1	-1.5
EDRB			eSN	Sn	02 25 44.9	-13
EDRB	Edirne	3.78 176	ePn	Pn	02 25 12.1	-1.5
MUKU	Mukachevo	3.81 319	⇓iP	Pn	02 25 14.3	+0.4
MUKU			Pm		02 25 16.2	
MUKU			eS	Sn	02 26 00.0	+1.4
MUKU			Sm		02 26 11.9	
MUKU			Sm		02 26 11.9	
BOVS	Bovan	3.90 241	⇓iPn	Pn	02 25 14.0	-1.2
BOVS	Bovan	3.90 241	⇓iPn	Pn	02 25 14.0	-1.2
MORU	Morshyn	3.91 335	eP	Pn	02 25 15.3	+0.1
MORU			i S	Sn	02 26 01.7	+0.9
KDZ	Kurdzhali	4.03 191	P	Pn	02 25 16.1	-0.8
PHSR	Pinarhisar	4.07 168	ePN	Pn	02 25 15.2	-2.1
PHSR			eSN	Sn	02 25 50.2	-14
PHSR	Pinarhisar	4.07 168	ePn	Pn	02 25 15.2	-2.1
RZN	Rozhen	4.12 198	P	Pn	02 25 17.2	-1.0
UZH	Uzhgorod	4.12 318	⇓iP	Pn	02 25 18.4	+0.4
UZH			eS	Sn	02 26 06.6	+0.7
UZH			MLR	MLR		
	comp=N,2µm,1.1s					
UZH			MLR	MLR		
	comp=E,2µm,1.1s					
UZH			MLR	MLR		
	comp=Z,900nm,1.1s					
UZH	Uzhgorod	4.12 318	⇑iP	Pn	02 25 17.4	-0.6
UZH			Pm		02 25 20.2	
UZH			i S	Sn	02 26 06.7	+0.8
UZH			Sm		02 26 21.2	
UZH	Uzhgorod	4.12 318	iP	Pn	02 25 18.4	+0.4
UZH			eS	Sn	02 26 06.6	+0.7
SHIU	Shidnytsya	4.16 331	eP	Pn	02 25 18.7	+0.1
SHIU			Pm		02 25 21.3	
SHIU			i S	Sn	02 26 07.7	+0.9
SHIU			Sm		02 26 31.7	
BARS	Barje	4.33 231	ePn	Pn	02 25 20.3	-0.6
BARS	Barje	4.33 231	ePn	Pn	02 25 20.3	-0.6
KOLS	Kolonicke sedl	4.35 321	eP	Pn	02 25 21.9	+0.8
KOLS			pmax	pmax		
	comp=N,250nm,0.9s					
KOLS	Kolonicke sedl	4.35 321	eP	Pn	02 25 21.9	+0.8
	comp=N,250nm,0.9s					
KOLS	Kolonicke sedl	4.35 321	ePN	Pn	02 25 21.9	+0.8
KOLS			e		02 26 59.4	
KOLS			eLG	Lg	02 27 05.3	
KOLS			e		02 38 52.4	
KOLS			eL	L	02 55 08.4	
CTYL	Yalikoy Yolu	4.36 161	ePN	Pn	02 25 19.0	-2.2
CTYL			eSN	Sn	02 25 57.0	-14
CTYL	Yalikoy Yolu	4.36 161	ePn	Pn	02 25 19.0	-2.2
GRUS	Gruza	4.41 249	ePn	Pn	02 25 20.8	-1.1
GRUS	Gruza	4.41 249	ePn	Pn	02 25 20.8	-1.1
KKB	Krupnik	4.46 214	P	Pn	02 25 21.9	-0.6
MMB	Musomiste	4.47 207	P	Pn	02 25 22.4	-0.4
TRUS	Trudelj	4.49 254	ePn	Pn	02 25 21.8	-1.1
TRUS	Trudelj	4.49 254	ePn	Pn	02 25 21.8	-1.1
LVV	L'vov	4.50 340	eP	Pn	02 25 23.7	+0.7
LVV			eS	Sn	02 26 16.5	+1.7
LVV			MLR	MLR		
	comp=N,650nm,1.3s					
LVV			MLR	MLR		
	comp=E,650nm,1.3s					
LVV			MLR	MLR		
	comp=Z,800nm,1.3s					
LVV	L'vov	4.50 340	eP	Pn	02 25 22.7	-0.3
LVV			Pm		02 25 27.1	
LVV			i S	Sn	02 26 15.3	+0.5
LVV			Sm		02 26 18.7	
LVV			Sm		02 26 18.7	
LVV	L'vov	4.50 340	eP	Pn	02 25 23.7	+0.7
LVV			eS	Sn	02 26 16.5	+1.7
SLVT	Silivri	4.58 163	ePN	Pn	02 25 22.4	-1.7
SLVT	Silivri	4.58 163	eSN	Sn	02 26 02.6	-14
SLVT	Silivri	4.58 163	ePn	Pn	02 25 22.4	-1.7
CRLT	Corlu	4.59 167	ePN	Pn	02 25 22.5	-1.7
CRLT	Corlu	4.59 167	eSN	Sn	02 26 03.2	-14
CRLT	Corlu	4.59 167	ePn	Pn	02 25 22.5	-1.7
CTKS	Kestanelik-??a	4.63 160	ePN	Pn	02 25 23.1	-1.8
CTKS	Kestanelik-??a	4.63 160	eSN	Sn	02 26 03.8	-14
CTKS	Kestanelik-??a	4.63 160	ePn	Pn	02 25 23.1	-1.8
NVR	Nevrokopi	4.65 204	P	Pn	02 25 23.2	-1.9
NVR	Nevrokopi	4.65 204	P	Pn	02 25 23.2	-1.9
NVR	Nevrokopi	4.65 204	P	Pn	02 25 23.2	-1.9
FGSL	Fruska Gora	4.68 267	ePn	Pn	02 25 24.8	-0.6
FRGS	Fruska Gora	4.68 267	ePn	Pn	02 25 24.8	-0.6
TKR	Tekirdag	4.70 170	ePN	Pn	02 25 24.7	-1.0
TKR	Tekirdag	4.70 170	ePn	Pn	02 25 24.7	-1.0
CRVS	Cervenica-Dubn	4.71 316	eP	Pn	02 25 26.2	+0.4
CRVS	Cervenica-Dubn	4.71 316	eP	Pn	02 25 26.2	+0.4
CRVS	Cervenica-Dubn	4.71 316	ePN	Pn	02 25 26.2	+0.4
CRVS			e		02 27 06.2	
CRVS			e		02 38 56.0	
ALN	Alexandroupoli	4.72 183	P	Pn	02 25 23.6	-2.5
ALN	Alexandroupoli	4.72 183	P	Pn	02 25 23.6	-2.5
ALN	Alexandroupoli	4.72 183	P	Pn	02 25 23.6	-2.5
ALN	Alexandroupoli	4.72 183	P	Pn	02 25 23.6	-2.5
KWP	Kalwaria Pacla	4.74 329	eP	Pn	02 25 27.2	+1.1
KWP			e		02 25 37.2	
KWP			eS	Sn	02 26 20.8	+0.4
KWP	Kalwaria Pacla	4.74 329	⇓eP	Pn	02 25 27.2	+1.1
KWP			eS	Sn	02 26 20.8	+0.4
KWP	Kalwaria Pacla	4.74 329	eP	Pn	02 25 27.2	+1.1
KWP			eS	Sn	02 26 20.8	+0.4
BGKT	Bogazkoy	4.75 158	ePN	Pn	02 25 24.7	-1.7
BGKT	Bogazkoy	4.75 158	ePn	Pn	02 25 24.7	-1.7
KLYT	Kilyos	4.76 155	ePN	Pn	02 25 25.1	-1.4
KLYT	Kilyos	4.76 155	ePn	Pn	02 25 25.1	-1.4
DIVS	Divibare	4.81 254	⇓iPn	Pn	02 25 26.0	-1.3
DIVS	Divibare	4.81 254	⇓iPn	Pn	02 25 26.0	-1.3
KAVA	Kavala	4.82 197	P	Pn	02 25 25.5	-1.8
KAVA	Kavala	4.82 197	P	Pn	02 25 25.5	-1.8
KAVA	Kavala	4.82 197	P	Pn	02 25 25.5	-1.8
IVAS	Ivanjica	4.92 248	ePn	Pn	02 25 27.5	-1.1
IVAS	Ivanjica	4.92 248	ePn	Pn	02 25 27.5	-1.1
ISK	Istanbul-Kandi	4.94 156	ePN	Pn	02 25 28.3	-0.6
ISK	Istanbul-Kandi	4.94 156	ePn	Pn	02 25 28.3	-0.6
ERIK	Erikli-Kesan	4.94 179	ePN	Pn	02 25 29.2	+0.2
ERIK	Erikli-Kesan	4.94 179	ePn	Pn	02 25 29.2	+0.2
SRS	Serrai	4.95 206	P	Pn	02 25 27.1	-1.9
SRS	Serrai	4.95 206	P	Pn	02 25 27.1	-1.9
SRS	Serrai	4.95 206	P	Pn	02 25 27.1	-1.9
SRS	Serrai	4.95 206	P	Pn	02 25 27.1	-1.9
SART	Tekirdag	4.96 173	P	Pn	02 25 27.8	-1.4
SART	Tekirdag	4.96 173	iP	Pn	02 25 27.8	-1.4
RKY	Sarkoy-Tekirda	4.96 173	ePN	Pn	02 25 29.0	-0.2
RKY	Sarkoy-Tekirda	4.96 173	ePn	Pn	02 25 29.0	-0.2
KECS	Kecovo	4.96 307	eP	Pn	02 25 28.9	-0.3
KECS			pmax	pmax		
	comp=N,52nm,0.9s					
KECS	Kecovo	4.96 307	eP	Pn	02 25 28.9	-0.3
	comp=N,52nm,0.9s					
KECS	Kecovo	4.96 307	ePN	Pn	02 25 28.9	-0.3
KECS			eLG	Lg	02 27 07.6	
KECS			e		02 39 03.2	
KECS			e		03 01 04.3	
TEKS	Tekeris	4.99 260	ePn	Pn	02 25 28.9	-0.7
TEKS	Tekeris	4.99 260	ePn	Pn	02 25 28.9	-0.7
PSZ	Piszkesteto	5.04 300	⇓ePn	Pn	02 25 29.3	-0.9
PSZ	Piszkesteto	5.04 300	eP	Pn	02 25 29.3	-0.9
PSZ	Piszkesteto	5.04 300	eP	Pn	02 25 29.3	-0.9
PSZ	Piszkesteto	5.04 300	ePn	Pn	02 25 29.3	-0.9
SILT	Sile	5.04 151	ePN	Pn	02 25 28.8	-1.5
SILT	Sile	5.04 151	ePn	Pn	02 25 28.8	-1.5
MRMT	Marmara Adasi	5.08 170	ePN	Pn	02 25 30.4	-0.5
MRMT	Marmara Adasi	5.08 170	ePn	Pn	02 25 30.4	-0.5
SKO	Skopje	5.12 226	iPn	Pn	02 25 24.5	-6.8
VAY	Valandovo	5.12 214	P	Pn	02 25 29.6	-1.8
VAY	Valandovo	5.12 214	iPn	Pn	02 25 30.4	-0.9
VAY	Valandovo	5.12 214	ePn	Pn	02 25 30.4	-0.9
VAY	Valandovo	5.12 214	P	Pn	02 25 29.6	-1.8
VAY	Valandovo	5.12 214	P	Pn	02 25 29.6	-1.8
VAY	Valandovo	5.12 214	ePn	Pn	02 25 30.4	-0.9
VAY	Valandovo	5.12 214	P	Pn	02 25 29.6	-1.8
KNT	Kendrikon	5.14 211	P	Pn	02 25 29.7	-1.9
KNT	Kendrikon	5.14 211	P	Pn	02 25 29.7	-1.9
KNT	Kendrikon	5.14 211	P	Pn	02 25 29.7	-1.9
KNT	Kendrikon	5.14 211	P	Pn	02 25 29.7	-1.9
BUY	Buyukada	5.16 157	P	Pn	02 25 31.0	-0.7
BUY	Buyukada	5.16 157	iP	Pn	02 25 31.0	-0.7
STHS	Stebnicka Huta	5.17 319	eP	Pn	02 25 32.6	+0.7
STHS			pmax	pmax		
	comp=N,56nm,0.9s					
STHS	Stebnicka Huta	5.17 319	eP	Pn	02 25 32.6	+0.7
	comp=N,56nm,0.9s					
STHS	Stebnicka Huta	5.17 319	ePN	Pn	02 25 32.6	+0.7
STHS			eLG	Lg	02 27 34.4	
SJES	Sjenica	5.18 245	ePn	Pn	02 25 31.6	-0.6
SMTH	Samothraki Isl	5.18 187	P	Pn	02 25 30.0	-2.2
SMTH	Samothraki Isl	5.18 187	P	Pn	02 25 30.0	-2.2
SMTH	Samothraki Isl	5.18 187	P	Pn	02 25 30.0	-2.2
GELI	Tayfur-Gelibol	5.22 180	ePN	Pn	02 25 33.2	+0.6
GELI	Tayfur-Gelibol	5.22 180	ePn	Pn	02 25 33.2	+0.6
LPK	Lapseki	5.25 177	ePN	Pn	02 25 32.8	-0.2
LPK	Lapseki	5.25 177	ePn	Pn	02 25 32.8	-0.2
SEV	Sevastopol'	5.25 99	eP	Pn	02 25 30.5	-2.4
SEV			eS	Sn	02 26 29.3	-3.2
SEV	Sevastopol'	5.25 99	eP	Pn	02 25 30.5	-2.4
SEV			Pm		02 25 31.8	
SEV			eS	Sn	02 26 29.3	-3.2
SEV			Sm		02 26 31.5	
SEV	Sevastopol'	5.25 99	eP	Pn	02 25 30.5	-2.4
SEV			eS	Sn	02 26 29.3	-3.2
SOH	Sokhos	5.29 206	P	Pn	02 25 31.7	-1.9
SOH	Sokhos	5.29 206	P	Pn	02 25 31.7	-1.9
SOH	Sokhos	5.29 206	P	Pn	02 25 31.7	-1.9
SOH	Sokhos	5.29 206	P	Pn	02 25 31.7	-1.9
BBLS	Lazići	5.29 253	ePn	Pn	02 25 32.8	-0.8
BBLS	Lazići	5.29 253	ePn	Pn	02 25 32.8	-0.8
KAND	Kocaeli-Kandir	5.29 147	P	Pn	02 25 32.3	-1.3
KAND	Kocaeli-Kandir	5.29 147	iP	Pn	02 25 32.3	-1.3
HRT	Hereke	5.35 152	ePN	Pn	02 25 33.2	-1.2
HRT	Hereke	5.35 152	ePn	Pn	02 25 33.2	-1.2
ARMT	Armutlu	5.36 160	ePN	Pn	02 25 32.9	-1.6
ARMT	Armutlu	5.36 160	ePn	Pn	02 25 32.9	-1.6
EDC	Edincik	5.37 168	ePN	Pn	02 25 33.6	-1.1
EDC	Edincik	5.37 168	ePn	Pn	02 25 33.6	-1.1
AK11	Malin Array Si	5.39 19	ePn	Pn	02 25 32.8	-2.0
AK11	Malin Array Si	5.39 19	ePn	Pn	02 25 32.8	-2.0
KNL	Bal¨–kesir	5.41 171	iP	Pn	02 25 33.1	-2.0
KIEV	Kiev	5.41 19	diP	Pn	02 25 34.2	-0.9
KIEV	Kiev	5.41 19	P	Pn	02 25 34.3	-0.9
	SNR=82					
KIEV			eSn	Sn	02 26 32.3	-4.2
KIEV	Kiev	5.41 19	ePn	Pn	02 25 34.2	-0.9
KIEV			eSn	Sn	02 26 32.3	-4.2
AKASG	Malin Array Be	5.42 19	P	Pn	02 25 34.4	-0.9
	comp=N,73nm,0.3s,baz=202,slow=12,SNR=206					
AKASG			S	Sn	02 26 33.1	-3.6
	comp=N,91nm,0.3s,baz=195,slow=23,SNR=12					
AKBB	Malin Array Si	5.42 19	eP	Pn	02 25 34.1	-1.1
AKBB	Malin Array Si	5.42 19	eP	Pn	02 25 34.1	-1.1
AKBB	Malin Array Si	5.42 19	ePn	Pn	02 25 34.1	-1.1
BEY	Berane	5.43 242	⇓iPn	Pn	02 25 35.4	-0.1
BEY			eSn	Sn	02 26 34.3	-2.8
IVA	Berane	5.43 242	⇓iPn	Pn	02 25 35.4	-0.1
IVA			eSn	Sn	02 26 34.3	-2.8
BUD	Budapest	5.43 293	⇓ePn	Pn	02 25 34.7	-0.7
BUD			eSn	Sn	02 26 40.5	+3.6
BUD	Budapest	5.43 293	⇓eP	Pn	02 25 34.7	-0.7
PKSM	Moragy	5.46 279	ePn	Pn	02 25 35.8	+0.1
PKSM			eSn	Sn	02 26 38.4	+0.8
PKSM	Moragy	5.46 279	ePn	Pn	02 25 35.8	+0.1
PKSM			eSn	Sn	02 26 38.4	+0.8
SIM	Simferopol'	5.47 94	⇓iP	Pn	02 25 34.7	-1.3
SIM			eS	Sn	02 26 36.2	-1.8
SIM	Simferopol'	5.47 94	⇓iP	Pn	02 25 34.7	-1.3
SIM			Pm		02 25 39.4	
SIM			eS	Sn	02 26 36.2	-1.8
SIM			Sm		02 26 38.3	
SIM	Simferopol'	5.47 94	iP	Pn	02 25 34.7	-1.3
SIM			eS	Sn	02 26 36.2	-1.8
GRG	Griva	5.50 214	P	Pn	02 25 33.9	-2.5
GRG	Griva	5.50 214	P	Pn	02 25 33.9	-2.5
GRG	Griva	5.50 214	P	Pn	02 25 33.9	-2.5
GRG	Griva	5.50 214	P	Pn	02 25 33.9	-2.5
PLE	Pljevlja	5.52 248	⇑iPn	Pn	02 25 35.9	-0.9
PLE			eSn	Sn	02 26 36.9	-2.5
PLE	Pljevlja	5.52 248	⇑iPn	Pn	02 25 35.9	-0.9
PLE			eSn	Sn	02 26 36.9	-2.5
KCTX	Karacabey (Bur	5.54 164	ePN	Pn	02 25 35.1	-1.8
KCTX	Karacabey (Bur	5.54 164	ePn	Pn	02 25 35.1

VYHS	Vyhne	5.92 302	*e*P	Pn	02 25 41.9	-0.1
VYHS			MLR	MLR		
	comp=Z,500nm,3.7s					
VYHS	Vyhne	5.92 302	*e*P	Pn	02 25 41.9	-0.1
	comp=Z,500nm,3.7s					
VYHS	Vyhne	5.92 302	*e*PN	Pn	02 25 41.9	-0.1
VYHS			eLG	Lg	02 27 56.8	
BALY	Balya	5.94 171	P	Pn	02 25 40.9	-1.4
BALY	Balya	5.94 171	*i* P	Pn	02 25 40.9	-1.4
CAVI	Cavuskoy	5.97 154	*e*PN	Pn	02 25 41.7	-0.9
CAVI	Cavuskoy	5.97 154	*e*Pn	Pn	02 25 41.7	-0.9
GULT	Gulveren	5.99 148	*e*PN	Pn	02 25 42.5	-0.4
GULT	Gulveren	5.99 148	*e*Pn	Pn	02 25 42.6	-0.4
NKY	Niksic	6.03 245⇑	*i*Pn	Pn	02 25 42.8	-0.7
NKY			*e*Sn	Sn	02 26 48.6	-2.8
NKY	Niksic	6.03 245⇑	*i*Pn	Pn	02 25 42.8	-0.7
NKY			*e*Sn	Sn	02 26 48.6	-2.8
PAIG	Paliouri	6.03 200	P	Pn	02 25 41.6	-1.9
PAIG	Paliouri	6.03 200	P	Pn	02 25 41.6	-1.9
PAIG	Paliouri	6.03 200	P	Pn	02 25 41.6	-1.9
PAIG	Paliouri	6.03 200	P	Pn	02 25 41.6	-1.9
BTAS	Taskesti	6.06 145	P	Pn	02 25 43.0	-0.9
BTAS	Taskesti	6.06 145	*i* P	Pn	02 25 43.0	-0.9
PDG	Podgorica	6.07 241	P	Pn	02 25 47.0	+3.1
PDG	Podgorica	6.07 241	*e*Pn	Pn	02 25 43.8	-0.1
PDG	Podgorica	6.07 241	*e*Pn	Pn	02 25 43.8	-0.1
PDG			*e*Sn	Sn	02 26 49.3	-2.9
TTG	Podgorica	6.07 241	⇓*i*Pn	Pn	02 25 44.3	+0.4
TTG			*e*Sn	Sn	02 26 49.3	-2.9
TTG	Podgorica	6.07 241	P	Pn	02 25 47.0	+3.1
TTG	Podgorica	6.07 241	P	Pn	02 25 47.0	+3.1
TTG	Podgorica	6.07 241	P	Pn	02 25 47.0	+3.1
BALB	Balikesir	6.07 169	*e*PN	Pn	02 25 43.6	-0.4
BALB	Balikesir	6.07 169	*e*Pn	Pn	02 25 43.6	-0.4
FNA	Florina	6.07 219	P	Pn	02 25 43.5	-0.6
FNA	Florina	6.07 219	P	Pn	02 25 43.5	-0.6
FNA	Florina	6.07 219	P	Pn	02 25 43.5	-0.6
FNA	Florina	6.07 219	P	Pn	02 25 43.5	-0.6
NKME	Niksic	6.07 245⇓	*i*Pn	Pn	02 25 44.3	+0.2
NKME			*e*Sn	Sn	02 26 49.5	-3.0
NKME	Niksic	6.07 245⇓	*i*Pn	Pn	02 25 44.3	+0.2
NKME			*e*Sn	Sn	02 26 49.5	-3.0
OHR	Ohrid	6.08 224	*i* Pn	Pn	02 25 44.4	+0.2
SUDU	Sudak	6.10 94	*i* P	Pn	02 25 42.4	-2.0
SUDU			*e*S	Sn	02 26 50.3	-2.8
SUDU	Sudak	6.10 94⇑	*i*P	Pn	02 25 42.4	-2.0
SUDU			2 44.7	Pm	02 25 44.7	
SUDU			*e*S	Sn	02 26 50.3	-2.8
SUDU				Sm	02 26 53.8	
SUDU	Sudak	6.10 94	*i* P	Pn	02 25 42.4	-2.0
SUDU			*e*S	Sn	02 26 50.3	-2.8
DURS	Dursunbey	6.20 165	P	Pn	02 25 44.4	-1.5
DURS	Dursunbey	6.20 165	*i* P	Pn	02 25 44.4	-1.5
CEME	Cevo	6.21 243	*e*Pn	Pn	02 25 45.9	0.0
CEME			*e*Sn	Sn	02 26 53.0	-2.8
CEME	Cevo	6.21 243	*e*Pn	Pn	02 25 45.9	0.0
CEME			*e*Sn	Sn	02 26 53.0	-2.8
LIT	Litokhoron	6.22 209	P	Pn	02 25 44.4	-1.7
LIT	Litokhoron	6.22 209	P	Pn	02 25 44.4	-1.7
LIT	Litokhoron	6.22 209	P	Pn	02 25 44.4	-1.7
LIT	Litokhoron	6.22 209	P	Pn	02 25 44.4	-1.7
MDUB	Mudurnu	6.22 144	*e*PN	Pn	02 25 46.7	+0.5
MDUB	Mudurnu	6.22 144	*e*Pn	Pn	02 25 46.7	+0.5
DRME	Dracevica, Mon	6.25 239⇓	*i*Pn	Pn	02 25 46.5	+0.1
DRME			*e*Sn	Sn	02 26 54.0	-2.6
DRME	Dracevica, Mon	6.25 239⇓	*i*Pn	Pn	02 25 46.5	+0.1
DRME			*e*Sn	Sn	02 26 54.0	-2.6
BRY	Bratogost	6.27 247⇓	*i*Pn	Pn	02 25 46.8	0.0
BRY			*e*Sn	Sn	02 26 54.6	-2.8
BRY	Bratogost	6.27 247⇓	*i*Pn	Pn	02 25 46.8	0.0
BRY			*e*Sn	Sn	02 26 54.6	-2.8
AUBOZ	BOZOYUK	6.29 154	P	Pn	02 25 46.6	-0.5
AUBOZ	BOZOYUK	6.29 154	*i* P	Pn	02 25 46.6	-0.5
KZN	Kozani	6.30 214	P	Pn	02 25 46.2	-1.0
KZN	Kozani	6.30 214	P	Pn	02 25 46.2	-1.0
KZN	Kozani	6.30 214	P	Pn	02 25 46.2	-1.0
KZN	Kozani	6.30 214	P	Pn	02 25 46.2	-1.0
BCAM	Yenicaga	6.33 137	P	Pn	02 25 46.4	-1.2
BCAM	Yenicaga	6.33 137	*i* P	Pn	02 25 46.4	-1.2
ULC	Ulcinj	6.34 237⇑	*i*Pn	Pn	02 25 47.3	-0.4
ULC			*e*Sn	Sn	02 26 56.1	-2.9
ULC	Ulcinj	6.34 237⇑	*i*Pn	Pn	02 25 47.3	-0.4
ULC			*e*Sn	Sn	02 26 56.1	-2.9
FEO	Feodosiya	6.36 92⇑	*i*P	Pn	02 25 45.7	-2.1
FEO	Feodosiya	6.36 92⇑	*i*P	Pn	02 25 45.7	-2.1
FEO			Pm		02 25 46.8	
FEO	Feodosiya	6.36 92	*i* P	Pn	02 25 45.7	-2.1
BUM	Brajici-Budva	6.36 241	*e*Pn	Pn	02 25 47.4	-0.5
BUM			*e*Sn	Sn	02 26 56.3	-3.1
BUM	Brajici-Budva	6.36 241	*e*Pn	Pn	02 25 47.4	-0.5
BUM			*e*Sn	Sn	02 26 56.3	-3.1
PRK	Paraskevi	6.37 181	P	Pn	02 25 46.3	-1.7
PRK	Paraskevi	6.37 181	P	Pn	02 25 46.3	-1.7
PRK	Paraskevi	6.37 181	P	Pn	02 25 46.3	-1.7
PRK	Paraskevi	6.37 181	P	Pn	02 25 46.3	-1.7
TIR	Tirane	6.39 230	*e*P	Pn	02 25 46.8	-1.6
TIR			*e*		02 26 54.3	
TIR	Tirane	6.39 230	*e*P	Pn	02 25 46.8	-1.6
TIR			*e*Sn	Sn	02 26 54.3	-5.9
TIR	Tirane	6.39 230	*e*Pn	Pn	02 25 46.8	-1.6
TIR			*e*Sn	Sn	02 26 54.3	-5.9
OJC	Ojcow	6.40 318	*e*P	Pn	02 25 47.8	-0.6
OJC			*e*		02 25 57.9	
OJC	Ojcow	6.40 318⇓	*e*P	Pn	02 25 47.8	-0.6
OJC	Ojcow	6.40 318	*e*Pn	Pn	02 25 47.0	-1.3
OJC	Ojcow	6.40 318	*e*P	Pn	02 25 47.8	-0.6
OJC	Ojcow	6.40 318	*e*Pn	Pn	02 25 47.0	-1.3
SIGR	SIGRI	6.41 184	P	Pn	02 25 47.0	-1.6
SIGR	SIGRI	6.41 184	P	Pn	02 25 47.0	-1.6
SIGR	SIGRI	6.41 184	P	Pn	02 25 47.0	-1.6
BORA	Eskisehir	6.46 151	P	Pn	02 25 48.5	-0.8
BORA	Eskisehir	6.46 151	*i* P	Pn	02 25 48.5	-0.8
TREB	Trebinje	6.48 246	*e*Pn	Pn	02 25 50.2	+0.7
NEST	Nestorio	6.52 219	P	Pn	02 25 49.9	-0.2
HCY	Herceg Novi	6.53 244⇓	*i*Pn	Pn	02 25 50.8	+0.7
HCY			*e*Sn	Sn	02 27 00.4	-3.0
HCY	Herceg Novi	6.53 244⇓	*i*Pn	Pn	02 25 50.8	+0.7
HCY			*e*Sn	Sn	02 27 00.4	-3.0
DKL	Dikili	6.55 177	*e*PN	Pn	02 25 51.9	+1.5
TVSB	Tavsanli	6.56 159	*e*PN	Pn	02 25 50.1	-0.6
TVSB	Tavsanli	6.56 159	*e*Pn	Pn	02 25 50.1	-0.6
BLY	Banja Luka	6.58 266	*i* Pn	Pn	02 25 51.3	+0.5
BLY	Banja Luka	6.58 266	*i* Pn	Pn	02 25 51.3	+0.5
PENT	Pentalofos	6.66 217	P	Pn	02 25 51.9	-0.1
XOR	Xorichti	6.69 202	P	Pn	02 25 50.0	-2.3
XOR	Xorichti	6.69 202	P	Pn	02 25 50.0	-2.3
XOR	Xorichti	6.69 202	P	Pn	02 25 50.0	-2.3
AOS	Alonnisos	6.71 197	P	Pn	02 25 50.3	-2.3
AOS	Alonnisos	6.71 197	P	Pn	02 25 50.3	-2.3
AOS	Alonnisos	6.71 197	P	Pn	02 25 50.3	-2.3
FYTO	Fytoko, Volos	6.71 204	P	Pn	02 25 50.9	-1.7
FYTO	Fytoko, Volos	6.71 204	P	Pn	02 25 50.9	-1.7
FYTO	Fytoko, Volos	6.71 204	P	Pn	02 25 50.9	-1.7
NEO	Neokhori	6.73 202	P	Pn	02 25 50.7	-2.2
NEO	Neokhori	6.73 202	P	Pn	02 25 50.7	-2.2
NEO	Neokhori	6.73 202	P	Pn	02 25 50.7	-2.2
BEHE	Becsehely	6.76 281	*e*Pn	Pn	02 25 54.0	+0.8
BEHE	Becsehely	6.76 281	*e*Pn	Pn	02 25 54.0	+0.8
KPRO	Kipourio	6.77 215	P	Pn	02 25 53.3	-0.1
DEMI	Demirci	6.79 165	P	Pn	02 25 52.4	-1.3
DEMI	Demirci	6.79 165	*i* P	Pn	02 25 52.4	-1.3
SMOL	Smolenice	6.79 298	*e*P	Pn	02 25 53.4	-0.1
SMOL	Smolenice	6.79 298	*e*P	Pn	02 25 53.4	-0.1
SMOL	Smolenice	6.79 298	*e*PN	Pn	02 25 53.4	-0.1
SKIA	Skiathos	6.80 200	P	Pn	02 25 51.7	-2.2
STON	Ston	6.83 249	*i* Pn	Pn	02 25 55.0	+0.8
STON			Sn	Sn	02 27 08.9	-1.8
STON	Ston	6.83 249	*i* Pn	Pn	02 25 54.8	+0.6
STON	Ston	6.83 249	*i* Pn	Pn	02 25 54.8	+0.6
STON			Sn	Sn	02 27 08.8	-1.8
KAST	KASTAMONU	6.84 124	P	Pn	02 25 52.5	-1.9
KAST	KASTAMONU	6.84 124	*i* P	Pn	02 25 52.5	-1.9
THL	Klokotos Trika	6.86 210	P	Pn	02 25 53.9	-0.7
GDZ	Gediz	6.91 160	P	Pn	02 25 54.6	-0.8
GDZ	Gediz	6.91 160	*i* P	Pn	02 25 54.6	-0.8
ESKT	Eskisehir	6.92 150	*i* P	Pn	02 25 55.0	-0.5
SEYT	Eskypehyr	6.92 150	P	Pn	02 25 55.0	-0.4
OKC	Ostrava-Krasne	6.99 310⇑	*e*P	Pn	02 25 55.6	-0.7
OKC			*ex*	x	02 26 04.0	
OKC			*ex*	x	02 26 11.4	
OKC	Ostrava-Krasne	6.99 310	*e*P	Pn	02 25 55.6	-0.7
OKC	Ostrava-Krasne	6.99 310	P	Pn	02 25 55.6	-0.7
ILGA	Ilgaz	7.01 128	P	Pn	02 25 55.0	-1.8
ILGA	Ilgaz	7.01 128	*i* P	Pn	02 25 55.0	-1.8
AUKIR	K¨–rka- Seyitg	7.03 153	P	Pn	02 25 56.9	0.0
AUKIR	K¨–rka- Seyitg	7.03 153	*i* P	Pn	02 25 56.9	0.0
KERU	Kerch	7.07 89	*e*P	Pn	02 25 58.2	+0.9
KERU	Kerch	7.07 89	*e*P	Pn	02 25 58.2	+0.9
SOP	Sopron	7.09 290⇓	*e*Pn	Pn	02 25 57.8	+0.2
SOP			*e*Sn	Sn	02 27 18.0	+1.1
SOP	Sopron	7.09 290⇓	*e*P	Pn	02 25 57.8	+0.2
RAC	Raciborz	7.11 312	*e*P	Pn	02 25 56.9	-0.9
RAC	Raciborz	7.11 312	*e*P	Pn	02 25 56.9	-0.9
KOGS	Kog	7.12 280	*i* Pn	Pn	02 25 58.5	+0.5
SVRH	Sivrihisar-ESK	7.23 147	*e*PN	Pn	02 26 00.5	+0.9
SVRH	Sivrihisar-ESK	7.23 147	*e*PN	Pn	02 26 00.5	+0.9
CHOS	Chios island	7.23 182	P	Pn	02 25 58.0	-1.6
CHOS	Chios island	7.23 182	P	Pn	02 25 58.0	-1.6
CHOS	Chios island	7.23 182	P	Pn	02 25 58.0	-1.6
AUSIV	SIVRIHISAR	7.24 147	P	Pn	02 25 59.2	-0.6
AUSIV	SIVRIHISAR	7.24 147	*i* P	Pn	02 25 59.2	-0.6
BLCB	Balcova	7.24 176	*e*PN	Pn	02 26 01.2	+1.5
BEL	Belsk	7.25 331	*e*P	Pn	02 26 01.0	+1.3
BEL			*e*S	Sn	02 27 22.7	+2.1
BEL	Belsk	7.25 331	*e*P	Pn	02 26 01.0	+1.3
BEL			*e*S	Sn	02 27 22.7	+2.1
BEL	Belsk	7.25 331	*e*P	Pn	02 26 01.0	+1.3
BEL			*e*S	Sn	02 27 22.7	+2.1
AGG	Agios Georgios	7.25 206	P	Pn	02 25 58.7	-1.2
AGG	Agios Georgios	7.25 206	*e*P	Pn	02 25 59.2	-0.7
AGG	Agios Georgios	7.25 206	*e*P	Pn	02 25 59.2	-0.7
AGG	Agios Georgios	7.25 206	*e*Pn	Pn	02 25 59.2	-0.7
ELDT	Eldivan	7.25 132	P	Pn	02 25 58.8	-1.2
ELDT	Eldivan	7.25 132	*i* P	Pn	02 25 58.8	-1.2
URLA	Izmir	7.25 179	P	Pn	02 25 58.6	-1.3
URLA	Izmir	7.25 179	*i* P	Pn	02 25 58.6	-1.3
KULA	Kula-Manisa	7.29 166	*e*PN	Pn	02 26 00.9	+0.4
KULA	Kula-Manisa	7.29 166	*e*Pn	Pn	02 26 00.9	+0.4
MORC	Moravsky Berou	7.29 308	*e*P	Pn	02 25 59.3	-1.0
MORC	Moravsky Berou	7.29 308	*e*P	Pn	02 25 59.3	-1.0
MORC	Moravsky Berou	7.29 308	*e*Pn	Pn	02 25 59.3	-1.0
ZAG	Zagreb	7.30 275	*e*Pn	Pn	02 25 59.8	-0.7
ZEY	¨zmir	7.37 179	*i* P	Pn	02 26 00.6	-0.9
LKR	Lokris	7.41 201	P	Pn	02 26 00.1	-1.8
LKR	Lokris	7.41 201	P	Pn	02 26 00.1	-1.8
LKR	Lokris	7.41 201	P	Pn	02 26 00.1	-1.8
ANTO	Ankara	7.42 139	*e*P	Pn	02 26 01.0	-1.1
ANTO	Ankara	7.42 139	*e*P	Pn	02 26 01.0	-1.1
ANTO	Ankara	7.42 139	*e*Pn	Pn	02 26 01.0	-1.1
EREA	Eretria	7.42 195	P	Pn	02 26 00.4	-1.8
BR231	Keskin MP Arra	7.43 139	*e*Pn	Pn	02 26 01.8	-0.6
BR231	Keskin MP Arra	7.43 139	*e*Pn	Pn	02 26 01.8	-0.6
DSL	Palaion Diasel	7.58 213	P	Pn	02 26 04.7	+0.4
DSL	Palaion Diasel	7.58 213	P	Pn	02 26 04.7	+0.4
DSL	Palaion Diasel	7.58 213	P	Pn	02 26 04.7	+0.4
KHAL	Karahalli	7.59 161	P	Pn	02 26 03.9	-0.7
KHAL	Karahalli	7.59 161	*i* P	Pn	02 26 03.9	-0.7
CONA	Conrad Observa	7.61 291	*i* Pn	Pn	02 26 04.8	+0.2
	comp=Z,58nm,1.4s,SNR=29					
CONA	Conrad Observa	7.61 291	P	Pn	02 26 04.8	+0.2
	comp=Z,58nm,1.4s,SNR=29					
VRAC	Vranov	7.61 303	P	Pn	02 26 04.7	+0.1
	comp=Z,0.6nm,0.3s,baz=111,slow=12,SNR=112					
VRAC			LR	LR	02 29 26.7	
	comp=Z,201nm,20.2s,baz=106,slow=41					
VRAC	Vranov	7.61 303	*e*Pn	Pn	02 26 04.3	-0.3
UDBI	Udbina	7.62 266	*e*Pn	Pn	02 26 05.5	+0.7
UDBI	Udbina	7.62 266	*e*Pn	Pn	02 26 05.5	+0.7
BOLV	Bolvadin	7.67 152	P	Pn	02 26 05.7	+0.1
BOLV	Bolvadin	7.67 152	*i* P	Pn	02 26 05.7	+0.1
CRES	Cresnjev	7.67 275	*e*Pn	Pn	02 26 06.1	+0.6
ARSA	Arzberg	7.70 286	*i* Pn	Pn	02 26 06.6	+0.8
	comp=Z,29nm,0.9s,SNR=21					
ARSA	Arzberg	7.70 286	P	Pn	02 26 06.6	+0.8
	comp=Z,29nm,0.9s,SNR=21					
AYDB	Zeytinkoy-Aydi	7.74 171	*e*PN	Pn	02 26 07.7	+1.1
AYDB	Zeytinkoy-Aydi	7.74 171	*e*Pn	Pn	02 26 07.7	+1.1
DSF	Desfina	7.76 203	P	Pn	02 26 04.7	-2.0
DSF	Desfina	7.76 203	P	Pn	02 26 04.7	-2.0
DSF	Desfina	7.76 203	P	Pn	02 26 04.7	-2.0
ANX	Ano Chora	7.77 207	P	Pn	02 26 06.2	-0.7
PTL	Penteli	7.80 195	P	Pn	02 26 05.7	-1.5
PTL	Penteli	7.80 195	P	Pn	02 26 05.7	-1.5
PTL	Penteli	7.80 195	P	Pn	02 26 05.7	-1.5
ANN	Anapa	7.83 92	*d i*P	Pn	02 26 03.6	-3.8
ANN			*e*S	Sn	02 27 29.4	-5.1
ANN			pmax	pmax		
	comp=Z,296nm,1.4s					
KRLC	Kraliky	7.87 308	*e*P	Pn	02 26 06.8	-1.2
KRLC	Kraliky	7.87 308	*e*P	Pn	02 26 06.8	-1.2
KRLC	Kraliky	7.87 308	P	Pn	02 26 06.8	-1.2
BR131	Keskin Array S	7.93 135	*e*Pn	Pn	02 26 07.5	-1.6
BR131	Keskin Array S	7.93 135	*e*Pn	Pn	02 26 07.5	-1.6
BRTR	Keskin Array B	7.93 135	P	Pn	02 26 07.7	-1.4
	comp=Z,3.7nm,0.3s,baz=322,slow=10,SNR=501					
BRTR	Keskin Array B	7.93 135	*ce*P	Pn	02 26 07.6	-1.6
BRTR			pmax	pmax		
	comp=Z,60nm,0.7s					
SOKA	Soboth	7.98 282	*i* Pn	Pn	02 26 10.3	+0.7
	SNR=49					
SOKA	Soboth	7.98 282	P	Pn	02 26 10.3	+0.7
	SNR=49					
VLY	Voula,Athens	8.00 195	P	Pn	02 26 08.0	-1.9
VLY	Voula,Athens	8.00 195	P	Pn	02 26 08.0	-1.9
VLY	Voula,Athens	8.00 195	P	Pn	02 26 08.0	-1.9
LTK	Loutraki	8.01 200	P	Pn	02 26 08.8	-1.3
LTK	Loutraki	8.01 200	P	Pn	02 26 08.8	-1.3
LTK	Loutraki	8.01 200	P	Pn	02 26 08.8	-1.3
AYDN	Tasoluk	8.02 172	P	Pn	02 26 08.7	-1.6
AYDN	Tasoluk	8.02 172	*i* P	Pn	02 26 08.7	-1.6
KKUL	Konya-Kulu	8.04 141	P	Pn	02 26 10.2	-0.3
KKUL	Konya-Kulu	8.04 141	*i* P	Pn	02 26 10.2	-0.3
NVLJ	Novalja	8.24 267	*e*Pn	Pn	02 26 14.2	+1.2
NVLJ	Novalja	8.24 267	*e*Pn	Pn	02 26 14.1	+1.2
KDHN	Kadinhani	8.26 147	P	Pn	02 26 12.8	-0.6
KDHN	Kadinhani	8.26 147	*i* P	Pn	02 26 12.8	-0.6
DPC	Dobruska-Polom	8.26 309	*e*P	Pn	02 26 13.0	-0.3
DPC			*ex*	x	02 26 24.3	
DPC	Dobruska-Polom	8.26 309	*e*P	Pn	02 26 13.0	-0.3
DPC	Dobruska-Polom	8.26 309	P	Pn	02 26 13.0	-0.3
TREC	Trest	8.27 300⇑	*e*P	Pn	02 26 13.4	0.0
TREC	Trest	8.27 300	*e*P	Pn	02 26 13.4	0.0
TREC			MLR	MLR		
	comp=Z,2μm,20.3s					
TREC	Trest	8.27 300	P	Pn	02 26 13.4	0.0
BAGO	Egridir - ISPA	8.29 155	*i* P	Pn	02 26 15.0	+1.2
OBKA	Obir	8.30 280	*i* Pn	Pn	02 26 14.9	+1.0
	comp=Z,86nm,1.4s,SNR=19					
OBKA	Obir	8.30 280	P	Pn	02 26 14.9	+1.0
	comp=Z,86nm,1.4s,SNR=19					
LJU	Ljubljana	8.31 277⇓	*e*Pn	Pn	02 26 14.5	+0.5
LJU	Ljubljana	8.31 277	*e*Pn	Pn	02 26 14.9	+0.9
ISP	Isparta	8.37 157	*e*P	Pn	02 26 14.1	-0.8
ISP	Isparta	8.37 157	*e*P	Pn	02 26 14.1	-0.8
ISP	Isparta	8.37 157	*e*Pn	Pn	02 26 14.1	-0.8
CDAG	Cicekdag	8.38 133	P	Pn	02 26 14.0	-1.1
CDAG	Cicekdag	8.38 133	*i* P	Pn	02 26 14.0	-1.1
CEY	Cerknica	8.40 275	*e*Pn	Pn	02 26 15.5	+0.3
DID	Didima	8.45 197	P	Pn	02 26 14.1	-1.8
DID	Didima	8.45 197	P	Pn	02 26 14.1	-1.8
DID	Didima	8.45 197	P	Pn	02 26 14.1	-1.8
UPC	Upice	8.51 309⇑	*e*P	Pn	02 26 15.9	-0.7
UPC			*ex*	x	02 26 25.2	
UPC	Upice	8.51 309	*e*P	Pn	02 26 15.9	-0.7
UPC	Upice	8.51 309	P	Pn	02 26 15.9	-0.7
KSP	Ksiaz	8.54 311	*e*P	Pn	02 26 15.8	-1.2
KSP	Ksiaz	8.54 311	*e*P	Pn	02 26 15.8	-1.2
KSP	Ksiaz	8.54 311	*e*P	Pn	02 26 15.8	-1.2
APE	Apeiranthos	8.57 185	*e*PN	Pn	02 26 20.5	+3.0
APE	Apeiranthos	8.57 185	*c i*P	Pn	02 26 15.7	-1.8
APE	Apeiranthos	8.57 185	*i* P	Pn	02 26 15.7	-1.8
BODT	Bodrum	8.57 175	*e*PN	Pn	02 26 19.4	+1.8
MOA	Molln	8.64 289	*i* Pn	Pn	02 26 19.4	+1.0
	comp=Z,46nm,1.9s,SNR=18					
MOA	Molln	8.64 289	P	Pn	02 26 19.4	+1.0
	comp=Z,46nm,1.9s,SNR=18					
SUW	Suwalki	8.66 347	*e*P	Pn	02 26 16.5	-2.0
SUW	Suwalki	8.66 347	*e*P	Pn	02 26 16.5	-2.0
SUW	Suwalki	8.66 347	*e*P	Pn	02 26 16.5	-2.0
SKDS	Skadanscina	8.70 274	*i* Pn	Pn	02 26 19.5	+0.3
BCK	Bucak	8.73 158	*e*PN	Pn	02 26 20.2	+0.5
BCK	Bucak	8.73 158	*e*Pn	Pn	02 26 20.2	+0.5
GLHS	Glhisar (BURDU	8.76 164	*e*PN	Pn	02 26 21.1	+0.9
GLHS	Glhisar (BURDU	8.76 164	*e*Pn	Pn	02 26 21.1	+0.9
SUTC	Sutluce-Ispart	8.83 156	*e*PN	Pn	02 26 22.2	+1.1
SUTC	Sutluce-Ispart	8.83 156	*e*Pn	Pn	02 26 22.2	+1.1
AKSY	AKSARAY - Alti	8.84 139	P	Pn	02 26 21.2	0.0
AKSY	AKSARAY - Alti	8.84 139	*i* P	Pn	02 26 21.2	0.0
TRI	Trieste	8.86 275	*e*P	Pn	02 26 22.5	+1.2
TRI	Trieste	8.86 275	*e*P	Pn	02 26 22.5	+1.2
TRI	Trieste	8.86 275	*e*Pn	Pn	02 26 22.5	+1.2
GOPC	GO Pecny, Ondr	8.93 303	*e*P	Pn	02 26 22.1	-0.2
GOPC			*ex*	x	02 26 29.7	
GOPC	GO Pecny, Ondr	8.93 303	*e*P	Pn	02 26 22.1	-0.2
GOPC			MLR	MLR		
	comp=Z,2μm,17.1s					
GOPC	GO Pecny, Ondr	8.93 303	P	Pn	02 26 22.1	-0.2
MYKA	Terra Mystica	8.93 281	*i* Pn	Pn	02 26 23.2	+0.9
	comp=Z,12nm,0.9s,SNR=13					
MYKA	Terra Mystica	8.93 281	P	Pn	02 26 23.2	+0.9
	comp=Z,12nm,0.9s,SNR=13					
MICGM	Minsk	8.95 6⇓	*e*P	Pn	02 26 18.0	-4.4
MICGM			PM		02 26 19.0	
	comp=Z,0.1nm,1.0s					
MICGM			*e*pP		02 26 39.0	
MICGM			*e*		02 27 03.0	
MICGM			*e*S	Sn	02 27 54.0	-7.4
MICGM			*e*		02 28 28.0	
MICGM			eLR	LR	02 29 38.0	
MNK	Minsk	8.95 6⇓	*e*P	Pn	02 26 18.0	-4.4
MNK			*e*S	Sn	02 27 54.0	-7.4
MNK			pmax	pmax		
	comp=Z,80nm,1.0s					
KORT	Korkueli	9.10 160	*i* P	Pn	02 26 26.5	+1.7
PRU	Pruhonice	9.11 303⇑	*e*P	Pn	02 26 24.2	-0.4
PRU			*ex*	x	02 26 31.0	
PRU			AMS	AMS	02 30 00.0	
	comp=Z,200nm,10.5s					
PRU	Pruhonice	9.11 303	*e*P	Pn	02 26 24.2	-0.4
PRU			MLR	MLR		
	comp=Z,200nm,10.5s					
PRU	Pruhonice	9.11 303	P	Pn	02 26 24.2	-0.4
KBA	Koelnbreinsper	9.16 284	*i* Pn	Pn	02 26 26.7	+1.2
	comp=Z,87nm,1.4s,SNR=29					
KBA	Koelnbreinsper	9.16 284	P	Pn	02 26 26.7	+1.2
	comp=Z,87nm,1.4s,SNR=29					
FETY	Fethiye	9.20 166	*e*PN	Pn	02 26 27.6	+1.7
PRA	Prague	9.21 303⇑	*e*P	Pn	02 26 25.9	0.0
PRA	Prague	9.21 303	*e*P	Pn	02 26 25.9	0.0
PRA			MLR	MLR		
	comp=Z,2μm,17.4s					
PRA	Prague	9.21 303	P	Pn	02 26 25.9	0.0
GEA0	GERESS Array S	9.23 295	*e*Pn	Pn	02 26 26.2	-0.1
GEA0	GERESS Array S	9.23 295	*e*Pn	Pn	02 26 26.2	-0.1
GEC2	GERESS Array S	9.23 295	*e*P	Pn	02 26 27.2	+0.8
GEC2	GERESS Array S	9.23 295	*e*P	Pn	02 26 27.2	+0.8
GEC2	GERESS Array S	9.23 295	*e*Pn	Pn	02 26 27.2	+0.8
GERES	GERESS Array B	9.23 295	P	Pn	02 26 26.8	+0.4
	comp=Z,0.5nm,0.3s,baz=106,slow=14,SNR=86					
GERES			LR	LR	02 30 23.7	
	comp=Z,227nm,20.5s,baz

comp=Z,5.0nm,1.0s
CLL Collm 10.56 307 *e*Pn **Pn 02 26 43.1 -0.9**
CLL Collm 10.56 307 *e*Pn **Pn 02 26 43.1 -0.9**
SIVA Sivas 10.66 187 P Pn 02 27 02.2 +17
SIVA Sivas 10.66 187 P Pn 02 27 02.2 +17
SIVA Sivas 10.66 187 P Pn 02 27 02.2 +17
MOTA Moosalm 10.70 285 *i* Pn **Pn 02 26 47.8 +1.8**
SNR=21
MOTA Moosalm 10.70 285 P **Pn 02 26 47.8 +1.8**
SNR=21
CEL Celeste 10.74 230 *e*Pn **Pn 02 26 44.0 -2.5**
CEL Celeste 10.74 230 *e*Pn **Pn 02 26 44.0 -2.5**
FETA Feichten 10.94 283 *i* Pn **Pn 02 26 48.8 -0.4**
comp=Z,1.2nm,0.6s
FETA Feichten 10.94 283 P **Pn 02 26 48.8 -0.4**
comp=Z,1.2nm,0.6s
RETA Reutte 10.94 285 *i* Pn **Pn 02 26 49.4 +0.3**
comp=Z,20nm,1.0s,SNR=7.5
RETA Reutte 10.94 285 P **Pn 02 26 49.4 +0.3**
comp=Z,20nm,1.0s,SNR=7.5
GRFO Grafenberg 11.03 297 *e*P **Pn 02 26 50.1 0.0**
GRFO Grafenberg 11.03 297 *e*P **Pn 02 26 50.1 0.0**
GRFO Grafenberg 11.03 297 *e*Pn **Pn 02 26 50.1 0.0**
FUORN Ofenpass-Fuorn 11.26 281 *e*Pn **Pn 02 26 53.7 +0.2**
FUORN Ofenpass-Fuorn 11.26 281 *e*Pn **Pn 02 26 53.7 +0.2**
OBN Obninsk 11.49 31 P **Pn 02 26 52.8 -3.4**
comp=Z,42nm,0.3s,baz=69,slow=3.7,SNR=41
OBN S **Sn 02 28 55.5 -7.3**
comp=Z,19nm,0.3s,baz=40,slow=22,SNR=12
OBN Obninsk 11.49 31 *c i* P **Pn 02 26 52.4 -3.8**
OBN pmax pmax
comp=Z,52nm,0.5s
DAVOX Davos/Dischmat 11.52 282 P **Pn 02 26 55.3 -1.5**
comp=Z,0.0nm,0.3s,baz=151,slow=9.6,SNR=3.3
DAVOX LR LR 02 31 26.7
comp=Z,110nm,19.8s,baz=92,slow=38
DAVA Damuels 11.53 284 *i* Pn **Pn 02 26 55.8 -1.1**
comp=Z,22nm,1.1s
DAVA Damuels 11.53 284 P **Pn 02 26 55.8 -1.1**
comp=Z,22nm,1.1s
VRH Novokhopyorsk 11.60 56 *e*P **Pn 02 26 55.2 -2.4**
VRH *e*S **Sn 02 28 57.6 -7.8**
VRH pmax pmax
comp=Z,230nm,0.8s
VRH smax smax
comp=N,720nm,1.3s
VRH Novokhopyorsk 11.60 56 *e*P **Pn 02 26 55.2 -2.4**
comp=N,720nm,1.3s
CHVG Ch'k'valeri 11.62 99 P **Pn 02 26 57.4 -0.6**
KIV Kislovodsk 11.68 92 *i* P **Pn 02 26 58.5 -0.4**
SNR=11
KIV Kislovodsk 11.68 92 *d i* P **Pn 02 26 56.1 -2.8**
KIV pmax pmax
comp=Z,81nm,1.2s
KIV Kislovodsk 11.68 92 *e*Pn **Pn 02 26 56.2 -2.7**
KIV Kislovodsk 11.68 92 P **Pn 02 26 58.5 -0.4**
SNR=11
KIV Kislovodsk 11.68 92 *e*Pn **Pn 02 26 56.2 -2.7**
KVAR Kislovodsk Arr 11.69 92 P **Pn 02 26 56.5 -2.5**
baz=94,slow=5.2,SNR=30
KVAR LR LR 02 32 37.8
comp=Z,96nm,20.2s,baz=228,slow=42
GOF Gofitskoye 11.72 87 *j i* P **Pn 02 26 57.8 -1.5**
GOF pmax pmax
comp=Z,287nm,1.0s
GOF Gofitskoye 11.72 87 *i* P **Pn 02 26 57.8 -1.5**
comp=Z,287nm,1.0s
DRWC Darouich 11.84 136 *e*P **Pn 02 27 02.7 +1.6**
CSS Mathiatis 11.87 151 *e*Pn **Pn 02 27 00.1 -1.3**
CSS Mathiatis 11.87 151 *e*Pn **Pn 02 27 00.1 -1.3**
KBZ Khabaz 11.89 93 P **Pn 02 27 00.2 -1.2**
comp=Z,2.4nm,0.3s,baz=301,slow=9.7,SNR=34
KBZ LR LR 02 32 56.2
comp=Z,76nm,18.9s,baz=280,slow=43
TUE Stuetta 11.90 280 *e*Pn **Pn 02 26 59.0 -2.7**
TUE Stuetta 11.90 280 *e*Pn **Pn 02 26 59.0 -2.7**
NEY Neytrino 11.90 96 *||e*P **Pn 02 27 01.3 -0.5**
NEY Neytrino 11.90 96 *e*P **Pn 02 27 01.3 -0.5**
BSD Bornholm Skovb 12.00 327 *i* P **P 02 27 08.2 -1.5**
BSD Bornholm Skovb 12.00 327 *e*P **P 02 27 08.2 -1.5**
BSD Bornholm Skovb 12.00 327 *e*P **Pn 02 27 03.5 +0.8**
SNR=46
STU Stuttgart 12.13 291 *e*P **Pn 02 27 04.2 -0.4**
STU Stuttgart 12.13 291 *e*P **Pn 02 27 04.2 -0.4**
STU Stuttgart 12.13 291 *e*Pn **Pn 02 27 04.2 -0.4**
ARNB Al Arnab 12.13 140 *e*P **P 02 27 10.0 -1.6**
BTCH Batrach 12.21 138 *e*P **P 02 27 09.3 -3.1**
SPAK Spaichingen-Ko 12.32 288 *e*P **Pn 02 27 07.0 -0.2**
MOS Moscow 12.36 31 *e*P **Pn 02 27 05.3 -2.2**
MOS *e*SS **Sn 02 29 26.4 +2.7**
MOS pmax pmax
comp=Z,60nm,0.8s
MOS Moscow 12.36 31 *e*S **Sn 02 29 26.4 +2.7**
NCK Nalchik 12.44 94 *c e*P **Pn 02 27 10.7 +2.0**
NCK Nalchik 12.44 94 *e*P **Pn 02 27 10.7 +2.0**
ONI Oni 12.62 98 P **Pn 02 27 12.0 +1.0**
ONI Oni 12.62 98 P **Pn 02 27 12.0 +1.0**
ONI Oni 12.62 98 P **Pn 02 27 12.0 +1.0**
WRDH Warideh 12.63 140 *e*P **Pn 02 27 13.7 +2.5**
BFO Black Forest 12.65 289 *i* P **Pn 02 27 10.8 -0.5**
BFO Black Forest 12.65 289 *e*Pn **Pn 02 27 10.2 -1.1**
BFO Black Forest 12.65 289 *i* P **Pn 02 27 10.8 -0.5**
BFO Black Forest 12.65 289 *e*Pn **Pn 02 27 10.2 -1.1**
CLTB Caltabellotta 12.72 235 *e*Pn **P 02 27 15.4 -2.6**
CLTB Caltabellotta 12.72 235 *e*Pn **P 02 27 15.4 -2.6**
FELD Feldberg im Sc 12.83 287 *e*P **Pn 02 27 13.5 -0.3**
ZEI Tsey 12.86 96 *e*P **Pn 02 27 12.9 -1.4**
ZEI pmax pmax
comp=Z,79nm,0.8s
VSU Vasula 12.87 1 *d i* P **Pn 02 27 11.3 -2.7**
VSU pmax pmax
comp=Z,212nm,2.5s
KTD Kalmit 12.94 293 *e*P **Pn 02 27 15.6 +0.5**
BIDA Albida 13.00 141 *e*P **Pn 02 27 16.1 +0.1**
LANF Langenberg 13.07 292 *e*P **Pn 02 27 17.0 +0.3**
AKH Akhalkalaki 13.09 103 P **Pn 02 27 17.3 +0.1**
AKH Akhalkalaki 13.09 103 P **Pn 02 27 17.3 +0.1**
SENIN Lac Senin/Sane 13.32 280 *e*Pn **Pn 02 27 19.0 -1.1**
SENIN Lac Senin/Sane 13.32 280 *e*Pn **Pn 02 27 19.0 -1.1**
GUDG Gudauri 13.37 97 P **Pn 02 27 22.1 +1.2**
MOF Molkenrain 13.41 287 *e*P **Pn 02 27 21.0 -0.2**
ECH Echery 13.42 288 *e*P **Pn 02 27 21.7 +0.5**
HAWK Haweek 13.45 142 *e*P **P 02 27 27.1 +0.8**
LOMF Lomont 13.61 284 *e*P **Pn 02 27 23.2 -0.5**
DUS Dusheti 13.66 98 P **P 02 27 29.3 +0.9**
DUS Dusheti 13.66 98 P **P 02 27 29.3 +0.9**
DUS Dusheti 13.66 98 P **P 02 27 29.3 +0.9**
SFNV Sufian 13.82 127 *e*P Pn 02 27 21.1 -5.3
TBLG Delisi 13.82 100 P **P 02 27 28.5 -1.6**
TBLG Delisi 13.82 100 P **P 02 27 28.5 -1.6**
TBLG Delisi 13.82 100 P **P 02 27 28.5 -1.6**
RABH Abou Rabah 13.88 140 *e*P **P 02 27 31.2 +0.3**
THEF They Montfort 14.20 288 *e*P **Pn 02 27 30.8 -0.3**
BRBR Barbar 14.22 146 *e*P **P 02 27 35.0 +0.2**
WLF Walferdange 14.24 294 P **P 02 27 35.6 +0.9**
comp=Z,16nm,1.9s
DGRG David-gareji 14.36 100 P **P 02 27 35.2 -1.0**
DGRG David-gareji 14.36 100 P **P 02 27 35.2 -1.0**
DGRG David-gareji 14.36 100 P **P 02 27 35.2 -1.0**
MMAI Mount Meron Ar 14.37 148 P **P 02 27 36.5 +0.2**
comp=Z,0.5nm,0.3s,baz=347,slow=11,SNR=4.5
MMAI sP sP 02 28 09.9
comp=Z,1.1nm,0.3s,baz=339,slow=11,SNR=4.4
PUL Pulkovo 14.37 8 ⇑ *i* P **Pn 02 27 30.1 -3.0**
PUL pmax pmax
comp=Z,87nm,1.0s
TOTH TOTAH 14.46 144 *e*P P 02 27 43.0 +5.7
GNI Garni 14.49 106 P **P 02 27 37.7 -0.1**
comp=Z,0.7nm,0.3s,baz=299,slow=2.1,SNR=76
GNI Garni 14.49 106 *i* P **Pn 02 27 35.9 +0.8**
SNR=25
GNI Garni 14.49 106 *d i* P **P 02 27 37.5 -0.3**
GNI Garni 14.49 106 *i* P **P 02 27 37.5 -0.3**
MEM Membach 14.50 297 P **P 02 27 40.1 +2.5**
MZRK Al-Mazaregh 14.54 127 *e*P Pn 02 27 25.6 -10
BEBN Eben Emael 14.75 298 P **P 02 27 43.1 +2.8**
comp=Z,11nm,1.8s
BCLA Clavier 14.91 296 P **P 02 27 44.8 +2.7**
comp=Z,29nm,2.2s
ZALF Zalf 15.22 143 *e*P **P 02 27 46.5 +0.8**
DOU Dourbes 15.30 295 P **P 02 27 48.6 +2.2**
SSB Saint Sauveur 15.35 277 *e*P **Pn 02 27 43.6 -2.0**
SSB pmax pmax
comp=Z,27nm,1.4s
SSB Saint Sauveur 15.35 277 *e*Pn **Pn 02 27 43.6 -2.0**
comp=Z,27nm,1.4s
SSB Saint Sauveur 15.35 277 *e*Pn **Pn 02 27 43.6 -2.0**
comp=Z,27nm,1.4s
SNF Seneffe 15.56 296 P **P 02 27 51.4 +2.1**
ASF Jabal al Asfar 15.69 145 P **P 02 27 52.9 +1.8**
comp=Z,0.3nm,0.3s,baz=219,slow=6.1,SNR=3.9
FINES FINESS Array B 15.86 359 P **Pn 02 27 47.6 -4.1**
comp=Z,1.4nm,0.3s,baz=177,slow=12,SNR=52
FINES S Sn 02 30 32.5 -15
baz=179,slow=21,SNR=3.4
FINES LR LR 02 34 01.2
comp=Z,92nm,18.8s,baz=172,slow=37
FINES FINESS Array B 15.86 359 *i* P **Pn 02 27 47.5 -4.1**
FINES pmax pmax
comp=Z,6.0nm,0.4s
FIA1 FINESS Array S 15.86 359 *e*Pn **Pn 02 27 48.5 -3.2**
comp=Z,65nm,1.4s
PLDF La Plantade 15.90 279 *e*P **Pn 02 27 52.6 +0.2**
PLDF La Plantade 15.90 279 *e*P **Pn 02 27 52.6 +0.2**
AGO Saint Agoulin 16.23 280 *e*P **P 02 27 56.9 +0.1**
AGO Saint Agoulin 16.23 280 *e*P **P 02 27 56.9 +0.1**
KEST Kesra 16.25 239 P **P 02 27 57.9 +0.6**
comp=Z,1.9nm,0.3s,baz=1.6,slow=4.2,SNR=29
KEST Kesra 16.25 239 *e*Pn **P 02 27 57.8 +0.6**
comp=Z,62nm,1.4s
KEST Kesra 16.25 239 *e*Pn **P 02 27 57.8 +0.6**
comp=Z,62nm,1.4s
LBL Lubilhac 16.26 277 *e*P **Pn 02 27 55.9 -0.9**
LBL Lubilhac 16.26 277 *e*P **Pn 02 27 55.9 -0.9**
PYM Petit Puy Mans 16.35 279 *e*P **Pn 02 27 57.7 -0.2**
PYM Petit Puy Mans 16.35 279 *e*P **Pn 02 27 57.7 -0.2**
HFS Hagfors 16.39 337 P **Pn 02 27 56.3 -1.9**
comp=Z,2.6nm,0.3s,baz=139,slow=13,SNR=49
HFS LR LR 02 35 34.3
comp=Z,82nm,20.8s,baz=154,slow=41
HOMB Homborsund 16.73 326 IAMs_20 IAMs_20 02 58 01.3
comp=Z,3μm,14.9s
KLMR Klimovskoe 17.11 22 *c i* P **P 02 28 03.1 -3.1**
KLMR *i* 02 31 03.3
KLMR pmax pmax
comp=Z,59nm,1.0s
OSL Oslo 17.13 332 *e*P **Pn 02 28 07.2 +0.1**
OSL IAMs_20 IAMs_20 02 57 19.8
comp=Z,3μm,13.4s
OSL Oslo 17.13 332 *e*P **Pn 02 28 07.2 +0.1**
SNR=53
EIL Elat 17.28 154 P **P 02 28 08.6 +0.2**
comp=Z,0.7nm,0.3s,baz=352,slow=4.2,SNR=8.3
KONO Kongsberg 17.29 330 *e*P **P 02 28 07.4 -0.9**
KONO IAmb IAmb 02 28 50.5
comp=Z,15nm,0.8s
KONO IAMs_20 IAMs_20 02 57 38.8
comp=Z,3μm,14.8s
KONO Kongsberg 17.29 330 *e*P **P 02 28 07.2 -1.1**
KONO Kongsberg 17.29 330 *e*P **P 02 28 07.4 -0.9**
SNR=53
NC602 NORSAR Array S 17.50 335 *e*P **P 02 28 09.7 -0.9**
NC602 NORSAR Array S 17.50 335 *e*P **P 02 28 09.7 -0.9**
NC405 NORSAR Array S 17.76 336 *e*P **P 02 28 13.0 -0.4**
NC405 NORSAR Array S 17.76 336 *e*P **P 02 28 13.0 -0.4**
NAO01 NORSAR Array S 17.78 335 *e*P **P 02 28 13.6 -0.1**
NAO01 NORSAR Array S 17.78 335 *e*P **P 02 28 13.7 -0.1**
NB201 NORSAR Array S 17.83 336 *e*P **P 02 28 13.7 -0.5**
NB201 NORSAR Array S 17.83 336 *e*P **P 02 28 13.7 -0.5**
NB2 NORSAR Subarra 17.84 335 P **P 02 28 13.2 -1.2**
comp=Z,12nm,0.5s,baz=146,slow=12
NB2 NORSAR Subarra 17.84 335 P **P 02 28 13.2 -1.2**
baz=146,slow=12
NB2 NORSAR Subarra 17.84 335 P **P 02 28 13.2 -1.2**
comp=Z,12nm,0.5s,baz=15,slow=1.2,SNR=8.0
NOA NORSAR Array B 17.84 335 P **P 02 28 12.1 -2.3**
comp=Z,3.3nm,0.3s,baz=278,slow=5.1,SNR=60
NOA LR LR 02 36 28.3
comp=Z,70nm,19.7s,baz=165,slow=41
NC303 NORSAR Array S 17.95 336 *e*P **P 02 28 15.7 +0.2**
NC303 NORSAR Array S 17.95 336 *e*P **P 02 28 15.7 +0.2**
NBO02 NORSAR Array S 17.96 335 *e*P **P 02 28 15.8 +0.2**
NBO02 NORSAR Array S 17.96 335 *e*P **P 02 28 15.8 +0.2**
NBO00 NORSAR Array S 17.96 335 *e*P **P 02 28 15.4 -0.3**
NBO00 NORSAR Array S 17.96 335 *e*P **P 02 28 15.4 -0.3**
NC204 NORSAR Array S 18.16 335 *e*P **P 02 28 18.4 +0.4**
NC204 NORSAR Array S 18.16 335 *e*P **P 02 28 18.4 +0.4**
HYA Hoyanger 19.56 330 *e*P **P 02 28 34.1 +1.1**
HYA IAMs_20 IAMs_20 02 58 29.4
comp=Z,4μm,13.2s
HYA Hoyanger 19.56 330 *e*P **P 02 28 34.1 +1.1**
SNR=52
TMCR Tamitsa 19.69 15 *e*P **P 02 28 32.3 -2.1**
TMCR *e*S **S 02 32 06.0 -2.5**
TMCR pmax pmax
comp=Z,150nm,1.1s
TMCR Tamitsa 19.69 15 *e*P **P 02 28 32.3 -2.1**
comp=Z,150nm,1.1s
TBLU Trondheim 19.90 338 IAMs_20 IAMs_20 02 57 08.6
comp=Z,3μm,14.2s
SUE Sulen 20.00 328 *e*P **P 02 28 38.1 +0.3**
SUE IAmb IAmb 02 28 38.3
comp=Z,21nm,0.8s
SUE IAMs_20 IAMs_20 02 58 45.7
comp=Z,5μm,12.4s
SUE Sulen 20.00 328 *e*P **P 02 28 38.1 +0.3**
SNR=52
AKN Aaknes 20.01 333 *e*P **P 02 28 38.9 +1.0**
AKN IAmb IAmb 02 28 39.3
comp=Z,45nm,0.6s
AKN IAMs_20 IAMs_20 02 58 07.1
comp=Z,4μm,11.9s
AKN Aaknes 20.01 333 *e*P **P 02 28 38.9 +1.0**
SNR=52
MOL Molde 20.13 334 *e*P **P 02 28 40.2 +1.1**
MOL IAMs_20 IAMs_20 02 58 03.0
comp=Z,3μm,15.1s
MOL Molde 20.13 334 *e*P **P 02 28 40.2 +1.1**
SNR=52
FOO Floro 20.26 330 *e*P **P 02 28 40.9 +0.4**
FOO IAMs_20 IAMs_20 02 58 26.3
comp=Z,4μm,12.1s
FOO Floro 20.26 330 *e*P **P 02 28 40.9 +0.4**
SNR=52
NSS Namsos 20.58 342 IAmb IAmb 02 28 43.5
comp=Z,34nm,0.9s
NSS *e*P **P 02 28 43.7 -0.2**
NSS IAMs_20 IAMs_20 02 56 51.2
comp=Z,4μm,24.0s
NSS Namsos 20.58 342 *e*P **P 02 28 43.7 -0.2**
SNR=51
EKA Eskdalemuir Ar 21.03 308 P **P 02 28 48.7 -0.1**
comp=Z,1.6nm,0.5s,baz=110,slow=10,SNR=12
ESK Eskdalemuir 21.05 308 *e*P **P 02 28 48.6 -0.5**
ESK Eskdalemuir 21.05 308 *e*P **P 02 28 48.6 -0.5**
ESK Eskdalemuir 21.05 308 *e*P **P 02 28 48.6 -0.5**
AKTK Aktyubinsk 21.58 66 P **P 02 28 54.4 -0.4**
comp=Z,13nm,0.8s
AKTO Aktyubinsk 21.58 66 P **P 02 28 54.4 -0.4**
comp=Z,13nm,0.8s,baz=268,slow=12,SNR=44
AKTO S **S 02 32 43.7 -1.3**
comp=Z,4.8nm,0.9s,baz=32,slow=21,SNR=4.1
MOR8 Moi Rana 21.59 347 *e*P **P 02 28 55.7 +0.9**
MOR8 Moi Rana 21.59 347 *e*P **P 02 28 55.7 +0.9**
SNR=50
KONS Konsvik 22.11 346 *e*P **P 02 29 00.0 -0.1**
KONS Konsvik 22.11 346 *e*P **P 02 29 00.0 -0.1**
SNR=50
APA Apatity 22.31 7 ⇑ *i* P **P 02 29 03.0 +0.9**
APA *i* S **S 02 32 54.0 -3.0**
APA pmax pmax
comp=Z,186nm,1.7s
APA MLR MLR
comp=Z,1μm,10.0s
APA Apatity 22.31 7 *i* P **P 02 29 03.0 +0.9**
comp=Z,1μm,10.0s
ARU Arti 22.72 50 P **P 02 29 05.6 -0.5**
comp=Z,31nm,0.4s,baz=267,slow=8.4,SNR=31
ARU Arti 22.72 50 *c i* P **P 02 29 05.4 -0.7**
ARU *PP **pP 02 29 29.4 -2.9**
ARU 02 29 37.8
ARU PPP PPP 02 29 44.9
ARU S **S 02 33 05.0 +1.3**
ARU pmax pmax
comp=Z,95nm,1.7s
ARU Arti 22.72 50 *e*P **P 02 29 05.6 -0.5**
comp=Z,64nm,0.7s
ARU Arti 22.72 50 *e*P **P 02 29 05.6 -0.5**
comp=Z,64nm,0.7s
LVZ Lovozero 22.75 8 *c i*P **P 02 29 06.1 -0.2**
LVZ pmax pmax
comp=Z,98nm,1.6s
LVZ Lovozero 22.75 8 *e*P **P 02 29 05.9 -0.4**
comp=Z,331nm,1.0s
LVZ Lovozero 22.75 8 *e*P **P 02 29 05.9 -0.4**
comp=Z,331nm,1.0s
ABKAR Akbulak array 22.86 69 *e*P **P 02 29 07.7 +0.2**
ABKAR Akbulak array 22.86 69 *e*P **P 02 29 07.7 +0.2**
SOKR Solikamsk 22.89 41 *c i*P **P 02 29 06.0 -1.6**
SOKR *PP **pP 02 29 29.8 -4.3**
SOKR pmax pmax
comp=Z,72nm,1.9s
SOKR MLR MLR
comp=Z,88nm,23.0s
SOKR Solikamsk 22.89 41 *i* P **P 02 29 06.0 -1.6**
comp=Z,72nm,1.9s
ES19 SONSECA Array 22.98 266 *e*P **P 02 29 07.9 -0.9**
ES19 SONSECA Array 22.98 266 *e*P **P 02 29 07.9 -0.9**
ESDC Sonseca Array 23.04 266 P **P 02 29 07.8 -1.5**
comp=Z,2.8nm,0.6s,baz=66,slow=9.3,SNR=44
ESDC S **S 02 33 08.9 -0.4**
comp=Z,0.3nm,0.7s,baz=79,slow=23,SNR=2.8
ESLA Sonseca Array 23.04 266 *e*P **P 02 29 08.3 -1.0**
comp=Z,18nm,0.9s
ESLA Sonseca Array 23.04 266 *e*P **P 02 29 08.3 -1.0**
comp=Z,18nm,0.9s
STEI Steigen 23.12 349 *e*P **P 02 29 09.3 -0.4**
STEI Steigen 23.12 349 *e*P **P 02 29 09.3 -0.4**
SNR=42
PAB San Pablo 23.36 266 *e*P **P 02 29 11.3 -1.0**
PAB pmax pmax
comp=Z,23nm,1.3s
PAB San Pablo 23.36 266 *e*P **P 02 29 11.3 -1.0**
comp=Z,23nm,1.3s
PAB San Pablo 23.36 266 *e*P **P 02 29 11.3 -1.0**
comp=Z,23nm,1.3s
KTK1 Kautokeino 23.51 357 *e*P **P 02 29 13.2 -0.1**
KTK1 Kautokeino 23.51 357 *e*P **P 02 29 13.2 -0.1**
SNR=42
SVE Sverdlovsk 23.93 50 *e*P **P 02 29 17.8 +0.6**
SVE pmax pmax
comp=Z,48nm,1.1s
SVE Sverdlovsk 23.93 50 *e*P **P 02 29 17.8 +0.6**
comp=Z,48nm,1.1s
ARA0 ARCESS Array S 23.99 359 *e*P **P 02 29 17.3 -0.3**
ARA0 ARCESS Array S 23.99 359 *e*P **P 02 29 17.3 -0.3**
ARCES ARCESS Array B 23.99 359 P **P 02 29 17.3 -0.3**
comp=Z,4.6nm,0.6s,baz=181,slow=9.2,SNR=74
ARCES S **S 02 33 30.3 +6.4**
comp=Z,2.4nm,0.6s,baz=153,slow=16,SNR=2.2
ARE0 ARCESS Array S 23.99 359 *e*P **P 02 29 17.1 -0.5**
ARE0 ARCESS Array S 23.99 359 *e*P **P 02 29 17.1 -0.5**
PBRG Braganca 24.17 273 *e*P **P 02 29 19.6 0.0**
comp=Z,11nm,1.5s
PBRG *e*pP **pP 02 29 50.8 +2.7**
KEV Kevo 24.21 1 *e*P **P 02 29 20.0 +0.4**
KEV pmax pmax
comp=Z,27nm,1.0s
KEV Kevo 24.21 1 *e*P **P 02 29 20.0 +0.4**
comp=Z,27nm,1.0s
KEV Kevo 24.21 1 *e*P **P 02 29 20.0 +0.4**
comp=Z,27nm,1.0s
TRO Tromso 24.38 354 *e*P **P 02 29 20.7 -0.4**
TRO IAmb IAmb 02 29 22.4
comp=Z,34nm,1.3s
TRO IAMs_20 IAMs_20 02 55 16.3
comp=Z,3μm,11.1s
TRO Tromso 24.38 354 *e*P **P 02 29 20.7 -0.4**
SNR=42
MVO Moncorvo 24.60 272 *e*P **P 02 29 22.8 -0.7**
comp=Z,23nm,1.9s
MVO *e*pP **pP 02 29 55.7 +3.1**
GEYT Alibeck 24.74 97 P **P 02 29 26.9 +2.1**
comp=Z,20nm,0.6s,baz=297,slow=9.8,SNR=54
GEYT pP **pP 02 29 54.1 0.0**
comp=Z,18nm,0.8s,baz=304,slow=11,SNR=5.4
GEYT S **S 02 33 45.8 +9.2**
comp=Z,1.1nm,0.4s,baz=58,slow=25,SNR=2.2
PVRL Vila Real 25.04 272 *e*P **P 02 29 27.9 +0.4**
comp=Z,18nm,1.8s
POLO Lamas de Olo 25.06 273 *e*P **P 02 29 28.2 +0.5**
HAMF Hammerfest 25.13 358 *e*P **P 02 29 28.2 +0.2**
HAMF IAmb IAmb 02 29 47.0
comp=Z,124nm,2.0s
HAMF IAMs_20 IAMs_20 02 54 49.4
comp=Z,2μm,11.7s
HAMF Hammerfest 25.13 358 *e*P **P 02 29 28.2 +0.2**
SNR=41
MTE Manteigas 25.25 270 *e*P **P 02 29 28.4 -1.0**
comp=Z,26nm,1.5s
MTE *e*pP **pP 02 30 00.5 +1.5**
MTE Manteigas 25.25 270 *e*P **P 02 29 28.5 -1.0**
MTE Manteigas 25.25 270 *e*P **P 02 29 28.5 -0.9**
PMRV Marv??o 25.54 268 *e*P **P 02 29 30.6 -1.4**
PMRV *e*pP **pP 02 30 03.6 +2.0**
PBAR Barrancos 25.85 265 *e*P **P 02 29 33.4 -1.4**
comp=Z,28nm,1.6s
PBAR *e*pP **pP 02 30 06.5 +2.2**
PMTG Montargil 26.28 268 *e*P **P 02 29 37.4 -1.3**
PMTG *e*pP **pP 02 30 08.8 +0.6**
EVO Evora 26.37 267 *e*P **P 02 29 40.0 +0.5**
EVO *e*pP **pP 02 30 08.8 -0.2**
PVAQ Vaqueiros 26.69 264 *e*pP pP 02 30 14.5 +2.6
PCVE Castro Verde 26.80 265 *e*pP pP 02 30 15.4 +2.4
PNCL Nicolau / Gran 26.92 266 *e*pP pP 02 30 16.8 +2.8
MDT Midelt 27.05 253 P **P 02 29 45.3 -0.4**
comp=Z,2.1nm,0.7s,baz=91,slow=10,SNR=6.3
ZRNK Zerenda 28.38 59 *e*P **P 02 29 58.5 +1.2**
ZRNK pmax pmax
comp=Z,29nm,1.0s
ZRNK Zerenda 28.38 59 *e*P **P 02 29 58.5 +1.2**
comp=Z,29nm,1.0s
ZRNK Zerenda 28.38 59 *e*P **P 02 29 58.5 +1.2**
comp=Z,29nm,1.0s
TAM Tamanrasset 28.42 224 *e*P **P 02 29 59.8 +1.8**
TAM *e*PP **pP 02 30 30.9 +3.0**
TAM Tamanrasset 28.42 224 *e*P **P 02 29 59.8 +1.8**
TAM *e*pP **pP 02 30 30.9 +3.0**
TAM Tamanrasset 28.42 224 *e*P **P 02 29 59.8 +1.8**
TAM *e*pP **pP 02 30 30.9 +3.0**
BRVK Borovoye 29.15 59 *c i*P **P 02 30 05.3 +1.3**
BRVK pmax pmax
comp=Z,24nm,1.4s
BRVK Borovoye 29.15 59 *e*P **P 02 30 05.6 +1.6**
BRVK Borovoye 29.15 59 *e*P **P 02 30 05.6 +1.6**
BRVK *e* 02 30 33.7
BVAR Borovoye Array 29.22 59 P **P 02 30 06.0 +1.4**
comp=Z,3.6nm,0.5s,baz=275,slow=7.3,SNR=28
BVAR pP **pP 02 30 34.5 0.0**
comp=Z,7.1nm,0.8s,baz=282,slow=7.4,SNR=6.0
JMIC Jan Mayen 30.50 338 LR LR 02 41 52.2
comp=Z,50nm,21.3s,baz=230,slow=35
JMIC Jan Mayen 30.50 338 IAMs_20 IAMs_20 03 01 08.5
comp=Z,425nm,13.3s
BANOM Banah 30.94 119 *i* P **P 02 30 20.3 +0.2**
SNR=6.3
KKAR Karatay Array 31.33 79 *e*P **P 02 30 25.1 +1.7**
KKAR pmax pmax
comp=Z,9.0nm,0.5s
KKAR Karatay Array 31.33 79 *e*P **P 02 30 25.1 +1.7**
comp=Z,9.0nm,0.5s
KKAR Karatay Array 31.33 79 *e*P **P 02 30 25.1 +1.7**
comp=Z,9.0nm,0.5s
UOSS Minazif 31.60 121 *e*P **P 02 30 26.2 +0.3**
comp=Z,0.7nm,0.7s
UOSS Minazif 31.60 121 *e*P **P 02 30 26.2 +0.3**
comp=Z,0.7nm,0.7s
HATD Hatta, Dubai 31.65 121 P **P 02 30 26.4 +0.1**
ASHO Ashiyiah 31.71 121 *i* P **P 02 30 26.9 0.0**
SNR=12
HSPB Hornsund (broa 31.80 355 IAMs_20 IAMs_20 03 00 20.5
comp=Z,2μm,17.4s
SPITS Spitsbergen Ar 32.91 356 P **P 02 30 37.5 +0.7**
comp=Z,4.1nm,0.4s,baz=144,slow=13,SNR=56
SPITS LR LR 02 46 00.5
comp=Z,43nm,18.6s,baz=195,slow=40
EKS2 Erkin-Say 33.73 78 *e*P **P 02 30 46.5 +2.0**
EKS2 pmax pmax
comp=Z,18nm,0.7s
EKS2 Erkin-Say 33.73 78 *e*P **P 02 30 46.5 +2.0**
comp=Z,18nm,0.7s
EKS2 Erkin-Say 33.73 78 *e*P **P 02 30 46.5 +2.0**
comp=Z,18nm,0.7s
AML Almayashu 33.87 79 P **P 02 30 44.6 -1.4**
KBS Kingsbay 33.87 355 IAMs_20 IAMs_20 03 00 42.4

comp=Z,1µm,15.6s
KBS Kingsbay 33.87 355 eP P 02 30 45.5 +0.4
KBS pmax pmax
comp=Z,33nm,0.7s
KBS Kingsbay 33.87 355 eP P 02 30 45.5 +0.4
comp=Z,33nm,0.7s
KBS Kingsbay 33.87 355 eP P 02 30 45.5 +0.4
comp=Z,33nm,0.7s
AAK Ala-Archa 34.23 77 P P 02 30 51.1 +2.2
comp=Z,9.9nm,0.5s,baz=250,slow=4.3,SNR=44
AAK pP pP 02 31 20.0 +0.9
comp=Z,9.4nm,0.8s,baz=261,slow=10.0,SNR=4.4
AAK Ala-Archa 34.23 77c iP P 02 30 51.0 +2.2
AAK pmax pmax
comp=Z,126nm,1.5s
AAK Ala-Archa 34.23 77 eP P 02 30 51.0 +2.2
comp=Z,74nm,1.4s
AAK pP pP 02 31 20.0 +0.9
AAK Ala-Archa 34.23 77 eP P 02 30 51.0 +2.2
comp=Z,74nm,1.4s
AAK pP pP 02 31 20.0 +0.9
FRU Bishkek 34.24 77 iP P 02 30 50.0 +1.2
FRU pmax pmax
comp=Z,43nm,1.7s
FRU Bishkek 34.24 77 iP P 02 30 50.0 +1.2
comp=Z,43nm,1.7s
KURBB Kurchatov Arra 34.55 62 P P 02 30 52.0 +0.8
comp=Z,5.7nm,0.5s,baz=286,slow=9.3,SNR=40
KURBB pP pP 02 31 21.2 -0.4
comp=Z,2.3nm,0.6s,baz=287,slow=9.3,SNR=4.6
KURK Kurchatov 34.58 62 eP P 02 30 52.4 +0.9
KURK e*PP pP 02 31 21.4 -0.4
KURK pmax pmax
comp=Z,9.0nm,0.8s
KURK Kurchatov 34.58 62 eP P 02 30 52.4 +0.9
comp=Z,8.5nm,0.8s
KURK epP pP 02 31 21.4 -0.4
KURK Kurchatov 34.58 62 eP P 02 30 52.4 +0.9
comp=Z,8.5nm,0.8s
KURK epP pP 02 31 21.4 -0.4
TKM2 Tokmak 2 34.88 76 eP P 02 30 55.0 +0.5
TKM2 e*PP pP 02 31 25.8 +1.0
TKM2 pmax pmax
comp=Z,19nm,1.2s
TKM2 Tokmak 2 34.88 76 eP P 02 30 55.0 +0.5
comp=Z,19nm,1.2s
TKM2 epP pP 02 31 25.8 +1.0
TKM2 Tokmak 2 34.88 76 eP P 02 30 55.0 +0.5
comp=Z,19nm,1.2s
TKM2 epP pP 02 31 25.8 +1.0
KSH Kashi 36.52 82 P P 02 31 09.8 +1.4
KSH epP pP 02 31 40.5 +1.6
KSH esP sP 02 31 56.8 +1.8
KSH S S 02 36 39.7 -0.5
KSH pmax pmax
comp=Z,21nm,1.1s
KSH pmax pmax
comp=Z,86nm,2.1s
KSH LR LR
comp=N,310nm,5.1s
KSH LR LR
comp=E,310nm,5.7s
KSH LR LR
comp=Z,340nm,8.1s
NVS Novosibirsk 36.56 54⇑ iP P 02 31 10.0 +1.7
NVS e 02 31 38.9
NVS pmax pmax
comp=Z,40nm,1.3s
NVS pmax pmax
comp=E,14nm,1.0s
NVS Novosibirsk 36.56 54 iP P 02 31 10.0 +1.7
comp=E,40nm,1.3s
ZAA0 Zalesovo Array 37.63 56 eP P 02 31 18.4 +1.0
ZAA0 Zalesovo Array 37.63 56 eP P 02 31 18.4 +1.0
ZALV Zalesovo Beam 37.63 56 P P 02 31 18.4 +1.0
comp=E,21nm,0.5s,baz=282,slow=9.7,SNR=47
ZALV pP pP 02 31 48.0 -0.1
comp=E,34nm,0.7s,baz=279,slow=9.6,SNR=16
MAKZ Makanchi 37.78 68 eP P 02 31 19.9 +1.1
MAKZ e*PP pP 02 31 50.1 +0.6
MAKZ Makanchi 37.78 68 eP P 02 31 19.9 +1.1
MAKZ epP pP 02 31 50.1 +0.6
MAKZ Makanchi 37.78 68 eP P 02 31 19.9 +1.1
MAKZ epP pP 02 31 50.1 +0.6
MK31 Makanchi Array 37.99 68 eP P 02 31 21.7 +1.1
MK31 Makanchi Array 37.99 68 eP P 02 31 21.6 +1.1
MK31 Makanchi Array 37.99 68 eP P 02 31 21.6 +1.1
MKAR Makanchi Array 37.99 68 P P 02 31 21.6 +1.0
comp=E,4.5nm,0.4s,baz=273,slow=8.8,SNR=48
MKAR pP pP 02 31 51.5 +0.2
comp=E,9.7nm,0.6s,baz=276,slow=7.8,SNR=14
MK01 Makanchi Array 38.01 68 eP P 02 31 21.6 +0.9
MK01 Makanchi Array 38.01 68 eP P 02 31 21.6 +0.9
NRIK Noril'sk 38.17 30 P P 02 31 23.2 +1.5
comp=E,2.4nm,0.3s,baz=264,slow=7.2,SNR=6.4
TOA0 Torodi Ar. Sit 38.55 221 eP P 02 31 26.0 +0.5
comp=E,12nm,0.6s
TOA0 Torodi Ar. Sit 38.55 221 eP P 02 31 26.0 +0.5
comp=E,12nm,0.6s
TORD Torodi Ar. Bea 38.55 221 P P 02 31 25.6 +0.1
comp=E,10nm,0.5s,baz=30,slow=8.6,SNR=282
TORD PcP PcP 02 33 34.3 -1.0
comp=E,2.9nm,0.7s,baz=25,slow=1.7,SNR=3.6
KRAR Krasnoyarsk 41.68 51 P P 02 31 50.5 -0.3
KRAR pmax pmax
comp=Z,19nm,0.6s
WMQ Urumqi 42.64 70 eP P 02 32 00.0 +1.1
WMQ pP pP 02 32 31.3 +1.1
WMQ sP sP 02 32 44.0 -2.0
WMQ pmax pmax
comp=Z,8.0nm,1.4s
WMQ pmax pmax
comp=Z,47nm,3.6s
DBIC Dimbokro 47.31 225 P P 02 32 35.2 -0.7
comp=Z,7.0nm,0.4s,baz=11,slow=9.1,SNR=34
DBIC pP pP 02 33 07.6 -0.2
comp=Z,14nm,0.8s,baz=3.0,slow=9.9,SNR=7.6
TIC Toumodi 47.41 225 eP P 02 32 36.0 -0.7
KIC Kosan Boka 47.52 224 eP P 02 32 37.2 -0.4
comp=Z,12nm,0.5s
PYUN Piuthan 47.52 91 eP P 02 32 39.2 +1.4
comp=Z,63nm,0.7s
KMBO Kilima Mbogo 47.52 165 P P 02 32 38.2 +0.4
comp=Z,1.0nm,0.6s,baz=354,slow=9.2,SNR=4.1
KMBO pP pP 02 33 10.5 +0.8
comp=Z,1.2nm,0.8s,baz=20,slow=14,SNR=2.6
LIC Lamto 47.78 224 eP P 02 32 38.9 -0.6
comp=Z,15nm,0.7s
KOLN Koldanda 48.15 91 eP P 02 32 43.5 +0.9
comp=Z,36nm,0.8s
GKN Gorkha 48.74 90 eP P 02 32 47.8 +0.8
comp=Z,99nm,0.8s
TLY Talaya 49.16 53 P P 02 32 51.7 +2.0
comp=Z,5.3nm,0.4s,baz=324,slow=23,SNR=3.8
TLY pP pP 02 33 23.1 +1.3
comp=Z,10nm,0.7s,baz=300,slow=6.7,SNR=4.3
TLY Talaya 49.16 53 eP P 02 32 50.7 +1.0
comp=Z,8.2nm,0.7s
TLY epP pP 02 33 23.1 +1.3
TLY Talaya 49.16 53 eP P 02 32 50.7 +1.0
comp=Z,8.2nm,0.7s
TLY epP pP 02 33 23.1 +1.3
KKN Kakani 49.32 90 eP P 02 32 52.3 +0.8
comp=Z,63nm,0.6s
ZAK Zakamensk 49.51 55 eP P 02 32 54.0 +1.4
ZAK e 02 33 24.4
ZAK pmax pmax
comp=Z,6.0nm,1.2s
ZAK pmax pmax
comp=Z,6.0nm,1.0s
PKIN Phulchoki 49.53 90 eP P 02 32 53.8 +0.6
comp=Z,17nm,0.6s
GUN Gumba 49.66 90 eP P 02 32 55.1 +0.8
comp=Z,62nm,0.7s
TIXI Tiksi 51.12 23⇓ eP P 02 33 04.7 +0.5
TIXI pmax pmax
comp=Z,9.0nm,1.7s
HYB Hyderabad 51.45 105 iP P 02 33 07.0 -0.4
BOD Bodaibo 51.86 43 eP P 02 33 09.0 -0.9
BOD pmax pmax
comp=Z,9.0nm,1.1s
LSA Lhasa 52.28 84 eP P 02 33 15.3 +1.3
LSA pmax pmax
comp=Z,16nm,0.6s
LSA Lhasa 52.28 84 eP P 02 33 15.3 +1.3
comp=Z,16nm,0.6s
LSA Lhasa 52.28 84 eP P 02 33 15.3 +1.3
comp=Z,16nm,0.6s
SONA1 Songino Array 52.51 57 eP P 02 33 16.0 +1.0
SONA1 epP pP 02 33 47.2 -0.3
SONA1 Songino Array 52.51 57 eP P 02 33 16.0 +1.0
SONA1 epP pP 02 33 47.2 -0.3
SONM Songino Array 52.51 57 P P 02 33 16.1 +1.1
comp=Z,6.5nm,0.4s,baz=298,slow=8.3,SNR=62
SONM pP pP 02 33 47.6 +0.2
comp=Z,12nm,0.8s,baz=298,slow=8.6,SNR=17
GTA Gaotai 52.72 69 P P 02 33 17.7 +1.0
GTA pP pP 02 33 48.7 -0.4
GTA sP sP 02 34 04.6 -0.1
GTA pmax pmax
comp=Z,10.0nm,0.8s
ULN Ulaanbaatar 52.88 56c iP P 02 33 19.1 +1.3
ULN pmax pmax
comp=Z,10.0nm,1.2s
ULN Ulaanbaatar 52.88 56 eP P 02 33 19.0 +1.3
comp=Z,3.3nm,0.5s
ULN epP pP 02 33 50.5 +0.3
ULN Ulaanbaatar 52.88 56 eP P 02 33 19.0 +1.3
comp=Z,3.3nm,0.5s
ULN epP pP 02 33 50.5 +0.3
RES Resolute Bay 53.86 344 eP P 02 33 24.1 -0.2
RES pmax pmax
comp=Z,1.0nm,0.7s
RES Resolute Bay 53.86 344 eP P 02 33 24.1 -0.2
comp=Z,1.1nm,0.7s
RES Resolute Bay 53.86 344 eP P 02 33 24.1 -0.2
comp=Z,1.2nm,0.7s
SCHQ Schefferville 56.08 316 P P 02 33 39.5 -1.1
comp=Z,2.4nm,0.7s,baz=74,slow=5.4,SNR=5.7
SCHQ pP pP 02 34 13.1 -0.3
comp=Z,3.3nm,0.8s,baz=278,slow=16,SNR=3.0
YAK Yakutsk 56.48 33 iP P 02 33 43.4 +0.2
YAK pmax pmax
comp=Z,11nm,0.7s
LZH Lanzhou 57.22 70 eP P 02 33 50.7 +1.6
LZH pP pP 02 34 23.9 +1.9
LZH sP sP 02 34 38.5 +1.1
LZH pmax pmax
comp=Z,23nm,1.4s
HHC Hu-ho-hao-te 59.39 61 eP P 02 34 04.2 +0.2
HHC pmax pmax
comp=Z,17nm,1.1s
HHC pmax pmax
comp=Z,49nm,3.8s
CD2 Chengdu 60.24 75 P P 02 34 08.2 -1.7
CD2 pmax pmax
comp=Z,1.0nm,0.5s
LSZ Lusaka 60.62 178 eP P 02 34 13.1 +0.5
LSZ pmax pmax
comp=Z,14nm,1.4s
LSZ Lusaka 60.62 178 eP P 02 34 13.1 +0.5
comp=Z,14nm,1.4s
LSZ Lusaka 60.62 178 eP P 02 34 13.1 +0.5
comp=Z,14nm,1.4s
BJI Beijing 62.70 60 P P 02 34 26.9 +0.8
BJI pmax pmax
comp=Z,11nm,1.3s
BILL Bilibino 62.73 16cc eP P 02 34 26.0 0.0
BILL e*PP pP 02 34 59.1 -0.3
BILL e*SP sP 02 35 09.9 -4.9
BILL e 02 36 47.4
BILL pmax pmax
comp=Z,8.0nm,1.4s
BILL Bilibino 62.73 16 eP P 02 34 25.9 0.0
comp=Z,3.7nm,0.8s
BILL Bilibino 62.73 16 eP P 02 34 25.9 0.0
comp=Z,3.7nm,0.8s
KMI Kunming 63.18 81 P P 02 34 30.5 +0.6
KMI pmax pmax
comp=Z,24nm,1.2s
SEY Seymchan 63.59 24⇓ eP P 02 34 33.1 +1.4
ENH Enshi 64.50 72 eP P 02 34 38.1 -0.1
comp=Z,8.3nm,0.5s
ENH Enshi 64.50 72 eP P 02 34 38.1 -0.1
comp=Z,8.3nm,0.5s
CHTO Chiang Mai 64.66 89 eP P 02 34 39.7 +0.3
CHTO pmax pmax
comp=Z,21nm,0.8s
CHTO Chiang Mai 64.66 89 eP P 02 34 39.7 +0.3
comp=Z,21nm,0.8s
CHTO Chiang Mai 64.66 89 eP P 02 34 39.7 +0.3
comp=Z,21nm,0.8s
CM31 Chiang Mai Arr 64.90 89 eP P 02 34 41.7 +0.8
CM31 Chiang Mai Arr 64.90 89 eP P 02 34 41.7 +0.8
CMAR Chiang Mai Arr 64.90 89 P P 02 34 41.4 +0.5
comp=Z,14nm,0.7s,baz=304,slow=7.7,SNR=41
CMAR pP pP 02 35 15.8 +1.2
comp=Z,4.4nm,0.7s,baz=307,slow=7.3,SNR=5.0
CMAR Chiang Mai Arr 64.90 89 P P 02 34 41.4 +0.5
CMAR *PP pP 02 35 15.8 +1.2
CMAR pmax pmax
comp=Z,15nm,0.7s
CMAR pmax pmax
comp=Z,4.0nm,0.7s
CM01 Chiang Mai Arr 64.94 89 eP P 02 34 40.8 -0.3
CM01 Chiang Mai Arr 64.94 89 eP P 02 34 40.8 -0.3
FCC Fort Churchill 65.02 330 eP P 02 34 39.9 -1.1
FCC pmax pmax
comp=Z,3.0nm,0.6s
FCC Fort Churchill 65.02 330 eP P 02 34 39.9 -1.1
comp=Z,3.3nm,0.6s
FCC Fort Churchill 65.02 330 eP P 02 34 39.9 -1.1
comp=Z,3.3nm,0.6s
GYA Guiyang 65.02 77 eP P 02 34 43.0 +1.2
GYA pP pP 02 35 17.2 +1.7
GYA sP sP 02 35 33.4 +2.7
GYA PP PP 02 37 09.6 +3.3
GYA S S 02 43 11.8 -1.0
GYA sS sS 02 44 11.0 0.0
GYA pmax pmax
comp=Z,10.0nm,1.0s
KLR Kul'dur 65.40 44 eP P 02 34 43.8 +0.1
INK Inuvik 65.41 352 P P 02 34 43.0 -0.3
comp=Z,2.0nm,0.4s,baz=24,slow=6.1,SNR=43
INK PcP PcP 02 35 14.7 +0.5
comp=Z,1.9nm,0.6s,baz=43,slow=9.9,SNR=5.2
INK Inuvik 65.41 352 eP P 02 34 43.1 -0.3
comp=Z,3.4nm,0.4s
INK Inuvik 65.41 352 eP P 02 34 43.1 -0.3
comp=Z,3.4nm,0.4s
INK PcP PcP 02 35 14.7 +0.5
MA2 Magadan 65.69 27 eP P 02 34 45.3 -0.1
COLD Coldfoot 67.46 359 eP P 02 34 57.5 +1.0
comp=Z,5.7nm,1.0s
COLD Coldfoot 67.46 359 eP P 02 34 57.5 +1.0
comp=Z,5.7nm,1.0s
COLD epP pP 02 35 37.5 +7.1
WHN Wuhan 67.54 69 ⇑P P 02 34 59.6 +2.0
YKW3 Yellowknife Ar 67.76 342 eP P 02 34 57.4 -1.0
YKW3 epP pP 02 35 31.3 -1.1
YKW3 Yellowknife Ar 67.76 342 eP P 02 34 57.4 -1.0
YKW3 epP pP 02 35 31.3 -1.1
YKA Yellowknife Ar 67.82 342 P P 02 34 58.3 -0.4
comp=Z,2.6nm,0.6s,baz=30,slow=5.9,SNR=68
YKA pP pP 02 35 31.7 -1.0
comp=Z,1.8nm,0.7s,baz=28,slow=6.1,SNR=7.3
YKA sP sP 02 35 48.3 +0.4
comp=Z,0.8nm,0.6s,baz=25,slow=6.5,SNR=4.1
YKB5 Yellowknife Ar 67.82 342 eP P 02 34 58.0 -0.8
YKB5 epP pP 02 35 31.3 -1.4
YKB5 Yellowknife Ar 67.82 342 eP P 02 34 58.0 -0.8
YKB5 epP pP 02 35 31.3 -1.4
USRK Ussuriysk Ar. 68.94 48 P P 02 35 06.0 0.0
comp=Z,1.3nm,0.5s,baz=294,slow=3.5,SNR=7.1
USRK pP pP 02 35 40.7 +0.5
comp=Z,2.6nm,0.7s,baz=312,slow=6.0,SNR=5.1
NJ2 Nanjing 69.46 65 eP P 02 35 10.0 +0.5
NJ2 pmax pmax
comp=Z,21nm,0.5s
EGAK Eagle 69.52 354 eP P 02 35 09.9 +0.6
comp=Z,5.2nm,1.1s
EGAK Eagle 69.52 354 eP P 02 35 09.9 +0.6
comp=Z,5.2nm,1.1s
MLY Manley 69.67 359 eP P 02 35 10.9 +0.6
comp=Z,13nm,1.4s
MLY Manley 69.67 359 eP P 02 35 10.9 +0.6
comp=Z,13nm,1.4s
MDM Murphy Dome 69.69 358 eP P 02 35 11.3 +0.9
comp=Z,10nm,1.1s
MDM Murphy Dome 69.69 358 eP P 02 35 11.3 +0.9
comp=Z,10nm,1.1s
COLA College 69.76 357⇓ iP P 02 35 11.9 +1.2
COLA pmax pmax
comp=Z,5.0nm,0.9s
COLA College 69.76 357 eP P 02 35 10.9 +0.2
comp=Z,4.3nm,0.8s
COLA College 69.76 357 eP P 02 35 10.9 +0.2
comp=Z,4.3nm,0.8s
ILAR Eielson Array 69.83 357 P P 02 35 11.5 +0.3
comp=Z,0.9nm,0.7s,baz=357,slow=5.8,SNR=9.5
ILAR pP pP 02 35 46.1 +0.8
comp=Z,0.6nm,0.7s,baz=3.6,slow=7.2,SNR=2.9
DAWY Dawson 70.09 353 eP P 02 35 13.5 +0.6
comp=Z,8.6nm,0.8s
DAWY Dawson 70.09 353 eP P 02 35 13.5 +0.6
comp=Z,8.6nm,0.8s
WRH Wood River Hil 70.17 357 eP P 02 35 13.9 +0.6
comp=Z,6.4nm,0.9s
WRH Wood River Hil 70.17 357 eP P 02 35 13.9 +0.6
comp=Z,6.4nm,0.9s
BPAW Bear Paw Mtn. 70.61 359 eP P 02 35 16.6 +0.6
comp=Z,13nm,1.4s
BPAW Bear Paw Mtn. 70.61 359 eP P 02 35 16.6 +0.6
comp=Z,13nm,1.4s
DOT Dot Lake 70.82 356 eP P 02 35 18.1 +0.8
comp=Z,25nm,0.8s
DOT epP pP 02 35 52.2 +0.7
DOT Dot Lake 70.82 356 eP P 02 35 18.1 +0.8
comp=Z,25nm,0.8s
DOT epP pP 02 35 52.2 +0.7
MCK McKinley 70.93 358 eP P 02 35 18.0 0.0
MCK pmax pmax
comp=Z,10.0nm,1.0s
MCK McKinley 70.93 358 eP P 02 35 18.0 0.0
comp=Z,9.7nm,1.0s
MCK McKinley 70.93 358 eP P 02 35 18.0 0.0
comp=Z,9.7nm,1.0s
CAST Castle Rocks 71.30 359 eP P 02 35 20.9 +0.7
comp=Z,7.1nm,0.9s
CAST Castle Rocks 71.30 359 eP P 02 35 20.9 +0.7
comp=Z,7.1nm,0.9s
KSAR Wonju Array Be 71.33 55 P P 02 35 21.0 +0.3
KSAR Wonju Array Be 71.33 55 P P 02 35 21.0 +0.3
KSAR pP pP 02 35 54.4 -0.6
KSAR Wonju Array Be 71.33 55 P P 02 35 20.9 +0.3
KSAR pP pP 02 35 54.4 -0.6
KSRS Korea Array 71.34 55 P P 02 35 20.9 +0.2
comp=Z,3.0nm,0.7s,baz=317,slow=5.5,SNR=10
KSRS pP pP 02 35 54.4 -0.7
comp=Z,3.2nm,0.8s,baz=311,slow=5.1,SNR=6.7
KSRS Korea Array 71.34 55 P P 02 35 21.0 +0.2
KSRS pmax pmax
comp=Z,3.0nm,0.7s
KSRS pmax pmax
comp=Z,3.0nm,0.8s
DHY Denali Highway 71.54 357 eP P 02 35 22.5 +0.7
comp=Z,10nm,1.0s
DHY Denali Highway 71.54 357 eP P 02 35 22.5 +0.7
comp=Z,10nm,1.0s
YSS Yuzh-Sakhalins 72.20 40⇑ iP P 02 35 26.5 +0.7
YSS Yuzh-Sakhalins 72.20 40 eP P 02 35 25.7 -0.1
comp=Z,21nm,0.8s
YSS Yuzh-Sakhalins 72.20 40 eP P 02 35 25.7 -0.1
comp=Z,21nm,0.8s
ULM Lac du Bonnet 72.22 325 P P 02 35 24.8 -1.0
comp=Z,1.8nm,0.4s,baz=21,slow=10,SNR=2.8
ULM pP pP 02 35 59.9 -0.3
comp=Z,6.5nm,0.9s,baz=34,slow=1.3,SNR=4.9
BOSA Boshof 73.88 181 P P 02 35 35.3 -0.6
comp=Z,1.5nm,0.6s,baz=358,slow=7.1,SNR=6.3
BOSA pP pP 02 36 10.6 +0.2
comp=Z,3.7nm,0.7s,baz=357,slow=5.4,SNR=5.7
BOSA Boshof 73.88 181 P P 02 35 35.3 -0.6
BOSA pmax pmax
comp=Z,2.0nm,0.6s
BOSA pmax pmax
comp=Z,5.0nm,0.7s
KULM Kulim 75.22 98 eP P 02 35 43.5 -0.4
comp=Z,11nm,0.8s
KULM Kulim 75.22 98 eP P 02 35 43.5 -0.4
comp=Z,11nm,0.8s
RCBR Riachuelo 75.37 246 eP P 02 35 45.0 +0.3
comp=Z,5.5nm,0.8s
RCBR Riachuelo 75.37 246 eP P 02 35 45.0 +0.3
comp=Z,5.5nm,0.8s
PSI Prapat 75.80 101 P P 02 35 46.8 -0.5
comp=Z,5.2nm,0.5s,baz=305,slow=6.8,SNR=8.7
PSI pP pP 02 36 22.9 +0.9
comp=Z,4.7nm,0.5s,baz=291,slow=9.1,SNR=2.5
PSI Prapat 75.80 101 eP P 02 35 47.2 -0.1
PSI pmax pmax
comp=Z,20nm,1.1s
PSI Prapat 75.80 101 eP P 02 35 47.2 -0.1
comp=Z,20nm,1.1s
PSI pP pP 02 36 22.9 +0.9
IPM Ipoh 76.06 98 eP P 02 35 47.9 -0.8
comp=Z,14nm,0.7s
IPM Ipoh 76.06 98 eP P 02 35 47.9 -0.8
comp=Z,14nm,0.7s
KDAK Kodiak Island 76.96 359 iP P 02 35 52.0 -1.0
ECSD EROS Data Cent 77.68 322 eP P 02 35 56.2 -1.1
ECSD epP pP 02 36 31.4 -0.8
ECSD EROS Data Cent 77.68 322 eP P 02 35 56.2 -1.1
ECSD epP pP 02 36 31.4 -0.8
MAJO Matsushiro 77.73 50 eP P 02 35 59.1 +1.3
MAJO pmax pmax
comp=Z,4.0nm,0.6s
MAJO Matsushiro 77.73 50 eP P 02 35 59.1 +1.3
comp=Z,3.7nm,0.6s
MAJO Matsushiro 77.73 50 eP P 02 35 59.1 +1.3
comp=Z,3.7nm,0.6s
MJAR Matsushiro Arr 77.73 50 P P 02 35 57.9 +0.2
comp=Z,1.3nm,0.7s,baz=17,slow=3.5,SNR=3.9
MJAR pP pP 02 36 34.3 +1.7
comp=Z,2.0nm,0.8s,baz=335,slow=2.5,SNR=4.3
EGMT Eagleton 79.16 332 eP P 02 36 05.5 0.0
comp=Z,8.2nm,0.7s
EGMT epP pP 02 36 41.2 +0.8
EGMT Eagleton 79.16 332 eP P 02 36 05.5 0.0
comp=Z,8.2nm,0.7s
EGMT epP pP 02 36 41.2 +0.8
RSSD Black Hills 80.43 326 eP P 02 36 12.2 -0.4
RSSD pmax pmax
comp=Z,3.0nm,0.8s
RSSD Black Hills 80.43 326 eP P 02 36 12.2 -0.4
comp=Z,3.3nm,0.8s
RSSD Black Hills 80.43 326 eP P 02 36 12.2 -0.4
comp=Z,3.3nm,0.8s
JTMT Jette 80.84 334 eP P 02 36 14.9 +0.3
JTMT Jette 80.84 334 eP P 02 36 14.9 +0.3
SWMT Swartz Lake 80.97 334 eP P 02 36 15.5 +0.3
SWMT epP pP 02 36 51.3 +1.0
SWMT Swartz Lake 80.97 334 eP P 02 36 15.5 +0.3
SWMT epP pP 02 36 51.3 +1.0
NEW Newport 81.21 336 eP P 02 36 16.1 -0.3
NEW pmax pmax
comp=Z,2.0nm,0.8s
NEW Newport 81.21 336 eP P 02 36 16.1 -0.3
comp=Z,2.0nm,0.8s
NEW Newport 81.21 336 eP P 02 36 16.1 -0.3
comp=Z,2.0nm,0.8s
LRAL Lakeview Retre 81.24 309 eP P 02 36 15.7 -1.1
LRAL epP pP 02 36 51.9 +0.1
LRAL Lakeview Retre 81.24 309 eP P 02 36 15.7 -1.1
LRAL epP pP 02 36 51.9 +0.1
BOZ Bozeman (W) 81.86 332 eP P 02 36 19.7 -0.3
BOZ pmax pmax
comp=Z,1.0nm,0.7s
BOZ Bozeman (W) 81.86 332 eP P 02 36 19.7 -0.3
comp=Z,0.9nm,0.7s
BOZ Bozeman (W) 81.86 332 eP P 02 36 19.7 -0.3
comp=Z,0.9nm,0.7s
FLWY Flagg Ranch 82.92 330 eP P 02 36 26.1 +0.5
comp=Z,2.8nm,0.6s
FLWY epP pP 02 37 03.0 +2.2
FLWY Flagg Ranch 82.92 330 eP P 02 36 26.1 +0.5
comp=Z,2.8nm,0.6s
FLWY epP pP 02 37 03.0 +2.2
IMW Indian Meadow 83.17 330 eP P 02 36 27.0 0.0
comp=Z,1.5nm,0.5s
IMW epP pP 02 37 02.8 +0.6
IMW Indian Meadow 83.17 330 eP P 02 36 27.0 0.0
comp=Z,1.5nm,0.5s
IMW epP pP 02 37 02.8 +0.6
PHWY Pilot Hill 83.37 326 eP P 02 36 28.3 +0.2
PHWY epP pP 02 37 04.4 +1.0
PHWY Pilot Hill 83.37 326 eP P 02 36 28.3 +0.2

PHWY			*e*pP	**pP**	**02 37 04.4**	**+1.0**
FXWY	**Fox Creek**	**83.42 330**	*e*P	**P**	**02 36 29.5**	**+1.2**
FXWY	**Fox Creek**	**83.42 330**	*e*P	**P**	**02 36 29.5**	**+1.2**
BW06	**Boulder Array**	**83.67 329**	*e*P	**P**	**02 36 29.0**	**-0.5**
BW06	**Boulder Array**	**83.67 329**	*e*P	**P**	**02 36 29.0**	**-0.5**
PD31	**Pinedale Array**	**83.67 329**	*e*P	**P**	**02 36 29.5**	**0.0**
PD31	**Pinedale Array**	**83.67 329**	*e*P	**P**	**02 36 29.4**	**0.0**
PDAR	**Pinedale Array**	**83.67 329**	P	**P**	**02 36 28.9**	**-0.5**
	comp=Z,0.7nm,0.5s,baz=46,slow=4.3,SNR=9.1					
PDAR			pP	**pP**	**02 37 04.7**	**-0.1**
	comp=Z,1.7nm,0.9s,baz=46,slow=4.9,SNR=3.9					
BMO	**Blue Mountains**	**84.36 335**	*e*P	**P**	**02 36 31.3**	**-1.5**
	comp=Z,5.5nm,0.6s					
BMO			*e*pP	**pP**	**02 37 08.3**	**+0.2**
BMO	**Blue Mountains**	**84.36 335**	*e*P	**P**	**02 36 31.3**	**-1.5**
	comp=Z,5.5nm,0.6s					
BMO			*e*pP	**pP**	**02 37 08.3**	**+0.2**
HLID	**Hailey**	**84.63 333**	*e*P	**P**	**02 36 34.5**	**+0.2**
	comp=Z,0.9nm,0.7s					
HLID	**Hailey**	**84.63 333**	*e*P	**P**	**02 36 34.5**	**+0.2**
	comp=Z,0.9nm,0.7s					
ISCO	**Idaho Springs**	**84.71 325**	*e*P	**P**	**02 36 30.3**	**-4.7**
ISCO			pmax	pmax		
	comp=Z,1.0nm,0.7s					
ISCO	**Idaho Springs**	**84.71 325**	*e*P	**P**	**02 36 30.2**	**-4.7**
	comp=Z,0.9nm,0.7s					
ISCO			*e*pP	**pP**	**02 37 10.8**	**+0.5**
MFID	**Camas Ranch**	**85.21 333**	*e*P	**P**	**02 36 37.3**	**+0.2**
	comp=Z,4.8nm,0.7s					
MFID			*e*pP	**pP**	**02 37 13.3**	**+0.8**
MFID	**Camas Ranch**	**85.21 333**	*e*P	**P**	**02 36 37.3**	**+0.2**
	comp=Z,4.8nm,0.7s					
MFID			*e*pP	**pP**	**02 37 13.3**	**+0.8**
KKM	**Kota Kinabalu**	**85.59 86**	*e*P	**P**	**02 36 39.2**	**-0.1**
	comp=Z,19nm,0.9s					
KKM	**Kota Kinabalu**	**85.59 86**	*e*P	**P**	**02 36 39.2**	**-0.1**
	comp=Z,19nm,0.9s					
WMOK	**Wichita Mounta**	**85.93 318**	*e*P	**P**	**02 36 40.7**	**0.0**
WMOK	**Wichita Mounta**	**85.93 318**	*e*P	**P**	**02 36 40.7**	**0.0**
WMOK	**Wichita Mounta**	**85.93 318**	*e*P	**P**	**02 36 40.7**	**0.0**
PSUT	**Pine Spring**	**88.93 330**	*e*P	**P**	**02 36 56.1**	**+0.9**
PSUT	**Pine Spring**	**88.93 330**	*e*P	**P**	**02 36 56.1**	**+0.9**
PSUT			*e*pP	**pP**	**02 37 35.2**	**+4.3**
ANMO	**Albuquerque**	**89.20 323**	*e*P	**P**	**02 36 55.6**	**-0.9**
ANMO			pmax	pmax		
	comp=Z,1.0nm,0.8s					
ANMO	**Albuquerque**	**89.20 323**	*e*P	**P**	**02 36 55.6**	**-0.9**
	comp=Z,0.9nm,0.8s					
ANMO	**Albuquerque**	**89.20 323**	*e*P	**P**	**02 36 55.6**	**-0.9**
	comp=Z,0.9nm,0.8s					
MNTX	**Cornudas Mount**	**91.50 321**	*e*P	**P**	**02 37 05.9**	**-1.2**
MNTX			*e*pP	**pP**	**02 37 42.1**	**-0.7**
MNTX	**Cornudas Mount**	**91.50 321**	*e*P	**P**	**02 37 05.9**	**-1.2**
MNTX			*e*pP	**pP**	**02 37 42.1**	**-0.7**
TXAR	**Lajitas Array**	**92.72 318**	P	**P**	**02 37 11.8**	**-1.0**
	comp=Z,0.4nm,0.8s,baz=57,slow=4.6,SNR=6.5					
TXAR			pP	**pP**	**02 37 48.4**	**-0.2**
	comp=Z,0.5nm,0.8s,baz=48,slow=1.9,SNR=4.1					
WRA	**Warramunga Arr**	**116.41 92**	PKP	**PKPdf**	**02 42 42.4**	**-1.2**
	comp=Z,1.4nm,0.6s,baz=318,slow=1.9,SNR=9.3					
WRA			pPKP	pPKPdf	02 43 20.3	-0.6
	comp=Z,0.5nm,0.7s,baz=319,slow=1.9,SNR=2.3					
WRAB	**Tennant Creek**	**116.41 92**	*e*PKIKP	**PKPdf**	**02 42 42.3**	**-1.3**
WRAB	**Tennant Creek**	**116.41 92**	*e*PKIKP	**PKPdf**	**02 42 42.3**	**-1.3**
WRAB	**Tennant Creek**	**116.41 92**	*e*PKPdf	**PKPdf**	**02 42 42.3**	**-1.3**
ASAR	**Alice Springs**	**118.54 95**	PKP	**PKPdf**	**02 42 46.3**	**-1.3**
	comp=Z,1.7nm,0.6s,baz=331,slow=1.4,SNR=30					
ASAR			pPKP	**pPKPdf**	**02 43 25.0**	**+0.1**
	comp=Z,0.7nm,0.8s,baz=356,slow=1.7,SNR=2.9					
SNAA	**Sanae**	**118.82 190**	*e*PKIKP	**PKPdf**	**02 42 46.7**	**0.0**
SNAA	**Sanae**	**118.82 190**	*e*PKIKP	**PKPdf**	**02 42 46.7**	**0.0**
SNAA	**Sanae**	**118.82 190**	*e*PKPdf	**PKPdf**	**02 42 46.7**	**0.0**
STKA	**Stephens Creek**	**128.93 98**	PKP	**PKPdf**	**02 43 07.3**	**+0.1**
	comp=Z,2.0nm,0.4s,baz=351,slow=3.6,SNR=8.1					
STKA			pPKP	**pPKPdf**	**02 43 45.9**	**+1.3**
	comp=Z,0.7nm,0.4s,baz=73,slow=8.5,SNR=2.3					
VNDA	**Vanda**	**143.52 165**	PKP	PKPbc	02 43 31.4	+0.8
	comp=Z,0.9nm,0.9s,baz=285,slow=7.0,SNR=4.4					

MEX 01 02:27:12.6±0.5, 15°.81N×97°.44W, h24km±38km, MD3.7, Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PNIG	**Pinotepa**	**0.88**	**311**	*e*P	Pb	02 27 26.6	-2.6
PNIG				*e*S	Sb	02 27 37.1	-3.5
HUIG	**Huatulco**	**1.28**	**92**	*e*P	Pn	02 27 32.6	-2.4
HUIG				*e*S	Sn	02 27 47.4	-4.0
VHO	**Vista Hermosa**	**1.42**	**28**	*e*P	Pn	02 27 34.4	-2.8
VHO				*i* S	Sn	02 27 51.3	-3.9
TLIG	**Tlapa**	**2.05**	**328**	*e*P	Pn	02 27 43.3	-2.4
TLIG				*i* S	Sn	02 28 08.3	-2.4
PCIG		**4.06**	**91**	*e*P	Pn	02 28 10.8	-2.5
PCIG				*i* S	Sn	02 28 57.1	-3.0

BJI ***01*** *02:31:26.8, 43°.71N×77°.74E, h8km, mb5.0/57, mB5.2/45, ML5.3/8, Ms4.8/62, Ms7 4.6/56*
NNC ***01*** *02:31:27.5±0.5, 43°.72N×77°.66E, h2km±3km, mb5.8, mpv5.3, Error ellipse: s-maj=5.2km s-min=2.2km az=170.0*
SOME ***01*** *02:31:28.9, 43°.58N×77°.70E, h20km, MS4.3*
KRNET ***01*** *02:31:28.1±0.1, 43°.64N×77°.66E, h24km, mb5.4*
MOS ***01*** *02:31:28.3±1.1, 43°.64N×77°.76E, h22km, mb5.3/72, MS4.8/60, Error ellipse: s-maj=4.9km s-min=4.6km az=127.5*
MOS Felt (IV) at Almaty.
IDC ***01*** *02:31:29.3±0.3, 43°.55N×77°.69E, h23km±1km, mb4.5/41, mb1 4.6/49, mb1mx4.6/57, mbtmp4.7/49, ML4.6/7, MS4.6/39, Ms1 4.6/39, ms1mx4.4/60, Error ellipse: s-maj=7.5km s-min=5.3km az=151.0*
NEIC ***01*** *02:31:29.6±0.1, 43°.56N×77°.75E, mb5.3/126, MS4.8/105, Error ellipse: s-maj=3.1km s-min=2.4km az=172.0*
NEIC Felt [IV] at Almaty.
ISCJB ***01*** *02:31:29.3±0.2, 43°.61N±0°.01×77°.75E±0°.01, h30km±1km, mb5.1/231, MS4.7/184, Error ellipse: s-maj=2.3km s-min=1.8km az=171.2*
GCMT ***01*** *02:31:29.6±0.2, 43°.72N×77°.73E, h25km±1km, MW5.2/91, Moment Tensor Solution. s46,c65; s91,c158; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr1.93±.12; Mθθ-3.58±.10; Mφφ1.66±.09; Mrθ-5.28±.38; Mrφ0.33±.07; Mθφ-2.17±.25; Best double couple: M0 6.47000×10^16 NP1:φs248.00000°, δ79.00000°, λ72.00000°. NP2: φs129.00000°, δ21.00000°, λ149.00000°. Principal axes: T 6.0710, Plg52.0000°, Azm137.0000°; N 0.8070, Plg18.0000°, Azm251.0000°; P -6.8680, Plg32.0000°, Azm353.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 01 02:31:29.1±0.2, 43°.62N±0°.02×77°.66E±0°.01, h20km, h19km:pP-P, n933, σ1s72/919, mb5.2/245, MS4.8/187, 94C-56D, Lake Issyk-Kul region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KURS	**Kuram**	**0.40**	**109**	*e*P	**Pb**	**02 31 37.5**	**-0.1**
KURS	12μm,0.2s			*e*S	**Sb**	**02 31 43.3**	**+0.1**
	131μm,0.5s						
CHKK	**Chushkaly**	**0.54**	**298**	*e*P	**Pg**	**02 31 39.9**	**0.0**
CHKK	9μm,0.3s			*e*S	**Sg**	**02 31 47.4**	**+0.1**
	124μm,0.4s						
KOTS	**Kotyrbulak**	**0.55**	**226**	*e*P	**Pg**	**02 31 40.5**	**+0.1**
ARXS	**Arharly**	**0.60**	**12**	*e*P	**Pg**	**02 31 41.5**	**+0.3**
ARXS				*e*S	**Sg**	**02 31 50.4**	**+1.0**
AAA	**Alma-Ata**	**0.62**	**236**	*e*P	**Pn**	**02 31 42.6**	**-0.3**
AAA	22μm,0.4s			*e*S	**Sn**	**02 31 51.4**	**-0.9**
	43μm,0.2s						
AAA	**Alma-Ata**	**0.62**	**236**	*e*PG	**Pn**	**02 31 42.6**	**-0.3**
AAA				*e*S	**Sn**	**02 31 51.4**	**-0.9**
MDOK	**Medeo**	**0.64**	**224**	*e*P	**Pb**	**02 31 41.5**	**-0.1**
MDOK	16μm,0.5s			⇑*i*S	**Sb**	**02 31 50.3**	**+0.1**
	143μm,0.5s						
KNDC	**Almaty**	**0.65**	**231**	⇑P	**Pg**	**02 31 42.0**	**0.0**
KNDC				⇑S	**Sg**	**02 31 51.2**	**+0.6**
MNBS	**Baschi**	**0.71**	**49**	*e*P	**Pg**	**02 31 43.0**	**-0.1**
MNBS				*e*S	**Sg**	**02 31 53.1**	**+0.5**
KTBS	**Karatobe**	**0.71**	**278**	*e*P	**Pb**	**02 31 43.1**	**+0.2**
ZHN	**Zhinishke**	**0.73**	**128**	*e*P	**Pb**	**02 31 42.6**	**-0.5**
ZHN	6μm,0.1s			*e*S	**Sb**	**02 31 52.1**	**-0.6**
	71μm,0.2s						
KPKS	**Kokpek**	**0.76**	**101**	*e*P	**Pb**	**02 31 43.5**	**-0.3**
KPKS	41μm,0.4s			*e*S	**Sb**	**02 31 53.6**	**-0.2**
	115μm,0.3s						
TNSS	**Tian-Shan**	**0.78**	**222**	*e*P	**Pb**	**02 31 44.0**	**-0.2**
TNSS	17μm,0.5s			*e*S	**Sb**	**02 31 54.4**	**-0.1**
	52μm,0.5s						
SATY	**Saty**	**0.78**	**135**	⇓*i*P	**Pb**	**02 31 43.9**	**-0.3**
SATY	39μm,0.2s			⇑*i*S	**Sb**	**02 31 54.1**	**-0.3**
	60μm,0.3s						
ANVS	**Anan'yevo**	**0.84**	**179**	⇓*i*P	**Pb**	**02 31 44.5**	**-0.6**
ANVS	baz=180			⇓*e*S	**Sg**	**02 31 56.5**	**-0.2**
	baz=180						
IZV	**Izvestkoviy**	**0.96**	**233**	*e*P	**Pb**	**02 31 47.3**	**+0.1**
IZV				*e*S	**Sb**	**02 32 00.1**	**+0.6**
KUU	**Kurty**	**0.99**	**286**	⇑*i*P	**Pb**	**02 31 47.6**	**-0.1**
KUU	7μm,0.4s			*e*S	**Sb**	**02 32 00.8**	**+0.5**
	46μm,0.5s						
MTBS	**Maitube**	**1.02**	**242**	⇑*i*P	**Pb**	**02 31 48.1**	**0.0**
MTBS	8μm,0.2s			⇓*i*S	**Sn**	**02 32 02.0**	**-0.1**
	75μm,0.3s						
UZB	**Uzynbulak**	**1.10**	**115**	*e*P	**Pb**	**02 31 49.3**	**-0.3**
UZB	43μm,0.2s			*e*S	**Sb**	**02 32 03.3**	**-0.3**
	31μm,0.2s						
PRZ	**Przheval'sk**	**1.26**	**154**	⇓*i*P	**Pg**	**02 31 53.4**	**-0.1**
PRZ	baz=155			⇓*i*S	**Sg**	**02 32 10.7**	**+0.6**
	baz=155						
PDGK	**Podgornoye**	**1.36**	**102**	⇑*i*P	**Pb**	**02 31 53.6**	**-0.3**
PDGK	baz=103			⇑*i*S	**Sb**	**02 32 11.4**	**+0.5**
	baz=103						
PDGK	**Podgornoye**	**1.36**	**102**	⇑P	**Pb**	**02 31 53.6**	**-0.3**
PDGK				⇓S	**Sb**	**02 32 11.8**	**+0.8**
PDGK	**Podgornoye**	**1.36**	**102**	PG	**Pb**	**02 31 53.6**	**-0.3**
PDGK				S	**Sb**	**02 32 11.7**	**+0.8**
KST	**Kastek**	**1.36**	**246**	*e*P	**Pb**	**02 31 53.8**	**-0.3**
KST	4μm,0.5s			*e*S	**Sb**	**02 32 11.9**	**+0.8**
	189μm,0.4s						
DGS	**Degeres**	**1.42**	**255**	*e*P	**Pb**	**02 31 54.8**	**-0.2**
DGS				*e*S	**Sb**	**02 32 13.1**	**+0.3**
TDK	**Taldyqorghan**	**1.49**	**21**	*e*P	**Pb**	**02 31 55.8**	**-0.2**
TDK	24μm,0.4s			*e*S	**Sg**	**02 32 16.0**	**-1.2**
	88μm,0.5s						
KDJ	**Kajisay**	**1.53**	**193**	⇓*i*P	**Pb**	**02 31 57.3**	**+0.4**
KDJ	baz=193			⇓*i*S	**Sb**	**02 32 17.1**	**+1.2**
	baz=193						
TKM2	**Tokmak 2**	**1.66**	**246**	⇑*i*P	**Pb**	**02 31 58.5**	**-0.6**
TKM2	baz=245			⇑*i*S	**Sb**	**02 32 21.0**	**+1.4**
	baz=245						
TKM2	**Tokmak 2**	**1.66**	**246**	⇑P	**Pn**	**02 31 58.2**	**+0.9**
TKM2	3μm,0.5s			⇑S	**Sb**	**02 32 21.1**	**+1.4**
	23μm,0.1s						
TKM2	**Tokmak 2**	**1.66**	**246**	PN	**Pn**	**02 31 58.2**	**+0.9**
TKM2				S	**Sb**	**02 32 21.0**	**+1.4**
TKM2				pmax	pmax		
	comp=Z,3μm,0.5s						
TKM2				smax	smax		
	comp=N,23μm,0.2s						
TKM2	**Tokmak 2**	**1.66**	**246**	*e*Pn	**Pn**	**02 31 58.1**	**+0.8**
TKM2				*e*Sn	**Sb**	**02 32 20.7**	**+1.0**
SHLS	**Shalkode**	**1.69**	**105**	*e*P	**Pb**	**02 31 58.7**	**-0.9**
SHLS	comp=N,8μm,0.7s			*e*S	**Sb**	**02 32 21.1**	**+0.5**
	comp=N,39μm,0.7s						
BOOM	**Boomskoye usch**	**1.69**	**229**	⇓*i*P	**Pb**	**02 31 59.4**	**-0.2**
BOOM	baz=228			⇓*i*S	**Sb**	**02 32 21.2**	**+0.6**
	baz=228						
DJR	**Jarkent**	**1.70**	**64**	*e*P	**Pb**	**02 31 59.0**	**-0.7**
DJR	comp=N,8μm,0.3s			*e*S	**Sb**	**02 32 21.6**	**+0.9**
	comp=N,55μm,0.5s						
ULHL	**Ulahol**	**1.72**	**218**	⇓*i*P	**Pb**	**02 32 00.2**	**0.0**
ULHL	baz=217			⇓*i*S	**Sb**	**02 32 22.9**	**+1.4**
	baz=217						
KTMS	**Ketmen**	**1.97**	**94**	*e*P	**Pn**	**02 32 02.4**	**+0.9**
KTMS				*e*S	**Sb**	**02 32 27.4**	**-1.2**
KAPS	**Kapalarasan**	**2.06**	**36**	*e*P	**Pb**	**02 32 06.0**	**+0.1**
KAPS	comp=N,7μm,0.6s			*e*S	**Sg**	**02 32 33.2**	**-2.4**
	comp=N,97μm,0.5s						
KBK	**Karagaybulak**	**2.20**	**245**	⇑*i*P	**Pb**	**02 32 06.7**	**-1.7**
KBK	baz=244			⇑*i*S	**Sb**	**02 32 35.8**	**+0.5**
	baz=244						
CHMS	**Chumysh**	**2.21**	**255**	⇑*i*P	**Pn**	**02 32 05.9**	**+1.2**
CHMS	baz=254			⇑*i*S	**Sb**	**02 32 35.7**	**+0.4**
	baz=254						
USP	**Ospenovka**	**2.33**	**262**	⇑*i*P	**Pn**	**02 32 07.3**	**+1.0**
USP	baz=262			⇑*i*S	**Sb**	**02 32 38.8**	**+0.1**
	baz=262						
KZA	**Kyzart**	**2.35**	**230**	⇑*i*P	**Pb**	**02 32 09.3**	**-1.7**
KZA	baz=229			⇑*i*S	**Sb**	**02 32 39.7**	**0.0**
	baz=229						
FRU1	**Bishkek**	**2.36**	**251**	⇑*i*P	**Pn**	**02 32 08.7**	**+2.0**
FRU1	baz=250			⇑*e*S	**Sb**	**02 32 39.2**	**-0.4**
	baz=250						
FRU	**Bishkek**	**2.36**	**252**	⇑*i*PN	**Pn**	**02 32 07.5**	**+0.8**
FRU				*e*		02 32 39.0	
FRU				pmax	pmax		
	comp=Z,2μm,1.6s						
FRU				pmax	pmax		
	comp=E,6μm,4.0s						
FRU				smax	smax		
	comp=E,41μm,1.0s						
NRN	**Naryn**	**2.51**	**210**	⇑*i*P	**Pb**	**02 32 13.2**	**-0.4**
NRN	baz=210			⇑*e*S	**Sb**	**02 32 45.1**	**+1.0**
	baz=210						
AAK	**Ala-Archa**	**2.52**	**248**	Pn	**Pn**	**02 32 10.6**	**+1.5**
	comp=E,472nm,0.3s,baz=92,slow=7.5,SNR=163						
AAK				Pg	**Pg**	**02 32 16.5**	**-0.9**
	comp=E,854nm,0.3s,baz=77,slow=12,SNR=142						
AAK				Lg	Lg	02 32 46.4	
	comp=E,742nm,0.3s,baz=240,slow=20,SNR=19						
AAK	**Ala-Archa**	**2.52**	**248**	⇑*i*P	**Pn**	**02 32 10.7**	**+1.7**
AAK	baz=248			⇑*i*S	**Sb**	**02 32 43.1**	**-1.2**
	baz=248						
AAK	**Ala-Archa**	**2.52**	**248**	⇑Pn	**Pn**	**02 32 10.7**	**+1.7**
	comp=E,277nm,1.1s						
AAK				⇑Pg	**Pb**	**02 32 13.3**	**-0.4**
	comp=E,5μm,0.8s						
AAK				⇓Lg	Lg	02 32 46.1	
	comp=E,6μm,0.6s						
AAK	**Ala-Archa**	**2.52**	**248**	*e*Pn	**Pn**	**02 32 11.0**	**+1.9**
AAK				*e*Sn	**Sn**	**02 32 39.2**	**0.0**
UCH	**Uchtor**	**2.70**	**240**	⇑*i*P	**Pn**	**02 32 14.2**	**+2.4**
UCH	baz=240			⇑*i*S	**Sb**	**02 32 48.6**	**-1.1**
	baz=240						
EKS2	**Erkin-Say**	**3.00**	**253**	*e*PN	**Pn**	**02 32 17.2**	**+1.6**
EKS2				*e*		02 32 52.7	
EKS2	**Erkin-Say**	**3.00**	**253**	*e*Pn	**Pn**	**02 32 17.1**	**+1.6**
EKS2				*e*Sn	**Sn**	**02 32 52.7**	**+1.7**
MRKS	**Merke**	**3.36**	**256**	⇓*i*P	**Pb**	**02 32 28.2**	**+0.2**
MRKS	comp=E,1μm,0.6s			⇓*i*S	**Sb**	**02 33 11.5**	**+3.1**
	comp=E,5μm,0.4s						
MNAS	**Manas**	**3.94**	**255**	⇑Pn	**Pn**	**02 32 29.8**	**+1.2**
MNAS	comp=E,42nm,0.5s			⇑Pg	**Pb**	**02 32 39.3**	**+1.3**
	comp=E,279nm,0.5s						
MNAS				⇓Lg	Lg	02 33 31.9	
	comp=E,3μm,0.6s						
MNAS	**Manas**	**3.94**	**255**	PN	**Pn**	**02 32 29.8**	**+1.2**
MNAS						02 32 39.3	
MNAS						02 33 31.8	
MNAS				pmax	pmax		
	comp=Z,42nm,0.5s						
MNAS				pmax	pmax		
	comp=Z,279nm,0.5s						
MNAS				pmax	pmax		
	comp=N,3μm,0.6s						
KSH	**Kashi**	**4.29**	**198**	Pn	**Pb**	**02 32 43.1**	**-0.8**
KSH				Sn	**Sb**	**02 33 37.3**	**+2.0**
KSH				smax	smax		
	comp=N,4μm,1.0s						
KSH				smax	smax		
	comp=N,3μm,0.5s						
MAKZ	**Makanchi**	**4.41 42**	*e*PN	**Pn**	**02 32 37.0**	**+2.0**
MAKZ	**Makanchi**	**4.41 42**	*e*Pn	**Pn**	**02 32 37.0**	**+2.0**
MK01	**Makanchi Array**	**4.55 45**	*e*Pn	**Pn**	**02 32 38.3**	**+1.4**
MK31	**Makanchi Array**	**4.56 44**	⇓Pn	**Pn**	**02 32 38.6**	**+1.6**
MK31			⇑Lg	Lg	02 33 49.1	
	comp=N,2μm,0.5s					
MK31	**Makanchi Array**	**4.56 44**	PN	**Pn**	**02 32 38.5**	**+1.6**
MK31						02 33 48.9
MK31			pmax	pmax		
	comp=N,2μm,0.5s					
MK31			pmax	pmax		
	comp=N,2μm,0.5s					
MK31	**Makanchi Array**	**4.56 44**	*e*Pn	**Pn**	**02 32 39.1**	**+2.1**
MKAR	**Makanchi Array**	**4.56 44**	Pn	**Pn**	**02 32 38.5**	**+1.6**
	comp=N,21nm,0.3s,baz=216,slow=17,SNR=328					
MKAR			Pg	**Pb**	**02 32 48.3**	**-0.1**
	comp=N,178nm,0.3s,baz=222,slow=15,SNR=49					
MKAR			Sn	**Sn**	**02 33 30.6**	**+1.2**
	comp=N,227nm,0.3s,baz=220,slow=25,SNR=5.1					
MKAR			Lg	Lg	02 33 50.8	
	comp=N,766nm,0.3s,baz=221,slow=26,SNR=14					
MKAR			LR	LR	02 34 46.7	
	comp=N,3μm,18.8s,baz=232,slow=43					
MKAR	**Makanchi Array**	**4.56 44**	PN	**Pn**	**02 32 38.6**	**+1.6**
MKAR						02 32 48.3
MKAR						02 33 30.6
MKAR			pmax	pmax		
	comp=Z,21nm,0.3s					
MKAR			pmax	pmax		
	comp=Z,179nm,0.3s					
MKAR			smax	smax		
	comp=N,227nm,0.3s					
MKAR			MLR	MLR		
	comp=Z,3μm,18.8s					
MKAR	**Makanchi Array**	**4.56 44**	*e*Pn	**Pn**	**02 32 39.1**	**+2.1**
MKAR			Pg	**Pb**	**02 32 48.3**	**-0.1**
MKAR			Sn	**Sn**	**02 33 30.6**	**+1.2**
MKAR			Lg	Lg	02 33 50.8	
SFK	**Sufi-Kurgan**	**4.76 222**	⇑Pn	**Pn**	**02 32 42.7**	**+2.7**
SFK	comp=Z,387nm,1.1s		⇑Pg	**Pg**	**02 32 57.7**	**-2.4**
	comp=Z,1μm,1.0s					
SFK			⇓Lg	Lg	02 33 59.3	
	comp=Z,9μm,1.4s					
SFK	**Sufi-Kurgan**	**4.76 222**	PN	**Pn**	**02 32 42.6**	**+2.7**
SFK						02 32 57.7
SFK						02 33 59.3
SFK			pmax	pmax		
	comp=Z,387nm,1.1s					
SFK			pmax	pmax		
	comp=Z,1μm,1.0s					
SFK			pmax	pmax		
	comp=N,9μm,1.4s					
KK31	**Karatay Array**	**5.24 267**	⇓Pg	**Pb**	**02 33 02.5**	**+2.6**
KK31	comp=N,122nm,0.3s		⇑Lg	Lg	02 34 10.7	
	comp=N,3μm,0.8s					
KK31	**Karatay Array**	**5.24 267**	PN	**Pb**	**02 33 02.5**	**+2.6**
KK31						02 34 10.7
KK31			pmax	pmax		
	comp=Z,122nm,0.4s					
KK31			pmax	pmax		
	comp=N,1μm,0.5s					
KKAR	**Karatay Array**	**5.24 267**	*e*PN	**Pn**	**02 32 47.4**	**+1.2**
KKAR	**Karatay Array**	**5.24 267**	*e*Pn	**Pn**	**02 32 47.4**	**+1.2**
KKAR			*e*Lg	Lg	02 34 11.3	
IUG	**Iuzhnay**	**5.79 258**	*e*P	**Pg**	**02 33 15.5**	**-4.5**
IUG	comp=N,1μm,1.0s		*e*S	**Sg**	**02 34 31.4**	**-3.5**
	comp=N,4μm,1.3s					
OTUK	**Ortayu**	**5.93 323**	⇓Pn	**Pn**	**02 32 56.0**	**+0.2**
OTUK	comp=N,487nm,0.7s		⇓Lg	Lg	02 34 30.4	
	comp=N,19μm,1.1s					
OTUK	**Ortayu**	**5.93 323**	PN	**Pn**	**02 32 55.9**	**+0.2**
OTUK						02 34 30.4
OTUK			pmax	pmax		
	comp=Z,487nm,0.7s					
OTUK			pmax	pmax		
	comp=N,19μm,1.1s					
ZSN	**Zaisan**	**6.09 49**	*e*P	**Pg**	**02 33 22.4**	**-3.2**
ZSN	comp=N,160nm,0.6s		*e*S	**Sg**	**02 34 46.4**	**+2.0**
	comp=N,3μm,1.1s					
SEM	**Semipalatinsk**	**7.02 14**	*e*P	**Pg**	**02 33 41.5**	**-1.9**
SEM	comp=N,268nm,0.8s		*e*S	**Sg**	**02 35 15.4**	**+1.3**
	comp=N,5μm,0.8s					
KURBB	**Kurchatov Arra**	**7.03 5**	Pn	**Pn**	**02 33 10.8**	**0.0**
	comp=N,16nm,0.3s,baz=189,slow=12,SNR=295					
KURBB			Sn	**Sn**	**02 34 30.9**	**+0.8**
	comp=N,16nm,0.3s,baz=183,slow=17,SNR=7.8					
KURBB			Lg	Lg	02 35 10.1	
	comp=N,89nm,0.3s,baz=189,slow=30,SNR=21					
KURK	**Kurchatov**	**7.13 5**	⇓Pn	**Pn**	**02 33 12.1**	**-0.1**
KURK	comp=N,344nm,1.1s		⇑Pg	**Pb**	**02 33 31.7**	**-0.4**
	comp=N,1μm,0.9s					
KURK			⇓Lg	Lg	02 35 12.0	
	comp=N,23μm,1.1s					
KURK	**Kurchatov**	**7.13 5**	PN	**Pn**	**02 33 12.1**	**-0.1**
KURK			pmax	pmax		
	comp=Z,344nm,1.1s					
KURK			pmax	pmax		
	comp=N,23μm,1.1s					
KURK			pmax	pmax		
	comp=Z,8μm,20.0s					
KURK	**Kurchatov**	**7.13 5**	*e*Pn	**Pn**	**02 33 12.0**	**-0.1**
KURK			Sn	**Sn**	**02 34 30.9**	**-1.6**
KURK			*e*Lg	Lg	02 35 11.8	
WMQ	**Urumqi**	**7.28 85**	Pn	**Pn**	**02 33 14.2**	**-0.1**
WMQ			Sn	**Sn**	**02 34 33.9**	**-2.5**
WMQ			smax	smax		
	comp=Z,820nm,1.2s					
WMQ			smax	smax		
	comp=Z,650nm,1.2s					
VOSK	**Vostochnaya**	**10.14 336**	⇓Lg	Lg	02 36 43.5	
	comp=Z,3μm,0.9s					
CHCP	**Chirah Chowk**	**10.52 200**	P	**Pn**	**02 34 00.3**	**+1.5**
BVA0	**Borovoye Array**	**10.57 335**	⇓Pn	**Pn**	**02 33 58.2**	**-1.2**
	comp=Z,161nm,0.6s,baz=137,slow=12,SNR=437					
BVA0			⇓Lg	Lg	02 36 59.3	
	comp=Z,2μm,1.0s,baz=130,slow=

comp=Z,4μm,1.6s
ZRNK Zerenda 10.96 331 P **Pn 02 34 02.9 -1.8**
ZRNK pmax pmax
comp=Z,198nm,0.7s
ZRNK pmax pmax
comp=N,4μm,1.6s
CHKZ Chkalovo 11.08 338 ⇑Pn **Pn 02 34 05.2 -1.1**
comp=N,234nm,1.2s
CHKZ ⇑Lg Lg 02 37 13.6
comp=N,4μm,1.2s
CHKZ Chkalovo 11.08 338 P **Pn 02 34 05.2 -1.1**
CHKZ pmax pmax
comp=Z,234nm,1.2s
CHKZ pmax pmax
comp=N,4μm,1.3s
KBL Kabul 11.26 219 *e*P **Pn 02 34 10.4 +1.3**
KBL Kabul 11.26 219 *e*Pn **Pn 02 34 10.4 +1.3**
ZALV Zalesovo Beam 11.36 22 Pn **Pn 02 34 09.3 -0.8**
comp=N,10.0nm,0.3s,baz=212,slow=14,SNR=45
ZALV Sn **Sn 02 36 16.2 -0.1**
comp=N,17nm,0.3s,baz=220,slow=15,SNR=3.8
ZALV Lg Lg 02 37 28.3
comp=N,12nm,0.3s,baz=200,slow=25,SNR=7.4
ZALV LR LR 02 38 52.9
comp=N,3μm,20.2s,baz=218,slow=39
THW Thamme Wali 11.76 205 P **Pn 02 34 14.8 -1.0**
NVS Novosibirsk 11.80 16 *e*P **Pn 02 34 14.0 -2.1**
NVS *e* 02 36 22.2
SARP Sargodha 12.32 200 P **Pn 02 34 19.6 -3.8**
SMLA Simla 12.48 182 *e*P **Pn 02 34 26.2 +0.7**
SMLA *e*S **Sn 02 36 37.8 -6.1**
AB31 Akbulak array 13.44 301 Pn **Pn 02 34 36.6 -2.0**
comp=N,32nm,0.6s,baz=0.0,slow=0.1,SNR=169
AB31 ⇑Lg Lg 02 38 32.9
comp=N,586nm,1.2s,baz=102,slow=26,SNR=4.4
AB31 Akbulak array 13.44 301 P **Pn 02 34 36.5 -2.0**
AB31 pmax pmax
comp=Z,32nm,0.6s
AB31 pmax pmax
comp=N,586nm,1.2s
ABKAR Akbulak array 13.44 301 *e*Pn **Pn 02 34 36.7 -1.9**
AKTO Aktyubinsk 15.00 304 Pn **Pn 02 34 57.5 -2.3**
comp=N,4.9nm,0.3s,baz=99,slow=12,SNR=27
AKTO Sn **Sn 02 37 39.5 -5.9**
comp=N,5.6nm,0.3s,baz=268,slow=9.2,SNR=4.1
AKTO LR LR 02 41 06.4
comp=N,4μm,19.6s,baz=117,slow=38
KRAR Krasnoyarsk 15.77 33 *i* P **P 02 35 12.2 -1.4**
KRAR pmax pmax
comp=Z,59nm,1.1s
GEYT Alibeck 15.84 256 Pn **Pn 02 35 08.6 -2.4**
comp=Z,1.2nm,0.3s,baz=65,slow=8.5,SNR=5.5
GEYT Lg Lg 02 40 14.6
comp=Z,1.2nm,0.3s,baz=34,slow=16,SNR=3.7
GEYT LR LR 02 42 47.9
comp=Z,1μm,18.0s,baz=65,slow=43
PYUN Piuthan 16.07 163 *e*P **Pn 02 35 11.0 -3.1**
comp=Z,372nm,0.9s
KOLN Koldanda 16.53 161 *e*P **Pn 02 35 17.4 -2.5**
comp=Z,97nm,0.9s
GKN Gorkha 16.57 158 *e*P **Pn 02 35 17.4 -3.0**
comp=Z,1μm,1.4s
KKN Kakani 16.95 156 *e*P **Pn 02 35 22.6 -2.7**
comp=Z,738nm,1.4s
GUN Gumba 17.02 154 *e*P **Pn 02 35 24.2 -2.1**
comp=Z,484nm,1.1s
SVE Sverdlovsk 17.06 327 *ce*P **P 02 35 28.6 +0.7**
SVE pmax pmax
comp=Z,111nm,0.9s
DMN Daman 17.07 157 *e*P **Pn 02 35 24.0 -2.9**
comp=Z,1μm,1.4s
GTA Gaotai 17.11 97 ⇑P **Pn 02 35 24.1 -3.0**
GTA pP P 02 35 29.2 +0.5
GTA sP pP 02 35 32.7 -1.6
GTA S **Sn 02 38 31.6 -5.2**
GTA sS S 02 38 39.1 -7.0
GTA SS **SnSn 02 38 52.2 +2.3**
GTA pmax pmax
comp=Z,23nm,1.2s
GTA pmax pmax
comp=Z,130nm,5.2s
GTA LR LR
comp=Z,2μm,10.9s
GTA LR LR
comp=Z,2μm,12.0s
GTA LR LR
comp=Z,1μm,11.9s
PKIN Phulchoki 17.19 156 *e*P **Pn 02 35 25.8 -2.5**
comp=Z,636nm,1.4s
LSA Lhasa 17.58 138 P **P 02 35 35.2 +0.9**
LSA LR LR
comp=Z,2μm,17.7s
LSA LR LR
comp=Z,2μm,15.6s
LSA LR LR
comp=Z,6μm,17.7s
LSA Lhasa 17.58 138 *e*P **P 02 35 34.2 -0.1**
LSA pmax pmax
comp=Z,167nm,1.3s
LSA Lhasa 17.58 138 *e*Pn **P 02 35 34.2 -0.1**
comp=Z,167nm,1.3s
ARU Arti 17.66 323 Pn **Pn 02 35 32.3 -1.4**
comp=Z,0.1nm,0.3s,baz=108,slow=23,SNR=8.9
ARU Sn **Sn 02 38 43.6 -6.2**
comp=Z,0.1nm,0.3s,baz=108,slow=22,SNR=2.7
ARU Lg Lg 02 40 51.5
comp=Z,0.1nm,0.3s,baz=219,slow=5.6,SNR=6.3
ARU LR LR 02 42 49.3
comp=Z,5μm,19.8s,baz=122,slow=38
ARU Arti 17.66 323 *d i* P **Pn 02 35 34.0 +0.3**
ARU S **Sn 02 38 50.5 +0.7**
ARU pmax pmax
comp=Z,194nm,1.2s
ARU MLR MLR
comp=Z,6μm,17.0s
ARU Arti 17.66 323 *e*Pn **Pn 02 35 34.0 +0.3**
comp=Z,482nm,1.3s
ARU Sn **Sn 02 38 43.6 -6.2**
ARU *e*Lg Lg 02 40 38.4
ARU Lg Lg 02 40 51.5
ZAK Zakamensk 18.68 60 *e*P **Pn 02 35 46.6 +0.2**
ZAK pmax pmax
comp=Z,62nm,1.1s
TLY Talaya 19.20 56 Pn **Pn 02 35 53.6 +1.1**
baz=251,slow=5.4,SNR=2.9
TLY Lg Lg 02 41 36.0
comp=Z,0.0nm,0.3s,baz=60,slow=12,SNR=3.5
TLY LR LR 02 42 36.1
comp=Z,283nm,19.0s,baz=256,slow=35
TLY Talaya 19.20 56 *c i* P **Pn 02 35 52.6 +0.1**
TLY *e*S **Sn 02 39 26.0 -1.0**
TLY pmax pmax
comp=Z,48nm,1.4s
TLY MLR MLR
comp=Z,1μm,15.0s
TLY Talaya 19.20 56 *e*P **P 02 35 51.5 -0.1**
comp=Z,28nm,0.9s
TLY *e*Lg Lg 02 41 14.3
TLY Lg Lg 02 41 36.0
IRK Irkutsk 19.72 55 *e*P **Pn 02 35 59.9 +1.2**
SONM Songino Array 20.44 68 P **P 02 36 06.0 +0.7**
comp=Z,71nm,0.8s,baz=268,slow=11,SNR=87
SONM pPcP 02 40 23.9
comp=Z,4.2nm,0.8s,baz=236,slow=3.0,SNR=3.9
SONM Lg Lg 02 42 19.2
comp=Z,34nm,1.1s,baz=268,slow=25,SNR=3.7
SONM LR LR 02 44 11.2
comp=Z,1μm,18.2s,baz=272,slow=37
SONA1 Songino Array 20.45 68 *e*P **P 02 36 05.8 +0.4**
ULN Ulaanbaatar 20.89 68 *c i* P **P 02 36 10.3 +0.2**
ULN pmax pmax
comp=Z,18nm,1.0s
ULN MLR MLR
comp=Z,1μm,16.0s
ULN Ulaanbaatar 20.89 68 P **P 02 36 10.4 +0.3**
SNR=40
ULN Ulaanbaatar 20.89 68 P **P 02 36 10.4 +0.3**
SNR=40
ULN Ulaanbaatar 20.89 68 *e*P **P 02 36 10.2 +0.1**
comp=Z,82nm,1.0s
ULN LR LR
comp=Z,155nm,21.0s
LZH Lanzhou 21.41 102 *e*P **P 02 36 16.3 +0.5**
LZH pP pP 02 36 19.8 -1.6
LZH sP sP 02 36 22.6 -1.4
LZH PP **PnPn 02 36 41.5 +5.7**
LZH *e*S **S 02 40 06.5 -6.1**
LZH sS Sn 02 40 16.4 -4.2
LZH SS **SnSn 02 40 40.4 +4.8**
LZH pmax pmax
comp=Z,150nm,1.2s
LZH pmax pmax
comp=Z,400nm,4.0s
LZH LR LR
comp=Z,3μm,15.2s
LZH LR LR
comp=Z,2μm,14.2s
LZH LR LR
comp=Z,3μm,16.7s
SHL Shillong 21.43 143 ⇑*i* P **P 02 36 17.0 +0.9**
SHL *e*S Sn 02 40 20.0 -1.2
DGRG David-gareji 23.81 276 P **P 02 36 42.8 +2.2**
DGRG David-gareji 23.81 276 P **P 02 36 42.8 +2.2**
BTO Baotou 24.11 86 *e*P **P 02 36 43.4 -0.2**
DUS Dusheti 24.12 278 P P 02 36 53.9 +10
DUS Dusheti 24.12 278 P P 02 36 53.9 +10
GUDG Gudauri 24.19 279 P **P 02 36 46.8 +2.4**
TBLG Delisi 24.19 277 P **P 02 36 47.3 +3.1**
TBLG Delisi 24.19 277 P **P 02 36 47.3 +3.1**
CD2 Chengdu 24.23 113 P **P 02 36 44.5 -0.1**
CD2 sP sP 02 36 52.3 -0.8
CD2 PcP **PcP 02 40 23.8 -0.8**
CD2 S **S 02 41 04.2 +2.1**
CD2 sS sS 02 41 12.5 +0.6
CD2 SS **SnSn 02 41 50.5 +5.9**
CD2 pmax pmax
comp=Z,160nm,1.0s
CD2 pmax pmax
comp=Z,280nm,7.8s
CD2 LR LR
comp=Z,1μm,15.6s
CD2 LR LR
comp=Z,2μm,14.4s
ZEI Tsey 24.53 280 *e*P **P 02 36 47.6 +0.2**
ZEI pmax pmax
comp=Z,93nm,1.0s
NCK Nalchik 24.59 282 ⇓*e*P **P 02 36 51.1 +3.3**
NCK pmax pmax
comp=Z,22nm,1.5s
NCK MLR MLR
comp=Z,1μm,14.0s
SRSP Sriramsagar 24.62 178 *e*P **P 02 36 47.0 -1.2**
SRSP IAmb IAmb 02 36 48.3
comp=Z,62nm,1.2s
SRSP *e*S **S 02 41 07.8 -0.7**
SRSP IVMs_BB IVMs_BB 02 47 02.5
comp=Z,2μm,14.1s
GNI Garni 24.66 273 P **P 02 36 50.3 +1.8**
comp=Z,40nm,1.1s,baz=110,slow=2.7,SNR=22
GNI LR LR 02 48 04.7
comp=Z,536nm,19.1s,baz=64,slow=40
GNI Garni 24.66 273 *i* P **P 02 36 51.8 +3.2**
SNR=16
GNI Garni 24.66 273 *ce*P **P 02 36 50.7 +2.1**
GNI pmax pmax
comp=Z,164nm,1.1s
GNI MLR MLR
comp=Z,2μm,16.0s
GNI Garni 24.66 273 P **P 02 36 50.4 +1.8**
SNR=52
GNI Garni 24.66 273 *e*P **P 02 36 51.2 +2.6**
comp=Z,172nm,1.0s
GOF Gofitskoye 24.69 285 ⇑*e*P **P 02 36 50.3 +1.7**
GOF pmax pmax
comp=Z,165nm,0.9s
RPR Rampur 24.73 176 *e*P **P 02 36 48.6 -0.5**
RPR IAmb IAmb 02 36 50.6
comp=Z,136nm,0.9s
RPR *es*P **sP 02 36 58.3 +0.7**
RPR *e*S **S 02 41 11.3 +1.2**
RPR IVMs_BB IVMs_BB 02 47 18.1
comp=Z,2μm,13.2s
BANOM Banah 24.77 232 *i* P **P 02 36 49.9 +0.3**
SNR=6.4
BANOM Banah 24.77 232 P **P 02 36 49.7 +0.2**
ONI Oni 24.89 280 P **P 02 36 52.6 +2.0**
ONI Oni 24.89 280 P **P 02 36 52.6 +2.0**
KBZ Khabaz 25.03 282 P **P 02 36 52.8 +1.1**
comp=Z,4.7nm,1.0s,baz=72,slow=15,SNR=2.9
KBZ LR LR 02 48 28.1
comp=Z,867nm,19.9s,baz=72,slow=41
KVAR Kislovodsk Arr 25.13 283 P **P 02 36 55.5 +2.8**
comp=Z,5.3nm,0.6s,baz=244,slow=19,SNR=3.2
KVAR pP **sP 02 37 02.5 +1.2**
comp=Z,33nm,0.9s,baz=251,slow=23,SNR=11
KVAR LR LR 02 48 48.2
comp=Z,1μm,18.1s,baz=57,slow=41
KIV Kislovodsk 25.14 283 *i* P **P 02 36 58.9 +6.1**
SNR=8.9
KIV Kislovodsk 25.14 283 P **P 02 36 54.1 +1.3**
KIV *e*PPP PPP 02 37 35.8
KIV *e*SS **SnSn 02 42 09.4 +2.7**
KIV pmax pmax
comp=Z,22nm,1.7s
KIV MLR MLR
comp=Z,1μm,17.0s
KIV Kislovodsk 25.14 283 *e*P **P 02 36 54.2 +1.3**
comp=Z,82nm,1.0s
KIV LR LR
comp=Z,1μm,21.0s
HHC Hu-ho-hao-te 25.16 85 *e*P **P 02 36 53.5 +0.5**
HHC pP sP 02 37 00.9 -0.6
HHC S **S 02 41 15.4 -1.6**
HHC sS sS 02 41 23.1 -3.8
HHC SS **SnSn 02 42 12.7 +5.5**
HHC pmax pmax
comp=Z,49nm,1.0s
HHC pmax pmax
comp=Z,330nm,3.6s
HHC LR LR
comp=Z,1μm,12.3s
HHC LR LR
comp=Z,1μm,11.1s
HHC LR LR
comp=Z,1μm,11.4s
AKH Akhalkalaki 25.18 277 P **P 02 36 57.7 +4.4**
AKH Akhalkalaki 25.18 277 P **P 02 36 57.7 +4.4**
NEY Neytrino 25.26 281 ⇑*e*P **P 02 36 57.4 +3.4**
NEY pmax pmax
comp=Z,5.0nm,1.8s
NEY MLR MLR
comp=Z,754nm,14.0s
VRH Novokhopyorsk 25.27 300 *e*P **P 02 37 00.8 +7.0**
VRH pmax pmax
comp=Z,120nm,1.0s
KLRI Killari 25.49 182 *e*P **P 02 36 55.1 -1.0**
KLRI IAmb IAmb 02 36 57.9
comp=Z,70nm,1.0s
KLRI *es*P **sP 02 37 05.0 +0.5**
KLRI *e*S **S 02 41 25.1 +2.7**
KLRI IVMs_BB IVMs_BB 02 47 35.1
comp=Z,2μm,13.7s
UOSS Minazif 25.59 230 *e*P **P 02 36 57.0 +0.1**
comp=Z,1.6nm,0.9s
CHLP Challavanipeta 25.61 166 *e*P **P 02 36 56.1 -1.0**
CHLP IAmb IAmb 02 36 58.8
comp=Z,47nm,1.0s
CHLP *ep*P **pP 02 37 02.6 -0.5**
CHLP *es*P **sP 02 37 05.7 +0.1**
CHLP IVMsBB 02 48 11.4
comp=Z,1μm,13.6s
WSAR Wadi Sarin 25.68 224 P **P 02 36 58.8 +1.0**
comp=Z,18nm,1.1s,baz=82,slow=9.2,SNR=4.8
WSAR LR LR 02 48 41.9
comp=Z,686nm,20.2s,baz=68,slow=40
HATD Hatta, Dubai 25.72 230 *i* P **P 02 36 58.6 +0.5**
SNR=8.1
HATD Hatta, Dubai 25.72 230 P **P 02 36 58.4 +0.2**
SNR=5.9
HATD Hatta, Dubai 25.72 230 P **P 02 36 58.4 +0.2**
SNR=5.9
CHVG Ch'k'valeri 25.84 280 P P 02 37 08.8 +10
NAZ Nazwa, Dubai 25.86 231 *i* P **P 02 36 60.0 +0.6**
SNR=13
NAZ Nazwa, Dubai 25.86 231 P **P 02 36 60.0 +0.6**
SNR=13
NAZ Nazwa, Dubai 25.86 231 P **P 02 36 60.0 +0.6**
SNR=13
ASHO Ashiyiah 25.87 230 *i* P **P 02 37 00.1 +0.5**
SNR=18
ASHO Ashiyiah 25.87 230 P **P 02 37 00.1 +0.5**
SNR=14
ASHO Ashiyiah 25.87 230 P **P 02 37 00.1 +0.5**
SNR=14
XAN Xi'an 26.04 101 P **P 02 37 00.4 -0.6**
XAN pP sP 02 37 10.2 +0.7
XAN sP pP 02 37 13.5 +6.5
XAN S **S 02 41 32.0 +1.1**
XAN pmax pmax
comp=Z,54nm,1.2s
XAN pmax pmax
comp=Z,54nm,12.2s
XAN LR LR
comp=Z,1μm,12.1s
XAN LR LR
comp=Z,720nm,13.7s
XAN LR LR
comp=Z,1μm,14.5s
FAQ Al Faqa, Dubai 26.09 231 *i* P **P 02 37 01.7 +0.2**
SNR=5.4
FAQ Al Faqa, Dubai 26.09 231 P **P 02 37 01.5 0.0**
SNR=6.6
FAQ Al Faqa, Dubai 26.09 231 P **P 02 37 01.5 0.0**
SNR=6.6
SMDO Samad 26.12 225 P **P 02 37 03.1 +1.2**
SNR=8.6
SMDO Samad 26.12 225 P **P 02 37 03.1 +1.2**
SNR=8.6
HYBB Hyderabad (bro 26.13 178 *e*P **P 02 37 01.1 -0.8**
HYBB IAmb IAmb 02 37 03.9
comp=Z,118nm,1.8s
HYBB *es*P **sP 02 37 10.8 +0.4**
HYBB *e*S **S 02 41 32.8 +0.3**
HYBB IVMs_BB IVMs_BB 02 47 59.3
comp=Z,1μm,15.8s
HYB Hyderabad 26.13 178 *i* P **P 02 37 01.5 -0.4**
HYB *e* 02 37 09.5
HYB *e*S **S 02 41 37.0 +4.5**
HYB LR LR 02 53 00.0
comp=Z,6.1nm,14.0s
NRIK Noril'sk 26.28 8 P **P 02 37 03.1 +0.3**
comp=Z,57nm,1.0s,baz=197,slow=8.6,SNR=25
PVM Polavaram 26.50 171 *e*P **P 02 37 04.3 -0.9**
PVM IAmb IAmb 02 37 06.6
comp=Z,78nm,1.6s
PVM *e*S **S 02 41 38.0 -0.2**
PVM IVMs_BB IVMs_BB 02 48 16.4
comp=Z,1μm,14.6s
BOD Bodaibo 26.65 45 ⇑*i* P **P 02 37 06.6 +0.4**
BOD pmax pmax
comp=Z,115nm,1.0s
ARQ Araqi 26.70 228 P **P 02 37 07.5 +0.6**
VORR Voronezh 26.86 301 P **P 02 37 09.0 +0.8**
VORR pmax pmax
comp=Z,250nm,1.2s
VSR Storozhevoye 26.88 300 *e*P **pP 02 37 14.9 +0.6**
VSR pmax pmax
comp=Z,60nm,0.8s
TIY Taiyuan 26.90 91 *e*P **P 02 37 10.1 +1.3**
TIY PP **PnPn 02 37 53.3 +2.5**
TIY S **S 02 41 44.4 -0.1**
TIY sS **sS 02 41 59.1 +4.6**
TIY SS **SnSn 02 42 54.9 +5.1**
TIY pmax pmax
comp=Z,45nm,1.2s
TIY pmax pmax
comp=Z,150nm,8.9s
TIY LR LR
comp=Z,820nm,12.1s
TIY LR LR
comp=Z,260nm,8.0s
TIY LR LR
comp=Z,1μm,17.8s
NJS Nagarjunasagar 27.02 177 *e*P **P 02 37 08.8 -1.0**
NJS IAmb IAmb 02 37 09.6
comp=Z,38nm,1.5s
NJS *es*P **sP 02 37 19.0 +0.7**
NJS *e*S **S 02 41 50.4 +3.9**
NJS IVMs_BB IVMs_BB 02 48 36.7
comp=Z,2μm,11.2s
LPSR Galich'ya Gora 27.09 303 *e*P **pP 02 37 17.2 +1.0**
LPSR pmax pmax
comp=Z,60nm,0.7s
SOC Sochi 27.32 283 *e*P **pP 02 37 18.9 +0.5**
SOC pmax pmax
comp=Z,21nm,0.8s
SOC MLR MLR
comp=Z,1μm,13.0s
SRLM Srisailam 27.45 177 *e*P **P 02 37 12.8 -1.0**
SRLM IAmb IAmb 02 37 13.5
comp=Z,20nm,1.0s
SRLM *e*S **S 02 41 55.3 +2.0**
SRLM IVMs_BB IVMs_BB 02 48 48.3
comp=Z,2μm,13.4s
KMI Kunming 27.56 124 P **P 02 37 14.9 -0.1**
KMI pP sP 02 37 22.2 -1.3
KMI sP pP 02 37 25.1 +4.1
KMI PP **PnPn 02 38 06.4 +6.2**
KMI S **S 02 41 56.2 +0.7**
KMI sS sS 02 42 09.1 +3.7
KMI SS **SnSn 02 43 17.2 +11**
KMI pmax pmax
comp=Z,30nm,1.7s
KMI pmax pmax
comp=Z,140nm,3.1s
KMI LR LR
comp=Z,630nm,23.4s
KMI LR LR
comp=Z,780nm,18.3s
KMI LR LR
comp=Z,2μm,21.4s
ADKI Addanki 27.75 175 *e*P **P 02 37 16.1 -0.4**
ADKI IAmb IAmb 02 37 16.6
comp=Z,39nm,1.2s
ADKI *es*P **sP 02 37 25.5 +0.6**
ADKI *e* 02 41 50.5
ADKI IVMs_BB IVMs_BB 02 49 01.7
comp=Z,3μm,12.5s
RCLA Racherla 28.09 177 *e*P **P 02 37 18.4 -1.1**
RCLA IAmb IAmb 02 37 18.5
comp=Z,40nm,1.5s
RCLA *e*S **S 02 42 06.2 +2.8**
RCLA IVMs_BB IVMs_BB 02 49 15.3
comp=Z,2μm,11.5s
MOS Moscow 28.18 310 *e*P P 02 37 26.2 +6.2
MOS *e* 02 37 35.7
MOS *e* 02 38 15.6
MOS *e*SS SS 02 43 42.8 -20
MOS pmax pmax
comp=Z,197nm,0.9s
MOS pmax pmax
comp=Z,200nm,0.8s
MOS MLR MLR
comp=Z,4μm,12.0s
MOS MLR MLR
comp=E,3μm,11.0s
KLMR Klimovskoe 28.47 321 *e*P **P 02 37 22.9 +0.4**
KLMR pmax pmax
comp=Z,158nm,0.9s
ENH Enshi 28.53 107 *e*P **P 02 37 23.2 -0.1**
comp=Z,55nm,1.1s
ENH LR LR
comp=Z,901nm,20.0s
URV Uravakonda 28.58 181 *e*P **P 02 37 22.4 -1.5**
URV IAmb IAmb 02 37 23.6
comp=Z,56nm,1.7s
URV *e*S **S 02 42 09.5 -1.6**
URV IVMs_BB IVMs_BB 02 49 27.4
comp=Z,1μm,12.4s
ANN Anapa 28.65 287 *e*P **P 02 37 26.9 +2.6**
ANN *e* 02 38 14.8
ANN *e*S **S 02 42 16.2 +4.3**
ANN *e*SS **SnSn 02 43 35.0 +2.7**
ANN pmax pmax
comp=Z,50nm,0.9s
ANN MLR MLR
comp=Z,1μm,16.0s
OBN Obninsk 28.70 308 pP **pP 02 37 31.7 +1.2**
comp=Z,34nm,0.7s,baz=91,slow=15,SNR=5.4
OBN Lg Lg 02 46 33.4
comp=Z,18nm,0.7s,baz=137,slow=23,SNR=4.1
OBN LR LR 02 49 06.4
comp=Z,2μm,18.5s,baz=92,slow=37
OBN Obninsk 28.70 308 P **P 02 37 26.2 +1.6**
OBN *e* 02 38 19.8
OBN *e*PPP PPP 02 38 28.3
OBN *e*S **S 02 42 08.4 -4.0**

OBN eSS **SnSn** **02 43 35.4 +2.2**
OBN pmax pmax
comp=Z,23nm,1.4s
OBN MLR MLR
comp=Z,2μm,18.0s
OBN Obninsk 28.70 308 eP **P** **02 37 25.4 +0.8**
comp=Z,56nm,0.9s
OBN pP **pP** **02 37 31.7 +1.2**
OBN Lg Lg 02 46 33.4
BJI Beijing 28.75 84 P **P** **02 37 24.6 -0.6**
BJI S **S** **02 42 11.8 -1.7**
BJI pmax pmax
comp=Z,10.0nm,1.3s
BJI pmax pmax
comp=Z,110nm,4.5s
BJI LR LR
comp=Z,1μm,15.8s
BJI LR LR
comp=Z,1μm,17.2s
BJT Baijiatuau 28.75 84 PFAKE 02 37 40.0 +15
BJT LR LR
comp=Z,1μm,20.0s
GYA Guiyang 29.07 117⇑ i P **P** **02 37 28.4 +0.1**
GYA pP pP 02 37 34.8 +0.4
GYA PP **PnPn** **02 38 23.0 +2.3**
GYA PcP **PcP** **02 40 37.5 +1.4**
GYA S **S** **02 42 27.2 +8.2**
GYA SS **SnSn** **02 43 46.8 +3.7**
GYA ScP **ScP** **02 44 17.0 +0.5**
GYA ScS **ScS** **02 48 09.1 -1.6**
GYA pmax pmax
comp=Z,60nm,1.0s
GYA pmax pmax
comp=Z,180nm,5.2s
GYA LR LR
comp=Z,1μm,16.8s
GYA LR LR
comp=Z,810nm,17.2s
GYA LR LR
comp=Z,940nm,17.4s
HIA Hailar 29.25 64 PFAKE 02 37 40.0 +10
HIA LR LR
comp=Z,860nm,19.0s
CMAI Chiengmai2 29.64 136 P **P** **02 37 33.8 +0.4**
comp=Z,41nm,1.1s,comp=Z,3μm
SKHT Srikalahasti 29.83 176 eP **P** **02 37 35.0 +0.1**
SKHT IAmb IAmb 02 37 36.0
comp=Z,29nm,1.4s
SKHT IVMs_BB IVMs_BB 02 50 12.9
comp=Z,2μm,13.9s
CRAI Chiangrai 30.07 134 P **P** **02 37 37.8 +0.7**
comp=Z,203nm,1.1s,comp=Z,21μm
TMCR Tamitsa 30.34 326 eP **pP** **02 37 46.0 +1.0**
TMCR pmax pmax
comp=Z,142nm,1.2s
CHTO Chiang Mai 30.53 137 eP **P** **02 37 39.9 -1.3**
CHTO pmax pmax
comp=Z,4.0nm,0.8s
CHTO MLR MLR
comp=Z,1μm,20.0s
CHTO Chiang Mai 30.53 137 eP **P** **02 37 39.9 -1.3**
comp=Z,4.0nm,0.8s
CHTO LR LR
comp=Z,1μm,20.0s
CMAR Chiang Mai Arr 30.84 138 P **P** **02 37 43.3 -0.6**
comp=Z,5.2nm,0.8s,baz=319,slow=9.2,SNR=15
CMAR PcP **PcP** **02 40 40.0 -0.6**
comp=Z,1.5nm,0.3s,baz=320,slow=4.1,SNR=3.8
CMAR pPcP 02 40 48.0
comp=Z,3.5nm,0.7s,baz=303,slow=3.5,SNR=4.3
CMAR LR LR 02 52 21.2
comp=Z,1μm,18.0s,baz=334,slow=41
CMAR Chiang Mai Arr 30.84 138 i P **P** **02 37 43.7 -0.1**
CMAR pmax pmax
comp=Z,5.0nm,0.8s
CM01 Chiang Mai Arr 30.88 138 eP **P** **02 37 42.9 -1.2**
SIM Simferopol' 30.92 288 eP P 02 37 52.1 +7.7
LAMP Lampang 31.12 137 P **P** **02 37 47.0 +0.7**
comp=Z,8.4nm,1.0s
WHN Wuhan 31.79 102 ⇓P **P** **02 37 52.9 +0.8**
WHN pP **sP** **02 38 00.5 -0.1**
WHN S **S** **02 43 00.1 -1.1**
WHN LR LR
comp=Z,4μm,17.8s
WHN LR LR
comp=Z,2μm,10.9s
WHN LR LR
comp=Z,3μm,13.0s
UTTA Uttaradit 32.24 136 P **P** **02 37 56.9 +0.7**
comp=Z,8.1nm,1.2s,comp=Z,107nm
LOEI Loei 32.80 135 P **P** **02 38 02.4 +1.3**
comp=Z,19nm,1.0s,comp=Z,759nm
BR131 Keskin Array S 32.82 279 eP **P** **02 38 02.5 +1.2**
BRTR Keskin Array B 32.82 279 P **P** **02 38 02.4 +1.1**
comp=Z,9.2nm,1.0s,baz=92,slow=7.8,SNR=40
BRTR pP **sP** **02 38 09.6 -0.2**
comp=Z,34nm,0.8s,baz=102,slow=11,SNR=74
BRTR LR LR 02 54 32.5
comp=Z,165nm,18.0s,baz=49,slow=42
LVZ Lovozero 33.14 332 eP **P** **02 38 03.8 +0.1**
LVZ pmax pmax
comp=Z,64nm,1.2s
LVZ Lovozero 33.14 332 eP **P** **02 38 03.8 +0.1**
comp=Z,64nm,1.2s
AKASG Malin Array Be 33.18 300 P **P** **02 38 05.2 +1.1**
comp=Z,5.0nm,0.6s,baz=70,slow=8.9,SNR=8.8
AKASG pP **pP** **02 38 11.0 +0.8**
comp=Z,15nm,0.7s,baz=71,slow=8.9,SNR=21
AKASG pPcP 02 40 53.5
comp=Z,1.5nm,0.6s,baz=67,slow=4.1,SNR=5.4
AKASG LR LR 02 52 26.3
comp=Z,2μm,19.3s,baz=95,slow=38
AKASG Malin Array Be 33.18 300 i P **P** **02 38 05.1 +1.0**
AKASG pmax pmax
comp=Z,5.0nm,0.6s
AKBB Malin Array Si 33.18 300 eP **P** **02 38 05.7 +1.6**
AKBB pmax pmax
comp=Z,46nm,1.0s
AKBB Malin Array Si 33.18 300 eP **P** **02 38 05.7 +1.6**
comp=Z,46nm,1.0s
KIEV Kiev 33.19 300c i P **P** **02 38 05.5 +1.3**
KIEV pmax pmax
comp=Z,9.0nm,0.7s
KIEV MLR MLR
comp=Z,1μm,16.0s
KIEV Kiev 33.19 300 eP **P** **02 38 04.1 -0.1**
comp=Z,51nm,1.1s
KIEV LR LR
comp=Z,2μm,19.0s
AK11 Malin Array Si 33.22 300 eP **P** **02 38 06.2 +1.8**
ANTO Ankara 33.37 279 eP **P** **02 38 07.9 +1.9**
ANTO e*PP **sP** **02 38 14.1 -0.5**
ANTO MLR MLR
comp=Z,7.0nm,20.0s
ANTO Ankara 33.37 279 eP **P** **02 38 07.9 +1.9**
ANTO epP **sP** **02 38 14.1 -0.5**
ANTO LR LR
comp=Z,7.0nm,20.0s
BR231 Keskin MP Arra 33.40 279 eP **P** **02 38 08.2 +1.9**
APA Apatity 33.44 331⇑ i P **pP** **02 38 12.5 +0.2**
APA i 02 39 20.0
APA eS sS 02 43 35.0 -1.2
APA pmax pmax
comp=Z,18nm,0.7s
APA MLR MLR
comp=Z,3μm,10.0s
PBKT Sadao Pong 33.44 136 P **P** **02 38 07.2 +0.5**
comp=Z,36nm,1.4s,comp=Z,2μm
SNY Shenyang 33.46 77 ⇑P **P** **02 38 06.3 -0.3**
SNY pmax pmax
comp=Z,19nm,1.5s
SNY pmax pmax
comp=Z,360nm,4.2s
SNY LR LR
comp=Z,1μm,12.6s
SNY LR LR
comp=Z,2μm,13.4s
SNY LR LR
comp=Z,2μm,19.6s
MICGM Minsk 33.70 307⇑ i P **pP** **02 38 15.0 +0.3**
MICGM PM 02 38 16.0
comp=Z,0.3nm,0.8s
MICGM ePP **PnPn** **02 39 15.0 -5.6**
MICGM ePPP PPP 02 39 40.0
MICGM eS sS 02 43 40.0 -0.5
MICGM eSS **SS** **02 45 50.0 -6.0**
MICGM eSSS SSS 02 46 56.0
MICGM eLQ LQ 02 50 08.0
MICGM eLR LR 02 51 40.0
MICGM LRM MLR 02 52 06.0
comp=Z,4.0nm,12.0s
MNK Minsk 33.70 307⇑ i P **pP** **02 38 15.0 +0.3**
MNK ePPP PPP 02 39 40.0
MNK eS sS 02 43 40.0 -0.5
MNK pmax pmax
comp=Z,330nm,0.8s
MNK MLR MLR
comp=Z,4μm,12.0s
ASF Jabal al Asfar 33.82 264 P **P** **02 38 11.3 +1.3**
comp=Z,9.6nm,1.1s,baz=64,slow=3.4,SNR=6.4
ASF Jabal al Asfar 33.82 264 P **P** **02 38 11.3 +1.3**
ASF pmax pmax
comp=Z,8.0nm,1.0s
KIS Kishinev 34.07 293 eP **pP** **02 38 20.0 +2.0**
KIS eS **S** **02 43 38.0 +1.6**
KIS eLQ LQ 02 50 20.0
KIS LRM MLR 02 53 32.0
comp=Z,2μm,16.0s
KIS Kishinev 34.07 293 eP **pP** **02 38 20.0 +2.0**
KIS eS **S** **02 43 38.0 +1.6**
KIS MLR MLR
comp=Z,1μm,13.0s
KIS MLR MLR
comp=Z,2μm,16.0s
CN2 Changchun 34.16 73 eP **P** **02 38 12.9 +0.1**
NJ2 Nanjing 34.20 96 eP **P** **02 38 13.8 +0.6**
NJ2 pmax pmax
comp=Z,9.0nm,0.5s
NACGM Naroch 34.32 307 eP **pP** **02 38 21.0 +0.9**
NACGM eLQ LQ 02 49 22.0
NACGM eLR LR 02 51 10.0
NACGM LRM MLR 02 52 18.0
comp=Z,3.9nm,12.0s
IDID Didziasalis 34.33 308 eP **pP** **02 38 21.5 +1.3**
IDID IAmb IAmb 02 38 23.5
comp=Z,38nm,0.9s
VSU Vasula 34.37 314 P **P** **02 38 17.1 +2.8**
VSU MLR MLR
comp=Z,6μm,15.0s
MMAI Mount Meron Ar 34.47 267 P **P** **02 38 17.1 +1.5**
comp=Z,14nm,1.0s,baz=272,slow=40,SNR=4.0
MMAI pP **sP** **02 38 24.1 -0.1**
comp=Z,44nm,1.3s,baz=35,slow=16,SNR=5.7
SRDT SRDT 34.48 141 P **P** **02 38 16.5 +0.8**
comp=Z,106nm,1.0s,comp=Z,2μm
KHON Khomkaen 34.59 134 P **P** **02 38 17.4 +0.8**
comp=Z,15nm,1.1s,comp=Z,544nm
IZAR Zarasai 34.60 309 eP **pP** **02 38 23.8 +1.4**
IZAR IAmb IAmb 02 38 26.0
comp=Z,86nm,1.1s
ISAL Salakas 34.67 309 eP **pP** **02 38 24.4 +1.3**
ISAL IAmb IAmb 02 38 26.7
comp=Z,69nm,1.1s
SKNT Sakolnakorn 34.68 132 P **P** **02 38 17.3 -0.1**
comp=Z,40nm,2.0s
FIA1 FINESS Array S 34.94 319 eP **P** **02 38 20.9 +1.7**
comp=Z,84nm,0.8s
FINES FINESS Array B 34.94 319 P **P** **02 38 20.4 +1.1**
comp=Z,7.4nm,0.6s,baz=116,slow=9.9,SNR=16
FINES pP **sP** **02 38 26.6 -1.2**
comp=Z,71nm,0.8s,baz=97,slow=9.4,SNR=44
FINES LR LR 02 53 18.4
comp=Z,3μm,18.9s,baz=96,slow=37
TIRR Tirgusor 34.98 289 eP **P** **02 38 21.3 +1.5**
TIRR pmax pmax
comp=Z,13nm,1.1s
TIRR Tirgusor 34.98 289 eP **P** **02 38 21.3 +1.5**
comp=Z,13nm,1.1s
CSS Mathiatis 35.03 271 eP **P** **02 38 21.2 +0.8**
comp=Z,7.8nm,1.0s
CSS LR LR
comp=Z,63nm,19.0s
YAK Yakutsk 35.22 40 P **P** **02 38 22.0 +0.3**
comp=Z,12nm,0.3s,baz=155,slow=1.2,SNR=5.1
YAK pP **pP** **02 38 28.5 +0.8**
comp=Z,178nm,0.7s,baz=108,slow=0.7,SNR=19
YAK LR LR 02 53 15.8
comp=Z,1μm,18.4s,baz=264,slow=37
YAK Yakutsk 35.22 40 eP **P** **02 38 22.2 +0.5**
YAK e*PP **pP** **02 38 28.5 +0.8**
YAK e 02 39 39.5
YAK eS **S** **02 43 52.3 -1.5**
YAK e*SS **sS** **02 44 03.0 -0.8**
YAK eSSS SSS 02 46 16.6
YAK pmax pmax
comp=Z,15nm,0.8s
YAK pmax pmax
comp=Z,25nm,0.8s
YAK smax smax
comp=N,196nm,2.0s
YAK smax smax
comp=E,93nm,1.4s
YAK MLR MLR
comp=N,320nm,15.0s
YAK MLR MLR
comp=Z,954nm,17.0s
YAK MLR MLR
comp=E,646nm,16.0s
YAK Yakutsk 35.22 40 eP **P** **02 38 22.5 +0.8**
comp=E,214nm,0.8s
YAK pP **pP** **02 38 28.5 +0.8**
TESR Tescani 35.63 293⇑ i P pP 02 38 33.3 +1.8
VRI Vrincioaia 35.74 292⇑ i P pP 02 38 34.9 +2.4
VRI Vrincioaia 35.74 292⇑P pP 02 38 34.9 +2.4
PLOR Plostina 35.80 292⇑ i P pP 02 38 30.8 -2.2
PLOR Plostina 35.80 292⇑P pP 02 38 30.8 -2.2
ISP Isparta 35.80 277⇓ i P pP 02 38 35.1 +1.9
ISP Isparta 35.80 277⇓P pP 02 38 35.1 +1.9
ISP Isparta 35.80 277 PFAKE 02 38 40.0 +13
ISP LR LR
comp=Z,254nm,22.0s
ISR Istrita 36.07 291⇓ i P pP 02 38 38.8 +3.4
ISR Istrita 36.07 291⇓P pP 02 38 38.8 +3.4
SRAK Srakaew 36.16 137 P pP 02 38 33.6 -2.6
comp=Z,489nmcomp=Z,48nm,1.1s
BUR08 Bucovina Ar. S 36.32 295 eP **P** **02 38 32.6 +1.2**
MLR Muntele Rosu 36.37 291⇓ i P **P** **02 38 35.1 +3.1**
MLR Muntele Rosu 36.37 291⇓P **P** **02 38 35.1 +3.1**
MLR Muntele Rosu 36.37 291 eP **P** **02 38 34.3 +2.4**
comp=Z,23nm,0.9s
SSE Sheshan 36.39 95 P **P** **02 38 32.9 +0.8**
SSE S **S** **02 44 09.8 -2.6**
SSE pmax pmax
comp=Z,27nm,1.0s
SSE pmax pmax
comp=Z,98μm,3.0s
SSE LR LR
comp=Z,280nm,16.0s
SSE LR LR
comp=Z,250nm,16.0s
SSE LR LR
comp=Z,350nm,17.2s
KEV Kevo 36.41 333 PFAKE 02 38 40.0 +8.2
KEV LR LR
comp=Z,1μm,19.0s
SECR 36.42 291⇑ i P pP 02 38 42.0 +3.7
QIZ Qiongzhong 36.46 122 P **P** **02 38 32.8 0.0**
QIZ sP **sP** **02 38 40.7 -0.6**
QIZ S **S** **02 44 20.2 +6.5**
QIZ pmax pmax
comp=Z,16nm,1.0s
QIZ LR LR
comp=Z,460nm,15.1s
QIZ LR LR
comp=Z,400nm,19.9s
SUW Suwalki 36.49 306 eP pP 02 38 39.9 +1.2
SUW Suwalki 36.49 306 eP pP 02 38 39.9 +1.2
EIL Elat 36.58 262 P **P** **02 38 35.0 +1.3**
comp=Z,8.2nm,0.9s,baz=3.4,slow=5.9,SNR=7.3
EIL pP **sP** **02 38 41.6 -0.6**
comp=Z,12nm,0.9s,baz=6.7,slow=4.0,SNR=7.1
LVV L'vov 36.61 299 eP **pP** **02 38 39.0 -0.8**
LVV e 02 39 54.5
LVV ePPP PPP 02 40 20.7
LVV eS **S** **02 44 20.1 +4.7**
LVV MLR MLR
comp=N,500nm,15.0s
LVV MLR MLR
comp=E,480nm,15.0s
LVV MLR MLR
comp=Z,600nm,15.0s
DOPR Dopca 36.62 292⇓ i P pP 02 38 41.6 +1.6
MDJ Mudanjiang 36.78 70 P **P** **02 38 33.5 -1.7**
MDJ pP pP 02 38 39.8 -1.5
MDJ sP sP 02 38 42.2 -1.6
MDJ S **S** **02 44 16.1 -2.0**
MDJ ScP **ScP** **02 44 41.9 -0.8**
MDJ PcS **PcS** **02 44 44.3 -0.7**
MDJ pmax pmax
comp=Z,5.0nm,1.0s
MDJ pmax pmax
comp=Z,57nm,3.7s
MDJ LR LR
comp=Z,560nm,24.9s
MDJ LR LR
comp=Z,200nm,24.9s
MDJ LR LR
comp=Z,670nm,20.3s
MDJ Mudanjiang 36.78 70 PFAKE 02 38 50.0 +15
MDJ LR LR
comp=Z,1μm,19.0s
ARA0 ARCESS Array S 36.85 332 eP **P** **02 38 36.8 +1.2**
ARCES ARCESS Array B 36.85 332 P **P** **02 38 36.2 +0.7**
comp=Z,11nm,0.8s,baz=101,slow=7.6,SNR=12
ARCES pP **sP** **02 38 42.7 -1.4**
comp=Z,18nm,0.8s,baz=107,slow=5.5,SNR=5.0
ARCES LR LR 02 54 46.2
comp=Z,1μm,19.2s,baz=106,slow=38
VOIR 36.99 292⇑ i P pP 02 38 45.1 +1.8
VOIR 36.99 292⇑P pP 02 38 45.1 +1.8
ARCR ARCALIA 37.02 294⇑ i P P 02 38 46.3 +9.1
GOLR 37.23 291⇑ i P pP 02 38 47.3 +2.2
TIXI Tiksi 37.23 24 P **P** **02 38 39.1 +0.3**
comp=Z,11nm,0.6s,baz=268,slow=5.7,SNR=23
TIXI pP **sP** **02 38 45.9 -1.5**
comp=Z,111nm,0.9s,baz=261,slow=5.8,SNR=54
TIXI Lg Lg 02 51 11.6
comp=Z,2.3nm,1.0s,baz=207,slow=11,SNR=3.1
TIXI Tiksi 37.23 24de P **P** **02 38 39.0 +0.2**
TIXI pmax pmax
comp=Z,9.0nm,0.6s
TIXI MLR MLR
comp=Z,3μm,15.0s
TIXI Tiksi 37.23 24 eP **P** **02 38 39.0 +0.2**
comp=Z,116nm,0.9s
TIXI pP **sP** **02 38 45.9 -1.5**
TIXI Lg Lg 02 51 11.6
TIXI LR LR
comp=Z,3μm,20.0s
INCN Inchon 37.27 82 PFAKE 02 38 50.0 +10
INCN LR LR
comp=Z,872nm,20.0s
ARR Arges 37.30 292⇑ i P **P** **02 38 42.0 +2.3**
CHBT CHBT 37.38 138 P **P** **02 38 41.5 +1.0**
comp=Z,25nm,1.4s
PVL Pavlikeni 37.48 288 eP P 02 38 49.0 +7.8
KWP Kalwaria Pacla 37.49 299 eP **P** **02 38 44.0 +2.8**
KWP Kalwaria Pacla 37.49 299⇑ i P **P** **02 38 42.8 +1.6**
KWP Kalwaria Pacla 37.49 299⇑P **P** **02 38 42.8 +1.6**
CJR Cluj-Napoca 37.61 294⇓ i P pP 02 38 46.4 -2.1
CJR Cluj-Napoca 37.61 294⇓P pP 02 38 46.4 -2.1
LOT Lotru 37.85 292⇑ i P pP 02 38 52.8 +2.2
KOLS Kolonicke sedl 37.92 298 ePP PP 02 40 04.1 -7.4
TRPA Tarpa 37.94 297⇑ e P pP 02 38 53.5 +2.4
UZH Uzhgorod 37.98 298 eP **P** **02 38 45.6 +0.3**
UZH i 02 38 49.4
UZH i 02 38 56.0
UZH e 02 40 36.8
UZH e 02 40 59.6
UZH eS **S** **02 44 35.0 -1.2**
UZH e 02 47 15.2
UZH e 02 47 45.0
UZH MLR MLR
comp=N,900nm,14.0s
UZH MLR MLR
comp=E,2μm,14.0s
UZH MLR MLR
comp=Z,1μm,14.0s
QZH Quanzhou 38.15 106 P **P** **02 38 44.3 -2.8**
QZH S **S** **02 44 36.0 -3.3**
QZH LR LR
comp=Z,870nm,9.8s
QZH LR LR
comp=Z,810nm,10.4s
QZH LR LR
comp=Z,2μm,15.1s
DRGR 38.18 295⇑ i P pP 02 38 55.3 +2.0
DRGR 38.18 295⇑P pP 02 38 55.4 +2.1
KS01 Wonju Array Si 38.18 82 eP **P** **02 38 47.0 -0.2**
KS01 epP **pP** **02 38 54.1 +0.8**
KSAR Wonju Array Be 38.19 82 P **P** **02 38 47.5 +0.2**
KSAR *PP **sP** **02 38 54.6 -1.2**
KSAR 02 41 08.9
KSAR Wonju Array Be 38.19 82 P **P** **02 38 47.5 +0.2**
KSAR pP **sP** **02 38 54.6 -1.2**
KSAR pPcP 02 41 08.9
KSRS Korea Array 38.21 82 P **P** **02 38 47.5 0.0**
comp=Z,8.3nm,1.0s,baz=290,slow=7.0,SNR=13
KSRS pP **sP** **02 38 54.6 -1.4**
comp=Z,13nm,1.0s,baz=280,slow=7.4,SNR=15
KSRS pPcP 02 41 08.9
comp=Z,2.7nm,0.9s,baz=303,slow=2.0,SNR=4.5
BEL Belsk 38.24 303 eP pP 02 38 55.5 +1.9
BEL Belsk 38.24 303 eP pP 02 38 55.5 +1.9
CRVS Cervenica-Dubn 38.45 298 ePP PP 02 40 12.5 -4.7
STHS Stebnicka Huta 38.47 299 eP **P** **02 38 50.7 +1.2**
STHS e 02 38 57.0
STHS pmax pmax
comp=Z,12nm,0.8s
STHS Stebnicka Huta 38.47 299 eP **P** **02 38 50.7 +1.2**
STHS e 02 38 57.0
PGB Panagyurishte 38.51 287 eP pP 02 38 58.0 +1.9
MPEP Malo Peshtene 38.53 289 eP pP 02 38 57.0 +0.8
USRK Ussuriysk Ar. 38.54 70 P **P** **02 38 51.4 +1.3**
comp=Z,4.7nm,0.9s,baz=317,slow=10.0,SNR=6.2
USRK pP **sP** **02 38 58.6 0.0**
comp=Z,4.9nm,0.9s,baz=300,slow=8.6,SNR=5.2
VLA Vladivostok 38.83 71⇓ eP **P** **02 38 50.9 -1.6**
VLA e*PP **pP** **02 38 56.5 -2.1**
VLA e*SP **sP** **02 38 59.4 -1.7**
VLA eS **S** **02 44 47.0 -2.1**
VLA pmax pmax
comp=Z,18nm,0.8s
SIRR Siria 39.02 294⇑ i P pP 02 39 02.1 +1.8
NIE Niedzica 39.06 299 eP **P** **02 38 56.1 +1.6**
NIE Niedzica 39.06 299 eP **P** **02 38 56.1 +1.6**
OJC Ojcow 39.19 301 eP **P** **02 38 57.5 +1.9**
OJC Ojcow 39.19 301 eP **P** **02 38 56.2 +0.7**
OJC pmax pmax
comp=Z,80nm,1.1s
OJC Ojcow 39.19 301 eP **P** **02 38 56.2 +0.7**
comp=Z,80nm,1.1s
KARP Karpathos 39.23 276 eP **P** **02 38 56.9 +0.8**
KARP epP **sP** **02 39 03.5 -1.1**
KARP ePP **PnPn** **02 40 37.2 +8.5**
BZS Buzias 39.25 293⇑ i P pP 02 39 02.4 +0.2
BZS Buzias 39.25 293⇑P pP 02 39 02.4 +0.2
MDVR Moldovita 39.45 292⇑ i P pP 02 39 06.0 +2.1
KKB Krupnik 39.51 287 eP pP 02 39 06.0 +1.6
PSZ Piszkesteto 39.71 297⇓ i P pP 02 39 08.1 +2.0
PSZ Piszkesteto 39.71 297⇓ e P pP 02 39 07.4 +1.3
PSZ Piszkesteto 39.71 297⇓P pP 02 39 08.1 +2.0
PSZ Piszkesteto 39.71 297 eP **P** **02 39 01.1 +1.2**
PSZ epP **pP** **02 39 08.2 +2.0**
PSZ LR LR
comp=Z,1μm,19.0s
APE Apeiranthos 39.72 279⇑ i P **P** **02 39 00.8 +0.7**
APE Apeiranthos 39.72 279c i P **P** **02 39 00.5 +0.4**
APE pmax pmax
comp=Z,49nm,1.3s
APE MLR MLR
comp=Z,293nm,19.0s
VAY Valandovo 40.07 286 eP **P** **02 39 04.8 +1.9**
SANT Santorini 40.08 278⇑ i P pP 02 39 10.3 +1.0
SANT Santorini 40.08 278 eP **P** **02 39 03.0 -0.1**
comp=Z,86nm,1.2s
SANT LR LR
comp=Z,286nm,20.0s
TATO Taipei 40.17 103 PFAKE 02 39 10.0 +6.1
TATO LR LR
comp=Z,451nm,21.0s
RAC Raciborz 40.23 301 eP **P** **02 39 05.1 +1.0**
RAC MLR MLR
comp=Z,2μm,17.6s
VYHS Vyhne 40.23 298 eP **P** **02 39 06.0 +1.8**

VYHS			*e*			02 39 12.3
VYHS			pmax	pmax		
	comp=Z,11nm,1.2s					
VYHS			MLR	MLR		
	comp=Z,500nm,23.7s					
VYHS	**Vyhne**	**40.23 298**	*e*P	**P**		**02 39 06.0 +1.8**
VYHS			*e*			02 39 12.3
VYHS			*e*PP	PP		02 40 28.7 -8.0
VYHS			*e*L	L		02 56 30.3
YHNB	**Yeheng**	**40.28 103**	PFAKE			02 39 20.0 +15
YHNB			LR	LR		
	comp=Z,314nm,21.0s					
OKC	**Ostrava-Krasne**	**40.32 300**	*e*P	**P**		**02 39 07.5 +2.6**
OKC			*ep*P	**sP**		**02 39 12.6 -0.9**
OKC			*e*S	**S**		**02 45 16.3 +5.0**
OKC			AMS	AMS		02 56 40.0
	comp=Z,1μm,13.3s					
OKC	**Ostrava-Krasne**	**40.32 300**	*e*P	**P**		**02 39 07.5 +2.6**
OKC			*e*			02 39 12.6
OKC			*e*S	**S**		**02 45 16.3 +5.0**
OKC			MLR	MLR		
	comp=Z,1μm,13.3s					
BUD	**Budapest**	**40.40 297⇓**	*e*P	pP		02 39 13.2 +1.5
MOR8	**Moi Rana**	**40.44 326**	*e*P	**P**		**02 39 05.7 0.0**
MOR8			*ep*P	**pP**		**02 39 11.9 +0.1**
MOR8			IAmb	IAmb		02 39 13.0
	comp=Z,54nm,1.1s					
SSLB	**Suanglung**	**40.55 105**	*e*P	**P**		**02 39 07.2 +0.1**
	comp=Z,46nm,1.0s					
DAMY	**Dhamar**	**40.55 235**	*e*P	**P**		**02 39 08.8 +1.3**
	comp=Z,53nm,0.9s					
SKO	**Skopje**	**40.61 288**	*e*P	**P**		**02 39 08.4 +1.0**
LAST	**Lasithi**	**40.62 276⇑**	*i*P	**P**		**02 39 08.7 +1.0**
LAST	**Lasithi**	**40.62 276**	*e*P	**P**		**02 39 08.2 +0.5**
	comp=Z,127nm,0.8s					
MORC	**Moravsky Berou**	**40.71 300⇑**	*i*P	**P**		**02 39 10.2 +2.0**
MORC	**Moravsky Berou**	**40.71 300**	⇑P	**P**		**02 39 10.2 +2.0**
MORC	**Moravsky Berou**	**40.71 300**	*e*P	**P**		**02 39 10.5 +2.3**
	comp=Z,112nm,1.0s					
CSKK	**Cs‡kako**	**40.93 297**	*e*P	pP		02 39 17.9 +1.8
IDI	**Anoyia**	**40.99 277**	P	**P**		**02 39 11.0 +0.3**
	comp=Z,9.0nm,0.8s,baz=46,slow=9.3,SNR=18					
IDI	**Anoyia**	**40.99 277⇑**	*i*P	pP		02 39 16.9 +0.1
IDI	**Anoyia**	**40.99 277**	*e*P	**P**		**02 39 10.3 -0.4**
	comp=Z,57nm,1.0s					
HFS	**Hagfors**	**41.00 317**	P	**P**		**02 39 11.0 +0.6**
	comp=Z,4.1nm,0.5s,baz=107,slow=9.0,SNR=24					
HFS			pP	**pP**		**02 39 17.5 +1.0**
	comp=Z,50nm,0.8s,baz=98,slow=9.1,SNR=32					
HFS			LR	LR		02 56 47.7
	comp=Z,3μm,18.1s,baz=82,slow=37					
PKSM	**Moragy**	**41.04 295⇑**	*i*P	**P**		**02 39 13.6 +2.7**
PKSM	**Moragy**	**41.04 295**	⇑P	**P**		**02 39 13.6 +2.7**
BIA	**Bitola**	**41.05 286**	*e*P	**P**		**02 39 11.8 +0.6**
BSD	**Bornholm Skovb**	**41.08 309**	*i*P	P		02 39 17.7 +6.6
	comp=Z,44nm,0.9s					
	comp=Z,2μm,11.0s					
BSD	**Bornholm Skovb**	**41.08 309**	*i*P	**pP**		**02 39 17.7 +0.5**
BSD			pmax	pmax		
	comp=Z,44nm,0.9s					
BSD			MLR	MLR		
	comp=Z,2μm,11.0s					
KRLC	**Kraliky**	**41.11 301**	*e*P	**P**		**02 39 12.2 +0.7**
KRLC			*ep*P	**sP**		**02 39 19.4 -0.7**
KRLC			*e*PP	**PnPn**		**02 40 51.2 +0.5**
KRLC	**Kraliky**	**41.11 301**	*e*P	**P**		**02 39 12.2 +0.7**
KRLC			*e*			02 39 19.4
KRLC			*e*			02 40 51.2
SIVA	**Sivas**	**41.17 276⇓**	*i*P	**P**		**02 39 12.4 +0.3**
KSP	**Ksiaz**	**41.21 302**	*e*P	**P**		**02 39 13.7 +1.4**
KSP	**Ksiaz**	**41.21 302**	*e*P	**P**		**02 39 13.7 +1.4**
TWG	**Pinlang**	**41.25 106**	*e*P	**P**		**02 39 13.2 +0.3**
	comp=Z,417nm,1.3s					
DPC	**Dobruska-Polom**	**41.32 302**	*e*P	**P**		**02 39 15.0 +1.8**
DPC			*ep*P	**sP**		**02 39 21.6 -0.2**
DPC			*e*PP	**PP**		**02 40 50.6 +2.1**
DPC			AMS	AMS		02 57 10.0
	comp=Z,2μm,16.0s					
DPC	**Dobruska-Polom**	**41.32 302**	*e*P	**P**		**02 39 15.0 +1.8**
DPC			*e*			02 39 21.6
DPC			*e*			02 40 50.6
VRAC	**Vranov**	**41.43 300⇑**	*i*P	pP		02 39 22.4 +2.1
VRAC	**Vranov**	**41.43 300**	⇑P	pP		02 39 22.4 +2.1
UPC	**Upice**	**41.47 302**	*e*P	**P**		**02 39 15.7 +1.3**
UPC			*ep*P	**sP**		**02 39 22.3 -0.7**
UPC			*e*S	**S**		**02 45 27.1 -1.4**
UPC			AMS	AMS		02 57 10.0
	comp=Z,2μm,18.2s					
UPC	**Upice**	**41.47 302**	*e*P	**P**		**02 39 15.7 +1.3**
UPC			*e*			02 39 22.3
UPC			*e*S	**S**		**02 45 27.1 -1.4**
UPC			MLR	MLR		
	comp=Z,2μm,18.2s					
NKL	**Nikolayevsk**	**41.65 54**	*e*P	**P**		**02 39 15.0 -0.8**
NKL			*e*			02 39 22.0
NKL			pmax	pmax		
	comp=Z,17nm,1.0s					
NKL			MLR	MLR		
	comp=N,1μm,15.0s					
NKL			MLR	MLR		
	comp=E,2μm,15.0s					
NKL			MLR	MLR		
	comp=Z,2μm,15.0s					
LHMI	**Lhok Sumawe**	**41.85 150**	P	**P**		**02 39 18.9 +1.1**
NC405	**NORSAR Array S**	**41.86 318**	*e*P	**P**		**02 39 18.4 +0.9**
SPITS	**Spitsbergen Ar**	**41.87 344**	P	**P**		**02 39 17.7 +0.3**
	comp=Z,16nm,1.2s,baz=116,slow=7.0,SNR=5.5					
SPITS	**Spitsbergen Ar**	**41.87 344**	P	**P**		**02 39 17.7 +0.3**
SPITS			pmax	pmax		
	comp=Z,12nm,1.1s					
SOP	**Sopron**	**41.93 298⇓**	*e*P	pP		02 39 25.4 +1.1
TIR	**Tirane**	**41.94 288**	PFAKE			02 39 30.0 +12
TIR			LR	LR		
	comp=Z,740nm,19.0s					
PDG	**Podgorica**	**41.94 289⇑**	*i*P	pP		02 39 26.5 +2.0
NC602	**NORSAR Array S**	**41.99 318**	*e*P	**P**		**02 39 18.9 +0.3**
NC602			*ep*P	**pP**		**02 39 25.6 +1.0**
NC602	**NORSAR Array S**	**41.99 318**	*e*P	**P**		**02 39 19.3 +0.8**
NC303	**NORSAR Array S**	**42.02 319**	*e*P	**P**		**02 39 20.1 +1.3**
NB2	**NORSAR Subarra**	**42.11 318**	P	**P**		**02 39 19.5 -0.1**
	comp=Z,91nm,1.1s,baz=85,slow=8.6					
NB2	**NORSAR Subarra**	**42.11 318**	P	**P**		**02 39 19.5 -0.1**
	baz=85,slow=8.6					
NOA	**NORSAR Array B**	**42.11 318**	P	**P**		**02 39 20.0 +0.5**
	comp=Z,5.3nm,0.6s,baz=84,slow=8.1,SNR=13					
NOA			pP	**pP**		**02 39 26.6 +0.9**
	comp=Z,33nm,0.8s,baz=84,slow=8.2,SNR=37					
NOA			LR	LR		02 57 30.9
	comp=Z,3μm,18.4s,baz=85,slow=37					
TREC	**Trest**	**42.13 300**	*ep*P	**pP**		**02 39 28.1 +2.1**
TREC			*ex*	x		02 39 34.0
TREC			*e*S	**S**		**02 45 43.2 +4.8**
TREC			AMS	AMS		02 57 40.0
	comp=Z,2μm,20.3s					
CONA	**Conrad Observa**	**42.30 298**	*es*P	sP		02 39 29.8 -0.1
	comp=Z,30nm,1.5s,SNR=6.4					
NC204	**NORSAR Array S**	**42.30 319**	*e*P	**P**		**02 39 21.5 +0.4**
PVCC	**Panska Ves**	**42.35 302**	*e*P	**P**		**02 39 23.3 +1.7**
PVCC			*ep*P	**sP**		**02 39 29.8 -0.4**
PVCC			*ex*	x		02 39 43.7
PVCC			AMS	AMS		02 57 50.0
	comp=Z,2μm,16.1s					
PVCC	**Panska Ves**	**42.35 302**	*e*P	**P**		**02 39 23.3 +1.7**
PVCC			*e*			02 39 29.8
PVCC			MLR	MLR		
	comp=Z,2μm,16.1s					
COP	**Copenhagen**	**42.36 310**	*i*P	sP		02 39 29.3 -0.8
	comp=Z,39nm,0.8s					
COP	**Copenhagen**	**42.36 310**	*i*P	**sP**		**02 39 29.3 -0.8**
COP			pmax	pmax		
	comp=Z,39nm,0.8s					
JNU	**Nakatsue**	**42.38 86**	LR	LR		02 59 26.9
	comp=Z,550nm,18.3s,baz=297,slow=40					
GOPC	**GO Pecny, Ondr**	**42.39 301**	*ep*P	**pP**		**02 39 30.0 +1.9**
GOPC			*ex*	x		02 39 37.5
GOPC			*e*S	**S**		**02 45 44.5 +2.3**
GOPC			*es*S	**SS**		**02 48 47.4 -3.6**
GOPC			AMS	AMS		02 57 50.0
	comp=Z,2μm,17.1s					
OSL	**Oslo**	**42.51 317**	*ep*P	pP		02 39 30.1 +1.2
PRU	**Pruhonice**	**42.52 302**	*e*P	**P**		**02 39 24.5 +1.5**
PRU			*ep*P	**sP**		**02 39 31.2 -0.4**
PRU			*ex*	x		02 39 38.3
PRU			*e*PP	**PcP**		**02 41 10.3 -5.0**
PRU			*e*S	**S**		**02 45 48.5 +4.5**
PRU			*es*S	**SS**		**02 48 49.7 -3.8**
PRU			AMS	AMS		02 57 50.0
	comp=Z,2μm,16.6s					
PRU	**Pruhonice**	**42.52 302**	*e*P	**P**		**02 39 24.5 +1.5**
PRU			*e*			02 39 31.2
PRU			*e*			02 39 38.3
PRU			*e*			02 41 10.3
PRU			*e*S	**S**		**02 45 48.5 +4.5**
PRU			*es*S	**SS**		**02 48 49.7 -3.8**
PRU			MLR	MLR		
	comp=Z,2μm,16.6s					
PRA	**Prague**	**42.56 302**	*ep*P	**pP**		**02 39 31.6 +2.1**
PRA			AMS	AMS		02 58 00.0
	comp=Z,2μm,17.4s					
BRG	**Berggiesshubel**	**42.64 303**	*e*P	**pP**		**02 39 31.8 +1.7**
	comp=Z,33nm,1.4s					
BRG			S	**S**		**02 45 50.0 +4.3**
BRG			SS	**SS**		**02 48 52.0 -3.8**
BRG	**Berggiesshubel**	**42.64 303**	*e*P	**pP**		**02 39 31.8 +1.7**
BRG			S	**S**		**02 45 50.0 +4.3**
BRG			SS	**SS**		**02 48 52.0 -3.8**
BRG			pmax	pmax		
	comp=Z,33nm,1.4s					
ARSA	**Arzberg**	**42.73 297**	*i*P	pP		02 39 32.5 +1.6
	comp=Z,12nm,0.8s,SNR=6.4					
KBS	**Kingsbay**	**42.93 345**	PFAKE			02 39 40.0 +14
KBS			LR	LR		
	comp=Z,1μm,22.0s					
CLL	**Collm**	**43.09 304**	*e*P	**P**		**02 39 28.0 +0.5**
	comp=Z,7.0nm,0.7s					
CLL			*i*S	**sP**		**02 39 34.8 -1.3**
	comp=Z,52nm,1.1s					
CLL			*ep*P	**PP**		**02 41 08.0 +0.5**
CLL			*e*			02 41 20.0
CLL			*i*S	**S**		**02 45 54.1 +1.8**
CLL			*es*S	**SS**		**02 49 00.0 -4.6**
CLL	**Collm**	**43.09 304**	*e*P	**P**		**02 39 28.0 +0.5**
CLL			*i* *SP	**sP**		**02 39 34.8 -1.3**
CLL			*i*S	**S**		**02 45 54.1 +1.8**
CLL			pmax	pmax		
	comp=Z,7.0nm,0.7s					
KONO	**Kongsberg**	**43.11 316**	*e*P	**P**		**02 39 29.1 +1.5**
KONO			*ep*P	**sP**		**02 39 35.1 -1.2**
KONO	**Kongsberg**	**43.11 316**	*e*P	**P**		**02 39 28.7 +1.1**
KONO			pmax	pmax		
	comp=Z,72nm,1.1s					
KONO			MLR	MLR		
	comp=Z,2μm,20.0s					
KONO	**Kongsberg**	**43.11 316**	*e*P	**P**		**02 39 28.7 +1.1**
	comp=Z,72nm,1.1s					
KONO			LR	LR		
	comp=Z,2μm,20.0s					
KULM	**Kulim**	**43.22 145**	*e*P	**P**		**02 39 28.5 -0.5**
	comp=Z,48nm,1.1s					
KULM			LR	LR		
	comp=Z,471nm,19.0s					
SOKA	**Soboth**	**43.24 297**	*i*pP	pP		02 39 36.8 +1.7
	comp=Z,19nm,1.3s,SNR=6.4					
MOA	**Molln**	**43.35 299**	*i*pP	pP		02 39 37.7 +1.8
	comp=Z,14nm,1.6s					
KHC	**Kasperske Hory**	**43.37 301**	*e*P	**P**		**02 39 31.3 +1.4**
KHC			*ep*P	**sP**		**02 39 37.9 -0.7**
KHC			*ex*	x		02 39 45.4
KHC			*e*PP	**PcP**		**02 41 14.6 -3.6**
KHC			*es*S	SS		02 49 07.6 -2.7
KHC			AMS	AMS		02 58 30.0
	comp=Z,2μm,19.0s					
KHC	**Kasperske Hory**	**43.37 301**	*e*P	**P**		**02 39 31.3 +1.4**
KHC			*e*			02 39 37.9
KHC			*e*			02 39 45.4
KHC			*e*			02 41 14.6
KHC			*es*S	SS		02 49 07.6 -2.7
KHC			MLR	MLR		
	comp=Z,2μm,19.0s					
KHC	**Kasperske Hory**	**43.37 301**	*e*P	**P**		**02 39 31.4 +1.5**
	comp=Z,5.5nm,1.2s					
GEC2	**GERESS Array S**	**43.39 300**	*e*P	**P**		**02 39 32.1 +2.0**
GEC2			pmax	pmax		
	comp=Z,11nm,0.9s					
GEC2	**GERESS Array S**	**43.39 300**	*e*P	**P**		**02 39 32.1 +2.0**
	comp=Z,11nm,0.9s					
GERES	**GERESS Array B**	**43.39 300**	P	**P**		**02 39 31.1 +1.0**
	comp=Z,0.9nm,0.5s,baz=65,slow=9.4,SNR=10.0					
GERES			pP	**sP**		**02 39 37.9 -0.8**
	comp=Z,5.0nm,0.8s,baz=66,slow=8.5,SNR=16					
GERES			LR	LR		02 59 01.6
	comp=Z,865nm,19.3s,baz=80,slow=38					
GEA0	**GERESS Array S**	**43.39 300**	*e*P	**P**		**02 39 31.2 +1.1**
TYV	**Tymovskoe**	**43.42 57**	*e*P	**P**		**02 39 30.8 +0.6**
TYV			pmax	pmax		
	comp=Z,13nm,0.8s					
OBKA	**Obir**	**43.61 297**	*i*pP	pP		02 39 39.9 +1.8
	comp=Z,15nm,0.8s					
VNDS	**Vrh nad Dolski**	**43.65 296**	*i*P	pP		02 39 39.5 +1.1
VISS	**Visnje**	**43.67 296**	*e*P	pP		02 39 38.8 +0.3
NKC	**Novy Kostel**	**43.74 303**	*ep*P	**pP**		**02 39 41.0 +2.0**
NKC			AMS	AMS		02 58 20.0
	comp=Z,2μm,13.0s					
LJU	**Ljubljana**	**43.79 296**	*i*P	pP		02 39 40.7 +1.2
AKN	**Aaknes**	**43.95 320**	*e*P	**P**		**02 39 35.4 +1.0**
AKN			*ep*P	**sP**		**02 39 41.6 -1.3**
MUD	**Monsted U'grnd**	**43.97 312**	*ep*P	pP		02 39 41.8 +1.1
MUD	**Monsted U'grnd**	**43.97 312⇓**	*i*P	**pP**		**02 39 42.6 +1.9**
	comp=Z,73nm,1.0s					
	comp=Z,2μm,11.0s					
MUD	**Monsted U'grnd**	**43.97 312⇓**	*i*P	**pP**		**02 39 42.6 +1.9**
MUD			pmax	pmax		
	comp=Z,73nm,1.0s					
MUD			MLR	MLR		
	comp=Z,2μm,11.0s					
IPM	**Ipoh**	**44.11 145**	*e*P	**P**		**02 39 35.0 -1.1**
	comp=Z,38nm,1.0s					
KBA	**Koelnbreinsper**	**44.19 298**	*i*P	**P**		**02 39 37.9 +1.2**
	comp=Z,4.1nm,0.6s					
TRI	**Trieste**	**44.41 296**	*e*P	**P**		**02 39 39.0 +0.8**
TRI			pmax	pmax		
	comp=Z,27nm,0.9s					
TRI	**Trieste**	**44.41 296**	*e*P	**P**		**02 39 39.0 +0.8**
	comp=Z,27nm,0.9s					
GRFO	**Grafenberg**	**44.66 302**	*e*P	**P**		**02 39 42.1 +1.9**
GRFO			pmax	pmax		
	comp=Z,42nm,1.0s					
GRFO	**Grafenberg**	**44.66 302**	*e*P	**P**		**02 39 42.0 +1.9**
	comp=Z,42nm,1.0s					
YSS	**Yuzh-Sakhalins**	**44.74 62**	P	**P**		**02 39 40.1 -0.8**
YSS			MLR	MLR		
	comp=Z,500nm,14.0s					
PSI	**Prapat**	**44.82 149**	P	**P**		**02 39 40.5 -1.4**
	comp=Z,18nm,0.7s,baz=331,slow=8.2,SNR=17					
PSI	**Prapat**	**44.82 149**	*e*P	**P**		**02 39 40.1 -1.8**
PSI			pmax	pmax		
	comp=Z,27nm,0.8s					
PSI	**Prapat**	**44.82 149**	*e*P	**P**		**02 39 40.1 -1.8**
	comp=Z,27nm,0.8s					
ABTA	**Abfaltersbach**	**44.84 298**	*ep*P	pP		02 39 49.0 +1.0
	comp=Z,14nm,1.5s					
TIP	**Timpagrande**	**45.00 286⇓**	*i*P	**P**		**02 39 44.4 +1.2**
TIP	**Timpagrande**	**45.00 286**	*e*P	**P**		**02 39 44.1 +0.9**
	comp=Z,85nm,1.2s					
TIP			LR	LR		
	comp=Z,435nm,21.0s					
BER	**Bergen**	**45.07 318**	*e*P	**P**		**02 39 44.2 +1.0**
BER			*ep*P	**sP**		**02 39 50.9 -1.0**
ASK	**Askoy**	**45.12 318**	*e*P	**P**		**02 39 44.7 +1.0**
ASK			*ep*P	**sP**		**02 39 51.4 -0.9**
WTTA	**Wattenberg**	**45.22 299**	*i*pP	pP		02 39 52.3 +1.2
	comp=Z,27nm,1.3s					
CUC	**Castrocucco**	**45.30 288**	*e*P	**P**		**02 39 47.2 +1.7**
	comp=Z,28nm,0.8s					
CUC			LR	LR		
	comp=Z,749nm,19.0s					
MOTA	**Moosalm**	**45.53 299**	*i*P	**P**		**02 39 49.1 +1.8**
	SNR=23					
MA2	**Magadan**	**45.64 43**	*i*P	**P**		**02 39 48.9 +1.0**
SEY	**Seymchan**	**45.67 38⇓**	*e*P	**P**		**02 39 49.1 +1.1**
RETA	**Reutte**	**45.70 299**	*i*P	**P**		**02 39 49.8 +1.3**
	comp=Z,16nm,0.8s					
GSI	**Gunungsitoli**	**45.72 152**	P	**P**		**02 39 49.5 +0.6**
	comp=Z,122nm,1.6s					
GSI	**Gunungsitoli**	**45.72 152**	*e*P	**P**		**02 39 48.0 -0.9**
	comp=Z,283nm,1.5s					
FETA	**Feichten**	**45.88 299**	*i*P	**P**		**02 39 50.9 +0.7**
	comp=Z,19nm,1.2s					
AQU	**L'Aquila**	**45.95 292**	*e*P	**P**		**02 39 50.2 -0.4**
AQU			pmax	pmax		
	comp=Z,19nm,0.8s					
AQU			MLR	MLR		
	comp=Z,1μm,21.0s					
AQU	**L'Aquila**	**45.95 292**	*e*P	**P**		**02 39 50.2 -0.4**
	comp=Z,19nm,0.8s					
AQU			LR	LR		
	comp=Z,1μm,21.0s					
MAJO	**Matsushiro**	**45.97 77⇓**	*e*P	**P**		**02 39 50.4 -0.4**
MAJO			pmax	pmax		
	comp=Z,59nm,1.0s					
MAJO			MLR	MLR		
	comp=Z,4μm,19.0s					
MAJO	**Matsushiro**	**45.97 77**	*e*P	**P**		**02 39 49.8 -1.0**
	comp=Z,19nm,1.1s					
MAT	**Matsushiro**	**45.97 77**	P	**P**		**02 39 50.0 -0.8**
MJAR	**Matsushiro Arr**	**45.97 77**	P	**P**		**02 39 50.4 -0.3**
	comp=Z,6.2nm,1.0s,baz=296,slow=8.2,SNR=10					
MJAR			pP	**pP**		**02 39 57.7 +0.8**
	comp=Z,12nm,1.1s,baz=294,slow=8.1,SNR=12					
MJAR			pPcP			02 41 34.4
	comp=Z,4.0nm,0.9s,baz=308,slow=3.0,SNR=5.0					
CEL	**Celeste**	**46.02 285**	*e*P	**P**		**02 39 51.8 +0.6**
	comp=Z,138nm,1.0s					
CEL			LR	LR		
	comp=Z,308nm,20.0s					
STU	**Stuttgart**	**46.22 302**	*e*P	**P**		**02 39 53.8 +1.3**
STU			pmax	pmax		
	comp=Z,22nm,1.0s					
STU	**Stuttgart**	**46.22 302**	*e*P	**P**		**02 39 53.8 +1.3**
	comp=Z,22nm,1.0s					
DAVA	**Damuels**	**46.33 299**	*i*P	**P**		**02 39 54.5 +0.9**
	comp=Z,6.4nm,0.8s					
FUORN	**Ofenpass-Fuorn**	**46.33 298**	*e*P	**P**		**02 39 54.8 +1.0**
	comp=Z,13nm,0.8s					
MNSI	**Mandailing Nat**	**46.91 149**	P	**P**		**02 39 57.3 -1.0**
	comp=Z,58nm,1.0s,comp=Z,1μm					
BFO	**Black Forest**	**46.91 301**	*e*P	**P**		**02 39 59.5 +1.4**
BFO			pmax	pmax		
	comp=Z,22nm,1.2s					
BFO			MLR	MLR		
	comp=Z,1μm,19.0s					
BFO	**Black Forest**	**46.91 301**	*e*P	**P**		**02 39 59.5 +1.4**
	comp=Z,22nm,1.2s					
BFO			LR	LR		
	comp=Z,1μm,19.0s					
ERM	**Erimo**	**46.93 68**	PFAKE			02 40 10.0 +12
ERM			LR	LR		
	comp=Z,884nm,22.0s					
TUE	**Stuetta**	**46.97 299**	PFAKE			02 40 10.0 +11
TUE			LR	LR		
	comp=Z,1μm,19.0s					
LANF	**Langenberg**	**47.00 302**	*e*P	pP		02 40 06.6 +1.7
VLC	**Villacollemand**	**47.22 295**	PFAKE			02 40 10.0 +10
VLC			LR	LR		
	comp=Z,548nm,20.0s					
MEM	**Membach**	**47.51 305**	AP	pP		02 40 10.4 +1.6
	comp=Z,11nm,1.6s					
ECH	**Echery**	**47.68 302**	*e*P	pP		02 40 11.8 +1.5
MYKOM	**Kota Tinggi**	**47.73 143**	*e*P	**P**		**02 40 03.9 -0.7**
	comp=Z,29nm,1.2s					
WLF	**Walferdange**	**47.76 304**	AP	pP		02 40 12.6 +1.8
	comp=Z,20nm,1.3s					
WLF	**Walferdange**	**47.76 304**	*e*P	**P**		**02 40 04.8 +0.2**
WLF			pmax	pmax		
	comp=Z,26nm,1.1s					
WLF			MLR	MLR		
	comp=Z,756nm,19.0s					
WLF	**Walferdange**	**47.76 304**	*e*P	**P**		**02 40 04.8 +0.2**
	comp=Z,26nm,1.1s					
WLF			LR	LR		
	comp=Z,756nm,19.0s					
MOF	**Molkenrain**	**47.84 301**	*e*P	pP		02 40 12.8 +1.3
BCLA	**Clavier**	**47.99 305**	AP	pP		02 40 14.4 +1.8
SENIN	**Lac Senin/Sane**	**48.32 299**	*e*P	**P**		**02 40 09.2 0.0**
SENIN			*ep*P	**pP**		**02 40 12.6 -2.8**
DOU	**Dourbes**	**48.53 305**	AP	pP		02 40 18.5 +1.7
	comp=Z,17nm,1.6s					
PDSI	**Padang**	**48.81 149**	P	**P**		**02 40 11.8 -1.2**
	comp=Z,134nm,1.2s,comp=Z,8μm					
BNI	**Bardonecchia**	**49.26 298**	PFAKE			02 40 30.0 +14
BNI			LR	LR		
	comp=Z,1μm,20.0s					
DAG	**Danmarks Havn**	**49.41 342**	*i*P	**pP**		**02 40 22.8 -0.3**
	comp=Z,30nm,1.0s					
	comp=Z,940nm,19.0s					
DAG	**Danmarks Havn**	**49.41 342**	*i*P	**pP**		**02 40 22.8 -0.3**
DAG			pmax	pmax		
	comp=Z,30nm,1.0s					
DAG			MLR	MLR		
	comp=Z,990nm,19.0s					
BILL	**Bilibino**	**49.94 29⇓**	*e*P	**P**		**02 40 22.4 +1.3**
BILL			*e*			02 41 40.6
BILL			*e*			02 42 20.6
BILL			*e*PPP	PPP		02 43 14.7
BILL			pmax	pmax		
	comp=Z,3.0nm,1.0s					
BILL			MLR	MLR		
	comp=Z,1μm,21.0s					
BILL	**Bilibino**	**49.94 29**	*e*P	**P**		**02 40 22.5 +1.5**
	comp=Z,23nm,0.7s					
BILL			LR	LR		
	comp=Z,1μm,20.0s					
SSB	**Saint Sauveur**	**50.52 299**	*e*P	**P**		**02 40 26.1 +0.2**
SSB			pmax	pmax		
	comp=Z,21nm,1.3s					
SSB			MLR	MLR		
	comp=Z,915nm,19.0s					
SSB	**Saint Sauveur**	**50.52 299**	*e*P	**P**		**02 40 26.1 +0.2**
	comp=Z,21nm,1.3s					
SSB			LR	LR		
	comp=Z,915nm,19.0s					
PLDF	**La Plantade**	**50.80 300**	*e*P	pP		02 40 35.9 +1.6
EKA	**Eskdalemuir Ar**	**50.92 313**	P	**P**		**02 40 28.4 -0.2**
	comp=Z,1.3nm,0.5s,baz=63,slow=5.3,SNR=14					
EKA			pP	**pP**		**02 40 35.5 +0.7**
	comp=Z,18nm,0.7s,baz=80,slow=9.7,SNR=29					
EKA	**Eskdalemuir Ar**	**50.92 313**	P	**P**		**02 40 28.4 -0.2**
EKA			*PP	**pP**		**02 40 35.6 +0.7**
EKA			pmax	pmax		
	comp=Z,2.0nm,0.5s					
EKA			pmax	pmax		
	comp=Z,18nm,0.7s					
ESK	**Eskdalemuir**	**50.95 313**	*e*P	**P**		**02 40 29.5 +0.6**
ESK			pmax	pmax		
	comp=Z,21nm,0.8s					
ESK			MLR	MLR		
	comp=Z,2μm,19.0s					
ESK	**Eskdalemuir**	**50.95 313**	*e*P	**P**		**02 40 29.4 +0.6**
	comp=Z,21nm,0.8s					
ESK			LR	LR		
	comp=Z,2μm,19.0s					
DGAR	**Diego Garcia**	**51.01 187**	PFAKE			02 40 40.0 +10
DGAR			LR	LR		
	comp=Z,872nm,20.0s					
KSM	**Kuching**	**51.04 136**	PFAKE			02 40 40.0 +10
KSM			LR	LR		
	comp=Z,390nm,22.0s					
AGO	**Saint Agoulin**	**51.08 300**	*e*P	pP		02 40 36.9 +0.7
SBUM	**Sibu**	**51.19 133**	*e*P	**P**		**02 40 31.9 +0.8**
	comp=Z,28nm,1.2s					
PYM	**Petit Puy Mans**	**51.29 300**	*e*P	pP		02 40 38.2 +0.3
LBL	**Lubilhac**	**51.37 299**	*e*P	pP		02 40 39.0 +0.5

LHSI **Lahat** 52.67 147 P P 02 40 42.5 +0.5
STKI **Sintang** 52.84 136 P P 02 40 44.5 +1.2
BLSI **Bandar Lampung** 54.76 146 P P 02 40 59.3 +1.9
BORG **Borgarnes** 55.09 329 PFAKE 02 41 10.0 +11
BORG LR LR
comp=Z,1µm,21.0s
DAV **Davao City (W)** 55.45 117 PFAKE 02 41 10.0 +7.5
DAV LR LR
comp=Z,362nm,20.0s
SUMG **Summit** 56.00 341 *i* P pP 02 41 13.0 +0.6
comp=Z,35nm,1.1s
SUMG **Summit** 56.00 341 *eP* P 02 41 06.1 0.0
SUMG pmax pmax
comp=Z,30nm,1.0s
SUMG **Summit** 56.00 341 *eP* P 02 41 06.1 0.0
comp=Z,30nm,1.0s
VAL **Valentia** 56.20 312 ⇓ *i* P pP 02 41 15.5 +1.9
KMBO **Kilima Mbogo** 57.35 230 P P 02 41 14.9 -1.3
comp=Z,2.5nm,1.0s,baz=34,slow=11,SNR=5.0
KMBO pP pP 02 41 23.6 +1.0
comp=Z,6.8nm,1.0s,baz=24,slow=11,SNR=11
KMBO LR LR 03 09 15.5
comp=Z,379nm,18.9s,baz=65,slow=40
KMBO **Kilima Mbogo** 57.35 230 *eP* P 02 41 15.8 -0.5
KMBO *PP pP 02 41 23.6 +1.0
KMBO pmax pmax
comp=Z,13nm,1.1s
KMBO **Kilima Mbogo** 57.35 230 *eP* P 02 41 15.8 -0.5
comp=Z,12nm,1.1s
KMBO pP pP 02 41 23.6 +1.0
KULLO **Kullorsuaq** 58.31 347 *i* P pP 02 41 29.2 +0.9
comp=Z,31nm,1.1s
comp=Z,850nm,19.0s
KULLO **Kullorsuaq** 58.31 347 *i* P pP 02 41 29.2 +0.9
KULLO pmax pmax
comp=Z,31nm,1.1s
KULLO MLR MLR
comp=Z,860nm,19.0s
ES19 **SONSECA Array** 58.69 297 *eP* P 02 41 25.5 +0.3
ESDC **Sonseca Array** 58.75 297 P P 02 41 25.9 +0.3
comp=Z,1.0nm,0.5s,baz=54,slow=7.3,SNR=25
ESDC pP pP 02 41 32.8 +0.9
comp=Z,12nm,0.8s,baz=55,slow=6.4,SNR=32
ESDC LR LR 03 09 57.3
comp=Z,380nm,18.8s,baz=15,slow=39
ESLA **Sonseca Array** 58.75 297 *eP* P 02 41 26.0 +0.4
comp=Z,19nm,0.9s
PAB **San Pablo** 59.07 297 *eP* P 02 41 28.7 +0.8
PAB pmax pmax
comp=Z,16nm,0.9s
PAB MLR MLR
comp=Z,436nm,21.0s
PAB **San Pablo** 59.07 297 *eP* P 02 41 28.7 +0.8
comp=Z,16nm,0.9s
PAB LR LR
comp=Z,436nm,21.0s
PBRG **Braganca** 59.37 300 *eP* P 02 41 31.0 +1.1
PBRG *epP* pP 02 41 36.3 +0.1
PBRG **Braganca** 59.37 300 *eLR* LR 03 03 22.8
comp=Z,437nm,20.0s
GAMB **Gambell** 59.86 29 *eP* P 02 41 33.5 +0.8
comp=Z,42nm,1.0s
MVO **Moncorvo** 59.90 300 *eP* P 02 41 34.5 +0.9
comp=Z,39nm,1.3s
MVO *epP* sP 02 41 41.4 -0.9
MVO **Moncorvo** 59.90 300 *eLR* LR 03 05 09.5
comp=Z,380nm,18.0s
TNA **Tin City** 59.98 26 *eP* P 02 41 35.0 +1.4
comp=Z,78nm,1.0s
POLO **Lamas de Olo** 60.26 300 *eP* P 02 41 36.6 +0.5
comp=Z,11nm,1.5s
POLO *epP* sP 02 41 44.1 -0.7
POLO **Lamas de Olo** 60.26 300 *eLR* LR 03 03 34.8
comp=Z,269nm,20.0s
PVRL **Vila Real** 60.27 300 *eP* P 02 41 36.5 +0.4
PVRL *epP* sP 02 41 44.0 -0.8
MTE **Manteigas** 60.65 299 *eP* P 02 41 39.9 +1.2
comp=Z,37nm,1.1s
MTE *epP* sP 02 41 47.1 -0.3
MTE **Manteigas** 60.65 299 *eLR* LR 03 00 49.2
comp=Z,436nm,18.0s
MTE **Manteigas** 60.65 299 *eP* P 02 41 38.9 +0.2
MTE LR LR
comp=Z,722nm,20.0s
PMRV **Marv??o** 61.09 298 *eP* P 02 41 42.3 +0.6
comp=Z,49nm,1.1s
PMRV *epP* pP 02 41 48.6 +0.6
PMRV **Marv??o** 61.09 298 *eLR* LR 02 59 47.6
comp=Z,432nm,16.0s
PCAS **Casmilo, Conde** 61.44 299 *epP* pP 02 41 51.1 +0.7
PCAS A A 02 41 56.2
comp=Z,39nm,1.6s
PCAS **Casmilo, Conde** 61.44 299 *eLR* LR 03 01 15.6
KAPI **Kappang** 61.50 131 *eP* P 02 41 44.0 -0.6
comp=Z,29nm,1.3s
KAPI LR LR
comp=Z,268nm,22.0s
PBAR **Barrancos** 61.57 297 *eP* P 02 41 45.3 +0.4
comp=Z,124nm,1.5s
PBAR *epP* pP 02 41 51.9 +0.6
PBAR **Barrancos** 61.57 297 *eLR* LR 03 01 55.1
comp=Z,1µm,16.0s
PTOM **Tomar** 61.63 299 *epP* pP 02 41 52.6 +0.9
PMTG **Montargil** 61.83 298 *eP* P 02 41 47.3 +0.7
comp=Z,38nm,1.4s
PMTG *epP* pP 02 41 53.2 +0.2
PMTG **Montargil** 61.83 298 *eLR* LR 03 01 41.5
comp=Z,335nm,16.0s
RES **Resolute Bay** 61.88 358 *eP* P 02 41 46.4 0.0
RES pmax pmax
comp=Z,8.0nm,1.2s
RES **Resolute Bay** 61.88 358 *eP* P 02 41 46.4 0.0
comp=Z,8.3nm,1.2s
TAM **Tamanrasset** 61.94 276 *eP* P 02 41 47.9 +0.1
TAM pmax pmax
comp=Z,64nm,1.8s
TAM MLR MLR
comp=Z,123nm,20.0s
TAM **Tamanrasset** 61.94 276 *eP* P 02 41 47.9 +0.1
comp=Z,64nm,1.8s
TAM LR LR
comp=Z,123nm,20.0s
EVO **Evora** 62.00 298 *eP* P 02 41 48.0 +0.2
comp=Z,22nm,1.3s
EVO *epP* sP 02 41 55.9 -0.6
PBEJ **Beja** 62.19 297 *epP* pP 02 41 57.3 +1.8
PVAQ **Vaqueiros** 62.45 296 *eP* P 02 41 51.6 +0.8
comp=Z,57nm,1.8s
PVAQ *epP* sP 02 41 59.0 -0.6
PVAQ **Vaqueiros** 62.45 296 *eLR* LR 03 01 37.5
comp=Z,399nm,18.0s
MESJ **Messejana** 62.53 297 *eP* P 02 41 53.1 +1.8
MESJ AMb AMB 02 42 00.9
comp=Z,36nm,1.6s
MESJ **Messejana** 62.53 297 *eP* P 02 41 53.7 +2.4
MESJ *epP* pP 02 41 58.4 +0.7
MESJ **Messejana** 62.53 297 *eP* P 02 41 53.1 +1.8
PCVE **Castro Verde** 62.53 297 *epP* pP 02 41 59.2 +1.5
PCVE **Castro Verde** 62.53 297 *eLR* LR 03 01 51.1
comp=Z,450nm,18.0s
PNCL **Nicolau / Gran** 62.57 298 *eP* P 02 41 52.8 +1.2
comp=Z,28nm,1.4s
PNCL *epP* pP 02 41 58.8 +0.8
PBDV **Barranco-do-Ve** 62.69 296 *eP* P 02 41 53.3 +0.9
PBDV *epP* sP 02 41 59.9 -1.3
PBDV **Barranco-do-Ve** 62.69 296 *eLR* LR 03 01 12.0
comp=Z,378nm,18.0s
SFJD **Kangerlussuaq** 62.91 340 PFAKE 02 42 10.0 +17
SFJD LR LR
comp=Z,574nm,19.0s
PTEO **Sao Teotonio** 63.02 297 *epP* pP 02 42 02.6 +1.6
MDT **Midelt** 63.06 291 P P 02 41 55.4 +0.3
comp=Z,3.4nm,1.0s,baz=352,slow=13,SNR=3.9
MDT pP sP 02 42 03.3 -0.6
comp=Z,10nm,0.8s,baz=81,slow=6.2,SNR=14
MORF **Marmelete** 63.12 297 *eP* P 02 41 55.8 +0.5
MORF *epP* sP 02 42 03.4 -0.7
PFVI **Vila Bisbo** 63.33 297 *eLR* LR 03 02 05.0
comp=Z,434nm,20.0s
COLD **Coldfoot** 63.67 19 *eP* P 02 41 59.2 +0.8
comp=Z,89nm,0.9s
NLAI **Namlea** 64.35 123 P P 02 42 05.4 +1.8
MLY **Manley** 65.31 20 *eP* P 02 42 09.9 +0.7
comp=Z,50nm,0.9s
FYU **Fort Yukon** 65.34 17 *eP* P 02 42 10.5 +1.2
comp=Z,88nm,1.1s
TTA **Tatalina** 65.52 24 *eP* P 02 42 11.6 +0.9
TTA **Tatalina** 65.52 24 *eP* P 02 42 11.6 +0.9
TT01 **Tatalina** 65.53 24 *eP* P 02 42 11.6 +1.0
INK **Inuvik** 65.97 12 *eP* P 02 42 14.0 +0.6
INK pmax pmax
comp=Z,52nm,0.8s
INK **Inuvik** 65.97 12 *eP* P 02 42 14.0 +0.6
comp=Z,52nm,0.8s
MDM **Murphy Dome** 65.99 20 *eP* P 02 42 14.1 +0.5
comp=Z,46nm,0.8s
BPAW **Bear Paw Mtn.** 65.99 21 *eP* P 02 42 14.0 +0.4
comp=Z,69nm,0.8s
COLA **College** 66.15 19 P P 02 42 14.9 +0.3
COLA pmax pmax
comp=Z,11nm,1.0s
COLA MLR MLR
comp=Z,831nm,17.0s
COLA **College** 66.15 19 *eP* P 02 42 15.3 +0.7
comp=Z,110nm,0.8s
COLA LR LR
comp=Z,786nm,19.0s
CAST **Castle Rocks** 66.25 22 *eP* P 02 42 16.0 +0.7
comp=Z,63nm,0.8s
CCB **Clear Creek Bu** 66.35 20 *eP* P 02 42 16.4 +0.5
comp=Z,43nm,0.9s
WRH **Wood River Hil** 66.42 20 *eP* P 02 42 16.5 +0.1
comp=Z,34nm,0.9s
KTH **Kantishna Hill** 66.45 21 *eP* P 02 42 17.0 +0.3
comp=Z,119nm,0.9s
IL1 **Eielson Array** 66.47 19 *eP* P 02 42 16.3 -0.4
ILAR **Eielson Array** 66.47 19 P P 02 42 16.4 -0.3
comp=Z,4.6nm,0.8s,baz=318,slow=4.9,SNR=42
ILAR pP pP 02 42 23.7 +0.6
comp=Z,61nm,0.8s,baz=328,slow=5.6,SNR=126
ILAR PKP2bc 03 10 49.7
comp=Z,0.6nm,1.1s,baz=141,slow=1.6,SNR=4.1
ILAR LR LR 03 15 50.7
comp=Z,523nm,18.4s,baz=332,slow=40
ILB **Eielson Array** 66.47 19 *eP* P 02 42 16.5 -0.1
PPLA **Purkeypile** 66.63 22 *eP* P 02 42 18.4 +0.5
comp=Z,82nm,0.8s
TRF **Thorofare Moun** 66.70 21 *eP* P 02 42 18.7 +0.3
comp=Z,35nm,0.8s
HDA **Harding Lake** 66.75 19 *eP* P 02 42 18.2 -0.2
comp=Z,35nm,1.0s
MCK **McKinley** 66.82 21 *eP* P 02 42 18.8 -0.2
MCK pmax pmax
comp=Z,17nm,0.8s
MCK **McKinley** 66.82 21 *eP* P 02 42 18.8 -0.2
comp=Z,17nm,0.8s
SVW2 **Sparrevohn** 67.06 25 *eP* P 02 42 22.0 +1.4
comp=Z,41nm,1.0s
FAKI **Fak Fak** 67.33 118 *eP* P 02 42 22.0 -0.8
EGAK **Eagle** 67.75 17 *eP* P 02 42 25.3 +0.5
comp=Z,71nm,1.4s
EGAK LR LR
comp=Z,657nm,22.0s
DHY **Denali Highway** 67.76 20 *eP* P 02 42 25.1 0.0
comp=Z,50nm,0.7s
SOEI **Soe** 67.91 129 *eP* P 02 42 24.5 -2.1
DOT **Dot Lake** 68.08 19 *eP* P 02 42 27.1 +0.2
comp=Z,81nm,0.8s
PAX **Paxson** 68.33 20 *eP* P 02 42 28.5 -0.1
PAX pmax pmax
comp=Z,62nm,0.9s
PAX **Paxson** 68.33 20 *eP* P 02 42 28.4 -0.1
comp=Z,62nm,0.9s
PMR **Palmer** 68.53 22 *eP* P 02 42 29.6 -0.1
PMR pmax pmax
comp=Z,55nm,0.8s
PMR **Palmer** 68.53 22 *eP* P 02 42 29.6 -0.1
comp=Z,55nm,0.8s
SML **Sawmill** 68.57 22 *eP* P 02 42 30.4 +0.4
SML pmax pmax
comp=Z,81nm,0.8s
SML **Sawmill** 68.57 22 *eP* P 02 42 30.4 +0.4
comp=Z,81nm,0.8s
DAWY **Dawson** 68.74 17 *eP* P 02 42 31.1 0.0
comp=Z,35nm,0.9s
RC01 **Rabbit Creek A** 68.78 23 *eP* P 02 42 31.7 +0.4
comp=Z,99nm,0.8s
SCM **Sheep Creek Mo** 68.81 21 *eP* P 02 42 31.3 -0.3
SCM pmax pmax
comp=Z,100nm,0.7s
SCM **Sheep Creek Mo** 68.81 21 *eP* P 02 42 31.3 -0.3
comp=Z,100nm,0.7s
SEW **Seward** 69.67 23 *eP* P 02 42 37.5 +0.7
comp=Z,32nm,0.7s
DIV **Divide** 69.81 21 *eP* P 02 42 36.7 -1.1
comp=Z,20nm,0.8s
CHGN **Chignik** 69.83 30 *eP* P 02 42 37.8 0.0
BMRM **Bremner River** 70.25 20 *eP* P 02 42 41.5 +1.0
comp=Z,85nm,1.0s
KDAK **Kodiak Island** 70.63 26 *i* P P 02 42 42.9 +0.2
KDAK **Kodiak Island** 70.63 26 *eP* P 02 42 43.2 +0.5
comp=Z,97nm,0.8s
KDAK LR LR
comp=Z,551nm,19.0s
OHAK **Old Harbor** 70.86 27 *eP* P 02 42 45.2 +1.2
comp=Z,534nm,1.8s
TOA0 **Torodi Ar. Sit** 70.91 270 *eP* P 02 42 44.3 -0.8
TORD **Torodi Ar. Bea** 70.91 270 P P 02 42 44.3 -0.8
comp=Z,18nm,0.8s,baz=42,slow=5.5,SNR=110
TORD pP pP 02 42 51.7 +0.1
comp=Z,27nm,0.8s,baz=44,slow=5.0,SNR=31
TORD LR LR 03 19 14.6
comp=Z,104nm,18.9s,baz=40,slow=40
GENI **Genyem** 72.30 112 P P 02 42 54.9 +1.5
comp=Z,80nm,1.6s
YKW3 **Yellowknife Ar** 73.71 6 *eP* P 02 43 01.0 -0.1
comp=Z,43nm,0.8s
SKAG **Skagway** 73.74 17 *eP* P 02 43 01.6 +0.3
comp=Z,50nm,0.9s
YKA **Yellowknife Ar** 73.78 6 P P 02 43 00.9 -0.5
comp=Z,2.9nm,0.5s,baz=347,slow=6.0,SNR=90
YKA pP pP 02 43 08.7 +0.7
comp=Z,33nm,0.7s,baz=348,slow=6.0,SNR=92
YKB5 **Yellowknife Ar** 73.78 6 *eP* P 02 43 00.6 -0.9
LSZ **Lusaka** 74.01 230 *eP* P 02 43 02.9 -0.6
LSZ *e**PP pP 02 43 10.5 +0.5
LSZ pmax pmax
comp=Z,39nm,1.5s
LSZ MLR MLR
comp=Z,325nm,22.0s
LSZ **Lusaka** 74.01 230 *eP* P 02 43 02.9 -0.6
comp=Z,39nm,1.5s
LSZ *epP* pP 02 43 10.5 +0.5
LSZ LR LR
comp=Z,325nm,22.0s
FITZ **Fitzroy Crossi** 75.52 133 *eP* P 02 43 11.4 -0.7
comp=Z,25nm,1.2s
DLBC **Dease Lake** 75.73 15 LR LR 03 21 37.2
comp=Z,399nm,19.2s,baz=322,slow=40
DLBC **Dease Lake** 75.73 15 *eP* P 02 43 13.9 +1.0
comp=Z,24nm,1.0s
WRAK **Wrangell Islan** 77.17 17 *eP* P 02 43 21.7 +0.7
comp=Z,48nm,1.0s
WRAK *epP* sP 02 43 29.1 -0.8
WRAK LR LR
comp=Z,288nm,19.0s
SCHQ **Schefferville** 77.37 340 P P 02 43 23.0 +0.8
comp=Z,5.6nm,1.1s,baz=318,slow=1.8,SNR=3.5
SCHQ pP pP 02 43 28.7 0.0
comp=Z,7.5nm,0.9s,baz=28,slow=5.7,SNR=6.8
SCHQ LR LR 03 21 25.7
comp=Z,225nm,18.0s,baz=64,slow=39
FCC **Fort Churchill** 77.75 356 *eP* P 02 43 23.3 -0.9
FCC *e**PP pP 02 43 31.1 +0.4
FCC pmax pmax
comp=Z,22nm,1.0s
FCC **Fort Churchill** 77.75 356 *eP* P 02 43 23.3 -0.9
comp=Z,22nm,1.0s
FCC *epP* pP 02 43 31.1 +0.4
DBIC **Dimbokro** 80.02 270 P P 02 43 37.0 -0.4
comp=Z,19nm,1.1s,baz=20,slow=8.3,SNR=8.8
DBIC pP PcP 02 43 44.4 -0.4
comp=Z,34nm,0.8s,baz=22,slow=6.3,SNR=18
DBIC LR LR 03 24 34.7
comp=Z,107nm,18.1s,baz=28,slow=40
DBIC **Dimbokro** 80.02 270 *eP* P 02 43 37.1 -0.3
DBIC *e* 02 43 44.2
DBIC **Dimbokro** 80.02 270 *eP* P 02 43 37.1 -0.3
DBIC *ePcP* pP 02 43 44.2 +0.3
KIC **Kosan Boka** 80.14 269 *ePKP1* P 02 43 37.4 -0.7
comp=Z,250nm,1.2s
TIC **Toumodi** 80.16 270 *ePKP1* P 02 43 37.2 -1.0
LIC **Lamto** 80.44 269 *ePKP1* P 02 43 36.7 -3.0
comp=Z,117nm,1.5s
WRAB **Tennant Creek** 81.83 127 *c i* P P 02 43 45.7 -1.1
WRAB pmax pmax
comp=Z,121nm,1.3s
WRAB **Tennant Creek** 81.83 127 *eP* P 02 43 46.0 -0.8
comp=Z,42nm,1.1s
WRAB *epP* pP 02 43 54.1 +0.7
WRA **Warramunga Arr** 81.83 127 P P 02 43 45.8 -1.0
comp=Z,17nm,1.0s,baz=326,slow=4.9,SNR=61
PMG **Port Moresby** 81.99 111 *eP* P 02 43 46.7 -1.1
PMG pmax pmax
comp=Z,42nm,0.9s
PMG **Port Moresby** 81.99 111 *eP* P 02 43 46.7 -1.1
comp=Z,42nm,0.9s
BBB **Bella Bella** 82.01 16 LR LR 03 24 31.4
comp=Z,164nm,18.4s,baz=332,slow=39
COEN **Coen** 82.68 117 *eP* P 02 43 51.1 -0.3
comp=Z,43nm,0.9s
COEN *epP* pP 02 43 58.4 +0.5
TSUM **Tsumeb** 83.24 236 *eP* P 02 43 53.4 -0.9
comp=Z,14nm,0.9s
TSUM *epP* pP 02 44 01.8 +0.9
TSUM LR LR
comp=Z,353nm,20.0s
LBTB **Lobatse** 83.34 226 *eP* P 02 43 54.4 -0.3
LBTB *e**PP pP 02 44 02.1 +0.9
LBTB **Lobatse** 83.34 226 *eP* P 02 43 54.4 -0.3
LBTB *epP* pP 02 44 02.1 +0.9
AS31 **Alice Springs** 84.52 130 *eP* P 02 43 59.6 -1.0
comp=Z,4.1nm,1.2s
ASAR **Alice Springs** 84.52 130 P P 02 43 59.4 -1.3
comp=Z,8.3nm,1.0s,baz=325,slow=5.0,SNR=33
ASAR LR LR 03 26 11.4
comp=Z,158nm,18.9s,baz=310,slow=39
AS01 **Alice Springs** 84.54 130 *eP* P 02 43 59.4 -1.4
A04D **Lummi Island** 86.32 13 P pP 02 44 16.9 +1.0
baz=345
ULM **Lac du Bonnet** 86.34 356 pP pP 02 44 15.8 -0.2
comp=Z,13nm,1.0s,baz=0.6,slow=6.7,SNR=8.2
ULM LR LR 03 26 51.9
comp=Z,574nm,18.4s,baz=12,slow=38
BOSA **Boshof** 86.44 224 P P 02 44 09.6 -0.7
comp=Z,12nm,1.1s,baz=25,slow=3.8,SNR=7.1
BOSA pP pP 02 44 17.3 +0.5
comp=Z,14nm,0.9s,baz=61,slow=4.9,SNR=8.9
BOSA LR LR 03 24 08.4
comp=Z,116nm,18.5s,baz=36,slow=37
PKME **Peaks-Kenny Pk** 86.74 337 PFAKE 02 44 20.0 +8.5
PKME LR LR
comp=Z,567nm,20.0s
B05A **Bryant** 86.86 13 P pP 02 44 18.7 0.0
baz=346,SNR=5.4
WALA **Waterton Lakes** 87.15 8 *eP* P 02 44 13.0 -0.7
WALA *epP* pP 02 44 19.8 -0.4
B08A **Colville Reser** 87.19 11 *eP* P 02 44 14.2 +0.4
B08A *epP* pP 02 44 20.4 +0.1
C06D **Leavenworth** 87.39 12 P P 02 44 21.9 +7.3
baz=347
NLWA **Neilton Lookou** 87.40 14 *eP* P 02 44 14.1 -0.7
comp=Z,24nm,1.0s
NLWA *epP* sP 02 44 22.8 -0.9
NLWA LR LR
comp=Z,329nm,21.0s
NEW **Newport** 87.58 10 P pP 02 44 22.1 -0.1
baz=349
NEW **Newport** 87.58 10 *eP* P 02 44 16.0 +0.4
NEW *e**PP pP 02 44 22.6 +0.4
NEW pmax pmax
comp=Z,12nm,1.1s
NEW MLR MLR
comp=Z,245nm,19.0s
NEW **Newport** 87.58 10 *eP* P 02 44 16.0 +0.4
comp=Z,12nm,1.1s
NEW *epP* pP 02 44 22.6 +0.4
NEW LR LR
comp=Z,245nm,19.0s
A33A **Warroad** 87.62 355 P pP 02 44 22.2 -0.1
baz=5.0
A32A **Rocking H Ranc** 87.70 356 P pP 02 44 22.3 -0.4
baz=4.2
A30A **Hoffart Farm,** 87.75 357 P pP 02 44 23.4 +0.5
baz=2.9
C09A **Chrisman Ranch** 87.89 11 *eP* P 02 44 17.7 +0.7
D05A **Enumclaw** 87.92 13 *eP* P 02 44 17.7 +0.5
D05A *epP* sP 02 44 25.0 -1.2
B34A **Aery, Baudette** 88.03 355 P pP 02 44 24.7 +0.4
baz=5.5
B35A **Bob, Littlefor** 88.09 354 P pP 02 44 24.6 0.0
baz=6.2
B32A **Ashes, Strandq** 88.22 356 P pP 02 44 24.9 -0.3
baz=4.1,SNR=6.7
B30A **Myrvik Farm, E** 88.24 357 P pP 02 44 25.0 -0.3
baz=2.9,SNR=5.1
B31A **Greenbush Farm** 88.25 357 P pP 02 44 24.1 -1.2
baz=3.3
BSMT **Bassoo Peak** 88.25 8 P P 02 44 19.1 +0.1
B29A **Wagenman Farm,** 88.26 358 P pP 02 44 26.0 +0.6
baz=2.1
AGMN **Agassiz Nation** 88.29 356 P pP 02 44 25.2 -0.3
baz=4.6,SNR=8.7
AGMN **Agassiz Nation** 88.29 356 *eP* P 02 44 18.6 -0.4
comp=Z,23nm,0.9s
AGMN *epP* pP 02 44 25.7 +0.1
AGMN LR LR
comp=Z,692nm,19.0s
B33A **Robert and Kas** 88.30 355 P pP 02 44 25.8 +0.2
baz=4.8,SNR=5.5
EYMN **Ely** 88.32 353 P pP 02 44 25.0 -0.7
baz=7.8
EYMN **Ely** 88.32 353 PFAKE 02 44 30.0 +11
EYMN LR LR
comp=Z,420nm,20.0s
B27A **Peters Farms,** 88.35 359 P pP 02 44 27.1 +1.3
baz=0.7
LON **Longmire** 88.38 13 *eP* P 02 44 19.7 +0.2
LON pmax pmax
comp=Z,11nm,1.0s
LON **Longmire** 88.38 13 *eP* P 02 44 19.7 +0.2
comp=Z,11nm,1.0s
B26A **Jensen Ranch,** 88.39 360 P pP 02 44 27.3 +1.2
B25A **Knox Farm, Ray** 88.49 1 P pP 02 44 27.4 +0.9
baz=359
EGMT **Eagleton** 88.50 5 PFAKE 02 44 30.0 +10
EGMT LR LR
comp=Z,430nm,21.0s
D08A **Wollman Farm,** 88.52 11 *eP* P 02 44 19.2 -0.8
D08A *epP* pP 02 44 27.6 +1.0
LONY **Lake Ozonia** 88.72 341 *eP* P 02 44 20.4 -0.7
comp=Z,22nm,1.1s
LONY *epP* pP 02 44 28.1 +0.4
LONY LR LR
comp=Z,596nm,19.0s
C35A **Jirik Farms, M** 88.76 354 P pP 02 44 28.2 +0.4
baz=6.0
C33A **Trail** 88.82 356 P pP 02 44 28.6 +0.6
baz=4.7,SNR=6.5
C31A **Landman Farms,** 88.88 357 P pP 02 44 28.4 +0.1
baz=3.3
HAWA **Hanford** 89.08 12 PFAKE 02 44 30.0 +7.3
HAWA LR LR
comp=Z,390nm,20.0s
D36A **Goodland** 89.22 354 P pP 02 44 30.3 +0.4
baz=6.6
CHMT **Chamberlain Mo** 89.33 7 *eP* P 02 44 23.5 -0.7
MSO **Missoula** 89.35 8 P pP 02 44 30.6 -0.1
baz=352,SNR=5.8
MSO **Missoula** 89.35 8 *eP* P 02 44 23.9 -0.2
MSO *epP* pP 02 44 30.6 -0.1
D25A **Fairfield** 89.61 1 P pP 02 44 34.2 +2.3
baz=359
D27A **Center** 89.65 359 P pP 02 44 33.9 +1.9
baz=0.5
ACCN **Adirondack Com** 89.66 340 *eP* P 02 44 24.9 -0.6
ACCN *epP* sP 02 44 33.3 -1.1
D26A **Manning** 89.73 0 P pP 02 44 34.6 +2.2
baz=360
F10A **Beach Ranch, E** 89.82 10 *eP* P 02 44 26.6 +0.3
E36A **McGregor** 89.89 354 P pP 02 44 33.9 +0.8
baz=6.5
COWI **Conover** 89.90 351 PFAKE 02 44 40.0 +13
COWI LR LR
comp=Z,577nm,20.0s
G05D **Wamic, OR** 89.92 13 P pP 02 44 34.7 +1.4
baz=346
E35A **Pequot Lakes** 89.93 355 P pP 02 44 34.2 +1.0

	baz=5.7						
E34A	**Wadena**	**90.03**	**355**	P	pP	02 44 34.9	+1.2
	baz=5.1						
E25A	**Miller Ranch,**	**90.26**	**1**	P	pP	02 44 36.7	+1.8
	baz=359						
LRM	**Limekiln Ridge**	**90.49**	**7**	*e*P	**P**	**02 44 30.0**	**+0.4**
BOZ	**Bozeman (W)**	**90.73**	**6**	P	pP	02 44 37.9	+0.7
	baz=353,SNR=8.9						
BOZ	**Bozeman (W)**	**90.73**	**6**	*e*P	**P**	**02 44 31.1**	**+0.4**
BOZ				*e*PP*	**sP**	**02 44 38.3**	**-1.3**
BOZ				pmax	pmax		
	comp=Z,8.0nm,0.7s						
BOZ				MLR	MLR		
	comp=Z,365nm,19.0s						
BOZ	**Bozeman (W)**	**90.73**	**6**	*e*P	**P**	**02 44 31.1**	**+0.4**
	comp=Z,7.9nm,0.7s						
BOZ				*e*pP	**sP**	**02 44 38.3**	**-1.3**
BOZ				LR	LR		
	comp=Z,365nm,19.0s						
F33A	**5 Mile Ranch,**	**90.76**	**356**	P	pP	02 44 37.3	+0.2
	baz=4.3						
I05D	**Terrebonne, OR**	**90.80**	**14**	P	pP	02 44 38.5	+1.1
	baz=346						
F25A	**Bowman**	**90.83**	**1**	P	pP	02 44 39.2	+1.6
	baz=359						
F27A	**Lemmon**	**90.89**	**360**	P	pP	02 44 39.8	+2.0
	baz=0.2						
HNR	**Honiara**	**90.91**	**102**	PFAKE		02 44 40.0	+8.4
HNR				LR	LR		
	comp=Z,412nm,21.0s						
BMO	**Blue Mountains**	**90.91**	**11**	PFAKE		02 44 40.0	+8.6
BMO				LR	LR		
	comp=Z,225nm,21.0s						
F26A	**Lodgepole**	**90.91**	**0**	P	pP	02 44 39.8	+1.9
	baz=360						
DLMT	**Dillon**	**90.93**	**7**	*e*P	**P**	**02 44 32.3**	**+0.7**
	comp=Z,25nm,1.2s						
DLMT				*e*pP	**sP**	**02 44 39.1**	**-1.4**
I03D	**Drain, OR**	**91.06**	**15**	P	pP	02 44 40.5	+2.0
	baz=345						
I04A	**Tendick Farm,**	**91.14**	**14**	P	pP	02 44 40.3	+1.3
	baz=346						
RLMT	**Red Lodge**	**91.43**	**5**	P	pP	02 44 41.3	+0.7
	baz=355,SNR=6.5						
RLMT	**Red Lodge**	**91.43**	**5**	*e*P	**P**	**02 44 35.0**	**+1.1**
RLMT				LR	LR		
	comp=Z,468nm,22.0s						
MCMT	**McKenzie Canyo**	**91.44**	**7**	P	**P**	**02 44 34.6**	**+0.5**
J05D	**Fort Rock, OR**	**91.84**	**14**	P	pP	02 44 44.3	+1.9
	baz=346						
H34A	**Spellman Lake,**	**91.90**	**355**	P	pP	02 44 46.0	+3.5
	baz=4.7						
LKWY	**Lake**	**91.91**	**6**	*e*P	**pP**	**02 44 37.6**	**-5.2**
LKWY				*e*PP*	sP	02 44 44.9	-0.3
LKWY				pmax	pmax		
	comp=Z,13nm,1.1s						
LKWY				MLR	MLR		
	comp=Z,755nm,20.0s						
LKWY	**Lake**	**91.91**	**6**	*e*P	**pP**	**02 44 37.6**	**-5.2**
	comp=Z,13nm,1.1s						
LKWY				*e*pP	sP	02 44 44.9	-0.3
LKWY				LR	LR		
	comp=Z,755nm,20.0s						
H33A	**Prehn Over Nor**	**91.94**	**356**	P	pP	02 44 45.9	+3.2
	baz=4.0						
H17A	**Grant Village**	**92.06**	**6**	P	pP	02 44 46.1	+2.5
	baz=354,SNR=6.9						
H17A	**Grant Village**	**92.06**	**6**	*e*P	**P**	**02 44 37.2**	**+0.2**
	comp=Z,18nm,1.1s						
H17A				*e*pP	**sP**	**02 44 45.9**	**0.0**
FLWY	**Flagg Ranch**	**92.36**	**6**	*e*P	**P**	**02 44 38.7**	**+0.4**
	comp=Z,20nm,1.2s						
FLWY				*e*pP	**sP**	**02 44 46.8**	**-0.4**
K04D	**Chiloquin, OR**	**92.39**	**14**	P	pP	02 44 46.7	+1.8
	baz=346						
K05A	**Summer Lake**	**92.44**	**14**	*e*P	**P**	**02 44 39.5**	**+0.8**
N59A	**State Game Lan**	**92.50**	**340**	P	pP	02 44 46.1	+0.7
	baz=19						
MFID	**Camas Ranch**	**92.51**	**10**	*e*P	**P**	**02 44 37.6**	**-1.3**
	comp=Z,26nm,1.5s						
MFID				*e*pP	**pP**	**02 44 46.1**	**+0.6**
IMW	**Indian Meadow**	**92.53**	**6**	*e*P	**P**	**02 44 40.2**	**+1.0**
	comp=Z,20nm,1.2s						
IMW				*e*pP	**sP**	**02 44 46.9**	**-1.2**
HLID	**Hailey**	**92.53**	**9**	P	pP	02 44 46.1	+0.4
	baz=351						
HLID	**Hailey**	**92.53**	**9**	*e*P	**P**	**02 44 39.0**	**0.0**
	comp=Z,6.1nm,1.2s						
HLID				*e*pP	**pP**	**02 44 45.8**	**+0.2**
HLID				LR	LR		
	comp=Z,433nm,19.0s						
RSSD	**Black Hills**	**92.63**	**1**	P	pP	02 44 46.7	+0.6
	baz=359						
RSSD	**Black Hills**	**92.63**	**1**	*e*P	**P**	**02 44 39.6**	**+0.1**
RSSD				*e*PP*	**pP**	**02 44 46.9**	**+0.7**
RSSD				pmax	pmax		
	comp=Z,14nm,1.0s						
RSSD	**Black Hills**	**92.63**	**1**	*e*P	**P**	**02 44 39.6**	**+0.1**
	comp=Z,14nm,1.0s						
RSSD				*e*pP	**pP**	**02 44 46.9**	**+0.7**
I27A	**Quinn**	**92.69**	**360**	P	pP	02 44 47.1	+0.9
	baz=0.1						
I25A	**Rochford**	**92.73**	**1**	P	pP	02 44 47.7	+1.2
	baz=359						
I28A	**Midland**	**92.76**	**359**	P	pP	02 44 47.5	+1.0
	baz=0.8						
FXWY	**Fox Creek**	**92.78**	**6**	*e*P	**P**	**02 44 42.4**	**+2.1**
AAM	**Ann Arbor**	**92.83**	**346**	PFAKE		02 44 50.0	+10
AAM				LR	LR		
	comp=Z,278nm,20.0s						
M54A	**Oil Creek Stat**	**92.83**	**343**	P	pP	02 44 47.8	+0.9
	baz=16						
ECSD	**EROS Data Cent**	**92.88**	**356**	P	pP	02 44 48.0	+0.9
	baz=4.1						
ECSD	**EROS Data Cent**	**92.88**	**356**	*e*P	**P**	**02 44 41.3**	**+0.8**
	comp=Z,16nm,1.0s						
ECSD				*e*pP	**pP**	**02 44 47.3**	**+0.3**
ECSD				LR	LR		
	comp=Z,591nm,19.0s						
SNOW	**Snow King Moun**	**92.97**	**6**	*e*P	**P**	**02 44 41.4**	**+0.2**
	comp=Z,8.2nm,1.2s						
SNOW				*e*pP	**sP**	**02 44 49.2**	**-1.0**
REDW	**Red Top Meadow**	**93.07**	**6**	*e*P	**P**	**02 44 41.6**	**+0.1**
WVOR	**Wild Horse Val**	**93.09**	**12**	*e*P	**P**	**02 44 41.8**	**+0.2**
WVOR				*e*PP*	**sP**	**02 44 49.2**	**-1.3**
WVOR				pmax	pmax		
	comp=Z,10.0nm,1.0s						
WVOR				MLR	MLR		
	comp=Z,395nm,20.0s						
WVOR	**Wild Horse Val**	**93.09**	**12**	*e*P	**P**	**02 44 41.8**	**+0.2**
	comp=Z,9.6nm,1.0s						
WVOR				*e*pP	**sP**	**02 44 49.2**	**-1.3**
WVOR				LR	LR		
	comp=Z,395nm,20.0s						
J36A	**Seneca 1, Swea**	**93.14**	**354**	P	pP	02 44 49.3	+1.1
	baz=5.7						
JFWS	**Jewell Farm**	**93.17**	**351**	PFAKE		02 44 50.0	+8.2
JFWS				LR	LR		
	comp=Z,440nm,22.0s						
M04C	**Macdoel**	**93.19**	**14**	P	pP	02 44 50.2	+1.5
	baz=346						
J28A	**Allard Ranch,**	**93.33**	**359**	P	pP	02 44 50.7	+1.5
	baz=0.7						
J29A	**Okreek**	**93.34**	**359**	P	pP	02 44 48.0	-1.2
	baz=1.4						
MOD	**Modoc Plateau**	**93.34**	**13**	*e*P	**P**	**02 44 42.8**	**0.0**
	comp=Z,13nm,1.1s						
MOD				*e*pP	**sP**	**02 44 50.7**	**-1.1**
M02C	**Callahan**	**93.38**	**15**	P	pP	02 44 51.1	+1.6
	baz=345						
J30A	**Dallas**	**93.40**	**358**	P	pP	02 44 50.5	+1.1
	baz=2.0						
N54A	**Moraine State**	**93.42**	**343**	P	pP	02 44 50.0	+0.4
	baz=16						
J26A	**Sides Ranch, S**	**93.45**	**1**	P	pP	02 44 50.9	+1.1
	baz=359						
AHID	**Auburn Hatcher**	**93.64**	**6**	PFAKE		02 45 00.0	+16
AHID				LR	LR		
	comp=Z,300nm,19.0s						
K37A	**Belmond**	**93.64**	**354**	P	pP	02 44 51.6	+1.0
	baz=6.2						
BW06	**Boulder Array**	**93.75**	**5**	P	pP	02 44 51.6	+0.2
	baz=355						
BW06	**Boulder Array**	**93.75**	**5**	*e*P	**P**	**02 44 43.9**	**-0.8**
	comp=Z,1.6nm,0.7s						
BW06				*e*pP	**pP**	**02 44 51.1**	**-0.2**
BW06				*e*pP	**sP**	**02 44 51.9**	**-1.8**
BW06				LR	LR		
	comp=Z,534nm,19.0s						
PDAR	**Pinedale Array**	**93.75**	**5**	P	**P**	**02 44 43.8**	**-1.0**
	comp=Z,0.6nm,0.8s,baz=264,slow=3.0,SNR=3.8						
PDAR				pP	**pP**	**02 44 51.5**	**+0.2**
	comp=Z,1.4nm,0.7s,baz=41,slow=2.4,SNR=7.5						
PDAR				LR	LR	03 32 14.6	
	comp=Z,381nm,18.1s,baz=18,slow=39						
O56A	**Blue Knob Stat**	**93.78**	**342**	P	pP	02 44 52.2	+0.9
	baz=17						
N02D	**Trinity Center**	**93.81**	**15**	P	pP	02 44 52.7	+1.2
	baz=345						
K22A	**Casper**	**94.03**	**3**	P	pP	02 44 53.5	+0.9
	baz=357						
K30A	**Basset**	**94.05**	**358**	P	pP	02 44 54.0	+1.5
	baz=1.9						
K31A	**O'Neill**	**94.08**	**357**	P	pP	02 44 54.6	+2.0
	baz=2.5						
L38A	**Oak Wood Farm,**	**94.21**	**353**	P	pP	02 44 53.7	+0.6
	baz=6.7						
L37A	**Phoenix Point,**	**94.29**	**354**	P	pP	02 44 54.0	+0.5
	baz=6.2						
SCIA	**State Center**	**94.46**	**353**	PFAKE		02 45 00.0	+12
SCIA				LR	LR		
	comp=Z,749nm,20.0s						
O03D	**Paynes Creek**	**94.64**	**15**	P	pP	02 44 56.9	+1.6
	baz=346						
ACSO	**Alum Creek Sta**	**94.72**	**345**	PFAKE		02 45 00.0	+11
ACSO				LR	LR		
	comp=Z,430nm,21.0s						
HWUT	**Hardware Ranch**	**94.75**	**7**	*e*P	**P**	**02 44 50.3**	**+1.0**
	comp=Z,15nm,0.8s						
HWUT				*e*pP	**sP**	**02 44 57.0**	**-1.2**
HWUT				LR	LR		
	comp=Z,340nm,21.0s						
M38A	**Pleasantville**	**94.94**	**353**	P	pP	02 44 57.5	+0.9
	baz=6.6						
M37A	**Trindle Farm,**	**95.03**	**354**	P	pP	02 44 57.9	+1.0
	baz=6.0						
M33A	**Taylor Creek F**	**95.06**	**356**	P	pP	02 44 58.6	+1.5
	baz=3.7						
M34A	**Aspy Farms, Fr**	**95.10**	**356**	P	pP	02 44 58.8	+1.5
	baz=4.1						
STKA	**Stephens Creek**	**95.16**	**130**	P	**P**	**02 44 50.1**	**-0.7**
	comp=Z,0.9nm,0.7s,baz=26,slow=12,SNR=2.1						
STKA				LR	LR	03 33 02.1	
	comp=Z,113nm,18.7s,baz=323,slow=39						
ELK	**Elko**	**95.22**	**10**	*e*P	**P**	**02 44 50.9**	**-0.6**
ELK				*e*PP*	**pP**	**02 44 59.0**	**+0.9**
ELK				pmax	pmax		
	comp=Z,6.0nm,0.9s						
ELK	**Elko**	**95.22**	**10**	*e*P	**P**	**02 44 50.9**	**-0.6**
	comp=Z,5.9nm,0.9s						
ELK				*e*pP	**pP**	**02 44 59.0**	**+0.9**
BGNE	**Belgrade**	**95.27**	**357**	P	pP	02 44 59.1	+1.1
	baz=3.0						
HDIL	**Hopedale**	**95.38**	**350**	P	pP	02 44 59.2	+0.6
	baz=9.4						
HDIL	**Hopedale**	**95.38**	**350**	PFAKE		02 45 00.0	+8.1
HDIL				LR	LR		
	comp=Z,620nm,19.0s						
N39A	**Derby Farms, D**	**95.42**	**353**	P	pP	02 44 59.2	+0.5
	baz=7.1						
CBN	**Corbin Frederi**	**95.47**	**340**	PFAKE		02 45 00.0	+7.7
CBN				LR	LR		
	comp=Z,503nm,21.0s						
N38A	**Joes South For**	**95.57**	**353**	P	pP	02 45 00.5	+1.1
	baz=6.5						
N36A	**Muff Farm, Cla**	**95.68**	**354**	P	pP	02 45 01.1	+1.2
	baz=5.3						
N35A	**Tabor**	**95.68**	**355**	P	pP	02 45 01.6	+1.6
	baz=4.8						
N23A	**Red Feather La**	**95.80**	**3**	P	pP	02 45 02.5	+1.6
	baz=357						
OGNE	**Ogallala**	**95.82**	**360**	PFAKE		02 45 10.0	+16
OGNE				LR	LR		
	comp=Z,395nm,20.0s						
DUG	**Dugway, Tooele**	**96.03**	**8**	P	pP	02 45 03.5	+1.8
	baz=352						
DUG	**Dugway, Tooele**	**96.03**	**8**	*e*P	**P**	**02 44 55.8**	**+0.7**
DUG				*e*PP*	**sP**	**02 45 03.0**	**-1.1**
DUG				pmax	pmax		
	comp=Z,10.0nm,1.1s						
DUG				MLR	MLR		
	comp=Z,356nm,19.0s						
DUG	**Dugway, Tooele**	**96.03**	**8**	*e*P	**P**	**02 44 55.8**	**+0.7**
	comp=Z,10.0nm,1.1s						
DUG				*e*pP	**sP**	**02 45 03.0**	**-1.1**
DUG				LR	LR		
	comp=Z,356nm,19.0s						
O40A	**La Belle**	**96.11**	**352**	P	pP	02 45 02.4	+0.6
	baz=7.5						
O38A	**Galt**	**96.25**	**353**	P	pP	02 45 03.8	+1.3
	baz=6.4						
O34A	**Beatrice**	**96.42**	**356**	P	pP	02 45 04.8	+1.5
	baz=4.0						
O20A	**White River Ci**	**96.46**	**5**	P	pP	02 45 04.7	+1.0
	baz=356						
O20A	**White River Ci**	**96.46**	**5**	*e*P	**P**	**02 44 57.0**	**-0.1**
	comp=Z,12nm,1.2s						
O20A				*e*pP	**pP**	**02 45 04.5**	**+0.8**
O33A	**Hebron**	**96.57**	**356**	P	pP	02 45 04.8	+0.8
	baz=3.4						
P40A	**Paris**	**96.71**	**352**	P	pP	02 45 05.5	+0.9
	baz=7.4						
P38A	**Dawn**	**96.75**	**353**	P	pP	02 45 05.4	+0.6
	baz=6.3						
P18A	**Preston Nutter**	**96.83**	**6**	*e*P	**P**	**02 44 58.2**	**-0.7**
P37A	**Lathrop**	**96.86**	**354**	P	pP	02 45 06.1	+0.8
	baz=5.8						
ASCN	**Ascension**	**96.87**	**266**	PFAKE		02 45 10.0	+11
ASCN				LR	LR		
	comp=Z,2μm,21.0s						
P36A	**Good Intent, A**	**96.89**	**354**	P	pP	02 45 06.3	+0.8
	baz=5.1						
ISCO	**Idaho Springs**	**96.91**	**3**	P	pP	02 45 06.8	+0.9
	baz=358						
ISCO	**Idaho Springs**	**96.91**	**3**	*e*P	**P**	**02 44 58.5**	**-0.8**
ISCO				*e*PP*	**pP**	**02 45 06.5**	**+0.6**
ISCO				pmax	pmax		
	comp=Z,5.0nm,1.0s						
ISCO				MLR	MLR		
	comp=Z,478nm,21.0s						
ISCO	**Idaho Springs**	**96.91**	**3**	*e*P	**P**	**02 44 58.5**	**-0.8**
	comp=Z,4.6nm,1.0s						
ISCO				*e*pP	**pP**	**02 45 06.5**	**+0.6**
ISCO				LR	LR		
	comp=Z,478nm,21.0s						
P35A	**Duane Minner,**	**97.03**	**355**	P	pP	02 45 07.0	+0.9
	baz=4.5						
NVAR	**Mina Array Bea**	**97.06**	**13**	P	Pdif	02 45 00.2	+0.2
	comp=Z,1.1nm,0.8s,baz=333,slow=5.0,SNR=5.8						
NVAR				pP	pP	02 45 07.1	+0.6
	comp=Z,2.7nm,0.8s,baz=347,slow=2.8,SNR=9.8						
NVAR				LR	LR	03 33 46.2	
	comp=Z,189nm,19.2s,baz=332,slow=38						
P34A	**Walnut Farm, R**	**97.06**	**356**	P	pP	02 45 07.1	+0.9
	baz=4.0						
P32A	**Huiting Farm,**	**97.07**	**357**	P	pP	02 45 07.5	+1.2
	baz=2.7						
BLA	**Blacksburg**	**97.12**	**343**	PFAKE		02 45 10.0	+10
BLA				LR	LR		
	comp=Z,683nm,20.0s						
Q40A	**Laux Farm, Aux**	**97.24**	**352**	P	pP	02 45 07.9	+0.9
	baz=7.4						
Q39A	**Willow Grove F**	**97.28**	**353**	P	pP	02 45 08.0	+0.8
	baz=6.8						
Q38A	**Cooks Store, C**	**97.42**	**353**	P	pP	02 45 09.2	+1.4
	baz=6.3						
SMCO	**Snowmass**	**97.48**	**4**	*e*P	**P**	**02 45 01.5**	**-0.5**
	comp=Z,4.7nm,1.2s						
KSU1	**Kansas State U**	**97.50**	**356**	PFAKE		02 45 10.0	+8.4
KSU1				LR	LR		
	comp=Z,670nm,22.0s						
R11A	**Troy Canyon, C**	**97.53**	**10**	P	pP	02 45 09.4	+0.8
	baz=350						
R11A	**Troy Canyon, C**	**97.53**	**10**	*e*P	Pdif	02 45 02.4	+0.4
PSUT	**Pine Spring**	**97.56**	**9**	*e*P	**P**	**02 45 03.3**	**+1.1**
Q36A	**Arnold C. Örve**	**97.56**	**355**	P	pP	02 45 08.5	0.0
	baz=5.0						
Q37A	**Longview Farm,**	**97.57**	**354**	P	pP	02 45 08.7	+0.1
	baz=5.7						
Q33A	**Connelly Farm,**	**97.66**	**356**	P	pP	02 45 09.3	+0.3
	baz=3.2						
Q34A	**Chapman**	**97.69**	**356**	P	pP	02 45 09.6	+0.5
	baz=3.9						
Q32A	**Meitler Ranch,**	**97.70**	**357**	P	pP	02 45 09.7	+0.6
	baz=2.7						
Q35A	**Mercer Eighty,**	**97.70**	**355**	P	pP	02 45 08.9	-0.2
	baz=4.5						
KSCO	**Kaye Shedlock'**	**97.75**	**0**	P	pP	02 45 10.9	+1.4
	baz=360						
CBKS	**Cedar Bluff**	**97.91**	**358**	P	pP	02 45 11.1	+1.0
	baz=1.8						
CBKS	**Cedar Bluff**	**97.91**	**358**	*e*P	**P**	**02 45 01.6**	**-1.9**
CBKS				pmax	pmax		
	comp=Z,21nm,0.9s						
CBKS	**Cedar Bluff**	**97.91**	**358**	*e*P	**P**	**02 45 01.6**	**-1.9**
	comp=Z,21nm,0.9s						
R40A	**Maddies Statio**	**97.96**	**352**	P	pP	02 45 10.9	+0.6
	baz=7.3						
R39A	**Chumby, Stover**	**98.01**	**353**	P	pP	02 45 11.0	+0.5
	baz=6.7						
R37A	**Teagarden Farm**	**98.16**	**354**	P	pP	02 45 11.4	+0.2
	baz=5.4						
R38A	**Fenwick Farm,**	**98.21**	**353**	P	pP	02 45 11.7	+0.3
	baz=6.1						
R35A	**Emporia Munici**	**98.25**	**355**	P	pP	02 45 11.7	+0.2
	baz=4.4						
R32A	**Long Quarter,**	**98.27**	**357**	P	pP	02 45 12.4	+0.7
	baz=2.6						
R34A	**Isabella, Hill**	**98.33**	**356**	P	pP	02 45 12.5	+0.5
	baz=3.7						
R33A	**Olander Ranch,**	**98.36**	**357**	P	pP	02 45 12.8	+0.7
	baz=3.1						
PV01	**Paradox Valley**	**98.43**	**5**	*e*P	**P**	**02 45 06.0**	**-0.1**
	comp=Z,288nm,0.9s						
S39A	**Bolivar**	**98.65**	**353**	P	pP	02 45 14.0	+0.6
	baz=6.5						
S40A	**Lebanon**	**98.67**	**352**	P	pP	02 45 14.3	+0.8
	baz=7.1						
S37A	**Fort Scott**	**98.71**	**354**	P	pP	02 45 13.8	+0.2
	baz=5.4						
S38A	**Stockton**	**98.77**	**353**	P	pP	02 45 14.7	+0.8
	baz=6.1						
S22A	**4UR Ranch, Cre**	**98.91**	**4**	P	pP	02 45 16.2	+1.2
	baz=357						
SDCO	**Great Sand Dun**	**98.96**	**3**	P	pP	02 45 15.3	+0.2
	baz=358						
SDCO	**Great Sand Dun**	**98.96**	**3**	*e*P	**P**	**02 45 07.6**	**-0.9**
	comp=Z,10nm,1.4s						
SDCO				LR	LR		
	comp=Z,438nm,19.0s						
S32A	**Newby Ranch, P**	**99.00**	**357**	P	pP	02 45 16.3	+1.3
	baz=2.4						
T39A	**Clever**	**99.32**	**353**	P	pP	02 45 18.1	+1.7
	baz=6.5						
MVCO	**Mesa Verde**	**99.35**	**5**	P	pP	02 45 17.3	+0.4
	baz=355						
MVCO	**Mesa Verde**	**99.35**	**5**	PFAKE		02 45 20.0	+10
MVCO				LR	LR		
	comp=Z,384nm,19.0s						
T38A	**Diamond**	**99.39**	**353**	P	pP	02 45 17.2	+0.4
	baz=5.8						
T36A	**Boggs Farm, Ca**	**99.48**	**355**	P	pP	02 45 17.7	+0.6
	baz=4.7						
T25A	**Trinidad**	**99.60**	**2**	P	pP	02 45 18.6	+0.7
	baz=358						
T34A	**McClaskey Farm**	**99.60**	**356**	P	pP	02 45 18.2	+0.5
	baz=3.7						
T35A	**Sooner Cattle**	**99.67**	**355**	P	pP	02 45 18.9	+0.9
	baz=4.2						
U39A	**Green Forest**	**99.97**	**353**	P	pP	02 45 19.3	0.0
	baz=6.4						
U38A	**Gravette**	**99.99**	**353**	P	pP	02 45 20.0	+0.6
	baz=5.8						
V40A	**Witts Springs**	**100.47**	**352**	P	pP	02 45 21.9	+0.3
	baz=6.9						
V39A	**Pettigrew**	**100.52**	**353**	P	pP	02 45 22.4	+0.5
	baz=6.3						
WUAZ	**Wupatki**	**100.81**	**7**	PFAKE		02 45 30.0	+13
WUAZ				LR	LR		
	comp=Z,450nm,20.0s						
NHSC	**New Hope**	**101.00**	**341**	PFAKE		02 45 30.0	+13
NHSC				LR	LR		
	comp=Z,587nm,20.0s						
GOGA	**Godfrey**	**101.42**	**344**	PFAKE		02 45 30.0	+11
GOGA				LR	LR		
	comp=Z,349nm,20.0s						
ANMO	**Albuquerque**	**101.72**	**3**	P	pP	02 45 29.0	+1.4
	baz=357						
ANMO	**Albuquerque**	**101.72**	**3**	*e*P	**Pdif**	**02 45 20.4**	**-0.3**
ANMO				pmax	pmax		
	comp=Z,6.0nm,1.6s						
ANMO				MLR	MLR		
	comp=Z,421nm,21.0s						
ANMO	**Albuquerque**	**101.72**	**3**	*e*Pdif	**Pdif**	**02 45 20.4**	**-0.3**
	comp=Z,6.4nm,1.6s						
ANMO				LR	LR		
	comp=Z,421nm,21.0s						
MIAR	**Mount Ida**	**101.80**	**353**	PFAKE		02 45 30.0	+9.2
MIAR				LR	LR		
	comp=Z,698nm,20.0s						
CAN	**Canberra**	**101.87**	**128**	*e*P	**Pdif**	**02 45 21.4**	**+0.4**
CAN	**Canberra**	**101.87**	**128**	*e*Pdif	**Pdif**	**02 45 21.4**	**+0.4**
X39A	**Fountain Ranch**	**101.88**	**353**	P	**Pdif**	**02 45 28.6**	**+7.3**
	baz=6.0						
WMOK	**Wichita Mounta**	**101.95**	**357**	PFAKE		02 45 30.0	+8.4
WMOK				LR	LR		
	comp=Z,476nm,19.0s						
MSTX	**Muleshoe**	**102.78**	**0**	P	pPdif	02 45 33.6	+1.6
	baz=360						
TUC	**Tucson**	**104.04**	**7**	PFAKE		02 45 40.0	+9.0
TUC				LR	LR		
	comp=Z,277nm,19.0s						
NATX	**Nacogdoches**	**104.65**	**353**	PFAKE		02 45 50.0	+16
NATX				LR	LR		
	comp=Z,652nm,19.0s						
MNTX	**Cornudas Mount**	**104.99**	**3**	PFAKE		02 50 00.0	
MNTX				LR	LR		
	comp=Z,367nm,21.0s						
JCT	**Junction City**	**106.22**	**358**	PFAKE		02 50 00.0	
JCT				LR	LR		
	comp=Z,496nm,20.0s						
HKT	**Hockley**	**106.54**	**354**	*e*PKP	**PKiKP**	**02 49 52.3**	**-0.3**
TXAR	**Lajitas Array**	**107.39**	**1**	pPKiKP	pPKiKP	02 50 00.2	-1.0
	comp=Z,0.9nm,0.9s,baz=4.6,slow=6.3,SNR=3.3						
TXAR				pPKKPbc		03 01 15.9	
	comp=Z,0.6nm,0.8s,baz=204,slow=5.5,SNR=6.1						
ANWB	**Willy Bob**	**108.58**	**319**	PFAKE		02 50 10.0	
ANWB				LR	LR		
	comp=Z,400nm,19.0s						
KVTX	**Kingsville**	**109.06**	**356**	PFAKE		02 50 10.0	
KVTX				LR	LR		
	comp=Z,643nm,21.0s						
SJG	**San Juan**	**110.18**	**323**	PFAKE		02 50 10.0	
SJG				LR	LR		
	comp=Z,182nm,19.0s						
SDDR	**Presa de Saban**	**111.50**	**328**	PFAKE		02 50 10.0	
SDDR				LR	LR		
	comp=Z,325nm,20.0s						
GTBY	**Guantanamo Bay**	**112.00**	**332**	PFAKE		02 50 10.0	
GTBY				LR	LR		
	comp=Z,317nm,22.0s						
XMAS	**Kiritimati**	**113.01**	**63**	PFAKE		02 50 20.0	
XMAS				LR	LR		
	comp=Z,2.0nm,19.0s						
MTDJ	**Mount Denham**	**114.38**	**334**	PFAKE		02 50 20.0	+12
MTDJ				LR	LR		
	comp=Z,195nm,19.0s						
TEIG	**Tepich**	**115.17**	**345**	PFAKE		02 50 20.0	+11
TEIG				LR

comp=Z,194nm,20.0s
OTAV Otavalo 131.39 327 *e*PKPdf **PKPdf 02 50 41.3 +0.2**
OTAV *ep*PKPdf **pPKPdf 02 50 48.5 +0.7**
OTAV LR LR
comp=Z,145nm,20.0s
SAML Samuel 131.50 304 *e*PKPdf **PKPdf 02 50 39.8 -0.8**
QSPA South Pole Qui 133.40 180 *e*PKPdf **PKPdf 02 50 41.6 -1.0**
CPUP Villa Florida 139.82 280 PKP **PKPdf 02 50 54.0 -1.6**
comp=Z,1.7nm,0.8s,baz=158,slow=3.9,SNR=3.1
CPUP PP **PP 02 53 49.7 -2.3**
comp=Z,2.3nm,0.9s,baz=168,slow=8.5,SNR=2.4
LPAZ La Paz 140.21 302 PKP **PKPdf 02 50 56.9 -0.6**
comp=Z,1.0nm,0.9s,baz=194,slow=10,SNR=3.3
NNA Nana 141.56 317 *e*PKIKP **PKPdf 02 50 59.3 0.0**
NNA Nana 141.56 317 *e*PKPdf **PKPdf 02 50 59.3 0.0**
LVC Limon Verde 145.37 296 *e*PKPbc **PKPab 02 51 06.3 +0.1**
TRQA Tornquist 149.18 266 *e*PKPbc **PKPbc 02 51 15.2 -0.7**
PTCN Pitcairn Islan 150.76 60 PFAKE 02 51 30.0 +2.9
PTCN LR LR
comp=Z,2μm,21.0s
LCO Las Campanas 150.84 289 *e*PKPbc **PKPbc 02 51 19.9 -0.5**
LCO *e*PKPab **PKPab 02 51 28.0 +0.3**

*ISCJB **01** 02:40:06.4±0.5, 22°.8S±0°.1×66°.87W±0°.05, h200km, Error ellipse: s-maj=15.6km s-min=5.1km az=12.4*
*SJA **01** 02:40:06.3±1.4, 22°.81S×66°.77W, h201km±26km, ML2.7, MW2.8*
*GUC **01** 02:40:07.0±0.4, 22°.75S×67°.27W, h232km±6km, ML3.6*
ISC 01 02:40:06.5±1.9, **22°.75**±0°.3×**66°.87W**±0°.09, **h200**km, **n13, σ0.88/8, 4C, Jujuy Province**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YJA	**Yavi** baz=236,slow=5.6	**1.37**	**67**	*e*P	Pn	02 40 39.9	+0.3
YJA				IAML		02 40 40.3	
comp=Z,31nm,0.3s							
YJA				*i* S	**Sn**	**02 41 04.9**	**-0.2**
HJA	**Humahuaca**	**1.43**	**110**	*i* P	Pn	02 40 40.3	+0.3
HJA				IAML		02 40 41.2	
comp=Z,86nm,0.5s							
LVC	**Limon Verde**	**1.89**	**273**	*i* P	Pn	02 40 45.3	+1.0
LVC	**Limon Verde**	**1.89**	**273⇑**	*e*P	Pn	02 40 45.3	+1.0
LVC				*e*S	**Sn**	**02 41 14.7**	**+1.1**
AZAP	**Zapla**	**2.23**	**132**	*i* P	Pn	02 40 46.8	-0.9
AZAP				IAML		02 40 48.1	
comp=Z,40nm,0.5s							
SLA	**San Lorenzo**	**2.35**	**148**	*i* P	Pn	02 40 49.1	+0.2
SLA				IAML		02 40 49.4	
comp=Z,10nm,0.4s							
PB09	**IPOC Station P**	**2.38**	**292⇑**	*e*P	Pn	02 40 50.5	+1.2
PB09				*e*S	**Sn**	**02 41 23.4**	**+0.8**
PB09				IAML		02 41 28.2	
comp=N,194nm,0.2s							
PB06	**IPOC Station P**	**2.50**	**270**	*e*P	Pn	02 40 51.0	+0.5
PB06				*e*S	**Sn**	**02 41 24.5**	**-0.3**
PB06				IAML		02 41 27.8	
comp=E,98nm,0.2s							
ASTB	**Santa Barbara**	**2.53**	**119**	*i* P	Pn	02 40 50.2	-0.7
ALOL	**LOMAS DE OLMED**	**2.87**	**113**	*i* P	Pn	02 40 53.5	-1.2
PB07	**IPOC Station P**	**2.97**	**289**	*e*P	Pn	02 40 56.3	+0.3
PB07				*e*S	**Sn**	**02 41 33.8**	**-0.7**
PB07				IAML		02 41 35.6	
comp=N,153nm,0.2s							
PB04	**IPOC Station P**	**3.06**	**277⇑**	*e*P	**Pn**	**02 40 57.2**	**+0.1**
PB04				*e*S	**Sn**	**02 41 35.3**	**-1.1**
PB04				IAML		02 41 40.4	
comp=N,110nm,0.1s							
PB10	**IPOC Station P**	**3.48**	**256⇑**	*e*P	**Pn**	**02 41 01.9**	**0.0**

*KRNET **01** 02:41:18.7±0.1, 43°.62N×77°.69E, h21km, mb3.5*
*ISCJB **01** 02:41:20.1±0.4, 43°.61N±0°.02×77°.67E±0°.02, h2km±3km, Error ellipse: s-maj=3.1km s-min=2.1km az=164.3*
*SOME **01** 02:41:20.8, 43°.62N×77°.68E, h15km*
ISC 01 02:41:20.1±1.0, **43°.61N**±0°.02×**77°.68E**±0°.02, **h10**km±9km, **n34, σ0.59/68, 18C-17D, Lake Issyk-Kul region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KURS	**Kuram** 250nm,0.2s	**0.38**	**109⇑**	*i*P	**Pb**	**02 41 28.6**	**-0.3**
KURS				⇑*i*S	**Sb**	**02 41 34.5**	**-0.3**
400nm,0.4s							
CHKK	**Chushkaly** 42nm,0.2s	**0.56**	**298**	*e*P	**Pg**	**02 41 31.0**	**+0.1**
CHKK				*e*S	**Sg**	**02 41 38.3**	**+0.1**
370nm,0.2s							
KOTS	**Kotyrbulak**	**0.56**	**228**	*e*P	**Pb**	**02 41 32.1**	**0.0**
KOTS				*e*S	**Sb**	**02 41 39.6**	**-0.6**
ARXS	**Arharly** 130nm,0.2s	**0.61**	**10**	*e*P	**Pb**	**02 41 32.7**	**-0.2**
ARXS				*e*S	**Sb**	**02 41 41.1**	**-0.4**
901nm,0.1s							
AAA	**Alma-Ata** 255nm,0.2s	**0.63**	**238**	*e*P	**Pb**	**02 41 33.8**	**+0.5**
AAA				*e*S	**Sb**	**02 41 43.4**	**+1.2**
2μm,0.2s							
MDOK	**Medeo** 35nm,0.1s	**0.64**	**226⇓**	*i*P	**Pg**	**02 41 33.0**	**+0.4**
MDOK				⇓*i*S	**Sg**	**02 41 41.6**	**+0.5**
500nm,0.2s							
MNBS	**Baschi** 47nm,0.1s	**0.70**	**48**	*e*P	**Pb**	**02 41 34.6**	**+0.2**
MNBS				*e*S	**Sb**	**02 41 43.9**	**-0.3**
313nm,0.3s							
ZHN	**Zhinishke** 53nm,0.1s	**0.71**	**129**	*e*P	**Pg**	**02 41 33.8**	**0.0**
ZHN				*e*S	**Sg**	**02 41 43.1**	**0.0**
468nm,0.2s							
KTBS	**Karatobe**	**0.73**	**278**	*e*P	**Pg**	**02 41 34.4**	**+0.2**
KTBS				*e*S	**Sg**	**02 41 43.9**	**+0.2**
KPKS	**Kokpek** 252nm,0.4s	**0.75**	**101**	*e*P	**Pg**	**02 41 34.4**	**-0.1**
KPKS				*e*S	**Sg**	**02 41 44.5**	**+0.3**
390nm,0.2s							
SATY	**Saty** 57nm,0.1s	**0.77**	**136**	*e*P	**Pg**	**02 41 35.0**	**+0.1**
SATY				⇓*i*S	**Sb**	**02 41 45.6**	**-0.6**
2μm,0.1s							
TNSS	**Tian-Shan** 60nm,0.2s	**0.78**	**223**	*e*P	**Pg**	**02 41 35.5**	**+0.2**
TNSS				*e*S	**Sg**	**02 41 46.1**	**+0.6**
260nm,0.4s							
ANVS	**Anan'yevo** baz=181	**0.83**	**181**	⇓*i*P	**Pg**	**02 41 35.7**	**-0.4**
ANVS				⇓*i*S	**Sg**	**02 41 46.8**	**-0.2**
baz=181							
IZV	**Izvestkoviy** 114nm,0.4s	**0.97**	**234**	*e*P	**Pg**	**02 41 38.6**	**-0.2**
IZV				*e*S	**Sg**	**02 41 51.6**	**+0.2**
385nm,0.1s							
KUU	**Kurty** 74nm,0.2s	**1.01**	**286**	⇓*i*P	**Pg**	**02 41 38.7**	**-0.8**
KUU				⇓*i*S	**Sg**	**02 41 51.5**	**-1.2**
316nm,0.3s							
MTBS	**Maitube** 208nm,0.2s	**1.03**	**242⇑**	*i*P	**Pg**	**02 41 39.2**	**-0.8**
MTBS				⇓*i*S	**Sg**	**02 41 53.0**	**-0.4**
470nm,0.4s							
UZB	**Uzynbulak** 62nm,0.2s	**1.08**	**115**	⇓*i*P	**Pg**	**02 41 40.5**	**-0.5**
UZB				⇑*i*S	**Sg**	**02 41 54.9**	**-0.1**
150nm,0.2s							
PRZ	**Przheval'sk** baz=155	**1.25**	**155⇑**	*i*P	**Pn**	**02 41 43.4**	**-0.3**
PRZ				⇑*i*S	**Sn**	**02 42 00.8**	**+0.2**
baz=155							
PDGK	**Podgornoye** baz=102	**1.34**	**102⇓**	*i*P	**Pn**	**02 41 44.6**	**-0.3**
PDGK				⇓*i*S	**Sn**	**02 42 02.6**	**-0.2**
baz=102							
KST	**Kastek** 281nm,0.3s	**1.38**	**246⇑**	*i*P	**Pn**	**02 41 45.5**	**0.0**
KST				⇑*i*S	**Sb**	**02 42 03.2**	**-0.4**
1μm,0.3s							
DGS	**Degeres** 75nm,0.3s	**1.44**	**256**	*e*P	**Pn**	**02 41 46.3**	**0.0**
DGS				*e*S	**Sn**	**02 42 04.7**	**-0.6**
111nm,0.3s							
TDK	**Taldyqorghan** 164nm,1.1s	**1.49**	**20**	*e*P	**Pb**	**02 41 47.5**	**-0.3**
TDK				*e*S	**Sb**	**02 42 07.2**	**+0.4**
359nm,0.7s							

KDJ	**Kajisay** baz=194	**1.53**	**194⇓**	*i*P	**Pb**	**02 41 48.3**	**-0.3**
KDJ				⇓*i*S	**Sb**	**02 42 08.3**	**+0.2**
baz=194							
SHLS	**Shalkode** 14nm,0.1s	**1.67**	**105**	*e*P	**Pb**	**02 41 51.1**	**0.0**
SHLS				*e*S	**Sb**	**02 42 12.8**	**+0.6**
57nm,0.2s							
TKM2	**Tokmak 2** baz=246	**1.67**	**246⇓**	*i*P	**Pn**	**02 41 50.0**	**+0.4**
TKM2				⇓*i*S	**Sb**	**02 42 12.4**	**+0.2**
baz=246							
DJR	**Jarkent** 26nm,0.1s	**1.69**	**64**	*e*P	**Pb**	**02 41 51.1**	**-0.1**
DJR				*e*S	**Sb**	**02 42 13.0**	**+0.5**
122nm,0.3s							
BOOM	**Boomskoye usch** baz=229	**1.70**	**229⇑**	*i*P	**Pn**	**02 41 50.1**	**+0.2**
BOOM				⇑*i*S	**Sb**	**02 42 13.0**	**0.0**
baz=229							
ULHL	**Ulahol** baz=218	**1.73**	**218⇑**	*i*P	**Pb**	**02 41 51.4**	**-0.6**
ULHL				⇑*i*S	**Sb**	**02 42 14.9**	**+1.0**
baz=218							
KTMS	**Ketmen** 34nm,0.3s	**1.95**	**94**	*e*P	**Pb**	**02 41 55.8**	**0.0**
KTMS				*e*S	**Sb**	**02 42 20.6**	**+0.3**
96nm,0.4s							
KAPS	**Kapalarasan** 22nm,0.2s	**2.06**	**35**	*e*P	**Pb**	**02 41 57.7**	**+0.1**
KAPS				*e*S	**Sb**	**02 42 24.1**	**+0.9**
195nm,0.3s							
KBK	**Karagaybulak** baz=245	**2.22**	**245⇓**	*i*P	**Pn**	**02 41 58.0**	**+0.9**
KBK				⇓*i*S	**Sb**	**02 42 28.4**	**+0.5**
baz=245							
KZA	**Kyzart** baz=230	**2.35**	**230⇑**	*i*P	**Pb**	**02 42 01.6**	**-1.2**
KZA				⇑*i*S	**Sb**	**02 42 33.1**	**+1.0**
baz=230							
FRU1	**Bishkek** baz=251	**2.37**	**251⇑**	*i*P	**Pn**	**02 42 00.8**	**+1.7**
FRU1				⇑*i*S	**Sb**	**02 42 31.1**	**-1.1**
baz=251							
NRN	**Naryn** baz=210	**2.51**	**210⇑**	*i*P	**Pn**	**02 42 02.5**	**+1.3**
NRN				⇑*i*S	**Sb**	**02 42 35.5**	**-0.9**
baz=210							

*ISCJB **01** 02:41:21.9±0.3, 37°.65N±0°.03×143°.51E±0°.03, h10km, mb4.3/40, MS3.9/4, Error ellipse: s-maj=4.9km s-min=3.8km az=179.7*
*IDC **01** 02:41:21.3±0.5, 37°.47N×143°.71E, h0km, mb4.1/23, mb1 4.4/30, mb1mx4.3/48, mbtmp4.3/30, ML4.3/6, MS3.7/8, Ms1 3.8/8, ms1mx3.3/51, Error ellipse: s-maj=14.7km s-min=12.3km az=114.0*
*JMA **01** 02:41:23.4±0.2, 37°.68N×143°.52E, h29km, M4.6*
*NEIC **01** 02:41:23.9±4.0, 37°.54N×143°.66E, h15km±24km, mb4.7/12, Error ellipse: s-maj=10.3km s-min=7.5km az=113.0*
ISC 01 02:41:21.8±3.8, **37°.59N**±0°.04×**143°.60E**±0°.06, **h2**km±23km, **n92, σ2.21/100, mb4.5/44, MS3.8/4, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.98**	**297**	P	**Pn**	**02 41 54.7**	**-1.6**
JIO				S	**Sn**	**02 42 18.2**	**-3.5**
OFUJ	**Ofunato**	**2.13**	**315**	P	**Pn**	**02 41 56.4**	**-2.0**
OFUJ				S	**Sn**	**02 42 21.0**	**-4.5**
JFK	**Kawauchi**	**2.18**	**265**	P	**Pn**	**02 41 57.8**	**-1.3**
JFK				S	**Sn**	**02 42 22.4**	**-4.4**
JMM	**Marumori**	**2.25**	**278**	P	**Pn**	**02 41 58.6**	**-1.4**
JMM				S	**Sn**	**02 42 24.3**	**-4.0**
JMK	**Ichinoseki**	**2.32**	**307**	P	**Pn**	**02 41 59.5**	**-1.5**
JOU	**Okura**	**2.45**	**289**	P	**Pn**	**02 42 02.2**	**-0.6**
JOU				*e*S	**Sn**	**02 42 30.9**	**-2.5**
JFT	**Otama**	**2.60**	**270**	P	**Pn**	**02 42 04.5**	**-0.3**
JFT				S	**Sn**	**02 42 34.7**	**-2.3**
JOM	**Ohasama**	**2.62**	**317**	P	**Pn**	**02 42 03.7**	**-1.4**
JOM				S	**Sn**	**02 42 33.5**	**-3.9**
JTH	**Tanohata**	**2.72**	**330**	P	**Pn**	**02 42 05.3**	**-1.1**
JTH				*e*S	**Sn**	**02 42 35.5**	**-4.4**
JYK	**Kaneyama**	**2.88**	**299**	P	**Pn**	**02 42 08.1**	**-0.6**
JYK				S	**Sn**	**02 42 41.3**	**-2.6**
JRG	**Rokugo**	**2.95**	**309**	P	**Pn**	**02 42 08.9**	**-0.8**
JRG				*e*S	**Sn**	**02 42 43.6**	**-2.1**
JANG	**Nango**	**3.23**	**330**	P	**Pn**	**02 42 12.3**	**-1.2**
JTM	**Tenmabayashi**	**3.76**	**329**	P	**Pn**	**02 42 20.4**	**-0.3**
JTM				S	**Sn**	**02 43 00.6**	**-4.9**
JRY	**Ryogami san**	**4.08**	**249**	P	**Pn**	**02 42 24.6**	**-0.7**
JRY				S	**Sn**	**02 43 09.3**	**-4.4**
ERM	**Erimo**	**4.44**	**356**	*e*Pn	**Pn**	**02 42 28.1**	**-2.0**
ERM				*e*Sn	**Sn**	**02 43 16.8**	**-5.5**
MJAR	**Matsushiro Arr** 35nm,0.3s,baz=77,slow=11,SNR=294	**4.44**	**258**	Pn	**Pn**	**02 42 30.9**	**+0.8**
MJAR				Sn	**Sn**	**02 43 21.9**	**-0.5**
16nm,0.3s,baz=87,slow=29,SNR=5.2							
MJAR				LR	LR	02 44 26.2	
comp=Z,1μm,20.0s,baz=85,slow=41							
MAJO	**Matsushiro**	**4.44**	**258**	*e*Pn	**Pn**	**02 42 31.1**	**+1.0**
MAT	**Matsushiro**	**4.44**	**258**	P	**Pn**	**02 42 31.1**	**+0.9**
MAT				S	**Sn**	**02 43 21.9**	**-0.5**
JHJ	**Hachijo jima 2** 91nm,0.3s,baz=144,slow=23,SNR=21	**5.44**	**216**	Pn	**Pn**	**02 42 41.5**	**-2.4**
JHJ				Sn	**Sn**	**02 43 40.2**	**-6.9**
188nm,0.3s,baz=97,slow=23,SNR=12							
ASAJ	**Asahikawa** 8.7nm,0.3s,baz=208,slow=17,SNR=33	**6.57**	**354**	Pn	**Pn**	**02 42 59.2**	**-0.1**
ASAJ				Sn	**Sn**	**02 44 11.2**	**-3.7**
3.5nm,0.3s,baz=14,slow=29,SNR=3.8							
ASAJ				LR	LR	02 45 44.1	
comp=Z,288nm,21.6s,baz=241,slow=39							
CBIJ	**Chichi jima**	**10.53**	**187**	*e*Pn	**Pn**	**02 43 50.0**	**-3.7**
CBIJ				*e*Sn	Sn	02 45 38.3	-14
JCJ	**Chichijima** 16nm,0.3s,baz=267,slow=22,SNR=16	**10.53**	**187**	Pn	**Pn**	**02 43 50.2**	**-3.5**
JCJ				Sn	Sn	02 45 41.8	-10
37nm,0.3s,baz=296,slow=22,SNR=9.8							
USRK	**Ussuriysk Ar.** 1.5nm,0.3s,baz=117,slow=11,SNR=16	**10.99**	**311**	Pn	**Pn**	**02 44 01.3**	**+1.3**
USRK				LR	LR	02 48 12.1	
comp=Z,339nm,19.1s,baz=101,slow=37							
JNU	**Nakatsue** 0.5nm,0.3s,baz=62,slow=6.5,SNR=6.0	**11.30**	**251**	Pn	**Pn**	**02 44 05.0**	**+0.6**
JNU				LR	LR	02 48 57.5	
comp=Z,283nm,18.2s,baz=121,slow=40							
JNU	**Nakatsue** 18nm,0.9s	**11.30**	**251**	*e*Pn	**Pn**	**02 44 04.6**	**+0.2**
KSRS	**Korea Array** 0.4nm,0.3s,baz=82,slow=14,SNR=13	**12.46**	**274**	Pn	**Pn**	**02 44 22.4**	**+2.4**
KSAR	**Wonju Array Be**	**12.49**	**274**	Pn	**Pn**	**02 44 22.4**	**+2.0**
KLR	**Kul'dur** 0.6nm,0.3s,baz=136,slow=13,SNR=14	**14.46**	**327**	Pn	**Pn**	**02 44 44.9**	**-2.5**
BJT	**Baijiatuau** 14nm,0.7s	**21.49**	**285**	*e*P	**P**	**02 46 12.7**	**+1.0**
SEY	**Seymchan** 2.9nm,0.8s,baz=199,slow=12,SNR=4.3	**25.94**	**9**	P	**P**	**02 46 56.1**	**+0.9**
H11N2	**WAKE ISLAND Hy** baz=317,slow=75,SNR=19	**26.98**	**125**	T	T	03 15 23.6	
H11N1	**WAKE ISLAND Hy** baz=317,slow=75,SNR=13	**26.99**	**125**	T	T	03 15 24.6	
H11N3	**WAKE ISLAND Hy** baz=317,slow=75,SNR=18	**27.00**	**125**	T	T	03 15 23.7	
H11S1	**WAKE ISLAND Hy** baz=318,slow=76,SNR=9.4	**27.74**	**127**	T	T	03 16 14.7	
H11S3	**WAKE ISLAND Hy** baz=318,slow=76,SNR=12	**27.74**	**127**	T	T	03 16 22.3	
H11S2	**WAKE ISLAND Hy** baz=318,slow=76,SNR=9.8	**27.76**	**127**	T	T	03 16 19.5	
ULN	**Ulaanbaatar** 15nm,1.0s	**28.51**	**303**	*e*P	**P**	**02 47 20.7**	**+2.1**
SONM	**Songino Array** 2.0nm,0.5s,baz=107,slow=8.8,SNR=6.8	**28.94**	**303**	P	**P**	**02 47 24.1**	**+1.6**
SONM				LR	LR	02 58 25.6	
comp=Z,220nm,20.4s,baz=52,slow=35							
ENH	**Enshi** 32nm,0.8s	**29.12**	**266**	*e*P	**P**	**02 47 25.5**	**+1.4**
TLY	**Talaya** 6.6nm,0.8s,baz=78,slow=3.2,SNR=4.1	**31.31**	**310**	P	**P**	**02 47 46.0**	**+2.7**
BILL	**Bilibino** 1.6nm,0.4s	**33.02**	**15**	*e*P	**P**	**02 47 58.6**	**+0.6**
ZALV	**Zalesovo Beam** 4.5nm,0.7s,baz=79,slow=7.6,SNR=3.5	**42.84**	**312**	P	**P**	**02 49 21.4**	**+0.3**
ZALV				PcP	**PcP**	**02 51 11.8**	**-0.3**
2.0nm,0.6s,baz=101,slow=3.2,SNR=3.6							
CMAR	**Chiang Mai Arr** 1.1nm,0.6s,baz=46,slow=6.5,SNR=7.0	**43.33**	**257**	P	**P**	**02 49 26.1**	**+0.7**
CMAR				LR	LR	03 08 35.7	
comp=Z,89nm,19.1s,baz=100,slow=38							
NRIK	**Noril'sk** comp=Z,197nm,18.9s,baz=112,slow=38	**43.51**	**335**	LR	LR	03 09 00.6	
MKAR	**Makanchi Array** 3.3nm,0.7s,baz=80,slow=9.0,SNR=4.6	**45.31**	**302**	P	**P**	**02 49 41.4**	**+0.4**
KURK	**Kurchatov** 25nm,0.6s	**46.97**	**308**	*e*P	**P**	**02 49 53.7**	**-0.3**
ILAR	**Eielson Array** 1.2nm,0.6s,baz=262,slow=6.8,SNR=9.3	**48.09**	**33**	P	**P**	**02 50 02.5**	**-0.1**
GUN	**Gumba** 44nm,0.8s	**48.84**	**276**	*e*P	P	02 50 14.7	+5.5
KKN	**Kakani** 22nm,0.6s	**49.36**	**276**	*e*P	**P**	**02 50 17.3**	**+4.2**
GKN	**Gorkha** 44nm,0.9s	**49.77**	**277**	*e*P	**P**	**02 50 19.8**	**+3.7**
KOLN	**Koldanda** 6.0nm,0.4s	**50.70**	**277**	*e*P	**P**	**02 50 25.7**	**+2.5**
TKM2	**Tokmak 2**	**50.90**	**299**	*e*P	**P**	**02 50 23.5**	**-1.1**
PYUN	**Piuthan** 18nm,0.5s	**51.03**	**278**	*e*P	**P**	**02 50 27.7**	**+2.0**
EKS2	**Erkin-Say** 4.8nm,0.7s	**52.25**	**299**	*e*P	**P**	**02 50 32.2**	**-2.3**
INK	**Inuvik** 0.8nm,0.8s,baz=291,slow=5.7,SNR=5.0	**53.10**	**27**	P	**P**	**02 50 41.2**	**+1.0**
WRAB	**Tennant Creek** 22nm,0.7s	**57.87**	**190**	*e*P	**P**	**02 51 13.9**	**-1.2**
WRA	**Warramunga Arr** 15nm,0.4s,baz=8.3,slow=7.1,SNR=159	**57.88**	**190**	P	**P**	**02 51 13.8**	**-1.3**
FITZ	**Fitzroy Crossi** 11nm,1.2s	**57.91**	**200**	*e*P	**P**	**02 51 15.2**	**-0.1**
ABKAR	**Akbulak array** 4.2nm,0.6s	**58.91**	**311**	*e*P	**P**	**02 51 21.8**	**-0.4**
ASAR	**Alice Springs** 6.0nm,0.7s,baz=11,slow=7.7,SNR=45	**61.60**	**190**	P	**P**	**02 51 40.4**	**-0.4**
RES	**Resolute Bay** 3.9nm,1.1s	**61.63**	**15**	*e*P	**P**	**02 51 40.0**	**-0.3**
YKA	**Yellowknife Ar** 0.5nm,0.8s,baz=302,slow=6.8,SNR=7.5	**62.45**	**31**	P	**P**	**02 51 45.7**	**-0.3**
DZM	**Mont Dzumac** 9.3nm,1.1s,baz=316,slow=12,SNR=3.9	**63.11**	**156**	P	**P**	**02 51 52.9**	**+1.9**
ARCES	**ARCESS Array B** 3.7nm,0.9s,baz=70,slow=7.9,SNR=7.7	**64.09**	**340**	P	**P**	**02 51 57.7**	**+0.9**
GEYT	**Alibeck** 3.1nm,0.8s,baz=18,slow=6.2,SNR=4.5	**65.09**	**300**	P	**P**	**02 52 05.0**	**+1.0**
GEYT				LR	LR	03 22 33.7	
comp=Z,73nm,18.7s,baz=115,slow=38							
STKA	**Stephens Creek** 3.0nm,0.7s,baz=338,slow=6.4,SNR=7.3	**69.13**	**182**	P	**P**	**02 52 28.7**	**-0.7**
FINES	**FINESS Array B** 0.7nm,0.4s,baz=24,slow=10,SNR=5.6	**69.13**	**333**	P	**P**	**02 52 29.1**	**-0.1**
FINES				PcP	**PcP**	**02 52 57.0**	**+4.0**
3.9nm,0.6s,baz=57,slow=6.6,SNR=10							
SUMG	**Summit** 5.0nm,0.9s	**70.13**	**1**	*e*P	**P**	**02 52 35.6**	**-0.1**
KIV	**Kislovodsk** 8.9nm,0.8s	**71.86**	**312**	*e*P	**P**	**02 52 47.5**	**+1.3**
KBZ	**Khabaz** 4.1nm,0.8s,baz=155,slow=0.3,SNR=8.1	**71.86**	**311**	P	**P**	**02 52 48.8**	**+2.7**
NVAR	**Mina Array Bea** 0.5nm,0.8s,baz=273,slow=8.3,SNR=3.0	**73.25**	**54**	P	**P**	**02 52 56.1**	**+1.3**
HFS	**Hagfors** 10nm,1.1s,baz=100,slow=4.5,SNR=7.3	**74.29**	**336**	P	**P**	**02 52 59.8**	**-0.5**
NOA	**NORSAR Array B** 3.0nm,1.1s,baz=52,slow=7.0,SNR=4.5	**74.34**	**338**	P	**P**	**02 53 00.8**	**+0.2**
AKASG	**Malin Array Be** 1.5nm,0.7s,baz=47,slow=6.1,SNR=4.7	**74.92**	**323**	P	**P**	**02 53 03.8**	**-0.3**
PDAR	**Pinedale Array** 0.4nm,0.3s,baz=204,slow=3.3,SNR=7.5	**76.03**	**47**	P	**P**	**02 53 10.6**	**-0.3**
BRTR	**Keskin Array B** 0.3nm,0.5s,baz=135,slow=32,SNR=4.9	**79.78**	**313**	P	**P**	**02 53 32.4**	**+0.7**
ISCO	**Idaho Springs** 1.1nm,0.9s	**80.21**	**47**	*e*P	**P**	**02 53 34.2**	**0.0**
GERES	**GERESS Array B** 0.7nm,0.7s,baz=31,slow=5.4,SNR=4.9	**83.15**	**329**	P	**P**	**02 53 49.4**	**0.0**
SOKA	**Soboth** 6.1nm,1.1s	**84.29**	**327**	*i* P	**P**	**02 53 55.4**	**+0.2**
MOTA	**Moosalm** 2.3nm,0.7s	**85.39**	**330**	*i* PcP	**P**	**02 54 02.4**	**+1.6**
RETA	**Reutte** 7.7nm,0.9s	**85.41**	**330**	*i* PcP	**P**	**02 54 01.0**	**+0.1**
BFO	**Black Forest** 13nm,1.1s	**85.66**	**332**	*e*P	**P**	**02 54 02.0**	**0.0**
FETA	**Feichten** 6.0nm,1.3s	**85.81**	**330**	*i* PcP	**P**	**02 54 03.8**	**+0.9**
DAVA	**Damuels** 8.5nm,1.0s	**85.92**	**330**	*i* PcP	**P**	**02 54 03.4**	**-0.1**
TXAR	**Lajitas Array** 0.4nm,0.7s,baz=297,slow=3.3,SNR=4.7	**88.39**	**54**	P	**P**	**02 54 15.3**	**-0.4**
TORD	**Torodi Ar. Bea** 0.1nm,0.4s,baz=27,slow=2.3,SNR=5.5	**118.15**	**317**	PKP	**PKPdf**	**03 00 09.3**	**-1.7**
SNAA	**Sanae**	**141.78**	**196**	PKP	**PKPdf**	**03 00 49.2**	**-4.7**
VNA2	**Neumayer--Watz** baz=110,slow=3.0	**143.32**	**195**	PKP	PKPbc	03 00 53.5	-0.2
VNA3	**Neumayer Olymp**	**143.54**	**194**	PKP	PKPab	03 00 52.2	-1.1
VNA1	**Neumayer--Stat**	**143.72**	**195**	PKP	PKPab	03 00 54.0	0.0
LPAZ	**La Paz** 1.0nm,0.7s,baz=302,slow=4.8,SNR=4.8	**144.90**	**61**	PKP	**PKPdf**	**03 01 01.4**	**-0.3**
LCO	**Las Campanas**	**150.21**	**84**	*e*PKPbc	**PKPbc**	**03 01 14.6**	**-0.2**

MEX 01 02:46:04.2±1.4, **14°.19N**×**92°.47W**, **h29**km±32km, **MD3.8, Near coast of Chiapas**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THIG		**0.74**	**16**	*i* P	Pb	02 46 16.1	-2.4
THIG				*e*S	Sb	02 46 25.9	-2.4
PCIG		**1.67**	**334**	*e*P	Pn	02 46 30.6	-0.9
PCIG				*e*S	Sn	02 46 49.8	-2.2
CCIG	**Comitan**	**2.10**	**9**	*e*P	Pn	02 46 35.5	-2.1
CCIG				*e*S	Sn	02 47 00.0	-3.0
HUIG	**Huatulco**	**3.85**	**294**	*e*P	Pn	02 47 00.5	-1.0
HUIG				*i* S	Sn	02 47 41.8	-4.0

*NIED **01** 02:48:00, 37°.40N×141°.20E, h29km, Mw4.4 Best double couple: M0=4.83000×10^15 NP1:φs=278.00000°, δ54.00000°, λ-146.00000°. NP2:φs=166.00000°, δ63.00000°, λ-41.00000°.*
*ISCJB **01** 02:48:44.8±0.5, 37°.38N±0°.02×141°.25E±0°.03, h30km±3km, mb4.5/112, MS4.2/8, Error ellipse: s-maj=4.6km s-min=3.5km az=21.0*
*MOS **01** 02:48:45.2±1.3, 37°.44N×141°.32E, h33km, mb4.7/51, Error ellipse: s-maj=7.8km s-min=4.8km az=96.4*
*IDC **01** 02:48:45.5±0.4, 37°.37N×141°.11E, h26km±2km, mb4.2/23, mb1 4.4/27, mb1mx4.3/41, mbtmp4.4/27, ML4.6/2, MS4.0/4, Ms1 4.1/4, ms1mx3.4/50, Error ellipse: s-maj=14.0km

MAT	**Matsushiro**	**2.62**	**252**	P	**Pn**	**02 49 26.8**	**+0.5**
MAT				S	**Sb**	**02 50 00.8**	**-2.7**
MJB9	**Matsu-Tunnel**	**2.62**	**252**	*e*Pn	**Pn**	**02 49 26.9**	**+0.6**
INU	**Inuyama**	**4.02**	**241**	*e*Pn	**Pn**	**02 49 46.7**	**+1.3**
JHJ	**Hachijo jima 2**	**4.45**	**197**	Pn	**Pn**	**02 49 51.3**	**-0.1**
	121nm,0.3s,baz=266,slow=23,SNR=54						
JHJ				Sn	**Sn**	**02 50 41.5**	**-0.9**
	248nm,0.3s,baz=63,slow=23,SNR=8.7						
JHJ2	**Mitsune**	**4.45**	**196**	*e*Pn	**Pn**	**02 49 51.5**	**+0.1**
JHJ2				*e*Sn	**Sn**	**02 50 40.5**	**-1.9**
ERM	**Erimo**	**4.83**	**17⇑**	*e*P	**Pn**	**02 49 55.8**	**-0.7**
ERM	**Erimo**	**4.83**	**17**	*e*Pn	**Pn**	**02 49 55.5**	**-1.0**
ERM				*e*Sn	**Sn**	**02 50 51.0**	**-0.6**
ASAJ	**Asahikawa**	**6.78**	**8**	Pn	**Pn**	**02 50 23.1**	**-0.2**
	11nm,0.3s,baz=222,slow=9.2,SNR=53						
ASAJ	**Asahikawa**	**6.78**	**8**	*e*Pn	**Pn**	**02 50 22.1**	**-1.3**
YUK	**Yuzh-Kuril'sk**	**7.47**	**26**	*e*P	**Pn**	**02 50 30.8**	**-2.1**
YUK				*e*S	**Sn**	**02 51 50.4**	**-6.4**
YUK				pmax	pmax		
	comp=Z,157nm,0.6s						
YUK				pmax	pmax		
	comp=N,78nm,0.5s						
YUK				pmax	pmax		
	comp=E,55nm,0.3s						
YUK				MLR	MLR		
	comp=Z,547nm,9.0s						
SHO	**Shikotan**	**7.71**	**31**	*e*P	**Pn**	**02 50 32.8**	**-3.3**
SHO				pmax	pmax		
	comp=Z,106nm,0.5s						
SHO				pmax	pmax		
	comp=N,45nm,0.6s						
SHO				pmax	pmax		
	comp=E,34nm,0.5s						
VLA	**Vladivostok**	**9.19**	**311⇑**	*e*P	Pn	02 51 03.3	+6.9
VLA				S	Sn	02 52 46.4	+7.5
KUR	**Kuril'sk**	**9.25**	**30**	*e*P	**Pn**	**02 50 55.4**	**-1.8**
KUR				*e*S	**Sn**	**02 52 34.4**	**-6.0**
KUR				pmax	pmax		
	comp=Z,48nm,0.8s						
KUR				smax	smax		
	comp=E,45nm,0.7s						
KUR				smax	smax		
	comp=N,43nm,0.6s						
MSHR	**Mys Shultsa**	**9.34**	**307**	*c*eP	**Pn**	**02 50 59.7**	**+1.2**
JNU	**Nakatsue**	**9.53**	**246**	Pn	**Pn**	**02 51 03.6**	**+2.4**
	comp=N,1.1nm,0.3s,baz=171,slow=0.8,SNR=9.6						
JNU	**Nakatsue**	**9.53**	**246**	*e*Pn	**Pn**	**02 51 02.5**	**+1.4**
YSS	**Yuzh-Sakhalins**	**9.61**	**6⇓**	*e*P	**Pn**	**02 51 02.8**	**+0.7**
YSS				*e*S	**Sn**	**02 52 48.8**	**-0.4**
YSS				pmax	pmax		
	comp=Z,40nm,0.9s						
YSS				MLR	MLR		
	comp=Z,500nm,17.0s						
YSS	**Yuzh-Sakhalins**	**9.61**	**6**	*e*Pn	**Pn**	**02 51 01.8**	**-0.3**
USRK	**Ussuriysk Ar.**	**9.79**	**317**	Pn	Pn	02 51 08.5	+3.8
	comp=Z,0.6nm,0.3s,baz=131,slow=13,SNR=14						
CBIJ	**Chichi jima**	**10.30**	**176**	*e*Pn	**Pn**	**02 51 09.5**	**-2.2**
CBIJ				*e*Sn	Sn	02 52 57.5	-9.0
JCJ	**Chichijima**	**10.30**	**176**	Pn	**Pn**	**02 51 09.5**	**-2.2**
	comp=Z,39nm,0.3s,baz=60,slow=14,SNR=14						
JCJ				Sn	Sn	02 52 57.5	-8.9
	comp=Z,35nm,0.3s,baz=275,slow=21,SNR=6.5						
JCJ				LR	LR	02 55 22.1	
	comp=Z,324nm,21.8s,slow=39						
KSRS	**Korea Array**	**10.64**	**274**	Pn	Pn	02 51 20.5	+4.2
	comp=Z,0.4nm,0.3s,baz=92,slow=14,SNR=17						
KSAR	**Wonju Array Be**	**10.67**	**274**	P	Pn	02 51 20.5	+3.7
KSAR	**Wonju Array Be**	**10.67**	**274**	Pn	Pn	02 51 20.5	+3.7
MDJ	**Mudanjiang**	**11.40**	**313**	P	**Pn**	**02 51 25.8**	**-0.9**
MDJ				S	**Sn**	**02 53 29.6**	**-3.7**
MDJ				pmax	pmax		
	comp=Z,16nm,2.6s						
MDJ				pmax	pmax		
	comp=Z,110nm,2.9s						
MDJ				LR	LR		
	comp=N,370nm,17.0s						
MDJ				LR	LR		
	comp=E,190nm,17.7s						
MDJ				LR	LR		
	comp=Z,670nm,21.4s						
TYV	**Tymovskoe**	**13.49**	**4**	*e*P	**Pn**	**02 51 55.0**	**-0.2**
TYV				pmax	pmax		
	comp=Z,6.0nm,0.6s						
TYV				MLR	MLR		
	comp=E,1μm,15.0s						
TYV				MLR	MLR		
	comp=Z,2μm,16.0s						
KLR	**Kul'dur**	**13.70**	**333**	LR	LR	02 57 03.5	
	comp=Z,522nm,18.9s,baz=268,slow=36						
KLR	**Kul'dur**	**13.70**	**333**	*e*P	**Pn**	**02 52 01.0**	**+2.9**
NKL	**Nikolayevsk**	**15.76**	**359**	*e*P	**P**	**02 52 28.0**	**-1.3**
NJ2	**Nanjing**	**19.19**	**261**	*e*P	**P**	**02 53 06.8**	**-0.6**
NJ2				pmax	pmax		
	comp=Z,18nm,0.5s						
PETK	**Petropavlovsk-**	**19.42**	**31**	P	**P**	**02 53 09.2**	**-0.6**
	comp=Z,0.1nm,0.3s,baz=239,slow=4.9,SNR=6.2						
PET	**Petropavlovsk**	**19.75**	**32**	*e*P	**P**	**02 53 13.7**	**+0.3**
BJI	**Beijing**	**19.77**	**285**	P	**P**	**02 53 10.1**	**-3.5**
BJI				pmax	pmax		
	comp=Z,8.0nm,2.7s						
TPUB	**Ta-pu**	**22.64**	**237**	*e*P	**P**	**02 53 42.7**	**-2.1**
	comp=Z,13nm,0.8s						
MA2	**Magadan**	**23.01**	**12**	P	**P**	**02 53 48.4**	**+0.1**
	comp=Z,18nm,0.8s,baz=214,slow=8.7,SNR=12						
HHC	**Hu-ho-hao-te**	**23.27**	**288**	*e*P	**P**	**02 53 48.9**	**-2.4**
HHC				pmax	pmax		
	comp=Z,26nm,1.0s						
HHC				pmax	pmax		
	comp=Z,130nm,4.4s						
WHN	**Wuhan**	**23.33**	**261**	P	P	02 53 43.9	-7.9
YAK	**Yakutsk**	**25.69**	**347**	P	**P**	**02 54 12.0**	**-1.3**
	comp=Z,9.1nm,0.3s,baz=162,slow=3.8,SNR=3.5						
YAK	**Yakutsk**	**25.69**	**347**	*e*P	**P**	**02 54 12.2**	**-1.1**
YAK				pmax	pmax		
	comp=E,6.0nm,1.6s						
YAK				pmax	pmax		
	comp=Z,18nm,0.9s						
YAK				pmax	pmax		
	comp=N,6.0nm,0.9s						
YAK	**Yakutsk**	**25.69**	**347**	*e*P	**P**	**02 54 12.0**	**-1.3**
	comp=N,30nm,0.8s						
SEY	**Seymchan**	**26.45**	**11⇓**	*i*P	**P**	**02 54 22.4**	**+2.2**
BOD	**Bodaibo**	**27.17**	**327**	*e*P	**P**	**02 54 25.6**	**-1.1**
BOD				pmax	pmax		
	comp=Z,6.0nm,0.8s						
ENH	**Enshi**	**27.28**	**264**	*e*P	**P**	**02 54 27.3**	**-0.7**
SONM	**Songino Array**	**27.51**	**303**	P	**P**	**02 54 29.5**	**-0.5**
	comp=Z,1.9nm,0.4s,baz=97,slow=8.5,SNR=7.4						
H11N2	**WAKE ISLAND Hy 28.41**		**121**	T	T	03 24 43.9	
	baz=314,slow=75,SNR=1232						
H11N1	**WAKE ISLAND Hy 28.42**		**121**	T	T	03 24 44.5	
	baz=314,slow=75,SNR=1457						
H11N3	**WAKE ISLAND Hy 28.43**		**121**	T	T	03 24 45.2	
	baz=314,slow=75,SNR=1361						
H11S1	**WAKE ISLAND Hy 29.13**		**123**	T	T	03 25 36.6	
	baz=316,slow=76,SNR=675						
H11S3	**WAKE ISLAND Hy 29.14**		**123**	T	T	03 25 34.6	
	baz=316,slow=76,SNR=542						
H11S2	**WAKE ISLAND Hy 29.15**		**123**	T	T	03 25 34.0	
	baz=316,slow=76,SNR=602						
LZH	**Lanzhou**	**29.92**	**279**	*e*P	**P**	**02 54 54.2**	**+2.5**
LZH				pP	sP	02 55 05.1	+3.3
LZH				sP	pP	02 55 11.9	+13
LZH				PP	**PP**	**02 55 56.0**	**-3.2**
LZH				*e*S	**S**	**02 59 44.1**	**-3.7**
LZH				sS	sS	03 00 03.4	+3.8
LZH				SS	**SnSn**	**03 01 22.4**	**+2.9**
LZH				pmax	pmax		
	comp=Z,28nm,1.3s						
LZH				pmax	pmax		
	comp=Z,83nm,4.1s						
LZH				LR	LR		
	comp=N,2μm,14.9s						
LZH				LR	LR		
	comp=E,1μm,13.0s						
LZH				LR	LR		
	comp=Z,1μm,16.8s						
TLY	**Talaya**	**30.02**	**311**	*e*P	**P**	**02 54 50.6**	**-1.6**
TLY				pmax	pmax		
	comp=Z,4.0nm,0.7s						
TLY	**Talaya**	**30.02**	**311**	*e*P	**P**	**02 54 50.6**	**-1.6**
	comp=Z,3.6nm,0.7s						
CD2	**Chengdu**	**31.59**	**269**	P	**P**	**02 55 04.3**	**-2.0**
CD2				pmax	pmax		
	comp=Z,2.0nm,0.6s						
GTA	**Gaotai**	**32.37**	**287**	*e*P	**P**	**02 55 16.6**	**+3.4**
GTA				pP	sP	02 55 28.3	+5.0
GTA				sP	pP	02 55 34.0	+14
GTA				S	**S**	**03 00 30.1**	**+4.1**
GTA				pmax	pmax		
	comp=Z,6.0nm,0.8s						
GTA				pmax	pmax		
	comp=Z,150nm,5.9s						
GTA				LR	LR		
	comp=N,220nm,13.8s						
GTA				LR	LR		
	comp=E,110nm,18.5s						
GTA				LR	LR		
	comp=Z,190nm,18.1s						
BILL	**Bilibino**	**33.70**	**17⇑**	*e*P	**P**	**02 55 26.4**	**+2.1**
BILL				*e*		02 55 40.4	
BILL				pmax	pmax		
	comp=Z,8.0nm,1.4s						
BILL				MLR	MLR		
	comp=Z,200nm,16.0s						
BILL	**Bilibino**	**33.70**	**17**	*e*P	**P**	**02 55 25.1**	**+0.8**
	comp=Z,3.9nm,1.0s						
TIXI	**Tiksi**	**34.91**	**353**	*i*P	**P**	**02 55 36.6**	**+1.9**
TIXI				pmax	pmax		
	comp=Z,1.0nm,0.7s						
KMI	**Kunming**	**34.93**	**261**	P	**P**	**02 55 39.0**	**+3.3**
KMI				pmax	pmax		
	comp=Z,14nm,1.0s						
TNA	**Tin City**	**40.58**	**30**	*e*P	**P**	**02 56 23.2**	**+0.6**
	comp=Z,13nm,1.1s						
WMQ	**Urumqi**	**40.60**	**296**	P	**P**	**02 56 23.5**	**+0.3**
WMQ				pP	sP	02 56 33.6	+0.2
WMQ				sP	pP	02 56 40.8	+10
WMQ				S	**S**	**03 02 33.3**	**+2.0**
WMQ				pmax	pmax		
	comp=Z,7.0nm,0.5s						
WMQ				pmax	pmax		
	comp=Z,43nm,7.2s						
WMQ				LR	LR		
	comp=N,62nm,21.2s						
WMQ				LR	LR		
	comp=E,69nm,37.8s						
WMQ				LR	LR		
	comp=Z,37nm,26.6s						
ZAA0	**Zalesovo Array**	**41.60**	**312**	*e*P	**P**	**02 56 30.9**	**-0.3**
ZALV	**Zalesovo Beam**	**41.60**	**312**	P	**P**	**02 56 30.7**	**-0.5**
	comp=Z,4.2nm,0.6s,baz=96,slow=7.1,SNR=9.8						
ZALV				pPcP		02 58 35.8	
	comp=Z,3.8nm,0.6s,baz=109,slow=3.3,SNR=6.7						
NVS	**Novosibirsk**	**42.52**	**313**	*e*P	**P**	**02 56 41.9**	**+3.2**
MK01	**Makanchi Array**	**43.85**	**302**	*e*P	**P**	**02 56 48.6**	**-1.0**
MK31	**Makanchi Array**	**43.85**	**302**	*e*P	**P**	**02 56 49.0**	**-0.6**
MK31	**Makanchi Array**	**43.85**	**302**	*e*P	**P**	**02 56 49.0**	**-0.6**
MKAR	**Makanchi Array**	**43.85**	**302**	P	**P**	**02 56 48.9**	**-0.8**
	comp=Z,2.5nm,0.7s,baz=98,slow=9.1,SNR=14						
MKAR				PcP	**PcP**	**02 58 34.1**	**-1.5**
	comp=Z,0.6nm,0.8s,baz=94,slow=6.2,SNR=2.1						
MKAR				pPcP		02 58 43.7	
	comp=Z,1.6nm,0.8s,baz=78,slow=1.7,SNR=3.6						
MAKZ	**Makanchi**	**44.06**	**302**	*e*P	**P**	**02 56 50.7**	**-0.6**
MAKZ				pmax	pmax		
	comp=Z,4.0nm,0.8s						
MAKZ	**Makanchi**	**44.06**	**302**	*e*P	**P**	**02 56 50.7**	**-0.6**
	comp=Z,4.4nm,0.8s						
KURK	**Kurchatov**	**45.64**	**308**	*e*P	**P**	**02 57 02.6**	**-1.1**
KURK				pmax	pmax		
	comp=Z,16nm,0.9s						
KURK	**Kurchatov**	**45.64**	**308**	*e*P	**P**	**02 57 02.6**	**-1.1**
	comp=Z,16nm,0.9s						
PMG	**Port Moresby**	**46.88**	**172**	*e*P	**P**	**02 57 13.9**	**+0.1**
PMG				pmax	pmax		
	comp=Z,13nm,0.9s						
PMG	**Port Moresby**	**46.88**	**172**	*e*P	**P**	**02 57 13.9**	**+0.1**
	comp=Z,13nm,0.9s						
KDAK	**Kodiak Island**	**46.89**	**42**	*i*P	**P**	**02 57 14.2**	**+0.8**
CAST	**Castle Rocks**	**46.97**	**34**	*e*P	**P**	**02 57 16.4**	**+2.2**
	comp=Z,20nm,1.8s						
GUN	**Gumba**	**47.03**	**275**	*e*P	**P**	**02 57 15.0**	**-0.4**
	comp=Z,16nm,0.5s						
BPAW	**Bear Paw Mtn.**	**47.47**	**33**	*e*P	**P**	**02 57 18.8**	**+0.9**
	comp=Z,0.5nm,0.7s						
KKN	**Kakani**	**47.56**	**275**	*e*P	**P**	**02 57 19.6**	**+0.2**
MLY	**Manley**	**47.59**	**32**	*e*P	**P**	**02 57 20.7**	**+1.8**
	comp=Z,4.5nm,0.9s						
TRF	**Thorofare Moun**	**47.78**	**34**	*e*P	**P**	**02 57 22.6**	**+2.0**
	comp=Z,8.9nm,1.3s						
COLD	**Coldfoot**	**47.88**	**29**	*e*P	**P**	**02 57 20.7**	**-0.3**
	comp=Z,4.8nm,1.0s						
GKN	**Gorkha**	**47.98**	**276**	*e*P	**P**	**02 57 22.2**	**-0.4**
	comp=Z,26nm,0.8s						
MCK	**McKinley**	**48.38**	**34**	*e*P	**P**	**02 57 25.2**	**+0.2**
MCK				pmax	pmax		
	comp=Z,3.0nm,0.7s						
MCK	**McKinley**	**48.38**	**34**	*e*P	**P**	**02 57 25.2**	**+0.2**
	comp=Z,3.3nm,0.7s						
MDM	**Murphy Dome**	**48.65**	**32**	*e*P	**P**	**02 57 28.7**	**+1.6**
	comp=Z,13nm,1.1s						
SML	**Sawmill**	**48.75**	**37**	*e*P	**P**	**02 57 28.3**	**+0.4**
SML				pmax	pmax		
	comp=Z,2.0nm,0.7s						
SML	**Sawmill**	**48.75**	**37**	*e*P	**P**	**02 57 28.3**	**+0.4**
	comp=Z,1.5nm,0.7s						
KOLN	**Koldanda**	**48.90**	**276**	*e*P	**P**	**02 57 31.2**	**+1.5**
	comp=Z,10nm,0.6s						
ILAR	**Eielson Array**	**49.23**	**33**	P	**P**	**02 57 32.0**	**+0.5**
	comp=Z,2.6nm,0.7s,baz=269,slow=6.3,SNR=30						
ILB	**Eielson Array**	**49.23**	**33**	*e*P	**P**	**02 57 32.1**	**+0.6**
IL1	**Eielson Array**	**49.23**	**33**	*e*P	**P**	**02 57 31.6**	**+0.1**
PYUN	**Piuthan**	**49.24**	**277**	*e*P	**P**	**02 57 32.8**	**+0.5**
IPM	**Ipoh**	**49.26**	**238**	*e*P	**P**	**02 57 32.0**	**-0.3**
	comp=Z,5.1nm,0.7s						
TKM2	**Tokmak 2**	**49.38**	**298**	*e*P	**P**	**02 57 32.7**	**-0.5**
TKM2				pmax	pmax		
	comp=Z,6.0nm,0.5s						
TKM2	**Tokmak 2**	**49.38**	**298**	*e*P	**P**	**02 57 32.6**	**-0.5**
	comp=Z,5.9nm,0.5s						
DIV	**Divide**	**50.04**	**37**	*e*P	**P**	**02 57 38.8**	**+1.0**
	comp=Z,9.7nm,0.9s						
AAK	**Ala-Archa**	**50.24**	**298**	P	**P**	**02 57 40.7**	**+1.0**
AAK				pmax	pmax		
	comp=Z,2.0nm,0.8s						
AAK	**Ala-Archa**	**50.24**	**298**	*e*P	**P**	**02 57 38.8**	**-0.9**
	comp=Z,1.4nm,0.6s						
BRVK	**Borovoye**	**50.32**	**312⇓**	*e*P	**P**	**02 57 39.3**	**-0.6**
BRVK				pmax	pmax		
	comp=Z,8.0nm,2.5s						
BRVK	**Borovoye**	**50.32**	**312**	*e*P	**P**	**02 57 38.6**	**-1.3**
	comp=Z,8.2nm,0.9s						
DOT	**Dot Lake**	**50.55**	**34**	*e*P	**P**	**02 57 42.2**	**+0.6**
	comp=Z,7.8nm,0.8s						
ZRNK	**Zerenda**	**51.09**	**312**	*e*P	**P**	**02 57 45.2**	**-0.6**
ZRNK				pmax	pmax		
	comp=Z,9.0nm,1.0s						
ZRNK	**Zerenda**	**51.09**	**312**	*e*P	**P**	**02 57 45.2**	**-0.6**
	comp=Z,8.8nm,1.0s						
COEN	**Coen**	**51.11**	**178**	*e*P	**P**	**02 57 46.5**	**+0.2**
	comp=Z,19nm,1.0s						
EGAK	**Eagle**	**51.68**	**32**	*e*P	**P**	**02 57 50.2**	**+0.2**
	comp=Z,3.8nm,0.9s						
KKAR	**Karatay Array**	**52.87**	**300**	*e*P	**P**	**02 57 59.6**	**+0.4**
KKAR				pmax	pmax		
	comp=Z,4.0nm,0.8s						
KKAR	**Karatay Array**	**52.87**	**300**	*e*P	**P**	**02 57 59.6**	**+0.4**
	comp=Z,3.5nm,0.8s						
GSI	**Gunungsitoli**	**53.91**	**239**	*e*P	**P**	**02 58 06.8**	**-0.3**
	comp=Z,17nm,0.7s						
INK	**Inuvik**	**54.10**	**27**	P	**P**	**02 58 08.7**	**+0.9**
INK	**Inuvik**	**54.10**	**27**	*e*P	**P**	**02 58 08.7**	**+0.9**
	comp=Z,6.1nm,1.1s						
SVE	**Sverdlovsk**	**54.81**	**318**	*e*P	**pP**	**02 58 21.5**	**+0.9**
SVE				pmax	pmax		
	comp=Z,14nm,0.9s						
ARU	**Arti**	**56.03**	**318**	*d i*P	**P**	**02 58 24.8**	**+2.9**
ARU						03 00 30.0	
ARU				S	**S**	**03 06 15.4**	**+6.7**
ARU				pmax	pmax		
	comp=Z,11nm,1.6s						
ARU	**Arti**	**56.03**	**318**	*e*P	**P**	**02 58 20.4**	**-1.5**
	comp=Z,19nm,1.1s						
FITZ	**Fitzroy Crossi**	**57.14**	**198**	*e*P	**P**	**02 58 29.9**	**-0.3**
	comp=Z,2.6nm,0.6s						
WRAB	**Tennant Creek**	**57.40**	**188**	*c i*P	**P**	**02 58 31.5**	**-0.5**
WRAB				pmax	pmax		
	comp=Z,31nm,1.2s						
WRAB	**Tennant Creek**	**57.40**	**188**	*e*P	**P**	**02 58 31.0**	**-1.0**
	comp=Z,10nm,1.0s						
WB2	**Warramunga Arr**	**57.41**	**188**	*e*P	**P**	**02 58 31.1**	**-0.9**
WRA	**Warramunga Arr**	**57.41**	**188**	P	**P**	**02 58 31.1**	**-0.9**
	comp=Z,1.9nm,0.5s,baz=5.9,slow=7.2,SNR=46						
WRA				pP	**pP**	**02 58 38.5**	**-1.1**
	comp=Z,2.8nm,0.4s,baz=1.1,slow=7.5,SNR=11						
ABKAR	**Akbulak array**	**57.64**	**310**	*e*P	**P**	**02 58 32.1**	**-1.4**
DLBC	**Dease Lake**	**58.39**	**38**	*e*P	**P**	**02 58 38.6**	**-0.1**
	comp=Z,2.8nm,0.7s						
AS01	**Alice Springs**	**61.13**	**188**	*e*P	**P**	**02 58 57.2**	**-0.6**
AS31	**Alice Springs**	**61.14**	**188**	*e*P	**P**	**02 58 57.6**	**-0.2**
	comp=Z,1.9nm,1.1s						
ASAR	**Alice Springs**	**61.14**	**188**	P	**P**	**02 58 57.5**	**-0.3**
	comp=Z,3.5nm,0.9s,baz=1.2,slow=3.9,SNR=25						
ASAR				pP	**pP**	**02 59 06.1**	**+0.7**
	comp=Z,1.4nm,0.6s,baz=14,slow=14,SNR=5.3						
MBWA	**Marble Bar**	**61.69**	**203**	*e*P	**P**	**02 59 00.9**	**-0.7**
	comp=Z,11nm,0.7s						
RES	**Resolute Bay**	**62.27**	**14**	*e*P	**P**	**02 59 04.7**	**-0.1**
RES				pmax	pmax		
	comp=Z,6.0nm,0.9s						
RES	**Resolute Bay**	**62.27**	**14**	*e*P	**P**	**02 59 04.7**	**-0.1**
	comp=Z,6.1nm,0.9s						
EIDS	**Eidsvold**	**63.11**	**170**	*e*P	**P**	**02 59 11.4**	**+0.5**
	comp=Z,7.1nm,0.7s						
KLMR	**Klimovskoe**	**63.40**	**328**	*e*P	**P**	**02 59 10.5**	**-2.0**
KLMR				pmax	pmax		
	comp=Z,4.0nm,0.8s						
YKA	**Yellowknife Ar**	**63.54**	**30**	P	**P**	**02 59 13.6**	**+0.2**
	comp=Z,1.3nm,0.7s,baz=303,slow=6.6,SNR=32						
YKA				pP	**pP**	**02 59 22.3**	**+1.4**
	comp=Z,1.0nm,0.6s,baz=304,slow=7.3,SNR=9.7						
YKB5	**Yellowknife Ar**	**63.54**	**30**	*e*P	**P**	**02 59 13.0**	**-0.4**
GEYT	**Alibeck**	**63.58**	**299**	P	**P**	**02 59 14.9**	**+0.7**
	comp=Z,1.9nm,0.7s,baz=79,slow=7.7,SNR=4.0						
ARCES	**ARCESS Array B**	**63.62**	**339**	P	**P**	**02 59 13.6**	**-0.3**
	comp=Z,1.8nm,0.5s,baz=62,slow=8.3,SNR=20						
DZM	**Mont Dzumac**	**63.72**	**154**	P	**P**	**02 59 17.5**	**+2.3**
	comp=Z,12nm,0.9s,baz=4.3,slow=8.2,SNR=7.4						
DAG	**Danmarks Havn**	**65.40**	**355**	*i*P	**P**	**02 59 24.5**	**-0.9**
	comp=Z,2.5nm,0.7s						
DAG	**Danmarks Havn**	**65.40**	**355**	*i*P	**P**	**02 59 24.5**	**-0.9**
DAG				pmax	pmax		
	comp=Z,2.0nm,0.7s						
VRH	**Novokhopyorsk**	**67.25**	**318**	*e*P	**P**	**02 59 39.4**	**+1.8**
VRH				pmax	pmax		
	comp=Z,7.0nm,0.6s						
OBN	**Obninsk**	**67.75**	**323**	*e*P	**P**	**02 59 42.2**	**+1.5**
OBN				*e*		02 59 47.5	
OBN				*e*		03 00 04.3	
OBN				pmax	pmax		
	comp=Z,5.0nm,0.8s						
OBN				MLR	MLR		
	comp=Z,94nm,15.0s						
LPSR	**Galich'ya Gora**	**67.96**	**320**	*e*P	**P**	**02 59 43.2**	**+1.1**
LPSR				*e**PP	**pP**	**02 59 49.4**	**-0.3**
LPSR				pmax	pmax		
	comp=Z,2.0nm,0.4s						
FINES	**FINESS Array B**	**68.45**	**332**	P	**P**	**02 59 44.4**	**-0.6**
	comp=Z,2.6nm,0.6s,baz=57,slow=7.0,SNR=12						
FINES				pP	**pP**	**02 59 53.1**	**+0.4**
	comp=Z,10nm,0.9s,baz=44,slow=7.0,SNR=9.0						
VSR	**Storozhevoye**	**68.60**	**319**	*e*P	**P**	**02 59 46.8**	**+0.7**
VSR				*e**PP	**pP**	**02 59 52.6**	**-1.2**
VSR				pmax	pmax		
	comp=Z,3.0nm,0.4s						
STKA	**Stephens Creek**	**68.92**	**180**	P	**P**	**02 59 47.4**	**-0.8**
	comp=Z,2.8nm,0.6s,baz=337,slow=7.6,SNR=10						
STKA	**Stephens Creek**	**68.92**	**180**	*e*P	**P**	**02 59 48.2**	**0.0**
STKA				pmax	pmax		
	comp=Z,1.0nm,0.8s						
STKA	**Stephens Creek**	**68.92**	**180**	*e*P	**P**	**02 59 48.2**	**0.0**
	comp=Z,1.0nm,0.8s						
NEW	**Newport**	**69.93**	**44**	*e*P	**P**	**02 59 55.6**	**+1.1**
NEW				pmax	pmax		
	comp=Z,3.0nm,0.8s						
NEW	**Newport**	**69.93**	**44**	*e*P	**P**	**02 59 55.5**	**+1.1**
	comp=Z,3.2nm,0.8s						
BBOO	**Buckleboo**	**70.02**	**185**	*e*P	**P**	**02 59 54.8**	**-0.2**
	comp=Z,5.6nm,0.6s						
SUMG	**Summit**	**70.32**	**360**	*i*P	**P**	**02 59 57.5**	**+0.6**
	comp=Z,7.1nm,1.1s						
SUMG				*i*		03 00 05.9	
SUMG	**Summit**	**70.32**	**360**	*i*P	**P**	**02 59 57.5**	**+0.6**
SUMG				*i*		03 00 05.9	
SUMG				pmax	pmax		
	comp=Z,7.0nm,1.1s						
SUMG	**Summit**	**70.32**	**360**	*e*P	**P**	**02 59 57.7**	**+0.8**
	comp=Z,8.5nm,0.9s						
ZEI	**Tsey**	**70.50**	**309**	*e*P	**P**	**02 59 55.8**	**-2.5**
ZEI				pmax	pmax		
	comp=Z,5.0nm,0.6s						
KBZ	**Khabaz**	**70.60**	**311**	P	**P**	**02 59 58.5**	**0.0**
	comp=Z,3.1nm,0.8s,baz=17,slow=2.4,SNR=7.6						
KIV	**Kislovodsk**	**70.60**	**311⇑**	*e*P	**P**	**02 59 59.5**	**+0.8**
KIV				*i*		03 00 06.3	
KIV				pmax	pmax		
	comp=Z,12nm,1.0s						
KIV				MLR	MLR		
	comp=Z,50nm,16.0s						
KIV	**Kislovodsk**	**70.60**	**311**	*e*P	**P**	**02 59 58.2**	**-0.5**
	comp=Z,33nm,1.5s						
K05A	**Summer Lake**	**70.78**	**51**	*e*P	**P**	**03 00 01.2**	**+1.2**
	comp=Z,11nm,0.9s						
NEY	**Neytrino**	**70.97**	**310**	P	**P**	**03 00 03.7**	**+2.6**
NEY				pmax	pmax		
	comp=Z,2.0nm,1.6s						
WALA	**Waterton Lakes**	**71.22**	**42**	*e*P	**P**	**03 00 02.4**	**-0.1**
	comp=Z,8.9nm,1.4s						
GNI	**Garni**	**71.42**	**307⇓**	*e*P	**P**	**03 00 06.0**	**+2.1**
GNI				pmax	pmax

comp=Z,1.8nm,0.7s
PD31 Pinedale Array 77.47 45 *e*P **P 03 00 39.8 +0.6**
PDAR Pinedale Array 77.47 45 P **P 03 00 39.8 +0.6**
comp=Z,1.5nm,0.6s,baz=269,slow=2.5,SNR=19
PSUT Pine Spring 77.57 51 *e*P **P 03 00 41.1 +1.4**
comp=Z,3.3nm,0.8s
KWP Kalwaria Pacla 77.78 324⇑*i*P **P 03 00 39.3 -1.1**
KWP Kalwaria Pacla 77.78 324 ⇑P **P 03 00 39.4 -1.0**
BUR08 Bucovina Ar. S 77.96 322 *e*P **P 03 00 41.4 -0.2**
BURAR Bucovina Array 77.97 322⇑*i*P **P 03 00 41.1 -0.5**
BURAR Bucovina Array 77.97 322 ⇑P **P 03 00 41.1 -0.5**
PETR Petresti 78.22 319⇑*i*P **P 03 00 46.1 +3.2**
VRI Vrincioaia 78.39 320⇑*i*P **P 03 00 44.3 +0.4**
VRI Vrincioaia 78.39 320 ⇑P **P 03 00 44.3 +0.4**
KOLS Kolonicke sedl 78.47 324 *e*P pP 03 00 52.1 +0.1
KOLS Kolonicke sedl 78.47 324 *e* pP 03 00 52.1 +0.1
BRTR Keskin Array B 78.54 311 P **P 03 00 44.2 -0.8**
comp=Z,1.1nm,0.9s,baz=128,slow=3.5,SNR=6.4
BRTR pP **PcP 03 00 53.1 -1.0**
comp=Z,2.6nm,0.9s,baz=107,slow=4.1,SNR=11
STHS Stebnicka Huta 78.61 325 *e*P **P 03 00 45.2 +0.2**
STHS *e* 03 00 54.1
STHS pmax pmax
comp=Z,4.0nm,1.0s
STHS Stebnicka Huta 78.61 325 *e*P **P 03 00 45.2 +0.2**
STHS *e* 03 00 54.1
MSU Marysvale 78.61 50 *e*P **P 03 00 47.2 +1.6**
MSU Marysvale 78.61 50 *e*P **P 03 00 47.2 +1.6**
P17A Butcher Ranch, 78.88 49 *e*P **P 03 00 48.4 +1.5**
comp=Z,6.3nm,0.9s
MTPU Mount Pierson 78.91 50 *e*P **P 03 00 49.4 +2.0**
comp=Z,3.0nm,0.6s
BR231 Keskin MP Arra 78.98 312 *e*P **P 03 00 45.0 -2.3**
ISR Istrita 78.99 319⇑*i*P **P 03 00 50.4 +3.2**
ISR Istrita 78.99 319 ⇑P **P 03 00 50.4 +3.2**
P18A Preston Nutter 79.07 48 *e*P **P 03 00 50.3 +2.2**
comp=Z,5.6nm,0.9s
SRU San Rafael Swe 79.24 49 *e*P **P 03 00 50.2 +1.3**
SRU pmax pmax
comp=Z,7.0nm,0.9s
SRU San Rafael Swe 79.24 49 *e*P **P 03 00 50.2 +1.3**
comp=Z,6.5nm,0.9s
CJR Cluj-Napoca 79.39 322⇑*i*P **P 03 00 51.0 +1.6**
CJR Cluj-Napoca 79.39 322 ⇑P **P 03 00 51.0 +1.6**
OKC Ostrava-Krasne 79.69 327 *e*pP pP 03 00 58.9 +0.2
DRGR 79.77 322⇓*i*P **P 03 00 50.9 -0.6**
ARR Arges 79.81 320⇑*i*P **P 03 00 52.2 +0.5**
MORC Moravsky Berou 80.00 327⇑*i*P **P 03 00 52.4 -0.3**
MORC Moravsky Berou 80.00 327 ⇑P **P 03 00 52.4 -0.3**
DPC Dobruska-Polom 80.10 328 *e*P **P 03 00 53.4 +0.2**
DPC *e*pP **pP 03 01 01.9 +1.0**
DPC Dobruska-Polom 80.10 328 *e*P **P 03 00 53.4 +0.2**
DPC *e* 03 01 01.9
PSZ Piszkesteto 80.31 324 *e*P **P 03 00 55.0 +0.6**
PSZ pmax pmax
comp=Z,11nm,1.0s
PSZ Piszkesteto 80.31 324 *e*P **P 03 00 55.0 +0.6**
comp=Z,11nm,1.0s
VYHS Vyhne 80.37 325 *e*P pP 03 01 03.0 +0.6
VYHS Vyhne 80.37 325 *e* pP 03 01 03.0 +0.6
SIRR Siria 80.66 322⇑*i*P **P 03 00 56.3 +0.1**
BRG Berggiesshubel 80.69 329 *e*P **P 03 00 56.0 -0.3**
comp=Z,4.3nm,1.1s
BRG *e* 03 01 04.2
comp=Z,5.3nm,1.0s
comp=N,108nm,12.5s
comp=E,82nm,10.4s
comp=Z,209nm,17.5s
BRG Berggiesshubel 80.69 329 *e*P **P 03 00 56.0 -0.3**
BRG *e* 03 01 04.2
BRG pmax pmax
comp=Z,4.0nm,1.1s
BRG MLR MLR
comp=N,108nm,12.5s
BRG MLR MLR
comp=E,82nm,10.4s
BRG MLR MLR
comp=Z,209nm,17.5s
PVCC Panska Ves 80.70 329 *e*pP pP 03 01 04.5 +0.4
CLL Collm 80.73 330 *i* P **P 03 00 55.8 -0.7**
comp=Z,5.0nm,1.0s
CLL *i* 03 01 04.0
comp=Z,11nm,1.3s
CLL Collm 80.73 330 *i* P **P 03 00 55.8 -0.7**
CLL *i* 03 01 04.0
CLL pmax pmax
comp=Z,5.0nm,1.0s
PV05 Paradox Valley 80.75 49 *e*P **P 03 00 58.4 +1.2**
VRAC Vranov 80.77 327⇓*i*P **P 03 00 56.9 +0.2**
VRAC Vranov 80.77 327 ⇓P **P 03 00 56.9 +0.2**
Y14A Wickenburg 80.97 54 *e*P **P 03 00 59.5 +1.3**
WUAZ Wupatki 81.00 52 *e*P **P 03 01 00.0 +1.5**
comp=Z,4.8nm,0.9s
PV01 Paradox Valley 81.03 49 *e*P **P 03 00 59.9 +1.2**
PRU Pruhonice 81.12 328 *e*P **P 03 00 58.6 0.0**
PRU *e*pP **pP 03 01 06.6 +0.2**
PRU Pruhonice 81.12 328 *e*P **P 03 00 58.6 0.0**
PRU *e* 03 01 06.6
TREC Trest 81.25 328 *e*P **P 03 00 59.3 0.0**
TREC *e*pP **pP 03 01 07.5 +0.4**
TREC Trest 81.25 328 *e*P **P 03 00 59.3 0.0**
TREC *e* 03 01 07.5
MVCO Mesa Verde 81.68 49 *e*P **P 03 01 02.2 0.0**
comp=Z,4.1nm,0.9s
CONA Conrad Observa 82.12 326 *i*pP pP 03 01 13.0 +1.2
comp=Z,3.9nm,0.7s
PKSM Moragy 82.14 324⇓*i*P **P 03 01 06.9 +2.9**
PKSM Moragy 82.14 324 ⇓P **P 03 01 06.9 +2.9**
KHC Kasperske Hory 82.18 328 *e*P **P 03 01 04.0 -0.3**
KHC *e*pP **pP 03 01 12.5 +0.4**
KHC Kasperske Hory 82.18 328 *e*P **P 03 01 04.0 -0.3**
KHC *e* 03 01 12.5
KHC Kasperske Hory 82.18 328 *e*P **P 03 01 03.5 -0.7**
comp=Z,2.6nm,0.8s
S22A 4UR Ranch, Cre 82.33 48 *e*P **P 03 01 07.2 +1.7**
comp=Z,2.2nm,0.8s
GEC2 GERESS Array S 82.35 328 *e*P **P 03 01 04.7 -0.5**
GEC2 pmax pmax
comp=Z,13nm,1.4s
GEC2 GERESS Array S 82.35 328 *e*P **P 03 01 04.7 -0.5**
comp=Z,13nm,1.4s
GERES GERESS Array B 82.35 328 P **P 03 01 04.3 -0.9**
comp=Z,1.1nm,0.5s,baz=36,slow=5.6,SNR=16
GERES pP **pP 03 01 13.1 +0.1**
comp=Z,2.2nm,0.6s,baz=35,slow=6.0,SNR=14
GEA0 GERESS Array S 82.36 328 *e*P **P 03 01 04.2 -1.1**
GRFO Grafenberg 82.71 330 *e*P **P 03 01 07.6 +0.7**
GRFO pmax pmax
comp=Z,10.0nm,1.0s
GRFO Grafenberg 82.71 330 *e*P **P 03 01 07.6 +0.7**
comp=Z,9.8nm,1.0s
ARSA Arzberg 82.79 326 *i*pP pP 03 01 15.9 +0.7
comp=Z,4.6nm,1.1s
T25A Trinidad 84.16 47 *e*P **P 03 01 16.1 +1.2**
STU Stuttgart 84.24 330 *e*P **P 03 01 12.9 -1.9**
STU pmax pmax
comp=Z,14nm,0.9s
STU Stuttgart 84.24 330 *e*P **P 03 01 12.9 -1.9**
comp=Z,14nm,0.9s
ANMO Albuquerque 84.42 50⇑*i*P **P 03 01 17.6 +1.3**
ANMO pmax pmax
comp=Z,8.0nm,2.5s
ANMO Albuquerque 84.42 50 *e*P **P 03 01 17.7 +1.5**
comp=Z,3.3nm,1.0s
RETA Reutte 84.64 329 *i*pP pP 03 01 25.4 +0.6
comp=Z,9.3nm,0.7s
BFO Black Forest 84.94 331 *i* P **P 03 01 18.8 +0.4**
BFO Black Forest 84.94 331 *e*P **P 03 01 17.9 -0.6**
comp=Z,12nm,0.9s
FUORN Ofenpass-Fuorn 85.54 329 *e*P **P 03 01 21.4 -0.4**
LAST Lasithi 86.42 312⇑*i*P pP 03 01 31.9 -2.0
IDI Anoyia 86.67 313⇓*i*P pP 03 01 33.2 -1.9
SIVA Sivas 86.91 313⇓*i*P pP 03 01 34.3 -1.9
TXAR Lajitas Array 89.97 52 P **P 03 01 43.6 +0.5**
comp=Z,3.1nm,0.7s,baz=300,slow=3.2,SNR=37
TXAR pP **pP 03 01 53.0 +2.1**
comp=Z,1.0nm,0.6s,baz=292,slow=3.2,SNR=5.2
TXAR LR LR 03 39 15.5
comp=Z,284nm,20.7s,baz=0.0,slow=34
UTMT University of 93.15 38 *e*P **P 03 01 57.9 +0.3**
ESDC Sonseca Array 96.92 334 P **P 03 02 13.0 -1.9**
comp=Z,0.5nm,0.9s,baz=178,slow=37,SNR=3.6
ESDC pP **pP 03 02 23.1 +0.4**
comp=Z,0.2nm,0.5s,baz=14,slow=4.7,SNR=3.6

LPAZ La Paz 146.58 59 PKPbc **PKPbc 03 08 25.9 -0.2**
comp=Z,4.5nm,0.7s,baz=328,slow=2.3,SNR=31
LVC Limon Verde 150.13 69 *e*PKPbc **PKPbc 03 08 35.1 +0.2**
LCO Las Campanas 152.05 82 *e*PKPbc **PKPbc 03 08 39.1 0.0**

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*IDC **01** 02:54:40.0±0.9, 37.°56N×143.°67E, h0km, mb3.9/14, mb1 4.0/20, mb1mx3.8/49, mbtmp3.9/20, ML3.8/5, Error ellipse: s-maj=21.8km s-min=16.4km az=91.0*
*NEIC **01** 02:54:41.1±3.0, 37.°63N×143.°71E, h7km±19km, mb4.2/4, Error ellipse: s-maj=11.4km s-min=7.0km az=96.0*
*JMA **01** 02:54:42.9±0.2, 37.°69N×143.°53E, h38km, M4.0*
*ISCJB **01** 02:54:43.1±0.5, 37.°65N±0.°04×143.°56E±0.°05, h33km, mb4.0/19, Error ellipse: s-maj=5.7km s-min=4.9km az=144.0*
ISC 01 02:54:45.1±0.7, **37.°63N**±0.°05×**143.°61E**±0.°07, **h35**km, **n44**, σ1§**81**/52, **mb4.0**/19, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.96**	**295**	P	**Pn**	**02 55 13.9**	**-1.9**
JIO				S	**Sn**	**02 55 36.2**	**-3.0**
OFUJ	**Ofunato**	**2.10**	**314**	P	**Pn**	**02 55 15.5**	**-2.2**
JFK	**Kawauchi**	**2.19**	**264**	P	**Pn**	**02 55 16.6**	**-2.3**
JFK				S	**Sn**	**02 55 42.8**	**-2.0**
JMM	**Marumori**	**2.24**	**277**	P	**Pn**	**02 55 17.7**	**-1.9**
JMM				*e*S	**Sn**	**02 55 43.4**	**-2.7**
JMK	**Ichinoseki**	**2.29**	**306**	P	**Pn**	**02 55 18.5**	**-1.9**
JOU	**Okura**	**2.44**	**288**	P	**Pn**	**02 55 21.2**	**-1.2**
JOM	**Ohasama**	**2.58**	**316**	P	**Pn**	**02 55 22.7**	**-1.6**
JOM				*e*S	**Sn**	**02 55 52.4**	**-2.1**
JFT	**Otama**	**2.60**	**269**	P	**Pn**	**02 55 23.5**	**-1.1**
JFT				S	**Sn**	**02 55 54.1**	**-0.8**
JTH	**Tanohata**	**2.68**	**330**	P	**Pn**	**02 55 24.4**	**-1.2**
JTH				*e*S	**Sn**	**02 55 53.8**	**-3.0**
JYK	**Kaneyama**	**2.86**	**298**	P	**Pn**	**02 55 27.0**	**-1.2**
JRG	**Rokugo**	**2.92**	**308**	P	**Pn**	**02 55 27.8**	**-1.2**
JRY	**Ryogami san**	**4.10**	**248**	P	**Pn**	**02 55 43.9**	**-1.4**
ERM	**Erimo**	**4.39**	**356**	*e*Pn	**Pn**	**02 55 47.0**	**-2.2**
MJAR	**Matsushiro Arr**	**4.45**	**257**	Pn	**Pn**	**02 55 50.5**	**+0.5**
	7.0nm,0.3s,baz=74,slow=9.8,SNR=36						
MJAR				Sn	**Sn**	**02 56 40.4**	**-0.2**
	3.3nm,0.3s,baz=92,slow=31,SNR=4.8						
MAJO	**Matsushiro**	**4.45**	**258**	*e*Pn	**Pn**	**02 55 50.0**	**-0.1**
MAT	**Matsushiro**	**4.45**	**258**	P	**Pn**	**02 55 49.9**	**-0.1**
MAT				S	**Sn**	**02 56 40.9**	**+0.3**
JNBK	**Urakawa-nobuka**	**4.69**	**352**	P	**Pn**	**02 55 51.8**	**-1.5**
JHJ	**Hachijo jima 2**	**5.48**	**216**	Pn	**Pn**	**02 56 02.6**	**-1.6**
	18nm,0.3s,baz=308,slow=24,SNR=13						
JHJ				Sn	**Sn**	**02 56 59.1**	**-6.8**
	44nm,0.3s,baz=270,slow=23,SNR=8.9						
ASAJ	**Asahikawa**	**6.53**	**354**	Pn	**Pn**	**02 56 18.1**	**-0.4**
	2.9nm,0.3s,baz=196,slow=17,SNR=15						
ASAJ				Sn	**Sn**	**02 57 27.3**	**-4.3**
	0.7nm,0.3s,baz=60,slow=33,SNR=3.7						
CBIJ	**Chichi jima**	**10.57**	**187**	*e*Pn	**Pn**	**02 57 14.0**	**-0.1**
JCJ	**Chichijima**	**10.57**	**187**	Pn	Pn	02 57 08.4	-5.7
JCJ				Sn	Sn	02 58 58.8	-12
USRK	**Ussuriysk Ar.**	**10.96**	**310**	Pn	**Pn**	**02 57 20.1**	**+0.8**
	0.2nm,0.3s,baz=147,slow=42,SNR=3.5						
KSRS	**Korea Array**	**12.45**	**274**	Pn	Pn	02 57 41.5	+1.8
	0.1nm,0.3s,baz=84,slow=14,SNR=5.2						
KSAR	**Wonju Array Be**	**12.48**	**274**	Pn	**Pn**	**02 57 41.5**	**+1.3**
KLR	**Kul'dur**	**14.42**	**327**	Pn	**Pn**	**02 58 04.6**	**-1.9**
	0.1nm,0.3s,baz=134,slow=13,SNR=5.6						
ULN	**Ulaanbaatar**	**28.48**	**303**	*e*P	**P**	**03 00 38.5**	**+1.5**
	2.6nm,0.8s						
SONM	**Songino Array**	**28.92**	**303**	P	**P**	**03 00 42.0**	**+1.2**
	0.4nm,0.4s,baz=101,slow=8.6,SNR=3.9						
ZALV	**Zalesovo Beam**	**42.81**	**312**	P	**P**	**03 02 39.9**	**+0.7**
	1.3nm,0.6s,baz=64,slow=9.8,SNR=2.4						
MKAR	**Makanchi Array**	**45.28**	**302**	P	**P**	**03 03 00.1**	**+0.9**
	1.3nm,0.7s,baz=84,slow=12,SNR=3.3						
KURK	**Kurchatov**	**46.94**	**308**	*e*P	**P**	**03 03 12.1**	**0.0**
	6.8nm,0.6s						
KURBB	**Kurchatov Arra**	**47.01**	**308**	P	**P**	**03 03 13.0**	**+0.3**
	3.5nm,0.6s,baz=82,slow=8.0,SNR=34						
ILAR	**Eielson Array**	**48.05**	**33**	P	**P**	**03 03 21.5**	**+0.9**
	0.3nm,0.7s,baz=246,slow=7.3,SNR=3.1						
BRVK	**Borovoye**	**51.52**	**312**	*e*P	**P**	**03 03 46.8**	**-0.3**
	2.8nm,0.7s						
WRAB	**Tennant Creek**	**57.91**	**190**	*e*P	**P**	**03 04 32.8**	**-0.9**
	2.0nm,0.5s						
WRA	**Warramunga Arr**	**57.92**	**190**	P	**P**	**03 04 33.2**	**-0.6**
	2.3nm,0.4s,baz=8.3,slow=7.1,SNR=30						
ABKAR	**Akbulak array**	**58.89**	**310**	*e*P	**P**	**03 04 40.6**	**+0.4**
	1.1nm,0.6s						
AKTO	**Aktyubinsk**	**59.57**	**312**	P	**P**	**03 04 46.0**	**+1.0**
	1.4nm,0.9s,baz=81,slow=14,SNR=5.0						
ASAR	**Alice Springs**	**61.65**	**190**	P	**P**	**03 04 59.2**	**-0.1**
	0.7nm,0.7s,baz=11,slow=5.9,SNR=7.4						
YKA	**Yellowknife Ar**	**62.41**	**31**	P	**P**	**03 05 05.4**	**+1.4**
	0.1nm,0.6s,baz=304,slow=6.5,SNR=3.6						
FINES	**FINESS Array B**	**69.09**	**333**	P	**P**	**03 05 47.7**	**+0.7**
	1.2nm,0.8s,baz=267,slow=3.8,SNR=4.0						
KBZ	**Khabaz**	**71.83**	**311**	P	**P**	**03 06 05.5**	**+1.4**
	1.5nm,0.8s,baz=52,slow=2.1,SNR=4.1						
HFS	**Hagfors**	**74.25**	**336**	P	**P**	**03 06 18.4**	**+0.3**
	0.8nm,0.6s,baz=92,slow=7.9,SNR=3.8						
NOA	**NORSAR Array B**	**74.30**	**338**	P	**P**	**03 06 19.2**	**+0.7**
	0.8nm,1.0s,baz=230,slow=17,SNR=2.7						
AKASG	**Malin Array Be**	**74.88**	**323**	P	**P**	**03 06 22.4**	**+0.5**
	0.7nm,0.5s,baz=48,slow=5.5,SNR=3.3						

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*SJA **01** 02:56:03.3±1.8, 23.°61S×66.°85W, h224km±18km, ML3.4, MW3.0*
*ISCJB **01** 02:56:04.6±0.5, 23.°66S±0.°05×66.°96W±0.°04, h201km±5km, mb3.1/3, Error ellipse: s-maj=8.4km s-min=4.4km az=34.1*
*GUC **01** 02:56:07.8±0.3, 23.°50S×67.°37W, h216km±8km, ML4.2*
*IDC **01** 02:56:14.8±9.6, 22.°81S×66.°31W, h255km±66km, mb2.9/3, mb1 3.1/4, mb1mx2.9/16, mbtmp3.4/4, Error ellipse: s-maj=109.8km s-min=28.8km az=20.0*
ISC 01 02:56:05.2±0.9, **23.°63S**±0.°06×**66.°92W**±0.°04, **h197**km±8km, **n19**, σ1§**43**/32, **mb3.1**/3, **4C, Jujuy Province**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HJA	**Humahuaca**	**1.45**	**74**	*i* P	**Pn**	**02 56 39.1**	**+0.4**
HJA				IAML		02 56 40.1	
	comp=Z,368nm,0.5s						
SLA	**San Lorenzo**	**1.69**	**130**	*i* P	**Pn**	**02 56 41.6**	**+1.0**
	baz=303,slow=8.6						
SLA				IAML		02 56 42.3	
	comp=Z,116nm,0.4s						
SLA				*i* S	**S**	**02 57 09.7**	**+1.5**
AZAP	**Zapla**	**1.80**	**110**	*i* P	**Pn**	**02 56 41.8**	**0.0**
AZAP				IAML		02 56 42.2	
	comp=Z,292nm,0.4s						
YJA	**Yavi**	**1.94**	**42**	*e*P	**Pn**	**02 56 44.1**	**+0.6**
	baz=215,slow=7.9						
YJA				IAML		02 56 45.4	
	comp=Z,41nm,0.3s						
YJA				*i* S	**S**	**02 57 13.3**	**+0.3**
LVC	**Limon Verde**	**2.09**	**299**	*e*P	**Pn**	**02 56 46.4**	**+1.5**
LVC				*e*S	**S**	**02 57 17.2**	**+1.6**
ASTB	**Santa Barbara**	**2.29**	**98**	*i* P	**Pn**	**02 56 46.5**	**-0.2**
PB06	**IPOC Station P**	**2.60**	**290**⇑	*e*P	**Pn**	**02 56 51.1**	**+0.8**
PB06				*e*S	**S**	**02 57 23.7**	**-1.6**
PB06				IAML		02 57 27.6	
	comp=E,383nm,0.5s						
FSA	**Cafayete**	**2.62**	**161**	*i* P	**Pn**	**02 56 50.5**	**+0.1**
FSA				*i* S	**S**	**02 57 24.4**	**-1.4**
ALOL	**LOMAS DE OLMED**	**2.70**	**95**	*i* P	**Pn**	**02 56 50.9**	**-0.4**
ALOL				*e*S	**S**	**02 57 25.9**	**-1.3**
PB09	**IPOC Station P**	**2.81**	**310**	*e*P	**Pn**	**02 56 53.9**	**+1.1**
PB09				*e*S	**S**	**02 57 28.7**	**-1.0**
PB09				IAML		02 57 33.5	
	comp=E,651nm,0.7s						
PB04	**IPOC Station P**	**3.24**	**293**⇑	*e*P	**Pn**	**02 56 58.3**	**+0.5**
PB04				*e*S	**S**	**02 57 36.7**	**-2.1**
PB04				IAML		02 57 42.6	
	comp=N,363nm,0.6s						
PB07	**IPOC Station P**	**3.33**	**304**⇑	*e*P	**Pn**	**02 56 59.6**	**+0.8**
PB07				*e*S	**S**	**02 57 38.9**	**-1.8**
PB10	**IPOC Station P**	**3.33**	**271**	*e*P	**Pn**	**02 56 59.2**	**+0.5**
PB10				*e*S	**S**	**02 57 38.2**	**-2.2**
PB10				IAML		02 57 40.6	
	comp=E,522nm,0.3s						
AHML	**Horco Molle**	**3.46**	**156**	*e*P	**Pn**	**02 57 00.0**	**-0.2**
	baz=343,slow=12						
AHML				*e*S	**S**	**02 57 41.8**	**-1.6**
PB01	**IPOC Station P**	**3.50**	**317**⇑	*e*P	**Pn**	**02 57 01.8**	**+0.9**

PB01 *e*S **S 02 57 43.1 -1.3**
PB01 IAML 02 57 45.1
comp=E,378nm,0.2s
LPAZ La Paz 7.39 351 P **Pn 02 57 52.6 +1.4**
comp=E,0.4nm,0.3s,baz=169,slow=5.9,SNR=12
LPAZ S **S 02 59 11.4 -3.8**
comp=E,0.0nm,0.3s,baz=211,slow=5.3,SNR=1.4
TXAR Lajitas Array 63.42 324 P **P 03 06 15.5 +1.4**
comp=E,0.1nm,0.6s,baz=157,slow=9.4,SNR=3.1
TORD Torodi Ar. Bea 76.37 69 P **P 03 07 31.9 -1.3**
comp=E,0.8nm,0.5s,baz=260,slow=5.8,SNR=24
YKA Yellowknife Ar 93.80 340 P **P 03 08 60.0 +0.6**
comp=E,0.1nm,0.6s,baz=138,slow=5.4,SNR=3.3

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*KRNET **01** 03:05:50.0±0.1, 43.°64N×77.°67E, h23km, mb3.6*
*NNC **01** 03:05:49.6±0.6, 43.°70N×77.°70E, h2km±5km, mb4.0, mpv3.6, Error ellipse: s-maj=6.5km s-min=3.0km az=171.0*
*ISCJB **01** 03:05:51.0±0.5, 43.°67N±0.°02×77.°68E±0.°02, h12km±3km, mb3.3/5, Error ellipse: s-maj=2.7km s-min=2.1km az=162.2*
*IDC **01** 03:05:50.1±0.8, 43.°47N×77.°70E, h24km±4km, mb3.1/6, mb1 3.4/12, mb1mx3.2/51, mbtmp3.4/12, ML3.3/6, Error ellipse: s-maj=12.4km s-min=8.2km az=143.0*
*SOME **01** 03:05:51.2, 43.°62N×77.°68E, h20km*
ISC 01 03:05:50.2±0.5, **43.°61N**±0.°02×**77.°65E**±0.°01, **h17**km±3km, **n67**, σ1§**43**/127, **mb3.3**/5, **44C-32D, Lake Issyk-Kul region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KURS	**Kuram**	**0.40**	**108**	*e*P	**Pb**	**03 05 59.2**	**+0.5**
	294nm,0.2s						
KURS				*e*S	**Sb**	**03 06 04.8**	**+0.2**
	3μm,0.3s						
CHKK	**Chushkaly**	**0.54**	**299**	*e*P	**Pb**	**03 06 01.8**	**+0.6**
	263nm,0.2s						
CHKK				*e*S	**Sb**	**03 06 09.7**	**+1.0**
	4μm,0.3s						
KOTS	**Kotyrbulak**	**0.55**	**227**	*e*P	**Pn**	**03 06 02.6**	**-0.7**
KOTS				*e*S	**Sb**	**03 06 10.4**	**+1.5**
AAA	**Alma-Ata**	**0.62**	**237**	*e*P	**Pn**	**03 06 04.6**	**+0.5**
	727nm,0.2s						
AAA				*e*S	**Sn**	**03 06 14.3**	**+0.7**
	8μm,0.2s						
ARXS	**Arharly**	**0.62**	**12**	*e*P	**Pb**	**03 06 03.3**	**+0.7**
	474nm,0.3s						
ARXS				*e*S	**Sb**	**03 06 12.0**	**+1.1**
	2μm,0.2s						
MDOK	**Medeo**	**0.63**	**225**	*e*P	**Pb**	**03 06 03.4**	**+0.7**
	286nm,0.1s						
MDOK				*e*S	**Sb**	**03 06 11.7**	**+0.4**
	2μm,0.2s						
KNDC	**Almaty**	**0.64**	**232**	⇑P	**Pn**	**03 06 03.9**	**-0.5**
KNDC				⇓S	**Sn**	**03 06 13.1**	**-1.0**
KTBS	**Karatobe**	**0.71**	**279**	*e*P	**Pn**	**03 06 05.1**	**-0.4**
KTBS				*e*S	**Sb**	**03 06 14.9**	**+1.3**
MNBS	**Baschi**	**0.72**	**49**	*e*P	**Pn**	**03 06 05.3**	**-0.3**
	128nm,0.3s						
MNBS				*e*S	**Sb**	**03 06 14.5**	**+0.6**
	1μm,0.3s						
ZHN	**Zhinishke**	**0.72**	**128**	*e*P	**Pb**	**03 06 04.5**	**+0.2**
	366nm,0.1s						
ZHN				*e*S	**Sb**	**03 06 13.9**	**0.0**
	11μm,0.2s						
KPKS	**Kokpek**	**0.76**	**101**	*e*P	**Pb**	**03 06 05.3**	**+0.2**
	968nm,0.1s						
KPKS				*e*S	**Sg**	**03 06 14.8**	**-0.5**
	4μm,0.4s						
TNSS	**Tian-Shan**	**0.77**	**223**	*e*P	**Pb**	**03 06 05.9**	**+0.6**
	270nm,0.3s						
TNSS				*e*S	**Sb**	**03 06 16.5**	**+0.9**
	2μm,0.3s						
SATY	**Saty**	**0.78**	**135**	*e*P	**Pb**	**03 06 05.6**	**+0.3**
	1μm,0.1s						
SATY				⇑*i*S	**Sb**	**03 06 15.9**	**+0.3**
	14μm,0.1s						
ANVS	**Anan'yevo**	**0.83**	**179**	⇓*i*P	**Pg**	**03 06 06.5**	**+0.2**
	baz=180						
ANVS				⇓*i*S	**Sg**	**03 06 17.8**	**+0.5**
	baz=180						
IZV	**Izvestkoviy**	**0.95**	**233**	*e*P	**Pn**	**03 06 09.3**	**+0.5**
	158nm,0.1s						
IZV				*e*S	**Sn**	**03 06 22.4**	**+0.3**
	1μm,0.2s						
KUU	**Kurty**	**0.99**	**287**	⇑*i*P	**Pn**	**03 06 09.4**	**+0.1**
	277nm,0.1s						
KUU				*e*S	**Sg**	**03 06 22.9**	**+0.4**
	998nm,0.4s						
MTBS	**Maitube**	**1.01**	**242**	⇑*i*P	**Pg**	**03 06 10.0**	**+0.2**
	560nm,0.2s						
MTBS				⇓*i*S	**Sn**	**03 06 24.0**	**+0.5**
	1μm,0.2s						
UZB	**Uzynbulak**	**1.10**	**114**	*e*P	**Pn**	**03 06 11.1**	**+0.2**
	917nm,0.2s						
UZB				*e*S	**Sb**	**03 06 24.9**	**0.0**
	1μm,0.2s						
PRZ	**Przheval'sk**	**1.25**	**154**	⇑*i*P	**Pg**	**03 06 15.1**	**+0.7**
	baz=155						
PRZ				⇑*e*S	**Sg**	**03 06 32.6**	**+1.8**
	baz=155						
KST	**Kastek**	**1.36**	**246**	*e*P	**Pb**	**03 06 15.7**	**+0.5**
	53nm,0.3s						
KST				*e*S	**Sg**	**03 06 33.9**	**-0.2**
	401nm,0.2s						
PDGK	**Podgornoye**	**1.36**	**101**	⇑*i*P	**Pb**	**03 06 15.4**	**+0.2**
	baz=102						
PDGK				⇑*i*S	**Sb**	**03 06 33.1**	**+0.8**
	baz=102						
PDGK	**Podgornoye**	**1.36**	**101**	⇑P	**Pb**	**03 06 15.3**	**+0.2**
	299nm,0.5s						
PDGK				⇓S	**Sb**	**03 06 33.0**	**+0.8**
	584nm,0.6s						
DGS	**Degeres**	**1.42**	**256**	*e*P	**Pb**	**03 06 16.8**	**+0.6**
	112nm,0.3s						
DGS				*e*S	**Sg**	**03 06 35.5**	**-0.5**
	692nm,0.3s						
TDK	**Taldyqorghan**	**1.50**	**21**	*e*P	**Pg**	**03 06 18.4**	**-0.6**
	598nm,0.3s						
TDK				*e*S	**Sg**	**03 06 37.9**	**-0.6**
	3μm,0.3s						
KDJ	**Kajisay**	**1.52**	**193**	⇓*e*P	**Pg**	**03 06 19.2**	**-0.3**
	baz=193						
KDJ				⇓*i*S	**Sg**	**03 06 39.1**	**-0.2**
	baz=193						
TKM2	**Tokmak 2**	**1.65**	**246**	⇑*i*P	**Pb**	**03 06 20.5**	**+0.2**
	baz=245						
TKM2				⇑*i*S	**Sb**	**03 06 42.3**	**+1.4**
	baz=245						
TKM2	**Tokmak 2**	**1.65**	**246**	⇑P	**Pb**	**03 06 20.4**	**+0.2**
	66nm,0.6s						
TKM2				⇑S	**Sg**	**03 06 43.0**	**-0.5**
	208nm,0.3s						
BOOM	**Boomskoye usch**	**1.68**	**229**	⇑*e*P	**Pb**	**03 06 21.4**	**+0.7**
	baz=228						
BOOM				⇑*i*S	**Sg**	**03 06 43.5**	**-0.9**
	baz=228						
SHLS	**Shalkode**	**1.69**	**105

USP			⇑iS		Sb	03 07 00.8	+0.8
	baz=262						
KZA	**Kyzart**	**2.34**	**230**	⇓iP	**Pb**	**03 06 32.6**	**+0.5**
	baz=230						
KZA			⇓iS		Sg	03 07 04.5	-1.0
	baz=230						
FRU1	**Bishkek**	**2.35**	**251**	⇑eP	**Pb**	**03 06 31.1**	**-1.0**
	baz=251						
FRU1			⇑iS		Sb	03 07 02.1	+1.3
	baz=251						
NRN	**Naryn**	**2.50**	**210**	⇓eP	**Pb**	**03 06 33.5**	**-1.2**
	baz=210						
NRN			⇓iS		Sb	03 07 05.7	+0.5
	baz=210						
AAK	**Ala-Archa**	**2.51**	**248**	Pn	**Pb**	**03 06 32.8**	**-2.1**
	9.8nm,0.3s,baz=86,slow=8.6,SNR=57						
AAK				Lg	Lg	03 07 09.2	
	19nm,0.3s,baz=26,slow=23,SNR=12						
AAK	**Ala-Archa**	**2.51**	**248**	⇓iP	**Pb**	**03 06 34.7**	**-0.2**
	baz=248						
AAK			⇓iS		Sb	03 07 06.9	+1.4
	baz=248						
AAK	**Ala-Archa**	**2.51**	**248**	⇑Pn	**Pb**	**03 06 35.1**	**+0.2**
	10nm,0.4s						
AAK				⇓Pg	Pg	03 06 38.5	+0.2
	58nm,0.7s						
AAK				⇓Lg	Lg	03 07 07.9	
	119nm,0.8s						
UCH	**Uchtor**	**2.69**	**240**	⇓iP	**Pb**	**03 06 38.3**	**+0.2**
	baz=240						
UCH			⇓iS		Sb	03 07 13.6	+2.7
	baz=240						
AML	**Almayashu**	**3.26**	**244**	⇑iP	**Pb**	**03 06 44.7**	**-3.1**
	baz=244						
AML			⇑iS		Sb	03 07 29.3	+1.9
	baz=244						
MRKS	**Merke**	**3.35**	**257**	⇓iP	**Pb**	**03 06 51.8**	**+2.7**
	36nm,0.3s						
MRKS			⇓iS		Sg	03 07 35.2	-2.6
	114nm,0.4s						
MNAS	**Manas**	**3.94**	**255**	⇑Pg	**Pb**	**03 07 01.2**	**+2.1**
	6.7nm,0.6s						
MNAS				⇑Lg	Lg	03 07 53.8	
	25nm,0.6s						
MAKZ	**Makanchi**	**4.42**	**42**	⇑Pg	**Pb**	**03 07 04.7**	**-2.6**
	3.0nm,0.4s						
MAKZ				⇑Lg	Lg	03 08 05.5	
	13nm,0.6s						
MK31	**Makanchi Array**	**4.57**	**44**	⇑Pn	**Pn**	**03 07 01.1**	**+2.6**
	0.5nm,0.2s,baz=220,slow=15,SNR=50						
MK31				Pg	Pb	03 07 07.9	-1.9
	1.3nm,0.2s,baz=221,slow=15,SNR=14						
MK31				⇓Sn	Sn	03 07 52.7	+1.6
	3.7nm,0.3s,baz=0.0,slow=0.1,SNR=4.9						
MK31				⇓Lg	Lg	03 08 10.5	
	12nm,0.5s,baz=222,slow=28,SNR=13						
MKAR	**Makanchi Array**	**4.57**	**44**	Pn	**Pn**	**03 07 01.0**	**+2.5**
	0.7nm,0.3s,baz=217,slow=15,SNR=36						
MKAR				Sn	Sn	03 07 52.8	+1.6
	4.1nm,0.3s,baz=220,slow=25,SNR=7.9						
MKAR				Lg	Lg	03 08 11.6	
	12nm,0.3s,baz=192,slow=28,SNR=14						
KK31	**Karatay Array**	**5.23**	**267**	⇑Pn	**Pn**	**03 07 11.8**	**+4.2**
	0.9nm,0.3s,baz=77,slow=15,SNR=25						
KK31				⇑Pg	Pg	03 07 27.3	-3.0
	2.2nm,0.3s,baz=81,slow=15,SNR=13						
KK31				⇓Lg	Lg	03 08 35.1	
	15nm,0.5s,baz=86,slow=28,SNR=10						
OTUK	**Ortayu**	**5.93**	**323**	⇑Pn	**Pn**	**03 07 18.1**	**+0.9**
	2.4nm,0.4s						
OTUK				⇓Sn	Sn	03 08 24.3	-0.5
	3.3nm,0.3s						
OTUK				⇑Lg	Lg	03 08 53.9	
	30nm,0.4s						
KURBB	**Kurchatov Arra**	**7.04**	**5**	Pn	**Pn**	**03 07 33.5**	**+1.2**
	0.5nm,0.3s,baz=192,slow=12,SNR=32						
KURBB				Sn	Sn	03 08 51.4	-0.5
	0.3nm,0.3s,baz=181,slow=17,SNR=5.2						
KURBB				Lg	Lg	03 09 30.8	
	0.5nm,0.3s,baz=200,slow=27,SNR=6.5						
KURK	**Kurchatov**	**7.14**	**5**	⇓Pn	**Pn**	**03 07 34.7**	**+1.0**
	4.2nm,0.5s						
KURK				⇑Lg	Lg	03 09 34.5	
	52nm,0.8s						
VOSK	**Vostochnaya**	**10.14**	**336**	⇑Pn	**Pn**	**03 08 13.7**	**-1.2**
	2.0nm,0.6s						
VOSK				⇓Sn	Sn	03 10 12.5	+4.3
	2.3nm,0.7s						
VOSK				⇓Lg	Lg	03 11 11.0	
	6.2nm,0.7s						
BVA0	**Borovoye Array**	**10.58**	**335**	Pn	**Pn**	**03 08 24.6**	**+3.7**
	1.8nm,0.5s,baz=148,slow=14,SNR=9.8						
BVA0				⇑Lg	Lg	03 11 24.3	
	9.4nm,0.8s,baz=162,slow=27,SNR=4.7						
BVAR	**Borovoye Array**	**10.58**	**335**	Pn	**Pn**	**03 08 20.4**	**-0.5**
	0.4nm,0.3s,baz=137,slow=13,SNR=5.7						
BVAR				Sn	Sn	03 10 17.0	-1.9
	0.7nm,0.3s,baz=216,slow=43,SNR=5.7						
BVAR				Lg	Lg	03 11 28.0	
	0.9nm,0.3s,baz=155,slow=26,SNR=4.6						
BRVK	**Borovoye**	**10.64**	**335**	⇑Pn	**Pn**	**03 08 19.5**	**-2.2**
	3.2nm,0.6s						
BRVK				⇓Sn	Sn	03 10 24.5	+4.1
	3.5nm,0.6s						
BRVK				⇑Lg	Lg	03 11 24.3	
	5.5nm,0.5s						
ZRNK	**Zerenda**	**10.97**	**331**	⇑Pn	**Pn**	**03 08 24.7**	**-1.4**
	2.0nm,0.5s						
ZRNK				⇑Sn	Sn	03 10 32.0	+3.6
	1.1nm,0.5s						
ZRNK				⇑Lg	Lg	03 11 35.1	
	2.4nm,0.6s						
CHKZ	**Chkalovo**	**11.09**	**338**	⇑Pn	**Pn**	**03 08 26.5**	**-1.3**
	1.0nm,0.4s						
CHKZ				⇑Sn	Sn	03 10 34.2	+2.9
	1.5nm,0.8s						
CHKZ				⇓Lg	Lg	03 11 37.8	
	9.3nm,0.9s						
ZALV	**Zalesovo Beam**	**11.37**	**22**	Pn	**Pn**	**03 08 33.8**	**+2.2**
	0.3nm,0.3s,baz=216,slow=14,SNR=3.1						
ZALV				Lg	Lg	03 11 50.4	
	0.6nm,0.3s,baz=182,slow=31,SNR=3.7						
AKTO	**Aktyubinsk**	**15.01**	**304**	Pn	**Pn**	**03 09 20.3**	**-1.0**
	0.2nm,0.3s,baz=87,slow=3.4,SNR=2.4						
AKTO				Lg	Lg	03 13 49.6	
	0.2nm,0.3s,baz=37,slow=21,SNR=3.6						
SONM	**Songino Array**	**20.45**	**68**	P	**P**	**03 10 24.8**	**-1.9**
	0.2nm,0.4s,baz=66,slow=3.7,SNR=4.8						
SONM				pP	pP	03 10 31.1	-0.5
	0.5nm,0.4s,baz=266,slow=13,SNR=2.7						
FINES	**FINESS Array B**	**34.95**	**319**	P	**P**	**03 12 39.9**	**-0.8**
	2.2nm,1.0s,baz=211,slow=18,SNR=2.6						
FINES				pP	sP	03 12 48.9	+0.6
	1.0nm,0.8s,baz=108,slow=9.2,SNR=1.6						
ILAR	**Eielson Array**	**66.48**	**19**	P	**P**	**03 16 38.5**	**+0.3**
	0.1nm,0.6s,baz=343,slow=20,SNR=2.9						
ILAR				pP	pP	03 16 44.5	+0.7
	0.3nm,0.7s,baz=314,slow=5.1,SNR=4.3						
TORD	**Torodi Ar. Bea**	**70.91**	**270**	P	**P**	**03 17 05.5**	**-1.1**
	0.2nm,0.8s,baz=47,slow=51,SNR=3.2						
TORD				pP	sP	03 17 14.6	+0.2
	0.3nm,0.8s,baz=42,slow=6.6,SNR=1.7						
YKA	**Yellowknife Ar**	**73.79**	**6**	P	**P**	**03 17 23.0**	**0.0**
	0.1nm,0.5s,baz=352,slow=6.0,SNR=4.0						
YKA				pP	sP	03 17 30.3	-0.5
	0.2nm,0.6s,baz=350,slow=6.0,SNR=5.8						
WRA	**Warramunga Arr**	**81.82**	**127**	P	**P**	**03 18 06.6**	**-1.7**
	0.4nm,1.0s,baz=345,slow=5.6,SNR=4.7						

NIED ***01*** *03:19:00,40°.20N×143°.30E,h23km,Mw3.7 Best double couple: M₀3.78000×10¹⁴ NP1:φs162.00000°,δ23.00000°, λ42.00000°. NP2:φs32.00000°,δ75.00000°,λ107.00000°.*
JMA ***01*** *03:19:08.7±0.2,40°.22N×143°.30E,h5km±2km,M3.9*
ISCJB ***01*** *03:19:09.3±1.7,40°.15N±0°.06×143°.42E±0°.09, h23km±11km,mb3.6/6,Error ellipse: s-maj=13.5km s-min=7.9km az=38.1*
IDC ***01*** *03:19:17.5±4.6,40°.52N×142°.59E,h34km±35km,mb3.5/6, mb1 3.5/8,mb1mx3.3/55,mbtmp3.6/8,ML3.2/2,Error ellipse: s-maj=49.3km s-min=21.7km az=92.0*
ISC 01 03:19:09.4±2.9,40°.23N±0°.06×143°.24E±0°.09,h7km±17km, n26,σ0°90/24,mb3.7/6,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.09**	**255**	P		**Pb**	**03 19 30.4**		**-0.3**
JTH				eS		**Sn**	**03 19 46.1**		**-0.4**
MIYJ	**Miyakonagasawa**	**1.27**	**239**	P		**Pb**	**03 19 33.3**		**-0.4**
MIYJ				eS		**Sb**	**03 19 50.2**		**-0.1**
JANG	**Nango**	**1.32**	**277**	P		**Pn**	**03 19 34.3**		**0.0**
JKZ	**Kuzumaki**	**1.48**	**261**	P		**Pb**	**03 19 36.9**		**-0.4**
JKZ				eS		**Sg**	**03 19 57.4**		**+0.2**
OFUJ	**Ofunato**	**1.67**	**227**	P		**Pn**	**03 19 39.0**		**-0.1**
JOM	**Ohasama**	**1.68**	**244**	P		**Pb**	**03 19 39.9**		**-0.7**
JOM				S		**Sb**	**03 20 01.9**		**-0.1**
JTM	**Tenmabayashi**	**1.74**	**289**	P		**Pn**	**03 19 40.9**		**+0.8**
JEM	**Erimo**	**1.78**	**358**	P		**Pn**	**03 19 40.4**		**-0.2**
JAH	**Hinai**	**1.99**	**270**	P		**Pb**	**03 19 44.8**		**-1.2**
JMK	**Ichinoseki**	**2.02**	**231**	P		**Pn**	**03 19 44.3**		**+0.5**
JOT	**Ohata**	**2.02**	**305**	P		**Pn**	**03 19 44.8**		**+1.0**
JOT				eS		**Sb**	**03 20 12.4**		**+0.7**
JNBK	**Urakawa-nobuka**	**2.08**	**350**	P		**Pb**	**03 19 46.2**		**-1.2**
ASAJ	**Asahikawa**	**3.91**	**353**	Pn		**Pn**	**03 20 12.2**		**+2.4**
	1.7nm,0.3s,baz=189,slow=15,SNR=6.4								
ASAJ				Lg		Lg	03 21 11.7		
	0.8nm,0.3s,baz=217,slow=8.5,SNR=2.7								
MJAR	**Matsushiro Arr**	**5.40**	**229**	Pn		**Pn**	**03 20 32.3**		**+1.9**
	0.7nm,0.3s,baz=40,slow=11,SNR=8.4								
SONM	**Songino Array**	**27.35**	**298**	P		**P**	**03 24 55.1**		**+0.1**
	0.6nm,0.5s,baz=89,slow=10,SNR=3.1								
H11N2	**WAKE ISLAND Hy 28.78**	**128**		T		T	03 56 04.8		
	SNR=14								
H11N1	**WAKE ISLAND Hy 28.79**	**128**		T		T	03 55 28.4		
	baz=193,slow=74,SNR=14								
H11N3	**WAKE ISLAND Hy 28.80**	**128**		T		T	03 55 14.2		
	baz=320,slow=74,SNR=15								
H11S1	**WAKE ISLAND Hy 29.61**	**130**		T		T	03 56 18.4		
	baz=322,slow=76,SNR=11								
H11S3	**WAKE ISLAND Hy 29.62**	**130**		T		T	03 56 18.8		
	baz=322,slow=76,SNR=9.3								
H11S2	**WAKE ISLAND Hy 29.63**	**130**		T		T	03 56 17.4		
	baz=322,slow=76,SNR=9.0								
MKAR	**Makanchi Array**	**43.71**	**300**	P		**P**	**03 27 14.5**		**-0.4**
	0.2nm,0.5s,baz=81,slow=8.0,SNR=3.9								
KURBB	**Kurchatov Arra**	**45.23**	**306**	P		**P**	**03 27 26.6**		**-0.4**
	1.9nm,0.5s,baz=79,slow=8.4,SNR=20								
BVAR	**Borovoye Array**	**49.53**	**311**	P		**P**	**03 28 00.5**		**+0.1**
	0.4nm,0.4s,baz=100,slow=6.3,SNR=3.7								
WRA	**Warramunga Arr**	**60.44**	**190**	P		P	03 29 25.5		+5.9
	0.4nm,1.0s,baz=6.6,slow=6.8,SNR=3.2								
FINES	**FINESS Array B**	**66.65**	**332**	P		**P**	**03 30 00.0**		**-0.2**
	1.0nm,0.8s,baz=165,slow=30,SNR=3.6								

NIED ***01*** *03:26:00,37°.10N×141°.20E,h53km,Mw4.1 Best double couple: M₀1.58000×10¹⁵ NP1:φs71.00000°,δ31.00000°, λ117.00000°. NP2:φs220.00000°,δ63.00000°,λ75.00000°.*
ISCJB ***01*** *03:26:39.9±0.6,37°.07N±0°.03×141°.30E±0°.07,h53km±4km, mb3.9/20,MS3.4/4,Error ellipse: s-maj=9.7km s-min=5.0km az=19.0*
JMA ***01*** *03:26:41.5±0.1,37°.11N×141°.15E,h56km±1km,M4.2*
JMA Felt II J1.
IDC ***01*** *03:26:42.1±1.9,37°.07N×141°.10E,h59km±18km,mb3.7/20, mb1 3.9/23,mb1mx3.8/44,mbtmp4.0/23,MS3.1/10, Ms1 3.1/10,ms1mx2.8/44,Error ellipse: s-maj=16.7km s-min=10.8km az=89.0*
ISC 01 03:26:41.2±1.1,37°.08N±0°.04×141°.28E±0°.08,h50km±8km, n54,σ1°33/55,mb3.9/20,MS3.4/4,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.38**	**273**	P		**Pn**	**03 26 51.0**		**-0.2**
ONAJ				eS		**Sn**	**03 26 57.6**		**-0.8**
JFK	**Kawauchi**	**0.43**	**312**	P		**Pn**	**03 26 51.4**		**-0.3**
JFK				S		**Sn**	**03 26 58.4**		**-0.8**
JHO	**Hitachi**	**0.74**	**231**	P		**Pn**	**03 26 55.0**		**-0.4**
JHO				S		**Sn**	**03 27 04.5**		**-1.2**
JFT	**Otama**	**0.87**	**301**	P		**Pn**	**03 26 57.1**		**-0.1**
JFT				S		**Sn**	**03 27 07.8**		**-1.1**
JMM	**Marumori**	**0.87**	**334**	P		**Pn**	**03 26 56.9**		**-0.3**
JMM				S		**Sn**	**03 27 08.0**		**-1.0**
JFY	**Yanaizu**	**1.29**	**285**	P		**Pn**	**03 27 02.3**		**-0.6**
JOU	**Okura**	**1.37**	**339**	P		**Pn**	**03 27 03.7**		**-0.3**
JOU				S		**Sn**	**03 27 21.4**		**+0.4**
JIO	**Ouri**	**1.37**	**2**	P		**Pn**	**03 27 04.0**		**0.0**
JIO				eS		**Sn**	**03 27 20.4**		**-0.6**
JYS	**Shiratake**	**1.49**	**320**	P		**Pn**	**03 27 05.4**		**-0.2**
JAG	**Ashikaga**	**1.60**	**246**	P		**Pn**	**03 27 06.6**		**-0.5**
JAG				S		**Sn**	**03 27 25.0**		**-1.7**
MJAR	**Matsushiro Arr**	**2.52**	**259**	P		**Pn**	**03 27 19.8**		**+0.2**
	13nm,0.3s,baz=81,slow=16,SNR=61								
MJAR				LR		LR	03 28 29.3		
	comp=Z,217nm,21.5s,baz=30,slow=46								
MAT	**Matsushiro**	**2.52**	**259**	P		**Pn**	**03 27 20.1**		**+0.4**
MAT				S		**Sn**	**03 27 49.6**		**+0.4**
JHJ	**Hachijo jima 2**	**4.14**	**198**	P		**Pn**	**03 27 43.5**		**+1.7**
	63nm,0.3s,baz=74,slow=12,SNR=16								
JHJ				S		**Sn**	**03 28 28.6**		**-0.3**
	98nm,0.3s,baz=63,slow=23,SNR=12								
ASAJ	**Asahikawa**	**7.10**	**8**	P		**Pn**	**03 28 22.2**		**-0.3**
	3.8nm,0.3s,baz=220,slow=9.7,SNR=28								
ASAJ				LR		LR	03 32 01.3		
	comp=Z,56nm,18.5s,baz=229,slow=45								
JNU	**Nakatsue**	**9.39**	**248**	LR		LR	03 32 53.3		
	comp=Z,75nm,20.4s,baz=120,slow=40								
USRK	**Ussuriysk Ar.**	**10.01**	**318**	P		**Pn**	**03 29 06.5**		**+4.1**
	1.2nm,0.3s,baz=135,slow=13,SNR=50								
USRK				LR		LR	03 32 33.3		
	comp=Z,68nm,21.6s,baz=156,slow=35								
KSRS	**Korea Array**	**10.65**	**276**	P		**Pn**	**03 29 14.3**		**+3.3**
	0.3nm,0.3s,baz=92,slow=14,SNR=9.1								
KSRS				LR		LR	03 32 55.6		
	comp=Z,60nm,20.2s,baz=110,slow=35								
KLR	**Kul'dur**	**13.98**	**333**	P		**P**	**03 30 02.2**		**-0.8**
	0.2nm,0.3s,baz=138,slow=14,SNR=11								
KLR				LR		LR	03 34 49.1		
	comp=Z,57nm,21.6s,baz=126,slow=35								
SONM	**Songino Array**	**27.67**	**304**	P		**P**	**03 32 22.9**		**-1.5**
	4.5nm,0.5s,baz=102,slow=7.8,SNR=25								
H11N2	**WAKE ISLAND Hy 28.27**	**121**		T		T	04 02 14.5		
	baz=313,slow=75,SNR=203								
H11N1	**WAKE ISLAND Hy 28.27**	**121**		T		T	04 02 27.4		
	baz=313,slow=75,SNR=140								
H11N3	**WAKE ISLAND Hy 28.28**	**121**		T		T	04 02 38.9		
	baz=313,slow=75,SNR=123								
H11S1	**WAKE ISLAND Hy 28.98**	**123**		T		T	04 03 26.3		
	baz=314,slow=76,SNR=101								
H11S3	**WAKE ISLAND Hy 28.98**	**123**		T		T	04 03 10.9		
	baz=314,slow=76,SNR=92								
H11S2	**WAKE ISLAND Hy 28.99**	**123**		T		T	04 03 30.3		
	baz=314,slow=76,SNR=64								
TLY	**Talaya**	**30.22**	**311**	LR		LR	03 45 32.9		
	comp=Z,28nm,19.5s,baz=120,slow=38								
ZALV	**Zalesovo Beam**	**41.80**	**312**	P		**P**	**03 34 25.0**		**-0.6**
	2.2nm,0.5s,baz=99,slow=8.4,SNR=6.3								
ZALV				LR		LR	03 51 50.7		
	comp=Z,35nm,18.5s,baz=68,slow=36								
MKAR	**Makanchi Array**	**44.00**	**302**	P		**P**	**03 34 42.7**		**-0.9**
	1.2nm,0.5s,baz=91,slow=9.2,SNR=9.6								
GUN	**Gumba**	**47.04**	**276**	eP		**P**	**03 35 09.0**		**+0.7**
	17nm,0.5s								
KKN	**Kakani**	**47.57**	**276**	eP		**P**	**03 35 13.5**		**+1.3**
	11nm,0.5s								
GKN	**Gorkha**	**47.99**	**276**	eP		**P**	**03 35 17.1**		**+1.7**
	12nm,0.5s								
KOLN	**Koldanda**	**48.91**	**277**	eP		**P**	**03 35 24.6**		**+2.0**
	2.9nm,0.3s								
PYUN	**Piuthan**	**49.26**	**277**	eP		**P**	**03 35 29.4**		**+4.2**
ILAR	**Eielson Array**	**49.51**	**32**	P		**P**	**03 35 26.8**		**+0.4**
	0.8nm,0.6s,baz=264,slow=5.8,SNR=11								
BVAR	**Borovoye Array**	**50.46**	**312**	LR		LR	03 58 08.4		
	comp=Z,165nm,20.2s,baz=72,slow=38								
INK	**Inuvik**	**54.40**	**27**	P		**P**	**03 36 02.0**		**-0.6**
	0.6nm,0.4s,baz=318,slow=3.5,SNR=7.4								
WRA	**Warramunga Arr**	**57.09**	**188**	P		**P**	**03 36 21.6**		**-0.8**
	1.7nm,0.6s,baz=6.1,slow=7.3,SNR=36								
ASAR	**Alice Springs**	**60.82**	**188**	P		**P**	**03 36 48.1**		**-0.2**
	1.2nm,0.8s,baz=18,slow=5.6,SNR=17								
YKA	**Yellowknife Ar**	**63.82**	**30**	P		**P**	**03 37 07.9**		**0.0**
	0.4nm,0.6s,baz=301,slow=6.4,SNR=10								
ARCES	**ARCESS Array B**	**63.91**	**339**	P		**P**	**03 37 07.8**		**-0.6**
	0.9nm,0.7s,baz=57,slow=8.8,SNR=5.0								
STKA	**Stephens Creek**	**68.60**	**180**	P		**P**	**03 37 38.4**		**-0.3**
	2.2nm,0.7s,baz=8.3,slow=5.9,SNR=6.0								
FINES	**FINESS Array B**	**68.72**	**332**	P		**P**	**03 37 39.4**		**+0.1**
	1.3nm,0.6s,baz=44,slow=8.8,SNR=7.9								
KBZ	**Khabaz**	**70.79**	**311**	P		**P**	**03 37 50.2**		**-2.1**
	0.6nm,0.4s,baz=84,slow=2.2,SNR=2.8								
HFS	**Hagfors**	**74.00**	**336**	P		**P**	**03 38 10.7**		**-0.5**
	1.5nm,0.8s,baz=72,slow=4.8,SNR=5.1								
NB2	**NORSAR Subarra**	**74.10**	**337**	P		**P**	**03 38 11.3**		**-0.5**
	comp=Z,1.1nm,0.8s,baz=41,slow=5.9								
NOA	**NORSAR Array B**	**74.10**	**337**	P		**P**	**03 38 11.5**		**-0.3**
	comp=Z,0.8nm,0.7s,baz=40,slow=5.7,SNR=4.8								
NOA				LR		LR	04 14 01.0		
	comp=Z,21nm,19.8s,baz=350,slow=38								
AKASG	**Malin Array Be**	**74.19**	**322**	P		**P**	**03 38 11.2**		**-1.2**
	comp=Z,0.8nm,0.4s,baz=47,slow=6.0,SNR=7.2								
NVAR	**Mina Array Bea**	**75.05**	**53**	P		**P**	**03 38 19.6**		**+1.7**
	comp=Z,0.5nm,0.6s,baz=300,slow=5.4,SNR=4.9								
PDAR	**Pinedale Array**	**77.71**	**45**	P		**P**	**03 38 33.8**		**+0.8**
	comp=Z,0.4nm,0.7s,baz=277,slow=2.8,SNR=5.5								
BRTR	**Keskin Array B**	**78.74**	**311**	P		**P**	**03 38 39.8**		**+1.3**
	comp=Z,0.3nm,0.5s,baz=116,slow=5.6,SNR=3.5								
GERES	**GERESS Array B**	**82.61**	**328**	P		**P**	**03 38 58.8**		**-0.3**
	comp=Z,0.3nm,0.5s,baz=31,slow=5.4,SNR=3.7								
TXAR	**Lajitas Array**	**90.18**	**52**	P		**P**	**03 39 37.4**		**+0.8**
	comp=Z,0.8nm,0.7s,baz=282,slow=2.5,SNR=10								
TORD	**Torodi Ar. Bea**	**117.22**	**315**	PKP		**PKPdf**	**03 45 19.3**		**-2.2**
	comp=Z,0.1nm,0.5s,baz=72,slow=0.9,SNR=5.3								
LPAZ	**La Paz**	**146.76**	**59**	PKPbc		**PKPbc**	**03 46 19.1**		**+0.2**
	comp=Z,3.4nm,0.6s,baz=336,slow=2.5,SNR=22								

NIED ***01*** *03:28:00,37°.90N×142°.10E,h23km,Mw3.6 Best double couple: M₀3.33000×10¹⁴ NP1:φs22.00000°,δ13.00000°, λ-106.00000°. NP2:φs219.00000°,δ78.00000°, λ-86.00000°.*
IDC ***01*** *03:28:14.0±0.9,37°.69N×142°.29E,h0km,mb3.5/7, mb1 3.8/7,mb1mx3.6/38,mbtmp3.5/7,Error ellipse: s-maj=28.8km s-min=22.4km az=105.0*
ISCJB ***01*** *03:28:15.2±1.6,37°.78N±0°.04×142°.19E±0°.08, h17km±10km,mb3.5/7,Error ellipse: s-maj=11.2km s-min=7.3km az=6.7*
JMA ***01*** *03:28:18.1±0.2,37°.83N×142°.04E,h30km±3km,M4.1*
JMA Felt I J1.
ISC 01 03:28:15.6±2.2,37°.79N±0°.05×142°.09E±0°.08,h10km±13km, n17,σ0°83/25,mb3.5/7,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.89**	**319**	P		**Pb**	**03 28 33.6**		**+0.5**
JIO				S		**Sg**	**03 28 43.9**		**-0.3**
JMM	**Marumori**	**1.03**	**275**	P		**Pn**	**03 28 36.0**		**-0.1**
JMM				S		**Sg**	**03 28 48.5**		**-0.3**
JFK	**Kawauchi**	**1.05**	**247**	P		**Pn**	**03 28 36.4**		**-0.1**
JFK				eS		**Sg**	**03 28 49.5**		**0.0**
ONAJ	**Iwakimizuishiy**	**1.23**	**237**	P		**Pb**	**03 28 39.1**		**+0.1**
ONAJ				eS		**Sb**	**03 28 54.3**		**-0.7**
JOU	**Okura**	**1.27**	**298**	P		**Pb**	**03 28 39.6**		**0.0**
JOU				eS		**Sb**	**03 28 55.1**		**-0.8**
JMK	**Ichinoseki**	**1.35**	**330**	P		**Pn**	**03 28 40.5**		**0.0**
JFT	**Otama**	**1.42**	**260**	P		**Pg**	**03 28 42.7**		**-0.1**
JFT				S		**Sb**	**03 29 00.5**		**+0.2**
JYS	**Shiratake**	**1.66**	**286**	P		**Pb**	**03 28 45.9**		**-0.3**
JYS				S		**Sb**	**03 29 07.6**		**+0.4**
JYK	**Kaneyama**	**1.77**	**310**	P		**Pn**	**03 28 46.9**		**+0.6**
JOM	**Ohasama**	**1.80**	**340**	P		**Pn**	**03 28 46.7**		**0.0**
JOM				eS		**Sn**	**03 29 07.6**		**-2.0**
SONM	**Songino Array**	**27.82**	**303**	P		**P**	**03 34 05.4**		**+0.3**
	0.6nm,0.6s,baz=102,slow=8.1,SNR=3.0								
MKAR	**Makanchi Array**	**44.18**	**302**	P		**P**	**03 36 27.2**		**+2.6**
	0.5nm,0.7s,baz=92,slow=9.6,SNR=2.7								
ILAR	**Eielson Array**	**48.57**	**33**	P		**P**	**03 36 58.6**		**-0.2**
	0.2nm,0.5s,baz=262,slow=6.1,SNR=2.6								
WRA	**Warramunga Arr**	**57.88**	**189**	P		**P**	**03 38 06.5**		**-1.2**
	1.8nm,0.7s,baz=6.4,slow=7.3,SNR=5.3								
ASAR	**Alice Springs**	**61.61**	**189**	P		**P**	**03 38 33.2**		**-0.2**
	0.3nm,0.7s,baz=14,slow=12,SNR=3.3								
YKA	**Yellowknife Ar**	**62.89**	**31**	P		**P**	**03 38 41.3**		**-0.3**
	0.1nm,0.6s,baz=306,slow=7.5,SNR=2.6								
TXAR	**Lajitas Array**	**89

*JMA **01** 03:45:14.4±0.1,24°.12N×121°.79E,h45km±2km*
*ISCJB **01** 03:45:15.8±0.3,24°.17N±0°.02×121°.85E±0°.02,h39km±7km,*
Error ellipse: s-maj=3.9km s-min=2.5km az=136.3
*TAP **01** 03:45:15.4,24°.19N×121°.79E,h43km,ML3.1,C*
ISC 01 03:45:14.4±1.0,24°.15N±0°.02×121°.88E±0°.02,h20km±8km,
n43,σ0s65/76,1C-4D,Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWD	**Chiawan**	**0.27**	**256**	P	**Pn**	**03 45 23.1**	**0.0**
TWD	baz=230			S	**Sn**	**03 45 29.2**	**+0.6**
HWA	**Hwalien**	**0.30**	**236**	P	**Pn**	**03 45 23.9**	**+0.3**
HWA	baz=208			*e*S	**Sn**	**03 45 30.1**	**+0.7**
ENA	**Nanau**	**0.31**	**336**	⇓*i*P	**Pn**	**03 45 23.6**	**-0.1**
ENA	baz=352			*i* S	**Sn**	**03 45 29.7**	**0.0**
TWC	**Suao**	**0.46**	**357**	⇓*i*P	**Pn**	**03 45 25.9**	**0.0**
TWC	baz=13			S	**Sn**	**03 45 33.4**	**-0.1**
ESL	**Shilin**	**0.53**	**231**	*e*P	**Pn**	**03 45 25.9**	**-0.8**
NNS	baz=228 **Nan Shan**	**0.55**	**303**	P	**Pb**	**03 45 26.1**	**+0.7**
NNS	baz=304			S	**Sb**	**03 45 33.7**	**+0.8**
WHF	**Hehuan Shan**	**0.56**	**270**	P	**Pn**	**03 45 26.6**	**-0.9**
WHF	baz=264			S	**Sb**	**03 45 34.7**	**+1.1**
ENTT	**Nioudou**	**0.57**	**330**	P	**Pn**	**03 45 26.6**	**-0.7**
ENTT	baz=331			S	**Sn**	**03 45 34.9**	**-1.3**
TWE	**Neicheng**	**0.60**	**341**	⇓*i*P	**Pn**	**03 45 27.3**	**-0.5**
TWE	baz=344			S	**Sn**	**03 45 35.8**	**-1.2**
ILA	**Ilan**	**0.63**	**349**	*e*P	**Pn**	**03 45 28.3**	**+0.1**
ILA	baz=358			*e*S	**Sn**	**03 45 37.1**	**-0.5**
TWT	**Tachien**	**0.65**	**280**	P	**Pn**	**03 45 28.1**	**-0.5**
TWT	baz=276			S	**Sb**	**03 45 36.9**	**+1.0**
EGS	**baz=13**	**0.70**	**4**	*e*P	**Pn**	**03 45 29.3**	**+0.2**
EGS	baz=13			S	**Sn**	**03 45 39.4**	**+0.1**
NSK	**Sanguang**	**0.71**	**318**	⇑*i*P	**Pb**	**03 45 28.4**	**+0.3**
NSK	baz=315			S	**Sb**	**03 45 37.3**	**-0.2**
WDT	**Danda**	**0.79**	**241**	⇓P	**Pn**	**03 45 30.0**	**-0.5**
WDT	baz=225			S	**Sb**	**03 45 40.1**	**+0.3**
EHY	**Hungye**	**0.81**	**219**	*e*P	**Pb**	**03 45 29.3**	**-0.6**
TWB1	baz=211 **Santiao Chiao**	**0.86**	**7**	*e*P	**Pn**	**03 45 31.6**	**+0.2**
TWB1	baz=14			*e*S	**Sn**	**03 45 43.6**	**+0.2**
NWF	**Wu-fen Shan**	**0.93**	**354**	*e*P	**Pn**	**03 45 32.4**	**+0.1**
NWF	baz=350			*e*S	**Sn**	**03 45 44.7**	**-0.4**
SMLT	**Sun Moon Lake**	**0.93**	**254**	*e*P	**Pn**	**03 45 33.0**	**+0.6**
SMLT	baz=244			*e*S	**Sn**	**03 45 44.4**	**-0.8**
NSTT	**Nanjuang**	**0.94**	**301**	*e*P	**Pn**	**03 45 32.1**	**-0.3**
NSTT	baz=301			*e*S	**Sb**	**03 45 43.1**	**-0.8**
TWF1	**Yuli**	**0.95**	**214**	*e*P	**Pb**	**03 45 31.4**	**-0.8**
TWF1	baz=216			*e*S	**Sb**	**03 45 43.2**	**-1.2**
TYC	**Yuchr**	**0.96**	**256**	*e*P	**Pn**	**03 45 32.6**	**-0.2**
TYC	baz=245			*e*S	**Sn**	**03 45 45.2**	**-0.6**
JYNG	**Yonagunijimaku**	**1.02**	**72**	*e*S	**Sn**	**03 45 47.8**	**+0.6**
TWQ1	**Liyutan**	**1.03**	**282**	*e*P	**Pn**	**03 45 34.5**	**+0.8**
TWQ1	baz=279			*e*S	**Sb**	**03 45 46.4**	**-0.2**
TWS1	**Kuangyinshan**	**1.04**	**336**	*e*P	**Pb**	**03 45 33.3**	**-0.4**
NSY	baz=341 **Sanyi**	**1.06**	**285**	*e*P	**Pb**	**03 45 34.0**	**0.0**
NSY	baz=283			*e*S	**Sb**	**03 45 47.2**	**-0.1**
YUS	**Yu-Shan**	**1.07**	**233**	P	**Pn**	**03 45 34.7**	**0.0**
YUS	baz=217			S	**Sb**	**03 45 48.1**	**-0.1**
YOJ	**Yonaguni jima**	**1.08**	**73**	P	**Pb**	**03 45 35.0**	**+0.7**
YOJ				*e*S	**Sn**	**03 45 49.4**	**+0.7**
TCU	**Taichung**	**1.10**	**270**	*e*P	**Pn**	**03 45 33.7**	**-0.9**
TCU	baz=266			*e*S	**Sn**	**03 45 49.0**	**-0.2**
WNT	**Mingjian**	**1.12**	**257**	*e*P	**Pb**	**03 45 36.4**	**+1.3**
WNT	baz=251			*e*S	**Sn**	**03 45 50.3**	**+0.5**
CHKT	**Chengkung**	**1.14**	**204**	*e*P	**Pb**	**03 45 36.5**	**+1.1**
CHKT	baz=190			*e*S	**Sn**	**03 45 51.5**	**+1.2**
ALS	**Alishan**	**1.17**	**238**	P	**Pb**	**03 45 36.2**	**+0.2**
ALS	baz=231			*e*S	**Sb**	**03 45 50.8**	**-0.1**
CHN5	**Tsauling**	**1.23**	**244**	*e*P	**Pb**	**03 45 36.9**	**0.0**
CHN5	baz=227			*e*S	**Sn**	**03 45 53.6**	**+1.1**
ELDTW	**Lidau**	**1.24**	**220**	*e*P	**Pn**	**03 45 36.2**	**-0.4**
ELDTW	baz=213			*e*S	**Sb**	**03 45 52.6**	**0.0**
CHN4	**Tsaushan**	**1.42**	**236**	*e*P	**Pb**	**03 45 39.8**	**-0.3**
CHN4	baz=220			*e*S	**Sb**	**03 45 58.8**	**+1.0**
STYT	**Tauyuan**	**1.42**	**227**	*e*P	**Pn**	**03 45 37.5**	**-1.6**
STYT	baz=220			*e*S	**Sb**	**03 45 57.4**	**-0.5**
CHY	**Chiayi**	**1.48**	**244**	*e*P	**Pn**	**03 45 39.4**	**-0.4**
TWG	baz=239 **Pinlang**	**1.51**	**210**	*e*P	**Pn**	**03 45 40.0**	**-0.3**
CHN1	baz=195 **Nanshi**	**1.56**	**233**	*e*P	**Pb**	**03 45 42.4**	**-0.3**
CHN1	baz=226			*e*S	**Sb**	**03 46 01.7**	**-0.4**
SGST	**Jiashian**	**1.59**	**229**	*e*P	**Pb**	**03 45 42.5**	**-0.6**
SGST	baz=213			*e*S	**Sb**	**03 46 03.0**	**+0.3**
IRIF	**Iriomote-Funau**	**1.70**	**83**	*e*S	**Sb**	**03 46 05.7**	**-0.2**
JKRS	**Kuro-shima**	**1.95**	**87**	*e*S	**Sb**	**03 46 11.9**	**-1.1**
JIJ	**Ishigaki jima**	**2.08**	**84**	*e*S	**Sn**	**03 46 13.3**	**0.0**
JISG	**Ishigakijimahi**	**2.26**	**78**	*e*S	**Sn**	**03 46 17.7**	**-0.2**

*JMA **01** 03:55:40.7±0.2,39°.63N×143°.61E,h24km,M4.1*
*ISCJB **01** 03:55:42.0±1.7,39°.61N±0°.04×143°.54E±0°.05,*
h25km±13km,mb3.7/17,Error ellipse: s-maj=7.7km
s-min=5.9km az=152.8
*IDC **01** 03:55:43.2±0.7,39°.56N×143°.45E,h22km±3km,mb3.6/17,*
mb1 3.8/19,mb1mx3.7/41,mbtmp3.8/19,ML3.7/2,MS2.7/4,
Ms1 2.7/4,ms1mx2.5/36,Error ellipse: s-maj=20.2km
s-min=16.2km az=110.0
ISC 01 03:55:43.6±0.6,39°.62N±0°.05×143°.45E±0°.06,h22km±3km,
n42,σ0s97/52,mb3.8/17,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**1.26**	**268**	P	**Pn**	**03 56 04.9**	**-0.9**
MIYJ				*e*S	**Sb**	**03 56 22.8**	**+0.4**
JTH	**Tanohata**	**1.26**	**285**	P	**Pn**	**03 56 04.8**	**-1.1**
JTH				*e*S	**Sb**	**03 56 23.4**	**+0.9**
OFUJ	**Ofunato**	**1.48**	**249**	P	**Pn**	**03 56 08.1**	**-0.8**
OFUJ				*e*S	**Sn**	**03 56 27.3**	**-0.3**
JANG	**Nango**	**1.67**	**297**	P	**Pn**	**03 56 10.3**	**-1.1**
JANG				*e*S	**Sn**	**03 56 30.7**	**-1.4**
JOM	**Ohasama**	**1.68**	**266**	P	**Pn**	**03 56 11.5**	**-0.1**
JOM				*e*S	**Sb**	**03 56 33.5**	**-0.9**
JMK	**Ichinoseki**	**1.86**	**250**	P	**Pn**	**03 56 13.5**	**-0.5**
JMK				*e*S	**Sb**	**03 56 38.4**	**-1.1**
JTM	**Tenmabayashi**	**2.16**	**303**	P	**Pn**	**03 56 18.4**	**+0.1**
JRG	**Rokugo**	**2.19**	**265**	P	**Pn**	**03 56 18.8**	**+0.2**
JAH	**Hinai**	**2.24**	**286**	P	**Pn**	**03 56 19.6**	**+0.3**
JAH				*e*S	**Sn**	**03 56 46.8**	**+0.6**
JYK	**Kaneyama**	**2.50**	**255**	P	**Pn**	**03 56 23.1**	**+0.2**
JOU	**Okura**	**2.51**	**241**	P	**Pn**	**03 56 22.8**	**-0.2**
JOT	**Ohata**	**2.54**	**315**	P	**Pn**	**03 56 23.4**	**0.0**
ASAJ	**Asahikawa**	**4.54**	**352**	Pn	**Pn**	**03 56 51.1**	**+0.2**
ASAJ	2.4nm,0.3s,baz=200,slow=17,SNR=18			Sn	**Sn**	**03 57 43.3**	**+0.5**
MAT	**Matsushiro**	**5.15**	**235**	P	**Pn**	**03 57 00.2**	**+0.8**
MAT				*e*S	**Sb**	**03 58 17.9**	**+3.4**
MJAR	**Matsushiro Arr**	**5.15**	**235**	Pn	**Pn**	**03 57 00.2**	**+0.8**
MJAR	3.1nm,0.3s,baz=39,slow=12,SNR=53			LR	LR	03 58 49.5	
JHJ	comp=Z,24nm,21.2s,baz=50,slow=36 **Hachijo jima 2**	**7.13**	**206**	Pn	**Pn**	**03 57 28.0**	**+1.5**
JHJ	14nm,0.3s,baz=74,slow=22,SNR=3.1			Sn	Sn	03 58 39.5	-7.4
USRK	17nm,0.3s,baz=79,slow=22,SNR=3.5 **Ussuriysk Ar.**	**9.69**	**302**	Pn	**Pn**	**03 58 04.3**	**+2.7**
JNU	0.4nm,0.3s,baz=99,slow=15,SNR=6.1 **Nakatsue**	**12.03**	**241**	LR	LR	04 03 28.7	
KSRS	comp=Z,70nm,21.1s,baz=126,slow=39 **Korea Array**	**12.35**	**265**	LR	LR	04 02 54.3	
KLR	comp=Z,38nm,18.6s,baz=135,slow=35 **Kul'dur**	**12.72**	**323**	LR	LR	04 03 56.2	
SEY	comp=Z,49nm,19.2s,baz=80,slow=39 **Seymchan**	**23.95**	**10**	P	**P**	**04 00 56.1**	**+0.3**
SONM	2.8nm,0.8s,baz=211,slow=11,SNR=7.1 **Songino Array**	**27.79**	**299**	P	**P**	**04 01 31.7**	**+0.7**
H11N2	1.1nm,0.7s,baz=97,slow=8.4,SNR=6.1 **WAKE ISLAND Hy**	**28.28**	**128**	T	T	04 32 37.1	
H11N1	baz=318,slow=75,SNR=14 **WAKE ISLAND Hy**	**28.29**	**128**	T	T	04 32 33.5	
H11N3	baz=318,slow=75,SNR=15 **WAKE ISLAND Hy**	**28.30**	**128**	T	T	04 32 33.6	
ZALV	baz=318,slow=75,SNR=18 **Zalesovo Beam**	**41.41**	**310**	P	**P**	**04 03 28.4**	**+0.4**
ZALV	1.3nm,0.5s,baz=94,slow=7.9,SNR=3.9			PcP	**PcP**	**04 05 25.3**	**-0.3**
MKAR	0.4nm,0.3s,baz=54,slow=7.5,SNR=2.4 **Makanchi Array**	**44.15**	**300**	P	**P**	**04 03 50.3**	**-0.1**
ILAR	1.3nm,0.8s,baz=82,slow=9.5,SNR=10 **Eielson Array**	**46.45**	**34**	P	**P**	**04 04 08.8**	**+0.4**
ILAR	0.4nm,0.6s,baz=263,slow=6.3,SNR=6.0			pP	**pP**	**04 04 14.5**	**-0.8**
ILAR	0.8nm,0.7s,baz=266,slow=5.6,SNR=6.9			sP	**sP**	**04 04 17.8**	**-0.2**
INK	0.8nm,0.7s,baz=273,slow=6.0,SNR=7.1 **Inuvik**	**51.35**	**28**	P	**P**	**04 04 46.9**	**+1.0**
INK	0.5nm,0.6s,baz=246,slow=4.3,SNR=3.2			sP	**sP**	**04 04 55.9**	**+0.4**
WRA	0.8nm,0.5s,baz=308,slow=3.8,SNR=4.1 **Warramunga Arr**	**59.86**	**190**	P	**P**	**04 05 46.0**	**-1.5**
YKA	0.2nm,0.5s,baz=7.7,slow=6.9,SNR=6.0 **Yellowknife Ar**	**60.77**	**31**	P	**P**	**04 05 53.4**	**+0.2**
YKA	0.2nm,0.6s,baz=302,slow=6.6,SNR=4.4			sP	**sP**	**04 06 02.4**	**-0.6**
ARCES	0.3nm,0.8s,baz=301,slow=6.0,SNR=5.2 **ARCESS Array B**	**62.14**	**339**	P	**P**	**04 06 01.1**	**-1.3**
ASAR	1.0nm,0.8s,baz=53,slow=8.1,SNR=4.5 **Alice Springs**	**63.59**	**190**	P	**P**	**04 06 11.8**	**-0.8**
FINES	0.2nm,0.5s,baz=8.6,slow=6.8,SNR=4.4 **FINESS Array B**	**67.27**	**332**	P	**P**	**04 06 36.2**	**+0.2**
KBZ	1.1nm,0.6s,baz=85,slow=6.7,SNR=12 **Khabaz**	**70.43**	**311**	P	**P**	**04 06 56.6**	**+0.7**
NVAR	1.5nm,0.8s,baz=61,slow=2.3,SNR=4.8 **Mina Array Bea**	**72.17**	**55**	P	**P**	**04 07 07.9**	**+1.0**
NVAR	0.3nm,0.6s,baz=316,slow=8.3,SNR=2.9			sP	**sP**	**04 07 17.5**	**+0.8**
HFS	0.7nm,0.7s,baz=292,slow=6.8,SNR=4.7 **Hagfors**	**72.38**	**336**	P	**P**	**04 07 07.8**	**+0.4**
NB2	1.1nm,0.4s,baz=45,slow=8.6,SNR=12 **NORSAR Subarra**	**72.41**	**338**	P	**P**	**04 07 07.6**	**-0.1**
NOA	comp=Z,0.6nm,0.6s,baz=37,slow=6.2 **NORSAR Array B**	**72.41**	**338**	P	**P**	**04 07 07.0**	**-0.7**
AKASG	comp=Z,1.0nm,0.7s,baz=38,slow=5.8,SNR=4.6 **Malin Array Be**	**73.22**	**323**	P	**P**	**04 07 12.2**	**-0.4**
PDAR	comp=Z,0.5nm,0.4s,baz=46,slow=6.9,SNR=4.1 **Pinedale Array**	**74.72**	**47**	P	**P**	**04 07 21.8**	**-0.1**
PDAR	comp=Z,0.3nm,0.8s,baz=25,slow=3.9,SNR=2.7			sP	**sP**	**04 07 31.5**	**-0.2**
TORD	comp=Z,0.5nm,0.6s,baz=242,slow=2.3,SNR=4.7 **Torodi Ar. Bea**	**116.57**	**318**	PKP	**PKPdf**	**04 14 25.1**	**-1.2**
	comp=Z,0.2nm,0.4s,baz=198,slow=33,SNR=2.2						

*IDC **01** 04:11:24.0±1.4,0°.48N×98°.20E,h0km,mb3.4/4,mb1 3.6/5,*
mb1mx3.4/40,mbtmp3.4/5,MS4.0/1,Ms1 4.0/1,
ms1mx2.6/29,Error ellipse: s-maj=67.6km s-min=21.2km
az=50.0
*ISCJB **01** 04:11:29.4±1.0,0°.55N±0°.09×98°.36E±0°.08,h43km,*
mb3.3/4,MS3.9/1,Error ellipse: s-maj=15.0km
s-min=9.4km az=32.7
*DJA **01** 04:11:33.2±2.8,1°.N±7°×9°.9E±°,h30km±30km,M3.4/4,*
MLv3.4/4
ISC 01 04:11:31.0±1.2,0°.6N±0°.1×98°.4E±0°.1,h43km,n13,
σ1s49/10,mb3.3/4,Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MNSI	**Mandailing Nat**	**1.17**	**80**	P	**Pn**	**04 11 51.6**	**+0.7**
MNSI				S	**Sn**	**04 12 05.1**	**-0.5**
PDSI	**Padang**	**2.52**	**126**	P	**Pn**	**04 12 11.7**	**+2.1**
TSI	**Tuntungan**	**2.89**	**3**	P	**Pn**	**04 12 16.7**	**+2.2**
KCSI	**Kotacane, Aceh**	**2.98**	**347**	P	**Pn**	**04 12 17.5**	**+1.7**
CMAR	**Chiang Mai Arr**	**17.76**	**2**	P	**Pn**	**04 15 34.6**	**-0.5**
H08S2	baz=189,slow=11,SNR=2.7 **Diego Garcia H**	**27.13**	**252**	T	T	04 44 47.2	
H08S3	baz=73,slow=75,SNR=10 **Diego Garcia H**	**27.13**	**252**	T	T	04 44 41.4	
H08S1	baz=73,slow=75,SNR=9.9 **Diego Carcia H**	**27.15**	**252**	T	T	04 44 44.6	
SIJI	baz=73,slow=75,SNR=13 **Sorong**	**32.87**	**93**	LR	LR	04 32 02.3	
WRA	comp=Z,223nm,18.4s,baz=17,slow=37 **Warramunga Arr**	**40.67**	**122**	P	**P**	**04 19 07.7**	**+0.2**
ASAR	0.3nm,0.8s,baz=304,slow=9.0,SNR=3.8 **Alice Springs**	**42.05**	**127**	P	**P**	**04 19 18.5**	**-0.4**
MKAR	0.1nm,0.5s,baz=294,slow=7.0,SNR=3.2 **Makanchi Array**	**48.13**	**345**	P	**P**	**04 20 06.2**	**-0.5**
BRTR	1.2nm,0.5s,baz=154,slow=8.1,SNR=17 **Keskin Array B**	**70.42**	**312**	P	**P**	**04 22 39.8**	**-1.4**
	0.3nm,0.6s,baz=104,slow=5.3,SNR=2.2						

*NIED **01** 04:16:00,37°.70N×143°.20E,h11km,Mw3.6 Best double*
couple: M0:2.57000×10^14 NP1:φs42.00000°,δ46.00000°,
λ-71.00000°. NP2:φs196.00000°,δ47.00000°,
λ-108.00000°.
*IDC **01** 04:16:41.9±1.1,37°.51N×143°.52E,h0km,mb3.6/8,*
mb1 3.8/10,mb1mx3.6/36,mbtmp3.6/10,ML3.5/2,Error
ellipse: s-maj=28.7km s-min=20.8km az=141.0
*ISCJB **01** 04:16:45.5±0.6,37°.63N±0°.05×143°.35E±0°.05,h33km,*
mb3.6/8,Error ellipse: s-maj=7.0km s-min=4.9km
az=149.0
*JMA **01** 04:16:47.0±0.4,37°.66N×143°.18E,h29km,M3.5*
ISC 01 04:16:47.3±0.8,37°.62N±0°.06×143°.35E±0°.08,h35km,n25,
σ1s61/34,mb3.5/8,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.79**	**298**	*e*S	**Sn**	**04 17 35.4**	**-1.7**
JFK	**Kawauchi**	**1.98**	**263**	P	**Pn**	**04 17 18.1**	**-0.3**
JMM	**Marumori**	**2.04**	**278**	*e*S	**Sn**	**04 17 41.9**	**-1.5**
ONAJ	**Iwakimizuishiy**	**2.10**	**257**	P	**Pn**	**04 17 19.4**	**-0.6**
ONAJ				S	**Sn**	**04 17 43.0**	**-1.9**
JOU	**Okura**	**2.25**	**290**	*e*S	**Sn**	**04 17 48.3**	**-0.3**
JFT	**Otama**	**2.40**	**269**	P	**Pn**	**04 17 24.5**	**+0.4**
JFT				S	**Sn**	**04 17 52.0**	**-0.2**
JOM	**Ohasama**	**2.46**	**320**	*e*S	**Sn**	**04 17 51.4**	**-2.3**
JYK	**Kaneyama**	**2.69**	**300**	P	**Pn**	**04 17 28.0**	**-0.1**
JANG	**Nango**	**3.10**	**333**	*e*S	**Sn**	**04 18 09.2**	**-0.4**
JAG	**Ashikaga**	**3.34**	**250**	P	**Pn**	**04 17 37.6**	**+0.6**
JAG				*e*S	**Sn**	**04 18 14.5**	**-0.9**
JRY	**Ryogami san**	**3.91**	**247**	P	**Pn**	**04 17 45.0**	**+0.1**
JRY				S	**Sn**	**04 18 27.7**	**-1.9**
JOD2	**Odawara 2**	**4.16**	**237**	P	**Pn**	**04 17 47.5**	**-0.9**
JOD2				*e*S	**Sn**	**04 18 33.6**	**-2.2**
MJAR	**Matsushiro Arr**	**4.25**	**257**	Pn	**Pn**	**04 17 50.8**	**+1.2**
MJAR	2.6nm,0.3s,baz=90,slow=15,SNR=30			Sn	**Sn**	**04 18 40.4**	**+2.5**
MAT	1.3nm,0.3s,baz=179,slow=24,SNR=5.2 **Matsushiro**	**4.25**	**257**	P	**Pn**	**04 17 51.3**	**+1.7**
MAT				S	**Sn**	**04 18 39.5**	**+1.5**
MAT	**Matsushiro**	**4.25**	**257**	P	**Pn**	**04 17 51.8**	**+2.2**
MAT				*e*S	**Sn**	**04 18 40.6**	**+2.6**
JHJ	**Hachijo jima 2**	**5.35**	**214**	Sn	**Sn**	**04 19 00.9**	**-4.2**
ASAJ	15nm,0.3s,baz=73,slow=19,SNR=2.8 **Asahikawa**	**6.52**	**355**	Pn	**Pn**	**04 18 20.6**	**0.0**
ASAJ	1.1nm,0.3s,baz=224,slow=15,SNR=7.2			Sn	**Sn**	**04 19 30.9**	**-2.9**
MKAR	0.4nm,0.3s,baz=49,slow=20,SNR=3.1 **Makanchi Array**	**45.12**	**302**	P	**P**	**04 25 01.3**	**+1.1**
ILAR	0.5nm,0.8s,baz=80,slow=8.4,SNR=3.8 **Eielson Array**	**48.17**	**33**	P	**P**	**04 25 23.7**	**-0.1**
INK	0.4nm,0.6s,baz=281,slow=7.1,SNR=4.3 **Inuvik**	**53.16**	**27**	P	**P**	**04 26 02.1**	**+0.8**
WRA	0.2nm,0.4s,baz=303,slow=4.4,SNR=4.6 **Warramunga Arr**	**57.88**	**190**	P	**P**	**04 26 34.6**	**-1.1**
YKA	0.5nm,0.6s,baz=10,slow=7.1,SNR=5.7 **Yellowknife Ar**	**62.52**	**31**	P	**P**	**04 27 06.6**	**-0.4**
ARCES	0.1nm,0.7s,baz=300,slow=6.6,SNR=4.0 **ARCESS Array B**	**63.99**	**340**	P	**P**	**04 27 17.3**	**+0.6**
FINES	2.1nm,0.9s,baz=77,slow=13,SNR=4.3 **FINESS Array B**	**69.01**	**333**	P	**P**	**04 27 49.3**	**+0.5**
PDAR	1.3nm,0.9s,baz=67,slow=11,SNR=3.6 **Pinedale Array**	**76.15**	**46**	P	**P**	**04 28 32.1**	**+0.2**
	0.3nm,0.7s,baz=302,slow=5.2,SNR=2.8						

*IDC **01** 04:22:10.0±1.2,37°.57N×143°.62E,h0km,mb3.6/3,*
mb1 3.9/7,mb1mx3.5/48,mbtmp4.0/7,ML3.7/4,MS2.8/3,
Ms1 2.8/3,ms1mx2.4/42,Error ellipse: s-maj=42.1km
s-min=20.5km az=110.0
*ISCJB **01** 04:22:13.1±1.1,37°.29N±0°.10×143°.66E±0°.10,h33km,*
mb3.7/3,MS2.7/1,Error ellipse: s-maj=14.6km
s-min=11.0km az=164.5
ISC 01 04:22:13.8±1.1,37°.40N±0°.08×143°.8E±0°.1,h35km,n10,
σ2s41/11,mb3.7/3,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**4.52**	**261**	Pn	**Pn**	**04 23 19.4**	**-0.4**
MJAR	2.8nm,0.3s,baz=89,slow=14,SNR=24			LR	LR	04 25 15.3	
MAT	comp=Z,33nm,20.7s,baz=100,slow=42 **Matsushiro**	**4.52**	**261**	P	**Pn**	**04 23 21.3**	**+1.5**
MAT				S	**Sn**	**04 24 10.5**	**-0.7**
JHJ	**Hachijo jima 2**	**5.37**	**218**	Pn	**Pn**	**04 23 32.8**	**+1.4**
JHJ	12nm,0.3s,baz=53,slow=20,SNR=3.3			Sn	**Sn**	**04 24 28.9**	**-3.0**
ASAJ	12nm,0.3s,baz=90,slow=20,SNR=3.7 **Asahikawa**	**6.76**	**353**	Pn	**Pn**	**04 23 48.4**	**-2.2**
JCJ	0.9nm,0.3s,baz=182,slow=14,SNR=7.3 **Chichijima**	**10.36**	**188**	Pn	**Pn**	**04 24 39.8**	**-0.1**
JCJ	2.0nm,0.3s,baz=17,slow=20,SNR=4.9			Sn	**Sn**	**04 26 31.2**	**-3.6**
KLR	2.3nm,0.3s,baz=311,slow=19,SNR=3.3 **Kul'dur**	**14.68**	**327**	LR	LR	04 30 52.4	
TLY	comp=Z,100nm,21.8s,baz=194,slow=36 **Talaya**	**31.51**	**310**	LR	LR	04 41 38.7	
ILAR	comp=Z,16nm,19.1s,baz=262,slow=37 **Eielson Array**	**48.18**	**33**	P	**P**	**04 30 50.6**	**+0.2**
WRA	0.2nm,0.7s,baz=276,slow=8.1,SNR=3.5 **Warramunga Arr**	**57.72**	**190**	P	**P**	**04 32 03.2**	**+2.1**
ASAR	1.5nm,0.7s,baz=10,slow=7.5,SNR=20 **Alice Springs**	**61.45**	**190**	P	**P**	**04 32 29.9**	**+3.2**
	0.5nm,0.9s,baz=7.3,slow=14,SNR=5.1						

JMA 01 04:22:43.8±0.1,37°.42N×141°.76E,h39km±3km,M2.9,
Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.71**	**266**	P	Pn	04 22 57.3	-0.1
JFK				S	Sn	04 23 06.8	-0.3
ONAJ	**Iwakimizuishiy**	**0.83**	**248**	P	Pn	04 22 59.1	0.0
ONAJ				*e*S	Sn	04 23 09.7	-0.4
JMM	**Marumori**	**0.89**	**300**	P	Pn	04 22 59.7	-0.1
JMM				S	Sn	04 23 11.4	0.0
JIO	**Ouri**	**1.08**	**343**	P	Pn	04 23 02.4	0.0
JIO				*e*S	Sn	04 23 15.5	-0.7
JFT	**Otama**	**1.14**	**275**	P	Pn	04 23 04.0	+0.8
JFT				S	Sn	04 23 18.6	+1.0
JHO	**Hitachi**	**1.25**	**230**	P	Pn	04 23 04.6	-0.1
JHO				*e*S	Sn	04 23 20.0	-0.3
JOU	**Okura**	**1.28**	**318**	P	Pn	04 23 06.4	+1.2

*IDC **01** 04:30:16.2±0.9,18°.78N×120°.13E,h0km,mb3.9/8,*
mb1 4.1/8,mb1mx3.6/54,mbtmp3.9/8,Error ellipse:
s-maj=70.8km s-min=16.4km az=66.0
*MAN **01** 04:30:20,18°.80N×120°.03E,h6km,mb4.7,ML3.5,MS3.5*
ISC 01 04:30:18.5±2.2,18°.73N±0°.08×119°.93E±0°.09,h14km±13km,
n14,σ0s51/19,mb3.9/8,2C-1D,Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PIP	**Pasuquin**	**0.77**	**121**	⇑*i*P	**Pn**	**04 30 35.4**	**+0.5**
PIP				*e*S	**Sb**	**04 30 44.2**	**+0.2**
SIPP	**Brgy, Tapao**	**0.94**	**148**	⇑*e*P	**Pn**	**04 30 38.0**	**+0.7**
SIPP				*e*S	**Sb**	**04 30 48.7**	**-0.3**
ABRA	**Dolores**	**1.31**	**145**	*e*P	**Pg**	**04 30 43.5**	**-0.2**
ABRA				*e*S	**Sn**	**04 30 59.5**	**0.0**
APYP	**Conner**	**1.52**	**124**	*e*P	**Pb**	**04 30 46.5**	**0.0**
APYP				*e*S	**Sg**	**04 31 07.5**	**+0.1**
BCPH	**Baguio City Da**	**2.42**	**165**	⇓*e*P	**Pb**	**04 31 01.6**	**-0.2**
BCPH				*e*S	**Sb**	**04 31 32.2**	**+0.6**
CAUP	**Cauayan**	**2.53**	**134**	*e*P	**Pb**	**04 31 03.4**	**-0.3**
FITZ	**Fitzroy Crossi**	**37.03**	**171**	P	**P**	**04 37 27.2**	**-0.8**
WRA	2.5nm,1.2s,baz=331,slow=10,SNR=3.6 **Warramunga Arr**	**40.95**	**159**	P	**P**	**04 38 00.1**	**-0.7**
MKAR	2.0nm,0.8s,baz=339,slow=9.1,SNR=14 **Makanchi Array**	**41.62**	**321**	P	**P**	**04 38 06.8**	**+0.6**
ASAR	1.1nm,0.9s,baz=112,slow=9.6,SNR=8.6 **Alice Springs**	**44.29**	**162**	P	**P**	**04 38 28.4**	**+0.4**
ZALV	1.7nm,0.5s,baz=338,slow=6.7,SNR=39 **Zalesovo Beam**	**44.30**	**331**	P	**P**	**04 38 27.9**	**+0.2**
KURBB	0.8nm,0.5s,baz=128,slow=9.3,SNR=2.9 **Kurchatov Arra**	**45.66**	**324**	P	**P**	**04 38 39.2**	**+0.6**
STKA	0.8nm,0.6s,baz=121,slow=8.2,SNR=7.4 **Stephens Creek**	**54.44**	**157**	P	**P**	**04 39 45.6**	**+0.2**
YKA	1.5nm,0.5s,baz=346,slow=6.6,SNR=5.1 **Yellowknife Ar**	**88.44**	**22**	P	**P**	**04 43 09.3**	**-0.7**
	0.2nm,0.7s,baz=312,slow=4

JFK				*e*S	**Sn**	**04 36 18.0**	**-1.2**
JMK	**Ichinoseki**	**2.26**	**307**	P	**Pn**	**04 35 54.8**	**-0.5**
JFT	**Otama**	**2.55**	**269**	P	**Pn**	**04 35 59.6**	**+0.3**
JFT				*e*S	**Sn**	**04 36 28.7**	**-0.6**
JOM	**Ohasama**	**2.56**	**317**	P	**Pn**	**04 35 59.3**	**-0.1**
JOM				*e*S	**Sn**	**04 36 28.1**	**-1.4**
JYK	**Kaneyama**	**2.82**	**298**	P	**Pn**	**04 36 03.0**	**0.0**
JYK				S	**Sn**	**04 36 35.7**	**-0.3**
JANG	**Nango**	**3.17**	**331**	P	**Pn**	**04 36 07.7**	**-0.1**
JAG	**Ashikaga**	**3.48**	**251**	P	**Pn**	**04 36 11.9**	**-0.2**
JAG				*e*S	**Sn**	**04 36 50.5**	**-1.9**
BSO1	**Boso 1**	**3.61**	**216**	P	**Pn**	**04 36 12.2**	**-1.2**
BSO1				*e*S	**Sn**	**04 36 54.4**	**-0.4**
JRY	**Ryogami san**	**4.05**	**248**	P	**Pn**	**04 36 19.5**	**-0.4**
JRY				S	Sn	04 37 03.4	-3.1
JOD2	**Odawara 2**	**4.29**	**238**	P	**Pn**	**04 36 22.6**	**-0.6**
JOD2				*e*S	Sn	04 37 09.3	-3.1
MJAR	**Matsushiro Arr**	**4.40**	**257**	Pn	**Pn**	**04 36 25.2**	**+0.5**
	5.9nm,0.3s,baz=89,slow=14,SNR=53						
MJAR				Sn	**Sn**	**04 37 16.8**	**+1.8**
	2.4nm,0.3s,baz=82,slow=33,SNR=4.4						
MJAR				LR	LR	04 38 30.8	
	comp=Z,140nm,19.2s,baz=75,slow=44						
MAJO	**Matsushiro**	**4.40**	**257**	*e*Pn	**Pn**	**04 36 25.3**	**+0.6**
MAT	**Matsushiro**	**4.40**	**257**	P	**Pn**	**04 36 25.5**	**+0.8**
MAT				S	**Sn**	**04 37 16.2**	**+1.2**
MAT	**Matsushiro**	**4.40**	**257**	P	**Pn**	**04 36 25.9**	**+1.2**
MAT				*e*S	**Sn**	**04 37 16.1**	**+1.1**
ERM	**Erimo**	**4.40**	**356**	*e*Pn	**Pn**	**04 36 23.8**	**-0.9**
ERM				*e*Sn	Sn	04 37 10.8	-4.2
JYN	**Shimob**	**4.54**	**244**	P	**Pn**	**04 36 27.1**	**+0.3**
JYN				*e*S	**Sn**	**04 37 17.2**	**-1.5**
JHJ	**Hachijo jima 2**	**5.44**	**215**	Pn	**Pn**	**04 36 37.0**	**-2.0**
	9.7nm,0.3s,baz=75,slow=20,SNR=2.3						
JHJ				Sn	Sn	04 37 35.2	-5.4
	20nm,0.3s,baz=106,slow=7.4,SNR=3.9						
ASAJ	**Asahikawa**	**6.53**	**354**	Pn	**Pn**	**04 36 53.0**	**-1.0**
	2.6nm,0.3s,baz=208,slow=12,SNR=13						
ASAJ				Sn	Sn	04 38 03.5	-4.0
	0.6nm,0.3s,baz=273,slow=18,SNR=2.3						
JNU	**Nakatsue**	**11.27**	**250**	LR	LR	04 43 13.5	
	comp=Z,31nm,18.3s,baz=118,slow=42						
KSRS	**Korea Array**	**12.40**	**274**	LR	LR	04 42 52.2	
	comp=Z,48nm,18.0s,baz=128,slow=37						
KLR	**Kul'dur**	**14.40**	**327**	Pn	**Pn**	**04 38 40.0**	**-1.7**
	0.1nm,0.3s,baz=170,slow=12,SNR=3.5						
SEY	**Seymchan**	**25.92**	**9**	P	**P**	**04 40 49.5**	**+0.3**
	1.6nm,0.7s,baz=162,slow=8.4,SNR=4.5						
H11N2	**WAKE ISLAND Hy**	**27.04**	**125**	T	T	05 09 14.9	
	baz=317,slow=75,SNR=9.3						
H11N1	**WAKE ISLAND Hy**	**27.05**	**125**	T	T	05 09 21.6	
	baz=317,slow=75,SNR=9.2						
H11N3	**WAKE ISLAND Hy**	**27.06**	**125**	T	T	05 09 15.2	
	baz=317,slow=75,SNR=8.5						
H11S1	**WAKE ISLAND Hy**	**27.80**	**127**	T	T	05 10 13.9	
	baz=321						
H11S3	**WAKE ISLAND Hy**	**27.80**	**127**	T	T	05 10 12.9	
	baz=321						
H11S2	**WAKE ISLAND Hy**	**27.82**	**127**	T	T	05 10 13.0	
	baz=321						
CMAR	**Chiang Mai Arr**	**43.28**	**256**	LR	LR	05 02 09.3	
	comp=Z,11nm,18.2s,baz=180,slow=37						
MKAR	**Makanchi Array**	**45.25**	**302**	P	**P**	**04 43 35.6**	**+1.0**
	0.4nm,0.7s,baz=88,slow=11,SNR=4.6						
ILAR	**Eielson Array**	**48.09**	**33**	P	**P**	**04 43 56.4**	**-0.2**
	0.8nm,0.7s,baz=264,slow=6.7,SNR=9.9						
TKM2	**Tokmak 2**	**50.84**	**299**	*e*P	**P**	**04 44 18.3**	**+0.2**
	1.2nm,0.6s						
BVAR	**Borovoye Array**	**51.43**	**312**	P	P	04 44 20.8	-1.4
	0.8nm,0.4s,baz=54,slow=7.4,SNR=3.7						
WRAB	**Tennant Creek**	**57.89**	**190**	*e*P	**P**	**04 45 08.5**	**-0.7**
	4.5nm,0.8s						
WRA	**Warramunga Arr**	**57.91**	**190**	P	**P**	**04 45 08.7**	**-0.6**
	3.5nm,0.7s,baz=10,slow=7.3,SNR=30						
WRA				LR	LR	05 14 41.4	
	comp=Z,15nm,18.6s,baz=220,slow=41						
ABKAR	**Akbulak array**	**58.85**	**310**	*e*P	**P**	**04 45 16.1**	**+0.3**
	0.6nm,0.6s						
ASAR	**Alice Springs**	**61.63**	**190**	P	**P**	**04 45 34.5**	**-0.4**
	0.9nm,0.8s,baz=10,slow=7.3,SNR=13						
YKA	**Yellowknife Ar**	**62.45**	**31**	P	**P**	**04 45 40.0**	**+0.1**
	0.3nm,0.7s,baz=302,slow=6.7,SNR=7.2						
ARCES	**ARCESS Array B**	**64.04**	**340**	P	**P**	**04 45 51.6**	**+1.1**
	0.8nm,0.9s,baz=62,slow=10,SNR=3.2						
FINES	**FINESS Array B**	**69.08**	**333**	P	**P**	**04 46 23.4**	**+0.7**
	1.1nm,0.7s,baz=34,slow=15,SNR=3.7						
KBZ	**Khabaz**	**71.80**	**311**	P	**P**	**04 46 40.2**	**+0.6**
	1.4nm,0.8s,baz=45,slow=3.4,SNR=5.1						
PDAR	**Pinedale Array**	**76.04**	**47**	P	**P**	**04 47 04.7**	**-0.2**
	0.3nm,0.6s,baz=270,slow=3.0,SNR=4.0						

*IDC **01** 04:39:31.9±0.5, 1.°14S×14.°42W, h0km, mb4.4/31, mb1 4.5/33, mb1mx4.4/44, mbtmp4.4/33, ML4.8/2, MS4.2/24, Ms1 4.2/24, ms1mx4.2/28, Error ellipse: s-maj=13.5km s-min=11.2km az=150.0*

*ISCJB **01** 04:39:32.2±0.2, 1.°24S±0.°04×14.°47W±0.°03, h10km, mb4.8/111, MS4.3/33, Error ellipse: s-maj=6.3km s-min=3.9km az=148.3*

*MOS **01** 04:39:32.2±1.1, 1.°20S×14.°54W, h10km, mb4.9/35, MS4.3/9, Error ellipse: s-maj=12.8km s-min=5.9km az=64.6*

*NEIC **01** 04:39:33.7±0.2, 1.°22S×14.°44W, h10km, mb4.9/64, Error ellipse: s-maj=6.4km s-min=4.3km az=146.0*

*GCMT **01** 04:39:33.7±0.2, 0.°99S×14.°40W, h18km±1km, MW5.0/105, Moment Tensor Solution. s49,c71; s105,c154; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}=0.31±.12; $M_{\theta\theta}$2.52±.11; $M_{\phi\phi}$-2.21±.11; $M_{r\theta}$0.39±.22; $M_{\theta\phi}$-3.75±.09; $M_{\phi r}$0.96±.23; Best double couple: M_0=4.56100×10^{16} NP1:ϕ_s163.00000°, δ81.00000°, λ-11.00000°. NP2: ϕ_s255.00000°, δ79.00000°, λ-171.00000°. Principal axes: T 4.5920, Plg1.0000°, Azm209.0000°; N -0.0630, Plg76.0000°, Azm305.0000°; P -4.5310, Plg14.0000°, Azm119.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 01 04:39:33.6±0.3, 1.°20S±0.°05×14.°39W±0.°06, h10km, n335, σ1§87/332, mb4.7/111, MS4.3/33, 22C-7D, North of Ascension Island

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
H10N2	**ASCENSION HYDR**	**6.58**	**181**	T	T	04 47 40.8	
	baz=360,slow=73,SNR=78						
H10N3	**ASCENSION HYDR**	**6.59**	**181**	T	T	04 47 52.7	
	baz=360,slow=73,SNR=76						
H10N1	**ASCENSION HYDR**	**6.60**	**181**	T	T	04 47 52.5	
	baz=360,slow=73,SNR=96						
ASCN	**Ascension**	**6.68**	**180**	*e*Pn	**Pn**	**04 41 10.3**	**-1.6**
ASCN				*e*Sn	**Sn**	**04 42 24.5**	**-3.8**
H10S1	**ASCENSION HYDR**	**7.69**	**182**	T	T	04 49 14.6	
	baz=0.5,slow=74,SNR=237						
H10S3	**ASCENSION HYDR**	**7.70**	**182**	T	T	04 49 15.4	
	baz=0.5,slow=74,SNR=79						
H10S2	**ASCENSION HYDR**	**7.71**	**182**	T	T	04 49 15.8	
	baz=0.5,slow=74,SNR=111						
LIC	**Lamto**	**11.91**	**52**	*e*P	**Pn**	**04 42 22.5**	**-1.1**
	24nm,0.3s						
TIC	**Toumodi**	**12.18**	**50**	*e*P	**Pn**	**04 42 23.9**	**-3.4**
KIC	**Kosan Boka**	**12.22**	**52**	*e*P	**Pn**	**04 42 25.8**	**-2.1**
	204nm,1.2s						
DBIC	**Dimbokro**	**12.32**	**50**	Pn	**Pn**	**04 42 26.8**	**-2.4**
	5.4nm,0.3s,baz=230,slow=11,SNR=84						
DBIC				Sn	Sn	04 44 37.0	-10
	2.7nm,0.3s,baz=300,slow=20,SNR=3.8						
DBIC				LR	LR	04 46 22.4	
	comp=Z,2μm,19.2s,baz=200,slow=33						
DBIC	**Dimbokro**	**12.32**	**50**	*e*Pn	**Pn**	**04 42 27.6**	**-1.6**
DBIC				Sn	Sn	04 44 37.0	-10
BBTS	**Babate**	**15.90**	**352**	Pn	**Pn**	**04 43 14.5**	**-3.2**
	3.1nm,0.3s,baz=31,slow=0.4,SNR=16						
BBTS				Sn	Sn	04 46 00.1	-14
	3.7nm,0.3s,baz=352,slow=21,SNR=6.3						
BBTS				LR	LR	04 48 41.3	
	comp=Z,868nm,19.0s,baz=166,slow=35						
TOA0	**Torodi Ar. Sit**	**21.40**	**48**	*e*P	**P**	**04 44 20.7**	**-1.0**
TORD	**Torodi Ar. Bea**	**21.40**	**48**	P	**P**	**04 44 20.1**	**-1.6**
	34nm,0.6s,baz=231,slow=10,SNR=160						
TORD				S	**S**	**04 48 09.8**	**-10**
	3.0nm,0.5s,baz=237,slow=22,SNR=3.0						
TORD				LR	LR	04 51 56.7	
	comp=Z,1μm,18.2s,baz=235,slow=35						
RCBR	**Riachuelo**	**21.95**	**257**	P	**P**	**04 44 26.8**	**-1.0**
	38nm,1.0s,baz=75,slow=12,SNR=13						
RCBR				LR	LR	04 51 02.5	
	comp=Z,409nm,19.4s,baz=74,slow=32						
RCBR	**Riachuelo**	**21.95**	**257**	*e*P	**P**	**04 44 28.1**	**+0.3**
	98nm,1.4s						
TAM	**Tamanrasset**	**30.75**	**38**	*e*P	**P**	**04 45 50.4**	**+0.9**
TAM				pmax	pmax		
	comp=Z,5.0nm,0.7s						
TAM	**Tamanrasset**	**30.75**	**38**	*e*P	**P**	**04 45 50.4**	**+0.9**
	comp=Z,4.7nm,0.7s						
MDT	**Midelt**	**35.08**	**14**	P	**P**	**04 46 26.0**	**-1.1**
	comp=Z,2.3nm,1.1s,baz=328,slow=14,SNR=2.1						
TSUM	**Tsumeb**	**36.07**	**122**	P	**P**	**04 46 35.7**	**-0.2**
	comp=Z,3.2nm,0.8s,baz=281,slow=7.5,SNR=5.8						
TSUM	**Tsumeb**	**36.07**	**122**	*e*P	**P**	**04 46 36.1**	**+0.2**
	comp=Z,26nm,1.8s						
PFVI	**Vila Bisbo**	**38.49**	**7**	*e*P	**P**	**04 46 56.6**	**+0.6**
	comp=Z,42nm,1.1s						
SPB	**Sao Paulo**	**39.00**	**233**	*e*P	**P**	**04 47 01.0**	**+0.5**
	comp=Z,9.3nm,0.8s						
CMLA	**Cha da Macela**	**40.12**	**346**	*e*P	**P**	**04 47 07.8**	**-1.9**
CMLA	**Cha da Macela**	**40.12**	**346**	*e*P	**P**	**04 47 07.8**	**-1.9**
ESDC	**Sonseca Array**	**41.79**	**12**	P	**P**	**04 47 21.9**	**-1.5**
	comp=Z,0.2nm,0.5s,baz=195,slow=8.6,SNR=7.1						
ESDC				LR	LR	05 04 47.5	
	comp=Z,309nm,19.6s,baz=195,slow=36						
ES19	**SONSECA Array**	**41.83**	**12**	*e*P	**P**	**04 47 25.3**	**+1.5**
MTE	**Manteigas**	**41.88**	**8**	*e*P	**P**	**04 47 25.9**	**+1.7**
	comp=Z,7.7nm,0.9s						
KEST	**Kesra**	**42.90**	**29**	P	**P**	**04 47 32.4**	**-0.3**
	comp=Z,14nm,1.0s,baz=218,slow=5.2,SNR=9.5						
KEST				LR	LR	05 05 04.7	
	comp=Z,469nm,21.5s,baz=204,slow=36						
KEST	**Kesra**	**42.90**	**29**	*e*P	**P**	**04 47 35.7**	**+3.0**
	comp=Z,22nm,1.1s						
LSZ	**Lusaka**	**44.28**	**111**	P	**P**	**04 47 44.1**	**0.0**
	comp=Z,10nm,0.9s,baz=283,slow=6.2,SNR=14						
LSZ	**Lusaka**	**44.28**	**111**	*e*P	**P**	**04 47 44.3**	**+0.2**
LSZ				pmax	pmax		
	comp=Z,28nm,1.4s						
LSZ	**Lusaka**	**44.28**	**111**	*e*P	**P**	**04 47 44.3**	**+0.2**
	comp=Z,28nm,1.4s						
LBTB	**Lobatse**	**45.27**	**125**	P	**P**	**04 47 52.6**	**+0.7**
	comp=Z,7.1nm,0.8s,baz=311,slow=7.4,SNR=7.9						
LBTB	**Lobatse**	**45.27**	**125**	P	**P**	**04 47 52.6**	**+0.7**
LBTB				pmax	pmax		
	comp=Z,9.0nm,1.0s						
LBTB	**Lobatse**	**45.27**	**125**	*e*P	**P**	**04 47 52.5**	**+0.6**
	comp=Z,38nm,1.4s						
SUR	**Sutherland**	**45.38**	**137**	P	**P**	**04 47 53.0**	**+0.2**
	comp=Z,1.2nm,0.9s,baz=279,slow=9.5,SNR=7.5						
SUR	**Sutherland**	**45.38**	**137**	*e*P	**P**	**04 47 53.2**	**+0.5**
	comp=Z,27nm,0.9s						
PTGA	**Pitinga**	**45.57**	**270**	P	**P**	**04 47 54.1**	**-0.2**
	comp=Z,5.2nm,0.7s,baz=107,slow=11,SNR=7.9						
PTGA				LR	LR	05 04 46.4	
	comp=Z,109nm,18.8s,baz=98,slow=33						
PTGA	**Pitinga**	**45.57**	**270**	*e*P	**P**	**04 47 54.1**	**-0.2**
	comp=Z,7.1nm,0.8s						
WDD	**Wied Dalam**	**45.68**	**33**	*e*P	**P**	**04 47 56.2**	**+1.4**
	comp=Z,251nm,1.2s						
BOSA	**Boshof**	**46.62**	**129**	P	**P**	**04 48 02.8**	**+0.3**
	comp=Z,8.1nm,0.8s,baz=300,slow=7.8,SNR=6.3						
BOSA				LR	LR	05 04 54.7	
	comp=Z,156nm,18.7s,baz=270,slow=33						
BOSA	**Boshof**	**46.62**	**129**	*e*P	**P**	**04 48 03.5**	**+1.0**
BOSA				pmax	pmax		
	comp=Z,28nm,1.3s						
BOSA	**Boshof**	**46.62**	**129**	*e*P	**P**	**04 48 03.5**	**+1.0**
	comp=Z,28nm,1.3s						
CPUP	**Villa Florida**	**48.24**	**235**	P	**P**	**04 48 14.3**	**-0.7**
	comp=Z,5.8nm,0.7s,baz=68,slow=8.8,SNR=18						
CPUP				LR	LR	05 05 48.6	
	comp=Z,252nm,21.6s,baz=72,slow=33						
CPUP	**Villa Florida**	**48.24**	**235**	*e*P	**P**	**04 48 14.7**	**-0.3**
CPUP	**Villa Florida**	**48.24**	**235**	*e*P	**P**	**04 48 14.7**	**-0.3**
SIV	**San Ignacio**	**48.29**	**250**	P	**P**	**04 48 14.9**	**-0.6**
	comp=Z,9.4nm,1.1s,baz=100,slow=10,SNR=10						
SIV				LR	LR	05 08 02.3	
	comp=Z,342nm,18.3s,baz=86,slow=35						
GRGR	**Grenville**	**48.77**	**287**	*e*P	**P**	**04 48 18.6**	**-0.7**
	comp=Z,292nm,1.4s						
SAML	**Samuel**	**49.16**	**259**	*e*P	**P**	**04 48 21.9**	**-0.3**
	comp=Z,21nm,0.8s						
TIP	**Timpagrande**	**49.31**	**32**	*e*P	**P**	**04 48 25.1**	**+2.0**
	comp=Z,12nm,0.8s						
GDHS	**Morne Mazeau,**	**49.88**	**292**	*e*P	**P**	**04 48 26.9**	**-0.9**
	comp=Z,243nm,1.7s						
AQU	**L'Aquila**	**50.09**	**27**	*e*P	**P**	**04 48 28.1**	**-0.9**
AQU				pmax	pmax		
	comp=Z,36nm,0.9s						
AQU	**L'Aquila**	**50.09**	**27**	*e*P	**P**	**04 48 28.1**	**-0.9**
	comp=Z,36nm,0.9s						
VLC	**Villacollemand**	**50.29**	**23**	*e*P	**P**	**04 48 30.6**	**+0.1**
	comp=Z,22nm,1.4s						
SENIN	**Lac Senin/Sane**	**51.08**	**19**	*e*P	**P**	**04 48 37.0**	**+0.5**
SMRT	**St. Maarten**	**51.57**	**294**	*e*P	**P**	**04 48 39.9**	**-0.6**
	comp=Z,48nm,1.0s						
IDI	**Anoyia**	**51.60**	**41**	*e*P	**P**	**04 48 41.0**	**+0.5**
	comp=Z,30nm,1.2s						
SABA	**Saba**	**51.60**	**294**	*e*P	**P**	**04 48 39.8**	**-1.0**
	comp=Z,139nm,1.3s						
KMBO	**Kilima Mbogo**	**51.63**	**90**	P	**P**	**04 48 41.4**	**+0.1**
	comp=Z,2.0nm,0.8s,baz=329,slow=3.1,SNR=4.3						
KMBO				LR	LR	05 09 10.2	
	comp=Z,554nm,18.9s,baz=259,slow=34						
KMBO	**Kilima Mbogo**	**51.63**	**90**	*i* P	**P**	**04 48 43.7**	**+2.4**
KMBO				pmax	pmax		
	comp=Z,2.0nm,0.8s						
KMBO	**Kilima Mbogo**	**51.63**	**90**	*e*P	**P**	**04 48 42.1**	**+0.8**
	comp=Z,5.4nm,1.2s						
TUE	**Stuetta**	**51.87**	**21**	*e*P	**P**	**04 48 42.6**	**+0.1**
	comp=Z,5.4nm,0.9s						
LAST	**Lasithi**	**51.92**	**42**	*e*P	**P**	**04 48 44.1**	**+1.3**
	comp=Z,18nm,1.2s						
DYA	**Yadsworthy**	**52.22**	**8**	*e*P	**P**	**04 48 45.1**	**+0.4**
	comp=Z,88nm,1.5s						
FUORN	**Ofenpass-Fuorn**	**52.33**	**21**	*e*P	**P**	**04 48 46.2**	**+0.3**
	comp=Z,7.8nm,1.1s						
DAVA	**Damuels**	**52.76**	**21**	*i* P	**P**	**04 48 49.0**	**0.0**
	comp=Z,20nm,1.0s						
FETA	**Feichten**	**52.84**	**21**	*i* P	**P**	**04 48 49.7**	**+0.1**
	comp=Z,4.6nm,0.9s						
ABVI	**Anegada Island**	**52.91**	**295**	*e*P	**P**	**04 48 50.8**	**+0.4**
	comp=Z,119nm,0.9s						
TRI	**Trieste**	**52.93**	**24**	*e*P	**P**	**04 48 50.2**	**+0.1**
TRI				pmax	pmax		
	comp=Z,60nm,1.5s						
TRI	**Trieste**	**52.93**	**24**	*e*P	**P**	**04 48 50.2**	**+0.1**
	comp=Z,60nm,1.5s						
BFO	**Black Forest**	**53.14**	**19**	*i* P	**P**	**04 48 52.9**	**+1.3**
BFO	**Black Forest**	**53.14**	**19**	*e*P	**P**	**04 48 51.3**	**-0.4**
	comp=Z,6.9nm,1.0s						
RETA	**Reutte**	**53.24**	**21**	*i* P	**P**	**04 48 53.2**	**+0.7**
	comp=Z,6.5nm,0.9s						
ABTA	**Abfaltersbach**	**53.28**	**23**	*i* P	**P**	**04 48 54.2**	**+1.5**
	comp=Z,2.4nm,0.7s						
WTTA	**Wattenberg**	**53.37**	**22**	*i* P	**P**	**04 48 54.2**	**+0.7**
	comp=Z,16nm,1.4s						
MYKA	**Terra Mystica**	**53.63**	**24**	P	**P**	**04 48 57.7**	**+2.4**
	comp=Z,11nm,1.2s						
WLF	**Walferdange**	**53.67**	**16**	*e*P	**P**	**04 48 55.1**	**-0.3**
WLF				pmax	pmax		
	comp=Z,10.0nm,1.1s						
WLF	**Walferdange**	**53.67**	**16**	*e*P	**P**	**04 48 55.1**	**-0.3**
	comp=Z,10nm,1.1s						
STU	**Stuttgart**	**53.81**	**19**	*e*P	**P**	**04 48 56.5**	**0.0**
STU	**Stuttgart**	**53.81**	**19**	*e*P	**P**	**04 48 56.5**	**0.0**
KBA	**Koelnbreinsper**	**53.87**	**23**	*i* P	**P**	**04 48 58.9**	**+1.7**
	comp=Z,7.9nm,1.0s						
HUMP	**Col San Antoni**	**54.13**	**293**	*e*P	**P**	**04 48 59.2**	**-0.2**
	comp=Z,94nm,1.8s						
CBYP	**Canovanas**	**54.17**	**294**	*e*P	**P**	**04 48 59.1**	**-0.6**
	comp=Z,25nm,1.0s						
SOKA	**Soboth**	**54.23**	**25**	*i* P	**P**	**04 49 01.3**	**+1.5**
	comp=Z,6.9nm,1.0s						
MOA	**Molln**	**54.87**	**23**	*i* P	**P**	**04 49 05.0**	**+0.7**
	comp=Z,5.7nm,0.8s						
ARSA	**Arzberg**	**54.89**	**25**	*i* P	**P**	**04 49 06.1**	**+1.6**
	comp=Z,7.8nm,1.0s						
LPAZ	**La Paz**	**54.99**	**251**	P	**P**	**04 49 05.0**	**-1.4**
	comp=Z,5.3nm,0.8s,baz=81,slow=6.3,SNR=23						
LPAZ				LR	LR	05 11 17.0	
	comp=Z,254nm,20.1s,baz=90,slow=35						
LPAZ	**La Paz**	**54.99**	**251**	*e*P	**P**	**04 49 05.2**	**-1.2**
LPAZ				pmax	pmax		
	comp=Z,8.0nm,0.9s						
LPAZ	**La Paz**	**54.99**	**251**	*e*P	**P**	**04 49 05.2**	**-1.2**
	comp=Z,8.0nm,0.9s						
LRS	**Lares**	**55.09**	**293**	*e*P	**P**	**04 49 06.3**	**-0.1**
GRFO	**Grafenberg**	**55.27**	**20**	*e*P	**P**	**04 49 07.4**	**+0.2**
GRFO				pmax	pmax		
	comp=Z,11nm,1.1s						
GRFO	**Grafenberg**	**55.27**	**20**	*e*P	**P**	**04 49 07.4**	**+0.2**
	comp=Z,10nm,1.1s						
GEA0	**GERESS Array S**	**55.45**	**22**	*e*P	**P**	**04 49 08.3**	**-0.2**
PKSM	**Moragy**	**55.46**	**27⇑**	*i* P	**P**	**04 49 10.2**	**+1.7**
GEC2	**GERESS Array S**	**55.46**	**22**	*e*P	**P**	**04 49 09.4**	**+0.8**
GEC2				pmax	pmax		
	comp=Z,20nm,1.2s						
GEC2	**GERESS Array S**	**55.46**	**22**	*e*P	**P**	**04 49 09.4**	**+0.8**
	comp=Z,20nm,1.2s						
GERES	**GERESS Array B**	**55.46**	**22**	P	**P**	**04 49 08.9**	**+0.3**
	comp=Z,10nm,1.1s,baz=193,slow=5.5,SNR=30						
CONA	**Conrad Observa**	**55.57**	**24**	*i* P	**P**	**04 49 10.1**	**+0.7**
	comp=Z,12nm,1.2s						
KHC	**Kasperske Hory**	**55.65**	**22**	*e*P	**P**	**04 49 10.7**	**+0.8**
KHC				*e*S	**S**	**04 57 01.2**	**+5.2**
KHC				AMS	AMS	05 13 30.0	
	comp=Z,400nm,20.1s						
KHC	**Kasperske Hory**	**55.65**	**22**	*e*P	**P**	**04 49 10.7**	**+0.8**
KHC				*e*S	**S**	**04 57 01.2**	**+5.2**
KHC				MLR	MLR		
	comp=Z,400nm,20.1s						
KHC	**Kasperske Hory**	**55.65**	**22**	*e*P	**P**	**04 49 10.0**	**+0.1**
	comp=Z,3.9nm,1.3s						
NKC	**Novy Kostel**	**56.16**	**20**	*e*P	**P**	**04 49 15.6**	**+2.1**
NKC				AMS	AMS	05 17 40.0	
	comp=Z,300nm,13.9s						
NKC	**Novy Kostel**	**56.16**	**20**	*e*P	**P**	**04 49 15.6**	**+2.1**
NKC				MLR	MLR		
	comp=Z,300nm,13.9s						
BZS	**Buzias**	**56.44**	**30⇓**	*i* P	**P**	**04 49 18.8**	**+3.2**
TREC	**Trest**	**56.51**	**23**	AMS	AMS	05 14 20.0	
	comp=Z,300nm,17.1s						
PRU	**Pruhonice**	**56.71**	**22**	*e*P	**P**	**04 49 18.0**	**+0.6**
PRU				*e*S	**S**	**04 57 02.7**	**-7.3**
PRU				AMS	AMS	05 14 00.0	
	comp=Z,400nm,20.1s						
PRU	**Pruhonice**	**56.71**	**22**	*e*P	**P**	**04 49 18.0**	**+0.6**
PRU				*e*S	**S**	**04 57 02.7**	**-7.3**
PRU				MLR	MLR		
	comp=Z,400nm,20.1s						
GOPC	**GO Pecny, Ondr**	**56.74**	**22**	AMS	AMS	05 14 00.0	
	comp=Z,300nm,21.8s						
SIRR	**Siria**	**56.93**	**29⇑**	*i* P	**P**	**04 49 22.9**	**+3.9**
VRAC	**Vranov**	**56.96**	**24⇑**	*i* P	**P**	**04 49 20.0**	**+0.8**
LVC	**Limon Verde**	**57.03**	**244**	LR	LR	05 11 43.5	
	comp=Z,566nm,20.2s,baz=82,slow=34						
LVC	**Limon Verde**	**57.03**	**244**	*e*P	**P**	**04 49 19.0**	**-1.6**
	comp=Z,41nm,1.8s						
PVCC	**Panska Ves**	**57.16**	**22**	*e*P	**P**	**04 49 21.3**	**+0.7**
PVCC				AMS	AMS	05 14 00.0	
	comp=Z,300nm,13.6s						
PVCC	**Panska Ves**	**57.16**	**22**	*e*P	**P**	**04 49 21.3**	**+0.7**
PVCC				MLR	MLR		
	comp=Z,300nm,13.6s						
BRG	**Berggiesshubel**	**57.22**	**21**	*e*P	**P**	**04 49 24.4**	**+3.4**
	comp=Z,10.0nm,1.2s						
BRG				*i*		04 49 31.8	
	comp=Z,8.6nm,1.1s						
BRG	**Berggiesshubel**	**57.22**	**21**	*e*P	**P**	**04 49 24.4**	**+3.4**
BRG				*i*		04 49 31.8	
BRG				pmax	pmax		
	comp=Z,10.0nm,1.2s						
CLL	**Collm**	**57.25**	**20**	*e*P	**P**	**04 49 22.0**	**+0.8**
	comp=Z,10.0nm,1.5s						
CLL				*e*		04 49 31.0	
CLL				*e*S	**S**	**04 57 24.0**	**+6.9**
CLL				LmV		05 14 00.0	
	comp=Z,200nm,19.3s						
CLL	**Collm**	**57.25**	**20**	*e*P	**P**	**04 49 22.0**	**+0.8**
CLL				*e*		04 49 31.0	
CLL				*e*S	**S**	**04 57 24.0**	**+6.9**
CLL				pmax	pmax		
	comp=Z,10.0nm,1.5s						
CLL				MLR	MLR		
	comp=Z,200nm,19.3s						
CLL	**Collm**	**57.25**	**20**	*e*P	**P**	**04 49 21.3**	**+0.1**
	comp=Z,7.2nm,1.1s						

BURAR	Bucovina Array	59.62	30	⇓	*i*P		P	04 49 39.9 +1.9
TESR	Tescani	59.62	32	⇑	*i*P		P	04 49 41.2 +3.3
BUR08	Bucovina Ar. S	59.63	30		*e*P		P	04 49 39.9 +1.9
GRTK	Grand Turk	59.81	296		*e*P		P	04 49 39.2 -0.3
	comp=Z,220nm,1.4s							
KWP	Kalwaria Pacla	59.82	27		*e*P		P	04 49 41.7 +2.5
KWP	Kalwaria Pacla	59.82	27		*e*P		P	04 49 41.7 +2.5
BRTR	Keskin Array B	59.84	42		P		P	04 49 40.5 +0.8
	comp=Z,6.1nm,1.0s,baz=235,slow=6.6,SNR=18							
BRTR	Keskin Array B	59.84	42		*c*e*P*		P	04 49 44.2 +4.5
BRTR					pmax	pmax		
	comp=Z,6.0nm,1.0s							
BR131	Keskin Array S	59.84	42		*e*P		P	04 49 40.5 +0.8
ROSC	El Rosal	60.17	276		P		P	04 49 43.5 +0.8
	comp=Z,8.4nm,0.7s,baz=78,slow=9.0,SNR=6.7							
ROSC					LR	LR		05 13 46.7
	comp=Z,151nm,19.6s,baz=160,slow=34							
ROSC	El Rosal	60.17	276		*e*P		P	04 49 42.3 -0.4
	comp=Z,7.4nm,0.8s							
LCO	Las Campanas	60.28	237		*e*P		P	04 49 42.1 -0.9
	comp=Z,9.7nm,0.7s							
LVV	L'vov	60.56	28		*e*P		P	04 49 48.1 +3.8
LVV					*e*			04 52 02.1
LVV					*e*PPP		PPP	04 53 30.3
LVV					*e*S		S	04 57 58.1 -2.1
LVV					*e*SS		SS	05 01 54.3 -4.3
NORC	Norcasia	60.77	277		*e*P		P	04 49 44.7 -1.7
GUYC	Guyana, Colomb	61.26	277		*e*P		P	04 49 48.9 -1.4
SORM	Soroca	61.55	31	⇑	*i*P		P	04 49 52.8 +1.8
MOTC	Monteria, Cord	61.85	281		*e*P		P	04 49 53.4 -0.3
EFI	East Falkland	62.19	209	⇑	*e*P		P	04 49 55.2 0.0
KIEV	Kiev	63.62	29	*c*	*i*P		P	04 50 06.8 +2.1
KIEV					pmax	pmax		
	comp=Z,13nm,1.2s							
KIEV					MLR	MLR		
	comp=Z,196nm,19.0s							
KIEV	Kiev	63.62	29		*e*P		P	04 50 05.4 +0.7
	comp=Z,15nm,1.2s							
AKASG	Malin Array Be	63.63	29		P		P	04 50 03.7 -1.1
	comp=Z,5.4nm,1.0s,baz=229,slow=6.2,SNR=17							
AKASG	Malin Array Be	63.63	29	*c*	*e*P		P	04 50 07.0 +2.2
AKASG					pmax	pmax		
	comp=Z,5.0nm,1.0s							
OTAV	Otavalo	64.07	271		*e*P		P	04 50 08.7 -0.3
	comp=Z,2.1nm,0.6s							
HFS	Hagfors	64.95	15		P		P	04 50 12.9 -0.4
	comp=Z,3.6nm,0.8s,baz=186,slow=6.0,SNR=7.3							
HFS					LR	LR		05 21 42.8
	comp=Z,216nm,18.1s,baz=212,slow=39							
NB2	NORSAR Subarra	65.13	13		P		P	04 50 15.2 +0.7
	comp=Z,5.7nm,1.1s,baz=212,slow=6.5							
NOA	NORSAR Array B	65.13	13		P		P	04 50 14.6 0.0
	comp=Z,2.2nm,0.9s,baz=207,slow=6.6,SNR=4.0							
NC204	NORSAR Array S	65.23	13		*e*P		P	04 50 19.3 +4.1
BCIP	Isla Barro Col	65.99	281		*e*P		P	04 50 20.0 -0.9
	comp=Z,9.9nm,0.6s							
NEY	Neytrino	67.52	42	⇓	*e*P		P	04 50 34.3 +3.9
NEY					pmax	pmax		
	comp=Z,2.0nm,1.2s							
GNI	Garni	67.68	45	⇓	*e*P		P	04 50 35.7 +4.2
GNI					pmax	pmax		
	comp=Z,52nm,1.7s							
KIV	Kislovodsk	67.79	41	⇓	*e*P		P	04 50 35.6 +3.6
KIV					pmax	pmax		
	comp=Z,20nm,1.7s							
KIV					MLR	MLR		
	comp=Z,79nm,20.0s							
KBZ	Khabaz	67.83	41		P		P	04 50 31.3 -0.8
	comp=Z,8.1nm,1.0s,baz=234,slow=0.6,SNR=15							
VSR	Storozhevoye	69.06	33		*e*P		P	04 50 41.3 +1.6
VSR					pmax	pmax		
	comp=Z,10.0nm,1.4s							
VNA1	Neumayer--Stat	69.45	178		P		P	04 50 42.6 +0.9
FINES	FINESS Array B	69.69	19		P		P	04 50 42.9 -0.4
	comp=Z,1.5nm,0.4s,baz=203,slow=5.1,SNR=17							
FINES					LR	LR		05 21 53.0
	comp=Z,297nm,20.7s,baz=193,slow=36							
FIA1	FINESS Array S	69.69	19		*e*P		P	04 50 43.1 -0.1
VNA2	Neumayer--Watz	69.76	178		P		P	04 50 44.2 +0.5
	baz=350,slow=7.4							
OBN	Obninsk	69.83	28		*e*P		P	04 50 50.6 +6.3
OBN					*e*			04 51 08.8
OBN					pmax	pmax		
	comp=Z,5.0nm,0.9s							
VNA3	Neumayer Olymp	70.00	178		P		P	04 50 45.1 0.0
SCHQ	Schefferville	70.39	331		P		P	04 50 47.9 +0.1
	comp=Z,1.5nm,0.6s,baz=76,slow=7.7,SNR=4.0							
SNAA	Sanae	70.75	176		P		P	04 50 50.0 +0.3
SNAA	Sanae	70.75	176	⇑	*i*P		P	04 50 49.3 -0.5
SNAA	Sanae	70.75	176		*e*P		P	04 50 49.8 0.0
	comp=Z,670nm,0.8s							
SSPA	Standing Stone	70.97	314		*e*P		P	04 50 53.3 +1.6
	comp=Z,43nm,1.9s							
JTS	JuntasAbangare	71.11	281		*e*P		P	04 50 52.5 -0.5
JTS					pmax	pmax		
	comp=Z,7.0nm,1.0s							
JTS	JuntasAbangare	71.11	281		*e*P		P	04 50 52.5 -0.5
	comp=Z,6.6nm,1.0s							
M54A	Oil Creek Stat	72.53	314		P		P	04 51 01.1 +0.1
	baz=108							
KLMR	Klimovskoe	74.33	24		*e*P		P	04 51 12.3 +1.2
KLMR					*e*			04 53 58.2
KLMR					pmax	pmax		
	comp=Z,14nm,1.4s							
SUMG	Summit	75.22	353		*i*P		P	04 51 17.1 +0.5
	comp=Z,4.4nm,0.8s							
SUMG	Summit	75.22	353		*e*P		P	04 51 17.1 +0.5
SUMG					pmax	pmax		
	comp=Z,4.0nm,0.8s							
SUMG	Summit	75.22	353		*e*P		P	04 51 17.4 +0.7
	comp=Z,6.2nm,0.9s							
ARCES	ARCESS Array B	75.51	13		P		P	04 51 17.6 -0.3
	comp=Z,2.2nm,0.8s,baz=235,slow=4.3,SNR=13							
ARCES					LR	LR		05 24 52.9
	comp=Z,192nm,21.7s,baz=228,slow=36							
SWET	Sewanee	75.69	307		*e*P		P	04 51 20.1 +0.5
LRAL	Lakeview Retre	76.13	304		*e*P		P	04 51 21.8 -0.3
	comp=Z,4.4nm,0.6s							
Y47A	UCPARC, Winfie	76.99	305		P		P	04 51 27.1 +0.1
	baz=100							
GEYT	Alibeck	77.00	51		LR		LR	05 26 48.5
	comp=Z,187nm,21.5s,baz=150,slow=37							
Z47A	Carrollton	77.05	304		P		P	04 51 27.3 0.0
	baz=100							
WVT	Waverly	77.38	307		*e*P		P	04 51 29.0 -0.2
WVT	Waverly	77.38	307		*e*P		P	04 51 29.0 -0.2
Z46A	Louisville	77.77	304		P		P	04 51 31.7 +0.3
	baz=100							
146A	Union	77.77	304		P		P	04 51 32.3 +0.9
	baz=100							
DAG	Danmarks Havn	77.92	359		*i*P		P	04 51 27.5 -3.8
	comp=Z,6.8nm,1.2s							
DAG	Danmarks Havn	77.92	359		*e*P		P	04 51 27.5 -3.8
DAG					pmax	pmax		
	comp=Z,11nm,1.2s							
SIUC	Southern Illin	78.77	309		*e*P		P	04 51 39.4 +2.6
AKTO	Aktyubinsk	79.79	38		P		P	04 51 42.2 0.0
	comp=Z,0.7nm,0.4s,baz=234,slow=5.9,SNR=3.4							
ABKAR	Akbulak array	80.73	40		*e*P		P	04 51 46.9 -0.3
W41B	Gary Mavity, V	80.78	306		P		P	04 51 46.7 -1.1
	baz=98							
X40A	Basin Creek Fa	81.16	305		P		P	04 51 49.7 -0.1
	baz=98							
Q40A	Laux Farm, Aux	81.19	310		P		P	04 51 49.5 -0.5
	baz=99							
S40A	Lebanon	81.32	308		P		P	04 51 50.6 0.0
	baz=98							
ARU	Arti	81.63	32	*c*	*i*P		P	04 51 53.8 +1.9
ARU								04 54 55.8
ARU					S		S	05 02 07.6 +3.4
ARU					SS		SS	05 07 21.2 -0.2
ARU					pmax	pmax		
	comp=Z,11nm,1.7s							
ARU					MLR	MLR		
	comp=Z,163nm,19.0s							
ARU	Arti	81.63	32		*e*P		P	04 51 53.1 +1.2
	comp=Z,2.6nm,0.5s							
R39A	Chumby, Stover	81.84	309		P		P	04 51 53.4 0.0
	baz=98							
T39A	Clever	81.93	307		P		P	04 51 53.2 -0.8
	baz=98							
S39A	Bolivar	81.98	308		P		P	04 51 53.7 -0.4
	baz=98							
X39A	Fountain Ranch	82.21	305		P		P	04 51 55.5 +0.1
	baz=97							
Q38A	Cooks Store, C	82.38	309		P		P	04 51 55.9 -0.3
	baz=98							
P38A	Dawn	82.40	310		P		P	04 51 55.8 -0.5
	baz=98							
S38A	Stockton	82.43	308		P		P	04 51 55.5 -1.0
	baz=97							
R38A	Fenwick Farm,	82.50	309		P		P	04 51 56.1 -0.7
	baz=98							
Y38A	Idabel	82.65	304		P		P	04 51 57.7 0.0
	baz=96							
T38A	Diamond	82.66	307		P		P	04 51 57.2 -0.5
	baz=97							
X38A	Whitesboro	82.82	305		P		P	04 51 58.8 +0.2
	baz=96							
T37A	Cheneyville 18	83.17	307		P		P	04 51 59.6 -0.8
	baz=97							
V37A	Hulbert	83.21	306		P		P	04 52 00.5 0.0
	baz=96							
R37A	Teagarden Farm	83.24	309		P		P	04 52 00.0 -0.7
	baz=97							
W36A	Wetumka	84.01	305		P		P	04 52 04.9 +0.2
	baz=96							
MAW	Mawson	84.04	158		P		P	04 52 05.4 +1.3
	comp=Z,0.9nm,0.6s,baz=233,slow=5.1,SNR=4.5							
O35A	Humboldt	84.30	310		P		P	04 52 05.8 -0.3
	baz=96							
T35A	Sooner Cattle	84.41	307		P		P	04 52 06.8 0.0
	baz=96							
W35A	Tecumseh	84.54	305		P		P	04 52 07.4 0.0
	baz=95							
Z35A	Perchaven, San	84.69	303		P		P	04 52 06.7 -1.5
	baz=95							
KSU1	Kansas State U	84.71	309		*e*P		P	04 52 10.9 +2.7
O34A	Beatrice	84.89	310		P		P	04 52 09.0 -0.1
	baz=96							
A33A	Warroad	84.98	319		P		P	04 52 09.2 -0.2
	baz=98							
B33A	Robert and Kas	85.03	318		P		P	04 52 09.3 -0.3
	baz=97							
C33A	Trail	85.09	318		P		P	04 52 09.8 -0.1
	baz=97							
U34A	Anderson Ranch	85.19	307		P		P	04 52 10.9 +0.2
	baz=95							
U34A	Anderson Ranch	85.19	307		*e*P		P	04 52 11.1 +0.5
ECSD	EROS Data Cent	85.20	314		P		P	04 52 10.2 -0.4
	baz=96							
ECSD	EROS Data Cent	85.20	314		*e*P		P	04 52 09.3 -1.3
	comp=Z,3.7nm,0.8s							
AGMN	Agassiz Nation	85.21	318		P		P	04 52 10.5 0.0
	baz=97							
AGMN	Agassiz Nation	85.21	318		*e*P		P	04 52 10.7 +0.2
	comp=Z,6.1nm,0.7s							
Z34A	Collier Ranch,	85.25	303		P		P	04 52 10.7 -0.3
	baz=95							
X34A	Smith Ranch, M	85.28	305		P		P	04 52 11.4 +0.3
	baz=95							
134A	White-Moore Ra	85.32	303		P		P	04 52 11.4 0.0
	baz=94							
234A	Clairette	85.33	302		P		P	04 52 11.2 -0.3
	baz=94							
434A	Burnet	85.35	301		P		P	04 52 11.3 -0.3
	baz=94							
334A	Lometa	85.36	301		P		P	04 52 11.7 +0.1
	baz=94							
ULM	Lac du Bonnet	85.47	320		LR		LR	05 26 41.0
	comp=Z,59nm,18.2s,baz=136,slow=33							
534A	Blanco	85.47	300		P		P	04 52 12.4 +0.1
	baz=94							
U33A	Lingo Farm, Me	85.65	306		P		P	04 52 13.0 0.0
	baz=95							
FCC	Fort Churchill	85.68	329		*e*P		P	04 52 12.6 +0.1
FCC					pmax	pmax		
	comp=Z,3.0nm,0.9s							
FCC	Fort Churchill	85.68	329		*e*P		P	04 52 12.6 +0.1
	comp=Z,3.3nm,0.9s							
A32A	Rocking H Ranc	85.70	319		P		P	04 52 12.8 -0.1
	baz=97							
V33A	Lossen Ranch,	85.74	306		P		P	04 52 13.8 +0.4
	baz=95							
X33A	Lawton	85.82	305		P		P	04 52 14.1 +0.3
	baz=94							
233A	Rising Star	85.97	302		P		P	04 52 14.9 +0.2
	baz=94							
333A	Richland Sprin	86.00	301		P		P	04 52 14.5 -0.3
	baz=94							
633A	Saathoff Ranch	86.04	299		P		P	04 52 15.4 +0.3
	baz=94							
433A	Art	86.05	301		P		P	04 52 15.3 +0.2
	baz=94							
733A	Divot King Ran	86.10	299		P		P	04 52 15.7 +0.4
	baz=94							
V32A	Arapaho	86.35	306		P		P	04 52 17.2 +0.8
	baz=94							
S32A	Newby Ranch, P	86.41	308		P		P	04 52 17.0 +0.2
	baz=94							
ABTX	Abilene, Hawle	86.64	303		*e*P		P	04 52 17.9 -0.1
	comp=Z,15nm,1.0s							
JCT	Junction City	86.65	300		P		P	04 52 18.2 +0.1
	baz=93							
JCT	Junction City	86.65	300		*e*P		P	04 52 18.1 +0.1
JCT					pmax	pmax		
	comp=Z,16nm,0.9s							
JCT	Junction City	86.65	300		*e*P		P	04 52 18.1 +0.1
	comp=Z,16nm,0.9s							
832A	Faith Ranch, C	86.67	298		P		P	04 52 18.4 +0.2
	baz=93							
K30A	Basset	87.29	313		P		P	04 52 21.5 +0.6
	baz=94							
BRVK	Borovoye	87.74	37		P		P	04 52 27.7 +4.9
BRVK					pmax	pmax		
	comp=Z,4.0nm,1.3s							
BVAR	Borovoye Array	87.80	37		P		P	04 52 22.8 -0.3
	comp=Z,1.0nm,0.8s,baz=258,slow=7.2,SNR=2.9							
QSPA	South Pole Qui	88.87	180		*e*P		P	04 52 28.5 +0.5
	comp=Z,18nm,0.8s							
I27A	Quinn	89.14	314		P		P	04 52 30.4 +0.6
	baz=92							
MSTX	Muleshoe	89.32	304		P		P	04 52 31.0 +0.2
	baz=92							
MSTX	Muleshoe	89.32	304		*e*P		P	04 52 28.4 -2.5
	comp=Z,7.1nm,0.8s							
EKS2	Erkin-Say	89.46	48		*e*P		P	04 52 31.3 0.0
EKS2					pmax	pmax		
	comp=Z,1.0nm,0.4s							
EKS2	Erkin-Say	89.46	48		*e*P		P	04 52 31.3 0.0
	comp=Z,1.3nm,0.4s							
TXAR	Lajitas Array	89.95	299		P		P	04 52 33.8 -0.1
	comp=Z,0.8nm,0.7s,baz=117,slow=6.7,SNR=12							
TXAR					LR	LR		05 29 23.0
	comp=Z,43nm,21.0s,baz=0.0,slow=33							
TX31	Lajitas Ar. Si	89.95	299		*e*P		P	04 52 34.4 +0.5
AAK	Ala-Archa	89.98	48	⇓	*e*P		P	04 52 36.7 +2.9
AAK					pmax	pmax		
	comp=Z,8.0nm,1.4s							
AAK	Ala-Archa	89.98	48		*e*P		P	04 52 34.9 +1.0
	comp=Z,1.6nm,0.5s							
TKM2	Tokmak 2	90.80	47		*e*P		P	04 52 38.0 +0.3
TKM2					pmax	pmax		
	comp=Z,2.0nm,0.4s							
TKM2	Tokmak 2	90.80	47		*e*P		P	04 52 38.0 +0.3
	comp=Z,1.8nm,0.4s							
KSH	Kashi	91.04	51		*e*P		P	04 52 38.4 -0.4
KSH					*e*pP		sP	04 52 43.6 +0.3
KSH					*e*PP		PP	04 56 16.2 +1.0
KSH	Kashi	91.04	51		SKS		SKSac	05 03 07.6 -3.8
KSH	Kashi	91.04	51		S		S	05 03 31.7 -5.2
ANMO	Albuquerque	92.38	305	*c*	*e*P		P	04 52 45.2 0.0
ANMO					pmax	pmax		
	comp=Z,2.0nm,1.0s							
PDAR	Pinedale Array	94.61	313		P		P	04 52 54.8 -0.6
	comp=Z,0.4nm,0.7s,baz=101,slow=4.7,SNR=4.2							
PDAR					LR	LR		05 30 34.7
	comp=Z,49nm,20.9s,baz=96,slow=32							
NRIK	Noril'sk	95.33	20		LR		LR	05 40 23.7
	comp=Z,53nm,18.4s,baz=292,slow=38							
MKAR	Makanchi Array	95.45	43		P		P	04 52 59.1 +0.2
	comp=Z,0.4nm,0.8s,baz=349,slow=1.5,SNR=2.9							
MKAR					LR	LR		05 41 20.7
	comp=Z,100nm,19.3s,baz=292,slow=39							
YKA	Yellowknife Ar	95.79	333		P		P	04 52 59.4 -0.5
	comp=Z,0.9nm,0.9s,baz=81,slow=5.0,SNR=16							
ZALV	Zalesovo Beam	96.40	36		LR		LR	05 40 54.9
	comp=Z,100nm,18.7s,baz=253,slow=38							
WMQ	Urumqi	99.55	46		*e*P		Pdif	04 53 18.6 +1.2
BILL	Bilibino	113.29	360		*i*PKIKP		PKiKP	04 58 13.8 +2.5
BILL					*e*PPP		PPP	05 01 28.6
BILL					pmax	pmax		
	comp=Z,1.0nm,0.9s							
CD2	Chengdu	114.58	56		PKP		PKPdf	04 58 13.9 -1.0
GYA	Guiyang	118.14	61		*e*Pdif		Pdif	04 54 40.0 -0.5
GYA					PKP		PKPdf	04 58 21.6 -0.4
GYA					PP		PP	04 59 40.4 +3.5
BJI	Beijing	120.83	43		PKP		PKPdf	04 58 23.4 -3.2
BJI					PP		PP	04 59 54.4 -0.2
BJI	Beijing	120.83	43		SS		SS	05 16 25.2 -0.6
YSS	Yuzh-Sakhalins	130.26	20		*e*PKIKP		PKPdf	04 58 49.5 +5.1
YSS					pmax	pmax		
	comp=Z,56nm,2.5s							
ASAR	Alice Springs	140.49	131		PKhKP		PKPpre	04 58 58.0
	comp=Z,0.8nm,0.7s,baz=225,slow=2.3,SNR=11							
WRA	Warramunga Arr	142.83	126		PKP		PKPdf	04 59 07.3 -1.2
	comp=Z,0.9nm,0.6s,baz=242,slow=2.5,SNR=6.1							
WRAB	Tennant Creek	142.84	126		*i* PKIKP		PKPdf	04 59 14.1 +5.6

ISCJB ***01*** *04:40:18.7±0.6, 36°.99N±0°.03×140°.78E±0°.06, h16km±6km, mb3.5/2, Error ellipse: s-maj=8.6km s-min=5.2km az=4.4*
IDC ***01*** *04:40:18.8±2.6, 36°.84N×140°.73E, h0km, mb3.4/2, mb1 3.6/4, mb1mx3.3/43, mbtmp3.5/4, ML3.2/2, Error ellipse: s-maj=40.8km s-min=28.0km az=40.0*
JMA ***01*** *04:40:19.4, 37°.01N×140°.65E, h8km±1km, M3.5*
Broadband fault plane solution: P waves. NP1: ϕ_s222.00000°, δ79.00000°, λ-109.00000°. NP2: ϕ_s103.00000°, δ21.00000°, λ-30.00000°. Principal axes: T Plg32.0000°, Azm327.0000°; N Plg18.0000°, Azm225.0000°; P Plg52.0000°, Azm110.0000°;
JMA Felt I J1.

ISC 01 04:40:19.5±1.0, 37°.00N±0°.03×140°.66E±0°.04, h9km±8km, n11, σ0ˢ52/20, 6C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.15	46	⇑P	Pg	04 40 22.8	0.0
ONAJ				S	Sg	04 40 25.2	0.0
JHO	Hitachi	0.39	191	⇑P	Pg	04 40 27.2	0.0
JHO				S	Sg	04 40 32.6	+0.3
JFK	Kawauchi	0.41	25	⇑P	Pg	04 40 27.2	-0.3
JFK				S	Sg	04 40 32.8	0.0
JFT	Otama	0.58	334	⇑P	Pg	04 40 30.7	0.0
JFT				S	Sg	04 40 38.4	0.0
JYT	Yasato	0.85	206	⇑P	Pg	04 40 35.5	-0.4
JYT				S	Sg	04 40 46.8	-0.2
JFY	Yanaizu	0.87	298	⇑P	Pg	04 40 35.8	-0.3
JFY				S	Sg	04 40 46.9	-0.5
MJAR	Matsushiro Arr	2.02	258	Pn	Pn	04 40 54.6	+0.9
	7.1nm,0.3s,baz=81,slow=16,SNR=34						
MJAR				Sn	Sb	04 41 21.1	-0.5
	7.9nm,0.3s,baz=85,slow=26,SNR=10						
MAT	Matsushiro	2.02	258	P	Pn	04 40 54.9	+1.2
MAT				S	Sb	04 41 22.1	+0.5
JHJ	Hachijo jima 2	3.94	191	Pn	Pn	04 41 20.1	+0.1
	5.3nm,0.3s,baz=74,slow=16,SNR=2.0						
JHJ				Sn	Sn	04 42 06.8	+0.5
	4.9nm,0.3s,baz=90,slow=20,SNR=2.9						
WRA	Warramunga Arr	56.95	187	P	P	04 50 04.5	-0.6
	0.3nm,0.5s,baz=3.9,slow=7.4,SNR=8.7						
ASAR	Alice Springs	60.67	187	P	P	04 50 30.4	-0.6
	0.2nm,0.7s,baz=356,slow=9.2,SNR=3.5						

MDD ***01*** *04:50:33.3±0.6, 32°.50N×5°.07W, h2km±5km, mb4.3/9, Error ellipse: s-maj=5.3km s-min=4.1km az=85.0, PRXIMO*
INMG ***01*** *04:50:34.6±1.5, 32°.57N×5°.15W, h10km, ML3.0, Error ellipse: s-maj=5.4km s-min=4.3km az=81.0*
CNRM ***01*** *04:50:34.5, 32°.56N×4°.91W, h30km, MD3.5*
CSEM ***01*** *04:50:36.3±0.3, 32°.67N×5°.33W, h15km, MD3.5, Error ellipse: s-maj=6.6km s-min=3.7km az=127.0*
IGIL ***01*** *04:50:36.1, 32°.50N×5°.09W, h24km, ML3.0*

ISC 01 04:50:35.6±1.5, 32°.72N±0°.06×5°.39W±0°.05, h6km±11km, n123, σ1ˢ32/199, 1C-2D, Morocco

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CZD	Col de Zad	0.43	43	P	Pg	04 50 43.0	-1.0
CZD				S	Sg	04 50 50.0	+0.4
CZD	Col de Zad	0.43	43	P	Pg	04 50 43.0	-1.0
CZD				*i* S	Sg	04 50 50.0	+0.4
KIB	El Ksiba	0.57	255	P	Pn	04 50 49.0	-1.3
KIB				S	Sn	04 51 02.0	+2.0
KIB	El Ksiba	0.57	255	*i* P	Pn	04 50 49.0	-1.3
KIB				S	Sn	04 51 02.0	+2.0
MIF	Mishlifen	0.70	11	P	Pb	04 50 50.5	+0.2
MIF				S	Sb	04 51 02.0	+1.7
MIF	Mishlifen	0.70	11	*i* P	Pb	04 50 50.5	+0.2
MIF				*i* S	Sb	04 51 02.0	+1.7
TZC	Tazercounte	1.09	239	P	Pn	04 50 56.0	-1.6
TZC				S	Sn	04 51 14.0	+0.9
TZC	Tazercounte	1.09	239	*i* P	Pn	04 50 56.0	-1.6
TZC				*i* S	Sn	04 51 14.0	+0.9
ZFT	Errachidia	1.11	128	P	Pg	04 50 47.5	-9.5
ZFT				S	Sg	04 50 57.0	-14
ZFT	Errachidia	1.11	128	P	Pg	04 50 47.5	-9.5
ZFT				S	Sg	04 50 57.0	-14
OUK	Oukaimeden	2.59	235	P	Pn	04 51 16.0	-2.3
OUK				S	Sn	04 51 49.0	-1.3
OUK	Oukaimeden	2.59	235	*i* P	Pn	04 51 16.0	-2.3
OUK				*i* S	Sn	04 51 49.0	-1.3
CIA	Chichaoua	3.08	249	P	Pn	04 51 25.0	+0.2
CIA	Chichaoua	3.08	249	*i* P	Pn	04 51 25.0	+0.2
ECEU	Ceuta	3.17	0	P	Pn	04 51 27.6	+1.6
	0.6nm,0.2s,SNR=4.0						
ECEU	Ceuta	3.17	0	P	Pn	04 51 27.6	+1.6
	0.6nm,0.2s,SNR=4.0						
EMIJ	Mijas	3.87	7	P	Pn	04 51 34.8	-0.8
	1.0nm,0.2s,SNR=13						
EMIJ				S	Sn	04 52 20.2	-1.2
	3.7nm,0.2s,SNR=7.2						
EMIJ	Mijas	3.87	7	P	Pn	04 51 34.8	-0.8
	1.0nm,0.2s,SNR=13						
EMIJ				S	Sn	04 52 20.2	-1.2
	3.7nm,0.2s,SNR=7.2						
ESPR	Espera	4.16	355	P	Pn	04 51 40.4	+0.9
	0.

PVAQ	Vaqueiros	5.05	338	P	Pn	04 51 52.4 +0.6
PVAQ				S	Sn	04 52 51.0 +0.6
	14nm,0.2s					
EGRO	El Granado	5.10	341	P	Pn	04 51 53.4 +0.9
	5.7nm,0.1s,SNR=34					
EGRO				S	Sn	04 52 51.8 +0.1
	17nm,0.2s,SNR=15					
EGRO	El Granado	5.10	341	P	Pn	04 51 53.4 +0.9
	5.7nm,0.1s,SNR=34					
EGRO				S	Sn	04 52 51.8 +0.1
	17nm,0.2s,SNR=15					
GORA	Gorafe	5.12	21	P	Pn	04 51 53.8 +0.9
	1.0nm,0.2s,SNR=7.9					
GORA	Gorafe	5.12	21	P	Pn	04 51 53.8 +0.9
	1.0nm,0.2s,SNR=7.9					
EMIN	Mina Concepcio	5.14	349	P	Pn	04 51 53.3 +0.2
	2.9nm,0.1s,SNR=28					
EMIN				S	Sn	04 52 52.3 -0.5
	2.0nm,0.2s,SNR=36					
EMIN	Mina Concepcio	5.14	349	P	Pn	04 51 53.3 +0.2
	2.9nm,0.1s,SNR=28					
EMIN				S	Sn	04 52 52.3 -0.5
	2.0nm,0.2s,SNR=36					
PFVI	Vila Bisbo	5.23	328	ePn	Pn	04 51 55.5 +1.2
PFVI				A	A	04 53 07.5
	12nm,0.7s					
PFVI	Vila Bisbo	5.23	328	P	Pn	04 51 55.5 +1.2
	4.4nm,0.3s,SNR=15					
PFVI				S	Sn	04 52 56.7 +1.8
	4.3nm,0.1s,SNR=7.9					
PFVI	Vila Bisbo	5.23	328	P	Pn	04 51 55.5 +1.2
	4.4nm,0.3s,SNR=15					
PFVI				S	Sn	04 52 56.7 +1.8
	4.3nm,0.1s,SNR=7.9					
MORF	Marmelete	5.30	331	eP	Pn	04 51 56.2 +0.9
MORF				eS	Sn	04 52 54.4 -2.3
MORF				AML	AML	04 53 01.0
	comp=N,20nm,0.3s					
MORF	Marmelete	5.30	331	ePn	Pn	04 51 56.2 +0.9
MORF				A	A	04 53 03.8
	comp=N,20nm,0.2s					
MORF	Marmelete	5.30	331	P	Pn	04 51 56.2 +0.9
MORF	Marmelete	5.30	331	P	Pn	04 51 56.2 +0.9
ECAB	El Cabril	5.34	360	P	Pn	04 51 55.8 -0.1
	comp=N,1.1nm,0.3s,SNR=20					
ECAB				S	Sn	04 52 56.2 -1.5
	comp=N,3.0nm,0.2s					
ECAB	El Cabril	5.34	360	P	Pn	04 51 55.8 -0.1
	comp=N,1.1nm,0.3s,SNR=20					
ECAB				S	Sn	04 52 56.2 -1.5
	comp=N,3.0nm,0.2s					
PCVE	Castro Verde	5.36	337	ePn	Pn	04 51 57.0 +0.9
PCVE				eSn	Sn	04 52 58.3 +0.2
PCVE				A	A	04 53 05.8
	comp=N,12nm,0.3s					
PCVE	Castro Verde	5.36	337	P	Pn	04 51 57.0 +0.9
PCVE				S	Sn	04 52 58.3 +0.2
	comp=N,12nm,0.3s					
PCVE	Castro Verde	5.36	337	P	Pn	04 51 57.0 +0.9
PCVE				S	Sn	04 52 58.3 +0.2
	comp=N,12nm,0.3s					
EQES	Quesada	5.41	20	P	Pn	04 51 59.2 +2.3
	comp=N,0.3nm,0.1s,SNR=7.9					
EQES				S	Sn	04 53 03.9 +4.3
	comp=N,1.7nm,0.3s					
EQES	Quesada	5.41	20	P	Pn	04 51 59.2 +2.3
	comp=N,0.3nm,0.1s,SNR=7.9					
EQES				S	Sn	04 53 03.9 +4.3
	comp=N,1.7nm,0.3s					
EADA	Adamuz	5.47	7	P	Pn	04 51 57.5 -0.2
	comp=N,1.6nm,0.3s,SNR=11					
EADA				S	Sn	04 53 00.7 -0.3
	comp=N,2.8nm,0.1s					
EADA	Adamuz	5.47	7	P	Pn	04 51 57.5 -0.2
	comp=N,1.6nm,0.3s,SNR=11					
EADA				S	Sn	04 53 00.7 -0.3
	comp=N,2.8nm,0.1s					
PTEO	Sao Teotonio	5.54	331	ePn	Pn	04 51 59.6 +1.1
PTEO				eSn	Sn	04 53 03.6 +1.2
PTEO				A	A	04 53 08.9
	comp=N,12nm,0.5s					
PTEO	Sao Teotonio	5.54	331	P	Pn	04 51 59.6 +1.1
PTEO				S	Sn	04 53 03.6 +1.2
	comp=N,5.8nm,0.5s					
PTEO	Sao Teotonio	5.54	331	P	Pn	04 51 59.6 +1.1
PTEO				S	Sn	04 53 03.6 +1.2
	comp=N,5.8nm,0.5s					
PBAR	Barrancos	5.61	347	ePn	Pn	04 52 00.0 +0.5
PBAR				eSn	Sn	04 53 04.9 +0.7
PBAR				A	A	04 53 08.7
	comp=N,19nm,0.3s					
PBAR	Barrancos	5.61	347	P	Pn	04 52 00.0 +0.5
PBAR				S	Sn	04 53 04.9 +0.7
	comp=N,19nm,0.3s					
PBAR	Barrancos	5.61	347	P	Pn	04 52 00.0 +0.5
PBAR				S	Sn	04 53 04.9 +0.7
	comp=N,19nm,0.3s					
MESJ	Messejana	5.61	336	eP	Pn	04 52 00.1 +0.6
MESJ				eS	Sn	04 53 01.8 -2.4
MESJ				AML	AML	04 53 08.6
	comp=N,16nm,0.3s					
MESJ	Messejana	5.61	336	ePn	Pn	04 52 00.3 +0.8
MESJ				eSn	Sn	04 53 04.4 +0.2
MESJ				A	A	04 53 11.8
	comp=N,12nm,0.4s					
MESJ	Messejana	5.61	336	P	Pn	04 52 00.3 +0.8
MESJ				S	Sn	04 53 04.4 +0.2
	comp=N,12nm,0.4s					
MESJ	Messejana	5.61	336	P	Pn	04 52 00.3 +0.8
MESJ				S	Sn	04 53 04.4 +0.2
	comp=N,12nm,0.4s					
PBEJ	Beja	5.67	340	ePn	Pn	04 52 01.0 +0.7
PBEJ				eSn	Sn	04 53 06.1 +0.4
PBEJ				A	A	04 53 10.2
	comp=N,6.0nm,0.3s					
PBEJ	Beja	5.67	340	P	Pn	04 52 01.0 +0.7
PBEJ				S	Sn	04 53 06.1 +0.4
	comp=N,3.0nm,0.3s					
PBEJ	Beja	5.67	340	P	Pn	04 52 01.0 +0.7
PBEJ				S	Sn	04 53 06.1 +0.4
	comp=N,3.0nm,0.3s					
PNCL	Nicolau / Gran	5.96	335	ePn	Pn	04 52 05.0 +0.7
PNCL				eSn	Sn	04 53 13.3 +0.5
PNCL				A	A	04 53 17.8
	comp=N,8.8nm,0.3s					
PNCL	Nicolau / Gran	5.96	335	ePn	Pn	04 52 05.0 +0.7
PNCL				eSn	Sn	04 53 13.3 +0.5
	comp=N,8.8nm,0.3s					
EMUR	La Murta	6.13	32	P	Pn	04 52 06.0 -0.7
	comp=N,0.5nm,0.2s,SNR=7.9					
EMUR	La Murta	6.13	32	P	Pn	04 52 06.0 -0.7
	comp=N,0.5nm,0.2s,SNR=7.9					
EBAD	Badajoz	6.17	348	⇓P	Pn	04 52 07.6 +0.4
	comp=N,8.6nm,0.2s,SNR=18					
EBAD				S	Sn	04 53 17.9 0.0
	comp=N,12nm,0.2s					
EBAD	Badajoz	6.17	348	P	Pn	04 52 07.6 +0.4
	comp=N,8.6nm,0.2s,SNR=18					
EBAD				S	Sn	04 53 17.9 0.0
	comp=N,12nm,0.2s					
EVO	Evora	6.18	341	ePn	Pn	04 52 08.1 +0.8
EVO	Evora	6.18	341	P	Pn	04 52 08.1 +0.8
EVO	Evora	6.18	341	P	Pn	04 52 08.1 +0.8
ETOB	Tobarra	6.69	27	P	Pn	04 52 15.3 +0.9
	comp=N,0.3nm,0.2s,SNR=6.9					
ETOB	Tobarra	6.69	27	P	Pn	04 52 15.3 +0.9
	comp=N,0.3nm,0.2s,SNR=6.9					
PMTG	Montargil	6.74	341	ePn	Pn	04 52 15.8 +0.8
PMTG				eSn	Sn	04 53 32.6 +0.5
PMTG				A	A	04 53 50.3
	comp=N,5.5nm,0.6s					
PMTG	Montargil	6.74	341	ePn	Pn	04 52 15.8 +0.8
PMTG				eSn	Sn	04 53 32.6 +0.5
	comp=N,5.5nm,0.6s					
PMRV	Marv??o	6.89	347	ePn	Pn	04 52 17.8 +0.7
PMRV				eSn	Sn	04 53 35.5 -0.2
PMRV				A	A	04 53 41.6
	comp=N,4.3nm,0.3s					
PMRV	Marv??o	6.89	347	P	Pn	04 52 17.8 +0.7
PMRV				S	Sn	04 53 35.5 -0.2
	comp=N,4.3nm,0.3s					
PMRV	Marv??o	6.89	347	P	Pn	04 52 17.8 +0.7
PMRV				S	Sn	04 53 35.5 -0.2
	comp=N,4.3nm,0.3s					
ALMR	Almeirim	6.92	339	eP	Pn	04 52 17.9 +0.4
ALMR	Almeirim	6.92	339	eP	Pn	04 52 17.9 +0.4
ALMR	Almeirim	6.92	339	P	Pn	04 52 17.9 +0.4
ALMR	Almeirim	6.92	339	eP	Pn	04 52 17.9 +0.4
ESDC	Sonseca Array	7.03	9	P	Pn	04 52 18.8 -0.3
	comp=N,0.4nm,0.1s,baz=194,slow=13,SNR=19					
ESDC				S	Sn	04 53 31.7 -7.7
	comp=N,0.3nm,0.3s,baz=7.6,slow=25,SNR=4.2					
ESDC	Sonseca Array	7.03	9	P	Pn	04 52 18.8 -0.3
	comp=N,0.4nm,0.1s,SNR=19					
ESDC				S	Sn	04 53 31.7 -7.7
	comp=N,0.3nm,0.3s,SNR=4.2					
PTOM	Tomar	7.30	341	ePn	Pn	04 52 23.6 +0.8
PTOM	Tomar	7.30	341	P	Pn	04 52 23.6 +0.8
PTOM	Tomar	7.30	341	P	Pn	04 52 23.6 +0.8
EPLA	Plasencia	7.35	356	⇑P	Pn	04 52 23.3 -0.1
	comp=N,2.3nm,0.2s,SNR=18					
EPLA				S	Sn	04 53 44.1 -3.1
	comp=N,3.8nm,0.2s					
EPLA	Plasencia	7.35	356	P	Pn	04 52 23.3 -0.1
	comp=N,2.3nm,0.2s,SNR=18					
EPLA				S	Sn	04 53 44.1 -3.1
	comp=N,3.8nm,0.2s					
PCAS	Casmilo, Conde	7.73	342	ePn	Pn	04 52 29.6 +0.9
PCAS	Casmilo, Conde	7.73	342	ePn	Pn	04 52 29.6 +0.9
MTE	Manteigas	7.86	348	ePn	Pn	04 52 31.3 +0.9
MTE				eSn	Sn	04 53 58.4 -1.3
MTE	Manteigas	7.86	348	P	Pn	04 52 31.3 +0.9
MTE				S	Sn	04 53 58.4 -1.3
MTE	Manteigas	7.86	348	P	Pn	04 52 31.3 +0.9
MTE				S	Sn	04 53 58.4 -1.3
GUD	Guadarrama	7.97	7	P	Pn	04 52 32.1 +0.1
	comp=N,0.4nm,0.2s,SNR=7.9					
GUD				S	Sn	04 53 59.4 -3.2
	comp=N,1.1nm,0.4s,SNR=7.9					
GUD	Guadarrama	7.97	7	P	Pn	04 52 32.1 +0.1
	comp=N,0.4nm,0.2s,SNR=7.9					
GUD				S	Sn	04 53 59.4 -3.2
	comp=N,1.1nm,0.4s,SNR=7.9					
MVO	Moncorvo	8.53	352	ePn	Pn	04 52 40.1 +0.5
MVO				eSn	Sn	04 54 14.9 -1.3
MVO	Moncorvo	8.53	352	P	Pn	04 52 40.2 +0.5
	comp=N,7.4nm,0.2s,SNR=6.8					
MVO				S	Sn	04 54 13.1 -3.1
	comp=N,3.1nm,0.3s					
MVO	Moncorvo	8.53	352	P	Pn	04 52 40.2 +0.5
	comp=N,7.4nm,0.2s,SNR=6.8					
MVO				S	Sn	04 54 13.1 -3.1
	comp=N,3.1nm,0.3s					
MVO				eSn	Sn	04 54 14.9 -1.3
POLO	Lamas de Olo	8.85	348	ePn	Pn	04 52 44.9 +0.9
POLO				eSn	Sn	04 54 22.6 -1.5
POLO				A	A	04 54 30.0
	comp=N,1.2nm,0.5s					
POLO	Lamas de Olo	8.85	348	ePn	Pn	04 52 44.9 +0.9
POLO				eSn	Sn	04 54 22.6 -1.5
	comp=N,1.2nm,0.5s					
PBRG	Braganca	9.13	354	ePn	Pn	04 52 48.3 +0.4
PBRG	Braganca	9.13	354	P	Pn	04 52 48.3 +0.4
PBRG	Braganca	9.13	354	P	Pn	04 52 48.3 +0.4
ECAL	Calabor	9.27	354	P	Pn	04 52 49.9 +0.1
	comp=N,0.6nm,0.1s,SNR=4.8					
ECAL				S	Sn	04 54 30.4 -3.9
	comp=N,3.2nm,0.3s					
ECAL	Calabor	9.27	354	P	Pn	04 52 49.9 +0.1
	comp=N,0.6nm,0.1s,SNR=4.8					
ECAL				S	Sn	04 54 30.5 -3.9
	comp=N,3.2nm,0.3s					
ELOB	Lobios	9.37	348	P	Pn	04 52 52.1 +0.9
	comp=N,1.7nm,0.2s,SNR=6.5					
ELOB				S	Sn	04 54 34.3 -2.7
	comp=N,1.2nm,0.2s					
ELOB	Lobios	9.37	348	P	Pn	04 52 52.1 +0.9
	comp=N,1.7nm,0.2s,SNR=6.5					
ELOB				S	Sn	04 54 34.3 -2.7
	comp=N,1.2nm,0.2s					
EAGO	Agolada(Pontev	10.29	349	P	Pn	04 53 04.9 +1.2
	comp=N,0.8nm,0.2s,SNR=7.9					
EAGO	Agolada(Pontev	10.29	349	P	Pn	04 53 04.9 +1.2
	comp=N,0.8nm,0.2s,SNR=7.9					
EARI	Arriondas	10.56	1	P	Pn	04 53 08.8 +1.3
	comp=N,0.4nm,0.3s,SNR=4.0					
EARI	Arriondas	10.56	1	P	Pn	04 53 08.8 +1.3
	comp=N,0.4nm,0.3s,SNR=4.0					
EMAZ	Mazaricos	10.60	346	P	Pn	04 53 09.2 +1.3
	comp=N,1.3nm,0.2s,SNR=7.9					
EMAZ	Mazaricos	10.60	346	P	Pn	04 53 09.2 +1.3
	comp=N,1.3nm,0.2s,SNR=7.9					
ELAN	Lanestosa	10.61	8	P	Pn	04 53 09.0 +0.9
	comp=N,0.3nm,0.2s,SNR=7.9					
ELAN	Lanestosa	10.61	8	P	Pn	04 53 09.0 +0.9
	comp=N,0.3nm,0.2s,SNR=7.9					
EPON	Pontenova	10.68	353	P	Pn	04 53 09.8 +0.8
	comp=N,0.6nm,0.2s,SNR=7.9					
EPON	Pontenova	10.68	353	P	Pn	04 53 09.8 +0.8
	comp=N,0.6nm,0.2s,SNR=7.9					

*ISCJB **01** 04:52:12.9±0.2, 6.˙78N±0.˙02×73.˙00W±0.˙02, h166km±1km, mb4.3/69, Error ellipse: s-maj=4.4km s-min=3.2km az=38.8*
*NEIC **01** 04:52:13.4±0.6, 6.˙62N×73.˙16W, h159km±5km, mb4.4/58, Error ellipse: s-maj=5.8km s-min=5.7km az=163.0*
*FUNV **01** 04:52:14.9, 6.˙81N×73.˙06W, h173km, MW3.6*
*IDC **01** 04:52:14.5±0.6, 6.˙78N×72.˙95W, h172km±5km, mb3.5/12, mb1 3.8/17, mb1mx3.6/31, mbtmp4.1/17, Error ellipse: s-maj=11.9km s-min=8.2km az=125.0*
*RSNC **01** 04:52:15.3±1.2, 6.˙79N×73.˙12W, h152km±6km, ML4.4*
ISC 01 04:52:14.2±0.5, 6.˙82N±0.˙03×73.˙00W±0.˙04, h165km±4km, n146, σ1§67/179, mb4.4/69, 10C-6D, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BARC	Barichara	0.29	218	i P	Pn	04 52 35.7	-1.1
BARC				eS	Sn	04 52 50.6	-3.3
BARC				i		04 52 52.6	
	comp=Z,4μm,0.3s						
PAMC	Pamplona, Colo	0.60	30	i P	Pn	04 52 38.4	+0.2
PAMC				eS	Sn	04 52 55.6	-1.1
BRRC	Barranca, Sant	0.76	292	⇑iP	Pn	04 52 37.5	-1.1
BRRC				eS	Sn	04 52 55.0	-2.3
BRRC				i		04 52 58.3	
	comp=Z,3μm,0.2s						
CBRI	Barrientos, No	0.91	13	eP	Pn	04 52 40.2	+0.3
GRMC	Gramalote, San	0.91	12	i P	Pn	04 52 41.5	+1.6
GRMC				eS	Sn	04 53 01.1	+1.4
GRMC				i		04 53 04.2	
	comp=Z,4μm,0.4s						
RUSC	La Rusia	0.93	185	⇓iP	Pn	04 52 39.5	-0.9
RUSC				eS	Sn	04 52 58.5	-2.0
RUSC				i		04 52 59.3	
	comp=Z,2μm,0.3s						
GUEC	Guerrero, Nort	1.01	4	eP	Pn	04 52 40.9	+0.2
CAPV	Capacho	1.24	33	⇓eP	Pn	04 52 43.6	+0.9
CAPV				eS	Sn	04 53 04.7	+0.1
OCAC	Ocana	1.44	347	eP	Pn	04 52 43.8	-0.7
OCAC				eS	Sn	04 53 06.8	-1.1
OCAC				i		04 53 10.8	
	comp=Z,6μm,0.2s						
YOPC	Yopal, Colombi	1.57	158	i P	Pn	04 52 46.1	+0.4
YOPC				eS	Sn	04 53 08.8	-1.2
YOPC				i		04 53 10.8	
	comp=Z,1μm,0.3s						
NORC	Norcasia	2.24	236	eP	Pn	04 52 51.2	-1.8
NORC				eS	Sn	04 53 18.9	-4.1
ROSC	El Rosal	2.37	214	P	Pn	04 52 55.1	+0.2
	comp=Z,343nm,0.3s,baz=296,slow=7.1,SNR=436						
ROSC				S	Sn	04 53 27.9	+1.7
	comp=Z,577nm,0.3s,baz=199,slow=23,SNR=13						
ROSC	El Rosal	2.37	214	eS	Sn	04 53 25.9	-0.4
ROSC				i		04 53 30.3	
	comp=Z,2μm,0.5s						
SOCV	Socops	2.58	56	⇑eP	Pn	04 52 57.8	+0.8
SOCV				eS	Sn	04 53 29.2	-1.0
VIGV	El Vigia	2.58	39	⇓eP	Pn	04 52 57.8	+0.8
VIGV				eS	Sn	04 53 29.4	-0.8
HELC	Santa Helena	2.59	256	eP	Pn	04 52 55.5	-2.0
HELC				eS	Sn	04 53 27.5	-3.4
HELC				i		04 53 34.0	
	comp=Z,1μm,0.3s						
VILC	Villavicencio,	2.78	194	eP	Pn	04 52 58.6	-1.0
VILC				eS	Sn	04 53 32.1	-2.7
VILC				i		04 53 46.9	
	comp=Z,615nm,0.4s						
GUYC	Guyana, Colomb	2.86	236	eP	Pn	04 52 59.8	-1.0
GUYC				i		04 53 46.0	
	comp=Z,2μm,0.3s						
SDV	Santo Domingo	3.12	49	P	Pn	04 53 05.1	+1.3
	comp=Z,88nm,0.3s,baz=225,slow=2.8,SNR=71						
SDV				S	Sn	04 53 41.8	-0.5
	comp=Z,38nm,0.3s,baz=166,slow=23,SNR=3.8						
SDV	Santo Domingo	3.12	49	eP	Pn	04 53 05.1	+1.3
SDV				i		04 53 44.5	
	comp=Z,389nm,0.5s						
DBBC	Dabeiba	3.19	274	i P	Pn	04 53 03.1	-1.5
TOLC	Tolima	3.20	226	eP	Pn	04 53 03.9	-1.1
ELOV	Elorza	3.50	87	⇑eP	Pn	04 53 09.5	+1.1
ELOV				eS	Sn	04 53 49.6	-0.9
PRAC	Prado	3.61	211	eP	Pn	04 53 08.6	-1.3
PRAC				eS	Sn	04 53 52.3	-1.1
SJAC	San Juan de Ar	3.65	195	eP	Pn	04 53 10.1	-0.4
SJAC				i		04 54 06.9	
	comp=Z,1μm,0.6s						
VIRV	Villa del Rosa	3.71	9	⇓eP	Pn	04 53 10.2	-0.9
VIRV				eS	Sn	04 53 53.2	-2.3
GUVC	San Jose del G	4.26	175	eP	Pn	04 53 17.1	-1.2
SANV	Sanarito	4.34	52	⇑eP	Pn	04 53 19.6	+0.2
SANV				eS	Sn	04 54 07.3	-3.0
CURV	Curarigua	4.37	43	⇓eP	Pn	04 53 20.0	+0.3
CURV				eS	Sn	04 54 07.9	-3.0
DABV	Dabajuro	4.70	30	eP	Pn	04 53 24.2	+0.3
DABV				eS	Sn	04 54 15.5	-3.0
TEPV	Terepaima	4.89	50	⇑eP	Pn	04 53 26.9	+0.3
TEPV				eS	Sn	04 54 19.1	-4.0
SIQV	Siquisique	4.94	39	⇓eP	Pn	04 53 26.3	-0.9
SIQV				eS	Sn	04 54 20.4	-3.9
BAUV	El Baul	5.35	66	⇑eP	Pn	04 53 31.4	-1.0
BAUV				eS	Sn	04 54 28.7	-5.0
MAPV	Macapo	5.40	56	⇑eP	Pn	04 53 33.0	-0.1
MAPV				eS	Sn	04 54 31.1	-3.9
MONV	Montecano	5.91	30	⇑eP	Pn	04 53 39.3	-0.6
MONV				eS	Sn	04 54 41.7	-5.5
TURV	Turiamo	6.25	54	eP	Pn	04 53 44.0	-0.3
TURV				eS	Sn	04 54 49.3	-5.8
MERV	Las Mercedes	7.06	70	⇑eP	Pn	04 53 54.1	-1.0
BCIP	Isla Barro Col	7.16	289	ePn	Pn	04 53 52.9	-3.5
CUPV	Ccepira	7.83	65	⇑eP	Pn	04 54 04.4	-0.9
OTAV	Otavalo	8.50	220	ePn	Pn	04 54 09.7	-5.0
GUNV	Guanoco	10.49	71	eP	Pn	04 54 39.3	-1.1
HDC	Heredia	11.44	287	ePn	Pn	04 54 52.3	-0.7
PCJ	Portland Cotta	11.59	340	eP	Pn	04 54 56.5	+1.8
PAPH	Port-au-Prince	11.65	3	ePn	Pn	04 54 57.5	+1.9
CMJ	Castle Mountai	11.72	344	eP	Pn	04 54 57.7	+1.2
CMJ				i S	Sn	04 56 49.1	-17
GWJ	Greenwich	11.76	342	eP	Pn	04 54 57.3	+0.1
BANI	BANI	11.79	12	ePn	Pn	04 54 59.6	+2.2
STH	Stony Hill	11.79	342	eP	Pn	04 54 58.7	+1.3
STH				i P	Pn	04 54 59.0	+1.6
STH				eS	Sn	04 56 48.4	-20
BNJ	Bonny Gate	12.06	342	eP	Pn	04 55 02.6	+1.7
MTDJ	Mount Denham	12.17	339	ePn	Pn	04 55 04.1	+1.8
MTDJ				eSn	Sn	04 57 10.9	-6.4
CVJ	Coleyville	12.17	339	eP	Pn	04 55 04.7	+2.4
SDDR	Presa de Saban	12.20	8	ePn	P	04 55 06.6	-1.9
BBJ	Bamboo Saint A	12.22	341	eP	Pn	04 55 03.3	+0.3
SJG	San Juan	13.06	30	P	Pn	04 55 13.6	0.0
	comp=Z,5.1nm,0.3s,baz=202,slow=12,SNR=18						
SJG	San Juan	13.06	30	ePn	Pn	04 55 12.6	-1.0
	comp=Z,11nm,0.4s						
ABVI	Anegada Island	14.54	35	ePn	P	04 55 34.6	+0.3
PTGA	Pitinga	15.02	119	P	Pn	04 55 38.2	0.0
	comp=Z,0.3nm,0.3s,baz=336,slow=19,SNR=3.3						
TGUH	Tegucigalpa,Un	15.76	298	ePn	Pn	04 55 47.0	-0.4
	comp=Z,12nm,1.0s						
SAML	Samuel	18.47	148	eP	P	04 56 17.3	-0.4
	comp=Z,8.4nm,0.9s						
SAML				eS	S	04 59 32.4	-7.6
TEIG	Tepich	19.93	313	P	P	04 56 34.6	+1.3
	comp=Z,0.7nm,0.3s,baz=269,slow=24,SNR=9.4						
LPAZ	La Paz	23.46	168	P	P	04 57 08.8	-0.8
	comp=Z,1.2nm,0.8s,baz=40,slow=8.8,SNR=3.8						
LPAZ				pP	pP	04 57 42.2	+1.2
	comp=Z,5.0nm,0.8s,baz=339,slow=12,SNR=8.0						
WVT	Waverly	32.18	337	eP	P	04 58 27.4	+0.9
	comp=Z,8.6nm,1.0s						
WLAR	White Oak Lake	32.58	328	eP	P	04 58 31.8	+1.8
	comp=Z,10.0nm,0.8s						
PVMO	Portageville	33.18	335	eP	P	04 58 36.8	+1.6
	comp=Z,110nm,0.6s						
MCWV	Mont Chateau	33.27	350	eP	P	04 58 37.6	+1.7
	comp=Z,18nm,1.4s						
BDFB	Brasilia	33.33	132	eP	P	04 58 38.5	+1.7
WHAR	Wooly Hollow	33.42	331	eP	P	04 58 38.4	+1.1
	comp=Z,16nm,1.5s						
X301	Greenbrier Sit	33.44	330	eP	P	04 58 38.5	+1.1
	comp=Z,4.6nm,0.7s						
WCI	Wyandotte Cave	33.51	341	eP	P	04 58 39.0	+1.0
	comp=Z,6.6nm,0.7s						
LUPA	Lehigh Univers	33.70	357	eP	P	04 58 41.1	+1.5
	comp=Z,32nm,1.8s						
USIN	University of	33.74	339	eP	P	04 58 40.4	+0.4
	comp=Z,11nm,0.9s						
PBMO	Poplar Bluff	33.80	334	eP	P	04 58 41.4	+0.8
	comp=Z,8.2nm,0.6s						
SIUC	Southern Illin	34.10	337	eP	P	04 58 44.4	+1.3
	comp=Z,12nm,0.7s						
SIUC				ePcP	PcP	05 01 18.6	+1.8
BLO	Bloomington	34.44	341	eP	P	04 58 46.5	+0.5
	comp=Z,12nm,0.6s						
OLIL	Olney	34.58	339	eP	P	04 58 48.2	+1.0
	comp=Z,10nm,1.0s						
ALLY	Alegheny Colle	35.26	351	eP	P	04 58 54.8	+1.7
	comp=Z,61nm,1.8s						
ABTX	Abilene, Hawle	35.68	320	eP	P	04 58 57.3	+0.5
	comp=Z,4.4nm,0.7s						
TUL1	Leonard	35.70	327	eP	P	04 58 57.1	+0.2
	comp=Z,19nm,1.7s						
SFIN	Lafayette	35.72	341	eP	P	04 58 58.4	+1.4
	comp=Z,15nm,0.6s						
W34A	Bridge Creek,	36.31	325	eP	P	04 59 02.8	+0.7
	comp=Z,12nm,1.1s						
TXAR	Lajitas Array	36.55	312	P	P	04 59 04.7	+0.4
	comp=Z,0.4nm,0.4s,baz=121,slow=9.3,SNR=14						
TXAR				pP	pP	04 59 41.2	+1.7
	comp=

comp=Z,3.9nm,0.5s,baz=189,slow=7.6,SNR=20
BW06 Boulder Array 48.15 324 *eP* **P 05 00 38.3 +0.3**
PD31 Pinedale Array 48.15 324 *eP* **P 05 00 37.6 -0.3**
PDAR Pinedale Array 48.15 324 P **P 05 00 37.9 -0.1**
comp=Z,0.7nm,0.5s,baz=116,slow=9.1,SNR=9.6
CTU Camp Tracy 48.28 320 *eP* **P 05 00 38.8 -0.2**
comp=Z,2.2nm,0.6s
TCUT Toone Canyon 48.30 321 *eP* **P 05 00 38.8 -0.5**
comp=Z,6.0nm,0.6s
HWUT Hardware Ranch 48.67 322 *eP* **P 05 00 41.8 -0.2**
comp=Z,5.7nm,1.5s
BGU Big Grassy Mou 49.22 320 *eP* **P 05 00 46.3 +0.2**
comp=Z,3.7nm,0.8s
REDW Red Top Meadow 49.26 324 *eP* **P 05 00 46.9 +0.4**
comp=Z,3.0nm,0.6s
IMW Indian Meadow 49.63 324 *eP* **P 05 00 49.7 +0.4**
comp=Z,12nm,2.0s
MCMT McKenzie Canyo 51.29 324 *eP* **P 05 01 02.5 +0.9**
DLMT Dillon 51.45 325 *eP* **P 05 01 03.4 +0.6**
comp=Z,14nm,1.9s
HLID Hailey 51.51 322 *eP* **P 05 01 03.9 +0.7**
comp=Z,2.1nm,1.1s
NV01 Mina Array Sit 51.57 315 *eP* **P 05 01 03.5 -0.4**
NVAR Mina Array Bea 51.57 315 P **P 05 01 03.7 -0.2**
comp=Z,0.5nm,0.7s,baz=133,slow=8.3,SNR=4.2
MFID Camas Ranch 52.30 321 *eP* **P 05 01 08.1 -1.0**
comp=Z,3.3nm,0.9s
WVOR Wild Horse Val 53.61 319 *eP* **P 05 01 19.3 +0.7**
comp=Z,12nm,1.8s
AFDM Forest Hills D 53.68 314 *eP* **P 05 01 19.4 +0.2**
comp=Z,7.3nm,1.3s
YBMT Yellow Bay 53.72 327 *eP* **P 05 01 19.7 +0.3**
JTMT Jette 53.80 327 *eP* **P 05 01 20.6 +0.7**
BSMT Bassoo Peak 54.13 326 *eP* **P 05 01 22.1 -0.3**
FCC Fort Churchill 54.30 347 *eP* **P 05 01 22.7 -0.4**
comp=Z,2.6nm,0.8s
YKA Yellowknife Ar 63.30 340 P **P 05 02 25.6 +0.4**
comp=Z,3.3nm,0.6s,baz=133,slow=6.6,SNR=150
YKA pP **pP 05 03 04.6 +0.6**
comp=Z,0.6nm,0.5s,baz=134,slow=6.8,SNR=2.6
YKB5 Yellowknife Ar 63.30 340 *eP* **P 05 02 25.3 +0.1**
YKW3 Yellowknife Ar 63.35 340 *eP* **P 05 02 25.9 +0.4**
comp=Z,3.2nm,0.7s
SUMG Summit 68.97 11 *eP* **P 05 03 02.8 +1.1**
comp=Z,26nm,1.6s
INK Inuvik 73.07 340 *eP* **P 05 03 26.4 +0.5**
comp=Z,1.3nm,0.6s
TORD Torodi Ar. Bea 73.62 78 P **P 05 03 28.7 -1.5**
comp=Z,0.2nm,0.5s,baz=283,slow=7.0,SNR=11
DOT Dot Lake 75.56 334 *eP* **P 05 03 41.7 +1.2**
comp=Z,7.1nm,0.7s
ILAR Eielson Array 77.01 335 P **P 05 03 47.8 -0.8**
comp=Z,0.4nm,0.5s,baz=105,slow=3.7,SNR=4.5
WLF Walferdange 77.81 41 *eP* **P 05 03 54.1 +0.8**
comp=Z,6.0nm,0.9s
BPAW Bear Paw Mtn. 78.65 334 *eP* **P 05 03 57.9 +0.2**
comp=Z,0.3nm,0.8s
PPLA Purkeypile 79.03 333 *eP* **P 05 03 58.2 -1.7**
comp=Z,21nm,1.4s
CAST Castle Rocks 79.05 333 *eP* **P 05 04 00.9 +1.1**
comp=Z,6.0nm,0.4s
NOA NORSAR Array B 81.27 29 P **P 05 04 12.3 +0.5**
comp=Z,0.4nm,0.6s,baz=270,slow=5.2,SNR=2.6
AQU L'Aquila 82.80 48 *eP* **P 05 04 19.8 -0.4**
comp=Z,30nm,1.2s
ARCES ARCESS Array B 86.63 20 P **P 05 04 38.9 +0.2**
comp=Z,1.4nm,0.9s,baz=266,slow=4.2,SNR=5.7
ASAR Alice Springs 149.21 234 PKPbc **PKPdf 05 11 41.2 +1.5**
comp=Z,0.7nm,0.5s,baz=118,slow=3.7,SNR=14
WRAB Tennant Creek 150.43 241 *e*PKPbc **PKPbc 05 11 46.5 -0.7**
WRA Warramunga Arr 150.44 241 PKPbc **PKPbc 05 11 46.0 -1.3**
comp=Z,0.8nm,0.4s,baz=109,slow=2.6,SNR=18

NIED ***01*** *05:06:00,37.°50N×141.°30E,h17km,Mw3.9 Best double couple: M0:8.15000×10^14 NP1:*ϕ_S*=233.00000°,*δ*61.00000°,*
λ-5.00000°. NP2:ϕ_S*=325.00000°,*δ*86.00000°,*
λ-151.00000°.
ISCJB ***01*** *05:06:04.3±1.0,37.°49N±0.°03×141.°49E±0.°05,h7km±5km,*
mb3.7/15,MS3.9/2,Error ellipse: s-maj=7.3km
s-min=4.0km az=17.9
IDC ***01*** *05:06:04.6±0.8,37.°47N×141.°48E,h0km,mb3.7/13,*
mb1 3.9/16,mb1mx3.8/53,mbtmp3.7/16,ML3.9/3,MS3.2/5,
Ms1 3.2/5,ms1mx2.7/50,Error ellipse: s-maj=21.3km
s-min=15.0km az=126.0
JMA ***01*** *05:06:07.5,37.°53N×141.°28E,h19km±1km,M4.2*
JMA Felt III J1.
NEIC ***01*** *05:06:08.9±2.1,37.°48N×141.°42E,h29km±15km,mb4.2/3,*
Error ellipse: s-maj=11.5km s-min=6.4km az=120.0
NEIC Recorded [3 JMA] in Fukushima.
ISC 01 05:06:05.5±1.7,37.°50N±0.°04×141.°43E±0.°06,h4km±10km,
n43,σ1§14/45,mb3.7/15,Near east coast of eastern
Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.46**	**254**	P	**Pg**	**05 06 15.0**	**+0.7**
JFK				S	**Sg**	**05 06 20.3**	**0.0**
JMM	**Marumori**	**0.62**	**307**	P	**Pg**	**05 06 17.4**	**-0.1**
JMM				S	**Sg**	**05 06 24.6**	**-1.0**
ONAJ	**Iwakimizuishiy**	**0.64**	**232**	P	**Pb**	**05 06 18.6**	**-0.6**
ONAJ				S	**Sg**	**05 06 26.4**	**+0.4**
JFT	**Otama**	**0.87**	**272**	P	**Pg**	**05 06 21.9**	**-0.2**
JFT				S	**Sg**	**05 06 32.2**	**-1.2**
JIO	**Ouri**	**0.96**	**356**	P	**Pg**	**05 06 24.2**	**+0.3**
JIO				S	**Sb**	**05 06 37.1**	**-0.6**
JOU	**Okura**	**1.06**	**326**	P	**Pg**	**05 06 25.5**	**-0.3**
JOU				S	**Sg**	**05 06 38.7**	**-0.8**
JHO	**Hitachi**	**1.12**	**218**	S	**Sg**	**05 06 41.1**	**-0.3**
MJAR	**Matsushiro Arr**	**2.74**	**251**	Pn	**Pn**	**05 06 51.0**	**+0.7**
	17nm,0.3s,baz=82,slow=16,SNR=82						
MJAR				Sn	**Sb**	**05 07 26.6**	**-2.6**
	25nm,0.3s,baz=31,slow=15,SNR=5.1						
MAJO	**Matsushiro**	**2.75**	**251**	*e*Pn	**Pn**	**05 06 51.3**	**+0.9**
MAJO				*e*Sn	**Sb**	**05 07 28.8**	**-0.4**
MAT	**Matsushiro**	**2.75**	**251**	P	**Pn**	**05 06 51.0**	**+0.7**
MAT				S	**Sb**	**05 07 29.4**	**+0.2**
JHJ	**Hachijo jima 2**	**4.57**	**198**	Pn	**Pn**	**05 07 15.9**	**+0.5**
	24nm,0.3s,baz=297,slow=24,SNR=7.9						
JHJ				Sn	**Sn**	**05 08 07.8**	**-1.1**
	28nm,0.3s,baz=253,slow=19,SNR=2.8						
JHJ2	**Mitsune**	**4.57**	**197**	*e*Pn	**Pn**	**05 07 15.4**	**0.0**
JHJ2				*e*Sn	**Sn**	**05 08 09.7**	**+0.9**
ASAJ	**Asahikawa**	**6.67**	**7**	Pn	**Pn**	**05 07 44.6**	**+0.3**
	1.7nm,0.3s,baz=206,slow=4.4,SNR=11						
ASAJ				Sn	**Sn**	**05 09 02.1**	**+1.3**
	baz=252,slow=20,SNR=1.8						
ASAJ				LR	LR	05 10 28.0	
	comp=Z,68nm,19.7s,baz=78,slow=39						
ASAJ	**Asahikawa**	**6.67**	**7**	*e*Pn	**Pn**	**05 07 45.3**	**+1.0**
ASAJ				Sn	**Sn**	**05 09 02.1**	**+1.3**
YSS	**Yuzh-Sakhalins**	**9.50**	**6**	*e*Pn	**Pn**	**05 08 23.6**	**+0.5**
JNU	**Nakatsue**	**9.66**	**246**	LR	LR	05 12 08.8	
	comp=Z,75nm,21.2s,baz=116,slow=38						
USRK	**Ussuriysk Ar.**	**9.79**	**316**	Pn	Pn	05 08 32.8	+5.7
	0.2nm,0.3s,baz=122,slow=14,SNR=3.3						
KSRS	**Korea Array**	**10.73**	**274**	Pn	Pn	05 08 44.8	+4.8
	0.2nm,0.3s,baz=90,slow=14,SNR=5.3						
KSRS				LR	LR	05 12 21.8	
	comp=Z,47nm,18.2s,baz=82,slow=35						
KSAR	**Wonju Array Be**	**10.77**	**274**	Pn	**Pn**	**05 08 44.8**	**+4.4**
JOW	**Kunigami**	**15.38**	**230**	*e*Pn	**Pn**	**05 09 43.9**	**+0.5**
	126nm,2.0s						
SEY	**Seymchan**	**26.34**	**11**	P	**P**	**05 11 41.7**	**-0.5**
	0.6nm,0.5s,baz=163,slow=19,SNR=2.8						
SONM	**Songino Array**	**27.54**	**303**	P	**P**	**05 11 52.4**	**-0.9**
	0.4nm,0.6s,baz=101,slow=7.5,SNR=3.1						
H11N2	**WAKE ISLAND Hy**	**28.38**	**122**	T	T	05 42 00.2	
	baz=314,slow=76,SNR=1059						
H11N1	**WAKE ISLAND Hy**	**28.39**	**122**	T	T	05 42 03.3	
	baz=314,slow=76,SNR=1143						
H11N3	**WAKE ISLAND Hy**	**28.40**	**122**	T	T	05 42 04.0	
	baz=314,slow=76,SNR=942						
H11S1	**WAKE ISLAND Hy**	**29.10**	**124**	T	T	05 42 56.1	
	baz=316,slow=76,SNR=500						
H11S3	**WAKE ISLAND Hy**	**29.11**	**124**	T	T	05 42 52.3	
	baz=316,slow=76,SNR=338						
H11S2	**WAKE ISLAND Hy**	**29.12**	**124**	T	T	05 43 00.8	
	baz=316,slow=76,SNR=328						
ZALV	**Zalesovo Beam**	**41.61**	**312**	P	**P**	**05 13 55.8**	**+1.3**
	0.9nm,0.4s,baz=113,slow=7.9,SNR=2.5						
MKAR	**Makanchi Array**	**43.88**	**302**	P	**P**	**05 14 12.0**	**-1.0**
	0.8nm,0.7s,baz=87,slow=9.4,SNR=8.3						
ILAR	**Eielson Array**	**49.10**	**33**	P	**P**	**05 14 53.4**	**-0.2**
	0.5nm,0.5s,baz=271,slow=5.8,SNR=8.0						
TKM2	**Tokmak 2**	**49.42**	**298**	*e*P	**P**	**05 14 56.8**	**+0.1**
	1.2nm,0.4s						
AAK	**Ala-Archa**	**50.28**	**298**	LR	LR	05 38 31.8	
	comp=Z,95nm,18.2s,baz=252,slow=39						
INK	**Inuvik**	**53.97**	**27**	P	**P**	**05 15 30.6**	**+0.6**
	0.4nm,0.4s,baz=286,slow=6.1,SNR=8.5						
WRA	**Warramunga Arr**	**57.52**	**188**	P	**P**	**05 15 55.3**	**-0.7**
	1.3nm,0.7s,baz=4.5,slow=7.5,SNR=8.0						
ABKAR	**Akbulak array**	**57.65**	**310**	P	**P**	**05 15 55.9**	**-0.8**
	0.5nm,0.5s						
YKA	**Yellowknife Ar**	**63.41**	**30**	P	**P**	**05 16 34.9**	**-0.8**
	0.2nm,0.7s,baz=303,slow=6.1,SNR=5.7						
ARCES	**ARCESS Array B**	**63.57**	**339**	P	**P**	**05 16 38.7**	**+2.0**
	2.3nm,0.9s,baz=56,slow=8.9,SNR=5.5						
NOA	**NORSAR Array B**	**73.76**	**337**	P	**P**	**05 17 40.4**	**-0.2**
	0.6nm,0.8s,baz=41,slow=8.3,SNR=3.4						
PDAR	**Pinedale Array**	**77.34**	**46**	P	**P**	**05 18 01.0**	**-0.6**
	0.2nm,0.5s,baz=11,slow=0.9,SNR=3.2						
GERES	**GERESS Array B**	**82.32**	**328**	P	**P**	**05 18 26.8**	**-1.6**
	0.2nm,0.6s,baz=44,slow=7.1,SNR=2.8						
PPT	**Papeete**	**84.83**	**117**	LR	LR	05 51 36.2	
	comp=Z,45nm,20.1s,baz=160,slow=32						
TXAR	**Lajitas Array**	**89.83**	**52**	P	**P**	**05 19 06.2**	**+0.3**
	0.2nm,0.5s,baz=282,slow=2.8,SNR=4.7						

SJA 01 05:06:46.4±1.2,34.°42S×70.°82W,h125km±25km,ML3.9,
MW4.0,Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ROC1	**El Roble**	**1.45**	**354**	*e*P	Pn	05 07 13.8	0.0
ROC1				*e*S	Sn	05 07 35.7	+1.1
ROC1				*e*S	Sn	05 07 35.9	+1.3
AAGR	**Agrelo**	**2.12**	**52**	*e*P	Pn	05 07 22.7	+0.9
AUSP	**Uspallata**	**2.49**	**29**	*e*P	Pn	05 07 28.2	+1.6
RTLS	**Leoncito**	**2.91**	**27**	*e*P	Pn	05 07 34.3	+2.4
RTCV	**Cerro Valdivia**	**3.19**	**38**	*e*P	Pn	05 07 36.0	+0.7
CANA	**Caviahue**	**3.47**	**183**	*e*P	Pn	05 07 40.6	+1.4
CANA				*e*S	Sn	05 08 10.1	-10
CANA				IAML		05 08 12.9	
	comp=E,195nm,0.5s						
RTLL	**Cerro Villicun**	**3.66**	**33**	*e*P	Pn	05 07 42.5	+0.9
AMOG	**MOGNA**	**3.98**	**30**	*i* P	Pn	05 07 47.1	+1.1

INMG ***01*** *05:10:47.6±0.7,32.°36N×5.°78W,h0km,ML2.4,Error*
ellipse: s-maj=5.4km s-min=3.5km az=84.0
IGIL ***01*** *05:10:47.1,32.°09N×6.°19W,h0km*
MDD ***01*** *05:10:47.9±0.8,32.°18N×5.°82W,h18km±5km,mb4.4/2,*
Error ellipse: s-maj=6.6km s-min=5.0km az=134.0,
PRXIMO
CSEM ***01*** *05:10:48.3±0.2,32.°25N×5.°86W,h30km,MD3.3,Error*
ellipse: s-maj=5.0km s-min=3.9km az=124.0
CNRM ***01*** *05:10:49.3,32.°25N×5.°85W,h30km,MD3.3*
ISC 01 05:10:45.7±1.3,32.°23N±0.°04×5.°84W±0.°04,h11km±13km,
n79,σ1§57/139,Morocco

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KIB	**El Ksiba**	**0.39**	**334**	P	**Pb**	**05 10 56.0**	**+1.3**
KIB				S	**Sb**	**05 11 03.0**	**+2.2**
KIB	**El Ksiba**	**0.39**	**334**	*i* P	**Pb**	**05 10 56.0**	**+1.3**
KIB				*i* S	**Sb**	**05 11 03.0**	**+2.2**
TZC	**Tazercounte**	**0.56**	**262**	P	**Pb**	**05 10 58.5**	**+0.9**
TZC				S	**Sb**	**05 11 07.0**	**+1.3**
TZC	**Tazercounte**	**0.56**	**262**	*i* P	**Pb**	**05 10 58.5**	**+0.9**
TZC				*i* S	**Sb**	**05 11 07.0**	**+1.3**
CZD	**Col de Zad**	**1.05**	**40**	P	**Pb**	**05 11 07.0**	**+0.9**
CZD				S	**Sg**	**05 11 20.0**	**+0.3**
CZD	**Col de Zad**	**1.05**	**40**	*i* P	**Pb**	**05 11 07.0**	**+0.9**
CZD				*i* S	**Sg**	**05 11 20.0**	**+0.3**
ZFT	**Errachidia**	**1.28**	**98**	P	**Pg**	**05 11 09.0**	**-1.3**
ZFT				S	**Sg**	**05 11 26.0**	**-0.9**
ZFT	**Errachidia**	**1.28**	**98**	*i* P	**Pg**	**05 11 09.0**	**-1.3**
ZFT				*i* S	**Sg**	**05 11 26.0**	**-0.9**
OUK	**Oukaimeden**	**2.00**	**240**	P	**Pn**	**05 11 21.0**	**+1.2**
OUK				S	**Sn**	**05 11 43.0**	**-2.1**
OUK	**Oukaimeden**	**2.00**	**240**	*i* P	**Pn**	**05 11 21.0**	**+1.2**
OUK				*i* S	**Sn**	**05 11 43.0**	**-2.1**
CIA	**Chichaoua**	**2.57**	**256**	P	**Pn**	**05 11 28.0**	**+0.6**
CIA				S	**Sn**	**05 11 57.0**	**-1.6**
CIA	**Chichaoua**	**2.57**	**256**	*i* P	**Pn**	**05 11 28.0**	**+0.6**
CIA				*i* S	**Sn**	**05 11 57.0**	**-1.6**
EMIJ	**Mijas**	**4.42**	**11**	P	**Pn**	**05 11 52.2**	**-0.6**
	0.7nm,0.2s,SNR=7.9						
EMIJ				S	**Sn**	**05 12 44.6**	**+0.3**
	0.4nm,0.1s,SNR=7.9						
EMIJ	**Mijas**	**4.42**	**11**	P	**Pn**	**05 11 52.2**	**-0.6**
	0.7nm,0.2s,SNR=7.9						
EMIJ				S	**Sn**	**05 12 44.6**	**+0.3**
	0.4nm,0.1s,SNR=7.9						
EBER	**Berja**	**5.26**	**27**	P	**Pn**	**05 12 05.6**	**+1.1**
	0.4nm,0.2s,SNR=7.9						
EBER				S	**Sn**	**05 13 06.5**	**+1.3**
	0.2nm,0.1s,SNR=7.9						
EBER	**Berja**	**5.26**	**27**	P	**Pn**	**05 12 05.6**	**+1.1**
	0.4nm,0.2s,SNR=7.9						
EBER				S	**Sn**	**05 13 06.5**	**+1.3**
	0.2nm,0.1s,SNR=7.9						
PBDV	**Barranco-do-Ve**	**5.29**	**342**	*e*Pn	**Pn**	**05 12 05.2**	**+0.4**
PBDV				*e*Sn	**Sn**	**05 13 04.4**	**-1.5**
PBDV				A	A	05 13 18.6	
	3.3nm,0.6s						
PBDV	**Barranco-do-Ve**	**5.29**	**342**	P	**Pn**	**05 12 05.2**	**+0.4**
PBDV				S	**Sn**	**05 13 04.4**	**-1.5**
	3.3nm,0.6s						
PBDV	**Barranco-do-Ve**	**5.29**	**342**	P	**Pn**	**05 12 05.2**	**+0.4**
PBDV				S	**Sn**	**05 13 04.4**	**-1.5**
	3.3nm,0.6s						
PVAQ	**Vaqueiros**	**5.39**	**344**	*e*Pn	**Pn**	**05 12 06.8**	**+0.7**
PVAQ				*e*Sn	**Sn**	**05 13 06.0**	**-2.2**
PVAQ				A	A	05 13 15.6	
	2.9nm,0.5s						
PVAQ	**Vaqueiros**	**5.39**	**344**	P	**Pn**	**05 12 06.8**	**+0.7**
PVAQ				S	**Sn**	**05 13 06.0**	**-2.2**
	2.9nm,0.5s						
PVAQ	**Vaqueiros**	**5.39**	**344**	P	**Pn**	**05 12 06.8**	**+0.7**
PVAQ				S	**Sn**	**05 13 06.0**	**-2.2**
	2.9nm,0.5s						
EGRO	**El Granado**	**5.47**	**346**	P	**Pn**	**05 12 07.9**	**+0.8**
	0.9nm,0.1s,SNR=7.9						
EGRO				S	**Sn**	**05 13 07.7**	**-2.3**
	0.9nm,0.2s,SNR=7.9						
EGRO	**El Granado**	**5.47**	**346**	P	**Pn**	**05 12 07.9**	**+0.8**
	0.9nm,0.1s,SNR=7.9						
EGRO				S	**Sn**	**05 13 07.7**	**-2.3**
	0.9nm,0.2s,SNR=7.9						
PFVI	**Vila Bisbo**	**5.48**	**334**	*e*Pn	**Pn**	**05 12 07.7**	**+0.4**
PFVI				*e*Sn	**Sn**	**05 13 08.8**	**-1.6**
PFVI				A	A	05 13 27.0	
	9.6nm,0.7s						
PFVI	**Vila Bisbo**	**5.48**	**334**	P	**Pn**	**05 12 07.5**	**+0.1**
	1.6nm,0.1s,SNR=6.2						
PFVI				S	Sn	05 13 05.9	-4.5
	1.1nm,0.1s,SNR=7.9						
PFVI	**Vila Bisbo**	**5.48**	**334**	*e*Pn	**Pn**	**05 12 07.7**	**+0.4**
PFVI				*e*Sn	**Sn**	**05 13 08.8**	**-1.6**
	9.6nm,0.7s						
EMIN	**Mina Concepcio**	**5.57**	**353**	P	**Pn**	**05 12 08.4**	**-0.2**
	0.4nm,0.1s,SNR=6.8						
EMIN				S	**Sn**	**05 13 09.9**	**-2.8**
	0.2nm,0.1s						
EMIN	**Mina Concepcio**	**5.57**	**353**	P	**Pn**	**05 12 08.4**	**-0.2**
	0.4nm,0.1s,SNR=6.8						
EMIN				S	**Sn**	**05 13 09.9**	**-2.8**
	0.2nm,0.1s						
MORF	**Marmelete**	**5.57**	**336**	*e*P	**Pn**	**05 12 09.2**	**+0.5**
MORF	**Marmelete**	**5.57**	**336**	*e*Pn	**Pn**	**05 12 09.2**	**+0.5**
MORF				*e*Sn	**Sn**	**05 13 10.6**	**-2.1**
MORF				A	A	05 13 13.3	
	3.3nm,0.1s						
MORF	**Marmelete**	**5.57**	**336**	P	**Pn**	**05 12 09.2**	**+0.5**
MORF				S	**Sn**	**05 13 10.6**	**-2.1**
	3.3nm,0.1s						
MORF	**Marmelete**	**5.57**	**336**	P	**Pn**	**05 12 09.2**	**+0.5**
MORF				S	**Sn**	**05 13 10.6**	**-2.1**
	3.3nm,0.1s						
PCVE	**Castro Verde**	**5.69**	**342**	*e*Sn	**Sn**	**05 13 13.6**	**-1.9**
PCVE	**Castro Verde**	**5.69**	**342**	S	**Sn**	**05 13 13.6**	**-1.9**
PCVE	**Castro Verde**	**5.69**	**342**	S	**Sn**	**05 13 13.6**	**-1.9**
PTEO	**Sao Teotonio**	**5.81**	**337**	*e*Pn	**Pn**	**05 12 12.5**	**+0.6**
PTEO				*e*Sn	**Sn**	**05 13 16.6**	**-2.0**
PTEO	**Sao Teotonio**	**5.81**	**337**	P	**Pn**	**05 12 12.5**	**+0.6**
PTEO				S	**Sn**	**05 13 16.6**	**-2.0**
PTEO	**Sao Teotonio**	**5.81**	**337**	P	**Pn**	**05 12 12.5**	**+0.6**
PTEO				S	**Sn**	**05 13 16.6**	**-2.0**
ECAB	**El Cabril**	**5.85**	**3**	P	**Pn**	**05 12 12.9**	**+0.5**
	0.7nm,0.1s,SNR=14						
ECAB				S	**Sn**	**05 13 16.8**	**-2.7**
	1.1nm,0.2s,SNR=6.1						
ECAB	**El Cabril**	**5.85**	**3**	P	**Pn**	**05 12 12.9**	**+0.5**
	0.7nm,0.1s,SNR=14						
ECAB				S	**Sn**	**05 13 16.8**	**-2.7**
	1.1nm,0.2s,SNR=6.1						
MESJ	**Messejana**	**5.93**	**341**	*e*P	**Pn**	**05 12 14.3**	**+0.7**
MESJ	**Messejana**	**5.93**	**341**	*e*Pn	**Pn**	**05 12 14.2**	**+0.7**
MESJ				*e*Sn	**Sn**	**05 13 19.9**	**-1.6**
MESJ				A	A	05 13 23.4	
	2.8nm,0.4s						
MESJ	**Messejana**	**5.93**	**341**	P	**Pn**	**05 12 14.2**	**+0.7**
MESJ				S	**Sn**	**05 13 19.9**	**-1.6**
	2.8nm,0.4s						
MESJ	**Messejana**	**5.93**	**341**	P	**Pn**	**05 12 14.2**	**+0.7**
MESJ				S	**Sn**	**05 13 19.9**	**-1.6**
	2.8nm,0.4s						
EQES	**Quesada**	**6.01**	**21**	P	**Pn**	**05 12 16.1**	**+1.4**
	0.2nm,0.2s,SNR=7.9						
EQES				S	**Sn**	**05 13 25.5**	**+1.8**
	0.0nm,0.1s,SNR=7.9						
EQES	**Quesada**	**6.01**	**21**	P	**Pn**	**05 12 16.1**	**+1.4**
	0.2nm,0.2s,SNR=7.9						
PBAR	**Barrancos**	**6.02**	**351**	*e*Pn	**Pn**	**05 12 15.4**	**+0.7**
PBAR				*e*Sn	**Sn**	**05 13 21.8**	**-1.8**
PBAR				A	A	05 13 27.4	
	2.7nm,0.4s						
PBAR	**Barrancos**	**6.02**	**351**	P	**Pn**	**05 12 15.4**	**+0.7**
PBAR				S	**Sn**	**05 13 21.8**	**-1.8**
	2.7nm,0.4s						
PBAR	**Barrancos**	**6.02**	**351**	P	**Pn**	**05 12 15.4**	**+0.7**
PBAR				S	**Sn**	**05 13 21.8**	**-1.8**
	2.7nm,0.4s						
EADA	**Adamuz**	**6.02**	**10**	P	**Pn**	**05 12 15.3**	**+0.5**
	0.5nm,0.1s,SNR=13						
EADA				S	**Sn**	**05 13 21.1**	**-2.6**
	0.7nm,0.1s						
EADA	**Adamuz**	**6.02**	**10**	P	**Pn**	**05 12 15.3**	**+0.5**
	0.5nm,0.1s,SNR=13						
EADA				S	**Sn**	**05 13 21.1**	**-2.6**
	0.7nm,0.1s						
PBEJ	**Beja**	**6.02**	**345**	*e*Pn	**Pn**	**05 12 15.4**	**+0.6**
PBEJ				*e*Sn	**Sn**	**05 13 21.3**	**-2.4**
PBEJ				A	A	05 13 24.4	
	1.7nm,0.6s						
PBEJ	**Beja**	**6.02**	**345**	P	**Pn**	**05 12 15.4**	**+0.6**
PBEJ				S	**Sn**	**05 13 21.3**	**-2.4**
	0.9nm,0.6s						
PBEJ	**Beja**	**6.02**	**345**	P	**Pn**	**05 12 15.4**	**+0.6**
PBEJ				S	**Sn**	**05 13 21.3**	**-2.4**
	0.9nm,0.6s						
PNCL	**Nicolau / Gran**	**6.27**	**340**	*e*Pn	**Pn**	**05 12 18.6**	**+0.4**
PNCL				*e*Sn	**Sn**	**05 13 26.4**	**-3.5**
PNCL				A	A	05 13 34.9	
	1.9nm,0.9s						
PNCL	**Nicolau / Gran**	**6.27**	**340**	*e*Pn	**Pn**	**05 12 18.6**	**+0.4**
PNCL				*e*Sn	**Sn**	**05 13 26.4**	**-3.5**
	1.9nm,0.9s						
EVO	**Evora**	**6.54**	**345**	*e*Pn	**Pn**	**05 12 22.8**	**+0.9**
EVO				*e*Sn	**Sn**	**05 13 34.1**	**-2.4**
EVO				A	A	05 13 40.4	
	2.2nm,0.4s						
EVO	**Evora**	**6.54**	**345**	P	**Pn**	**05 12 22.8**	**+0.9**
EVO				S	**Sn**	**05 13 34.1**	**-2.4**
	2.2nm,0.4s						
EVO	**Evora**	**6.54**	**345**	P	**Pn**	**05 12 22.8**	**+0.9**
EVO				S	**Sn**	**05 13 34.1**	**-2.4**
	2.2nm,0.4s						
EBAD	**Badajoz**	**6.59**	**352**	P	**Pn**	**05 12 23.4**	**+0.9**
	1.6nm,0.1s,SNR=19						
EBAD				S	**Sn**	**05 13 36.4**	**-1.3**
	1.2nm,0.2s						
EBAD	**Badajoz**	**6.59**	**352**	P	**Pn**	**05 12 23.4**	**+0.9**
	1.6nm,0.1s,SNR=19						
EBAD				S	**Sn**	**05 13 36.3**	**-1.3**
	1.2nm,0.2s						
PMTG	**Montargil**	**7.10**	**345**	*e*Pn	**Pn**	**05 12 30.7**	**+1.1**
PMTG	**Montargil**	**7.10**	**345**	*e*Pn	**Pn**	**05 12 30.7**	**+1.1**
PMRV	**Marv??o**	**7.30**	**351**	*e*Pn	**Pn**	**05 12 33.1**	**+0.8**
PMRV				*e*Sn	**Sn**	**05 13 52.6**	**-2.6**
PMRV				A	A	05 13 56.3	
	1.1nm,0.6s						
PMRV	**Marv??o**	**7.30**	**351**	P	**Pn**	**05 12 33.1**	**+0.8**
PMRV				S	**Sn**	**05 13 52.6**	**-2.6**
	1.1nm,0.6s						
PMRV	**Marv??o**	**7.30**	**351**	P	**Pn**	**05 12 33.1**	**+0.8**
PMRV				S	**Sn**	**05 13 52.6**	**-2.6**
	1.1nm,0.6s						
ESDC	**Sonseca Array**	**7.59**	**11**	P	**Pn**	**05 12 36.3**	**-0.1**
	0.2nm,0.2s,baz=196,slow=13,SNR=13						
ESDC				S	Sn	05 13 57.6	-4.8
	0.2nm,0.3s,baz=196,slow=23,SNR=4.0						
ESDC	**Sonseca Array**	**7.59**	**11**	P	**Pn**	**05 12 36.3**	**-0.1**
	0.2nm,0.

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CCSP	**San Pedro de C**	**1.50**	**38**	*e*P	**Pn**	**05 12 16.3**	**-1.3**
CCSP				*e*S	**Sn**	**05 12 35.5**	**-0.4**
CCSP				IAML		05 12 40.6	
	comp=N,3μm,0.4s						
VLCH	**Valdivia**	**1.95**	**156**	*e*P	**Pn**	**05 12 22.8**	**-0.9**
VLCH				*e*S	**Sn**	**05 12 47.0**	**+0.2**
COCH	**Cobquecura**	**2.24**	**33**	*e*P	**Pn**	**05 12 27.6**	**0.0**
COCH				*e*S	**Sn**	**05 12 55.8**	**+1.8**
COCH				IAML		05 13 05.2	
	comp=E,2μm,0.8s						
CCHI	**Chillan**	**2.26**	**52**	*e*P	**Pn**	**05 12 27.8**	**-0.2**
CCHI				*e*S	**Sn**	**05 12 56.3**	**+1.8**
CCHI				IAML		05 13 10.9	
	comp=E,2μm,0.7s						
CANA	**Caviahue**	**2.54**	**88**	*e*P	**Pn**	**05 12 30.4**	**-1.7**
CANA				*i* S	**Sn**	**05 13 00.6**	**-1.3**
CANA				IAML		05 13 02.6	
	comp=E,4μm,0.9s						
TALC	**Talca**	**3.38**	**40**	*e*P	**Pn**	**05 12 43.3**	**-0.1**
TALC				*e*S	**Sn**	**05 13 23.4**	**+1.2**
PLCA	**Paso Flores**	**3.95**	**134**	*e*P	**Pn**	**05 12 51.4**	**+0.1**
PLCA				*e*S	**Sn**	**05 13 39.8**	**+3.3**
PLCA				IAML		05 13 55.9	
	comp=Z,95nm,0.6s						
PLCA	**Paso Flores**	**3.95**	**134**	*e*P	**Pn**	**05 12 51.4**	**+0.1**
ROC1	**El Roble**	**5.70**	**29**	*e*P	**Pn**	**05 13 15.4**	**-0.1**
ROC1				*e*S	Sn	05 14 45.8	+26
LCO	**Las Campanas**	**9.47**	**19**	*e*Pn	**Pn**	**05 14 07.4**	**0.0**
	comp=Z,25nm,0.6s						
LCO				*e*Sn	**Sn**	**05 15 49.6**	**-3.2**
VCA	**Vinchina**	**10.56**	**30**	IAML		05 14 47.7	
	comp=Z,8.9nm,0.4s						
CPUP	**Villa Florida**	**18.45**	**56**	P	**Pn**	**05 16 05.2**	**-0.9**
	comp=Z,0.1nm,0.3s,baz=217,slow=4.8,SNR=4.2						
CPUP				LR	LR	05 23 50.7	
	comp=Z,168nm,18.1s,baz=236,slow=39						
LPAZ	**La Paz**	**22.32**	**16**	P	P	05 16 54.6	+6.1
	comp=Z,2.0nm,0.6s,baz=190,slow=8.5,SNR=12						
TXAR	**Lajitas Array**	**72.44**	**333**	P	P	05 23 21.3	+5.4
	comp=Z,0.5nm,0.8s,baz=165,slow=9.3,SNR=4.5						
DBIC	**Dimbokro**	**78.17**	**72**	P	**P**	**05 23 50.4**	**+1.3**
	comp=Z,4.3nm,0.7s,baz=208,slow=4.9,SNR=6.6						
SPMN	**Marine on St.**	**84.54**	**347**	P	**P**	**05 24 22.2**	**+0.1**
	comp=Z,19nm,0.8s						
TORD	**Torodi Ar. Bea**	**87.26**	**71**	P	**P**	**05 24 36.9**	**+0.6**
	comp=Z,0.6nm,0.5s,baz=223,slow=3.9,SNR=7.0						
TIXI	**Tiksi**	**144.28**	**348**	*e*PKPdf	**PKPdf**	**05 31 26.5**	**+2.4**
BVAR	**Borovoye Array**	**151.41**	**47**	PKPbc	**PKPab**	**05 31 47.3**	**-3.6**
	comp=Z,2.2nm,0.6s,baz=274,slow=2.2,SNR=8.7						

*ISCJB **01** 05:13:44.0±0.7, 51°.45N±0°.03×16°.15E±0°.04, h0km, Error ellipse: s-maj=5.1km s-min=3.1km az=12.0*
*CSEM **01** 05:13:45.1±0.4, 51°.46N×16°.15E, h2km, ML2.8/9, Error ellipse: s-maj=6.8km s-min=3.6km az=178.0*
*WAR **01** 05:13:46.0, 51°.46N×16°.15E, h1km, Mw2.3*

ISC 01 05:13:45.5±1.1, 51°.46N±0°.05×16°.15E±0°.02, h0km, n32, σ0§60/63, 6D, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.62**	**171**	*i* Pg	**Pg**	**05 13 57.8**	**+0.4**
KSP				*e*Sg	**Sg**	**05 14 06.2**	**+0.7**
KSP	**Ksiaz**	**0.62**	**171**	*i* Pg	**Pg**	**05 13 57.8**	**+0.4**
KSP				*e*Sg	**Sg**	**05 14 06.2**	**+0.7**
KSP	**Ksiaz**	**0.62**	**171**	*i* Pgd	**Pg**	**05 13 57.8**	**+0.4**
KSP				*e*Sg	**Sg**	**05 14 06.2**	**+0.7**
UPC	**Upice**	**0.96**	**185**	⇓*e*PG	**Pg**	**05 14 04.0**	**+0.2**
UPC				*e*SG	**Sb**	**05 14 17.5**	**-0.7**
	comp=Z,14nm,0.3s						
UPC	**Upice**	**0.96**	**185**	Pg	**Pg**	**05 14 04.0**	**+0.2**
UPC				Sg	**Sb**	**05 14 17.5**	**-0.7**
	14nm,0.3s						
DPC	**Dobruska-Polom**	**1.12**	**174**	*e*PG	**Pg**	**05 14 06.8**	**-0.1**
DPC				*e*SG	**Sg**	**05 14 21.8**	**+0.5**
	comp=Z,9.7nm,0.5s						
DPC	**Dobruska-Polom**	**1.12**	**174**	Pg	**Pg**	**05 14 06.8**	**-0.1**
DPC				Sg	**Sg**	**05 14 21.8**	**+0.5**
	9.7nm,0.5s						
PVCC	**Panska Ves**	**1.36**	**228**	⇓*e*PG	**Pg**	**05 14 11.5**	**-0.1**
PVCC				*e*SG	**Sn**	**05 14 30.9**	**+0.3**
	comp=Z,29nm,0.2s						
PVCC	**Panska Ves**	**1.36**	**228**	Pg	**Pg**	**05 14 11.5**	**-0.1**
PVCC				Sg	**Sn**	**05 14 30.9**	**+0.3**
	29nm,0.2s						
KRLC	**Kraliky**	**1.44**	**164**	*e*PG	**Pn**	**05 14 12.9**	**0.0**
KRLC				*e*SG	**Sg**	**05 14 31.2**	**-0.6**
KRLC	**Kraliky**	**1.44**	**164**	Pg	**Pn**	**05 14 12.9**	**0.0**
KRLC				Sg	**Sg**	**05 14 31.2**	**-0.6**
BRG	**Berggiesshubel**	**1.51**	**248**	PN	**Pn**	**05 14 13.6**	**-0.1**
BRG				PG	**Pg**	**05 14 14.7**	**+0.3**
BRG				SG	**Sn**	**05 14 34.2**	**+0.1**
	14nm,0.3s						
GOPC	**GO Pecny, Ondr**	**1.77**	**210**	*e*PG	**Pb**	**05 14 18.5**	**-0.4**
GOPC				*e*SG	**Sg**	**05 14 42.7**	**+0.3**
	comp=Z,4.8nm,0.2s						
GOPC	**GO Pecny, Ondr**	**1.77**	**210**	Pg	**Pb**	**05 14 18.5**	**-0.4**
GOPC				Sg	**Sg**	**05 14 42.7**	**+0.3**
	4.8nm,0.2s						
PRU	**Pruhonice**	**1.79**	**215**	⇓*e*PN	**Pn**	**05 14 17.6**	**-0.1**
PRU				*e*PG	**Pb**	**05 14 18.9**	**-0.3**
PRU				*e*SG	**Sb**	**05 14 42.5**	**+0.3**
	comp=Z,8.5nm,0.4s						
PRU	**Pruhonice**	**1.79**	**215**	Pn	**Pn**	**05 14 17.6**	**-0.1**
MORC	**Moravsky Berou**	**1.90**	**152**	*e*Pn	**Pn**	**05 14 18.6**	**-0.7**
CLL	**Collm**	**1.98**	**267**	*e*Pn	**Pn**	**05 14 20.0**	**-0.2**
CLL				*e*Pg	**Pb**	**05 14 22.0**	**-0.3**
CLL				*i*		05 14 25.0	
CLL				*i* Sg	**Sg**	**05 14 49.8**	**+0.8**
	comp=Z,6.0nm,0.6s						
OKC	**Ostrava-Krasne**	**2.06**	**141**	⇓*e*PN	**Pn**	**05 14 20.5**	**-0.9**
OKC				*e*PG	**Pb**	**05 14 24.2**	**+0.4**
OKC				*e*SG	**Sb**	**05 14 49.7**	**-0.3**
	comp=Z,5.3nm,0.4s						
OKC	**Ostrava-Krasne**	**2.06**	**141**	Pn	**Pn**	**05 14 20.5**	**-0.9**
VRAC	**Vranov**	**2.17**	**172**	*e*Pn	**Pn**	**05 14 21.7**	**-1.2**
TREC	**Trest**	**2.21**	**191**	⇓*e*PN	**Pn**	**05 14 24.4**	**+1.0**
TREC				*e*PG	**Pb**	**05 14 26.9**	**+0.6**
TREC				*e*SG	**Sg**	**05 14 55.7**	**-0.7**
	comp=Z,3.5nm,0.2s						
TREC	**Trest**	**2.21**	**191**	Pn	**Pn**	**05 14 24.4**	**+1.0**
OJC	**Ojcow**	**2.63**	**117**	*e*Pg	**Pg**	**05 14 36.3**	**+0.5**
OJC				*e*Sg	**Sg**	**05 15 10.9**	**+1.0**
OJC	**Ojcow**	**2.63**	**117**	*e*Pg	**Pg**	**05 14 36.3**	**+0.5**
OJC				*e*Sg	**Sg**	**05 15 10.9**	**+1.0**
OJC	**Ojcow**	**2.63**	**117**	*e*Pg	**Pg**	**05 14 36.3**	**+0.5**
OJC				*e*Sg	**Sg**	**05 15 10.9**	**+1.0**
NKC	**Novy Kostel**	**2.65**	**244**	⇓*e*PN	**Pn**	**05 14 29.5**	**0.0**
NKC				*e*PG	**Pg**	**05 14 35.3**	**-0.9**
NKC				*e*SG	**Sg**	**05 15 11.2**	**+0.7**
	comp=Z,7.4nm,0.3s						
NKC	**Novy Kostel**	**2.65**	**244**	Pn	**Pn**	**05 14 29.5**	**0.0**
KHC	**Kasperske Hory**	**2.85**	**216**	*e*PN	**Pn**	**05 14 32.4**	**+0.1**
KHC				*e*PG	**Pb**	**05 14 38.4**	**+1.1**
KHC				*e*SN	**Sn**	**05 15 06.7**	**-0.7**
KHC				*e*SG	**Sg**	**05 15 17.1**	**0.0**
	comp=Z,3.2nm,0.4s						
KHC	**Kasperske Hory**	**2.85**	**216**	Pn	**Pn**	**05 14 32.4**	**+0.1**
STHS	**Stebnicka Huta**	**3.85**	**120**	*e*Pg	**Pg**	**05 14 58.1**	**-1.1**
STHS	**Stebnicka Huta**	**3.85**	**120**	*e*PG	**Pg**	**05 14 58.1**	**-1.1**

*KLM **01** 05:21:48.3, 2°.73N×97°.61E, h24km, mb4.0, ML4.0, MS5.2*
*NEIC **01** 05:21:50.3±0.6, 2°.69N×97°.68E, h77km±6km, mb4.5/3, Error ellipse: s-maj=10.1km s-min=8.2km az=97.0*
*DJA **01** 05:21:50.9±0.8, 3°.N±3°.×9°.8E±°, h32km±8km, M4.5/13, mB5.4/1, mb4.8/3, MLv4.3/13, Mw(mB)4.9/1*
*IDC **01** 05:21:51.1±1.7, 2°.79N×97°.73E, h80km±16km, mb3.9/20, mb1 4.0/21, mb1mx3.8/43, mbtmp4.2/21, MS3.1/2, Ms1 3.2/2, ms1mx2.6/47, Error ellipse: s-maj=21.9km s-min=18.8km az=48.0*

ISC 01 05:21:46.9±0.5, 2°.65N±0°.05×97°.54E±0°.04, h35km, n54, σ2§33/54, mb4.2/24, 7C, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KCSI	**Kotacane, Aceh**	**0.89**	**15**	P	**Pn**	**05 22 06.6**	**+3.5**
KCSI				S	**Sn**	**05 22 18.8**	**+4.0**
TSI	**Tuntungan**	**1.33**	**51**	P	Pn	05 22 12.7	+3.7
TSI				S	**Sn**	**05 22 30.0**	**+4.5**
GSI	**Gunungsitoli**	**1.34**	**178**	P	**Pn**	**05 22 13.1**	**+3.9**
GSI	**Gunungsitoli**	**1.34**	**178**	*e*Pn	**Pn**	**05 22 13.0**	**+3.8**
PSI	**Prapat**	**1.40**	**84**	P	**Pn**	**05 22 12.6**	**+2.6**
	baz=296,slow=12						
PSI				S	**Sn**	**05 22 28.9**	**+1.6**
MLSI	**Meulaboh, Aceh**	**1.96**	**325**	P	Pn	05 22 23.1	+5.4
MLSI				S	**Sn**	**05 22 48.1**	**+7.0**
LHMI	**Lhok Sumawe**	**2.62**	**347**	P	Pn	05 22 31.8	+5.0
LHMI	**Lhok Sumawe**	**2.62**	**347**	*e*Pn	**Pn**	**05 22 31.1**	**+4.3**
MNSI	**Mandailing Nat**	**2.75**	**132**	P	**Pn**	**05 22 32.3**	**+3.7**
IPM	**Ipoh**	**3.93**	**62**	⇑P	**Pn**	**05 22 45.4**	**+0.6**
IPM	**Ipoh**	**3.93**	**62**	*e*Pn	**Pn**	**05 22 47.2**	**+2.4**
IPM				*e*Sn	**Sn**	**05 23 29.0**	**-0.7**
KULM	**Kulim**	**4.06**	**50**	⇑P	**Pn**	**05 22 47.0**	**+0.3**
KULM	**Kulim**	**4.06**	**50**	*e*Pn	**Pn**	**05 22 48.9**	**+2.3**
KULM				*e*Sn	**Sn**	**05 23 29.1**	**-3.9**
FRIM	**Kepong**	**4.12**	**82**	⇑P	**Pn**	**05 22 48.9**	**+1.4**
BKNI	**Bangkinang**	**4.20**	**123**	P	Pn	05 22 53.1	+4.6
PDSI	**Padang**	**4.59**	**140**	P	Pn	05 23 01.0	+7.0
RGRI	**Rengat**	**5.65**	**122**	P	Pn	05 23 13.1	+4.7
KGM	**Kluang**	**5.81**	**96**	⇑P	**Pn**	**05 23 12.1**	**+1.4**
KTGM	**Kuala Trenggan**	**6.18**	**64**	⇑P	**Pn**	**05 23 16.8**	**+1.0**
MYKOM	**Kota Tinggi**	**6.37**	**98**	⇑P	**Pn**	**05 23 20.2**	**+1.9**
KSM	**Kuching**	**12.82**	**95**	⇑P	**Pn**	**05 24 48.5**	**+1.7**
CMAR	**Chiang Mai Arr**	**15.77**	**5**	P	**Pn**	**05 25 26.0**	**-0.5**
	0.8nm,0.3s,baz=195,slow=11,SNR=14						
CMAR				LR	LR	05 31 27.2	
	comp=Z,54nm,19.1s,baz=182,slow=37						
KAPI	**Kappang**	**23.46**	**109**	LR	LR	05 36 23.0	
	comp=Z,57nm,21.8s,baz=289,slow=37						
GUN	**Gumba**	**27.47**	**337**	*e*P	**P**	**05 27 29.2**	**-1.2**
	14nm,0.4s						
GKN	**Gorkha**	**28.06**	**335**	*e*P	**P**	**05 27 34.3**	**-1.1**
KOLN	**Koldanda**	**28.30**	**333**	*e*P	**P**	**05 27 37.4**	**-0.2**
	16nm,0.5s						
PYUN	**Piuthan**	**28.86**	**333**	*e*P	**P**	**05 27 42.2**	**-0.4**
WRA	**Warramunga Arr**	**42.53**	**124**	P	**P**	**05 29 37.7**	**-1.9**
	0.4nm,0.5s,baz=302,slow=9.2,SNR=6.1						
WRA				pP	**sP**	**05 29 53.4**	**-0.6**
	3.0nm,0.6s,baz=301,slow=9.1,SNR=12						
ASAR	**Alice Springs**	**44.02**	**129**	pP	pP	05 30 05.4	+3.6
	0.9nm,0.8s,baz=303,slow=8.6,SNR=4.8						
KSAR	**Wonju Array Be**	**44.44**	**35**	P	**P**	**05 29 52.1**	**-2.5**
KSRS	**Korea Array**	**44.47**	**35**	P	**P**	**05 29 52.1**	**-2.7**
	1.8nm,0.6s,baz=231,slow=8.1,SNR=5.8						
SONM	**Songino Array**	**45.65**	**8**	P	**P**	**05 30 01.9**	**-2.3**
	2.2nm,0.4s,baz=190,slow=10,SNR=13						
SONM				PcP	**PcP**	**05 31 41.8**	**-0.3**
	0.2nm,0.3s,baz=194,slow=3.1,SNR=3.8						
MKAR	**Makanchi Array**	**45.92**	**345**	P	**P**	**05 30 04.7**	**-1.6**
	2.4nm,0.4s,baz=158,slow=8.6,SNR=44						
KKAR	**Karatay Array**	**46.92**	**333**	*e*P	**P**	**05 30 14.5**	**+0.4**
	1.3nm,0.5s						
TLY	**Talaya**	**49.13**	**5**	P	**P**	**05 30 30.2**	**-0.9**
	0.8nm,0.3s,baz=298,slow=4.4,SNR=3.9						
GEYT	**Alibeck**	**50.33**	**319**	P	**P**	**05 30 40.8**	**+0.3**
	5.9nm,0.6s,baz=142,slow=7.5,SNR=10						
KURBB	**Kurchatov Arra**	**50.43**	**344**	P	**P**	**05 30 39.6**	**-1.3**
	1.1nm,0.4s,baz=164,slow=6.9,SNR=16						
KURK	**Kurchatov**	**50.49**	**345**	P	**P**	**05 30 39.6**	**-1.8**
USRK	**Ussuriysk Ar.**	**51.36**	**31**	P	**P**	**05 30 45.8**	**-2.3**
	1.2nm,0.6s,baz=231,slow=9.1,SNR=3.8						
ZALV	**Zalesovo Beam**	**52.19**	**351**	P	**P**	**05 30 52.4**	**-1.6**
	12nm,0.3s,baz=167,slow=7.0,SNR=50						
KLR	**Kul'dur**	**54.81**	**27**	P	**P**	**05 31 11.3**	**-2.1**
	2.9nm,0.7s,baz=256,slow=8.1,SNR=8.2						
BVAR	**Borovoye Array**	**55.00**	**340**	P	**P**	**05 31 13.3**	**-1.4**
	5.4nm,0.7s,baz=134,slow=8.5,SNR=30						
BRVK	**Borovoye**	**55.06**	**340**	*e*P	**P**	**05 31 13.6**	**-1.6**
	5.3nm,0.9s						
ABKAR	**Akbulak array**	**56.40**	**331**	*e*P	**P**	**05 31 23.6**	**-1.3**
	5.1nm,0.8s						
KBZ	**Khabaz**	**63.21**	**319**	P	**P**	**05 32 11.6**	**-0.1**
	1.8nm,0.8s,baz=133,slow=6.9,SNR=5.5						
BRTR	**Keskin Array B**	**68.39**	**312**	P	**P**	**05 32 44.4**	**-1.1**
	2.2nm,0.7s,baz=130,slow=7.3,SNR=13						
SEY	**Seymchan**	**72.30**	**23**	P	**P**	**05 33 06.7**	**-2.0**
	1.0nm,0.4s,baz=208,slow=17,SNR=3.3						
AKASG	**Malin Array Be**	**74.32**	**322**	P	**P**	**05 33 19.2**	**-1.6**
	0.2nm,0.3s,baz=86,slow=5.4,SNR=4.0						
BOSA	**Boshof**	**75.79**	**240**	P	**P**	**05 33 30.4**	**+0.5**
	2.0nm,0.8s,baz=91,slow=3.1,SNR=4.4						
FINES	**FINESS Array B**	**78.87**	**332**	P	**P**	**05 33 45.4**	**-1.0**
	1.2nm,0.4s,baz=93,slow=6.1,SNR=22						
ARCES	**ARCESS Array B**	**81.29**	**340**	P	**P**	**05 33 58.6**	**-0.7**
	1.2nm,0.7s,baz=92,slow=5.0,SNR=18						
GERES	**GERESS Array B**	**83.95**	**319**	P	**P**	**05 34 16.2**	**+2.5**
	0.3nm,0.5s,baz=99,slow=6.1,SNR=5.5						
HFS	**Hagfors**	**84.64**	**330**	P	**P**	**05 34 16.2**	**-0.6**
	1.6nm,0.6s,baz=117,slow=8.8,SNR=6.8						
NOA	**NORSAR Array B**	**85.91**	**331**	P	**P**	**05 34 23.5**	**+0.4**
	0.5nm,0.7s,baz=44,slow=2.3,SNR=2.5						

*ISCJB **01** 05:31:11.7±1.0, 19°.32S±0°.08×66°.9W±0°.1, h266km, mb4.0/2, Error ellipse: s-maj=14.9km s-min=8.8km az=34.2*
*IDC **01** 05:31:16.3±4.4, 18°.64S×66°.45W, h276km±30km, mb3.8/2, mb1 3.9/3, mb1mx3.3/17, mbtmp4.2/3, Error ellipse: s-maj=85.6km s-min=43.0km az=15.0*

ISC 01 05:31:12.8±1.1, 19°.26S±0°.08×67°.0W±0°.1, h266km, n10, σ1§36/16, 1C-2D, Southern Bolivia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MNMC	**Minye Minye**	**2.44**	**273**	*e*P	**Pn**	**05 32 01.3**	**+0.3**
MNMC				*e*S	**S**	**05 32 38.5**	**-0.6**
MNMC				IAML		05 32 45.0	
	comp=E,335nm,0.8s						
PB11	**IPOC Station P**	**2.54**	**258**	*e*P	**Pn**	**05 32 02.0**	**+0.3**
PB11				*e*S	**S**	**05 32 40.0**	**-0.6**
HMBC	**Humberstone**	**2.89**	**249**	*e*P	**Pn**	**05 32 06.1**	**+0.9**
HMBC				*e*S	**S**	**05 32 45.2**	**-1.6**
HMBC				IAML		05 32 47.2	
	comp=E,648nm,0.2s						
PB01	**IPOC Station P**	**2.92**	**232**	⇓*e*P	**Pn**	**05 32 05.4**	**-0.1**
PB01				*e*S	**S**	**05 32 46.2**	**-1.3**
PB01				IAML		05 32 49.7	
	comp=N,264nm,0.2s						
LPAZ	**La Paz**	**3.14**	**340**	P	**Pn**	**05 32 09.7**	**+1.1**
	comp=N,3.6nm,0.3s,baz=141,slow=6.3,SNR=96						
LPAZ				S	**S**	**05 32 52.0**	**-0.7**
	comp=N,1.6nm,0.3s,baz=31,slow=20,SNR=11						
LPAZ	**La Paz**	**3.14**	**340**	⇓*e*P	**Pn**	**05 32 07.2**	**-1.4**
LPAZ				*e*S	S	05 32 46.8	-6.0
PB09	**IPOC Station P**	**3.27**	**219**	⇑*e*P	**Pn**	**05 32 09.7**	**+0.4**
PB09				*e*S	**S**	**05 32 53.0**	**-1.3**
TORD	**Torodi Ar. Bea**	**74.93**	**70**	P	**P**	**05 42 23.7**	**-1.6**
	comp=N,1.9nm,0.4s,baz=252,slow=5.2,SNR=52						
YKA	**Yellowknife Ar**	**89.69**	**340**	P	**P**	**05 43 40.9**	**+0.6**
	comp=N,1.6nm,0.7s,baz=129,slow=4.6,SNR=5.2						
WRA	**Warramunga Arr**	**135.77**	**209**	PKP	**PKPdf**	**05 50 05.7**	**+3.1**
	comp=N,0.1nm,0.4s,baz=156,slow=1.8,SNR=3.7						

*ISCJB **01** 05:31:41.4±0.8, 0°.16N±0°.08×124°.6E±0°.1, h73km, mb3.7/6, Error ellipse: s-maj=15.6km s-min=10.8km az=21.2*
*IDC **01** 05:31:42.5±5.2, 0°.16N×124°.67E, h64km±47km, mb3.5/6, mb1 3.6/8, mb1mx3.4/46, mbtmp3.8/8, ML3.8/2, MS3.0/1, Ms1 3.0/1, ms1mx2.4/34, Error ellipse: s-maj=40.0km s-min=16.1km az=60.0*

ISC 01 05:31:43.5±0.9, 0°.1N±0°.1×124°.7E±0°.1, h73km, n10, σ1§04/12, mb3.7/6, Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DAV	**Davao City (W)**	**6.94**	**7**	LR	LR	05 36 27.5	
	comp=Z,120nm,18.2s,baz=333,slow=41						
KAPI	**Kappang**	**7.10**	**224**	P	**Pn**	**05 33 25.2**	**+0.4**
	2.1nm,0.3s,baz=26,slow=4.6,SNR=7.7						
KAPI				S	**Sn**	**05 34 43.8**	**-0.2**
	2.5nm,0.3s,baz=45,slow=23,SNR=6.0						
FITZ	**Fitzroy Crossi**	**18.15**	**177**	P	**Pn**	**05 35 50.9**	**+0.2**
	0.2nm,0.3s,baz=22,slow=10.0,SNR=6.1						
WRA	**Warramunga Arr**	**22.09**	**155**	P	**P**	**05 36 31.0**	**-1.8**
	0.6nm,0.4s,baz=335,slow=12,SNR=20						
WRA				PcP	**PcP**	**05 40 28.7**	**+0.6**
	0.2nm,0.3s,baz=337,slow=2.0,SNR=5.9						
ASAR	**Alice Springs**	**25.30**	**160**	P	**P**	**05 37 03.1**	**-0.3**
	0.8nm,0.7s,baz=326,slow=6.7,SNR=14						
ASAR				PcP	**PcP**	**05 40 35.8**	**+0.9**
	0.8nm,0.3s,baz=352,slow=2.2,SNR=21						
STKA	**Stephens Creek**	**35.64**	**155**	P	**P**	**05 38 35.4**	**+0.8**
	1.6nm,0.5s,baz=328,slow=8.6,SNR=6.3						
SONM	**Songino Array**	**50.09**	**344**	P	**P**	**05 40 32.4**	**+1.1**
	0.3nm,0.3s,baz=162,slow=8.5,SNR=3.4						
MKAR	**Makanchi Array**	**59.39**	**327**	P	**P**	**05 41 37.5**	**-0.9**
	0.2nm,0.4s,baz=121,slow=8.4,SNR=5.7						
KURBB	**Kurchatov Arra**	**63.69**	**329**	P	**P**	**05 42 06.2**	**-1.0**
	1.1nm,0.2s,baz=138,slow=5.4,SNR=2.7						
TORD	**Torodi Ar. Bea**	**121.99**	**286**	PKP	**PKPdf**	**05 50 29.5**	**-1.1**
	0.2nm,0.4s,baz=142,slow=2.4,SNR=3.4						

*IDC **01** 05:41:23.2±1.1, 37°.48N×143°.44E, h0km, mb3.8/7, mb1 3.9/11, mb1mx3.6/50, mbtmp3.9/11, ML3.5/3, MS2.8/2, Ms1 2.8/2, ms1mx2.4/38, Error ellipse: s-maj=25.1km s-min=17.9km az=84.0*
*ISCJB **01** 05:41:25.1±0.7, 37°.64N±0°.05×143°.57E±0°.07, h33km, mb3.9/11, Error ellipse: s-maj=8.5km s-min=6.6km az=26.5*
*JMA **01** 05:41:25.3±0.3, 37°.67N×143°.54E, h45km, M3.4*
*NEIC **01** 05:41:27.1±0.9, 37°.61N×143°.68E, h35km, mb4.2/4, Error ellipse: s-maj=18.9km s-min=11.5km az=98.0*

ISC 01 05:41:27.7±1.0, 37°.64N±0°.06×143°.53E±0°.09, h35km, n30, σ1§82/32, mb3.9/11, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.90**	**296**	P	**Pn**	**05 41 56.3**	**-1.3**
JIO				*e*S	**Sn**	**05 42 19.4**	**-0.9**
OFUJ	**Ofunato**	**2.05**	**315**	P	**Pn**	**05 41 57.9**	**-1.7**
JFK	**Kawauchi**	**2.13**	**263**	P	**Pn**	**05 41 59.8**	**-0.9**
JMM	**Marumori**	**2.18**	**277**	P	**Pn**	**05 42 00.3**	**-1.1**
JMK	**Ichinoseki**	**2.24**	**306**	P	**Pn**	**05 42 00.9**	**-1.3**
JOU	**Okura**	**2.37**	**289**	P	**Pn**	**05 42 03.6**	**-0.5**
ERM	**Erimo**	**4.38**	**356**	*e*Pn	**Pn**	**05 42 29.8**	**-1.8**
ERM				*e*Sn	**Sn**	**05 43 19.9**	**-1.4**
MJAR	**Matsushiro Arr**	**4.39**	**257**	Pn	**Pn**	**05 42 30.7**	**-1.2**
	2.9nm,0.3s,baz=75,slow=10,SNR=51						
MJAR				Sn	**Sn**	**05 43 19.8**	**-2.0**
	0.5nm,0.3s,baz=90,slow=13,SNR=4.8						
MJAR				LR	LR	05 44 26.7	
	comp=Z,86nm,18.3s,baz=60,slow=43						
MAJO	**Matsushiro**	**4.39**	**257**	*e*Pn	**Pn**	**05 42 32.2**	**+0.4**
MAT	**Matsushiro**	**4.39**	**257**	P	**Pn**	**05 42 32.4**	**+0.5**
MAT				S	**Sn**	**05 43 23.0**	**+1.2**
JHJ	**Hachijo jima 2**	**5.45**	**215**	Pn	**Pn**	**05 42 44.6**	**-1.8**
	6.2nm,0.3s,baz=41,slow=19,SNR=3.1						
JHJ				Sn	**Sn**	**05 43 42.5**	**-5.3**
	6.5nm,0.3s,baz=72,slow=20,SNR=2.8						
ASAJ	**Asahikawa**	**6.51**	**354**	Pn	**Pn**	**05 43 00.6**	**-0.3**
	0.9nm,0.3s,baz=174,slow=16,SNR=7.0						
ASAJ				Sn	**Sn**	**05 44 10.6**	**-3.2**
	0.4nm,0.3s,baz=78,slow=19,SNR=2.8						
USRK	**Ussuriysk Ar.**	**10.91**	**311**	Pn	**Pn**	**05 44 01.6**	**+0.4**
	0.2nm,0.3s,baz=108,slow=13,SNR=4.5						
KSRS	**Korea Array**	**12.39**	**274**	LR	LR	05 48 48.3	
	comp=Z,49nm,18.1s,baz=300,slow=36						
KLR	**Kul'dur**	**14.38**	**327**	Pn	**Pn**	**05 44 45.6**	**-3.0**
	0.1nm,0.3s,baz=121,slow=12,SNR=4.9						
H11N2	**WAKE ISLAND Hy**	**27.06**	**125**	T	T	06 15 17.6	
	baz=317,slow=75,SNR=14						
H11N1	**WAKE ISLAND Hy**	**27.07**	**125**	T	T	06 15 25.0	
	baz=317,slow=75,SNR=8.7						
H11N3	**WAKE ISLAND Hy**	**27.08**	**125**	T	T	06 15 17.5	
	baz=317,slow=75,SNR=13						
SONM	**Songino Array**	**28.86**	**303**	P	**P**	**05 47 24.7**	**+1.8**
	0.4nm,0.6s,baz=92,slow=10,SNR=3.7			

JMK	Ichinoseki	3.00 299	P		Pn	05 48 44.3	+1.8
JMK			eS		Sn	05 49 16.6	-0.6
JMM	Marumori	3.02 278	eS		Sn	05 49 16.8	-0.8
JOU	Okura	3.20 286	P		Pn	05 48 47.3	+2.0
JOU			eS		Sn	05 49 22.7	+0.5
JOM	Ohasama	3.22 308	P		Pn	05 48 47.6	+2.0
JOM			eS		Sn	05 49 22.6	-0.2
JFT	Otama	3.37 271	eS		Sn	05 49 25.5	-0.8
MJAR	Matsushiro Arr	5.18 261	Pn		Pn	05 49 13.4	+0.9
	2.4nm,0.3s,baz=91,slow=15,SNR=21						
MAT	Matsushiro	5.18 261	P		Pn	05 49 14.9	+2.3
MAT			S		Sn	05 50 03.4	-7.8
JHJ	Hachijo jima 2	5.88 223	Pn		Pn	05 49 21.1	-1.1
	12nm,0.3s,baz=132,slow=20,SNR=5.1						
ASAJ	Asahikawa	6.75 348	Pn		Pn	05 49 33.4	-0.7
	0.4nm,0.3s,baz=342,slow=20,SNR=5.2						
H11N2	WAKE ISLAND Hy 26.32 126		T		T	06 20 58.9	
	baz=317,slow=75,SNR=4.6						
H11N1	WAKE ISLAND Hy 26.33 126		T		T	06 20 57.5	
	baz=317,slow=75,SNR=3.6						
H11N3	WAKE ISLAND Hy 26.34 126		T		T	06 20 58.1	
	baz=317,slow=75,SNR=5.1						
H11S1	WAKE ISLAND Hy 27.10 128		T		T	06 21 58.2	
	baz=321						
H11S3	WAKE ISLAND Hy 27.10 128		T		T	06 21 57.1	
	baz=321						
H11S2	WAKE ISLAND Hy 27.11 128		T		T	06 22 00.2	
	baz=321						
SONM	Songino Array	29.62 303	P		P	05 53 57.6	-1.9
	0.3nm,0.5s,baz=104,slow=6.1,SNR=2.3						
ZALV	Zalesovo Beam	43.45 312	P		P	05 55 57.5	+0.7
	0.9nm,0.6s,baz=133,slow=6.5,SNR=3.7						
ILAR	Eielson Array	47.73 33	P		P	05 56 29.8	-0.7
	0.2nm,0.9s,baz=345,slow=3.1,SNR=3.4						
WRA	Warramunga Arr	57.97 191	P		P	05 57 46.6	+0.1
	1.1nm,0.8s,baz=14,slow=7.3,SNR=6.4						
ASAR	Alice Springs	61.69 191	P		P	05 58 12.6	+0.5
	0.5nm,0.9s,baz=1.0,slow=5.8,SNR=6.0						

*IDC **01** 05:50:47.0±1.1, 37°.54N×142°.39E, h0km, mb3.3/4, mb1 3.5/6, mb1mx3.3/41, mbtmp3.4/6, ML3.1/2, Error ellipse: s-maj=35.0km s-min=21.4km az=107.0*
*ISCJB **01** 05:50:48.7±0.9, 37°.63N±0°.05×142°.13E±0°.08, h24km, mb3.4/4, Error ellipse: s-maj=9.9km s-min=6.1km az=160.9*
*JMA **01** 05:50:50.3±0.2, 37°.69N×142°.05E, h26km±4km, M3.4*
ISC 01 05:50:50.0±1.1, 37°.68N±0°.05×142°.05E±0°.08, h24km, n13, σ0$51/15, mb3.5/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.95	325	P	Pb	05 51 07.7	-0.1
JIO				S	Sb	05 51 19.4	-0.5
JFK	Kawauchi	0.98	252	P	Pb	05 51 08.1	-0.3
JMM	Marumori	1.01	281	P	Pb	05 51 08.7	-0.1
JMM				S	Sb	05 51 21.5	-0.2
ONAJ	Iwakimizuishiy	1.15	240	P	Pb	05 51 10.5	-0.8
JOU	Okura	1.29	302	P	Pb	05 51 13.5	-0.1
JOU				S	Sn	05 51 29.6	+0.6
JFT	Otama	1.37	264	P	Pb	05 51 14.7	-0.2
JMK	Ichinoseki	1.43	333	P	Pb	05 51 14.8	-1.1
MJAR	Matsushiro Arr	3.27	251	Pn	Pb	05 51 42.9	-4.5
	0.8nm,0.3s,baz=71,slow=14,SNR=6.1						
JHJ	Hachijo jima 2	4.91	203	Pn	Pn	05 52 02.5	+0.2
	4.7nm,0.3s,baz=90,slow=20,SNR=2.2						
JHJ				Sn	Sn	05 52 58.4	-0.1
	6.6nm,0.3s,baz=73,slow=19,SNR=2.0						
KURBB	Kurchatov Arra	46.00	308	P	P	05 59 13.7	+2.5
	0.2nm,0.4s,baz=79,slow=8.0,SNR=2.4						
WRA	Warramunga Arr	57.77	189	P	P	06 00 39.1	-0.1
	0.4nm,0.5s,baz=5.8,slow=7.5,SNR=7.6						
ASAR	Alice Springs	61.50	188	P	P	06 01 04.8	0.0
	0.3nm,0.7s,baz=14,slow=7.9,SNR=4.1						
YKA	Yellowknife Ar	63.00	30	P	P	06 01 15.1	+0.7
	0.1nm,0.7s,baz=297,slow=6.3,SNR=3.1						

*ISN **01** 05:56:13.6±0.3, 35°.59N×44°.53E, h0km, ML2.7*
*CSEM **01** 05:56:14.7±0.3, 35°.49N×44°.80E, h2km, ML2.7, Error ellipse: s-maj=79.9km s-min=5.0km az=33.0*
TEH 01 05:56:16.8, 35°.41N×44°.79E, h10km, ML2.7, Iraq

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IDHR	Dehrash	1.49	118	eAMB	AMB	05 57 05.9	
	comp=Z,2μm,0.2s						
IDHR				eSg	Sb	05 57 03.7	0.0
IGHG	Ghaleghazi	1.81	126	ePn	Pn	05 56 48.2	-0.1
IGHG				eSg	Sb	05 57 13.5	+0.4
IGHG	Ghaleghazi	1.81	126	ePn	Pn	05 56 48.2	-0.1
IGHG				eSg	Sb	05 57 13.5	+0.4
IVIS	Veis	1.91	117	ePn	Pn	05 56 49.6	+0.1
IVIS				eSg	Sb	05 57 15.9	+0.3
IVIS				eAMB	AMB	05 57 23.2	
	comp=Z,467nm,0.2s						
IVIS	Veis	1.91	117	ePn	Pn	05 56 49.6	+0.1
IVIS				eSg	Sb	05 57 15.9	+0.3

*NIED **01** 06:12:00, 36°.70N×142°.30E, h23km, Mw4.2 Best double couple: M0=2.32000×10^15 NP1:φ=194.00000°, δ=26.00000°, λ=82.00000°. NP2:φ=22.00000°, δ=64.00000°, λ=94.00000°.*
*ISCJB **01** 06:12:20.0±1.1, 36°.69N±0°.03×142°.32E±0°.04, h30km±8km, mb4.1/42, MS3.5/19, Error ellipse: s-maj=5.1km s-min=4.6km az=27.5*
*JMA **01** 06:12:19.5±0.2, 36°.69N×142°.33E, h33km, M4.1*
*MOS **01** 06:12:21.0±1.2, 36°.72N×142°.27E, h37km, mb4.3/30, Error ellipse: s-maj=10.3km s-min=6.9km az=111.7*
*IDC **01** 06:12:22.5±2.8, 36°.55N×142°.27E, h37km±25km, mb3.7/20, mb1 3.9/25, mb1mx3.9/37, mbtmp4.0/25, ML3.7/3, MS3.4/17, Ms1 3.4/17, ms1mx3.2/47, Error ellipse: s-maj=16.9km s-min=13.4km az=110.0*
*NEIC **01** 06:12:23.3±1.5, 36°.90N×142°.16E, h28km±13km, mb4.5/5, Error ellipse: s-maj=10.5km s-min=5.4km az=115.0*
ISC 01 06:12:21.2±0.7, 36°.70N±0°.04×142°.24E±0°.05, h26km±4km, n116, σ1$35/122, mb4.1/42, MS3.5/19, 10C-1D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	1.23	290	P	Pn	06 12 42.1	-0.6
ONAJ				eS	Sn	06 12 58.6	+0.1
JFK	Kawauchi	1.28	302	P	Pn	06 12 42.7	-0.8
JFK				eS	Sn	06 12 59.9	+0.1
JHO	Hitachi	1.35	267	P	Pn	06 12 43.8	-0.5
JHO				eS	Sn	06 13 00.5	-0.9
JMM	Marumori	1.65	316	P	Pn	06 12 47.6	-0.8
JMM				eS	Sn	06 13 10.0	+1.3
JFT	Otama	1.73	299	P	Pn	06 12 49.6	0.0
JFT				eS	Sn	06 13 12.1	+1.3
JIO	Ouri	1.90	338	P	Pn	06 12 51.2	-0.6
JIO				eS	Sn	06 13 14.9	+0.1
JOU	Okura	2.09	323	P	Pn	06 12 55.2	+0.7
JOU				eS	Sn	06 13 21.3	+1.7
JAG	Ashikaga	2.26	264	P	Pn	06 12 56.9	0.0
JAG				S	Sn	06 13 24.9	+1.0
BSO1	Boso 1	2.28	207	P	Pn	06 12 57.2	+0.6
BSO1				eS	Sn	06 13 26.6	+3.0
JMK	Ichinoseki	2.39	341	P	Pn	06 12 59.0	+0.3
JMK				S	Sn	06 13 27.0	-0.1
MJAR	Matsushiro Arr	3.25	268	Pn	Pn	06 13 11.1	+0.6
	13nm,0.3s,baz=105,slow=10,SNR=120						
MJAR				LR	LR	06 14 31.4	
	comp=Z,316nm,21.1s,baz=120,slow=40						
MAJO	Matsushiro	3.25	269	c iP	Pn	06 13 11.7	+1.2
MAJO	Matsushiro	3.25	269	ePn	Pn	06 13 11.8	+1.3
MAJO				eSn	Sn	06 13 49.0	+0.6
MAT	Matsushiro	3.25	269	P	Pn	06 13 11.7	+1.2
MAT				S	Sb	06 13 53.8	-3.5
MJB9	Matsu-Tunnel	3.25	269	ePn	Pn	06 13 12.0	+1.5
JHJ2	Mitsune	4.09	210	ePn	Pn	06 13 26.9	+4.9
JHJ	Hachijo jima 2	4.10	210	Pn	Pn	06 13 22.1	0.0
	30nm,0.3s,baz=50,slow=22,SNR=7.7						
JHJ				Sn	Sn	06 14 05.4	-3.9
	30nm,0.3s,baz=348,slow=9.3,SNR=4.0						
INU	Inuyama	4.45	254	ePn	Pn	06 13 28.5	+1.6
ERM	Erimo	5.36	7	⇑iP	Pn	06 13 38.2	-1.2
ERM	Erimo	5.36	7	ePn	Pn	06 13 38.0	-1.4
ERM				eSn	Sn	06 14 39.0	-1.3
ERM				eSn	Sn	06 14 43.1	+2.9

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAJ	Asahikawa	7.42	2	Pn	Pn	06 14 06.8	-0.9
	3.7nm,0.3s,baz=215,slow=9.5,SNR=14						
ASAJ				Sn	Sn	06 15 27.2	-3.7
	0.5nm,0.3s,baz=162,slow=20,SNR=3.5						
YUK	Yuzh-Kuril'sk	7.83	20	eP	Pn	06 14 09.4	-3.9
YUK				eS	Sn	06 15 34.4	-6.7
YUK				pmax	pmax		
	comp=Z,95nm,0.7s						
YUK				pmax	pmax		
	comp=N,50nm,0.4s						
YUK				pmax	pmax		
	comp=E,40nm,0.5s						
SHO	Shikotan	7.98	25	eP	Pn	06 14 12.6	-2.7
SHO				pmax	pmax		
	comp=E,15nm,0.5s						
SHO				pmax	pmax		
	comp=Z,35nm,0.5s						
SHO				pmax	pmax		
	comp=N,8.0nm,0.4s						
KUR	Kuril'sk	9.53	25	eP	Pn	06 14 31.6	-5.0
CBIJ	Chichi jima	9.57	180	ePn	Pn	06 14 41.5	+4.3
JCJ	Chichijima	9.57	180	Pn	Pn	06 14 34.7	-2.6
	baz=17,slow=20						
JCJ				Sn	Sn	06 16 14.1	-10
	comp=N,5.5nm,0.3s,baz=313,slow=19,SNR=4.4						
JNU	Nakatsue	9.99	252	LR	LR	06 18 53.9	
	comp=N,173nm,18.8s,baz=115,slow=39						
JNU	Nakatsue	9.99	252	ePn	Pn	06 14 44.6	+1.6
YSS	Yuzh-Sakhalins	10.26	2	⇑eP	Pn	06 14 51.4	+4.8
YSS				pmax	pmax		
	comp=Z,20nm,1.4s						
YSS	Yuzh-Sakhalins	10.26	2	ePn	Pn	06 14 46.2	-0.3
USRK	Ussuriysk Ar.	10.82	317	Pn	Pn	06 14 56.2	+1.9
	comp=Z,0.1nm,0.3s,baz=133,slow=15,SNR=2.3						
USRK				LR	LR	06 18 55.7	
	comp=Z,283nm,18.9s,baz=132,slow=36						
KSRS	Korea Array	11.47	278	Pn	Pn	06 15 06.9	+3.7
	comp=Z,0.1nm,0.3s,baz=97,slow=13,SNR=4.3						
KSRS				LR	LR	06 19 20.0	
	comp=Z,273nm,18.5s,baz=108,slow=36						
MDJ	Mudanjiang	12.44	313	P	Pn	06 15 12.3	-4.1
MDJ				pmax	pmax		
	comp=Z,10.0nm,1.4s						
MDJ				pmax	pmax		
	comp=Z,330nm,4.6s						
KLR	Kul'dur	14.68	332	LR	LR	06 21 20.6	
	comp=Z,152nm,18.5s,baz=134,slow=36						
PETK	Petropavlovsk-	19.66	29	P	Pn	06 16 49.4	+0.1
	comp=Z,0.3nm,0.3s,baz=193,slow=12,SNR=4.2						
BJI	Beijing	20.69	287	P	P	06 16 58.1	-1.0
BJI				pmax	pmax		
	comp=Z,6.0nm,0.7s						
BJI				LR	LR		
	comp=N,210nm,12.9s						
BJI				LR	LR		
	comp=E,130nm,12.9s						
BJI				LR	LR		
	comp=Z,63nm,17.4s						
BJT	Baijiatuau	20.69	287	eP	P	06 16 59.3	+0.1
BJT				pmax	pmax		
	comp=Z,9.0nm,0.4s						
BJT	Baijiatuau	20.69	287	eP	P	06 16 59.3	+0.1
	comp=Z,8.8nm,0.4s						
MA2	Magadan	23.55	11	P	P	06 17 30.0	+0.8
	comp=Z,6.2nm,0.7s,baz=255,slow=9.9,SNR=4.6						
MA2				LR	LR	06 26 20.1	
	comp=Z,44nm,18.4s,baz=196,slow=35						
MA2	Magadan	23.55	11	P	P	06 17 30.0	+0.8
MA2				pmax	pmax		
	comp=Z,4.0nm,0.5s						
MA2				MLR	MLR		
	comp=Z,44nm,18.4s						
WHN	Wuhan	23.98	263	⇑P	P	06 17 25.9	-7.6
HHC	Hu-ho-hao-te	24.21	289	eP	P	06 17 36.0	+0.3
HHC				S	S	06 21 54.6	+2.0
HHC				pmax	pmax		
	comp=Z,20nm,0.8s						
HHC				pmax	pmax		
	comp=Z,120nm,4.1s						
HHC				LR	LR		
	comp=N,660nm,12.3s						
HHC				LR	LR		
	comp=E,660nm,12.3s						
HHC				LR	LR		
	comp=Z,670nm,10.3s						
YAK	Yakutsk	26.55	347	P	P	06 17 56.7	+0.2
	comp=Z,20nm,0.6s,baz=358,slow=1.3,SNR=6.2						
YAK				LR	LR	06 28 55.2	
	comp=Z,130nm,18.0s,baz=142,slow=37						
YAK	Yakutsk	26.55	347	eP	P	06 17 56.9	+0.4
YAK				pmax	pmax		
	comp=Z,23nm,0.7s						
YAK	Yakutsk	26.55	347	eP	P	06 17 56.9	+0.4
	comp=Z,22nm,0.6s						
SEY	Seymchan	27.00	10	P	P	06 18 02.0	+1.5
	comp=Z,3.1nm,0.6s,baz=205,slow=12,SNR=8.9						
SEY	Seymchan	27.00	10	eP	P	06 18 03.5	+2.9
H11N2	WAKE ISLAND Hy 27.40 121		T		T	06 46 42.8	
	baz=313,slow=75,SNR=10						
H11N1	WAKE ISLAND Hy 27.41 121		T		T	06 46 45.3	
	baz=313,slow=75,SNR=8.6						
H11N3	WAKE ISLAND Hy 27.42 121		T		T	06 46 43.4	
	baz=313,slow=75,SNR=7.5						
ENH	Enshi	27.97	266	eP	P	06 18 09.8	+0.1
	comp=Z,15nm,0.8s						
ULN	Ulaanbaatar	28.09	305	ceP	P	06 18 11.9	+1.1
ULN				pmax	pmax		
	comp=Z,5.0nm,1.2s						
ULN	Ulaanbaatar	28.09	305	eP	P	06 18 11.5	+0.7
	comp=Z,4.9nm,1.0s						
ULN				epP	sP	06 18 21.8	0.0
H11S1	WAKE ISLAND Hy 28.12 124		T		T	06 47 52.3	
	baz=319,SNR=14						
H11S3	WAKE ISLAND Hy 28.12 124		T		T	06 47 54.7	
	baz=319,slow=74,SNR=9.1						
H11S2	WAKE ISLAND Hy 28.13 124		T		T	06 47 45.3	
	baz=319,slow=74,SNR=4.6						
BOD	Bodaibo	28.17	328	eP	P	06 18 10.9	-0.2
BOD				pmax	pmax		
	comp=Z,4.0nm,1.4s						
SONA1	Songino Array	28.52	304	eP	P	06 18 15.4	+0.8
SONM	Songino Array	28.53	304	P	P	06 18 15.2	+0.6
	comp=Z,5.4nm,0.7s,baz=106,slow=9.0,SNR=32						
SONM				LR	LR	06 29 47.5	
	comp=Z,58nm,21.4s,baz=162,slow=36						
LZH	Lanzhou	30.78	281	eP	P	06 18 35.2	+0.5
LZH				pP	sP	06 18 45.9	+0.2
LZH				sP	pP	06 18 50.6	+8.1
LZH				PP	PnPn	06 19 29.2	-5.9
LZH				eS	S	06 23 34.0	-2.6
LZH				sS	sS	06 23 52.1	+2.7
LZH				SS	ScP	06 25 10.8	-1.8
LZH				pmax	pmax		
	comp=Z,29nm,1.1s						
LZH				pmax	pmax		
	comp=Z,110nm,4.0s						
LZH				LR	LR		
	comp=N,1μm,14.0s						
LZH				LR	LR		
	comp=E,1μm,14.7s						
LZH				LR	LR		
	comp=Z,1μm,15.3s						
ZAK	Zakamensk	31.00	309	eP	P	06 18 37.1	+0.7
ZAK				pmax	pmax		
	comp=Z,4.0nm,1.3s						
TLY	Talaya	31.05	311	eP	P	06 18 38.5	+1.7
TLY				pmax	pmax		
	comp=Z,5.0nm,1.2s						
TLY				MLR	MLR		
	comp=Z,118nm,17.0s						
CD2	Chengdu	32.34	271	P	P	06 18 48.5	+0.1
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
GTA	Gaotai	33.30	288	eP	P	06 18 58.0	+1.2
GTA				pP	sP	06 19 07.6	-0.2
GTA				sP	pP	06 19 11.4	+6.8
GTA				S	S	06 24 15.1	-0.6
GTA				sS	sS	06 24 31.1	+2.5
GTA				SS	SnSn	06 26 17.8	+0.8
GTA				pmax	pmax		
	comp=Z,5.0nm,1.0s						
GTA				pmax	pmax		
	comp=Z,35nm,6.6s						
GTA				LR	LR		
	comp=N,130nm,19.5s						
GTA				LR	LR		
	comp=E,110nm,15.7s						
GTA				LR	LR		
	comp=Z,150nm,13.8s						
BILL	Bilibino	34.17	16	ceP	P	06 19 03.2	-0.6
BILL				e		06 19 10.9	
BILL				pmax	pmax		
	comp=Z,4.0nm,1.2s						
KMI	Kunming	35.57	262	P	P	06 19 14.9	-1.8
KMI				pmax	pmax		
	comp=Z,16nm,0.6s						
KMI				pmax	pmax		
	comp=Z,56nm,3.1s						
KMI				LR	LR		
	comp=Z,50nm,19.4s						
TIXI	Tiksi	35.71	353	c iP	P	06 19 20.6	+3.6
TIXI				pmax	pmax		
	comp=Z,4.0nm,2.1s						
WMQ	Urumqi	41.59	297	eP	P	06 20 08.8	+2.0
WMQ				pmax	pmax		
	comp=Z,14nm,3.6s						
WMQ				LR	LR		
	comp=N,21nm,21.2s						
WMQ				LR	LR		
	comp=E,71nm,37.8s						
WMQ				LR	LR		
	comp=Z,15nm,21.2s						
CMAR	Chiang Mai Arr	42.06	256	P	P	06 20 11.4	+0.6
	comp=Z,0.5nm,0.3s,baz=51,slow=5.9,SNR=3.9						
CMAR				LR	LR	06 40 29.3	
	comp=Z,58nm,18.1s,baz=30,slow=40						
ZAA0	Zalesovo Array	42.63	313	eP	P	06 20 15.5	+0.4
ZALV	Zalesovo Beam	42.63	313	P	P	06 20 15.9	+0.8
	comp=Z,1.7nm,0.6s,baz=98,slow=7.6,SNR=5.6						
ZALV	Zalesovo Beam	42.63	313	i P	P	06 20 15.8	+0.7
ZALV				pmax	pmax		
	comp=Z,2.0nm,0.6s						
NRIK	Noril'sk	43.85	335	LR	LR	06 40 24.9	
	comp=Z,67nm,18.6s,baz=114,slow=38						
MK01	Makanchi Array	44.86	302	eP	P	06 20 33.5	+0.4
MK31	Makanchi Array	44.86	303	eP	P	06 20 33.8	+0.6
MK31	Makanchi Array	44.86	303	eP	P	06 20 33.8	+0.6
MKAR	Makanchi Array	44.86	303	P	P	06 20 33.6	+0.5
	comp=Z,1.9nm,0.7s,baz=88,slow=9.6,SNR=21						
MKAR				LR	LR	06 39 35.3	
	comp=Z,38nm,18.6s,baz=64,slow=36						
MKAR	Makanchi Array	44.86	303	ceP	P	06 20 33.5	+0.3
MKAR				pmax	pmax		
	comp=Z,2.0nm,0.7s						
MKAR	Makanchi Array	44.86	303	eP	P	06 20 33.8	+0.6
PMG	Port Moresby	46.09	173	LR	LR	06 40 22.8	
	comp=Z,52nm,19.4s,baz=34,slow=37						
PMG	Port Moresby	46.09	173	ceP	P	06 20 43.6	+0.6
ILAR	Eielson Array	49.42	32	P	P	06 21 09.4	+1.0
	comp=Z,1.4nm,0.8s,baz=267,slow=6.5,SNR=14						
TKM2	Tokmak 2	50.38	299	eP	P	06 21 17.4	+1.1
TKM2				pmax	pmax		
	comp=Z,17nm,1.8s						
TKM2	Tokmak 2	50.38	299	eP	P	06 21 17.4	+1.1
	comp=Z,17nm,1.8s						
AAK	Ala-Archa	51.24	299	eP	P	06 21 21.4	-1.3
AAK				pmax	pmax		
	comp=Z,2.0nm,1.0s						
BRVK	Borovoye	51.35	313	eP	P	06 21 23.0	-0.1
BRVK				pmax	pmax		
	comp=Z,3.0nm,1.3s						
ZRNK	Zerenda	52.12	313	eP	P	06 21 29.6	+0.7
ZRNK				pmax	pmax		
	comp=Z,2.0nm,0.8s						
ZRNK	Zerenda	52.12	313	eP	P	06 21 29.6	+0.7
	comp=Z,2.4nm,0.8s						
INK	Inuvik	54.38	27	P	P	06 21 46.7	+1.4
	comp=Z,0.8nm,0.6s,baz=299,slow=6.7,SNR=8.4						
WRA	Warramunga Arr	56.82	189	P	P	06 22 01.7	-1.7
	comp=Z,1.1nm,1.0s,baz=5.8,slow=7.5,SNR=7.7						
WRA	Warramunga Arr	56.82	189	i P	P	06 22 03.5	+0.1
WRA				pmax	pmax		
	comp=Z,1.0nm,1.0s						
ARU	Arti	57.05	319	d iP	P	06 22 05.0	+0.4
ARU				S	S	06 29 59.2	+1.7
ARU				SS	SS	06 33 43.8	-2.0
ARU				pmax	pmax		
	comp=Z,8.0nm,1.7s						
ABKAR	Akbulak array	58.67	311	eP	P	06 22 16.1	+0.1
ASAR	Alice Springs	60.55	189	P	P	06 22 27.9	-1.3
	comp=Z,0.5nm,0.7s,baz=15,slow=7.2,SNR=6.5						
YKA	Yellowknife Ar	63.77	30	P	P	06 22 51.2	+0.8
	comp=Z,0.2nm,0.6s,baz=301,slow=6.1,SNR=11						
KLMR	Klimovskoe	64.40	328	eP	P	06 22 52.5	-2.0
KLMR				e*PP	pP	06 23 02.4	-0.4
KLMR				e*SP	sP	06 23 07.5	+1.6
KLMR				pmax	pmax		
	comp=Z,3.0nm,0.9s						
ARCES	ARCESS Array B	64.55	340	LR	LR	06 57 27.4	
	comp=Z,27nm,19.7s,baz=37,slow=42						
OBN	Obninsk	68.76	324	eP	P	06 23 22.3	-0.2
OBN				pmax	pmax		
	comp=Z,4.0nm,0.9s						
FINES	FINESS Array B	69.42	333	P	P	06 23 27.2	+0.8
	comp=Z,4.0nm,1.1s,baz=23,slow=10,SNR=6.0						
FINES				LR	LR	06 56 06.9	
	comp=Z,35nm,21.4s,baz=182,slow=38						
KBZ	Khabaz	71.63	311	P	P	06 23 41.1	+0.9
	comp=Z,2.4nm,0.8s,baz=38,slow=5.7,SNR=6.5						
KIV	Kislovodsk	71.63	311	ceP	P	06 23 41.5	+1.1
KIV				e		06 23 53.2	
KIV				e		06 26 19.3	
KIV				ePPP	PPP	06 28 04.1	
KIV				pmax	pmax		
	comp=Z,3.0nm,0.6s						
GNI	Garni	72.44	307	eP	P	06 23 46.3	+0.8
GNI				pmax	pmax		
	comp=Z,5.0nm,0.9s						
NVAR	Mina Array Bea	74.66	53	P	P	06 23 58.6	0.0
	comp=Z,0.2nm,0.4s,baz=331,slow=3.5,SNR=3.0						
NB2	NORSAR Subarra	74.75	338	P	P	06 23 58.8	+0.3
	comp=Z,2.0nm,0.9s,baz=39,slow=6.2						
NOA	NORSAR Array B	74.75	338	P	P	06 23 58.5	0.0
	comp=Z,1.3nm,1.0s,baz=40,slow=5.7,SNR=3.0						
AKASG	Malin Array Be	74.97	323	P	P	06 24 00.1	+0.3
	comp=Z,1.3nm,0.6s,baz=46,slow=5.8,SNR=8.7						
AKASG				LR	LR	07 00 35.0	
	comp=Z,26nm,19.5s,baz=85,slow=38						
KIEV	Kiev	74.98	323	eP	P	06 23 59.5	-0.4
KIEV				pmax	pmax		
	comp=Z,3.0nm,0.8s						
PDAR	Pinedale Array	77.43	46	P	P	06 24 15.2	+0.9
	comp=Z,0.2nm,0.4s,baz=270,slow=0.6,SNR=4.0						
KOLS	Kolonicke sedl	79.48	324	eP	P	06 24 25.6	+0.3
KOLS	Kolonicke sedl	79.48	324	eP	P	06 24 25.6	+0.3
BRTR	Keskin Array B	79.57	312	P	P	06 24 27.0	+0.9
	comp=Z,1.1nm,1.0s,baz=94,slow=5.0,SNR=5.4						
CLL	Collm	81.72	331	eP	P	06 24 36.0	-1.1
CLL	Collm	81.72	331	eP	P	06 24 36.0	-1.1
GERES	GERESS Array B	83.35	329	P	P	06 24 46.3	+0.5
	comp=Z,0.7nm,0.7s,baz=34,slow=8.1,SNR=4.9						
GERES				LR	LR	07 05 05.2	
	comp=Z,28nm,18.3s,baz=356,slow=38						
TXAR	Lajitas Array	89.80	53	P	P	06 25 16.6

Ms1 2.8/1, ms1mx2.4/15, Error ellipse: s-maj=151.8km s-min=28.7km az=46.0

ISC 01 06:27:42.7±1.4, 10.9N±0.1×110.7E±0.1, h35km, n18, σ1♀07/17, mb3.2/3, South of Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCJI	**Pacitan**	**2.69**	**11**	P	**Pn**	**06 28 23.1**	**-0.5**
PCJI				S	**Sn**	**06 28 55.3**	**+0.4**
UGM	**Wanagama**	**2.92**	**357**	P	**Pn**	**06 28 28.1**	**+1.3**
WOJI	**Wonogiri, Jawa**	**3.01**	**5**	P	**Pn**	**06 28 27.6**	**-0.3**
CMJI	**Cimerak**	**3.75**	**324**	P	**Pn**	**06 28 36.9**	**-1.2**
GMJI	**Gumukmas**	**3.76**	**47**	P	**Pn**	**06 28 38.1**	**-0.1**
SMRI	**Semarang**	**3.79**	**357**	P	**Pn**	**06 28 38.0**	**-0.7**
JAGI	**Jajag, Banyuwa**	**4.18**	**56**	P	**Pn**	**06 28 44.2**	**+0.1**
CISI	**Cisompet, Garu**	**4.31**	**319**	P	**Pn**	**06 28 44.3**	**-1.7**
UWJI	**Ujung Watu**	**4.41**	**4**	P	**Pn**	**06 28 46.2**	**-1.1**
JCJI	**Jatiwangi**	**4.94**	**331**	P	Pn	06 28 49.5	-5.0
CNJI	**Cibinong**	**4.95**	**315**	P	**Pn**	**06 28 53.5**	**-1.2**
LEM	**Lembang**	**5.00**	**323**	LR	LR	06 30 60.0	
	comp=Z,97nm,21.3s,baz=201,slow=40						
TWSI	**Taliwang, Sumb**	**6.48**	**72**	P	**Pn**	**06 29 15.1**	**-0.7**
PLAI	**Plampang**	**7.30**	**75**	P	**Pn**	**06 29 26.1**	**-0.8**
FITZ	**Fitzroy Crossi**	**16.19**	**118**	Pn	**Pn**	**06 31 26.1**	**-1.6**
	0.1nm,0.3s,baz=305,slow=12,SNR=2.7						
FITZ				Sn	Sn	06 34 11.0	-15
	0.1nm,0.3s,baz=185,slow=19,SNR=3.2						
WRA	**Warramunga Arr**	**24.53**	**114**	P	**P**	**06 32 59.4**	**+0.1**
	0.2nm,0.6s,baz=286,slow=12,SNR=2.7						
ASAR	**Alice Springs**	**25.55**	**123**	P	**P**	**06 33 09.6**	**+1.1**
	0.6nm,0.8s,baz=300,slow=9.4,SNR=7.0						
MKAR	**Makanchi Array**	**62.74**	**338**	P	**P**	**06 38 05.6**	**+1.3**
	0.2nm,0.4s,baz=152,slow=6.5,SNR=3.3						

ISN 01 06:52:53.9±0.3, 35.12N×44.42E, h0km, ML3.1
CSEM 01 06:53:00.0±1.0, 35.03N×44.76E, h2km, ML3.1, Error ellipse: s-maj=30.6km s-min=13.2km az=46.0

TEH 01 06:52:58.5, 34.91N×44.57E, h1km, ML3.1, Iraq

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IDHR	**Dehrash**	**1.51**	**97**	*e*Pg	Pn	06 53 25.5	-1.4
IDHR				*e*Sg	Sg	06 53 45.7	-1.4
IDHR				*e*AMB	AMB	06 53 48.5	
	comp=Z,4μm,0.1s						
IDHR	**Dehrash**	**1.51**	**97**	*e*Pg	Pn	06 53 25.5	-1.4
IDHR				*e*Sg	Sg	06 53 45.7	-1.4
IGHG	**Ghaleghazi**	**1.75**	**109**	*e*Pn	Pn	06 53 30.8	+0.6
IGHG				*e*AMB	AMB	06 54 03.6	
	comp=Z,2μm,0.3s						
IGHG	**Ghaleghazi**	**1.75**	**109**	*e*Pn	Pn	06 53 30.8	+0.6
IVIS	**Veis**	**1.92**	**101**	*e*Pn	Pn	06 53 32.3	-0.1
IVIS				*e*Sg	Sb	06 53 58.5	-0.3
IVIS				*e*AMB	AMB	06 54 03.7	
	comp=Z,1μm,0.2s						
IVIS	**Veis**	**1.92**	**101**	*e*Pn	Pn	06 53 32.3	-0.1
IVIS				*e*Sg	Sb	06 53 58.5	-0.3
ILIN	**Lien**	**1.97**	**89**	*e*Pn	Pn	06 53 32.7	-0.5
ILIN				*e*AMB	AMB	06 53 38.1	
	comp=Z,1μm,0.1s						
ILIN	**Lien**	**1.97**	**89**	*e*Pn	Pn	06 53 32.7	-0.5
HAKT	**HAKKARI**	**2.73**	**346**	*i* P	Pn	06 53 44.9	+1.2
HAKT				*i* S	Sn	06 54 10.7	-6.9
SIRN	**S¨–rnak**	**3.12**	**327**	*i* P	Pb	06 53 52.4	-2.3
SIRN				*i* S	Sb	06 54 34.4	+1.1
IBST	**Bostanabad**	**3.36**	**33**	*e*Pn	Pn	06 53 51.4	-0.9
IBST				*e*AMB	AMB	06 54 38.8	
	comp=Z,183nm,0.2s						
IBST	**Bostanabad**	**3.36**	**33**	*e*Pn	Pn	06 53 51.4	-0.9
ISHB	**Shabestar**	**3.47**	**14**	*e*Pn	Pn	06 53 53.8	-0.1
ISHB				*e*AMB	AMB	06 53 58.8	
	comp=Z,454nm,0.3s						

ISCJB 01 06:55:55.5±0.4, 43.96N±0.05×85.12E±0.04, h28km, mb4.0/20, MS2.9/3, Error ellipse: s-maj=7.1km s-min=3.7km az=23.6
BJI 01 06:55:55.1, 43.65N×85.25E, h7km, mb4.0/6, mB4.3/4, ML3.9/9, Ms3.8/3, Ms7 3.5/2
IDC 01 06:55:57.1±0.7, 43.73N×85.30E, h35km±5km, mb3.8/20, mb1 3.9/27, mb1mx3.8/52, mbtmp3.9/27, ML3.6/7, MS2.9/8, Ms1 2.9/8, ms1mx2.7/51, Error ellipse: s-maj=15.0km s-min=9.3km az=41.0
NEIC 01 06:55:58.2±0.6, 43.81N×85.24E, h45km±6km, mb4.1/3, Error ellipse: s-maj=8.3km s-min=5.1km az=178.0
NNC 01 06:56:04.3±3.4, 44.09N×84.58E, h21km±16km, mb3.9, mpv3.7, Error ellipse: s-maj=24.3km s-min=12.9km az=99.0

ISC 01 06:55:57.2±0.5, 43.92N±0.07×85.15E±0.04, h28km, n51, σ1♀78/67, mb4.0/20, MS3.0/3, 11C-6D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WMQ	**Urumqi**	**1.84**	**92**	Pg	**Pn**	**06 56 27.9**	**+0.8**
WMQ				Sg	**Sb**	**06 56 51.8**	**-1.2**
WMQ				smax	smax		
	comp=N,1μm,0.5s						
WMQ				smax	smax		
	comp=E,1μm,0.5s						
WMQ	**Urumqi**	**1.84**	**92**	*e*Pg	**Pn**	**06 56 27.9**	**+0.8**
WMQ				*e*Sg	**Sb**	**06 56 51.8**	**-1.2**
MK31	**Makanchi Array**	**3.51**	**326**	Pn	**Pn**	**06 56 53.7**	**+3.9**
	2.9nm,0.3s,baz=144,slow=14,SNR=3692						
MK31				Pg	Pb	06 57 03.5	+4.9
	22nm,0.7s,baz=140,slow=18,SNR=4.5						
MK31				Lg	Lg	06 57 44.5	
	91nm,0.3s,baz=144,slow=30,SNR=12						
MKAR	**Makanchi Array**	**3.51**	**326**	Pn	**Pn**	**06 56 53.8**	**+3.9**
	6.2nm,0.3s,baz=146,slow=13,SNR=192						
MKAR				Lg	Lg	06 57 51.4	
	127nm,0.3s,baz=147,slow=32,SNR=19						
MKAR				LR	LR	06 58 43.2	
	comp=Z,144nm,18.2s,baz=156,slow=45						
TKM2	**Tokmak 2**	**7.03**	**265**	*e*Pn	**Pn**	**06 57 38.8**	**+0.4**
	12nm,0.5s						
AAK	**Ala-Archa**	**7.88**	**264**	Pn	**Pn**	**06 57 52.5**	**+2.4**
	0.8nm,0.3s,baz=86,slow=7.5,SNR=5.9						
AAK				Lg	Lg	07 00 04.6	
	1.0nm,0.3s,baz=32,slow=19,SNR=2.3						
AAK				LR	LR	07 01 21.5	
	comp=Z,68nm,19.2s,baz=69,slow=41						
AAK	**Ala-Archa**	**7.88**	**264**	⇓Pn	**Pn**	**06 57 51.6**	**+1.5**
	2.2nm,0.7s						
AAK				⇑Lg	Lg	07 00 03.5	
	17nm,0.9s						
KURBB	**Kurchatov Arra**	**8.07**	**328**	Pn	**Pn**	**06 57 54.9**	**+2.5**
	0.4nm,0.3s,baz=141,slow=12,SNR=21						
KURBB				Sn	**Sn**	**06 59 24.0**	**+1.4**
	1.8nm,0.3s,baz=132,slow=26,SNR=8.0						
KURBB				Lg	Lg	07 00 13.7	
	1.4nm,0.3s,baz=140,slow=31,SNR=5.4						
KURK	**Kurchatov**	**8.11**	**329**	⇑Pn	**Pn**	**06 57 53.6**	**+0.6**
	7.0nm,0.4s						
KURK				⇑Sn	**Sn**	**06 59 24.1**	**+0.4**
	35nm,0.5s						
KURK	**Kurchatov**	**8.11**	**329**	*e*Pn	**Pn**	**06 57 54.7**	**+1.7**
	9.8nm,0.6s						
KURK				*e*Sn	**Sn**	**06 59 23.3**	**-0.4**
KURK				Sn	**Sn**	**06 59 24.0**	**+0.4**
KURK				Lg	Lg	07 00 13.7	
EKS2	**Erkin-Say**	**8.39**	**265**	*e*Pn	**Pn**	**06 57 57.8**	**+0.8**
	7.7nm,0.8s						
MNAS	**Manas**	**9.35**	**266**	⇓Pn	**Pn**	**06 58 14.7**	**+4.6**
	2.5nm,0.6s						
MNAS				⇑Lg	Lg	07 00 47.1	
	15nm,0.8s						
OTUK	**Ortayu**	**9.89**	**300**	⇑Pn	**Pn**	**06 58 18.9**	**+1.4**
	4.7nm,0.7s						
OTUK				⇑Lg	Lg	07 01 04.2	
	21nm,0.7s						
ZALV	**Zalesovo Beam**	**10.04**	**359**	Pn	**Pn**	**06 58 20.1**	**+0.8**
	1.6nm,0.3s,baz=184,slow=15,SNR=10						
ZALV				Sn	**Sn**	**07 00 08.3**	**-2.6**
	8.3nm,0.3s,baz=182,slow=25,SNR=16						
ZALV				LR	LR	07 02 45.5	
	comp=Z,67nm,19.9s,baz=62,slow=40						
KK31	**Karatay Array**	**10.67**	**271**	⇓Pn	**Pn**	**06 58 29.7**	**+1.7**
	0.8nm,0.6s,baz=69,slow=13,SNR=13						
KK31				⇑Lg	Lg	07 01 26.3	
	6.0nm,0.7s,baz=69,slow=28,SNR=4.4						
KKAR	**Karatay Array**	**10.67**	**271**	*e*Pn	**Pn**	**06 58 28.3**	**+0.2**
	0.8nm,0.4s						
GTA	**Gaotai**	**11.86**	**107**	P	**Pn**	**06 58 45.6**	**+1.1**
GTA				pP		06 58 49.0	
GTA				sP		06 58 52.1	
GTA				S	**Sn**	**07 00 59.1**	**+3.3**
GTA				sS		07 01 03.5	
GTA				SS	**SnSn**	**07 01 12.3**	**+4.7**
GTA				pmax	pmax		
	comp=Z,3.0nm,0.8s						
GTA				pmax	pmax		
	comp=Z,53nm,3.9s						
GTA				LR	LR		
	comp=N,99nm,5.7s						
GTA				LR	LR		
	comp=E,98nm,5.1s						
GTA				LR	LR		
	comp=Z,71nm,5.7s						
BVA0	**Borovoye Array**	**13.35**	**318**	⇑Pn	**Pn**	**06 59 06.4**	**+1.7**
	2.7nm,0.6s,baz=116,slow=13,SNR=11						
BVA0				⇓Sn	**Sn**	**07 01 31.3**	**-0.6**
	2.7nm,0.5s						
BVAR	**Borovoye Array**	**13.35**	**318**	Pn	**Pn**	**06 59 05.8**	**+1.2**
	0.6nm,0.3s,baz=111,slow=14,SNR=11						
BVAR				Sn	**Sn**	**07 01 30.5**	**-1.5**
	0.6nm,0.3s,baz=94,slow=20,SNR=3.9						
CHKZ	**Chkalovo**	**13.65**	**321**	⇑Pn	**Pn**	**06 59 09.3**	**+0.7**
	1.4nm,0.4s						
CHKZ				⇓Sn	**Sn**	**07 01 39.8**	**+0.6**
	5.4nm,0.6s						
CHKZ				⇑Lg	Lg	07 03 03.4	
	8.6nm,0.9s						
TLY	**Talaya**	**14.62**	**51**	LR	LR	07 05 31.1	
	comp=Z,60nm,20.2s,baz=205,slow=39						
TLY	**Talaya**	**14.62**	**51**	*e*Pn	**Pn**	**06 59 22.3**	**+0.2**
SONM	**Songino Array**	**15.29**	**68**	Pn	**Pn**	**06 59 29.5**	**-1.6**
	0.1nm,0.3s,baz=266,slow=8.7,SNR=3.0						
SONM				pP	**P**	**06 59 36.5**	**+0.8**
	0.5nm,0.3s,baz=256,slow=11,SNR=33						
AB31	**Akbulak array**	**18.09**	**296**	⇓P	**Pn**	**07 00 05.4**	**-0.8**
	0.9nm,0.5s						
ABKAR	**Akbulak array**	**18.09**	**296**	*e*P	**P**	**07 00 07.0**	**+0.6**
	2.5nm,0.7s						
AKTO	**Aktyubinsk**	**19.49**	**299**	P	**P**	**07 00 21.3**	**-0.6**
	0.2nm,0.3s,baz=69,slow=5.6,SNR=2.6						
AKTO				S	**S**	**07 03 54.4**	**-5.9**
	0.1nm,0.3s,baz=233,slow=20,SNR=3.7						
AKTO				LR	LR	07 07 38.4	
	comp=Z,16nm,21.1s,baz=104,slow=36						
AKTO	**Aktyubinsk**	**19.49**	**299**	⇑P	**Pn**	**07 00 25.9**	**+2.7**
	1.7nm,0.7s						
ARU	**Arti**	**20.97**	**316**	P	Pn	07 00 39.6	-0.9
	4.4nm,0.4s,baz=111,slow=6.7,SNR=8.2						
ARU				LR	LR	07 09 27.6	
	comp=Z,44nm,18.4s,baz=134,slow=38						
ARU	**Arti**	**20.97**	**316**	*e*P	Pn	07 00 39.5	-1.0
	7.0nm,0.6s						
HIA	**Hailar**	**24.22**	**65**	P	**P**	**07 01 10.6**	**-0.8**
	5.2nm,0.4s						
NRIK	**Noril'sk**	**25.51**	**2**	P	**P**	**07 01 24.1**	**+1.3**
	5.6nm,0.4s,baz=187,slow=5.0,SNR=17						
NRIK				LR	LR	07 12 34.1	
	comp=Z,42nm,19.8s,baz=92,slow=39						
CMAR	**Chiang Mai Arr**	**27.92**	**151**	P	**P**	**07 01 43.6**	**-1.3**
	0.6nm,0.4s,baz=331,slow=10,SNR=4.1						
KLR	**Kul'dur**	**32.06**	**64**	P	**P**	**07 02 20.1**	**-1.3**
	0.8nm,0.4s,baz=243,slow=6.6,SNR=3.9						
TIXI	**Tiksi**	**34.80**	**23**	P	**P**	**07 02 44.7**	**-0.3**
	1.3nm,0.4s,baz=214,slow=4.1,SNR=4.2						
AKASG	**Malin Array Be**	**37.73**	**301**	P	**P**	**07 03 10.5**	**+0.3**
	0.5nm,0.3s,baz=68,slow=9.1,SNR=2.8						
BRTR	**Keskin Array B**	**38.10**	**282**	P	**P**	**07 03 13.8**	**+0.1**
	0.6nm,0.4s,baz=98,slow=6.9,SNR=6.5						
BRTR				pP	**sP**	**07 03 25.6**	**+0.2**
	0.7nm,0.7s,baz=99,slow=5.6,SNR=3.7						
FINES	**FINESS Array B**	**38.31**	**318**	P	**P**	**07 03 15.7**	**+0.8**
	1.4nm,0.7s,baz=113,slow=29,SNR=6.5						
FINES				PcP	**PcP**	**07 05 27.6**	**-0.7**
	0.5nm,0.4s,baz=90,slow=3.8,SNR=3.8						
ARCES	**ARCESS Array B**	**39.14**	**331**	P	**P**	**07 03 23.1**	**+1.2**
	0.9nm,0.5s,baz=86,slow=6.7,SNR=11						
ARCES				PcP	**PcP**	**07 05 29.9**	**-1.0**
	2.8nm,1.2s,baz=91,slow=4.9,SNR=5.0						
NB2	**NORSAR Subarra**	**45.48**	**319**	P	**P**	**07 04 13.8**	**+0.3**
	comp=Z,0.6nm,0.5s,baz=75,slow=7.9						
NOA	**NORSAR Array B**	**45.48**	**319**	P	**P**	**07 04 14.1**	**+0.5**
	comp=Z,0.6nm,0.4s,baz=77,slow=7.7,SNR=4.9						
NOA				LR	LR	07 24 09.2	
	comp=Z,16nm,19.7s,baz=55,slow=37						
PETK	**Petropavlovsk-**	**46.99**	**52**	P	**P**	**07 04 25.6**	**+0.1**
	comp=Z,1.1nm,0.6s,baz=286,slow=4.2,SNR=4.3						
ESDC	**Sonseca Array**	**63.37**	**300**	P	**P**	**07 06 23.2**	**-0.7**
	comp=Z,1.2nm,0.7s,baz=54,slow=6.7,SNR=12						
ILAR	**Eielson Array**	**64.27**	**22**	P	**P**	**07 06 28.4**	**-0.9**
	comp=Z,0.8nm,0.6s,baz=317,slow=5.1,SNR=9.6						
INK	**Inuvik**	**64.41**	**15**	P	**P**	**07 06 30.3**	**+0.2**
	comp=Z,1.2nm,0.9s,baz=324,slow=8.7,SNR=4.5						
YKA	**Yellowknife Ar**	**72.75**	**9**	P	**P**	**07 07 22.0**	**-0.3**
	comp=Z,1.0nm,0.5s,baz=340,slow=6.0,SNR=35						
TORD	**Torodi Ar. Bea**	**76.32**	**275**	P	**P**	**07 07 43.4**	**-0.4**
	comp=Z,1.7nm,0.6s,baz=42,slow=4.9,SNR=14						
WRA	**Warramunga Arr**	**77.89**	**133**	P	**P**	**07 07 50.0**	**-2.3**
	comp=Z,2.7nm,0.6s,baz=332,slow=5.0,SNR=49						
WRA				pP	**pP**	**07 08 00.7**	**-0.5**
	comp=Z,1.5nm,0.7s,baz=334,slow=5.2,SNR=6.5						
SCHQ	**Schefferville**	**78.77**	**344**	P	**P**	**07 07 57.5**	**+0.6**
	comp=Z,1.7nm,0.6s,baz=21,slow=8.6,SNR=6.7						
ASAR	**Alice Springs**	**80.74**	**136**	P	**P**	**07 08 05.6**	**-2.3**
	comp=Z,1.1nm,0.7s,baz=332,slow=5.2,SNR=15						
ASAR				pP	**PcP**	**07 08 16.1**	**+1.5**
	comp=Z,0.6nm,0.7s,baz=329,slow=5.9,SNR=5.6						
PDAR	**Pinedale Array**	**92.69**	**11**	P	**P**	**07 09 06.2**	**-0.6**
	comp=Z,0.1nm,0.4s,baz=340,slow=6.7,SNR=2.2						
LPAZ	**La Paz**	**144.34**	**312**	PKP	**PKPab**	**07 15 29.1**	**-0.6**
	comp=Z,1.1nm,0.8s,baz=87,slow=6.9,SNR=3.8						

NIED 01 07:04:00, 36.00N×141.10E, h20km, Mw4.4 Best double couple: M0=4.73000×10^15 NP1:φs=233.00000°, δ=43.00000°, λ=-56.00000°. NP2:φs=10.00000°, δ=56.00000°, λ=-117.00000°.
ISCJB 01 07:04:27.8±0.5, 35.90N±0.02×141.07E±0.03, h27km±3km, mb4.4/73, MS3.7/21, Error ellipse: s-maj=4.6km s-min=4.0km az=26.1
MOS 01 07:04:28.5±1.0, 35.92N×141.13E, h33km, mb4.6/45, Error ellipse: s-maj=8.6km s-min=5.2km az=99.6
JMA 01 07:04:28.3±0.1, 35.91N×141.06E, h30km±1km, M4.4
JMA Felt II J1.
NEIC 01 07:04:30.7±1.6, 35.86N×141.02E, h35km±11km, mb4.6/29, Error ellipse: s-maj=5.8km s-min=4.5km az=111.0
NEIC Recorded [2 JMA] in Chiba and Ibaraki.
IDC 01 07:04:30.1±3.6, 35.89N×141.01E, h31km±25km, mb4.0/24, mb1 4.2/29, mb1mx4.1/40, mbtmp4.2/29, ML3.2/5, MS3.5/19, Ms1 3.5/19, ms1mx3.3/56, Error ellipse: s-maj=16.0km s-min=12.2km az=99.0

ISC 01 07:04:29.1±0.4, 35.93N±0.03×141.07E±0.04, h24km±2km, h24km:pP-P, n197, σ1♀61/216, mb4.5/74, MS3.6/22, 9C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.29**	**217**	P	**Pb**	**07 04 35.0**	**-0.8**
CHOJ				S	**Sb**	**07 04 39.8**	**-0.6**
JYT	**Yasato**	**0.77**	**293**	P	**Pb**	**07 04 42.2**	**-1.6**
JYT				S	**Sb**	**07 04 53.1**	**-0.7**
JHO	**Hitachi**	**0.79**	**329**	P	**Pb**	**07 04 42.8**	**-1.3**
JHO				*e*S	**Sb**	**07 04 54.3**	**-0.1**
BSO3	**Boso 3**	**1.22**	**202**	P	**Pn**	**07 04 49.7**	**-0.7**
MJAR	**Matsushiro Arr**	**2.39**	**286**	Pn	**Pn**	**07 05 06.1**	**-0.7**
	22nm,0.3s,baz=98,slow=9.0,SNR=318						
MJAR				Lg	Lg	07 05 44.0	
	26nm,0.3s,baz=95,slow=26,SNR=5.9						
MAJO	**Matsushiro**	**2.39**	**286**	*e* i P	**Pn**	**07 05 06.4**	**-0.4**
MAJO	**Matsushiro**	**2.39**	**286**	*e*Pn	**Pn**	**07 05 06.8**	**0.0**
MAJO				*e*Sn	**Sn**	**07 05 34.1**	**-1.3**
MAT	**Matsushiro**	**2.39**	**286**	P	**Pn**	**07 05 06.3**	**-0.5**
MAT				*e*S	**Sn**	**07 05 36.0**	**+0.6**
MJB9	**Matsu-Tunnel**	**2.40**	**286**	*e*Pn	**Pn**	**07 05 06.8**	**-0.1**
MJB9				*e*Sn	**Sn**	**07 05 33.7**	**-1.8**
JHJ2	**Mitsune**	**3.00**	**201**	*e*Pn	**Pn**	**07 05 16.5**	**+1.4**
JHJ2				*e*Sn	**Sn**	**07 05 48.7**	**-1.5**
JHJ	**Hachijo jima 2**	**3.00**	**201**	Pn	**Pn**	**07 05 14.6**	**-0.6**
	20nm,0.3s,baz=106,slow=23,SNR=11						
JHJ				Sn	**Sn**	**07 05 53.0**	**+2.6**
	68nm,0.3s,baz=214,slow=19,SNR=8.3						
INU	**Inuyama**	**3.35**	**261**	*e*Pn	**Pn**	**07 05 22.2**	**+2.3**
ERM	**Erimo**	**6.29**	**14**	*e*P	**Pn**	**07 05 59.7**	**-0.6**
ERM				pmax	pmax		
	comp=Z,57nm,2.5s						
ERM	**Erimo**	**6.29**	**14**	*e*Pn	**Pn**	**07 06 01.7**	**+1.5**
ERM				*e*Sn	**Sn**	**07 07 12.7**	**+1.4**
ASAJ	**Asahikawa**	**8.26**	**8**	Pn	**Pn**	**07 06 25.9**	**-1.4**
	comp=Z,4.4nm,0.3s,baz=235,slow=9.7,SNR=16						
ASAJ	**Asahikawa**	**8.26**	**8**	*e*Pn	**Pn**	**07 06 27.3**	**0.0**
CBIJ	**Chichi jima**	**8.86**	**174**	*e*Pn	**Pn**	**07 06 32.8**	**-2.9**
CBIJ				*e*Sn	**Sn**	**07 08 12.2**	**-2.5**
JCJ	**Chichijima**	**8.86**	**174**	Pn	**Pn**	**07 06 31.6**	**-4.0**
	comp=Z,10nm,0.3s,baz=0.6,slow=20,SNR=14						
JNU	**Nakatsue**	**8.86**	**254**	Pn	**Pn**	**07 06 35.9**	**+0.1**
	comp=Z,0.2nm,0.3s,baz=68,slow=5.4,SNR=2.3						
JNU				LR	LR	07 10 43.2	
	comp=Z,462nm,19.3s,baz=326,slow=42						
YUK	**Yuzh-Kuril'sk**	**8.89**	**23**	P	**Pn**	**07 06 37.2**	**+1.3**
YUK				*e*S	**Sn**	**07 08 08.7**	**-6.5**
YUK				pmax	pmax		
	comp=Z,85nm,0.6s						
YUK				pmax	pmax		
	comp=N,35nm,0.2s						
YUK				pmax	pmax		
	comp=E,30nm,0.2s						
SHO	**Shikotan**	**9.08**	**27**	*e*P	**Pn**	**07 06 38.4**	**-0.1**
SHO				pmax	pmax		
	comp=Z,28nm,0.6s						
KUR	**Kuril'sk**	**10.63**	**27**	P	**Pn**	**07 07 00.4**	**+0.7**
KUR				*e*S	**Sn**	**07 08 52.0**	**-5.9**
KUR				pmax	pmax		
	comp=Z,13nm,0.8s						
KUR				smax	smax		
	comp=N,7.0nm,0.6s						
KUR				smax	smax		
	comp=E,16nm,0.6s						
KSRS	**Korea Array**	**10.66**	**282**	Pn	**Pn**	**07 07 03.9**	**+3.6**
	comp=E,0.2nm,0.3s,baz=95,slow=14,SNR=4.9						
KSRS				LR	LR	07 11 15.1	
	comp=E,282nm,18.7s,baz=110,slow=38						
KSAR	**Wonju Array Be**	**10.70**	**282**	P	**Pn**	**07 07 03.9**	**+3.2**
KSAR	**Wonju Array Be**	**10.70**	**282**	Pn	**Pn**	**07 07 03.9**	**+3.2**
USRK	**Ussuriysk Ar.**	**10.79**	**323**	Pn	**Pn**	**07 07 03.7**	**+1.7**
	comp=E,0.3nm,0.3s,baz=133,slow=14,SNR=6.2						
YSS	**Yuzh-Sakhalins**	**11.08**	**6**	*e*P	Pn	07 07 10.8	+4.8
YSS				MLR	MLR		
	comp=Z,400nm,13.0s						
MDJ	**Mudanjiang**	**12.32**	**318**	P	**Pn**	**07 07 23.4**	**+0.5**
MDJ				pmax	pmax		
	comp=Z,33nm,4.7s						
MDJ				pmax	pmax		
	comp=Z,800nm,4.0s						
KLR	**Kul'dur**	**14.94**	**336**	Pn	**Pn**	**07 07 59.5**	**+0.9**
	comp=Z,0.1nm,0.3s,baz=121,slow=12,SNR=1.7						
KLR				LR	LR	07 13 33.4	
	comp=Z,179nm,18.5s,baz=148,slow=36						
TYV	**Tymovskoe**	**14.97**	**4**	*e*P	**Pn**	**07 07 57.8**	**-1.2**
TYV				pmax	pmax		
	comp=Z,9.0nm,0.8s						
TYV				MLR	MLR		
	comp=Z,1μm,12.0s						
NKL	**Nikolayevsk**	**17.22**	**359**	*e*P	**P**	**07 08 29.0**	**-0.2**
NJ2	**Nanjing**	**18.82**	**265**	*e*P	**P**	**07 08 46.3**	**-0.7**
NJ2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
TIA	**Tai'an**	**19.35**	**278**	⇓P	**Pn**	**07 08 57.9**	**+3.9**
TIA				pmax	pmax		
	comp=Z,10.0nm,0.6s						
BJI	**Beijing**	**20.02**	**289**	P	**P**	**07 08 59.8**	**-0.3**
BJI				sP	**sP**	**07 09 10.2**	**+0.4**
BJI				S	**S**	**07 12 42.8**	**-1.2**
BJI				sS	**sS**	**07 12 55.3**	**+0.8**
BJI				PcS	**PcS**	**07 16 52.4**	**-0.4**
BJI	**Beijing**	**20.02**	**289**	ScS	ScS	07 20 31.2	-1.4
BJI				pmax	pmax		
	comp=Z,8.0nm,0.5s						
PETK	**Petropavlovsk-**	**20.78**	**29**	P	**P**	**07 09 08.9**	**+0.7**
	comp=Z,7.3nm,1.1s,baz=212,slow=8.2,SNR=4.4						
PETK				LR	LR	07 17 16.6	
	comp=Z,33nm,21.8s,baz=227,slow=37						
PETK	**Petropavlovsk-**	**20.78**	**29**	P	**P**	**07 09 09.0**	**+0.7**
PETK				pmax	pmax		
	comp=Z,7.0nm,1.1s						
PETK				MLR	MLR		
	comp=Z,33nm,21.8s						
PET	**Petropavlovsk**	**21.10**	**30**	*e*P	**P**	**07 09 15.7**	**+4.0**
PET				pmax	pmax		
	comp=Z,79nm,1.7s						
WHN	**Wuhan**	**22.95**	**264**	*e*P	**P**	**07 09 33.2**	**+1.6**
WHN				S	**S**	**07 13 39.4**	**-1.0**
WHN				LR	LR		
	comp=Z,730nm,13.6s						
HHC	**Hu-ho-hao-te**	**23.58**	**291**	*e*P	**P**	**07 09 36.0**	**-2.0**
HHC				S	**S**	**07 13 55.6**	**+4.6**
HHC				pmax	pmax		
	comp=Z,39nm,0.9s						
HHC				pmax	pmax		
	comp=Z,120nm,4.1s						
HHC				LR	LR		
	comp=N,950nm,12.3s						
HHC				LR	LR		
	comp=E,940nm,11.3s						
HHC				LR	LR		
	comp=Z,930nm,11.3s						
MA2	**Magadan**	**24.49**	**12**	P	**P**	**07 09 46.3**	**+0.2**
	comp=Z,4.0nm,0.3s,baz=206,slow=2.1,SNR=5.0						
MA2				LR	LR	07 19 56.9	
	comp=Z,52nm,19.0s,baz=238,slow=38						
MA2	**Magadan**	**24.

TLY eS **S** **07 15 45.7 +0.1**
TLY pmax pmax
comp=Z,2.0nm,0.9s
TLY MLR MLR
comp=Z,189nm,19.0s
CD2 Chengdu 31.41 272 P **P** **07 10 47.1 -1.3**
CD2 pmax pmax
comp=Z,1.0nm,0.5s
DAV Davao City (W) 32.04 210 LR LR 07 23 16.5
comp=Z,72nm,21.2s,baz=334,slow=35
GTA Gaotai 32.64 289 P **P** **07 11 00.7 +1.5**
GTA pP sP 07 11 10.2 +0.9
GTA sP pP 07 11 14.1 +7.7
GTA S **S** **07 16 13.8 -0.1**
GTA sS sS 07 16 29.5 +3.8
GTA SS **SnSn** **07 18 13.4 +4.2**
GTA pmax pmax
comp=Z,2.0nm,1.0s
GTA pmax pmax
comp=Z,44nm,5.0s
GTA LR LR
comp=N,130nm,10.5s
GTA LR LR
comp=E,140nm,13.3s
GTA LR LR
comp=Z,120nm,11.4s
KMI Kunming 34.53 263 P **P** **07 11 13.4 -2.5**
KMI pmax pmax
comp=Z,14nm,0.8s
KMI LR LR
comp=Z,49nm,20.8s
BILL Bilibino 35.16 16 *ce*P **P** **07 11 19.3 -1.3**
BILL *e* 07 11 27.4
BILL pmax pmax
comp=Z,4.0nm,1.0s
BILL Bilibino 35.16 16 *e*P **P** **07 11 20.9 +0.3**
comp=Z,6.6nm,1.1s
TIXI Tiksi 36.35 354 P **P** **07 11 30.2 -0.6**
comp=Z,1.6nm,0.3s,baz=180,slow=2.1,SNR=4.0
TIXI Tiksi 36.35 354 *ce*P **P** **07 11 30.0 -0.7**
TIXI pmax pmax
comp=Z,6.0nm,2.5s
TIXI Tiksi 36.35 354 *e*P **P** **07 11 30.6 -0.1**
comp=Z,3.7nm,0.8s
CMAR Chiang Mai Arr 40.96 256 P **P** **07 12 10.0 0.0**
comp=Z,1.0nm,0.7s,baz=52,slow=5.6,SNR=5.3
CMAR LR LR 07 30 11.6
comp=Z,72nm,19.9s,baz=65,slow=38
WMQ Urumqi 41.10 298 P **P** **07 12 13.0 +2.0**
WMQ pP sP 07 12 21.6 +0.4
WMQ sP pP 07 12 25.5 +7.2
WMQ S **S** **07 18 22.0 -0.5**
WMQ SS **SS** **07 21 16.9 -8.3**
WMQ pmax pmax
comp=Z,3.0nm,0.6s
WMQ pmax pmax
comp=Z,16nm,3.5s
WMQ LR LR
comp=N,32nm,21.2s
WMQ LR LR
comp=E,34nm,37.8s
WMQ LR LR
comp=Z,15nm,26.6s
ZAA0 Zalesovo Array 42.46 313 *e*P **P** **07 12 22.3 +0.4**
ZALV Zalesovo Beam 42.46 313 P **P** **07 12 21.6 -0.3**
comp=Z,4.0nm,0.7s,baz=91,slow=6.7,SNR=8.3
ZALV PcP **PcP** **07 14 13.9 -0.6**
comp=Z,1.5nm,0.5s,baz=111,slow=3.3,SNR=3.7
ZALV LR LR 07 29 44.2
comp=Z,33nm,18.8s,baz=69,slow=36
NVS Novosibirsk 43.41 315 *e*P **P** **07 12 28.9 -0.6**
MK01 Makanchi Array 44.47 303 *e*P **P** **07 12 38.9 +0.6**
MK31 Makanchi Array 44.48 303 *e*P **P** **07 12 39.1 +0.8**
MK31 Makanchi Array 44.48 303 *e*P **P** **07 12 39.1 +0.8**
MKAR Makanchi Array 44.48 303 P **P** **07 12 38.6 +0.3**
comp=Z,5.7nm,0.9s,baz=89,slow=10,SNR=35
MKAR LR LR 07 31 51.8
comp=Z,56nm,21.4s,baz=82,slow=37
MKAR Makanchi Array 44.48 303 *i* P **P** **07 12 39.0 +0.7**
MKAR pmax pmax
comp=Z,6.0nm,0.9s
MAKZ Makanchi 44.69 303 *e*P **P** **07 12 40.7 +0.7**
MAKZ pmax pmax
comp=Z,5.0nm,0.8s
MAKZ Makanchi 44.69 303 *e*P **P** **07 12 40.7 +0.7**
comp=Z,5.0nm,0.8s
PMG Port Moresby 45.46 172 *ce*P P 07 12 55.8 +9.5
PMG pmax pmax
comp=Z,116nm,2.5s
TTA Tatalina 46.48 34 *e*P **P** **07 12 54.2 +0.2**
TTA pmax pmax
comp=Z,6.0nm,1.4s
TTA Tatalina 46.48 34 *e*P **P** **07 12 54.2 +0.2**
comp=Z,6.2nm,1.4s
RSO Redoubt South 47.94 38 *e*P **P** **07 13 06.8 +1.2**
SOEI Soe 48.13 202 *e*P **P** **07 13 06.3 -1.0**
comp=Z,74nm,1.0s
MLY Manley 48.93 32 *e*P **P** **07 13 15.2 +2.2**
MLY *ep*P **sP** **07 13 23.1 -0.1**
MTN Manton Dam 49.41 193 *e*P **P** **07 13 15.4 -1.6**
comp=Z,18nm,1.0s
COEN Coen 49.66 177 *e*P **P** **07 13 18.9 0.0**
comp=Z,13nm,0.9s
TKM2 Tokmak 2 49.91 299 *e*P **P** **07 13 21.0 0.0**
TKM2 pmax pmax
comp=Z,11nm,1.1s
TKM2 Tokmak 2 49.91 299 *e*P **P** **07 13 21.0 0.0**
comp=Z,11nm,1.1s
MDM Murphy Dome 49.99 32 *e*P **P** **07 13 22.9 +1.8**
comp=Z,12nm,0.9s
COLA College 50.16 32 *e*P **P** **07 13 23.9 +1.7**
COLA pmax pmax
comp=Z,5.0nm,0.7s
COLA College 50.16 32 *e*P **P** **07 13 23.9 +1.7**
comp=Z,4.9nm,0.7s
IL1 Eielson Array 50.57 32 *e*P **P** **07 13 26.2 +0.8**
ILAR Eielson Array 50.57 32 P **P** **07 13 25.8 +0.4**
comp=Z,2.7nm,0.8s,baz=269,slow=6.4,SNR=32
ILB Eielson Array 50.57 32 *e*P **P** **07 13 26.3 +0.9**
KSH Kashi 50.61 295 *e*P **P** **07 13 28.5 +2.3**
KSH *es*P sP 07 13 42.2 +5.7
KSH S **S** **07 20 40.1 +0.6**
KSH pmax pmax
comp=Z,35nm,3.0s
KSH LR LR
comp=N,110nm,7.3s
KSH LR LR
comp=E,74nm,7.1s
KSH LR LR
comp=Z,100nm,5.6s
AAK Ala-Archa 50.77 299 *e*P **P** **07 13 26.3 -1.2**
AAK pmax pmax
comp=Z,3.0nm,0.9s
AAK Ala-Archa 50.77 299 *e*P **P** **07 13 27.8 +0.4**
comp=Z,4.3nm,0.9s
FYU Fort Yukon 51.20 30 *e*P **P** **07 13 31.7 +1.6**
comp=Z,36nm,1.7s
ZRNK Zerenda 51.95 313 *e*P **P** **07 13 36.5 +0.6**
ZRNK pmax pmax
comp=Z,5.0nm,0.8s
ZRNK Zerenda 51.95 313 *e*P **P** **07 13 36.5 +0.6**
comp=Z,5.4nm,0.8s
KKAR Karatay Array 53.44 301 *e*P **P** **07 13 47.7 +0.6**
KKAR Karatay Array 53.44 301 *e*P **P** **07 13 47.6 +0.6**
INK Inuvik 55.49 27 *e*P **P** **07 14 02.7 +1.2**
INK pmax pmax
comp=Z,4.0nm,0.8s
INK Inuvik 55.49 27 *e*P **P** **07 14 02.7 +1.2**
comp=Z,4.5nm,0.8s
FITZ Fitzroy Crossi 55.69 198 *e*P **P** **07 14 03.2 -0.3**
comp=Z,17nm,1.4s
SVE Sverdlovsk 55.79 319 *e*P **P** **07 14 05.0 +1.1**
SVE pmax pmax
comp=Z,9.0nm,0.8s
WRAB Tennant Creek 55.92 188 *e*P **P** **07 14 04.2 -1.0**
WRAB pmax pmax
comp=Z,19nm,1.0s
WRAB Tennant Creek 55.92 188 *e*P **P** **07 14 04.2 -1.0**
comp=Z,19nm,1.0s
WB2 Warramunga Arr 55.93 188 *e*P **P** **07 14 04.0 -1.3**
comp=Z,20nm,1.0s
WRA Warramunga Arr 55.93 188 P **P** **07 14 04.4 -0.8**
comp=Z,14nm,0.9s,baz=6.3,slow=7.4,SNR=77
WRA LR LR 07 38 02.6
comp=Z,43nm,19.1s,baz=190,slow=36
ARU Arti 57.00 319 *ci*P **P** **07 14 12.5 0.0**
ARU 07 15 05.6
ARU 07 16 15.3
ARU S **S** **07 22 03.2 -2.1**
ARU 07 24 00.6
ARU pmax pmax
comp=Z,8.0nm,0.7s
ARU Arti 57.00 319 *e*P **P** **07 14 12.7 +0.1**
comp=Z,8.1nm,0.7s
HYB Hyderabad 57.90 269 *i* P **P** **07 14 19.5 0.0**
HYB *ep*P **sP** **07 14 29.0 -0.8**
ABKAR Akbulak array 58.44 311 *e*P **P** **07 14 22.9 +0.2**
AKTO Aktyubinsk 59.21 312 LR LR 07 41 25.1
comp=Z,53nm,18.9s,slow=37
AS01 Alice Springs 59.66 188 *e*P **P** **07 14 30.5 -0.8**
AS31 Alice Springs 59.66 188 *e*P **P** **07 14 31.2 -0.2**
comp=Z,2.0nm,0.6s
ASAR Alice Springs 59.66 188 P **P** **07 14 30.9 -0.5**
comp=Z,4.5nm,0.7s,baz=12,slow=7.5,SNR=57
RES Resolute Bay 63.73 14 *e*P **P** **07 14 58.7 +0.5**
RES pmax pmax
comp=Z,6.0nm,0.9s
RES Resolute Bay 63.73 14 *e*P **P** **07 14 58.7 +0.5**
comp=Z,6.2nm,0.9s
KLMR Klimovskoe 64.54 328 *e*P **P** **07 15 03.0 -0.7**
KLMR *e**PP **pP** **07 15 12.2 +0.9**
KLMR pmax pmax
comp=Z,6.0nm,0.9s
YKA Yellowknife Ar 64.90 30 P **P** **07 15 06.4 +0.4**
comp=Z,2.2nm,0.8s,baz=301,slow=6.6,SNR=51
YKB5 Yellowknife Ar 64.90 30 *e*P **P** **07 15 06.2 +0.1**
ARCES ARCESS Array B 64.93 339 P **P** **07 15 06.0 -0.1**
comp=Z,1.7nm,0.8s,baz=79,slow=7.5,SNR=6.9
DAG Danmarks Havn 66.84 355 *i* P **P** **07 15 18.1 -0.3**
comp=Z,3.7nm,1.0s
DAG *e* 07 15 27.8
DAG Danmarks Havn 66.84 355 *i* P **P** **07 15 18.1 -0.3**
DAG *e* 07 15 27.8
DAG pmax pmax
comp=Z,4.0nm,1.0s
STKA Stephens Creek 67.46 180 P **P** **07 15 21.7 -1.0**
comp=Z,2.2nm,0.9s,baz=1.0,slow=12,SNR=4.0
VRH Novokhopyorsk 68.21 318 *e*P **P** **07 15 26.7 -0.7**
VRH *e**PP **pP** **07 15 36.2 +1.2**
VRH pmax pmax
comp=Z,5.0nm,0.8s
OBN Obninsk 68.81 323 LR LR 07 47 27.2
comp=Z,58nm,18.9s,baz=88,slow=37
OBN Obninsk 68.81 323 *e*P **P** **07 15 34.3 +3.3**
OBN pmax pmax
comp=Z,4.0nm,0.8s
VSR Storozhevoye 69.58 319 *e*P **P** **07 15 34.8 -1.1**
VSR *e**PP **pP** **07 15 43.9 +0.4**
VSR pmax pmax
comp=Z,3.0nm,0.5s
FINES FINESS Array B 69.66 332 P **P** **07 15 36.2 0.0**
comp=Z,4.7nm,0.8s,baz=64,slow=8.7,SNR=14
FINES FINESS Array B 69.66 332 *i* P **P** **07 15 36.7 +0.5**
FINES pmax pmax
comp=Z,5.0nm,0.8s
WSAR Wadi Sarin 70.89 285 LR LR 07 51 30.5
comp=Z,37nm,18.5s,baz=107,slow=40
ZEI Tsey 71.28 310 *e*P P 07 15 39.8 -7.0
ZEI pmax pmax
comp=Z,4.0nm,0.4s
KBZ Khabaz 71.41 311 P **P** **07 15 47.6 +0.5**
comp=Z,1.8nm,0.7s,baz=8.9,slow=3.3,SNR=5.5
KIV Kislovodsk 71.42 311 *ce*P **P** **07 15 48.1 +0.7**
KIV *e* 07 15 56.7
KIV pmax pmax
comp=Z,9.0nm,1.7s
SUMG Summit 71.78 360 *i* P **P** **07 15 50.7 +1.2**
comp=Z,8.8nm,0.9s
SUMG *i* 07 15 58.8
SUMG Summit 71.78 360 *e*P **P** **07 15 51.1 +1.6**
SUMG *e**PP **sP** **07 15 58.9 -1.1**
SUMG pmax pmax
comp=Z,9.0nm,0.9s
SUMG Summit 71.78 360 *e*P **P** **07 15 51.1 +1.6**
comp=Z,9.4nm,0.9s
SUMG *ep*P **sP** **07 15 58.9 -1.1**
GNI Garni 72.14 307 LR LR 07 50 21.8
comp=Z,49nm,18.1s,baz=66,slow=38
AKASG Malin Array Be 75.00 322 P **P** **07 16 07.6 -0.7**
comp=Z,0.8nm,0.4s,baz=48,slow=6.8,SNR=9.0
AKBB Malin Array Si 75.00 322 *e*P sP 07 16 18.5 -0.3
AKBB Malin Array Si 75.00 322 *e*P sP 07 16 18.4 -0.3
KIEV Kiev 75.01 322 *e*P **P** **07 16 08.2 -0.1**
KIEV pmax pmax
comp=Z,4.0nm,0.9s
KIEV Kiev 75.01 322 *e*P **P** **07 16 07.5 -0.8**
comp=Z,5.7nm,1.0s
NB2 NORSAR Subarra 75.09 337 P **P** **07 16 08.9 +0.2**
comp=Z,5.2nm,0.8s,baz=42,slow=5.9
NOA NORSAR Array B 75.09 337 P **P** **07 16 08.7 -0.1**
comp=Z,3.6nm,0.8s,baz=39,slow=5.7,SNR=14
LRM Limekiln Ridge 75.13 44 *e*P **P** **07 16 10.6 +1.1**
LRM *ep*P **sP** **07 16 18.9 -1.1**
BOZ Bozeman (W) 75.69 44 *e*P **P** **07 16 13.8 +1.2**
BOZ pmax pmax
comp=Z,5.0nm,1.2s
BOZ Bozeman (W) 75.69 44 *e*P **P** **07 16 13.8 +1.2**
comp=Z,4.8nm,1.2s
NVAR Mina Array Bea 75.87 53 P **P** **07 16 14.1 +0.3**
comp=Z,1.1nm,0.8s,baz=278,slow=6.2,SNR=8.4
H17A Grant Village 77.05 44 *e*P **P** **07 16 23.6 +3.2**
comp=Z,9.1nm,1.3s
IMW Indian Meadow 77.15 45 *e*P **P** **07 16 23.2 +2.2**
comp=Z,7.5nm,1.4s
R11A Troy Canyon, C 77.66 52 *e*P **P** **07 16 24.9 +1.0**
comp=Z,11nm,1.7s
PDAR Pinedale Array 78.64 45 P **P** **07 16 29.8 +0.5**
comp=Z,0.9nm,0.6s,baz=274,slow=2.3,SNR=13
BUR08 Bucovina Ar. S 78.99 322 *e*P **P** **07 16 31.5 +0.5**
BUR08 *ep*P **sP** **07 16 41.8 +0.2**
BRTR Keskin Array B 79.37 312 P **P** **07 16 33.5 +0.2**
comp=Z,1.2nm,0.8s,baz=135,slow=2.4,SNR=8.0
BRTR Keskin Array B 79.37 312 *i* P **P** **07 16 36.7 +3.4**
BRTR pmax pmax
comp=Z,1.0nm,0.7s
KOLS Kolonicke sedl 79.55 324 *e*P **P** **07 16 34.5 +0.6**
KOLS Kolonicke sedl 79.55 324 *e*P **P** **07 16 34.5 +0.6**
STHS Stebnicka Huta 79.70 325 *e*P **P** **07 16 35.1 +0.4**
STHS Stebnicka Huta 79.70 325 *e*P **P** **07 16 35.1 +0.4**
BR231 Keskin MP Arra 79.82 312 *e*P **P** **07 16 34.5 -1.1**
CRVS Cervenica-Dubn 79.95 324 *e*P **P** **07 16 37.0 +0.9**
CRVS Cervenica-Dubn 79.95 324 *e*P **P** **07 16 37.0 +0.9**
MLR Muntele Rosu 80.04 320 LR LR 07 54 54.3
comp=Z,20nm,19.1s,baz=81,slow=38
SRU San Rafael Swe 80.35 48 *e*P **P** **07 16 39.1 +0.5**
SRU pmax pmax
comp=Z,3.0nm,0.8s
SRU San Rafael Swe 80.35 48 *e*P **P** **07 16 39.1 +0.5**
comp=Z,2.7nm,0.8s
LANS Liptovska Anna 80.71 325 *e*P **P** **07 16 42.5 +2.3**
LANS Liptovska Anna 80.71 325 *e*P **P** **07 16 42.5 +2.3**
DPC Dobruska-Polom 81.24 328 *e*P **P** **07 16 43.8 +0.8**
DPC Dobruska-Polom 81.24 328 *e*P **P** **07 16 43.8 +0.8**
VYHS Vyhne 81.47 325 *e*P **P** **07 16 45.2 +1.0**
VYHS Vyhne 81.47 325 *e*P **P** **07 16 45.2 +1.0**
BRG Berggiesshubel 81.86 329 *e*P **P** **07 16 46.7 +0.6**
comp=Z,3.4nm,1.2s
BRG Berggiesshubel 81.86 329 *e*P **P** **07 16 46.7 +0.6**
BRG pmax pmax
comp=Z,3.0nm,1.2s
CLL Collm 81.91 330 *e*P **P** **07 16 46.0 -0.4**
comp=Z,4.0nm,0.9s
CLL *i* 07 16 56.6
comp=Z,5.0nm,0.9s
CLL *e* 07 17 02.0
CLL Collm 81.91 330 *e*P **P** **07 16 46.0 -0.4**
CLL *i* 07 16 56.6
CLL pmax pmax
comp=Z,4.0nm,0.9s
PRU Pruhonice 82.27 328 *e*P **P** **07 16 49.3 +0.9**
PRU Pruhonice 82.27 328 *e*P **P** **07 16 49.3 +0.9**
MMAI Mount Meron Ar 82.37 305 LR LR 07 56 53.0
comp=Z,43nm,19.0s,baz=200,slow=38
KHC Kasperske Hory 83.33 328 *e*P **P** **07 16 53.4 -0.6**
KHC *ep*P **pP** **07 17 02.7 +1.0**
KHC Kasperske Hory 83.33 328 *e*P **P** **07 16 53.4 -0.6**
KHC *e* 07 17 02.7
GERES GERESS Array B 83.50 328 P **P** **07 16 54.2 -0.7**
comp=Z,0.8nm,0.8s,baz=37,slow=5.2,SNR=6.6
GERES LR LR 07 57 26.2
comp=Z,29nm,18.8s,baz=354,slow=38
PPT Papeete 84.39 116 LR LR 07 49 27.9
comp=Z,50nm,20.8s,baz=345,slow=32
BFO Black Forest 86.12 331 *i* P **P** **07 17 08.7 +0.7**
BFO Black Forest 86.12 331 *e*P **P** **07 17 08.4 +0.4**
comp=Z,5.2nm,0.9s
SCHQ Schefferville 86.47 16 P **P** **07 17 09.4 -0.1**
comp=Z,1.5nm,1.0s,baz=40,slow=5.6,SNR=4.1
TXAR Lajitas Array 91.01 52 P **P** **07 17 31.9 +0.1**
comp=Z,0.8nm,0.9s,baz=306,slow=4.5,SNR=6.1
CCIG Comitan 107.70 54 *e*Pdif **Pdif** **07 18 42.9 -4.3**
TORD Torodi Ar. Bea 117.90 314 PKP **PKPdf** **07 23 13.3 -0.8**
comp=Z,0.9nm,0.9s,baz=113,slow=0.6,SNR=3.7
LPAZ La Paz 147.48 61 PKPbc **PKPbc** **07 24 12.8 +0.5**

IDC ***01*** *07:14:15.5±0.6,37.°79N×144.°04E,h0km,mb4.1/23, mb1 4.2/30,mb1mx4.1/57,mbtmp4.1/30,ML4.1/5,MS3.1/6, Ms1 3.1/6,ms1mx2.7/54,Error ellipse: s-maj=15.1km s-min=12.2km az=127.0*
NEIC ***01*** *07:14:17.2±0.3,37.°82N×144.°04E,h10km,mb4.4/9,Error ellipse: s-maj=7.8km s-min=5.2km az=131.0*
ISCJB ***01*** *07:14:18.4±1.3,37.°89N±0.°03×143.°90E±0.°04, h28km±10km,mb4.1/31,MS3.1/2,Error ellipse: s-maj=5.6km s-min=4.8km az=177.5*
JMA ***01*** *07:14:19.2±0.2,37.°91N×143.°88E,h42km,M4.6*
ISC 01 07:14:20.3±3.9,37.°90N±0.°05×143.°91E±0.°07,h28km±27km, **n71,σ1°51/83,mb4.1**/31,**Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.09**	**286**	P	**Pn**	**07 14 52.7**	**-0.7**
JIO				S	**Sn**	**07 15 17.1**	**-1.4**
OFUJ	**Ofunato**	**2.12**	**305**	P	**Pn**	**07 14 53.0**	**-0.8**
OFUJ				S	**Sn**	**07 15 17.7**	**-1.4**
JMK	**Ichinoseki**	**2.36**	**297**	P	**Pn**	**07 14 56.8**	**-0.3**
JMK				S	**Sn**	**07 15 23.9**	**-1.2**
JMM	**Marumori**	**2.46**	**270**	P	**Pn**	**07 14 57.6**	**-1.0**
JMM				S	**Sn**	**07 15 25.7**	**-2.0**
JFK	**Kawauchi**	**2.47**	**258**	P	**Pn**	**07 14 57.0**	**-1.6**
JOM	**Ohasama**	**2.58**	**308**	P	**Pn**	**07 14 59.6**	**-0.6**
JOM				S	**Sn**	**07 15 29.9**	**-0.7**
JTH	**Tanohata**	**2.59**	**323**	P	**Pn**	**07 15 00.0**	**-0.3**
JTH				S	**Sn**	**07 15 28.9**	**-1.9**
JOU	**Okura**	**2.60**	**281**	P	**Pn**	**07 15 00.3**	**-0.2**
JOU				S	**Sn**	**07 15 30.8**	**-0.3**
JFT	**Otama**	**2.86**	**263**	P	**Pn**	**07 15 03.6**	**-0.4**
JFT				S	**Sn**	**07 15 36.7**	**-0.8**
JRG	**Rokugo**	**2.97**	**301**	P	**Pn**	**07 15 06.0**	**+0.5**
JRG				*e*S	**Sn**	**07 15 40.2**	**0.0**
JYK	**Kaneyama**	**2.97**	**291**	P	**Pn**	**07 15 05.7**	**+0.2**
JYK				S	**Sn**	**07 15 40.2**	**0.0**
JANG	**Nango**	**3.09**	**324**	P	**Pn**	**07 15 06.5**	**-0.7**
JANG				S	**Sn**	**07 15 41.2**	**-2.1**
JTM	**Tenmabayashi**	**3.63**	**324**	P	**Pn**	**07 15 14.6**	**0.0**
JTM				S	**Sn**	**07 15 54.4**	**-2.0**
ERM	**Erimo**	**4.15**	**352**	*e*Pn	**Pn**	**07 15 21.1**	**-0.6**
ERM				*e*Sn	**Sn**	**07 16 04.0**	**-5.3**
MJAR	**Matsushiro Arr**	**4.75**	**255**	Pn	**Pn**	**07 15 30.5**	**+0.5**
	10nm,0.3s,baz=85,slow=15,SNR=120						
MJAR				Sn	**Sn**	**07 16 24.9**	**+0.9**
	5.1nm,0.3s,baz=90,slow=15,SNR=5.6						
MJAR				LR	LR	07 17 16.8	
	comp=Z,75nm,18.3s,baz=75,slow=38						
MAJO	**Matsushiro**	**4.75**	**255**	*e*Pn	**Pn**	**07 15 30.7**	**+0.7**
MAT	**Matsushiro**	**4.75**	**255**	P	**Pn**	**07 15 30.7**	**+0.7**
MAT				*e*S	**Sn**	**07 16 26.3**	**+2.2**
JHJ2	**Mitsune**	**5.83**	**216**	*e*Pn	**Pn**	**07 15 44.0**	**-0.7**
JHJ2				*e*Sn	**Sn**	**07 16 45.1**	**-5.5**
JHJ	**Hachijo jima 2**	**5.83**	**216**	Pn	**Pn**	**07 15 43.0**	**-2.0**
	34nm,0.3s,baz=346,slow=19,SNR=14						
JHJ				Sn	**Sn**	**07 16 45.5**	**-5.3**
	30nm,0.3s,baz=110,slow=22,SNR=5.8						
ASAJ	**Asahikawa**	**6.29**	**351**	Pn	**Pn**	**07 15 51.4**	**+0.2**
	7.8nm,0.3s,baz=214,slow=11,SNR=36						
ASAJ				Sn	**Sn**	**07 17 00.6**	**-1.4**
	7.6nm,0.3s,baz=28,slow=29,SNR=8.6						
ASAJ	**Asahikawa**	**6.29**	**351**	*e*Pn	**Pn**	**07 15 51.3**	**+0.2**
	7.6nm,0.4s						
ASAJ				*e*Sn	**Sn**	**07 16 59.3**	**-2.7**
ASAJ				Sn	**Sn**	**07 17 00.6**	**-1.4**
CBIJ	**Chichi jima**	**10.87**	**188**	Pn	Pn	07 16 47.5	-6.5
CBIJ				Sn	Sn	07 18 39.6	-15
JCJ	**Chichijima**	**10.87**	**188**	Pn	Pn	07 16 47.5	-6.5
	7.1nm,0.3s,baz=265,slow=22,SNR=8.8						
JCJ				Sn	Sn	07 18 39.6	-15
	baz=108,slow=20						
USRK	**Ussuriysk Ar.**	**10.98**	**309**	Pn	**Pn**	**07 16 56.9**	**+1.6**
	0.3nm,0.3s,baz=134,slow=14,SNR=5.1						
USRK				LR	LR	07 21 05.2	
	comp=Z,136nm,18.8s,baz=158,slow=37						
JNU	**Nakatsue**	**11.64**	**250**	*e*Pn	**Pn**	**07 17 02.9**	**-1.6**
KSRS	**Korea Array**	**12.68**	**273**	Pn	**Pn**	**07 17 19.9**	**+1.3**
	0.4nm,0.3s,baz=86,slow=14,SNR=6.6						
KSRS				LR	LR	07 21 10.9	
	comp=Z,55nm,21.6s,baz=42,slow=32						
KSAR	**Wonju Array Be**	**12.71**	**273**	Pn	**Pn**	**07 17 19.9**	**+0.8**
KLR	**Kul'dur**	**14.33**	**326**	Pn	**Pn**	**07 17 40.4**	**-0.8**
	0.3nm,0.3s,baz=146,slow=11,SNR=7.2						
KLR				LR	LR	07 23 16.2	
	comp=Z,70nm,18.4s,baz=145,slow=37						
PETK	**Petropavlovsk-**	**17.97**	**28**	P	**P**	**07 18 28.8**	**+0.6**
	0.1nm,0.3s,baz=194,slow=10,SNR=3.2						
PET	**Petropavlovsk**	**18.27**	**29**	*e*P	**P**	**07 18 29.8**	**-1.6**
	6.6nm,0.5s						
GUMO	**Guam**	**24.23**	**178**	LR	LR	07 27 10.2	
	comp=Z,54nm,19.9s,baz=93,slow=32						
SEY	**Seymchan**	**25.59**	**9**	P	**P**	**07 19 47.2**	**+0.5**
	3.4nm,0.7s,baz=185,slow=8.6,SNR=11						
YAK	**Yakutsk**	**25.71**	**345**	*e*P	**P**	**07 19 47.9**	**+0.1**
	11nm,0.8s						
H11N2	**WAKE ISLAND Hy**	**26.96**	**126**	T	T	07 48 03.5	
	baz=318,slow=76,SNR=7.6						
H11N1	**WAKE ISLAND Hy**	**26.97**	**126**	T	T	07 47 59.6	
	baz=318,slow=76,SNR=6.4						
H11N3	**WAKE ISLAND Hy**	**26.98**	**126**	T	T	07 48 10.1	
	baz=318,slow=76,SNR=6.2						
H11S1	**WAKE ISLAND Hy**	**27.74**	**128**	T	T	07 49 13.3	
	baz=319						
H11S3	**WAKE ISLAND Hy**	**27.74**	**128**	T	T	07 49 04.0	
	baz=319						
H11S2	**WAKE ISLAND Hy**	**27.76**	**128**	T	T	07 49 10.2	
	baz=319						
ULN	**Ulaanbaatar**	**28.54**	**302**	*e*P	**P**	**07 20 14.9**	**+1.3**
	1.1nm,0.4s						
SONM	**Songino Array**	**28.98**	**302**	P	**P**	**07 20 19.9**	**+2.5**
	1.6nm,0.8s,baz=60,slow=8.8,SNR=5.3						
SONM				LR	LR	07 32 23.9	
	comp=Z,59nm,18.5s,baz=50,slow=37						
ENH	**Enshi**	**29.38**	**265**	P	**P**	**07 20 21.5**	**+0.4**
	8.5nm,1.1s						
TLY	**Talaya**	**31.29**	**309**	P	**P**	**07 20 40.3**	**+2.6**
	1.7nm,0.6s,baz=248,slow=22,SNR=3.1						
ZALV	**Zalesovo Beam**	**42.81**	**312**	P	**P**	**07 22 16.0**	**+0.7**
	0.9nm,0.5s,baz=90,slow=10,SNR=2.8						
ZALV				PcP	**PcP**	**07 24 05.8**	**-0.4**
	1.8nm,0.4s,baz=103,slow=2.7,SNR=6.0						
CMAR	**Chiang Mai Arr**	**43.63**	**256**	P	**P**	**07 22 22.6**	**+0.2**
	1.2nm,0.7s,baz=50,slow=6.5,SNR=8.3						
MKAR	**Makanchi Array**	**45.35**	**302**	P	**P**	**07 22 36.7**	**+0.9**
	2.4nm,0.8s,baz=88,slow=9.0,SNR=19						
KURK	**Kurchatov**	**46.97**	**308**	P	**P**	**07 22 49.6**	**+1.2**
KURBB	**Kurchatov Arra**	**47.04**	**308**	P	**P**	**07 22 49.6**	**+0.6**
	2.4nm,0.5s,baz=82,slow=8.1,SNR=22						
ILAR	**Eielson Array**	**47.70**	**33**	P	**P**	**07 22 54.2**	**+0.3**
	2.4nm,0.7s,baz=264,slow=6.5,SNR=23						
TKM2	**Tokmak 2**	**50.96**	**299**	*e*P	**P**	**07 23 21.2**	**+1.7**
	8.9nm,1.0s						
INK	**Inuvik**	**52.71**	**28**	P	**P**	**07 23 32.2**	**+0.4**
	1.3nm,0.5s,baz=304,slow=8.2,SNR=16						
ARU	**Arti**	**57.02**	**319**	*e*P	**P**	**07 24 04.0**	**+0.7**
	5.5nm,0.7s						
WRAB	**Tennant Creek**	**58.22**	**191**	*e*P	**P**	**07 24 10.7**	**-1.3**
	7.2nm,0.8s						
WRA	**Warramunga Arr**	**58.23**	**191**	P	**P**	**07 24 10.7**	**-1.4**
	8.9nm,0.8s,baz=12,slow=7.4,SNR=51						
FITZ	**Fitzroy Crossi**	**58.29**	**201**	P	**P**	**07 24 12.1**	**-0.4**
	1.0nm,0.7s,baz=10,slow=8.4,SNR=5.3						
ABKAR	**Akbulak array**	**58.90**	**310**	*e*P	**P**	**07 24 16.9**	**+0.4**
	1.9nm,0.6s						
ASAR	**Alice Springs**	**61.96**	**190**	P	**P**	**07 24 36.8**	**-0.8**
	0.8nm,0.5s,baz=10,slow=15,SNR=17						
YKA	**Yellowknife Ar**	**62.05**	**31**	P	**P**	**07 24 37.7**	**-0.1**
	0.7nm,0.7s,baz=302,slow=6.6,SNR=22						

ARCES	ARCESS Array B	63.88	340	P	P	07 24 49.5	-0.3
	0.7nm,0.6s,baz=61,slow=9.9,SNR=5.5						
GEYT	Alibeck	65.14	300	P	P	07 24 58.3	-0.4
	2.0nm,0.6s,baz=349,slow=4.5,SNR=3.9						
FINES	FINESS Array B	68.96	333	P	P	07 25 22.3	-0.1
	2.2nm,0.6s,baz=38,slow=7.2,SNR=11						
KBZ	Khabaz	71.83	312	P	P	07 25 41.1	+0.8
	1.7nm,0.8s,baz=93,slow=9.0,SNR=4.1						
NVAR	Mina Array Bea	72.88	55	P	P	07 25 47.0	0.0
	0.7nm,0.8s,baz=276,slow=5.0,SNR=5.4						
H17A	Grant Village	74.05	46	eP	P	07 25 55.1	+1.3
	1.4nm,0.8s						
NOA	NORSAR Array B	74.14	338	P	P	07 25 53.1	-0.7
	0.6nm,0.6s,baz=38,slow=5.8,SNR=3.4						
AKASG	Malin Array Be	74.81	323	P	P	07 25 57.3	-0.4
	1.9nm,0.5s,baz=45,slow=5.9,SNR=10						
PDAR	Pinedale Array	75.64	47	P	P	07 26 02.6	-0.3
	0.7nm,0.6s,baz=308,slow=1.5,SNR=9.4						
GERES	GERESS Array B	83.00	329	P	P	07 26 42.5	-0.3
	0.6nm,0.6s,baz=335,slow=5.0,SNR=4.3						
TXAR	Lajitas Array	88.02	54	P	P	07 27 08.0	-0.2
	0.2nm,0.5s,baz=262,slow=1.8,SNR=3.3						
TXAR	Lajitas Array	88.02	54	P	P	07 27 08.0	-0.2
TORD	Torodi Ar. Bea	118.08	317	PKP	PKPdf	07 33 03.6	-1.5
	0.1nm,0.4s,baz=233,slow=0.7,SNR=2.8						

IDC 01 07:34:59.2±53.0, 16.72S×179.88W, h0km, mb3.7/3, mb1 3.9/3, mb1mx3.6/28, mbtmp3.7/3, Error ellipse: s-maj=962.4km s-min=154.6km az=77.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	Stephens Creek	37.99	239	P	P	07 42 19.4	+0.3
	0.8nm,0.5s,baz=85,slow=12,SNR=4.4						
WRA	Warramunga Arr	43.47	258	P	P	07 43 04.0	-0.6
	0.2nm,0.4s,baz=92,slow=8.4,SNR=4.2						
ASAR	Alice Springs	43.77	253	P	P	07 43 06.9	-0.1
	1.2nm,0.7s,baz=88,slow=8.5,SNR=20						

*KRNET **01** 07:41:38.6±0.1, 43.°62N×77.°66E, h23km, mb3.3*
*NNC **01** 07:41:38.7±0.7, 43.°61N×77.°67E, h3km±4km, mb3.5, mpv3.3, Error ellipse: s-maj=8.8km s-min=2.8km az=169.0*
*ISCJB **01** 07:41:39.3±0.3, 43.°61N±0.°02×77.°67E±0.°02, h3km±2km, mb3.9/3, Error ellipse: s-maj=3.1km s-min=2.0km az=166.5*
*SOME **01** 07:41:39.6, 43.°60N×77.°65E, h20km*
*MOS **01** 07:41:40.1±2.3, 43.°71N×77.°68E, h19km, mb4.1/3, Error ellipse: s-maj=14.3km s-min=11.3km az=61.7*
MOS Felt (II) at Tyrgen.

ISC 01 07:41:39.5±1.0, 43.°60N±0.°02×77.°66E±0.°01, h9km±8km, n63, σ1°31/105, mb4.0/3, 42C-19D, Lake Issyk-Kul region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KURS	Kuram	0.39	106	⇑iP	Pb	07 41 48.1	-0.5
	65nm,0.1s						
KURS				⇑iS	Sb	07 41 53.7	-1.0
	722nm,0.4s						
KOTS	Kotyrbulak	0.54	228	eP	Pb	07 41 50.8	-0.4
CHKK	Chushkaly	0.55	300	eP	Pg	07 41 50.4	+0.3
	48nm,0.2s						
CHKK				eS	Sg	07 41 58.3	+1.1
	864nm,0.3s						
AAA	Alma-Ata	0.61	238	eP	Pb	07 41 52.9	+0.5
	286nm,0.1s						
AAA				eS	Sn	07 42 02.5	-2.0
	3μm,0.2s						
AAA	Alma-Ata	0.61	238	ePG	Pb	07 41 52.8	+0.5
AAA				eS	Sn	07 42 02.4	-2.0
MDOK	Medeo	0.62	226	⇑iP	Pg	07 41 51.8	+0.3
	175nm,0.2s						
MDOK				⇑iS	Sg	07 42 00.5	+0.8
	768nm,0.2s						
ARXS	Arharly	0.63	11	eP	Pg	07 41 52.1	+0.5
KNDC	Almaty	0.63	233	⇑P	Pg	07 41 52.0	+0.3
	90nm,0.2s						
KNDC				⇑S	Sg	07 42 00.7	+0.7
	172nm,0.2s						
ZHN	Zhinishke	0.71	127	eP	Pg	07 41 53.1	-0.2
	100nm,0.2s						
ZHN				eS	Sg	07 42 02.6	0.0
	3μm,0.2s						
KTBS	Karatobe	0.71	279	eP	Pb	07 41 53.5	-0.6
KTBS				eS	Sb	07 42 03.6	-0.5
MNBS	Baschi	0.72	48	eP	Pg	07 41 53.6	+0.2
	30nm,0.2s						
MNBS				eS	Sg	07 42 03.5	+0.6
	719nm,0.5s						
KPKS	Kokpek	0.76	100	eP	Pb	07 41 53.9	-1.0
	147nm,0.1s						
KPKS				eS	Sb	07 42 04.2	-1.2
	740nm,0.2s						
TNSS	Tian-Shan	0.76	223	⇓iP	Pg	07 41 54.2	0.0
	102nm,0.4s						
TNSS				⇑iS	Sb	07 42 05.2	-0.6
	382nm,0.3s						
SATY	Saty	0.77	134	⇓iP	Pb	07 41 54.2	-0.9
	500nm,0.1s						
SATY				⇑iS	Sb	07 42 04.5	-1.2
	3μm,0.2s						
ANVS	Anan'yevo	0.82	179	⇓iP	Pb	07 41 54.8	-1.1
	baz=180						
ANVS				⇓iS	Sb	07 42 06.2	-0.9
	baz=180						
KUU	Kurty	1.00	288	eP	Pb	07 41 58.0	-1.0
	60nm,0.1s						
KUU				eS	Sb	07 42 11.1	-1.1
	261nm,0.3s						
MTBS	Maitube	1.01	243	⇓iP	Pb	07 41 58.4	-0.8
	91nm,0.2s						
MTBS				⇑iS	Sb	07 42 12.0	-0.6
	676nm,0.4s						
UZB	Uzynbulak	1.09	114	eP	Pb	07 41 59.7	-1.0
	262nm,0.2s						
UZB				eS	Sb	07 42 13.9	-1.2
	298nm,0.3s						
PRZ	Przheval'sk	1.24	154	⇑iP	Pg	07 42 03.5	+0.2
	baz=154						
PRZ				⇑iS	Sg	07 42 21.0	+1.6
	baz=154						
KST	Kastek	1.35	246	eP	Pn	07 42 03.8	-0.9
	276nm,0.4s						
KST				eS	Sn	07 42 21.1	-1.8
	158nm,0.2s						
PDGK	Podgornoye	1.36	101	⇑iP	Pn	07 42 04.0	-0.7
	baz=102						
PDGK				⇑iS	Sb	07 42 22.1	-0.4
	baz=102						
PDGK	Podgornoye	1.36	101	⇑P	Pn	07 42 03.9	-0.7
	55nm,0.5s						
PDGK				⇑S	Sb	07 42 22.1	-0.4
	55nm,0.3s						
PDGK	Podgornoye	1.36	101	PG	Pn	07 42 03.9	-0.7
PDGK				S	Sb	07 42 22.1	-0.4
PDGK				pmax	pmax		
	comp=Z,55nm,0.5s						
PDGK				smax	smax		
	comp=N,55nm,0.3s						
DGS	Degeres	1.42	256	eP	Pb	07 42 05.6	-0.5
	comp=N,27nm,0.3s						
DGS				eS	Sb	07 42 23.9	-0.4
	comp=N,250nm,0.3s						
TDK	Taldyqorghan	1.51	21	eP	Pb	07 42 07.0	-0.7
	comp=N,285nm,0.5s						
TDK				eS	Sb	07 42 26.8	-0.1
	comp=N,558nm,0.3s						
KDJ	Kajisay	1.51	194	⇓iP	Pb	07 42 07.5	-0.3
	baz=193						
KDJ				⇓iS	Sb	07 42 27.3	+0.2
	baz=193						
TKM2	Tokmak 2	1.65	246	⇑iP	Pn	07 42 09.0	+0.2
	baz=246						
TKM2				⇑iS	Sb	07 42 31.3	+0.2
	baz=246						
TKM2	Tokmak 2	1.65	246	⇓P	Pn	07 42 08.5	-0.3
	comp=N,9.7nm,0.3s						
TKM2				⇑S	Sb	07 42 30.8	-0.3
	comp=N,71nm,0.2s						
TKM2	Tokmak 2	1.65	246	PN	Pn	07 42 08.5	-0.3
TKM2				S	Sb	07 42 30.8	-0.3
TKM2				pmax	pmax		
	comp=Z,10.0nm,0.4s						
TKM2				smax	smax		
	comp=N,71nm,0.3s						
BOOM	Boomskoye usch	1.68	229	⇑iP	Pb	07 42 09.7	-0.9
	baz=229						
BOOM				⇑iS	Sb	07 42 31.9	0.0
	baz=229						
SHLS	Shalkode	1.68	104	eP	Pb	07 42 10.0	-0.8
	comp=N,33nm,0.1s						
SHLS				eS	Sb	07 42 31.7	-0.4
	comp=N,196nm,0.3s						
DJR	Jarkent	1.71	64	eP	Pb	07 42 10.2	-0.9
	comp=N,63nm,0.3s						
DJR				⇓iS	Sb	07 42 32.6	-0.1
	comp=N,265nm,0.4s						
ULHL	Ulahol	1.71	218	⇓iP	Pb	07 42 10.3	-0.8
	baz=218						
ULHL				⇓iS	Sb	07 42 32.9	+0.1
	baz=218						
KTMS	Ketmen	1.97	94	eP	Pb	07 42 14.4	-1.1
	comp=N,25nm,0.3s						
KTMS				eS	Sb	07 42 39.9	-0.3
	comp=N,158nm,0.3s						
KAPS	Kapalarasan	2.08	35	eP	Pb	07 42 16.5	-0.9
	comp=N,50nm,0.3s						
KAPS				eS	Sb	07 42 43.6	+0.2
	comp=N,301nm,0.4s						
KBK	Karagaybulak	2.19	245	⇑iP	Pb	07 42 17.8	-1.6
	baz=245						
KBK				⇑iS	Sb	07 42 45.9	-0.9
	baz=245						
CHMS	Chumysh	2.20	255	⇑iP	Pb	07 42 17.7	-1.8
	baz=255						
CHMS				⇑iS	Sb	07 42 45.8	-1.1
	baz=255						
USP	Ospenovka	2.32	263	⇑iP	Pb	07 42 19.7	-1.8
	baz=262						
USP				⇑iS	Sb	07 42 48.7	-1.7
	baz=262						
KZA	Kyzart	2.33	230	⇑iP	Pb	07 42 20.5	-1.4
	baz=230						
KZA				⇑iS	Sb	07 42 50.1	-0.9
	baz=230						
FRU1	Bishkek	2.35	251	⇑eP	Pb	07 42 19.8	-2.2
	baz=251						
FRU1				⇑iS	Sb	07 42 50.1	-1.0
	baz=251						
NRN	Naryn	2.49	210	⇑iP	Pb	07 42 22.5	-2.0
	baz=210						
NRN				⇑iS	Sb	07 42 53.5	-1.8
	baz=210						
AAK	Ala-Archa	2.51	248	⇑iP	Pb	07 42 22.7	-2.1
	baz=248						
AAK				⇑iS	Sb	07 42 53.3	-2.5
	baz=248						
AAK	Ala-Archa	2.51	248	⇓Pn	Pb	07 42 23.5	-1.3
	comp=N,8.9nm,0.3s						
AAK				⇑Lg	Lg	07 42 56.3	
	comp=N,22nm,0.8s						
AAK	Ala-Archa	2.51	248	PN	Pb	07 42 23.4	-1.3
AAK						07 42 56.3	
AAK				pmax	pmax		
	comp=Z,9.0nm,0.4s						
AAK				pmax	pmax		
	comp=N,22nm,0.8s						
MRKS	Merke	3.35	257	⇓iP	Pb	07 42 40.8	+1.7
	comp=N,7.1nm,0.3s						
MRKS				eS	Sg	07 43 24.2	-2.9
	comp=N,33nm,0.3s						
MNAS	Manas	3.94	255	⇑Pg	Pb	07 42 50.3	+1.1
	comp=N,1.3nm,0.3s						
MNAS				⇓Lg	Lg	07 43 42.0	
	comp=N,8.2nm,0.5s						
MNAS	Manas	3.94	255	PN	Pb	07 42 50.2	+1.1
MNAS						07 43 41.9	
MNAS				pmax	pmax		
	comp=Z,1.0nm,0.3s						
MNAS				pmax	pmax		
	comp=N,8.0nm,0.5s						
MAKZ	Makanchi	4.43	42	⇓Pn	Pn	07 42 47.6	+0.8
	comp=N,1.2nm,0.3s						
MAKZ				⇑Lg	Lg	07 43 57.0	
	comp=N,4.8nm,0.5s						
MAKZ	Makanchi	4.43	42	PN	Pb	07 42 53.1	-4.3
MAKZ						07 43 56.9	
MAKZ				pmax	pmax		
	comp=Z,1.0nm,0.4s						
MAKZ				pmax	pmax		
	comp=N,5.0nm,0.5s						
MK31	Makanchi Array	4.58	44	⇑Pn	Pn	07 42 49.9	+1.0
	comp=N,0.5nm,0.3s,baz=222,slow=15,SNR=13						
MK31				⇓Lg	Lg	07 44 00.9	
	comp=N,4.1nm,0.5s,baz=218,slow=28,SNR=12						
MK31	Makanchi Array	4.58	44	PN	Pn	07 42 49.8	+1.0
MK31						07 44 00.8	
MK31				pmax	pmax		
	comp=Z,1.0nm,0.3s						
MK31				pmax	pmax		
	comp=N,4.0nm,0.5s						
MKAR	Makanchi Array	4.58	44	ePN	Pn	07 42 49.7	+0.8
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.2s						
KK31	Karatay Array	5.23	267	⇓Pg	Pb	07 43 12.2	+1.1
	comp=Z,0.5nm,0.3s,baz=86,slow=16,SNR=8.9						
KK31				⇑Lg	Lg	07 44 22.4	
	comp=Z,4.1nm,0.5s,baz=76,slow=29,SNR=8.0						
KK31	Karatay Array	5.23	267	ePN	Pg	07 43 18.4	-1.3
KK31						07 44 22.4	
KK31				pmax	pmax		
	comp=Z,1.0nm,0.4s						
KK31				pmax	pmax		
	comp=N,4.0nm,0.5s						
OTUK	Ortayu	5.94	323	⇓Pn	Pn	07 43 06.5	-1.2
	comp=N,0.4nm,0.3s						
OTUK				⇑Lg	Lg	07 44 46.8	
	comp=N,18nm,0.6s						
OTUK	Ortayu	5.94	323	PN	Pn	07 43 06.4	-1.2
OTUK						07 44 42.3	
OTUK				pmax	pmax		
	comp=N,18nm,0.6s						
KURK	Kurchatov	7.15	5	⇑Pn	Pn	07 43 21.1	-3.0
	comp=N,3.4nm,0.8s						
KURK				⇓Sn	Sn	07 44 45.7	+0.3
	comp=N,2.6nm,0.5s						
KURK				⇑Lg	Lg	07 45 25.1	
	comp=N,4.1nm,0.5s						
KURK	Kurchatov	7.15	5	PN	Pn	07 43 21.1	-3.0
ARU	Arti	17.68	323	eP	P	07 45 46.4	-0.2
ULN	Ulaanbaatar	20.89	68	eP	P	07 46 22.2	+0.1
KIV	Kislovodsk	25.14	283	eP	P	07 47 09.4	+4.6
KIV				pmax	pmax		
	comp=Z,3.0nm,0.9s						
OBN	Obninsk	28.71	308	eP	P	07 47 38.3	+1.6
OBN				pmax	pmax		
	comp=Z,3.0nm,0.9s						
KIEV	Kiev	33.20	300	eP	P	07 48 18.5	+2.2
KIEV				pmax	pmax		
	comp=Z,1.0nm,0.9s						

*NIED **01** 07:42:00, 38.°00N×143.°00E, h23km, Mw3.5 Best double couple: M0 1.98000×10^14 NP1:φs358.00000°, δ40.00000°, λ-98.00000°. NP2:φs188.00000°, δ50.00000°, λ-83.00000°.*

JMA 01 07:42:22.8±0.2, 38.°05N×143.°03E, h37km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	1.38	287	P	Pn	07 42 46.7	+1.2
JIO				S	Sn	07 43 03.8	+1.3
OFUJ	Ofunato	1.48	314	P	Pn	07 42 47.7	+0.8
JMK	Ichinoseki	1.68	303	P	Pn	07 42 50.7	+1.1
JMM	Marumori	1.78	265	P	Pn	07 42 51.6	+0.7
JMM				eS	Sn	07 43 12.7	+0.4
JFK	Kawauchi	1.84	249	P	Pn	07 42 52.4	+0.5
JOU	Okura	1.89	280	P	Pn	07 42 54.2	+1.7
JOU				S	Sn	07 43 18.4	+3.3
JOM	Ohasama	1.97	317	P	Pn	07 42 54.9	+1.4
JFT	Otama	2.20	257	P	Pn	07 42 58.9	+2.1
JYK	Kaneyama	2.27	293	P	Pn	07 42 59.7	+2.0
JRG	Rokugo	2.31	306	P	Pn	07 43 00.6	+2.4

DJA 01 08:01:11.7±0.5, 3.°S±3.°×14.°0E±.°, h10km, M4.2/4, mB5.9/2, mb4.7/4, MLv3.9/2, Mw(mB)5.5/2, Irian Jaya

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GENI	Genyem	0.89	349	P	Pg	08 01 27.4	-1.4
GENI				S	Sb	08 01 40.8	-0.3
JAY	Jayapura	1.02	22	P	Pg	08 01 29.9	-1.5
JAY				S	Sg	08 01 44.3	-0.3
MMPI	Merauke	4.96	179	P	Pn	08 02 26.0	-0.4
RKPI	Ransiki, Papua	6.45	287	P	Pn	08 02 46.6	-0.2
	109nm,1.1s,4μm0.5nm						
FAKI	Fak Fak	8.09	274	P	Pn	08 03 08.5	-0.8
	24nm,1.3s						
SWI	Sorong	9.43	286	P	Pn	08 03 27.4	-0.3

*IDC **01** 08:03:02.9±0.7, 4.°14S×152.°77E, h0km, mb4.1/9, mb1 4.3/9, mb1mx3.9/35, mbtmp4.1/9, MS3.0/6, Ms1 3.0/6, ms1mx2.7/41, Error ellipse: s-maj=33.8km s-min=18.9km az=122.0*
*ISCJB **01** 08:03:06.5±0.6, 4.°09S±0.°10×152.°7E±0.°1, h35km, mb4.2/12, MS3.1/3, Error ellipse: s-maj=17.9km s-min=9.7km az=43.7*
*NEIC **01** 08:03:08.2±0.4, 4.°16S×152.°73E, h35km, mb4.8/3, Error ellipse: s-maj=11.9km s-min=8.5km az=134.0*

ISC 01 08:03:08.1±0.7, 4.°1S±0.°1×152.°8E±0.°1, h35km, n22, σ1°39/23, mb4.2/12, MS3.2/3, 1C, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	Port Moresby	7.73	226	Pn	Pn	08 05 02.1	+3.8
	1.4nm,0.3s,baz=54,slow=17,SNR=3.4						
PMG				Sn	Sn	08 06 26.4	+1.7
	4.2nm,0.3s,baz=141,slow=15,SNR=8.8						
PMG				LR	LR	08 08 03.7	
	comp=Z,194nm,19.1s,baz=74,slow=39						
PMG	Port Moresby	7.73	226	ePn	Pn	08 04 56.8	-1.4
	35nm,0.6s						
PMG				eSn	Sn	08 06 26.1	+1.4
PMG				Sn	Sn	08 06 26.4	+1.7
HNR	Honiara	8.88	127	LR	LR	08 07 50.0	
	comp=Z,28nm,20.1s,baz=331,slow=32						
GUMO	Guam	19.22	336	LR	LR	08 13 41.4	
	comp=Z,15nm,21.8s,baz=66,slow=33						
FAKI	Fak Fak	20.55	272	P	P	08 07 43.3	-0.7
	8.8nm,0.8s						
DZM	Mont Dzumac	22.26	145	P	P	08 08 01.7	-0.7
	2.2nm,0.6s,baz=100,slow=19,SNR=5.1						
WRAB	Tennant Creek	23.94	227	eP	P	08 08 18.2	-1.0
	30nm,0.8s						
WRA	Warramunga Arr	23.95	227	P	P	08 08 18.6	-0.7
	21nm,0.7s,baz=51,slow=10.0,SNR=101						
WRA				PcP	PcP	08 12 02.1	+0.8
	0.9nm,0.6s,baz=51,slow=2.2,SNR=4.9						
ASAR	Alice Springs	26.71	221	P	P	08 08 43.5	-0.9
	3.1nm,0.6s,baz=54,slow=9.0,SNR=42						
ASAR				PcP	PcP	08 12 08.0	+0.5
	0.5nm,0.6s,baz=57,slow=3.4,SNR=5.1						
ASAR				LR	LR	08 18 13.5	
	comp=Z,68nm,19.7s,baz=48,slow=34						
STKA	Stephens Creek	29.62	200	P	P	08 09 08.5	-1.7
	1.1nm,0.6s,baz=21,slow=14,SNR=5.9						
STKA				LR	LR	08 20 09.4	
	comp=Z,71nm,19.1s,baz=28,slow=35						
FITZ	Fitzroy Crossi	30.03	240	P	P	08 09 13.0	-1.0
	8.3nm,0.8s,baz=67,slow=7.2,SNR=17						
KAPI	Kappang	32.97	267	eP	P	08 09 38.2	-1.8
	6.7nm,0.3s						
MJAR	Matsushiro Arr	42.62	343	LR	LR	08 28 39.0	
	comp=Z,11nm,18.2s,baz=120,slow=36						
ILAR	Eielson Array	81.47	22	P	P	08 15 21.8	+0.3
	0.5nm,0.7s,baz=246,slow=3.8,SNR=5.7						
MAW	Mawson	86.26	203	P	P	08 15 44.7	-1.2
	1.9nm,0.9s,baz=84,slow=11,SNR=6.3						
INK	Inuvik	87.76	21	P	P	08 15 53.3	+0.2
	0.4nm,0.8s,baz=258,slow=3.9,SNR=2.6						
SYO	Syowa Base	94.37	199	⇑eP	P	08 16 24.8	+0.9
YKA	Yellowknife Ar	94.76	28	P	P	08 16 26.6	+0.8
	0.1nm,0.7s,baz=271,slow=4.9,SNR=5.3						
ABKAR	Akbulak array	94.92	319	eP	P	08 16 27.1	+0.3
	2.0nm,0.3s						
GERES	GERESS Array B	123.42	329	PKP	PKPdf	08 22 02.4	+0.5
	0.3nm,0.5s,baz=48,slow=2.0,SNR=4.5						
LPAZ	La Paz	134.76	118	PKP	PKPdf	08 22 26.5	+1.5
	0.4nm,0.5s,baz=254,slow=5.4,SNR=3.9						
TORD	Torodi Ar. Bea	150.08	289	PKPbc	PKPbc	08 22 56.7	+0.5
	1.6nm,0.4s,baz=85,slow=2.3,SNR=20						

*ISN **01** 08:16:02.6±0.3, 35.°69N×44.°61E, h0km, ML2.8*
*CSEM **01** 08:16:05.2±0.3, 35.°54N×44.°75E, h2km, ML2.8, Error ellipse: s-maj=91.7km s-min=5.5km az=33.0*

TEH 01 08:16:06.2, 35.°55N×44.°76E, h5km, ML2.8, Iraq

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IDHR	Dehrash	1.58	122	e		08 14 56.0	
IDHR				ePn	Pn	08 16 34.4	-0.7
IDHR				eSg	Sn	08 16 55.7	-0.3
IGHG	Ghaleghazi	1.92	129	ePn	Pn	08 16 39.6	-0.2
IGHG				eSg	Sb	08 17 06.1	-0.1
IGHG				eAMB	AMB	08 17 12.6	
	comp=Z,953nm,0.2s						
IGHG	Ghaleghazi	1.92	129	ePn	Pn	08 16 39.6	-0.2
IGHG				eSg	Sb	08 17 06.1	-0.1
IVIS	Veis	1.99	120	ePn	Pn	08 16 41.1	+0.4
IVIS				eSg	Sb	08 17 08.2	0.0
IVIS	Veis	1.99	120	ePn	Pn	08 16 41.1	+0.4
IVIS				eSg	Sb	08 17 08.2	0.0

*CSEM **01** 08:21:00.0±0.7, 35.°05N×44.°65E, h2km, ML3.0, Error ellipse: s-maj=31.4km s-min=7.0km az=35.0*
*ISN **01** 08:21:06.4±0.3, 35.°58N×44.°32E, h0km, ML3.0*

TEH 01 08:21:05.2, 35.°1N×44.°86E, h29km, ML3.0, 2C, Iraq

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IDHR	Dehrash	1.32	107	ePn	Pn	08 21 27.0	-0.9
IDHR				eSg	Sb	08 21 47.4	+1.3
IDHR				eAMB	AMB	08 21 49.6	
	comp=Z,5μm,0.1s						
IDHR	Dehrash	1.32	107	ePn	Pn	08 21 27.0	-0.9
IDHR				eSg	Sb	08 21 47.4	+1.3
IGHG	Ghaleghazi	1.61	118	ePn	Pn	08 21 32.2	+0.3
IGHG				eAMB	AMB	08 22 04.7	
	comp=Z,2μm,0.3s						
IGHG	Ghaleghazi	1.61	118	ePn	Pn	08 21 32.2	+0.3
ILIN	Lien	1.74	96	⇑ePn	Pn	08 21 33.7	0.0
ILIN				eAMB	AMB	08 21 39.1	
	comp=Z,1μm,0.1s						
ILIN	Lien	1.74	96	⇑ePn	Pn	08 21 33.7	0.0
IVIS	Veis	1.74	109	ePn	Pn	08 21 33.7	+0.1
IVIS				eSg	Sb	08 21 59.9	+1.9
IVIS				eAMB	AMB	08 22 04.8	
	comp=Z,1μm,0.2s						
IVIS	Veis	1.74	109	ePn	Pn	08 21 33.7	+0.1
IVIS				eSg	Sb	08 21 59.9	+1.9
ISHB	Shabestar	3.23	11	ePn	Pn	08 21 53.6	-0.6
ISHB				eAMB	AMB	08 22 00.5	
	comp=Z,332nm,0.3s						
IMRD	Marand	3.66	10	ePn	Pn	08 21 59.9	-0.2
IMRD				eAMB	AMB	08 22 55.6	
	comp=Z,230nm,0.2s						
IMRD	Marand	3.66	10	ePn	Pn	08 21 59.9	-0.2

*NNC **01** 08:25:32.8±4.3, 40.°89N×69.°64E, h0km, mb3.1, mpv2.7, Error ellipse: s-maj=31.3km s-min=14.9km az=22.0*
*KRNET **01** 08:25:34.9±0.1, 40.°79N×69.°52E, mb2.8*

ISC 01 08:25:34.2±2.5, 41.°00N±0.°06×69.°6E±0.°1, h10km, n8, σ1°11/12, 9C-6D, Tajikistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BTK	Batken	1.31	136	⇓eP	Pg	08 25 59.1	-0.2
	baz=126						
BTK				⇓iS	Sn	08 26 15.6	-0.5
	baz=126						
KK31	Karatay Array	2.20	17	Pg	Pg	08 26 16.1	-0.3
	0.8nm,0.2s,baz=197,slow=15,SNR=45						
KK31				⇑Lg	Lg	08 26 46.1	
	9.4nm,0.6s,baz=199,slow=30,SNR=15

baz=77
MNAS Manas 2.62 54⇑iP Pb 08 26 21.4 +0.2
baz=52
MNAS ⇑iS Sg 08 26 56.8 -1.4
baz=52
MNAS Manas 2.62 54 ⇑Pg Pb 08 26 21.0 -0.2
3.5nm,0.8s
MNAS ⇑Lg Lg 08 26 55.9
4.4nm,0.6s
AML Almayashu 3.25 68⇑iP Pb 08 26 31.7 -0.6
baz=65
AML ⇑iS Sb 08 27 12.8 +0.7
baz=65
AAK Ala-Archa 3.98 64 ⇓Pg Pb 08 26 45.5 +0.9
1.1nm,0.5s
AAK ⇑Lg Lg 08 27 42.5
1.9nm,0.6s
TKM2 Tokmak 2 4.85 65 ⇓Pg Pb 08 27 01.9 +2.6
1.5nm,0.9s
TKM2 ⇑Lg Lg 08 28 06.0
2.0nm,0.7s

KRSC 01 08:30:10.6±1.2,56°.09N×163°.47E,h6km±15km,ML3.6,
Near east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KBG	**Krutoberegovo**	**0.46**	**292**	*i* P	Pg	08 30 19.9	+0.4
KBG				*i* S	Sg	08 30 25.9	+0.4
BDR	**Baidarnaya**	**1.35**	**292**	*e*P	Pn	08 30 35.3	-0.7
BDR				*e*S	Sb	08 30 53.8	-0.1
ZLN	**Zelenaya**	**1.50**	**268**	*e*P	Pg	08 30 39.4	+0.1
ZLN				*e*S	Sg	08 30 58.5	-0.2
CIRR	**Tsirk**	**1.53**	**272**	*e*P	Pb	08 30 39.1	-0.2
CIRR				*e*S	Sn	08 30 58.8	+0.1
LGNR	**Loginova**	**1.56**	**271**	*e*P	Pb	08 30 39.6	-0.4
KLY	**Klyuchi**	**1.59**	**279**	*e*P	Pn	08 30 37.7	-1.5
KLY				*e*S	Sn	08 30 56.7	-3.4
KRSR	**Krestovskiy**	**1.63**	**276**	*e*P	Pn	08 30 40.2	+0.3
KRSR				*e*S	Sn	08 31 00.7	-0.5
BKI	**Bering**	**1.67**	**121**	*e*P	Pb	08 30 41.6	-0.1
BKI				*e*S	Sb	08 31 02.6	-0.3
BZMR	**Bezymyannaya**	**1.68**	**266**	*e*P	Pb	08 30 41.6	-0.4
KIRR	**Kirishev**	**1.76**	**267**	*e*P	Pb	08 30 42.8	-0.6
MKZ	**Mys Kozlova**	**1.83**	**214**	*e*P	Pn	08 30 43.3	+0.8
MKZ				*e*S	Sn	08 31 06.2	+0.3
KPT	**Kopyto**	**1.83**	**268**	*e*P	Pn	08 30 43.5	+0.9
KMNR	**Kamenistaya**	**1.85**	**261**	*e*P	Pb	08 30 44.5	-0.3
TUMD	**Tumrok D**	**1.95**	**244**	*e*P	Pn	08 30 45.0	+0.8
KOZ	**Kozyrevsk**	**2.02**	**271**	*e*S	Sn	08 31 11.4	+0.8
ESO	**Esso**	**2.69**	**269**	*e*P	Pb	08 30 57.6	-1.4
ESO				*e*S	Sb	08 31 30.6	-1.6
SDLR	**Sedlovina**	**3.87**	**225**	*e*P	Pn	08 31 12.7	+2.0
KRER	**Koryakskii**	**3.91**	**226**	*e*P	Pb	08 31 15.7	-4.3
KRX	**Arik**	**3.91**	**228**	*e*P	Pb	08 31 16.3	-3.6
SMAR	**Somma**	**3.92**	**226**	*e*P	Pn	08 31 15.4	+4.0
AVH	**Avacha**	**3.94**	**226**	*e*P	Pn	08 31 15.7	+4.1
UGLR	**Uglovaya**	**3.95**	**225**	*e*P	Pn	08 31 14.4	+2.7
GNL	**Ganaly**	**3.99**	**235**	*e*P	Pn	08 31 15.4	+3.1

NNC 01 08:31:57.4±3.0,38°.12N×69°.41E,h0km,mb3.6,mpv3.2,
3C-7D,Error ellipse: s-maj=26.0km s-min=14.9km
az=3.0,Tajikistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFK	**Sufi-Kurgan**	**3.70**	**58**	⇓Pg	Pb	08 33 03.7	-0.1
6.6nm,0.5s							
SFK				⇑Sn	Sn	08 33 42.3	+1.8
4.6nm,0.3s							
SFK				⇑Lg	Lg	08 33 55.2	
15nm,0.5s							
MNAS	**Manas**	**4.96**	**27**	⇓Pg	Pb	08 33 25.0	-0.2
6.3nm,0.9s							
MNAS				⇓Lg	Lg	08 34 36.1	
15nm,1.3s							
KK31	**Karatay Array**	**5.05**	**9**	Pn	Pn	08 33 16.1	+1.7
0.5nm,0.4s,baz=195,slow=15,SNR=5.8							
KK31				⇓Pg	Pb	08 33 29.4	+2.8
0.7nm,0.4s,baz=187,slow=12,SNR=6.6							
KK31				⇓Lg	Lg	08 34 36.3	
10.0nm,0.8s,baz=188,slow=27,SNR=4.3							
AAK	**Ala-Archa**	**5.95**	**39**	⇓Pn	Pn	08 33 27.6	+0.7
2.5nm,0.6s							
AAK				Lg	Lg	08 35 06.4	
4.8nm,0.9s							
TKM2	**Tokmak 2**	**6.72**	**43**	⇑Pn	Pn	08 33 36.7	-0.9
1.9nm,0.8s							
TKM2				⇓Lg	Lg	08 35 32.6	
2.4nm,0.9s							

*SOF **01** 08:36:24.4,40°.55N×28°.41E,h2km,MD3.3*
*ATH **01** 08:36:28.2,40°.81N±28°.13E,h14km±2km,ML3.4/5,Error ellipse: s-maj=3.7km s-min=1.6km az=8.0*
*THE **01** 08:36:29.9,40°.84N±28°.16E,h0km±1km,ML3.6/3,Error ellipse: s-maj=1.1km s-min=0.6km az=51.0*
*DDA **01** 08:36:30.9,40°.82N±28°.13E,h5km,Ml3.7*
*ISK **01** 08:36:30.5,40°.85N×28°.14E,h10km,ML3.2*
*CSEM **01** 08:36:30.8±0.1,40°.85N×28°.12E,h10km,ML3.2,Error ellipse: s-maj=2.4km s-min=2.1km az=177.0*
*ISCJB **01** 08:36:30.5±0.3,40°.87N±0°.02×28°.11E±0°.02,h11km±2km,Error ellipse: s-maj=2.7km s-min=2.2km az=173.3*
ISC 01 08:36:29.9±1.1,40°.85N±0°.02×28°.13E±0°.01,h4km±10km,
n194,σ0°.72/238,15C-7D,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SLVT	**Silivri**	**0.38**	**9**	P	Pg	08 36 36.5	-0.8
SLVT				S	Sg	08 36 40.5	-1.8
CRLT	**Corlu**	**0.41**	**313**	*e*PG	Pb	08 36 39.3	-0.3
CRLT				*e*SG	Sb	08 36 46.0	-0.2
CRLT	**Corlu**	**0.41**	**313**	*e*Pg	Pb	08 36 39.3	-0.3
CRLT				*e*Sg	Sb	08 36 46.0	-0.2
TKR	**Tekirdag**	**0.47**	**287**	*e*PG	Pb	08 36 41.1	+0.4
TKR				*e*SG	Sb	08 36 48.3	+0.3
TKR	**Tekirdag**	**0.47**	**287**	*e*Pg	Pb	08 36 41.1	+0.4
TKR				*e*Sg	Sb	08 36 48.3	+0.3
CTKS	**Kestanelik-??a**	**0.48**	**37**	*e*PG	Pb	08 36 40.3	-0.6
CTKS				*e*SG	Sb	08 36 47.4	-0.8
CTKS	**Kestanelik-??a**	**0.48**	**37**	*e*Pg	Pb	08 36 40.3	-0.6
CTKS				*e*Sg	Sb	08 36 47.4	-0.8
MRMT	**Marmara Adasi**	**0.48**	**238**	*e*PG	Pb	08 36 40.5	-0.4
MRMT				*e*SG	Sb	08 36 47.5	-0.8
MRMT	**Marmara Adasi**	**0.48**	**238**	*e*Pg	Pb	08 36 40.5	-0.4
MRMT				*e*Sg	Sb	08 36 47.5	-0.8
EDC	**Edincik**	**0.55**	**202**	*e*PG	Pb	08 36 41.6	-0.5
EDC				*e*SG	Sb	08 36 49.0	-1.2
EDC	**Edincik**	**0.55**	**202**	*e*Pg	Pb	08 36 41.6	-0.5
EDC				*e*Sg	Sb	08 36 49.0	-1.2
BGKT	**Bogazkoy**	**0.59**	**56**	*e*PG	Pb	08 36 42.2	-0.5
BGKT	**Bogazkoy**	**0.59**	**56**	*e*Pg	Pb	08 36 42.2	-0.5
KCTX	**Karacabey (Bur**	**0.61**	**164**	*e*PG	Pb	08 36 43.0	-0.2
KCTX	**Karacabey (Bur**	**0.61**	**164**	*e*Pg	Pb	08 36 43.0	-0.2
CTYL	**Yalikoy Yolu**	**0.63**	**11**	*e*PG	Pb	08 36 43.3	-0.2
CTYL	**Yalikoy Yolu**	**0.63**	**11**	*e*Pg	Pb	08 36 43.3	-0.2
ISK	**Istanbul-Kandi**	**0.73**	**73**	*e*PG	Pg	08 36 44.5	+0.4
ISK	**Istanbul-Kandi**	**0.73**	**73**	P	Pg	08 36 44.3	+0.2
ISK				S	Sb	08 36 55.1	-0.6
ISK	**Istanbul-Kandi**	**0.73**	**73**	P	Pg	08 36 44.3	+0.2
ISK	**Istanbul-Kandi**	**0.73**	**73**	*e*Pg	Pg	08 36 44.5	+0.4
ISK				S	Sb	08 36 55.1	-0.6
SART	**Tekirdag**	**0.74**	**257**	P	Pg	08 36 44.9	+0.8
SART				S	Sb	08 36 55.6	-0.3
SART	**Tekirdag**	**0.74**	**257**	*i* P	Pg	08 36 44.9	+0.8
SART				*i* S	Sb	08 36 55.6	-0.3
KNL	**Bal¨--kesir**	**0.74**	**218**	*i* P	Pg	08 36 44.3	+0.1
KNL				*i* S	Sb	08 36 55.3	-0.6
RKY	**Sarkoy-Tekirda**	**0.74**	**257**	*e*PG	Pb	08 36 45.2	-0.2
RKY	**Sarkoy-Tekirda**	**0.74**	**257**	*e*Pg	Pb	08 36 45.2	-0.2
BUY	**Buyukada**	**0.75**	**90**	P	Pb	08 36 45.2	-0.3
BUY				S	Sb	08 36 57.1	+1.0
BUY	**Buyukada**	**0.75**	**90**	*i* P	Pb	08 36 45.2	-0.3
BUY				*i* S	Sb	08 36 57.1	+1.0
MDNY	**Mudanya-Bursa**	**0.75**	**130**	*e*PG	Pb	08 36 45.7	+0.2
MDNY	**Mudanya-Bursa**	**0.75**	**130**	*e*Pg	Pb	08 36 45.7	+0.2
KRBG	**Karabiga-Canak**	**0.78**	**234**	*e*PG	Pb	08 36 46.0	0.0
KRBG	**Karabiga-Canak**	**0.78**	**234**	*e*Pg	Pb	08 36 46.0	0.0
KLYT	**Kilyos**	**0.80**	**60**	*e*PG	Pb	08 36 46.1	-0.2
KLYT	**Kilyos**	**0.80**	**60**	*e*Pg	Pb	08 36 46.1	-0.2
GONE	**Gonen-Balikesi**	**0.88**	**203**	*e*PG	Pg	08 36 47.1	+0.5
GONE	**Gonen-Balikesi**	**0.88**	**203**	*e*Pg	Pg	08 36 47.2	+0.5
PHSR	**Pinarhisar**	**0.90**	**330**	*e*PG	Pb	08 36 48.7	+0.6
PHSR	**Pinarhisar**	**0.90**	**330**	*e*Pg	Pb	08 36 48.7	+0.6
GEMT	**Gemlik**	**0.91**	**117**	*e*PG	Pb	08 36 48.3	+0.1
GEMT	**Gemlik**	**0.91**	**117**	*e*Pg	Pb	08 36 48.3	+0.1
ORLT	**Orhaneli**	**1.00**	**144**	*e*PG	Pn	08 36 50.7	0.0
ORLT	**Orhaneli**	**1.00**	**144**	*e*Pg	Pn	08 36 50.7	0.0
IGD	**Bursa**	**1.01**	**125**	*i* P	Pg	08 36 49.2	-0.1
IGD				*i* S	Sb	08 37 03.5	0.0
ULDT	**Uludag**	**1.05**	**132**	P	Pb	08 36 50.9	+0.2
ULDT	**Uludag**	**1.05**	**132**	*i* P	Pb	08 36 50.9	+0.2
IZI	**Iznik**	**1.15**	**116**	*e*PN	Pb	08 36 52.4	0.0
IZI	**Iznik**	**1.15**	**116**	*e*Pn	Pb	08 36 52.4	0.0
LPK	**Lapseki**	**1.15**	**246**	*e*PN	Pg	08 36 52.2	+0.2
LPK	**Lapseki**	**1.15**	**246**	*e*Pn	Pg	08 36 52.2	+0.2
HRT	**Hereke**	**1.17**	**91**	*e*PN	Pg	08 36 52.3	0.0
HRT	**Hereke**	**1.17**	**91**	*e*Pn	Pg	08 36 52.3	0.0
BALY	**Balya**	**1.18**	**199**	P	Pg	08 36 52.8	+0.2
BALY	**Balya**	**1.18**	**199**	*i* P	Pg	08 36 52.8	+0.2
SILT	**Sile**	**1.18**	**75**	*e*PN	Pb	08 36 52.9	0.0
SILT	**Sile**	**1.18**	**75**	*e*Pn	Pb	08 36 52.9	0.0
BALB	**Balikesir**	**1.23**	**189**	*e*PN	Pn	08 36 54.4	+0.6
BALB	**Balikesir**	**1.23**	**189**	*e*Pn	Pn	08 36 54.4	+0.6
ERIK	**Erikli-Kesan**	**1.24**	**262**	*e*PN	Pb	08 36 53.7	-0.2
ERIK	**Erikli-Kesan**	**1.24**	**262**	*e*Pn	Pb	08 36 53.7	-0.2
DURS	**Dursunbey**	**1.28**	**168**	P	Pn	08 36 54.6	0.0
DURS				S	Sn	08 37 12.9	+0.7
DURS	**Dursunbey**	**1.28**	**168**	*i* P	Pn	08 36 54.6	0.0
DURS				*i* S	Sn	08 37 12.9	+0.7
ADVT	**Abdulvahap**	**1.29**	**108**	*e*PN	Pn	08 36 54.7	-0.1
ADVT	**Abdulvahap**	**1.29**	**108**	*e*Pn	Pn	08 36 54.7	-0.1
GELI	**Tayfur-Gelibol**	**1.34**	**251**	*e*PN	Pn	08 36 55.1	-0.2
GELI	**Tayfur-Gelibol**	**1.34**	**251**	*e*Pn	Pn	08 36 55.1	-0.2
EDRB	**Edirne**	**1.44**	**314**	*e*PN	Pb	08 36 57.0	-0.3
EDRB	**Edirne**	**1.44**	**314**	P	Pn	08 36 56.8	+0.1
EDRB				S	Sg	08 37 16.6	+0.4
EDRB	**Edirne**	**1.44**	**314**	P	Pn	08 36 56.8	+0.1
EDRB	**Edirne**	**1.44**	**314**	*e*Pn	Pb	08 36 57.0	-0.3
EDRB				S	Sg	08 37 16.6	+0.4
CAVI	**Cavuskoy**	**1.46**	**116**	*e*PN	Pg	08 36 58.2	+0.3
CAVI	**Cavuskoy**	**1.46**	**116**	*e*Pn	Pg	08 36 58.2	+0.3
ALN	**Alexandroupoli**	**1.58**	**272**	*e*PN	Pn	08 36 58.7	0.0
ALN	**Alexandroupoli**	**1.58**	**272**	P	Pn	08 36 58.2	-0.4
ALN				S	Sg	08 37 20.9	+0.2
ALN	**Alexandroupoli**	**1.58**	**272**	P	Pn	08 36 58.3	-0.4
ALN	**Alexandroupoli**	**1.58**	**272**	*e*Pn	Pn	08 36 58.7	0.0
ALN				S	Sn	08 37 19.5	0.0
ALN	**Alexandroupoli**	**1.58**	**272**	P	Pn	08 36 58.3	-0.4
ALN				S	Sn	08 37 19.5	0.0
ALN				AML	AML	08 37 23.2	
comp=N,1521μm,0.4s							
ALN				AML	AML	08 37 24.1	
comp=E,951μm,0.7s							
KAND	**Kocaeli-Kandir**	**1.58**	**81**	P	Pn	08 36 59.0	+0.3
KAND				S	Sg	08 37 20.6	-0.1
KAND	**Kocaeli-Kandir**	**1.58**	**81**	*i* P	Pn	08 36 59.0	+0.3
KAND				*i* S	Sg	08 37 20.6	-0.1
SPNC	**Sapanca-Adapaz**	**1.66**	**95**	*e*PN	Pn	08 37 00.3	+0.5
SPNC	**Sapanca-Adapaz**	**1.66**	**95**	*e*Pn	Pn	08 37 00.3	+0.5
EZN	**Ezine**	**1.72**	**234**	*e*PN	Pn	08 37 01.2	+0.6
EZN	**Ezine**	**1.72**	**234**	P	Pn	08 37 00.2	-0.4
EZN				S	Sb	08 37 23.9	-0.1
EZN	**Ezine**	**1.72**	**234**	P	Pn	08 37 00.2	-0.4
EZN	**Ezine**	**1.72**	**234**	*e*Pn	Pn	08 37 01.2	+0.6
EZN				S	Sb	08 37 23.9	-0.1
AUBOZ	**BOZOYUK**	**1.73**	**122**	P	Pg	08 37 03.5	+0.4
AUBOZ	**BOZOYUK**	**1.73**	**122**	*i* P	Pg	08 37 03.5	+0.4
TVSB	**Tavsanli**	**1.73**	**144**	*e*PN	Pb	08 37 01.9	-0.5
TVSB	**Tavsanli**	**1.73**	**144**	*e*Pn	Pb	08 37 01.9	-0.5
GULT	**Gulveren**	**1.86**	**102**	*e*PN	Pn	08 37 03.0	+0.4
GULT	**Gulveren**	**1.86**	**102**	*e*Pn	Pn	08 37 03.1	+0.4
DEMI	**Demirci**	**1.86**	**166**	P	Pn	08 37 02.8	+0.1
DEMI	**Demirci**	**1.86**	**166**	*i* P	Pn	08 37 02.8	+0.1
BOZC	**Bozcaada**	**1.88**	**238**	*i* P	Pn	08 37 02.7	-0.2
AYVA	**Ayvalik**	**1.90**	**216**	P	Pg	08 37 06.8	+0.5
AYVA	**Ayvalik**	**1.90**	**216**	*i* P	Pg	08 37 06.8	+0.5
JMB	**Yambol**	**1.98**	**325**	P	Pn	08 37 05.2	+1.0
JMB	**Yambol**	**1.98**	**325**	P	Pn	08 37 05.2	+1.0
AKS	**Akhisar**	**1.99**	**187**	*e*PN	Pb	08 37 05.6	-1.0
AKS	**Akhisar**	**1.99**	**187**	*e*Pn	Pb	08 37 05.6	-1.0
DIKL	**Dikili**	**2.01**	**208**	*e*PN	Pn	08 37 04.9	+0.3
DKL	**Dikili**	**2.01**	**208**	*e*Pn	Pn	08 37 04.9	+0.3
SMTH	**Samothraki Isl**	**2.01**	**260**	P	Pn	08 37 03.9	-0.8
SMTH				S	Sn	08 37 31.2	+0.9
SMTH	**Samothraki Isl**	**2.01**	**260**	P	Pn	08 37 04.2	-0.5
SMTH				S	Sn	08 37 30.1	-0.1
SMTH	**Samothraki Isl**	**2.01**	**260**	P	Pn	08 37 04.2	-0.5
SMTH				S	Sn	08 37 30.1	-0.1
SMTH				AML	AML	08 37 39.4	
comp=E,562μm,0.4s							
SMTH				AML	AML	08 37 39.9	
comp=N,721μm,0.4s							
BORA	**Eskisehir**	**2.02**	**118**	P	Pg	08 37 08.7	0.0
BORA	**Eskisehir**	**2.02**	**118**	*i* P	Pg	08 37 08.7	0.0
GDZ	**Gediz**	**2.05**	**149**	*i* P	Pg	08 37 10.6	+1.5
SAHE	**Sakarya_HENDEK**	**2.07**	**89**	P	Pn	08 37 05.8	+0.4
SAHE				S	Sg	08 37 36.5	+0.2
SAHE	**Sakarya_HENDEK**	**2.07**	**89**	*i* P	Pn	08 37 05.8	+0.4
SAHE				*i* S	Sg	08 37 36.5	+0.2
PRK	**Paraskevi**	**2.15**	**222**	P	Pn	08 37 06.2	-0.3
PRK				S	Sn	08 37 34.0	+0.5
PRK	**Paraskevi**	**2.15**	**222**	P	Pn	08 37 06.2	-0.3
PRK				S	Sn	08 37 32.8	-0.7
PRK	**Paraskevi**	**2.15**	**222**	P	Pn	08 37 05.9	-0.6
PRK				S	Sn	08 37 32.8	-0.7
PRK				AML	AML	08 37 43.9	
comp=N,3195μm,0.5s							
PRK				AML	AML	08 37 47.6	
comp=E,2414μm,0.6s							
KDZ	**Kurdzhali**	**2.19**	**292**	P	Pn	08 37 07.6	+0.5
KDZ	**Kurdzhali**	**2.19**	**292**	P	Pn	08 37 07.6	+0.5
BTAS	**Taskesti**	**2.20**	**96**	P	Pb	08 37 09.5	-0.8
BTAS	**Taskesti**	**2.20**	**96**	*i* P	Pb	08 37 09.5	-0.8
DIM	**Dimitrovgrad**	**2.29**	**302**	P	Pn	08 37 08.4	0.0
DIM	**Dimitrovgrad**	**2.29**	**302**	P	Pn	08 37 08.4	0.0
MDUB	**Mudurnu**	**2.37**	**98**	*e*PN	Pn	08 37 10.5	+0.9
MDUB	**Mudurnu**	**2.37**	**98**	*e*Pn	Pn	08 37 10.5	+0.9
KULA	**Kula-Manisa**	**2.37**	**170**	*e*PN	Pn	08 37 09.9	+0.2
KULA	**Kula-Manisa**	**2.37**	**170**	P	Pn	08 37 09.1	-0.6
KULA				S	Sn	08 37 39.0	-0.2
KULA	**Kula-Manisa**	**2.37**	**170**	P	Pn	08 37 09.1	-0.6
KULA	**Kula-Manisa**	**2.37**	**170**	*e*Pn	Pn	08 37 09.9	+0.2
KULA				S	Sn	08 37 39.0	-0.2
SIGR	**SIGRI**	**2.40**	**228**	*e*PN	Pn	08 37 10.7	+0.8
SIGR	**SIGRI**	**2.40**	**228**	P	Pn	08 37 09.3	-0.6
SIGR				S	Sb	08 37 41.7	-1.7
SIGR	**SIGRI**	**2.40**	**228**	P	Pn	08 37 09.5	-0.4
SIGR	**SIGRI**	**2.40**	**228**	*e*Pn	Pn	08 37 10.7	+0.8
SIGR				S	Sn	08 37 39.0	-0.6
SIGR	**SIGRI**	**2.40**	**228**	P	Pn	08 37 09.5	-0.4
SIGR				S	Sn	08 37 39.0	-0.6
SIGR				AML	AML	08 37 49.5	
comp=N,1887μm,0.6s							
SIGR				AML	AML	08 37 52.3	
comp=E,899μm,0.5s							
PRD	**Provadia**	**2.41**	**347**	P	Pn	08 37 10.3	+0.3
PRD	**Provadia**	**2.41**	**347**	P	Pn	08 37 10.3	+0.3
LIA	**Limnos Island**	**2.44**	**248**	P	Pn	08 37 10.3	-0.2
LIA				S	Sn	08 37 42.4	+1.6
LIA	**Limnos Island**	**2.44**	**248**	P	Pn	08 37 10.4	-0.1
LIA				S	Sn	08 37 40.5	-0.3
IZM	**Izmir**	**2.54**	**196**	*e*PN	Pn	08 37 12.7	+0.7
IZM	**Izmir**	**2.54**	**196**	*e*Pn	Pn	08 37 12.7	+0.7
BLCB	**Balcova**	**2.60**	**199**	*e*PN	Pn	08 37 14.4	+1.6
BLCB	**Balcova**	**2.60**	**199**	*e*Pn	Pn	08 37 14.4	+1.6
RZN	**Rozhen**	**2.70**	**289**	P	Pn	08 37 14.3	0.0
RZN	**Rozhen**	**2.70**	**289**	P	Pn	08 37 14.3	0.0
KAVA	**Kavala**	**2.74**	**274**	P	Pn	08 37 14.6	-0.1
KAVA	**Kavala**	**2.74**	**274**	P	Pn	08 37 14.6	-0.1
KAVA	**Kavala**	**2.74**	**274**	P	Pn	08 37 14.9	+0.2
PLD	**Plovdiv**	**2.86**	**297**	P	Pn	08 37 16.4	+0.1
PLD	**Plovdiv**	**2.86**	**297**	P	Pn	08 37 16.4	+0.1
CHOS	**Chios island**	**2.94**	**214**	P	Pn	08 37 16.9	-0.5
CHOS				S	Sn	08 37 54.0	+0.8
CHOS	**Chios island**	**2.94**	**214**	P	Pn	08 37 16.9	-0.5
CHOS				S	Sn	08 37 52.1	-1.1
CHOS	**Chios island**	**2.94**	**214**	P	Pn	08 37 16.1	-1.3
CHOS				S	Sn	08 37 52.1	-1.1
CHOS				AML	AML	08 38 14.4	
comp=N,570μm,0.6s							
CHOS				AML	AML	08 38 15.6	
comp=E,686μm,0.3s							
OUR	**Ouranopolis**	**3.20**	**262**	P	Pn	08 37 19.9	-1.1
OUR	**Ouranopolis**	**3.20**	**262**	P	Pn	08 37 19.9	-1.1
NVR	**Nevrokopi**	**3.26**	**280**	P	Pn	08 37 21.8	-0.1
NVR	**Nevrokopi**	**3.26**	**280**	P	Pn	08 37 21.8	-0.1
SMG	**Samos**	**3.30**	**198**	P	Pn	08 37 22.0	-0.3
SMG	**Samos**	**3.30**	**198**	P	Pn	08 37 22.0	-0.3
MMB	**Musomiste**	**3.40**	**284**	P	Pn	08 37 24.1	+0.4
MMB	**Musomiste**	**3.40**	**284**	P	Pn	08 37 24.1	+0.4
SRS	**Serrai**	**3.44**	**276**	P	Pn	08 37 24.4	+0.1
SRS	**Serrai**	**3.44**	**276**	P	Pn	08 37 24.4	+0.1
PAIG	**Paliouri**	**3.52**	**256**	P	Pn	08 37 24.4	-0.9
PAIG	**Paliouri**	**3.52**	**256**	P	Pn	08 37 24.4	-0.9
TIRR	**Tirgusor**	**3.61**	**3**⇓*i*P	Pn	Pn	08 37 20.2	-6.3
AOS	**Alonnisos**	**3.67**	**244**	P	Pn	08 37 26.8	-0.6
AOS	**Alonnisos**	**3.67**	**244**	P	Pn	08 37 26.8	-0.6
KKB	**Krupnik**	**3.93**	**287**	P	Pn	08 37 31.7	+0.7
KKB	**Krupnik**	**3.93**	**287**	P	Pn	08 37 31.7	+0.7
SULR		**4.06**	**341**	S	Sg	08 38 41.4	+1.0
MPEP	**Malo Peshtene**	**4.11**	**309**	P	Pn	08 37 34.0	+0.5
MPEP	**Malo Peshtene**	**4.11**	**309**	P	Pn	08 37 34.0	+0.5
VAY	**Valandovo**	**4.23**	**278**	*e*Pn	Pn	08 37 36.1	+1.0
VAY				*e*Pg	Pg	08 37 50.3	-0.6
VAY				*e*Sn	Sg	08 38 46.4	+0.7
VAY	**Valandovo**	**4.23**	**278**	*e*Pn	Pn	08 37 36.1	+1.0
APE	**Apeiranthos**	**4.29**	**209**	S	Sg	08 38 49.4	+1.7
ISR	**Istrita**	**4.42**	**345**⇑*i*P	Pn	Pn	08 37 38.0	+0.3
ISR	**Istrita**	**4.42**	**345**⇑*i*P	Pn	Pn	08 37 38.0	+0.3
MLR	**Muntele Rosu**	**4.90**	**342**⇑*i*P	Pn	Pn	08 37 46.8	+2.3
MLR	**Muntele Rosu**	**4.90**	**342**⇑*i*P	Pn	Pn	08 37 46.8	+2.3
VOIR		**5.10**	**335**⇑*i*P	Pn	Pn	08 37 49.8	+2.6
VOIR		**5.10**	**335**⇑*i*P	Pn	Pn	08 37 49.8	+2.6
BARS	**Barje**	**5.11**	**295** *i* Pn	Pn	Pn	08 37 48.3	+1.1
PLOR	**Plostina**	**5.11**	**348**⇑*i*P	Pn	Pn	08 37 46.7	-0.5
PLOR	**Plostina**	**5.11**	**348**⇑*i*P	Pn	Pn	08 37 46.7	-0.5
VRI	**Vrincioaia**	**5.11**	**349**⇑*i*P	Pn	Pn	08 37 46.1	-1.2
VRI	**Vrincioaia**	**5.11**	**349**⇑*i*P	Pn	Pn	08 37 46.1	-1.2
ARR	**Arges**	**5.18**	**332**⇓*i*P	Pn	Pn	08 37 52.4	+4.1
ARR	**Arges**	**5.18**	**332**⇓*i*P	Pn	Pn	08 37 52.4	+4.1
DOPR	**Dopca**	**5.49**	**340**⇑*i*P	Pn	Pn	08 37 54.7	+2.3
DOPR	**Dopca**	**5.49**	**340**⇑*i*P	Pn	Pn	08 37 54.7	+2.3
TESR	**Tescani**	**5.76**	**350**⇓*i*P	Pn	Pn	08 37 54.3	-1.8
TESR	**Tescani**	**5.76**	**350**⇓*i*P	Pn	Pn	08 37 54.3	-1.8
KUBS	**Kucevo**	**5.94**	**309** *e*Pn	Pn	Pn	08 37 57.2	-1.4
MDVR	**Moldovita**	**6.14**	**312**⇑*i*P	Pn	Pn	08 37 51.9	-9.4
GRUS	**Gruza**	**6.27**	**301** *e*Pn	Pn	Pn	08 38 03.3	+0.1
BZS	**Buzias**	**6.73**	**317**⇑*i*P	Pb	Pb	08 38 19.8	-7.6
BURAR	**Bucovina Array**	**7.07**	**344**⇓*i*P	Pn	Pn	08 38 14.7	+0.4
BURAR	**Bucovina Array**	**7.07**	**344**⇓*i*P	Pn	Pn	08 38 14.7	+0.4
DRGR		**7.11**	**328**⇑*i*P	Pn	Pn	08 38 21.0	+6.3

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TNA	**Tin City**	**86.70**	**10**	*e*P	**P**	**09 00 05.9**	**-0.4**
	26nm,1.1s						
RC01	**Rabbit Creek A**	**87.13**	**19**	*e*P	**P**	**09 00 08.0**	**-0.6**
	3.0nm,0.7s						
BILL	**Bilibino**	**87.23**	**359**	*e*P	**P**	**09 00 08.3**	**-0.5**
	5.9nm,1.0s						
CMB	**Columbia Colle**	**88.19**	**49**	*e*P	**P**	**09 00 14.0**	**-0.2**
	17nm,0.7s						
TRF	**Thorofare Moun**	**88.80**	**17**	*e*P	**P**	**09 00 14.3**	**-2.3**
	5.3nm,0.9s						
SNAA	**Sanae**	**88.91**	**183**	P	**P**	**09 00 17.4**	**+0.2**
VNA3	**Neumayer Olymp**	**89.55**	**181**	P	**P**	**09 00 20.1**	**+0.1**
VNA2	**Neumayer--Watz**	**89.82**	**182**	P	**P**	**09 00 21.8**	**+0.4**
	baz=158,slow=3.4						
NVAR	**Mina Array Bea**	**89.84**	**49**	P	**P**	**09 00 22.3**	**+0.1**
	3.2nm,0.8s,baz=228,slow=8.4,SNR=27						
MOD	**Modoc Plateau**	**89.96**	**45**	*e*P	**P**	**09 00 22.3**	**-0.3**
	4.2nm,0.8s						
ILAR	**Eielson Array**	**90.78**	**18**	P	**P**	**09 00 23.7**	**-2.0**
	3.0nm,0.8s,baz=236,slow=5.9,SNR=23						
WVOR	**Wild Horse Val**	**91.31**	**45**	*e*P	**P**	**09 00 28.7**	**-0.1**
	12nm,1.2s						
EGAK	**Eagle**	**92.51**	**19**	*e*P	**P**	**09 00 33.4**	**-0.3**
	5.8nm,1.2s						
TXAR	**Lajitas Array**	**97.93**	**62**	P	**P**	**09 00 59.3**	**-0.1**
	0.6nm,0.8s,baz=221,slow=5.0,SNR=8.1						
MKAR	**Makanchi Array**	**101.03**	**316**	P	**Pdif**	**09 01 13.9**	**+1.2**
	0.1nm,0.3s,baz=80,slow=12,SNR=2.6						
YKA	**Yellowknife Ar**	**101.40**	**28**	P	**Pdif**	**09 01 13.9**	**0.0**
	0.5nm,0.7s,baz=256,slow=4.7,SNR=14						
ARCES	**ARCESS Array B**	**124.94**	**345**	PKP	**PKPdf**	**09 06 21.0**	**-1.4**
	1.7nm,0.9s,baz=75,slow=1.0,SNR=6.7						
CONA	**Conrad Observa**	**143.67**	**328**	*i* PKPdf	PKPbc	09 06 56.7	+1.2
	10nm,1.2s,SNR=5.6						
KHC	**Kasperske Hory**	**143.93**	**331**	*e*PKP	PKPbc	09 06 56.5	+0.3
GERES	**GERESS Array B**	**144.08**	**331**	PKP	PKPbc	09 06 56.8	+0.1
	2.8nm,0.8s,baz=35,slow=3.3,SNR=19						
ARSA	**Arzberg**	**144.29**	**327**	*i* PKPdf	PKPbc	09 06 57.9	+0.6
	6.9nm,1.1s						
MOA	**Molln**	**144.51**	**329**	*i* PKPdf	**PKPdf**	**09 06 58.9**	**-0.5**
	19nm,1.0s,SNR=5.9						
PERS	**Pernice**	**144.91**	**327**	*i* PKPbc	PKPbc	09 06 59.4	0.0
SOKA	**Soboth**	**144.93**	**327**	*i* PKPdf	**PKPdf**	**09 06 59.9**	**-0.4**
	22nm,1.1s,SNR=7.6						
DOBS	**Dobrina**	**145.04**	**326**	*e*PKPbc	**PKPab**	**09 06 59.8**	**0.0**
LEGS	**Legarje**	**145.26**	**326**	*i* PKPbc	**PKPdf**	**09 07 00.7**	**-0.1**
CRES	**Cresnjev**	**145.26**	**325**	*i* PKPbc	**PKPdf**	**09 07 00.8**	**+0.1**
KBA	**Koelnbreinsper**	**145.50**	**329**	*i* PKPab	**PKPdf**	**09 07 01.0**	**-0.3**
	16nm,1.1s,SNR=8.3						
MYKA	**Terra Mystica**	**145.66**	**328**	*i* PKPab	**PKPbc**	**09 07 01.9**	**+0.1**
	11nm,0.7s						
MEM	**Membach**	**145.75**	**339**	P	**PKPab**	**09 07 02.1**	**-0.1**
STU	**Stuttgart**	**146.09**	**335**	*e*PKPbc	**PKPab**	**09 07 03.5**	**-0.1**
ABTA	**Abfaltersbach**	**146.14**	**329**	*i* PKPab	**PKPbc**	**09 07 03.0**	**-0.3**
	24nm,0.9s,SNR=11						
BCLA	**Clavier**	**146.15**	**340**	P	**PKPab**	**09 07 04.0**	**+0.3**
WATA	**Walderalm**	**146.16**	**331**	*i* PKPab	**PKPbc**	**09 07 03.6**	**+0.2**
	SNR=6.8						
WTTA	**Wattenberg**	**146.18**	**331**	*i* PKPab	**PKPbc**	**09 07 03.4**	**-0.1**
	18nm,0.9s,SNR=5.7						
MOTA	**Moosalm**	**146.37**	**331**	*i* pPKPdf	**PKPab**	**09 07 05.2**	**+0.3**
	SNR=10.0						
SNF	**Seneffe**	**146.39**	**341**	P	**PKPab**	**09 07 04.2**	**-0.4**
WLF	**Walferdange**	**146.51**	**338**	P	**PKPab**	**09 07 05.0**	**-0.1**
WLF	**Walferdange**	**146.51**	**338**	*e*PKPbc	**PKPab**	**09 07 04.8**	**-0.4**
DOU	**Dourbes**	**146.65**	**340**	P	**PKPbc**	**09 07 04.7**	**+0.2**
FETA	**Feichten**	**146.78**	**331**	*i* pPKPdf	**PKPbc**	**09 07 05.6**	**+0.4**
	17nm,1.0s,SNR=8.3						
BFO	**Black Forest**	**146.79**	**335**	*e*PKPbc	**PKPbc**	**09 07 05.0**	**-0.1**
DAVA	**Damuels**	**146.96**	**332**	*i* PKPab	**PKPbc**	**09 07 05.8**	**0.0**
	9.2nm,0.9s						
TUE	**Stuetta**	**147.81**	**332**	*e*PKPbc	**PKPbc**	**09 07 08.6**	**+0.4**
BNI	**Bardonecchia**	**150.09**	**333**	*e*PKPdf	PKPpre	09 07 00.3	
SSB	**Saint Sauveur**	**150.78**	**336**	*e*PKPbc	**PKPbc**	**09 07 14.9**	**-0.6**

*CSEM **01** 09:04:39.2, 37.08N×20.77E, h21km, ML2.5/7*
ATH 01 09:04:39.2, 37.08N×20.77E, h21km±1km, ML2.5/6, Error ellipse: s-maj=2.9km s-min=0.9km az=46.0, Ionian Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZKS	**Zakynthos**	**0.62**	**1**	P	Pb	09 04 52.0	+0.5
ZKS				S	Sb	09 05 00.0	+0.2
ZKS	**Zakynthos**	**0.62**	**1**	P	Pb	09 04 52.0	+0.5
ZKS				S	Sb	09 04 60.0	+0.2
ZKS				AML	AML	09 05 06.1	
	comp=E,2822μm,0.4s						
ZKS				AML	AML	09 05 07.5	
	comp=N,2216μm,0.4s						
PYL	**PYLOS**	**0.80**	**103**	P	Pn	09 04 55.0	-0.2
PYL				S	Sn	09 05 05.7	-0.8
PYL	**PYLOS**	**0.80**	**103**	P	Pn	09 04 55.0	-0.2
PYL				S	Sn	09 05 05.7	-0.8
PYL				AML	AML	09 05 09.8	
	comp=N,458μm,0.6s						
PYL				AML	AML	09 05 10.1	
	comp=E,569μm,0.4s						
AMT	**Artemida-Makis**	**0.87**	**58**	P	Pn	09 04 56.5	+0.1
AMT				S	Sn	09 05 08.3	-0.2
AMT	**Artemida-Makis**	**0.87**	**58**	P	Pn	09 04 56.5	+0.1
AMT				S	Sn	09 05 08.3	-0.1
AMT				AML	AML	09 05 14.6	
	comp=E,1070μm,0.4s						
AMT				AML	AML	09 05 18.8	
	comp=N,2022μm,0.6s						
ITM	**Ithomi**	**0.93**	**83**	P	Pb	09 04 56.4	-0.2
ITM				S	Sn	09 05 10.0	+0.2
ITM	**Ithomi**	**0.93**	**83**	P	Pb	09 04 56.4	-0.2
ITM				S	Sn	09 05 10.0	+0.3
ITM				AML	AML	09 05 18.6	
	comp=N,265μm,0.4s						
ITM				AML	AML	09 05 19.8	
	comp=E,294μm,0.6s						
VLS	**Valsamata**	**1.11**	**353**	P	Pn	09 04 59.6	0.0
VLS				S	Sn	09 05 16.3	+2.0
RLS	**Riolos of Patr**	**1.12**	**29**	P	Pb	09 05 00.3	+0.3
RLS				S	Sn	09 05 15.5	+0.9
RLS	**Riolos of Patr**	**1.12**	**29**	S	Sn	09 05 15.5	+0.9
RLS				AML	AML	09 05 24.3	
	comp=E,231μm,0.4s						
RLS				AML	AML	09 05 26.0	
	comp=N,239μm,0.6s						
DRO	**Drossia**	**1.15**	**40**	P	Pb	09 05 01.0	+0.6
DRO				S	Sn	09 05 17.2	+1.9
DRO	**Drossia**	**1.15**	**40**	P	Pb	09 05 01.0	+0.6
DRO				S	Sn	09 05 17.2	+1.9
DRO				AML	AML	09 05 21.1	
	comp=E,868μm,0.5s						
DRO				AML	AML	09 05 24.4	
	comp=N,733μm,0.4s						
TRIP	**Tripoli**	**1.28**	**69**	P	Pb	09 05 03.8	+1.2
TRIP	**Tripoli**	**1.28**	**69**	P	Pb	09 05 03.8	+1.2
VLX	**Vlachokerasia**	**1.31**	**77**	P	Pb	09 05 04.4	+1.1
VLX	**Vlachokerasia**	**1.31**	**77**	P	Pb	09 05 04.4	+1.1
KLV	**Kalavryta, Ach**	**1.46**	**48**	P	Pb	09 05 06.3	+0.6
KLV	**Kalavryta, Ach**	**1.46**	**48**	P	Pb	09 05 06.3	+0.6
PDO	**Prodromos**	**1.56**	**12**	P	Pb	09 05 07.8	+0.5
PDO	**Prodromos**	**1.56**	**12**	P	Pb	09 05 07.8	+0.5
DSF	**Desfina**	**1.93**	**46**	P	Pb	09 05 13.5	-0.2
DSF	**Desfina**	**1.93**	**46**	P	Pb	09 05 13.5	-0.1
DID	**Didima**	**2.01**	**77**	P	Pb	09 05 15.1	0.0
DID	**Didima**	**2.01**	**77**	P	Pb	09 05 15.1	0.0

*ISCJB **01** 09:05:22.8±0.8, 16.32N±0.06×97.51W±0.03, h36km±8km, mb3.9/9, Error ellipse: s-maj=9.9km s-min=5.4km az=178.5*
*MEX **01** 09:05:24.9±0.6, 16.30N×97.53W, h29km±10km, MD4.2*
*NEIC **01** 09:05:25.0, 16.31N×97.54W, h20km, mb4.1/3, MD4.2(MEX), After MEX.*
*IDC **01** 09:05:25.3±5.3, 15.85N×97.06W, h100km±36km, mb3.3/5, mb1 3.6/8, mb1mx3.4/35, mbtmp3.6/8, MS3.0/2, Ms1 3.0/2, ms1mx2.5/20, Error ellipse: s-maj=69.9km s-min=35.1km az=176.0*
ISC 01 09:05:22.5±1.3, 16.33N±0.06×97.50W±0.04, h25km±11km, n32, σ1°17/43, mb3.9/9, Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PNIG	**Pinotepa**	**0.61**	**276**	*i* P	**Pb**	**09 05 34.5**	**-0.1**
PNIG				*e*S	**Sb**	**09 05 42.7**	**-0.1**
PNIG	**Pinotepa**	**0.61**	**276**	*i* P	**Pb**	**09 05 34.5**	**-0.1**
PNIG				*e*S	**Sb**	**09 05 42.2**	**-0.6**
VHO	**Vista Hermosa**	**1.04**	**44**	*i* P	**Pb**	**09 05 41.6**	**-0.4**
VHO				*e*S	**Sn**	**09 05 55.4**	**-0.2**
VHO	**Vista Hermosa**	**1.04**	**44**	*i* P	**Pb**	**09 05 41.6**	**-0.4**
VHO				*e*S	**Sn**	**09 05 55.4**	**-0.2**
OXBJ	**Oaxaca**	**1.04**	**45**	*e*P	**Pn**	**09 05 41.7**	**-0.1**
OXBJ				*e*S	**Sn**	**09 05 55.4**	**-0.3**
HUIG	**Huatulco**	**1.44**	**112**	*e*P	**Pn**	**09 05 47.7**	**+0.6**
HUIG	**Huatulco**	**1.44**	**112**	*e*P	**Pn**	**09 05 47.7**	**+0.6**
TLIG	**Tlapa**	**1.60**	**320**	*e*P	**Pn**	**09 05 49.1**	**-0.3**
TLIG				*e*S	**Sn**	**09 06 07.9**	**-1.5**
TPIG	**Tehuac#an**	**2.09**	**3**	*e*P	**Pn**	**09 05 56.3**	**+0.2**
TPIG				*e*P	**Pn**	**09 05 56.3**	**+0.2**
TPIG				*i* S	**Sn**	**09 06 20.8**	**-0.7**
TPIG	**Tehuac#an**	**2.09**	**3**	*e*P	**Pn**	**09 05 56.3**	**+0.2**
TPIG				*i* S	**Sn**	**09 06 20.8**	**-0.7**
MEIG	**Mezcala**	**2.58**	**308**	*e*P	**Pn**	**09 06 04.0**	**+1.1**
MEIG	**Mezcala**	**2.58**	**308**	*e*P	**Pn**	**09 06 04.0**	**+1.1**
CMIG	**Matias Romero**	**2.62**	**73**	P	**Pn**	**09 06 02.8**	**-0.4**
	9.3nm,0.3s,baz=241,slow=12,SNR=243						
CMIG				S	**Sn**	**09 06 33.6**	**-0.6**
	66nm,0.3s,baz=302,slow=6.8,SNR=8.6						
CAIG	**El Cayaco**	**2.75**	**286**	*e*P	**Pn**	**09 06 04.3**	**-0.8**
CAIG	**El Cayaco**	**2.75**	**286**	*e*P	**Pn**	**09 06 04.3**	**-0.8**
YAIG	**Yautepec**	**2.93**	**330**	*e*P	**Pn**	**09 06 08.9**	**+1.2**
YAIG				*i* S	**Sn**	**09 06 41.2**	**-1.1**
YAIG	**Yautepec**	**2.93**	**330**	*e*P	**Pn**	**09 06 08.9**	**+1.2**
YAIG				*i* S	**Sn**	**09 06 41.2**	**-1.1**
ARIG	**Puente Sto Nin**	**3.35**	**306**	*e*P	**Pn**	**09 06 14.3**	**+0.9**
TEIG	**Tepich**	**9.58**	**65**	P	**Pn**	**09 07 37.7**	**-1.2**
	1.7nm,0.3s,baz=89,slow=24,SNR=8.9						
TEIG				S	Sn	09 09 19.5	-6.3
	4.5nm,0.3s,baz=255,slow=24,SNR=5.8						
TXAR	**Lajitas Array**	**14.14**	**337**	P	**P**	**09 08 47.0**	**-1.7**
	0.1nm,0.3s,baz=159,slow=14,SNR=9.0						
TXAR				LR	LR	09 14 37.1	
	comp=Z,99nm,18.7s,baz=0.0,slow=38						
JCT	**Junction City**	**14.25**	**352**	*e*Pn	**Pn**	**09 08 45.6**	**+2.8**
LPIG	**La Paz**	**14.29**	**305**	LR	LR	09 14 11.3	
	comp=Z,27nm,19.5s,baz=178,slow=35						
MIAR	**Mount Ida**	**18.48**	**10**	*e*P	**P**	**09 09 35.0**	**-1.7**
	9.0nm,1.0s						
WUAZ	**Wupatki**	**22.78**	**330**	*e*P	**P**	**09 10 25.8**	**+2.4**
	5.8nm,0.9s						
TKL	**Tuckaleechee C**	**22.82**	**30**	P	**P**	**09 10 21.3**	**-2.4**
	1.3nm,0.5s,baz=194,slow=15,SNR=6.0						
MVCO	**Mesa Verde**	**22.97**	**337**	*e*P	**P**	**09 10 26.6**	**+1.1**
	7.0nm,1.1s						
PV01	**Paradox Valley**	**23.81**	**338**	*e*P	**P**	**09 10 34.7**	**+0.8**
	199nm,0.9s						
PDAR	**Pinedale Array**	**28.30**	**341**	P	**P**	**09 11 14.2**	**-0.2**
	0.2nm,0.5s,baz=153,slow=14,SNR=4.1						
NVAR	**Mina Array Bea**	**28.61**	**324**	P	**P**	**09 11 18.9**	**+1.7**
	0.8nm,0.8s,baz=151,slow=9.1,SNR=7.4						
SCHQ	**Schefferville**	**45.11**	**25**	P	**P**	**09 13 38.6**	**+1.8**
	0.9nm,0.5s,baz=230,slow=16,SNR=5.4						
YKA	**Yellowknife Ar**	**47.66**	**349**	P	**P**	**09 13 55.3**	**-1.2**
	0.4nm,0.6s,baz=156,slow=7.3,SNR=15						
ILAR	**Eielson Array**	**58.65**	**338**	P	**P**	**09 15 16.3**	**-1.2**
	1.1nm,1.1s,baz=145,slow=5.5,SNR=5.5						

*IDC **01** 09:07:09.3±10.0, 3.15N×126.06E, h0km, mb3.8/4, mb1 4.0/4, mb1mx3.6/48, mbtmp3.9/4, Error ellipse: s-maj=174.4km s-min=97.3km az=145.0*
*ISCJB **01** 09:07:24.8±0.8, 2.73N±0.06×125.8E±0.1, h100km, mb3.8/3, Error ellipse: s-maj=16.9km s-min=7.3km az=168.1*
*DJA **01** 09:07:26.3±0.3, 3°N±3°×12°6E±°, h10km, M4.4/2, mB5.3/1, mb4.7/1, MLv4.3/2, Mw(mB)4.8/1*
ISC 01 09:07:24.9±1.0, 2.80N±0.06×125.73E±0.09, h100km, n12, σ2°32/15, mb4.1/3, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SGSI	**Sangihe**	**0.91**	**347**	P	**Pn**	**09 07 44.8**	**+0.4**
SGSI				S	**Sn**	**09 08 00.9**	**+1.9**
LBMI	**Labuha**	**3.84**	**153**	P	**Pn**	**09 08 24.6**	**+2.6**
LBMI				S	**Sn**	**09 09 10.1**	**+3.8**
MRSI	**Marisa**	**4.43**	**239**	P	**Pn**	**09 08 30.9**	**+0.9**
SANI	**Sanana**	**4.82**	**177**	P	**Pn**	**09 08 36.6**	**+1.3**
SANI				S	**Sn**	**09 09 28.7**	**-1.3**
LUWI	**Luwuk**	**4.83**	**218**	P	**Pn**	**09 08 36.8**	**+1.5**
NLAI	**Namlea**	**6.15**	**167**	P	**Pn**	**09 08 53.7**	**+0.4**
MSAI	**Masohi**	**6.89**	**152**	P	**Pn**	**09 09 04.7**	**+1.3**
PBKI	**Pangkalan Bun**	**15.08**	**249**	P	**P**	**09 10 58.0**	**+2.3**
FITZ	**Fitzroy Crossi**	**20.77**	**180**	P	**P**	**09 11 54.8**	**-3.2**
	0.8nm,0.4s,baz=356,slow=11,SNR=4.5						
WRA	**Warramunga Arr**	**24.13**	**160**	P	**P**	**09 12 29.1**	**-2.6**
	3.9nm,0.5s,baz=342,slow=10.0,SNR=52						
ASAR	**Alice Springs**	**27.48**	**164**	P	**P**	**09 12 59.6**	**-2.3**
	0.4nm,0.4s,baz=341,slow=7.4,SNR=14						
STKA	**Stephens Creek**	**37.63**	**158**	P	**P**	**09 14 28.4**	**-1.9**
	1.1nm,0.3s,baz=327,slow=10,SNR=4.5						

*NIED **01** 09:10:00, 37.80N×142.00E, h65km, Mw3.9 Best double couple: M07.23000×10^14 NP1:φs75.00000°, δ29.00000°, λ23.00000°. NP2:φs324.00000°, δ79.00000°, λ117.00000°.*
*JMA **01** 09:10:12.3±0.1, 37.77N×142.03E, h31km±3km, M3.8*
*IDC **01** 09:10:16.4±6.0, 36.58N×141.87E, h0km, mb3.6/2, mb1 3.7/3, mb1mx3.3/51, mbtmp3.4/3, ML2.9/1, MS3.4/1, Ms1 3.4/1, ms1mx2.2/29, Error ellipse: s-maj=129.1km s-min=41.0km az=32.0*
ISC 01 09:10:11.9±2.6, 37.77N±0.05×142.0E±0.1, h24km±17km, n14, σ0°79/20, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.86**	**323**	P	**Pn**	**09 10 28.4**	**0.0**
JIO				S	**Sb**	**09 10 39.1**	**0.0**
JMM	**Marumori**	**0.97**	**276**	P	**Pn**	**09 10 30.2**	**+0.2**
JMM				S	**Sn**	**09 10 43.1**	**+0.1**
JFK	**Kawauchi**	**0.99**	**246**	P	**Pn**	**09 10 30.3**	**0.0**
JFK				*e*S	**Sb**	**09 10 42.8**	**-0.2**
ONAJ	**Iwakimizuishiy**	**1.18**	**236**	P	**Pn**	**09 10 32.8**	**-0.1**
ONAJ				*e*S	**Sn**	**09 10 47.3**	**-0.9**
JOU	**Okura**	**1.22**	**299**	P	**Pb**	**09 10 34.2**	**0.0**
JOU				*e*S	**Sb**	**09 10 49.7**	**+0.2**
JMK	**Ichinoseki**	**1.33**	**332**	P	**Pn**	**09 10 35.3**	**+0.3**
JMK				S	**Sn**	**09 10 51.3**	**-0.6**
JFT	**Otama**	**1.35**	**260**	P	**Pb**	**09 10 36.5**	**0.0**
JFT				S	**Sb**	**09 10 54.0**	**+0.6**
JYS	**Shiratake**	**1.60**	**287**	P	**Pb**	**09 10 40.2**	**-0.5**
JOM	**Ohasama**	**1.79**	**342**	P	**Pn**	**09 10 42.0**	**+0.7**
MJAR	**Matsushiro Arr**	**3.28**	**249**	Pn	**Pn**	**09 11 04.2**	**+2.4**
	1.8nm,0.3s,baz=88,slow=16,SNR=15						
MJAR				LR	LR	09 11 46.6	
	comp=Z,13nm,20.7s,baz=105,slow=31						
MAT	**Matsushiro**	**3.28**	**249**	P	Pb	09 11 05.7	-3.6
MAT				*e*S	**Sb**	**09 11 47.6**	**-1.2**
SONM	**Songino Array**	**27.78**	**303**	LR	LR	09 27 19.5	
	comp=Z,68nm,18.7s,baz=260,slow=36						
WRA	**Warramunga Arr**	**57.86**	**189**	P	**P**	**09 20 01.6**	**-0.1**
	0.8nm,0.5s,baz=5.4,slow=7.2,SNR=17						
ASAR	**Alice Springs**	**61.59**	**188**	P	**P**	**09 20 27.1**	**-0.2**
	0.2nm,0.6s,baz=22,slow=5.1,SNR=3.2						

*MOS **01** 09:13:53.5±1.5, 43.74N×77.64E, h16km, mb4.7/25, Error ellipse: s-maj=6.4km s-min=5.2km az=106.6*
MOS Felt (III-IV) at Almaty.
*NNC **01** 09:13:53.0±0.7, 43.69N×77.67E, h0km±5km, mb5.1, mpv4.8, Error ellipse: s-maj=6.6km s-min=2.2km az=172.0*
*KRNET **01** 09:13:54.2±0.1, 43.62N×77.65E, h22km, mb4.6*
*SOME **01** 09:13:55.4, 43.62N×77.67E, h25km, MS3.5*
*IDC **01** 09:13:55.3±0.5, 43.53N×77.66E, h23km±2km, mb4.0/21, mb1 4.1/29, mb1mx4.0/53, mbtmp4.2/29, ML3.9/8, MS3.8/28, Ms1 3.8/28, ms1mx3.6/48, Error ellipse: s-maj=9.2km s-min=6.6km az=144.0*
*NEIC **01** 09:13:55.9±0.5, 43.60N×77.64E, h22km±3km, mb4.9/30, Error ellipse: s-maj=5.3km s-min=3.9km az=169.0*
NEIC Felt [III] at Almaty. Also felt at Energeticheskiy.
*ISCJB **01** 09:13:55.2±0.3, 43.66N±0.02×77.70E±0.02, h26km±2km, mb4.6/65, MS3.9/37, Error ellipse: s-maj=2.7km s-min=1.9km az=163.2*
ISC 01 09:13:55.0±0.3, 43.62N±0.02×77.66E±0.01, h17km±1km, h16km:pP-P, n299, σ2°06/349, mb4.7/65, MS4.0/37, 52C-41D, Lake Issyk-Kul region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KURS	**Kuram**	**0.39**	**109**	*e*P	**Pb**	**09 14 03.6**	**+0.1**
	3μm,0.3s						
KURS				*e*S	**Sb**	**09 14 09.5**	**+0.1**
	34μm,0.4s						
CHKK	**Chushkaly**	**0.54**	**298**	*e*P	**Pb**	**09 14 06.0**	**0.0**
	1μm,0.2s						
CHKK				*e*S	**Sb**	**09 14 13.9**	**+0.4**
	42μm,0.3s						
KOTS	**Kotyrbulak**	**0.55**	**227**	*e*P	**Pb**	**09 14 06.4**	**+0.1**
KOTS				*e*S	**Sb**	**09 14 14.1**	**+0.1**
ARXS	**Arharly**	**0.61**	**11**	*e*P	**Pb**	**09 14 07.8**	**+0.5**
	3μm,0.5s						
ARXS				*e*S	**Sb**	**09 14 15.7**	**+0.1**
	30μm,0.6s						
AAA	**Alma-Ata**	**0.62**	**237**	*e*P	**Pn**	**09 14 08.6**	**-0.6**
	8μm,0.3s						
AAA				*e*S	**Sn**	**09 14 18.2**	**-0.5**
	32μm,0.2s						
AAA	**Alma-Ata**	**0.62**	**237**	*e*PG	**Pn**	**09 14 08.5**	**-0.6**
AAA				*e*S	**Sn**	**09 14 18.0**	**-0.7**
MDOK	**Medeo**	**0.63**	**225**	*e*P	**Pg**	**09 14 07.4**	**-0.1**
	6μm,0.6s						
MDOK				⇓*i*S	**Sg**	**09 14 16.1**	**+0.1**
	31μm,0.6s						
KNDC	**Almaty**	**0.64**	**232**	⇑P	**Pg**	**09 14 07.8**	**+0.1**
KNDC				⇑S	**Sg**	**09 14 16.3**	**+0.1**
MNBS	**Baschi**	**0.71**	**49**	*e*P	**Pb**	**09 14 09.3**	**+0.3**
	351nm,0.3s						
MNBS				*e*S	**Sb**	**09 14 19.1**	**+0.5**
	4μm,0.7s						
KTBS	**Karatobe**	**0.72**	**278**	*e*P	**Pb**	**09 14 09.2**	**+0.1**
ZHN	**Zhinishke**	**0.72**	**128**	*e*P	**Pg**	**09 14 08.7**	**-0.4**
	2μm,0.2s						
ZHN				*e*S	**Sg**	**09 14 18.3**	**-0.4**
	81μm,0.3s						
KPKS	**Kokpek**	**0.76**	**101**	*e*P	**Pg**	**09 14 09.7**	**-0.2**
	6μm,0.2s						
KPKS				*e*S	**Sb**	**09 14 20.1**	**+0.1**
	24μm,0.3s						
TNSS	**Tian-Shan**	**0.77**	**223**	*e*P	**Pg**	**09 14 09.9**	**-0.3**
	4μm,0.4s						
TNSS				*e*S	**Sg**	**09 14 20.4**	**-0.1**
	12μm,0.5s						
SATY	**Saty**	**0.78**	**135**	⇓*i*P	**Pb**	**09 14 09.9**	**-0.3**
	11μm,0.2s						
SATY				⇑*i*S	**Sb**	**09 14 20.3**	**-0.2**
	50μm,0.2s						
ANVS	**Anan'yevo**	**0.83**	**180**	⇓*i*P	**Pb**	**09 14 10.5**	**-0.6**
	baz=179						
ANVS				⇓*i*S	**Sb**	**09 14 21.8**	**-0.3**
	baz=179						
KUU	**Kurty**	**1.00**	**287**	*e*P	**Pb**	**09 14 13.5**	**-0.3**
	2μm,0.2s						
KUU				*e*S	**Sb**	**09 14 26.8**	**+0.1**
	10μm,0.3s						
MTBS	**Maitube**	**1.02**	**242**	⇓*i*P	**Pb**	**09 14 14.0**	**-0.2**
	2μm,0.2s						
MTBS				⇓*i*S	**Sb**	**09 14 27.7**	**+0.4**
	13μm,0.2s						
UZB	**Uzynbulak**	**1.10**	**115**	*e*P	**Pb**	**09 14 15.4**	**-0.3**
	5μm,0.2s						
UZB				*e*S	**Sb**	**09 14 29.4**	**-0.3**
	9μm,0.3s						
PRZ	**Przheval'sk**	**1.25**	**154**	⇓*i*P	**Pg**	**09 14 19.4**	**+0.2**
	baz=154						
PRZ				⇓*i*S	**Sg**	**09 14 36.7**	**+1.1**
	baz=154						
PDGK	**Podgornoye**	**1.36**	**102**	⇑*e*P	**Pb**	**09 14 19.7**	**-0.3**
	baz=102						
PDGK				⇑*i*S	**Sg**	**09 14 38.0**	**-0.9**
	baz=102						
PDGK	**Podgornoye**	**1.36**	**102**	⇑P	**Pn**	**09 14 19.1**	**-0.1**
	2μm,0.5s						
PDGK				⇓S	**Sb**	**09 14 37.1**	**0.0**
	9μm,0.9s						
PDGK	**Podgornoye**	**1.36**	**102**	PG	**Pn**	**09 14 19.1**	**-0.1**
KST	**Kastek**	**1.36**	**246**	*e*P	**Pn**	**09 14 19.7**	**+0.3**
	655nm,0.5s						
KST				⇓*i*S	**Sb**	**09 14 37.7**	**+0.4**
	4μm,0.4s						
DGS	**Degeres**	**1.42**	**255**	*e*P	**Pn**	**09 14 20.8**	**+0.6**
	927nm,0.6s						
DGS				*e*S	**Sn**	**09 14 38.4**	**-0.2**
	3μm,0.7s						
TDK	**Taldygorghan**	**1.49**	**21**	*e*P	**Pb**	**09 14 22.1**	**-0.1**
	5μm,0.2s						
TDK				*e*S	**Sg**	**09 14 42.4**	**-0.7**
	19μm,0.8s						
KDJ	**Kajisay**	**1.52**	**194**	⇓*e*P	**Pb**	**09 14 23.2**	**+0.3**
	baz=193						
KDJ				⇓*i*S	**Sb**	**09 14 43.2**	**+1.2**
	baz=193						
TKM2	**Tokmak

baz=248
AAK ⇑*i*S **Sb** **09 15 08.5 -2.0**
baz=248
AAK Ala-Archa 2.52 248 ⇑Pn **Pn** **09 14 36.5 +1.2**
comp=E,585nm,0.6s
AAK ⇑Lg Lg 09 15 11.7
comp=E,2μm,1.0s
AAK Ala-Archa 2.52 248*c i*PN **Pn** **09 14 36.3 +1.0**
AAK pmax pmax
comp=Z,585nm,0.5s
AAK Ala-Archa 2.52 248 *e*Pn **Pn** **09 14 36.7 +1.4**
AAK *e*Pg **Pg** **09 14 43.6 +0.3**
AAK *e*Sn **Sb** **09 15 12.1 +1.5**
UCH Uchtor 2.69 240 ⇑*i*P **Pn** **09 14 40.1 +2.1**
baz=240
UCH ⇑*i*S **Sn** **09 15 13.0 +2.6**
baz=240
EKS2 Erkin-Say 3.00 253 ⇑*i*P **Pn** **09 14 43.0 +1.2**
baz=253
EKS2 ⇑*i*S **Sn** **09 15 20.2 +2.8**
baz=253
EKS2 Erkin-Say 3.00 253 *e*PN **Pn** **09 14 43.3 +1.5**
EKS2 *e* 09 15 18.5
EKS2 Erkin-Say 3.00 253 *e*Pn **Pn** **09 14 43.3 +1.5**
EKS2 *e*Sn **Sn** **09 15 18.5 +1.1**
AML Almayashu 3.27 244 ⇑*i*P **Pn** **09 14 48.2 +2.4**
baz=244
AML ⇑*i*S **Sn** **09 15 26.4 +1.9**
baz=244
MRKS Merke 3.36 257 *e*P **Pb** **09 14 56.3 +2.2**
comp=Z,332nm,0.5s
MRKS *e*S **Sg** **09 15 39.8 -3.0**
comp=Z,2μm,0.6s
MNAS Manas 3.94 255 ⇑*e*P **Pn** **09 14 56.2 +1.4**
baz=255
MNAS ⇑*e*S **Sn** **09 15 42.1 +1.3**
baz=255
MNAS Manas 3.94 255 ⇑Pg **Pb** **09 15 05.1 +0.9**
comp=Z,140nm,0.7s
MNAS ⇑Lg Lg 09 15 56.3
comp=Z,602nm,0.6s
MNAS Manas 3.94 255 PN **Pb** **09 15 05.0 +0.9**
MNAS 09 15 56.3
MNAS pmax pmax
comp=Z,140nm,0.7s
MNAS pmax pmax
comp=N,602nm,0.6s
KSH Kashi 4.29 198 Pn **Pb** **09 15 09.3 -0.6**
KSH Sn **Sb** **09 16 03.1 +1.7**
KSH pmax pmax
comp=Z,33nm,0.6s
KSH smax smax
comp=N,840nm,0.9s
KSH smax smax
comp=E,550nm,0.6s
MAKZ Makanchi 4.42 42 *e*PN **Pn** **09 15 02.8 +1.5**
MAKZ Makanchi 4.42 42 *e*Pn **Pn** **09 15 02.8 +1.5**
MK01 Makanchi Array 4.55 45 *e*Pn **Pn** **09 15 04.4 +1.3**
MK31 Makanchi Array 4.56 44 Pn **Pn** **09 15 04.8 +1.6**
comp=E,67nm,0.5s,baz=222,slow=15,SNR=1245
MK31 ⇑Lg Lg 09 16 14.8
comp=E,316nm,0.7s,baz=222,slow=27,SNR=11
MK31 Makanchi Array 4.56 44 PN **Pn** **09 15 04.8 +1.6**
MK31 pmax pmax
comp=Z,67nm,0.5s
MK31 pmax pmax
comp=N,316nm,0.7s
MK31 Makanchi Array 4.56 44 *e*Pn **Pn** **09 15 04.8 +1.6**
MKAR Makanchi Array 4.56 44 Pn **Pn** **09 15 04.7 +1.4**
comp=N,5.4nm,0.3s,baz=222,slow=16,SNR=206
MKAR Sn **Sn** **09 15 58.2 +2.4**
comp=N,27nm,0.3s,baz=225,slow=22,SNR=5.9
MKAR Lg Lg 09 16 16.6
comp=N,59nm,0.3s,baz=221,slow=24,SNR=12
MKAR LR LR 09 17 13.6
comp=N,741nm,19.8s,baz=216,slow=43
MKAR Makanchi Array 4.56 44 *i* PN **Pn** **09 15 04.6 +1.4**
MKAR pmax pmax
comp=Z,9.0nm,0.3s
SFK Sufi-Kurgan 4.75 222 ⇓*e*P **Pn** **09 15 08.7 +2.6**
baz=222
SFK ⇓*e*S **Sb** **09 16 17.5 +2.5**
baz=222
SFK Sufi-Kurgan 4.75 222 ⇑Pg **Pb** **09 15 18.9 +0.9**
comp=Z,266nm,1.0s
SFK ⇓Lg Lg 09 16 23.3
comp=Z,466nm,0.8s
SFK Sufi-Kurgan 4.75 222 PN **Pb** **09 15 18.9 +0.9**
KK31 Karatay Array 5.24 267 Pn **Pn** **09 15 13.0 +0.5**
comp=Z,5.0nm,0.6s,baz=79,slow=14,SNR=217
KK31 ⇑Pg **Pb** **09 15 28.3 +2.2**
comp=Z,75nm,0.8s,baz=78,slow=14,SNR=62
KK31 ⇓Lg Lg 09 16 36.6
comp=Z,306nm,0.5s
KK31 Karatay Array 5.24 267 *e*PN **Pn** **09 15 13.0 +0.5**
KK31 pmax pmax
comp=Z,5.0nm,0.6s
KKAR Karatay Array 5.24 267 *e*PN **Pn** **09 15 13.2 +0.7**
KKAR Karatay Array 5.24 267 *e*Pn **Pn** **09 15 13.2 +0.7**
IUG Iuzhnay 5.79 258 *e*P **Pg** **09 15 41.6 -4.3**
comp=Z,255nm,0.7s
IUG *e*S **Sg** **09 16 57.6 -3.3**
comp=Z,932nm,0.8s
OTUK Ortayu 5.93 323 ⇑Pn **Pn** **09 15 21.6 -0.4**
comp=Z,23nm,0.6s
OTUK ⇑Lg Lg 09 16 58.5
comp=Z,2μm,0.8s
OTUK Ortayu 5.93 323 PN **Pn** **09 15 21.6 -0.4**
OTUK pmax pmax
comp=Z,23nm,0.6s
OTUK pmax pmax
comp=N,2μm,0.8s
ZSN Zaisan 6.09 49 *e*P **Pg** **09 15 49.4 -2.2**
comp=N,44nm,0.9s
ZSN *e*S **Sg** **09 17 12.1 +1.7**
comp=N,339nm,0.9s
SEM Semipalatinsk 7.02 14 *e*P **Pg** **09 16 05.6 -3.8**
comp=N,29nm,0.6s
SEM *e*S **Sg** **09 17 38.8 -1.3**
comp=N,544nm,0.8s
KURBB Kurchatov Arra 7.04 5 Pn **Pn** **09 15 37.4 +0.2**
comp=N,2.2nm,0.3s,baz=193,slow=12,SNR=87
KURBB Sn **Sn** **09 16 57.7 +1.0**
comp=N,2.9nm,0.3s,baz=192,slow=15,SNR=5.4
KURBB Lg Lg 09 17 35.9
comp=N,13nm,0.3s,baz=187,slow=29,SNR=17
KURK Kurchatov 7.13 5 ⇓Pg **Pb** **09 16 00.0 +1.7**
comp=N,154nm,0.9s
KURK ⇑Lg Lg 09 17 36.1
comp=N,3μm,1.2s
KURK Kurchatov 7.13 5 PN Pn 09 15 47.7 +9.2
KURK pmax pmax
comp=Z,154nm,0.9s
KURK pmax pmax
comp=N,3μm,1.2s
KURK Kurchatov 7.13 5 *e*Pn **Pn** **09 15 39.3 +0.8**
KURK Sn **Sn** **09 16 57.7 -1.4**
KURK Lg Lg 09 17 35.9
WMQ Urumqi 7.28 85 Pn **Pn** **09 15 39.1 -1.4**
WMQ Sn **Sn** **09 17 02.4 -0.4**
WMQ smax smax
comp=N,100nm,1.2s
WMQ smax smax
comp=E,62nm,0.8s
CHCP Chirah Chowk 10.52 200 P **Pn** **09 16 27.7 +2.7**
BVA0 Borovoye Array 10.58 335 ⇓Pn **Pn** **09 16 24.1 -1.7**
comp=E,21nm,0.8s
BVA0 ⇓Lg Lg 09 19 26.8
comp=E,36nm,0.7s
BVA0 Borovoye Array 10.58 335 P **Pn** **09 16 24.0 -1.7**
BVA0 09 18 18.2
BVA0 pmax pmax
comp=Z,21nm,0.8s
BVA0 pmax pmax
comp=N,36nm,0.7s
BVAR Borovoye Array 10.58 335 Pn **Pn** **09 16 24.7 -1.1**
comp=N,3.2nm,0.3s,baz=143,slow=13,SNR=60
BVAR Sn **Sn** **09 18 19.1 -4.6**
comp=N,5.7nm,0.3s,baz=139,slow=21,SNR=6.1
BVAR Lg Lg 09 19 20.6
comp=N,7.4nm,0.3s,baz=148,slow=20,SNR=4.4
BVAR LR LR 09 20 42.2
comp=N,901nm,20.3s,baz=245,slow=38
BRVK Borovoye 10.64 335 ⇓Pn **Pn** **09 16 24.4 -2.2**
comp=N,38nm,0.6s
BRVK ⇓Lg Lg 09 19 27.2
comp=N,52nm,0.7s

BRVK Borovoye 10.64 335 P **Pn** **09 16 24.3 -2.2**
BRVK 09 18 17.9
BRVK pmax pmax
comp=Z,38nm,0.6s
BRVK pmax pmax
comp=N,52nm,0.7s
BRVK Borovoye 10.64 335 *e*Pn **Pn** **09 16 25.5 -1.0**
CEP Cherat 10.76 207 P Pn 09 16 34.6 +6.3
CEP S Sn 09 18 08.0 -20
ZRNK Zerenda 10.97 331 *e*P **Pn** **09 16 29.4 -1.7**
ZRNK Zerenda 10.97 331 *e*Pn **Pn** **09 16 29.4 -1.7**
CHKZ Chkalovo 11.09 338 ⇓Pn **Pn** **09 16 30.3 -2.3**
comp=N,13nm,0.6s
CHKZ ⇑Lg Lg 09 19 40.8
comp=N,31nm,0.8s
CHKZ Chkalovo 11.09 338 P **Pn** **09 16 31.5 -1.1**
CHKZ 09 18 29.5
CHKZ pmax pmax
comp=Z,13nm,0.6s
CHKZ pmax pmax
comp=N,31nm,0.8s
KBL Kabul 11.26 219 *e*P **Pn** **09 16 34.0 -1.3**
KBL Kabul 11.26 219 *e*Pn **Pn** **09 16 34.0 -1.3**
ZALV Zalesovo Beam 11.36 22 Pn **Pn** **09 16 35.8 -0.6**
comp=N,1.8nm,0.3s,baz=214,slow=14,SNR=14
ZALV Lg Lg 09 19 50.2
comp=N,1.3nm,0.3s,baz=208,slow=24,SNR=2.9
ZALV LR LR 09 21 19.3
comp=N,426nm,20.3s,baz=246,slow=39
THW Thamme Wali 11.76 205 P **Pn** **09 16 45.4 +3.5**
NVS Novosibirsk 11.81 16 *e*P **Pn** **09 16 42.1 -0.4**
NVS *e* 09 18 47.6
AB31 Akbulak array 13.45 301 *i* P **Pn** **09 17 01.4 -3.5**
AB31 pmax pmax
comp=Z,3.0nm,0.5s
ABKAR Akbulak array 13.45 301 *e*Pn **Pn** **09 17 02.4 -2.5**
AKTO Aktyubinsk 15.01 304 Pn **Pn** **09 17 23.7 -2.5**
comp=Z,0.9nm,0.3s,baz=107,slow=12,SNR=15
AKTO Sn **Sn** **09 20 03.6 -8.3**
comp=Z,1.0nm,0.3s,baz=240,slow=12,SNR=3.8
AKTO Lg Lg 09 21 43.2
comp=Z,0.8nm,0.3s,baz=70,slow=10,SNR=4.5
AKTO LR LR 09 23 33.1
comp=Z,396nm,19.7s,baz=118,slow=38
AKTO Aktyubinsk 15.01 304 ⇓P **Pn** **09 17 22.9 -3.3**
comp=Z,16nm,0.9s
KRAR Krasnoyarsk 15.78 33 *e*P **P** **09 17 39.5 -0.5**
GEYT Alibeck 15.84 256 Pn **Pn** **09 17 34.9 -2.3**
comp=Z,0.6nm,0.3s,baz=64,slow=10,SNR=2.9
GEYT LR LR 09 24 27.9
comp=Z,166nm,19.1s,baz=70,slow=40
PYUN Piuthan 16.07 163 *e*P **Pn** **09 17 36.9 -3.4**
comp=Z,48nm,0.8s
KOLN Koldanda 16.52 161 *e*P **Pn** **09 17 42.2 -3.9**
comp=Z,17nm,0.8s
GKN Gorkha 16.56 158 *e*P **Pn** **09 17 43.3 -3.3**
GUN Gumba 17.02 154 *e*P **Pn** **09 17 53.2 +0.7**
comp=Z,53nm,0.8s
SVE Sverdlovsk 17.06 327 *e*P **Pn** **09 17 50.0 -2.6**
SVE pmax pmax
comp=Z,17nm,0.9s
DMN Daman 17.07 157 *e*P **Pn** **09 17 50.6 -2.4**
comp=Z,60nm,0.9s
GTA Gaotai 17.11 97 P **Pn** **09 17 50.8 -2.5**
GTA pP P 09 17 56.0 +1.0
GTA sP pP 09 17 58.6 -1.1
GTA S **Sn** **09 20 57.5 -5.7**
GTA sS sS 09 21 17.2 -2.9
GTA SS **SnSn** **09 21 30.4 +14**
GTA pmax pmax
comp=Z,6.0nm,1.2s
GTA pmax pmax
comp=Z,58nm,4.1s
GTA LR LR
comp=N,220nm,12.4s
GTA LR LR
comp=E,200nm,11.9s
GTA LR LR
comp=Z,180nm,16.6s
PKIN Phulchoki 17.18 156 *e*P **Pn** **09 17 53.6 -0.9**
comp=Z,30nm,0.7s
MOY Mondy 17.61 55 *e*P P 09 18 09.0 +8.5
ARU Arti 17.67 323 P **Pn** **09 17 59.3 -0.7**
comp=Z,0.0nm,0.3s,baz=110,slow=6.2,SNR=11
ARU Lg Lg 09 23 03.8
comp=Z,0.0nm,0.3s,baz=316,slow=3.1,SNR=4.3
ARU LR LR 09 25 15.9
comp=Z,489nm,19.9s,baz=119,slow=38
ARU Arti 17.67 323*c i*P **Pn** **09 17 57.7 -2.4**
ARU S **Sn** **09 21 15.1 -1.3**
ARU pmax pmax
comp=Z,4.0nm,0.6s
ARU Arti 17.67 323 *e*Pn **Pn** **09 17 58.6 -1.5**
comp=Z,58nm,1.2s
ARU Lg Lg 09 23 03.8
ZAK Zakamensk 18.68 60 *e*P **P** **09 18 11.5 -0.8**
ZAK pmax pmax
comp=Z,11nm,1.3s
TLY Talaya 19.20 56 Lg Lg 09 23 59.2
comp=Z,0.0nm,0.3s,baz=248,slow=19,SNR=2.0
TLY Talaya 19.20 56 *e*P Pn 09 18 26.3 +7.5
TLY *e*S **Sn** **09 21 43.2 -10**
TLY pmax pmax
comp=Z,8.0nm,1.1s
TLY MLR MLR
comp=Z,134nm,11.0s
TLY Talaya 19.20 56 *e*P **Pn** **09 18 18.4 -0.4**
TLY Lg Lg 09 23 59.2
IRK Irkutsk 19.72 55 *e*P **Pn** **09 18 31.4 +6.4**
SONM Songino Array 20.44 68 P **P** **09 18 32.5 +0.9**
comp=Z,6.8nm,0.8s,baz=272,slow=13,SNR=26
SONM Lg Lg 09 24 49.8
comp=Z,4.4nm,1.1s,baz=263,slow=22,SNR=5.1
SOKR Solikamsk 20.45 329 *e*P Pn 09 18 32.4 -1.0
SOKR pmax pmax
comp=Z,4.0nm,0.5s
SOKR MLR MLR
comp=Z,466nm,18.0s
SONA1 Songino Array 20.45 68 *e*P **P** **09 18 32.5 +0.8**
ULN Ulaanbaatar 20.89 68 *e*P Pn 09 18 40.2 +1.3
ULN Ulaanbaatar 20.89 68 *e*P **P** **09 18 37.0 +0.6**
comp=Z,14nm,0.9s
LZH Lanzhou 21.41 102 *e*P **P** **09 18 43.3 +1.2**
LZH pP sP 09 18 49.0 0.0
LZH sP pP 09 18 52.3 +5.5
LZH *e*S **S** **09 22 33.3 -5.8**
LZH sS sS 09 22 44.6 -2.1
LZH SS **SnSn** **09 23 09.5 +7.6**
LZH pmax pmax
comp=Z,34nm,1.2s
LZH pmax pmax
comp=Z,73nm,4.0s
LZH LR LR
comp=N,1μm,12.5s
LZH LR LR
comp=E,1μm,12.4s
LZH LR LR
comp=Z,1μm,14.6s
SHL Shillong 21.42 143 *e*P **P** **09 18 42.0 -0.3**
DGRG David-gareji 23.81 276 P **P** **09 19 09.6 +2.6**
DGRG David-gareji 23.81 276 P **P** **09 19 09.6 +2.6**
GUDG Gudauri 24.19 279 P **P** **09 19 13.0 +2.2**
CD2 Chengdu 24.22 113 P **P** **09 19 10.2 -0.7**
CD2 sP sP 09 19 20.1 +2.0
CD2 PP **PnPn** **09 19 46.7 +6.2**
CD2 PcP **PcP** **09 22 50.5 -0.5**
CD2 S **S** **09 23 27.9 -0.7**
CD2 sS sS 09 23 39.6 +2.6
CD2 SS **SnSn** **09 24 18.0 +7.1**
CD2 pmax pmax
comp=Z,40nm,0.9s
CD2 pmax pmax
comp=Z,110nm,5.9s
CD2 LR LR
comp=E,270nm,8.4s
CD2 LR LR
comp=Z,190nm,6.9s
ZEI Tsey 24.53 280 *e*P **P** **09 19 11.6 -2.2**
ZEI pmax pmax
comp=Z,9.0nm,0.6s
GNI Garni 24.66 273 P **P** **09 19 16.3 +1.3**
comp=Z,6.1nm,0.5s,baz=342,slow=3.3,SNR=8.0
GNI LR LR 09 30 31.6
comp=Z,70nm,18.5s,baz=57,slow=40
GNI Garni 24.66 273 *e*P **P** **09 19 16.5 +1.6**

GNI pmax pmax
comp=Z,110nm,1.7s
GNI Garni 24.66 273 *e*P **P** **09 19 17.0 +2.0**
comp=Z,24nm,1.0s
GOF Gofitskoye 24.69 285*c e*P P 09 19 24.2 +9.2
ONI Oni 24.90 280 P P 09 19 08.6 -8.3
ONI Oni 24.90 280 P P 09 19 08.6 -8.3
KBZ Khabaz 25.04 282 P **P** **09 19 19.6 +1.6**
comp=Z,3.0nm,1.0s,baz=117,slow=5.3,SNR=3.8
KBZ LR LR 09 31 04.1
comp=Z,139nm,18.1s,baz=62,slow=41
KVAR Kislovodsk Arr 25.14 283 P **P** **09 19 22.5 +3.3**
comp=Z,2.2nm,0.6s,baz=264,slow=13,SNR=3.4
KVAR LR LR 09 31 15.5
comp=Z,143nm,18.6s,baz=63,slow=41
KIV Kislovodsk 25.14 283 *e*P **P** **09 19 19.5 +0.3**
KIV pmax pmax
comp=Z,8.0nm,0.7s
KIV MLR MLR
comp=Z,133nm,17.0s
KIV Kislovodsk 25.14 283 *e*P **P** **09 19 20.1 +0.9**
comp=Z,22nm,1.1s
HHC Hu-ho-hao-te 25.16 85 *e*P **P** **09 19 18.8 -0.5**
HHC S S 09 23 30.9 -13
HHC pmax pmax
comp=Z,31nm,0.8s
HHC pmax pmax
comp=Z,150nm,4.2s
HHC LR LR
comp=N,890nm,11.3s
HHC LR LR
comp=E,1μm,12.3s
HHC LR LR
comp=Z,1μm,12.3s
NEY Neytrino 25.27 281 *e*P **P** **09 19 17.0 -3.4**
VRH Novokhopyorsk 25.28 300 *e*P **P** **09 19 26.1 +5.9**
VRH pmax pmax
comp=Z,20nm,1.1s
WSAR Wadi Sarin 25.68 224 LR LR 09 31 44.1
comp=Z,92nm,21.5s,baz=64,slow=42
HYB Hyderabad 26.13 178 *i* P **P** **09 19 27.0 -1.2**
HYB *e*pP **sP** **09 19 37.5 +2.1**
NRIK Noril'sk 26.29 8 P **P** **09 19 30.3 +1.1**
comp=Z,13nm,0.7s,baz=200,slow=9.5,SNR=4.5
NRIK LR LR 09 31 18.9
comp=Z,222nm,18.8s,baz=170,slow=40
BOD Bodaibo 26.65 45 *e*P **P** **09 19 32.6 0.0**
BOD pmax pmax
comp=Z,16nm,0.9s
VSR Storozhevoye 26.88 300 *e*P **P** **09 19 40.7 +6.0**
VSR pmax pmax
comp=Z,10.0nm,1.1s
KMI Kunming 27.56 124 P **P** **09 19 46.4 +5.1**
KMI pmax pmax
comp=Z,11nm,0.9s
KMI LR LR
comp=N,130nm,14.6s
KMI LR LR
comp=E,89nm,14.8s
KMI LR LR
comp=Z,150nm,17.3s
KLMR Klimovskoe 28.48 321 *e*P **P** **09 19 48.7 -0.2**
KLMR *e* 09 20 38.1
KLMR pmax pmax
comp=Z,23nm,1.0s
OBN Obninsk 28.71 308 LR LR 09 31 33.0
comp=Z,210nm,18.9s,baz=89,slow=37
OBN Obninsk 28.71 308 *e*P **P** **09 19 53.5 +2.6**
OBN pmax pmax
comp=Z,3.0nm,0.4s
OBN MLR MLR
comp=Z,202nm,18.0s
BJI Beijing 28.75 84 P **P** **09 19 51.9 +0.4**
BJI pmax pmax
comp=Z,8.0nm,0.4s
GYA Guiyang 29.07 117 P **P** **09 19 55.4 +0.8**
GYA pP sP 09 20 01.8 0.0
GYA PP **PnPn** **09 20 50.6 +3.8**
GYA PcP **PcP** **09 23 03.2 +0.7**
GYA S **S** **09 24 44.0 -1.6**
GYA SS **SnSn** **09 26 13.9 +4.4**
GYA ScP **ScP** **09 26 33.3 -10**
GYA Guiyang 29.07 117 ScS ScS 09 30 36.0 -1.4
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,120nm,5.4s
GYA LR LR
comp=N,560nm,16.8s
GYA LR LR
comp=E,510nm,17.2s
GYA LR LR
comp=Z,540nm,17.4s
CM31 Chiang Mai Arr 30.83 138 *e*P **P** **09 20 09.8 -0.3**
CMAR Chiang Mai Arr 30.83 138 P **P** **09 20 09.8 -0.3**
comp=Z,0.9nm,0.4s,baz=322,slow=9.6,SNR=9.5
CM01 Chiang Mai Arr 30.87 138 *e*P **P** **09 20 10.1 -0.4**
WHN Wuhan 31.79 102 ⇑P **P** **09 20 19.5 +1.1**
BR131 Keskin Array S 32.82 279 *e*P **P** **09 20 28.8 +1.1**
BRTR Keskin Array B 32.82 279 P **P** **09 20 28.7 +1.1**
comp=Z,2.7nm,0.8s,baz=93,slow=8.7,SNR=18
BRTR pP **sP** **09 20 35.9 +1.0**
comp=Z,5.2nm,0.8s,baz=97,slow=9.0,SNR=18
BRTR LR LR 09 34 38.5
comp=Z,29nm,20.8s,baz=73,slow=38
AKASG Malin Array Be 33.18 300 P **P** **09 20 30.6 +0.1**
comp=Z,0.4nm,0.3s,baz=70,slow=9.2,SNR=3.2
AKASG LR LR 09 34 52.9
comp=Z,158nm,19.4s,baz=100,slow=38
KIEV Kiev 33.19 300 *e*P **P** **09 20 30.0 -0.6**
KIEV pmax pmax
comp=Z,3.0nm,0.9s
KIEV Kiev 33.19 300 *e*P **P** **09 20 31.4 +0.8**
comp=Z,4.0nm,0.7s
BR231 Keskin MP Arra 33.40 279 *e*P **P** **09 20 29.9 -2.8**
APA Apatity 33.45 331 *e*P P 09 20 38.5 +5.9
APA MLR MLR
comp=Z,500nm,11.0s
NJ2 Nanjing 34.20 96 *e*P **P** **09 20 40.8 +1.3**
NJ2 pmax pmax
comp=Z,15nm,0.5s
VSU Vasula 34.37 314 *e*P P 09 20 47.0 +6.3
VSU pmax pmax
comp=Z,101nm,1.7s
FIA1 FINESS Array S 34.95 319 *e*P **P** **09 20 46.3 +0.7**
FINES FINESS Array B 34.95 319 P **P** **09 20 46.5 +0.8**
comp=Z,1.0nm,0.6s,baz=91,slow=7.6,SNR=7.0
FINES pP **sP** **09 20 52.8 -0.1**
comp=Z,8.2nm,0.6s,baz=111,slow=8.1,SNR=14
FINES LR LR 09 35 45.1
comp=Z,310nm,19.3s,baz=359,slow=37
YAK Yakutsk 35.23 40 pP pP 09 20 55.1 +1.9
comp=Z,27nm,0.6s,baz=84,slow=2.9,SNR=4.7
YAK Yakutsk 35.23 40 *e*P P 09 20 53.8 +5.8
YAK pmax pmax
comp=Z,32nm,0.9s
YAK pmax pmax
comp=E,14nm,1.3s
TESR Tescani 35.64 293 ⇓*i*P P 09 20 59.6 +7.8
ISP Isparta 35.81 277 *e*P **P** **09 20 53.9 +0.4**
ISP pmax pmax
comp=Z,18nm,1.3s
ISP Isparta 35.81 277 *e*P **P** **09 20 53.9 +0.4**
comp=Z,18nm,1.3s
BURAR Bucovina Array 36.32 295 ⇓*i*P **P** **09 20 59.0 +1.2**
BURAR Bucovina Array 36.32 295 ⇓P **P** **09 20 59.0 +1.2**
BUR08 Bucovina Ar. S 36.33 295 *e*P **P** **09 20 58.7 +0.9**
MLR Muntele Rosu 36.38 291 ⇑*i*P P 09 21 05.3 +7.0
MLR Muntele Rosu 36.38 291 ⇑P P 09 21 05.3 +7.0
MLR Muntele Rosu 36.38 291 *e*P **P** **09 21 00.2 +1.9**
MDJ Mudanjiang 36.78 70 P **P** **09 21 00.2 -1.4**
MDJ pmax pmax
comp=Z,5.0nm,0.5s
MDJ pmax pmax
comp=Z,660nm,4.2s
ARA0 ARCESS Array S 36.85 332 *e*P **P** **09 21 03.3 +1.4**
ARCES ARCESS Array B 36.85 332 P **P** **09 21 01.6 -0.3**
comp=Z,2.3nm,0.8s,baz=93,slow=7.9,SNR=5.9
ARCES pP **sP** **09 21 08.9 -0.3**
comp=Z,2.8nm,0.8s,baz=96,slow=9.0,SNR=4.3
ARCES LR LR 09 37 11.9
comp=Z,119nm,18.0s,baz=92,slow=38
VOIR 37.00 292 ⇑*i*P P 09 21 11.3 +7.8
VOIR 37.00 292 ⇑P P 09 21 11.3 +7.8
ARCR ARCALIA 37.02 294 ⇓*i*P **P** **09 21 04.5 +0.9**
KLR Kul'dur 37.03 62 *e*P **P** **09 21 04.8 +1.1**

TIXI Tiksi 37.24 24 P **P 09 21 05.2 0.0**
comp=Z,2.1nm,0.4s,baz=244,slow=4.4,SNR=6.1
TIXI pP **sP 09 21 12.5 +0.1**
comp=Z,17nm,0.9s,baz=259,slow=4.0,SNR=13
TIXI Tiksi 37.24 24 *eP* **P 09 21 04.5 -0.6**
TIXI pmax pmax
comp=Z,16nm,0.9s
TIXI Tiksi 37.24 24 *eP* **P 09 21 05.3 +0.2**
comp=Z,16nm,0.8s
TIXI pP **sP 09 21 12.5 +0.1**
ARR Arges 37.30 292 ⇓*iP* **P 09 21 08.7 +2.6**
KWP Kalwaria Pacla 37.49 299 ⇑*iP* **P 09 21 09.0 +1.4**
KWP Kalwaria Pacla 37.49 299 ⇑P **P 09 21 09.0 +1.4**
KOLS Kolonicke sedl 37.93 298 *e*PP PP 09 22 40.1 +2.3
KS01 Wonju Array Si 38.18 82 *eP* **P 09 21 13.4 -0.1**
DRGR 38.18 295 ⇓*iP* **P 09 21 12.6 -0.9**
DRGR 38.18 295 ⇓P **P 09 21 12.6 -0.9**
KSAR Wonju Array Be 38.19 82 P P 09 21 20.5 +6.9
KSAR Wonju Array Be 38.19 82 pP pP 09 21 20.4 +1.7
KSRS Korea Array 38.21 82 pP pP 09 21 20.4 +1.5
comp=Z,3.3nm,1.0s,baz=287,slow=7.5,SNR=4.7
VLA Vladivostok 38.83 71⇑*eP* **P 09 21 18.7 -0.2**
VLA *i* *PP **pP 09 21 22.1 -2.0**
VLA *e* *SP **sP 09 21 23.5 -2.6**
VLA *e* 09 22 48.2
VLA *e* 09 23 29.6
VLA *e*S **S 09 27 18.1 +2.4**
VLA pmax pmax
comp=Z,71nm,1.4s
OJC Ojcow 39.20 301 *eP* **P 09 21 22.6 +0.7**
OJC Ojcow 39.20 301 *eP* **P 09 21 22.6 +0.7**
BZS Buzias 39.25 293 ⇓*iP* **P 09 21 22.7 +0.3**
BZS Buzias 39.25 293 ⇓P **P 09 21 22.7 +0.3**
LAST Lasithi 40.63 276 ⇓*iP* **P 09 21 34.4 +0.3**
LAST Lasithi 40.63 276 *eP* **P 09 21 34.8 +0.8**
comp=Z,18nm,0.8s
IDI Anoyia 40.99 277 *eP* **P 09 21 37.1 0.0**
comp=Z,51nm,1.4s
HFS Hagfors 41.01 317 P **P 09 21 36.9 +0.1**
comp=Z,1.6nm,0.7s,baz=69,slow=7.9,SNR=4.4
HFS pP **sP 09 21 43.9 -0.2**
comp=Z,14nm,0.9s,baz=108,slow=9.8,SNR=12
HFS LR LR 09 39 14.1
comp=Z,332nm,18.0s,baz=102,slow=37
HFS Hagfors 41.01 317 P **P 09 21 36.9 +0.1**
HFS *PP **sP 09 21 43.9 -0.2**
HFS pmax pmax
comp=Z,14nm,0.9s
HFS pmax pmax
comp=Z,14nm,0.9s
HFS MLR MLR
comp=Z,332nm,18.0s
PKSM Moragy 41.04 295 ⇑*iP* P 09 21 30.0 -7.2
PKSM Moragy 41.04 295 ⇑P P 09 21 30.0 -7.2
DPC Dobruska-Polom 41.33 302 *eP* **P 09 21 41.0 +1.4**
DPC *ep*P **sP 09 21 47.6 +0.7**
DPC AMS AMS 09 39 20.0
comp=Z,200nm,20.6s
DPC Dobruska-Polom 41.33 302 *eP* **P 09 21 41.0 +1.4**
DPC *e* 09 21 47.6
DPC MLR MLR
comp=Z,200nm,20.6s
UPC Upice 41.48 302 AMS AMS 09 39 40.0
comp=Z,300nm,17.5s
NC405 NORSAR Array S 41.87 318 *eP* **P 09 21 43.8 -0.1**
NC602 NORSAR Array S 42.00 318 *eP* **P 09 21 44.6 -0.3**
NC303 NORSAR Array S 42.02 319 *eP* **P 09 21 45.8 +0.7**
NB2 NORSAR Subarra 42.12 318 P **P 09 21 45.6 -0.4**
comp=Z,4.9nm,0.7s,baz=83,slow=8.6
NOA NORSAR Array B 42.12 318 P **P 09 21 45.8 -0.2**
comp=Z,0.7nm,0.6s,baz=84,slow=8.0,SNR=5.2
NOA pP **sP 09 21 52.9 -0.4**
comp=Z,3.5nm,0.9s,baz=78,slow=8.9,SNR=9.0
NOA LR LR 09 39 57.4
comp=Z,277nm,18.4s,baz=85,slow=37
TREC Trest 42.13 300 AMS AMS 09 40 20.0
comp=Z,200nm,15.7s
NBO02 NORSAR Array S 42.29 318 *eP* **P 09 21 48.6 +1.3**
NC204 NORSAR Array S 42.31 319 *eP* **P 09 21 46.7 -0.8**
PVCC Panska Ves 42.36 302 AMS AMS 09 39 20.0
comp=Z,200nm,17.2s
JNU Nakatsue 42.37 86 LR LR 09 39 02.4
comp=Z,99nm,18.9s,baz=299,slow=36
GOPC GO Pecny, Ondr 42.39 301 AMS AMS 09 40 10.0
comp=Z,200nm,19.8s
PRU Pruhonice 42.52 302 AMS AMS 09 40 30.0
comp=Z,200nm,14.3s
CLL Collm 43.09 304 *eP* **P 09 21 55.0 +1.1**
CLL *i* 09 22 01.3
comp=Z,5.0nm,0.8s
CLL Collm 43.09 304 *eP* **P 09 21 55.0 +1.1**
CLL *i* 09 22 01.3
KONO Kongsberg 43.12 316 *eP* **P 09 21 56.4 +2.4**
KHC Kasperske Hory 43.38 301 AMS AMS 09 41 00.0
comp=Z,200nm,11.2s
GERES GERESS Array B 43.39 300 P **P 09 21 57.2 +0.8**
comp=Z,0.3nm,0.4s,baz=61,slow=9.3,SNR=5.0
GERES LR LR 09 43 15.7
comp=Z,79nm,18.1s,baz=86,slow=40
GERES GERESS Array B 43.39 300 P **P 09 21 57.3 +0.8**
GERES pmax pmax
comp=Z,1.0nm,0.7s
GERES MLR MLR
comp=Z,79nm,18.1s
TRI Trieste 44.41 296 *eP* **P 09 22 04.5 -0.1**
TRI pmax pmax
comp=Z,24nm,1.2s
TRI Trieste 44.41 296 *eP* **P 09 22 04.5 -0.1**
comp=Z,24nm,1.2s
PSI Prapat 44.81 149 *eP* **P 09 22 07.8 -0.4**
PSI pmax pmax
comp=Z,9.0nm,0.7s
PSI Prapat 44.81 149 *eP* **P 09 22 07.8 -0.4**
comp=Z,8.5nm,0.7s
CUC Castrocucco 45.30 288 *eP* **P 09 22 12.9 +1.1**
comp=Z,47nm,2.0s
MA2 Magadan 45.65 43 LR LR 09 42 07.6
comp=Z,169nm,18.8s,baz=287,slow=37
SEY Seymchan 45.67 38 *eP* **P 09 22 17.0 +2.6**
GSI Gunungsitoli 45.72 152 *eP* **P 09 22 15.9 +0.7**
comp=Z,30nm,1.1s
MJAR Matsushiro Arr 45.97 77 pP pP 09 22 24.7 +2.3
comp=Z,2.7nm,1.0s,baz=300,slow=9.4,SNR=4.6
FUORN Ofenpass-Fuorn 46.34 298 *eP* **P 09 22 21.0 +0.8**
comp=Z,9.4nm,1.4s
ERM Erimo 46.94 68 *eP* **P 09 22 23.6 -1.0**
ERM pmax pmax
comp=Z,50nm,1.3s
ERM Erimo 46.94 68 *eP* **P 09 22 23.6 -1.0**
comp=Z,50nm,1.3s
BILL Bilibino 49.95 29 *eP* **P 09 22 51.5 +4.1**
BILL *e* 09 24 06.7
BILL *e* 09 24 48.6
BILL pmax pmax
comp=Z,10.0nm,2.5s
BILL MLR MLR
comp=Z,133nm,18.0s
BILL Bilibino 49.95 29 *eP* **P 09 22 49.2 +1.8**
PETK Petropavlovsk- 51.38 49 LR LR 09 45 47.3
comp=Z,102nm,18.7s,baz=276,slow=37
KMBO Kilima Mbogo 57.35 230 LR LR 09 51 41.2
comp=Z,89nm,18.4s,baz=90,slow=40
ES19 SONSECA Array 58.70 297 *eP* **P 09 23 51.6 0.0**
ESDC Sonseca Array 58.75 297 P **P 09 23 51.8 -0.2**
comp=Z,0.9nm,0.6s,baz=57,slow=7.6,SNR=11
MLY Manley 65.31 20 *eP* **P 09 24 36.5 +0.9**
FYU Fort Yukon 65.34 17 *eP* **P 09 24 37.9 +2.2**
TTA Tatalina 65.52 24 *eP* **P 09 24 38.1 +1.1**
TTA Tatalina 65.52 24 *eP* **P 09 24 38.1 +1.1**
TT01 Tatalina 65.54 24 *eP* **P 09 24 38.3 +1.3**
INK Inuvik 65.98 12 P **P 09 24 39.7 -0.1**
comp=Z,1.1nm,0.6s,baz=356,slow=7.9,SNR=8.8
INK pP **sP 09 24 47.1 -0.2**
comp=Z,5.1nm,0.8s,baz=354,slow=8.5,SNR=16
MDM Murphy Dome 65.99 20 *eP* **P 09 24 40.6 +0.6**
comp=Z,7.4nm,0.8s
BPAW Bear Paw Mtn. 66.00 21 *eP* **P 09 24 40.2 +0.2**
comp=Z,11nm,0.9s
CAST Castle Rocks 66.25 22 *eP* **P 09 24 42.5 +0.8**
comp=Z,9.4nm,0.8s
KTH Kantishna Hill 66.46 21 *eP* **P 09 24 43.0 0.0**
comp=Z,15nm,0.9s
IL1 Eielson Array 66.47 19 *eP* **P 09 24 42.6 -0.4**
ILAR Eielson Array 66.47 19 P **P 09 24 42.9 -0.2**
comp=Z,1.4nm,0.7s,baz=326,slow=5.3,SNR=14
ILAR pP **sP 09 24 50.4 -0.2**
comp=Z,8.4nm,0.8s,baz=323,slow=4.8,SNR=36
ILAR LR LR 09 57 31.9
comp=Z,63nm,18.6s,baz=328,slow=39
ILB Eielson Array 66.47 19 *eP* **P 09 24 43.8 +0.7**
PPLA Purkeypile 66.64 22 *eP* **P 09 24 44.0 -0.3**
comp=Z,12nm,0.8s
AKUT Akutan 68.62 34 *eP* **P 09 24 57.9 +1.2**
comp=Z,36nm,0.7s
RC01 Rabbit Creek A 68.79 23 *eP* **P 09 24 58.3 +0.6**
comp=Z,14nm,0.8s
KDAK Kodiak Island 70.64 26 LR LR 09 59 16.8
comp=Z,44nm,18.2s,baz=326,slow=38
KDAK Kodiak Island 70.64 26 *ceP* P 09 25 16.5 +7.4
KDAK Kodiak Island 70.64 26 *eP* **P 09 25 09.2 +0.1**
comp=Z,16nm,0.8s
BALM Baldy 70.75 19 *eP* **P 09 25 10.5 +0.5**
BALM pmax pmax
comp=Z,16nm,1.3s
BALM Baldy 70.75 19 *eP* **P 09 25 10.4 +0.5**
comp=Z,16nm,1.3s
OHAK Old Harbor 70.86 27 *eP* **P 09 25 11.6 +1.1**
comp=Z,11nm,0.7s
TOA0 Torodi Ar. Sit 70.92 270 *eP* **P 09 25 10.4 -1.1**
TORD Torodi Ar. Bea 70.92 270 P **P 09 25 10.3 -1.2**
comp=Z,7.4nm,0.8s,baz=42,slow=5.5,SNR=51
TORD pP **pP 09 25 17.6 +0.6**
comp=Z,4.4nm,0.8s,baz=42,slow=5.4,SNR=11
YKW3 Yellowknife Ar 73.72 6 *eP* **P 09 25 27.0 -0.5**
comp=Z,6.7nm,0.9s
YKA Yellowknife Ar 73.78 6 P **P 09 25 27.3 -0.6**
comp=Z,1.4nm,0.6s,baz=349,slow=5.9,SNR=53
YKA pP **sP 09 25 34.8 -0.6**
comp=Z,4.6nm,0.8s,baz=349,slow=6.0,SNR=38
YKB5 Yellowknife Ar 73.78 6 *eP* **P 09 25 27.5 -0.3**
DBIC Dimbokro 80.02 270 P **P 09 26 02.3 -1.4**
comp=Z,3.4nm,0.7s,baz=19,slow=6.1,SNR=4.7
DBIC pP **PcP 09 26 10.7 -0.5**
comp=Z,6.9nm,0.9s,baz=27,slow=8.5,SNR=3.2
WRAB Tennant Creek 81.82 127 *eP* **P 09 26 12.2 -0.9**
WRAB pmax pmax
comp=Z,7.0nm,1.0s
WRAB Tennant Creek 81.82 127 *eP* **P 09 26 12.2 -0.9**
comp=Z,6.7nm,1.0s
WRA Warramunga Arr 81.82 127 P **P 09 26 11.9 -1.3**
comp=Z,3.6nm,0.9s,baz=328,slow=5.1,SNR=24
WRA pP **sP 09 26 20.1 -0.6**
comp=Z,2.9nm,0.9s,baz=327,slow=5.3,SNR=9.9
WB2 Warramunga Arr 81.83 127 *eP* **P 09 26 12.3 -0.9**
comp=Z,7.4nm,1.0s
TSUM Tsumeb 83.24 236 *eP* **P 09 26 20.8 0.0**
comp=Z,9.7nm,1.2s
LBTB Lobatse 83.33 226 *eP* **P 09 26 20.7 -0.3**
LBTB pmax pmax
comp=Z,21nm,1.5s
LBTB Lobatse 83.33 226 *eP* **P 09 26 20.7 -0.3**
comp=Z,21nm,1.5s
ASAR Alice Springs 84.51 130 P **P 09 26 25.8 -1.2**
comp=Z,1.7nm,0.9s,baz=320,slow=5.0,SNR=13
AS01 Alice Springs 84.54 130 *eP* **P 09 26 25.8 -1.3**
ULM Lac du Bonnet 86.35 356 LR LR 10 07 57.0
comp=Z,82nm,19.6s,baz=5.5,slow=38
GCMT Greycliff 90.74 5 *eP* **P 09 26 57.4 +0.3**
PDAR Pinedale Array 93.76 5 LR LR 10 14 32.5
comp=Z,50nm,18.1s,baz=61,slow=39
STKA Stephens Creek 95.15 130 LR LR 10 19 18.2
comp=Z,57nm,19.6s,baz=221,slow=41
LVC Limon Verde 145.37 296 *e*PKPbc **PKPab 09 33 33.0 +0.4**
TRQA Tornquist 149.19 266 *e*PKPbc **PKPbc 09 33 41.9 -0.3**

*ISCJB **01** 09:22:42.2±0.6, 6°.83N±0°.05×82°.43W±0°.04, h10km, mb3.5/5, MS3.4/8, Error ellipse: s-maj=7.2km s-min=4.3km az=29.9*
*CASC **01** 09:22:43.7±3.0, 6°.75N×82°.43W, h34km±70km, MD4.5*
*IDC **01** 09:22:46.2±4.9, 7°.74N×81°.92W, h0km, mb3.5/5, mb1 3.9/6, mb1mx3.7/27, mbtmp3.6/6, ML3.5/1, MS3.4/12, Ms1 3.4/12, ms1mx3.2/27, Error ellipse: s-maj=181.6km s-min=31.1km az=27.0*
*GCMT **01** 09:22:48.0±0.9, 6°.88N×82°.36W, h25km, MW4.9/63, Moment Tensor Solution. s34,c36; s63,c81; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr-0.17±.22; Mθθ2.94±.18; Mφφ-2.77±.21; Mrθ0.00±.38; Mφθ0.21±.14; Mφr0.17±.39; Best double couple: M0=2.86800×10^16 NP1:φs223.00000°, δ88.00000°, λ-177.00000°. NP2: φs133.00000°, δ87.00000°, λ-2.00000°. Principal axes: T 2.9480, Plg0.0000°, Azm358.0000°; N -0.1610, Plg86.0000°, Azm266.0000°; P -2.7890, Plg4.0000°, Azm88.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 01 09:22:43.9±1.0, 6°.89N±0°.07×82°.47W±0°.06, h10km, n36, σ1°39/36, mb3.7/5, MS3.3/8, 4C-2D, South of Panama

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TBS2		**1.90**	**354**	*eP*	**Pn**	**09 23 15.3**	**-1.2**
TBS2				*eS*	**Sb**	**09 23 40.9**	**-1.7**
BRU2	**Volcan**	**1.90**	**353**	⇑*iP*	**Pn**	**09 23 15.5**	**-1.0**
BRU2				*eS*	**Sb**	**09 23 42.9**	**+0.2**
PNME	**Penonome**	**2.65**	**53**	*eP*	**Pn**	**09 23 26.7**	**-0.1**
PNME				*eS*	**Sn**	**09 23 59.7**	**+0.7**
BUS	**Buena Vista**	**2.94**	**334**	⇑*iP*	**Pn**	**09 23 31.0**	**0.0**
BUS				*eS*	**Sn**	**09 24 03.6**	**-3.0**
QCR	**Quepos**	**3.02**	**326**	⇑*iP*	**Pn**	**09 23 31.1**	**-0.8**
URSC	**Urasca**	**3.20**	**336**	*eP*	**Pn**	**09 23 34.5**	**0.0**
URSC				*eS*	**Sb**	**09 24 17.6**	**-2.5**
BCIP	**Isla Barro Col**	**3.45**	**49**	*eP*	**Pn**	**09 23 36.6**	**-1.2**
BCIP				*eS*	**Sn**	**09 24 17.6**	**-1.2**
BCIP	**Isla Barro Col**	**3.45**	**49**	*eP*	**Pn**	**09 23 36.5**	**-1.2**
BCIP				*eS*	**Sn**	**09 24 19.9**	**+1.2**
BCIP				*i*		09 24 32.1	
	comp=Z,144nm,0.7s						
HDC	**Heredia**	**3.49**	**332**	⇑*iP*	**Pn**	**09 23 39.1**	**+0.6**
HDC				*eS*	**Sn**	**09 24 22.6**	**+2.7**
UPA	**Univ. de Panam**	**3.58**	**54**	*eP*	**Pn**	**09 23 37.6**	**-1.9**
UPA				*eS*	**Sn**	**09 24 20.6**	**-1.2**
CGA2	**Cerro Gallo 2**	**3.68**	**328**	*eP*	**Pn**	**09 23 41.0**	**0.0**
JCR	**Jicaral**	**3.93**	**319**	⇓*iP*	**Pn**	**09 23 44.4**	**-0.1**
JTS	**JuntasAbangare**	**4.17**	**324**	⇓*iP*	**Pn**	**09 23 48.5**	**+0.7**
JTS				*eS*	**Sn**	**09 24 37.2**	**+0.6**
UPD2	**Meteti**	**4.71**	**69**	*eP*	**Pn**	**09 23 56.0**	**+0.9**
SOLC	**Bahia Solano**	**5.08**	**97**	*eP*	**Pn**	**09 23 56.8**	**-3.3**
SOLC				*i*		09 24 11.2	
	comp=Z,8.5nm,0.3s						
HELC	**Santa Helena**	**6.93**	**95**	*eP*	**Pn**	**09 24 25.5**	**-0.5**
HELC				*i*		09 24 40.6	
	comp=Z,7.1nm,0.5s						
MOTC	**Monteria, Cord**	**7.00**	**74**	*eP*	**Pn**	**09 24 25.8**	**-0.8**
MOTC				*i*		09 24 52.4	
	comp=Z,4.0nm,0.7s						
GUYC	**Guyana, Colomb**	**7.24**	**103**	*eP*	**Pn**	**09 24 31.7**	**+1.4**
CRUC	**La Cruz**	**7.63**	**134**	*eP*	**Pn**	**09 24 35.0**	**-0.6**
PRAC	**Prado**	**8.19**	**112**	*eP*	**Pn**	**09 24 43.9**	**+0.9**
TEIG	**Tepich**	**14.40**	**338**	LR	LR	09 31 45.8	
	comp=Z,128nm,18.2s,baz=18,slow=39						
ATAH	**Atahualpa**	**14.52**	**164**	LR	LR	09 31 04.3	
	comp=Z,272nm,19.3s,baz=356,slow=33						
CMIG	**Matias Romero**	**15.80**	**311**	Pn	**P**	**09 26 29.8**	**-0.8**
	comp=Z,0.2nm,0.3s,baz=90,slow=9.7,SNR=9.7						
CMIG				LR	LR	09 31 37.0	
	comp=Z,166nm,20.7s,baz=127,slow=34						
SJG	**San Juan**	**19.43**	**53**	LR	LR	09 34 15.3	
	comp=Z,48nm,18.8s,baz=238,slow=37						
PTGA	**Pitinga**	**23.70**	**108**	LR	LR	09 36 58.4	
	comp=Z,51nm,19.4s,baz=290,slow=36						
LPAZ	**La Paz**	**27.05**	**148**	LR	LR	09 39 52.2	
	comp=Z,166nm,20.2s,baz=324,slow=37						
TKL	**Tuckaleechee C**	**28.66**	**358**	LR	LR	09 40 29.9	
	comp=Z,55nm,19.4s,baz=230,slow=38						
TXAR	**Lajitas Array**	**29.96**	**321**	**P**	**P**	**09 28 53.6**	**+1.0**
	comp=Z,0.3nm,0.8s,baz=110,slow=11,SNR=2.6						
TXAR				LR	LR	09 41 03.0	
	comp=Z,50nm,18.3s,baz=0.0,slow=37						
CPUP	**Villa Florida**	**41.06**	**145**	LR	LR	09 50 00.4	
	comp=Z,61nm,18.1s,baz=316,slow=39						
PDAR	**Pinedale Array**	**42.98**	**331**	LR	LR	09 50 27.2	
	comp=Z,30nm,19.0s,baz=110,slow=39						
NVAR	**Mina Array Bea**	**45.09**	**320**	P	**P**	**09 31 02.8**	**+2.2**
	comp=Z,0.7nm,0.7s,baz=127,slow=6.9,SNR=6.0						
YBH	**Yreka Blue Hor**	**49.73**	**321**	LR	LR	09 54 21.7	
	comp=Z,42nm,18.3s,baz=146,slow=38						
NEW	**Newport**	**50.62**	**331**	LR	LR	09 55 07.3	
	comp=Z,67nm,20.4s,baz=112,slow=39						
YKA	**Yellowknife Ar**	**60.27**	**343**	P	**P**	**09 32 52.2**	**-0.1**
	comp=Z,0.6nm,0.8s,baz=139,slow=7.0,SNR=11						
ILAR	**Eielson Array**	**73.05**	**336**	**P**	**P**	**09 34 13.5**	**-0.5**
	comp=Z,0.5nm,0.7s,baz=112,slow=4.5,SNR=6.2						
TORD	**Torodi Ar. Bea**	**82.81**	**78**	P	**P**	**09 35 09.6**	**+0.5**
	comp=Z,0.3nm,0.6s,baz=263,slow=2.3,SNR=2.7						

*NIED **01** 09:32:00, 38°.60N×141°.90E, h50km, Mw4.2 Best double couple: M0=1.90000×10^15 NP1:φs220.00000°, δ17.00000°, λ106.00000°. NP2:φs23.00000°, δ74.00000°, λ85.00000°.*
*ISCJB **01** 09:32:09.7±0.6, 38°.63N±0°.05×142°.11E±0°.07, h41km, mb3.8/17, MS3.4/9, Error ellipse: s-maj=9.2km s-min=5.6km az=135.7*
*JMA **01** 09:32:12.2±0.1, 38°.64N×141°.89E, h47km±1km, M3.9*
JMA Felt II J1.
*IDC **01** 09:32:13.5±2.5, 38°.65N×141°.83E, h61km±21km, mb3.6/17, mb1 3.8/20, mb1mx3.6/38, mbtmp3.8/20, ML3.3/3, MS3.3/11, Ms1 3.3/11, ms1mx3.0/37, Error ellipse: s-maj=22.0km s-min=16.5km az=136.0*

ISC 01 09:32:11.6±0.7, 38°.67N±0°.07×141°.96E±0°.09, h41km, n40, σ0°95/31, mb3.8/17, MS3.4/9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.47**	**331**	P	**Pn**	**09 32 22.9**	**+0.9**
OFUJ				S	**Sn**	**09 32 30.4**	**+1.1**
JIO	**Ouri**	**0.53**	**246**	P	**Pn**	**09 32 22.8**	**+0.1**
JIO				S	**Sn**	**09 32 30.1**	**-0.5**
JMK	**Ichinoseki**	**0.65**	**296**	P	**Pn**	**09 32 24.7**	**+0.4**
JOM	**Ohasama**	**0.96**	**327**	P	**Pn**	**09 32 29.2**	**+0.6**
JOU	**Okura**	**1.06**	**254**	P	**Pn**	**09 32 29.9**	**-0.1**
MJAR	**Matsushiro Arr**	**3.66**	**236**	P	**Pn**	**09 33 07.2**	**+1.5**
	3.0nm,0.3s,baz=40,slow=12,SNR=34						
MJAR				LR	LR	09 34 52.3	
	comp=Z,150nm,19.3s,baz=25,slow=45						
MAT	**Matsushiro**	**3.66**	**236**	P	**Pn**	**09 33 07.1**	**+1.4**
MAT				eS	**Sn**	**09 33 49.8**	**+2.2**
ASAJ	**Asahikawa**	**5.46**	**5**	P	**Pn**	**09 33 31.4**	**+1.0**
	2.0nm,0.3s,baz=204,slow=10,SNR=16						
ASAJ				S	**Sn**	**09 34 30.5**	**-1.5**
	2.5nm,0.3s,baz=77,slow=19,SNR=2.4						
USRK	**Ussuriysk Ar.**	**9.30**	**310**	P	**Pn**	**09 34 24.1**	**+1.1**
	0.4nm,0.3s,baz=119,slow=14,SNR=6.3						
KSRS	**Korea Array**	**11.14**	**268**	P	Pn	09 34 53.3	+5.1
	0.2nm,0.3s,baz=83,slow=15,SNR=3.4						
KLR	**Kul'dur**	**12.86**	**329**	LR	LR	09 39 44.9	
	comp=Z,113nm,21.6s,baz=160,slow=35						
MA2	**Magadan**	**21.67**	**12**	P	**P**	**09 36 58.8**	**+0.5**
	3.8nm,0.6s,baz=213,slow=13,SNR=4.4						
SEY	**Seymchan**	**25.11**	**11**	P	**P**	**09 37 33.4**	**+1.2**
	4.1nm,0.8s,baz=209,slow=5.5,SNR=12						
SONM	**Songino Array**	**27.27**	**301**	LR	LR	09 48 56.9	
	comp=Z,39nm,19.9s,baz=62,slow=37						
H11N2	**WAKE ISLAND Hy 28.66**	**124**		T	T	10 08 26.9	
	baz=317,slow=76,SNR=562						
H11N1	**WAKE ISLAND Hy 28.66**	**124**		T	T	10 08 27.7	
	baz=317,slow=76,SNR=1119						
H11N3	**WAKE ISLAND Hy 28.67**	**124**		T	T	10 08 28.4	
	baz=317,slow=76,SNR=672						
H11S1	**WAKE ISLAND Hy 29.43**	**126**		T	T	10 09 19.7	
	baz=318,slow=76,SNR=146						
H11S3	**WAKE ISLAND Hy 29.43**	**126**		T	T	10 09 19.8	
	baz=318,slow=76,SNR=172						
H11S2	**WAKE ISLAND Hy 29.44**	**126**		T	T	10 09 21.0	
	baz=318,slow=76,SNR=166						
ZALV	**Zalesovo Beam**	**41.15**	**311**	P	**P**	**09 39 50.9**	**-0.7**
	1.8nm,0.4s,baz=91,slow=7.9,SNR=8.3						
NRIK	**Noril'sk**	**41.97**	**334**	LR	LR	09 58 20.6	
	comp=Z,53nm,19.3s,baz=124,slow=37						
MKAR	**Makanchi Array**	**43.64**	**301**	P	**P**	**09 40 11.6**	**-0.3**
	1.9nm,0.8s,baz=88,slow=9.5,SNR=19						
MKAR				LR	LR	09 58 45.3	
	comp=Z,28nm,19.3s,baz=162,slow=36						
ILAR	**Eielson Array**	**47.89**	**33**	P	**P**	**09 40 45.5**	**+0.3**
	0.5nm,0.6s,baz=272,slow=6.5,SNR=7.9						
INK	**Inuvik**	**52.74**	**28**	P	**P**	**09 41 22.0**	**+0.3**
	0.9nm,0.8s,baz=304,slow=3.6,SNR=4.7						
WRA	**Warramunga Arr**	**58.74**	**188**	P	**P**	**09 42 04.2**	**-1.1**
	0.4nm,0.8s,baz=7.3,slow=7.1,SNR=6.1						
YKA	**Yellowknife Ar**	**62.18**	**31**	P	**P**	**09 42 28.6**	**+0.3**
	0.2nm,0.7s,baz=302,slow=6.9,SNR=6.8						
ASAR	**Alice Springs**	**62.47**	**188**	pP	pP	09 42 44.1	+1.5
	1.4nm,0.7s,baz=40,slow=5.0,SNR=17						
ARCES	**ARCESS Array B**	**62.62**	**339**	LR	LR	10 11 31.3	
	comp=Z,18nm,21.4s,baz=38,slow=38						
FINES	**FINESS Array B**	**67.57**	**332**	P	**P**	**09 43 03.1**	**-0.2**
	1.9nm,0.8s,baz=7.0,slow=17,SNR=6.1						
FINES				LR	LR	10 13 41.2	
	comp=Z,35nm,18.8s,baz=194,slow=37						
KBZ	**Khabaz**	**70.17**	**310**	P	**P**	**09 43 19.9**	**+0.1**
	2.7nm,0.9s,baz=6.6,slow=2.9,SNR=6.3						
HFS	**Hagfors**	**72.78**	**336**	P	**P**	**09 43 34.8**	**-0.5**
	1.3nm,0.6s,baz=55,slow=5.6,SNR=4.9						
NB2	**NORSAR Subarra**	**72.85**	**337**	P	**P**	**09 43 34.7**	**-1.1**
	comp=Z,2.4nm,0.9s,baz=39,slow=6.2						
NOA	**NORSAR Array B**	**72.85**	**337**	P	**P**	**09 43 35.1**	**-0.6**
	comp=Z,1.3nm,0.8s,baz=38,slow=6.0,SNR=4.9						
NOA				LR	LR	10 18 02.5	
	comp=Z,19nm,21.9s,baz=20,slow=38						
AKASG	**Malin Array Be**	**73.27**	**322**	P	**P**	**09 43 37.8**	**-0.6**
	comp=Z,0.5nm,0.4s,baz=40,slow=5.0,SNR=6.0						
PDAR	**Pinedale Array**	**76.22**	**46**	P	**P**	**09 43 56.8**	**+0.9**
	comp=Z,0.2nm,0.5s,baz=227,slow=4.8,SNR=4.3						
BRTR	**Keskin Array B**	**78.09**	**312**	P	**P**	**09 44 05.4**	**-1.0**
	comp=Z,0.5nm,0.7s,baz=128,slow=2.0,SNR=3.6						
BRTR				LR	LR	10 21 38.4	
	comp=Z,17nm,18.8s,baz=356,slow=38						
GERES	**GERESS Array B**	**81.55**	**328**	P	**P**	**09 44 23.7**	**-1.2**
	comp=Z,0.3nm,0.3s,baz=36,slow=8.5,SNR=3.9						
RPZ	**Rata Peaks**	**86.13**	**159**	LR	LR	10 20 56.5	
	comp=Z,58nm,21.0s,baz=295,slow=34						
TXAR	**Lajitas Array**	**88.78**	**53**	P	**P**	**09 45 02.1**	**+0.7**
	comp=Z,0.2nm,0.7s,baz=306,slow=3.1,SNR=3.6						
TXAR				LR	LR	10 21 42.0	
	comp=Z,34nm,21.2s,baz=0.0,slow=33						

*NIED **01** 09:36:00, 36°.60N×140°.60E, h35km, Mw3.7 Best double couple: M0=4.24000×10^14 NP1:φs327.00000°, δ12.00000°, λ-100.00000°. NP2:φs157.00000°, δ78.00000°, λ-88.00000°.*
*IDC **01** 09:36:29.4±1.1, 36°.46N×140°.66E, h0km, mb3.4/4, mb1 3.6/6, mb1mx3.4/40, mbtmp3.5/6, ML3.1/2, Error ellipse: s-maj=22.7km s-min=21.9km az=80.0*
*ISCJB **01** 09:36:32.1±0.8, 36°.58N±0°.05×140°.70E±0°.07, h28km±4km, mb3.4/4, Error ellipse: s-maj=10.9km s-min=6.3km az=43.0*
*JMA **01** 09:36:33.7, 36°.63N×140°.56E, h22km±1km, M3.9 Broadband fault plane solution: P waves. NP1: φs162.00000°, δ80.00000°, λ-91.00000°. NP2: φs350.00000°, δ10.00000°, λ-82.00000°. Principal axes: T Plg35.0000°, Azm253.0000°; N Plg1.0000°, Azm162.0000°; P Plg55.0000°, Azm70.0000°;*
JMA Felt III J1.

ISC 01 09:36:33.2±0.9, 36°.61N±0°.05×140°.60E±0°.06, h24km±6km, n19, σ0°98/19, mb3.4/4, 2C-2D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.02**	**270**	⇓P	**Pb**	**09 36 37.4**	**0.0**
JHO				S	**Sb**	**09 36 39.8**	**-0.4**
JYT	**Yasato**	**0.50**	**220**	P	**Pb**	**09 36 43.5**	**+0.1**
JYT				S	**Sb**	**09 36 50.4**	**+0.1**

0.5nm,0.7s,baz=107,slow=9.7,SNR=2.6
H11N2 WAKE ISLAND Hy 28.50 119 T T 10 12 09.8
baz=313,slow=75,SNR=51
H11N1 WAKE ISLAND Hy 28.51 119 T T 10 12 16.4
baz=313,slow=75,SNR=58
H11N3 WAKE ISLAND Hy 28.52 119 T T 10 12 17.2
baz=313,slow=75,SNR=51
H11S1 WAKE ISLAND Hy 29.19 121 T T 10 13 06.1
baz=314,slow=76,SNR=138
H11S3 WAKE ISLAND Hy 29.19 121 T T 10 13 06.3
baz=314,slow=76,SNR=92
H11S2 WAKE ISLAND Hy 29.21 121 T T 10 13 09.0
baz=314,slow=76,SNR=114
ILAR Eielson Array 50.20 32 P **P** **09 45 28.1 +1.5**
0.3nm,0.7s,baz=261,slow=4.5,SNR=3.7
WRA Warramunga Arr 56.56 187 P **P** **09 46 14.0 +0.2**
0.4nm,0.5s,baz=1.2,slow=7.4,SNR=12
ASAR Alice Springs 60.28 187 P **P** **09 46 36.9 -2.9**
0.4nm,1.1s,baz=27,slow=10,SNR=3.4

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*IDC **01** 09:49:15.6±2.6, 14°.98N×42°.15E, h0km, mb3.6/6, mb1 3.7/6, mb1mx3.5/34, mbtmp3.6/6, Error ellipse: s-maj=63.8km s-min=28.0km az=167.0*
*ISCJB **01** 09:49:16.2±1.0, 15°.2N±0°.1×42°.23E±0°.06, h8km, mb3.6/6, Error ellipse: s-maj=18.3km s-min=8.2km az=8.0*
ISC 01 09:49:17.1±1.2, 15°.1N±0°.2×42°.30E±0°.08, h8km, n8, σ1§40/10, mb3.8/6, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HAJJ	**Hajjah**	**1.38**	**65**	*i* P	**Pn**	**09 49 41.2**	**-1.7**
HAJJ				*i* S	**Sb**	**09 49 60.0**	**-1.1**
HAJJ				AML	AML	09 50 18.2	
	comp=Z,2μm,0.5s						
DHBB	**Dhamar BB**	**2.10**	**105**	*i* P	**Pb**	**09 49 55.6**	**0.0**
DHBB				*e*		09 49 55.9	
	baz=281,slow=1.9						
DHBB				*i* S	**Sn**	**09 50 20.2**	**+0.9**
BRTR	**Keskin Array B**	**25.65**	**344**	P	**P**	**09 54 49.1**	**+1.6**
	comp=Z,0.5nm,0.8s,baz=179,slow=8.6,SNR=4.0						
TORD	**Torodi Ar. Bea**	**39.38**	**272**	P	**P**	**09 56 46.2**	**-1.5**
	comp=Z,0.7nm,0.9s,baz=87,slow=8.5,SNR=4.3						
GERES	**GERESS Array B**	**40.99**	**331**	P	**P**	**09 56 60.0**	**-0.6**
	comp=Z,1.6nm,0.9s,baz=159,slow=4.0,SNR=7.9						
MKAR	**Makanchi Array**	**45.83**	**38**	P	**P**	**09 57 40.8**	**+1.1**
	comp=Z,1.0nm,0.9s,baz=239,slow=4.7,SNR=5.6						
ZALV	**Zalesovo Beam**	**50.95**	**31**	P	**P**	**09 58 19.9**	**+0.8**
	comp=Z,0.5nm,0.3s,baz=248,slow=7.6,SNR=3.3						
SONM	**Songino Array**	**61.58**	**44**	P	**P**	**09 59 36.6**	**+1.4**
	comp=Z,0.3nm,0.3s,baz=255,slow=5.7,SNR=3.1						

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*CSEM **01** 09:56:23.9±0.5, 80°.41N×0°.48W, h10km, ML3.2, Error ellipse: s-maj=15.5km s-min=5.7km az=1.0*
*BER **01** 09:56:27.7±5.7, 80°.49N×1°.00E, h15km±134km, MD2.3, ML2.7, ML3.3(NAO)*
*IDC **01** 09:56:30.0±5.8, 80°.04N×0°.90E, h0km, mb3.3/2, mb1 3.5/3, mb1mx3.1/38, mbtmp3.4/3, ML3.2/1, MS2.7/1, Ms1 2.7/1, ms1mx2.3/28, Error ellipse: s-maj=111.0km s-min=38.4km az=73.0*
ISC 01 09:56:30.7±1.7, 79°.8N±0°.2×1°.06E±0°.08, h10km, n28, σ1§42/38, 1C, Greenland Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KBS	**Kingsbay**	**2.20**	**108**	Pn	**Pn**	**09 57 06.5**	**-0.7**
KBS				Sn	**Sn**	**09 57 33.2**	**-1.2**
KBS	**Kingsbay**	**2.20**	**108**	Pn	**Pn**	**09 57 06.5**	**-0.7**
KBS				Sn	**Sn**	**09 57 33.2**	**-1.2**
KBS				IAML		09 57 36.5	
	comp=Z,56nm,0.3s						
KBS	**Kingsbay**	**2.20**	**108**	⇑*i* P	**Pn**	**09 57 06.6**	**-0.7**
	SNR=54						
KBS				*i* S	**Sn**	**09 57 33.2**	**-1.2**
	SNR=57						
BRBA	**Barentsburg A**	**3.08**	**118**	Pn	**Pn**	**09 57 20.8**	**+1.6**
	SNR=55						
SPA0	**Spitsbergen Ar**	**3.35**	**111**	Pn	**Pn**	**09 57 23.3**	**+0.2**
	baz=338,slow=9.3						
SPA0				Sn	**Sn**	**09 58 02.9**	**+0.1**
	baz=352,slow=14						
SPA0	**Spitsbergen Ar**	**3.35**	**111**	Pn	**Pn**	**09 57 23.3**	**+0.2**
	baz=338,slow=9.3						
SPA0				*e*		09 57 24.7	
SPA0				Sn	**Sn**	**09 58 02.9**	**+0.1**
	baz=352,slow=14						
SPA0				IAML		09 58 07.4	
	comp=Z,48nm,0.4s						
SPA0	**Spitsbergen Ar**	**3.35**	**111**	Pn	**Pn**	**09 57 23.3**	**+0.2**
	SNR=55						
SPA0				Sn	**Sn**	**09 58 02.9**	**+0.1**
	SNR=55						
HSPB	**Hornsund (broa**	**4.04**	**127**	*e*P	**Pn**	**09 57 33.7**	**+1.2**
HSPB				Sn	**Sn**	**09 58 20.9**	**+1.2**
HSPB				IAML		09 58 27.9	
	comp=Z,45nm,0.6s						
HSPB	**Hornsund (broa**	**4.04**	**127**	*e*P	**Pn**	**09 57 33.7**	**+1.2**
	SNR=53						
HOPEN	**Hopen**	**5.89**	**112**	*e*P	**Pn**	**09 57 57.4**	**-0.4**
HOPEN				*e*S	**Sn**	**09 59 02.8**	**-2.4**
HOPEN				IAML		09 59 06.2	
	comp=Z,16nm,0.3s						
HOPEN	**Hopen**	**5.89**	**112**	*e*P	**Pn**	**09 57 57.4**	**-0.4**
	SNR=53						
JNW	**Jan Mayen West**	**9.11**	**200**	*e*P	**Pn**	**09 58 42.6**	**+0.6**
JNW	**Jan Mayen West**	**9.11**	**200**	*e*P	**Pn**	**09 58 42.6**	**+0.6**
	SNR=51						
JNE	**Jan Mayen East**	**9.14**	**200**	*e*P	**Pn**	**09 58 42.9**	**+0.5**
JNE	**Jan Mayen East**	**9.14**	**200**	*e*P	**Pn**	**09 58 42.9**	**+0.5**
	SNR=51						
JMIC	**Jan Mayen**	**9.16**	**200**	*e*P	**Pn**	**09 58 42.5**	**-0.2**
JMIC	**Jan Mayen**	**9.16**	**200**	*e*P	**Pn**	**09 58 42.5**	**-0.2**
	SNR=51						
SCO	**Scoresbysund**	**10.92**	**224**	*i* P	**Pn**	**09 59 04.4**	**-2.3**
	SNR=51						
ARA0	**ARCESS Array S**	**11.99**	**136**	Pn	**Pn**	**09 59 22.3**	**+1.0**
	baz=345,slow=12						
ARA0				Sn	**Sn**	**10 01 32.4**	**-2.5**
	baz=355,slow=22						
ARA0	**ARCESS Array S**	**11.99**	**136**	Pn	**Pn**	**09 59 22.3**	**+1.0**
	baz=345,slow=12						
ARA0				Sn	**Sn**	**10 01 32.4**	**-2.5**
	baz=355,slow=22						
ARA0	**ARCESS Array S**	**11.99**	**136**	Pn	**Pn**	**09 59 22.3**	**+1.0**
	SNR=55						
ARCES	**ARCESS Array B**	**11.99**	**136**	Pn	**Pn**	**09 59 23.1**	**+1.8**
	comp=Z,0.2nm,0.3s,baz=342,slow=12,SNR=10						
ARCES				Sn	**Sn**	**10 01 32.5**	**-2.4**
	comp=Z,0.1nm,0.3s,baz=356,slow=21,SNR=3.6						
FIA0	**FINESS Array S**	**19.85**	**143**	P	**P**	**10 01 03.7**	**+2.3**
	baz=331,slow=10						
FIA0	**FINESS Array S**	**19.85**	**143**	P	**P**	**10 01 03.7**	**+2.3**
	baz=331,slow=10						
FIA0	**FINESS Array S**	**19.85**	**143**	P	**P**	**10 01 03.7**	**+2.3**
	SNR=51						
FINES	**FINESS Array B**	**19.85**	**143**	P	**P**	**10 01 03.5**	**+2.2**
	comp=Z,1.4nm,0.9s,baz=297,slow=8.4,SNR=5.6						
ZALV	**Zalesovo Beam**	**36.38**	**82**	LR	LR	10 22 47.7	
	comp=Z,11nm,20.3s,baz=220,slow=43						
MKAR	**Makanchi Array**	**42.81**	**88**	P	**P**	**10 04 28.9**	**+0.8**
	comp=Z,0.4nm,0.6s,baz=346,slow=6.5,SNR=4.8						

IDC 01 10:04:46.9±2.4, 36°.57N×144°.55E, h0km, mb3.3/2, mb1 3.6/4, mb1mx3.3/42, mbtmp3.5/4, ML3.6/2, Error ellipse: s-maj=59.0km s-min=30.0km az=73.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**5.11**	**272**	Pn	Pn	10 06 05.0	+0.4
	1.8nm,0.3s,baz=76,slow=17,SNR=25						
MAT	**Matsushiro**	**5.11**	**272**	P	Pn	10 06 05.4	+0.7
MAT				*e*S	Sn	10 06 56.1	-8.3
ASAJ	**Asahikawa**	**7.69**	**349**	Pn	Pn	10 06 41.1	+1.1
	1.0nm,0.3s,baz=197,slow=9.9,SNR=9.3						
MKAR	**Makanchi Array**	**46.49**	**303**	P	P	10 13 14.8	-0.9
	0.1nm,0.3s,baz=77,slow=6.5,SNR=4.3						
WRA	**Warramunga Arr**	**57.02**	**191**	P	P	10 14 34.6	0.0
	0.3nm,0.7s,baz=9.6,slow=7.0,SNR=3.2						

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*ISCJB **01** 10:11:38.3±0.8, 25°.18S±0°.09×179°.6E±0°.1, h493km, mb3.8/8, Error ellipse: s-maj=17.1km s-min=11.4km az=169.5*
*IDC **01** 10:11:41.0±1.3, 25°.47S×179°.76E, h533km±15km, mb3.4/7, mb1 3.6/9, mb1mx3.2/32, mbtmp4.3/9, Error ellipse: s-maj=27.1km s-min=14.0km az=161.0*
ISC 01 10:11:38.1±0.9, 25°.3S±0°.1×179°.8E±0°.1, h493km, n17, σ1§46/17, mb3.8/8, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**4.43**	**153**	P	P	10 13 03.5	+4.0
	268nm,0.3s,baz=87,slow=7.6,SNR=26						
DZM	**Mont Dzumac**	**12.65**	**282**	P	**P**	**10 14 25.6**	**+1.9**
	0.7nm,0.3s,baz=322,slow=18,SNR=8.2						
URZ	**Urewera**	**13.11**	**189**	P	**P**	**10 14 27.5**	**-0.7**
	1.9nm,0.3s,baz=278,slow=3.3,SNR=16						
URZ				S	**S**	**10 16 49.7**	**+1.1**
	0.8nm,0.3s,baz=216,slow=19,SNR=5.1						
CTA	**Charters Tower**	**31.32**	**273**	P	**P**	**10 17 18.1**	**+0.6**
	8.9nm,0.4s,baz=93,slow=10,SNR=32						
STKA	**Stephens Creek**	**34.04**	**250**	P	**P**	**10 17 40.9**	**+0.4**
	1.6nm,0.5s,baz=95,slow=12,SNR=7.4						
ASAR	**Alice Springs**	**41.64**	**262**	P	**P**	**10 18 42.5**	**-0.2**
	1.9nm,0.3s,baz=101,slow=8.0,SNR=24						
ASAR				S	**S**	**10 24 22.1**	**-1.1**
	0.5nm,0.7s,baz=110,slow=15,SNR=4.9						
WRA	**Warramunga Arr**	**42.14**	**268**	P	**P**	**10 18 45.9**	**-0.9**
	5.0nm,0.8s,baz=100,slow=7.1,SNR=93						
WRA				S	**S**	**10 24 26.6**	**-3.9**
	1.1nm,1.0s,baz=105,slow=13,SNR=3.2						
KSRS	**Korea Array**	**79.20**	**320**	P	**P**	**10 22 51.9**	**+0.6**
	1.4nm,0.6s,baz=132,slow=6.9,SNR=6.1						
PETK	**Petropavlovsk-**	**80.42**	**347**	P	**P**	**10 22 57.5**	**+0.1**
	2.3nm,0.6s,baz=116,slow=7.7,SNR=9.7						
CMAR	**Chiang Mai Arr**	**89.84**	**290**	P	**P**	**10 23 45.8**	**+1.6**
	0.6nm,0.6s,baz=124,slow=3.6,SNR=4.4						
ILAR	**Eielson Array**	**93.44**	**14**	P	**P**	**10 23 58.7**	**-0.9**
	0.2nm,0.6s,baz=227,slow=4.8,SNR=3.9						
ARCES	**ARCESS Array B**	**133.22**	**348**	PKhKP	PKPpre	10 29 48.6	
	1.6nm,0.9s,baz=127,slow=0.9,SNR=7.5						
ARCES				PKP	**PKiKP**	**10 29 57.0**	**-0.8**
	0.5nm,0.5s,baz=92,slow=2.9,SNR=9.0						
ARCES				SKP		10 32 38.8	
	3.0nm,1.1s,baz=28,slow=5.9,SNR=4.4						
FINES	**FINESS Array B**	**139.71**	**341**	PKhKP	PKPpre	10 30 00.5	
	0.5nm,0.4s,baz=17,slow=3.5,SNR=7.4						
FINES				PKP	**PKPdf**	**10 30 09.3**	**+0.6**
	0.5nm,0.3s,baz=66,slow=4.8,SNR=3.4						
NB2	**NORSAR Subarra**	**143.44**	**351**	PKP	PKPab	10 30 12.9	-0.7
	comp=Z,3.1nm,0.6s,baz=16,slow=3.3						
NOA	**NORSAR Array B**	**143.44**	**351**	PKP	PKPbc	10 30 13.2	-0.7
	comp=Z,4.1nm,0.8s,baz=22,slow=3.9,SNR=13						
AKASG	**Malin Array Be**	**146.04**	**326**	PKPbc	**PKPbc**	**10 30 21.0**	**-1.0**
	comp=Z,1.4nm,0.4s,baz=41,slow=4.6,SNR=5.6						
BRTR	**Keskin Array B**	**148.25**	**305**	PKPbc	**PKPbc**	**10 30 27.9**	**-0.6**
	comp=Z,0.7nm,0.5s,baz=60,slow=1.4,SNR=5.1						

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*NIED **01** 10:22:00, 36°.00N×140°.90E, h44km, Mw4.6 Best double couple: M0=9.98000×10^15 NP1:φ=213.00000°, δ=15.00000°, λ=105.00000°. NP2:φ=17.00000°, δ=76.00000°, λ=86.00000°.*
*ISCJB **01** 10:22:41.2±0.3, 35°.84N±0°.03×140°.73E±0°.03, h52km±3km, mb4.7/139, MS3.7/33, Error ellipse: s-maj=4.6km s-min=3.9km az=145.4*
*JMA **01** 10:22:41.0±0.1, 35°.90N×140°.85E, h42km±1km, M4.4*
JMA Felt II J1.
*IDC **01** 10:22:43.3±1.6, 35°.83N×140°.75E, h57km±14km, mb4.1/28, mb1 4.3/32, mb1mx4.2/43, mbtmp4.4/32, MS3.7/28, Ms1 3.7/28, ms1mx3.6/51, Error ellipse: s-maj=13.7km s-min=9.1km az=92.0*
*NEIC **01** 10:22:43.8±0.5, 35°.84N×140°.68E, h60km±4km, mb4.8/90, Error ellipse: s-maj=4.2km s-min=3.1km az=130.0*
NEIC Recorded [2 JMA] in Chiba, Ibaraki and Tochigi.
*MOS **01** 10:22:44.3±0.9, 36°.27N×140°.65E, h62km, mb4.9/65, Error ellipse: s-maj=7.5km s-min=4.7km az=104.2*
ISC 01 10:22:40.7±0.5, 35°.90N±0°.04×140°.76E±0°.04, h32km±3km, n325, σ1§58/340, mb4.7/140, MS3.8/33, 12C-4D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.22**	**158**	⇑P	**Pn**	**10 22 48.2**	**+0.6**
CHOJ				S	**Sn**	**10 22 54.0**	**+2.0**
JYT	**Yasato**	**0.56**	**305**	⇓P	**Pn**	**10 22 53.4**	**+1.0**
JYT				S	**Sn**	**10 23 02.2**	**+1.6**
JHO	**Hitachi**	**0.72**	**348**	⇓P	**Pb**	**10 22 55.1**	**+0.2**
MJAR	**Matsushiro Arr**	**2.16**	**288**	P	**Pb**	**10 23 17.0**	**-2.1**
	89nm,0.3s,baz=101,slow=8.7,SNR=465						
MJAR				LR	LR	10 24 17.3	
	comp=Z,2μm,20.6s,baz=115,slow=44						
MAJO	**Matsushiro**	**2.16**	**288**	*i* P	**Pb**	**10 23 17.1**	**-2.0**
MAJO	**Matsushiro**	**2.16**	**288**	*e*Pn	**Pb**	**10 23 17.2**	**-2.0**
MAT	**Matsushiro**	**2.16**	**288**	P	**Pb**	**10 23 17.2**	**-1.9**
MAT				*e*S	**Sb**	**10 23 43.7**	**-1.8**
MJB9	**Matsu-Tunnel**	**2.16**	**288**	*e*Pn	**Pb**	**10 23 17.2**	**-2.0**
JHJ2	**Mitsune**	**2.89**	**196**	*e*Pn	**Pn**	**10 23 25.2**	**+0.8**
JHJ2				*e*Sn	**Sn**	**10 24 00.7**	**+2.6**
JHJ	**Hachijo jima 2**	**2.89**	**196**	P	**Pn**	**10 23 25.2**	**+0.8**
	91nm,0.3s,baz=127,slow=23,SNR=7.6						
JHJ				S	**Sn**	**10 23 59.1**	**+1.0**
	190nm,0.3s,baz=267,slow=22,SNR=4.2						
INU	**Inuyama**	**3.10**	**261**	*e*Pn	**Pn**	**10 23 30.6**	**+3.3**
ERM	**Erimo**	**6.38**	**16**	*i* P	**Pn**	**10 24 11.3**	**-1.1**
ERM	**Erimo**	**6.38**	**16**	*e*Pn	**Pn**	**10 24 11.6**	**-0.8**
ERM				*e*Sn	**Sn**	**10 25 22.7**	**-1.3**
ASAJ	**Asahikawa**	**8.32**	**9**	P	**Pn**	**10 24 38.0**	**-1.0**
	7.6nm,0.3s,baz=218,slow=9.6,SNR=53						
ASAJ				S	**Sn**	**10 26 09.0**	**-2.8**
	1.6nm,0.3s,baz=292,slow=19,SNR=2.7						
JNU	**Nakatsue**	**8.61**	**254**	P	**Pn**	**10 24 46.5**	**+3.4**
	1.1nm,0.3s,baz=281,slow=1.4,SNR=9.1						
JNU				LR	LR	10 28 25.9	
	comp=Z,1μm,18.5s,baz=102,slow=40						
JNU	**Nakatsue**	**8.61**	**254**	*e*Pn	**Pn**	**10 24 46.7**	**+3.6**
CBIJ	**Chichi jima**	**8.86**	**172**	*e*Pn	**Pn**	**10 24 44.0**	**-2.5**
CBIJ				*e*Sn	Sn	10 26 16.8	-8.4
JCJ	**Chichijima**	**8.86**	**172**	P	**Pn**	**10 24 44.0**	**-2.5**
	32nm,0.3s,baz=290,slow=13,SNR=33						
JCJ				S	Sn	10 26 14.7	-11
	baz=270,slow=20						
YUK	**Yuzh-Kuril'sk**	**9.01**	**24**	*e*P	**Pn**	**10 24 47.9**	**-0.6**
YUK				*e*S	**Sn**	**10 26 20.9**	**-7.9**
YUK				pmax	pmax		
	comp=Z,172nm,0.6s						
YUK				pmax	pmax		
	comp=N,110nm,0.4s						
YUK				pmax	pmax		
	comp=E,110nm,0.8s						
SHO	**Shikotan**	**9.22**	**29**	*e*P	**Pn**	**10 24 48.9**	**-2.4**
SHO				pmax	pmax		
	comp=Z,46nm,0.5s						
SHO				pmax	pmax		
	comp=N,13nm,0.4s						
SHO				pmax	pmax		
	comp=E,21nm,0.3s						
KSRS	**Korea Array**	**10.43**	**282**	P	Pn	10 25 14.0	+6.2
	comp=E,0.8nm,0.3s,baz=96,slow=14,SNR=11						
KSRS				LR	LR	10 29 16.8	
	comp=E,421nm,21.1s,baz=101,slow=38						
KS01	**Wonju Array Si**	**10.45**	**282**	*e*Pn	Pn	10 25 14.7	+6.5
KS15	**Wonju Array Si**	**10.46**	**282**	*e*Pn	Pn	10 25 14.3	+6.1
KSAR	**Wonju Array Be**	**10.46**	**282**	P	Pn	10 25 14.0	+5.7
KSAR	**Wonju Array Be**	**10.46**	**282**	P	Pn	10 25 14.0	+5.7
USRK	**Ussuriysk Ar.**	**10.66**	**324**	P	**Pn**	**10 25 15.1**	**+4.1**
	comp=E,0.6nm,0.3s,baz=133,slow=13,SNR=15						
USRK				LR	LR	10 29 04.5	
	comp=E,520nm,19.7s,baz=138,slow=36						
KUR	**Kuril'sk**	**10.77**	**28**	*e*P	**Pn**	**10 25 10.7**	**-1.8**
KUR				*e*S	Sn	10 27 02.6	-9.2
KUR				pmax	pmax		
	comp=Z,15nm,0.5s						
KUR				smax	smax		
	comp=N,19nm,0.7s						
KUR				smax	smax		
	comp=E,35nm,0.7s						
YSS	**Yuzh-Sakhalins**	**11.14**	**7**	⇑*e*P	**Pn**	**10 25 19.1**	**+1.5**
YSS				pmax	pmax		
	comp=Z,30nm,1.0s						
YSS	**Yuzh-Sakhalins**	**11.14**	**7**	*e*Pn	**Pn**	**10 25 16.5**	**-1.1**
MDJ	**Mudanjiang**	**12.18**	**319**	P	**Pn**	**10 25 34.3**	**+2.6**
MDJ				pmax	pmax		
	comp=Z,11nm,2.2s						
MDJ				pmax	pmax		
	comp=Z,250nm,3.3s						
KLR	**Kul'dur**	**14.86**	**336**	P	**Pn**	**10 26 08.1**	**-0.3**
	comp=Z,0.6nm,0.3s,baz=166,slow=8.1,SNR=8.6						
KLR				LR	LR	10 31 46.8	
	comp=Z,274nm,19.4s,baz=154,slow=36						
TYV	**Tymovskoe**	**15.02**	**5**	*e*P	**Pn**	**10 26 08.8**	**-1.6**
TYV				pmax	pmax		
	comp=Z,18nm,0.8s						
NJ2	**Nanjing**	**18.56**	**264**	*e*P	**Pn**	**10 26 56.2**	**+1.0**
NJ2				pmax	pmax		
	comp=Z,13nm,0.5s						
BJI	**Beijing**	**19.80**	**289**	P	**P**	**10 27 06.2**	**-2.0**
BJI				S	**S**	**10 30 48.5**	**-0.9**
BJI				pmax	pmax		
	comp=Z,18nm,1.2s						
BJI				LR	LR		
	comp=Z,250nm,26.2s						
BJT	**Baijiatuau**	**19.80**	**289**	*e*P	**P**	**10 27 08.1**	**-0.2**
BJT				pmax	pmax		
	comp=Z,20nm,0.9s						
BJT	**Baijiatuau**	**19.80**	**289**	*e*P	**P**	**10 27 08.1**	**-0.2**
	comp=Z,20nm,0.9s						
PEA0	**Petropavlovsk-**	**20.93**	**29**	*e*P	**P**	**10 27 21.6**	**+1.1**
PEA0B	**Petropavlovsk-**	**20.93**	**29**	*e*P	**P**	**10 27 21.9**	**+1.5**
	comp=Z,122nm,1.8s						
PETK	**Petropavlovsk-**	**20.93**	**29**	P	**P**	**10 27 21.8**	**+1.3**
	comp=Z,12nm,1.1s,baz=224,slow=4.1,SNR=6.1						
PETK				LR	LR	10 36 27.2	
	comp=Z,26nm,20.0s,baz=223,slow=39						
TPUB	**Ta-pu**	**21.49**	**240**	*e*P	**P**	**10 27 24.7**	**-2.0**
	comp=Z,15nm,1.1s						
WHN	**Wuhan**	**22.70**	**264**	P	**P**	**10 27 38.6**	**-0.9**
WHN				S	**S**	**10 31 46.5**	**+0.7**
WHN				LR	LR		
	comp=Z,850nm,21.2s						
HHC	**Hu-ho-hao-te**	**23.36**	**291**	*e*P	**P**	**10 27 45.1**	**-1.2**
HHC				pmax	pmax		
	comp=Z,19nm,1.0s						
HHC				pmax	pmax		
	comp=Z,81nm,4.7s						
CLNS	**Chul'man**	**23.52**	**338**	*e*P	**P**	**10 27 46.1**	**-1.5**
CLNS				pmax	pmax		
	comp=E,7.0nm,1.0s						
CLNS				pmax	pmax		
	comp=N,4.0nm,1.1s						
CLNS				pmax	pmax		
	comp=Z,17nm,0.9s						
MA2	**Magadan**	**24.57**	**12**	P	**P**	**10 27 57.8**	**+0.5**
	comp=Z,13nm,0.8s,baz=217,slow=9.7,SNR=12						
MA2				LR	LR	10 38 57.3	
	comp=Z,67nm,18.1s,baz=214,slow=40						
XAN	**Xi'an**	**26.10**	**275**	P	**P**	**10 28 10.1**	**-1.4**
XAN				pP	pP	10 28 20.2	-0.6
XAN				sP	sP	10 28 24.0	-0.8
XAN				S	**S**	**10 32 34.6**	**-6.2**
XAN				pmax	pmax		
	comp=Z,10.0nm,1.0s						
XAN				pmax	pmax		
	comp=Z,64nm,5.4s						
XAN				LR	LR		
	comp=N,110nm,9.8s						
XAN				LR	LR		
	comp=E,160nm,13.9s						
XAN				LR	LR		
	comp=Z,190nm,16.1s						
ENH	**Enshi**	**26.73**	**267**	*e*P	**P**	**10 28 16.2**	**-1.1**
	comp=Z,18nm,0.6s						
YAK	**Yakutsk**	**27.06**	**349**	P	**P**	**10 28 18.7**	**-1.1**
	comp=Z,12nm,0.4s,baz=147,slow=2.3,SNR=5.8						
YAK				LR	LR	10 39 12.0	
	comp=Z,169nm,19.7s,baz=170,slow=36						
YAK	**Yakutsk**	**27.06**	**349**	*e*P	**P**	**10 28 19.1**	**-0.7**
YAK				pmax	pmax		
	comp=Z,20nm,1.3s						
YAK				pmax	pmax		
	comp=E,4.0nm,1.3s						
YAK				pmax	pmax		
	comp=N,16nm,1.5s						
YAK	**Yakutsk**	**27.06**	**349**	*e*P	**P**	**10 28 20.4**	**+0.5**
	comp=N,18nm,0.5s						
ULN	**Ulaanbaatar**	**27.57**	**306**	*ce*P	**P**	**10 28 26.8**	**+2.0**
ULN				pmax	pmax		
	comp=Z,5.0nm,0.7s						
ULN	**Ulaanbaatar**	**27.57**	**306**	*e*P	**P**	**10 28 24.5**	**-0.3**
	comp=Z,14nm,1.3s						
SONA1	**Songino Array**	**28.00**	**306**	*e*P	**P**	**10 28 28.6**	**0.0**
SONM	**Songino Array**	**28.00**	**306**	P	**P**	**10 28 28.6**	**0.0**
	comp=Z,4.8nm,0.6s,baz=105,slow=9.0,SNR=23						
SONM				LR	LR	10 40 15.6	
	comp=Z,218nm,18.2s,baz=82,slow=38						
SEY	**Seymchan**	**28.00**	**11**	P	**P**	**10 28 29.0**	**+0.8**
	comp=Z,1.5nm,0.5s,baz=199,slow=5.3,SNR=6.6						
SEY	**Seymchan**	**28.00**	**11**	*i* P	**P**	**10 28 29.4**	**+1.2**
H11N2	**WAKE ISLAND Hy**	**28.05**	**118**	T	T	10 57 40.3	
	baz=311,slow=75,SNR=126						
H11N1	**WAKE ISLAND Hy**	**28.06**	**118**	T	T	10 57 40.9	
	baz=311,slow=75,SNR=137						
H11N3	**WAKE ISLAND Hy**	**28.07**	**118**	T	T	10 57 42.5	
	baz=311,slow=75,SNR=139						
BOD	**Bodaibo**	**28.22**	**329**	⇑*i* P	**P**	**10 28 30.2**	**0.0**
BOD				pmax	pmax		
	comp=Z,11nm,0.8s						
H11S1	**WAKE ISLAND Hy**	**28.72**	**120**	T	T	10 58 25.7	
	baz=312,slow=75,SNR=139						
H11S3	**WAKE ISLAND Hy**	**28.72**	**120**	T	T	10 58 26.0	
	baz=312,slow=75,SNR=76						
H11S2	**WAKE ISLAND Hy**	**28.73**	**120**	T	T	10 58 23.9	
	baz=312,slow=75,SNR=63						
LZH	**Lanzhou**	**29.75**	**281**	*e*P	**P**	**10 28 44.6**	**+0.3**
LZH				pP	pP	10 28 55.0	+1.3
LZH				sP	sP	10 29 00.7	+3.0
LZH				*e*S	**S**	**10 33 33.4**	**-5.2**
LZH				sS	sS	10 33 53.3	-0.8
LZH				SS	**SnSn**	**10 34 58.5**	**-11**
LZH				pmax	pmax		
	comp=Z,16nm,1.0s						
LZH				pmax	pmax		
	comp=Z,69nm,4.5s						
LZH				LR	LR		
	comp=N

KMI pmax pmax
comp=Z,22nm,0.9s
KMI pmax pmax
comp=Z,48nm,5.0s
KMI LR LR
comp=N,140nm,19.9s
KMI LR LR
comp=E,160nm,19.9s
KMI LR LR
comp=Z,160nm,23.5s
BILL Bilibino 35.26 16 *e*P **P 10 29 32.5 +0.6**
BILL *e* 10 30 54.1
BILL *e*PPP PPP 10 31 06.4
BILL pmax pmax
comp=Z,5.0nm,1.0s
BILL MLR MLR
comp=Z,68nm,19.0s
BILL Bilibino 35.26 16 *e*P **P 10 29 31.9 0.0**
comp=Z,4.8nm,1.0s
TIXI Tiksi 36.35 354 P **P 10 29 41.0 -0.2**
comp=Z,3.7nm,0.5s,baz=159,slow=3.8,SNR=10
TIXI Tiksi 36.35 354 P **P 10 29 41.0 -0.2**
TIXI pmax pmax
comp=Z,4.0nm,0.5s
TIXI Tiksi 36.35 354 *e*P **P 10 29 41.0 -0.2**
comp=Z,4.7nm,0.9s
KRAR Krasnoyarsk 37.92 317 *i*P **P 10 29 59.2 +4.5**
KRAR pmax pmax
comp=Z,7.0nm,0.9s
FAKI Fak Fak 39.43 193 *e*P **P 10 30 06.7 -1.0**
comp=Z,19nm,1.1s
GAMB Gambell 39.96 31 *e*P **P 10 30 14.4 +2.8**
comp=Z,5.9nm,0.9s
CMAR Chiang Mai Arr 40.71 256 P **P 10 30 19.1 +0.8**
comp=Z,0.7nm,0.5s,baz=53,slow=6.4,SNR=6.0
CMAR LR LR 10 48 40.2
comp=Z,130nm,18.2s,baz=72,slow=38
CMAR Chiang Mai Arr 40.71 256 *ce*P **P 10 30 20.3 +1.9**
CMAR pmax pmax
comp=Z,1.0nm,0.6s
WMQ Urumqi 40.89 298 P **P 10 30 20.2 +0.5**
WMQ pP sP 10 30 34.5 +1.3
WMQ sP pP 10 30 41.7 +12
WMQ sS S 10 36 49.7 +21
WMQ LR LR
comp=N,33nm,29.2s
WMQ LR LR
comp=E,29nm,31.6s
WMQ LR LR
comp=Z,40nm,24.8s
ZAA0 Zalesovo Array 42.30 313 *e*P **P 10 30 31.4 +0.4**
ZALV Zalesovo Beam 42.30 313 P **P 10 30 31.0 0.0**
comp=Z,4.8nm,0.4s,baz=102,slow=8.1,SNR=20
ZALV PcP **PcP 10 32 23.6 -0.6**
comp=Z,2.2nm,0.5s,baz=129,slow=2.8,SNR=3.7
ZALV LR LR 10 48 59.0
comp=Z,76nm,19.3s,baz=72,slow=37
NVS Novosibirsk 43.25 315 *e*P **P 10 30 39.1 +0.4**
NVS *e* 10 30 50.7
NVS pmax pmax
comp=Z,9.0nm,0.7s
NVS pmax pmax
comp=E,6.0nm,0.7s
NRIK Noril'sk 44.08 336 P **P 10 30 45.1 -0.1**
comp=E,5.9nm,0.5s,baz=138,slow=6.8,SNR=7.8
NRIK LR LR 10 50 20.8
comp=E,101nm,18.1s,baz=116,slow=38
MK01 Makanchi Array 44.28 303 *e*P **P 10 30 47.0 -0.1**
MK31 Makanchi Array 44.28 303 *i*P **P 10 30 47.5 +0.3**
MK31 pmax pmax
comp=Z,17nm,0.7s
MK31 Makanchi Array 44.28 303 *e*P **P 10 30 47.8 +0.6**
MKAR Makanchi Array 44.28 303 P **P 10 30 47.7 +0.5**
comp=Z,17nm,0.7s,baz=90,slow=9.9,SNR=184
MKAR PcP **PcP 10 32 31.0 -0.1**
comp=Z,1.1nm,0.7s,baz=72,slow=4.7,SNR=2.5
MKAR LR LR 10 50 10.3
comp=Z,128nm,18.1s,baz=90,slow=37
KSM Kuching 44.39 226 *e*P **P 10 30 47.4 -0.9**
comp=Z,12nm,1.1s
MAKZ Makanchi 44.49 303 P **P 10 30 48.9 0.0**
MAKZ pmax pmax
comp=Z,17nm,0.7s
MAKZ Makanchi 44.49 303 *e*P **P 10 30 49.4 +0.5**
comp=Z,22nm,0.8s
KAPI Kappang 45.22 210 *e*P **P 10 30 54.9 0.0**
comp=Z,9.9nm,0.9s
KURK Kurchatov 46.22 309 P **P 10 31 01.6 -0.8**
KURK pmax pmax
comp=Z,31nm,0.5s
KURK Kurchatov 46.22 309 *e*P **P 10 31 02.5 0.0**
comp=Z,29nm,0.8s
TT01 Tatalina 46.64 34 *e*P **P 10 31 06.7 +1.1**
TTA Tatalina 46.65 34 *e*P **P 10 31 07.7 +2.0**
TTA *e**PP **sP 10 31 20.3 +1.0**
TTA Tatalina 46.65 34 *e*P **P 10 31 07.7 +2.0**
TTA *e*pP **sP 10 31 20.3 +1.0**
SVW2 Sparrevohn 46.74 37 *e*P **P 10 31 08.0 +1.6**
comp=Z,5.7nm,0.9s
KKN Kakani 47.28 277 *e*P **P 10 31 12.5 +1.2**
comp=Z,12nm,0.4s
DMN Daman 47.50 276 *e*P **P 10 31 14.2 +1.1**
comp=Z,8.2nm,0.6s
GKN Gorkha 47.71 277 *e*P **P 10 31 15.0 +0.4**
comp=Z,18nm,0.4s
SOEI Soe 48.00 202 *e*P **P 10 31 15.0 -1.8**
comp=Z,36nm,0.9s
IPM Ipoh 48.10 239 *e*P **P 10 31 18.0 +0.4**
comp=Z,11nm,1.1s
RSO Redoubt South 48.12 38 *e*P **P 10 31 17.2 -0.1**
KDAK Kodiak Island 48.29 41 *i*P **P 10 31 19.7 +1.3**
KDAK Kodiak Island 48.29 41 *e*P **P 10 31 19.4 +1.0**
comp=Z,93nm,1.9s
PPLA Purkeypile 48.40 34 *e*P **P 10 31 21.1 +1.6**
comp=Z,28nm,1.7s
SPU Mount Spurr 48.45 37 *e*P **P 10 31 20.7 +1.0**
CAST Castle Rocks 48.46 34 *e*P **P 10 31 21.4 +1.7**
comp=Z,4.7nm,0.8s
KOLN Koldanda 48.64 277 *e*P **P 10 31 21.4 -0.5**
comp=Z,16nm,0.7s
BPAW Bear Paw Mtn. 48.96 33 *e*P **P 10 31 25.1 +1.5**
comp=Z,26nm,2.0s
KTH Kantishna Hill 48.98 33 *e*P **P 10 31 26.2 +2.4**
comp=Z,5.5nm,0.9s
PYUN Piuthan 49.00 278 *e*P **P 10 31 24.8 +0.2**
comp=Z,62nm,0.8s
MLY Manley 49.09 32 *e*P **P 10 31 26.2 +1.7**
comp=Z,4.4nm,0.8s
TRF Thorofare Moun 49.26 34 *e*P **P 10 31 27.2 +1.1**
comp=Z,20nm,1.8s
MTN Manton Dam 49.33 192 *e*P **P 10 31 26.0 -0.8**
comp=Z,40nm,1.8s
COLD Coldfoot 49.40 29 *e*P **P 10 31 28.3 +1.5**
comp=Z,4.1nm,1.3s
RC01 Rabbit Creek A 49.58 37 *e*P **P 10 31 28.7 +0.4**
comp=Z,28nm,1.5s
COEN Coen 49.64 177 *e*P **P 10 31 31.3 +2.1**
comp=Z,19nm,1.3s
TKM2 Tokmak 2 49.71 299 *e*P **P 10 31 30.9 +1.1**
TKM2 pmax pmax
comp=Z,64nm,1.6s
TKM2 Tokmak 2 49.71 299 *e*P **P 10 31 30.9 +1.1**
comp=Z,64nm,1.6s
SEW Seward 49.78 38 *e*P **P 10 31 29.8 0.0**
comp=Z,69nm,1.7s
PMR Palmer 49.85 36 *e*P **P 10 31 30.8 +0.5**
PMR pmax pmax
comp=Z,7.0nm,1.1s
PMR Palmer 49.85 36 *e*P **P 10 31 30.8 +0.5**
comp=Z,7.1nm,1.1s
RND Reindeer 49.91 34 *e*P **P 10 31 30.9 0.0**
RND pmax pmax
comp=Z,8.0nm,1.2s
RND Reindeer 49.91 34 *e*P **P 10 31 30.9 0.0**
comp=Z,8.2nm,1.2s
MDM Murphy Dome 50.15 32 *e*P **P 10 31 34.2 +1.5**
comp=Z,9.9nm,1.1s
SML Sawmill 50.22 36 *e*P **P 10 31 34.1 +0.9**
SML pmax pmax
comp=Z,59nm,2.0s
SML Sawmill 50.22 36 *e*P **P 10 31 34.1 +0.9**
comp=Z,59nm,2.0s
WRH Wood River Hil 50.22 32 *e*P **P 10 31 34.6 +1.5**
comp=Z,16nm,1.6s
COLA College 50.31 32 *e*P **P 10 31 34.5 +0.7**
COLA pmax pmax
comp=Z,6.0nm,0.8s
COLA College 50.31 32 *e*P **P 10 31 34.5 +0.7**
comp=Z,6.1nm,0.8s
CCB Clear Creek Bu 50.34 32 *e*P **P 10 31 35.1 +1.1**
comp=Z,8.4nm,1.6s
KSH Kashi 50.39 295 P **P 10 31 38.7 +3.7**
KSH *es*P sP 10 31 56.7 +8.1
KSH *e*PcP **PcP 10 32 56.1 +3.0**
KSH *e*PP **PP 10 33 36.1 +5.6**
KSH S **S 10 38 48.4 +2.3**
KSH pmax pmax
comp=Z,64nm,3.8s
KSH LR LR
comp=N,150nm,9.5s
KSH LR LR
comp=E,92nm,6.3s
KSH LR LR
comp=Z,88nm,8.7s
FRU Bishkek 50.43 299 *e*P **P 10 31 35.0 -0.1**
AAK Ala-Archa 50.57 299 P **P 10 31 36.3 0.0**
AAK pmax pmax
comp=Z,7.0nm,0.9s
AAK Ala-Archa 50.57 299 *e*P **P 10 31 36.9 +0.6**
comp=Z,5.4nm,0.8s
SCM Sheep Creek Mo 50.69 36 *e*P **P 10 31 37.7 +0.9**
SCM pmax pmax
comp=Z,56nm,2.0s
SCM Sheep Creek Mo 50.69 36 *e*P **P 10 31 37.7 +0.9**
comp=Z,56nm,2.0s
CHKZ Chkalovo 50.70 314 P **P 10 31 36.0 -0.9**
CHKZ pmax pmax
comp=Z,13nm,0.6s
ILAR Eielson Array 50.73 32 P **P 10 31 37.1 +0.2**
comp=Z,3.2nm,0.7s,baz=266,slow=5.7,SNR=28
ILAR LR LR 10 52 10.3
comp=Z,24nm,21.6s,baz=326,slow=35
ILB Eielson Array 50.73 32 *e*P **P 10 31 37.4 +0.4**
IL1 Eielson Array 50.73 32 *e*P **P 10 31 36.8 -0.1**
BVA0 Borovoye Array 50.95 313 *i*P **P 10 31 38.8 0.0**
BVA0 pmax pmax
comp=Z,5.0nm,0.5s
BRVK Borovoye 51.01 313 P **P 10 31 39.3 +0.1**
BRVK pmax pmax
comp=Z,17nm,1.1s
BRVK Borovoye 51.01 313 *e*P **P 10 31 39.5 +0.3**
comp=Z,7.5nm,0.6s
EKS2 Erkin-Say 51.07 299 *e*P **P 10 31 40.7 +0.7**
EKS2 pmax pmax
comp=Z,5.0nm,0.8s
EKS2 Erkin-Say 51.07 299 *e*P **P 10 31 40.7 +0.7**
comp=Z,4.8nm,0.8s
FYU Fort Yukon 51.35 29 *e*P **P 10 31 43.5 +1.9**
comp=Z,17nm,1.5s
KLU Klutina 51.39 36 *e*P **P 10 31 42.9 +0.9**
comp=Z,35nm,1.8s
EYAK Cordova Ski Ar 51.57 37 *e*P **P 10 31 44.4 +1.1**
comp=Z,42nm,1.5s
ZRNK Zerenda 51.78 313 *e*P **P 10 31 45.3 +0.3**
ZRNK pmax pmax
comp=Z,23nm,1.1s
ZRNK Zerenda 51.78 313 *e*P **P 10 31 45.3 +0.3**
comp=Z,23nm,1.1s
DOT Dot Lake 52.04 33 *e*P **P 10 31 47.3 +0.5**
comp=Z,8.9nm,0.7s
BMRM Bremner River 52.08 37 *e*P **P 10 31 48.3 +1.1**
comp=Z,44nm,1.8s
RAGM Ragged Mountai 52.12 37 *e*P **P 10 31 48.9 +1.4**
comp=Z,76nm,1.7s
GSI Gunungsitoli 52.77 239 *e*P **P 10 31 51.7 -1.1**
comp=Z,48nm,1.4s
BALM Baldy 53.16 36 *e*P **P 10 31 56.2 +0.9**
BALM pmax pmax
comp=Z,15nm,1.3s
BALM Baldy 53.16 36 *e*P **P 10 31 56.2 +0.9**
comp=Z,15nm,1.3s
EGAK Eagle 53.18 32 *e*P **P 10 31 55.7 +0.6**
comp=Z,11nm,1.4s
KK31 Karatay Array 53.24 301 *i*P **P 10 31 55.6 -0.4**
KK31 pmax pmax
comp=Z,8.0nm,0.9s
KKAR Karatay Array 53.24 301 *e*P **P 10 31 56.4 +0.4**
KKAR Karatay Array 53.24 301 *e*P **P 10 31 56.4 +0.4**
DAWY Dawson 54.04 32 *e*P **P 10 32 02.8 +1.3**
comp=Z,10nm,1.5s
FITZ Fitzroy Crossi 55.59 198 *e*P **P 10 32 13.2 0.0**
comp=Z,6.5nm,0.6s
INK Inuvik 55.63 27 P **P 10 32 13.7 +0.8**
comp=Z,2.2nm,0.5s,baz=296,slow=6.6,SNR=36
INK Inuvik 55.63 27 *e*P **P 10 32 13.7 +0.8**
comp=Z,2.9nm,0.8s
SVE Sverdlovsk 55.65 319 *e*P **P 10 32 12.8 -0.4**
SVE pmax pmax
comp=Z,19nm,0.9s
WRAB Tennant Creek 55.86 187 *ce*P **P 10 32 14.6 -0.5**
WRAB pmax pmax
comp=Z,13nm,0.7s
WRAB Tennant Creek 55.86 187 *e*P **P 10 32 14.3 -0.8**
comp=Z,11nm,0.9s
WB2 Warramunga Arr 55.87 187 *e*P **P 10 32 14.2 -1.0**
comp=Z,8.9nm,0.9s
WRA Warramunga Arr 55.87 187 P **P 10 32 13.9 -1.3**
comp=Z,8.9nm,0.8s,baz=3.5,slow=7.4,SNR=96
WRA Warramunga Arr 55.87 187 *i*P **P 10 32 13.8 -1.4**
WRA pmax pmax
comp=Z,9.0nm,0.8s
ARU Arti 56.86 319 *c i*P **P 10 32 21.8 -0.1**
ARU 10 33 19.6
ARU 10 34 23.1
ARU S **S 10 40 16.0 +3.0**
ARU SS **SS 10 43 52.6 -8.3**
ARU pmax pmax
comp=Z,27nm,1.0s
ARU Arti 56.86 319 *e*P **P 10 32 22.1 +0.2**
comp=Z,54nm,1.4s
HYB Hyderabad 57.65 269 *i*P **P 10 32 28.0 -0.1**
AB31 Akbulak array 58.27 310 *e*P **P 10 32 31.7 -0.2**
AB31 pmax pmax
comp=Z,3.0nm,0.4s
ABKAR Akbulak array 58.27 310 *e*P **P 10 32 32.0 0.0**
AKTO Aktyubinsk 59.04 312 P **P 10 32 36.6 -0.7**
AKTO pmax pmax
comp=Z,8.0nm,1.1s
AS01 Alice Springs 59.59 187 *e*P **P 10 32 40.5 -0.8**
AS31 Alice Springs 59.60 187 *e*P **P 10 32 41.1 -0.3**
comp=Z,1.6nm,0.6s
ASAR Alice Springs 59.60 187 P **P 10 32 40.6 -0.7**
comp=Z,3.5nm,0.8s,baz=14,slow=7.9,SNR=37
ASAR LR LR 10 57 25.8
comp=Z,51nm,21.7s,baz=48,slow=35
ASAR Alice Springs 59.60 187 P **P 10 32 40.7 -0.7**
ASAR pmax pmax
comp=Z,3.0nm,0.8s
DLBC Dease Lake 59.84 37 *e*P **P 10 32 44.0 +1.2**
comp=Z,21nm,1.8s
MBWA Marble Bar 60.14 203 *e*P **P 10 32 44.3 -0.8**
comp=Z,18nm,0.8s
LVZ Lovozero 62.92 336 *e*P **P 10 33 03.3 -0.1**
LVZ pmax pmax
comp=Z,41nm,1.4s
LVZ Lovozero 62.92 336 *e*P **P 10 33 03.3 -0.1**
comp=Z,41nm,1.4s
BBB Bella Bella 63.24 44 LR LR 10 57 41.5
comp=Z,20nm,18.9s,baz=178,slow=33
RES Resolute Bay 63.82 14 *e*P **P 10 33 09.2 0.0**
RES pmax pmax
comp=Z,6.0nm,1.0s
RES Resolute Bay 63.82 14 *e*P **P 10 33 09.2 0.0**
comp=Z,5.9nm,1.0s
GEYT Alibeck 63.92 299 P **P 10 33 11.0 +0.5**
comp=Z,1.6nm,0.2s,baz=60,slow=3.9,SNR=6.4
GEYT LR LR 11 02 53.2
comp=Z,68nm,19.4s,baz=95,slow=38
KEV Kevo 64.31 339 *e*P **P 10 33 13.2 +0.8**
KEV Kevo 64.31 339 *e*P **P 10 33 12.9 +0.5**
KEV pmax pmax
comp=Z,71nm,1.9s
KEV Kevo 64.31 339 *e*P **P 10 33 12.9 +0.5**
comp=Z,71nm,1.9s
KLMR Klimovskoe 64.43 328 *e*P **P 10 33 12.1 -1.3**
KLMR pmax pmax
comp=Z,7.0nm,0.9s
HAMF Hammerfest 64.71 341 *e*P **P 10 33 15.0 -0.1**
ARA0 ARCESS Array S 64.87 339 *e*P **P 10 33 16.7 +0.6**
ARCES ARCESS Array B 64.87 339 P **P 10 33 16.6 +0.5**
comp=Z,4.5nm,0.7s,baz=51,slow=8.3,SNR=31
ARCES LR LR 11 06 44.3
comp=Z,58nm,18.1s,baz=60,slow=41
ARE0 ARCESS Array S 64.87 339 *e*P **P 10 33 16.7 +0.6**
ARE0 ARCESS Array S 64.87 339 *e*P **P 10 33 16.5 +0.4**
comp=Z,29nm,1.6s
YKA Yellowknife Ar 65.05 30 P **P 10 33 17.1 -0.2**
comp=Z,0.7nm,0.7s,baz=304,slow=7.1,SNR=22
YKB5 Yellowknife Ar 65.05 30 *e*P **P 10 33 16.6 -0.7**
YKB5 *e*pP **sP 10 33 30.5 -0.7**
KIF Kilpisjarvi 66.52 340 *e*P **P 10 33 27.3 +0.6**
STKA Stephens Creek 67.43 179 P **P 10 33 31.2 -1.7**
comp=Z,2.2nm,0.8s,baz=356,slow=9.4,SNR=5.0
STKA Stephens Creek 67.43 179 *e*P **P 10 33 32.4 -0.5**
comp=Z,5.6nm,2.0s
NLWA Neilton Lookou 67.87 47 *e*P **P 10 33 36.7 +1.0**
comp=Z,14nm,1.2s
VRH Novokhopyorsk 68.06 318 *e*P **P 10 33 35.5 -1.3**
VRH pmax pmax
comp=Z,4.0nm,0.8s
BBOO Buckleboo 68.50 184 *e*P **P 10 33 39.2 -0.4**
comp=Z,80nm,1.9s
OBN Obninsk 68.68 323 *e*P **P 10 33 40.9 +0.3**
OBN pmax pmax
comp=Z,5.0nm,0.5s
OBN MLR MLR
comp=Z,92nm,16.0s
LPSR Galich'ya Gora 68.83 320 *e*P **P 10 33 40.7 -0.9**
LPSR pmax pmax
comp=Z,6.0nm,0.6s
VSR Storozhevoye 69.43 319 *e*P **P 10 33 44.9 -0.5**
VSR pmax pmax
comp=Z,10.0nm,0.6s
FIA1 FINESS Array S 69.57 332 *e*P **P 10 33 45.9 0.0**
FINES FINESS Array B 69.57 332 P **P 10 33 46.1 +0.1**
comp=Z,6.8nm,0.8s,baz=72,slow=8.2,SNR=20
FINES LR LR 11 05 39.8
comp=Z,64nm,19.8s,baz=288,slow=37
FINES FINESS Array B 69.57 332 *i*P **P 10 33 46.0 0.0**
FINES pmax pmax
comp=Z,7.0nm,0.8s
MOR8 Moi Rana 70.24 340 ⇓ *i*P **P 10 33 49.3 -0.7**
MOR8 *e*P **P 10 33 49.4 -0.7**
MOR8 IAmb IAmb 10 33 49.6
comp=Z,14nm,0.7s
ZEI Tsey 71.11 309 *e*P **P 10 33 54.7 -1.3**
ZEI pmax pmax
comp=Z,9.0nm,0.4s
KBZ Khabaz 71.24 311 P **P 10 33 56.7 +0.2**
comp=Z,5.5nm,0.8s,baz=41,slow=3.3,SNR=17
KBZ LR LR 11 07 20.7
comp=Z,56nm,19.8s,baz=42,slow=38
KVAR Kislovodsk Arr 71.24 311 LR LR 11 07 23.1
comp=Z,50nm,20.1s,baz=82,slow=38
KIV Kislovodsk 71.25 311 *e*P **P 10 33 58.0 +1.3**
KIV *e* 10 34 17.4
KIV *e* 10 36 36.9
KIV pmax pmax
comp=Z,23nm,1.2s
KIV MLR MLR
comp=Z,47nm,19.0s
KIV Kislovodsk 71.25 311 *e*P **P 10 33 58.1 +1.3**
comp=Z,13nm,0.7s
NEW Newport 71.31 44 *e*P **P 10 33 57.2 +0.3**
NEW pmax pmax
comp=Z,8.0nm,1.6s
NEW Newport 71.31 44 *e*P **P 10 33 57.2 +0.3**
comp=Z,8.2nm,1.6s
YBH Yreka Blue Hor 71.45 52 *e*P **P 10 33 59.3 +1.3**
YBH pmax pmax
comp=Z,11nm,1.4s
YBH Yreka Blue Hor 71.45 52 *e*P **P 10 33 59.3 +1.3**
comp=Z,11nm,1.4s
NEY Neytrino 71.60 310 *e*P **P 10 33 58.2 -0.8**
SUMG Summit 71.81 360 *e*P **P 10 34 01.4 +1.4**
SUMG *e**PP **sP 10 34 13.7 -0.2**
SUMG pmax pmax
comp=Z,7.0nm,1.0s
SUMG Summit 71.81 360 *e*P **P 10 34 01.4 +1.4**
comp=Z,7.2nm,1.0s
SUMG *e*pP **sP 10 34 13.7 -0.2**
GNI Garni 71.96 307 LR LR 11 08 24.9
comp=Z,78nm,19.0s,baz=70,slow=38
GNI Garni 71.96 307 *ce*P **P 10 33 59.8 -1.4**
GNI pmax pmax
comp=Z,39nm,1.2s
K05A Summer Lake 72.07 50 *e*P **P 10 34 03.1 +1.2**
comp=Z,35nm,1.8s
SWMT Swartz Lake 73.47 43 *e*P **P 10 34 11.4 +1.4**
NC405 NORSAR Array S 74.81 337 *e*P **P 10 34 18.1 +0.7**
AKASG Malin Array Be 74.87 322 P **P 10 34 17.7 -0.1**
comp=Z,3.9nm,0.5s,baz=47,slow=6.1,SNR=20
AKASG LR LR 11 10 13.1
comp=Z,144nm,19.0s,baz=0.0,slow=38
AKASG Malin Array Be 74.87 322 *i*P **P 10 34 17.0 -0.8**
AKASG pmax pmax
comp=Z,4.0nm,0.5s
KIEV Kiev 74.88 322 *c i*P **P 10 34 17.3 -0.7**
KIEV pmax pmax
comp=Z,5.0nm,0.9s
KIEV Kiev 74.88 322 *e*P **P 10 34 17.2 -0.7**
comp=Z,6.8nm,0.7s
NC204 NORSAR Array S 74.98 337 *e*P **P 10 34 19.3 +0.9**
NB201 NORSAR Array S 74.99 337 *e*P **P 10 34 18.7 +0.3**
NB2 NORSAR Subarra 75.02 337 P **P 10 34 18.6 0.0**
comp=Z,4.7nm,0.7s,baz=41,slow=5.9
NB2 NORSAR Subarra 75.02 337 P **P 10 34 18.6 0.0**
baz=41,slow=5.9
NOA NORSAR Array B 75.02 337 P **P 10 34 18.7 0.0**
comp=Z,7.1nm,0.9s,baz=46,slow=5.2,SNR=15
NOA LR LR 11 10 19.6
comp=Z,69nm,19.5s,baz=70,slow=38
NBO02 NORSAR Array S 75.13 337 *e*P **P 10 34 19.3 +0.1**
FCC Fort Churchill 75.25 26 *e*P **P 10 34 19.9 0.0**
FCC pmax pmax
comp=Z,32nm,1.9s
FCC Fort Churchill 75.25 26 *e*P **P 10 34 19.9 0.0**
comp=Z,32nm,1.9s
LRM Limekiln Ridge 75.32 44 *e*P **P 10 34 21.8 +0.8**
DLMT Dillon 75.52 44 *e*P **P 10 34 22.3 +0.4**
comp=Z,9.8nm,1.4s
BOZ Bozeman (W) 75.89 44 *e*P **P 10 34 24.9 +0.9**
BOZ pmax pmax
comp=Z,2.0nm,0.8s
BOZ Bozeman (W) 75.89 44 *e*P **P 10 34 24.9 +0.9**
comp=Z,2.2nm,0.8s
NV01 Mina Array Sit 76.09 53 *e*P **P 10 34 25.9 +0.4**
NVAR Mina Array Bea 76.09 53 P **P 10 34 26.6 +1.1**
comp=Z,0.5nm,0.4s,baz=230,slow=26,SNR=12
NVAR LR LR 10 59 54.3
comp=Z,30nm,20.5s,baz=330,slow=29
NV11 Mina Array Sit 76.18 53 *e*P **P 10 34 26.6 +0.7**
comp=Z,10nm,1.6s
ELK Elko 76.68 49 *e*P **P 10 34 29.9 +1.1**
ELK pmax pmax
comp=Z,3.0nm,1.3s
ELK Elko 76.68 49 *e*P **P 10 34 29.9 +1.1**
comp=Z,3.2nm,1.3s
H17A Grant Village 77.25 44 *e*P **P 10 34 33.5 +1.6**
comp=Z,7.0nm,1.2s
IMW Indian Meadow 77.34 45 *e*P **P 10 34 34.1 +1.6**
comp=Z,2.2nm,0.8s
HVU Hansel Valley 77.56 47 *e*P **P 10 34 34.3 +0.7**
HVU pmax pmax
comp=Z,4.0nm,1.1s
HVU Hansel Valley 77.56 47 *e*P **P 10 34 34.3 +0.7**
comp=Z,3.8nm,1.1s
R11A Troy Canyon, C 77.88 51 *e*P **P 10 34 35.8 +0.4**
comp=Z,10.0nm,1.9s
LVV L'vov 77.98 324 *e*P **P 10 34 36.5 +1.0**
DUG Dugway, Tooele 78.50 49 *e*P **P 10 34 39.5 +0.7**
DUG pmax pmax
comp=Z,10.0nm,1.6s
DUG Dugway, Tooele 78.50 49 *e*P **P 10 34 39.5 +0.7**
comp=Z,10.0nm,1.6s
KWP Kalwaria Pacla 78.74 324 *e*P **P 10 34 40.9 +1.1**
KWP Kalwaria Pacla 78.74 324 *e*P **P 10 34 40.9 +1.1**
BW06 Boulder Array 78.83 45 *e*P **P 10 34 40.1 -0.6**
PDAR Pinedale Array 78.84 45 P **P 10 34 40.6 -0.1**
comp=Z,1.0nm,0.8s,baz=274,slow=1.0,SNR=9.0
BUR08 Bucovina Ar. S 78.86 322 *e*P **P 10 34 41.1 +0.6**
BR131 Keskin Array S 79.20 311 *e*P **P 10 34 43.1 +0.4**
BRTR Keskin Array B 79.20 311 P **P 10 34 42.7 0.0**
comp=Z,2.4nm,0.8s,baz=84,slow=5.1,SNR=14
BRTR Keskin Array B 79.20 311 P **P 10 34 42.7 0.0**
BRTR pmax pmax
comp=Z,3.0nm,0.8s
KOLS Kolonicke sedl 79.42 324 *e*P **P 10 34 43.8 +0.3**
KOLS pmax pmax

comp=Z,2.0nm,1.1s
KOLS Kolonicke sedl 79.42 324 *e*P **P 10 34 43.8 +0.3**
BR231 Keskin MP Arra 79.66 312 *e*P **P 10 34 43.4 -1.6**
OJC Ojcow 79.68 326 *e*P **P 10 34 45.0 +0.1**
OJC Ojcow 79.68 326 *e*P **P 10 34 45.0 +0.1**
OJC Ojcow 79.68 326 *e*P **P 10 34 45.2 +0.4**
comp=Z,6.9nm,1.0s
CRVS Cervenica-Dubn 79.83 324 *e*P **P 10 34 46.1 +0.4**
CRVS Cervenica-Dubn 79.83 324 *e*P **P 10 34 46.1 +0.4**
MSU Marysvale 79.91 50 *e*P **P 10 34 47.5 +0.8**
MSU Marysvale 79.91 50 *e*P **P 10 34 47.5 +0.8**
NIE Niedzica 80.02 325 *e*P **P 10 34 48.0 +1.2**
NIE Niedzica 80.02 325 *e*P **P 10 34 48.0 +1.2**
KNB Kanab 80.43 51 *e*P **P 10 34 51.1 +1.7**
KNB pmax pmax
comp=Z,13nm,1.8s
KNB Kanab 80.43 51 *e*P **P 10 34 51.1 +1.7**
comp=Z,12nm,1.8s
KECS Kecovo 80.59 324 *e*P **P 10 34 50.1 +0.3**
KECS pmax pmax
comp=Z,2.0nm,1.2s
KECS Kecovo 80.59 324 *e*P **P 10 34 50.1 +0.3**
LANS Liptovska Anna 80.59 325 *e*P **P 10 34 51.4 +1.5**
LANS Liptovska Anna 80.59 325 *e*P **P 10 34 51.4 +1.5**
KSP Ksiaz 80.78 328 *e*P **P 10 34 51.6 +0.8**
KSP Ksiaz 80.78 328 *e*P **P 10 34 51.6 +0.8**
DPC Dobruska-Polom 81.13 328 *e*P **P 10 34 53.3 +0.6**
DPC Dobruska-Polom 81.13 328 *e*P **P 10 34 53.3 +0.6**
VYHS Vyhne 81.35 325 *e*P **P 10 34 54.4 +0.5**
VYHS pmax pmax
comp=Z,4.0nm,1.5s
VYHS Vyhne 81.35 325 *e*P **P 10 34 54.4 +0.5**
BRG Berggiesshubel 81.75 329 *e*P **P 10 34 56.4 +0.5**
comp=Z,3.2nm,0.8s
BRG Berggiesshubel 81.75 329 *e*P **P 10 34 56.4 +0.5**
BRG pmax pmax
comp=Z,3.0nm,0.8s
PV09 Paradox Valley 81.78 48 *e*P **P 10 34 54.2 -2.5**
CLL Collm 81.81 330 *e*P **P 10 34 52.0 -4.2**
CLL ⇑*i*P **P 10 34 55.9 -0.3**
comp=Z,6.0nm,0.8s
CLL *i* 10 35 02.2
CLL *i* 10 35 08.0
comp=Z,8.0nm,1.1s
CLL Collm 81.81 330 ⇑*i*P **P 10 34 55.9 -0.3**
CLL *i* 10 35 08.0
CLL pmax pmax
comp=Z,6.0nm,0.8s
CLL Collm 81.81 330 *e*P **P 10 34 56.3 +0.1**
comp=Z,6.7nm,0.8s
KHC Kasperske Hory 83.23 328 *e*P **P 10 35 03.9 +0.2**
KHC *e*pP **sP 10 35 16.8 -1.0**
KHC Kasperske Hory 83.23 328 *e*P **P 10 35 03.9 +0.2**
KHC *e* 10 35 16.8
KHC Kasperske Hory 83.23 328 *e*P **P 10 35 03.8 +0.1**
comp=Z,2.2nm,1.1s
GERES GERESS Array B 83.39 328 P **P 10 35 04.3 -0.3**
comp=Z,1.0nm,0.6s,baz=36,slow=5.3,SNR=9.2
GERES LR LR 11 14 36.2
comp=Z,30nm,19.0s,baz=72,slow=37
GEA0 GERESS Array S 83.40 328 *e*P **P 10 35 04.3 -0.3**
PMOR Pomariorio Ree 84.22 113 *e*T T 12 07 38.0
comp=Z,3.8nm,0.2s
PPT Papeete 84.61 116 LR LR 11 03 13.4
comp=Z,60nm,21.4s,baz=320,slow=29
PPT2 Papeete2 84.62 116 *e*LR LR 11 01 15.0
comp=Z,131nm,26.0s
PPT2 Papeete2 84.62 116 *e*T T 12 08 07.1
comp=Z,1.5nm,0.3s
ANMO Albuquerque 85.72 49 *e*P **P 10 35 17.7 +0.9**
ANMO pmax pmax
comp=Z,1.0nm,1.0s
BFO Black Forest 86.03 330 *c e*P **P 10 35 18.2 +0.3**
BFO Black Forest 86.03 330 *e*P **P 10 35 17.7 -0.2**
comp=Z,6.6nm,1.0s
SCHQ Schefferville 86.57 16 P **P 10 35 21.5 +1.1**
comp=Z,1.2nm,0.7s,baz=350,slow=12,SNR=3.6
SCHQ Schefferville 86.57 16 *e*P **P 10 35 21.4 +1.1**
comp=Z,38nm,2.0s
FUORN Ofenpass-Fuorn 86.58 328 *e*P **P 10 35 21.2 +0.3**
comp=Z,3.7nm,0.6s
TX31 Lajitas Ar. Si 91.23 52 *e*P **P 10 35 43.0 0.0**
TXAR Lajitas Array 91.23 52 P **P 10 35 43.4 +0.4**
comp=Z,0.4nm,0.5s,baz=299,slow=3.6,SNR=10.0
TORD Torodi Ar. Bea 117.74 314 PKP **PKPdf 10 41 23.0 -1.2**
comp=Z,0.6nm,0.5s,baz=32,slow=1.3,SNR=11
BOSA Boshof 125.84 258 PKP **PKPdf 10 41 38.3 -1.1**
comp=Z,2.2nm,0.8s,baz=224,slow=9.7,SNR=3.6
DBIC Dimbokro 126.74 316 PKP **PKPdf 10 41 40.4 -1.0**
comp=Z,4.3nm,0.9s,baz=334,slow=2.2,SNR=3.2
SHEL Horse Pasture 144.18 295 *i* PKIKP **PKPdf 10 42 13.0 -0.7**
LPAZ La Paz 147.72 60 PKPbc **PKPbc 10 42 23.2 0.0**
comp=Z,2.6nm,0.6s,baz=274,slow=2.2,SNR=18
LPAZ La Paz 147.72 60 *e*PKP2 **PKPbc 10 42 23.0 -0.2**
LPAZ La Paz 147.72 60 *e*PKPbc **PKPbc 10 42 23.0 -0.2**
RCBR Riachuelo 149.91 353 *e*PKPbc **PKPbc 10 42 27.8 -0.5**
LVC Limon Verde 151.05 71 *e*PKPbc **PKPbc 10 42 31.9 +0.8**

JMA 01 10:23:49.7±0.2, 37.18N×141.43E, h44km±2km, M3.8,
Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.48**	**293**	P	Pn	10 24 00.2	-0.2
JFK				S	Sn	10 24 07.9	-0.1
ONAJ	**Iwakimizuishiy**	**0.51**	**261**	P	Pn	10 24 00.4	-0.4
ONAJ				S	Sn	10 24 08.5	-0.2
JMM	**Marumori**	**0.85**	**324**	P	Pn	10 24 05.7	+0.4
JMM				S	Sn	10 24 16.7	+0.1

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*NIED **01** 10:35:00, 39.00N×142.40E, h29km, Mw3.7 Best double couple: M0 3.73000×10^14 NP1:ϕ=82.00000°, δ=32.00000°, λ=-34.00000°. NP2:ϕ=202.00000°, δ=73.00000°, λ=-118.00000°.*
*ISCJB **01** 10:35:08.6±1.1, 39.00N±0.04×142.47E±0.07, h24km±7km, mb3.7/11, Error ellipse: s-maj=9.3km s-min=5.5km az=29.0*
*JMA **01** 10:35:09.7±0.1, 39.04N×142.43E, h31km±2km, M3.7*
JMA Felt I J1.
*IDC **01** 10:35:11.4±0.8, 38.95N×142.40E, h32km±6km, mb3.5/11, mb1 3.7/13, mb1mx3.5/54, mbtmp3.7/13, ML3.6/2, MS2.6/3, Ms1 2.6/3, ms1mx2.3/46, Error ellipse: s-maj=21.8km s-min=15.3km az=106.0*
ISC 01 10:35:11.3±0.9, 39.04N±0.04×142.33E±0.06, h31km±6km, n25, σ0=90/34, mb3.8/11, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.52**	**274**	P	**Pb**	**10 35 21.5**	**-0.5**
OFUJ				S	**Sb**	**10 35 29.4**	**+0.1**
MIYJ	**Miyakonagasawa**	**0.66**	**323**	P	**Pn**	**10 35 23.1**	**-1.5**
MIYJ				S	**Sb**	**10 35 32.6**	**-0.8**
JMK	**Ichinoseki**	**0.87**	**264**	P	**Pn**	**10 35 26.9**	**-0.5**
JMK				S	**Sn**	**10 35 38.9**	**-0.2**
JOM	**Ohasama**	**0.91**	**298**	P	**Pn**	**10 35 27.6**	**-0.4**
JOM				S	**Sn**	**10 35 40.3**	**+0.1**
JTH	**Tanohata**	**0.96**	**338**	P	**Pn**	**10 35 27.4**	**-1.3**
JTH				S	**Sn**	**10 35 41.5**	**+0.1**
JIO	**Ouri**	**0.97**	**233**	P	**Pn**	**10 35 27.4**	**-1.3**
JIO				S	**Sn**	**10 35 39.4**	**-2.0**
JRG	**Rokugo**	**1.36**	**285**	P	**Pn**	**10 35 35.2**	**+1.0**
JRG				S	**Sb**	**10 35 53.9**	**+0.6**
JOU	**Okura**	**1.47**	**243**	P	**Pn**	**10 35 35.8**	**+0.1**
JOU				S	**Sn**	**10 35 54.7**	**+0.8**
MJAR	**Matsushiro Arr**	**4.11**	**234**	Pn	**Pn**	**10 36 13.4**	**+1.4**
MJAR	2.1nm,0.3s,baz=37,slow=12,SNR=18			LR	LR	10 38 01.5	
	comp=Z,62nm,20.9s,baz=40,slow=42						
MAT	**Matsushiro**	**4.11**	**234**	P	Pn	10 36 15.4	+3.4
MAT				*e*S	**Sn**	**10 36 59.8**	**+0.7**
ASAJ	**Asahikawa**	**5.07**	**2**	Pn	**Pn**	**10 36 26.6**	**+1.4**
	2.2nm,0.3s,baz=224,slow=13,SNR=17						
ASAJ				Sn	**Sn**	**10 37 22.2**	**-0.5**
	baz=225,slow=19,SNR=2.4						
USRK	**Ussuriysk Ar.**	**9.30**	**307**	Pn	Pn	10 37 27.6	+4.4
	0.3nm,0.3s,baz=106,slow=14,SNR=4.1						
JNU	**Nakatsue**	**10.99**	**241**	LR	LR	10 42 21.2	
	comp=Z,39nm,18.4s,baz=170,slow=39						
KSRS	**Korea Array**	**11.44**	**267**	LR	LR	10 41 58.3	
	comp=Z,24nm,18.1s,baz=97,slow=35						
MA2	**Magadan**	**21.24**	**12**	P	**P**	**10 39 54.9**	**+0.4**
	3.8nm,0.6s,baz=225,slow=9.9,SNR=7.9						
SEY	**Seymchan**	**24.68**	**11**	P	**P**	**10 40 29.9**	**+0.8**
	1.8nm,0.6s,baz=208,slow=7.9,SNR=6.8						
ZALV	**Zalesovo Beam**	**41.13**	**311**	P	**P**	**10 42 51.9**	**-0.3**
	1.1nm,0.4s,baz=80,slow=8.0,SNR=2.8						
MKAR	**Makanchi Array**	**43.70**	**300**	P	**P**	**10 43 14.0**	**+0.7**
	0.7nm,0.6s,baz=85,slow=9.5,SNR=11						
MKAR				pP	**pP**	**10 43 23.6**	**+1.2**
	0.6nm,0.6s,baz=80,slow=10,SNR=2.6						
ILAR	**Eielson Array**	**47.41**	**33**	P	**P**	**10 43 42.0**	**-0.5**
	0.8nm,0.6s,baz=276,slow=5.4,SNR=8.9						
INK	**Inuvik**	**52.27**	**28**	P	**P**	**10 44 19.8**	**+0.6**
	0.7nm,0.5s,baz=310,slow=14,SNR=6.5						
WRA	**Warramunga Arr**	**59.15**	**189**	P	**P**	**10 45 08.0**	**-1.1**
	0.6nm,0.5s,baz=7.1,slow=7.0,SNR=6.4						
WRA				pP	**pP**	**10 45 17.9**	**-0.6**
	1.1nm,0.6s,baz=8.8,slow=7.4,SNR=6.1						
YKA	**Yellowknife Ar**	**61.71**	**31**	P	**P**	**10 45 26.3**	**+0.1**
	0.2nm,0.7s,baz=302,slow=6.5,SNR=6.0						
ASAR	**Alice Springs**	**62.88**	**189**	P	**P**	**10 45 33.5**	**-0.9**
	0.2nm,0.6s,baz=15,slow=13,SNR=4.7						
ASAR				pP	**pP**	**10 45 43.6**	**-0.2**
	0.4nm,0.6s,baz=5.9,slow=4.4,SNR=4.2						
NVAR	**Mina Array Bea**	**73.21**	**54**	P	**P**	**10 46 40.1**	**+0.5**
	0.4nm,0.8s,baz=290,slow=8.6,SNR=3.1						
PDAR	**Pinedale Array**	**75.75**	**46**	P	**P**	**10 46 54.4**	**+0.1**
	0.2nm,0.6s,baz=234,slow=3.1,SNR=3.0						

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*ISCJB **01** 10:37:09.5±0.7, 22.04N±0.07×143.0E±0.2, h250km, mb3.6/13, Error ellipse: s-maj=23.8km s-min=10.1km az=175.1*
*IDC **01** 10:37:12.1±2.3, 22.04N×143.04E, h261km±21km, mb3.4/14, mb1 3.5/16, mb1mx3.3/59, mbtmp4.0/16, Error ellipse: s-maj=19.7km s-min=12.0km az=88.0*
ISC 01 10:37:11.2±0.8, 22.08N±0.10×143.0E±0.2, h250km, n17, σ1=07/19, mb3.6/13, Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCJ	**Chichijima**	**5.06**	**351**	P	**Pn**	**10 38 28.1**	**+0.5**
	9.0nm,0.3s,baz=118,slow=23,SNR=8.2						
JCJ				S	**S**	**10 39 26.9**	**-1.7**
	11nm,0.3s,baz=125,slow=24,SNR=7.4						
MJAR	**Matsushiro Arr**	**15.01**	**345**	P	**P**	**10 40 30.7**	**-0.3**
	0.5nm,0.3s,baz=215,slow=11,SNR=4.6						
KSRS	**Korea Array**	**20.13**	**323**	P	**P**	**10 41 29.1**	**+2.5**
	5.1nm,0.6s,baz=147,slow=9.0,SNR=32						
KLR	**Kul'dur**	**28.54**	**344**	P	**P**	**10 42 44.3**	**+0.6**
	1.1nm,0.4s,baz=169,slow=8.4,SNR=8.0						
SONM	**Songino Array**	**38.96**	**320**	P	**P**	**10 44 13.6**	**+0.2**
	1.0nm,0.4s,baz=124,slow=6.2,SNR=9.5						
WRA	**Warramunga Arr**	**42.62**	**192**	P	**P**	**10 44 42.7**	**-0.6**
	1.5nm,0.6s,baz=11,slow=7.9,SNR=22						
ASAR	**Alice Springs**	**46.33**	**192**	P	**P**	**10 45 11.7**	**-0.8**
	0.3nm,0.5s,baz=18,slow=11,SNR=9.7						
ZALV	**Zalesovo Beam**	**53.83**	**322**	P	**P**	**10 46 06.5**	**-1.8**
	0.8nm,0.3s,baz=103,slow=6.7,SNR=4.8						
MKAR	**Makanchi Array**	**54.34**	**312**	P	**P**	**10 46 12.2**	**0.0**
	0.6nm,0.5s,baz=99,slow=7.7,SNR=6.8						
MKAR				PcP	**PcP**	**10 47 12.3**	**-0.5**
	0.3nm,0.4s,baz=72,slow=5.1,SNR=4.0						
ILAR	**Eielson Array**	**61.77**	**27**	P	**P**	**10 47 03.0**	**-0.2**
	0.6nm,0.6s,baz=256,slow=5.0,SNR=5.7						
INK	**Inuvik**	**67.28**	**24**	P	**P**	**10 47 37.7**	**-0.9**
	1.8nm,1.3s,baz=350,slow=6.1,SNR=4.1						
YKA	**Yellowknife Ar**	**76.19**	**28**	P	**P**	**10 48 32.0**	**+0.4**
	0.6nm,0.5s,baz=292,slow=5.9,SNR=21						
ARCES	**ARCESS Array B**	**78.52**	**341**	P	**P**	**10 48 44.3**	**-0.2**
	0.8nm,0.6s,baz=74,slow=8.7,SNR=13						
KBZ	**Khabaz**	**82.01**	**314**	P	**P**	**10 49 04.0**	**+0.6**
	2.4nm,0.8s,baz=84,slow=2.1,SNR=6.9						
FINES	**FINESS Array B**	**82.78**	**334**	P	**P**	**10 49 06.0**	**-1.0**
	1.8nm,0.3s,baz=64,slow=4.7,SNR=26						
NVAR	**Mina Array Bea**	**83.02**	**51**	P	**P**	**10 49 10.2**	**+1.1**
	0.4nm,0.6s,baz=284,slow=6.0,SNR=4.3						
LPAZ	**La Paz**	**150.04**	**84**	PKPbc	**PKPbc**	**10 56 34.2**	**+0.5**
	1.0nm,0.5s,baz=355,slow=3.1,SNR=6.0						

IDC 01 10:39:19.5±11.0, 52.71N×173.87W, h0km, mb3.4/5, mb1 3.7/6, mb1mx3.4/61, mbtmp3.3/6, ML3.7/1, MS3.0/2, Ms1 3.0/2, ms1mx2.4/37, Error ellipse: s-maj=221.0km s-min=47.2km az=76.0, Andreanof Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ILAR	**Eielson Array**	**18.31**	**38**	P	Pn	10 43 33.0	-1.6
	0.1nm,0.3s,baz=188,slow=13,SNR=4.3						
INK	**Inuvik**	**24.62**	**35**	P	P	10 44 40.6	-0.4
	0.7nm,0.8s,baz=232,slow=6.8,SNR=3.7						
INK				LR	LR	10 55 55.3	
	comp=Z,42nm,18.5s,baz=277,slow=40						
DLBC	**Dease Lake**	**25.08**	**59**	LR	LR	10 54 27.7	
	comp=Z,22nm,18.2s,baz=64,slow=36						
YKA	**Yellowknife Ar**	**32.09**	**49**	P	P	10 45 48.3	+0.6
	0.6nm,0.7s,baz=276,slow=9.8,SNR=17						
NVAR	**Mina Array Bea**	**40.41**	**88**	P	P	10 47 00.4	+1.0
	0.3nm,0.5s,baz=306,slow=7.7,SNR=3.3						
PDAR	**Pinedale Array**	**43.02**	**77**	P	P	10 47 21.6	+0.8
	0.2nm,0.4s,baz=315,slow=2.3,SNR=4.6						
TXAR	**Lajitas Array**	**55.48**	**86**	P	P	10 48 54.4	-1.7
	0.2nm,0.5s,baz=312,slow=5.1,SNR=8.4						

IDC 01 11:04:42.8±3.0, 36.96N×144.77E, h0km, mb3.5/4, mb1 3.8/6, mb1mx3.5/60, mbtmp3.6/6, ML3.7/2, Error ellipse: s-maj=65.0km s-min=28.9km az=160.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**5.28**	**267**	Pn	Pn	11 06 02.5	-0.5
	2.5nm,0.3s,baz=88,slow=15,SNR=14						
MAT	**Matsushiro**	**5.28**	**267**	P	Pn	11 06 02.4	-0.6
MAT				*e*S	Sn	11 07 00.7	-3.9
ASAJ	**Asahikawa**	**7.33**	**348**	Pn	Pn	11 06 29.3	-1.8
	1.3nm,0.3s,baz=199,slow=15,SNR=19						
ASAJ				Sn	Sn	11 07 44.5	-11
	0.2nm,0.3s,baz=338,slow=18,SNR=1.7						
SEY	**Seymchan**	**26.42**	**8**	P	P	11 10 22.0	+1.1
	1.3nm,0.6s,baz=45,slow=22,SNR=4.3						
MKAR	**Makanchi Array**	**46.42**	**303**	P	P	11 13 11.2	0.0
	0.7nm,0.6s,baz=84,slow=9.9,SNR=7.2						
ILAR	**Eielson Array**	**48.12**	**32**	P	P	11 13 23.3	-0.7
	0.3nm,0.7s,baz=257,slow=5.7,SNR=4.1						
YKA	**Yellowknife Ar**	**62.50**	**31**	P	P	11 15 07.8	0.0
	0.2nm,0.7s,baz=297,slow=6.1,SNR=4.6						

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*MAN **01** 11:06:50, 6.37N×127.10E, h87km, mb5.5, ML4.6, MS4.9*
*KLM **01** 11:06:51.8, 6.51N×127.30E, h74km, mb5.1, MS5.7*
*ISCJB **01** 11:06:54.5±0.4, 6.57N±0.02×126.92E±0.02, h80km±3km, mb4.8/186, Error ellipse: s-maj=4.1km s-min=2.7km az=161.1*
*IDC **01** 11:06:54.0±1.2, 6.58N×126.83E, h61km±10km, mb4.4/37, mb1 4.5/38, mb1mx4.4/50, mbtmp4.6/38, MS4.2/34, Ms1 4.2/34, ms1mx4.2/45, Error ellipse: s-maj=12.8km s-min=7.5km az=76.0*
*BJI **01** 11:06:54.3, 6.50N×126.90E, h80km, mb4.7/47, mB4.9/36, Ms4.7/41, MS7 4.5/38*
*GCMT **01** 11:06:56.6±0.2, 6.56N×127.12E, h36km±1km, MW5.1/91, Moment Tensor Solution. s47,c56; s91,c117; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr2.74±.22; Mθθ3.57±.17; Mϕϕ-6.31±.17; Mrθ-1.75±.24; Mϕθ0.86±.12; Mϕr2.81±.26; Best double couple: M0 6.17400×10^16 NP1:ϕ=321.00000°, δ=74.00000°, λ=45.00000°. NP2: ϕ=216.00000°, δ=47.00000°, λ=158.00000°. Principal axes: T 5.0760, Plg43.0000°, Azm189.0000°; N 2.1950, Plg42.0000°, Azm337.0000°; P -7.2710, Plg17.0000°, Azm83.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **01** 11:06:56.6±0.6, 6.55N×126.89E, h83km±5km, mb5.0/110 Error ellipse: s-maj=4.5km s-min=3.2km az=74.0*
*MOS **01** 11:06:56.1±1.2, 6.65N×126.81E, h93km, mb4.9/49, MS4.3/4, Error ellipse: s-maj=10.0km s-min=5.4km az=112.0*
*DJA **01** 11:06:57.8±0.6, 7.4N±4.12.7E±, h77km±5km, M5.2/69, mb5.2/69, mB5.6/40, MLv5.8/1, Mw(mB)5.1/40*
ISC 01 11:06:57.1±0.4, 6.57N±0.03×126.85E±0.04, h86km±3km,
n472, σ1=86/508, mb4.9/185, 19C-8D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MATI	**Mati**	**0.69**	**302**	*e*P	Pn	11 07 06.5	-6.7
MATI				*e*S	**Sn**	**11 07 23.6**	**-1.5**
DAV	**Davao City (W)**	**1.35**	**292**	P	**Pn**	**11 07 17.9**	**-2.9**
	1μm,0.3s,baz=94,slow=2.2,SNR=192						
DAV				S	**Sn**	**11 07 38.5**	**-0.2**
	3μm,0.3s,baz=107,slow=23,SNR=24						
DAV				LR	LR	11 08 06.7	
	comp=Z,20μm,18.4s,baz=112,slow=55						
DAV	**Davao City (W)**	**1.35**	**292**	*e*Pn	**Pn**	**11 07 19.1**	**-1.7**
DAV				*e*Sn	**Sn**	**11 07 39.3**	**+0.6**
BIPH	**Bislig**	**1.67**	**343**	⇑*i*P	**Pn**	**11 07 24.4**	**-0.5**
BIPH				*i* S	**Sn**	**11 07 45.5**	**-0.5**
KCP	**Kidapawan**	**1.80**	**284**	⇓*i*P	**Pn**	**11 07 24.0**	**-2.6**
KCP				*i* S	**Sn**	**11 07 44.3**	**-4.7**
BUKP	**Musuan**	**2.20**	**306**	*e*P	**Pn**	**11 07 30.0**	**-1.9**
BUKP				*e*S	**Sn**	**11 08 00.1**	**+1.7**
CTBH	**Cotabato--PC H**	**2.66**	**284**	⇓*e*P	**Pn**	**11 07 36.1**	**-2.0**
CTBH				*e*S	**Sn**	**11 08 11.8**	**+2.3**
CGP	**Cagayan de Oro**	**2.84**	**311**	⇑*i*P	**Pn**	**11 07 38.1**	**-2.3**
CGP				*i* S	**Sn**	**11 08 13.6**	**-0.2**
SGSI	**Sangihe**	**3.15**	**205**	P	**Pn**	**11 07 43.2**	**-1.5**
SGSI				S	**Sn**	**11 08 25.8**	**+4.4**
SCPH	**Surigao**	**3.46**	**337**	*e*P	**Pn**	**11 07 47.6**	**-1.2**
SCPH				*e*S	**Sn**	**11 08 33.6**	**+4.8**
PAGZ	**Pagadian**	**3.66**	**290**	*e*P	**Pn**	**11 07 50.4**	**-1.2**
TBP	**Tagbilaran**	**4.28**	**317**	⇓*e*P	**Pn**	**11 07 58.7**	**-1.3**
IPIL	**Ipil**	**4.41**	**286**	*e*P	**Pn**	**11 08 01.4**	**-0.4**
LLP	**Lapu-Lapu**	**4.69**	**323**	⇓*e*P	**Pn**	**11 08 03.8**	**-1.7**
LLP				*e*S	**Sn**	**11 09 01.1**	**+2.5**
PLP	**Palo**	**4.92**	**338**	⇓*e*P	**Pn**	**11 08 07.7**	**-1.0**
PLP				*e*S	**Sn**	**11 09 11.8**	**+7.4**
RCP	**Roxas**	**6.40**	**321**	⇓*e*P	**Pn**	**11 08 28.1**	**-0.8**
LBMI	**Labuha**	**7.19**	**175**	P	**Pn**	**11 08 36.6**	**-3.1**
	661nm,0.9s,6μm2.7nm						
MRSI	**Marisa**	**7.79**	**219**	P	**Pn**	**11 08 46.4**	**-1.4**
MYLDM	**Lahad Datu**	**8.42**	**261**	*e*Pn	**Pn**	**11 08 58.2**	**+1.8**
LUWI	**Luwuk**	**8.59**	**208**	P	**Pn**	**11 08 59.6**	**+0.9**
	1μm,1.0s,11μm						
LUWI	**Luwuk**	**8.59**	**208**	*e*Pn	**Pn**	**11 08 60.0**	**+1.2**
SWI	**Sorong**	**8.60**	**149**	P	**Pn**	**11 08 54.9**	**-4.0**
	119nm,0.6s,1μm						
SANI	**Sanana**	**8.61**	**186**	P	**Pn**	**11 08 54.4**	**-4.6**
TSM	**Tawau**	**9.22**	**256**	⇑P	**Pn**	**11 09 08.1**	**+0.8**
SDKM	**Sandakan**	**9.64**	**265**	⇑P	**Pn**	**11 09 13.9**	**+0.7**
NLAI	**Namlea**	**9.75**	**179**	P	**Pn**	**11 09 10.6**	**-4.0**
KDM	**Kudat**	**9.95**	**273**	⇑P	**Pn**	**11 09 17.4**	**+0.1**
MSAI	**Masohi**	**10.07**	**168**	P	**Pn**	**11 09 18.2**	**-0.7**
	57nm,1.1s,973nm						
KKM	**Kota Kinabalu**	**10.58**	**268**	⇑P	**Pn**	**11 09 25.2**	**-0.8**
KKM	**Kota Kinabalu**	**10.58**	**268**	*e*Pn	**Pn**	**11 09 26.4**	**+0.3**
FAKI	**Fak Fak**	**10.86**	**150**	P	**Pn**	**11 09 27.3**	**-2.5**
	88nm,1.0s,858nm						
FAKI	**Fak Fak**	**10.86**	**150**	*e*Pn	**Pn**	**11 09 25.9**	**-3.9**
FAKI				*e*Sn	Sn	11 11 20.9	-8.6
RKPI	**Ransiki, Papua**	**10.86**	**137**	P	**Pn**	**11 09 32.2**	**+2.4**
TTSI	**Tana Toraja**	**11.85**	**217**	P	**Pn**	**11 09 43.5**	**+0.3**
	537nm,1.3s,7μm						
BKB	**Balikpapan**	**12.62**	**232**	P	**Pn**	**11 09 53.3**	**-0.2**
	289nm,1.5s,4μm						
SPSI	**Sidrap Palu**	**12.63**	**214**	P	**Pn**	**11 09 52.3**	**-1.3**
	104nm,0.8s,2μm						
KAPI	**Kappang**	**13.51**	**212**	P	**Pn**	**11 10 03.7**	**-1.6**
	3.1nm,0.3s,baz=20,slow=6.7,SNR=63						
KAPI				LR	LR	11 16 00.6	
	comp=Z,736nm,18.1s,baz=55,slow=40						
KAPI	**Kappang**	**13.51**	**212**	*e*Pn	**Pn**	**11 10 03.5**	**-1.8**
MTKI	**Muara Teweh, K**	**14.07**	**238**	P	**Pn**	**11 10 13.4**	**+0.7**
	154nm,0.9s						
BTM	**Bintulu**	**14.12**	**257**	⇑P	**Pn**	**11 10 13.5**	**+0.3**
BSSI	**Bau Bau, Buton**	**14.13**	**207**	P	**P**	**11 10 16.7**	**-1.7**
	95nm,1.0s,1μm						
SBUM	**Sibu**	**15.14**	**255**	⇑P	**Pn**	**11 10 27.9**	**+1.4**
SBUM	**Sibu**	**15.14**	**255**	*e*Pn	**P**	**11 10 28.8**	**-0.8**
	241nm,0.9s						
BBKI	**Banjar Baru**	**15.59**	**231**	P	**P**	**11 10 34.6**	**0.0**
	258nm,1.3s,4μm						
MMRI	**Maumere**	**15.79**	**197**	P	**Pn**	**11 10 32.0**	**-2.6**
MMRI	**Maumere**	**15.79**	**197**	*e*Pn	**Pn**	**11 10 33.5**	**-1.2**
	515nm,1.6s						
GENI	**Genyem**	**16.12**	**124**	P	**Pn**	**11 10 37.7**	**-1.0**
	125nm,1.5s,3μm						
SOEI	**Soe**	**16.42**	**189**	P	**P**	**11 10 46.0**	**+2.1**
SOEI	**Soe**	**16.42**	**189**	*e*Pn	**Pn**	**11 10 42.5**	**-0.1**
	406nm,1.0s						
JAY	**Jayapura**	**16.52**	**123**	P	**Pn**	**11 10 43.8**	**0.0**
	0.1nm,0.3s,baz=268,slow=23,SNR=9.7						
JAY				LR	LR	11 16 39.6	
	comp=Z,40nm,18.8s,baz=341,slow=35						
JAY	**Jayapura**	**16.52**	**123**	P	**P**	**11 10 45.0**	**+0.1**
STKI	**Sintang**	**16.64**	**248**	P	**P**	**11 10 49.5**	**+3.2**
	83nm,1.6s,26μm						
BATI	**Baumata**	**16.97**	**191**	P	**P**	**11 10 50.0**	**+0.1**
	baz=73,slow=19						
BATI				LR	LR	11 17 41.6	
	comp=Z,549nm,20.9s,baz=358,slow=38						
BATI	**Baumata**	**16.97**	**191**	P	**P**	**11 10 52.4**	**+2.6**
KSM	**Kuching**	**17.25**	**254**	⇑P	**P**	**11 10 54.1**	**+1.1**
KSM	**Kuching**	**17.25**	**254**	*e*Pn	**P**	**11 10 54.4**	**+1.3**
	84nm,1.2s						
YULB	**Yu-li**	**17.56**	**343**	*e*P	**Pn**	**11 10 57.8**	**+1.4**
	28nm,1.4s						
PBKI	**Pangkalan Bun**	**17.73**	**239**	P	**Pn**	**11 11 03.2**	**+4.6**
	290nm,1

CISI	**Cisompet, Garu**	**23.61 234**	P	**P**	**11 12 00.6**	**-0.1**
	185nm,0.6s,34µm					
CISI	**Cisompet, Garu**	**23.61 234**	*e*P	**P**	**11 11 59.3**	**-1.4**
	245nm,1.2s					
CBJI	**Citeko**	**23.76 237**	P	**P**	**11 12 04.5**	**+2.5**
	581nm,1.0s					
PANO	**Nakornpanom**	**24.14 298**	P	**P**	**11 12 05.8**	**+0.5**
	30nm,1.1s,1µm					
FITZ	**Fitzroy Crossi**	**24.55 183**	P	**P**	**11 12 08.6**	**-0.4**
	65nm,0.9s,baz=18,slow=8.1,SNR=77					
FITZ	**Fitzroy Crossi**	**24.55 183**	P	**P**	**11 12 08.0**	**-1.0**
	baz=25,SNR=65					
FITZ	**Fitzroy Crossi**	**24.55 183**	*e*P	**P**	**11 12 08.1**	**-0.8**
	51nm,0.8s					
SKNT	**Sakolnakorn**	**24.62 297**	P	**P**	**11 12 10.1**	**+0.3**
	68nm,1.2s					
KLI	**Kotabumi**	**24.72 243**	P	**P**	**11 12 12.9**	**+2.3**
	221nm,1.0s,3µm					
CGJI	**Cibinong**	**24.84 239**	P	**P**	**11 12 18.4**	**+6.6**
SSE	**Sheshan**	**24.97 348**	P	**P**	**11 12 08.0**	**-4.7**
SSE			S	**S**	**11 16 31.0**	**+0.7**
SSE			pmax	pmax		
	comp=Z,19nm,0.9s					
SSE			pmax	pmax		
	comp=Z,51nm,3.5s					
SSE			LR	LR		
	comp=N,290nm,21.6s					
SSE			LR	LR		
	comp=E,220nm,21.3s					
SSE			LR	LR		
	comp=Z,410nm,24.7s					
CBIJ	**Chichi jima**	**25.09 34**	*e*P	**P**	**11 12 12.7**	**-1.1**
	137nm,0.7s					
JCJ	**Chichijima**	**25.09 34**	P	**P**	**11 12 12.7**	**-1.2**
	114nm,0.6s,baz=290,slow=8.1,SNR=8.0					
JCJ			LR	LR	11 21 17.7	
	comp=Z,489nm,20.8s,baz=234,slow=34					
MDSI	**Maura Dua**	**25.16 245**	P	**P**	**11 12 17.0**	**+2.4**
	79nm,0.9s					
KASI	**Kota Agung**	**25.34 242**	P	**P**	**11 12 19.9**	**+3.6**
	114nm,1.0s					
KHON	**Khomkaen**	**25.44 294**	P	**P**	**11 12 24.2**	**+7.0**
LHSI	**Lahat**	**25.47 247**	P	**P**	**11 12 20.6**	**+3.1**
	176nm,1.2s,2µm					
SRAK	**Srakaew**	**25.48 289**	P	**P**	**11 12 17.4**	**-0.2**
	58nm,1.1s,994nm					
LWLI	**Liwa**	**25.50 244**	P	**P**	**11 12 22.1**	**+4.3**
	164nm,1.0s,8µm					
PMG	**Port Moresby**	**25.72 128**	LR	LR	11 24 21.8	
	comp=Z,327nm,18.9s,baz=302,slow=41					
PMG	**Port Moresby**	**25.72 128**	*i* P	**P**	**11 12 19.4**	**-0.3**
PMG			pmax	pmax		
	comp=Z,54nm,1.1s					
PMG	**Port Moresby**	**25.72 128**	*e*P	**P**	**11 12 18.5**	**-1.2**
	comp=Z,16nm,0.8s					
IPM	**Ipoh**	**25.78 267**	*e*P	**P**	**11 12 20.4**	**+0.1**
	comp=Z,57nm,0.9s					
SKLT	**Songkhla**	**26.05 273**	P	**P**	**11 12 27.4**	**+4.7**
	comp=Z,36nm,0.9s					
COEN	**Coen**	**26.05 142**	P	**P**	**11 12 21.0**	**-1.7**
	baz=26,SNR=12					
COEN	**Coen**	**26.05 142**	*e*P	**P**	**11 12 21.5**	**-1.2**
	comp=Z,59nm,1.2s					
CHAI	**Chaiyaphum**	**26.06 293**	P	**P**	**11 12 28.6**	**+5.8**
KULM	**Kulim**	**26.09 269**	*e*P	**P**	**11 12 23.4**	**+0.3**
	comp=Z,80nm,1.2s					
NAYO	**Nakonayok**	**26.23 289**	P	**P**	**11 12 29.6**	**+5.2**
	comp=Z,14nm,1.4s,comp=Z,797nm					
MASI	**Maura Aman, Be**	**26.39 249**	P	**P**	**11 12 30.6**	**+4.7**
	comp=Z,271nm,0.7s,comp=Z,8µm					
NJ2	**Nanjing**	**26.43 345**	*e*P	**P**	**11 12 27.4**	**+1.5**
NJ2			pmax	pmax		
	comp=Z,5.0nm,0.5s					
SDSI	**Sungai Dareh**	**26.44 255**	P	**P**	**11 12 27.5**	**+1.2**
	comp=Z,87nm,1.5s,comp=Z,27µm					
BKNI	**Bangkinang**	**26.48 257**	*e*P	**P**	**11 12 26.1**	**-0.6**
	comp=Z,98nm,0.5s					
WHN	**Wuhan**	**26.58 335**	*e*P	**P**	**11 12 32.2**	**+4.9**
JNU	**Nakatsue**	**26.68 8**	P	**P**	**11 12 29.1**	**+0.8**
	comp=Z,9.3nm,0.9s,baz=178,slow=7.2,SNR=4.5					
JNU	**Nakatsue**	**26.68 8**	*e*P	**P**	**11 12 28.6**	**+0.3**
	comp=Z,28nm,0.9s					
PBKT	**Sadao Pong**	**27.19 294**	P	**P**	**11 12 34.1**	**+1.1**
	comp=Z,19nm,1.1s,comp=Z,1µm					
LOEI	**Loei**	**27.24 296**	P	**P**	**11 12 31.3**	**-2.1**
	comp=Z,20nm,1.3s					
WRAB	**Tennant Creek**	**27.35 164**	*ce*P	**P**	**11 12 32.9**	**-1.5**
WRAB			pmax	pmax		
	comp=Z,164nm,1.7s					
WRAB	**Tennant Creek**	**27.35 164**	*e*P	**P**	**11 12 32.6**	**-1.8**
	comp=Z,44nm,0.9s					
WRA	**Warramunga Arr**	**27.36 165**	P	**P**	**11 12 32.1**	**-2.3**
	comp=Z,20nm,0.9s,baz=340,slow=11,SNR=57					
WRA			S	**S**	**11 17 13.3**	**+4.9**
	comp=Z,2.2nm,0.9s,baz=346,slow=14,SNR=2.6					
WRA			ScP	**ScP**	**11 19 27.6**	**+2.8**
	comp=Z,3.8nm,0.8s,baz=347,slow=3.3,SNR=5.8					
PDSI	**Padang**	**27.36 255**	P	**P**	**11 12 40.0**	**+5.4**
	comp=Z,36nm,1.0s,comp=Z,9µm					
WB2	**Warramunga Arr**	**27.36 164**	*e*P	**P**	**11 12 32.6**	**-1.8**
	comp=Z,58nm,0.8s					
RABL	**Rabaul**	**27.44 112**	*e*P	**P**	**11 12 34.2**	**-1.1**
	comp=Z,113nm,0.9s					
GYA	**Guiyang**	**27.58 318**	P	**P**	**11 12 39.4**	**+2.9**
GYA			pP	pP	11 12 57.4	+1.3
GYA			sP	sP	11 13 06.8	+0.6
GYA			PP	**PnPn**	**11 13 30.3**	**+3.7**
GYA			PcP	**PcP**	**11 15 53.6**	**+1.2**
GYA			S	**S**	**11 17 14.0**	**+2.0**
GYA			SS	**SnSn**	**11 18 38.4**	**+6.4**
GYA			ScP	**ScP**	**11 19 26.2**	**+0.6**
GYA			ScS	**ScS**	**11 23 17.0**	**-0.8**
GYA			pmax	pmax		
	comp=Z,20nm,1.0s					
GYA			pmax	pmax		
	comp=Z,120nm,5.6s					
GYA			LR	LR		
	comp=Z,570nm,16.9s					
GYA			LR	LR		
	comp=Z,520nm,17.4s					
GYA			LR	LR		
	comp=Z,540nm,17.5s					
PSI	**Prapat**	**28.07 264**	P	**P**	**11 12 39.1**	**-1.9**
	comp=Z,8.9nm,0.7s,baz=116,slow=9.3					
PSI	**Prapat**	**28.07 264**	*e*P	**P**	**11 12 41.4**	**+0.3**
PSI			pmax	pmax		
	comp=Z,21nm,0.9s					
PSI	**Prapat**	**28.07 264**	*e*P	**P**	**11 12 41.4**	**+0.3**
	comp=Z,21nm,0.9s					
NANT	**Nan**	**28.20 298**	P	P	11 12 48.0	+6.0
MBWA	**Marble Bar**	**28.43 194**	*e*P	**P**	**11 12 43.1**	**-0.8**
	comp=Z,130nm,1.5s					
ENH	**Enshi**	**28.67 327**	*e*P	**P**	**11 12 45.6**	**-0.5**
	comp=Z,14nm,0.9s					
KCSI	**Kotacane, Aceh**	**29.12 265**	P	**P**	**11 12 49.7**	**-0.5**
KMI	**Kunming**	**29.53 311**	P	**P**	**11 12 57.8**	**+3.8**
KMI			pP	pP	11 13 14.7	+1.0
KMI			sP	sP	11 13 26.3	+2.6
KMI			S	**S**	**11 17 47.1**	**+4.2**
KMI			sS	sS	11 18 17.9	+0.9
KMI			SS	**SnSn**	**11 19 24.0**	**+4.5**
KMI			pmax	pmax		
	comp=Z,16nm,1.2s					
KMI			pmax	pmax		
	comp=Z,48nm,3.6s					
KMI			LR	LR		
	comp=Z,410nm,18.6s					
KMI			LR	LR		
	comp=Z,560nm,19.6s					
KMI			LR	LR		
	comp=Z,800nm,18.6s					
CMAR	**Chiang Mai Arr**	**29.64 296**	P	**P**	**11 12 54.5**	**-0.2**
	comp=Z,0.5nm,0.6s,baz=116,slow=6.9,SNR=6.8					
CMAR			PcP	**PcP**	**11 15 58.4**	**+0.8**
	comp=Z,2.7nm,0.9s,baz=93,slow=0.7,SNR=7.9					
CMAR			ScP	**ScP**	**11 19 38.0**	**+6.0**
	comp=Z,1.6nm,0.9s,baz=116,slow=3.5,SNR=3.3					
CMAR			LR	LR	11 26 36.5	
	comp=Z,949nm,18.3s,baz=118,slow=40					
GSI	**Gunungsitoli**	**29.66 261**	P	**P**	**11 12 56.5**	**+1.5**
	comp=Z,59nm,0.8s					
GSI	**Gunungsitoli**	**29.66 261**	*e*P	**P**	**11 12 53.5**	**-1.4**
	comp=Z,40nm,0.8s					
QIS	**Mount Isa**	**29.73 155**	P	**P**	**11 12 53.9**	**-1.6**
	baz=30,SNR=67					
CMMT	**Chiang Mai**	**29.75 297**	P	P	11 13 05.1	+9.3
CHTO	**Chiang Mai**	**29.76 297**	P	P	11 13 05.1	+9.3
CHTO	**Chiang Mai**	**29.76 297**	*e*P	**P**	**11 12 58.2**	**+2.4**
CHTO			pmax	pmax		
	comp=Z,4.0nm,0.8s					
CHTO	**Chiang Mai**	**29.76 297**	*e*P	**P**	**11 12 58.2**	**+2.4**
	comp=Z,4.3nm,0.8s					
MTSU	**Mount Surprise**	**30.00 145**	P	**P**	**11 12 56.6**	**-1.3**
	baz=30,SNR=26					
INU	**Inuyama**	**30.13 17**	*e*P	**P**	**11 12 57.6**	**-1.3**
	comp=Z,38nm,0.7s					
KSRS	**Korea Array**	**30.75 2**	LR	LR	11 27 03.6	
	comp=Z,498nm,19.2s,baz=181,slow=39					
AS31	**Alice Springs**	**30.83 167**	*e*P	**P**	**11 13 03.8**	**-1.5**
	comp=Z,5.8nm,0.7s					
ASAR	**Alice Springs**	**30.83 167**	P	**P**	**11 13 03.9**	**-1.4**
	comp=Z,5.7nm,0.7s,baz=12,slow=9.0,SNR=52					
ASAR			PcP	**PcP**	**11 16 01.0**	**+0.4**
	comp=Z,2.4nm,0.5s,baz=353,slow=2.6,SNR=4.9					
ASAR			S	**S**	**11 18 04.2**	**+1.3**
	comp=Z,2.2nm,0.9s,baz=350,slow=20,SNR=4.0					
ASAR			ScP	**ScP**	**11 19 38.4**	**+2.6**
	comp=Z,3.1nm,0.9s,baz=354,slow=1.6,SNR=7.1					
ASAR			LR	LR	11 27 32.9	
	comp=Z,406nm,18.5s,baz=345,slow=40					
AS01	**Alice Springs**	**30.84 167**	*e*P	**P**	**11 13 03.5**	**-1.8**
WRKA	**Warakurna**	**31.45 177**	P	**P**	**11 13 09.6**	**-1.0**
	baz=32,SNR=45					
MJAR	**Matsushiro Arr**	**31.59 18**	P	**P**	**11 13 09.5**	**-2.2**
	comp=Z,9.8nm,0.8s,baz=192,slow=9.3,SNR=18					
MJAR			LR	LR	11 24 59.1	
	comp=Z,764nm,21.2s,baz=185,slow=34					
MAT	**Matsushiro**	**31.59 18**	P	**P**	**11 13 09.3**	**-2.4**
MAT			S	S	11 18 25.6	+11
MJB9	**Matsu-Tunnel**	**31.59 18**	*e*P	**P**	**11 13 09.9**	**-1.8**
	comp=Z,4.6nm,0.8s					
XAN	**Xi'an**	**31.97 331**	P	**P**	**11 13 12.5**	**-2.7**
XAN			pmax	pmax		
	comp=Z,5.0nm,0.9s					
XAN			pmax	pmax		
	comp=Z,30nm,4.1s					
XAN			LR	LR		
	comp=Z,500nm,22.3s					
XAN			LR	LR		
	comp=Z,760nm,25.5s					
XAN			LR	LR		
	comp=Z,400nm,18.1s					
CD2	**Chengdu**	**32.47 321**	P	**P**	**11 13 19.2**	**-0.4**
CD2			pP	pP	11 13 37.7	-1.7
CD2			sP	sP	11 13 47.1	-2.3
CD2			PP	**PP**	**11 14 34.4**	**-0.2**
CD2			S	**S**	**11 18 30.2**	**+1.8**
CD2			sS	sS	11 19 02.6	0.0
CD2			pmax	pmax		
	comp=Z,20nm,0.5s					
CD2			pmax	pmax		
	comp=Z,160nm,5.1s					
CD2			LR	LR		
	comp=Z,580nm,18.0s					
CD2			LR	LR		
	comp=Z,720nm,16.8s					
CTA	**Charters Tower**	**32.66 145**	P	**P**	**11 13 21.0**	**-0.3**
	comp=Z,16nm,0.8s,baz=318,slow=13,SNR=19					
CTA	**Charters Tower**	**32.66 145**	P	**P**	**11 13 21.0**	**-0.3**
CTAO	**Charters Tower**	**32.66 145**	*e*P	**P**	**11 13 20.8**	**-0.5**
CTAO			pmax	pmax		
	comp=Z,112nm,0.8s					
CTAO	**Charters Tower**	**32.66 145**	*e*P	**P**	**11 13 20.8**	**-0.5**
	comp=Z,112nm,0.8s					
BJI	**Beijing**	**34.67 346**	P	**P**	**11 13 40.6**	**+2.1**
BJI			S	**S**	**11 19 07.0**	**+4.9**
BJI			pmax	pmax		
	comp=Z,6.0nm,0.8s					
BJI			pmax	pmax		
	comp=Z,74nm,3.0s					
BJI			LR	LR		
	comp=Z,220nm,12.4s					
LZH	**Lanzhou**	**36.15 328**	*e*P	**P**	**11 13 51.9**	**+0.4**
LZH			pP	pP	11 14 07.4	-4.1
LZH			PP	**PP**	**11 15 15.0**	**-0.3**
LZH			*e*S	**S**	**11 19 23.1**	**-2.2**
LZH			SS	**SnSn**	**11 21 53.4**	**-6.2**
LZH			pmax	pmax		
	comp=Z,38nm,1.3s					
LZH			pmax	pmax		
	comp=Z,140nm,4.3s					
LZH			LR	LR		
	comp=Z,1µm,13.6s					
LZH			LR	LR		
	comp=Z,2µm,13.0s					
LZH			LR	LR		
	comp=Z,2µm,16.4s					
HNR	**Honiara**	**36.61 115**	LR	LR	11 27 18.1	
	comp=Z,173nm,21.9s,baz=300,slow=33					
VLA	**Vladivostok**	**36.67 6⇑**	*i*P	**P**	**11 13 54.3**	**-1.2**
VLA			*i* *PP	**pP**	**11 14 17.0**	**+1.4**
VLA			*i* *SP	**sP**	**11 14 29.0**	**+3.5**
VLA			*e*		11 15 20.3	
VLA			*i*		11 16 15.2	
VLA			pmax	pmax		
	comp=Z,31nm,0.9s					
HHC	**Hu-ho-hao-te**	**36.76 340**	*e*P	**P**	**11 13 58.1**	**+1.6**
HHC			S	**S**	**11 19 36.3**	**+2.0**
HHC			pmax	pmax		
	comp=Z,23nm,0.9s					
HHC			pmax	pmax		
	comp=Z,170nm,5.4s					
HHC			LR	LR		
	comp=Z,940nm,14.3s					
HHC			LR	LR		
	comp=Z,900nm,13.1s					
HHC			LR	LR		
	comp=Z,960nm,14.3s					
MORW	**Morawa**	**36.93 196**	P	**P**	**11 13 57.5**	**-0.5**
	baz=37,SNR=7.0					
QLP	**Quilpie**	**37.02 154**	P	**P**	**11 13 57.0**	**-1.7**
	baz=37,SNR=25					
USRK	**Ussuriysk Ar.**	**37.75 6**	P	**P**	**11 14 03.9**	**-0.8**
	comp=Z,5.9nm,0.9s,baz=173,slow=8.9,SNR=8.0					
USRK			LR	LR	11 29 31.1	
	comp=Z,270nm,20.9s,baz=176,slow=36					
MDJ	**Mudanjiang**	**37.97 3**	P	**P**	**11 14 06.5**	**0.0**
MDJ			pmax	pmax		
	comp=Z,15nm,1.2s					
MDJ			pmax	pmax		
	comp=Z,880nm,5.1s					
MDJ	**Mudanjiang**	**37.97 3**	*e*P	**P**	**11 14 06.7**	**+0.2**
	comp=Z,62nm,1.6s					
KMBL	**Kambalda**	**38.02 187**	P	**P**	**11 14 06.5**	**-0.6**
	baz=38,SNR=16					
ERM	**Erimo**	**38.15 20**	*e*P	**P**	**11 14 09.2**	**+1.1**
ERM			pmax	pmax		
	comp=Z,91nm,1.4s					
ERM	**Erimo**	**38.15 20**	*e*P	**P**	**11 14 09.2**	**+1.1**
	comp=Z,91nm,1.4s					
BLDU	**Ballidu**	**38.23 194**	P	**P**	**11 14 08.2**	**-0.7**
	baz=38,SNR=18					
SHL	**Shillong**	**38.35 303⇑**	*i*P	**P**	**11 14 10.0**	**-0.3**
	comp=Z,3.0nm,0.6s					
SHL			*e*S	**S**	**11 20 00.0**	**+1.0**
KLBR	**Kellerberrin**	**38.93 192**	P	**P**	**11 14 14.3**	**-0.4**
	baz=39,SNR=14					
RMQ	**Roma**	**39.13 148**	P	**P**	**11 14 15.4**	**-1.1**
	baz=39,SNR=6.1					
EIDS	**Eidsvold**	**39.54 144**	P	**P**	**11 14 18.6**	**-1.3**
	baz=40,SNR=4.3					
EIDS	**Eidsvold**	**39.54 144**	*e*P	**P**	**11 14 18.6**	**-1.3**
	comp=Z,13nm,0.9s					
ASAJ	**Asahikawa**	**39.86 18**	P	**P**	**11 14 22.5**	**+0.2**
	comp=Z,20nm,1.0s,baz=235,slow=9.4,SNR=8.5					
ASAJ	**Asahikawa**	**39.86 18**	*e*P	**P**	**11 14 23.0**	**+0.7**
	comp=Z,270nm,2.0s					
BBOO	**Buckleboo**	**40.13 168**	P	**P**	**11 14 23.7**	**-1.0**
	baz=40,SNR=26					
BBOO	**Buckleboo**	**40.13 168**	*e*P	**P**	**11 14 23.8**	**-1.0**
	comp=Z,37nm,0.8s					
NWAO	**Narrogin (SRO)**	**40.33 193**	P	**P**	**11 14 26.4**	**+0.1**
	baz=41,SNR=29					
H11S3	**WAKE ISLAND Hy**	**40.55 69**	T	T	11 58 43.7	
	baz=258,slow=70,SNR=52					
H11S1	**WAKE ISLAND Hy**	**40.57 69**	T	T	11 58 22.9	
	baz=258,slow=70,SNR=27					
H11S2	**WAKE ISLAND Hy**	**40.57 69**	T	T	11 58 17.8	
	baz=258,slow=70,SNR=33					
STKA	**Stephens Creek**	**40.74 161**	P	**P**	**11 14 28.4**	**-1.3**
	comp=Z,23nm,0.6s,baz=350,slow=7.2,SNR=77					
STKA			LR	LR	11 34 32.5	
	comp=Z,143nm,18.5s,baz=339,slow=41					
STKA	**Stephens Creek**	**40.74 161**	P	**P**	**11 14 28.4**	**-1.3**
	baz=41,SNR=73					
STKA	**Stephens Creek**	**40.74 161**	*e*P	**P**	**11 14 28.5**	**-1.3**
STKA			pmax	pmax		
	comp=Z,9.0nm,0.9s					
STKA	**Stephens Creek**	**40.74 161**	*e*P	**P**	**11 14 28.5**	**-1.3**
	comp=Z,8.9nm,0.9s					
GTA	**Gaotai**	**40.76 327**	P	**P**	**11 14 29.4**	**-0.6**
GTA			pP	pP	11 14 48.1	-2.2
GTA			sP	sP	11 14 56.6	-3.6
GTA			PcP	**PcP**	**11 16 29.4**	**-0.4**
GTA			S	**S**	**11 20 35.2**	**+0.7**
GTA			sS	sS	11 21 06.7	-2.7
GTA			SS	**SS**	**11 23 34.2**	**-4.3**
GTA			pmax	pmax		
	comp=Z,10.0nm,1.4s					
GTA			pmax	pmax		
	comp=Z,140nm,5.0s					
GTA			LR	LR		
	comp=Z,670nm,24.5s					
GTA			LR	LR		
	comp=Z,430nm,22.8s					
GTA			LR	LR		
	comp=Z,460nm,21.4s					
H11N1	**WAKE ISLAND Hy**	**41.00 67**	T	T	11 58 58.7	
	baz=265,slow=74,SNR=46					
H11N2	**WAKE ISLAND Hy**	**41.01 67**	T	T	11 58 58.6	
	baz=265,slow=74,SNR=27					
H11N3	**WAKE ISLAND Hy**	**41.02 67**	T	T	11 58 59.6	
	baz=265,slow=74,SNR=40					
HTT	**Hallett**	**41.40 165**	P	**P**	**11 14 35.0**	**-0.2**
	baz=42,SNR=9.0					
CMSA	**Cobar Meteorol**	**41.95 156**	P	**P**	**11 14 38.9**	**-0.8**
	baz=42,SNR=17					
RKGY	**Rocky Gully**	**42.01 192**	P	**P**	**11 14 41.1**	**+1.0**
	baz=42,SNR=11					
HABR	**Khabarovsk**	**42.33 8**	*e*P	**P**	**11 14 40.3**	**-2.2**
HABR			*e**PP	**pP**	**11 15 03.5**	**+0.5**
HABR			*e**SP	**sP**	**11 15 15.2**	**+2.4**
HABR			*e*		11 16 20.3	
HABR			*e*		11 16 31.8	
HABR			*e*PPP	PPP	11 16 55.1	
HABR			S	**S**	**11 20 53.9**	**-3.3**
HABR			*e**SS	**sS**	**11 21 35.3**	**+3.0**
HABR			*e*		11 24 30.6	
HABR			*e*SSS	SSS	11 24 47.4	
HABR			pmax	pmax		
	comp=N,39nm,1.5s					
HABR			pmax	pmax		
	comp=E,50nm,1.5s					
HABR			pmax	pmax		
	comp=Z,44nm,1.5s					
HABR			MLR	MLR		
	comp=Z,161nm,16.0s					
YSS	**Yuzh-Sakhalins**	**42.49 16⇑**	*e*P	**P**	**11 14 43.9**	**+0.1**
YSS			pmax	pmax		
	comp=Z,20nm,1.1s					
YSS			MLR	MLR		
	comp=Z,600nm,15.0s					
KLR	**Kul'dur**	**42.71 5**	P	**P**	**11 14 44.3**	**-1.3**
	comp=Z,4.7nm,0.7s,baz=194,slow=3.6,SNR=15					
CHLP	**Challavanipeta**	**43.30 290**	*e*P	**P**	**11 14 50.6**	**-0.2**
ARMA	**Armidale**	**43.79 148**	P	**P**	**11 14 54.5**	**-0.2**
	baz=44,SNR=10					
ARMA	**Armidale**	**43.79 148**	*e*P	**P**	**11 14 54.6**	**0.0**
	comp=Z,62nm,1.2s					
GUN	**Gumba**	**44.21 304**	*e*P	**P**	**11 14 57.0**	**-1.4**
	comp=Z,52nm,0.9s					
ULN	**Ulaanbaatar**	**44.48 341**	*ce*P	**P**	**11 14 59.4**	**-0.6**
ULN			pmax	pmax		
	comp=Z,6.0nm,1.0s					
ULN	**Ulaanbaatar**	**44.48 341**	*e*P	**P**	**11 14 59.2**	**-0.8**
	comp=Z,17nm,1.2s					
KKN	**Kakani**	**44.66 303**	*e*P	**P**	**11 14 59.5**	**-2.4**
	comp=Z,17nm,0.7s					
SONM	**Songino Array**	**44.67 340**	P	**P**	**11 15 00.7**	**-0.8**
	comp=Z,2.4nm,1.0s,baz=154,slow=8.2,SNR=5.3					
SONM			LR	LR	11 36 12.8	
	comp=Z,292nm,18.5s,baz=148,slow=39					
SONA1	**Songino Array**	**44.67 340**	*e*P	**P**	**11 15 00.6**	**-1.0**
DMN	**Daman**	**44.74 303**	*e*P	**P**	**11 14 59.9**	**-2.7**
GKN	**Gorkha**	**45.27 303**	*e*P	**P**	**11 15 05.4**	**-1.2**
ARPS	**Mount Arapiles**	**45.34 163**	P	**P**	**11 15 05.9**	**-0.9**
	baz=46,SNR=26					
PVM	**Polavaram**	**45.40 288**	*e*P	**P**	**11 15 07.7**	**+0.2**
YNG	**Young**	**45.47 155**	P	**P**	**11 15 08.1**	**+0.2**
	baz=46,SNR=5.5					
KOLN	**Koldanda**	**46.06 303**	*e*P	**P**	**11 15 11.8**	**-1.1**
	comp=Z,45nm,0.8s					
CAN	**Canberra**	**46.60 155**	*e*P	**P**	**11 15 17.0**	**+0.2**
CAN			pmax	pmax		
	comp=Z,36nm,0.9s					
CAN	**Canberra**	**46.60 155**	*e*P	**P**	**11 15 17.0**	**+0.2**
	comp=Z,36nm,0.9s					
PYUN	**Piuthan**	**46.67 303**	*e*P	**P**	**11 15 17.1**	**-0.6**
	comp=Z,73nm,0.9s					
CNB	**Canberra Magne**	**46.75 155**	P	**P**	**11 15 18.6**	**+0.6**
	baz=47,SNR=13					
ADKI	**Addanki**	**46.80 285**	*e*P	**P**	**11 15 18.1**	**-0.5**
SKHT	**Srikalahasti**	**46.88 283**	*e*P	**P**	**11 15 19.5**	**+0.3**
TOO	**Toolangi**	**47.24 160**	P	**P**	**11 15 22.5**	**+0.8**
	baz=47,SNR=6.2					
NJS	**Nagarjunasagar**	**47.51 286**	*e*P	**P**	**11 15 24.1**	**0.0**
RCLA	**Racherla**	**47.74 285**	*e*P	**P**	**11 15 25.9**	**-0.1**
NKL	**Nikolayevsk**	**47.79 11**	*e*P	**P**	**11 15 24.2**	**-1.5**
NKL			pmax	pmax		
	comp=N,10.0nm,0.9s					
NKL			pmax	pmax		
	comp=Z,10.0nm,0.9s					
RPR	**Rampur**	**47.82 289**	*e*P	**P**	**11 15 26.3**	**-0.2**
SRLM	**Srisailam**	**47.86 286**	*e*P	**P**	**11 15 26.0**	**-0.9**
ZAK	**Zakamensk**	**47.91 340**	*e*P	**P**	**11 15 25.2**	**-1.6**
ZAK			pmax	pmax		
	comp=Z,4.0nm,1.3s					
DZM	**Mont Dzumac**	**48.12 127**	P	**P**	**11 15 28.7**	**-0.1**
	comp=Z,13nm,0.8s,baz=332,slow=5.1,SNR=8.0					
HYB	**Hyderabad**	**48.33 287**	*i* P	**P**	**11 15 30.5**	**0.0**
HYBB	**Hyderabad (bro**	**48.33 287**	*e*P	**P**	**11 15 29.7**	**-0.8**
SRSP	**Sriramsagar**	**48.72 289**	*e*P	**P**	**11 15 32.9**	**-0.5**
TLY	**Talaya**	**48.89 341**	*e*P	**P**	**11 15 33.6**	**-0.6**
TLY			*e*S	S	11 22 40.5	+9.0
TLY			pmax	pmax		
	comp=Z,7.0nm,0.9s					
TLY			MLR	MLR		
	comp=Z,273nm,20.0s					
TLY	**Talaya**	**48.89 341**	*e*P	**P**	**11 15 33.8**	**-0.4**
	comp=Z,9.6nm,1.1s					
URV	**Uravakonda**	**49.33 284**	*e*P	**P**	**11 15 37.9**	**-0.3**
KLRI	**Killari**	**50.25 288**	*e*P	**P**	**11 15 44.2**	**-1.0**
WMQ	**Urumqi**	**50.50 324**	P	**P**	**11 15 46.8**	**+0.2**
WMQ			pP	pP	11 16 02.4	-5.3
WMQ			sP	sP	11 16 15.4	-1.9
WMQ			S	**S**	**11 22 50.2**	**-4.1**
WMQ			sS	sS	11 23 27.8	-2.4
WMQ			ScS	**ScS**	**11 25 28.2**	**-1.3**
WMQ			pmax	pmax		
	comp=Z,8.0nm,1.0s					
WMQ			pmax	pmax		
	comp=Z,70nm,6.2s					
WMQ			LR	LR		
	comp=Z,390nm,21.2s					
WMQ			LR	LR		
	comp=Z,140nm,21.2s					
WMQ			LR	LR		
	comp=Z,160nm,21.2s					
BOD	**Bodaibo**	**52.09 351**	*e*P	**P**	**11 15 56.3**	**-1.9**
BOD			*e*		11 16 20.7	
BOD			pmax

MKAR Makanchi Array 55.32 324 P **P** **11 16 21.4 -0.7**
comp=Z,8.3nm,0.6s,baz=125,slow=7.5,SNR=40
MKAR ScP **ScP** **11 21 15.9 +3.0**
comp=Z,1.0nm,0.9s,baz=98,slow=6.0,SNR=3.4
MKAR Makanchi Array 55.32 324 *e*P **P** **11 16 22.4 +0.4**
MKAR Makanchi Array 55.32 324 *e*P **P** **11 16 22.4 +0.4**
MKAR ScP **ScP** **11 21 15.9 +3.0**
YAK Yakutsk 55.38 2 P **P** **11 16 21.6 -0.5**
comp=Z,30nm,0.9s,baz=8.4,slow=2.3,SNR=7.2
YAK Yakutsk 55.38 2 *e*P **P** **11 16 20.9 -1.2**
YAK *e*S **S** **11 23 56.8 -3.1**
YAK *e*SS **SS** **11 27 48.2 +2.6**
YAK pmax pmax
comp=Z,23nm,0.9s
YAK pmax pmax
comp=N,7.0nm,1.0s
YAK smax smax
comp=N,48nm,16.5s
YAK smax smax
comp=E,42nm,16.3s
YAK MLR MLR
comp=E,109nm,17.0s
YAK MLR MLR
comp=Z,314nm,18.0s
YAK MLR MLR
comp=N,243nm,17.0s
YAK Yakutsk 55.38 2 *e*P **P** **11 16 21.7 -0.4**
comp=N,36nm,0.9s
MAKZ Makanchi 55.51 324 *e*P **P** **11 16 22.6 -0.8**
MAKZ pmax pmax
comp=Z,12nm,0.8s
MAKZ Makanchi 55.51 324 *e*P **P** **11 16 22.6 -0.8**
comp=Z,12nm,0.8s
MA2 Magadan 55.94 14 P **P** **11 16 25.4 -0.8**
comp=Z,7.0nm,0.6s,baz=216,slow=7.5,SNR=12
MSVF Nonsavu 56.02 116 *e*P **P** **11 16 28.0 +0.4**
MSVF pmax pmax
comp=Z,23nm,0.9s
MSVF Nonsavu 56.02 116 *e*P **P** **11 16 28.0 +0.4**
comp=Z,24nm,0.9s
KSH Kashi 56.15 314 P **P** **11 16 29.6 +1.4**
KSH *e*pP pP 11 16 49.1 -0.5
KSH *e*PP **PP** **11 18 37.4 +3.2**
KSH *e*ScP **ScP** **11 21 17.4 +0.5**
KSH S **S** **11 24 11.5 +0.3**
KSH ScS **ScS** **11 26 09.0 -0.7**
KSH pmax pmax
comp=Z,110nm,4.5s
KSH LR LR
comp=Z,220nm,8.8s
KSH LR LR
comp=Z,380nm,14.8s
KSH LR LR
comp=Z,520nm,17.2s
TKM2 Tokmak 2 57.73 317 *e*P **P** **11 16 38.6 -0.8**
TKM2 pmax pmax
comp=Z,35nm,1.8s
TKM2 Tokmak 2 57.73 317 *e*P **P** **11 16 38.6 -0.8**
comp=Z,35nm,1.8s
ZALV Zalesovo Beam 58.13 332 P **P** **11 16 40.2 -1.6**
comp=Z,3.7nm,0.7s,baz=126,slow=10.0,SNR=7.0
ZALV LR LR 11 44 30.9
comp=Z,160nm,18.6s,baz=86,slow=39
AAK Ala-Archa 58.36 317 P **P** **11 16 43.3 -0.5**
comp=Z,1.9nm,0.5s,baz=138,slow=6.5,SNR=8.3
AAK LR LR 11 44 56.0
comp=Z,440nm,20.5s,baz=86,slow=39
AAK Ala-Archa 58.36 317 P **P** **11 16 42.9 -0.9**
AAK pmax pmax
comp=Z,9.0nm,1.2s
AAK Ala-Archa 58.36 317 *e*P **P** **11 16 43.8 -0.1**
comp=Z,27nm,1.8s
EKS2 Erkin-Say 58.86 316 *e*P **P** **11 16 47.2 0.0**
EKS2 pmax pmax
comp=Z,11nm,0.8s
EKS2 Erkin-Say 58.86 316 *e*P **P** **11 16 47.2 0.0**
comp=Z,11nm,0.8s
SEY Seymchan 59.26 13 P **P** **11 16 49.5 +0.2**
comp=Z,2.5nm,0.8s,baz=221,slow=6.8,SNR=7.4
SEY Seymchan 59.26 13 *e*P **P** **11 16 48.9 -0.5**
NVS Novosibirsk 59.41 332 *e*P **P** **11 16 49.3 -1.3**
NVS pmax pmax
comp=Z,45nm,2.0s
NVS pmax pmax
comp=N,15nm,1.8s
NVS pmax pmax
comp=E,11nm,1.3s
KURK Kurchatov 59.43 327 P **P** **11 16 48.7 -2.1**
KURK pmax pmax
comp=Z,35nm,0.8s
KURK Kurchatov 59.43 327 *e*P **P** **11 16 49.8 -1.0**
comp=Z,21nm,0.9s
KK31 Karatay Array 61.26 316 *i*P **P** **11 17 02.6 -0.9**
KK31 pmax pmax
comp=Z,6.0nm,0.7s
KKAR Karatay Array 61.26 316 *e*P **P** **11 17 03.0 -0.5**
KKAR Karatay Array 61.26 316 *e*P **P** **11 17 03.0 -0.5**
DCZ Deep Cove 63.10 149 *e*P **P** **11 17 15.7 +0.1**
comp=Z,16nm,0.9s
THZ Tophouse 63.88 143 *e*P **P** **11 17 20.1 -0.8**
comp=Z,102nm,1.6s
LBZ Lake Benmore 63.97 147 *e*P **P** **11 17 21.8 +0.4**
comp=Z,25nm,0.9s
RPZ Rata Peaks 64.02 146 P **P** **11 17 21.3 -0.5**
comp=Z,13nm,0.8s,baz=57,slow=5.5,SNR=5.5
URZ Urewera 64.54 138 *e*P **P** **11 17 25.2 0.0**
comp=Z,87nm,1.4s
BKZ Black Stump Fm 64.62 139 *e*P **P** **11 17 25.6 -0.2**
comp=Z,81nm,1.5s
KHZ Kahutara 64.64 143 *e*P **P** **11 17 25.3 -0.5**
comp=Z,75nm,0.8s
TIXI Tiksi 65.02 1 LR LR 11 45 59.6
comp=Z,384nm,21.4s,baz=190,slow=36
TIXI Tiksi 65.02 1 *e*P **P** **11 17 26.4 -1.3**
TIXI pmax pmax
comp=Z,8.0nm,1.0s
TIXI Tiksi 65.02 1 *e*P **P** **11 17 26.1 -1.6**
comp=Z,6.4nm,0.8s
BVA0 Borovoye Array 65.03 326 *i*P **P** **11 17 26.7 -1.5**
BVA0 pmax pmax
comp=Z,15nm,1.0s
BRVK Borovoye 65.10 326 *ce*P **P** **11 17 27.8 -0.8**
BRVK pmax pmax
comp=Z,16nm,0.6s
BRVK Borovoye 65.10 326 *e*P **P** **11 17 27.6 -1.0**
comp=Z,18nm,0.7s
ZRNK Zerenda 65.77 326 *e*P **P** **11 17 31.8 -1.1**
ZRNK pmax pmax
comp=Z,22nm,0.8s
ZRNK Zerenda 65.77 326 *e*P **P** **11 17 31.8 -1.1**
comp=Z,22nm,0.8s
BILL Bilibino 66.80 15 *e*P **P** **11 17 37.4 -1.8**
BILL pmax pmax
comp=Z,2.0nm,0.9s
WSAR Wadi Sarin 67.43 292 LR LR 11 50 48.4
comp=Z,136nm,19.9s,slow=39
NRIK Noril'sk 67.72 346 P **P** **11 17 43.8 -1.2**
comp=Z,2.6nm,0.4s,baz=138,slow=6.6,SNR=4.2
NRIK LR LR 11 52 04.6
comp=Z,252nm,18.1s,baz=120,slow=40
GEYT Alibeck 69.23 308 P **P** **11 17 55.0 -0.1**
comp=Z,6.4nm,0.8s,baz=132,slow=4.4,SNR=10
AB31 Akbulak array 70.05 320 P **P** **11 17 58.5 -1.4**
AB31 pmax pmax
comp=Z,7.0nm,0.8s
ABKAR Akbulak array 70.05 320 *e*P **P** **11 17 58.1 -1.8**
UNV Unalaska Valle 71.04 35 *e*P **P** **11 18 05.5 -0.3**
comp=Z,27nm,0.8s
AKTO Aktyubinsk 71.53 321 P **P** **11 18 07.9 -1.0**
comp=Z,6.9nm,0.7s,baz=102,slow=7.4,SNR=27
AKTO LR LR 11 52 39.7
comp=Z,271nm,19.3s,baz=105,slow=38
AKTO Aktyubinsk 71.53 321 P **P** **11 18 07.0 -1.9**
AKTO pmax pmax
comp=Z,11nm,0.9s
AKUT Akutan 71.53 35 *e*P **P** **11 18 08.0 -0.7**
comp=Z,226nm,1.8s
SVE Sverdlovsk 71.62 328↑ *e*P **P** **11 18 08.9 -0.4**
SVE pmax pmax
comp=Z,31nm,1.1s
GAMB Gambell 71.77 24 *e*P **P** **11 18 10.7 +0.7**
comp=Z,10nm,0.9s
ARU Arti 72.62 327 LR LR 11 54 01.7
comp=Z,218nm,18.5s,baz=100,slow=39
ARU Arti 72.62 327 *c i*P **P** **11 18 13.7 -1.5**
ARU 11 18 29.7
ARU *PP **pP** **11 18 36.9 -0.6**
ARU 11 20 52.2
ARU S **S** **11 27 32.0 -1.3**
ARU SS **SS** **11 32 09.0 -4.9**
ARU pmax pmax
comp=Z,13nm,1.0s
ARU Arti 72.62 327 *e*P **P** **11 18 13.9 -1.3**
comp=Z,15nm,0.9s
FALS False Pass 73.04 35 *e*P **P** **11 18 17.5 -0.2**
comp=Z,52nm,0.8s
TNA Tin City 73.94 23 *e*P **P** **11 18 22.9 0.0**
comp=Z,8.9nm,1.0s
SOKR Solikamsk 74.32 330 *e*P **P** **11 18 27.2 +2.1**
SOKR pmax pmax
comp=Z,4.0nm,0.6s
SDPT Sand Point 74.79 34 *e*P **P** **11 18 27.5 -0.4**
comp=Z,44nm,1.0s
MIR Mirnyy 76.93 193 *i*P **P** **11 18 41.0 +1.2**
MIR pmax pmax
comp=Z,5.0nm,1.2s
SVW2 Sparrevohn 78.27 29 *e*P **P** **11 18 48.6 +1.1**
comp=Z,14nm,1.2s
TT01 Tatalina 78.32 27 *e*P **P** **11 18 48.5 +0.7**
TTA Tatalina 78.33 27 *e*P **P** **11 18 47.3 -0.6**
TTA pmax pmax
comp=Z,18nm,1.6s
TTA Tatalina 78.33 27 *e*P **P** **11 18 47.3 -0.6**
comp=Z,18nm,1.6s
OHAK Old Harbor 79.02 33 *e*P **P** **11 18 51.8 +0.2**
comp=Z,84nm,1.8s
DGRG David-gareji 79.30 311 P **P** **11 18 54.0 +0.4**
DGRG David-gareji 79.30 311 P **P** **11 18 54.0 +0.4**
KDAK Kodiak Island 79.44 33 *i*P **P** **11 18 53.8 -0.1**
KDAK Kodiak Island 79.44 33 *e*P **P** **11 18 54.1 +0.2**
comp=Z,29nm,0.8s
RSO Redoubt South 79.58 30 *e*P **P** **11 18 54.9 0.0**
GNI Garni 79.77 310 *e*P **P** **11 18 54.6 -1.7**
GNI pmax pmax
comp=Z,26nm,1.2s
SPU Mount Spurr 79.98 29 *e*P **P** **11 18 57.0 +0.1**
PPLA Purkeypile 80.06 27 *e*P **P** **11 18 58.0 +0.6**
comp=Z,17nm,1.2s
CAST Castle Rocks 80.16 27 *e*P **P** **11 18 58.1 +0.3**
comp=Z,11nm,0.8s
ZEI Tsey 80.40 312 *e*P **P** **11 18 58.3 -1.4**
ZEI pmax pmax
comp=Z,19nm,0.8s
KTH Kantishna Hill 80.69 27 *e*P **P** **11 19 00.7 0.0**
comp=Z,14nm,1.1s
BPAW Bear Paw Mtn. 80.70 26 *e*P **P** **11 19 00.8 +0.2**
comp=Z,19nm,0.9s
MLY Manley 80.87 25 *e*P **P** **11 19 02.0 +0.4**
comp=Z,11nm,0.9s
TRF Thorofare Moun 80.97 27 *e*P **P** **11 19 02.3 0.0**
comp=Z,15nm,0.9s
RC01 Rabbit Creek A 81.10 29 *e*P **P** **11 19 02.8 0.0**
comp=Z,13nm,0.6s
KBZ Khabaz 81.13 313 P **P** **11 19 02.7 -0.6**
comp=Z,2.0nm,0.9s,baz=36,slow=19,SNR=5.4
KBZ LR LR 12 00 44.8
comp=Z,201nm,19.2s,baz=76,slow=40
SEW Seward 81.20 30 *e*P **P** **11 19 03.7 +0.4**
comp=Z,26nm,1.1s
COLD Coldfoot 81.25 23 *e*P **P** **11 19 04.3 +0.8**
comp=Z,15nm,1.2s
NEY Neytrino 81.26 313 *e*P **P** **11 19 00.9 -3.4**
NEY pmax pmax
comp=Z,1.0nm,0.9s
KIV Kislovodsk 81.28 313 *e*P **P** **11 19 03.4 -0.8**
KIV pmax pmax
comp=Z,5.0nm,0.7s
BWN Browne 81.37 26 *e*P **P** **11 19 05.5 +1.3**
comp=Z,25nm,1.0s
PMR Palmer 81.41 29 *e*P **P** **11 19 04.0 -0.4**
PMR pmax pmax
comp=Z,14nm,0.9s
PMR Palmer 81.41 29 *e*P **P** **11 19 04.0 -0.4**
comp=Z,14nm,0.9s
MCK McKinley 81.58 27 *e*P **P** **11 19 05.0 -0.4**
MCK pmax pmax
comp=Z,28nm,0.9s
MCK McKinley 81.58 27 *e*P **P** **11 19 05.0 -0.4**
comp=Z,28nm,0.9s
RND Reindeer 81.61 27 *e*P **P** **11 19 05.3 -0.3**
RND pmax pmax
comp=Z,10.0nm,0.7s
RND Reindeer 81.61 27 *e*P **P** **11 19 05.2 -0.3**
comp=Z,9.6nm,0.7s
SML Sawmill 81.80 29 *e*P **P** **11 19 06.8 +0.3**
SML pmax pmax
comp=Z,20nm,1.0s
SML Sawmill 81.80 29 *e*P **P** **11 19 06.8 +0.3**
comp=Z,20nm,1.0s
VRH Novokhopyorsk 81.87 321 *e*P **P** **11 19 06.4 -0.6**
VRH pmax pmax
comp=Z,20nm,1.5s
MDM Murphy Dome 81.93 25 *e*P **P** **11 19 07.0 -0.1**
comp=Z,10nm,1.0s
WRH Wood River Hil 81.98 26 *e*P **P** **11 19 07.2 -0.2**
comp=Z,14nm,1.1s
COLA College 82.09 25 *e*P **P** **11 19 07.0 -0.9**
COLA pmax pmax
comp=Z,7.0nm,1.0s
COLA College 82.09 25 *e*P **P** **11 19 07.2 -0.7**
comp=Z,9.7nm,0.9s
CCB Clear Creek Bu 82.11 26 *e*P **P** **11 19 07.6 -0.5**
comp=Z,12nm,1.2s
SCM Sheep Creek Mo 82.28 29 *e*P **P** **11 19 09.9 +0.8**
SCM pmax pmax
comp=Z,21nm,1.0s
SCM Sheep Creek Mo 82.28 29 *e*P **P** **11 19 09.9 +0.8**
comp=Z,21nm,1.0s
HDA Harding Lake 82.47 26 *e*P **P** **11 19 09.1 -0.9**
comp=Z,17nm,1.0s
IL1 Eielson Array 82.50 26 *e*P **P** **11 19 09.2 -1.0**
ILAR Eielson Array 82.50 26 P **P** **11 19 08.8 -1.2**
comp=Z,4.1nm,0.7s,baz=243,slow=5.0,SNR=44
ILAR LR LR 11 54 33.8
comp=Z,161nm,21.5s,baz=266,slow=35
ILB Eielson Array 82.50 26 *e*P **P** **11 19 08.9 -1.2**
KLU Klutina 82.95 29 *e*P **P** **11 19 13.2 +0.7**
comp=Z,36nm,1.4s
KLMR Klimovskoe 83.00 330 *e*P **P** **11 19 10.7 -2.0**
KLMR *e* 11 22 23.8
KLMR pmax pmax
comp=Z,60nm,1.4s
DIV Divide 83.03 29 *e*P **P** **11 19 14.0 +1.0**
comp=Z,40nm,1.2s
EYAK Cordova Ski Ar 83.05 30 *e*P **P** **11 19 13.5 +0.5**
comp=Z,96nm,1.9s
PAX Paxson 83.14 27 *e*P **P** **11 19 14.2 +0.6**
PAX pmax pmax
comp=Z,19nm,1.3s
PAX Paxson 83.14 27 *e*P **P** **11 19 14.2 +0.6**
comp=Z,19nm,1.3s
FYU Fort Yukon 83.19 24 *e*P **P** **11 19 14.9 +1.3**
comp=Z,64nm,1.5s
VSR Storozhevoye 83.47 321 *e*P **P** **11 19 14.0 -1.4**
VSR pmax pmax
comp=Z,10.0nm,1.6s
LPSR Galich'ya Gora 83.56 322 *e*P **P** **11 19 15.1 -0.7**
LPSR pmax pmax
comp=Z,8.0nm,0.7s
RAGM Ragged Mountai 83.58 30 *e*P **P** **11 19 16.9 +1.0**
comp=Z,30nm,1.0s
BMRM Bremner River 83.60 29 *e*P **P** **11 19 16.7 +0.8**
comp=Z,26nm,1.0s
DOT Dot Lake 83.75 27 *e*P **P** **11 19 16.6 0.0**
comp=Z,29nm,1.0s
MOS Moscow 84.18 325 *e*P **P** **11 19 16.9 -2.0**
MOS *e* 11 19 38.1
BALM Baldy 84.69 29 *e*P **P** **11 19 22.5 +1.0**
BALM pmax pmax
comp=Z,17nm,0.9s
BALM Baldy 84.69 29 *e*P **P** **11 19 22.5 +1.0**
comp=Z,17nm,0.9s
OBN Obninsk 84.82 325 *ce*P **P** **11 19 21.0 -1.1**
OBN pmax pmax
comp=Z,31nm,1.7s
EGAK Eagle 84.96 25 *e*P **P** **11 19 23.2 +0.6**
comp=Z,10nm,0.8s
ANN Anapa 85.00 314 *e*P **P** **11 19 21.3 -2.0**
ANN pmax pmax
comp=Z,35nm,1.0s
DAWY Dawson 85.79 26 *e*P **P** **11 19 27.3 +0.4**
comp=Z,5.2nm,0.8s
PPT Papeete 85.88 108 LR LR 11 52 24.6
comp=Z,107nm,19.8s,baz=348,slow=32
PPT2 Papeete2 85.88 108 *e*S **S** **11 29 59.7 +4.4**
comp=Z,131nm,24.8s
PPT2 Papeete2 85.88 108 *e*LR LR 11 46 52.4
comp=Z,298nm,23.8s
VNDA Vanda 86.21 173 P **P** **11 19 28.6 +0.1**
comp=Z,7.5nm,0.9s,baz=315,slow=5.6,SNR=32
VNDA LR LR 11 59 31.0
comp=Z,72nm,18.8s,baz=335,slow=37
MAW Mawson 86.44 200 P **P** **11 19 30.2 +0.4**
comp=Z,6.7nm,1.1s,baz=59,slow=5.9,SNR=7.9
MAW LR LR 11 53 03.4
comp=Z,82nm,21.3s,baz=59,slow=32
MAW Mawson 86.44 200 P **P** **11 19 30.3 +0.5**
baz=87,SNR=5.4
MAW Mawson 86.44 200 *e*P **P** **11 19 30.6 +0.8**
MAW pmax pmax
comp=Z,4.0nm,1.3s
MAW Mawson 86.44 200 *e*P **P** **11 19 30.6 +0.8**
comp=Z,3.7nm,1.3s
ASF Jabal al Asfar 86.50 302 LR LR 12 04 43.8
comp=Z,133nm,19.4s,slow=40
PMOR Pomariorio Ree 87.13 105 *e*T T 12 56 34.4
comp=Z,2.2nm,0.2s
INK Inuvik 87.49 22 *e*P **P** **11 19 34.2 -0.8**
INK pmax pmax
comp=Z,4.0nm,0.8s
INK Inuvik 87.49 22 *e*P **P** **11 19 34.2 -0.8**
comp=Z,4.1nm,0.8s
ARA0 ARCESS Array S 87.84 340 *e*P **P** **11 19 35.8 -0.8**
ARCES ARCESS Array B 87.84 340 P **P** **11 19 36.3 -0.4**
comp=Z,2.9nm,0.8s,baz=86,slow=5.5,SNR=6.6
ARCES LR LR 12 05 32.6
comp=Z,114nm,18.3s,baz=92,slow=40
BRTR Keskin Array B 88.31 310 P **P** **11 19 38.9 -0.9**
comp=Z,1.3nm,0.3s,baz=95,slow=5.5,SNR=7.8
BRTR LR LR 12 03 15.4
comp=Z,68nm,21.1s,baz=60,slow=38
BRTR Keskin Array B 88.31 310 *i*P **P** **11 19 38.5 -1.2**
BRTR pmax pmax
comp=Z,1.0nm,0.3s
FIA1 FINESS Array S 89.40 332 *e*P **P** **11 19 43.6 -0.5**
FINES FINESS Array B 89.40 332 P **P** **11 19 43.0 -1.1**
comp=Z,3.5nm,0.9s,baz=132,slow=5.7,SNR=6.6
FINES LR LR 12 03 30.7
comp=Z,183nm,18.9s,baz=20,slow=38
FINES FINESS Array B 89.40 332 *ce*P **P** **11 19 43.2 -0.9**
FINES pmax pmax
comp=Z,4.0nm,0.9s
VSU Vasula 89.71 329 *e*P **P** **11 19 48.3 +2.7**
VSU pmax pmax
comp=Z,22nm,1.0s
KMBO Kilima Mbogo 89.72 269 P **P** **11 19 46.9 -0.1**
comp=Z,1.1nm,0.4s,baz=18,slow=7.2,SNR=4.9
KMBO LR LR 12 01 42.8
comp=Z,75nm,18.7s,baz=90,slow=37
AKASG Malin Array Be 89.77 321 P **P** **11 19 45.1 -1.0**
comp=Z,2.3nm,0.8s,baz=64,slow=5.4,SNR=8.2
AKASG LR LR 12 04 36.3
comp=Z,76nm,18.1s,baz=80,slow=39
KIEV Kiev 89.78 321 *d i*P **P** **11 19 44.8 -1.3**
KIEV pmax pmax
comp=Z,4.0nm,1.0s
KIEV Kiev 89.78 321 *e*P **P** **11 19 45.0 -1.1**
comp=Z,8.9nm,1.2s
TAOE Nuku Hiva Isla 93.95 98 *e*S **S** **11 31 13.5 +3.4**
comp=Z,339nm,29.2s
TAOE Nuku Hiva Isla 93.95 98 *e*LR LR 11 50 40.6
comp=Z,568nm,23.2s
UZH Uzhgorod 94.62 320 *e*P **P** **11 20 09.6 +1.0**
UZH *e* 11 20 32.2
RES Resolute Bay 95.01 10 *e*P **P** **11 20 09.6 -0.2**
RES pmax pmax
comp=Z,3.0nm,0.9s
RES Resolute Bay 95.01 10 *e*P **P** **11 20 09.6 -0.2**
comp=Z,3.0nm,0.9s
CRVS Cervenica-Dubn 95.08 320 *e*P **P** **11 20 10.2 -0.5**
CRVS Cervenica-Dubn 95.08 320 *e*P **P** **11 20 10.2 -0.5**
SYO Syowa Base 95.10 201 ||*i*X **P** **11 20 10.0 -0.2**
NB2 NORSAR Subarra 96.31 334 P **P** **11 20 14.4 -1.6**
comp=Z,2.2nm,0.8s,baz=68,slow=4.6
NOA NORSAR Array B 96.31 334 P **P** **11 20 14.5 -1.5**
comp=Z,1.4nm,0.9s,baz=65,slow=4.5,SNR=2.8
NOA LR LR 12 10 17.2
comp=Z,84nm,18.1s,baz=65,slow=40
QSPA South Pole Qui 96.46 180 *e*P **P** **11 20 16.2 -0.5**
YKA Yellowknife Ar 96.88 24 P **P** **11 20 17.9 -0.6**
comp=Z,2.1nm,0.7s,baz=300,slow=4.6,SNR=43
YKA PKiKP **PKiKP** **11 24 54.6 +0.2**
comp=Z,0.3nm,1.0s,baz=293,slow=1.6,SNR=4.5
YKA PKKP **PKKPbc** **11 36 58.2 -4.1**
comp=Z,0.5nm,0.7s,baz=118,slow=2.9,SNR=11
YKB5 Yellowknife Ar 96.88 24 *e*P **P** **11 20 18.0 -0.5**
DPC Dobruska-Polom 97.81 323 *e*P Pdif 11 20 23.4 +0.3
DPC *ex* x 11 20 27.7
DPC *e*pP pP 11 20 41.9 -4.3
DPC Dobruska-Polom 97.81 323 *e*P Pdif 11 20 23.4 +0.3
NLWA Neilton Lookou 98.02 40 *e*P **P** **11 20 24.0 -0.1**
comp=Z,15nm,1.3s
BRG Berggiesshubel 99.03 324 *e*P **Pdif** **11 20 33.2 +4.7**
comp=Z,4.5nm,1.2s
BRG *e* 11 20 47.8
comp=Z,8.3nm,1.4s
BRG Berggiesshubel 99.03 324 *e*P **Pdif** **11 20 33.2 +4.7**
BRG pmax pmax
comp=Z,8.0nm,1.4s
GERES GERESS Array B 99.94 322 P **Pdif** **11 20 31.9 -0.8**
comp=Z,0.3nm,0.6s,baz=47,slow=10.0,SNR=3.5
NVAR Mina Array Bea 104.92 48 Pdiff **Pdif** **11 20 54.9 -0.4**
comp=Z,0.4nm,0.7s,baz=273,slow=5.3,SNR=4.1
PDAR Pinedale Array 109.14 40 PKKPab PKKPab 11 36 35.5 -2.8
comp=Z,1.0nm,0.8s,baz=109,slow=6.9,SNR=8.4
MSTX Muleshoe 118.14 46 P **PKPdf** **11 25 33.3 -1.7**
baz=301
MSTX Muleshoe 118.14 46 *e*PKPdf **PKPdf** **11 25 33.2 -1.8**
TX31 Lajitas Ar. Si 119.75 51 *e*PKPdf **PKPdf** **11 25 38.1 -0.1**
TXAR Lajitas Array 119.75 51 PKP **PKPdf** **11 25 38.8 +0.6**
comp=Z,0.4nm,0.7s,baz=176,slow=0.8,SNR=5.1
Q39A Willow Grove F 121.52 36 P **PKPdf** **11 25 40.9 -0.3**
baz=312
R39A Chumby, Stover 121.97 36 P **PKPdf** **11 25 41.8 -0.3**
baz=311
JCT Junction City 122.10 48 P **PKPdf** **11 25 42.8 +0.2**
baz=302
JCT Junction City 122.10 48 *e*PKIKP **PKPdf** **11 25 42.9 +0.3**
JCT Junction City 122.10 48 *e*PKPdf **PKPdf** **11 25 42.9 +0.3**
TOA0 Torodi Ar. Sit 122.11 290 *e*PKPdf **PKPdf** **11 25 42.0 -0.9**
TORD Torodi Ar. Bea 122.11 290 PKP **PKPdf** **11 25 42.2 -0.7**
comp=Z,3.2nm,0.7s,baz=52,slow=1.8,SNR=26
TORD PKKPab **PKKPbc** **11 35 39.2 -0.5**
comp=Z,0.9nm,0.7s,baz=265,slow=4.0,SNR=6.2
Y35A Marietta 122.17 43 P **PKPdf** **11 25 42.6 0.0**
baz=306
S39A Bolivar 122.21 37 P **PKPdf** **11 25 42.3 -0.3**
baz=311
R40A Maddies Statio 122.44 36 P **PKPdf** **11 25 42.6 -0.3**
baz=312
V38A Canehill 122.71 40 P **PKPdf** **11 25 43.4 -0.2**
baz=309
W38A Poteau 123.13 40 P **PKPdf** **11 25 44.5 +0.1**
baz=308
733A Divot King Ran 123.39 49 P **PKPdf** **11 25 43.3 -1.7**
baz=301
V40A Witts Springs 123.74 39 P **PKPdf** **11 25 45.8 +0.2**
baz=310
X39A Fountain Ranch 123.74 41 P **PKPdf** **11 25 45.9 +0.3**
baz=308
MIAR Mount Ida 124.06 40 P **PKPdf** **11 25 46.6 +0.4**
baz=309
MIAR Mount Ida 124.06 40 *e*PKIKP **PKPdf** **11 25 46.3 +0.1**
MIAR Mount Ida 124.06 40 *e*PKPdf **PKPdf** **11 25 46.3 +0.1**
OLIL Olney 124.48 33 *e*PKPdf **PKPdf** **11 25 47.7 +0.9**
DBIC Dimbokro 130.05 284 PKP **PKPdf** **11 25 59.0 +0.8**
comp=Z,2.8nm,0.6s,baz=64,slow=8.4,SNR=3.9
DBIC SKPbc **SKPbc** **11 29 15.4 +1.9**
comp=Z,2.2nm,0.4s,baz=51,slow=4.1,SNR=5.4
JTS JuntasAbangare 144.17 62 *e*PKIKP **PKPdf** **11 26 23.4 -0.8**
JTS JuntasAbangare 144.17 62 *e*PKPdf **PKPdf** **11 26 23.4 -0.8**
TRQA Tornquist 147.65 167 *e*PKPbc **PKPbc** **11 26 32.7 +0.5**
ROC1 El Roble 148.92 150 *e*PKPbc **PKPbc** **11 26 35.6 -0.4**
BCIP Isla Barro Col 149.15 60 *e*PKPbc **PKPbc** **11 26 37.5 +0.8**
BCIP Isla Barro Col 149.15 60 *e*P **PKPbc** **11 26 35.7 -1.0**
LRS Lares 151.84 28 *e*PKPbc **PKPbc** **11 26 43.4 +0.4**
LCO Las Campanas 152.20 146 *e*PKPbc **PKPbc** **11 26 45.4 +1.5**
MTP Monte Pirata 152.60 26 *e*PKPbc **PKPbc** **11 26 45.0 +0.3**

DBBC	Dabeiba	153.33	60	eP	PKPab	11 26 59.2	+0.4
OTAV	Otavalo	153.87	76	eP	PKPab	11 27 02.6	+0.9
CMBC	Cumbal	154.27	74	eP	PKPab	11 27 06.0	+2.6
GUYC	Guyana, Colomb	154.90	63	eP	PKPab	11 27 07.7	+1.7
CRUC	La Cruz	154.91	72	eP	PKPab	11 27 08.2	+2.3
NORC	Norcasia	155.20	61	eP	PKPab	11 27 07.7	+0.9
TOLC	Tolima	155.25	64	eP	PKPab	11 27 07.1	-0.2
GRMC	Gramalote, San	155.80	54	eP	PKPab	11 27 07.7	-1.7
CBRI	Barrientos, No	155.81	54	eP	PKPab	11 27 07.7	-1.8
BETC	Betania	155.93	68	eP	PKPab	11 27 10.5	+0.6
PAMC	Pamplona, Colo	156.10	55	eP	PKPab	11 27 10.5	-0.6
BARC	Barichara	156.12	57	eP	PKPab	11 27 09.9	-1.0
RUSC	La Rusia	156.57	59	eP	PKPab	11 27 10.5	-2.7
SDV	Santo Domingo	156.78	49	ePKPab	PKPab	11 27 13.7	+0.1
YOPC	Yopal, Colombi	157.41	59	eP	PKPab	11 27 17.3	+0.9
CPUP	Villa Florida	159.95	169	PKPab	PKPab	11 27 26.8	+0.2
	comp=Z,4.2nm,0.8s,baz=192,slow=5.7,SNR=6.0						
LPAZ	La Paz	162.44	125	PKP	PKPdf	11 26 51.5	+0.7
	comp=Z,1.1nm,0.8s,baz=223,slow=3.3,SNR=4.4						
LPAZ				PKPab	PKPab	11 27 40.5	+1.8
	comp=Z,7.0nm,0.8s,baz=208,slow=2.7,SNR=14						
LPAZ	La Paz	162.44	125	ePKIKP	PKPdf	11 26 50.6	-0.1
LPAZ	La Paz	162.44	125	ePKPdf	PKPdf	11 26 50.6	-0.1
LPAZ				ePKPab	PKPab	11 27 41.2	+2.4

JMA 01 11:10:18.6±0.4, 37°.20N×144°.43E, h44km, M4.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	2.74	298	P	Pn	11 11 01.5	+1.4
JIO				S	Sn	11 11 33.3	+1.4
JFK	Kawauchi	2.84	274	P	Pn	11 11 03.3	+1.8
OFUJ	Ofunato	2.87	312	P	Pn	11 11 02.9	+1.0
ONAJ	Iwakimizuishiy	2.90	269	P	Pn	11 11 04.0	+1.7
ONAJ				S	Sn	11 11 37.5	+1.5
JMM	Marumori	2.97	284	P	Pn	11 11 04.8	+1.7
JMK	Ichinoseki	3.08	306	P	Pn	11 11 07.1	+2.4
JMK				S	Sn	11 11 41.4	+1.2
JHO	Hitachi	3.15	260	P	Pn	11 11 07.3	+1.6
JOU	Okura	3.20	292	P	Pn	11 11 08.9	+2.5
JFT	Otama	3.28	277	P	Pn	11 11 10.3	+2.9
JOM	Ohasama	3.35	314	P	Pn	11 11 09.9	+1.4
JOM				S	Sn	11 11 47.7	+0.7
JYK	Kaneyama	3.64	299	P	Pn	11 11 14.8	+2.4
JANG	Nango	3.90	325	S	Sn	11 11 59.6	-1.0
JAG	Ashikaga	4.07	261	P	Pn	11 11 20.3	+2.0
JAG				S	Sn	11 12 05.4	+0.8
MAT	Matsushiro	5.03	264	P	Pn	11 11 35.0	+3.4
MAT				eS	Sn	11 12 32.4	+4.0

IDC 01 11:14:16.6±2.3, 28°.44S×177°.63W, h0km, mb3.8/3, mb1 3.9/3, mb1mx3.6/31, mbtmp3.8/3, Error ellipse: s-maj=37.0km s-min=21.7km az=72.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	Raoul Island	0.84	197	Pn	Pn	11 14 36.5	+0.8
	126nm,0.3s,baz=22,slow=21,SNR=7.0						
RAO				Sn	Sn	11 14 49.4	+0.5
	464nm,0.3s,baz=103,slow=21,SNR=11						
STKA	Stephens Creek	35.27	254	P	P	11 21 12.2	-1.0
	2.0nm,0.9s,baz=105,slow=15,SNR=3.0						
ASAR	Alice Springs	43.57	265	P	P	11 22 21.2	-1.4
	0.2nm,0.4s,baz=106,slow=7.4,SNR=5.2						
WRA	Warramunga Arr	44.38	270	P	P	11 22 29.8	+0.7
	1.4nm,0.8s,baz=110,slow=8.1,SNR=29						
FINES	FINESS Array B	143.41	341	PKP	PKPdf	11 33 53.2	+0.9
	1.9nm,0.8s,baz=56,slow=4.8,SNR=7.3						

*JMA **01** 11:34:53.8±0.5, 36°.89N×142°.30E, h12km±4km, M3.4*
*ISCJB **01** 11:34:56.2±1.5, 37°.0N±0°.1×142°.2E±0°.2, h19km, mb3.5/2, Error ellipse: s-maj=18.1km s-min=14.4km az=19.6*
*IDC **01** 11:34:56.0±2.0, 37°.12N×142°.04E, h0km, mb3.5/2, mb1 3.5/4, mb1mx3.3/51, mbtmp3.4/4, ML3.0/2, Error ellipse: s-maj=45.9km s-min=29.3km az=80.0*
ISC 01 11:34:58.5±1.6, 37°.12N±0°.10×142°.0E±0°.1, h19km, n10, σ0°81/10, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	0.93	286	P	Pb	11 35 16.3	+0.2
ONAJ	Iwakimizuishiy	0.96	270	P	Pb	11 35 16.8	+0.2
JHO	Hitachi	1.26	247	P	Pn	11 35 19.5	-1.6
JFT	Otama	1.39	287	P	Pb	11 35 23.7	-0.2
JIO	Ouri	1.43	339	P	Pb	11 35 24.2	-0.4
JOU	Okura	1.64	320	P	Pb	11 35 28.5	+0.4
MJAR	Matsushiro Arr	3.10	260	Pn	Pn	11 35 46.0	-0.4
	1.3nm,0.3s,baz=86,slow=14,SNR=13						
ASAJ	Asahikawa	7.01	4	Pn	Pn	11 36 39.3	-0.8
	0.3nm,0.3s,baz=288,slow=19,SNR=5.1						
SONM	Songino Array	28.13	304	P	P	11 40 50.3	+0.9
	0.3nm,0.2s,baz=97,slow=7.4,SNR=2.6						
WRA	Warramunga Arr	57.21	189	P	P	11 44 44.9	+0.5
	0.7nm,1.1s,baz=3.7,slow=7.4,SNR=2.8						

*NNC **01** 11:37:07.9±0.5, 43°.67N×77°.68E, h0km, mb4.8, mpv4.6, Error ellipse: s-maj=7.7km s-min=2.9km az=171.0*
*ISCJB **01** 11:37:08.7±0.5, 43°.72N±0°.02×77°.66E±0°.02, h12km±3km, mb4.3/46, MS3.6/6, Error ellipse: s-maj=2.6km s-min=1.9km az=162.7*
*KRNET **01** 11:37:08.9±0.1, 43°.62N×77°.66E, h22km*
*IDC **01** 11:37:09.6±0.6, 43°.57N×77°.66E, h23km±2km, mb3.7/16, mb1 3.9/24, mb1mx3.8/50, mbtmp4.0/24, ML3.9/8, MS3.5/2, Ms1 3.6/2, ms1mx2.9/45, Error ellipse: s-maj=10.2km s-min=7.8km az=138.0*
*SOME **01** 11:37:09.9, 43°.58N×77°.67E, h20km, MS2.7*
*MOS **01** 11:37:09.4±1.5, 43°.82N×77°.50E, h21km, mb4.4/16, Error ellipse: s-maj=6.9km s-min=5.3km az=82.6*
MOS Felt (IV) at Almaty.
*NEIC **01** 11:37:11.6±0.9, 43°.72N×77°.54E, h28km±6km, mb4.8/14, Error ellipse: s-maj=8.5km s-min=5.4km az=150.0*
NEIC Felt [III] at Almaty. Also felt at Esik.
ISC 01 11:37:09.6±0.3, 43°.66N±0°.02×77°.64E±0°.01, h13km±2km, h13km:pP-P, n197, σ1°86/260, mb4.5/46, MS3.5/6, 53C-24D, Lake Issyk-Kul region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KURS	Kuram	0.42	113	eP	Pg	11 37 18.0	0.0
	2μm,0.3s						
KURS				eS	Sg	11 37 23.6	-0.1
	19μm,0.4s						
CHKK	Chushkaly	0.51	295	eP	Pb	11 37 20.3	-0.2
	1μm,0.2s						
CHKK				eS	Sb	11 37 27.9	+0.1
	20μm,0.3s						
KOTS	Kotyrbulak	0.57	223	eP	Pg	11 37 20.8	0.0
ARXS	Arharly	0.57	13	eP	Pb	11 37 21.9	+0.3
	2μm,0.4s						
ARXS				eS	Sn	11 37 30.9	-2.0
	16μm,0.5s						
AAA	Alma-Ata	0.63	233	eP	Pb	11 37 23.0	+0.3
	6μm,0.2s						
AAA				eS	Sb	11 37 32.6	+1.2
	43μm,0.2s						
AAA	Alma-Ata	0.63	233	ePG	Pb	11 37 22.9	+0.3
AAA				eS	Sb	11 37 32.5	+1.2
MDOK	Medeo	0.66	222	eP	Pg	11 37 21.8	-0.6
	4μm,0.2s						
MDOK				⇓iS	Sg	11 37 30.3	-0.8
	18μm,0.2s						
KNDC	Almaty	0.66	229	⇓P	Pg	11 37 22.0	-0.5
KNDC				⇑S	Sg	11 37 30.5	-0.7
MNBS	Baschi	0.69	52	eP	Pb	11 37 23.6	0.0
	235nm,0.2s						
MNBS				eS	Sg	11 37 32.3	0.0
	3μm,0.6s						
KTBS	Karatobe	0.70	275	eP	Pb	11 37 23.6	0.0
ZHN	Zhinishke	0.76	130	eP	Pg	11 37 23.2	-1.1
	2μm,0.2s						
ZHN				eS	Sg	11 37 32.7	-1.5
	57μm,0.3s						
KPKS	Kokpek	0.78	104	eP	Pg	11 37 24.1	-0.7
	2μm,0.1s						
KPKS				eS	Sg	11 37 33.5	-1.6
	18μm,0.4s						

TNSS	Tian-Shan	0.80	220	eP	Pg	11 37 24.3	-0.9
	3μm,0.4s						
TNSS				eS	Sg	11 37 34.9	-0.8
	10μm,0.4s						
SATY	Saty	0.82	137	⇓iP	Pg	11 37 24.4	-1.1
	9μm,0.1s						
SATY				⇑iS	Sg	11 37 34.6	-1.6
	34μm,0.2s						
ANVS	Anan'yevo	0.87	179	⇓iP	Pg	11 37 25.0	-1.5
	baz=180						
ANVS				⇓iS	Sg	11 37 36.2	-1.8
	baz=180						
KUU	Kurty	0.97	285	eP	Pb	11 37 27.8	-0.5
	807nm,0.1s						
KUU				⇑iS	Sb	11 37 41.1	0.0
	6μm,0.4s						
MTBS	Maitube	1.03	240	⇑iP	Pb	11 37 28.5	-0.8
	1μm,0.2s						
MTBS				eS	Sb	11 37 42.0	-0.7
	11μm,0.3s						
UZB	Uzynbulak	1.13	116	eP	Pb	11 37 29.9	-1.2
	6μm,0.3s						
UZB				eS	Sb	11 37 44.1	-1.6
	9μm,0.2s						
PRZ	Przheval'sk	1.30	154	⇓iP	Pn	11 37 32.9	-0.6
	baz=154						
PRZ				⇓iS	Sb	11 37 50.3	-0.2
	baz=154						
KST	Kastek	1.37	244	eP	Pn	11 37 33.9	-0.6
	421nm,0.4s						
KST				⇑iS	Sn	11 37 52.1	-0.4
	4μm,0.3s						
PDGK	Podgornoye	1.38	103	⇑iP	Pn	11 37 34.1	-0.4
	baz=102						
PDGK				⇑iS	Sb	11 37 52.5	-0.2
	baz=102						
PDGK	Podgornoye	1.38	103	⇓P	Pn	11 37 33.6	-0.9
	2μm,0.5s						
PDGK				⇓S	Sn	11 37 51.7	-0.9
	3μm,0.5s						
PDGK	Podgornoye	1.38	103	PG	Pn	11 37 33.6	-0.9
DGS	Degeres	1.42	254	eP	Pn	11 37 35.2	-0.1
	799nm,0.3s						
DGS				eS	Sn	11 37 53.6	-0.2
	3μm,0.4s						
TDK	Taldygorghan	1.46	22	eP	Pg	11 37 36.9	-0.8
	6μm,0.3s						
TDK				eS	Sg	11 37 56.5	-0.1
	12μm,0.5s						
KDJ	Kajisay	1.56	193	⇓iP	Pn	11 37 37.7	+0.5
	baz=193						
KDJ				⇓iS	Sn	11 37 57.6	+0.2
	baz=193						
TKM2	Tokmak 2	1.66	245	⇑iP	Pn	11 37 38.7	0.0
	baz=246						
TKM2				⇑iS	Sb	11 38 00.8	-0.3
	baz=246						
TKM2	Tokmak 2	1.66	245	⇑P	Pn	11 37 39.0	+0.4
	378nm,0.4s						
TKM2				⇑S	Sb	11 38 00.6	-0.6
	2μm,0.3s						
TKM2	Tokmak 2	1.66	245	ePN	Pn	11 37 38.6	0.0
TKM2				e		11 38 00.8	
TKM2	Tokmak 2	1.66	245	ePn	Pn	11 37 38.6	0.0
TKM2				eSn	Sb	11 38 00.8	-0.3
DJR	Jarkent	1.69	66	eP	Pb	11 37 40.2	-0.5
	490nm,0.3s						
DJR				⇑iS	Sb	11 38 01.6	-0.3
	5μm,0.4s						
BOOM	Boomskoye usch	1.71	228	⇓iP	Pn	11 37 39.7	+0.5
	baz=229						
BOOM				⇓iS	Sb	11 38 01.7	-0.6
	baz=229						
SHLS	Shalkode	1.71	106	eP	Pn	11 37 39.7	+0.4
	609nm,0.4s						
SHLS				eS	Sb	11 38 01.9	-0.6
	4μm,0.4s						
ULHL	Ulahol	1.74	217	⇓iP	Pn	11 37 40.4	+0.6
	baz=218						
ULHL				⇓iS	Sb	11 38 03.4	0.0
	baz=218						
KTMS	Ketmen	1.98	95	eP	Pb	11 37 44.1	-1.5
	297nm,0.5s						
KTMS				eS	Sb	11 38 09.5	-0.7
	1μm,0.4s						
KAPS	Kapalarasan	2.04	36	eP	Pb	11 37 46.5	-0.1
	1μm,0.3s						
KAPS				eS	Sg	11 38 13.3	-1.9
	8μm,0.4s						
KBK	Karagaybulak	2.21	244	⇑iP	Pn	11 37 47.0	+0.9
	baz=245						
KBK				⇑iS	Sb	11 38 15.4	-1.4
	baz=245						
FRU1	Bishkek	2.36	250	⇑iP	Pn	11 37 49.0	+0.9
	baz=251						
FRU1				⇑iS	Sb	11 38 19.1	-1.9
	baz=251						
FRU	Bishkek	2.36	251	⇑ePN	Pn	11 37 48.0	0.0
FRU				i		11 37 54.0	
FRU				e		11 38 18.0	
FRU				i		11 38 22.0	
FRU				pmax	pmax		
	comp=Z,610nm,1.0s						
FRU				pmax	pmax		
	comp=N,2μm,1.5s						
KZA	Kyzart	2.36	229	⇑iP	Pn	11 37 50.1	+1.7
	baz=230						
KZA				⇑iS	Sb	11 38 19.7	-1.7
	baz=230						
AAK	Ala-Archa	2.52	247	Pn	Pn	11 37 50.9	+0.6
	comp=N,43nm,0.3s,baz=64,slow=5.5,SNR=108						
AAK				Lg	Lg	11 38 25.6	
	comp=N,201nm,0.3s,baz=277,slow=20,SNR=18						
AAK	Ala-Archa	2.52	247	⇑iP	Pn	11 37 50.8	+0.4
	baz=248						
AAK				⇑iS	Sn	11 38 23.1	+2.1
	baz=248						
AAK	Ala-Archa	2.52	247	⇓Pn	Pn	11 37 51.6	+1.2
	comp=N,247nm,0.4s						
AAK				⇑Sn	Sb	11 38 26.6	+0.9
	comp=N,754nm,0.8s						
AAK	Ala-Archa	2.52	247	c iPN	Pn	11 37 50.7	+0.4
AAK				pmax	pmax		
	comp=Z,247nm,0.4s						
AAK	Ala-Archa	2.52	247	ePn	Pn	11 37 51.0	+0.6
AAK				eSn	Sb	11 38 25.2	-0.5
AAK				eSn	Sg	11 38 26.2	-4.3
NRN	Naryn	2.53	209	⇑iP	Pn	11 37 52.8	+2.1
	baz=210						
NRN				⇑iS	Sb	11 38 24.0	-2.2
	baz=210						
UCH	Uchtor	2.70	239	⇑iP	Pn	11 37 54.5	+1.3
	baz=240						
UCH				⇑iS	Sb	11 38 29.4	-1.9
	baz=240						
EKS2	Erkin-Say	3.00	252	⇑iP	Pn	11 37 57.5	+0.6
	baz=253						
EKS2				⇑iS	Sn	11 38 34.2	+1.5
	baz=253						
EKS2	Erkin-Say	3.00	252	ePN	Pn	11 37 57.6	+0.6
EKS2	Erkin-Say	3.00	252	ePn	Pn	11 37 57.6	+0.7
AML	Almayashu	3.28	244	⇑iP	Pn	11 38 02.4	+1.4
	baz=244						
AML				⇑iS	Sn	11 38 42.5	+2.5
	baz=244						
MRKS	Merke	3.35	256	eP	Pb	11 38 09.6	+0.6
	comp=Z,199nm,0.3s						
MRKS				⇓iS	Sb	11 38 52.1	+2.4
	comp=Z,578nm,0.3s						
TOKL	Toktogul	3.91	246	⇑iP	Pn	11 38 11.5	+2.1
	baz=246						
TOKL				⇑eS	Sn	11 38 58.8	+3.7
	baz=246						
MNAS	Manas	3.94	255	⇑Pn	Pn	11 38 10.0	0.0
	comp=Z,68nm,0.7s						
MNAS				⇑Lg	Lg	11 39 11.2	
	comp=Z,212nm,0.5s						
MNAS	Manas	3.94	255	PN	Pn	11 38 09.9	0.0
MNAS						11 39 09.6	
MNAS				pmax	pmax		
	comp=Z,68nm,0.7s						
MNAS				pmax	pmax		
	comp=N,212nm,0.5s						
KSH	Kashi	4.32	197	Pn	Pb	11 38 23.4	-2.0
KSH				Sn	Sb	11 39 15.9	-1.6
KSH				smax	smax		
	comp=N,440nm,0.9s						
KSH				smax	smax		
	comp=E,370nm,0.7s						
MAKZ	Makanchi	4.39	43	⇑Pn	Pn	11 38 16.5	+0.4
	comp=E,35nm,0.5s						
MAKZ				⇓Lg	Lg	11 39 26.3	
	comp=E,152nm,0.6s						
MAKZ	Makanchi	4.39	43	PN	Pn	11 38 16.4	+0.4
MAKZ						11 39 26.2	
MAKZ				pmax	pmax		
	comp=Z,35nm,0.5s						
MAKZ				pmax	pmax		
	comp=N,152nm,0.6s						
MAKZ	Makanchi	4.39	43	ePn	Pn	11 38 17.1	+1.1
MK01	Makanchi Array	4.53	45	ePn	Pn	11 38 18.6	+0.7
MK31	Makanchi Array	4.54	45	Pn	Pn	11 38 19.0	+1.0
	comp=N,30nm,0.5s,baz=220,slow=14,SNR=398						
MK31				Lg	Lg	11 39 31.1	
	comp=N,92nm,0.5s,baz=220,slow=28,SNR=13						
MK31	Makanchi Array	4.54	45	ePN	Pn	11 38 19.0	+1.0
MK31						11 39 31.0	
MK31				pmax	pmax		
	comp=Z,30nm,0.5s						
MK31				pmax	pmax		
	comp=N,92nm,0.5s						
MK31	Makanchi Array	4.54	45	ePn	Pn	11 38 19.2	+1.2
MKAR	Makanchi Array	4.54	45	Pn	Pn	11 38 19.2	+1.2
	comp=N,6.3nm,0.3s,baz=218,slow=15,SNR=120						
MKAR				Sn	Sn	11 39 11.1	+0.4
	comp=N,29nm,0.3s,baz=220,slow=25,SNR=7.9						
MKAR				Lg	Lg	11 39 28.6	
	comp=N,24nm,0.3s,baz=223,slow=23,SNR=5.2						
MKAR	Makanchi Array	4.54	45	ePN	Pn	11 38 19.2	+1.2
MKAR				pmax	pmax		
	comp=Z,10.0nm,0.3s						
SFK	Sufi-Kurgan	4.77	222	⇑eP	Pn	11 38 23.1	+1.7
	baz=222						
SFK	Sufi-Kurgan	4.77	222	⇑Pg	Pb	11 38 36.6	+3.3
	comp=Z,62nm,0.7s						
SFK				⇓Lg	Lg	11 39 39.0	
	comp=Z,472nm,1.0s						
KK31	Karatay Array	5.23	266	⇑Pn	Pn	11 38 27.0	-0.4
	comp=Z,3.6nm,0.3s,baz=77,slow=13,SNR=116						
KK31				⇓Lg	Lg	11 39 51.4	
	comp=Z,162nm,0.5s,baz=75,slow=30,SNR=11						
KK31	Karatay Array	5.23	266	ePN	Pb	11 38 34.1	-6.7
KK31				pmax	pmax		
	comp=Z,4.0nm,0.3s						
KK31				pmax	pmax		
	comp=N,162nm,0.5s						
KKAR	Karatay Array	5.23	266	ePN	Pn	11 38 27.5	+0.1
KKAR	Karatay Array	5.23	266	ePn	Pn	11 38 27.5	+0.1
IUG	Iuzhnay	5.79	258	eP	Pg	11 38 56.4	-4.1
	comp=N,120nm,0.7s						
IUG				eS	Sg	11 40 12.1	-3.3
	comp=N,407nm,0.7s						
OTUK	Ortayu	5.89	323	⇑Pn	Pn	11 38 35.9	-0.7
	comp=N,26nm,0.5s						
OTUK				⇓Lg	Lg	11 40 12.5	
	comp=N,1μm,1.1s						
OTUK	Ortayu	5.89	323	PN	Pn	11 38 35.9	-0.7
OTUK				pmax	pmax		
	comp=Z,26nm,0.5s						
OTUK				pmax	pmax		
	comp=N,1μm,1.1s						
ZSN	Zaisan	6.08	49	eP	Pg	11 39 03.7	-2.2
	comp=N,13nm,0.4s						
ZSN				eS	Sg	11 40 26.9	+2.3
	comp=N,154nm,0.8s						
SEM	Semipalatinsk	6.99	14	eP	Pg	11 39 20.9	-2.4
	comp=N,17nm,0.4s						
SEM				eS	Sg	11 40 52.7	-1.0
	comp=N,315nm,0.6s						
KURBB	Kurchatov Arra	7.00	5	Pn	Pn	11 38 52.0	+0.3
	comp=N,4.0nm,0.3s,baz=193,slow=12,SNR=158						
KURBB				Sn	Sn	11 40 08.6	-2.4
	comp=N,2.3nm,0.3s,baz=183,slow=18,SNR=5.8						
KURBB				Lg	Lg	11 40 50.2	
	comp=N,5.0nm,0.3s,baz=183,slow=28,SNR=7.7						
KURK	Kurchatov	7.10	5	⇑Pn	Pn	11 38 52.5	-0.6
	comp=N,57nm,0.7s						
KURK				⇑Lg	Lg	11 40 50.5	
	comp=N,118nm,0.6s						
KURK	Kurchatov	7.10	5	PN	Pn	11 38 52.4	-0.6
KURK				pmax	pmax		
	comp=Z,57nm,0.7s						
KURK				pmax	pmax		
	comp=N,118nm,0.6s						
KURK	Kurchatov	7.10	5	ePn	Pn	11 38 52.9	-0.2
KURK				Sn	Sn	11 40 08.6	-4.8
KURK				Lg	Lg	11 40 50.2	
WMQ	Urumqi	7.28	85	Pn	Pn	11 38 56.1	+0.4
WMQ				Sn	Sn	11 40 17.0	-1.3
WMQ				smax	smax		
	comp=N,88nm,1.3s						
WMQ				smax	smax		
	comp=E,81nm,0.8s						
BVA0	Borovoye Array	10.54	335	⇓Pn	Pn	11 39 38.1	-2.1
	comp=E,11nm,0.7s						
BVA0				⇑Sn	Sn	11 41 39.7	+1.6
	comp=E,18nm,0.6s						
BVA0				⇑Lg	Lg	11 42 39.1	
	comp=E,110nm,0.9s,baz=136,slow=25,SNR=3.5						
BVA0	Borovoye Array	10.54	335	P	Pn	11 39 38.1	-2.1
BVA0						11 41 31.5	
BVA0				pmax	pmax		
	comp=Z,11nm,0.7s						
BVA0				smax	smax		
	comp=N,18nm,0.6s						
BVAR	Borovoye Array	10.54	335	Pn	Pn	11 39 38.8	-1.4
	comp=N,4.1nm,0.3s,baz=146,slow=14,SNR=62						
BVAR				Sn	Sn	11 41 32.5	-5.6
	comp=N,3.4nm,0.3s,baz=144,slow=26,SNR=5.3						
BVAR				Lg	Lg	11 42 46.2	
	comp=N,7.7nm,0.3s,baz=149,slow=23,SNR=7.0						
BRVK	Borovoye	10.60	335	⇑Pn	Pn	11 39 38.7	-2.4
	comp=N,22nm,0.6s						
BRVK	Borovoye	10.60	335	P	Pn	11 39 38.6	-2.4
BRVK				pmax	pmax		
	comp=Z,22nm,0.6s						
BRVK	Borovoye	10.60	335	ePn	Pn	11 39 39.9	-1.1
ZRNK	Zerenda	10.93	331	eP	Pn	11 39 43.5	-2.0
ZRNK	Zerenda	10.93	331	ePn	Pn	11 39 43.5	-2.0
CHKZ	Chkalovo	11.05	338	⇓Pn	Pn	11 39 45.6	-1.6
	comp=Z,9.1nm,0.6s						
CHKZ	Chkalovo	11.05	338	P	Pn	11 39 45.5	-1.6
CHKZ				pmax	pmax		
	comp=Z,9.0nm,0.6s						
KBL	Kabul	11.28	219	eP	Pn	11 39 51.6	+0.9
KBL	Kabul	11.28	219	ePn	Pn	11 39 51.6	+0.9
ZAA0	Zalesovo Array	11.33	22	ePn	Pn	11 39 48.9	-2.2
ZALV	Zalesovo Beam	11.33	22	Pn	Pn	11 39 49.1	-1.9
	comp=Z,2.6nm,0.3s,baz=213,slow=13,SNR=20						
ZALV				Lg	Lg	11 43 09.6	
	comp=Z,1.1nm,0.3s,baz=205,slow=24,SNR=6.5						
ZALV	Zalesovo Beam	11.33	22	i P	Pn	11 39 50.0	-1.0
ZALV				pmax	pmax		
	comp=Z,6.0nm,0.4s						
NVS	Novosibirsk	11.77	16	eP	Pn	11 39 56.6	-0.4
NVS				e		11 42 03.6	
AB31	Akbulak array	13.41	301	⇓P	Pn	11 40 17.2	-2.3
	comp=Z,2.2nm,0.5s,baz=110,slow=8.5,SNR=9.5						
AB31				⇑S	Sn	11 42 52.9	+4.5
	comp=Z,3.6nm,0.6s						
AB31	Akbulak array	13.41	301	i P	Pn	11 40 16.5	-3.0
AB31				pmax	pmax		
	comp=Z,4.0nm,0.6s						
AB31				pmax	pmax		
	comp=N,4.0nm,0.6s						
ABKAR	Akbulak array	13.41	301	ePn	Pn	11 40 16.6	-2.9
AKTO	Aktyubinsk	14.98	304

DMN	Daman	17.11	157	eP	P	11 41 09.5	-0.9
	comp=Z,15nm,0.6s						
GTA	Gaotai	17.12	97	eP	Pn	11 41 05.2	-3.5
GTA				pP	P	11 41 08.5	-1.8
GTA	Gaotai	17.12	97	P	P	11 41 10.5	+0.2
GTA				sP	Pn	11 41 11.1	+2.4
GTA				pP	sP	11 41 18.3	+2.5
GTA				sP	pP	11 41 22.9	+8.8
GTA				S	Sn	11 44 20.3	+1.4
GTA				sS	sS	11 44 32.4	-2.0
GTA				SS	SnSn	11 44 40.8	+8.9
GTA				pmax	pmax		
	comp=Z,3.0nm,0.9s						
GTA				pmax	pmax		
	comp=Z,11nm,1.2s						
GTA				pmax	pmax		
	comp=Z,170nm,4.4s						
GTA				LR	LR		
	comp=N,120nm,14.3s						
GTA				LR	LR		
	comp=E,72nm,13.8s						
GTA				LR	LR		
	comp=Z,160nm,15.1s						
PKIN	Phulchoki	17.22	156	eP	Pn	11 41 07.8	-2.3
	comp=Z,17nm,0.6s						
ARU	Arti	17.63	323	P	Pn	11 41 13.3	-1.4
	comp=Z,0.0nm,0.3s,baz=110,slow=10,SNR=6.8						
ARU				Lg	Lg	11 46 16.6	
	comp=Z,0.0nm,0.3s,baz=157,slow=20,SNR=4.5						
ARU	Arti	17.63	323	c iP	Pn	11 41 13.6	-1.1
ARU				S	Sn	11 44 29.2	-1.5
ARU				pmax	pmax		
	comp=Z,17nm,1.7s						
ARU	Arti	17.63	323	ePn	Pn	11 41 13.2	-1.5
	comp=Z,9.5nm,0.5s						
ARU				Lg	Lg	11 46 16.6	
ZAK	Zakamensk	18.67	60	eP	P	11 41 25.6	-1.7
ZAK				pmax	pmax		
	comp=Z,4.0nm,1.4s						
TLY	Talaya	19.19	56	Lg	Lg	11 47 00.8	
	comp=Z,0.0nm,0.3s,baz=285,slow=18,SNR=4.3						
TLY	Talaya	19.19	56	eP	Pn	11 41 39.4	+5.6
TLY				pmax	pmax		
	comp=Z,2.0nm,0.8s						
SONM	Songino Array	20.44	68	P	P	11 41 46.5	-0.2
	comp=Z,3.6nm,0.8s,baz=268,slow=11,SNR=5.3						
SONA1	Songino Array	20.45	68	eP	Pn	11 41 50.2	+1.3
ULN	Ulaanbaatar	20.88	68	c iP	Pn	11 41 55.1	+1.1
ULN				pmax	pmax		
	comp=Z,6.0nm,0.9s						
ULN	Ulaanbaatar	20.88	68	eP	Pn	11 41 54.5	+0.5
	comp=Z,5.4nm,0.9s						
LZH	Lanzhou	21.43	102	eP	P	11 42 06.4	+9.0
LZH				pP	sP	11 42 11.1	+8.1
LZH				sP	pP	11 42 14.6	+13
LZH				pmax	pmax		
	comp=Z,20nm,1.2s						
LZH				pmax	pmax		
	comp=Z,25nm,1.3s						
CD2	Chengdu	24.25	113	P	P	11 42 26.6	+0.3
CD2				pmax	pmax		
	comp=Z,5.0nm,0.7s						
ZEI	Tsey	24.51	280	eP	P	11 42 25.1	-3.7
ZEI				pmax	pmax		
	comp=Z,4.0nm,0.5s						
GNI	Garni	24.65	273	eP	P	11 42 31.2	+1.2
GNI				pmax	pmax		
	comp=Z,11nm,0.6s						
KBZ	Khabaz	25.02	282	P	P	11 42 37.7	+4.6
	comp=Z,4.1nm,1.0s,baz=99,slow=8.5,SNR=5.5						
KBZ	Khabaz	25.02	282	P	P	11 42 37.7	+4.6
KBZ				pmax	pmax		
	comp=Z,2.0nm,0.7s						
KVAR	Kislovodsk Arr	25.11	283	pP	pP	11 42 41.4	+3.3
	comp=Z,3.7nm,0.6s,baz=286,slow=4.8,SNR=2.7						
KIV	Kislovodsk	25.12	283	i P	P	11 42 33.7	-0.4
KIV				pmax	pmax		
	comp=Z,5.0nm,1.0s						
KIV				MLR	MLR		
	comp=Z,69nm,19.0s						
HHC	Hu-ho-hao-te	25.16	85	eP	P	11 42 36.2	+1.6
HHC				pmax	pmax		
	comp=Z,13nm,1.0s						
HHC				pmax	pmax		
	comp=Z,140nm,4.7s						
NEY	Neytrino	25.25	281	i P	P	11 42 36.7	+1.3
BOD	Bodaibo	26.63	45	eP	P	11 42 49.0	+1.4
BOD				pmax	pmax		
	comp=Z,7.0nm,1.0s						
KMI	Kunming	27.59	124	P	P	11 43 00.2	+3.4
KMI				pmax	pmax		
	comp=Z,11nm,1.4s						
KLMR	Klimovskoe	28.44	321	eP	P	11 43 05.5	+1.8
KLMR				pmax	pmax		
	comp=Z,8.0nm,0.7s						
OBN	Obninsk	28.67	308	eP	P	11 43 05.4	-0.4
OBN				e		11 43 54.7	
OBN				pmax	pmax		
	comp=Z,8.0nm,0.7s						
OBN				MLR	MLR		
	comp=Z,79nm,20.0s						
GYA	Guiyang	29.10	117	P	P	11 43 12.4	+2.4
GYA				pP	sP	11 43 22.0	+6.2
GYA				PP	PnPn	11 44 07.8	+5.5
GYA				PcP	PcP	11 46 19.6	+1.8
GYA				S	S	11 48 02.2	+0.7
GYA				SS	SnSn	11 49 34.0	+8.5
GYA				ScP	ScP	11 49 58.9	0.0
GYA	Guiyang	29.10	117	ScS	ScS	11 53 50.7	-2.5
GYA				pmax	pmax		
	comp=Z,20nm,1.0s						
GYA				pmax	pmax		
	comp=Z,120nm,5.2s						
GYA				LR	LR		
	comp=N,520nm,16.8s						
GYA				LR	LR		
	comp=E,480nm,17.2s						
GYA				LR	LR		
	comp=Z,500nm,17.0s						
CMAR	Chiang Mai Arr	30.87	138	P	P	11 43 24.1	-1.5
	comp=Z,0.6nm,0.8s,baz=314,slow=8.2,SNR=5.3						
CMAR				LR	LR	11 58 01.9	
	comp=Z,56nm,18.3s,baz=170,slow=41						
BR131	Keskin Array S	32.80	279	eP	P	11 43 42.0	-0.7
BRTR	Keskin Array B	32.80	279	P	P	11 43 43.0	+0.4
	comp=Z,0.7nm,0.6s,baz=93,slow=9.9,SNR=5.5						
BRTR				pP	sP	11 43 49.9	+1.4
	comp=Z,2.7nm,0.8s,baz=97,slow=9.3,SNR=12						
BRTR	Keskin Array B	32.80	279	ceP	P	11 43 42.7	0.0
BRTR				pmax	pmax		
	comp=Z,1.0nm,0.6s						
AKASG	Malin Array Be	33.15	300	P	P	11 43 45.4	0.0
	comp=Z,0.2nm,0.4s,baz=72,slow=8.6,SNR=2.9						
AKASG				pP	sP	11 43 51.2	0.0
	comp=Z,0.7nm,0.4s,baz=70,slow=9.1,SNR=5.6						
KIEV	Kiev	33.16	300	eP	P	11 43 46.1	+0.6
KIEV				pmax	pmax		
	comp=Z,3.0nm,0.8s						
BR231	Keskin MP Arra	33.38	279	eP	P	11 43 43.6	-4.1
NJ2	Nanjing	34.21	96	eP	P	11 43 58.7	+3.9
NJ2				pmax	pmax		
	comp=Z,13nm,0.9s						
VSU	Vasula	34.33	314	eP	P	11 43 56.9	+1.3
VSU				pmax	pmax		
	comp=Z,30nm,0.9s						
FINES	FINESS Array B	34.91	319	P	P	11 44 01.1	+0.6
	comp=Z,0.9nm,0.6s,baz=121,slow=7.4,SNR=7.9						
FINES				pP	sP	11 44 07.0	+0.7
	comp=Z,5.5nm,0.6s,baz=101,slow=9.1,SNR=15						
YAK	Yakutsk	35.20	40	eP	P	11 44 09.0	+6.0
YAK				pmax	pmax		
	comp=Z,16nm,0.7s						
MDJ	Mudanjiang	36.78	70	P	P	11 44 23.0	+6.3
MDJ				pmax	pmax		
	comp=Z,15nm,1.5s						
MDJ				pmax	pmax		
	comp=Z,250nm,3.2s						
ARA0	ARCESS Array S	36.81	332	eP	P	11 44 16.4	-0.3
ARCES	ARCESS Array B	36.81	332	P	P	11 44 16.6	-0.2
	comp=Z,1.6nm,0.9s,baz=92,slow=8.5,SNR=5.5						
ARCES				pP	sP	11 44 23.2	+0.6
	comp=Z,0.7nm,0.4s,baz=98,slow=10,SNR=2.0						
ARCES	ARCESS Array B	36.81	332	eP	P	11 44 17.2	+0.4
TIXI	Tiksi	37.21	24	P	P	11 44 19.7	-0.4
	comp=Z,1.0nm,0.3s,baz=273,slow=6.2,SNR=3.5						
TIXI				pP	sP	11 44 26.6	+0.7
	comp=Z,4.2nm,0.6s,baz=261,slow=6.5,SNR=9.5						
TIXI	Tiksi	37.21	24	eP	P	11 44 21.1	+1.0
TIXI				pmax	pmax		
	comp=Z,9.0nm,1.0s						
TIXI	Tiksi	37.21	24	eP	P	11 44 19.6	-0.4
	comp=Z,8.2nm,1.0s						
TIXI				pP	sP	11 44 26.6	+0.7
VLA	Vladivostok	38.83	71⇑	eP	P	11 44 36.3	+2.3
VLA				*PP	sP	11 44 39.5	-0.4
VLA				pmax	pmax		
	comp=Z,25nm,1.2s						
LAST	Lasithi	40.61	276	eP	P	11 44 48.7	-0.4
	comp=Z,100nm,1.6s						
NB2	NORSAR Subarra	42.08	318	P	P	11 45 00.1	-0.7
	comp=Z,2.2nm,0.5s,baz=84,slow=8.6						
NOA	NORSAR Array B	42.08	318	P	P	11 45 00.7	-0.1
	comp=Z,0.4nm,0.5s,baz=84,slow=8.1,SNR=3.8						
NOA				pP	sP	11 45 06.2	-0.5
	comp=Z,1.9nm,0.5s,baz=84,slow=8.1,SNR=9.7						
NOA	NORSAR Array B	42.08	318	P	P	11 45 00.7	-0.1
NOA				*PP	sP	11 45 06.2	-0.5
NOA				pmax	pmax		
	comp=Z,1.0nm,0.6s						
NOA				pmax	pmax		
	comp=Z,2.0nm,0.5s						
CLL	Collm	43.06	304	eP	P	11 45 07.0	-1.8
CLL				i		11 45 15.9	
CLL				LmV		12 08 00.0	
	comp=Z,200nm,20.1s						
CLL				LmV		12 10 00.0	
	comp=Z,200nm,20.1s						
CLL	Collm	43.06	304	eP	P	11 45 07.0	-1.8
CLL				i		11 45 15.9	
GERES	GERESS Array B	43.36	300	P	P	11 45 12.9	+1.5
	comp=Z,0.1nm,0.3s,baz=64,slow=6.7,SNR=2.1						
YSS	Yuzh-Sakhalins	44.73	62⇑	eP	P	11 45 15.5	-6.8
YSS				pmax	pmax		
	comp=Z,30nm,1.4s						
BILL	Bilibino	49.92	29	eP	P	11 46 08.1	+5.7
BILL				pmax	pmax		
	comp=Z,9.0nm,1.8s						
BILL				MLR	MLR		
	comp=Z,70nm,17.0s						
JCJ	Chichijima	53.86	85	LR	LR	12 09 11.2	
	comp=Z,75nm,19.9s,baz=131,slow=36						
ESDC	Sonseca Array	58.72	297	P	P	11 47 06.2	-0.8
	comp=Z,0.3nm,0.6s,baz=59,slow=8.0,SNR=5.1						
TTA	Tatalina	65.49	24	eP	P	11 47 52.9	+0.8
TTA				pmax	pmax		
	comp=Z,12nm,1.8s						
TTA	Tatalina	65.49	24	eP	P	11 47 52.9	+0.8
	comp=Z,12nm,1.8s						
TT01	Tatalina	65.50	24	eP	P	11 47 52.2	+0.2
INK	Inuvik	65.94	12	P	P	11 47 54.0	-0.7
	comp=Z,0.4nm,0.5s,baz=356,slow=4.5,SNR=5.3						
INK				pP	sP	11 48 01.2	+0.5
	comp=Z,3.0nm,0.8s,baz=345,slow=7.2,SNR=9.8						
INK	Inuvik	65.94	12	eP	P	11 47 53.7	-1.0
INK				pP	sP	11 48 01.2	+0.5
MDM	Murphy Dome	65.96	20	eP	P	11 47 55.2	+0.2
	comp=Z,12nm,1.8s						
KTH	Kantishna Hill	66.42	21	eP	P	11 47 57.2	-0.9
	comp=Z,7.7nm,0.9s						
IL1	Eielson Array	66.44	19	eP	P	11 47 56.9	-1.2
ILAR	Eielson Array	66.44	19	P	P	11 47 56.9	-1.2
	comp=Z,0.5nm,0.7s,baz=317,slow=4.0,SNR=6.8						
ILAR				pP	sP	11 48 03.8	-0.3
	comp=Z,3.9nm,0.8s,baz=322,slow=5.1,SNR=31						
PPLA	Purkeypile	66.61	22	eP	P	11 47 59.6	+0.2
	comp=Z,6.5nm,0.7s						
DOT	Dot Lake	68.05	19	eP	P	11 48 07.2	-1.1
	comp=Z,27nm,1.6s						
SML	Sawmill	68.54	22	eP	P	11 48 11.2	-0.2
SML				pmax	pmax		
	comp=Z,8.0nm,0.8s						
SML	Sawmill	68.54	22	eP	P	11 48 11.2	-0.2
	comp=Z,7.7nm,0.8s						
KDAK	Kodiak Island	70.60	26	ceP	P	11 48 30.6	+6.5
KDAK	Kodiak Island	70.60	26	eP	P	11 48 24.3	+0.2
	comp=Z,11nm,0.8s						
TOA0	Torodi Ar. Sit	70.90	270	eP	P	11 48 24.5	-2.1
	comp=Z,4.8nm,1.0s						
TORD	Torodi Ar. Bea	70.90	270	P	P	11 48 24.6	-2.0
	comp=Z,3.2nm,0.7s,baz=42,slow=5.2,SNR=20						
YKW3	Yellowknife Ar	73.68	6	eP	P	11 48 42.8	+0.3
	comp=Z,5.8nm,1.3s						
YKA	Yellowknife Ar	73.75	6	P	P	11 48 41.3	-1.5
	comp=Z,0.6nm,0.6s,baz=349,slow=5.9,SNR=25						
YKA				pP	sP	11 48 48.3	-0.6
	comp=Z,2.1nm,0.7s,baz=348,slow=6.0,SNR=29						
YKB5	Yellowknife Ar	73.75	6	eP	P	11 48 41.2	-1.7
DBIC	Dimbokro	80.01	270	P	P	11 49 17.1	-1.8
	comp=Z,1.5nm,0.6s,baz=73,slow=14,SNR=3.1						
WRA	Warramunga Arr	81.86	127	P	P	11 49 26.5	-2.1
	comp=Z,1.4nm,0.8s,baz=332,slow=4.9,SNR=10						
WRA	Warramunga Arr	81.86	127	ceP	P	11 49 35.5	+6.9
WRA				pmax	pmax		
	comp=Z,1.0nm,0.7s						
ASAR	Alice Springs	84.55	130	P	P	11 49 40.0	-2.4
	comp=Z,0.9nm,0.9s,baz=316,slow=5.2,SNR=7.7						
SDCO	Great Sand Dun	98.93	3	eP	P	11 50 48.2	-1.8
	comp=Z,6.7nm,1.2s						
HOPE	Hope Point	136.99	232	ePKPdf	PKPdf	11 56 31.1	-0.1
LVC	Limon Verde	145.34	296	ePKPbc	PKPbc	11 56 46.5	-1.1
EFI	East Falkland	149.51	239	ePKP2	PKPbc	11 56 58.7	+0.9
EFI	East Falkland	149.51	239	ePKPbc	PKPbc	11 56 58.6	+0.9
PMSA	Palmer Station	149.95	212	ePKPdf	PKPdf	11 56 52.9	-0.5
PMSA				ePKPbc	PKPbc	11 56 56.5	-1.9

NIED ***01*** *11:47:00, 38°.50N×141°.80E, h17km, Mw3.8 Best double couple: M0=5.52000×10^14 NP1:φs=221.00000°, δ=66.00000°, λ=-174.00000°. NP2:φs=128.00000°, δ=84.00000°, λ=-24.00000°.*

ISCJB ***01*** *11:47:12.0±1.0, 38°.52N±0°.05×142°.0E±0°.1, h54km±9km, mb3.3/2, MS2.9/1, Error ellipse: s-maj=14.5km s-min=6.3km az=19.6*

IDC ***01*** *11:47:13.0±3.2, 38°.51N×142°.19E, h54km±31km, mb3.1/2, mb1 3.4/5, mb1mx3.1/41, mbtmp3.5/5, ML3.3/3, MS3.0/1, Ms1 3.0/1, ms1mx2.3/11, Error ellipse: s-maj=42.0km s-min=19.0km az=104.0*

JMA ***01*** *11:47:13.5, 38°.51N×141°.85E, h56km±1km, M3.8*

JMA Felt I J1.

ISC 01 11:47:12.7±1.8, 38°.48N±0°.06×142°.0E±0°.1, h43km±17km, n18, σ1§10/25, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.52	267	P	Pn	11 47 24.1	+0.4
JIO				S	Sn	11 47 31.4	-0.1
OFUJ	Ofunato	0.65	336	P	Pn	11 47 26.1	+0.5
JMK	Ichinoseki	0.78	308	P	Pn	11 47 27.2	0.0
JMK				S	Sn	11 47 37.1	-0.6
JOU	Okura	1.06	264	P	Pn	11 47 30.6	-0.5
JOU				S	Sn	11 47 43.4	-1.3
JMM	Marumori	1.14	238	P	Pn	11 47 31.7	-0.4
JMM				S	Sn	11 47 45.4	-1.1
JOM	Ohasama	1.14	331	P	Pn	11 47 32.3	+0.2
JOM				S	Sn	11 47 46.5	0.0
JYK	Kaneyama	1.36	289	P	Pn	11 47 34.8	-0.4
JYK				S	Sn	11 47 51.0	-1.0
JRG	Rokugo	1.41	311	P	Pn	11 47 35.5	-0.3
JFK	Kawauchi	1.43	219	P	Pn	11 47 36.4	+0.3
JYS	Shirataka	1.55	261	P	Pn	11 47 37.6	-0.2
JFT	Otama	1.63	234	P	Pn	11 47 39.2	+0.3
MJAR	Matsushiro Arr	3.59	239	P	Pn	11 48 07.5	+1.8
	3.2nm,0.3s,baz=37,slow=13,SNR=47						
MAT	Matsushiro	3.59	239	P	Pn	11 48 07.6	+1.8
MAT				eS	Sn	11 48 49.5	+2.6
ASAJ	Asahikawa	5.65	4	P	Pn	11 48 33.8	-0.3
	1.7nm,0.3s,baz=211,slow=12,SNR=27						
ASAJ				S	Sn	11 49 37.1	-0.5
	0.2nm,0.3s,baz=208,slow=17,SNR=2.4						
USRK	Ussuriysk Ar.	9.45	310	P	Pn	11 49 28.5	+2.3
	0.3nm,0.3s,baz=120,slow=14,SNR=4.7						
GUMO	Guam	24.92	173	LR	LR	12 01 07.8	
	comp=Z,36nm,20.9s,baz=97,slow=34						
MKAR	Makanchi Array	43.76	301	P	P	11 55 14.2	+0.3
	0.2nm,0.3s,baz=87,slow=8.3,SNR=2.9						
WRA	Warramunga Arr	58.56	188	P	P	11 57 03.9	-1.0
	0.1nm,0.4s,baz=5.6,slow=7.3,SNR=4.1						

ISCJB ***01*** *11:56:15.2±1.0, 17°.3S±0°.2×178°.8W±0°.2, h539km, mb3.6/6, Error ellipse: s-maj=35.7km s-min=18.7km az=144.1*

IDC ***01*** *11:56:18.7±3.3, 17°.29S×178°.81W, h561km±37km, mb3.2/6, mb1 3.4/6, mb1mx3.0/29, mbtmp4.1/6, Error ellipse: s-maj=29.5km s-min=17.3km az=150.0*

ISC 01 11:56:16.6±1.0, 17°.2S±0°.2×178°.8W±0°.2, h539km, n10, σ0§69/13, mb3.5/6, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	Stephens Creek	38.63	240	P	P	12 02 54.7	+0.8
	3.5nm,0.5s,baz=78,slow=9.3,SNR=13						
WRA	Warramunga Arr	44.38	259	P	P	12 03 39.5	-0.1
	1.9nm,0.6s,baz=96,slow=8.1,SNR=50						
WRA				PcP	PcP	12 05 12.1	+0.2
	1.0nm,0.9s,baz=86,slow=3.4,SNR=4.6						
ASAR	Alice Springs	44.61	254	P	P	12 03 41.8	+0.4
	14nm,0.5s,baz=89,slow=8.0,SNR=156						
ASAR				PcP	PcP	12 05 12.8	+0.2
	1.1nm,0.8s,baz=103,slow=5.1,SNR=4.6						
ASAR				S	S	12 09 37.1	-1.4
	0.5nm,0.8s,baz=93,slow=17,SNR=5.2						
VNDA	Vanda	61.08	185	P	P	12 05 37.5	-0.4
	1.1nm,0.9s,baz=16,slow=7.0,SNR=2.9						
ILAR	Eielson Array	85.32	13	P	P	12 07 55.9	-0.3
	0.2nm,0.6s,baz=232,slow=4.4,SNR=3.9						
YKA	Yellowknife Ar	93.88	25	P	P	12 08 35.4	-0.7
	0.1nm,0.7s,baz=242,slow=4.4,SNR=4.0						
BRTR	Keskin Array B	144.04	315	PKP	PKPab	12 14 51.4	+0.4
	0.7nm,0.8s,baz=149,slow=2.9,SNR=5.3						
DPC	Dobruska-Polom	144.80	343	eP	PKPab	12 14 53.6	+0.2
KHC	Kasperske Hory	146.63	345	eP	PKPbc	12 14 58.9	+1.0
GERES	GERESS Array B	146.87	345	PKPbc	PKPbc	12 14 59.1	+0.5
	0.2nm,0.3s,baz=46,slow=7.6,SNR=4.8						

DJA 01 12:25:40.3±1.1, 8°S±9°×10°7E±°, h25km±13km, M3.6/7, MLv3.6/7, Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CISI	Cisompet, Garu	0.67	36	P	Pb	12 25 53.1	-0.3
CISI				S	Sn	12 26 03.3	-0.6
CNJI	Cibinong	0.84	340	P	Pb	12 25 56.0	-0.2
CNJI				S	Sn	12 26 07.6	-0.4
CMJI	Cimerak	1.07	73	P	Pn	12 25 59.2	-0.5
LEM	Lembang	1.28	9	P	Pn	12 26 02.5	-0.3
SKJI	Sukabumi	1.38	322	P	Pn	12 26 03.7	-0.4
CGJI	Cibinong	2.26	311	P	Pn	12 26 15.9	-0.2

IDC ***01*** *12:33:13.8±1.0, 40°.04N×71°.84E, h0km, mb3.6/6, mb1 3.7/10, mb1mx3.4/51, mbtmp3.5/10, ML3.1/4, Error ellipse: s-maj=20.3km s-min=13.7km az=135.0*

SOME ***01*** *12:33:17.7, 40°.23N×71°.82E, h0km*

NNC ***01*** *12:33:18.6±3.2, 40°.23N×71°.85E, h10km±18km, mb3.9, mpv3.5, Error ellipse: s-maj=22.5km s-min=10.4km az=43.0*

KRNET ***01*** *12:33:18.3±0.1, 40°.13N×71°.78E, h30km, mb3.6*

ISC 01 12:33:16.5±0.7, 40°.20N±0°.04×71°.84E±0°.03, h10km, n32, σ1§79/45, mb3.6/6, 23C-8D, Tajikistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OHH	Osh	0.79	65	⇓iP	Pn	12 33 35.0	+1.2
OHH	baz=62						
				⇓iS	Sn	12 33 47.2	+1.4
	baz=62						
BTK	Batken	0.80	260	⇑iP	Pg	12 33 32.5	+0.6
BTK	baz=265						
				⇑iS	Sg	12 33 43.2	+0.9
	baz=265						
SFK	Sufi-Kurgan	1.29	98	⇑iP	Pn	12 33 42.4	+1.6
SFK	baz=94						
				⇑iS	Sn	12 34 00.3	+2.0
	baz=94						
SFK	Sufi-Kurgan	1.29	98	⇑Pn	Pn	12 33 42.1	+1.3
SFK	38nm,0.4s						
				⇑Lg	Lg	12 34 00.2	
	58nm,0.2s						
ARSB	Arslanbob	1.42	37	⇑iP	Pg	12 33 44.6	+0.8
ARSB	baz=37						
				⇑iS	Sg	12 34 04.8	+2.6
	baz=37						
TOKL	Toktogul	1.91	24	⇑iP	Pb	12 33 52.0	+0.6
TOKL	baz=24						
				⇑iS	Sg	12 34 18.2	+0.4
	baz=24						
MNAS	Manas	2.34	12	⇑eP	Pb	12 33 59.0	+0.1
MNAS	baz=13						
				⇑iS	Sb	12 34 28.9	+1.0
	baz=13						
MNAS	Manas	2.34	12	⇓Pn	Pb	12 33 59.2	+0.4
MNAS	17nm,0.4s						
				⇑Lg	Lg	12 34 32.2	
	213nm,0.6s						
IUG	Iuzhnay	2.38	326	eP	Pg	12 34 01.4	-0.7
IUG	205nm,0.7s						
				eS	Sg	12 34 33.0	+0.1
	220nm,0.6s						
MRKS	Merke	2.75	22	eP	Pg	12 34 08.8	-0.4
MRKS	30nm,0.4s						
				eS	Sg	12 34 44.9	+0.1
	117nm,0.4s						
EKS2	Erkin-Say	2.86	30	⇓iP	Pb	12 34 06.4	-1.3
EKS2	baz=30						
UCH	Uchtor	2.86	44	⇑iP	Pn	12 34 05.8	+3.2
UCH	baz=44						
KK31	Karatay Array	3.07	342	⇑Pn	Pn	12 34 07.0	+1.9
KK31	0.3nm,0.2s,baz=152,slow=12,SNR=89						
				Pg	Pg	12 34 13.8	-1.5
	11nm,0.3s,baz=161,slow=14,SNR=69						
KK31				⇓Sn	Sn	12 34 42.1	+0.3
	7.7nm,0.3s,baz=156,slow=24,SNR=5.6						
KK31				⇓Lg	Lg	12 34 52.9	
	66nm,0.7s,baz=162,slow=30,SNR=4.0						
AAK	Ala-Archa	3.15	39	Pn	Pn	12 34 09.9	+3.6
	3.6nm,0.3s,baz=193,slow=7.4,SNR=23						
AAK				Lg	Lg	12 34 57.3	
	5.0nm,0.3s,baz=181,slow=23,SNR=5.6						
AAK	Ala-Archa	3.15	39	⇑iP	Pn	12 34 09.8	+3.5
AAK	baz=38						
AAK	Ala-Archa	3.15	39	⇑Pn	Pn	12 34 09.6	+3.3
AAK	13nm,0.3s						
				⇓Lg	Lg	12 34 56.8	
	39nm,0.6s						
KZA	Kyzart	3.19	53	⇑iP	Pn	12 34 10.5	+3.4
KZA	baz=52						
KBK	Karagaybulak	3.39	43	⇑iP	Pb	12 34 14.5	-2.3
KBK	baz=42						
NRN	Naryn	3.39	67	⇑eP	Pn	12 34 12.5	+2.7
NRN	baz=67						
				⇑iS	Sn	12 34 51.7	+1.5
	baz=67						
TKM2	Tokmak 2	3.92	45	⇑Pn	Pn	12 34 20.5	+3.6
TKM2	18nm,0.7s						
				⇓Lg	Lg	12 35 21.5	
	9.5nm,0.5s						
DGS	Degeres	4.23	43	eP	Pg	12 34 35.6	-2.0
DGS	11nm,0.7s						
				eS	Sg	12 35 31.5	-0.9
	41nm,0.6s						
MTBS	Maitube	4.52	48	eP	Pg	12 34 41.3	-1.7

WRA	**Warramunga Arr**	**83.41**	**123**	P	**P**	**12 45 42.8**	**-1.4**
	0.3nm,0.6s,baz=329,slow=5.0,SNR=5.8						
ASAR	**Alice Springs**	**85.85**	**126**	P	**P**	**12 45 55.0**	**-1.5**
	0.3nm,0.6s,baz=311,slow=5.1,SNR=7.1						

IDC 01 12:33:20.1±2.9, 31°.87N×141°.12E, h0km, mb3.2/3, mb1 3.5/3, mb1mx3.2/42, mbtmp3.2/3, MS2.8/1, Ms1 2.8/1, ms1mx2.1/19, Error ellipse: s-maj=296.9km s-min=30.6km az=108.0, Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NRIK	**Noril'sk**	**47.89**	**337**	LR	LR	13 01 41.2	
	comp=Z,12nm,21.9s,baz=100,slow=36						
WRA	**Warramunga Arr**	**51.93**	**188**	P	P	12 42 31.1	+0.3
	0.3nm,0.4s,baz=6.2,slow=7.6,SNR=18						
ASAR	**Alice Springs**	**55.66**	**188**	P	P	12 42 57.4	-0.6
	0.1nm,0.6s,baz=1.6,slow=4.8,SNR=7.5						
YKA	**Yellowknife Ar**	**68.41**	**29**	P	P	12 44 23.3	+0.1
	0.2nm,0.8s,baz=293,slow=7.1,SNR=3.8						

*LDG **01** 12:38:46.9±0.8, 50°.77N×7°.57W, h10km, Ml2.7/5, Error ellipse: s-maj=19.2km s-min=15.3km az=40.0*
*CSEM **01** 12:38:59.3±1.5, 49°.95N×6°.56W, h10km, ML2.0, Error ellipse: s-maj=34.6km s-min=11.8km az=114.0*
*BGS **01** 12:39:00.5±1.6, 50°.05N×6°.64W, h10km, ML2.0*

ISC 01 12:38:57.0±2.9, 50°.05N±0°.05×6°.8W±0°.1, h4km±12km, n30, σ1°62/48, North Atlantic Ocean

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CCA1	**Carnmenellis**	**1.00**	**82**	*e*P	**Pg**	**12 39 16.6**	**+0.5**
CCA1				*e*S	**Sg**	**12 39 29.2**	**+0.1**
CCA1				AML	AML	12 39 30.6	
	comp=N,128nm,0.2s						
CCA1				AML	AML	12 39 30.8	
	comp=E,93nm,0.2s						
CCA1	**Carnmenellis**	**1.00**	**82**	*e*P	**Pg**	**12 39 16.6**	**+0.5**
CCA1				*e*S	**Sg**	**12 39 29.2**	**+0.1**
CCA1				AML	AML	12 39 30.6	
	comp=N,128nm,0.2s						
CCA1				AML	AML	12 39 30.8	
	comp=E,93nm,0.2s						
CCA1	**Carnmenellis**	**1.00**	**82**	*e*P	**Pg**	**12 39 16.6**	**+0.5**
CCA1				*e*S	**Sg**	**12 39 29.2**	**+0.1**
	comp=E,93nm,0.2s						
SBD	**Saint Breward**	**1.43**	**68**	*e*P	**Pn**	**12 39 23.7**	**-0.1**
SBD				*e*S	**Sb**	**12 39 40.8**	**-2.0**
	comp=E,23nm,0.6s						
HTL	**Hartland**	**1.73**	**56**	*e*P	**Pn**	**12 39 29.4**	**+1.5**
HTL				*e*S	**Sn**	**12 39 49.4**	**-1.1**
HTL				AML	AML	12 39 56.9	
	comp=E,7.1nm,0.6s						
HTL				AML	AML	12 39 58.1	
	comp=N,8.3nm,0.8

CHN1				*e*S		**Sb**		**13 08 11.1**	**+0.7**
	baz=229								
SGST	**Jiashian**	**1.85**	**229**	*e*P		**Pb**		**13 07 47.8**	**-0.4**
	baz=225								
SGST				*e*S		**Sb**		**13 08 12.2**	**+1.1**
	baz=225								
JIJ	**Ishigaki jima**	**1.86**	**88**	P		**Pb**		**13 07 47.8**	**-0.5**
JIJ				S		**Sn**		**13 08 09.1**	**-0.2**
JISG	**Ishigakijimahi**	**2.03**	**81**	P		**Pn**		**13 07 48.8**	**+0.5**
JISG				S		**Sn**		**13 08 13.8**	**+0.3**
SSD	**Sandimen**	**2.05**	**221**	*e*P		**Pn**		**13 07 48.3**	**-0.4**
	baz=193								
SSD				*e*S		**Sb**		**13 08 16.9**	**-0.2**
	baz=193								
EAST	**Anshuo**	**2.23**	**211**	*e*P		**Pb**		**13 07 54.1**	**-0.5**
	baz=206								

NNC 01 13:09:06.1±2.8, 38°.91N×70°.68E, h0km, mb3.6, mpv3.2, 7C-2D, Error ellipse: s-maj=21.7km s-min=12.7km az=21.0, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFK	**Sufi-Kurgan**	**2.45**	**62**	⇑Pn	Pn	13 09 47.2	-0.3
	6.2nm,0.5s						
SFK				⇓Sn	Sn	13 10 20.0	+1.7
	43nm,0.6s						
MNAS	**Manas**	**3.83**	**21**	⇑Pn	Pn	13 10 07.2	+0.8
	3.4nm,0.4s						
MNAS				⇑Sn	Sn	13 10 52.9	+0.6
	13nm,0.5s						
KK31	**Karatay Array**	**4.19**	**358**	Pn	Pn	13 10 12.2	+1.0
	1.3nm,0.5s,baz=180,slow=12,SNR=27						
KK31				⇑Sn	Sn	13 11 03.6	+2.7
	2.2nm,0.3s,baz=186,slow=24,SNR=5.8						
AAK	**Ala-Archa**	**4.71**	**37**	⇑Pn	Pn	13 10 17.6	-0.9
	3.3nm,0.5s						
AAK				⇓Sn	Sn	13 11 12.3	-1.7
	2.9nm,0.7s						
TKM2	**Tokmak 2**	**5.47**	**41**	⇑Pn	Pn	13 10 28.5	-0.5
	3.1nm,0.7s						
TKM2				⇑Sn	Sn	13 11 34.6	+2.0
	2.6nm,0.5s						
AB31	**Akbulak array**	**12.89**	**327**	P	Pn	13 12 08.5	-1.9
	0.4nm,0.4s,baz=163,slow=8.9,SNR=17						
AB31				S	Sn	13 14 32.9	-1.5
	0.3nm,0.4s,baz=148,slow=24,SNR=3.9						

IDC 01 13:28:42.1±9.3, 3°.48S×69°.54E, h0km, mb3.5/5, mb1 3.6/5, mb1mx3.4/35, mbtmp3.5/5, MS3.3/7, Ms1 3.3/7, ms1mx2.9/40, Error ellipse: s-maj=299.7km s-min=28.3km az=66.0, Chagos Archipelago region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08N2	**Diego Garcia H**	**3.18**	**153**	Pn	Pn	13 29 30.2	-2.9
H08N2				T	T	13 33 11.7	
	baz=315,slow=75,SNR=800						
H08N3	**Diego Garcia H**	**3.19**	**153**	Pn	Pn	13 29 30.4	-2.9
H08N3				T	T	13 33 17.2	
	baz=315,slow=75,SNR=924						
H08N1	**Diego Garcia H**	**3.20**	**153**	Pn	Pn	13 29 31.0	-2.4
H08N1				T	T	13 33 08.3	
	baz=315,slow=75,SNR=1064						
H08S3	**Diego Garcia H**	**5.05**	**145**	Pn	Pn	13 29 56.8	-2.2
H08S3				T	T	13 35 44.3	
	baz=311,slow=74,SNR=16						
H08S1	**Diego Garcia H**	**5.06**	**145**	Pn	Pn	13 29 57.3	-1.8
H08S1				T	T	13 35 46.5	
	baz=311,slow=74,SNR=26						
H08S2	**Diego Garcia H**	**5.07**	**145**	Pn	Pn	13 29 57.4	-1.8
H08S2				T	T	13 35 45.6	
	baz=311,slow=74,SNR=16						
WSAR	**Wadi Sarin**	**28.61**	**339**	LR	LR	13 43 31.0	
	comp=Z,48nm,19.7s,baz=202,slow=31						
PSI	**Prapat**	**30.02**	**78**	LR	LR	13 45 21.5	
	comp=Z,501nm,18.4s,baz=104,slow=33						
GEYT	**Alibeck**	**42.54**	**347**	LR	LR	13 53 05.5	
	comp=Z,51nm,21.8s,baz=135,slow=34						
GNI	**Garni**	**49.02**	**335**	LR	LR	13 59 19.5	
	comp=Z,12nm,18.3s,baz=151,slow=38						
MKAR	**Makanchi Array**	**51.31**	**11**	P	P	13 37 47.9	-0.2
	0.3nm,0.8s,baz=198,slow=8.7,SNR=3.2						
KVAR	**Kislovodsk Arr**	**53.03**	**336**	LR	LR	13 58 46.5	
	comp=Z,14nm,19.0s,baz=282,slow=34						
AKTO	**Aktyubinsk**	**54.61**	**351**	LR	LR	14 01 44.1	
	comp=Z,17nm,18.3s,baz=124,slow=36						
ZALV	**Zalesovo Beam**	**58.63**	**11**	P	P	13 38 40.6	-0.3
	0.4nm,0.3s,baz=205,slow=5.3,SNR=3.3						
SONM	**Songino Array**	**60.42**	**28**	P	P	13 38 54.2	+0.6
	0.3nm,0.4s,baz=243,slow=5.8,SNR=3.5						
WRA	**Warramunga Arr**	**65.14**	**110**	P	P	13 39 25.8	+0.2
	0.6nm,0.8s,baz=283,slow=6.0,SNR=5.0						
ASAR	**Alice Springs**	**65.16**	**114**	P	P	13 39 25.4	-0.3
	0.2nm,0.7s,baz=290,slow=6.5,SNR=3.0						
FINES	**FINESS Array B**	**72.83**	**340**	LR	LR	14 13 34.4	
	comp=Z,16nm,19.1s,baz=190,slow=37						

IDC 01 13:46:08.0±2.2, 6°.25N×125°.89E, h0km, mb3.3/3, mb1 3.5/3, mb1mx3.2/47, mbtmp3.3/3, Error ellipse: s-maj=170.5km s-min=26.0km az=65.0, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**27.32**	**162**	P	P	13 51 56.2	+1.4
	0.2nm,0.3s,baz=343,slow=11,SNR=5.8						
ASAR	**Alice Springs**	**30.74**	**166**	P	P	13 52 23.9	-1.4
	0.2nm,0.5s,baz=344,slow=7.4,SNR=6.7						
MKAR	**Makanchi Array**	**55.03**	**325**	P	P	13 55 41.4	-0.1
	0.1nm,0.4s,baz=115,slow=8.2,SNR=4.1						

MAN 01 14:07:27, 6°.67N×126°.49E, h15km, mb4.7, ML3.6, MS3.6, 1C, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MATI	**Mati**	**0.36**	**320**	*e*P	Pb	14 07 36.0	+0.9
MATI				*e*S	Sn	14 07 47.8	+3.3
BIPH	**Bislig**	**1.51**	**355**	⇑*e*P	Pb	14 07 54.5	-0.2
BIPH				/ S	Sg	14 08 15.8	+0.1
BUKP	**Musuan**	**1.86**	**310**	*e*P	Pn	14 07 59.1	+0.8
BUKP				*e*S	Sn	14 08 17.9	-3.6

SGS 01 14:17:31.1, 25°.22N×37°.79E, h10km, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LNY12	**LNY12**	**0.05**	**342**	S	Sg	14 17 34.5	-0.2
LNY12				P	Pg	14 17 33.2	0.0
LNY12	**LNY12**	**0.05**	**342**	S	Sg	14 17 34.6	-0.2
LNY12				P	Pg	14 17 33.2	0.0
LNY10	**LNY10**	**0.08**	**55**	S	Sg	14 17 35.1	-0.1
LNY10				P	Pg	14 17 33.6	+0.1
LNY10	**LNY10**	**0.08**	**55**	S	Sg	14 17 35.1	-0.1
LNY10				P	Pg	14 17 33.6	+0.1
LNY11	**LNY11**	**0.09**	**351**	S	Sg	14 17 35.6	0.0
LNY11				P	Pg	14 17 33.7	0.0
LNY11	**LNY11**	**0.09**	**351**	S	Sg	14 17 35.6	0.0
LNY11				P	Pg	14 17 33.7	0.0
LNY02	**LNY02**	**0.11**	**143**	S	Sg	14 17 35.7	-0.2
LNY02				P	Pg	14 17 33.8	0.0
LNY02	**LNY02**	**0.11**	**143**	S	Sg	14 17 35.7	-0.2
LNY02				P	Pg	14 17 33.9	0.0
LNY04	**LNY04**	**0.14**	**290**	S	Sg	14 17 36.4	-0.1
LNY04				P	Pg	14 17 34.3	0.0
LNY04	**LNY04**	**0.14**	**290**	S	Sg	14 17 36.4	-0.1
LNY04				P	Pg	14 17 34.3	0.0
LNY01	**LNY01**	**0.15**	**91**	S	Sg	14 17 37.0	0.0
LNY01				P	Pg	14 17 34.6	0.0
LNY01	**LNY01**	**0.15**	**91**	S	Sg	14 17 37.0	0.0
LNY01				P	Pg	14 17 34.6	0.0
LNY03	**LNY03**	**0.17**	**21**	S	Sg	14 17 37.3	0.0
LNY03				P	Pg	14 17 34.7	-0.1
LNY03	**LNY03**	**0.17**	**21**	S	Sg	14 17 37.2	-0.1
LNY03				P	Pg	14 17 34.7	-0.1
LNY05	**LNY05**	**0.20**	**206**	S	Sg	14 17 37.9	-0.2
LNY05				P	Pg	14 17 36.0	+0.8
LNY05	**LNY05**	**0.20**	**206**	S	Sg	14 17 37.9	-0.2
LNY05				P	Pg	14 17 36.0	+0.7
LNY08	**LNY08**	**0.20**	**164**	S	Sg	14 17 38.2	0.0
LNY08				P	Pg	14 17 35.2	-0.1
LNY09	**LNY09**	**0.21**	**327**	S	Sg	14 17 38.5	0.0
LNY09				P	Pg	14 17 35.5	0.0
LNY09	**LNY09**	**0.21**	**327**	S	Sg	14 17 38.5	0.0
LNY09				P	Pg	14 17 35.5	0.0
LNY07	**LNY07**	**0.22**	**245**	P	Pg	14 17 35.6	0.0

*IDC **01** 14:29:44.1±2.6, 37°.04N×142°.40E, h0km, mb3.2/3, mb1 3.4/5, mb1mx3.3/36, mbtmp3.3/5, ML2.6/2, MS2.3/1, Ms1 2.3/1, ms1mx2.0/21, Error ellipse: s-maj=70.8km s-min=26.0km az=57.0*
*ISCJB **01** 14:29:56.8±1.4, 38°.58N±0°.06×142°.2E±0°.1, h37km×17km, mb3.0/1, Error ellipse: s-maj=16.1km s-min=8.1km az=19.6*
*JMA **01** 14:29:56.8±0.1, 38°.59N×142°.17E, h38km±2km, M3.4*
ISC 01 14:29:55.5±3.1, 38°.56N±0°.06×142°.2E±0°.1, h27km±17km, n20, σ6°.75/17, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.68**	**320**	P	**Pn**	**14 30 09.3**	**-0.1**
OFUJ				S	**Sb**	**14 30 17.7**	**-0.3**
JIO	**Ouri**	**0.70**	**262**	P	**Pn**	**14 30 09.5**	**-0.1**
JIO				S	**Sb**	**14 30 18.3**	**-0.1**
JMK	**Ichinoseki**	**0.88**	**297**	P	**Pn**	**14 30 12.2**	**0.0**
JMK				S	**Sn**	**14 30 23.1**	**-1.0**
MIYJ	**Miyakonagasawa**	**1.07**	**343**	P	**Pn**	**14 30 14.6**	**-0.1**
MIYJ				S	**Sn**	**14 30 27.4**	**-1.3**
JOM	**Ohasama**	**1.17**	**322**	P	**Pn**	**14 30 16.5**	**+0.4**
JOU	**Okura**	**1.25**	**262**	P	**Pn**	**14 30 17.8**	**+0.6**
JOU				S	**Sn**	**14 30 32.8**	**-0.2**
JMM	**Marumori**	**1.33**	**239**	P	**Pn**	**14 30 18.3**	**+0.1**
JRG	**Rokugo**	**1.50**	**304**	P	**Pn**	**14 30 21.6**	**+0.9**
JYK	**Kaneyama**	**1.51**	**284**	P	**Pn**	**14 30 21.9**	**+1.1**
JKZ	**Kuzumaki**	**1.59**	**334**	P	**Pn**	**14 30 23.2**	**+1.3**
JFK	**Kawauchi**	**1.60**	**222**	P	**Pn**	**14 30 22.1**	**0.0**
USRK	**Ussuriysk Ar.**	**9.54**	**309**	Pn	Pn	14 32 16.4	+5.4
	0.2nm,0.3s,baz=122,slow=15,SNR=5.1						
KSRS	**Korea Array**	**11.35**	**269**	LR	LR	14 36 42.3	
	comp=Z,15nm,18.5s,baz=174,slow=36						
H11N2	**WAKE ISLAND Hy**	**28.42**	**124**	T	T	15 06 02.4	
	baz=316,slow=75,SNR=64						
H11N1	**WAKE ISLAND Hy**	**28.43**	**124**	T	T	15 06 03.0	
	baz=316,slow=75,SNR=41						
H11N3	**WAKE ISLAND Hy**	**28.44**	**124**	T	T	15 06 03.7	
	baz=316,slow=75,SNR=39						
H11S1	**WAKE ISLAND Hy**	**29.19**	**126**	T	T	15 07 05.5	
	baz=318,slow=76,SNR=9.9						
H11S3	**WAKE ISLAND Hy**	**29.19**	**126**	T	T	15 07 06.8	
	baz=318,slow=76,SNR=6.9						
H11S2	**WAKE ISLAND Hy**	**29.21**	**126**	T	T	15 07 04.6	
	baz=318,slow=76,SNR=4.4						
MKAR	**Makanchi Array**	**43.88**	**301**	P	**P**	**14 37 59.8**	**+0.3**
	0.1nm,0.3s,baz=79,slow=11,SNR=3.2						

*ISCJB **01** 14:29:54.2±1.9, 35°.75N±0°.07×141°.5E±0°.1, h18km±12km, mb3.2/2, Error ellipse: s-maj=18.0km s-min=11.0km az=159.2*
*JMA **01** 14:30:00.1±0.2, 35°.79N×140°.99E, h35km±2km, M2.7*
ISC 01 14:29:57.9±2.4, 35°.76N±0°.07×141°.3E±0°.2, h28km±14km, n8, σ6°.35/11, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.33**	**260**	P	**Pb**	**14 30 06.1**	**+0.4**
CHOJ				S	**Sb**	**14 30 10.6**	**-0.4**
JCN	**Nagara**	**0.93**	**249**	P	**Pb**	**14 30 15.1**	**-0.3**
JHO	**Hitachi**	**1.02**	**327**	P	**Pn**	**14 30 16.2**	**-0.1**
JHO				S	**Sb**	**14 30 29.5**	**-0.4**
BSO3	**Boso 3**	**1.14**	**213**	P	**Pn**	**14 30 17.7**	**0.0**
MJAR	**Matsushiro Arr**	**2.59**	**288**	Pn	**Pn**	**14 30 38.0**	**+0.1**
	1.4nm,0.3s,baz=97,slow=8.2,SNR=17						
MAT	**Matsushiro**	**2.59**	**288**	P	**Pn**	**14 30 38.4**	**+0.4**
MAT				S	**Sb**	**14 31 15.2**	**0.0**
WRA	**Warramunga Arr**	**55.79**	**188**	P	**P**	**14 39 32.3**	**-0.1**
	0.2nm,0.7s,baz=7.0,slow=7.6,SNR=6.8						
ASAR	**Alice Springs**	**59.51**	**188**	P	**P**	**14 39 58.9**	**+0.3**
	0.2nm,0.8s,baz=6.0,slow=11,SNR=3.8						

WEL 01 14:48:39.9±0.4, 39°.14S×174°.81E, h221km±2km, ML3.6/9, 4C-8D, Error ellipse: s-maj=4.0km s-min=2.7km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VRZ	**Vera Road**	**0.04**	**289**	⇓PN	Pn	14 49 08.0	-0.6
VRZ				SN	S	14 49 30.2	-0.7
WAZ	**Wanganui**	**0.63**	**167**	⇓PN	Pn	14 49 10.4	+0.5
WAZ				SN	S	14 49 33.3	-0.2
TUVZ	**Tukino**	**0.67**	**101**	PN	Pn	14 49 10.4	+0.1
MOVZ	**Moawhango**	**0.78**	**110**	⇓PN	Pn	14 49 10.4	-0.3
MOVZ				SN	S	14 49 32.5	-2.2
BHHZ	**Black Hill Sta**	**1.04**	**110**	PN	Pn	14 49 11.9	-0.2
BHHZ				SN	S	14 49 35.2	-2.0
OHWZ	**Ohakea**	**1.14**	**160**	PN	Pn	14 49 13.0	+0.3
OHWZ				SN	S	14 49 38.6	+0.3
TSZ	**Takapari Road**	**1.28**	**136**	PN	Pn	14 49 13.9	+0.2
TSZ				AML	AML	14 49 40.2	
TSZ				AML	AML	14 49 41.2	
KWHZ	**Kaweka Forest**	**1.29**	**103**	PN	Pn	14 49 14.1	+0.2
MRHZ	**Matea Rd**	**1.29**	**77**	⇓PN	Pn	14 49 13.0	-0.9
BKZ	**Black Stump Fm**	**1.31**	**92**	⇓PN	Pn	14 49 13.6	-0.5
BKZ				AML	AML	14 49 40.8	
KRHZ	**Kereru**	**1.31**	**113**	⇑PN	Pn	14 49 14.1	+0.1
PNHZ	**Pukenui**	**1.33**	**126**	PN	Pn	14 49 14.2	+0.1
MCHZ	**McNeill Hill**	**1.50**	**102**	PN	Pn	14 49 16.0	+0.6
NMHZ	**Naumai**	**1.56**	**89**	⇓PN	Pn	14 49 16.4	+0.4
DVHZ	**Dannevirke**	**1.56**	**138**	PN	Pn	14 49 15.9	-0.1
DVHZ				SN	S	14 49 42.8	-1.4
WPHZ	**Waipukurau**	**1.57**	**127**	PN	Pn	14 49 16.2	+0.2
WPHZ				SN	S	14 49 43.7	-0.4
MRZ	**Mangatainoka R**	**1.63**	**159**	PN	Pn	14 49 16.3	-0.3
MUGZ	**Murupara**	**1.67**	**67**	⇑PN	Pn	14 49 15.6	-1.3
PRWZ	**Pori Road**	**1.68**	**148**	PN	Pn	14 49 17.6	+0.7
OGWZ	**Otaki Gorge**	**1.70**	**171**	PN	Pn	14 49 16.9	-0.2
ARHZ	**Aropaoanui**	**1.71**	**95**	PN	Pn	14 49 17.4	+0.2
KIW	**Kapiti Island**	**1.72**	**177**	PN	Pn	14 49 16.9	-0.5
KIW				AML	AML	14 49 45.1	
KIW				AML	AML	14 49 45.7	
KAHZ	**Kahuranaki**	**1.73**	**113**	PN	Pn	14 49 17.9	+0.4
RAHZ	**Arahi**	**1.79**	**84**	PN	Pn	14 49 17.7	-0.3
DUWZ	**D'Urville Isla**	**1.80**	**202**	⇑PN	Pn	14 49 17.4	-0.7
PRHZ	**Porangahau**	**1.81**	**129**	PN	Pn	14 49 18.3	+0.1
PXZ	**Pawanui**	**1.82**	**120**	PN	Pn	14 49 18.3	0.0
TIWZ	**Tintock**	**1.84**	**153**	PN	Pn	14 49 18.3	-0.1
TIWZ				AML	AML	14 49 49.6	
HOWZ	**Holdsworth Sta**	**1.84**	**163**	PN	Pn	14 49 17.8	-0.6
ANWZ	**Angora Road**	**1.84**	**136**	PN	Pn	14 49 18.5	+0.1
CAW	**Cannon Point**	**1.98**	**174**	PN	Pn	14 49 19.1	-0.6
CAW				AML	AML	14 49 52.4	
CAW				AML	AML	14 49 53.1	
URZ	**Urewera**	**2.01**	**65**	⇓PN	Pn	14 49 18.4	-1.6
SNGZ	**Shannon Statio**	**2.01**	**81**	PN	Pn	14 49 19.6	-0.5
MTW	**Mount Morrison**	**2.09**	**165**	PN	Pn	14 49 20.1	-0.7
TCW	**Tory Channel**	**2.11**	**191**	PN	Pn	14 49 20.5	-0.5
TCW				AML	AML	14 49 52.6	
TCW				AML	AML	14 49 53.0	
RAGZ	**Rawiri**	**2.14**	**73**	PN	Pn	14 49 20.4	-1.1
WEL	**Wellington**	**2.15**	**181**	PN	Pn	14 49 20.7	-0.6
WEL				AML	AML	14 49 53.7	
KNZ	**Kokohu**	**2.23**	**88**	⇑PN	Pn	14 49 21.8	-0.5
BHW	**Baring Head**	**2.27**	**179**	PN	Pn	14 49 21.6	-1.0
MWZ	**Matawai**	**2.27**	**70**	PN	Pn	14 49 21.3	-1.5
PAWZ	**Paruwai Farm**	**2.29**	**168**	PN	Pn	14 49 22.0	-0.9
MSWZ	**Moikau Station**	**2.30**	**172**	PN	Pn	14 49 22.0	-1.0
MSWZ				AML	AML	14 49 55.8	
MSWZ				AML	AML	14 49 56.2	
RIGZ	**Rimuhau**	**2.35**	**80**	PN	Pn	14 49 22.8	-0.7
NNZ	**Nelson**	**2.35**	**207**	PN	Pn	14 49 22.2	-1.2
TUWZ	**Tuamarina**	**2.38**	**196**	PN	Pn	14 49 23.0	-0.8
TUWZ				AML	AML	14 49 56.3	
TUWZ				AML	AML	14 49 56.6	
QRZ	**Quartz Range**	**2.43**	**225**	PN	Pn	14 49 22.3	-2.0
PLWZ	**Palliser**	**2.45**	**172**	PN	Pn	14 49 23.5	-1.1
TKGZ	**Te Karaka**	**2.48**	**75**	PN	Pn	14 49 24.0	-0.9
BSWZ	**Blackbirch Sta**	**2.67**	**195**	PN	Pn	14 49 26.2	-0.7
HAZ	**Te Kaha**	**2.71**	**60**	PN	Pn	14 49 25.1	-2.3
THZ	**Tophouse**	**3.00**	**208**	PN	Pn	14 49 28.9	-1.7
KHZ	**Kahutara**	**3.41**	**196**	PN	Pn	14 49 33.9	-1.4
DSZ	**Denniston Nort**	**3.47**	**220**	PN	Pn	14 49 33.5	-2.5
LTZ	**Lake Taylor**	**4.12**	**207**	PN	Pn	14 49 40.3	-3.6
INZ	**Inchbonnie**	**4.40**	**214**	PN	Pn	14 49 44.3	-2.9
OXZ	**Oxford**	**4.68**	**206**	PN	Pn	14 49 47.6	-3.1
CRLZ	**Canterbury Las**	**4.73**	**200**	PN	Pn	14 49 48.0	-3.3
MQZ	**McQueen's Vall**	**4.84**	**199**	⇓PN	Pn	14 49 49.3	-3.4

IDC 01 14:49:59.8±6.1, 6°.94S×147°.75E, h78km±45km, mb3.6/3, mb1 3.7/5, mb1mx3.3/40, mbtmp3.8/5, ML3.7/1, Error ellipse: s-maj=55.1km s-min=55.0km az=110.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.52**	**193**	P	Pn	14 50 38.5	-0.1
	4.6nm,0.3s,baz=14,slow=5.1,SNR=22						
PMG				S	Sn	14 51 18.6	+10
	9.6nm,0.3s,baz=348,slow=19,SNR=7.8						
WRA	**Warramunga Arr**	**18.34**	**224**	P	Pn	14 54 09.7	+0.6
	0.3nm,0.3s,baz=50,slow=11,SNR=15						
ASAR	**Alice Springs**	**21.29**	**217**	P	P	14 54 40.4	+0.1
	1.0nm,0.4s,baz=52,slow=9.1,SNR=43						
FITZ	**Fitzroy Crossi**	**24.23**	**241**	P	P	14 55 09.2	-0.3
	5.7nm,0.5s,baz=52,slow=8.2,SNR=80						
STKA	**Stephens Creek**	**25.47**	**192**	P	P	14 55 20.6	-0.1
	1.2nm,0.7s,baz=347,slow=10,SNR=3.9						
TORD	**Torodi Ar. Bea**	**146.03**	**283**	PKPbc	PKPdf	15 09 30.8	-0.1
	0.6nm,0.7s,baz=58,slow=3.0,SNR=8.3						

IDC 01 14:51:23.9±1.3, 22°.00S×68°.90E, h0km, mb3.7/7, mb1 3.9/7, mb1mx3.6/38, mbtmp3.7/7, MS3.6/6, Ms1 3.6/6, ms1mx3.1/43, Error ellipse: s-maj=48.6km s-min=21.8km az=27.0, Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08S1	**Diego Carcia H**	**14.69**	**14**	T	T	15 09 32.5	
	baz=194,slow=76,SNR=34						
H08S2	**Diego Garcia H**	**14.69**	**14**	T	T	15 09 36.2	
	baz=194,slow=76,SNR=41						
H08S3	**Diego Garcia H**	**14.71**	**14**	T	T	15 09 31.9	
	baz=194,slow=76,SNR=40						
OPO	**Ambohidratompo**	**20.65**	**276**	LR	LR	15 02 15.6	
	comp=Z,223nm,18.2s,baz=80,slow=32						
KMBO	**Kilima Mbogo**	**37.14**	**300**	LR	LR	15 09 59.3	
	comp=Z,55nm,21.3s,baz=92,slow=30						
BOSA	**Boshof**	**39.83**	**251**	LR	LR	15 12 11.7	
	comp=Z,93nm,20.4s,baz=75,slow=31						
CMAR	**Chiang Mai Arr**	**49.81**	**38**	P	P	15 00 19.6	+0.8
	0.6nm,0.7s,baz=237,slow=8.2,SNR=4.9						
CMAR				LR	LR	15 19 31.1	
	comp=Z,28nm,20.1s,baz=70,slow=34						
FITZ	**Fitzroy Crossi**	**53.19**	**97**	P	P	15 00 42.9	-1.4
	1.6nm,0.7s,baz=220,slow=7.9,SNR=3.7						
ASAR	**Alice Springs**	**59.45**	**105**	P	P	15 01 29.6	+0.6
	0.6nm,0.6s,baz=262,slow=5.9,SNR=15						
ASAR				LR	LR	15 24 04.3	
	comp=Z,81nm,19.4s,baz=290,slow=33						
WRA	**Warramunga Arr**	**60.71**	**101**	P	P	15 01 38.0	+0.2
	0.7nm,0.7s,baz=253,slow=6.8,SNR=7.5						
STKA	**Stephens Creek**	**64.49**	**116**	LR	LR	15 25 02.4	
	comp=Z,57nm,21.5s,baz=209,slow=31						
MKAR	**Makanchi Array**	**69.53**	**10**	P	P	15 02 33.9	-0.5
	0.5nm,0.7s,baz=186,slow=4.3,SNR=4.3						
BRTR	**Keskin Array B**	**69.68**	**332**	P	P	15 02 35.5	-0.1
	0.3nm,0.4s,baz=150,slow=6.1,SNR=3.3						
TORD	**Torodi Ar. Bea**	**74.57**	**291**	P	P	15 03 05.5	+0.2
	0.5nm,0.8s,baz=115,slow=3.9,SNR=3.1						

WEL 01 14:57:03.0±0.1, 43°.58S×172°.62E, h11km, ML3.7/17, 4C-3D, Error ellipse: s-maj=0.7km s-min=0.5km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRLZ	**Canterbury Las**	**0.01**	**9**	⇑PG	Pg	14 57 04.7	-0.2
CRLZ				SG	Sg	14 57 05.9	-0.3
CRLZ				AML	AML	14 57 05.9	
CRLZ				AML	AML	14 57 05.9	
CRLZ				AML	AML	14 57 05.9	
MQZ	**McQueen's Vall**	**0.13**	**169**	⇑PG	Pg	14 57 06.3	+0.2
MQZ				SG	Sg	14 57 08.4	+0.2
MQZ				AML	AML	14 57 08.6	
OXZ	**Oxford**	**0.50**	**301**	⇓P*	Pg	14 57 12.6	-0.1
OXZ				S*	Sg	14 57 19.5	+0.3
LTZ	**Lake Taylor**	**0.84**	**342**	⇓P*	Pg	14 57 19.1	-0.1
LTZ				AML	AML	14 57 36.0	
LTZ				AML	AML	14 57 37.8	
RPZ	**Rata Peaks**	**1.15**	**263**	⇑P*	Pb	14 57 23.8	-1.0
RPZ				AML	AML	14 57 47.5	
RPZ				AML	AML	14 57 48.1	
INZ	**Inchbonnie**	**1.22**	**314**	P*	Pn	14 57 24.9	-1.0
KHZ	**Kahutara**	**1.34**	**30**	⇑PN	Pn	14 57 26.1	-1.6
WVZ	**Waitaha Valley**	**1.47**	**290**	⇓PN	Pn	14 57 28.6	-0.7
WVZ				AML	AML	14 57 53.5	
WVZ				AML	AML	14 57 55.6	
THZ	**Tophouse**	**1.83**	**7**	PN	Pn	14 57 32

*CSEM **01** 15:04:29.2±0.1,39.°04N×27.°98E,h5km,ML3.3,Error ellipse: s-maj=1.9km s-min=1.8km az=87.0*
*THE **01** 15:04:29.0,39.°00N×28.°00E,h0km±1km,ML3.6/7,Error ellipse: s-maj=1.4km s-min=0.8km az=59.0*
ISC 01 15:04:29.5±0.9,**39.°06N**±0.°01×**28.°01E**±0.°01,**h13**km±7km, **n167**,σ0°**88**/222,**9C-2D**,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKHS	**Akhisar**	**0.23**	**220**	P	**Pg**	**15 04 34.3**	**-0.2**
AKHS				S	**Sg**	**15 04 38.4**	**+0.5**
AKHS	**Akhisar**	**0.23**	**220**	⇑*i*P	**Pg**	**15 04 34.4**	**-0.2**
AKHS				*i* S	**Sg**	**15 04 38.4**	**+0.5**
AKS	**Akhisar**	**0.23**	**220**	*e*PG	**Pg**	**15 04 34.3**	**-0.2**
AKS	**Akhisar**	**0.23**	**220**	*e*Pg	**Pg**	**15 04 34.3**	**-0.2**
DEMI	**Demirci**	**0.55**	**91**	P	**Pg**	**15 04 40.1**	**-0.3**
DEMI				S	**Sg**	**15 04 46.9**	**-0.9**
DEMI	**Demirci**	**0.55**	**91**	⇑*i*P	**Pg**	**15 04 40.1**	**-0.3**
DEMI				*i* S	**Sg**	**15 04 46.9**	**-0.9**
BALB	**Balikesir**	**0.59**	**351**	*e*PG	**Pg**	**15 04 40.9**	**-0.2**
BALB				*e*SG	**Sg**	**15 04 49.4**	**+0.5**
BALB	**Balikesir**	**0.59**	**351**	*e*Pg	**Pg**	**15 04 40.9**	**-0.2**
BALB				*e*Sg	**Sg**	**15 04 49.4**	**+0.5**
KULA	**Kula-Manisa**	**0.74**	**136**	*e*PG	**Pb**	**15 04 44.3**	**0.0**
KULA	**Kula-Manisa**	**0.74**	**136**	P	**Pg**	**15 04 43.6**	**-0.4**
KULA				S	**Sg**	**15 04 53.3**	**-0.5**
KULA	**Kula-Manisa**	**0.74**	**136**	P	**Pg**	**15 04 43.6**	**-0.4**
KULA	**Kula-Manisa**	**0.74**	**136**	*e*Pg	**Pb**	**15 04 44.3**	**0.0**
KULA				S	**Sg**	**15 04 53.3**	**-0.5**
BALY	**Balya**	**0.75**	**336**	P	**Pg**	**15 04 43.9**	**-0.1**
BALY				S	**Sg**	**15 04 54.0**	**+0.2**
BALY	**Balya**	**0.75**	**336**	*i* P	**Pg**	**15 04 43.9**	**-0.1**
BALY				*i* S	**Sg**	**15 04 54.0**	**+0.2**
DKL	**Dikili**	**0.86**	**271**	*e*PG	**Pg**	**15 04 45.1**	**-1.0**
DKL	**Dikili**	**0.86**	**271**	*e*Pg	**Pg**	**15 04 45.1**	**-1.0**
IZM	**Izmir**	**0.88**	**222**	*e*PG	**Pg**	**15 04 46.4**	**-0.1**
IZM	**Izmir**	**0.88**	**222**	*e*Pg	**Pg**	**15 04 46.4**	**-0.1**
BLCB	**Balcova**	**1.01**	**229**	*e*PG	**Pb**	**15 04 48.2**	**-0.6**
BLCB				*e*SG	**Sg**	**15 05 02.5**	**+0.4**
BLCB	**Balcova**	**1.01**	**229**	*e*Pg	**Pb**	**15 04 48.2**	**-0.6**
BLCB				*e*Sg	**Sg**	**15 05 02.5**	**+0.4**
GONE	**Gonen-Balikesi**	**1.02**	**346**	*e*PG	**Pb**	**15 04 48.5**	**-0.5**
GONE	**Gonen-Balikesi**	**1.02**	**346**	*e*Pg	**Pb**	**15 04 48.5**	**-0.5**
AYVA	**Ayvalik**	**1.05**	**284**	P	**Pb**	**15 04 49.5**	**0.0**
AYVA				S	**Sg**	**15 05 04.1**	**+0.5**
AYVA	**Ayvalik**	**1.05**	**284**	⇑*i*P	**Pb**	**15 04 49.5**	**0.0**
AYVA				*i* S	**Sg**	**15 05 04.1**	**+0.5**
AYDB	**Zeytinkoy-Aydi**	**1.11**	**185**	*e*PN	**Pb**	**15 04 50.5**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**1.11**	**185**	*e*Pn	**Pb**	**15 04 50.5**	**-0.1**
GDZ	**Gediz**	**1.15**	**88**	P	**Pb**	**15 04 51.1**	**-0.2**
GDZ				S	**Sb**	**15 05 05.7**	**-0.5**
GDZ	**Gediz**	**1.15**	**88**	⇑*i*P	**Pb**	**15 04 51.1**	**-0.2**
GDZ				*i* S	**Sb**	**15 05 05.7**	**-0.5**
TVSB	**Tavsanli**	**1.20**	**70**	*e*PN	**Pg**	**15 04 52.5**	**-0.1**
TVSB	**Tavsanli**	**1.20**	**70**	*e*Pn	**Pg**	**15 04 52.5**	**-0.1**
ORLT	**Orhaneli**	**1.21**	**35**	*e*PN	**Pn**	**15 04 52.3**	**+0.2**
ORLT	**Orhaneli**	**1.21**	**35**	*e*Pn	**Pn**	**15 04 52.3**	**+0.2**
KCTX	**Karacabey (Bur**	**1.24**	**13**	*e*PN	**Pn**	**15 04 52.8**	**+0.3**
KCTX	**Karacabey (Bur**	**1.24**	**13**	*e*Pn	**Pn**	**15 04 52.8**	**+0.3**
KNL	**Bal¨–kesir**	**1.27**	**343**	*i* P	**Pn**	**15 04 52.0**	**-0.9**
KNL				*i* S	**Sb**	**15 05 09.2**	**-0.3**
EDC	**Edincik**	**1.29**	**355**	*e*PN	**Pb**	**15 04 53.9**	**+0.2**
EDC	**Edincik**	**1.29**	**355**	*e*Pn	**Pb**	**15 04 53.9**	**+0.2**
URLA	**Izmir**	**1.30**	**238**	P	**Pn**	**15 04 53.5**	**+0.1**
URLA				S	**Sg**	**15 05 11.2**	**-0.4**
URLA	**Izmir**	**1.30**	**238**	⇑*i*P	**Pn**	**15 04 53.5**	**+0.1**
URLA				*i* S	**Sg**	**15 05 11.2**	**-0.4**
KHAL	**Karahalli**	**1.35**	**120**	P	**Pn**	**15 04 54.2**	**+0.1**
KHAL				S	**Sb**	**15 05 11.7**	**-0.1**
KHAL	**Karahalli**	**1.35**	**120**	⇓*i*P	**Pn**	**15 04 54.2**	**+0.1**
KHAL				*i* S	**Sb**	**15 05 11.7**	**-0.1**
PRK	**Paraskevi**	**1.36**	**279**	P	**Pn**	**15 04 54.1**	**0.0**
PRK				S	**Sg**	**15 05 13.3**	**-0.1**
PRK	**Paraskevi**	**1.36**	**279**	P	**Pn**	**15 04 54.1**	**0.0**
PRK				S	**Sg**	**15 05 13.3**	**-0.1**
ULDT	**Uludag**	**1.39**	**38**	P	**Pn**	**15 04 54.5**	**-0.3**
ULDT				S	**Sn**	**15 05 10.7**	**-2.4**
ULDT	**Uludag**	**1.39**	**38**	⇑*i*P	**Pn**	**15 04 54.5**	**-0.3**
ULDT				*i* S	**Sn**	**15 05 10.7**	**-2.4**
KHL	**Karahalli**	**1.40**	**121**	*e*PN	**Pb**	**15 04 55.7**	**+0.3**
KHL	**Karahalli**	**1.40**	**121**	*e*Pn	**Pb**	**15 04 55.7**	**+0.3**
AYDN	**Tasoluk**	**1.40**	**184**	P	**Pn**	**15 04 54.1**	**-0.6**
AYDN				S	**Sb**	**15 05 13.3**	**+0.2**
AYDN	**Tasoluk**	**1.40**	**184**	⇓*i*P	**Pn**	**15 04 54.1**	**-0.6**
AYDN				*i* S	**Sb**	**15 05 13.3**	**+0.2**
ZEY	**¨zmir**	**1.43**	**236**	⇑*i*P	**Pn**	**15 04 54.6**	**-0.5**
ZEY				*i* S	**Sn**	**15 05 12.5**	**-1.3**
KRBG	**Karabiga-Canak**	**1.44**	**338**	*e*PN	**Pn**	**15 04 55.9**	**+0.7**
KRBG	**Karabiga-Canak**	**1.44**	**338**	*e*Pn	**Pn**	**15 04 55.9**	**+0.7**
MDNY	**Mudanya-Bursa**	**1.48**	**27**	*e*PN	**Pb**	**15 04 57.1**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.48**	**27**	*e*Pn	**Pb**	**15 04 57.1**	**+0.3**
GCAM	**G?zelcaml?**	**1.48**	**204**	P	**Pn**	**15 04 56.3**	**+0.5**
GCAM				S	**Sn**	**15 05 14.2**	**-0.8**
GCAM	**G?zelcaml?**	**1.48**	**204**	*i* P	**Pn**	**15 04 56.3**	**+0.5**
GCAM				*i* S	**Sn**	**15 05 14.2**	**-0.8**
EZN	**Ezine**	**1.51**	**301**	*e*PN	**Pb**	**15 04 57.1**	**-0.3**
EZN	**Ezine**	**1.51**	**301**	P	**Pn**	**15 04 56.3**	**+0.1**
EZN				S	**Sb**	**15 05 17.4**	**+1.0**
EZN	**Ezine**	**1.51**	**301**	P	**Pn**	**15 04 56.3**	**+0.1**
EZN	**Ezine**	**1.51**	**301**	*e*Pn	**Pb**	**15 04 57.1**	**-0.3**
EZN				S	**Sb**	**15 05 17.4**	**+1.0**
IGD	**Bursa**	**1.52**	**37**	*i* P	**Pn**	**15 04 54.9**	**-1.4**
IGD				*i* S	**Sn**	**15 05 14.5**	**-1.5**
DENT	**Denizli**	**1.53**	**148**	*e*PN	**Pb**	**15 04 57.5**	**-0.2**
DENT	**Denizli**	**1.53**	**148**	*e*Pn	**Pb**	**15 04 57.5**	**-0.2**
MRMT	**Marmara Adasi**	**1.58**	**349**	*e*PN	**Pn**	**15 04 58.0**	**+0.8**
MRMT	**Marmara Adasi**	**1.58**	**349**	*e*Pn	**Pn**	**15 04 58.0**	**+0.8**
LPK	**Lapseki**	**1.63**	**324**	*e*PN	**Pn**	**15 04 58.2**	**+0.4**
LPK	**Lapseki**	**1.63**	**324**	*e*Pn	**Pn**	**15 04 58.2**	**+0.4**
SMG	**Samos**	**1.63**	**215**	P	**Pn**	**15 04 56.8**	**-1.0**
SMG				S	**Sn**	**15 05 19.2**	**+0.5**
SMG	**Samos**	**1.63**	**215**	P	**Pn**	**15 04 56.8**	**-1.0**
SMG				S	**Sn**	**15 05 19.2**	**+0.5**
ARMT	**Armutlu**	**1.65**	**23**	*e*PN	**Pn**	**15 04 58.9**	**+0.8**
ARMT	**Armutlu**	**1.65**	**23**	*e*Pn	**Pn**	**15 04 58.9**	**+0.8**
GEMT	**Gemlik**	**1.65**	**33**	*e*PN	**Pb**	**15 04 59.6**	**-0.2**
GEMT	**Gemlik**	**1.65**	**33**	*e*Pn	**Pb**	**15 04 59.6**	**-0.2**
CHOS	**Chios island**	**1.67**	**247**	*e*PN	**Pn**	**15 04 59.1**	**+0.7**
CHOS	**Chios island**	**1.67**	**247**	P	**Pn**	**15 04 58.3**	**-0.1**
CHOS				S	**Sn**	**15 05 20.0**	**+0.3**
CHOS	**Chios island**	**1.67**	**247**	P	**Pn**	**15 04 58.3**	**-0.1**
CHOS	**Chios island**	**1.67**	**247**	*e*Pn	**Pn**	**15 04 59.1**	**+0.7**
CHOS				S	**Sn**	**15 05 20.0**	**+0.3**
SIGR	**SIGRI**	**1.68**	**276**	*e*PN	**Pb**	**15 04 59.6**	**-0.6**
SIGR	**SIGRI**	**1.68**	**276**	P	**Pn**	**15 04 58.5**	**0.0**
SIGR				S	**Sb**	**15 05 21.9**	**+0.7**
SIGR	**SIGRI**	**1.68**	**276**	P	**Pn**	**15 04 58.5**	**0.0**
SIGR	**SIGRI**	**1.68**	**276**	*e*Pn	**Pb**	**15 04 59.6**	**-0.6**
SIGR				S	**Sb**	**15 05 21.9**	**+0.7**
IZI	**Iznik**	**1.71**	**41**	*e*PN	**Pb**	**15 05 00.5**	**-0.3**
IZI	**Iznik**	**1.71**	**41**	*e*Pn	**Pb**	**15 05 00.5**	**-0.3**
RKY	**Sarkoy-Tekirda**	**1.75**	**339**	*e*PN	**Pn**	**15 05 00.5**	**+0.9**
RKY	**Sarkoy-Tekirda**	**1.75**	**339**	*e*Pn	**Pn**	**15 05 00.5**	**+0.9**
SART	**Tekirdag**	**1.75**	**339**	P	**Pn**	**15 04 59.7**	**+0.1**
SART				S	**Sn**	**15 05 21.6**	**-0.1**
SART	**Tekirdag**	**1.75**	**339**	*i* P	**Pn**	**15 04 59.7**	**+0.1**
SART				*i* S	**Sn**	**15 05 21.6**	**-0.1**
GELI	**Tayfur-Gelibol**	**1.79**	**319**	*e*PN	**Pn**	**15 05 00.5**	**+0.5**
GELI	**Tayfur-Gelibol**	**1.79**	**319**	*e*Pn	**Pn**	**15 05 00.5**	**+0.5**
CAVI	**Cavuskoy**	**1.82**	**51**	*e*PN	**Pb**	**15 05 01.8**	**-0.9**
CAVI	**Cavuskoy**	**1.82**	**51**	*e*Pn	**Pb**	**15 05 01.8**	**-0.9**
ADVT	**Abdulvahap**	**1.92**	**44**	*e*PN	**Pb**	**15 05 03.9**	**-0.4**
ADVT	**Abdulvahap**	**1.92**	**44**	*e*Pn	**Pb**	**15 05 03.9**	**-0.4**
YER	**Yerkesik**	**1.93**	**173**	*e*PN	**Pn**	**15 05 02.9**	**+0.9**
YER	**Yerkesik**	**1.93**	**173**	P	**Pn**	**15 05 01.6**	**-0.4**
YER	**Yerkesik**	**1.93**	**173**	P	**Pn**	**15 05 01.6**	**-0.4**
YER	**Yerkesik**	**1.93**	**173**	*e*Pn	**Pn**	**15 05 02.9**	**+0.9**
ERIK	**Erikli-Kesan**	**1.98**	**325**	*e*PN	**Pn**	**15 05 03.5**	**+0.8**
ERIK	**Erikli-Kesan**	**1.98**	**325**	*e*Pn	**Pn**	**15 05 03.5**	**+0.8**
BODT	**Bodrum**	**2.06**	**196**	*e*PN	**Pn**	**15 05 04.8**	**+1.0**
BODT	**Bodrum**	**2.06**	**196**	P	**Pn**	**15 05 03.4**	**-0.4**
BODT				S	**Sn**	**15 05 30.1**	**+0.7**
BODT	**Bodrum**	**2.06**	**196**	P	**Pn**	**15 05 03.4**	**-0.4**
BODT	**Bodrum**	**2.06**	**196**	*e*Pn	**Pn**	**15 05 04.8**	**+1.0**
BODT				S	**Sn**	**15 05 30.1**	**+0.7**
CRLT	**Corlu**	**2.08**	**354**	*e*PN	**Pn**	**15 05 04.6**	**+0.5**
CRLT	**Corlu**	**2.08**	**354**	*e*Pn	**Pn**	**15 05 04.6**	**+0.5**
GPA	**Golpazari**	**2.16**	**55**	*e*PN	**Pb**	**15 05 07.2**	**-1.3**
GPA	**Golpazari**	**2.16**	**55**	*e*Pn	**Pb**	**15 05 07.2**	**-1.3**
ISK	**Istanbul-Kandi**	**2.16**	**22**	*e*PN	**Pn**	**15 05 07.0**	**+1.8**
ISK	**Istanbul-Kandi**	**2.16**	**22**	P	**Pn**	**15 05 04.3**	**-0.9**
ISK				S	**Sb**	**15 05 36.1**	**+0.9**
ISK	**Istanbul-Kandi**	**2.16**	**22**	P	**Pn**	**15 05 04.3**	**-0.9**
ISK	**Istanbul-Kandi**	**2.16**	**22**	*e*Pn	**Pn**	**15 05 07.0**	**+1.8**
ISK				S	**Sb**	**15 05 36.1**	**+0.9**
HRT	**Hereke**	**2.18**	**35**	*e*PN	**Pb**	**15 05 07.4**	**-1.3**
HRT	**Hereke**	**2.18**	**35**	*e*Pn	**Pb**	**15 05 07.4**	**-1.3**
BGKT	**Bogazkoy**	**2.20**	**15**	*e*PN	**Pn**	**15 05 07.0**	**+1.3**
BGKT	**Bogazkoy**	**2.20**	**15**	*e*Pn	**Pn**	**15 05 07.0**	**+1.3**
CTKS	**Kestanelik-??a**	**2.21**	**10**	*e*PN	**Pn**	**15 05 06.5**	**+0.7**
CTKS	**Kestanelik-??a**	**2.21**	**10**	*e*Pn	**Pn**	**15 05 06.5**	**+0.7**
ESKT	**Eskisehir**	**2.25**	**77**	*i* P	**Pb**	**15 05 09.8**	**-0.3**
ESKT				*i* S	**Sb**	**15 05 38.9**	**+0.9**
SEYT	**Eskypehyr**	**2.25**	**77**	P	**Pb**	**15 05 09.8**	**-0.3**
SEYT				S	**Sb**	**15 05 38.9**	**+0.9**
DALY	**Dalyan (Mu¨la**	**2.29**	**167**	*e*PN	**Pn**	**15 05 08.0**	**+1.1**
DALY	**Dalyan (Mu¨la**	**2.29**	**167**	*e*Pn	**Pn**	**15 05 08.0**	**+1.1**
ISP	**Isparta**	**2.33**	**121**	*e*PN	**Pn**	**15 05 09.1**	**+1.6**
ISP	**Isparta**	**2.33**	**121**	⇑*i*P	**Pn**	**15 05 07.7**	**+0.1**
ISP	**Isparta**	**2.33**	**121**	P	**Pn**	**15 05 07.3**	**-0.3**
ISP	**Isparta**	**2.33**	**121**	P	**Pn**	**15 05 07.3**	**-0.3**
ISP	**Isparta**	**2.33**	**121**	*e*Pn	**Pn**	**15 05 09.1**	**+1.6**
KLYT	**Kilyos**	**2.33**	**20**	*e*PN	**Pn**	**15 05 08.8**	**+1.3**
KLYT	**Kilyos**	**2.33**	**20**	*e*Pn	**Pn**	**15 05 08.8**	**+1.3**
LIA	**Limnos Island**	**2.34**	**292**	P	**Pn**	**15 05 08.2**	**+0.6**
LIA				S	**Sn**	**15 05 38.5**	**+2.3**
LIA	**Limnos Island**	**2.34**	**292**	P	**Pn**	**15 05 08.2**	**+0.6**
LIA				S	**Sn**	**15 05 38.5**	**+2.3**
GULT	**Gulveren**	**2.37**	**54**	*e*PN	**Pb**	**15 05 10.6**	**-1.5**
GULT	**Gulveren**	**2.37**	**54**	*e*Pn	**Pb**	**15 05 10.6**	**-1.5**
SMTH	**Samothraki Isl**	**2.37**	**307**	P	**Pn**	**15 05 08.3**	**+0.2**
SMTH				S	**Sb**	**15 05 39.5**	**-1.8**
SMTH	**Samothraki Isl**	**2.37**	**307**	P	**Pn**	**15 05 08.3**	**+0.2**
SMTH				S	**Sb**	**15 05 39.5**	**-1.8**
ALN	**Alexandroupoli**	**2.38**	**321**	*e*PN	**Pn**	**15 05 08.6**	**+0.5**
ALN	**Alexandroupoli**	**2.38**	**321**	P	**Pn**	**15 05 08.4**	**+0.3**
ALN				S	**Sb**	**15 05 39.8**	**-1.5**
ALN	**Alexandroupoli**	**2.38**	**321**	P	**Pn**	**15 05 08.4**	**+0.3**
ALN	**Alexandroupoli**	**2.38**	**321**	*e*Pn	**Pn**	**15 05 08.6**	**+0.5**
ALN				S	**Sb**	**15 05 39.8**	**-1.5**
SPNC	**Sapanca-Adapaz**	**2.41**	**47**	*e*PN	**Pn**	**15 05 10.1**	**+1.6**
SPNC	**Sapanca-Adapaz**	**2.41**	**47**	*e*Pn	**Pn**	**15 05 10.1**	**+1.6**
CTYL	**Yalikoy Yolu**	**2.43**	**5**	*e*PN	**Pn**	**15 05 10.6**	**+1.8**
CTYL	**Yalikoy Yolu**	**2.43**	**5**	*e*Pn	**Pn**	**15 05 10.6**	**+1.8**
NIS1	**Nisyros Isl.**	**2.54**	**195**	*e*PN	**Pn**	**15 05 11.4**	**+1.2**
NIS1	**Nisyros Isl.**	**2.54**	**195**	*e*Pn	**Pn**	**15 05 11.5**	**+1.2**
FETY	**Fethiye**	**2.56**	**160**	*e*PN	**Pn**	**15 05 11.5**	**+0.8**
FETY	**Fethiye**	**2.56**	**160**	P	**Pn**	**15 05 09.7**	**-1.0**
FETY				S	**Sn**	**15 05 41.8**	**+0.1**
FETY	**Fethiye**	**2.56**	**160**	P	**Pn**	**15 05 09.7**	**-1.0**
FETY	**Fethiye**	**2.56**	**160**	*e*Pn	**Pn**	**15 05 11.5**	**+0.8**
FETY				S	**Sn**	**15 05 41.8**	**+0.1**
SVRH	**Sivrihisar-ESK**	**2.76**	**81**	*e*PN	**Pn**	**15 05 15.3**	**+1.9**
SVRH	**Sivrihisar-ESK**	**2.76**	**81**	*e*Pn	**Pn**	**15 05 15.3**	**+1.9**
APE	**Apeiranthos**	**2.78**	**225**	*e*PN	**Pn**	**15 05 14.1**	**+0.3**
APE	**Apeiranthos**	**2.78**	**225**	⇑*i*P	**Pg**	**15 05 21.9**	**-1.0**
APE	**Apeiranthos**	**2.78**	**225**	*e*Pn	**Pn**	**15 05 14.1**	**+0.3**
SUTC	**Sutluce-Ispart**	**2.83**	**123**	*e*PN	**Pn**	**15 05 16.4**	**+1.9**
SUTC	**Sutluce-Ispart**	**2.83**	**123**	*e*Pn	**Pn**	**15 05 16.5**	**+1.9**
MDUB	**Mudurnu**	**2.84**	**59**	*e*PN	**Pn**	**15 05 16.4**	**+1.9**
MDUB	**Mudurnu**	**2.84**	**59**	*e*Pn	**Pn**	**15 05 16.5**	**+1.9**
EDRB	**Edirne**	**2.95**	**341**	*e*PN	**Pn**	**15 05 16.9**	**+0.9**
EDRB	**Edirne**	**2.95**	**341**	P	**Pn**	**15 05 16.4**	**+0.4**
EDRB	**Edirne**	**2.95**	**341**	P	**Pn**	**15 05 16.4**	**+0.4**
EDRB	**Edirne**	**2.95**	**341**	*e*Pn	**Pn**	**15 05 16.9**	**+0.9**
KIZT	**Kizilcal**	**3.02**	**92**	*e*PN	**Pn**	**15 05 19.1**	**+2.0**
KIZT	**Kizilcal**	**3.02**	**92**	*e*Pn	**Pn**	**15 05 19.2**	**+2.0**
KAVA	**Kavala**	**3.31**	**307**	P	**Pn**	**15 05 21.2**	**+0.3**
KAVA	**Kavala**	**3.31**	**307**	P	**Pn**	**15 05 21.2**	**+0.3**
OUR	**Ouranopolis**	**3.36**	**294**	*e*PN	**Pn**	**15 05 22.8**	**+1.2**
OUR	**Ouranopolis**	**3.36**	**294**	*e*Pn	**Pn**	**15 05 22.8**	**+1.2**

MEX 01 15:04:58.9±0.7,**16.°22N×98.°09W**,**h5**km±5km,**MD3.7**,**Near coast of Guerrero**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PNIG	**Pinotepa**	**0.18**	**349**	*i* P	Pg	15 05 02.0	-0.5
PNIG				*i* S	Sg	15 05 04.9	+0.2
TLIG	**Tlapa**	**1.41**	**341**	*e*P	Pn	15 05 21.8	-3.6
TLIG				*e*S	Sb	15 05 38.6	-5.6
VHO	**Vista Hermosa**	**1.56**	**57**	*e*P	Pn	15 05 23.4	-4.1
VHO				*e*S	Sn	15 05 43.5	-4.7
HMTT	**Tlapaneco**	**1.63**	**344**	*i* P	Pn	15 05 24.8	-3.6
HMTT				*e*S	Sn	15 05 44.1	-5.9
ACX	**Acapulco**	**1.81**	**291**	*i* P	Pn	15 05 26.9	-3.9
ACX				*i* S	Sn	15 05 50.6	-3.7
HUIG	**Huatulco**	**1.96**	**103**	*e*P	Pn	15 05 29.3	-3.5
HUIG				*e*S	Sn	15 05 53.9	-4.0
CAIG	**El Cayaco**	**2.24**	**292**	*e*P	Pn	15 05 34.4	-2.4
CAIG				*e*S	Sn	15 06 01.3	-3.5
TPIG	**Tehuac#an**	**2.30**	**18**	*e*P	Pn	15 05 34.6	-3.0
TPIG				*i* S	Sn	15 06 02.2	-4.2

*DDA **01** 15:09:06.6,37.°99N×37.°53E,h7km,Ml2.6*
*ISK **01** 15:09:06.4,38.°04N×37.°45E,h5km,MD2.6*
*CSEM **01** 15:09:06.6±0.4,38.°03N×37.°47E,h2km,ML2.6,Error ellipse: s-maj=9.2km s-min=5.6km az=121.0*
*ISCJB **01** 15:09:07.2±0.6,38.°05N±0.°03×37.°49E±0.°05,h6km±7km, Error ellipse: s-maj=7.9km s-min=4.2km az=33.3*
ISC 01 15:09:06.8±1.0,**38.°07N**±0.°03×**37.°46E**±0.°03,**h14**km±9km, **n14**,σ0°**53**/28,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKCD	**Akcadag**	**0.43**	**59**	P	**Pg**	**15 09 15.0**	**-0.5**
AKCD				S	**Sg**	**15 09 21.7**	**+0.4**
AKCD	**Akcadag**	**0.43**	**59**	*i* P	**Pg**	**15 09 15.0**	**-0.5**
AKCD				*i* S	**Sg**	**15 09 21.7**	**+0.4**
DARE	**Darende-Malaty**	**0.50**	**2**	*e*PG	**Pb**	**15 09 17.2**	**-0.2**
DARE				*e*SG	**Sb**	**15 09 24.9**	**+0.4**
DARE	**Darende-Malaty**	**0.50**	**2**	*e*Pg	**Pb**	**15 09 17.2**	**-0.2**
DARE				*e*Sg	**Sb**	**15 09 25.0**	**+0.4**
KMRS	**Kahramanmaras**	**0.72**	**218**	*e*PG	**Pg**	**15 09 20.2**	**-0.7**
KMRS				*e*SG	**Sg**	**15 09 30.3**	**-0.1**
KMRS	**Kahramanmaras**	**0.72**	**218**	*e*Pg	**Pg**	**15 09 20.2**	**-0.7**
KMRS				*e*Sg	**Sg**	**15 09 30.3**	**-0.1**
GZT	**Gaziantep**	**0.72**	**173**	*i* P	**Pn**	**15 09 22.9**	**+0.1**
GZT				*i* S	**Sb**	**15 09 30.8**	**-0.3**
KAMA	**Osmaniye**	**1.09**	**216**	*i* P	**Pg**	**15 09 29.3**	**+1.5**
KAMA				*i* S	**Sg**	**15 09 42.1**	**+0.1**
URFA	**Urfa**	**1.25**	**120**	*e*PN	**Pg**	**15 09 30.6**	**-0.3**
URFA				*e*SN	**Sg**	**15 09 48.2**	**+0.9**
URFA	**Urfa**	**1.25**	**120**	*e*Pn	**Pg**	**15 09 30.6**	**-0.3**
URFA				*e*Sn	**Sg**	**15 09 48.2**	**+0.9**
ELZG	**Elazig**	**1.27**	**70**	P	**Pn**	**15 09 30.5**	**+0.2**
ELZG				S	**Sb**	**15 09 47.0**	**+0.1**
ELZG	**Elazig**	**1.27**	**70**	*i* P	**Pn**	**15 09 30.5**	**+0.2**
ELZG				*i* S	**Sb**	**15 09 47.0**	**+0.1**
SURC	**SANLIURFA_SURC**	**1.50**	**142**	P	**Pg**	**15 09 35.6**	**-0.2**
SURC				S	**Sn**	**15 09 52.4**	**-0.4**
SURC	**SANLIURFA_SURC**	**1.50**	**142**	*e*P	**Pg**	**15 09 35.6**	**-0.2**
SURC				*i* S	**Sn**	**15 09 52.4**	**-0.4**

*ISCJB **01** 15:12:08.9±0.4,44.°05N±0.°04×146.°37E±0.°06, h115km±3km,mb3.5/14,Error ellipse: s-maj=8.5km s-min=5.0km az=139.1*
*MOS **01** 15:12:08.9±1.2,44.°12N×146.°35E,h117km,mb4.0/5,Error ellipse: s-maj=16.2km s-min=8.5km az=70.5*
*SKHL **01** 15:12:10.8±0.4,44.°10N×146.°20E,h111km±3km,mb4.9/6, msha5.8/3*
*IDC **01** 15:12:10.9±2.0,44.°20N×146.°15E,h118km±18km, mb3.4/14,mb1 3.5/18,mb1mx3.4/55,mbtmp3.7/18,MS3.4/1, Ms1 3.4/1,ms1mx2.3/25,Error ellipse: s-maj=18.8km s-min=13.3km az=124.0*
*JMA **01** 15:12:10.6±0.2,44.°04N×146.°37E,h99km±2km,M3.4*
ISC 01 15:12:09.7±0.6,**44.°05N**±0.°05×**146.°34E**±0.°05,**h107**km±5km, **n65**,σ1°**30**/78,**mb3.6**/14,**4C-2D**,**Kuril Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YUK	**Yuzh-Kuril'sk**	**0.34**	**268**	*e*PN	**Pn**	**15 12 25.9**	**+0.6**
YUK				*i* S	**Sn**	**15 12 37.5**	**+0.6**
YUK				pmax	pmax		
	comp=Z,1μm,0.2s						
YUK				pmax	pmax		
	comp=N,345nm,0.1s						
YUK				pmax	pmax		
	comp=E,625nm,0.1s						
YUK				smax	smax		
	comp=N,5μm,0.5s						
YUK				smax	smax		
	comp=E,8μm,0.4s						
YUK	**Yuzh-Kuril'sk**	**0.34**	**268**	*e*P	**Pn**	**15 12 25.9**	**+0.6**
YUK				AMB	AMB	15 12 27.5	
	comp=E,350nm,0.2s						
YUK				AMB	AMB	15 12 27.5	
	comp=E,630nm,0.2s						
YUK				AMB	AMB	15 12 27.5	
	comp=E,1μm,0.2s						
YUK				*i* S	**Sn**	**15 12 37.5**	**+0.6**
YUK				A	A	15 12 38.9	
	comp=E,5μm,0.5s						
YUK				A	A	15 12 38.9	
	comp=E,8μm,0.5s						
SHO	**Shikotan**	**0.40**	**117**	*d* iPN	**Pn**	**15 12 26.0**	**+0.4**
SHO				*i* S	**Sn**	**15 12 37.5**	**+0.1**
SHO				pmax	pmax		
	comp=N,702nm,0.2s						
SHO				pmax	pmax		
	comp=Z,2μm,0.2s						
SHO				pmax	pmax		
	comp=E,520nm,0.1s						
SHO				smax	smax		
	comp=N,5μm,0.3s						
SHO				smax	smax		
	comp=E,7μm,0.4s						
SHO	**Shikotan**	**0.40**	**117**	⇓*i*P	**Pn**	**15 12 26.0**	**+0.4**
SHO				AMB	AMB	15 12 26.2	
	comp=E,700nm,0.2s						
SHO				AMB	AMB	15 12 26.2	
	comp=E,520nm,0.2s						
SHO				AMB	AMB	15 12 26.2	
	comp=E,2μm,0.2s						
SHO				*i* S	**Sn**	**15 12 37.5**	**+0.1**
SHO				A	A	15 12 38.3	
	comp=E,5μm,0.4s			

TXAR Lajitas Array 82.97 56 P **P 15 24 23.9 +0.8**
comp=Z,0.1nm,0.4s,baz=248,slow=3.8,SNR=3.0

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*JMA **01** 15:25:37.3±0.9,35°.47N×142°.01E,h23km,M3.0*
*ISCJB **01** 15:25:44.6±1.8,35°.3N±0°.1×141°.5E±0°.2,h35km,mb3.3/3, Error ellipse: s-maj=25.7km s-min=10.6km az=152.1*
*IDC **01** 15:25:49.5±5.7,34°.48N×139°.85E,h0km,mb3.3/3, mb1 3.5/3,mb1mx3.2/36,mbtmp3.3/3,ML2.3/1,Error ellipse: s-maj=223.6km s-min=23.5km az=67.0*
ISC 01 15:25:47.7±1.8,35°.34N±0°.09×141°.4E±0°.2,h35km,n8, σ2°72/9,mb3.2/3,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.56**	**311**	P	**Pn**	**15 25 55.4**	**-3.8**
CHOJ				*e*S	**Sn**	**15 26 08.5**	**+1.2**
BSO1	**Boso 1**	**0.76**	**206**	P	**Pn**	**15 25 59.0**	**-2.4**
BSO3	**Boso 3**	**0.89**	**234**	P	**Pn**	**15 26 01.2**	**-2.3**
BSO4	**Boso 4**	**0.92**	**248**	P	**Pn**	**15 26 02.4**	**-1.6**
MJAR	**Matsushiro Arr**	**2.84**	**296**	Pn	**Pn**	**15 26 28.7**	**-1.9**
	0.7nm,0.3s,baz=106,slow=9.0,SNR=7.0						
MKAR	**Makanchi Array**	**45.02**	**304**	P	**P**	**15 34 03.1**	**+3.4**
	0.1nm,0.3s,baz=92,slow=7.6,SNR=2.3						
WRA	**Warramunga Arr**	**55.38**	**188**	P	**P**	**15 35 17.8**	**-0.6**
	0.3nm,0.4s,baz=4.1,slow=7.6,SNR=15						
ASAR	**Alice Springs**	**59.11**	**188**	P	**P**	**15 35 44.9**	**+0.2**
	0.1nm,0.6s,baz=359,slow=7.0,SNR=7.4						

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*ISCJB **01** 15:36:51.8±0.7, 11°.96N±0°.09×144°.3E±0°.2, h29km, mb3.6/11,MS4.4/1,Error ellipse: s-maj=25.2km s-min=9.6km az=23.3*
*IDC **01** 15:36:55.3±2.3, 12°.03N×144°.36E, h44km±20km, mb3.4/11, mb1 3.6/11,mb1mx3.4/46,mbtmp3.6/11,MS4.4/1, Ms1 4.4/1,ms1mx2.7/29,Error ellipse: s-maj=27.4km s-min=15.1km az=109.0*
ISC 01 15:36:53.1±1.1,12°.0N±0°.1×144°.5E±0°.2,h29km,n13, σ0°91/11,mb3.5/10,South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**1.61**	**15**	P	**Pb**	**15 37 22.9**	**+0.7**
	13nm,0.3s,baz=96,slow=6.1,SNR=8.4						
GUMO				S	**Sb**	**15 37 41.1**	**-1.0**
	20nm,0.3s,baz=323,slow=23,SNR=8.6						
GUMO				LR	LR	15 38 07.4	
	comp=Z,30nm,21.1s,baz=155,slow=44						
WRA	**Warramunga Arr**	**33.29**	**198**	P	**P**	**15 43 27.9**	**-0.5**
	0.2nm,0.7s,baz=17,slow=9.6,SNR=2.6						
ASAR	**Alice Springs**	**36.94**	**196**	P	**P**	**15 43 59.5**	**-0.4**
	0.2nm,0.7s,baz=19,slow=12,SNR=6.0						
CMAR	**Chiang Mai Arr**	**44.28**	**284**	P	**P**	**15 45 01.5**	**+0.8**
	0.5nm,0.7s,baz=82,slow=7.4,SNR=5.0						
PSI	**Prapat**	**46.00**	**262**	LR	LR	16 05 49.2	
	comp=Z,462nm,21.9s,slow=38						
MKAR	**Makanchi Array**	**62.34**	**317**	P	**P**	**15 47 12.8**	**-0.2**
	0.6nm,0.6s,baz=92,slow=8.3,SNR=8.3						
ZALV	**Zalesovo Beam**	**62.66**	**325**	P	**P**	**15 47 14.0**	**-1.0**
	0.5nm,0.4s,baz=110,slow=9.2,SNR=3.4						
ILAR	**Eielson Array**	**70.15**	**25**	P	**P**	**15 48 01.9**	**-0.8**
	0.2nm,0.5s,baz=252,slow=5.7,SNR=3.8						
BVAR	**Borovoye Array**	**70.90**	**322**	P	**P**	**15 48 06.9**	**-0.7**
	0.9nm,0.4s,baz=104,slow=8.0,SNR=8.0						
INK	**Inuvik**	**75.96**	**22**	P	**P**	**15 48 38.2**	**+1.2**
	0.4nm,0.7s,baz=226,slow=0.9,SNR=2.8						
YKA	**Yellowknife Ar**	**84.43**	**27**	P	**P**	**15 49 23.3**	**+0.5**
	0.2nm,0.7s,baz=294,slow=5.2,SNR=4.3						
NVAR	**Mina Array Bea**	**88.21**	**51**	P	P	15 49 43.8	+1.6
	0.3nm,0.7s,baz=245,slow=7.8,SNR=3.1						
BRTR	**Keskin Array B**	**97.84**	**313**	P	Pdif	15 50 26.9	+0.4
	0.3nm,0.6s,baz=17,slow=6.9,SNR=2.6						

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*IDC **01** 15:40:09.7±0.9,37°.25N×142°.41E,h0km,mb3.8/10, mb1 3.9/14,mb1mx3.7/43,mbtmp3.8/14,ML3.7/3,MS2.8/1, Ms1 2.8/1,ms1mx2.2/54,Error ellipse: s-maj=26.3km s-min=16.1km az=89.0*
*ISCJB **01** 15:40:11.2±0.5,37°.31N±0°.05×142°.38E±0°.05,h21km, mb4.0/18,Error ellipse: s-maj=7.0km s-min=6.0km az=155.1*
*JMA **01** 15:40:11.1±0.2,37°.32N×142°.34E,h21km,M4.2*
*NEIC **01** 15:40:14.3±2.9,37°.26N×142°.50E,h33km±19km,mb4.4/4, Error ellipse: s-maj=17.0km s-min=8.7km az=124.0*
ISC 01 15:40:12.8±0.7,37°.33N±0°.05×142°.28E±0°.06,h21km,n52, σ1°55/49,mb4.0/18,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.12**	**272**	P	**Pn**	**15 40 32.3**	**-1.0**
JFK				*e*S	**Sb**	**15 40 46.8**	**-0.8**
ONAJ	**Iwakimizuishiy**	**1.20**	**260**	P	**Pn**	**15 40 33.0**	**-1.5**
JMM	**Marumori**	**1.30**	**295**	P	**Pn**	**15 40 34.8**	**-0.9**
JMM				*e*S	**Sn**	**15 40 51.7**	**-0.7**
JIO	**Ouri**	**1.34**	**327**	P	**Pn**	**15 40 35.2**	**-1.1**
JHO	**Hitachi**	**1.54**	**243**	P	**Pn**	**15 40 38.0**	**-1.1**
JFT	**Otama**	**1.56**	**278**	P	**Pb**	**15 40 39.6**	**-1.4**
JFT				*e*S	**Sn**	**15 40 59.2**	**+0.3**
JOU	**Okura**	**1.65**	**310**	P	**Pn**	**15 40 40.7**	**+0.2**
JOU				*e*S	**Sb**	**15 41 01.8**	**-1.0**
MJAR	**Matsushiro Arr**	**3.35**	**258**	Pn	**Pn**	**15 41 05.4**	**+1.4**
	3.8nm,0.3s,baz=76,slow=15,SNR=25						
MAJO	**Matsushiro**	**3.35**	**258**	*e*Pn	**Pn**	**15 41 06.2**	**+2.2**
MAT	**Matsushiro**	**3.35**	**258**	P	**Pn**	**15 41 06.2**	**+2.2**
MAT				S	**Sb**	**15 41 52.1**	**+0.1**
MJB9	**Matsu-Tunnel**	**3.36**	**258**	*e*Pn	**Pn**	**15 41 06.2**	**+2.2**
JHJ2	**Mitsune**	**4.66**	**206**	*e*Pn	Pn	15 41 14.2	-7.7
JHJ	**Hachijo jima 2**	**4.67**	**207**	Pn	**Pn**	**15 41 21.3**	**-0.8**
	28nm,0.3s,baz=319,slow=23,SNR=14						
JHJ				Sn	**Sn**	**15 42 11.5**	**-4.1**
	20nm,0.3s,baz=90,slow=20,SNR=3.9						
INU	**Inuyama**	**4.68**	**247**	*e*Pn	**Pn**	**15 41 25.6**	**+3.3**
ERM	**Erimo**	**4.73**	**8**	*e*Pn	**Pn**	**15 41 22.2**	**-0.6**
ASAJ	**Asahikawa**	**6.79**	**2**	Pn	**Pn**	**15 41 51.0**	**-0.1**
	1.2nm,0.3s,baz=230,slow=8.5,SNR=13						
ASAJ				Sn	**Sn**	**15 43 06.9**	**-0.8**
	0.8nm,0.3s,baz=313,slow=18,SNR=2.2						
ASAJ	**Asahikawa**	**6.79**	**2**	*e*Pn	**Pn**	**15 41 51.5**	**+0.3**
ASAJ				Sn	**Sn**	**15 43 06.9**	**-0.8**
JNU	**Nakatsue**	**10.22**	**249**	LR	LR	15 46 54.7	
	comp=Z,61nm,21.1s,baz=120,slow=39						
USRK	**Ussuriysk Ar.**	**10.39**	**315**	Pn	**Pn**	**15 42 43.0**	**+2.5**
	0.1nm,0.3s,baz=176,slow=24,SNR=2.1						
KSRS	**Korea Array**	**11.42**	**275**	Pn	Pn	15 43 00.1	+5.4
	0.1nm,0.3s,baz=86,slow=13,SNR=5.5						
KSAR	**Wonju Array Be**	**11.46**	**275**	Pn	Pn	15 43 00.1	+4.9
MDJ	**Mudanjiang**	**12.03**	**311**	P	Pn	15 43 07.6	+4.6
MDJ				pmax	pmax		
	comp=Z,6.0nm,1.5s						
MDJ				pmax	pmax		
	comp=Z,210nm,4.4s						
KLR	**Kul'dur**	**14.14**	**331**	Pn	**P**	**15 43 35.9**	**-3.3**
	comp=Z,0.1nm,0.3s,baz=295,slow=19,SNR=2.1						
HHC	**Hu-ho-hao-te**	**24.04**	**288**	*e*P	**P**	**15 45 25.0**	**-1.4**
HHC				pmax	pmax		
	comp=Z,14nm,1.0s						
HHC				pmax	pmax		
	comp=Z,71nm,3.7s						
SEY	**Seymchan**	**26.37**	**10**	P	**P**	**15 45 49.2**	**+1.9**
	comp=Z,2.3nm,0.8s,baz=233,slow=22,SNR=4.4						
H11N2	**WAKE ISLAND Hy 27.71**	**122**		T	T	16 14 44.0	
	baz=315,slow=75,SNR=256						
H11N1	**WAKE ISLAND Hy 27.72**	**122**		T	T	16 14 48.1	
	baz=315,slow=75,SNR=211						
H11N3	**WAKE ISLAND Hy 27.73**	**122**		T	T	16 14 53.5	
	baz=315,slow=75,SNR=213						
SONA1	**Songino Array**	**28.20**	**303**	*e*P	**P**	**15 46 05.2**	**+1.2**
SONM	**Songino Array**	**28.20**	**303**	P	**P**	**15 46 04.7**	**+0.7**
	comp=Z,1.6nm,0.7s,baz=90,slow=12,SNR=5.3						
H11S1	**WAKE ISLAND Hy 28.45**	**125**		T	T	16 15 45.7	
	baz=317,slow=76,SNR=245						
H11S3	**WAKE ISLAND Hy 28.45**	**125**		T	T	16 15 46.6	
	baz=317,slow=76,SNR=234						
H11S2	**WAKE ISLAND Hy 28.46**	**125**		T	T	16 15 45.1	
	baz=317,slow=76,SNR=160						
CD2	**Chengdu**	**32.36**	**270**	P	**P**	**15 46 39.9**	**-1.0**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
KMI	**Kunming**	**35.69**	**262**	P	**P**	**15 47 09.4**	**-0.6**
KMI				pmax	pmax		
	comp=Z,7.0nm,0.7s						
WMQ	**Urumqi**	**41.33**	**297**	P	**P**	**15 47 58.7**	**+1.7**
WMQ				sP	sP	15 48 05.7	-0.4
WMQ				pmax	pmax		
	comp=Z,3.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,29nm,3.5s						
ZALV	**Zalesovo Beam**	**42.23**	**312**	P	**P**	**15 48 05.7**	**+1.6**
	comp=Z,1.6nm,0.6s,baz=96,slow=6.5,SNR=8.4						
LSA	**Lhasa**	**42.87**	**275**	P	**P**	**15 48 10.1**	**-0.2**
	comp=Z,2.5nm,0.8s						
MK01	**Makanchi Array**	**44.55**	**302**	*e*P	**P**	**15 48 23.9**	**+0.9**
MKAR	**Makanchi Array**	**44.55**	**302**	P	**P**	**15 48 24.3**	**+1.3**
	comp=Z,1.0nm,0.7s,baz=88,slow=9.6,SNR=9.5						
MKAR	**Makanchi Array**	**44.55**	**302**	*e*P	**P**	**15 48 24.1**	**+1.0**
MAKZ	**Makanchi**	**44.76**	**302**	*e*P	**P**	**15 48 26.0**	**+1.3**
	comp=Z,10nm,1.8s						
KURK	**Kurchatov**	**46.30**	**308**	*e*P	**P**	**15 48 39.4**	**+2.6**
	comp=Z,4.8nm,0.8s						
TKM2	**Tokmak 2**	**50.10**	**298**	*e*P	**P**	**15 49 09.1**	**+2.5**
	comp=Z,3.3nm,0.9s						
KKAR	**Karatay Array**	**53.58**	**300**	*e*P	**P**	**15 49 33.4**	**+1.2**
WRA	**Warramunga Arr**	**57.45**	**189**	P	**P**	**15 49 59.5**	**-0.7**
	comp=Z,0.9nm,0.6s,baz=7.5,slow=7.1,SNR=30						
ABKAR	**Akbulak array**	**58.28**	**310**	*e*P	**P**	**15 50 05.8**	**0.0**
ASAR	**Alice Springs**	**61.18**	**189**	P	**P**	**15 50 26.1**	**+0.2**
	comp=Z,0.6nm,0.7s,baz=2.0,slow=6.0,SNR=15						
YKA	**Yellowknife Ar**	**63.21**	**30**	P	**P**	**15 50 39.5**	**+0.4**
	comp=Z,0.2nm,0.7s,baz=304,slow=7.3,SNR=4.9						
FINES	**FINESS Array B**	**68.88**	**332**	P	**P**	**15 51 16.6**	**+1.1**
	comp=Z,1.7nm,0.8s,baz=80,slow=12,SNR=5.9						
KBZ	**Khabaz**	**71.23**	**311**	P	**P**	**15 51 30.1**	**-0.1**
	comp=Z,0.7nm,0.5s,baz=283,slow=1.7,SNR=4.4						
AKASG	**Malin Array Be**	**74.49**	**323**	P	**P**	**15 51 50.1**	**+0.6**
	comp=Z,0.4nm,0.4s,baz=46,slow=6.1,SNR=4.4						

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*ROM **01** 15:46:59.7±0.3,41°.92N×15°.31E,h10km,Md2.0/5,Ml2.1/4, Error ellipse: s-maj=4.3km s-min=2.2km az=11.0*
*CSEM **01** 15:47:00.2±0.3,41°.88N×15°.25E,h2km,ML2.8/4,Error ellipse: s-maj=7.6km s-min=5.0km az=3.0*
ISC 01 15:46:58.7±1.3,41°.97N±0°.05×15°.32E±0°.03,h17km±10km, n14,σ0°48/24,Southern Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SGRT	**San Giovanni R**	**0.38**	**124**	Pg	**Pb**	**15 47 07.1**	**0.0**
SGRT				Sg	**Sb**	**15 47 12.7**	**-0.1**
	126nm,0.4s						
SGRT	**San Giovanni R**	**0.38**	**124**	Pg	**Pb**	**15 47 07.1**	**0.0**
SGRT				Sg	**Sb**	**15 47 12.7**	**-0.1**
	126nm,0.4s						
MSAG	**Monte S. Angel**	**0.51**	**120**	Pg	**Pn**	**15 47 10.7**	**-0.6**
MSAG				Sg	**Sb**	**15 47 17.4**	**+1.0**
	154nm,0.3s						
MSAG	**Monte S. Angel**	**0.51**	**120**	Pg	**Pn**	**15 47 10.7**	**-0.6**
MSAG				Sg	**Sb**	**15 47 17.4**	**+1.0**
	154nm,0.3s						
SGTA	**Sant Agata di**	**0.84**	**178**	Pg	**Pg**	**15 47 15.0**	**0.0**
SGTA				Sg	**Sg**	**15 47 26.3**	**+0.3**
SGTA	**Sant Agata di**	**0.84**	**178**	Pg	**Pg**	**15 47 15.0**	**0.0**
SGTA				Sg	**Sg**	**15 47 26.3**	**+0.3**
VAGA	**Valle Agricola**	**0.99**	**236**	Pg	**Pg**	**15 47 17.8**	**0.0**
VAGA	**Valle Agricola**	**0.99**	**236**	Pg	**Pg**	**15 47 17.8**	**0.0**
INTR	**Introdacqua**	**1.06**	**273**	Pg	**Pg**	**15 47 19.1**	**0.0**
INTR				Sg	**Sn**	**15 47 33.8**	**+0.6**
	62nm,0.8s						
INTR	**Introdacqua**	**1.06**	**273**	Pg	**Pg**	**15 47 19.1**	**0.0**
INTR				Sg	**Sn**	**15 47 33.8**	**+0.6**
	62nm,0.8s						
MCRV	**Calabrutti - M**	**1.19**	**186**	Pg	**Pn**	**15 47 20.0**	**-0.7**
MCRV				Sg	**Sb**	**15 47 36.1**	**0.0**
	25nm,0.5s						
MCRV	**Calabrutti - M**	**1.19**	**186**	Pg	**Pn**	**15 47 20.0**	**-0.7**
MCRV				Sg	**Sb**	**15 47 36.1**	**0.0**
	25nm,0.5s						
STON	**Ston**	**1.98**	**62**	*i* Pn	**Pg**	**15 47 36.5**	**-0.1**
STON	**Ston**	**1.98**	**62**	*i* Pn	**Pg**	**15 47 36.5**	**-0.1**

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*NEIC **01** 15:47:14.1±2.5,37°.63N×143°.72E,h1km±15km,mb4.6/12, Error ellipse: s-maj=8.6km s-min=4.9km az=108.0*
*IDC **01** 15:47:14.3±0.6,37°.60N×143°.70E,h0km,mb3.9/20, mb1 4.0/26,mb1mx3.9/57,mbtmp4.0/26,ML3.7/6,MS3.0/5, Ms1 3.0/5,ms1mx2.8/50,Error ellipse: s-maj=16.9km s-min=12.8km az=108.0*
*ISCJB **01** 15:47:15.5±1.2,37°.69N±0°.03×143°.59E±0°.04,h20km±8km, mb4.2/47,MS3.3/8,Error ellipse: s-maj=5.1km s-min=4.3km az=33.0*
*MOS **01** 15:47:16.9±1.2,37°.73N×143°.72E,h33km,mb4.4/26,Error ellipse: s-maj=9.4km s-min=5.8km az=101.5*
*JMA **01** 15:47:17.9±0.2,37°.71N×143°.49E,h40km,M4.0*
ISC 01 15:47:15.0±2.4,37°.69N±0°.06×143°.66E±0°.06,h4km±15km, n125,σ1°80/131,mb4.3/47,MS3.0/8,11C-1D,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.98**	**293**	P	**Pn**	**15 47 48.4**	**-0.7**
JIO				*e*S	**Sn**	**15 48 09.4**	**-4.9**
OFUJ	**Ofunato**	**2.09**	**312**	P	**Pn**	**15 47 49.7**	**-1.0**
OFUJ				*e*S	**Sn**	**15 48 13.8**	**-3.4**
JFK	**Kawauchi**	**2.24**	**262**	P	**Pn**	**15 47 51.1**	**-1.7**
JFK				S	**Sn**	**15 48 16.7**	**-4.2**
JMM	**Marumori**	**2.28**	**275**	P	**Pn**	**15 47 52.0**	**-1.3**
JMM				*e*S	**Sn**	**15 48 17.8**	**-4.0**
JMK	**Ichinoseki**	**2.30**	**304**	P	**Pn**	**15 47 53.0**	**-0.5**
JOU	**Okura**	**2.46**	**287**	P	**Pn**	**15 47 55.5**	**-0.3**
JOU				*e*S	**Sn**	**15 48 23.5**	**-2.8**
JOM	**Ohasama**	**2.57**	**314**	P	**Pn**	**15 47 57.0**	**-0.3**
JOM				S	**Sn**	**15 48 26.6**	**-2.4**
JFT	**Otama**	**2.65**	**267**	P	**Pn**	**15 47 57.6**	**-0.8**
JFT				*e*S	**Sn**	**15 48 27.3**	**-3.6**
JTH	**Tanohata**	**2.65**	**328**	*e*S	**Sn**	**15 48 27.6**	**-3.3**
JYK	**Kaneyama**	**2.87**	**296**	P	**Pn**	**15 48 01.3**	**-0.2**
JRG	**Rokugo**	**2.92**	**307**	P	**Pn**	**15 48 02.9**	**+0.8**
JRG				*e*S	**Sn**	**15 48 37.6**	**0.0**
JANG	**Nango**	**3.16**	**329**	P	**Pn**	**15 48 05.5**	**+0.1**
JANG				*e*S	**Sn**	**15 48 39.5**	**-3.9**
JTM	**Tenmabayashi**	**3.69**	**328**	P	**Pn**	**15 48 14.2**	**+1.5**
JTM				*e*S	**Sn**	**15 48 54.5**	**-2.0**
ERM	**Erimo**	**4.33**	**355**	*d* iP	**Pn**	**15 48 21.4**	**-0.1**
ERM	**Erimo**	**4.33**	**355**	*e*Pn	**Pn**	**15 48 21.2**	**-0.3**
ERM				*e*Sn	**Sn**	**15 49 09.4**	**-3.1**
MJAR	**Matsushiro Arr**	**4.51**	**257**	Pn	**Pn**	**15 48 24.6**	**+0.7**
	12nm,0.3s,baz=71,slow=11,SNR=190						
MJAR				Sn	**Sn**	**15 49 14.6**	**-2.2**
	4.0nm,0.3s,baz=93,slow=13,SNR=4.3						
MAJO	**Matsushiro**	**4.51**	**257**	*c* iP	**Pn**	**15 48 24.6**	**+0.6**
MAJO	**Matsushiro**	**4.51**	**257**	*e*Pn	**Pn**	**15 48 24.4**	**+0.5**
MAT	**Matsushiro**	**4.51**	**257**	P	**Pn**	**15 48 24.3**	**+0.3**
MAT				S	**Sn**	**15 49 14.6**	**-2.2**
MJB9	**Matsu-Tunnel**	**4.51**	**257**	*e*Pn	**Pn**	**15 48 24.4**	**+0.4**
JHJ2	**Mitsune**	**5.54**	**216**	*e*Pn	**Pn**	**15 48 36.6**	**-1.5**
JHJ	**Hachijo jima 2**	**5.55**	**216**	Pn	**Pn**	**15 48 36.8**	**-1.5**
	29nm,0.3s,baz=120,slow=22,SNR=6.1						
JHJ				Sn	Sn	15 49 34.3	-8.3
	33nm,0.3s,baz=54,slow=19,SNR=4.0						
INU	**Inuyama**	**5.84**	**248**	*e*Pn	**Pn**	**15 48 42.1**	**-0.2**
ASAJ	**Asahikawa**	**6.47**	**353**	Pn	**Pn**	**15 48 51.1**	**+0.3**
	3.0nm,0.3s,baz=204,slow=15,SNR=25						
ASAJ				Sn	**Sn**	**15 49 59.9**	**-5.1**
	1.4nm,0.3s,baz=73,slow=19,SNR=2.8						
ASAJ	**Asahikawa**	**6.47**	**353**	*e*Pn	**Pn**	**15 48 50.8**	**-0.1**
ASAJ				Sn	**Sn**	**15 49 59.9**	**-5.1**
YUK	**Yuzh-Kuril'sk**	**6.55**	**14**	*e*P	**Pn**	**15 48 51.8**	**-0.2**
YUK				*e*S	**Sn**	**15 50 01.7**	**-5.4**
YUK				pmax	pmax		
	comp=Z,91nm,0.6s						
SHO	**Shikotan**	**6.62**	**20**	*e*P	**Pn**	**15 48 51.7**	**-1.2**
SHO				*e*S	Sn	15 50 01.4	-7.4
SHO				pmax	pmax		
	comp=Z,49nm,0.6s						
KUR	**Kuril'sk**	**8.17**	**21**	*e*P	**Pn**	**15 49 13.1**	**-1.0**
KUR				*e*S	Sn	15 50 39.7	-7.1
KUR				pmax	pmax		
	comp=Z,13nm,0.3s						
YSS	**Yuzh-Sakhalins**	**9.28**	**356**	*e*P	**Pn**	**15 49 28.1**	**-1.3**
YSS				*e*S	**Sn**	**15 51 15.9**	**+1.8**
YSS				pmax	pmax		
	comp=Z,30nm,2.0s						
YSS	**Yuzh-Sakhalins**	**9.28**	**356**	*e*Pn	**Pn**	**15 49 30.3**	**+0.9**
VLA	**Vladivostok**	**10.49**	**305**	iP	Pn	15 49 52.8	+6.9
VLA				*i* S	Sn	15 51 52.0	+8.2
VLA				pmax	pmax		
	comp=Z,17nm,1.4s						
USRK	**Ussuriysk Ar.**	**10.96**	**310**	Pn	**Pn**	**15 49 54.4**	**+2.0**
	comp=Z,0.7nm,0.3s,baz=108,slow=11,SNR=13						
JNU	**Nakatsue**	**11.38**	**250**	Pn	**Pn**	**15 49 58.5**	**+0.2**
	comp=Z,0.3nm,0.3s,baz=117,slow=12,SNR=5.3						
JNU				LR	LR	15 55 31.2	
	comp=Z,88nm,18.2s,baz=115,slow=44						
KSRS	**Korea Array**	**12.49**	**274**	Pn	**Pn**	**15 50 15.6**	**+2.2**
	comp=Z,0.2nm,0.3s,baz=84,slow=14,SNR=14						
KSAR	**Wonju Array Be**	**12.53**	**274**	P	**Pn**	**15 50 15.6**	**+1.7**
KSAR	**Wonju Array Be**	**12.53**	**274**	Pn	**Pn**	**15 50 15.6**	**+1.7**
MDJ	**Mudanjiang**	**12.65**	**308**	P	**Pn**	**15 50 15.7**	**+0.1**
MDJ				pmax	pmax		
	comp=Z,10.0nm,1.5s						
MDJ				pmax	pmax		
	comp=Z,98nm,4.0s						
KLR	**Kul'dur**	**14.39**	**327**	Pn	**Pn**	**15 50 38.4**	**-1.0**
	comp=Z,0.2nm,0.3s,baz=132,slow=12,SNR=13						
KLR				LR	LR	15 56 22.4	
	comp=Z,97nm,19.0s,baz=126,slow=38						
NKL	**Nikolayevsk**	**15.60**	**353**	*e*P	**Pn**	**15 50 54.7**	**-0.7**
PETK	**Petropavlovsk-**	**18.24**	**28**	LR	LR	15 57 11.6	
	comp=Z,31nm,21.2s,baz=215,slow=33						
TIA	**Tai'an**	**21.24**	**274**	iP	**P**	**15 52 00.9**	**-1.0**
TIA				pmax	pmax		
	comp=Z,20nm,1.1s						
BJI	**Beijing**	**21.50**	**285**	P	**P**	**15 52 04.8**	**+0.2**
BJI				pmax	pmax		
	comp=Z,8.0nm,0.8s						
BJI				LR	LR		
	comp=Z,48nm,22.4s						
MA2	**Magadan**	**22.37**	**10**	LR	LR	15 59 51.0	
	comp=Z,24nm,21.9s,baz=236,slow=34						
HHC	**Hu-ho-hao-te**	**24.97**	**287**	*e*P	**P**	**15 52 36.5**	**-3.1**
HHC				S	S	15 56 55.6	-8.3
HHC				pmax	pmax		
	comp=Z,37nm,1.0s						
HHC				pmax	pmax		
	comp=Z,150nm,4.0s						
HHC				LR	LR		
	comp=N,810nm,11.3s						
HHC				LR	LR		
	comp=E,850nm,12.3s						
HHC				LR	LR		
	comp=Z,1μm,11.3s						
WHN	**Wuhan**	**25.23**	**262**	iP	**P**	**15 52 42.9**	**+1.1**
SEY	**Seymchan**	**25.83**	**9**	P	**P**	**15 52 48.5**	**+1.6**
	comp=Z,2.3nm,0.8s,baz=178,slow=11,SNR=5.6						
SEY	**Seymchan**	**25.83**	**9**	*e*P	**P**	**15 52 47.8**	**+0.9**
YAK	**Yakutsk**	**25.86**	**345**	P	**P**	**15 52 47.2**	**0.0**
	comp=Z,4.0nm,0.5s,baz=1.3,slow=3.7,SNR=5.4						
YAK				LR	LR	16 02 35.9	
	comp=Z,31nm,20.6s,baz=282,slow=36						
YAK	**Yakutsk**	**25.86**	**345**	*e*P	**P**	**15 52 46.6**	**-0.6**
YAK				pmax	pmax		
	comp=Z,7.0nm,0.8s						
YAK	**Yakutsk**	**25.86**	**345**	*e*P	**P**	**15 52 46.5**	**-0.8**
	comp=Z,8.8nm,0.7s						
H11N2	**WAKE ISLAND Hy 27.00**	**125**		T	T	16 21 13.5	
	baz=317,slow=75,SNR=18						
H11N1	**WAKE ISLAND Hy 27.01**	**125**		T	T	16 21 18.2	
	baz=317,slow=75,SNR=12						
H11N3	**WAKE ISLAND Hy 27.02**	**125**		T	T	16 21 13.1	
	baz=317,slow=75,SNR=20						
H11S1	**WAKE ISLAND Hy 27.77**	**127**		T	T	16 22 08.4	
	baz=319,slow=76,SNR=7.9						
H11S3	**WAKE ISLAND Hy 27.77**	**127**		T	T	16 22 14.0	
	baz=319,slow=76,SNR=8.6						
H11S2	**WAKE ISLAND Hy 27.79**	**127**		T	T	16 22 15.8	
	baz=319,slow=76,SNR=9.0						
BOD	**Bodaibo**	**27.96**	**326**	*e*P	**P**	**15 53 05.5**	**-0.7**
BOD				pmax	pmax		
	comp=Z,4.0nm,1.5s						
ULN	**Ulaanbaatar**	**28.49**	**303**	*c e*P	**P**	**15 53 11.9**	**+0.7**
ULN				pmax	pmax		
	comp=Z,7.0nm,1.2s						
ULN	**Ulaanbaatar**	**28.49**	**303**	*e*P	**P**	**15 53 10.1**	**-1.2**
	comp=Z,5.0nm,0.8s						
SONM	**Songino Array**	**28.92**	**302**	P	**P**	**15 53 16.1**	**+1.0**
	comp=Z,1.6nm,0.9s,baz=101,slow=7.7,SNR=6.3						
SONM	**Songino Array**	**28.92**	**302**	P	**P**	**15 53 16.1**	**+1.0**
SONM				pmax	pmax		
	comp=Z,1.0nm,0.7s						
ENH	**Enshi**	**29.17**	**266**	*e*P	**P**	**15 53 18.6**	**+1.3**
	comp=Z,18nm,0.8s						
TLY	**Talaya**	**31.27**	**310**	*e*P	P	15 53 39.3	+3.6
TLY				*e*S	S	15 58

TKM2 pmax pmax
comp=Z,5.0nm,0.9s
TKM2 Tokmak 2 50.89 299 *eP* **P 15 56 17.6 +0.3**
comp=Z,4.6nm,0.9s
PYUN Piuthan 51.06 278 *eP* P 15 56 25.7 +7.0
BVAR Borovoye Array 51.45 312 P **P 15 56 21.4 +0.3**
comp=Z,1.6nm,0.7s,baz=76,slow=8.3,SNR=11
BRVK Borovoye 51.51 312 *ceP* **P 15 56 22.5 +1.1**
BRVK pmax pmax
comp=Z,3.0nm,0.8s
BRVK Borovoye 51.51 312 *eP* **P 15 56 21.6 +0.2**
comp=Z,3.2nm,0.9s
AAK Ala-Archa 51.75 299 *i* P **P 15 56 22.8 -0.8**
AAK pmax pmax
comp=Z,11nm,2.5s
ZRNK Zerenda 52.28 312 *eP* **P 15 56 27.5 +0.3**
ZRNK pmax pmax
comp=Z,4.0nm,1.0s
ZRNK Zerenda 52.28 312 *eP* **P 15 56 27.5 +0.3**
comp=Z,4.3nm,1.0s
INK Inuvik 52.98 28 P **P 15 56 33.1 +1.0**
comp=Z,0.3nm,0.7s,baz=317,slow=6.4,SNR=3.5
KKAR Karatay Array 54.34 300 *eP* **P 15 56 42.3 -0.3**
KKAR Karatay Array 54.34 300 *eP* **P 15 56 42.3 -0.3**
ARU Arti 57.05 319 *c i* P **P 15 57 02.0 +0.3**
ARU 15 59 05.1
ARU S **S 16 04 57.8 +1.0**
ARU SS **SS 16 08 41.6 -3.1**
ARU pmax pmax
comp=Z,8.0nm,1.2s
ARU Arti 57.05 319 *eP* **P 15 57 01.8 0.0**
comp=Z,4.5nm,0.6s
WRAB Tennant Creek 57.98 190 *ceP* **P 15 57 06.5 -2.1**
WRAB pmax pmax
comp=Z,44nm,2.5s
WRAB Tennant Creek 57.98 190 *eP* **P 15 57 06.9 -1.7**
comp=Z,5.8nm,0.8s
WB2 Warramunga Arr 57.99 190 *eP* **P 15 57 07.2 -1.6**
comp=Z,5.8nm,0.7s
WRA Warramunga Arr 57.99 190 P **P 15 57 07.4 -1.4**
comp=Z,7.0nm,0.7s,baz=11,slow=7.4,SNR=76
ABKAR Akbulak array 58.88 310 *eP* **P 15 57 14.5 -0.2**
AS01 Alice Springs 61.71 190 *eP* **P 15 57 33.1 -1.2**
AS31 Alice Springs 61.72 190 *eP* **P 15 57 32.8 -1.5**
comp=Z,1.3nm,1.3s
ASAR Alice Springs 61.72 190 P **P 15 57 33.2 -1.1**
comp=Z,1.7nm,0.8s,baz=6.2,slow=8.6,SNR=27
YKA Yellowknife Ar 62.33 31 P **P 15 57 38.3 +0.3**
comp=Z,0.2nm,0.7s,baz=301,slow=6.6,SNR=6.1
ARCES ARCESS Array B 64.00 340 P **P 15 57 49.8 +0.8**
comp=Z,0.7nm,0.7s,baz=60,slow=7.4,SNR=7.0
GEYT Allbeck 65.08 300 P **P 15 57 57.1 +0.5**
comp=Z,0.9nm,0.4s,baz=64,slow=6.8,SNR=4.4
OBN Obninsk 68.63 324 *i* P **P 15 58 18.9 0.0**
OBN pmax pmax
comp=Z,3.0nm,0.7s
FINES FINESS Array B 69.06 333 P **P 15 58 21.8 +0.4**
comp=Z,1.7nm,0.8s,baz=147,slow=11,SNR=5.4
FINES FINESS Array B 69.06 333 *ceP* **P 15 58 23.2 +1.8**
FINES pmax pmax
comp=Z,2.0nm,0.9s
STKA Stephens Creek 69.24 182 P **P 15 58 22.8 0.0**
comp=Z,0.8nm,0.7s,baz=329,slow=11,SNR=3.9
ZEI Tsey 71.75 310 *eP* **P 15 58 36.7 -1.9**
ZEI pmax pmax
comp=Z,4.0nm,0.4s
KIV Kislovodsk 71.82 312 *ceP* **P 15 58 40.0 +1.2**
KIV pmax pmax
comp=Z,7.0nm,1.0s
KBZ Khabaz 71.82 311 P **P 15 58 40.0 +1.4**
comp=Z,2.4nm,0.8s,baz=65,slow=4.6,SNR=8.8
KBZ Khabaz 71.82 311 P **P 15 58 40.0 +1.4**
KBZ pmax pmax
comp=Z,2.0nm,0.8s
NOA NORSAR Array B 74.26 338 P **P 15 58 52.7 -0.1**
comp=Z,0.6nm,0.7s,baz=28,slow=2.0,SNR=3.0
AKASG Malin Array Be 74.86 323 P **P 15 58 56.5 +0.1**
comp=Z,0.5nm,0.3s,baz=47,slow=6.2,SNR=4.2
PDAR Pinedale Array 75.92 47 P **P 15 59 04.6 +1.6**
comp=Z,0.2nm,0.5s,baz=277,slow=2.3,SNR=3.0
CLL Collm 81.40 331 *eP* **P 15 59 33.0 +0.3**
CLL Collm 81.40 331 *eP* **P 15 59 33.0 +0.3**

MEX 01 15:51:20.7±0.4, 18°.37N×100°.81W, h38km±8km, MD3.5, Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ARIG	**Puente Sto Nin**	**0.45**	**101**	*eP*	Pn	15 51 29.1	-1.5
ARIG				*eS*	Sn	15 51 35.6	-2.0
ZIIG	**Zihuatanejo**	**0.98**	**220**	*eP*	Pn	15 51 36.1	-1.9
ZIIG				*eS*	Sn	15 51 48.6	-1.9
MEIG	**Mezcala**	**1.21**	**111**	*eP*	Pn	15 51 39.7	-1.5
MEIG				*eS*	Sn	15 51 53.4	-3.0
MOIG	**Morelia**	**1.35**	**345**	*eP*	Pn	15 51 41.5	-1.8
MOIG				*eS*	Sn	15 51 57.8	-2.4
MAVM	**Malinalco, Edo**	**1.38**	**65**	*eP*	Pn	15 51 39.9	-3.7
CAIG	**El Cayaco**	**1.41**	**158**	*eP*	Pn	15 51 41.7	-2.2
CAIG				*eS*	Sn	15 51 59.4	-1.8
YAIG	**Yautepec**	**1.73**	**73**	*eP*	Pn	15 51 47.2	-1.1
TLIG	**Tlapa**	**2.28**	**110**	*i P*	Pn	15 51 55.4	-0.6
MMIG	**Aquila**	**2.41**	**269**	*eP*	Pn	15 51 56.9	-0.7

GUC 01 15:52:49.0±0.3, 22°.98S×67°.26W, h247km±13km, ML3.6, 6C-1D, Chile-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB06	**IPOC Station P**	**2.15**	**277**	⇑ *iP*	Pn	15 53 34.5	+1.7
PB06				*eS*	S	15 54 09.3	+2.0
PB06				IAML		15 54 13.4	
comp=E,55nm,0.1s							
PB07	**IPOC Station P**	**2.73**	**297**	⇑ *iP*	Pn	15 53 40.9	+2.2
PB07				*i S*	S	15 54 20.1	+2.1
PB07				IAML		15 54 21.1	
comp=N,144nm,0.2s							
PB04	**IPOC Station P**	**2.75**	**283**	*eP*	Pn	15 53 41.1	+2.3
PB04				*eS*	S	15 54 20.9	+2.8
PB04				IAML		15 54 23.4	
comp=N,70nm,0.1s							
PB01	**IPOC Station P**	**2.83**	**313**	⇑ *iP*	Pn	15 53 41.5	+1.9
PB01				*i S*	S	15 54 21.8	+2.2
PB01				IAML		15 54 25.4	
comp=E,75nm,0.3s							
ANCH	**Antofagasta**	**2.98**	**256**	⇑ *iP*	Pn	15 53 43.4	+2.3
ANCH				*i S*	S	15 54 24.0	+1.8
PB10	**IPOC Station P**	**3.08**	**259**	⇑ *iP*	Pn	15 53 44.3	+2.1
PB10				*i S*	S	15 54 26.3	+2.2
PB10				IAML		15 54 28.0	
comp=N,64nm,0.3s							
PATCX	**Punta Patache**	**3.44**	**308**	⇑ *iP*	Pn	15 53 48.3	+1.9
PATCX				*eS*	S	15 54 34.0	+2.2
HMBC	**Humberstone**	**3.64**	**317**	*eP*	Pn	15 53 49.9	+1.2
HMBC				*eS*	S	15 54 37.2	+1.3
MNMC	**Minye Minye**	**4.41**	**330**	⇓ *iP*	Pn	15 53 60.0	+2.0
MNMC				*i S*	S	15 54 54.3	+1.6

IDC 01 15:53:18.1±1.4, 1°.91N×127°.40E, h0km, mb3.7/3, mb1 3.9/5, mb1mx3.5/37, mbtmp3.8/5, ML3.7/2, Error ellipse: s-maj=53.5km s-min=22.5km az=71.0, Halmahera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAPI	**Kappang**	**10.28**	**228**	Pn	Pn	15 55 48.3	+1.4
2.0nm,0.3s,baz=20,slow=5.3,SNR=8.1							
FITZ	**Fitzroy Crossi**	**19.96**	**185**	P	P	15 57 50.4	-1.7
0.1nm,0.3s,baz=23,slow=17,SNR=4.1							
WRA	**Warramunga Arr**	**22.76**	**163**	P	P	15 58 21.9	-0.3
1.4nm,0.3s,baz=340,slow=11,SNR=41							
ASAR	**Alice Springs**	**26.20**	**166**	P	P	15 58 56.5	+1.8
0.3nm,0.3s,baz=346,slow=12,SNR=9.3							
ASAR				PcP	PcP	16 02 19.9	-2.2
0.2nm,0.4s,baz=356,slow=1.8,SNR=4.9							
MKAR	**Makanchi Array**	**59.42**	**326**	P	P	16 03 22.9	+0.2
0.7nm,0.6s,baz=122,slow=8.3,SNR=11							

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*ISCJB **01** 16:05:22.4±1.2, 4°.6S±0°.1×28°.6E±0°.1, h10km, mb3.5/3, Error ellipse: s-maj=21.2km s-min=14.8km az=147.6*
*IDC **01** 16:05:22.3±1.5, 4°.68S×28°.60E, h0km, mb3.6/3, mb1 3.7/4, mb1mx3.4/32, mbtmp3.7/4, ML3.5/1, Error ellipse: s-maj=40.0km s-min=24.7km az=128.0*
ISC 01 16:05:24.0±1.3, 4°.7S±0°.1×28°.53E±0°.09, h10km, n7, σ1§66/9, mb3.7/3, 1D, Lake Tanganyika region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DODT	**Dodoma, Tanzan**	**7.35**	**102**	*i P*	**Pn**	**16 07 11.9**	**+0.3**
DODT				*i S*	**Sg**	**16 09 19.4**	**-0.7**
KMBO	**Kilima Mbogo**	**9.39**	**68**	*i P*	Pn	16 07 34.7	-5.0
KMBO				*i*		16 07 34.8	
baz=276,slow=28							
KMBO				⇓ *i S*	**Sn**	**16 09 28.9**	**+3.3**
KMBO	**Kilima Mbogo**	**9.39**	**68**	Pn	**Pn**	**16 07 39.5**	**-0.2**
0.5nm,0.3s,baz=231,slow=14,SNR=7.1							
KMBO				Sn	**Sn**	**16 09 23.4**	**-2.1**
1.2nm,0.3s,baz=180,slow=20,SNR=4.5							
KMBO				Lg	Lg	16 10 19.3	
3.1nm,0.3s,baz=181,slow=24,SNR=11							
MATP	**Matopo**	**15.68**	**180**	*i S*	**P**	**16 09 09.9**	**+0.5**
BOSA	**Boshof**	**24.04**	**187**	P	**P**	**16 10 39.2**	**-0.3**
2.5nm,0.8s,baz=11,slow=11,SNR=4.9							
BRTR	**Keskin Array B**	**44.41**	**6**	P	**P**	**16 13 35.2**	**+0.1**
0.8nm,0.7s,baz=185,slow=9.6,SNR=6.9							
MKAR	**Makanchi Array**	**69.74**	**36**	P	**P**	**16 16 34.0**	**-0.4**
0.1nm,0.3s,baz=222,slow=3.4,SNR=2.2							

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*ISCJB **01** 16:12:41.9±0.6, 6°.96S±0°.02×155°.80E±0°.02, h62km±5km, mb5.8/280, Error ellipse: s-maj=3.6km s-min=2.9km az=15.5*
*NEIC **01** 16:12:41.4±0.1, 6°.95S×155°.86E, h46km, mb5.8/163, ME5.2, MW5.8, MW5.9, MW5.8, Error ellipse: s-maj=3.2km s-min=3.0km az=116.0, Moment Tensor Solution. s47 Moment tensor: Scale 10^{17}Nm; M_{rr}5.83; $M_{\theta\theta}$-4.40; $M_{\phi\phi}$-1.43; $M_{r\theta}$-0.63; $M_{\theta\phi}$3.77; $M_{\phi r}$-0.04; Best double couple: $M_0$6.50000×10^{17} NP1:ϕ_s300.00000°, δ47.00000°, λ84.00000°. NP2:ϕ_s129.00000°, δ43.00000°, λ97.00000°. Principal axes: T 5.8900, Plg85.0000°, Azm149.0000°; N 1.1000, Plg5.0000°, Azm304.0000°; P -6.9900, Plg2.0000°, Azm34.0000°; Broadband fault plane solution: P waves. NP1:ϕ_s185.00000°, δ45.00000°, λ126.00000°. NP2: ϕ_s320.00000°, δ55.00000°, λ60.00000°. Principal axes: T Plg65.0000°, Azm173.0000°; N Plg0.0000°, Azm0.0000°; P Plg6.0000°, Azm71.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from BB mechanism.*
NEIC Felt at Arawa. Also felt at Gizo, Solomon Islands.
*MOS **01** 16:12:41.9±1.0, 6°.93S×155°.80E, h61km, mb5.7/81, MS5.1/17 Error ellipse: s-maj=6.4km s-min=5.4km az=102.5*
*BJI **01** 16:12:41.3, 6°.75S×155°.89E, h54km, mb5.5/88, mB5.5/72, Ms5.3/93, Ms7 5.1/87*
*GCMT **01** 16:12:42.3±0.1, 7°.16S×155°.76E, h54km, MW5.8/134, Moment Tensor Solution. s134, c256; s124, c343; Duration: 2≈0 Moment tensor: Scale 10^{17}Nm; M_{rr}6.02±.06; $M_{\theta\theta}$-4.04±.05; $M_{\phi\phi}$-1.98±.05; $M_{r\theta}$-0.92±.05; $M_{\theta\phi}$3.61±.04; $M_{\phi r}$-0.34±.05; Best double couple: $M_0$6.47700×10^{17} NP1:ϕ_s299.00000°, δ48.00000°, λ78.00000°. NP2:ϕ_s136.00000°, δ43.00000°, λ103.00000°. Principal axes: T 6.1670, Plg81.0000°, Azm142.0000°; N 0.6200, Plg9.0000°, Azm306.0000°; P -6.7860, Plg2.0000°, Azm37.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*
*NEIC **01** 16:12:43.0±0.0, 6°.99S×155°.60E, h58km, Moment Tensor Solution. s41 Moment tensor: Scale 10^{17}Nm; M_{rr}5.49; $M_{\theta\theta}$-3.28; $M_{\phi\phi}$-2.21; $M_{r\theta}$-0.57; $M_{\theta\phi}$3.09; $M_{\phi r}$-0.07; Best double couple: $M_0$5.70000×10^{17} NP1:ϕ_s305.00000°, δ47.00000°, λ84.00000°. NP2:ϕ_s135.00000°, δ43.00000°, λ97.00000°. Principal axes: T 5.5300, Plg84.0000°, Azm152.0000°; N 0.3600, Plg4.0000°, Azm309.0000°; P -5.8900, Plg1.0000°, Azm39.0000°;*
*IDC **01** 16:12:43.0±0.4, 6°.97S×155°.86E, h56km±3km, mb5.4/44, mb1 5.4/48, mb1mx5.4/54, mbtmp5.7/48, MS5.1/34, Ms1 5.1/34, ms1mx5.0/40 Error ellipse: s-maj=9.7km s-min=7.8km az=78.0*
*DJA **01** 16:12:47.6±0.7, 7°.5±.3°×15°.6E±°, h91km±8km, M5.8/33, mb5.9/33, mB6.1/29, Mw(mB)5.8/29, Mwp5.5/2*
*NEIC **01** 16:12:58.1±0.0, 6°.62S×155°.63E, h53km, Moment Tensor Solution. s26 Moment tensor: Scale 10^{17}Nm; M_{rr}8.10; $M_{\theta\theta}$-4.46; $M_{\phi\phi}$-3.64; $M_{r\theta}$-1.37; $M_{\theta\phi}$3.92; $M_{\phi r}$0.84; Best double couple: $M_0$8.20000×10^{17} NP1:ϕ_s310.00000°, δ51.00000°, λ87.00000°. NP2:ϕ_s134.00000°, δ39.00000°, λ93.00000°. Principal axes: T 8.2600, Plg84.0000°, Azm202.0000°; N -0.1200, Plg2.0000°, Azm312.0000°; P -8.1400, Plg6.0000°, Azm42.0000°;*
ISC 01 16:12:42.5±0.2, 6°.94S±0°.03×155°.83E±0°.03, h54km±1km, h54km: pP-P, n1285, σ1§55/1568, mb5.9/299, MS5.2/95, 61C-90D, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RABL	**Rabaul**	**4.56**	**307**	*ePn*	**Pn**	16 13 54.1	+5.2
HNR	**Honiara**	**4.77**	**122**	P	**Pn**	**16 13 53.1**	**+1.2**
131nm,0.3s,baz=246,slow=3.7,SNR=27							
HNR				S	**Sn**	**16 14 48.9**	**+3.1**
354nm,0.3s,baz=320,slow=22,SNR=8.2							
HNR				LR	LR	16 15 51.4	
comp=Z,39μm,18.2s,baz=335,slow=40							
HNR	**Honiara**	**4.77**	**122**	*eP*	**Pn**	**16 13 52.0**	**+0.2**
HNR				*eS*	**Sn**	**16 14 48.0**	**+2.1**
PMG	**Port Moresby**	**8.93**	**253**	P	**Pn**	**16 14 52.1**	**+3.3**
14nm,0.3s,baz=63,slow=5.2,SNR=76							
PMG				S	**Sn**	**16 16 33.4**	**+5.4**
30nm,0.3s,baz=350,slow=12,SNR=6.5							
PMG				LR	LR	16 18 08.6	
comp=Z,30μm,21.4s,baz=50,slow=36							
PMG	**Port Moresby**	**8.93**	**253**	*ePn*	**Pn**	**16 14 51.8**	**+2.9**
PMG				S	**Sn**	**16 16 33.4**	**+5.4**
MANU	**Manus Island**	**9.74**	**300**	*ePn*	**Pn**	**16 15 01.6**	**+1.7**
PATS	**Pohnpei**	**13.91**	**10**	P	**Pn**	**16 15 57.4**	**+0.5**
baz=14,SNR=4.7							
PATS	**Pohnpei**	**13.91**	**10**	*ePn*	**Pn**	**16 15 56.6**	**-0.3**
COEN	**Coen**	**14.26**	**240**	P	**Pn**	**16 16 03.8**	**+2.2**
baz=14,SNR=32							
COEN	**Coen**	**14.26**	**240**	*ePn*	**Pn**	**16 16 03.4**	**+1.7**
MMPI	**Merauke**	**15.38**	**263**	P	**P**	**16 16 20.2**	**+0.3**
910nm,1.5s,11μm							
JAY	**Jayapura**	**15.70**	**286**	P	**Pn**	**16 16 21.5**	**+1.1**
0.8nm,0.3s,baz=90,slow=23,SNR=43							
JAY	**Jayapura**	**15.70**	**286**	P	**P**	**16 16 22.8**	**-0.7**
247nm,1.3s,4μm							
MTSU	**Mount Surprise**	**15.80**	**224**	P	**P**	**16 16 24.5**	**-0.1**
baz=16,SNR=41							
CTA	**Charters Tower**	**16.04**	**214**	P	**P**	**16 16 26.8**	**-0.3**
2.3nm,0.3s,baz=41,slow=15,SNR=39							
CTA				PcP	**PcP**	**16 21 18.9**	**+0.1**
0.6nm,0.3s,baz=103,slow=2.5,SNR=4.0							
CTA				LR	LR	16 22 04.3	
comp=Z,12μm,19.7s,baz=51,slow=35							
GENI	**Genyem**	**16.19**	**285**	P	**P**	**16 16 30.3**	**+1.4**
448nm,1.3s,9μm							
DZM	**Mont Dzumac**	**18.20**	**147**	P	**Pn**	**16 16 52.5**	**+1.0**
3.9nm,0.3s,baz=351,slow=11,SNR=63							
DZM				PcP	**PcP**	**16 21 22.7**	**+0.4**
0.6nm,0.3s,baz=104,slow=16,SNR=4.4							
DZM				LR	LR	16 23 06.8	
comp=Z,6μm,20.1s,baz=320,slow=34							
EIDS	**Eidsvold**	**18.88**	**193**	P	**Pn**	**16 17 00.9**	**+1.4**
baz=19,SNR=46							
EIDS	**Eidsvold**	**18.88**	**193**	*eP*	**Pn**	**16 17 00.3**	**+0.7**
205nm,1.1s							
TARA	**Tarawa**	**18.94**	**65**	*eP*	**Pn**	**16 17 01.3**	**+0.9**
1μm,1.0s							
KWAJ	**Kwajalein Atol**	**19.56**	**37**	*eP*	**Pn**	**16 17 09.6**	**+1.9**
KWAJ				pmax	pmax		
comp=Z,2μm,0.6s							
KWAJ	**Kwajalein Atol**	**19.56**	**37**	*eP*	**Pn**	**16 17 09.6**	**+1.9**
comp=Z,2μm,0.6s							
RKPI	**Ransiki, Papua**	**22.25**	**283**	P	**P**	**16 17 37.8**	**+2.7**
comp=Z,2μm,1.3s,comp=Z,15μm							
GUMO	**Guam**	**23.12**	**332**	P	**P**	**16 17 45.4**	**+1.3**
comp=Z,129nm,0.9s,baz=110,slow=14,SNR=2.9							
GUMO				PcP	**PcP**	**16 21 32.1**	**+0.6**
comp=Z,63nm,0.7s,baz=263,slow=23,SNR=3.0							
GUMO				LR	LR	16 25 37.9	
comp=Z,3μm,21.6s,baz=148,slow=34							
GUMO	**Guam**	**23.12**	**332**	*eP*	**P**	**16 17 43.0**	**-1.0**
GUMO				PcP	**PcP**	**16 21 32.1**	**+0.6**
FUNA	**Funafuti**	**23.21**	**95**	*eP*	**P**	**16 17 42.8**	**-2.2**
comp=Z,932nm,1.4s							
ARMA	**Armidale**	**23.69**	**189**	*eP*	**P**	**16 17 48.5**	**-1.0**
comp=Z,509nm,1.1s							
FAKI	**Fak Fak**	**23.83**	**278**	P	**P**	**16 17 51.8**	**+1.0**
comp=Z,463nm,1.5s,comp=Z,7μm							
FAKI	**Fak Fak**	**23.83**	**278**	*eP*	**P**	**16 17 50.2**	**-0.6**
comp=Z,730nm,1.4s							
MSVF	**Nonsavu**	**24.18**	**118**	*eP*	**P**	**16 17 54.4**	**+0.3**
MSVF				pmax	pmax		
comp=Z,1μm,1.6s							
MSVF	**Nonsavu**	**24.18**	**118**	*eP*	**P**	**16 17 54.2**	**+0.2**
comp=Z,1μm,1.6s							
SAUI	**Saumlaki**	**24.34**	**266**	P	**P**	**16 17 57.6**	**+2.1**
comp=Z,3μm,0.9s,comp=Z,24μm							
SAUI	**Saumlaki**	**24.34**	**266**	*eP*	**P**	**16 17 57.1**	**+1.6**
comp=Z,2μm,0.9s							
WB0	**Warramunga Arr**	**24.40**	**236**	P	**P**	**16 17 56.9**	**+0.8**
baz=24							
WRAB	**Tennant Creek**	**24.52**	**236**	*eP*	**P**	**16 17 57.8**	**+0.7**
WRAB				pmax	pmax		
comp=Z,270nm,0.9s							
WRAB	**Tennant Creek**	**24.52**	**236**	*eP*	**P**	**16 17 57.8**	**+0.7**
comp=Z,267nm,0.8s							
WB2	**Warramunga Arr**	**24.52**	**236**	*eP*	**P**	**16 17 58.0**	**+0.8**
WRA	**Warramunga Arr**	**24.53**	**236**	P	**P**	**16 17 58.1**	**+0.9**
comp=Z,279nm,0.9s,baz=62,slow=9.6,SNR=235							
WRA				PcP	**PcP**	**16 21 35.1**	**+0.5**
comp=Z,108nm,0.9s,baz=57,slow=2.1,SNR=17							
WRA				S	**S**	**16 22 19.4**	**+5.0**
comp=Z,33nm,1.3s,baz=58,slow=16,SNR=3.3							
WRA				ScP	**ScP**	**16 25 09.8**	**+0.9**
comp=Z,17nm,1.1s,baz=48,slow=1.9,SNR=6.7							
WRA				LR	LR	16 27 39.9	
comp=Z,10μm,18.6s,baz=60,slow=36							
WRA				PKiKP	**PKiKP**	**16 29 15.4**	**-1.4**
comp=Z,2.4nm,0.6s,baz=345,slow=0.8,SNR=11							
WRA	**Warramunga Arr**	**24.53**	**236**	P	**P**	**16 17 58.1**	**+0.9**
WRA						16 21 35.1	
WRA				S	**S**	**16 22 19.4**	**+5.0**
WRA				pmax	pmax		
comp=Z,283nm,0.9s							
WRA				pmax	pmax		
comp=Z,108nm,1.0s							
WRA				smax	smax		
comp=N,33nm,1.3s							
WRA				MLR	MLR		
comp=Z,10μm,18.6s							
MTN	**Manton Dam**	**25.02**	**255**	P	**P**	**16 18 02.4**	**+0.8**
baz=25,SNR=489							
MTN	**Manton Dam**	**25.02**	**255**	*eP*	**P**	**16 18 02.4**	**+0.8**
comp=Z,1μm,0.9s							
SWI	**Sorong**	**25.23**	**283**	P	**P**	**16 18 03.9**	**+0.3**
comp=Z,946nm,1.1s,comp=Z,8μm							
PALU	**Palau**	**25.59**	**303**	P	**P**	**16 18 08.0**	**+1.2**
baz=26,SNR=4.8							
BNDI	**Bandamaira**	**25.91**	**274**	P	**P**	**16 18 11.6**	**+1.9**
comp=Z,698nm,1.0s,comp=Z,13μm							
CMSA	**Cobar Meteorol**	**26.24**	**200**	P	**P**	**16 18 12.6**	**0.0**
baz=26,SNR=161							
MGCD	**Mangrove Creek**	**26.50**	**189**	P	**P**	**16 18 15.7**	**+0.8**
baz=27,SNR=32							
AS01	**Alice Springs**	**26.80**	**229**	*eP*	**P**	**16 18 17.3**	**-0.5**
AS31	**Alice Springs**	**26.83**	**229**	*eP*	**P**	**16 18 17.9**	**-0.2**
comp=Z,21nm,0.7s							
ASAR	**Alice Springs**	**26.83**	**229**	P	**P**	**16 18 18.0**	**-0.1**
comp=Z,86nm,0.9s,baz=61,slow=9.3,SNR=1276							
ASAR				PcP	**PcP**	**16 21 40.5**	**+0.8**
comp=Z,63nm,0.9s,baz=56,slow=3.1,SNR=16							
ASAR				ScP	**ScP**	**16 25 16.2**	**+0.6**
comp=Z,10nm,0.9s,baz=70,slow=3.4,SNR=5.8							
ASAR				LR	LR	16 28 40.2	
comp=Z,9μm,18.9s,baz=87,slow=36							
ASAR				PKiKP	**PKiKP**	**16 29 16.6**	**-1.5**
comp=Z,1.4nm,0.8s,baz=113,slow=1.2,SNR=4.3							
ASAR				P3KPbc		16 50 59.5	
comp=Z,0.6nm,0.8s,baz=229,slow=4.1,SNR=9.1							
MSAI	**Masohi**	**27.02**	**276**	P	**P**	**16 18 21.6**	**+1.8**
comp=Z,45nm,0.8s,comp=Z,598nm							
H11S3	**WAKE ISLAND Hy**	**27.45**	**23**	P	**P**	**16 18 25.8**	**+2.5**
H11S3				T	T	16 46 39.6	
baz=202,slow=75,SNR=300							
H11S2	**WAKE ISLAND Hy**	**27.45**	**23**	T	T	16 46 51.4	
baz=202,slow=75,SNR=2326							
H11S1	**WAKE ISLAND Hy**	**27.47**	**23**	T	T	16 46 57.0	
baz=202,slow=75,SNR=70							
KNRA	**Kununurra**	**27.90**	**250**	P	**P**	**16 18 28.5**	**+0.9**
baz=28							
YNG	**Young**	**28.08**	**193**	P	**P**	**16 18 29.8**	**+0.8**
baz=28,SNR=5.6							
STKA	**Stephens Creek**	**28.14**	**206**	P	**P**	**16 18 29.5**	**-0.1**
comp=Z,66nm,0.8s,baz=13,slow=8.8,SNR=55							
STKA				PcP	**PcP**	**16 21 42.6**	**-0.1**
comp=Z,75nm,0.9s,baz=291,slow=2.5,SNR=7.2							
STKA				ScP	**ScP**	**16 25 20.3**	**+1.0**
comp=Z,9.4nm,0.9s,baz=134,slow=6.3,SNR=3.0							
STKA				LR	LR	16 29 14.9	
comp=Z,12μm,20.7s,baz=24,slow=35							
STKA				P3KPbc		16 50 52.5	
comp=Z,2.2nm,0.9s,baz=169,slow=6.1,SNR=4.7							
STKA				P3KP		16 52 03.5	
comp=Z,1.4nm,0.8s,baz=306,slow=5.6,SNR=2.8							
STKA	**Stephens Creek**	**28.14**	**206**	P	**P**	**16 18 30.0**	**+0.4**
baz=28,SNR=22							
STKA	**Stephens Creek**	**28.14**	**206**	*eP*	**P**	**16 18 29.2**	**-0.4**
comp=Z,129nm,1.7s							
STKA				PcP	**PcP**	**16 21 42.6**	**-0.1**
STKA				ScP	**ScP**	**16 25 20.3**	**+1.0**
STKA				*e*		16 50 52.5	
STKA				PKKKP		16 52 03.5	
H11N1	**WAKE ISLAND Hy**	**28.64**	**22**	T	T	16 48 19.0	
baz=203,slow=76,SNR=204							
H11N3	**WAKE ISLAND Hy**	**28.65**	**22**	P	P	16 18 39.0	+5.0
H11N3				T	T	16 48 25.8	
baz=203,slow=76,SNR=191							
H11N2	**WAKE ISLAND Hy**	**28.65**	**22**	T	T	16 48 19.5	
baz=203,slow=76,SNR=28							
NLAI	**Namlea**	**28.85**	**276**	P	**P**	**16 18 37.8**	**+1.7**
comp=Z,210nm,0.6s,comp=Z,2μm							
CNB	**Canberra Magne**	**28.86**	**191**	P	**P**	**16 18 36.9**	**+0.9**
baz=29,SNR=49							
CAN	**Canberra**	**28.94**	**192**	P	**P**	**16 18 36.8**	**+0.1**
baz=29							
CAN	**Canberra**	**28.94**	**192**	*eP*	**P**	**16 18 37.2**	**+0.5**
CAN				pmax	pmax		
comp=Z,180nm,1.1s							
CAN	**Canberra**	**28.94**	**192**	*eP*	**P**	**16 18 37.2**	**+0.5**
comp=Z,175nm,1.1s							
LBMI	**Labuha**	**28.94**	**281**	P	**P**	**16 18 39.2**	**+2.3**
comp=Z,1μm,1.7s,comp=Z,

SNR=5.8
RAO Raoul Island 33.24 135 P P 16 19 14.0 -0.6
comp=Z,242nm,0.3s,baz=190,slow=1.8,SNR=5.7
RAO Raoul Island 33.24 135 eP P 16 19 14.4 -0.2
RAO pmax pmax
comp=Z,1μm,1.1s
RAO Raoul Island 33.24 135 eP P 16 19 13.9 -0.6
comp=Z,1μm,1.1s
MMRI Maumere 33.32 265 P P 16 19 15.6 +0.1
comp=Z,797nm,1.2s,comp=Z,8μm
MMRI Maumere 33.32 265 eP P 16 19 14.8 -0.7
MMRI epP pP 16 19 28.8 -0.6
LUWI Luwuk 33.48 279 P P 16 19 18.4 +1.5
LUWI Luwuk 33.48 279 eP P 16 19 17.6 +0.7
LUWI epP pP 16 19 30.6 -0.1
BUKP Musuan 34.03 295 eP P 16 19 22.3 +0.6
CTBH Cotabato--PC H 34.50 293 eP P 16 19 25.9 +0.2
CGP Cagayan de Oro 34.60 296⇓eP P 16 19 29.2 +2.6
PAGZ Pagadian 35.53 294 eP P 16 19 35.5 +0.9
HIZ Hauiti 35.84 154 eP P 16 19 37.7 +0.7
comp=Z,579nm,1.6s
HIZ Hauiti 35.84 154 PN P 16 19 35.1 -1.8
HIZ PcP PcP 16 22 03.8 +0.3
KAPI Kappang 35.93 271 P P 16 19 39.0 +1.0
comp=Z,300nm,0.8s,baz=109,slow=3.7,SNR=195
KAPI PcP PcP 16 22 04.9 +0.6
comp=Z,69nm,0.9s,baz=166,slow=2.8,SNR=5.2
KAPI Kappang 35.93 271 eP P 16 19 38.8 +0.7
comp=Z,467nm,1.0s
KAPI epP pP 16 19 51.5 -0.5
KAPI PcP PcP 16 22 04.9 +0.6
MOO Moorlands 36.17 191 P P 16 19 41.2 +1.5
baz=36,SNR=13
IPIL Ipil 36.25 293 eP P 16 19 41.2 +0.4
CBIJ Chichi jima 36.32 339 P P 16 19 40.9 -0.3
CBIJ PcP PcP 16 22 05.8 +0.7
JCJ Chichijima 36.32 339 P P 16 19 40.9 -0.3
comp=Z,48nm,0.6s,baz=298,slow=6.6,SNR=4.4
JCJ PcP PcP 16 22 05.8 +0.7
HAZ Te Kaha 36.58 150 PN P 16 19 43.2 -0.1
TAU Tasmania Unive 36.60 191 eP P 16 19 44.4 +1.0
TAU e 16 22 06.9
TAU pmax pmax
comp=Z,300nm,0.9s
TAU Tasmania Unive 36.60 191 eP P 16 19 44.4 +1.0
comp=Z,302nm,0.9s
TAU ePcP PcP 16 22 06.9 +1.2
URZ Urewera 36.65 151 P P 16 19 44.2 +0.3
comp=Z,130nm,1.1s,baz=337,slow=0.1,SNR=25
URZ PcP PcP 16 22 05.0 -1.0
comp=Z,17nm,0.7s,baz=132,slow=6.2,SNR=2.5
URZ Urewera 36.65 151 eP P 16 19 44.7 +0.8
comp=Z,230nm,1.2s
URZ PcP PcP 16 22 05.0 -1.0
URZ Urewera 36.65 151 PN P 16 19 44.4 +0.5
URZ PcP PcP 16 22 04.6 -1.3
MWZ Matawai 36.91 151 PN P 16 19 47.5 +1.4
PUZ Puketiti 37.06 150 PN P 16 19 47.4 0.0
BKZ Black Stump Fm 37.10 153 eP P 16 19 48.0 +0.2
comp=Z,99nm,0.6s
BKZ Black Stump Fm 37.10 153 PN P 16 19 47.9 +0.2
RIGZ Rimuhau 37.32 151 PN P 16 19 50.0 +0.4
KNZ Kokohu 37.53 152 PN P 16 19 51.2 0.0
MBWA Marble Bar 37.65 244 P P 16 19 52.7 +0.2
SNR=14
MBWA Marble Bar 37.65 244 eP P 16 19 52.4 -0.2
comp=Z,332nm,0.8s
THZ Tophouse 37.85 159 eP P 16 19 54.0 0.0
comp=Z,323nm,0.8s
THZ Tophouse 37.85 159 PN P 16 19 53.1 -1.0
MRZ Mangatainoka R 37.93 155 PN P 16 19 54.3 -0.4
TUWZ Tuamarina 37.94 158 ePN P 16 19 55.0 +0.3
INZ Inchbonnie 38.22 161 PN P 16 19 56.8 -0.3
BFZ Birch Farm 38.23 155 eP P 16 19 57.3 0.0
comp=Z,258nm,1.4s
WVZ Waitaha Valley 38.31 162 ePN P 16 19 57.8 -0.1
MTW Mount Morrison 38.32 156 ePN P 16 19 57.6 -0.4
FOZ Fox Glacier 38.46 164 eP P 16 19 58.8 -0.3
comp=Z,269nm,1.2s
FOZ ePcP PcP 16 22 11.6 +0.3
LTZ Lake Taylor 38.53 160 eP P 16 19 59.9 +0.2
comp=Z,389nm,1.1s
LTZ Lake Taylor 38.53 160 PN P 16 19 60.0 +0.2
KHZ Kahutara 38.65 159 eP P 16 19 59.9 -0.7
comp=Z,326nm,0.8s
OXZ Oxford 38.95 161 eP P 16 20 02.6 -0.6
comp=Z,413nm,1.0s
OXZ ePcP PcP 16 22 12.9 0.0
OXZ Oxford 38.95 161 PN P 16 20 02.8 -0.4
RPZ Rata Peaks 38.99 162 P P 16 20 03.7 +0.1
comp=Z,332nm,0.9s,baz=48,slow=1.2,SNR=101
RPZ PcP PcP 16 22 12.4 -0.7
comp=Z,22nm,0.7s,baz=249,slow=3.8,SNR=3.7
RPZ LR LR 16 35 48.2
comp=Z,5μm,18.4s,baz=314,slow=36
RPZ Rata Peaks 38.99 162 eP P 16 20 03.7 +0.1
comp=Z,425nm,0.9s
RPZ PcP PcP 16 22 12.4 -0.7
RPZ Rata Peaks 38.99 162 ePN P 16 20 03.6 0.0
MSZ Milford Sound 39.04 166 PN P 16 20 05.4 +1.4
MYLDM Lahad Datu 39.15 287 eP P 16 20 07.3 +2.0
comp=Z,742nm,1.2s
LBZ Lake Benmore 39.35 164 eP P 16 20 05.6 -1.0
comp=Z,196nm,1.2s
LBZ Lake Benmore 39.35 164 ePN P 16 20 06.0 -0.6
CRLZ Canterbury Las 39.36 161 eP P 16 20 06.5 -0.1
comp=Z,779nm,1.1s
CRLZ Canterbury Las 39.36 161 PN P 16 20 06.5 -0.1
WKZ Wanaka 39.45 165 eP P 16 20 07.0 -0.5
comp=Z,100nm,1.0s
MQZ McQueen's Vall 39.49 161 eP P 16 20 07.3 -0.4
comp=Z,1μm,1.7s
MQZ McQueen's Vall 39.49 161 ePN P 16 20 07.0 -0.7
DCZ Deep Cove 39.62 167 eP P 16 20 08.4 -0.3
comp=Z,104nm,1.1s
DCZ ePcP PcP 16 22 15.0 +0.1
MLZ Mavora Lakes 39.74 166 eP P 16 20 09.6 -0.2
comp=Z,390nm,1.1s
MLZ Mavora Lakes 39.74 166 PN P 16 20 09.8 0.0
KMBL Kambalda 39.95 228 P P 16 20 12.1 +0.4
baz=40,SNR=36
KMBL P pP 16 20 12.6 -13
baz=40,SNR=8.2
ODZ Otahua Downs 40.09 164 eP P 16 20 12.0 -0.7
comp=Z,240nm,1.4s
ODZ Otahua Downs 40.09 164 PN P 16 20 12.2 -0.5
PYZ Puysegur Point 40.19 168 eP P 16 20 10.8 -2.7
comp=Z,120nm,1.3s
PYZ ePcP PcP 16 22 17.7 +0.9
WHZ Wether Hill Ro 40.20 167 eP P 16 20 12.1 -1.4
comp=Z,73nm,1.0s
WHZ Wether Hill Ro 40.20 167 PN P 16 20 12.8 -0.7
SDKM Sandakan 40.53 287 ⇑P P 16 20 16.4 -0.4
JAGI Jajag, Banyuwa 41.32 265 eP P 16 20 20.9 -2.4
comp=Z,402nm,1.2s
JAGI ePcP PcP 16 22 20.4 -0.8
KKM Kota Kinabalu 41.58 287 eP P 16 20 25.7 +0.2
comp=Z,472nm,0.8s
JHJ Hachijo jima 2 42.66 340 LR LR 16 37 45.7
comp=Z,1μm,19.4s,baz=74,slow=35
JOW Kunigami 42.90 323 eP P 16 20 36.7 +0.8
comp=Z,45nm,0.9s
GIRL Giralia 42.96 244 P P 16 20 37.7 +1.2
baz=43,SNR=13
KLBR Kellerberrin 43.16 230 P P 16 20 37.7 -0.4
baz=43,SNR=220
MORW Morawa 43.46 235 P P 16 20 40.4 -0.1
baz=44,SNR=67
MIDW Midway 43.48 35 epP pP 16 20 57.2 +2.4
BLDU Ballidu 43.55 232 P P 16 20 41.0 -0.1
baz=44,SNR=47
NWAO Narrogin (SRO) 44.15 229 P P 16 20 46.1 +0.1
comp=Z,202nm,0.9s,baz=268,slow=0.0,SNR=67
NWAO Narrogin (SRO) 44.15 229 P P 16 20 46.2 +0.2
baz=44,SNR=51
SBUM Sibu 44.51 281 eP P 16 20 50.3 +1.2
comp=Z,386nm,1.4s
YOJ Yonaguni jima 44.69 315 eP P 16 20 50.9 +0.6
YOJ pmax pmax
comp=Z,430nm,1.5s
YOJ Yonaguni jima 44.69 315 eP P 16 20 50.9 +0.6
comp=Z,426nm,1.5s
UGM Wanagama 44.92 266 eP P 16 20 51.3 -1.2
comp=Z,209nm,0.8s
TWG Pinlang 45.07 312 eP P 16 20 52.6 -0.8
comp=Z,248nm,1.1s
RAR Rarotonga 45.17 113 LR LR 16 36 45.1
comp=Z,1μm,21.0s,baz=287,slow=32
RAR Rarotonga 45.17 113 eP P 16 20 54.1 -0.1
RAR pmax pmax
comp=Z,200nm,1.0s
RAR Rarotonga 45.17 113 eP P 16 20 54.1 -0.1
comp=Z,196nm,0.9s
YULB Yu-li 45.25 313 eP P 16 20 55.1 +0.3
comp=Z,100nm,1.2s
NACB Ninganchiao 45.51 314 eP P 16 20 57.4 +0.5
comp=Z,170nm,1.1s
SSLB Suanglung 45.74 313 eP P 16 20 58.5 -0.2
comp=Z,59nm,0.8s
YHNB Yeheng 45.98 314 eP P 16 21 00.7 +0.1
comp=Z,438nm,1.7s
TATO Taipei 46.09 315 eP P 16 21 01.8 +0.4
comp=Z,112nm,1.0s
KSM Kuching 46.19 279 eP P 16 21 03.0 +0.5
comp=Z,396nm,0.7s
MJAR Matsushiro Arr 46.30 340 P P 16 21 02.9 0.0
comp=Z,43nm,0.9s,baz=167,slow=8.0,SNR=13
MJAR PcP PcP 16 22 37.7 +0.1
comp=Z,28nm,0.8s,baz=159,slow=5.1,SNR=5.9
MJAR LR LR 16 41 06.7
comp=Z,303nm,19.0s,baz=165,slow=37
MAJO Matsushiro 46.30 340c iP P 16 21 02.8 -0.1
MAJO pmax pmax
comp=Z,315nm,0.6s
MAJO Matsushiro 46.30 340 eP P 16 21 03.1 +0.2
MAJO epP pP 16 21 17.7 +0.5
MAT Matsushiro 46.30 340 P P 16 21 03.0 +0.1
MAT S S 16 27 44.2 -2.0
MJB9 Matsu-Tunnel 46.31 340 eP P 16 21 03.0 +0.1
MJB9 epP pP 16 21 17.8 +0.5
JNU Nakatsue 46.36 331 P P 16 21 03.8 +0.3
comp=Z,72nm,0.9s,baz=98,slow=4.1,SNR=19
JNU Nakatsue 46.36 331 eP P 16 21 04.0 +0.5
comp=Z,146nm,1.0s
H01W1 Cape Leeuwin H 47.32 228 P P 16 21 12.8 +2.1
baz=77,slow=8.0,SNR=30
H01W3 Cape Leeuwin H 47.33 228 P P 16 21 12.9 +2.2
baz=77,slow=8.0,SNR=25
H01W2 Cape Leeuwin H 47.34 228 P P 16 21 13.2 +2.3
baz=77,slow=8.0,SNR=36
XMAS Kiritimati 47.48 81 eP P 16 21 12.9 +0.4
comp=Z,169nm,1.1s
MCQ Macquarie Isla 47.49 178 eP P 16 21 12.4 +0.5
MCQ pmax pmax
comp=Z,370nm,1.1s
MCQ Macquarie Isla 47.49 178 eP P 16 21 12.4 +0.5
comp=Z,370nm,1.1s
LEM Lembang 47.85 267 LR LR 16 43 40.8
comp=Z,2μm,21.9s,slow=39
QZH Quanzhou 48.15 312⇑iP P 16 21 14.2 -3.3
QZH pP pP 16 21 27.1 -4.8
QZH sP sP 16 21 33.0 -5.2
QZH S S 16 28 04.1 -8.7
QZH pmax pmax
comp=Z,190nm,0.8s
QZH pmax pmax
comp=Z,1μm,5.6s
QZH LR LR
comp=Z,650nm,10.1s
QZH LR LR
comp=Z,2μm,21.2s
QZH LR LR
comp=Z,6μm,30.2s
XMIS Christmas Isla 49.68 262 eP P 16 21 29.5 0.0
comp=Z,299nm,1.1s
ERM Erimo 50.08 348 eP P 16 21 33.6 +1.7
ERM pmax pmax
comp=Z,13nm,0.5s
ERM Erimo 50.08 348 eP P 16 21 33.0 +1.1
comp=Z,67nm,1.0s
SSE Sheshan 50.28 321 P P 16 21 34.0 +0.3
SSE pP pP 16 21 47.3 -0.9
SSE PcP PcP 16 22 52.9 +0.9
SSE S S 16 28 41.7 -0.8
SSE sS sS 16 29 05.2 -1.7
SSE pmax pmax
comp=Z,17nm,0.7s
SSE pmax pmax
comp=Z,380nm,6.4s
SSE LR LR
comp=Z,910nm,20.9s
SSE LR LR
comp=Z,950nm,21.1s
SSE LR LR
comp=Z,1μm,21.9s
GZH Guangzhou 51.14 307⇑iP P 16 21 41.8 +1.5
GZH sP sP 16 21 59.6 -1.5
GZH S S 16 28 56.5 +1.8
GZH pmax pmax
comp=Z,1μm,5.3s
GZH LR LR
comp=Z,5μm,23.0s
KSRS Korea Array 51.28 331 P P 16 21 42.0 +0.9
comp=Z,70nm,1.0s,baz=150,slow=8.1,SNR=95
KSRS PcP PcP 16 22 57.3 +1.8
comp=Z,12nm,0.7s,baz=143,slow=4.6,SNR=7.2
KSRS ScP ScP 16 26 48.3 +0.7
comp=Z,1.8nm,1.1s,baz=140,slow=42,SNR=4.6
KSRS LR LR 16 43 25.4
comp=Z,542nm,19.6s,baz=141,slow=36
KSRS PKPPKP P'P'df 16 52 23.2 +2.8
comp=Z,1.5nm,0.9s,baz=271,slow=2.5,SNR=3.5
KS15 Wonju Array Si 51.29 331 eP P 16 21 42.4 +1.2
KSAR Wonju Array Be 51.29 331 P P 16 21 42.0 +0.9
KSAR 16 22 57.3
KSAR Wonju Array Be 51.29 331 P P 16 21 42.0 +0.9
KSAR PcP PcP 16 22 57.3 +1.8
KSAR ScP ScP 16 26 48.3 +0.6
KSAR P'P' 16 52 23.2
KS01 Wonju Array Si 51.31 331 eP P 16 21 41.6 +0.3
YUK Yuzh-Kuril'sk 51.53 351c iP P 16 21 43.0 +0.2
YUK i *PP pP 16 21 57.7 +0.4
YUK i 16 22 53.3
YUK i S S 16 29 01.3 +2.0
YUK i *SS sS 16 29 24.0 +0.2
YUK pmax pmax
comp=Z,1μm,1.7s
YUK pmax pmax
comp=E,847nm,1.0s
YUK pmax pmax
comp=Z,757nm,1.0s
YUK pmax pmax
comp=N,389nm,0.9s
INCN Inchon 51.92 330 P P 16 21 47.2 +1.2
SNR=7.0
INCN Inchon 51.92 330 P P 16 21 47.2 +1.2
SNR=7.0
INCN Inchon 51.92 330 eP P 16 21 46.9 +1.0
comp=N,200nm,1.2s
QIZ Qiongzhong 52.14 300 P P 16 21 49.1 +1.2
QIZ pP pP 16 22 02.4 0.0
QIZ S S 16 29 08.2 -0.4
QIZ SS SS 16 32 46.7 -0.1
QIZ pmax pmax
comp=N,63nm,0.7s
QIZ LR LR
comp=N,390nm,27.7s
QIZ LR LR
comp=N,550nm,27.1s
ASAJ Asahikawa 52.21 348 P P 16 21 50.2 +2.4
comp=N,84nm,0.7s,baz=215,slow=9.1,SNR=32
ASAJ Asahikawa 52.21 348 eP P 16 21 49.8 +1.9
comp=N,102nm,0.8s
NJ2 Nanjing 52.40 320 eP P 16 21 51.0 +1.5
NJ2 pP pP 16 22 03.4 -0.7
NJ2 S S 16 29 13.1 +1.4
NJ2 sS sS 16 29 34.9 -1.3
NJ2 pmax pmax
comp=N,46nm,1.1s
NJ2 pmax pmax
comp=N,580nm,6.0s
NJ2 LR LR
comp=N,2μm,22.2s
NJ2 LR LR
comp=N,1μm,24.9s
NJ2 LR LR
comp=N,2μm,23.8s
KUR Kuril'sk 52.42 353 P P 16 21 48.5 -0.9
KUR S S 16 29 07.6 -3.9
KUR MLR MLR
comp=Z,1μm,17.0s
MYKOM Kota Tinggi 52.59 278 eP P 16 21 51.2 0.0
comp=Z,186nm,0.9s
OPA Opana 53.45 57 eP P 16 21 58.9 +1.4
OPA pmax pmax
comp=Z,170nm,1.0s
OPA Opana 53.45 57 eP P 16 21 58.0 +0.5
comp=Z,173nm,1.0s
MSHR Mys Shultsa 54.17 338 eP P 16 22 02.0 -0.3
PPT Papeete 54.22 107 P P 16 22 04.6 +1.4
comp=Z,259nm,1.0s,baz=297,slow=1.4,SNR=17
PPT LR LR 16 40 32.2
comp=Z,1μm,21.3s,baz=277,slow=31
PPT Papeete 54.22 107 eP P 16 22 04.8 +1.6
PPT Papeete 54.22 107 eP P 16 22 04.1 +1.0
PPT2 Papeete2 54.22 107 eP P 16 22 04.7 +1.4
comp=Z,385nm,1.2s
PPT2 eS S 16 29 41.2 +4.1
comp=Z,1μm,26.2s
PPT2 eLQ LQ 16 35 44.6
comp=Z,3μm,25.5s
PPT2 eLR LR 16 38 01.7
comp=Z,3μm,22.5s,baz=283
PAE Paea 54.22 107 eP P 16 22 04.4 +1.2
comp=Z,121nm,1.2s
VLA Vladivostok 54.37 339⇓iP P 16 22 01.7 -2.0
VLA e*PP pP 16 22 17.7 -0.7
VLA i *SP sP 16 22 24.9 +0.3
VLA i 16 23 04.7
VLA i 16 24 04.4
VLA i S S 16 29 35.4 -2.5
VLA pmax pmax
comp=Z,215nm,1.3s
TIAR Tiarei 54.44 107 eP P 16 22 06.1 +1.3
comp=Z,223nm,1.1s
WHN Wuhan 54.48 315 ⇑P P 16 22 05.7 +0.9
WHN pP pP 16 22 18.8 -0.6
WHN S S 16 29 38.1 -1.8
WHN pmax pmax
comp=Z,1μm,5.2s
WHN LR LR
comp=Z,1μm,11.7s
WHN LR LR
comp=Z,2μm,18.0s
WHN LR LR
comp=Z,6μm,23.9s
TVO Taravao 54.54 107 eP P 16 22 07.0 +1.4
comp=Z,179nm,1.1s
POHA Pohakuloa 54.72 60 eP P 16 22 07.8 +0.8
comp=Z,1μm,1.3s
YSS Yuzh-Sakhalins 54.90 349⇑iP P 16 22 09.1 +1.6
YSS e*PP pP 16 22 23.1 +0.9
YSS e*SP sP 16 22 30.8 +2.4
YSS e 16 23 09.0
YSS e 16 24 16.0
YSS eS S 16 29 42.5 -2.5
YSS pmax pmax
comp=N,70nm,0.9s
YSS pmax pmax
comp=Z,150nm,0.9s
YSS MLR MLR
comp=Z,2μm,19.0s
YSS Yuzh-Sakhalins 54.90 349 eP P 16 22 08.8 +1.3
comp=Z,188nm,1.0s
BKNI Bangkinang 55.13 275 eP P 16 22 09.3 -0.5
comp=Z,364nm,1.0s
USRK Ussuriysk Ar. 55.27 339 P P 16 22 11.7 +1.5
comp=Z,187nm,1.1s,baz=149,slow=7.6,SNR=70
USRK LR LR 16 43 21.1
comp=Z,688nm,21.4s,baz=138,slow=33
USRK PKP2ab 16 52 43.7
comp=Z,5.8nm,1.1s,baz=34,slow=0.7,SNR=4.5
DL2 Dalian 55.56 328 P P 16 22 13.4 +1.0
DL2 pP pP 16 22 28.4 +1.3
DL2 S S 16 29 57.2 +3.1
DL2 pmax pmax
comp=Z,92nm,1.3s
DL2 pmax pmax
comp=Z,480nm,5.7s
DL2 LR LR
comp=Z,1μm,25.5s
DL2 LR LR
comp=Z,1μm,24.0s
DL2 LR LR
comp=Z,3μm,23.5s
MEH Mehetia 55.68 107 eP P 16 22 14.7 +1.0
comp=Z,178nm,1.1s
PMOR Pomariorio Ree 55.70 103 eP P 16 22 15.4 +1.5
IPM Ipoh 55.86 280 eP P 16 22 14.9 -0.2
comp=Z,277nm,0.9s
VAH Vaihoa 55.97 104 eP P 16 22 16.9 +1.1
comp=Z,509nm,1.3s
PANO Nakornpanom 55.99 296 P P 16 22 16.8 +0.9
comp=Z,223nm,0.9s,comp=Z,3μm
TIA Tai'an 56.22 323 ⇑P P 16 22 17.3 0.0
TIA S S 16 30 01.7 -1.4
TIA pmax pmax
comp=Z,40nm,1.3s
TIA pmax pmax
comp=Z,620nm,5.3s
TIA LR LR
comp=Z,1μm,20.6s
TIA LR LR
comp=Z,600nm,18.4s
TIA LR LR
comp=Z,2μm,20.7s
KULM Kulim 56.39 281 eP P 16 22 18.5 -0.3
comp=Z,396nm,0.9s
MDJ Mudanjiang 56.50 338 P P 16 22 19.8 +0.8
MDJ sP sP 16 22 39.4 -0.6
MDJ S S 16 30 08.4 +2.0
MDJ sS sS 16 30 32.2 +1.0
MDJ pmax pmax
comp=Z,84nm,1.3s
MDJ pmax pmax
comp=Z,520nm,3.4s
MDJ LR LR
comp=Z,670nm,28.2s
MDJ LR LR
comp=Z,480nm,26.1s
MDJ LR LR
comp=Z,1μm,27.1s
MDJ Mudanjiang 56.50 338 eP P 16 22 20.0 +1.0
comp=Z,122nm,1.1s
CHBT CHBT 56.65 290 P P 16 22 21.0 +0.4
comp=Z,462nm,1.0s,comp=Z,6μm
SNY Shenyang 56.79 332 ⇑P P 16 22 21.6 +0.5
SNY sP sP 16 22 44.2 +2.2
SNY S S 16 30 10.0 -0.3
SNY pmax pmax
comp=Z,38nm,1.1s
SNY pmax pmax
comp=Z,680nm,6.7s
SNY LR LR
comp=Z,1μm,19.8s
SNY LR LR
comp=Z,1μm,15.7s
SNY LR LR
comp=Z,3μm,35.1s
SKLT Songkhla 56.83 283 P P 16 22 22.1 +0.2
comp=Z,394nm,1.0s,comp=Z,4μm
SRAK Srakaew 57.29 291 P P 16 22 21.7 -3.5
comp=Z,274nm,0.8s,comp=Z,2μm
KHON Khomkaen 57.32 294 P P 16 22 26.2 +0.9
comp=Z,114nm,0.8s,comp=Z,914nm
SKR Severo-Kuril's 57.39 0 eP P 16 22 20.5 -4.7
SKR eS S 16 30 16.0 -1.8
SKR eSSS SSS 16 36 19.0
SKR pmax pmax
comp=Z,180nm,1.0s
SKR MLR MLR
comp=E,2μm,20.0s
SKR MLR MLR
comp=Z,2μm,20.0s
CN2 Changchun 57.50 334 eP P 16 22 26.8 +0.7
CN2 eS S 16 30 21.4 +1.8
CN2 pmax pmax
comp=Z,50nm,1.3s
CN2 pmax pmax
comp=Z,200nm,4.0s
CN2 LR LR
comp=Z,1μm,21.0s
CN2 LR LR
comp=Z,1μm,21.0s
CN2 LR LR
comp=Z,900nm,22.0s
PSI Prapat 57.62 278 eP P 16 22 26.2 -1.5

PSI pmax pmax
comp=Z,58nm,0.9s
PSI Prapat 57.62 278 *e*P **P 16 22 25.9 -1.7**
comp=Z,58nm,0.9s
NONG Nongkai 57.62 296 P **P 16 22 27.9 +0.5**
comp=Z,309nm,1.0s,comp=Z,4µm
ENH Enshi 57.81 312 *e*P **P 16 22 28.2 -0.4**
comp=Z,90nm,0.8s
TRTT Trang 57.87 284 P **P 16 22 29.0 -0.3**
comp=Z,272nm,1.1s,comp=Z,3µm
CHAI Chaiyaphum 57.93 294 P **P 16 22 29.9 +0.2**
comp=Z,87nm,0.7s,comp=Z,674nm
NAYO Nakonayok 58.05 292 P **P 16 22 31.5 +1.0**
comp=Z,370nm,1.2s,comp=Z,4µm
PATY Pattaya 58.06 290 P **P 16 22 31.5 +0.9**
comp=Z,187nm,0.8s,comp=Z,3µm
GYA Guiyang 58.08 307⇑*i*P **P 16 22 31.1 +0.4**
GYA pP pP 16 22 47.8 +2.3
GYA sP sP 16 22 55.2 +3.5
GYA PP **PP 16 24 44.0 +4.0**
GYA ScP **ScP 16 27 17.6 -0.3**
GYA S **S 16 30 27.4 -0.7**
GYA sS sS 16 30 54.8 +1.8
GYA SS **SS 16 34 22.2 +1.8**
GYA pmax pmax
comp=Z,70nm,0.6s
GYA pmax pmax
comp=Z,190nm,6.2s
GYA LR LR
comp=Z,7µm,20.8s
GYA LR LR
comp=Z,5µm,21.2s
GYA LR LR
comp=Z,7µm,21.0s
HABR Khabarovsk 58.12 344 *e*P **P 16 22 28.7 -1.7**
HABR *e**PP **pP 16 22 44.5 -0.7**
HABR *e**SP **sP 16 22 51.5 +0.1**
HABR *e* 16 23 19.8
HABR *e* 16 24 37.6
HABR *e*S **S 16 30 25.5 -2.1**
HABR *e**SS **sS 16 30 52.9 +0.5**
HABR 16 32 13.4
HABR *e*SS **SS 16 34 18.8 -1.2**
HABR pmax pmax
comp=N,39nm,1.3s
HABR pmax pmax
comp=E,20nm,1.3s
HABR pmax pmax
comp=Z,153nm,1.3s
HABR pmax pmax
comp=Z,1µm,3.7s
HABR MLR MLR
comp=Z,709nm,19.0s
COCO West Island 58.32 260 *i* P **P 16 22 34.5 +2.1**
COCO West Island 58.32 260 *e*P **P 16 22 33.1 +0.7**
comp=Z,664nm,0.6s
TYV Tymovskoe 58.68 350 *e*P **P 16 22 36.2 +1.9**
TYV *e*S **S 16 30 39.0 +4.2**
TYV pmax pmax
comp=E,118nm,1.4s
TYV pmax pmax
comp=Z,24nm,0.8s
TYV pmax pmax
comp=Z,2µm,6.0s
TYV smax smax
comp=N,2µm,10.0s
GSI Gunungsitoli 58.70 276 *e*P **P 16 22 33.8 -1.3**
comp=N,347nm,0.9s
GSI *e*pP **pP 16 22 47.2 -2.7**
SURT Suratani 58.99 285 P **P 16 22 37.1 0.0**
comp=N,177nm,1.0s,comp=N,2µm
PBKT Sadao Pong 59.07 294 P **P 16 22 38.5 +0.9**
comp=N,207nm,0.8s,comp=N,3µm
LOEI Loei 59.11 295 P **P 16 22 36.1 -1.8**
comp=N,260nm,0.9s,comp=N,4µm
PKDT Phuket 59.19 283 P **P 16 22 38.4 -0.1**
comp=N,604nm,0.8s,comp=N,5µm
PHET Kaeng Krachan 59.21 289 P **P 16 22 39.8 +1.2**
comp=N,331nm,0.8s,comp=N,3µm
BJT Baijiatuau 59.33 325 *e*P **P 16 22 39.6 +0.6**
BJT pmax pmax
comp=Z,206nm,1.8s
BJT Baijiatuau 59.33 325 *e*P **P 16 22 39.6 +0.6**
comp=Z,206nm,1.8s
BJI Beijing 59.34 325 P **P 16 22 39.6 +0.6**
BJI sP **sP 16 22 59.8 -0.2**
BJI S **S 16 30 43.1 -0.6**
BJI sS **sS 16 31 11.0 +2.3**
BJI pmax pmax
comp=Z,35nm,1.4s
BJI pmax pmax
comp=Z,690nm,6.2s
BJI LR LR
comp=Z,850nm,19.2s
BJI LR LR
comp=Z,1µm,21.1s
BJI LR LR
comp=Z,2µm,29.5s
KLR Kul'dur 59.77 342 P **P 16 22 43.2 +1.4**
comp=Z,58nm,1.1s,baz=149,slow=5.1,SNR=55
KLR PKPPKP **P'P'df 16 52 10.8 +3.5**
comp=Z,8.5nm,0.9s,baz=307,slow=4.1,SNR=5.4
PET Petropavlovsk 59.78 2 *e*P **P 16 22 42.4 +0.7**
PET *e**PP **pP 16 22 57.9 +1.3**
PET *e**SP **sP 16 23 02.9 +0.1**
PET *e*S **S 16 30 51.3 +2.4**
PET *e*SS **SS 16 34 47.9 +2.0**
PET pmax pmax
comp=Z,86nm,0.8s
PET pmax pmax
comp=Z,400nm,8.2s
PET pmax pmax
comp=Z,600nm,7.2s
PET Petropavlovsk 59.78 2 *e*P **P 16 22 42.5 +0.7**
PET epP **pP 16 22 59.0 +2.3**
PET ⇑*e* 16 52 16.5
UTTA Uttaradit 59.83 295 P **P 16 22 43.7 +0.9**
comp=Z,81nm,1.2s,comp=Z,676nm
PEA0 Petropavlovsk- 59.84 1 *e*P **P 16 22 43.4 +1.2**
PEA0 ⇑*e* 16 52 16.4
PEA0B Petropavlovsk- 59.84 1 *e*P **P 16 22 43.4 +1.2**
comp=Z,304nm,1.0s
PETK Petropavlovsk- 59.84 1 P **P 16 22 43.7 +1.5**
comp=Z,70nm,0.8s,baz=157,slow=7.3,SNR=71
PETK pP **pP 16 22 58.7 +1.7**
comp=Z,114nm,1.0s,baz=142,slow=7.5,SNR=14
PETK LR LR 16 44 50.4
comp=Z,2µm,21.7s,baz=181,slow=32
PETK PKP2bc 16 52 17.0
comp=Z,21nm,0.9s,baz=40,slow=2.3,SNR=15
LHMI Lhok Sumawe 59.99 280 *e*P **P 16 22 42.9 -1.1**
LHMI *e*pP **pP 16 22 57.7 -1.2**
NANT Nan 60.05 296 P **P 16 22 45.1 +0.8**
comp=Z,126nm,1.2s,comp=Z,1µm
TIY Taiyuan 60.07 321 *e*P **P 16 22 44.4 +0.2**
TIY pP **pP 16 22 59.9 +0.8**
TIY sP **sP 16 23 08.0 +2.8**
TIY PP **PP 16 25 03.2 +5.9**
TIY S **S 16 30 52.3 -1.1**
TIY sS **sS 16 31 17.3 -1.0**
TIY pmax pmax
comp=Z,410nm,5.7s
TIY LR LR
comp=Z,180nm,6.2s
TIY LR LR
comp=Z,440nm,13.9s
TIY LR LR
comp=Z,1µm,19.9s
SRDT SRDT 60.09 291 P **P 16 22 45.9 +1.2**
comp=Z,2µm,1.4s,comp=Z,16µm
XAN Xi'an 60.24 316 P **P 16 22 45.3 -0.1**
XAN S **S 16 30 51.8 -3.9**
XAN SS **SS 16 34 54.2 +0.2**
XAN pmax pmax
comp=Z,55nm,1.2s
XAN pmax pmax
comp=Z,420nm,12.3s
XAN LR LR
comp=Z,810nm,21.5s
XAN LR LR
comp=Z,1µm,23.3s
XAN LR LR
comp=Z,2µm,23.3s
SUKH Sukhothai 60.58 294 P **P 16 22 49.0 +1.1**
comp=Z,82nm,0.8s,comp=Z,619nm
KMI Kunming 60.67 304 P **P 16 22 49.9 +1.1**

KMI pP pP 16 23 03.4 -0.2
KMI sP sP 16 23 09.1 -0.7
KMI PcP **PcP 16 23 34.1 +1.5**
KMI PP **PP 16 25 07.9 +4.8**
KMI S **S 16 31 02.2 +0.3**
KMI sS sS 16 31 24.5 -2.4
KMI pmax pmax
comp=Z,54nm,1.3s
KMI pmax pmax
comp=Z,480nm,6.8s
KMI LR LR
comp=Z,490nm,21.9s
KMI LR LR
comp=Z,1µm,24.9s
KMI LR LR
comp=Z,2µm,24.0s
KHLT Khaolaem Dam 60.72 291 P **P 16 22 50.1 +1.2**
comp=Z,214nm,1.3s,comp=Z,2µm
CRAI Chiangrai 60.83 298 P **P 16 22 50.4 +0.7**
comp=Z,1µm,0.9s,comp=Z,49µm
LAMP Lampang 60.91 296 P **P 16 22 51.5 +1.3**
comp=Z,98nm,1.1s,comp=Z,731nm
NKL Nikolayevsk 61.23 350 *i* P **P 16 22 53.0 +1.4**
NKL *e* 16 23 11.8
NKL *e* 16 31 09.0
NKL pmax pmax
comp=N,12nm,0.9s
NKL pmax pmax
comp=E,12nm,0.9s
NKL pmax pmax
comp=Z,38nm,0.9s
NKL pmax pmax
comp=Z,700nm,5.0s
CM01 Chiang Mai Arr 61.48 295 *e*P **P 16 22 55.1 +1.0**
CM01 *e*pP **pP 16 23 09.1 +0.1**
CM31 Chiang Mai Arr 61.51 295 *e*P **P 16 22 55.4 +1.1**
CM31 *e*pP **pP 16 23 09.3 +0.1**
CMAR Chiang Mai Arr 61.51 295 P **P 16 22 55.6 +1.4**
comp=Z,72nm,0.8s,baz=112,slow=4.9,SNR=368
CMAR pP **pP 16 23 09.3 +0.1**
comp=Z,180nm,1.1s,baz=109,slow=5.2,SNR=21
CMAR LR LR 16 45 58.3
comp=Z,538nm,21.9s,baz=108,slow=32
CMAR PKP2bc 16 52 12.1
comp=Z,2.4nm,1.0s,baz=274,slow=4.0,SNR=5.0
CMAR Chiang Mai Arr 61.51 295 P **P 16 22 55.7 +1.4**
CMAR *PP **pP 16 23 09.3 +0.1**
CMAR pmax pmax
comp=Z,77nm,0.8s
CMAR pmax pmax
comp=Z,181nm,1.1s
CMAR MLR MLR
comp=Z,538nm,21.9s
CMMT Chiang Mai 61.62 296 P **P 16 22 55.6 +0.6**
comp=Z,249nm,1.3s,comp=Z,3µm
CHTO Chiang Mai 61.62 296 P **P 16 22 55.6 +0.6**
comp=Z,450nm,1.7s,comp=Z,13µm
CHTO Chiang Mai 61.62 296 *e*P **P 16 22 56.0 +1.0**
CHTO pmax pmax
comp=Z,400nm,1.2s
CHTO Chiang Mai 61.62 296 P **P 16 22 56.2 +1.2**
SNR=83
CHTO Chiang Mai 61.62 296 P **P 16 22 56.2 +1.2**
SNR=83
CHTO Chiang Mai 61.62 296 *e*P **P 16 22 56.0 +1.0**
CHTO *e*pP **pP 16 23 09.5 -0.4**
MHMT Maesarieng 62.33 295 P **P 16 23 00.8 +1.0**
comp=Z,75nm,1.2s
CD2 Chengdu 62.41 310 P **P 16 23 00.6 +0.4**
CD2 sP sP 16 23 23.1 +1.9
CD2 PP **PP 16 25 18.6 +0.5**
CD2 S **S 16 31 20.9 -2.4**
CD2 sS sS 16 31 51.5 +3.1
CD2 SS **SS 16 35 30.5 +2.4**
CD2 pmax pmax
comp=Z,180nm,0.6s
CD2 pmax pmax
comp=Z,660nm,8.4s
CD2 LR LR
comp=Z,2µm,25.2s
CD2 LR LR
comp=Z,2µm,25.2s
HHC Hu-ho-hao-te 62.54 323 *e*P **P 16 23 01.7 +0.8**
HHC pP pP 16 23 16.8 +0.9
HHC sP sP 16 23 24.6 +2.6
HHC S **S 16 31 23.6 -1.1**
HHC SS **SS 16 35 27.8 -2.1**
HHC pmax pmax
comp=Z,76nm,1.2s
HHC pmax pmax
comp=Z,630nm,7.3s
HHC LR LR
comp=Z,1µm,16.7s
HHC LR LR
comp=Z,1µm,16.7s
HHC LR LR
comp=Z,1µm,16.3s
CMBY CAMPBELL BAY 63.28 281 *e*P **P 16 23 05.8 -0.4**
BTO Baotou 63.32 322 *e*P **P 16 23 06.9 +0.8**
TAOE Nuku Hiva Isla 63.38 96 *e*P **P 16 23 08.2 +1.2**
comp=Z,270nm,1.0s
TAOE *e*S **S 16 31 40.2 +4.1**
comp=Z,2µm,30.1s
TAOE *e*LQ LQ 16 38 55.1
comp=Z,3µm,28.6s
TAOE *e*LR LR 16 42 19.8
comp=Z,2µm,22.5s,baz=276
TAOE Nuku Hiva Isla 63.38 96 *e*P **P 16 23 07.7 +0.7**
HIA Hailar 64.22 335 *e*P **P 16 23 12.9 +1.1**
HIA pmax pmax
comp=Z,124nm,1.0s
HIA Hailar 64.22 335 *e*P **P 16 23 12.9 +1.1**
comp=Z,124nm,1.0s
LZH Lanzhou 64.86 315 *e*P **P 16 23 17.8 +1.4**
LZH pP pP 16 23 31.8 +0.4
LZH sP sP 16 23 38.2 +0.7
LZH PP **PP 16 25 41.0 +1.3**
LZH *e*S **S 16 31 53.4 -0.4**
LZH sS sS 16 32 20.4 +1.3
LZH SS **SS 16 36 07.0 +0.6**
LZH pmax pmax
comp=Z,140nm,1.4s
LZH pmax pmax
comp=Z,550nm,5.1s
LZH LR LR
comp=Z,2µm,14.9s
LZH LR LR
comp=Z,1µm,14.1s
LZH LR LR
comp=Z,2µm,15.2s
DGPR DIGLIPUR 65.59 288 *e*P **P 16 23 19.0 -2.2**
DGPR IAmb IAmb 16 23 22.4
comp=Z,138nm,0.8s
MA2 Magadan 66.42 357 P **P 16 23 26.2 +0.5**
comp=Z,34nm,0.9s,baz=171,slow=6.8,SNR=21
MA2 pP **pP 16 23 42.6 +1.8**
comp=Z,47nm,0.9s,baz=185,slow=8.2,SNR=8.9
MA2 sP **sP 16 23 49.2 +2.3**
comp=Z,80nm,0.8s,baz=191,slow=6.9,SNR=11
MA2 LR LR 16 49 37.6
comp=Z,1µm,21.6s,baz=188,slow=33
MA2 PKP2bc 16 51 59.0
comp=Z,19nm,1.1s,baz=66,slow=2.9,SNR=8.7
NIKH Nikolski High 66.78 22 *e*P **P 16 23 28.3 +0.2**
NIKH *e*pP **pP 16 23 44.5 +1.4**
CASY Casey 66.90 198 *e*P **P 16 23 28.6 -0.2**
comp=Z,193nm,1.1s
RKT Rikitea 68.19 112 *e*P **P 16 23 37.9 +0.2**
comp=Z,343nm,1.0s
RKT *e*S **S 16 32 37.2 +2.8**
comp=Z,1µm,36.5s
RKT *e*LQ LQ 16 41 29.0
comp=Z,1µm,31.2s
RKT *e*LR LR 16 44 30.7
comp=Z,7µm,28.8s,baz=278
UNV Unalaska Valle 68.35 23 *e*P **P 16 23 37.5 -0.5**
UNV *e*pP **pP 16 23 53.0 -0.1**
AKUT Akutan 68.85 23 *e*P **P 16 23 40.5 -0.6**
comp=Z,158nm,1.2s
CIT Chita 68.93 334 *e*P **P 16 23 43.0 +1.3**
CIT pmax pmax
comp=Z,225nm,1.2s
GTA Gaotai 69.27 317⇑P **P 16 23 45.3 +1.1**
GTA pP pP 16 23 58.8 -0.6
GTA sP sP 16 24 03.8 -1.7
GTA S **S 16 32 45.3 -1.5**

GTA sS sS 16 33 08.0 -4.2
GTA SS **SS 16 37 14.1 -0.5**
GTA pmax pmax
comp=Z,37nm,1.2s
GTA pmax pmax
comp=Z,480nm,5.5s
GTA LR LR
comp=Z,640nm,18.5s
GTA LR LR
comp=Z,850nm,23.8s
GTA LR LR
comp=Z,2µm,24.7s
ULN Ulaanbaatar 69.40 327*ce*P **P 16 23 46.3 +1.4**
ULN pmax pmax
comp=Z,232nm,1.0s
ULN Ulaanbaatar 69.40 327 P **P 16 23 46.6 +1.7**
SNR=99
ULN Ulaanbaatar 69.40 327 P **P 16 23 46.6 +1.7**
SNR=99
ULN Ulaanbaatar 69.40 327 *e*P **P 16 23 46.5 +1.6**
comp=Z,212nm,1.0s
SEY Seymchan 69.72 358 P **P 16 23 47.3 +1.0**
comp=Z,42nm,1.0s,baz=167,slow=5.6,SNR=46
SEY pP **pP 16 24 03.5 +2.0**
comp=Z,38nm,1.1s,baz=171,slow=7.2,SNR=5.6
SEY PKP2bc 16 51 52.0
comp=Z,22nm,1.1s,baz=14,slow=2.1,SNR=24
SEY Seymchan 69.72 358*ce*P **P 16 23 47.0 +0.7**
SONM Songino Array 69.74 327 P **P 16 23 48.4 +1.5**
comp=Z,192nm,0.9s,baz=131,slow=5.7,SNR=496
SONM PKP2bc 16 51 43.8
comp=Z,1.3nm,1.0s,baz=263,slow=2.4,SNR=5.0
SONM LR LR 16 54 23.0
comp=Z,712nm,20.6s,baz=132,slow=36
SONA1 Songino Array 69.74 327 *e*P **P 16 23 48.0 +1.0**
SHL Shillong 69.98 300 *e*P **P 16 23 48.1 -0.9**
SHL IAmb IAmb 16 23 51.9
comp=Z,74nm,0.7s
SHL *i* x x 16 32 57.0
FALS False Pass 70.31 24 *e*P **P 16 23 49.7 -0.4**
comp=Z,605nm,1.8s
VNDA Vanda 70.61 179 P **P 16 23 52.2 +0.6**
comp=Z,62nm,1.0s,baz=335,slow=6.6,SNR=189
VNDA LR LR 16 49 16.3
comp=Z,2µm,21.3s,baz=7.0,slow=31
YAK Yakutsk 71.68 347 P **P 16 23 59.2 +0.9**
comp=Z,36nm,0.7s,baz=146,slow=3.1,SNR=34
YAK PKPPKP **P'P'df 16 51 47.8 +0.4**
comp=Z,8.0nm,0.7s,baz=287,slow=2.3,SNR=7.5
YAK LR LR 16 53 14.9
comp=Z,755nm,22.0s,baz=146,slow=34
YAK Yakutsk 71.68 347*c i*P **P 16 23 59.1 +0.9**
YAK *e* 16 24 16.1
YAK *e**PP **sP 16 24 20.2 +0.7**
YAK *e* 16 26 40.9
YAK *e*S **S 16 33 13.4 -0.3**
YAK *e**SS **sS 16 33 39.6 +0.3**
YAK *e* 16 33 57.5
YAK *e*SS **SS 16 37 55.2 +4.8**
YAK pmax pmax
comp=N,22nm,1.1s
YAK pmax pmax
comp=E,11nm,1.0s
YAK pmax pmax
comp=Z,62nm,0.9s
YAK pmax pmax
comp=Z,19nm,1.0s
YAK pmax pmax
comp=N,36nm,1.5s
YAK smax smax
comp=N,236nm,3.3s
YAK smax smax
comp=E,132nm,2.3s
YAK Yakutsk 71.68 347 *e*P **P 16 23 58.5 +0.3**
comp=E,73nm,0.9s
YAK *e*P'P'df **P'P'df 16 51 47.1 -0.3**
SDPT Sand Point 71.85 25 *e*P **P 16 23 58.7 -0.7**
comp=E,124nm,1.0s
LSA Lhasa 71.92 304 *e*P **P 16 24 01.3 +0.3**
LSA pmax pmax
comp=Z,65nm,0.9s
LSA Lhasa 71.92 304 *e*P **P 16 24 01.3 +0.3**
comp=Z,65nm,0.9s
ZAK Zakamensk 72.89 328 *e*P **P 16 24 06.2 +0.3**
ZAK pmax pmax
comp=Z,136nm,1.0s
MIR Mirnyy 73.05 202⇑*i*P **P 16 24 07.0 +0.6**
MIR *e*S **S 16 33 30.0 +0.7**
MIR *e*SS **SS 16 38 10.0 -0.9**
MIR pmax pmax
comp=Z,34nm,1.2s
MIR smax smax
comp=E,2µm,10.0s
CHGN Chignik 73.35 25 *e*P **P 16 24 08.5 +0.2**
CHGN *e*pP **PcP 16 24 24.0 -0.3**
TLY Talaya 73.44 329 P **P 16 24 10.1 +1.1**
comp=E,59nm,0.8s,baz=154,slow=4.3,SNR=52
TLY Talaya 73.44 329*c i*P **P 16 24 09.9 +0.9**
TLY *e* 16 24 25.7
TLY *e* 16 26 49.7
TLY *e*S **S 16 33 33.2 -1.1**
TLY *e* 16 34 16.9
TLY *e*SS **SS 16 38 16.9 -0.9**
TLY pmax pmax
comp=Z,115nm,1.0s
TLY MLR MLR
comp=Z,565nm,19.0s
TLY Talaya 73.44 329 *e*P **P 16 24 09.7 +0.7**
comp=Z,108nm,1.0s
IRK Irkutsk 73.45 330 *e*P **P 16 24 08.8 -0.2**
IRK pmax pmax
comp=Z,272nm,1.2s
GAMB Gambell 74.66 14 *e*P **P 16 24 16.3 +0.6**
comp=Z,79nm,1.1s
BOK Bokaro 74.71 297 *e*P **P 16 24 16.8 -0.2**
BOK IAmb IAmb 16 24 19.6
comp=Z,96nm,0.8s
MOY Mondy 74.80 328 *e*P **P 16 24 18.2 +1.1**
MOY pmax pmax
comp=Z,172nm,1.6s
CHLP Challavanipeta 75.12 291 *e*P **P 16 24 20.0 +0.6**
CHLP IAmb IAmb 16 24 21.6
comp=Z,616nm,1.3s
CHLP *e*pP **PcP 16 24 33.6 +0.8**
CHLP *e*PP **PP 16 27 07.5 -0.8**
CHLP *e*S **S 16 33 53.1 -1.2**
CHLP *e*SKSac **SKSac 16 34 17.5 -7.1**
BILL Bilibino 75.17 4*ce*P **P 16 24 19.5 +0.8**
BILL *i* 16 24 32.8
BILL *e* 16 27 06.1
BILL *e*PPP PPP 16 28 55.4
BILL *e*S **S 16 33 49.9 -3.0**
BILL *e*SS **SS 16 38 42.9 -0.5**
BILL pmax pmax
comp=Z,247nm,1.2s
BILL MLR MLR
comp=Z,1µm,19.0s
BILL Bilibino 75.17 4 *e*P **P 16 24 19.5 +0.8**
comp=Z,351nm,1.4s
VIS Vishakhapatnam 75.63 290 *e*P **P 16 24 21.6 -0.7**
VIS IAmb IAmb 16 24 23.5
comp=Z,187nm,1.0s
GUN Gumba 75.80 301 *e*P **P 16 24 24.2 +0.6**
comp=Z,645nm,0.9s
OHAK Old Harbor 76.11 26 *e*P **P 16 24 24.2 0.0**
comp=Z,42nm,0.8s
PKIN Phulchoki 76.12 301 *e*P **P 16 24 25.5 +0.1**
comp=Z,229nm,0.9s
KKN Kakani 76.28 301 *e*P **P 16 24 26.5 +0.3**
comp=Z,251nm,0.8s
DMN Daman 76.38 300 *e*P **P 16 24 27.4 +0.6**
comp=Z,444nm,0.8s
KDAK Kodiak Island 76.76 26 LR LR 16 55 39.7
comp=Z,1µm,19.8s,baz=225,slow=34
KDAK Kodiak Island 76.76 26 *i* P **P 16 24 28.4 +0.5**
KDAK Kodiak Island 76.76 26 *e*P **P 16 24 28.1 +0.2**
comp=Z,66nm,1.0s
GKN Gorkha 76.88 301 *e*P **P 16 24 29.7 +0.2**
comp=Z,310nm,0.6s
TNA Tin City 77.06 15 *e*P **P 16 24 29.8 +0.3**
comp=Z,48nm,0.9s
PVM Polavaram 77.12 289 *e*P **P 16 24 30.4 -0.4**
PVM IAmb IAmb 16 24 32.1
comp=Z,246nm,1.2s
PVM *e*pP **pP 16 24 45.4 -0.8**
PVM *e*S **S 16 34 13.2 -3.1**

PVM					*e*SKSac	**SKSac**	**16 34 37.5**	**-2.0**
SVW2	**Sparrevohn**	**77.64**	**22**		*e*P	**P**	**16 24 33.2**	**+0.4**
	comp=Z,48nm,1.2s							
MDRS	**Chennai**	**77.65**	**285**		*e*P	**P**	**16 24 32.2**	**-1.6**
MDRS					IAmb	IAmb	16 24 48.9	
	comp=Z,122nm,1.0s							
MDRS					*e*x	x	16 33 35.8	
MDRS					*e*x	x	16 42 14.8	
MDRS					*e*x	x	16 48 14.8	
KOLN	**Koldanda**	**77.71**	**300**		*e*P	**P**	**16 24 34.3**	**+0.1**
	comp=Z,228nm,0.6s							
HOM	**Homer**	**78.27**	**24**		*e*P	**P**	**16 24 35.8**	**-0.5**
HOM					*e*pP	**pP**	**16 24 52.6**	**+0.9**
SKHT	**Srikalahasti**	**78.28**	**286**		*e*P	**P**	**16 24 37.2**	**-0.2**
SKHT					IAmb	IAmb	16 24 38.4	
	comp=Z,142nm,0.8s							
SKHT					*e*PcP	**PcP**	**16 24 45.7**	**-0.9**
SKHT					*e*pP	**pP**	**16 24 51.8**	**-0.9**
SKHT					*e*S	**S**	**16 34 26.0**	**-2.9**
SKHT					*e*SKSac	**SKSac**	**16 34 44.8**	**-3.2**
PYUN	**Piuthan**	**78.31**	**300**		*e*P	**P**	**16 24 37.3**	**-0.3**
	comp=Z,388nm,0.9s							
ADKI	**Addanki**	**78.41**	**288**		*e*P	**P**	**16 24 37.9**	**-0.2**
ADKI					IAmb	IAmb	16 24 39.4	
	comp=Z,208nm,1.1s							
ADKI					*e*PcP	**PcP**	**16 24 47.0**	**-0.1**
ADKI					*e*pP	**pP**	**16 24 52.4**	**-1.1**
ADKI					*e*sP	**sP**	**16 24 58.8**	**-0.7**
ADKI					*e*S	**S**	**16 34 27.1**	**-3.1**
ADKI					*e*SKSac	**SKSac**	**16 34 45.6**	**-3.2**
ADKI					*e*SS	**SS**	**16 39 34.7**	**+0.3**
TT01	**Tatalina**	**78.66**	**20**		*e*P	**P**	**16 24 38.8**	**+0.3**
TTA	**Tatalina**	**78.68**	**20**		*e*P	**P**	**16 24 39.0**	**+0.4**
TTA					pmax	pmax		
	comp=Z,41nm,1.0s							
TTA	**Tatalina**	**78.68**	**20**		*e*P	**P**	**16 24 39.0**	**+0.4**
	comp=Z,41nm,1.0s							
SPU	**Mount Spurr**	**79.02**	**23**		*e*P	**P**	**16 24 40.1**	**-0.4**
NJS	**Nagarjunasagar**	**79.17**	**288**		*e*P	**P**	**16 24 41.5**	**-0.7**
NJS					IAmb	IAmb	16 24 43.2	
	comp=Z,245nm,1.0s							
NJS					*e*pP	**pP**	**16 24 55.5**	**-2.1**
NJS					*e*S	**S**	**16 34 37.1**	**-1.2**
NJS					*e*SKSac	**SKSac**	**16 34 50.1**	**-4.2**
RCLA	**Racherla**	**79.30**	**287**		*e*P	**P**	**16 24 42.2**	**-0.8**
RCLA					IAmb	IAmb	16 24 43.2	
	comp=Z,51nm,0.8s							
RCLA					*e*pP	**pP**	**16 24 55.9**	**-2.4**
RCLA					*e*sP	**sP**	**16 25 02.5**	**-1.9**
RCLA					*e*S	**S**	**16 34 38.5**	**-1.3**
RCLA					*e*SKSac	**SKSac**	**16 34 52.0**	**-3.2**
WMQ	**Urumqi**	**79.35**	**317**		P	**P**	**16 24 43.2**	**+0.5**
WMQ					PcP	**PcP**	**16 24 51.4**	**+0.7**
WMQ					pP	pP	16 24 56.9	-1.3
WMQ					sP	sP	16 25 05.0	+0.8
WMQ					S	**S**	**16 34 37.7**	**-1.7**
WMQ					SKS	**SKSac**	**16 34 49.1**	**-5.5**
WMQ					ScS	**SKKSac**	**16 34 56.1**	**-0.1**
WMQ					SS	**SS**	**16 39 51.6**	**+3.9**
WMQ					pmax	pmax		
	comp=Z,28nm,1.2s							
WMQ					pmax	pmax		
	comp=Z,270nm,4.6s							
WMQ					LR	LR		
	comp=Z,310nm,24.8s							
WMQ					LR	LR		
	comp=Z,340nm,26.4s							
WMQ					LR	LR		
	comp=Z,730nm,28.2s							
SEW	**Seward**	**79.43**	**25**		*e*P	**P**	**16 24 42.6**	**-0.1**
	comp=Z,65nm,1.0s							
SRLM	**Srisailam**	**79.48**	**288**		*e*P	**P**	**16 24 43.2**	**-0.7**
SRLM					IAmb	IAmb	16 24 44.9	
	comp=Z,379nm,1.1s							
SRLM					*e*pP	**pP**	**16 24 57.1**	**-2.2**
SRLM					*e*S	**S**	**16 34 36.7**	**-5.0**
RPR	**Rampur**	**79.61**	**291**		*e*P	**P**	**16 24 44.0**	**-0.6**
RPR					IAmb	IAmb	16 24 45.1	
	comp=Z,179nm,0.8s							
RPR					*e*pP	**pP**	**16 24 57.7**	**-2.3**
RPR					*e*S	**S**	**16 34 39.2**	**-3.8**
RPR					*e*SKSac	**SKSac**	**16 34 55.1**	**-2.2**
RC01	**Rabbit Creek A**	**79.88**	**24**		*e*P	**P**	**16 24 44.9**	**-0.2**
	comp=Z,72nm,1.1s							
PPLA	**Purkeypile**	**80.02**	**21**		*e*P	**P**	**16 24 45.0**	**-1.1**
	comp=Z,105nm,1.4s							
HYB	**Hyderabad**	**80.03**	**289**	⇑	*i*P	**P**	**16 24 47.0**	**+0.1**
	comp=Z,215nm,0.8s							
HYB					*e*pP	**pP**	**16 25 01.0**	**-1.4**
HYB					*e*S	**S**	**16 34 46.0**	**-1.6**
HYB	**Hyderabad**	**80.03**	**289**		*e*x	**PcP**	**16 24 58.8**	**+4.6**
HYBB	**Hyderabad (bro**	**80.04**	**289**		*e*P	**P**	**16 24 46.5**	**-0.5**
HYBB					IAmb	IAmb	16 24 47.6	
	comp=Z,188nm,1.0s							
HYBB					*e*PcP	**PcP**	**16 24 53.6**	**-0.7**
HYBB					*e*pP	**pP**	**16 25 00.9**	**-1.5**
HYBB					*e*PP	**PP**	**16 27 50.0**	**+0.4**
HYBB					*e*S	**S**	**16 34 40.7**	**-6.9**
HYBB					*e*SKSac	**SKSac**	**16 34 59.4**	**-1.0**
HYBB					*e*SS	**SS**	**16 39 59.4**	**+0.5**
TRD	**Trivandrum**	**80.10**	**280**		*e*P	**P**	**16 24 45.9**	**-1.4**
TRD					IAmb	IAmb	16 24 48.6	
	comp=Z,163nm,1.0s							
CAST	**Castle Rocks**	**80.37**	**21**		*e*P	**P**	**16 24 47.1**	**-0.7**
	comp=Z,64nm,0.9s							
PMR	**Palmer**	**80.41**	**23**		*e*P	**P**	**16 24 47.7**	**-0.2**
PMR	**Palmer**	**80.41**	**23**		*e*P	**P**	**16 24 47.7**	**-0.2**
	comp=Z,43nm,0.9s							
TIXI	**Tiksi**	**80.42**	**352**		P	**P**	**16 24 47.9**	**+0.1**
	comp=Z,17nm,0.6s,baz=142,slow=5.1,SNR=57							
TIXI					PKKPbc	**PKKPbc**	**16 43 28.7**	**-4.4**
	comp=Z,3.7nm,0.9s,baz=326,slow=2.4,SNR=10							
TIXI					PKP2bc		16 51 15.6	
	comp=Z,1.1nm,0.3s,baz=24,slow=0.9,SNR=6.2							
TIXI					PKPPKP	**P'P'df**	**16 51 33.5**	**+1.7**
	comp=Z,1.5nm,0.9s,baz=25,slow=3.8,SNR=4.3							
TIXI					LR	LR	16 59 11.2	
	comp=Z,624nm,21.8s,baz=144,slow=35							
TIXI	**Tiksi**	**80.42**	**352**	*c*	*e*P	**P**	**16 24 46.5**	**-1.3**
TIXI					pmax	pmax		
	comp=Z,60nm,1.7s							
TIXI	**Tiksi**	**80.42**	**352**		*e*P	**P**	**16 24 47.1**	**-0.7**
	comp=Z,25nm,0.8s							
SRSP	**Sriramsagar**	**80.51**	**290**		*e*P	**P**	**16 24 48.4**	**-1.0**
SRSP					IAmb	IAmb	16 24 50.1	
	comp=Z,297nm,0.8s							
SRSP					*e*pP	**pP**	**16 25 02.6**	**-2.3**
SRSP					*e*S	**S**	**16 34 48.8**	**-3.6**
SRSP					*e*SKSac	**SKSac**	**16 35 01.1**	**-2.4**
URV	**Uravakonda**	**80.83**	**286**		*e*P	**P**	**16 24 50.8**	**-0.4**
URV					IAmb	IAmb	16 24 52.5	
	comp=Z,406nm,1.1s							
URV					*e*pP	**pP**	**16 25 04.6**	**-2.1**
URV					*e*S	**S**	**16 34 52.5**	**-3.4**
SML	**Sawmill**	**80.84**	**23**		*e*P	**P**	**16 24 50.5**	**+0.1**
SML					pmax	pmax		
	comp=Z,165nm,1.2s							
SML	**Sawmill**	**80.84**	**23**		*e*P	**P**	**16 24 50.5**	**+0.1**
	comp=Z,165nm,1.2s							
KTH	**Kantishna Hill**	**80.87**	**21**		*e*P	**P**	**16 24 49.2**	**-1.3**
	comp=Z,42nm,1.0s							
TRF	**Thorofare Moun**	**81.04**	**22**		*e*P	**P**	**16 24 50.7**	**-0.8**
KRAR	**Krasnoyarsk**	**81.13**	**330**	*c*	*i*P	**P**	**16 24 51.5**	**-0.4**
KRAR					pmax	pmax		
	comp=Z,33nm,0.9s							
BPAW	**Bear Paw Mtn.**	**81.17**	**21**		*e*P	**P**	**16 24 51.1**	**-0.9**
	comp=Z,55nm,1.5s							
EYAK	**Cordova Ski Ar**	**81.22**	**25**		*e*P	**P**	**16 24 52.4**	**+0.1**
	comp=Z,98nm,1.5s							
SCM	**Sheep Creek Mo**	**81.26**	**24**		*e*P	**P**	**16 24 52.7**	**+0.1**
SCM					pmax	pmax		
	comp=Z,82nm,1.1s							
SCM	**Sheep Creek Mo**	**81.26**	**24**		*e*P	**P**	**16 24 52.7**	**+0.1**
	comp=Z,82nm,1.1s							
DIV	**Divide**	**81.52**	**25**		*e*P	**P**	**16 24 53.8**	**-0.1**
	comp=Z,88nm,1.4s							
RND	**Reindeer**	**81.54**	**22**		*e*P	**P**	**16 24 53.3**	**-0.8**
RND					pmax	pmax		
	comp=Z,85nm,1.1s							
RND	**Reindeer**	**81.54**	**22**		*e*P	**P**	**16 24 53.3**	**-0.8**
	comp=Z,85nm,1.1s							
RAGM	**Ragged Mountai**	**81.60**	**26**		*e*P	**P**	**16 24 54.5**	**+0.2**
	comp=Z,72nm,1.2s							
KLU	**Klutina**	**81.64**	**24**		*e*P	**P**	**16 24 54.8**	**+0.2**
	comp=Z,89nm,1.1s							
MCK	**McKinley**	**81.70**	**22**		*e*P	**P**	**16 24 54.3**	**-0.5**
MCK	**McKinley**	**81.70**	**22**		*e*P	**P**	**16 24 54.0**	**-0.8**
	comp=Z,145nm,1.0s							
MLY	**Manley**	**81.81**	**20**		*e*P	**P**	**16 24 55.0**	**-0.4**
	comp=Z,37nm,1.0s							
DHY	**Denali Highway**	**81.92**	**23**		*e*P	**P**	**16 24 55.7**	**-0.5**
	comp=Z,46nm,1.0s							
BMRM	**Bremner River**	**81.92**	**25**		*e*P	**P**	**16 24 55.7**	**-0.4**
	comp=Z,114nm,1.2s							
PAF	**Port-aux-Franc**	**81.93**	**221**		*e*P	**P**	**16 24 56.5**	**+0.2**
PAF					pmax	pmax		
	comp=Z,487nm,1.3s							
PAF	**Port-aux-Franc**	**81.93**	**221**		*e*P	**P**	**16 24 56.5**	**+0.2**
	comp=Z,487nm,1.3s							
KLRI	**Killari**	**81.98**	**289**		*e*P	**P**	**16 24 56.5**	**-0.8**
KLRI					IAmb	IAmb	16 24 57.3	
	comp=Z,88nm,0.8s							
KLRI					*e*pP	**pP**	**16 25 10.2**	**-2.7**
KLRI					*e*S	**S**	**16 35 02.8**	**-5.1**
BHPL	**Bhopal**	**82.16**	**295**		*e*P	**P**	**16 24 57.7**	**-0.5**
BHPL					IAmb	IAmb	16 24 58.3	
	comp=Z,260nm,1.1s							
WRH	**Wood River Hil**	**82.42**	**21**		*e*P	**P**	**16 24 57.7**	**-0.8**
	comp=Z,213nm,1.9s							
H08S2	**Diego Garcia H**	**82.53**	**263**		P	**P**	**16 25 00.4**	**+0.5**
	baz=32,slow=4.4,SNR=7.4							
H08S3	**Diego Garcia H**	**82.54**	**263**		P	**P**	**16 25 00.2**	**+0.2**
	baz=32,slow=4.4,SNR=6.5							
H08S1	**Diego Garcia H**	**82.55**	**263**		P	**P**	**16 25 00.3**	**+0.3**
	baz=32,slow=4.4,SNR=5.6							
DGAR	**Diego Garcia**	**82.59**	**263**	*c*	*i*P	**P**	**16 24 59.6**	**-0.9**
DGAR	**Diego Garcia**	**82.59**	**263**		*e*P	**P**	**16 24 60.0**	**-0.5**
	comp=Z,422nm,1.0s							
PAX	**Paxson**	**82.59**	**23**		*e*P	**P**	**16 24 59.4**	**-0.2**
PAX					pmax	pmax		
	comp=Z,63nm,1.5s							
PAX	**Paxson**	**82.59**	**23**		*e*P	**P**	**16 24 59.4**	**-0.2**
	comp=Z,63nm,1.5s							
CCB	**Clear Creek Bu**	**82.62**	**21**		*e*P	**P**	**16 24 58.3**	**-1.3**
	comp=Z,37nm,1.0s							
MDM	**Murphy Dome**	**82.64**	**21**		*e*P	**P**	**16 24 58.7**	**-1.1**
	comp=Z,71nm,1.2s							
COLA	**College**	**82.73**	**21**	*c*	*i*P	**P**	**16 24 58.9**	**-1.2**
COLA					pmax	pmax		
	comp=Z,73nm,1.0s							
COLA	**College**	**82.73**	**21**		*e*P	**P**	**16 24 59.1**	**-1.0**
	comp=Z,73nm,0.8s							
ZSN	**Zaisan**	**82.74**	**320**	⇑	*i*P	**P**	**16 24 59.7**	**-0.9**
	comp=Z,891nm,1.0s							
HDA	**Harding Lake**	**82.80**	**22**		*e*P	**P**	**16 24 59.5**	**-1.1**
	comp=Z,45nm,1.0s							
BALM	**Baldy**	**82.92**	**26**		*e*P	**P**	**16 25 00.7**	**-0.7**
BALM					pmax	pmax		
	comp=Z,38nm,1.0s							
BALM	**Baldy**	**82.92**	**26**		*e*P	**P**	**16 25 00.7**	**-0.7**
	comp=Z,38nm,1.0s							
ILAR	**Eielson Array**	**83.02**	**21**		P	**P**	**16 25 00.6**	**-1.1**
	comp=Z,29nm,0.9s,baz=253,slow=4.6,SNR=90							
ILAR					pP	**pP**	**16 25 16.1**	**-1.1**
	comp=Z,20nm,0.9s,baz=260,slow=4.9,SNR=5.9							
ILAR					PKKPbc	**PKKPbc**	**16 43 23.2**	**-3.7**
	comp=Z,2.8nm,0.6s,baz=356,slow=1.6,SNR=7.3							
ILAR					PKP2bc		16 51 08.6	
	comp=Z,1.1nm,1.0s,baz=344,slow=0.6,SNR=5.4							
ILAR					PKPPKP	**P'P'df**	**16 51 26.1**	**-1.5**
	comp=Z,2.9nm,1.0s,baz=349,slow=1.9,SNR=8.2							
ILAR					LR	LR	16 57 25.3	
	comp=Z,3μm,21.9s,baz=244,slow=32							
ILB	**Eielson Array**	**83.02**	**21**		*e*P	**P**	**16 24 60.0**	**-1.7**
IL1	**Eielson Array**	**83.02**	**21**		*e*P	**P**	**16 25 00.2**	**-1.5**
DDI	**Dehra Dun**	**83.02**	**302**		*e*P	**P**	**16 25 03.0**	**+0.5**
QSPA	**South Pole Qui**	**83.04**	**180**		*e*P	**P**	**16 25 01.8**	**-0.1**
MENT	**Mentasta**	**83.27**	**24**		*e*P	**P**	**16 25 03.2**	**+0.1**
	comp=Z,26nm,0.8s							
COLD	**Coldfoot**	**83.29**	**18**		*e*P	**P**	**16 25 02.3**	**-0.8**
	comp=Z,34nm,1.0s							
NDI	**New Delhi**	**83.40**	**300**		*e*x	P	16 24 59.0	-5.4
DOT	**Dot Lake**	**83.49**	**23**		*e*P	**P**	**16 25 03.6**	**-0.6**
	comp=Z,125nm,0.9s							
MK01	**Makanchi Array**	**83.90**	**318**		*e*P	**P**	**16 25 06.7**	**+0.1**
MK31	**Makanchi Array**	**83.91**	**318**		*i*P	**P**	**16 25 06.7**	**0.0**
MK31					pmax	pmax		
	comp=Z,174nm,0.7s							
MK31	**Makanchi Array**	**83.91**	**318**		*e*P	**P**	**16 25 07.2**	**+0.5**
MKAR	**Makanchi Array**	**83.91**	**318**		P	**P**	**16 25 07.0**	**+0.3**
	comp=Z,227nm,0.8s,baz=100,slow=4.3,SNR=409							
MKAR					PKiKP	**PKiKP**	**16 30 21.6**	**-0.7**
	comp=Z,2.5nm,0.7s,baz=121,slow=1.3,SNR=3.2							
MKAR					PKKPbc	**PKKPbc**	**16 43 23.1**	**-0.9**
	comp=Z,0.5nm,0.6s,baz=282,slow=2.9,SNR=4.0							
MKAR					PKPPKP	**P'P'df**	**16 51 28.1**	**+0.8**
	comp=Z,0.8nm,0.7s,baz=316,slow=3.3,SNR=5.5							
MKAR					LR	LR	17 02 59.2	
	comp=Z,408nm,20.7s,baz=102,slow=36							
MKAR	**Makanchi Array**	**83.91**	**318**		*i*P	**P**	**16 25 05.6**	**-1.1**
MKAR					pmax	pmax		
	comp=Z,224nm,0.8s							
SMLA	**Simla**	**83.94**	**302**		*e*P	**P**	**16 25 06.8**	**-0.3**
MAKZ	**Makanchi**	**84.12**	**318**		*e*P	**P**	**16 25 08.0**	**+0.2**
MAKZ					pmax	pmax		
	comp=Z,244nm,0.8s							
MAKZ	**Makanchi**	**84.12**	**318**		*e*P	**P**	**16 25 08.0**	**+0.2**
	comp=Z,244nm,0.8s							
GOA	**Goa**	**84.19**	**286**		*e*P	**P**	**16 25 07.9**	**-0.7**
FYU	**Fort Yukon**	**84.56**	**20**		*e*P	**P**	**16 25 09.7**	**+0.2**
	comp=Z,88nm,1.5s							
SHLS	**Shalkode**	**84.57**	**315**	⇑	*i*P	**P**	**16 25 10.8**	**+0.4**
	comp=Z,573nm,1.1s							
SHLS					*i*pP	**pP**	**16 25 26.6**	**+0.7**
ZALV	**Zalesovo Beam**	**84.60**	**326**		P	**P**	**16 25 09.6**	**-0.4**
	comp=Z,66nm,0.5s,baz=111,slow=5.3,SNR=266							
ZALV					PKKPbc	**PKKPbc**	**16 43 20.6**	**-2.0**
	comp=Z,1.4nm,0.7s,baz=318,slow=2.0,SNR=4.8							
ZALV					PKPPKP	**P'P'df**	**16 51 29.1**	**+3.7**
	comp=Z,0.8nm,0.6s,baz=254,slow=4.2,SNR=5.1							
ZALV					LR	LR	17 05 09.9	
	comp=Z,505nm,19.1s,baz=86,slow=37							
POO	**Poona**	**84.64**	**289**		*e*P	**P**	**16 25 10.2**	**-0.8**
H02N1	**VAN INLET T-PH**	**84.72**	**35**		P	**P**	**16 25 12.4**	**+1.7**
MAW	**Mawson**	**84.77**	**203**		P	**P**	**16 25 11.0**	**+0.5**
	comp=Z,153nm,0.9s,baz=91,slow=6.2,SNR=140							
MAW					LR	LR	17 01 24.5	
	comp=Z,699nm,18.2s,baz=80,slow=34							
MAW	**Mawson**	**84.77**	**203**		*e*P	**P**	**16 25 10.6**	**0.0**
MAW					*e*		16 28 26.2	
MAW					pmax	pmax		
	comp=Z,56nm,1.1s							
MAW	**Mawson**	**84.77**	**203**		*e*P	**P**	**16 25 10.6**	**0.0**
	comp=Z,56nm,1.1s							
MAW					*e*PP	**PP**	**16 28 26.2**	**-0.8**
DHRM	**DHARAMSHALA**	**84.89**	**303**		*e*P	**P**	**16 25 11.7**	**-0.5**
EGAK	**Eagle**	**85.15**	**23**		*e*P	**P**	**16 25 12.9**	**+0.5**
	comp=Z,83nm,1.3s							
EGAK					*e*PKKPdf	**PKKPdf**	**16 43 14.8**	**+0.7**
UZB	**Uzynbulak**	**85.18**	**314**	⇑	*i*P	**P**	**16 25 13.7**	**+0.4**
	comp=Z,677nm,1.2s							
UZB					*i*PP	**PP**	**16 28 32.9**	**+1.4**
SKAG	**Skagway**	**85.42**	**29**		*e*P	**P**	**16 25 14.4**	**+0.5**
	comp=Z,72nm,1.5s							
KPKS	**Kokpek**	**85.50**	**315**	⇑	*i*P	**P**	**16 25 15.2**	**+0.4**
	comp=Z,1μm,1.3s							
DAWY	**Dawson**	**85.51**	**24**		*e*P	**P**	**16 25 14.8**	**+0.4**
	comp=Z,64nm,1.3s							
NVS	**Novosibirsk**	**85.76**	**326**	⇓	*i*P	**P**	**16 25 16.2**	**+0.5**
NVS					*e**PP	**pP**	**16 25 30.8**	**-0.5**
NVS					*e*S	S	16 35 34.7	-10
NVS					pmax	pmax		
	comp=N,42nm,1.5s							
NVS					pmax	pmax		
	comp=E,101nm,1.5s							
NVS					pmax	pmax		
	comp=Z,144nm,1.5s							
NVS					smax	smax		
	comp=E,65nm,3.1s							
NVS					smax	smax		
	comp=N,26nm,2.7s							
WRAK	**Wrangell Islan**	**85.85**	**32**		*e*P	**P**	**16 25 16.3**	**+0.2**
	comp=N,111nm,1.4s							
SEM	**Semipalatinsk**	**86.22**	**322**	⇑	*i*P	**P**	**16 25 17.5**	**-0.5**
	comp=N,896nm,1.0s							
MDOK	**Medeo**	**86.59**	**314**	⇓	*i*P	**P**	**16 25 20.7**	**+0.4**
	comp=N,454nm,1.1s							
MDOK					*i*pP	**pP**	**16 25 30.2**	**-5.7**
MDOK					*e*S	**SKSac**	**16 35 41.6**	**-1.0**
KSH	**Kashi**	**86.61**	**310**		P	**P**	**16 25 22.7**	**+2.2**
KSH					*e*pP	sP	16 25 40.1	-2.0
KSH					*e*sP	pP	16 25 46.7	+11
KSH					*e*PP	**PP**	**16 28 49.7**	**+6.6**
KSH					SKS	**SKSac**	**16 35 42.7**	**-0.2**
KSH					S	**S**	**16 35 54.9**	**+1.4**
KSH					pmax	pmax		
	comp=N,130nm,0.9s							
KSH					pmax	pmax		
	comp=N,940nm,3.1s							
KSH					LR	LR		
	comp=N,140nm,6.1s							
KSH					LR	LR		
	comp=N,170nm,10.5s							
KSH					LR	LR		
	comp=N,910nm,23.9s							
AAA	**Alma-Ata**	**86.68**	**314**		*e*P	**P**	**16 25 21.3**	**+0.7**
AAA					pmax	pmax		
	comp=Z,800nm,3.7s							
AAA					MLR	MLR		
	comp=Z,1μm,19.0s							
BBB	**Bella Bella**	**86.98**	**37**		LR	LR	16 57 18.9	
	comp=Z,4μm,21.1s,baz=290,slow=31							
KUU	**Kurty**	**87.25**	**315**	⇑	*i*P	**P**	**16 25 23.6**	**+0.2**
	comp=Z,3μm,1.0s							
KUU					*i*pP	**pP**	**16 25 39.1**	**+0.1**
KUU					*i*PP	**PP**	**16 28 48.1**	**+0.1**
KUU					*e*S	**SKSac**	**16 35 45.5**	**-0.9**
KURK	**Kurchatov**	**87.30**	**322**		*e*P	**P**	**16 25 22.8**	**-0.6**
KURK	**Kurchatov**	**87.30**	**322**		*e*P	**P**	**16 25 22.8**	**-0.6**
	comp=Z,50nm,0.8s							
KURK					PKiKP	**PKiKP**	**16 30 26.9**	**-0.7**
KURBB	**Kurchatov Arra**	**87.33**	**322**		P	**P**	**16 25 23.1**	**-0.5**
	comp=Z,32nm,0.7s,baz=105,slow=3.7,SNR=376							
KURBB					PKiKP	**PKiKP**	**16 30 26.9**	**-0.8**
	comp=Z,2.1nm,0.6s,baz=111,slow=1.4,SNR=8.1							
TKM2	**Tokmak 2**	**87.58**	**314**		*e*P	**P**	**16 25 25.3**	**+0.1**
TKM2	**Tokmak 2**	**87.58**	**314**		*e*P	**P**	**16 25 25.0**	**-0.2**
	comp=Z,53nm,0.8s							
L02D	**Cave Junction,**	**87.67**	**47**		P	**P**	**16 25 26.1**	**+0.7**
	baz=258							
DLBC	**Dease Lake**	**87.67**	**30**		P	**P**	**16 25 25.9**	**+0.8**
	comp=Z,40nm,1.1s,baz=239,slow=7.9,SNR=29							
DLBC					pP	**pP**	**16 25 40.4**	**-0.4**
	comp=Z,44nm,1.1s,baz=252,slow=4.5,SNR=9.7							
DLBC					LR	LR	16 57 42.8	
	comp=Z,2μm,22.0s,baz=318,slow=31							
DLBC	**Dease Lake**	**87.67**	**30**		*e*P	**P**	**16 25 25.4**	**+0.3**
	comp=Z,132nm,1.3s							
DLBC					pP	**pP**	**16 25 40.4**	**-0.4**
M02C	**Callahan**	**88.07**	**48**		P	**P**	**16 25 28.4**	**+1.0**
	baz=259							
N02D	**Trinity Center**	**88.10**	**49**		P	**P**	**16 25 28.6**	**+1.0**
	baz=259							
WDC	**Whiskeytown Da**	**88.15**	**49**		*e*P	**P**	**16 25 29.3**	**+1.6**
WDC					pmax	pmax		
	comp=Z,18nm,1.3s							
WDC	**Whiskeytown Da**	**88.15**	**49**		*e*P	**P**	**16 25 29.3**	**+1.6**
	comp=Z,18nm,1.3s							
I03D	**Drain, OR**	**88.15**	**46**		P	**P**	**16 25 29.0**	**+1.4**
	baz=259							
HUMO	**Hull Mountain**	**88.22**	**47**		*e*P	**P**	**16 25 29.9**	**+1.9**
	comp=Z,18nm,1.0s							
YBH	**Yreka Blue Hor**	**88.24**	**48**		P	**P**	**16 25 28.9**	**+0.7**
	comp=Z,3.6nm,0.9s,baz=266,slow=3.4,SNR=7.2							
YBH					PKPPKP	**P'P'df**	**16 51 25.6**	**+5.7**
	comp=Z,1.9nm,0.9s,baz=86,slow=2.6,SNR=3.8							
YBH	**Yreka Blue Hor**	**88.24**	**48**		*e*P	**P**	**16 25 28.4**	**+0.2**
YBH					pmax	pmax		
	comp=Z,20nm,1.2s							
YBH	**Yreka Blue Hor**	**88.24**	**48**		*e*P	**P**	**16 25 28.4**	**+0.2**
	comp=Z,20nm,1.2s							
YBH					P'P'		16 51 25.6	
FRU	**Bishkek**	**88.27**	**313**	⇑	*i*P	**P**	**16 25 28.0**	**-0.2**
FRU					*e*		16 25 42.0	
FRU					*e*		16 35 50.5	
FRU					*e*S	**S**	**16 36 13.0**	**+4.0**
FRU					pmax	pmax		
	comp=Z,220nm,2.1s							
FRU					MLR	MLR		
	comp=E,600nm,18.0s							
AAK	**Ala-Archa**	**88.32**	**313**		P	**P**	**16 25 28.8**	**+0.1**
AAK					pmax	pmax		
	comp=Z,56nm,1.0s							
AAK	**Ala-Archa**	**88.32**	**313**		*e*P	**P**	**16 25 28.5**	**-0.1**
	comp=Z,55nm,0.8s							
G03D	**McMinnville, O**	**88.51**	**44**		P	**P**	**16 25 30.1**	**+0.9**
	baz=259							
NLWA	**Neilton Lookou**	**88.53**	**42**		*e*P	**P**	**16 25 29.9**	**+0.5**
	comp=Z,10nm,0.9s							
**E03A

comp=Z,109nm,1.2s
EDW2 Edwards Air Fo 90.80 55 P P 16 25 41.0 +0.7
baz=262
OTUK Ortayu 90.81 318 P P 16 25 38.0 -2.0
OTUK pmax pmax
comp=Z,10.0nm,1.1s
BFSC Mount Baldy Ra 90.98 56 P P 16 25 41.7 +0.4
baz=262
NV01 Mina Array Sit 91.04 52 *eP* **P 16 25 40.9 -0.6**
NVAR Mina Array Bea 91.04 52 *eP* **P 16 25 41.5 -0.1**
comp=Z,5.2nm,0.9s,baz=256,slow=6.3,SNR=23
NVAR PKKPbc **PKKPbc 16 43 06.4 0.0**
comp=Z,1.7nm,0.8s,baz=96,slow=2.9,SNR=6.1
NVAR PKPPKP **P'P'df 16 51 13.8 -1.4**
comp=Z,4.7nm,1.0s,baz=80,slow=3.5,SNR=12
LRMC Laurel Mtn Rad 91.13 55 P P 16 25 43.3 +1.3
baz=262
NV11 Mina Array Sit 91.15 52 *eP* **P 16 25 41.5 -0.5**
comp=Z,43nm,1.3s
KBL Kabul 91.25 304 *eP* **P 16 25 41.8 -0.8**
KBL Kabul 91.25 304 *eP* **P 16 25 41.3 -1.3**
comp=Z,76nm,0.8s
109C Camp Elliot, M 91.27 57 P P 16 25 43.9 +1.5
baz=263
KK31 Karatay Array 91.28 313 *i* P **P 16 25 41.4 -0.9**
KK31 pmax pmax
comp=Z,27nm,0.9s
KKAR Karatay Array 91.28 313 *eP* **P 16 25 41.5 -0.8**
KKAR Karatay Array 91.28 313 *eP* **P 16 25 41.5 -0.8**
MURC Murrieta 91.28 56 P P 16 25 43.3 +0.7
baz=262
DAC Darwin (Calif) 91.31 54 *eP* **P 16 25 43.9 +1.1**
DAC Darwin (Calif) 91.31 54 *eP* **P 16 25 43.9 +1.1**
comp=Z,45nm,1.3s
WVOR Wild Horse Val 91.34 48 *eP* **P 16 25 42.3 -0.5**
WVOR pmax pmax
comp=Z,42nm,1.7s
WVOR Wild Horse Val 91.34 48 *eP* **P 16 25 42.3 -0.5**
comp=Z,42nm,1.7s
MPMC Manual Prospec 91.36 54 P P 16 25 43.9 +0.8
baz=262
IUG Iuzhnay 91.50 312 ⇑ *iP* **P 16 25 43.7 +0.2**
comp=Z,604nm,1.3s
GRAC Grapevine Rang 91.58 53 P P 16 25 45.1 +1.2
baz=262
B08A Colville Reser 91.71 42 *eP* **P 16 25 42.5 -1.6**
comp=Z,9.4nm,1.1s
B08A *e*PKKPdf **PKKPdf 16 43 03.0 +0.9**
D08A Wollman Farm, 91.80 43 *es*P sP 16 26 07.5 +1.2
GSC Goldstone, Bar 91.82 55 P P 16 25 45.9 +0.8
baz=263
GSC Goldstone, Bar 91.82 55 *eP* **P 16 25 46.0 +0.9**
GSC *e**PP **sP 16 26 06.9 +0.2**
GSC Goldstone, Bar 91.82 55 *eP* **P 16 25 46.0 +0.9**
MONP2 Monument Peak 91.84 57 P P 16 25 45.9 +0.5
baz=263
PFO Pinyon Flats O 91.89 57 P P 16 25 45.0 -0.5
comp=Z,5.2nm,1.0s,baz=315,slow=8.7,SNR=3.9
PFO Pinyon Flats O 91.89 57 P P 16 25 46.2 +0.7
baz=263
PFO Pinyon Flats O 91.89 57 P P 16 25 45.0 -0.5
PFO *es*P **sP 16 26 07.6 +0.4**
FURC Furnace Creek, 91.92 54 P P 16 25 46.3 +1.0
baz=263
HEC Hector,Ludlow 92.14 55 P P 16 25 47.5 +0.9
baz=263
BELC Belle Mtn. Jos 92.32 56 P P 16 25 48.3 +0.8
baz=263
SWSC Sam W. Stewart 92.36 57 P P 16 25 48.2 +0.7
baz=263
TPNV Topopah Spring 92.46 53 P P 16 25 49.3 +1.2
baz=263
TPNV Topopah Spring 92.46 53 *eP* **P 16 25 48.3 +0.2**
TPNV pmax pmax
comp=Z,25nm,1.0s
TPNV Topopah Spring 92.46 53 *eP* **P 16 25 48.3 +0.2**
comp=Z,25nm,1.0s
TUQ Turquoise Moun 92.55 55 P P 16 25 49.5 +1.0
baz=263
BMO Blue Mountains 92.62 45 *eP* **P 16 25 48.6 0.0**
BMO *e**PP **pP 16 26 04.8 +0.5**
BMO Blue Mountains 92.62 45 *eP* **P 16 25 47.5 -1.1**
BMO *ep*P **pP 16 26 04.8 +0.5**
SYO Syowa Base 92.65 199 ‖ *iP* **P 16 25 46.0 -2.1**
SYO Syowa Base 92.65 199 ‖ *iP*cP **PcP 16 25 51.0 +2.3**
GMRC Granite Mounta 92.69 55 P P 16 25 50.2 +1.0
baz=263
BC3 Big Chuckawall 92.73 57 P P 16 25 51.1 +1.8
baz=264
BVA0 Borovoye Array 92.75 323 *i* P **P 16 25 47.7 -1.1**
BVA0 pmax pmax
comp=Z,92nm,0.9s
BVAR Borovoye Array 92.75 323 P P 16 25 48.0 -0.8
comp=Z,94nm,0.9s,baz=104,slow=5.2,SNR=405
BVAR PKiKP **PKiKP 16 30 36.4 -0.4**
comp=Z,3.8nm,0.7s,baz=90,slow=1.5,SNR=5.4
F10A Beach Ranch, E 92.81 44 *eP* **P 16 25 49.3 -0.2**
comp=Z,15nm,1.1s
BRVK Borovoye 92.82 323 *ce*P **P 16 25 48.2 -0.9**
BRVK pmax pmax
comp=Z,97nm,1.0s
BRVK Borovoye 92.82 323 *eP* **P 16 25 48.2 -0.9**
comp=Z,110nm,1.1s
IRM Iron Mountain 93.04 56 P P 16 25 52.3 +1.6
baz=264
R11A Troy Canyon, C 93.15 52 P P 16 25 52.1 +0.9
baz=264
R11A Troy Canyon, C 93.15 52 *eP* **P 16 25 51.5 +0.2**
comp=Z,26nm,1.3s
NEW Newport 93.16 42 P P 16 25 50.0 -0.9
comp=Z,5.3nm,1.0s,baz=220,slow=5.7,SNR=6.4
NEW LR LR 17 00 28.9
comp=Z,3μm,21.7s,baz=254,slow=31
NEW Newport 93.16 42 P P 16 25 50.9 0.0
baz=263
NEW Newport 93.16 42 *eP* **P 16 25 50.6 -0.3**
NEW *e**PP **sP 16 26 10.2 -2.4**
NEW Newport 93.16 42 *eP* **P 16 25 49.8 -1.2**
NEW *e* 16 26 10.2
GLA Glamis 93.19 57 P P 16 25 52.7 +1.3
baz=264
Y12C Blythe 93.51 57 P P 16 25 54.6 +1.8
baz=264
ZRNK Zerenda 93.57 323 *eP* **P 16 25 51.5 -1.1**
ZRNK Zerenda 93.57 323 *eP* **P 16 25 51.1 -1.5**
comp=Z,47nm,0.7s
ELK Elko 93.67 50 *eP* **P 16 25 53.3 -0.4**
ELK *e* 16 26 10.8
ELK Elko 93.67 50 *eP* **P 16 25 53.3 -0.4**
ELK *e* 16 26 10.8
PDMCI Parker Dam,Lak 93.88 56 P P 16 25 54.7 +0.2
baz=264
W13A Hualapai Mount 94.17 55 *eP* **P 16 25 55.9 -0.2**
comp=Z,20nm,0.9s
PSUT Pine Spring 94.52 52 *eP* **P 16 25 58.0 +0.3**
comp=Z,42nm,1.4s
HLID Hailey 94.55 47 P P 16 25 58.2 +0.6
baz=265
HLID Hailey 94.55 47 *eP* **P 16 25 57.2 -0.4**
comp=Z,24nm,1.8s
HLID *e*PKKPdf **PKKPdf 16 42 57.1 0.0**
BSMT Bassoo Peak 94.67 43 *eP* **P 16 25 58.1 0.0**
214A Organ Pipe Nat 94.77 59 P P 16 25 59.0 +0.3
baz=265
LCMT Little Creek M 94.86 53 *eP* **P 16 25 59.5 +0.4**
comp=Z,20nm,1.2s
MSO Missoula 95.16 44 P P 16 26 00.9 +0.7
baz=265
KNB Kanab 95.20 53 *eP* **P 16 26 03.0 +2.3**
KNB Kanab 95.20 53 *eP* **P 16 26 01.7 +1.0**
comp=Z,41nm,1.3s
WALA Waterton Lakes 95.36 41 *eP* **P 16 26 00.8 -0.3**
WALA *e* 16 26 22.3
MRIV Mauritius Mete 95.37 249 *eP* **P 16 26 00.9 -0.8**
DUG Dugway, Tooele 95.46 50 P P 16 26 02.0 +0.2
baz=266
DUG Dugway, Tooele 95.46 50 *eP* **P 16 26 01.4 -0.4**
DUG Dugway, Tooele 95.46 50 *eP* **P 16 26 01.4 -0.4**
U15A North Rim 95.58 54 *eP* **P 16 26 06.1 +3.5**
U15A *e* 16 26 26.0
HVU Hansel Valley 95.61 49 *eP* **P 16 26 02.5 0.0**
HVU pmax pmax
comp=Z,45nm,1.9s
HVU Hansel Valley 95.61 49 *eP* **P 16 26 02.5 0.0**
comp=Z,45nm,1.9s
MCMT McKenzie Canyo 95.77 46 *eP* **P 16 26 02.3 -0.9**
MCMT *e* 16 26 26.3
MTPU Mount Pierson 95.79 52 *eP* **P 16 26 05.5 +1.9**
MSU Marysvale 95.83 52 *eP* **P 16 26 05.3 +1.7**
MSU *e* 16 26 22.0
MSU Marysvale 95.83 52 *eP* **P 16 26 05.3 +1.7**
MSU *e* 16 26 22.0
YKW3 Yellowknife Ar 95.90 28 *eP* **P 16 26 02.4 -0.6**
YKA Yellowknife Ar 95.90 28 P **P 16 26 02.9 -0.1**
comp=Z,16nm,1.0s,baz=268,slow=4.6,SNR=134
YKA pP **pP 16 26 18.9 +0.1**
comp=Z,12nm,0.9s,baz=266,slow=4.5,SNR=12
YKA PP **PP 16 29 57.4 +1.7**
comp=Z,1.6nm,0.9s,baz=272,slow=6.5,SNR=2.8
YKA PKiKP **PKiKP 16 30 42.4 +0.5**
comp=Z,0.4nm,0.7s,baz=268,slow=0.9,SNR=4.1
YKA PKKPbc **PKKPbc 16 42 50.6 -3.8**
comp=Z,7.6nm,0.8s,baz=84,slow=2.9,SNR=63
YKA PKPPKP P'P'df 16 50 52.9 -11
comp=Z,0.5nm,0.8s,baz=56,slow=1.8,SNR=6.4
YKB5 Yellowknife Ar 95.90 28 *eP* **P 16 26 02.3 -0.8**
YKB5 *ep*P **pP 16 26 18.5 -0.3**
YKB5 *e*PKKPbc **PKKPbc 16 42 48.5 -5.9**
NLU North Lily Min 96.01 51 *eP* **P 16 26 04.9 +0.5**
NLU *e* 16 26 21.6
LRM Limekiln Ridge 96.12 45 *e*PKKPbc PKKPbc 16 42 53.6 +0.1
WUAZ Wupatki 96.25 55 P P 16 26 05.8 +0.3
baz=266
LPIG La Paz 96.31 67 LR LR 17 01 46.5
comp=Z,3μm,20.8s,baz=272,slow=31
TUC Tucson 96.52 58 *e*PKKPbc PKKPbc 16 42 51.4 -0.3
TMUT Trail Mountain 96.63 51 *eP* **P 16 26 08.5 +1.1**
BOZ Bozeman (W) 96.69 45 P P 16 26 07.7 +0.5
baz=267
BOZ Bozeman (W) 96.69 45 *eP* **P 16 26 08.6 +1.4**
BOZ Bozeman (W) 96.69 45 *eP* **P 16 26 08.6 +1.4**
RER Riviere de l'E 96.84 248 *eP* **P 16 26 07.7 -0.7**
comp=Z,134nm,1.0s
P17A Butcher Ranch, 97.01 51 *eP* Pdif 16 26 11.0 +2.0
FXWY Fox Creek 97.01 47 *eP* **P 16 26 08.6 -0.3**
comp=Z,5.2nm,1.0s
BW06 Boulder Array 98.05 48 P P 16 26 13.5 -0.1
baz=268
BW06 Boulder Array 98.05 48 *eP* **P 16 26 12.5 -1.1**
PD31 Pinedale Array 98.05 48 *eP* **P 16 26 13.1 -0.5**
PDAR Pinedale Array 98.05 48 P P 16 26 12.1 -1.5
comp=Z,2.7nm,0.9s,baz=235,slow=3.2,SNR=14
PDAR PKKPbc **PKKPbc 16 42 46.0 -2.1**
comp=Z,1.5nm,0.6s,baz=102,slow=4.7,SNR=4.7
PDAR PKPPKP **P'P'df 16 50 59.2 -2.5**
comp=Z,3.7nm,1.0s,baz=90,slow=4.4,SNR=7.8
PDAR LR LR 17 07 51.7
comp=Z,2μm,18.6s,baz=287,slow=34
EGMT Eagleton 98.06 43 P Pdif 16 26 14.1 +0.8
baz=269
RLMT Red Lodge 98.33 45 P Pdif 16 26 15.2 +0.4
baz=268
SVE Sverdlovsk 98.61 326 *d iP* **P 16 26 14.4 -1.0**
SVE pmax pmax
comp=Z,29nm,0.9s
MVCO Mesa Verde 98.66 53 P Pdif 16 26 16.8 +0.3
baz=268
O20A White River Ci 98.96 51 P Pdif 16 26 18.2 +0.6
baz=268
AB31 Akbulak array 99.06 319 *i* P **Pdif 16 26 15.4 -2.2**
AB31 pmax pmax
comp=Z,14nm,0.8s
ABKAR Akbulak array 99.06 319 *eP* **Pdif 16 26 15.5 -2.1**
ABKAR *e*PKKPbc **PKKPbc 16 42 43.9 -1.3**
121A Cookes Peak, D 99.06 58 P Pdif 16 26 18.6 +0.3
baz=268
ARU Arti 99.76 326 P Pdif 16 26 19.1 -1.5
comp=Z,24nm,0.7s,baz=93,slow=2.7,SNR=42
ARU Arti 99.76 326 *c iP* **Pdif 16 26 18.9 -1.7**
ARU *PP **pP 16 26 36.9 +0.6**
ARU 16 30 23.4
ARU S **SKSac 16 36 52.0 -2.5**
ARU SP **SP 16 39 13.4 -4.0**
ARU pmax pmax
comp=Z,42nm,1.0s
ARU MLR MLR
comp=Z,1μm,22.0s
ARU Arti 99.76 326 *e*Pdif **Pdif 16 26 18.8 -1.8**
comp=Z,29nm,0.8s
ARU *e*PKKPbc **PKKPbc 16 42 40.9 -2.5**
BIDO Bidbid 99.77 293 P Pdif 16 26 20.9 -0.5
SNR=8.3
BIDO Bidbid 99.77 293 Pdiff **Pdif 16 26 20.9 -0.5**
SNR=8.3
S22A 4UR Ranch, Cre 100.00 53 P Pdif 16 26 22.5 0.0
baz=269
ANMO Albuquerque 100.25 56 P Pdif 16 26 24.4 +0.9
baz=269
ANMO Albuquerque 100.25 56 *eP* **Pdif 16 26 23.1 -0.4**
K22A Casper 100.28 48 P Pdif 16 26 24.0 +0.5
baz=270
AKTO Aktyubinsk 100.29 320 P Pdif 16 26 21.6 -1.5
comp=Z,13nm,0.9s,baz=99,slow=6.2,SNR=38
AKTO PKiKP **PKiKP 16 30 50.8 +0.7**
comp=Z,2.7nm,0.9s,baz=316,slow=8.9,SNR=4.4
AKTO Aktyubinsk 100.29 320 P Pdif 16 26 20.1 -3.0
AKTO pmax pmax
comp=Z,18nm,0.9s
SNAA Sanae 100.30 187 P Pdif 16 26 22.1 -0.7
SNAA Sanae 100.30 187 *c iP* **Pdif 16 26 22.0 -0.8**
SNAA Sanae 100.30 187 *e*Pdif **Pdif 16 26 21.9 -0.9**
SNAA *e*PP **PP 16 30 29.6 +0.9**
GEYT Alibeck 100.30 307 P Pdif 16 26 22.9 -0.6
comp=Z,12nm,0.9s,baz=119,slow=1.9,SNR=24
GEYT PP **PP 16 30 31.4 +1.2**
comp=Z,2.7nm,0.7s,baz=209,slow=4.6,SNR=3.0
HPIG 100.67 64 *e*PKKPbc PKKPbc 16 42 40.5 +0.4
N23A Red Feather La 100.72 50 P Pdif 16 26 26.5 +1.0
baz=270
N23A Red Feather La 100.72 50 *eP* **Pdif 16 26 27.1 +1.5**
ISCO Idaho Springs 100.97 51 P Pdif 16 26 27.0 +0.3
baz=270
MNTX Cornudas Mount 101.07 59 P Pdif 16 26 27.5 +0.4
baz=269
ARQ Araqi 101.24 292 P Pdif 16 26 27.1 -0.9
SNR=6.6
ARQ Araqi 101.24 292 Pdiff **Pdif 16 26 27.1 -0.9**
SNR=6.6
Q24A Divide 101.33 52 P Pdif 16 26 29.3 +0.8
baz=270
VNA3 Neumayer Olymp 101.38 185 P Pdif 16 26 26.6 -1.0
VNA2 Neumayer--Watz 101.49 186 P Pdif 16 26 27.8 -0.3
baz=141,slow=5.2
HATD Hatta, Dubai 101.66 294 *i* P **Pdif 16 26 29.2 -0.6**
SNR=5.6
RES Resolute Bay 101.70 15 PKKPbc PKKPbc 16 42 34.1 -4.2
comp=Z,6.7nm,1.0s,baz=76,slow=1.6,SNR=15
RES PKPPKP **P'P'df 16 50 51.4 -1.0**
comp=Z,1.5nm,0.9s,baz=290,slow=2.6,SNR=5.1
RES Resolute Bay 101.70 15 *eP* **Pdif 16 26 28.0 -0.8**
RES Resolute Bay 101.70 15 *e*Pdif **Pdif 16 26 28.0 -0.8**
RES *e*PKKPbc **PKKPbc 16 42 34.3 -4.0**
RES P'P' 16 50 51.4
ASHO Ashiyiah 101.72 294 *i* P **Pdif 16 26 29.3 -0.8**
SNR=6.4
VNA1 Neumayer--Stat 101.83 185 P Pdif 16 26 24.2 -5.4
T25A Trinidad 101.92 54 P Pdif 16 26 31.5 +0.5
baz=270
RSSD Black Hills 102.07 46 P Pdif 16 26 31.7 +0.3
baz=272
NAZ Nazwa, Dubai 102.09 294 P Pdif 16 26 30.7 -1.0
FAQ Al Faqa, Dubai 102.14 294 P Pdif 16 26 30.9 -1.0
J25A Sunshine Ranch 102.26 47 P Pdif 16 26 32.3 +0.1
baz=272
I25A Rochford 102.29 47 P Pdif 16 26 32.4 0.0
baz=272
H25A Fruitdale 102.36 46 P Pdif 16 26 32.8 +0.2
baz=272
TX31 Lajitas Ar. Si 102.50 62 *e*PKKPbc PKKPbc 16 42 31.9 -2.8
TXAR Lajitas Array 102.50 62 PKKPbc PKKPbc 16 42 33.2 -1.4
comp=Z,2.1nm,0.6s,baz=117,slow=2.9,SNR=19
TXAR PKKP **PKKPdf 16 42 45.6 +3.4**
comp=Z,1.7nm,0.8s,baz=111,slow=2.8,SNR=6.6
TXAR PKPPKP **P'P'df 16 50 52.3 -1.8**
comp=Z,2.1nm,1.0s,baz=129,slow=1.8,SNR=6.7
J26A Sides Ranch, S 102.80 47 P Pdif 16 26 34.9 +0.4
baz=272
CBKS Cedar Bluff 105.56 52 *e*PKKPab PKKPab 16 42 42.0 +0.4
HOPEN Hopen 105.61 349 *e*PP PP 16 31 11.1 +2.5
HOPEN *e* 16 40 08.8
HOPEN IAMs_20 IAMs_20 17 08 10.0
comp=Z,2μm,33.4s

KBS Kingsbay 105.83 353 *e* **Pdif 16 26 37.8 -9.3**
KBS *e*PP **PP 16 31 10.1 -0.1**
KBS *i* 16 40 28.0
KBS IAMs_20 IAMs_20 17 08 43.5
comp=Z,1μm,24.7s
SPITS Spitsbergen Ar 105.84 352 PKKPbc PKKPbc 16 42 22.6 -3.3
JCT Junction City 105.86 60 *e*PKKPbc PKKPbc 16 42 25.3 +0.7
JCT *e*PKKPab **PKKPab 16 42 41.0 +0.5**
ABTX Abilene, Hawle 105.93 58 *e*PKKPab PKKPab 16 42 40.8 +0.7
FCC Fort Churchill 106.27 31 PKiKP **PKiKP 16 30 58.7 -2.0**
FCC *e*PKKPbc **PKKPbc 16 42 20.8 -3.3**
FCC *e*PKKPdf **PKKPdf 16 42 36.5 +0.8**
Z33A Whitaker Ranch 106.65 57 P PKiKP 16 31 02.3 +0.1
baz=273
A32A Rocking H Ranc 106.80 41 P PKiKP 16 31 03.5 +1.5
baz=279
HSPB Hornsund (broa 106.84 351 *e*PP PP 16 31 09.3 -8.4
HSPB *e* 16 40 33.1
HSPB *i* 16 56 48.1
HSPB IAMs_20 IAMs_20 17 15 47.0
comp=Z,1μm,20.1s
434A Burnet 107.17 60 P PKiKP 16 31 01.5 -1.8
baz=272
334A Lometa 107.17 59 P PKiKP 16 31 01.3 -2.0
baz=272
W34A Bridge Creek, 107.36 55 *e*PKKPdf PKKPdf 16 42 34.0 +0.8
U34A Anderson Ranch 107.47 54 *e*PKKPdf PKKPdf 16 42 32.8 -0.2
E34A Wadena 108.06 43 P PKiKP 16 31 04.6 +0.2
baz=279
APA Apatity 108.37 340 *eP* **Pdif 16 26 50.0 -8.6**
APA MLR MLR
comp=Z,1μm,25.0s
KLMR Klimovskoe 108.67 332 *eP* **Pdif 16 26 57.5 -2.6**
KLMR pmax pmax
comp=Z,33nm,1.4s
TUL1 Leonard 108.92 55 *e*PKKPab PKKPab 16 42 26.1 -0.7
HAMF Hammerfest 109.59 345 *e*PP PP 16 31 37.1 -0.6
HAMF *e* 16 40 56.6
HAMF IAMs_20 IAMs_20 17 18 29.9
comp=Z,997nm,18.5s
ARA0 ARCESS Array S 109.77 343 *e*Pdif **Pdif 16 27 03.4 -1.4**
ARA0 *e*PKiKP **PKiKP 16 31 06.5 -0.5**
ARA0 *e*PKKPbc **PKKPbc 16 42 09.8 -3.6**
ARCES ARCESS Array B 109.77 343 Pdiff **Pdif 16 27 03.8 -1.1**
comp=Z,0.7nm,0.6s,baz=48,slow=3.8,SNR=5.1
ARCES PKiKP **PKiKP 16 31 06.7 -0.3**
comp=Z,6.8nm,0.6s,baz=98,slow=1.7,SNR=55
ARCES PKKPbc **PKKPbc 16 42 08.7 -4.7**
comp=Z,4.1nm,0.8s,baz=240,slow=3.9,SNR=6.4
ARCES PKKPab **PKKPab 16 42 21.6 -0.7**
comp=Z,11nm,0.9s,baz=228,slow=3.1,SNR=13
ARE0 ARCESS Array S 109.77 343 *e*PKiKP **PKiKP 16 31 07.0 0.0**
ARE0 *e*PKKPab **PKKPab 16 42 21.9 -0.5**
DAG Danmarks Havn 110.14 359 *i* P **PKKPbc 16 42 08.5 -3.8**
comp=Z,16nm,1.0s
HHAR Hobbs 110.37 54 *e*PKKPab PKKPab 16 42 19.9 -0.4
GUDG Gudauri 110.38 313 P PKiKP 16 31 10.6 +1.5
VRH Novokhopyorsk 110.39 322 *e*PKIKP **PKiKP 16 31 07.7 -0.9**
VRH pmax pmax
comp=Z,10.0nm,0.6s
CMIG Matias Romero 110.41 74 PKKPbc PKKPbc 16 42 11.2 +1.4
comp=Z,3.4nm,0.7s,baz=67,slow=6.6,SNR=7.6
CMIG PKKPab **PKKPab 16 42 20.6 +0.1**
comp=Z,9.8nm,0.9s,baz=81,slow=8.2,SNR=10
X39A Fountain Ranch 110.42 56 P PKiKP 16 31 08.1 -1.1
baz=276
GNI Garni 110.54 310 *i* PKIKP **PKiKP 16 31 08.6 -0.9**
S39A Bolivar 110.69 52 P PKiKP 16 31 08.4 -1.3
baz=277
U39A Green Forest 110.73 54 P PKiKP 16 31 08.5 -1.3
baz=277
T39A Clever 110.73 53 P PKiKP 16 31 08.2 -1.6
baz=277
ZEI Tsey 110.74 313 *i* PKIKP **PKiKP 16 31 11.1 +1.3**
ZEI pmax pmax
comp=Z,14nm,0.9s
Q39A Willow Grove F 110.78 51 P PKiKP 16 31 08.7 -1.0
baz=278
R39A Chumby, Stover 110.83 52 P PKiKP 16 31 08.6 -1.3
baz=278
NCK Nalchik 110.84 314 *i* PKIKP **PKiKP 16 31 09.1 -0.7**
MIAR Mount Ida 110.85 56 P PKiKP 16 31 08.2 -1.9
baz=276
ONI Oni 111.10 313 P PKiKP 16 31 11.0 +0.7
ONI Oni 111.10 313 PKIKP **PKiKP 16 31 11.0 +0.7**
U40A Yellville 111.23 54 P PKiKP 16 31 09.4 -1.3
baz=277
AKH Akhalkalaki 111.28 312 ‖ *iP* **PKiKP 16 31 11.8 +0.9**
KBZ Khabaz 111.29 314 Pdiff **Pdif 16 27 12.3 +0.2**
comp=Z,1.2nm,0.7s,baz=152,slow=6.4,SNR=4.1
V40A Witts Springs 111.33 54 P PKiKP 16 31 09.5 -1.5
baz=277
WLAR White Oak Lake 111.33 57 *e*PKKPab PKKPab 16 42 16.3 +0.3
KIV Kislovodsk 111.40 315 *c iP*KIKP **PKiKP 16 31 11.0 +0.1**
KIV *i* 16 31 50.8
KIV *e* 16 38 09.5
KIV *e*SS SS 16 47 28.3 +6.3
KIV pmax pmax
comp=Z,10.0nm,1.0s
KIV MLR MLR
comp=Z,741nm,25.0s
P40A Paris 111.42 50 P PKiKP 16 31 09.9 -1.1
baz=279
R40A Maddies Statio 111.44 52 P PKiKP 16 31 09.8 -1.2
baz=278
O40A La Belle 111.46 50 P PKiKP 16 31 10.0 -1.0
baz=279
X40A Basin Creek Fa 111.47 56 P PKiKP 16 31 09.5 -1.7
baz=276
Q40A Laux Farm, Aux 111.48 51 P PKiKP 16 31 09.9 -1.2
baz=279
TRO Tromso 111.48 345 *e* 16 31 08.7
TRO *e*PP **PP 16 31 51.0 -0.3**
TRO IAMs_20 IAMs_20 17 15 22.4
comp=Z,1μm,21.0s
NEY Neytrino 111.51 314 *i* PKIKP **PKiKP 16 31 10.7 -0.5**
LPSR Galich'ya Gora 111.66 324 *e*PKIKP **PKiKP 16 31 10.5 -0.5**
LPSR pmax pmax
comp=Z,20nm,0.9s
UALR University of 111.84 55 *e*PKKPab PKKPab 16 42 13.9 +0.1
W41A Tony Mavity, V 111.87 55 P PKiKP 16 31 11.4 -0.5
baz=277
W41B Gary Mavity, V 111.87 55 P PKiKP 16 31 11.3 -0.6
baz=277
VSR Storozhevoye 111.93 323 *e*PKIKP **PKiKP 16 31 10.9 -0.6**
VSR pmax pmax
comp=Z,20nm,0.8s
CHVG Ch'k'valeri 112.07 313 P PKiKP 16 31 12.0 -0.1
OBN Obninsk 112.15 327 *c iP*KIKP **PKiKP 16 31 11.9 +0.1**
OBN *e*SS SS 16 47 29.5 -1.4
OBN pmax pmax
comp=Z,17nm,1.7s
OBN MLR MLR
comp=Z,489nm,22.0s
JFWS Jewell Farm 112.16 46 *e*PKKPab PKKPab 16 42 12.2 -0.1
DAMY Dhamar 112.42 283 *e*PKiKP **PKiKP 16 31 15.2 +1.3**
DAMY *e*PP **PP 16 32 01.5 +1.1**
CCIG Comitan 113.02 75 *e*PKKPbc PKKPbc 16 42 01.6 +0.3
SOC Sochi 113.58 315 *i* PKIKP **PKiKP 16 31 14.7 -0.2**
SOC *e* 16 32 07.9
SOC *e*PPP PPP 16 34 34.4
SOC *e*PS **PS 16 41 35.1 -9.4**
SOC *e*SSS SSS 16 52 08.2
SOC pmax pmax
comp=Z,14nm,0.3s
SOC MLR MLR
comp=Z,686nm,22.0s
STEI Steigen 113.64 345 *e*PKPdf **PKiKP 16 31 14.0 -0.3**
SUMG Summit 113.85 5 *i* P **PKKPbc 16 41 56.8 -3.7**
comp=Z,24nm,1.2s
SUMG Summit 113.85 5 *e*PKKPbc PKKPbc 16 41 57.5 -3.0
LOF Lofoten 113.92 345 *e*PKPdf **PKiKP 16 31 14.6 -0.3**
FIA1 FINESS Array S 114.22 336 *e*Pdif **Pdif 16 27 23.8 -1.0**
FIA1 *e*PKiKP PKPdif 16 31 15.0 -0.6
FIA1 *e*PKiKP **PKiKP 16 31 15.2 -0.4**
FIA1 *e*PKKPbc **PKKPbc 16 41 55.5 -2.8**
FIA1 *e*PKKPbc **PKKPab 16 41 56.4 -6.3**
FIA1 *e*PKKPab **PKKPab 16 42 02.1 -0.6**
FINES FINESS Array B 114.22 336 PKP PKPdif 16 31 15.1 -0.5
comp=Z,19nm,0.7s,baz=106,slow=6.2,SNR=56
FINES PP **PP 16 32 12.0 +0.9**
comp=Z,9.7nm,1.0s,baz=65,slow=11,SNR=4.0
FINES PKKPbc **PKKPbc 16 41 55.9 -2.5**
comp=Z,5.5nm,0.8s,baz=124,slow=3.4,SNR=14
FINES PKKPab **PKKPab 16 42 02.4 -0.3**

comp=Z,13nm,0.8s,baz=315,slow=0.3,SNR=19
FINES FINESS Array B 114.22 336 PKIKP PKPdf 16 31 15.1 -0.5
FINES 16 32 12.0
FINES 16 41 55.9
FINES pmax pmax
comp=Z,20nm,0.8s
FINES pmax pmax
comp=Z,10.0nm,1.0s
FINES pmax pmax
comp=Z,13nm,0.8s
MZRK Al-Mazaregh 114.40 306 *e*P PKPdf 16 31 15.4 -1.3
SFNV Sufian 114.74 307 *e*P PKPdf 16 31 16.4 -1.0
ANN Anapa 114.86 316 *i* PKIKP PKPdf 16 31 15.7 -1.6
ANN *e* 16 31 32.3
ANN *e* 16 37 57.8
ANN pmax pmax
comp=Z,21nm,1.2s
JMIC Jan Mayen 115.26 354 *e*PP PP 16 32 17.9 -0.2
JMIC *e* 16 41 57.0
JMIC IAMs_20 IAMs_20 17 12 17.4
comp=Z,578nm,19.5s
WVT Waverly 115.28 53 *e*PKKPbc PKKPbc 16 41 52.0 -2.0
VSU Vasula 115.54 333*c i* PKIKP **PKPdf 16 31 17.7 -0.5**
VSU pmax pmax
comp=Z,44nm,0.6s
Z47A Carrollton 115.57 57 P **PKPdf 16 31 17.5 -1.5**
baz=279
Y47A UCPARC, Winfie 115.64 56 P **PKPdf 16 31 18.1 -1.1**
baz=279
WCI Wyandotte Cave 116.07 51 *e*PKIKP **PKPdf 16 31 17.8 -2.1**
WCI *e* 16 41 50.5
WCI Wyandotte Cave 116.07 51 *e*PKPdf **PKPdf 16 31 17.8 -2.1**
WCI *e*PKKPbc **PKKPbc 16 41 50.5 -0.8**
PLCA Paso Flores 116.26 142 *e*PKIKP **PKPdf 16 31 19.4 -0.9**
PLCA Paso Flores 116.26 142 *e*PKPdf **PKPdf 16 31 19.4 -0.9**
PLCA *e*PKKPbc **PKKPbc 16 41 50.7 -0.2**
LRAL Lakeview Retre 116.48 57 *e*PKKPbc PKKPbc 16 41 48.8 -0.9
SWET Sewanee 116.97 54 *e*PKKPbc PKKPbc 16 41 47.5 -0.6
NSS Namsos 117.06 343 *e*PKPdf **PKPdf 16 31 20.6 -0.3**
NACGM Naroch 117.33 330 *e* **PKPdf 16 31 21.0 -0.8**
NACGM *e*LQ LQ 17 11 10.0
NACGM *e*LR LR 17 15 16.0
ROOS tl_alroos 117.41 305 *e*P **PKPdf 16 31 24.8 +2.1**
ZALF Zalf 117.60 303 *e*P **PKPdf 16 31 22.0 -1.0**
TGUH Tegucigalpa,Un 117.70 78 *e*PKKPbc PKKPbc 16 41 47.2 +2.3
FURI Furi 117.78 276 *e*P **PKPdf 16 31 25.7 +1.5**
AKASG Malin Array Be 117.97 325 PKP **PKPdf 16 31 22.6 -0.6**
comp=Z,32nm,0.6s,baz=60,slow=2.5,SNR=135
AKASG PP **PP 16 32 39.8 +2.1**
comp=Z,3.2nm,0.9s,baz=55,slow=6.5,SNR=5.1
AKASG PKKPbc **PKKPbc 16 41 43.4 -1.6**
comp=Z,3.0nm,0.8s,baz=254,slow=4.1,SNR=16
AKASG SKKP 16 45 39.0
comp=Z,2.6nm,1.0s,baz=247,slow=3.4,SNR=7.2
AKBB Malin Array Si 117.97 325 *e*PKIKP **PKPdf 16 31 22.3 -0.9**
AKBB Malin Array Si 117.97 325 *e*PKPdf **PKPdf 16 31 22.3 -0.9**
KIEV Kiev 117.99 325*c i* PKIKP **PKPdf 16 31 22.2 -0.9**
KIEV Kiev 117.99 325 *e*PKPdf **PKPdf 16 31 22.3 -0.9**
KIEV *e*PKKPbc **PKKPbc 16 41 43.7 -1.2**
AK11 Malin Array Si 118.02 325 *e*PKPdf **PKPdf 16 31 22.4 -0.9**
ARNB Al Arnab 118.13 307 *e*P PKPdf 16 31 33.0 +8.9
HOPE Hope Point 118.13 172 *e*PKPdf **PKPdf 16 31 22.4 -0.9**
SALA Sala 118.14 303 *e*P **PKPdf 16 31 24.1 -0.1**
KMBO Kilima Mbogo 118.19 265 PKP **PKPdf 16 31 25.2 +0.3**
comp=Z,15nm,0.8s,baz=79,slow=3.1,SNR=37
KMBO PP **PP 16 32 42.0 +1.0**
comp=Z,0.8nm,0.3s,baz=50,slow=7.8,SNR=1.6
KMBO Kilima Mbogo 118.19 265 *e*PKIKP **PKPdf 16 31 24.6 -0.4**
KMBO 16 32 42.0
KMBO Kilima Mbogo 118.19 265 PKPdf **PKPdf 16 31 25.8 +0.8**
SNR=5.3
KMBO Kilima Mbogo 118.19 265 *e*PKPdf **PKPdf 16 31 24.6 -0.4**
KMBO PP **PP 16 32 42.0 +1.0**
TZTN Tazewell 118.58 52 *e*PKPdf **PKPdf 16 31 23.0 -1.8**
TKL Tuckaleechee C 118.60 53 PKP **PKPdf 16 31 23.6 -1.3**
comp=Z,2.6nm,0.7s,baz=218,slow=7.3,SNR=3.8
BRBR Barbar 118.65 304 *e*P **PKPdf 16 31 24.5 -0.8**
TCHB Talchebab 118.78 303 *e*P **PKPdf 16 31 28.9 +3.5**
BR131 Keskin Array S 118.97 312 *e*PKPdf **PKPdf 16 31 24.7 -0.9**
BRTR Keskin Array B 118.97 312 PKP **PKPdf 16 31 24.7 -0.9**
comp=Z,16nm,0.9s,baz=124,slow=2.2,SNR=55
BRTR PP **PP 16 32 46.4 +1.1**
comp=Z,4.8nm,1.0s,baz=123,slow=4.6,SNR=3.0
BRTR PKKPbc **PKKPab 16 41 41.9 -0.6**
comp=Z,3.7nm,0.8s,baz=217,slow=3.3,SNR=14
BRTR SKKP 16 45 36.5
comp=Z,2.9nm,1.0s,baz=193,slow=4.9,SNR=4.9
ANTO Ankara 119.55 312 *e*PKIKP **PKPdf 16 31 26.2 -0.4**
ANTO Ankara 119.55 312 *e*PKPdf **PKPdf 16 31 26.2 -0.4**
ANTO *e*PKKPbc **PKKPab 16 41 40.2 +0.3**
BR231 Keskin MP Arra 119.57 312 *e*PKPdf **PKPdf 16 31 25.4 -1.3**
BR231 *e*PKPdf **PKiKP 16 31 26.3 -0.5**
BR231 *e*PKKPbc **PKKPab 16 41 40.7 +0.9**
SORM Soroca 119.59 322⇑*i* P **PKPdf 16 31 25.8 -0.5**
SORM Soroca 119.59 322⇓*i* P **PKKPbc 16 41 37.6 -1.4**
SORM Soroca 119.59 322 ⇑PKIKP **PKPdf 16 31 25.8 -0.5**
SUW Suwalki 119.59 330 *e*PKP **PKPdf 16 31 25.9 -0.2**
SUW Suwalki 119.59 330 *e*PKIKP **PKPdf 16 31 25.9 -0.2**
NC405 NORSAR Array S 119.70 341 *e*PKPdf **PKPdf 16 31 25.5 -0.7**
NC303 NORSAR Array S 119.73 341 *e*PKPdf **PKPdf 16 31 25.5 -0.7**
KIS Kishinev 119.77 321 *e*PKP **PKPdf 16 31 26.0 -0.7**
KIS Kishinev 119.77 321 *e*PP PP 16 32 52.0 +1.7
KIS Kishinev 119.77 321 *e*PS PS 16 42 36.0 -4.5
KIS LRM MLR 17 31 02.0
comp=Z,700nm,20.0s
KIS Kishinev 119.77 321 *e*P **PKKPbc 16 41 37.0 -1.3**
KIS XM 16 41 40.0
comp=Z,200nm,0.8s
KIS Kishinev 119.77 321 *e*PKIKP **PKPdf 16 31 26.0 -0.7**
KIS *e* 16 31 42.0
KIS *e* 16 32 52.0
KIS *e*PS **PS 16 42 36.0 -4.5**
KIS MLR MLR
comp=N,300nm,20.0s
KIS MLR MLR
comp=Z,700nm,20.0s
KIS MLR MLR
comp=Z,700nm,20.0s
NB201 NORSAR Array S 119.89 341 *e*PKPdf **PKPdf 16 31 25.7 -0.9**
NC204 NORSAR Array S 119.89 341 *e*PKPdf **PKPdf 16 31 26.2 -0.4**
NB2 NORSAR Subarra 119.92 341 PKPdf **PKPdf 16 31 26.0 -0.7**
comp=Z,23nm,0.8s,baz=39,slow=1.9
NB2 NORSAR Subarra 119.92 341 PKPdf **PKPdf 16 31 26.0 -0.7**
baz=39,slow=1.9
NOA NORSAR Array B 119.92 341 PKP **PKPdf 16 31 26.0 -0.7**
comp=Z,18nm,0.8s,baz=45,slow=1.9,SNR=53
NOA PKKPbc **PKKPab 16 41 36.7 -1.0**
comp=Z,12nm,0.9s,baz=43,slow=3.6,SNR=37
NOA NORSAR Array B 119.92 341 PKIKP **PKPdf 16 31 26.0 -0.7**
NOA pmax pmax
comp=Z,25nm,1.0s
NBO02 NORSAR Array S 120.03 341 *e*PKPdf **PKPdf 16 31 26.2 -0.6**
NC602 NORSAR Array S 120.04 341 *e*PKPdf **PKPdf 16 31 25.9 -1.0**
NC602 *e*PKKPbc **PKKPab 16 41 36.0 -1.1**
N54A Moraine State 120.05 46 P **PKPdf 16 31 26.5 -1.0**
baz=288
NBO00 NORSAR Array S 120.06 341 *e*PKPdf **PKPdf 16 31 26.3 -0.6**
NBO00 *e*PKKPbc **PKKPab 16 41 36.2 -0.8**
M54A Oil Creek Stat 120.11 46 P **PKPdf 16 31 26.5 -1.1**
baz=289
NAO01 NORSAR Array S 120.17 341 *e*PKPdf **PKPdf 16 31 26.6 -0.5**
NAO01 *e*PKKPbc **PKKPab 16 41 36.1 -0.5**
AKN Aaknes 120.30 344 *e*PKPdf **PKPdf 16 31 27.5 +0.2**
AKN IAmb IAmb 16 31 27.7
comp=Z,48nm,1.0s
AKN *e*PP **PP 16 32 51.9 -1.3**
LEOM Leova 120.34 321⇓*i* P **PKPdf 16 31 28.1 +0.3**
LEOM Leova 120.34 321⇓*i* P **PKKPbc 16 41 36.0 -0.1**
LEOM Leova 120.34 321 ⇓PKIKP **PKPdf 16 31 28.1 +0.3**
ROC1 El Roble 120.38 135 *e*PKPdf **PKPdf 16 31 27.5 -1.2**
CSS Mathiatis 120.44 307 *e*PKPdf **PKPdf 16 31 27.7 -0.7**
TLCR 120.50 319⇓*i* P **PKPdf 16 31 28.5 +0.3**
TLCR 120.50 319 ⇓PKIKP **PKPdf 16 31 28.5 +0.3**
KMSC Kings Mountain 120.66 53 P **PKPdf 16 31 27.9 -1.0**
baz=284
KMSC Kings Mountain 120.66 53 *e*P **PKPdf 16 31 28.2 -0.6**
KMSC *e*PKKPbc **PKKPab 16 41 36.0 +1.0**
BOSA Boshof 120.70 231 PKP **PKPdf 16 31 29.4 +0.1**
comp=Z,68nm,0.8s,baz=120,slow=1.9,SNR=125
BOSA Boshof 120.70 231 *e*PKIKP **PKPdf 16 31 28.9 -0.4**
BOSA Boshof 120.70 231 *e*PKPdf **PKPdf 16 31 28.9 -0.4**
CFR Carcaliu 120.94 319⇓*i* P **PKPdf 16 31 29.4 +0.4**
CFR Carcaliu 120.94 319⇓*i* P **PKKPbc 16 41 32.7 -1.1**
CFR Carcaliu 120.94 319 ⇓PKIKP **PKPdf 16 31 29.4 +0.4**
TIRR Tirgusor 121.05 318⇑*i* P **PKPdf 16 31 29.5 +0.3**
TIRR Tirgusor 121.05 318⇓*i* P **PKKPbc 16 41 33.4 0.0**
TIRR Tirgusor 121.05 318 ⇑PKIKP **PKPdf 16 31 29.5 +0.3**
TIRR Tirgusor 121.05 318 *e*PKPdf **PKPdf 16 31 28.8 -0.5**
TIRR *e*PKKPbc **PKKPab 16 41 32.9 -0.2**
MANR Mangalia 121.18 318⇑*i* P **PKPdf 16 31 29.7 +0.2**
PRAR RASCA 121.21 322⇓*i* P **PKPdf 16 31 29.6 +0.1**
PRAR RASCA 121.21 322⇓*i* P **PKKPbc 16 41 32.5 -0.5**
HARR Harsova 121.27 319⇓*i* P **PKPdf 16 31 30.4 +0.7**
HARR Harsova 121.27 319 ⇓PKIKP **PKPdf 16 31 30.4 +0.7**
O56A Blue Knob Stat 121.30 47 P **PKPdf 16 31 28.9 -1.1**
baz=289
FOO Floro 121.31 344 *e*PKPdf **PKPdf 16 31 29.2 0.0**
FOO IAMs_20 IAMs_20 17 16 42.1
comp=Z,2μm,24.7s
TESR Tescani 121.33 321⇓*i* P **PKPdf 16 31 29.9 +0.1**
TESR Tescani 121.33 321⇓*i* P **PKKPbc 16 41 30.6 -1.9**
LVV L'vov 121.33 326 *i* PKIKP **PKPdf 16 31 29.0 -0.7**
LVV *e* 16 33 11.7
LVV *e* 16 38 19.7
LVV MLR MLR
comp=N,700nm,22.0s
LVV MLR MLR
comp=E,400nm,22.0s
LVV MLR MLR
comp=Z,1μm,22.0s
HYA Hoyanger 121.35 343 *e*P **PKPdf 16 31 29.2 -0.1**
SCHQ Schefferville 121.35 27 PKKPbc PKKPbc 16 41 31.2 -1.4
comp=Z,8.6nm,0.8s,baz=114,slow=3.2,SNR=4.5
ODBI Odobesti 121.39 320⇓*i* P **PKPdf 16 31 30.7 +0.8**
ODBI Odobesti 121.39 320⇓*i* P **PKKPbc 16 41 32.0 -0.2**
KONO Kongsberg 121.50 341 *e*PP PP 16 33 01.0 -0.4
KONO IAMs_20 IAMs_20 17 23 16.8
comp=Z,1μm,24.5s
MATP Matopo 121.53 241 PKKPbc PKKPbc 16 41 32.1 +0.9
comp=Z,4.5nm,1.1s,baz=260,slow=1.0,SNR=3.8
VRI Vrincioaia 121.56 320⇑*i* P **PKKPbc 16 41 30.7 -0.9**
PLOR Plostina 121.61 320⇓*i* P **PKPdf 16 31 30.2 -0.2**
PLOR Plostina 121.61 320⇓*i* P **PKKPbc 16 41 29.3 -2.1**
PLOR Plostina 121.61 320 ⇓PKIKP **PKPdf 16 31 30.2 -0.2**
SSPA Standing Stone 121.67 46 *e*PKPdf **PKPdf 16 31 28.6 -2.0**
BUR08 Bucovina Ar. S 121.70 323 *e*PKPdf **PKPdf 16 31 30.6 0.0**
BUR08 *e*PKKPbc **PKKPab 16 41 30.4 +0.1**
BURAR Bucovina Array 121.71 323⇓*i* P **PKPdf 16 31 31.4 +0.8**
BURAR Bucovina Array 121.71 323⇑*i* P **PKKPbc 16 41 32.6 +1.4**
BURAR Bucovina Array 121.71 323 ⇓PKIKP **PKPdf 16 31 31.4 +0.8**
SUE Sulen 121.84 344 *e*PKPdf **PKPdf 16 31 30.2 0.0**
SUE *e*PP **PP 16 33 05.2 +1.6**
SUE IAMs_20 IAMs_20 17 16 56.0
comp=Z,2μm,27.1s
ISP Isparta 121.85 310⇓*i* P **PKPdf 16 31 30.4 -0.8**
ISP Isparta 121.85 310 ⇓PKIKP **PKPdf 16 31 30.4 -0.8**
ISP Isparta 121.85 310 *e*PKPdf **PKPdf 16 31 29.8 -1.4**
ISR Istrita 121.99 320⇓*i* P **PKKPbc 16 41 30.1 +0.1**
BEL Belsk 122.01 329 *e*PKP **PKPdf 16 31 31.2 +0.3**
BEL Belsk 122.01 329 *e*PKIKP **PKPdf 16 31 31.2 +0.3**
SUR Sutherland 122.02 225 PKP **PKPdf 16 31 32.6 +0.8**
comp=Z,2.9nm,0.6s
SUR pPKP **pPKPdf 16 31 48.0 -0.1**
comp=Z,2.9nm,0.9s,baz=277,slow=3.2,SNR=3.5
SUR Sutherland 122.02 225 *e*PKPdf **PKPdf 16 31 32.1 +0.3**
SUR pPKP **pPKPdf 16 31 48.0 -0.1**
LBTB Lobatse 122.09 235 *e*PKIKP **PKPdf 16 31 31.7 -0.3**
LBTB Lobatse 122.09 235 *e*PKPdf **PKPdf 16 31 31.7 -0.3**
KWP Kalwaria Pacla 122.17 326 *e*PKP **PKPdf 16 31 31.6 +0.3**
KWP Kalwaria Pacla 122.17 326⇓*i* P **PKPdf 16 31 31.9 +0.6**
KWP Kalwaria Pacla 122.17 326⇑*i* P **PKKPbc 16 41 29.0 -0.4**
KWP Kalwaria Pacla 122.17 326 ⇓PKIKP **PKPdf 16 31 31.9 +0.6**
ASK Askoy 122.19 343 *e*PKPdf **PKPdf 16 31 30.9 -0.1**
ASK IAmb IAmb 16 31 31.7
comp=Z,30nm,0.9s
MLR Muntele Rosu 122.22 320⇓*i* P **PKPdf 16 31 31.8 +0.1**
MLR Muntele Rosu 122.22 320⇓*i* P **PKKPbc 16 41 28.2 -1.0**
MLR Muntele Rosu 122.22 320 ⇓PKIKP **PKPdf 16 31 31.8 +0.1**
MLR Muntele Rosu 122.22 320 *e*PKPdf **PKPdf 16 31 31.0 -0.7**
MLR *e*PKKPbc **PKKPab 16 41 27.0 -1.2**
PRD Provadia 122.22 317 P **PKPdf 16 31 31.6 +0.1**
PRD Provadia 122.22 317 *e*P **PKKPbc 16 41 27.9 -1.1**
BER Bergen 122.23 343 *e*PKPdf **PKPdf 16 31 30.9 -0.1**
BER IAMs_20 IAMs_20 17 17 53.4
comp=Z,1μm,28.1s
ODD1 Odda 122.23 342 IAmb IAmb 16 31 31.9
comp=Z,67nm,1.0s
SECR 122.33 320⇓*i* P **PKPdf 16 31 32.2 +0.4**
SECR 122.33 320⇓*i* P **PKKPbc 16 41 28.6 0.0**
ARCR ARCALIA 122.48 323⇓*i* P **PKPdf 16 31 32.5 +0.5**
ARCR ARCALIA 122.48 323⇓*i* P **PKKPbc 16 41 28.4 +0.3**
BLS5 Blasjo 122.68 342 *e*P **PKPdf 16 31 32.0 0.0**
BLS5 *e*PP **PP 16 33 09.1 -0.3**
BLS5 IAMs_20 IAMs_20 17 19 26.7
comp=Z,2μm,25.5s
BMR Baia Mare 122.70 324⇓*i* P **PKPdf 16 31 32.7 +0.3**
BMR Baia Mare 122.70 324 ⇓PKIKP **PKPdf 16 31 32.7 +0.3**
LCO Las Campanas 122.71 131 *e*PKPdf **PKPdf 16 31 32.3 -1.0**
BSD Bornholm Skovb 122.75 334 *i* P **PKPdf 16 31 32.2 0.0**
BSD Bornholm Skovb 122.75 334 *i* PKIKP **PKPdf 16 31 32.2 0.0**
KOLS Kolonicke sedl 122.78 325 *e*PKIKP **PKPdf 16 31 33.1 +0.6**
KOLS Kolonicke sedl 122.78 325 *e*PKP **PKPdf 16 31 33.1 +0.6**
KOLS Kolonicke sedl 122.78 325 *e*P **PKKPbc 16 41 26.3 -0.7**
KOLS *e*PP **PKKSbc 16 45 16.4 -2.0**
VOIR 122.81 321⇓*i* P **PKPdf 16 31 32.6 -0.1**
VOIR 122.81 321⇓*i* P **PKKPbc 16 41 26.6 -0.3**
VOIR 122.81 321 ⇓PKIKP **PKPdf 16 31 32.6 -0.1**
UZH Uzhgorod 122.92 325⇓*i* PKIKP **PKPdf 16 31 33.0 +0.3**
UZH *e* 16 31 48.4
UZH *e* 16 35 54.8
UZH *e* 16 38 33.8
UZH *e* 16 43 06.2
UZH *e* 16 49 55.0
UZH MLR MLR
comp=N,900nm,19.0s
UZH MLR MLR
comp=E,550nm,19.0s
HOMB Homborsund 122.92 340 *e*PKPdf **PKPdf 16 31 34.0 +1.6**
HOMB *e*PP **PP 16 33 07.5 -3.6**
FRNY Flat Rock 122.95 40 *e*PKPdf **PKPdf 16 31 31.2 -1.7**
KULA Kula-Manisa 123.02 312 P **PKPdf 16 31 32.8 -0.6**
TRPA Tarpa 123.03 324⇑*e*PKPdf **PKPdf 16 31 33.1 +0.1**
STHS Stebnicka Huta 123.09 326 *e*PKIKP **PKPdf 16 31 34.0 +0.9**
STHS Stebnicka Huta 123.09 326 *e*PKP **PKPdf 16 31 34.0 +0.9**
ARR Arges 123.10 321⇓*i* P **PKPdf 16 31 34.1 +0.8**
ARR Arges 123.10 321⇓*i* P **PKKPbc 16 41 25.1 -0.6**
CJR Cluj-Napoca 123.11 323⇓*i* P **PKPdf 16 31 33.8 +0.6**
CJR Cluj-Napoca 123.11 323⇑*i* P **PKKPbc 16 41 25.0 -0.7**
CJR Cluj-Napoca 123.11 323 ⇓PKIKP **PKPdf 16 31 33.8 +0.6**
GOLR 123.12 320⇓*i* P **PKKPbc 16 41 25.9 +0.4**
SIBR Sibiu 123.18 321⇓*i* P PKKPbc 16 41 34.5 +9.1
EDRB Edirne 123.19 316 P **PKPdf 16 31 33.0 -0.5**
KMY Karmoy 123.21 342 *e*PKPdf **PKPdf 16 31 33.1 +0.2**
KMY IAmb IAmb 16 31 33.6
comp=Z,43nm,0.9s
CRVS Cervenica-Dubn 123.25 326 *e*PKIKP **PKPdf 16 31 33.8 +0.4**
CRVS Cervenica-Dubn 123.25 326 *e*PKP **PKPdf 16 31 33.8 +0.4**
CRVS Cervenica-Dubn 123.25 326 *e*P **PKKPbc 16 41 24.6 -0.6**
HUMR Humele 123.25 320⇑*i* P **PKPdf 16 31 33.0 -0.5**
SNART Snartemo 123.30 341 *e*P **PKPdf 16 31 33.1 -0.1**
SNART IAmb IAmb 16 31 33.6
comp=Z,46nm,0.8s
STAV Stavanger 123.30 342 *e*PP PP 16 33 14.9 +1.4
STAV *e*SS SS 16 49 58.1 +3.4
STAV IAMs_20 IAMs_20 17 25 57.1
comp=Z,1μm,22.4s
ZIMR 123.38 319⇑*i* P **PKPdf 16 31 34.4 +0.6**
ZIMR 123.38 319 ⇑PKIKP **PKPdf 16 31 34.4 +0.6**
COP Copenhagen 123.39 336 *i* P **PKPdf 16 31 34.0 +0.6**
COP Copenhagen 123.39 336 *e*PKIKP **PKPdf 16 31 34.0 +0.6**
OJC Ojcow 123.43 328 *e*PKP **PKPdf 16 31 33.7 0.0**
OJC Ojcow 123.43 328 *e*PKIKP **PKPdf 16 31 33.2 -0.5**
OJC Ojcow 123.43 328 *e*PKPdf **PKPdf 16 31 33.2 -0.5**
OJC *e*PKKPbc **PKKPab 16 41 23.4 +0.7**
PVL Pavlikeni 123.59 318 P **PKPdf 16 31 34.5 +0.3**
LOT Lotru 123.60 321⇓*i* P **PKPdf 16 31 34.1 -0.2**
DRGR 123.60 323⇓*i* P **PKPdf 16 31 34.4 +0.2**
DRGR 123.60 323⇓*i* P **PKKPbc 16 41 23.0 -0.8**
DRGR 123.60 323 ⇓PKIKP **PKPdf 16 31 34.4 +0.2**
NIE Niedzica 123.61 327 *e*PKP **PKPdf 16 31 34.9 +0.8**
NIE Niedzica 123.61 327 *e*PKIKP **PKPdf 16 31 34.9 +0.8**
LSZ Lusaka 123.62 247 *e*PKIKP **PKPdf 16 31 35.5 +0.3**
LSZ Lusaka 123.62 247 PKPdf **PKPdf 16 31 35.9 +0.7**
SNR=21
LSZ Lusaka 123.62 247 *e*PKPdf **PKPdf 16 31 35.5 +0.3**
LMQ La Malbaie 123.65 36 *e*PKKPbc PKKPbc 16 41 22.2 -1.3
ODNJ Ogdensburg 123.82 45 *e*PKPdf **PKPdf 16 31 33.4 -1.3**
DEV Deva 123.93 322⇓*i* P **PKPdf 16 31 35.2 +0.4**
DEV Deva 123.93 322 ⇓PKIKP **PKPdf 16 31 35.2 +0.4**
BRNJ Basking Ridge 124.00 45 *e*PKPdf **PKPdf 16 31 34.0 -1.1**
KECS Kecovo 124.02 326 *e*PKIKP **PKPdf 16 31 34.6 -0.3**
KECS Kecovo 124.02 326 *e*PKP **PKPdf 16 31 34.6 -0.3**
KECS Kecovo 124.02 326 *e*P **PKKPbc 16 41 21.4 -0.7**
ALN Alexandroupoli 124.05 315 P **PKPdf 16 31 33.7 -1.4**
MUD Monsted U'grnd 124.07 338 *i* P **PKPdf 16 31 34.7 0.0**
MUD Monsted U'grnd 124.07 338 *i* PKIKP **PKPdf 16 31 34.7 0.0**
CRAR CRAIOVA 124.10 320⇓*i* P **PKPdf 16 31 36.4 +1.3**
CRAR CRAIOVA 124.10 320 ⇓PKIKP **PKPdf 16 31 36.4 +1.3**
WAL1 Walls 124.14 347 *e*P **PKPdf 16 31 34.5 -0.2**
KDZ Kurdzhali 124.18 316 P **PKPdf 16 31 34.8 -0.6**
LANS Liptovska Anna 124.21 327 *e*PKIKP **PKPdf 16 31 36.6 +1.3**
LANS Liptovska Anna 124.21 327 *e*PKP **PKPdf 16 31 36.6 +1.3**
LANS Liptovska Anna 124.21 327 *e*P **PKKPbc 16 41 21.7 +0.3**
SRE Strehaia 124.32 321⇓*i* P **PKPdf 16 31 36.4 +0.8**
SRE Strehaia 124.32 321 ⇓PKIKP **PKPdf 16 31 36.4 +0.8**
PAL Palisades 124.33 44 *e*PKIKP **PKPdf 16 31 34.3 -1.4**
PAL Palisades 124.33 44 *e*PKPdf **PKPdf 16 31 34.3 -1.4**
RAC Raciborz 124.36 328 *e*PKIKP **PKPdf 16 31 36.0 +0.6**
RAC *e* 16 33 19.6
RAC MLR MLR
comp=Z,1μm,21.1s
SIRR Siria 124.49 323⇓*i* P **PKPdf 16 31 36.3 +0.4**
PRK Paraskevi 124.51 313 P **PKPdf 16 31 35.4 -0.7**
OKC Ostrava-Krasne 124.53 328 *e*PKPdf **PKPdf 16 31 36.1 +0.3**
OKC *e*pPKP **pPKPdf 16 31 52.4 +0.4**
OKC *e*PP **PP 16 33 25.6 +3.4**
OKC *e*PKKP **PKKPbc 16 41 19.7 -0.4**
OKC AMS AMS 17 28 00.0
comp=Z,600nm,22.0s
OKC Ostrava-Krasne 124.53 328 *e*PKIKP **PKPdf 16 31 36.1 +0.3**
OKC *e* 16 31 52.4
OKC *e* 16 33 25.6
OKC MLR MLR
comp=Z,600nm,22.0s
SMTH Samothraki Isl 124.57 315 P **PKPdf 16 31 34.6 -1.6**
MPEP Malo Peshtene 124.57 319 P **PKPdf 16 31 36.3 +0.2**
MPEP Malo Peshtene 124.57 319 *e*P **PKKPbc 16 41 18.7 -1.0**
PSZ Piszkesteto 124.66 325⇓*i* P **PKPdf 16 31 36.6 +0.4**
PSZ Piszkesteto 124.66 325⇓*i* P **PKKPbc 16 41 18.7 -1.0**
PSZ Piszkesteto 124.66 325⇑*e*PKPdf **PKPdf 16 31 36.2 0.0**
PSZ Piszkesteto 124.66 325 ⇓PKIKP **PKPdf 16 31 36.6 +0.4**
PSZ Piszkesteto 124.66 325 *e*PKPdf **PKPdf 16 31 35.7 -0.5**
PSZ *e*Sdif Sdif 16 41 18.8 +0.6
BZS Buzias 124.85 322⇓*i* P **PKPdf 16 31 36.8 +0.3**
BZS Buzias 124.85 322⇓*i* P **PKKPbc 16 41 18.3 -0.4**
BZS Buzias 124.85 322 ⇓PKIKP **PKPdf 16 31 36.8 +0.3**
KSP Ksiaz 124.87 330 *e*PKP **PKPdf 16 31 36.8 +0.4**
KSP Ksiaz 124.87 330 *e*PKIKP **PKPdf 16 31 36.8 +0.4**
MORC Moravsky Berou 124.88 328⇓*i* P **PKPdf 16 31 37.4 +0.9**
MORC Moravsky Berou 124.88 328⇓*i* P **PKKPbc 16 41 18.4 -0.4**
MORC Moravsky Berou 124.88 328 *e*PKIKP **PKPdf 16 31 36.5 0.0**
MORC Moravsky Berou 124.88 328 *e*PKPdf **PKPdf 16 31 36.5 0.0**
MORC *e*Sdif Sdif 16 41 18.3 -1.6
VYHS Vyhne 124.93 326 *e*PKIKP **PKPdf 16 31 36.7 +0.1**
VYHS Vyhne 124.93 326 *e*PKP **PKPdf 16 31 36.7 +0.1**
VYHS Vyhne 124.93 326 *e*P **PKKPbc 16 41 17.3 -1.2**
VYHS *e*PP SKKPbc 16 44 51.7 -14
TIM Timisoara 125.03 322⇓*i* P **PKPdf 16 31 39.0 +2.2**
TIM Timisoara 125.03 322 ⇓PKIKP **PKPdf 16 31 39.0 +2.2**
KAVA Kavala 125.07 316 P **PKPdf 16 31 36.0 -1.1**
KRLC Kraliky 125.09 329 *e*PKPdf **PKPdf 16 31 37.1 +0.2**
KRLC *e*pPKP **pPKPdf 16 31 53.3 +0.1**
KRLC *e*PKKP **PKKPbc 16 41 17.7 -0.3**
KRLC Kraliky 125.09 329 *e*PKIKP **PKPdf 16 31 37.1 +0.2**
KRLC *e* 16 31 53.3
KARP Karpathos 125.12 309 *e*PKPdf **PKPdf 16 31 37.2 -0.2**
DPC Dobruska-Polom 125.16 329 *e*PKPdf **PKPdf 16 31 37.6 +0.5**
DPC *e*pPKP **pPKPdf 16 31 52.0 -1.3**
DPC *e*PP **PP 16 33 30.5 +4.0**
DPC *e*PKKP **PKKPbc 16 41 17.5 -0.2**
DPC *e*SKKP 16 45 02.6
DPC AMS AMS 17 26 20.0
comp=Z,1μm,22.3s
DPC Dobruska-Polom 125.16 329 *e*PKIKP **PKPdf 16 31 37.6 +0.5**
DPC *e* 16 31 52.0
DPC *e* 16 33 30.5
DPC *e* 16 45 02.6
DPC MLR MLR
comp=Z,1μm,22.3s
MDVR Moldovita 125.20 321⇓*i* P **PKPdf 16 31 37.5 +0.2**
MDVR Moldovita 125.20 321⇓*i* P **PKKPbc 16 41 16.5 -0.9**
UPC Upice 125.22 330 *e*PKPdf **PKPdf 16 31 37.4 +0.3**
UPC *e*pPKP **pPKPdf 16 31 52.5 -0.8**
UPC *e*PP **PP 16 33 27.4 +0.6**
UPC *e*x x 16 41 17.2
UPC *e*SKKP 16 45 03.6
UPC AMS AMS 17 26 20.0
comp=Z,1μm,24.2s
UPC Upice 125.22 330 *e*PKIKP **PKPdf 16 31 37.4 +0.3**
UPC *e* 16 31 52.5
UPC *e* 16 33 27.4
UPC *e* 16 45 03.6
UPC MLR MLR
comp=Z,1μm,24.2s
BANR Banloc 125.26 322⇓*i* P **PKPdf 16 31 38.4 +1.1**
MMB Musomiste 125.36 317 P **PKPdf 16 31 37.0 -0.7**
MMB Musomiste 125.36 317 *e*P **PKKPbc 16 41 15.3 -1.4**
NVR Nevrokopi 125.37 317 P **PKPdf 16 31 35.9 -1.8**
BUD Budapest 125.39 325⇑*e*PKPdf **PKPdf 16 31 37.7 +0.2**
SRS Serrai 125.65 316 P **PKPdf 16 31 34.2 -4.0**
VRAC Vranov 125.65 328⇓*i* P **PKPdf 16 31 38.6 +0.6**
VRAC Vranov 125.65 328 ⇓PKIKP **PKPdf 16 31 38.6 +0.6**
KKB Krupnik 125.67 318 P **PKPdf 16 31 37.5 -0.8**
SMOL Smolenice 125.68 327 *e*PKIKP **PKPdf 16 31 39.0 +0.9**
SMOL Smolenice 125.68 327 *e*PKP **PKPdf 16 31 39.0 +0.9**
CSKK Cs˙tkako 125.88 326⇑*e*PKPdf **PKPdf 16 31 38.9 +0.4**
PVCC Panska Ves 125.92 330 *e*PKPdf **PKPdf 16 31 38.9 +0.5**
PVCC *e*x x 16 31 42.3
PVCC *e*pPKP **pPKPdf 16 31 54.5 -0.2**
PVCC *e*PP **PP 16 33 34.4 +3.0**
PVCC AMS AMS 17 30 30.0
comp=Z,900nm,21.4s
PVCC Panska Ves 125.92 330 *e*PKIKP **PKPdf 16 31 38.9 +0.5**
PVCC *e* 16 31 54.5
PVCC *e* 16 33 34.4
PVCC MLR MLR
comp=Z,900nm,21.4s
BRG Berggiesshubel 126.00 331 *i* PKP **PKPdf 16 31 38.9 +0.3**
comp=Z,84nm,1.0s
BRG *i* pPKP **pPKPdf 16 31 54.3 -0.5**
comp=Z,61nm,1.5s
BRG *i* PP **PP 16 33 32.1 +0.2**
comp=Z,20nm,1.3s
BRG *i* PKS **PKSdf 16 35 15.9 +0.9**
comp=Z,21nm,1.7s
BRG PS **PS 16 43 21.0 -14**
BRG SS SS 16 50 28.0 -1.3
comp=N,869nm,29.7s
comp=E,855nm,27.2s
comp=Z,1μm,29.5s
BRG Berggiesshubel 126.00 331 *i* PKIKP **PKPdf 16 31 38.9 +0.3**
BRG *i* 16 31 54.3
BRG *i* 16 33 32.1
BRG SS SS 16 50 28.0 -1.3
BRG p

CLL			*e*			16 53 12.0	
CLL			*e*SSS	SSS		16 55 12.0	
CLL	**Collm**	**126.16 332**	⇑*i*PKIKP	**PKPdf**		**16 31 39.0**	**+0.1**
CLL			*i*			16 31 54.6	
CLL			pmax	pmax			
comp=Z,85nm,0.8s							
CLL	**Collm**	**126.16 332**	*e*PKPdf	**PKPdf**		**16 31 38.7**	**-0.2**
GOPC	**GO Pecny, Ondr**	**126.20 330**	*e*PKPdf	**PKPdf**		**16 31 39.5**	**+0.5**
GOPC			*ep*PKP	**pPKPdf**		**16 31 55.3**	**0.0**
GOPC			*e*PP	**PP**		**16 33 36.9**	**+3.5**
GOPC			*e*SP	SP		16 43 25.2	-4.4
GOPC			*e*SS	**SS**		**16 50 40.1**	**+8.0**
GOPC			AMS	AMS		17 24 30.0	
comp=Z,800nm,26.1s							
GOPC	**GO Pecny, Ondr**	**126.20 330**	*e*PKIKP	**PKPdf**		**16 31 39.5**	**+0.5**
GOPC			*e*			16 31 55.3	
GOPC			*e*			16 33 36.9	
GOPC			*e*PS	**PS**		**16 43 25.2**	**-12**
GOPC			*e*SS	SS		16 50 40.1	+8.0
GOPC			MLR	MLR			
comp=Z,800nm,26.1s							
TREC	**Trest**	**126.23 329**	*e*PKPdf	**PKPdf**		**16 31 39.4**	**+0.3**
TREC			*ep*PKP	**pPKPdf**		**16 31 54.0**	**-1.4**
TREC			*e*PP	**PP**		**16 33 33.6**	**-0.1**
TREC			*e*SKKP			16 44 58.1	
TREC			AMS	AMS		17 26 30.0	
comp=Z,1μm,21.8s							
TREC	**Trest**	**126.23 329**	*e*PKIKP	**PKPdf**		**16 31 39.4**	**+0.3**
TREC			*e*			16 31 54.0	
TREC			*e*			16 33 33.6	
TREC			*e*			16 44 58.1	
TREC			MLR	MLR			
comp=Z,1μm,21.8s							
VAY	**Valandovo**	**126.26 317**	*i* PKP	**PKPdf**		**16 31 38.2**	**-1.1**
PRU	**Pruhonice**	**126.28 330**	*e*PKPdf	**PKPdf**		**16 31 39.2**	**+0.1**
PRU			*ep*PKP	**pPKPdf**		**16 31 55.0**	**-0.4**
PRU			*e*PP	**PP**		**16 33 37.5**	**+3.6**
PRU			*ex*	x		16 41 12.9	
PRU			*e*SKKP			16 44 57.4	
PRU			AMS	AMS		17 29 30.0	
comp=Z,900nm,23.1s							
PRA	**Prague**	**126.28 330**	*e*PKPdf	**PKPdf**		**16 31 39.6**	**+0.5**
PRA			AMS	AMS		17 29 20.0	
comp=Z,1μm,22.6s							
PRA	**Prague**	**126.28 330**	*e*PKIKP	**PKPdf**		**16 31 39.6**	**+0.5**
PRA			MLR	MLR			
comp=Z,1μm,22.6s							
MLA1	**Latheron**	**126.29 347**	*e*P	**PKPdf**		**16 31 38.5**	**-0.4**
PKSM	**Moragy**	**126.31 324**	⇓*i*P	**PKPdf**		**16 31 39.7**	**+0.4**
PKSM	**Moragy**	**126.31 324**	⇓PKIKP	**PKPdf**		**16 31 39.7**	**+0.4**
NPS	**Neapolis**	**126.41 309**	P	**PKPdf**		**16 31 40.0**	**+0.1**
GRG	**Griva**	**126.53 317**	P	**PKPdf**		**16 31 38.6**	**-1.4**
GRG	**Griva**	**126.53 317**	PKIKP	**PKPdf**		**16 31 38.6**	**-1.4**
GRG	**Griva**	**126.53 317**	P	**PKPdf**		**16 31 38.6**	**-1.4**
LAST	**Lasithi**	**126.55 309**	⇓*i*P	**PKPdf**		**16 31 41.0**	**+0.8**
LAST	**Lasithi**	**126.55 309**	P	**PKPdf**		**16 31 40.5**	**+0.3**
LAST	**Lasithi**	**126.55 309**	*e*PKPdf	**PKPdf**		**16 31 39.9**	**-0.3**
SOP	**Sopron**	**126.64 327**	⇑*e*PKPdf	**PKPdf**		**16 31 39.8**	**-0.1**
XOR	**Xorichti**	**126.66 315**	P	**PKPdf**		**16 31 38.4**	**-1.9**
PTL	**Penteli**	**126.71 313**	P	**PKPdf**		**16 31 38.5**	**-1.9**
SKO	**Skopje**	**126.72 318**	*i* PKP	**PKPdf**		**16 31 40.2**	**-0.1**
MVH1	**Achvaich**	**126.82 347**	*e*P	**PKPdf**		**16 31 39.5**	**-0.5**
LIT	**Litokhoron**	**126.84 316**	P	**PKPdf**		**16 31 39.0**	**-1.6**
LIT	**Litokhoron**	**126.84 316**	PKIKP	**PKPdf**		**16 31 39.0**	**-1.6**
LIT	**Litokhoron**	**126.84 316**	P	**PKPdf**		**16 31 39.0**	**-1.6**
CONA	**Conrad Observa**	**126.87 327**	*i* PKiKP	**PKPdf**		**16 31 40.4**	**-0.1**
comp=Z,30nm,0.8s,SNR=22							
MCD	**Coleburn Disti**	**126.92 346**	*e*P	**PKPdf**		**16 31 39.5**	**-0.7**
IDI	**Anoyia**	**126.96 309**	⇓*i*P	**PKPdf**		**16 31 41.1**	**+0.1**
IDI	**Anoyia**	**126.96 309**	P	**PKPdf**		**16 31 40.5**	**-0.5**
IDI	**Anoyia**	**126.96 309**	*e*PKPdf	**PKPdf**		**16 31 41.1**	**+0.1**
MME1	**Meikle Cairn**	**127.08 346**	*e*P	**PKPdf**		**16 31 39.6**	**-0.9**
LKR	**Lokris**	**127.09 314**	P	**PKPdf**		**16 31 38.8**	**-2.2**
SIVA	**Sivas**	**127.11 309**	⇑*i*P	**PKPdf**		**16 31 42.3**	**+1.1**
NKC	**Novy Kostel**	**127.14 331**	*e*PKPdf	**PKPdf**		**16 31 41.1**	**+0.3**
NKC			*ep*PKP	**pPKPdf**		**16 31 56.9**	**-0.2**
NKC			*e*PP	**PP**		**16 33 42.9**	**+3.4**
NKC			AMS	AMS		17 28 20.0	
comp=Z,1μm,20.8s							
NKC	**Novy Kostel**	**127.14 331**	*e*PKIKP	**PKPdf**		**16 31 41.1**	**+0.3**
NKC			*e*			16 31 56.9	
NKC			*e*			16 33 42.9	
NKC			MLR	MLR			
comp=Z,1μm,20.8s							
BIA	**Bitola**	**127.23 317**	*i* PKP	**PKPdf**		**16 31 40.5**	**-0.8**
KZN	**Kozani**	**127.25 316**	P	**PKPdf**		**16 31 40.0**	**-1.4**
KZN	**Kozani**	**127.25 316**	PKIKP	**PKPdf**		**16 31 40.0**	**-1.4**
KZN	**Kozani**	**127.25 316**	P	**PKPdf**		**16 31 40.0**	**-1.4**
LVC	**Limon Verde**	**127.28 125**	PP	PP		16 33 44.5	+2.6
comp=Z,49nm,1.1s,baz=220,slow=9.0,SNR=4.5							
LVC	**Limon Verde**	**127.28 125**	*e*PKPdf	**PKPdf**		**16 31 42.3**	**-0.1**
LVC			*e*PP	**PP**		**16 33 44.8**	**+2.9**
MDO	**Dochfour**	**127.30 347**	*e*P	**PKPdf**		**16 31 40.4**	**-0.5**
FNA	**Florina**	**127.30 317**	P	**PKPdf**		**16 31 40.6**	**-0.9**
FNA	**Florina**	**127.30 317**	PKIKP	**PKPdf**		**16 31 40.6**	**-0.9**
FNA	**Florina**	**127.30 317**	P	**PKPdf**		**16 31 40.6**	**-0.9**
KHC	**Kasperske Hory**	**127.31 330**	*e*PKPdf	**PKPdf**		**16 31 41.2**	**0.0**
KHC			*ep*PKP	**pPKPdf**		**16 31 57.0**	**-0.4**
KHC			*es*PKP			16 32 02.4	
KHC			*e*PP	**PP**		**16 33 42.4**	**+1.6**
KHC			*e*SP	SP		16 43 33.4	-6.0
KHC			*e*SKKP			16 44 51.6	
KHC			*e*SS	**SS**		**16 50 55.3**	**+9.4**
KHC			AMS	AMS		17 27 50.0	
comp=Z,1μm,22.0s							
KHC	**Kasperske Hory**	**127.31 330**	*e*PKIKP	**PKPdf**		**16 31 41.2**	**0.0**
KHC			*e*			16 31 57.0	
KHC			*e*			16 32 02.4	
KHC			*e*			16 33 42.4	
KHC			*e*SS	SS		16 50 55.3	+9.4
KHC			MLR	MLR			
comp=Z,1μm,22.0s							
KHC	**Kasperske Hory**	**127.31 330**	*e*PKPdf	**PKPdf**		**16 31 41.1**	**-0.1**
THL	**Klokotos Trika**	**127.41 315**	P	**PKPdf**		**16 31 40.2**	**-1.4**
AGG	**Agios Georgios**	**127.42 315**	P	**PKPdf**		**16 31 40.4**	**-1.3**
AGG	**Agios Georgios**	**127.42 315**	*e*PKIKP	**PKPdf**		**16 31 41.4**	**-0.3**
AGG	**Agios Georgios**	**127.42 315**	*e*PKPdf	**PKPdf**		**16 31 41.4**	**-0.3**
GEC2	**GERESS Array S**	**127.43 329**	*e*PKIKP	**PKPdf**		**16 31 41.1**	**-0.4**
GEC2	**GERESS Array S**	**127.43 329**	*e*PKPdf	**PKPdf**		**16 31 41.1**	**-0.4**
GERES	**GERESS Array B**	**127.43 329**	PKP	**PKPdf**		**16 31 41.1**	**-0.4**
comp=Z,42nm,0.7s,baz=169,slow=2.3,SNR=182							
GERES			pPKP	**pPKPdf**		**16 31 55.8**	**-1.9**
comp=Z,9.2nm,0.8s,baz=117,slow=4.7,SNR=4.7							
GERES			PKKPbc	PKKPbc		16 41 09.9	
comp=Z,0.3nm,0.6s,baz=226,slow=7.0,SNR=4.2							
GERES			SKKPbc	SKKPbc		16 44 48.6	-8.5
comp=Z,0.6nm,0.4s,baz=227,slow=5.3,SNR=3.5							
GERES	**GERESS Array B**	**127.43 329**	PKIKP	**PKPdf**		**16 31 41.1**	**-0.4**
GERES						16 31 55.8	
GERES			pmax	pmax			
comp=Z,43nm,0.7s							
GERES			pmax	pmax			
comp=Z,9.0nm,0.8s							
GEA0	**GERESS Array S**	**127.44 329**	*e*PKPdf	**PKPdf**		**16 31 41.0**	**-0.5**
KAC	**Achnashellach**	**127.46 347**	*e*P	**PKPdf**		**16 31 40.9**	**-0.3**
ARSA	**Arzberg**	**127.46 327**	*i* PKiKP	**PKPdf**		**16 31 41.6**	**+0.1**
comp=Z,4.3nm,0.7s,SNR=9.8							
POPC	**Popayan, Colom**	**127.52 92**	*e*P	**PKPdf**		**16 31 38.8**	**-4.1**
DSF	**Desfina**	**127.53 314**	P	**PKPdf**		**16 31 41.0**	**-1.0**
PB01	**IPOC Station P**	**127.54 123**	*e*PKPdf	**PKPdf**		**16 31 41.3**	**-1.2**
KOGS	**Kog**	**127.54 326**	*i* PKPdf	**PKPdf**		**16 31 41.4**	**-0.2**
OHR	**Ohrid**	**127.54 318**	*i* PKP	**PKPdf**		**16 31 41.3**	**-0.6**
KPL	**Plockton**	**127.68 347**	*e*P	**PKPdf**		**16 31 41.4**	**-0.1**
KPRO	**Kipourio**	**127.69 316**	P	**PKPdf**		**16 31 41.2**	**-1.0**
NEST	**Nestorio**	**127.69 317**	P	**PKPdf**		**16 31 41.2**	**-1.1**
MOA	**Molln**	**127.77 328**	*i* PKiKP	**PKPdf**		**16 31 42.3**	**+0.2**
comp=Z,17nm,0.8s,SNR=8.6							
EDU	**Dundee**	**127.78 345**	*e*P	**PKPdf**		**16 31 40.8**	**-1.0**
EVR	**Evrytania**	**127.83 315**	P	**PKPdf**		**16 31 43.0**	**+0.4**
SERG	**Sergoula**	**127.86 314**	P	**PKPdf**		**16 31 41.9**	**-0.7**
ANX	**Ano Chora**	**127.89 314**	P	**PKPdf**		**16 31 42.5**	**-0.2**
PDG	**Podgorica**	**127.91 320**	⇓*i*P	**PKPdf**		**16 31 42.4**	**-0.1**
KLV	**Kalavryta, Ach**	**127.95 314**	P	**PKPdf**		**16 31 42.9**	**+0.1**
PB11	**IPOC Station P**	**127.97 122**	*e*PKPdf	**PKPdf**		**16 31 42.5**	**-1.0**
BLY	**Banja Luka**	**127.97 323**	⇓*i*P	**PKPdf**		**16 31 43.1**	**+0.6**
LAKA	**Lakka**	**127.99 314**	P	**PKPdf**		**16 31 42.9**	**+0.1**
TIR	**Tirane**	**128.05 318**	⇓*i*P	**PKPdf**		**16 31 44.1**	**+1.3**
TIR	**Tirane**	**128.05 318**	⇓PKIKP	**PKPdf**		**16 31 44.1**	**+1.3**
TIR	**Tirane**	**128.05 318**	*e*PKPdf	**PKPdf**		**16 31 43.3**	**+0.5**
PERS	**Pernice**	**128.06 326**	*e*PKPdf	**PKPdf**		**16 31 41.9**	**-0.9**
SOKA	**Soboth**	**128.08 326**	*i* PKiKP	**PKPdf**		**16 31 42.6**	**-0.2**
SNR=14							
GRFO	**Grafenberg**	**128.09 331**	*e*PKIKP	**PKPdf**		**16 31 42.7**	**+0.1**
GRFO	**Grafenberg**	**128.09 331**	*e*PKPdf	**PKPdf**		**16 31 42.7**	**+0.1**
ESY	**Stoneypath**	**128.24 345**	*e*P	**PKPdf**		**16 31 42.3**	**-0.4**
DBBC	**Dabeiba**	**128.37 87**	*e*P	**PKPdf**		**16 31 45.6**	**+1.3**
WTSB	**Winterswijk**	**128.38 336**	*e*PKP	**PKPdf**		**16 31 43.1**	**0.0**
WTSB			*eX*			16 31 59.1	
PDO	**Prodromos**	**128.41 315**	P	**PKPdf**		**16 31 44.1**	**+0.5**
EAB	**Aberfoyle**	**128.43 346**	*e*P	**PKPdf**		**16 31 42.9**	**-0.2**
OBKA	**Obir**	**128.44 327**	*i* PKiKP	**PKPdf**		**16 31 43.4**	**-0.1**
comp=Z,25nm,1.4s,SNR=7.0							
BOJS	**Bojanci**	**128.66 325**	*i* PKPdf	**PKPdf**		**16 31 44.1**	**+0.3**
LKD2	**Lefkada island**	**128.69 315**	P	**PKPdf**		**16 31 44.5**	**+0.4**
LJU	**Ljubljana**	**128.74 326**	*i* PKPdf	**PKPdf**		**16 31 44.0**	**0.0**
KBA	**Koelnbreinsper**	**128.74 328**	*i* PKiKP	**PKPdf**		**16 31 43.8**	**-0.4**
comp=Z,39nm,1.2s							
BETC	**Betania**	**128.76 92**	*e*P	**PKPdf**		**16 31 44.4**	**-0.6**
MYKA	**Terra Mystica**	**128.86 327**	*i* PKiKP	**PKPdf**		**16 31 44.0**	**-0.3**
comp=Z,20nm,0.9s,SNR=6.5							
ESK	**Eskdalemuir**	**128.93 345**	*e*P	**PKPdf**		**16 31 44.0**	**-0.1**
ESK	**Eskdalemuir**	**128.93 345**	*c i*PKIKP	**PKPdf**		**16 31 45.3**	**+1.3**
MOTC	**Monteria, Cord**	**128.99 84**	*e*P	**PKPdf**		**16 31 42.5**	**-2.8**
HELC	**Santa Helena**	**128.99 88**	*e*P	**PKPdf**		**16 31 44.4**	**-1.4**
GUYC	**Guyana, Colomb**	**129.06 89**	*e*P	**PKPdf**		**16 31 44.4**	**-1.7**
TOLC	**Tolima**	**129.07 90**	*e*P	**PKPdf**		**16 31 42.5**	**-3.4**
ABTA	**Abfaltersbach**	**129.39 328**	*i* PKiKP	**PKPdf**		**16 31 45.1**	**-0.2**
comp=Z,62nm,1.6s,SNR=12							
PRAC	**Prado**	**129.42 91**	*e*P	**PKPdf**		**16 31 45.0**	**-1.2**
WATA	**Walderalm**	**129.50 329**	*i* PKiKP	**PKPdf**		**16 31 45.7**	**+0.1**
SNR=9.9							
WTTA	**Wattenberg**	**129.51 329**	*i* PKiKP	**PKPdf**		**16 31 45.8**	**+0.2**
comp=Z,17nm,0.7s,SNR=14							
NORC	**Norcasia**	**129.60 89**	*e*P	**PKPdf**		**16 31 43.8**	**-2.8**
HGN	**Heimansgroeve**	**129.65 336**	*e*PKP	**PKPdf**		**16 31 45.5**	**0.0**
comp=Z,44nm,1.1s							
HGN			*e*PP	**PP**		**16 34 01.8**	**+6.0**
STU	**Stuttgart**	**129.68 332**	*e*PKIKP	**PKPdf**		**16 31 45.3**	**-0.4**
STU	**Stuttgart**	**129.68 332**	*e*PKPdf	**PKPdf**		**16 31 45.3**	**-0.4**
GAL1	**Galloway**	**129.72 346**	*e*P	**PKPdf**		**16 31 45.0**	**-0.6**
MOTA	**Moosalm**	**129.73 329**	*i* PKiKP	**PKiKP**		**16 31 47.1**	**+0.3**
SNR=20							
BEBN	**Eben Emael**	**129.73 336**	PKP	**PKPdf**		**16 31 46.3**	**+0.7**
BEBN			E			16 35 04.9	
MEM	**Membach**	**129.74 335**	PKP	**PKPdf**		**16 31 46.0**	**+0.3**
MEM			E			16 35 04.7	
RETA	**Reutte**	**129.81 330**	*i* PKiKP	**PKPdf**		**16 31 46.2**	**+0.2**
comp=Z,33nm,1.2s,SNR=12							
ROSC	**El Rosal**	**130.09 90**	PKP	**PKPdf**		**16 31 47.5**	**-0.4**
comp=Z,16nm,0.8s,baz=89,slow=14,SNR=8.9							
ROSC			SKPbc	**SKPab**		**16 35 05.8**	**-0.3**
comp=Z,6.9nm,1.0s,baz=205,slow=14,SNR=3.7							
ROSC	**El Rosal**	**130.09 90**	*e*PKPdf	**PKPdf**		**16 31 46.6**	**-1.4**
ROSC			SKPbc	**SKPab**		**16 35 05.8**	**-0.3**
ROSC	**El Rosal**	**130.09 90**	*e*P	**PKPdf**		**16 31 48.1**	**+0.2**
FETA	**Feichten**	**130.14 329**	*i* PKiKP	**PKPdf**		**16 31 47.0**	**+0.2**
comp=Z,36nm,0.8s,SNR=11							
LANF	**Langenberg**	**130.17 333**	PKP	**PKPdf**		**16 31 47.0**	**+0.4**
BCLA	**Clavier**	**130.18 336**	PKP	**PKPdf**		**16 31 46.6**	**0.0**
BCLA			E			16 35 06.0	
SJAC	**San Juan de Ar**	**130.30 92**	*e*P	PKPdf		16 31 56.8	+8.8
DAVA	**Damuels**	**130.38 330**	*i* PKiKP	**PKiKP**		**16 31 47.7**	**-0.4**
comp=Z,21nm,0.7s							
WLF	**Walferdange**	**130.40 334**	PKP	**PKPdf**		**16 31 47.2**	**+0.2**
WLF			E			16 35 06.5	
WLF	**Walferdange**	**130.40 334**	*e*PKIKP	**PKPdf**		**16 31 46.4**	**-0.6**
WLF	**Walferdange**	**130.40 334**	*e*PKPdf	**PKPdf**		**16 31 46.4**	**-0.6**
WLF			*e*SKPbc	**SKPbc**		**16 35 06.3**	**+0.4**
BFO	**Black Forest**	**130.40 332**	*e*PKIKP	**PKPdf**		**16 31 45.6**	**-1.5**
BFO	**Black Forest**	**130.40 332**	*e*PKPdf	**PKPdf**		**16 31 45.6**	**-1.5**
BFO			*e*SKPbc	**SKPbc**		**16 35 06.9**	**+0.8**
SNF	**Seneffe**	**130.52 336**	PKP	**PKPdf**		**16 31 48.7**	**+1.5**
SNF			E			16 35 07.7	
FUORN	**Ofenpass-Fuorn**	**130.64 329**	*e*PKPdf	**PKPdf**		**16 31 48.0**	**+0.1**
FUORN			*e*SKPbc	**SKPab**		**16 35 09.1**	**+1.8**
VILC	**Villavicencio,**	**130.64 91**	*e*P	**PKPdf**		**16 31 46.3**	**-2.4**
CWF	**Charnwood Fore**	**130.65 342**	*e*PKPdf	**PKPdf**		**16 31 47.8**	**+0.4**
CWF			*e*SKPbc	**SKPab**		**16 35 07.7**	**+0.9**
DOU	**Dourbes**	**130.71 336**	PKP	**PKPdf**		**16 31 47.9**	**+0.4**
DOU			E			16 35 08.3	
LPAZ	**La Paz**	**130.76 118**	PKhKP	PKPpre		16 31 38.2	
comp=Z,1.1nm,0.6s,baz=358,slow=3.8,SNR=3.2							
LPAZ			PKP	**PKPdf**		**16 31 49.7**	**+0.3**
comp=Z,6.4nm,0.9s,baz=240,slow=2.2,SNR=6.6							
LPAZ			PP	**PP**		**16 34 04.5**	**-0.7**
comp=Z,4.2nm,1.0s,baz=274,slow=3.5,SNR=3.7							
LPAZ			SKPbc	**SKPbc**		**16 35 08.7**	**-0.3**
comp=Z,6.7nm,1.0s,baz=233,slow=1.0,SNR=4.4							
LPAZ	**La Paz**	**130.76 118**	PKPpre	PKPpre		16 31 38.2	
LPAZ			*e*PKPdf	**PKPdf**		**16 31 46.8**	**-2.6**
LPAZ			PP	**PP**		**16 34 04.5**	**-0.7**
LPAZ			SKPbc	**SKPbc**		**16 35 08.7**	**-0.3**
ECH	**Echery**	**131.03 333**	PKP	**PKPdf**		**16 31 47.9**	**-0.4**
FOEL	**Foel Wylfa**	**131.09 343**	*e*P	**PKPdf**		**16 31 48.2**	**0.0**
TIP	**Timpagrande**	**131.19 317**	⇓*i*P	**PKPdf**		**16 31 50.8**	**+1.9**
TIP	**Timpagrande**	**131.19 317**	*e*PKPdf	**PKPdf**		**16 31 48.5**	**-0.4**
TUE	**Stuetta**	**131.21 330**	*e*P	PKPpre		16 31 40.6	
TUE			*e*PKPdf	**PKPdf**		**16 31 48.8**	**-0.1**
TUE			*e*SKPbc	**SKPab**		**16 35 10.7**	**+1.0**
OCAC	**Ocana**	**131.29 85**	*e*P	**PKPdf**		**16 31 53.1**	**+3.2**
MOF	**Molkenrain**	**131.30 332**	PKP	**PKPdf**		**16 31 48.7**	**-0.2**
HLM1	**Long Mynd**	**131.32 343**	*e*P	**PKPdf**		**16 31 48.1**	**-0.5**
BARC	**Barichara**	**131.35 87**	*e*P	PKPpre		16 31 45.0	
TSUM	**Tsumeb**	**131.35 237**	*e*PKPpre	PKPpre		16 31 34.2	
TSUM			*e*PKPdf	**PKPdf**		**16 31 49.7**	**-0.2**
GIRC	**Giron, Santand**	**131.36 87**	*e*P	**PKPdf**		**16 31 47.5**	**-2.5**
CUC	**Castrocucco**	**131.39 319**	*e*PKPdf	**PKPdf**		**16 31 48.0**	**-1.2**
RUSC	**La Rusia**	**131.40 88**	*e*P	**PKPdf**		**16 31 48.1**	**-2.4**
THEF	**They Montfort**	**131.53 333**	PKP	**PKPdf**		**16 31 49.4**	**+0.1**
AQU	**L'Aquila**	**131.59 323**	*e*PKIKP	**PKPdf**		**16 31 50.3**	**+0.7**
AQU	**L'Aquila**	**131.59 323**	*e*PKPdf	**PKPdf**		**16 31 50.3**	**+0.7**
GRMC	**Gramalote, San**	**131.78 86**	*e*P	**PKPdf**		**16 31 46.3**	**-4.6**
CBRI	**Barrientos, No**	**131.78 86**	*e*P	**PKPdf**		**16 31 48.8**	**-2.1**
LOMF	**Lomont**	**131.81 332**	PKP	**PKPdf**		**16 31 50.1**	**+0.2**
WOL	**Wolverton**	**131.85 341**	*e*P	**PKPdf**		**16 31 49.6**	**-0.1**
SWN1	**Swindon**	**131.87 341**	*e*P	**PKPdf**		**16 31 50.6**	**+0.9**
LPW	**Lampeter**	**132.02 343**	*e*P	**PKPdf**		**16 31 49.8**	**-0.1**
CEL	**Celeste**	**132.23 317**	*e*PKPdf	**PKPdf**		**16 31 51.9**	**+1.0**
OG01	**Vacheresse**	**132.62 331**	PKP	**PKPdf**		**16 31 52.0**	**+0.6**
RSL	**Roselend**	**133.11 331**	PKP	**PKPdf**		**16 31 52.4**	**-0.1**
GDM	**Grand'Maison**	**133.71 330**	PKP	**PKPdf**		**16 31 53.8**	**+0.2**
GRN	**Grenoble**	**133.86 331**	PKP	**PKPdf**		**16 31 54.1**	**+0.3**
CPUP	**Villa Florida**	**133.86 137**	PKP	**PKPdf**		**16 31 54.3**	**0.0**
comp=Z,4.6nm,0.7s,baz=0.1,slow=1.5,SNR=10							
CPUP			PP	**PP**		**16 34 23.5**	**-0.1**
comp=Z,5.2nm,0.9s,baz=284,slow=4.0,SNR=3.6							
CPUP			SKPbc	**SKPbc**		**16 35 18.3**	**-0.6**
comp=Z,4.8nm,0.9s,baz=237,slow=6.6,SNR=2.9							
SDV	**Santo Domingo**	**133.96 84**	*e*PKPdf	**PKPdf**		**16 31 54.2**	**-0.8**
SDV	**Santo Domingo**	**133.96 84**	*e*P	**PKPdf**		**16 31 52.5**	**-2.5**
PLDF	**La Plantade**	**134.31 333**	PKP	**PKPdf**		**16 31 56.0**	**+1.4**
CLTB	**Caltabellotta**	**134.39 318**	*e*PKPdf	**PKPdf**		**16 31 55.2**	**+0.1**
SSB	**Saint Sauveur**	**134.41 332**	PKP	**PKPdf**		**16 31 55.0**	**+0.2**
SSB	**Saint Sauveur**	**134.41 332**	*e*PKIKP	**PKPdf**		**16 31 54.8**	**0.0**
SSB	**Saint Sauveur**	**134.41 332**	*e*PKPdf	**PKPdf**		**16 31 54.8**	**0.0**
SSB			*e*SKPbc	**SKPbc**		**16 35 21.4**	**+1.3**
AGO	**Saint Agoulin**	**134.47 333**	PKP	**PKPdf**		**16 31 55.8**	**+1.0**
OG26	**St.-Nazaire-De**	**134.56 330**	PKP	**PKPdf**		**16 31 55.5**	**+0.4**
H09W1	**TRISTAN DA CUN**	**134.81 193**	PKP	**PKPdf**		**16 31 56.7**	**+1.0**
H09N1	**TRISTAN DA CUN**	**134.84 193**	PKP	**PKPdf**		**16 31 56.8**	**+1.0**
TRIS	**Tristan da Cun**	**134.84 193**	*e*PKPdf	**PKPdf**		**16 31 56.3**	**+0.5**
VERF	**Verneugheol**	**134.99 334**	PKP	**PKPdf**		**16 31 56.3**	**+0.4**
LBL	**Lubilhac**	**135.04 333**	PKP	**PKPdf**		**16 31 57.8**	**+1.8**
VSL	**Villasalto**	**135.74 322**	*e*PKPdf	**PKPdf**		**16 31 57.0**	**-0.4**
LRDF	**Laroque-de-Fa**	**137.12 331**	PKP	PKPpre		16 31 52.1	
FILF	**Fillols**	**137.39 331**	PKP	**PKPdf**		**16 31 55.8**	**-4.6**
SJG	**San Juan**	**137.64 71**	*e*PKIKP	**PKPdf**		**16 32 00.7**	**-0.8**
SJG	**San Juan**	**137.64 71**	*e*PKPdf	**PKPdf**		**16 32 00.7**	**-0.8**
VALF	**Valcebollere**	**137.77 331**	PKP	PKPpre		16 31 53.3	
HUMP	**Col San Antoni**	**137.92 71**	*e*PKPdf	**PKPdf**		**16 32 01.4**	**-0.6**
KEST	**Kesra**	**138.00 318**	PKhKP	PKPpre		16 31 50.6	
comp=Z,5.2nm,0.6s,baz=332,slow=3.4,SNR=9.6							
KEST			PKP	**PKPdf**		**16 32 02.6**	**+0.8**
comp=Z,26nm,1.0s,baz=132,slow=2.2,SNR=12							
SAML	**Samuel**	**138.04 112**	*e*PKPdf	**PKPdf**		**16 32 02.8**	**+0.5**
LABF	**Labassere**	**138.18 333**	PKP	**PKPdf**		**16 32 02.0**	**+0.1**
VIEF	**Viey**	**138.33 333**	PKP	PKPpre		16 31 55.1	
REYF	**Montagne du Re**	**138.37 334**	PKP	PKPpre		16 31 56.5	
ATE	**Arette**	**138.49 334**	PKP	PKPpre		16 31 58.5	
LARF	**Larrau**	**138.65 334**	PKP	PKPpre		16 31 57.7	
SET	**Setif**	**140.26 321**	P	PKPpre		16 32 01.0	
PBRG	**Braganca**	**141.99 339**	*e*PKP	PKPpre		16 32 04.6	
PBRG	**Braganca**	**141.99 339**	*e*LR	LR		17 18 39.0	
SPB	**Sao Paulo**	**142.09 144**	*e*PKPdf	**PKPdf**		**16 32 08.2**	**-1.3**
MVO	**Moncorvo**	**142.65 338**	*e*PKP	PKPpre		16 32 07.0	
MVO	**Moncorvo**	**142.65 338**	*e*LQ	LQ		17 14 29.5	
MVO			*e*LR	LR		17 21 24.3	
comp=Z,539nm,20.0s							
ESDC	**Sonseca Array**	**142.69 334**	PKhKP	PKPpre		16 32 06.2	
comp=Z,20nm,1.0s,baz=22,slow=2.8,SNR=60							
ESDC			PP	**PP**		**16 35 18.5**	**+0.7**
comp=Z,1.1nm,0.6s,baz=29,slow=6.3,SNR=4.1							
ESLA	**Sonseca Array**	**142.69 334**	*e*P	**PKPdf**		**16 32 06.4**	**-3.7**
POLO	**Lamas de Olo**	**142.74 339**	*e*PKP	**PKPdf**		**16 32 08.0**	**-2.2**
POLO	**Lamas de Olo**	**142.74 339**	*e*LR	LR		17 21 17.9	
PVRL	**Vila Real**	**142.80 339**	*e*PKP	**PKPdf**		**16 32 08.2**	**-2.1**
PAB	**San Pablo**	**142.96 334**	*e*PKIKP	PKPpre		16 32 07.9	
PAB	**San Pablo**	**142.96 334**	*e*PKPpre	PKPpre		16 32 07.9	
PTO	**Porto**	**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**59.97**	**105**	P	P	16 34 13.4	-0.2
	0.4nm,0.6s,baz=266,slow=6.0,SNR=6.7						
WRA	**Warramunga Arr**	**61.24**	**101**	P	P	16 34 22.4	+0.1
	0.6nm,0.7s,baz=257,slow=6.4,SNR=3.6						
MKAR	**Makanchi Array**	**69.72**	**10**	P	P	16 35 16.7	+0.1
	0.5nm,0.7s,baz=189,slow=7.3,SNR=2.7						

IDC 01 16:24:26.3±5.8, 21°.99S×68°.71E, h0km, mb3.8/4, mb1 4.0/4, mb1mx3.6/38, mbtmp3.8/4, Error ellipse: s-maj=155.8km s-min=39.8km az=62.0, Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08S1	**Diego Carcia H**	**14.72**	**15**	T	T	16 42 37.3	
	baz=194,slow=76,SNR=104						
H08S2	**Diego Garcia H**	**14.72**	**15**	T	T	16 42 35.8	
	baz=194,slow=76,SNR=119						
H08S3	**Diego Garcia H**	**14.74**	**15**	T	T	16 42 38.7	
	baz=194,slow=76,SNR=107						
CMAR	**Chiang Mai Arr**	**49.91**	**39**	P	P	16 33 21.5	-0.5
	0.6nm,0.9s,baz=227,slow=7.0,SNR=4.5						
ASAR	**Alice Springs**	**59.63**	**105**	P	P	16 34 32.9	+0.3
	0.9nm,0.7s,baz=260,slow=6.5,SNR=8.6						
WRA	**Warramunga Arr**	**60.89**	**101**	P	P	16 34 41.0	-0.3
	1.6nm,0.9s,baz=254,slow=6.9,SNR=5.4						
MKAR	**Makanchi Array**	**69.55**	**10**	P	P	16 35 37.0	+0.2
	0.6nm,0.7s,baz=187,slow=3.4,SNR=2.5						

*CSEM **01** 16:32:49.7, 33°.79N×35°.77E, h2km, ML2.7*
GRAL 01 16:32:49.7±0.3, 33°.79N×35°.77E, h3km±20km, MD2.7, Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BHL	**Bhannes**	**0.15**	**319**	eP	Pg	16 32 52.5	-0.2
BHL	**Bhannes**	**0.15**	**319**	eP	Pg	16 32 52.5	-0.2
DQRL	**Deir Qamar**	**0.19**	**244**	eP	Pg	16 32 53.1	-0.2
DQRL				eS	Sg	16 32 55.7	-0.2
DQRL	**Deir Qamar**	**0.19**	**244**	eP	Pg	16 32 53.2	-0.2
DQRL				eS	Sg	16 32 55.7	-0.2
RCY	**Rachaya**	**0.29**	**170**	eP	Pg	16 32 55.1	-0.3
RCY				eS	Sg	16 32 59.0	-0.3
RCY	**Rachaya**	**0.29**	**170**	eP	Pg	16 32 55.1	-0.3
RCY				eS	Sg	16 32 59.0	-0.3
HWQ	**Hawqa**	**0.51**	**16**	eP	Pg	16 32 59.0	-0.5

*ISCJB **01** 16:47:26.1±0.8, 19°.2S±0°.2×176°.2W±0°.1, h50km, mb4.4/6, Error ellipse: s-maj=28.1km s-min=8.3km az=139.1*
*IDC **01** 16:47:27.5±4.6, 19°.33S×176°.02W, h55km±28km, mb4.2/4, mb1 4.2/6, mb1mx3.5/40, mbtmp4.3/6, ML3.4/2, Error ellipse: s-maj=121.3km s-min=19.6km az=140.0*
*NEIC **01** 16:47:28.3±3.3, 19°.27S×176°.18W, h49km±38km, mb4.4/3, Error ellipse: s-maj=50.4km s-min=20.6km az=164.0*
ISC 01 16:47:27.9±0.9, 19°.3S±0°.2×176°.1W±0°.2, h50km, n11, σ1§29/13, mb4.3/6, 1D, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**6.77**	**39**	P	**Pn**	**16 49 05.6**	**+0.8**
	0.6nm,0.3s,baz=221,slow=20,SNR=3.0						
AFI				S	**Sn**	**16 50 19.6**	**-1.0**
	4.3nm,0.3s,baz=211,slow=4.0,SNR=17						
DZM	**Mont Dzumac**	**16.54**	**257**	P	**Pn**	**16 51 16.3**	**-0.3**
	0.1nm,0.3s,baz=31,slow=9.8,SNR=13						
EIDS	**Eidsvold**	**30.88**	**253**	eP	**P**	**16 53 40.8**	**+1.1**
	2.2nm,0.6s						
CTA	**Charters Tower**	**35.37**	**262**	P	**P**	**16 54 21.0**	**+2.0**
	1.7nm,0.4s,baz=93,slow=10,SNR=5.8						
CTAO	**Charters Tower**	**35.37**	**262**	eP	**P**	**16 54 20.9**	**+1.8**
	11nm,0.3s						
STKA	**Stephens Creek**	**39.91**	**243**	P	**P**	**16 54 56.7**	**-0.5**
	1.8nm,0.5s,baz=85,slow=11,SNR=13						
WRAB	**Tennant Creek**	**46.51**	**260**	eP	**P**	**16 55 49.3**	**-1.4**
	2.5nm,0.7s						
ASAR	**Alice Springs**	**46.52**	**255**	P	**P**	**16 55 49.7**	**-1.0**
	7.2nm,0.5s,baz=92,slow=7.6,SNR=335						
ASAR				ScP	**ScP**	**17 01 12.8**	**-1.2**
	0.6nm,0.9s,baz=103,slow=3.8,SNR=5.7						
WRA	**Warramunga Arr**	**46.52**	**260**	P	**P**	**16 55 50.0**	**-0.7**
	1.5nm,0.3s,baz=97,slow=7.5,SNR=87						
QSPA	**South Pole Qui**	**70.80**	**180**	eP	**P**	**16 58 39.9**	**+0.8**
SYO	**Syowa Base**	**88.31**	**192‖**	eP	**P**	**17 00 13.0**	**-0.7**

*ISCJB **01** 16:52:37.2±1.0, 38°.86N±0°.08×142°.4E±0°.2, h27km, mb3.4/5, Error ellipse: s-maj=26.9km s-min=11.7km az=5.3*
*IDC **01** 16:52:43.4±3.3, 39°.03N×142°.41E, h63km±30km, mb3.1/5, mb1 3.4/7, mb1mx3.1/43, mbtmp3.4/7, ML2.8/2, Error ellipse: s-maj=34.0km s-min=22.4km az=109.0*
ISC 01 16:52:37.5±1.4, 38°.7N±0°.1×142°.3E±0°.2, h27km, n11, σ0§94/7, mb3.4/5, 1C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**3.89**	**237**	P	**Pb**	**16 53 44.7**	**-0.7**
	0.5nm,0.3s,baz=40,slow=11,SNR=12						
ASAJ	**Asahikawa**	**5.41**	**2**	P	**Pn**	**16 53 56.2**	**-0.1**
	0.4nm,0.3s,baz=17,slow=11,SNR=3.7						
ASAJ				S	**Sn**	**16 54 56.7**	**-0.9**
	0.4nm,0.3s,baz=187,slow=26,SNR=1.8						
H11N2	**WAKE ISLAND Hy**	**28.47**	**125**	T	T	17 29 12.5	
	baz=318,slow=76,SNR=13						
H11N1	**WAKE ISLAND Hy**	**28.48**	**125**	T	T	17 29 11.6	
	baz=318,slow=76,SNR=6.2						
H11N3	**WAKE ISLAND Hy**	**28.49**	**125**	T	T	17 29 10.2	
	baz=318,slow=76,SNR=4.3						
ZALV	**Zalesovo Beam**	**41.32**	**311**	P	**P**	**17 00 21.4**	**+0.9**
	0.3nm,0.4s,baz=90,slow=7.3,SNR=2.3						
MKAR	**Makanchi Array**	**43.84**	**301**	P	**P**	**17 00 42.3**	**+1.2**
	0.2nm,0.3s,baz=82,slow=9.9,SNR=5.2						
ILAR	**Eielson Array**	**47.71**	**33**	P	**P**	**17 01 11.6**	**+0.1**
	0.3nm,0.7s,baz=263,slow=7.2,SNR=3.0						
WRA	**Warramunga Arr**	**58.82**	**189**	P	P	17 02 37.4	+3.9
	0.4nm,0.6s,baz=5.5,slow=7.0,SNR=7.2						
TXAR	**Lajitas Array**	**88.56**	**53**	P	**P**	**17 05 27.9**	**-0.2**
	0.1nm,0.6s,baz=317,slow=21,SNR=2.7						
SYO	**Syowa Base**	**130.01**	**207‖**	eP		17 21 30.0	

*IDC **01** 17:18:26.2±3.3, 20°.68S×179°.02W, h592km±34km, mb3.1/8, mb1 3.3/8, mb1mx3.0/34, mbtmp4.0/8, Error ellipse: s-maj=29.0km s-min=25.2km az=147.0*
*ISCJB **01** 17:18:29.0±1.0, 20°.9S±0°.2×179°.1W±0°.2, h645km, mb3.5/8, Error ellipse: s-maj=30.8km s-min=17.5km az=150.9*
ISC 01 17:18:30.8±1.0, 20°.8S±0°.2×179°.1W±0°.2, h645km, n13, σ1§49/16, mb3.6/8, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**13.54**	**262**	P	**P**	**17 21 24.8**	**+0.9**
	0.2nm,0.3s,baz=93,slow=18,SNR=3.8						
STKA	**Stephens Creek**	**36.75**	**244**	P	**P**	**17 24 45.9**	**-0.6**
	1.1nm,0.5s,baz=92,slow=11,SNR=6.3						
ASAR	**Alice Springs**	**43.46**	**257**	P	**P**	**17 25 38.9**	**-0.9**
	4.3nm,0.5s,baz=92,slow=8.0,SNR=185						
ASAR				PcP	**PcP**	**17 27 12.6**	**-0.3**
	0.4nm,0.6s,baz=104,slow=3.1,SNR=4.8						
ASAR				ScP	**ScP**	**17 30 08.8**	**+4.6**
	0.3nm,0.6s,baz=103,slow=4.1,SNR=7.2						
ASAR				S	**S**	**17 31 22.9**	**-0.9**
	0.4nm,0.8s,baz=98,slow=15,SNR=5.3						
WRA	**Warramunga Arr**	**43.55**	**263**	P	**P**	**17 25 39.3**	**-1.3**
	2.5nm,0.3s,baz=97,slow=7.6,SNR=124						
WRA				PcP	**PcP**	**17 27 13.3**	**+0.1**
	0.1nm,0.4s,baz=102,slow=7.5,SNR=2.9						
FITZ	**Fitzroy Crossi**	**51.98**	**263**	P	**P**	**17 26 42.6**	**-0.3**
	1.0nm,0.3s,baz=81,slow=4.5,SNR=16						
VNDA	**Vanda**	**57.55**	**185**	P	**P**	**17 27 20.5**	**-0.1**
	0.4nm,0.6s,baz=4.4,slow=7.8,SNR=5.9						
ILAR	**Eielson Array**	**88.81**	**13**	P	**P**	**17 30 16.9**	**-0.5**
	0.3nm,0.5s,baz=228,slow=5.1,SNR=4.5						
CMAR	**Chiang Mai Arr**	**89.24**	**290**	P	**P**	**17 30 21.8**	**+1.3**
	0.9nm,0.9s,baz=135,slow=3.3,SNR=5.3						
YKA	**Yellowknife Ar**	**97.19**	**25**	P	**P**	**17 30 55.1**	**-0.5**
	0.1nm,0.5s,baz=241,slow=6.3,SNR=3.1						
ARCES	**ARCESS Array B**	**129.00**	**349**	PKP	**PKPdf**	**17 36 26.1**	**-0.2**
	1.3nm,0.8s,baz=29,slow=2.8,SNR=6.8						
AKASG	**Malin Array Be**	**142.75**	**330**	PKhKP	PKPpre	17 36 49.3	
	2.6nm,0.4s,baz=44,slow=4.2,SNR=19						
BRTR	**Keskin Array B**	**146.26**	**311**	PKPbc	**PKPbc**	**17 37 00.8**	**-0.4**
	0.5nm,0.6s,baz=153,slow=3.7,SNR=5.5						
GERES	**GERESS Array B**	**150.17**	**343**	PKPbc	**PKPbc**	**17 37 10.7**	**0.0**
	0.5nm,0.9s,baz=45,slow=2.6,SNR=4.7						

IDC 01 17:22:23.5±16.0, 24°.10S×70°.76E, h0km, mb3.2/3, mb1 3.4/3, mb1mx3.2/46, mbtmp3.2/3, Error ellipse: s-maj=541.4km s-min=44.1km az=51.0, Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08S1	**Diego Carcia H**	**16.45**	**6**	T	T	17 43 18.1	
	baz=190,slow=76,SNR=17						
H08S2	**Diego Garcia H**	**16.45**	**6**	T	T	17 43 12.0	
	baz=190,slow=76,SNR=16						
H08S3	**Diego Garcia H**	**16.47**	**6**	T	T	17 43 17.9	
	baz=190,slow=76,SNR=15						
ASAR	**Alice Springs**	**57.27**	**104**	P	P	17 32 13.2	-0.2
	0.2nm,0.6s,baz=254,slow=6.4,SNR=5.9						
WRA	**Warramunga Arr**	**58.65**	**99**	P	P	17 32 23.1	+0.1
	0.2nm,0.8s,baz=255,slow=7.2,SNR=2.7						
MKAR	**Makanchi Array**	**71.33**	**8**	P	P	17 33 44.9	0.0
	0.1nm,0.2s,baz=191,slow=1.2,SNR=4.1						

*CSEM **01** 17:31:59.5, 38°.61N×29°.26W, h2km, ML3.8*
PDA 01 17:31:59.5±0.9, 38°.61N×29°.26W, h2km±5km, MD3.8, ML3.8, Error ellipse: s-maj=6.0km s-min=4.5km az=99.0, Azores Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CALA	**Caldeira**	**0.44**	**93**	eP	Pg	17 32 07.2	-0.7
CALA				eS	Sg	17 32 13.5	-0.1
CALA	**Caldeira**	**0.44**	**93**	eP	Pg	17 32 07.2	-0.7
CALA				eS	Sg	17 32 13.5	-0.1
PCED	**Cedros**	**0.44**	**87**	eP	Pg	17 32 07.6	-0.3
PCED				eS	Sg	17 32 13.2	-0.4
PCED	**Cedros**	**0.44**	**87**	eP	Pg	17 32 07.6	-0.3
PCED				eS	Sg	17 32 13.2	-0.4
PCED				A	A	17 32 16.1	
	4μm,0.5s						
HOR	**Horta**	**0.50**	**99**	eP	Pg	17 32 08.4	-0.7
HOR				eS	Sg	17 32 14.8	-0.7
HOR	**Horta**	**0.50**	**99**	eP	Pg	17 32 08.4	-0.7
HOR				eS	Sg	17 32 14.8	-0.7
HOR				A	A	17 32 16.4	
	5μm,0.3s						
PCAN	**Candelaria**	**0.62**	**103**	eP	Pg	17 32 09.9	-1.5
PCAN				eS	Sg	17 32 18.0	-1.5
PCAN	**Candelaria**	**0.62**	**103**	eP	Pg	17 32 09.9	-1.5
PCAN				eS	Sg	17 32 18.0	-1.5
PCAN				A	A	17 32 22.1	
	3μm,0.3s						
PICO	**Pico**	**0.66**	**99**	eP	Pg	17 32 11.2	-1.0
PICO				eS	Sg	17 32 19.7	-1.1
PICO	**Pico**	**0.66**	**99**	eP	Pg	17 32 11.2	-1.0
PICO				eS	Sg	17 32 19.7	-1.1
PICO				A	A	17 32 20.9	
	7μm,0.3s						
ROSA	**Rosais**	**0.81**	**82**	eP	Pg	17 32 12.9	-2.0
ROSA				eS	Sg	17 32 22.9	-2.5
ROSA	**Rosais**	**0.81**	**82**	eP	Pg	17 32 12.9	-2.0
ROSA				eS	Sg	17 32 22.9	-2.5
ROSA				A	A	17 32 29.1	
	3μm,0.5s						
PID	**Ribeirinha**	**0.91**	**100**	eS	Sg	17 32 25.6	-3.1
PID	**Ribeirinha**	**0.91**	**100**	eS	Sg	17 32 25.6	-3.1
PMAN	**Manadas**	**0.92**	**88**	eP	Pg	17 32 14.5	-2.6
PMAN				eS	Sg	17 32 25.6	-3.4
PMAN	**Manadas**	**0.92**	**88**	eP	Pg	17 32 14.5	-2.6
PMAN				eS	Sg	17 32 25.6	-3.4
PMAN				A	A	17 32 37.1	
	1μm,0.3s						
PGRA	**Graciosa**	**1.08**	**67**	eP	Pg	17 32 16.8	-3.5
PGRA				eS	Sg	17 32 29.3	-5.0
PGRA	**Graciosa**	**1.08**	**67**	eP	Pg	17 32 16.8	-3.5
PGRA				eS	Sg	17 32 29.3	-5.0
PGRA				A	A	17 32 30.2	
	820nm,0.3s						
ADH	**Angra Heroismo**	**1.59**	**88**	eP	Pn	17 32 23.8	-4.8
ADH				eS	Sn	17 32 41.7	-7.9
ADH	**Angra Heroismo**	**1.59**	**88**	eP	Pn	17 32 23.8	-4.8
ADH				eS	Sn	17 32 41.7	-7.9
ADH				A	A	17 32 44.0	
	321nm,0.3s						
PSET	**Sete Cidades**	**2.89**	**105**	eS	Sn	17 33 14.1	-7.9
PSET	**Sete Cidades**	**2.89**	**105**	eS	Sn	17 33 14.1	-7.9
PSET				A	A	17 33 17.6	
	61nm,0.3s						
CMLA	**Cha da Macela**	**3.06**	**105**	eP	Pn	17 32 43.9	-5.0
CMLA				eS	Sn	17 33 18.0	-8.1
CMLA	**Cha da Macela**	**3.06**	**105**	eP	Pn	17 32 43.9	-5.0
CMLA				eS	Sn	17 33 18.0	-8.1
BART	**Pico Bartolome**	**3.33**	**103**	eP	Pn	17 32 48.0	-4.6
BART				eS	Sn	17 33 24.3	-8.4
BART	**Pico Bartolome**	**3.33**	**103**	eP	Pn	17 32 48.0	-4.6
BART				eS	Sn	17 33 24.3	-8.4
BART				A	A	17 33 27.1	
	25nm,0.4s						
PSMA	**Santa Maria**	**3.65**	**115**	eP	Pn	17 32 52.2	-4.7
PSMA				eS	Sn	17 33 31.5	-8.9
PSMA				A	A	17 33 33.0	
	16nm,0.2s						
PSMN	**Pico do Norte,**	**3.69**	**114**	eP	Pn	17 32 52.7	-4.8
PSMN				eS	Sn	17 33 32.9	-8.6
PSMN	**Pico do Norte,**	**3.69**	**114**	eP	Pn	17 32 52.7	-4.8
PSMN				eS	Sn	17 33 32.9	-8.6
PSMN				A	A	17 33 36.4	
	21nm,0.3s						

*ISCJB **01** 17:34:32.9±0.8, 33°.42N±0°.04×141°.14E±0°.07, h48km, mb3.8/3, Error ellipse: s-maj=8.1km s-min=5.9km az=3.3*
*JMA **01** 17:34:34.8±0.2, 33°.53N×140°.99E, h41km, M3.2*
*IDC **01** 17:34:35.5±2.8, 33°.36N×141°.05E, h51km±24km, mb3.5/3, mb1 3.8/5, mb1mx3.2/47, mbtmp3.8/5, ML3.4/1, Error ellipse: s-maj=26.5km s-min=12.7km az=85.0*
ISC 01 17:34:33.7±1.1, 33°.39N±0°.05×141°.17E±0°.08, h48km, n16, σ1§25/22, mb3.8/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHJ2	**Mitsune**	**1.16**	**257**	P	**Pn**	**17 34 53.7**	**+0.1**
JHJ2				S	**Sn**	**17 35 07.7**	**-0.7**
JHCJ	**Hachijojimakas**	**1.19**	**255**	P	**Pn**	**17 34 53.9**	**-0.1**
JHCJ				S	**Sn**	**17 35 08.1**	**-0.9**
JHJ	**Hachijo jima 2**	**1.19**	**257**	P	**Pn**	**17 34 53.8**	**-0.1**
JHJ				S	**Sn**	**17 35 08.2**	**-0.8**
BSO1	**Boso 1**	**1.27**	**353**	P	**Pn**	**17 34 54.4**	**-0.2**
BSO3	**Boso 3**	**1.51**	**339**	P	**Pn**	**17 34 57.8**	**-0.3**
BSO4	**Boso 4**	**1.74**	**337**	P	**Pn**	**17 35 01.4**	**0.0**
JKO	**Kozu shima**	**1.87**	**296**	P	**Pn**	**17 35 02.7**	**-0.5**
JIM2	**Oshima 3**	**1.96**	**313**	eS	**Sn**	**17 35 24.9**	**-3.0**
JIZS	**Izushimoda**	**2.32**	**306**	P	**Pn**	**17 35 09.0**	**-0.4**
JOD2	**Odawara 2**	**2.54**	**318**	P	**Pn**	**17 35 11.6**	**-0.9**
MJAR	**Matsushiro Arr**	**3.97**	**323**	P	**Pn**	**17 35 32.9**	**+0.8**
	2.7nm,0.3s,baz=158,slow=13,SNR=28						
MJAR				S	**Sn**	**17 36 18.1**	**+0.6**
	0.4nm,0.3s,baz=119,slow=15,SNR=3.3						
MAT	**Matsushiro**	**3.98**	**323**	P	**Pn**	**17 35 33.1**	**+0.9**
MAT				S	**Sn**	**17 36 16.2**	**-1.3**
JCJ	**Chichijima**	**6.33**	**172**	P	**Pn**	**17 36 05.8**	**+1.3**
JCJ				S	**Sn**	**17 37 12.5**	**-3.0**
	3.1nm,0.3s,baz=157,slow=21,SNR=2.6						
MKAR	**Makanchi Array**	**45.96**	**305**	P	**P**	**17 42 52.9**	**+0.9**
	0.1nm,0.2s,baz=91,slow=8.8,SNR=2.8						
WRA	**Warramunga Arr**	**53.43**	**188**	P	**P**	**17 43 49.7**	**+0.8**
	1.5nm,0.3s,baz=6.0,slow=7.5,SNR=33						
ASAR	**Alice Springs**	**57.16**	**188**	P	**P**	**17 44 16.8**	**+1.1**
	0.4nm,0.4s,baz=0.6,slow=6.7,SNR=25						

IDC 01 17:35:10.2±3.6, 21°.95S×177°.93W, h0km, mb3.6/4, mb1 3.8/4, mb1mx3.6/34, mbtmp3.6/4, Error ellipse: s-maj=175.0km s-min=37.2km az=147.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**37.24**	**246**	P	P	17 42 22.5	-1.2
	1.0nm,0.9s,baz=35,slow=16,SNR=2.7						
ASAR	**Alice Springs**	**44.27**	**258**	P	P	17 43 21.9	0.0
	0.3nm,0.3s,baz=98,slow=7.2,SNR=16						
WRA	**Warramunga Arr**	**44.48**	**263**	P	P	17 43 24.4	+0.7
	0.8nm,0.6s,baz=96,slow=8.3,SNR=13						
YKA	**Yellowknife Ar**	**97.80**	**25**	P	P	17 48 46.7	-0.3
	0.1nm,0.6s,baz=258,slow=6.2,SNR=3.3						

IDC 01 17:44:22.4±2.3, 37°.60N×143°.91E, h0km, mb3.6/2, mb1 3.7/4, mb1mx3.2/52, mbtmp3.6/4, ML3.0/2, Error ellipse: s-maj=56.6km s-min=30.8km az=82.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**4.68**	**259**	Pn	Pn	17 45 33.7	-0.6
	0.9nm,0.3s,baz=72,slow=9.5,SNR=14						
MJAR				Sn	Sn	17 46 25.3	-3.9
	0.3nm,0.3s,baz=128,slow=8.1,SNR=2.5						
ASAJ	**Asahikawa**	**6.58**	**352**	Pn	Pn	17 46 00.2	-0.2
	0.3nm,0.3s,baz=214,slow=16,SNR=4.9						
ASAJ				Sn	Sn	17 47 10.8	-5.3
	0.2nm,0.3s,baz=10,slow=32,SNR=2.0						
ZALV	**Zalesovo Beam**	**43.01**	**312**	P	P	17 52 23.4	+0.1
	0.3nm,0.3s,baz=84,slow=13,SNR=2.3						
WRA	**Warramunga Arr**	**57.94**	**191**	P	P	17 54 16.4	-0.1
	0.4nm,0.7s,baz=8.4,slow=7.1,SNR=4.9						

*WEL **01** 17:44:40.9±0.6, 35°.33S×179°.87E, h33km, ML4.1/6, Error ellipse: s-maj=6.1km s-min=3.8km az=90.0*
*IDC **01** 17:44:42.8±8.6, 35°.67S×179°.85E, h41km±79km, mb3.5/2, mb1 3.8/3, mb1mx3.4/44, mbtmp3.8/3, ML4.0/1, Error ellipse: s-maj=73.2km s-min=52.7km az=142.0*
ISC 01 17:44:50.3±3.0, 36°.0S±0°.2×179°.6E±0°.2, h113km±23km, n42, σ1§91/46, 3D, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MXZ	**Matakaoa Point**	**1.87**	**212**	PN	**Pn**	**17 45 19.9**	**-1.8**
MXZ				SN	**Sn**	**17 45 46.0**	**+0.3**
MXZ				AML	AML	17 45 50.7	
WMGZ	**Waiomatatini S**	**2.05**	**206**	PN	**Pn**	**17 45 23.3**	**-0.6**
WMGZ				SN	**Sn**	**17 45 50.9**	**+1.1**
WMGZ				SN		17 45 53.6	
PKGZ	**Pakihiroa**	**2.24**	**212**	PN	**Pn**	**17 45 25.3**	**-1.2**
PKGZ				SN	**Sn**	**17 45 55.5**	**+1.2**
HAZ	**Te Kaha**	**2.27**	**218**	PN	**Pn**	**17 45 24.9**	**-1.9**
HAZ				SN	**Sn**	**17 45 57.8**	**+3.0**
PUZ	**Puketiti**	**2.33**	**206**	PN	**Pn**	**17 45 26.4**	**-1.2**
PUZ				SN	**Sn**	**17 45 57.3**	**+1.1**
PUZ				AML	AML	17 46 24.3	
TWGZ	**Tauwhareparae**	**2.53**	**210**	ePN	**Pn**	**17 45 28.7**	**-1.4**
TWGZ				SN	**Sn**	**17 46 03.2**	**+2.4**
CNGZ	**Carnagh Statio**	**2.72**	**203**	ePN	**Pn**	**17 45 31.1**	**-1.5**
TKGZ	**Te Karaka**	**2.81**	**209**	PN	**Pn**	**17 45 31.9**	**-1.9**
MWZ	**Matawai**	**2.85**	**214**	‖PN	**Pn**	**17 45 32.8**	**-1.6**
MWZ				AML	AML	17 46 12.2	
MWZ				AML	AML	17 46 12.9	
URZ	**Urewera**	**3.00**	**220**	P	**Pn**	**17 45 34.5**	**-1.8**
	15nm,0.3s,baz=273,slow=2.8,SNR=146						
URZ				S	**Sn**	**17 46 12.0**	**+0.2**
	22nm,0.3s,baz=279,slow=23,SNR=6.3						
URZ	**Urewera**	**3.00**	**220**	PN	**Pn**	**17 45 34.5**	**-1.8**
URZ				AML	AML	17 46 13.3	
URZ				AML	AML	17 46 15.8	
RAGZ	**Rawiri**	**3.04**	**214**	PN	**Pn**	**17 45 35.1**	**-1.8**
MARZ	**Manawahe**	**3.05**	**228**	PN	**Pn**	**17 45 35.0**	**-2.0**
RIGZ	**Rimuhau**	**3.07**	**207**	PN	**Pn**	**17 45 35.8**	**-1.5**
PRGZ	**Paritu Road**	**3.22**	**204**	PN	**Pn**	**17 45 37.8**	**-1.5**
SNGZ	**Shannon Statio**	**3.31**	**212**	PN	**Pn**	**17 45 39.2**	**-1.2**
MUGZ	**Murupara**	**3.34**	**221**	‖PN	**Pn**	**17 45 38.7**	**-2.1**
KNZ	**Kokohu**	**3.38**	**206**	PN	**Pn**	**17 45 39.1**	**-2.3**
RAHZ	**Arahi**	**3.53**	**213**	PN	**Pn**	**17 45 42.0**	**-1.3**
PRRZ	**Plateau Road**	**3.56**	**224**	PN	**Pn**	**17 45 42.7**	**-1.1**
WHHZ	**Waihua**	**3.60**	**210**	PN	**Pn**	**17 45 43.2**	**-1.0**
ALRZ	**Allen Road**	**3.63**	**224**	PN	**Pn**	**17 45 43.0**	**-1.7**
TOZ	**Tahuroa Road**	**3.69**	**241**	‖PN	**Pn**	**17 45 43.6**	**-1.9**
MRHZ	**Matea Rd**	**3.79**	**220**	PN	**Pn**	**17 45 44.5**	**-2.4**
NMHZ	**Naumai**	**3.80**	**214**	PN	**Pn**	**17 45 46.1**	**-1.0**
ARHZ	**Aropaoanui**	**3.85**	**211**	PN	**Pn**	**17 45 46.3**	**-1.4**
BKZ	**Black Stump Fm**	**4.00**	**217**	PN	**Pn**	**17 45 47.4**	**-2.4**
BKZ				AML	AML	17 47 02.2	
BKZ				AML	AML	17 47 02.4	
AWAZ	**Awhitu Peninsu**	**4.11**	**253**	PN	**Pn**	**17 45 49.1**	**-2.0**
MCHZ	**McNeill Hill**	**4.13**	**212**	PN	**Pn**	**17 45 49.4**	**-2.0**
KWHZ	**Kaweka Forest**	**4.24**	**215**	PN	**Pn**	**17 45 50.7**	**-2.2**
KRHZ	**Kereru**	**4.44**	**214**	PN	**Pn**	**17 45 53.0**	**-2.5**
BHHZ	**Black Hill Sta**	**4.46**	**217**	PN	**Pn**	**17 45 54.4**	**-1.5**
MOVZ	**Moawhango**	**4.56**	**220**	PN	**Pn**	**17 45 54.6**	**-2.6**
PNHZ	**Pukenui**	**4.74**	**213**	PN	**Pn**	**17 45 56.6**	**-3.0**
BFZ	**Birch Farm**	**5.36**	**208**	PN	**Pn**	**17 46 04.9**	**-3.1**
TIWZ	**Tintock**	**5.59**	**210**	PN	**Pn**	**17 46 08.0**	**-3.0**
MRZ	**Mangatainoka R**	**5.62**	**213**	PN	Pn	17 46 07.3	-4.1
KIW	**Kapiti Island**	**6.08

comp=E,976nm,0.4s
PET smax smax
comp=N,957nm,0.6s
KZV Kizimen 1.49 348 *e*P **Pn 17 49 05.3 -0.2**
KZV *e*S **Sn 17 49 23.0 -1.2**
TUMR Tumrok 1.67 346 *i* P **Pn 17 49 08.3 +0.3**
TUMR *i* S **Sn 17 49 28.1 -0.6**
TUMR Tumrok 1.67 346 PN **Pn 17 49 08.3 +0.3**
TUMR S **Sn 17 49 28.1 -0.6**
GNL Ganaly 1.73 272 *e*P **Pn 17 49 08.9 +0.2**
GNL Ganaly 1.73 272 PN **Pn 17 49 08.9 +0.2**
KRMR Karymshinskiy 1.83 244 *i* P **Pn 17 49 10.9 +0.8**
KRMR *e*S **Sn 17 49 32.3 -0.1**
RUS Russkaya 1.87 230 *i* P **Pn 17 49 10.6 0.0**
RUS *e*S **Sn 17 49 32.5 -0.9**
RUS Russkaya 1.87 230 PN **Pn 17 49 10.6 0.0**
RUS S **Sn 17 49 32.5 -0.9**
PETK Petropavlovsk- 1.96 255 Pg **Pn 17 49 12.4 +0.5**
comp=N,35nm,0.3s,baz=80,slow=19,SNR=1836
PETK Lg Lg 17 49 36.3
comp=N,44nm,0.3s,baz=73,slow=39,SNR=22
MTVR Mutnovka 1.99 235 *e*P **Pn 17 49 13.1 +0.7**
MTVR *e*S **Sn 17 49 36.5 -0.1**
KMNR Kamenistaya 2.12 351 *e*P **Pn 17 49 15.4 +1.2**
KMNR Kamenistaya 2.12 351 PN **Pn 17 49 15.4 +1.2**
ASAK Asacha 2.19 235 *e*P **Pn 17 49 16.5 +1.4**
ASAK *e*S **Sn 17 49 42.5 +1.1**
BZMR Bezymyannaya 2.29 355 *e*P **Pn 17 49 17.4 +1.0**
KIRR Kirishev 2.31 353 *e*P **Pn 17 49 17.7 +0.9**
APC Apacha 2.33 253 *e*P **Pn 17 49 18.2 +1.3**
APC *e*S **Sn 17 49 45.4 +0.7**
APC Apacha 2.33 253 PN **Pn 17 49 18.2 +1.3**
APC S **Sn 17 49 45.4 +0.7**
KPT Kopyto 2.33 351 *e*P **Pn 17 49 18.8 +1.7**
KPT Kopyto 2.33 351 PN **Pn 17 49 18.8 +1.7**
ZLN Zelenaya 2.36 359 *e*P **Pn 17 49 18.8 +1.4**
ZLN *e*S **Sn 17 49 47.0 +1.4**
ZLN Zelenaya 2.36 359 PN **Pn 17 49 18.8 +1.4**
ZLN S **Sn 17 49 47.0 +1.4**
LGNR Loginova 2.42 358 *e*P **Pn 17 49 20.3 +1.8**
LGNR *e*S **Sn 17 49 48.6 +1.1**
LGNR Loginova 2.42 358 PN **Pn 17 49 20.3 +1.8**
LGNR S **Sn 17 49 48.6 +1.1**
CIRR Tsirk 2.46 359 *e*P **Pn 17 49 20.4 +1.6**
CIRR Tsirk 2.46 359 PN **Pn 17 49 20.4 +1.6**
KOZ Kozyrevsk 2.46 347 *e*P **Pn 17 49 19.6 +0.8**
KOZ Kozyrevsk 2.46 347 PN **Pn 17 49 19.6 +0.8**
KRSR Krestovskiy 2.56 357 *e*P **Pn 17 49 21.5 +1.3**
KRSR *e*S **Sn 17 49 51.2 +0.6**
KRSR Krestovskiy 2.56 357 PN **Pn 17 49 21.5 +1.3**
KRSR S **Sn 17 49 51.2 +0.6**
ESO Esso 2.58 332 *e*P **Pn 17 49 20.2 -0.2**
ESO Esso 2.58 332 PN **Pn 17 49 20.2 -0.2**
KLY Klyuchi 2.66 358 *e*P **Pn 17 49 22.4 +1.0**
KLY *e*S **Sn 17 49 53.1 +0.4**
KBG Krutoberegovo 2.81 22 *e*P **Pn 17 49 24.8 +1.3**
KBG *e*S **Sn 17 49 57.7 +1.2**
BDR Baidarnaya 2.92 4 *e*P **Pn 17 49 26.8 +1.7**
SMKR Semkarok 2.95 7 *e*P **Pn 17 49 26.8 +1.3**
SMKR *e*S **Sn 17 50 00.3 +0.3**
SMKR Semkarok 2.95 7 PN **Pn 17 49 26.8 +1.3**
SMKR S **Sn 17 50 00.3 +0.3**
SRKR Sorokina 3.00 3 *e*P **Pn 17 49 27.5 +1.3**
SRKR *e*S **Sn 17 50 00.8 -0.6**
SRKR Sorokina 3.00 3 PN **Pn 17 49 27.5 +1.3**
SRKR S **Sn 17 50 00.8 -0.6**
PAU Pauzhetka 3.30 230 *e*P Pn 17 49 33.0 +2.8
PAU *e*S **Sn 17 50 11.0 +2.4**
PAU Pauzhetka 3.30 230 PN Pn 17 49 33.0 +2.8
PAU S **Sn 17 50 11.0 +2.4**
BKI Bering 3.37 61 *i* P **Pn 17 49 32.1 +0.9**
BKI *e*S **Sn 17 50 08.1 -2.2**
BKI Bering 3.37 61 PN **Pn 17 49 32.1 +0.9**
BKI S **Sn 17 50 08.1 -2.2**
SKR Severo-Kuril's 4.17 226 *e*P **Pn 17 49 43.8 +1.6**
SKR *e*S **Sn 17 50 31.2 +1.2**
SKR Severo-Kuril's 4.17 226 PN **Pn 17 49 43.0 +0.8**
MJAR Matsushiro Arr 23.25 232 P **P 17 53 47.5 +1.9**
comp=N,0.8nm,0.7s,baz=24,slow=9.5,SNR=3.5
ILAR Eielson Array 28.09 46 P **P 17 54 28.6 -0.9**
comp=N,0.3nm,0.7s,baz=245,slow=7.9,SNR=3.4
H11N2 WAKE ISLAND Hy 34.19 170 T T 18 31 49.6
baz=353,slow=76,SNR=51
H11N3 WAKE ISLAND Hy 34.21 170 T T 18 31 49.8
baz=353,slow=76,SNR=55
H11N1 WAKE ISLAND Hy 34.21 170 T T 18 31 52.9
baz=353,slow=76,SNR=68
H11S1 WAKE ISLAND Hy 35.38 170 T T 18 33 11.5
SNR=5.1
YKA Yellowknife Ar 42.44 43 P **P 17 56 31.4 -0.9**
comp=N,0.3nm,0.5s,baz=298,slow=7.8,SNR=7.1
MKAR Makanchi Array 48.31 296 P P 17 57 13.7 -5.5
comp=N,0.1nm,0.5s,baz=58,slow=7.0,SNR=2.7
NVAR Mina Array Bea 55.13 71 P **P 17 58 10.6 +0.2**
comp=N,0.2nm,0.5s,baz=316,slow=6.3,SNR=2.9
PDAR Pinedale Array 56.85 62 P **P 17 58 22.5 -0.3**
comp=N,0.5nm,0.8s,baz=1,9,slow=4.5,SNR=3.8
FINES FINESS Array B 59.77 337 P P 17 58 39.2 -3.3
comp=N,1.3nm,0.8s,baz=51,slow=7.3,SNR=4.5
NOA NORSAR Array B 63.12 344 P P 17 59 01.6 -3.5
comp=N,0.3nm,0.6s,baz=180,slow=16,SNR=3.0
TXAR Lajitas Array 70.00 68 P **P 17 59 49.1 -0.6**
comp=N,0.5nm,0.5s,baz=294,slow=4.6,SNR=10

*ISCJB **01** 17:49:38.7±0.4, 6°.85N±0°.04×73°.07W±0°.04, h163km±3km, mb3.3/4, Error ellipse: s-maj=8.1km s-min=3.4km az=43.4*
*FUNV **01** 17:49:38.8, 6°.73N×73°.19W, h169km, MW3.7*
*IDC **01** 17:49:39.6±0.7, 6°.76N×72°.95W, h164km±8km, mb3.1/4, mb1 3.5/6, mb1mx3.1/36, mbtmp3.7/6, Error ellipse: s-maj=29.6km s-min=7.6km az=130.0*
*RSNC **01** 17:49:41.4±0.9, 6°.78N×73°.12W, h146km±4km, ML3.6*
ISC 01 17:49:39.4±0.8, 6°.81N±0°.04×73°.05W±0°.04, h161km±5km, n38, σ1°29/63, mb3.2/4, 3C-3D, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BARC	**Barichara**	**0.26**	**211**	*i* P	**Pn**	**17 50 01.0**	**-0.5**
BARC				*e*S	**Sn**	**17 50 15.9**	**-2.4**
BARC				*i*		17 50 17.3	
comp=Z,1μm,0.3s							
GIRC	**Giron, Santand**	**0.30**	**331**	*e*P	**Pn**	**17 50 01.1**	**-0.4**
GIRC				*e*S	**Sn**	**17 50 16.6**	**-1.8**
PAMC	**Pamplona, Colo**	**0.63**	**33**	*i* P	**Pn**	**17 50 03.8**	**+0.5**
PAMC				*e*S	**Sn**	**17 50 21.1**	**-0.5**
BRRC	**Barranca, Sant**	**0.72**	**294**	⇑*i*P	**Pn**	**17 50 02.9**	**-0.4**
BRRC				*i*		17 50 03.2	
comp=Z,754nm,0.3s							
BRRC				*e*S	**Sn**	**17 50 20.3**	**-1.2**
RUSC	**La Rusia**	**0.92**	**182**	⇓*i*P	**Pn**	**17 50 04.8**	**-0.4**
RUSC				*e*S	**Sn**	**17 50 23.3**	**-1.7**
RUSC				*i*		17 50 24.9	
comp=Z,282nm,0.3s							
CBRI	**Barrientos, No**	**0.93**	**15**	*i* P	**Pn**	**17 50 05.5**	**+0.6**
CBRI				*e*S	**Sn**	**17 50 24.5**	**0.0**
GRMC	**Gramalote, San**	**0.93**	**15**	*i* P	**Pn**	**17 50 06.8**	**+1.9**
GRMC				*e*S	**Sn**	**17 50 26.8**	**+2.2**
GRMC				*i*		17 50 28.1	
comp=Z,417nm,0.4s							
GUEC	**Guerrero, Nort**	**1.02**	**7**	*e*P	**Pn**	**17 50 06.4**	**+0.6**
CAPV	**Capacho**	**1.27**	**35**	⇑*i*P	**Pn**	**17 50 08.9**	**+1.0**
CAPV				*e*S	**Sn**	**17 50 30.4**	**+0.6**
OCAC	**Ocana**	**1.44**	**349**	*i* P	**Pn**	**17 50 09.2**	**-0.2**
OCAC				*e*S	**Sn**	**17 50 31.8**	**-0.8**
OCAC				*i*		17 50 36.0	
comp=Z,399nm,0.3s							
YOPC	**Yopal, Colombi**	**1.58**	**157**	*i* P	**Pn**	**17 50 11.4**	**+0.7**
NORC	**Norcasia**	**2.20**	**236**	*e*P	**Pn**	**17 50 16.9**	**-0.6**
NORC				*e*S	**Sn**	**17 50 44.6**	**-2.4**
ROSC	**El Rosal**	**2.33**	**213**	P	**Pn**	**17 50 20.5**	**+1.0**
comp=Z,31nm,0.3s,baz=72,slow=23,SNR=61							
ROSC				S	**Sn**	**17 50 51.4**	**+0.9**
comp=Z,70nm,0.3s,baz=127,slow=17,SNR=11							
ROSC	**El Rosal**	**2.33**	**213**	*e*P	**Pn**	**17 50 20.4**	**+1.0**
ROSC				*i*		17 50 57.0	
comp=Z,494nm,0.7s							
HELC	**Santa Helena**	**2.54**	**256**	*e*P	**Pn**	**17 50 22.1**	**+0.2**
HELC				*e*S	**Sn**	**17 50 52.9**	**-1.9**
HELC				*i*		17 50 59.6	
comp=Z,143nm,0.3s							
VIGV	**El Vigia**	**2.61**	**40**	⇑*i*P	**Pn**	**17 50 23.3**	**+0.8**
VIGV				*e*S	**Sn**	**17 50 56.3**	**+0.4**
SOCV	**Socops**	**2.62**	**56**	*e*P	**Pn**	**17 50 23.1**	**+0.6**
SOCV				*e*S	**Sn**	**17 50 55.7**	**-0.2**
VILC	**Villavicencio,**	**2.76**	**194**	*e*P	**Pn**	**17 50 24.1**	**-0.2**
VILC				*i*		17 51 02.8	
comp=Z,178nm,0.4s							
GUYC	**Guyana, Colomb**	**2.81**	**236**	*e*P	**Pn**	**17 50 25.8**	**+0.4**
GUYC				*e*S	**Sn**	**17 51 00.0**	**-0.9**
DBBC	**Dabeiba**	**3.15**	**274**	*e*P	**Pn**	**17 50 29.2**	**+0.1**
SDV	**Santo Domingo**	**3.16**	**49**	P	**Pn**	**17 50 30.3**	**+1.0**
comp=Z,18nm,0.3s,baz=231,slow=11,SNR=24							
SDV				S	**Sn**	**17 51 07.9**	**-0.2**
comp=Z,23nm,0.3s,baz=30,slow=20,SNR=19							
SDV	**Santo Domingo**	**3.16**	**49**	*e*P	**Pn**	**17 50 30.3**	**+1.0**
TOLC	**Tolima**	**3.17**	**226**	*e*P	**Pn**	**17 50 30.6**	**+1.1**
ELOV	**Elorza**	**3.54**	**87**	*e*P	**Pn**	**17 50 35.1**	**+1.1**
PRAC	**Prado**	**3.58**	**211**	*e*P	**Pn**	**17 50 34.4**	**-0.2**
PRAC				*e*S	**Sn**	**17 51 16.7**	**-0.9**
VIRV	**Villa del Rosa**	**3.72**	**10**	*e*P	**Pn**	**17 50 35.7**	**-0.6**
VIRV				*e*S	**Sn**	**17 51 17.9**	**-2.9**
CURV	**Curarigua**	**4.41**	**44**	*e*P	**Pn**	**17 50 45.3**	**0.0**
CURV				*e*S	**Sn**	**17 51 34.2**	**-2.5**
DABV	**Dabajuro**	**4.73**	**30**	*e*P	**Pn**	**17 50 50.1**	**+0.7**
DABV				*e*S	**Sn**	**17 51 41.6**	**-2.6**
TEPV	**Terepaima**	**4.93**	**50**	⇓*i*P	**Pn**	**17 50 52.6**	**+0.4**
TEPV				*e*S	**Sn**	**17 51 46.9**	**-2.2**
SIQV	**Siquisique**	**4.98**	**40**	*e*P	**Pn**	**17 50 51.7**	**-1.1**
SIQV				*e*S	**Sn**	**17 51 48.1**	**-2.0**
BAUV	**El Baul**	**5.39**	**67**	⇓*i*P	**Pn**	**17 50 57.1**	**-1.1**
BAUV				*e*S	**Sn**	**17 51 56.0**	**-3.8**
MAPV	**Macapo**	**5.44**	**56**	*e*P	**Pn**	**17 50 58.8**	**-0.1**
TXAR	**Lajitas Array**	**36.52**	**312**	P	**P**	**17 56 30.5**	**+0.9**
comp=Z,0.2nm,0.4s,baz=125,slow=9.2,SNR=7.2							
PDAR	**Pinedale Array**	**48.13**	**324**	P	**P**	**17 58 04.0**	**+0.7**
comp=Z,0.3nm,0.5s,baz=106,slow=9.4,SNR=3.6							
YKA	**Yellowknife Ar**	**63.30**	**340**	P	**P**	**17 59 51.0**	**+0.3**
comp=Z,0.9nm,0.6s,baz=133,slow=6.6,SNR=34							
INK	**Inuvik**	**73.06**	**340**	P	**P**	**18 00 52.4**	**+1.0**
comp=Z,0.2nm,0.5s,baz=75,slow=3.6,SNR=3.3							
ASAR	**Alice Springs**	**149.17**	**234**	PKP	**PKPdf**	**18 09 04.0**	**-1.2**
comp=Z,0.1nm,0.8s,baz=190,slow=27,SNR=2.8							
ASAR				PKPbc	**PKPbc**	**18 09 09.2**	**-0.4**
comp=Z,0.4nm,0.9s,baz=117,slow=3.2,SNR=5.9							
ASAR				PKPab	**PKPab**	**18 09 14.6**	**+0.1**
comp=Z,0.1nm,0.4s,baz=108,slow=3.6,SNR=5.3							
WRA	**Warramunga Arr**	**150.40**	**241**	PKPbc	**PKPbc**	**18 09 12.5**	**-0.2**
comp=Z,0.5nm,0.9s,baz=111,slow=2.6,SNR=4.8							

*ISCJB **01** 17:55:33.1±0.9, 47°.9N±0°.2×152°.7E±0°.2, h117km, mb3.4/8, Error ellipse: s-maj=26.0km s-min=16.5km az=143.2*
*IDC **01** 17:55:37.8±2.6, 47°.89N×152°.58E, h148km±23km, mb3.0/9, mb1 3.2/11, mb1mx3.0/48, mbtmp3.5/11, MS2.7/1, Ms1 2.7/1, ms1mx2.4/19, Error ellipse: s-maj=28.8km s-min=17.8km az=141.0*
ISC 01 17:55:35.2±1.0, 47°.9N±0°.2×152°.7E±0°.2, h117km, n15, σ1°62/11, mb3.3/8, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PETK	**Petropavlovsk-**	**6.15**	**29**	P	**Pn**	**17 57 06.1**	**+2.6**
0.1nm,0.3s,baz=195,slow=10,SNR=5.0							
ASAJ	**Asahikawa**	**7.96**	**246**	P	**Pn**	**17 57 30.6**	**+2.7**
0.5nm,0.3s,baz=85,slow=11,SNR=3.6							
KLR	**Kul'dur**	**13.93**	**283**	LR	LR	18 05 09.9	
comp=Z,30nm,18.5s,baz=72,slow=41							
KSRS	**Korea Array**	**20.89**	**249**	P	**P**	**18 00 07.8**	**-0.1**
0.8nm,0.7s,baz=57,slow=9.1,SNR=4.6							
H11S1	**WAKE ISLAND Hy 31.44**	**154**	T	T		18 34 51.4	
baz=341,slow=76,SNR=3.7							
H11S3	**WAKE ISLAND Hy 31.45**	**154**	T	T		18 34 45.0	
baz=341,slow=76,SNR=14							
H11S2	**WAKE ISLAND Hy 31.45**	**154**	T	T		18 34 55.5	
baz=341,slow=76,SNR=6.0							
ZALV	**Zalesovo Beam**	**41.73**	**305**	P	**P**	**18 03 10.9**	**-1.3**
0.8nm,0.5s,baz=69,slow=8.1,SNR=4.3							
MKAR	**Makanchi Array**	**46.18**	**296**	P	**P**	**18 03 47.0**	**-0.9**
0.2nm,0.6s,baz=69,slow=5.9,SNR=3.6							
YKA	**Yellowknife Ar**	**50.21**	**37**	P	**P**	**18 04 18.7**	**+0.1**
0.1nm,0.5s,baz=301,slow=7.4,SNR=2.6							
FINES	**FINESS Array B**	**62.91**	**334**	P	**P**	**18 05 47.0**	**-1.4**
0.5nm,0.4s,baz=33,slow=7.6,SNR=6.7							
NOA	**NORSAR Array B**	**67.08**	**341**	P	**P**	**18 06 14.6**	**-0.9**
1.0nm,0.9s,baz=15,slow=10.0,SNR=2.8							
ASAR	**Alice Springs**	**73.17**	**198**	P	**P**	**18 06 52.1**	**-0.8**
0.2nm,0.4s,baz=12,slow=5.6,SNR=3.2							
TXAR	**Lajitas Array**	**77.20**	**60**	P	**P**	**18 07 15.5**	**-0.8**
0.2nm,0.4s,baz=302,slow=5.1,SNR=3.3							
GERES	**GERESS Array B**	**77.33**	**334**	P	**P**	**18 07 15.9**	**-0.7**
0.2nm,0.4s,baz=25,slow=6.6,SNR=3.7							

*SJA **01** 18:33:24.5±0.3, 33°.60S×70°.64W, h85km±6km, ML2.4, MW2.5*
*GUC **01** 18:33:32.4±0.4, 33°.09S×70°.31W, h12km±2km, ML1.9*
ISC 01 18:33:30.9±1.8, 33°.05S±0°.06×70°.35W±0°.04, h5km±15km, n8, σ1°30/13, 1C-2D, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PEL	**Peldehue**	**0.29**	**252**	⇓*i*P	**Pb**	**18 33 39.6**	**+0.9**
PEL				*i* S	**Sb**	**18 33 44.8**	**+0.9**
PEL				IAML		18 33 45.3	
comp=N,208nm,0.1s							
CLCH	**Cerro Calan**	**0.38**	**204**	⇑*i*P	**Pb**	**18 33 40.1**	**0.0**
CLCH				*i* S	**Sb**	**18 33 46.3**	**0.0**
CLCH				IAML		18 33 48.6	
comp=N,326nm,0.2s							
ROCH	**El Roble**	**0.56**	**278**	⇓*i*P	**Pn**	**18 33 45.2**	**-0.5**
ROCH				*i* S	**Sn**	**18 33 54.4**	**-1.1**
ROCH				IAML		18 33 55.4	
comp=N,150nm,0.1s							
ROC1	**El Roble**	**0.56**	**278**	*e*P	**Pg**	**18 33 41.9**	**+0.2**
ROC1				*e*S	**Sn**	**18 33 54.5**	**-1.1**
ANTU	**Antumapu**	**0.57**	**205**	*e*P	**Pb**	**18 33 43.4**	**+0.1**
ANTU				IAML		18 34 00.4	
comp=E,88nm,0.1s							
ARCO	**CERRO ARCO**	**1.21**	**80**	*e*P	**Pb**	**18 33 53.1**	**-1.3**
ARCO				IAML		18 33 58.4	
comp=Z,35nm,0.1s							
ARCO				*e*S	**Sn**	**18 34 14.4**	**+2.9**
ASAL	**Salagasta**	**1.36**	**71**	*e*P	**Pn**	**18 33 55.8**	**-0.8**
RTLS	**Leoncito**	**1.54**	**36**	*e*P	**Pb**	**18 34 00.5**	**+0.5**

IDC 01 18:39:16.2±11.0, 7°.37S×128°.32E, h114km±128km, mb3.3/3, mb1 3.2/6, mb1mx3.1/26, mbtmp3.5/6, ML3.1/3, Error ellipse: s-maj=75.4km s-min=59.8km az=34.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BATI	**Baumata**	**5.40**	**238**	P	Pn	18 40 43.1	+8.6
BATI				S	Sn	18 41 45.9	+10
FITZ	**Fitzroy Crossi**	**10.98**	**194**	P	Pn	18 41 51.8	+1.8
0.2nm,0.3s,baz=27,slow=10,SNR=5.4							
FITZ				S	Sn	18 43 47.6	-3.4
0.7nm,0.3s,baz=278,slow=23,SNR=7.1							
WRA	**Warramunga Arr**	**13.79**	**156**	P	Pn	18 42 25.9	-1.1
0.1nm,0.3s,baz=331,slow=14,SNR=4.5							
WRA				S	Sn	18 44 49.6	-9.5
0.3nm,0.3s,baz=337,slow=20,SNR=7.1							
ASAR	**Alice Springs**	**17.07**	**162**	P	Pn	18 43 09.3	+1.3
0.1nm,0.3s,baz=340,slow=10,SNR=9.7							
ASAR				S	Sn	18 46 12.1	-6.0
0.1nm,0.3s,baz=345,slow=24,SNR=4.9							
SONM	**Songino Array**	**58.28**	**343**	P	P	18 48 58.7	-0.4
0.4nm,0.7s,baz=168,slow=4.6,SNR=4.3							
MKAR	**Makanchi Array**	**67.64**	**328**	P	P	18 50 01.3	+0.4
0.3nm,0.5s,baz=113,slow=8.9,SNR=9.2							
ZALV	**Zalesovo Beam**	**71.19**	**335**	P	P	18 50 21.9	-0.6
0.5nm,0.5s,baz=120,slow=8.7,SNR=2.8							

IDC 01 18:40:36.6±3.9, 8°.68N×40°.72W, h0km, mb3.3/3, mb1 3.6/3, mb1mx3.3/27, mbtmp3.3/3, MS3.4/7, Ms1 3.4/7, ms1mx3.2/18, Error ellipse: s-maj=165.1km s-min=32.7km az=10.0, Central Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
H10N3	**ASCENSION HYDR**	**30.85**	**121**	T	T	19 19 44.1	
baz=303,slow=75,SNR=13							
H10N2	**ASCENSION HYDR**	**30.86**	**121**	T	T	19 19 42.2	
baz=303,slow=75,SNR=14							
H10N1	**ASCENSION HYDR**	**30.87**	**121**	T	T	19 19 44.5	
baz=303,slow=75,SNR=16							
H10S3	**ASCENSION HYDR**	**31.31**	**123**	T	T	19 20 16.5	
baz=304,slow=75,SNR=9.4							
H10S1	**ASCENSION HYDR**	**31.32**	**123**	T	T	19 20 17.2	
baz=304,slow=75,SNR=8.7							
H10S2	**ASCENSION HYDR**	**31.33**	**123**	T	T	19 20 18.1	
baz=304,slow=75,SNR=8.1							
ROSC	**El Rosal**	**33.58**	**266**	LR	LR	19 01 25.8	
comp=Z,80nm,18.9s,baz=89,slow=37							
DBIC	**Dimbokro**	**35.59**	**91**	LR	LR	18 58 32.9	
comp=Z,49nm,20.6s,baz=278,slow=30							
LPAZ	**La Paz**	**36.77**	**228**	LR	LR	19 01 54.2	
comp=Z,43nm,21.6s,baz=68,slow=35							
CPUP	**Villa Florida**	**38.36**	**204**	LR	LR	19 04 37.6	
comp=Z,70nm,18.4s,baz=88,slow=38							
TORD	**Torodi Ar. Bea**	**41.84**	**80**	P	P	18 48 28.8	-0.1
1.0nm,1.0s,baz=256,slow=7.6,SNR=4.8							
TORD				LR	LR	19 04 11.7	
comp=Z,87nm,19.3s,baz=270,slow=34							
DAVOX	**Davos/Dischmat**	**57.30**	**39**	LR	LR	19 11 18.8	
comp=Z,18nm,20.5s,baz=252,slow=32							
TXAR	**Lajitas Array**	**62.25**	**299**	P	P	18 51 00.8	-0.1
0.2nm,0.8s,baz=96,slow=7.3,SNR=2.5							
NOA	**NORSAR Array B**	**64.68**	**25**	LR	LR	19 13 35.1	
comp=Z,14nm,21.9s,baz=65,slow=31							
YKA	**Yellowknife Ar**	**74.92**	**332**	P	P	18 52 19.3	+0.1
0.3nm,0.9s,baz=90,slow=5.4,SNR=3.0							

*IDC **01** 18:43:45.4±2.3, 36°.45N×141°.98E, h0km, mb3.3/3, mb1 3.3/4, mb1mx3.1/43, mbtmp3.2/4, ML2.9/1, Error ellipse: s-maj=55.6km s-min=28.3km az=50.0*
*ISCJB **01** 18:43:47.0±1.2, 36°.38N±0°.06×141°.9E±0°.1, h19km, mb3.2/3, Error ellipse: s-maj=12.2km s-min=8.0km az=10.2*
*JMA **01** 18:43:47.0±0.4, 36°.35N×141°.80E, h80km, M2.9*
ISC 01 18:43:49.3±1.4, 36°.38N±0°.06×141°.68E±0°.09, h19km, n18, σ0°79/16, mb3.2/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.92**	**285**	P	**Pb**	**18 44 05.9**	**-0.8**
CHOJ	**Chosi**	**0.94**	**225**	P	**Pb**	**18 44 06.4**	**-0.6**
CHOJ				*e*S	**Sn**	**18 44 21.2**	**+0.7**
ONAJ	**Iwakimizuishiy**	**1.01**	**316**	P	**Pb**	**18 44 08.2**	**0.0**
JFK	**Kawauchi**	**1.18**	**327**	P	**Pn**	**18 44 10.4**	**-0.4**
JFT	**Otama**	**1.56**	**317**	S	**Sn**	**18 44 36.5**	**+0.6**
JMM	**Marumori**	**1.65**	**335**	P	**Pn**	**18 44 16.6**	**-0.6**
JAG	**Ashikaga**	**1.79**	**272**	P	**Pn**	**18 44 18.9**	**-0.3**
JRY	**Ryogami san**	**2.27**	**262**	P	**Pn**	**18 44 25.4**	**-0.4**
MJAR	**Matsushiro Arr**	**2.80**	**274**	Pn	**Pn**	**18 44 34.4**	**+1.3**
1.7nm,0.3s,baz=105,slow=8.4,SNR=31							
MJAR				Sn	**Sb**	**18 45 11.9**	**-0.7**
0.7nm,0.3s,baz=243,slow=32,SNR=3.2							
MAT	**Matsushiro**	**2.80**	**274**	P	**Pn**	**18 44 33.5**	**+0.4**
MAT				S	**Sn**	**18 45 06.4**	**0.0**
H11N2	**WAKE ISLAND Hy 27.63**	**120**	T	T		19 18 02.1	
baz=313,slow=74,SNR=16							
H11N1	**WAKE ISLAND Hy 27.64**	**120**	T	T		19 18 13.6	
baz=313,slow=74,SNR=11							
H11N3	**WAKE ISLAND Hy 27.65**	**120**	T	T		19 18 07.6	
baz=313,slow=74,SNR=12							
H11S1	**WAKE ISLAND Hy 28.33**	**122**	T	T		19 19 11.6	
baz=315,slow=74,SNR=3.8							
H11S3	**WAKE ISLAND Hy 28.33**	**122**	T	T		19 19 12.4	
baz=131,slow=74,SNR=3.3							
SONM	**Songino Array**	**28.33**	**305**	P	**P**	**18 49 43.5**	**+1.5**
0.4nm,0.5s,baz=108,slow=9.1,SNR=3.4							
MKAR	**Makanchi Array**	**44.65**	**303**	P	**P**	**18 51 59.8**	**-0.8**
0.2nm,0.8s,baz=88,slow=7.4,SNR=3.1							
WRA	**Warramunga Arr**	**56.44**	**188**	P	**P**	**18 53 29.7**	**-0.1**
0.2nm,0.7s,baz=7.0,slow=7.5,SNR=3.3							

IDC 01 18:47:08.1±2.9, 27°.72N×142°.05E, h0km, mb3.3/4, mb1 3.4/4, mb1mx3.2/42, mbtmp3.3/4, Error ellipse: s-maj=131.0km s-min=26.5km az=76.0, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**47.96**	**190**	P	P	18 55 48.4	-0.3
0.1nm,0.3s,baz=5.6,slow=7.4,SNR=4.8							
MKAR	**Makanchi Array**	**49.99**	**309**	P	P	18 56 04.4	+0.2
0.2nm,0.3s,baz=87,slow=11,SNR=9.1							
ASAR	**Alice Springs**	**51.69**	**190**	P	P	18 56 16.9	-0.1
0.1nm,0.3s,baz=3.6,slow=5.3,SNR=8.0							
FINES	**FINESS Array B**	**77.34**	**334**	P	P	18 59 04.2	-0.2
0.4nm,0.7s,baz=46,slow=6.0,SNR=4.5							

*ISCJB **01** 18:51:02.7±1.2, 31°.7N±0°.3×40°.8W±0°.1, h14km, mb3.5/11, MS3.5/2, Error ellipse: s-maj=38.4km s-min=16.7km az=4.2*
*IDC **01** 18:51:02.3±1.5, 31°.66N×40°.78W, h0km, mb3.6/11, mb1 3.7/11, mb1mx3.6/46, mbtmp3.6/11, MS3.5/2, Ms1 3.5/2, ms1mx2.8/33, Error ellipse: s-maj=48.4km s-min=19.6km az=2.0*
ISC 01 18:51:04.5±1.4, 31°.7N±0°.3×40°.8W±0°.1, h14km, n19, σ0°36/11, mb3.6/11, Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SCHQ	**Schefferville**	**29.64**	**329**	LR	LR	19 08 07.3	
comp=

WRA	Warramunga Arr	56.06 188	P		P	19 00 54.9	+1.9
	0.1nm,0.3s,baz=18,slow=8.9,SNR=5.2						
ASAR	Alice Springs	59.79 188	P		P	19 01 22.0	+2.9
	0.5nm,1.1s,baz=8.7,slow=15,SNR=3.6						

*TIF **01** 19:00:53.5, 41°.35N×43°.97E, h10km±1km*
*ISCJB **01** 19:00:54.0±0.6, 41°.32N±0°.04×43°.93E±0°.04, h4km±6km, Error ellipse: s-maj=7.1km s-min=3.6km az=146.6*
*CSEM **01** 19:00:54.1±0.2, 41°.33N×43°.92E, h2km, ML1.8, Error ellipse: s-maj=5.2km s-min=3.2km az=154.0*
*DDA **01** 19:00:54.9, 41°.32N×43°.79E, h7km, Md3.1*
ISC 01 19:00:53.4±1.3, 41°.38N±0°.05×43°.89E±0°.02, h0km±13km, n21, σ0§49/40, Turkey-Georgia-Armenia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKH	Akhalkalaki	0.30	275	P	Pb	19 01 01.1	-0.6
AKH				S	Sb	19 01 06.0	-1.3
AKH	Akhalkalaki	0.30	275	P	Pb	19 01 01.1	-0.6
AKH				S	Sb	19 01 05.7	-1.6
KZR	Kazreti	0.40	90	P	Pg	19 01 01.0	0.0
KZR				S	Sg	19 01 06.0	-0.1
KZR	Kazreti	0.40	90	P	Pg	19 01 00.7	-0.3
KZR				S	Sg	19 01 06.1	0.0
TBLG	Delisi	0.73	61	P	Pb	19 01 08.8	-0.1
TBLG				S	Sb	19 01 19.6	+0.1
TBLG	Delisi	0.73	61	P	Pb	19 01 08.8	-0.1
TBLG				S	Sb	19 01 19.6	+0.1
EAK	Akyaka	0.73	197	P	Pg	19 01 07.4	+0.1
EAK				S	Sg	19 01 17.0	+0.3
EAK	Akyaka	0.73	197	*i* P	Pg	19 01 07.4	+0.1
EAK				*i* S	Sg	19 01 17.0	+0.3
SEAG	Tbilisi Sea	0.79	61	P	Pn	19 01 19.7	+8.0
EPOS	Posof	0.88	278	P	Pg	19 01 10.4	+0.2
EPOS				S	Sb	19 01 24.8	+0.8
EPOS	Posof	0.88	278	*i* P	Pg	19 01 10.4	+0.2
EPOS				*i* S	Sb	19 01 24.8	+0.8
DUS	Dusheti	0.93	40	P	Pb	19 01 12.1	-0.4
DUS				S	Sb	19 01 25.9	+0.4
DUS	Dusheti	0.93	40	P	Pb	19 01 12.1	-0.4
DUS				S	Sb	19 01 25.9	+0.4
GUDG	Gudauri	1.17	22	P	Pn	19 01 16.9	-0.2
GUDG				S	Sn	19 01 33.4	-0.5
ONI	Oni	1.25	345	P	Pn	19 01 18.1	0.0
ONI				S	Sn	19 01 36.4	+0.7
ONI	Oni	1.25	345	P	Pn	19 01 18.2	0.0
ONI				S	Sn	19 01 36.2	+0.5
DAGI	Agillar	1.52	259	*i* P	Pg	19 01 22.7	+0.2
DAGI				*i* S	Sn	19 01 42.5	+0.1
DDEM	Demirkent	1.69	254	P	Pb	19 01 25.0	-0.4
DDEM				S	Sg	19 01 47.7	+0.1
DDEM	Demirkent	1.69	254	*i* P	Pb	19 01 24.9	-0.4
DDEM				*i* S	Sg	19 01 47.7	+0.1
DBAD	Bademkaya	1.69	258	P	Pb	19 01 25.6	+0.2
DBAD				S	Sb	19 01 47.6	+0.2
DBAD	Bademkaya	1.69	258	*i* P	Pb	19 01 25.6	+0.2
DBAD				*i* S	Sb	19 01 47.6	+0.2

*THE **01** 19:05:42.9, 38°.88N×21°.64E, h2km±1km, ML3.2/28, Error ellipse: s-maj=1.1km s-min=0.5km az=205.0*
*BEO **01** 19:05:42.5±1.1, 38°.75N×21°.65E, h0km, M3.2/5*
*ATH **01** 19:05:42.1, 38°.83N×21°.61E, h14km±1km, ML3.1/9, Error ellipse: s-maj=1.5km s-min=0.6km az=165.0*
*ISCJB **01** 19:05:42.3±0.3, 38°.87N±0°.01×21°.62E±0°.02, h3km±2km, mb3.4/8, Error ellipse: s-maj=2.1km s-min=1.8km az=151.0*
*CSEM **01** 19:05:42.8±0.1, 38°.84N×21°.63E, h2km, ML3.2, Error ellipse: s-maj=2.3km s-min=1.7km az=71.0*
*IDC **01** 19:05:46.8±2.6, 38°.84N×21°.64E, h40km±23km, mb3.3/8, mb1 3.4/11, mb1mx3.2/46, mbtmp3.4/11, ML2.9/3, Error ellipse: s-maj=26.0km s-min=18.8km az=90.0*
ISC 01 19:05:42.8±0.8, 38°.84N±0°.01×21°.62E±0°.01, h9km±5km, n227, σ1§16/336, mb3.5/8, 15C-9D, Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EVR	Evrytania	0.17	64	P	Pg	19 05 46.4	0.0
EVR				S	Sg	19 05 48.8	-0.1
EVR	Evrytania	0.17	64	P	Pg	19 05 46.4	0.0
EVR				S	Sg	19 05 48.8	-0.1
EVR	Evrytania	0.17	64	P	Pg	19 05 46.5	+0.1
EVR				S	Sg	19 05 49.5	+0.5
EVR				AML	AML	19 05 50.3	
	comp=N,19010μm,0.2s						
PVO	Paravola	0.24	198	P	Pg	19 05 47.2	-0.4
PVO				S	Sg	19 05 50.4	-0.4
PVO	Paravola	0.24	198	P	Pg	19 05 47.2	-0.4
PVO				S	Sg	19 05 50.2	-0.6
ANX	Ano Chora	0.34	136	P	Pg	19 05 49.3	-0.3
ANX				S	Sg	19 05 55.4	+1.2
ANX	Ano Chora	0.34	136	P	Pg	19 05 49.3	-0.3
ANX				S	Sg	19 05 55.4	+1.2
PDO	Prodromos	0.42	234	P	Pg	19 05 51.0	0.0
PDO				S	Sg	19 05 58.0	+1.5
PDO	Prodromos	0.42	234	P	Pg	19 05 51.0	0.0
PDO				S	Sg	19 05 56.6	+0.1
PDO	Prodromos	0.42	234	P	Pg	19 05 49.3	-1.7
PDO				S	Sg	19 05 56.6	+0.1
PDO				AML	AML	19 05 58.4	
	comp=E,17918μm,0.3s						
PDO				AML	AML	19 06 02.0	
	comp=N,24708μm,0.6s						
EFP	Efpalio	0.47	151	P	Pg	19 05 51.9	-0.1
EFP				S	Sb	19 06 00.1	-0.2
EFP	Efpalio	0.47	151	P	Pg	19 05 51.4	-0.6
EFP				S	Sg	19 05 58.3	+0.1
EFP	Efpalio	0.47	151	P	Pg	19 05 51.4	-0.6
EFP				S	Sg	19 05 58.3	+0.1
EFP				AML	AML	19 06 03.2	
	comp=E,9128μm,0.2s						
EFP				AML	AML	19 06 03.3	
	comp=N,7429μm,0.3s						
DSL	Palaion Diasel	0.50	306	P	Pg	19 05 51.5	-1.0
DSL				S	Sg	19 06 00.4	+1.3
DSL	Palaion Diasel	0.50	306	P	Pg	19 05 51.6	-1.0
DSL				S	Sg	19 05 58.9	-0.2
DSL	Palaion Diasel	0.50	306	P	Pg	19 05 51.1	-1.4
DSL				S	Sg	19 05 58.3	-0.7
DSL				AML	AML	19 06 02.5	
	comp=N,4098μm,0.3s						
DSL				AML	AML	19 06 02.6	
	comp=E,3680μm,0.3s						
SERG	Sergoula	0.55	141	P	Pg	19 05 52.6	-0.9
SERG				S	Sb	19 06 02.9	+0.3
SERG	Sergoula	0.55	141	P	Pg	19 05 52.7	-0.8
SERG				S	Sb	19 06 02.0	-0.6
RODI	Rodini	0.56	157	P	Pg	19 05 53.4	-0.3
RODI	Rodini	0.56	157	P	Pg	19 05 53.4	-0.3
UPR	University Cam	0.57	167	P	Pb	19 05 54.9	-0.1
UPR				S	Sb	19 06 04.6	+1.4
UPR	University Cam	0.57	167	P	Pb	19 05 54.9	-0.1
AGG	Agios Georgios	0.58	72	P	Pg	19 05 53.8	-0.3
AGG				S	Sg	19 06 02.0	+0.2
AGG	Agios Georgios	0.58	72	P	Pg	19 05 53.8	-0.3
AGG				S	Sg	19 06 02.0	+0.2
AGG	Agios Georgios	0.58	72	P	Pg	19 05 53.9	-0.2
AGG				S	Sb	19 06 03.4	-0.2
AGG				AML	AML	19 06 04.1	
	comp=E,14883μm,0.4s						
AGG				AML	AML	19 06 05.9	
	comp=N,11686μm,0.3s						
KALE	Kalithea	0.61	138	P	Pg	19 05 53.5	-1.1
KALE				S	Sb	19 06 04.1	-0.2
KALE	Kalithea	0.61	138	P	Pg	19 05 53.5	-1.1
KALE				S	Sg	19 06 02.9	+0.3
KALE	Kalithea	0.61	138	P	Pg	19 05 53.3	-1.3
KALE				S	Sg	19 06 02.9	+0.3
KALE				AML	AML	19 06 06.6	
	comp=E,3721μm,0.5s						
KALE				AML	AML	19 06 08.0	
	comp=N,4297μm,0.2s						
LAKA	Lakka	0.67	155	P	Pg	19 05 56.2	+0.6
LAKA				S	Sb	19 06 05.4	-0.5
LAKA	Lakka	0.67	155	P	Pg	19 05 54.6	-1.1
LAKA				S	Sb	19 06 05.4	-0.5
LAKA	Lakka	0.67	155	P	Pg	19 05 54.6	-1.1
AXS	Araxos	0.67	196	P	Pg	19 05 55.0	-0.8
AXS				S	Sg	19 06 05.3	+0.7
AXS	Araxos	0.67	196	P	Pg	19 05 55.2	-0.6
AXS				S	Sg	19 06 05.1	+0.6
AXS	Araxos	0.67	196	P	Pg	19 05 55.2	-0.6
AXS				S	Sg	19 06 05.1	+0.6
LKD2	Lefkada island	0.75	266	P	Pg	19 05 56.7	-0.6
LKD2				S	Sb	19 06 09.5	+1.1
LKD2	Lefkada island	0.75	266	P	Pg	19 05 57.0	-0.3
LKD2				S	Sg	19 06 07.6	+0.5
LKD2	Lefkada island	0.75	266	P	Pg	19 05 57.0	-0.3
LKD2				S	Sg	19 06 07.6	+0.5
LKD2				AML	AML	19 06 14.2	
	comp=E,3609μm,0.5s						
LKD2				AML	AML	19 06 16.3	
	comp=N,2483μm,0.4s						
THL	Klokotos Trika	0.78	23	P	Pg	19 05 57.1	-0.8
THL				S	Sb	19 06 09.0	-0.3
THL	Klokotos Trika	0.78	23	P	Pg	19 05 57.3	-0.6
THL				S	Sg	19 06 08.6	+0.5
RLS	Riolos of Patr	0.79	189	P	Pg	19 05 57.7	-0.3
RLS				S	Sb	19 06 10.5	+1.0
RLS	Riolos of Patr	0.79	189	P	Pg	19 05 57.7	-0.3
RLS				S	Sb	19 06 09.3	-0.2
RLS	Riolos of Patr	0.79	189	S	Sb	19 06 09.3	-0.2
RLS				AML	AML	19 06 11.1	
	comp=E,1914μm,0.5s						
RLS				AML	AML	19 06 16.3	
	comp=N,1418μm,0.4s						
DSF	Desfina	0.83	121	P	Pg	19 05 57.5	-1.3
DSF				S	Sb	19 06 10.8	+0.1
DSF	Desfina	0.83	121	P	Pg	19 05 57.5	-1.3
DSF				S	Sg	19 06 09.9	+0.2
DSF	Desfina	0.83	121	P	Pg	19 05 56.7	-2.2
DSF				S	Sg	19 06 09.9	+0.2
DSF				AML	AML	19 06 14.2	
	comp=N,3124μm,0.2s						
DSF				AML	AML	19 06 14.2	
	comp=E,2555μm,0.2s						
DRO	Drossia	0.89	175	P	Pg	19 05 59.0	-0.9
DRO				S	Sn	19 06 13.7	-0.8
DRO	Drossia	0.89	175	P	Pg	19 05 59.1	-0.9
DRO				S	Sn	19 06 13.7	-0.8
DRO	Drossia	0.89	175	P	Pg	19 05 59.1	-0.9
KLV	Kalavryta, Ach	0.90	152	P	Pg	19 05 59.6	-0.5
KLV				S	Sb	19 06 13.7	+1.0
KLV	Kalavryta, Ach	0.90	152	P	Pg	19 05 59.6	-0.5
KLV				S	Sb	19 06 13.7	+1.0
KLV	Kalavryta, Ach	0.90	152	P	Pg	19 05 58.0	-2.1
KFL	Anninata	0.98	222	P	Pg	19 06 00.4	-1.2
KFL				S	Sn	19 06 17.8	+1.2
KFL	Anninata	0.98	222	P	Pg	19 06 00.4	-1.2
KFL	Anninata	0.98	222	P	Pg	19 06 00.3	-1.2
JAN	Janina	1.01	324	P	Pg	19 06 01.6	-0.6
JAN				S	Sb	19 06 16.2	+0.4
JAN	Janina	1.01	324	P	Pg	19 06 01.6	-0.6
JAN				S	Sb	19 06 16.2	+0.4
VLS	Valsamata	1.04	231	P	Pg	19 06 01.2	-1.7
VLS				S	Sn	19 06 18.0	-0.3
VLS	Valsamata	1.04	231	P	Pg	19 06 01.2	-1.7
VLS				S	Sn	19 06 18.0	-0.3
LKR	Lokris	1.10	100	P	Pg	19 06 03.3	-0.6
LKR				S	Sb	19 06 18.7	+0.4
LKR	Lokris	1.10	100	P	Pg	19 06 03.3	-0.6
LKR				S	Sb	19 06 18.7	+0.4
LKR	Lokris	1.10	100	P	Pg	19 06 03.2	-0.6
KPRO	Kipourio	1.13	350	P	Pb	19 06 02.6	-1.9
KPRO				S	Sg	19 06 19.2	+0.1
KPRO	Kipourio	1.13	350	P	Pb	19 06 03.1	-1.4
KPRO				S	Sg	19 06 19.2	+0.1
KPRO	Kipourio	1.13	350	P	Pb	19 06 03.1	-1.4
THAL	Thalero	1.15	134	P	Pb	19 06 04.8	0.0
THAL				S	Sn	19 06 22.7	+1.9
THAL	Thalero	1.15	134	P	Pb	19 06 04.6	-0.2
THAL	Thalero	1.15	134	P	Pb	19 06 04.6	-0.2
PROD	Prodromos	1.16	120	P	Pb	19 06 04.3	-0.7
PROD	Prodromos	1.16	120	P	Pb	19 06 04.3	-0.7
FYTO	Fytoko, Volos	1.17	61	P	Pb	19 06 04.8	-0.4
FYTO				S	Sn	19 06 21.8	+0.4
FYTO	Fytoko, Volos	1.17	61	P	Pb	19 06 04.8	-0.4
FYTO				S	Sn	19 06 21.8	+0.4
FYTO	Fytoko, Volos	1.17	61	P	Pb	19 06 04.4	-0.8
IGT	Igoumenitsa	1.21	305	P	Pn	19 06 05.2	-0.7
IGT	Igoumenitsa	1.21	305	P	Pn	19 06 05.4	-0.5
IGT	Igoumenitsa	1.21	305	P	Pn	19 06 05.4	-0.5
SMIA	Simia	1.24	88	P	Pn	19 06 06.2	-0.1
SMIA				S	Sg	19 06 22.7	-0.1
SMIA	Simia	1.24	88	P	Pn	19 06 06.2	-0.1
SMIA				S	Sg	19 06 22.7	-0.1
SMIA	Simia	1.24	88	P	Pg	19 06 06.8	+0.2
AMT	Artemida-Makis	1.31	177	P	Pn	19 06 07.3	+0.1
AMT				S	Sg	19 06 27.6	+2.7
AMT	Artemida-Makis	1.31	177	P	Pn	19 06 07.3	+0.1
AMT	Artemida-Makis	1.31	177	P	Pn	19 06 07.4	+0.1
ZKS	Zakynthos	1.32	210	P	Pn	19 06 06.7	-0.6
ZKS				S	Sg	19 06 27.6	+2.4
ZKS	Zakynthos	1.32	210	P	Pn	19 06 06.7	-0.6
ZKS	Zakynthos	1.32	210	P	Pn	19 06 06.1	-1.3
SGD	Sagiada	1.32	306	P	Pn	19 06 07.6	+0.2
SGD				S	Sg	19 06 26.8	+1.5
SGD	Sagiada	1.32	306	P	Pn	19 06 07.6	+0.2
SGD				S	Sg	19 06 26.8	+1.5
SGD	Sagiada	1.32	306	P	Pg	19 06 08.3	+0.2
XOR	Xorichti	1.33	66	P	Pn	19 06 07.3	-0.2
XOR				S	Sg	19 06 26.1	+0.5
XOR	Xorichti	1.33	66	P	Pn	19 06 07.3	-0.2
XOR				S	Sg	19 06 26.1	+0.5
XOR	Xorichti	1.33	66	P	Pn	19 06 06.9	-0.7
NEO	Neokhori	1.33	69	P	Pn	19 06 07.3	-0.3
NEO				S	Sb	19 06 25.0	-0.1
NEO	Neokhori	1.33	69	P	Pn	19 06 07.3	-0.3
NEO				S	Sb	19 06 25.0	-0.1
LTK	Loutraki	1.34	127	P	Pn	19 06 07.4	-0.2
LTK				S	Sg	19 06 28.2	+2.3
LTK	Loutraki	1.34	127	P	Pn	19 06 07.4	-0.2
LTK	Loutraki	1.34	127	P	Pn	19 06 07.4	-0.2
PENT	Pentalofos	1.40	345	P	Pn	19 06 08.4	-0.2
PENT				S	Sg	19 06 29.2	+1.3
PENT	Pentalofos	1.40	345	P	Pn	19 06 08.4	-0.2
PENT				S	Sg	19 06 29.2	+1.3
PENT	Pentalofos	1.40	345	P	Pn	19 06 08.3	-0.2
LIT	Litokhoron	1.43	28	P	Pn	19 06 08.2	-0.7
LIT				S	Sg	19 06 29.1	+0.4
LIT	Litokhoron	1.43	28	P	Pb	19 06 09.4	-0.1
LIT				S	Sg	19 06 29.1	+0.4
LIT	Litokhoron	1.43	28	P	Pb	19 06 09.4	-0.1
VIL2	Platees	1.44	115	P	Pg	19 06 10.8	+0.4
KZN	Kozani	1.47	5	P	Pn	19 06 09.2	-0.3
KZN				S	Sn	19 06 28.9	+0.1
KZN	Kozani	1.47	5	P	Pn	19 06 09.2	-0.3
KZN				S	Sn	19 06 28.9	+0.1
VILL	Villia	1.49	116	P	Pb	19 06 10.8	+0.1
VILL				S	Sg	19 06 31.4	+0.6
VILL	Villia	1.49	116	P	Pb	19 06 10.8	+0.1
VILL				S	Sg	19 06 31.4	+0.6
NEST	Nestorio	1.63	345	P	Pb	19 06 12.7	-0.4
NEST	Nestorio	1.63	345	P	Pn	19 06 12.5	+0.8
NEST	Nestorio	1.63	345	P	Pn	19 06 12.5	+0.8
KEK	Kerkira	1.66	302	P	Pb	19 06 13.5	0.0
KEK				S	Sb	19 06 35.7	+1.3
KEK	Kerkira	1.66	302	P	Pb	19 06 13.5	0.0
KEK				S	Sb	19 06 35.7	+1.3
ITM	Ithomi	1.68	172	P	Pb	19 06 13.8	0.0
ITM				S	Sg	19 06 38.3	+1.6
ITM	Ithomi	1.68	172	P	Pb	19 06 13.5	-0.3
ITM	Ithomi	1.68	172	P	Pb	19 06 13.5	-0.3
AOS	Alonnisos	1.79	79	P	Pn	19 06 13.3	-0.6
AOS				S	Sn	19 06 35.9	-0.8
AOS	Alonnisos	1.79	79	P	Pn	19 06 13.3	-0.6
AOS				S	Sn	19 06 35.9	-0.8
DID	Didima	1.85	136	P	Pb	19 06 15.9	-0.8
DID	Didima	1.85	136	P	Pb	19 06 15.7	-1.0
DID	Didima	1.85	136	P	Pb	19 06 15.7	-1.0
EREA	Eretria	1.86	102	P	Pn	19 06 15.2	+0.4
EREA				S	Sn	19 06 39.1	+0.7
EREA	Eretria	1.86	102	P	Pn	19 06 15.2	+0.4
EREA				S	Sn	19 06 39.1	+0.7
ATH	Athens Observa	1.86	117	P	Pb	19 06 16.0	-1.0
ATH				S	Sb	19 06 39.5	-0.9
ATH	Athens Observa	1.86	117	P	Pb	19 06 16.0	-1.0
ATH				S	Sb	19 06 39.5	-0.9
KRND	KRANIDI	1.89	140	P	Pn	19 06 16.1	+0.9
KRND	KRANIDI	1.89	140	P	Pn	19 06 16.1	+0.9
PAIG	Paliouri	1.93	55	P	Pn	19 06 15.3	-0.4
PAIG				S	Sn	19 06 38.9	-1.2
PAIG	Paliouri	1.93	55	P	Pn	19 06 15.3	-0.4
PAIG				S	Sn	19 06 38.9	-1.2
PTL	Penteli	1.94	113	P	Pn	19 06 16.5	+0.7
PTL	Penteli	1.94	113	P	Pn	19 06 16.5	+0.7
FNA	Florina	1.95	355	P	Pn	19 06 16.2	+0.2
FNA				S	Sb	19 06 41.9	-0.9
FNA	Florina	1.95	355	P	Pn	19 06 17.0	+0.9
FNA				S	Sb	19 06 41.9	-0.9
FNA	Florina	1.95	355	P	Pn	19 06 17.0	+0.9
PYL	PYLOS	1.95	177	P	Pb	19 06 18.2	-0.2
PYL				S	Sb	19 06 42.8	+0.1
PYL	PYLOS	1.95	177	P	Pb	19 06 18.2	-0.2
PYL				S	Sb	19 06 42.8	+0.1
VLY	Voula,Athens	1.98	119	P	Pn	19 06 16.8	+0.4
VLY	Voula,Athens	1.98	119	P	Pn	19 06 16.8	+0.4
VLY	Voula,Athens	1.98	119	P	Pn	19 06 16.4	0.0
PLG	Polygyros	2.08	42	P	Pn	19 06 17.4	-0.5
PLG				S	Sn	19 06 43.0	-0.9
PLG	Polygyros	2.08	42	P	Pn	19 06 17.4	-0.5
PLG				S	Sn	19 06 43.0	-0.9
HORT	Hortiatis	2.09	33	P	Pn	19 06 17.4	-0.7
HORT	Hortiatis	2.09	33	P	Pn	19 06 17.4	-0.7
BIA	Bitola	2.19	354	*i* Pn	Pb	19 06 23.5	+0.9
BIA				*e*Sn	Sg	19 06 53.6	+0.6
BIA	Bitola	2.19	354	*i* Pn	Pb	19 06 23.4	+0.9
GRG	Griva	2.20	16	P	Pn	19 06 19.2	-0.2
GRG	Griva	2.20	16	P	Pn	19 06 19.9	+0.4
GRG	Griva	2.20	16	P	Pn	19 06 19.9	+0.4
OHR	Ohrid	2.35	345	*i* Pn	Pb	19 06 25.5	+0.1
OHR				*e*Sn	Sg	19 06 59.0	+0.7
OHR	Ohrid	2.35	345	*i* Pn	Pb	19 06 25.4	+0.1
OUR	Ouranopolis	2.36	50	P	Pn	19 06 21.7	+0.1
OUR				S	Sn	19 06 51.1	+0.5
OUR	Ouranopolis	2.36	50	P	Pn	19 06 21.7	+0.1
OUR				S	Sn	19 06 51.1	+0.5
KNT	Kendrikon	2.52	23	P	Pn	19 06 24.6	+0.8
KNT	Kendrikon	2.52	23	P	Pn	19 06 24.6	+0.8
VAY	Valandovo	2.58	16	*i* Pn	Pn	19 06 26.2	+1.6
VAY				*e*Sn	Sn	19 06 57.3	+1.2
VAY	Valandovo	2.58	16	*e*Pn	Pn	19 06 26.5	+1.8
VAY	Valandovo	2.58	16	*e*Pn	Pn	19 06 26.5	+1.8
VAY				*e*Sn	Sn	19 06 57.3	+1.2
SRS	Serrai	2.73	33	P	Pn	19 06 26.7	-0.1
SRS				S	Sn	19 06 59.7	-0.2
SRS	Serrai	2.73	33	P	Pn	19 06 26.7	-0.1
SRS				S	Sn	19 06 59.7	-0.2
TIR	Tirane	2.84	332 ⇑	*i* P	Pn	19 06 29.3	+1.0
TIR	Tirane	2.84	332	S	Sb	19 07 05.9	-2.6
TIR	Tirane	2.84	332 ⇑	*i* P	Pn	19 06 29.3	+1.0
NVR	Nevrokopi	3.04	34	P	Pn	19 06 31.6	+0.6
NVR				S	Sn	19 07 08.0	+0.5
NVR	Nevrokopi	3.04	34	P	Pn	19 06 31.6	+0.6
NVR				S	Sn	19 07 08.0	+0.5
KAVA	Kavala	3.10	45	P	Pn	19 06 31.1	-0.7
KAVA	Kavala	3.10	45	P	Pn	19 06 31.1	-0.7
SKO	Skopje	3.13	358	*i* Pn	Pn	19 06 35.4	+3.1
SKO	Skopje	3.13	358	*i* Pn	Pn	19 06 35.3	+3.1
APE	Apeiranthos	3.56	119 ⇑	*i* P	Pn	19 06 39.3	+1.0
APE	Apeiranthos	3.56	119 ⇑	*i* P	Pn	19 06 39.3	+1.0
TIP	Timpagrande	3.80	277 ⇓	*i* P	Pn	19 06 43.2	+1.7
TIP	Timpagrande	3.80	277	S	Sn	19 07 27.4	+1.1
TIP	Timpagrande	3.80	277 ⇓	*i* P	Pn	19 06 43.2	+1.7
BARS	Barje	3.97	2	*e*Pn	Pn	19 06 45.1	+1.3
BARS				*e*Sn	Sn	19 07 32.1	+1.6
BARS	Barje	3.97	2	*e*Pn	Pn	19 06 45.1	+1.3
BARS				*e*Sn	Sn	19 07 32.1	+1.6
PDG	Podgorica	4.01	334	*e*Pn	Pn	19 06 47.2	+2.9
PDG	Podgorica	4.01	334	*e*Pn	Pn	19 06 47.2	+2.9
IDI	Anoyia	4.41	143	Pn	Pn	19 06 51.8	+1.9
	comp=E,0.2nm,0.3s,baz=190,slow=5.9,SNR=2.7						
IDI	Anoyia	4.41	143 ⇓	*i* P	Pn	19 06 51.7	+1.9
SJES	Sjenica	4.59	345	*e*Pn	Pn	19 06 55.2	+2.9
LAST	Lasithi	4.80	139 ⇑	*i* P	Pn	19 06 57.4	+2.1
LAST	Lasithi	4.80	139 ⇑	*i* P	Pn	19 06 57.4	+2.1
IVAS	Ivanjica	4.86	347	*e*Pn	Pn	19 06 57.1	+1.1
IVAS	Ivanjica	4.86	347	*e*Pn	Pn	19 06 57.1	+1.1
BOLS	Boljevac	4.99	3	*e*Pn	Pn	19 06 59.2	+1.4
BOLS	Boljevac	4.99	3	*e*Pn	Pn	19 06 59.2	+1.4
STON	Ston	5.00	325	*i* Pn	Pn	19 06 57.9	0.0
STON				Sn	Sn	19 07 50.8	-5.0
STON	Ston	5.00	325	*e*Pn	Pn	19 06 59.2	+1.3
STON	Ston	5.00	325	*e*Pn	Pn	19 06 59.2	+1.3
GRUS	Gruza	5.09	353	*e*Pn	Pn	19 07 01.0	+1.9
GRUS	Gruza	5.09	353	*e*Pn	Pn	19 07 01.0	+1.9
BBLS	Lazići	5.29	342	*e*Pn	Pn	19 07 03.0	+1.1
BBLS	Lazići	5.29	342	*e*Pn	Pn	19 07 03.0	+1.1
DIVS	Divibare	5.39	347	*e*Pn	Pn	19 07 04.7	+1.3
DIVS				*e*Sn	Sn	19 08 07.0	+1.4
DIVS	Divibare	5.39	347	*e*Pn	Pn	19 07 04.7	+1.3
DIVS				*e*Sn	Sn	19 08 07.0	+1.4
TRUS	Trudelj	5.45	351	*e*Pn	Pn	19 07 06.4	+2.3
TRUS	Trudelj	5.45	351	*e*Pn	Pn	19 07 06.4	+2.3
TEKS	Tekeris	5.91

0.9nm,0.3s,baz=327,slow=12,SNR=38
WRA S **S** **19 13 35.0 -1.7**
0.2nm,0.3s,baz=326,slow=21,SNR=7.1
ASAR Alice Springs 17.60 158 P **P** **19 11 34.4 +1.2**
1.3nm,0.3s,baz=334,slow=11,SNR=188
ASAR S **S** **19 14 37.0 -0.8**
0.1nm,0.3s,baz=338,slow=23,SNR=6.0
STKA Stephens Creek 28.04 152 P **P** **19 13 12.4 +1.7**
0.8nm,0.7s,baz=332,slow=15,SNR=2.8
MJAR Matsushiro Arr 45.02 13 P **P** **19 15 30.6 -1.8**
0.6nm,0.4s,baz=198,slow=9.3,SNR=4.7
SONM Songino Array 57.84 344 P **P** **19 17 06.7 +0.2**
0.3nm,0.6s,baz=175,slow=7.2,SNR=2.5
PETK Petropavlovsk- 65.76 20 P **P** **19 17 59.1 +0.6**
2.3nm,0.9s,baz=192,slow=1.6,SNR=5.7
MKAR Makanchi Array 66.80 328 P **P** **19 18 05.5 +0.2**
0.3nm,0.6s,baz=111,slow=6.6,SNR=5.0
ZALV Zalesovo Beam 70.53 335 P **P** **19 18 27.4 -0.5**
0.8nm,0.4s,baz=131,slow=6.4,SNR=5.0
SEY Seymchan 72.83 12 P **P** **19 18 41.9 +0.6**
0.9nm,0.6s,baz=212,slow=12,SNR=4.9

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*ISCJB **01** 19:30:35.1±0.6, 19°.7S±0°.1×174°.9W±0°.1, h35km, mb3.8/8, MS2.8/1, Error ellipse: s-maj=18.6km s-min=11.6km az=135.4*
*IDC **01** 19:30:36.1±7.5, 19°.61S×174°.98W, h28km±52km, mb3.5/8, mb1 3.9/11, mb1mx3.7/40, mbtmp3.9/11, ML4.1/3, MS2.9/1, Ms1 2.9/1, ms1mx2.4/32, Error ellipse: s-maj=31.1km s-min=18.1km az=133.0*
ISC 01 19:30:36.6±0.6, 19°.6S±0°.1×174°.9W±0°.1, h35km, n16, σ1°29/17, mb3.8/8, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**6.38**	**28**	Pn	**Pn**	**19 32 09.2**	**+0.9**
	11nm,0.3s,baz=157,slow=0.8,SNR=14						
AFI				Sn	**Sn**	**19 33 16.7**	**-3.3**
	11nm,0.3s,baz=48,slow=20,SNR=4.3						
RAR	**Rarotonga**	**14.26**	**99**	Pn	**Pn**	**19 33 55.3**	**-0.7**
	1.3nm,0.3s,baz=268,slow=13,SNR=4.8						
RAR				Sn		19 36 17.5	-15
	1.6nm,0.3s,baz=151,slow=20,SNR=3.1						
URZ	**Urewera**	**19.86**	**199**	P	**Pn**	**19 35 05.6**	**-0.8**
	1.2nm,0.3s,baz=321,slow=3.3,SNR=5.7						
RPZ	**Rata Peaks**	**26.79**	**203**	LR	LR	19 45 15.7	
	comp=Z,27nm,19.8s,baz=346,slow=33						
STKA	**Stephens Creek**	**40.82**	**244**	P	**P**	**19 38 14.2**	**-0.8**
	1.3nm,0.8s,baz=71,slow=8.4,SNR=3.7						
ASAR	**Alice Springs**	**47.58**	**255**	P	**P**	**19 39 09.6**	**+0.3**
	0.6nm,0.4s,baz=87,slow=8.7,SNR=36						
ASAR				PcP	**PcP**	**19 40 38.9**	**0.0**
	0.5nm,0.6s,baz=106,slow=4.1,SNR=5.3						
WRA	**Warramunga Arr**	**47.64**	**261**	P	**P**	**19 39 08.4**	**-1.3**
	0.9nm,0.5s,baz=97,slow=8.8,SNR=26						
VNDA	**Vanda**	**59.09**	**186**	P	**P**	**19 40 32.7**	**-0.2**
	1.2nm,0.8s,baz=2.4,slow=5.6,SNR=6.1						
NVAR	**Mina Array Bea**	**78.37**	**42**	P	**P**	**19 42 35.7**	**+1.9**
	0.3nm,0.7s,baz=232,slow=6.7,SNR=3.3						
MAW	**Mawson**	**83.39**	**199**	P	**P**	**19 43 00.3**	**+0.4**
	2.0nm,0.7s,baz=87,slow=5.6,SNR=4.8						
ILAR	**Eielson Array**	**86.81**	**12**	P	**P**	**19 43 18.2**	**+1.3**
	0.2nm,0.6s,baz=241,slow=6.8,SNR=2.3						
YKA	**Yellowknife Ar**	**94.48**	**24**	P	**P**	**19 43 53.8**	**+1.1**
	0.1nm,0.6s,baz=237,slow=4.3,SNR=3.3						
ARCES	**ARCESS Array B**	**128.52**	**351**	PKP	**PKPdf**	**19 49 38.5**	**-0.7**
	0.6nm,0.5s,baz=2.7,slow=1.4,SNR=14						
FINES	**FINESS Array B**	**135.67**	**346**	PKP	**PKPdf**	**19 49 53.2**	**+0.4**
	0.6nm,0.7s,baz=112,slow=29,SNR=3.9						
BRTR	**Keskin Array B**	**148.33**	**315**	PKPbc	**PKPbc**	**19 50 19.0**	**-0.7**
	0.5nm,0.6s,baz=160,slow=5.4,SNR=4.2						
GERES	**GERESS Array B**	**150.01**	**349**	PKPbc	**PKPbc**	**19 50 23.1**	**-0.4**
	0.4nm,0.6s,baz=42,slow=4.2,SNR=4.6						

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*TIF **01** 19:32:37.5, 41°.08N×43°.67E, h11km±2km*
*ISCJB **01** 19:32:38.3±0.9, 41°.08N±0°.03×43°.59E±0°.04, h1km±8km, Error ellipse: s-maj=5.9km s-min=4.1km az=145.9*
*CSEM **01** 19:32:38.2±0.1, 41°.09N×43°.59E, h5km, MD2.9, Error ellipse: s-maj=2.5km s-min=2.2km az=160.0*
*DDA **01** 19:32:42.1, 40°.76N×43°.31E, h7km, Md2.9*
ISC 01 19:32:38.3±1.0, 41°.09N±0°.03×43°.59E±0°.03, h9km±9km, n16, σ0°47/31, Turkey-Georgia-Armenia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKH	**Akhalkalaki**	**0.33**	**348**	P	**Pg**	**19 32 44.8**	**-0.1**
AKH				S	**Sg**	**19 32 49.7**	**+0.4**
AKH	**Akhalkalaki**	**0.33**	**348**	P	**Pg**	**19 32 44.8**	**-0.1**
AKH				S	**Sg**	**19 32 49.7**	**+0.4**
EAK	**Akyaka**	**0.40**	**178**	P	**Pg**	**19 32 46.0**	**-0.3**
EAK				S	**Sg**	**19 32 52.3**	**+0.7**
EAK	**Akyaka**	**0.40**	**178**	*i* P	**Pg**	**19 32 46.0**	**-0.3**
EAK				*i* S	**Sg**	**19 32 52.3**	**+0.7**
TBLG	**Delisi**	**1.08**	**53**	P	**Pg**	**19 32 58.2**	**-0.9**
TBLG				S	**Sg**	**19 33 12.9**	**-0.1**
TBLG	**Delisi**	**1.08**	**53**	P	**Sn**	**19 33 14.2**	**-0.6**
DAGI	**Agillar**	**1.26**	**270**	*i* P	**Pn**	**19 33 02.3**	**0.0**
DAGI				*i* S	**Sn**	**19 33 20.1**	**+0.7**
DUS	**Dusheti**	**1.30**	**40**	P	**Pg**	**19 33 03.7**	**+0.3**
DUS				S	**Sn**	**19 33 21.6**	**+1.2**
DGRG	**David-gareji**	**1.40**	**74**	P	**Pb**	**19 33 04.3**	**-0.3**
DGRG				S	**Sg**	**19 33 23.8**	**+0.6**
DGRG	**David-gareji**	**1.40**	**74**	P	**Pn**	**19 33 04.1**	**+0.1**
DGRG				S	**Sb**	**19 33 22.3**	**-0.2**
DDEM	**Demirkent**	**1.40**	**262**	P	**Pn**	**19 33 04.2**	**0.0**
DDEM				S	**Sb**	**19 33 22.6**	**-0.2**
DDEM	**Demirkent**	**1.40**	**262**	*i* P	**Pn**	**19 33 04.2**	**0.0**
DDEM				*i* S	**Sb**	**19 33 22.6**	**-0.2**
DBAD	**Bademkaya**	**1.43**	**268**	P	**Pb**	**19 33 05.0**	**-0.2**
DBAD				S	**Sg**	**19 33 24.2**	**-0.1**
DBAD	**Bademkaya**	**1.43**	**268**	*i* P	**Pb**	**19 33 05.0**	**-0.2**
DBAD				*i* S	**Sg**	**19 33 24.2**	**-0.1**
ONI	**Oni**	**1.50**	**356**	P	**Pn**	**19 33 05.3**	**-0.2**
ONI				S	**Sg**	**19 33 26.7**	**0.0**
GUDG	**Gudauri**	**1.53**	**26**	P	**Pg**	**19 33 07.3**	**-0.3**
GUDG				S	**Sg**	**19 33 28.0**	**+0.6**

IDC 01 19:38:12.3±54.0, 15°.59S×172°.36W, h0km, mb3.6/3, mb1 3.8/3, mb1mx3.5/36, mbtmp3.6/3, MS3.5/1, Ms1 3.5/1, ms1mx2.6/35, Error ellipse: s-maj=1045.0km s-min=190.5km az=79.0, Samoa Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H11S2	**WAKE ISLAND Hy**	**39.65**	**328**	T	T	20 27 20.4	
	baz=148,slow=75,SNR=10						
H11S3	**WAKE ISLAND Hy**	**39.67**	**328**	T	T	20 27 21.5	
	baz=148,slow=75,SNR=9.6						
H11S1	**WAKE ISLAND Hy**	**39.67**	**328**	T	T	20 27 21.8	
	baz=148,slow=75,SNR=7.0						
STKA	**Stephens Creek**	**44.81**	**240**	P	P	19 46 28.8	+0.6
	0.6nm,0.5s,baz=96,slow=12,SNR=4.7						
WRA	**Warramunga Arr**	**50.78**	**257**	P	P	19 47 14.2	-0.5
	0.3nm,0.9s,baz=96,slow=7.0,SNR=4.2						
ASAR	**Alice Springs**	**51.01**	**252**	P	P	19 47 16.2	-0.2
	1.2nm,0.5s,baz=89,slow=8.0,SNR=42						
FITZ	**Fitzroy Crossi**	**59.15**	**258**	LR	LR	20 12 29.8	
	comp=Z,39nm,18.8s,baz=351,slow=35						

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*JMA **01** 19:41:05.8±0.4, 45°.39N×150°.64E, h30km, M4.4*
*SKHL **01** 19:41:07.2±0.4, 45°.10N×150°.70E, h78km±5km, mb4.8/3*
*MOS **01** 19:41:07.1±1.8, 45°.76N×150°.40E, h58km, mb4.0/7, Error ellipse: s-maj=19.2km s-min=11.1km az=73.4*
*IDC **01** 19:41:11.6±2.9, 45°.94N×150°.38E, h75km±25km, mb3.5/12, mb1 3.6/15, mb1mx3.4/41, mbtmp3.8/15, Error ellipse: s-maj=26.0km s-min=17.1km az=136.0*
ISC 01 19:41:01.7±0.9, 44°.92N±0°.09×151°.10E±0°.08, h35km, n49, σ2°36/54, mb3.8/12, 4D, East of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUR	**Kuril'sk**	**2.31**	**279**	*d i* PN	**Pn**	**19 41 39.0**	**+1.8**
KUR				*i* S	**Sn**	**19 42 03.9**	**-0.5**
KUR				pmax	pmax		
	comp=N,48nm,0.2s						
KUR				pmax	pmax		
	comp=E,102nm,0.2s						
KUR				pmax	pmax		
	comp=Z,325nm,0.2s						
KUR				smax	smax		
	comp=N,232nm,0.3s						
KUR				smax	smax		
	comp=E,121nm,0.1s						
KUR	**Kuril'sk**	**2.31**	**279**	‖ *i* P	**Pn**	**19 41 39.0**	**+1.8**
KUR				AMB	AMB	19 41 40.0	
	comp=E,50nm,0.2s						
KUR				AMB	AMB	19 41 40.0	
	comp=E,100nm,0.2s						
KUR				AMB	AMB	19 41 40.0	
	comp=E,330nm,0.2s						
KUR				*i* S	**Sn**	**19 42 03.2**	**-1.2**
KUR				A	A	19 42 04.2	
	comp=E,240nm,0.2s						
KUR				A	A	19 42 04.2	
	comp=E,120nm,0.2s						
SHO	**Shikotan**	**3.24**	**253**	*d i* PN	**Pn**	**19 41 52.2**	**+2.3**
SHO				pmax	pmax		
	comp=Z,46nm,0.5s						
SHO				pmax	pmax		
	comp=N,31nm,0.2s						
SHO				pmax	pmax		
	comp=E,30nm,0.3s						
SHO	**Shikotan**	**3.24**	**253**	‖ *i* P	**Pn**	**19 41 52.2**	**+2.3**
SHO				AMB	AMB	19 41 52.8	
	comp=E,50nm,0.3s						
SHO				*i* S	**Sn**	**19 42 25.9**	**-1.3**
SHO				A	A	19 42 31.0	
	comp=E,230nm,0.3s						
SHO				A	A	19 42 31.0	
	comp=E,260nm,0.3s						
YUK	**Yuzh-Kuril'sk**	**3.85**	**259**	*eP*	**Pn**	**19 42 01.6**	**+3.2**
YUK				AMB	AMB	19 42 05.6	
	comp=E,300nm,1.0s						
YUK				*i* S	**Sn**	**19 42 42.5**	**+0.1**
YUK				A	A	19 42 52.3	
	comp=E,400nm,0.4s						
NEM2	**Nemuro 2**	**4.16**	**250**	P	**Pn**	**19 42 04.8**	**+2.2**
NEM2				*eS*	**Sn**	**19 42 48.5**	**-1.4**
JRA	**Rausu**	**4.39**	**259**	P	**Pn**	**19 42 09.5**	**+3.7**
JRA				*eS*	**Sn**	**19 42 57.7**	**+2.0**
JNK	**Nakash**	**4.77**	**256**	P	**Pn**	**19 42 14.5**	**+3.4**
JNK				*eS*	**Sn**	**19 43 04.9**	**-0.3**
JAK	**Akkeshi**	**5.01**	**250**	P	**Pn**	**19 42 16.5**	**+2.3**
JAK				*eS*	**Sn**	**19 43 09.4**	**-1.4**
JTKR	**Abashiri--Toko**	**5.24**	**262**	P	**Pn**	**19 42 21.0**	**+3.6**
JAR	**Ashorobuto**	**5.52**	**256**	P	**Pn**	**19 42 25.2**	**+3.9**
JAR				*eS*	**Sn**	**19 43 24.0**	**+0.4**
JMP	**Maruseppu**	**5.62**	**263**	P	**Pn**	**19 42 26.9**	**+4.2**
JOB	**Onbets**	**5.62**	**252**	P	**Pn**	**19 42 25.6**	**+2.9**
JOB				*eS*	**Sn**	**19 43 24.9**	**-1.1**
JCH	**Churui**	**6.06**	**250**	P	**Pn**	**19 42 31.0**	**+2.3**
JCH				*eS*	**Sn**	**19 43 34.8**	**-2.0**
JKA	**Kamikawa-asahi**	**6.13**	**265**	*eP*	**Pn**	**19 42 34.1**	**+4.4**
ASAJ	**Asahikawa**	**6.13**	**265**	P	**Pn**	**19 42 34.1**	**+4.4**
	comp=E,0.6nm,0.3s,baz=111,slow=12,SNR=5.6						
YSS	**Yuzh-Sakhalins**	**6.17**	**292**	*eP*	**Pn**	**19 42 34.2**	**+4.0**
MYR	**Moyori**	**6.25**	**248**	*eP*	**Pn**	**19 42 34.5**	**+3.1**
MYR				*eS*	**Sn**	**19 43 40.8**	**-0.7**
JNBK	**Urakawa-nobuka**	**6.61**	**249**	P	**Pn**	**19 42 38.5**	**+2.2**
JKB	**Kayabe**	**7.93**	**251**	*eS*	**Sn**	**19 44 18.8**	**-4.0**
TYV	**Tymovskoe**	**8.22**	**319**	*eP*	**Pn**	**19 42 59.4**	**+1.1**
JTM	**Tenmabayashi**	**8.45**	**244**	*eS*	**Sn**	**19 44 30.6**	**-4.9**
PETK	**Petropavlovsk-**	**9.27**	**25**	P	**Pn**	**19 43 13.9**	**+1.3**
	comp=E,0.2nm,0.3s,baz=182,slow=12,SNR=7.1						
PETK	**Petropavlovsk-**	**9.27**	**25**	PN	**Pn**	**19 43 14.0**	**+1.3**
SEY	**Seymchan**	**18.07**	**2**	P	**Pn**	**19 45 06.5**	**-3.0**
	comp=E,0.1nm,0.3s,baz=194,slow=10,SNR=3.9						
KROS	**Kirovskiy**	**18.21**	**310**	*eP*	**Pn**	**19 45 10.9**	**-0.5**
H11N2	**WAKE ISLAND Hy**	**28.34**	**147**	T	T	20 17 47.8	
	baz=336,slow=75,SNR=67						
H11N1	**WAKE ISLAND Hy**	**28.35**	**147**	T	T	20 17 52.7	
	baz=336,slow=75,SNR=54						
H11N3	**WAKE ISLAND Hy**	**28.35**	**147**	T	T	20 17 45.1	
	baz=336,slow=75,SNR=51						
TIXI	**Tiksi**	**28.86**	**346**	P	P	19 46 51.1	-5.3
	comp=E,2.1nm,0.3s,baz=130,slow=19,SNR=4.2						
H11S1	**WAKE ISLAND Hy**	**29.38**	**149**	T	T	20 19 06.3	
	baz=337,slow=76,SNR=51						
H11S3	**WAKE ISLAND Hy**	**29.39**	**149**	T	T	20 19 08.4	
	baz=337,slow=76,SNR=47						
H11S2	**WAKE ISLAND Hy**	**29.40**	**149**	T	T	20 18 58.8	
	baz=337,slow=76,SNR=52						
ILAR	**Eielson Array**	**38.86**	**37**	P	**P**	**19 48 24.5**	**+1.4**
	comp=E,0.3nm,0.6s,baz=269,slow=7.8,SNR=3.8						
INK	**Inuvik**	**43.95**	**31**	P	**P**	**19 49 06.7**	**+2.0**
	comp=E,0.5nm,0.3s,baz=274,slow=3.8,SNR=6.6						
MKAR	**Makanchi Array**	**46.55**	**298**	P	**P**	**19 49 24.9**	**-0.8**
	comp=E,1.0nm,0.7s,baz=67,slow=7.4,SNR=12						
MKAR				PcP	**PcP**	**19 50 59.4**	**0.0**
	comp=E,0.2nm,0.6s,baz=50,slow=4.5,SNR=3.1						
YKA	**Yellowknife Ar**	**53.23**	**35**	P	**P**	**19 50 16.6**	**+0.5**
	comp=E,0.3nm,0.5s,baz=298,slow=7.0,SNR=5.1						
ARCES	**ARCESS Array B**	**59.12**	**341**	P	**P**	**19 50 56.1**	**-2.0**
	comp=E,0.7nm,0.8s,baz=44,slow=7.9,SNR=3.9						
FINES	**FINESS Array B**	**65.09**	**334**	P	**P**	**19 51 35.7**	**-2.5**
	comp=E,1.1nm,0.5s,baz=38,slow=6.5,SNR=19						
GEYT	**Alibek**	**66.33**	**300**	P	**P**	**19 51 46.7**	**+0.1**
	comp=E,1.3nm,0.6s,baz=20,slow=4.7,SNR=5.1						
NOA	**NORSAR Array B**	**69.50**	**340**	P	**P**	**19 52 04.3**	**-1.8**
	comp=E,0.5nm,0.6s,baz=28,slow=6.6,SNR=7.7						
ASAR	**Alice Springs**	**70.04**	**197**	P	P	19 52 20.7	+11
	comp=E,0.2nm,0.9s,baz=12,slow=7.0,SNR=3.0						
DPC	**Dobruska-Polom**	**77.31**	**332**	*eP*	**P**	**19 52 52.6**	**+0.3**
DPC	**Dobruska-Polom**	**77.31**	**332**	*eP*	**P**	**19 52 52.6**	**+0.3**
BRTR	**Keskin Array B**	**78.74**	**316**	P	**P**	**19 53 00.2**	**-0.4**
	comp=E,0.5nm,0.8s,baz=111,slow=6.8,SNR=4.1						
KHC	**Kasperske Hory**	**79.26**	**333**	*eP*	**P**	**19 53 03.4**	**+0.3**
KHC	**Kasperske Hory**	**79.26**	**333**	*eP*	**P**	**19 53 03.4**	**+0.3**
KHC	**Kasperske Hory**	**79.26**	**333**	*eP*	**P**	**19 53 03.4**	**+0.3**
GERES	**GERESS Array B**	**79.47**	**333**	P	**P**	**19 53 03.5**	**-0.8**
	comp=E,0.5nm,0.7s,baz=346,slow=10,SNR=4.2						

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*ISCJB **01** 19:44:09.3±0.7, 2°.08N±0°.09×101°.18W±0°.07, h10km, mb4.5/29, MS3.5/12, Error ellipse: s-maj=12.9km s-min=9.0km az=17.7*
*IDC **01** 19:44:10.3±0.9, 2°.27N×100°.87W, h0km, mb4.2/8, mb1 4.5/8, mb1mx4.2/28, mbtmp4.2/8, MS3.5/13, Ms1 3.6/13, ms1mx3.4/30, Error ellipse: s-maj=50.4km s-min=26.5km az=90.0*
*NEIC **01** 19:44:11.8±0.5, 2°.27N×101°.07W, h10km, mb4.6/23, Error ellipse: s-maj=14.1km s-min=8.3km az=53.0*
ISC 01 19:44:11.4±0.7, 2°.2N±0°.1×101°.1W±0°.2, h10km, n225, σ0°96/217, mb4.5/29, MS3.4/12, Galapagos Triple Junction region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMIG	**Matias Romero**	**16.05**	**22**	LR	LR	19 52 39.7	
	comp=Z,341nm,18.5s,baz=158,slow=32						
ZAIG	**Zacatecas**	**20.52**	**356**	*eP*	Pn	19 48 54.1	+1.6
	19nm,1.3s						
TEIG	**Tepich**	**21.91**	**34**	LR	LR	19 56 19.4	
	comp=Z,98nm,21.2s,baz=40,slow=34						
OTAV	**Otavalo**	**22.77**	**95**	*eP*	**P**	**19 49 13.3**	**-1.5**
	12nm,1.4s						
LPIG	**La Paz**	**23.54**	**339**	LR	LR	19 56 29.7	
	comp=Z,249nm,19.0s,baz=70,slow=31						
ATAH	**Atahualpa**	**24.51**	**112**	LR	LR	19 56 47.7	
	comp=Z,69nm,20.9s,baz=274,slow=31						
035A	**Encino**	**24.80**	**6**	P	**P**	**19 49 34.0**	**+0.3**
	baz=187						
034A	**Hebbronville**	**24.87**	**5**	P	**P**	**19 49 34.8**	**+0.4**
	baz=186						
933A	**Laredo**	**25.36**	**4**	P	**P**	**19 49 39.2**	**+0.4**
	baz=184						
934A	**Benavides**	**25.41**	**5**	P	**P**	**19 49 41.2**	**+1.9**
	baz=186						
834A	**Tilden**	**25.93**	**5**	P	**P**	**19 49 46.6**	**+2.6**
	baz=186						
832A	**Faith Ranch, C**	**25.99**	**2**	P	**P**	**19 49 45.1**	**+0.6**
	baz=182						
833A	**Chaparral WMA,**	**26.06**	**4**	P	**P**	**19 49 45.9**	**+0.7**
	baz=184						
835A	**Beeville**	**26.16**	**7**	P	**P**	**19 49 46.7**	**+0.6**
	baz=187						
736A	**Circle Diamond**	**26.92**	**8**	P	**P**	**19 49 53.4**	**+0.5**
	baz=189						
TX31	**Lajitas Ar. Si**	**27.12**	**355**	*eP*	**P**	**19 49 56.1**	**+1.2**
TXAR	**Lajitas Array**	**27.12**	**355**	P	**P**	**19 49 56.1**	**+1.2**
	4.3nm,0.8s,baz=172,slow=11,SNR=30						
TXAR				PcP	**PcP**	**19 53 15.2**	**-0.6**
	0.6nm,0.7s,baz=188,slow=5.0,SNR=5.6						
TXAR				LR	LR	19 59 41.9	
	comp=Z,279nm,19.3s,baz=0.0,slow=34						
NNA	**Nana**	**27.95**	**121**	LR	LR	19 58 32.5	
	comp=Z,90nm,21.3s,baz=289,slow=31						
JCT	**Junction City**	**28.19**	**2**	P	**P**	**19 50 05.5**	**+1.2**
	baz=183						
JCT	**Junction City**	**28.19**	**2**	*eP*	**P**	**19 50 05.5**	**+1.2**
	18nm,1.1s						
433A	**Art**	**28.50**	**4**	P	**P**	**19 50 07.2**	**+0.1**
	baz=184						
434A	**Burnet**	**28.62**	**5**	P	**P**	**19 50 09.1**	**+0.9**
	baz=186						
435B	**Jarrell**	**28.66**	**6**	P	**P**	**19 50 09.0**	**+0.5**
	baz=187						
541A	**Lake Charles**	**28.75**	**14**	P	**P**	**19 50 09.7**	**+0.4**
	baz=197						
438A	**Sam Houston St**	**28.93**	**10**	P	**P**	**19 50 11.3**	**+0.4**
	baz=192						
542A	**Morse**	**28.97**	**15**	P	**P**	**19 50 11.7**	**+0.4**
	baz=198						
333A	**Richland Sprin**	**29.07**	**4**	P	**P**	**19 50 12.5**	**+0.4**
	baz=184						
439A	**Center Grove,**	**29.10**	**11**	P	**P**	**19 50 12.9**	**+0.5**
	baz=193						
334A	**Lometa**	**29.14**	**5**	P	**P**	**19 50 13.0**	**+0.3**
	baz=186						
MNTX	**Cornudas Mount**	**29.64**	**353**	P	**P**	**19 50 17.3**	**+0.1**
	baz=171						
MNTX	**Cornudas Mount**	**29.64**	**353**	*eP*	**P**	**19 50 16.8**	**-0.4**
	7.0nm,1.2s						
339A	**Huntington**	**29.67**	**11**	P	**P**	**19 50 17.9**	**+0.5**
	baz=193						
233A	**Rising Star**	**29.77**	**4**	P	**P**	**19 50 18.6**	**+0.3**
	baz=184						
WHTX	**Lake Whitney,**	**29.87**	**6**	P	**P**	**19 50 19.8**	**+0.7**
	baz=187						
ABTX	**Abilene, Hawle**	**30.33**	**3**	P	**P**	**19 50 24.4**	**+1.1**
	baz=183						
239A	**Gary**	**30.35**	**11**	P	**P**	**19 50 24.4**	**+0.9**
	baz=193						
133A	**Hamilton Ranch**	**30.35**	**4**	P	**P**	**19 50 24.1**	**+0.6**
	baz=184						
134A	**White-Moore Ra**	**30.38**	**5**	P	**P**	**19 50 24.4**	**+0.6**
	baz=186						
135A	**Vickery Place,**	**30.43**	**6**	P	**P**	**19 50 25.3**	**+1.1**
	baz=187						
121A	**Cookes Peak, D**	**30.84**	**349**	P	**P**	**19 50 29.5**	**+1.5**
	baz=167						
Z33A	**Whitaker Ranch**	**31.04**	**4**	P	**P**	**19 50 30.5**	**+1.0**
	baz=184						
140A	**Cam and Jess,**	**31.14**	**12**	P	**P**	**19 50 32.1**	**+1.7**
	baz=195						
TUC	**Tucson**	**31.32**	**344**	P	**P**	**19 50 32.7**	**+0.6**
	baz=161						
348A	**Jackson**	**31.66**	**22**	P	**P**	**19 50 36.2**	**+1.2**
	baz=206						
MSTX	**Muleshoe**	**31.67**	**357**	P	**P**	**19 50 36.6**	**+1.3**
	baz=177						
MSTX	**Muleshoe**	**31.67**	**357**	*eP*	**P**	**19 50 33.9**	**-1.4**
	14nm,1.2s						
Y36A	**Durant**	**31.89**	**8**	P	**P**	**19 50 38.6**	**+1.6**
	baz=189						
X32A	**Elmer**	**32.13**	**3**	P	**P**	**19 50 40.5**	**+1.3**
	baz=183						
Y39A	**Lockesburg**	**32.29**	**11**	P	**P**	**19 50 42.0**	**+1.6**
	baz=193						
X35A	**Drake**	**32.30**	**6**	P	**P**	**19 50 41.7**	**+1.1**
	baz=188						
248A	**Dixon Mills**	**32.33**	**22**	P	**P**	**19 50 42.5**	**+1.6**
	baz=206						
X36A	**Centrahoma**	**32.54**	**7**	P	**P**	**19 50 44.1**	**+1.4**
	baz=189						
X37A	**Clayton**	**32.70**	**9**	P	**P**	**19 50 45.2**	**+1.1**
	baz=191						
X39A	**Fountain Ranch**	**32.84**	**11**	P	**P**	**19 50 46.4**	**+1.1**
	baz=193						
X38A	**Whitesboro**	**32.87**	**10**	P	**P**	**19 50 46.6**	**+1.0**
	baz=192						
W33A	**Caddo, Fort Co**	**32.91**	**4**	P	**P**	**19 50 46.8**	**+0.8**
	baz=185						
MIAR	**Mount Ida**	**32.98**	**12**	P	**P**	**19 50 47.8**	**+1.3**
	baz=194,SNR=7.0						
MIAR	**Mount Ida**	**32.98**	**12**	*eP*	**P**	**19 50 44.4**	**-2.2**
	12nm,0.9s						
ANMO	**Albuquerque**	**32.98**	**352**	LR	LR	20 03 11.4	
	comp=Z,296nm,19.9s,baz=206,slow=35						
ANMO	**Albuquerque**	**32.98**	**352**	P	**P**	**19 50 47.4**	**+0.5**
	baz=170						
Z47A	**Carrollton**	**33.21**	**20**	P	**P**	**19 50 49.2**	**+0.6**
	baz=204						
W37B	**Quinton**	**33.23**	**9**	P	**P**	**19 50 49.2**	**+0.4**
	baz=190						
W38A	**Poteau**	**33.31**	**10**	P	**P**	**19 50 51.1**	**+1.6**
	baz=192						
Z48A	**Northport**	**33.55**	**21**	P	**P**	**19 50 52.6**	**+1.0**
	baz=205						
W39A	**Magazine**	**33.57**	**11**	P	**P**	**19 50 53.2**	**+1.5**
	baz=193						
Y46A	**Houston**	**33.58**	**19**	P	**P**	**19 50 53.5**	**+1.7**
	baz=202						
V33A	**Lossen Ranch,**	**33.59**	**4**	P	**P**	**19 50 52.7**	**+0.8**
	baz=185						
V34A	**Guthrie**	**33.67**	**5**	P	**P**	**19 50 53.2**	**+0.7**
	baz=186						
W40A	**Ferguson Farm,**	**33.70**	**12**	P	**P**	**19 50 53.9**	**+1.0**
	baz=194						
MONP2	**Monument Peak**	**33.76**	**336**	P	**P**	**19 50 54.5**	**+0.8**
	baz=152						
W41A	**Tony Mavity, V**	**33.86**	**13**	P	**P**	**19 50 55.2**	**+0.9**
	baz=196						
W41B	**Gary Mavity, V**	**33.86**	**13**	P	**P**	**19 50 55.1**	**+0.8**
	baz=196						
Y47A	**

GSC	Goldstone, Bar	36.04	338	P	P	19 51 14.3 +1.1
	baz=153					
S39A	Bolivar	36.07	11	P	P	19 51 14.2 +0.9
	baz=193,SNR=5.6					
R33A	Olander Ranch,	36.08	4	P	P	19 51 14.4 +0.9
	baz=185					
EDW2	Edwards Air Fo	36.13	336	P	P	19 51 14.3 +0.3
	baz=150					
R34A	Isabella, Hill	36.14	5	P	P	19 51 14.7 +0.8
	baz=186					
S40A	Lebanon	36.14	12	P	P	19 51 14.7 +0.7
	baz=195					
R36A	Gordon, Harris	36.35	7	P	P	19 51 16.4 +0.6
	baz=189					
R37A	Teagarden Farm	36.43	8	P	P	19 51 17.3 +0.9
	baz=190					
R38A	Fenwick Farm,	36.45	10	P	P	19 51 16.9 +0.3
	baz=192					
CBKS	Cedar Bluff	36.49	2	P	P	19 51 17.4 +0.4
	baz=182					
CPCT	Cooper Cave	36.53	23	*e*P	P	19 51 16.8 -0.5
	5.7nm,0.9s					
Q32A	Meitler Ranch,	36.72	3	P	P	19 51 19.5 +0.6
	baz=184					
R39A	Chumby, Stover	36.73	11	P	P	19 51 19.8 +0.8
	baz=194					
PV10	Paradox Valley	36.75	350	*e*P	P	19 51 19.2 -0.2
Q33A	Connelly Farm,	36.78	4	P	P	19 51 19.9 +0.5
	baz=185					
Q34A	Chapman	36.78	5	P	P	19 51 20.1 +0.7
	baz=187					
Q35A	Mercer Eighty,	36.81	7	P	P	19 51 20.1 +0.4
	baz=188					
R40A	Maddies Statio	36.86	12	P	P	19 51 20.4 +0.4
	baz=195,SNR=8.7					
PV09	Paradox Valley	36.89	350	*e*P	P	19 51 20.8 +0.2
MPMC	Manual Prospec	36.96	338	P	P	19 51 21.9 +0.7
	baz=152,SNR=5.9					
ISA	Isabella, Lake	37.00	336	P	P	19 51 22.9 +1.5
	baz=150					
TKL	Tuckaleechee C	37.01	24	*e*P	P	19 51 22.5 +1.1
	9.7nm,1.0s					
SIUC	Southern Illin	37.03	16	*e*P	P	19 51 22.6 +1.1
	20nm,0.9s					
Q38A	Cooks Store, C	37.26	10	P	P	19 51 24.2 +0.8
	baz=192,SNR=5.7					
TPNV	Topopah Spring	37.31	340	P	P	19 51 24.6 +0.5
	baz=154					
P34A	Walnut Farm, R	37.41	5	P	P	19 51 25.8 +1.1
	baz=187					
LPAZ	La Paz	37.41	121	LR	LR	20 04 51.2
	comp=Z,56nm,20.7s,baz=305,slow=33					
LPAZ	La Paz	37.41	121	*e*P	P	19 51 26.4 +0.7
LPAZ				*ep*P	sP	19 51 32.1 +2.0
Q39A	Willow Grove F	37.45	10	P	P	19 51 26.2 +1.1
	baz=193					
KMSC	Kings Mountain	37.62	27	P	P	19 51 27.6 +1.0
	baz=214					
P36A	Good Intent, A	37.67	8	P	P	19 51 27.9 +1.0
	baz=190					
SRU	San Rafael Swe	37.75	348	*e*P	P	19 51 28.3 +0.5
P37A	Lathrop	37.76	9	P	P	19 51 28.1 +0.5
	baz=191					
P38A	Dawn	37.92	10	P	P	19 51 29.3 +0.3
	baz=192					
O34A	Beatrice	38.05	6	P	P	19 51 30.9 +0.8
	baz=187					
P40A	Paris	38.10	11	P	P	19 51 31.2 +0.7
	baz=195,SNR=7.9					
P17A	Butcher Ranch,	38.15	348	*e*P	P	19 51 30.2 -0.9
	37nm,1.3s					
O37A	Wolven Farm, M	38.35	9	P	P	19 51 33.3 +0.7
	baz=191					
R11A	Troy Canyon, C	38.36	342	P	P	19 51 32.8 -0.2
	baz=156					
O38A	Galt	38.41	9	P	P	19 51 34.1 +1.0
	baz=192					
O40A	La Belle	38.70	11	P	P	19 51 36.3 +0.7
	baz=195,SNR=5.6					
O39A	Kirksville	38.70	11	P	P	19 51 36.5 +0.9
	baz=194					
DUG	Dugway, Tooele	39.30	346	P	P	19 51 41.5 +0.7
	baz=161					
NV01	Mina Array Sit	39.36	339	*e*P	P	19 51 40.4 -1.0
NVAR	Mina Array Bea	39.36	339	P	P	19 51 42.9 +1.5
	1.6nm,0.8s,baz=156,slow=8.2,SNR=11					
NVAR				PcP	PcP	19 53 50.5 +0.6
	1.8nm,1.1s,baz=177,slow=4.8,SNR=5.0					
NVAR				LR	LR	20 06 27.9
	comp=Z,79nm,18.2s,baz=240,slow=34					
SAML	Samuel	39.41	107	*e*P	P	19 51 42.2 +0.3
	6.6nm,1.1s					
M38A	Pleasantville	39.72	9	P	P	19 51 44.7 +0.6
	baz=192					
BGU	Big Grassy Mou	40.05	346	*e*P	P	19 51 45.0 -2.0
	7.0nm,1.1s					
PDAR	Pinedale Array	41.12	351	P	P	19 51 56.5 +0.6
	5.0nm,0.9s,baz=168,slow=7.6,SNR=4.6					
PDAR				PcP	PcP	19 53 54.8 -0.7
	0.5nm,0.7s,baz=163,slow=5.4,SNR=2.9					
PDAR				LR	LR	20 07 44.0
	comp=Z,60nm,18.7s,baz=214,slow=34					
SUSD	Miller	42.14	2	P	P	19 52 04.8 +0.7
	baz=183					
I37A	Lemond, Waseca	42.23	8	P	P	19 52 05.0 +0.2
	baz=191					
O03D	Paynes Creek	42.32	336	P	P	19 52 06.2 +0.6
	baz=148					
I38A	Scanlan Farm,	42.42	9	P	P	19 52 06.5 +0.2
	baz=193					
H35A	Sunnyside Ranc	42.72	7	P	P	19 52 10.4 +1.7
	baz=189					
H17A	Grant Village	42.87	350	P	P	19 52 11.5 +1.2
	baz=166					
HLID	Hailey	42.88	346	P	P	19 52 11.3 +1.0
	baz=160					
WVOR	Wild Horse Val	43.04	341	*e*P	P	19 52 10.2 -1.3
	8.9nm,1.3s					
MOD	Modoc Plateau	43.14	339	*e*P	P	19 52 12.3 0.0
	11nm,1.5s					
N02D	Trinity Center	43.26	336	P	P	19 52 13.3 +0.1
	baz=148					
M04C	Macdoel	43.61	337	P	P	19 52 17.4 +1.3
	baz=149					
M02C	Callahan	43.67	336	P	P	19 52 17.4 +0.8
	baz=148					
MCMT	McKenzie Canyo	43.72	348	*e*P	P	19 52 15.9 -1.2
K05A	Summer Lake	44.07	339	*e*P	P	19 52 21.4 +1.5
	18nm,1.2s					
E33A	Westby DABS, E	44.38	5	P	P	19 52 23.6 +1.5
	baz=187					
L02D	Cave Junction,	44.62	336	P	P	19 52 25.6 +1.5
	baz=147					
J05D	Fort Rock, OR	44.68	339	P	P	19 52 25.9 +1.2
	baz=151,SNR=5.9					
D33A	AnnSam, Waubun	45.03	5	P	P	19 52 27.9 +0.7
	baz=187					
C27A	Sayler Ranch,	45.37	360	P	P	19 52 31.1 +1.1
	baz=179					
D37A	Cotton	45.45	8	P	P	19 52 30.6 0.0
	baz=192					
I04A	Tendick Farm,	45.55	338	P	P	19 52 31.2 -0.3
	baz=149					
I05D	Terrebonne, OR	45.64	340	P	P	19 52 33.0 +0.8
	baz=151					
C36A	Pine Crest Far	45.98	8	P	P	19 52 34.7 0.0
	baz=192					
C37A	Embarrass	46.04	8	P	P	19 52 35.5 +0.2
	baz=192					
C38A	Sawbill Land.	46.17	9	P	P	19 52 36.1 -0.2
	baz=194					
H04A	Detroit Lake	46.24	339	*e*P	P	19 52 36.5 -0.4
	5.2nm,0.9s					
EYMN	Ely	46.36	9	P	P	19 52 37.9 +0.1
	baz=193					
A33A	Warroad	46.85	5	P	P	19 52 42.0 +0.4
	baz=188					
LON	Longmire	47.92	341	*e*P	P	19 52 49.9 -0.1
	3.4nm,1.1s					
NEW	Newport	47.94	346	P	P	19 52 50.5 +0.3
	baz=158					
NEW	Newport	47.94	346	*e*P	P	19 52 49.5 -0.7
	5.8nm,0.9s					
ULM	Lac du Bonnet	48.12	5	P	P	19 52 50.6 -0.8
	3.2nm,0.8s,baz=297,slow=1.8,SNR=4.0					
ULM	Lac du Bonnet	48.12	5	*e*P	P	19 52 49.9 -1.5
	38nm,1.6s					
FCC	Fort Churchill	56.71	4	*e*P	P	19 53 54.9 -0.1

SCHQ	Schefferville	59.45	22	P	P	19 54 13.6 -0.8
	4.5nm,0.7s,baz=218,slow=6.9,SNR=3.0					
SCHQ				LR	LR	20 19 31.2
	comp=Z,27nm,21.4s,baz=304,slow=36					
YKA	Yellowknife Ar	61.02	353	P	P	19 54 24.0 -0.9
	3.5nm,0.9s,baz=161,slow=6.6,SNR=36					
YKB5	Yellowknife Ar	61.02	353	*e*P	P	19 54 24.0 -0.9
YKW3	Yellowknife Ar	61.09	353	*e*P	P	19 54 24.8 -0.6
DAWY	Dawson	67.74	343	*e*P	P	19 55 09.2 +0.2
EGAK	Eagle	68.78	343	*e*P	P	19 55 15.6 +0.1
SML	Sawmill	69.17	338	*e*P	P	19 55 17.9 -0.2
RND	Reindeer	70.36	339	*e*P	P	19 55 25.3 0.0
IL1	Eielson Array	70.56	341	*e*P	P	19 55 25.3 -1.1
ILAR	Eielson Array	70.56	341	P	P	19 55 25.5 -0.9
	2.5nm,0.8s,baz=152,slow=4.7,SNR=24					
ILB	Eielson Array	70.56	341	*e*P	P	19 55 25.9 -0.5
MDM	Murphy Dome	71.12	341	*e*P	P	19 55 30.2 +0.4
KTH	Kantishna Hill	71.18	339	*e*P	P	19 55 30.2 -0.1
PPLA	Purkeypile	71.27	338	*e*P	P	19 55 30.7 -0.2
CAST	Castle Rocks	71.53	338	*e*P	P	19 55 31.8 -0.6
MLY	Manley	72.00	340	*e*P	P	19 55 35.0 -0.3
COLD	Coldfoot	73.17	342	*e*P	P	19 55 43.2 +1.2
H11S2	WAKE ISLAND Hy	91.36	288	T	T	21 38 27.0
	baz=88,slow=75,SNR=7.9					
H11S1	WAKE ISLAND Hy	91.37	288	T	T	21 38 19.0
	baz=88,slow=75,SNR=9.0					
H11S3	WAKE ISLAND Hy	91.38	288	T	T	21 38 21.1
	baz=88,slow=75,SNR=9.3					
ESDC	Sonseca Array	94.16	50	P	P	19 57 30.6 -0.3
	0.1nm,0.3s,baz=259,slow=13,SNR=2.9					
NOA	NORSAR Array B	98.75	27	LR	LR	20 39 17.1
	comp=Z,13nm,22.0s,baz=285,slow=34					
ARCES	ARCESS Array B	100.06	17	LR	LR	20 42 18.8
	comp=Z,13nm,21.6s,baz=30,slow=35					
ASAR	Alice Springs	122.68	243	PKP	PKPdf	20 03 09.5 +1.0
	0.5nm,0.7s,baz=118,slow=2.0,SNR=4.8					
WRA	Warramunga Arr	123.06	248	PKP	PKPdf	20 03 11.2 +2.0
	0.8nm,0.8s,baz=88,slow=2.2,SNR=6.6					
ZALV	Zalesovo Beam	123.86	356	PKP	PKPdf	20 03 09.3 -0.4
	0.3nm,0.4s,baz=211,slow=1.7,SNR=3.6					
BVAR	Borovoye Array	124.55	6	PKP	PKPdf	20 03 11.2 +0.1
	1.3nm,0.9s,baz=333,slow=1.7,SNR=5.8					
SONM	Songino Array	124.69	338	PKP	PKPdf	20 03 12.7 +0.9
	0.4nm,0.6s,baz=270,slow=1.5,SNR=4.1					
HHC	Hu-ho-hao-te	127.83	329	*e*P	PKPdf	20 03 16.0 -2.0
MKAR	Makanchi Array	131.15	357	PKP	PKPdf	20 03 23.7 -0.3
	1.0nm,1.0s,baz=20,slow=3.9,SNR=5.9					
WMQ	Urumqi	133.53	351	*e*P	PKPdf	20 03 27.1 -1.5
WMQ				pmax	pmax	
	comp=Z,3.0nm,0.5s					
WMQ				pmax	pmax	
	comp=Z,39nm,3.6s					
GEYT	Alibeck	135.72	24	PKP	PKPdf	20 03 33.4 +0.5
	0.2,0.8nm,0.7s,baz=129,slow=2.1,SNR=3.5					
CD2	Chengdu	139.45	326	PKP	PKPdf	20 03 37.3 -2.6
GUN	Gumba	149.34	348	*e*P	PKPbc	20 04 01.4 -0.5
	comp=Z,76nm,1.1s					
GKN	Gorkha	149.49	350	*e*P	PKPbc	20 04 01.1 -0.9
	comp=Z,35nm,1.2s					
KKN	Kakani	149.58	349	*e*P	PKPbc	20 04 01.7 -0.6
	comp=Z,28nm,1.1s					
PYUN	Piuthan	149.64	353	*e*P	PKPbc	20 04 01.6 -0.8
PKIN	Phulchoki	149.76	348	*e*P	PKPbc	20 04 01.2 -1.6
DMN	Daman	149.79	349	*e*P	PKPbc	20 04 02.0 -0.9
	comp=Z,27nm,1.3s					
KOLN	Koldanda	149.89	352	*e*P	PKPbc	20 04 02.0 -1.0
	comp=Z,17nm,1.1s					
CMAR	Chiang Mai Arr	151.52	317	PKP	PKPdf	20 04 01.4 +0.7
	comp=Z,2.2nm,1.2s,baz=318,slow=0.7,SNR=6.3					
CMAR				PKPbc	PKPbc	20 04 07.5 +0.6
	comp=Z,4.0nm,1.1s,baz=323,slow=1.8,SNR=17					

MEX 01 19:44:11.3±0.8, 28.72N×112.97W, h15km±17km, MD3.6, Gulf of California

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SRIG	Santa Rosalia	1.54	155	*e*P	Pn	19 44 34.7	-3.5
SRIG				*i* S	Sn	19 44 53.0	-5.0
HSIG		1.80	80	*i* P	Pn	19 44 37.8	-4.1
HSIG				*i* S	Sn	19 44 59.9	-4.6
SPIG	San Pedro Mart	3.17	318	*e*P	Pn	19 44 57.6	-3.5
SPIG				*i* S	Sn	19 45 35.0	-3.8

WEL 01 19:56:48.1±0.2, 45.48S×167.18E, h64km±1km, ML3.4/12, 5C-7D, Error ellipse: s-maj=1.7km s-min=0.9km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DCZ	Deep Cove	0.02	309	⇑P	Pn	19 56 56.9	-0.6
DCZ				SN	Sn	19 57 03.5	-0.8
DCZ				AML	AML	19 57 04.2	
DCZ				AML	AML	19 57 04.3	
DCZ				AML	AML	19 57 04.3	
MLZ	Mavora Lakes	0.67	81	⇑P	Pn	19 57 02.1	-0.2
MLZ				SN	Sn	19 57 13.2	+0.4
MLZ				AML	AML	19 57 14.0	
WHZ	Wether Hill Ro	0.68	128	⇓P	Pn	19 57 02.2	-0.2
WHZ				SN	Sn	19 57 13.0	+0.1
WHZ				AML	AML	19 57 14.0	
PYZ	Puysegur Point	0.77	207	PN	Pn	19 57 03.6	+0.1
PYZ				SN	Sn	19 57 15.4	+0.6
MSZ	Milford Sound	0.96	34	PN	Pn	19 57 05.6	-0.2
MSZ				SN	Sn	19 57 19.0	0.0
MSZ				AML	AML	19 57 19.2	
WKZ	Wanaka	1.46	64	PN	Pn	19 57 12.4	+0.1
WKZ				SN	Sn	19 57 30.4	-0.1
WKZ				AML	AML	19 57 31.2	
WKZ	Wanaka	1.46	64	PN	Pn	19 57 12.1	-0.2
WKZ				PN		19 57 12.4	
WKZ				SN	Sn	19 57 30.4	-0.1
WKZ				SN		19 57 30.8	
WKZ				AML	AML	19 57 31.2	
WKZ				AML	AML	19 57 32.7	
APZ	The Paps	1.47	158	⇑P	Pn	19 57 12.0	-0.5
APZ				SN	Sn	19 57 31.1	+0.2
APZ				AML	AML	19 57 31.5	
EAZ	Earnscleugh	1.52	81	PN	Pn	19 57 13.0	-0.2
EAZ				SN	Sn	19 57 31.3	-0.8
EAZ	Earnscleugh	1.52	81	PN	Pn	19 57 13.0	-0.2
EAZ				PN	Pn	19 57 13.0	-0.2
EAZ				SN	Sn	19 57 31.3	-0.8
EAZ				AML	AML	19 57 31.7	
EAZ				AML	AML	19 57 33.3	
SYZ	Scrubby Hill	1.73	128	PN	Pn	19 57 15.4	-0.5
SYZ				SN	Sn	19 57 36.5	-0.5
SYZ	Scrubby Hill	1.73	128	PN	Pn	19 57 15.4	-0.5
SYZ				PN	Pn	19 57 15.4	-0.5
SYZ				SN	Sn	19 57 36.5	-0.5
SYZ				AML	AML	19 57 38.1	
TUZ	Tuapeka	1.78	106	PN	Pn	19 57 16.2	-0.5
TUZ				SN	Sn	19 57 37.1	-1.2
TUZ				AML	AML	19 57 37.9	
TUZ	Tuapeka	1.78	106	PN	Pn	19 57 16.0	-0.6
TUZ				PN		19 57 16.2	
TUZ				SN	Sn	19 57 37.1	-1.2
TUZ				AML	AML	19 57 37.5	
TUZ				AML	AML	19 57 37.9	
TUZ				AML	AML	19 57 37.9	
JCZ	Jackson Bay	1.81	40	PN	Pn	19 57 16.7	-0.5
JCZ				AML	AML	19 57 44.8	
JCZ				AML	AML	19 57 46.5	
LBZ	Lake Benmore	2.40	64	⇓P	Pn	19 57 23.3	-1.7
LBZ				SN	Sn	19 57 50.5	-2.8
LBZ	Lake Benmore	2.40	64	⇓P	Pn	19 57 23.3	-1.7
LBZ				SN	Sn	19 57 50.5	-2.8
HHSZ	Highcliff Hill	2.43	101	⇓P	Pn	19 57 24.9	-0.6
HHSZ				SN	Sn	19 57 51.2	-2.9
HHSZ	Highcliff Hill	2.43	101	⇓P	Pn	19 57 24.9	-0.6
HHSZ				SN	Sn	19 57 51.2	-2.9
ODZ	Otahua Downs	2.49	81	⇓P	Pn	19 57 24.7	-1.5
ODZ				SN	Sn	19 57 51.8	-3.6
ODZ				AML	AML	19 57 53.1	
ODZ				AML	AML	19 57 53.8	
ODZ	Otahua Downs	2.49	81	⇓P	Pn	19 57 24.7	-1.5
ODZ				SN	Sn	19 57 51.8	-3.6
ODZ				AML	AML	19 57 53.1	
ODZ				AML	AML	19 57 53.8	
FOZ	Fox Glacier	2.71	45	PN	Pn	19 57 27.4	-1.8
FOZ	Fox Glacier	2.71	45	PN	Pn	19 57 27.4	-1.8

RPZ	Rata Peaks	3.28	59	⇑PN	Pn	19 57 34.7	-2.4
RPZ	Rata Peaks	3.28	59	⇑PN	Pn	19 57 34.7	-2.4
OXZ	Oxford	4.09	60	PN	Pn	19 57 44.8	-3.4
OXZ	Oxford	4.09	60	PN	Pn	19 57 44.8	-3.4
MQZ	McQueen's Vall	4.29	68	PN	Pn	19 57 48.0	-2.9
MQZ	McQueen's Vall	4.29	68	PN	Pn	19 57 48.0	-2.9
LTZ	Lake Taylor	4.55	55	PN	Pn	19 57 50.7	-3.8
LTZ	Lake Taylor	4.55	55	PN	Pn	19 57 50.7	-3.8

NIED ***01*** *19:59:00, 37.10N×140.70E, h5km, Mw3.9 Best double couple: M0:8.84000×10^14 NP1:φ=29.00000°, δ=17.00000°, λ=-90.00000°. NP2:φ=209.00000°, δ=73.00000°, λ=-90.00000°.*

IDC ***01*** *19:59:29.6±0.8, 36.94N×140.81E, h0km, mb3.7/10, mb1 3.9/12, mb1mx3.6/52, mbtmp3.7/12, ML3.5/2, MS2.6/1, Ms1 2.6/1, ms1mx2.1/47, Error ellipse: s-maj=21.0km s-min=17.2km az=99.0*

JMA ***01*** *19:59:30.8, 37.07N×140.67E, h10km±1km, M3.8 Broadband fault plane solution: P waves. NP1: φ=206.00000°, δ=53.00000°, λ=-71.00000°. NP2: φ=357.00000°, δ=41.00000°, λ=-113.00000°. Principal axes: T Plg=6.0000°, Azm=283.0000°; N Plg=15.0000°, Azm=15.0000°; P Plg=74.0000°, Azm=171.0000°;*

JMA Felt II J1.

ISC 01 19:59:30.9±1.0, 37.06N±0.03×140.66E±0.04, h5km±7km, n27, σ0.73/28, mb3.6/10, 6C-1D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.12	69	⇑P	Pg	19 59 33.5	0.0
ONAJ				S	Sg	19 59 35.4	+0.2
JFK	Kawauchi	0.35	29	⇑P	Pg	19 59 37.5	-0.3
JHO	Hitachi	0.45	189	⇓P	Pg	19 59 39.9	0.0
JHO				S	Sg	19 59 45.9	+0.4
JFT	Otama	0.53	331	⇑P	Pg	19 59 41.1	0.0
JFT				S	Sg	19 59 48.2	+0.3
JSB	Shiboa	0.60	262	⇑P	Pb	19 59 43.3	-0.6
JSB				S	Sb	19 59 51.8	-0.8
JMM	Marumori	0.81	8	⇑P	Pg	19 59 45.8	-0.8
JMM				S	Sg	19 59 56.5	-0.6
JFY	Yanaizu	0.84	295	⇑P	Pg	19 59 46.9	-0.1
JFY				S	Sg	19 59 57.8	0.0
MJAR	Matsushiro Arr	2.03	256	Pn	Pn	20 00 06.1	+0.3
	23nm,0.3s,baz=80,slow=16,SNR=207						
MJAR				Sn	Sb	20 00 33.8	-0.1
	40nm,0.3s,baz=312,slow=25,SNR=19						
MAT	Matsushiro	2.03	256	P	Pn	20 00 06.4	+0.6
MAT				S	Sb	20 00 33.8	-0.1
ASAJ	Asahikawa	7.20	11	Pn	Pn	20 01 18.0	+1.2
	0.6nm,0.3s,baz=209,slow=11,SNR=8.1						
KSRS	Korea Array	10.16	276	Pn	Pn	20 02 05.0	+7.6
	0.2nm,0.3s,baz=90,slow=14,SNR=4.1						
KSRS				LR	LR	20 05 26.1	
	comp=Z,40nm,21.7s,baz=175,slow=34						
SONM	Songino Array	27.27	304	P	P	20 05 16.8	+0.6
	0.8nm,0.7s,baz=106,slow=8.8,SNR=6.1						
H11N2	WAKE ISLAND Hy	28.68	120	T	T	20 35 15.2	
	baz=313,slow=75,SNR=33						
H11N1	WAKE ISLAND Hy	28.69	120	T	T	20 35 14.1	
	baz=313,slow=75,SNR=27						
H11N3	WAKE ISLAND Hy	28.70	120	T	T	20 35 17.5	
	baz=313,slow=75,SNR=29						
H11S1	WAKE ISLAND Hy	29.38	122	T	T	20 36 18.6	
	baz=314,slow=76,SNR=28						
H11S3	WAKE ISLAND Hy	29.38	122	T	T	20 36 09.4	
	baz=314,slow=76,SNR=21						
H11S2	WAKE ISLAND Hy	29.40	122	T	T	20 36 10.6	
	baz=314,slow=76,SNR=18						
ZALV	Zalesovo Beam	41.45	312	P	P	20 07 19.1	+0.7
	0.3nm,0.3s,baz=93,slow=12,SNR=2.7						
MKAR	Makanchi Array	43.59	302	P	P	20 07 36.9	+0.9
	0.4nm,0.5s,baz=87,slow=7.4,SNR=8.1						
ILAR	Eielson Array	49.80	32	P	P	20 08 23.4	-0.9
	0.4nm,0.8s,baz=264,slow=5.7,SNR=4.7						
BVAR	Borovoye Array	50.11	312	P	P	20 08 27.3	+0.6
	0.4nm,0.6s,baz=241,slow=34,SNR=2.4						
WRA	Warramunga Arr	57.01	187	P	P	20 09 16.0	-1.6
	3.1nm,0.6s,baz=4.1,slow=7.3,SNR=55						
ASAR	Alice Springs	60.73	187	P	P	20 09 42.6	-0.9
	0.8nm,0.7s,baz=9.5,slow=5.7,SNR=16						
ARCES	ARCESS Array B	63.76	339	P	P	20 10 04.8	+1.5
	1.1nm,0.9s,baz=52,slow=12,SNR=3.1						
YKA	Yellowknife Ar	64.09	30	P	P	20 10 05.2	-0.3
	0.1nm,0.5s,baz=302,slow=6.2,SNR=3.4						
FINES	FINESS Array B	68.51	332	P	P	20 10 34.0	+0.2
	2.3nm,1.0s,baz=344,slow=33,SNR=2.9						

ISCJB ***01*** *20:00:47.5±0.6, 49.81N±0.04×18.50E±0.03, h0km, Error ellipse: s-maj=5.6km s-min=3.2km az=5.3*

IPEC ***01*** *20:00:48.6±0.2, 49.81N×18.58E, h1km±4km, ML1.6/3, Error ellipse: s-maj=2.1km s-min=1.1km az=161.0*

CSEM ***01*** *20:00:48.1±0.2, 49.80N×18.53E, h1km, ML2.5/7, Error ellipse: s-maj=5.9km s-min=3.4km az=1.0*

PRU ***01*** *20:00:49.7, 49.83N×18.47E, h0km*

ISC 01 20:00:48.3±0.8, 49.79N±0.04×18.51E±0.02, h0km, n27, σ0.98/41, Czech and Slovak Republics

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OKC	Ostrava-Krasne	0.24	282	*e*PG	Pb	20 00 54.5	+1.6
OKC				*e*SG	Sg	20 00 58.1	+2.1
	comp=Z,17nm,0.5s						
OKC	Ostrava-Krasne	0.24	282	Pg	Pb	20 00 54.5	+1.6
OKC				Sg	Sg	20 00 58.1	+2.1
	17nm,0.5s						
MORC	Moravsky Berou	0.63	269	*e*Pg	Pb	20 01 01.7	-0.5
MORC				*e*Sg	Sg	20 01 09.8	+1.4
	11nm,0.3s,baz=87						
OJC	Ojcow	0.94	62	*e*Pg	Pg	20 01 05.6	-0.7
OJC				*e*Sg	Sg	20 01 17.8	-0.6
OJC	Ojcow	0.94	62	*e*Pg	Pg	20 01 05.6	-0.7
OJC				*e*Sg	Sg	20 01 17.8	-0.6
KRLC	Kraliky	1.15	285	*e*PG	Pg	20 01 10.3	-0.1
KRLC				*e*SG	Sb	20 01 26.3	-0.4
KRLC	Kraliky	1.15	285	Pg	Pg	20 01 10.3	-0.1
KRLC				Sg	Sb	20 01 26.3	-0.4
VYHS	Vyhne	1.31	170	*e*Pn	Pb	20 01 13.7	-0.1
VYHS				*e*Sn	Sb	20 01 31.5	+0.3
VYHS	Vyhne	1.31	170	*e*PN	Pb	20 01 13.7	-0.1
VYHS				*e*SN	Sb	20 01 31.5	+0.3
VYHS				*e*LG	Lg	20 01 34.5	
VRAC	Vranov	1.34	250	*e*Pg	Pb	20 01 14.4	+0.1
VRAC				*e*Sg	Sb	20 01 31.9	0.0
	7.0nm,0.3s,baz=68						
D

*ISCJB **01** 20:04:41.8±0.5, 6°.92S±0°.08×155°.90E±0°.06, h100km, mb3.8/12, Error ellipse: s-maj=11.0km s-min=8.4km az=177.7*
*IDC **01** 20:04:46.0±2.4, 6°.98S×155°.77E, h121km±21km, mb3.6/12, mb1 3.7/16, mb1mx3.6/39, mbtmp4.0/16, MS3.0/3, Ms1 3.0/3, ms1mx2.7/30, Error ellipse: s-maj=18.8km s-min=15.8km az=151.0*
ISC 01 20:04:43.6±0.6, 6°.88S±0°.09×155°.87E±0°.07, h100km, n27, σ1$28/27, mb3.8/12, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	**Honiara**	**4.77**	**122**	P	**Pn**	**20 05 56.4**	**+3.2**
	7.6nm,0.3s,baz=215,slow=9.1,SNR=4.0						
HNR				S	Sn	20 07 00.8	+13
	7.2nm,0.3s,baz=233,slow=20,SNR=4.5						
HNR				LR	LR	20 07 44.5	
	comp=Z,165nm,19.2s,baz=239,slow=37						
HNR	**Honiara**	**4.77**	**122**	P	**Pn**	**20 05 55.0**	**+1.8**
HNR				S	**Sn**	**20 06 45.0**	**-2.4**
PMG	**Port Moresby**	**8.98**	**253**	P	**Pn**	**20 06 51.3**	**+0.9**
	1.3nm,0.3s,baz=83,slow=8.1,SNR=5.1						
PMG				S	**Sn**	**20 08 31.8**	**+2.0**
	0.7nm,0.3s,baz=76,slow=17,SNR=3.5						
PMG				LR	LR	20 10 12.5	
	comp=Z,79nm,18.2s,baz=56,slow=37						
CTA	**Charters Tower**	**16.10**	**214**	P	**Pn**	**20 08 24.4**	**+0.1**
	0.1nm,0.3s,baz=40,slow=16,SNR=3.9						
DZM	**Mont Dzumac**	**18.23**	**147**	P	**P**	**20 08 49.9**	**+0.7**
	0.3nm,0.3s,baz=330,slow=20,SNR=4.0						
WRA	**Warramunga Arr**	**24.59**	**236**	P	**P**	**20 09 53.5**	**-1.1**
	1.6nm,0.4s,baz=61,slow=9.5,SNR=19						
WRA				PcP	**PcP**	**20 13 30.4**	**+0.1**
	0.3nm,0.4s,baz=64,slow=2.8,SNR=5.6						
ASAR	**Alice Springs**	**26.90**	**229**	P	**P**	**20 10 13.5**	**-2.0**
	0.5nm,0.7s,baz=62,slow=9.3,SNR=9.7						
ASAR				PcP	**PcP**	**20 13 35.9**	**+0.4**
	0.5nm,0.4s,baz=68,slow=2.7,SNR=11						
H11S3	**WAKE ISLAND Hy**	**27.38**	**23**	T	T	20 38 44.6	
	baz=202,slow=75,SNR=64						
H11S2	**WAKE ISLAND Hy**	**27.39**	**23**	T	T	20 38 46.3	
	baz=202,slow=75,SNR=70						
H11S1	**WAKE ISLAND Hy**	**27.40**	**23**	T	T	20 38 50.8	
	baz=202,slow=75,SNR=32						
STKA	**Stephens Creek**	**28.21**	**206**	P	**P**	**20 10 26.4**	**-0.6**
	0.9nm,0.6s,baz=23,slow=15,SNR=2.5						
FITZ	**Fitzroy Crossi**	**31.49**	**246**	P	**P**	**20 10 54.9**	**-1.3**
	3.7nm,0.4s,baz=72,slow=3.9,SNR=76						
KSRS	**Korea Array**	**51.25**	**331**	P	**P**	**20 13 38.2**	**+1.1**
	0.8nm,0.8s,baz=138,slow=7.7,SNR=4.6						
PETK	**Petropavlovsk-**	**59.78**	**1**	LR	LR	20 37 22.3	
	comp=Z,14nm,22.0s,baz=102,slow=33						
CMAR	**Chiang Mai Arr**	**61.52**	**295**	P	**P**	**20 14 50.1**	**-0.4**
	0.8nm,0.8s,baz=120,slow=4.7,SNR=6.3						
SONM	**Songino Array**	**69.71**	**327**	P	**P**	**20 15 43.7**	**+0.8**
	2.2nm,0.8s,baz=139,slow=7.5,SNR=11						
ILAR	**Eielson Array**	**82.95**	**21**	P	**P**	**20 16 56.6**	**-0.6**
	0.4nm,0.8s,baz=239,slow=4.5,SNR=5.0						
MKAR	**Makanchi Array**	**83.89**	**318**	P	**P**	**20 17 02.9**	**+0.5**
	0.7nm,0.6s,baz=98,slow=7.6,SNR=10						
ZALV	**Zalesovo Beam**	**84.57**	**326**	P	**P**	**20 17 05.1**	**-0.6**
	1.2nm,0.6s,baz=132,slow=5.6,SNR=6.4						
BVAR	**Borovoye Array**	**92.73**	**323**	P	**P**	**20 17 42.9**	**-1.7**
	0.7nm,0.5s,baz=90,slow=1.6,SNR=3.9						
YKA	**Yellowknife Ar**	**95.83**	**28**	P	**P**	**20 17 58.9**	**+0.4**
	0.1nm,0.7s,baz=266,slow=4.6,SNR=5.2						
ARCES	**ARCESS Array B**	**109.73**	**343**	PKiKP	**PKiKP**	**20 23 02.3**	**-0.1**
	1.0nm,0.8s,baz=72,slow=2.9,SNR=11						
FINES	**FINESS Array B**	**114.19**	**336**	PKP	PKPdf	20 23 10.4	-0.6
	0.7nm,0.7s,baz=98,slow=3.9,SNR=6.4						
AKASG	**Malin Array Be**	**117.95**	**325**	PKP	**PKPdf**	**20 23 18.2**	**-0.4**
	0.2nm,0.4s,baz=127,slow=2.4,SNR=4.0						
GERES	**GERESS Array B**	**127.40**	**329**	PKP	**PKPdf**	**20 23 37.5**	**+0.5**
	0.5nm,0.5s,baz=64,slow=3.1,SNR=7.5						
TORD	**Torodi Ar. Bea**	**153.83**	**286**	PKPbc	**PKPbc**	**20 24 31.6**	**-0.7**
	0.5nm,0.4s,baz=44,slow=2.3,SNR=8.0						
TORD				PKPab	**PKPab**	**20 24 45.0**	**-0.6**
	0.6nm,0.6s,baz=86,slow=4.3,SNR=5.2						
DBIC	**Dimbokro**	**160.85**	**271**	PKPab	**PKPab**	**20 25 15.1**	**-0.9**
	3.1nm,0.7s,baz=73,slow=4.1,SNR=5.4						

MEX 01 20:08:32.1±0.6, 15°.03N×92°.76W, h91km±7km, MD3.6, Mexico-Guatemala border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THIG		**0.49**	**104**	*e*P	Pn	20 08 45.8	-1.0
THIG				*e*S	Sn	20 08 56.2	-1.6
PCIG		**0.81**	**327**	*e*P	Pn	20 08 48.9	-0.9
PCIG				*e*S	Sn	20 09 01.3	-1.6
CCIG	**Comitan**	**1.38**	**26**	*e*P	Pn	20 08 56.1	-0.5
CCIG				*i* S	Sn	20 09 13.3	-1.8
TGIG		**1.77**	**349**	*e*P	Pn	20 09 00.2	-1.3
TGIG				*i* S	Sn	20 09 21.4	-2.3

*MOS **01** 20:29:03.3±1.0, 43°.78N×77°.66E, h17km, mb4.2/14, Error ellipse: s-maj=7.4km s-min=5.8km az=84.3*
MOS Felt (IV) at Almaty.
*ISCJB **01** 20:29:03.8±0.6, 43°.72N±0°.02×77°.72E±0°.02, h12km±4km, mb3.9/24, MS3.1/8, Error ellipse: s-maj=2.8km s-min=2.2km az=159.7*
*IDC **01** 20:29:04.9±0.6, 43°.52N×77°.70E, h23km±2km, mb3.6/16, mb1 3.9/23, mb1mx3.7/52, mbtmp3.9/23, ML3.9/7, MS3.1/9, Ms1 3.1/9, ms1mx2.8/51, Error ellipse: s-maj=10.9km s-min=7.1km az=146.0*
*KRNET **01** 20:29:04.0±0.1, 43°.64N×77°.66E, h24km, mb4.6*
*NNC **01** 20:29:04.1±0.8, 43°.67N×77°.68E, h3km±6km, mb4.5, mpv4.2, Error ellipse: s-maj=8.6km s-min=3.8km az=167.0*
*SOME **01** 20:29:05.3, 43°.62N×77°.67E, h20km, MS2.8*
*NEIC **01** 20:29:05.0±2.1, 43°.64N×77°.73E, h21km±16km, mb4.0/2, Error ellipse: s-maj=8.6km s-min=6.8km az=163.0*
ISC 01 20:29:04.3±0.4, 43°.63N±0°.02×77°.69E±0°.02, h15km±2km, h14km:pP-P, n148, σ1$57/211, mb4.0/24, MS3.1/8, 45C-33D, Lake Issyk-Kul region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KURS	**Kuram**	**0.38**	**111**	*e*P	**Pb**	**20 29 13.3**	**+0.6**
	1μm,0.4s						
KURS				*e*S	**Sb**	**20 29 19.0**	**+0.5**
	10μm,0.5s						
CHKK	**Chushkaly**	**0.55**	**296**	*e*P	**Pb**	**20 29 16.0**	**+0.3**
	2μm,0.2s						
CHKK				*e*S	**Sb**	**20 29 23.9**	**+0.5**
	25μm,0.4s						
KOTS	**Kotyrbulak**	**0.57**	**227**	*e*P	**Pb**	**20 29 16.6**	**+0.5**
ARXS	**Arharly**	**0.59**	**10**	*e*P	**Pn**	**20 29 17.6**	**-0.7**
	3μm,0.4s						
ARXS				*e*S	**Sb**	**20 29 26.1**	**+1.3**
	12μm,0.4s						
AAA	**Alma-Ata**	**0.65**	**237**	*e*P	**Pn**	**20 29 18.6**	**-0.4**
	3μm,0.2s						
AAA				*e*S	**Sn**	**20 29 28.3**	**-0.6**
	43μm,0.3s						
AAA	**Alma-Ata**	**0.65**	**237**	*e*PG	**Pn**	**20 29 18.5**	**-0.4**
AAA				*e*S	**Sn**	**20 29 28.3**	**-0.6**
MDOK	**Medeo**	**0.66**	**225**	*e*P	**Pg**	**20 29 17.5**	**+0.3**
	2μm,0.1s						
MDOK				⇓*i*S	**Sb**	**20 29 26.5**	**-0.1**
	23μm,0.2s						
KNDC	**Almaty**	**0.67**	**232**	⇑P	**Pb**	**20 29 18.0**	**+0.3**
KNDC				⇓S	**Sb**	**20 29 26.9**	**+0.2**
MNBS	**Baschi**	**0.69**	**49**	*e*P	**Pn**	**20 29 19.1**	**-0.5**
	336nm,0.2s						
MNBS				*e*S	**Sn**	**20 29 28.8**	**-1.3**
	3μm,0.4s						
ZHN	**Zhinishke**	**0.71**	**130**	*e*P	**Pb**	**20 29 18.5**	**0.0**
	1μm,0.2s						
ZHN				*e*S	**Sb**	**20 29 28.0**	**-0.2**
	10μm,0.2s						
KTBS	**Karatobe**	**0.73**	**277**	*e*P	**Pb**	**20 29 19.1**	**+0.3**
KTBS				*e*S	**Sb**	**20 29 29.5**	**+0.8**
KPKS	**Kokpek**	**0.74**	**102**	*e*P	**Pb**	**20 29 19.4**	**+0.4**
	5μm,0.3s						
KPKS				*e*S	**Sb**	**20 29 29.5**	**+0.5**
	18μm,0.3s						
SATY	**Saty**	**0.77**	**137**	⇓*i*P	**Pb**	**20 29 19.6**	**+0.1**
	6μm,0.2s						
SATY				⇓*i*S	**Sb**	**20 29 30.0**	**+0.1**
	45μm,0.2s						
TNSS	**Tian-Shan**	**0.80**	**223**	*e*P	**Pg**	**20 29 20.0**	**+0.1**
	3μm,0.4s						
TNSS				*e*S	**Sb**	**20 29 30.8**	**0.0**
	10μm,0.4s						
ANVS	**Anan'yevo**	**0.84**	**181**	⇓*i*P	**Pg**	**20 29 20.4**	**-0.3**
	baz=180						
ANVS				⇓*i*S	**Sb**	**20 29 32.2**	**+0.2**
	baz=180						
KUU	**Kurty**	**1.01**	**286**	*e*P	**Pb**	**20 29 23.5**	**0.0**
	1μm,0.2s						
KUU				*e*S	**Sb**	**20 29 37.0**	**+0.4**
	8μm,0.2s						
MTBS	**Maitube**	**1.04**	**242**	⇑*i*P	**Pb**	**20 29 24.1**	**0.0**
	2μm,0.2s						
MTBS				*e*S	**Sb**	**20 29 37.8**	**+0.3**
	15μm,0.3s						
UZB	**Uzynbulak**	**1.09**	**116**	*e*P	**Pn**	**20 29 25.1**	**0.0**
	5μm,0.2s						
UZB				*e*S	**Sg**	**20 29 39.3**	**-0.2**
	5μm,0.3s						
PRZ	**Przheval'sk**	**1.26**	**155**	⇓*i*P	**Pg**	**20 29 29.1**	**+0.6**
	baz=155						
PRZ				⇓*i*S	**Sg**	**20 29 46.3**	**+1.4**
	baz=155						
PDGK	**Podgornoye**	**1.34**	**102**	⇑*i*P	**Pb**	**20 29 29.4**	**+0.3**
	baz=102						
PDGK				⇑*i*S	**Sg**	**20 29 47.6**	**0.0**
	baz=102						
PDGK	**Podgornoye**	**1.34**	**102**	⇑P	**Pb**	**20 29 29.2**	**+0.1**
	2μm,0.5s						
PDGK				⇑S	**Sg**	**20 29 47.1**	**-0.5**
PDGK	**Podgornoye**	**1.34**	**102**	*i* PG	**Pb**	**20 29 29.2**	**+0.1**
PDGK				pmax	pmax		
	comp=Z,2μm,0.4s						
KST	**Kastek**	**1.39**	**246**	*e*P	**Pn**	**20 29 29.7**	**+0.4**
	comp=Z,230nm,0.1s						
KST				*e*S	**Sb**	**20 29 47.6**	**+0.1**
	comp=Z,2μm,0.2s						
DGS	**Degeres**	**1.45**	**255**	*e*P	**Pb**	**20 29 30.9**	**0.0**
	comp=Z,452nm,0.2s						
DGS				*e*S	**Sb**	**20 29 49.6**	**+0.4**
	comp=Z,3μm,0.6s						
TDK	**Taldygorghan**	**1.47**	**20**	*e*P	**Pb**	**20 29 31.9**	**+0.5**
	comp=Z,4μm,0.4s						
TDK				*e*S	**Sg**	**20 29 52.1**	**+0.4**
	comp=Z,13μm,0.4s						
KDJ	**Kajisay**	**1.54**	**194**	⇓*i*P	**Pb**	**20 29 33.1**	**+0.4**
	baz=193						
KDJ				⇓*i*S	**Sb**	**20 29 52.9**	**+0.8**
	baz=193						
DJR	**Jarkent**	**1.68**	**64**	*e*P	**Pb**	**20 29 34.9**	**0.0**
	comp=Z,1μm,0.3s						
DJR				*e*S	**Sg**	**20 29 57.5**	**-0.8**
	comp=Z,6μm,0.6s						
TKM2	**Tokmak 2**	**1.68**	**246**	⇑*i*P	**Pn**	**20 29 34.3**	**+1.0**
	baz=245						
TKM2				⇑*i*S	**Sb**	**20 29 56.6**	**+0.5**
	baz=245						
TKM2	**Tokmak 2**	**1.68**	**246**	⇑P	**Pb**	**20 29 34.6**	**-0.4**
	comp=Z,178nm,0.2s						
TKM2				⇑S	**Sb**	**20 29 56.6**	**+0.5**
	comp=Z,2μm,0.6s						
TKM2	**Tokmak 2**	**1.68**	**246**	*e*PN	**Pb**	**20 29 34.4**	**-0.7**
TKM2	**Tokmak 2**	**1.68**	**246**	*e*P	**Pb**	**20 29 34.4**	**-0.7**
BOOM	**Boomskoye usch**	**1.71**	**229**	⇓*i*P	**Pb**	**20 29 35.2**	**-0.3**
	baz=228						
BOOM				⇓*i*S	**Sb**	**20 29 57.7**	**+0.8**
	baz=228						
ULHL	**Ulahol**	**1.74**	**218**	⇓*i*P	**Pb**	**20 29 35.9**	**-0.2**
	baz=217						
ULHL				⇓*i*S	**Sb**	**20 29 58.6**	**+0.8**
	baz=217						
KTMS	**Ketmen**	**1.95**	**94**	*e*P	**Pb**	**20 29 39.5**	**-0.1**
	comp=Z,543nm,0.4s						
KTMS				*e*S	**Sb**	**20 30 05.1**	**+1.4**
	comp=Z,2μm,0.4s						
KAPS	**Kapalarasan**	**2.04**	**35**	*e*P	**Pb**	**20 29 42.1**	**+0.9**
	comp=Z,788nm,0.3s						
KAPS				*e*S	**Sg**	**20 30 09.2**	**-0.8**
	comp=Z,7μm,0.4s						
KBK	**Karagaybulak**	**2.23**	**245**	⇑*i*P	**Pn**	**20 29 42.6**	**+1.8**
	baz=245						
KBK				⇑*i*S	**Sb**	**20 30 11.1**	**-0.7**
	baz=245						
USP	**Ospenovka**	**2.35**	**262**	⇑*i*P	**Pn**	**20 29 43.6**	**+1.2**
	baz=262						
USP				⇑*i*S	**Sn**	**20 30 12.6**	**+1.6**
	baz=262						
KZA	**Kyzart**	**2.37**	**230**	⇓*i*P	**Pn**	**20 29 44.9**	**+1.9**
	baz=229						
KZA				⇓*i*S	**Sb**	**20 30 16.7**	**+0.6**
	baz=229						
FRU1	**Bishkek**	**2.38**	**251**	⇑*i*P	**Pn**	**20 29 44.6**	**+1.8**
	baz=251						
FRU1				⇑*i*S	**Sb**	**20 30 14.7**	**-1.3**
	baz=251						
FRU	**Bishkek**	**2.38**	**252**	⇑*i*PN	**Pn**	**20 29 44.0**	**+1.2**
FRU				*i*		20 30 16.0	
FRU				pmax	pmax		
	comp=Z,490nm,1.1s						
FRU				smax	smax		
	comp=E,2μm,1.3s						
NRN	**Naryn**	**2.52**	**210**	⇓*i*P	**Pb**	**20 29 49.0**	**-0.4**
	baz=210						
NRN				⇓*i*S	**Sb**	**20 30 20.0**	**-0.4**
	baz=210						
AAK	**Ala-Archa**	**2.54**	**248**	Pn	**Pn**	**20 29 46.6**	**+1.5**
	comp=E,106nm,0.3s,baz=78,slow=5.3,SNR=223						
AAK				Pg	**Pg**	**20 29 53.1**	**+0.2**
	comp=E,106nm,0.3s,baz=88,slow=11,SNR=528						
AAK				Lg	Lg	20 30 22.6	
	comp=E,132nm,0.3s,baz=287,slow=19,SNR=12						
AAK	**Ala-Archa**	**2.54**	**248**	⇑*i*P	**Pn**	**20 29 46.3**	**+1.2**
	baz=248						
AAK				⇑*i*S	**Sb**	**20 30 20.5**	**-0.2**
	baz=248						
AAK	**Ala-Archa**	**2.54**	**248**	⇑Pn	**Pb**	**20 29 49.1**	**-0.5**
	comp=E,348nm,0.3s						
AAK				⇑Lg	Lg	20 30 28.8	
	comp=E,361nm,0.5s						
AAK	**Ala-Archa**	**2.54**	**248**	*c i* PN	**Pn**	**20 29 46.4**	**+1.3**
UCH	**Uchtor**	**2.72**	**240**	⇑*i*P	**Pn**	**20 29 50.1**	**+2.3**
	baz=240						
UCH				⇑*i*S	**Sb**	**20 30 25.6**	**-0.6**
	baz=240						
EKS2	**Erkin-Say**	**3.02**	**253**	⇑*i*P	**Pn**	**20 29 53.1**	**+1.4**
	baz=252						
EKS2				⇑*i*S	**Sb**	**20 30 33.9**	**-0.6**
	baz=252						
EKS2	**Erkin-Say**	**3.02**	**253**	*e*PN	**Pn**	**20 29 53.2**	**+1.6**
EKS2	**Erkin-Say**	**3.02**	**253**	*e*P	**Pn**	**20 29 53.2**	**+1.6**
AML	**Almayashu**	**3.29**	**244**	⇑*i*P	**Pn**	**20 29 57.8**	**+2.1**
	baz=244						
AML				⇑*i*S	**Sn**	**20 30 38.8**	**+4.0**
	baz=244						
MRKS	**Merke**	**3.38**	**256**	*e*P	**Pb**	**20 30 06.3**	**+2.4**
	comp=E,263nm,0.4s						
MRKS				*e*S	**Sg**	**20 30 49.5**	**-3.3**
	comp=E,556nm,0.3s						
MNAS	**Manas**	**3.96**	**255**	⇑*i*P	**Pn**	**20 30 06.0**	**+1.3**
	baz=255						
MNAS				⇑*i*S	**Sb**	**20 31 00.9**	**-0.8**
	baz=255						
MNAS	**Manas**	**3.96**	**255**	⇑Pn	**Pn**	**20 30 05.9**	**+1.3**
	comp=E,3.6nm,0.6s						
MNAS				⇓Pg	**Pb**	**20 30 16.1**	**+2.2**
	comp=E,44nm,0.5s						
MNAS				⇓Lg	Lg	20 31 07.2	
	comp=E,344nm,0.8s						
KSH	**Kashi**	**4.30**	**198**	*e*Pn	**Pb**	**20 30 18.6**	**-1.1**
KSH				Sn	**Sg**	**20 31 21.6**	**-0.8**
KSH				smax	smax		
	comp=N,290nm,1.3s						
KSH				smax	smax		
	comp=E,290nm,0.9s						
MK31	**Makanchi Array**	**4.54**	**44**	⇓Pn	**Pn**	**20 30 14.2**	**+1.7**
	comp=E,2.9nm,0.2s,baz=220,slow=15,SNR=17						
MK31				⇓Lg	Lg	20 31 25.9	
	comp=E,178nm,0.7s,baz=220,slow=28,SNR=11						
MK31	**Makanchi Array**	**4.54**	**44**	*i* PN	**Pn**	**20 30 14.2**	**+1.7**
MK31				pmax	pmax		
	comp=Z,3.0nm,0.2s						
MKAR	**Makanchi Array**	**4.54**	**44**	Pn	**Pn**	**20 30 14.5**	**+2.0**
	comp=Z,5.6nm,0.3s,baz=219,slow=15,SNR=146						
MKAR				Lg	Lg	20 31 24.1	
	comp=Z,36nm,0.3s,baz=234,slow=26,SNR=5.8						
SFK	**Sufi-Kurgan**	**4.78**	**222**	⇑*e*P	**Pn**	**20 30 18.5**	**+2.6**
	baz=222						
SFK				⇑*e*S	**Sb**	**20 31 23.0**	**-2.2**
	baz=222						
SFK	**Sufi-Kurgan**	**4.78**	**222**	⇓Pn	**Pn**	**20 30 19.1**	**+3.2**
	comp=Z,9.9nm,0.5s						
SFK				⇓Pg	**Pg**	**20 30 36.7**	**+0.9**
	comp=Z,47nm,0.4s						
SFK				⇑Lg	Lg	20 31 35.7	
	comp=Z,231nm,1.0s						
SFK	**Sufi-Kurgan**	**4.78**	**222**	PN	**Pn**	**20 30 19.1**	**+3.2**
KK31	**Karatay Array**	**5.26**	**267**	⇑Pn	**Pn**	**20 30 23.0**	**+0.7**
	comp=Z,0.5nm,0.2s,baz=83,slow=14,SNR=92						
KK31				⇑Lg	Lg	20 31 47.7	
	comp=Z,193nm,0.5s,baz=80,slow=29,SNR=11						
KK31	**Karatay Array**	**5.26**	**267**	PN	**Pn**	**20 30 23.0**	**+0.7**
KKAR	**Karatay Array**	**5.26**	**267**	*e*PN	**Pn**	**20 30 23.3**	**+1.0**
KKAR				pmax	pmax		
	comp=Z,47nm,0.4s						
KKAR	**Karatay Array**	**5.26**	**267**	*e*P	**Pn**	**20 30 23.3**	**+1.0**
	comp=Z,47nm,0.4s						
IUG	**Iuzhnay**	**5.81**	**258**	*e*P	**Pg**	**20 30 51.8**	**-3.8**
	comp=Z,64nm,0.7s						
IUG				*e*S	**Sg**	**20 32 07.9**	**-3.0**
	comp=Z,291nm,0.8s						
OTUK	**Ortayu**	**5.94**	**323**	⇓Pn	**Pn**	**20 30 32.1**	**+0.5**
	comp=Z,12nm,0.4s						
OTUK				⇑Lg	Lg	20 32 08.7	
	comp=Z,428nm,0.7s						
OTUK	**Ortayu**	**5.94**	**323**	*i* PN	**Pn**	**20 30 32.1**	**+0.5**
OTUK				pmax	pmax		
	comp=Z,12nm,0.3s						
ZSN	**Zaisan**	**6.07**	**49**	*e*P	**Pg**	**20 31 00.1**	**-0.3**
	comp=Z,18nm,0.5s						
ZSN				*e*S	**Sg**	**20 32 22.2**	**+3.2**
	comp=Z,140nm,0.9s						
SEM	**Semipalatinsk**	**7.01**	**14**	*e*P	**Pg**	**20 31 16.0**	**-2.3**
	comp=Z,21nm,0.5s						
SEM				*e*S	**Sg**	**20 32 46.8**	**-2.2**
	comp=Z,142nm,0.7s						
KURBB	**Kurchatov Arra**	**7.02**	**4**	Pn	**Pn**	**20 30 47.5**	**+1.0**
	comp=Z,2.7nm,0.3s,baz=193,slow=12,SNR=280						
KURBB				Lg	Lg	20 32 42.8	
	comp=Z,3.7nm,0.3s,baz=170,slow=30,SNR=6.2						
KURK	**Kurchatov**	**7.12**	**5**	⇓Pn	**Pn**	**20 30 48.7**	**+0.9**
	comp=Z,14nm,0.5s						
KURK				⇑Lg	Lg	20 32 48.2	
	comp=Z,576nm,0.6s						
KURK	**Kurchatov**	**7.12**	**5**	PN	**Pn**	**20 30 47.5**	**-0.3**
KURK				pmax	pmax		
	comp=Z,3.0nm,0.3s						
KURK	**Kurchatov**	**7.12**	**5**	Pn	**Pn**	**20 30 47.5**	**-0.3**
KURK				Lg	Lg	20 32 42.8	
VOSK	**Vostochnaya**	**10.14**	**336**	*ce*P	**Pn**	**20 31 28.2**	**-1.0**
VOSK				pmax	pmax		
	comp=Z,7.0nm,0.4s						
BVA0	**Borovoye Array**	**10.58**	**335**	⇓P	**Pn**	**20 31 34.6**	**-0.6**
	comp=Z,6.4nm,0.6s						
BVA0				⇑S	**Sn**	**20 33 38.4**	**+5.1**
	comp=Z,6.3nm,0.8s,baz=158,slow=26,SNR=6.1						
BVAR	**Borovoye Array**	**10.58**	**335**	Pn	**Pn**	**20 31 34.4**	**-0.8**
	comp=Z,2.9nm,0.3s,baz=152,slow=16,SNR=50						
BVAR				Sn	**Sn**	**20 33 29.1**	**-4.3**
	comp=Z,5.1nm,0.3s,baz=144,slow=22,SNR=7.3						
BVAR				Lg	Lg	20 34 42.6	
	comp=Z,7.1nm,0.3s,baz=163,slow=27,SNR=9.2						
BRVK	**Borovoye**	**10.64**	**335**	*de*P	**Pn**	**20 31 35.1**	**-0.9**
BRVK				pmax	pmax		
	comp=Z,21nm,1.2s						
ZRNK	**Zerenda**	**10.97**	**331**	⇓P	**Pn**	**20 31 39.4**	**-1.2**
	comp=Z,6.7nm,0.4s						
ZRNK				⇑S	**Sn**	**20 33 46.5**	**+3.6**
	comp=Z,14nm,0.6s						
ZRNK	**Zerenda**	**10.97**	**331**	*i* P	**Pn**	**20 31 39.3**	**-1.2**
ZRNK				pmax	pmax		
	comp=Z,7.0nm,0.4s						
CHKZ	**Chkalovo**	**11.08**	**338**	⇓P	**Pn**	**20 31 41.4**	**-0.7**
	comp=Z,7.2nm,0.6s						
CHKZ				⇑S	**Sn**	**20 33 49.9**	**+4.2**
	comp=Z,14nm,0.7s						
CHKZ	**Chkalovo**	**11.08**	**338**	*i* P	**Pn**	**20 31 41.4**	**-0.7**
CHKZ				pmax	pmax		
	comp=Z,7.0nm,0.6s						
ZALV	**Zalesovo Beam**	**11.34**	**22**	Pn	**Pn**	**20 31 46.0**	**+0.3**
	comp=Z,2.3nm,0.3s,baz=214,slow=16,SNR=22						
ZALV				Sn	**Sn**	**20 33 52.9**	**+0.9**
	comp=Z,1.3nm,0.3s,baz=222,slow=19,SNR=4.5						
ZALV				Lg	Lg	20 35 05.2	
	comp=Z,0.3nm,0.3s,baz=200,slow=24,SNR=5.3						
ZALV				LR	LR	20 36 30.3	
	comp=Z,74nm,20.8s,baz=254,slow=39						
ZALV	**Zalesovo Beam**	**11.34**	**22**	*i* P	**Pn**	**20 31 46.4**	**+0.7**
ZALV				pmax	pmax		
	comp=Z,2.0nm,0.3s						
NVS	**Novosibirsk**	**11.79**	**16**	*e*P	**Pn**	**20 31 55.4**	**+3.6**
NVS				*e*		20 33 57.5	
AB31	**Akbulak array**	**13.46**	**301**	⇑P	**Pn**	**20 32 13.8**	**-0.8**
	comp=Z,0.3nm,0.2s,baz=117,slow=8.7,SNR=78						
AB31	**Akbulak array**	**13.46**	**301**	*e*P	Pn	20 32 09.7	-4.9
ABKAR	**Akbulak array**	**13.46**	**301**	*e*P	**Pn**	**20 32 12.8**	**-1.7**
	comp=Z,6.3nm,0.5s						
AKTO	**Aktyubinsk**	**15.02**	**304**	Pn	**Pn**	**20 32 34.0**	**-1.8**
	comp=Z,0.6nm,0.3s,baz=102,slow=15,SNR=10.0						
AKTO				Lg	Lg	20 37 01.7	
	comp=Z,0.4nm,0.3s,baz=234,slow=17,SNR=4.0						
AKTO				LR	LR	20 38 42.6	
	comp=Z,121nm,18.9s,baz=114,slow=38						
AKTO	**Aktyubinsk**	**15.02**	**304**	⇓P	**Pn**	**20 32 35.4**	**-0.5**
	comp=

ZEI Tsey 24.55 280 *eP* **P 20 34 27.5 +4.0**
ZEI pmax pmax
comp=Z,5.0nm,0.6s
NCK Nalchik 24.61 282 *eP* P 20 34 32.1 +8.2
NCK pmax pmax
comp=Z,3.0nm,0.5s
KVAR Kislovodsk Arr 25.15 283 LR LR 20 46 25.0
comp=Z,49nm,18.3s,baz=29,slow=41
KIV Kislovodsk 25.16 283 *eP* **P 20 34 26.4 -2.5**
KIV pmax pmax
comp=Z,3.0nm,0.8s
KIV MLR MLR
comp=Z,43nm,17.0s
WSAR Wadi Sarin 25.70 224 LR LR 20 46 37.7
comp=Z,35nm,18.2s,baz=99,slow=41
BOD Bodaibo 26.63 45 *eP* **P 20 34 41.4 -0.6**
BOD pmax pmax
comp=Z,4.0nm,0.9s
KLMR Klimovskoe 28.48 321 *eP* **P 20 34 55.0 -3.5**
KLMR pmax pmax
comp=Z,9.0nm,1.0s
OBN Obninsk 28.71 308 LR LR 20 46 53.0
comp=Z,80nm,19.9s,baz=89,slow=37
OBN Obninsk 28.71 308 *eP* **P 20 34 57.1 -3.5**
OBN pmax pmax
comp=Z,9.0nm,1.4s
OBN MLR MLR
comp=Z,64nm,17.0s
CMAR Chiang Mai Arr 30.83 138 P **P 20 35 18.3 -1.3**
comp=Z,0.3nm,0.7s,baz=320,slow=9.7,SNR=3.3
BRTR Keskin Array B 32.84 279 P **P 20 35 38.6 +1.3**
comp=Z,0.6nm,0.7s,baz=103,slow=8.7,SNR=4.0
BRTR pP **sP 20 35 45.6 +1.8**
comp=Z,2.5nm,0.7s,baz=100,slow=9.3,SNR=16
BRTR LR LR 20 51 50.9
comp=Z,14nm,20.3s,baz=66,slow=42
AKASG Malin Array Be 33.19 300 P **P 20 35 41.0 +0.9**
comp=Z,0.2nm,0.3s,baz=72,slow=8.2,SNR=2.8
AKASG LR LR 20 50 03.0
comp=Z,45nm,20.5s,baz=80,slow=38
FINES FINESS Array B 34.95 319 P **P 20 35 56.3 +1.0**
comp=Z,0.7nm,0.5s,baz=90,slow=6.3,SNR=10.0
FINES pP **sP 20 36 02.4 +0.7**
comp=Z,3.8nm,0.6s,baz=93,slow=9.9,SNR=11
FINES FINESS Array B 34.95 319 *eP* **P 20 35 54.6 -0.7**
FINES pmax pmax
comp=Z,1.0nm,0.5s
YAK Yakutsk 35.20 40 *eP* **P 20 35 57.8 +0.4**
YAK pmax pmax
comp=Z,8.0nm,0.6s
ARCES ARCESS Array B 36.85 332 P **P 20 36 12.3 +0.8**
comp=Z,1.2nm,0.9s,baz=87,slow=23,SNR=3.5
ARCES pP **sP 20 36 17.9 -0.1**
comp=Z,2.1nm,0.8s,baz=98,slow=8.7,SNR=4.0
KLR Kul'dur 37.01 62 *eP* **P 20 36 14.2 +1.1**
TIXI Tiksi 37.22 24 P **P 20 36 15.1 +0.6**
comp=Z,0.9nm,0.3s,baz=256,slow=4.2,SNR=12
TIXI Tiksi 37.22 24⇓*eP* **P 20 36 15.2 +0.6**
TIXI pmax pmax
comp=Z,2.0nm,0.8s
KOLS Kolonicke sedl 37.94 298 *eP* **P 20 36 25.0 +4.0**
KOLS Kolonicke sedl 37.94 298 *e* **P 20 36 25.0 +4.0**
VLA Vladivostok 38.80 71⇑*iP* **P 20 36 27.1 -1.2**
VLA *i* *PP **pP 20 36 30.1 -2.8**
VLA *i* *SP **sP 20 36 31.2 -3.5**
VLA *e* 20 37 56.2
VLA *e* 20 38 37.9
VLA *e*S **S 20 42 26.2 +1.0**
VLA pmax pmax
comp=Z,12nm,1.1s
NB2 NORSAR Subarra 42.12 318 P **P 20 36 56.2 +0.6**
comp=Z,1.9nm,0.5s,baz=85,slow=8.6
NOA NORSAR Array B 42.12 318 P **P 20 36 56.4 +0.8**
comp=Z,0.3nm,0.5s,baz=84,slow=8.0,SNR=2.8
NOA pP **sP 20 37 02.3 +0.3**
comp=Z,1.6nm,0.5s,baz=84,slow=8.1,SNR=6.9
CLL Collm 43.10 304 *eP* **P 20 37 02.0 -1.6**
CLL *e* 20 37 07.0
CLL *i* 20 37 11.0
CLL *e*PPP PPP 20 39 14.0
CLL Collm 43.10 304 *eP* **P 20 37 02.0 -1.6**
CLL *e* 20 37 07.0
CLL *i* 20 37 11.0
GERES GERESS Array B 43.40 300 P **P 20 37 07.0 +0.8**
comp=Z,0.2nm,0.6s,baz=32,slow=12,SNR=3.5
GERES pP **sP 20 37 14.1 +1.4**
comp=Z,0.3nm,0.4s,baz=53,slow=8.9,SNR=3.2
MJAR Matsushiro Arr 45.95 77 LR LR 20 57 45.4
comp=Z,25nm,18.4s,baz=95,slow=37
BILL Biiibino 49.93 29 *eP* **P 20 37 58.0 +1.1**
BILL pmax pmax
comp=Z,7.0nm,2.1s
BILL MLR MLR
comp=Z,37nm,19.0s
ESDC Sonseca Array 58.76 297 P **P 20 39 01.9 +0.2**
comp=Z,0.3nm,0.6s,baz=45,slow=4.0,SNR=3.4
ESDC pP **sP 20 39 09.1 +0.8**
comp=Z,0.3nm,0.4s,baz=63,slow=6.3,SNR=4.4
INK Inuvik 65.96 12 P **P 20 39 49.2 -0.1**
comp=Z,0.7nm,0.5s,baz=275,slow=2.1,SNR=5.2
INK pP **sP 20 39 56.9 +1.0**
comp=Z,2.0nm,0.8s,baz=353,slow=8.3,SNR=5.9
ILAR Eielson Array 66.45 19 P **P 20 39 52.2 -0.3**
comp=Z,0.8nm,0.8s,baz=308,slow=5.0,SNR=5.8
ILAR pP **sP 20 39 59.7 +0.5**
comp=Z,2.8nm,0.8s,baz=320,slow=5.0,SNR=18
TORD Torodi Ar. Bea 70.94 270 P **P 20 40 20.2 -1.0**
comp=Z,2.3nm,0.8s,baz=45,slow=5.5,SNR=18
TORD pP **sP 20 40 28.1 +0.3**
comp=Z,1.5nm,0.5s,baz=41,slow=5.6,SNR=9.6
YKA Yellowknife Ar 73.77 6 P **P 20 40 36.9 -0.4**
comp=Z,0.8nm,0.6s,baz=347,slow=6.0,SNR=25
YKA pP **sP 20 40 44.3 +0.2**
comp=Z,2.0nm,0.7s,baz=348,slow=6.0,SNR=24
WRA Warramunga Arr 81.81 127 P **P 20 41 21.9 -0.9**
comp=Z,1.3nm,0.8s,baz=327,slow=5.1,SNR=9.3
ASAR Alice Springs 84.50 130 P **P 20 41 35.2 -1.4**
comp=Z,0.5nm,0.8s,baz=318,slow=6.1,SNR=5.8
MIR Mirnyy 110.48 174 *e*PKIKP **PKiKP 20 47 34.0 -0.7**
MIR pmax pmax
comp=Z,6.0nm,1.5s

NIED ***01*** *20:31:00,35°.80N×141°.40E,h8km,Mw4.0 Best double couple: M0:1.22000×10^15 NP1:φs312.00000°,δ5.00000°, λ-124.00000°. NP2:φs166.00000°,δ86.00000°, λ-87.00000°.*
IDC ***01*** *20:31:44.9±1.1,35°.60N×141°.42E,h0km,mb3.5/4, mb1 3.8/7,mb1mx3.5/43,mbtmp3.7/7,ML3.5/3,MS2.9/5, Ms1 3.0/5,ms1mx2.6/37,Error ellipse: s-maj=28.6km s-min=21.9km az=96.0*
ISCJB ***01*** *20:31:47.2±0.8,35°.78N±0°.05×141°.47E±0°.08,h26km, mb3.7/5,MS3.2/2,Error ellipse: s-maj=9.5km s-min=7.3km az=17.6*
JMA ***01*** *20:31:47.7±0.3,35°.78N×141°.44E,h24km±2km,M3.5*
ISC 01 20:31:48.2±0.9,35°.75N±0°.06×141°.45E±0°.07,h26km,n26, σ1§34/19,mb3.6/5,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.48**	**265**	P	**Pb**	**20 31 57.3**	**-0.8**
CHOJ				S	**Sb**	**20 32 04.4**	**-0.4**
JHO	**Hitachi**	**1.12**	**321**	P	**Pn**	**20 32 07.5**	**-0.6**
JYT	**Yasato**	**1.12**	**296**	P	**Pn**	**20 32 07.1**	**-1.1**
BSO1	**Boso 1**	**1.16**	**199**	P	**Pn**	**20 32 08.4**	**+0.2**
BSO4	**Boso 4**	**1.18**	**230**	P	**Pb**	**20 32 09.8**	**0.0**
BSO3	**Boso 3**	**1.21**	**219**	P	**Pn**	**20 32 09.6**	**+0.4**
MJAR	**Matsushiro Arr**	**2.74**	**288**	Pn	**Pn**	**20 32 30.0**	**-0.4**
	2.6nm,0.3s,baz=106,slow=8.7,SNR=56						
MJAR				Sn	**Sb**	**20 33 08.7**	**-0.9**
	2.9nm,0.3s,baz=185,slow=11,SNR=6.7						
MJAR				LR	LR	20 33 28.6	
	comp=Z,47nm,21.9s,baz=115,slow=38						
MAT	**Matsushiro**	**2.74**	**288**	P	**Pn**	**20 32 31.0**	**+0.5**
MAT				S	**Sb**	**20 33 08.6**	**-1.0**
JHJ	**Hachijo jima 2**	**2.96**	**208**	Pn	**Pn**	**20 32 32.5**	**-1.0**
	7.0nm,0.3s,baz=90,slow=16,SNR=4.9						
JHJ				Sn	**Sn**	**20 33 10.2**	**+2.1**
	27nm,0.3s,baz=80,slow=22,SNR=7.2						
ASAJ	**Asahikawa**	**8.41**	**6**	Pn	**Pn**	**20 33 47.1**	**-1.1**
	0.5nm,0.3s,baz=194,slow=8.1,SNR=5.8						
JCJ	**Chichijima**	**8.65**	**176**	Pn	**Pn**	**20 33 48.4**	**-3.2**
	5.4nm,0.3s,baz=294,slow=20,SNR=3.0						
JNU	**Nakatsue**	**9.11**	**256**	LR	LR	20 37 27.5	
	comp=Z,56nm,20.4s,baz=117,slow=38						
KSRS	**Korea Array**	**11.00**	**283**	LR	LR	20 38 43.7	
	comp=Z,81nm,19.3s,baz=118,slow=38						
YAK	**Yakutsk**	**27.33**	**348**	LR	LR	20 47 22.9	
	comp=Z,69nm,21.4s,baz=270,slow=34						
H11N2	**WAKE ISLAND Hy**	**27.49**	**119**	T	T	21 06 32.9	
	baz=311,slow=75,SNR=181						
H11N1	**WAKE ISLAND Hy**	**27.50**	**119**	T	T	21 06 33.6	
	baz=311,slow=75,SNR=123						
H11N3	**WAKE ISLAND Hy**	**27.51**	**119**	T	T	21 06 32.2	
	baz=311,slow=75,SNR=171						
H11S1	**WAKE ISLAND Hy**	**28.16**	**121**	T	T	21 07 26.1	
	baz=312,slow=75,SNR=73						
H11S3	**WAKE ISLAND Hy**	**28.16**	**121**	T	T	21 07 27.0	
	baz=312,slow=75,SNR=76						
H11S2	**WAKE ISLAND Hy**	**28.18**	**121**	T	T	21 07 21.6	
	baz=312,slow=75,SNR=60						
SONM	**Songino Array**	**28.54**	**306**	P	**P**	**20 37 42.7**	**+1.0**
	0.2nm,0.6s,baz=98,slow=11,SNR=2.6						
CMAR	**Chiang Mai Arr**	**41.21**	**257**	LR	LR	20 58 26.1	
	comp=Z,35nm,19.3s,baz=135,slow=39						
KDAK	**Kodiak Island**	**48.04**	**41**	P	P	20 40 40.3	+15
	5.2nm,0.6s,baz=316,slow=5.6,SNR=7.6						
ILAR	**Eielson Array**	**50.57**	**32**	P	**P**	**20 40 45.9**	**+1.8**
	0.6nm,0.8s,baz=270,slow=5.4,SNR=3.6						
ASAR	**Alice Springs**	**59.52**	**188**	P	**P**	**20 41 48.6**	**-0.6**
	0.3nm,1.0s,baz=8.8,slow=9.2,SNR=6.8						
TXAR	**Lajitas Array**	**90.89**	**52**	P	**P**	**20 44 51.5**	**+1.6**
	0.3nm,0.7s,baz=294,slow=4.0,SNR=4.0						

IDC 01 21:11:55.6±6.0,19°.86S×175°.62W,h120km±50km, mb3.8/5,mb1 3.9/6,mb1mx3.4/43,mbtmp4.2/6,MS2.6/1, Ms1 2.6/1,ms1mx2.3/28,Error ellipse: s-maj=121.4km s-min=30.4km az=138.0,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**6.96**	**32**	P	Pn	21 13 35.3	+0.2
	2.1nm,0.3s,baz=96,slow=2.8,SNR=5.6						
AFI				S	Sn	21 14 53.3	+0.3
	8.8nm,0.3s,baz=49,slow=22,SNR=7.1						
CTA	**Charters Tower**	**35.78**	**263**	P	P	21 18 44.3	+0.9
	7.4nm,0.5s,baz=86,slow=12,SNR=16						
STKA	**Stephens Creek**	**40.08**	**244**	P	P	21 19 19.5	+0.1
	0.5nm,0.4s,baz=78,slow=9.3,SNR=4.9						
JAY	**Jayapura**	**45.99**	**286**	LR	LR	21 38 22.6	
	comp=Z,7.3nm,20.4s,baz=2.0,slow=34						
ASAR	**Alice Springs**	**46.84**	**256**	P	P	21 20 13.3	-0.4
	1.7nm,0.5s,baz=94,slow=8.7,SNR=50						
WRA	**Warramunga Arr**	**46.91**	**261**	P	P	21 20 13.3	-1.0
	1.3nm,0.5s,baz=96,slow=8.7,SNR=50						
FITZ	**Fitzroy Crossi**	**55.33**	**261**	P	P	21 21 17.2	-0.1
	0.6nm,0.3s,baz=80,slow=8.4,SNR=7.3						
BRTR	**Keskin Array B**	**148.03**	**315**	PKPbc	PKPbc	21 31 27.0	-0.4
	0.4nm,0.6s,baz=130,slow=3.2,SNR=3.3						

IDC 01 21:14:54.7±4.2,15°.26S×171°.68E,h0km,mb3.6/2, mb1 3.9/2,mb1mx3.4/41,mbtmp3.6/2,Error ellipse: s-maj=258.8km s-min=54.7km az=151.0,Vanuatu Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**35.85**	**257**	P	P	21 21 57.5	+1.0
	0.3nm,0.4s,baz=87,slow=8.3,SNR=4.8						
ASAR	**Alice Springs**	**36.50**	**251**	P	P	21 22 00.8	-1.2
	0.8nm,0.6s,baz=83,slow=8.8,SNR=6.0						
AKASG	**Malin Array Be**	**133.51**	**328**	PKP	PKPdf	21 34 13.4	+0.4
	0.2nm,0.3s,baz=56,slow=4.0,SNR=3.8						
BRTR	**Keskin Array B**	**136.06**	**312**	PKP	PKPdf	21 34 17.0	-1.4
	0.5nm,0.8s,baz=81,slow=4.5,SNR=4.2						

IDC 01 21:19:51.6±7.6,4°.79S×151°.91E,h0km,mb4.1/4, mb1 4.2/4,mb1mx3.6/40,mbtmp4.1/4,Error ellipse: s-maj=121.9km s-min=72.8km az=33.0,New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**22.79**	**227**	P	P	21 24 56.2	+0.1
	6.3nm,0.5s,baz=51,slow=10,SNR=60						
ASAR	**Alice Springs**	**25.57**	**221**	P	P	21 25 23.3	+0.8
	1.4nm,0.8s,baz=55,slow=8.9,SNR=14						
STKA	**Stephens Creek**	**28.63**	**199**	P	P	21 25 48.9	-1.1
	1.9nm,0.9s,baz=17,slow=13,SNR=4.7						
FITZ	**Fitzroy Crossi**	**28.89**	**241**	P	P	21 25 52.3	-0.1
	1.3nm,0.8s,baz=59,slow=9.7,SNR=5.4						

IDC ***01*** *21:21:27.9±0.7,10°.98N×126°.90E,h0km,mb3.9/13, mb1 4.1/13,mb1mx3.9/40,mbtmp3.9/13,MS2.9/8, Ms1 2.9/8,ms1mx2.7/49,Error ellipse: s-maj=34.1km s-min=14.7km az=72.0*
ISCJB ***01*** *21:21:30.9±0.3,11°.01N±0°.04×126°.96E±0°.05,h33km, mb4.2/25,MS2.7/5,Error ellipse: s-maj=7.1km s-min=5.3km az=14.8*
NEIC ***01*** *21:21:32.8±0.3,10°.89N×126°.84E,h35km,mb4.4/15,Error ellipse: s-maj=13.4km s-min=6.3km az=76.0*
MAN ***01*** *21:21:34,10°.91N×126°.62E,h15km,mb4.7,ML3.6,MS3.6*
ISC 01 21:23.0±0.6,11°.00N±0°.05×126°.88E±0°.09,h35km,n64, σ1§42/59,mb4.3/25,MS2.7/5,1C-2D,Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SCPH	**Surigao**	**1.83**	**229**	*eP*	**Pn**	**21 22 01.7**	**-0.3**
SCPH				*e*S	**Sn**	**21 22 23.6**	**-0.3**
PLP	**Palo**	**1.88**	**275**⇑	*eP*	**Pn**	**21 22 01.3**	**-1.3**
OCLP	**Ormoc**	**2.23**	**272**	*eP*	**Pn**	**21 22 08.0**	**+0.4**
LLP	**Lapu-Lapu**	**2.94**	**257**	*eP*	**Pn**	**21 22 18.3**	**+1.0**
LLP				*e*S	Sn	21 23 00.9	+9.4
TBP	**Tagbilaran**	**3.24**	**247**	*i* P	**Pn**	**21 22 23.1**	**+1.7**
CGP	**Cagayan de Oro**	**3.32**	**221**	⇓*i*P	**Pn**	**21 22 24.1**	**+1.6**
CGP				*i* S	**Sn**	**21 23 00.9**	**0.0**
BUKP	**Musuan**	**3.58**	**210**	*eP*	**Pn**	**21 22 27.8**	**+1.6**
RCP	**Roxas**	**4.10**	**278**⇓	*eP*	**Pn**	**21 22 33.7**	**+0.5**
DAV	**Davao City (W)**	**4.11**	**198**	LR	LR	21 24 31.0	
	comp=Z,190nm,19.4s,baz=42,slow=45						
IPIL	**Ipil**	**5.32**	**233**	*eP*	Pn	21 22 43.6	-6.4
LUWI	**Luwuk**	**12.64**	**199**	*e*Pn	**Pn**	**21 24 26.7**	**-3.8**
KAPI	**Kappang**	**17.42**	**204**	P	**P**	**21 25 35.5**	**+1.1**
	3.4nm,0.3s,baz=28,slow=5.4,SNR=6.8						
KAPI				LR	LR	21 33 11.7	
	comp=Z,74nm,19.0s,baz=306,slow=40						
KAPI	**Kappang**	**17.42**	**204**	*e*Pn	**P**	**21 25 35.5**	**+1.1**
	29nm,1.2s						
GUMO	**Guam**	**17.76**	**80**	LR	LR	21 31 48.8	
	comp=Z,61nm,18.3s,baz=249,slow=35						
SOEI	**Soe**	**20.78**	**187**	*eP*	**P**	**21 26 08.1**	**-3.3**
	21nm,0.8s						
JNU	**Nakatsue**	**22.32**	**9**	LR	LR	21 35 48.1	
	comp=Z,16nm,18.6s,baz=128,slow=38						
MTN	**Manton Dam**	**24.06**	**170**	*eP*	**P**	**21 26 43.1**	**-2.1**
	7.4nm,0.8s						
KSRS	**Korea Array**	**26.36**	**2**	LR	LR	21 38 34.3	
	comp=Z,22nm,19.1s,baz=340,slow=39						
IPM	**Ipoh**	**26.41**	**258**	*eP*	**P**	**21 27 05.9**	**-0.8**
	9.7nm,1.2s						
KULM	**Kulim**	**26.57**	**260**	*eP*	**P**	**21 27 08.4**	**+0.3**
	14nm,1.2s						
MJAR	**Matsushiro Arr**	**27.41**	**20**	LR	LR	21 38 18.7	
	comp=Z,25nm,19.4s,baz=240,slow=37						
CM31	**Chiang Mai Arr**	**27.99**	**289**	*eP*	**P**	**21 27 19.3**	**-1.5**
CMAR	**Chiang Mai Arr**	**27.99**	**289**	P	**P**	**21 27 19.3**	**-1.5**
	0.4nm,0.7s,baz=110,slow=8.0,SNR=3.5						
CMAR				LR	LR	21 37 46.3	
	comp=Z,13nm,20.4s,baz=235,slow=35						
FITZ	**Fitzroy Crossi**	**28.94**	**182**	P	**P**	**21 27 28.3**	**-0.9**
	0.7nm,0.6s,baz=9.5,slow=6.1,SNR=2.5						
WRA	**Warramunga Arr**	**31.61**	**167**	P	**P**	**21 27 51.7**	**-1.2**
	1.3nm,0.9s,baz=344,slow=9.6,SNR=4.2						
WR1	**Warramunga Arr**	**31.61**	**167**	*eP*	**P**	**21 27 51.7**	**-1.1**
MBWA	**Marble Bar**	**32.72**	**192**	*eP*	**P**	**21 28 05.2**	**+2.7**
	27nm,1.3s						
AS31	**Alice Springs**	**35.13**	**169**	*eP*	**P**	**21 28 23.3**	**-0.2**
	0.6nm,0.8s						
ASAR	**Alice Springs**	**35.13**	**169**	P	**P**	**21 28 23.3**	**-0.2**
	0.7nm,0.5s,baz=349,slow=7.0,SNR=11						
AS01	**Alice Springs**	**35.14**	**169**	*eP*	**P**	**21 28 22.9**	**-0.7**
SONA1	**Songino Array**	**40.56**	**339**	*eP*	**P**	**21 29 08.0**	**-1.2**
GUN	**Gumba**	**41.92**	**300**	*eP*	**P**	**21 29 20.5**	**-0.5**
	14nm,0.8s						
KKN	**Kakani**	**42.40**	**299**	*eP*	**P**	**21 29 23.6**	**-1.1**
	8.7nm,0.7s						
DMN	**Daman**	**42.51**	**299**	*eP*	**P**	**21 29 23.8**	**-1.8**
GKN	**Gorkha**	**43.01**	**299**	*eP*	**P**	**21 29 29.5**	**-0.1**
	4.3nm,0.5s						
KOLN	**Koldanda**	**43.84**	**299**	*eP*	**P**	**21 29 36.1**	**-0.3**
	8.9nm,0.7s						
BBOO	**Buckleboo**	**44.44**	**169**	*eP*	**P**	**21 29 41.0**	**+0.3**
	20nm,1.1s						
PYUN	**Piuthan**	**44.44**	**299**	*eP*	**P**	**21 29 41.9**	**+0.7**
STKA	**Stephens Creek**	**44.90**	**162**	P	**P**	**21 29 44.8**	**+0.4**
	0.9nm,0.5s,baz=339,slow=7.7,SNR=6.1						
STKA	**Stephens Creek**	**44.90**	**162**	*eP*	**P**	**21 29 43.3**	**-1.1**
	3.1nm,1.5s						
PETK	**Petropavlovsk-**	**48.73**	**24**	LR	LR	21 49 47.1	
	comp=Z,17nm,21.9s,baz=287,slow=35						
YAK	**Yakutsk**	**50.98**	**2**	*eP*	**P**	**21 30 30.0**	**-1.0**
	15nm,0.4s						
MK01	**Makanchi Array**	**51.80**	**322**	*eP*	**P**	**21 30 38.8**	**+1.3**
MK31	**Makanchi Array**	**51.82**	**322**	*eP*	**P**	**21 30 39.0**	**+1.4**
MK32	**Makanchi Array**	**51.82**	**322**	*eP*	**P**	**21 30 38.9**	**+1.2**
MKAR	**Makanchi Array**	**51.82**	**322**	P	**P**	**21 30 38.9**	**+1.2**
	2.8nm,0.8s,baz=112,slow=6.9,SNR=26						
MKAR	**Makanchi Array**	**51.82**	**322**	*eP*	**P**	**21 30 39.0**	**+1.4**
MAKZ	**Makanchi**	**52.01**	**322**	*eP*	**P**	**21 30 40.4**	**+1.3**
	5.7nm,1.1s						
ZALV	**Zalesovo Beam**	**54.28**	**331**	P	**P**	**21 30 55.4**	**-0.3**
	0.4nm,0.4s,baz=101,slow=8.0,SNR=5.2						
ZAA1	**Zalesovo Array**	**54.28**	**331**	*eP*	**P**	**21 30 55.4**	**-0.3**
EKS2	**Erkin-Say**	**55.75**	**314**	*eP*	**P**	**21 31 10.8**	**+4.1**
	2.5nm,0.9s						
KURK	**Kurchatov**	**55.81**	**325**	*eP*	**P**	**21 31 07.8**	**+1.1**
	11nm,1.1s						
KKAR	**Karatay Array**	**58.17**	**314**	*eP*	**P**	**21 31 26.7**	**+3.0**
TIXI	**Tiksi**	**60.62**	**1**	P	**P**	**21 31 40.2**	**+0.3**
	0.7nm,0.3s,baz=149,slow=2.6,SNR=6.6						
BRVK	**Borovoye**	**61.48**	**325**	*eP*	**P**	**21 31 45.3**	**-0.9**
	2.2nm,0.8s						
ZRNK	**Zerenda**	**62.17**	**325**	*eP*	**P**	**21 31 51.4**	**+0.6**
	2.7nm,0.8s						
GEYT	**Alibeck**	**66.59**	**307**	P	**P**	**21 32 21.7**	**+1.6**
	2.9nm,1.1s,baz=110,slow=6.5,SNR=6.2						
ILAR	**Eielson Array**	**78.53**	**26**	P	**P**	**21 33 29.9**	**-0.6**
	0.4nm,0.9s,baz=230,slow=4.2,SNR=3.2						
ILB	**Eielson Array**	**78.53**	**26**	*eP*	**P**	**21 33 29.9**	**-0.6**
ARA0	**ARCESS Array S**	**83.72**	**340**	*eP*	**P**	**21 33 58.4**	**+0.3**
ARCES	**ARCESS Array B**	**83.72**	**340**	P	**P**	**21 33 58.4**	**+0.3**
	4.5nm,1.0s,baz=66,slow=5.9,SNR=7.5						
VNDA	**Vanda**	**90.57**	**173**	P	**P**	**21 34 32.0**	**+1.0**
	1.0nm,0.6s,baz=329,slow=5.9,SNR=6.3						
YKA	**Yellowknife Ar**	**92.85**	**24**	P	**P**	**21 34 42.3**	**+0.3**
	0.4nm,0.8s,baz=298,slow=4.6,SNR=7.6						
YKB5	**Yellowknife Ar**	**92.85**	**24**	*eP*	**P**	**21 34 42.3**	**+0.3**

WEL 01 21:32:29.9±0.3,36°.87S×176°.61E,h233km±3km,ML3.7/4, 2C-2D,Error ellipse: s-maj=5.9km s-min=5.7km az=0.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HAZ	**Te Kaha**	**1.29**	**134**	PN	Pn	21 33 05.5	+0.6
HAZ				SN	S	21 33 32.3	-0.1
URZ	**Urewera**	**1.45**	**164**	⇑PN	Pn	21 33 06.3	+0.2
URZ				SN	S	21 33 34.8	+0.3
PKGZ	**Pakihiroa**	**1.55**	**132**	PN	Pn	21 33 06.2	-0.8
PKGZ				SN	S	21 33 35.2	-1.0
MUGZ	**Murupara**	**1.61**	**175**	PN	Pn	21 33 07.8	+0.3
MUGZ				SN	S	21 33 36.9	-0.1
MWZ	**Matawai**	**1.64**	**154**	⇓PN	Pn	21 33 07.9	+0.2
MWZ				SN	S	21 33 37.3	-0.1
RAGZ	**Rawiri**	**1.75**	**159**	PN	Pn	21 33 09.0	+0.3
RAGZ				SN	S	21 33 38.9	-0.3
MRHZ	**Matea Rd**	**1.97**	**184**	PN	Pn	21 33 10.9	+0.2
SNGZ	**Shannon Statio**	**2.00**	**163**	PN	Pn	21 33 11.1	+0.2
SNGZ				SN	S	21 33 42.5	-0.6
RIGZ	**Rimuhau**	**2.05**	**154**	PN	Pn	21 33 11.8	+0.4
CNGZ	**Carnagh Statio**	**2.06**	**142**	PN	Pn	21 33 11.9	+0.5
NMHZ	**Naumai**	**2.23**	**176**	PN	Pn	21 33 13.4	+0.2
WHHZ	**Waihua**	**2.26**	**168**	PN	Pn	21 33 13.4	-0.1
BKZ	**Black Stump Fm**	**2.30**	**182**	PN	Pn	21 33 13.2	-0.7
KNZ	**Kokohu**	**2.31**	**159**	PN	Pn	21 33 13.3	-0.6
ARHZ	**Aropaoanui**	**2.41**	**173**	PN	Pn	21 33 14.6	-0.3
KWHZ	**Kaweka Forest**	**2.56**	**183**	⇑PN	Pn	21 33 15.9	-0.7
MCHZ	**McNeill Hill**	**2.58**	**178**	PN	Pn	21 33 16.2	-0.4
KRHZ	**Kereru**	**2.78**	**184**	PN	Pn	21 33 17.6	-1.3
PNHZ	**Pukenui**	**3.06**	**186**	⇓PN	Pn	21 33 20.1	-1.9
TSZ	**Takapari Road**	**3.23**	**189**	PN	Pn	21 33 22.1	-1.8
DVHZ	**Dannevirke**	**3.45**	**186**	PN	Pn	21 33 24.2	-2.1
PRWZ	**Pori Road**	**3.72**	**187**	PN	Pn	21 33 27.5	-2.0

ISCJB ***01*** *21:35:04.6±0.7,37°.33N±0°.04×71°.79E±0°.09,h150km, mb3.4/3,Error ellipse: s-maj=10.8km s-min=5.1km az=160.8*
IDC ***01*** *21:35:06.8±6.5,37°.23N×72°.22E,h176km±58km,mb3.1/3, mb1 3.2/5,mb1mx2.8/29,mbtmp3.6/5,MS3.2/2,Ms1 3.2/2, ms1mx2.3/29,Error ellipse: s-maj=87.6km s-min=30.9km az=137.0*
NNC ***01*** *21:35:13.6±2.4,37°.82N×72°.12E,h193km±22km,mb2.8, mpv3.8,Error ellipse: s-maj=24.9km s-min=19.2km az=66.0*
ISC 01 21:35:05.1±0.9,37°.32N±0°.07×71°.88E±0°.09,h150km,n19, σ2§21/23,mb3.7/3,2C-7D,Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFK	**Sufi-Kurgan**	**2.98**	**25**	⇓P	**Pn**	**21 35 56.6**	**+4.2**
	8.8nm,0.3s						
SFK				⇓S	**Sn**	**21 36 30.7**	**+1.7**
	134nm,0.5s						
MNAS	**Manas**	**5.18**	**5**	⇓P	**Pn**	**21 36 24.3**	**+3.3**
	14nm,0.3s						
MNAS				⇓S	**Sn**	**21 37 19.5**	**-0.8**
	26nm,0.6s						
AAK	**Ala-Archa**	**5.68**	**20**	⇓P	**Pn**	**21 36 30.4**	**+2.7**
	7.6nm,0.4s						
AAK				⇓S	**Sn**	**21 37 32.0**	**-0.2**
	12nm,0.6s						
KK31	**Karatay Array**	**5.87**	**350**	P	**

mb1mx3.4/19, mbtmp3.7/2, ML3.8/2, Error ellipse: s-maj=29.7km s-min=10.1km az=39.0

ISC 01 21:40:21.2±1.0, 19°.87S±0°.07×133°.98E±0°.08, h12km, n27, σ1♀02/28, Northern Territory

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WC1	**Warramunga Arr**	**0.35**	**99**	P	**Pg**	**21 40 27.7**	**-0.5**
	baz=0.4						
WR1	**Warramunga Arr**	**0.35**	**101**	P	**Pg**	**21 40 28.0**	**-0.3**
	baz=0.4						
WRA	**Warramunga Arr**	**0.35**	**102**	Pg	**Pg**	**21 40 28.3**	**0.0**
	26nm,0.3s,baz=288,slow=18,SNR=2839						
WRA				Lg	Lg	21 40 32.7	
	133nm,0.3s,baz=277,slow=34,SNR=207						
WB1	**Warramunga Ar.**	**0.36**	**104**	P	**Pg**	**21 40 28.2**	**-0.3**
	baz=0.4						
WB3	**Warramunga Arr**	**0.36**	**98**	P	**Pg**	**21 40 28.1**	**-0.4**
	baz=0.4						
WB4	**Warramunga Arr**	**0.36**	**95**	P	**Pg**	**21 40 28.4**	**-0.2**
	baz=0.4						
WB5	**Warramunga Arr**	**0.37**	**91**	P	**Pg**	**21 40 28.3**	**-0.3**
	baz=0.4						
WB6	**Warramunga Arr**	**0.37**	**87**	P	**Pg**	**21 40 28.4**	**-0.3**
	baz=0.4						
WC2	**Warramunga Arr**	**0.37**	**98**	P	**Pg**	**21 40 28.1**	**-0.6**
	baz=0.4						
WR2	**Warramunga Arr**	**0.37**	**101**	P	**Pg**	**21 40 28.3**	**-0.4**
	baz=0.4						
WB7	**Warramunga Arr**	**0.38**	**85**	P	**Pg**	**21 40 28.4**	**-0.5**
	baz=0.4						
WC3	**Warramunga Arr**	**0.38**	**103**	P	**Pg**	**21 40 28.4**	**-0.5**
	baz=0.4						
WB9	**Warramunga Arr**	**0.39**	**78**	P	**Pg**	**21 40 28.7**	**-0.4**
	baz=0.4						
WR3	**Warramunga Arr**	**0.40**	**101**	P	**Pg**	**21 40 28.8**	**-0.3**
	baz=0.4						
WB0	**Warramunga Arr**	**0.41**	**75**	P	**Pg**	**21 40 29.0**	**-0.4**
	baz=0.5						
WR4	**Warramunga Arr**	**0.41**	**101**	P	**Pg**	**21 40 29.1**	**-0.3**
	baz=0.5						
WR5	**Warramunga Arr**	**0.44**	**101**	P	**Pg**	**21 40 29.5**	**-0.4**
	baz=0.5						
WR8	**Warramunga Arr**	**0.50**	**100**	P	**Pg**	**21 40 29.7**	**-1.3**
	baz=0.5						
WR0	**Warramunga Arr**	**0.54**	**99**	P	**Pg**	**21 40 30.6**	**-1.2**
	baz=0.6						
ASAR	**Alice Springs**	**3.78**	**181**	Pn	**Pn**	**21 41 22.1**	**+2.8**
	6.3nm,0.3s,baz=14,slow=8.0,SNR=181						
ASAR				Sn	**Sn**	**21 42 05.0**	**+1.2**
	10nm,0.3s,baz=0.3,slow=27,SNR=9.0						
ASAR				Lg	Lg	21 42 18.9	
	20nm,0.3s,baz=2.8,slow=30,SNR=16						
QIS	**Mount Isa**	**5.33**	**98**	P	**Pn**	**21 41 42.4**	**+1.7**
	baz=5.4,SNR=5.2						
KDU	**Kakadu**	**7.29**	**348**	P	**Pn**	**21 42 08.0**	**+0.4**
	baz=7.3,SNR=9.4						
WRKA	**Warakurna**	**7.35**	**225**	P	**Pn**	**21 42 07.9**	**-0.5**
	baz=7.3,SNR=7.8						
MTN	**Manton Dam**	**7.50**	**338**	P	**Pn**	**21 42 09.9**	**-0.6**
	baz=7.5,SNR=7.4						
FITZ	**Fitzroy Crossi**	**8.08**	**281**	P	**Pn**	**21 42 18.2**	**-0.3**
	baz=8.0,SNR=12						
STKA	**Stephens Creek**	**13.77**	**152**	**Pn**	**Pn**	**21 43 33.9**	**-2.5**
	0.3nm,0.3s,baz=326,slow=12,SNR=9.9						
STKA				Sn	Sn	21 46 00.1	-9.3
	0.3nm,0.3s,baz=52,slow=12,SNR=4.3						
HTT	**Hallett**	**14.21**	**163**	P	**Pn**	**21 43 41.4**	**-1.0**
	baz=14						

RSPR 01 21:41:45.6, 19°.28N×68°.32W, h68km±7km, MD3.5/6, 10C-4D, North Atlantic Ocean

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DR12	**Loma Pena Alta**	**1.11**	**244**	⇓*i*P	Pn	21 42 04.8	-0.7
AGPR	**Aguadilla, PR**	**1.40**	**125**	*e*S	Sn	21 42 25.9	-1.1
AGPR	**Aguadilla, PR**	**1.40**	**125**	⇓*e*P	Pn	21 42 08.0	-1.2
LSP	**Las Mesas**	**1.60**	**133**	⇓*e*P	Pn	21 42 10.7	-1.2
CRPR	**Cabo Rojo, PR**	**1.71**	**137**	⇑*e*P	Pn	21 42 12.4	-0.9
CRPR	**Cabo Rojo, PR**	**1.71**	**137**	*e*S	Sn	21 42 33.6	-0.6
LRS	**Lares**	**1.71**	**125**	⇓*e*P	Pn	21 42 12.1	-1.2
LRS				*e*S	Sn	21 42 33.3	-1.0
AOPR	**Arecibo Observ**	**1.75**	**122**	⇑*e*P	Pn	21 42 12.6	-1.3
AOPR	**Arecibo Observ**	**1.75**	**122**	⇑*e*P	Pn	21 42 13.2	-0.6
AOPR				*e*S	Sn	21 42 35.2	-0.1
AOPR	**Arecibo Observ**	**1.75**	**122**	*e*S	Sn	21 42 35.0	-0.3
GBPR	**Guanica, Bosqu**	**1.88**	**133**	⇓*e*P	Pn	21 42 15.0	-0.6
OBIP	**Obispado Ponce**	**2.04**	**127**	⇑*e*P	Pn	21 42 17.2	-0.5
OBIP	**Obispado Ponce**	**2.04**	**127**	*e*S	Sn	21 42 41.7	-0.5
CELP	**Cerrillos**	**2.04**	**126**	⇑*e*P	Pn	21 42 17.4	-0.3
CELP				*e*S	Sn	21 42 42.0	-0.2
SJG	**San Juan**	**2.36**	**119**	⇑*e*P	Pn	21 42 21.2	-0.8
SJG				*e*S	Sn	21 42 49.5	-0.5
SJG	**San Juan**	**2.36**	**119**	⇑*e*P	Pn	21 42 21.2	-0.9
SJG				*e*S	Sn	21 42 49.5	-0.5
CBYP	**Canovanas**	**2.54**	**113**	⇑*e*P	Pn	21 42 24.6	0.0
HUMP	**Col San Antoni**	**2.60**	**115**	⇑*e*P	Pn	21 42 25.1	-0.2
HUMP	**Col San Antoni**	**2.60**	**115**	*e*S	Sn	21 42 56.0	+0.1

*ISCJB **01** 21:50:26.3±0.3, 37°.17N±0°.02×34°.58E±0°.02, h87km±5km, Error ellipse: s-maj=3.3km s-min=2.9km az=20.8*
*DDA **01** 21:50:26.3, 37°.20N×34°.53E, h84km, Md3.6*
*CSEM **01** 21:50:27.3±0.1, 37°.18N×34°.55E, h80km, MD3.6, Error ellipse: s-maj=3.3km s-min=3.0km az=60.0*
*NIC **01** 21:50:30.2±0.4, 36°.90N×34°.23E, h76km*
*NSSC **01** 21:50:31.2±1.7, 36°.92N×34°.93E, h113km±32km, ML3.1*

ISC 01 21:50:26.4±1.2, 37°.15N±0°.02×34°.56E±0°.02, h89km±5km, n80, σ1♀43/141, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GULE	**Gulek**	**0.22**	**52**	P	**Pn**	**21 50 40.2**	**+0.7**
GULE				S	**Sn**	**21 50 49.2**	**-0.1**
GULE	**Gulek**	**0.22**	**52**	*i* P	**Pn**	**21 50 40.2**	**+0.7**
GULE				*i* S	**Sn**	**21 50 49.2**	**-0.1**
DED	**Mersin**	**0.27**	**134**	*i* P	**Pn**	**21 50 39.6**	**+0.1**
DED				*i* S	**Sn**	**21 50 48.2**	**-1.1**
KERG	**Konya-Eregli**	**0.44**	**308**	P	**Pn**	**21 50 40.6**	**-0.1**
KERG				S	**Sn**	**21 50 49.6**	**-1.8**
KERG	**Konya-Eregli**	**0.44**	**308**	*i* P	**Pn**	**21 50 40.6**	**-0.1**
KERG				*i* S	**Sn**	**21 50 49.6**	**-1.8**
KIZK	**Mersin**	**0.74**	**207**	P	**Pn**	**21 50 44.1**	**+0.9**
KIZK				S	**Sn**	**21 50 56.6**	**+0.8**
KIZK	**Mersin**	**0.74**	**207**	*i* P	**Pn**	**21 50 44.1**	**+0.9**
KIZK				*i* S	**Sn**	**21 50 56.6**	**+0.8**
AKO	**Adana**	**0.77**	**66**	*i* P	**Pn**	**21 50 44.4**	**+0.9**
AKO				*i* S	**Sn**	**21 50 57.3**	**+1.0**
YURE	**YUREGIR**	**0.92**	**110**	P	**Pn**	**21 50 45.8**	**+0.7**
YURE	**YUREGIR**	**0.92**	**110**	*i* P	**Pn**	**21 50 45.9**	**+0.7**
YURE				*i* S	**Sn**	**21 50 57.2**	**-1.9**
ERMK	**Ermenek**	**1.41**	**250**	P	**Pn**	**21 50 52.5**	**+1.3**
ERMK				S	**Sn**	**21 51 10.7**	**+0.8**
ERMK	**Ermenek**	**1.41**	**250**	*i* P	**Pn**	**21 50 52.5**	**+1.3**
ERMK				*i* S	**Sn**	**21 51 10.7**	**+0.8**
ANDN	**Andirin**	**1.49**	**73**	P	**Pn**	**21 50 52.3**	**+0.3**
ANDN				S	**Sn**	**21 51 11.8**	**+0.4**
ANDN	**Andirin**	**1.49**	**73**	*i* P	**Pn**	**21 50 52.3**	**+0.3**
ANDN				*i* S	**Sn**	**21 51 11.8**	**+0.4**
AKSY	**AKSARAY - Alti**	**1.63**	**337**	P	**Pn**	**21 50 53.4**	**-0.4**
AKSY				S	**Sn**	**21 51 13.0**	**-1.5**
AKSY	**AKSARAY - Alti**	**1.63**	**337**	*i* P	**Pn**	**21 50 53.4**	**-0.4**
AKSY				*i* S	**Sn**	**21 51 13.0**	**-1.5**
YAYL	**Yayladag**	**1.67**	**131**	P	**Pn**	**21 50 55.7**	**+1.3**
YAYL				S	**Sn**	**21 51 16.4**	**+0.8**
YAYL	**Yayladag**	**1.67**	**131**	*i* P	**Pn**	**21 50 55.7**	**+1.3**
YAYL				*i* S	**Sn**	**21 51 16.4**	**+0.8**
AVNS	**Nevsehir-Avano**	**1.67**	**8**	P	**Pn**	**21 50 54.5**	**+0.1**
AVNS				S	**Sn**	**21 51 15.0**	**-0.6**
AVNS	**Nevsehir-Avano**	**1.67**	**8**	*i* P	**Pn**	**21 50 54.5**	**+0.1**
AVNS				*i* S	**Sn**	**21 51 15.0**	**-0.6**
KAMA	**Osmaniye**	**1.69**	**88**	*i* P	**Pn**	**21 50 55.2**	**+0.7**
KAMA				*i* S	**Sn**	**21 51 15.4**	**-0.4**
ARNB	**Al Arnab**	**1.72**	**138**	*e*P	**Pn**	**21 50 56.7**	**+1.7**
ARNB				*e*S	**Sn**	**21 51 14.7**	**-1.9**
ARNB				AML	AML	21 51 22.5	
	comp=N,500nm,0.8s						
ARNB				AML	AML	21 51 23.4	
	comp=E,176nm,0.2s						
ARNB	**Al Arnab**	**1.72**	**138**	*e*P	**Pn**	**21 50 56.7**	**+1.7**
ARNB				*e*S	**Sn**	**21 51 14.7**	**-1.9**
	comp=E,176nm,0.2s						
DRWC	**Darouich**	**1.77**	**107**	*e*P	**Pn**	**21 50 55.9**	**+0.3**
DRWC				*e*S	**Sn**	**21 51 17.2**	**-0.6**
DRWC				AML	AML	21 51 20.7	
	comp=E,158nm,0.3s						
DRWC				AML	AML	21 51 23.0	
	comp=N,167nm,0.4s						
DRWC	**Darouich**	**1.77**	**107**	*e*P	**Pn**	**21 50 55.9**	**+0.3**
DRWC				*e*S	**Sn**	**21 51 17.2**	**-0.6**
	comp=N,167nm,0.4s						
KMER	**Konya-Meram**	**1.85**	**290**	P	**Pn**	**21 50 57.1**	**+0.4**
KMER				S	**Sn**	**21 51 20.1**	**+0.4**
KMER	**Konya-Meram**	**1.85**	**290**	*i* P	**Pn**	**21 50 57.1**	**+0.4**
KMER				*i* S	**Sn**	**21 51 20.1**	**+0.4**
HCB	**Kahramanmara¯**	**1.89**	**83**	*i* P	**Pn**	**21 50 57.7**	**+0.6**
HCB				*i* S	**Sn**	**21 51 19.2**	**-1.2**
BTCH	**Batrach**	**1.89**	**125**	*e*P	**Pn**	**21 50 59.2**	**+2.1**
BTCH				*e*S	**Sn**	**21 51 18.5**	**-2.1**
BTCH				AML	AML	21 51 26.4	
	comp=E,480nm,0.5s						
BTCH				AML	AML	21 51 26.7	
	comp=N,499nm,0.3s						
BTCH	**Batrach**	**1.89**	**125**	*e*P	**Pn**	**21 50 59.2**	**+2.1**
BTCH				*e*S	**Sn**	**21 51 18.5**	**-2.1**
	comp=N,499nm,0.3s						
GAZI	**Gazipasa**	**2.02**	**244**	P	**Pn**	**21 51 00.5**	**+1.7**
GAZI				S	**Sn**	**21 51 23.3**	**-0.2**
GAZI	**Gazipasa**	**2.02**	**244**	*i* P	**Pn**	**21 51 00.5**	**+1.7**
GAZI				*i* S	**Sn**	**21 51 23.3**	**-0.2**
KUZU	**Kuzuini**	**2.05**	**100**	P	**Pn**	**21 51 00.4**	**+1.1**
KUZU				S	**Sn**	**21 51 24.8**	**+0.5**
KUZU	**Kuzuini**	**2.05**	**100**	*i* P	**Pn**	**21 51 00.4**	**+1.1**
KUZU				*i* S	**Sn**	**21 51 24.8**	**+0.5**
SLNF	**Slenfeh**	**2.05**	**139**	*e*P	**Pn**	**21 51 00.5**	**+1.1**
SLNF				*e*S	**Sn**	**21 51 22.5**	**-2.0**
SLNF				AML	AML	21 51 31.4	
	comp=E,605nm,0.4s						
SLNF				AML	AML	21 51 33.3	
	comp=N,810nm,0.3s						
SLNF	**Slenfeh**	**2.05**	**139**	*e*P	**Pn**	**21 51 00.5**	**+1.1**
SLNF				*e*S	**Sn**	**21 51 22.5**	**-2.0**
	comp=N,810nm,0.3s						
PHNC	**Paralimni**	**2.18**	**191**	P	**Pn**	**21 51 00.5**	**-0.5**
	baz=4.0						
PHNC	**Paralimni**	**2.18**	**191**	P	**Pn**	**21 51 00.5**	**-0.5**
WRDH	**Warideh**	**2.22**	**137**	*e*P	**Pn**	**21 51 03.2**	**+1.7**
WRDH				*e*S	**Sn**	**21 51 25.9**	**-2.4**
WRDH				AML	AML	21 51 35.7	
	comp=N,128nm,0.2s						
WRDH	**Warideh**	**2.22**	**137**	*e*P	**Pn**	**21 51 03.2**	**+1.7**
WRDH				*e*S	**Sn**	**21 51 25.9**	**-2.4**
	comp=N,128nm,0.2s						
MAMC	**Mammari**	**2.25**	**209**	P	**Pn**	**21 51 01.8**	**-0.1**
	baz=25						
MAMC	**Mammari**	**2.25**	**209**	P	**Pn**	**21 51 01.8**	**-0.1**
KDHN	**Kadinhani**	**2.37**	**306**	P	**Pn**	**21 51 04.1**	**+0.6**
KDHN				S	**Sn**	**21 51 31.4**	**-0.6**
KDHN	**Kadinhani**	**2.37**	**306**	*i* P	**Pn**	**21 51 04.1**	**+0.6**
KDHN				*i* S	**Sn**	**21 51 31.4**	**-0.6**
CSS	**Mathiatis**	**2.40**	**205**	P	**Pn**	**21 51 02.7**	**-1.1**
	baz=20						
CSS				S	**Sn**	**21 51 28.8**	**-3.7**
CSS	**Mathiatis**	**2.40**	**205**	P	**Pn**	**21 51 02.7**	**-1.1**
KKUL	**Konya-Kulu**	**2.40**	**328**	P	**Pn**	**21 51 04.8**	**+0.9**
KKUL				S	**Sn**	**21 51 32.3**	**-0.4**
KKUL	**Konya-Kulu**	**2.40**	**328**	*i* P	**Pn**	**21 51 04.8**	**+0.9**
KKUL				*i* S	**Sn**	**21 51 32.3**	**-0.4**
GZT	**Gaziantep**	**2.41**	**84**	*i* P	**Pn**	**21 51 04.8**	**+0.7**
GZT				*i* S	**Sn**	**21 51 31.8**	**-1.1**
ALFC	**Alefka**	**2.54**	**219**	P	**Pn**	**21 51 04.5**	**-1.3**
	baz=36						
ALFC				S	**Sn**	**21 51 30.9**	**-5.1**
ALFC	**Alefka**	**2.54**	**219**	P	**Pn**	**21 51 04.5**	**-1.3**
CUSAR	**Sarkisla-SIVAS**	**2.63**	**30**	P	**Pn**	**21 51 07.5**	**+0.5**
CUSAR				S	**Sn**	**21 51 36.1**	**-2.0**
CUSAR	**Sarkisla-SIVAS**	**2.63**	**30**	*i* P	**Pn**	**21 51 07.5**	**+0.5**
CUSAR				*i* S	**Sn**	**21 51 36.1**	**-2.0**
BBAL	**Bala**	**2.64**	**335**	P	**Pn**	**21 51 07.9**	**+0.7**
BBAL				S	**Sn**	**21 51 38.8**	**+0.3**
BBAL	**Bala**	**2.64**	**335**	*i* P	**Pn**	**21 51 07.9**	**+0.7**
BBAL				*i* S	**Sn**	**21 51 38.8**	**+0.3**
KFRA	**Kufra**	**2.65**	**136**	*e*P	**Pn**	**21 51 08.9**	**+1.7**
KFRA				*e*S	**Sn**	**21 51 34.6**	**-3.9**
KFRA				AML	AML	21 51 43.5	
	comp=N,234nm,0.3s						
KFRA				AML	AML	21 51 49.8	
	comp=E,115nm,0.3s						
KFRA	**Kufra**	**2.65**	**136**	*e*P	**Pn**	**21 51 08.9**	**+1.7**
CUALT	**Altinyayla-SIV**	**2.74**	**39**	P	**Pn**	**21 51 09.7**	**+1.2**
CUALT				S	**Sn**	**21 51 40.7**	**-0.2**
CUALT	**Altinyayla-SIV**	**2.74**	**39**	*i* P	**Pn**	**21 51 09.7**	**+1.2**
CUALT				*i* S	**Sn**	**21 51 40.7**	**-0.2**
SZAC	**Souni**	**2.75**	**210**	P	**Pn**	**21 51 10.8**	**+2.3**
	baz=26						
SZAC				S	**Sn**	**21 51 43.6**	**+2.7**
SZAC	**Souni**	**2.75**	**210**	P	**Pn**	**21 51 10.8**	**+2.3**
SZAC				S	**Sn**	**21 51 43.6**	**+2.7**
AKMC	**Akamas**	**2.78**	**221**	P	**Pn**	**21 51 11.3**	**+2.3**
	baz=38						
AKMC	**Akamas**	**2.78**	**221**	P	**Pn**	**21 51 11.3**	**+2.3**
AKCD	**Akcadag**	**2.90**	**66**	P	**Pn**	**21 51 12.0**	**+1.3**
AKCD				S	**Sn**	**21 51 44.6**	**-0.2**
AKCD	**Akcadag**	**2.90**	**66**	*i* P	**Pn**	**21 51 12.0**	**+1.3**
AKCD				*i* S	**Sn**	**21 51 44.6**	**-0.2**
HAWK	**Haweek**	**3.02**	**150**	*e*P	**Pn**	**21 51 13.9**	**+1.7**
HAWK				*e*S	**Sn**	**21 51 43.5**	**-4.0**
HAWK				AML	AML	21 51 50.4	
	comp=N,189nm,0.2s						
HAWK				AML	AML	21 51 50.5	
	comp=E,82nm,0.2s						
HAWK	**Haweek**	**3.02**	**150**	*e*P	**Pn**	**21 51 13.9**	**+1.7**
HWQ	**Hawqa**	**3.08**	**158**	*e*P	**Pn**	**21 51 14.6**	**+1.5**
HWQ	**Hawqa**	**3.08**	**158**	*e*P	**Pn**	**21 51 14.6**	**+1.5**
COAL	**Corum-Alaca**	**3.12**	**6**	P	**Pn**	**21 51 14.6**	**+1.0**
COAL				S	**Sn**	**21 51 47.8**	**-2.1**
COAL	**Corum-Alaca**	**3.12**	**6**	*i* P	**Pn**	**21 51 14.6**	**+1.0**
COAL				*i* S	**Sn**	**21 51 47.8**	**-2.1**
SURC	**SANLIURFA_SURC**	**3.26**	**94**	P	**Pn**	**21 51 16.1**	**+0.7**
SURC				S	**Sn**	**21 51 56.1**	**-0.1**
SURC	**SANLIURFA_SURC**	**3.26**	**94**	*i* P	**Pn**	**21 51 16.1**	**+0.7**
SURC				*i* S	**Sn**	**21 51 53.1**	**-0.1**
BHL	**Bhannes**	**3.36**	**164**	*e*P	**Pn**	**21 51 17.4**	**+0.7**
BHL	**Bhannes**	**3.36**	**164**	*e*P	**Pn**	**21 51 17.5**	**+0.7**
DQRL	**Deir Qamar**	**3.53**	**166**	*e*P	**Pn**	**21 51 19.8**	**+0.6**
DQRL	**Deir Qamar**	**3.53**	**166**	*e*P	**Pn**	**21 51 19.8**	**+0.6**
RCY	**Rachaya**	**3.79**	**164**	*e*P	**Pn**	**21 51 23.9**	**+1.2**
AKAS	**Kas**	**4.08**	**259**	P	**Pn**	**21 51 27.3**	**+0.7**
AKAS	**Kas**	**4.08**	**259**	*i* P	**Pn**	**21 51 27.3**	**+0.7**
AKAS				*i* S	**Sn**	**21 52 10.3**	**-3.1**

*ISCJB **01** 21:52:59.0±0.5, 21°.52S±0°.04×66°.75W±0°.04, h228km±6km, mb3.6/2, Error ellipse: s-maj=7.5km s-min=4.3km az=34.4*
*IDC **01** 21:52:58.1±1.0, 21°.50S×66°.54W, h215km±11km, mb3.2/2, mb1 3.6/6, mb1mx3.3/31, mbtmp4.1/6, Error ellipse: s-maj=18.8km s-min=11.7km az=124.0*
*SJA **01** 21:52:59.4±1.1, 21°.48S×66°.64W, h224km±7km, ML3.6, MW3.3*
*GUC **01** 21:53:00.3±0.5, 21°.49S×67°.22W, h267km±8km, ML4.6*

ISC 01 21:52:58.7±0.8, 21°.48S±0°.05×66°.67W±0°.05, h225km±8km, n34, σ1♀41/49, 6C-6D, Southern Bolivia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YJA	**Yavi**	**1.28**	**123**	*e*P	**Pn**	**21 53 34.8**	**+1.3**
YJA				IAML		21 53 35.8	
	comp=Z,134nm,0.2s						
YJA				*e*S	**S**	**21 54 00.6**	**0.0**
HJA	**Humahuaca**	**2.08**	**146**	*i* P	**Pn**	**21 53 42.0**	**+1.6**
HJA				IAML		21 53 42.4	
	comp=Z,370nm,0.7s						
HJA				*e*S	**S**	**21 54 13.4**	**+0.5**
LVC	**Limon Verde**	**2.37**	**241**	*i* P	**Pn**	**21 53 44.2**	**+1.0**
LVC				*e*S	**S**	**21 54 17.8**	**-0.1**
LVC	**Limon Verde**	**2.37**	**241**	P	**Pn**	**21 53 44.1**	**+0.9**
	comp=Z,2μm,0.3s,baz=60,slow=6.4,SNR=506						
LVC				S	**S**	**21 54 17.6**	**-0.3**
	comp=Z,579nm,0.3s,baz=222,slow=20,SNR=18						
PB09	**IPOC Station P**	**2.41**	**262**	⇓*i*P	**Pn**	**21 53 44.7**	**+1.1**
PB09				*i* S	**S**	**21 54 18.6**	**+0.1**
PB09				IAML		21 54 21.9	
	comp=E,2μm,0.5s						
PB01	**IPOC Station P**	**2.66**	**279**	⇑*i*P	**Pn**	**21 53 46.8**	**+0.7**
PB01				*i* S	**S**	**21 54 22.9**	**-0.2**
PB01				IAML		21 54 23.6	
	comp=N,879nm,0.3s						
PB06	**IPOC Station P**	**2.96**	**245**	⇓*i*P	**Pn**	**21 53 49.5**	**+0.1**
PB06				*i* S	**S**	**21 54 27.3**	**-1.8**
PB06				IAML		21 54 29.5	
	comp=E,317nm,0.3s						
PB07	**IPOC Station P**	**3.00**	**265**	⇓*i*P	**Pn**	**21 53 50.4**	**+0.4**
PB07				*i* S	**S**	**21 54 28.4**	**-1.6**
PB07				IAML		21 54 28.8	
	comp=N,2μm,0.4s						
AZAP	**Zapla**	**3.11**	**152**	*i* P	**Pn**	**21 53 51.6**	**+0.4**
AZAP				IAML		21 53 54.8	
	comp=Z,37nm,0.4s						
ASTB	**Santa Barbara**	**3.20**	**141**	*e*P	**Pn**	**21 53 52.9**	**+0.7**
ASTB				*e*S	**S**	**21 54 33.3**	**-0.8**
HMBC	**Humberstone**	**3.24**	**291**	⇑*i*P	**Pn**	**21 53 52.9**	**+0.2**
HMBC				*i* S	**S**	**21 54 32.9**	**-1.9**
HMBC				IAML		21 54 35.7	
	comp=N,1μm,0.4s						
PB11	**IPOC Station P**	**3.28**	**301**	⇑*i*P	**Pn**	**21 53 53.8**	**+0.7**
PB11				*i* S	**S**	**21 54 35.1**	**-0.6**
PATCX	**Punta Patache**	**3.32**	**281**	⇓*i*P	**Pn**	**21 53 53.9**	**+0.4**
PATCX				*i* S	**S**	**21 54 34.0**	**-2.4**
PATCX				IAML		21 54 36.7	
	comp=N,937nm,0.4s						
PB04	**IPOC Station P**	**3.34**	**255**	⇑*i*P	**Pn**	**21 53 54.2**	**+0.4**
PB04				*i* S	**S**	**21 54 34.5**	**-2.5**
PB04				IAML		21 54 36.0	
	comp=N,407nm,0.2s						
ALOL	**LOMAS DE OLMED**	**3.40**	**134**	*e*P	**Pn**	**21 53 54.5**	**+0.1**
SLA	**San Lorenzo**	**3.40**	**162**	*i* P	**Pn**	**21 53 56.0**	**+1.5**
MNMC	**Minye Minye**	**3.60**	**310**	⇑*i*P	**Pn**	**21 53 58.3**	**+1.3**
MNMC				*e*S	**S**	**21 54 42.2**	**-0.6**
PSGC	**Pisagua**	**3.74**	**299**	⇓*i*P	**Pn**	**21 53 58.5**	**0.0**
PSGC				*i* S	**S**	**21 54 43.1**	**-2.3**
ANCH	**Antofagasta**	**4.09**	**237**	⇓*i*P	**Pn**	**21 54 02.9**	**+0.3**
ANCH				*i* S	**S**	**21 54 50.0**	**-2.9**
PB13	**IPOC Station P**	**4.11**	**319**	⇑*i*P	**Pn**	**21 54 05.6**	**+2.2**
FSA	**Cafayete**	**4.66**	**172**	*i* P	**Pn**	**21 54 11.2**	**+1.5**
FSA				IAML		21 54 12.5	
	comp=Z,14nm,0.6s						
LPAZ	**La Paz**	**5.34**	**345**	*i* P	**Pn**	**21 54 20.7**	**+1.9**
LPAZ	**La Paz**	**5.34**	**345**	P	**Pn**	**21 54 20.4**	**+1.6**
	comp=Z,7.2nm,0.3s,baz=157,slow=9.3,SNR=109						
LPAZ				S	**S**	**21 55 23.3**	**+1.3**
	baz=217,slow=20,SNR=2.5						
AHML	**Horco Molle**	**5.42**	**167**	*e*P	**Pn**	**21 54 21.0**	**+1.8**
AHML				IAML		21 54 21.5	
	comp=Z,9.4nm,0.4s						
CYA	**Choya**	**6.98**	**174**	IAML		21 54 40.4	
	comp=Z,11nm,0.4s						
VCA	**Vinchina**	**7.36**	**191**	IAML		21 56 13.3	
	comp=Z,13nm,0.6s						
SIV	**San Ignacio**	**7.61**	**45**	P	**Pn**	**21 54 46.9**	**-0.2**
	comp=Z,18nm,0.3s,baz=263,slow=12,SNR=133						
SIV				S	**S**	**21 56 09.7**	**-4.0**
	comp=Z,1.0nm,0.3s,baz=270,slow=19,SNR=2.7						
AVFE	**Valle Fertil**	**9.17**	**184**	IAML		21 56 48.1	
	comp=Z,11nm,0.4s						
CPUP	**Villa Florida**	**9.81**	**121**	P	**Pn**	**21 55 13.9**	**-1.4**
	comp=Z,0.1nm,0.3s,baz=295,slow=14,SNR=2.3						
NNA	**Nana**	**13.56**	**313**	P	**P**	**21 56 04.1**	**-0.1**
	comp=Z,1.1nm,0.3s,baz=158,slow=11,SNR=2.8						
PTGA	**Pitinga**	**21.63**	**18**	P	**P**	**21 57 29.9**	**-1.6**
	comp=Z,1.6nm,0.4s,baz=174,slow=19,SNR=3.7						
YKA	**Yellowknife Ar**	**91.87**	**340**	P	**P**	**22 05 41.7**	**+0.9**
	comp=Z,0.2nm,0.5s,baz=134,slow=4.8,SNR=7.5						
WRA	**Warramunga Arr**	**133.99**	**208**	PKP	**PKPdf**	**22 11 50.2**	**+0.2**
	comp=Z,0.2nm,0.3s,baz=154,slow=1.8,SNR=7.2						
MKAR	**Makanchi Array**	**144.37**	**37**	PKP	**PKPdf**	**22 12 08.8**	**+0.8**
	comp=Z,0.4nm,0.7s,baz=301,slow=2.8,SNR=4.5						

*DHMR **01** 21:55:11.9±1.3, 14°.98N×42°.18E, h3km±674km, ML3.9*
*IDC **01** 21:55:15.3±1.8, 14°.98N×41°.67E, h0km, mb3.5/4, mb1 3.6/5

4.2nm,1.0s,baz=193,slow=5.9,SNR=4.6
PEA1 Petropavlovsk- 57.72 3 *eP* **P 22 07 09.8 +2.0**
CM31 Chiang Mai Arr 58.28 295 *eP* **P 22 07 12.3 -0.1**
CMAR Chiang Mai Arr 58.28 295 P **P 22 07 12.3 -0.1**
0.9nm,0.7s,baz=125,slow=5.1,SNR=8.9
SMY Shemya 59.87 14 *eP* **P 22 07 21.1 -1.6**
468nm,1.4s
SONA0 Songino Array 66.50 328 *eP* **P 22 08 06.5 -0.5**
7.4nm,1.7s
SONM Songino Array 66.50 328 P **P 22 08 06.5 -0.5**
0.5nm,0.5s,baz=132,slow=6.8,SNR=3.5
VNDA Vanda 72.91 178 P **P 22 08 46.9 +1.1**
1.7nm,0.6s,baz=331,slow=6.7,SNR=6.8
MK01 Makanchi Array 80.56 319 *eP* **P 22 09 29.3 -0.2**
MK31 Makanchi Array 80.57 319 *eP* **P 22 09 29.8 +0.2**
MK32 Makanchi Array 80.57 319 *eP* **P 22 09 29.4 -0.2**
MKAR Makanchi Array 80.57 319 P **P 22 09 29.4 -0.2**
0.9nm,0.6s,baz=104,slow=6.7,SNR=13
MKAR Makanchi Array 80.57 319 *eP* **P 22 09 29.8 +0.2**
MAKZ Makanchi 80.78 319 *eP* **P 22 09 30.6 -0.1**
2.5nm,0.7s
ZALV Zalesovo Beam 81.34 326 P **P 22 09 33.1 -0.3**
0.4nm,0.4s,baz=111,slow=4.6,SNR=2.6
ZAA1 Zalesovo Array 81.34 326 *eP* **P 22 09 33.1 -0.4**
KURK Kurchatov 83.99 322 *eP* **P 22 09 47.2 -0.1**
KURBB Kurchatov Arra 84.02 322 P **P 22 09 47.2 -0.2**
0.8nm,0.7s,baz=114,slow=4.0,SNR=10
TKM2 Tokmak 2 84.22 314 *eP* **P 22 09 49.4 +0.5**
3.3nm,0.6s
AAK Ala-Archa 84.95 313 P **P 22 09 52.6 0.0**
3.1nm,0.5s,baz=122,slow=5.8,SNR=16
AAK Ala-Archa 84.95 313 *eP* **P 22 09 53.1 +0.5**
EKS2 Erkin-Say 85.48 313 *eP* **P 22 09 56.0 +0.9**
3.2nm,0.7s
BBB Bella Bella 86.72 37 LR LR 22 40 47.0
comp=Z,18nm,21.2s,baz=237,slow=30
BVAR Borovoye Array 89.45 323 P **P 22 10 13.1 -0.8**
3.1nm,0.7s,baz=102,slow=5.7,SNR=20
PDAR Pinedale Array 98.42 48 LR LR 22 49 28.5
comp=Z,14nm,18.5s,baz=328,slow=32
GERES GERESS Array B 124.22 329 PKP **PKPdf 22 16 15.8 0.0**
0.5nm,0.7s,baz=108,slow=0.4,SNR=5.5

IDC 01 21:57:40.4±2.2, 10°.26N×92°.07E, h0km, mb3.7/4, mb1 3.8/5, mb1mx3.3/63, mbtmp3.6/5, ML3.6/1, MS3.0/1, Ms1 3.0/1, ms1mx2.3/62, Error ellipse: s-maj=70.7km s-min=22.5km az=69.0, Andaman Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**10.52**	**38**	Pn	Pn	22 00 13.4	+0.9
	0.1nm,0.3s,baz=231,slow=15,SNR=4.2						
H08S3	**Diego Garcia H**	**26.38**	**228**	T	T	22 31 01.1	
	baz=47,slow=76,SNR=85						
H08S2	**Diego Garcia H**	**26.39**	**228**	T	T	22 31 01.5	
	baz=47,slow=76,SNR=97						
H08S1	**Diego Carcia H**	**26.40**	**228**	T	T	22 31 02.5	
	baz=47,slow=76,SNR=113						
MKAR	**Makanchi Array**	**37.34**	**349**	P	P	22 04 54.6	0.0
	0.1nm,0.4s,baz=178,slow=6.6,SNR=3.1						
SONM	**Songino Array**	**39.35**	**15**	P	P	22 05 11.2	-0.4
	0.4nm,0.5s,baz=201,slow=7.7,SNR=3.9						
ZALV	**Zalesovo Beam**	**43.95**	**354**	LR	LR	22 29 21.4	
	comp=Z,18nm,19.2s,baz=238,slow=43						
WRA	**Warramunga Arr**	**51.31**	**126**	P	P	22 06 46.5	-0.2
	2.3nm,0.5s,baz=307,slow=8.2,SNR=23						
ASAR	**Alice Springs**	**53.01**	**130**	P	P	22 06 59.4	0.0
	0.9nm,0.7s,baz=309,slow=7.5,SNR=10						

JMA 01 22:05:18.2±0.2, 38°.38N×142°.31E, h29km±2km, M3.9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.76**	**276**	P	Pb	22 05 32.7	-0.2
JIO				S	Sb	22 05 42.3	-0.5
OFUJ	**Ofunato**	**0.86**	**325**	P	Pn	22 05 34.0	-0.4
OFUJ				S	Sb	22 05 45.0	-0.8
JMK	**Ichinoseki**	**1.03**	**304**	P	Pn	22 05 36.8	+0.2
JMK				S	Sn	22 05 50.1	+0.1
JOU	**Okura**	**1.29**	**270**	P	Pb	22 05 41.3	-0.6
JOU				S	Sb	22 05 57.6	-0.5
JMM	**Marumori**	**1.30**	**247**	P	Pn	22 05 40.2	-0.2
JMM				S	Sn	22 05 56.0	-0.8
JOM	**Ohasama**	**1.35**	**324**	P	Pn	22 05 41.7	+0.6
JOM				S	Sb	22 05 58.9	-0.8
JFK	**Kawauchi**	**1.52**	**229**	P	Pn	22 05 42.8	-0.7
JFK				S	Sn	22 06 00.0	-2.3
ONAJ	**Iwakimizuishiy**	**1.75**	**224**	P	Pn	22 05 46.1	-0.6
ONAJ				S	Sn	22 06 06.0	-2.0
MAT	**Matsushiro**	**3.74**	**242**	P	Pn	22 06 18.1	+4.1
MAT				S	Sn	22 07 02.7	+5.5

JMA 01 22:13:20.8±0.1, 35°.51N×140°.12E, h23km±1km, M2.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCN	**Nagara**	**0.11**	**144**	P	Pb	22 13 25.5	+0.2
JCN				S	Sb	22 13 29.0	+0.7
KTR	**Katsuura**	**0.40**	**156**	P	Pb	22 13 28.8	-0.4
KTR				S	Sb	22 13 34.9	+0.1
BSO4	**Boso 4**	**0.55**	**161**	P	Pb	22 13 31.8	+0.1
JYT	**Yasato**	**0.72**	**5**	P	Pb	22 13 34.6	-0.1
JYT				S	Sb	22 13 44.5	+0.4
BSO3	**Boso 3**	**0.78**	**156**	P	Pb	22 13 35.4	-0.1
JOD2	**Odawara 2**	**0.88**	**254**	P	Pb	22 13 36.8	-0.6
MAT	**Matsushiro**	**1.86**	**304**	P	Pb	22 13 53.2	-0.9
MAT				S	Sb	22 14 18.6	+1.6

IDC 01 22:16:32.1±3.1, 61°.15N×28°.10W, h0km, mb3.3/4, mb1 3.6/5, mb1mx3.2/64, mbtmp3.4/5, ML3.6/1, MS2.8/6, Ms1 2.8/6, ms1mx2.5/36, Error ellipse: s-maj=79.3km s-min=24.2km az=163.0, Iceland region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BORG	**Borgarnes**	**4.75**	**38**	Pn	Pn	22 17 43.5	-1.3
	2.4nm,0.3s,baz=216,slow=7.5,SNR=7.9						
BORG				Sn	Sn	22 18 41.0	+0.5
	1.0nm,0.3s,baz=273,slow=23,SNR=6.7						
SFJD	**Kangerlussuaq**	**11.41**	**310**	LR	LR	22 23 07.8	
	comp=Z,59nm,18.2s,baz=142,slow=35						
FRB	**Frobisher Bay**	**18.66**	**296**	LR	LR	22 27 11.7	
	comp=Z,42nm,18.1s,baz=182,slow=34						
NOA	**NORSAR Array B**	**18.81**	**73**	LR	LR	22 26 47.4	
	comp=Z,14nm,20.1s,baz=245,slow=33						
ARCES	**ARCESS Array B**	**23.09**	**46**	P	P	22 21 39.6	+0.6
	0.5nm,0.6s,baz=270,slow=9.6,SNR=5.4						
DAVOX	**Davos/Dischmat**	**26.10**	**106**	LR	LR	22 32 48.4	
	comp=Z,18nm,19.1s,baz=267,slow=37						
GERES	**GERESS Array B**	**26.45**	**99**	LR	LR	22 31 48.7	
	comp=Z,24nm,19.1s,baz=340,slow=35						
VRAC	**Vranov**	**27.52**	**95**	LR	LR	22 33 53.9	
	comp=Z,22nm,20.1s,baz=308,slow=38						
YKA	**Yellowknife Ar**	**37.98**	**311**	P	P	22 23 51.4	+0.5
	0.2nm,0.6s,baz=51,slow=9.0,SNR=6.4						
PDAR	**Pinedale Array**	**49.86**	**288**	P	P	22 25 26.1	-0.8
	0.3nm,0.6s,baz=44,slow=6.9,SNR=4.3						
MKAR	**Makanchi Array**	**58.71**	**49**	P	P	22 26 31.1	0.0
	0.3nm,0.5s,baz=340,slow=5.3,SNR=4.9						

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*MAN **01** 22:24:02, 10°.96N×126°.65E, h3km, mb4.6, ML3.5, MS3.4*
*ISCJB **01** 22:24:03.8±1.5, 10°.92N±0°.05×126°.86E±0°.09, h49km±13km, mb4.1/23, MS3.1/5, Error ellipse: s-maj=14.4km s-min=7.3km az=166.3*
*IDC **01** 22:24:03.6±0.8, 10°.90N×126°.88E, h31km±5km, mb3.7/16, mb1 3.9/17, mb1mx3.7/49, mbtmp3.9/17, ML3.8/1, MS3.2/6, Ms1 3.2/6, ms1mx2.8/42, Error ellipse: s-maj=32.9km s-min=13.1km az=78.0*
*NEIC **01** 22:24:06.0±1.2, 10°.88N×126°.85E, h53km±11km, mb4.3/9, Error ellipse: s-maj=10.3km s-min=3.8km az=76.0*
ISC 01 22:24:04.3±0.7, 11°.02N±0°.05×126°.82E±0°.07, h32km±4km, h32km:pP-P, n54, σ1°35/63, mb4.1/23, MS2.9/5, 2C-1D, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SCPH	**Surigao**	**1.79**	**227**	*eP*	**Pn**	**22 24 32.4**	**-0.6**
SCPH				*eS*	**Sn**	**22 24 54.4**	**-0.3**
PLP	**Palo**	**1.81**	**275**	*eP*	**Pn**	**22 24 32.1**	**-1.2**
PLP				*i S*	**Sn**	**22 24 55.3**	**+0.2**
LLP	**Lapu-Lapu**	**2.89**	**256**	*eP*	**Pn**	**22 24 50.1**	**+2.0**
LLP				*eS*	**Sb**	**22 25 29.1**	**-1.0**
CGP	**Cagayan de Oro**	**3.30**	**220**	*eP*	**Pb**	**22 25 04.9**	**+2.8**
CGP				*eS*	**Sn**	**22 25 33.1**	**+1.3**
RCP	**Roxas**	**4.03**	**278**	*eP*	**Pn**	**22 25 04.5**	**+0.7**
YHNB	**Yeheng**	**14.53**	**340**	P	**Pn**	**22 27 29.9**	**+2.1**
	12nm,0.3s						
TATO	**Taipei**	**14.78**	**341**	*e*Pn	**Pn**	**22 27 27.2**	**-3.8**
KAPI	**Kappang**	**17.41**	**204**	P	**Pn**	**22 28 03.9**	**-1.0**
	0.4nm,0.3s,baz=87,slow=11,SNR=3.3						
KAPI				LR	LR	22 34 46.0	
	comp=Z,56nm,19.6s,baz=345,slow=37						
KAPI	**Kappang**	**17.41**	**204**	*e*Pn	**Pn**	**22 28 03.9**	**-1.0**
	18nm,1.3s						
LEM	**Lembang**	**26.07**	**228**	LR	LR	22 41 42.1	
	comp=Z,164nm,18.0s,baz=180,slow=41						
MJAR	**Matsushiro Ar**	**27.42**	**20**	LR	LR	22 38 28.4	
	comp=Z,20nm,22.0s,baz=210,slow=31						
CMAR	**Chiang Mai Arr**	**27.93**	**289**	LR	LR	22 42 32.4	
	comp=Z,22nm,18.1s,baz=120,slow=40						
FITZ	**Fitzroy Crossi**	**28.96**	**182**	P	**P**	**22 30 00.0**	**-0.9**
	1.8nm,0.8s,baz=0.0,slow=13,SNR=2.9						
FITZ	**Fitzroy Crossi**	**28.96**	**182**	*eP*	**P**	**22 30 00.0**	**-0.9**
	18nm,1.8s						
COEN	**Coen**	**29.64**	**146**	*eP*	**P**	**22 30 10.3**	**+3.1**
	66nm,0.5s						
WR1	**Warramunga Arr**	**31.64**	**166**	*eP*	**P**	**22 30 22.6**	**-2.1**
	14nm,1.6s						
WRA	**Warramunga Arr**	**31.64**	**166**	P	**P**	**22 30 22.6**	**-2.1**
	0.8nm,0.6s,baz=346,slow=9.5,SNR=6.9						
USRK	**Ussuriysk Ar.**	**33.36**	**7**	P	**P**	**22 30 40.5**	**+1.0**
	1.2nm,0.7s,baz=149,slow=45,SNR=3.1						
AS31	**Alice Springs**	**35.16**	**169**	*eP*	**P**	**22 30 53.8**	**-1.5**
	0.7nm,0.8s						
ASAR	**Alice Springs**	**35.16**	**169**	P	**P**	**22 30 53.8**	**-1.5**
	0.8nm,0.6s,baz=347,slow=9.0,SNR=16						
AS01	**Alice Springs**	**35.17**	**169**	*eP*	**P**	**22 30 53.9**	**-1.5**
SONA0	**Songino Array**	**40.52**	**339**	*eP*	**P**	**22 31 41.2**	**+0.7**
	8.2nm,1.8s						
SONM	**Songino Array**	**40.52**	**339**	P	**P**	**22 31 41.2**	**+0.7**
	0.9nm,0.9s,baz=147,slow=6.8,SNR=4.5						
GUN	**Gumba**	**41.86**	**300**	*eP*	**P**	**22 31 50.2**	**-1.9**
	18nm,0.9s						
PKIN	**Phulchoki**	**42.19**	**299**	*eP*	**P**	**22 31 53.2**	**-1.5**
	4.7nm,0.5s						
DMN	**Daman**	**42.45**	**299**	*eP*	**P**	**22 31 55.1**	**-1.7**
	5.8nm,0.7s						
KOLN	**Koldanda**	**43.78**	**299**	*eP*	**P**	**22 32 07.5**	**0.0**
	8.1nm,0.8s						
PYUN	**Piuthan**	**44.38**	**299**	*eP*	**P**	**22 32 14.3**	**+2.0**
STKA	**Stephens Creek**	**44.94**	**162**	P	**P**	**22 32 15.0**	**-1.3**
	1.1nm,0.5s,baz=332,slow=6.8,SNR=4.9						
PETK	**Petropavlovsk-**	**48.74**	**24**	P	**P**	**22 32 46.5**	**+0.7**
	2.2nm,0.9s,baz=238,slow=8.2,SNR=2.6						
PETK				LR	LR	22 52 28.2	
	comp=Z,12nm,20.4s,baz=176,slow=35						
PEA1	**Petropavlovsk-**	**48.74**	**24**	*eP*	**P**	**22 32 46.5**	**+0.7**
MK01	**Makanchi Array**	**51.75**	**322**	*eP*	**P**	**22 33 09.2**	**+0.4**
MK31	**Makanchi Array**	**51.77**	**322**	*eP*	**P**	**22 33 09.8**	**+0.8**
MK32	**Makanchi Array**	**51.77**	**322**	*eP*	**P**	**22 33 09.6**	**+0.7**
MK32				*ep*P	**pP**	**22 33 19.3**	**+0.6**
MKAR	**Makanchi Array**	**51.77**	**322**	P	**P**	**22 33 09.6**	**+0.7**
	2.9nm,0.8s,baz=113,slow=7.9,SNR=25						
MKAR				pP	**pP**	**22 33 19.3**	**+0.6**
	3.4nm,0.8s,baz=113,slow=9.0,SNR=15						
MAKZ	**Makanchi**	**51.96**	**322**	*eP*	**P**	**22 33 11.2**	**+0.8**
	3.5nm,1.0s						
ZALV	**Zalesovo Beam**	**54.24**	**331**	P	**P**	**22 33 27.0**	**+0.1**
	0.8nm,0.5s,baz=76,slow=6.1,SNR=3.8						
ZAA1	**Zalesovo Array**	**54.24**	**331**	*eP*	**P**	**22 33 27.0**	**+0.1**
KURK	**Kurchatov**	**55.77**	**325**	*eP*	**P**	**22 33 38.5**	**+0.5**
	9.9nm,1.1s						
ZRNK	**Zerenda**	**62.12**	**325**	*eP*	**P**	**22 34 22.2**	**+0.1**
	2.6nm,0.8s						
GEYT	**Alibeck**	**66.53**	**307**	P	**P**	**22 34 51.6**	**+0.2**
	1.2nm,0.8s,baz=165,slow=2.9,SNR=3.8						
GEYT				pP	**pP**	**22 35 02.2**	**+0.8**
	1.5nm,1.0s,baz=226,slow=3.9,SNR=3.1						
RPZ	**Rata Peaks**	**67.71**	**147**	LR	LR	23 04 00.7	
	comp=Z,55nm,18.8s,baz=30,slow=36						
ILAR	**Eielson Array**	**78.54**	**26**	P	**P**	**22 36 02.0**	**-0.3**
	0.3nm,0.7s,baz=264,slow=7.2,SNR=3.6						
ILB	**Eielson Array**	**78.54**	**26**	*eP*	**P**	**22 36 02.0**	**-0.3**
ARA0	**ARCESS Array S**	**83.69**	**340**	*eP*	**P**	**22 36 28.9**	**-0.6**
ARA0				*ep*P	**pP**	**22 36 39.2**	**-0.7**
ARCES	**ARCESS Array B**	**83.69**	**340**	P	**P**	**22 36 28.9**	**-0.6**
	2.2nm,0.8s,baz=81,slow=5.8,SNR=10						
ARCES				pP	**pP**	**22 36 39.2**	**-0.7**
	0.6nm,0.5s,baz=81,slow=6.4,SNR=1.7						
BR101	**Keskin Array S**	**85.48**	**309**	*eP*	**P**	**22 36 38.6**	**-0.8**
BR101				*ep*P	**pP**	**22 36 48.6**	**-1.1**
BRTR	**Keskin Array B**	**85.48**	**309**	P	**P**	**22 36 38.6**	**-0.8**
	0.3nm,0.5s,baz=104,slow=4.6,SNR=3.4						
BRTR				pP	**pP**	**22 36 48.6**	**-1.1**
	0.5nm,0.7s,baz=90,slow=6.2,SNR=3.3						
FIA0	**FINESS Array S**	**85.49**	**332**	*eP*	**P**	**22 36 38.6**	**-0.2**
FIA0				*ep*P	**pP**	**22 36 48.2**	**-0.9**
FINES	**FINESS Array B**	**85.49**	**332**	P	**P**	**22 36 38.6**	**-0.2**
	1.3nm,0.9s,baz=90,slow=6.3,SNR=3.5						
FINES				pP	**pP**	**22 36 48.2**	**-0.9**
	1.0nm,0.7s,baz=68,slow=7.0,SNR=2.3						
VNDA	**Vanda**	**90.60**	**173**	P	**P**	**22 37 00.6**	**-2.2**
	1.2nm,0.8s,baz=324,slow=6.7,SNR=7.8						
YKA	**Yellowknife Ar**	**92.86**	**24**	P	**P**	**22 37 13.2**	**-0.5**
	0.2nm,0.7s,baz=296,slow=4.2,SNR=3.9						
YKB5	**Yellowknife Ar**	**92.86**	**24**	*eP*	**P**	**22 37 13.2**	**-0.5**
TCBU	**Trout Butte**	**96.62**	**43**	*eP*	**P**	**22 37 34.6**	**+3.1**

JMA 01 22:26:22.8±0.2, 25°.64N×122°.41E, h267km±4km, M3.8, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JYNG	**Yonagunijimaku**	**1.28**	**158**	P	Pn	22 27 01.3	0.0
JYNG				*eS*	S	22 27 32.2	+0.5
IRIF	**Iriomote-Funau**	**1.77**	**137**	P	Pn	22 27 05.1	+0.3
IRIF				*eS*	S	22 27 37.8	-0.2
JKRS	**Kuro-shima**	**2.01**	**134**	P	Pn	22 27 07.3	+0.5
JKRS				*eS*	S	22 27 41.6	-0.1
JISG	**Ishigakijimahi**	**2.02**	**121**	P	Pn	22 27 06.8	-0.1
JISG				S	S	22 27 41.1	-0.6
JIJ	**Ishigaki jima**	**2.02**	**129**	P	Pn	22 27 06.8	-0.1
JIJ				S	S	22 27 40.7	-1.1
HATJ	**Hateruma jima**	**2.02**	**141**	P	Pn	22 27 07.5	+0.6
JTJ	**Tarama**	**2.30**	**115**	P	Pn	22 27 09.9	+0.5
JTJ				S	S	22 27 46.0	-0.4
JIRB	**Irabujima**	**2.63**	**107**	P	Pn	22 27 12.7	+0.1
JIRB				S	S	22 27 50.7	-1.3
JIKM	**Ikemajima**	**2.67**	**105**	P	Pn	22 27 13.5	+0.6
JIKM				S	S	22 27 52.2	-0.5
JOGS	**Gusukube**	**2.85**	**107**	P	Pn	22 27 15.5	+0.7
JOGS				S	S	22 27 55.5	-0.6

IDC 01 22:39:29.4±1.6, 6°.19N×124°.45E, h0km, mb3.8/3, mb1 4.1/3, mb1mx3.5/39, mbtmp3.8/3, Error ellipse: s-maj=204.8km s-min=26.5km az=72.0, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**27.73**	**160**	P	P	22 45 19.9	0.0
	1.7nm,0.6s,baz=339,slow=9.4,SNR=20						
ASAR	**Alice Springs**	**31.08**	**163**	P	P	22 45 49.5	-0.1
	0.8nm,0.5s,baz=343,slow=7.1,SNR=22						
SONM	**Songino Array**	**44.27**	**343**	P	P	22 47 40.9	-0.1
	0.5nm,0.8s,baz=155,slow=8.8,SNR=4.0						

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*ISCJB **01** 22:52:04.8±2.3, 39°.24N±0°.06×143°.02E±0°.07, h4km±19km, mb3.5/4, Error ellipse: s-maj=10.9km s-min=9.6km az=159.9*
*JMA **01** 22:52:05.8±0.1, 39°.24N×143°.03E, h18km±2km, M3.7*
*IDC **01** 22:52:12.2±3.4, 39°.22N×142°.86E, h69km±30km, mb3.3/4, mb1 3.4/6, mb1mx3.1/44, mbtmp3.5/6, ML3.1/2, Error ellipse: s-maj=43.5km s-min=21.7km az=101.0*
ISC 01 22:52:06.1±2.5, 39°.23N±0°.06×142°.9E±0°.1, h17km±13km, n18, σ0°76/19, mb3.6/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**0.92**	**292**	P	**Pg**	**22 52 23.9**	**-0.1**
MIYJ				S	**Sn**	**22 52 36.9**	**-0.1**
OFUJ	**Ofunato**	**0.98**	**261**	P	**Pg**	**22 52 25.2**	**0.0**
JTH	**Tanohata**	**1.08**	**311**	P	**Pg**	**22 52 26.7**	**-0.3**
JTH				*eS*	**Sg**	**22 52 41.4**	**+0.3**
JOM	**Ohasama**	**1.28**	**281**	P	**Pb**	**22 52 30.1**	**+0.3**
JOM				S	**Sg**	**22 52 47.6**	**0.0**
JMK	**Ichinoseki**	**1.35**	**259**	P	**Pb**	**22 52 31.3**	**+0.4**
JMK				*eS*	**Sg**	**22 52 50.1**	**+0.3**
JKZ	**Kuzumaki**	**1.44**	**302**	P	**Pb**	**22 52 32.5**	**0.0**
JKZ				*eS*	**Sg**	**22 52 52.0**	**-0.6**
JIO	**Ouri**	**1.45**	**238**	P	**Pb**	**22 52 32.6**	**0.0**
JANG	**Nango**	**1.57**	**317**	P	**Pn**	**22 52 33.3**	**+0.1**
JRG	**Rokugo**	**1.78**	**276**	P	**Pb**	**22 52 38.5**	**+0.2**
JRG				*eS*	**Sg**	**22 53 03.3**	**-0.1**
MJAR	**Matsushiro Arr**	**4.59**	**236**	P	Pn	22 53 19.1	+4.3
	0.7nm,0.3s,baz=40,slow=12,SNR=6.7						
ASAJ	**Asahikawa**	**4.89**	**357**	P	Pn	22 53 22.4	+3.6
	0.8nm,0.3s,baz=202,slow=11,SNR=2.7						
SEY	**Seymchan**	**24.41**	**10**	P	**P**	**22 57 24.9**	**+1.5**
	0.7nm,0.3s,baz=163,slow=7.3,SNR=5.2						
H11S1	**WAKE ISLAND Hy**	**29.17**	**128**	T	T	23 28 41.7	
	baz=320,slow=76,SNR=5.3						
H11S3	**WAKE ISLAND Hy**	**29.18**	**128**	T	T	23 28 42.4	
	baz=320,slow=76,SNR=4.9						
H11S2	**WAKE ISLAND Hy**	**29.19**	**128**	T	T	23 28 42.1	
	baz=320,slow=76,SNR=4.7						
ZALV	**Zalesovo Beam**	**41.35**	**311**	P	**P**	**22 59 49.0**	**-1.8**
	0.3nm,0.3s,baz=101,slow=7.5,SNR=2.1						
MKAR	**Makanchi Array**	**43.99**	**300**	P	**P**	**23 00 13.7**	**+1.2**
	0.2nm,0.5s,baz=83,slow=9.1,SNR=3.1						
WRA	**Warramunga Arr**	**59.41**	**189**	P	**P**	**23 02 07.0**	**-0.8**
	0.4nm,0.6s,baz=7.4,slow=6.9,SNR=6.3						

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*IDC **01** 22:59:38.2±8.5, 13°.78S×166°.72E, h96km±83km, mb3.6/6, mb1 3.6/7, mb1mx3.4/38, mbtmp3.8/7, ML2.8/1, MS2.9/1, Ms1 2.9/1, ms1mx2.5/29, Error ellipse: s-maj=60.7km s-min=39.9km az=165.0*
ISC 01 22:59:33.1±1.5, 13°.55S±0°.1×166°.7E±0°.3, h43km, n8, σ1°41/9, mb3.7/6, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**8.54**	**181**	P	**Pn**	**23 01 35.2**	**+0.9**
	0.1nm,0.3s,baz=119,slow=19,SNR=1.9						
DZM				S	**Sn**	**23 03 08.7**	**-0.6**
	baz=135,slow=20,SNR=1.8						
DZM				LR	LR	23 04 30.8	
	comp=Z,87nm,19.2s,baz=205,slow=36						
WRA	**Warramunga Arr**	**37.51**	**254**	P	**P**	**23 05 50.7**	**-1.2**
	0.3nm,0.6s,baz=86,slow=9.4,SNR=8.1						
ASAR	**Alice Springs**	**32.58**	**247**	P	**P**	**23 06 00.0**	**-0.7**
	0.4nm,0.6s,baz=73,slow=9.7,SNR=10						
CMAR	**Chiang Mai Arr**	**73.91**	**294**	P	**P**	**23 11 06.4**	**+2.2**
	1.5nm,1.0s,baz=132,slow=4.9,SNR=5.7						
SONM	**Songino Array**	**81.16**	**324**	P	**P**	**23 11 43.9**	**-0.3**
	0.5nm,0.7s,baz=101,slow=4.5,SNR=3.6						
MKAR	**Makanchi Array**	**95.90**	**317**	P	**P**	**23 12 56.0**	**+0.6**
	0.6nm,0.7s,baz=91,slow=6.6,SNR=7.3						
ZALV	**Zalesovo Beam**	**96.05**	**324**	P	**P**	**23 12 55.1**	**-0.6**
	0.5nm,0.5s,baz=86,slow=6.1,SNR=3.6						
ARCES	**ARCESS Array B**	**118.91**	**345**	PKP	**PKPdf**	**23 18 14.6**	**-1.8**
	0.7nm,0.6s,baz=66,slow=2.3,SNR=12						

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*IDC **01** 23:01:57.4±0.8, 28°.69N×129°.59E, h0km, mb3.6/10, mb1 3.8/13, mb1mx3.6/44, mbtmp3.7/13, ML3.4/3, MS3.1/7, Ms1 3.1/7, ms1mx2.8/48, Error ellipse: s-maj=26.4km s-min=13.9km az=87.0*
*ISCJB **01** 23:02:00.5±0.5, 28°.68N±0°.03×129°.63E±0°.05, h29km±3km, mb3.6/10, MS3.2/4, Error ellipse: s-maj=7.1km s-min=3.8km az=22.1*
*NIED **01** 23:02:00, 28°.70N×129°.60E, h20km, Mw4.1 Best double couple: $M_0$1.49000×10^{15} NP1:ϕ_s108.00000°, δ24.00000°, λ-133.00000°. NP2:ϕ_s334.00000°, δ72.00000°, λ-73.00000°.*
*JMA **01** 23:02:01.2±0.1, 28°.66N×129°.59E, h16km±3km, M3.9*
JMA Felt II J1.
ISC 01 23:01:59.7±1.3, 28°.72N±0°.04×129°.53E±0°.06, h12km±9km, n38, σ1°22/42, mb3.7/10, MS3.1/4, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAM	**Amami Oshima**	**0.32**	**168**	P	**Pg**	**23 02 06.5**	**+0.3**
JAM				*eS*	**Sg**	**23 02 10.4**	**-0.1**
JTAJ	**Takarajima**	**0.51**	**326**	P	**Pn**	**23 02 12.9**	**0.0**
JTAJ				*eS*	**Sn**	**23 02 21.6**	**0.0**
JZK	**Kikaishima**	**0.56**	**136**	P	**Pg**	**23 02 10.7**	**-0.1**
JZK				*eS*	**Sg**	**23 02 18.2**	**-0.1**
JAMN	**Amaminishikomi**	**0.57**	**213**	P	**Pb**	**23 02 12.1**	**+0.4**
JAMN				*eS*	**Sb**	**23 02 20.4**	**+0.7**
JTK	**Tokunoshima**	**1.06**	**209**	P	**Pb**	**23 02 19.4**	**-0.7**
JTK				*eS*	**Sb**	**23 02 33.2**	**-0.8**
JNN	**Nakanoshima**	**1.15**	**15**	P	**Pb**	**23 02 20.9**	**-0.7**
JOKE	**Okinoerabujima**	**1.60**	**212**	P	**Pn**	**23 02 28.2**	**+0.4**
JOKE				*eS*	**Sn**	**23 02 48.3**	**-0.1**
JYAK	**Yakushimahirau**	**1.73**	**29**	P	**Pb**	**23 02 30.9

0.4nm,1.1s,baz=291,slow=6.0,SNR=4.2
YKA PP **PP 23 16 37.6 +3.0**
0.1nm,0.5s,baz=268,slow=5.4,SNR=3.6
BRTR Keskin Array B 76.42 308 P **P 23 13 49.1 -0.4**
0.8nm,0.8s,baz=86,slow=5.3,SNR=6.6

*NSSC **01** 23:07:02.8±1.0, 36°.27N×32°.19E, h10km±40km, ML2.1*
*ISK **01** 23:07:02.2, 36°.27N×31°.94E, h16km, MD3.2*
*CSEM **01** 23:07:03.9±0.2, 36°.26N×31°.94E, h30km, MD3.2, Error ellipse: s-maj=6.3km s-min=4.0km az=44.0*
*DDA **01** 23:07:04.6, 36°.41N×31°.77E, h54km, Md3.2*
*NIC **01** 23:07:05.7±0.2, 36°.16N×32°.08E, h30km, ML3.2*
ISC 01 23:07:01.5±1.2, 36°.23N±0°.03×31°.94E±0°.02, h18km±5km, n68, σ1§88/100, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GAZI	**Gazipasa**	**0.30**	**89**	P	Pn	23 07 16.5	+5.5
GAZI				S	Sb	23 07 26.0	+13
GAZI	**Gazipasa**	**0.30**	**89**	*i* P	Pn	23 07 16.5	+5.5
GAZI				*i* S	Sb	23 07 26.0	+13
ERMK	**Ermenek**	**0.88**	**62**	P	**Pn**	**23 07 22.5**	**+3.3**
ERMK				S	**Sn**	**23 07 36.9**	**+5.3**
ERMK	**Ermenek**	**0.88**	**62**	*i* P	**Pn**	**23 07 22.5**	**+3.3**
ERMK				*i* S	**Sn**	**23 07 36.9**	**+5.3**
ALFC	**Alefka**	**1.20**	**153**	P	**Pg**	**23 07 24.9**	**+0.2**
ALFC	baz=337			S	**Sn**	**23 07 40.5**	**+1.3**
ALFC	**Alefka**	**1.20**	**153**	P	**Pg**	**23 07 24.9**	**+0.2**
ALFC				S	**Sn**	**23 07 40.5**	**+1.3**
ANTB	**Antalya**	**1.23**	**303**	*e*PN	**Pg**	**23 07 24.9**	**-0.5**
ANTB				*e*SN	**Sn**	**23 07 41.5**	**+1.5**
ANTB	**Antalya**	**1.23**	**303**	*e*Pn	**Pg**	**23 07 24.9**	**-0.5**
ANTB				*e*Sn	**Sn**	**23 07 41.5**	**+1.5**
AKMC	**Akamas**	**1.24**	**165**	P	**Pg**	**23 07 25.9**	**+0.4**
AKMC	baz=349 **Akamas**	**1.24**	**165**	P	**Pg**	**23 07 25.9**	**+0.4**
AKDN	**Akdeniz- K¯–br**	**1.25**	**138**	*e*PN	**Pg**	**23 07 26.1**	**+0.5**
AKDN				*e*SN	**Sn**	**23 07 43.3**	**+2.9**
AKDN	**Akdeniz- K¯–br**	**1.25**	**138**	*e*Pn	**Pg**	**23 07 26.1**	**+0.5**
AKDN				*e*Sn	**Sn**	**23 07 43.3**	**+2.9**
LEF	**Lefka**	**1.35**	**145**	*e*PN	**Pg**	**23 07 27.3**	**-0.2**
LEF	**Lefka**	**1.35**	**145**	*e*Pn	**Pg**	**23 07 27.3**	**-0.2**
IKL	**Isikli**	**1.41**	**89**	*e*PN	**Pg**	**23 07 27.9**	**-0.7**
IKL				*e*SN	**Sg**	**23 07 46.6**	**-0.4**
IKL	**Isikli**	**1.41**	**89**	*e*Pn	**Pg**	**23 07 28.0**	**-0.7**
IKL				*e*Sn	**Sg**	**23 07 46.6**	**-0.4**
SUTC	**Sutluce-Ispart**	**1.46**	**329**	*e*PN	**Pb**	**23 07 28.2**	**+0.1**
SUTC				*e*SN	**Sb**	**23 07 46.9**	**+0.6**
SUTC	**Sutluce-Ispart**	**1.46**	**329**	*e*Pn	**Pb**	**23 07 28.2**	**+0.1**
SUTC				*e*Sn	**Sb**	**23 07 46.9**	**+0.6**
MAMC	**Mammari**	**1.48**	**135**	P	**Pb**	**23 07 29.1**	**+0.6**
MAMC	baz=316 **Mammari**	**1.48**	**135**	P	**Pb**	**23 07 29.1**	**+0.6**
KORT	**Korkueli**	**1.49**	**301**	P	**Pn**	**23 07 27.3**	**-0.2**
KORT				S	**Sn**	**23 07 47.2**	**+0.6**
KORT	**Korkueli**	**1.49**	**301**	*i* P	**Pn**	**23 07 27.3**	**-0.2**
KORT				*i* S	**Sn**	**23 07 47.2**	**+0.6**
KMER	**Konya-Meram**	**1.57**	**12**	P	**Pn**	**23 07 29.4**	**+0.8**
KMER				S	**Sn**	**23 07 49.3**	**+0.7**
KMER	**Konya-Meram**	**1.57**	**12**	*i* P	**Pn**	**23 07 29.4**	**+0.8**
KMER				*i* S	**Sn**	**23 07 49.3**	**+0.7**
SZAC	**Souni**	**1.66**	**152**	S	**Sg**	**23 07 54.8**	**-0.2**
SZAC	baz=335 **Souni**	**1.66**	**152**	S	**Sg**	**23 07 54.8**	**-0.2**
CSS	**Mathiatis**	**1.70**	**138**	S	**Sn**	**23 07 51.7**	**+0.2**
CSS	baz=319 **Mathiatis**	**1.70**	**138**	S	**Sn**	**23 07 51.7**	**+0.2**
KONT	**Konya--Tatoy**	**1.74**	**11**	*e*PN	**Pn**	**23 07 31.7**	**+0.8**
KONT	**Konya--Tatoy**	**1.74**	**11**	*e*Pn	**Pn**	**23 07 31.7**	**+0.8**
KIZK	**Mersin**	**1.79**	**81**	P	**Pb**	**23 07 33.5**	**-0.3**
KIZK				S	**Sn**	**23 07 54.4**	**+0.6**
KIZK	**Mersin**	**1.79**	**81**	*i* P	**Pb**	**23 07 33.5**	**-0.3**
KIZK				*i* S	**Sn**	**23 07 54.4**	**+0.6**
AKAS	**Kas**	**1.89**	**271**	P	**Pb**	**23 07 35.4**	**-0.1**
AKAS	**Kas**	**1.89**	**271**	*i* P	**Pb**	**23 07 35.4**	**-0.1**
ISP	**Isparta**	**1.95**	**325**	*e*PN	**Pn**	**23 07 35.5**	**+1.7**
ISP	**Isparta**	**1.95**	**325**	*e*Pn	**Pn**	**23 07 35.5**	**+1.7**
BAGO	**Egridir - ISPA**	**1.98**	**333**	*i* P	**Pn**	**23 07 35.1**	**+0.8**
LADK	**Ladik-KONYA**	**1.99**	**10**	*e*PN	**Pn**	**23 07 35.2**	**+0.8**
LADK	**Ladik-KONYA**	**1.99**	**10**	*e*Pn	**Pn**	**23 07 35.2**	**+0.8**
KERG	**Konya-Eregli**	**2.11**	**55**	P	**Pn**	**23 07 36.9**	**+0.9**
KERG				S	**Sn**	**23 08 00.6**	**-1.3**
KERG	**Konya-Eregli**	**2.11**	**55**	*i* P	**Pn**	**23 07 36.9**	**+0.9**
KERG				*i* S	**Sn**	**23 08 00.6**	**-1.3**
MERS	**Mersin**	**2.17**	**72**	*e*PN	**Pn**	**23 07 38.8**	**+2.0**
MERS	**Mersin**	**2.17**	**72**	*e*Pn	**Pn**	**23 07 38.8**	**+2.0**
KDHN	**Kadinhani**	**2.29**	**3**	P	**Pn**	**23 07 38.1**	**-0.3**
KDHN	**Kadinhani**	**2.29**	**3**	*i* P	**Pn**	**23 07 38.1**	**-0.3**
KARA	**Karaisali**	**2.70**	**67**	*e*PN	**Pn**	**23 07 46.1**	**+2.1**
KARA	**Karaisali**	**2.70**	**67**	*e*Pn	**Pn**	**23 07 46.2**	**+2.1**
TURN	**Turunc**	**2.77**	**284**	*i* P	**Pb**	**23 07 49.2**	**-1.1**
KHAL	**Karahalli**	**2.90**	**318**	S	**Sn**	**23 08 18.6**	**-2.6**
KHAL	**Karahalli**	**2.90**	**318**	*i* S	**Sn**	**23 08 18.6**	**-2.6**
ARNB	**Al Arnab**	**3.29**	**95**	*e*P	**Pn**	**23 07 52.3**	**+0.2**
ARNB				*e*S	**Sn**	**23 08 27.7**	**-3.1**
ARNB	comp=N,22nm,0.5s			AML	AML	23 08 31.5	
ARNB	comp=E,15nm,0.4s			AML	AML	23 08 33.5	
ARNB	**Al Arnab**	**3.29**	**95**	*e*P	**Pn**	**23 07 52.3**	**+0.2**
ARNB				*e*S	**Sn**	**23 08 27.7**	**-3.1**
AFSR	**Af¯ar-Bala (A**	**3.33**	**15**	*e*PN	**Pn**	**23 07 55.3**	**+2.5**
AFSR	**Af¯ar-Bala (A**	**3.33**	**15**	*e*Pn	**Pn**	**23 07 55.3**	**+2.5**
TAHT	**Tahtakopru-Hat**	**3.43**	**86**	*e*PN	**Pn**	**23 07 56.1**	**+2.1**
TAHT	**Tahtakopru-Hat**	**3.43**	**86**	*e*Pn	**Pn**	**23 07 56.1**	**+2.1**
BTCH	**Batrach**	**3.66**	**92**	*e*P	**Pn**	**23 07 57.1**	**-0.2**
BTCH				*e*S	**Sn**	**23 08 36.7**	**-3.3**
BTCH	comp=N,38nm,0.7s			AML	AML	23 08 44.5	
BTCH	comp=E,20nm,0.3s			AML	AML	23 08 44.9	
BTCH	**Batrach**	**3.66**	**92**	*e*P	**Pn**	**23 07 57.1**	**-0.2**
BTCH				*e*S	**Sn**	**23 08 36.7**	**-3.3**
DRWC	**Darouich**	**3.83**	**83**	*e*P	**Pn**	**23 07 59.3**	**-0.3**
DRWC				*e*S	**Sn**	**23 08 40.2**	**-4.0**
DRWC	comp=N,8.7nm,0.4s			AML	AML	23 08 44.8	
DRWC	comp=E,14nm,0.4s			AML	AML	23 08 47.8	
DRWC	**Darouich**	**3.83**	**83**	*e*P	**Pn**	**23 07 59.3**	**-0.3**
DRWC				*e*S	**Sn**	**23 08 40.2**	**-4.0**
HAWK	**Haweek**	**4.03**	**114**	*e*P	**Pn**	**23 08 02.1**	**-0.2**
HAWK				*e*S	**Sn**	**23 08 45.9**	**-3.1**
HAWK	comp=E,15nm,0.2s			AML	AML	23 08 47.8	
HAWK	comp=N,8.9nm,0.3s			AML	AML	23 08 48.1	
HAWK	**Haweek**	**4.03**	**114**	*e*P	**Pn**	**23 08 02.1**	**-0.2**
HAWK				*e*S	**Sn**	**23 08 45.9**	**-3.1**
MARH	**Ras Al Marh**	**4.32**	**119**	*e*P	**Pn**	**23 08 07.2**	**+0.6**
MARH				*e*S	**Sn**	**23 08 53.4**	**-3.3**
ROOS	**tl_alroos**	**4.84**	**114**	*e*P	**Pn**	**23 08 15.1**	**+1.7**
ROOS				*e*S	**Sn**	**23 09 05.5**	**-3.5**
ROOS	comp=N,8.1nm,0.5s			AML	AML	23 09 08.9	
ROOS	comp=E,5.3nm,0.6s			AML	AML	23 09 12.4	
ROOS	**tl_alroos**	**4.84**	**114**	*e*P	**Pn**	**23 08 15.1**	**+1.7**
ROOS				*e*S	**Sn**	**23 09 05.5**	**-3.5**
TCHB	**Talchebab**	**4.87**	**136**	*e*P	**Pn**	**23 08 15.3**	**+1.5**
TCHB				*e*S	**Sn**	**23 09 07.5**	**-2.2**
TCHB	**Talchebab**	**4.87**	**136**	*e*P	**Pn**	**23 08 15.3**	**+1.5**
TCHB				*e*S	**Sn**	**23 09 07.5**	**-2.2**

*IDC **01** 23:15:24.1±0.9, 4°.64N×126°.42E, h0km, mb3.8/11, mb1 3.9/11, mb1mx3.7/51, mbtmp3.8/11, MS3.3/2, Ms1 3.3/2, ms1mx2.6/42, Error ellipse: s-maj=92.9km s-min=14.4km az=71.0*
*NEIC **01** 23:15:29.2±0.4, 4°.64N×126°.48E, h35km, mb4.1/2, Error ellipse: s-maj=21.5km s-min=7.9km az=75.0*
*ISCJB **01** 23:15:32.6±0.6, 4°.59N±0°.09×126°.5E±0°.2, h85km, mb3.9/14, Error ellipse: s-maj=29.3km s-min=10.2km az=164.8*
ISC 01 23:15:34.7±0.8, 4°.6N±0°.1×126°.4E±0°.2, h85km, n16, σ0§81/16, mb3.9/14, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**22.56**	**182**	P	**P**	**23 20 26.7**	**-1.3**
WRAB	0.8nm,0.3s,baz=358,slow=12,SNR=6.3 **Tennant Creek**	**25.58**	**163**	*e*P	**P**	**23 20 55.5**	**-0.5**
WRA	1.9nm,0.7s **Warramunga Arr**	**25.58**	**163**	P	**P**	**23 20 54.5**	**-1.6**
ASAR	1.3nm,0.6s,baz=344,slow=10,SNR=12 **Alice Springs**	**29.01**	**166**	P	**P**	**23 21 26.6**	**-0.1**
COCO	0.3nm,0.5s,baz=348,slow=8.4,SNR=7.8 **West Island**	**33.82**	**240**	*e*P	**P**	**23 22 09.2**	**+0.2**
STKA	215nm,0.6s **Stephens Creek**	**39.03**	**159**	P	**P**	**23 22 54.2**	**+1.0**
SONM	1.3nm,0.6s,baz=334,slow=11,SNR=4.9 **Songino Array**	**46.40**	**341**	P	**P**	**23 23 51.8**	**-0.9**
SONM	0.3nm,0.5s,baz=90,slow=6.2,SNR=3.5			LR	LR	23 46 40.8	
MKAR	comp=Z,16nm,18.5s,baz=89,slow=40 **Makanchi Array**	**56.69**	**325**	P	**P**	**23 25 09.4**	**0.0**
MKAR	0.3nm,0.3s,baz=115,slow=7.7,SNR=14			PcP	**PcP**	**23 26 05.8**	**+1.1**
MA2	0.4nm,0.6s,baz=129,slow=3.2,SNR=3.7 **Magadan**	**57.95**	**14**	*e*P	**P**	**23 25 17.8**	**-0.3**
AAK	1.9nm,0.4s **Ala-Archa**	**59.53**	**318**	LR	LR	23 54 30.1	
KURBB	comp=Z,56nm,18.1s,baz=254,slow=39 **Kurchatov Arra**	**60.86**	**327**	P	**P**	**23 25 38.2**	**0.0**
KURK	0.8nm,0.5s,baz=128,slow=6.2,SNR=12 **Kurchatov**	**60.87**	**327**	P	**P**	**23 25 38.2**	**0.0**
BVAR	0.5nm,0.3s,baz=124,slow=7.4,SNR=4.4 **Borovoye Array**	**66.45**	**327**	P	**P**	**23 26 14.7**	**-0.3**
NRIK	**Noril'sk**	**69.53**	**346**	P	**P**	**23 26 34.7**	**+0.8**
ARCES	1.4nm,0.5s,baz=138,slow=6.5,SNR=4.9 **ARCESS Array B**	**89.55**	**340**	P	**P**	**23 28 22.4**	**+0.1**
FINES	0.6nm,0.7s,baz=83,slow=6.1,SNR=5.3 **FINESS Array B**	**90.94**	**332**	P	**P**	**23 28 28.6**	**-0.3**
	0.4nm,0.4s,baz=62,slow=5.2,SNR=8.4						

WEL 01 23:15:42.9±0.6, 36°.28S×178°.10E, h108km±13km, ML3.5/2, Error ellipse: s-maj=8.8km s-min=5.5km az=0.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HAZ	**Te Kaha**	**1.50**	**190**	PN	Pn	23 16 09.2	-0.3
HAZ				SN	Sn	23 16 30.4	+0.7
PKGZ	**Pakihiroa**	**1.61**	**181**	PN	Pn	23 16 11.1	+0.2
PKGZ				SN	Sn	23 16 30.8	-1.4
MWZ	**Matawai**	**2.10**	**192**	PN	Pn	23 16 17.3	+0.2
MWZ				SN	Sn	23 16 43.8	+0.6
URZ	**Urewera**	**2.13**	**202**	PN	Pn	23 16 17.5	+0.1
URZ				SN	Sn	23 16 44.1	+0.3
CNGZ	**Carnagh Statio**	**2.20**	**178**	PN	Pn	23 16 18.2	-0.2
RAGZ	**Rawiri**	**2.28**	**194**	PN	Pn	23 16 19.7	+0.3
MUGZ	**Murupara**	**2.44**	**205**	PN	Pn	23 16 21.9	+0.6
RIGZ	**Rimuhau**	**2.44**	**186**	PN	Pn	23 16 20.4	-1.0

*IDC **01** 23:18:57.3±0.5, 15°.16S×172°.77W, h0km, mb4.6/22, mb1 4.8/22, mb1mx4.6/42, mbtmp4.6/22, MS4.1/19, Ms1 4.1/19, ms1mx4.0/26, Error ellipse: s-maj=21.2km s-min=13.8km az=125.0*
*GCMT **01** 23:18:58.6±0.2, 14°.92S×172°.58W, h22km±1km, MW5.0/74, Moment Tensor Solution. s34,c41; s74,c105; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}~1.57±.18; $M_{\theta\theta}$1.86±.14; $M_{\phi\phi}$-0.29±.14; $M_{r\theta}$-0.88±.23; $M_{\theta\phi}$-3.16±.10; $M_{r\phi}$0.97±.24; Best double couple: $M_0$3.52100×10^{16} NP1:ϕ_s168.00000°, δ86.00000°, λ-22.00000°. NP2: ϕ_s260.00000°, δ68.00000°, λ-175.00000°. Principal axes: T 4.3970, Plg12.0000°, Azm216.0000°; N -1.7520, Plg68.0000°, Azm338.0000°; P -2.6450, Plg18.0000°, Azm122.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **01** 23:18:58.6±0.1, 15°.14S×172°.94W, h10km, mb5.0/145 Error ellipse: s-maj=4.6km s-min=2.7km az=134.0*
NEIC Felt at Apia.
*BJI **01** 23:18:58.4, 15°.09S×172°.98W, h6km, mb5.1/35, mB5.5/22, Ms5.3/12, Ms7 4.9/9*
*ISCJB **01** 23:18:59.9±0.1, 15°.22S±0°.04×172°.90W±0°.04, h29km, mb4.9/182, MS4.3/26, Error ellipse: s-maj=6.4km s-min=4.0km az=140.3*
*MOS **01** 23:19:02.7±1.0, 14°.86S×172°.68W, h33km, mb5.0/53, MS4.3/7, Error ellipse: s-maj=11.6km s-min=7.5km az=70.2*
ISC 01 23:19:01.8±0.3, 15°.22S±0°.06×172°.89W±0°.06, h29km, n654, σ1§01/619, mb4.9/182, MS4.3/26, 14C-52D, Samoa Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**1.70**	**40**	Pn	Pn	23 19 20.0	-10
AFI	547nm,0.3s,baz=180,slow=1.7,SNR=548			Sn	Sn	23 19 35.3	-15
MSVF	2μm,0.3s,baz=66,slow=20,SNR=40 **Nonsavu**	**9.04**	**253**	*e*P	**Pn**	**23 21 08.7**	**-1.8**
MSVF	**Nonsavu**	**9.04**	**253**	*e*Pn	**Pn**	**23 21 08.7**	**-1.8**
RAR	**Rarotonga**	**13.81**	**117**	Pn	Pn	23 22 06.4	-9.4
RAR	2.0nm,0.3s,baz=32,slow=9.5,SNR=3.6 **Rarotonga**	**13.81**	**117**	*e*P	**Pn**	**23 22 16.9**	**+1.1**
RAR	**Rarotonga**	**13.81**	**117**	*e*Pn	**Pn**	**23 22 16.9**	**+1.1**
RAO	**Raoul Island**	**14.71**	**198**	*e*P	**Pn**	**23 22 28.8**	**+0.8**
RAO	**Raoul Island**	**14.71**	**198**	*e*Pn	**Pn**	**23 22 28.8**	**+0.8**
DZM	**Mont Dzumac**	**20.71**	**248**	P	Pn	23 23 41.5	-1.1
TARA	3.1nm,0.8s,baz=82,slow=17,SNR=3.0 **Tarawa**	**21.64**	**318**	*e*P	**P**	**23 23 47.1**	**-2.9**
PAE	87nm,0.9s **Paea**	**22.49**	**99**	*e*T	T	23 46 16.1	
PPT	4.0nm,0.3s **Papeete**	**22.49**	**99**	LR	LR	23 30 06.8	
PPT2	comp=Z,181nm,20.7s,baz=268,slow=30 **Papeete2**	**22.49**	**99**	*e*LQ	LQ	23 27 59.4	
PPT2	2μm,26.0s			*e*LR	LR	23 29 02.5	
PPT2	579nm,25.5s **Papeete2**	**22.49**	**99**	*e*T	T	23 46 16.6	
TIAR	3.3nm,0.3s **Tiarei**	**22.71**	**99**	*e*T	T	23 46 32.3	
TVO	3.7nm,0.3s **Taravao**	**22.81**	**100**	*e*T	T	23 46 38.6	
XMAS	1.4nm,0.3s **Kiritimati**	**22.98**	**43**	*e*P	**P**	**23 24 02.3**	**-2.0**
PMOR	168nm,1.2s **Pomariorio Ree**	**24.13**	**93**	*e*P	**P**	**23 24 13.0**	**-2.5**
PMOR	76nm,1.2s **Pomariorio Ree**	**24.13**	**93**	*e*T	T	23 48 05.9	
VAH	3.5nm,0.3s **Vaihoa**	**24.38**	**93**	*e*P	**P**	**23 24 14.8**	**-2.9**
URZ	50nm,1.0s **Urewera**	**24.59**	**199**	P	**P**	**23 24 19.7**	**+0.3**
URZ	33nm,0.8s,baz=283,slow=3.6,SNR=14 **Urewera**	**24.59**	**199**	*e*P	**P**	**23 24 19.2**	**-0.2**
HIZ	94nm,1.3s **Hauiti**	**25.59**	**203**	*e*P	**P**	**23 24 26.7**	**-1.8**
BKZ	186nm,1.3s **Black Stump Fm**	**25.61**	**199**	*e*P	**P**	**23 24 27.8**	**-1.0**
BFZ	22nm,0.9s **Birch Farm**	**27.07**	**198**	*e*P	**P**	**23 24 41.4**	**-0.5**
LTZ	210nm,1.7s **Lake Taylor**	**30.27**	**202**	*e*P	**P**	**23 25 10.7**	**+0.3**
KWAJ	31nm,1.0s **Kwajalein Atol**	**30.71**	**320**	*e*P	**P**	**23 25 12.9**	**-1.6**
KWAJ	**Kwajalein Atol**	**30.71**	**320**	*e*P	**P**	**23 25 12.9**	**-1.6**
OXZ	480nm,1.5s **Oxford**	**30.83**	**202**	*e*P	**P**	**23 25 13.9**	**-1.4**
TAOE	73nm,1.5s **Nuku Hiva Isla**	**32.62**	**83**	*e*LR	LR	23 33 23.8	
WKZ	244nm,23.7s **Wanaka**	**33.24**	**204**	*e*P	**P**	**23 25 36.4**	**-0.1**
MLZ	269nm,2.0s **Mavora Lakes**	**34.05**	**204**	*e*P	**P**	**23 25 43.0**	**-0.5**
DCZ	29nm,1.0s **Deep Cove**	**34.52**	**205**	*e*P	**P**	**23 25 47.5**	**0.0**
WHZ	74nm,1.6s **Wether Hill Ro**	**34.55**	**204**	*e*P	**P**	**23 25 47.8**	**0.0**
RKT	39nm,0.9s **Rikitea**	**36.59**	**108**	*e*LR	LR	23 35 36.9	
	400nm,26.5s						
RKT	**Rikitea**	**36.59**	**108**	*e*T	T	00 04 09.2	
H11S2	6.7nm,0.3s **WAKE ISLAND Hy**	**39.07**	**328**	T	T	00 08 09.4	
H11S3	baz=147,slow=76,SNR=22 **WAKE ISLAND Hy**	**39.08**	**328**	T	T	00 08 09.4	
H11S1	baz=147,slow=76,SNR=12 **WAKE ISLAND Hy**	**39.09**	**328**	T	T	00 08 11.1	
HON	baz=147,slow=76,SNR=18 **Honolulu**	**39.15**	**22**	*e*P	**P**	**23 26 27.1**	**-0.1**
HON	**Honolulu**	**39.15**	**22**	*e*P	**P**	**23 26 27.1**	**-0.1**
KEKH	151nm,0.9s **Kekaha**	**39.17**	**20**	*e*P	**P**	**23 26 26.4**	**-0.9**
KIP	147nm,1.2s **Kipapa**	**39.24**	**22**	*ce*P	**P**	**23 26 28.5**	**+0.6**
KIP	comp=Z,1μm,2.5s			pmax	pmax		
OPA	**Opana**	**39.48**	**22**	*e*P	**P**	**23 26 29.0**	**-0.9**
OPA	comp=Z,128nm,1.4s			pmax	pmax		
OPA	**Opana**	**39.48**	**22**	*e*P	**P**	**23 26 29.0**	**-0.9**
CAN	comp=Z,128nm,1.4s **Canberra**	**39.52**	**232**	*e*P	**P**	**23 26 28.4**	**-1.9**
CAN	comp=Z,31nm,1.4s			pmax	pmax		
CAN	**Canberra**	**39.52**	**232**	*e*P	**P**	**23 26 28.4**	**-1.9**
H11N3	comp=Z,31nm,1.4s **WAKE ISLAND Hy**	**40.00**	**330**	T	T	00 09 29.1	
H11N1	baz=148,slow=76,SNR=12 **WAKE ISLAND Hy**	**40.01**	**330**	T	T	00 09 20.8	
H11N2	baz=148,slow=76,SNR=15 **WAKE ISLAND Hy**	**40.02**	**330**	T	T	00 09 25.2	
PTCN	baz=148,slow=76,SNR=15 **Pitcairn Islan**	**41.21**	**111**	*e*P	**P**	**23 26 44.5**	**+0.2**
MANU	comp=Z,601nm,1.3s **Manus Island**	**41.31**	**285**	*e*P	**P**	**23 26 41.5**	**-3.8**
MIDW	comp=Z,45nm,1.1s **Midway**	**43.40**	**354**	*e*P	**P**	**23 27 01.2**	**-0.7**
STKA	comp=Z,48nm,0.7s **Stephens Creek**	**44.55**	**240**	P	**P**	**23 27 10.7**	**-0.6**
STKA	comp=Z,2.5nm,0.7s,baz=82,slow=8.5,SNR=5.5			LR	LR	23 42 45.3	
STKA	comp=Z,100nm,19.4s,baz=43,slow=32 **Stephens Creek**	**44.55**	**240**	*e*P	**P**	**23 27 11.0**	**-0.3**
STKA	comp=Z,2.0nm,0.9s			pmax	pmax		
STKA	**Stephens Creek**	**44.55**	**240**	*e*P	**P**	**23 27 11.0**	**-0.3**
WRAB	comp=Z,1.6nm,0.9s **Tennant Creek**	**50.35**	**257**	*ce*P	**P**	**23 27 56.2**	**-0.4**
WRAB	comp=Z,12nm,1.2s			pmax	pmax		
WRAB	**Tennant Creek**	**50.35**	**257**	*e*P	**P**	**23 27 55.6**	**-1.0**
WRA	comp=Z,8.2nm,1.2s **Warramunga Arr**	**50.36**	**257**	P	**P**	**23 27 55.6**	**-1.1**
WRA	comp=Z,4.7nm,1.1s,baz=92,slow=7.1,SNR=18			PcP	**PcP**	**23 29 14.0**	**-1.1**
AS01	comp=Z,3.8nm,0.8s,baz=87,slow=3.7,SNR=9.8 **Alice Springs**	**50.59**	**252**	*e*P	**P**	**23 27 57.1**	**-1.3**
AS31	**Alice Springs**	**50.63**	**252**	*e*P	**P**	**23 27 58.5**	**-0.2**
ASAR	comp=Z,3.6nm,0.8s **Alice Springs**	**50.63**	**252**	P	**P**	**23 27 58.0**	**-0.7**
ASAR	comp=Z,9.3nm,0.8s,baz=85,slow=8.4,SNR=61			LR	LR	23 48 36.2	
ASAR	**Alice Springs**	**50.63**	**252**	P	**P**	**23 27 58.0**	**-0.7**
ASAR	comp=Z,8.0nm,0.7s			pmax	pmax		
ASAR	comp=Z,248nm,19.5s			MLR	MLR		
JCJ	**Chichijima**	**60.59**	**314**	LR	LR	23 52 21.6	
SOEI	comp=Z,226nm,18.6s,baz=104,slow=33 **Soe**	**61.42**	**267**	*e*P	**P**	**23 29 15.1**	**-1.1**
SOEI				*es*P	**pP**	**23 29 20.6**	**-4.6**
VNDA	**Vanda**	**63.60**	**186**	P	**P**	**23 29 31.0**	**+1.5**
VNDA	comp=Z,8.0nm,0.9s,baz=7.6,slow=6.5,SNR=36			LR	LR	23 52 27.7	
VNDA	comp=Z,42nm,21.8s,baz=20,slow=32 **Vanda**	**63.60**	**186**	P	**P**	**23 29 31.0**	**+1.5**
VNDA	comp=Z,8.0nm,1.0s			pmax	pmax		
VNDA	comp=Z,42nm,21.8s			MLR	MLR		
VNDA	**Vanda**	**63.60**	**186**	P	**P**	**23 29 31.0**	**+1.5**
MJAR	**Matsushiro Arr**	**69.12**	**319**	P	**P**	**23 30 05.7**	**+0.2**
MJAR	comp=Z,6.3nm,0.9s,baz=157,slow=5.8,SNR=4.3 **Matsushiro Arr**	**69.12**	**319**	P	**P**	**23 30 05.7**	**+0.2**
MJAR	comp=Z,7.0nm,1.0s			pmax	pmax		
MAJO	**Matsushiro**	**69.12**	**319**	*i* P	**P**	**23 30 06.0**	**+0.5**
MAJO				pmax	pmax		
H06S1	comp=Z,65nm,0.9s **SOCORRO T**	**69.69**	**63**	T	T	00 47 48.0	
SNCC	SNR=7.1 **San Nicolas Is**	**70.11**	**46**	P	**P**	**23 30 11.8**	**+0.2**
SCZ2	baz=235 **Santa Cruz Isl**	**70.46**	**45**	P	**P**	**23 30 13.7**	**-0.1**
SBC	baz=235 **Santa Barbara**	**70.66**	**45**	P	**P**	**23 30 15.2**	**+0.2**
PKM	baz=235 **Mcpherson Peak**	**70.85**	**44**	P	**P**	**23 30 16.2**	**-0.2**
BLG	baz=235,SNR=5.4 **Laguna Peak, P**	**70.91**	**45**	P	**P**	**23 30 16.5**	**-0.1**
CIS	baz=236 **Catalina Islan**	**70.96**	**46**	P	**P**	**23 30 17.0**	**+0.1**
SMMC	baz=236 **Simmler**	**70.97**	**44**	P	**P**	**23 30 17.0**	**+0.1**
FMP	baz=234 **Fort Macarthur**	**71.22**	**46**	P	**P**	**23 30 18.0**	**-0.3**
OSI	baz=236 **Osito Audit: C**	**71.43**	**45**	P	**P**	**23 30 19.8**	**+0.1**
DECC	baz=236 **Green Verdugo**	**71.49**	**45**	P	**P**	**23 30 19.8**	**-0.3**
PASC	baz=236 **Pasadena Art C**	**71.55**	**46**	*e*P	**P**	**23 30 19.1**	**-1.3**
109C	comp=Z,23nm,1.1s **Camp Elliot, M**	**71.60**	**47**	P	**P**	**23 30 20.1**	**-0.6**
KMRM	baz=237 **Mail Ridge**	**71.62**	**38**	*e*P	**P**	**23 30 20.3**	**-0.5**
ARVC	comp=Z,34nm,0.9s **Arvin**	**71.64**	**44**	P	**P**	**23 30 20.5**	**-0.4**
MWC	baz=235,SNR=5.2 **Mount Wilson**	**71.67**	**46**	*e*P	**P**	**23 30 20.9**	**-0.4**
MWC	comp=Z,27nm,1.0s			pmax	pmax		
MWC	**Mount Wilson**	**71.67**	**46**	*e*P	**P**	**23 30 20.9**	**-0.4**
MURC	comp=Z,27nm,1.0s **Murrieta**	**71.92**	**46**	P	**P**	**23 30 22.3**	**-0.4**
BFSC	baz=237 **Mount Baldy Ra**	**71.95**	**46**	P	**P**	**23 30 22.4**	**-0.6**
JNU	baz=236,SNR=5.0 **Nakatsue**	**72.04**	**313**	P	**P**	**23 30 24.0**	**+0.6**
RCTC	comp=Z,11nm,0.8s,baz=62,slow=3.7,SNR=6.2 **Rector, Farm

comp=Z,6.0nm,0.8s,baz=148,slow=8.6,SNR=5.4
PETK LR LR 00 01 36.4
comp=Z,61nm,18.2s,baz=150,slow=35
LRMC Laurel Mtn Rad 72.62 45 P **P 23 30 26.4 -0.5**
baz=236
N02D Trinity Center 72.69 38 P **P 23 30 27.3 +0.1**
baz=231
RRX Edison Barstow 72.75 45 P **P 23 30 27.5 -0.1**
baz=237
O03D Paynes Creek 72.81 39 P **P 23 30 27.8 -0.1**
baz=232
M02C Callahan 72.87 37 P **P 23 30 28.4 +0.2**
baz=231
CWC Cottonwood Cre 72.89 44 P **P 23 30 28.2 -0.4**
baz=236
L02D Cave Junction, 72.92 36 P **P 23 30 28.2 -0.3**
baz=230
BELC Belle Mtn. Jos 72.98 47 P **P 23 30 28.6 -0.5**
baz=238
MLAC Mammoth, Mammo 73.07 42 P **P 23 30 28.9 -0.8**
baz=235
MPMC Manual Prospec 73.07 44 P **P 23 30 29.2 -0.5**
baz=236,SNR=20
GSC Goldstone, Bar 73.12 45 P **P 23 30 28.9 -0.9**
baz=237,SNR=12
GSC Goldstone, Bar 73.12 45 *eP* **P 23 30 29.1 -0.8**
GSC pmax pmax
comp=Z,21nm,1.1s
GSC Goldstone, Bar 73.12 45 *eP* **P 23 30 29.1 -0.8**
comp=Z,21nm,1.1s
DAC Darwin (Calif) 73.12 44 *eP* **P 23 30 29.4 -0.6**
DAC pmax pmax
comp=Z,10.0nm,1.2s
DAC Darwin (Calif) 73.12 44 *eP* **P 23 30 29.4 -0.6**
comp=Z,10nm,1.2s
YBH Yreka Blue Hor 73.17 37 *eP* **P 23 30 29.9 -0.1**
YBH pmax pmax
comp=Z,13nm,1.0s
YBH Yreka Blue Hor 73.17 37 *eP* **P 23 30 29.9 -0.1**
comp=Z,13nm,1.0s
BC3 Big Chuckawall 73.18 47 P **P 23 30 29.8 -0.4**
baz=238
HEC Hector,Ludlow 73.19 46 P **P 23 30 29.6 -0.7**
baz=237,SNR=14
WAKR Walker 73.19 41 *eP* **P 23 30 29.9 -0.4**
GLA Glamis 73.31 48 P **P 23 30 30.7 -0.3**
baz=239
GLA Glamis 73.31 48 *eP* **P 23 30 31.2 +0.2**
GLA pmax pmax
comp=Z,24nm,1.3s
GLA Glamis 73.31 48 *eP* **P 23 30 31.2 +0.2**
comp=Z,24nm,1.3s
KKM Kota Kinabalu 73.32 281 *eP* **P 23 30 31.6 +0.1**
comp=Z,14nm,0.9s
YSS Yuzh-Sakhalins 73.58 330 P P 23 30 24.4 -7.7
HUMO Hull Mountain 73.58 36 *eP* **P 23 30 32.4 0.0**
comp=Z,12nm,1.1s
GMRC Granite Mounta 73.63 46 P **P 23 30 32.0 -0.9**
baz=238,SNR=12
IRM Iron Mountain 73.66 47 P **P 23 30 32.7 -0.4**
baz=238
GRAC Grapevine Rang 73.67 43 P **P 23 30 33.0 0.0**
baz=236
M04C Macdoel 73.70 37 P **P 23 30 33.1 -0.1**
baz=231,SNR=11
FURC Furnace Creek, 73.72 44 P **P 23 30 33.0 -0.2**
baz=236,SNR=5.4
TUQ Turquoise Moun 73.80 45 P **P 23 30 33.4 -0.5**
baz=237
SHOC Shoshone, Teco 73.81 45 P **P 23 30 33.8 0.0**
baz=237
NV01 Mina Array Sit 73.87 42 *eP* **P 23 30 33.1 -1.2**
NVAR Mina Array Bea 73.87 42 P **P 23 30 33.7 -0.7**
comp=Z,7.8nm,0.8s,baz=228,slow=10,SNR=35
NVAR LR LR 23 56 43.8
comp=Z,238nm,19.4s,baz=254,slow=31
Y12C Blythe 73.89 48 P **P 23 30 34.2 -0.1**
baz=239,SNR=5.6
Y12C Blythe 73.89 48 *eP* **P 23 30 34.2 -0.1**
comp=Z,16nm,1.0s
113A Mohawk Valley, 73.93 49 *eP* **P 23 30 33.9 -0.7**
comp=Z,14nm,1.0s
NV11 Mina Array Sit 73.97 42 *eP* **P 23 30 34.3 -0.6**
comp=Z,15nm,1.0s
I03D Drain, OR 74.06 35 P **P 23 30 34.9 -0.2**
baz=230
214A Organ Pipe Nat 74.23 50 P **P 23 30 36.0 -0.4**
baz=240,SNR=6.2
214A Organ Pipe Nat 74.23 50 *eP* **P 23 30 35.7 -0.7**
comp=Z,57nm,1.1s
K04D Chiloquin, OR 74.28 37 P **P 23 30 36.6 +0.1**
baz=231
TPNV Topopah Spring 74.39 44 P **P 23 30 36.9 -0.5**
baz=237,SNR=17
TPNV Topopah Spring 74.39 44 *eP* **P 23 30 36.8 -0.6**
TPNV pmax pmax
comp=Z,11nm,1.0s
TPNV Topopah Spring 74.39 44 *eP* **P 23 30 36.8 -0.6**
comp=Z,10nm,1.0s
PDMCI Parker Dam,Lak 74.45 47 P **P 23 30 37.1 -0.5**
baz=239,SNR=7.2
I04A Tendick Farm, 74.64 35 P **P 23 30 38.1 -0.5**
baz=231,SNR=7.0
KDAK Kodiak Island 74.66 11 LR LR 23 56 40.7
comp=Z,257nm,21.2s,baz=224,slow=30
MOD Modoc Plateau 74.68 38 *eP* **P 23 30 38.5 -0.5**
comp=Z,12nm,0.9s
QSPA South Pole Qui 74.82 180 *eP* **P 23 30 39.2 -0.2**
comp=Z,126nm,1.5s
K05A Summer Lake 74.84 37 *eP* **P 23 30 39.8 -0.1**
comp=Z,28nm,1.1s
J05D Fort Rock, OR 74.99 36 P **P 23 30 40.8 +0.1**
baz=232,SNR=15
W13A Hualapai Mount 75.04 47 *eP* **P 23 30 40.8 -0.4**
comp=Z,12nm,1.0s
Y14A Wickenburg 75.07 48 *eP* **P 23 30 40.8 -0.5**
G03D McMinnville, O 75.08 34 P **P 23 30 41.0 +0.1**
baz=230,SNR=5.3
H04A Detroit Lake 75.33 35 *eP* **P 23 30 42.2 -0.2**
comp=Z,14nm,0.9s
I05D Terrebonne, OR 75.58 35 P **P 23 30 43.8 -0.2**
baz=231,SNR=6.6
R11A Troy Canyon, C 75.60 43 P **P 23 30 43.8 -0.5**
baz=237,SNR=9.8
R11A Troy Canyon, C 75.60 43 *eP* **P 23 30 43.6 -0.7**
comp=Z,8.1nm,1.1s
F04D Rainier, OR 75.78 33 P **P 23 30 45.2 +0.2**
baz=230
E03A Lebam 75.80 33 *eP* **P 23 30 44.9 -0.1**
comp=Z,30nm,1.0s
TUC Tucson 75.90 51 P **P 23 30 45.9 -0.3**
baz=242
TUC Tucson 75.90 51 *eP* **P 23 30 45.8 -0.3**
TUC pmax pmax
comp=Z,18nm,1.0s
TUC Tucson 75.90 51 *eP* **P 23 30 45.8 -0.3**
comp=Z,18nm,1.0s
WVOR Wild Horse Val 75.99 38 *eP* **P 23 30 45.9 -0.5**
WVOR pmax pmax
comp=Z,9.0nm,0.9s
WVOR Wild Horse Val 75.99 38 *eP* **P 23 30 45.9 -0.5**
comp=Z,9.4nm,0.9s
F04A Amboy 76.00 34 *eP* **P 23 30 45.7 -0.6**
comp=Z,14nm,1.0s
G05D Wamic, OR 76.16 35 P **P 23 30 45.8 -1.4**
baz=231
NLWA Neilton Lookou 76.19 32 *eP* **P 23 30 47.4 +0.1**
comp=Z,13nm,1.1s
KSRS Korea Array 76.38 315 P **P 23 30 50.7 +2.2**
comp=Z,6.3nm,0.9s,baz=125,slow=6.1,SNR=20
KSRS LR LR 23 57 55.3
comp=Z,101nm,20.2s,baz=114,slow=31
KSRS Korea Array 76.38 315 P **P 23 30 50.7 +2.2**
KSRS pmax pmax
comp=Z,7.0nm,0.9s
KSRS MLR MLR
comp=Z,101nm,20.2s
TDL Tradedollar La 76.38 33 P **P 23 30 48.5 0.0**
KSAR Wonju Array Be 76.40 315 P **P 23 30 50.7 +2.0**
KSAR Wonju Array Be 76.40 315 P **P 23 30 50.7 +2.0**
KS01 Wonju Array Si 76.41 315 *eP* **P 23 30 50.1 +1.4**
X16A Lo Mia Camp, P 76.44 48 *eP* **P 23 30 49.2 -0.1**
comp=Z,23nm,1.0s
LCMT Little Creek M 76.47 45 *eP* **P 23 30 49.0 -0.2**
comp=Z,11nm,1.1s
G06A Carlson Farm, 76.54 35 *eP* **P 23 30 48.8 -0.6**
comp=Z,15nm,1.2s
VTHM Trough 76.54 35 P **P 23 30 48.8 -0.6**

319A Douglas 76.60 52 *eP* **P 23 30 49.9 -0.2**
KNB Kanab 76.76 45 *eP* **P 23 30 50.9 -0.1**
KNB pmax pmax
comp=Z,11nm,1.0s
KNB Kanab 76.76 45 *eP* **P 23 30 50.9 -0.1**
comp=Z,11nm,1.0s
U15A North Rim 76.83 46 *eP* **P 23 30 51.4 -0.1**
PSUT Pine Spring 76.84 44 *eP* **P 23 30 50.9 -0.6**
comp=Z,9.9nm,1.0s
LON Longmire 76.85 33 *eP* **P 23 30 50.8 -0.3**
LON pmax pmax
comp=Z,7.0nm,1.1s
LON Longmire 76.85 33 *eP* **P 23 30 50.8 -0.3**
comp=Z,6.9nm,1.1s
WUAZ Wupatki 77.02 47 P **P 23 30 52.1 -0.4**
baz=240,SNR=7.3
WUAZ Wupatki 77.02 47 *eP* **P 23 30 52.2 -0.2**
comp=Z,21nm,1.1s
D05A Enumclaw 77.03 33 *eP* **P 23 30 51.7 -0.3**
comp=Z,58nm,1.4s
MSHR Mys Shultsa 77.10 321 *ceP* **P 23 30 52.8 +0.3**
ELK Elko 77.13 41 *eP* **P 23 30 52.5 -0.5**
ELK pmax pmax
comp=Z,7.0nm,1.1s
ELK Elko 77.13 41 *eP* **P 23 30 52.5 -0.5**
comp=Z,7.4nm,1.1s
RSO Redoubt South 77.15 10 *eP* **P 23 30 52.0 -0.6**
USRK Ussuriysk Ar. 77.54 323 P **P 23 30 55.8 +0.8**
comp=Z,4.2nm,1.0s,baz=111,slow=4.7,SNR=5.2
USRK LR LR 23 59 15.5
comp=Z,163nm,20.5s,baz=128,slow=31
X18A Snowflake 77.57 49 *eP* **P 23 30 55.5 -0.1**
comp=Z,20nm,1.2s
A04D Lummi Island 77.66 31 P **P 23 30 55.8 +0.4**
baz=229
KSM Kuching 77.66 275 *eP* **P 23 30 56.1 -0.2**
comp=Z,31nm,1.1s
B05A Bryant 77.67 32 P **P 23 30 55.4 -0.1**
baz=230,SNR=5.3
MTPU Mount Pierson 77.72 45 *eP* **P 23 30 57.0 +0.4**
comp=Z,28nm,1.4s
LTY Liberty 77.78 33 *eP* **P 23 30 56.0 -0.3**
comp=Z,7.8nm,1.1s
HAWA Hanford 77.86 35 *eP* **P 23 30 56.8 +0.1**
comp=Z,22nm,1.4s
SPU Mount Spurr 77.94 10 *eP* **P 23 30 55.4 -1.5**
MSU Marysvale 77.96 44 *eP* **P 23 30 57.9 +0.2**
MSU Marysvale 77.96 44 *eP* **P 23 30 57.9 +0.2**
W18A Petrified Fore 78.00 48 P **P 23 30 57.5 -0.5**
baz=242
ETW Entiat 78.17 33 P **P 23 30 57.8 -0.7**
MFID Camas Ranch 78.25 39 *eP* **P 23 30 58.3 -0.8**
comp=Z,8.2nm,1.0s
121A Cookes Peak, D 78.26 52 P **P 23 30 59.1 -0.4**
baz=243,SNR=11
121A Cookes Peak, D 78.26 52 *eP* **P 23 30 59.2 -0.2**
comp=Z,17nm,1.0s
RC01 Rabbit Creek A 78.28 11 *eP* **P 23 30 58.0 -0.6**
comp=Z,16nm,1.1s
DUG Dugway, Tooele 78.40 43 P **P 23 30 59.5 -0.5**
baz=239,SNR=11
DUG Dugway, Tooele 78.40 43 *eP* **P 23 30 59.4 -0.7**
DUG pmax pmax
comp=Z,11nm,1.1s
DUG Dugway, Tooele 78.40 43 *eP* **P 23 30 59.4 -0.7**
comp=Z,11nm,1.1s
ZAIG Zacatecas 78.49 62 *eP* **P 23 31 01.1 0.0**
comp=Z,7.7nm,1.0s
D08A Wollman Farm, 78.59 34 *eP* **P 23 31 00.3 -0.5**
comp=Z,27nm,1.3s
BGU Big Grassy Mou 78.64 42 *eP* **P 23 31 01.3 -0.1**
comp=Z,6.6nm,1.4s
SAW Saint Andrews 78.73 34 P **P 23 31 00.6 -1.0**
GAMB Gambell 78.76 1 *eP* **P 23 31 02.3 +1.1**
comp=Z,20nm,1.3s
NLU North Lily Min 78.76 43 *eP* **P 23 31 02.1 0.0**
comp=Z,5.8nm,1.2s
PMR Palmer 78.85 11 *eP* **P 23 31 00.7 -1.1**
PMR pmax pmax
comp=Z,21nm,1.3s
PMR Palmer 78.85 11 *eP* **P 23 31 00.7 -1.1**
comp=Z,21nm,1.3s
TT01 Tatalina 78.99 8 *eP* **P 23 31 01.2 -1.3**
TMUT Trail Mountain 79.01 44 *eP* **P 23 31 03.8 +0.2**
comp=Z,28nm,1.0s
TTA Tatalina 79.01 8 *eP* **P 23 31 02.1 -0.7**
TTA pmax pmax
comp=Z,13nm,1.0s
TTA Tatalina 79.01 8 *eP* **P 23 31 02.1 -0.7**
comp=Z,13nm,1.0s
DIV Divide 79.12 13 *eP* **P 23 31 02.6 -0.8**
comp=Z,22nm,0.9s
B08A Colville Reser 79.17 33 *eP* **P 23 31 02.6 -1.3**
comp=Z,14nm,1.2s
HLID Hailey 79.18 39 P **P 23 31 04.2 -0.1**
baz=237,SNR=11
HLID Hailey 79.18 39 *eP* **P 23 31 04.1 -0.2**
comp=Z,9.1nm,1.0s
MDJ Mudanjiang 79.19 322 P **P 23 31 04.9 +0.9**
MDJ pP PcP 23 31 07.9 -4.4
MDJ sP pP 23 31 09.2 -4.1
MDJ S **S 23 41 03.2 +1.2**
MDJ ScS **ScS 23 41 23.4 -1.3**
MDJ SS **SS 23 46 11.5 +2.3**
MDJ pmax pmax
comp=Z,8.0nm,1.4s
MDJ pmax pmax
comp=Z,270nm,4.0s
BMRM Bremner River 79.23 14 *eP* **P 23 31 03.4 -0.6**
comp=Z,30nm,1.0s
HVU Hansel Valley 79.25 41 *eP* **P 23 31 04.2 -0.5**
HVU pmax pmax
comp=Z,11nm,1.2s
HVU Hansel Valley 79.25 41 *eP* **P 23 31 04.2 -0.5**
comp=Z,11nm,1.2s
CTU Camp Tracy 79.35 43 *eP* **P 23 31 05.2 -0.1**
comp=Z,12nm,1.3s
SRU San Rafael Swe 79.38 45 *eP* **P 23 31 05.3 -0.2**
SRU pmax pmax
comp=Z,16nm,1.0s
SRU San Rafael Swe 79.38 45 *eP* **P 23 31 05.3 -0.2**
comp=Z,16nm,1.0s
C09A Chrisman Ranch 79.39 34 *eP* **P 23 31 04.5 -0.6**
comp=Z,24nm,0.3s
P17A Butcher Ranch, 79.41 44 *eP* **P 23 31 05.5 -0.1**
comp=Z,22nm,1.1s
KLU Klutina 79.41 13 *eP* **P 23 31 04.3 -0.7**
comp=Z,14nm,1.1s
JLU Jordanelle 79.50 43 *eP* **P 23 31 05.5 -0.7**
comp=Z,10nm,1.0s
MNTX Cornudas Mount 79.73 53 P **P 23 31 06.9 -0.5**
baz=245
MNTX Cornudas Mount 79.73 53 *eP* **P 23 31 06.8 -0.6**
comp=Z,9.9nm,1.1s
P18A Preston Nutter 79.82 44 *eP* **P 23 31 08.2 +0.2**
comp=Z,11nm,1.1s
BALM Baldy 79.82 15 *eP* **P 23 31 06.6 -0.7**
BALM pmax pmax
comp=Z,13nm,1.0s
BALM Baldy 79.82 15 *eP* **P 23 31 06.6 -0.7**
comp=Z,13nm,1.0s
BNM Barren Site 79.84 50 *eP* **P 23 31 08.1 -0.1**
PV05 Paradox Valley 79.86 46 *eP* **P 23 31 08.5 +0.3**
MVCO Mesa Verde 79.87 47 P **P 23 31 07.7 -0.5**
baz=242
MVCO Mesa Verde 79.87 47 *eP* **P 23 31 07.8 -0.5**
comp=Z,4.5nm,0.8s
LPM Los Pinos Moun 79.91 50 *eP* **P 23 31 08.2 -0.2**
HWUT Hardware Ranch 79.94 42 *eP* **P 23 31 07.7 -0.8**
comp=Z,7.7nm,1.3s
PV09 Paradox Valley 80.03 46 *eP* **P 23 31 08.9 -0.2**
PV10 Paradox Valley 80.04 46 *eP* **P 23 31 08.9 -0.3**
CAST Castle Rocks 80.05 9 *eP* **P 23 31 06.1 -2.3**
comp=Z,4.1nm,1.0s
TX31 Lajitas Ar. Si 80.11 56 *eP* **P 23 31 09.2 -0.4**
TXAR Lajitas Array 80.11 56 P **P 23 31 08.4 -1.2**
comp=Z,6.1nm,1.1s,baz=232,slow=6.2,SNR=20
TXAR LR LR 00 00 14.2
comp=Z,134nm,19.0s,baz=0.0,slow=31
MA2 Magadan 80.15 342 P **P 23 31 08.3 -0.6**
comp=Z,3.2nm,0.5s,baz=83,slow=1.7,SNR=4.4
MA2 LR LR 00 02 02.9
comp=Z,113nm,20.3s,baz=138,slow=32
PV01 Paradox Valley 80.25 46 *eP* **P 23 31 09.8 -0.5**
NEW Newport 80.29 34 P **P 23 31 08.9 -1.1**
baz=234
NEW Newport 80.29 34 *eP* **P 23 31 09.4 -0.7**

NEW pmax pmax
comp=Z,8.0nm,1.3s
NEW Newport 80.29 34 *eP* **P 23 31 09.3 -0.7**
comp=Z,8.1nm,1.3s
ANMO Albuquerque 80.32 50 P **P 23 31 10.4 -0.3**
baz=244
ANMO Albuquerque 80.32 50 *ceP* **P 23 31 10.3 -0.3**
ANMO pmax pmax
comp=Z,18nm,1.7s
ANMO Albuquerque 80.32 50 *eP* **P 23 31 10.4 -0.3**
comp=Z,8.8nm,0.9s
KTH Kantishna Hill 80.36 10 *eP* **P 23 31 08.5 -1.6**
comp=Z,8.2nm,1.0s
TRF Thorofare Moun 80.37 10 *eP* **P 23 31 09.1 -1.2**
comp=Z,16nm,1.0s
SKAG Skagway 80.42 18 *eP* **P 23 31 10.0 -0.4**
comp=Z,16nm,1.0s
RND Reindeer 80.58 11 *eP* **P 23 31 10.3 -0.9**
RND pmax pmax
comp=Z,18nm,1.0s
RND Reindeer 80.58 11 *eP* **P 23 31 10.3 -0.9**
comp=Z,18nm,1.0s
KLR Kul'dur 80.64 327 P **P 23 31 12.1 +0.3**
comp=Z,1.1nm,0.5s,baz=60,slow=11,SNR=3.9
KLR LR LR 00 01 08.7
comp=Z,141nm,21.5s,baz=190,slow=31
MCMT McKenzie Canyo 80.81 39 *eP* **P 23 31 12.8 -0.4**
AHID Auburn Hatcher 80.83 41 *eP* **P 23 31 12.6 -0.7**
comp=Z,9.3nm,1.2s
PAX Paxson 80.83 12 *eP* **P 23 31 11.5 -1.2**
PAX pmax pmax
comp=Z,11nm,1.3s
PAX Paxson 80.83 12 *eP* **P 23 31 11.5 -1.2**
comp=Z,11nm,1.3s
MCK McKinley 80.86 11 *eP* **P 23 31 11.7 -1.0**
MCK pmax pmax
comp=Z,25nm,1.0s
MCK McKinley 80.86 11 *eP* **P 23 31 11.7 -1.0**
comp=Z,26nm,1.0s
MENT Mentasta 81.17 13 *eP* **P 23 31 13.7 -0.7**
comp=Z,10nm,1.0s
BWN Browne 81.17 10 *eP* **P 23 31 13.6 -0.7**
comp=Z,24nm,1.0s
DLMT Dillon 81.25 38 *eP* **P 23 31 15.6 +0.2**
comp=Z,13nm,1.4s
MSO Missoula 81.25 37 P **P 23 31 14.3 -1.0**
baz=237,SNR=8.2
MSO Missoula 81.25 37 *eP* **P 23 31 14.2 -1.1**
comp=Z,13nm,1.2s
REDW Red Top Meadow 81.28 41 *eP* **P 23 31 15.2 -0.5**
comp=Z,11nm,1.2s
S22A 4UR Ranch, Cre 81.29 47 P **P 23 31 15.8 -0.1**
baz=243,SNR=22
S22A 4UR Ranch, Cre 81.29 47 *eP* **P 23 31 16.0 0.0**
comp=Z,18nm,1.0s
FXWY Fox Creek 81.31 40 *eP* **P 23 31 15.1 -0.8**
comp=Z,9.1nm,1.2s
BSMT Bassoo Peak 81.34 35 *eP* **P 23 31 14.8 -1.0**
SNOW Snow King Moun 81.40 41 *eP* **P 23 31 15.4 -0.9**
comp=Z,9.3nm,1.0s
O20A White River Ci 81.42 44 P **P 23 31 16.1 -0.3**
baz=242
O20A White River Ci 81.42 44 *eP* **P 23 31 16.5 +0.1**
comp=Z,6.8nm,0.9s
LRM Limekiln Ridge 81.58 38 *eP* **P 23 31 16.6 -0.6**
SWMT Swartz Lake 81.59 36 *eP* **P 23 31 16.2 -0.9**
QLMT Earthquake Lak 81.68 39 *eP* **P 23 31 18.0 +0.3**
WRH Wood River Hil 81.69 11 *eP* **P 23 31 16.0 -1.0**
comp=Z,33nm,1.1s
CHMT Chamberlain Mo 81.69 37 *eP* **P 23 31 16.6 -1.2**
DOT Dot Lake 81.73 13 *eP* **P 23 31 16.7 -0.6**
comp=Z,40nm,1.0s
FLWY Flagg Ranch 81.74 40 *eP* **P 23 31 18.0 -0.1**
comp=Z,19nm,1.3s
MLY Manley 81.77 9 *eP* **P 23 31 16.4 -1.1**
comp=Z,12nm,1.0s
BW06 Boulder Array 81.81 42 P **P 23 31 17.9 -0.7**
baz=241
BW06 Boulder Array 81.81 42 *eP* **P 23 31 17.6 -0.9**
PD31 Pinedale Array 81.81 42 *eP* **P 23 31 17.9 -0.7**
PDAR Pinedale Array 81.81 42 P **P 23 31 17.3 -1.2**
comp=Z,2.1nm,0.9s,baz=217,slow=3.7,SNR=14
PDAR LR LR 00 02 14.3
comp=Z,203nm,18.8s,baz=246,slow=32
SMCO Snowmass 81.84 46 *eP* **P 23 31 18.7 -0.3**
comp=Z,12nm,1.0s
YMR Madison River 81.88 39 *eP* **P 23 31 19.0 +0.2**
comp=Z,12nm,1.2s
CCB Clear Creek Bu 81.90 11 *eP* **P 23 31 17.2 -0.9**
comp=Z,18nm,0.9s
BOZ Bozeman (W) 81.98 38 P **P 23 31 18.6 -0.6**
baz=239,SNR=8.1
BOZ Bozeman (W) 81.98 38 *eP* **P 23 31 18.5 -0.7**
BOZ pmax pmax
comp=Z,13nm,1.3s
BOZ Bozeman (W) 81.98 38 *eP* **P 23 31 18.5 -0.7**
comp=Z,13nm,1.3s
COLA College 82.10 11 *diP* **P 23 31 17.7 -1.4**
COLA pmax pmax
comp=Z,34nm,1.1s
COLA College 82.10 11 *eP* **P 23 31 17.7 -1.4**
comp=Z,40nm,1.1s
MDM Murphy Dome 82.11 10 *eP* **P 23 31 18.3 -1.0**
comp=Z,21nm,1.2s
LKWY Lake 82.17 40 *eP* **P 23 31 21.4 +1.0**
LKWY pmax pmax
comp=Z,12nm,1.1s
LKWY Lake 82.17 40 *eP* **P 23 31 21.4 +1.0**
comp=Z,12nm,1.1s
IL1 Eielson Array 82.18 11 *eP* **P 23 31 18.1 -1.5**
ILAR Eielson Array 82.18 11 P **P 23 31 18.2 -1.4**
comp=Z,3.9nm,1.0s,baz=204,slow=6.0,SNR=23
ILB Eielson Array 82.18 11 *eP* **P 23 31 18.6 -1.0**
SDCO Great Sand Dun 82.24 48 P **P 23 31 20.2 -0.7**
baz=244,SNR=7.3
SDCO Great Sand Dun 82.24 48 *eP* **P 23 31 20.3 -0.6**
comp=Z,6.0nm,1.2s
SEY Seymchan 82.48 345 P **P 23 31 21.1 0.0**
comp=Z,6.2nm,1.0s,baz=168,slow=7.0,SNR=8.1
SEY Seymchan 82.48 345 *eP* **P 23 31 21.8 +0.6**
WALA Waterton Lakes 82.49 35 *eP* **P 23 31 21.0 -0.8**
comp=Z,14nm,1.2s
MSTX Muleshoe 82.67 52 P **P 23 31 22.3 -0.7**
baz=246,SNR=7.0
MSTX Muleshoe 82.67 52 *eP* **P 23 31 22.4 -0.7**
comp=Z,17nm,0.9s
832A Faith Ranch, C 82.70 58 P **P 23 31 22.7 -0.5**
baz=248,SNR=7.3
T25A Trinidad 82.76 49 P **P 23 31 23.1 -0.5**
baz=245,SNR=6.4
T25A Trinidad 82.76 49 *eP* **P 23 31 23.1 -0.5**
comp=Z,11nm,1.0s
Q24A Divide 83.02 47 P **P 23 31 24.4 -0.5**
baz=244,SNR=11
Q24A Divide 83.02 47 *eP* **P 23 31 24.8 -0.2**
comp=Z,26nm,1.0s
933A Laredo, 83.03 59 P **P 23 31 24.9 -0.1**
baz=249,SNR=7.4
ISCO Idaho Springs 83.06 46 P **P 23 31 24.9 -0.3**
baz=244,SNR=6.8
ISCO Idaho Springs 83.06 46 *eP* **P 23 31 24.9 -0.3**
ISCO pmax pmax
comp=Z,6.0nm,1.0s
ISCO Idaho Springs 83.06 46 *eP* **P 23 31 24.9 -0.3**
comp=Z,6.4nm,1.0s
DAWY Dawson 83.13 14 *eP* **P 23 31 24.5 -0.2**
comp=Z,14nm,1.0s
RLMT Red Lodge 83.15 40 P **P 23 31 25.3 -0.1**
baz=241,SNR=12
RLMT Red Lodge 83.15 40 *eP* **P 23 31 25.0 -0.4**
comp=Z,14nm,1.2s
833A Chaparral WMA, 83.19 58 P **P 23 31 25.6 -0.2**
baz=249
GCMT Greycliff 83.23 39 *eP* **P 23 31 26.3 +0.5**
N23A Red Feather La 83.32 45 P **P 23 31 26.6 +0.1**
baz=243,SNR=9.9
N23A Red Feather La 83.32 45 *eP* **P 23 31 26.4 -0.1**
comp=Z,12nm,0.9s
034A Hebbronville 83.33 60 P **P 23 31 26.5 +0.1**
baz=249
EGAK Eagle 83.34 13 *eP* **P 23 31 25.3 -0.3**
comp=Z,10nm,1.1s
TIA Tai'an 83.47 310 ⇑P **P 23 31 29.3 +2.3**
TIA pmax pmax
comp=Z,10.0nm,0.9s
JCT Junction City 83.65 56 P **P 23 31 27.1 -0.9**
baz=248

934A **Benavides** 83.66 59 P **P** 23 31 26.9 -1.2
baz=249
K22A **Casper** 83.72 43 P **P** 23 31 27.8 -0.6
baz=243
035A **Encino** 83.77 60 P **P** 23 31 29.1 +0.3
baz=250
633A **Saathoff Ranch** 83.78 57 P **P** 23 31 28.7 -0.1
baz=249
834A **Tilden** 83.81 59 P **P** 23 31 29.4 +0.5
baz=249,SNR=7.4
PHWY **Pilot Hill** 83.83 44 *e*P **P** 23 31 28.2 -0.9
comp=Z,12nm,1.2s
AMTX **Amarillo** 83.86 52 P **P** 23 31 28.5 -0.6
baz=247
AMTX **Amarillo** 83.86 52 *e*P **P** 23 31 28.4 -0.7
comp=Z,15nm,0.9s
COLD **Coldfoot** 83.90 9 *e*P **P** 23 31 28.9 +0.5
comp=Z,16nm,1.2s
533A **Kerrville** 84.11 57 P **P** 23 31 29.7 -0.8
baz=249,SNR=7.2
EGMT **Eagleton** 84.30 37 P **P** 23 31 30.5 -0.6
baz=240,SNR=5.6
EGMT **Eagleton** 84.30 37 *e*P **P** 23 31 30.5 -0.6
comp=Z,16nm,1.1s
433A **Art** 84.32 56 P **P** 23 31 30.6 -0.8
baz=249
BILL **Bilibino** 84.40 352 *e*P **P** 23 31 30.4 -0.6
BILL pmax pmax
comp=Z,6.0nm,1.2s
BILL MLR MLR
comp=Z,55nm,17.0s
534A **Blanco** 84.55 57 P **P** 23 31 31.9 -0.8
baz=249,SNR=5.7
ABTX **Abilene, Hawle** 84.56 54 P **P** 23 31 32.0 -0.7
baz=248
ABTX **Abilene, Hawle** 84.56 54 *e*P **P** 23 31 31.9 -0.8
comp=Z,23nm,1.0s
333A **Richland Sprin** 84.61 56 P **P** 23 31 32.2 -0.8
baz=249
735A **Kenedy** 84.68 58 P **P** 23 31 32.7 -0.6
baz=250
KSCO **Kaye Shedlock'** 84.82 47 P **P** 23 31 33.5 -0.4
baz=246
KSCO **Kaye Shedlock'** 84.82 47 *e*P **P** 23 31 34.0 0.0
comp=Z,25nm,1.0s
635A **Leesville** 84.90 58 P **P** 23 31 34.2 -0.2
baz=250
233A **Rising Star** 84.93 55 P **P** 23 31 33.9 -0.6
baz=249
434A **Burnet** 85.00 56 P **P** 23 31 34.1 -0.8
baz=249
133A **Hamilton Ranch** 85.13 55 P **P** 23 31 35.1 -0.4
baz=249
334A **Lometa** 85.21 56 P **P** 23 31 35.3 -0.7
baz=249
Z33A **Whitaker Ranch** 85.49 54 P **P** 23 31 36.8 -0.6
baz=249
X32A **Elmer** 85.51 53 P **P** 23 31 36.5 -0.8
baz=248,SNR=5.6
636A **Smothers Creek** 85.52 58 P **P** 23 31 38.0 +0.6
baz=250
234A **Clairette** 85.53 55 P **P** 23 31 36.6 -0.9
baz=249
435B **Jarrell** 85.54 57 P **P** 23 31 36.9 -0.6
baz=250
BJI **Beijing** 85.70 313 P **P** 23 31 39.7 +1.6
BJI S **S** 23 42 12.2 +3.3
BJI SS **SS** 23 47 47.5 +1.3
BJI pmax pmax
comp=Z,16nm,1.2s
BJI pmax pmax
comp=Z,200nm,3.9s
BJI LR LR
comp=Z,150nm,4.8s
134A **White-Moore Ra** 85.78 55 P **P** 23 31 38.1 -0.7
baz=249
W32A **Sentinel** 85.80 52 P **P** 23 31 38.1 -0.7
baz=248,SNR=11
335A **Moody** 85.84 56 P **P** 23 31 38.4 -0.7
baz=250
Y33A **Hilltop Ranch,** 85.86 53 P **P** 23 31 38.4 -0.8
baz=249
RSSD **Black Hills** 86.00 42 P **P** 23 31 38.5 -1.3
baz=244
RSSD **Black Hills** 86.00 42 *e*P **P** 23 31 38.6 -1.3
RSSD pmax pmax
comp=Z,24nm,1.5s
RSSD **Black Hills** 86.00 42 *e*P **P** 23 31 38.6 -1.3
comp=Z,24nm,1.5s
WHTX **Lake Whitney,** 86.06 56 P **P** 23 31 39.3 -0.8
baz=250
X33A **Lawton** 86.15 53 P **P** 23 31 39.3 -1.2
baz=249
I25A **Rochford** 86.16 43 P **P** 23 31 39.6 -0.9
baz=245
V32A **Arapaho** 86.17 52 P **P** 23 31 40.4 -0.3
baz=248
436A **Wall Ranch, Ga** 86.17 57 P **P** 23 31 40.2 -0.5
baz=250
135A **Vickery Place,** 86.30 55 P **P** 23 31 40.8 -0.5
baz=250
336A **Riesel** 86.34 56 P **P** 23 31 40.2 -1.4
baz=250
W33A **Caddo, Fort Co** 86.40 52 P **P** 23 31 41.8 +0.1
baz=249
U32A **Winter Ranch,** 86.44 51 P **P** 23 31 41.8 -0.1
baz=248
H25A **Fruitdale** 86.50 42 P **P** 23 31 42.4 +0.3
baz=245
Y34A **Reagan Ranch,** 86.52 54 P **P** 23 31 41.4 -0.9
baz=249
X34A **Smith Ranch, M** 86.69 53 P **P** 23 31 42.5 -0.7
baz=249
437A **Phantom Ranch,** 86.72 57 P **P** 23 31 43.4 0.0
baz=250
V33A **Lossen Ranch,** 86.78 52 P **P** 23 31 43.1 -0.5
baz=249
236A **Katherine and** 86.80 56 P **P** 23 31 43.5 -0.3
baz=250
CBKS **Cedar Bluff** 86.81 48 P **P** 23 31 43.6 -0.2
baz=248
W34A **Bridge Creek,** 86.96 52 P **P** 23 31 45.3 +0.8
baz=249
136A **Ennis** 86.97 55 P **P** 23 31 44.5 -0.1
baz=250
J27A **Elkhorn Farm,** 86.98 44 P **P** 23 31 44.5 0.0
baz=246
H26A **Fairpoint** 87.03 42 P **P** 23 31 45.0 +0.3
baz=245
X35A **Drake** 87.28 53 P **P** 23 31 45.5 -0.5
baz=250
Z36A **Blue Ridge** 87.31 55 P **P** 23 31 46.2 0.0
baz=250
V34A **Guthrie** 87.37 52 P **P** 23 31 46.9 +0.4
baz=249
237A **Washetta, Mont** 87.38 56 P **P** 23 31 46.4 -0.2
baz=250
R32A **Long Quarter,** 87.41 49 P **P** 23 31 46.8 +0.1
baz=248
U34A **Anderson Ranch** 87.57 51 P **P** 23 31 47.4 0.0
baz=249
W35A **Tecumseh** 87.62 53 P **P** 23 31 48.0 +0.3
baz=250
Y36A **Durant** 87.65 54 P **P** 23 31 48.1 +0.2
baz=250
Q32A **Meitler Ranch,** 87.73 49 P **P** 23 31 47.0 -1.1
baz=248
238A **Jacksonville** 87.93 56 P **P** 23 31 49.6 +0.3
baz=251
INK **Inuvik** 87.98 14 P **P** 23 31 47.1 -1.5
comp=Z,7.0nm,1.1s,baz=196,slow=7.7,SNR=12
INK **Inuvik** 87.98 14 *e*P **P** 23 31 47.9 -0.7
INK pmax pmax
comp=Z,12nm,1.1s
INK **Inuvik** 87.98 14 *e*P **P** 23 31 47.9 -0.7
comp=Z,12nm,1.1s
T34A **McClaskey Farm** 88.03 51 P **P** 23 31 49.9 +0.3
baz=249
F27A **Lemmon** 88.04 41 P **P** 23 31 49.8 +0.4
baz=246
MAW **Mawson** 88.11 198 P **P** 23 31 50.5 +1.1
comp=Z,13nm,0.9s,baz=135,slow=4.7,SNR=13
MAW LR LR 00 11 14.3
comp=Z,109nm,19.4s,baz=64,slow=36
MAW **Mawson** 88.11 198 *e*P **P** 23 31 51.0 +1.6
MAW pmax pmax
comp=Z,3.0nm,0.9s
MAW **Mawson** 88.11 198 *e*P **P** 23 31 51.0 +1.6
comp=Z,3.0nm,0.9s
GYA **Guiyang** 88.39 298 *e*P **P** 23 31 52.0 +0.3
GYA pmax pmax
comp=Z,10.0nm,1.0s
C26A **Wahner Farm, P** 88.79 40 P **P** 23 31 53.6 +0.6
baz=246
Q34A **Chapman** 88.88 49 P **P** 23 31 53.2 -0.4
baz=250
BGNE **Belgrade** 88.91 47 P **P** 23 31 52.7 -0.9
baz=249
S35A **Otter Creek Ra** 88.91 51 P **P** 23 31 53.0 -0.8
baz=250
K31A **O'Neill** 88.93 45 P **P** 23 31 53.7 -0.1
baz=248
PSI **Prapat** 88.97 273 *e*P **P** 23 31 56.6 +1.9
PSI pmax pmax
comp=Z,27nm,1.2s
PSI **Prapat** 88.97 273 *e*P **P** 23 31 56.6 +1.9
comp=Z,27nm,1.2s
X38A **Whitesboro** 89.04 54 P **P** 23 31 54.1 -0.3
baz=251
YAK **Yakutsk** 89.15 337 *e*P **P** 23 31 54.4 +0.2
YAK pmax pmax
comp=Z,7.0nm,0.6s
HHC **Hu-ho-hao-te** 89.27 313 *e*P **P** 23 31 58.1 +2.6
HHC S **S** 23 42 50.4 +7.1
HHC pmax pmax
comp=Z,24nm,1.3s
HHC pmax pmax
comp=Z,96nm,7.8s
HHC LR LR
comp=Z,420nm,17.6s
HHC LR LR
comp=Z,490nm,17.8s
HHC LR LR
comp=Z,440nm,17.8s
YKA **Yellowknife Ar** 89.74 23 P **P** 23 31 55.8 -1.2
comp=Z,5.4nm,0.9s,baz=235,slow=4.3,SNR=82
YKB5 **Yellowknife Ar** 89.74 23 *e*P **P** 23 31 53.8 -3.2
V38A **Canehill** 89.75 53 P **P** 23 31 58.1 +0.4
baz=251
P35A **Duane Minner,** 89.77 49 P **P** 23 31 57.9 +0.2
baz=250
T37A **Cheneyville 18** 89.78 51 P **P** 23 31 56.6 -1.3
baz=251
YKW3 **Yellowknife Ar** 89.78 23 *e*P **P** 23 31 55.9 -1.2
comp=Z,7.1nm,1.0s
S37A **Fort Scott** 90.05 51 P **P** 23 31 58.6 -0.5
baz=251
T38A **Diamond** 90.22 52 P **P** 23 31 59.2 -0.7
baz=251
R37A **Teagarden Farm** 90.23 50 P **P** 23 31 59.6 -0.3
baz=251
V39A **Pettigrew** 90.33 53 P **P** 23 31 59.4 -1.2
baz=252
JTS **JuntasAbangare** 90.70 80 *e*P **P** 23 32 04.2 +1.5
JTS pmax pmax
comp=Z,32nm,0.9s
JTS **JuntasAbangare** 90.70 80 *e*P **P** 23 32 04.2 +1.5
comp=Z,32nm,0.9s
R38A **Fenwick Farm,** 90.88 51 P **P** 23 32 01.8 -1.2
baz=251
KMI **Kunming** 91.39 296 P **P** 23 32 05.5 -0.4
KMI sP pP 23 32 13.8 -1.5
KMI pmax pmax
comp=Z,5.0nm,1.1s
R39A **Chumby, Stover** 91.57 51 P **P** 23 32 04.1 -2.0
baz=252
CD2 **Chengdu** 92.14 301 P **P** 23 32 07.4 -1.6
CD2 pmax pmax
comp=Z,10.0nm,0.5s
R40A **Maddies Statio** 92.14 51 P **P** 23 32 07.8 -1.0
baz=252
L38A **Oak Wood Farm,** 92.81 47 P **P** 23 32 11.5 -0.3
baz=252
CMAR **Chiang Mai Arr** 93.02 288 P **P** 23 32 15.0 +1.7
comp=Z,2.4nm,0.7s,baz=100,slow=2.6,SNR=18
CMAR LR LR 00 14 25.5
comp=Z,59nm,18.1s,baz=163,slow=36
CMAR **Chiang Mai Arr** 93.02 288 P **P** 23 32 15.0 +1.7
CMAR pmax pmax
comp=Z,2.0nm,0.7s
CMAR MLR MLR
comp=Z,59nm,18.1s
CHTO **Chiang Mai** 93.11 289 *e*P **P** 23 32 14.1 +0.4
CHTO pmax pmax
comp=Z,4.0nm,0.9s
CHTO **Chiang Mai** 93.11 289 *e*P **P** 23 32 14.1 +0.4
comp=Z,3.8nm,0.9s
ULM **Lac du Bonnet** 93.49 39 LR LR 00 10 27.6
comp=Z,199nm,18.2s,baz=270,slow=33
LZH **Lanzhou** 93.51 306 *e*P **P** 23 32 18.3 +2.9
LZH pP pP 23 32 22.3 -2.5
LZH sP sP 23 32 24.5 -3.6
LZH pmax pmax
comp=Z,21nm,1.3s
ULN **Ulaanbaatar** 94.63 318 *e*P **P** 23 32 22.2 +2.0
ULN pmax pmax
comp=Z,4.0nm,1.2s
TIXI **Tiksi** 94.97 344 LR LR 00 10 31.3
comp=Z,97nm,20.7s,baz=106,slow=33
TIXI **Tiksi** 94.97 344 *e*P **P** 23 32 21.3 +0.3
TIXI pmax pmax
comp=Z,4.0nm,1.2s
SONM **Songino Array** 95.04 318 LR LR 00 10 10.3
comp=Z,106nm,21.9s,baz=85,slow=32
FCC **Fort Churchill** 97.19 31 *e*P **P** 23 32 30.5 -0.8
FCC **Fort Churchill** 97.19 31 *e*P **P** 23 32 30.5 -0.8
GTA **Gaotai** 97.45 309 *e*P Pdif 23 32 34.4 +1.1
GTA sP pP 23 32 41.5 -1.1
GTA SKS **SKSac** 23 43 09.8 +0.9
GTA S **ScS** 23 43 58.8 +2.4
GTA sS sS 23 44 07.7 -4.1
GTA pmax pmax
comp=Z,5.0nm,0.7s
GTA pmax pmax
comp=Z,94nm,4.4s
GTA LR LR
comp=Z,110nm,18.5s
GTA LR LR
comp=Z,140nm,19.5s
NVS **Novosibirsk** 110.29 323 *e*P **Pdif** 23 33 38.5 +8.7
NVS pmax pmax
comp=Z,27nm,1.9s
MKAR **Makanchi Array** 111.05 315 PKiKP **PKiKP** 23 37 32.9 +0.3
comp=Z,1.0nm,0.9s,baz=218,slow=1.0,SNR=3.7
KSH **Kashi** 115.76 307 *e*PKP **PKPdf** 23 37 42.6 +0.6
KSH PKS **PKSdf** 23 41 18.1 -0.7
KSH SKS **SKSdf** 23 44 49.7 -2.6
KSH SKKS **SKKSac** 23 45 47.1 +2.3
KSH AMB AMB
comp=Z,49nm,3.7s
KSH LR LR
comp=Z,67nm,6.1s
KSH LR LR
comp=Z,66nm,5.7s
KSH LR LR
comp=Z,120nm,5.1s
BVAR **Borovoye Array** 118.04 322 PKP **PKPdf** 23 37 45.4 -0.4
comp=Z,1.3nm,0.8s,baz=217,slow=4.4,SNR=5.2
ARCES **ARCESS Array B** 124.50 352 PKP **PKPdf** 23 37 58.0 +0.3
comp=Z,3.8nm,0.9s,baz=54,slow=2.1,SNR=7.6
KLMR **Klimovskoe** 128.79 340 *e*PKIKP **PKPdf** 23 38 05.2 -0.9
KLMR pmax pmax
comp=Z,11nm,1.4s
GEYT **Alibeck** 129.79 307 PKP **PKPdf** 23 38 09.9 +1.1
comp=Z,1.7nm,1.0s,baz=354,slow=1.5,SNR=5.9
OBN **Obninsk** 134.15 337 *e*PKIKP **PKPdf** 23 38 17.5 +1.1
OBN pmax pmax
comp=Z,5.0nm,0.9s
NOA **NORSAR Array B** 134.15 357 PKP **PKPdf** 23 38 16.5 +0.2
comp=Z,0.8nm,0.9s,baz=13,slow=4.1,SNR=3.0
KIV **Kislovodsk** 138.38 321 *e*PKIKP **PKPdf** 23 38 24.1 -0.7
KIV *e* 23 41 18.2
KIV pmax pmax
comp=Z,18nm,4.4s
AKASG **Malin Array Be** 140.36 338 PKP **PKPdf** 23 38 27.8 -0.3
comp=Z,0.4nm,0.3s,baz=41,slow=3.2,SNR=6.0
KWP **Kalwaria Pacla** 143.40 343 *e*PKP PKPbc 23 38 31.2 +0.5
KWP **Kalwaria Pacla** 143.40 343 ‖*i*P PKPbc 23 38 31.2 +0.5
KWP **Kalwaria Pacla** 143.40 343 *e*PKIKP PKPbc 23 38 31.2 +0.5
OJC **Ojcow** 143.61 346 *e*PKP PKPbc 23 38 31.8 +0.5
OJC **Ojcow** 143.61 346 *e*PKIKP PKPbc 23 38 31.8 +0.5
CLL **Collm** 143.70 354 *i* PKPdf PKPbc 23 38 31.7 +0.2
comp=Z,8.0nm,1.2s
CLL *i* 23 38 38.2
comp=Z,10.0nm,1.1s
CLL *i* PP **PP** 23 41 48.4 +2.7
CLL **Collm** 143.70 354 *i* PKIKP PKPbc 23 38 31.7 +0.2
CLL *i* 23 38 38.2
CLL pmax pmax
comp=Z,8.0nm,1.2s
STHS **Stebnicka Huta** 144.00 344 *e*PKIKP **PKPdf** 23 38 34.0 -0.6
STHS **Stebnicka Huta** 144.00 344 *e*PKP **PKPdf** 23 38 34.0 -0.6
BRG **Berggiesshubel** 144.02 353 *e*PKP PKPbc 23 38 32.9 +0.4
comp=Z,2.6nm,0.8s
BRG **Berggiesshubel** 144.02 353 *e*PKIKP PKPbc 23 38 32.9 +0.4
BRG pmax pmax
comp=Z,3.0nm,0.8s
UPC **Upice** 144.08 350 AMS AMS 00 37 40.0
comp=Z,100nm,20.0s
KOLS **Kolonicke sedl** 144.15 343 *e*PKIKP PKPbc 23 38 33.1 +0.1
KOLS **Kolonicke sedl** 144.15 343 *e*PKP PKPbc 23 38 33.1 +0.1
DPC **Dobruska-Polom** 144.18 350 *e*PKP PKPbc 23 38 33.4 +0.3
DPC *ep*PKP **PKiKP** 23 38 37.1 -1.4
DPC AMS AMS 00 40 30.0
comp=Z,100nm,14.9s
DPC **Dobruska-Polom** 144.18 350 *e*PKIKP PKPbc 23 38 33.4 +0.3
DPC MLR MLR
comp=Z,100nm,14.9s
NIE **Niedzica** 144.23 345 *e*PKP PKPbc 23 38 33.9 +0.7
NIE **Niedzica** 144.23 345 *e*PKIKP PKPbc 23 38 33.9 +0.7
TSUM **Tsumeb** 144.27 197 *e*PKPdf **PKPdf** 23 38 35.5 -0.7
OKC **Ostrava-Krasne** 144.33 348 *e*PKP **PKPdf** 23 38 34.5 -0.6
OKC *ep*PKP **PKiKP** 23 38 37.7 -1.0
OKC **Ostrava-Krasne** 144.33 348 *e*PKIKP **PKPdf** 23 38 34.5 -0.6
KRLC **Kraliky** 144.36 349 *e*PKP PKPbc 23 38 33.8 +0.2
KRLC *ep*PKP **PKiKP** 23 38 37.4 -1.5
KRLC **Kraliky** 144.36 349 *e*PKIKP PKPbc 23 38 33.8 +0.2
BURAR **Bucovina Array** 144.38 339 ‖*i*P **PKPdf** 23 38 34.7 -0.8
BURAR **Bucovina Array** 144.38 339 ‖PKIKP **PKPdf** 23 38 34.7 -0.8
CRVS **Cervenica-Dubn** 144.41 344 *e*PKIKP PKPbc 23 38 34.2 +0.4
CRVS **Cervenica-Dubn** 144.41 344 *e*PKP PKPbc 23 38 34.2 +0.4
UZH **Uzhgorod** 144.42 343 *e*PKIKP **PKPdf** 23 38 35.2 -0.1
UZH *i* 23 38 44.2
MORC **Moravsky Berou** 144.50 348 ‖*i*P **PKPdf** 23 38 35.3 -0.2
MORC **Moravsky Berou** 144.50 348 ‖PKIKP **PKPdf** 23 38 35.3 -0.2
LANS **Liptovska Anna** 144.68 346 *e*PKIKP **PKPdf** 23 38 35.7 -0.2
LANS **Liptovska Anna** 144.68 346 *e*PKP **PKPdf** 23 38 35.7 -0.2
MEM **Membach** 144.70 1 PKP **PKPab** 23 38 34.4 -0.1
SNF **Seneffe** 144.73 3 PKP **PKPdf** 23 38 35.5 -0.2
PRA **Prague** 144.74 352 *e*PKP **PKPdf** 23 38 35.4 -0.4
PRA **Prague** 144.74 352 *e*PKIKP **PKPdf** 23 38 35.4 -0.4
TESR **Tescani** 144.79 336 ‖*i*P **PKPab** 23 38 34.4 -0.6
TRPA **Tarpa** 144.80 342 ‖*e*PKPbc PKPbc 23 38 35.4 +0.4
PRU **Pruhonice** 144.80 352 *e*PKP PKPbc 23 38 35.2 +0.2
PRU AMS AMS 00 40 50.0
comp=Z,100nm,22.1s
PRU **Pruhonice** 144.80 352 *e*PKIKP PKPbc 23 38 35.2 +0.2
PRU MLR MLR
comp=Z,100nm,22.1s
NKC **Novy Kostel** 144.81 354 *e*PKP PKPbc 23 38 35.4 +0.4
NKC **Novy Kostel** 144.81 354 *e*PKIKP PKPbc 23 38 35.4 +0.4
GOPC **GO Pecny, Ondr** 144.84 351 *e*PKP **PKPdf** 23 38 35.7 -0.4
GOPC **GO Pecny, Ondr** 144.84 351 *e*PKIKP **PKPdf** 23 38 35.7 -0.4
BCLA **Clavier** 144.87 2 PKP PKPbc 23 38 35.5 +0.4
BMR **Baia Mare** 144.91 341 ‖*i*P **PKPdf** 23 38 37.0 +0.8
BMR **Baia Mare** 144.91 341 ‖PKIKP **PKPdf** 23 38 37.0 +0.8
TLCR 144.96 333 ‖*i*P **PKPdf** 23 38 38.9 +2.5
TLCR 144.96 333 ‖PKIKP **PKPdf** 23 38 38.9 +2.5
KECS **Kecovo** 145.05 344 *e*PKIKP **PKPab** 23 38 36.1 +0.2
KECS **Kecovo** 145.05 344 *e*PKP **PKPab** 23 38 36.1 +0.2
VRAC **Vranov** 145.13 349 ‖*i*P **PKPdf** 23 38 36.4 -0.2
VRAC **Vranov** 145.13 349 ‖PKIKP **PKPdf** 23 38 36.4 -0.2
ARCR **ARCALIA** 145.14 339 ‖*i*P **PKPdf** 23 38 36.9 +0.2
DOU **Dourbes** 145.16 3 PKP **PKPbc** 23 38 35.1 -1.0
PETR **Petresti** 145.20 335 ‖*i*P **PKPdf** 23 38 38.9 +2.1
ODBI **Odobesti** 145.24 335 ‖*i*P **PKPdf** 23 38 38.5 +1.7
CFR **Carcaliu** 145.26 334 ‖*i*P **PKPdf** 23 38 37.0 +0.1
CFR **Carcaliu** 145.26 334 ‖PKIKP **PKPdf** 23 38 37.0 +0.1
VRI **Vrincioaia** 145.29 336 ‖*i*P **PKPdf** 23 38 38.1 +1.1
VRI **Vrincioaia** 145.29 336 ‖PKIKP **PKPdf** 23 38 38.1 +1.1
PLOR **Plostina** 145.33 336 ‖*i*P **PKPdf** 23 38 37.3 +0.2
PLOR **Plostina** 145.33 336 ‖PKIKP **PKPdf** 23 38 37.3 +0.2
TREC **Trest** 145.34 350 *e*PKP **PKPbc** 23 38 36.6 -0.2
TREC *ep*PKP **PKiKP** 23 38 40.9 0.0
TREC AMS AMS 00 40 40.0
comp=Z,200nm,22.1s
TREC **Trest** 145.34 350 *e*PKIKP **PKPbc** 23 38 36.6 -0.2
TREC *e* 23 38 40.9
TREC MLR MLR
comp=Z,200nm,22.1s
VYHS **Vyhne** 145.44 346 *e*PKIKP **PKPab** 23 38 37.8 +0.5
VYHS **Vyhne** 145.44 346 *e*PKP **PKPab** 23 38 37.8 +0.5
GRFO **Grafenberg** 145.46 355 *e*PKIKP **PKPab** 23 38 37.3 0.0
GRFO **Grafenberg** 145.46 355 *e*PKPbc **PKPab** 23 38 37.3 0.0
GRER 145.59 335 ‖*i*P **PKPab** 23 38 39.8 +1.9
WLF **Walferdange** 145.64 1 PKP **PKPbc** 23 38 37.6 -0.1
WLF **Walferdange** 145.64 1 *e*PKIKP **PKPbc** 23 38 37.7 0.0
WLF **Walferdange** 145.64 1 *e*PKPdf **PKPbc** 23 38 37.7 0.0
TIRR **Tirgusor** 145.71 332 ‖*i*P **PKPab** 23 38 39.5 +1.1
TIRR **Tirgusor** 145.71 332 ‖PKIKP **PKPab** 23 38 39.5 +1.1
CJR **Cluj-Napoca** 145.72 340 ‖*i*P **PKPab** 23 38 39.3 +0.9
CJR **Cluj-Napoca** 145.72 340 ‖PKIKP **PKPab** 23 38 39.3 +0.9
PSZ **Piszkesteto** 145.72 345 ‖*i*P **PKPab** 23 38 38.6 +0.1
PSZ **Piszkesteto** 145.72 345 ‖*e*PKPdf **PKPbc** 23 38 38.1 0.0
PSZ **Piszkesteto** 145.72 345 *e*PKIKP **PKPdf** 23 38 37.9 +0.2
PSZ **Piszkesteto** 145.72 345 *e*PKPdf **PKPdf** 23 38 37.9 +0.2
SMOL **Smolenice** 145.73 348 *e*PKIKP **PKPab** 23 38 39.7 +1.3
SMOL **Smolenice** 145.73 348 *e*PKP **PKPab** 23 38 39.7 +1.3
HARR **Harsova** 145.74 333 ‖*i*P **PKPab** 23 38 40.6 +2.1
HARR **Harsova** 145.74 333 ‖PKP2 **PKPab** 23 38 40.6 +2.1
KHC **Kasperske Hory** 145.77 352 *e*PKP **PKPab** 23 38 38.8 +0.2
KHC *ex* *x* 23 38 44.8
KHC **Kasperske Hory** 145.77 352 *e*PKIKP **PKPab** 23 38 38.6 0.0
KHC **Kasperske Hory** 145.77 352 *e*PKPdf **PKPab** 23 38 38.6 0.0
MLR **Muntele Rosu** 145.91 336 ⇑*i*P **PKPab** 23 38 39.3 0.0
MLR **Muntele Rosu** 145.91 336 ⇑PKP2 **PKPab** 23 38 39.3 0.0
DRGR 145.94 341 ⇑*i*P **PKPbc** 23 38 39.0 +0.2
DRGR 145.94 341 ⇑PKP2 **PKPbc** 23 38 39.0 +0.2
ISR **Istrita** 145.98 335 ‖*i*P **PKPab** 23 38 40.4 +0.9
ISR **Istrita** 145.98 335 ‖PKP2 **PKPab** 23 38 40.4 +0.9
GERES **GERESS Array B** 146.04 352 PKPbc **PKPbc** 23 38 38.9 -0.1
comp=Z,9.6nm,1.0s,baz=29,slow=3.0,SNR=64
KMBO **Kilima Mbogo** 146.05 244 PKPbc **PKPab** 23 38 41.9 +1.0
comp=Z,2.3nm,0.7s,baz=38,slow=7.5,SNR=5.5
KMBO **Kilima Mbogo** 146.05 244 *c* *i*PKP2 **PKPab** 23 38 41.7 +0.8
KMBO pmax pmax
comp=Z,2.0nm,0.7s
KMBO **Kilima Mbogo** 146.05 244 *e*PKPdf **PKPdf** 23 38 39.2 -0.3
SECR 146.24 336 ‖*i*P **PKPab** 23 38 40.3 -0.1
VOIR 146.30 337 ‖*i*P **PKPab** 23 38 40.8 +0.1
VOIR 146.30 337 ‖PKP2 **PKPab** 23 38 40.8 +0.1
BRTR **Keskin Array B** 146.33 322 PKPbc **PKPab** 23 38 41.0 -0.1
comp=Z,17nm,1.0s,baz=115,slow=1.8,SNR=67
BRTR **Keskin Array B** 146.33 322 *c* *i*PKP2 **PKPab** 23 38 41.5 +0.4
BRTR pmax pmax
comp=Z,17nm,1.0s
LANF **Langenberg** 146.33 359 PKP **PKPab** 23 38 40.5 -0.1
BUD **Budapest** 146.35 345 ‖*e*PKPdf **PKPab** 23 38 41.1 +0.4
STU **Stuttgart** 146.50 357 *e*PKP2 **PKPbc** 23 38 40.7 +0.4
STU **Stuttgart** 146.50 357 *e*PKPab **PKPbc** 23 38 40.7 +0.4
ARR **Arges** 146.51 337 ‖*i*P **PKPab** 23 38 41.7 +0.2
CONA **Conrad Observa** 146.59 349 *i* pPKPdf **PKPab** 23 38 41.7 -0.1
comp=Z,40nm,2.3s,SNR=16
DEV **Deva** 146.68 340 ‖*i*P **PKPab** 23 38 41.6 -0.4
DEV **Deva** 146.68 340 ‖PKP2 **PKPab** 23 38 41.6 -0.4
SOP **Sopron** 146.70 348 ‖*e*PKPdf **PKPab** 23 38 41.3 +0.4
SIRR **Siria** 146.74 341 ‖*i*P **PKPbc** 23 38 41.5 +0.4
LOT **Lotru** 146.76 338 ‖*i*P **PKPdf** 23 38 40.3 +0.7
MOA **Molln** 146.93 351 *i* pPKPdf **PKPab** 23 38 42.4 -0.6
comp=Z,21nm,1.1s,SNR=14
BFO **Black Forest** 146.97 359 *c* *i*PKP2 **PKPbc** 23 38 42.2 +0.5
BFO **Black Forest** 146.97 359 *e*PKPab **PKPbc** 23 38 42.1 +0.4
THEF **They Montfort** 147.08 1 PKP **PKPbc** 23 38 42.5 +0.5
ECH **Echery** 147.10 360 PKP **PKPbc** 23 38 42.5 +0.4
ARSA **Arzberg** 147.31 349 *i* sPKPdf **PKPbc** 23 38 43.4 +0.7
comp=Z,20nm,1.4s,SNR=15
BZS **Buzias** 147.33 341 ‖*i*P **PKPbc** 23 38 43.4 +0.6
BZS **Buzias** 147.33 341 ‖PKP2 **PKPbc** 23 38 43.4 +0.6
MOF **Molkenrain** 147.47 360 PKP **PKPbc** 23 38 43.6 +0.4
PKSM **Moragy** 147.63 345 ‖*i*P **PKPbc** 23 38 44.3 +0.7
PKSM **Moragy** 147.63 345 ‖PKP2 **PKPbc** 23 38 44.3 +0.7
SRE **Strehaia** 147.64 338 ⇑*i*P **PKPab** 23 38 45.6 -0.3
SRE **Strehaia** 147.64 338 ⇑PKP2 **PKPab** 23 38 45.6 -0.3
RETA **Reutte** 147.69 355 *i* sPKPdf **PKPbc** 23 38 44.3 +0.5
comp=Z,28nm,1.4s,SNR=12

BANR	Banloc	147.69	341	⇓iP		PKPab	23 38 45.5	-0.5
WATA	Walderalm	147.77	354	i PKPab		PKPbc	23 38 44.8	+0.7
	SNR=9.0							
MOTA	Moosalm	147.80	355	i pPKPbc		PKPab	23 38 45.9	-0.7
	SNR=18							
WTTA	Wattenberg	147.83	354	i PKPab		PKPbc	23 38 44.9	+0.5
	comp=Z,15nm,1.2s,SNR=5.6							
KOGS	Kog	147.94	348	i PKPbc		PKPbc	23 38 44.3	-0.2
DAVA	Damuels	147.95	356	i PKPab		PKPbc	23 38 45.3	+0.7
	comp=Z,27nm,1.1s,SNR=13							
SOKA	Soboth	147.95	350	i sPKPdf		PKPbc	23 38 44.6	0.0
	SNR=11							
LOMF	Lomont	147.97	0	PKP		PKPbc	23 38 45.1	+0.5
GROS	Grobnik	148.07	349	ePKPbc		PKPbc	23 38 44.0	-0.9
FETA	Feichten	148.15	355	i PKiKP		PKPbc	23 38 45.9	+0.7
	comp=Z,18nm,1.2s,SNR=9.3							
OBKA	Obir	148.19	350	i sPKPdf		PKPbc	23 38 45.2	0.0
	comp=Z,10nm,1.1s							
MYKA	Terra Mystica	148.22	351	i sPKPdf		PKPbc	23 38 45.0	-0.2
	comp=Z,16nm,1.1s,SNR=7.2							
ABTA	Abfaltersbach	148.25	353	i sPKPdf		PKPbc	23 38 45.4	0.0
	comp=Z,25nm,1.2s,SNR=9.7							
MPEP	Malo Peshtene	148.56	336	eP		PKPbc	23 38 47.0	+0.8
LJU	Ljubljana	148.65	350	i PKPbc		PKPbc	23 38 46.2	-0.1
TUE	Stuetta	148.79	357	ePKPbc		PKPbc	23 38 46.3	-0.6
AGO	Saint Agoulin	149.09	5	PKP		PKPbc	23 38 48.8	+1.4
PLDF	La Plantade	149.21	5	PKP		PKPbc	23 38 49.5	+1.7
KDZ	Kurdzhali	149.27	333	eP		PKPbc	23 38 47.0	-1.0
BLY	Banja Luka	149.36	346	⇓iP		PKPbc	23 38 49.4	+1.3
PYM	Petit Puy Mans	149.37	6	PKP		PKPbc	23 38 49.9	+1.7
ISP	Isparta	149.41	322	⇓iP		PKPbc	23 38 49.5	+0.9
ISP	Isparta	149.41	322	⇓PKP2		PKPbc	23 38 49.5	+0.9
LBL	Lubilhac	149.91	5	PKP		PKPbc	23 38 51.6	+2.0
MMB	Musomiste	150.05	335	eP		PKPbc	23 38 49.0	-1.0
KKB	Krupnik	150.08	336	eP		PKPbc	23 38 49.2	-0.8
POLO	Lamas de Olo	150.92	23	ePKPbc		PKPbc	23 38 51.9	-0.2
PBRG	Braganca	150.94	22	ePKPbc		PKPbc	23 38 52.4	+0.3
PVRL	Vila Real	151.03	23	ePKPbc		PKPbc	23 38 52.6	+0.3
MVO	Moncorvo	151.39	23	ePKPbc		PKPbc	23 38 52.8	-0.4
PCAS	Casmilo, Conde	151.75	26	ePKPbc		PKPbc	23 38 53.2	-0.8
MTE	Manteigas	151.85	24	ePKPbc		PKPbc	23 38 54.6	+0.3
MTE	Manteigas	151.85	24	ePKPbc		PKPbc	23 38 54.6	+0.3
PTOM	Tomar	152.16	26	ePKPbc		PKPbc	23 38 55.1	+0.2
PMTG	Montargil	152.69	27	ePKPbc		PKPbc	23 38 56.5	+0.4
PMRV	Marv??o	152.74	25	ePKPbc		PKPbc	23 38 56.2	0.0
EVO	Evora	153.23	27	ePKPbc		PKPbc	23 38 56.0	-1.3
EVO	Evora	153.23	27	ePKPab		PKPab	23 39 09.6	+0.6
PNCL	Nicolau / Gran	153.34	28	ePKPbc		PKPbc	23 38 57.2	-0.4
MESJ	Messejana	153.71	28	ePKPbc		PKPbc	23 38 58.3	-0.1
PBEJ	Beja	153.71	27	ePKPbc		PKPbc	23 38 59.7	+1.3
ESDC	Sonseca Array	153.78	20	PKPbc		PKPbc	23 38 59.0	+0.4
	comp=Z,2.8nm,0.9s,baz=338,slow=2.9,SNR=12							
PBAR	Barrancos	153.95	26	ePKPbc		PKPbc	23 38 59.6	+0.7
PVAQ	Vaqueiros	154.29	28	ePKPdf		PKPdf	23 38 52.4	+1.0
PVAQ	Vaqueiros	154.29	28	ePKPbc		PKPdf	23 38 52.9	+1.5

MEX 01 23:22:31.2±0.5, 18°.03N×99°.85W, h53km±4km, MD3.6, Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MEIG	Mezcala	0.24	114	eP	Pn	23 22 38.7	-1.6
MEIG				eS	Sn	23 22 45.1	-1.6
ARIG	Puente Sto Nin	0.53	298	eP	Pn	23 22 41.7	-1.4
ARIG				eS	Sn	23 22 50.0	-1.6
CAIG	El Cayaco	1.05	202	eP	Pn	23 22 47.9	-1.8
CAIG				i S	Sn	23 23 01.5	-1.9
YAIG	Yautepec	1.12	42	i P	Pn	23 22 49.1	-1.7
YAIG				i S	Sn	23 23 03.3	-1.9
ACX	Acapulco	1.15	180	eP	Pn	23 22 49.8	-1.2
ACX				eS	Sn	23 23 03.8	-2.0
MZVM		1.30	27	eP	Pn	23 22 51.6	-1.5
MZVM				i S	Sn	23 23 06.5	-2.8
TLIG	Tlapa	1.31	110	eP	Pn	23 22 52.5	-0.8
TLIG				i S	Sn	23 23 07.3	-2.5
ZIIG	Zihuatanejo	1.59	255	eP	Pn	23 22 55.6	-1.4
ZIIG				i S	Sn	23 23 14.0	-2.5
IIO	Organos	1.89	34	i P	Pn	23 23 00.3	-1.1
IIO				i S	Sn	23 23 22.6	-1.7

*NIED **01** 23:25:00, 37°.80N×141°.70E, h56km, Mw4.0 Best double couple: M₀1.08000×10¹⁵ NP1:φ₀=219.00000°, δ30.00000°, λ107.00000°. NP2:φ₀=19.00000°, δ61.00000°, λ80.00000°.*
*IDC **01** 23:25:20.4±0.7, 37°.87N×141°.94E, h0km, mb4.0/20, mb1 4.1/23, mb1mx4.0/45, mbtmp4.0/23, ML3.8/2, MS2.7/5, Ms1 2.7/5, ms1mx2.4/42, Error ellipse: s-maj=19.8km s-min=14.9km az=93.0*
*ISCJB **01** 23:25:24.8±0.7, 37°.70N±0°.03×141°.87E±0°.06, h46km±5km, mb4.0/27, MS2.7/1, Error ellipse: s-maj=8.7km s-min=4.9km az=17.3*
*NEIC **01** 23:25:27.0±0.8, 37°.71N×141°.86E, h50km±7km, mb4.4/6, Error ellipse: s-maj=10.6km s-min=7.2km az=121.0*
NEIC Recorded [2 JMA] in Fukushima.
*JMA **01** 23:25:28.1, 37°.78N×141°.57E, h48km±1km, M4.1*
JMA Felt II J1.

ISC 01 23:25:26.2±1.2, 37°.74N±0°.04×141°.82E±0°.07, h41km±11km, n56, σ1°.23/57, mb4.2/27, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.81	333	P	Pn	23 25 41.7	+0.5
JIO				S	Sn	23 25 51.0	-1.0
JMM	Marumori	0.83	279	P	Pn	23 25 40.9	-0.5
JMM				S	Sn	23 25 49.8	-2.6
JFK	Kawauchi	0.84	244	P	Pn	23 25 41.6	0.0
JFK				S	Sn	23 25 51.0	-1.8
ONAJ	Iwakimizuishiy	1.03	233	P	Pn	23 25 44.6	+0.3
ONAJ				S	Sn	23 25 56.0	-1.6
JFT	Otama	1.20	260	P	Pn	23 25 46.7	+0.2
JFT				S	Sn	23 26 00.2	-1.4
JMK	Ichinoseki	1.30	339	P	Pn	23 25 48.8	+0.8
JMK				S	Sn	23 26 03.7	-0.5
JYS	Shirataka	1.47	290	P	Pn	23 25 49.9	-0.4
JYK	Kaneyama	1.65	316	P	Pn	23 25 52.9	+0.2
JFY	Yanaizu	1.71	260	P	Pn	23 25 53.6	0.0
MJAR	Matsushiro Arr	3.12	249	Pn	Pn	23 26 13.9	+1.0
	6.8nm,0.3s,baz=71,slow=12,SNR=22						
MJAR				Sn	Sn	23 26 52.5	+3.5
	7.7nm,0.3s,baz=81,slow=16,SNR=4.6						
MJAR				LR	LR	23 27 48.8	
	comp=Z,112nm,19.1s,baz=60,slow=46						
MAJO	Matsushiro	3.12	249	ePn	Pn	23 26 14.2	+1.2
MAT	Matsushiro	3.12	249	P	Pn	23 26 14.4	+1.4
MAT				S	Sn	23 26 50.6	+1.5
ERM	Erimo	4.40	13	ePn	Pn	23 26 31.4	+1.0
JHJ	Hachijo jima 2	4.90	200	Pn	Pn	23 26 38.0	+0.7
	13nm,0.3s,baz=162,slow=23,SNR=8.5						
JHJ				Sn	Sn	23 27 31.9	-0.8
	49nm,0.3s,baz=251,slow=22,SNR=10						
ASAJ	Asahikawa	6.40	5	Pn	Pn	23 26 59.0	+1.1
	1.5nm,0.3s,baz=239,slow=12,SNR=5.4						
ASAJ				LR	LR	23 28 58.7	
	comp=Z,32nm,19.7s,baz=157,slow=35						
USRK	Ussuriysk Ar.	9.85	314	Pn	Pn	23 27 45.9	+0.7
	0.7nm,0.3s,baz=120,slow=14,SNR=5.5						
CBIJ	Chichi jima	10.61	178	Pn	Pn	23 27 54.9	-0.9
JCJ	Chichijima	10.61	178	Pn	Pn	23 27 54.9	-0.9
	baz=338,slow=19						
KSRS	Korea Array	11.04	273	Pn	Pn	23 28 04.7	+3.2
	0.3nm,0.3s,baz=83,slow=13,SNR=4.9						
KSRS				LR	LR	23 31 30.3	
	comp=Z,46nm,19.6s,baz=64,slow=33						
KSAR	Wonju Array Be	11.07	273	Pn	Pn	23 28 04.7	+2.8
KLR	Kul'dur	13.60	331	LR	LR	23 33 28.9	
	comp=Z,37nm,20.7s,baz=162,slow=36						
MA2	Magadan	22.60	12	LR	LR	23 38 27.5	
	comp=Z,27nm,19.0s,baz=90,slow=35						
SSLB	Suanglung	22.62	238	eP	P	23 30 22.3	-1.4
	4.5nm,0.4s						
SEY	Seymchan	26.04	11	P	P	23 30 56.9	+1.6
	1.0nm,0.5s,baz=270,slow=20,SNR=3.3						
SONM	Songino Array	27.67	303	P	P	23 31 09.7	-0.7
	1.4nm,0.6s,baz=98,slow=9.3,SNR=11						
ENH	Enshi	27.72	264	eP	P	23 31 09.9	-1.0
	12nm,0.9s						
H11N2	WAKE ISLAND Hy	28.24	122	T	T	00 01 36.2	
	baz=315,slow=75,SNR=774						
H11N1	WAKE ISLAND Hy	28.25	122	T	T	00 01 34.9	
	baz=315,slow=75,SNR=878						
H11N3	WAKE ISLAND Hy	28.25	122	T	T	00 01 35.7	
	baz=315,slow=75,SNR=770						
H11S1	WAKE ISLAND Hy	28.98	125	T	T	00 02 25.6	
	baz=317,slow=76,SNR=291						
H11S3	WAKE ISLAND Hy	28.98	125	T	T	00 02 33.0	
	baz=317,slow=76,SNR=283						
H11S2	WAKE ISLAND Hy	28.99	125	T	T	00 02 34.4	
	baz=317,slow=76,SNR=229						
ZALV	Zalesovo Beam	41.69	312	P	P	23 33 10.5	-0.2
	3.2nm,0.7s,baz=99,slow=7.7,SNR=4.4						
CMAR	Chiang Mai Arr	41.99	255	P	P	23 33 14.5	+0.9
	0.6nm,0.4s,baz=41,slow=8.4,SNR=3.2						
MKAR	Makanchi Array	44.03	302	P	P	23 33 30.0	+0.2
	2.3nm,0.8s,baz=98,slow=6.0,SNR=4.2						
KURK	Kurchatov	45.76	308	eP	P	23 33 43.9	+0.4
	9.0nm,0.5s						
KURBB	Kurchatov Arra	45.83	308	P	P	23 33 44.1	+0.1
	3.5nm,0.5s,baz=81,slow=8.2,SNR=4.9						
COLA	College	48.31	33	eP	P	23 34 02.9	-0.3
	1.5nm,0.5s						
AAK	Ala-Archa	50.45	298	eP	P	23 34 20.4	+0.4
	1.5nm,0.6s						
ARU	Arti	56.05	318	P	P	23 35 00.5	-0.3
	1.0nm,0.4s,baz=22,slow=4.8,SNR=4.4						
WRA	Warramunga Arr	57.80	188	P	P	23 35 13.7	+0.2
	1.3nm,0.5s,baz=5.5,slow=7.2,SNR=21						
AKTO	Aktyubinsk	58.45	312	P	P	23 35 16.0	-1.8
	1.9nm,0.8s,baz=256,slow=23,SNR=4.0						
ASAR	Alice Springs	61.53	188	P	P	23 35 40.4	+1.3
	0.5nm,0.7s,baz=6.6,slow=6.2,SNR=7.0						
YKA	Yellowknife Ar	63.04	30	P	P	23 35 46.5	-2.3
	0.1nm,0.6s,baz=268,slow=5.8,SNR=2.7						
ARCES	ARCESS Array B	63.46	339	P	P	23 35 50.6	-0.8
	1.0nm,0.7s,baz=52,slow=7.9,SNR=7.9						
GEYT	Alibeck	63.78	299	P	P	23 35 53.9	-0.2
	1.2nm,0.7s,baz=44,slow=4.5,SNR=3.7						
FINES	FINESS Array B	68.35	332	P	P	23 36 22.9	0.0
	1.9nm,0.6s,baz=38,slow=13,SNR=11						
KVAR	Kislovodsk Arr	70.69	311	P	P	23 36 38.9	+1.0
	3.5nm,0.9s,baz=289,slow=6.8,SNR=4.3						
KBZ	Khabaz	70.69	311	P	P	23 36 38.0	+0.3
	1.9nm,0.9s,baz=64,slow=6.2,SNR=5.0						
CMB	Columbia Colle	73.20	55	eP	P	23 36 53.1	+0.1
	2.6nm,0.4s						
NB2	NORSAR Subarra	73.67	337	P	P	23 36 55.0	-0.3
	comp=Z,0.6nm,0.5s,baz=37,slow=6.2						
NOA	NORSAR Array B	73.67	337	P	P	23 36 55.5	+0.2
	comp=Z,1.4nm,0.8s,baz=38,slow=5.9,SNR=6.6						
AKASG	Malin Array Be	73.94	322	P	P	23 36 57.0	0.0
	comp=Z,1.3nm,0.4s,baz=45,slow=6.4,SNR=6.0						
PDAR	Pinedale Array	76.94	46	P	P	23 37 15.9	+1.2
	comp=Z,0.2nm,0.6s,baz=241,slow=0.9,SNR=2.4						
BRTR	Keskin Array B	78.63	312	P	P	23 37 24.3	+0.2
	comp=Z,0.5nm,0.6s,baz=77,slow=4.6,SNR=4.2						
GERES	GERESS Array B	82.29	328	P	P	23 37 43.5	0.0
	comp=Z,0.4nm,0.4s,baz=38,slow=6.8,SNR=5.0						

*IDC **01** 23:27:24.9±1.0, 43°.67N×77°.68E, h0km, mb3.2/2, mb1 3.6/8, mb1mx3.4/45, mbtmp3.6/8, ML3.1/6, MS2.7/2, Ms1 2.7/2, ms1mx2.2/28, Error ellipse: s-maj=16.7km s-min=7.3km az=138.0*
*NNC **01** 23:27:25.8±0.9, 43°.60N×77°.71E, h0km, mb4.0, mpv3.8, Error ellipse: s-maj=15.0km s-min=3.8km az=172.0*
*KRNET **01** 23:27:25.7±0.1, 43°.62N×77°.66E, h23km, mb3.9*
*ISCJB **01** 23:27:26.6±0.4, 43°.62N±0°.02×77°.67E±0°.02, h8km±2km, mb3.0/1, MS2.7/1, Error ellipse: s-maj=3.1km s-min=2.1km az=163.1*
*SOME **01** 23:27:26.5, 43°.58N×77°.67E, h15km*

ISC 01 23:27:25.7±0.7, 43°.61N±0°.02×77°.62E±0°.01, h15km±5km, n58, σ1°.19/100, 37C-16D, Lake Issyk-Kul region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KURS	Kuram	0.42	107	eP	Pb	23 27 34.9	+0.1
	298nm,0.1s						
KURS				eS	Sg	23 27 40.5	+0.5
	3μm,0.3s						
CHKK	Chushkaly	0.52	300	eP	Pb	23 27 37.6	+1.1
	365nm,0.2s						
CHKK				eS	Sb	23 27 45.6	+1.7
	4μm,0.3s						
KOTS	Kotyrbulak	0.53	225	eP	Pb	23 27 38.1	+1.3
KOTS				eS	Sn	23 27 46.6	-0.9
AAA	Alma-Ata	0.59	236	eP	Pn	23 27 40.1	+0.5
	714nm,0.2s						
AAA				eS	Sn	23 27 49.7	+0.6
	14μm,0.2s						
MDOK	Medeo	0.61	223	⇑iP	Pb	23 27 39.0	+0.9
	362nm,0.2s						
MDOK				⇓iS	Sb	23 27 47.9	+1.3
	4μm,0.2s						
KNDC	Almaty	0.62	231	⇑P	Pb	23 27 39.4	+1.2
KNDC				⇑S	Sb	23 27 47.4	+0.7
ARXS	Arharly	0.62	14	eP	Pb	23 27 39.2	+0.9
	932nm,0.3s						
ARXS				eS	Sb	23 27 48.1	+1.2
	2μm,0.2s						
MNBS	Baschi	0.73	50	eP	Pb	23 27 40.7	+0.4
	154nm,0.2s						
MNBS				eS	Sb	23 27 50.5	+0.4
	2μm,0.3s						
ZHN	Zhinishke	0.74	126	eP	Pg	23 27 40.1	-0.1
	375nm,0.1s						
ZHN				eS	Sg	23 27 49.5	-0.5
	17μm,0.2s						
TNSS	Tian-Shan	0.75	221	eP	Pb	23 27 41.5	+0.7
	355nm,0.2s						
TNSS				eS	Sb	23 27 52.2	+1.3
	2μm,0.3s						
KPKS	Kokpek	0.79	100	eP	Pg	23 27 40.9	-0.1
	1μm,0.1s						
KPKS				eS	Sg	23 27 51.1	-0.3
	5μm,0.2s						
SATY	Saty	0.80	134	⇓iP	Pg	23 27 41.2	0.0
	2μm,0.1s						
SATY				eS	Sg	23 27 51.6	-0.1
	15μm,0.1s						
ANVS	Anan'yevo	0.83	178	⇑iP	Pg	23 27 41.9	+0.1
	baz=180						
ANVS				⇑iS	Sg	23 27 53.2	+0.4
	baz=180						
KUU	Kurty	0.97	287	eP	Pn	23 27 45.1	+0.3
	212nm,0.1s						
KUU				⇑iS	Sn	23 27 58.5	+0.2
	1μm,0.3s						
MTBS	Maitube	0.99	241	⇑iP	Pn	23 27 45.6	+0.5
	412nm,0.2s						
MTBS				⇓iS	Sn	23 27 59.4	+0.5
	2μm,0.3s						
UZB	Uzynbulak	1.12	114	eP	Pb	23 27 46.6	-0.3
	1μm,0.2s						
UZB				eS	Sb	23 28 00.7	-0.6
	2μm,0.3s						
PRZ	Pzheval'sk	1.26	153	⇑iP	Pg	23 27 50.6	+0.5
	baz=154						
PRZ				⇑iS	Sg	23 28 07.9	+1.3
	baz=154						
KST	Kastek	1.33	245	eP	Pg	23 27 51.2	-0.2
	1μm,0.4s						
KST				eS	Sg	23 28 09.1	+0.3
	10μm,0.3s						
PDGK	Podgornoye	1.39	101	⇑iP	Pn	23 27 51.0	+0.5
	baz=102						
PDGK				⇑iS	Sn	23 28 09.2	+0.7
	baz=102						
PDGK	Podgornoye	1.39	101	⇓P	Pn	23 27 50.8	+0.4
	357nm,0.4s						
PDGK				⇓S	Sn	23 28 08.6	+0.1
	397nm,0.5s						
DGS	Degeres	1.40	255	eP	Pg	23 27 52.5	-0.1
	158nm,0.3s						
DGS				eS	Sg	23 28 11.0	+0.2
	1μm,0.3s						
TDK	Taldyqorghan	1.50	22	eP	Pb	23 27 53.3	0.0
	644nm,0.2s						
TDK				eS	Sg	23 28 13.8	-0.5
	3μm,0.4s						
KDJ	Kajisay	1.51	192	⇓iP	Pg	23 27 54.7	-0.2
	baz=193						
KDJ				⇓iS	Sg	23 28 14.4	-0.2
	baz=193						
TKM2	Tokmak 2	1.63	246	⇑iP	Pb	23 27 56.0	+0.4
	baz=246						
TKM2				⇑iS	Sg	23 28 18.3	0.0
	baz=246						
TKM2	Tokmak 2	1.63	246	⇑P	Pb	23 27 56.0	+0.4
	28nm,0.2s						
TKM2				⇑S	Sg	23 28 18.2	-0.1
	336nm,0.5s						
BOOM	Boomskoye usch	1.66	228	⇓iP	Pb	23 27 56.8	+0.7
	baz=229						
BOOM				⇓iS	Sg	23 28 19.2	-0.1
	baz=229						
ULHL	Ulahol	1.70	217	⇑iP	Pb	23 27 57.4	+0.7
	baz=218						
ULHL				⇑iS	Sg	23 28 19.9	-0.5
	baz=218						
SHLS	Shalkode	1.71	105	eP	Pn	23 27 56.0	+0.9
	256nm,0.2s						
SHLS				eS	Sb	23 28 18.6	+0.2
	1μm,0.3s						
DJR	Jarkent	1.73	65	eP	Pb	23 27 56.9	-0.2
	313nm,0.2s						
DJR				⇓iS	Sb	23 28 19.5	+0.8
	1μm,0.3s						
KTMS	Ketmen	1.99	94	eP	Pb	23 28 01.2	-0.6
	224nm,0.3s						
KTMS				eS	Sb	23 28 26.8	+0.3
	797nm,0.3s						
KAPS	Kapalarasan	2.09	36	⇓iP	Pb	23 28 03.6	+0.3
	146nm,0.3s						
KAPS				eS	Sg	23 28 30.9	-1.9
	1μm,0.3s						
CHMS	Chumysh	2.18	255	⇑iP	Pb	23 28 04.3	-0.6
	baz=255						
CHMS				⇑iS	Sb	23 28 31.9	+0.2
	baz=255						
USP	Ospenovka	2.30	262	⇑iP	Pb	23 28 06.1	-0.8
	baz=262						
USP				⇑iS	Sb	23 28 35.0	-0.1
	baz=262						
KZA	Kyzart	2.32	230	⇑iP	Pb	23 28 06.7	-0.8
	baz=230						
KZA				⇑iS	Sb	23 28 35.7	-0.4
	baz=230						
FRU1	Bishkek	2.33	251	⇑eP	Pb	23 28 06.3	-1.1
	baz=251						
FRU1				⇑iS	Sb	23 28 36.4	+0.5
	baz=251						
NRN	Naryn	2.48	209	⇑eP	Pb	23 28 10.6	+0.4
	baz=210						
NRN				⇑iS	Sb	23 28 42.2	+1.5
	baz=210						
AAK	Ala-Archa	2.49	248	Pn	Pb	23 28 10.5	+0.3
	18nm,0.3s,baz=91,slow=8.9,SNR=104						
AAK				Pg	Pg	23 28 15.0	+1.6
	50nm,0.3s,baz=90,slow=9.9,SNR=97						
AAK				Lg	Lg	23 28 44.1	
	30nm,0.3s,baz=282,slow=20,SNR=12						
AAK	Ala-Archa	2.49	248	⇓Pn	Pb	23 28 10.8	+0.6
	62nm,0.3s						
AAK				⇑Sn	Sg	23 28 44.2	-1.5
	44nm,0.5s						
MRKS	Merke	3.33	256	eP	Pg	23 28 27.8	-1.7
	42nm,0.5s						
MRKS				eS	Sg	23 29 11.1	-1.5
	117nm,0.4s						
MNAS	Manas	3.91	255	⇑eP	Pn	23 28 29.1	+3.7
	baz=255						
MNAS				⇑iS	Sb	23 29 23.5	+1.8
	baz=255						
MNAS	Manas	3.91	255	⇑Pg	Pg	23 28 39.8	-0.9
	7.6nm,0.5s						
MNAS				⇑Lg	Lg	23 29 29.6	
	30nm,0.5s						
MK31	Makanchi Array	4.59	44	Pn	Pn	23 28 36.4	+1.9
	0.5nm,0.2s,baz=221,slow=16,SNR=193						
MK31				⇓Lg	Lg	23 29 46.8	
	8.9nm,0.3s,baz=219,slow=28,SNR=11						
MKAR	Makanchi Array	4.59	44	Pn	Pn	23 28 36.2	+1.7
	1.2nm,0.3s,baz=222,slow=14,SNR=97						
MKAR				Lg	Lg	23 29 47.8	
	14nm,0.3s,baz=226,slow=29,SNR=12						
MKAR				LR	LR	23 30 29.5	
	comp=Z,60nm,18.9s,baz=168,slow=41						
SFK	Sufi-Kurgan	4.73	222	⇓eP	Pn	23 28 42.7	+6.0
	baz=222						
SFK				⇓iS	Sg	23 29 52.3	-5.3
	baz=222						
KK31	Karatay Array	5.21	267	⇑Pg	Pb	23 28 58.7	+2.2
	1.1nm,0.3s,baz=77,slow=15,SNR=19						
KK31				Lg	Lg	23 30 09.2	
	34nm,0.5s,baz=80,slow=30,SNR=12						
IUG	Iuzhnay	5.76	258	eP	Pg	23 29 13.3	-2.8
	8.0nm,0.4s						
IUG				eS	Sg	23 30 28.9	-1.8
	43nm,0.7s						
OTUK	Ortayu	5.92	323	⇑Pn	Pn	23 28 54.2	+1.4
	2.0nm,0.4s						
OTUK				⇓Lg	Lg	23 30 34.3	
	50nm,0.6s						
ZSN	Zaisan	6.12	49	eP	Pg	23 29 21.6	-1.1
	7.5nm,0.6s						
ZSN				eS	Sg	23 30 43.8	+1.9
	21nm,0.8s						
KURBB	Kurchatov Arra	7.04	5	Pn	Pn	23 29 09.3	+1.1
	0.5nm,0.3s,baz=191,slow=12,SNR=43						
KURBB				Lg	Lg	23 31 07.9	
	1.0nm,0.3s,baz=186,slow=28,SNR=8.6						
KURK	Kurchatov	7.14	5	⇑Pn	Pn	23 29 09.7	+0.2
	2.9nm,0.5s						
KURK				⇑Lg	Lg	23 31 12.9	
	92nm,0.6s						
BVA0	Borovoye Array	10.57	336	⇑Lg	Lg	23 33 02.9	
	20nm,0.5s,baz=151,slow=27,SNR=5.3						
BVAR	Borovoye Array	10.57	336	Pn	Pn	23 29 56.2	-0.3
	0.6nm,0.3s,baz=150,slow=13,SNR=5.8						
BVAR				Sn	Sn	23 31 49.4	-5.1
	0.8nm,0.3s,baz=135,slow=17,SNR=4.4						
BVAR				Lg	Lg	23 32 59.6	
	1.2nm,0.3s,baz=145,slow=29,SNR=3.5						
ZALV	Zalesovo Beam	11.38	22	Pn	Pn	23 30 08.0	+0.5
	0.4nm,0.3s,baz=206,slow=17,SNR=6.4						
ZALV				Sn	Sn	23 32 14.4	+0.2
	0.3nm,0.3

*DDA **01** 23:29:00.9, 40°.65N×30°.58E, h7km, Md2.6, Suspected Mining explosion.*
*ISCJB **01** 23:29:01.1±0.5, 40°.63N±0°.04×30°.55E±0°.04, h0km, Error ellipse: s-maj=5.5km s-min=4.6km az=22.6*
*CSEM **01** 23:29:01.3±0.2, 40°.63N×30°.59E, h5km, MD2.9, Error ellipse: s-maj=3.9km s-min=3.4km az=21.0, Suspected Mining explosion.*
*ISK **01** 23:29:02.3, 40°.58N×30°.47E, h7km, MD2.9*

ISC 01 23:29:01.3±0.9, 40°.64N±0°.03×30°.58E±0°.02, h0km, n34, σ0°42/40, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GULT	**Gulveren**	**0.21**	**194**	*e*PG	**Pg**	**23 29 05.5**	**+0.3**
GULT	**Gulveren**	**0.21**	**194**	*e*Pg	**Pg**	**23 29 05.5**	**+0.3**
SPNC	**Sapanca-Adapaz**	**0.21**	**284**	*e*PG	**Pg**	**23 29 06.2**	**+0.8**
SPNC	**Sapanca-Adapaz**	**0.21**	**284**	*e*Pg	**Pg**	**23 29 06.2**	**+0.8**
SAHE	**Sakarya_HENDEK**	**0.30**	**43**	P	**Pg**	**23 29 07.5**	**+0.5**
SAHE	**Sakarya_HENDEK**	**0.30**	**43**	*i* P	**Pg**	**23 29 07.5**	**+0.5**
BTAS	**Taskesti**	**0.32**	**101**	P	**Pg**	**23 29 07.7**	**+0.3**
BTAS	**Taskesti**	**0.32**	**101**	*i* P	**Pg**	**23 29 07.7**	**+0.3**
GPA	**Golpazari**	**0.40**	**211**	*e*PG	**Pg**	**23 29 09.2**	**+0.3**
GPA	**Golpazari**	**0.40**	**211**	*e*Pg	**Pg**	**23 29 09.3**	**+0.3**
KAND	**Kocaeli-Kandir**	**0.55**	**327**	P	**Pg**	**23 29 11.9**	**+0.1**
KAND				S	**Sg**	**23 29 19.1**	**+0.3**
KAND	**Kocaeli-Kandir**	**0.55**	**327**	*i* P	**Pg**	**23 29 11.9**	**+0.1**
KAND				*i* S	**Sg**	**23 29 19.1**	**+0.3**
BORA	**Eskisehir**	**0.76**	**188**	P	**Pg**	**23 29 15.9**	**+0.1**
BORA	**Eskisehir**	**0.76**	**188**	*i* P	**Pg**	**23 29 15.9**	**+0.1**
SILT	**Sile**	**0.88**	**306**	*e*PG	**Pb**	**23 29 19.2**	**-0.2**
SILT	**Sile**	**0.88**	**306**	*e*Pg	**Pb**	**23 29 19.2**	**-0.2**
GEMT	**Gemlik**	**1.08**	**260**	*e*PG	**Pg**	**23 29 21.5**	**-0.5**
GEMT				*e*SG	**Sg**	**23 29 35.8**	**-0.2**
GEMT	**Gemlik**	**1.08**	**260**	*e*Pg	**Pg**	**23 29 21.5**	**-0.5**
GEMT				*e*Sg	**Sg**	**23 29 35.8**	**-0.2**
BCAM	**Yenicaga**	**1.14**	**80**	P	**Pg**	**23 29 22.2**	**-0.9**
BCAM	**Yenicaga**	**1.14**	**80**	*i* P	**Pg**	**23 29 22.2**	**-0.9**
ISK	**Istanbul-Kandi**	**1.23**	**291**	*e*PN	**Pg**	**23 29 25.1**	**+0.2**
ISK	**Istanbul-Kandi**	**1.23**	**291**	*e*Pn	**Pg**	**23 29 25.1**	**+0.2**
ARMT	**Armutlu**	**1.31**	**268**	*e*PN	**Pg**	**23 29 26.1**	**-0.3**
ARMT				*e*SN	**Sg**	**23 29 43.2**	**-0.2**
ARMT	**Armutlu**	**1.31**	**268**	*e*Pn	**Pg**	**23 29 26.1**	**-0.3**
ARMT				*e*Sn	**Sg**	**23 29 43.2**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.32**	**259**	*e*PN	**Pg**	**23 29 26.2**	**-0.4**
MDNY	**Mudanya-Bursa**	**1.32**	**259**	*e*Pn	**Pg**	**23 29 26.2**	**-0.4**
SVRH	**Sivrihisar-ESK**	**1.39**	**148**	*e*PN	**Pb**	**23 29 28.8**	**+0.7**
SVRH	**Sivrihisar-ESK**	**1.39**	**148**	*e*Pn	**Pb**	**23 29 28.8**	**+0.7**
TVSB	**Tavsanli**	**1.46**	**216**	*e*PN	**Pn**	**23 29 28.9**	**-0.1**
TVSB	**Tavsanli**	**1.46**	**216**	*e*Pn	**Pn**	**23 29 28.9**	**-0.1**
CTKS	**Kestanelik-??a**	**1.68**	**292**	*e*PN	**Pn**	**23 29 32.0**	**0.0**
CTKS	**Kestanelik-??a**	**1.68**	**292**	*e*Pn	**Pn**	**23 29 32.0**	**0.0**
KCTX	**Karacabey (Bur**	**1.74**	**258**	*e*PN	**Pn**	**23 29 32.5**	**-0.2**
KCTX	**Karacabey (Bur**	**1.74**	**258**	*e*Pn	**Pn**	**23 29 32.5**	**-0.2**

*IDC **01** 23:49:52.0±0.6, 37°.47N×143°.64E, h0km, mb4.1/25, mb1 4.2/33, mb1mx4.1/53, mbtmp4.1/33, ML4.0/6, MS3.6/4, Ms1 3.6/4, ms1mx3.0/34, Error ellipse: s-maj=14.5km s-min=12.3km az=117.0*
*ISCJB **01** 23:49:52.8±1.3, 37°.59N±0°.04×143°.50E±0°.04, h11km±8km, mb4.2/43, MS3.7/6, Error ellipse: s-maj=7.4km s-min=4.8km az=159.1*
*JMA **01** 23:49:54.7±0.2, 37°.63N×143°.51E, h46km, M4.3*
*MOS **01** 23:49:55.6±1.8, 37°.61N×143°.62E, h33km, mb4.6/23, Error ellipse: s-maj=9.1km s-min=6.1km az=103.3*
*NEIC **01** 23:49:57.0±0.5, 37°.48N×143°.63E, h35km, mb4.3/4, Error ellipse: s-maj=10.7km s-min=7.7km az=128.0*

ISC 01 23:49:53.1±2.6, 37°.54N±0°.05×143°.60E±0°.06, h7km±16km, n109, σ1°76/108, mb4.4/46, MS3.7/6, 9C-1D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.00**	**298**	P	**Pn**	**23 50 25.8**	**-1.5**
JIO				*e*S	**Sn**	**23 50 48.4**	**-4.2**
OFUJ	**Ofunato**	**2.16**	**316**	P	**Pn**	**23 50 27.5**	**-2.1**
JFK	**Kawauchi**	**2.17**	**266**	P	**Pn**	**23 50 28.4**	**-1.4**
JFK				S	**Sn**	**23 50 53.3**	**-3.7**
JMM	**Marumori**	**2.25**	**279**	P	**Pn**	**23 50 29.4**	**-1.4**
ONAJ	**Iwakimizuishiy**	**2.27**	**260**	P	**Pn**	**23 50 30.1**	**-1.1**
ONAJ				S	**Sn**	**23 50 55.9**	**-3.6**
JMK	**Ichinoseki**	**2.35**	**308**	P	**Pn**	**23 50 30.5**	**-1.6**
JOU	**Okura**	**2.46**	**291**	P	**Pn**	**23 50 33.0**	**-0.7**
JOU				*e*S	**Sn**	**23 51 01.1**	**-3.0**
JFT	**Otama**	**2.59**	**271**	P	**Pn**	**23 50 35.1**	**-0.4**
JFT				S	**Sn**	**23 51 04.8**	**-2.5**
JHO	**Hitachi**	**2.59**	**250**	P	**Pn**	**23 50 34.6**	**-0.9**
JOM	**Ohasama**	**2.65**	**318**	P	**Pn**	**23 50 34.7**	**-1.6**
JOM				*e*S	**Sn**	**23 51 04.3**	**-4.4**
MJAR	**Matsushiro Arr**	**4.42**	**259**	Pn	**Pn**	**23 51 01.1**	**+0.4**
	24nm,0.3s,baz=84,slow=14,SNR=155						
MJAR				Sn	**Sn**	**23 51 52.0**	**-0.5**
	4.4nm,0.3s,baz=72,slow=32,SNR=5.1						
MAJO	**Matsushiro**	**4.42**	**259**	*c i* P	**Pn**	**23 51 01.6**	**+0.9**
MAJO	**Matsushiro**	**4.42**	**259**	*e*Pn	**Pn**	**23 51 01.9**	**+1.1**
MAT	**Matsushiro**	**4.42**	**259**	P	**Pn**	**23 51 01.6**	**+0.9**
MAT				S	**Sn**	**23 51 52.2**	**-0.3**
ERM	**Erimo**	**4.49**	**356**	*d i* P	**Pn**	**23 50 59.5**	**-2.0**
ERM	**Erimo**	**4.49**	**356**	*e*Pn	**Pn**	**23 50 60.0**	**-1.5**
JHJ	**Hachijo jima 2**	**5.40**	**216**	Pn	**Pn**	**23 51 12.5**	**-1.5**
	38nm,0.3s,baz=282,slow=19,SNR=14						
JHJ				Sn	**Sn**	**23 52 11.3**	**-5.2**
	73nm,0.3s,baz=40,slow=23,SNR=6.0						
ASAJ	**Asahikawa**	**6.62**	**354**	Pn	**Pn**	**23 51 29.6**	**-1.2**
	14nm,0.3s,baz=200,slow=14,SNR=26						
ASAJ				Sn	**Sn**	**23 52 42.1**	**-4.4**
	3.7nm,0.3s,baz=46,slow=30,SNR=6.9						
YUK	**Yuzh-Kuril'sk**	**6.72**	**14**	*e*P	**Pn**	**23 51 29.3**	**-2.8**
YUK				*e*S	Sn	23 52 40.4	-8.5
YUK				pmax	pmax		
	comp=Z,154nm,0.7s						
YUK				pmax	pmax		
	comp=N,117nm,0.4s						
YUK				pmax	pmax		
	comp=E,61nm,0.4s						
SHO	**Shikotan**	**6.79**	**20**	*e*P	Pn	23 51 29.6	-3.5
SHO				*e*S	Sn	23 52 40.8	-10
SHO				pmax	pmax		
	comp=Z,54nm,0.4s						
KUR	**Kuril'sk**	**8.33**	**21**	*e*P	**Pn**	**23 51 53.7**	**-0.6**
CBIJ	**Chichi jima**	**10.48**	**187**	Pn	**Pn**	**23 52 20.7**	**-3.1**
CBIJ				Sn	Sn	23 54 09.5	-12
JCJ	**Chichijima**	**10.48**	**187**	Pn	**Pn**	**23 52 20.7**	**-3.1**
	comp=Z,12nm,0.3s,baz=81,slow=21,SNR=7.3						
JCJ				Sn	Sn	23 54 09.5	-12
	comp=Z,10nm,0.3s,baz=285,slow=19,SNR=6.9						
MSHR	**Mys Shultsa**	**10.78**	**302**	*ce*P	**Pn**	**23 52 28.9**	**+1.0**
USRK	**Ussuriysk Ar.**	**11.02**	**311**	Pn	**Pn**	**23 52 31.9**	**+0.7**
	comp=Z,1.4nm,0.3s,baz=115,slow=12,SNR=11						
JNU	**Nakatsue**	**11.28**	**251**	Pn	**Pn**	**23 52 35.0**	**+0.2**
	comp=Z,0.3nm,0.3s,baz=210,slow=18,SNR=4.6						
KSRS	**Korea Array**	**12.45**	**274**	Pn	**Pn**	**23 52 53.2**	**+2.4**
	comp=Z,0.3nm,0.3s,baz=84,slow=14,SNR=14						
KSAR	**Wonju Array Be**	**12.48**	**274**	P	**Pn**	**23 52 53.2**	**+2.0**
KSAR	**Wonju Array Be**	**12.48**	**274**	Pn	**Pn**	**23 52 53.2**	**+2.0**
KLR	**Kul'dur**	**14.50**	**327**	Pn	**Pn**	**23 53 16.1**	**-2.6**
	comp=Z,0.5nm,0.3s,baz=132,slow=12,SNR=19						
PETK	**Petropavlovsk-**	**18.41**	**28**	P	**P**	**23 54 10.6**	**+1.9**
	comp=Z,0.1nm,0.3s,baz=190,slow=16,SNR=3.0						
GUMO	**Guam**	**23.88**	**177**	LR	LR	00 04 33.8	
	comp=Z,48nm,19.1s,baz=96,slow=37						
SEY	**Seymchan**	**25.99**	**9**	P	**P**	**23 55 27.0**	**+0.8**
	comp=Z,4.6nm,0.9s,baz=176,slow=8.8,SNR=7.2						
SEY	**Seymchan**	**25.99**	**9**	*ce*P	**P**	**23 55 28.5**	**+2.2**
YAK	**Yakutsk**	**26.00**	**345**	*e*P	P	23 55 33.7	+7.4
YAK				pmax	pmax		
	comp=Z,14nm,0.9s						
YAK				pmax	pmax		
	comp=E,4.0nm,1.1s						
YAK				pmax	pmax		
	comp=N,8.0nm,1.3s						
H11N2	**WAKE ISLAND Hy**	**26.95**	**125**	T	T	00 23 52.3	
	baz=317,slow=75,SNR=12						
H11N1	**WAKE ISLAND Hy**	**26.96**	**125**	T	T	00 23 49.7	
	baz=317,slow=75,SNR=8.0						
H11N3	**WAKE ISLAND Hy**	**26.97**	**125**	T	T	00 23 57.4	
	baz=317,slow=75,SNR=10						
H11S1	**WAKE ISLAND Hy**	**27.71**	**127**	T	T	00 24 55.1	
	baz=318,slow=76,SNR=6.1						
H11S3	**WAKE ISLAND Hy**	**27.72**	**127**	T	T	00 24 49.1	
	baz=318,slow=76,SNR=6.6						
H11S2	**WAKE ISLAND Hy**	**27.73**	**127**	T	T	00 24 55.5	
	baz=318,slow=76,SNR=7.0						
BOD	**Bodaibo**	**28.07**	**326**	*e*P	**P**	**23 55 43.4**	**-1.6**
BOD				pmax	pmax		
	comp=Z,7.0nm,1.5s						
ULN	**Ulaanbaatar**	**28.53**	**303**	*ce*P	**P**	**23 55 50.6**	**+1.2**
ULN				pmax	pmax		
	comp=Z,8.0nm,0.8s						
ULN	**Ulaanbaatar**	**28.53**	**303**	*e*P	**P**	**23 55 49.8**	**+0.4**
	comp=Z,6.6nm,0.8s						
SONM	**Songino Array**	**28.96**	**303**	P	**P**	**23 55 53.8**	**+0.6**
	comp=Z,2.3nm,0.6s,baz=85,slow=8.4,SNR=18						
ENH	**Enshi**	**29.11**	**266**	*e*P	**P**	**23 55 55.7**	**+1.1**
	comp=Z,25nm,0.9s						
TLY	**Talaya**	**31.33**	**310**	P	**P**	**23 56 16.4**	**+2.3**
	comp=Z,4.1nm,0.7s,baz=147,slow=2.7,SNR=5.4						
TLY	**Talaya**	**31.33**	**310**	*e*P	**P**	**23 56 16.8**	**+2.7**
TLY				pmax	pmax		
	comp=Z,5.0nm,0.8s						
TLY				MLR	MLR		
	comp=Z,100nm,14.0s						
ZAK	**Zakamensk**	**31.34**	**307**	*e*P	**P**	**23 56 13.7**	**-0.5**
ZAK				pmax	pmax		
	comp=Z,4.0nm,1.0s						
MOY	**Mondy**	**32.96**	**309**	*e*P	**P**	**23 56 30.7**	**+2.3**
BILL	**Bilibino**	**33.07**	**15**	*e*P	P	23 56 32.6	+3.6
BILL				*e*		23 56 37.6	
BILL				*e*		23 57 38.1	
BILL				pmax	pmax		
	comp=Z,2.0nm,1.0s						
GTA	**Gaotai**	**34.08**	**287**	*e*P	**P**	**23 56 39.4**	**+1.0**
TIXI	**Tiksi**	**35.02**	**352**	*e*P	P	23 56 54.2	+8.3
TIXI				pmax	pmax		
	comp=Z,1.0nm,1.0s						
ZALV	**Zalesovo Beam**	**42.87**	**312**	P	**P**	**23 57 51.6**	**-0.2**
	comp=Z,3.5nm,0.6s,baz=100,slow=7.5,SNR=6.7						
ZALV				LR	LR	00 17 59.7	
	comp=Z,94nm,18.4s,baz=70,slow=39						
CMAR	**Chiang Mai Arr**	**43.31**	**257**	P	**P**	**23 57 56.4**	**+0.6**
	comp=Z,1.0nm,0.5s,baz=50,slow=6.8,SNR=6.9						
NVS	**Novosibirsk**	**43.76**	**313**	*e*P	P	23 58 05.3	+6.3
NVS				pmax	pmax		
	comp=Z,4.0nm,0.4s						
NVS				pmax	pmax		
	comp=E,3.0nm,0.6s						
MKAR	**Makanchi Array**	**45.33**	**302**	P	**P**	**23 58 11.9**	**+0.1**
	comp=E,4.3nm,0.7s,baz=90,slow=8.6,SNR=4.1						
MKAR				LR	LR	00 19 41.5	
	comp=E,60nm,18.2s,baz=89,slow=39						
MKAR	**Makanchi Array**	**45.33**	**302**	*ce*P	P	23 58 16.1	+4.4
MKAR				pmax	pmax		
	comp=Z,4.0nm,0.7s						
KURK	**Kurchatov**	**46.99**	**308**	P	**P**	**23 58 25.1**	**+0.3**
KURK				pmax	pmax		
	comp=Z,9.0nm,0.6s						
KURK	**Kurchatov**	**46.99**	**308**	P	**P**	**23 58 25.1**	**+0.3**
KURBB	**Kurchatov Arra**	**47.07**	**308**	P	**P**	**23 58 25.1**	**-0.2**
	comp=Z,9.4nm,0.6s,baz=82,slow=7.9,SNR=7.6						
ILAR	**Eielson Array**	**48.14**	**33**	P	**P**	**23 58 34.0**	**+0.6**
	comp=Z,0.9nm,0.8s,baz=267,slow=6.1,SNR=6.1						
GUN	**Gumba**	**48.84**	**276**	*e*P	**P**	**23 58 40.0**	**+0.3**
	comp=Z,10nm,0.3s						
KKN	**Kakani**	**49.36**	**277**	*e*P	**P**	**23 58 44.6**	**+1.0**
	comp=Z,19nm,0.6s						
GKN	**Gorkha**	**49.77**	**277**	*e*P	**P**	**23 58 46.5**	**-0.2**
	comp=Z,8.2nm,0.4s						
KOLN	**Koldanda**	**50.70**	**277**	*e*P	**P**	**23 58 56.0**	**+2.2**
	comp=Z,5.9nm,0.4s						
PYUN	**Piuthan**	**51.03**	**278**	*e*P	**P**	**23 58 57.0**	**+0.7**
	comp=Z,14nm,0.4s						
AAK	**Ala-Archa**	**51.78**	**299**	P	**P**	**23 59 02.2**	**+0.6**
	comp=Z,1.5nm,0.5s,baz=30,slow=20,SNR=2.0						
EKS2	**Erkin-Say**	**52.27**	**299**	*e*P	**P**	**23 59 05.7**	**+0.4**
EKS2				pmax	pmax		
	comp=Z,2.0nm,0.7s						
EKS2	**Erkin-Say**	**52.27**	**299**	*e*P	**P**	**23 59 05.7**	**+0.4**
	comp=Z,1.9nm,0.7s						
INK	**Inuvik**	**53.14**	**27**	P	**P**	**23 59 11.8**	**+0.7**
	comp=Z,0.4nm,0.4s,baz=190,slow=1.5,SNR=5.0						
ARU	**Arti**	**57.13**	**319**	P	**P**	**23 59 40.1**	**0.0**
	comp=Z,2.2nm,0.5s,baz=52,slow=4.1,SNR=6.4						
ARU	**Arti**	**57.13**	**319**	*c i* P	**P**	**23 59 40.7**	**+0.6**
ARU						00 01 45.8	
ARU				S	**S**	**00 07 35.6**	**+0.2**
ARU				SS	**SS**	**00 11 21.2**	**-2.4**
ARU				pmax	pmax		
	comp=Z,7.0nm,1.0s						
WRAB	**Tennant Creek**	**57.82**	**190**	*ce*P	**P**	**23 59 45.4**	**+0.1**
WRAB				pmax	pmax		
	comp=Z,14nm,0.8s						
WRA	**Warramunga Arr**	**57.83**	**190**	P	**P**	**23 59 45.0**	**-0.4**
	comp=Z,9.6nm,0.5s,baz=8.5,slow=7.0,SNR=95						
WRA	**Warramunga Arr**	**57.83**	**190**	P	**P**	**23 59 45.0**	**-0.4**
WRA				pmax	pmax		
	comp=Z,12nm,0.7s						
AKTO	**Aktyubinsk**	**59.63**	**312**	P	**P**	**23 59 56.6**	**-1.1**
	comp=Z,2.1nm,0.6s,baz=52,slow=9.5,SNR=5.6						
AKTO	**Aktyubinsk**	**59.63**	**312**	P	**P**	**23 59 56.6**	**-1.1**
AKTO				pmax	pmax		
	comp=Z,3.0nm,0.8s						
ASAR	**Alice Springs**	**61.55**	**190**	P	**P**	**00 00 10.8**	**-0.2**
	comp=Z,1.1nm,0.5s,baz=12,slow=13,SNR=30						
YKA	**Yellowknife Ar**	**62.49**	**31**	P	**P**	**00 00 17.3**	**+0.4**
	comp=Z,0.4nm,0.7s,baz=304,slow=6.8,SNR=8.6						
ARCES	**ARCESS Array B**	**64.13**	**340**	P	**P**	**00 00 27.9**	**+0.2**
	comp=Z,0.5nm,0.5s,baz=62,slow=8.4,SNR=8.4						
GEYT	**Alibeck**	**65.11**	**300**	P	**P**	**00 00 35.5**	**+0.9**
	comp=Z,2.3nm,0.9s,baz=57,slow=5.5,SNR=7.3						
OBN	**Obninsk**	**68.73**	**324**	*e*P	**P**	**00 00 57.2**	**-0.1**
OBN				*e*		00 03 27.1	
OBN				pmax	pmax		
	comp=Z,3.0nm,1.0s						
OBN				MLR	MLR		
	comp=Z,93nm,19.0s						
STKA	**Stephens Creek**	**69.08**	**182**	P	**P**	**00 00 59.1**	**-0.5**
	comp=Z,1.4nm,0.7s,baz=22,slow=6.2,SNR=3.6						
FINES	**FINESS Array B**	**69.17**	**333**	P	**P**	**00 00 59.5**	**-0.5**
	comp=Z,1.7nm,0.7s,baz=28,slow=9.3,SNR=5.9						
FINES	**FINESS Array B**	**69.17**	**333**	*ce*P	**P**	**00 01 01.2**	**+1.3**
FINES				pmax	pmax		
	comp=Z,2.0nm,0.7s						
ZEI	**Tsey**	**71.82**	**310**	*e*P	**P**	**00 01 13.9**	**-2.8**
ZEI				pmax	pmax		
	comp=Z,7.0nm,0.9s						
KVAR	**Kislovodsk Arr**	**71.88**	**312**	P	**P**	**00 01 17.6**	**+0.7**
	comp=Z,3.1nm,0.8s,baz=53,slow=3.3,SNR=4.0						
KIV	**Kislovodsk**	**71.88**	**312**	*e*P	**P**	**00 01 18.4**	**+1.4**
KIV				pmax	pmax		
	comp=Z,11nm,1.0s						
KBZ	**Khabaz**	**71.89**	**311**	P	**P**	**00 01 17.3**	**+0.5**
	comp=Z,2.6nm,0.9s,baz=218,slow=4.0,SNR=5.8						
NVAR	**Mina Array Bea**	**73.29**	**54**	P	**P**	**00 01 24.9**	**-0.6**
	comp=Z,0.4nm,0.7s,baz=289,slow=5.6,SNR=2.8						
NOA	**NORSAR Array B**	**74.39**	**338**	P	**P**	**00 01 30.5**	**-0.9**
	comp=Z,0.7nm,0.8s,baz=49,slow=5.9,SNR=4.2						
KIEV	**Kiev**	**74.97**	**323**	*e*P	**P**	**00 01 36.0**	**+1.2**
KIEV				pmax	pmax		
	comp=Z,3.0nm,1.0s						
PDAR	**Pinedale Array**	**76.07**	**47**	P	**P**	**00 01 42.0**	**+0.4**
	comp=Z,0.3nm,0.5s,baz=257,slow=2.4,SNR=4.2						
BRTR	**Keskin Array B**	**79.81**	**313**	P	**P**	**00 02 03.6**	**+1.2**
	comp=Z,0.5nm,0.9s,baz=1.1,slow=7.2,SNR=3.6						
DPC	**Dobruska-Polom**	**80.94**	**329**	*e*P	**P**	**00 02 11.0**	**+2.8**
DPC	**Dobruska-Polom**	**80.94**	**329**	*e*P	**P**	**00 02 11.0**	**+2.8**
CLL	**Collm**	**81.51**	**331**	*e*P	**P**	**00 02 11.0**	**-0.1**
	comp=Z,11nm,1.6s						
CLL	**Collm**	**81.51**	**331**	*e*P	**P**	**00 02 11.0**	**-0.1**
CLL				pmax	pmax		
	comp=Z,11nm,1.6s						
PRU	**Pruhonice**	**81.95**	**330**	*e*P	**P**	**00 02 15.8**	**+2.4**
PRU				*e*pP	PcP	00 02 25.8	+6.8
PRU	**Pruhonice**	**81.95**	**330**	*e*P	**P**	**00 02 15.8**	**+2.4**
PRU				*e*		00 02 25.8	
CONA	**Conrad Observa**	**83.01**	**328**	*i* PcP	**P**	**00 02 20.4**	**+1.2**
	comp=Z,5.4nm,1.3s						
KHC	**Kasperske Hory**	**83.01**	**330**	*e*P	**P**	**00 02 20.9**	**+1.8**
KHC	**Kasperske Hory**	**83.01**	**330**	*e*P	**P**	**00 02 20.9**	**+1.8**
GERES	**GERESS Array B**	**83.19**	**329**	P	**P**	**00 02 20.1**	**+0.1**
	comp=Z,0.2nm,0.5s,baz=44,slow=4.4,SNR=5.3						
GERES				LR	LR	00 43 51.8	
	comp=Z,108nm,19.2s,baz=26,slow=39						
SOKA	**Soboth**	**84.33**	**327**	*i* PcP	**P**	**00 02 26.6**	**+0.6**
	comp=Z,4.3nm,1.2s						
BFO	**Black Forest**	**85.70**	**332**	*ce*P	**P**	**00 02 35.1**	**+2.4**
FETA	**Feichten**	**85.85**	**330**	*i* P	**P**	**00 02 32.9**	**-0.7**
	comp=Z,3.6nm,0.9s						
DAVA	**Damuels**	**85.97**	**330**	*i* PcP	**P**	**00 02 35.9**	**+1.7**
	comp=Z,5.8nm,1.1s						

*IDC **01** 23:52:20.0±1.1, 36°.84N×140°.58E, h0km, mb3.6/4, mb1 3.8/4, mb1mx3.4/47, mbtmp3.6/4, Error ellipse: s-maj=25.0km s-min=16.3km az=170.0*
*ISCJB **01** 23:52:20.1±0.8, 36°.67N±0°.03×140°.71E±0°.06, h11km±4km, mb3.6/4, Error ellipse: s-maj=8.6km s-min=4.7km az=25.5*
*JMA **01** 23:52:21.1, 36°.70N×140°.63E, h7km±1km, M3.3 Broadband fault plane solution: P waves. NP1: φs=343.00000°, δ56.00000°, λ-74.00000°. NP2: φs=135.00000°, δ37.00000°, λ-113.00000°. Principal axes: T Plg10.0000°, Azm61.0000°; N Plg14.0000°, Azm153.0000°; P Plg73.0000°, Azm296.0000°;*
JMA Felt III J1.

ISC 01 23:52:21.1±1.0, 36°.70N±0°.03×140°.62E±0°.05, h8km±7km, n14, σ0°56/22, mb3.7/4, 3C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.10**	**203**	⇑P	**Pg**	**23 52 23.4**	**-0.1**
JHO				S	**Sg**	**23 52 25.0**	**-0.1**
ONAJ	**Iwakimizuishiy**	**0.42**	**20**	P	**Pg**	**23 52 29.5**	**+0.1**
ONAJ				S	**Sg**	**23 52 35.1**	**+0.1**
JYT	**Yasato**	**0.58**	**216**	⇑P	**Pg**	**23 52 32.2**	**-0.2**
JYT				S	**Sg**	**23 52 40.7**	**+0.7**
JSB	**Shiboa**	**0.62**	**296**	P	**Pg**	**23 52 33.7**	**+0.6**
JSB				S	**Sb**	**23 52 42.7**	**-0.4**
JFK	**Kawauchi**	**0.69**	**17**	⇑P	**Pg**	**23 52 34.2**	**-0.3**
JFK				S	**Sg**	**23 52 43.6**	**0.0**
JFT	**Otama**	**0.84**	**345**	P	**Pg**	**23 52 37.5**	**+0.1**
JFT				S	**Sg**	**23 52 48.5**	**+0.1**
JAG	**Ashikaga**	**0.98**	**254**	P	**Pg**	**23 52 39.0**	**-0.9**
JFY	**Yanaizu**	**1.01**	**314**	P	**Pg**	**23 52 40.5**	**-0.1**
JFY				S	**Sg**	**23 52 53.9**	**+0.1**
MJAR	**Matsushiro Arr**	**1.94**	**266**	Pn	**Pn**	**23 52 55.0**	**+0.5**
	15nm,0.3s,baz=79,slow=11,SNR=15						
MJAR				Lg	Lg	23 53 19.7	
	14nm,0.3s,baz=60,slow=22,SNR=8.3						
MAT	**Matsushiro**	**1.94**	**266**	P	**Pn**	**23 52 54.9**	**+0.4**
MAT				S	**Sb**	**23 53 20.8**	**-0.5**
SONM	**Songino Array**	**27.44**	**305**	P	**P**	**23 58 06.6**	**-1.0**
	0.7nm,0.8s,baz=104,slow=10,SNR=3.4						
WRA	**Warramunga Arr**	**56.65**	**187**	P	**P**	**00 02 05.6**	**+0.7**
	1.0nm,0.7s,baz=4.6,slow=7.5,SNR=6.3						
ASAR	**Alice Springs**	**60.38**	**187**	P	**P**	**00 02 31.9**	**+1.1**
	0.7nm,0.8s,baz=14,slow=6.7,SNR=5.7						
YKA	**Yellowknife Ar**	**64.41**	**30**	P	**P**	**00 02 56.8**	**-0.7**
	0.2nm,0.7s,baz=303,slow=6.6,SNR=3.4						

*NNC **01** 23:52:40.6±0.7, 43°.59N×77°.69E, h4km±4km, mb4.2, mpv3.9, Error ellipse: s-maj=9.3km s-min=2.1km az=172.0*
*KRNET **01** 23:52:40.6±0.1, 43°.62N×77°.66E, h24km, mb3.7*
*ISCJB **01** 23:52:41.3±0.3, 43°.60N±0°.02×77°.67E±0°.02, h5km±2km, Error ellipse: s-maj=3.1km s-min=2.0km az=161.9*
*SOME **01** 23:52:41.3, 43°.62N×77°.68E, h20km*

ISC 01 23:52:40.9±1.1, 43°.61N±0°.02×77°.73E±0°.02, h6km±9km, n46, σ0°80/85, 37C-16D, Lake Issyk-Kul region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KURS	**Kuram**	**0.35**	**110**	⇑*i* P	**Pb**	**23 52 49.7**	**+0.1**
	775nm,0.2s						
KURS				⇓*i* S	**Sb**	**23 52 55.2**	**-0.1**
	3μm,0.3s						
KOTS	**Kotyrbulak**	**0.58**	**230**	*e*P	**Pg**	**23 52 52.7**	**+0.6**
KOTS				*e*S	**Sg**	**23 53 00.4**	**+0.7**
CHKK	**Chushkaly**	**0.59**	**297**	*e*P	**Pg**	**23 52 52.3**	**+0.1**
	252nm,0.2s						
CHKK				*e*S

TKM2	**Tokmak 2**	**1.70**	**247**	⇓P	**Pn**	**23 53 10.6**	**-0.7**
	141nm,0.6s						
TKM2				⇑S	**Sn**	**23 53 32.9**	**-0.6**
	128nm,0.3s						
BOOM	**Boomskoye usch**	**1.72**	**230**	⇑*i*P	**Pn**	**23 53 11.5**	**-0.1**
	baz=229						
BOOM				⇑*i*S	**Sn**	**23 53 33.1**	**-0.9**
	baz=229						
ULHL	**Ulahol**	**1.75**	**219**	⇓*i*P	**Pn**	**23 53 12.3**	**+0.4**
	baz=218						
ULHL				⇓*i*S	**Sn**	**23 53 34.7**	**+0.1**
	baz=218						
KTMS	**Ketmen**	**1.92**	**94**	*e*P	**Pb**	**23 53 16.2**	**-0.2**
	167nm,0.3s						
KTMS				*e*S	**Sg**	**23 53 41.9**	**-0.6**
	311nm,0.3s						
KAPS	**Kapalarasan**	**2.04**	**34**	*e*P	**Pb**	**23 53 18.3**	**-0.2**
	98nm,0.3s						
KAPS				*e*S	**Sb**	**23 53 45.2**	**+1.0**
	1μm,0.5s						
KBK	**Karagaybulak**	**2.25**	**246**	⇑*i*P	**Pn**	**23 53 19.4**	**+0.6**
	baz=245						
KBK				⇑*i*S	**Sn**	**23 53 47.2**	**+0.3**
	baz=245						
CHMS	**Chumysh**	**2.25**	**255**	⇑*i*P	**Pn**	**23 53 19.0**	**+0.2**
	baz=255						
CHMS				⇑*i*S	**Sn**	**23 53 47.0**	**+0.1**
	baz=255						
USP	**Ospenovka**	**2.37**	**263**	⇓*i*P	**Pn**	**23 53 20.8**	**+0.4**
	baz=262						
USP				⇓*i*S	**Sn**	**23 53 49.4**	**-0.5**
	baz=262						
KZA	**Kyzart**	**2.38**	**231**	⇑*i*P	**Pn**	**23 53 21.9**	**+1.1**
	baz=230						
KZA				⇑*i*S	**Sn**	**23 53 51.2**	**+0.7**
	baz=230						
NRN	**Naryn**	**2.52**	**211**	⇑*e*P	**Pb**	**23 53 25.4**	**-1.4**
	baz=210						
NRN				⇑*i*S	**Sn**	**23 53 55.2**	**+1.3**
	baz=210						
AAK	**Ala-Archa**	**2.56**	**249**	⇑*i*P	**Pn**	**23 53 23.3**	**+0.2**
	baz=248						
AAK				⇑*i*S	**Sn**	**23 53 55.4**	**+0.8**
	baz=248						
AAK	**Ala-Archa**	**2.56**	**249**	⇓Pn	**Pn**	**23 53 23.2**	**+0.2**
	56nm,0.5s						
AAK				Lg	Lg	23 54 01.3	
	50nm,0.5s						
UCH	**Uchtor**	**2.73**	**241**	⇑*i*P	**Pn**	**23 53 26.4**	**+0.6**
	baz=240						
UCH				⇑*i*S	**Sn**	**23 53 59.3**	**0.0**
	baz=240						
MRKS	**Merke**	**3.40**	**257**	*e*P	**Pb**	**23 53 42.0**	**+0.4**
	95nm,0.3s						
MRKS				*e*S	**Sb**	**23 54 25.9**	**+2.6**
	110nm,0.4s						
MNAS	**Manas**	**3.99**	**255**	⇑*e*P	**Pn**	**23 53 42.3**	**-0.4**
	baz=255						
MNAS				⇑*e*S	**Sn**	**23 54 28.5**	**-1.3**
	baz=255						
MK31	**Makanchi Array**	**4.53**	**44**	Pn	**Pn**	**23 53 51.5**	**+1.4**
	1.4nm,0.3s,baz=223,slow=16,SNR=101						
MK31				⇑Lg	Lg	23 55 01.7	
	47nm,0.5s,baz=221,slow=29,SNR=12						
SFK	**Sufi-Kurgan**	**4.78**	**223**	⇑Pn	**Pn**	**23 53 55.1**	**+1.4**
	4.9nm,0.4s						
SFK				⇑Lg	Lg	23 55 08.9	
	25nm,0.8s						
KK31	**Karatay Array**	**5.28**	**267**	⇓Pg	**Pb**	**23 54 17.1**	**+3.4**
	3.5nm,0.3s,baz=79,slow=14,SNR=49						
KK31				Lg	Lg	23 55 23.4	
	7.8nm,0.3s,baz=81,slow=30,SNR=10						
OTUK	**Ortayu**	**5.97**	**323**	⇑Pn	**Pn**	**23 54 08.7**	**-1.1**
	2.7nm,0.5s						
OTUK				⇓Lg	Lg	23 55 49.3	
	45nm,0.6s						
BVA0	**Borovoye Array**	**10.61**	**335**	⇑Lg	Lg	23 58 14.2	
	14nm,1.0s,baz=156,slow=33,SNR=5.4						

IDC ***01*** *23:56:08.6±4.5, 12°.47S×167°.18E, h0km, mb4.2/3, mb1 4.4/3, mb1mx3.6/27, mbtmp4.1/3, Error ellipse: s-maj=187.1km s-min=81.5km az=158.0*
NEIC ***01*** *23:56:09.6±0.9, 12°.60S×167°.19E, h10km, mb4.3/5, Error ellipse: s-maj=35.5km s-min=9.7km az=179.0*
ISC 01 23:56:09.7±1.6, 12°.6S±0°.5×167°.2E±0°.1, h10km, n10, σ0s51/10, mb4.4/6, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FUNA	**Funafuti**	**12.46**	**72**	*e*Pn	**Pn**	**23 59 06.7**	**-0.5**
PMG	**Port Moresby**	**19.93**	**277**	*e*P	**P**	**00 00 40.8**	**-1.1**
	5.7nm,0.6s						
AFI	**Afiamalu**	**20.50**	**96**	*e*P	**P**	**00 00 48.5**	**+0.3**
	3.5nm,0.5s						
KKM	**Kota Kinabalu**	**53.95**	**287**	*e*P	**P**	**00 05 34.7**	**+0.5**
	2.1nm,0.5s						
MCK	**McKinley**	**83.14**	**18**	*e*P	**P**	**00 08 35.8**	**+0.2**
	1.1nm,0.5s						
COLA	**College**	**84.30**	**18**	*e*P	**P**	**00 08 41.6**	**+0.2**
	2.3nm,0.7s						
ILAR	**Eielson Array**	**84.52**	**18**	P	**P**	**00 08 42.6**	**+0.1**
	1.8nm,0.6s,baz=227,slow=5.4,SNR=24						
MKAR	**Makanchi Array**	**95.61**	**317**	P	**P**	**00 09 35.6**	**+0.2**
	0.5nm,0.6s,baz=100,slow=6.2,SNR=6.1						
YKA	**Yellowknife Ar**	**95.68**	**27**	P	**P**	**00 09 35.4**	**+0.1**
	0.2nm,0.4s,baz=259,slow=4.6,SNR=7.6						
ARCES	**ARCESS Array B**	**118.17**	**346**	PKP	**PKPdf**	**00 14 56.6**	**+0.1**
	0.5nm,0.4s,baz=74,slow=1.8,SNR=14						

FUNV ***02*** *00:18:48.0, 10°.08N×60°.51W, h16km, MW3.5*
ISCJB ***02*** *00:18:52.1±1.2, 10°.09N±0°.07×60°.91W±0°.09, h87km±8km, Error ellipse: s-maj=16.8km s-min=7.3km az=36.9*
TRN ***02*** *00:18:56.0, 10°.27N×61°.04W, h69km, MD3.9*
ISC 02 00:18:51.9±1.6, 10°.01N±0°.06×60°.78W±0°.07, h73km±13km, n24, σ1s46/32, Trinidad

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TBH	**Brigand Hill**	**0.55**	**329**	*e*P	**Pn**	**00 19 05.9**	**+0.4**
SIPA	**Siparia**	**0.73**	**281**	*e*P	**Pn**	**00 19 08.4**	**+1.1**
TPP	**Pointe-a-Pierr**	**0.73**	**295**	*e*P	**Pn**	**00 19 07.7**	**+0.4**
TPP	**Pointe-a-Pierr**	**0.73**	**295**	*e*P	**Pn**	**00 19 08.2**	**+0.9**
TPP				*e*S	**Sn**	**00 19 16.7**	**-2.0**
TRN	**Trinidad (W)**	**0.88**	**316**	*e*P	**Pn**	**00 19 09.3**	**+0.2**
TRN				*e*S	**Sn**	**00 19 18.7**	**-3.2**
BUAY	**Buenos Aires**	**0.90**	**276**	*e*P	**Pn**	**00 19 10.9**	**+1.7**
BUAY				*e*S	**Sn**	**00 19 20.8**	**-1.4**
ALNG	**Atlantic LNG**	**0.91**	**281**	*e*P	**Pn**	**00 19 10.5**	**+1.1**
TOSP	**Speyside**	**1.31**	**11**	*e*P	**Pn**	**00 19 16.6**	**+2.2**
TOSP	**Speyside**	**1.31**	**11**	*e*P	**Pn**	**00 19 16.7**	**+2.3**
TOSP				*e*S	**Sn**	**00 19 31.4**	**+0.1**
GUNV	**Guanoco**	**2.13**	**274**	*e*P	**Pn**	**00 19 26.4**	**+1.0**
GUNV				*e*S	**Sn**	**00 19 53.1**	**+2.0**
GRGR	**Grenville**	**2.28**	**338**	*e*P	**Pn**	**00 19 26.2**	**-1.2**
GRGR	**Grenville**	**2.28**	**338**	*e*P	**Pn**	**00 19 26.2**	**-1.2**
GRW	**Mount Saint Ca**	**2.31**	**338**	*e*P	**Pn**	**00 19 28.2**	**+0.5**
GRW	**Mount Saint Ca**	**2.31**	**338**	*e*P	**Pn**	**00 19 28.3**	**+0.5**
GRSS	**Sisters**	**2.42**	**340**	*e*P	**Pn**	**00 19 28.4**	**-0.9**
GRSS	**Sisters**	**2.42**	**340**	*e*P	**Pn**	**00 19 28.6**	**-0.6**
ORIV	**Oritupano**	**2.75**	**250**	*e*P	**Pn**	**00 19 34.2**	**+0.4**
ORIV				*e*S	**Sn**	**00 20 09.3**	**+3.2**
GURV	**El Guri**	**3.19**	**226**	*e*P	**Pn**	**00 19 39.1**	**-0.6**
GURV				*e*S	**Sn**	**00 20 18.0**	**+1.4**
LUEV	**Luepa**	**4.19**	**189**	*e*P	**Pn**	**00 19 51.9**	**-1.7**
CUPV	**Cœpira**	**4.93**	**271**	*e*P	**Pn**	**00 20 03.2**	**-0.3**
BIRV	**Birongo**	**5.42**	**275**	*e*P	**Pn**	**00 20 10.3**	**+0.1**
MERV	**Las Mercedes**	**5.49**	**263**	*e*P	**Pn**	**00 20 11.3**	**+0.1**
MERV				*e*S	**Sn**	**00 21 12.7**	**-0.3**
TURV	**Turiamo**	**6.96**	**274**	*e*P	**Pn**	**00 20 30.8**	**-0.5**
BAUV	**El Baul**	**7.24**	**262**	*e*P	**Pn**	**00 20 34.1**	**-1.0**

BER ***02*** *00:20:15.2±4.4, 79°.92N×4°.93E, h10km±385km, MD2.9, ML2.0, ML2.4(NAO)*
NAO ***02*** *00:20:15.1±3.9, 79°.82N×5°.51E, ML2.5*
CSEM 02 00:20:12.2±0.8, 79°.38N×2°.94E, h10km, ML2.5, Error ellipse: s-maj=36.5km s-min=10.6km az=8.0, Greenland Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KBS	**Kingsbay**	**1.76**	**101**	Pg	Pn	00 20 42.1	-0.6
KBS				Lg	Lg	00 21 02.4	
KBS	**Kingsbay**	**1.76**	**101**	*e*P	Pn	00 20 42.0	-0.7
KBS				*e*S	Sn	00 21 01.9	-3.2
KBS				IAML		00 21 03.1	
	comp=Z,32nm,0.4s						
KBS	**Kingsbay**	**1.76**	**101**	*e*P	Pn	00 20 42.0	-0.7
	SNR=50						
KBS				*e*S	Sn	00 21 01.9	-3.2
	SNR=50						
KBS				Lg	Lg	00 21 02.4	
SPA0	**Spitsbergen Ar**	**2.89**	**108**	Pn	Pn	00 20 58.7	+0.6
	baz=321,slow=11						
SPA0				Sn	Sn	00 21 31.2	-1.7
	baz=333,slow=12						
SPA0	**Spitsbergen Ar**	**2.89**	**108**	Pn	Pn	00 20 58.7	+0.6
	baz=321,slow=11						
SPA0				Sn	Sn	00 21 31.2	-1.7
	baz=333,slow=12						
SPA0	**Spitsbergen Ar**	**2.89**	**108**	Pn	Pn	00 20 58.7	+0.6
	SNR=465						
SPA0				Sn	Sn	00 21 31.2	-1.7
HSP	**Hornsund**	**3.51**	**126**	Pn	Pn	00 21 08.5	+1.8
HSP				Sn	Sn	00 21 48.4	+0.2
HSPB	**Hornsund (broa**	**3.52**	**126**	Pn	Pn	00 21 08.5	+1.8
HSPB				*e*S	Sn	00 21 47.4	-0.9
HSPB	**Hornsund (broa**	**3.52**	**126**	Pn	Pn	00 21 08.5	+1.8
HSPB				*e*S	Sn	00 21 47.4	-0.9
	SNR=50						
HSPB				Sn	Sn	00 21 48.4	+0.1
HOPEN	**Hopen**	**5.41**	**111**	*e*P	Pn	00 21 33.2	+0.4
HOPEN				*e*S	Sn	00 22 30.9	-4.2
HOPEN	**Hopen**	**5.41**	**111**	*e*P	Pn	00 21 33.2	+0.4
	SNR=49						
ARA0	**ARCESS Array S**	**11.45**	**137**	Pn	Pn	00 22 56.2	+0.8
ARA0				Sn	Sn	00 25 01.4	-1.7
	baz=0.8,slow=22						
ARA0	**ARCESS Array S**	**11.45**	**137**	Pn	Pn	00 22 56.2	+0.8
ARA0				Sn	Sn	00 25 01.4	-1.7
	baz=0.8,slow=22						
ARA0	**ARCESS Array S**	**11.45**	**137**	Pn	Pn	00 22 56.2	+0.8
ARA0				Sn	Sn	00 25 01.4	-1.7
	SNR=4.4						

TIF ***02*** *00:37:49.4, 41°.75N×43°.49E, h12km±2km*
ISCJB ***02*** *00:37:50.4±0.8, 41°.72N±0°.03×43°.45E±0°.03, h8km±6km, Error ellipse: s-maj=5.2km s-min=3.8km az=157.2*
CSEM ***02*** *00:37:50.1±0.2, 41°.73N×43°.45E, h8km, ML2.0, Error ellipse: s-maj=4.8km s-min=4.0km az=148.0*
DDA ***02*** *00:37:50.9, 41°.63N×43°.41E, h7km, Md2.7*
ISC 02 00:37:49.5±1.1, 41°.70N±0°.03×43°.46E±0°.02, h9km±11km, n20, σ0s64/36, Turkey-Georgia-Armenia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKH	**Akhalkalaki**	**0.29**	**175**	P	**Pb**	**00 37 56.4**	**-0.6**
AKH				S	**Sb**	**00 38 01.6**	**-0.3**
AKH	**Akhalkalaki**	**0.29**	**175**	P	**Pb**	**00 37 56.4**	**-0.6**
AKH				S	**Sb**	**00 38 01.6**	**-0.3**
EPOS	**Posof**	**0.58**	**251**	*i* P	**Pb**	**00 38 01.6**	**-0.3**
EPOS				*i* S	**Sb**	**00 38 11.2**	**+0.9**
ONI	**Oni**	**0.89**	**360**	P	**Pg**	**00 38 05.7**	**-1.0**
ONI				S	**Sg**	**00 38 18.2**	**-0.1**
TBLG	**Delisi**	**0.96**	**87**	P	**Pn**	**00 38 08.7**	**-0.5**
TBLG				S	**Sn**	**00 38 23.2**	**+0.2**
TBLG	**Delisi**	**0.96**	**87**	P	**Pn**	**00 38 09.3**	**+0.1**
TBLG				S	**Sn**	**00 38 23.2**	**+0.2**
EAK	**Akyaka**	**1.01**	**174**	*i* P	**Pb**	**00 38 09.2**	**-0.2**
EAK				*i* S	**Sb**	**00 38 22.9**	**0.0**
GUDG	**Gudauri**	**1.08**	**44**	P	**Pg**	**00 38 10.0**	**-0.3**
GUDG				S	**Sb**	**00 38 24.6**	**-0.2**
GUDG	**Gudauri**	**1.08**	**44**	P	**Pg**	**00 38 10.0**	**-0.3**
GUDG				S	**Sb**	**00 38 24.6**	**-0.2**
ARTV	**Artvin**	**1.26**	**247**	S	**Sb**	**00 38 30.3**	**+0.4**
ARTV	**Artvin**	**1.26**	**247**	*i* S	**Sb**	**00 38 30.3**	**+0.4**
DAGI	**Agillar**	**1.31**	**243**	*i* P	**Pb**	**00 38 14.7**	**+0.2**
DAGI				*i* S	**Sn**	**00 38 33.2**	**+1.3**
CHVG	**Ch'k'valeri**	**1.44**	**316**	P	**Pb**	**00 38 16.9**	**+0.3**
CHVG				S	**Sg**	**00 38 36.4**	**+0.4**
CHVG	**Ch'k'valeri**	**1.44**	**316**	P	**Pb**	**00 38 16.9**	**+0.3**
CHVG				S	**Sg**	**00 38 36.4**	**+0.4**
DGRG	**David-gareji**	**1.46**	**99**	P	**Pg**	**00 38 17.3**	**-0.2**
DGRG				S	**Sg**	**00 38 38.6**	**+2.2**
DGRG	**David-gareji**	**1.46**	**99**	P	**Pb**	**00 38 16.6**	**-0.2**
DGRG				S	**Sg**	**00 38 37.3**	**+0.9**
DBAD	**Bademkaya**	**1.49**	**244**	P	**Pb**	**00 38 17.6**	**+0.2**
DBAD				S	**Sg**	**00 38 37.6**	**+0.2**
DBAD	**Bademkaya**	**1.49**	**244**	*i* P	**Pb**	**00 38 17.6**	**+0.2**
DBAD				*i* S	**Sg**	**00 38 37.6**	**+0.2**
DDEM	**Demirkent**	**1.52**	**239**	S	**Sn**	**00 38 36.1**	**-0.8**
DDEM	**Demirkent**	**1.52**	**239**	*i* S	**Sn**	**00 38 36.1**	**-0.8**

NEIC ***02*** *00:37:59.9±1.5, 39°.39N×143°.36E, h41km±12km, mb4.6/10, Error ellipse: s-maj=18.0km s-min=12.6km az=113.0*
ISCJB ***02*** *00:38:04.2±0.6, 39°.76N±0°.04×142°.48E±0°.06, h44km±5km, mb4.2/37, MS3.4/7, Error ellipse: s-maj=8.5km s-min=5.3km az=34.2*
MOS ***02*** *00:38:04.8±1.3, 39°.69N×142°.48E, h51km, mb4.3/24, Error ellipse: s-maj=10.4km s-min=6.8km az=84.8*
JMA ***02*** *00:38:06.0±0.1, 39°.75N×142°.37E, h40km±1km, M4.0*
JMA Felt I J1
IDC ***02*** *00:38:09.8±2.0, 39°.70N×142°.29E, h76km±16km, mb3.6/17, mb1 3.8/21, mb1mx3.7/45, mbtmp4.0/21, MS3.2/11, Ms1 3.2/11, ms1mx2.9/42, Error ellipse: s-maj=18.7km s-min=11.5km az=112.0*
ISC 02 00:38:04.4±1.3, 39°.79N±0°.04×142°.52E±0°.05, h32km±8km, n83, σ1s95/81, mb4.1/37, MS3.3/7, 5C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**0.53**	**287**	P	**Pn**	**00 38 15.8**	**+0.1**
JTH				*e*S	**Sb**	**00 38 22.7**	**-0.3**
MIYJ	**Miyakonagasawa**	**0.58**	**249**	P	**Pn**	**00 38 16.1**	**-0.4**
MIYJ				*e*S	**Sb**	**00 38 23.2**	**-1.2**
JKZ	**Kuzumaki**	**0.94**	**282**	P	**Pn**	**00 38 21.5**	**+0.1**
JKZ				S	**Sn**	**00 38 32.2**	**-1.5**
JANG	**Nango**	**0.97**	**307**	P	**Pn**	**00 38 21.9**	**+0.1**
JANG				S	**Sn**	**00 38 33.8**	**-0.6**
OFUJ	**Ofunato**	**0.97**	**223**	P	**Pn**	**00 38 21.7**	**-0.1**
OFUJ				S	**Sn**	**00 38 32.7**	**-1.7**
JOM	**Ohasama**	**1.00**	**252**	P	**Pn**	**00 38 22.2**	**0.0**
JOM				S	**Sn**	**00 38 32.9**	**-2.3**
JMK	**Ichinoseki**	**1.31**	**231**	P	**Pn**	**00 38 26.6**	**+0.1**
JMK				S	**Sn**	**00 38 41.6**	**-1.2**
ERM	**Erimo**	**2.27**	**12**	*e*P	**Pb**	**00 38 45.2**	**+0.4**
ERM	**Erimo**	**2.27**	**12**	*e*Pn	**Pn**	**00 38 39.8**	**+0.1**
ASAJ	**Asahikawa**	**4.32**	**1**	P	Pn	00 39 13.6	+5.7
	5.1nm,0.3s,baz=206,slow=15,SNR=9.1						
ASAJ				S	**Sb**	**00 40 05.3**	**-6.1**
	5.1nm,0.3s,baz=24,slow=33,SNR=2.7						
ASAJ				LR	LR	00 41 26.6	
	comp=Z,218nm,19.4s,baz=164,slow=44						
ASAJ	**Asahikawa**	**4.32**	**1**	P	Pn	00 39 13.6	+5.7
ASAJ				S	**Sb**	**00 40 05.3**	**-6.1**
ASAJ				pmax	pmax		
	comp=Z,5.0nm,0.3s						
ASAJ				smax	smax		
	comp=N,5.0nm,0.3s						
ASAJ				MLR	MLR		
	comp=Z,218nm,19.4s						
MAJO	**Matsushiro**	**4.70**	**228**	*e*P	**Pn**	**00 39 13.3**	**+0.2**
MAJO	**Matsushiro**	**4.70**	**228**	*e*Pn	**Pn**	**00 39 12.0**	**-1.1**
MAT	**Matsushiro**	**4.70**	**228**	P	**Pn**	**00 39 15.5**	**+2.4**
MJAR	**Matsushiro Arr**	**4.70**	**228**	P	**Pn**	**00 39 15.0**	**+1.9**
	comp=Z,18nm,0.3s,baz=82,slow=11,SNR=94						
MJAR				LR	LR	00 41 19.0	
	comp=Z,109nm,21.0s,baz=65,slow=42						
MJAR	**Matsushiro Arr**	**4.70**	**228**	P	**Pn**	**00 39 15.0**	**+1.9**
MJAR				pmax	pmax		
	comp=Z,18nm,0.3s						
MJAR				MLR	MLR		
	comp=Z,109nm,21.0s						
YUK	**Yuzh-Kuril'sk**	**4.92**	**29**	*e*P	**Pn**	**00 39 18.5**	**+2.4**
YUK				*e*S	**Sn**	**00 40 12.1**	**+0.3**
YUK				pmax	pmax		
	comp=Z,44nm,0.3s						
SHO	**Shikotan**	**5.19**	**37**	*e*P	**Pn**	**00 39 20.3**	**+0.5**
SHO				*i* S	**Sn**	**00 40 15.6**	**-3.0**
SHO				pmax	pmax		
	comp=Z,17nm,0.3s						
KUR	**Kuril'sk**	**6.72**	**34**	*e*P	**Pn**	**00 39 42.6**	**+1.8**
KUR				*e*S	**Sn**	**00 40 55.4**	**-0.8**
KUR				pmax	pmax		
	comp=Z,25nm,0.6s						
JHJ	**Hachijo jima 2**	**7.01**	**199**	P	**Pn**	**00 39 40.4**	**-4.4**
	comp=Z,7.0nm,0.3s,baz=140,slow=13,SNR=2.8						
USRK	**Ussuriysk Ar.**	**8.99**	**303**	P	**Pn**	**00 40 15.6**	**+3.6**
	comp=Z,0.8nm,0.3s,baz=116,slow=14,SNR=10						
USRK				LR	LR	00 43 33.4	
	comp=Z,144nm,19.6s,baz=151,slow=36						
JNU	**Nakatsue**	**11.49**	**238**	LR	LR	00 45 23.9	
	comp=Z,33nm,18.2s,baz=111,slow=38						
KSRS	**Korea Array**	**11.66**	**263**	P	**Pn**	**00 40 52.5**	**+4.1**
	comp=Z,0.4nm,0.3s,baz=66,slow=15,SNR=3.8						
KSRS				LR	LR	00 44 52.0	
	comp=Z,81nm,19.7s,baz=94,slow=35						
KLR	**Kul'dur**	**12.16**	**324**	LR	LR	00 45 38.5	
	comp=Z,97nm,19.2s,baz=194,slow=37						
YAK	**Yakutsk**	**23.61**	**345**	*e*P	**P**	**00 43 11.9**	**-0.2**
YAK				pmax	pmax		
	comp=Z,15nm,1.0s						
SEY	**Seymchan**	**23.92**	**11**	P	**P**	**00 43 17.5**	**+2.4**
	comp=Z,5.5nm,0.8s,baz=193,slow=5.8,SNR=12						
SEY	**Seymchan**	**23.92**	**11**	*e*P	**P**	**00 43 18.0**	**+2.9**
BOD	**Bodaibo**	**25.74**	**324**	*e*P	**P**	**00 43 31.1**	**-0.6**
BOD				pmax	pmax		
	comp=Z,3.0nm,0.9s						
ULN	**Ulaanbaatar**	**26.64**	**299**	*e*P	**P**	**00 43 41.4**	**+1.2**
ULN				pmax	pmax		
	comp=Z,9.0nm,2.5s						
SONM	**Songino Array**	**27.08**	**299**	P	**P**	**00 43 43.3**	**-0.8**
	comp=Z,1.3nm,0.5s,baz=81,slow=8.9,SNR=11						
SONM				LR	LR	00 54 57.9	
	comp=Z,76nm,18.4s,baz=90,slow=37						
H11N2	**WAKE ISLAND Hy**	**28.95**	**127**	T	T	01 14 34.2	
	baz=319,slow=75,SNR=108						
H11N1	**WAKE ISLAND Hy**	**28.96**	**127**	T	T	01 14 40.3	
	baz=319,slow=75,SNR=118						
H11N3	**WAKE ISLAND Hy**	**28.97**	**127**	T	T	01 14 32.7	
	baz=319,slow=75,SNR=133						
ZAK	**Zakamensk**	**29.34**	**304**	*e*P	**P**	**00 44 03.5**	**-0.7**
ZAK				pmax	pmax		
	comp=Z,3.0nm,1.1s						
H11S1	**WAKE ISLAND Hy**	**29.76**	**128**	T	T	01 15 14.4	
	baz=314,slow=76,SNR=98						
H11S3	**WAKE ISLAND Hy**	**29.76**	**128**	T	T	01 15 14.5	
	baz=314,slow=76,SNR=69						
H11S2	**WAKE ISLAND Hy**	**29.77**	**128**	T	T	01 15 15.7	
	baz=314,slow=76,SNR=46						
BILL	**Bilibino**	**31.14**	**17**	*e*P	**P**	**00 44 22.8**	**+3.0**
BILL				*e*		00 44 36.8	
BILL				*e*SS	SS	00 51 14.8	-22
BILL				pmax	pmax		
	comp=Z,2.0nm,0.7s						
BILL				MLR	MLR		
	comp=Z,27nm,17.0s						
TIXI	**Tiksi**	**32.67**	**352**	*e*P	**P**	**00 44 35.1**	**+1.9**
TIXI				pmax	pmax		
	comp=Z,1.0nm,0.8s						
ZALV	**Zalesovo Beam**	**40.76**	**310**	P	**P**	**00 45 42.0**	**-0.1**
	comp=Z,3.0nm,0.5s,baz=95,slow=8.1,SNR=30						
NRIK	**Noril'sk**	**41.16**	**334**	LR	LR	01 04 00.3	
	comp=Z,61nm,18.5s,baz=106,slow=38						
CMAR	**Chiang Mai Arr**	**43.08**	**253**	P	**P**	**00 46 01.4**	**-0.1**
	comp=Z,0.5nm,0.4s,baz=53,slow=6.9,SNR=4.2						
MKAR	**Makanchi Array**	**43.45**	**300**	P	**P**	**00 46 04.0**	**-0.2**
	comp=Z,1.7nm,0.6s,baz=86,slow=10,SNR=25						
MKAR				LR	LR	01 04 56.4	
	comp=Z,34nm,19.6s,baz=32,slow=37						
KURK	**Kurchatov**	**44.97**	**306**	*e*P	**P**	**00 46 16.0**	**-0.3**
KURK				pmax	pmax		
	comp=Z,8.0nm,0.6s						
KURK	**Kurchatov**	**44.97**	**306**	*e*P	**P**	**00 46 16.0**	**-0.3**
	comp=Z,8.1nm,0.6s						
ILAR	**Eielson Array**	**46.71**	**34**	P	**P**	**00 46 31.8**	**+1.9**
	comp=Z,0.5nm,0.7s,baz=271,slow=6.8,SNR=8.0						
TKM2	**Tokmak 2**	**49.13**	**297**	*e*P	**P**	**00 46 49.5**	**+0.3**
TKM2				pmax	pmax		
	comp=Z,4.0nm,0.8s						
TKM2	**Tokmak 2**	**49.13**	**297**	*e*P	**P**	**00 46 49.5**	**+0.3**
	comp=Z,3.9nm,0.8s						
BRVK	**Borovoye**	**49.45**	**311**	*ce*P	**P**	**00 46 52.5**	**+1.3**
BRVK				pmax	pmax		
	comp=Z,2.0nm,1.0s						
AAK	**Ala-Archa**	**49.99**	**297**	*e*P	**P**	**00 46 54.2**	**-1.5**
AAK				pmax	pmax		
	comp=Z,2.0nm,1.0s						
AAK	**Ala-Archa**	**49.99**	**297**	*e*P	**P**	**00 46 55.3**	**-0.4**
	comp=Z,0.8nm,0.4s						
EKS2	**Erkin-Say**	**50.47**	**297**	*e*P	**P**	**00 46 59.2**	**-0.1**
EKS2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
EKS2	**Erkin-Say**	**50.47**	**297**	*e*P	**P**	**00 46 59.1**	**-0.1**
	comp=Z,0.8nm,0.5s						
INK	**Inuvik**	**51.55**	**28**	P	**P**	**00 47 09.1**	**+2.4**
	comp=Z,0.9nm,0.8s,baz=297,slow=7.4,SNR=5.6						
KKAR	**Karatay Array**	**52.53**	**299**	*e*P	**P**	**00 47 14.3**	**-0.3**
KKAR				pmax	pmax		
	comp=Z,1.0nm,0.6s						
KKAR	**Karatay Array**	**52.53**	**299**	*e*P	**P**	**00 47 14.2**	**-0.3**
	comp=Z,1.0nm,0.6s						
ARU	**Arti**	**54.90**	**318**	*c i*P	**P**	**00 47 31.7**	**+0.1**
ARU						00 49 33.7	
ARU				S	**S**	**00 55

SNR=7.3
NCB Newcomb 90.27 26 *e*P P 00 50 55.9 -6.0
comp=Z,84nm,1.0s

JMA 02 00:38:42.1,36.70N×140.60E,h9km±1km,M3.7,6C,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.09**	**196**	⇑P	Pg	00 38 44.5	0.0
JHO				S	Sg	00 38 46.2	+0.1
ONAJ	**Iwakimizuishiy**	**0.43**	**22**	⇑P	Pg	00 38 50.5	-0.1
ONAJ				S	Sg	00 38 56.4	+0.1
JYT	**Yasato**	**0.57**	**215**	⇑P	Pg	00 38 53.0	-0.2
JYT				S	Sg	00 39 00.8	+0.1
JSB	**Shiboa**	**0.61**	**296**	⇑P	Pg	00 38 54.3	+0.4
JSB				S	Sg	00 39 02.7	+0.8
JFK	**Kawauchi**	**0.70**	**18**	⇑P	Pg	00 38 55.2	-0.4
JFK				S	Sg	00 39 04.5	-0.3
JFT	**Otama**	**0.84**	**346**	P	Pg	00 38 58.1	-0.3
JFT				S	Sg	00 39 09.2	-0.1
JAG	**Ashikaga**	**0.96**	**254**	⇑P	Pg	00 38 59.5	-1.1
JAG				S	Sg	00 39 12.5	-0.6
JFY	**Yanaizu**	**1.00**	**315**	S	Sg	00 39 14.2	-0.3
MAT	**Matsushiro**	**1.93**	**266**	S	Sb	00 39 41.2	-0.5

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*IDC **02** 00:44:24.5±1.7,14.32S×167.47E,h174km±12km, mb4.2/18,mb1 4.3/18,mb1mx4.1/40,mbtmp4.6/18,MS3.2/2, Ms1 3.1/2,ms1mx2.6/35,Error ellipse: s-maj=19.8km s-min=12.7km az=102.0*
*ISCJB **02** 00:44:31.4±0.2,14.38S±0.04×167.11E±0.04,h250km, mb4.7/66,Error ellipse: s-maj=5.9km s-min=5.4km az=23.0*
*BJI **02** 00:44:33.3,14.40S×167.10E,h277km,mb4.7/35, mB4.9/22*
*NEIC **02** 00:44:34.5±0.8,14.42S×167.13E,h267km±8km,mb5.0/40, Error ellipse: s-maj=5.7km s-min=4.9km az=161.0*
*MOS **02** 00:44:35.6±1.8,14.37S×167.11E,h280km,mb4.9/14, Error ellipse: s-maj=10.6km s-min=8.7km az=33.0*
ISC 02 00:44:33.3±0.3,14.40S±0.05×167.13E±0.05,h250km, n204,σ1.9/72/215,mb4.7/66,1C-28D,Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**7.66**	**185**	P	**Pn**	**00 46 23.0**	**+0.5**
1.6nm,0.3s,baz=196,slow=19,SNR=15							
HNR	**Honiara**	**8.59**	**304**	LR	LR	00 49 57.2	
comp=Z,59nm,19.3s,baz=66,slow=38							
HNR	**Honiara**	**8.59**	**304**	*e*P	**Pn**	**00 46 37.0**	**+2.9**
HNR	**Honiara**	**8.59**	**304**	*e*Pn	**Pn**	**00 46 37.0**	**+2.9**
MSVF	**Nonsavu**	**11.01**	**109**	*e*P	**Pn**	**00 47 06.5**	**+1.9**
MSVF	**Nonsavu**	**11.01**	**109**	*e*Pn	**Pn**	**00 47 06.5**	**+1.9**
TARA	**Tarawa**	**16.67**	**21**	*e*P	**P**	**00 48 11.6**	**+0.1**
101nm,1.0s							
LHI	**Lord Howe Isla**	**18.58**	**202**	*e*P	**P**	**00 48 31.8**	**-0.3**
348nm,1.8s							
EIDS	**Eidsvold**	**18.61**	**232**	*e*P	**P**	**00 48 32.9**	**+0.3**
24nm,0.9s							
PMG	**Port Moresby**	**20.16**	**282**	P	**P**	**00 48 50.7**	**+1.5**
19nm,0.6s,baz=105,slow=3.8,SNR=5.6							
PMG	**Port Moresby**	**20.16**	**282**	*e*P	**P**	**00 48 48.8**	**-0.4**
PMG				pmax	pmax		
comp=Z,105nm,1.0s							
PMG	**Port Moresby**	**20.16**	**282**	*e*P	**P**	**00 48 50.5**	**+1.3**
comp=Z,20nm,0.8s							
RAO	**Raoul Island**	**20.24**	**139**	*e*P	**P**	**00 48 51.3**	**+1.3**
RAO				pmax	pmax		
comp=Z,385nm,0.8s							
RAO	**Raoul Island**	**20.24**	**139**	*e*P	**P**	**00 48 51.3**	**+1.3**
comp=Z,385nm,0.8s							
AFI	**Afiamalu**	**20.46**	**91**	*e*P	**P**	**00 48 52.0**	**-0.5**
AFI				pmax	pmax		
comp=Z,79nm,1.1s							
AFI	**Afiamalu**	**20.46**	**91**	*e*P	**P**	**00 48 52.0**	**-0.5**
comp=Z,79nm,1.1s							
ARMA	**Armidale**	**21.40**	**219**	*e*P	**P**	**00 49 02.0**	**+0.1**
comp=Z,103nm,1.6s							
COEN	**Coen**	**23.23**	**268**	*e*P	**P**	**00 49 17.7**	**-1.0**
comp=Z,14nm,0.8s							
KNTN	**Kanton**	**23.86**	**63**	*e*P	**P**	**00 49 25.2**	**+0.8**
comp=Z,142nm,1.1s							
URZ	**Urewera**	**25.36**	**161**	*e*P	**P**	**00 49 37.0**	**-0.7**
STKA	**Stephens Creek**	**29.11**	**229**	P	**P**	**00 50 12.7**	**+1.5**
comp=Z,22nm,0.6s,baz=48,slow=8.1,SNR=76							
STKA				PcP	**PcP**	**00 53 13.4**	**+1.0**
comp=Z,0.7nm,0.4s,baz=34,slow=2.8,SNR=5.3							
STKA	**Stephens Creek**	**29.11**	**229**	*e*P	**P**	**00 50 11.5**	**+0.4**
STKA	**Stephens Creek**	**29.11**	**229**	*e*P	**P**	**00 50 11.5**	**+0.4**
comp=Z,5.4nm,0.6s							
STKA				PcP	**PcP**	**00 53 13.4**	**+1.0**
FOZ	**Fox Glacier**	**29.13**	**176**	*e*P	**P**	**00 50 10.3**	**-0.8**
comp=Z,160nm,1.9s							
OXZ	**Oxford**	**29.14**	**173**	*e*P	**P**	**00 50 09.4**	**-1.8**
comp=Z,170nm,1.9s							
RPZ	**Rata Peaks**	**29.41**	**174**	*e*P	**P**	**00 50 12.8**	**-0.9**
comp=Z,85nm,1.6s							
PYZ	**Puysegur Point**	**31.67**	**181**	*e*P	**P**	**00 50 31.5**	**-1.9**
comp=Z,197nm,1.4s							
WB2	**Warramunga Arr**	**31.77**	**255**	*e*P	**P**	**00 50 34.0**	**-0.7**
comp=Z,15nm,0.6s							
WRAB	**Tennant Creek**	**31.77**	**255**	*d i*P	**P**	**00 50 34.1**	**-0.5**
WRAB				pmax	pmax		
comp=Z,37nm,0.7s							
WRAB	**Tennant Creek**	**31.77**	**255**	*e*P	**P**	**00 50 33.2**	**-1.4**
comp=Z,15nm,0.6s							
WRA	**Warramunga Arr**	**31.78**	**255**	P	**P**	**00 50 33.9**	**-0.8**
comp=Z,16nm,0.7s,baz=86,slow=9.4,SNR=95							
WRA				PcP	**PcP**	**00 53 20.4**	**+0.7**
comp=Z,2.0nm,0.8s,baz=82,slow=3.2,SNR=6.9							
WRA	**Warramunga Arr**	**31.78**	**255**	*i* P	**P**	**00 50 33.2**	**-1.5**
WRA				pmax	pmax		
comp=Z,16nm,0.6s							
RAR	**Rarotonga**	**32.19**	**107**	*e*P	**P**	**00 50 38.1**	**-0.1**
RAR				pmax	pmax		
comp=Z,446nm,2.0s							
RAR	**Rarotonga**	**32.19**	**107**	*e*P	**P**	**00 50 38.1**	**-0.1**
comp=Z,446nm,2.0s							
AS01	**Alice Springs**	**32.62**	**249**	*e*P	**P**	**00 50 41.3**	**-0.8**
AS31	**Alice Springs**	**32.67**	**249**	*e*P	**P**	**00 50 42.0**	**-0.5**
comp=Z,6.2nm,0.6s							
ASAR	**Alice Springs**	**32.67**	**249**	P	**P**	**00 50 42.0**	**-0.5**
comp=Z,16nm,0.7s,baz=76,slow=9.3,SNR=162							
ASAR				PcP	**PcP**	**00 53 22.6**	**+0.4**
comp=Z,1.1nm,0.7s,baz=98,slow=2.3,SNR=6.1							
TAU	**Tasmania Unive**	**33.13**	**207**	*e*P	**P**	**00 50 46.0**	**-0.1**
TAU				pmax	pmax		
comp=Z,63nm,1.5s							
TAU	**Tasmania Unive**	**33.13**	**207**	*e*P	**P**	**00 50 46.0**	**-0.1**
comp=Z,63nm,1.5s							
BBOO	**Buckleboo**	**33.68**	**232**	*e*P	**P**	**00 50 50.3**	**-0.7**
comp=Z,13nm,0.6s							
XMAS	**Kiritimati**	**38.70**	**68**	*e*P	**P**	**00 51 34.5**	**+0.9**
comp=Z,127nm,1.1s							
FITZ	**Fitzroy Crossi**	**39.95**	**259**	*e*P	**P**	**00 51 43.9**	**0.0**
comp=Z,15nm,0.9s							
MBWA	**Marble Bar**	**45.50**	**254**	*e*P	**P**	**00 52 28.1**	**-0.2**
comp=Z,105nm,1.9s							
KAPI	**Kappang**	**47.54**	**276**	*e*P	**P**	**00 52 44.5**	**+0.3**
comp=Z,16nm,1.0s							
CBIJ	**Chichi jima**	**47.83**	**330**	*e*P	**P**	**00 52 45.3**	**-0.8**
comp=Z,512nm,1.9s							
KEKH	**Kekaha**	**48.62**	**43**	*e*P	**P**	**00 52 51.2**	**-1.1**
comp=Z,534nm,1.7s							
NWAO	**Narrogin (SRO)**	**48.81**	**239**	*e*P	**P**	**00 52 52.8**	**-0.8**
NWAO				pmax	pmax		
comp=Z,26nm,1.0s							
NWAO	**Narrogin (SRO)**	**48.81**	**239**	*e*P	**P**	**00 52 52.8**	**-0.8**
comp=Z,26nm,1.0s							
HON	**Honolulu**	**49.31**	**45**	*e*P	**P**	**00 52 57.3**	**-0.2**
HON				pmax	pmax		
comp=Z,169nm,0.9s							
HON	**Honolulu**	**49.31**	**45**	*e*P	**P**	**00 52 57.3**	**-0.2**
comp=Z,169nm,0.9s							
KIP	**Kipapa**	**49.37**	**45**	*e*P	**P**	**00 52 57.7**	**-0.2**
KIP				pmax	pmax		
comp=Z,95nm,1.3s							
KIP	**Kipapa**	**49.37**	**45**	*e*P	**P**	**00 52 57.7**	**-0.2**
comp=Z,95nm,1.3s							
HPO	**Honuapo**	**49.57**	**49**	*e*P	**P**	**00 52 58.7**	**-0.8**
KKH	**Kailua Kona**	**49.60**	**48**	*e*P	**P**	**00 52 59.1**	**-0.6**
KKH	**Kailua Kona**	**49.60**	**48**	*e*P	**P**	**00 52 59.1**	**-0.6**
MYLDM	**Lahad Datu**	**52.00**	**288**	*e*P	**P**	**00 53 16.8**	**-0.9**
comp=Z,49nm,1.6s							
JAGI	**Jajag, Banyuwa**	**52.17**	**270**	*e*P	**P**	**00 53 17.6**	**-1.4**
comp=Z,129nm,1.8s							
KKM	**Kota Kinabalu**	**54.43**	**288**	*e*P	**P**	**00 53 34.6**	**-0.8**
comp=Z,13nm,0.8s							
JOW	**Kunigami**	**55.71**	**317**	*e*P	**P**	**00 53 43.8**	**-0.5**
comp=Z,146nm,1.7s							
SMRI	**Semarang**	**56.06**	**271**	*e*P	**P**	**00 53 45.4**	**-1.6**
comp=Z,258nm,2.0s							
MJAR	**Matsushiro Arr**	**57.55**	**333**	P	**P**	**00 53 55.9**	**-1.1**
comp=Z,4.2nm,0.6s,baz=169,slow=7.9,SNR=4.3							
MAJO	**Matsushiro**	**57.55**	**333**	*i* P	**P**	**00 53 55.1**	**-1.9**
MAJO				pmax	pmax		
comp=Z,29nm,0.9s							
JNU	**Nakatsue**	**58.57**	**324**	P	**P**	**00 54 03.7**	**-0.5**
comp=Z,11nm,0.7s,baz=31,slow=2.3,SNR=5.8							
JNU	**Nakatsue**	**58.57**	**324**	*e*P	**P**	**00 54 02.6**	**-1.6**
comp=Z,23nm,1.0s							
NACB	**Ninganchiao**	**58.71**	**310**	*e*P	**P**	**00 54 04.0**	**-1.3**
comp=Z,17nm,1.0s							
YHNB	**Yeheng**	**59.17**	**311**	*e*P	**P**	**00 54 07.5**	**-0.9**
comp=Z,70nm,1.5s							
PTCN	**Pitcairn Islan**	**59.59**	**111**	*e*P	**P**	**00 54 10.2**	**-1.2**
comp=Z,256nm,0.8s							
XMIS	**Christmas Isla**	**60.02**	**266**	*e*P	**P**	**00 54 11.3**	**-3.1**
comp=Z,96nm,1.1s							
VNDA	**Vanda**	**63.19**	**181**	P	**P**	**00 54 34.5**	**0.0**
comp=Z,1.5nm,0.7s,baz=353,slow=6.3,SNR=11							
KSRS	**Korea Array**	**63.39**	**326**	P	**P**	**00 54 36.1**	**-0.3**
comp=Z,2.3nm,0.8s,baz=138,slow=7.2,SNR=6.9							
KSAR	**Wonju Array Be**	**63.40**	**326**	P	**P**	**00 54 36.1**	**-0.3**
KSAR	**Wonju Array Be**	**63.40**	**326**	P	**P**	**00 54 36.1**	**-0.3**
NJ2	**Nanjing**	**65.34**	**316**	*e*P	**P**	**00 54 47.6**	**-1.5**
NJ2				pmax	pmax		
comp=Z,14nm,0.6s							
USRK	**Ussuriysk Ar.**	**66.53**	**333**	P	**P**	**00 54 56.8**	**+0.4**
comp=Z,5.8nm,1.0s,baz=140,slow=6.2,SNR=6.1							
WHN	**Wuhan**	**67.62**	**312**	⇑P	**P**	**00 55 04.4**	**+0.9**
WHN				pP	**pP**	**00 56 07.9**	**+7.1**
PETK	**Petropavlovsk-**	**67.72**	**354**	P	**P**	**00 55 03.4**	**-0.2**
comp=Z,7.0nm,0.8s,baz=145,slow=9.2,SNR=6.3							
MDJ	**Mudanjiang**	**67.92**	**332**	P	**P**	**00 55 06.1**	**+1.0**
MDJ				pmax	pmax		
comp=Z,13nm,0.8s							
MDJ				pmax	pmax		
comp=Z,340nm,4.7s							
CN2	**Changchun**	**69.29**	**329**	*e*P	**P**	**00 55 13.6**	**0.0**
CN2				pmax	pmax		
comp=Z,10.0nm,0.6s							
KLR	**Kul'dur**	**70.65**	**336**	P	**P**	**00 55 22.0**	**+0.3**
comp=Z,2.4nm,0.7s,baz=106,slow=1.2,SNR=6.3							
KLR	**Kul'dur**	**70.65**	**336**	P	**P**	**00 55 22.0**	**+0.3**
GYA	**Guiyang**	**71.42**	**305**	*e*P	**P**	**00 55 28.0**	**+1.1**
GYA				sP	sP	00 56 59.2	+7.6
GYA				PP	**PP**	**00 58 12.5**	**+3.3**
GYA				S	**S**	**01 04 23.3**	**-1.5**
GYA				SKS	**SKSac**	**01 05 00.8**	**-5.4**
GYA				sS	sS	01 06 13.0	+6.4
GYA				pmax	pmax		
comp=Z,10.0nm,1.0s							
BJI	**Beijing**	**71.92**	**321**	P	**P**	**00 55 29.7**	**+0.2**
BJI				pmax	pmax		
comp=Z,8.0nm,0.8s							
BJI				pmax	pmax		
comp=Z,73nm,3.3s							
XAN	**Xi'an**	**73.37**	**313**	P	**P**	**00 55 38.7**	**+0.5**
XAN				pmax	pmax		
comp=Z,8.0nm,1.0s							
XAN				pmax	pmax		
comp=Z,20nm,3.2s							
KMI	**Kunming**	**74.02**	**302**	P	**P**	**00 55 42.2**	**-0.2**
KMI				pmax	pmax		
comp=Z,37nm,0.5s							
KMI				pmax	pmax		
comp=Z,78nm,4.4s							
KMI				LR	LR		
comp=Z,77nm,7.3s							
KMI				LR	LR		
comp=Z,82nm,5.6s							
KMI				LR	LR		
comp=Z,65nm,5.5s							
CMAR	**Chiang Mai Arr**	**74.69**	**294**	P	**P**	**00 55 47.9**	**+1.8**
comp=Z,2.6nm,0.6s,baz=115,slow=4.6,SNR=15							
CHTO	**Chiang Mai**	**74.82**	**294**	*e*P	**P**	**00 55 46.1**	**-0.8**
CHTO	**Chiang Mai**	**74.82**	**294**	*e*P	**P**	**00 55 46.1**	**-0.8**
HHC	**Hu-ho-hao-te**	**75.25**	**320**	*e*P	**P**	**00 55 48.0**	**-0.9**
HHC				S	**S**	**01 05 03.3**	**-3.9**
HHC				pmax	pmax		
comp=Z,20nm,1.2s							
HHC				pmax	pmax		
comp=Z,120nm,7.0s							
QSPA	**South Pole Qui**	**75.63**	**180**	*e*P	**P**	**00 55 50.5**	**-0.3**
comp=Z,38nm,1.1s							
CD2	**Chengdu**	**75.70**	**308**	P	**P**	**00 55 50.4**	**-1.3**
CD2				pmax	pmax		
comp=Z,10.0nm,0.5s							
SEY	**Seymchan**	**77.94**	**353**	*e*P	**P**	**00 56 01.1**	**-2.2**
YAK	**Yakutsk**	**81.67**	**343**	*e*P	**P**	**00 56 23.3**	**0.0**
YAK				pmax	pmax		
comp=Z,20nm,0.9s							
YAK				pmax	pmax		
comp=N,10.0nm,1.3s							
YAK				pmax	pmax		
comp=E,6.0nm,1.3s							
ULN	**Ulaanbaatar**	**81.79**	**324**	*e*P	**P**	**00 56 25.1**	**+0.6**
ULN				pmax	pmax		
comp=Z,12nm,1.3s							
ULN	**Ulaanbaatar**	**81.79**	**324**	*e*P	**P**	**00 56 24.6**	**+0.1**
MAW	**Mawson**	**82.14**	**202**	P	**P**	**00 56 26.6**	**+0.8**
comp=Z,12nm,1.0s,baz=124,slow=5.4,SNR=11							
MAW				LR	LR	01 28 03.1	
comp=Z,29nm,21.6s,baz=240,slow=32							
MAW	**Mawson**	**82.14**	**202**	*e*P	**P**	**00 56 26.8**	**+1.0**
MAW	**Mawson**	**82.14**	**202**	*e*P	**P**	**00 56 26.8**	**+1.0**
SONM	**Songino Array**	**82.15**	**324**	P	**P**	**00 56 26.8**	**+0.5**
comp=Z,1.1nm,0.4s,baz=139,slow=5.8,SNR=17							
SONA1	**Songino Array**	**82.15**	**324**	*e*P	**P**	**00 56 26.4**	**+0.1**
BILL	**Bilibino**	**82.21**	**360**	*de*P	**P**	**00 56 25.6**	**-0.4**
BILL				pmax	pmax		
comp=Z,11nm,1.5s							
GTA	**Gaotai**	**82.34**	**314**	*e*P	**P**	**00 56 28.8**	**+1.3**
GTA				pP	pP	00 57 27.8	+0.7
GTA				sP	sP	00 57 55.3	+1.8
GTA				S	**S**	**01 06 22.7**	**+0.4**
GTA				sS	sS	01 08 09.1	+2.1
GTA				pmax	pmax		
comp=Z,9.0nm,1.2s							
GTA				pmax	pmax		
comp=Z,76nm,5.1s							
CAST	**Castle Rocks**	**83.72**	**17**	*e*P	**P**	**00 56 32.0**	**-1.9**
ZAK	**Zakamensk**	**85.20**	**325**	*e*P	**P**	**00 56 41.4**	**-0.3**
ZAK				pmax	pmax		
comp=Z,7.0nm,1.1s							
TLY	**Talaya**	**85.64**	**326**	*e*P	**P**	**00 56 44.0**	**+0.3**
TLY				pmax	pmax		
comp=Z,7.0nm,0.8s							
ILAR	**Eielson Array**	**86.25**	**18**	P	**P**	**00 56 43.9**	**-2.5**
comp=Z,1.4nm,0.7s,baz=236,slow=5.7,SNR=15							
ILB	**Eielson Array**	**86.25**	**18**	*e*P	**P**	**00 56 44.7**	**-1.7**
TIXI	**Tiksi**	**89.62**	**349**	*e*P	**P**	**00 56 59.9**	**-2.2**
TIXI				pmax	pmax		
comp=Z,3.0nm,1.0s							
TIXI	**Tiksi**	**89.62**	**349**	*e*P	**P**	**00 57 01.1**	**-1.0**
CWU	**Camp Williams**	**92.35**	**49**	*e*P	**P**	**00 57 14.7**	**-1.1**
WMQ	**Urumqi**	**92.40**	**315**	*e*P	**P**	**00 57 13.5**	**-2.3**
WMQ				pmax	pmax		
comp=Z,33nm,3.6s							
SNAA	**Sanae**	**93.87**	**183**	P	P	00 57 18.2	-3.8
VNA3	**Neumayer Olymp**	**94.54**	**181**	P	**P**	**00 57 24.4**	**-0.7**
VNA2	**Neumayer--Watz**	**94.81**	**182**	P	**P**	**00 57 26.1**	**-0.2**
baz=176,slow=3.6							
MKAR	**Makanchi Array**	**96.87**	**316**	P	**P**	**00 57 36.3**	**+0.2**
comp=Z,4.0nm,0.8s,baz=93,slow=6.2,SNR=23							
ZALV	**Zalesovo Beam**	**97.05**	**324**	P	**P**	**00 57 35.9**	**-0.7**
comp=Z,3.3nm,0.8s,baz=115,slow=4.5,SNR=12							
MAKZ	**Makanchi**	**97.08**	**316**	*e*P	**P**	**00 57 37.9**	**+0.9**
MAKZ	**Makanchi**	**97.08**	**316**	*e*P	**P**	**00 57 37.9**	**+0.9**
YKA	**Yellowknife Ar**	**97.31**	**27**	P	**P**	**00 57 35.1**	**-2.4**
comp=Z,0.5nm,0.8s,baz=255,slow=4.6,SNR=8.1							
KURBB	**Kurchatov Arra**	**100.10**	**320**	PKiKP	**PKiKP**	**01 02 16.8**	**+0.2**
comp=Z,0.2nm,0.4s,baz=101,slow=1.9,SNR=4.2							
BVAR	**Borovoye Array**	**105.40**	**322**	PKiKP	**PKiKP**	**01 02 26.5**	**+0.2**
comp=Z,0.2nm,0.3s,baz=126,slow=2.5,SNR=3.3							
ARU	**Arti**	**112.14**	**325**	PKiKP	**PKiKP**	**01 02 39.0**	**+0.2**
comp=Z,1.4nm,0.4s,baz=39,slow=1.4,SNR=5.6							
ARU	**Arti**	**112.14**	**325**	*i* PKIKP	**PKiKP**	**01 02 37.7**	**-1.0**
ARU						01 03 29.9	
ARU						01 09 23.5	
ARU				SS	SS	01 18 45.2	-0.5
AKTO	**Aktyubinsk**	**113.13**	**319**	PKiKP	**PKiKP**	**01 02 41.3**	**+0.4**
comp=Z,0.5nm,0.5s,baz=279,slow=1.3,SNR=5.8							
GEYT	**Alibeck**	**113.63**	**305**	PKiKP	**PKiKP**	**01 02 42.5**	**+0.2**
comp=Z,1.2nm,0.7s,baz=22,slow=1.6,SNR=3.7							
ARCES	**ARCESS Array B**	**119.90**	**345**	PKP	**PKPdf**	**01 02 53.0**	**-0.3**
comp=Z,3.1nm,0.5s,baz=61,slow=1.9,SNR=53							
KLMR	**Klimovskoe**	**120.33**	**333**	*e*PKIKP	**PKPdf**	**01 02 51.1**	**-3.2**
KLMR				pmax	pmax		
comp=Z,9.0nm,1.3s							
VRH	**Novokhopyorsk**	**123.04**	**322**	*e*PKIKP	**PKPdf**	**01 02 59.6**	**-0.2**
VRH				pmax	pmax		
comp=Z,10.0nm,0.7s							
ZEI	**Tsey**	**123.93**	**312**	*i* PKIKP	**PKPdf**	**01 03 01.8**	**-0.3**
ZEI				pmax	pmax		
comp=Z,9.0nm,0.8s							
LPSR	**Galich'ya Gora**	**124.15**	**325**	*e*PKIKP	**PKPdf**	**01 03 02.6**	**+0.7**
LPSR				pmax	pmax		
comp=Z,10.0nm,0.9s							
OBN	**Obninsk**	**124.35**	**328**	⇓*i*PKIKP	**PKPdf**	**01 03 02.4**	**+0.2**
OBN				pmax	pmax		
comp=Z,7.0nm,0.7s							
KBZ	**Khabaz**	**124.43**	**313**	PKP	**PKPdf**	**01 03 03.5**	**+0.7**
comp=Z,2.5nm,0.9s,baz=178,slow=2.1,SNR=6.8							
KIV	**Kislovodsk**	**124.52**	**314**	*e*PKIKP	**PKPdf**	**01 03 03.2**	**+0.1**
KIV				pmax	pmax		
comp=Z,5.0nm,1.0s							
VSR	**Storozhevoye**	**124.54**	**323**	*e*PKIKP	**PKPdf**	**01 03 01.7**	**-1.0**
VSR				pmax	pmax		
comp=Z,7.0nm,0.9s							
FINES	**FINESS Array B**	**125.36**	**338**	PKP	**PKPdf**	**01 03 03.7**	**-0.3**
comp=Z,4.7nm,0.9s,baz=98,slow=4.2,SNR=9.5							
BBSR	**BB Station**	**129.67**	**60**	*e*PKPdf	**PKPdf**	**01 03 12.0**	**-1.1**
NB2	**NORSAR Subarra**	**130.27**	**345**	PKPdf	**PKPdf**	**01 03 13.0**	**-0.4**
comp=Z,4.0nm,1.2s,baz=31,slow=1.9							
NOA	**NORSAR Array B**	**130.27**	**345**	PKP	**PKPdf**	**01 03 13.2**	**-0.3**
comp=Z,1.3nm,0.7s,baz=34,slow=2.0,SNR=6.0							
NOA				SKPbc	**SKPab**	**01 06 19.6**	**+6.6**
comp=Z,3.5nm,1.0s,baz=31,slow=3.2,SNR=6.2							
AKASG	**Malin Array Be**	**130.38**	**326**	PKP	**PKPdf**	**01 03 14.6**	**+0.7**
comp=Z,2.5nm,0.8s,baz=55,slow=2.5,SNR=8.5							
BRTR	**Keskin Array B**	**132.19**	**311**	PKP	**PKPdf**	**01 03 18.0**	**+0.1**
comp=Z,1.5nm,0.8s,baz=141,slow=2.6,SNR=11							
BRTR				SKPbc	**SKiKP**	**01 06 28.4**	**-2.6**
comp=Z,0.3nm,0.6s,baz=80,slow=2.9,SNR=3.8							
BRTR	**Keskin Array B**	**132.19**	**311**	PKiKP	**PKPdf**	**01 03 18.0**	**+0.1**
LEOM	**Leova**	**133.09**	**322**	⇓*i*P	**PKPdf**	**01 03 20.5**	**+1.4**
LEOM	**Leova**	**133.09**	**322**	⇓PKIKP	**PKPdf**	**01 03 20.5**	**+1.4**
CFR	**Carcaliu**	**133.78**	**320**	⇓*i*P	**PKPdf**	**01 03 20.9**	**+0.4**
CFR	**Carcaliu**	**133.78**	**320**	⇓PKIKP	**PKPdf**	**01 03 20.9**	**+0.4**
TESR	**Tescani**	**134.02**	**322**	⇓*i*P	PKPdf	01 03 32.2	+11
BURAR	**Bucovina Array**	**134.26**	**324**	⇓*i*P	**PKPdf**	**01 03 23.5**	**+2.0**
KWP	**Kalwaria Pacla**	**134.44**	**328**	⇓*i*P	**PKPdf**	**01 03 21.7**	**+0.1**
KWP	**Kalwaria Pacla**	**134.44**	**328**	⇓PKIKP	**PKPdf**	**01 03 21.7**	**+0.1**
KOLS	**Kolonicke sedl**	**135.09**	**327**	*e*PKIKP	**PKPdf**	**01 03 23.8**	**+0.9**
KOLS	**Kolonicke sedl**	**135.09**	**327**	*e*PKP	**PKPdf**	**01 03 23.8**	**+0.9**
BMR	**Baia Mare**	**135.19**	**325**	⇓*i*P	**PKPdf**	**01 03 18.8**	**-4.3**
BMR	**Baia Mare**	**135.19**	**325**	⇓PKIKP	**PKPdf**	**01 03 18.8**	**-4.3**
STHS	**Stebnicka Huta**	**135.32**	**329**	*e*PKIKP	**PKPdf**	**01 03 25.8**	**+2.5**
STHS	**Stebnicka Huta**	**135.32**	**329**	*e*PKP	**PKPdf**	**01 03 25.8**	**+2.5**
BTMR	**Bucharest-Geot**	**135.40**	**320**	⇓*i*P	**PKPdf**	**01 03 18.7**	**-4.8**
ARR	**Arges**	**135.82**	**322**	⇓*i*P	**PKPdf**	**01 03 25.6**	**+1.2**
HUMR	**Humele**	**136.05**	**321**	⇓*i*P	**PKPdf**	**01 03 24.3**	**-0.5**
MORC	**Moravsky Berou**	**136.88**	**331**	⇓*i*P	**PKPdf**	**01 03 27.4**	**+1.2**
MORC	**Moravsky Berou**	**136.88**	**331**	⇓PKIKP	**PKPdf**	**01 03 27.4**	**+1.2**
DPC	**Dobruska-Polom**	**137.02**	**333**	*e*PKPdf	**PKPdf**	**01 03 27.4**	**+0.9**
DPC	**Dobruska-Polom**	**137.02**	**333**	*e*PKIKP	**PKPdf**	**01 03 27.4**	**+0.9**
BZS	**Buzias**	**137.44**	**324**	⇓*i*P	**PKPdf**	**01 03 28.0**	**+0.7**
BZS	**Buzias**	**137.44**	**324**	⇓PKIKP	**PKPdf**	**01 03 28.0**	**+0.7**
VRAC	**Vranov**	**137.65**	**331**	⇓*i*P	**PKPdf**	**01 03 30.9**	**+3.3**
VRAC	**Vranov**	**137.65**	**331**	⇓PKIKP	**PKPdf**	**01 03 30.9**	**+3.3**
BRG	**Berggiesshubel**	**137.65**	**335**	*e*(P)

MNBS	**Baschi**	**0.71**	**48**	*eP*	Pg	00 47 02.1	-0.5
	0.6nm,0.1s						
MNBS				*eS*	Sg	00 47 11.5	-0.5
	9.9nm,0.2s						
KPKS	**Kokpek**	**0.75 100**		*eP*	Pg	00 47 02.0	-1.2
	6.9nm,0.1s						
KPKS				*eS*	Sg	00 47 11.6	-1.5
	21nm,0.4s						
SATY	**Saty**	**0.76 135**		*eP*	Pg	00 47 02.7	-0.8
	9.5nm,0.1s						
SATY				*eS*	Sg	00 47 12.8	-0.7
	154nm,0.1s						
TNSS	**Tian-Shan**	**0.77 224**		*eP*	Pg	00 47 03.1	-0.5
	1.8nm,0.1s						
TNSS				*eS*	Sg	00 47 13.4	-0.4
	15nm,0.3s						
ANVS	**Anan'yevo**	**0.82 180**		⇑*eP*	Pg	00 47 03.5	-1.0
	baz=204						
ANVS				⇑*eS*	Sg	00 47 13.3	-2.0
	baz=204						
KUU	**Kurty**	**1.01 287**		*eP*	Pb	00 47 06.8	-0.9
	1.7nm,0.1s						
KUU				*eS*	Sb	00 47 19.9	-0.9
	3.9nm,0.2s						
MTBS	**Maitube**	**1.02 243**		*eP*	Pb	00 47 07.4	-0.6
	2.7nm,0.1s						
MTBS				*eS*	Sb	00 47 20.9	-0.3
	12nm,0.2s						
UZB	**Uzynbulak**	**1.09 114**		⇓*iP*	Pb	00 47 08.0	-1.2
	7.1nm,0.2s						
UZB				⇓*iS*	Sb	00 47 22.1	-1.1
	6.7nm,0.2s						
PRZ	**Przheval'sk**	**1.24 154**		⇑*eP*	Pn	00 47 08.8	-2.7
	baz=159						
PRZ				⇑*eS*	Sb	00 47 20.7	-6.9
	baz=159						
PDGK	**Podgornoye**	**1.35 101**		⇑*iP*	Pn	00 47 12.1	-0.8
	baz=101						
PDGK				⇑*iS*	Sn	00 47 29.5	-1.0
	baz=101						
PDGK	**Podgornoye**	**1.35 101**		⇓*eP*	Pn	00 47 12.2	-0.7
	baz=88						
PDGK				⇓*iS*	Sn	00 47 27.1	-3.4
	baz=88						
DGS	**Degeres**	**1.43 256**		*eP*	Pn	00 47 14.2	+0.1
	0.6nm,0.1s						
DGS				*eS*	Sn	00 47 32.4	-0.3
	2.8nm,0.4s						
KDJ	**Kajisay**	**1.51 194**		⇑*eP*	Pn	00 47 15.7	+0.4
	baz=207						
KDJ				⇑*eS*	Sn	00 47 32.2	-2.6
	baz=207						
TKM2	**Tokmak 2**	**1.66 247**		⇑*iP*	Pn	00 47 18.0	+0.7
	baz=247						
TKM2				⇑*iS*	Sb	00 47 40.1	+0.4
	baz=247						
BOOM	**Boomskoye usch**	**1.68 229**		⇑*eP*	Pg	00 47 20.3	-0.7
	baz=242						
BOOM				⇑*iS*	Sb	00 47 40.9	+0.5
	baz=242						
DJR	**Jarkent**	**1.70**	**64**	*eP*	Pb	00 47 18.7	-0.9
	1.6nm,0.1s						
DJR				*eS*	Sb	00 47 40.9	+0.1
	6.2nm,0.2s						
ULHL	**Ulahol**	**1.71 218**		⇑*iP*	Pb	00 47 19.2	-0.7
	baz=219						
ULHL				⇑*iS*	Sb	00 47 41.6	+0.3
	baz=219						
KAPS	**Kapalarasan**	**2.07**	**35**	*eP*	Pb	00 47 24.8	-1.2
	0.8nm,0.4s						
KAPS				*eS*	Sb	00 47 51.5	0.0
	4.4nm,0.3s						

NIED ***02*** *00:49:00, 36.°30N×140.°90E, h20km, Mw3.7 Best double couple: M0=3.68000×10^14 NP1:φ=248.00000°, δ=13.00000°, λ=140.00000°. NP2:φ=18.00000°, δ=82.00000°, λ=80.00000°.*
JMA ***02*** *00:49:06.9±0.1, 36.°33N×140.°94E, h39km±1km, M3.8*
JMA Felt II J1.
ISCJB ***02*** *00:49:07.2±0.8, 36.°36N±0.°04×140.°95E±0.°08, h40km±7km, mb3.9/8, MS3.2/1, Error ellipse: s-maj=10.9km s-min=6.3km az=14.9*
IDC ***02*** *00:49:08.5±5.9, 36.°37N×140.°93E, h34km±43km, mb3.7/8, mb1 3.8/10, mb1mx3.4/57, mbtmp3.9/10, ML3.6/2, MS2.9/4, Ms1 2.9/4, ms1mx2.4/44, Error ellipse: s-maj=35.4km s-min=16.2km az=73.0*

ISC 02 00:49:07.5±1.5, 36.°41N±0.°04×140.°90E±0.°06, h26km±10km, n28, σ=0.963/26, mb3.9/8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.33**	**307**	P	**Pn**	**00 49 16.2**	**-0.5**
JHO				S	**Sn**	**00 49 22.4**	**-0.3**
JYT	**Yasato**	**0.60**	**252**	P	**Pb**	**00 49 19.1**	**-0.3**
JYT				S	**Sb**	**00 49 27.3**	**-0.2**
ONAJ	**Iwakimizuishiy**	**0.69**	**353**	P	**Pb**	**00 49 21.2**	**+0.1**
JFK	**Kawauchi**	**0.95**	**359**	P	**Pn**	**00 49 24.6**	**-0.7**
JFK				*eS*	**Sb**	**00 49 36.7**	**-1.0**
JAG	**Ashikaga**	**1.17**	**271**	P	**Pn**	**00 49 27.7**	**-0.5**
JAG				S	**Sn**	**00 49 42.8**	**-0.4**
JFT	**Otama**	**1.19**	**338**	P	**Pb**	**00 49 29.8**	**+0.3**
JFT				S	**Sb**	**00 49 45.8**	**+1.3**
JKT	**Katashina**	**1.38**	**285**	P	**Pn**	**00 49 31.7**	**+0.6**
JKT				S	**Sb**	**00 49 49.7**	**-0.1**
MJAR	**Matsushiro Arr**	**2.17**	**274**	Pn	**Pn**	**00 49 42.4**	**+0.4**
	27nm,0.3s,baz=112,slow=8.6,SNR=103						
MJAR				Lg	Lg	00 50 18.5	
	25nm,0.3s,baz=94,slow=27,SNR=8.2						
MJAR				LR	LR	00 50 43.4	
	comp=Z,168nm,18.2s,baz=75,slow=44						
MAT	**Matsushiro**	**2.17**	**274**	P	**Pn**	**00 49 42.8**	**+0.8**
MAT				S	**Sb**	**00 50 12.7**	**0.0**
JHJ	**Hachijo jima 2**	**3.41**	**196**	Pn	**Pn**	**00 49 59.5**	**+0.4**
	9.5nm,0.3s,baz=324,slow=22,SNR=7.7						
JHJ				Sn	**Sn**	**00 50 38.6**	**0.0**
	30nm,0.3s,baz=76,slow=23,SNR=8.5						
JNU	**Nakatsue**	**8.87**	**251**	LR	LR	00 54 48.8	
	comp=Z,55nm,20.9s,baz=250,slow=38						
KSRS	**Korea Array**	**10.44**	**280**	LR	LR	00 55 40.3	
	comp=Z,32nm,18.9s,baz=44,slow=37						
SONM	**Songino Array**	**27.80**	**305**	P	**P**	**00 54 54.4**	**0.0**
	0.6nm,0.5s,baz=105,slow=9.9,SNR=5.8						
H11N2	**WAKE ISLAND Hy 28.20**	**119**		T	T	01 24 23.7	
	baz=312,slow=75,SNR=35						
H11N1	**WAKE ISLAND Hy 28.20**	**119**		T	T	01 24 23.3	
	baz=312,slow=75,SNR=36						
H11N3	**WAKE ISLAND Hy 28.21**	**119**		T	T	01 24 15.0	
	baz=312,slow=75,SNR=36						
H11S1	**WAKE ISLAND Hy 28.88**	**121**		T	T	01 25 11.2	
	baz=314,slow=76,SNR=224						
H11S3	**WAKE ISLAND Hy 28.88**	**121**		T	T	01 25 09.4	
	baz=314,slow=76,SNR=118						
H11S2	**WAKE ISLAND Hy 28.90**	**121**		T	T	01 25 04.4	
	baz=314,slow=76,SNR=117						
DAV	**Davao City (W)**	**32.39**	**209**	LR	LR	01 08 03.0	
	comp=Z,55nm,20.7s,baz=343,slow=35						
ZALV	**Zalesovo Beam**	**42.03**	**313**	P	**P**	**00 56 57.0**	**+0.4**
	2.3nm,0.5s,baz=90,slow=6.6,SNR=13						
MKAR	**Makanchi Array**	**44.10**	**303**	P	**P**	**00 57 13.8**	**+0.3**
	0.6nm,0.6s,baz=91,slow=10,SNR=7.7						
ILAR	**Eielson Array**	**50.24**	**32**	P	**P**	**00 58 02.3**	**+1.3**
	0.9nm,0.7s,baz=246,slow=5.7,SNR=4.5						
WRA	**Warramunga Arr**	**56.39**	**187**	P	**P**	**00 58 45.7**	**-0.9**
	0.4nm,0.4s,baz=4.7,slow=7.4,SNR=7.0						
ARU	**Arti**	**56.55**	**319**	P	**P**	**00 58 47.4**	**-0.1**
	2.0nm,0.4s,baz=112,slow=5.4,SNR=5.1						
ASAR	**Alice Springs**	**60.12**	**187**	P	**P**	**00 59 12.2**	**-0.5**
	0.4nm,0.6s,baz=8.8,slow=8.4,SNR=3.5						
ARCES	**ARCESS Array B**	**64.43**	**339**	P	**P**	**00 59 40.4**	**-0.7**
	1.9nm,1.1s,baz=66,slow=9.9,SNR=2.7						
H06S1	**SOCORRO T**	**92.83**	**64**	T	T	02 48 08.1	
	SNR=54						

IDC ***02*** *01:09:19.5±1.0, 35.°49N×141.°05E, h0km, mb3.7/5, mb1 3.9/9, mb1mx3.6/39, mbtmp3.9/9, ML3.8/3, MS2.9/6, Ms1 2.9/6, ms1mx2.6/43, Error ellipse: s-maj=29.3km s-min=16.9km az=99.0*
ISCJB ***02*** *01:09:22.6±0.7, 35.°54N±0.°04×141.°15E±0.°07, h33km, mb3.7/5, MS2.8/3, Error ellipse: s-maj=8.7km s-min=5.6km az=165.7*
JMA ***02*** *01:09:24.6±0.2, 35.°54N×140.°93E, h41km±2km, M3.4*

ISC 02 01:09:24.6±0.8, 35.°53N±0.°05×140.°98E±0.°08, h33km, n29, σ=0.999/22, mb3.7/5, MS2.8/3, 3C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.19**	**330**	⇑P	**Pn**	**01 09 31.6**	**+1.0**
CHOJ				S	**Sb**	**01 09 36.9**	**+1.4**
JCN	**Nagara**	**0.64**	**260**	P	**Pn**	**01 09 37.8**	**+0.5**
BSO4	**Boso 4**	**0.75**	**224**	P	**Pn**	**01 09 38.6**	**-0.2**
BSO3	**Boso 3**	**0.82**	**208**	⇓P	**Pn**	**01 09 39.2**	**-0.4**
BSO3				*eX*		01 09 51.4	
BSO1	**Boso 1**	**0.88**	**180**	⇑P	**Pn**	**01 09 40.0**	**-0.1**
JYT	**Yasato**	**0.94**	**318**	P	**Pn**	**01 09 41.2**	**-0.2**
JYT				*eS*	**Sn**	**01 09 53.0**	**-0.7**
JIM2	**Oshima 3**	**1.51**	**238**	P	**Pn**	**01 09 48.0**	**-1.3**
JOD2	**Odawara 2**	**1.57**	**261**	⇑P	**Pn**	**01 09 49.4**	**-0.7**
MJAR	**Matsushiro Arr**	**2.46**	**295**	Pn	**Pn**	**01 10 02.6**	**+0.2**
	8.3nm,0.3s,baz=121,slow=29,SNR=20						
MJAR				LR	LR	01 10 50.5	
	comp=Z,11nm,19.1s,baz=120,slow=36						
MAT	**Matsushiro**	**2.46**	**295**	P	**Pn**	**01 10 03.6**	**+1.2**
MAT				*eS*	**Sn**	**01 10 32.3**	**+1.0**
JHJ	**Hachijo jima 2**	**2.60**	**203**	Pn	**Pn**	**01 10 04.2**	**-0.1**
	38nm,0.3s,baz=284,slow=21,SNR=8.8						
JHJ				Sn	**Sn**	**01 10 36.2**	**+1.4**
	36nm,0.3s,baz=92,slow=22,SNR=7.1						
JCJ	**Chichijima**	**8.48**	**173**	Pn	**Pn**	**01 11 23.3**	**-1.7**
ASAJ	**Asahikawa**	**8.66**	**8**	Pn	**Pn**	**01 11 25.9**	**-1.6**
	2.0nm,0.3s,baz=257,slow=8.7,SNR=6.0						
JNU	**Nakatsue**	**8.69**	**257**	LR	LR	01 15 21.0	
	comp=Z,156nm,18.4s,baz=111,slow=41						
KSRS	**Korea Array**	**10.68**	**284**	Pn	Pn	01 12 00.7	+5.5
	0.3nm,0.3s,baz=99,slow=14,SNR=7.3						
KSRS				LR	LR	01 15 44.5	
	comp=Z,42nm,20.3s,baz=98,slow=36						
JOW	**Kunigami**	**13.90**	**235**	LR	LR	01 17 44.4	
	comp=Z,41nm,19.5s,baz=197,slow=36						
PETK	**Petropavlovsk-**	**21.16**	**29**	LR	LR	01 21 47.8	
	comp=Z,25nm,21.5s,baz=199,slow=35						
MA2	**Magadan**	**24.89**	**12**	LR	LR	01 26 02.4	
	comp=Z,25nm,18.1s,baz=260,slow=40						
YAK	**Yakutsk**	**27.46**	**348**	LR	LR	01 26 12.2	
	comp=Z,40nm,18.2s,baz=192,slow=37						
H11N2	**WAKE ISLAND Hy 27.72**	**118**		T	T	01 44 17.8	
	baz=310,slow=75,SNR=22						
H11N1	**WAKE ISLAND Hy 27.73**	**118**		T	T	01 44 16.4	
	baz=310,slow=75,SNR=20						
H11N3	**WAKE ISLAND Hy 27.74**	**118**		T	T	01 44 18.8	
	baz=310,slow=75,SNR=18						
MKAR	**Makanchi Array**	**44.63**	**303**	P	**P**	**01 17 33.4**	**-0.4**
	0.5nm,0.6s,baz=86,slow=9.9,SNR=5.0						
ILAR	**Eielson Array**	**50.95**	**32**	P	**P**	**01 18 23.1**	**+0.7**
	0.6nm,0.6s,baz=251,slow=5.6,SNR=4.4						
WRA	**Warramunga Arr**	**55.53**	**188**	P	**P**	**01 18 55.3**	**-1.3**
	1.4nm,0.7s,baz=2.3,slow=8.0,SNR=19						
YKA	**Yellowknife Ar**	**65.28**	**30**	P	**P**	**01 20 03.1**	**+0.4**
	0.2nm,0.7s,baz=299,slow=6.5,SNR=5.6						
NOA	**NORSAR Array B**	**75.43**	**337**	P	**P**	**01 21 04.9**	**+0.1**
	1.0nm,0.8s,baz=40,slow=6.0,SNR=3.8						
H06E1	**SOCORRO T-PHASE**	**93.15**	**64**	T	T	03 07 08.4	
	SNR=7.5						
H06S1	**SOCORRO T**	**93.15**	**64**	T	T	03 04 49.9	
	SNR=16						

WEL 02 01:25:23.6±1.1, 38.°15S×175.°72E, h164km±9km, ML3.6/4, 1D, Error ellipse: s-maj=8.7km s-min=6.4km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MRHZ	**Matea Rd**	**0.88**	**141**	PN	Pn	01 25 49.1	+0.3
MUGZ	**Murupara**	**0.89**	**112**	PN	Pn	01 25 49.3	+0.4
URZ	**Urewera**	**1.10**	**96**	PN	Pn	01 25 50.4	-0.1
BKZ	**Black Stump Fm**	**1.18**	**149**	⇓PN	Pn	01 25 51.3	0.0
NMHZ	**Naumai**	**1.27**	**138**	PN	Pn	01 25 52.9	+0.8
RAHZ	**Arahi**	**1.32**	**126**	PN	Pn	01 25 52.8	+0.3
BHHZ	**Black Hill Sta**	**1.37**	**169**	PN	Pn	01 25 52.3	-0.7
RAGZ	**Rawiri**	**1.38**	**105**	PN	Pn	01 25 53.4	+0.2
KWHZ	**Kaweka Forest**	**1.39**	**157**	PN	Pn	01 25 53.1	-0.1
SNGZ	**Shannon Statio**	**1.42**	**117**	PN	Pn	01 25 53.8	+0.3
MWZ	**Matawai**	**1.44**	**98**	PN	Pn	01 25 53.5	-0.1
MWZ				SN	Sn	01 26 16.4	-0.4
ARHZ	**Aropaoanui**	**1.50**	**138**	PN	Pn	01 25 54.3	+0.1
KRHZ	**Kereru**	**1.58**	**161**	PN	Pn	01 25 54.5	-0.5
HAZ	**Te Kaha**	**1.68**	**77**	PN	Pn	01 25 55.8	-0.2
HAZ				SN	Sn	01 26 19.1	-1.9
RIGZ	**Rimuhau**	**1.70**	**110**	PN	Pn	01 25 56.3	-0.1
TKGZ	**Te Karaka**	**1.70**	**100**	PN	Pn	01 25 56.3	0.0
KNZ	**Kokohu**	**1.76**	**120**	PN	Pn	01 25 56.5	-0.4
PKGZ	**Pakihiroa**	**1.88**	**83**	PN	Pn	01 25 58.2	-0.1
WMGZ	**Waiomatatini S**	**2.16**	**82**	PN	Pn	01 26 01.1	-0.2

SGS ***02*** *01:28:30.5, 14.°93N×41.°50E, h26km*
ISCJB ***02*** *01:28:33.9±2.0, 15.°19N±0.°03×42.°12E±0.°07, h9km±15km, Error ellipse: s-maj=11.0km s-min=5.3km az=179.5*
DHMR ***02*** *01:28:35.6±1.2, 15.°06N×42.°35E, h2km±33km, ML3.5*
ARO ***02*** *01:28:37.6, 15.°N±16.°×42.°2E±6.°1, h15km±99km, ML3.4*

ISC 02 01:28:34.4±3.3, 15.°10N±0.°04×42.°3E±0.°1, h16km±22km, n18, σ=2.951/25, 2C, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HAJJ	**Hajjah**	**1.39**	**64**	⇑*iP*	**Pn**	**01 29 00.3**	**+1.0**
HAJJ				*i S*	**Sg**	**01 29 21.2**	**+1.9**
HAJJ				AML	AML	01 29 31.3	
	comp=Z,845nm,0.5s						
FRSS	**Farasan al Kab**	**1.64**	**354**	S	**Sn**	**01 29 22.1**	**-1.4**
FRSS				P	Pn	01 28 59.8	-2.8
UDYN	**Al 'Udayn**	**1.96**	**125**	*i P*	**Pb**	**01 10.7**	**+0.8**
UDYN				*i S*	**Sg**	**01 29 37.1**	**-0.6**
UDYN				AML	AML	01 29 52.4	
	comp=E,480nm,0.4s						
DHBB	**Dhamar BB**	**2.08**	**104**	*i P*	**Pb**	**01 29 12.7**	**+0.7**
DHBB				*i S*	**Sg**	**01 29 40.5**	**-1.0**
TRBA	**At Turbah**	**2.55**	**136**	⇑*iP*	**Pb**	**01 29 19.2**	**-0.8**
TRBA				*i S*	**Sg**	**01 29 53.7**	**-2.9**
TRBA				AML	AML	01 30 13.1	
	comp=N,378nm,0.7s						
DJNS	**Zahran al Janu**	**2.85**	**25**	S	**Sn**	**01 29 54.1**	**+0.4**
DJNS				P	**Pn**	**01 29 20.6**	**+1.0**
MAOD	**Malaho**	**2.98**	**181**	*eP*	**Pn**	**01 29 23.1**	**+2.0**
MAOD	**Malaho**	**2.98**	**181**	*eP*	**Pn**	**01 29 23.1**	**+2.0**
OBO	**Obock**	**3.24**	**163**	*eP*	**Pn**	**01 29 28.0**	**+3.4**
OBO	**Obock**	**3.24**	**163**	*eP*	**Pn**	**01 29 28.0**	**+3.4**
TDD	**Tadjoura Ara**	**3.32**	**170**	*eP*	**Pn**	**01 29 28.6**	**+2.9**
TDD	**Tadjoura Ara**	**3.32**	**170**	*eP*	**Pn**	**01 29 28.6**	**+2.9**
ATD	**Arta Tunnel**	**3.58**	**171**	*eP*	**Pn**	**01 29 32.7**	**+3.3**
ATD				*eS*	**Sb**	**01 30 17.2**	**-3.6**
ATD	**Arta Tunnel**	**3.58**	**171**	*eP*	**Pn**	**01 29 32.7**	**+3.3**
ATD				*eS*	**Sb**	**01 30 17.2**	**-3.6**
SGH	**Sud-Ghoubbet**	**3.65**	**175**	*eP*	**Pn**	**01 29 33.1**	**+2.8**
SGH	**Sud-Ghoubbet**	**3.65**	**175**	*eP*	**Pn**	**01 29 33.1**	**+2.8**
NAMS	**An Nimas**	**4.05**	**359**	P	**Pn**	**01 29 36.6**	**+0.5**
TATS	**Tathlith**	**4.56**	**14**	P	**Pn**	**01 29 44.4**	**+1.5**

MEX 02 01:28:45.3±0.6, 14.°27N×92.°68W, h16km±101km, MD3.9, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		**1.52**	**340**	*eP*	Pn	01 29 07.5	-4.3
PCIG				*eS*	Sn	01 29 25.4	-5.9
CCIG	**Comitan**	**2.07**	**15**	*i P*	Pn	01 29 16.7	-2.9
CCIG				*i S*	Sn	01 29 40.1	-5.1
TGIG		**2.54**	**350**	*i P*	Pn	01 29 23.0	-2.8
TGIG				*i S*	Sn	01 29 52.7	-3.8

SOME ***02*** *01:38:44.6, 38.°18N×70.°98E, h5km*
IDC ***02*** *01:38:50.3±3.0, 37.°47N×73.°61E, h0km, mb3.6/4, mb1 3.7/7, mb1mx3.3/51, mbtmp3.5/7, ML2.9/3, Error ellipse: s-maj=57.0km s-min=30.9km az=135.0*
NNC ***02*** *01:38:51.3±3.0, 37.°22N×73.°03E, h143km±34km, mb2.7, mpv3.5, Error ellipse: s-maj=30.3km s-min=24.4km az=79.0*

ISC 02 01:38:49.9±1.6, 37.°2N±0.°1×73.°1E±0.°1, h10km, n18, σ=1.992/26, mb3.6/4, 5C-4D, Tajikistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFK	**Sufi-Kurgan**	**2.79**	**6**	⇑P	**Pn**	**01 39 34.8**	**0.0**
	24nm,0.5s						
SFK				⇓S	**Sn**	**01 40 12.0**	**+3.4**
	92nm,0.5s						
MNAS	**Manas**	**5.27**	**355**	⇑P	**Pn**	**01 40 08.6**	**-0.3**
	3.9nm,0.4s						
MNAS				⇑S	**Sn**	**01 41 08.1**	**-1.5**
	8.7nm,0.5s						
AAK	**Ala-Archa**	**5.49**	**11**	Pn	**Pn**	**01 40 12.7**	**+0.9**
	1.0nm,0.3s,baz=148,slow=4.7,SNR=8.6						
AAK				Sn	**Sn**	**01 41 16.5**	**+1.3**
	0.8nm,0.3s,baz=344,slow=18,SNR=9.5						
AAK	**Ala-Archa**	**5.49**	**11**	⇑P	**Pn**	**01 40 12.8**	**+0.9**
	1.8nm,0.4s						
AAK				⇓S	**Sn**	**01 41 15.5**	**+0.3**
	31nm,1.1s						
MRKS	**Merke**	**5.50**	**1**	*eP*	**Pn**	**01 40 11.3**	**-0.7**
	3.3nm,0.3s						
MRKS				*eS*	**Sn**	**01 41 13.6**	**-1.8**
	10nm,0.3s						
TKM2	**Tokmak 2**	**5.98**	**18**	⇑P	**Pn**	**01 40 18.6**	**-0.2**
	1.3nm,0.6s						
TKM2				⇓S	**Sn**	**01 41 25.9**	**-1.5**
	4.0nm,0.5s						
KK31	**Karatay Array**	**6.19**	**342**	P	**Pn**	**01 40 21.5**	**+0.1**
	1.5nm,0.6s,baz=153,slow=12,SNR=18						
KK31				S	**Sn**	**01 41 30.9**	**-1.4**
	13nm,0.7s,baz=150,slow=22,SNR=10.0						
DGS	**Degeres**	**6.33**	**18**	*eP*	**Pb**	**01 40 37.8**	**-2.4**
	4.6nm,0.5s						
DGS				*eS*	**Sb**	**01 41 59.4**	**+3.4**
	9.5nm,0.7s						
MKAR	**Makanchi Array**	**11.72**	**33**	Pn	**Pn**	**01 41 36.2**	**-0.9**
	0.1nm,0.3s,baz=207,slow=13,SNR=4.6						
GEYT	**Alibeck**	**11.94**	**278**	Pn	**Pn**	**01 41 40.6**	**+0.4**
	0.3nm,0.3s,baz=128,slow=9.6,SNR=4.1						
KURBB	**Kurchatov Arra**	**13.93**	**14**	Pn	**Pn**	**01 42 06.1**	**-1.2**
	0.0nm,0.3s,baz=203,slow=11,SNR=3.2						
AB31	**Akbulak array**	**15.36**	**326**	P	**Pn**	**01 42 22.9**	**-3.7**
	0.8nm,0.5s,baz=135,slow=13,SNR=18						
AB31				⇓S	Sn	01 45 05.7	-11
	0.9nm,0.6s,baz=152,slow=22,SNR=3.5						
BVAR	**Borovoye Array**	**15.90**	**354**	Pn	**Pn**	**01 42 35.3**	**+1.6**
	0.4nm,0.3s,baz=163,slow=10,SNR=12						
ZALV	**Zalesovo Beam**	**18.56**	**22**	P	**P**	**01 43 03.4**	**-3.3**
	0.1nm,0.3s,baz=218,slow=9.1,SNR=2.9						
FINES	**FINESS Array B**	**37.84**	**325**	P	**P**	**01 46 08.9**	**+2.4**
	1.4nm,1.0s,baz=113,slow=15,SNR=4.0						
ARCES	**ARCESS Array B**	**41.13**	**337**	P	**P**	**01 46 35.6**	**+1.9**
	1.6nm,1.0s,baz=101,slow=6.4,SNR=5.1						
NOA	**NORSAR Array B**	**44.83**	**322**	P	**P**	**01 47 05.8**	**+1.9**
	0.4nm,0.6s,baz=93,slow=4.8,SNR=2.7						
YKA	**Yellowknife Ar**	**80.42**	**4**	P	**P**	**01 51 01.6**	**+0.3**
	0.1nm,0.5s,baz=348,slow=5.6,SNR=7.2						

SOME 02 01:46:33.6, 43.°60N×77.°70E, h10km, 1C-1D, Lake Issyk-Kul region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHKK	**Chushkaly**	**0.57**	**298**	*eP*	Pg	01 46 44.6	-0.1
	1.4nm,0.1s						
CHKK				*eS*	Sg	01 46 52.5	+0.1
	4.3nm,0.1s						
ARXS	**Arharly**	**0.62**	**8**	*eP*	Pg	01 46 45.9	+0.2
	2.0nm,0.1s						
ARXS				*eS*	Sb	01 46 54.7	-0.7
	12nm,0.1s						
MDOK	**Medeo**	**0.65**	**228**	*eP*	Pg	01 46 45.1	-1.1
	1.4nm,0.4s						
MDOK				*eS*	Sg	01 46 53.4	-1.2
	5.0nm,0.2s						
MNBS	**Baschi**	**0.70**	**46**	*eP*	Pg	01 46 46.5	-0.6
	0.7nm,0.2s						
MNBS				*eS*	Sg	01 46 55.8	-0.5
	5.7nm,0.2s						
SATY	**Saty**	**0.75**	**136**	⇑*iP*	Pg	01 46 47.5	-0.6
	2.9nm,0.1s						
SATY				⇓*iS*	Sg	01 46 57.5	-0.3
	36nm,0.2s						
TNSS	**Tian-Shan**	**0.79**	**225**	*eP*	Pg	01 46 48.5	-0.3
	0.6nm,0.1s						
TNSS				*eS*	Sg	01 46 59.5	+0.5
	6.8nm,0.3s						
KAPS	**Kapalarasan**	**2.06**	**35**	*eP*	Pb	01 47 10.5	-0.6
	0.4nm,0.2s						
KAPS				*eS*	Sb	01 47 37.0	+0.1
	1.1nm,0.3s						

NNC 02 01:47:47.1±4.2, 36.°83N×70.°81E, h182km±78km, mb2.5, mpv3.5, 6C-4D, Error ellipse: s-maj=56.1km s-min=30.1km az=61.0, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFK	**Sufi-Kurgan**	**3.82**	**33**	⇑P	Pn	01 48 45.3	-0.8
	2.1nm,0.2s						
SFK				⇑S	Sn	01 49 33.6	+1.2
	3.1nm,0.2s						
MNAS	**Manas**	**5.80**	**13**	⇑P	Pn	01 49 11.8	+0.3
	3.3nm,0.8s						
MNAS				⇑S	Sn	01 50 16.7	-1.4
	2.1nm,0.3s						
KK31	**Karatay Array**	**6.27**	**358**	P	Pn	01 49 18.6	+1.0
	1.0nm,0.2s,baz=230,slow=15,SNR=26						
KK31				⇓S	Sn	01 50 29.9	+0.9
	0.9nm,0.3s,baz=187,slow=25,SNR=5.4						
AAK	**Ala-Archa**	**6.45**	**25**	⇓P	Pn	01 49 19.5	-0.6
	3.7n

CBX				*e*S	**Sn**	**01 55 18.3**	**0.0**
CBX	**Cerro Bola**	**1.45**	**323**	⇓*e*P	**Pb**	**01 55 00.6**	**-0.5**
CBX				⇑*e*		01 55 24.9	
CBX				AML	AML	01 55 24.9	
	comp=E,282nm,0.5s						
TJIG	**Tijuana**	**1.56**	**326**	*e*P	**Pn**	**01 55 01.6**	**+0.5**
TJIG				*e*S	**Sn**	**01 55 20.1**	**-0.6**
SWSC	**Sam W. Stewart**	**1.80**	**356**	P	**Pb**	**01 55 07.4**	**+0.6**
	baz=182						
MONP2	**Monument Peak**	**1.86**	**339**	P	**Pb**	**01 55 08.0**	**-0.1**
	baz=162						
MONP2				S	**Sb**	**01 55 30.4**	**-0.7**
	baz=162						
109C	**Camp Elliot, M**	**2.14**	**325**	P	**Pb**	**01 55 11.7**	**-0.9**
	baz=144						
109C				Sb	**Sb**	**01 55 37.9**	**-0.8**
	baz=144						
214A	**Organ Pipe Nat**	**2.55**	**71**	P	**Pn**	**01 55 15.3**	**+0.5**
	baz=259						
PFO	**Pinyon Flats O**	**2.55**	**345**	Pb	**Pb**	**01 55 20.4**	**+0.6**
	baz=167						
PFO				Sb	**Sb**	**01 55 51.5**	**+0.6**
	baz=167						
MURC	**Murrieta**	**2.78**	**332**	Sb	**Sb**	**01 55 56.6**	**-0.6**
	baz=152						

IDC 02 01:58:45.2±4.0, 17°.89S×176°.57W, h0km, mb4.1/3, mb1 4.2/3, mb1mx3.6/36, mbtmp4.1/3, Error ellipse: s-maj=181.1km s-min=40.8km az=141.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**40.17**	**242**	P	P	02 06 23.5	+0.1
	0.7nm,0.3s,baz=51,slow=6.5,SNR=3.8						
WRA	**Warramunga Arr**	**46.35**	**259**	P	P	02 07 13.8	+0.2
	1.0nm,0.3s,baz=97,slow=7.7,SNR=43						
ASAR	**Alice Springs**	**46.48**	**254**	P	P	02 07 14.2	-0.4
	1.1nm,0.4s,baz=86,slow=8.2,SNR=26						
BRTR	**Keskin Array B**	**146.00**	**316**	PKPbc	PKPdf	02 18 25.2	-1.5
	0.4nm,0.6s,baz=141,slow=4.7,SNR=4.5						
GERES	**GERESS Array B**	**148.01**	**347**	PKPbc	PKPbc	02 18 33.1	+0.2
	0.1nm,0.3s,baz=27,slow=3.6,SNR=5.2						

IDC 02 02:01:09.0±1.2, 18°.03N×145°.43E, h0km, mb3.8/6, mb1 4.1/6, mb1mx3.6/46, mbtmp3.8/6, Error ellipse: s-maj=66.5km s-min=19.8km az=108.0, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**39.27**	**197**	P	P	02 08 39.8	+0.1
	1.9nm,0.7s,baz=18,slow=9.0,SNR=17						
ASAR	**Alice Springs**	**42.94**	**196**	P	P	02 09 09.5	-0.3
	0.6nm,0.5s,baz=12,slow=9.0,SNR=14						
DZM	**Mont Dzumac**	**44.84**	**152**	P	P	02 09 25.1	-0.1
	1.9nm,0.6s,baz=324,slow=19,SNR=3.0						
ILAR	**Eielson Array**	**64.36**	**26**	P	P	02 11 46.7	+0.3
	0.4nm,0.4s,baz=255,slow=5.9,SNR=7.4						
YKA	**Yellowknife Ar**	**78.70**	**28**	P	P	02 13 12.8	-0.1
	0.3nm,0.7s,baz=286,slow=5.4,SNR=5.6						
NVAR	**Mina Array Bea**	**83.75**	**52**	P	P	02 13 40.3	-0.3
	0.8nm,0.7s,baz=260,slow=5.7,SNR=7.1						

NIED ***02*** *02:09:00, 37°.60N×141°.70E, h56km, Mw4.5 Best double couple: M₀5.74000×10¹⁵ NP1:φ₀s195.00000°, δ33.00000°, λ91.00000°. NP2:φ₀s14.00000°, δ57.00000°, λ89.00000°.*
MOS ***02*** *02:09:33.0±1.0, 37°.74N×141°.58E, h40km, mb4.9/84, Error ellipse: s-maj=7.2km s-min=4.3km az=100.0*
ISCJB ***02*** *02:09:34.8±0.3, 37°.65N±0°.02×141°.57E±0°.03, h58km±2km, mb4.6/165, MS3.6/13, Error ellipse: s-maj=4.6km s-min=3.4km az=135.0*
JMA ***02*** *02:09:35.5±0.1, 37°.65N×141°.60E, h48km±2km, M4.7*
JMA Felt III J1.
IDC ***02*** *02:09:36.3±0.5, 37°.65N×141°.57E, h57km±4km, mb4.3/36, mb1 4.4/43, mb1mx4.4/50, mbtmp4.6/43, MS3.4/12, Ms1 3.5/12, ms1mx3.2/39, Error ellipse: s-maj=12.1km s-min=10.0km az=107.0*
NEIC ***02*** *02:09:37.0±0.5, 37°.62N×141°.56E, h65km±4km, mb4.7/88, Error ellipse: s-maj=4.7km s-min=3.7km az=148.0*
NEIC Recorded [3 JMA] in Fukushima.

ISC 02 02:09:34.4±0.4, 37°.64N±0°.04×141°.72E±0°.04, h45km±3km, h44km: pP-P, n372, σ1°54/411, mb4.6/168, MS3.4/15, 37C-5D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.72**	**248**	P	**Pn**	**02 09 48.5**	**+0.2**
JFK				S	**Sn**	**02 09 57.6**	**-0.8**
JMM	**Marumori**	**0.77**	**288**	P	**Pn**	**02 09 49.0**	**+0.1**
JMM				S	**Sn**	**02 09 58.0**	**-1.4**
JIO	**Ouri**	**0.87**	**340**	P	**Pn**	**02 09 51.0**	**+0.8**
JIO				S	**Sn**	**02 10 01.6**	**-0.1**
ONAJ	**Iwakimizuishiy**	**0.91**	**234**	P	**Pn**	**02 09 51.1**	**+0.3**
ONAJ				S	**Sn**	**02 10 02.0**	**-0.8**
JFT	**Otama**	**1.11**	**264**	P	**Pn**	**02 09 54.1**	**+0.6**
JFT				S	**Sn**	**02 10 07.8**	**+0.2**
JOU	**Okura**	**1.11**	**311**	P	**Pn**	**02 09 53.7**	**+0.2**
JMK	**Ichinoseki**	**1.37**	**343**	P	**Pn**	**02 09 58.1**	**+1.0**
JMK				S	**Sn**	**02 10 14.3**	**+0.3**
JHO	**Hitachi**	**1.38**	**222**	P	**Pn**	**02 09 57.4**	**+0.2**
JHO				*e*S	**Sn**	**02 10 12.4**	**-1.8**
JYS	**Shirataka**	**1.43**	**295**	P	**Pn**	**02 09 58.2**	**+0.3**
JYS				S	**Sn**	**02 10 11.6**	**-4.0**
JFY	**Yanaizu**	**1.62**	**262**	P	**Pn**	**02 10 01.0**	**+0.5**
MJAR	**Matsushiro Arr**	**3.01**	**250**	P	**Pn**	**02 10 21.2**	**+1.6**
	46nm,0.3s,baz=54,slow=11,SNR=208						
MAJO	**Matsushiro**	**3.01**	**250**	*e*iP	**Pn**	**02 10 21.2**	**+1.6**
MAJO	**Matsushiro**	**3.01**	**250**	*e*Pn	**Pn**	**02 10 21.3**	**+1.6**
MAT	**Matsushiro**	**3.01**	**250**	P	**Pn**	**02 10 21.3**	**+1.7**
MAT				S	**Sn**	**02 10 53.9**	**-0.6**
MJB9	**Matsu-Tunnel**	**3.02**	**250**	*e*Pn	**Pn**	**02 10 21.4**	**+1.7**
INU	**Inuyama**	**4.42**	**240**	*e*Pn	**Pn**	**02 10 41.6**	**+2.6**
ERM	**Erimo**	**4.51**	**14**	*e*P	**Pn**	**02 10 40.6**	**+0.5**
ERM	**Erimo**	**4.51**	**14**	*e*Pn	**Pn**	**02 10 42.6**	**+2.5**
ERM				*e*Sn	**Sn**	**02 11 23.2**	**-8.0**
JHJ2	**Mitsune**	**4.78**	**200**	*e*Pn	**Pn**	**02 10 43.1**	**-0.7**
JHJ2				*e*Sn	**Sn**	**02 11 30.9**	**-6.9**
JHJ	**Hachijo jima 2**	**4.78**	**200**	P	**Pn**	**02 10 45.0**	**+1.2**
	59nm,0.3s,baz=309,slow=2.6,SNR=16						
JHJ				S	**Sn**	**02 11 36.4**	**-1.5**
	82nm,0.3s,baz=230,slow=23,SNR=11						
JHJ				LR	LR	02 12 49.8	
	comp=Z,400nm,20.6s,baz=110,slow=41						
ASAJ	**Asahikawa**	**6.51**	**6**	P	**Pn**	**02 11 07.6**	**+0.1**
	11nm,0.3s,baz=225,slow=7.8,SNR=18						
ASAJ				S	**Sn**	**02 12 20.5**	**+0.1**
	4.6nm,0.3s,baz=9.3,slow=12,SNR=2.8						
ASAJ	**Asahikawa**	**6.51**	**6**	*e*Pn	**Pn**	**02 11 07.6**	**+0.1**
ASAJ				*e*Sn	**Sn**	**02 12 19.5**	**-0.9**
YUK	**Yuzh-Kuril'sk**	**7.12**	**25**	*e*P	**Pn**	**02 11 14.3**	**-1.6**
YUK				*e*S	**Sn**	**02 12 28.7**	**-6.7**
YUK				pmax	pmax		
	comp=Z,158nm,0.6s						
YUK				pmax	pmax		
	comp=N,93nm,0.7s						
YUK				pmax	pmax		
	comp=E,81nm,0.4s						
SHO	**Shikotan**	**7.33**	**30**	*e*P	**Pn**	**02 11 17.7**	**-1.2**
SHO				*e*S	**Sn**	**02 12 34.5**	**-6.2**
SHO				pmax	pmax		
	comp=Z,47nm,0.5s						
KUR	**Kuril'sk**	**8.88**	**29**	*e*P	**Pn**	**02 11 40.8**	**+0.8**
KUR				*e*S	**Sn**	**02 13 15.7**	**-3.0**
KUR				pmax	pmax		
	comp=Z,27nm,0.6s						
KUR				pmax	pmax		
	comp=N,15nm,0.6s						
KUR				smax	smax		
	comp=E,72nm,0.5s						
VLA	**Vladivostok**	**9.29**	**309**	⇓*i*P	**Pn**	**02 11 48.3**	**+2.7**
VLA				*i* S	**Sn**	**02 13 33.9**	**+5.2**
VLA				pmax	pmax		
	comp=Z,63nm,0.9s						
YSS	**Yuzh-Sakhalins**	**9.34**	**4**	*e*P	**Pn**	**02 11 47.9**	**+1.5**
USRK	**Ussuriysk Ar.**	**9.86**	**315**	P	**Pn**	**02 11 54.1**	**+0.7**
	comp=Z,2.6nm,0.3s,baz=119,slow=12,SNR=33						
USRK				LR	LR	02 15 25.1	
	comp=Z,273nm,21.8s,baz=124,slow=36						
JNU	**Nakatsue**	**9.93**	**246**	P	**Pn**	**02 11 56.1**	**+1.6**
	comp=Z,1.0nm,0.3s,baz=5.0,slow=3.2,SNR=12						
JNU				LR	LR	02 16 14.9	
	comp=Z,416nm,19.2s,baz=110,slow=41						
JNU	**Nakatsue**	**9.93**	**246**	*e*Pn	**Pn**	**02 11 54.6**	**+0.1**
CBIJ	**Chichi jima**	**10.52**	**178**	P	**Pn**	**02 12 02.2**	**-0.3**
JCJ	**Chichijima**	**10.52**	**178**	P	**Pn**	**02 12 02.2**	**-0.3**
	comp=Z,16nm,0.3s,baz=94,slow=22,SNR=10						
KSRS	**Korea Array**	**10.96**	**273**	P	**Pn**	**02 12 11.8**	**+3.3**
	comp=Z,1.1nm,0.3s,baz=85,slow=14,SNR=48						
KSRS				LR	LR	02 16 18.7	
	comp=Z,201nm,18.6s,baz=76,slow=37						
KS01	**Wonju Array Si**	**10.98**	**273**	*e*Pn	**Pn**	**02 12 11.5**	**+2.7**
KS01				*e*Sn	Sn	02 13 44.0	-26
KS15	**Wonju Array Si**	**10.99**	**273**	*e*Pn	**Pn**	**02 12 11.3**	**+2.3**
KSAR	**Wonju Array Be**	**10.99**	**273**	P	**Pn**	**02 12 11.8**	**+2.8**
KSAR	**Wonju Array Be**	**10.99**	**273**	P	**Pn**	**02 12 11.8**	**+2.8**
MDJ	**Mudanjiang**	**11.49**	**311**	P	Pn	02 12 21.4	+5.6
MDJ				S	**Sn**	**02 14 21.3**	**-1.4**
MDJ				pmax	pmax		
	comp=Z,12nm,0.6s						
MDJ				pmax	pmax		
	comp=Z,170nm,4.7s						
MDJ				LR	LR		
	comp=N,97nm,25.2s						
MDJ				LR	LR		
	comp=E,120nm,28.3s						
MDJ				LR	LR		
	comp=Z,220nm,25.2s						
MDJ	**Mudanjiang**	**11.49**	**311**	*e*Pn	**Pn**	**02 12 18.8**	**+3.0**
	comp=Z,18nm,0.9s						
HABR	**Khabarovsk**	**11.87**	**338**	*e*P	**Pn**	**02 12 18.3**	**-2.6**
HABR				*e*S	**Sn**	**02 14 30.5**	**-1.4**
HABR				pmax	pmax		
	comp=N,20nm,1.2s						
HABR				pmax	pmax		
	comp=E,41nm,1.2s						
HABR				pmax	pmax		
	comp=Z,29nm,1.2s						
HABR				MLR	MLR		
	comp=Z,112nm,12.0s						
TYV	**Tymovskoe**	**13.24**	**3**	*e*P	**Pn**	**02 12 39.0**	**-0.6**
TYV				pmax	pmax		
	comp=Z,29nm,0.8s						
KLR	**Kul'dur**	**13.65**	**331**	P	**Pn**	**02 12 47.0**	**+1.8**
	comp=Z,0.2nm,0.3s,baz=180,slow=11,SNR=4.0						
KLR				LR	LR	02 17 57.9	
	comp=Z,138nm,19.1s,baz=146,slow=37						
CN2	**Changchun**	**13.78**	**302**	*e*P	**Pn**	**02 12 49.0**	**+1.9**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.6s						
PETK	**Petropavlovsk-**	**19.04**	**31**	P	**Pn**	**02 13 53.6**	**-0.1**
	comp=Z,0.3nm,0.3s,baz=197,slow=9.0,SNR=6.5						
NJ2	**Nanjing**	**19.56**	**260**	*e*P	**P**	**02 13 57.8**	**-0.6**
NJ2				pmax	pmax		
	comp=Z,7.0nm,0.8s						
TIA	**Tai'an**	**19.71**	**273**	⇓P	**P**	**02 13 59.5**	**-0.5**
TIA				pmax	pmax		
	comp=Z,30nm,1.1s						
BJI	**Beijing**	**20.02**	**285**	P	**P**	**02 14 01.4**	**-2.0**
BJI				S	**S**	**02 17 40.2**	**-5.8**
BJI				pmax	pmax		
	comp=Z,9.0nm,1.3s						
BJI				LR	LR		
	comp=Z,95nm,23.2s						
BJT	**Baijiatuau**	**20.03**	**285**	*e*P	**P**	**02 14 04.4**	**+0.9**
BJT				pmax	pmax		
	comp=Z,17nm,0.5s						
BJT	**Baijiatuau**	**20.03**	**285**	*e*P	**P**	**02 14 04.4**	**+0.9**
	comp=Z,17nm,0.5s						
MA2	**Magadan**	**22.71**	**12**	P	**P**	**02 14 32.2**	**0.0**
	comp=Z,10nm,0.7s,baz=230,slow=9.5,SNR=6.5						
HHC	**Hu-ho-hao-te**	**23.52**	**287**	*e*P	**P**	**02 14 40.2**	**-0.3**
HHC				S	**S**	**02 18 47.2**	**-4.0**
HHC				pmax	pmax		
	comp=Z,18nm,1.0s						
HHC				pmax	pmax		
	comp=Z,190nm,4.5s						
HHC				LR	LR		
	comp=N,560nm,11.5s						
HHC				LR	LR		
	comp=E,680nm,12.9s						
HHC				LR	LR		
	comp=Z,730nm,12.8s						
WHN	**Wuhan**	**23.69**	**261**	⇑P	**P**	**02 14 42.5**	**+0.5**
WHN				pP	**pP**	**02 14 55.9**	**+2.4**
YAK	**Yakutsk**	**25.54**	**347**	P	**P**	**02 14 58.6**	**0.0**
	comp=Z,33nm,0.5s,baz=9.2,slow=2.3,SNR=15						
YAK				LR	LR	02 25 15.1	
	comp=Z,92nm,20.3s,baz=176,slow=37						
YAK	**Yakutsk**	**25.54**	**347**	*e*P	**P**	**02 14 58.1**	**-0.4**
YAK				*e**PP	**sP**	**02 15 17.6**	**+1.9**
YAK				*e*		02 18 24.7	
YAK				*e*S	**S**	**02 19 19.4**	**-3.4**
YAK				pmax	pmax		
	comp=Z,51nm,0.8s						
YAK				pmax	pmax		
	comp=E,4.0nm,0.9s						
YAK				pmax	pmax		
	comp=N,11nm,1.0s						
YAK				smax	smax		
	comp=N,95nm,2.3s						
YAK				smax	smax		
	comp=E,59nm,2.5s						
YAK	**Yakutsk**	**25.54**	**347**	*e*P	**P**	**02 14 58.6**	**0.0**
	comp=E,59nm,0.8s						
YAK				*e*S	**S**	**02 19 23.0**	**+0.2**
SEY	**Seymchan**	**26.15**	**11**	P	**P**	**02 15 04.8**	**+0.7**
	comp=E,15nm,0.8s,baz=188,slow=8.4,SNR=29						
SEY	**Seymchan**	**26.15**	**11**	*ce*P	**P**	**02 15 06.4**	**+2.3**
XAN	**Xi'an**	**26.75**	**272**	P	**P**	**02 15 08.5**	**-1.4**
XAN				pmax	pmax		
	comp=Z,10.0nm,0.5s						
XAN				pmax	pmax		
	comp=Z,34nm,4.1s						
ULN	**Ulaanbaatar**	**27.23**	**303**	*ce*P	**P**	**02 15 14.7**	**+0.5**
ULN				pmax	pmax		
	comp=Z,10.0nm,1.2s						
ULN	**Ulaanbaatar**	**27.23**	**303**	*e*P	**P**	**02 15 14.1**	**0.0**
	comp=Z,5.9nm,0.7s						
ENH	**Enshi**	**27.63**	**264**	*e*P	**P**	**02 15 17.0**	**-0.9**
	comp=Z,45nm,0.9s						
SONA1	**Songino Array**	**27.65**	**303**	*e*P	**P**	**02 15 18.2**	**+0.2**
SONM	**Songino Array**	**27.66**	**303**	P	**P**	**02 15 18.4**	**+0.3**
	comp=Z,6.7nm,0.6s,baz=102,slow=8.9,SNR=52						
ZAK	**Zakamensk**	**30.09**	**307**	*e*P	**P**	**02 15 38.6**	**-1.0**
ZAK				pmax	pmax		
	comp=Z,5.0nm,1.0s						
TLY	**Talaya**	**30.13**	**310**	*e*P	**P**	**02 15 40.3**	**+0.5**
TLY				*e*S	**S**	**02 20 41.5**	**+6.1**
TLY				pmax	pmax		
	comp=Z,6.0nm,1.0s						
TLY				MLR	MLR		
	comp=Z,68nm,15.0s						
LZH	**Lanzhou**	**30.21**	**279**	*e*P	P	02 15 46.4	+5.5
LZH				pP	sP	02 16 00.8	+2.7
LZH				sP	pP	02 16 08.0	+15
LZH				PP	**PP**	**02 16 45.1**	**-4.4**
LZH				*e*S	**S**	**02 20 40.3**	**+3.0**
LZH				sS	sS	02 21 06.7	+9.5
LZH				SS	**ScP**	**02 22 22.6**	**+3.1**
LZH				pmax	pmax		
	comp=Z,33nm,1.1s						
LZH				pmax	pmax		
	comp=Z,79nm,4.3s						
LZH				LR	LR		
	comp=N,1μm,14.0s						
LZH				LR	LR		
	comp=E,1μm,15.1s						
LZH				LR	LR		
	comp=Z,2μm,16.2s						
GYA	**Guiyang**	**31.57**	**260**	*e*P	**P**	**02 15 52.8**	**0.0**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
CD2	**Chengdu**	**31.92**	**269**	P	**P**	**02 15 54.3**	**-1.5**
CD2				pmax	pmax		
	comp=Z,2.0nm,0.5s						
GTA	**Gaotai**	**32.62**	**286**	P	**P**	**02 16 00.8**	**-1.2**
GTA				pP	pP	02 16 16.2	+2.3
GTA				sP	sP	02 16 25.8	+6.5
GTA				PcP	**PcP**	**02 18 47.6**	**+0.3**
GTA				S	**S**	**02 21 10.8**	**-4.1**
GTA				sS	sS	02 21 36.0	+1.1
GTA				SS	**SnSn**	**02 23 11.0**	**-1.2**
GTA				pmax	pmax		
	comp=Z,5.0nm,1.1s						
GTA				pmax	pmax		
	comp=Z,80nm,4.3s						
GTA				LR	LR		
	comp=N,110nm,19.5s						
GTA				LR	LR		
	comp=E,98nm,19.0s						
GTA				LR	LR		
	comp=Z,110nm,18.1s						
BILL	**Bilibino**	**33.38**	**17**	⇓*e*P	**P**	**02 16 08.5**	**+0.4**
BILL				*i* *PP	**pP**	**02 16 19.0**	**-1.0**
BILL				*i* *SP	**sP**	**02 16 22.3**	**-3.1**
BILL				*e*		02 17 34.7	
BILL				*i*		02 18 50.6	
BILL				*e*S	**S**	**02 21 26.5**	**+0.8**
BILL				pmax	pmax		
	comp=Z,10.0nm,2.5s						
BILL				MLR	MLR		
	comp=Z,37nm,17.0s						
TIXI	**Tiksi**	**34.72**	**353**	*ce*P	**P**	**02 16 19.3**	**-0.3**
TIXI				pmax	pmax		
	comp=Z,3.0nm,0.7s						
TIXI	**Tiksi**	**34.72**	**353**	*e*P	**P**	**02 16 18.8**	**-0.8**
	comp=Z,4.7nm,0.6s						
KMI	**Kunming**	**35.30**	**261**	P	**P**	**02 16 25.1**	**-0.3**
KMI				pP	sP	02 16 41.2	-1.5
KMI				sP	pP	02 16 49.2	+12
KMI				pmax	pmax		
	comp=Z,35nm,0.9s						
KMI				pmax	pmax		
	comp=Z,53nm,4.0s						
KRAR	**Krasnoyarsk**	**37.20**	**316**	*e*P	**P**	**02 16 40.7**	**-0.3**
WMQ	**Urumqi**	**40.79**	**296**	P	**P**	**02 17 11.7**	**+0.4**
WMQ				pP	sP	02 17 27.2	-1.6
WMQ				sP	pP	02 17 35.1	+12
WMQ				PcS	**PcS**	**02 23 03.7**	**+1.1**
WMQ				pmax	pmax		
	comp=Z,6.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,21nm,3.5s						
WMQ				LR	LR		
	comp=N,28nm,17.8s						
WMQ				LR	LR		
	comp=E,55nm,35.6s						
WMQ				LR	LR		
	comp=Z,31nm,28.4s						
ZAA0	**Zalesovo Array**	**41.69**	**312**	*e*P	**P**	**02 17 17.6**	**-0.9**
ZALV	**Zalesovo Beam**	**41.69**	**312**	P	**P**	**02 17 18.2**	**-0.2**
	comp=Z,3.5nm,0.5s,baz=93,slow=7.3,SNR=18						
ZALV				PcP	**PcP**	**02 19 14.3**	**-0.1**
	comp=Z,1.3nm,0.5s,baz=103,slow=4.6,SNR=3.1						
CMAR	**Chiang Mai Arr**	**41.89**	**255**	LR	LR	02 35 41.3	
	comp=Z,27nm,18.7s,baz=85,slow=38						
NVS	**Novosibirsk**	**42.60**	**313**	*e*P	**P**	**02 17 25.6**	**-0.3**
NVS				pmax	pmax		
	comp=Z,5.0nm,0.4s						
NVS				pmax	pmax		
	comp=E,6.0nm,0.7s						
NRIK	**Noril'sk**	**42.82**	**335**	LR	LR	02 36 23.0	
	comp=E,44nm,19.0s,baz=86,slow=38						
MK01	**Makanchi Array**	**44.01**	**302**	*e*P	**P**	**02 17 36.9**	**-0.5**
MK31	**Makanchi Array**	**44.01**	**302**	*i* P	**P**	**02 17 36.9**	**-0.5**
MK31				pmax	pmax		
	comp=Z,6.0nm,0.7s						
MK31	**Makanchi Array**	**44.01**	**302**	*e*P	**P**	**02 17 37.2**	**-0.2**
MKAR	**Makanchi Array**	**44.01**	**302**	P	**P**	**02 17 37.1**	**-0.3**
	comp=Z,6.5nm,0.7s,baz=87,slow=9.8,SNR=45						
MAKZ	**Makanchi**	**44.22**	**302**	*e*P	**P**	**02 17 38.1**	**-1.0**
MAKZ				pmax	pmax		
	comp=Z,8.0nm,0.8s						
MAKZ	**Makanchi**	**44.22**	**302**	*e*P	**P**	**02 17 38.1**	**-1.0**
	comp=Z,8.1nm,0.8s						
KURK	**Kurchatov**	**45.76**	**308**	P	**P**	**02 17 49.3**	**-1.9**
KURK				pmax	pmax		
	comp=Z,79nm,0.8s						
KURK	**Kurchatov**	**45.76**	**308**	*e*P	**P**	**02 17 50.6**	**-0.5**
	comp=Z,42nm,0.8s						
RSO	**Redoubt South**	**46.28**	**39**	*e*P	**P**	**02 17 57.9**	**+2.5**
KDAK	**Kodiak Island**	**46.49**	**42**	*i* P	**P**	**02 17 58.0**	**+1.2**
KDAK	**Kodiak Island**	**46.49**	**42**	*e*P	**P**	**02 17 57.6**	**+0.8**
	comp=Z,15nm,0.8s						
CAST	**Castle Rocks**	**46.59**	**35**	*e*P	**P**	**02 17 59.2**	**+1.6**
	comp=Z,3.4nm,0.6s						
SPU	**Mount Spurr**	**46.61**	**38**	*e*P	**P**	**02 17 59.1**	**+1.3**
BPAW	**Bear Paw Mtn.**	**47.09**	**34**	*e*P	**P**	**02 18 02.8**	**+1.3**
	comp=Z,13nm,1.6s						
KAPI	**Kappang**	**47.10**	**211**	*e*P	**P**	**02 18 01.5**	**-0.6**
	comp=Z,10nm,0.8s						
KTH	**Kantishna Hill**	**47.11**	**34**	*e*P	**P**	**02 18 03.6**	**+1.9**
	comp=Z,6.4nm,0.9s						
MLY	**Manley**	**47.21**	**32**	*e*P	**P**	**02 18 04.0**	**+1.6**
	comp=Z,3.7nm,0.7s						
GUN	**Gumba**	**47.34**	**275**	*e*P	**P**	**02 18 04.0**	**-0.3**
	comp=Z,46nm,0.4s						
TRF	**Thorofare Moun**	**47.40**	**34**	*e*P	**P**	**02 18 05.5**	**+1.4**
	comp=Z,4.7nm,0.8s						
KKN	**Kakani**	**47.87**	**275**	*e*P	**P**	**02 18 07.8**	**-0.5**
	comp=Z,30nm,0.5s						
MCK	**McKinley**	**48.00**	**34**	*e*P	**P**	**02 18 09.2**	**+0.6**
MCK				pmax	pmax		
	comp=Z,5.0nm,0.8s						
MCK	**McKinley**	**48.00**	**34**	*e*P	**P**	**02 18 09.2**	**+0.6**
	comp=Z,4.8nm,0.8s						
PMR	**Palmer**	**48.00**	**37**	*e*P	**P**	**02 18 09.7**	**+1.2**
PMR				pmax	pmax		
	comp=Z,6.0nm,0.7s						
PMR	**Palmer**	**48.00**	**37**	*e*P	**P**	**02 18 09.7**	**+1.2**
	comp=Z,6.5nm,0.7s						
RND	**Reindeer**	**48.04**	**35**	*e*P	**P**	**02 18 08.9**	**-0.1**
RND	**Reindeer**	**48.04**	**35**	*e*P	**P**	**02 18 08.8**	**-0.1**
DMN	**Daman**	**48.09**	**275**	*e*P	**P**	**02 18 09.3**	**-0.7**
	comp=Z,14nm,0.6s						
MDM	**Murphy Dome**	**48.28**	**32**	*e*P	**P**	**02 18 11.9**	**+1.3**
	comp=Z,11nm,1.1s						
GKN	**Gorkha**	**48.28**	**276**	*e*P	**P**	**02 18 11.0**	**-0.4**
	comp=Z,69nm,0.8s						
WRH	**Wood River Hil**	**48.35**	**33**	*e*P	**P**	**02 18 12.2**	**+1.0**
	comp=Z,3.6nm,0.8s						
SML	**Sawmill**	**48.36**	**37**	*e*P	**P**	**02 18 12.4**	**+1.0**
SML				pmax	pmax		
	comp=Z,11nm,0.7s						
SML	**Sawmill**	**48.36**	**37**	*e*P	**P**	**02 18 12.3**	**+1.0**
	comp=Z,11nm,0.7s						
COLA	**College**	**48.44**	**33**	*e*P	**P**	**02 18 12.8**	**+0.9**
COLA				pmax	pmax		
	comp=Z,2.0nm,0.8s						
CCB	**Clear Creek Bu**	**48.47**	**33**	*e*P	**P**	**02 18 11.8**	**-0.3**
	comp=Z,8.3nm,1.6s						
SCM	**Sheep Creek Mo**	**48.84**	**37**	*e*P	**P**	**02 18 17.3**	**+2.2**
SCM				pmax	pmax		
	comp=Z,11nm,0.8s						
SCM	**Sheep Creek Mo**	**48.84**	**37**	*e*P	**P**	**02 18 17.2**	**+2.2**
	comp=Z,11nm,0.8s						
IL1	**Eielson Array**	**

MENT Mentasta 50.40 35 *eP* **P 02 18 29.4 +2.5**
comp=Z,5.8nm,0.7s
BRVK Borovoye 50.41 312 *ceP* **P 02 18 27.4 +0.3**
BRVK pmax pmax
comp=Z,5.0nm,0.8s
BRVK Borovoye 50.41 312 *eP* **P 02 18 26.4 -0.7**
comp=Z,8.3nm,1.0s
AAK Ala-Archa 50.42 298 *c iP* **P 02 18 27.0 -0.6**
AAK pmax pmax
comp=Z,8.0nm,0.5s
AAK Ala-Archa 50.42 298 *eP* **P 02 18 27.4 -0.2**
comp=Z,10nm,1.2s
EKS2 Erkin-Say 50.91 298 *eP* **P 02 18 31.1 -0.1**
EKS2 pmax pmax
comp=Z,6.0nm,0.6s
EKS2 Erkin-Say 50.91 298 *eP* **P 02 18 31.1 -0.1**
comp=Z,6.2nm,0.6s
ZRNK Zerenda 51.18 312 *eP* **P 02 18 32.6 -0.3**
ZRNK pmax pmax
comp=Z,7.0nm,0.9s
ZRNK Zerenda 51.18 312 *eP* **P 02 18 32.6 -0.3**
comp=Z,7.1nm,0.9s
MNAS Manas 51.86 298 P **P 02 18 37.4 -0.9**
MNAS pmax pmax
comp=Z,12nm,0.6s
KK31 Karatay Array 53.04 300 *i P* **P 02 18 45.9 -1.0**
KK31 pmax pmax
comp=Z,2.0nm,0.6s
KKAR Karatay Array 53.04 300 *eP* **P 02 18 46.2 -0.7**
KKAR Karatay Array 53.04 300 *eP* **P 02 18 46.2 -0.7**
INK Inuvik 53.74 27 *eP* **P 02 18 52.8 +1.2**
INK pmax pmax
comp=Z,7.0nm,0.6s
INK Inuvik 53.74 27 *eP* **P 02 18 52.8 +1.2**
comp=Z,7.2nm,0.6s
MDSI Maura Dua 54.53 228 P **P 02 18 59.3 +1.3**
comp=Z,13nm,1.0s,comp=Z,1μm
SVE Sverdlovsk 54.86 318⇓ *eP* **P 02 18 59.7 -0.2**
SVE pmax pmax
comp=Z,24nm,0.9s
ARU Arti 56.07 318 *c iP* **P 02 19 08.2 -0.4**
ARU 02 21 10.9
ARU S **S 02 26 56.0 +2.1**
ARU SS **SS 02 30 37.7 -2.3**
ARU pmax pmax
comp=Z,18nm,0.8s
ARU Arti 56.07 318 *eP* **P 02 19 08.3 -0.4**
comp=Z,16nm,0.8s
KBL Kabul 57.43 291 *eP* **P 02 19 16.8 -2.1**
KBL pmax pmax
comp=Z,14nm,1.0s
KBL Kabul 57.43 291 *eP* **P 02 19 16.8 -2.1**
comp=Z,14nm,1.0s
FITZ Fitzroy Crossi 57.47 198 *eP* **P 02 19 18.6 -0.3**
comp=Z,15nm,1.3s
WRAB Tennant Creek 57.68 188 *ceP* **P 02 19 20.8 +0.5**
WRAB pmax pmax
comp=Z,50nm,1.7s
WRAB Tennant Creek 57.68 188 *eP* **P 02 19 20.9 +0.5**
comp=Z,13nm,0.9s
WB2 Warramunga Arr 57.69 188 *eP* **P 02 19 20.5 +0.1**
comp=Z,15nm,0.8s
WRA Warramunga Arr 57.69 188 P **P 02 19 20.4 0.0**
comp=Z,11nm,0.5s,baz=5.5,slow=6.9,SNR=22
WRA pP **pP 02 19 35.5 +2.4**
comp=Z,7.1nm,0.6s,baz=5.1,slow=7.3,SNR=11
WRA Warramunga Arr 57.69 188 *i P* **P 02 19 20.3 -0.1**
WRA pmax pmax
comp=Z,11nm,0.5s
AB31 Akbulak array 57.74 310 *i P* **P 02 19 19.2 -1.4**
AB31 pmax pmax
comp=Z,6.0nm,0.5s
ABKAR Akbulak array 57.74 310 *eP* **P 02 19 20.1 -0.5**
AKTO Aktyubinsk 58.46 312 P **P 02 19 24.7 -0.9**
AKTO pmax pmax
comp=Z,9.0nm,0.8s
SPITS Spitsbergen Ar 59.98 349 P **P 02 19 36.5 +0.8**
comp=Z,2.7nm,0.7s,baz=72,slow=6.2,SNR=7.0
AS01 Alice Springs 61.41 188 *eP* **P 02 19 46.3 +0.3**
AS31 Alice Springs 61.42 188 *eP* **P 02 19 46.8 +0.7**
comp=Z,2.0nm,0.8s
ASAR Alice Springs 61.42 188 P **P 02 19 46.5 +0.5**
comp=Z,6.1nm,0.7s,baz=12,slow=5.9,SNR=67
RES Resolute Bay 61.96 15 *eP* **P 02 19 49.5 +0.4**
RES pmax pmax
comp=Z,5.0nm,0.6s
RES Resolute Bay 61.96 15 *eP* **P 02 19 49.5 +0.4**
comp=Z,5.5nm,0.6s
MBWA Marble Bar 62.04 203 *eP* **P 02 19 50.1 -0.1**
YKW3 Yellowknife Ar 63.13 30 *eP* **P 02 19 58.0 +1.0**
comp=Z,4.4nm,0.9s
YKA Yellowknife Ar 63.16 30 P **P 02 19 58.2 +0.9**
comp=Z,2.6nm,0.7s,baz=303,slow=6.5,SNR=70
YKA pP **pP 02 20 13.5 +3.4**
comp=Z,1.0nm,0.5s,baz=299,slow=5.4,SNR=12
YKB5 Yellowknife Ar 63.16 30 *eP* **P 02 19 57.2 -0.1**
KLMR Klimovskoe 63.38 328 *eP* **P 02 19 55.1 -3.7**
KLMR pmax pmax
comp=Z,6.0nm,0.8s
ARCES ARCESS Array B 63.52 339 P **P 02 19 59.8 +0.2**
comp=Z,3.9nm,0.9s,baz=61,slow=9.9,SNR=12
ARCES LR LR 02 50 41.0
comp=Z,14nm,18.6s,baz=50,slow=39
GEYT Alibeck 63.76 299 P **P 02 20 02.0 +0.3**
comp=Z,3.1nm,0.7s,baz=37,slow=3.7,SNR=7.6
DAG Danmarks Havn 65.20 355 *i P* **P 02 20 09.7 -0.7**
comp=Z,7.3nm,0.9s
DAG *i* 02 20 30.5
DAG Danmarks Havn 65.20 355 *i P* **P 02 20 09.7 -0.7**
DAG *i* 02 20 30.5
DAG pmax pmax
comp=Z,6.0nm,0.9s
NLWA Neilton Lookou 66.13 48 *eP* **P 02 20 19.3 +2.3**
comp=Z,8.9nm,0.9s
VRH Novokhopyorsk 67.30 318 *eP* **P 02 20 23.3 -1.0**
VRH pmax pmax
comp=Z,10.0nm,0.6s
OBN Obninsk 67.76 323 P **P 02 20 26.7 -0.4**
comp=Z,9.8nm,0.4s,baz=188,slow=20,SNR=3.2
OBN Obninsk 67.76 323 *ceP* **P 02 20 27.0 -0.1**
OBN pmax pmax
comp=Z,5.0nm,0.5s
OBN MLR MLR
comp=Z,28nm,17.0s
LPSR Galich'ya Gora 68.00 320 *eP* **P 02 20 28.0 -0.7**
LPSR pmax pmax
comp=Z,10.0nm,0.8s
B08A Colville Reser 68.24 45 *eP* **P 02 20 31.0 +0.6**
comp=Z,7.6nm,1.3s
FIA1 FINESS Array S 68.39 332 *eP* **P 02 20 30.8 -0.2**
FINES FINESS Array B 68.40 332 P **P 02 20 30.7 -0.3**
comp=Z,8.6nm,0.6s,baz=45,slow=7.9,SNR=36
FINES LR LR 02 53 09.1
comp=Z,30nm,18.2s,baz=29,slow=38
H04A Detroit Lake 68.53 50 *eP* **P 02 20 34.5 +2.3**
comp=Z,5.7nm,0.9s
VSR Storozhevoye 68.64 319 *eP* **P 02 20 32.0 -0.7**
VSR pmax pmax
comp=Z,10.0nm,0.6s
STKA Stephens Creek 69.16 180 P **P 02 20 36.2 +0.3**
comp=Z,1.5nm,0.5s,baz=1.5,slow=7.0,SNR=6.6
NEW Newport 69.53 44 *eP* **P 02 20 38.6 +0.3**
NEW pmax pmax
comp=Z,4.0nm,0.9s
NEW Newport 69.53 44 *eP* **P 02 20 38.6 +0.3**
comp=Z,4.2nm,0.9s
GOF Gofitskoye 69.88 312⇑ *eP* **P 02 20 39.9 -0.6**
GOF pmax pmax
comp=Z,29nm,1.0s
VSU Vasula 70.06 330 *ceP* **P 02 20 42.5 +1.2**
VSU pmax pmax
comp=Z,18nm,1.0s
SUMG Summit 70.08 0 *i P* **P 02 20 42.3 +0.5**
comp=Z,7.3nm,1.0s
SUMG Summit 70.08 0 *i P* **P 02 20 42.3 +0.5**
SUMG pmax pmax
comp=Z,7.0nm,1.0s
SUMG Summit 70.08 0 *eP* **P 02 20 42.6 +0.8**
comp=Z,8.0nm,1.0s
K05A Summer Lake 70.38 51 *eP* **P 02 20 45.5 +1.7**
comp=Z,8.0nm,0.8s
ZEI Tsey 70.61 309 *eP* **P 02 20 43.4 -1.9**
ZEI pmax pmax
comp=Z,10.0nm,0.7s
KVAR Kislovodsk Arr 70.69 311 P **P 02 20 45.6 -0.1**
comp=Z,8.5nm,0.7s,baz=221,slow=0.7,SNR=13

KBZ Khabaz 70.70 311 P **P 02 20 45.7 +0.2**
comp=Z,8.1nm,0.9s,baz=73,slow=4.5,SNR=24
KIV Kislovodsk 70.70 311 *eP* **P 02 20 46.2 +0.5**
KIV pmax pmax
comp=Z,21nm,0.9s
KIV Kislovodsk 70.70 311 *eP* **P 02 20 45.9 +0.3**
comp=Z,21nm,0.9s
WALA Waterton Lakes 70.83 42 *eP* **P 02 20 47.2 +0.8**
comp=Z,5.0nm,0.8s
NEY Neytrino 71.07 310 *eP* **P 02 20 48.4 +0.4**
NEY pmax pmax
comp=Z,1.0nm,0.8s
BMO Blue Mountains 71.34 47 *eP* **P 02 20 51.4 +1.8**
comp=Z,4.6nm,0.9s
JTMT Jette 71.39 44 *eP* **P 02 20 52.2 +2.3**
SCO Scoresbysund 71.54 354 *i P* **P 02 20 50.7 +0.6**
comp=Z,6.3nm,1.2s
SCO Scoresbysund 71.54 354 *i P* **P 02 20 50.7 +0.6**
SCO pmax pmax
comp=Z,6.0nm,1.2s
GNI Garni 71.54 307 P **P 02 20 51.9 +0.9**
comp=Z,5.6nm,0.8s,baz=110,slow=3.5,SNR=4.5
GNI Garni 71.54 307 *ceP* **P 02 20 52.3 +1.4**
GNI pmax pmax
comp=Z,29nm,1.2s
AKH Akhalkalaki 71.62 308⇑ *iP* **P 02 20 52.2 +0.8**
MFID Camas Ranch 73.04 48 *eP* **P 02 20 59.9 +0.1**
comp=Z,3.1nm,0.6s
CMB Columbia Colle 73.32 55 *eP* **P 02 21 03.0 +1.6**
CMB pmax pmax
comp=Z,5.0nm,1.1s
CMB Columbia Colle 73.32 55 *eP* **P 02 21 03.0 +1.6**
comp=Z,4.9nm,1.1s
FCC Fort Churchill 73.35 27 *eP* **P 02 20 59.5 -1.6**
FCC pmax pmax
comp=Z,17nm,1.3s
FCC Fort Churchill 73.35 27 *eP* **P 02 20 59.5 -1.6**
comp=Z,17nm,1.3s
NC405 NORSAR Array S 73.52 337 *eP* **P 02 21 02.2 +0.1**
LRM Limekiln Ridge 73.55 45 *eP* **P 02 21 05.0 +2.1**
HFS Hagfors 73.64 336 P **P 02 21 02.7 -0.1**
comp=Z,5.3nm,0.4s,baz=57,slow=5.5,SNR=49
EGMT Eagleton 73.66 42 *eP* **P 02 21 05.2 +1.9**
comp=Z,6.7nm,0.8s
NC204 NORSAR Array S 73.68 338 *eP* **P 02 21 03.9 +0.7**
NB201 NORSAR Array S 73.69 337 *eP* **P 02 21 03.4 +0.2**
NB2 NORSAR Subarra 73.73 337 P **P 02 21 03.0 -0.4**
comp=Z,13nm,0.9s,baz=37,slow=6.2
NOA NORSAR Array B 73.73 337 P **P 02 21 03.4 0.0**
comp=Z,8.6nm,0.8s,baz=39,slow=5.8,SNR=36
NOA NORSAR Array B 73.73 337 P **P 02 21 03.4 0.0**
NOA pmax pmax
comp=Z,8.0nm,0.8s
HLID Hailey 73.78 47 *eP* **P 02 21 05.5 +1.3**
comp=Z,4.5nm,1.0s
NBO02 NORSAR Array S 73.83 337 *eP* **P 02 21 04.0 +0.1**
AKASG Malin Array Be 73.97 322 P **P 02 21 04.5 -0.5**
comp=Z,8.8nm,0.5s,baz=46,slow=6.2,SNR=55
AKASG pP **PcP 02 21 21.1 +1.0**
comp=Z,2.0nm,0.4s,baz=46,slow=6.2,SNR=4.6
AKBB Malin Array Si 73.97 322 *eP* **P 02 21 04.5 -0.4**
AKBB pmax pmax
comp=Z,29nm,1.4s
AKBB Malin Array Si 73.97 322 *eP* **P 02 21 04.5 -0.4**
comp=Z,29nm,1.4s
KIEV Kiev 73.98 322 *c iP* **P 02 21 04.2 -0.8**
KIEV pmax pmax
comp=Z,9.0nm,1.0s
KIEV Kiev 73.98 322 *eP* **P 02 21 04.2 -0.8**
comp=Z,10nm,0.7s
AK11 Malin Array Si 74.01 322 *eP* **P 02 21 04.8 -0.4**
BOZ Bozeman (W) 74.11 44 *eP* **P 02 21 08.0 +2.0**
BOZ pmax pmax
comp=Z,5.0nm,0.8s
BOZ Bozeman (W) 74.11 44 *eP* **P 02 21 08.0 +2.0**
comp=Z,4.9nm,0.8s
NV01 Mina Array Sit 74.43 53 *eP* **P 02 21 10.0 +1.9**
NVAR Mina Array Bea 74.43 53 P **P 02 21 10.0 +1.8**
comp=Z,2.6nm,0.7s,baz=289,slow=5.8,SNR=26
SIM Simferopol' 75.07 316 *ceP* **P 02 21 11.2 -0.2**
SIM pmax pmax
comp=Z,8.0nm,0.7s
H17A Grant Village 75.47 45 *eP* **P 02 21 17.7 +3.6**
comp=Z,8.1nm,0.8s
IMW Indian Meadow 75.58 45 *eP* **P 02 21 17.7 +3.0**
comp=Z,5.9nm,0.8s
FXWY Fox Creek 75.69 46 *eP* **P 02 21 18.0 +2.7**
comp=Z,5.7nm,1.1s
REDW Red Top Meadow 75.96 46 *eP* **P 02 21 19.6 +2.8**
comp=Z,18nm,1.8s
SORM Soroca 76.08 321⇑ *iP* **P 02 21 16.6 -0.5**
R11A Troy Canyon, C 76.20 52 *eP* **P 02 21 18.8 +0.6**
comp=Z,17nm,0.3s
TPNV Topopah Spring 76.62 54 *eP* **P 02 21 22.6 +2.0**
TPNV pmax pmax
comp=Z,14nm,0.9s
TPNV Topopah Spring 76.62 54 *eP* **P 02 21 22.6 +2.0**
comp=Z,14nm,0.9s
HWUT Hardware Ranch 76.64 48 *eP* **P 02 21 22.3 +1.6**
comp=Z,15nm,1.5s
DUG Dugway, Tooele 76.78 49 *eP* **P 02 21 23.0 +1.6**
DUG pmax pmax
comp=Z,13nm,1.4s
DUG Dugway, Tooele 76.78 49 *eP* **P 02 21 23.0 +1.6**
comp=Z,13nm,1.4s
BW06 Boulder Array 77.07 46 *eP* **P 02 21 24.8 +1.6**
comp=Z,7.9nm,1.4s
PD31 Pinedale Array 77.07 46 *eP* **P 02 21 24.3 +1.2**
PDAR Pinedale Array 77.07 46 P **P 02 21 24.4 +1.3**
comp=Z,2.2nm,0.7s,baz=260,slow=2.1,SNR=21
PDAR pP **sP 02 21 40.0 -1.3**
comp=Z,2.2nm,0.5s,baz=274,slow=1.2,SNR=11
BEL Belsk 77.08 327 *eP* **P 02 21 23.5 +0.8**
BEL Belsk 77.08 327 *eP* **P 02 21 23.5 +0.8**
PSUT Pine Spring 77.16 51 *eP* **P 02 21 23.3 -0.5**
comp=Z,4.1nm,1.0s
LEOM Leova 77.24 319⇑ *iP* **P 02 21 23.5 -0.2**
KWP Kalwaria Pacla 77.78 324 *eP* **P 02 21 27.6 +0.8**
KWP Kalwaria Pacla 77.78 324⇑ *iP* **P 02 21 27.5 +0.8**
KWP Kalwaria Pacla 77.78 324 *eP* **P 02 21 27.6 +0.8**
BUR08 Bucovina Ar. S 77.98 322 *eP* **P 02 21 28.0 +0.1**
BURAR Bucovina Array 77.99 322⇑ *iP* **P 02 21 27.9 -0.1**
TESR Tescani 78.03 320⇑ *iP* **P 02 21 28.0 -0.1**
CFR Carcaliu 78.16 319⇑ *iP* **P 02 21 28.7 -0.1**
PETR Petresti 78.26 319⇑ *iP* **P 02 21 30.6 +1.2**
VRI Vrincioaia 78.43 320⇑ *iP* **P 02 21 30.9 +0.5**
P17A Butcher Ranch, 78.47 49 *eP* **P 02 21 32.1 +1.2**
comp=Z,22nm,1.6s
KOLS Kolonicke sedl 78.48 324 *eP* **P 02 21 30.7 +0.1**
KOLS pmax pmax
comp=Z,3.0nm,1.1s
KOLS Kolonicke sedl 78.48 324 *eP* **P 02 21 30.7 +0.1**
MTPU Mount Pierson 78.50 51 *eP* **P 02 21 34.3 +2.9**
comp=Z,4.0nm,0.8s
STHS Stebnicka Huta 78.61 325 *eP* **P 02 21 32.1 +0.8**
STHS pmax pmax
comp=Z,6.0nm,1.3s
STHS Stebnicka Huta 78.61 325 *eP* **P 02 21 32.1 +0.8**
GRER 78.63 319⇑ *iP* **P 02 21 33.7 +2.2**
BR131 Keskin Array S 78.64 312 *eP* **P 02 21 30.5 -1.3**
BRTR Keskin Array B 78.64 312 P **P 02 21 31.8 0.0**
comp=Z,1.4nm,0.6s,baz=57,slow=4.2,SNR=11
OJC Ojcow 78.68 326 *eP* **P 02 21 32.2 +0.6**
OJC Ojcow 78.68 326 *eP* **P 02 21 31.6 0.0**
OJC pmax pmax
comp=Z,14nm,1.1s
OJC Ojcow 78.68 326 *eP* **P 02 21 31.6 0.0**
comp=Z,14nm,1.1s
UZH Uzhgorod 78.68 324 *eP* **P 02 21 30.2 -1.5**
SRU San Rafael Swe 78.83 49 *eP* **P 02 21 34.4 +1.5**
SRU pmax pmax
comp=Z,5.0nm,0.7s
SRU San Rafael Swe 78.83 49 *eP* **P 02 21 34.4 +1.5**
comp=Z,5.4nm,0.7s
CRVS Cervenica-Dubn 78.88 324 *eP* **P 02 21 33.0 +0.2**
CRVS Cervenica-Dubn 78.88 324 *eP* **P 02 21 33.0 +0.2**
ISR Istrita 79.03 319⇑ *iP* **P 02 21 34.3 +0.6**
NIE Niedzica 79.03 325 *eP* **P 02 21 34.4 +0.7**
NIE Niedzica 79.03 325 *eP* **P 02 21 34.4 +0.7**
BR231 Keskin MP Arra 79.07 312 *eP* **P 02 21 32.2 -2.0**
MLR Muntele Rosu 79.08 320⇑ *iP* **P 02 21 34.1 0.0**
MLR Muntele Rosu 79.08 320 *eP* **P 02 21 33.1 -1.0**
MLR pmax pmax
comp=Z,10.0nm,1.3s
MLR Muntele Rosu 79.08 320 *eP* **P 02 21 33.1 -1.0**
comp=Z,9.9nm,1.3s
VOIR 79.58 320⇑ *iP* **P 02 21 37.5 +0.7**
OKC Ostrava-Krasne 79.68 327 *eP* **P 02 21 37.5 +0.4**
OKC Ostrava-Krasne 79.68 327 *eP* **P 02 21 37.5 +0.4**
KSP Ksiaz 79.72 328 *eP* **P 02 21 37.9 +0.6**
KSP Ksiaz 79.72 328 *eP* **P 02 21 37.9 +0.6**
ARR Arges 79.84 320⇑ *iP* **P 02 21 39.3 +1.2**
MORC Moravsky Berou 79.99 327⇑ *iP* **P 02 21 39.3 +0.5**
MORC Moravsky Berou 79.99 327 *eP* **P 02 21 39.3 +0.5**
MORC pmax pmax
comp=Z,22nm,0.8s
MORC Moravsky Berou 79.99 327 *eP* **P 02 21 39.3 +0.5**
comp=Z,22nm,0.8s
DPC Dobruska-Polom 80.08 328 *eP* **P 02 21 39.9 +0.6**
DPC *ex* x 02 21 43.4
DPC Dobruska-Polom 80.08 328 *eP* **P 02 21 39.9 +0.6**
DPC *e* 02 21 43.4
KRLC Kraliky 80.09 328 *eP* **P 02 21 39.6 +0.2**
KRLC *ex* x 02 21 43.0
KRLC Kraliky 80.09 328 *eP* **P 02 21 39.6 +0.2**
KRLC *e* 02 21 43.0
PSZ Piszkesteto 80.31 325⇑ *iP* **P 02 21 41.2 +0.5**
PSZ Piszkesteto 80.31 325 *eP* **P 02 21 41.6 +1.0**
PSZ pmax pmax
comp=Z,11nm,1.1s
PSZ Piszkesteto 80.31 325 *eP* **P 02 21 41.6 +1.0**
comp=Z,11nm,1.1s
N23A Red Feather La 80.34 45 *eP* **P 02 21 42.0 +0.8**
comp=Z,7.7nm,1.1s
PV05 Paradox Valley 80.35 49 *eP* **P 02 21 43.7 +2.4**
VYHS Vyhne 80.37 325 *eP* **P 02 21 41.3 +0.4**
VYHS pmax pmax
comp=Z,3.0nm,1.0s
VYHS Vyhne 80.37 325 *eP* **P 02 21 41.3 +0.4**
WUAZ Wupatki 80.60 52 *eP* **P 02 21 43.8 +1.2**
comp=Z,6.1nm,1.1s
PV01 Paradox Valley 80.63 49 *eP* **P 02 21 45.0 +2.2**
BRG Berggiesshubel 80.66 330 *eP* **P 02 21 42.4 +0.1**
comp=Z,6.6nm,1.1s
BRG Berggiesshubel 80.66 330 *eP* **P 02 21 42.4 +0.1**
BRG pmax pmax
comp=Z,7.0nm,1.2s
PVCC Panska Ves 80.67 329 *eP* **P 02 21 43.0 +0.6**
PVCC Panska Ves 80.67 329 *eP* **P 02 21 43.0 +0.6**
CLL Collm 80.70 330⇑ *iP* **P 02 21 42.5 0.0**
comp=Z,8.0nm,0.8s
CLL Collm 80.70 330⇑ *iP* **P 02 21 42.5 0.0**
CLL pmax pmax
comp=Z,8.0nm,0.8s
CLL Collm 80.70 330 *eP* **P 02 21 42.5 0.0**
comp=Z,11nm,1.0s
VRAC Vranov 80.75 327 P **P 02 21 43.1 +0.2**
comp=Z,5.6nm,1.0s,baz=58,slow=6.7,SNR=6.4
VRAC Vranov 80.75 327⇑ *iP* **P 02 21 43.5 +0.6**
PRU Pruhonice 81.10 329 *eP* **P 02 21 44.9 +0.2**
PRU Pruhonice 81.10 329 *eP* **P 02 21 44.9 +0.2**
BZS Buzias 81.16 322⇑ *iP* **P 02 21 45.0 -0.1**
TREC Trest 81.23 328 *eP* **P 02 21 45.5 0.0**
TREC Trest 81.23 328 *eP* **P 02 21 45.5 0.0**
X16A Lo Mia Camp, P 81.26 53 *eP* **P 02 21 45.7 -0.4**
comp=Z,3.8nm,1.0s
MVCO Mesa Verde 81.28 49 *eP* **P 02 21 45.4 -0.8**
comp=Z,22nm,1.8s
ASF Jabal al Asfar 81.37 304 P **P 02 21 46.7 0.0**
comp=Z,2.2nm,0.8s,baz=147,slow=2.0,SNR=4.8
BANR Banloc 81.56 322⇑ *iP* P 02 21 39.9 -7.3
MDVR Moldovita 81.71 321⇑ *iP* **P 02 21 48.0 -0.2**
NKC Novy Kostel 81.76 330 *eP* **P 02 21 48.3 +0.1**
NKC Novy Kostel 81.76 330 *eP* **P 02 21 48.3 +0.1**
MMAI Mount Meron Ar 81.82 305 P **P 02 21 49.3 +0.3**
comp=Z,3.5nm,0.6s,baz=62,slow=7.0,SNR=5.8
S22A 4UR Ranch, Cre 81.92 48 *eP* **P 02 21 49.8 +0.1**
comp=Z,2.1nm,0.8s
CONA Conrad Observa 82.11 327 *i P* **P 02 21 50.8 +0.6**
comp=Z,2.4nm,0.6s
PKSM Moragy 82.14 324⇑ *iP* **P 02 21 50.0 -0.3**
KHC Kasperske Hory 82.16 329 *eP* **P 02 21 50.6 +0.2**
KHC *ep*P **sP 02 22 10.1 +1.4**
KHC Kasperske Hory 82.16 329 *eP* **P 02 21 50.6 +0.2**
KHC *e* 02 22 10.1
KHC Kasperske Hory 82.16 329 *eP* **P 02 21 48.3 -2.1**
comp=Z,2.5nm,0.9s
GEC2 GERESS Array S 82.33 328 *eP* **P 02 21 50.9 -0.5**
GEC2 pmax pmax
comp=Z,4.0nm,0.6s
GEC2 GERESS Array S 82.33 328 *eP* **P 02 21 50.9 -0.5**
comp=Z,3.5nm,0.6s
GERES GERESS Array B 82.33 328 P **P 02 21 51.3 -0.1**
comp=Z,2.6nm,0.6s,baz=37,slow=6.0,SNR=25
GERES LR LR 03 03 34.7
comp=Z,28nm,19.1s,baz=33,slow=39
GEA0 GERESS Array S 82.33 328 *eP* **P 02 21 51.2 -0.2**
EKA Eskdalemuir Ar 82.65 341 P **P 02 21 53.2 +0.4**
comp=Z,1.1nm,0.5s,baz=33,slow=5.1,SNR=9.4
ECSD EROS Data Cent 83.29 38 *eP* **P 02 21 57.0 +0.7**
comp=Z,4.1nm,0.9s
SOKA Soboth 83.43 326 *i P* **P 02 21 57.2 +0.1**
comp=Z,6.4nm,0.7s
T25A Trinidad 83.75 47 *eP* **P 02 21 58.9 -0.2**
comp=Z,4.1nm,0.6s
OBKA Obir 83.77 326 *i P* **P 02 21 58.2 -0.6**
comp=Z,5.4nm,0.9s
KBA Koelnbreinsper 83.85 327 *i* PcP **P 02 22 00.4 +1.0**
comp=Z,3.9nm,0.7s
ANMO Albuquerque 84.01 50 *eP* **P 02 22 00.4 -0.1**
ANMO pmax pmax
comp=Z,4.0nm,1.2s
ANMO Albuquerque 84.01 50 *eP* **P 02 22 01.6 +1.1**
comp=Z,3.8nm,1.0s
MYKA Terra Mystica 84.08 327 *i P* **P 02 21 59.8 -0.6**
comp=Z,3.1nm,0.7s
EIL Elat 84.25 303 P **P 02 22 01.4 -0.1**
comp=Z,3.8nm,0.7s,baz=40,slow=4.9,SNR=7.1
MOTA Moosalm 84.58 329 *i* PcP **P 02 22 03.9 +0.9**
comp=Z,3.0nm,0.6s,SNR=5.0
RETA Reutte 84.61 329 *i* PcP **P 02 22 03.3 +0.2**
comp=Z,6.0nm,0.6s,SNR=5.1
SCHQ Schefferville 84.69 16 P **P 02 22 03.5 +0.2**
comp=Z,3.3nm,0.7s,baz=8.7,slow=6.4,SNR=8.7
BFO Black Forest 84.90 331 *i P* **P 02 22 05.0 +0.5**
BFO Black Forest 84.90 331 *eP* **P 02 22 02.4 -2.0**
comp=Z,7.4nm,0.8s
FETA Feichten 85.00 329 *i P* **P 02 22 04.8 -0.4**
comp=Z,3.5nm,0.7s
DAVA Damuels 85.13 329 *i P* **P 02 22 05.5 -0.4**
comp=Z,10nm,0.9s
FUORN Ofenpass-Fuorn 85.51 329 *eP* **P 02 22 07.5 -0.4**
comp=Z,11nm,0.8s
DAVOX Davos/Dischmat 85.54 329 P **P 02 22 07.9 0.0**
comp=Z,3.3nm,0.8s,baz=356,slow=13
IDI Anoyia 86.76 313 P **P 02 22 13.5 -0.5**
comp=Z,11nm,0.8s,baz=65,slow=6.0,SNR=5.7
TX31 Lajitas Ar. Si 89.56 53 *eP* **P 02 22 27.9 +0.4**
TXAR Lajitas Array 89.56 53 P **P 02 22 29.1 +1.6**
comp=Z,3.3nm,0.8s,baz=302,slow=3.0,SNR=11
TXAR pP **sP 02 22 44.9 -0.9**
comp=Z,1.5nm,0.5s,baz=296,slow=2.8,SNR=5.6
ESDC Sonseca Array 96.86 334 P **P 02 23 00.5 -0.3**
comp=Z,0.4nm,0.7s,baz=23,slow=4.8,SNR=3.8
ESDC LR LR 03 11 12.5
comp=Z,31nm,18.5s,baz=90,slow=38
TORD Torodi Ar. Bea 117.08 315 PKP **PKPdf 02 28 14.1 -0.9**
comp=Z,0.3nm,0.5s,baz=358,slow=0.9,SNR=9.1
BOSA Boshof 126.92 260 PKP **PKPdf 02 28 33.3 -0.3**
comp=Z,2.5nm,0.9s,baz=207,slow=1.9,SNR=4.7
SNAA Sanae 141.40 197 PKP PKPpre 02 28 52.9
VNA2 Neumayer--Watz 142.96 196 PKP **PKPdf 02 28 59.1 -2.8**
baz=92,slow=2.6
VNA3 Neumayer Olymp 143.21 195 PKP PKPab 02 28 56.6 -1.6
LPAZ La Paz 146.18 59 PKPbc **PKPab 02 29 11.7 0.0**
comp=Z,3.6nm,0.5s,baz=348,slow=2.7,SNR=26

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*ISCJB **02** 02:28:12.2±0.5, 4.°44S±0.°04×123.°00E±0.°06, h10km, mb3.9/4, MS2.9/1, Error ellipse: s-maj=8.1km s-min=5.5km az=169.9*
*IDC **02** 02:28:13.3±1.2, 4.°51S×122.°82E, h0km, mb3.9/4, mb1 4.0/6, mb1mx3.7/41, mbtmp3.9/6, ML3.3/2, MS3.0/2, Ms1 3.0/2, ms1mx2.5/39, Error ellipse: s-maj=115.0km s-min=19.0km az=64.0*
*NEIC **02** 02:28:14.1±0.7, 4.°41S×122.°93E, h10km, mb3.8/1, Error ellipse: s-maj=18.6km s-min=9.7km az=71.0*
NEIC Felt [III] at Kendari.

*DJA **02** 02:28:14.9±0.5, 4°.5S±4°.×12°.3E±°., h10km, M4.4/10, mB5.3/1, mb4.8/1, MLv4.1/10, Mw(mB)4.7/1*

ISC 02 02:28:14.1±0.8, 4°.43S±0°.05×122°.87E±0°.07, h10km, n21, σ1°53/21, mb4.0/4, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSSI	**Bau Bau, Buton**	**2.92**	**234**	P	**Pn**	**02 29 00.5**	**-0.1**
SPSI	**Sidrap Palu**	**3.12**	**278**	P	**Pn**	**02 29 03.1**	**-0.4**
KAPI	**Kappang**	**3.16**	**259**	*e*Pn	**Pn**	**02 29 04.3**	**+0.4**
KAPI				*e*S	**Sb**	**02 29 45.5**	**-3.5**
TTSI	**Tana Toraja**	**3.33**	**294**	P	**Pn**	**02 29 08.6**	**+2.2**
LUWI	**Luwuk**	**3.36**	**358**	P	**Pn**	**02 29 05.5**	**-1.3**
LUWI	**Luwuk**	**3.36**	**358**	*e*Pn	**Pn**	**02 29 05.1**	**-1.7**
LUWI				*e*S	**Sn**	**02 29 47.1**	**+0.3**
SANI	**Sanana**	**3.91**	**53**	P	Pg	02 29 37.1	+8.0
MMRI	**Maumere**	**4.23**	**188**	P	**Pn**	**02 29 19.6**	**+0.9**
MMRI	**Maumere**	**4.23**	**188**	*e*Pn	**Pn**	**02 29 19.2**	**+0.5**
MMRI				*e*S	**Sn**	**02 30 06.9**	**-1.2**
MRSI	**Marisa**	**4.96**	**349**	P	**Pn**	**02 29 28.4**	**-0.3**
SOEI	**Soe**	**5.47**	**165**	P	**Pn**	**02 29 38.2**	**+2.3**
SOEI	**Soe**	**5.47**	**165**	*e*Pn	**Pn**	**02 29 36.7**	**+0.8**
DAV	**Davao City (W)**	**11.74**	**13**	LR	LR	02 36 26.6	
FITZ	**Fitzroy Crossi**	**13.86**	**169**	Pn	**Pn**	**02 31 28.9**	**-1.9**
WRAB	**Tennant Creek**	**19.05**	**145**	*e*P	**P**	**02 32 35.3**	**-1.4**
WRA	**Warramunga Arr**	**19.05**	**145**	P	**P**	**02 32 35.4**	**-1.3**
ASAR	**Alice Springs**	**21.89**	**152**	P	**P**	**02 33 08.8**	**+1.2**
JOW	**Kunigami**	**31.51**	**9**	LR	LR	02 47 57.1	
STKA	**Stephens Creek**	**32.47**	**149**	P	**P**	**02 34 45.9**	**+0.9**
SONM	**Songino Array**	**54.02**	**346**	P	**P**	**02 37 39.7**	**+1.0**
MKAR	**Makanchi Array**	**62.31**	**330**	P	**P**	**02 38 37.8**	**+1.1**

comp=Z,62nm,18.6s,baz=330,slow=42
comp=Z,6nm,0.8s,baz=341,slow=15,SNR=26
comp=Z,26nm,20.6s,baz=298,slow=38
comp=Z,1.1nm,0.7s,baz=326,slow=15,SNR=3.0
comp=Z,1.1nm,0.8s,baz=167,slow=8.2,SNR=6.9
0.8nm,0.7s,baz=152,slow=6.5,SNR=2.2

*IDC **02** 02:31:06.0±1.2, 43°.54N×77°.63E, h0km, mb3.2/4, mb1 3.5/9, mb1mx3.4/50, mbtmp3.4/9, ML3.4/5, Error ellipse: s-maj=19.4km s-min=9.8km az=141.0*
*NNC **02** 02:31:07.5±0.8, 43°.72N×77°.67E, h4km±6km, mb4.1, mpv3.8, Error ellipse: s-maj=6.2km s-min=3.0km az=172.0*
*MOS **02** 02:31:08.7±1.6, 43°.83N×77°.50E, h9km, mb4.2/3, Error ellipse: s-maj=10.8km s-min=7.4km az=76.5*
*KRNET **02** 02:31:08.3±0.1, 43°.62N×77°.69E, h22km, mb3.8*
*SOME **02** 02:31:09.8, 43°.60N×77°.68E, h20km*
*ISCJB **02** 02:31:09.4±0.4, 43°.62N±0°.02×77°.68E±0°.02, h9km±3km, mb3.5/5, Error ellipse: s-maj=3.0km s-min=2.0km az=161.9*

ISC 02 02:31:09.0±1.0, 43°.67N±0°.02×77°.67E±0°.01, h12km±7km, n87, σ1°71/135, mb3.4/5, 44C-34D, Lake Issyk-Kul region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KURS	**Kuram**	**0.41**	**117**	*e*P	**Pb**	**02 31 17.7**	**-0.4**
KURS				*e*S	**Sb**	**02 31 23.2**	**-1.1**
CHKK	**Chushkaly**	**0.53**	**292**	*e*P	**Pb**	**02 31 20.3**	**+0.2**
CHKK				*e*S	**Sb**	**02 31 28.2**	**+0.4**
ARXS	**Arharly**	**0.55**	**12**	*e*P	**Pn**	**02 31 21.9**	**-0.9**
ARXS				*e*S	**Sn**	**02 31 30.6**	**-1.3**
KOTS	**Kotyrbulak**	**0.60**	**223**	*e*P	**Pg**	**02 31 20.9**	**+0.2**
KOTS				*e*S	**Sg**	**02 31 28.7**	**0.0**
AAA	**Alma-Ata**	**0.66**	**233**	*e*P	**Pb**	**02 31 23.0**	**+0.4**
AAA				*e*S	**Sb**	**02 31 32.6**	**+0.9**
AAA	**Alma-Ata**	**0.66**	**233**	*e*PG	**Pb**	**02 31 22.9**	**+0.4**
AAA				*e*S	**Sb**	**02 31 32.6**	**+0.9**
MNBS	**Baschi**	**0.67**	**52**	*e*P	**Pb**	**02 31 23.4**	**+0.8**
MNBS				*e*S	**Sb**	**02 31 33.1**	**+1.3**
MDOK	**Medeo**	**0.68**	**222**	⇑*i*P	**Pg**	**02 31 21.8**	**-0.5**
MDOK				⇑*i*S	**Sg**	**02 31 30.6**	**-0.7**
KNDC	**Almaty**	**0.69**	**229**	⇓P	**Pg**	**02 31 22.2**	**-0.1**
KNDC				⇑S	**Sg**	**02 31 31.2**	**-0.2**
ZHN	**Zhinishke**	**0.75**	**132**	*e*P	**Pg**	**02 31 22.9**	**-0.6**
ZHN				*e*S	**Sg**	**02 31 32.4**	**-1.0**
KPKS	**Kokpek**	**0.76**	**105**	*e*P	**Pg**	**02 31 23.8**	**0.0**
KPKS				*e*S	**Sg**	**02 31 33.8**	**0.0**
SATY	**Saty**	**0.81**	**139**	⇓*i*P	**Pg**	**02 31 24.1**	**-0.7**
SATY				⇑*i*S	**Sg**	**02 31 34.0**	**-1.4**
TNSS	**Tian-Shan**	**0.82**	**220**	*e*P	**Pg**	**02 31 24.3**	**-0.7**
TNSS				*e*S	**Sg**	**02 31 35.0**	**-0.8**
ANVS	**Anan'yevo**	**0.89**	**180**	⇑*e*P	**Pg**	**02 31 24.8**	**-1.4**
ANVS				⇑*e*S	**Sg**	**02 31 35.8**	**-2.0**
KUU	**Kurty**	**0.99**	**283**	*e*P	**Pg**	**02 31 27.8**	**-0.3**
KUU				⇓*e*S	**Sg**	**02 31 41.4**	**+0.4**
MTBS	**Maitube**	**1.06**	**240**	⇑*i*P	**Pg**	**02 31 28.5**	**-0.9**
MTBS				⇑*i*S	**Sg**	**02 31 42.2**	**-0.9**
UZB	**Uzynbulak**	**1.11**	**118**	*e*P	**Pb**	**02 31 29.4**	**-0.8**
UZB				*e*S	**Sg**	**02 31 43.5**	**-1.5**
PRZ	**Przheval'sk**	**1.30**	**156**	⇓*e*P	**Pn**	**02 31 33.2**	**+0.1**
PRZ				⇓*i*S	**Sb**	**02 31 50.2**	**0.0**
PDGK	**Podgornoye**	**1.36**	**104**	⇓*e*P	**Pn**	**02 31 33.7**	**0.0**
PDGK				⇓*e*S	**Sb**	**02 31 51.3**	**-0.5**
PDGK	**Podgornoye**	**1.36**	**104**	⇓P	**Pn**	**02 31 33.7**	**0.0**
PDGK				⇓S	**Sb**	**02 31 51.3**	**-0.5**
PDGK	**Podgornoye**	**1.36**	**104**	P*	**Pn**	**02 31 33.7**	**0.0**
PDGK				S	**Sb**	**02 31 51.2**	**-0.5**
KST	**Kastek**	**1.40**	**244**	⇑*i*P	**Pn**	**02 31 34.4**	**0.0**
KST				⇑*i*S	**Sn**	**02 31 52.4**	**-0.4**
TDK	**Taldyqorghan**	**1.43**	**21**	*e*P	**Pg**	**02 31 37.0**	**+0.4**
TDK				*e*S	**Sg**	**02 31 56.5**	**+1.4**
DGS	**Degeres**	**1.45**	**253**	*e*P	**Pn**	**02 31 35.2**	**+0.1**
DGS				*e*S	**Sn**	**02 31 53.8**	**-0.2**
KDJ	**Kajisay**	**1.58**	**193**	⇑*e*P	**Pn**	**02 31 37.1**	**+0.1**
KDJ				⇑*i*S	**Sn**	**02 31 57.1**	**-0.4**
DJR	**Jarkent**	**1.66**	**66**	*e*P	**Pb**	**02 31 39.5**	**-0.1**
DJR				*e*S	**Sg**	**02 32 01.8**	**-0.7**
SHLS	**Shalkode**	**1.69**	**107**	*e*P	**Pn**	**02 31 38.9**	**+0.4**

comp=N,221nm,0.2s
comp=N,550nm,0.3s
comp=N,70nm,0.5s
comp=N,392nm,0.4s
comp=N,174nm,0.3s
comp=N,438nm,0.3s
comp=N,207nm,0.3s
comp=N,1μm,0.3s
comp=N,246nm,0.3s
comp=N,1μm,0.2s
comp=N,293nm,0.6s
comp=N,2μm,0.3s
comp=N,1μm,0.2s
comp=N,1μm,0.3s
comp=N,1μm,0.3s
comp=N,2μm,0.3s
comp=N,1μm,0.2

comp=Z,0.7nm,0.5s,baz=180,slow=10,SNR=5.4
KSRS LR LR 03 07 43.8
comp=Z,17nm,18.1s,baz=202,slow=40
BJI Beijing 44.83 353 P **P 02 48 03.6 +1.8**
BJI pmax pmax
comp=Z,6.0nm,1.1s
HHC Hu-ho-hao-te 46.38 348 *e*P **P 02 48 17.6 +3.4**
HHC pmax pmax
comp=Z,24nm,1.0s
HHC pmax pmax
comp=Z,140nm,6.4s
USRK Ussuriysk Ar. 49.28 9 P **P 02 48 35.8 -0.7**
comp=Z,2.5nm,0.7s,baz=179,slow=7.9,SNR=6.6
SONM Songino Array 54.16 346 P **P 02 49 12.8 -0.2**
comp=Z,3.0nm,0.8s,baz=162,slow=8.5,SNR=12
SONA1 Songino Array 54.17 346 *e*P **P 02 49 13.2 +0.1**
WMQ Urumqi 57.61 331 *e*P **P 02 49 38.0 +0.2**
WMQ pmax pmax
comp=Z,2.0nm,0.6s
WMQ pmax pmax
comp=Z,61nm,4.6s
WMQ LR LR
comp=Z,14nm,28.8s
MKAR Makanchi Array 62.41 330 P **P 02 50 10.8 +0.2**
comp=Z,1.8nm,0.8s,baz=128,slow=7.9,SNR=12
MKAR LR LR 03 21 06.4
comp=Z,20nm,18.3s,baz=142,slow=40
ZALV Zalesovo Beam 66.39 337 P **P 02 50 35.3 -1.2**
comp=Z,5.1nm,0.9s,baz=129,slow=5.9,SNR=14
KURK Kurchatov 66.84 331 *e*P **P 02 50 38.8 -0.6**
comp=Z,15nm,0.9s
VNDA Vanda 75.76 172 P **P 02 51 33.7 +0.8**
comp=Z,0.7nm,0.8s,baz=343,slow=7.7,SNR=3.6
VNDA LR LR 03 26 03.2
comp=Z,27nm,18.1s,baz=324,slow=37
NRIK Noril'sk 77.61 348 LR LR 03 29 39.4
comp=Z,17nm,19.3s,baz=127,slow=39
BRTR Keskin Array B 92.23 309 P **P 02 52 59.6 +1.7**
comp=Z,0.3nm,0.6s,baz=56,slow=7.7,SNR=3.6

KRNET ***02*** *02:52:30.1±0.1,39°.47N×77°.50E,mb2.7*
NNC ***02*** *02:52:36.3±8.0,37°.98N×71°.64E,h0km,mb3.5,mpv3.1, Error ellipse: s-maj=60.5km s-min=47.0km az=170.0*
ISC 02 02:52:29.6±4.2,39°.5N±0°.2×77°.4E±0°.2,h10km,n8, σ2s10/11,12C-3D,Southern Xinjiang

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
NRN	**Naryn**	**2.18**	**331**	⇑*e*P			**Pn**	**02 53 06.2**	**-0.1**
	baz=330								
NRN				⇑*e*S			**Sn**	**02 53 33.2**	**-0.3**
	baz=330								
SFK	**Sufi-Kurgan**	**3.04**	**280**	⇑*e*P			**Pn**	**02 53 18.5**	**+0.6**
	baz=281								
SFK				⇑*e*S			**Sn**	**02 53 53.4**	**-1.1**
	baz=281								
SFK	**Sufi-Kurgan**	**3.04**	**280**	⇓Pn			**Pn**	**02 53 18.5**	**+0.6**
	6.9nm,0.3s								
SFK				⇑Sn			**Sn**	**02 53 52.5**	**-1.9**
	24nm,0.5s								
BOOM	**Boomskoye usch**	**3.16**	**340**	⇑*e*P			**Pn**	**02 53 20.1**	**+0.5**
	baz=339								
BOOM				⇑*e*S			**Sn**	**02 53 55.7**	**-1.7**
	baz=339								
AAK	**Ala-Archa**	**3.80**	**326**	⇑Pn			Pg	02 53 52.5	+10
	3.2nm,0.8s								
AAK				⇑Sn			Sg	02 54 52.9	+21
	1.0nm,0.3s								
MNAS	**Manas**	**4.74**	**310**	⇑*e*P			**Pn**	**02 53 41.6**	**+0.4**
	baz=310								
MNAS				⇑*e*S			**Sn**	**02 54 34.0**	**-2.3**
	baz=310								
MNAS	**Manas**	**4.74**	**310**	⇓Pn			Pn	02 53 46.4	+5.2
	1.5nm,0.4s								
MNAS				⇓Sn			**Sn**	**02 54 40.9**	**+4.6**
	5.6nm,0.8s								
KK31	**Karatay Array**	**6.29**	**307**	⇑Pn			Pn	02 53 55.2	-7.2
	0.3nm,0.5s,baz=156,slow=11,SNR=7.7								
KK31				Sn			Sn	02 54 57.2	-17
	7.1nm,0.8s,baz=161,slow=22,SNR=14								

CSEM ***02*** *02:57:19.2±0.3,52°.96N×9°.06E,h1km,ML2.7/9,Error ellipse: s-maj=5.4km s-min=4.0km az=153.0*
ISCJB ***02*** *02:57:20.9±0.5,52°.67N±0°.03×8°.99E±0°.04,h0km,Error ellipse: s-maj=4.4km s-min=2.8km az=29.1*
BNS ***02*** *02:57:21.6±0.4,52°.94N×9°.28E,h1km±9km,ML2.6*
LDG ***02*** *02:57:21.3±0.1,52°.97N×9°.21E,h5km,Ml2.6/17,Error ellipse: s-maj=2.7km s-min=1.8km az=152.0*
BGR ***02*** *02:57:21.1±0.7,52°.93N×9°.29E,h4km±3km,ML2.5/9,Error ellipse: s-maj=3.3km s-min=3.3km az=64.0*
PRU ***02*** *02:57:22.8,52°.98N×9°.58E,h9km*
ISC 02 02:57:21.3±0.8,52°.80N±0°.03×9°.09E±0°.02,h0km,n64, σ1s77/109,Germany

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
RETH	**Rethem/Aller,**	**0.18**	**111**	Pg			**Pg**	**02 57 26.5**	**+1.8**
RETH				Sg			**Sg**	**02 57 30.1**	**+3.2**
NRDL	**Niedersach Rie**	**0.69**	**116**	Pg			**Pg**	**02 57 35.8**	**+1.3**
NRDL				Sg			**Sb**	**02 57 46.5**	**+0.3**
NRDL	**Niedersach Rie**	**0.69**	**116**	*e*Pg			**Pg**	**02 57 35.8**	**+1.3**
NRDL				*e*Sg			**Sb**	**02 57 46.5**	**+0.3**
IBBN	**Ibbenburen**	**0.95**	**239**	Pg			**Pn**	**02 57 42.7**	**+0.8**
IBBN				Sg			**Sn**	**02 57 58.9**	**+2.7**
IBBN	**Ibbenburen**	**0.95**	**239**	*e*Pg			**Pn**	**02 57 42.6**	**+0.8**
IBBN				*e*Sg			**Sn**	**02 57 58.9**	**+2.7**
ASSE	**Asse, Remlinge**	**1.18**	**124**	Pg			**Pg**	**02 57 43.5**	**-0.4**
ASSE				Sg			**Sb**	**02 58 00.5**	**+0.2**
ASSE	**Asse, Remlinge**	**1.18**	**124**	*e*Pg			**Pg**	**02 57 43.5**	**-0.4**
ASSE				*e*Sg			**Sb**	**02 58 00.5**	**+0.2**
VLW4	**Vlagtwedde**	**1.22**	**279**	*e*Pg			**Pn**	**02 57 47.4**	**+1.8**
	baz=71								
VLW4				*e*Sg			**Sn**	**02 58 05.8**	**+3.0**
CLZ	**Clausthal**	**1.24**	**140**	Pg			**Pg**	**02 57 45.1**	**0.0**
CLZ				Sg			**Sb**	**02 58 02.6**	**+0.4**
CLZ	**Clausthal**	**1.24**	**140**	*e*Pg			**Pg**	**02 57 45.1**	**0.0**
CLZ				*e*Sg			**Sb**	**02 58 02.6**	**+0.4**
FSW4	**Finsterwolde 4**	**1.26**	**290**	*e*Pg			**Pg**	**02 57 46.7**	**+1.3**
	baz=81								
BSEG	**Bad Segeberg**	**1.35**	**32**	Pg			Pn	02 57 43.3	-4.1
BSEG				Sg			**Sg**	**02 57 59.9**	**-4.9**
BSEG	**Bad Segeberg**	**1.35**	**32**	*e*Pg			Pn	02 57 43.3	-4.1
BSEG				*e*Sg			**Sg**	**02 57 59.9**	**-4.9**
GTTG	**Gvttingen**	**1.37**	**156**	Pg			**Pb**	**02 57 47.9**	**+0.1**
GTTG				Sg			**Sn**	**02 58 08.0**	**+1.5**
GTTG	**Gvttingen**	**1.37**	**156**	*e*Pg			**Pb**	**02 57 47.9**	**+0.1**
GTTG				*e*Sg			**Sn**	**02 58 08.0**	**+1.5**
ZL24	**Zuidlaardervee**	**1.44**	**283**	*e*Pg			**Pn**	**02 57 49.1**	**+0.5**
	baz=78								
ZL24				*e*Sg			**Sn**	**02 58 10.3**	**+2.0**
ZLV4	**Zuidlaardervee**	**1.44**	**283**	*e*Pg			**Pn**	**02 57 49.1**	**+0.5**
	baz=78								
WDB4	**Woudbloem 4**	**1.48**	**287**	*e*Pg			**Pn**	**02 57 49.2**	**0.0**
	baz=82								
WDB4				*e*Sg			**Sg**	**02 58 09.5**	**+0.7**
ENM4	**Eenrum**	**1.69**	**292**	*e*Pg			**Pn**	**02 57 51.9**	**-0.1**
	baz=89								
ENM4				*e*Sg			**Sn**	**02 58 15.4**	**+1.1**
HOBG	**Hohbusch**	**2.12**	**212**	Pn			**Pb**	**02 57 59.6**	**-1.0**
HOBG				Sn			**Sg**	**02 58 27.1**	**-2.3**
	59nm,0.9s								
HOBG	**Hohbusch**	**2.12**	**212**	*e*Pn			**Pb**	**02 57 59.6**	**-1.0**
HOBG				*e*Sn			**Sg**	**02 58 27.1**	**-2.3**
	59nm,0.9s								
STB	**Steinbach**	**2.62**	**213**	Pn			**Pn**	**02 58 05.3**	**+0.5**
STB	**Steinbach**	**2.62**	**213**	*e*Pn			**Pn**	**02 58 05.3**	**+0.5**
CLL	**Collm**	**2.84**	**120**	*e*Pg			**Pb**	**02 58 15.0**	**+2.1**
CLL				*e*Sg			**Sb**	**02 58 50.0**	**+1.9**
	comp=Z,8.0nm,0.8s								
CLL				LmV				06 27 00.0	
	comp=Z,200nm,19.4s								
MEM	**Membach**	**2.92**	**222**	P			**Pn**	**02 58 08.4**	**-0.5**
NKC	**Novy Kostel**	**3.32**	**139**	*e*PN			**Pn**	**02 58 14.5**	**0.0**
NKC				*e*PG			**Pg**	**02 58 27.7**	**+2.8**
NKC				*e*SG			**Sg**	**02 59 07.6**	**-0.2**
	comp=Z,4.8nm,0.4s								
NKC	**Novy Kostel**	**3.32**	**139**	Pn			**Pn**	**02 58 14.5**	**0.0**
NKC				Sg			**Sg**	**02 59 07.6**	**-0.2**
	comp=Z,4.8nm,0.4s								
BCLA	**Clavier**	**3.36**	**226**	P			**Pn**	**02 58 14.9**	**-0.1**
BRG	**Berggiesshubel**	**3.58**	**121**	PG			**Pn**	**02 58 16.2**	**-1.8**
BRG				SG			**Sb**	**02 59 11.9**	**+2.6**
	comp=Z,2.8nm,0.8s								
GIVF	**Givet**	**3.80**	**226**	*e*Pn			**Pn**	**02 58 20.6**	**-0.4**
GIVF				*e*Sn			**Sn**	**02 59 05.1**	**-1.3**
	comp=Z,4.2nm,0.2s								
GIVF	**Givet**	**3.80**	**226**	*e*Pn			**Pn**	**02 58 20.6**	**-0.4**
GIVF				*e*Sn			**Sn**	**02 59 05.1**	**-1.3**
	comp=Z,2.1nm,0.2s								
LUNU	**Lund**	**3.82**	**40**	*i* P			Pn	02 58 17.0	-4.3
	SNR=71								
DOU	**Dourbes**	**3.90**	**228**	P			**Pn**	**02 58 22.5**	**0.0**
BAIF	**Baives**	**4.11**	**230**	*e*Pn			**Pn**	**02 58 24.8**	**-0.5**
BAIF				*e*Sn			**Sn**	**02 59 12.3**	**-1.7**
	comp=Z,1.5nm,0.2s								
BAIF	**Baives**	**4.11**	**230**	*e*Pn			**Pn**	**02 58 24.8**	**-0.5**
BAIF				*e*Sn			**Sn**	**02 59 12.3**	**-1.7**
	comp=Z,0.8nm,0.2s								
BSD	**Bornholm Skovb**	**4.15**	**54**	*i* P			Pn	02 58 20.6	-5.2
BSD				*e*S			Sn	02 59 04.1	-11
BSD	**Bornholm Skovb**	**4.15**	**54**	*i* P			Pn	02 58 20.7	-5.1
	SNR=71								
BSD				*e*S			Sn	02 59 04.1	-11
	SNR=71								
CDF	**Champ du Feu**	**4.54**	**195**	*e*Pn			**Pn**	**02 58 30.8**	**-0.6**
CDF				*e*Sg			**Sg**	**02 59 49.0**	**+1.8**
	comp=Z,4.6nm,0.5s								
CDF	**Champ du Feu**	**4.54**	**195**	*e*Pn			**Pn**	**02 58 30.8**	**-0.6**
CDF				*e*Sg			**Sg**	**02 59 49.0**	**+1.8**
	comp=Z,2.3nm,0.5s								
KHC	**Kasperske Hory**	**4.64**	**141**	*e*SG			**Sg**	**02 59 49.0**	**-1.3**
KHC	**Kasperske Hory**	**4.64**	**141**	Sg			**Sg**	**02 59 49.0**	**-1.3**
PAGF	**Fort de Pagny**	**4.76**	**208**	*e*Pn			**Pn**	**02 58 33.9**	**-0.4**
PAGF				*e*Sn			**Sn**	**02 59 28.4**	**-1.7**
	comp=Z,0.3nm,0.2s,baz=26								
PAGF	**Fort de Pagny**	**4.76**	**208**	*e*Pn			**Pn**	**02 58 33.9**	**-0.4**
PAGF				*e*Sn			**Sn**	**02 59 28.4**	**-1.7**
	comp=Z,0.2nm,0.2s								
MEZF	**Maizieres J'vi**	**5.01**	**212**	*e*Pn			**Pn**	**02 58 37.5**	**-0.2**
MEZF				*e*Sn			**Sn**	**02 59 34.4**	**-1.9**
	comp=Z,4.0nm,0.4s,baz=33								
MEZF	**Maizieres J'vi**	**5.01**	**212**	*e*Pn			**Pn**	**02 58 37.5**	**-0.2**
MEZF				*e*Sn			**Sn**	**02 59 34.4**	**-1.9**
	comp=Z,2.0nm,0.4s								
HAU	**Haudompre**	**5.11**	**201**	*e*Pn			**Pn**	**02 58 39.0**	**-0.1**
HAU				*e*Sn			**Sn**	**02 59 36.9**	**-1.9**
	comp=Z,0.7nm,0.2s								
HAU	**Haudompre**	**5.11**	**201**	*e*Pn			**Pn**	**02 58 39.0**	**-0.1**
HAU				*e*Sn			**Sn**	**02 59 36.9**	**-1.9**
	comp=Z,0.3nm,0.2s								
HINF	**Hinteralfeld**	**5.19**	**197**	*e*Pn			**Pn**	**02 58 40.0**	**-0.2**
HINF				*e*Sg			**Sg**	**03 00 09.3**	**+1.3**
	comp=Z,1.1nm,0.3s								
HINF	**Hinteralfeld**	**5.19**	**197**	*e*Pn			**Pn**	**02 58 40.0**	**-0.2**
HINF				*e*Sg			**Sg**	**03 00 09.3**	**+1.3**
	comp=Z,0.6nm,0.3s								
SFTF	**Sexfontaines**	**5.28**	**211**	*e*Pn			**Pn**	**02 58 41.2**	**-0.2**
SFTF				*e*Sn			**Sn**	**02 59 40.8**	**-2.1**
	comp=Z,1.7nm,0.4s,baz=34								
SFTF	**Sexfontaines**	**5.28**	**211**	*e*Pn			**Pn**	**02 58 41.2**	**-0.2**
SFTF				*e*Sn			**Sn**	**02 59 40.8**	**-2.1**
	comp=Z,0.9nm,0.4s								
HOMB	**Homborsund**	**5.49**	**357**	*i* S			Sn	02 59 36.5	-12
	SNR=71								
LOR	**Lormes**	**6.48**	**213**	*e*Pn			**Pn**	**02 58 57.4**	**-0.5**
	baz=41								
LOR				*e*Sn			**Sn**	**03 00 09.6**	**-2.9**
	comp=Z,1.2nm,0.4s								
LOR	**Lormes**	**6.48**	**213**	*e*Pn			**Pn**	**02 58 57.4**	**-0.5**
CABF	**La Chapelle**	**6.50**	**199**	*e*Pn			**Pn**	**02 58 57.7**	**-0.5**
CABF				*e*Sn			**Sn**	**03 00 10.0**	**-3.0**
	comp=Z,0.4nm,0.3s								
CABF	**La Chapelle**	**6.50**	**199**	*e*Pn			**Pn**	**02 58 57.7**	**-0.5**
CABF				*e*Sn			**Sn**	**03 00 10.0**	**-3.0**
	comp=Z,0.2nm,0.3s								
SSF	**Saint Saulge**	**6.78**	**214**	*e*Pn			**Pn**	**02 59 01.4**	**-0.6**
SSF				*e*Sn			**Sn**	**03 00 16.6**	**-3.3**
	comp=Z,0.5nm,0.2s								
SSF	**Saint Saulge**	**6.78**	**214**	*e*Pn			**Pn**	**02 59 01.4**	**-0.6**
SSF				*e*Sn			**Sn**	**03 00 16.6**	**-3.3**
	comp=Z,0.2nm,0.2s								
SMF	**Signal de Mont**	**7.04**	**211**	*e*Pn			**Pn**	**02 59 05.1**	**-0.4**
SMF				*e*Sn			**Sn**	**03 00 22.9**	**-3.3**
	comp=Z,0.4nm,0.3s								
SMF	**Signal de Mont**	**7.04**	**211**	*e*Pn			**Pn**	**02 59 05.1**	**-0.4**
SMF				*e*Sn			**Sn**	**03 00 22.9**	**-3.3**
	comp=Z,0.2nm,0.3s								
AVF	**Avril sur Loir**	**7.07**	**214**	*e*Pn			**Pn**	**02 59 05.5**	**-0.4**
AVF				*e*Sn			**Sn**	**03 00 23.5**	**-3.4**
	comp=Z,0.3nm,0.3s								
AVF	**Avril sur Loir**	**7.07**	**214**	*e*Pn			**Pn**	**02 59 05.5**	**-0.4**
AVF				*e*Sn			**Sn**	**03 00 23.5**	**-3.4**
	comp=Z,0.2nm,0.3s								
BGF	**Bois d'Agland**	**7.44**	**215**	*e*Pn			**Pn**	**02 59 10.6**	**-0.5**
BGF				*e*Sn			**Sn**	**03 00 31.9**	**-4.3**
	comp=Z,4.7nm,0.6s								
BGF	**Bois d'Agland**	**7.44**	**215**	*e*Pn			**Pn**	**02 59 10.6**	**-0.5**
BGF				*e*Sn			**Sn**	**03 00 31.9**	**-4.3**
	comp=Z,2.3nm,0.6s								

NIED ***02*** *03:16:00,37°.00N×140°.50E,h5km,Mw3.9 Best double couple: M0=7.12000×10^14 NP1:φs=82.00000°,δ28.00000°, λ-93.00000°. NP2:φs=265.00000°,δ62.00000°, λ-89.00000°.*
ISCJB ***02*** *03:16:54.9±0.4,36°.99N±0°.03×140°.59E±0°.05,h19km±3km, mb3.7/14,Error ellipse: s-maj=6.4km s-min=3.9km az=22.1*
JMA ***02*** *03:16:55.0,36°.99N×140°.53E,h7km±2km,M3.9 Broadband fault plane solution: P waves. NP1: φs=269.00000°,δ56.00000°,λ-85.00000°. NP2:φs=81.00000°, δ34.00000°,λ-97.00000°. Principal axes: T Plg11.0000°, Azm356.0000°; N Plg4.0000°, Azm87.0000°; P Plg78.0000°, Azm196.0000°;*
JMA Felt III J1.
IDC ***02*** *03:17:01.2±2.4,36°.92N×140°.27E,h58km±24km,mb3.4/14, mb1 3.7/15,mb1mx3.5/40,mbtmp3.8/15,ML3.7/1,MS2.8/2, Ms1 2.8/2,ms1mx2.4/31 Error ellipse: s-maj=21.4km s-min=13.2km az=73.0*
ISC 02 03:16:54.7±1.1,37°.01N±0°.03×140°.46E±0°.04,h5km±8km, n28,σ0s84/34,mb3.8/14,6C-1D,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.29**	**72**	⇑P			**Pg**	**03 17 00.0**	**-0.3**
ONAJ				*e*S			**Sg**	**03 17 03.5**	**-0.6**
JHO	**Hitachi**	**0.41**	**167**	⇑P			**Pg**	**03 17 02.4**	**-0.2**
JHO				S			**Sg**	**03 17 07.7**	**-0.3**
JSB	**Shiboa**	**0.43**	**264**	⇓P			**Pb**	**03 17 05.3**	**+0.5**
JSB				S			**Sb**	**03 17 12.5**	**+0.8**
JFK	**Kawauchi**	**0.49**	**43**	⇑P			**Pg**	**03 17 04.0**	**-0.1**
JFK				S			**Sg**	**03 17 10.2**	**-0.2**
JFT	**Otama**	**0.52**	**349**	⇑P			**Pb**	**03 17 05.7**	**-0.5**
JFT				S			**Sb**	**03 17 13.6**	**-0.4**
JFY	**Yanaizu**	**0.72**	**303**	⇑P			**Pb**	**03 17 10.0**	**+0.3**
JYT	**Yasato**	**0.81**	**195**	P			**Pg**	**03 17 10.3**	**+0.1**
JYT				S			**Sb**	**03 17 21.9**	**-0.6**
JMM	**Marumori**	**0.89**	**17**	⇑P			**Pg**	**03 17 11.5**	**-0.3**
JMM				S			**Sg**	**03 17 23.5**	**0.0**
MJAR	**Matsushiro Arr**	**1.87**	**256**	P			**Pb**	**03 17 28.2**	**-1.1**
	17nm,0.3s,baz=69,slow=14,SNR=81								
MJAR				S			**Sg**	**03 17 54.1**	**-0.5**
	32nm,0.3s,baz=101,slow=25,SNR=22								
JHJ	**Hachijo jima 2**	**3.92**	**188**	P			**Pn**	**03 17 57.9**	**+2.3**
	15nm,0.3s,baz=79,slow=18,SNR=4.7								
JHJ				S			**Sn**	**03 18 41.2**	**-0.8**
	14nm,0.3s,baz=215,slow=21,SNR=3.0								
ASAJ	**Asahikawa**	**7.28**	**12**	P			**Pn**	**03 18 43.1**	**+1.4**
	1.9nm,0.3s,baz=200,slow=9.3,SNR=9.1								
JNU	**Nakatsue**	**8.76**	**247**	LR			LR	03 22 37.9	
	comp=Z,54nm,19.4s,baz=119,slow=39								
USRK	**Ussuriysk Ar.**	**9.64**	**321**	P			Pn	03 19 20.9	+6.9
	baz=140,slow=13,SNR=9.1								
USRK				LR			LR	03 23 01.5	
	comp=Z,54nm,18.8s,baz=199,slow=38								
KSRS	**Korea Array**	**10.01**	**276**	P			Pn	03 19 25.6	+6.6
	0.2nm,0.3s,baz=94,slow=14,SNR=14								
SONM	**Songino Array**	**27.16**	**304**	P			**P**	**03 22 37.9**	**-1.1**
	1.2nm,0.7s,baz=104,slow=8.1,SNR=7.7								
ZALV	**Zalesovo Beam**	**41.37**	**312**	P			**P**	**03 24 41.2**	**-0.2**
	0.7nm,0.3s,baz=87,slow=7.8,SNR=3.1								
MKAR	**Makanchi Array**	**43.48**	**302**	P			**P**	**03 24 58.3**	**-0.5**
	0.4nm,0.5s,baz=84,slow=12,SNR=5.5								
ILAR	**Eielson Array**	**49.92**	**32**	P			**P**	**03 25 49.5**	**+0.6**
	0.4nm,0.7s,baz=268,slow=7.8,SNR=5.3								
INK	**Inuvik**	**54.76**	**27**	P			**P**	**03 26 25.1**	**+0.4**
	0.6nm,0.7s,baz=299,slow=4.1,SNR=4.5								
WRA	**Warramunga Arr**	**56.94**	**187**	P			**P**	**03 26 39.8**	**-1.2**
	1.9nm,0.7s,baz=1.7,slow=7.5,SNR=19								
ASAR	**Alice Springs**	**60.67**	**187**	P			**P**	**03 27 05.7**	**-1.1**
	0.9nm,0.8s,baz=359,slow=4.8,SNR=7.0								
RES	**Resolute Bay**	**62.81**	**14**	P			**P**	**03 27 21.6**	**+1.0**
	0.5nm,0.5s,baz=328,slow=6.5,SNR=3.6								
ARCES	**ARCESS Array B**	**63.75**	**339**	P			**P**	**03 27 26.5**	**-0.5**
	0.7nm,0.7s,baz=56,slow=9.0,SNR=6.8								
YKA	**Yellowknife Ar**	**64.21**	**30**	P			**P**	**03 27 30.4**	**+0.3**
	0.2nm,0.8s,baz=304,slow=6.9,SNR=5.4								
FINES	**FINESS Array B**	**68.48**	**332**	P			**P**	**03 27 56.7**	**-0.7**
	1.3nm,0.7s,baz=0.0,slow=7.6,SNR=4.5								
NVAR	**Mina Array Bea**	**75.61**	**53**	P			**P**	**03 28 42.0**	**+1.1**
	0.6nm,0.8s,baz=299,slow=6.8,SNR=4.1								
PDAR	**Pinedale Array**	**78.22**	**45**	P			**P**	**03 28 55.5**	**-0.1**
	0.4nm,0.7s,baz=132,slow=2.2,SNR=4.0								
GERES	**GERESS Array B**	**82.33**	**328**	P			**P**	**03 29 16.1**	**-1.3**
	0.3nm,0.4s,baz=38,slow=6.8,SNR=4.4								

JMA 02 03:23:22.3±0.2,38°.24N×144°.06E,h23km,M3.6,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.05**	**295**	P			Pn	03 23 56.4	+1.0
OFUJ				S			Sn	03 24 21.5	+1.3
JIO	**Ouri**	**2.14**	**277**	P			Pn	03 23 57.3	+0.7
JIO				S			Sn	03 24 23.9	+1.4
JMK	**Ichinoseki**	**2.34**	**289**	P			Pn	03 24 00.7	+1.4
JMK				*e*S			Sn	03 24 29.3	+2.0
JOM	**Ohasama**	**2.49**	**301**	*e*S			Sn	03 24 32.6	+1.6
JMM	**Marumori**	**2.61**	**263**	P			Pn	03 24 04.0	+1.0
JMM				*e*S			Sn	03 24 34.8	+0.9
JFK	**Kawauchi**	**2.67**	**252**	S			Sn	03 24 35.6	0.0
JOU	**Okura**	**2.67**	**274**	*e*S			Sn	03 24 37.6	+1.9
JRG	**Rokugo**	**2.92**	**294**	P			Pn	03 24 09.6	+2.4
JRG				*e*S			Sn	03 24 44.0	+2.5
JYK	**Kaneyama**	**2.98**	**284**	P			Pn	03 24 10.4	+2.3
JFT	**Otama**	**3.03**	**257**	P			Pn	03 24 10.8	+1.9
JFT				S			Sn	03 24 46.6	+2.1
JRY	**Ryogami san**	**4.68**	**243**	P			Pn	03 24 32.5	+0.9
JRY				S			Sn	03 25 24.0	-1.2

JMA 02 03:25:02.8±0.1,39°.68N×142°.65E,h33km±2km,M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**0.65**	**261**	P			Pn	03 25 15.4	-0.3
MIYJ				S			Sb	03 25 24.0	-0.7
JTH	**Tanohata**	**0.66**	**293**	P			Pn	03 25 15.7	-0.1
JTH				*e*S			Sn	03 25 25.0	0.0
OFUJ	**Ofunato**	**0.97**	**232**	P			Pn	03 25 20.1	0.0
OFUJ				S			Sn	03 25 32.3	-0.4
JKZ	**Kuzumaki**	**1.06**	**287**	P			Pn	03 25 21.9	+0.5
JKZ				S			Sn	03 25 35.5	+0.4
JOM	**Ohasama**	**1.07**	**259**	P			Pn	03 25 22.1	+0.6
JOM				S			Sb	03 25 36.0	-0.5
JANG	**Nango**	**1.11**	**309**	P			Pn	03 25 22.0	-0.1
JANG				*e*S			Sb	03 25 37.4	-0.3
JMK	**Ichinoseki**	**1.33**	**237**	P			Pn	03 25 25.6	+0.6
JMK				S			Sn	03 25 42.3	+0.8
JRG	**Rokugo**	**1.58**	**260**	P			Pb	03 25 30.5	-1.0
JRG				*e*S			Sb	03 25 50.1	-1.0
JIO	**Ouri**	**1.59**	**220**	P			Pn	03 25 29.2	+0.6
JIO				S			Sn	03 25 48.6	+0.6
JAH	**Hinai**	**1.63**	**289**	P			Pb	03 25 30.9	-1.3
JAH				*e*S			Sb	03 25 51.1	-1.3
JTM	**Tenmabayashi**	**1.64**	**313**	P			Pn	03 25 30.5	+1.2
JTM				*e*S			Sn	03 25 50.1	+0.9
JYK	**Kaneyama**	**1.93**	**248**	P			Pb	03 25 35.4	-2.0
JYK				S			Sb	03 25 59.9	-1.2

JMA 02 03:31:35.4±0.3,39°.41N×144°.04E,h17km,M3.6,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**1.73**	**276**	P			Pn	03 32 05.1	+0.5
MIYJ				*e*S			Sb	03 32 27.4	-0.6
JTH	**Tanohata**	**1.76**	**288**	P			Pn

DIV	**Divide**	**3.07**	**125**	*e*Pn	**Pn**	**03 33 09.6 -0.3**
DIV				*e*S	**Sn**	**03 33 44.4 -2.0**
DOT	**Dot Lake**	**3.18**	**75**	P	**Pn**	**03 33 11.5 +0.1**
IM3	**Indian Mountai**	**3.25**	**339**	P	**Pn**	**03 33 12.3 +0.1**
MENT	**Mentasta**	**3.30**	**88**	P	**Pn**	**03 33 13.4 +0.4**
EYAK	**Cordova Ski Ar**	**3.47**	**132**	P	**Pn**	**03 33 16.1 +0.8**
BMRM	**Bremner River**	**3.61**	**121**	*e*Pn	**Pn**	**03 33 18.1 +0.9**
BMRM				*e*S	**Sn**	**03 33 58.2 -1.0**
AUL	**Augustine Lava**	**3.81**	**200**	P	**Pn**	**03 33 21.4 +1.7**
PS05	**TAPS Pump Stn5**	**3.85**	**2**	P	**Pn**	**03 33 20.7 +0.6**
VRDI	**Verde Repeater**	**3.94**	**113**	P	**Pn**	**03 33 21.5 -0.1**
BCA3	**Beaver Creek A**	**4.18**	**85**	P	**Pn**	**03 33 24.4 -0.2**
CDD	**Cape Douglas**	**4.27**	**199**	P	**Pn**	**03 33 27.2 +1.2**
COLD	**Coldfoot**	**4.27**	**4**	P	**Pn**	**03 33 26.3 +0.4**
BERG	**Berg Lake**	**4.32**	**124**	P	**Pn**	**03 33 26.7 +0.2**
NICHA	**Nichawak Mount**	**4.32**	**126**	P	**Pn**	**03 33 27.0 +0.4**
PTPK	**Patty Peak**	**4.38**	**111**	P	**Pn**	**03 33 27.8 +0.3**
FOPK	**Fourpeaked Vol**	**4.42**	**197**	P	**Pn**	**03 33 28.1 +0.3**
BALM	**Baldy**	**4.50**	**112**	P	**Pn**	**03 33 28.6 -0.4**
KIAG	**Kiagna River**	**4.55**	**113**	P	**Pn**	**03 33 29.5 -0.3**
EGAK	**Eagle**	**4.69**	**63**	P	**Pn**	**03 33 32.8 +1.4**
ISLE	**Juniper Island**	**4.73**	**116**	P	**Pn**	**03 33 32.5 +0.3**
BARN	**Barnard Glacie**	**4.78**	**110**	P	**Pn**	**03 33 33.5 +0.6**
BARK	**Barkley Ridge**	**4.79**	**119**	P	**Pn**	**03 33 33.5 +0.7**
KULT	**Kultieth River**	**4.79**	**121**	P	**Pn**	**03 33 33.8 +0.9**
KAWH	**Katmai**	**4.99**	**204**	P	**Pn**	**03 33 36.7 +1.2**
KAKN	**Katmai Knife C**	**5.12**	**205**	P	**Pn**	**03 33 38.4 +1.0**
BM3	**Burnt Mountain**	**5.19**	**28**	P	**Pn**	**03 33 38.5 +0.3**
KABR	**Katmai Barrier**	**5.26**	**204**	P	**Pn**	**03 33 39.7 +0.6**
KDAK	**Kodiak Island**	**5.28**	**190**	*e*Pn	**Pn**	**03 33 38.3 -1.1**
KDAK				*e*S	**Sn**	**03 34 35.6 -3.4**
DAWY	**Dawson**	**5.29**	**73**	P	**Pn**	**03 33 39.6 +0.1**
OHAK	**Old Harbor**	**5.90**	**192**	P	**Pn**	**03 33 46.0 -1.7**
INK	**Inuvik**	**8.94**	**46**	P	**Pn**	**03 34 28.8 +0.2**
	0.1nm,0.3s,baz=240,slow=15,SNR=5.3					
YKA	**Yellowknife Ar**	**16.52**	**75**	P	**P**	**03 36 09.2 +1.8**
	0.0nm,0.3s,baz=285,slow=9.6,SNR=7.3					
KLR	**Kul'dur**	**42.47**	**289**	LR	LR	03 59 31.4
	comp=Z,22nm,18.1s,slow=39					
TXAR	**Lajitas Array**	**45.24**	**115**	P	P	03 40 34.5 +6.8
	0.4nm,0.4s,baz=347,slow=3.7,SNR=3.7					
ARCES	**ARCESS Array B**	**47.74**	**2**	P	**P**	**03 40 47.7 +1.0**
	0.8nm,0.8s,baz=27,slow=8.1,SNR=3.5					
BVAR	**Borovoye Array**	**59.88**	**333**	P	**P**	**03 42 14.8 -0.3**
	0.4nm,0.5s,baz=57,slow=10,SNR=2.8					
MKAR	**Makanchi Array**	**62.70**	**322**	P	**P**	**03 42 33.5 -0.7**
	0.3nm,0.3s,baz=43,slow=8.3,SNR=4.0					

*FUNV **02** 03:39:31.5, 7.79N×73.38W, h5km, MW3.0*
*ISCJB **02** 03:39:32.6±0.7, 7.98N±0.02×73.27W±0.03, h3km±4km, Error ellipse: s-maj=4.8km s-min=3.7km az=17.8*
*RSNC **02** 03:39:33.9±0.6, 8.00N×73.27W, h4km±4km, ML2.9*

ISC 02 03:39:32.9±1.2, 7.96N±0.03×73.25W±0.03, h3km±11km, n16, σ0.65/30, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OCAC	**Ocana**	**0.28**	**346**	*i* P	**Pg**	**03 39 38.5**	**0.0**
OCAC				*e*S	**Sg**	**03 39 42.3**	**+0.1**
OCAC				*i*		03 39 43.5	
	comp=Z,1μm,0.3s						
GRMC	**Gramalote, San**	**0.50**	**119**	*i* P	**Pg**	**03 39 42.9**	**+0.3**
GRMC				*e*S	**Sg**	**03 39 49.7**	**+0.5**
GRMC				*i*		03 39 50.9	
	comp=Z,1μm,0.5s						
CBRI	**Barrientos, No**	**0.51**	**118**	*i* P	**Pb**	**03 39 44.0**	**-0.6**
CBRI				*e*S	**Sb**	**03 39 51.4**	**-1.1**
CBRI				*i*		03 39 53.7	
	comp=Z,1μm,0.3s						
PAMC	**Pamplona, Colo**	**0.82**	**138**	*e*P	**Pb**	**03 39 49.6**	**-0.5**
PAMC				*e*S	**Sb**	**03 40 01.3**	**-0.6**
GIRC	**Giron, Santand**	**0.88**	**176**	*e*P	**Pg**	**03 39 50.1**	**+0.4**
GIRC				*e*S	**Sb**	**03 40 02.2**	**-0.8**
CAPV	**Capacho**	**0.93**	**96**	*e*P	**Pb**	**03 39 51.9**	**0.0**
CAPV				*e*S	**Sb**	**03 40 05.1**	**+0.4**
BRRC	**Barranca, Sant**	**0.96**	**208**	*e*P	**Pg**	**03 39 51.0**	**-0.4**
BRRC				*e*S	**Sg**	**03 40 04.5**	**+0.6**
BRRC				*i*		03 40 07.9	
	comp=Z,172nm,0.2s						
BARC	**Barichara**	**1.36**	**177**	*e*P	**Pn**	**03 39 58.4**	**-0.7**
BARC				*e*S	**Sb**	**03 40 17.4**	**+0.3**
BARC				*i*		03 40 18.5	
	comp=Z,194nm,0.4s						
RUSC	**La Rusia**	**2.06**	**175**	*e*P	**Pn**	**03 40 09.3**	**+0.4**
RUSC				*e*S	**Sb**	**03 40 37.1**	**-0.4**
RUSC				*i*		03 40 39.3	
	comp=Z,118nm,0.4s						
VIGV	**El Vigia**	**2.06**	**65**	*e*P	**Pn**	**03 40 08.6**	**+0.1**
VIGV				*e*S	**Sb**	**03 40 36.6**	**-0.5**
SOCV	**Socops**	**2.39**	**82**	*e*P	**Pn**	**03 40 13.0**	**0.0**
SOCV				*e*S	**Sn**	**03 40 44.0**	**+1.1**
VIRV	**Villa del Rosa**	**2.66**	**18**	*e*P	**Pn**	**03 40 16.1**	**-0.6**
VIRV				*e*S	**Sn**	**03 40 51.2**	**+1.7**
HELC	**Santa Helena**	**2.86**	**232**	*e*P	**Pn**	**03 40 20.1**	**+0.3**
HELC				*e*S	**Sn**	**03 40 55.6**	**+0.6**
NORC	**Norcasia**	**2.87**	**214**	*e*P	**Pn**	**03 40 19.6**	**-0.1**
CURV	**Curarigua**	**3.84**	**58**	*e*P	**Pn**	**03 40 33.1**	**+0.1**
CURV				*e*S	**Sn**	**03 41 17.9**	**-0.8**
SIQV	**Siquisique**	**4.32**	**52**	*e*P	**Pn**	**03 40 38.9**	**-0.7**

*IDC **02** 03:40:43.0±3.3, 37.53N×142.43E, h0km, mb3.4/2, mb1 3.5/3, mb1mx3.2/43, mbtmp3.3/3, ML3.2/1, MS2.3/1, Ms1 2.3/1, ms1mx2.0/25, Error ellipse: s-maj=70.6km s-min=41.0km az=57.0*
*JMA **02** 03:40:51.5±0.1, 37.42N×141.80E, h43km±3km, M3.5*

ISC 02 03:40:50.1±2.3, 37.42N±0.06×141.9E±0.1, h32km±13km, n11, σ1.20/19, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.79**	**266**	P	**Pb**	**03 41 05.6**	**+0.2**
JFK				S	**Sb**	**03 41 15.5**	**-0.3**
ONAJ	**Iwakimizuishiy**	**0.91**	**250**	P	**Pb**	**03 41 07.3**	**-0.1**
ONAJ				S	**Sn**	**03 41 18.5**	**-0.2**
JMM	**Marumori**	**0.96**	**298**	P	**Pb**	**03 41 08.1**	**-0.1**
JMM				S	**Sb**	**03 41 19.9**	**-0.6**
JIO	**Ouri**	**1.11**	**339**	P	**Pb**	**03 41 10.4**	**-0.3**
JIO				S	**Sn**	**03 41 23.7**	**+0.1**
JFT	**Otama**	**1.22**	**275**	P	**Pb**	**03 41 12.4**	**-0.2**
JFT				S	**Sb**	**03 41 27.2**	**-0.7**
JHO	**Hitachi**	**1.31**	**232**	P	**Pn**	**03 41 12.9**	**+0.7**
JHO				S	**Sn**	**03 41 28.6**	**0.0**
JOU	**Okura**	**1.34**	**315**	P	**Pb**	**03 41 14.4**	**-0.2**
JOU				S	**Sb**	**03 41 31.0**	**-0.4**
MJAR	**Matsushiro Arr**	**3.05**	**254**	Pn	**Pn**	**03 41 38.7**	**+2.5**
	2.4nm,0.3s,baz=74,slow=18,SNR=15						
MJAR				LR	LR	03 42 58.6	
	comp=Z,38nm,18.2s,baz=160,slow=39						
MAT	**Matsushiro**	**3.05**	**254**	P	**Pn**	**03 41 38.7**	**+2.5**
MAT				*e*S	**Sn**	**03 42 09.2**	**-2.5**
MKAR	**Makanchi Array**	**44.22**	**302**	P	**P**	**03 48 56.2**	**0.0**
	0.2nm,0.3s,baz=73,slow=9.3,SNR=2.9						
WRA	**Warramunga Arr**	**57.49**	**188**	P	**P**	**03 50 35.2**	**-1.0**
	0.2nm,0.4s,baz=6.5,slow=7.4,SNR=1.4						

*ISCJB **02** 03:47:41.7±2.3, 42.6N±0.3×43.4E±0.3, h10km, Error ellipse: s-maj=56.0km s-min=11.0km az=141.0*
*TIF **02** 03:47:41.1, 42.58N×43.43E, h10km*
*DDA **02** 03:47:43.0, 42.75N×42.28E, h7km, Md2.9*

ISC 02 03:47:41.4±2.9, 42.6N±0.4×43.4E±0.7, h10km, n5, σ0.77/10, Western Caucasus

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONI	**Oni**	**0.04**	**10**	P	**Pg**	**03 47 43.3**	**-0.1**
ONI				S	**Sg**	**03 47 44.9**	**0.0**
ARTV	**Artvin**	**1.78**	**220**	*i* P	**Pn**	**03 48 13.0**	**+0.6**
ARTV				*i* S	**Sb**	**03 48 37.2**	**+0.6**
DAGI	**Agillar**	**1.87**	**218**	*i* P	**Pb**	**03 48 15.0**	**-0.7**
DAGI				*i* S	**Sn**	**03 48 38.0**	**+0.7**
DBAD	**Bademkaya**	**2.02**	**221**	*i* P	**Pn**	**03 48 16.5**	**+0.9**
DBAD				*i* S	**Sb**	**03 48 42.6**	**-0.9**
DDEM	**Demirkent**	**2.09**	**218**	*i* P	**Pb**	**03 48 18.6**	**-0.9**
DDEM				*i* S	**Sb**	**03 48 45.3**	**-0.3**

JMA 02 03:51:31.1±0.2, 36.71N×141.83E, h44km±4km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.92**	**296**	P	Pn	03 51 47.5	-0.1
JFK	**Kawauchi**	**1.01**	**311**	P	Pn	03 51 49.0	+0.2
JHO	**Hitachi**	**1.02**	**265**	P	Pn	03 51 48.9	-0.1
JHO				S	Sn	03 52 02.7	+0.6
JMM	**Marumori**	**1.42**	**325**	P	Pn	03 51 54.9	+0.5
JMM				*e*S	Sn	03 52 12.4	+0.5
JFT	**Otama**	**1.44**	**304**	P	Pn	03 51 56.1	+1.4
JFT				*e*S	Sn	03 52 13.9	+1.4
JIO	**Ouri**	**1.78**	**348**	P	Pn	03 51 59.8	+0.4
JIO				S	Sn	03 52 21.4	+0.6
JOU	**Okura**	**1.90**	**331**	P	Pn	03 52 03.0	+2.0
JOU				S	Sn	03 52 25.7	+2.0
JAG	**Ashikaga**	**1.93**	**262**	P	Pn	03 52 02.5	+1.0
JKT	**Katashina**	**2.07**	**272**	P	Pn	03 52 05.4	+1.9
MAT	**Matsushiro**	**2.92**	**268**	P	Pn	03 52 17.3	+2.3
MAT				S	Sn	03 52 47.8	-1.1

*ISCJB **02** 04:20:20.1±0.8, 43.03N±0.02×15.65E±0.03, h4km±6km, Error ellipse: s-maj=3.6km s-min=3.2km az=168.8*
*CSEM **02** 04:20:20.4±0.1, 43.00N×15.62E, h2km, ML2.6, Error ellipse: s-maj=3.3km s-min=2.8km az=140.0*
*ROM **02** 04:20:20.5±0.5, 43.03N×15.67E, h10km, Ml2.6/20, Error ellipse: s-maj=7.9km s-min=4.3km az=52.0*
*VIE **02** 04:20:20.9±0.7, 42.99N×15.67E, h8km, mb2.5/7, ml2.6/7, Error ellipse: s-maj=8.9km s-min=5.3km az=78.0*
*BEO **02** 04:20:22.0±1.1, 43.01N×15.70E, h0km, M2.8/5*

ISC 02 04:20:20.2±1.2, 42.99N±0.03×15.61E±0.03, h2km±11km, n90, σ0.83/115, 2C, Adriatic Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CAFR	**Castel Frentan**	**1.21**	**231**	Pn	**Pn**	**04 20 44.5**	**+0.4**
CAFR	**Castel Frentan**	**1.21**	**231**	Pn	**Pn**	**04 20 44.5**	**+0.4**
FRES	**Fresagrandinar** 158nm,0.5s	**1.23**	**215**	Pn	**Pn**	**04 20 45.0**	**+0.5**
FRES	**Fresagrandinar** 158nm,0.5s	**1.23**	**215**	Pn	**Pn**	**04 20 45.0**	**+0.5**
SGRT	**San Giovanni R**	**1.24**	**175**	Pn	**Pg**	**04 20 43.9**	**-0.1**
SGRT	**San Giovanni R**	**1.24**	**175**	Pn	**Pg**	**04 20 43.9**	**-0.1**
MSAG	**Monte S. Angel** 163nm,0.7s	**1.30**	**170**	Pn	**Pg**	**04 20 44.1**	**-1.0**
MSAG	**Monte S. Angel** 163nm,0.7s	**1.30**	**170**	Pn	**Pg**	**04 20 44.1**	**-1.0**
VCEL	**Villa Celiera** 103nm,0.6s	**1.44**	**246**	Pn	**Pb**	**04 20 48.4**	**+0.6**
VCEL	**Villa Celiera** 103nm,0.6s	**1.44**	**246**	Pn	**Pb**	**04 20 48.4**	**+0.6**
TERO	**Teramo**	**1.52**	**257**	Pn	**Pn**	**04 20 48.3**	**-0.2**
TERO	**Teramo**	**1.52**	**257**	Pn	**Pn**	**04 20 48.3**	**-0.2**
STON	**Ston**	**1.54**	**94**	*e*Pn	**Pn**	**04 20 46.9**	**-1.7**
STON				Sn	**Sn**	**04 21 08.7**	**-0.5**
STON	**Ston**	**1.54**	**94**	*e*Pn	**Pn**	**04 20 48.0**	**-0.7**
STON				*e*Sn	**Sn**	**04 21 09.5**	**+0.3**
STON	**Ston**	**1.54**	**94**	*e*Pg	**Pn**	**04 20 48.0**	**-0.7**
STON				*e*Sg	**Sn**	**04 21 08.5**	**-0.7**
STON				*e*Sn	**Sn**	**04 21 09.5**	**+0.3**
UDBI	**Udbina**	**1.54**	**4**	*e*Pn	**Pn**	**04 20 48.0**	**-0.9**
UDBI				Sn	**Sg**	**04 21 10.2**	**+0.5**
UDBI	**Udbina**	**1.54**	**4**	*e*Pn	**Pn**	**04 20 47.9**	**-0.9**
UDBI				Sn	**Sg**	**04 21 10.2**	**+0.5**
INTR	**Introdacqua** 91nm,0.7s	**1.60**	**233**	Pn	**Pn**	**04 20 49.2**	**-0.4**
INTR	**Introdacqua** 91nm,0.7s	**1.60**	**233**	Pn	**Pn**	**04 20 49.2**	**-0.4**
NVLJ	**Novalja**	**1.66**	**341**	*i* Pn	**Pn**	**04 20 50.6**	**+0.2**
NVLJ				Sn	**Sg**	**04 21 13.8**	**+0.3**
NVLJ	**Novalja**	**1.66**	**341**	*i* Pn	**Pn**	**04 20 50.5**	**+0.2**
NVLJ				Sn	**Sg**	**04 21 13.8**	**+0.3**
FAGN	**Fagnano** 121nm,0.5s	**1.66**	**245**	Pn	**Pb**	**04 20 51.4**	**-0.2**
FAGN	**Fagnano** 121nm,0.5s	**1.66**	**245**	Pn	**Pb**	**04 20 51.4**	**-0.2**
MIDA	**Miranda** 66nm,0.5s	**1.68**	**217**	Pn	**Pn**	**04 20 49.7**	**-1.1**
MIDA	**Miranda** 66nm,0.5s	**1.68**	**217**	Pn	**Pn**	**04 20 49.7**	**-1.1**
SMA1	**SAN MARTINO** 46nm,0.6s	**1.71**	**259**	Pn	**Pn**	**04 20 51.1**	**-0.1**
SMA1	**SAN MARTINO** 46nm,0.6s	**1.71**	**259**	Pn	**Pn**	**04 20 51.1**	**-0.1**
RM32	**Poggio Cancell** 37nm,0.8s	**1.76**	**257**	Pn	**Pn**	**04 20 51.5**	**-0.3**
RM32	**Poggio Cancell** 37nm,0.8s	**1.76**	**257**	Pn	**Pn**	**04 20 51.5**	**-0.3**
CING	**Cingoli**	**1.81**	**283**	Pn	**Pb**	**04 20 53.3**	**-0.8**
CING	**Cingoli**	**1.81**	**283**	Pn	**Pb**	**04 20 53.3**	**-0.8**
PTRJ	**Pietraroja** 133nm,0.8s	**1.81**	**207**	Pn	**Pn**	**04 20 53.0**	**+0.4**
PTRJ	**Pietraroja** 133nm,0.8s	**1.81**	**207**	Pn	**Pn**	**04 20 53.0**	**+0.4**
CERA	**Filignano**	**1.83**	**221**	Pn	**Pg**	**04 20 55.2**	**0.0**
CERA	**Filignano**	**1.83**	**221**	Pn	**Pg**	**04 20 55.2**	**0.0**
RM33	**Pellescritta (** 30nm,0.3s	**1.83**	**256**	Pn	**Pn**	**04 20 53.1**	**+0.3**
RM33	**Pellescritta (** 30nm,0.3s	**1.83**	**256**	Pn	**Pn**	**04 20 53.1**	**+0.3**
NRCA	**Norcia** 26nm,0.7s	**1.84**	**266**	Pn	**Pn**	**04 20 53.5**	**+0.6**
NRCA	**Norcia** 26nm,0.7s	**1.84**	**266**	Pn	**Pn**	**04 20 53.5**	**+0.6**
SGG	**Gregorio Mates** 52nm,0.5s	**1.85**	**210**	Pn	**Pn**	**04 20 53.3**	**+0.3**
SGG	**Gregorio Mates** 52nm,0.5s	**1.85**	**210**	Pn	**Pn**	**04 20 53.3**	**+0.3**
VVLD	**Villa Vallelon** 41nm,0.7s	**1.85**	**233**	Pn	**Pb**	**04 20 54.5**	**-0.3**
VVLD	**Villa Vallelon** 41nm,0.7s	**1.85**	**233**	Pn	**Pb**	**04 20 54.5**	**-0.3**
VAGA	**Valle Agricola** 52nm,0.5s	**1.88**	**213**	Pn	**Pn**	**04 20 54.2**	**+0.8**
VAGA	**Valle Agricola** 52nm,0.5s	**1.88**	**213**	Pn	**Pn**	**04 20 54.2**	**+0.8**
LNSS	**Leonessa** 33nm,0.5s	**1.93**	**259**	Pn	**Pn**	**04 20 53.7**	**-0.5**
LNSS	**Leonessa** 33nm,0.5s	**1.93**	**259**	Pn	**Pn**	**04 20 53.7**	**-0.5**
TREB	**Trebinje**	**2.03**	**97**	*e*Pn	**Pn**	**04 20 55.4**	**-0.1**
TREB				*e*Sn	**Sn**	**04 21 20.4**	**-1.1**
BLY	**Banja Luka**	**2.09**	**32**	*e*Pn	**Pn**	**04 20 57.5**	**+1.2**
BLY				*e*Sg	**Sg**	**04 21 27.8**	**+0.3**
BLY	**Banja Luka** 67nm,0.5s	**2.09**	**32**	Pn	**Pn**	**04 20 57.1**	**+0.8**
BLY	**Banja Luka** 67nm,0.5s	**2.09**	**32**	Pn	**Pn**	**04 20 57.1**	**+0.8**
BLY				*e*Sn	**Sn**	**04 21 20.5**	**-2.4**
BLY				*e*Sg	**Sg**	**04 21 27.8**	**+0.3**
SSFR	**Montelago di S** 16nm,0.3s	**2.12**	**283**	Pn	**Pn**	**04 20 56.5**	**-0.2**
SSFR	**Montelago di S** 16nm,0.3s	**2.12**	**283**	Pn	**Pn**	**04 20 56.5**	**-0.2**
BRY	**Bratogost**	**2.15**	**91**	*e*Pn	**Pn**	**04 20 57.5**	**+0.2**
BRY				*e*Sn	**Sn**	**04 21 23.0**	**-1.6**
MCRV	**Calabrutti - M** 23nm,0.6s	**2.23**	**189**	Pn	**Pn**	**04 20 59.8**	**+1.5**
MCRV	**Calabrutti - M** 23nm,0.6s	**2.23**	**189**	Pn	**Pn**	**04 20 59.8**	**+1.5**
PIEI	**Pieia** 9.0nm,0.7s	**2.31**	**285**	Pn	**Pn**	**04 20 59.1**	**-0.3**
PIEI	**Pieia** 9.0nm,0.7s	**2.31**	**285**	Pn	**Pn**	**04 20 59.1**	**-0.3**
ATPC	**Poggio Castell** 47nm,1.0s	**2.36**	**283**	Pn	**Pn**	**04 21 00.2**	**+0.2**
ATPC	**Poggio Castell** 47nm,1.0s	**2.36**	**283**	Pn	**Pn**	**04 21 00.2**	**+0.2**
UPM	**Unac-Piva**	**2.42**	**84**	*e*Pn	**Pn**	**04 21 01.2**	**+0.2**
UPM				*e*Sn	**Sn**	**04 21 29.4**	**-1.9**
DRME	**Dracevica, Mon**	**2.76**	**106**	*e*Pn	**Pn**	**04 21 05.6**	**+0.1**
CRES	**Cresnjev**	**2.84**	**358**	⇑*i*Pn	**Pn**	**04 21 06.3**	**-0.3**
CRES				*e*Sn	**Sn**	**04 21 39.1**	**-2.2**
VISS	**Visnje**	**2.87**	**349**	*e*Pn	**Pn**	**04 21 07.3**	**+0.4**
VISS	**Visnje**	**2.87**	**349**	*e*Pn	**Pn**	**04 21 07.3**	**+0.4**
CEY	**Cerknica**	**2.88**	**343**	*e*Pn	**Pn**	**04 21 07.2**	**+0.1**
CEY				*e*Sn	**Sn**	**04 21 41.0**	**-1.3**
BBLS	**Lazići**	**2.90**	**71**	*e*Pn	**Pn**	**04 21 08.7**	**+1.2**
BBLS				*e*Sn	**Sn**	**04 21 43.8**	**+0.9**
BBLS	**Lazići**	**2.90**	**71**	*e*Pn	**Pn**	**04 21 07.6**	**+0.1**
BBLS				*e*Sn	**Sn**	**04 21 43.8**	**+0.9**
LJU	**Ljubljana**	**3.15**	**346**	⇑*i*Pn	**Pn**	**04 21 11.2**	**+0.4**
LJU				*e*Sn	**Sn**	**04 21 48.0**	**-1.0**
SJES	**Sjenica**	**3.21**	**84**	*e*Pn	**Pn**	**04 21 13.7**	**+2.0**

CRNS	**Crni Vrh**	**3.24**	**343**	*e*Pn	**Pn**	**04 21 12.3 +0.2**
CRNS	**Crni Vrh**	**3.24**	**343**	*e*Pn	**Pn**	**04 21 12.3 +0.2**
VOJS	**Vojsko**	**3.28**	**338**	*e*Pn	**Pn**	**04 21 12.7 0.0**
VOJS	**Vojsko**	**3.28**	**338**	*e*Pn	**Pn**	**04 21 12.7 0.0**
IVAS	**Ivanjica**	**3.37**	**78**	*e*Pn	**Pn**	**04 21 15.1 +1.2**
IVAS	**Ivanjica**	**3.37**	**78**	*e*Pn	**Pn**	**04 21 15.1 +1.2**
DIVS	**Divibare**	**3.37**	**69**	*e*Pn	**Pn**	**04 21 15.4 +1.4**
DIVS	**Divibare**	**3.37**	**69**	*e*Pn	**Pn**	**04 21 15.4 +1.4**
OBKA	**Obir** 2.5nm,0.3s	**3.60**	**348**	*i* Pn	**Pn**	**04 21 17.7 +0.6**
OBKA				*e*Sn	**Sn**	**04 22 02.2 +2.0**
OBKA	**Obir** 2.5nm,0.3s	**3.60**	**348**	Pn	**Pn**	**04 21 17.7 +0.6**
OBKA				Sn	**Sn**	**04 22 02.2 +2.0**
TRUS	**Trudelj**	**3.69**	**69**	*e*Pn	**Pn**	**04 21 19.8 +1.5**
TRUS	**Trudelj**	**3.69**	**69**	*e*Pn	**Pn**	**04 21 19.8 +1.5**
SOKA	**Soboth** 1.0nm,0.2s	**3.71**	**354**	*i* Pn	**Pn**	**04 21 18.6 0.0**
SOKA	**Soboth** 1.0nm,0.2s	**3.71**	**354**	Pn	**Pn**	**04 21 18.6 0.0**
ARSA	**Arzberg** 1.1nm,0.2s	**4.26**	**359**	*i* Pn	**Pn**	**04 21 26.0 -0.1**
ARSA	**Arzberg** 1.1nm,0.2s	**4.26**	**359**	Pn	**Pn**	**04 21 26.0 -0.1**
KBA	**Koelnbreinsper** 1.4nm,0.3s	**4.39**	**339**	*i* Pn	**Pn**	**04 21 28.3 +0.3**
KBA				*i* Sn	**Sn**	**04 22 20.1 +0.2**
KBA	**Koelnbreinsper** 1.4nm,0.3s	**4.39**	**339**	Pn	**Pn**	**04 21 28.3 +0.3**
KBA				Sn	**Sn**	**04 22 20.1 +0.2**
MOA	**Molln** 4.4nm,0.5s	**4.95**	**349**	*i* Pn	**Pn**	**04 21 36.5 +0.9**
MOA				*i* Sn	**Sn**	**04 22 34.0 +0.6**
MOA	**Molln** 4.4nm,0.5s	**4.95**	**349**	Pn	**Pn**	**04 21 36.5 +0.9**
MOA				Sn	**Sn**	**04 22 34.0 +0.6**

MEX 02 04:24:03.2±0.7, 19.09N×103.05W, h62km±14km, MD3.8, Jalisco

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EZ5V		**0.65**	**306**	*i* P	Pn	04 24 15.5	-1.8
EZ5V				*e*S	Sn	04 24 26.3	-1.4
MMIG	**Aquila**	**0.85**	**200**	*e*P	Pn	04 24 17.7	-1.7
MMIG				*i* S	Sn	04 24 29.9	-1.6
R15V		**0.89**	**275**	*e*P	Pn	04 24 19.3	-0.7
R15V				*i* S	Sn	04 24 30.2	-2.2
MOIG	**Morelia**	**1.85**	**71**	*e*P	Pn	04 24 30.6	-2.2
MOIG				*i* S	Sn	04 24 53.0	-2.3
ZIIG	**Zihuatanejo**	**2.11**	**134**	*i* P	Pn	04 24 35.0	-1.1
ZIIG				*i* S	Sn	04 25 00.1	-1.2
ANIG	**Ahuacatlan**	**2.39**	**325**	*i* P	Pn	04 24 38.9	-1.3
ANIG				*i* S	Sn	04 25 07.0	-1.4
ARIG	**Puente Sto Nin**	**2.68**	**107**	*e*P	Pn	04 24 43.3	-0.7
ARIG				*i* S	Sn	04 25 13.2	-2.2

*ISCJB **02** 04:29:36.1±0.7, 35.45N±0.04×141.07E±0.08, h43km±6km, mb3.5/7, MS2.6/2, Error ellipse: s-maj=10.4km s-min=7.2km az=174.9*
*JMA **02** 04:29:37.2±0.2, 35.55N×140.94E, h39km±1km, M3.0*
*IDC **02** 04:29:38.9±2.2, 35.40N×141.00E, h49km±21km, mb3.3/7, mb1 3.6/10, mb1mx3.3/51, mbtmp3.6/10, ML3.7/3, MS2.6/7, Ms1 2.6/7, ms1mx2.5/22, Error ellipse: s-maj=27.6km s-min=13.9km az=85.0*

ISC 02 04:29:37.2±1.1, 35.45N±0.05×141.00E±0.08, h30km±7km, n26, σ1.10/26, mb3.5/7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.28**	**337**	P	**Pb**	**04 29 44.1**	**-0.3**
CHOJ				S	**Sb**	**04 29 49.3**	**0.0**
KTR	**Katsuura**	**0.63**	**242**	P	**Pn**	**04 29 50.5**	**+0.4**
JCN	**Nagara**	**0.65**	**268**	P	**Pn**	**04 29 50.5**	**+0.2**
BSO4	**Boso 4**	**0.70**	**230**	P	**Pn**	**04 29 51.9**	**+0.9**
BSO3	**Boso 3**	**0.76**	**212**	P	**Pb**	**04 29 51.8**	**+0.1**
BSO1	**Boso 1**	**0.79**	**181**	P	**Pb**	**04 29 52.6**	**+0.5**
JIM2	**Oshima 3**	**1.47**	**241**	P	**Pn**	**04 30 00.8**	**-0.9**
JIM2				*e*S	**Sn**	**04 30 20.0**	**0.0**
JOD2	**Odawara 2**	**1.57**	**264**	P	**Pn**	**04 30 02.2**	**-0.9**
JOD2				*e*S	**Sn**	**04 30 21.1**	**-1.3**
JAG	**Ashikaga**	**1.59**	**308**	P	**Pn**	**04 30 02.1**	**-1.2**
MJAR	**Matsushiro Arr** 3.9nm,0.3s,baz=154,slow=14,SNR=19	**2.51**	**297**	P	**Pn**	**04 30 17.1**	**+1.1**
MJAR				LR	LR	04 31 37.9	
	comp=Z,44nm,19.0s,baz=185,slow=48						
MAT	**Matsushiro**	**2.51**	**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAGZ	Rawiri	3.23	199	PN	Pn	04 59 04.1	+0.6
RAGZ				SN	S	04 59 47.3	+0.9
RAGZ	Rawiri	3.23	199	Pn	Pn	04 59 04.1	+0.6
RAGZ				Sn	S	04 59 47.3	+0.9
RIGZ	Rimuhau	3.36	193	PN	Pn	04 59 05.0	+0.2
RIGZ				SN	S	04 59 48.2	-0.6
MUGZ	Murupara	3.42	207	PN	Pn	04 59 06.1	+0.6
SNGZ	Shannon Statio	3.52	198	||PN	Pn	04 59 07.4	+0.7
SNGZ	Shannon Statio	3.52	198	Pn	Pn	04 59 07.4	+0.7
KNZ	Kokohu	3.68	193	PN	Pn	04 59 08.3	-0.2
KNZ	Kokohu	3.68	193	Pn	Pn	04 59 08.3	-0.2
MHGZ	Mahia Peninsul	3.77	190	Pn	Pn	04 59 10.0	+0.4
WHHZ	Waihua	3.83	198	PN	Pn	04 59 10.3	0.0
NMHZ	Naumai	3.96	202	PN	Pn	04 59 12.6	+0.6
NMHZ	Naumai	3.96	202	Pn	Pn	04 59 12.9	+0.9
ARHZ	Aropaoanui	4.06	199	PN	Pn	04 59 13.1	+0.1
ARHZ	Aropaoanui	4.06	199	Pn	Pn	04 59 13.5	+0.5
BKZ	Black Stump Fm	4.13	205	||PN	Pn	04 59 14.5	+0.6
BKZ	Black Stump Fm	4.13	205	Pn	Pn	04 59 14.5	+0.6
MCHZ	McNeill Hill	4.32	201	PN	Pn	04 59 16.6	+0.6
MCHZ	McNeill Hill	4.32	201	Pn	Pn	04 59 16.6	+0.6
KWHZ	Kaweka Forest	4.38	204	PN	Pn	04 59 17.3	+0.3
BHHZ	Black Hill Sta	4.57	207	PN	Pn	04 59 19.8	+0.6
BHHZ	Black Hill Sta	4.57	207	Pn	Pn	04 59 19.8	+0.6
KAHZ	Kahuranaki	4.59	198	PN	Pn	04 59 19.7	+0.2
KAHZ	Kahuranaki	4.59	198	Pn	Pn	04 59 19.9	+0.4
KRHZ	Kereru	4.60	203	PN	Pn	04 59 19.2	-0.4
MOVZ	Moawhango	4.62	210	ePN	Pn	04 59 20.4	+0.5
PXZ	Pawanui	4.82	197	PN	Pn	04 59 21.7	-0.5
PXZ	Pawanui	4.82	197	Pn	Pn	04 59 21.7	-0.5
PNHZ	Pukenui	4.90	203	ePN	Pn	04 59 22.2	-1.0
PNHZ	Pukenui	4.90	203	Pn	Pn	04 59 22.8	-0.4
MRZ	Mangatainoka R	5.78	204	PN	Pn	04 59 33.2	-0.9
MRZ	Mangatainoka R	5.78	204	Pn	Pn	04 59 33.2	-0.9
TIWZ	Tintock	5.78	202	PN	Pn	04 59 34.1	-0.1
TIWZ	Tintock	5.78	202	Pn	Pn	04 59 34.1	-0.1
HOWZ	Holdsworth Sta	6.01	204	PN	Pn	04 59 36.0	-1.0
HOWZ	Holdsworth Sta	6.01	204	Pn	Pn	04 59 36.1	-0.9
OGWZ	Otaki Gorge	6.06	206	PN	Pn	04 59 37.2	-0.4
OGWZ	Otaki Gorge	6.06	206	Pn	Pn	04 59 37.2	-0.4
KIW	Kapiti Island	6.20	208	PN	Pn	04 59 38.8	-0.6
KIW	Kapiti Island	6.20	208	Pn	Pn	04 59 38.8	-0.5
CAW	Cannon Point	6.35	206	ePN	Pn	04 59 40.4	-1.0
DUWZ	D'Urville Isla	6.56	214	PN	Pn	04 59 43.6	-0.4
DUWZ	D'Urville Isla	6.56	214	Pn	Pn	04 59 43.6	-0.4
SNZO	South Karori	6.66	207	ePn	Pn	04 59 42.4	-2.8
SNZO				eS	S	05 01 02.6	+0.5
TCW	Tory Channel	6.74	210	PN	Pn	04 59 45.4	-0.9
TCW	Tory Channel	6.74	210	Pn	Pn	04 59 45.4	-0.9
THZ	Tophouse	7.79	214	PN	Pn	04 59 59.1	-0.5
KHZ	Kahutara	8.06	209	PN	Pn	05 00 02.4	-0.5
KHZ				SN	S	05 01 31.6	-2.8
KHZ	Kahutara	8.06	209	ePn	Pn	05 00 02.5	-0.5
KHZ				eS	S	05 01 26.6	-7.9
LTZ	Lake Taylor	8.88	212	ePN	Pn	05 00 12.4	-1.2
LTZ	Lake Taylor	8.88	212	Pn	Pn	05 00 12.5	-1.1
CTZ	Chatham Island	9.04	158	PN	P	05 00 20.2	-3.0
OXZ	Oxford	9.43	211	ePN	Pn	05 00 19.3	-1.1
MQZ	McQueen's Vall	9.49	208	ePN	Pn	05 00 19.6	-1.7
MQZ				SN	S	05 02 03.4	-4.7

DDA ***02*** *05:00:00.9, 38.°90N×26.°76E, h29km, Md2.9*
ATH ***02*** *05:00:01.2, 38.°89N×26.°76E, h25km±3km, ML2.7/3, Error ellipse: s-maj=5.4km s-min=1.4km az=264.0*
ISCJB ***02*** *05:00:01.8±0.4, 38.°90N±0.°01×26.°73E±0.°03, h6km±3km, Error ellipse: s-maj=3.7km s-min=2.4km az=163.9*
THE ***02*** *05:00:01.9, 38.°88N×26.°72E, h5km±1km, ML2.8/6, Error ellipse: s-maj=1.8km s-min=0.5km az=246.0*
CSEM ***02*** *05:00:01.9±0.1, 38.°88N×26.°74E, h8km, MD3.3, Error ellipse: s-maj=2.6km s-min=2.2km az=67.0*
ISK ***02*** *05:00:02.1, 38.°93N×26.°77E, h7km, MD3.3*
ISC 02 05:00:01.3±1.0, 38.°87N±0.°01×26.°72E±0.°02, h9km±9km, n97, σ0°55/151, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DKL	Dikili	0.25	36	ePG	Pg	05 00 06.2	-0.1
DKL	Dikili	0.25	36	ePg	Pg	05 00 06.2	-0.1
AYVA	Ayvalik	0.44	357	P	Pg	05 00 10.0	+0.1
AYVA				S	Sb	05 00 17.2	-0.8
AYVA	Ayvalik	0.44	357	*i* P	Pg	05 00 10.0	+0.1
AYVA				*i* S	Sb	05 00 17.2	-0.8
PRK	Paraskevi	0.51	317	P	Pg	05 00 11.8	+0.5
PRK				S	Sb	05 00 19.6	-0.5
PRK	Paraskevi	0.51	317	P	Pg	05 00 11.8	+0.5
PRK				S	Sb	05 00 19.6	-0.5
PRK	Paraskevi	0.51	317	P	Pg	05 00 12.0	+0.7
PRK				S	Sb	05 00 19.9	-0.3
PRK				AML	AML	05 00 22.1	
	comp=N,1884μm,0.4s						
PRK				AML	AML	05 00 24.6	
	comp=E,1644μm,0.4s						
URLA	Izmir	0.52	191	P	Pg	05 00 11.7	+0.3
URLA				S	Sb	05 00 20.8	+0.5
URLA	Izmir	0.52	191	*i* P	Pg	05 00 11.7	+0.3
URLA				*i* S	Sb	05 00 20.8	+0.5
ZEY	¨zmir	0.65	195	*i* P	Pg	05 00 13.7	-0.3
ZEY				*i* S	Sn	05 00 25.8	-1.4
CHOS	Chios island	0.71	227	ePG	Pn	05 00 17.5	-0.2
CHOS	Chios island	0.71	227	P	Pb	05 00 15.6	-0.4
CHOS				S	Sb	05 00 26.5	+0.6
CHOS	Chios island	0.71	227	P	Pb	05 00 15.6	-0.4
CHOS	Chios island	0.71	227	ePg	Pn	05 00 17.5	-0.2
CHOS				S	Sb	05 00 26.5	+0.6
CHOS	Chios island	0.71	227	P	Pg	05 00 15.2	+0.1
CHOS				S	Sn	05 00 28.6	-0.2
CHOS				AML	AML	05 00 29.0	
	comp=E,3633μm,0.3s						
CHOS				AML	AML	05 00 29.0	
	comp=N,1967μm,0.3s						
SIGR	SIGRI	0.76	297	ePG	Pb	05 00 17.1	+0.4
SIGR				eSG	Sn	05 00 29.3	-0.5
SIGR	SIGRI	0.76	297	P	Pb	05 00 16.4	-0.2
SIGR				S	Sb	05 00 27.3	+0.2
SIGR	SIGRI	0.76	297	P	Pb	05 00 16.5	-0.2
SIGR	SIGRI	0.76	297	ePg	Pb	05 00 17.1	+0.4
SIGR				S	Sb	05 00 27.3	+0.2
SIGR	SIGRI	0.76	297	P	Pb	05 00 16.5	-0.2
SIGR				S	Sb	05 00 27.3	+0.2
SIGR				AML	AML	05 00 30.6	
	comp=E,1231μm,0.4s						
SIGR				AML	AML	05 00 31.3	
	comp=N,768μm,0.3s						
AKS	Akhisar	0.85	89	ePG	Pg	05 00 17.7	0.0
AKS	Akhisar	0.85	89	ePg	Pg	05 00 17.7	0.0
AKHS	Akhisar	0.85	89	P	Pg	05 00 17.6	-0.1
AKHS				S	Sg	05 00 29.1	+0.2
AKHS	Akhisar	0.85	89	*i* P	Pg	05 00 17.6	-0.1
AKHS				*i* S	Sg	05 00 29.1	+0.2
EZN	Ezine	1.00	342	ePG	Pb	05 00 21.0	+0.1
EZN				eSG	Sg	05 00 34.1	+0.5
EZN	Ezine	1.00	342	P	Pb	05 00 21.0	+0.1
EZN				S	Sb	05 00 34.3	+0.1
EZN	Ezine	1.00	342	P	Pb	05 00 21.0	+0.1
EZN				S	Sb	05 00 34.3	+0.1
BOZC	Bozcaada	1.10	332	*i* P	Pg	05 00 21.9	-0.6
BOZC				*i* S	Sb	05 00 37.5	+0.5
BALY	Balya	1.11	38	P	Pg	05 00 22.3	-0.5
BALY				S	Sn	05 00 38.3	-0.4
BALY	Balya	1.11	38	*i* P	Pg	05 00 22.3	-0.5
BALY				*i* S	Sn	05 00 38.3	-0.4
SMG	Samos	1.16	175	P	Pb	05 00 23.3	-0.3
SMG				S	Sn	05 00 40.1	+0.2
SMG	Samos	1.16	175	P	Pg	05 00 23.5	-0.2
SMG				S	Sn	05 00 40.1	+0.2
SMG	Samos	1.16	175	P	Pg	05 00 23.5	-0.2
SMG				S	Sn	05 00 41.2	+1.3
BALB	Balikesir	1.18	49	ePN	Pb	05 00 23.7	-0.3
BALB				eSN	Sn	05 00 40.3	-0.1
BALB	Balikesir	1.18	49	ePn	Pb	05 00 23.7	-0.3
BALB				eSn	Sn	05 00 40.3	-0.1
GCAM	G?zelcaml?	1.24	161	P	Pn	05 00 24.6	-0.2
GCAM				S	Sg	05 00 40.8	-0.3
GCAM	G?zelcaml?	1.24	161	*i* P	Pn	05 00 24.6	-0.2
GCAM				*i* S	Sg	05 00 40.8	-0.3
AYDB	Zeytinkoy-Aydi	1.30	135	ePN	Pg	05 00 26.9	+0.6
AYDB	Zeytinkoy-Aydi	1.30	135	ePn	Pg	05 00 26.9	+0.6
GONE	Gonen-Balikesi	1.39	32	ePN	Pb	05 00 27.7	+0.1
GONE	Gonen-Balikesi	1.39	32	ePn	Pb	05 00 27.7	+0.1
LPK	Lapseki	1.50	1	ePN	Pb	05 00 29.4	0.0
LPK				eSN	Sb	05 00 48.8	+0.2
LPK	Lapseki	1.50	1	ePn	Pb	05 00 29.4	0.0
LPK				eSn	Sb	05 00 48.8	+0.2
AYDN	Tasoluk	1.51	143	P	Pn	05 00 28.0	-0.7
AYDN				S	Sg	05 00 49.3	-0.7
AYDN	Tasoluk	1.51	143	*i* P	Pn	05 00 28.0	-0.7
AYDN				*i* S	Sg	05 00 49.3	-0.7
KNL	Bal¨–kesir	1.53	24	*i* P	Pn	05 00 27.6	-1.3
KNL				*i* S	Sn	05 00 48.9	0.0
GELI	Tayfur-Gelibol	1.54	353	ePN	Pb	05 00 29.7	-0.4
GELI	Tayfur-Gelibol	1.54	353	ePn	Pb	05 00 29.7	-0.4
DURS	Dursunbey	1.54	61	P	Pn	05 00 28.4	-0.8
DURS				S	Sn	05 00 49.2	-0.3
DURS	Dursunbey	1.54	61	*i* P	Pn	05 00 28.4	-0.8
DURS				*i* S	Sn	05 00 49.2	-0.3
KULA	Kula-Manisa	1.56	103	ePN	Pg	05 00 31.0	-0.2
KULA	Kula-Manisa	1.56	103	P	Pn	05 00 29.0	-0.4
KULA				S	Sb	05 00 50.4	+0.1
KULA	Kula-Manisa	1.56	103	P	Pn	05 00 29.0	-0.4
KULA	Kula-Manisa	1.56	103	ePn	Pg	05 00 31.0	-0.2
KULA				S	Sb	05 00 50.4	+0.1
DEMI	Demirci	1.56	83	P	Pb	05 00 30.5	-0.1
DEMI				S	Sn	05 00 49.8	-0.1
DEMI	Demirci	1.56	83	*i* P	Pb	05 00 30.5	-0.1
DEMI				*i* S	Sn	05 00 49.8	-0.1
LIA	Limnos Island	1.57	311	P	Pn	05 00 29.6	+0.1
LIA	Limnos Island	1.57	311	P	Pn	05 00 29.6	+0.1
KRBG	Karabiga-Canak	1.58	16	ePN	Pn	05 00 29.7	+0.1
KRBG	Karabiga-Canak	1.58	16	ePn	Pn	05 00 29.7	+0.1
EDC	Edincik	1.72	31	ePN	Pn	05 00 31.7	+0.2
EDC	Edincik	1.72	31	ePn	Pn	05 00 31.7	+0.2
ERIK	Erikli-Kesan	1.81	355	ePN	Pn	05 00 33.2	+0.6
ERIK	Erikli-Kesan	1.81	355	ePn	Pn	05 00 33.2	+0.6
SMTH	Samothraki Isl	1.84	330	P	Pn	05 00 33.2	0.0
SMTH				S	Sn	05 00 56.9	+0.2
SMTH	Samothraki Isl	1.84	330	P	Pn	05 00 33.2	0.0
SMTH				S	Sn	05 00 56.9	+0.2
SMTH	Samothraki Isl	1.84	330	P	Pn	05 00 33.2	0.0
SMTH				S	Sn	05 00 56.9	+0.2
RKY	Sarkoy-Tekirda	1.85	11	ePN	Pn	05 00 33.8	+0.5
RKY	Sarkoy-Tekirda	1.85	11	ePn	Pn	05 00 33.8	+0.5
SART	Tekirdag	1.85	11	P	Pn	05 00 33.2	-0.2
SART				S	Sb	05 00 58.5	-0.2
SART	Tekirdag	1.85	11	*i* P	Pn	05 00 33.2	-0.2
SART				*i* S	Sb	05 00 58.5	-0.2
MRMT	Marmara Adasi	1.86	21	ePN	Pn	05 00 33.9	+0.4
MRMT	Marmara Adasi	1.86	21	ePn	Pn	05 00 33.9	+0.4
KCTX	Karacabey (Bur	1.88	42	ePN	Pb	05 00 35.0	-0.9
KCTX	Karacabey (Bur	1.88	42	ePn	Pb	05 00 35.0	-0.9
BDRM	Kayabasi	1.89	162	P	Pg	05 00 37.2	-0.4
BDRM				S	Sg	05 01 02.6	+0.5
BDRM	Kayabasi	1.89	162	*i* P	Pg	05 00 37.2	-0.4
BDRM				*i* S	Sg	05 01 02.6	+0.5
ALN	Alexandroupoli	2.09	346	ePN	Pn	05 00 38.0	+1.4
ALN	Alexandroupoli	2.09	346	P	Pn	05 00 36.9	+0.3
ALN				S	Sn	05 01 02.8	+0.1
ALN	Alexandroupoli	2.09	346	P	Pn	05 00 37.1	+0.5
ALN	Alexandroupoli	2.09	346	ePn	Pn	05 00 38.0	+1.4
ALN				S	Sn	05 01 02.8	+0.1
ALN	Alexandroupoli	2.09	346	P	Pn	05 00 37.1	+0.5
YER	Yerkesik	2.13	144	ePN	Pb	05 00 39.7	-0.4
YER	Yerkesik	2.13	144	ePn	Pb	05 00 39.7	-0.4
GDZ	Gediz	2.16	83	P	Pb	05 00 41.7	+0.9
GDZ				S	Sb	05 01 08.8	+1.1
GDZ	Gediz	2.16	83	*i* P	Pb	05 00 41.6	+0.9
GDZ				*i* S	Sb	05 01 08.8	+1.1
TVSB	Tavsanli	2.21	74	ePN	Pn	05 00 39.7	+1.4
TVSB	Tavsanli	2.21	74	ePn	Pn	05 00 39.7	+1.4
MDNY	Mudanya-Bursa	2.24	47	ePN	Pn	05 00 40.1	+1.4
MDNY	Mudanya-Bursa	2.24	47	ePn	Pn	05 00 40.1	+1.4
ULDT	Uludag	2.26	55	P	Pb	05 00 42.7	+0.3
ULDT				S	Sb	05 01 11.5	+0.9
ULDT	Uludag	2.26	55	*i* P	Pb	05 00 42.7	+0.3
ULDT				*i* S	Sb	05 01 11.5	+0.9
IGD	Bursa	2.37	53	*i* P	Pb	05 00 44.5	+0.2
IGD				*i* S	Sg	05 01 15.7	-1.8
PAIG	Paliouri	2.58	295	P	Pn	05 00 43.2	-0.1
PAIG	Paliouri	2.58	295	P	Pn	05 00 43.2	-0.1
KAVA	Kavala	2.72	322	P	Pn	05 00 45.5	+0.3
KAVA	Kavala	2.72	322	P	Pn	05 00 45.5	+0.3

NIED ***02*** *05:08:00, 37.°90N×142.°40E, h35km, Mw3.7 Best double couple: M0=4.57000×10^14 NP1:φ=271.00000°, δ=8.00000°, λ=83.00000°. NP2:φ=99.00000°, δ=82.00000°, λ=91.00000°.*
JMA ***02*** *05:08:14.7±0.2, 37.°88N×142.°45E, h42km±4km, M3.8*
IDC ***02*** *05:08:17.6±2.6, 37.°82N×142.°38E, h55km±24km, mb3.4/10, mb1 3.6/13, mb1mx3.4/45, mbtmp3.7/13, ML3.7/3, MS2.6/5, Ms1 2.6/5, ms1mx2.4/35, Error ellipse: s-maj=24.7km s-min=14.9km az=108.0*
ISC 02 05:08:12.1±2.1, 37.°81N±0.°05×142.°47E±0.°07, h13km±12km, n26, σ1°47/31, mb3.8/10, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	1.09	307	P	Pg	05 08 33.3	+0.2
JIO				S	Sg	05 08 46.2	-1.2
JMM	Marumori	1.33	273	P	Pn	05 08 36.9	+0.6
JMM				eS	Sb	05 08 52.9	-0.8
JFK	Kawauchi	1.34	251	P	Pn	05 08 37.1	+0.6
JFK				eS	Sb	05 08 53.4	-0.7
OFUJ	Ofunato	1.42	334	P	Pn	05 08 37.4	-0.1
OFUJ				eS	Sb	05 08 54.0	-2.3
JMK	Ichinoseki	1.50	320	P	Pn	05 08 39.3	+0.6
JMK				S	Sn	05 08 57.3	-0.9
JOU	Okura	1.53	292	P	Pn	05 08 40.3	+1.2
JOU				S	Sn	05 08 58.8	0.0
JFT	Otama	1.71	261	P	Pn	05 08 43.6	+2.0
JFT				eS	Sn	05 09 04.3	+0.9
JOM	Ohasama	1.90	331	P	Pn	05 08 45.1	+0.9
JYK	Kaneyama	1.99	304	P	Pn	05 08 46.7	+1.3
MJAR	Matsushiro Arr	3.63	251	P	Pn	05 09 10.6	+2.6
	2.0nm,0.3s,baz=81,slow=14,SNR=7.6						
MJAR				LR	LR	05 10 50.6	
	comp=Z,74nm,21.2s,baz=65,slow=43						
MAT	Matsushiro	3.63	251	P	Pn	05 09 08.7	+0.7
JHJ	Hachijo jima 2	5.17	206	P	Pn	05 09 30.8	+1.7
	29nm,0.3s,baz=110,slow=23,SNR=8.4						
JHJ				S	Sn	05 10 24.9	-3.6
	19nm,0.3s,baz=248,slow=23,SNR=4.5						
ASAJ	Asahikawa	6.30	1	P	Pn	05 09 48.4	+3.8
	1.3nm,0.3s,baz=234,slow=8.7,SNR=4.3						
ASAJ				LR	LR	05 12 23.2	
	comp=Z,77nm,22.0s,baz=160,slow=39						
JNU	Nakatsue	10.54	247	LR	LR	05 15 23.8	
	comp=Z,38nm,18.6s,baz=151,slow=41						
KSRS	Korea Array	11.54	273	LR	LR	05 15 04.9	
	comp=Z,20nm,19.2s,baz=35,slow=35						
MA2	Magadan	22.43	11	LR	LR	05 23 52.4	
	comp=Z,24nm,18.6s,baz=310,slow=42						
SEY	Seymchan	25.87	10	P	P	05 13 43.8	+0.6
	2.2nm,0.6s,baz=195,slow=7.5,SNR=7.8						
MKAR	Makanchi Array	44.42	302	P	P	05 16 22.1	-0.4
	0.3nm,0.6s,baz=96,slow=10,SNR=3.4						
KURBB	Kurchatov Arra	46.19	308	P	P	05 16 36.1	-0.2
	0.9nm,0.4s,baz=82,slow=8.0,SNR=12						
ILAR	Eielson Array	48.39	33	P	P	05 16 53.4	0.0
	0.8nm,0.7s,baz=267,slow=6.6,SNR=9.1						
INK	Inuvik	53.31	27	P	P	05 17 31.0	+0.7
	1.2nm,1.1s,baz=295,slow=6.3,SNR=6.0						
WRA	Warramunga Arr	57.95	189	P	P	05 18 03.8	-0.4
	0.5nm,0.5s,baz=6.6,slow=7.4,SNR=6.6						
ASAR	Alice Springs	61.68	189	P	P	05 18 30.6	+0.8
	0.3nm,0.6s,baz=14,slow=8.9,SNR=3.7						
YKA	Yellowknife Ar	62.72	31	P	P	05 18 36.2	0.0
	0.2nm,0.6s,baz=303,slow=6.6,SNR=5.9						
FINES	FINESS Array B	68.52	332	P	P	05 19 13.1	-0.6
	1.7nm,0.8s,baz=54,slow=12,SNR=3.4						
PDAR	Pinedale Array	76.53	46	P	P	05 20 02.4	+0.3
	0.2nm,0.6s,baz=135,slow=0.6,SNR=4.5						

ISCJB ***02*** *05:19:09.7±0.5, 37.°17N±0.°06×142.°46E±0.°05, h9km, mb4.0/14, Error ellipse: s-maj=8.7km s-min=5.6km az=169.1*
JMA ***02*** *05:19:10.5±0.3, 37.°15N×142.°44E, h23km, M4.0*
IDC ***02*** *05:19:18.0±2.6, 37.°08N×142.°28E, h63km±25km, mb3.6/13, mb1 3.8/17, mb1mx3.7/47, mbtmp3.9/17, ML3.5/3, MS3.2/2, Ms1 3.2/2, ms1mx2.5/39, Error ellipse: s-maj=20.7km s-min=14.2km az=89.0*
ISC 02 05:19:11.4±0.7, 37.°17N±0.°07×142.°27E±0.°06, h9km, n29, σ1°07/27, mb3.9/14, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	1.13	281	P	Pn	05 19 33.1	-0.4
JFK				eS	Sn	05 19 50.1	+1.0
ONAJ	Iwakimizuishiy	1.18	267	P	Pb	05 19 33.5	-0.5
JMM	Marumori	1.36	301	P	Pn	05 19 36.3	-0.3
JHO	Hitachi	1.47	248	P	Pn	05 19 37.5	-0.6
JIO	Ouri	1.48	331	P	Pn	05 19 37.3	-0.9
JFT	Otama	1.58	283	P	Pb	05 19 40.2	-0.6
JFT				eS	Sb	05 20 00.9	0.0
JOU	Okura	1.75	314	P	Pn	05 19 42.4	+0.5
MJAR	Matsushiro Arr	3.31	260	P	Pn	05 20 05.8	+2.3
	7.2nm,0.3s,baz=89,slow=15,SNR=32						
MJAR				LR	LR	05 21 06.3	
	comp=Z,28nm,20.0s,baz=70,slow=33						
MAT	Matsushiro	3.32	260	P	Pb	05 20 06.8	-3.6
MAT				S	Sb	05 20 48.6	-2.3
JHJ	Hachijo jima 2	4.52	207	P	Pn	05 20 21.4	+1.4
	7.9nm,0.3s,baz=154,slow=23,SNR=3.4						
ASAJ	Asahikawa	6.95	2	P	Pn	05 20 54.2	+0.8
	2.0nm,0.3s,baz=237,slow=9.2,SNR=5.1						
JNU	Nakatsue	10.16	250	P	Pn	05 21 41.9	+4.4
	0.3nm,0.3s,baz=66,slow=10.0,SNR=3.9						
USRK	Ussuriysk Ar.	10.50	315	P	Pn	05 21 48.5	+6.5
	0.2nm,0.3s,baz=125,slow=15,SNR=12						
USRK				LR	LR	05 25 32.1	
	comp=Z,90nm,18.5s,baz=136,slow=35						
KSRS	Korea Array	11.43	276	P	Pn	05 22 01.5	+6.7
	0.2nm,0.3s,baz=91,slow=14,SNR=8.5						
KLR	Kul'dur	14.27	331	LR	LR	05 28 12.3	
	comp=Z,92nm,18.0s,baz=133,slow=37						
SEY	Seymchan	26.53	10	P	P	05 24 51.2	+2.1
	2.2nm,0.8s,baz=171,slow=7.8,SNR=4.9						
SONM	Songino Array	26.28	304	P	P	05 25 06.0	+0.9
	1.9nm,0.8s,baz=102,slow=9.3,SNR=10						
ZALV	Zalesovo Beam	42.33	312	P	P	05 27 05.3	-0.1
	0.6nm,0.3s,baz=74,slow=6.6,SNR=3.9						
MKAR	Makanchi Array	44.63	302	P	P	05 27 24.2	+0.1
	1.0nm,0.6s,baz=90,slow=9.7,SNR=7.4						
PMG	Port Moresby	46.55	173	P	P	05 27 40.1	+0.6
	30nm,0.4s,baz=180,slow=21,SNR=12						
ILAR	Eielson Array	49.02	32	P	P	05 27 58.0	-0.1
	1.1nm,0.8s,baz=265,slow=6.8,SNR=11						
INK	Inuvik	53.96	27	P	P	05 28 35.3	+0.2
	0.7nm,0.7s,baz=293,slow=7.2,SNR=4.8						
WRA	Warramunga Arr	57.29	189	P	P	05 28 57.7	-1.8
	1.9nm,0.6s,baz=6.3,slow=7.3,SNR=6.2						
ASAR	Alice Springs	61.02	189	P	P	05 29 24.5	-0.9
	0.5nm,0.4s,baz=1.5,slow=6.9,SNR=4.2						
YKA	Yellowknife Ar	63.35	30	P	P	05 29 39.7	-0.8
	0.3nm,0.9s,baz=298,slow=6.1,SNR=4.7						
FINES	FINESS Array B	69.01	332	P	P	05 30 17.5	+0.6
	2.4nm,0.7s,baz=46,slow=8.2,SNR=8.5						
NVAR	Mina Array Bea	74.36	54	P	P	05 30 49.7	-0.1
	0.7nm,0.8s,baz=285,slow=5.2,SNR=6.5						
AKASG	Malin Array Be	74.61	323	P	P	05 30 50.4	-0.3
	1.6nm,0.7s,baz=45,slow=6.0,SNR=5.6						
PDAR	Pinedale Array	77.08	46	P	P	05 31 04.8	-0.5
	0.3nm,0.6s,baz=357,slow=3.0,SNR=3.8						

IDC 02 05:20:30.4±1.9, 58.°07S×25.°44W, h0km, mb3.9/1, mb1 3.9/1, mb1mx3.6/17, mbtmp3.9/1, Error ellipse: s-maj=113.8km s-min=65.6km az=137.0, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TORD	Torodi Ar. Bea	74.38	27	P	P	05 32 09.8	0.0
	0.6nm,0.5s,baz=200,slow=6.1,SNR=13						
YKA	Yellowknife Ar	138.30	316	PKP	PKPdf	05 39 55.6	-0.3
	0.2nm,0.4s,baz=132,slow=2.1,SNR=19						
SONM	Songino Array	149.86	89	PKPbc	PKPbc	05 40 21.1	-0.5
	0.6nm,0.3s,baz=236,sl

MJAR	**Matsushiro Arr**	**2.46 270**	P		**Pb**	**05 28 54.2**	**-2.3**
	14nm,0.3s,baz=84,slow=10,SNR=100						
MJAR			LR		LR	05 30 12.3	
	comp=Z,156nm,18.3s,baz=105,slow=47						
MAT	**Matsushiro**	**2.46 270**	P		**Pb**	**05 28 54.5**	**-2.0**
MAT			S		**Sb**	**05 29 26.3**	**-0.2**
ASAJ	**Asahikawa**	**7.58 7**	P		**Pn**	**05 30 03.9**	**+2.7**
	1.1nm,0.3s,baz=225,slow=13,SNR=3.8						
JNU	**Nakatsue**	**9.21 251**	LR		LR	05 34 43.7	
	comp=Z,40nm,19.6s,baz=255,slow=42						
USRK	**Ussuriysk Ar.**	**10.38 320**	P		Pn	05 30 44.2	+4.8
	0.4nm,0.3s,baz=140,slow=12,SNR=6.7						
USRK			LR		LR	05 34 47.5	
	comp=Z,71nm,20.2s,baz=88,slow=38						
KLR	**Kul'dur**	**14.41 334**	LR		LR	05 36 47.2	
	comp=Z,44nm,19.3s,baz=165,slow=36						
PETK	**Petropavlovsk-**	**20.13 30**	LR		LR	05 40 07.9	
	comp=Z,8.2nm,19.4s,baz=338,slow=35						
SONM	**Songino Array**	**27.94 305**	P		**P**	**05 34 00.5**	**+0.1**
	1.6nm,0.9s,baz=104,slow=9.0,SNR=7.7						
ZALV	**Zalesovo Beam**	**42.13 313**	P		**P**	**05 36 02.4**	**+0.4**
	1.7nm,0.5s,baz=108,slow=7.1,SNR=4.8						
MKAR	**Makanchi Array**	**44.26 302**	P		**P**	**05 36 19.6**	**+0.3**
	0.6nm,0.5s,baz=88,slow=10,SNR=7.1						
WRA	**Warramunga Arr**	**56.61 188**	P		**P**	**05 37 53.2**	**+0.4**
	0.4nm,0.9s,baz=6.5,slow=7.2,SNR=5.8						
ASAR	**Alice Springs**	**60.34 188**	P		**P**	**05 38 19.4**	**+0.6**
	0.4nm,0.9s,baz=359,slow=5.3,SNR=4.1						
YKA	**Yellowknife Ar**	**64.25 30**	P		**P**	**05 38 43.7**	**-0.8**
	0.2nm,0.7s,baz=300,slow=6.5,SNR=4.1						
FINES	**FINESS Array B**	**69.15 332**	P		**P**	**05 39 14.7**	**-1.1**
	1.3nm,0.7s,baz=27,slow=9.4,SNR=3.2						
AKASG	**Malin Array Be**	**74.57 322**	P		**P**	**05 39 48.4**	**-0.1**
	0.8nm,0.4s,baz=46,slow=6.3,SNR=7.5						

*IDC **02** 05:33:37.8±1.5, 1°.04S×120°.12E, h0km, mb3.6/3, mb1 3.8/4, mb1mx3.5/34, mbtmp3.7/4, ML3.5/1, MS2.3/1, Ms1 2.3/1, ms1mx2.1/40, Error ellipse: s-maj=80.9km s-min=24.5km az=64.0*
*DJA **02** 05:33:39.9±0.6, 1°.S±4°×11°.9E±°, h10km, M4.3/7, MLv4.3/7*
*ISCJB **02** 05:33:40.4±1.0, 1°.15S±0°.06×119°.20E±0°.07, h33km, mb3.6/3, Error ellipse: s-maj=10.5km s-min=8.0km az=33.1*

ISC 02 05:33:43.0±1.2, 1°.19S±0°.07×119°.26E±0°.07, h35km, n9, σ2°.01/11, mb3.7/3, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TTSI	**Tana Toraja**	**1.93**	**163**	P	**Pn**	**05 34 10.8**	**-2.6**
TTSI				S	**Sn**	**05 34 35.6**	**-0.8**
SPSI	**Sidrap Palu**	**2.81**	**170**	P	**Pn**	**05 34 25.3**	**-0.2**
MRSI	**Marisa**	**3.15**	**58**	P	**Pn**	**05 34 27.1**	**-3.0**
LUWI	**Luwuk**	**3.51**	**88**	P	**Pn**	**05 34 34.9**	**-0.2**
LUWI				S	**Sn**	**05 35 17.9**	**+2.4**
KAPI	**Kappang**	**3.83**	**173**	Pn	**Pn**	**05 34 39.0**	**-0.6**
	3.0nm,0.3s,baz=326,slow=5.4,SNR=6.9						
KAPI				Sn	**Sn**	**05 35 25.2**	**+1.7**
	1.2nm,0.3s,baz=304,slow=23,SNR=4.0						
KAPI				LR	LR	05 35 45.4	
	comp=Z,41nm,21.5s,baz=2.8,slow=32						
BBKI	**Banjar Baru**	**4.96**	**243**	P	**Pn**	**05 34 53.9**	**-1.2**
WRA	**Warramunga Arr**	**23.77**	**143**	P	P	05 38 46.9	-5.7
	2.7nm,0.8s,baz=320,slow=11,SNR=16						
ASAR	**Alice Springs**	**26.48**	**149**	P	**P**	**05 39 16.0**	**-1.2**
	0.9nm,0.9s,baz=342,slow=14,SNR=9.5						
MKAR	**Makanchi Array**	**57.73**	**331**	P	**P**	**05 43 32.4**	**+1.9**
	0.5nm,0.6s,baz=137,slow=6.7,SNR=5.3						

*CSEM **02** 05:36:09.5±0.9, 41°.31N×43°.60E, h15km, ML1.5, Error ellipse: s-maj=51.6km s-min=15.3km az=176.0*

TIF 02 05:36:09.8, 41°.47N×43°.75E, h7km±3km, Turkey-Georgia-Armenia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKH	**Akhalkalaki**	**0.20**	**251**	P	Pg	05 36 14.2	+0.3
AKH				S	Sg	05 36 16.9	+0.3
AKH	**Akhalkalaki**	**0.20**	**251**	P	Pg	05 36 14.2	+0.3
AKH				S	Sg	05 36 17.0	+0.3
TBLG	**Delisi**	**0.79**	**71**	P	Sn	05 36 39.0	-0.4
TBLG	**Delisi**	**0.79**	**71**	P	Pn	05 36 28.9	+1.6
TBLG				S	Sn	05 36 38.6	-0.8
ONI	**Oni**	**1.14**	**349**	P	Pn	05 36 32.4	+0.2
ONI				S	Sn	05 36 48.4	+0.4
DGRG	**David-gareji**	**1.22**	**91**	P	Pn	05 36 33.7	+0.4
DGRG				S	Sn	05 36 52.5	+2.3
DGRG	**David-gareji**	**1.22**	**91**	P	Pn	05 36 33.5	+0.1
DGRG				S	Sb	05 36 49.6	+0.3

*ARO **02** 05:43:09.3, 15°.N±46°×4°.2E±10°.0, h15km±99km, ML3.3*

ISC 02 05:42:59.7±2.6, 15°.10N±0°.09×42°.0E±0°.1, h10km, n9, σ0°.85/12, Red Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HAJJ	**Hajjah**	**1.68**	**69**	*i* P	**Pg**	**05 43 32.0**	**+0.1**
HAJJ				*e*		05 43 32.3	
	baz=269,slow=14						
HAJJ				*i* S	**Sg**	**05 43 54.5**	**+0.8**
HAJJ				AML	AML	05 44 09.9	
	comp=Z,1μm,0.4s						
TRBA	**At Turbah**	**2.79**	**132**	*i* P	**Pb**	**05 43 48.1**	**-1.6**
TRBA				*i* S	**Sg**	**05 44 30.1**	**+0.8**
MAOD	**Malaho**	**3.00**	**175**	*e*P	**Pb**	**05 43 53.5**	**+0.2**
OBO	**Obock**	**3.35**	**157**	*e*P	**Pb**	**05 43 59.7**	**+0.5**
TDD	**Tadjoura Ara**	**3.40**	**164**	*e*P	**Pb**	**05 44 00.6**	**+0.6**
LDLD	**Lac de Lave**	**3.53**	**172**	*e*P	**Pb**	**05 44 01.2**	**-1.1**
ATD	**Arta Tunnel**	**3.65**	**166**	*e*P	**Pb**	**05 44 04.1**	**-0.3**
ATD				*e*S	**Sb**	**05 44 48.4**	**-0.3**
SGH	**Sud-Ghoubbet**	**3.70**	**170**	*e*P	**Pb**	**05 44 04.4**	**-0.8**
ATA	**Atar**	**3.82**	**162**	*e*P	**Pb**	**05 44 07.2**	**0.0**

*IDC **02** 05:44:17.7±4.0, 17°.51N×106°.94W, h0km, mb3.0/4, mb1 3.6/7, mb1mx3.5/33, mbtmp3.3/7, ML3.5/3, MS3.9/13, Ms1 3.9/13, ms1mx3.9/17, Error ellipse: s-maj=73.3km s-min=33.1km az=22.0*
*ISCJB **02** 05:44:31.3±1.3, 18°.75N±0°.04×105°.82W±0°.03, h11km±8km, mb4.1/29, MS3.9/8, Error ellipse: s-maj=7.8km s-min=4.8km az=23.6*
*MEX **02** 05:44:31.3±0.7, 18°.70N×106°.00W, h10km, MD4.2*
*NEIC **02** 05:44:31.3, 18°.70N×106°.00W, h10km, mb4.2/43, MD4.2(MEX), After MEX.*

ISC 02 05:44:32.6±1.9, 18°.78N±0°.06×105°.79W±0°.06, h8km±10km, n92, σ1°.72/86, mb4.2/28, MS3.9/8, Off coast of Jalisco

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CJM	**Chamela**	**1.01**	**44**	*e*P	**Pg**	**05 44 50.1**	**-1.8**
CJM				*e*S	**Sb**	**05 45 05.2**	**-0.4**
CJM	**Chamela**	**1.01**	**44**	*e*P	**Pg**	**05 44 50.1**	**-1.8**
CJM				*e*S	**Sb**	**05 45 05.2**	**-0.4**
R15V		**1.75**	**77**	*e*P	**Pn**	**05 45 00.8**	**-2.5**
R15V				*e*S	**Sn**	**05 45 24.1**	**-1.8**
EZ5V		**2.18**	**71**	*e*P	**Pn**	**05 45 08.0**	**-1.4**
EZ5V				*e*S	**Sn**	**05 45 36.6**	**-0.1**
MMIG	**Aquila**	**2.37**	**101**	*e*P	**Pn**	**05 45 10.0**	**-1.7**
MMIG				*e*S	**Sn**	**05 45 40.0**	**-1.0**
MMIG	**Aquila**	**2.37**	**101**	*e*P	**Pn**	**05 45 10.0**	**-1.7**
MMIG				*e*S	**Sn**	**05 45 40.0**	**-1.0**
ANIG	**Ahuacatlan**	**2.56**	**28**	*e*P	**Pn**	**05 45 13.4**	**-1.1**
ANIG				*e*S	**Sn**	**05 45 44.9**	**-0.9**
ANIG	**Ahuacatlan**	**2.56**	**28**	*e*P	**Pn**	**05 45 13.4**	**-1.1**
ANIG				*e*S	**Sn**	**05 45 44.9**	**-0.9**
MOIG	**Morelia**	**4.44**	**78**	*i* P	**Pn**	**05 45 39.5**	**-0.9**
MOIG				*e*S	**Sn**	**05 46 32.7**	**+0.3**
MOIG	**Morelia**	**4.44**	**78**	*e*Pn	**Pn**	**05 45 43.6**	**+3.2**
MOIG				*e*S	**Sn**	**05 46 32.7**	**+0.3**
H06E1	**SOCORRO T-PHAS**	**4.87**	**271**	T	T	05 50 02.1	
	SNR=130						
H06S1	**SOCORRO T**	**4.90**	**270**	T	T	05 50 02.8	
	SNR=30						
H06N1	**SOCORRO T-PHAS**	**4.92**	**272**	T	T	05 50 02.3	
	SNR=5.6						
ZAIG	**Zacatecas**	**4.99**	**37**	*e*Pn	**Pn**	**05 45 51.2**	**+3.2**
TLIG	**Tlapa**	**6.97**	**99**	*e*Pn	**Pn**	**05 46 16.3**	**+1.1**
HPIG		**8.12**	**1**	*e*Pn	Pn	05 46 39.2	+8.2
CMIG	**Matias Romero**	**10.51**	**97**	Pn	**Pn**	**05 47 05.3**	**+1.6**
	0.6nm,0.3s,baz=273,slow=11,SNR=11						
CMIG				LR	LR	05 51 18.8	
	comp=Z,498nm,19.1s,baz=272,slow=36						
TXAR	**Lajitas Array**	**10.69**	**10**	Pn	Pn	05 47 12.6	+6.5
	0.1nm,0.3s,baz=198,slow=14,SNR=2.8						
TXAR				LR	LR	05 51 18.3	
	comp=Z,688nm,19.0s,baz=0.0,slow=35						
JCT	**Junction City**	**12.86**	**24**	*e*Pn	**Pn**	**05 47 38.4**	**+2.7**
MNTX	**Cornudas Mount**	**12.87**	**2**	*e*Pn	**Pn**	**05 47 35.7**	**-0.2**
MNTX				*e*Sn	**Sn**	**05 49 59.0**	**-0.4**
CCIG	**Comitan**	**13.26**	**99**	*e*Pn	**Pn**	**05 47 44.8**	**+3.5**
121A	**Cookes Peak, D**	**13.81**	**353**	*e*Pn	**Pn**	**05 47 50.7**	**+1.8**
121A				*e*Sn	**Sn**	**05 50 25.5**	**+2.8**
TUC	**Tucson**	**14.21**	**343**	*e*Pn	**Pn**	**05 47 56.5**	**+2.3**
TUC				*e*Sn	**Sn**	**05 50 31.3**	**-0.8**
MSTX	**Muleshoe**	**15.37**	**9**	Pn	**Pn**	**05 48 10.5**	**+0.6**
	40nm,1.1s						
MSTX				*e*Sn	**Sn**	**05 51 02.7**	**+2.3**
LAZ	**Ladron**	**15.61**	**356**	*e*Pn	**P**	**05 48 17.9**	**+0.5**
ANMO	**Albuquerque**	**16.12**	**358**	P	**P**	**05 48 23.9**	**+0.8**
	0.1nm,0.3s,baz=211,slow=12,SNR=2.2						
ANMO				LR	LR	05 54 26.5	
	comp=Z,528nm,20.1s,baz=186,slow=35						
ANMO	**Albuquerque**	**16.12**	**358**	*e*Pn	**P**	**05 48 21.8**	**-1.3**
	9.7nm,1.5s						
NATX	**Nacogdoches**	**16.37**	**36**	*e*Pn	**P**	**05 48 25.6**	**0.0**
	9.4nm,0.5s						
NATX				*e*Sn	**S**	**05 51 31.6**	**-5.5**
X16A	**Lo Mia Camp, P**	**16.37**	**343**	*e*Pn	**Pn**	**05 48 21.5**	**-1.4**
	13nm,1.5s						
AMTX	**Amarillo**	**16.45**	**12**	*e*Pn	**Pn**	**05 48 24.2**	**+0.3**
AMTX				*e*Sn	**Sn**	**05 51 30.4**	**+3.6**
TEIG	**Tepich**	**16.57**	**82**	LR	LR	05 55 12.0	
	comp=Z,182nm,21.9s,baz=142,slow=37						
WMOK	**Wichita Mounta**	**17.07**	**20**	*e*Pn	**P**	**05 48 35.3**	**+1.8**
	36nm,1.9s						
WUAZ	**Wupatki**	**17.39**	**345**	*e*Pn	**Pn**	**05 48 36.0**	**+0.1**
	8.0nm,1.1s						
PFO	**Pinyon Flats O**	**17.59**	**329**	LR	LR	05 54 29.3	
	comp=Z,410nm,18.9s,baz=154,slow=34						
V34A	**Guthrie**	**18.50**	**22**	*e*P	**Pn**	**05 48 50.6**	**+1.3**
	2.2nm,0.3s						
SDCO	**Great Sand Dun**	**18.90**	**1**	*e*P	**Pn**	**05 48 56.2**	**+1.8**
	12nm,1.4s						
S22A	**4UR Ranch, Cre**	**18.92**	**357**	*e*P	Pn	05 49 02.8	+8.1
	10nm,1.4s						
MIAR	**Mount Ida**	**19.10**	**32**	*e*P	**P**	**05 48 55.5**	**-0.2**
	2.6nm,0.8s						
KNB	**Kanab**	**19.19**	**343**	*e*P	**P**	**05 48 55.9**	**-1.1**
	10nm,1.3s						
TUL1	**Leonard**	**19.22**	**25**	*e*P	**P**	**05 48 55.5**	**-1.6**
	15nm,1.1s						
PV04	**Paradox Valley**	**19.73**	**353**	*e*P	**P**	**05 49 03.3**	**+0.4**
MTPU	**Mount Pierson**	**19.99**	**345**	*e*P	**Pn**	**05 49 08.0**	**+0.4**
	9.2nm,1.4s						
X301	**Greenbrier Sit**	**20.24**	**33**	*e*P	**P**	**05 49 08.9**	**+0.7**
	32nm,1.6s						
HHAR	**Hobbs**	**20.33**	**29**	*e*P	**P**	**05 49 09.7**	**+0.5**
	33nm,1.3s						
WHAR	**Wooly Hollow**	**20.34**	**33**	*e*P	Pn	05 49 11.0	-0.3
	19nm,1.2s						
SMCO	**Snowmass**	**20.35**	**357**	*e*P	Pn	05 49 11.1	-0.8
	4.9nm,1.4s						
MSU	**Marysvale**	**20.43**	**346**	*e*P	**P**	**05 49 09.1**	**-1.5**
CBKS	**Cedar Bluff**	**20.65**	**14**	*e*P	**P**	**05 49 13.4**	**+0.7**
	59nm,1.5s						
PSUT	**Pine Spring**	**20.90**	**342**	*e*P	**P**	**05 49 15.8**	**+0.2**
	5.1nm,1.0s						
ISCO	**Idaho Springs**	**20.95**	**0**	*e*P	**P**	**05 49 16.0**	**-0.2**
	5.3nm,1.1s						
TMUT	**Trail Mountain**	**20.98**	**348**	*e*P	**P**	**05 49 17.1**	**+0.5**
	11nm,1.3s						
P17A	**Butcher Ranch,**	**21.06**	**349**	*e*P	**P**	**05 49 15.3**	**-2.0**
	12nm,1.1s						
P18A	**Preston Nutter**	**21.13**	**350**	*e*P	**P**	**05 49 18.4**	**-0.2**
	15nm,1.3s						
R11A	**Troy Canyon, C**	**21.29**	**338**	*e*P	**P**	**05 49 16.8**	**-3.0**
	6.3nm,1.3s						
O20A	**White River Ci**	**21.39**	**355**	*e*P	**P**	**05 49 22.3**	**+1.5**
	10nm,1.1s						
LRAL	**Lakeview Retre**	**22.02**	**46**	*e*P	**P**	**05 49 29.7**	**+2.2**
	26nm,1.3s						
N23A	**Red Feather La**	**22.04**	**360**	*e*P	**P**	**05 49 29.4**	**+1.4**
	12nm,1.4s						
DUG	**Dugway, Tooele**	**22.19**	**346**	*e*P	**P**	**05 49 29.9**	**+0.6**
	12nm,1.4s						
JLU	**Jordanelle**	**22.29**	**349**	*e*P	**P**	**05 49 34.0**	**+3.4**
	7.7nm,1.3s						
NV11	**Mina Array Sit**	**22.35**	**334**	*e*P	**P**	**05 49 31.5**	**+0.3**
	9.5nm,1.4s						
NV01	**Mina Array Sit**	**22.41**	**333**	*e*P	**P**	**05 49 32.7**	**+0.8**
NVAR	**Mina Array Bea**	**22.41**	**333**	P	**P**	**05 49 27.3**	**-4.6**
	0.7nm,0.8s,baz=131,slow=7.5,SNR=5.2						
WAKR	**Walker**	**22.97**	**332**	*e*P	**P**	**05 49 36.3**	**-1.4**
TIGA	**Tifton**	**23.67**	**54**	*e*P	**P**	**05 49 45.4**	**+0.8**
	20nm,0.6s						
SWET	**Sewanee**	**24.03**	**43**	*e*P	**P**	**05 49 48.1**	**0.0**
	6.3nm,1.3s						
PDAR	**Pinedale Array**	**24.13**	**353**	P	**P**	**05 49 46.0**	**-3.1**
	0.2nm,0.5s,baz=170,slow=10,SNR=3.7						
GOGA	**Godfrey**	**24.71**	**49**	*e*P	**P**	**05 49 54.7**	**+0.4**
	25nm,1.3s						
REDW	**Red Top Meadow**	**24.88**	**351**	*e*P	**P**	**05 49 54.3**	**-1.7**
	19nm,1.5s						
SNOW	**Snow King Moun**	**24.96**	**351**	*e*P	**P**	**05 49 56.6**	**-0.2**
	12nm,1.1s						
FXWY	**Fox Creek**	**25.18**	**351**	*e*P	**P**	**05 49 59.0**	**+0.3**
	6.7nm,1.3s						
IMW	**Indian Meadow**	**25.42**	**351**	*e*P	**P**	**05 49 59.2**	**-1.7**
	0.3nm,0.4s						
FLWY	**Flagg Ranch**	**25.56**	**352**	*e*P	**P**	**05 50 02.7**	**+0.5**
	14nm,1.4s						
TKL	**Tuckaleechee C**	**25.71**	**45**	P	**P**	**05 50 04.9**	**+1.5**
	4.1nm,1.0s,baz=228,slow=12,SNR=3.6						
TKL				LR	LR	06 02 45.9	
	comp=Z,205nm,20.2s,baz=241,slow=40						
WCI	**Wyandotte Cave**	**25.77**	**37**	*e*P	**P**	**05 50 04.8**	**+0.9**
	11nm,0.5s						
HDIL	**Hopedale**	**25.92**	**30**	*e*P	**P**	**05 50 06.5**	**+1.3**
	25nm,1.1s						
YBH	**Yreka Blue Hor**	**27.05**	**331**	LR	LR	06 00 32.1	
	comp=Z,358nm,18.9s,baz=156,slow=35						
KMSC	**Kings Mountain**	**27.11**	**48**	*e*P	**P**	**05 50 16.6**	**+0.6**
	14nm,1.0s						
MSO	**Missoula**	**28.77**	**348**	*e*P	**P**	**05 50 31.0**	**+0.1**
	11nm,1.5s						
ULM	**Lac du Bonnet**	**32.38**	**12**	LR	LR	06 04 47.8	
	comp=Z,420nm,18.2s,baz=254,slow=36						
OTAV	**Otavalo**	**32.55**	**121**	*e*P	**P**	**05 51 05.3**	**+0.3**
	110nm,1.5s						
TAOE	**Nuku Hiva Isla**	**43.62**	**234**	*e*LR	LR	06 04 11.8	
	406nm,25.9s						
TAOE	**Nuku Hiva Isla**	**43.62**	**234**	*e*T	T	06 38 07.9	
	83nm,0.3s						
YKA	**Yellowknife Ar**	**44.10**	**354**	P	P	05 52 35.5	-5.5
	0.2nm,1.0s,baz=166,slow=7.6,SNR=2.7						
RKT	**Rikitea**	**50.46**	**216**	*e*LR	LR	06 07 29.6	
	378nm,26.2s						
RKT	**Rikitea**	**50.46**	**216**	*e*T	T	06 46 52.5	
	3.0nm,0.3s						
LPAZ	**La Paz**	**50.87**	**131**	LR	LR	06 13 54.0	
	comp=Z,101nm,18.1s,baz=304,slow=35						
KDAK	**Kodiak Island**	**51.86**	**330**	LR	LR	06 14 15.3	
	comp=Z,80nm,18.8s,baz=137,slow=34						
INK	**Inuvik**	**52.50**	**347**	LR	LR	06 17 02.8	
	comp=Z,144nm,18.1s,baz=152,slow=37						
INK	**Inuvik**	**52.50**	**347**	*e*P	**P**	**05 53 45.8**	**0.0**
	7.8nm,1.2s						
ILAR	**Eielson Array**	**53.48**	**339**	P	P	05 53 44.8	-8.3
	0.2nm,0.8s,baz=150,slow=6.3,SNR=3.0						
ILAR				LR	LR	06 15 49.9	
	comp=Z,59nm,18.4s,baz=116,slow=35						
PPT	**Papeete**	**56.19**	**233**	LR	LR	06 11 29.3	
	comp=Z,109nm,19.2s,baz=28,slow=30						
PPT2	**Papeete2**	**56.20**	**233**	*e*S	**S**	**06 02 02.2**	**-1.4**
	88nm,27.0s						
PPT2				*e*LR	LR	06 10 04.6	
	394nm,26.5s,baz=44						

TAP 02 05:48:34.6, 24°.71N×121°.78E, h68km±1km, ML2.6, B, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWE	**Neicheng**	**0.10**	**278**	P	Pn	05 48 45.2	+0.6
	baz=277						
TWE				*e*S	Sn	05 48 52.4	+0.6
	baz=277						
TWC	**Suao**	**0.12**	**147**	P	Pn	05 48 45.1	+0.5
	baz=143						
TWC				*e*S	Sn	05 48 52.6	+0.7
	baz=143						
ENTT	**Nioudou**	**0.20**	**251**	*e*P	Pn	05 48 45.4	+0.4
	baz=249						
ENTT				*e*S	Sn	05 48 53.3	+0.7
	baz=249						
ENA	**Nanau**	**0.28**	**187**	*e*S	Sn	05 48 53.1	-0.1
	baz=185						
TWB1	**Santiao Chiao**	**0.36**	**32**	P	Pn	05 48 46.1	+0.1
	baz=33						
TWB1				S	Sn	05 48 54.5	+0.3
	baz=33						
NWF	**Wu-fen Shan**	**0.36**	**0**	*e*P	Pn	05 48 46.1	-0.1
NWF				*e*S	Sn	05 48 56.2	+1.7
NSK	**Sanguang**	**0.39**	**266**	*e*P	Pn	05 48 46.0	-0.2
	baz=265						
NSK				*e*S	Sn	05 48 54.7	-0.1
	baz=265						
NNS	**Nan Shan**	**0.46**	**235**	*e*P	Pn	05 48 47.2	+0.2
	baz=233						
NNS				*e*S	Sn	05 48 55.9	-0.1
	baz=233						
TWS1	**Kuangyinshan**	**0.51**	**320**	*e*P	Pn	05 48 48.1	+0.7
	baz=320						
TWS1				*e*S	Sn	05 48 58.1	+1.4
	baz=320						
TWD	**Chiawan**	**0.65**	**195**	*e*P	Pn	05 48 49.3	+0.5
	baz=194						
TWT	**Tachien**	**0.71**	**231**	*e*P	Pn	05 48 50.6	+0.9
	baz=231						
TWT				*e*S	Sn	05 49 01.6	+0.8
	baz=231						
NSTT	**Nanjuang**	**0.71**	**264**	*e*P	Pn	05 48 49.2	-0.3
	baz=263						
NSTT				*e*S	Sn	05 49 00.8	+0.4
	baz=263						
ESF	**Shoufeng Towns**	**0.87**	**197**	*e*P	Pn	05 48 54.3	+3.0
	baz=196						
ESF				*e*S	Sn	05 49 05.3	+1.6
	baz=196						
NSY	**Sanyi**	**0.97**	**253**	*e*P	Pn	05 48 53.2	+0.5
	baz=252						
NSY				*e*S	Sn	05 49 06.9	+0.8
	baz=252						
WDT	**Danda**	**1.11**	**212**	*e*P	Pn	05 48 54.9	+0.1
	baz=211						
WDT				S	Sn	05 49 10.1	+0.4
	baz=211						
SMLT	**Sun Moon Lake**	**1.15**	**225**	*e*P	Pn	05 48 56.0	+1.0
	baz=224						
SMLT				*e*S	Sn	05 49 11.1	+0.9
	baz=224						
TYC	**Yuchr**	**1.16**	**227**	*e*P	Pn	05 48 55.8	+0.8
	baz=226						
TYC				*e*S	Sn	05 49 10.9	+0.6
	baz=226						
ALS	**Alishan**	**1.49**	**217**	*e*P	Pn	05 49 00.4	+0.7
	baz=216						
ALS				*e*S	Sn	05 49 20.7	+2.3
	baz=216						
CHN5	**Tsauling**	**1.49**	**223**	*e*S	Sn	05 49 19.2	+1.0
	baz=222						
CHN4	**Tsaushan**	**1.73**	**219**	*e*P	Pn	05 49 03.7	+1.0
	baz=218						
CHN4				*e*S	Sn	05 49 24.4	+0.6
	baz=218						

*ISCJB **02** 05:48:38.8±0.2, 33°.62N±0°.03×98°.91E±0°.03, h10km, mb4.2/45, MS4.0/28, Error ellipse: s-maj=3.9km s-min=3.2km az=5.1*
*IDC **02** 05:48:38.9±0.7, 33°.63N×98°.97E, h0km, mb4.0/19, mb1 4.2/22, mb1mx4.0/56, mbtmp4.0/22, ML4.0/3, MS3.9/25, Ms1 3.9/25, ms1mx3.8/44, Error ellipse: s-maj=20.3km s-min=13.0km az=33.0*
*BJI **02** 05:48:40.0, 33°.74N×98°.94E, h10km, mb4.6/27, mB4.8/24, ML4.5/15, Ms4.5/45, Ms7 4.3/39*
*MOS **02** 05:48:43.0±1.2, 33°.75N×98°.98E, h33km, mb4.5/29, Error ellipse: s-maj=8.0km s-min=6.0km az=98.1*
*NEIC **02** 05:48:43.5±1.6, 33°.77N×98°.94E, h24km±13km, mb4.5/19, Error ellipse: s-maj=6.3km s-min=5.3km az=213.0*

ISC 02 05:48:41.2±0.3, 33°.64N±0°.03×98°.88E±0°.03, h10km, n153, σ2°.62/179, mb4.4/47, MS3.9/28, 5C-4D, Qinghai

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LZH	**Lanzhou**	**4.75**	**58**	*e*Pn	**Pn**	**05 49 53.3**	**+0.2**
LZH				Pg	**Pb**	**05 50 07.3**	**+2.5**
LZH				Sn	**Sn**	**05 50 54.1**	**+5.7**
LZH				Sg	**Sg**	**05 51 09.6**	**-4.4**
LZH				smax	smax		
	comp=N,580nm,0.9s						
LZH				smax	smax		
	comp=E,4μm,1.2s						
LZH				LR	LR		
	comp=N,7μm,5.5s						
LZH				LR	LR		
	comp=E,5μm,6.2s						
LZH				LR	LR		
	comp=Z,6μm,7.5s						
LZH	**Lanzhou**	**4.75**	**58**	*e*P	**Pn**	**05 49 53.0**	**-0.1**
LZH						05 50 54.1	
LZH	**Lanzhou**	**4.75**	**58**	*e*Pn	**Pn**	**05 49 53.0**	**-0.1**
LZH				Pg	**Pb**	**05 50 07.3**	**+2.5**
LZH				Sn	**Sn**	**05 50 54.1**	**+5.7**
LZH				Sg	**Sg**	**05 51 09.6**	**-4.4**
CD2	**Chengdu**	**4.94**	**122**	Pg	**Pb**	**05 50 07.7**	**-0.2**
CD2				Sn	**Sn**	**05 50 51.1**	**-1.8**
CD2				Sg	**Sg**	**05 51 22.9**	**

GYA	Guiyang	9.83	135⇑	*i*P	Pn	05 51 02.9	+0.2
GYA				PP	PnPn	05 51 16.4	+6.0
GYA				S	Sn	05 53 00.2	+7.0
GYA				SS	SnSn	05 53 13.0	+8.0
GYA				pmax	pmax		
	comp=Z,30nm,0.9s						
GYA				pmax	pmax		
	comp=Z,120nm,4.0s						
GYA				LR	LR		
	comp=Z,410nm,9.2s						
GYA				LR	LR		
	comp=Z,370nm,8.9s						
GYA				LR	LR		
	comp=Z,390nm,9.8s						
SHL	Shillong	10.09	219	*e*P	Pn	05 51 03.3	-3.0
SHL				*e*S	Sn	05 53 02.0	+2.4
SHL				IAML		05 54 47.1	
	comp=N,324nm,0.2s						
SHL				IAML		05 54 48.8	
	comp=E,67nm,0.6s						
BTO	Baotou	11.28	49	*e*P	Pn	05 51 20.8	-1.8
HHC	Hu-ho-hao-te	12.40	51	*e*P	Pn	05 51 36.2	-1.7
HHC				sP		05 51 45.9	
HHC				S	Sn	05 53 54.8	-1.3
HHC				SS	SnSn	05 54 15.2	+7.0
HHC				pmax	pmax		
	comp=E,54nm,1.2s						
HHC				pmax	pmax		
	comp=E,110nm,3.9s						
HHC				LR	LR		
	comp=E,1μm,9.7s						
HHC				LR	LR		
	comp=E,1μm,10.3s						
HHC				LR	LR		
	comp=E,1μm,11.0s						
GUN	Gumba	12.55	246	*e*P	Pn	05 51 39.1	-1.1
	comp=E,79nm,0.8s						
KKN	Kakani	13.07	247	*e*P	Pn	05 51 45.5	-1.7
	comp=E,44nm,0.7s						
DMN	Daman	13.29	247	*e*P	Pn	05 51 48.9	-1.4
	comp=E,45nm,0.8s						
WMQ	Urumqi	13.39	323	P	Pn	05 51 48.2	-3.1
WMQ				pP	P	05 51 52.3	-8.6
WMQ				sP		05 51 56.2	
WMQ				PP	PnPn	05 52 02.0	+2.8
WMQ				S	Sn	05 54 22.9	+2.6
WMQ				sS	sS	05 54 23.9	
WMQ				PcP	PcP	05 57 17.0	-2.7
WMQ				pmax	pmax		
	comp=E,16nm,0.5s						
WMQ				pmax	pmax		
	comp=E,73nm,3.5s						
WMQ				LR	LR		
	comp=E,550nm,12.7s						
GKN	Gorkha	13.46	249	*e*P	Pn	05 51 51.1	-1.4
	comp=E,58nm,0.6s						
WHN	Wuhan	13.47	99	*e*P	P	05 52 00.2	-1.6
WHN				S	Sn	05 54 31.9	+10
WHN				LR	LR		
	comp=N,6μm,7.3s						
WHN				LR	LR		
	comp=E,2μm,6.2s						
WHN				LR	LR		
	comp=Z,3μm,14.3s						
KOLN	Koldanda	14.38	250	*e*P	Pn	05 52 03.4	-1.7
	comp=Z,34nm,0.6s						
PYUN	Piuthan	14.72	252	*e*P	Pn	05 52 07.5	-2.2
	comp=Z,101nm,0.9s						
CHTO	Chiang Mai	14.76	180	P	P	05 52 18.5	+2.3
	comp=Z,110nm,1.3s,comp=Z,2μm						
CHTO	Chiang Mai	14.76	180	*e*P	P	05 52 14.2	-2.0
CHTO				pmax	pmax		
	comp=Z,18nm,0.8s						
CHTO	Chiang Mai	14.76	180	*e*Pn	P	05 52 14.2	-2.0
	comp=Z,18nm,0.8s						
CMMT	Chiang Mai	14.76	180	P	P	05 52 18.4	+2.1
	comp=Z,24nm,1.3s						
BOK	Bokaro	15.03	233	*e*P	Pn	05 52 11.0	-2.7
LAMP	Lampang	15.07	177	P	P	05 52 19.7	+0.1
	comp=Z,5.8nm,0.9s						
CMAR	Chiang Mai Arr	15.12	180	Pn	Pn	05 52 15.9	+0.9
	comp=Z,0.7nm,0.3s,baz=351,slow=11,SNR=14						
CM01	Chiang Mai Arr	15.15	180	*e*Pn	P	05 52 19.7	-0.9
BJI	Beijing	15.24	60	P	Pn	05 52 14.1	-2.3
BJI				pmax	pmax		
	comp=Z,5.0nm,1.6s						
BJI				LR	LR		
	comp=Z,1μm,9.5s						
BJI				LR	LR		
	comp=Z,2μm,12.7s						
BJI				LR	LR		
	comp=Z,1μm,19.1s						
SONM	Songino Array	15.27	20	Pn	Pn	05 52 15.5	-1.4
	comp=Z,0.3nm,0.3s,baz=200,slow=12,SNR=12						
SONM				LR	LR	05 58 41.9	
	comp=Z,285nm,19.6s,baz=202,slow=40						
SONA1	Songino Array	15.28	20	*e*Pn	Pn	05 52 12.5	-4.7
ULN	Ulaanbaatar	15.49	21⇑	*e*P	Pn	05 52 18.7	-1.2
ULN				pmax	pmax		
	comp=Z,17nm,1.7s						
ULN	Ulaanbaatar	15.49	21	*e*Pn	Pn	05 52 18.6	-1.2
	comp=Z,12nm,1.2s						
ULN				*e*Sn	Sn	05 55 10.8	-0.7
UTTA	Uttaradit	15.90	174	P	P	05 52 31.1	+2.3
	comp=Z,4.3nm,0.8s						
ZAK	Zakamensk	17.04	10	*e*P	P	05 52 43.1	+1.6
ZAK				pmax	pmax		
	comp=Z,3.0nm,1.3s						
PBKT	Sadao Pong	17.10	173	P	P	05 52 43.3	+1.2
	comp=Z,19nm,0.9s,comp=Z,1μm						
SKNT	Sakolnakorn	17.22	163	P	P	05 52 45.2	+1.8
	comp=Z,8.9nm,1.4s,comp=Z,3μm						
DDI	Dehra Dun	17.97	265	*e*P	Pn	05 52 47.3	-4.0
DDI				IAmb	IAmb	05 52 48.3	
MOY	Mondy	18.09	4	*e*P	P	05 52 58.7	+5.7
MK01	Makanchi Array	18.18	321	*e*Pn	Pn	05 52 52.2	-1.5
MK31	Makanchi Array	18.20	321	*e*P	Pn	05 52 53.1	-0.9
MK31	Makanchi Array	18.20	321	*e*Pn	Pn	05 52 53.0	-0.9
MKAR	Makanchi Array	18.20	321	P	Pn	05 52 52.4	-1.6
	comp=Z,0.2nm,0.3s,baz=131,slow=13,SNR=15						
MKAR				LR	LR	06 00 38.3	
	comp=Z,393nm,20.6s,baz=126,slow=39						
MKAR	Makanchi Array	18.20	321	*i* P	Pn	05 52 53.0	-1.0
MKAR				pmax	pmax		
	comp=Z,5.0nm,0.9s						
MKAR	Makanchi Array	18.20	321	*e*Pn	Pn	05 52 53.0	-1.0
TLY	Talaya	18.36	9	LR	LR	06 00 17.0	
	comp=Z,187nm,19.9s,baz=185,slow=38						
TLY	Talaya	18.36	9	*e*P	P	05 53 09.1	+13
TLY				pmax	pmax		
	comp=Z,4.0nm,1.8s						
TLY				MLR	MLR		
	comp=Z,355nm,14.0s						
MAKZ	Makanchi	18.38	321	*e*P	Pn	05 52 54.0	-2.2
MAKZ				pmax	pmax		
	comp=Z,9.0nm,1.1s						
MAKZ	Makanchi	18.38	321	*e*Pn	Pn	05 52 54.0	-2.2
	comp=Z,8.9nm,1.1s						
SMLA	Simla	18.51	268	*e*P	P	05 52 54.2	-3.4
SMLA				IAmb	IAmb	05 52 59.8	
	comp=Z,82nm,2.0s						
DHRM	DHARAMSHALA	19.00	272	*e*P	P	05 52 58.4	-5.0
DHRM				IAmb	IAmb	05 53 07.8	
	comp=Z,16nm,0.9s						
SSE	Sheshan	19.01	92	P	P	05 53 01.2	-1.9
SSE				S	Sn	05 56 32.8	-3.9
SSE				pmax	pmax		
	comp=Z,21nm,0.7s						
SSE				pmax	pmax		
	comp=Z,66nm,5.2s						
SSE				LR	LR		
	comp=Z,940nm,11.3s						
SSE				LR	LR		
	comp=Z,400nm,11.4s						
SSE				LR	LR		
	comp=Z,660nm,7.6s						
QZH	Quanzhou	19.23	112	P	Pn	05 53 10.4	+3.9
QZH				S	S	05 56 43.0	-0.4
QZH				LR	LR		
	comp=Z,2μm,13.3s						
KSH	Kashi	19.29	294	*e*P	Pn	05 53 10.3	+3.0
KSH				*e*pP	sP	05 53 13.9	+3.4
KSH				*e*sP	pP	05 53 17.4	+8.2
KSH				*e*PP	PnPn	05 53 27.8	+7.6
KSH				S	Sn	05 56 42.5	-1.2
KSH				SS	SnSn	05 57 09.0	+11
KSH				pmax	pmax		
	comp=Z,70nm,4.3s						
KSH				LR	LR		
	comp=Z,1μm,14.7s						
KSH				LR	LR		
	comp=Z,460nm,7.3s						
KSH				LR	LR		
	comp=Z,670nm,12.5s						
TKM2	Tokmak 2	20.44	304	*e*P	P	05 53 19.3	+0.3
TKM2				*e*S	S	05 57 06.7	-1.2
TKM2				pmax	pmax		
	comp=Z,12nm,1.0s						
TKM2	Tokmak 2	20.44	304	*e*P	P	05 53 19.3	+0.3
	comp=Z,12nm,1.0s						
TKM2				*e*S	S	05 57 06.7	-1.2
PATY	Pattaya	20.70	175	P	Pn	05 53 28.5	+4.5
	comp=Z,8.7nm,1.0s						
DGPR	DIGLIPUR	21.08	196	*e*P	P	05 53 18.0	-7.8
FRU	Bishkek	21.10	303⇓	*i* P	P	05 53 30.0	+4.1
FRU				pmax	pmax		
	comp=Z,67nm,2.0s						
VIS	Vishakhapatnam	21.11	225	*e*P	P	05 53 20.2	-5.9
VIS				IAmb	IAmb	05 53 27.1	
	comp=Z,15nm,0.9s						
AAK	Ala-Archa	21.12	302	P	P	05 53 27.5	+1.2
	comp=Z,1.2nm,0.4s,baz=135,slow=7.1,SNR=4.3						
AAK				LR	LR	06 03 09.4	
	comp=Z,808nm,21.8s,baz=88,slow=41						
AAK	Ala-Archa	21.12 302⇑		*e*P	P	05 53 27.7	+1.4
AAK				pmax	pmax		
	comp=Z,65nm,1.9s						
AAK	Ala-Archa	21.12	302	*e*P	P	05 53 26.3	0.0
	comp=Z,20nm,1.4s						
BHPL	Bhopal	21.48	247	*e*P	P	05 53 27.8	-2.4
BHPL				IAmb	IAmb	05 53 29.7	
	comp=Z,32nm,0.9s						
EKS2	Erkin-Say	21.64	302	*e*P	P	05 53 32.5	+0.7
EKS2				*e*S	S	05 57 27.1	-4.4
EKS2				pmax	pmax		
	comp=Z,6.0nm,1.0s						
EKS2	Erkin-Say	21.64	302	*e*P	P	05 53 32.5	+0.7
	comp=Z,6.5nm,1.0s						
EKS2				*e*S	S	05 57 27.1	-4.4
KURBB	Kurchatov Arra	22.59	325	P	P	05 53 40.1	-1.6
	comp=Z,3.2nm,0.6s,baz=130,slow=11,SNR=25						
KURK	Kurchatov	22.61	325	P	P	05 53 40.2	-1.7
KURK				pmax	pmax		
	comp=Z,3.0nm,0.6s						
KURK	Kurchatov	22.61	325	*e*P	P	05 53 40.5	-1.4
	comp=Z,77nm,2.0s						
ZAA0	Zalesovo Array	22.62	338	*e*P	P	05 53 40.9	-1.1
ZALV	Zalesovo Beam	22.62	338	P	P	05 53 41.1	-0.9
	comp=Z,14nm,0.7s,baz=148,slow=10,SNR=25						
ZALV				LR	LR	06 03 27.8	
	comp=Z,204nm,19.8s,baz=139,slow=39						
CN2	Changchun	22.99	56	*e*P	P	05 53 46.9	+0.9
CN2				pmax	pmax		
	comp=Z,40nm,1.1s						
CN2				pmax	pmax		
	comp=Z,200nm,4.0s						
CN2				LR	LR		
	comp=Z,800nm,12.0s						
CN2				LR	LR		
	comp=Z,500nm,12.0s						
CN2				LR	LR		
	comp=Z,700nm,13.0s						
KS15	Wonju Array Si	23.86	73	*e*P	P	05 53 54.1	-0.6
KSAR	Wonju Array Be	23.86	73	P	P	05 53 53.6	-1.1
KSAR	Wonju Array Be	23.86	73	P	P	05 53 53.6	-1.1
KS01	Wonju Array Si	23.87	72	*e*P	P	05 53 54.8	0.0
NVS	Novosibirsk	23.87	337	*e*P	P	05 53 54.6	-0.1
NVS				pmax	pmax		
	comp=N,17nm,1.5s						
NVS				pmax	pmax		
	comp=Z,25nm,1.5s						
NVS				pmax	pmax		
	comp=E,13nm,1.4s						
KSRS	Korea Array	23.89	73	P	P	05 53 53.6	-1.4
	comp=E,5.5nm,0.8s,baz=268,slow=8.5,SNR=30						
KSRS				LR	LR	06 03 32.3	
	comp=E,316nm,19.1s,baz=269,slow=38						
KSRS	Korea Array	23.89	73	*e*P	P	05 53 54.6	-0.4
KKAR	Karatay Array	24.07	301	*e*P	P	05 53 58.7	+2.0
KKAR				pmax	pmax		
	comp=Z,1.0nm,0.4s						
KKAR	Karatay Array	24.07	301	*e*P	P	05 53 58.7	+2.0
	comp=Z,0.6nm,0.4s						
HYB	Hyderabad	24.37	234	*i* P	P	05 53 59.5	-0.2
KBL	Kabul	24.69	280	*e*P	P	05 54 04.1	+1.4
KBL				pmax	pmax		
	comp=Z,21nm,0.9s						
KBL	Kabul	24.69	280	*e*P	P	05 54 04.1	+1.4
	comp=Z,21nm,0.9s						
MDJ	Mudanjiang	26.08	56	P	P	05 54 13.0	-1.9
MDJ				S	S	05 58 43.5	-2.6
MDJ				pmax	pmax		
	comp=Z,7.0nm,1.2s						
MDJ				pmax	pmax		
	comp=Z,300nm,4.6s						
MDJ				LR	LR		
	comp=Z,69nm,13.5s						
MDJ				LR	LR		
	comp=Z,150nm,16.2s						
MDJ				LR	LR		
	comp=Z,210nm,17.0s						
BOD	Bodaibo	26.26	18	*e*P	P	05 54 15.1	-1.3
JNU	Nakatsue	26.67	82	P	P	05 54 20.0	-0.4
	comp=Z,9.3nm,1.0s,baz=278,slow=5.6,SNR=4.4						
JNU				LR	LR	06 03 58.7	
	comp=Z,143nm,21.1s,baz=292,slow=35						
USRK	Ussuriysk Ar.	27.66	58	LR	LR	06 05 57.4	
	comp=Z,274nm,21.3s,baz=228,slow=38						
BRVK	Borovoye	28.15	322	*e*P	P	05 54 33.6	+0.2
BRVK				pmax	pmax		
	comp=Z,2.0nm,1.1s						
KLR	Kul'dur	28.87	47	P	P	05 54 39.3	-0.6
	comp=Z,7.1nm,1.0s,baz=269,slow=12,SNR=9.7						
KLR				LR	LR	06 07 10.9	
	comp=Z,550nm,19.1s,baz=260,slow=39						
MJAR	Matsushiro Arr	32.16	74	P	P	05 55 07.5	-1.6
	comp=Z,0.6nm,0.4s,baz=281,slow=8.6,SNR=4.5						
MJAR				LR	LR	06 09 31.5	
	comp=Z,146nm,18.9s,baz=300,slow=39						
ABKAR	Akbulak array	32.68	310	*e*P	P	05 55 10.5	-3.0
	comp=Z,0.7nm,0.5s						
GEYT	Alibeck	33.16	289	LR	LR	06 11 45.1	
	comp=Z,311nm,18.7s,baz=25,slow=42						
YAK	Yakutsk	34.51	25	LR	LR	06 10 21.3	
	comp=Z,218nm,19.1s,baz=237,slow=38						
NKL	Nikolayevsk	35.44	44	*e*P	P	05 55 37.0	-0.4
NKL				MLR	MLR		
	comp=E,500nm,21.0s						
NKL				MLR	MLR		
	comp=Z,900nm,21.0s						
ARU	Arti	35.73	322	*d i* P	P	05 55 39.6	-0.2
ARU						05 56 56.8	
ARU				S	S	06 01 16.5	0.0
ARU				SS	SnSn	06 03 35.6	-2.4
ARU				pmax	pmax		
	comp=Z,13nm,1.7s						
ARU				MLR	MLR		
	comp=Z,302nm,21.0s						
NRIK	Noril'sk	36.31	353	LR	LR	06 11 15.6	
	comp=Z,204nm,19.8s,baz=150,slow=37						
TIXI	Tiksi	41.25	14	P	P	05 56 25.8	-0.3
	comp=Z,1.2nm,0.5s,baz=237,slow=4.9,SNR=3.4						
TIXI	Tiksi	41.25	14⇓	*e*P	P	05 56 24.1	-1.9
TIXI				pmax	pmax		
	comp=Z,1.0nm,1.0s						
MA2	Magadan	42.55	36	LR	LR	06 15 24.1	
	comp=Z,153nm,18.2s,baz=291,slow=38						
MA2	Magadan	42.55	36	*e*P	P	05 56 37.0	+0.2
GNI	Garni	43.22	295⇑	*e*P	P	05 56 42.1	-0.7
GNI				pmax	pmax		
	comp=Z,8.0nm,0.9s						
ZEI	Tsey	43.48	299	*e*P	P	05 56 46.0	+1.1
ZEI				pmax	pmax		
	comp=Z,5.0nm,0.6s						
KBZ	Khabaz	44.10	300	P	P	05 56 49.3	-0.2
	comp=Z,1.4nm,0.6s,baz=92,slow=8.5,SNR=3.8						
KBZ				LR	LR	06 18 14.5	
	comp=Z,150nm,19.5s,baz=84,slow=40						
SEY	Seymchan	44.17	32	*e*P	P	05 56 50.0	+0.2
KIV	Kislovodsk	44.23	301	*e*P	P	05 56 52.8	+2.1
KIV				pmax	pmax		
	comp=Z,7.0nm,1.0s						
KIV				MLR	MLR		
	comp=Z,190nm,16.0s						
PETK	Petropavlovsk-	45.55	46	LR	LR	06 17 32.9	
	comp=Z,161nm,18.4s,baz=269,slow=38						
KLMR	Klimovskoe	46.46	324	*e*P	P	05 57 06.9	-1.1
KLMR				pmax	pmax		
	comp=Z,12nm,1.3s						
OBN	Obninsk	47.62	316	*e*P	P	05 57 20.0	+2.8
OBN				pmax	pmax		
	comp=Z,6.0nm,0.5s						
BILL	Bilibino	50.84	27⇓	*e*P	P	05 57 42.4	+0.8
BILL				*i* *SP	sP	05 57 49.1	+3.1
BILL				pmax	pmax		
	comp=Z,19nm,2.5s						
BILL				MLR	MLR		
	comp=Z,106nm,18.0s						
BRTR	Keskin Array B	51.65	297	P	P	05 57 47.9	-0.5
	comp=Z,1.5nm,0.8s,baz=96,slow=7.6,SNR=6.6						
BRTR	Keskin Array B	51.65	297	*i* P	P	05 57 48.5	+0.1
BRTR				pmax	pmax		
	comp=Z,2.0nm,0.8s						
AKASG	Malin Array Be	52.41	311	P	P	05 57 53.4	-0.3
	comp=Z,0.4nm,0.4s,baz=71,slow=7.8,SNR=4.9						
AKASG				LR	LR	06 22 05.5	
	comp=Z,112nm,18.1s,baz=70,slow=38						
FINES	FINESS Array B	52.98	325	P	P	05 57 57.8	+0.1
	comp=Z,2.6nm,0.9s,baz=100,slow=7.9,SNR=3.6						
FINES				LR	LR	06 21 58.4	
	comp=Z,197nm,18.5s,baz=144,slow=38						
FINES	FINESS Array B	52.98	325	*e*P	P	05 57 59.5	+1.8
FINES				pmax	pmax		
	comp=Z,3.0nm,0.9s						
ARCES	ARCESS Array B	53.12	335	P	P	05 57 57.5	-1.1
	comp=Z,0.5nm,0.3s,baz=86,slow=7.4,SNR=16						
ARCES				LR	LR	06 22 10.1	
	comp=Z,64nm,18.3s,baz=63,slow=38						
NB2	NORSAR Subarra	60.12	326	P	P	05 58 48.0	-0.6
	comp=Z,0.5nm,0.5s,baz=72,slow=7.4						
NOA	NORSAR Array B	60.12	326	P	P	05 58 47.7	-0.9
	comp=Z,1.1nm,0.8s,baz=74,slow=7.0,SNR=4.1						
NOA				LR	LR	06 26 09.2	
	comp=Z,134nm,18.4s,baz=45,slow=37						
GERES	GERESS Array B	62.60	312	P	P	05 59 06.4	+0.8
	comp=Z,0.3nm,0.2s,baz=54,slow=12,SNR=4.6						
WRAB	Tennant Creek	63.10	142	P	P	05 59 09.5	+0.4
WRAB				pmax	pmax		
	comp=Z,1.0nm,0.7s						
WRAB	Tennant Creek	63.10	142	P	P	05 59 09.5	+0.4
	comp=Z,1.5nm,0.7s						
WRA	Warramunga Arr	63.10	142	P	P	05 59 07.3	-1.9
	comp=Z,1.0nm,0.8s,baz=337,slow=6.9,SNR=9.8						
WRA	Warramunga Arr	63.10	142	*i* P	P	05 59 11.0	+1.9
WRA				pmax	pmax		
	comp=Z,1.0nm,0.9s						
ASAR	Alice Springs	66.02	145	P	P	05 59 27.1	-1.1
	comp=Z,0.6nm,0.7s,baz=324,slow=6.2,SNR=8.3						
KMBO	Kilima Mbogo	67.32	252	LR	LR	06 27 24.2	
	comp=Z,61nm,21.3s,baz=356,slow=34						
BPAW	Bear Paw Mtn.	68.33	26	*e*P	P	05 59 42.4	+0.1
	comp=Z,3.8nm,1.2s						
PPLA	Purkeypile	68.52	28	*e*P	P	05 59 43.8	+0.1
	comp=Z,33nm,1.3s						
KTH	Kantishna Hill	68.65	27	*e*P	P	05 59 45.0	+0.6
	comp=Z,17nm,1.2s						
COLA	College	69.03	25	*e*P	P	05 59 46.3	-0.3
COLA				pmax	pmax		
	comp=Z,17nm,1.0s						
COLA	College	69.03	25	*e*P	P	05 59 46.3	-0.3
	comp=Z,17nm,1.0s						
ILAR	Eielson Array	69.43	25	P	P	05 59 47.7	-1.4
	comp=Z,4.6nm,1.0s,baz=287,slow=5.4,SNR=31						
ILAR	Eielson Array	69.43	25	*e*P	P	05 59 48.1	-1.0
PMR	Palmer	70.44	28	*e*P	P	05 59 55.3	0.0
PMR				pmax	pmax		
	comp=Z,8.0nm,1.0s						
PMR	Palmer	70.44	28	*e*P	P	05 59 55.3	0.0
	comp=Z,8.1nm,1.0s						
PAX	Paxson	71.01	26	*e*P	P	05 59 59.2	+0.3
PAX				pmax	pmax		
	comp=Z,4.0nm,1.0s						
PAX	Paxson	71.01	26	*e*P	P	05 59 59.2	+0.3
	comp=Z,4.0nm,1.0s						
KDAK	Kodiak Island	71.12	32	*i* P	P	05 59 59.2	-0.4
INK	Inuvik	71.18	18	*e*P	P	05 59 59.3	-0.5
INK				pmax	pmax		
	comp=Z,7.0nm,1.3s						
INK	Inuvik	71.18	18	*e*P	P	05 59 59.3	-0.5
	comp=Z,7.0nm,1.3s						
EGAK	Eagle	71.36	23	*e*P	P	06 00 00.5	-0.4
	comp=Z,11nm,1.4s						
BMRM	Bremner River	72.56	27	*e*P	P	06 00 08.8	+0.5
	comp=Z,15nm,1.0s						
YKA	Yellowknife Ar	80.49	15	P	P	06 00 51.6	-1.4
	comp=Z,1.3nm,1.0s,baz=333,slow=4.8,SNR=13						
TORD	Torodi Ar. Bea	88.69	285	LR	LR	06 48 39.3	
	comp=Z,76nm,19.5s,baz=290,slow=41						
SCHQ	Schefferville	91.03	352	LR	LR	06 45 06.3	
	comp=Z,88nm,19.1s,baz=46,slow=37						
ULM	Lac du Bonnet	95.46	9	LR	LR	06 49 22.5	
	comp=Z,36nm,19.1s,baz=359,slow=38						
PDAR	Pinedale Array	99.62	21	LR	LR	06 51 17.5	
	comp=Z,61nm,18.8s,baz=354,slow=38						
SAML	Samuel	150.39	322	*e*PKPdf	PKPdf	06 08 27.2	-1.1
SAML				*e*PKPbc	PKiKP	06 08 34.4	+0.1
SAML				*e*PKPab	PKPab	06 08 39.9	0.0

JMA 02 05:49:18.0±0.2, 24°.14N×123°.64E, h45km±2km, M1.5, Southwestern Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HATJ	Hateruma jima	0.17	119	P	Pn	05 49 25.4	-0.2
HATJ				S	Sn	05 49 31.0	+0.1
IRIF	Iriomote-Funau	0.21	23	P	Pn	05 49 25.6	-0.3
IRIF				S	Sn	05 49 31.7	+0.3
JKRS	Kuro-shima	0.35	74	P	Pn	05 49 27.4	+0.2
JKRS				*e*S	Sn	05 49 34.7	+1.0
JIJ	Ishigaki jima	0.51	64	P	Pn	05 49 28.9	-0.2
JIJ				S	Sn	05 49 37.0	0.0
YOJ	Yonaguni jima	0.66	299	P	Pn	05 49 31.3	+0.3
JYNG	Yonagunijimaku	0.71	296	P	Pn	05 49 32.1	+0.5
JISG	Ishigakijimahi	0.76	54	P	Pn	05 49 32.0	-0.3
JISG				S	Sn	05 49 42.6	-0.1
JTJ	Tarama	1.09	63	P	Pn	05 49 37.2	+0.4

CSEM ***02*** *05:49:45.7, 28°.35N×59°.02E, h5km, ML3.9*

TEH 02 05:49:45.7, 28°.35N×59°.02E, h5km, ML3.9, Southern Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHMN	Cheshme madani	1.99	320	*e*Pn	Pb	05 50 22.8	+0.2
CHMN	Cheshme madani	1.99	320	*e*Pn	Pb	05 50 22.8	+0.2
IBND	Bandar-abas	2.37	248	*e*Pn	Pb	05 50 27.6	-1.3
IBND				*e*AMB	AMB	05 51 21.4	
	comp=Z,15μm,0.3s						
IBND	Bandar-abas	2.37	248	*e*Pn	Pb	05 50 27.6	-1.3
NGRK	Negar Kerman	2.38	303	*e*Pn	Pb	05 50 29.6	+0.2
NGRK	Negar Kerman	2.38	303	*e*Pn	Pb	05 50 29.6	+0.2
TVBK	TV Kerman	2.56	310	*e*Pn	Pb	05 50 31.8	-0.6
TVBK	TV Kerman	2.56	310	*e*Pn	Pb	05 50 31.8	-0.6
GENO	Geno	2.69	250	*e*Pn	Pb	05 50 33.5	-1.0
GENO	Geno	2.69	250	*e*Pn	Pb	05 50 33.5	-1.0
KHGB	Koh Gabri	3.00	313	*e*Pn	Pb	05 50 37.3	-2.5
KHGB	Koh Gabri	3.00	313	*e*Pn	Pb	05 50 37.3	-2.5
IKOO	Kooshah	4.06	360	*e*Pn	Pn	05 50 51.2	+2.4
IKOO				*e*AMB	AMB	05 50 52.6	
	comp=Z,2μm,0.1s						
IKOO

IMEH				*e*AMB	AMB	05 52 34.3	
	comp=Z,564nm,0.3s						
IMEH	**Mehriz**	**4.88**	**309**	*e*Pn	Pb	05 51 12.2	+0.3
ISAD	**Sadrabad**	**5.83**	**309**	*e*Pn	Pg	05 51 33.6	-3.8
ISAD				*e*AMB	AMB	05 52 58.4	
	comp=E,250nm,0.2s						
ISAD	**Sadrabad**	**5.83**	**309**	*e*Pn	Pg	05 51 33.6	-3.8
IKAZ	**Kazeroun**	**6.44**	**285**	*e*Pn	Pn	05 51 24.6	+3.0
IKAZ				*e*AMB	AMB	05 52 49.3	
	comp=Z,533nm,0.2s						
IKAZ	**Kazeroun**	**6.44**	**285**	*e*Pn	Pn	05 51 24.6	+3.0

ISCJB ***02*** *05:52:37.8±0.5, 8°.54S±0°.04×27°.5E±0°.1, h10km, mb3.9/10, MS3.2/3, Error ellipse: s-maj=16.3km s-min=5.8km az=10.7*
IDC ***02*** *05:52:38.6±0.8, 8°.47S×27°.58E, h0km, mb3.8/9, mb1 4.1/14, mb1mx3.8/36, mbtmp4.0/14, ML3.1/3, MS3.3/6, Ms1 3.2/6, ms1mx3.0/32, Error ellipse: s-maj=33.7km s-min=16.8km az=98.0*
LSZ ***02*** *05:52:40.4±0.9, 8°.12S×27°.36E, h26km, MD4.1*
NEIC ***02*** *05:52:40.1±0.3, 8°.47S×27°.70E, h10km, mb4.3/2, Error ellipse: s-maj=14.5km s-min=6.0km az=97.0*
ISC 02 05:52:39.3±0.6, 8°.59S±0°.05×27°.63E±0°.10, h10km, n25, σ1§65/27, mb4.0/10, MS3.2/3, 1C, Zaire

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KMZ	**Kasempa**	**5.15**	**200**	⇑*i*P	Pn	05 54 00.8	+4.2
KMZ				*i*		05 54 03.4	
	baz=16,slow=7.9						
KMZ				*i* S	**Sn**	**05 54 58.4**	**+2.2**
KMZ				*i* Sg	**Sg**	**05 55 23.9**	**-0.9**
LSZ	**Lusaka**	**6.67**	**175**	Pn	**Pn**	**05 54 20.5**	**+3.0**
	1.9nm,0.3s,baz=357,slow=11,SNR=16						
LSZ				Sn	**Sn**	**05 55 34.5**	**+0.8**
	25nm,0.3s,baz=240,slow=4.1,SNR=7.2						
LSZ				Lg	Lg	05 56 08.7	
	22nm,0.3s,baz=37,slow=12,SNR=6.3						
LSZ	**Lusaka**	**6.67**	**175**	*e*Pn	**Pn**	**05 54 20.5**	**+3.0**
LSZ				*e*Sn	**Sn**	**05 55 33.6**	**-0.1**
LSZ				Lg	Lg	05 56 08.7	
DODT	**Dodoma, Tanzan**	**8.39**	**74**	*i* P	**Pn**	**05 54 39.5**	**-1.7**
DODT				*i* S	Sg	05 57 00.7	-8.3
MATP	**Matopo**	**11.80**	**176**	Pn	**Pn**	**05 55 30.1**	**+2.3**
	2.1nm,0.3s,baz=349,slow=14,SNR=26						
MATP				Sn	**Sn**	**05 57 36.0**	**-3.7**
	4.1nm,0.3s,baz=291,slow=16,SNR=3.8						
MATP				Lg	Lg	05 58 53.4	
	0.3nm,0.3s,baz=246,slow=23,SNR=4.2						
MATP				LR	LR	05 59 08.8	
	comp=Z,48nm,18.4s,baz=14,slow=33						
KMBO	**Kilima Mbogo**	**12.11**	**53**	Pn	**Pn**	**05 55 30.9**	**-1.4**
	0.5nm,0.3s,baz=231,slow=16,SNR=7.4						
KMBO				Lg	Lg	05 58 53.5	
	0.6nm,0.3s,baz=290,slow=16,SNR=7.2						
KMBO	**Kilima Mbogo**	**12.11**	**53**	*e*Pn	**Pn**	**05 55 30.3**	**-2.0**
KMBO				Lg	Lg	05 58 53.5	
TSUM	**Tsumeb**	**14.36**	**222**	Pn	**Pn**	**05 56 02.6**	**-0.3**
	1.0nm,0.3s,baz=29,slow=14,SNR=19						
TSUM				Sn	Sn	05 58 33.7	-8.7
	1.2nm,0.3s,baz=290,slow=19,SNR=4.2						
TSUM				Lg	Lg	06 00 11.2	
	0.7nm,0.3s,baz=281,slow=20,SNR=2.0						
TSUM				LR	LR	06 01 56.5	
	comp=Z,88nm,18.3s,baz=328,slow=39						
TSUM	**Tsumeb**	**14.36**	**222**	*e*Pn	**Pn**	**05 56 00.6**	**-2.3**
TSUM				*e*Sn	**Sn**	**05 58 40.4**	**-2.0**
TSUM				Lg	Lg	06 00 11.2	
LBTB	**Lobatse**	**16.45**	**187**	Pn	**P**	**05 56 32.9**	**-0.3**
	0.5nm,0.3s,baz=20,slow=15,SNR=12						
LBTB				Lg	Lg	06 01 11.9	
	0.6nm,0.3s,baz=330,slow=17,SNR=3.3						
LBTB				LR	LR	06 03 12.3	
	comp=Z,170nm,18.3s,baz=23,slow=38						
BOSA	**Boshof**	**20.05**	**186**	P	Pn	05 57 14.4	-0.1
	3.6nm,0.8s,baz=12,slow=10,SNR=5.8						
BOSA				LR	LR	06 05 21.6	
	comp=Z,118nm,20.3s,baz=13,slow=38						
SUR	**Sutherland**	**24.51**	**194**	LR	LR	06 07 48.3	
	comp=Z,10.0nm,18.1s,baz=28,slow=37						
TORD	**Torodi Ar. Bea**	**33.62**	**310**	P	**P**	**05 59 20.0**	**-0.2**
	1.5nm,0.9s,baz=121,slow=9.6,SNR=4.1						
BRTR	**Keskin Array B**	**48.39**	**6**	P	**P**	**06 01 21.1**	**-0.5**
	1.6nm,0.7s,baz=180,slow=8.5,SNR=10.0						
GERES	**GERESS Array B**	**58.49**	**349**	P	**P**	**06 02 36.1**	**+0.4**
	0.3nm,0.3s,baz=170,slow=8.1,SNR=4.1						
AKASG	**Malin Array Be**	**59.06**	**1**	P	**P**	**06 02 39.4**	**0.0**
	0.7nm,0.4s,baz=187,slow=6.6,SNR=6.6						
ABKAR	**Akbulak array**	**64.18**	**23**	P	**P**	**06 03 14.2**	**+0.2**
	0.6nm,0.7s						
ARU	**Arti**	**69.64**	**18**	*e*P	**P**	**06 03 49.4**	**+0.8**
	3.6nm,0.6s						
FINES	**FINESS Array B**	**69.82**	**359**	LR	LR	06 39 03.6	
	comp=Z,96nm,18.3s,baz=162,slow=40						
BVAR	**Borovoye Array**	**71.31**	**26**	P	**P**	**06 03 59.3**	**+0.3**
	0.9nm,0.7s,baz=197,slow=3.1,SNR=3.9						
MKAR	**Makanchi Array**	**73.43**	**36**	P	**P**	**06 04 12.5**	**+0.7**
	0.3nm,0.6s,baz=258,slow=4.6,SNR=4.5						
KURBB	**Kurchatov Arra**	**73.56**	**31**	P	**P**	**06 04 13.6**	**+1.2**
	0.8nm,0.8s,baz=238,slow=5.9,SNR=5.9						
KURK	**Kurchatov**	**73.67**	**31**	P	**P**	**06 04 13.6**	**+0.6**
ARCES	**ARCESS Array B**	**77.95**	**359**	P	**P**	**06 04 37.8**	**+0.6**
	0.9nm,0.6s,baz=183,slow=5.7,SNR=12						
YKA	**Yellowknife Ar**	**119.63**	**341**	PKP	**PKPdf**	**06 11 29.2**	**+0.1**
	0.2nm,0.8s,baz=55,slow=2.1,SNR=4.5						

IDC ***02*** *05:54:24.6±4.2, 25°.24S×69°.46W, h0km, mb4.1/1, mb1 3.8/2, mb1mx3.5/21, mbtmp3.8/2, ML3.2/1, Error ellipse: s-maj=131.2km s-min=59.2km az=77.0*
ISCJB ***02*** *05:54:41.7±1.2, 24°.09S±0°.08×69°.0W±0°.2, h103km±18km, mb3.8/1, Error ellipse: s-maj=28.5km s-min=9.5km az=22.2*
GUC ***02*** *05:54:43.1±0.4, 24°.08S×68°.95W, h47km±7km, ML3.7*
ISC 02 05:54:43.6±1.8, 24°.03S±0°.09×69°.1W±0°.1, h92km±18km, n11, σ1§49/16, Northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB14	**IPOC Station P**	**1.37**	**244**	*e*P	**Pn**	**05 55 08.0**	**-0.1**
PB14				*e*S	**Sn**	**05 55 26.8**	**+0.2**
PB14				IAML		05 55 32.4	
	comp=E,996nm,0.2s						
PB06	**IPOC Station P**	**1.40**	**340**	*e*P	**Pn**	**05 55 08.1**	**-0.2**
PB06				*e*S	**Sn**	**05 55 27.2**	**+0.2**
LVC	**Limon Verde**	**1.42**	**5**	*e*P	**Pn**	**05 55 08.0**	**-0.7**
PB10	**IPOC Station P**	**1.47**	**290**	*e*P	**Pn**	**05 55 09.1**	**+0.1**
PB10				*e*S	**Sn**	**05 55 29.0**	**+0.8**
PB10				IAML		05 55 35.2	
	comp=E,2μm,0.3s						
PB04	**IPOC Station P**	**1.96**	**329**	*e*P	**Pn**	**05 55 15.6**	**0.0**
PB04				*e*S	**Sn**	**05 55 41.7**	**+1.9**
PB09	**IPOC Station P**	**2.23**	**356**	*e*P	**Pn**	**05 55 19.5**	**+0.5**
PB09				*e*S	**Sn**	**05 55 46.9**	**+0.8**
PB09				IAML		05 55 53.1	
	comp=E,860nm,0.7s						
PB07	**IPOC Station P**	**2.41**	**341**	*e*P	**Pn**	**05 55 21.2**	**-0.3**
PB07				*e*S	**Sn**	**05 55 46.6**	**-3.9**
PB01	**IPOC Station P**	**3.00**	**352**	*e*P	**Pn**	**05 55 28.7**	**-0.5**
PB01				*e*S	Sn	05 55 55.1	-9.2
LPAZ	**La Paz**	**7.75**	**7**	Pn	**Pn**	**05 56 36.5**	**+2.2**
	comp=E,0.1nm,0.3s,baz=203,slow=8.8,SNR=4.6						
TORD	**Torodi Ar. Bea**	**78.34**	**70**	P	P	06 06 31.5	-2.7
	comp=E,0.7nm,0.4s,baz=259,slow=5.3,SNR=15						
MKAR	**Makanchi Array**	**147.72**	**38**	PKPbc	**PKPdf**	**06 14 13.8**	**-0.9**
	comp=E,0.4nm,0.6s,baz=320,slow=4.3,SNR=6.1						

NIED ***02*** *06:09:00, 42°.90N×145°.50E, h11km, Mw3.8 Best double couple: M0=5.38000×10^14 NP1:φ=153.00000°, δ=34.00000°, λ=1.00000°. NP2:φ=63.00000°, δ=89.00000°, λ=124.00000°.*
MOS ***02*** *06:09:34.5±1.2, 42°.92N×145°.62E, h59km, mb4.2/10, Error ellipse: s-maj=16.9km s-min=9.9km az=89.4*
ISCJB ***02*** *06:09:34.2±0.9, 42°.93N±0°.08×145°.52E±0°.06, h51km±5km, mb3.8/4, Error ellipse: s-maj=14.0km s-min=5.8km az=155.8*
JMA ***02*** *06:09:34.4±0.1, 42°.93N×145°.51E, h44km±1km, M4.0*
JMA Felt II J1.
SKHL ***02*** *06:09:35.0±0.5, 43°.00N×145°.30E, h53km±5km, mb4.5/3*
IDC ***02*** *06:09:39.1±2.7, 43°.02N×145°.56E, h78km±21km, mb3.5/14, mb1 3.7/17, mb1mx3.5/42, mbtmp3.9/17, Error ellipse: s-maj=22.9km s-min=17.1km az=163.0*
ISC 02 06:09:34.0±1.5, 42°.98N±0°.08×145°.52E±0°.04, h32km±9km, n38, σ1§30/45, mb4.0/14, 4C-4D, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NEM2	**Nemuro 2**	**0.42**	**23**	P	**Pn**	**06 09 44.8**	**+1.0**
NEM2				*e*S	**Sn**	**06 09 52.1**	**+1.7**
JAK	**Akkeshi**	**0.60**	**272**	⇓P	**Pn**	**06 09 46.6**	**+0.3**
JAK				*e*S	**Sb**	**06 09 55.7**	**+1.2**
JNK	**Nakash**	**0.84**	**316**	⇓P	**Pb**	**06 09 50.2**	**+0.1**
JNK				*e*S	**Sb**	**06 10 01.3**	**+0.2**
JRA	**Rausu**	**1.00**	**343**	⇓P	**Pb**	**06 09 52.8**	**0.0**
YUK	**Yuzh-Kuril'sk**	**1.08**	**13**	*c i*PN	**Pb**	**06 09 53.9**	**-0.2**
YUK				*i* S	**Sb**	**06 10 07.9**	**-0.1**
YUK				pmax	pmax		
	comp=Z,395nm,0.3s						
YUK				pmax	pmax		
	comp=E,97nm,0.1s						
YUK				pmax	pmax		
	comp=N,73nm,0.3s						
YUK				smax	smax		
	comp=N,1μm,0.3s						
YUK				smax	smax		
	comp=E,3μm,0.5s						
YUK	**Yuzh-Kuril'sk**	**1.08**	**13**	⇑*i*P	**Pb**	**06 09 53.9**	**-0.2**
YUK				AMB	AMB	06 09 55.6	
	comp=E,70nm,0.3s						
YUK				AMB	AMB	06 09 55.6	
	comp=E,400nm,0.3s						
YUK				AMB	AMB	06 09 55.6	
	comp=E,100nm,0.1s						
YUK				*i* S	**Sb**	**06 10 07.9**	**-0.1**
YUK				A	A	06 10 08.9	
	comp=E,1μm,0.4s						
YUK				A	A	06 10 08.9	
	comp=E,3μm,0.4s						
JOB	**Onbets**	**1.24**	**267**	P	**Pn**	**06 09 55.2**	**+0.1**
SHO	**Shikotan**	**1.30**	**47**	*c i*PN	**Pb**	**06 09 57.5**	**-0.4**
SHO				*i* S	**Sb**	**06 10 13.9**	**-0.4**
SHO				pmax	pmax		
	comp=N,188nm,0.5s						
SHO				pmax	pmax		
	comp=E,182nm,0.5s						
SHO				pmax	pmax		
	comp=Z,208nm,0.5s						
SHO				smax	smax		
	comp=N,2μm,0.6s						
SHO				smax	smax		
	comp=E,1μm,0.5s						
SHO	**Shikotan**	**1.30**	**47**	⇑*i*P	**Pb**	**06 09 57.5**	**-0.4**
SHO				AMB	AMB	06 10 01.2	
	comp=E,190nm,0.5s						
SHO				AMB	AMB	06 10 01.2	
	comp=E,180nm,0.5s						
SHO				AMB	AMB	06 10 01.2	
	comp=E,210nm,0.5s						
SHO				*i* S	**Sb**	**06 10 13.9**	**-0.4**
SHO				A	A	06 10 21.0	
	comp=E,2μm,0.6s						
SHO				A	A	06 10 21.0	
	comp=E,1μm,0.6s						
JAR	**Ashorobuto**	**1.32**	**284**	⇓P	**Pn**	**06 09 56.7**	**+0.5**
JKA	**Kamikawa-asahi**	**2.41**	**299**	*e*P	**Pb**	**06 10 15.3**	**-1.3**
ASAJ	**Asahikawa**	**2.41**	**299**	P	**Pb**	**06 10 15.3**	**-1.3**
	comp=E,24nm,0.3s,baz=165,slow=16,SNR=39						
ASAJ				S	**Sb**	**06 10 46.2**	**+0.3**
	comp=E,17nm,0.3s,baz=27,slow=28,SNR=8.8						
KUR	**Kuril'sk**	**2.82**	**36**	*e*PN	**Pn**	**06 10 19.4**	**+2.7**
KUR				*e*S	**Sb**	**06 10 53.3**	**-4.2**
KUR				pmax	pmax		
	comp=Z,33nm,0.5s						
KUR				pmax	pmax		
	comp=E,10.0nm,0.3s						
KUR				pmax	pmax		
	comp=N,16nm,0.2s						
KUR				smax	smax		
	comp=N,146nm,0.6s						
KUR				smax	smax		
	comp=E,109nm,0.5s						
KUR	**Kuril'sk**	**2.82**	**36**	*e*P	**Pn**	**06 10 19.4**	**+2.7**
KUR				AMB	AMB	06 10 21.0	
	comp=E,20nm,0.4s						
KUR				AMB	AMB	06 10 21.0	
	comp=E,10.0nm,0.4s						
KUR				AMB	AMB	06 10 21.0	
	comp=E,30nm,0.4s						
KUR				*e*S	**Sb**	**06 10 53.3**	**-4.2**
KUR				A	A	06 10 58.8	
	comp=E,150nm,0.5s						
KUR				A	A	06 10 58.8	
	comp=E,110nm,0.5s						
YSS	**Yuzh-Sakhalins**	**4.43**	**335**	*e*P	**Pn**	**06 10 38.4**	**-0.5**
KLR	**Kul'dur**	**11.41**	**308**	P	Pn	06 12 18.7	+4.1
	comp=E,0.1nm,0.3s,baz=128,slow=14,SNR=3.8						
EKMR	**Ekimchan**	**13.12**	**325**	*e*P	Pn	06 12 42.1	+4.2
PET	**Petropavlovsk**	**13.33**	**37**	AMS	AMS	06 18 56.0	
	comp=E,300nm,18.0s						
MA2	**Magadan**	**16.93**	**9**	P	**P**	**06 13 31.4**	**+1.5**
	comp=E,0.9nm,0.3s,baz=197,slow=19,SNR=2.8						
SONM	**Sonino Array**	**27.68**	**294**	P	**P**	**06 15 19.5**	**+0.4**
	comp=E,0.6nm,0.3s,baz=87,slow=8.8,SNR=6.7						
ILAR	**Eielson Array**	**42.81**	**36**	P	**P**	**06 17 27.4**	**-0.9**
	comp=E,0.4nm,0.7s,baz=279,slow=8.1,SNR=4.3						
MKAR	**Makanchi Array**	**43.89**	**298**	P	**P**	**06 17 37.3**	**0.0**
	comp=E,1.8nm,0.8s,baz=75,slow=9.3,SNR=10						
INK	**Inuvik**	**47.66**	**30**	P	**P**	**06 18 05.8**	**-1.0**
	comp=E,0.7nm,0.5s,baz=271,slow=3.8,SNR=6.1						
BVAR	**Borovoye Array**	**49.07**	**309**	P	**P**	**06 18 18.3**	**+0.4**
	comp=E,0.9nm,0.3s,baz=85,slow=8.8,SNR=8.0						
RES	**Resolute Bay**	**56.04**	**16**	P	**P**	**06 19 08.9**	**-0.2**
	comp=E,2.6nm,0.5s,baz=326,slow=5.3,SNR=20						
YKA	**Yellowknife Ar**	**57.10**	**33**	P	**P**	**06 19 16.0**	**-0.8**
	comp=E,0.2nm,0.8s,baz=304,slow=6.8,SNR=4.4						
YKA	**Yellowknife Ar**	**57.10**	**33**	P	**P**	**06 19 16.0**	**-0.8**
YKA	**Yellowknife Ar**	**57.10**	**33**	*e*P	**P**	**06 19 16.0**	**-0.8**
ARCES	**ARCESS Array B**	**59.55**	**339**	P	**P**	**06 19 34.2**	**+0.4**
	comp=E,0.6nm,0.6s,baz=45,slow=13,SNR=4.1						
FINES	**FINESS Array B**	**65.01**	**333**	P	**P**	**06 20 10.2**	**-0.3**
	comp=E,2.9nm,0.7s,baz=50,slow=10,SNR=8.6						
ASAR	**Alice Springs**	**67.17**	**192**	P	**P**	**06 20 25.0**	**+0.3**
	comp=E,0.2nm,0.6s,baz=3.8,slow=5.6,SNR=2.9						
NVAR	**Mina Array Bea**	**68.99**	**57**	P	**P**	**06 20 37.3**	**+0.8**
	comp=E,0.3nm,0.7s,baz=289,slow=8.2,SNR=2.9						
KBZ	**Khabaz**	**69.41**	**311**	P	**P**	**06 20 38.9**	**+0.2**
	comp=E,1.3nm,0.7s,baz=101,slow=3.3,SNR=4.0						
NB2	**NORSAR Subarra**	**69.88**	**338**	P	**P**	**06 20 40.7**	**-0.6**
	comp=Z,0.7nm,0.4s,baz=33,slow=6.5						
NOA	**NORSAR Array B**	**69.88**	**338**	P	**P**	**06 20 41.0**	**-0.3**
	comp=Z,0.7nm,0.5s,baz=37,slow=5.9,SNR=7.3						
NOA	**NORSAR Array B**	**69.88**	**338**	P	**P**	**06 20 41.0**	**-0.3**
NOA				pmax	pmax		
	comp=Z,1.0nm,0.5s						
NOA	**NORSAR Array B**	**69.88**	**338**	*e*P	**P**	**06 20 41.0**	**-0.3**
AKASG	**Malin Array Be**	**71.49**	**323**	P	**P**	**06 20 50.3**	**-0.9**
	comp=Z,0.7nm,0.5s,baz=44,slow=6.6,SNR=5.9						

MOS ***02*** *06:09:38.7±1.1, 42°.55N×43°.25E, h8km, mb3.9/2, Error ellipse: s-maj=7.5km s-min=4.9km az=75.2*
TIF ***02*** *06:09:38.6, 42°.56N×43°.35E, h8km±1km*
CSEM ***02*** *06:09:39.3±0.2, 42°.58N×43°.28E, h2km, ML3.3, Error ellipse: s-maj=3.9km s-min=3.1km az=65.0*
AZER ***02*** *06:09:41.0±99.0, 42°.16N×43°.22E, h10km±10km, Error ellipse: s-maj=203.7km s-min=7.5km az=293.0*
ISC 02 06:09:38.6±1.1, 42°.56N±0°.02×43°.29E±0°.02, h3km±8km, n86, σ1§25/143, 13C-12D, Western Caucasus

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONI	**Oni**	**0.12**	**74**	P	**Pg**	**06 09 41.1**	**+0.1**
ONI				S	**Sg**	**06 09 42.7**	**-0.1**
ONI	**Oni**	**0.12**	**74**	PG	**Pg**	**06 09 41.1**	**+0.1**
ONI	**Oni**	**0.12**	**74**	P	**Pg**	**06 09 41.1**	**+0.1**
ONI				S	**Sg**	**06 09 42.6**	**-0.1**
DIGR	**Digorskoe uzhe**	**0.40**	**32**	⇓*i*PG	**Pg**	**06 09 46.4**	**0.0**
DIGR				*i* S	**Sg**	**06 09 51.8**	**+0.1**
DIGR	**Digorskoe uzhe**	**0.40**	**32**	*i* Pg	**Pg**	**06 09 46.4**	**0.0**
DIGR				*i* Sg	**Sg**	**06 09 51.8**	**+0.1**
ZEI	**Tsey**	**0.51**	**63**	⇓*i*PG	**Pg**	**06 09 47.7**	**-0.6**
KORR	**Kora**	**0.78**	**47**	⇑*i*PG	**Pg**	**06 09 53.5**	**0.0**
KORR				*i* S	**Sg**	**06 10 03.6**	**0.0**
KORR	**Kora**	**0.78**	**47**	*i* Pg	**Pg**	**06 09 53.5**	**0.0**
KORR				*i* Sg	**Sg**	**06 10 03.6**	**0.0**
NEY	**Neytrino**	**0.81**	**329**	*d i*PG	**Pb**	**06 09 55.1**	**-0.3**
NEY				*i* S	**Sb**	**06 10 06.5**	**-0.2**
NEY				pmax	pmax		
	comp=Z,115nm,0.2s						
NEY				smax	smax		
	comp=N,138nm,0.2s						
NEY	**Neytrino**	**0.81**	**329**	*i* Pg	**Pb**	**06 09 55.1**	**-0.3**
	comp=N,115nm,0.2s						
NEY				*i* Sg	**Sb**	**06 10 06.5**	**-0.2**
	comp=N,138nm,0.2s						
LSNR	**Lesken**	**0.82**	**28**	*i* PG	**Pg**	**06 09 54.6**	**+0.3**
LSNR				*i* S	**Sb**	**06 10 06.0**	**-1.0**
LSNR				pmax	pmax		
	comp=Z,66nm,0.2s						
LSNR				smax	smax		
	comp=N,339nm,0.2s						
LSNR	**Lesken**	**0.82**	**28**	*i* Pg	**Pg**	**06 09 54.6**	**+0.3**
	comp=N,66nm,0.2s						
LSNR				*i* Sg	**Sb**	**06 10 06.0**	**-1.0**
	comp=N,339nm,0.2s						
GUDG	**Gudauri**	**0.88**	**96**	P	**Pg**	**06 09 55.2**	**-0.2**
GUDG				S	**Sg**	**06 10 07.6**	**+0.7**
GUDG	**Gudauri**	**0.88**	**96**	P	**Pg**	**06 09 55.2**	**-0.2**
GUDG				S	**Sg**	**06 10 07.6**	**+0.7**
CHVG	**Ch'k'valeri**	**0.91**	**281**	P	**Pn**	**06 09 58.2**	**0.0**
CHVG				S	**Sn**	**06 10 11.9**	**+0.2**
CHVG	**Ch'k'valeri**	**0.91**	**281**	P	**Pn**	**06 09 58.2**	**0.0**
ARNR	**Ardon**	**0.96**	**49**	*i* PG	**Pg**	**06 09 57.4**	**+0.4**
ARNR				*i* S	**Sb**	**06 10 11.0**	**+0.1**
ARNR				pmax	pmax		
	comp=Z,28nm,0.2s						
ARNR				smax	smax		
	comp=N,415nm,0.4s						
ARNR	**Ardon**	**0.96**	**49**	*i* Pg	**Pg**	**06 09 57.4**	**+0.4**
	comp=N,28nm,0.2s						
ARNR				*i* Sg	**Sb**	**06 10 11.0**	**+0.1**
	comp=N,415nm,0.4s						
NCK	**Nalchik**	**0.96**	**13**	*d i*PG	**Pn**	**06 09 58.0**	**-1.0**
NCK				*i* S	**Sn**	**06 10 12.1**	**-1.1**
NCK				pmax	pmax		
	comp=Z,391nm,0.3s						
NCK				smax	smax		
	comp=E,498nm,0.4s						
NCK	**Nalchik**	**0.96**	**13**	*i* Pg	**Pn**	**06 09 58.0**	**-1.0**
	comp=E,391nm,0.3s						
NCK				*i* Sg	**Sn**	**06 10 12.1**	**-1.1**
STDR	**Stavd-Durt**	**0.99**	**35**	⇓*i*PG	**Pn**	**06 09 58.8**	**-0.5**
STDR				*i* S	**Sb**	**06 10 11.9**	**+0.1**
STDR	**Stavd-Durt**	**0.99**	**35**	*i* Pg	**Pn**	**06 09 58.8**	**-0.5**
STDR				*i* Sg	**Sb**	**06 10 11.9**	**+0.1**
VLKR	**Vladikavkaz**	**1.13**	**64**	*e*PG	**Pb**	**06 10 00.3**	**-0.5**
VLKR				*e*S	**Sg**	**06 10 15.9**	**+1.0**
VLKR				pmax	pmax		
	comp=Z,89nm,0.3s						
VLKR				smax	smax		
	comp=E,444nm,0.7s						
VLKR	**Vladikavkaz**	**1.13**	**64**	*e*Pg	**Pb**	**06 10 00.3**	**-0.5**
	comp=E,89nm,0.3s						
VLKR				*e*Sg	**Sg**	**06 10 15.9**	**+1.0**
DUS	**Dusheti**	**1.14**	**114**	P	**Pn**	**06 10 01.5**	**0.0**
DUS				S	**Sn**	**06 10 16.8**	**-0.9**
DUS	**Dusheti**	**1.14**	**114**	PG	**Pn**	**06 10 01.5**	**0.0**
DUS						06 10 16.8	
DUS	**Dusheti**	**1.14**	**114**	P	**Pn**	**06 10 01.5**	**0.0**
DUS				S	**Sn**	**06 10 16.8**	**-0.9**
AKH	**Akhalkalaki**	**1.16**	**173**	P	**Pn**	**06 10 01.2**	**-0.1**
AKH				S	**Sn**	**06 10 17.1**	**-0.9**
AKH	**Akhalkalaki**	**1.16**	**173**	PG	**Pb**	**06 10 01.2**	**-0.1**
AKH				S	**Sn**	**06 10 17.2**	**-0.9**
AKH	**Akhalkalaki**	**1.16**	**173**	P	**Pb**	**06 10 01.2**	**-0.1**
AKH				S	**Sn**	**06 10 17.2**	**-0.9**
BTKR	**Batakoyurt**	**1.23**	**48**	*e*PG	**Pg**	**06 10 03.3**	**+1.2**
BTKR				*e*S	**Sn**	**06 10 19.3**	**-0.4**
BTKR	**Batakoyurt**	**1.23**	**48**	*e*Pg	**Pg**	**06 10 03.3**	**+1.2**
BTKR				*e*Sg	**Sn**	**06 10 19.3**	**-0.4**
KMGR	**Komgaron**	**1.26**	**66**	*e*PG	**Pb**	**06 10 03.0**	**0.0**
KMGR				*e*S	**Sb**	**06 10 19.0**	**-0.6**
KMGR	**Komgaron**	**1.26**	**66**	*e*Pg	**Pb**	**06 10 03.0**	**0.0**
KMGR				*e*Sg	**Sb**	**06 10 19.0**	**-0.6**
SHA1	**Shidzhatmaz**	**1.27**	**339**	PG	**Pg**	**06 10 03.7**	**+0.8**
SHA1	**Shidzhatmaz**	**1.27**	**339**	Pg	**Pg**	**06 10 03.7**	**+0.8**
TBLG	**Delisi**	**1.35**	**127**	P	**Pg**	**06 10 05.8**	**+1.2**
TBLG				S	**Sg**	**06 10 23.5**	**+1.4**
TBLG	**Delisi**	**1.35**	**127**	PG	**Pg**	**06 10 05.5**	**+1.0**
TBLG				S	**Sg**	**06 10 23.5**	**+1.4**
TBLG	**Delisi**	**1.35**	**127**	P	**Pg**	**06 10 05.5**	**+1.0**
TBLG				S	**Sg**	**06 10 23.5**	**+1.4**
PRTR	**Priterechnaya**	**1.40**	**31**	⇓*i*PG	**Pg**	**06 10 06.1**	**+0.8**
PRTR				*e*S	**Sg**	**06 10 24.7**	**+1.3**
PRTR	**Priterechnaya**	**1.40**	**31**	*i* Pg	**Pg**	**06 10 06.1**	**+0.8**
PRTR				*e*Sg	**Sg**	**06 10 24.7**	**+1.3**
KZR	**Kazreti**	**1.44**	**144**	P	**Pn**	**06 10 05.2**	**-0.4**
KZR				S	**Sn**	**06 10 23.8**	**-1.2**
KZR	**Kazreti**	**1.44**	**144**	P	**Pn**	**06 10 05.1**	**-0.4**
KZR				S	**Sn**	**06 10 23.8**	**-1.2**
KIV	**Kislovodsk**	**1.47**	**343**	*i* PG	**Pg**	**06 10 06.9**	**+0.2**
KIV	**Kislovodsk**

XNQ				S	Sn	06 11 29.6	+4.3
OBN	Obninsk	13.31	343⇑	eP	Pn	06 12 48.4	+0.2
OBN				pmax	pmax		
	comp=Z,5.0nm,0.5s						
OBN				MLR	MLR		
	comp=Z,301nm,19.0s						
OBN	Obninsk	13.31	343	eP	Pn	06 12 48.4	+0.2
	comp=Z,301nm,19.0s						
ARU	Arti	17.00	30	eP	P	06 13 39.6	+0.5
ARU				pmax	pmax		
	comp=Z,1.0nm,0.9s						
ARU	Arti	17.00	30	eP	P	06 13 39.6	+0.5
	comp=Z,1.0nm,0.9s						
VSU	Vasula	19.00	333⇓	eP	Pn	06 14 02.1	+0.4
VSU				pmax	pmax		
	comp=Z,15nm,1.4s						
VSU	Vasula	19.00	333	eP	Pn	06 14 02.1	+0.4
	comp=Z,15nm,1.4s						
BRVK	Borovoye	20.83	50⇑	eP	P	06 14 21.6	+0.6
BRVK	Borovoye	20.83	50	eP	P	06 14 21.6	+0.6
AAK	Ala-Archa	22.91	79⇑	eP	P	06 14 44.2	+0.6
AAK				pmax	pmax		
	comp=Z,3.0nm,0.9s						
AAK	Ala-Archa	22.91	79	eP	P	06 14 44.2	+0.6
	comp=Z,3.0nm,0.9s						
BFO	Black Forest	25.05	295	i P	P	06 15 02.0	-1.8
BFO	Black Forest	25.05	295	i P	P	06 15 02.0	-1.8
KURK	Kurchatov	25.39	59	eP	P	06 15 09.2	+2.3
KURK				pmax	pmax		
	comp=Z,4.0nm,1.8s						
KURK	Kurchatov	25.39	59	eP	P	06 15 09.2	+2.3
	comp=Z,4.0nm,1.8s						

IDC 02 06:14:60.0±3.8, 30°51′S×138°27′E, h0km, mb1 2.8/3, mb1mx2.8/28, mbtmp2.6/3, ML2.4/3, Error ellipse: s-maj=77.2km s-min=16.3km az=41.0, South Australia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	Stephens Creek	3.16	116	Pn	Pn	06 15 51.5	+0.6
	0.2nm,0.3s,baz=306,slow=14,SNR=2.4						
STKA				Sn	Sn	06 16 28.7	-0.6
	0.8nm,0.3s,baz=299,slow=4.6,SNR=3.1						
STKA				Lg	Lg	06 16 40.1	
	1.3nm,0.3s,baz=38,slow=23,SNR=5.4						
ASAR	Alice Springs	7.85	329	Pn	Pn	06 16 55.6	+0.1
	0.1nm,0.3s,baz=148,slow=13,SNR=5.2						
ASAR				Sn	Sn	06 18 27.1	+1.9
	0.1nm,0.3s,baz=152,slow=22,SNR=3.5						
WRA	Warramunga Arr	11.11	340	Pn	Pn	06 17 40.0	-0.1
	0.0nm,0.3s,baz=161,slow=12,SNR=3.4						
WRA				Sn	Sn	06 19 45.3	+0.1
	0.0nm,0.3s,baz=163,slow=34,SNR=3.1						

IDC 02 06:15:10.9±1.1, 37°59N×144°61E, h0km, mb3.5/4, mb1 3.8/6, mb1mx3.4/40, mbtmp3.5/6, ML3.6/1, Error ellipse: s-maj=42.5km s-min=23.5km az=138.0
ISCJB 02 06:15:13.5±1.0, 37°6N±0°2×144°5E±0°1, h33km, mb3.5/4, Error ellipse: s-maj=31.6km s-min=13.2km az=158.2

ISC 02 06:15:15.9±1.1, 37°6N±0°2×144°5E±0°1, h35km, n7, σ1§34/7, mb3.5/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	5.17	261	Pn	Pn	06 16 30.0	-0.7
	2.1nm,0.3s,baz=82,slow=14,SNR=24						
MAT	Matsushiro	5.17	261	P	Pn	06 16 29.9	-0.8
KSRS	Korea Array	13.20	275	Pn	Pn	06 18 21.8	+1.1
	baz=93,slow=14,SNR=4.1						
ILAR	Eielson Array	47.72	33	P	P	06 23 47.0	-1.7
	0.4nm,0.7s,baz=260,slow=8.1,SNR=4.3						
INK	Inuvik	52.78	28	P	P	06 24 26.6	-0.4
	0.4nm,0.6s,baz=271,slow=18,SNR=3.6						
WRA	Warramunga Arr	57.99	191	P	P	06 25 05.2	+0.2
	0.8nm,0.9s,baz=2.7,slow=7.3,SNR=6.3						
NVAR	Mina Array Bea	72.67	55	P	P	06 26 41.6	+1.3
	0.3nm,0.7s,baz=292,slow=5.7,SNR=3.5						

NIED 02 06:25:00, 39°90N×142°40E, h38km, Mw3.8 Best double couple: M0=4.75000×10^14 NP1:φ0=238.00000°, δ13.00000°, λ129.00000°. NP2:φ0=18.00000°, δ80.00000°, λ82.00000°.
ISCJB 02 06:25:11.1±0.6, 39°91N±0°04×142°59E±0°06, h31km, mb3.7/14, MS3.0/1, Error ellipse: s-maj=7.7km s-min=5.3km az=36.4
JMA 02 06:25:13.6±0.1, 39°92N×142°40E, h38km±1km, M3.7
JMA Felt I J1.
IDC 02 06:25:18.8±2.1, 39°84N×142°34E, h87km±18km, mb3.4/14, mb1 3.5/17, mb1mx3.3/49, mbtmp3.7/17, MS3.1/1, Ms1 3.1/1, ms1mx2.2/31, Error ellipse: s-maj=19.1km s-min=13.0km az=110.0

ISC 02 06:25:13.0±0.8, 39°96N±0°04×142°47E±0°07, h31km, n30, σ1§05/32, mb3.7/14, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	Tanohata	0.47	268	P	Pb	06 25 23.1	+0.1
JTH				eS	Sb	06 25 29.9	+0.1
MIYJ	Miyakonagasawa	0.63	233	P	Pb	06 25 24.9	-0.7
MIYJ				eS	Sb	06 25 32.9	-1.3
JANG	Nango	0.84	300	P	Pn	06 25 28.5	-0.2
JKZ	Kuzumaki	0.88	272	P	Pn	06 25 29.3	0.0
JOM	Ohasama	1.03	242	P	Pn	06 25 31.0	-0.3
OFUJ	Ofunato	1.07	216	P	Pn	06 25 31.6	-0.3
OFUJ				eS	Sn	06 25 44.2	-1.5
JTM	Tenmabayashi	1.36	308	P	Pn	06 25 36.5	+0.7
JTM				eS	Sn	06 25 53.1	+0.4
JMK	Ichinoseki	1.40	224	P	Pn	06 25 36.3	0.0
JAH	Hinai	1.43	280	P	Pn	06 25 37.1	+0.3
JRG	Rokugo	1.53	249	P	Pn	06 25 38.7	+0.6
ASAJ	Asahikawa	4.16	1	P	Pb	06 26 19.8	-5.6
	1.8nm,0.3s,baz=231,slow=3.0,SNR=8.7						
ASAJ				S	Sb	06 27 12.2	-3.0
	1.7nm,0.3s,baz=29,slow=32,SNR=2.8						
MAT	Matsushiro	4.78	226	P	Pn	06 26 24.1	+1.2
MAT				S	Sn	06 27 17.5	+0.2
MJAR	Matsushiro Arr	4.78	226	P	Pn	06 26 25.7	+2.8
	0.7nm,0.3s,baz=32,slow=13,SNR=15						
USRK	Ussuriysk Ar.	8.87	302	P	Pn	06 27 23.4	+4.4
	0.2nm,0.3s,baz=105,slow=15,SNR=6.9						
KSRS	Korea Array	11.64	262	P	Pn	06 28 09.2	+12
	0.2nm,0.3s,baz=72,slow=14,SNR=6.5						
SEY	Seymchan	23.77	11	P	P	06 30 24.1	+1.8
	0.5nm,0.3s,baz=34,slow=6.6,SNR=3.9						
SONM	Songino Array	26.97	299	P	P	06 30 52.0	+0.2
	0.3nm,0.4s,baz=86,slow=7.5,SNR=2.9						
TLY	Talaya	29.15	307	LR	LR	06 44 15.7	
	comp=Z,34nm,18.8s,baz=42,slow=39						
ZALV	Zalesovo Beam	40.62	310	P	P	06 32 49.2	-0.5
	1.3nm,0.3s,baz=90,slow=7.2,SNR=2.2						
MKAR	Makanchi Array	43.33	300	P	P	06 33 11.6	-0.5
	0.5nm,0.4s,baz=86,slow=9.1,SNR=3.6						
KURBB	Kurchatov Arra	44.91	306	P	P	06 33 23.9	-0.7
	1.7nm,0.6s,baz=80,slow=8.5,SNR=13						
ILAR	Eielson Array	46.59	34	P	P	06 33 38.8	+1.1
	0.3nm,0.5s,baz=275,slow=5.9,SNR=4.2						
BVAR	Borovoye Array	49.26	311	P	P	06 33 58.2	-0.3
	0.6nm,0.5s,baz=64,slow=6.8,SNR=3.8						
INK	Inuvik	51.42	28	P	P	06 34 14.1	-0.4
	0.2nm,0.5s,baz=304,slow=7.1,SNR=3.2						
ARU	Arti	54.75	317	P	P	06 34 38.9	-0.3
	1.4nm,0.4s,baz=95,slow=10.0,SNR=3.3						
AKTO	Aktyubinsk	57.37	311	P	P	06 34 58.4	+0.4
	1.2nm,0.7s,baz=65,slow=12,SNR=3.7						
WRA	Warramunga Arr	60.07	189	P	P	06 35 15.9	-1.1
	0.8nm,1.0s,baz=7.4,slow=7.1,SNR=5.4						
YKA	Yellowknife Ar	60.87	31	P	P	06 35 22.9	+0.8
	0.1nm,0.5s,baz=304,slow=6.8,SNR=3.3						
ASAR	Alice Springs	63.80	189	P	P	06 35 41.6	-0.5
	0.4nm,0.9s,baz=359,slow=8.3,SNR=3.9						
KBZ	Khabaz	69.64	310	P	P	06 36 19.6	+0.4
	1.1nm,0.7s,baz=15,slow=11,SNR=3.7						

IDC 02 06:31:53.0±1.8, 37°55N×69°56E, h0km, mb3.7/9, mb1 3.9/15, mb1mx3.7/51, mbtmp3.7/15, ML3.5/5, MS3.6/4, Ms1 3.6/4, ms1mx2.9/45, Error ellipse: s-maj=34.7km s-min=12.1km az=150.0
NNC 02 06:31:53.1±2.9, 37.67N×69°36E, h0km, mb4.1, mpv3.6, Error ellipse: s-maj=32.6km s-min=22.4km az=152.0
ISCJB 02 06:31:54.4±1.3, 37°8N±0°1×69°33E±0°09, h12km, mb3.4/6, MS3.8/3, Error ellipse: s-maj=20.7km s-min=6.8km az=156.8

ISC 02 06:31:56.2±1.5, 37°8N±0°2×69°36E±0°10, h12km, n25, σ1§43/23, mb3.6/7, MS3.7/3, 5C-4D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MNAS	Manas	5.30	26	⇑Pn	Pn	06 33 13.2	-2.1
	3.7nm,0.6s						
MNAS				⇓Lg	Lg	06 34 45.2	
	31nm,1.4s						
KK31	Karatay Array	5.41	9	Pn	Pn	06 33 17.8	+1.1
	1.1nm,0.4s,baz=195,slow=13,SNR=23						
KK31				⇑Lg	Lg	06 34 47.1	
	4.5nm,0.5s,baz=186,slow=26,SNR=3.7						
AAK	Ala-Archa	6.25	37	Pn	Pn	06 33 29.9	+1.5
	4.0nm,0.3s,baz=168,slow=3.4,SNR=27						
AAK				Sn	Sn	06 34 43.4	+3.5
	0.6nm,0.3s,baz=183,slow=7.7,SNR=2.2						
AAK				Lg	Lg	06 35 12.2	
	0.4nm,0.3s,baz=311,slow=16,SNR=3.7						
AAK	Ala-Archa	6.25	37	⇑Pn	Pn	06 33 29.1	+0.7
	4.7nm,0.5s						
AAK				⇓Lg	Lg	06 35 14.7	
	48nm,1.5s						
TKM2	Tokmak 2	7.01	41	⇑Pn	Pn	06 33 37.5	-1.4
	5.5nm,0.8s						
TKM2				⇑Lg	Lg	06 35 35.9	
	3.8nm,0.8s						
GEYT	Alibeck	8.90	275	Pn	Pn	06 34 05.1	+0.5
	1.0nm,0.3s,baz=133,slow=10.0,SNR=3.4						
GEYT				Sn	Sn	06 35 44.7	-0.1
	3.7nm,0.3s,baz=301,slow=27,SNR=6.0						
GEYT				LR	LR	06 39 02.4	
	comp=Z,90nm,18.4s,baz=95,slow=47						
MKAR	Makanchi Array	13.14	43	Pn	Pn	06 35 00.5	-2.1
	0.1nm,0.3s,baz=224,slow=8.4,SNR=8.5						
AB31	Akbulak array	13.35	332	⇓Pn	Pn	06 35 04.2	-1.3
	0.8nm,0.4s,baz=148,slow=12,SNR=3.7						
KURBB	Kurchatov Arra	14.42	24	Pn	Pn	06 35 17.0	-3.1
	baz=217,slow=11,SNR=4.5						
KURBB				Lg	Lg	06 39 41.0	
	0.0nm,0.3s,baz=210,slow=28,SNR=4.3						
AKTO	Aktyubinsk	15.04	331	Pn	Pn	06 35 27.9	-0.5
	0.2nm,0.3s,baz=146,slow=13,SNR=15						
AKTO	Aktyubinsk	15.04	331	⇓Pn	Pn	06 35 27.0	-1.5
	29nm,0.9s						
BVAR	Borovoye Array	15.28	2	Pn	Pn	06 35 30.9	-0.7
	0.2nm,0.3s,baz=173,slow=13,SNR=5.9						
BVAR				Lg	Lg	06 40 05.4	
	0.6nm,0.3s,baz=199,slow=27,SNR=8.3						
ZALV	Zalesovo Beam	19.37	28	P	P	06 36 19.5	-2.1
	0.4nm,0.3s,baz=219,slow=12,SNR=4.3						
ARU	Arti	20.02	342	P	P	06 36 30.0	+1.3
	2.0nm,0.4s,baz=199,slow=6.7,SNR=7.6						
KBZ	Khabaz	20.87	295	P	P	06 36 39.0	+1.0
	1.8nm,0.7s,baz=117,slow=12,SNR=3.4						
KVAR	Kislovodsk Arr	21.05	296	P	P	06 36 39.4	-0.6
	4.0nm,0.5s,baz=142,slow=6.0,SNR=3.2						
BRTR	Keskin Array B	27.82	285	P	P	06 37 46.6	+1.1
	0.6nm,0.8s,baz=84,slow=5.9,SNR=2.7						
ARCES	ARCESS Array B	39.48	337	P	P	06 39 26.0	-0.1
	1.3nm,0.8s,baz=98,slow=8.7,SNR=4.4						
GERES	GERESS Array B	41.14	304	LR	LR	07 00 49.9	
	comp=Z,26nm,18.2s,baz=36,slow=42						
NOA	NORSAR Array B	42.58	322	P	P	06 39 51.7	-0.1
	0.4nm,0.6s,baz=98,slow=8.2,SNR=2.8						
JNU	Nakatsue	49.55	76	LR	LR	07 03 11.6	
	comp=Z,532nm,21.3s,baz=97,slow=38						
TGY	Tagaytay City	51.28	103	LR	LR	07 01 38.2	
	comp=Z,76nm,20.1s,slow=35						
TORD	Torodi Ar. Bea	64.46	267	P	P	06 42 33.6	+0.8
	0.5nm,0.8s,baz=34,slow=5.8,SNR=3.5						
ILAR	Eielson Array	73.92	15	P	P	06 43 30.8	0.0
	0.2nm,0.6s,baz=336,slow=2.0,SNR=3.5						
YKA	Yellowknife Ar	80.04	2	P	P	06 44 04.8	-0.4
	0.5nm,0.7s,baz=350,slow=5.6,SNR=14						

NIED 02 06:44:00, 36°30N×140°80E, h50km, Mw3.7 Best double couple: M0=4.41000×10^14 NP1:φ0=203.00000°, δ40.00000°, λ112.00000°. NP2:φ0=356.00000°, δ54.00000°, λ73.00000°.
JMA 02 06:44:19.7±0.1, 36°35N×140°82E, h49km±1km, M3.8
JMA Felt II J1.
IDC 02 06:44:21.4±2.1, 36°34N×140°88E, h62km±20km, mb3.2/7, mb1 3.5/10, mb1mx3.3/51, mbtmp3.6/10, MS2.6/2, Ms1 2.6/2, ms1mx2.3/22, Error ellipse: s-maj=18.6km s-min=10.5km az=69.0

ISC 02 06:44:18.7±1.6, 36°37N±0°05×140°85E±0°06, h31km±11km, n21, σ1§18/30, mb3.5/7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	Hitachi	0.33	316	P	Pn	06 44 28.9	+1.5
JHO				i S	Sn	06 44 35.1	+1.9
JYT	Yasato	0.55	255	P	Pn	06 44 31.2	+0.8
JYT				S	Sn	06 44 39.2	+0.6
ONAJ	Iwakimizuishiy	0.73	357	P	Pb	06 44 33.5	+0.5
ONAJ				S	Sn	06 44 43.2	+0.1
JFK	Kawauchi	0.99	1	P	Pb	06 44 36.9	-0.5
JFK				S	Sn	06 44 49.2	-0.3
JAG	Ashikaga	1.13	273	P	Pb	06 44 39.2	-0.5
JAG				S	Sn	06 44 52.9	0.0
JFT	Otama	1.22	340	P	Pb	06 44 41.6	+0.4
JFT				S	Sb	06 44 56.8	+0.3
JKT	Katashina	1.35	287	P	Pb	06 44 42.9	-0.6
JKT				S	Sb	06 45 00.0	-0.4
JFY	Yanaizu	1.38	319	P	Pb	06 44 43.6	-0.4
JFY				S	Sb	06 45 00.9	-0.4
MJAR	Matsushiro Arr	2.14	275	P	Pn	06 44 53.9	+1.6
	15nm,0.3s,baz=105,slow=9.0,SNR=129						
MJAR				S	Sb	06 45 21.2	-1.7
	16nm,0.3s,baz=83,slow=18,SNR=9.1						
MAT	Matsushiro	2.14	275	P	Pn	06 44 54.0	+1.7
MAT				S	Sn	06 45 20.1	+2.3
JHJ	Hachijo jima 2	3.36	195	P	Pn	06 45 10.7	+1.6
	16nm,0.3s,baz=294,slow=23,SNR=5.2						
JHJ				S	Sn	06 45 50.4	+2.4
	24nm,0.3s,baz=11,slow=23,SNR=5.7						
ASAJ	Asahikawa	7.85	9	P	Pn	06 46 11.8	+1.1
	0.7nm,0.3s,baz=132,slow=17,SNR=2.1						
JNU	Nakatsue	8.83	251	LR	LR	06 49 56.8	
	comp=Z,40nm,21.1s,baz=302,slow=38						
KSRS	Korea Array	10.41	280	LR	LR	06 51 13.6	
	comp=Z,33nm,18.7s,baz=114,slow=39						
SONM	Songino Array	27.79	305	P	P	06 50 04.3	-0.6
	0.4nm,0.6s,baz=100,slow=11,SNR=3.9						
MKAR	Makanchi Array	44.09	303	P	P	06 52 23.2	-0.7
	0.6nm,0.6s,baz=89,slow=12,SNR=3.2						
ILAR	Eielson Array	50.29	32	P	P	06 53 12.3	+0.4
	0.4nm,0.7s,baz=266,slow=6.3,SNR=4.2						
WRA	Warramunga Arr	56.35	187	P	P	06 53 55.4	-1.4
	0.6nm,0.5s,baz=5.0,slow=7.6,SNR=3.8						
ASAR	Alice Springs	60.07	187	P	P	06 54 21.6	-1.2
	0.6nm,0.4s,baz=7.0,slow=8.4,SNR=15						
ARCES	ARCESS Array B	64.46	339	P	P	06 54 51.3	-0.4
	0.9nm,0.8s,baz=60,slow=13,SNR=2.3						
YKA	Yellowknife Ar	64.60	30	P	P	06 54 52.7	0.0
	0.1nm,0.6s,baz=305,slow=7.5,SNR=4.4						

IDC 02 06:47:26.2±2.8, 3°98S×152°20E, h0km, mb3.9/3, mb1 4.2/3, mb1mx3.5/38, mbtmp3.9/3, Error ellipse: s-maj=112.0km s-min=39.7km az=123.0, New Ireland region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	23.56	226	P	P	06 52 39.2	+0.7
	3.0nm,0.6s,baz=53,slow=10,SNR=41						
ASAR	Alice Springs	26.37	220	P	P	06 53 04.1	-0.3
	0.5nm,0.5s,baz=54,slow=9.0,SNR=17						
FITZ	Fitzroy Crossi	29.54	240	P	P	06 53 33.7	+1.0
	1.6nm,0.6s,baz=61,slow=10,SNR=3.0						
TORD	Torodi Ar. Bea	149.48	289	PKPbc	PKPbc	07 07 17.0	-1.6
	0.5nm,0.3s,baz=86,slow=2.1,SNR=12						

IDC 02 06:50:28.3±6.1, 7°74S×129°32E, h134km±59km, mb3.4/1, mb1 3.5/5, mb1mx3.2/37, mbtmp3.8/5, Error ellipse: s-maj=54.4km s-min=28.4km az=34.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BATI	Baumata	6.10	246	P	Pn	06 51 56.1	-0.1
BATI				S	Sn	06 53 05.4	+0.4
FITZ	Fitzroy Crossi	10.90	199	P	Pn	06 53 01.5	+0.8
	0.3nm,0.3s,baz=6.3,slow=9.3,SNR=7.7						
FITZ				S	Sn	06 55 00.1	-0.9
	0.8nm,0.3s,baz=110,slow=17,SNR=12						
WRA	Warramunga Arr	13.07	159	P	Pn	06 53 28.8	-0.3
	0.4nm,0.3s,baz=342,slow=13,SNR=8.7						
WRA				S	Sn	06 55 52.4	-1.0
	0.8nm,0.3s,baz=339,slow=22,SNR=10						
ASAR	Alice Springs	16.43	165	P	P	06 54 13.1	+1.5
	0.4nm,0.3s,baz=341,slow=9.2,SNR=30						
ASAR				S	S	06 57 16.1	+0.5
	0.2nm,0.3s,baz=313,slow=16,SNR=6.5						
STKA	Stephens Creek	26.60	156	P	P	06 55 53.8	-0.4
	0.7nm,0.5s,baz=326,slow=15,SNR=2.7						

IDC 02 07:01:09.8±3.7, 3°56S×149°39E, h0km, mb3.9/3, mb1 4.2/3, mb1mx3.6/33, mbtmp3.9/3, MS2.7/1, Ms1 2.7/1, ms1mx2.4/32, Error ellipse: s-maj=121.4km s-min=46.8km az=112.0, Bismarck Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	Guam	17.62	345	LR	LR	07 12 08.5	
	comp=Z,21nm,18.7s,baz=119,slow=37						
WRA	Warramunga Arr	21.93	221	P	P	07 06 04.2	-0.9
	2.0nm,0.8s,baz=43,slow=12,SNR=12						
ASAR	Alice Springs	24.97	215	P	P	07 06 35.1	-0.2
	1.8nm,1.0s,baz=54,slow=8.4,SNR=11						
FITZ	Fitzroy Crossi	27.39	236	P	P	07 06 58.1	+1.0
	5.5nm,0.9s,baz=81,slow=7.7,SNR=6.9						
TORD	Torodi Ar. Bea	146.69	289	PKPbc	PKPdf	07 20 53.8	+0.7
	0.5nm,0.8s,baz=192,slow=1.6,SNR=2.7						

IDC 02 07:07:07.9±1.0, 25°46N×142°86E, h0km, mb3.4/7, mb1 3.6/7, mb1mx3.5/34, mbtmp3.4/7, Error ellipse: s-maj=40.6km s-min=17.5km az=85.0
ISCJB 02 07:07:11.6±0.8, 25°41N±0°09×143°0E±0°2, h40km, mb3.4/7, Error ellipse: s-maj=32.3km s-min=10.6km az=165.0

ISC 02 07:07:13.5±1.0, 25°4N±0°1×142°8E±0°3, h40km, n8, σ1§27/9, mb3.6/7, Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCJ	Chichijima	1.75	341	Pn	Pn	07 07 40.2	-1.1
	19nm,0.3s,baz=56,slow=22,SNR=28						
JCJ				Sn	Sn	07 08 03.8	+1.5
	22nm,0.3s,baz=278,slow=23,SNR=3.5						
KLR	Kul'dur	25.27	343	P	P	07 12 37.4	+1.5
	0.8nm,0.5s,baz=136,slow=9.4,SNR=4.0						
WRA	Warramunga Arr	45.86	191	P	P	07 15 32.1	+0.1
	0.6nm,0.7s,baz=11,slow=8.7,SNR=6.8						
ASAR	Alice Springs	49.58	191	P	P	07 16 01.7	+0.9
	0.2nm,0.8s,baz=18,slow=12,SNR=3.1						
MKAR	Makanchi Array	51.98	311	P	P	07 16 17.2	-1.5
	0.1nm,0.3s,baz=81,slow=4.5,SNR=3.1						
ILAR	Eielson Array	58.89	28	P	P	07 17 07.4	-0.7
	0.3nm,0.6s,baz=259,slow=6.0,SNR=4.3						
YKA	Yellowknife Ar	73.32	28	P	P	07 18 40.7	+0.1
	0.2nm,0.7s,baz=293,slow=5.7,SNR=4.2						
FINES	FINESS Array B	79.68	334	P	P	07 19 17.3	+0.6
	0.6nm,0.4s,baz=70,slow=4.9,SNR=4.6						

MEX 02 07:20:41.8±0.3, 16°32N×98°31W, h12km±2km, MD3.7, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PNIG	Pinotepa	0.19	67	i P	Pg	07 20 45.7	-0.4
PNIG				i S	Sg	07 20 48.7	-0.2
TLIG	Tlapa	1.26	349	eP	Pn	07 21 01.6	-3.9
TLIG				eS	Sb	07 21 17.1	-4.9
VHO	Vista Hermosa	1.69	63	eP	Pn	07 21 07.8	-3.6
VHO				eS	Sn	07 21 28.7	-4.4
CAIG	El Cayaco	2.01	291	i P	Pn	07 21 12.7	-2.9
CAIG				i S	Sn	07 21 36.7	-4.0
HUIG	Huatulco	2.19	104	i P	Pn	07 21 15.1	-3.0
HUIG				i S	Sn	07 21 41.2	-4.0
TPIG	Tehuac#an	2.28	23	i P	Pn	07 21 15.9	-3.6
TPIG				i S	Sn	07 21 43.6	-4.1
YAIG	Yautepec	2.63	344	i P	Pn	07 21 21.7	-2.6
YAIG				i S	Sn	07 21 53.0	-3.3

IDC 02 07:25:36.6±1.4, 6°68S×132°73E, h0km, mb4.0/4, mb1 4.0/7, mb1mx3.8/39, mbtmp3.9/7, ML3.6/3, MS3.6/13, Ms1 3.6/13, ms1mx3.3/44, Error ellipse: s-maj=65.0km s-min=21.6km az=89.0
ISCJB 02 07:25:40.3±0.6, 6°64S±0°05×132°3E±0°1, h33km, mb4.0/6, MS3.6/10, Error ellipse: s-maj=16.8km s-min=6.6km az=178.9

ISC 02 07:25:42.3±0.8, 6°63S±0°07×132°4E±0°1, h35km, n18, σ1§89/13, mb3.9/6, MS3.7/10, Tanimbar Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	Fitzroy Crossi	13.15	209	Pn	Pn	07 28 46.1	-0.5
	0.3nm,0.3s,baz=39,slow=10,SNR=11						
FITZ				Sn	Sn	07 31 12.3	+0.6
	0.8nm,0.3s,baz=201,slow=18,SNR=7.1						
WRA	Warramunga Arr	13.37	172	Pn	Pn	07 28 47.3	-2.4
	0.3nm,0.3s,baz=354,slow=13,SNR=18						
WRA				Sn	Sn	07 31 20.3	+3.1
	0.4nm,0.3s,baz=359,slow=22,SNR=4.8						
WRA				LR	LR	07 34 30.0	
	comp=Z,348nm,18.4s,baz=345,slow=40						
PMG	Port Moresby	14.91	102	LR	LR	07 36 27.2	
	comp=Z,407nm,18.0s,baz=102,slow=45						
ASAR	Alice Springs	17.00	175	Pn	Pn	07 29 35.4	-2.1
	0.2nm,0.3s,baz=350,slow=13,SNR=14						
ASAR				Sn	Sn	07 32 44.0	-1.5
	0.1nm,0.3s,baz=353,slow=20,SNR=5.6						
ASAR				LR	LR	07 35 03.8	
	comp=Z,65nm,20.6s,baz=354,slow=34						
CTA	Charters Tower	19.00	136	P	Pn	07 30 03.7	+1.7
	0.1nm,0.3s,baz=326,slow=15,SNR=3.8						
STKA	Stephens Creek

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SKR                                    eS    Sn   07 28 11.7 -0.7
SKR  Severo-Kuril's   2.42 344 ePN   Pn   07 27 39.0 -4.1
SKR                                  pmax  pmax
     comp=Z,60nm,0.5s
SKR  Severo-Kuril's   2.42 344 eP    Pn   07 27 42.4 -0.7
SKR                                   AMB   AMB  07 27 43.8
     comp=Z,170nm,0.9s
SKR                                    eS    Sn   07 28 11.2 -1.2
SKR                                     A     A   07 28 14.4
     comp=Z,90nm,0.3s
SKR                                     A     A   07 28 14.4
     comp=Z,70nm,0.3s
PAU  Pauzhetka        3.12 356 eP    Pn   07 27 52.7  0.0
PAU                                    eS    Sn   07 28 30.1 +0.5
PAU  Pauzhetka        3.12 356 PN    Pn   07 27 52.7  0.0
PAU                                     S    Sn   07 28 30.1 +0.5
PAU  Pauzhetka        3.12 356 eP    Pn   07 27 52.7  0.0
PAU                                    eS    Sn   07 28 30.1 +0.5
ASAK Asacha           4.06   7 eP    Pn   07 28 05.8 +0.1
RUS  Russkaya         4.18  12 eP    Pn   07 28 07.0 -0.1
RUS                                    eS    Sn   07 28 54.6 -1.0
RUS  Russkaya         4.18  12 PN    Pn   07 28 07.0 -0.1
RUS                                     S    Sn   07 28 54.6 -1.0
RUS  Russkaya         4.18  12 eP    Pn   07 28 07.0 -0.1
RUS                                    eS    Sn   07 28 54.6 -1.0
MTVR Mutnovka         4.19   9 eP    Pn   07 28 07.4  0.0
MTVR                                   eS    Sn   07 28 55.7 -0.4
KRMR Karymshinskiy    4.53   8 eP    Pn   07 28 12.6 +0.7
KRMR                                   eS    Sn   07 29 04.9 +0.7
APC  Apacha           4.58   0 eP    Pn   07 28 12.7 +0.1
APC  Apacha           4.58   0 PN    Pn   07 28 12.7 +0.1
PET  Petropavlovsk    4.77  11 eP    Pn   07 28 15.4 +0.1
PET                                    eS    Sn   07 29 09.0 -1.3
PET  Petropavlovsk    4.77  11 ePN   Pn   07 28 15.7 +0.4
PET                                    eS    Sn   07 29 10.7 +0.4
PET                                  pmax  pmax
     comp=Z,19nm,0.5s
PET                                  smax  smax
     comp=N,43nm,0.5s
PET                                  smax  smax
     comp=E,33nm,0.7s
PET  Petropavlovsk    4.77  11 eP    Pn   07 28 15.7 +0.4
PET                                   AMB   AMB  07 28 16.2
     comp=E,20nm,0.5s
PET                                    eS    Sn   07 29 10.7 +0.4
PET                                     A     A   07 29 15.1
     comp=E,40nm,0.5s
PET                                     A     A   07 29 16.4
     comp=E,30nm,0.7s
DALK Dalny            4.79  12 eP    Pn   07 28 15.7 +0.1
DALK                                   eS    Sn   07 29 09.8 -1.0
UGLR Uglovaya         4.98  12 eP    Pn   07 28 18.6 +0.4
AVH  Avacha           5.02  11 eP    Pn   07 28 20.3 +1.5
AVH  Avacha           5.02  11 PN    Pn   07 28 20.3 +1.5
AVH  Avacha           5.02  11 eP    Pn   07 28 20.3 +1.5
SMAR Somma            5.03  11 eP    Pn   07 28 19.6 +0.6
SMAR Somma            5.03  11 PN    Pn   07 28 19.6 +0.6
KOK  Koryaka          5.04  10 eP    Pn   07 28 20.6 +1.6
KOK  Koryaka          5.04  10 PN    Pn   07 28 20.6 +1.6
KOK  Koryaka          5.04  10 eP    Pn   07 28 20.6 +1.6
SDLR Sedlovina        5.05  12 eP    Pn   07 28 19.2 -0.1
SDLR Sedlovina        5.05  12 PN    Pn   07 28 19.2 -0.1
KRER Koryakskii       5.06  11 eP    Pn   07 28 20.4 +0.9
KRX  Arik             5.10  10 eP    Pn   07 28 20.6 +0.6
GNL  Ganaly           5.37   5 eP    Pn   07 28 24.7 +1.0
GNL  Ganaly           5.37   5 PN    Pn   07 28 24.7 +1.0
MKZ  Mys Kozlova      6.84  23 eP    Pn   07 28 43.3 -0.4
MKZ  Mys Kozlova      6.84  23 PN    Pn   07 28 43.3 -0.4
MKZ  Mys Kozlova      6.84  23 eP    Pn   07 28 43.3 -0.4
KMNR Kamenistaya      7.66  13 eP    Pn   07 28 56.4 +1.4
KMNR Kamenistaya      7.66  13 PN    Pn   07 28 56.4 +1.4
TYV  Tymovskoe        9.73 290 eP    Pn   07 29 23.7 +0.3
```

IDC 02 07:35:46.0±2.5, 54°.16N×86°.37E, h0km, mb1 3.4/2, mb1mx3.1/54, mbtmp3.4/2, ML3.0/2, Error ellipse: s-maj=20.0km s-min=11.8km az=59.0, Southwestern Siberia

```
Code  Station Name      Δ°   AZ°   Phase ID          Time     Res
                                   Op    ISC       h m s    ISC
I46RU ZALESOVO INFRA  0.94 258  i                 07 42 10.0
      baz=78,slow=331,SNR=1.2
ZALV  Zalesovo Beam   0.94 258  Pg    Pg        07 36 02.1 -1.9
      5.2nm,0.3s,baz=74,slow=17,SNR=28
ZALV                                Lg    Lg        07 36 17.7
      10.0nm,0.3s,baz=77,slow=28,SNR=37
ZALV                                Rg    Rg        07 36 22.1
      5.9nm,0.3s,baz=43,slow=28,SNR=13
KURBB Kurchatov Arra  5.96 237  Pn    Pn        07 37 17.1 +1.6
      0.3nm,0.3s,baz=54,slow=14,SNR=7.5
MKAR  Makanchi Array  7.82 201  Pn    Pn        07 37 41.8 +0.8
      0.3nm,0.3s,baz=22,slow=12,SNR=11
MKAR                                Sn    Sn        07 39 11.8 +1.7
      baz=16,slow=25,SNR=2.8
MKAR                                Lg    Lg        07 39 54.1
      baz=28,slow=32,SNR=6.1
```

*IDC **02** 07:41:50.8±0.9, 41°.56N×65°.69E, h0km, mb3.8/8, mb1 3.9/13, mb1mx3.7/45, mbtmp3.8/13, ML3.6/5, MS2.5/1, Ms1 2.5/1, ms1mx2.0/47, Error ellipse: s-maj=15.2km s-min=10.3km az=20.0*

*ISCJB **02** 07:41:52.2±0.5, 42°.09N±0°.04×65°.85E±0°.04, h10km, mb3.8/12, MS4.6/1, Error ellipse: s-maj=6.5km s-min=4.0km az=10.1*

*NEIC **02** 07:41:53.3±0.7, 41°.86N×65°.86E, h10km, mb4.1/2, Error ellipse: s-maj=13.5km s-min=8.7km az=189.0*

*NNC **02** 07:41:56.5±1.9, 42°.11N×65°.95E, h28km±12km, mb4.1, mpv3.6, Error ellipse: s-maj=13.9km s-min=6.2km az=36.0*

*SOME **02** 07:42:02.9, 42°.12N×66°.47E, h10km*

ISC 02 07:41:53.3±0.6, 41°.94N±0°.06×65°.87E±0°.04, h10km, n47, σ2s30/68, mb3.9/12, 16C-18D, Central Kazakhstan

```
Code  Station Name      Δ°   AZ°   Phase ID          Time     Res
                                   Op    ISC       h m s    ISC
CHM   Chimkent        2.80  81  eP                Pb       07 42 44.2 +0.8
      81nm,0.2s
CHM                                    eS    Sn        07 43 14.6 +2.5
      600nm,0.4s
BRLS  Borolday        2.95  72  eP                Pb       07 42 47.8 +1.8
BRLS                                   eS    Sb        07 43 20.2 -1.9
IUG   Iuzhnay         3.11  85  eP                Pg       07 42 51.1 -1.7
      94nm,0.4s
IUG                                    eS    Sb        07 43 26.0 -0.7
      407nm,0.3s
KK31  Karatay Array   3.62  70  ⇓Pn               Pn       07 42 50.0 +0.6
      5.0nm,0.3s,baz=263,slow=11,SNR=168
KK31                                  ⇓Lg    Lg        07 43 46.5
      13nm,0.3s,baz=248,slow=27,SNR=7.4
KKAR  Karatay Array   3.62  70  ePn               Pn       07 42 50.3 +0.9
KKAR                                   eSn   Sn        07 43 35.4 +3.1
MNAS  Manas           4.96  81  Pn                Pn       07 43 08.9 +1.0
MNAS                                  ⇑Pg    Pb        07 43 23.7 +3.5
      7.3nm,0.4s
MNAS                                   Sn    Sn        07 44 04.9 -0.4
MNAS                                  ⇓Lg    Lg        07 44 29.0
      37nm,0.6s
EKS2  Erkin-Say       5.91  80  ePn               Pn       07 43 22.1 +1.1
EKS2                                   eSn   Sn        07 44 29.5 +0.7
SFK   Sufi-Kurgan     6.09 106  ⇑Pn               Pn       07 43 24.0 +0.4
      1.6nm,0.4s
SFK                                   ⇓Sn    Sn        07 44 31.5 -1.9
      16nm,0.3s
SFK                                   ⇓Lg    Lg        07 45 08.6
      28nm,0.5s
AAK   Ala-Archa       6.44  81  Pn                Pn       07 43 31.4 +3.2
      1.0nm,0.3s,baz=228,slow=10.0,SNR=9.1
AAK                                    Sn    Sn        07 44 44.7 +2.9
      1.1nm,0.3s,baz=223,slow=20,SNR=3.3
AAK   Ala-Archa       6.44  81  ⇓Pn               Pn       07 43 30.2 +2.0
      3.5nm,0.8s
AAK                                   ⇓Lg    Lg        07 45 15.1
      15nm,0.6s
AAK   Ala-Archa       6.44  81  ePn               Pn       07 43 31.3 +3.0
AAK                                    eSn   Sn        07 44 40.2 -1.6
GEYT  Alibeck         7.18 239  Pn                Pn       07 43 38.2  0.0
      3.1nm,0.3s,baz=47,slow=8.7,SNR=11
GEYT                                   Sn    Sn        07 44 57.0 -2.9
      6.1nm,0.3s,baz=30,slow=12,SNR=4.7
GEYT                                   LR    LR        07 47 00.7
      comp=Z,35nm,18.3s,baz=5.0,slow=45
TKM2  Tokmak 2        7.26  79  ⇑Pn               Pn       07 43 40.0 +0.4
      1.1nm,0.5s
TKM2                                  ⇓Lg    Lg        07 45 41.9
      10nm,0.5s
TKM2  Tokmak 2        7.26  79  ePn               Pn       07 43 40.3 +0.6
TKM2                                   eSn   Sn        07 45 06.7 +4.4
OTUK  Ortayu          7.79  34  ⇑Pn               Pn       07 43 47.4 +0.8
      3.2nm,0.4s
OTUK                                  ⇓Sn    Sn        07 45 13.3 -1.5
      4.1nm,0.4s
OTUK                                  ⇑Lg    Lg        07 46 01.3
      13nm,0.8s
KSH   Kashi           8.05 104  Pn                Pn       07 43 47.4 -2.9
KSH                                    Sn    Sn        07 45 03.1  -18
KSH                                   smax  smax
      comp=N,23nm,1.0s
KSH                                   smax  smax
      comp=E,19nm,0.9s
AB31  Akbulak array   8.41 332  ⇑Pn               Pn       07 43 54.8 -0.3
      comp=E,1.4nm,0.3s,baz=154,slow=12,SNR=274
AB31                                  ⇑Sn    Sn        07 45 24.0 -6.0
      comp=E,3.3nm,0.5s,baz=153,slow=15,SNR=5.4
AB31                                  ⇓Lg    Lg        07 46 20.2
      comp=E,7.1nm,0.5s,baz=146,slow=27,SNR=4.1
ABKAR Akbulak array   8.41 332  ePn               Pn       07 43 55.4 +0.4
ABKAR                                  eSn   Sn        07 45 26.7 -3.3
AKTO  Aktyubinsk     10.08 330  Pn                Pn       07 44 19.7 +1.7
      comp=E,0.2nm,0.3s,baz=145,slow=14,SNR=4.4
AKTO                                    Sn    Sn        07 46 13.8 +2.7
      comp=E,1.1nm,0.3s,baz=342,slow=21,SNR=6.3
AKTO  Aktyubinsk     10.08 330  ⇓Pn               Pn       07 44 19.4 +1.4
      comp=E,2.2nm,0.6s
AKTO                                  ⇑Pg
      comp=E,3.6nm,0.7s
AKTO                                  ⇑Sn    Sn        07 46 08.1 -3.0
      comp=E,6.8nm,0.6s
AKTO                                  ⇓Lg    Lg        07 47 12.9
      comp=E,9.7nm,0.7s
PDGK  Podgornoye     10.13  78  ⇓Lg               Lg       07 47 16.4
      comp=E,12nm,1.0s
ZRNK  Zerenda        11.22  10  ⇑Pn               Pn       07 44 32.6 -0.9
      comp=E,3.8nm,0.8s
ZRNK                                  ⇑Sn    Sn        07 46 33.2 -5.7
      comp=E,3.9nm,0.5s
ZRNK                                  ⇑Lg    Lg        07 47 50.4
      comp=E,5.7nm,0.9s
BVA0  Borovoye Array 11.50  14  Pn                Pn       07 44 36.3 -1.2
      comp=E,0.4nm,0.3s,baz=224,slow=32,SNR=22
BVA0                                  ⇓Sn    Sn        07 46 40.5 -5.4
      comp=E,8.2nm,0.8s,baz=191,slow=18,SNR=9.7
BVA0                                  ⇑Lg    Lg        07 47 57.0
      comp=E,9.0nm,0.8s
BVAR  Borovoye Array 11.50  14  Pn                Pn       07 44 37.7 +0.2
      comp=E,0.9nm,0.3s,baz=182,slow=10,SNR=14
BVAR                                    Sn    Sn        07 46 45.0 -0.9
      comp=E,1.3nm,0.3s,baz=186,slow=21,SNR=9.5
BRVK  Borovoye       11.51  13  ⇓Pn               Pn       07 44 36.9 -0.7
      comp=E,3.8nm,0.6s
BRVK  Borovoye       11.51  13  ePn               Pn       07 44 37.3 -0.3
CHKZ  Chkalovo       12.16  14  ⇑Pn               Pn       07 44 45.7 -0.7
      comp=E,5.4nm,0.9s
CHKZ                                  ⇓Sn    Sn        07 46 58.1 -3.9
      comp=E,12nm,0.9s
MAKZ  Makanchi       12.51  62  ⇑Pn               Pn       07 44 50.1 -1.1
      comp=E,4.2nm,1.1s
MAKZ                                  ⇓Lg    Lg        07 48 31.2
      comp=E,9.0nm,1.1s
MK31  Makanchi Array 12.71  62  ⇑Pn               Pn       07 44 53.0 -0.9
      comp=E,1.5nm,0.5s,baz=249,slow=14,SNR=24
MK31                                  ⇓Lg    Lg        07 48 38.5
      comp=E,4.5nm,0.8s,baz=240,slow=29,SNR=4.2
MKAR  Makanchi Array 12.71  62  Pn                Pn       07 44 53.6 -0.4
      comp=E,0.7nm,0.3s,baz=250,slow=16,SNR=24
MKAR                                    Sn    Sn        07 47 17.8 +2.3
      comp=E,0.1nm,0.3s,baz=328,slow=23,SNR=2.0
ARU   Arti           15.25 344  Pn                Pn       07 45 28.8 +0.3
      comp=E,0.0nm,0.3s,baz=90,slow=22,SNR=2.7
ARU   Arti           15.25 344  ePn               Pn       07 45 28.1 -0.4
ARU                                    eSn   Sn        07 48 11.8 -5.5
GNI   Garni          16.04 271  Pn                P        07 45 44.8 +2.4
      comp=E,0.8nm,0.3s,baz=135,slow=5.3,SNR=3.4
ZALV  Zalesovo Beam  17.41  40  P                 P        07 45 58.0 +0.7
      comp=E,0.7nm,0.3s,baz=236,slow=11,SNR=2.6
BRTR  Keskin Array B 24.41 276  P                 P        07 47 12.7 +0.7
      comp=E,1.0nm,0.7s,baz=64,slow=5.6,SNR=6.3
FINES FINESS Array B 30.75 323  P                 P        07 48 09.2 +0.9
      comp=E,1.5nm,0.4s,baz=108,slow=8,9,SNR=4.1
ARCES ARCESS Array B 34.59 336  P                 P        07 48 42.8 +1.0
      comp=E,1.3nm,0.7s,baz=123,slow=8.8,SNR=6.2
TIP   Timpagrande    37.01 283  eP                P        07 49 05.5 +2.5
      comp=E,1.6nm,0.4s
NOA   NORSAR Array B 37.65 319  P                 P        07 49 08.6 +0.5
      comp=E,0.7nm,0.9s,baz=112,slow=7.1,SNR=2.4
SPITS Spitsbergen Ar 41.28 346  P                 P        07 49 39.9 +1.7
      comp=E,3.6nm,0.8s,baz=144,slow=12,SNR=3.9
KEST  Kesra          43.78 281  P                 P        07 50 01.0 +1.8
      comp=E,3.3nm,0.5s,baz=48,slow=7.9,SNR=5.7
JNU   Nakatsue       51.20  77  LR                LR       08 14 42.6
      comp=E,528nm,19.3s,baz=124,slow=38
TORD  Torodi Ar. Bea 62.15 263  P                 P        07 52 13.0 -1.9
      comp=E,0.4nm,0.8s,baz=53,slow=6.4,SNR=3.6
YKA   Yellowknife Ar 75.92   0  P                 P        07 53 40.1 +0.5
      comp=E,0.6nm,0.5s,baz=355,slow=6.4,SNR=29
FITZ  Fitzroy Crossi 81.28 124  eP                P        07 54 07.0 -2.7
      comp=E,0.8nm,0.6s
WRA   Warramunga Arr 88.18 119  P                 P        07 54 43.4 -1.2
      comp=E,0.2nm,0.8s,baz=327,slow=4.4,SNR=3.3
ASAR  Alice Springs  90.57 122  P                 P        07 54 54.0 -1.7
      comp=E,0.1nm,0.6s,baz=316,slow=5.1,SNR=2.8
```

IDC 02 07:48:50.3±33.0, 22°.51S×179°.35W, h0km, mb4.0/4, mb1 4.2/4, mb1mx3.7/42, mbtmp4.0/4, Error ellipse: s-maj=608.7km s-min=145.6km az=90.0, South of Fiji Islands

```
Code  Station Name      Δ°   AZ°   Phase ID          Time     Res
                                   Op    ISC       h m s    ISC
STKA  Stephens Creek 35.81 246  P                 P        07 55 50.7 -0.9
      1.0nm,0.6s,baz=87,slow=8.2,SNR=5.3
ASAR  Alice Springs  42.87 259  P                 P        07 56 50.4 -0.4
      1.0nm,0.8s,baz=92,slow=6.8,SNR=13
WRA   Warramunga Arr 43.11 264  P                 P        07 56 53.2 +0.5
      2.0nm,0.5s,baz=97,slow=8.5,SNR=54
FITZ  Fitzroy Crossi 51.54 264  P                 P        07 57 58.6 +0.1
      2.2nm,0.7s,baz=126,slow=10,SNR=4.1
```

*AZER **02** 07:49:20.4±99.0, 42°.27N×42°.63E, h43km±59km, Error ellipse: s-maj=406.1km s-min=16.5km az=292.0*

*TIF **02** 07:49:21.2, 42°.56N×43°.41E, h10km*

*MOS **02** 07:49:21.7±2.0, 42°.55N×43°.29E, h10km, mb4.0/3, Error ellipse: s-maj=7.5km s-min=4.8km az=80.5*

*CSEM **02** 07:49:22.1±0.2, 42°.59N×43°.30E, h2km, ML3.4, Error ellipse: s-maj=4.2km s-min=3.5km az=61.0*

*ISK **02** 07:49:24.4, 42°.54N×43°.45E, h28km, MD3.4*

ISC 02 07:49:21.3±0.7, 42°.56N±0°.02×43°.38E±0°.02, h10km±4km, n95, σ1s66/147, 17C-11D, Western Caucasus

```
Code  Station Name      Δ°   AZ°   Phase ID          Time     Res
                                   Op    ISC       h m s    ISC
ONI   Oni            0.06  59  P                 Pg       07 49 23.6  0.0
ONI                                    S     Sg       07 49 25.0 -0.2
ONI   Oni            0.06  59  PG                Pg       07 49 23.5  0.0
ONI   Oni            0.06  59  P                 Pg       07 49 23.5  0.0
ONI                                    S     Sg       07 49 25.0 -0.2
DIGR  Digorskoe uzhe 0.37  23  ⇓iPG               Pg       07 49 28.4 -0.3
DIGR  Digorskoe uzhe 0.37  23  i Pg               Pg       07 49 28.4 -0.3
ZEI   Tsey           0.45  59  ⇓iPG               Pg       07 49 30.0 -0.1
ZEI   Tsey           0.45  59  i Pg               Pg       07 49 30.0 -0.1
KORR  Kora           0.73  44  i PG               Pb       07 49 35.9 -0.2
KORR                                   i S   Sb       07 49 47.1 +1.0
KORR                                  pmax  pmax
      comp=Z,286nm,0.4s
KORR                                  smax  smax
      comp=E,3μm,0.5s
KORR  Kora           0.73  44  i Pg               Pb       07 49 35.9 -0.2
      comp=E,286nm,0.4s
KORR                                   i Sg  Sb       07 49 47.1 +1.0
LSNR  Lesken         0.79  24  i PG               Pb       07 49 37.0 -0.1
LSNR                                   i S   Sn       07 49 49.1 -1.3
LSNR                                  pmax  pmax
      comp=Z,173nm,0.3s
LSNR                                  smax  smax
      comp=N,440nm,0.4s
GUDG  Gudauri        0.81  96  P                 Pb       07 49 37.6 -0.1
GUDG                                   S     Sb       07 49 48.7 -0.1
NEY   Neytrino       0.84 325d iPG               Pg       07 49 37.6  0.0
NEY                                    i S   Sb       07 49 49.6  0.0
NEY                                  pmax  pmax
      comp=Z,82nm,0.2s
NEY                                  smax  smax
      comp=E,524nm,0.4s
NEY   Neytrino       0.84 325  i Pg               Pg       07 49 37.6  0.0
      comp=E,82nm,0.2s
NEY                                    i Sg  Sb       07 49 49.6  0.0
ARNR  Ardon          0.91  47  i PG               Pn       07 49 40.0 -0.1
ARNR                                   i S   Sn       07 49 53.4 +0.2
ARNR                                  pmax  pmax
      comp=Z,52nm,0.2s
ARNR                                  smax  smax
      comp=N,569nm,0.4s
ARNR  Ardon          0.91  47  i Pg               Pn       07 49 40.0 -0.1
      comp=N,52nm,0.2s
ARNR                                   i Sg  Sn       07 49 53.4 +0.2
      comp=N,569nm,0.4s
NCK   Nalchik        0.95   9 iPG                 Pn       07 49 40.3 -0.4
NCK                                    i S   Sn       07 49 54.5 +0.2
NCK                                  pmax  pmax
      comp=Z,402nm,0.3s
NCK                                  smax  smax
      comp=E,646nm,0.4s
NCK   Nalchik        0.95   9  i Pg               Pn       07 49 40.3 -0.4
      comp=E,402nm,0.3s
NCK                                    i Sg  Sn       07 49 54.5 +0.2
STDR  Stavd-Durt     0.95  31 ⇓iPG                Pn       07 49 41.2 +0.5
STDR                                   eS    Sn       07 49 54.8 +0.5
STDR  Stavd-Durt     0.95  31  i Pg               Pn       07 49 41.2 +0.5
STDR                                   eSg   Sn       07 49 54.8 +0.5
CHVG  Ch'k'valeri    0.97 280 ePG                Pg       07 49 37.4 -2.6
CHVG  Ch'k'valeri    0.97 280  P                 Pb       07 49 40.6 +0.4
CHVG                                   S     Sn       07 49 55.7 +0.9
CHVG  Ch'k'valeri    0.97 280 ePG                Pg       07 49 37.4 -2.6
CHVG  Ch'k'valeri    0.97 280  P                 Pb       07 49 40.6 +0.4
VLKR  Vladikavkaz    1.07  63 ⇓iPG               Pn       07 49 43.1 +0.7
VLKR                                   eS    Sn       07 49 57.8 +0.5
VLKR  Vladikavkaz    1.07  63  i Pg               Pn       07 49 43.1 +0.7
VLKR                                   eSg   Sn       07 49 57.8 +0.5
DUS   Dusheti        1.08 115  P                 Pn       07 49 43.6 +1.1
DUS                                    S     Sn       07 49 59.1 +1.4
DUS   Dusheti        1.08 115  PG                Pn       07 49 43.7 +1.1
DUS                                    S     Sn       07 49 59.1 +1.4
DUS   Dusheti        1.08 115  P                 Pn       07 49 43.7 +1.1
DUS                                    S     Sn       07 49 59.1 +1.4
AKH   Akhalkalaki    1.15 176  P                 Pn       07 49 43.5 -0.1
AKH                                    S     Sn       07 49 59.3 -0.2
AKH   Akhalkalaki    1.15 176  PG                Pn       07 49 43.5 -0.1
AKH                                    S     Sn       07 49 59.3 -0.2
AKH   Akhalkalaki    1.15 176  P                 Pn       07 49 43.5 -0.1
AKH                                    S     Sn       07 49 59.3 -0.2
BTKR  Batakoyurt     1.18  46 ⇑iPG               Pn       07 49 45.9 +2.1
BTKR                                   eS    Sn       07 50 02.3 +2.4
BTKR  Batakoyurt     1.18  46  i Pg               Pn       07 49 45.9 +2.1
BTKR                                   eSg   Sn       07 50 02.3 +2.4
KMGR  Komgaron       1.20  65 ePG                Pg       07 49 45.4 +1.1
KMGR                                   eS    Sn       07 50 01.8 +1.3
KMGR  Komgaron       1.20  65 ePg                Pg       07 49 45.4 +1.1
KMGR                                   eSg   Sn       07 50 01.8 +1.3
SHA1  Shidzhatmaz    1.29 336  PG                Pg       07 49 46.3 +0.2
SHA1  Shidzhatmaz    1.29 336  Pg                Pg       07 49 46.3 +0.2
TBLG  Delisi         1.30 129 ePN                Pg       07 49 46.6 +0.3
TBLG                                   eSN   Sn       07 50 02.6 -0.5
TBLG  Delisi         1.30 129  P                 Pg       07 49 48.3 +1.9
TBLG                                   S     Sg       07 50 05.9 +2.7
TBLG  Delisi         1.30 129  P                 Pg       07 49 48.3 +1.9
TBLG                                   S     Sg       07 50 05.6 +2.4
TBLG  Delisi         1.30 129 ePG                Pg       07 49 48.1 +1.8
TBLG  Delisi         1.30 129 ePn                Pg       07 49 46.6 +0.3
TBLG  Delisi         1.30 129 ePg                Pg       07 49 48.1 +1.8
TBLG  Delisi         1.30 129  P                 Pg       07 49 48.3 +1.9
TBLG                                   eSn   Sn       07 50 02.6 -0.5
TBLG                                   S     Sg       07 50 05.6 +2.4
PRTR  Priterechnaya  1.36  29 ePG                Pg       07 49 48.2 +0.8
PRTR                                   eS    Sg       07 50 07.1 +2.0
PRTR  Priterechnaya  1.36  29 ePg                Pg       07 49 48.2 +0.8
PRTR                                   eSg   Sg       07 50 07.1 +2.0
KIV   Kislovodsk     1.48 340 ePN                Pg       07 49 50.3 +0.5
KIV   Kislovodsk     1.48 340  i PG              Pb       07 49 48.8 -0.2
KIV   Kislovodsk     1.48 340  i Pg             Pb       07 49 48.8 -0.2
KIV   Kislovodsk     1.48 340 ePn                Pg       07 49 50.3 +0.5
BEYR  Belyy Ugol+    1.51 344  PG                Pg       07 49 50.1 -0.2
BEYR  Belyy Ugol+    1.51 344  Pg                Pg       07 49 50.1 -0.2
DGRG  David-gareji   1.85 126  P                 Pg       07 49 56.3 -0.5
DGRG                                   S     Sg       07 50 22.0 +1.2
DGRG  David-gareji   1.85 126  PN                Pg       07 49 56.3 -0.5
DGRG                                   S     Sg       07 50 22.0 +1.2
DGRG  David-gareji   1.85 126  P                 Pg       07 49 56.3 -0.5
DGRG                                   S     Sg       07 50 22.0 +1.2
KARS  Kars           1.94 187 ePN                Pb       07 49 56.4 -0.5
KARS  Kars           1.94 187  PN                Pb       07 49 56.0 -0.9
KARS  Kars           1.94 187 ePn                Pb       07 49 56.4 -0.5
QZX   Qazax, Azerbai 2.11 135  ⇑P                Pb       07 49 58.9 -0.8
QZX                                   ⇑S    Sb       07 50 26.8 +0.9
QZX   Qazax, Azerbai 2.11 135  P                 Pb       07 49 58.9 -0.8
QZX                                   S     Sb       07 50 26.8 +0.9
GOF   Gofitskoye     2.51 354⇑ePN                Pg       07 50 09.0 -0.4
GOF                                   eS    Sg       07 50 40.9 -1.0
GOF                                  pmax  pmax
      comp=Z,32nm,0.7s
GOF                                  smax  smax
      comp=E,63nm,0.6s
GOF   Gofitskoye     2.51 354 eSb                Sg       07 50 40.9 -1.0
GDB   GEDABAY        2.56 135 ⇑P                 Pb       07 50 06.0 -1.3
      SNR=36
GDB                                   ⇑S    Sb       07 50 39.2 +0.3
GDB   GEDABAY        2.56 135  P                 Pb       07 50 06.0 -1.3
      SNR=36
GDB                                   S     Sb       07 50 39.2 +0.3
ZKTA  Zakatala       2.58 110  P                 Pg       07 50 09.3 -1.4
      SNR=5.2
GNI   Garni          2.62 157⇑ePN                Pb       07 50 06.5 -1.8
GNI   Garni          2.62 157 ePn                Pb       07 50 06.5 -1.8
GNBR  Gunib          2.66  92 ePN                Pg       07 50 12.4 +0.2
GNBR                                   eS    Sg       07 50 45.5 -1.1
SOC   Sochi          2.87 292 ePN                Pn       07 50 08.2 +1.1
SOC                                    e                07 50 41.4
SOC                                  pmax  pmax
      comp=Z,7.0nm,0.5s
SOC   Sochi          2.87 292 ePn                Pn       07 50 08.2 +1.1
      comp=Z,7.0nm,0.5s
SOC                                    eSn   Sn       07 50 41.4 -0.3
GANJ  Ganja          2.92 130 ⇑P                 Pb       07 50 12.0 -1.4
      SNR=7.5
GANJ                                  ⇑S    Sb       07 50 49.1  0.0
GANJ  Ganja          2.92 130  P                 Pb       07 50 12.0 -1.4
      SNR=7.5
GANJ                                   S     Sb       07 50 49.1  0.0
SEKA  Sheki          3.15 114 ⇑P                 Pb       07 50 15.3 -2.1
      SNR=5.3
SEKA                                  ⇑S    Sb       07 50 54.0 -1.9
SEKA  Sheki          3.15 114  P                 Pb       07 50 15.3 -2.1
      SNR=5.3
SEKA                                   S     Sb       07 50 54.0 -1.9
BAYT  Ayd'–ntepe-Bay 3.26 229 ePN                Pn       07 50 15.4 +2.8
BAYT  Ayd'–ntepe-Bay 3.26 229 ePn                Pn       07 50 15.4 +2.8
XNQ   Khinaliq       3.81 110 ⇑P                 Pb       07 50 25.1 -3.7
XNQ                                   ⇓S    Sb       07 51 14.4 -0.7
XNQ   Khinaliq       3.81 110  P                 Pb       07 50 25.1 -3.7
XNQ                                   S     Sb       07 51 14.4 -0.7
ANN   Anapa          4.86 299 ePN                Pn       07 50 36.0 +1.6
ANN                                  pmax  pmax
      comp=Z,6.0nm,0.4s
ANN   Anapa          4.86 299 ePn                Pn       07 50 36.0 +1.6
      comp=Z,6.0nm,0.4s
AKTO  Aktyubinsk     12.78  47  ⇓Pn               Pn       07 52 22.3 -0.6
      comp=Z,1.4nm,0.8s
AKTO                                  ⇑Sn    Sn       07 54 40.2 -4.9
      comp=Z,2.2nm,0.9s
AKTO  Aktyubinsk     12.78  47  Pn                Pn       07 52 22.3 -0.6
      comp=Z,1.4nm,0.8s
AKTO                                   Sn    Sn       07 54 40.2 -4.9
      comp=Z,2.2nm,0.9s
AB31  Akbulak array  13.32  54  ⇓Pn               Pn       07 52 28.9 -1.4
      comp=Z,0.6nm,0.5s,baz=246,slow=11,SNR=12
AB31                                  ⇓Sn    Sn       07 54 51.8 -6.5
      comp=Z,1.1nm,0.8s,baz=238,slow=24,SNR=5.6
AB31  Akbulak array  13.32  54  Pn                Pn       07 52 28.9 -1.4
      comp=Z,0.6nm,0.5s,SNR=12
AB31                                   Sn    Sn       07 54 51.8 -6.5
      comp=Z,1.1nm,0.8s,SNR=5.6
```

APE	**Apeiranthos**	**14.77**	**254⇑**	*e*P	**Pn**	**07 52 48.2**	**-2.0**
APE				pmax	pmax		
comp=Z,25nm,1.4s							
ARU	**Arti**	**16.97**	**30**	*e*P	**P**	**07 53 20.9**	**+0.5**
ARU				pmax	pmax		
comp=Z,1.0nm,0.8s							
ARU	**Arti**	**16.97**	**30**	*e*P	**P**	**07 53 20.9**	**+0.5**
comp=Z,1.0nm,0.8s							
VSU	**Vasula**	**19.03**	**332⇑**	*e*P	**Pn**	**07 53 45.5**	**+1.7**
VSU				pmax	pmax		
comp=Z,36nm,1.3s							
VSU	**Vasula**	**19.03**	**332**	*e*P	**Pn**	**07 53 45.5**	**+1.7**
comp=Z,36nm,1.3s							
BRVK	**Borovoye**	**20.77**	**50⇑**	*e*P	Pn	07 54 03.9	-0.7
BRVK				pmax	pmax		
comp=Z,5.0nm,2.0s							
BRVK	**Borovoye**	**20.77**	**50**	*e*P	Pn	07 54 03.9	-0.7
comp=Z,5.0nm,2.0s							
AAK	**Ala-Archa**	**22.84**	**79⇓**	*e*P	**P**	**07 54 26.1**	**+1.4**
AAK				pmax	pmax		
comp=Z,1.0nm,0.8s							
AAK	**Ala-Archa**	**22.84**	**79**	*e*P	**P**	**07 54 26.1**	**+1.4**
comp=Z,1.0nm,0.8s							
LVZ	**Lovozero**	**25.82**	**352⇑**	*e*P	**P**	**07 54 57.0**	**+4.6**
LVZ				pmax	pmax		
comp=Z,18nm,1.3s							
LVZ	**Lovozero**	**25.82**	**352**	*e*P	**P**	**07 54 57.0**	**+4.6**
comp=Z,18nm,1.3s							

NIED ***02*** *07:55:00,36°.60N×140°.80E,h14km,Mw3.7 Best double couple: M0:3.53000×10¹⁴ NP1:φs:347.00000°,δ32.00000°, λ-56.00000°. NP2:φs:128.00000°,δ64.00000°, λ-110.00000°.*
ISCJB ***02*** *07:55:16.6±0.8,36°.59N±0°.04×140°.95E±0°.06,h26km±5km, mb3.8/12,Error ellipse: s-maj=8.6km s-min=5.1km az=29.0*
JMA ***02*** *07:55:18.1,36°.60N×140°.83E,h28km±1km,M3.9*
JMA Felt III J1.
IDC ***02*** *07:55:22.2±2.3,36°.55N×140°.78E,h60km±24km,mb3.3/11, mb1 3.5/14,mb1mx3.4/49,mbtmp3.6/14,ML3.4/3,MS2.7/2, Ms1 2.7/2,ms1mx2.4/39,Error ellipse: s-maj=19.5km s-min=10.4km az=68.0*
ISC 02 07:55:17.3±1.3,36°.62N±0°.04×140°.88E±0°.06,h17km±7km, n24,σ1§01/31,mb3.7/12,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.25**	**269**	P		**Pb**	**07 55 23.9**	**+0.6**
JHO				S		**Sg**	**07 55 27.6**	**+0.8**
ONAJ	**Iwakimizuishiy**	**0.49**	**352**	P		**Pb**	**07 55 27.9**	**+0.5**
ONAJ				S		**Sb**	**07 55 35.0**	**+0.7**
JYT	**Yasato**	**0.68**	**235**	P		**Pg**	**07 55 30.2**	**-0.4**
JYT				S		**Sg**	**07 55 38.7**	**-0.9**
JFK	**Kawauchi**	**0.75**	**360**	P		**Pb**	**07 55 31.7**	**-0.1**
JFK				*e*S		**Sg**	**07 55 41.2**	**-0.7**
JSB	**Shiboa**	**0.85**	**295**	P		**Pb**	**07 55 34.0**	**+0.5**
JSB				S		**Sb**	**07 55 45.1**	**+0.5**
JFT	**Otama**	**1.00**	**334**	P		**Pg**	**07 55 36.6**	**-0.1**
JFT				S		**Sb**	**07 55 49.4**	**+0.4**
JAG	**Ashikaga**	**1.17**	**261**	P		**Pn**	**07 55 37.4**	**-1.4**
MJAR	**Matsushiro Arr**	**2.15**	**269**	P		**Pn**	**07 55 52.7**	**+0.4**
14nm,0.3s,baz=83,slow=13,SNR=90								
MJAR				S		**Sn**	**07 56 19.8**	**+1.1**
31nm,0.3s,baz=88,slow=13,SNR=7.6								
MAT	**Matsushiro**	**2.15**	**269**	P		**Pn**	**07 55 53.1**	**+0.7**
MAT				S		**Sn**	**07 56 19.6**	**+0.9**
JHJ	**Hachijo jima 2**	**3.60**	**195**	P		**Pn**	**07 56 13.2**	**+1.0**
9.0nm,0.3s,baz=94,slow=22,SNR=2.5								
JHJ				S		**Sn**	**07 56 54.9**	**+0.5**
20nm,0.3s,baz=95,slow=22,SNR=2.8								
JNU	**Nakatsue**	**8.93**	**250**	LR		LR	08 01 01.9	
comp=Z,54nm,18.8s,baz=118,slow=38								
KSRS	**Korea Array**	**10.40**	**278**	P		Pn	07 57 49.3	+3.8
0.3nm,0.3s,baz=117,slow=35,SNR=7.0								
KSRS				LR		LR	08 01 38.0	
comp=Z,37nm,18.4s,baz=122,slow=36								
SEY	**Seymchan**	**27.28**	**11**	P		**P**	**08 01 02.9**	**+2.5**
0.3nm,0.3s,baz=246,slow=7.7,SNR=3.3								
TIXI	**Tiksi**	**35.65**	**354**	P		**P**	**08 02 13.2**	**-0.7**
1.1nm,0.4s,baz=143,slow=6.7,SNR=3.4								
MKAR	**Makanchi Array**	**43.98**	**302**	P		**P**	**08 03 21.1**	**-2.4**
0.2nm,0.5s,baz=83,slow=11,SNR=3.7								
ILAR	**Eielson Array**	**50.07**	**32**	P		**P**	**08 04 10.2**	**-0.6**
0.8nm,0.8s,baz=267,slow=6.4,SNR=7.5								
INK	**Inuvik**	**54.95**	**27**	P		**P**	**08 04 48.0**	**+1.2**
0.5nm,0.6s,baz=285,slow=12,SNR=6.1								
WRA	**Warramunga Arr**	**56.59**	**187**	P		**P**	**08 04 58.5**	**-0.6**
0.7nm,0.6s,baz=0.9,slow=7.2,SNR=3.7								
ASAR	**Alice Springs**	**60.32**	**187**	P		**P**	**08 05 24.8**	**-0.2**
0.1nm,0.4s,baz=9.9,slow=5.9,SNR=3.3								
ARCES	**ARCESS Array B**	**64.23**	**339**	P		**P**	**08 05 49.3**	**-1.4**
1.1nm,0.7s,baz=68,slow=11,SNR=3.7								
YKA	**Yellowknife Ar**	**64.38**	**30**	P		**P**	**08 05 52.4**	**+0.6**
0.3nm,0.8s,baz=301,slow=6.6,SNR=5.8								
FINES	**FINESS Array B**	**68.98**	**332**	P		**P**	**08 06 20.9**	**-0.3**
830nm,1.6s,baz=26,slow=4.9,SNR=4.9								
NOA	**NORSAR Array B**	**74.40**	**337**	P		**P**	**08 06 53.2**	**-0.6**
1.0nm,0.8s,baz=29,slow=4.2,SNR=3.3								
PDAR	**Pinedale Array**	**78.26**	**45**	P		**P**	**08 07 16.9**	**+0.5**
0.3nm,0.7s,baz=316,slow=2.5,SNR=3.0								

MOS ***02*** *08:00:07.4±1.4,52°.42N×161°.11E,h17km,mb4.2/9,Error ellipse: s-maj=9.8km s-min=5.0km az=100.8*
KRSC ***02*** *08:00:08.3±1.7,52°.55N×161°.04E,h16km±10km,ML4.3*
IDC ***02*** *08:00:15.5±3.1,52°.73N×160°.57E,h57km±27km,mb3.5/14, mb1 3.7/15,mb1mx3.5/44,mbtmp3.8/15,ML3.7/1,MS3.1/3, Ms1 3.1/3,ms1mx2.6/41,Error ellipse: s-maj=22.6km s-min=16.1km az=129.0*
ISC 02 08:00:09.3±1.7,52°.81N±0°.05×160°.98E±0°.04,h11km±10km, n83,σ1§29/100,mb3.9/15,MS3.0/3,Off east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
NLC	**Nalytchevo**	**1.05**	**291**	*e*P		**Pn**	**08 00 29.8**	**-0.2**
NLC	**Nalytchevo**	**1.05**	**291**	PN		**Pn**	**08 00 29.8**	**-0.2**
SDLR	**Sedlovina**	**1.35**	**291**	*i* P		**Pb**	**08 00 34.8**	**+0.1**
SDLR				*e*S		**Sg**	**08 00 53.7**	**+0.9**
SDLR	**Sedlovina**	**1.35**	**291**	PN		**Pb**	**08 00 34.8**	**+0.1**
SDLR				S		**Sg**	**08 00 53.7**	**+0.9**
UGLR	**Uglovaya**	**1.36**	**288**	*i* P		**Pb**	**08 00 35.0**	**+0.1**
UGLR				S		**Sg**	**08 00 54.2**	**+0.9**
DALK	**Dalny**	**1.37**	**280**	*e*P		**Pn**	**08 00 34.6**	**+0.3**
DALK				*e*S		**Sn**	**08 00 51.7**	**-0.7**
SMAR	**Somma**	**1.39**	**290**	*i* P		**Pb**	**08 00 35.7**	**+0.2**
SMAR	**Somma**	**1.39**	**290**	PN		**Pb**	**08 00 35.7**	**+0.2**
PET	**Petropavlovsk**	**1.43**	**280**	*e*P		**Pb**	**08 00 35.8**	**-0.1**
PET				S		**Sb**	**08 00 53.7**	**-0.4**
PET	**Petropavlovsk**	**1.43**	**280**	*e*PN		**Pn**	**08 00 35.5**	**+0.4**
PET				*e*S		**Sb**	**08 00 54.5**	**+0.4**
PET				pmax		pmax		
comp=Z,401nm,0.7s								
PET				smax		smax		
comp=N,811nm,0.5s								
PET				smax		smax		
comp=E,1μm,0.7s								
AVH	**Avacha**	**1.43**	**289**	*i* P		**Pb**	**08 00 36.2**	**+0.2**
AVH	**Avacha**	**1.43**	**289**	PN		**Pb**	**08 00 36.2**	**+0.2**
KRER	**Koryakskii**	**1.44**	**291**	*i* P		**Pb**	**08 00 36.4**	**+0.2**
KRX	**Arik**	**1.51**	**292**	*i* P		**Pb**	**08 00 37.1**	**-0.4**
KII	**Karymskiy**	**1.53**	**324**	*e*P		**Pg**	**08 00 39.2**	**+0.5**
KII				*e*S		**Sg**	**08 01 01.4**	**+2.8**
KII	**Karymskiy**	**1.53**	**324**	PN		**Pg**	**08 00 39.2**	**+0.5**
KII				S		**Sg**	**08 01 01.4**	**+2.8**
RUS	**Russkaya**	**1.55**	**257**	*i* P		**Pn**	**08 00 36.9**	**0.0**
RUS				*e*S		**Sn**	**08 00 55.7**	**-1.3**
RUS	**Russkaya**	**1.55**	**257**	PN		**Pn**	**08 00 36.9**	**0.0**
RUS				S		**Sn**	**08 00 55.7**	**-1.3**
KRMR	**Karymshinskiy**	**1.73**	**272**	*e*P		**Pn**	**08 00 39.9**	**+0.6**
KRMR				*e*S		**Sn**	**08 01 00.5**	**-0.9**
MTVR	**Mutnovka**	**1.74**	**260**	*e*P		**Pn**	**08 00 40.0**	**+0.4**
MTVR				*e*S		**Sn**	**08 01 02.1**	**+0.3**
GRL	**Gorelyy**	**1.79**	**263**	P		**Pn**	**08 00 40.7**	**+0.4**
GRL	**Gorelyy**	**1.79**	**263**	PN		**Pn**	**08 00 40.7**	**+0.4**
MKZ	**Mys Kozlova**	**1.80**	**14**	*e*P		**Pb**	**08 00 41.9**	**-0.4**
MKZ	**Mys Kozlova**	**1.80**	**14**	PN		**Pb**	**08 00 41.9**	**-0.4**
ASAK	**Asacha**	**1.93**	**258**	*i* P		**Pn**	**08 00 42.8**	**+0.7**
ASAK				*e*S		**Sn**	**08 01 06.6**	**+0.2**
PETK	**Petropavlovsk-**	**2.01**	**280**	P		**Pn**	**08 00 44.5**	**+1.3**
comp=E,76nm,0.3s,baz=92,slow=20,SNR=475								
PETK				S		**Sb**	**08 01 10.6**	**-0.3**
comp=E,23nm,0.3s,baz=107,slow=19,SNR=6.3								
GNL	**Ganaly**	**2.03**	**297**	*i* P		**Pb**	**08 00 46.0**	**-0.3**
GNL				*e*S		**Sg**	**08 01 14.3**	**-0.3**
GNL	**Ganaly**	**2.03**	**297**	PN		**Pb**	**08 00 46.0**	**-0.3**
GNL				S		**Sg**	**08 01 14.3**	**-0.3**
APC	**Apacha**	**2.32**	**274**	*e*P		**Pb**	**08 00 49.6**	**-1.6**
APC				*e*S		**Sb**	**08 01 20.2**	**+0.4**
APC	**Apacha**	**2.32**	**274**	PN		**Pb**	**08 00 49.6**	**-1.6**
APC				S		**Sb**	**08 01 20.2**	**+0.4**
TUMD	**Tumrok D**	**2.42**	**352**	P		**Pb**	**08 00 53.1**	**+0.2**
TUMR	**Tumrok**	**2.53**	**349**	*e*P		**Pb**	**08 00 54.1**	**-0.6**
TUMR				S		**Sg**	**08 01 28.1**	**-2.3**
TUMR	**Tumrok**	**2.53**	**349**	PN		**Pb**	**08 00 54.1**	**-0.6**
TUMR				S		**Sg**	**08 01 28.1**	**-2.3**
PAU	**Pauzhetka**	**2.90**	**244**	*e*P		**Pn**	**08 00 55.9**	**+0.5**
PAU	**Pauzhetka**	**2.90**	**244**	PN		**Pn**	**08 00 55.9**	**+0.5**
KMNR	**Kamenistaya**	**2.98**	**352**	*e*P		**Pb**	**08 01 01.1**	**-1.4**
KMNR	**Kamenistaya**	**2.98**	**352**	PN		**Pb**	**08 01 01.1**	**-1.4**
BZMR	**Bezymyannaya**	**3.14**	**355**	*e*P		**Pb**	**08 01 04.8**	**-0.5**
KPT	**Kopyto**	**3.19**	**352**	P		**Pb**	**08 01 05.6**	**-0.5**
KPT	**Kopyto**	**3.19**	**352**	PN		**Pb**	**08 01 05.6**	**-0.5**
ZLN	**Zelenaya**	**3.21**	**358**	P		**Pb**	**08 01 05.5**	**-0.9**
ZLN	**Zelenaya**	**3.21**	**358**	PN		**Pb**	**08 01 05.5**	**-0.9**
LGNR	**Loginova**	**3.28**	**357**	*e*P		**Pb**	**08 01 07.1**	**-0.6**
LGNR	**Loginova**	**3.28**	**357**	PN		**Pb**	**08 01 07.1**	**-0.6**
CIRR	**Tsirk**	**3.31**	**358**	*e*P		**Pb**	**08 01 08.1**	**-0.1**
CIRR	**Tsirk**	**3.31**	**358**	PN		**Pb**	**08 01 08.1**	**-0.1**
KOZ	**Kozyrevsk**	**3.32**	**349**	P		**Pb**	**08 01 06.8**	**-1.4**
KOZ	**Kozyrevsk**	**3.32**	**349**	PN		**Pb**	**08 01 06.8**	**-1.4**
ESO	**Esso**	**3.39**	**338**	*e*P		Pb	08 01 06.1	-3.4
ESO	**Esso**	**3.39**	**338**	PN		Pb	08 01 06.1	-3.4
KRSR	**Krestovskiy**	**3.42**	**356**	*e*P		**Pb**	**08 01 08.7**	**-1.3**
KRSR	**Krestovskiy**	**3.42**	**356**	PN		**Pb**	**08 01 08.7**	**-1.3**
KLY	**Klyuchi**	**3.52**	**357**	P		Pn	08 01 00.1	-3.7
KBG	**Krutoberegovo**	**3.59**	**16**	*e*P		**Pb**	**08 01 12.4**	**-0.4**
KBG				S		**Sb**	**08 01 57.7**	**+1.3**
SKR	**Severo-Kuril's**	**3.70**	**237**	P		**Pn**	**08 01 05.0**	**-1.4**
SKR				*e*S		**Sn**	**08 01 46.7**	**-3.2**
SKR	**Severo-Kuril's**	**3.70**	**237**	*e*PN		Pn	08 01 01.5	-4.9
SKR				pmax		pmax		
comp=Z,60nm,0.5s								
BDR	**Baidarnaya**	**3.77**	**2**	P		**Pb**	**08 01 13.4**	**-2.4**
SMKR	**Semkarok**	**3.79**	**4**	P		**Pb**	**08 01 13.8**	**-2.4**
SMKR				S		**Sb**	**08 02 01.9**	**-0.2**
SMKR	**Semkarok**	**3.79**	**4**	PN		**Pb**	**08 01 13.8**	**-2.4**
SMKR				S		**Sb**	**08 02 01.9**	**-0.2**
BKI	**Bering**	**3.79**	**49**	*e*P		**Pn**	**08 01 09.3**	**+1.6**
BKI	**Bering**	**3.79**	**49**	PN		**Pn**	**08 01 09.3**	**+1.6**
SRKR	**Sorokina**	**3.85**	**2**	*e*P		Pb	08 01 14.2	-3.1
SRKR	**Sorokina**	**3.85**	**2**	PN		Pb	08 01 14.2	-3.1
ASAJ	**Asahikawa**	**14.95**	**242**	P		**Pn**	**08 03 39.4**	**-1.0**
comp=Z,0.5nm,0.3s,baz=52,slow=17,SNR=3.6								
ASAJ				S		**Sn**	**08 06 31.1**	**+5.3**
comp=Z,0.2nm,0.3s,baz=213,slow=31,SNR=4.0								
USRK	**Ussuriysk Ar.**	**20.93**	**257**	LR		LR	08 13 56.9	
comp=Z,70nm,19.2s,baz=147,slow=40								
TIXI	**Tiksi**	**23.56**	**335**	P		**P**	**08 05 18.7**	**-0.7**
comp=Z,2.3nm,0.5s,baz=119,slow=12,SNR=9.4								
ILAR	**Eielson Array**	**28.63**	**45**	LR		LR	08 18 16.5	
comp=Z,28nm,19.3s,baz=179,slow=37								
SONM	**Songino Array**	**34.49**	**284**	P		**P**	**08 06 56.3**	**-1.0**
comp=Z,0.5nm,0.3s,baz=45,slow=6.9,SNR=2.3								
SONM				LR		LR	08 22 26.7	
comp=Z,30nm,20.2s,baz=118,slow=39								
YKA	**Yellowknife Ar**	**43.01**	**43**	P		**P**	**08 08 10.3**	**+2.1**
comp=Z,0.2nm,0.7s,baz=299,slow=8.1,SNR=3.8								
RES	**Resolute Bay**	**43.38**	**22**	P		**P**	**08 08 13.2**	**+2.1**
comp=Z,0.8nm,0.8s,baz=301,slow=12,SNR=3.0								
MKAR	**Makanchi Array**	**48.76**	**296**	P		**P**	**08 08 51.8**	**-2.1**
comp=Z,0.4nm,0.5s,baz=58,slow=6.4,SNR=6.8								
ARCES	**ARCESS Array B**	**53.72**	**342**	P		**P**	**08 09 30.6**	**-0.1**
comp=Z,0.7nm,0.6s,baz=53,slow=7.7,SNR=7.4								
PDAR	**Pinedale Array**	**57.19**	**61**	P		**P**	**08 09 58.1**	**+1.8**
comp=Z,0.3nm,0.8s,baz=329,slow=4.3,SNR=2.6								
CMAR	**Chiang Mai Arr**	**58.65**	**259**	P		**P**	**08 10 03.8**	**-2.9**
comp=Z,1.2nm,0.4s,baz=15,slow=6.0,SNR=5.0								
FINES	**FINESS Array B**	**60.59**	**337**	P		**P**	**08 10 20.3**	**+0.9**
comp=Z,4.5nm,0.6s,baz=29,slow=8.4,SNR=10								
FINES	**FINESS Array B**	**60.59**	**337**	P		**P**	**08 10 20.3**	**+0.9**
FINES				pmax		pmax		
comp=Z,3.0nm,0.6s								
NB2	**NORSAR Subarra**	**63.96**	**344**	P		**P**	**08 10 42.1**	**+0.1**
comp=Z,0.8nm,0.7s,baz=20,slow=6.9								
NOA	**NORSAR Array B**	**63.96**	**344**	P		**P**	**08 10 42.6**	**+0.6**
comp=Z,0.8nm,0.6s,baz=20,slow=6.7,SNR=4.9								
AKASG	**Malin Array Be**	**69.13**	**329**	P		**P**	**08 11 14.7**	**-0.4**
comp=Z,1.2nm,0.4s,baz=34,slow=6.6,SNR=5.8								
KBZ	**Khabaz**	**70.11**	**317**	P		**P**	**08 11 22.1**	**+0.9**
comp=Z,2.9nm,0.9s,baz=68,slow=3.7,SNR=7.1								
ZEI	**Tsey**	**70.46**	**316**	*e*P		**P**	**08 11 22.1**	**-1.7**
ZEI				pmax		pmax		
comp=Z,5.0nm,0.6s								
WRA	**Warramunga Arr**	**76.06**	**206**	P		**P**	**08 11 55.5**	**-1.1**
comp=Z,0.2nm,0.7s,baz=17,slow=6.4,SNR=2.9								
ASAR	**Alice Springs**	**79.73**	**205**	P		**P**	**08 12 16.9**	**-0.1**
comp=Z,0.1nm,0.7s,baz=14,slow=5.9,SNR=2.9								

IDC ***02*** *08:13:52.0±38.0,0°.57S×101°.64E,h0km,mb3.3/3, mb1 3.5/3,mb1mx3.2/52,mbtmp3.3/3,MS4.1/1,Ms1 4.1/1, ms1mx2.8/22,Error ellipse: s-maj=710.8km s-min=251.9km az=146.0*
DJA ***02*** *08:14:41.4±0.7,6°.S±4°×10°.4E±°,h10km,M4.3/7,mb5.3/1, MLv3.8/7*
ISC 02 08:14:40.0±2.5,5°.7S±0°.1×103°.9E±0°.1,h10km,n10, σ1§10/7,mb3.2/3,Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
KASI	**Kota Agung**	**0.65**	**76**	P		**Pg**	**08 14 52.0**	**-0.6**
KASI				S		**Sb**	**08 15 03.9**	**+1.3**
LWLI	**Liwa**	**0.69**	**17**	P		**Pg**	**08 14 52.0**	**-1.3**
LWLI				S		**Sn**	**08 15 06.7**	**0.0**
KLI	**Kotabumi**	**1.28**	**51**	P		**Pn**	**08 15 04.1**	**+0.1**
MNAI	**Manna**	**1.59**	**325**	P		Pn	08 15 02.9	-5.3
LHSI	**Lahat**	**1.87**	**350**	P		**Pn**	**08 15 13.1**	**+1.0**
CGJI	**Cibinong**	**2.04**	**117**	P		**Pn**	**08 15 14.5**	**0.0**
WRA	**Warramunga Arr**	**32.84**	**118**	P		P	08 21 07.0	-7.2
0.2nm,0.8s,baz=297,slow=10,SNR=3.3								
ASAR	**Alice Springs**	**33.99**	**125**	P		P	08 21 18.4	-5.8
0.2nm,0.6s,baz=307,slow=8.1,SNR=3.1								
STKA	**Stephens Creek**	**43.84**	**131**	P		P	08 22 40.0	-6.7
1.6nm,0.7s,baz=302,slow=9.5,SNR=4.4								
TLY	**Taiaya**	**57.13**	**360**	LR		LR	08 49 03.3	
comp=Z,182nm,18.9s,baz=128,slow=40								

NIED ***02*** *08:17:00,37°.70N×143°.50E,h8km,Mw3.9 Best double couple: M0:8.62000×10¹⁴ NP1:φs:21.00000°,δ27.00000°, λ-115.00000°. NP2:φs:229.00000°,δ65.00000°, λ-78.00000°.*
ISCJB ***02*** *08:17:50.9±0.6,37°.63N±0°.04×143°.50E±0°.05,h33km, mb3.7/12,Error ellipse: s-maj=6.7km s-min=5.0km az=149.3*
JMA ***02*** *08:17:50.8±0.2,37°.74N×143°.54E,h43km,M3.8*
IDC ***02*** *08:17:53.3±0.6,37°.50N×143°.52E,h38km±4km,mb3.4/11, mb1 3.6/15,mb1mx3.5/52,mbtmp3.7/15,ML3.6/3,Error ellipse: s-maj=17.2km s-min=12.8km az=121.0*
ISC 02 08:17:52.6±0.6,37°.62N±0°.05×143°.49E±0°.07,h35km,n32, σ1§39/43,mb3.6/12,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.88**	**297**	P		**Pn**	**08 18 21.4**	**-0.9**
JIO				*e*S		**Sn**	**08 18 43.7**	**-1.1**
OFUJ	**Ofunato**	**2.04**	**316**	P		**Pn**	**08 18 22.9**	**-1.6**
JFK	**Kawauchi**	**2.09**	**264**	P		**Pn**	**08 18 24.9**	**-0.3**
JFK				*e*S		**Sn**	**08 18 50.0**	**0.0**
JMM	**Marumori**	**2.15**	**277**	P		**Pn**	**08 18 25.3**	**-0.6**
JMM				*e*S		**Sn**	**08 18 50.9**	**-0.4**
JMK	**Ichinoseki**	**2.23**	**307**	P		**Pn**	**08 18 26.0**	**-1.0**
JOU	**Okura**	**2.35**	**289**	P		**Pn**	**08 18 28.7**	**0.0**
JFT	**Otama**	**2.50**	**269**	*e*S		**Sn**	**08 19 00.1**	**0.0**
JOM	**Ohasama**	**2.53**	**318**	P		**Pn**	**08 18 30.1**	**-1.0**
JOM				S		**Sn**	**08 18 59.9**	**-0.8**
JYK	**Kaneyama**	**2.78**	**299**	P		**Pn**	**08 18 34.0**	**-0.6**
JRY	**Ryogami san**	**4.01**	**248**	P		**Pn**	**08 18 51.5**	**0.0**
JRY				S		**Sn**	**08 19 36.0**	**-1.3**
MJAR	**Matsushiro Arr**	**4.35**	**257**	Pn		**Pn**	**08 18 57.9**	**+1.7**
7.7nm,0.3s,baz=91,slow=15,SNR=47								
MJAR				Sn		Sn	08 19 50.8	+5.0
1.9nm,0.3s,baz=67,slow=15,SNR=4.2								
MAT	**Matsushiro**	**4.36**	**257**	P		**Pn**	**08 18 58.2**	**+1.9**
MAT				S		**Sn**	**08 19 48.7**	**+2.9**
JHJ	**Hachijo jima 2**	**5.41**	**215**	Pn		**Pn**	**08 19 09.4**	**-1.3**
15nm,0.3s,baz=328,slow=18,SNR=14								
JHJ				Sn		**Sn**	**08 20 07.8**	**-4.0**
26nm,0.3s,baz=284,slow=23,SNR=6.1								
ASAJ	**Asahikawa**	**6.53**	**354**	Pn		**Pn**	**08 19 25.0**	**-1.1**
2.3nm,0.3s,baz=198,slow=15,SNR=15								
ASAJ				Sn		**Sn**	**08 20 39.9**	**+0.6**
2.3nm,0.3s,baz=187,slow=19,SNR=7.2								
JCJ	**Chichijima**	**10.55**	**186**	Pn		Pn	08 20 16.9	-4.3
4.4nm,0.3s,baz=97,slow=23,SNR=5.1								
USRK	**Ussuriysk Ar.**	**10.90**	**311**	Pn		Pn	08 20 30.6	+4.7
0.3nm,0.3s,baz=119,slow=13,SNR=7.4								
JNU	**Nakatsue**	**11.22**	**250**	Pn		**Pn**	**08 20 31.1**	**+0.5**
0.1nm,0.3s,baz=198,slow=11,SNR=3.2								
KSRS	**Korea Array**	**12.36**	**274**	Pn		Pn	08 20 49.1	+3.1
baz=83,slow=14,SNR=4.2								
KLR	**Kul'dur**	**14.38**	**328**	Pn		**Pn**	**08 21 11.6**	**-2.0**
0.2nm,0.3s,baz=160,slow=11,SNR=5.2								
SEY	**Seymchan**	**25.93**	**9**	P		**P**	**08 23 22.5**	**+1.4**
1.1nm,0.7s,baz=174,slow=6.5,SNR=4.0								
SEY				pP		**sP**	**08 23 34.0**	**-1.4**
2.4nm,0.8s,baz=197,slow=6.8,SNR=4.2								
SONM	**Songino Array**	**28.85**	**303**	P		**P**	**08 23 47.4**	**-0.3**
0.3nm,0.4s,baz=102,slow=12,SNR=2.8								
ZALV	**Zalesovo Beam**	**42.75**	**312**	pP		pP	08 25 58.2	+1.6
1.2nm,0.3s,baz=108,slow=14,SNR=1.2								
MKAR	**Makanchi Array**	**45.21**	**302**	P		**P**	**08 26 07.3**	**+1.1**
0.3nm,0.5s,baz=77,slow=9.0,SNR=3.5								
KURBB	**Kurchatov Arra**	**46.95**	**308**	P		**P**	**08 26 20.6**	**+0.9**
1.6nm,0.7s,baz=80,slow=8.2,SNR=19								
ILAR	**Eielson Array**	**48.12**	**33**	P		**P**	**08 26 28.5**	**-0.1**
0.6nm,0.9s,baz=270,slow=6.6,SNR=5.1								
ILAR				pP		**pP**	**08 26 40.1**	**+1.1**
1.1nm,0.7s,baz=263,slow=6.3,SNR=8.0								
BVAR	**Borovoye Array**	**51.40**	**312**	P		**P**	**08 26 55.0**	**+1.3**
0.4nm,0.5s,baz=74,slow=11,SNR=3.4								
BVAR				pP		**sP**	**08 27 06.2**	**-2.1**
0.5nm,0.5s,baz=92,slow=10,SNR=3.1								
INK	**Inuvik**	**53.11**	**27**	P		**P**	**08 27 08.2**	**+2.1**
0.3nm,0.6s,baz=249,slow=1.5,SNR=2.8								
INK				pP		**sP**	**08 27 18.8**	**-2.0**
0.3nm,0.5s,baz=303,slow=6.6,SNR=2.2								
WRA	**Warramunga Arr**	**57.90**	**190**	P		**P**	**08 27 40.5**	**-0.6**
4.7nm,0.7s,baz=11,slow=7.4,SNR=50								
ASAR	**Alice Springs**	**61.62**	**190**	P		**P**	**08 28 06.8**	**+0.2**
1.1nm,0.7s,baz=9.3,slow=14,SNR=14								
ASAR				sP		**sP**	**08 28 21.6**	**+0.1**
0.5nm,0.8s,baz=12,slow=6.4,SNR=3.3								
YKA	**Yellowknife Ar**	**62.47**	**31**	P		**P**	**08 28 13.2**	**+1.3**
0.1nm,0.4s,baz=298,slow=6.9,SNR=3.8								
FINES	**FINESS Array B**	**69.06**	**333**	P		**P**	**08 28

1.0nm,0.4s,baz=79,slow=5.9,SNR=4.3
NVAR Mina Array Bea 73.31 54 P **P 08 30 36.1 +0.6**
0.3nm,0.7s,baz=296,slow=2.9,SNR=2.8
NOA NORSAR Array B 74.33 338 P **P 08 30 40.6 -0.3**
1.1nm,0.9s,baz=38,slow=5.9,SNR=3.0
AKASG Malin Array Be 74.89 323 P **P 08 30 45.3 +1.1**
0.4nm,0.4s,baz=46,slow=6.0,SNR=4.7
PDAR Pinedale Array 76.08 47 P **P 08 30 51.9 +0.3**
0.6nm,0.7s,baz=302,slow=1.6,SNR=7.0

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*IDC **02** 08:19:14.7±0.7, 37°.33N×143°.61E, h0km, mb4.0/15, mb1 4.2/20, mb1mx4.0/55, mbtmp4.0/20, ML3.6/4, MS3.0/1, Ms1 3.0/1, ms1mx2.3/46, Error ellipse: s-maj=18.5km s-min=16.1km az=101.0*
*ISCJB **02** 08:19:17.8±0.6, 37°.30N±0°.08×143°.47E±0°.10, h33km, mb3.9/15, MS2.9/1, Error ellipse: s-maj=12.4km s-min=10.8km az=150.7*
ISC 02 08:19:20.0±0.8, 37°.3N±0°.1×143°.5E±0°.1, h35km, n21, σ0s89/20, mb3.9/15, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**4.34 261**		Pn	**Pn**	**08 20 23.3**	**-0.1**
	12nm,0.3s,baz=90,slow=15,SNR=9.2						
USRK	**Ussuriysk Ar.**	**11.11 312**		Pn	**Pn**	**08 21 56.2**	**-0.1**
	0.2nm,0.3s,baz=109,slow=12,SNR=4.0						
JNU	**Nakatsue**	**11.17 252**		Pn	**Pn**	**08 21 56.4**	**-0.7**
	0.4nm,0.3s,baz=65,slow=3.6,SNR=4.2						
KSRS	**Korea Array**	**12.42 275**		Pn	**Pn**	**08 22 14.0**	**-0.1**
	0.2nm,0.3s,baz=93,slow=14,SNR=6.2						
KLR	**Kul'dur**	**14.64 328**		Pn	**Pn**	**08 22 45.0**	**+0.6**
	0.1nm,0.3s,baz=134,slow=14,SNR=4.5						
YAK	**Yakutsk**	**26.18 345**		LR	LR	08 34 39.0	
	comp=Z,32nm,19.4s,baz=134,slow=35						
SEY	**Seymchan**	**26.20 9**		P	**P**	**08 24 50.8**	**-0.2**
	1.0nm,0.5s,baz=199,slow=5.8,SNR=3.9						
SONM	**Songino Array**	**29.03 303**		P	**P**	**08 25 15.9**	**-0.8**
	1.5nm,0.8s,baz=73,slow=10.0,SNR=4.5						
CMAR	**Chiang Mai Arr**	**43.21 257**		P	**P**	**08 27 17.9**	**+0.2**
	2.2nm,0.7s,baz=50,slow=6.2,SNR=3.0						
MKAR	**Makanchi Array**	**45.39 302**		P	**P**	**08 27 36.3**	**+1.4**
	1.8nm,0.7s,baz=77,slow=11,SNR=5.2						
BVAR	**Borovoye Array**	**51.62 312**		P	**P**	**08 28 21.5**	**-1.2**
	0.9nm,0.6s,baz=75,slow=11,SNR=2.8						
INK	**Inuvik**	**53.35 27**		P	**P**	**08 28 35.5**	**+0.2**
	0.5nm,0.6s,baz=316,slow=5.2,SNR=2.1						
WRA	**Warramunga Arr**	**57.62 190**		P	**P**	**08 29 06.2**	**-0.3**
	6.6nm,0.7s,baz=10,slow=7.4,SNR=16						
AKTO	**Aktyubinsk**	**59.73 312**		P	**P**	**08 29 22.4**	**+1.4**
	1.8nm,0.7s,baz=81,slow=12,SNR=3.2						
ASAR	**Alice Springs**	**61.35 190**		P	**P**	**08 29 32.4**	**+0.1**
	2.5nm,0.8s,baz=12,slow=7.0,SNR=12						
YKA	**Yellowknife Ar**	**62.69 31**		P	**P**	**08 29 38.9**	**-1.9**
	0.3nm,0.8s,baz=299,slow=6.3,SNR=3.1						
STKA	**Stephens Creek**	**68.88 182**		P	**P**	**08 30 21.1**	**+0.2**
	1.1nm,0.8s,baz=359,slow=12,SNR=3.3						
KBZ	**Khabaz**	**71.98 311**		P	**P**	**08 30 39.9**	**0.0**
	1.3nm,0.5s,baz=117,slow=5.2,SNR=3.0						
NVAR	**Mina Array Bea**	**73.45 54**		P	**P**	**08 30 50.6**	**+1.6**
	1.4nm,1.1s,baz=294,slow=6.2,SNR=2.9						
NOA	**NORSAR Array B**	**74.55 338**		P	**P**	**08 30 54.5**	**-0.3**
	0.9nm,0.9s,baz=43,slow=5.5,SNR=2.7						
PDAR	**Pinedale Array**	**76.24 46**		P	**P**	**08 31 05.3**	**+0.2**
	0.5nm,0.8s,baz=276,slow=4.3,SNR=3.8						

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*NIED **02** 08:23:00, 24°.70N×122°.40E, h8km, Mw3.9 Best double couple: M0=8.62000×10^14 NP1:φ=96.00000°, δ=19.00000°, λ=-97.00000°. NP2:φ=283.00000°, δ=71.00000°, λ=-88.00000°.*
*ISCJB **02** 08:23:23.4±0.4, 24°.78N±0°.02×122°.49E±0°.01, h8km±2km, mb3.8/9, Error ellipse: s-maj=3.7km s-min=2.1km az=5.5*
*JMA **02** 08:23:24.7, 24°.66N×122°.42E, h34km±2km, M3.6*
*TAP **02** 08:23:24.7, 24°.75N×122°.28E, h1km, ML4.0, D*
*IDC **02** 08:23:31.7±7.2, 24°.76N×122°.40E, h78km±69km, mb3.6/10, mb1 3.8/10, mb1mx3.4/51, mbtmp3.9/10, Error ellipse: s-maj=42.5km s-min=14.6km az=79.0*
ISC 02 08:23:22.4±1.1, 24°.69N±0°.03×122°.50E±0°.02, h3km±8km, n71, σ0s75/113, mb4.1/9, 2C-1D, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JYNG	**Yonagunijimaku**	**0.47 120**		P	**Pn**	**08 23 35.4**	**-0.7**
JYNG				S	**Sb**	**08 23 42.6**	**+1.8**
YOJ	**Yonaguni jima**	**0.52 115**		P	**Pn**	**08 23 36.2**	**-0.5**
YOJ				S	**Sb**	**08 23 44.0**	**+1.9**
EGS		**0.54 287**		P	**Pg**	**08 23 33.2**	**+0.5**
	baz=286						
EGS				S	**Sg**	**08 23 40.2**	**+0.5**
	baz=286						
TWB1	**Santiao Chiao**	**0.56 305**		⇓*i*P	**Pg**	**08 23 33.6**	**+0.4**
	baz=314						
TWB1				*i* S	**Sg**	**08 23 39.6**	**-0.9**
	baz=314						
TWC	**Suao**	**0.59 263**		*i* P	**Pg**	**08 23 34.2**	**+0.4**
	baz=249						
TWC				S	**Sg**	**08 23 42.1**	**+0.5**
	baz=249						
ILA	**Ilan**	**0.68 277**		*e*P	**Pb**	**08 23 36.3**	**-0.7**
	baz=271						
ILA				*e*S	**Sg**	**08 23 45.1**	**+0.6**
	baz=271						
ENA	**Nanau**	**0.73 250**		P	**Pb**	**08 23 37.4**	**-0.5**
	baz=236						
ENA				S	**Sb**	**08 23 47.0**	**-1.3**
	baz=236						
NWF	**Wu-fen Shan**	**0.75 301**		⇑P	**Pb**	**08 23 38.0**	**-0.2**
	baz=304						
NWF				*e*S	**Sg**	**08 23 46.6**	**-0.1**
	baz=304						
TWE	**Neicheng**	**0.75 273**		P	**Pg**	**08 23 37.0**	**+0.1**
	baz=266						
TWE				S	**Sg**	**08 23 47.4**	**+0.8**
	baz=266						
ENTT	**Nioudou**	**0.85 267**		P	**Pb**	**08 23 39.7**	**-0.1**
	baz=260						
ENTT				S	**Sg**	**08 23 49.4**	**-0.3**
	baz=260						
TAP1	**Taipei**	**0.95 292**		*i* S	**Sg**	**08 23 53.1**	**+0.1**
	baz=292						
TAP	**Taipei**	**0.96 292**		*i* S	**Sg**	**08 23 53.3**	**-0.1**
	baz=292						
TWY	**Chenhua**	**1.00 306**		*i* P	**Pb**	**08 23 42.3**	**-0.1**
	baz=310						
TWY				*i* S	**Sg**	**08 23 54.4**	**-0.3**
	baz=310						
PCYT	**Pengchaiyu**	**1.01 338**		P	**Pn**	**08 23 43.6**	**0.0**
	baz=348						
TWD	**Chiawan**	**1.02 234**		P	**Pb**	**08 23 42.5**	**-0.1**
	baz=222						
TWD				S	**Sb**	**08 23 57.0**	**+0.6**
	baz=222						
NSK	**Sanguang**	**1.03 270**		*i* P	**Pb**	**08 23 42.8**	**-0.2**
	baz=264						
NSK				S	**Sg**	**08 23 54.8**	**-0.9**
	baz=264						
NNS	**Nan Shan**	**1.05 257**		P	**Pb**	**08 23 43.2**	**-0.1**
	baz=249						
NNS				S	**Sb**	**08 23 57.0**	**-0.5**
	baz=249						
TWS1	**Kuangyinshan**	**1.06 293**		P	**Pb**	**08 23 43.5**	**0.0**
	baz=294						
TWS1				S	**Sg**	**08 23 56.4**	**-0.2**
	baz=294						
HWA	**Hwalien**	**1.08 229**		*e*P	**Pn**	**08 23 46.1**	**+1.7**
	baz=218						
HWA				*e*S	**Sn**	**08 24 00.9**	**+1.1**
	baz=218						
IRIF	**Iriomote-Funau**	**1.18 107**		P	**Pn**	**08 23 45.9**	**+0.1**
IRIF				S	**Sn**	**08 24 02.2**	**-0.2**
NCU	**National Centr**	**1.22 284**		*e*S	**Sb**	**08 24 02.1**	**-0.2**
	baz=282						
WHF	**Hehuan Shan**	**1.24 245**		P	**Pb**	**08 23 46.6**	**-0.2**
	baz=236						
WHF				S	**Sb**	**08 24 02.8**	**-0.6**
	baz=236						
TWT	**Tachien**	**1.28 251**		⇑*i*P	**Pn**	**08 23 47.6**	**+0.3**
	baz=243						
TWT				*e*S	**Sb**	**08 24 04.2**	**0.0**
	baz=243						
ESL	**Shilin**	**1.30 228**		P	**Pb**	**08 23 48.3**	**+0.8**
	baz=219						
ESL				S	**Sn**	**08 24 06.0**	**+0.6**
	baz=219						
HATJ	**Hateruma jima**	**1.35 117**		P	**Pg**	**08 23 48.8**	**+0.5**
HATJ				S	**Sb**	**08 24 06.2**	**+0.2**
NSTT	**Nanjuang**	**1.36 268**		P	**Pg**	**08 23 48.5**	**0.0**
	baz=264						
NSTT				S	**Sb**	**08 24 06.3**	**0.0**
	baz=264						
JKRS	**Kuro-shima**	**1.45 108**		P	**Pb**	**08 23 50.2**	**+0.1**
JKRS				S	**Sb**	**08 24 08.8**	**-0.1**
JIJ	**Ishigaki jima**	**1.54 102**		P	**Pn**	**08 23 50.7**	**0.0**
JIJ				S	**Sn**	**08 24 10.2**	**-1.0**
WDT	**Danda**	**1.55 234**		P	**Pg**	**08 23 52.5**	**+0.3**
	baz=226						
WDT				S	**Sg**	**08 24 12.5**	**+0.2**
	baz=226						
NSY	**Sanyi**	**1.60 261**		*e*P	**Pg**	**08 23 53.9**	**+0.7**
	baz=256						
NSY				*e*S	**Sg**	**08 24 13.5**	**-0.4**
	baz=256						
TWQ1	**Liyutan**	**1.60 258**		*e*P	**Pg**	**08 23 53.4**	**+0.2**
	baz=253						
TWQ1				*e*S	**Sg**	**08 24 13.6**	**-0.4**
	baz=253						
JISG	**Ishigakijimahi**	**1.66 93**		P	**Pg**	**08 23 54.2**	**0.0**
SMLT	**Sun Moon Lake**	**1.66 242**		P	**Pg**	**08 23 54.2**	**-0.1**
	baz=235						
SMLT				S	**Sg**	**08 24 15.9**	**+0.1**
	baz=235						
TYC	**Yuchr**	**1.69 243**		P	**Pg**	**08 23 54.8**	**0.0**
	baz=236						
TYC				S	**Sg**	**08 24 16.9**	**+0.3**
	baz=236						
TWF1	**Yuli**	**1.72 220**		*e*P	**Pb**	**08 23 54.1**	**-0.7**
	baz=212						
TWF1				*e*S	**Sb**	**08 24 16.6**	**-0.2**
	baz=212						
TCU	**Taichung**	**1.74 252**		*e*P	**Pg**	**08 23 56.8**	**+0.9**
	baz=247						
TCU				*e*S	**Sg**	**08 24 18.3**	**-0.2**
	baz=247						
WNT	**Mingjian**	**1.84 244**		*e*P	**Pb**	**08 23 57.1**	**+0.4**
	baz=239						
WNT				*e*S	**Sg**	**08 24 21.0**	**-0.5**
	baz=239						
YUS	**Yu-Shan**	**1.85 230**		P	**Pb**	**08 23 57.0**	**-0.2**
	baz=223						
YUS				S	**Sg**	**08 24 21.2**	**-0.6**
	baz=223						
ALS	**Alishan**	**1.94 233**		P	**Pb**	**08 23 58.6**	**0.0**
	baz=227						
ALS				*e*S	**Sg**	**08 24 23.9**	**-0.9**
	baz=227						
CHN5	**Tsauling**	**1.98 237**		P	**Pb**	**08 23 59.6**	**+0.4**
	baz=231						
CHN5				S	**Sb**	**08 24 24.7**	**+0.3**
	baz=231						
JTJ	**Tarama**	**2.01 91**		P	**Pb**	**08 23 58.6**	**-1.0**
ELDTW	**Lidau**	**2.01 222**		*e*S	**Sn**	**08 24 22.9**	**-0.3**
	baz=216						
WGK	**Gukeng**	**2.03 241**		*e*S	**Sg**	**08 24 26.6**	**-1.0**
	baz=235						
CHN2	**Minshiung**	**2.17 238**		*e*S	**Sg**	**08 24 31.6**	**-0.7**
	baz=233						
WTCT	**Ta-ch'eng**	**2.18 248**		*e*S	**Sb**	**08 24 30.2**	**+0.2**
	baz=244						
CHN4	**Tsaushan**	**2.19 233**		P	**Pb**	**08 24 02.3**	**-0.4**
	baz=227						
CHN4				S	**Sb**	**08 24 30.3**	**0.0**
	baz=227						
STYT	**Tauyuan**	**2.20 227**		*e*P	**Pb**	**08 24 02.5**	**-0.4**
	baz=221						
STYT				*e*S	**Sb**	**08 24 30.2**	**-0.3**
	baz=221						
CHY	**Chiayi**	**2.23 238**		*e*S	**Sn**	**08 24 27.8**	**-0.6**
	baz=233						
WTP	**Ta-pu**	**2.24 231**		*e*P	**Pb**	**08 24 03.1**	**-0.5**
	baz=225						
WTP				*e*S	**Sb**	**08 24 30.7**	**-1.0**
	baz=225						
TWG	**Pinlang**	**2.27 215**		*e*S	**Sn**	**08 24 30.3**	**+1.0**
	baz=209						
TTN	**Taitung**	**2.29 213**		*e*S	**Sb**	**08 24 32.2**	**-0.8**
	baz=207						
TWK	**Hsinying**	**2.32 233**		*e*S	**Sb**	**08 24 33.6**	**-0.4**
	baz=227						
WSF	**Szhu**	**2.32 244**		*e*S	**Sb**	**08 24 33.1**	**-1.0**
	baz=239						
CHN1	**Nanshi**	**2.34 231**		*e*P	**Pb**	**08 24 05.0**	**-0.3**
	baz=225						
CHN1				*e*S	**Sb**	**08 24 33.5**	**-1.1**
	baz=225						
SGST	**Jiashian**	**2.37 228**		*e*P	**Pb**	**08 24 05.0**	**-0.8**
	baz=222						
SGST				*e*S	**Sb**	**08 24 35.3**	**-0.2**
	baz=222						
SSD	**Sandimen**	**2.58 222**		*e*P	**Pb**	**08 24 08.4**	**-1.0**
	baz=217						
SSD				*e*S	**Sb**	**08 24 39.9**	**-1.6**
	baz=217						
EAST	**Anshuo**	**2.75 214**		*e*P	**Pb**	**08 24 10.7**	**-1.5**
	baz=209						
EAST				*e*S	**Sb**	**08 24 44.0**	**-2.4**
	baz=209						
HEN	**Hengchun**	**3.12 212**		*e*S	**Sn**	**08 24 51.3**	**+1.0**
	baz=207						
TSEB	**Hengchuen, Pin**	**3.14 208**		*e*S	**Sn**	**08 24 52.0**	**+1.3**
	baz=204						
TWK1	**Hengchun**	**3.14 210**		*e*S	**Sn**	**08 24 52.0**	**+1.1**
	baz=205						
KSRS	**Korea Array**	**13.54 19**		P	**P**	**08 26 45.0**	**+0.2**
	0.6nm,0.3s,baz=198,slow=12,SNR=32						
USRK	**Ussuriysk Ar.**	**20.95 19**		P	**P**	**08 28 07.1**	**+0.6**
	2.6nm,0.7s,baz=213,slow=10,SNR=6.2						
KLR	**Kul'dur**	**25.55 14**		P	**P**	**08 28 53.4**	**+1.0**
	2.2nm,0.9s,baz=233,slow=6.2,SNR=6.3						
SONM	**Songino Array**	**26.39 335**		P	**P**	**08 29 00.6**	**+0.5**
	4.3nm,0.9s,baz=144,slow=8.8,SNR=16						
TLY	**Talaya**	**30.57 337**		P	**P**	**08 29 37.2**	**-0.1**
	1.9nm,0.6s,baz=14,slow=12,SNR=4.3						
WRA	**Warramunga Arr**	**45.84 164**		P	**P**	**08 31 46.2**	**+0.3**
	3.0nm,0.5s,baz=347,slow=8.7,SNR=46						
ASAR	**Alice Springs**	**49.32 166**		P	**P**	**08 32 13.9**	**+0.9**
	1.7nm,0.7s,baz=342,slow=8.9,SNR=31						
STKA	**Stephens Creek**	**59.13 161**		P	**P**	**08 33 25.6**	**+1.2**
	0.6nm,0.8s,baz=18,slow=7.3,SNR=3.6						
ARCES	**ARCESS Array B**	**69.52 338**		P	**P**	**08 34 30.4**	**-1.7**
	1.4nm,1.0s,baz=55,slow=7.8,SNR=2.9						
YKA	**Yellowknife Ar**	**82.04 23**		P	**P**	**08 35 42.0**	**-1.8**
	0.1nm,0.7s,baz=303,slow=5.4,SNR=3.3						
NVAR	**Mina Array Bea**	**95.25 44**		P	**P**	**08 36 48.6**	**+0.4**
	0.2nm,0.7s,baz=298,slow=3.8,SNR=2.3						

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*IDC **02** 08:23:46.8±3.6, 36°.25N×69°.95E, h235km±32km, mb3.0/10, mb1 3.0/15, mb1mx2.9/53, mbtmp3.6/15, Error ellipse: s-maj=26.6km s-min=14.6km az=10.0*
*ISCJB **02** 08:23:48.0±0.5, 36°.50N±0°.04×69°.86E±0°.08, h250km, mb3.2/9, Error ellipse: s-maj=8.5km s-min=5.7km az=1.4*
*NNC **02** 08:23:54.1±2.6, 36°.96N×69°.77E, h230km, mb2.4, mpv3.5, Error ellipse: s-maj=23.5km s-min=18.3km az=156.0*
ISC 02 08:23:48.8±0.7, 36°.52N±0°.06×69°.85E±0°.08, h250km, n25, σ1s86/31, mb3.2/9, 5C-6D, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CEP	**Cherat**	**3.18 147**		⇓P	**Pn**	**08 24 43.5**	**+0.1**
CEP				S	**S**	**08 25 25.0**	**-1.6**
CHCP	**Chirah Chowk**	**4.00 135**		P	**Pn**	**08 24 52.9**	**+0.2**
THW	**Thamme Wali**	**4.03 157**		P	**Pn**	**08 24 52.4**	**-0.7**
SFK	**Sufi-Kurgan**	**4.52 38**		⇑P	**Pn**	**08 24 59.5**	**+0.6**
	13nm,0.4s						
SFK				⇑S	**S**	**08 25 53.7**	**-1.1**
	23nm,0.3s						
MNAS	**Manas**	**6.30 18**		⇓P	**Pn**	**08 25 21.8**	**+1.0**
	1.1nm,0.4s						
MNAS				⇑S	**S**	**08 26 28.7**	**-5.8**
	29nm,1.4s						
KK31	**Karatay Array**	**6.60 4**		⇓P	**Pn**	**08 25 24.2**	**-0.1**
	0.6nm,0.4s,baz=193,slow=15,SNR=14						
KK31				⇓S	**S**	**08 26 36.7**	**-4.1**
	12nm,1.1s,baz=194,slow=19,SNR=7.0						
AAK	**Ala-Archa**	**7.08 29**		P	**Pn**	**08 25 31.3**	**+0.7**
	1.5nm,0.3s,baz=179,slow=7.3,SNR=6.3						
AAK				S	**S**	**08 26 51.6**	**-0.7**
	0.5nm,0.3s,baz=324,slow=22,SNR=7.6						
TKM2	**Tokmak 2**	**7.78 33**		⇑P	**Pn**	**08 25 39.0**	**-0.4**
	6.3nm,1.1s						
TKM2				⇑S	**S**	**08 27 05.4**	**-3.0**
	4.3nm,0.7s						
GEYT	**Alibeck**	**9.46 282**		P	**P**	**08 26 05.3**	**-1.9**
	0.8nm,0.3s,baz=90,slow=16,SNR=2.9						
MKAR	**Makanchi Array**	**13.84 38**		P	**P**	**08 26 56.0**	**+0.3**
	0.1nm,0.3s,baz=222,slow=15,SNR=8.0						
AB31	**Akbulak array**	**14.63 334**		⇓P	**P**	**08 27 05.9**	**+1.5**
	0.3nm,0.5s,baz=140,slow=11,SNR=13						
KURBB	**Kurchatov Arra**	**15.42 21**		P	**Pn**	**08 27 14.1**	**+0.2**
	0.1nm,0.3s,baz=211,slow=12,SNR=4.4						
AKTO	**Aktyubinsk**	**16.31 332**		P	**Pn**	**08 27 25.1**	**+0.8**
	0.6nm,0.3s,baz=131,slow=8.1,SNR=7.4						
AKTO	**Aktyubinsk**	**16.31 332**		⇓P	**Pn**	**08 27 24.7**	**+0.3**
	4.3nm,1.4s						
BVAR	**Borovoye Array**	**16.51 1**		P	**Pn**	**08 27 27.1**	**+0.5**
	0.4nm,0.3s,baz=172,slow=10,SNR=4.5						
BRTR	**Keskin Array B**	**28.54 288**		P	P	08 29 24.1	+2.5
	0.8nm,0.7s,baz=93,slow=10,SNR=3.9						
SONM	**Songino Array**	**29.09 56**		P	**P**	**08 29 28.1**	**+1.7**
	0.6nm,0.7s,baz=242,slow=11,SNR=2.9						
FINES	**FINESS Array B**	**36.95 326**		P	**P**	**08 30 35.2**	**+1.4**
	1.2nm,0.6s,baz=118,slow=11,SNR=2.8						
ARCES	**ARCESS Array B**	**40.77 338**		P	**P**	**08 31 07.0**	**+1.7**
	0.8nm,0.8s,baz=118,slow=7.0,SNR=4.7						
NOA	**NORSAR Array B**	**43.81 323**		P	**P**	**08 31 29.9**	**+0.1**
	0.4nm,0.5s,baz=129,slow=5.2,SNR=3.5						
KLR	**Kul'dur**	**45.88 54**		P	**P**	**08 31 46.9**	**+0.6**
	0.9nm,0.5s,baz=300,slow=8.1,SNR=4.3						
TORD	**Torodi Ar. Bea**	**64.79 268**		P	**P**	**08 34 00.4**	**-0.8**
	0.2nm,0.5s,baz=58,slow=5.1,SNR=4.6						
YKA	**Yellowknife Ar**	**81.26 2**		P	**P**	**08 35 37.2**	**+0.6**
	0.0nm,0.3s,baz=349,slow=5.6,SNR=2.3						
YKA				pP	**pP**	**08 36 38.6**	**+2.6**
	0.2nm,0.8s,baz=354,slow=5.4,SNR=3.6						
WRA	**Warramunga Arr**	**82.79 121**		P	**P**	**08 35 43.2**	**-2.1**
	0.6nm,1.1s,baz=150,slow=10,SNR=5.1						
ASAR	**Alice Springs**	**85.03 124**		P	**P**	**08 35 54.5**	**-2.0**
	0.2nm,0.5s,baz=308,slow=5.0,SNR=6.0						

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*ISCJB **02** 08:39:37.8±0.4, 70°.09N±0°.03×15°.2W±0°.2, h10km, mb3.7/15, MS3.2/14, Error ellipse: s-maj=7.8km s-min=3.9km az=7.2*
*CSEM **02** 08:39:37.3±0.2, 70°.14N×15°.12W, h2km, ML3.6, Error ellipse: s-maj=10.7km s-min=4.4km az=100.0*
*REY **02** 08:39:38.8, 69°.88N×14°.00W, h4km*
*IDC **02** 08:39:40.2±0.6, 70°.08N×15°.98W, h0km, mb3.7/15, mb1 4.0/18, mb1mx3.8/45, mbtmp3.8/18, ML3.5/3, MS3.3/20, Ms1 3.3/20, ms1mx3.1/50, Error ellipse: s-maj=21.6km s-min=12.0km az=28.0*
ISC 02 08:39:40.5±0.5, 70°.13N±0°.05×15°.34W±0°.06, h10km, n70, σ2s01/77, mb3.7/15, MS3.1/14, Jan Mayen Island region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SCO	**Scoresbysund**	**2.27 282**		*i* P	**Pn**	**08 40 16.5**	**-1.4**
SCO	**Scoresbysund**	**2.27 282**		*e*P	**Pn**	**08 40 16.6**	**-1.4**
	SNR=108						
JMIC	**Jan Mayen**	**2.44 66**		Pn	**Pn**	**08 40 16.2**	**-4.2**
	9.0nm,0.3s,baz=191,slow=2.0,SNR=26						
IGRI	**Grimsey**	**3.74 197**		P	**Pn**	**08 40 36.9**	**-1.3**
	baz=206						
IGRI				S	**Sn**	**08 41 21.9**	**-0.3**
	baz=206						
IGRI	**Grimsey**	**3.74 197**		P	**Pn**	**08 40 36.9**	**-1.3**
IGRI				S	**Sn**	**08 41 21.9**	**-0.3**
ILEI	**Leirhofn**	**3.77 187**		P	**Pn**	**08 40 35.7**	**-2.9**
	baz=196						
ILEI	**Leirhofn**	**3.77 187**		P	**Pn**	**08 40 35.7**	**-2.9**
IGIL	**Gilhagi**	**4.09 186**		P	**Pn**	**08 40 40.0**	**-3.0**
	baz=194						
IGIL				S	**Sn**	**08 41 27.9**	**-3.0**
	baz=194						
IGIL	**Gilhagi**	**4.09 186**		P	**Pn**	**08 40 40.0**	**-3.0**
IGIL				S	**Sn**	**08 41 27.9**	**-3.0**
IHED	**Heoinshofoi**	**4.14 191**		P	**Pn**	**08 40 41.5**	**-2.1**
	baz=200						
IHED				S	**Sn**	**08 41 30.8**	**-1.2**
	baz=200						
IHED	**Heoinshofoi**	**4.14 191**		P	**Pn**	**08 40 41.5**	**-2.1**
IHED				S	**Sn**	**08 41 30.8**	**-1.2**
IDIM	**Dimmadals¯¡s**	**4.23 189**		P	**Pn**	**08 40 42.5**	**-2.5**
	baz=197						
IDIM				S	**Sn**	**08 41 33.1**	**-1.3**
	baz=197						
IDIM	**Dimmadals¯¡s**	**4.23 189**		P	**Pn**	**08 40 42.5**	**-2.5**
IDIM				S	**Sn**	**08 41 33.1**	**-1.3**
ISIG	**Siglufjorour**	**4.24 200**		P	**Pn**	**08 40 44.3**	**-0.7**
	baz=208						
ISIG	**Siglufjorour**	**4.24 200**		P	**Pn**	**08 40 44.3**	**-0.7**
IGRA	**Granastaoir**	**4.32 192**		P	**Pn**	**08 40 44.4**	**-1.7**
	baz=200						
IGRA				S	**Sn**	**08 41 36.1**	**-0.2**
	baz=200						
IGRA	**Granastaoir**	**4.32 192**		P	**Pn**	**08 40 44.4**	**-1.7**
IGRA				S	**Sn**	**08 41 36.2**	**-0.2**
IGHA	**Grjothals**	**4.34 187**		P	**Pn**	**08 40 43.8**	**-2.6**
	baz=195						
IGHA	**Grjothals**	**4.34 187**		P	**Pn**	**08 40 43.8**	**-2.6**
IHLA	**Hella**	**4.36 197**		P	**Pn**	**08 40 46.0**	**-0.7**
	baz=205						
IHLA				S	**Sn**	**08 41 37.3**	**-0.2**
	baz=205						
IHLA	**Hella**	**4.36 197**		P	**Pn**	**08 40 46.0**	**-0.7**
IHLA				S	**Sn**	**08 41 37.3**	**-0.2**
IHRN	**Hraun**	**4.42 206**		P	**Pn**	**08 40 47.2**	**-0.3**
	baz=214						
IHRN				S	**Sn**	**08 41 40.1**	**+1.2**
	baz=214						
IHRN	**Hraun**	**4.42 206**		P	**Pn**	**08 40 47.2**	**-0.3**
IHRN				S	**Sn**	**08 41 40.1**	**+1.2**
IMEL	**Melhnausar**	**4.61 187**		P	**Pn**	**08 40 47.6**	**-2.5**
	baz=194						
IMEL	**Melhnausar**	**4.61 187**		P	**Pn**	**08 40 47.7**	**-2.5**
ISVA	**Svartarkot**	**4.87 190**		P	**Pn**	**08 40 52.4**	**-1.4**
	baz=197						
ISVA	**Svartarkot**	**4.87 190**		P	**Pn**	**08 40 52.3**	**-1.4**
IADA	**Aoalbol**	**5.14 181**		P	**Pn**	**08 40 54.7**	**-2.7**
	baz=188						
IADA	**

RES	**Resolute Bay**	**22.72 317**	P	**P**	**08 44 43.2**	**+1.3**	
	0.9nm,0.7s,baz=19,slow=14,SNR=4.9						
RES			LR	LR	08 53 16.4		
	comp=Z,56nm,20.0s,baz=44,slow=36						
GERES	**GERESS Array B**	**25.45 132**	P	**P**	**08 45 10.4**	**+2.2**	
	5.6nm,1.2s,baz=342,slow=7.2,SNR=12						
VRAC	**Vranov**	**25.79 127**	P	**P**	**08 45 15.6**	**+4.4**	
	2.3nm,0.4s,baz=345,slow=9.2,SNR=3.1						
VRAC			LR	LR	08 55 45.7		
	comp=Z,59nm,19.5s,baz=320,slow=37						
DAVOX	**Davos/Dischmat**	**26.46 139**	LR	LR	08 56 25.2		
	comp=Z,49nm,18.1s,baz=272,slow=38						
OBN	**Obninsk**	**27.08 97**	LR	LR	08 55 11.4		
	comp=Z,76nm,21.0s,baz=266,slow=34						
SCHQ	**Schefferville**	**27.17 262**	P	**P**	**08 45 22.8**	**-0.9**	
	1.9nm,0.7s,baz=34,slow=7.3,SNR=5.6						
SCHQ			LR	LR	08 55 34.2		
	comp=Z,63nm,19.3s,baz=62,slow=35						
AKASG	**Malin Array Be**	**28.34 110**	P	**P**	**08 45 35.5**	**+1.4**	
	1.2nm,0.7s,baz=328,slow=9.3,SNR=2.6						
NRIK	**Noril'sk**	**31.62 41**	LR	LR	09 00 38.0		
	comp=Z,21nm,18.1s,baz=216,slow=40						
INK	**Inuvik**	**35.67 326**	P	**P**	**08 46 38.0**	**-0.2**	
	0.8nm,0.7s,baz=35,slow=12,SNR=3.8						
YKA	**Yellowknife Ar**	**36.22 309**	P	**P**	**08 46 42.8**	**0.0**	
	1.7nm,0.8s,baz=32,slow=8.0,SNR=35						
BRTR	**Keskin Array B**	**39.53 114**	P	**P**	**08 47 14.6**	**+3.3**	
	0.5nm,0.7s,baz=1.4,slow=5.8,SNR=2.5						
BRTR			LR	LR	09 03 19.5		
	comp=Z,24nm,22.0s,baz=312,slow=36						
ILAR	**Eielson Array**	**41.24 331**	P	**P**	**08 47 25.8**	**+0.7**	
	0.9nm,0.9s,baz=22,slow=6.7,SNR=7.9						
ILAR			LR	LR	09 07 52.3		
	comp=Z,24nm,18.5s,baz=46,slow=41						
ZALV	**Zalesovo Beam**	**43.75 57**	LR	LR	09 08 19.2		
	comp=Z,46nm,20.0s,baz=86,slow=39						
MKAR	**Makanchi Array**	**49.34 64**	P	**P**	**08 48 30.4**	**+1.0**	
	0.3nm,0.4s,baz=340,slow=6.7,SNR=4.5						
MKAR			LR	LR	09 12 21.3		
	comp=Z,18nm,18.5s,baz=4.5,slow=40						
PDAR	**Pinedale Array**	**51.88 291**	P	**P**	**08 48 48.4**	**-0.6**	
	0.5nm,0.7s,baz=43,slow=6.0,SNR=5.5						
PDAR			LR	LR	09 10 28.7		
	comp=Z,54nm,19.5s,baz=58,slow=36						
SONM	**Songino Array**	**55.02 44**	P	P	08 49 16.2	+4.4	
	0.2nm,0.4s,baz=347,slow=5.9,SNR=2.8						
TORD	**Torodi Ar. Bea**	**57.94 160**	P	**P**	**08 49 34.1**	**+1.4**	
	0.8nm,0.9s,baz=344,slow=4.7,SNR=4.4						
NVAR	**Mina Array Bea**	**58.57 296**	P	**P**	**08 49 37.0**	**-0.1**	
	0.3nm,0.7s,baz=44,slow=5.4,SNR=2.3						
NVAR			LR	LR	09 15 59.0		
	comp=Z,53nm,18.1s,baz=10.0,slow=37						
TXAR	**Lajitas Array**	**62.18 279**	P	**P**	**08 50 01.9**	**+0.1**	
	0.7nm,0.7s,baz=14,slow=5.6,SNR=4.3						
TXAR			LR	LR	09 17 14.7		
	comp=Z,65nm,18.6s,baz=0.0,slow=36						

ISK ***02*** *08:51:58.1,37.°31N×28.°27E,h4km,MD2.9*
CSEM ***02*** *08:51:59.6±0.3,37.°28N×28.°25E,h2km,MD2.9,Error ellipse: s-maj=7.8km s-min=5.4km az=59.0*
ISC 02 08:51:59.3±1.1,37.°28N±0.°03×28.°22E±0.°04,h5km±11km, n14,σ0s94/23,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.15**	**161**	*e*PG	**Pg**	**08 52 02.3**	**-0.1**
YER				*e*SG	**Sg**	**08 52 05.5**	**+1.0**
YER	**Yerkesik**	**0.15**	**161**	*e*Pg	**Pg**	**08 52 02.3**	**-0.1**
YER				*e*Sg	**Sg**	**08 52 05.5**	**+1.0**
AYDN	**Tasoluk**	**0.47**	**325**	P	**Pb**	**08 52 09.2**	**-0.8**
AYDN				S	**Sb**	**08 52 17.4**	**+0.2**
AYDN	**Tasoluk**	**0.47**	**325**	*i* P	**Pb**	**08 52 09.2**	**-0.8**
AYDN				*i* S	**Sb**	**08 52 17.4**	**+0.2**
DALY	**Dalyan (Mu¨la**	**0.58**	**143**	*e*PG	**Pg**	**08 52 10.1**	**-0.3**
DALY				*e*SG	**Sb**	**08 52 18.7**	**-1.7**
DALY	**Dalyan (Mu¨la**	**0.58**	**143**	*e*Pg	**Pg**	**08 52 10.1**	**-0.3**
DALY				*e*Sg	**Sb**	**08 52 18.7**	**-1.7**
BDRM	**Kayabasi**	**0.66**	**251**	P	**Pb**	**08 52 13.0**	**-0.2**
BDRM	**Kayabasi**	**0.66**	**251**	*i* P	**Pb**	**08 52 13.0**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**0.71**	**339**	*e*PG	**Pg**	**08 52 12.2**	**-0.8**
AYDB	**Zeytinkoy-Aydi**	**0.71**	**339**	*e*Pg	**Pg**	**08 52 12.2**	**-0.8**
BODT	**Bodrum**	**0.76**	**254**	*e*PG	**Pb**	**08 52 14.2**	**-0.7**
BODT				*e*SG	**Sb**	**08 52 25.8**	**+0.2**
BODT	**Bodrum**	**0.76**	**254**	*e*Pg	**Pb**	**08 52 14.2**	**-0.7**
BODT				*e*Sg	**Sb**	**08 52 25.8**	**+0.2**
KHAL	**Karahalli**	**1.48**	**42**	P	**Pg**	**08 52 27.7**	**0.0**
KHAL	**Karahalli**	**1.48**	**42**	*i* P	**Pg**	**08 52 27.7**	**0.0**
KHAL				*i* S	**Sn**	**08 52 48.7**	**+2.2**

ISCJB ***02*** *08:59:28.9±0.8,12.°8S±0.°1×167.°1E±0.°1,h300km,mb3.5/7, Error ellipse: s-maj=21.7km s-min=16.1km az=135.8*
IDC ***02*** *08:59:32.1±6.1,12.°97S×167.°07E,h323km±68km,mb3.0/6, mb1 3.2/7,mb1mx3.0/46,mbtmp3.7/7,Error ellipse: s-maj=50.8km s-min=16.6km az=173.0*
ISC 02 08:59:30.2±0.9,12.°8S±0.°1×167.°1E±0.°2,h300km,n8, σ0s60/8,mb3.5/7,Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**9.21**	**184**	P	**Pn**	**09 01 39.1**	**+0.5**
	0.9nm,0.3s,baz=85,slow=10,SNR=47						
CTA	**Charters Tower**	**21.20**	**247**	P	**P**	**09 03 52.9**	**-0.1**
	1.0nm,0.4s,baz=63,slow=11,SNR=2.3						
WRA	**Warramunga Arr**	**32.13**	**253**	P	**P**	**09 05 29.6**	**-0.9**
	0.2nm,0.5s,baz=82,slow=9.6,SNR=4.2						
ASAR	**Alice Springs**	**33.20**	**246**	P	**P**	**09 05 39.7**	**0.0**
	0.2nm,0.6s,baz=73,slow=9.2,SNR=5.5						
PPT	**Papeete**	**42.05**	**102**	P	**P**	**09 06 52.7**	**-0.7**
	15nm,0.6s,baz=264,slow=18,SNR=2.9						
SEY	**Seymchan**	**76.39**	**353**	P	**P**	**09 10 46.9**	**+0.5**
	1.1nm,0.6s,baz=207,slow=21,SNR=4.6						
ILAR	**Eielson Array**	**84.80**	**18**	P	**P**	**09 11 31.1**	**+0.3**
	1.0nm,0.6s,baz=226,slow=5.2,SNR=15						
YKA	**Yellowknife Ar**	**95.97**	**27**	P	**P**	**09 12 22.9**	**0.0**
	0.1nm,0.6s,baz=257,slow=4.6,SNR=4.6						

ISK ***02*** *09:03:02.2,37.°18N×39.°20E,h2km,MD2.7*
ISCJB ***02*** *09:03:03.4±0.8,37.°18N±0.°06×39.°23E±0.°04,h3km±10km, Error ellipse: s-maj=9.9km s-min=4.7km az=160.6*
CSEM ***02*** *09:03:03.1±0.4,37.°16N×39.°21E,h8km,MD2.7,Error ellipse: s-maj=9.6km s-min=5.1km az=170.0*
ISC 02 09:03:03.2±1.4,37.°18N±0.°05×39.°24E±0.°05,h7km±12km, n12,σ0s32/21,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URFA	**Urfa**	**0.42**	**308**	*e*PG	**Pg**	**09 03 10.9**	**-0.5**
URFA				*e*SG	**Sg**	**09 03 17.4**	**+0.4**
URFA	**Urfa**	**0.42**	**308**	*e*Pg	**Pg**	**09 03 10.9**	**-0.5**
URFA				*e*Sg	**Sg**	**09 03 17.4**	**+0.4**
SURC	**SANLIURFA_SURC**	**0.58**	**239**	P	**Pg**	**09 03 14.2**	**-0.2**
SURC	**SANLIURFA_SURC**	**0.58**	**239**	*i* P	**Pg**	**09 03 14.2**	**-0.2**
SURC				*i* S	**Sb**	**09 03 24.3**	**+0.1**
MAZI	**Mazidag**	**1.00**	**74**	*e*PG	**Pb**	**09 03 23.0**	**0.0**
MAZI				*e*SG	**Sn**	**09 03 38.0**	**-0.3**
MAZI	**Mazidag**	**1.00**	**74**	*e*Pg	**Pb**	**09 03 23.0**	**0.0**
MAZI				*e*Sg	**Sn**	**09 03 38.0**	**-0.3**
DYBB	**Diyarbakir**	**1.05**	**43**	*e*PG	**Pb**	**09 03 23.6**	**-0.2**
DYBB				*e*SG	**Sn**	**09 03 39.4**	**0.0**
DIY	**Diyarbakir**	**1.06**	**47**	*e*Pg	**Pg**	**09 03 23.6**	**0.0**
DIY				*e*Sg	**Sn**	**09 03 39.4**	**-0.3**
SVRC	**Sivrice-ELAZID**	**1.20**	**3**	*e*PN	**Pg**	**09 03 26.0**	**-0.2**
SVRC	**Sivrice-ELAZID**	**1.20**	**3**	*e*Pn	**Pg**	**09 03 26.0**	**-0.2**
AKCD	**Akcadag**	**1.52**	**317**	P	**Pn**	**09 03 31.2**	**+0.2**
AKCD				S	**Sg**	**09 03 52.6**	**+0.4**
AKCD	**Akcadag**	**1.52**	**317**	*i* P	**Pn**	**09 03 31.2**	**+0.2**
AKCD				*i* S	**Sg**	**09 03 52.6**	**+0.4**

JMA ***02*** *09:09:05.9±0.2,39.°56N×143.°65E,h17km±4km,M4.3*
IDC ***02*** *09:09:06.9±0.7,39.°62N×143.°36E,h0km,mb4.1/22, mb1 4.3/27,mb1mx4.2/44,mbtmp4.2/27,ML3.6/5,MS3.5/20, Ms1 3.5/20,ms1mx3.3/42,Error ellipse: s-maj=17.8km s-min=12.5km az=117.0*
ISCJB ***02*** *09:09:07.7±0.9,39.°59N±0.°03×143.°54E±0.°04,h21km±6km, mb4.4/52,MS3.7/25,Error ellipse: s-maj=6.4km s-min=3.5km az=39.0*
MOS ***02*** *09:09:09.9±0.9,39.°64N×143.°42E,h33km,mb4.7/23,Error ellipse: s-maj=8.9km s-min=5.7km az=97.3*
NEIC ***02*** *09:09:12.3±1.5,39.°63N×143.°37E,h35km±10km,mb4.7/13, Error ellipse: s-maj=7.9km s-min=4.4km az=122.0*
ISC 02 09:09:13.3±0.7,39.°67N±0.°04×143.°38E±0.°04,h48km±4km, n144,σ2s67/176,mb4.5/50,MS3.7/25,9C-5D,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.20**	**283**	P	**Pn**	**09 09 31.1**	**-2.6**
JTH				S	**Sn**	**09 09 50.3**	**+1.4**
MIYJ	**Miyakonagasawa**	**1.21**	**266**	P	**Pn**	**09 09 31.1**	**-2.8**
MIYJ				S	**Sn**	**09 09 48.4**	**-0.8**
OFUJ	**Ofunato**	**1.46**	**247**	P	**Pn**	**09 09 34.0**	**-3.2**
OFUJ				S	**Sn**	**09 09 55.2**	**+0.1**
JANG	**Nango**	**1.60**	**297**	P	**Pn**	**09 09 36.9**	**-2.2**
JANG				S	**Sn**	**09 10 00.0**	**+1.4**
JOM	**Ohasama**	**1.63**	**264**	P	**Pn**	**09 09 37.5**	**-2.1**
JOM				S	**Sn**	**09 09 59.3**	**-0.1**
JMK	**Ichinoseki**	**1.83**	**247**	P	**Pn**	**09 09 39.5**	**-2.7**
JMK				*e*S	**Sn**	**09 10 02.8**	**-1.4**
JTM	**Tenmabayashi**	**2.09**	**303**	P	**Pn**	**09 09 44.8**	**-1.1**
JTM				*e*S	**Sn**	**09 10 15.2**	**+4.5**
JRG	**Rokugo**	**2.15**	**263**	P	**Pn**	**09 09 44.8**	**-1.8**
JAH	**Hinai**	**2.17**	**285**	P	**Pn**	**09 09 45.8**	**-1.2**
JAH				*e*S	**Sn**	**09 10 16.3**	**+3.5**
ERM	**Erimo**	**2.35**	**356**	*e*P	**Pn**	**09 09 49.1**	**-0.3**
ERM	**Erimo**	**2.35**	**356**	*e*Pn	**Pn**	**09 09 49.1**	**-0.3**
JYK	**Kaneyama**	**2.46**	**253**	P	**Pn**	**09 09 49.2**	**-1.8**
JOU	**Okura**	**2.49**	**239**	*e*S	**Sn**	**09 10 18.4**	**-2.1**
JNBK	**Urakawa-nobuka**	**2.65**	**350**	P	**Pn**	**09 09 52.8**	**-0.7**
JNBK				S	**Sn**	**09 10 26.0**	**+1.6**
JKB	**Kayabe**	**2.84**	**322**	P	**Pn**	**09 09 55.3**	**-0.9**
JCH	**Churui**	**2.94**	**360**	P	**Pn**	**09 09 55.3**	**-2.2**
JCH				S	**Sn**	**09 10 29.7**	**-1.8**
JAR	**Ashorobuto**	**3.63**	**4**	P	**Pn**	**09 10 04.2**	**-2.8**
JAR				S	**Sn**	**09 10 46.8**	**-1.8**
NEM2	**Nemuro 2**	**4.09**	**25**	P	Pn	09 10 09.7	-3.6
NEM2				S	**Sn**	**09 10 55.0**	**-4.9**
JTKR	**Abashiri--Toko**	**4.31**	**5**	P	**Pn**	**09 10 14.3**	**-2.0**
JTKR				S	**Sn**	**09 11 03.7**	**-1.6**
ASAJ	**Asahikawa**	**4.48**	**353**	Pn	**Pn**	**09 10 18.1**	**-0.5**
	2.7nm,0.3s,baz=200,slow=18,SNR=34						
ASAJ				Sn	**Sn**	**09 11 09.8**	**+0.3**
	5.7nm,0.3s,baz=244,slow=29,SNR=4.3						
YUK	**Yuzh-Kuril'sk**	**4.74**	**22**	*e*P	**Pn**	**09 10 21.6**	**-0.5**
YUK				*e*S	**Sn**	**09 11 11.3**	**-4.4**
YUK				pmax	pmax		
	comp=N,86nm,0.6s						
YUK				pmax	pmax		
	comp=E,138nm,0.6s						
YUK				pmax	pmax		
	comp=Z,145nm,0.6s						
SHO	**Shikotan**	**4.92**	**30**	*e*P	**Pn**	**09 10 22.8**	**-1.9**
SHO				*e*S	**Sn**	**09 11 13.7**	**-6.6**
SHO				pmax	pmax		
	comp=Z,61nm,0.7s						
MJAR	**Matsushiro Arr**	**5.14**	**234**	Pn	**Pn**	**09 10 26.1**	**-1.7**
	comp=Z,2.5nm,0.3s,baz=38,slow=12,SNR=140						
MJAR				Sn	Sn	09 11 14.9	-11
	comp=Z,2.6nm,0.3s,baz=247,slow=19,SNR=6.2						
MJAR				LR	LR	09 12 38.0	
	comp=Z,367nm,18.9s,baz=20,slow=42						
MAJO	**Matsushiro**	**5.14**	**234**	*c i*P	**Pn**	**09 10 26.1**	**-1.7**
MAJO	**Matsushiro**	**5.14**	**234**	*e*Pn	**Pn**	**09 10 26.2**	**-1.5**
MAT	**Matsushiro**	**5.14**	**234**	P	**Pn**	**09 10 26.2**	**-1.6**
MJB9	**Matsu-Tunnel**	**5.14**	**234**	*e*Pn	**Pn**	**09 10 26.3**	**-1.5**
KUR	**Kuril'sk**	**6.47**	**29**	P	**Pn**	**09 10 44.0**	**-1.9**
KUR				*e*S	**Sn**	**09 11 52.6**	**-5.7**
KUR				smax	smax		
	comp=N,60nm,0.4s						
KUR				smax	smax		
	comp=E,91nm,0.6s						
INU	**Inuyama**	**6.65**	**232**	*e*Pn	**Pn**	**09 10 46.9**	**-1.6**
JHJ2	**Mitsune**	**7.15**	**205**	*e*Pn	Pn	09 11 00.3	+5.0
JHJ	**Hachijo jima 2**	**7.16**	**205**	Pn	**Pn**	**09 10 51.1**	**-4.2**
	comp=E,16nm,0.3s,baz=154,slow=23,SNR=12						
JHJ				Sn	Sn	09 12 04.2	-11
	comp=E,10nm,0.3s,baz=249,slow=22,SNR=3.4						
YSS	**Yuzh-Sakhalins**	**7.29**	**357**	*e*P	**Pn**	**09 10 55.0**	**-2.2**
USRK	**Ussuriysk Ar.**	**9.62**	**302**	Pn	**Pn**	**09 11 30.8**	**+1.7**
	comp=E,0.7nm,0.3s,baz=100,slow=13,SNR=23						
USRK				LR	LR	09 15 04.5	
	comp=E,271nm,21.3s,baz=129,slow=37						
HABR	**Khabarovsk**	**10.64**	**329**	*e*P	Pn	09 11 35.8	-7.2
HABR				*e*SS	**Sn**	**09 13 39.4**	**-1.2**
HABR				pmax	pmax		
	comp=E,14nm,1.3s						
HABR				pmax	pmax		
	comp=N,18nm,1.3s						
HABR				pmax	pmax		
	comp=Z,32nm,1.3s						
HABR				MLR	MLR		
	comp=Z,244nm,16.0s						
JNU	**Nakatsue**	**12.01**	**241**	Pn	**Pn**	**09 11 59.2**	**-2.5**
	comp=Z,0.2nm,0.3s,baz=30,slow=10,SNR=3.4						
JNU				LR	LR	09 16 55.8	
	comp=Z,367nm,18.9s,baz=70,slow=39						
KSRS	**Korea Array**	**12.31**	**265**	Pn	**Pn**	**09 12 07.4**	**+1.6**
	comp=Z,0.2nm,0.3s,baz=88,slow=13,SNR=15						
KSRS				LR	LR	09 16 31.8	
	comp=Z,224nm,18.3s,baz=84,slow=36						
KSAR	**Wonju Array Be**	**12.34**	**265**	P	**Pn**	**09 12 07.4**	**+1.2**
KSAR	**Wonju Array Be**	**12.34**	**265**	Pn	**Pn**	**09 12 07.4**	**+1.2**
KLR	**Kul'dur**	**12.65**	**323**	Pn	**Pn**	**09 12 09.4**	**-1.0**
	comp=Z,0.1nm,0.3s,baz=123,slow=15,SNR=6.9						
KLR				LR	LR	09 17 15.2	
	comp=Z,241nm,20.1s,baz=128,slow=38						
CN2	**Changchun**	**14.01**	**293**	*e*P	**Pn**	**09 12 29.0**	**0.0**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.6s						
CN2				LR	LR		
	comp=N,300nm,13.0s						
CN2				LR	LR		
	comp=E,400nm,13.0s						
CN2				LR	LR		
	comp=Z,300nm,14.0s						
PETK	**Petropavlovsk-**	**16.63**	**31**	LR	LR	09 18 46.0	
	comp=Z,44nm,21.5s,baz=203,slow=35						
MA2	**Magadan**	**20.46**	**11**	P	**P**	**09 13 46.8**	**+0.2**
	comp=Z,13nm,0.7s,baz=208,slow=8.0,SNR=13						
MA2				LR	LR	09 22 48.2	
	comp=Z,80nm,18.4s,baz=220,slow=40						
BJI	**Beijing**	**20.87**	**280**	P	**P**	**09 13 48.0**	**-3.1**
BJI				sP	**pP**	**09 14 03.6**	**+1.2**
BJI				S	**S**	**09 17 32.3**	**-8.8**
BJI				sS	Sn	09 17 47.2	-1.5
BJI				pmax	pmax		
	comp=Z,9.0nm,0.9s						
BJI				pmax	pmax		
	comp=Z,74nm,3.4s						
BJI				LR	LR		
	comp=N,190nm,13.0s						
BJI				LR	LR		
	comp=E,290nm,16.4s						
BJI				LR	LR		
	comp=Z,180nm,16.0s						
TIA	**Tai'an**	**20.97**	**269**	*e*P	**P**	**09 13 50.1**	**-2.2**
TIA				pmax	pmax		
	comp=Z,30nm,1.0s						
NJ2	**Nanjing**	**21.24**	**257**	*e*P	**P**	**09 13 52.9**	**-2.3**
NJ2				pmax	pmax		
	comp=Z,21nm,0.5s						
YAK	**Yakutsk**	**23.90**	**344**	P	**P**	**09 14 21.2**	**-1.1**
	comp=Z,11nm,0.4s,baz=358,slow=0.2,SNR=5.3						
YAK				LR	LR	09 24 28.7	
	comp=Z,51nm,19.8s,baz=144,slow=38						
YAK	**Yakutsk**	**23.90**	**344**	*e*P	**P**	**09 14 21.1**	**-1.1**
YAK				*e*		09 14 49.5	
YAK				*e*		09 18 05.5	
YAK				*e*S	**S**	**09 18 34.8**	**-0.1**
YAK				*e*SS	**SnSn**	**09 19 19.2**	**+1.4**
YAK				pmax	pmax		
	comp=Z,16nm,0.9s						
YAK				pmax	pmax		
	comp=N,8.0nm,1.0s						
YAK				pmax	pmax		
	comp=E,5.0nm,1.0s						
YAK				pmax	pmax		
	comp=Z,154nm,3.2s						
YAK				pmax	pmax		
	comp=N,123nm,4.1s						
YAK				pmax	pmax		
	comp=E,33nm,3.4s						
YAK				smax	smax		
	comp=N,136nm,4.1s						
YAK				smax	smax		
	comp=E,107nm,4.2s						
YAK				MLR	MLR		
	comp=Z,63nm,14.0s						
YAK				MLR	MLR		
	comp=N,65nm,14.0s						
YAK	**Yakutsk**	**23.90**	**344**	*e*P	**P**	**09 14 21.6**	**-0.6**
	comp=N,23nm,0.9s						
SEY	**Seymchan**	**23.91**	**10**	P	**P**	**09 14 22.9**	**+0.5**
	comp=N,8.9nm,0.8s,baz=182,slow=6.0,SNR=26						
SEY	**Seymchan**	**23.91**	**10**	*e*P	**P**	**09 14 23.4**	**+1.0**
HHC	**Hu-ho-hao-te**	**24.25**	**283**	*e*P	**P**	**09 14 23.8**	**-2.0**
HHC				PP	**sP**	**09 14 49.1**	**+5.1**
HHC				S	**S**	**09 18 32.5**	**-8.6**
HHC				pmax	pmax		
	comp=Z,25nm,1.0s						
HHC				pmax	pmax		
	comp=Z,120nm,4.3s						
HHC				LR	LR		
	comp=N,400nm,13.7s						
HHC				LR	LR		
	comp=E,520nm,12.7s						
HHC				LR	LR		
	comp=Z,350nm,13.7s						
WHN	**Wuhan**	**25.35**	**258**	*i*P	**P**	**09 14 35.3**	**-0.4**
GUMO	**Guam**	**26.02**	**177**	LR	LR	09 23 43.6	
	comp=Z,38nm,21.0s,baz=32,slow=34						
BOD	**Bodaibo**	**26.23**	**324**	*e*P	**P**	**09 14 43.3**	**-0.1**
BOD				pmax	pmax		
	comp=Z,15nm,0.8s						
ULN	**Ulaanbaatar**	**27.28**	**299**	*ce*P	**P**	**09 14 53.0**	**-0.2**
ULN				pmax	pmax		
	comp=Z,14nm,1.2s						
ULN	**Ulaanbaatar**	**27.28**	**299**	*e*P	**P**	**09 14 53.7**	**+0.5**
	comp=Z,12nm,1.1s						
SONA1	**Songino Array**	**27.72**	**299**	*e*P	**P**	**09 14 57.6**	**+0.5**
SONM	**Songino Array**	**27.72**	**299**	P	**P**	**09 14 57.7**	**+0.6**
	comp=Z,4.3nm,0.8s,baz=98,slow=9.2,SNR=23						
SONM				LR	LR	09 26 38.1	
	comp=Z,239nm,19.5s,baz=85,slow=38						
XAN	**Xi'an**	**28.03**	**269**	P	**P**	**09 14 59.4**	**-0.5**
XAN				pP	pP	09 15 10.6	-1.8
XAN				sP	sP	09 15 16.0	-2.2
XAN				PP	**PnPn**	**09 15 46.7**	**-2.2**
XAN				S	S	09 19 31.1	-10
XAN				sS	sS	09 19 52.4	-10
XAN				SS	**SnSn**	**09 20 48.9**	**-10**
XAN				pmax	pmax		
	comp=Z,7.0nm,1.1s						
XAN				pmax	pmax		
	comp=Z,61nm,5.7s						
XAN				LR	LR		
	comp=N,120nm,15.9s						
XAN				LR	LR		
	comp=E,190nm,15.9s						
XAN				LR	LR		
	comp=Z,190nm,16.3s						
ENH	**Enshi**	**29.17**	**262**	*e*P	**P**	**09 15 09.3**	**-0.8**
	comp=Z,5.9nm,0.6s						
TLY	**Talaya**	**29.88**	**307**	LR	LR	09 27 59.6	
	comp=Z,69nm,19.3s,baz=86,slow=38						
ZAK	**Zakamensk**	**29.96**	**304**	*e*P	**P**	**09 15 15.8**	**-1.1**
ZAK				pmax	pmax		
	comp=Z,3.0nm,1.0s						
BILL	**Bilibino**	**31.06**	**16**	*e*P	**P**	**09 15 27.2**	**+0.9**
BILL				*i* SS	SS	09 22 12.1	-30
BILL				MLR	MLR		
	comp=Z,59nm,17.0s						
LZH	**Lanzhou**	**31.24**	**276**	*e*P	**P**	**09 15 28.8**	**+0.3**
LZH				pP	pP	09 15 39.1	-2.0
LZH				sP	sP	09 15 44.2	-2.6
LZH				PP	**PnPn**	**09 16 26.8**	**-5.0**
LZH				*e*S	**S**	**09 20 24.3**	**-7.4**
LZH				sS	sS	09 20 44.2	-8.7
LZH				SS	**SnSn**	**09 22 12.1**	**-5.4**
LZH				pmax	pmax		
	comp=Z,27nm,1.0s						
LZH				pmax	pmax		
	comp=Z,85nm,4.3s						
LZH				LR	LR		
	comp=N,1μm,13.2s						
LZH				LR	LR		
	comp=E,1μm,12.6s						
LZH				LR	LR		
	comp=Z,1μm,15.2s						
MOY	**Mondy**	**31.52**	**307**	*e*P	**P**	**09 15 31.5**	**+0.8**
TIXI	**Tiksi**	**32.88**	**352**	P	**P**	**09 15 41.3**	**-1.0**
	comp=Z,0.4nm,0.2s,baz=307,slow=0.8,SNR=2.5						
TIXI				LR	LR	09 30 55.2	
	comp=Z,75nm,18.6s,baz=168,slow=40						
TIXI	**Tiksi**	**32.88**	**352**	*e*P	**P**	**09 15 41.4**	**-0.8**
TIXI				pmax	pmax		
	comp=Z,2.0nm,1.1s						
TIXI	**Tiksi**	**32.88**	**352**	P	**P**	**09 15 41.3**	**-1.0**
TIXI				*e*PP	**PP**	**09 17 02.6**	**+5.5**
GYA	**Guiyang**	**33.24**	**258**	P	**P**	**09 15 47.8**	**+1.8**
GYA				pP	pP	09 15 58.6	-0.1
GYA				PP	**sP**	**09 16 03.0**	**-1.4**
GYA				PcP	**PcP**	**09 18 33.4**	**+5.8**
GYA				S	**S**	**09 20 59.2**	**-3.7**
GYA				sS	sS	09 21 18.7	-5.4
GYA				ScP	**ScP**	**09 22 13.0**	**+5.1**
GYA				SS	**SnSn**	**09 22 56.2**	**-10**
GYA	**Guiyang**	**33.24**	**258**	ScS	ScS	09 26 11.4	+2.6
GYA				pmax	pmax		
	comp=Z,20nm,1.0s						
GYA				pmax	pmax		
	comp=Z,120nm,5.2s						
GYA				LR	LR		
	comp=N,550nm,16.9s						
GYA				LR	LR		
	comp=E,490nm,17.2s						
GYA				LR	LR		
	comp=Z,520nm,17.0s						
CD2	**Chengdu**	**33.28**	**267**	P	**P**	**09 15 45.4**	**-0.9**
CD2				sP	sP	09 16 01.5	-3.2
CD2				PP	**PnPn**	**09 16

comp=Z,91nm,18.5s,baz=118,slow=39
CMAR Chiang Mai Arr 43.69 254 P **P 09 17 13.4 -0.2**
comp=Z,3.9nm,0.3s,baz=40,slow=6.9,SNR=3.8
CMAR LR LR 09 36 13.5
comp=Z,62nm,18.7s,baz=198,slow=37
CM01 Chiang Mai Arr 43.70 254 *e*P **P 09 17 13.8 +0.1**
MK01 Makanchi Array 44.08 300 *e*P **P 09 17 16.6 +0.1**
MK31 Makanchi Array 44.08 300 *e*P **P 09 17 16.9 +0.4**
MK31 Makanchi Array 44.08 300 *e*P **P 09 17 16.9 +0.4**
MKAR Makanchi Array 44.08 300 P **P 09 17 16.8 +0.3**
comp=Z,4.5nm,0.7s,baz=82,slow=9.9,SNR=43
MKAR LR LR 09 36 35.6
comp=Z,115nm,18.4s,baz=90,slow=37
MKAR Makanchi Array 44.08 300 *e*P **P 09 17 16.9 +0.4**
KDAK Kodiak Island 44.11 44 P P 09 17 32.3 +16
comp=Z,2.9nm,0.7s,baz=303,slow=9.4,SNR=3.6
MAKZ Makanchi 44.29 300 *e*P **P 09 17 18.5 +0.4**
MAKZ pmax pmax
comp=Z,8.0nm,0.9s
MAKZ Makanchi 44.29 300 *e*P **P 09 17 18.5 +0.4**
comp=Z,7.5nm,0.9s
BWN Browne 45.34 35 *e*P P 09 17 35.5 +9.3
comp=Z,18nm,0.6s
KURK Kurchatov 45.57 306 *e*P **P 09 17 28.4 +0.1**
KURK pmax pmax
comp=Z,16nm,1.0s
KURK Kurchatov 45.57 306 *e*P **P 09 17 28.4 +0.1**
comp=Z,16nm,1.0s
MCK McKinley 45.58 35 P **P 09 17 29.6 +1.4**
MCK McKinley 45.58 35 P **P 09 17 29.6 +1.4**
IL1 Eielson Array 46.44 34 *e*P P 09 17 43.1 +8.2
ILAR Eielson Array 46.44 34 P **P 09 17 35.4 +0.5**
comp=Z,0.9nm,0.6s,baz=268,slow=6.7,SNR=13
ILB Eielson Array 46.44 34 *e*P P 09 17 45.1 +10
TKM2 Tokmak 2 49.78 297 *e*P **P 09 18 02.2 +1.0**
TKM2 pmax pmax
comp=Z,12nm,0.8s
TKM2 Tokmak 2 49.78 297 *e*P **P 09 18 02.2 +1.0**
comp=Z,12nm,0.8s
BRVK Borovoye 50.03 311 *c*e**P** **P 09 18 03.3 +0.6**
BRVK pmax pmax
comp=Z,6.0nm,1.0s
BRVK Borovoye 50.03 311 *e*P **P 09 18 03.5 +0.8**
comp=Z,6.2nm,0.9s
AAK Ala-Archa 50.64 297↓ *e*P **P 09 18 07.7 0.0**
AAK pmax pmax
comp=Z,5.0nm,1.0s
KSH Kashi 50.78 293 *e*P **P 09 18 13.4 +4.6**
KSH *e*pP sP 09 18 26.0 -1.6
KSH *e*PP **PP 09 20 10.2 +5.2**
KSH *e*ScP **ScP 09 23 22.5 +5.3**
KSH PcS **PcS 09 23 26.6 +3.9**
KSH S **S 09 25 22.1 +1.0**
KSH pmax pmax
comp=Z,73nm,5.0s
KSH LR LR
comp=N,200nm,9.5s
KSH LR LR
comp=E,62nm,4.2s
KSH LR LR
comp=Z,120nm,5.0s
ZRNK Zerenda 50.80 311 *e*P **P 09 18 09.3 +0.7**
ZRNK pmax pmax
comp=Z,9.0nm,0.9s
ZRNK Zerenda 50.80 311 *e*P **P 09 18 09.3 +0.7**
comp=Z,9.2nm,0.9s
EKS2 Erkin-Say 51.12 297 *e*P **P 09 18 11.6 +0.3**
EKS2 pmax pmax
comp=Z,4.0nm,0.8s
EKS2 Erkin-Say 51.12 297 *e*P **P 09 18 11.6 +0.3**
comp=Z,4.1nm,0.8s
INK Inuvik 51.34 28 P **P 09 18 13.3 +1.1**
comp=Z,0.8nm,0.7s,baz=290,slow=6.0,SNR=5.2
KKAR Karatay Array 53.17 299 *e*P **P 09 18 26.6 +0.2**
KKAR Karatay Array 53.17 299 *e*P **P 09 18 26.6 +0.2**
SVE Sverdlovsk 54.22 318↓ *e*P **P 09 18 34.8 +1.1**
SVE pmax pmax
comp=Z,17nm,1.1s
ARU Arti 55.43 318 *d i*P **P 09 18 42.6 +0.1**
ARU S **S 09 26 21.6 -1.9**
ARU pmax pmax
comp=Z,15nm,1.0s
ARU MLR MLR
comp=Z,210nm,15.0s
ARU Arti 55.43 318 *e*P **P 09 18 43.3 +0.8**
comp=Z,11nm,0.8s
ABKAR Akbulak array 57.44 309 *e*P **P 09 18 57.3 +0.3**
RES Resolute Bay 59.66 15 P **P 09 19 12.4 +0.4**
comp=Z,1.3nm,0.7s,baz=293,slow=6.0,SNR=6.6
RES Resolute Bay 59.66 15 *e*P **P 09 19 12.4 +0.4**
comp=Z,2.4nm,0.9s
RES P **P 09 19 12.4 +0.4**
WRA Warramunga Arr 59.90 190 P **P 09 19 13.4 -0.9**
comp=Z,1.1nm,0.9s,baz=7.4,slow=6.9,SNR=7.2
YKA Yellowknife Ar 60.75 31 P **P 09 19 20.4 +0.8**
comp=Z,0.3nm,0.5s,baz=299,slow=6.2,SNR=9.9
ARCES ARCESS Array B 62.08 339 LR LR 09 49 41.9
comp=Z,47nm,21.1s,baz=50,slow=39
KLMR Klimovskoe 62.36 328 *e*P **P 09 19 29.9 -0.6**
KLMR pmax pmax
comp=Z,10.0nm,1.5s
ASAR Alice Springs 63.63 190 P **P 09 19 39.4 +0.1**
comp=Z,0.8nm,0.8s,baz=6.4,slow=6.7,SNR=8.0
FINES FINESS Array B 67.20 332 P **P 09 20 02.5 +0.6**
comp=Z,4.2nm,0.7s,baz=50,slow=10,SNR=11
FINES LR LR 09 52 28.8
comp=Z,128nm,18.8s,baz=322,slow=39
ZEI Tsey 70.32 310 *e*P **P 09 20 20.7 -1.3**
ZEI pmax pmax
comp=Z,8.0nm,0.9s
KIV Kislovodsk 70.35 311 *e*P **P 09 20 23.4 +1.4**
KIV pmax pmax
comp=Z,20nm,1.1s
KIV MLR MLR
comp=Z,82nm,17.0s
KIV Kislovodsk 70.35 311 *e*P **P 09 20 24.3 +2.3**
comp=Z,14nm,0.8s
KBZ Khabaz 70.36 311 P **P 09 20 23.4 +1.5**
comp=Z,4.4nm,0.8s,baz=64,slow=5.5,SNR=12
NEY Neytrino 70.75 310↑ *e*P **P 09 20 25.4 +0.9**
NEY pmax pmax
comp=Z,1.0nm,0.8s
NVAR Mina Array Bea 72.18 55 P **P 09 20 35.1 +1.8**
comp=Z,0.3nm,0.7s,baz=288,slow=6.1,SNR=4.2
NC204 NORSAR Array S 72.29 338 *e*P **P 09 20 33.6 +0.3**
NB2 NORSAR Subarra 72.34 338 P **P 09 20 34.0 +0.3**
comp=Z,4.2nm,0.8s,baz=38,slow=5.9
NOA NORSAR Array B 72.34 338 P **P 09 20 34.4 +0.7**
comp=Z,2.8nm,0.8s,baz=38,slow=6.0,SNR=12
NOA LR LR 09 56 26.3
comp=Z,40nm,18.7s,baz=30,slow=39
AKASG Malin Array Be 73.15 323 P **P 09 20 39.2 +0.6**
comp=Z,2.2nm,0.7s,baz=46,slow=6.1,SNR=8.6
PDAR Pinedale Array 74.72 47 P **P 09 20 49.8 +1.5**
comp=Z,0.5nm,0.7s,baz=253,slow=1.5,SNR=4.7
BUR08 Bucovina Ar. S 77.18 322 *e*P **P 09 21 03.5 +1.5**
STHS Stebnicka Huta 77.68 326 *e*P **P 09 21 06.7 +2.1**
STHS Stebnicka Huta 77.68 326 *e*P **P 09 21 06.7 +2.1**
CRVS Cervenica-Dubn 77.97 325 *e*P **P 09 21 08.1 +1.9**
CRVS Cervenica-Dubn 77.97 325 *e*P **P 09 21 08.1 +1.9**
BRTR Keskin Array B 78.25 312 P **P 09 21 08.0 -0.1**
comp=Z,0.6nm,0.6s,baz=68,slow=7.3,SNR=3.7
BRTR LR LR 10 01 11.8
comp=Z,20nm,19.2s,baz=68,slow=40
BRTR Keskin Array B 78.25 312 *c*e**P** **P 09 21 08.8 +0.7**
BRTR pmax pmax
comp=Z,1.0nm,0.6s
VYHS Vyhne 79.42 326 *e*P **P 09 21 15.9 +1.7**
VYHS Vyhne 79.42 326 *e*P **P 09 21 15.9 +1.7**
CLL Collm 79.56 331 *e*P **P 09 21 15.0 +0.1**
comp=Z,5.0nm,0.9s
CLL Collm 79.56 331 *e*P **P 09 21 15.0 +0.1**
CLL pmax pmax
comp=Z,5.0nm,0.9s
GERES GERESS Array B 81.27 329 P **P 09 21 24.4 +0.1**
comp=Z,0.3nm,0.4s,baz=5.7,slow=2.7,SNR=3.8
GERES LR LR 10 01 05.0
comp=Z,43nm,19.0s,baz=353,slow=38
GERES GERESS Array B 81.27 329 P **P 09 21 24.4 +0.1**
GERES pmax pmax
comp=Z,1.0nm,0.8s
GERES MLR MLR
comp=Z,43nm,19.0s
ANMO Albuquerque 81.72 51↑ *e*P P 09 21 36.6 +10
ANMO pmax pmax
comp=Z,1.0nm,1.1s

TIF ***02*** *09:15:27.8, 42°.55N×43°.42E, h9km±1km*
DDA ***02*** *09:15:29.7, 42°.58N×42°.96E, h7km, Md2.8*
ISC 02 09:15:27.3±4.2, 42°.6N±0°.3×43°.3E±0°.2, h1km±25km, n4, σ0°38/8, Western Caucasus

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONI	**Oni**	**0.13**	**100**	P	**Pg**	**09 15 30.0**	**+0.1**
ONI				S	**Sg**	**09 15 31.4**	**-0.2**
ARTV	**Artvin**	**1.75**	**216**	*i* P	**Pn**	**09 15 59.2**	**+0.2**
ARTV				*i* S	**Sg**	**09 16 23.5**	**0.0**
DAGI	**Agillar**	**1.84**	**214**	*i* P	**Pb**	**09 16 01.9**	**+0.1**
DAGI				*i* S	**Sb**	**09 16 25.9**	**+0.4**
DBAD	**Bademkaya**	**1.98**	**217**	*i* P	**Pb**	**09 16 04.0**	**-0.3**
DBAD				*i* S	**Sb**	**09 16 29.1**	**-0.5**

ISCJB ***02*** *09:26:09.4±0.4, 31°.20N±0°.04×130°.51E±0°.09, h137km±3km, mb3.5/13, Error ellipse: s-maj=12.2km s-min=6.2km az=10.5*
IDC ***02*** *09:26:10.4±0.9, 31°.20N×130°.49E, h131km±7km, mb3.2/12, mb1 3.3/14, mb1mx3.2/38, mbtmp3.6/14, Error ellipse: s-maj=21.2km s-min=8.4km az=100.0*
JMA ***02*** *09:26:11.6±0.1, 31°.23N×130°.53E, h127km±1km, M3.0*
ISC 02 09:26:10.6±0.7, 31°.20N±0°.05×130°.49E±0°.08, h134km±5km, n26, σ0°77/36, mb3.6/13, Kyushu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JSU	**Suzuyama**	**0.30**	**354**	P	**Pn**	**09 26 29.5**	**+0.3**
JSU				S	**Sn**	**09 26 42.9**	**-0.5**
JTSR	**Tashiro 2**	**0.37**	**96**	P	**Pn**	**09 26 29.6**	**+0.1**
JTSR				S	**Sn**	**09 26 43.0**	**-0.7**
JTN	**Tanegashima 3**	**0.69**	**142**	P	**Pn**	**09 26 31.7**	**+0.4**
JTN				S	**Sn**	**09 26 46.8**	**-0.2**
JNAR	**Kushima--Naru**	**0.74**	**64**	P	**Pn**	**09 26 32.0**	**+0.4**
JNAR				S	**Sn**	**09 26 47.4**	**-0.2**
JSJ	**Shimokoshiki**	**0.82**	**306**	P	**Pn**	**09 26 32.2**	**0.0**
JSJ				S	**Sn**	**09 26 48.3**	**-0.4**
JTZ	**Takazaki**	**0.86**	**36**	P	**Pn**	**09 26 32.8**	**+0.2**
JTZ				S	**Sn**	**09 26 48.2**	**-1.2**
JYAK	**Yakushimahirau**	**0.96**	**179**	P	**Pn**	**09 26 34.0**	**+0.5**
JYAK				S	**Sn**	**09 26 50.5**	**-0.4**
JIU2	**Izumi 2**	**1.37**	**11**	P	**Pn**	**09 26 38.1**	**+0.6**
JIU2				S	**Sn**	**09 26 57.8**	**-0.2**
JNN	**Nakanoshima**	**1.46**	**202**	P	**Pn**	**09 26 39.5**	**+1.0**
JNU	**Nakatsue**	**1.94**	**10**	P	**Pn**	**09 26 44.0**	**0.0**
	3.4nm,0.3s,baz=229,slow=0.9,SNR=31						
JNU				S	**Sn**	**09 27 09.8**	**0.0**
	2.6nm,0.3s,baz=199,slow=23,SNR=10						
JOW	**Kunigami**	**4.77**	**205**	P	**Pn**	**09 27 21.0**	**+0.3**
	1.2nm,0.3s,baz=137,slow=21,SNR=8.3						
JOW				S	**Sn**	**09 28 13.7**	**-1.5**
	3.2nm,0.3s,baz=135,slow=27,SNR=12						
MJAR	**Matsushiro Arr**	**8.34**	**48**	P	**Pn**	**09 28 08.8**	**+0.3**
	0.2nm,0.3s,baz=240,slow=14,SNR=4.4						
SONM	**Songino Array**	**24.78**	**319**	P	**P**	**09 31 21.6**	**+1.6**
	0.6nm,0.6s,baz=128,slow=9.0,SNR=3.5						
MKAR	**Makanchi Array**	**39.92**	**307**	P	**P**	**09 33 31.7**	**+0.3**
	0.2nm,0.4s,baz=96,slow=12,SNR=3.6						
TIXI	**Tiksi**	**40.51**	**359**	P	**P**	**09 33 35.0**	**-0.9**
	0.5nm,0.3s,baz=108,slow=1.6,SNR=2.5						
KURBB	**Kurchatov Arra**	**42.80**	**312**	P	**P**	**09 33 55.9**	**+1.1**
	0.6nm,0.4s,baz=96,slow=8.7,SNR=12						
WRA	**Warramunga Arr**	**50.99**	**175**	P	**P**	**09 34 59.0**	**+0.3**
	0.1nm,0.4s,baz=354,slow=8.0,SNR=2.7						
ASAR	**Alice Springs**	**54.66**	**176**	P	**P**	**09 35 26.4**	**+0.8**
	0.1nm,0.8s,baz=357,slow=5.6,SNR=4.0						
ARCES	**ARCESS Array B**	**66.13**	**338**	P	**P**	**09 36 42.2**	**-0.8**
	0.5nm,0.5s,baz=57,slow=9.0,SNR=7.3						
KBZ	**Khabaz**	**67.59**	**308**	P	**P**	**09 36 53.9**	**+1.2**
	1.1nm,0.5s,baz=77,slow=2.6,SNR=5.7						
FINES	**FINESS Array B**	**69.54**	**330**	P	**P**	**09 37 03.6**	**-0.9**
	36nm,1.2s,baz=66,slow=5.5,SNR=12						
AKASG	**Malin Array Be**	**73.06**	**319**	P	**P**	**09 37 25.4**	**-0.4**
	0.8nm,0.4s,baz=50,slow=7.0,SNR=6.2						
YKA	**Yellowknife Ar**	**73.20**	**26**	P	**P**	**09 37 26.7**	**+0.3**
	0.2nm,0.6s,baz=303,slow=5.9,SNR=5.7						
BRTR	**Keskin Array B**	**75.56**	**308**	P	**P**	**09 37 41.0**	**+0.2**
	1.4nm,0.7s,baz=100,slow=6.4,SNR=6.9						
NB2	**NORSAR Subarra**	**75.74**	**334**	P	**P**	**09 37 39.8**	**-1.4**
	comp=Z,0.4nm,0.5s,baz=48,slow=5.3						
NOA	**NORSAR Array B**	**75.74**	**334**	P	**P**	**09 37 40.1**	**-1.1**
	comp=Z,0.6nm,0.5s,baz=49,slow=5.5,SNR=4.4						

ISCJB ***02*** *09:39:09.8±0.5, 37°.87N±0°.03×27°.42E±0°.03, h4km±10km, Error ellipse: s-maj=5.8km s-min=4.0km az=27.0*
DDA ***02*** *09:39:09.8, 37°.84N×27°.43E, h7km, Md2.5*
ISK ***02*** *09:39:09.4, 37°.89N×27°.43E, h10km, MD2.3*
CSEM ***02*** *09:39:10.0±0.1, 37°.88N×27°.42E, h5km, MD2.5, Error ellipse: s-maj=3.6km s-min=2.7km az=50.0*
ISC 02 09:39:10.1±1.1, 37°.87N±0°.02×27°.42E±0°.02, h5km±14km, n19, σ0°23/34, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GCAM	**G?zelcaml?**	**0.23**	**221**	P	**Pg**	**09 39 14.4**	**-0.1**
GCAM				S	**Sg**	**09 39 17.5**	**0.0**
GCAM	**G?zelcaml?**	**0.23**	**221**	*i* P	**Pg**	**09 39 14.4**	**-0.1**
GCAM				*i* S	**Sg**	**09 39 17.6**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**0.38**	**79**	*e*PG	**Pg**	**09 39 17.3**	**-0.2**
AYDB				*e*SG	**Sg**	**09 39 23.0**	**+0.5**
AYDB	**Zeytinkoy-Aydi**	**0.38**	**79**	*e*Pg	**Pg**	**09 39 17.3**	**-0.2**
AYDB				*e*Sg	**Sg**	**09 39 23.0**	**+0.5**
AYDN	**Tasoluk**	**0.42**	**120**	P	**Pg**	**09 39 18.1**	**-0.1**
AYDN				S	**Sg**	**09 39 23.6**	**-0.2**
AYDN	**Tasoluk**	**0.42**	**120**	*i* P	**Pg**	**09 39 18.1**	**-0.1**
AYDN				*i* S	**Sg**	**09 39 23.6**	**-0.2**
BLCB	**Balcova**	**0.59**	**330**	*e*PG	**Pg**	**09 39 21.1**	**-0.4**
BLCB	**Balcova**	**0.59**	**330**	*e*Pg	**Pg**	**09 39 21.1**	**-0.4**
ZEY	**¨zmir**	**0.81**	**297**	*i* P	**Pg**	**09 39 26.0**	**+0.4**
ZEY				*i* S	**Sg**	**09 39 36.2**	**0.0**
URLA	**Izmir**	**0.81**	**307**	P	**Pg**	**09 39 25.9**	**+0.2**
URLA				S	**Sb**	**09 39 38.1**	**+0.1**
URLA	**Izmir**	**0.81**	**307**	*i* P	**Pg**	**09 39 25.9**	**+0.2**
URLA				*i* S	**Sb**	**09 39 38.1**	**+0.1**
BODT	**Bodrum**	**0.81**	**186**	*e*PG	**Pg**	**09 39 25.8**	**+0.1**
BODT				*e*SG	**Sb**	**09 39 37.8**	**-0.2**
BODT	**Bodrum**	**0.81**	**186**	*e*Pg	**Pg**	**09 39 25.8**	**+0.1**
BODT				*e*Sg	**Sb**	**09 39 37.8**	**-0.2**
YER	**Yerkesik**	**1.01**	**137**	*e*PG	**Pg**	**09 39 29.4**	**0.0**
YER				*e*SG	**Sb**	**09 39 43.8**	**+0.2**
YER	**Yerkesik**	**1.01**	**137**	*e*Pg	**Pg**	**09 39 29.4**	**0.0**
YER				*e*Sg	**Sb**	**09 39 43.8**	**+0.2**
AKHS	**Akhisar**	**1.05**	**17**	P	**Pg**	**09 39 30.3**	**+0.1**
AKHS				S	**Sb**	**09 39 44.6**	**-0.3**
AKHS	**Akhisar**	**1.05**	**17**	*i* P	**Pg**	**09 39 30.3**	**+0.1**
AKHS				*i* S	**Sb**	**09 39 44.6**	**-0.3**
CHOS	**Chios island**	**1.19**	**296**	*e*PN	**Pg**	**09 39 32.8**	**-0.2**
CHOS	**Chios island**	**1.19**	**296**	*e*Pn	**Pg**	**09 39 32.8**	**-0.2**

DHMR ***02*** *09:40:03.4±1.5, 15°.43N×42°.02E, h8km±22km, ML3.4*
IDC ***02*** *09:40:09.3±3.5, 14°.72N×42°.17E, h0km, mb3.6/5, mb1 3.8/5, mb1mx3.5/35, mbtmp3.6/5, Error ellipse: s-maj=73.5km s-min=35.5km az=151.0*
ISC 02 09:40:11.7±1.0, 14°.9N±0°.2×42°.1E±0°.1, h10km, n8, σ1°17/9, mb3.4/5, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HAJJ	**Hajjah**	**1.69**	**60**	*i* P	Pn	09 40 32.1	-9.3
HAJJ				*i* S	Sn	09 40 53.4	-10
HAJJ				AML	AML	09 41 12.3	
	comp=Z,881nm,0.5s						
UDYN	**Al 'Udayn**	**2.03**	**116**	*i* P	**Pn**	**09 40 45.5**	**-0.6**
UDYN				AML	AML	09 40 52.5	
	comp=Z,218nm,0.4s						
UDYN				*i* S	**Sg**	**09 41 17.6**	**+0.6**
TRBA	**At Turbah**	**2.55**	**129**	*i* P	**Pn**	**09 40 53.2**	**-0.1**
TRBA				*i* S	**Sg**	**09 41 34.0**	**+0.3**
TRBA				AML	AML	09 41 48.7	
	comp=N,220nm,0.7s						
BRTR	**Keskin Array B**	**25.86**	**345**	P	**P**	**09 45 44.8**	**+1.1**
	comp=N,0.4nm,0.5s,baz=156,slow=11,SNR=2.7						
TORD	**Torodi Ar. Bea**	**39.19**	**273**	P	**P**	**09 47 40.4**	**+0.1**
	comp=N,0.5nm,0.7s,baz=90,slow=6.7,SNR=4.9						
GERES	**GERESS Array B**	**41.12**	**331**	P	**P**	**09 47 54.5**	**-1.5**
	comp=N,0.9nm,0.6s,baz=120,slow=7.9,SNR=8.8						
MKAR	**Makanchi Array**	**46.17**	**38**	P	**P**	**09 48 35.6**	**-1.0**
	comp=N,0.2nm,0.5s,baz=228,slow=7.4,SNR=3.6						
FINES	**FINESS Array B**	**47.92**	**350**	P	**P**	**09 48 51.7**	**+1.7**
	comp=N,2.7nm,1.0s,baz=161,slow=5.5,SNR=3.1						

NIED ***02*** *09:52:00, 37°.10N×141°.40E, h41km, Mw3.7 Best double couple: M0:3.89000×10^14 NP1:φ0=81.00000°, δ23.00000°, λ124.00000°. NP2:φ0=225.00000°, δ71.00000°, λ77.00000°.*
ISCJB ***02*** *09:52:50.5±0.7, 37°.05N±0°.03×141°.45E±0°.07, h47km±7km, mb3.6/11, MS2.7/1, Error ellipse: s-maj=10.0km s-min=5.3km az=13.5*
JMA ***02*** *09:52:51.4±0.1, 37°.08N×141°.41E, h46km±2km, M3.9*
JMA Felt II J1.
IDC ***02*** *09:52:52.6±0.6, 37°.05N×141°.34E, h48km±5km, mb3.4/11, mb1 3.7/15, mb1mx3.5/43, mbtmp3.7/15, MS2.7/4, Ms1 2.7/4, ms1mx2.3/34, Error ellipse: s-maj=18.4km s-min=9.7km az=111.0*
ISC 02 09:52:50.5±0.6, 37°.07N±0°.04×141°.47E±0°.05, h31km±3km, n31, σ0°82/46, mb3.7/11, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.54**	**274**	P	**Pn**	**09 53 02.5**	**+0.4**
ONAJ				S	**Sn**	**09 53 10.3**	**+0.2**
JFK	**Kawauchi**	**0.56**	**302**	P	**Pn**	**09 53 02.5**	**+0.1**
JFK				S	**Sb**	**09 53 10.2**	**+0.3**
JHO	**Hitachi**	**0.86**	**238**	P	**Pn**	**09 53 06.4**	**0.0**
JHO				S	**Sn**	**09 53 17.2**	**-0.6**
JMM	**Marumori**	**0.96**	**326**	P	**Pn**	**09 53 07.9**	**0.0**
JMM				S	**Sn**	**09 53 19.6**	**-0.9**
JFT	**Otama**	**1.01**	**297**	P	**Pb**	**09 53 09.3**	**-0.1**
JFT				S	**Sn**	**09 53 21.7**	**0.0**
JIO	**Ouri**	**1.39**	**356**	P	**Pn**	**09 53 14.0**	**+0.3**
JIO				S	**Sn**	**09 53 30.2**	**-0.8**
JOU	**Okura**	**1.45**	**334**	P	**Pn**	**09 53 15.3**	**+0.8**
JOU				*e*S	**Sn**	**09 53 33.3**	**+0.8**
JFY	**Yanaizu**	**1.45**	**284**	P	**Pn**	**09 53 15.2**	**+0.6**
JFY				*e*S	**Sn**	**09 53 32.5**	**-0.1**
JYS	**Shiratake**	**1.60**	**316**	P	**Pn**	**09 53 17.6**	**+0.9**
JYS				*e*S	**Sn**	**09 53 36.3**	**0.0**
MJAR	**Matsushiro Arr**	**2.67**	**260**	P	**Pn**	**09 53 32.8**	**+1.5**
	3.0nm,0.3s,baz=20,slow=34,SNR=30						
MJAR				S	**Sb**	**09 54 09.1**	**-0.9**
	6.7nm,0.3s,baz=60,slow=28,SNR=5.6						
MJAR				LR	LR	09 54 55.0	
	comp=Z,82nm,19.1s,baz=45,slow=48						
MAT	**Matsushiro**	**2.67**	**260**	P	**Pn**	**09 53 32.9**	**+1.5**
MAT				S	**Sn**	**09 54 01.6**	**-1.1**
JHJ	**Hachijo jima 2**	**4.17**	**200**	P	**Pn**	**09 53 53.4**	**+1.3**
	12nm,0.3s,baz=118,slow=23,SNR=6.0						
JHJ				S	**Sn**	**09 54 40.0**	**+0.3**
	27nm,0.3s,baz=242,slow=23,SNR=8.7						
ASAJ	**Asahikawa**	**7.09**	**7**	P	**Pn**	**09 54 32.9**	**+0.8**
	1.5nm,0.3s,baz=204,slow=17,SNR=12						
ASAJ				S	**Sn**	**09 55 49.7**	**-1.9**
	0.3nm,0.3s,baz=72,slow=30,SNR=2.7						
JCJ	**Chichijima**	**9.96**	**176**	P	**Pn**	**09 55 10.1**	**-1.3**
	2.6nm,0.3s,baz=109,slow=23,SNR=3.2						
JCJ				S	Sn	09 56 55.8	-6.4
	7.8nm,0.3s,baz=285,slow=23,SNR=4.9						
USRK	**Ussuriysk Ar.**	**10.13**	**318**	P	Pn	09 55 18.5	+4.8
	0.3nm,0.3s,baz=140,slow=13,SNR=15						
KSRS	**Korea Array**	**10.81**	**276**	P	Pn	09 55 30.4	+7.4
	0.1nm,0.3s,baz=94,slow=14,SNR=8.0						
KSRS				LR	LR	09 59 09.2	
	comp=Z,30nm,21.4s,baz=70,slow=35						
KLR	**Kul'dur**	**14.06**	**333**	P	**P**	**09 56 14.5**	**-0.3**
	0.1nm,0.3s,baz=133,slow=15,SNR=4.4						
KLR				LR	LR	10 00 49.3	
	comp=Z,38nm,18.4s,baz=154,slow=34						
PETK	**Petropavlovsk-**	**19.64**	**30**	P	**Pn**	**09 57 18.1**	**+0.3**
	0.1nm,0.3s,baz=209,slow=12,SNR=2.8						
YAK	**Yakutsk**	**26.05**	**347**	LR	LR	10 09 01.1	
	comp=Z,21nm,19.7s,baz=94,slow=37						
SONM	**Songino Array**	**27.81**	**304**	P	**P**	**09 58 36.3**	**-0.5**
	1.1nm,0.6s,baz=104,slow=8.8,SNR=4.6						
ZALV	**Zalesovo Beam**	**41.93**	**312**	P	**P**	**10 00 37.6**	**-0.3**
	0.8nm,0.4s,baz=104,slow=6.1,SNR=2.3						
MKAR	**Makanchi Array**	**44.14**	**302**	P	**P**	**10 00 55.6**	**-0.4**
	0.4nm,0.5s,baz=84,slow=12,SNR=4.8						
MKAR				pP	**sP**	**10 01 07.9**	**-1.1**
	0.5nm,0.6s,baz=89,slow=9.7,SNR=2.9						
ILAR	**Eielson Array**	**49.44**	**32**	P	**P**	**10 01 37.6**	**+0.4**
	0.7nm,0.7s,baz=266,slow=6.2,SNR=8.4						
ILAR				pP	**sP**	**10 01 50.6**	**+0.4**
	0.5nm,0.7s,baz=268,slow=6.4,SNR=3.7						
INK	**Inuvik**	**54.34**	**27**	P	**P**	**10 02 14.0**	**+0.4**
	0.4nm,0.5s,baz=305,slow=4.8,SNR=4.6						
INK				pP	**sP**	**10 02 28.1**	**+1.4**
	0.5nm,0.5s,baz=297,slow=5.6,SNR=2.4						
WRA	**Warramunga Arr**	**57.10**	**188**	P	**P**	**10 02 33.4**	**-0.5**
	0.6nm,0.6s,baz=7.0,slow=7.5,SNR=16						
WRA				pP	**sP**	**10 02 47.3**	**+0.3**
	0.6nm,0.6s,baz=5.3,slow=7.4,SNR=3.6						
ASAR	**Alice Springs**	**60.83**	**188**	P	**P**	**10 02 59.1**	**-0.6**
	0.3nm,0.7s,baz=16,slow=8.3,SNR=5.7						
YKA	**Yellowknife Ar**	**63.76**	**30**	P	**P**	**10 03 18.6**	**-0.3**
	0.2nm,0.6s,baz=303,slow=8.0,SNR=4.0						
YKA				pP	**sP**	**10 03 31.6**	**-0.5**
	0.3nm,0.7s,baz=302,slow=6.7,SNR=5.4						
NVAR	**Mina Array Bea**	**74.93**	**53**	P	**P**	**10 04 30.6**	**+1.8**
	0.1nm,0.5s,baz=294,slow=4.5,SNR=4.1						
PDAR	**Pinedale Array**	**77.61**	**45**	P	**P**	**10 04 44.2**	**+0.3**
	0.3nm,0.6s,baz=264,slow=1.5,SNR=4.3						
TXAR	**Lajitas Array**	**90.06**	**52**	P	**P**	**10 05 48.2**	**+0.6**
	0.4nm,0.5s,baz=343,slow=3.9,SNR=3.7						
LPAZ	**La Paz**	**146.64**	**60**	PKPbc	**PKPbc**	**10 12 30.4**	**+0.2**
	0.8nm,0.7s,baz=354,slow=7.7,SNR=3.3						
LPAZ				pPKPbc	pPKPbc	10 12 45.6	+5.3
	0.5nm,0.4s,baz=295,slow=14,SNR=2.2						

IDC 02 09:54:26.4±10.0, 21°.95S×171°.75W, h0km, mb4.0/5, mb1 4.2/5, mb1mx3.7/35, mbtmp4.0/5, Error ellipse: s-maj=204.8km s-min=131.3km az=39.0, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**20.22**	**266**	P	P	09 59 03.6	+0.3
	3.7nm,0.7s,baz=74,slow=14,SNR=4.4						
CTA	**Charters Tower**	**39.16**	**265**	P	P	10 01 56.5	+0.2
	4.0nm,0.4s,baz=91,slow=11,SNR=13						
STKA	**Stephens Creek**	**42.49**	**246**	P	P	10 02 22.3	-1.3
	0.4nm,0.6s,baz=106,slow=13,SNR=3.3						

IZI	Iznik	0.55	165	*e*PG	Pg	10 04 02.5	0.0
IZI	Iznik	0.55	165	*e*Pg	Pg	10 04 02.5	0.0
ADVT	Abdulvahap	0.55	142	*e*PG	Pg	10 04 02.7	+0.2
ADVT	Abdulvahap	0.55	142	*e*Pg	Pg	10 04 02.7	+0.2
MDNY	Mudanya-Bursa	0.59	212	*e*PG	Pg	10 04 02.5	-0.6
MDNY	Mudanya-Bursa	0.59	212	*e*Pg	Pg	10 04 02.6	-0.6
IGD	Bursa	0.61	186	*i* P	Pg	10 04 03.4	-0.1
IGD				*i* S	Sg	10 04 11.4	-0.2
CTKS	Kestanelik-??a	0.70	302	*e*PG	Pb	10 04 05.6	+0.1
KAND	Kocaeli-Kandir	0.72	71	P	Pg	10 04 05.6	-0.1
KAND				S	Sg	10 04 15.2	0.0
KAND	Kocaeli-Kandir	0.72	71	*i* P	Pg	10 04 05.6	-0.1
KAND				*i* S	Sg	10 04 15.2	0.0
ULDT	Uludag	0.73	189	P	Pn	10 04 07.2	-0.5
ULDT	Uludag	0.73	189	*i* P	Pn	10 04 07.2	-0.5
CAVI	Cavuskoy	0.79	147	*e*PG	Pb	10 04 07.0	0.0
CAVI	Cavuskoy	0.79	147	*e*Pg	Pb	10 04 07.1	0.0
KCTX	Karacabey (Bur	0.93	230	*e*PG	Pn	10 04 10.0	-0.2
KCTX	Karacabey (Bur	0.93	230	*e*Pg	Pn	10 04 10.0	-0.2
CTYL	Yalikoy Yolu	0.97	309	*e*PG	Pn	10 04 10.8	+0.1
CTYL	Yalikoy Yolu	0.97	309	*e*Pg	Pn	10 04 10.8	+0.1
GULT	Gulveren	1.03	115	*e*PG	Pg	10 04 11.8	+0.3
GULT	Gulveren	1.03	115	*e*Pg	Pg	10 04 11.8	+0.3
SAHE	Sakarya_HENDEK	1.19	90	P	Pb	10 04 13.8	-0.1
SAHE				S	Sn	10 04 29.5	-0.1
SAHE	Sakarya_HENDEK	1.19	90	*i* P	Pb	10 04 13.8	-0.1
SAHE				*i* S	Sn	10 04 29.5	-0.1
EDC	Edincik	1.21	245	*e*PN	Pg	10 04 14.9	+0.1
EDC	Edincik	1.21	245	*e*Pn	Pg	10 04 15.0	+0.1
MRMT	Marmara Adasi	1.31	259	*e*PN	Pg	10 04 17.0	0.0
MRMT	Marmara Adasi	1.31	259	*e*Pn	Pg	10 04 17.0	0.0
BORA	Eskisehir	1.33	138	P	Pg	10 04 17.1	-0.1
BORA				S	Sg	10 04 35.0	+0.5
BORA	Eskisehir	1.33	138	*i* P	Pg	10 04 17.1	-0.1
BORA				*i* S	Sg	10 04 35.0	+0.5
DURS	Dursunbey	1.41	207	P	Pg	10 04 19.9	+1.1
DURS	Dursunbey	1.41	207	*i* P	Pg	10 04 19.9	+1.1
TVSB	Tavsanli	1.42	175	*e*PN	Pb	10 04 18.2	+0.2
TVSB	Tavsanli	1.42	175	*e*Pn	Pb	10 04 18.2	+0.2
MDUB	Mudurnu	1.50	105	*e*PN	Pb	10 04 19.6	+0.3
MDUB	Mudurnu	1.50	105	*e*Pn	Pb	10 04 19.7	+0.3
PHSR	Pinarhisar	1.54	300	*e*PN	Pb	10 04 20.2	+0.4
PHSR	Pinarhisar	1.54	300	*e*Pn	Pb	10 04 20.2	+0.4
RKY	Sarkoy-Tekirda	1.61	264	*e*PN	Pb	10 04 21.2	0.0
RKY	Sarkoy-Tekirda	1.61	264	*e*Pn	Pb	10 04 21.2	0.0

IDC ***02*** *10:07:05.4±1.9,3.″61S×149.″61E,h0km,mb4.0/5, mb1 4.3/5,mb1mx3.7/38,mbtmp4.0/5,Error ellipse: s-maj=73.6km s-min=26.9km az=117.0*
ISCJB ***02*** *10:07:06.9±1.7,3.″7S±0.″3×149.″6E±0.″5,h20km,mb3.9/5, Error ellipse: s-maj=73.6km s-min=22.6km az=29.9*
ISC 02 10:07:08.2±1.8,3.7S±0.″3×149.7E±0.″5,h20km,n6,σ0°70/6, mb4.0/5,Bismarck Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	22.03	222	P	P	10 12 00.8	-0.9
	5.4nm,0.9s,baz=44,slow=12,SNR=19						
ASAR	Alice Springs	25.05	216	P	P	10 12 31.8	+0.4
	4.3nm,0.9s,baz=53,slow=7.9,SNR=25						
FITZ	Fitzroy Crossi	27.57	237	P	P	10 12 54.8	+0.6
	9.3nm,1.0s,baz=53,slow=9.3,SNR=13						
MKAR	Makanchi Array	77.47	319	P	P	10 19 02.2	-0.1
	0.5nm,0.9s,baz=94,slow=8.7,SNR=3.6						
YKA	Yellowknife Ar	95.89	28	P	P	10 20 33.3	+0.1
	0.2nm,0.8s,baz=282,slow=4.4,SNR=3.0						
TORD	Torodi Ar. Bea	147.02	289	PKPbc	PKPbc	10 26 50.4	-0.3
	0.7nm,0.9s,baz=56,slow=3.7,SNR=4.2						

IDC 02 10:08:38.6±3.2,3.″55S×149.″33E,h0km,mb4.1/5, mb1 4.4/5,mb1mx3.8/36,mbtmp4.1/5,MS3.1/9,Ms1 3.1/9, ms1mx2.9/36,Error ellipse: s-maj=87.7km s-min=28.5km az=100.0,Bismarck Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	Port Moresby	6.20	200	LR	LR	10 12 56.1	
	comp=Z,121nm,20.0s,baz=74,slow=42						
HNR	Honiara	12.05	119	LR	LR	10 15 34.4	
	comp=Z,84nm,20.4s,baz=286,slow=34						
WRA	Warramunga Arr	21.89	221	P	P	10 13 33.0	-0.4
	7.1nm,1.1s,baz=44,slow=12,SNR=8.9						
DZM	Mont Dzumac	24.79	139	LR	LR	10 22 39.0	
	comp=Z,73nm,21.5s,baz=243,slow=34						
ASAR	Alice Springs	24.94	215	P	P	10 14 04.0	+0.1
	7.6nm,1.0s,baz=50,slow=8.0,SNR=16						
FITZ	Fitzroy Crossi	27.34	236	P	P	10 14 25.5	-0.1
	9.6nm,1.0s,baz=58,slow=8.2,SNR=7.9						
KAPI	Kappang	29.53	266	LR	LR	10 25 46.5	
	comp=Z,27nm,21.4s,baz=358,slow=35						
KSRS	Korea Array	45.39	336	LR	LR	10 35 13.7	
	comp=Z,28nm,18.8s,baz=160,slow=35						
CMAR	Chiang Mai Arr	54.22	296	P	P	10 18 06.8	+0.2
	0.4nm,0.3s,baz=125,slow=3.5,SNR=4.4						
PETK	Petropavlovsk-	56.89	6	LR	LR	10 38 31.3	
	comp=Z,26nm,21.2s,baz=192,slow=32						
MA2	Magadan	62.95	1	LR	LR	10 46 43.3	
	comp=Z,9.9nm,18.9s,baz=213,slow=36						
TLY	Talaya	67.30	331	LR	LR	10 48 27.1	
	comp=Z,19nm,19.9s,baz=118,slow=36						
MKAR	Makanchi Array	77.13	320	P	P	10 20 34.0	-0.2
	0.7nm,0.8s,baz=114,slow=5.4,SNR=5.8						
MKAR				LR	LR	10 54 07.0	
	comp=Z,9.2nm,18.8s,baz=141,slow=35						
TORD	Torodi Ar. Bea	146.63	289	PKPbc	PKPbc	10 28 22.8	-0.6
	1.5nm,0.9s,baz=68,slow=2.2,SNR=7.9						

DDA ***02*** *10:14:06.0,37.″21N×31.″66E,h7km,Md2.7*
CSEM ***02*** *10:14:07.8±0.3,37.″29N×31.″90E,h10km,MD2.9,Error ellipse: s-maj=7.5km s-min=5.3km az=73.0*
ISK ***02*** *10:14:08.2,37.″35N×31.″88E,h13km,MD2.9*
ISC 02 10:14:07.1±1.4,37.″26N±0.″03×31.″89E±0.″04,h2km±12km, n17,σ0°84/29,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SUTC	Sutluce-Ispart	0.74	287	*e*PG	Pb	10 14 22.5	-0.3
SUTC				*e*SG	Sb	10 14 32.8	-0.6
SUTC	Sutluce-Ispart	0.74	287	*e*Pg	Pb	10 14 22.5	-0.3
SUTC				*e*Sg	Sb	10 14 32.8	-0.6
KONT	Konya--Tatoy	0.78	29	*e*PG	Pg	10 14 22.3	+0.3
KONT				*e*SG	Sg	10 14 32.7	+0.7
KONT	Konya--Tatoy	0.78	29	*e*Pg	Pg	10 14 22.3	+0.3
KONT				*e*Sg	Sg	10 14 32.7	+0.7
LADK	Ladik-KONYA	1.01	22	*e*PG	Pg	10 14 26.6	+0.2
LADK				*e*SG	Sb	10 14 40.0	-1.1
LADK	Ladik-KONYA	1.01	22	*e*Pg	Pg	10 14 26.6	+0.2
LADK				*e*Sg	Sb	10 14 40.0	-1.1
ERMK	Ermenek	1.03	127	P	Pg	10 14 26.9	+0.1
ERMK				S	Sn	10 14 43.9	+0.1
ERMK	Ermenek	1.03	127	*i* P	Pg	10 14 26.9	+0.1
ERMK				*i* S	Sn	10 14 43.9	+0.1
GAZI	Gazipasa	1.08	161	P	Pb	10 14 27.9	-0.7
GAZI				S	Sb	10 14 43.9	+0.7
GAZI	Gazipasa	1.08	161	*i* P	Pb	10 14 27.9	-0.7
GAZI				*i* S	Sb	10 14 43.9	+0.7
BAGO	Egridir - ISPA	1.14	310	*i* P	Pb	10 14 28.9	-0.6
BAGO				*i* S	Sn	10 14 48.4	+2.1
KDHN	Kadinhani	1.27	8	P	Pn	10 14 31.3	-0.6
KDHN	Kadinhani	1.27	8	*i* P	Pn	10 14 31.3	-0.6
KDHN				*i* S	Sn	10 14 51.7	+2.1
KIZT	Kizilcal	1.61	360	*e*PN	Pn	10 14 35.9	-0.8
KIZT	Kizilcal	1.61	360	*e*Pn	Pn	10 14 35.9	-0.8
IKL	Isikli	1.77	125	*e*PN	Pb	10 14 40.1	-0.1
IKL	Isikli	1.77	125	*e*Pn	Pb	10 14 40.1	-0.1

ATH ***02*** *10:17:24.8,37.″66N×19.″73E,h5km±1km,ML3.6/11,Error ellipse: s-maj=2.1km s-min=1.4km az=91.0*
ISCJB ***02*** *10:17:26.4±0.8,37.″74N±0.″03×19.″84E±0.″03,h1km±5km, mb3.8/7,Error ellipse: s-maj=5.9km s-min=4.0km az=13.3*
BEO ***02*** *10:17:27.5±1.1,37.″70N×19.″72E,h0km,M3.5/7*
IDC ***02*** *10:17:27.4±1.5,37.″80N×20.″24E,h0km,mb3.8/7, mb1 3.8/7,mb1mx3.5/39,mbtmp3.8/7,Error ellipse: s-maj=33.3km s-min=27.4km az=115.0*
CSEM ***02*** *10:17:28.2±0.3,37.″73N×19.″93E,h2km,ML3.5,Error ellipse: s-maj=6.7km s-min=3.9km az=29.0*

THE ***02*** *10:17:29.6,37.″75N×20.″02E,h2km±2km,ML3.5/12,Error ellipse: s-maj=2.3km s-min=1.1km az=239.0*
ISC 02 10:17:28.7±1.4,37.″79N±0.″03×19.″92E±0.″04,h6km±9km, n141,σ1°20/190,mb3.9/7,Ionian Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VLS	Valsamata	0.66	54	P	Pg	10 17 40.6	-0.7
VLS				S	Sg	10 17 50.2	+0.3
VLS	Valsamata	0.66	54	P	Pg	10 17 40.6	-0.7
VLS				S	Sg	10 17 50.2	+0.3
ZKS	Zakynthos	0.70	97	P	Pg	10 17 41.0	-1.1
ZKS				S	Sg	10 17 50.6	-0.5
ZKS	Zakynthos	0.70	97	P	Pg	10 17 41.2	-0.8
ZKS				S	Sg	10 17 50.6	-0.5
ZKS	Zakynthos	0.70	97	P	Pg	10 17 41.2	-0.8
ZKS				S	Sb	10 17 54.2	+1.2
ZKS				AML	AML	10 17 54.2	
	comp=E,22962μm,0.3s						
ZKS				AML	AML	10 17 54.3	
	comp=N,30470μm,0.3s						
KFL	Anninata	0.76	65	P	Pg	10 17 42.2	-1.1
KFL				S	Sg	10 17 53.4	+0.3
KFL	Anninata	0.76	65	P	Pg	10 17 42.2	-1.1
KFL				S	Sg	10 17 53.4	+0.3
KFL	Anninata	0.76	65	P	Pg	10 17 41.8	-1.5
KFL				S	Sb	10 17 55.9	+1.0
LKD2	Lefkada island	1.16	30	P	Pg	10 17 50.6	-0.2
LKD2				S	Sn	10 18 08.6	+1.1
LKD2	Lefkada island	1.16	30	P	Pg	10 17 50.6	-0.2
LKD2				S	Sn	10 18 08.6	+1.1
LKD2	Lefkada island	1.16	30	P	Pg	10 17 50.6	-0.2
LKD2				S	Sn	10 18 10.1	+2.6
LKD2				AML	AML	10 18 11.5	
	comp=E,4400μm,0.2s						
LKD2				AML	AML	10 18 11.7	
	comp=N,4332μm,0.3s						
AXS	Araxos	1.22	70	P	Pg	10 17 51.1	-1.0
AXS				S	Sg	10 18 07.7	-0.3
AXS	Araxos	1.22	70	P	Pg	10 17 51.1	-1.0
AXS				S	Sg	10 18 07.7	-0.3
AXS	Araxos	1.22	70	P	Pg	10 17 50.9	-1.2
AXS				S	Sn	10 18 08.8	-0.3
RLS	Riolos of Patr	1.25	77	P	Pg	10 17 52.5	-0.2
RLS				S	Sg	10 18 08.7	-0.3
RLS	Riolos of Patr	1.25	77	P	Pg	10 17 52.5	-0.2
RLS				S	Sg	10 18 08.7	-0.3
RLS	Riolos of Patr	1.25	77	S	Sn	10 18 11.9	+2.0
RLS				AML	AML	10 18 15.4	
	comp=E,1744μm,0.5s						
RLS				AML	AML	10 18 16.0	
	comp=N,1752μm,0.3s						
PDO	Prodromos	1.28	51	P	Pn	10 17 52.0	-1.1
PDO				S	Sn	10 18 11.1	+0.5
PDO	Prodromos	1.28	51	P	Pn	10 17 52.0	-1.1
PDO				S	Sn	10 18 10.9	+0.3
PDO	Prodromos	1.28	51	P	Pn	10 17 51.2	-1.9
PDO				S	Sn	10 18 10.9	+0.3
PDO				AML	AML	10 18 14.9	
	comp=E,5805μm,0.4s						
PDO				AML	AML	10 18 16.6	
	comp=N,5984μm,0.3s						
DRO	Drossia	1.43	83	P	Pb	10 17 55.6	-0.1
DRO	Drossia	1.43	83	P	Pb	10 17 55.6	-0.1
DRO				S	Sg	10 18 17.4	+2.8
DRO	Drossia	1.43	83	P	Pg	10 17 56.1	0.0
DRO				S	Sg	10 18 17.4	+2.8
DRO				AML	AML	10 18 22.5	
	comp=E,4153μm,0.4s						
DRO				AML	AML	10 18 23.2	
	comp=N,3246μm,0.3s						
AMT	Artemida-Makis	1.45	100	P	Pn	10 17 54.5	-0.9
AMT	Artemida-Makis	1.45	100	P	Pn	10 17 54.5	-0.9
AMT				S	Sg	10 18 18.5	+3.3
AMT	Artemida-Makis	1.45	100	P	Pn	10 17 54.5	-0.9
AMT				S	Sg	10 18 18.5	+3.3
AMT				AML	AML	10 18 26.2	
	comp=E,2793μm,0.7s						
AMT				AML	AML	10 18 28.3	
	comp=N,2220μm,0.7s						
PVO	Paravola	1.51	56	P	Pn	10 17 55.7	-0.5
PVO				S	Sg	10 18 18.6	+1.2
DSL	Palaion Diasel	1.63	34	P	Pb	10 17 59.0	-0.1
DSL				S	Sg	10 18 21.1	0.0
DSL	Palaion Diasel	1.63	34	P	Pb	10 17 59.0	-0.1
DSL				S	Sg	10 18 21.1	0.0
DSL	Palaion Diasel	1.63	34	P	Pb	10 17 59.2	+0.1
DSL				S	Sg	10 18 24.4	+3.4
DSL				AML	AML	10 18 25.0	
	comp=E,3170μm,0.6s						
DSL				AML	AML	10 18 25.1	
	comp=N,4232μm,0.4s						
LAKA	Lakka	1.69	74	P	Pn	10 17 59.1	+0.4
LAKA	Lakka	1.69	74	P	Pn	10 17 59.1	+0.4
LAKA				S	Sg	10 18 23.2	+0.2
LAKA	Lakka	1.69	74	P	Pn	10 17 58.7	0.0
LAKA				S	Sg	10 18 23.2	+0.2
LAKA				AML	AML	10 18 33.2	
	comp=E,1119μm,0.8s						
LAKA				AML	AML	10 18 35.1	
	comp=N,901μm,0.8s						
PYL	PYLOS	1.71	121	P	Pn	10 17 58.5	-0.4
PYL	PYLOS	1.71	121	P	Pn	10 17 58.5	-0.4
PYL	PYLOS	1.71	121	P	Pn	10 17 58.7	-0.2
ITM	Ithomi	1.71	110	P	Pn	10 17 57.9	-1.1
ITM	Ithomi	1.71	110	P	Pn	10 17 57.9	-1.1
ITM	Ithomi	1.71	110	P	Pn	10 17 57.0	-2.0
IGT	Igoumenitsa	1.77	10	P	Pn	10 18 00.5	+0.7
IGT	Igoumenitsa	1.77	10	P	Pn	10 18 00.5	+0.7
IGT	Igoumenitsa	1.77	10	P	Pb	10 18 00.8	-0.7
ANX	Ano Chora	1.77	62	P	Pb	10 18 01.1	-0.5
ANX				S	Sn	10 18 23.3	+0.5
ANX	Ano Chora	1.77	62	P	Pb	10 18 01.1	-0.5
ANX				S	Sn	10 18 23.3	+0.5
ANX	Ano Chora	1.77	62	S	Sg	10 18 27.6	+2.0
ANX				AML	AML	10 18 29.4	
	comp=E,1314μm,0.4s						
ANX				AML	AML	10 18 33.5	
	comp=N,2585μm,0.5s						
KLV	Kalavryta, Ach	1.79	81	P	Pn	10 18 00.7	+0.6
KLV	Kalavryta, Ach	1.79	81	P	Pn	10 18 00.7	+0.6
KLV	Kalavryta, Ach	1.79	81	P	Pn	10 18 00.6	+0.5
KLV				S	Sg	10 18 28.8	+2.7
KLV				AML	AML	10 18 33.1	
	comp=N,555μm,0.7s						
KLV				AML	AML	10 18 39.0	
	comp=E,670μm,0.7s						
SGD	Sagiada	1.84	8	P	Pn	10 18 01.7	+1.0
SGD	Sagiada	1.84	8	P	Pn	10 18 01.7	+1.0
SGD	Sagiada	1.84	8	P	Pb	10 18 02.4	-0.2
KALE	Kalithea	1.85	70	P	Pn	10 18 01.8	+0.8
KALE				S	Sn	10 18 24.4	-0.4
KALE	Kalithea	1.85	70	P	Pn	10 18 01.8	+0.8
KALE				S	Sn	10 18 24.4	-0.4
KALE	Kalithea	1.85	70	P	Pn	10 18 01.8	+0.8
KALE				S	Sg	10 18 29.6	+1.4
KALE				AML	AML	10 18 33.7	
	comp=E,959μm,0.7s						
KALE				AML	AML	10 18 36.9	
	comp=N,1125μm,0.9s						
EVR	Evrytania	1.86	52	P	Pb	10 18 03.2	0.0
EVR	Evrytania	1.86	52	P	Pb	10 18 03.2	0.0
EVR				S	Sg	10 18 28.9	+0.3
EVR	Evrytania	1.86	52	P	Pg	10 18 03.9	-0.5
EVR				S	Sg	10 18 28.9	+0.3
KEK	Kerkira	1.92	357	P	Pn	10 18 02.6	+0.7
KEK	Kerkira	1.92	357	P	Pn	10 18 02.6	+0.7
DSF	Desfina	2.15	72	P	Pn	10 18 05.4	+0.3
DSF				S	Sn	10 18 33.0	+0.9
DSF	Desfina	2.15	72	P	Pn	10 18 05.4	+0.3
DSF				S	Sn	10 18 33.0	+0.9
DSF	Desfina	2.15	72	P	Pn	10 18 04.7	-0.4
AGG	Agios Georgios	2.26	56	P	Pn	10 18 07.7	+1.1
AGG	Agios Georgios	2.26	56	P	Pn	10 18 07.4	+0.8
AGG	Agios Georgios	2.26	56	P	Pn	10 18 07.4	+0.8
THL	Klokotos Trika	2.42	42	P	Pn	10 18 10.2	+1.5
THL				S	Sn	10 18 39.5	+1.0
THL	Klokotos Trika	2.42	42	P	Pn	10 18 10.2	+1.5
THL				S	Sn	10 18 39.5	+1.0
LTK	Loutraki	2.42	84	P	Pn	10 18 08.7	-0.1
LTK	Loutraki	2.42	84	P	Pn	10 18 08.7	-0.1
LTK	Loutraki	2.42	84	P	Pn	10 18 07.6	-1.2
KPRO	Kipourio	2.44	27	P	Pb	10 18 12.4	-0.6
KPRO	Kipourio	2.44	27	P	Pb	10 18 12.3	-0.6
LKR	Lokris	2.58	70	P	Pn	10 18 10.7	-0.2
LKR				S	Sn	10 18 42.3	-0.2
LKR	Lokris	2.58	70	P	Pn	10 18 10.7	-0.2
LKR				S	Sn	10 18 42.3	-0.2
LKR	Lokris	2.58	70	P	Pn	10 18 09.4	-1.5
VLI	Veliai	2.64	113	P	Pn	10 18 11.2	-0.5
VLI	Veliai	2.64	113	P	Pn	10 18 11.2	-0.5
DID	Didima	2.65	95	P	Pn	10 18 10.9	-1.0
DID				S	Sn	10 18 44.2	-0.2
DID	Didima	2.65	95	P	Pn	10 18 10.9	-1.0
DID				S	Sn	10 18 44.2	-0.2
DID	Didima	2.65	95	P	Pn	10 18 09.4	-2.5
VIL2	Platees	2.68	80	P	Pn	10 18 11.3	-1.1
VILL	Villia	2.71	81	P	Pn	10 18 12.4	-0.4
VILL	Villia	2.71	81	P	Pn	10 18 12.4	-0.4
NEST	Nestorio	2.77	18	P	Pb	10 18 16.1	-2.4
NEST	Nestorio	2.77	18	P	Pb	10 18 16.1	-2.4
TIP	Timpagrande	2.84	300	P	Pn	10 18 16.7	+2.1
TIP	Timpagrande	2.84	300	P	Pn	10 18 16.7	+2.1
FYTO	Fytoko, Volos	2.87	55	P	Pn	10 18 15.4	+0.5
FYTO	Fytoko, Volos	2.87	55	P	Pn	10 18 15.4	+0.5
KZN	Kozani	2.90	29	P	Pn	10 18 17.9	+2.5
KZN	Kozani	2.90	29	P	Pn	10 18 17.9	+2.5
OHR	Ohrid	3.39	11	*i* Pn	Pn	10 18 24.6	+2.5
OHR	Ohrid	3.39	11	*i* Pn	Pn	10 18 24.6	+2.5
AOS	Alonnisos	3.40	65	P	Pn	10 18 19.2	-3.0
AOS	Alonnisos	3.40	65	P	Pn	10 18 19.2	-3.0
BIA	Bitola	3.40	18	*i* Pn	Pg	10 18 34.7	+0.8
TIR	Tirane	3.55	359	*e*Pn	Pn	10 18 26.0	+1.7
TIR	Tirane	3.55	359	*e*Pn	Pn	10 18 26.0	+1.7
PAIG	Paliouri	3.63	53	P	Pn	10 18 25.2	-0.2
PAIG	Paliouri	3.63	53	P	Pn	10 18 25.2	-0.2
GRG	Griva	3.70	31	P	Pn	10 18 27.2	+0.8
GRG	Griva	3.70	31	P	Pn	10 18 26.4	0.0
GRG	Griva	3.70	31	P	Pn	10 18 26.4	0.0
SG1	Sgolgore (BA)	3.95	322	*e*Pn	Pn	10 18 32.4	+2.7
VAY	Valandovo	4.08	29	*i* Pn	Pn	10 18 33.5	+2.0
VAY	Valandovo	4.08	29	*e*Pn	Pn	10 18 33.4	+1.9
VAY	Valandovo	4.08	29	*e*Pn	Pn	10 18 33.4	+1.9
KNT	Kendrikon	4.08	33	P	Pn	10 18 32.4	+0.8
KNT	Kendrikon	4.08	33	P	Pn	10 18 32.4	+0.8
SRS	Serrai	4.37	39	P	Pn	10 18 36.0	+0.4
SRS	Serrai	4.37	39	P	Pn	10 18 36.0	+0.4
PDG	Podgorica	4.66	354	*e*Sn	Sn	10 19 33.7	-0.2
PDG	Podgorica	4.66	354	*e*Sn	Sn	10 19 33.7	-0.2
BARS	Barje	5.23	16	*e*Pn	Pn	10 18 47.5	+0.2
BARS	Barje	5.23	16	*e*Pn	Pn	10 18 47.5	+0.2
STON	Ston	5.35	342	*e*Pn	Pn	10 18 48.7	-0.2
STON				*e*Sn	Sn	10 19 47.5	-3.4
STON	Ston	5.35	342	*e*Pn	Pn	10 18 49.1	+0.1
STON				*e*Sn	Sn	10 19 49.4	-1.4
STON	Ston	5.35	342	*e*Pn	Pn	10 18 49.1	+0.1
SJES	Sjenica	5.46	0	*e*Pn	Pn	10 18 50.7	0.0
SJES	Sjenica	5.46	0	*e*Pn	Pn	10 18 50.7	0.0
SELS	Selova	5.50	9	*e*Pn	Pn	10 18 50.5	-0.6
IVAS	Ivanjica	5.78	2	*e*Pn	Pn	10 18 54.5	-0.5
IVAS				*e*Sn	Sn	10 20 01.6	0.0
IVAS	Ivanjica	5.78	2	*e*Pn	Pn	10 18 54.5	-0.5
IVAS				*e*Sn	Sn	10 20 01.6	0.0
ZAPS	Zavoj	5.86	20	*e*Pn	Pn	10 18 57.5	+1.5
GRUS	Gruza	6.12	5	*e*Pn	Pn	10 18 59.2	-0.4
GRUS	Gruza	6.12	5	*e*Pn	Pn	10 18 59.2	-0.4
DIVS	Divibare	6.30	0	*e*Pn	Pn	10 19 01.3	-0.8
DIVS	Divibare	6.30	0	*e*Pn	Pn	10 19 01.3	-0.8
TRUS	Trudelj	6.44	3	*e*Pn	Pn	10 19 04.0	+0.1
TRUS	Trudelj	6.44	3	*e*Pn	Pn	10 19 04.0	+0.1
TEKS	Tekeris	6.76	358	*e*Pn	Pn	10 19 08.4	0.0
TEKS	Tekeris	6.76	358	*e*Pn	Pn	10 19 08.4	0.0
SOKA	Soboth	9.59	339	*i* Pn	Pn	10 19 47.6	+0.4
	comp=N,4.0nm,0.7s						
SOKA	Soboth	9.59	339	Pn	Pn	10 19 47.6	+0.4
	comp=N,4.0nm,0.7s						
HFS	Hagfors	22.71	352	P	P	10 22 31.2	+0.3
	comp=N,2.4nm,0.5s,baz=163,slow=10,SNR=3.8						
EKA	Eskdalemuir Ar	23.47	326	P	P	10 22 39.8	+1.1
	comp=N,2.9nm,0.9s,baz=112,slow=12,SNR=4.1						
NOA	NORSAR Array B	23.91	350	P	P	10 22 43.0	+0.1
	comp=N,1.5nm,0.9s,baz=161,slow=9.4,SNR=4.2						
FINES	FINESS Array B	23.99	7	P	P	10 22 42.7	-1.0
	comp=N,1.7nm,0.6s,baz=177,slow=10,SNR=6.6						
TORD	Torodi Ar. Bea	29.43	218	P	P	10 23 33.8	+0.8
	comp=N,0.3nm,0.6s,baz=31,slow=8.5,SNR=3.0						
MKAR	Makanchi Array	45.91	58	P	P	10 25 49.7	-2.2
	comp=N,0.5nm,0.3s,baz

VNA2 Neumayer--Watz 13.02 177 P **Pn** **10 23 58.7 -1.0**
baz=349,slow=16
VNA3 Neumayer Olymp 13.31 180 P **Pn** **10 24 03.0 -0.6**
SNAA Sanae 14.01 171 P **Pn** **10 24 12.5 -0.8**
SNAA Sanae 14.01 171 P **Pn** **10 24 12.0 -1.3**
4μm,0.8s
SYO Syowa Base 23.77 137⇑ *eP* **P** **10 26 04.4 -2.7**
SYO Syowa Base 23.77 137⇓ *eP* **P** **10 26 07.4 +0.3**
QSPA South Pole Qui 32.25 180 P **P** **10 27 24.1 +0.9**
MAW Mawson 32.49 137 P **P** **10 27 26.1 +1.1**
6.7nm,1.0s,baz=247,slow=8.3,SNR=5.4
MAW LR LR 10 38 19.5
comp=Z,148nm,21.8s,baz=242,slow=32
BOSA Boshof 38.01 55 LR LR 10 40 12.9
comp=Z,100nm,20.9s,baz=202,slow=31
VNDA Vanda 44.64 177 P **P** **10 29 08.5 +1.6**
1.1nm,0.6s,baz=201,slow=6.8,SNR=14
VNDA LR LR 10 46 50.7
comp=Z,98nm,20.4s,baz=184,slow=35
CPUP Villa Florida 46.03 292 P **P** **10 29 18.0 -0.5**
3.6nm,1.0s,baz=170,slow=6.1,SNR=3.6
CPUP LR LR 10 47 27.4
comp=Z,63nm,18.7s,baz=155,slow=35
LPAZ La Paz 59.85 289 P **P** **10 31 01.4 +0.1**
2.3nm,0.8s,baz=179,slow=8.9,SNR=10
LPAZ LR LR 10 55 32.3
comp=Z,40nm,20.6s,baz=116,slow=35
DBIC Dimbokro 64.55 5 LR LR 10 53 44.1
comp=Z,29nm,20.3s,baz=165,slow=31
KMBO Kilima Mbogo 67.58 52 LR LR 10 58 00.1
comp=Z,70nm,19.0s,baz=88,slow=33
TORD Torodi Ar. Bea 71.48 12 P **P** **10 32 16.5 +1.0**
0.5nm,0.8s,baz=190,slow=7.3,SNR=2.8
ROSC El Rosal 81.08 294 LR LR 11 08 09.0
comp=Z,23nm,20.3s,baz=250,slow=35
ASAR Alice Springs 93.11 147 P **P** **10 34 08.8 -0.3**
0.6nm,0.8s,baz=206,slow=5.3,SNR=5.9
ASAR LR LR 11 12 45.3
comp=Z,107nm,19.7s,baz=190,slow=33
FINES FINESS Array B 122.28 19 PKP **PKPdf** **10 39 46.4 -2.1**
1.8nm,0.8s,baz=202,slow=10.0,SNR=3.0
YKA Yellowknife Ar 144.49 309 PKP **PKPab** **10 40 27.5 -0.8**
0.4nm,0.8s,baz=114,slow=3.7,SNR=8.4
ILAR Eielson Array 158.85 306 PKPab **PKPab** **10 41 27.9 +0.4**
0.7nm,0.9s,baz=101,slow=2.8,SNR=3.3

WEL 02 10:26:15.6±0.2, 39°.51S×178°.28E, h33km, ML3.5/7, 8C-2D, Error ellipse: s-maj=2.2km s-min=1.4km az=90.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
MHGZ	**Mahia Peninsul**	**0.46**	**321**	⇑PN		**Pb**	10 26 24.8	-0.7
MHGZ					SN	Sb	10 26 32.2	-0.2
PRGZ	**Paritu Road**	**0.66**	**333**	PN		**Pn**	10 26 27.8	-0.9
KNZ	**Kokohu**	**0.68**	**316**	⇓PN		**Pn**	10 26 27.8	-1.0
KNZ					SN	Sb	10 26 37.8	-0.4
KNZ					AML	AML	10 26 39.9	
RIGZ	**Rimuhau**	**0.90**	**333**	PN		Pn	10 26 31.3	-0.6
WHHZ	**Waihua**	**0.92**	**298**	⇑PN		**Pn**	10 26 31.7	-0.5
WHHZ					SN	Sn	10 26 44.4	+0.3
CKHZ	**Cape Kidnapper**	**0.94**	**261**	PN		Pn	10 26 31.7	-0.7
ARHZ	**Aropaoanui**	**1.02**	**284**	PN		Pn	10 26 33.0	-0.6
CNGZ	**Carnagh Statio**	**1.03**	**357**	⇑PN		Pn	10 26 33.4	-0.3
SNGZ	**Shannon Statio**	**1.03**	**315**	⇑PN		Pn	10 26 33.3	-0.5
RAHZ	**Arahi**	**1.10**	**302**	PN		Pn	10 26 34.2	-0.5
KAHZ	**Kahuranaki**	**1.11**	**255**	PN		Pn	10 26 35.2	+0.3
TKGZ	**Te Karaka**	**1.12**	**343**	PN		Pn	10 26 34.6	-0.4
TKGZ					SN	Sn	10 26 48.1	-1.2
PXZ	**Pawanui**	**1.21**	**244**	PN		Pn	10 26 35.2	-0.9
PXZ					AML	AML	10 26 55.7	
PXZ					AML	AML	10 26 55.7	
PXZ					AML	AML	10 26 57.3	
PXZ					AML	AML	10 26 57.3	
NMHZ	**Naumai**	**1.21**	**290**	PN		Pn	10 26 36.0	-0.3
RAGZ	**Rawiri**	**1.22**	**326**	⇑PN		Pn	10 26 35.9	-0.4
MCHZ	**McNeill Hill**	**1.22**	**273**	PN		Pn	10 26 36.0	-0.4
MWZ	**Matawai**	**1.31**	**333**	PN		Pn	10 26 37.2	-0.5
MWZ					AML	AML	10 26 55.4	
MWZ					AML	AML	10 27 06.4	
MWZ					AML	AML	10 27 07.7	
MWZ					AML	AML	10 27 07.7	
TWGZ	**Tauwhareparae**	**1.35**	**350**	PN		Pn	10 26 37.9	-0.3
BKZ	**Black Stump Fm**	**1.43**	**283**	⇑PN		Pn	10 26 38.5	-0.7
BKZ					AML	AML	10 26 59.9	
BKZ					AML	AML	10 27 13.6	
KWHZ	**Kaweka Forest**	**1.44**	**273**	PN		Pn	10 26 38.7	-0.6
PUZ	**Puketiti**	**1.44**	**359**	PN		Pn	10 26 38.4	-0.9
PUZ					SN	Sn	10 26 56.0	-1.1
PUZ					AML	AML	10 26 57.0	
WPHZ	**Waipukurau**	**1.52**	**248**	PN		Pn	10 26 40.0	-0.4
URZ	**Urewera**	**1.55**	**324**	⇑PN		Pn	10 26 40.4	-0.4
URZ					AML	AML	10 27 06.2	
URZ					AML	AML	10 27 09.8	
MUGZ	**Murupara**	**1.56**	**311**	⇓PN		Pn	10 26 41.0	0.0
MRHZ	**Matea Rd**	**1.59**	**295**	PN		Pn	10 26 41.3	-0.2
PKGZ	**Pakihiroa**	**1.63**	**354**	PN		Pn	10 26 41.4	-0.6
ANWZ	**Angora Road**	**1.68**	**235**	PN		Pn	10 26 41.3	-1.2
WMGZ	**Waiomatatini S**	**1.69**	**4**	PN		Pn	10 26 42.5	-0.4
BHHZ	**Black Hill Sta**	**1.71**	**270**	PN		Pn	10 26 42.6	-0.6
BHHZ					SN	Sn	10 27 01.5	-2.4
HAZ	**Te Kaha**	**1.79**	**347**	⇑PN		Pn	10 26 43.8	-0.5
TSZ	**Takapari Road**	**1.86**	**252**	PN		Pn	10 26 44.1	-1.1
BFZ	**Birch Farm**	**1.95**	**232**	SN		Sn	10 27 07.0	-2.6
MOVZ	**Moawhango**	**1.96**	**272**	AML		AML	10 27 12.1	
MRZ	**Mangatainoka R**	**2.37**	**240**	*e*PN		Pn	10 26 49.8	-2.3
MRZ					SN	Sn	10 27 17.1	-2.9
HOWZ	**Holdsworth Sta**	**2.53**	**236**	PN		Pn	10 26 52.3	-2.0
PAWZ	**Paruwai Farm**	**2.87**	**228**	SN		Sn	10 27 28.4	-4.0
KIWZ	**Kapiti Island**	**2.91**	**241**	*e*PN		Pn	10 26 58.0	-1.5
CAWZ	**Cannon Point**	**2.92**	**236**	*e*PN		Pn	10 26 57.2	-2.6
MSWZ	**Moikau Station**	**2.99**	**230**	*e*PN		Pn	10 26 57.4	-3.3
BHWZ	**Baring Head**	**3.21**	**233**	SN		Sn	10 27 36.5	-4.3
TCWZ	**Tory Channel**	**3.49**	**240**	SN		Sn	10 27 44.5	-3.3
DUWZ	**D'Urville Isla**	**3.58**	**247**	*e*PN		Pn	10 27 07.6	-1.1
CTZ	**Chatham Island**	**5.70**	**139**	PN		Pn	10 27 38.1	+0.3
CTZ					SN	Sn	10 28 35.9	-6.2
MQZ	**McQueen's Vall**	**5.94**	**223**	*e*PN		Pn	10 27 37.6	-3.6
MQZ					SN	Sn	10 28 38.6	-9.4

NIED ***02*** *10:32:00, 35°.30N×142°.70E, h5km, Mw3.7 Best double couple: M₀4.30000×10¹⁴ NP1:φ₀=201.00000°, δ30.00000°, λ-94.00000°. NP2:φ₀=26.00000°, δ61.00000°, λ-88.00000°.*
IDC ***02*** *10:32:01.4±0.8, 35°.21N×142°.53E, h0km, mb3.7/9, mb1 3.8/12, mb1mx3.6/52, mbtmp3.7/12, ML3.0/3, Error ellipse: s-maj=22.3km s-min=17.2km az=97.0*
JMA ***02*** *10:32:03.5±0.4, 35°.33N×142°.72E, h45km, M3.6*
ISCJB ***02*** *10:32:04.1±0.6, 35°.24N±0°.04×142°.69E±0°.05, h42km, mb3.6/9, Error ellipse: s-maj=6.4km s-min=5.9km az=160.4*
ISC 02 10:32:06.2±0.9, 35°.23N±0°.05×142°.68E±0°.08, h42km, n28, σ1ᵗ75/37, mb3.6/9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**1.51**	**248**	P		**Pn**	**10 32 29.0**	**-1.2**
BSO1				S		**Sn**	**10 32 48.8**	**+0.4**
CHOJ	**Chosi**	**1.56**	**288**	P		**Pn**	**10 32 29.9**	**-1.5**
CHOJ				*e*S		**Sn**	**10 32 48.6**	**-1.8**
BSO3	**Boso 3**	**1.83**	**257**	P		**Pn**	**10 32 34.6**	**-0.3**
BSO4	**Boso 4**	**1.94**	**264**	P		**Pn**	**10 32 36.8**	**+0.4**
BSO4				*e*S		**Sn**	**10 33 01.4**	**+1.9**
KTR	**Katsuura**	**1.94**	**268**	*e*S		**Sn**	**10 33 00.4**	**+0.7**
JAG	**Ashikaga**	**2.88**	**295**	P		**Pn**	**10 32 48.3**	**-1.3**
JOD2	**Odawara 2**	**2.94**	**272**	P		**Pn**	**10 32 48.7**	**-1.7**
JFT	**Otama**	**2.97**	**321**	P		**Pn**	**10 32 48.7**	**-2.0**
JFT				*e*S		**Sn**	**10 33 20.5**	**-4.6**
JHJ2	**Mitsune**	**3.18**	**229**	P		**Pn**	**10 32 53.1**	**-0.5**
JHJ2				*e*S		**Sn**	**10 33 29.6**	**-0.6**
JRY	**Ryogami san**	**3.18**	**285**	P		**Pn**	**10 32 53.2**	**-0.4**
JRY				*e*S		**Sn**	**10 33 29.7**	**-0.6**
JHJ	**Hachijo jima 2**	**3.19**	**230**	Pn		**Pn**	**10 32 53.0**	**-0.8**
	8.3nm,0.3s,baz=91,slow=22,SNR=17							
JHJ					Sn	**Sn**	**10 33 27.9**	**-2.7**
	68nm,0.3s,baz=49,slow=21,SNR=9.9							
JYN	**Shimob**	**3.39**	**276**	P		**Pn**	**10 32 55.5**	**-1.1**
JYN				*e*S		**Sn**	**10 33 35.3**	**-0.3**
MJAR	**Matsushiro Arr**	**3.86**	**291**	Pn		**Pn**	**10 33 01.9**	**-1.1**
	5.6nm,0.3s,baz=120,slow=30,SNR=42							
MJAR					Sn	**Sn**	**10 33 48.1**	**+1.0**
	3.2nm,0.3s,baz=279,slow=29,SNR=5.3							
MAT	**Matsushiro**	**3.86**	**291**	P		**Pn**	**10 33 02.4**	**-0.6**
MAT				S		**Sn**	**10 33 46.5**	**-0.7**
MAT	**Matsushiro**	**3.86**	**291**	P		**Pn**	**10 33 02.5**	**-0.6**
JMK	**Ichinoseki**	**3.90**	**343**	P		**Pn**	**10 33 01.2**	**-2.3**
JCJ	**Chichijima**	**8.12**	**183**	Pn		**Pn**	**10 33 59.6**	**-1.8**
	baz=288,slow=20							
JCJ				Sn		**Sn**	**10 35 26.0**	**-5.9**
ASAJ	**Asahikawa**	**8.88**	**360**	Pn		Pn	10 34 08.1	-3.7
	1.0nm,0.3s,baz=213,slow=11,SNR=6.9							
USRK	**Ussuriysk Ar.**	**12.16**	**321**	Pn		**Pn**	**10 34 56.1**	**-0.5**
	0.1nm,0.3s,baz=127,slow=13,SNR=3.2							
SONM	**Songino Array**	**29.66**	**306**	P		**P**	**10 38 08.0**	**+0.1**
	0.9nm,0.7s,baz=112,slow=9.1,SNR=4.7							
MKAR	**Makanchi Array**	**45.96**	**304**	P		**P**	**10 40 25.3**	**+0.4**
	0.4nm,0.6s,baz=85,slow=9.1,SNR=4.0							
ILAR	**Eielson Array**	**50.48**	**32**	P		**P**	**10 41 00.8**	**+1.3**
	0.5nm,0.9s,baz=262,slow=6.8,SNR=3.9							
WRA	**Warramunga Arr**	**55.43**	**190**	P		**P**	**10 41 37.4**	**+0.9**
	0.8nm,0.8s,baz=9.8,slow=7.6,SNR=6.6							
ASAR	**Alice Springs**	**59.16**	**189**	P		**P**	**10 42 03.5**	**+0.7**
	0.5nm,0.9s,baz=357,slow=5.9,SNR=5.0							
AKTO	**Aktyubinsk**	**60.65**	**313**	P		**P**	**10 42 13.7**	**+1.0**
	0.3nm,0.3s,baz=98,slow=14,SNR=4.1							
NVAR	**Mina Array Bea**	**75.25**	**53**	P		P	10 43 48.5	+3.6
	0.2nm,0.5s,baz=294,slow=6.8,SNR=2.7							
NOA	**NORSAR Array B**	**76.24**	**338**	P		**P**	**10 43 50.8**	**+0.8**
	0.5nm,0.7s,baz=63,slow=4.7,SNR=2.8							
AKASG	**Malin Array Be**	**76.35**	**323**	P		**P**	**10 43 50.7**	**0.0**
	0.5nm,0.4s,baz=48,slow=6.3,SNR=4.2							

JMA ***02*** *10:36:11.9±0.4, 35°.32N×142°.71E, h59km, M3.3*
IDC ***02*** *10:36:29.9±4.2, 35°.69N×141°.16E, h101km±40km, mb3.0/4, mb1 3.3/5, mb1mx3.0/44, mbtmp3.3/5, MS3.2/1, Ms1 3.2/1, ms1mx2.3/13, Error ellipse: s-maj=46.2km s-min=24.5km az=104.0*
ISC 02 10:36:14.6±2.0, 35°.53N±0°.06×142°.1E±0°.1, h22km, n17, σ1ᵗ37/13, mb3.5/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.05**	**280**	P		Pn	10 36 38.3	+4.3
CHOJ				S		Sn	10 36 57.0	+9.1
BSO1	**Boso 1**	**1.28**	**228**	P		**Pb**	**10 36 37.6**	**-0.1**
BSO1				S		Sb	10 36 57.3	+3.8
BSO4	**Boso 4**	**1.56**	**251**	P		Pb	10 36 44.6	+1.9
BSO4				*e*S		Sb	10 37 09.5	+7.6
JAG	**Ashikaga**	**2.35**	**293**	P		**Pb**	**10 36 56.1**	**-0.1**
JFT	**Otama**	**2.46**	**325**	P		**Pb**	**10 36 57.0**	**-1.1**
JFT				*e*S		**Sb**	**10 37 29.5**	**+1.6**
JOD2	**Odawara 2**	**2.50**	**265**	P		**Pb**	**10 36 57.1**	**-1.7**
JOD2				*e*S		**Sb**	**10 37 30.3**	**+1.2**
JRY	**Ryogami san**	**2.67**	**282**	P		**Pb**	**10 37 01.4**	**-0.3**
JHJ2	**Mitsune**	**3.08**	**219**	P		**Pn**	**10 37 01.6**	**-0.2**
JHJ	**Hachijo jima 2**	**3.09**	**220**	S		**Sn**	**10 37 37.9**	**-0.4**
	21nm,0.3s,baz=126,slow=22,SNR=7.2							
MJAR	**Matsushiro Arr**	**3.33**	**289**	P		Pb	10 37 09.1	-3.9
	3.6nm,0.3s,baz=92,slow=14,SNR=18							
MJAR					S	Sn	10 37 33.8	-11
	3.5nm,0.3s,baz=80,slow=29,SNR=10.0							
MAT	**Matsushiro**	**3.34**	**289**	P		**Pb**	**10 37 11.2**	**-1.9**
MAT				S		**Sb**	**10 37 54.4**	**+1.2**
MAT	**Matsushiro**	**3.34**	**289**	P		**Pb**	**10 37 10.8**	**-2.3**
JCJ	**Chichijima**	**8.40**	**180**	LR		LR	10 41 19.1	
	comp=Z,158nm,21.1s,baz=24,slow=34							
MKAR	**Makanchi Array**	**45.42**	**303**	P		**P**	**10 44 32.4**	**+0.8**
	0.1nm,0.4s,baz=90,slow=9.1,SNR=1.8							
ILAR	**Eielson Array**	**50.47**	**32**	P		P	10 45 19.4	+9.0
	0.3nm,0.6s,baz=245,slow=5.8,SNR=4.8							
WRA	**Warramunga Arr**	**55.66**	**189**	P		P	10 45 56.4	+7.3
	0.6nm,0.5s,baz=9.8,slow=7.5,SNR=2.0							
ASAR	**Alice Springs**	**59.38**	**189**	P		P	10 46 21.1	+5.8
	0.4nm,1.1s,baz=0.1,slow=7.0,SNR=4.4							

IDC 02 10:37:39.3±6.8, 55°.82S×145°.58W, h0km, mb3.7/2, mb1 3.9/2, mb1mx3.6/16, mbtmp3.7/2, MS3.6/4, Ms1 3.6/4, ms1mx3.3/19, Error ellipse: s-maj=599.0km s-min=62.4km az=160.0, Pacific-Antarctic Ridge

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
PPT	**Papeete**	**38.30**	**354**	LR		LR	10 57 14.8	
	comp=Z,78nm,18.3s,baz=128,slow=31							
AFI	**Afiamalu**	**46.45**	**324**	LR		LR	11 00 13.0	
	comp=Z,48nm,21.9s,baz=200,slow=29							
MAW	**Mawson**	**55.09**	**193**	LR		LR	11 09 26.8	
	comp=Z,66nm,18.0s,baz=241,slow=35							
ASAR	**Alice Springs**	**65.50**	**264**	P		P	10 48 24.2	0.0
	0.9nm,1.1s,baz=134,slow=6.6,SNR=2.7							
H01W1	**Cape Leeuwin H**	**67.21**	**241**	T		T	12 03 51.7	
	baz=144,slow=76,SNR=23							
H01W2	**Cape Leeuwin H**	**67.21**	**241**	T		T	12 03 52.1	
	baz=144,slow=76,SNR=22							
H01W3	**Cape Leeuwin H**	**67.22**	**241**	T		T	12 03 53.0	
	baz=144,slow=76,SNR=26							
WRA	**Warramunga Arr**	**68.20**	**266**	P		P	10 48 41.6	+0.1
	0.8nm,1.0s,baz=142,slow=6.1,SNR=1.7							
BOSA	**Boshof**	**95.54**	**172**	LR		LR	11 31 57.1	
	comp=Z,33nm,18.2s,baz=183,slow=34							
ILAR	**Eielson Array**	**120.27**	**359**	PKP		PKPdf	10 56 30.5	-0.2
	0.1nm,0.4s,baz=188,slow=1.8,SNR=3.5							
MKAR	**Makanchi Array**	**149.31**	**273**	PKPbc		PKPbc	10 57 28.4	-0.6
	0.5nm,0.8s,baz=127,slow=3.8,SNR=3.2							

ISCJB ***02*** *10:40:42.7±0.6, 40°.80N±0°.04×31°.55E±0°.04, h2km±6km, Error ellipse: s-maj=7.2km s-min=4.2km az=158.8*
CSEM ***02*** *10:40:42.9±0.1, 40°.77N×31°.55E, h2km, MD2.6, Error ellipse: s-maj=3.8km s-min=2.3km az=152.0*
ISK ***02*** *10:40:42.4, 40°.76N×31°.55E, h3km, MD2.6*
DDA ***02*** *10:40:42.5, 40°.77N×31°.56E, h7km, Md2.6*
ISC 02 10:40:43.0±1.1, 40°.80N±0°.03×31°.54E±0°.02, h4km±13km, n30, σ0ᵗ45/42, Turkey

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
BCAM	**Yenicaga**	**0.40**	**88**	P		**Pg**	**10 40 50.7**	**0.0**
BCAM				S		**Sg**	**10 40 56.2**	**+0.2**
BCAM	**Yenicaga**	**0.40**	**88**	*i* P		**Pg**	**10 40 50.7**	**0.0**
BCAM				*i* S		**Sg**	**10 40 56.2**	**+0.2**
MDUB	**Mudurnu**	**0.42**	**218**	*e*PG		**Pg**	**10 40 50.9**	**-0.2**
MDUB				*e*SG		**Sg**	**10 40 57.1**	**+0.5**
MDUB	**Mudurnu**	**0.42**	**218**	*e*Pg		**Pg**	**10 40 50.9**	**-0.2**
MDUB				*e*Sg		**Sg**	**10 40 57.1**	**+0.5**
BTAS	**Taskesti**	**0.47**	**240**	P		**Pg**	**10 40 51.3**	**-0.7**
BTAS				S		**Sg**	**10 40 59.0**	**+0.9**
BTAS	**Taskesti**	**0.47**	**240**	*i* P		**Pg**	**10 40 51.4**	**-0.7**
BTAS				*i* S		**Sg**	**10 40 59.0**	**+0.9**
KDZE	**Karadeniz Ereo**	**0.51**	**352**	*e*PG		**Pb**	**10 40 54.2**	**-0.4**
KDZE	**Karadeniz Ereo**	**0.51**	**352**	*e*Pg		**Pb**	**10 40 54.2**	**-0.4**
SAHE	**Sakarya_HENDEK**	**0.52**	**276**	P		**Pg**	**10 40 52.8**	**-0.2**
SAHE				S		**Sg**	**10 40 59.8**	**+0.1**
SAHE	**Sakarya_HENDEK**	**0.52**	**276**	*i* P		**Pg**	**10 40 52.8**	**-0.2**
SAHE				*i* S		**Sg**	**10 40 59.8**	**+0.1**
GULT	**Gulveren**	**0.86**	**245**	*e*PG		**Pg**	**10 40 58.8**	**-0.7**
GULT				*e*SG		**Sb**	**10 41 12.2**	**-0.3**
GULT	**Gulveren**	**0.86**	**245**	*e*Pg		**Pg**	**10 40 58.8**	**-0.7**
GULT				*e*Sg		**Sb**	**10 41 12.2**	**-0.3**
SAFT	**Safranbolu**	**0.97**	**63**	*e*PG		**Pb**	**10 41 02.1**	**-0.3**
SAFT	**Safranbolu**	**0.97**	**63**	*e*Pg		**Pb**	**10 41 02.1**	**-0.3**
BTIN	**Bartˇ–n**	**0.99**	**33**	P		**Pg**	**10 41 01.6**	**-0.3**
BTIN	**Bartˇ–n**	**0.99**	**33**	*i* P		**Pg**	**10 41 01.6**	**-0.3**
KAND	**Kocaeli-Kandir**	**1.06**	**286**	P		**Pb**	**10 41 03.7**	**-0.2**
KAND	**Kocaeli-Kandir**	**1.06**	**286**	*i* P		**Pb**	**10 41 03.7**	**-0.2**
SVRH	**Sivrihisar-ESK**	**1.36**	**180**	*e*PN		**Pg**	**10 41 08.2**	**-0.8**
SVRH				*e*SN		**Sb**	**10 41 27.1**	**+0.4**
SVRH	**Sivrihisar-ESK**	**1.36**	**180**	*e*Pn		**Pg**	**10 41 08.2**	**-0.8**
SVRH				*e*Sn		**Sb**	**10 41 27.1**	**+0.4**
ADVT	**Abdulvahap**	**1.42**	**255**	*e*PN		**Pn**	**10 41 09.8**	**+0.2**
ADVT	**Abdulvahap**	**1.42**	**255**	*e*Pn		**Pn**	**10 41 09.8**	**+0.2**
HRT	**Hereke**	**1.42**	**271**	*e*PN		**Pg**	**10 41 10.0**	**-0.1**
HRT	**Hereke**	**1.42**	**271**	*e*Pn		**Pg**	**10 41 10.0**	**-0.1**
IZI	**Iznik**	**1.64**	**254**	*e*PN		**Pn**	**10 41 13.0**	**+0.3**
IZI	**Iznik**	**1.64**	**254**	*e*Pn		**Pn**	**10 41 13.0**	**+0.3**
ARMT	**Armutlu**	**2.05**	**264**	*e*PN		**Pn**	**10 41 18.8**	**+0.6**
ARMT	**Armutlu**	**2.05**	**264**	*e*Pn		**Pn**	**10 41 18.8**	**+0.6**
TVSB	**Tavsanli**	**2.09**	**230**	*e*PN		**Pn**	**10 41 19.1**	**+0.2**
TVSB	**Tavsanli**	**2.09**	**230**	*e*Pn		**Pn**	**10 41 19.1**	**+0.2**

NIED ***02*** *10:43:00, 43°.50N×147°.40E, h35km, Mw3.8 Best double couple: M₀5.93000×10¹⁴ NP1:φ₀=207.00000°, δ40.00000°, λ29.00000°. NP2:φ₀=94.00000°, δ72.00000°, λ126.00000°.*
IDC ***02*** *10:43:42.3±3.7, 43°.83N×147°.48E, h0km, mb3.8/5, mb1 3.9/8, mb1mx3.6/51, mbtmp3.7/8, ML3.2/3, MS3.0/4, Ms1 3.0/4, ms1mx2.5/42, Error ellipse: s-maj=91.7km s-min=21.9km az=163.0*
JMA ***02*** *10:43:45.9±0.3, 43°.50N×147°.35E, h23km±5km, M4.0*
SKHL ***02*** *10:43:47.1±0.8, 43°.80N×147°.40E, h59km±5km, mb4.8/4*
MOS ***02*** *10:43:47.7±1.5, 44°.02N×147°.16E, h51km, mb4.1/6, Error ellipse: s-maj=12.3km s-min=8.9km az=84.5*
ISC 02 10:43:45.6±1.8, 43°.76N±0°.07×147°.43E±0°.06, h25km±12km, n47, σ1ᵗ14/57, mb3.6/8, MS3.1/3, 5C-7D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
SHO	**Shikotan**	**0.45**	**285**	*d* iPN		**Pn**	**10 43 57.3**	**+0.9**
SHO				*i* S		**Sn**	**10 44 03.9**	**+0.2**
SHO				pmax		pmax		
	comp=N,395nm,0.4s							
SHO				pmax		pmax		
	comp=E,622nm,0.4s							
SHO				pmax		pmax		
	comp=Z,2μm,0.4s							
SHO				smax		smax		
	comp=E,7μm,0.6s							
SHO				smax		smax		
	comp=N,7μm,0.3s							
SHO	**Shikotan**	**0.45**	**285**	⇓ *i*P		**Pn**	**10 43 57.3**	**+0.9**
SHO				AMB		AMB	10 43 57.5	
	comp=N,400nm,0.4s							
SHO				AMB		AMB	10 43 57.5	
	comp=N,620nm,0.4s							
SHO				AMB		AMB	10 43 57.5	
	comp=N,2μm,0.4s							
SHO				*e*S		**Sn**	**10 44 04.2**	**+0.5**
SHO				A		A	10 44 06.3	
	comp=N,7μm,0.3s							
SHO				A		A	10 44 06.3	
	comp=N,7μm,0.6s							
YUK	**Yuzh-Kuril'sk**	**1.17**	**284**	*d* iPN		**Pb**	**10 44 07.0**	**-0.1**
YUK				*i* S		**Sb**	**10 44 22.2**	**+0.4**
YUK				pmax		pmax		
	comp=N,689nm,0.2s							
YUK				pmax		pmax		
	comp=E,892nm,0.2s							
YUK				pmax		pmax		
	comp=Z,2μm,0.2s							
YUK				smax		smax		
	comp=N,3μm,0.4s							
YUK				smax		smax		
	comp=E,2μm,0.4s							
YUK	**Yuzh-Kuril'sk**	**1.17**	**284**	⇓ *i*P		**Pb**	**10 44 07.0**	**-0.1**
YUK				AMB		AMB	10 44 07.6	
	comp=E,690nm,0.4s							
YUK				AMB		AMB	10 44 07.6	
	comp=E,890nm,0.4s							
YUK				AMB		AMB	10 44 07.6	
	comp=E,2μm,0.4s							
YUK				*e*S		**Sb**	**10 44 22.2**	**+0.4**
YUK				A		A	10 44 26.8	
	comp=E,3μm,0.4s							
YUK				A		A	10 44 26.8	
	comp=E,2μm,0.4s							
NEM2	**Nemuro 2**	**1.29**	**253**	P		**Pn**	**10 44 07.1**	**-0.9**
NEM2				*e*S		**Sn**	**10 44 22.3**	**-2.1**
KUR	**Kuril'sk**	**1.51**	**12**	*e*PN		**Pb**	**10 44 12.6**	**-0.3**
KUR				pmax		pmax		
	comp=Z,123nm,0.4s							
KUR				pmax		pmax		
	comp=E,38nm,0.2s							
KUR	**Kuril'sk**	**1.51**	**12**	*e*P		**Pn**	**10 44 11.1**	**+0.1**
KUR				AMB		AMB	10 44 14.2	
	comp=E,40nm,0.3s							
KUR				AMB		AMB	10 44 14.2	
	comp=E,120nm,0.3s							
KUR				*i* S		**Sn**	**10 44 29.5**	**-0.4**
KUR				A		A	10 44 34.6	
	comp=E,430nm,0.2s							
KUR				A		A	10 44 34.6	
	comp=E,370nm,0.2s							
JRA	**Rausu**	**1.68**	**277**	P		**Pn**	**10 44 14.5**	**+1.1**
JRA				*e*S		**Sb**	**10 44 35.6**	**-0.9**
JNK	**Nakash**	**1.97**	**266**	P		**Pn**	**10 44 17.6**	**+0.2**
JNK				*e*S		**Sn**	**10 44 41.2**	**-0.2**
JAK	**Akkeshi**	**2.13**	**250**	P	

Error ellipse: s-maj=8.5km s-min=5.4km az=87.0
GCMT ***02*** *10:59:07.3±0.4, 5°.60S×149°.13E, h255km±3km, MW5.0/67, Moment Tensor Solution. s38,c44; s67,c83; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}=3.59±.17; $M_{\theta\theta}$=0.72±.17; $M_{\phi\phi}$=4.31±.18; $M_{r\theta}$=1.35±.16; $M_{\theta\phi}$=0.98±.15; $M_{r\phi}$=0.80±.17; Best double couple: M_0=4.40000×10^{16} NP1:ϕ_s=191.00000°, δ53.00000°, λ-60.00000°. NP2: ϕ_s=327.00000°, δ46.00000°, λ-124.00000°. Principal axes: T 4.5310, Plg4.0000°, Azm260.0000°; N -0.2610, Plg23.0000°, Azm352.0000°; P -4.2690, Plg66.0000°, Azm161.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
IDC ***02*** *10:59:07.1±0.4, 5°.49S×149°.22E, h262km±3km, mb4.2/27, mb1 4.3/31, mb1mx4.2/43, mbtmp4.8/31 Error ellipse: s-maj=11.7km s-min=6.6km az=85.0*
DJA ***02*** *10:59:07.4±1.4, 5°.5S±10°×14°.9E±1°.3, h254km±8km, M5.2/14, mb4.9/14, mB5.2/6, MLv5.7/1, Mw(mB)4.6/6*
ISC 02 10:59:06.9±0.4, 5°.49S±0°.05×149°.23E±0°.06, h261km±4km, h261km:pP-P, n109, σ1§07/127, mb4.5/42, 2D, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**4.40**	**208**	P	**Pn**	**11 00 16.0**	**+0.1**
	42nm,0.3s,baz=41,slow=5.2,SNR=181						
PMG				S	**S**	**11 01 06.9**	**-4.0**
	25nm,0.3s,baz=14,slow=15,SNR=8.1						
JAY	**Jayapura**	**9.00**	**289**	P	**Pn**	**11 01 11.8**	**-1.3**
	0.6nm,0.3s,baz=270,slow=23,SNR=23						
JAY	**Jayapura**	**9.00**	**289**	P	**Pn**	**11 01 11.7**	**-1.3**
	202nm,1.1s,2μm						
GENI	**Genyem**	**9.49**	**287**	P	**Pn**	**11 01 17.6**	**-1.4**
	166nm,1.2s,2μm						
COEN	**Coen**	**10.31**	**215**	P	**Pn**	**11 01 31.2**	**+1.9**
	baz=10,SNR=56						
COEN	**Coen**	**10.31**	**215**	*e*Pn	**Pn**	**11 01 30.9**	**+1.5**
	165nm,0.9s						
HNR	**Honiara**	**11.32**	**111**	P	**Pn**	**11 01 41.9**	**0.0**
	6.5nm,0.3s,baz=240,slow=1.2,SNR=9.4						
HNR				S	S	11 03 58.6	+10
	5.0nm,0.3s,baz=13,slow=22,SNR=7.0						
HNR	**Honiara**	**11.32**	**111**	*e*P	**Pn**	**11 01 41.0**	**-1.0**
HNR				*e*S	S	11 03 24.0	-25
HNR	**Honiara**	**11.32**	**111**	*e*Pn	**Pn**	**11 01 41.4**	**-0.6**
	262nm,1.0s						
HNR				P	**Pn**	**11 01 41.9**	**0.0**
HNR				S	S	11 03 58.6	+10
MTSU	**Mount Surprise**	**13.45**	**200**	P	**Pn**	**11 02 06.2**	**-1.9**
	baz=14,SNR=45						
CTA	**Charters Tower**	**14.79**	**191**	P	**Pn**	**11 02 25.9**	**+1.5**
	2.9nm,0.3s,baz=6.1,slow=13,SNR=56						
CTA				S	**S**	**11 05 08.5**	**+1.1**
	0.1nm,0.3s,baz=101,slow=15,SNR=5.4						
QIS	**Mount Isa**	**17.65**	**211**	P	**P**	**11 02 55.9**	**+0.6**
	baz=18,SNR=35						
KDU	**Kakadu**	**18.02**	**245**	P	**P**	**11 02 59.1**	**0.0**
	baz=18,SNR=55						
SWI	**Sorong**	**18.52**	**284**	P	**Pn**	**11 03 08.8**	**+0.6**
	70nm,0.7s,1μm						
MTN	**Manton Dam**	**19.29**	**247**	P	**P**	**11 03 12.3**	**-0.6**
	baz=19,SNR=32						
PALU	**Palau**	**19.48**	**311**	P	**P**	**11 03 15.2**	**+0.3**
	baz=20						
EIDS	**Eidsvold**	**19.84**	**175**	P	**P**	**11 03 19.5**	**+0.8**
	baz=20,SNR=18						
EIDS	**Eidsvold**	**19.84**	**175**	*e*P	**P**	**11 03 19.2**	**+0.6**
	49nm,0.7s						
WRAB	**Tennant Creek**	**20.38**	**224**	*e*P	**P**	**11 03 23.5**	**-1.0**
	55nm,0.6s						
WRA	**Warramunga Arr**	**20.40**	**224**	P	**P**	**11 03 24.5**	**-0.2**
	28nm,0.4s,baz=49,slow=9.7,SNR=174						
WRA				S	**S**	**11 06 57.9**	**+0.2**
	91nm,1.0s,baz=50,slow=21,SNR=51						
RMQ	**Roma**	**20.88**	**181**	P	**P**	**11 03 30.4**	**+0.8**
	baz=21,SNR=48						
QLP	**Quilpie**	**21.51**	**192**	P	**P**	**11 03 36.3**	**+0.7**
	baz=22,SNR=155						
KNRA	**Kununurra**	**22.50**	**242**	P	**P**	**11 03 45.2**	**+0.4**
	baz=22						
ASAR	**Alice Springs**	**23.33**	**218**	P	**P**	**11 03 53.0**	**+0.7**
	33nm,0.4s,baz=49,slow=8.6,SNR=966						
ASAR				S	**S**	**11 07 44.8**	**-0.6**
	16nm,0.8s,baz=42,slow=14,SNR=13						
DZM	**Mont Dzumac**	**23.43**	**136**	P	**P**	**11 03 53.7**	**+0.5**
	48nm,0.5s,baz=303,slow=6.8,SNR=78						
ARMA	**Armidale**	**24.90**	**175**	P	**P**	**11 04 07.9**	**+1.5**
	baz=25,SNR=14						
ARMA	**Armidale**	**24.90**	**175**	*e*P	**P**	**11 04 07.2**	**+0.7**
	70nm,0.9s						
SOEI	**Soe**	**25.09**	**259**	*e*P	**P**	**11 04 11.2**	**+2.7**
	113nm,1.0s						
CMSA	**Cobar Meteorol**	**26.12**	**187**	P	**P**	**11 04 17.5**	**+0.2**
	baz=26,SNR=10						
FITZ	**Fitzroy Crossi**	**26.23**	**239**	P	**P**	**11 04 18.6**	**+0.2**
	18nm,0.3s,baz=58,slow=9.5,SNR=194						
FITZ				S	**S**	**11 08 29.9**	**-1.2**
	23nm,1.1s,baz=288,slow=18,SNR=4.9						
FITZ	**Fitzroy Crossi**	**26.23**	**239**	P	**P**	**11 04 18.3**	**-0.1**
	baz=26,SNR=105						
FITZ	**Fitzroy Crossi**	**26.23**	**239**	P	**P**	**11 04 18.6**	**+0.2**
FITZ				*e*P	**P**	**11 04 18.7**	**+0.2**
FITZ				S	**S**	**11 08 29.9**	**-1.2**
STKA	**Stephens Creek**	**27.20**	**194**	P	**P**	**11 04 26.1**	**-0.8**
	4.9nm,0.7s,baz=6.8,slow=11,SNR=14						
STKA	**Stephens Creek**	**27.20**	**194**	P	**P**	**11 04 26.3**	**-0.7**
	baz=27,SNR=13						
WRKA	**Warakurna**	**27.94**	**224**	P	**P**	**11 04 33.4**	**-0.2**
	baz=28,SNR=21						
YNG	**Young**	**28.67**	**181**	P	**P**	**11 04 40.9**	**+0.9**
	baz=29,SNR=15						
HTT	**Hallett**	**29.41**	**198**	P	**P**	**11 04 46.6**	**+0.1**
	baz=30,SNR=10.0						
CNB	**Canberra Magne**	**29.68**	**180**	P	**P**	**11 04 50.0**	**+1.2**
	baz=30,SNR=24						
CAN	**Canberra**	**29.68**	**180**	*e*P	**P**	**11 04 49.6**	**+0.7**
	16nm,0.5s						
BBOO	**Buckleboo**	**29.83**	**203**	P	**P**	**11 04 49.6**	**-0.5**
	baz=30,SNR=15						
BBOO	**Buckleboo**	**29.83**	**203**	*e*P	**P**	**11 04 49.3**	**-0.9**
	17nm,0.8s						
ARPS	**Mount Arapiles**	**31.86**	**191**	P	**P**	**11 05 08.1**	**+0.3**
	baz=32,SNR=16						
TOO	**Toolangi**	**32.11**	**186**	P	**P**	**11 05 10.8**	**+0.8**
	baz=32,SNR=14						
KMBL	**Kambalda**	**36.33**	**222**	P	**P**	**11 05 46.0**	**-0.3**
	baz=36,SNR=21						
MOO	**Moorlands**	**36.84**	**183**	P	**P**	**11 05 52.0**	**+1.6**
	baz=37,SNR=8.6						
GIRL	**Giralia**	**37.84**	**240**	P	**P**	**11 06 00.2**	**+1.2**
	baz=38,SNR=6.7						
JOW	**Kunigami**	**38.00**	**329**	P	**P**	**11 06 00.6**	**+0.3**
	12nm,0.6s,baz=127,slow=9.5,SNR=8.5						
MORW	**Morawa**	**39.17**	**229**	P	**P**	**11 06 09.7**	**-0.3**
	baz=39,SNR=6.8						
KLBR	**Kellerberrin**	**39.28**	**225**	P	**P**	**11 06 10.0**	**-0.8**
	baz=39,SNR=44						
BLDU	**Ballidu**	**39.48**	**227**	P	**P**	**11 06 12.1**	**-0.4**
	baz=40,SNR=15						
NWAO	**Narrogin (SRO)**	**40.41**	**223**	P	**P**	**11 06 19.5**	**-0.6**
	baz=40,SNR=8.4						
MUN	**Mundaring**	**40.59**	**225**	P	**P**	**11 06 21.4**	**-0.2**
	baz=41						
URZ	**Urewera**	**41.29**	**146**	P	**P**	**11 06 28.2**	**+1.0**
	32nm,0.9s,baz=282,slow=4.0,SNR=12						
RKGY	**Rocky Gully**	**41.57**	**222**	P	**P**	**11 06 29.9**	**+0.4**
	baz=42,SNR=13						
JNU	**Nakatsue**	**42.17**	**337**	P	**P**	**11 06 34.9**	**+0.5**
	14nm,0.6s,baz=164,slow=2.6,SNR=15						
JNU				pP	**pP**	**11 07 29.7**	**+1.3**
	6.8nm,0.9s,baz=136,slow=6.1,SNR=2.8						
JNU	**Nakatsue**	**42.17**	**337**	*e*P	**P**	**11 06 34.2**	**-0.1**
	18nm,1.2s						
JNU				P	**P**	**11 06 34.9**	**+0.5**
JNU				pP	**pP**	**11 07 29.7**	**+1.3**
RPZ	**Rata Peaks**	**42.65**	**157**	P	**P**	**11 06 37.9**	**-0.1**
	47nm,0.6s,baz=294,slow=2.4,SNR=30						
RPZ	**Rata Peaks**	**42.65**	**157**	P	**P**	**11 06 38.0**	**-0.1**
RPZ				*e*P	**P**	**11 06 38.4**	**+0.4**
MJAR	**Matsushiro Arr**	**43.07**	**347**	P	**P**	**11 06 41.7**	**+0.2**
	22nm,0.9s,baz=165,slow=7.7,SNR=62						
MAJO	**Matsushiro**	**43.07**	**347**	*e*P	**P**	**11 06 41.5**	**-0.1**
	55nm,1.1s						
MAT	**Matsushiro**	**43.07**	**347**	P	**P**	**11 06 41.7**	**+0.2**
KSRS	**Korea Array**	**47.12**	**337**	P	**P**	**11 07 13.9**	**+0.7**
	9.7nm,0.8s,baz=154,slow=8.4,SNR=42						
KSRS				pP	**pP**	**11 08 10.2**	**+1.8**
	1.9nm,0.9s,baz=139,slow=6.1,SNR=2.2						
KSAR	**Wonju Array Be**	**47.12**	**337**	P	**P**	**11 07 13.9**	**+0.7**
KSAR				pP	**pP**	**11 08 10.2**	**+1.7**
ASAJ	**Asahikawa**	**49.74**	**354**	P	**P**	**11 07 34.4**	**+1.4**
	20nm,0.8s,baz=201,slow=11,SNR=6.0						
NONG	**Nongkai**	**51.13**	**298**	P	pP	11 08 42.3	+2.3
	45nm,1.0s,9μm						
NAYO	**Nakonayok**	**51.43**	**293**	P	pP	11 08 44.7	+2.4
	435nm7.1nm,1.1s						
USRK	**Ussuriysk Ar.**	**51.85**	**344**	P	**P**	**11 07 49.5**	**+0.9**
	10nm,0.8s,baz=174,slow=8.0,SNR=24						
USRK				pP	**pP**	**11 08 45.0**	**0.0**
	1.1nm,0.6s,baz=136,slow=42,SNR=3.0						
LOEI	**Loei**	**52.58**	**297**	P	pP	11 08 50.8	-0.3
	6.5nm,1.6s						
UTTA	**Uttaradit**	**53.30**	**297**	P	pP	11 08 59.1	+2.7
	2.6nm,1.0s						
SUKH	**Sukhothai**	**54.03**	**296**	P	pP	11 09 04.7	+2.9
	2.6nm,1.2s						
CMAR	**Chiang Mai Arr**	**54.98**	**297**	P	**P**	**11 08 16.0**	**+4.1**
	0.6nm,0.4s,baz=128,slow=6.9,SNR=4.2						
CMAR				pP	**pP**	**11 09 08.4**	**-0.5**
	1.6nm,0.4s,baz=117,slow=5.6,SNR=4.1						
CMMT	**Chiang Mai**	**55.10**	**297**	P	pP	11 09 12.2	+2.4
	5.8nm,1.5s						
CHTO	**Chiang Mai**	**55.11**	**297**	P	pP	11 09 12.2	+2.4
	27nm,1.5s						
KLR	**Kul'dur**	**56.59**	**346**	P	**P**	**11 08 22.8**	**+0.1**
	5.2nm,1.0s,baz=123,slow=4.8,SNR=5.7						
KLR				pP	**pP**	**11 09 20.8**	**+0.7**
	4.5nm,1.1s,baz=171,slow=6.0,SNR=4.4						
PETK	**Petropavlovsk-**	**58.82**	**6**	P	**P**	**11 08 38.2**	**+0.2**
	22nm,1.0s,baz=130,slow=4.6,SNR=11						
MA2	**Magadan**	**64.88**	**1**	P	**P**	**11 09 18.2**	**0.0**
	5.8nm,0.7s,baz=147,slow=8.3,SNR=7.0						
SONM	**Songino Array**	**65.07**	**330**	P	**P**	**11 09 19.9**	**+0.1**
	1.9nm,0.5s,baz=145,slow=5.8,SNR=12						
SONM				pP	**pP**	**11 10 20.2**	**+1.4**
	8.6nm,1.0s,baz=136,slow=5.6,SNR=14						
CASY	**Casey**	**66.34**	**196**	*e*P	**P**	**11 09 27.0**	**-0.4**
	6.5nm,1.2s						
SEY	**Seymchan**	**68.28**	**2**	P	**P**	**11 09 39.5**	**0.0**
	2.2nm,0.6s,baz=160,slow=6.0,SNR=10.0						
VNDA	**Vanda**	**72.29**	**177**	P	**P**	**11 10 04.5**	**+0.9**
	18nm,0.8s,baz=331,slow=6.0,SNR=88						
BILL	**Bilibino**	**74.34**	**7**	*e*P	**P**	**11 10 15.4**	**-0.2**
	9.9nm,1.0s						
TIXI	**Tiksi**	**78.15**	**354**	P	**P**	**11 10 36.1**	**-0.8**
	1.6nm,0.5s,baz=164,slow=2.4,SNR=3.3						
TIXI				pP	**pP**	**11 11 37.5**	**-0.7**
	1.3nm,0.3s,baz=264,slow=3.2,SNR=3.5						
MKAR	**Makanchi Array**	**78.53**	**320**	P	**P**	**11 10 38.8**	**-0.8**
	0.4nm,0.4s,baz=122,slow=5.2,SNR=4.2						
MKAR				pP	**pP**	**11 11 40.8**	**-0.1**
	2.2nm,0.8s,baz=116,slow=8.2,SNR=5.8						
ZALV	**Zalesovo Beam**	**79.78**	**327**	P	**P**	**11 10 44.6**	**-1.4**
	0.7nm,0.4s,baz=34,slow=47,SNR=2.9						
ZALV				pP	**pP**	**11 11 48.6**	**+0.9**
	3.2nm,0.7s,baz=95,slow=6.4,SNR=4.4						
RC01	**Rabbit Creek A**	**81.31**	**25**	*e*P	**P**	**11 10 51.2**	**-2.8**
	6.4nm,0.3s						
KURK	**Kurchatov**	**82.14**	**323**	*e*P	**P**	**11 10 57.3**	**-1.3**
	7.7nm,1.3s						
AAK	**Ala-Archa**	**82.57**	**314**	pP	pP	11 12 04.8	+1.6
	1.1nm,0.5s,baz=120,slow=5.6,SNR=1.6						
MCK	**McKinley**	**82.88**	**23**	*e*P	**P**	**11 11 00.8**	**-1.3**
	17nm,1.0s						
MAW	**Mawson**	**83.57**	**203**	P	**P**	**11 11 05.3**	**-0.3**
	12nm,0.8s,baz=103,slow=6.9,SNR=13						
ILAR	**Eielson Array**	**84.15**	**23**	P	**P**	**11 11 06.8**	**-1.8**
	3.9nm,0.8s,baz=253,slow=4.8,SNR=23						
ILAR				pP	**pP**	**11 12 10.2**	**-0.6**
	2.6nm,0.8s,baz=254,slow=5.5,SNR=7.8						
QSPA	**South Pole Qui**	**84.47**	**180**	*e*P	**P**	**11 11 10.1**	**-0.3**
	153nm,1.1s						
NRIK	**Noril'sk**	**85.48**	**342**	pP	pP	11 12 16.2	-1.3
	9.3nm,0.7s,baz=112,slow=6.1,SNR=6.1						
KKAR	**Karatay Array**	**85.53**	**314**	*e*P	**P**	**11 11 14.6**	**-1.3**
	4.4nm,1.2s						
EGAK	**Eagle**	**86.41**	**24**	*e*P	**P**	**11 11 18.6**	**-1.0**
	12nm,1.2s						
DAWY	**Dawson**	**86.88**	**25**	*e*P	**P**	**11 11 22.2**	**+0.1**
	20nm,1.3s						
BVAR	**Borovoye Array**	**87.67**	**324**	P	**P**	**11 11 24.1**	**-1.9**
	0.7nm,0.6s,baz=108,slow=4.8,SNR=6.0						
INK	**Inuvik**	**90.38**	**21**	P	**P**	**11 11 37.1**	**-1.2**
	3.8nm,1.0s,baz=210,slow=3.6,SNR=10						
INK				pP	**pP**	**11 12 41.5**	**+0.2**
	2.9nm,1.0s,baz=234,slow=6.6,SNR=5.2						
INK	**Inuvik**	**90.38**	**21**	*e*P	**P**	**11 11 37.0**	**-1.2**
	4.8nm,1.1s						
INK				P	**P**	**11 11 37.1**	**-1.2**
INK				pP	**pP**	**11 12 41.5**	**+0.2**
SYO	**Syowa Base**	**91.83**	**200**	‖ *e*P	**P**	**11 11 43.4**	**-1.6**
SYO	**Syowa Base**	**91.83**	**200**	‖ *e*pP	pP	11 12 48.0	-0.1
NVAR	**Mina Array Bea**	**95.31**	**52**	P	**P**	**11 12 02.2**	**+0.2**
	0.3nm,0.7s,baz=264,slow=7.6,SNR=4.2						
NVAR				pP	**pP**	**11 13 04.4**	**-0.8**
	0.4nm,0.8s,baz=271,slow=7.8,SNR=1.9						
YKA	**Yellowknife Ar**	**97.69**	**28**	P	**P**	**11 12 11.2**	**-0.6**
	0.8nm,1.0s,baz=272,slow=4.4,SNR=9.0						
YKA				pP	**pP**	**11 13 14.2**	**-0.9**
	0.3nm,0.8s,baz=276,slow=4.7,SNR=3.5						
PDAR	**Pinedale Array**	**101.94**	**48**	P	**Pdif**	**11 12 30.6**	**-1.0**
	0.6nm,0.8s,baz=35,slow=5.4,SNR=4.0						
PLCA	**Paso Flores**	**121.30**	**145**	PKP	**PKPdf**	**11 17 29.2**	**-0.2**
	2.5nm,0.6s,baz=340,slow=2.6,SNR=9.4						
GERES	**GERESS Array B**	**122.73**	**327**	PKP	**PKPdf**	**11 17 31.4**	**-0.5**
	0.4nm,0.2s,baz=64,slow=3.4,SNR=5.2						
LPAZ	**La Paz**	**137.17**	**121**	PKP	**PKPdf**	**11 18 01.1**	**+0.3**
	3.2nm,0.9s,baz=349,slow=2.4,SNR=7.2						
CPUP	**Villa Florida**	**139.21**	**142**	PKP	**PKPdf**	**11 18 03.7**	**+0.1**
	7.0nm,1.1s,baz=39,slow=3.0,SNR=5.0						
SAML	**Samuel**	**144.65**	**114**	*e*PKPbc	**PKPab**	**11 18 11.9**	**-1.1**
TORD	**Torodi Ar. Bea**	**147.10**	**286**	PKPbc	**PKPdf**	**11 18 18.6**	**+0.9**
	1.6nm,0.6s,baz=86,slow=2.4,SNR=16						
TORD				pPKPbc	**pPKPbc**	**11 19 24.3**	**-1.5**
	4.7nm,1.0s,baz=85,slow=3.2,SNR=6.2						

NIED ***02*** *11:08:00, 37°.70N×143°.50E, h8km, Mw3.8 Best double couple: M_0=5.23000×10^{14} NP1:ϕ_s=332.00000°, δ30.00000°, λ-151.00000°. NP2:ϕ_s=216.00000°, δ76.00000°, λ-64.00000°.*
IDC ***02*** *11:08:40.2±0.9, 37°.48N×143°.63E, h0km, mb3.8/9, mb1 4.0/16, mb1mx3.8/46, mbtmp3.9/16, ML3.7/5, MS3.0/4, Ms1 3.0/4, ms1mx2.6/52, Error ellipse: s-maj=21.1km s-min=15.9km az=99.0*
ISCJB ***02*** *11:08:42.4±0.5, 37°.43N±0°.04×143°.56E±0°.06, h33km, mb4.0/13, MS3.5/1, Error ellipse: s-maj=6.9km s-min=6.0km az=24.0*
JMA ***02*** *11:08:43.6±0.3, 37°.67N×143°.48E, h40km, M3.8*
NEIC ***02*** *11:08:45.3±0.6, 37°.54N×143°.57E, h35km, mb4.4/4, Error ellipse: s-maj=11.7km s-min=7.7km az=122.0*
ISC 02 11:08:45.5±0.9, 37°.53N±0°.07×143°.42E±0°.08, h35km, n38, σ1§81/39, mb3.9/13, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.88**	**300**	P	**Pn**	**11 09 14.1**	**-0.9**
JFK	**Kawauchi**	**2.03**	**266**	P	**Pn**	**11 09 16.7**	**-0.5**
JFK				*e*S	**Sn**	**11 09 42.1**	**+0.7**
OFUJ	**Ofunato**	**2.07**	**319**	P	**Pn**	**11 09 15.8**	**-1.9**
JMM	**Marumori**	**2.11**	**280**	P	**Pn**	**11 09 17.7**	**-0.5**
JMK	**Ichinoseki**	**2.24**	**310**	P	**Pn**	**11 09 18.7**	**-1.3**
JOU	**Okura**	**2.33**	**292**	P	**Pn**	**11 09 21.3**	**0.0**
JFT	**Otama**	**2.45**	**271**	P	**Pn**	**11 09 23.5**	**+0.6**
JOM	**Ohasama**	**2.56**	**320**	P	**Pn**	**11 09 23.0**	**-1.4**
JYK	**Kaneyama**	**2.78**	**301**	P	**Pn**	**11 09 27.3**	**-0.1**
JRG	**Rokugo**	**2.87**	**311**	P	**Pn**	**11 09 28.5**	**-0.2**
MJAR	**Matsushiro Arr**	**4.28**	**258**	Pn	**Pn**	**11 09 50.3**	**+2.1**
	9.4nm,0.3s,baz=89,slow=15,SNR=88						
MJAR				Sn	**Sn**	**11 10 38.4**	**+1.5**
	7.3nm,0.3s,baz=88,slow=14,SNR=4.1						
MAJO	**Matsushiro**	**4.28**	**258**	*e*Pn	**Pn**	**11 09 49.8**	**+1.6**
MAT	**Matsushiro**	**4.28**	**258**	P	**Pn**	**11 09 50.0**	**+1.8**
MAT				S	**Sn**	**11 10 29.9**	**-7.0**
ERM	**Erimo**	**4.48**	**358**	*e*Pn	**Pn**	**11 09 49.7**	**-1.1**
JHJ2	**Mitsune**	**5.30**	**215**	*e*Pn	**Pn**	**11 10 01.1**	**-1.1**
JHJ	**Hachijo jima 2**	**5.31**	**215**	Pn	**Pn**	**11 10 00.6**	**-1.7**
	16nm,0.3s,baz=297,slow=19,SNR=15						
JHJ				Sn	**Sn**	**11 10 59.2**	**-3.1**
	26nm,0.3s,baz=95,slow=22,SNR=5.7						
ASAJ	**Asahikawa**	**6.61**	**355**	Pn	**Pn**	**11 10 17.7**	**-2.3**
	1.8nm,0.3s,baz=211,slow=15,SNR=14						
ASAJ				LR	LR	11 13 11.4	
	comp=Z,77nm,20.1s,baz=94,slow=41						
CBIJ	**Chichi jima**	**10.46**	**186**	Pn	Pn	11 11 09.1	-3.9
CBIJ				Sn	Sn	11 12 57.5	-11
JCJ	**Chichijima**	**10.46**	**186**	Pn	Pn	11 11 09.1	-3.9
	baz=274,slow=19						
JCJ				Sn	Sn	11 12 57.5	-11
	2.8nm,0.3s,baz=300,slow=20,SNR=2.3						
USRK	**Ussuriysk Ar.**	**10.91**	**311**	**Pn**	**Pn**	**11 11 19.7**	**+0.7**
	0.1nm,0.3s,baz=110,slow=16,SNR=3.2						
JNU	**Nakatsue**	**11.15**	**250**	Pn	**Pn**	**11 11 24.0**	**+1.7**
	0.2nm,0.3s,baz=65,slow=5.4,SNR=4.1						
KSRS	**Korea Array**	**12.31**	**274**	**Pn**	**Pn**	**11 11 39.7**	**+1.5**
	0.3nm,0.3s,baz=80,slow=14,SNR=6.0						
KSRS				LR	LR	11 16 08.0	
	comp=Z,38nm,19.9s,baz=140,slow=36						
KSAR	**Wonju Array Be**	**12.34**	**274**	Pn	**Pn**	**11 11 39.7**	**+1.0**
KLR	**Kul'dur**	**14.42**	**328**	Pn	**Pn**	**11 12 03.6**	**-3.3**
	0.1nm,0.3s,baz=129,slow=13,SNR=4.5						
KLR				LR	LR	11 18 22.5	
	comp=Z,44nm,18.6s,baz=170,slow=40						
SONM	**Songino Array**	**28.85**	**303**	P	**P**	**11 14 42.3**	**+1.8**
	0.7nm,0.6s,baz=96,slow=11,SNR=4.1						
ZALV	**Zalesovo Beam**	**42.76**	**312**	P	**P**	**11 16 40.3**	**+1.1**
	0.8nm,0.3s,baz=94,slow=4.3,SNR=2.3						
MKAR	**Makanchi Array**	**45.21**	**302**	P	**P**	**11 16 59.7**	**+0.7**
	0.7nm,0.6s,baz=73,slow=9.4,SNR=4.8						
KURK	**Kurchatov**	**46.88**	**308**	*e*P	**P**	**11 17 12.3**	**+0.3**
	6.5nm,0.6s						
KURBB	**Kurchatov Arra**	**46.96**	**308**	P	**P**	**11 17 13.2**	**+0.6**
	3.0nm,0.6s,baz=82,slow=7.9,SNR=29						
ILAR	**Eielson Array**	**48.22**	**33**	P	**P**	**11 17 21.3**	**-0.9**
	0.5nm,0.8s,baz=273,slow=7.0,SNR=4.9						
TKM2	**Tokmak 2**	**50.80**	**299**	*e*P	**P**	**11 17 43.7**	**+1.2**
	1.9nm,0.6s						
INK	**Inuvik**	**53.21**	**27**	P	**P**	**11 18 00.7**	**+0.9**
	0.4nm,0.5s,baz=270,slow=3.0,SNR=3.0						
ARU	**Arti**	**57.04**	**319**	LR	LR	11 45 09.9	
	comp=Z,37nm,19.7s,baz=98,slow=38						
WRAB	**Tennant Creek**	**57.79**	**190**	*e*P	**P**	**11 18 33.0**	**-0.3**
	3.2nm,0.7s						
WRA	**Warramunga Arr**	**57.80**	**190**	P	**P**	**11 18 33.2**	**-0.1**
	2.5nm,0.5s,baz=10,slow=7.4,SNR=28						
ABKAR	**Akbulak array**	**58.84**	**310**	*e*P	**P**	**11 18 41.0**	**+0.7**
	0.5nm,0.5s						
ASAR	**Alice Springs**	**61.53**	**190**	P	**P**	**11 18 59.1**	**+0.2**
	1.0nm,0.9s,baz=5.8,slow=7.7,SNR=11						
YKA	**Yellowknife Ar**	**62.57**	**31**	P	**P**	**11 19 05.6**	**+0.2**
	0.1nm,0.6s,baz=298,slow=6.4,SNR=2.8						

IDC ***02*** *11:09:08.7±0.7, 37°.51N×144°.64E, h0km, mb4.0/11, mb1 4.2/15, mb1mx3.9/43, mbtmp4.1/15, ML4.0/3, MS2.7/1, Ms1 2.7/1, ms1mx2.3/48, Error ellipse: s-maj=23.1km s-min=14.9km az=114.0*
ISCJB ***02*** *11:09:11.0±0.5, 37°.37N±0°.06×144°.6E±0°.1, h33km, mb4.0/14, Error ellipse: s-maj=12.6km s-min=8.2km az=15.4*
NEIC ***02*** *11:09:13.6±0.5, 37°.49N×144°.63E, h35km, mb4.3/3, Error ellipse: s-maj=12.2km s-min=8.5km az=106.0*
ISC 02 11:09:13.3±0.7, 37°.41N±0°.09×144°.6E±0°.1, h35km, n24, σ1§47/23, mb4.1/14, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ERM	**Erimo**	**4.72**	**347**	*e*Pn	**Pn**	**11 10 21.7**	**-0.3**
MJAR	**Matsushiro Arr**	**5.16**	**262**	Pn	**Pn**	**11 10 29.1**	**+1.1**
	3.0nm,0.3s,baz=90,slow=15,SNR=4.8						
MJAR				Sn	Sn	11 11 17.7	-8.6
	2.3nm,0.3s,baz=84,slow=17,SNR=2.6						
MAJO	**Matsushiro**	**5.16**	**262**	*e*Pn	**Pn**	**11 10 29.6**	**+1.6**
MAT	**Matsushiro**	**5.16**	**262**	P	Pn	11 10 39.1	+11
MAT				S	Sn	11 11

ERM *e*Sn Sn 11 31 06.4 -15
MJAR Matsushiro Arr 3.63 237 P **Pn 11 30 43.9 +1.4**
7.0nm,0.3s,baz=38,slow=12,SNR=86
MJAR LR LR 11 32 19.8
comp=Z,429nm,20.6s,baz=45,slow=43
MAJO Matsushiro 3.63 237*d i* P **Pn 11 30 43.4 +0.9**
MAJO Matsushiro 3.63 237 *e*Pn **Pn 11 30 44.4 +1.8**
MAT Matsushiro 3.63 237 P **Pn 11 30 43.9 +1.4**
MAT S **Sn 11 31 25.1 +1.0**
MJB9 Matsu-Tunnel 3.63 237 *e*Pn **Pn 11 30 44.4 +1.9**
INU Inuyama 5.13 232 *e*Pn **Pn 11 31 04.8 +1.8**
ASAJ Asahikawa 5.54 5 P **Pn 11 31 08.7 0.0**
5.0nm,0.3s,baz=215,slow=12,SNR=29
ASAJ S **Sn 11 32 10.1 -0.9**
3.6nm,0.3s,baz=233,slow=20,SNR=2.7
ASAJ Asahikawa 5.54 5 *e*Pn **Pn 11 31 11.1 +2.5**
ASAJ S **Sn 11 32 10.1 -0.9**
JHJ Hachijo jima 2 5.75 199 P **Pn 11 31 11.8 +0.2**
14nm,0.3s,baz=82,slow=23,SNR=6.4
JHJ S **Sn 11 32 12.3 -3.9**
16nm,0.3s,baz=90,slow=20,SNR=4.2
JHJ LR LR 11 33 03.8
comp=Z,62nm,20.1s,baz=27,slow=34
YUK Yuzh-Kuril'sk 6.17 27 *e*P **Pn 11 31 16.7 -0.6**
YUK *e*S **Sn 11 32 22.1 -4.4**
YUK pmax pmax
comp=Z,147nm,0.4s
SHO Shikotan 6.41 33 *e*P **Pn 11 31 18.4 -2.2**
SHO *e*S **Sn 11 32 25.5 -7.0**
SHO pmax pmax
comp=Z,62nm,0.7s
KUR Kuril'sk 7.95 32 *e*P **Pn 11 31 41.6 -0.1**
KUR *e*S **Sn 11 33 06.8 -3.5**
KUR pmax pmax
comp=Z,29nm,0.3s
YSS Yuzh-Sakhalins 8.38 4 *e*P **Pn 11 31 48.3 +0.8**
VLA Vladivostok 8.88 304⇑ *i*P **Pn 11 31 54.5 0.0**
VLA *e*S **Sn 11 33 33.3 +0.1**
VLA pmax pmax
comp=Z,57nm,1.1s
MSHR Mys Shultsa 9.14 299⇑ *e*P **Pn 11 31 56.9 -1.2**
USRK Ussuriysk Ar. 9.36 310 P **Pn 11 32 00.7 -0.4**
comp=Z,0.6nm,0.3s,baz=127,slow=13,SNR=21
USRK LR LR 11 35 17.1
comp=Z,297nm,22.0s,baz=118,slow=36
JNU Nakatsue 10.53 242 P **Pn 11 32 18.6 +1.4**
comp=Z,0.5nm,0.3s,baz=124,slow=12,SNR=13
JNU LR LR 11 36 40.2
comp=Z,291nm,19.8s,baz=98,slow=39
JNU Nakatsue 10.53 242 *e*Pn **Pn 11 32 19.2 +2.0**
MDJ Mudanjiang 11.05 307 P **Pn 11 32 25.7 +1.5**
MDJ S **Sn 11 34 28.9 +2.6**
MDJ pmax pmax
comp=Z,21nm,1.4s
MDJ pmax pmax
comp=Z,210nm,4.4s
MDJ LR LR
comp=N,71nm,24.1s
MDJ LR LR
comp=E,130nm,27.5s
MDJ LR LR
comp=Z,210nm,23.0s
KSRS Korea Array 11.15 269 P **Pn 11 32 28.9 +3.4**
comp=Z,0.3nm,0.3s,baz=85,slow=14,SNR=15
KSRS LR LR 11 36 22.0
comp=Z,178nm,20.6s,baz=76,slow=36
KS15 Wonju Array Si 11.18 268 *e*Pn Pn 11 32 31.3 +5.3
KSAR Wonju Array Be 11.18 268 P **Pn 11 32 28.9 +2.9**
KSAR Wonju Array Be 11.18 268 P **Pn 11 32 28.9 +2.9**
CBIJ Chichi jima 11.47 179 P **Pn 11 32 29.9 0.0**
CBIJ S Sn 11 34 26.0 -11
JCJ Chichijima 11.47 179 P **Pn 11 32 29.9 0.0**
baz=315,slow=20
JCJ S Sn 11 34 26.0 -11
comp=Z,2.8nm,0.3s,baz=270,slow=20,SNR=2.4
KLR Kul'dur 12.93 329 P **Pn 11 32 49.4 -0.3**
comp=Z,0.1nm,0.3s,baz=145,slow=16,SNR=3.5
KLR LR LR 11 37 43.4
comp=Z,226nm,19.7s,baz=136,slow=37
SKR Severo-Kuril's 15.69 35 *e*P **P 11 33 29.3 -0.8**
PETK Petropavlovsk- 18.12 32 LR LR 11 40 11.3
comp=Z,74nm,21.7s,baz=212,slow=34
TIA Tai'an 19.88 271⇓ P **P 11 34 14.5 -1.8**
TIA pmax pmax
comp=Z,10.0nm,0.7s
NJ2 Nanjing 19.94 258 *e*P **Pn 11 34 18.2 -0.8**
NJ2 pmax pmax
comp=Z,12nm,0.9s
BJI Beijing 20.00 282 P **P 11 34 17.1 -0.5**
BJI S **S 11 37 55.9 -4.1**
BJI pmax pmax
comp=Z,8.0nm,0.8s
BJI LR LR
comp=N,120nm,12.2s
BJI LR LR
comp=E,230nm,12.0s
BJI LR LR
comp=Z,130nm,30.7s
MA2 Magadan 21.74 12 P **P 11 34 34.8 -1.3**
comp=Z,10nm,0.8s,baz=217,slow=9.6,SNR=12
MA2 LR LR 11 43 33.8
comp=Z,40nm,18.0s,baz=231,slow=38
MA2 Magadan 21.74 12 P **P 11 34 34.8 -1.3**
MA2 pmax pmax
comp=Z,15nm,1.0s
MA2 MLR MLR
comp=Z,40nm,18.0s
HHC Hu-ho-hao-te 23.45 285 *e*P **P 11 34 52.6 -1.7**
HHC pP pP 11 35 06.4 +1.0
HHC PP **PnPn 11 35 25.1 +3.2**
HHC S **S 11 38 54.8 -10**
HHC pmax pmax
comp=Z,22nm,0.8s
HHC pmax pmax
comp=Z,130nm,4.5s
HHC LR LR
comp=N,530nm,11.5s
HHC LR LR
comp=E,590nm,12.1s
HHC LR LR
comp=Z,660nm,12.7s
WHN Wuhan 24.06 259⇓ *i*P **P 11 34 58.7 -1.3**
YAK Yakutsk 24.66 346 P **P 11 35 03.2 -1.8**
comp=Z,9.3nm,0.3s,baz=338,slow=3.2,SNR=6.3
YAK LR LR 11 45 05.2
comp=Z,52nm,21.0s,baz=176,slow=37
YAK Yakutsk 24.66 346 *e*P **P 11 35 03.9 -1.1**
YAK *e* 11 35 38.9
YAK *e*S **S 11 39 27.0 +3.7**
YAK *e*SS **SnSn 11 40 22.9 +11**
YAK *e* 11 46 03.6
YAK pmax pmax
comp=Z,27nm,0.9s
YAK pmax pmax
comp=N,8.0nm,1.0s
YAK pmax pmax
comp=E,3.0nm,1.0s
YAK pmax pmax
comp=Z,121nm,4.0s
YAK pmax pmax
comp=N,144nm,4.3s
YAK pmax pmax
comp=E,95nm,4.1s
YAK smax smax
comp=N,211nm,4.7s
YAK smax smax
comp=E,96nm,4.5s
YAK MLR MLR
comp=Z,60nm,17.0s
SEY Seymchan 25.18 11 P **P 11 35 10.9 +1.1**
comp=Z,12nm,0.9s,baz=203,slow=6.7,SNR=36
SEY Seymchan 25.18 11⇓ *e*P **P 11 35 11.1 +1.3**
BOD Bodaibo 26.47 326 *e*P **P 11 35 19.7 -1.9**
BOD pmax pmax
comp=Z,5.0nm,1.4s
ULN Ulaanbaatar 26.89 302*ce*P **P 11 35 25.5 -0.1**
ULN pmax pmax
comp=Z,5.0nm,1.0s
ULN Ulaanbaatar 26.89 302 *e*P **P 11 35 26.3 +0.7**
comp=Z,3.6nm,0.8s
XAN Xi'an 26.94 271 P **P 11 35 24.5 -1.6**
XAN pmax pmax
comp=Z,4.0nm,0.9s
XAN pmax pmax
comp=Z,540nm,6.5s
SONA1 Songino Array 27.32 301 *e*P **P 11 35 28.9 -0.5**

SONM Songino Array 27.32 301 P **P 11 35 27.9 -1.6**
comp=Z,2.1nm,0.9s,baz=95,slow=9.8,SNR=8.8
SONM LR LR 11 46 44.9
comp=Z,73nm,18.6s,baz=132,slow=37
ENH Enshi 27.95 263 *e*P **P 11 35 33.2 -1.9**
comp=Z,23nm,0.7s
TLY Talaya 29.68 309 P **P 11 35 49.5 -0.7**
comp=Z,4.3nm,0.8s,baz=106,slow=3.0,SNR=8.7
TLY Talaya 29.68 309 *e*P **P 11 35 49.8 -0.5**
TLY pmax pmax
comp=Z,8.0nm,1.0s
TLY MLR MLR
comp=Z,86nm,18.0s
TLY Talaya 29.68 309 *e*P **P 11 35 50.0 -0.3**
comp=Z,6.2nm,0.9s
ZAK Zakamensk 29.68 306 *e*P **P 11 35 49.3 -1.1**
ZAK pmax pmax
comp=Z,7.0nm,0.9s
LZH Lanzhou 30.28 277 *e*P **P 11 35 58.6 +2.7**
LZH pP sP 11 36 10.8 -2.1
LZH sP pP 11 36 15.5 +7.8
LZH PP **PnPn 11 36 55.4 +0.4**
LZH *e*S **S 11 40 53.2 +0.3**
LZH sS sS 11 41 14.8 +2.2
LZH SS **ScP 11 42 40.2 +5.9**
LZH pmax pmax
comp=Z,27nm,1.1s
LZH pmax pmax
comp=Z,91nm,4.5s
LZH LR LR
comp=N,2μm,13.7s
LZH LR LR
comp=E,2μm,12.8s
LZH LR LR
comp=Z,2μm,15.4s
MOY Mondy 31.30 308 *e*P **P 11 36 04.2 -0.5**
CD2 Chengdu 32.15 268 P **P 11 36 11.2 -1.1**
CD2 pmax pmax
comp=Z,1.0nm,0.5s
BILL Bilibino 32.41 17⇑ *e*P **P 11 36 14.3 +0.2**
BILL *e**PP **pP 11 36 26.1 +0.3**
BILL *e* 11 37 18.9
BILL *e* 11 39 00.6
BILL pmax pmax
comp=Z,3.0nm,1.0s
GTA Gaotai 32.56 285 *e*P **P 11 36 16.6 +0.6**
GTA pP pP 11 36 24.3 -3.4
GTA sP sP 11 36 27.6 -5.3
GTA S **S 11 41 29.1 +0.6**
GTA sS sS 11 41 41.6 -6.6
GTA SS **SnSn 11 43 25.0 -0.2**
GTA pmax pmax
comp=Z,4.0nm,0.9s
GTA pmax pmax
comp=Z,48nm,4.5s
GTA LR LR
comp=N,65nm,15.7s
GTA LR LR
comp=E,180nm,20.2s
GTA LR LR
comp=Z,180nm,18.5s
TIXI Tiksi 33.80 353 P **P 11 36 24.7 -1.5**
comp=Z,3.0nm,0.7s,baz=159,slow=6.7
TIXI Tiksi 33.80 353⇓ *e*P **P 11 36 24.9 -1.3**
TIXI pmax pmax
comp=Z,3.0nm,0.9s
TIXI Tiksi 33.80 353 *e*P **P 11 36 24.6 -1.6**
comp=Z,3.1nm,0.8s
KMI Kunming 35.66 260 P **P 11 36 42.8 -0.2**
KMI pmax pmax
comp=Z,14nm,0.8s
KMI pmax pmax
comp=Z,110nm,4.5s
WMQ Urumqi 40.56 295 P **P 11 37 24.6 +0.7**
WMQ pP pP 11 37 35.6 -0.3
WMQ sP sP 11 37 40.6 -0.5
WMQ PcS **PcS 11 43 18.0 +1.8**
WMQ sS sS 11 43 58.0 +7.9
WMQ Urumqi 40.56 295 ScS ScS 11 47 25.4 -0.3
WMQ pmax pmax
comp=Z,13nm,0.8s
WMQ pmax pmax
comp=Z,36nm,3.5s
WMQ LR LR
comp=N,8.0nm,17.0s
WMQ LR LR
comp=E,38nm,25.6s
WMQ LR LR
comp=Z,33nm,25.6s
ZAA0 Zalesovo Array 41.21 311 *e*P **P 11 37 27.9 -1.1**
ZAA0 *e*P **P 11 37 28.4 -0.7**
ZALV Zalesovo Beam 41.21 311 P **P 11 37 28.1 -1.0**
comp=Z,6.5nm,0.5s,baz=88,slow=7.6,SNR=26
ZALV PcP **PcP 11 39 26.8 -0.5**
comp=Z,1.8nm,0.5s,baz=93,slow=2.9,SNR=3.8
NRIK Noril'sk 42.05 334 P **P 11 37 33.7 -1.9**
comp=Z,2.5nm,0.4s,baz=116,slow=7.2,SNR=3.5
NRIK LR LR 11 55 58.4
comp=Z,101nm,19.9s,baz=100,slow=37
NVS Novosibirsk 42.10 312 *e*P **P 11 37 33.7 -2.6**
CMAR Chiang Mai Arr 42.34 254 P **P 11 37 37.7 -1.0**
comp=Z,0.8nm,0.4s,baz=49,slow=7.3,SNR=3.5
CMAR LR LR 11 56 35.9
comp=Z,22nm,20.1s,baz=195,slow=38
MK01 Makanchi Array 43.69 301 *e*P **P 11 37 48.0 -1.3**
MK31 Makanchi Array 43.69 301 *e*P **P 11 37 48.6 -0.7**
MK31 Makanchi Array 43.69 301 *e*P **P 11 37 48.6 -0.7**
MKAR Makanchi Array 43.69 301 P **P 11 37 48.5 -0.8**
comp=Z,6.9nm,0.9s,baz=83,slow=9.9,SNR=40
MKAR LR LR 11 56 10.2
comp=Z,46nm,21.3s,baz=88,slow=36
MKAR Makanchi Array 43.69 301 *e*P **P 11 37 48.6 -0.7**
MAKZ Makanchi 43.90 301 *e*P **P 11 37 50.3 -0.7**
MAKZ pmax pmax
comp=Z,12nm,1.0s
MAKZ Makanchi 43.90 301 *e*P **P 11 37 50.3 -0.7**
comp=Z,12nm,1.0s
KURK Kurchatov 45.34 307 *e*P **P 11 38 01.1 -1.3**
KURK pmax pmax
comp=Z,42nm,1.0s
KURK Kurchatov 45.34 307 *e*P **P 11 38 01.1 -1.3**
comp=Z,42nm,1.0s
KURBB Kurchatov Arra 45.41 307 P **P 11 38 01.9 -1.0**
comp=Z,31nm,0.8s,baz=82,slow=8.3,SNR=150
KDAK Kodiak Island 45.65 43 *i* P **P 11 38 05.9 +1.2**
ILAR Eielson Array 47.94 33 P **P 11 38 22.9 +0.3**
comp=Z,1.3nm,0.7s,baz=270,slow=6.5,SNR=17
ILAR pP **pP 11 38 34.7 -0.1**
comp=Z,1.3nm,0.9s,baz=262,slow=5.8,SNR=5.7
ILAR Eielson Array 47.94 33 P **P 11 38 22.9 +0.3**
ILAR *PP **pP 11 38 34.7 -0.1**
ILAR pmax pmax
comp=Z,1.0nm,0.7s
ILAR pmax pmax
comp=Z,1.0nm,0.9s
TKM2 Tokmak 2 49.30 297 *e*P **P 11 38 33.3 -0.3**
TKM2 pmax pmax
comp=Z,10.0nm,0.9s
TKM2 Tokmak 2 49.30 297 *e*P **P 11 38 33.3 -0.3**
comp=Z,9.6nm,0.9s
BVAR Borovoye Array 49.87 311 P **P 11 38 36.6 -0.9**
comp=Z,3.0nm,0.6s,baz=79,slow=7.5,SNR=18
BVAR PcP **PcP 11 39 57.1 -0.3**
comp=Z,2.3nm,0.7s,baz=62,slow=3.5,SNR=5.5
BRVK Borovoye 49.92 312*c i*P **P 11 38 36.8 -1.1**
BRVK pmax pmax
comp=Z,11nm,1.2s
AAK Ala-Archa 50.16 297 P **P 11 38 38.6 -1.4**
comp=Z,0.8nm,0.3s,baz=101,slow=5.2,SNR=4.8
AAK Ala-Archa 50.16 297⇑ *e*P **P 11 38 38.8 -1.3**
AAK pmax pmax
comp=Z,5.0nm,1.0s
KSH Kashi 50.19 293 *e*P **P 11 38 43.9 +3.6**
KSH *e*pP sP 11 38 56.0 -1.7
KSH *e*PP **PP 11 40 40.3 +4.7**
KSH S **S 11 45 51.0 +1.7**
KSH pmax pmax
comp=Z,56nm,4.1s
KSH LR LR
comp=N,84nm,7.1s
KSH LR LR
comp=E,82nm,6.9s
IPM Ipoh 50.34 238 *e*P **P 11 38 40.7 -0.8**
comp=E,13nm,1.0s
HNR Honiara 50.63 157 LR LR 11 58 32.5
comp=E,47nm,19.9s,baz=14,slow=34

ZRNK Zerenda 50.70 312 *e*P **P 11 38 43.1 -0.7**
ZRNK pmax pmax
comp=Z,8.0nm,0.8s
ZRNK Zerenda 50.70 312 *e*P **P 11 38 43.1 -0.7**
comp=Z,8.0nm,0.8s
KKAR Karatay Array 52.74 299 *e*P **P 11 38 58.4 -0.8**
KKAR Karatay Array 52.74 299 *e*P **P 11 38 58.4 -0.8**
SVE Sverdlovsk 54.28 318⇑ *i*P **P 11 39 10.1 -0.1**
SVE pmax pmax
comp=Z,17nm,0.9s
ARU Arti 55.50 318 P **P 11 39 18.0 -1.0**
comp=Z,4.6nm,0.6s,baz=74,slow=3.4,SNR=13
ARU Arti 55.50 318*c i*P **P 11 39 17.9 -1.0**
ARU 11 40 17.1
ARU 11 41 19.1
ARU S **S 11 47 00.9 +0.1**
ARU SS **SS 11 50 38.1 -7.3**
ARU pmax pmax
comp=Z,13nm,1.0s
ARU Arti 55.50 318 *e*P **P 11 39 18.4 -0.6**
comp=Z,10nm,0.9s
ABKAR Akbulak array 57.29 310 *e*P **P 11 39 30.7 -1.1**
AKTO Aktyubinsk 57.98 311 P **P 11 39 35.4 -1.3**
comp=Z,4.9nm,0.7s,baz=64,slow=11,SNR=20
WRAB Tennant Creek 58.66 188⇓ *e*P **P 11 39 40.8 -0.9**
WRAB pmax pmax
comp=Z,9.0nm,1.0s
WRA Warramunga Arr 58.67 188 P **P 11 39 40.8 -0.9**
comp=Z,2.9nm,0.8s,baz=6.0,slow=7.1,SNR=22
WRA pP **pP 11 39 55.2 +0.9**
comp=Z,3.6nm,0.8s,baz=6.3,slow=7.3,SNR=12
RES Resolute Bay 60.98 15 *e*P **P 11 39 56.5 -0.5**
RES *e**PP **sP 11 40 12.8 -1.8**
RES Resolute Bay 60.98 15 *e*P **P 11 39 56.5 -0.5**
RES *e*pP **sP 11 40 12.8 -1.8**
YKA Yellowknife Ar 62.24 31 P **P 11 40 05.7 +0.1**
comp=Z,0.8nm,0.8s,baz=301,slow=6.6,SNR=18
YKA pP **pP 11 40 19.7 +1.4**
comp=Z,0.4nm,0.7s,baz=298,slow=5.7,SNR=4.1
ASAR Alice Springs 62.39 188 P **P 11 40 06.8 -0.3**
comp=Z,0.9nm,0.7s,baz=14,slow=5.3,SNR=10
ASAR pP **pP 11 40 20.8 +1.1**
comp=Z,2.8nm,0.8s,baz=12,slow=7.3,SNR=17
ARCES ARCESS Array B 62.70 339 P **P 11 40 07.6 -1.0**
comp=Z,1.4nm,0.9s,baz=56,slow=7.4,SNR=6.1
GEYT Alibeck 63.48 299 P **P 11 40 13.7 -0.7**
comp=Z,2.8nm,0.6s,baz=48,slow=2.2,SNR=4.1
GEYT LR LR 12 09 42.6
comp=Z,32nm,18.9s,baz=95,slow=38
OBN Obninsk 67.12 323⇓ *e*P **P 11 40 36.8 -0.7**
OBN *e* 11 41 05.6
OBN *e*S **S 11 49 34.1 +5.9**
OBN *e*SS **SS 11 53 49.6 +2.6**
OBN pmax pmax
comp=Z,6.0nm,1.2s
OBN MLR MLR
comp=Z,43nm,16.0s
FIA1 FINESS Array S 67.64 332 *e*P **P 11 40 39.7 -1.1**
FINES FINESS Array B 67.65 332 P **P 11 40 39.9 -0.8**
comp=Z,5.2nm,0.8s,baz=45,slow=8.4,SNR=13
FINES LR LR 12 11 28.9
comp=Z,49nm,21.4s,baz=0.0,slow=37
FINES FINESS Array B 67.65 332 *i* P **P 11 40 40.0 -0.8**
FINES pmax pmax
comp=Z,5.0nm,0.8s
AFI Afiamalu 67.80 131 LR LR 12 02 55.9
comp=Z,29nm,21.5s,baz=311,slow=29
SUMG Summit 69.13 0 *e*P **P 11 40 50.6 +0.2**
SUMG pmax pmax
comp=Z,7.0nm,0.9s
SUMG Summit 69.13 0 *e*P **P 11 40 50.6 +0.2**
comp=Z,6.8nm,0.9s
GOF Gofitskoye 69.39 312⇑ *e*P **P 11 40 50.3 -1.7**
KIV Kislovodsk 70.23 311 *e*P **P 11 40 57.2 -0.1**
KIV pmax pmax
comp=Z,20nm,0.9s
KIV MLR MLR
comp=Z,21nm,17.0s
KIV Kislovodsk 70.23 311 *e*P **P 11 40 58.0 +0.7**
comp=Z,23nm,1.0s
KBZ Khabaz 70.23 310 P **P 11 40 56.9 -0.3**
comp=Z,6.6nm,0.9s,baz=52,slow=5.1,SNR=15
KBZ LR LR 12 15 46.0
comp=Z,27nm,18.3s,baz=94,slow=39
NEY Neytrino 70.61 310⇑ *e*P **P 11 41 00.4 +0.7**
NEY pmax pmax
comp=Z,1.0nm,0.9s
HFS Hagfors 72.85 336 P **P 11 41 12.2 -0.4**
comp=Z,8.0nm,0.9s,baz=74,slow=6.3,SNR=9.8
HFS sP **sP 11 41 30.9 +0.4**
comp=Z,1.2nm,0.4s,baz=46,slow=6.4,SNR=2.5
NC204 NORSAR Array S 72.87 338 *e*P **P 11 41 12.9 +0.1**
NB2 NORSAR Subarra 72.92 337 P **P 11 41 11.9 -1.2**
comp=Z,4.8nm,0.8s,baz=38,slow=6.2
NOA NORSAR Array B 72.92 337 P **P 11 41 11.5 -1.6**
comp=Z,3.6nm,0.7s,baz=38,slow=5.9,SNR=12
NOA sP **sP 11 41 31.1 +0.2**
comp=Z,2.0nm,0.8s,baz=39,slow=5.9,SNR=4.1
NOA LR LR 12 15 39.9
comp=Z,46nm,21.9s,baz=290,slow=38
NBO02 NORSAR Array S 73.02 337 *e*P **P 11 41 13.0 -0.7**
AKASG Malin Array Be 73.34 322 P **P 11 41 14.5 -1.2**
comp=Z,2.7nm,0.7s,baz=47,slow=6.1,SNR=12
AKASG sP **sP 11 41 33.2 -0.4**
comp=Z,1.0nm,0.5s,baz=45,slow=6.3,SNR=3.1
NVAR Mina Array Bea 73.70 54 P **P 11 41 19.2 +0.9**
comp=Z,0.7nm,0.8s,baz=280,slow=5.8,SNR=3.9
BW06 Boulder Array 76.26 46 *e*P **P 11 41 33.1 +0.1**
PD31 Pinedale Array 76.26 46 *e*P **P 11 41 33.6 +0.5**
PDAR Pinedale Array 76.26 46 P **P 11 41 33.5 +0.5**
comp=Z,1.0nm,0.7s,baz=270,slow=2.8,SNR=13
PDAR pP **pP 11 41 48.0 +2.0**
comp=Z,0.5nm,0.6s,baz=280,slow=1.8,SNR=3.5
BUR08 Bucovina Ar. S 77.35 322 *e*P **P 11 41 38.8 -0.2**
SRU San Rafael Swe 78.05 49 *e*P **P 11 41 44.6 +1.5**
SRU pmax pmax
comp=Z,3.0nm,0.8s
SRU San Rafael Swe 78.05 49 *e*P **P 11 41 44.6 +1.5**
comp=Z,2.6nm,0.8s
BRTR Keskin Array B 78.15 312 P **P 11 41 42.8 -0.8**
comp=Z,0.5nm,0.5s,baz=79,slow=7.5,SNR=5.7
BR231 Keskin MP Arra 78.58 312 *e*P **P 11 41 43.0 -2.9**
DPC Dobruska-Polom 79.38 328 *e*P **P 11 41 50.0 0.0**
DPC Dobruska-Polom 79.38 328 *e*P **P 11 41 50.0 0.0**
PV10 Paradox Valley 79.41 49 *e*P **P 11 41 52.6 +1.9**
BRG Berggiesshubel 79.94 330 *e*P **P 11 41 48.6 -4.4**
comp=Z,1.7nm,0.7s
BRG Berggiesshubel 79.94 330 *e*P **P 11 41 48.6 -4.4**
BRG pmax pmax
comp=Z,2.0nm,0.7s
CLL Collm 79.97 330 *i* P **P 11 41 52.6 -0.5**
comp=Z,6.0nm,0.6s
CLL Collm 79.97 330 *i* P **P 11 41 52.6 -0.5**
CLL pmax pmax
comp=Z,6.0nm,0.6s
VRAC Vranov 80.06 327 P **P 11 41 54.1 +0.4**
comp=Z,3.1nm,0.6s,baz=69,slow=8.6,SNR=4.3
MMAI Mount Meron Ar 81.43 305 P **P 11 42 01.2 -0.2**
comp=Z,0.9nm,0.4s,baz=86,slow=39,SNR=3.4
KHC Kasperske Hory 81.45 329 *e*P **P 11 42 00.8 -0.4**
KHC Kasperske Hory 81.45 329 *e*P **P 11 42 00.5 -0.7**
KHC pmax pmax
comp=Z,2.0nm,0.9s
KHC Kasperske Hory 81.45 329 *e*P **P 11 42 00.5 -0.7**
comp=Z,1.8nm,0.9s
GERES GERESS Array B 81.62 328 P **P 11 42 01.3 -0.8**
comp=Z,0.6nm,0.4s,baz=32,slow=5.3,SNR=7.3
GERES sP **sP 11 42 20.0 -0.1**
comp=Z,0.5nm,0.4s,baz=44,slow=5.9,SNR=3.1
SPMN Marine on St. 83.10 36 *e*P **P 11 42 13.6 +3.8**
comp=Z,91nm,0.1s
PMOR Pomariorio Ree 84.40 114 *e*T T 13 15 40.7
comp=Z,16nm,0.2s
FUORN Ofenpass-Fuorn 84.80 329 *e*P **P 11 42 18.7 -0.1**
comp=Z,10.0nm,0.8s
DAVOX Davos/Dischmat 84.82 329 P **P 11 42 18.7 -0.1**
comp=Z,2.6nm,0.5s,baz=9.3,slow=18,SNR=3.5
PPT Papeete 84.94 117 LR LR 12 11 20.6
comp=Z,59nm,21.8s,baz=12,slow=29
PPT2 Papeete2 84.95 117 *e*LR LR 12 09 38.6
comp=Z,93nm,26.5s
PPT2 Papeete2 84.95 117 *e*T T 13 16 25.7
comp=Z,3.8nm,0.3s
MEH Mehetia 86.20 116 *e*T T 13 18 00.5
comp=Z,21nm,0.2s
TXAR Lajitas Array 88.82 53 P **P 11 42 39.1 +0.6**

comp=Z,0.4nm,0.7s,baz=302,slow=1.7,SNR=3.2
TXAR pP **pP** 11 42 52.8 +1.2
comp=Z,0.9nm,0.7s,baz=328,slow=5.9,SNR=4.8
LPAZ La Paz 145.50 58 PKPbc **PKPdf** 11 49 22.7 -0.6
comp=Z,1.8nm,0.7s,baz=333,slow=3.4,SNR=8.4

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*IDC **02** 11:43:26.2±0.6, 30°.74N×105°.76W, h0km, mb4.1/11, mb1 4.3/18, mb1mx4.1/40, mbtmp4.1/18, ML3.9/7, MS3.4/13, Ms1 3.4/13, ms1mx3.2/39, Error ellipse: s-maj=15.6km s-min=5.6km az=43.0*
*NEIC **02** 11:43:28.2±0.3, 30°.73N×105°.72W, h10km, mb4.3/36, MW4.2, MD4.5(MEX), Error ellipse: s-maj=5.0km s-min=3.4km az=193.0, Moment Tensor Solution. s42 Moment tensor: Scale 10^15Nm; Mrr-2.25; Mθθ 0.00; Mφφ2.25; Mrθ-0.35; Mθφ-0.60; Mφr-1.30; Best double couple: M=2.70000×10^15 NP1:φs152.00000°, δ33.00000°, λ-114.00000°. NP2:φs0.00000°, δ60.00000°, λ-75.00000°. Principal axes: T 2.6900, Plg14.0000°, Azm79.0000°; N 0.0000, Plg13.0000°, Azm172.0000°; P -2.6900, Plg71.0000°, Azm304.0000°;*
NEIC Felt at Ciudad Juarez. Felt [II] at El Paso, Texas. Felt at Santa Teresa, New Mexico.
*MEX **02** 11:43:28.6±0.6, 30°.75N×105°.66W, h5km±12km, MD4.5*
ISC 02 11:43:27.4±0.9, 30°.74N±0°.03×105°.70W±0°.04, h7km±5km, n267, σ1$56/262, mb4.3/15, MS3.5/4, Texas-Mexico border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MNTX	**Cornudas Mount**	**0.99**	**16**	P	**Pg**	**11 43 44.9**	**-1.6**
	baz=192						
MNTX				S	**Sg**	**11 43 58.7**	**-0.7**
	baz=192						
MNTX	**Cornudas Mount**	**0.99**	**16**	*i* P	**Pg**	**11 43 45.0**	**-1.4**
MNTX				*e*Sg	**Sg**	**11 43 58.1**	**-1.3**
GDL2	**Guadalupe Moun**	**1.85**	**38**	*e*Pn	**Pn**	**11 44 00.3**	**+0.6**
GDL2				*e*Sn	**Sg**	**11 44 25.9**	**-0.9**
CGIG		**2.00**	**260**	*e*P	**Pn**	**11 44 00.9**	**-1.0**
CGIG				*e*S	**Sn**	**11 44 24.6**	**-2.7**
CGIG		**2.00**	**260**	*e*P	**Pn**	**11 44 00.9**	**-1.0**
CGIG				*e*S	**Sn**	**11 44 24.6**	**-2.7**
CLNB	**Carlsbad**	**2.17**	**45**	*e*Pn	**Pb**	**11 44 05.7**	**-1.4**
CLNB				*e*Sn	**Sb**	**11 44 34.9**	**+0.6**
TX31	**Lajitas Ar. Si**	**2.25**	**128**	*e*Pn	**Pb**	**11 44 08.1**	**-0.3**
TX31				*e*Pn	**Pg**	**11 44 08.7**	**-1.8**
TX31				*e*Sn	**Sb**	**11 44 37.9**	**+1.3**
TX31				*e*Sn	**Sg**	**11 44 39.3**	**-0.4**
TXAR	**Lajitas Array**	**2.25**	**128**	Pn	**Pn**	**11 44 05.3**	**+0.1**
	70nm,0.3s,baz=306,slow=16,SNR=292						
TXAR				Pg	**Pb**	**11 44 08.5**	**+0.1**
	125nm,0.3s,baz=310,slow=17,SNR=290						
TXAR				Lg	Lg	11 44 38.8	
	716nm,0.3s,baz=308,slow=27,SNR=44						
TXAR				LR	LR	11 45 16.9	
	comp=Z,2μm,18.3s,baz=0.0,slow=48						
121A	**Cookes Peak, D**	**2.52**	**316**	P	**Pn**	**11 44 07.9**	**-1.1**
	baz=135						
121A				S	**Sn**	**11 44 40.1**	**-0.1**
	baz=135						
121A	**Cookes Peak, D**	**2.52**	**316**	*e*P	**Pn**	**11 44 07.7**	**-1.3**
121A				*e*S	**Sn**	**11 44 37.5**	**-2.7**
121A	**Cookes Peak, D**	**2.52**	**316**	*e*Pn	**Pn**	**11 44 07.9**	**-1.1**
121A				*e*Sn	**Sb**	**11 44 43.7**	**-0.8**
Y22D	**IRIS PASSCAL I**	**3.48**	**343**	P	**Pn**	**11 44 21.9**	**-0.2**
	baz=162						
Y22D	**IRIS PASSCAL I**	**3.48**	**343**	*e*Pn	**Pn**	**11 44 22.1**	**-0.1**
BNM	**Barren Site**	**3.49**	**347**	*e*Pn	**Pn**	**11 44 22.1**	**-0.3**
LPM	**Los Pinos Moun**	**3.65**	**348**	*e*Pn	**Pn**	**11 44 24.0**	**-0.4**
HPIG		**3.79**	**180**	*e*P	**Pn**	**11 44 25.3**	**-1.2**
HPIG				*i* S	**Sn**	**11 45 08.8**	**-2.7**
HPIG		**3.79**	**180**	*e*Pn	**Pn**	**11 44 26.6**	**+0.1**
HPIG				*i* S	**Sn**	**11 45 08.8**	**-2.7**
LAZ	**Ladron**	**3.85**	**342**	*e*Pn	**Pn**	**11 44 27.0**	**-0.2**
MSTX	**Muleshoe**	**4.06**	**37**	P	**Pn**	**11 44 30.3**	**+0.2**
	baz=217						
MSTX				Sb	**Sg**	**11 45 32.8**	**-5.1**
	baz=217						
MSTX	**Muleshoe**	**4.06**	**37**	*e*Pn	**Pn**	**11 44 30.4**	**+0.2**
ANMO	**Albuquerque**	**4.24**	**352**	Pn	**Pn**	**11 44 33.0**	**+0.3**
	1.7nm,0.3s,baz=167,slow=15,SNR=45						
ANMO				Pg	**Pb**	**11 44 43.2**	**+0.7**
	9.7nm,0.3s,baz=163,slow=18,SNR=44						
ANMO				Lg	Lg	11 45 39.6	
	48nm,0.3s,baz=59,slow=18,SNR=6.8						
ANMO				LR	LR	11 46 19.5	
	comp=Z,372nm,19.5s,baz=184,slow=41						
ANMO	**Albuquerque**	**4.24**	**352**	P	**Pn**	**11 44 32.6**	**-0.1**
	baz=171						
ANMO	**Albuquerque**	**4.24**	**352**	*e*P	**Pn**	**11 44 31.4**	**-1.2**
ANMO				*e*S	**Sn**	**11 45 20.9**	**-1.7**
ANMO	**Albuquerque**	**4.24**	**352**	*e*Pn	**Pn**	**11 44 32.6**	**-0.1**
ANMO				Pg	**Pb**	**11 44 43.2**	**+0.7**
ANMO				Lg	Lg	11 45 39.6	
TUC	**Tucson**	**4.62**	**291**	P	**Pn**	**11 44 36.7**	**-1.1**
	baz=110						
TUC	**Tucson**	**4.62**	**291**	*e*Pn	**Pn**	**11 44 36.6**	**-1.1**
TUC				*e*S	**Sn**	**11 45 30.3**	**-1.4**
HSIG		**4.87**	**251**	*e*P	**Pn**	**11 44 40.3**	**-0.9**
HSIG				*e*S	**Sn**	**11 45 36.6**	**-1.3**
HSIG		**4.87**	**251**	*e*Pn	**Pn**	**11 44 40.6**	**-0.6**
HSIG				*e*S	**Sn**	**11 45 36.6**	**-1.3**
JCT	**Junction City**	**5.09**	**91**	P	**Pn**	**11 44 44.9**	**+0.7**
	baz=273						
JCT	**Junction City**	**5.09**	**91**	*e*Pn	**Pn**	**11 44 45.0**	**+0.8**
X18A	**Snowflake**	**5.21**	**318**	*e*Pn	**Pn**	**11 44 46.7**	**+0.7**
AMTX	**Amarillo**	**5.34**	**38**	P	**Pn**	**11 44 47.7**	**+0.1**
	baz=219						
AMTX	**Amarillo**	**5.34**	**38**	*e*Pn	**Pn**	**11 44 48.1**	**+0.5**
ABTX	**Abilene, Hawle**	**5.49**	**68**	P	**Pn**	**11 44 49.6**	**0.0**
	baz=250						
ABTX	**Abilene, Hawle**	**5.49**	**68**	*e*Pn	**Pn**	**11 44 49.7**	**0.0**
W18A	**Petrified Fore**	**5.53**	**323**	P	**Pn**	**11 44 50.8**	**+0.4**
	baz=141						
W18A	**Petrified Fore**	**5.53**	**323**	*e*Pn	**Pn**	**11 44 50.9**	**+0.5**
832A	**Faith Ranch, C**	**5.55**	**115**	P	**Pn**	**11 44 50.4**	**-0.2**
	baz=297						
433A	**Art**	**5.69**	**88**	P	**Pn**	**11 44 52.0**	**-0.3**
	baz=270						
333A	**Richland Sprin**	**5.79**	**83**	P	**Pn**	**11 44 54.5**	**+0.7**
	baz=265						
633A	**Saathoff Ranch**	**5.79**	**101**	P	**Pn**	**11 44 54.9**	**+1.1**
	baz=284						
533A	**Kerrville**	**5.79**	**95**	P	**Pn**	**11 44 55.3**	**+1.4**
	baz=277						
233A	**Rising Star**	**5.95**	**76**	P	**Pn**	**11 44 55.8**	**-0.2**
	baz=258						
833A	**Chaparral WMA,**	**6.00**	**112**	P	**Pn**	**11 44 56.2**	**-0.4**
	baz=295						
133A	**Hamilton Ranch**	**6.07**	**70**	P	**Pn**	**11 44 57.0**	**-0.7**
	baz=253						
X16A	**Lo Mia Camp, P**	**6.08**	**309**	*e*Pn	**Pn**	**11 44 58.1**	**+0.2**
214A	**Organ Pipe Nat**	**6.21**	**283**	P	**Pn**	**11 44 58.7**	**-0.7**
	baz=100						
214A	**Organ Pipe Nat**	**6.21**	**283**	*e*P	**Pn**	**11 44 58.8**	**-0.7**
214A				*i* S	**Sn**	**11 46 09.5**	**-1.3**
214A	**Organ Pipe Nat**	**6.21**	**283**	*e*Pn	**Pn**	**11 44 58.9**	**-0.7**
	275nm,0.6s						
534A	**Blanco**	**6.28**	**95**	P	**Pn**	**11 45 01.0**	**+0.5**
	baz=277						
434A	**Burnet**	**6.39**	**87**	P	**Pn**	**11 45 01.4**	**-0.7**
	baz=270						
Z33A	**Whitaker Ranch**	**6.41**	**65**	P	**Pn**	**11 45 01.9**	**-0.4**
	baz=247						
933A	**Laredo**	**6.42**	**117**	P	**Pn**	**11 45 02.5**	**+0.1**
	baz=300						
334A	**Lometa**	**6.43**	**83**	P	**Pn**	**11 45 02.2**	**-0.3**
	baz=266						
T25A	**Trinidad**	**6.47**	**9**	*e*Pn	Pb	11 45 12.7	-7.8
X32A	**Elmer**	**6.54**	**54**	P	**Pn**	**11 45 04.3**	**+0.3**
	baz=236						
234A	**Clairette**	**6.59**	**77**	P	**Pn**	**11 45 03.7**	**-1.0**
	baz=260						
WUAZ	**Wupatki**	**6.73**	**317**	*e*Pn	Pn	11 45 10.8	+3.9
134A	**White-Moore Ra**	**6.75**	**72**	P	**Pn**	**11 45 05.8**	**-1.1**
	baz=255						
Y33A	**Hilltop Ranch,**	**6.81**	**60**	P	**Pn**	**11 45 07.4**	**-0.3**
	baz=242						
MVCO	**Mesa Verde**	**6.86**	**341**	P	**Pn**	**11 45 10.2**	**+1.5**
	baz=159						
MVCO	**Mesa Verde**	**6.86**	**341**	*e*Pn	**Pn**	**11 45 10.2**	**+1.5**
Y14A	**Wickenburg**	**6.96**	**299**	*e*Pn	**Pn**	**11 45 09.4**	**-0.4**
W32A	**Sentinel**	**6.96**	**49**	P	**Pn**	**11 45 09.9**	**0.0**
	baz=232						
435B	**Jarrell**	**6.98**	**88**	P	**Pn**	**11 45 12.0**	**+1.9**
	baz=271						
SDCO	**Great Sand Dun**	**6.99**	**1**	*e*Pn	**Pn**	**11 45 13.5**	**+3.0**
S22A	**4UR Ranch, Cre**	**7.05**	**353**	*e*Pn	Pn	11 45 16.8	+5.5
535A	**Dale**	**7.05**	**94**	P	**Pn**	**11 45 13.0**	**+1.8**
	baz=277						
WMOK	**Wichita Mounta**	**7.06**	**54**	*e*Pn	**Pn**	**11 45 10.7**	**-0.5**
335A	**Moody**	**7.12**	**84**	P	**Pn**	**11 45 11.7**	**-0.3**
	baz=267						
X33A	**Lawton**	**7.15**	**56**	P	**Pn**	**11 45 12.5**	**0.0**
	baz=239						
WHTX	**Lake Whitney,**	**7.16**	**78**	P	**Pn**	**11 45 12.4**	**-0.1**
	baz=261						
WHTX	**Lake Whitney,**	**7.16**	**78**	*e*Pn	**Pn**	**11 45 12.9**	**+0.3**
113A	**Mohawk Valley,**	**7.16**	**288**	*e*Pn	**Pn**	**11 45 12.3**	**-0.4**
135A	**Vickery Place,**	**7.29**	**73**	P	**Pn**	**11 45 14.3**	**-0.2**
	baz=257						
Y34A	**Reagan Ranch,**	**7.44**	**62**	P	**Pn**	**11 45 15.2**	**-1.2**
	baz=246						
W33A	**Caddo, Fort Co**	**7.50**	**52**	P	**Pn**	**11 45 18.2**	**+1.0**
	baz=235						
X34A	**Smith Ranch, M**	**7.66**	**58**	P	**Pn**	**11 45 19.5**	**0.0**
	baz=241						
PV01	**Paradox Valley**	**7.75**	**343**	*e*Pn	**Pn**	**11 45 23.4**	**+2.6**
LPIG	**La Paz**	**7.78**	**213**	LR	LR	11 47 59.0	
	comp=Z,185nm,18.4s,baz=16,slow=35						
PV05	**Paradox Valley**	**7.84**	**340**	*e*Pn	**Pn**	**11 45 24.3**	**+2.2**
U15A	**North Rim**	**7.90**	**318**	*e*Pn	Pn	11 45 33.5	+10
V33A	**Lossen Ranch,**	**8.01**	**49**	P	**Pn**	**11 45 24.1**	**-0.1**
	baz=232						
LNIG	**Linares**	**8.02**	**135**	*e*P	**Pn**	**11 45 25.1**	**+0.7**
LNIG	**Linares**	**8.02**	**135**	*e*P	**Pn**	**11 45 25.1**	**+0.7**
W34A	**Bridge Creek,**	**8.02**	**54**	*e*Pn	**Pn**	**11 45 23.9**	**-0.5**
Y12C	**Blythe**	**8.06**	**294**	P	**Pn**	**11 45 24.5**	**-0.4**
	baz=110						
Y12C	**Blythe**	**8.06**	**294**	*e*Pn	**Pn**	**11 45 24.6**	**-0.3**
PV04	**Paradox Valley**	**8.08**	**342**	*e*Pn	**Pn**	**11 45 27.9**	**+2.6**
GLA	**Glamis**	**8.10**	**289**	P	**Pn**	**11 45 25.2**	**-0.3**
	baz=105						
GLA	**Glamis**	**8.10**	**289**	*e*Pn	**Pn**	**11 45 25.2**	**-0.3**
PV10	**Paradox Valley**	**8.10**	**341**	*e*Pn	**Pn**	**11 45 26.8**	**+1.1**
W13A	**Hualapai Mount**	**8.14**	**304**	*e*Pn	**Pn**	**11 45 26.9**	**+0.7**
X35A	**Drake**	**8.21**	**61**	P	**Pn**	**11 45 25.6**	**-1.5**
	baz=245						
PV09	**Paradox Valley**	**8.24**	**341**	*e*Pn	**Pn**	**11 45 29.2**	**+1.5**
ZAIG	**Zacatecas**	**8.42**	**160**	*e*P	**Pn**	**11 45 31.0**	**+0.8**
ZAIG				*i* S	**Sn**	**11 47 03.4**	**-2.2**
ZAIG	**Zacatecas**	**8.42**	**160**	*e*Pn	**Pn**	**11 45 31.1**	**+1.0**
ZAIG				*i* S	**Sn**	**11 47 03.4**	**-2.2**
SMCO	**Snowmass**	**8.48**	**353**	*e*Pn	Pn	11 45 34.9	+3.8
V34A	**Guthrie**	**8.52**	**51**	*e*Pn	**Pn**	**11 45 30.3**	**-1.0**
HKT	**Hockley**	**8.56**	**93**	*e*Pn	**Pn**	**11 45 31.7**	**0.0**
KNB	**Kanab**	**8.62**	**318**	*e*Pn	Pn	11 45 40.3	+7.6
PKCU	**Pink Cliffs**	**8.64**	**322**	*e*Pn	Pn	11 45 38.1	+4.9
IRM	**Iron Mountain**	**8.68**	**296**	P	**Pn**	**11 45 33.1**	**-0.4**
	baz=111						
BC3	**Big Chuckawall**	**8.76**	**292**	P	**Pn**	**11 45 33.9**	**-0.8**
	baz=107						
LCMT	**Little Creek M**	**8.86**	**317**	*e*Pn	Pn	11 45 41.6	+5.6
U34A	**Anderson Ranch**	**8.86**	**48**	P	**Pn**	**11 45 34.9**	**-1.0**
	baz=232						
U34A	**Anderson Ranch**	**8.86**	**48**	*e*Pn	**Pn**	**11 45 34.5**	**-1.5**
LDFC	**Landfair**	**9.02**	**301**	*e*Pn	**Pn**	**11 45 40.4**	**+2.2**
ISCO	**Idaho Springs**	**9.04**	**0**	*e*Pn	Pn	11 45 42.1	+3.4
MTPU	**Mount Pierson**	**9.04**	**325**	*e*Pn	**Pn**	**11 45 40.3**	**+1.6**
SRU	**San Rafael Swe**	**9.24**	**336**	*e*Pn	**Pn**	**11 45 42.6**	**+1.3**
BELC	**Belle Mtn. Jos**	**9.30**	**293**	P	**Pn**	**11 45 41.2**	**-0.9**
	baz=108						
GMRC	**Granite Mounta**	**9.31**	**298**	P	**Pn**	**11 45 41.7**	**-0.5**
	baz=113						
U35A	**Pawnee**	**9.35**	**51**	P	**Pn**	**11 45 41.6**	**-1.0**
	baz=235						
MSU	**Marysvale**	**9.41**	**327**	*e*Pn	**Pn**	**11 45 45.4**	**+1.8**
T34A	**McClaskey Farm**	**9.44**	**46**	P	**Pn**	**11 45 43.1**	**-0.8**
	baz=230						
NATX	**Nacogdoches**	**9.50**	**81**	*e*Pn	**Pn**	**11 45 44.8**	**0.0**
X37A	**Clayton**	**9.51**	**64**	P	**Pn**	**11 45 43.6**	**-1.2**
	baz=248						
PFO	**Pinyon Flats O**	**9.56**	**290**	Pn	**Pn**	**11 45 44.5**	**-1.1**
	1.0nm,0.3s,baz=92,slow=16,SNR=13						
PFO				Lg	Lg	11 48 29.9	
	0.3nm,0.3s,baz=157,slow=15,SNR=5.0						
PFO				LR	LR	11 49 46.5	
	comp=Z,257nm,21.6s,baz=100,slow=40						
PFO	**Pinyon Flats O**	**9.56**	**290**	P	**Pn**	**11 45 44.5**	**-1.1**
	baz=105						
PFO	**Pinyon Flats O**	**9.56**	**290**	*e*Pn	**Pn**	**11 45 43.9**	**-1.7**
PFO				Lg	Lg	11 48 29.9	
P18A	**Preston Nutter**	**9.61**	**338**	*e*Pn	**Pn**	**11 45 49.6**	**+3.1**
P17A	**Butcher Ranch,**	**9.64**	**336**	*e*Pn	Pn	11 45 51.6	+4.8
TMUT	**Trail Mountain**	**9.65**	**334**	*e*Pn	**Pn**	**11 45 49.3**	**+2.2**
W37B	**Quinton**	**9.67**	**60**	P	**Pn**	**11 45 45.7**	**-1.4**
	baz=245						
TUL1	**Leonard**	**9.76**	**55**	*e*Pn	**Pn**	**11 45 45.6**	**-2.6**
T35A	**Sooner Cattle**	**9.81**	**49**	P	**Pn**	**11 45 47.7**	**-1.2**
	baz=233						
HEC	**Hector,Ludlow**	**9.84**	**297**	P	**Pn**	**11 45 48.9**	**-0.6**
	baz=112						
X38A	**Whitesboro**	**9.96**	**64**	P	**Pn**	**11 45 49.2**	**-1.7**
	baz=249						
T36A	**Boggs Farm, Ca**	**10.30**	**50**	P	**Pn**	**11 45 54.3**	**-1.4**
	baz=234						
GSC	**Goldstone, Bar**	**10.37**	**299**	*e*Pn	**Pn**	**11 45 59.4**	**+2.6**
S35A	**Otter Creek Ra**	**10.40**	**46**	P	**Pn**	**11 45 55.3**	**-1.7**
	baz=230						
X39A	**Fountain Ranch**	**10.46**	**66**	P	**Pn**	**11 45 56.2**	**-1.7**
	baz=251						
TPNV	**Topopah Spring**	**10.73**	**308**	*e*Pn	Pn	11 46 06.3	+4.5
V38A	**Canehill**	**10.73**	**59**	P	**Pn**	**11 45 59.7**	**-1.9**
	baz=244						
S36A	**Lake Cedric, C**	**10.88**	**47**	P	**Pn**	**11 46 01.8**	**-1.7**
	baz=232						
MIAR	**Mount Ida**	**10.90**	**66**	*e*Pn	**Pn**	**11 46 03.9**	**+0.1**
WLAR	**White Oak Lake**	**11.06**	**71**	*e*Pn	**Pn**	**11 46 06.7**	**+0.7**
DUG	**Dugway, Tooele**	**11.07**	**330**	*e*Pn	Pn	11 46 11.3	+5.0
LRMC	**Laurel Mtn Rad**	**11.10**	**298**	P	**Pn**	**11 46 06.7**	**-0.1**
	baz=112						
R11A	**Troy Canyon, C**	**11.13**	**316**	*e*Pn	Pn	11 46 12.7	+5.5
KSU1	**Kansas State U**	**11.18**	**39**	*e*Pn	**Pn**	**11 46 09.4**	**+1.7**
HHAR	**Hobbs**	**11.26**	**57**	*e*Pn	**Pn**	**11 46 06.6**	**-2.2**
V39A	**Pettigrew**	**11.29**	**60**	P	**Pn**	**11 46 07.3**	**-1.9**
	baz=246						
R36A	**Gordon, Harris**	**11.30**	**45**	P	**Pn**	**11 46 07.5**	**-1.9**
	baz=230						
DAC	**Darwin (Calif)**	**11.36**	**302**	*e*Pn	Pn	11 46 15.3	+4.9
T38A	**Diamond**	**11.36**	**53**	P	**Pn**	**11 46 07.8**	**-2.4**
	baz=239						
S37A	**Fort Scott**	**11.39**	**49**	P	**Pn**	**11 46 08.7**	**-1.9**
	baz=235						
U39A	**Green Forest**	**11.63**	**58**	P	**Pn**	**11 46 11.3**	**-2.7**
	baz=244						
V40A	**Witts Springs**	**11.89**	**61**	P	**Pn**	**11 46 15.6**	**-1.9**
	baz=248						
K22A	**Casper**	**11.90**	**357**	Pn	**Pn**	**11 46 18.2**	**+0.5**
UALR	**University of**	**11.94**	**67**	*e*Pn	**Pn**	**11 46 20.9**	**+2.9**
X301	**Greenbrier Sit**	**12.03**	**65**	*e*Pn	**Pn**	**11 46 18.2**	**-1.1**
W41B	**Gary Mavity, V**	**12.13**	**65**	P	**Pn**	**11 46 18.7**	**-1.9**
	baz=252						
WHAR	**Wooly Hollow**	**12.13**	**65**	*e*Pn	**Pn**	**11 46 19.7**	**-1.0**
R38A	**Fenwick Farm,**	**12.23**	**49**	P	**Pn**	**11 46 19.6**	**-2.5**
	baz=236						
S39A	**Bolivar**	**12.36**	**53**	P	**Pn**	**11 46 21.7**	**-2.1**
	baz=239						
PDAR	**Pinedale Array**	**12.39**	**347**	Pn	**Pn**	**11 46 26.9**	**+2.5**
	0.1nm,0.3s,baz=166,slow=9.2,SNR=5.0						
PDAR				Pg		11 47 10.2	
	0.1nm,0.3s,baz=168,slow=13,SNR=3.5						
PDAR				Lg	Lg	11 49 55.0	
	0.1nm,0.3s,baz=166,slow=20,SNR=2.3						
HVU	**Hansel Valley**	**12.40**	**335**	*e*Pn	Pn	11 46 28.2	+3.6
ELK	**Elko**	**12.63**	**325**	LR	LR	11 51 58.7	
	comp=Z,230nm,20.2s,baz=136,slow=41						
ELK	**Elko**	**12.63**	**325**	*e*Pn	Pn	11 46 32.8	+5.1
T40A	**Mansfield**	**12.66**	**56**	P	**Pn**	**11 46 25.5**	**-2.5**
	baz=243						
AHID	**Auburn Hatcher**	**12.75**	**342**	*e*Pn	**Pn**	**11 46 32.4**	**+3.0**
NV11	**Mina Array Sit**	**12.81**	**310**	*e*Pn	Pn	11 46 35.7	+5.6
S40A	**Lebanon**	**12.88**	**54**	P	**Pn**	**11 46 28.4**	**-2.6**
	baz=241						
NV01	**Mina Array Sit**	**12.90**	**310**	*e*Pn	Pn	11 46 35.0	+3.5
NVAR	**Mina Array Bea**	**12.90**	**310**	Pn	**Pn**	**11 46 33.7**	**+2.3**
	0.2nm,0.3s,baz=126,slow=13,SNR=13						
NVAR				LR	LR	11 51 26.7	
	comp=Z,171nm,18.9s,baz=146,slow=38						
Q39A	**Willow Grove F**	**13.32**	**48**	P	**Pn**	**11 46 34.4**	**-2.5**
	baz=235						
SNOW	**Snow King Moun**	**13.32**	**344**	*e*Pn	**Pn**	**11 46 39.7**	**+2.6**
R40A	**Maddies Statio**	**13.38**	**52**	P	**Pn**	**11 46 35.4**	**-2.4**
	baz=239						
WAKR	**Walker**	**13.70**	**308**	*e*Pn	P	11 46 46.9	-4.3
IMW	**Indian Meadow**	**13.77**	**344**	*e*Pn	P	11 46 48.1	-4.0
FLWY	**Flagg Ranch**	**13.89**	**345**	*e*Pn	**P**	**11 46 53.8**	**+0.4**
PBMO	**Poplar Bluff**	**14.05**	**61**	*e*Pn	**Pn**	**11 46 47.0**	**+0.1**
CMB	**Columbia Colle**	**14.13**	**305**	*e*Pn	**Pn**	**11 46 50.4**	**+2.3**
	42nm,1.2s						
LKWY	**Lake**	**14.29**	**346**	*e*Pn	P	11 46 54.3	-3.5
SAO	**San Andreas Ge**	**14.41**	**299**	*e*Pn	**Pn**	**11 46 54.7**	**+2.9**
YMR	**Madison River**	**14.51**	**345**	*e*Pn	**P**	**11 46 58.1**	**-2.0**
HLID	**Hailey**	**14.55**	**334**	*e*P	**P**	**11 47 02.9**	**+2.3**
RLMT	**Red Lodge**	**14.63**	**350**	P	**P**	**11 47 03.1**	**+1.6**
	baz=168						
RLMT	**Red Lodge**	**14.63**	**350**	*e*Pn	**P**	**11 47 00.5**	**-1.0**
O40A	**La Belle**	**14.63**	**46**	P	**Pn**	**11 46 52.0**	**-2.8**
	baz=234						
N39A	**Derby Farms, D**	**14.71**	**43**	P	**Pn**	**11 46 52.9**	**-3.0**
	baz=230						
ECSD	**EROS Data Cent**	**14.84**	**27**	P	**P**	**11 47 05.0**	**+1.5**
	baz=212						
ECSD	**EROS Data Cent**	**14.84**	**27**	*e*Pn	**P**	**11 47 01.5**	**-2.1**
AFDM	**Forest Hills D**	**14.96**	**307**	*e*Pn	**P**	**11 47 05.1**	**+0.1**
MFID	**Camas Ranch**	**15.00**	**330**	Pn	**P**	**11 47 03.3**	**-2.2**
MCMT	**McKenzie Canyo**	**15.15**	**340**	*e*Pn	**P**	**11 47 08.1**	**+0.8**
F25A	**Bowman**	**15.26**	**6**	P	**P**	**11 47 10.4**	**+2.1**
	baz=187						
SIUC	**Southern Illin**	**15.29**	**59**	*e*Pn	**Pn**	**11 47 00.7**	**-3.1**
	17nm,0.8s						
F27A	**Lemmon**	**15.38**	**10**	P	**P**	**11 47 11.3**	**+1.7**
	baz=192						
DLMT	**Dillon**	**15.57**	**342**	*e*Pn	**P**	**11 47 11.4**	**-0.5**
	15nm,1.4s						
BOZ	**Bozeman (W)**	**15.59**	**344**	*e*Pn	**P**	**11 47 14.7**	**+2.6**
	13nm,1.5s						
WVOR	**Wild Horse Val**	**15.61**	**322**	*e*Pn	**P**	**11 47 12.2**	**0.0**
	30nm,1.6s						
E26A	**Carlson Angus**	**15.91**	**8**	P	**P**	**11 47 17.0**	**+1.5**
	baz=190						
LRM	**Limekiln Ridge**	**15.95**	**343**	*e*Pn	**P**	**11 47 20.1**	**+3.8**
G33A	**Ortonville**	**16.15**	**24**	P	**P**	**11 47 20.5**	**+2.3**
	baz=209						
MOD	**Modoc Plateau**	**16.18**	**318**	*e*Pn	**P**	**11 47 18.4**	**-0.3**
	6.6nm,1.0s						
H35A	**Sunnyside Ranc**	**16.35**	**29**	P	**P**	**11 47 22.5**	**+2.2**
	baz=215						
D26A	**Manning**	**16.46**	**8**	P	**P**	**11 47 23.3**	**+1.7**
	baz=190						
OLIL	**Olney**	**16.50**	**56**	*e*Pn	**P**	**11 47 21.0**	**-1.0**
OLIL				*e*P	**sP**	**11 47 26.5**	**+1.7**
OLIL				*e*PcP	**PcP**	**11 52 07.4**	**-3.4**
HDIL	**Hopedale**	**16.52**	**49**	P	**Pn**	**11 47 17.6**	**-2.0**
	baz=238						
HDIL	**Hopedale**	**16.52**	**49**	*e*Pn	**Pn**	**11 47 16.6**	**-3.0**
	48nm,0.8s						
HDIL				*e*PcP	**PcP**	**11 52 12.7**	**+1.9**
BMO	**Blue Mountains**	**16.79**	**330**	*e*Pn	**P**	**11 47 24.2**	**-1.1**
	9.1nm,1.1s						
CMIG	**Matias Romero**	**16.79**	**142**	Pn	**P**	**11 47 27.1**	**+1.8**
	0.1nm,0.3s,baz=330,slow=12,SNR=4.7						
WDC	**Whiskeytown Da**	**16.82**	**310**	*e*Pn	**P**	**11 47 27.9**	**+2.3**
	18nm,1.5s						
K05A	**Summer Lake**	**17.04**	**319**	*e*Pn	P	11 47 35.6	+7.3
	20nm,1.4s						
C25A	**Freed Ranch, W**	**17.05**	**6**	P	**P**	**11 47 29.4**	**+1.2**
	baz=187						
SWET	**Sewanee**	**17.17**	**70**	*e*P

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SADO				Lg	Lg	11 56 33.8	
	4.2nm,0.6s,baz=345,slow=19,SNR=2.5						
SADO				LR	LR	11 58 44.5	
	comp=Z,120nm,18.4s,baz=264,slow=36						
BBB	**Bella Bella**	**27.02**	**329**	LR	LR	12 00 34.4	
	comp=Z,38nm,21.4s,baz=141,slow=38						
YKA	**Yellowknife Ar**	**32.28**	**352**	P	**P**	**11 49 55.6**	**-0.9**
	0.9nm,0.9s,baz=161,slow=8.2,SNR=10						
YKA				PcP	**PcP**	**11 52 43.9**	**-0.6**
	0.4nm,0.9s,baz=160,slow=2.7,SNR=3.5						
SCHQ	**Schefferville**	**36.61**	**37**	P	**P**	**11 50 34.5**	**+0.4**
	2.8nm,0.5s,baz=249,slow=16,SNR=2.1						
SCHQ				LR	LR	12 06 30.1	
	comp=Z,83nm,21.1s,baz=338,slow=38						
INK	**Inuvik**	**40.95**	**345**	P	**P**	**11 51 11.3**	**+1.0**
	baz=145,slow=7.1						
ILAR	**Eielson Array**	**42.50**	**335**	P	**P**	**11 51 24.4**	**+1.3**
	0.4nm,0.8s,baz=136,slow=5.6,SNR=5.2						
SUMG	**Summit**	**54.17**	**20**	*eP*	**P**	**11 52 54.2**	**+0.7**
	8.0nm,0.9s						
PETK	**Petropavlovsk-**	**69.75**	**320**	P	**P**	**11 54 37.7**	**-0.4**
	2.1nm,0.6s,baz=61,slow=12,SNR=3.3						
ARCES	**ARCESS Array B**	**73.94**	**16**	P	**P**	**11 55 02.3**	**-0.6**
	2.6nm,0.8s,baz=324,slow=5.4,SNR=13						
NOA	**NORSAR Array B**	**75.25**	**27**	P	**P**	**11 55 11.0**	**+0.3**
	1.0nm,0.8s,baz=308,slow=5.8,SNR=2.5						
PLCA	**Paso Flores**	**78.21**	**153**	P	**P**	**11 55 29.7**	**+2.1**
	4.3nm,1.1s,baz=333,slow=9.0,SNR=3.6						
FINES	**FINESS Array B**	**80.19**	**21**	P	**P**	**11 55 37.6**	**-0.6**
	2.9nm,0.8s,baz=300,slow=11,SNR=8.2						
GERES	**GERESS Array B**	**84.11**	**35**	P	**P**	**11 55 59.4**	**+0.2**
	0.3nm,0.3s,baz=348,slow=12,SNR=4.4						
DBIC	**Dimbokro**	**95.86**	**79**	LR	LR	12 35 41.6	
	comp=Z,30nm,18.4s,baz=320,slow=33						
WRA	**Warramunga Arr**	**125.24**	**266**	PKP	**PKPdf**	**12 02 28.4**	**-1.0**
	0.5nm,0.6s,baz=57,slow=2.2,SNR=9.5						
ASAR	**Alice Springs**	**127.05**	**262**	PKP	**PKPdf**	**12 02 32.1**	**-0.7**
	0.3nm,0.6s,baz=68,slow=2.4,SNR=7.2						

MAN 02 11:54:58,12.56N×120.93E,h8km,mb4.3,ML3.2,MS3.0, 4C,Mindoro

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SJMP	**San Jose**	**0.21**	**118**	*e*P	Pg	11 55 04.3	+2.0
SJMP				*e*S	Sg	11 55 08.8	+3.7
BUSP	**Coron**	**0.90**	**232**	*e*P	Pn	11 55 16.6	-0.4
BUSP				*e*S	Sn	11 55 30.1	-0.1
PGP	**Puerto Galera**	**0.94**	**1⇑**	*e*P	Pg	11 55 15.8	-0.2
PGP				*i* S	Sg	11 55 28.3	0.0
BOAC	**Boac**	**1.26**	**45**	*e*P	Pn	11 55 21.6	-0.3
BOAC				*e*S	Sn	11 55 39.2	+0.1
TGY	**Tagaytay City**	**1.53**	**0⇑**	*e*P	Pb	11 55 26.4	-0.3
LQP	**Lukban**	**1.65**	**21⇑**	*e*P	Pb	11 55 28.9	0.0
CUYO	**Cuyo Island**	**1.70**	**177**	*e*P	Pn	11 55 28.1	+0.1
GQP	**Guinayangan**	**1.99**	**48⇑**	*e*P	Pn	11 55 33.4	-1.1
GQP				*e*S	Sg	11 56 01.7	-0.4
ENPP	**El Nido**	**1.99**	**228**	*e*P	Pb	11 55 33.5	-1.1

ISCJB ***02*** *11:58:35.1±0.5,30.77N±0.04×105.70W±0.04,h10km, Error ellipse: s-maj=5.6km s-min=4.8km az=149.0*
NEIC ***02*** *11:58:36.4±0.7,30.74N×105.70W,h10km,ML3.3,Error ellipse: s-maj=9.8km s-min=7.9km az=156.0*
MEX ***02*** *11:58:39.1±0.3,30.81N×105.65W,h10km±5km,MD4.1*
ISC 02 11:58:35.5±1.0,30.78N±0.05×105.73W±0.05,h10km,n17, σ1§54/25,Texas-Mexico border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MNTX	**Cornudas Mount**	**0.96**	**18**	*e*Pg	**Pn**	**11 58 54.4**	**-0.7**
MNTX				*e*Sg	**Sn**	**11 59 07.7**	**-1.0**
CGIG		**1.98**	**258**	*e*P	**Pb**	**11 59 10.4**	**-1.4**
CGIG				*e*S	**Sb**	**11 59 35.4**	**-1.2**
CGIG		**1.98**	**258**	*e*P	**Pb**	**11 59 10.4**	**-1.4**
CGIG				*e*S	**Sb**	**11 59 35.4**	**-1.2**
121A	**Cookes Peak, D**	**2.47**	**315**	*e*P	**Pn**	**11 59 17.0**	**+1.0**
121A				*e*S	**Sn**	**11 59 46.6**	**+0.2**
121A	**Cookes Peak, D**	**2.47**	**315**	*e*Pn	**Pn**	**11 59 17.3**	**+1.3**
HPIG		**3.83**	**179**	*e*P	**Pn**	**11 59 35.5**	**+0.8**
HPIG				*i* S	**Sn**	**12 00 21.4**	**+1.4**
HPIG		**3.83**	**179**	*e*P	**Pn**	**11 59 35.5**	**+0.8**
HPIG				*i* S	**Sn**	**12 00 21.4**	**+1.4**
MSTX	**Muleshoe**	**4.04**	**37**	*e*Pn	**Pn**	**11 59 40.0**	**+2.5**
ANMO	**Albuquerque**	**4.20**	**352**	*e*P	**Pn**	**11 59 40.3**	**+0.6**
ANMO	**Albuquerque**	**4.20**	**352**	*e*Pn	**Pn**	**11 59 41.7**	**+2.0**
TUC	**Tucson**	**4.58**	**291**	*e*P	**Pn**	**11 59 45.9**	**+1.1**
TUC				*i* S	**Sn**	**12 00 40.3**	**+2.1**
JCT	**Junction City**	**5.12**	**92**	*e*Pn	**Pn**	**11 59 51.3**	**-0.9**
AMTX	**Amarillo**	**5.32**	**39**	*e*Pn	**Pn**	**11 59 57.5**	**+2.5**
ABTX	**Abilene, Hawle**	**5.50**	**69**	*e*Pn	**Pn**	**11 59 57.5**	**0.0**
214A	**Organ Pipe Nat**	**6.17**	**283**	*e*P	**Pn**	**12 00 08.4**	**+1.7**
214A				*e*S	**Sn**	**12 01 19.7**	**+2.4**
WUAZ	**Wupatki**	**6.68**	**316**	*e*Pg	**Pg**	**12 00 42.4**	**-1.1**
WMOK	**Wichita Mounta**	**7.05**	**54**	*e*Pn	**Pn**	**12 00 20.5**	**+1.7**

PRE ***02*** *12:05:08.6±1.2,21.15S×33.47E,h10km,ML3.9*
ISC 02 12:05:13.7±2.7,21.33S±0.10×32.9E±0.1,h14km,n7, σ2§11/11,Mozambique

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSNA	**Messina**	**2.83**	**248**	*e*P	**Pb**	**12 06 02.3**	**-1.6**
MSNA				*e*S	**Sg**	**12 06 43.8**	**-0.7**
MSNA				AML	AML	12 06 55.5	
	comp=Z,80nm,0.4s						
BLWY	**Bulawayo**	**4.15**	**286**	*i* P	**Pn**	**12 06 18.1**	**+1.2**
BLWY				*i* S	**Sg**	**12 07 25.5**	**-1.6**
MATP	**Matopo**	**4.18**	**282**	*i* P	**Pn**	**12 06 18.9**	**+1.7**
MATP				*i* S	**Sg**	**12 07 26.4**	**-1.5**
POGA	**Pongola**	**6.12**	**190**	*e*P	**Pn**	**12 06 43.9**	**+0.1**
POGA				*e*S	**Sn**	**12 07 53.0**	**-0.7**
POGA				AML	AML	12 09 40.1	
	comp=Z,25nm,0.3s						
ERPM	**east rand prop**	**6.54**	**219**	*e*S	**Sn**	**12 08 07.3**	**+3.0**
ERPM				AML	AML	12 09 05.0	
	comp=Z,39nm,0.4s						
PRYS	**Parys**	**7.50**	**221**	*e*P	Pn	12 07 06.5	+3.6
PRYS				*e*S	**Sn**	**12 08 31.5**	**+3.6**
PRYS				AML	AML	12 09 33.1	
	comp=Z,14nm,0.7s						
BOSA	**Boshof**	**10.01**	**222**	*i* P	Pn	12 07 30.8	-6.4
BOSA				*i* S	**Sn**	**12 09 28.9**	**-0.6**

KRSC 02 12:20:02.5±0.9,54.26N×160.01E,h139km±12km,ML3.6, Near east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KII	**Karymskiy**	**0.40**	**236**	*i* P	Pn	12 20 23.5	+1.3
NLC	**Nalytchevo**	**1.16**	**200**	*e*P	Pn	12 20 28.9	+1.2
NLC				*e*S	Sn	12 20 48.2	+1.3
SPN	**Mys Shipunski**	**1.17**	**180**	*e*S	Sn	12 20 47.4	+0.4
SDLR	**Sedlovina**	**1.19**	**215**	*i* P	Pn	12 20 29.4	+1.2
KRX	**Arik**	**1.21**	**222**	P	Pn	12 20 30.0	+1.6
KRER	**Koryakskii**	**1.22**	**218**	*e*P	Pn	12 20 29.9	+1.4
SMAR	**Somma**	**1.23**	**216**	*i* P	Pn	12 20 30.0	+1.3
AVH	**Avacha**	**1.25**	**218**	*i* P	Pn	12 20 30.4	+1.7
UGLR	**Uglovaya**	**1.27**	**214**	*i* P	Pn	12 20 30.3	+1.4
GNL	**Ganaly**	**1.35**	**246**	*i* P	Pn	12 20 29.8	+0.1
DALK	**Dalny**	**1.44**	**212**	*i* P	Pn	12 20 31.6	+1.0
DALK				*e*S	Sn	12 20 52.8	+0.8
PET	**Petropavlovsk**	**1.48**	**214**	*e*P	Pn	12 20 32.0	+1.0
KMNR	**Kamenistaya**	**1.50**	**5**	*e*P	Pn	12 20 33.6	+2.3
KRMR	**Karymshinskiy**	**1.82**	**219**	*i* P	Pn	12 20 36.1	+1.3
ESO	**Esso**	**1.83**	**336**	*e*P	Pn	12 20 35.5	+0.6
BKI	**Bering**	**3.58**	**72**	*e*S	Sn	12 21 40.2	+1.2

ISCJB ***02*** *12:24:05.2±0.8,40.21S±0.07×57.89W±0.1,h10km,mb4.1/7, Error ellipse: s-maj=13.8km s-min=9.7km az=4.4*
IDC ***02*** *12:24:05.1±0.7,40.24S×57.89W,h0km,mb4.2/6, mb1 4.3/10,mb1mx4.0/36,mbtmp4.3/10,ML4.1/2,MS3.4/1, Ms1 3.4/1,ms1mx2.8/21,Error ellipse: s-maj=28.1km s-min=20.0km az=61.0*
NEIC ***02*** *12:24:06.7±0.4,40.24S×57.90W,h10km,mb4.0/1,Error ellipse: s-maj=9.5km s-min=7.7km az=63.0*
ISC 02 12:24:06.1±0.7,40.34S±0.08×57.9W±0.1,h10km,n21, σ0§76/22,mb4.3/7,South Atlantic Ocean

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TRQA	**Tornquist**	**3.89**	**304**	*e*Pn	**Pn**	**12 25 06.1**	**+0.1**
PLCA	**Paso Flores**	**9.63**	**264**	Pn	**Pn**	**12 26 24.0**	**-0.8**
	0.5nm,0.3s,baz=132,slow=9.5,SNR=20						
PLCA				Sn	Sn	12 28 21.9	+8.8
	3.7nm,0.3s,baz=250,slow=14,SNR=7.8						
CPUP	**Villa Florida**	**13.98**	**2**	Pn	**Pn**	**12 27 23.7**	**-0.5**
	0.1nm,0.3s,baz=187,slow=16,SNR=2.8						
CPUP				Sn	**Sn**	**12 29 59.6**	**+0.2**
	0.6nm,0.3s,baz=72,slow=20,SNR=3.3						
CPUP				LR	LR	12 33 04.8	
	comp=Z,136nm,19.1s,baz=190,slow=39						
LCO	**Las Campanas**	**15.42**	**313**	*e*Pn	**Pn**	**12 27 44.0**	**+0.1**
USHA	**Ushuaia**	**16.12**	**202**	Pn	**P**	**12 27 55.8**	**-0.1**
	45nm,0.3s,baz=8.1,slow=12,SNR=5.0						
USHA				Sn	Sn	12 30 40.9	-10
	11nm,0.3s,baz=251,slow=12,SNR=3.1						
LVC	**Limon Verde**	**19.97**	**329**	P	**P**	**12 28 38.6**	**-0.3**
	35nm,0.3s,baz=152,slow=10,SNR=9.6						
SIV	**San Ignacio**	**24.41**	**353**	P	**P**	**12 29 24.0**	**-0.8**
	3.4nm,0.5s,baz=186,slow=11,SNR=3.1						
LPAZ	**La Paz**	**25.55**	**337**	P	**P**	**12 29 35.6**	**-0.2**
	5.3nm,0.8s,baz=148,slow=5.7,SNR=26						
OTAV	**Otavalo**	**44.51**	**330**	*e*P	**P**	**12 32 19.2**	**+0.8**
	3.7nm,1.6s						
TEIG	**Tepich**	**66.56**	**329**	P	**P**	**12 34 56.3**	**0.0**
	1.9nm,0.4s,baz=90,slow=20,SNR=4.0						
BOSA	**Boshof**	**67.23**	**109**	P	**P**	**12 35 01.0**	**+0.1**
	2.7nm,1.0s,baz=162,slow=9.6,SNR=2.5						
TORD	**Torodi Ar. Bea**	**76.65**	**60**	P	**P**	**12 35 57.1**	**-0.1**
	0.5nm,0.4s,baz=214,slow=6.1,SNR=7.0						
ANMO	**Albuquerque**	**87.24**	**322**	P	**P**	**12 36 54.0**	**+1.2**
	0.4nm,0.4s,baz=192,slow=2.6,SNR=3.7						
ASAR	**Alice Springs**	**115.38**	**192**	PKP	**PKPdf**	**12 42 48.9**	**+0.4**
	0.3nm,0.5s,baz=162,slow=1.2,SNR=12						
WRA	**Warramunga Arr**	**118.96**	**193**	PKP	**PKPdf**	**12 42 55.8**	**+0.5**
	1.1nm,0.5s,baz=185,slow=1.6,SNR=45						
KURBB	**Kurchatov Arra**	**148.20**	**56**	PKPbc	**PKPab**	**12 43 52.4**	**-2.3**
	1.6nm,0.8s,baz=274,slow=3.4,SNR=13						
KURK	**Kurchatov**	**148.25**	**56**	PKPbc	**PKPbc**	**12 43 52.4**	**+0.6**
TIXI	**Tiksi**	**148.43**	**356**	PKPbc	**PKPbc**	**12 43 51.2**	**-0.4**
	3.9nm,0.8s,baz=204,slow=6.7,SNR=7.4						
CMAR	**Chiang Mai Arr**	**150.47**	**131**	PKPbc	**PKPbc**	**12 43 59.2**	**+0.9**
	1.0nm,0.5s,baz=225,slow=5.0,SNR=5.6						
MKAR	**Makanchi Array**	**150.69**	**64**	PKPbc	**PKPbc**	**12 43 58.4**	**+0.3**
	0.4nm,0.7s,baz=295,slow=1.2,SNR=3.9						
ZALV	**Zalesovo Beam**	**151.60**	**49**	PKPbc	**PKPbc**	**12 43 60.0**	**+0.2**
	0.8nm,0.4s,baz=309,slow=2.1,SNR=4.5						

NIED ***02*** *12:36:00,38.30N×142.20E,h38km,Mw4.8 Best double couple: Ms1.65000×10^16 NP1:φ0=203.00000°,δ40.00000°, λ-81.00000°. NP2:φ0=11.00000°,δ50.00000°,λ-97.00000°.*
IDC ***02*** *12:36:41.6±0.4,38.27N×142.10E,h0km,mb4.6/33, mb1 4.7/39,mb1mx4.7/50,mbtmp4.6/39,ML4.1/4,MS4.0/29, Ms1 4.0/29,ms1mx3.9/45,Error ellipse: s-maj=12.2km s-min=10.6km az=114.0*
JMA ***02*** *12:36:45.7±0.1,38.31N×142.23E,h38km±2km,M4.7*
JMA Felt II J1.
MOS ***02*** *12:36:46.5±0.9,38.52N×142.06E,h33km,mb5.0/82, MS4.0/19,Error ellipse: s-maj=6.2km s-min=4.1km az=99.7*
ISCJB ***02*** *12:36:47.0±0.4,38.34N±0.03×142.10E±0.02,h44km±3km, mb4.8/196,MS4.2/38,Error ellipse: s-maj=4.5km s-min=2.9km az=158.2*
NEIC ***02*** *12:36:49.4±0.5,38.33N×142.06E,h52km±4km,mb4.8/112, Error ellipse: s-maj=4.3km s-min=2.8km az=142.0*
NEIC Recorded [2 JMA] in Iwate and Miyagi.
ISC 02 12:36:46.0±0.3,38.33N±0.04×142.22E±0.03,h30km±1km, h29km:pP-P,n674,σ1§40/750,mb4.8/198,MS4.2/40, 27C-7D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.70**	**280**	P	**Pb**	**12 36 59.4**	**-0.3**
JIO				S	**Sb**	**12 37 08.4**	**-0.6**
OFUJ	**Ofunato**	**0.86**	**330**	P	**Pb**	**12 37 01.8**	**-0.7**
JMK	**Ichinoseki**	**1.00**	**308**	P	**Pn**	**12 37 04.0**	**0.0**
JMM	**Marumori**	**1.22**	**248**	P	**Pn**	**12 37 06.3**	**-0.8**
JOU	**Okura**	**1.23**	**272**	P	**Pn**	**12 37 07.4**	**+0.2**
JOU				S	**Sn**	**12 37 23.3**	**+0.5**
JOM	**Ohasama**	**1.35**	**328**	P	**Pn**	**12 37 09.2**	**+0.4**
JFK	**Kawauchi**	**1.44**	**228**	P	**Pn**	**12 37 08.9**	**-1.2**
JYK	**Kaneyama**	**1.57**	**292**	P	**Pn**	**12 37 12.3**	**+0.4**
JRG	**Rokugo**	**1.63**	**311**	P	**Pn**	**12 37 13.3**	**+0.6**
JFT	**Otama**	**1.70**	**242**	P	**Pn**	**12 37 13.7**	**0.0**
MJAR	**Matsushiro Arr**	**3.66**	**242**	Pn	**Pn**	**12 37 42.0**	**+1.3**
	16nm,0.3s,baz=55,slow=11,SNR=174						
MJAR				LR	LR	12 39 17.1	
	comp=Z,3μm,18.3s,baz=60,slow=44						
MJAR	**Matsushiro Arr**	**3.66**	**242**	P	**Pn**	**12 37 42.0**	**+1.3**
MJAR				pmax	pmax		
	comp=Z,16nm,0.3s						
MJAR				MLR	MLR		
	comp=Z,3μm,18.3s						
MAJO	**Matsushiro**	**3.66**	**242**	*c*eP	**Pn**	**12 37 42.0**	**+1.3**
MAJO	**Matsushiro**	**3.66**	**242**	*e*Pn	**Pn**	**12 37 42.2**	**+1.5**
MAT	**Matsushiro**	**3.66**	**242**	P	**Pn**	**12 37 42.0**	**+1.3**
MAT				*e*S	**Sn**	**12 38 25.8**	**+2.9**
MJB9	**Matsu-Tunnel**	**3.66**	**242**	*e*Pn	**Pn**	**12 37 42.8**	**+2.1**
ERM	**Erimo**	**3.75**	**11⇑**	*e*P	**Pn**	**12 37 42.7**	**+1.0**
ERM	**Erimo**	**3.75**	**11**	*e*Pn	**Pn**	**12 37 42.9**	**+1.1**
INU	**Inuyama**	**5.13**	**236**	*e*Pn	**Pn**	**12 38 03.1**	**+2.3**
JHJ	**Hachijo jima 2**	**5.57**	**202**	Pn	**Pn**	**12 38 06.1**	**-0.8**
	comp=Z,37nm,0.3s,baz=333,slow=21,SNR=38						
JHJ				Sn	**Sn**	**12 39 05.9**	**-3.9**
	comp=Z,74nm,0.3s,baz=120,slow=23,SNR=5.9						
ASAJ	**Asahikawa**	**5.78**	**3**	Pn	**Pn**	**12 38 11.6**	**+1.8**
	comp=Z,3.4nm,0.3s,baz=201,slow=12,SNR=38						
ASAJ				Sn	**Sn**	**12 39 19.4**	**+4.3**
	comp=Z,6.7nm,0.3s,baz=108,slow=20,SNR=2.9						
YUK	**Yuzh-Kuril'sk**	**6.32**	**25**	*e*P	**Pn**	**12 38 17.2**	**+0.1**
YUK				*e*S	**Sn**	**12 39 23.8**	**-4.5**
YUK				pmax	pmax		
	comp=Z,371nm,0.6s						
SHO	**Shikotan**	**6.53**	**31**	*e*P	**Pn**	**12 38 18.4**	**-1.6**
SHO				*e*S	**Sn**	**12 39 26.1**	**-7.4**
SHO				pmax	pmax		
	comp=Z,80nm,0.4s						
KUR	**Kuril'sk**	**8.08**	**30**	*i* P	**Pn**	**12 38 40.8**	**-0.4**
KUR				*e*S	**Sn**	**12 40 06.1**	**-5.4**
KUR				smax	smax		
	comp=N,114nm,0.5s						
KUR				smax	smax		
	comp=E,214nm,0.5s						
YSS	**Yuzh-Sakhalins**	**8.62**	**2**	*e*P	**Pn**	**12 38 50.3**	**+1.6**
YSS				*e*		12 40 20.6	
YSS				pmax	pmax		
	comp=Z,60nm,0.9s						
YSS	**Yuzh-Sakhalins**	**8.62**	**2**	*e*Pn	**Pn**	**12 38 52.3**	**+3.6**
VLA	**Vladivostok**	**9.19**	**305⇑**	*e*P	**Pn**	**12 38 59.5**	**+3.1**
VLA				*e*S	**Sn**	**12 40 43.7**	**+4.9**
VLA				pmax	pmax		
	comp=Z,185nm,1.1s						
MSHR	**Mys Shultsa**	**9.44**	**300⇑**	*e*P	**Pn**	**12 39 00.9**	**+1.0**
USRK	**Ussuriysk Ar.**	**9.68**	**311**	Pn	**Pn**	**12 39 04.9**	**+1.7**
	comp=Z,1.0nm,0.3s,baz=120,slow=15,SNR=53						
USRK				LR	LR	12 42 34.3	
	comp=Z,1μm,19.3s,baz=118,slow=37						
JNU	**Nakatsue**	**10.58**	**244**	Pn	**Pn**	**12 39 18.3**	**+2.6**
	comp=Z,1.2nm,0.3s,baz=52,slow=3.3,SNR=21						
JNU				LR	LR	12 43 47.6	
	comp=Z,2μm,18.9s,baz=58,slow=41						
CBIJ	**Chichi jima**	**11.21**	**180**	Pn	**Pn**	**12 39 21.1**	**-3.1**
CBIJ				Sn	Sn	12 41 16.9	-12
JCJ	**Chichijima**	**11.21**	**180**	Pn	**Pn**	**12 39 21.1**	**-3.1**
	comp=Z,8.9nm,0.3s,baz=288,slow=21,SNR=15						
JCJ				Sn	Sn	12 41 16.9	-12
	comp=Z,5.8nm,0.3s,baz=288,slow=20,SNR=4.0						
KSRS	**Korea Array**	**11.34**	**270**	Pn	**Pn**	**12 39 29.2**	**+3.3**
	comp=Z,0.8nm,0.3s,baz=80,slow=14,SNR=25						
KSRS				LR	LR	12 43 34.1	
	comp=Z,778nm,19.6s,baz=76,slow=37						
KS01	**Wonju Array Si**	**11.36**	**270**	*e*Pn	**Pn**	**12 39 29.7**	**+3.5**
MDJ	**Mudanjiang**	**11.36**	**308**	P	**Pn**	**12 39 27.2**	**+1.0**
MDJ				S	**Sn**	**12 41 33.4**	**+1.4**
MDJ				pmax	pmax		
	comp=Z,6.0nm,0.8s						
MDJ				pmax	pmax		
	comp=Z,140nm,3.7s						
MDJ				LR	LR		
	comp=N,310nm,19.4s						
MDJ				LR	LR		
	comp=E,290nm,20.7s						
MDJ				LR	LR		
	comp=Z,640nm,20.9s						
MDJ	**Mudanjiang**	**11.36**	**308**	*e*Pn	**Pn**	**12 39 27.8**	**+1.6**
	comp=Z,42nm,0.9s						
KS15	**Wonju Array Si**	**11.37**	**270**	*e*Pn	Pn	12 39 31.8	+5.5
KSAR	**Wonju Array Be**	**11.37**	**270**	P	**Pn**	**12 39 29.2**	**+2.8**
KSAR	**Wonju Array Be**	**11.37**	**270**	Pn	**Pn**	**12 39 29.1**	**+2.8**
HABR	**Khabarovsk**	**11.39**	**335**	*e*P	**Pn**	**12 39 25.3**	**-1.3**
HABR				*e*S	**Sn**	**12 41 32.1**	**-0.6**
HABR				pmax	pmax		
	comp=Z,24nm,1.5s						
HABR				pmax	pmax		
	comp=N,21nm,1.4s						
HABR				pmax	pmax		
	comp=E,22nm,1.4s						
HABR				MLR	MLR		
	comp=Z,533nm,15.0s						
TYV	**Tymovskoe**	**12.53**	**1**	*e*P	**Pn**	**12 39 44.0**	**+1.9**
TYV				pmax	pmax		
	comp=Z,145nm,1.8s						
TYV				MLR	MLR		
	comp=Z,1μm,17.0s						
KLR	**Kul'dur**	**13.25**	**329**	Pn	**Pn**	**12 39 51.9**	**-0.1**
	comp=Z,0.2nm,0.3s,baz=135,slow=13,SNR=5.3						
KLR				LR	LR	12 44 59.8	
	comp=Z,999nm,18.5s,baz=142,slow=38						
CN2	**Changchun**	**13.78**	**299**	*e*P	**Pn**	**12 40 01.5**	**+2.3**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.7s						
CN2				pmax	pmax		
	comp=Z,200nm,4.0s						
CN2				LR	LR		
	comp=N,500nm,15.0s						
CN2				LR	LR		
	comp=E,700nm,15.0s						
CN2				LR	LR		
	comp=Z,800nm,17.0s						
SNY	**Shenyang**	**14.69**	**290**	⇓P	**P**	**12 40 18.9**	**+1.4**
SNY				S	**S**	**12 43 11.9**	**+0.3**
SNY				pmax	pmax		
	comp=Z,16nm,0.5s						
SNY				pmax	pmax		
	comp=Z,230nm,4.5s						
SNY				LR	LR		
	comp=N,410nm,5.3s						
SNY				LR	LR		
	comp=E,1μm,18.1s						
SNY				LR	LR		
	comp=Z,2μm,16.9s						
NKL	**Nikolayevsk**	**14.86**	**356**	*e*P	**Pn**	**12 40 10.5**	**-3.3**
NKL				pmax	pmax		
	comp=Z,17nm,1.0s						
DL2	**Dalian**	**16.11**	**278**	P	**P**	**12 40 32.6**	**-0.7**
DL2				pP	**pP**	**12 40 41.8**	**+0.6**
DL2				S	**S**	**12 43 35.1**	**-5.5**
DL2				pmax	pmax		
	comp=Z,99nm,1.1s						
DL2				LR	LR		
	comp=N,450nm,14.6s						
DL2				LR	LR		
	comp=E,620nm,17.7s						
DL2				LR	LR		
	comp=Z,710nm,17.6s						
JOW	**Kunigami**	**16.40**	**230**	Pn	**Pn**	**12 40 32.8**	**-1.3**
	baz=60,slow=20						
PETK	**Petropavlovsk-**	**18.24**	**31**	P	**P**	**12 40 58.5**	**+1.7**
	comp=Z,0.2nm,0.3s,baz=171,slow=10,SNR=4.4						
PETK				LR	LR	12 48 28.7	
	comp=Z,144nm,18.4s,baz=219,slow=38						
TIA	**Tai'an**	**20.07**	**272**	⇑P	Pn	12 41 27.5	+8.6
TIA				S	**S**	**12 44 56.8**	**-4.1**
TIA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
TIA				LR	LR		
	comp=N,190nm,14.3s						
TIA				LR	LR		
	comp=E,360nm,14.3s						
TIA				LR	LR		
	comp=Z,560nm,13.6s						
NJ2	**Nanjing**	**20.08**	**259**	*e*P	**P**	**12 41 16.7**	**-0.3**
NJ2				pmax	pmax		
	comp=Z,19nm,0.5s						
BJI	**Beijing**	**20.24**	**283**	P	**P**	**12 41 19.3**	**+0.6**
BJI				S	**S**	**12 45 01.9**	**-2.3**
BJI				sS	**sS**	**12 45 16.1**	**-0.8**
BJI				pmax	pmax		
	comp=Z,31nm,0.9s						
BJI				pmax	pmax		
	comp=Z,190nm,4.0s						
BJI				LR	LR		
	comp=N,190nm,12.7s						
BJT	**Baijiatuau**	**20.25**	**283**	*e*P	**P**	**12 41 19.6**	**+0.8**
BJT				pmax	pmax		
	comp=Z,22nm,0.8s						
BJT	**Baijiatuau**	**20.25**	**283**	*e*P	**P**	**12 41 19.6**	**+0.8**
	comp=Z,22nm,0.8s						
MA2	**Magadan**	**21.95**	**12**	P	**P**	**12 41 37.4**	**+0.4**
	comp=Z,34nm,0.7s,baz=210,slow=9.1,SNR=28						
MA2				LR	LR	12 50 46.6	
	comp=Z,177nm,19.8s,baz=233,slow=38						
YULB	**Yu-li**	**23.26**	**236**	*e*P	**P**	**12 41 50.2**	**-0.8**
	comp=Z,21nm,1.2s

XAN	**Xi'an**	**27.13 271**	P	**P**	**12 42 26.4**	**-0.1**
XAN			pP	sP	12 42 36.4	-2.4
XAN			sP	pP	12 42 40.2	+5.0
XAN			PP	**PnPn**	**12 43 12.5**	**+2.4**
XAN			S	**S**	**12 46 58.8**	**-4.3**
XAN			sS	sS	12 47 14.7	-2.7
XAN			SS	**SnSn**	**12 48 13.4**	**+2.2**
XAN			pmax	pmax		
	comp=Z,7.0nm,0.6s					
XAN			pmax	pmax		
	comp=Z,48nm,4.6s					
XAN			LR	LR		
	comp=N,190nm,11.9s					
XAN			LR	LR		
	comp=E,310nm,13.6s					
XAN			LR	LR		
	comp=Z,350nm,13.9s					
ULN	**Ulaanbaatar**	**27.18 302***c*	*i*P	**P**	**12 42 27.6**	**+0.6**
ULN			pmax	pmax		
	comp=Z,20nm,1.7s					
ULN	**Ulaanbaatar**	**27.18 302**	*e*P	**P**	**12 42 27.6**	**+0.6**
	comp=Z,12nm,1.1s					
SONA1	**Songino Array**	**27.62 302**	*e*P	**P**	**12 42 31.1**	**+0.3**
SONM	**Songino Array**	**27.62 302**	P	**P**	**12 42 31.0**	**+0.1**
	comp=Z,3.9nm,0.9s,baz=122,slow=5.2,SNR=18					
SONM			PcP	**PcP**	**12 45 47.5**	**-0.2**
	comp=Z,1.3nm,0.7s,baz=108,slow=2.7,SNR=4.3					
SONM			LR	LR	12 53 51.1	
	comp=Z,345nm,18.1s,baz=116,slow=37					
SONM	**Songino Array**	**27.62 302**	P	**P**	**12 42 31.0**	**+0.1**
SONM					12 45 47.5	
SONM			pmax	pmax		
	comp=Z,3.0nm,0.7s					
SONM			pmax	pmax		
	comp=Z,1.0nm,0.7s					
SONM			MLR	MLR		
	comp=Z,345nm,18.1s					
ENH	**Enshi**	**28.10 263**	*e*P	**P**	**12 42 34.3**	**-0.9**
	comp=Z,72nm,1.0s					
TLY	**Talaya**	**29.99 309**	P	**P**	**12 42 52.3**	**+0.5**
	comp=Z,5.2nm,0.7s,baz=103,slow=7.4,SNR=10					
TLY	**Talaya**	**29.99 309**	*e*P	**P**	**12 42 52.7**	**+0.9**
TLY			*e*S	**S**	**12 47 39.4**	**-8.2**
TLY			pmax	pmax		
	comp=Z,12nm,0.9s					
TLY			MLR	MLR		
	comp=Z,370nm,15.0s					
TLY	**Talaya**	**29.99 309**	*e*P	**P**	**12 42 52.6**	**+0.8**
	comp=Z,14nm,1.1s					
ZAK	**Zakamensk**	**29.99 306**	*e*P	**P**	**12 42 50.0**	**-1.9**
ZAK			pmax	pmax		
	comp=Z,11nm,1.1s					
LZH	**Lanzhou**	**30.50 278**	*e*P	**P**	**12 42 55.8**	**-0.9**
LZH			pP	pP	12 43 04.6	-0.8
LZH			sP	sP	12 43 07.9	-1.1
LZH			*e*S	**S**	**12 47 52.5**	**-3.8**
LZH			sS	sS	12 48 08.3	-2.4
LZH			SS	**ScP**	**12 49 33.0**	**-2.5**
LZH			pmax	pmax		
	comp=Z,35nm,1.1s					
LZH			pmax	pmax		
	comp=Z,73nm,4.5s					
LZH			LR	LR		
	comp=N,1μm,15.6s					
LZH			LR	LR		
	comp=E,1μm,12.5s					
LZH			LR	LR		
	comp=Z,2μm,15.9s					
GYA	**Guiyang**	**32.09 259**	*e*P	**P**	**12 43 11.8**	**+1.2**
GYA			pmax	pmax		
	comp=Z,10.0nm,0.8s					
CD2	**Chengdu**	**32.33 269**	P	**P**	**12 43 12.1**	**-0.5**
CD2			pmax	pmax		
	comp=Z,3.0nm,0.6s					
BILL	**Bilibino**	**32.60 17***c*	*i*P	**P**	**12 43 15.0**	**+0.5**
BILL			*e**PP	**sP**	**12 43 25.4**	**-1.5**
BILL			*e**SP	pP	12 43 33.1	+10
BILL			*e*		12 46 01.3	
BILL			pmax	pmax		
	comp=Z,17nm,1.2s					
BILL			MLR	MLR		
	comp=Z,112nm,19.0s					
BILL	**Bilibino**	**32.60 17**	*e*P	**P**	**12 43 14.5**	**0.0**
	comp=Z,12nm,1.0s					
GTA	**Gaotai**	**32.82 285**	P	**P**	**12 43 17.5**	**+0.6**
GTA			pP	sP	12 43 28.5	-0.8
GTA			sP	pP	12 43 32.0	+6.4
GTA			PcP	**PcP**	**12 46 02.6**	**+1.2**
GTA			S	**S**	**12 48 33.1**	**+0.8**
GTA			sS	sS	12 48 48.7	+2.0
GTA			SS	**SnSn**	**12 50 33.7**	**+4.1**
GTA			pmax	pmax		
	comp=Z,7.0nm,0.7s					
GTA			pmax	pmax		
	comp=Z,99nm,5.3s					
GTA			LR	LR		
	comp=N,170nm,19.5s					
GTA			LR	LR		
	comp=E,590nm,18.5s					
GTA			LR	LR		
	comp=Z,760nm,17.1s					
TIXI	**Tiksi**	**34.08 352**	P	**P**	**12 43 27.2**	**-0.1**
	comp=Z,5.1nm,0.8s,baz=141,slow=9.2,SNR=18					
TIXI	**Tiksi**	**34.08 352***ce*	P	**P**	**12 43 27.3**	**-0.1**
TIXI			pmax	pmax		
	comp=Z,17nm,1.7s					
TIXI	**Tiksi**	**34.08 352**	*e*P	**P**	**12 43 27.1**	**-0.1**
	comp=Z,9.6nm,1.0s					
KMI	**Kunming**	**35.80 260**	P	**P**	**12 43 43.0**	**0.0**
KMI			pP	sP	12 43 53.5	-1.9
KMI			S	**S**	**12 49 13.9**	**-4.9**
KMI			SS	**SnSn**	**12 51 42.1**	**-0.4**
KMI			pmax	pmax		
	comp=Z,16nm,0.8s					
KMI			pmax	pmax		
	comp=Z,73nm,3.9s					
KMI			LR	LR		
	comp=N,240nm,16.3s					
KMI			LR	LR		
	comp=E,290nm,14.4s					
KMI			LR	LR		
	comp=Z,360nm,16.8s					
NONG	**Nongkai**	**39.54 250**	P	**P**	**12 44 15.6**	**+1.2**
	comp=Z,35nm,0.7s					
WMQ	**Urumqi**	**40.84 296**	P	**P**	**12 44 25.5**	**+0.5**
WMQ			pP	sP	12 44 36.7	-0.8
WMQ			sP	pP	12 44 42.1	+8.2
WMQ			ScS	ScS	12 54 24.8	-3.0
WMQ			pmax	pmax		
	comp=Z,30nm,0.8s					
WMQ			pmax	pmax		
	comp=Z,69nm,3.8s					
WMQ			LR	LR		
	comp=N,100nm,12.8s					
WMQ			LR	LR		
	comp=E,110nm,14.4s					
WMQ			LR	LR		
	comp=Z,62nm,31.8s					
LOEI	**Loei**	**41.29 251**	P	**P**	**12 44 26.5**	**-2.4**
	comp=Z,5.7nm,1.5s					
ZAA0	**Zalesovo Array**	**41.53 311**	*e*P	**P**	**12 44 30.2**	**-0.2**
ZAA0			*e*P	**P**	**12 44 30.9**	**+0.4**
ZALV	**Zalesovo Beam**	**41.53 311**	P	**P**	**12 44 30.4**	**0.0**
	comp=Z,6.4nm,0.5s,baz=86,slow=6.8,SNR=26					
ZALV			PcP	**PcP**	**12 46 27.2**	**-0.2**
	comp=Z,3.1nm,0.5s,baz=110,slow=2.6,SNR=3.8					
ZALV			LR	LR	13 02 25.2	
	comp=Z,334nm,18.3s,baz=70,slow=37					
UTTA	**Uttaradit**	**41.67 252**	P	**P**	**12 44 33.4**	**+1.4**
	comp=Z,3.2nm,1.2s					
LAMP	**Lampang**	**41.89 254**	P	**P**	**12 44 35.8**	**+2.0**
	comp=Z,3.8nm,0.8s					
MRSI	**Marisa**	**42.03 211**	P	**P**	**12 44 37.0**	**+2.1**
	comp=Z,36nm,1.3s,comp=Z,2μm					
PBKT	**Sadao Pong**	**42.09 251**	P	**P**	**12 44 36.5**	**+1.1**
	comp=Z,8.2nm,1.4s					
CMMT	**Chiang Mai**	**42.24 255**	P	**P**	**12 44 37.1**	**+0.4**
	comp=Z,10nm,1.1s					
CHTO	**Chiang Mai**	**42.24 255**	P	**P**	**12 44 37.1**	**+0.4**
	comp=Z,42nm,1.4s					
CHTO	**Chiang Mai**	**42.24 255**	*e*P	**P**	**12 44 36.8**	**+0.1**
CHTO			pmax	pmax		
	comp=Z,10.0nm,1.0s					
CHTO	**Chiang Mai**	**42.24 255**	*e*P	**P**	**12 44 36.8**	**+0.1**
	comp=Z,10nm,1.0s					
NRIK	**Noril'sk**	**42.36 335**	P	**P**	**12 44 36.0**	**-1.0**
	comp=Z,2.9nm,0.4s,baz=112,slow=9.5,SNR=8.3					
NRIK			PcP	**PcP**	**12 46 31.0**	**+1.1**
	comp=Z,9.0nm,0.6s,baz=132,slow=4.4,SNR=4.4					
NRIK			LR	LR	13 03 15.0	
	comp=Z,471nm,19.1s,baz=103,slow=38					
NVS	**Novosibirsk**	**42.42 313**	*e*P	**P**	**12 44 37.7**	**0.0**
CMAR	**Chiang Mai Arr**	**42.45 255**	P	**P**	**12 44 37.3**	**-1.1**
	comp=Z,2.3nm,0.8s,baz=46,slow=5.5,SNR=14					
CMAR			PcP	**PcP**	**12 46 30.9**	**-0.2**
	comp=Z,0.7nm,0.7s,baz=4.3,slow=3.7,SNR=5.2					
CMAR			LR	LR	13 02 32.1	
	comp=Z,55nm,21.3s,baz=55,slow=37					
SUKH	**Sukhothai**	**42.53 253**	P	**P**	**12 44 39.9**	**+0.9**
	comp=Z,4.4nm,1.1s,comp=Z,41nm					
LSA	**Lhasa**	**42.74 274**	*e*P	**P**	**12 44 41.4**	**+0.2**
LSA			pmax	pmax		
	comp=Z,11nm,0.6s					
LSA	**Lhasa**	**42.74 274**	*e*P	**P**	**12 44 41.4**	**+0.2**
	comp=Z,11nm,0.6s					
SANI	**Sanana**	**42.89 204**	P	**P**	**12 44 43.1**	**+1.2**
	comp=Z,23nm,0.8s					
CHBT	**CHBT**	**43.60 245**	P	P	12 44 52.8	+5.1
	comp=Z,10.0nm,0.2s,comp=Z,2μm					
MK31	**Makanchi Array**	**43.99 301**	*i* P	**P**	**12 44 50.4**	**-0.1**
MK31			pmax	pmax		
	comp=Z,10.0nm,0.8s					
MKAR	**Makanchi Array**	**43.99 301**	P	**P**	**12 44 50.5**	**0.0**
	comp=Z,7.5nm,0.8s,baz=83,slow=9.9,SNR=23					
MKAR			LR	LR	13 03 49.1	
	comp=Z,130nm,18.6s,baz=80,slow=37					
MKAR	**Makanchi Array**	**43.99 301**	P	**P**	**12 44 50.5**	**0.0**
MKAR			pmax	pmax		
	comp=Z,7.0nm,0.8s					
MKAR			MLR	MLR		
	comp=Z,130nm,18.6s					
MKAR	**Makanchi Array**	**43.99 301**	*e*P	**P**	**12 44 51.1**	**+0.6**
TTA	**Tatalina**	**43.99 35**	*e*P	**P**	**12 44 52.0**	**+1.6**
TTA			pmax	pmax		
	comp=Z,22nm,1.9s					
TTA	**Tatalina**	**43.99 35**	*e*P	**P**	**12 44 52.0**	**+1.6**
	comp=Z,22nm,1.9s					
SVW2	**Sparrevohn**	**44.10 38**	*e*P	**P**	**12 44 53.6**	**+2.4**
	comp=Z,11nm,1.0s					
MAKZ	**Makanchi**	**44.19 301**	*e*P	**P**	**12 44 52.8**	**+0.6**
MAKZ			pmax	pmax		
	comp=Z,12nm,0.9s					
MAKZ	**Makanchi**	**44.19 301**	*e*P	**P**	**12 44 52.8**	**+0.6**
	comp=Z,12nm,0.9s					
RSO	**Redoubt South**	**45.49 39**	*e*P	**P**	**12 45 04.0**	**+1.6**
KURK	**Kurchatov**	**45.65 307**	P	**P**	**12 45 03.0**	**-0.6**
KURK			pmax	pmax		
	comp=Z,98nm,1.0s					
KURK	**Kurchatov**	**45.65 307**	*e*P	**P**	**12 45 03.5**	**-0.1**
	comp=Z,47nm,1.0s					
KDAK	**Kodiak Island**	**45.71 43**	P	P	12 45 19.3	+15
	comp=Z,14nm,0.8s,baz=254,slow=1.1,SNR=10					
KDAK	**Kodiak Island**	**45.71 43**	*i* P	**P**	**12 45 05.6**	**+1.7**
KDAK	**Kodiak Island**	**45.71 43**	*e*P	**P**	**12 45 05.7**	**+1.7**
	comp=Z,19nm,0.9s					
KDAK			P	**sP**	**12 45 19.3**	**+2.8**
KURBB	**Kurchatov Arra**	**45.72 307**	P	**P**	**12 45 04.2**	**0.0**
	comp=Z,24nm,0.5s,baz=82,slow=8.1,SNR=139					
PPLA	**Purkeypile**	**45.74 36**	*e*P	**P**	**12 45 06.8**	**+2.5**
	comp=Z,20nm,1.3s					
CAST	**Castle Rocks**	**45.79 35**	*e*P	**P**	**12 45 06.9**	**+2.2**
	comp=Z,6.2nm,1.0s					
SPU	**Mount Spurr**	**45.81 38**	*e*P	**P**	**12 45 06.8**	**+1.9**
BPAW	**Bear Paw Mtn.**	**46.29 34**	*e*P	**P**	**12 45 07.6**	**-1.0**
	comp=Z,28nm,1.8s					
KTH	**Kantishna Hill**	**46.31 35**	*e*P	**P**	**12 45 10.7**	**+1.9**
	comp=Z,14nm,1.0s					
MLY	**Manley**	**46.41 33**	*e*P	**P**	**12 45 11.6**	**+2.1**
	comp=Z,13nm,1.2s					
TRF	**Thorofare Moun**	**46.60 35**	*e*P	**P**	**12 45 13.9**	**+2.8**
	comp=Z,7.9nm,0.9s					
COLD	**Coldfoot**	**46.71 30**	*e*P	**P**	**12 45 13.6**	**+1.8**
COLD			*ep*P	**sP**	**12 45 24.5**	**+0.2**
MCK	**McKinley**	**47.20 34**	*e*P	**P**	**12 45 16.8**	**+1.1**
MCK			pmax	pmax		
	comp=Z,15nm,1.2s					
MCK	**McKinley**	**47.20 34**	*e*P	**P**	**12 45 16.8**	**+1.1**
	comp=Z,15nm,1.2s					
RND	**Reindeer**	**47.24 35**	*e*P	**P**	**12 45 17.1**	**+1.0**
RND			pmax	pmax		
	comp=Z,13nm,1.0s					
RND	**Reindeer**	**47.24 35**	*e*P	**P**	**12 45 17.1**	**+1.0**
	comp=Z,13nm,1.0s					
MDM	**Murphy Dome**	**47.48 33**	*e*P	**P**	**12 45 19.7**	**+1.9**
	comp=Z,17nm,1.1s					
WRH	**Wood River Hil**	**47.55 33**	*e*P	**P**	**12 45 19.6**	**+1.2**
WRH			*ep*P	**sP**	**12 45 30.1**	**-0.8**
SML	**Sawmill**	**47.57 37**	*e*P	**P**	**12 45 19.9**	**+1.3**
SML			pmax	pmax		
	comp=Z,10.0nm,0.8s					
SML	**Sawmill**	**47.57 37**	*e*P	**P**	**12 45 19.9**	**+1.3**
	comp=Z,9.7nm,0.8s					
COLA	**College**	**47.64 33**⇑	*e*P	**P**	**12 45 20.5**	**+1.5**
COLA			pmax	pmax		
	comp=Z,4.0nm,1.0s					
CCB	**Clear Creek Bu**	**47.66 33**	*e*P	**P**	**12 45 20.3**	**+1.1**
	comp=Z,10nm,1.6s					
ILAR	**Eielson Array**	**48.05 33**	P	**P**	**12 45 23.1**	**+0.8**
	comp=Z,5.7nm,0.8s,baz=268,slow=6.5,SNR=63					
KKN	**Kakani**	**48.20 275**	*e*P	**P**	**12 45 24.6**	**+0.4**
	comp=Z,63nm,0.8s					
PKIN	**Phulchoki**	**48.21 275**	*e*P	**P**	**12 45 24.1**	**-0.2**
	comp=Z,13nm,0.4s					
GKN	**Gorkha**	**48.61 276**	*e*P	**P**	**12 45 27.2**	**0.0**
	comp=Z,106nm,0.9s					
FYU	**Fort Yukon**	**48.66 31**	*e*P	**P**	**12 45 29.5**	**+2.7**
FYU			*ep*P	**sP**	**12 45 41.7**	**+2.2**
DOT	**Dot Lake**	**49.37 34**	*e*P	**P**	**12 45 33.3**	**+0.9**
	comp=Z,10nm,0.9s					
KOLN	**Koldanda**	**49.53 276**	*e*P	**P**	**12 45 34.5**	**+0.2**
	comp=Z,17nm,0.5s					
TKM2	**Tokmak 2**	**49.59 298**	P	**P**	**12 45 34.7**	**+0.1**
TKM2			pmax	pmax		
	comp=Z,24nm,1.3s					
TKM2	**Tokmak 2**	**49.59 298**	*e*P	**P**	**12 45 35.5**	**+0.8**
	comp=Z,21nm,1.1s					
MENT	**Mentasta**	**49.60 35**	*e*P	**P**	**12 45 36.3**	**+2.1**
	comp=Z,12nm,1.3s					
PYUN	**Piuthan**	**49.85 277**	*e*P	**P**	**12 45 37.1**	**+0.3**
BVA0	**Borovoye Array**	**50.18 312**	*i* P	**P**	**12 45 39.0**	**+0.3**
BVA0			pmax	pmax		
	comp=Z,10.0nm,1.0s					
BVAR	**Borovoye Array**	**50.18 312**	P	**P**	**12 45 38.8**	**+0.1**
	comp=Z,11nm,1.1s,baz=72,slow=9.5,SNR=21					
BVAR			PcP	**PcP**	**12 46 57.9**	**+0.3**
	comp=Z,7.1nm,0.7s,baz=85,slow=3.6,SNR=6.8					
BRVK	**Borovoye**	**50.24 312***d*	*i* P	**P**	**12 45 39.2**	**+0.1**
BRVK			pmax	pmax		
	comp=Z,23nm,2.5s					
BRVK	**Borovoye**	**50.24 312**	*e*P	**P**	**12 45 39.4**	**+0.3**
	comp=Z,11nm,1.0s					
FRU	**Bishkek**	**50.30 298**	*e*P	**P**	**12 45 39.0**	**-0.8**
FRU			*e*		12 46 57.0	
FRU			pmax	pmax		
	comp=Z,40nm,1.9s					
IPM	**Ipoh**	**50.37 239**	*e*P	**P**	**12 45 40.0**	**-0.5**
	comp=Z,21nm,1.0s					
AAK	**Ala-Archa**	**50.45 298***de*P		**P**	**12 45 41.1**	**0.0**
AAK			pmax	pmax		
	comp=Z,13nm,1.2s					
AAK	**Ala-Archa**	**50.45 298**	*e*P	**P**	**12 45 41.5**	**+0.5**
	comp=Z,4.5nm,0.8s					
KSH	**Kashi**	**50.47 293**	P	**P**	**12 45 45.8**	**+4.5**
KSH			*ep*P	sP	12 45 55.7	+1.8
KSH			*e*PP	**PP**	**12 47 42.3**	**+5.4**
KSH			PcS	**PcS**	**12 50 59.1**	**+2.6**
KSH			S	**S**	**12 52 56.4**	**+3.2**
KSH			pmax	pmax		
	comp=Z,61nm,6.8s					
KSH			LR	LR		
	comp=N,81nm,6.2s					
KSH			LR	LR		
	comp=E,160nm,7.4s					
KSH			LR	LR		
	comp=Z,320nm,15.0s					
SOEI	**Soe**	**50.69 203**	P	**P**	**12 45 41.4**	**-1.6**
	comp=Z,31nm,1.1s,comp=Z,2μm					
SOEI	**Soe**	**50.69 203**	*e*P	**P**	**12 45 42.8**	**-0.3**
SOEI			*ep*P	**sP**	**12 45 55.5**	**-0.2**
ZRNK	**Zerenda**	**51.01 312**	P	**P**	**12 45 44.5**	**-0.5**
ZRNK			pmax	pmax		
	comp=Z,22nm,1.2s					
ZRNK	**Zerenda**	**51.01 312**	*e*P	**P**	**12 45 45.3**	**+0.3**
	comp=Z,19nm,1.0s					
MTN	**Manton Dam**	**51.96 194**	*e*P	**P**	**12 45 52.4**	**+0.1**
	comp=Z,32nm,1.2s					
COEN	**Coen**	**52.02 179**	*e*P	**P**	**12 45 53.5**	**+0.7**
COEN			*ep*P	**sP**	**12 46 03.8**	**-1.6**
INK	**Inuvik**	**52.94 28**	P	**P**	**12 46 00.3**	**+1.3**
	comp=Z,6.4nm,1.1s,baz=276,slow=7.2,SNR=12					
INK			PcP	**PcP**	**12 47 08.1**	**+0.5**
	comp=Z,3.3nm,0.8s,baz=245,slow=4.8,SNR=3.6					
INK	**Inuvik**	**52.94 28**	*e*P	**P**	**12 46 00.5**	**+1.5**
INK					12 47 08.1	
INK			pmax	pmax		
	comp=Z,15nm,1.4s					
INK	**Inuvik**	**52.94 28**	*e*P	**P**	**12 46 00.5**	**+1.5**
	comp=Z,15nm,1.4s					
INK			PcP	**PcP**	**12 47 08.1**	**+0.5**
KK31	**Karatay Array**	**53.04 300**	*i* P	**P**	**12 45 59.9**	**-0.3**
KK31			pmax	pmax		
	comp=Z,14nm,1.1s					
KKAR	**Karatay Array**	**53.04 300**	*e*P	**P**	**12 46 00.4**	**+0.2**
KKAR			pmax	pmax		
	comp=Z,5.0nm,0.7s					
KKAR	**Karatay Array**	**53.04 300**	*e*P	**P**	**12 46 00.4**	**+0.2**
	comp=Z,5.4nm,0.7s					
SVE	**Sverdlovsk**	**54.60 318**⇑	*e*P	**P**	**12 46 12.2**	**+0.8**
SVE			pmax	pmax		
	comp=Z,44nm,1.1s					
SVE			MLR	MLR		
	comp=Z,600nm,19.0s					
PDSI	**Padang**	**54.78 235**	P	P	12 46 24.6	+11
LHSI	**Lahat**	**55.15 229**	P	**P**	**12 46 17.8**	**+2.0**
ARU	**Arti**	**55.82 318**	LR	LR	13 12 42.1	
	comp=Z,424nm,18.0s,baz=74,slow=39					
ARU	**Arti**	**55.82 318***d*	*i*P	**P**	**12 46 20.3**	**+0.1**
ARU					12 47 17.2	
ARU					12 48 19.8	
ARU			S	**S**	**12 54 06.9**	**+1.8**
ARU			SS	**SS**	**12 57 45.8**	**-4.5**
ARU			pmax	pmax		
	comp=Z,21nm,0.6s					
ARU			MLR	MLR		
	comp=Z,420nm,18.0s					
ARU	**Arti**	**55.82 318**	*e*P	**P**	**12 46 20.0**	**-0.2**
	comp=Z,26nm,0.8s					
DLBC	**Dease Lake**	**57.21 39**	P	**P**	**12 46 32.4**	**+2.3**
	comp=Z,4.0nm,0.8s,baz=290,slow=7.6,SNR=6.2					
KBL	**Kabul**	**57.56 291**	*e*P	**P**	**12 46 33.3**	**+0.2**
KBL			pmax	pmax		
	comp=Z,19nm,0.9s					
KBL	**Kabul**	**57.56 291**	*e*P	**P**	**12 46 33.3**	**+0.2**
	comp=Z,19nm,0.9s					
AB31	**Akbulak array**	**57.60 310**	P	**P**	**12 46 32.2**	**-0.7**
AB31			pmax	pmax		
	comp=Z,14nm,0.9s					
FITZ	**Fitzroy Crossi**	**58.26 199**	*e*P	**P**	**12 46 38.1**	**+0.4**
	comp=Z,34nm,1.4s					
FITZ			*ep*P	**sP**	**12 46 48.9**	**-1.5**
AKTO	**Aktyubinsk**	**58.29 312**	LR	LR	13 12 51.8	
	comp=Z,146nm,18.9s,slow=37					
AKTO	**Aktyubinsk**	**58.29 312**	P	**P**	**12 46 36.1**	**-1.7**
AKTO			pmax	pmax		
	comp=Z,12nm,1.0s					
WRAB	**Tennant Creek**	**58.43 189***d*	*i*P	**P**	**12 46 38.1**	**-0.8**
WRAB			pmax	pmax		
	comp=Z,48nm,1.2s					
WRAB	**Tennant Creek**	**58.43 189**	*e*P	**P**	**12 46 38.5**	**-0.4**
	comp=Z,21nm,1.0s					
WB2	**Warramunga Arr**	**58.44 189**	*e*P	**P**	**12 46 38.6**	**-0.4**
	comp=Z,21nm,0.9s					
WRA	**Warramunga Arr**	**58.44 189**	P	**P**	**12 46 38.2**	**-0.8**
	comp=Z,12nm,0.7s,baz=6.2,slow=7.1,SNR=99					
HYB	**Hyderabad**	**58.88 268**	*i* P	**P**	**12 46 43.0**	**+0.6**
SPITS	**Spitsbergen Ar**	**59.37 349**	LR	LR	13 13 12.3	
	comp=Z,73nm,21.2s,baz=55,slow=37					
RES	**Resolute Bay**	**61.18 15**	*e*P	**P**	**12 46 57.0**	**-0.3**
RES			pmax	pmax		
	comp=Z,7.0nm,0.9s					
RES	**Resolute Bay**	**61.18 15**	*e*P	**P**	**12 46 57.0**	**-0.3**
	comp=Z,7.5nm,0.9s					
TMCR	**Tamitsa**	**61.92 331**	*e*P	**P**	**12 47 02.5**	**+0.2**
TMCR			pmax	pmax		
	comp=Z,19nm,0.5s					
ASAR	**Alice Springs**	**62.16 189**	P	**P**	**12 47 04.2**	**-0.3**
	comp=Z,6.5nm,0.7s,baz=8.4,slow=5.5,SNR=83					
ASAR			LR	LR	13 14 17.7	
	comp=Z,61nm,20.3s,baz=356,slow=36					
ASAR	**Alice Springs**	**62.16 189**	P	**P**	**12 47 04.2**	**-0.3**
ASAR			pmax	pmax		
	comp=Z,6.0nm,0.7s					
ASAR			MLR	MLR		
	comp=Z,61nm,20.3s					
YKW3	**Yellowknife Ar**	**62.32 31**	*e*P	**P**	**12 47 05.9**	**+0.8**
	comp=Z,22nm,1.6s					
YKA	**Yellowknife Ar**	**62.36 31**	P	**P**	**12 47 05.8**	**+0.4**
	comp=Z,2.5nm,0.7s,baz=301,slow=6.6,SNR=67					
YKB5	**Yellowknife Ar**	**62.36 31**	*e*P	**P**	**12 47 04.8**	**-0.5**
KLMR	**Klimovskoe**	**63.00 328**	*e*P	**P**	**12 47 08.2**	**-1.5**
KLMR			*e**PP	**pP**	**12 47 18.9**	**0.0**
KLMR			*e*		12 49 27.0	
KLMR			pmax	pmax		
	comp=Z,20nm,1.2s					
ARCES	**ARCESS Array B**	**63.01 339**	P	**P**	**12 47 10.0**	**+0.4**
	comp=Z,4.1nm,0.8s,baz=60,slow=7.9,SNR=15					
ARCES			LR	LR	13 16 47.8	
	comp=Z,83nm,21.7s,baz=54,slow=38					
ARCES	**ARCESS Array B**	**63.01 339**	P	**P**	**12 47 10.0**	**+0.4**
ARCES			pmax	pmax		
	comp=Z,4.0nm,0.8s					
ARCES			MLR	MLR		
	comp=Z,83nm,21.7s					
GEYT	**Alibeck**	**63.77 299**	P	**P**	**12 47 15.2**	**-0.1**
	comp=Z,6.5nm,0.7s,baz=29,slow=3.4,SNR=11					
GEYT			LR	LR	13 16 48.5	
	comp=Z,153nm,18.6s,baz=165,slow=38					
DAG	**Danmarks Havn**	**64.53 355**	*i* P	**P**	**12 47 18.9**	**-0.6**
	comp=Z,11nm,1.0s					
DAG			*i*		12 47 31.1	
DAG	**Danmarks Havn**	**64.53 355**	*i* P	**P**	**12 47 18.9**	**-0.6**
DAG			*i*		12 47 31.1	
DAG			pmax	pmax		
	comp=Z,11nm,1.0s					
A04D	**Lummi Island**	**65.37 47**	P	**P**	**12 47 26.7**	**+1.4**
	baz=301					
NLWA	**Neilton Lookou**	**65.37 48**	*e*P	**P**	**12 47 28.0**	**+2.5**
	comp=Z,21nm,0.9s					
NLWA			*ep*P	**sP**	**12 47 40.3**	**+2.0**
B05A	**Bryant**	**65.95 47**	P	**P**	**12 47 30.6**	**+1.5**
	baz=301					
MOS	**Moscow**	**66.59 323**	*e*P	**P**	**12 47 32.5**	**-0.6**
MOS			pmax	pmax		
	comp=Z,46nm,1.0s					
VRH	**Novokhopyorsk**	**67.05 318**	*e*P	**P**	**12 47 34.1**	**-2.0**
VRH			pmax	pmax		
	comp=Z,7.0nm,0.3s					
LTY	**Liberty**	**67.30 47**	*e*P	**P**	**12 47 39.3**	**+1.4**
	comp=Z,6.2nm,0.9s					
OBN	**Obninsk**	**67.44 323***de*P		**P**	**12 47 38.4**	**-0.1**
OBN			*i*		12 47 49.7	
OBN			*e*		12 50 05.4	
OBN			*e*SS	SS	13 00 46.3	-5.5
OBN			pmax	pmax		
	comp=Z,57nm,1.7s					
OBN			MLR	MLR		
	comp=Z,179nm,15.0s					
B08A	**Colville Reser**	**67.47 46**	*e*P	**P**	**12 47 40.1**	**+1.2**
	comp=Z,17nm,1.3s					
B08A			*ep*P	**sP**	**12 47

baz=303
C09A Chrisman Ranch 68.37 46 *e*P **P 12 47 46.0 +1.4**
comp=Z,13nm,0.9s
VSR Storozhevoye 68.38 319 *e*P **P 12 47 43.8 -0.7**
VSR pmax pmax
comp=Z,20nm,0.6s
D08A Wollman Farm, 68.41 47 *e*P **P 12 47 46.0 +1.2**
comp=Z,7.6nm,1.0s
I05D Terrebonne, OR 68.47 50 P **P 12 47 46.4 +1.1**
baz=303
NEW Newport 68.75 45 P **P 12 47 48.0 +1.0**
comp=Z,6.7nm,0.8s,baz=325,slow=6.0,SNR=11
NEW Newport 68.75 45 P **P 12 47 47.9 +1.0**
baz=304,SNR=7.3
NEW Newport 68.75 45 *e*P **P 12 47 48.5 +1.5**
NEW *e**PP **sP 12 47 58.9 -0.9**
NEW pmax pmax
comp=Z,10.0nm,0.9s
NEW Newport 68.75 45 *e*P **P 12 47 48.5 +1.5**
comp=Z,9.6nm,0.9s
NEW *ep*P **sP 12 47 58.9 -0.9**
YBH Yreka Blue Hor 69.04 53 P **P 12 47 50.8 +1.8**
comp=Z,4.3nm,0.9s,baz=329,slow=1.7,SNR=11
YBH Yreka Blue Hor 69.04 53 *e*P **P 12 47 51.2 +2.2**
YBH *e**PP **sP 12 48 03.4 +1.6**
YBH Yreka Blue Hor 69.04 53 *e*P **P 12 47 51.2 +2.2**
YBH *ep*P **sP 12 48 03.4 +1.6**
J05D Fort Rock, OR 69.11 51 P **P 12 47 51.1 +1.6**
baz=303,SNR=7.0
M02C Callahan 69.14 53 P **P 12 47 50.9 +1.4**
baz=303
K04D Chiloquin, OR 69.15 52 P **P 12 47 51.2 +1.5**
baz=303
SUMG Summit 69.39 0 *i* P **P 12 47 51.8 +0.9**
comp=Z,9.7nm,0.8s
SUMG Summit 69.39 0 *i* P **P 12 47 51.8 +0.9**
SUMG pmax pmax
comp=Z,10.0nm,0.8s
SUMG Summit 69.39 0 *e*P **P 12 47 51.8 +0.9**
comp=Z,27nm,1.3s
N02D Trinity Center 69.46 54 P **P 12 47 52.7 +1.1**
baz=303
M04C Macdoel 69.56 53 P **P 12 47 53.8 +1.5**
baz=304,SNR=6.7
K05A Summer Lake 69.63 51 *e*P **P 12 47 54.9 +2.2**
comp=Z,22nm,1.1s
VSU Vasula 69.66 330⇑ *e*P **P 12 47 52.7 +0.4**
VSU pmax pmax
comp=Z,125nm,1.7s
GOF Gofitskoye 69.71 312⇑ *e*P **P 12 47 53.2 +0.3**
GOF pmax pmax
comp=Z,76nm,1.1s
STKA Stephens Creek 69.85 181 P **P 12 47 53.8 +0.1**
comp=Z,2.9nm,0.7s,baz=347,slow=7.2,SNR=8.2
WALA Waterton Lakes 70.05 43 *e*P **P 12 47 56.5 +1.5**
comp=Z,8.0nm,0.9s
NCK Nalchik 70.26 310⇑ *e*P **P 12 47 56.9 +0.6**
NCK pmax pmax
comp=Z,21nm,1.4s
O03D Paynes Creek 70.41 54 P **P 12 47 58.1 +0.7**
baz=304
MOD Modoc Plateau 70.45 52 *e*P **P 12 47 59.4 +1.7**
comp=Z,4.8nm,0.8s
ZEI Tsey 70.47 309 *e*P **P 12 47 55.3 -2.6**
ZEI pmax pmax
comp=Z,32nm,1.3s
KVAR Kislovodsk Arr 70.54 311 LR LR 13 21 37.5
comp=Z,77nm,18.5s,slow=38
KIV Kislovodsk 70.54 311 *e*P **P 12 47 58.7 +0.6**
KIV pmax pmax
comp=Z,63nm,1.1s
KIV MLR MLR
comp=Z,97nm,17.0s
KIV Kislovodsk 70.54 311 *e*P **P 12 47 59.3 +1.1**
comp=Z,56nm,1.0s
KBZ Khabaz 70.54 311 P **P 12 47 58.7 +0.7**
comp=Z,16nm,0.9s,baz=45,slow=1.7,SNR=38
KBZ LR LR 13 23 37.5
comp=Z,114nm,18.0s,baz=42,slow=40
BMO Blue Mountains 70.58 48 *e*P **P 12 48 00.0 +1.6**
BMO pmax pmax
comp=Z,6.0nm,1.2s
BMO Blue Mountains 70.58 48 *e*P **P 12 48 00.0 +1.6**
comp=Z,6.0nm,1.2s
JTMT Jette 70.61 44 *e*P **P 12 48 00.3 +1.7**
YBMT Yellow Bay 70.69 44 *e*P **P 12 48 00.7 +1.7**
SCO Scoresbysund 70.89 354 *i* P **P 12 47 59.6 0.0**
comp=Z,25nm,1.4s
SCO Scoresbysund 70.89 354 *e*P **P 12 47 59.6 0.0**
SCO pmax pmax
comp=Z,25nm,1.4s
SWMT Swartz Lake 70.91 44 *e*P **P 12 48 01.9 +1.5**
SWMT *ep*P **sP 12 48 14.1 +0.9**
NEY Neytrino 70.92 310⇓ *e*P **P 12 48 02.3 +1.7**
NEY pmax pmax
comp=Z,2.0nm,0.9s
BBOO Buckleboo 71.02 185 *e*P **P 12 48 00.7 -0.1**
comp=Z,23nm,1.1s
WVOR Wild Horse Val 71.17 51 *e*P **P 12 48 03.7 +1.7**
WVOR pmax pmax
comp=Z,4.0nm,0.9s
WVOR Wild Horse Val 71.17 51 *e*P **P 12 48 03.7 +1.7**
comp=Z,4.4nm,0.9s
MSO Missoula 71.34 45 P **P 12 48 03.8 +0.8**
baz=306
MSO Missoula 71.34 45 *e*P **P 12 48 04.0 +1.1**
comp=Z,8.0nm,1.1s
GNI Garni 71.44 307 LR LR 13 21 54.3
comp=Z,72nm,19.9s,baz=92,slow=38
UOSS Minazif 72.02 288 *e*P **P 12 48 07.5 +0.2**
comp=Z,0.7nm,0.9s
MFID Camas Ranch 72.28 48 *e*P **P 12 48 10.0 +1.3**
comp=Z,17nm,1.5s
FCC Fort Churchill 72.55 27 *e*P **P 12 48 10.3 +0.5**
FCC *e**PP **sP 12 48 22.3 -0.4**
FCC pmax pmax
comp=Z,14nm,1.1s
FCC Fort Churchill 72.55 27 *e*P **P 12 48 10.3 +0.5**
comp=Z,14nm,1.1s
FCC *ep*P **sP 12 48 22.3 -0.4**
CMB Columbia Colle 72.59 55 *e*P **P 12 48 11.8 +1.2**
CMB *e**PP **sP 12 48 23.9 +0.5**
CMB Columbia Colle 72.59 55 *e*P **P 12 48 11.8 +1.2**
CMB *ep*P **sP 12 48 23.9 +0.5**
LRM Limekiln Ridge 72.77 45 *e*P **P 12 48 12.8 +1.1**
EGMT Eagleton 72.87 42 P **P 12 48 13.3 +1.2**
baz=309,SNR=8.7
EGMT Eagleton 72.87 42 *e*P **P 12 48 13.3 +1.2**
comp=Z,11nm,0.8s
DLMT Dillon 72.97 45 *e*P **P 12 48 14.4 +1.6**
comp=Z,8.9nm,1.0s
HLID Hailey 73.02 48 P **P 12 48 14.7 +1.5**
baz=307,SNR=6.2
HLID Hailey 73.02 48 *e*P **P 12 48 14.8 +1.7**
comp=Z,5.7nm,1.1s
NC405 NORSAR Array S 73.03 337 *e*P **P 12 48 13.1 +0.4**
NC303 NORSAR Array S 73.04 338 *e*P **P 12 48 13.4 +0.7**
ANN Anapa 73.09 314 *e*P **P 12 48 12.8 -0.5**
ANN pmax pmax
comp=Z,24nm,1.5s
NC204 NORSAR Array S 73.18 338 *e*P **P 12 48 13.4 -0.2**
NB201 NORSAR Array S 73.20 337 *e*P **P 12 48 14.3 +0.5**
NB2 NORSAR Subarra 73.24 337 P **P 12 48 13.7 -0.2**
comp=Z,24nm,1.1s,baz=39,slow=6.2
NB2 NORSAR Subarra 73.24 337 P **P 12 48 13.7 -0.2**
baz=39,slow=6.2
NOA NORSAR Array B 73.24 337 P **P 12 48 14.1 +0.1**
comp=Z,10nm,0.9s,baz=39,slow=5.9,SNR=25
NOA LR LR 13 23 08.1
comp=Z,138nm,20.6s,baz=35,slow=38
BOZ Bozeman (W) 73.33 45 P **P 12 48 16.3 +1.4**
baz=308,SNR=12
BOZ Bozeman (W) 73.33 45 *e*P **P 12 48 16.3 +1.4**
BOZ pmax pmax
comp=Z,11nm,1.3s
BOZ Bozeman (W) 73.33 45 *e*P **P 12 48 16.3 +1.4**
comp=Z,11nm,1.3s
NBO02 NORSAR Array S 73.34 338 *e*P **P 12 48 14.7 +0.2**
NBO00 NORSAR Array S 73.37 338 *e*P **P 12 48 15.4 +0.7**
AKASG Malin Array Be 73.66 322 P **P 12 48 16.4 -0.2**
comp=Z,12nm,0.8s,baz=46,slow=6.5,SNR=50
AKASG LR LR 13 23 21.3
comp=Z,192nm,18.6s,baz=60,slow=38
AKBB Malin Array Si 73.66 322 *e*P **P 12 48 16.8 +0.2**
AKBB Malin Array Si 73.66 322 *e*P **P 12 48 16.8 +0.2**
NV01 Mina Array Sit 73.70 54 *e*P **P 12 48 18.4 +1.1**

NVAR Mina Array Bea 73.70 54 P **P 12 48 18.4 +1.1**
comp=Z,3.9nm,0.9s,baz=283,slow=6.4,SNR=23
AK11 Malin Array Si 73.70 322 *e*P **P 12 48 16.9 +0.1**
NV11 Mina Array Sit 73.79 54 *e*P **P 12 48 19.0 +1.3**
comp=Z,8.9nm,1.4s
MLAC Mammoth, Mammo 73.83 55 P **P 12 48 19.4 +1.3**
baz=306
YMR Madison River 74.31 45 *e*P **P 12 48 22.7 +2.0**
comp=Z,6.1nm,1.0s
GCMT Greycliff 74.32 44 *e*P **P 12 48 22.4 +1.7**
YFT Old Faithful 74.52 45 *e*P **P 12 48 25.7 +3.7**
comp=Z,8.1nm,1.1s
LKWY Lake 74.69 45 *e*P **P 12 48 26.1 +3.1**
LKWY pmax pmax
comp=Z,7.0nm,1.1s
LKWY Lake 74.69 45 *e*P **P 12 48 26.1 +3.1**
comp=Z,7.3nm,1.1s
H17A Grant Village 74.70 45 P **P 12 48 25.5 +2.5**
baz=309,SNR=11
H17A Grant Village 74.70 45 *e*P **P 12 48 26.4 +3.4**
comp=Z,14nm,1.0s
IMW Indian Meadow 74.81 46 *e*P **P 12 48 26.0 +2.3**
comp=Z,7.7nm,0.8s
FLWY Flagg Ranch 74.82 46 *e*P **P 12 48 26.2 +2.5**
comp=Z,16nm,1.4s
SIM Simferopol' 74.85 316 *e*P **P 12 48 23.7 +0.1**
SIM pmax pmax
comp=Z,13nm,1.0s
RLMT Red Lodge 74.96 44 P **P 12 48 25.9 +1.4**
baz=310,SNR=6.2
RLMT Red Lodge 74.96 44 *e*P **P 12 48 26.0 +1.4**
comp=Z,18nm,1.5s
HVU Hansel Valley 75.06 48 *e*P **P 12 48 27.0 +1.9**
HVU pmax pmax
comp=Z,6.0nm,0.9s
HVU Hansel Valley 75.06 48 *e*P **P 12 48 27.0 +1.9**
comp=Z,6.4nm,0.9s
GRAC Grapevine Rang 75.15 55 P **P 12 48 26.9 +1.4**
baz=307
REDW Red Top Meadow 75.19 46 *e*P **P 12 48 27.8 +1.9**
comp=Z,5.9nm,1.0s
ARVC Arvin 75.31 57 P **P 12 48 27.8 +1.3**
baz=307
DAC Darwin (Calif) 75.43 55 *e*P **P 12 48 27.9 +0.6**
DAC *e**PP **PcP 12 48 40.8 +0.3**
DAC pmax pmax
comp=Z,5.0nm,1.0s
DAC Darwin (Calif) 75.43 55 *e*P **P 12 48 27.9 +0.6**
comp=Z,4.7nm,1.0s
DAC *ep*P **PcP 12 48 40.8 +0.3**
R11A Troy Canyon, C 75.46 53 P **P 12 48 28.5 +1.0**
baz=308,SNR=10
R11A Troy Canyon, C 75.46 53 *e*P **P 12 48 29.0 +1.5**
comp=Z,5.8nm,1.0s
MPMC Manual Prospec 75.63 55 P **P 12 48 29.2 +0.7**
baz=307,SNR=6.7
A25A Svangstu Ranch 75.64 38 P **P 12 48 29.3 +1.2**
baz=313
OSI Osito Audit: C 75.69 57 P **P 12 48 30.3 +1.6**
baz=307
BLG Laguna Peak, P 75.76 58 P **P 12 48 30.8 +1.7**
baz=307
FURC Furnace Creek, 75.79 55 P **P 12 48 30.5 +1.4**
baz=307
LRMC Laurel Mtn Rad 75.85 56 P **P 12 48 30.5 +0.8**
baz=307
TPNV Topopah Spring 75.89 54 P **P 12 48 30.8 +0.8**
baz=308,SNR=7.2
TPNV Topopah Spring 75.89 54 *e*P **P 12 48 31.4 +1.4**
TPNV pmax pmax
comp=Z,8.0nm,1.0s
TPNV Topopah Spring 75.89 54 *e*P **P 12 48 31.4 +1.4**
comp=Z,8.4nm,1.0s
EDW2 Edwards Air Fo 76.01 57 P **P 12 48 31.4 +0.9**
baz=307,SNR=5.2
DUG Dugway, Tooele 76.02 50 P **P 12 48 31.8 +1.2**
baz=309,SNR=6.8
DUG Dugway, Tooele 76.02 50 *e*P **P 12 48 32.4 +1.8**
DUG *e**PP **PcP 12 48 43.1 +0.2**
DUG Dugway, Tooele 76.02 50 *e*P **P 12 48 32.4 +1.8**
DUG *ep*P **PcP 12 48 43.1 +0.2**
A26A Wade Farm, Ken 76.19 38 P **P 12 48 32.0 +0.7**
baz=313,SNR=6.0
TCUT Toone Canyon 76.28 48 *e*P **P 12 48 33.9 +1.7**
comp=Z,53nm,1.8s
BW06 Boulder Array 76.30 46 P **P 12 48 32.8 +0.5**
baz=310,SNR=9.8
BW06 Boulder Array 76.30 46 *e*P **P 12 48 32.3 0.0**
BW06 *ep*P **P 12 48 33.3 +1.1**
PD31 Pinedale Array 76.30 46 *e*P **P 12 48 33.2 +0.9**
PDAR Pinedale Array 76.30 46 P **P 12 48 33.0 +0.7**
comp=Z,3.9nm,0.6s,baz=267,slow=1.8,SNR=47
PSUT Pine Spring 76.42 52 *e*P **P 12 48 34.6 +1.6**
comp=Z,6.6nm,1.1s
B26A Jensen Ranch, 76.45 38 P **P 12 48 33.7 +0.9**
baz=313,SNR=5.8
GSC Goldstone, Bar 76.53 56 P **P 12 48 34.5 +1.0**
baz=308
GSC Goldstone, Bar 76.53 56 *e*P **P 12 48 34.7 +1.2**
GSC pmax pmax
comp=Z,6.0nm,1.1s
GSC Goldstone, Bar 76.53 56 *e*P **P 12 48 34.7 +1.2**
comp=Z,5.5nm,1.1s
JLU Jordanelle 76.58 49 *e*P **P 12 48 35.7 +1.8**
comp=Z,14nm,1.4s
NLU North Lily Min 76.61 50 *e*P **P 12 48 35.8 +1.7**
comp=Z,8.4nm,1.1s
BFSC Mount Baldy Ra 76.61 57 P **P 12 48 35.0 +0.9**
baz=306
CIS Catalina Islan 76.62 58 P **P 12 48 35.3 +1.3**
baz=307
BEL Belsk 76.71 327 *e*P **P 12 48 35.2 +1.2**
BEL Belsk 76.71 327 *e*P **P 12 48 35.2 +1.2**
D25A Fairfield 76.75 40 P **P 12 48 35.4 +0.9**
baz=313
C26A Wahner Farm, P 76.89 39 P **P 12 48 36.3 +1.1**
baz=314,SNR=6.4
TUQ Turquoise Moun 77.02 55 P **P 12 48 37.5 +1.1**
baz=306
A28A Rude Farm, Bot 77.03 37 P **P 12 48 36.8 +0.8**
baz=314,SNR=6.4
HEC Hector,Ludlow 77.12 56 P **P 12 48 38.1 +1.2**
baz=308
E25A Miller Ranch, 77.15 40 P **P 12 48 37.6 +0.8**
baz=313,SNR=5.3
C27A Sayler Ranch, 77.26 38 P **P 12 48 38.3 +0.9**
baz=314
D26A Manning 77.27 39 P **P 12 48 38.4 +0.9**
baz=313
B28A Dugan Ranch, T 77.30 37 P **P 12 48 38.1 +0.6**
baz=314
KWP Kalwaria Pacla 77.45 325 *e*P **P 12 48 39.2 +0.9**
KWP Kalwaria Pacla 77.45 325⇑ *i*P **P 12 48 39.6 +1.3**
KWP Kalwaria Pacla 77.45 325⇑⇑ P **P 12 48 39.6 +1.3**
MSU Marysvale 77.46 51 *e*P **P 12 48 41.0 +2.2**
MSU *e**PP **sP 12 48 51.8 0.0**
MSU Marysvale 77.46 51 *e*P **P 12 48 41.0 +2.2**
MSU *ep*P **sP 12 48 51.8 0.0**
A29A Manning Farm, 77.50 36 P **P 12 48 39.2 +0.6**
baz=315,SNR=13
F25A Bowman 77.51 41 P **P 12 48 39.3 +0.5**
baz=313
TMUT Trail Mountain 77.55 50 *e*P **P 12 48 41.5 +2.1**
comp=Z,17nm,1.5s
GMRC Granite Mounta 77.59 55 P **P 12 48 40.3 +0.8**
baz=308,SNR=5.4
E26A Carlson Angus 77.64 40 P **P 12 48 39.9 +0.4**
baz=314
D27A Center 77.67 39 P **P 12 48 40.6 +0.9**
baz=314
BUR08 Bucovina Ar. S 77.68 322 *e*P **P 12 48 40.6 +0.9**
BURAR Bucovina Array 77.69 322⇑ *i*P **P 12 48 40.7 +0.9**
BURAR Bucovina Array 77.69 322⇑⇑ P **P 12 48 40.7 +0.9**
P17A Butcher Ranch, 77.72 49 *e*P **P 12 48 42.1 +1.9**
comp=Z,11nm,0.8s
LCMT Little Creek M 77.74 52 *e*P **P 12 48 41.9 +1.5**
comp=Z,7.1nm,1.0s
MTPU Mount Pierson 77.75 51 *e*P **P 12 48 42.9 +2.3**
comp=Z,6.3nm,0.9s
B29A Wagenman Farm, 77.77 37 P **P 12 48 41.2 +1.1**
baz=315
PFO Pinyon Flats O 77.79 57 P **P 12 48 41.7 +1.0**
baz=308
BELC Belle Mtn. Jos 77.85 56 P **P 12 48 41.5 +0.5**
baz=308
P18A Preston Nutter 77.91 49 *e*P **P 12 48 43.1 +1.7**
comp=Z,24nm,1.5s

A30A Hoffart Farm, 77.92 36 P **P 12 48 41.5 +0.6**
baz=316,SNR=8.0
F26A Lodgepole 77.96 40 P **P 12 48 41.9 +0.5**
baz=314
KNB Kanab 78.00 52 *e*P **P 12 48 43.9 +2.1**
KNB pmax pmax
comp=Z,10.0nm,1.1s
KNB Kanab 78.00 52 *e*P **P 12 48 43.9 +2.1**
comp=Z,10nm,1.1s
G25A Newell 78.03 41 P **P 12 48 42.2 +0.5**
baz=313
ULM Lac du Bonnet 78.07 34 P **P 12 48 41.5 -0.2**
comp=Z,5.3nm,0.8s,baz=309,slow=8.6,SNR=5.3
ULM Lac du Bonnet 78.07 34 *e*P **P 12 48 42.2 +0.5**
ULM pmax pmax
comp=Z,7.0nm,0.9s
ULM Lac du Bonnet 78.07 34 *e*P **P 12 48 42.1 +0.5**
comp=Z,7.1nm,0.9s
K22A Casper 78.07 45 P **P 12 48 42.8 +0.7**
baz=312
K22A Casper 78.07 45 *e*P **P 12 48 43.2 +1.1**
comp=Z,5.8nm,0.7s
SRU San Rafael Swe 78.08 49 *e*P **P 12 48 43.4 +1.1**
SRU pmax pmax
comp=Z,10.0nm,0.7s
SRU San Rafael Swe 78.08 49 *e*P **P 12 48 43.4 +1.1**
comp=Z,9.5nm,0.7s
D28A Regan 78.08 38 P **P 12 48 42.6 +0.7**
baz=315
KOLS Kolonicke sedl 78.14 324 *e*P **P 12 48 42.9 +0.7**
KOLS *e* 12 48 54.5
KOLS pmax pmax
comp=Z,7.0nm,1.1s
KOLS Kolonicke sedl 78.14 324 *e*P **P 12 48 42.9 +0.7**
KOLS *e* 12 48 54.5
MONP2 Monument Peak 78.25 57 P **P 12 48 44.0 +0.7**
baz=308
B30A Myrvik Farm, E 78.26 36 P **P 12 48 43.5 +0.7**
baz=316,SNR=5.6
STHS Stebnicka Huta 78.26 325 *e*P **P 12 48 43.9 +1.0**
STHS *e* 12 48 59.0
STHS pmax pmax
comp=Z,6.0nm,1.1s
STHS Stebnicka Huta 78.26 325 *e*P **P 12 48 43.9 +1.0**
STHS *e* 12 48 59.0
F27A Lemmon 78.28 40 P **P 12 48 44.0 +0.9**
baz=314
IRM Iron Mountain 78.31 56 P **P 12 48 44.4 +1.0**
baz=309
OJC Ojcow 78.32 326 *e*P **P 12 48 43.3 +0.2**
OJC Ojcow 78.32 326 *e*P **P 12 48 44.1 +1.0**
OJC *e**PP **sP 12 48 56.1 +0.1**
OJC pmax pmax
comp=Z,29nm,1.1s
OJC Ojcow 78.32 326 *e*P **P 12 48 44.1 +1.0**
comp=Z,29nm,1.1s
OJC *ep*P **sP 12 48 56.1 +0.1**
H25A Fruitdale 78.32 42 P **P 12 48 43.9 +0.5**
baz=313
UZH Uzhgorod 78.35 324 *e*P **P 12 48 44.6 +1.3**
UZH *e* 12 48 46.6
UZH *e* 12 49 03.4
G26A Maurine 78.38 41 P **P 12 48 44.2 +0.5**
baz=314,SNR=7.6
BC3 Big Chuckawall 78.42 56 P **P 12 48 44.7 +0.6**
baz=308
RSSD Black Hills 78.43 42 P **P 12 48 44.6 +0.5**
baz=313
RSSD Black Hills 78.43 42 *e*P **P 12 48 44.9 +0.7**
RSSD pmax pmax
comp=Z,6.0nm,0.9s
RSSD Black Hills 78.43 42 *e*P **P 12 48 44.9 +0.7**
comp=Z,5.9nm,0.9s
E28A Huff 78.45 39 P **P 12 48 44.4 +0.4**
baz=315
BRTR Keskin Array B 78.47 312 P **P 12 48 44.5 +0.2**
comp=Z,2.8nm,0.9s,baz=99,slow=3.9,SNR=17
BRTR LR LR 13 28 43.0
comp=Z,35nm,18.7s,baz=56,slow=40
BRTR Keskin Array B 78.47 312 *i* P **P 12 48 44.9 +0.6**
BRTR pmax pmax
comp=Z,2.0nm,0.7s
ARCR ARCALIA 78.48 322⇑ *i*P **P 12 48 45.9 +1.8**
W13A Hualapai Mount 78.54 54 *e*P **P 12 48 46.3 +1.4**
W13A *ep*P **sP 12 48 57.9 +0.1**
B31A Greenbush Farm 78.59 36 P **P 12 48 45.4 +0.7**
baz=316
SWSC Sam W. Stewart 78.63 57 P **P 12 48 46.4 +1.2**
baz=308
I25A Rochford 78.66 42 P **P 12 48 45.8 +0.4**
baz=313
G27A Dupree 78.66 40 P **P 12 48 45.7 +0.5**
baz=314
NIE Niedzica 78.69 326 *e*P **P 12 48 46.2 +1.0**
NIE Niedzica 78.69 326 *e*P **P 12 48 46.2 +1.0**
U15A North Rim 78.70 52 *e*P **P 12 48 47.9 +2.0**
U15A *ep*P **sP 12 48 58.9 +0.1**
C30A Mose, Pekin 78.72 37 P **P 12 48 46.1 +0.7**
baz=316
DOPR Dopca 78.75 321⇑ *i*P **P 12 48 49.6 +4.0**
O20A White River Ci 78.76 47 P **P 12 48 46.8 +0.8**
baz=311
O20A White River Ci 78.76 47 *e*P **P 12 48 46.8 +0.8**
O20A *ep*P **sP 12 48 59.0 +0.1**
ISR Istrita 78.76 319⇑ *i*P **P 12 48 47.3 +1.6**
ISR Istrita 78.76 319⇑⇑ P **P 12 48 47.3 +1.6**
A32A Rocking H Ranc 78.76 35 P **P 12 48 46.0 +0.4**
baz=317
MLR Muntele Rosu 78.81 320 *e*P **P 12 48 47.4 +1.3**
MLR pmax pmax
comp=Z,14nm,1.2s
MLR Muntele Rosu 78.81 320 *e*P **P 12 48 47.4 +1.3**
comp=Z,14nm,1.2s
PDMCI Parker Dam,Lak 78.87 55 P **P 12 48 47.7 +1.3**
baz=309
Y12C Blythe 78.97 56 P **P 12 48 48.2 +1.2**
baz=309
Y12C Blythe 78.97 56 *e*P **P 12 48 48.9 +2.0**
comp=Z,7.3nm,0.9s
D30A Buchanan 79.02 37 P **P 12 48 47.3 +0.3**
baz=316
H27A Howes 79.11 41 P **P 12 48 48.7 +1.0**
baz=314
I26A New Underwood 79.11 42 P **P 12 48 48.5 +0.8**
baz=314
B32A Ashes, Strandq 79.12 35 P **P 12 48 47.9 +0.3**
baz=317
GLA Glamis 79.20 56 P **P 12 48 49.4 +1.0**
baz=309
A33A Warroad 79.24 35 P **P 12 48 48.2 -0.1**
baz=318,SNR=5.1
LANS Liptovska Anna 79.25 326 *e*P **P 12 48 49.9 +1.6**
LANS Liptovska Anna 79.25 326 *e*P **P 12 48 49.9 +1.6**
PV09 Paradox Valley 79.30 49 *e*P **P 12 48 50.8 +1.7**
KSP Ksiaz 79.33 329 *e*P **P 12 48 49.3 +0.6**
KSP Ksiaz 79.33 329 *e*P **P 12 48 49.3 +0.6**
E30A Jud 79.38 38 P **P 12 48 49.8 +0.8**
baz=316
G28A Parade 79.39 40 P **P 12 48 49.6 +0.4**
baz=315
F29A Eureka 79.40 39 P **P 12 48 49.9 +0.7**
baz=315
PV10 Paradox Valley 79.44 49 *e*P **P 12 48 51.7 +1.9**
J26A Sides Ranch, S 79.49 42 P **P 12 48 50.5 +0.6**
baz=314
AGMN Agassiz Nation 79.50 35 P **P 12 48 49.7 +0.1**
baz=317
AGMN Agassiz Nation 79.50 35 *e*P **P 12 48 49.3 -0.3**
comp=Z,8.1nm,1.0s
AGMN *ep*P **sP 12 49 01.5 -1.1**
I27A Quinn 79.51 41 P **P 12 48 50.6 +0.8**
baz=314
ARR Arges 79.55 321⇑ *i*P **P 12 48 51.8 +1.7**
N23A Red Feather La 79.56 46 P **P 12 48 51.8 +1.3**
baz=312,SNR=7.1
N23A Red Feather La 79.56 46 *e*P **P 12 48 52.3 +1.8**
N23A *ep*P **sP 12 49 03.4 0.0**
PHWY Pilot Hill 79.56 45 *e*P **P 12 48 51.6 +1.1**
comp=Z,19nm,1.8s
PV05 Paradox Valley 79.59 49 *e*P **P 12 48 52.5 +1.8**
H28A Mission Ridge 79.62 40 P **P 12 48 51.1 +0.7**
baz=315,SNR=8.7
MORC Moravsky Berou 79.62 327 *e*P **P 12 48 51.3 +1.0**
MORC *e**PP **sP 12 49 03.4 +0.1**
MORC pmax pmax
comp=Z,49nm,1.0s

MORC	Moravsky Berou	79.62	327	eP		P	12 48 51.3 +1.0
	comp=Z,49nm,1.0s						
MORC				epP		sP	12 49 03.4 +0.1
DPC	Dobruska-Polom	79.70	328	eP		P	12 48 51.8 +1.1
DPC	Dobruska-Polom	79.70	328	eP		P	12 48 51.8 +1.1
KRLC	Kraliky	79.72	328	eP		P	12 48 51.4 +0.6
KRLC	Kraliky	79.72	328	eP		P	12 48 51.4 +0.6
E31A	Nome	79.83	37	P		P	12 48 52.3 +0.8
	baz=316						
Y14A	Wickenburg	79.83	55	eP		P	12 48 53.2 +1.4
Y14A				epP		sP	12 49 05.5 +0.8
WUAZ	Wupatki	79.86	53	P		P	12 48 53.7 +1.6
	baz=310,SNR=6.3						
WUAZ	Wupatki	79.86	53	eP		P	12 48 53.9 +1.9
WUAZ				epP		sP	12 49 05.6 +0.6
PV01	Paradox Valley	79.87	49	eP		P	12 48 53.6 +1.4
B34A	Aery, Baudette	79.91	34	P		P	12 48 51.8 -0.1
	baz=318						
PSZ	Piszkesteto	79.97	325	eP		P	12 48 53.6 +1.3
PSZ				pmax		pmax	
	comp=Z,19nm,1.1s						
PSZ	Piszkesteto	79.97	325	eP		P	12 48 53.6 +1.3
	comp=Z,19nm,1.1s						
I28A	Midland	80.02	41	P		P	12 48 53.2 +0.7
	baz=315						
VYHS	Vyhne	80.02	326	eP		P	12 48 53.5 +1.0
VYHS				e			12 49 04.7
VYHS				pmax		pmax	
	comp=Z,7.0nm,1.4s						
VYHS	Vyhne	80.02	326	eP		P	12 48 53.5 +1.0
VYHS				e			12 49 04.7
H29A	Onida	80.06	40	P		P	12 48 53.7 +0.9
	baz=315						
J27A	Elkhorn Farm,	80.10	42	P		P	12 48 53.7 +0.6
	baz=314						
SMCO	Snowmass	80.12	48	eP		P	12 48 55.1 +1.4
	comp=Z,6.2nm,1.0s						
F31A	Hecla	80.15	38	P		P	12 48 54.0 +0.8
	baz=316						
G30A	Faulkton	80.24	39	P		P	12 48 54.4 +0.7
	baz=316						
BRG	Berggiesshubel	80.26	330	eP		P	12 48 54.3 +0.6
	comp=Z,10nm,1.2s						
BRG				e			12 49 03.8
	comp=Z,10nm,1.2s						
BRG	Berggiesshubel	80.26	330	eP		P	12 48 54.3 +0.6
BRG				e			12 49 03.8
BRG				pmax		pmax	
	comp=Z,10.0nm,1.3s						
CLL	Collm	80.29	330	i P		P	12 48 53.6 -0.2
	comp=Z,14nm,1.1s						
CLL				i			12 49 05.8
	comp=Z,17nm,1.1s						
CLL				i			12 49 09.4
CLL				LmV			13 27 00.0
	comp=Z,200nm,18.0s						
CLL	Collm	80.29	330	i P		P	12 48 53.6 -0.2
CLL				i			12 49 05.8
CLL				i			12 49 09.4
CLL				pmax		pmax	
	comp=Z,14nm,1.1s						
CLL				MLR		MLR	
	comp=Z,200nm,18.0s						
CLL	Collm	80.29	330	eP		P	12 48 54.3 +0.5
CLL				epP		sP	12 49 05.9 -0.9
J28A	Allard Ranch,	80.38	41	P		P	12 48 55.4 +0.8
	baz=315						
I29A	Vivian Onida	80.44	40	P		P	12 48 55.8 +0.9
	baz=315						
ISCO	Idaho Springs	80.49	46	P		P	12 48 56.4 +0.9
	baz=313						
ISCO	Idaho Springs	80.49	46	eP		P	12 48 57.2 +1.6
ISCO				pmax		pmax	
	comp=Z,3.0nm,0.9s						
ISCO	Idaho Springs	80.49	46	eP		P	12 48 57.2 +1.6
	comp=Z,3.1nm,0.9s						
X16A	Lo Mia Camp, P	80.52	54	eP		P	12 48 57.5 +1.8
MVCO	Mesa Verde	80.52	50	P		P	12 48 56.7 +1.0
	baz=311						
MVCO	Mesa Verde	80.52	50	eP		P	12 48 56.8 +1.2
MVCO				epP		sP	12 49 09.2 +0.6
G31A	Conde	80.63	39	P		P	12 48 56.4 +0.6
	baz=316						
D34A	Park Rapids	80.70	36	P		P	12 48 56.2 0.0
	baz=318						
C35A	Jirik Farms, M	80.80	35	P		P	12 48 56.5 -0.1
	baz=319						
BZS	Buzias	80.85	322	⇑i P		P	12 48 57.2 +0.2
BZS	Buzias	80.85	322	⇑P		P	12 48 57.2 +0.2
TREC	Trest	80.85	328	eP		P	12 48 57.6 +0.7
TREC	Trest	80.85	328	eP		P	12 48 57.6 +0.7
I30A	Oacoma	80.97	40	P		P	12 48 57.8 +0.2
	baz=316,SNR=7.6						
F33A	5 Mile Ranch,	81.11	37	P		P	12 48 58.5 +0.2
	baz=317						
S22A	4UR Ranch, Cre	81.16	49	P		P	12 49 00.3 +1.2
	baz=312,SNR=8.3						
S22A	4UR Ranch, Cre	81.16	49	eP		P	12 49 00.8 +1.6
	comp=Z,6.6nm,1.0s						
214A	Organ Pipe Nat	81.22	56	P		P	12 48 58.8 -0.4
	baz=310						
C36A	Pine Crest Far	81.26	34	P		P	12 48 59.2 +0.1
	baz=320						
NKC	Novy Kostel	81.35	330	eP		P	12 48 59.9 +0.3
NKC	Novy Kostel	81.35	330	eP		P	12 48 59.9 +0.3
G33A	Ortonville	81.51	38	P		P	12 49 00.9 +0.4
	baz=317						
H32A	Carlson Farm,	81.53	39	P		P	12 49 01.7 +1.0
	baz=317						
D36A	Goodland	81.55	35	P		P	12 49 00.1 -0.6
	baz=319						
OGNE	Ogallala	81.69	44	P		P	12 49 02.1 +0.5
	baz=314						
H33A	Prehn Over Nor	81.74	38	P		P	12 49 02.3 +0.5
	baz=317						
CONA	Conrad Observa	81.75	327	i P		P	12 49 03.2 +1.4
	comp=Z,10nm,1.0s,SNR=7.5						
KHC	Kasperske Hory	81.77	329	eP		P	12 49 02.4 +0.6
KHC				ex		x	12 49 13.0
KHC	Kasperske Hory	81.77	329	eP		P	12 49 02.4 +0.6
KHC				e			12 49 13.0
KHC	Kasperske Hory	81.77	329	eP		P	12 49 02.4 +0.6
	comp=Z,4.4nm,1.0s						
KHC				epP		sP	12 49 13.1 -1.7
G34A	Benson	81.86	37	P		P	12 49 02.9 +0.5
	baz=318						
D37A	Cotton	81.89	34	P		P	12 49 03.0 +0.5
	baz=320						
SDCO	Great Sand Dun	81.94	48	P		P	12 49 04.3 +1.0
	baz=313,SNR=6.2						
SDCO	Great Sand Dun	81.94	48	eP		P	12 49 04.8 +1.5
SDCO				epP		sP	12 49 16.0 -0.3
GEC2	GERESS Array S	81.94	329	eP		P	12 49 03.4 +0.6
GEC2				pmax		pmax	
	comp=Z,9.0nm,1.3s						
GEC2	GERESS Array S	81.94	329	eP		P	12 49 03.4 +0.6
	comp=Z,8.6nm,1.3s						
GERES	GERESS Array B	81.94	329	P		P	12 49 01.6 -1.2
	comp=Z,2.3nm,0.8s,baz=30,slow=3.5,SNR=16						
GERES				LR		LR	13 28 23.0
	comp=Z,178nm,19.6s,baz=39,slow=38						
GEA0	GERESS Array S	81.95	329	eP		P	12 49 02.7 -0.1
C38A	Sawbill Land.	81.97	33	P		P	12 49 03.0 +0.1
	baz=320						
E36A	McGregor	82.01	35	P		P	12 49 03.1 0.0
	baz=319						
TUC	Tucson	82.30	55	P		P	12 49 06.0 +1.0
	baz=311						
ARSA	Arzberg	82.42	327	eP		P	12 49 06.0 +0.8
	comp=Z,6.9nm,1.3s						
MOA	Molln	82.49	328	i P		P	12 49 06.3 +0.7
	comp=Z,8.1nm,1.4s						
ECSD	EROS Data Cent	82.50	39	P		P	12 49 05.8 0.0
	baz=317,SNR=6.9						
ECSD	EROS Data Cent	82.50	39	eP		P	12 49 06.2 +0.5
ECSD				epP		sP	12 49 16.4 -2.3
L31A	Butterfield Fa	82.51	41	P		P	12 49 06.4 +0.5
	baz=316						
H35A	Sunnyside Ranc	82.65	37	P		P	12 49 07.1 +0.6
	baz=318,SNR=5.0						
T25A	Trinidad	82.99	48	P		P	12 49 09.5 +0.8
	baz=314						
T25A	Trinidad	82.99	48	eP		P	12 49 09.8 +1.1
T25A				epP		sP	12 49 20.6 -1.0
SOKA	Soboth	83.07	326	i P		P	12 49 09.4 +0.6
	comp=Z,16nm,1.3s,SNR=9.1						
H36A	Jessenland, He	83.17	37	P		P	12 49 09.9 +0.8
	baz=319						
ANMO	Albuquerque	83.26	50	P		P	12 49 11.2 +1.2
	baz=313						
ANMO	Albuquerque	83.26	50	ceP		P	12 49 11.7 +1.6
ANMO				pmax		pmax	
	comp=Z,5.0nm,0.8s						
ANMO	Albuquerque	83.26	50	eP		P	12 49 11.4 +1.3
	comp=Z,9.3nm,1.2s						
OBKA	Obir	83.41	327	i P		P	12 49 10.7 +0.2
	comp=Z,3.7nm,0.7s						
BGNE	Belgrade	83.42	41	P		P	12 49 11.0 +0.4
	baz=317						
H37A	Dierke Farm, C	83.63	36	P		P	12 49 12.1 +0.5
	baz=320						
BNM	Barren Site	83.69	51	eP		P	12 49 13.5 +1.2
SCHQ	Schefferville	83.91	16	LR		LR	13 31 21.6
	comp=Z,53nm,18.3s,baz=48,slow=39						
WTTA	Wattenberg	84.04	329	i PcP		P	12 49 14.5 +0.6
	comp=Z,2.9nm,0.5s						
121A	Cookes Peak, D	84.06	53	P		P	12 49 15.2 +1.0
	baz=312,SNR=5.0						
121A	Cookes Peak, D	84.06	53	eP		P	12 49 15.4 +1.3
	comp=Z,8.5nm,0.8s						
PMOR	Pomariorio Ree	84.12	114	eT		T	14 22 01.4
	comp=Z,17nm,0.2s						
WLF	Walferdange	84.17	333	eP		P	12 49 16.4 +2.2
WLF				pmax		pmax	
	comp=Z,150nm,0.2s						
WLF	Walferdange	84.17	333	eP		P	12 49 16.4 +2.2
	comp=Z,150nm,0.2s						
RETA	Reutte	84.22	329	i P		P	12 49 15.2 +0.6
	comp=Z,13nm,1.1s,SNR=6.1						
J37A	Redenius Farm,	84.30	37	P		P	12 49 15.2 +0.2
	baz=319						
I38A	Scanlan Farm,	84.32	36	P		P	12 49 15.4 +0.3
	baz=320						
K36A	Gilmore City	84.37	38	P		P	12 49 15.7 +0.4
	baz=319						
CBKS	Cedar Bluff	84.45	44	P		P	12 49 15.9 0.0
	baz=316						
P32A	Huiting Farm,	84.48	43	P		P	12 49 16.1 +0.1
	baz=317						
BFO	Black Forest	84.48	331	i P		P	12 49 16.8 +1.0
BFO	Black Forest	84.48	331	eP		P	12 49 16.4 +0.5
	comp=Z,14nm,1.0s						
FETA	Feichten	84.61	329	i P		P	12 49 17.0 +0.3
	comp=Z,12nm,1.3s						
M35A	Neola	84.63	40	P		P	12 49 16.8 +0.1
	baz=318						
PPT2	Papeete2	84.66	117	eLR		LR	13 15 57.7
	comp=Z,191nm,24.2s						
PPT2	Papeete2	84.66	117	eT		T	14 22 42.5
	comp=Z,3.6nm,0.3s						
K37A	Belmond	84.67	38	P		P	12 49 17.2 +0.4
	baz=319						
DAVA	Damuels	84.73	330	i PcP		P	12 49 17.9 +0.6
	comp=Z,15nm,1.1s						
TIAR	Tiarei	84.80	117	eT		T	14 22 52.3
	comp=Z,1.8nm,0.3s						
Q32A	Meitler Ranch,	84.96	43	P		P	12 49 18.7 +0.3
	baz=317						
N35A	Tabor	85.11	40	P		P	12 49 19.6 +0.5
	baz=318						
FUORN	Ofenpass-Fuorn	85.12	329	eP		P	12 49 20.1 +0.7
	comp=Z,13nm,0.8s						
Q33A	Connelly Farm,	85.34	43	P		P	12 49 20.7 +0.4
	baz=317						
P34A	Walnut Farm, R	85.47	42	P		P	12 49 21.2 +0.3
	baz=318						
TAOE	Nuku Hiva Isla	85.87	105	eLR		LR	13 16 47.7
	comp=Z,153nm,22.4s						
Q34A	Chapman	85.87	42	P		P	12 49 23.8 +0.9
	baz=318						
P35A	Duane Minner,	85.90	41	P		P	12 49 23.6 +0.5
	baz=318						
M38A	Pleasantville	85.91	38	P		P	12 49 23.5 +0.5
	baz=320						
KSU1	Kansas State U	85.91	42	P		P	12 49 23.2 0.0
	baz=318						
MEH	Mehetia	85.91	116	eT		T	14 24 11.9
	comp=Z,27nm,0.3s						
T32A	Huddler Ranch,	86.07	45	P		P	12 49 24.6 +0.6
	baz=316						
AMTX	Amarillo	86.14	48	P		P	12 49 25.1 +0.6
	baz=315						
AMTX	Amarillo	86.14	48	eP		P	12 49 25.9 +1.4
AMTX				epP		sP	12 49 37.6 +0.1
MSTX	Muleshoe	86.14	49	P		P	12 49 24.9 +0.3
	baz=315						
P36A	Good Intent, A	86.25	41	P		P	12 49 25.3 +0.5
	baz=319						
N38A	Joes South For	86.36	39	P		P	12 49 25.7 +0.4
	baz=320						
O37A	Wolven Farm, M	86.38	40	P		P	12 49 25.9 +0.5
	baz=319						
Q35A	Mercer Eighty,	86.39	42	P		P	12 49 25.6 +0.1
	baz=318						
R35A	Emporia Munici	86.70	42	P		P	12 49 27.8 +0.8
	baz=318						
R36A	Gordon, Harris	87.07	42	P		P	12 49 29.6 +0.7
	baz=318						
P38A	Dawn	87.10	40	P		P	12 49 29.3 +0.4
	baz=320,SNR=5.5						
S35A	Otter Creek Ra	87.11	43	P		P	12 49 30.2 +1.1
	baz=318						
T34A	McClaskey Farm	87.13	44	P		P	12 49 30.2 +1.0
	baz=318						
Q37A	Longview Farm,	87.20	41	P		P	12 49 30.2 +0.7
	baz=319						
W32A	Sentinel	87.37	46	P		P	12 49 31.4 +1.0
	baz=316						
R37A	Teagarden Farm	87.43	41	P		P	12 49 30.9 +0.4
	baz=319						
O40A	La Belle	87.54	38	P		P	12 49 31.7 +0.6
	baz=321						
T35A	Sooner Cattle	87.58	43	P		P	12 49 31.7 +0.4
	baz=318						
W33A	Caddo, Fort Co	87.79	46	P		P	12 49 33.3 +0.9
	baz=317						
T36A	Boggs Farm, Ca	87.81	43	P		P	12 49 32.8 +0.4
	baz=318						
V34A	Guthrie	87.82	45	P		P	12 49 33.0 +0.5
	baz=317						
S37A	Fort Scott	87.84	42	P		P	12 49 32.8 +0.3
	baz=319						
X32A	Elmer	87.85	47	P		P	12 49 33.4 +0.7
	baz=316						
P40A	Paris	87.91	39	P		P	12 49 33.0 +0.1
	baz=320,SNR=6.2						
R38A	Fenwick Farm,	88.00	41	P		P	12 49 33.3 0.0
	baz=319						
T37A	Cheneyville 18	88.27	42	P		P	12 49 35.1 +0.5
	baz=319						
Q40A	Laux Farm, Aux	88.31	39	P		P	12 49 35.3 +0.6
	baz=320						
R39A	Chumby, Stover	88.35	40	P		P	12 49 34.8 -0.2
	baz=320,SNR=5.1						
HDIL	Hopedale	88.44	37	P		P	12 49 36.2 +0.8
	baz=322						
Y33A	Hilltop Ranch,	88.53	47	P		P	12 49 36.3 +0.4
	baz=317						
T38A	Diamond	88.67	42	P		P	12 49 36.5 0.0
	baz=319,SNR=5.1						
S39A	Bolivar	88.67	41	P		P	12 49 36.6 +0.1
	baz=320						
W35A	Tecumseh	88.68	45	P		P	12 49 37.2 +0.6
	baz=318						
U37A	Salina	88.70	43	P		P	12 49 37.3 +0.6
	baz=319						
V36A	Jenks	88.72	44	P		P	12 49 37.6 +0.9
	baz=318						
R40A	Maddies Statio	88.75	40	P		P	12 49 37.2 +0.3
	baz=320						
TX31	Lajitas Ar. Si	88.82	53	eP		P	12 49 38.0 +0.6
TX31				epP		sP	12 49 50.5 +0.1
TXAR	Lajitas Array	88.82	53	P		P	12 49 38.4 +0.9
	comp=Z,2.4nm,0.6s,baz=290,slow=3.1,SNR=9.0						
ABTX	Abilene, Hawle	88.94	48	P		P	12 49 38.3 +0.4
	baz=316						
ABTX	Abilene, Hawle	88.94	48	eP		P	12 49 38.8 +0.9
ABTX				epP		sP	12 49 50.9 -0.1
Z33A	Whitaker Ranch	88.97	47	P		P	12 49 38.2 +0.2
	baz=317						
W36A	Wetumka	89.04	44	P		P	12 49 38.9 +0.6
	baz=318						
Y34A	Reagan Ranch,	89.06	46	P		P	12 49 39.2 +0.8
	baz=317						
U38A	Gravette	89.07	42	P		P	12 49 39.0 +0.6
	baz=319						
V37A	Hulbert	89.08	43	P		P	12 49 38.9 +0.5
	baz=319						
T39A	Clever	89.15	41	P		P	12 49 39.1 +0.3
	baz=320						
S40A	Lebanon	89.17	40	P		P	12 49 39.2 +0.3
	baz=320						
X35A	Drake	89.18	45	P		P	12 49 39.6 +0.6
	baz=318						
133A	Hamilton Ranch	89.38	48	P		P	12 49 40.2 +0.3
	baz=317						
X36A	Centrahoma	89.40	45	P		P	12 49 40.6 +0.6
	baz=318						
Z34A	Collier Ranch,	89.40	47	P		P	12 49 40.4 +0.4
	baz=317						
V38A	Canehill	89.49	43	P		P	12 49 40.8 +0.5
	baz=319						
Y35A	Marietta	89.50	46	P		P	12 49 41.1 +0.7
	baz=318						
U39A	Green Forest	89.59	42	P		P	12 49 41.0 +0.2
	baz=320						
SFIN	Lafayette	89.60	35	P		P	12 49 41.1 +0.3
	baz=324						
Z35A	Perchaven, San	89.80	46	P		P	12 49 42.4 +0.5
	baz=318						
233A	Rising Star	89.81	48	P		P	12 49 42.5 +0.5
	baz=317						
134A	White-Moore Ra	89.89	47	P		P	12 49 42.9 +0.7
	baz=317						
V39A	Pettigrew	89.91	42	P		P	12 49 42.8 +0.4
	baz=320						
X37A	Clayton	89.92	44	P		P	12 49 43.0 +0.6
	baz=319						
U40A	Yellville	89.93	41	P		P	12 49 42.8 +0.3
	baz=320,SNR=5.7						
W38A	Poteau	90.03	43	P		P	12 49 43.5 +0.6
	baz=319						
X38A	Whitesboro	90.16	44	P		P	12 49 44.1 +0.6
	baz=319						
333A	Richland Sprin	90.26	49	P		P	12 49 44.6 +0.5
	baz=317						
234A	Clairette	90.27	48	P		P	12 49 44.7 +0.6
	baz=317						
W39A	Magazine	90.33	43	P		P	12 49 44.9 +0.6
	baz=320						
V40A	Witts Springs	90.37	42	P		P	12 49 44.6 0.0
	baz=320						
JCT	Junction City	90.39	50	P		P	12 49 44.8 +0.1
	baz=316						
433A	Art	90.61	49	P		P	12 49 46.2 +0.5
	baz=317						
X39A	Fountain Ranch	90.67	43	P		P	12 49 46.4 +0.5
	baz=319						
334A	Lometa	90.70	48	P		P	12 49 46.7 +0.6
	baz=317						
W40A	Ferguson Farm,	90.71	42	P		P	12 49 46.5 +0.5
	baz=320						
Z37A	Pogue Cattle C	90.82	45	P		P	12 49 47.5 +0.9
	baz=318						
MIAR	Mount Ida	90.93	43	P		P	12 49 48.1 +1.0
	baz=320						
MIAR	Mount Ida	90.93	43	eP		P	12 49 47.5 +0.4
MIAR				e*PP		sP	12 49 59.3 -0.8
MIAR	Mount Ida	90.93	43	eP		P	12 49 47.5 +0.4
MIAR				epP		sP	12 49 59.3 -0.8
X301	Greenbrier Sit	91.03	42	eP		P	12 49 47.8 +0.3
	comp=Z,11nm,1.2s						
WHAR	Wooly Hollow	91.05	42	eP		P	12 49 48.2 +0.6
	comp=Z,7.9nm,0.8s						
H06E1	SOCORRO T-PHAS	91.05	65	T		T	14 31 24.7
434A	Burnet	91.05	48	P		P	12 49 48.5 +0.8
	baz=317						
Y39A	Lockesburg	91.11	44	P		P	12 49 48.7 +0.7
	baz=319						
W41A	Tony Mavity, V	91.16	42	P		P	12 49 48.6 +0.5
	baz=320						
W41B	Gary Mavity, V	91.16	42	P		P	12 49 48.3 +0.2
	baz=320						
534A	Blanco	91.50	49	P		P	12 49 50.0 +0.1
	baz=317						
933A	Laredo	92.76	51	P		P	12 49 57.5 +1.8
	baz=316						
KEST	Kesra	94.37	323	LR		LR	13 37 27.8
	comp=Z,151nm,18.5s,baz=296,slow=39						
ESDC	Sonseca Array	96.40	334	LR		LR	13 38 33.3
	comp=Z,93nm,18.2s,baz=105,slow=38						
TORD	Torodi Ar. Bea	116.86	316	PKP		PKPdf	12 55 27.2 -0.9
	comp=Z,0.6nm,1.0s,baz=20,slow=4.6,SNR=3.5						
TORD				PP		PP	12 56 32.5 -3.6
	comp=Z,1.1nm,0.9s,baz=33,slow=4.4,SNR=5.3						
SNAA	Sanae	142.18	197	PKP	PKPpre		12 56 09.7
VNA2	Neumayer--Watz	143.75	196	PKP	PKPab		12 56 14.8 +0.9
	baz=127,slow=2.9						
VNA3	Neumayer Olymp	143.99	195	PKP	PKPab		12 56 14.7 -0.1
VNA1	Neumayer--Stat	144.14	196	PKP	PKPab		12 56 16.2 +0.9
LPAZ	La Paz	145.48	59	PKPbc	PKPdf		12 56 22.5 +0.2
	comp=Z,12nm,0.9s,baz=348,slow=3.4,SNR=37						

VIE 02 12:46:31.4±0.2, 46°.68N×13°.78E, h0km, mb-0.4/1, ml0.9/3,
Error ellipse: s-maj=1.3km s-min=1.1km az=15.0,
Mining explosion., Austria

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MYKA	Terra Mystica	0.11	244	ePg	Pg	12 46 33.5	+0.1
	2.9nm,0.1s						
MYKA				eSg	Sg	12 46 35.1	+0.2
	6.6nm,0.1s						
KBA	Koelnbreinsper	0.50	323	i Pg	Pg	12 46 41.2	+0.2
	0.7nm,0.1s						
KBA				i Sg	Sg	12 46 48.3	+0.8
	1.2nm,0.1s						
OBKA	Obir	0.56	107	i Pg	Pg	12 46 41.8	-0.2
	1.7nm,0.2s						
OBKA				eSg	Sg	12 46 50.1	+0.9
	2.4nm,0.1s						

*ISCJB **02** 13:06:08.7±0.4, 58°.67N±0°.03×18°.44E±0°.06, h0km, Error ellipse: s-maj=4.6km s-min=4.2km az=29.9*
*UPP **02** 13:06:09.1±0.2, 58°.71N×18°.55E, h0km, ML1.8, Explosion*
*CSEM **02** 13:06:09.8±0.3, 58°.69N×18°.35E, h2km, ML1.8, Error ellipse: s-maj=7.2km s-min=6.0km az=103.0, Mining explosion.*
*IDC **02** 13:06:12.9±2.0, 58°.91N×18°.49E, h0km, mb1 2.8/4, mb1mx2.7/54, mbtmp2.7/4, ML2.5/4, Error ellipse: s-maj=24.6km s-min=8.3km az=174.0*
*NAO **02** 13:06:12.8±2.3, 58°.91N×18°.46E, ML2.2*
*BER **02** 13:06:13.6±3.1, 58°.87N×18°.43E, h0km, ML2.2(NAO), Suspected explosion*
*HEL **02** 13:06:20.9±0.4, 59°.21N×19°.31E, h0km, ML1.6, Explosion*
ISC 02 13:06:08.6±0.8, 58°.73N±0°.03×18°.27E±0°.03, h0km, n55,
σ↑↓41/62, Baltic Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NYNU	Nynaeshamn	0.31	333	P	Pb	13 06 17.1	+0.1
NYNU				S	Sb	13 06 22.3	-0.2
NYNU	Nynaeshamn	0.31	333	P	Pb	13 06 17.0	+0.1
NYNU				S	Sb	13 06 22.3	-0.2
VIKU	Vikbolandet	0.85	255	P	Pn	13 06 27.6	-0.2
VIKU	Vikbolandet	0.85	255	P	Pn	13 06 27.6	-0.2
NRTU	Norrtaelje	0.97	11	P	Pg	13 06 27.3	+0.2
NRTU	Norrtaelje	0.97	11	P	Pg	13 06 27.3	+0.2
GOTU	Gotland	1.06	171	P	Pg	13 06 28.2	-0.7
GOTU	Gotland	1.06	171	P	Pg	13 06 28.2	-0.7
UPP	Uppsala	1.18	344	P	Pn	13 06 32.5	+0.2
UPP	Uppsala	1.18	344	P	Pn	13 06 32.5	+0.2
FIBU	Brunna	1.27	338	P	Pn	13 06 34.2	+0.7
BACU	Backbrunna	1.27	333	P	Pn	13 06 34.5	+0.9
BACU	Backbrunna	1.27	333	P	Pn	13 06 34.5	+0.9
VSTU	Vaestervik	1.41	221	P	Pb	13 06 36.5	+0.7
VSTU	Vaestervik	1.41	221	P	Pb	13 06 36.5	+0.7
FLYU	Flymyra	1.42	352	P	Pb	13 06 36.1	+0.3
FLYU	Flymyra	1.42	352	P	Pb	13 06 36.1	+0.3
GRAU	Graesoe	1.61	5	P	Pn	13 06 39.0	+0.7
GRAU	Graesoe	1.61	5	P	Pn	13 06 39.0	+0.7
AAL	A

392nm,0.6s,SNR=50
HFS Hagfors 2.73 303 Pn Pb 13 06 57.0 -1.2
baz=110,slow=14
HFS Lg Lg 13 07 38.1
baz=115,slow=37
HFS Hagfors 2.73 303 Pn Pb 13 06 56.5 -1.7
0.6nm,0.3s,baz=119,slow=14,SNR=11
HFS Sn **Sb 13 07 32.0 -0.2**
3.7nm,0.3s,baz=110,slow=21,SNR=12
HFS Hagfors 2.73 303 Pn Pb 13 06 57.0 -1.2
baz=110,slow=14
HFS Lg Lg 13 07 38.1
baz=115,slow=37
HFS Hagfors 2.73 303 Pn Pb 13 06 57.0 -1.2
SNR=50
HFS Lg Lg 13 07 38.1
MTSE Matsula 2.89 88 *e*S **Sn 13 07 30.3 -0.9**
SNR=50
RAF Rauma 2.90 36 *e*P **Pb 13 06 59.7 -1.4**
RAF *e*SB **Sn 13 07 26.9 -4.4**
RAF *e*SG Sb 13 07 27.8 -9.1
RAF MSG 13 07 28.6
comp=Z,2.6nm,0.1s
RAF Rauma 2.90 36 *e*P **Pb 13 06 59.5 -1.5**
SNR=50
MEF Metsahovi 3.46 62 *e*PG **Pb 13 07 10.9 +0.3**
HEMU Hemsoen 3.96 358 *e*PB **Pb 13 07 21.3 +2.2**
HEMU Hemsoen 3.96 358 Pb **Pb 13 07 21.3 +2.2**
BSD Bornholm Skovb 4.07 208 *i* P **Pn 13 07 11.0 -1.0**
BSD Bornholm Skovb 4.07 208 *e*P **Pn 13 07 11.0 -1.0**
BSD *e*S **Sn 13 08 01.8 +1.6**
comp=Z,1.2nm,0.8s,SNR=50
NB2 NORSAR Subarra 4.24 306 Pn **Pn 13 07 16.9 +2.4**
NB2 Lg Lg 13 08 24.9
NB2 NORSAR Subarra 4.24 306 Pn **Pn 13 07 16.9 +2.4**
NB2 Lg Lg 13 08 24.9
NB2 NORSAR Subarra 4.24 306 Pn **Pn 13 07 16.9 +2.4**
NB2 Lg Lg 13 08 24.9
NOA NORSAR Array B 4.24 306 Pn **Pn 13 07 17.1 +2.6**
comp=Z,0.2nm,0.3s,baz=110,slow=13,SNR=3.5
NOA Lg Lg 13 08 25.2
comp=Z,1.2nm,0.3s,baz=61,slow=20,SNR=9.2
PVF Pernaja 4.26 62 *e*PG **Pb 13 07 25.1 +0.8**
PVF Pernaja 4.26 62 Pg **Pb 13 07 25.1 +0.8**
VSU Vasula 4.44 90 *e*P **Pn 13 07 18.1 +1.1**
SNR=50
KEF Keuruu 4.75 41 *e*P **Pn 13 07 23.3 +1.9**
KEF Keuruu 4.75 41 P **Pn 13 07 23.2 +1.9**
FIA0 FINESS Array S 4.76 52 Pn **Pn 13 07 22.7 +1.2**
baz=235,slow=14
FIA0 Sn **Sn 13 08 16.8 -0.5**
FIA0 Lg Lg 13 08 34.9
baz=240,slow=28
FIA0 FINESS Array S 4.76 52 Pn **Pn 13 07 22.7 +1.2**
baz=235,slow=14
FIA0 Sn **Sn 13 08 16.8 -0.5**
FIA0 Lg Lg 13 08 34.9
baz=240,slow=28
FIA0 FINESS Array S 4.76 52 *e*P **Pn 13 07 23.9 +2.4**
FIA0 FINESS Array S 4.76 52 Pn **Pn 13 07 22.7 +1.2**
FIA0 Sn **Sn 13 08 16.8 -0.5**
SNR=50
FIA0 Lg Lg 13 08 34.9
FINES FINESS Array B 4.76 52 Pn **Pn 13 07 22.7 +1.2**
comp=Z,0.3nm,0.3s,baz=235,slow=13,SNR=6.7
FINES Sn **Sn 13 08 17.2 -0.1**
comp=Z,0.4nm,0.3s,baz=239,slow=19,SNR=3.9
FINES Lg Lg 13 08 35.2
comp=Z,1.2nm,0.3s,baz=239,slow=28,SNR=12
VAF Ylistaro 4.83 25 *e*P Pn 13 07 26.1 +3.7
VAF Ylistaro 4.83 25 P Pn 13 07 26.1 +3.7
KAF Kangasniemi 5.23 46 *e*P **Pn 13 07 29.8 +1.9**
ARA0 ARCESS Array S 11.28 13 Pn **Pn 13 08 48.7 -2.1**
baz=200,slow=14
ARA0 ARCESS Array S 11.28 13 Pn **Pn 13 08 48.7 -2.1**
baz=200,slow=14
ARCES ARCESS Array B 11.28 13 Pn **Pn 13 08 48.5 -2.4**
comp=Z,0.1nm,0.3s,baz=195,slow=13,SNR=10.0
ARCES Lg Lg 13 11 59.2
comp=Z,0.1nm,0.3s,baz=196,slow=26,SNR=2.7

NIED ***02*** *13:12:00,37.°60N×143.°50E,h17km,Mw3.9 Best double couple: M0:8.29000×10^14 NP1:φs:311.00000°,δ52.00000°, λ-180.00000°. NP2:φs:221.00000°,δ90.00000°, λ-38.00000°.*
IDC ***02*** *13:12:34.3±0.7,37.°53N×143.°62E,h0km,mb4.1/22, mb1 4.2/29,mb1mx4.1/59,mbtmp4.1/29,ML3.8/7,MS3.1/8, Ms1 3.1/8,ms1mx2.8/63,Error ellipse: s-maj=16.4km s-min=12.9km az=111.0*
ISCJB ***02*** *13:12:37.5±0.4,37.°58N±0.°03×143.°50E±0.°04,h33km, mb4.2/30,MS3.3/3,Error ellipse: s-maj=5.4km s-min=4.2km az=41.6*
JMA ***02*** *13:12:37.6±0.2,37.°64N×143.°50E,h48km,M4.0*
NEIC ***02*** *13:12:39.7±0.4,37.°58N×143.°57E,h35km,mb4.6/8,Error ellipse: s-maj=9.5km s-min=6.1km az=125.0*
ISC 02 13:12:40.1±0.7,37.°65N±0.°05×143.°48E±0.°08,h35km,n58, σ1**52/67,mb4.2/30,MS3.1/3,Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.87**	**296**	P	**Pn**	**13 13 08.4**	**-1.1**
JIO				*e*S	**Sn**	**13 13 31.3**	**-0.5**
OFUJ	**Ofunato**	**2.02**	**316**	P	**Pn**	**13 13 10.1**	**-1.5**
OFUJ				*e*S	**Sn**	**13 13 34.1**	**-1.5**
JFK	**Kawauchi**	**2.09**	**263**	P	**Pn**	**13 13 11.5**	**-1.1**
JFK				S	**Sn**	**13 13 36.3**	**-1.2**
JMK	**Ichinoseki**	**2.21**	**307**	P	**Pn**	**13 13 13.0**	**-1.1**
JFT	**Otama**	**2.50**	**268**	P	**Pn**	**13 13 18.0**	**-0.3**
JFT				S	**Sn**	**13 13 47.9**	**+0.4**
JOM	**Ohasama**	**2.50**	**317**	P	**Pn**	**13 13 17.3**	**-1.0**
JOM				*e*S	**Sn**	**13 13 46.4**	**-1.2**
JYK	**Kaneyama**	**2.77**	**298**	P	**Pn**	**13 13 21.6**	**-0.3**
JANG	**Nango**	**3.12**	**331**	P	**Pn**	**13 13 26.1**	**-0.7**
JANG				*e*S	**Sn**	**13 14 00.2**	**-2.7**
JAG	**Ashikaga**	**3.44**	**250**	P	**Pn**	**13 13 30.6**	**-0.6**
JAG				*e*S	**Sn**	**13 14 10.4**	**-0.4**
BSO1	**Boso 1**	**3.61**	**215**	P	**Pn**	**13 13 31.1**	**-1.9**
BSO1				S	**Sn**	**13 14 12.2**	**-1.9**
JRY	**Ryogami san**	**4.02**	**247**	P	**Pn**	**13 13 38.1**	**-1.0**
JRY				S	**Sn**	**13 14 22.8**	**-2.2**
JOT	**Ohata**	**4.18**	**334**	*e*S	**Sn**	**13 14 25.6**	**-3.2**
MJAR	**Matsushiro Arr**	**4.36**	**257**	Pn	**Pn**	**13 13 43.9**	**+0.1**
	17nm,0.3s,baz=82,slow=14,SNR=192						
MAJO	**Matsushiro**	**4.36**	**257**	*e*Pn	**Pn**	**13 13 44.0**	**+0.2**
MAT	**Matsushiro**	**4.36**	**257**	P	**Pn**	**13 13 44.2**	**+0.4**
MAT				*e*S	**Sn**	**13 14 33.0**	**-0.4**
ERM	**Erimo**	**4.37**	**357**	*e*Pn	**Pn**	**13 13 42.1**	**-1.8**
JHJ2	**Mitsune**	**5.42**	**215**	*e*Pn	**Pn**	**13 13 56.6**	**-1.9**
JHJ	**Hachijo jima 2**	**5.43**	**215**	Pn	**Pn**	**13 13 55.8**	**-2.8**
	22nm,0.3s,baz=78,slow=23,SNR=28						
JHJ				Sn	**Sn**	**13 14 53.7**	**-6.1**
	43nm,0.3s,baz=320,slow=22,SNR=7.9						
ASAJ	**Asahikawa**	**6.50**	**354**	Pn	**Pn**	**13 14 11.7**	**-1.4**
	3.2nm,0.3s,baz=180,slow=12,SNR=21						
ASAJ				Sn	**Sn**	**13 15 22.0**	**-4.0**
	1.6nm,0.3s,baz=54,slow=27,SNR=3.4						
ASAJ				LR	LR	13 17 08.6	
	comp=Z,151nm,20.3s,baz=198,slow=41						
CBIJ	**Chichi jima**	**10.58**	**186**	*e*Pn	Pn	13 15 03.2	-5.9
CBIJ				Sn	Sn	13 16 54.0	-12
JCJ	**Chichijima**	**10.58**	**186**	Pn	Pn	13 15 03.8	-5.3
	6.9nm,0.3s,baz=8.6,slow=17,SNR=14						
JCJ				Sn	Sn	13 16 54.0	-12
	8.1nm,0.3s,baz=286,slow=20,SNR=5.8						
USRK	**Ussuriysk Ar.**	**10.88**	**311**	Pn	**Pn**	**13 15 14.2**	**+1.0**
	0.9nm,0.3s,baz=121,slow=12,SNR=14						
USRK				LR	LR	13 19 09.9	
	comp=Z,87nm,18.3s,baz=142,slow=36						
JNU	**Nakatsue**	**11.23**	**250**	Pn	**Pn**	**13 15 17.0**	**-1.1**
	0.2nm,0.3s,baz=54,slow=10,SNR=7.8						
JNU				LR	LR	13 19 24.5	
	comp=Z,34nm,19.8s,baz=116,slow=36						
KSRS	**Korea Array**	**12.35**	**274**	Pn	**Pn**	**13 15 34.7**	**+1.4**
	0.3nm,0.3s,baz=85,slow=14,SNR=15						
KSRS				LR	LR	13 19 52.5	
	comp=Z,60nm,21.0s,baz=98,slow=35						
KSAR	**Wonju Array Be**	**12.38**	**274**	Pn	**Pn**	**13 15 34.7**	**+0.9**
KLR	**Kul'dur**	**14.35**	**327**	Pn	**Pn**	**13 15 58.0**	**-2.6**
	0.3nm,0.3s,baz=133,slow=12,SNR=14						
KLR				LR	LR	13 21 42.8	
	comp=Z,103nm,18.6s,baz=148,slow=38						
YAK	**Yakutsk**	**25.87**	**345**	P	**P**	**13 18 07.6**	**-0.5**
	5.6nm,0.4s,baz=150,slow=3.1,SNR=4.3						
YAK				LR	LR	13 28 32.2	
	comp=Z,47nm,18.2s,baz=179,slow=37						
SEY	**Seymchan**	**25.90**	**9**	P	**P**	**13 18 09.2**	**+0.8**
	0.7nm,0.4s,baz=183,slow=8.1,SNR=7.4						
ULN	**Ulaanbaatar**	**28.39**	**303**	P	**P**	**13 18 32.1**	**+1.0**
	3.8nm,0.9s						
SONM	**Songino Array**	**28.83**	**303**	P	**P**	**13 18 35.7**	**+0.7**
	1.4nm,0.6s,baz=94,slow=9.8,SNR=7.9						
ENH	**Enshi**	**29.02**	**265**	*e*P	**P**	**13 18 38.9**	**+2.1**
	18nm,0.9s						
TLY	**Talaya**	**31.19**	**310**	P	**P**	**13 18 57.7**	**+2.0**
	3.5nm,0.6s,baz=325,slow=1.1,SNR=3.9						
TLY				LR	LR	13 32 05.4	
	comp=Z,41nm,18.1s,baz=132,slow=37						
ZALV	**Zalesovo Beam**	**42.73**	**312**	P	**P**	**13 20 34.2**	**+0.7**
	3.0nm,0.6s,baz=92,slow=7.4,SNR=8.3						
CMAR	**Chiang Mai Arr**	**43.24**	**256**	P	**P**	**13 20 37.3**	**-0.9**
	0.8nm,0.7s,baz=34,slow=5.5,SNR=3.8						
MKAR	**Makanchi Array**	**45.19**	**302**	P	**P**	**13 20 54.2**	**+0.8**
	2.1nm,0.8s,baz=86,slow=9.7,SNR=21						
KURK	**Kurchatov**	**46.85**	**308**	*e*P	**P**	**13 21 06.7**	**+0.3**
	26nm,0.8s						
ILAR	**Eielson Array**	**48.09**	**33**	P	**P**	**13 21 16.1**	**+0.2**
	1.2nm,0.8s,baz=269,slow=6.3,SNR=14						
TKM2	**Tokmak 2**	**50.79**	**299**	*e*P	**P**	**13 21 38.1**	**+1.1**
	4.1nm,0.6s						
BVAR	**Borovoye Array**	**51.38**	**312**	P	**P**	**13 21 41.8**	**+0.7**
	2.1nm,0.7s,baz=74,slow=7.9,SNR=15						
BRVK	**Borovoye**	**51.43**	**312**	*e*P	**P**	**13 21 41.9**	**+0.4**
	3.3nm,0.8s						
INK	**Inuvik**	**53.09**	**27**	P	**P**	**13 21 53.7**	**+0.2**
	0.6nm,0.5s,baz=312,slow=7.3,SNR=6.4						
KKAR	**Karatay Array**	**54.24**	**300**	*e*P	**P**	**13 22 02.7**	**+0.3**
	6.4nm,1.2s						
ARU	**Arti**	**56.99**	**319**	P	**P**	**13 22 21.9**	**+0.1**
	2.3nm,0.5s,baz=59,slow=3.8,SNR=5.1						
WRAB	**Tennant Creek**	**57.91**	**190**	*e*P	**P**	**13 22 27.3**	**-1.3**
	4.5nm,1.0s						
WRA	**Warramunga Arr**	**57.92**	**190**	P	**P**	**13 22 27.5**	**-1.2**
	3.6nm,0.7s,baz=8.7,slow=7.1,SNR=50						
ABKAR	**Akbulak array**	**58.80**	**310**	*e*P	**P**	**13 22 35.0**	**+0.3**
	8.3nm,0.7s						
AKTO	**Aktyubinsk**	**59.49**	**312**	P	**P**	**13 22 39.6**	**+0.2**
	2.4nm,0.8s,baz=69,slow=13,SNR=7.2						
ASAR	**Alice Springs**	**61.65**	**190**	P	**P**	**13 22 53.6**	**-0.7**
	1.0nm,0.8s,baz=4.9,slow=7.4,SNR=26						
YKA	**Yellowknife Ar**	**62.45**	**31**	P	**P**	**13 22 59.1**	**-0.1**
	0.3nm,0.6s,baz=302,slow=6.6,SNR=7.2						
ARCES	**ARCESS Array B**	**64.00**	**340**	P	**P**	**13 23 09.2**	**-0.3**
	1.1nm,0.8s,baz=59,slow=10,SNR=5.8						
GEYT	**Alibeck**	**64.97**	**300**	P	**P**	**13 23 16.8**	**+0.4**
	1.2nm,0.4s,baz=64,slow=5.0,SNR=3.1						
FINES	**FINESS Array B**	**69.03**	**333**	P	**P**	**13 23 42.4**	**+0.7**
	1.6nm,0.7s,baz=43,slow=12,SNR=7.1						
KBZ	**Khabaz**	**71.74**	**311**	P	**P**	**13 23 59.8**	**+1.2**
	3.5nm,0.9s,baz=351,slow=1.3,SNR=9.0						
GNI	**Garni**	**72.65**	**307**	LR	LR	13 57 45.0	
	comp=Z,42nm,18.0s,baz=110,slow=37						
NOA	**NORSAR Array B**	**74.25**	**338**	P	**P**	**13 24 13.8**	**+0.7**
	0.6nm,0.5s,baz=38,slow=5.9,SNR=3.2						
AKASG	**Malin Array Be**	**74.81**	**323**	P	**P**	**13 24 16.6**	**0.0**
	1.3nm,0.6s,baz=46,slow=5.9,SNR=6.4						
PDAR	**Pinedale Array**	**76.06**	**47**	P	**P**	**13 24 23.9**	**-0.3**
	0.3nm,0.6s,baz=247,slow=1.9,SNR=3.0						
TORD	**Torodi Ar. Bea**	**118.04**	**317**	PKP	**PKPdf**	**13 31 24.3**	**+0.6**
	0.1nm,0.4s,baz=102,slow=2.2,SNR=3.5						

IDC ***02*** *13:20:56.5±0.4,15.°58S×174.°37W,h0km,mb4.7/30, mb1 4.9/31,mb1mx4.7/52,mbtmp4.7/31,ML3.8/1,MS4.9/41, Ms1 4.9/41,ms1mx4.9/45,Error ellipse: s-maj=16.8km s-min=11.5km az=131.0*
NEIC ***02*** *13:20:57.2±0.2,15.°48S×174.°34W,h10km,mb5.4/167, MS5.2/65,Error ellipse: s-maj=7.6km s-min=4.2km az=138.0*
GCMT ***02*** *13:20:57.2±0.1,15.°21S×174.°25W,h15km,MW5.5/129, Moment Tensor Solution. s96,c180; s129,c240; Duration: 1s3 Moment tensor: Scale 10^17Nm; Mrr-0.31±.02; Mθθ0.92±.02; Mφφ-0.61±.02; Mrθ0.16±.06; Mrφ1.98±.02; Mθφ-0.01±.06; Best double couple: M0:2.12900×10^17 NP1:φs:281.00000°,δ90.00000°, λ-4.00000°. NP2:φs:11.00000°,δ86.00000°,λ-180.00000°. Principal axes: T 2.2870, Plg3.0000°, Azm326.0000°; N -0.3150, Plg86.0000°, Azm96.0000°; P -1.9720, Plg3.0000°, Azm235.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
ISCJB ***02*** *13:20:59.9±0.1,15.°49S±0.°04×174.°41W±0.°03,h33km, mb5.2/228,MS5.1/125 Error ellipse: s-maj=5.9km s-min=3.1km az=147.4*
BJI ***02*** *13:21:00.0±1.9,15.°53S×173.°96W,h40km,mb5.1/32, mB5.4/33,Ms5.3/36,Ms7 5.2/33*
MOS ***02*** *13:21:01.0±1.9,15.°39S×174.°27W,h33km,mb5.5/56, MS5.1/16,Error ellipse: s-maj=9.9km s-min=6.8km az=58.8*
ISC 02 13:21:01.9±0.3,15.°63S±0.°06×174.°25W±0.°05,h36km±4km, n808,σ1**974/749,mb5.3/228,MS5.1/126,33C-12D,Tonga Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**2.94**	**55**	Pn	Pn	13 21 39.2	-7.0
	55nm,0.3s,baz=253,slow=1.5,SNR=173						
AFI				LR	LR	13 22 43.0	
	comp=Z,31μm,18.5s,baz=165,slow=35						
MSVF	**Nonsavu**	**7.67**	**253**	*e*P	**Pn**	**13 22 52.6**	**+1.4**
MSVF	**Nonsavu**	**7.67**	**253**	*e*Pn	**Pn**	**13 22 52.5**	**+1.4**
FUNA	**Funafuti**	**9.53**	**317**	*e*Pn	Pn	13 23 02.6	-14
RAO	**Raoul Island**	**13.97**	**193**	LR	LR	13 29 04.5	
	comp=Z,6μm,18.6s,baz=18,slow=35						
RAR	**Rarotonga**	**14.82**	**114**	Pn	**Pn**	**13 24 26.3**	**-2.6**
	0.8nm,0.3s,baz=235,slow=12,SNR=4.5						
RAR				LR	LR	13 29 07.1	
	comp=Z,3μm,20.5s,baz=288,slow=33						
RAR	**Rarotonga**	**14.82**	**114**	Pn	**Pn**	**13 24 29.0**	**+0.1**
DZM	**Mont Dzumac**	**19.35**	**248**	P	**P**	**13 25 23.8**	**-0.8**
	0.3nm,0.3s,baz=85,slow=13,SNR=16						
DZM				LR	LR	13 31 38.2	
	comp=Z,8μm,20.3s,baz=86,slow=33						
PAE	**Paea**	**23.72**	**98**	*e*T	T	13 50 44.9	
	7.1nm,0.3s						
PPT	**Papeete**	**23.72**	**98**	LR	LR	13 32 47.8	
	comp=Z,727nm,21.8s,baz=270,slow=30						
PPT2	**Papeete2**	**23.72**	**98**	*e*S	**S**	**13 30 21.9**	**-2.1**
	1μm,25.8s						
PPT2				*e*LQ	LQ	13 30 53.9	
	19μm,26.0s						
PPT2				*e*LR	LR	13 31 55.4	
	2μm,26.2s						
PPT2	**Papee2**	**23.72**	**98**	*e*T	T	13 50 43.3	
	12nm,0.3s						
URZ	**Urewera**	**23.79**	**197**	P	**P**	**13 26 10.6**	**-0.7**
	93nm,1.0s,baz=84,slow=1.7,SNR=13						
URZ				LR	LR	13 34 24.0	
	comp=Z,4μm,19.1s,baz=18,slow=34						
URZ	**Urewera**	**23.79**	**197**	*e*P	**P**	**13 26 12.0**	**+0.7**
	168nm,1.0s						
TIAR	**Tiarei**	**23.94**	**98**	*e*T	T	13 50 58.6	
	6.8nm,0.3s						
HIZ	**Hauiti**	**24.73**	**201**	*e*P	**P**	**13 26 23.0**	**+3.1**
	158nm,0.9s						
BKZ	**Black Stump Fm**	**24.81**	**197**	*e*P	**P**	**13 26 20.5**	**-0.3**
	54nm,1.1s						
PMOR	**Pomariorio Ree**	**25.43**	**92**	*e*P	**P**	**13 26 29.2**	**+2.7**
	360nm,1.3s						
PMOR	**Pomariorio Ree.**	**25.43**	**92**	*e*T	T	13 52 52.4	
	13nm,0.3s						
VAH	**Vaihoa**	**25.66**	**93**	*e*P	**P**	**13 26 31.7**	**+3.1**
	90nm,1.3s						
VAH	**Vaihoa**	**25.66**	**93**	*e*T	T	13 53 10.8	
	18nm,0.3s						
HNR	**Honiara**	**25.91**	**281**	LR	LR	13 34 54.4	
	comp=Z,7μm,20.9s,baz=123,slow=32						
BFZ	**Birch Farm**	**26.29**	**196**	*e*P	**P**	**13 26 34.6**	**+0.6**
	101nm,1.0s						
KHZ	**Kahutara**	**28.68**	**199**	P	**P**	**13 26 55.5**	**0.0**
LTZ	**Lake Taylor**	**29.42**	**200**	*e*P	**P**	**13 27 03.7**	**+1.6**
	30nm,0.7s						
OXZ	**Oxford**	**29.98**	**200**	*e*P	**P**	**13 27 05.7**	**-1.4**
	47nm,0.8s						
RPZ	**Rata Peaks**	**30.66**	**201**	P	**P**	**13 27 11.6**	**-1.4**
	14nm,1.0s,baz=129,slow=15,SNR=3.3						
RPZ				LR	LR	13 39 10.4	
	comp=Z,3μm,21.6s,baz=18,slow=36						
RPZ	**Rata Peaks**	**30.66**	**201**	*e*P	**P**	**13 27 11.8**	**-1.3**
	30nm,0.9s						
LBZ	**Lake Benmore**	**31.55**	**202**	*e*P	**P**	**13 27 17.9**	**-3.0**
MLZ	**Mavora Lakes**	**33.15**	**203**	*e*P	**P**	**13 27 34.4**	**-0.5**
	92nm,1.3s						
DCZ	**Deep Cove**	**33.60**	**204**	*e*P	**P**	**13 27 39.2**	**+0.4**
	79nm,1.2s						
WHZ	**Wether Hill Ro**	**33.66**	**203**	*e*P	**P**	**13 27 38.4**	**-0.9**
	116nm,1.2s						
EIDS	**Eidsvold**	**33.80**	**248**	P	**P**	**13 27 40.6**	**-0.2**
	baz=34,SNR=3.8						
EIDS	**Eidsvold**	**33.80**	**248**	*e*P	**P**	**13 27 40.8**	**+0.1**
	22nm,1.4s						
TAOE	**Nuku Hiva Isla**	**33.97**	**83**	*e*T	T	14 03 27.1	
	75nm,0.2s						
ARMA	**Armidale**	**34.52**	**239**	*e*P	**P**	**13 27 45.6**	**-1.5**
RMQ	**Roma**	**36.05**	**246**	P	**P**	**13 28 00.7**	**+0.5**
	baz=36,SNR=5.7						
RKT	**Rikitea**	**37.71**	**108**	*e*S	**S**	**13 34 02.3**	**-0.1**
	319nm,32.2s						
RKT				*e*LQ	LQ	13 36 56.5	
	3μm,25.8s						
RKT				*e*LR	LR	13 38 43.6	
	792nm,23.8s						
RKT	**Rikitea**	**37.71**	**108**	*e*T	T	14 08 19.6	
	19nm,0.3s						
CTA	**Charters Tower**	**37.79**	**257**	P	**P**	**13 28 13.6**	**-1.4**
	4.7nm,0.8s,baz=86,slow=9.9,SNR=3.7						
CTA				LR	LR	13 41 19.3	
	comp=Z,1μm,19.0s,baz=84,slow=32						
CTA	**Charters Tower**	**37.79**	**257**	P	**P**	**13 28 14.6**	**-0.5**
	baz=38						
CNB	**Canberra Magne**	**37.96**	**232**	P	**P**	**13 28 16.6**	**+0.2**
	baz=38						
PMG	**Port Moresby**	**38.13**	**275**	P	**P**	**13 28 16.6**	**-1.4**
	23nm,1.0s,baz=130,slow=7.1,SNR=4.1						
PMG				LR	LR	13 41 27.8	
	comp=Z,3μm,20.3s,baz=91,slow=32						
PMG	**Port Moresby**	**38.13**	**275**	*ce*P	**P**	**13 28 17.9**	**-0.1**
PMG				pmax	pmax		
	comp=Z,168nm,1.2s						
PMG	**Port Moresby**	**38.13**	**275**	*e*P	**P**	**13 28 17.4**	**-0.6**
	comp=Z,45nm,1.0s						
CAN	**Canberra**	**38.24**	**232**	*e*P	**P**	**13 28 20.0**	**+1.3**
CAN				pmax	pmax		
	comp=Z,36nm,1.1s						
CAN				MLR	MLR		
	comp=Z,2μm,20.0s						
CAN	**Canberra**	**38.24**	**232**	*e*P	**P**	**13 28 20.0**	**+1.3**
	comp=Z,36nm,1.1s						
CAN				LR	LR		
	comp=Z,2μm,20.0s						
MTSU	**Mount Surprise**	**39.66**	**260**	P	**P**	**13 28 31.3**	**+0.4**
	baz=40,SNR=13						
CMSA	**Cobar Meteorol**	**39.73**	**239**	P	**P**	**13 28 30.2**	**-1.0**
	baz=40,SNR=30						
KEKH	**Kekaha**	**40.01**	**21**	*e*P	**P**	**13 28 33.9**	**+0.4**
	comp=Z,208nm,1.0s						
QLP	**Quilpie**	**40.07**	**247**	P	**P**	**13 28 33.1**	**-0.9**
	baz=40,SNR=7.9						
KIP	**Kipapa**	**40.12**	**24**	‖*e*P	**P**	**13 28 34.8**	**+0.4**
KIP	**Kipapa**	**40.12**	**24**	*e*P	**P**	**13 28 32.0**	**-2.5**
	comp=Z,228nm,1.1s						
COEN	**Coen**	**41.15**	**267**	P	**P**	**13 28 43.8**	**+0.7**
	baz=41,SNR=9.9						
COEN	**Coen**	**41.15**	**267**	*e*P	**P**	**13 28 40.1**	**-3.0**
	comp=Z,64nm,1.2s						
TOO	**Toolangi**	**41.68**	**231**	P	**P**	**13 28 46.9**	**-0.4**
	baz=42,SNR=11						
TAU	**Tasmania Unive**	**42.59**	**222**	PFAKE		13 29 10.0	+15
TAU				LR	LR		
	comp=Z,4μm,20.0s						
STKA	**Stephens Creek**	**43.21**	**240**	P	**P**	**13 28 58.7**	**-1.0**
	comp=Z,23nm,1.2s,baz=78,slow=9.0,SNR=12						
STKA				LR	LR	13 44 49.5	
	comp=Z,2μm,20.9s,baz=84,slow=33						
STKA	**Stephens Creek**	**43.21**	**240**	P	**P**	**13 28 58.7**	**-1.0**
	baz=43,SNR=12						
STKA	**Stephens Creek**	**43.21**	**240**	*e*P	**P**	**13 28 58.0**	**-1.8**
STKA				pmax	pmax		
	comp=Z,8.0nm,1.0s						
STKA	**Stephens Creek**	**43.21**	**240**	*e*P	**P**	**13 28 58.0**	**-1.8**
	comp=Z,8.4nm,1.0s						
MIDW	**Midway**	**43.69**	**356**	PFAKE		13 29 10.0	+6.5
MIDW				LR	LR		
	comp=Z,3μm,20.0s						
QIS	**Mount Isa**	**44.02**	**256**	P	**P**	**13 29 07.9**	**+1.5**
	baz=44,SNR=5.9						
ARPS	**Mount Arapiles**	**44.20**	**233**	P	**P**	**13 29 07.0**	**-0.5**
	baz=44,SNR=7.2						
HTT	**Hallett**	**45.72**	**238**	P	**P**	**13 29 19.4**	**-0.4**
	baz=46,SNR=4.4						
JAY	**Jayapura**	**46.23**	**282**	LR	LR	13 46 17.3	
	comp=Z,51nm,20.6s,baz=11,slow=33						
BBOO	**Buckleboo**	**47.98**	**240**	P	**P**	**13 29 37.1**	**-0.4**
	baz=48						
BBOO	**Buckleboo**	**47.98**	**240**	*e*P	**P**	**13 29 35.4**	**-2.1**
	comp=Z,84nm,1.7s						
WB3	**Warramunga Arr**	**48.98**	**257**	P	**P**	**13 29 44.6**	**-0.7**
	baz=49						
WB2	**Warramunga Arr**	**48.98**	**257**	*e*P	**P**	**13 29 43.5**	**-1.9**
	comp=Z,59nm,1.1s						
WRAB	**Tennant Creek**	**48.98**	**257**	*ce*P	**P**	**13 29 44.4**	**-1.0**
WRAB				pmax	pmax		
	comp=Z,22nm,0.9s						
WRAB	**Tennant Creek**	**48.98**	**257**	*e*P	**P**	**13 29 42.6**	**-2.8**
	comp=Z,57nm,1.1s						
WRA	**Warramunga Arr**	**48.99**	**257**	P	**P**	**13 29 43.7**	**-1.7**
	comp=Z,7.8nm,0.9s,baz=90,slow=6.4,SNR=23						
WRA				LR	LR	13 47 20.4	
	comp=Z,1μm,20.6s,baz=95,slow=32						
WRA	**Warramunga Arr**	**48.99**	**257**	*i* P	**P**	**13 29 44.7**	**-0.7**
WRA				pmax	pmax		
	comp=Z,8.0nm,0.9s						
AS01	**Alice Springs**	**49.21**	**252**	*e*P	**P**	**13 29 44.8**	**-2.4**
AS31	**Alice Springs**	**49.26**	**252**	*e*P	**P**	**13 29 45.2**	**-2.3**
	comp=Z,14nm,0.8s						
**ASAR

MAJO pmax pmax
comp=Z,43nm,1.1s
MAJO Matsushiro 68.59 320 *e*P P 13 31 58.4 -2.9
comp=Z,25nm,1.2s
MAJO LR LR
comp=Z,2µm,22.0s
ERM Erimo 69.51 327 PFAKE 13 32 20.0 +13
ERM LR LR
comp=Z,2µm,20.0s
KUR Kuril'sk 69.64 332 *e*P P 13 32 09.5 +1.9
KUR *e*S S **13 41 18.8 +5.3**
KUR pmax pmax
comp=Z,224nm,3.5s
KUR pmax pmax
comp=Z,2µm,4.0s
MYLDM Lahad Datu 69.69 282 *e*P P 13 32 07.7 -0.9
comp=Z,85nm,1.2s
CASY Casey 69.86 205 *e*P P 13 32 09.1 +0.4
comp=Z,7.3nm,1.3s
CASY LR LR
comp=Z,207nm,19.0s
JAGI Jajag, Banyuwa 70.12 267 *e*P P 13 32 11.0 -0.3
comp=Z,61nm,0.9s
ASAJ Asahikawa 71.31 329 P P 13 32 17.1 -0.7
comp=Z,19nm,0.9s,baz=322,slow=12,SNR=3.2
ASAJ Asahikawa 71.31 329 *e*P P 13 32 17.5 -0.3
SNCC San Nicolas Is 71.33 46 P P 13 32 18.8 +0.5
baz=236
JNU Nakatsue 71.36 314 P P 13 32 17.6 -0.8
comp=Z,9.9nm,0.9s,baz=83,slow=4.4,SNR=6.5
JNU Nakatsue 71.36 314 *e*P P 13 32 16.4 -2.0
comp=Z,26nm,1.0s
SDPT Sand Point 71.66 8 *e*P P 13 32 19.4 -0.2
comp=Z,185nm,1.3s
SCZ2 Santa Cruz Isl 71.67 46 P P 13 32 20.8 +0.5
baz=236
SCI2 San Clemente I 71.87 47 P P 13 32 21.6 +0.2
baz=237
PKM Mcpherson Peak 72.05 45 P P 13 32 23.1 +0.4
baz=236,SNR=5.3
SAO San Andreas Ge 72.05 42 *e*P P 13 32 22.7 +0.2
SAO pmax pmax
comp=Z,38nm,1.1s
SAO San Andreas Ge 72.05 42 *e*P P 13 32 22.7 +0.2
comp=Z,38nm,1.1s
KKM Kota Kinabalu 72.12 282 PFAKE 13 32 30.0 +6.5
KKM LR LR
comp=Z,489nm,21.0s
SMMC Simmler 72.17 44 P P 13 32 23.3 +0.1
baz=235
CIS Catalina Islan 72.19 47 P P 13 32 23.5 +0.1
baz=237
PET Petropavlovsk 72.26 343 *e*P P 13 32 26.6 +3.3
PET *e*S S **13 41 47.2 +3.7**
PET *e*PS PnS **13 42 18.3 +0.9**
PET *e*SS SS **13 46 25.9 +3.6**
PET pmax pmax
comp=Z,31nm,1.2s
HOPS Hopland Field 72.37 40 *e*P P 13 32 24.5 +0.1
comp=Z,72nm,1.3s
FMP Fort Macarthur 72.44 46 P P 13 32 25.3 +0.4
baz=237
PEA0 Petropavlovsk- 72.60 343 *e*P P 13 32 24.0 -1.4
PEA0B Petropavlovsk- 72.60 343 *e*P P 13 32 24.0 -1.4
comp=Z,181nm,1.4s
PETK Petropavlovsk- 72.60 343 P P 13 32 24.7 -0.7
comp=Z,9.0nm,0.9s,baz=127,slow=9.5,SNR=4.6
PETK LR LR 13 58 50.2
comp=Z,422nm,21.4s,baz=162,slow=31
KMRM Mail Ridge 72.75 38 *e*P P 13 32 24.8 -1.8
comp=Z,62nm,0.9s
ARVC Arvin 72.85 45 P P 13 32 27.6 +0.3
baz=236
CHGN Chignik 72.88 9 *e*P P 13 32 25.1 -1.8
MWC Mount Wilson 72.89 46 *e*P P 13 32 26.7 -1.1
MWC pmax pmax
comp=Z,24nm,0.9s
MWC Mount Wilson 72.89 46 *e*P P 13 32 26.7 -1.1
comp=Z,24nm,0.9s
MURC Murrieta 73.15 47 P P 13 32 29.2 +0.1
baz=238
BFSC Mount Baldy Ra 73.17 46 P P 13 32 29.4 0.0
baz=237
YSS Yuzh-Sakhalins 73.28 331 *e*P P 13 32 27.0 -2.5
YSS pmax pmax
comp=Z,70nm,1.9s
YSS Yuzh-Sakhalins 73.28 331 *e*P P 13 32 26.6 -2.9
EDW2 Edwards Air Fo 73.29 46 P P 13 32 30.1 +0.1
baz=237,SNR=27
MONP2 Monument Peak 73.33 48 P P 13 32 30.4 -0.1
baz=238,SNR=6.2
ISA Isabella, Lake 73.39 45 P P 13 32 30.8 +0.3
baz=236,SNR=6.8
CMB Columbia Colle 73.48 42 *e*P P 13 32 29.9 -1.1
CMB pmax pmax
comp=Z,29nm,1.1s
CMB Columbia Colle 73.48 42 *e*P P 13 32 29.9 -1.1
comp=Z,29nm,1.1s
AFDM Forest Hills D 73.65 41 *e*P P 13 32 31.1 -0.8
comp=Z,31nm,1.3s
WDC Whiskeytown Da 73.67 39 *e*P P 13 32 31.5 -0.5
WDC pmax pmax
comp=Z,58nm,1.4s
WDC Whiskeytown Da 73.67 39 *e*P P 13 32 31.5 -0.5
comp=Z,58nm,1.4s
PFO Pinyon Flats O 73.68 47 P P 13 32 31.9 -0.5
comp=Z,3.9nm,1.0s,baz=162,slow=5.0,SNR=3.7
PFO LR LR 13 59 27.4
comp=Z,2µm,18.1s,baz=284,slow=31
PFO Pinyon Flats O 73.68 47 P P 13 32 32.6 +0.2
baz=238,SNR=5.2
PFO Pinyon Flats O 73.68 47 *e*P P 13 32 31.7 -0.7
PFO pmax pmax
comp=Z,14nm,1.0s
PFO Pinyon Flats O 73.68 47 *e*P P 13 32 31.7 -0.7
comp=Z,14nm,1.0s
SWSC Sam W. Stewart 73.80 48 P P 13 32 33.3 +0.4
baz=239
N02D Trinity Center 73.81 38 P P 13 32 33.6 +0.7
baz=232,SNR=9.2
LRMC Laurel Mtn Rad 73.83 45 P P 13 32 33.3 0.0
baz=237,SNR=24
O03D Paynes Creek 73.94 39 P P 13 32 33.8 +0.1
baz=233,SNR=8.2
M02C Callahan 73.98 38 P P 13 32 34.3 +0.4
baz=232,SNR=9.3
L02D Cave Junction, 74.03 37 P P 13 32 35.1 +1.1
baz=231
BELC Belle Mtn. Jos 74.21 47 P P 13 32 35.7 +0.2
baz=238,SNR=9.7
MLAC Mammoth, Mammo 74.25 43 P P 13 32 35.6 -0.2
baz=236
MPMC Manual Prospec 74.28 45 P P 13 32 36.3 +0.4
baz=237,SNR=41
YBH Yreka Blue Hor 74.28 38 P P 13 32 36.6 +0.9
comp=Z,24nm,1.2s,baz=218,slow=4.9,SNR=14
YBH LR LR 13 57 26.0
comp=Z,910nm,21.3s,baz=240,slow=30
YBH Yreka Blue Hor 74.28 38 *e*P P 13 32 35.7 0.0
YBH pmax pmax
comp=Z,42nm,1.1s
YBH Yreka Blue Hor 74.28 38 *e*P P 13 32 35.7 0.0
comp=Z,42nm,1.1s
DAC Darwin (Calif) 74.33 45 *e*P P 13 32 35.9 -0.3
DAC pmax pmax
comp=Z,14nm,1.0s
DAC Darwin (Calif) 74.33 45 *e*P P 13 32 35.9 -0.3
comp=Z,14nm,1.0s
GSC Goldstone, Bar 74.34 46 P P 13 32 36.3 +0.2
baz=238,SNR=21
GSC Goldstone, Bar 74.34 46 *e*P P 13 32 35.8 -0.3
GSC pmax pmax
comp=Z,31nm,1.0s
GSC Goldstone, Bar 74.34 46 *e*P P 13 32 35.8 -0.3
comp=Z,31nm,1.0s
WAKR Walker 74.36 42 *e*P P 13 32 36.1 -0.2
HEC Hector,Ludlow 74.41 46 P P 13 32 36.5 -0.1
baz=238,SNR=7.1
QSPA South Pole Qui 74.41 180 *e*P P 13 32 37.6 +1.4
comp=Z,236nm,1.3s
BC3 Big Chuckawall 74.42 48 P P 13 32 36.9 +0.2
baz=239
TPUB Ta-pu 74.49 300 P P 13 32 35.8 -1.4
comp=Z,84nm,1.6s
GLA Glamis 74.56 49 P P 13 32 37.5 0.0
baz=239
GLA Glamis 74.56 49 *e*P P 13 32 37.3 -0.1

GLA pmax pmax
comp=Z,28nm,1.0s
GLA Glamis 74.56 49 *e*P P 13 32 37.3 -0.1
comp=Z,28nm,1.0s
OHAK Old Harbor 74.65 12 *e*P P 13 32 37.3 +0.1
comp=Z,71nm,1.4s
HUMO Hull Mountain 74.68 37 *e*P P 13 32 37.4 -0.5
comp=Z,44nm,1.3s
M04C Macdoel 74.83 38 P P 13 32 38.9 +0.1
baz=232,SNR=17
GMRC Granite Mounta 74.86 47 P P 13 32 39.0 -0.3
baz=238,SNR=21
GRAC Grapevine Rang 74.87 44 P P 13 32 39.0 -0.2
baz=237,SNR=5.6
IRM Iron Mountain 74.90 47 P P 13 32 39.2 -0.2
baz=239,SNR=23
FURC Furnace Creek, 74.92 45 P P 13 32 39.4 +0.1
baz=237,SNR=6.6
TUQ Turquoise Moun 75.02 46 P P 13 32 39.8 -0.4
baz=238,SNR=6.5
SHOC Shoshone, Teco 75.02 45 P P 13 32 39.6 -0.4
baz=238,SNR=17
NV01 Mina Array Sit 75.05 42 *e*P P 13 32 39.7 -0.7
NVAR Mina Array Bea 75.05 42 P P 13 32 40.9 +0.5
comp=Z,11nm,1.1s,baz=28,slow=6.7,SNR=3.6
NVAR LR LR 13 58 23.6
comp=Z,850nm,20.7s,baz=242,slow=30
Y12C Blythe 75.13 48 P P 13 32 40.3 -0.4
baz=239
Y12C Blythe 75.13 48 *e*P P 13 32 40.5 -0.1
comp=Z,21nm,0.9s
I03D Drain, OR 75.15 36 P P 13 32 40.3 -0.1
baz=231
NV11 Mina Array Sit 75.15 42 *e*P P 13 32 40.5 -0.4
comp=Z,56nm,1.1s
KDAK Kodiak Island 75.31 12 LR LR 13 59 33.3
comp=Z,257nm,20.5s,baz=218,slow=31
KDAK Kodiak Island 75.31 12 *e*P P 13 32 40.8 -0.3
KDAK pmax pmax
comp=Z,111nm,1.4s
KDAK Kodiak Island 75.31 12 *e*P P 13 32 40.8 -0.3
comp=Z,111nm,1.4s
K04D Chiloquin, OR 75.39 37 P P 13 32 42.0 -0.1
baz=232
214A Organ Pipe Nat 75.49 50 P P 13 32 42.5 -0.3
baz=241
214A Organ Pipe Nat 75.49 50 *e*P P 13 32 41.1 -1.7
comp=Z,120nm,1.1s
HSIG 75.53 54 *e*P P 13 32 38.0 -5.1
comp=Z,26nm,1.1s
TPNV Topopah Spring 75.60 45 P P 13 32 43.3 -0.2
baz=238,SNR=25
TPNV Topopah Spring 75.60 45 *e*P P 13 32 41.5 -2.0
TPNV pmax pmax
comp=Z,26nm,1.0s
TPNV Topopah Spring 75.60 45 *e*P P 13 32 41.5 -2.0
comp=Z,26nm,1.0s
PDMCI Parker Dam,Lak 75.69 48 P P 13 32 43.2 -0.6
baz=240,SNR=6.0
I04A Tendick Farm, 75.74 36 P P 13 32 43.4 -0.5
baz=231,SNR=5.6
KSRS Korea Array 75.75 316 P P 13 32 44.4 +0.3
comp=Z,3.5nm,0.9s,baz=126,slow=6.1,SNR=13
KSRS LR LR 14 03 13.7
comp=Z,887nm,19.2s,baz=132,slow=34
KSAR Wonju Array Be 75.77 316 P P 13 32 44.4 +0.2
KSAR Wonju Array Be 75.77 316 P P 13 32 44.4 +0.2
KS01 Wonju Array Si 75.78 316 *e*P P 13 32 40.5 -3.8
MOD Modoc Plateau 75.81 39 *e*P P 13 32 42.8 -1.8
comp=Z,38nm,1.1s
J05D Fort Rock, OR 76.10 37 P P 13 32 46.2 0.0
baz=232,SNR=28
TYV Tymovskoe 76.19 334 *e*P P 13 32 46.8 +0.5
TYV pmax pmax
comp=Z,48nm,1.2s
TYV pmax pmax
comp=Z,500nm,5.0s
W13A Hualapai Mount 76.27 47 *e*P P 13 32 43.7 -3.7
comp=Z,21nm,1.0s
KMOR Kings Mountain 76.30 34 P P 13 32 47.5 +0.3
Y14A Wickenburg 76.32 49 *e*P P 13 32 46.3 -1.2
comp=Z,90nm,0.9s
KSM Kuching 76.39 275 *e*P P 13 32 45.1 -3.2
comp=Z,39nm,1.1s
KSM LR LR
comp=Z,218nm,21.0s
VLA Vladivostok 76.49 323 *e*P P 13 32 47.2 -0.9
VLA *i* 13 32 58.7
VLA *e* 13 35 38.3
VLA pmax pmax
comp=Z,23nm,1.7s
MSHR Mys Shultsa 76.60 322 *e*P P 13 32 49.8 +1.0
INCN Inchon 76.63 315 PFAKE 13 33 00.0 +11
INCN LR LR
comp=Z,1µm,20.0s
I05D Terrebonne, OR 76.68 36 P P 13 32 49.2 -0.2
baz=232,SNR=5.7
R11A Troy Canyon, C 76.79 44 P P 13 32 49.4 -0.9
baz=238,SNR=26
R11A Troy Canyon, C 76.79 44 *e*P P 13 32 48.9 -1.4
comp=Z,21nm,1.2s
QZH Quanzhou 76.86 301 *e*P P 13 32 50.4 -0.3
QZH S S **13 42 37.0 +0.8**
QZH LR LR
comp=Z,3µm,28.8s
MIR Mirnyy 76.88 204 *e*P P 13 32 56.0 +6.0
MIR pmax pmax
comp=Z,8.0nm,1.2s
USRK Ussuriysk Ar. 77.08 323 P P 13 32 52.1 +0.7
comp=Z,1.7nm,0.7s,baz=118,slow=11,SNR=6.3
USRK LR LR 14 00 27.6
comp=Z,2µm,21.6s,baz=120,slow=31
WVOR Wild Horse Val 77.13 39 *e*P P 13 32 51.3 -0.7
WVOR pmax pmax
comp=Z,41nm,1.2s
WVOR Wild Horse Val 77.13 39 *e*P P 13 32 51.3 -0.7
comp=Z,41nm,1.2s
TUC Tucson 77.17 51 P P 13 32 51.7 -0.7
baz=242
TUC Tucson 77.17 51 P P 13 32 53.1 +0.7
TUC pmax pmax
comp=Z,20nm,1.0s
TUC Tucson 77.17 51 *e*P P 13 32 53.1 +0.7
comp=Z,20nm,1.0s
G05D Wamic, OR 77.25 35 P P 13 32 52.7 +0.2
baz=232
G06A Carlson Farm, 77.62 36 *e*P P 13 32 57.2 +2.6
LCMT Little Creek M 77.69 46 *e*P P 13 32 53.5 -1.8
comp=Z,28nm,1.1s
X16A Lo Mia Camp, P 77.69 49 *e*P P 13 32 55.6 +0.2
comp=Z,28nm,1.0s
RSO Redoubt South 77.78 11 *e*P P 13 32 50.5 -4.8
SVW2 Sparrevohn 77.91 9 *e*P P 13 32 54.4 -1.3
comp=Z,32nm,1.2s
KNB Kanab 77.98 46 *e*P P 13 32 56.2 -0.7
KNB pmax pmax
comp=Z,33nm,1.1s
KNB Kanab 77.98 46 *e*P P 13 32 56.2 -0.7
comp=Z,33nm,1.1s
PSUT Pine Spring 78.05 44 *e*P P 13 32 57.0 -0.4
U15A North Rim 78.06 47 *e*P P 13 32 56.6 -0.9
comp=Z,70nm,1.1s
SEW Seward 78.09 12 *e*P P 13 32 56.8 +0.1
comp=Z,50nm,1.2s
HABR Khabarovsk 78.10 328 *c*e*P P 13 32 56.0 -1.0**
HABR *e* 13 33 05.4
HABR *e* 13 35 51.2
HABR *e*PPP PPP 13 37 38.9
HABR *e*S S **13 42 49.7 +1.1**
HABR *e* 13 43 15.1
HABR *e*SS SS **13 47 51.2 0.0**
HABR pmax pmax
comp=Z,18nm,1.5s
HABR pmax pmax
comp=N,21nm,1.5s
HABR pmax pmax
comp=E,42nm,1.5s
HABR MLR MLR
comp=Z,331nm,16.0s
WUAZ Wupatki 78.26 48 P P 13 32 57.7 -0.8
baz=241
WUAZ Wupatki 78.26 48 *e*P P 13 32 57.3 -1.2
comp=Z,42nm,1.1s
PGC Sidney 78.27 32 *e*P P 13 32 57.3 -0.6
comp=Z,27nm,1.1s
ELK Elko 78.30 42 LR LR 14 03 14.7
comp=Z,681nm,18.0s,baz=316,slow=32

ELK Elko 78.30 42 *e*P P 13 32 57.3 -1.4
ELK pmax pmax
comp=Z,23nm,1.0s
ELK Elko 78.30 42 *e*P P 13 32 57.3 -1.4
comp=Z,23nm,1.0s
BBB Bella Bella 78.46 27 LR LR 13 58 44.7
comp=Z,530nm,21.4s,baz=251,slow=29
PKCU Pink Cliffs 78.55 46 *e*P P 13 32 58.0 -2.3
SPU Mount Spurr 78.58 11 *e*P P 13 32 56.7 -2.8
A04D Lummi Island 78.69 32 P P **13 33 01.0 +0.7**
baz=230,SNR=5.7
NKL Nikolayevsk 78.69 334 *e*P P 13 32 54.5 -5.7
NKL *e* 13 43 34.0
NKL pmax pmax
comp=Z,79nm,1.5s
NKL MLR MLR
comp=N,550nm,18.0s
NKL MLR MLR
comp=E,400nm,18.0s
NKL MLR MLR
comp=Z,1µm,18.0s
CGJI Cibinong 78.70 266 P P 13 33 06.0 +4.8
comp=Z,47nm,1.1s,comp=Z,1µm
MDJ Mudanjiang 78.71 323 P P **13 33 01.2 +0.7**
MDJ pP pP 13 33 13.2 +1.5
MDJ sP sP 13 33 18.0 +2.3
MDJ PP **PP 13 35 59.2 0.0**
MDJ S S **13 42 56.7 +1.3**
MDJ SS SS **13 48 01.5 +0.9**
MDJ pmax pmax
comp=Z,240nm,5.5s
MDJ LR LR
comp=Z,800nm,31.6s
MDJ LR LR
comp=Z,1µm,33.7s
MDJ LR LR
comp=Z,2µm,32.6s
B05A Bryant 78.71 33 P P **13 33 01.0 +0.6**
baz=231,SNR=6.3
X18A Snowflake 78.82 49 *e*P P 13 33 01.2 -0.4
comp=Z,34nm,1.4s
HPIG 78.85 58 *e*P P 13 32 59.1 -2.9
HPIG *e*PcP PcP **13 33 08.5 -2.1**
MTPU Mount Pierson 78.93 45 *e*P P 13 32 57.6 -4.7
MTPU *e*pP P **13 33 03.4 +1.0**
RC01 Rabbit Creek A 78.93 12 *e*P P 13 33 00.2 -1.1
comp=Z,104nm,1.3s
HAWA Hanford 78.94 35 *e*P P 13 32 59.8 -2.0
comp=Z,29nm,1.1s
MSU Marysvale 79.17 45 *e*P P 13 33 03.3 -0.2
MSU Marysvale 79.17 45 *e*P P 13 33 03.3 -0.2
GAMB Gambell 79.18 1 *e*P P 13 33 00.7 -2.0
comp=Z,48nm,1.7s
ETW Entiat 79.23 34 P P **13 33 03.3 -0.3**
EYAK Cordova Ski Ar 79.30 14 *e*P P 13 33 03.5 +0.1
comp=Z,42nm,1.3s
BMO Blue Mountains 79.31 37 *e*P P 13 33 02.3 -1.7
comp=Z,29nm,1.2s
BMO LR LR
comp=Z,600nm,21.0s
MFID Camas Ranch 79.38 39 *e*P P 13 33 03.6 -0.9
comp=Z,32nm,1.1s
PPBI Pangkal Pinang 79.42 271 P P **13 33 06.3 +1.2**
WTV Waterville 79.49 34 P P **13 33 04.1 -0.7**
PMR Palmer 79.51 12 *e*P P 13 33 02.5 -2.0
PMR Palmer 79.51 12 *e*P P 13 33 02.5 -2.0
TT01 Tatalina 79.58 8 *e*P P 13 33 04.5 -0.4
DUG Dugway, Tooele 79.59 43 P P **13 33 05.4 -0.3**
baz=239
DUG Dugway, Tooele 79.59 43 *e*P P 13 33 04.7 -1.0
DUG pmax pmax
comp=Z,32nm,1.0s
DUG Dugway, Tooele 79.59 43 *e*P P 13 33 04.7 -1.0
comp=Z,32nm,1.0s
TTA Tatalina 79.60 8 *e*P P 13 33 04.4 -0.7
TTA pmax pmax
comp=Z,72nm,1.3s
TTA Tatalina 79.60 8 *e*P P 13 33 04.4 -0.7
comp=Z,72nm,1.3s
NJ2 Nanjing 79.65 307 *e*P P 13 33 05.3 -0.7
NJ2 pmax pmax
comp=Z,16nm,1.1s
D08A Wollman Farm, 79.67 35 *e*P P 13 33 04.3 -1.4
E09A Wood Farm, Sta 79.78 36 *e*P P 13 33 05.9 -0.5
DIV Divide 79.81 14 *e*P P 13 33 04.8 -1.5
comp=Z,100nm,1.2s
BGU Big Grassy Mou 79.82 42 *e*P P 13 33 04.1 -2.9
comp=Z,23nm,1.4s
ZAIG Zacatecas 79.84 63 *e*P P 13 33 06.8 -0.8
ZAIG *e*PcP PcP **13 33 14.2 -0.9**
SML Sawmill 79.87 12 *e*P P 13 33 05.8 -0.8
SML pmax pmax
comp=Z,55nm,1.3s
SML Sawmill 79.87 12 *e*P P 13 33 05.8 -0.8
comp=Z,55nm,1.3s
WRAK Wrangell Islan 79.87 22 *e*P P 13 33 02.4 -4.2
comp=Z,57nm,1.2s
BMRM Bremner River 79.94 14 *e*P P 13 33 03.7 -3.2
comp=Z,151nm,1.2s
NLU North Lily Min 79.96 44 *e*P P 13 33 07.0 -0.8
NLU *e*PcP PcP **13 33 13.4 -1.7**
F10A Beach Ranch, E 79.99 36 *e*P P 13 33 06.7 -1.0
KLU Klutina 80.10 13 *e*P P 13 33 08.5 +0.6
comp=Z,53nm,1.3s
SCM Sheep Creek Mo 80.10 13 *e*P P 13 33 06.5 -1.3
SCM pmax pmax
comp=Z,72nm,1.2s
SCM Sheep Creek Mo 80.10 13 *e*P P 13 33 06.5 -1.3
comp=Z,72nm,1.2s
KASI Kota Agung 80.12 267 P P 13 33 14.8 +5.8
comp=Z,64nm,1.0s
MA2 Magadan 80.14 343 P P **13 33 06.7 -1.2**
comp=Z,4.3nm,0.8s,baz=166,slow=6.1,SNR=7.3
MA2 LR LR 14 02 45.2
comp=Z,452nm,20.6s,baz=177,slow=31
PPLA Purkeypile 80.16 10 *e*P P 13 33 08.8 +0.6
comp=Z,45nm,1.7s
TMUT Trail Mountain 80.21 45 *e*P P 13 33 09.5 +0.3
comp=Z,60nm,1.0s
B08A Colville Reser 80.22 34 *e*P P 13 33 07.3 -1.4
KLR Kul'dur 80.27 327 P P **13 33 08.6 -0.3**
comp=Z,1.5nm,0.8s,baz=82,slow=5.5,SNR=7.2
KLR LR LR 14 03 16.3
comp=Z,749nm,21.9s,baz=144,slow=32
HLID Hailey 80.33 40 P P **13 33 09.5 -0.1**
baz=238,SNR=59
HLID Hailey 80.33 40 *e*P P 13 33 09.5 -0.1
comp=Z,54nm,1.1s
HVU Hansel Valley 80.42 42 *e*P P 13 33 09.2 -1.0
HVU pmax pmax
comp=Z,30nm,1.0s
HVU Hansel Valley 80.42 42 *e*P P 13 33 09.2 -1.0
comp=Z,30nm,1.0s
C09A Chrisman Ranch 80.46 35 *e*P P 13 33 09.6 -0.5
CTU Camp Tracy 80.54 43 *e*P P 13 33 09.0 -1.8
comp=Z,29nm,1.1s
BALM Baldy 80.55 15 *e*P P 13 33 10.8 +0.5
BALM pmax pmax
comp=Z,74nm,1.3s
BALM Baldy 80.55 15 *e*P P 13 33 10.8 +0.5
comp=Z,74nm,1.3s
SRU San Rafael Swe 80.59 45 *e*P P 13 33 09.8 -1.3
SRU pmax pmax
comp=Z,38nm,1.1s
SRU San Rafael Swe 80.59 45 *e*P P 13 33 09.8 -1.3
comp=Z,38nm,1.1s
P17A Butcher Ranch, 80.62 45 *e*P P 13 33 08.5 -2.8
comp=Z,30nm,1.1s
CAST Castle Rocks 80.66 10 *e*P P 13 33 08.7 -2.1
comp=Z,41nm,1.5s
JLU Jordanelle 80.69 43 *e*P P 13 33 08.8 -2.9
comp=Z,26nm,1.0s
CN2 Changchun 80.74 320 *e*P P 13 33 10.7 -0.9
CN2 *e*S S **13 43 13.7 -3.2**
CN2 pmax pmax
comp=Z,20nm,0.9s
CN2 pmax pmax
comp=Z,200nm,3.0s
CN2 LR LR
comp=Z,600nm,23.0s
CN2 LR LR
comp=Z,900nm,23.0s
CN2 LR LR
comp=Z,700nm,23.0s
TCUT Toone Canyon 80.98 43 *e*P P 13 33 12.3 -0.9
KTH Kantishna Hill 80.98 10 *e*P P 13 33 10.3 -2.2

comp=Z,91nm,1.4s
TRF Thorofare Moun 81.00 11 eP P 13 33 11.0 -1.7
comp=Z,30nm,1.0s
P18A Preston Nutter 81.03 45 eP P 13 33 14.2 +0.6
comp=Z,10nm,0.9s
TNA Tin City 81.09 3 eP P 13 33 09.6 -3.3
comp=Z,56nm,1.2s
TNA ePcP **PcP 13 33 18.2 -0.9**
MVCO Mesa Verde 81.11 47 P **P 13 33 13.8 -0.2**
baz=243
MVCO Mesa Verde 81.11 47 eP P 13 33 10.8 -3.2
comp=Z,19nm,1.2s
MVCO ePcP **PcP 13 33 19.6 -0.7**
DHY Denali Highway 81.21 12 eP P 13 33 11.9 -2.0
comp=Z,47nm,1.4s
RND Reindeer 81.22 11 eP P 13 33 12.2 -1.6
RND pmax pmax
comp=Z,132nm,1.4s
RND Reindeer 81.22 11 eP P 13 33 12.2 -1.6
comp=Z,132nm,1.4s
SKAG Skagway 81.22 19 eP P 13 33 11.7 -2.1
comp=Z,84nm,1.4s
PV09 Paradox Valley 81.25 46 eP P 13 33 12.2 -2.7
NEW Newport 81.36 35 P **P 13 33 15.8 +0.9**
comp=Z,7.8nm,1.0s,baz=202,slow=3.9,SNR=8.6
NEW LR LR 14 03 18.5
comp=Z,524nm,19.7s,baz=224,slow=31
NEW Newport 81.36 35 P **P 13 33 14.8 -0.1**
baz=235
NEW Newport 81.36 35 eP P 13 33 11.4 -3.5
NEW pmax pmax
comp=Z,12nm,1.0s
NEW Newport 81.36 35 eP P 13 33 11.4 -3.5
comp=Z,12nm,1.0s
PV04 Paradox Valley 81.36 46 eP P 13 33 15.7 +0.4
PV01 Paradox Valley 81.48 47 eP P 13 33 13.2 -2.8
BPAW Bear Paw Mtn. 81.48 10 eP P 13 33 12.3 -2.8
comp=Z,19nm,1.4s
MCK McKinley 81.50 11 eP P 13 33 13.7 -1.5
MCK pmax pmax
comp=Z,75nm,1.3s
MCK McKinley 81.50 11 eP P 13 33 13.7 -1.5
comp=Z,75nm,1.3s
PAX Paxson 81.51 13 eP P 13 33 13.1 -2.3
PAX pmax pmax
comp=Z,42nm,1.4s
PAX Paxson 81.51 13 eP P 13 33 13.1 -2.3
comp=Z,42nm,1.4s
ANMO Albuquerque 81.58 50 LR LR 14 02 03.2
comp=Z,1μm,20.1s,baz=231,slow=30
ANMO Albuquerque 81.58 50 P **P 13 33 16.5 0.0**
baz=244
ANMO Albuquerque 81.58 50 deP **P 13 33 18.1 +1.6**
ANMO pmax pmax
comp=Z,48nm,1.7s
ANMO Albuquerque 81.58 50 eP P 13 33 13.1 -3.4
comp=Z,18nm,0.8s
BWN Browne 81.81 11 eP P 13 33 14.4 -2.4
comp=Z,116nm,1.2s
MENT Mentasta 81.87 14 eP P 13 33 15.0 -2.2
comp=Z,61nm,1.4s
AHID Auburn Hatcher 82.00 42 eP P 13 33 15.7 -2.8
AHID LR LR
comp=Z,658nm,19.0s
DLBC Dease Lake 82.22 22 eP P 13 33 17.7 -1.4
comp=Z,69nm,1.5s
QIZ Qiongzhong 82.23 292 P **P 13 33 18.1 -1.9**
QIZ S **S 13 43 38.6 +5.3**
QIZ SS **SS 13 48 54.6 +0.4**
QIZ pmax pmax
comp=Z,64nm,11.0s
QIZ LR LR
comp=Z,37nm,19.4s
QIZ LR LR
comp=Z,290nm,22.0s
WRH Wood River Hil 82.33 11 eP P 13 33 17.1 -2.4
comp=Z,95nm,1.3s
MSO Missoula 82.36 37 P **P 13 33 20.3 0.0**
baz=238
MSO Missoula 82.36 37 eP P 13 33 19.0 -1.3
comp=Z,40nm,1.3s
DLMT Dillon 82.38 39 eP P 13 33 18.8 -1.6
comp=Z,36nm,1.1s
MLY Manley 82.38 10 eP P 13 33 17.8 -2.1
comp=Z,28nm,1.2s
DOT Dot Lake 82.41 13 eP P 13 33 18.6 -1.4
comp=Z,185nm,1.3s
REDW Red Top Meadow 82.45 41 eP P 13 33 19.6 -1.3
comp=Z,99nm,1.4s
HDA Harding Lake 82.50 12 eP P 13 33 17.0 -3.4
comp=Z,27nm,1.0s
S22A 4UR Ranch, Cre 82.53 48 P **P 13 33 21.4 -0.2**
baz=244,SNR=46
S22A 4UR Ranch, Cre 82.53 48 eP P 13 33 21.6 0.0
comp=Z,58nm,1.0s
SEY Seymchan 82.53 345 P **P 13 33 19.4 -1.1**
comp=Z,9.3nm,1.0s,baz=141,slow=5.5,SNR=12
SEY LR LR 14 06 40.2
comp=Z,968nm,19.9s,baz=148,slow=33
SEY Seymchan 82.53 345 ⇑eP **P 13 33 20.4 -0.2**
CCB Clear Creek Bu 82.55 11 eP P 13 33 17.9 -2.7
comp=Z,32nm,0.9s
SNOW Snow King Moun 82.56 41 eP P 13 33 21.0 -0.5
comp=Z,65nm,1.1s
O20A White River Ci 82.62 45 P **P 13 33 21.7 -0.2**
baz=243
O20A White River Ci 82.62 45 eP P 13 33 20.1 -1.8
comp=Z,53nm,1.4s
IMW Indian Meadow 82.66 41 eP P 13 33 21.3 -0.8
comp=Z,53nm,1.1s
COLA College 82.74 11 ⇑eP **P 13 33 20.5 -1.1**
COLA pmax pmax
comp=Z,22nm,1.1s
COLA College 82.74 11 eP P 13 33 19.8 -1.8
comp=Z,36nm,0.8s
COLA LR LR
comp=Z,415nm,19.0s
MDM Murphy Dome 82.75 11 eP P 13 33 19.3 -2.5
comp=Z,151nm,1.9s
ILAR Eielson Array 82.83 11 P **P 13 33 21.2 -0.9**
comp=Z,21nm,1.2s,baz=232,slow=5.7,SNR=26
ILAR PP **PP 13 36 28.6 -4.4**
comp=Z,2.9nm,1.1s,baz=222,slow=7.6,SNR=4.6
ILAR LR LR 14 02 21.4
comp=Z,226nm,21.6s,baz=217,slow=30
ILB Eielson Array 82.83 11 eP P 13 33 19.9 -2.3
FLWY Flagg Ranch 82.90 41 eP P 13 33 21.1 -2.2
comp=Z,69nm,1.1s
BW06 Boulder Array 82.99 42 P **P 13 33 23.8 0.0**
baz=241,SNR=49
BW06 Boulder Array 82.99 42 eP P 13 33 22.6 -1.2
comp=Z,45nm,1.0s
BW06 LR LR
comp=Z,804nm,21.0s
PD31 Pinedale Array 82.99 42 eP P 13 33 21.7 -2.0
PDAR Pinedale Array 82.99 42 P **P 13 33 23.5 -0.3**
comp=Z,8.8nm,1.1s,baz=207,slow=3.0,SNR=23
PDAR LR LR 14 06 09.5
comp=Z,626nm,18.2s,baz=246,slow=33
YFT Old Faithful 83.00 40 eP P 13 33 21.7 -2.1
comp=Z,32nm,1.1s
YMR Madison River 83.03 40 eP P 13 33 23.6 -0.3
comp=Z,71nm,1.1s
SMCO Snowmass 83.06 46 eP P 13 33 24.0 -0.5
comp=Z,37nm,1.0s
BOZ Bozeman (W) 83.11 39 P **P 13 33 24.4 +0.2**
baz=240
BOZ Bozeman (W) 83.11 39 eP P 13 33 23.6 -0.6
BOZ pmax pmax
comp=Z,58nm,1.3s
BOZ MLR MLR
comp=Z,824nm,22.0s
BOZ Bozeman (W) 83.11 39 eP P 13 33 23.6 -0.6
comp=Z,58nm,1.3s
BOZ LR LR
comp=Z,824nm,22.0s
H17A Grant Village 83.13 40 P **P 13 33 24.3 -0.2**
baz=240,SNR=23
H17A Grant Village 83.13 40 eP P 13 33 23.9 -0.6
comp=Z,37nm,1.0s
LKWY Lake 83.33 40 eP P 13 33 22.5 -3.0
LKWY pmax pmax
comp=Z,52nm,1.0s
LKWY MLR MLR
comp=Z,649nm,19.0s
LKWY Lake 83.33 40 eP P 13 33 22.5 -3.0
comp=Z,52nm,1.0s
LKWY LR LR
comp=Z,649nm,19.0s
SDCO Great Sand Dun 83.48 48 P **P 13 33 26.2 -0.3**
baz=245,SNR=7.3
WALA Waterton Lakes 83.57 35 eP P 13 33 25.1 -1.4
comp=Z,21nm,1.1s
DAWY Dawson 83.85 15 eP P 13 33 26.3 -1.2
comp=Z,77nm,1.4s
T25A Trinidad 84.01 49 P **P 13 33 28.7 -0.4**
baz=246
EGAK Eagle 84.04 14 eP P 13 33 27.3 -1.0
comp=Z,56nm,1.4s
Q24A Divide 84.25 47 P **P 13 33 30.0 -0.4**
baz=245,SNR=24
Q24A Divide 84.25 47 eP P 13 33 31.5 +1.1
comp=Z,80nm,1.3s
ISCO Idaho Springs 84.28 46 P **P 13 33 30.3 -0.2**
baz=244,SNR=11
ISCO Idaho Springs 84.28 46 eP P 13 33 32.3 +1.7
ISCO pmax pmax
comp=Z,22nm,1.1s
ISCO Idaho Springs 84.28 46 eP P 13 33 32.3 +1.7
comp=Z,22nm,1.1s
RLMT Red Lodge 84.30 40 P **P 13 33 30.6 +0.2**
baz=241
RLMT Red Lodge 84.30 40 eP P 13 33 29.2 -1.2
comp=Z,44nm,1.0s
COLD Coldfoot 84.50 9 eP P 13 33 28.9 -1.7
comp=Z,31nm,1.1s
N23A Red Feather La 84.53 45 P **P 13 33 32.2 +0.5**
baz=244,SNR=40
N23A Red Feather La 84.53 45 eP P 13 33 31.6 -0.2
comp=Z,50nm,1.0s
BILL Bilibino 84.63 353 d iP **P 13 33 30.8 -0.5**
BILL e 13 33 38.0
BILL 13 36 46.0
BILL eS **S 13 43 57.5 +1.9**
BILL e 13 44 58.3
BILL eSS **SS 13 49 20.0 -7.9**
BILL pmax pmax
comp=Z,12nm,1.2s
BILL MLR MLR
comp=Z,311nm,18.0s
BILL Bilibino 84.63 353 eP P 13 33 30.1 -1.2
comp=Z,29nm,1.3s
CMIG Matias Romero 84.73 71 P **P 13 33 34.2 +1.3**
comp=Z,5.3nm,0.9s,baz=266,slow=9.9,SNR=6.0
CMIG LR LR 14 02 57.3
comp=Z,638nm,20.0s,baz=233,slow=30
FYU Fort Yukon 84.75 11 eP P 13 33 30.2 -1.6
comp=Z,30nm,1.4s
K22A Casper 84.92 43 P **P 13 33 33.9 +0.4**
baz=244,SNR=9.2
K22A Casper 84.92 43 eP P 13 33 31.9 -1.6
comp=Z,35nm,1.1s
BJI Beijing 85.03 314 P **P 13 33 34.0 +0.1**
BJI pP **pP 13 33 45.5 +0.4**
BJI sP **sP 13 33 50.7 +1.5**
BJI PP **PP 13 36 52.4 +0.9**
BJI S **S 13 43 58.1 -2.6**
BJI sS **sS 13 44 20.9 +1.6**
BJI pmax pmax
comp=Z,10.0nm,1.2s
BJI pmax pmax
comp=Z,180nm,3.8s
BJI LR LR
comp=Z,100nm,16.4s
BJI LR LR
comp=Z,210nm,20.0s
PHWY Pilot Hill 85.04 45 eP P 13 33 33.2 -1.1
comp=Z,22nm,1.1s
834A Tilden 85.15 59 P **P 13 33 35.0 +0.2**
baz=250
EGMT Eagleton 85.41 37 P **P 13 33 36.1 +0.4**
baz=241
EGMT Eagleton 85.41 37 eP P 13 33 36.5 +0.7
comp=Z,37nm,1.0s
433A Art 85.63 57 P **P 13 33 37.2 0.0**
baz=249
ABTX Abilene, Hawle 85.87 55 P **P 13 33 38.3 0.0**
baz=249
ABTX Abilene, Hawle 85.87 55 eP P 13 33 37.5 -0.8
comp=Z,139nm,1.0s
534A Blanco 85.87 57 P **P 13 33 38.2 -0.2**
baz=250,SNR=5.9
333A Richland Sprin 85.92 56 P **P 13 33 38.3 -0.3**
baz=249
KSCO Kaye Shedlock' 86.06 48 P **P 13 33 39.7 +0.4**
baz=246
IPM Ipoh 86.12 276 eP P 13 33 37.6 -2.4
comp=Z,27nm,1.1s
233A Rising Star 86.23 55 P **P 13 33 39.9 -0.3**
baz=249
434A Burnet 86.31 57 P **P 13 33 40.0 -0.6**
baz=250,SNR=7.4
ENH Enshi 86.35 303 eP P 13 33 40.1 -0.7
comp=Z,32nm,1.2s
PANO Nakornpanom 86.36 289 P P 13 33 45.8 +4.8
comp=Z,25nm,1.2s,comp=Z,2μm
334A Lometa 86.52 56 P **P 13 33 41.1 -0.5**
baz=250,SNR=6.2
KULM Kulim 86.70 276 PFAKE 13 33 50.0 +7.2
KULM LR LR
comp=Z,354nm,20.0s
Z33A Whitaker Ranch 86.79 54 P **P 13 33 43.3 +0.5**
baz=249
X32A Elmer 86.80 53 P **P 13 33 43.2 +0.3**
baz=249
234A Clairette 86.84 56 P **P 13 33 43.4 +0.3**
baz=250
636A Smothers Creek 86.84 58 P **P 13 33 44.1 +1.0**
baz=250
SKNT Sakolnakorn 86.88 288 P **P 13 33 46.4 +2.8**
comp=Z,31nm,1.3s
CCIG Comitan 87.00 72 eP P 13 33 42.3 -2.1
comp=Z,42nm,1.2s
536A Bastrop 87.04 58 P **P 13 33 44.4 +0.4**
baz=250
RSSD Black Hills 87.19 43 P **P 13 33 45.5 +0.8**
baz=245
RSSD Black Hills 87.19 43 eP P 13 33 42.2 -2.6
RSSD pmax pmax
comp=Z,17nm,1.1s
RSSD Black Hills 87.19 43 eP P 13 33 42.1 -2.6
comp=Z,17nm,1.1s
CHBT CHBT 87.19 284 P P 13 33 50.7 +5.6
comp=Z,19nm,1.2s
SKLT Songkhla 87.25 278 P P 13 33 50.8 +5.4
comp=Z,20nm,1.3s
MAW Mawson 87.31 199 P **P 13 33 45.6 +0.9**
comp=Z,7.6nm,0.9s,baz=75,slow=7.1,SNR=8.2
MAW LR LR 14 12 51.7
comp=Z,1μm,18.2s,baz=106,slow=36
MAW Mawson 87.31 199 P **P 13 33 45.9 +1.2**
baz=87,SNR=7.0
MAW Mawson 87.31 199 eP P 13 33 45.1 +0.4
MAW pmax pmax
comp=Z,12nm,1.4s
MAW Mawson 87.31 199 eP P 13 33 45.1 +0.4
comp=Z,12nm,1.4s
I25A Rochford 87.34 43 P **P 13 33 46.0 +0.6**
baz=246
WHTX Lake Whitney, 87.37 56 P **P 13 33 46.4 +0.7**
baz=250
GYA Guiyang 87.43 298 P **P 13 33 45.2 -1.0**
GYA pP pP 13 33 58.9 +1.4
GYA sP sP 13 34 04.2 +2.7
GYA PP **PP 13 37 12.0 +0.7**
GYA SKS **SKSac 13 44 05.6 -6.1**
GYA S **SKKSac 13 44 20.8 -0.3**
GYA sS sS 13 44 43.4 -0.2
GYA pmax pmax
comp=Z,30nm,1.0s
GYA pmax pmax
comp=Z,140nm,6.2s
PSI Prapat 87.69 274 eP P 13 33 43.7 -4.1
PSI pmax pmax
comp=Z,22nm,1.1s
PSI Prapat 87.69 274 eP P 13 33 43.7 -4.1
comp=Z,22nm,1.1s
NONG Nongkai 87.97 289 P P 13 33 53.8 +5.0
comp=Z,20nm,1.2s
Z35A Perchaven, San 87.99 55 P **P 13 33 48.8 +0.2**
baz=250
CBKS Cedar Bluff 88.06 49 P **P 13 33 48.8 0.0**
baz=248
CBKS Cedar Bluff 88.06 49 eP P 13 33 45.5 -3.4
CBKS MLR MLR
comp=Z,1μm,19.0s
CBKS Cedar Bluff 88.06 49 eP P 13 33 45.5 -3.4
CBKS LR LR
comp=Z,1μm,19.0s
T32A Huddler Ranch, 88.06 51 P **P 13 33 48.9 -0.1**
baz=249
XAN Xi'an 88.10 306 P **P 13 33 50.0 +0.8**
XAN pP sP 13 34 03.5 -1.0
XAN sP pP 13 34 08.6 +8.2
XAN SKS **SKSac 13 44 15.7 +0.4**
XAN pmax pmax
comp=Z,8.0nm,1.1s
XAN pmax pmax
comp=Z,54nm,8.0s
XAN LR LR
comp=Z,340nm,18.8s
XAN LR LR
comp=Z,610nm,22.4s
XAN LR LR
comp=Z,610nm,23.2s
J27A Elkhorn Farm, 88.18 44 P **P 13 33 49.5 +0.2**
baz=247
F25A Bowman 88.31 41 P **P 13 33 49.5 -0.4**
baz=246
TRTT Trang 88.32 279 P P 13 33 57.1 +6.6
comp=Z,31nm,1.4s,comp=Z,514nm
438A Sam Houston St 88.56 58 P **P 13 33 51.8 +0.5**
baz=251
X35A Drake 88.58 54 P **P 13 33 51.9 +0.5**
baz=250
HHC Hu-ho-hao-te 88.58 313 eP P 13 33 52.8 +1.4
HHC PP **PP 13 37 26.5 +6.2**
HHC S **S 13 44 41.7 +6.3**
HHC pmax pmax
comp=Z,31nm,1.3s
HHC pmax pmax
comp=Z,170nm,7.0s
HHC LR LR
comp=Z,310nm,17.7s
HHC LR LR
comp=Z,380nm,17.7s
HHC LR LR
comp=Z,550nm,16.8s
G26A Maurine 88.60 42 P **P 13 33 51.8 +0.5**
baz=246
R32A Long Quarter, 88.67 50 P **P 13 33 52.6 +0.9**
baz=249
INK Inuvik 88.69 14 P **P 13 33 49.8 -1.2**
comp=Z,1.7nm,0.8s,baz=240,slow=4.2,SNR=10
INK Inuvik 88.69 14 eP P 13 33 48.6 -2.4
INK pmax pmax
comp=Z,18nm,1.1s
INK Inuvik 88.69 14 eP P 13 33 48.6 -2.4
comp=Z,18nm,1.1s
J28A Allard Ranch, 88.76 44 P **P 13 33 52.9 +0.9**
baz=247
U34A Anderson Ranch 88.84 52 P **P 13 33 53.3 +0.8**
baz=250
U34A Anderson Ranch 88.84 52 eP P 13 33 48.4 -4.1
comp=Z,21nm,1.0s
D25A Fairfield 88.91 40 P **P 13 33 53.9 +1.2**
baz=246
KCSI Kotacane, Aceh 88.99 274 P P 13 33 59.8 +6.0
comp=Z,20nm,1.8s
YAK Yakutsk 89.00 337 LR LR 14 06 49.7
comp=Z,398nm,21.7s,baz=98,slow=31
YAK Yakutsk 89.00 337 eP P 13 33 53.0 +0.4
YAK pmax pmax
comp=Z,17nm,1.1s
YAK pmax pmax
comp=N,4.0nm,1.4s
YAK pmax pmax
comp=E,6.0nm,1.3s
YAK Yakutsk 89.00 337 eP P 13 33 49.2 -3.4
comp=E,19nm,1.1s
I28A Midland 89.03 44 P **P 13 33 54.8 +1.6**
baz=247
G27A Dupree 89.07 42 P **P 13 33 55.1 +1.6**
baz=247
F27A Lemmon 89.21 42 P **P 13 33 55.5 +1.4**
baz=247
T34A McClaskey Farm 89.31 51 P **P 13 33 55.3 +0.5**
baz=250
J29A Okreek 89.37 44 P **P 13 33 56.5 +1.7**
baz=248
W36A Wetumka 89.41 53 P **P 13 33 56.7 +1.5**
baz=251
D26A Manning 89.41 41 P **P 13 33 56.6 +1.6**
baz=246
B25A Knox Farm, Ray 89.47 39 P **P 13 33 56.9 +1.7**
baz=246
SURT Suratani 89.47 279 P P 13 34 03.8 +7.8
comp=E,7.8nm,1.5s
Y37A Hugo 89.49 55 P **P 13 33 57.1 +1.4**
baz=251
Q33A Connelly Farm, 89.52 49 P **P 13 33 57.1 +1.4**
baz=250
LOEI Loei 89.52 288 P **P 13 34 00.2 +4.1**
comp=E,11nm,1.8s,comp=E,575nm
PBKT Sadao Pong 89.53 287 P P 13 34 02.2 +6.1
comp=E,14nm,1.2s
M31A Lambtecht Ranc 89.53 47 P **P 13 33 57.4 +1.7**
baz=249
K30A Basset 89.58 45 P **P 13 33 57.0 +1.1**
baz=248
S34A Willow Spring 89.60 51 P **P 13 33 56.5 +0.4**
baz=250
G28A Parade 89.61 43 P **P 13 33 57.2 +1.2**
baz=247
I29A Vivian Onida 89.61 44 P **P 13 33 56.6 +0.6**
baz=248
O32A Brockman Farm, 89.64 48 P **P 13 33 56.9 +0.7**
baz=249
R34A Isabella, Hill 89.70 50 P **P 13 33 57.6 +1.0**
baz=250
T35A Sooner Cattle 89.78 52 P **P 13 33 58.7 +1.8**
baz=250
J30A Dallas 89.90 45 P **P 13 33 59.4 +2.0**
baz=248
H29A Onida 89.90 43 P **P 13 33 59.3 +2.0**
baz=248
C26A Wahner Farm, P 89.94 40 P **P 13 33 59.5 +2.0**
baz=247
PLCA Paso Flores 89.96 132 LR LR 14 05 27.9
comp=E,1μm,20.9s,baz=263,slow=30
S35A Otter Creek Ra 90.18 51 P **P 13 34 00.4 +1.5**
baz=250
UTTA Uttaradit 90.24 288 P P 13 34 05.8 +6.4
comp=E,3.9nm,1.4s
C27A Sayler Ranch, 90.26 40 P **P 13 34 00.9 +1.9**
baz=247
G29A Hoven 90.31 43 P **P 13 34 01.0 +1.8**
baz=248
KMI Kunming 90.39 296 P **P 13 34 02.4 +2.1**
KMI pP pP 13 34 11.3 -0.3
KMI S **S 13 44 55.1 +2.0**
KMI pmax pmax
comp=E,9.0nm,0.7s
KMI pmax pmax
comp=E,64nm,3.1s
KMI LR LR
comp=E,340nm,21.8s
KMI LR LR
comp=E,390nm,28.5s
KMI LR LR
comp=E,850nm,37.8s
A26A Wade Farm, Ken 90.40 39 P **P 13 34 01.6 +2.0**
baz=247
NANT Nan 90.40 289 P **P 13 34 04.0 +3.8**
comp=E,5.6nm,1.2s,comp=E,71nm
P34A Walnut Farm, R 90.44 49 P **P 13 34 00.7 +0.7**
baz=250
KSU1 Kansas State U 90.44 49 PFAKE 13 34 10.0 +10
KSU1 LR LR
comp=Z,1μm,21.0s
R35A Emporia Munici 90.49 50 P **P 13 34 02.0 +1.8**
baz=251
F29A Eureka 90.61 42 P **P 13 34 02.6 +2.0**
baz=248
SRDT SRDT 90.63 285 P P 13 34 09.2 +7.9
comp=Z,58nm,1.4s,comp=Z,4μm
YKA Yellowknife Ar 90.64 24 P **P 13 34 00.2 0.0**
comp=Z,4.1nm,1.0s,baz=239,slow=4.2,SNR=25
YKA PP **PP 13 37 38.3 +2.4**
comp=Z,2.1nm,1.0s,baz=234,slow=7.7,SNR=10
YKB5 Yellowknife Ar 90.64 24 eP P 13 33 57.8 -2.5
YKW3 Yellowknife Ar 90.67 24 eP P 13 33 58.4 -2.0

comp=Z,20nm,1.2s
SUKH Sukhothai 91.01 288 P P 13 34 08.3 +5.2
comp=Z,5.1nm,1.2s,comp=Z,61nm
T37A Cheneyville 18 91.06 52 P **P** **13 34 03.7 +0.8**
baz=251
CRAI Chiangrai 91.09 291 P **P** **13 34 07.7 +4.3**
comp=Z,65nm,1.5s
CD2 Chengdu 91.23 302 P **P** **13 34 02.1 -1.8**
CD2 pP pP 13 34 15.6 +0.4
CD2 PP **PP** **13 37 39.1 -2.4**
CD2 SKS **SKSac** **13 44 29.8 -4.0**
CD2 S **S** **13 44 56.9 -3.3**
CD2 sS sS 13 45 20.2 +1.3
CD2 SS **SS** **13 51 03.3 -2.5**
CD2 pmax pmax
comp=Z,20nm,0.5s
CD2 pmax pmax
comp=Z,110nm,4.3s
CD2 LR LR
comp=Z,720nm,20.2s
CD2 LR LR
comp=Z,820nm,20.2s
LAMP Lampang 91.30 289 P **P** **13 34 08.7 +4.3**
comp=Z,7.4nm,1.1s
W39A Magazine 91.32 54 P **P** **13 34 05.4 +1.3**
baz=252
E30A Jud 91.45 42 P **P** **13 34 06.2 +1.7**
baz=249
A28A Rude Farm, Bot 91.48 39 P **P** **13 34 06.2 +1.6**
baz=248
T38A Diamond 91.50 52 P **P** **13 34 06.0 +1.1**
baz=252
R37A Teagarden Farm 91.50 51 P **P** **13 34 06.4 +1.4**
baz=251
J33A Davis 91.62 45 P **P** **13 34 06.7 +1.3**
baz=250
V39A Pettigrew 91.62 53 P **P** **13 34 06.7 +1.1**
baz=252
TEIG Tepich 91.64 70 LR LR 14 06 42.9
comp=Z,150nm,21.7s,baz=168,slow=30
F31A Hecla 91.64 43 P **P** **13 34 06.4 +1.1**
baz=249
P36A Good Intent, A 91.64 49 P **P** **13 34 06.8 +1.2**
baz=251
D30A Buchanan 91.76 41 P **P** **13 34 07.0 +1.1**
baz=249
CMAR Chiang Mai Arr 91.91 289 P **P** **13 34 07.5 +0.2**
comp=Z,3.5nm,1.0s,baz=96,slow=2.7,SNR=11
CMAR LR LR 14 10 05.6
comp=Z,471nm,21.7s,baz=101,slow=32
U39A Green Forest 91.92 53 P **P** **13 34 07.3 +0.4**
baz=252
CMMT Chiang Mai 92.00 289 P **P** **13 34 10.8 +3.1**
comp=Z,14nm,1.2s
CHTO Chiang Mai 92.00 289 P **P** **13 34 10.8 +3.1**
comp=Z,62nm,1.2s
CHTO Chiang Mai 92.00 289 *e*P **P** **13 34 04.0 -3.7**
CHTO pmax pmax
comp=Z,39nm,1.6s
CHTO MLR MLR
comp=Z,586nm,20.0s
CHTO Chiang Mai 92.00 289 *e*P **P** **13 34 04.0 -3.7**
comp=Z,39nm,1.6s
CHTO LR LR
comp=Z,586nm,20.0s
ECSD EROS Data Cent 92.00 45 P **P** **13 34 07.6 +0.4**
baz=250
ECSD EROS Data Cent 92.00 45 *e*P **P** **13 34 04.5 -2.6**
comp=Z,14nm,1.1s
ECSD LR LR
comp=Z,2μm,21.0s
JTS JuntasAbangare 92.06 80⇑*e*P **P** **13 34 10.6 +2.5**
JTS pmax pmax
comp=Z,24nm,1.4s
JTS JuntasAbangare 92.06 80 PFAKE 13 34 20.0 +12
JTS LR LR
comp=Z,879nm,20.0s
A29A Manning Farm, 92.12 40 P **P** **13 34 08.6 +1.1**
baz=249
C30A Mose, Pekin 92.15 41 P **P** **13 34 09.0 +1.3**
baz=249
R38A Fenwick Farm, 92.15 51 P **P** **13 34 08.6 +0.7**
baz=252
SYO Syowa Base 92.21 192⇓*e*PcP **PcP** **13 34 08.6 +0.2**
P37A Lathrop 92.26 50 P **P** **13 34 09.2 +0.8**
baz=252
S39A Bolivar 92.44 52 P **P** **13 34 09.8 +0.6**
baz=252
W41A Tony Mavity, V 92.51 54 P **P** **13 34 10.2 +0.6**
baz=253
W41B Gary Mavity, V 92.51 54 P **P** **13 34 10.2 +0.6**
baz=253
C31A Landman Farms, 92.65 41 P **P** **13 34 10.8 +0.8**
baz=250
VNA3 Neumayer Olymp 92.70 175 P **P** **13 34 11.2 +1.2**
LZH Lanzhou 92.70 307 *e*P **P** **13 34 11.1 +0.4**
LZH pP pP 13 34 21.4 -0.6
LZH sP sP 13 34 26.6 +0.5
LZH PP **PP** **13 37 59.0 +5.9**
LZH *e*S **S** **13 45 09.6 -3.9**
LZH sS sS 13 45 30.1 -2.1
LZH SS **SS** **13 51 23.3 -3.7**
LZH pmax pmax
comp=Z,43nm,1.2s
LZH pmax pmax
comp=Z,140nm,4.2s
LZH LR LR
comp=Z,1μm,13.9s
LZH LR LR
comp=Z,1μm,15.7s
LZH LR LR
comp=Z,2μm,16.0s
A30A Hoffart Farm, 92.70 40 P **P** **13 34 10.6 +0.3**
baz=249
SNAA Sanae 92.72 177 P **P** **13 34 11.1 +1.1**
SNAA Sanae 92.72 177⇑*e*P **P** **13 34 11.7 +1.6**
SNAA Sanae 92.72 177 *e*P **P** **13 34 10.2 +0.2**
comp=Z,842nm,1.3s
R39A Chumby, Stover 92.84 51 P **P** **13 34 10.3 -0.8**
baz=252,SNR=19
P38A Dawn 92.87 50 P **P** **13 34 11.1 -0.1**
baz=252
T40A Mansfield 92.89 52 P **P** **13 34 10.9 -0.4**
baz=253,SNR=5.9
F33A 5 Mile Ranch, 92.92 43 P **P** **13 34 12.1 +0.8**
baz=251
S40A Lebanon 93.03 52 P **P** **13 34 11.3 -0.7**
baz=253,SNR=6.5
M37A Trindle Farm, 93.04 48 P **P** **13 34 12.4 +0.5**
baz=252
546A Slidell 93.14 60 P **P** **13 34 12.7 +0.1**
baz=254
VNA2 Neumayer--Watz 93.19 176 P **P** **13 34 08.5 -3.7**
baz=276,slow=1.0
VNA1 Neumayer--Stat 93.39 175 P **P** **13 34 12.8 -0.2**
R40A Maddies Statio 93.41 51 P **P** **13 34 13.2 -0.5**
baz=253,SNR=6.2
N38A Joes South For 93.44 49 P **P** **13 34 13.4 -0.4**
baz=252
B32A Ashes, Strandq 93.61 41 P **P** **13 34 14.8 +0.4**
baz=251,SNR=20
M38A Pleasantville 93.66 48 P **P** **13 34 14.9 +0.1**
baz=253
Q40A Laux Farm, Aux 93.76 51 P **P** **13 34 15.2 -0.2**
baz=253,SNR=5.1
A32A Rocking H Ranc 93.81 40 P **P** **13 34 15.4 +0.1**
baz=251,SNR=7.2
LCO Las Campanas 93.93 121 PFAKE 13 34 30.0 +13
LCO LR LR
comp=Z,882nm,21.0s
P40A Paris 93.94 50 P **P** **13 34 15.8 -0.3**
baz=253,SNR=6.1
AGMN Agassiz Nation 94.01 41 P **P** **13 34 16.1 -0.1**
baz=251,SNR=6.1
AGMN Agassiz Nation 94.01 41 *e*P **P** **13 34 13.4 -2.8**
comp=Z,26nm,1.2s
L38A Oak Wood Farm, 94.05 47 P **P** **13 34 16.7 +0.1**
baz=253
ULN Ulaanbaatar 94.06 319⇑*e*P **P** **13 34 20.1 +3.4**
ULN pmax pmax
comp=Z,5.0nm,1.6s
F35A Swanville 94.07 44 P **P** **13 34 15.8 -0.7**
baz=252
O40A La Belle 94.24 50 P **P** **13 34 16.3 -1.1**
baz=253,SNR=6.8
SONM Songino Array 94.47 318 P **P** **13 34 18.9 +0.4**
comp=Z,0.2nm,0.4s,baz=85,slow=3.9,SNR=2.4
SONM PP **PP** **13 38 08.1 +1.5**
comp=Z,0.3nm,0.3s,baz=112,slow=6.6,SNR=3.9
SONM LR LR 14 11 18.3
comp=Z,693nm,21.9s,baz=114,slow=32
A33A Warroad 94.51 40 P **P** **13 34 18.4 -0.1**
baz=252,SNR=6.8
ULM Lac du Bonnet 94.63 39 P **P** **13 34 19.6 +0.6**
comp=Z,17nm,1.2s,baz=255,slow=5.0,SNR=9.4
ULM LR LR 14 10 52.9
comp=Z,844nm,20.3s,baz=260,slow=32
ULM Lac du Bonnet 94.63 39 *e*P **P** **13 34 19.7 +0.7**
ULM pmax pmax
comp=Z,41nm,1.4s
ULM Lac du Bonnet 94.63 39 *e*P **P** **13 34 19.7 +0.7**
comp=Z,41nm,1.4s
J38A Wedel Dairy, R 94.73 46 P **P** **13 34 19.5 -0.2**
baz=253
F36A Milaca 94.77 44 P **P** **13 34 19.7 -0.1**
baz=253,SNR=7.3
D35A Remer 94.78 43 P **P** **13 34 19.1 -0.7**
baz=252
B34A Aery, Baudette 94.83 41 P **P** **13 34 19.9 -0.1**
baz=252,SNR=6.2
TIXI Tiksi 95.00 345⇓*e*P **P** **13 34 21.5 +1.3**
TIXI pmax pmax
comp=Z,9.0nm,1.3s
TIXI Tiksi 95.00 345 *e*P **P** **13 34 18.6 -1.6**
comp=Z,8.9nm,1.2s
C35A Jirik Farms, M 95.02 42 P **P** **13 34 21.0 +0.1**
baz=252
I38A Scanlan Farm, 95.04 46 P **P** **13 34 20.9 -0.2**
baz=253,SNR=6.2
SPMN Marine on St. 95.06 45 *e*P **P** **13 34 18.9 -2.3**
comp=Z,28nm,1.1s
E36A McGregor 95.14 43 P **P** **13 34 21.9 +0.4**
baz=253,SNR=6.0
B35A Bob, Littlefor 95.38 41 P **P** **13 34 22.8 +0.2**
baz=253,SNR=5.2
D36A Goodland 95.39 43 P **P** **13 34 22.8 +0.2**
baz=253,SNR=7.1
OTAV Otavalo 95.65 91 PFAKE 13 34 40.0 +15
OTAV LR LR
comp=Z,288nm,20.0s
C36A Pine Crest Far 95.77 42 P **P** **13 34 24.7 +0.3**
baz=253,SNR=6.1
D37A Cotton 95.87 43 P **P** **13 34 25.3 +0.5**
baz=254,SNR=6.4
JFWS Jewell Farm 96.19 47 *e*P **P** **13 34 22.6 -3.7**
JFWS pmax pmax
comp=Z,30nm,0.9s
JFWS MLR MLR
comp=Z,1μm,20.0s
JFWS Jewell Farm 96.19 47 *e*P **P** **13 34 22.6 -3.7**
comp=Z,30nm,0.9s
JFWS LR LR
comp=Z,1μm,20.0s
C37A Embarrass 96.19 42 P **P** **13 34 26.6 +0.4**
baz=254
HDIL Hopedale 96.25 50 PFAKE 13 34 40.0 +13
HDIL LR LR
comp=Z,987nm,20.0s
BCIP Isla Barro Col 96.64 82 PFAKE 13 34 40.0 +11
BCIP LR LR
comp=Z,362nm,22.0s
GTA Gaotai 96.68 309 *e*P **P** **13 34 30.5 +1.6**
GTA pP pP 13 34 38.8 -1.4
GTA sP sP 13 34 43.0 -1.2
GTA SKS **SKSac** **13 45 05.0 +1.7**
GTA S **ScS** **13 45 50.6 +2.2**
GTA sS sS 13 46 03.9 -2.9
GTA pmax pmax
comp=Z,3.0nm,1.3s
GTA pmax pmax
comp=Z,82nm,5.3s
GTA LR LR
comp=Z,360nm,22.8s
GTA LR LR
comp=Z,770nm,23.3s
GTA LR LR
comp=Z,1μm,23.8s
EYMN Ely 96.69 42 P **P** **13 34 28.3 -0.2**
baz=254
C39A Grand Marais 97.55 43 P **P** **13 34 32.0 -0.3**
baz=255
LVC Limon Verde 97.66 116 PFAKE 13 34 40.0 +5.9
LVC LR LR
comp=Z,461nm,20.0s
COWI Conover 97.77 44 *e*P **P** **13 34 29.2 -4.3**
comp=Z,30nm,1.0s
COWI LR LR
comp=Z,1μm,20.0s
GOGA Godfrey 99.08 58 PFAKE 13 34 50.0 +10
GOGA LR LR
comp=Z,589nm,22.0s
AAM Ann Arbor 100.78 49 PFAKE 13 35 00.0 +13
AAM LR LR
comp=Z,790nm,22.0s
MTDJ Mount Denham 100.97 74 PFAKE 13 35 00.0 +12
MTDJ LR LR
comp=Z,446nm,21.0s
BLA Blacksburg 102.28 55 PFAKE 13 35 00.0 +6.2
BLA LR LR
comp=Z,924nm,22.0s
CBN Corbin Frederi 104.82 54 PFAKE 13 35 20.0 +15
CBN LR LR
comp=Z,1μm,20.0s
WMQ Urumqi 106.41 312 Pdif **Pdif** **13 35 11.2 -0.8**
WMQ SS SS 13 54 40.7 +2.7
WMQ AMB AMB
comp=Z,73nm,4.2s
WMQ LR LR
comp=Z,160nm,17.8s
WMQ LR LR
comp=Z,190nm,20.0s
WMQ LR LR
comp=Z,250nm,22.2s
GRTK Grand Turk 107.53 72 PFAKE 13 39 40.0
GRTK LR LR
comp=Z,391nm,20.0s
DGAR Diego Garcia 110.09 256 PFAKE 13 39 40.0
DGAR LR LR
comp=Z,816nm,19.0s
KURK Kurchatov 112.77 319 PFAKE 13 39 50.0
KURK LR LR
comp=Z,840nm,20.0s
BBSR BB Station 114.56 61 PFAKE 13 39 50.0 +11
BBSR LR LR
comp=Z,440nm,21.0s
GRGR Grenville 114.71 84 PFAKE 13 39 50.0 +10
GRGR LR LR
comp=Z,239nm,19.0s
ANWB Willy Bob 115.58 78 PFAKE 13 39 50.0 +8.9
ANWB LR LR
comp=Z,251nm,19.0s
AAK Ala-Archa 116.00 310⇑*i*PKIKP **PKPdf** **13 39 44.3 +2.8**
AAK Ala-Archa 116.00 310 PFAKE 13 39 50.0 +8.5
AAK LR LR
comp=Z,572nm,21.0s
EKS2 Erkin-Say 116.53 310 PFAKE 13 39 50.0 +7.6
EKS2 LR LR
comp=Z,327nm,20.0s
KBS Kingsbay 116.61 359 PFAKE 13 39 50.0 +8.6
KBS LR LR
comp=Z,266nm,19.0s
BRVK Borovoye 117.61 322⇑*i*PKIKP **PKPdf** **13 39 45.7 +1.7**
BRVK pmax pmax
comp=Z,5.0nm,1.2s
BRVK Borovoye 117.61 322 PFAKE 13 39 50.0 +6.0
BRVK LR LR
comp=Z,810nm,22.0s
ZRNK Zerenda 118.39 322 *e*PKIKP **PKPdf** **13 39 44.5 -1.0**
ZRNK Zerenda 118.39 322 *e*PKPdf **PKPdf** **13 39 44.5 -1.0**
SOKR Solikamsk 122.59 332 *i*PKIKP **PKPdf** **13 39 56.1 +2.8**
SOKR pmax pmax
comp=Z,21nm,1.6s
ARU Arti 123.10 328 *i*PKIKP **PKPdf** **13 39 56.4 +2.0**
ARU 13 41 40.4
ARU PPP PPP 13 44 12.4
ARU 13 47 08.0
ARU SP SP 13 51 33.7 +8.1
ARU MLR MLR
comp=Z,788nm,21.0s
ARU Arti 123.10 328 PFAKE 13 40 00.0 +5.6
ARU LR LR
comp=Z,772nm,21.0s
KEV Kevo 124.30 351 PFAKE 13 40 10.0 +14
KEV LR LR
comp=Z,356nm,20.0s
ARCES ARCESS Array B 124.72 352 PKP **PKPdf** **13 39 55.4 -1.8**
comp=Z,1.5nm,0.9s,baz=25,slow=3.7,SNR=2.8
BORG Borgarnes 127.58 14 PFAKE 13 40 10.0 +7.2
BORG LR LR
comp=Z,438nm,19.0s
KLMR Klimovskoe 128.72 340 *e*PKIKP **PKPdf** **13 40 05.6 +0.6**
KLMR *e* 13 42 11.1
KLMR pmax pmax
comp=Z,12nm,1.1s
GEYT Alibeck 128.98 306 PKP **PKPdf** **13 40 06.1 -0.2**
comp=Z,0.7nm,0.4s,baz=350,slow=3.4,SNR=2.8
OBN Obninsk 133.99 336⇓*i*PKIKP **PKPdf** **13 40 17.2 +2.0**
OBN *e*SS SS 14 00 34.0 +3.7
OBN pmax pmax
comp=Z,8.0nm,0.5s
KONO Kongsberg 135.96 357 PFAKE 13 40 30.0 +11
KONO LR LR
comp=Z,297nm,20.0s
GOF Gofitskoye 137.07 321⇑*e*PKHKP PKPpre 13 40 02.1
ZEI Tsey 137.64 318 *e*PKIKP PKPdf 13 40 31.1 +8.4
ZEI pmax pmax
comp=Z,6.0nm,0.3s
KIV Kislovodsk 137.85 320 PFAKE 13 40 30.0 +7.1
KIV LR LR
comp=Z,537nm,20.0s
GNI Garni 138.24 314 PFAKE 13 40 30.0 +6.2
GNI LR LR
comp=Z,487nm,21.0s
ESK Eskdalemuir 139.80 8 PFAKE 13 40 40.0 +14
ESK LR LR
comp=Z,414nm,19.0s
AKASG Malin Array Be 140.23 337 PKP **PKPdf** **13 40 26.6 -0.2**
comp=Z,0.6nm,0.4s,baz=39,slow=2.6,SNR=5.6
AK11 Malin Array Si 140.27 337 *e*PKPdf **PKPdf** **13 40 24.9 -2.0**
AK11 *e*PKPdf **PKiKP** **13 40 28.2 -1.2**
LSZ Lusaka 142.12 217 PFAKE 13 40 40.0 +8.5
LSZ LR LR
comp=Z,676nm,20.0s
TSUM Tsumeb 143.48 199 *e*PKPdf **PKPdf** **13 40 34.7 +0.9**
CLL Collm 143.94 352 *e*PKPdf **PKPdf** **13 40 35.0 +1.5**
CLL *i* 13 40 39.2
comp=Z,9.0nm,0.9s
CLL Collm 143.94 352 *e*PKIKP **PKPdf** **13 40 35.0 +1.5**
STHS Stebnicka Huta 144.01 343 *e*PKIKP **PKPdf** **13 40 33.5 -0.2**
STHS Stebnicka Huta 144.01 343 *e*PKP **PKPdf** **13 40 33.5 -0.2**
KOLS Kolonicke sedl 144.14 341 *e*PKIKP **PKPdf** **13 40 36.3 +2.4**
KOLS Kolonicke sedl 144.14 341 *e*PKP **PKPdf** **13 40 36.3 +2.4**
BRG Berggiesshubel 144.23 351 *e*PKP **PKPdf** **13 40 37.5 +3.5**
comp=Z,5.9nm,1.2s
BRG Berggiesshubel 144.23 351 *e*PKIKP **PKPdf** **13 40 37.5 +3.5**
BRG pmax pmax
comp=Z,6.0nm,1.2s
UPC Upice 144.24 349 AMS AMS 14 44 10.0
comp=Z,600nm,20.2s
BUR08 Bucovina Ar. S 144.25 337 *e*PKPpre PKPpre 13 40 30.8
BURAR Bucovina Array 144.27 337⇑*i*P **PKPdf** **13 40 36.5 +2.2**
BURAR Bucovina Array 144.27 337⇑PKIKP **PKPdf** **13 40 36.5 +2.2**
DPC Dobruska-Polom 144.33 348 *e*PKP PKPbc 13 40 33.1 +0.5
DPC *ex* x 13 40 43.7
DPC *ex* x 13 40 47.7
DPC AMS AMS 14 42 00.0
comp=Z,500nm,21.2s
DPC Dobruska-Polom 144.33 348 *e*PKIKP PKPbc 13 40 33.1 +0.5
DPC *e* 13 40 43.7
DPC MLR MLR
comp=Z,500nm,21.2s
UZH Uzhgorod 144.40 341 *e*PKHKP PKPpre 13 40 30.2
UZH *e* 13 40 36.4
UZH *i* 13 40 42.2
CRVS Cervenica-Dubn 144.41 342 *e*PKIKP **PKPdf** **13 40 35.3 +0.8**
CRVS Cervenica-Dubn 144.41 342 *e*PKP **PKPdf** **13 40 35.2 +0.8**
OKC Ostrava-Krasne 144.43 346 AMS AMS 14 41 00.0
comp=Z,600nm,22.7s
PVCC Panska Ves 144.47 350 AMS AMS 14 40 10.0
comp=Z,700nm,23.5s
KRLC Kraliky 144.50 348 *e*PKP **PKPdf** **13 40 35.3 +0.7**
KRLC *ex* x 13 40 44.3
KRLC Kraliky 144.50 348 *e*PKIKP **PKPdf** **13 40 35.3 +0.7**
KRLC *e* 13 40 44.3
MORC Moravsky Berou 144.62 347 *e*PKIKP **PKPab** **13 40 31.8 -1.6**
MORC Moravsky Berou 144.62 347 *e*PKPdf **PKPab** **13 40 31.8 -1.6**
MORC *e*PKPdf **PKPdf** **13 40 35.0 +0.2**
KMBO Kilima Mbogo 144.69 245 PKP **PKPdf** **13 40 35.8 -0.5**
comp=Z,22nm,1.1s,baz=59,slow=8.1,SNR=12
KMBO Kilima Mbogo 144.69 245 *e*PKIKP **PKPab** **13 40 34.6 -0.4**
KMBO MLR MLR
comp=Z,565nm,20.0s
KMBO Kilima Mbogo 144.69 245 *e*PKPdf **PKPab** **13 40 34.6 -0.4**
KMBO LR LR
comp=Z,565nm,20.0s
LANS Liptovska Anna 144.74 344 *e*PKIKP **PKPdf** **13 40 36.6 +1.6**
LANS Liptovska Anna 144.74 344 *e*PKP **PKPdf** **13 40 36.6 +1.6**
TRPA Tarpa 144.76 340 *e*PKPbc **PKPdf** **13 40 35.4 +0.4**
BMR Baia Mare 144.84 339⇑*i*P **PKPdf** **13 40 37.9 +2.7**
BMR Baia Mare 144.84 339⇑PKIKP **PKPdf** **13 40 37.9 +2.7**
PRU Pruhonice 145.00 350 AMS AMS 14 40 10.0
comp=Z,800nm,23.7s
CFR Carcaliu 145.02 332⇑*i*P **PKPbc** **13 40 33.3 -1.6**
CFR Carcaliu 145.02 332⇑PKIKP **PKPbc** **13 40 33.3 -1.6**
GOPC GO Pecny, Ondr 145.03 350 *e*PKP **PKPdf** **13 40 36.6 +1.1**
GOPC *ex* x 13 40 45.8
GOPC AMS AMS 14 41 30.0
comp=Z,700nm,24.2s
GOPC GO Pecny, Ondr 145.03 350 *e*PKIKP **PKPdf** **13 40 36.6 +1.1**
GOPC *e* 13 40 45.8
GOPC MLR MLR
comp=Z,700nm,24.2s
ARCR ARCALIA 145.03 338⇑*i*P **PKPdf** **13 40 37.3 +1.8**
NKC Novy Kostel 145.06 352 *e*PKP **PKPdf** **13 40 37.7 +2.2**
NKC *ex* x 13 40 50.8
NKC Novy Kostel 145.06 352 *e*PKIKP **PKPdf** **13 40 37.7 +2.2**
NKC *e* 13 40 50.8
KECS Kecovo 145.07 343 *e*PKIKP **PKPdf** **13 40 35.3 -0.2**
KECS Kecovo 145.07 343 *e*PKP **PKPdf** **13 40 35.3 -0.2**
MEM Membach 145.11 360 PKP **PKPbc** **13 40 34.1 -0.9**
VRAC Vranov 145.26 348 PKPbc **PKPbc** **13 40 35.4 -0.2**
comp=Z,19nm,1.1s,baz=25,slow=4.5,SNR=13
BCLA Clavier 145.30 0 PKP **PKPbc** **13 40 34.3 -1.3**
TIRR Tirgusor 145.44 331 *e*PKIKP **PKPab** **13 40 40.7 +4.2**
TIRR Tirgusor 145.44 331 *e*PKPbc **PKPab** **13 40 40.7 +4.2**
HARR Harsova 145.49 332⇓*i*P **PKPab** **13 40 41.6 +4.9**
HARR Harsova 145.49 332⇓PKIKP **PKPab** **13 40 41.6 +4.9**
TREC Trest 145.50 349 AMS AMS 14 45 00.0
comp=Z,600nm,21.1s
VYHS Vyhne 145.51 345 *e*PKIKP **PKPbc** **13 40 36.4 0.0**
VYHS Vyhne 145.51 345 *e*PKP **PKPbc** **13 40 36.3 -0.1**
DOPR Dopca 145.57 336⇑*i*P **PKPab** **13 40 38.9 +1.9**
DOU Dourbes 145.61 1 PKP **PKPdf** **13 40 36.1 -0.3**
CJR Cluj-Napoca 145.62 338⇓*i*P **PKPab** **13 40 41.5 +4.3**
CJR Cluj-Napoca 145.62 338⇓PKIKP **PKPab** **13 40 41.5 +4.3**
MLR Muntele Rosu 145.73 334 PKPbc **PKPbc** **13 40 37.1 -0.2**
comp=Z,2.7nm,0.9s,baz=39,slow=4.1,SNR=11
MLR Muntele Rosu 145.73 334 *e*PKP2 **PKPdf** **13 40 36.4 -0.5**
MLR Muntele Rosu 145.73 334 *e*PKPbc **PKPdf** **13 40 36.4 -0.5**
PSZ Piszkesteto 145.75 343⇑*e*PKPbc **PKPab** **13 40 39.5 +1.9**
PSZ Piszkesteto 145.75 343 *e*PKP2 **PKPdf** **13 40 36.4 -0.4**
PSZ Piszkesteto 145.75 343 *e*PKPbc **PKPdf** **13 40 36.4 -0.4**
ISR Istrita 145.77 333⇑*i*P **PKPab** **13 40 37.7 -0.1**
ISR Istrita 145.77 333⇑PKP2 **PKPab** **13 40 37.7 -0.1**
BR131 Keskin Array S 145.81 320 *e*PKPdf **PKPdf** **13 40 37.4 +0.1**
BRTR Keskin Array B 145.81 320 PKPbc **PKPbc** **13 40 37.5 -0.3**
comp=Z,26nm,1.2s,baz=102,slow=1.8,SNR=34
SMOL Smolenice 145.83 346 *e*PKP2 **PKPab** **13 40 40.7 +2.9**
SMOL Smolenice 145.83 346 *e*PKP **PKPab** **13 40 40.7 +2.9**
DRGR 145.87 339⇑*i*P **PKPbc** **13 40 37.4 -0.3**
DRGR 145.87 339⇑PKP2 **PKPbc** **13 40 37.4 -0.3**
KHC Kasperske Hory 145.98 351 *e*PKP **PKPbc** **13 40 37.5 -0.4**
KHC *e*pPKP **PKiKP** **13 40 40.1 -1.2**
KHC *ex* x 13 40 49.0
KHC AMS AMS 14 44 50.0
comp=Z,700nm,21.2s
KHC Kasperske Hory 145.98 351 *e*PKP2 **PKPbc** **13 40 37.5 -0.4**
KHC MLR MLR
comp=Z,700nm,21.2s
KHC Kasperske Hory 145.98 351 *e*PKPdf **PKPdf** **13 40 37.3 +0.2**
WLF Walferdange 146.06 360 *e*PKP2 **PKPab** **13 40 38.4 -0.2**
WLF Walferdange 146.06 360 *e*PKPdf **PKPab** **13 40 38.4 -0.2**
GEC2 GERESS Array S 146.24 351 *e*PKP2 **PKPbc** **13 40 38.5 -0.3**
GEC2 GERESS Array S 146.24 351 *e*PKPdf **PKPbc** **13 40 38.5 -0.3**
GERES GERESS Array B 146.24 351 PKPbc **PKPbc** **13 40 39.0 +0.2**
comp=Z,6.2nm,0.9s,baz=58,slow=3.3,SNR=23

ANTO	Ankara	146.24	321	*e*PKP2	PKPbc	13 40 39.1	+0.1
ANTO	Ankara	146.24	321	*e*PKPdf	PKPbc	13 40 39.1	+0.1
GEA0	GERESS Array S	146.25	351	*e*PKPdf	PKPdf	13 40 38.0	+0.4
BR231	Keskin MP Arra	146.27	321	*e*PKPdf	PKPdf	13 40 38.2	+0.1
ARR	Arges	146.36	336⇑	*i*P	PKPab	13 40 40.3	+0.3
BUD	Budapest	146.39	344	*e*PKPdf	PKPab	13 40 40.3	+0.4
DEV	Deva	146.58	338⇓	*i*P	PKPab	13 40 44.6	+3.8
DEV	Deva	146.58	338⇓	PKP2	PKPab	13 40 44.6	+3.8
LOT	Lotru	146.63	337⇑	*i*P	PKPab	13 40 41.4	+0.3
LANF	Langenberg	146.70	358	PKP	PKPab	13 40 42.0	+0.9
CSKK	Cs˘ťkako	146.70	344	*e*PKPdf	PKPbc	13 40 39.1	-0.9
CONA	Conrad Observa	146.73	348	*i* sPKPbc	PKPab	13 40 42.8	+1.4
	comp=Z,56nm,1.5s,SNR=21						
SOP	Sopron	146.81	347⇑	*e*PKPdf	PKPab	13 40 43.3	+1.7
PRD	Provadia	146.88	330	*e*P	PKPab	13 40 46.1	+4.1
MOA	Molln	147.11	349	*i* sPKPbc	PKPab	13 40 43.3	+0.5
	comp=Z,19nm,1.6s						
BZS	Buzias	147.27	339⇑	*i*P	PKPab	13 40 43.3	-0.1
BZS	Buzias	147.27	339⇑	PKP2	PKPab	13 40 43.3	-0.1
BFO	Black Forest	147.32	357	*e*PKP2	PKPbc	13 40 41.3	-0.5
BFO				MLR	MLR		
	comp=Z,450nm,20.0s						
BFO	Black Forest	147.32	357	*e*PKPbc	PKPbc	13 40 41.3	-0.5
BFO				LR	LR		
	comp=Z,450nm,20.0s						
ARSA	Arzberg	147.44	348	*i* sPKPbc	PKPab	13 40 44.0	-0.1
	comp=Z,12nm,1.3s						
ECH	Echery	147.49	358	PKP	PKPab	13 40 43.4	-0.9
THEF	They Montfort	147.50	360	PKP	PKPab	13 40 43.3	-1.0
MOF	Molkenrain	147.85	358	PKP	PKPbc	13 40 44.2	+0.9
RETA	Reutte	147.97	354	*i* sPKPbc	PKPab	13 40 45.7	-0.6
	comp=Z,31nm,1.1s						
SOKA	Soboth	148.09	348	*i* pPKiKP	PKPab	13 40 48.0	+1.2
	comp=Z,29nm,1.2s,SNR=9.9						
PERS	Pernice	148.11	348	*i* PKPdf	PKPbc	13 40 43.1	-1.0
PERS				*i* PKPbc	PKPab	13 40 47.9	+1.0
DAVA	Damuels	148.25	355	*i* sPKPbc	PKPab	13 40 46.7	-0.8
	comp=Z,22nm,1.2s						
LOMF	Lomont	148.36	359	PKP	PKPab	13 40 46.5	-1.3
MPEP	Malo Peshtene	148.38	335	*e*P	PKPab	13 40 48.9	+0.9
FETA	Feichten	148.43	353	*i* sPKPbc	PKPab	13 40 47.0	-1.3
	comp=Z,16nm,1.3s						
ABTA	Abfaltersbach	148.47	351	*i* PKiKP	PKPbc	13 40 45.4	+0.4
	comp=Z,15nm,1.0s,SNR=8.9						
CSS	Mathiatis	148.66	313	PFAKE		13 40 50.0	+0.6
CSS				LR	LR		
	comp=Z,70nm,21.0s						
DAVOX	Davos/Dischmat	148.75	355	PKPbc	PKPbc	13 40 47.1	+1.2
	comp=Z,11nm,0.9s,baz=333,slow=8.6,SNR=5.0						
FUORN	Ofenpass-Fuorn	148.88	354	*e*PKPbc	PKPbc	13 40 44.9	-1.4
ISP	Isparta	148.90	320	PFAKE		13 40 50.0	-0.4
ISP				LR	LR		
	comp=Z,367nm,21.0s						
VISS	Visnje	148.97	348	*e*PKPdf	PKPbc	13 40 46.6	+0.4
VISS				*e*PKPbc	PKPab	13 40 52.6	+2.4
KDZ	Kurdzhali	149.01	331	*e*P	PKPab	13 40 49.5	-1.1
JAVS	Javornik	149.03	349	*i* PKPdf	PKPbc	13 40 45.4	-1.1
JAVS				*i* PKPbc	PKPab	13 40 51.9	+1.3
TUE	Stuetta	149.10	355	*e*PKPbc	PKPab	13 40 49.3	-1.7
BOJS	Bojanci	149.16	347	*i* PKPdf	PKPbc	13 40 46.1	-0.6
BOJS				*i* PKPbc	PKPab	13 40 51.5	+0.4
ASCN	Ascension	149.26	138	PFAKE		13 40 50.0	+2.1
ASCN				LR	LR		
	comp=Z,1µm,20.0s						
TRI	Trieste	149.27	349	*e*PKP2	PKPab	13 40 51.3	-0.1
TRI	Trieste	149.27	349	*e*PKPab	PKPab	13 40 51.3	-0.1
RZN	Rozhen	149.30	332	*e*P	PKPab	13 40 50.6	-1.4
SENIN	Lac Senin/Sane	149.33	358	*e*PKPab	PKPab	13 40 52.8	+0.8
BLY	Banja Luka	149.40	344⇑	*i*P	PKPab	13 40 49.8	-2.2
AGO	Saint Agoulin	149.59	4	PKP	PKPab	13 40 52.2	-0.6
PLDF	La Plantade	149.70	3	PKP	PKPbc	13 40 50.3	+2.2
MMB	Musomiste	149.83	333	*e*P	PKPbc	13 40 48.0	-0.5
KKB	Krupnik	149.88	334	*e*P	PKPbc	13 40 49.6	+1.0
SSB	Saint Sauveur	150.43	2	*e*PKIKP	PKPab	13 40 54.7	-1.5
SSB	Saint Sauveur	150.43	2	*e*PKPab	PKPab	13 40 54.7	-1.5
SKO	Skopje	150.47	336	*i* PKP	PKPbc	13 40 52.3	+2.3
GRN	Grenoble	150.48	0	PKP	PKPab	13 40 55.5	-1.0
GDM	Grand'Maison	150.52	359	PKP	PKPab	13 40 55.6	-1.2
VAY	Valandovo	150.55	334	*i* PKP	PKPbc	13 40 52.2	+2.0
BNI	Bardonecchia	150.66	359	*e*PKIKP	PKPdf	13 40 41.3	-3.8
BNI				MLR	MLR		
	comp=Z,699nm,22.0s						
BNI	Bardonecchia	150.66	359	*e*PKPdf	PKPdf	13 40 41.3	-3.8
BNI				LR	LR		
	comp=Z,699nm,22.0s						
OHR	Ohrid	151.46	336	*i* PKP	PKPbc	13 40 54.2	+1.8
PBRG	Braganca	151.78	20	*e*LR	LR	14 31 57.9	
	comp=Z,455nm,22.0s						
POLO	Lamas de Olo	151.80	22	*e*PKPab	PKPab	13 41 00.4	-1.8
POLO	Lamas de Olo	151.80	22	*e*LR	LR	14 31 31.1	
	comp=Z,196nm,22.0s						
MVO	Moncorvo	152.25	21	*e*PKPbc	PKPab	13 40 52.0	-2.2
MVO	Moncorvo	152.25	21	*e*PKPab	PKPab	13 41 01.4	-2.6
MVO	Moncorvo	152.25	21	*e*LR	LR	14 31 31.1	
	comp=Z,331nm,18.0s						
AGG	Agios Georgios	152.53	331	*e*PKIKP	PKPbc	13 40 58.7	+3.8
AGG	Agios Georgios	152.53	331	*e*PKPbc	PKPbc	13 40 58.7	+3.8
AQU	L'Aquila	152.57	348	PFAKE		13 41 00.0	+5.1
AQU				LR	LR		
	comp=Z,767nm,21.0s						
PCAS	Casmilo, Conde	152.68	24	*e*PKPab	PKPab	13 41 01.5	-4.3
PCAS	Casmilo, Conde	152.68	24	*e*LR	LR	14 31 17.7	
	comp=Z,590nm,20.0s						
MTE	Manteigas	152.74	23	*e*PKPdf	PKPdf	13 40 46.2	-2.0
MTE	Manteigas	152.74	23	*e*PKPab	PKPab	13 41 02.6	-3.5
MTE	Manteigas	152.74	23	*e*LR	LR	14 31 24.4	
	comp=Z,249nm,20.0s						
MTE	Manteigas	152.74	23	*e*PKPbc	PKPbc	13 41 00.5	+5.1
PMOZ	Porto Moniz, M	153.07	46	*e*LR	LR	14 33 33.6	
	comp=Z,234nm,22.0s						
PMTG	Montargil	153.63	25	*e*PKPbc	PKPbc	13 40 55.5	-1.7
PMTG	Montargil	153.63	25	*e*LR	LR	14 31 24.7	
	comp=Z,424nm,20.0s						
PMRV	Marv??o	153.65	23	*e*PKPbc	PKPbc	13 40 57.0	-0.3
PMRV	Marv??o	153.65	23	*e*LR	LR	14 32 33.9	
	comp=Z,578nm,20.0s						
CUC	Castrocucco	154.19	342	PFAKE		13 41 00.0	+1.5
CUC				LR	LR		
	comp=Z,418nm,22.0s						
PNCL	Nicolau / Gran	154.31	27	*e*LR	LR	14 32 21.6	
	comp=Z,560nm,22.0s						
ES19	SONSECA Array	154.58	18	*e*PKPab	PKPab	13 41 14.2	+0.3
ESDC	Sonseca Array	154.59	18	PKPbc	PKPbc	13 40 59.2	-0.2
	comp=Z,0.1nm,0.3s,baz=331,slow=4.1,SNR=2.9						
ESDC				PKPab	PKPab	13 41 14.2	+0.3
	comp=Z,8.7nm,1.1s,baz=334,slow=4.2,SNR=9.4						
PAB	San Pablo	154.59	18	PFAKE		13 41 00.0	+0.6
PAB				LR	LR		
	comp=Z,683nm,22.0s						
TIP	Timpagrande	154.63	340	*e*PKPab	PKPab	13 41 17.4	+3.3
PBAR	Barrancos	154.87	24	*e*LR	LR	14 30 47.9	
	comp=Z,1µm,20.0s						
PCVE	Castro Verde	154.92	27	*e*PKPab	PKPab	13 41 18.3	+3.0
PCVE	Castro Verde	154.92	27	*e*LR	LR	14 32 38.0	
	comp=Z,624nm,20.0s						
MORF	Marmelete	154.92	28	*e*PKPbc	PKPbc	13 40 57.5	-2.6
MORF	Marmelete	154.92	28	*e*LR	LR	14 32 37.3	
	comp=Z,556nm,20.0s						
PFVI	Vila Bisbo	154.98	28	*e*LR	LR	14 33 18.2	
	comp=Z,439nm,18.0s						
PVAQ	Vaqueiros	155.25	26	*e*LR	LR	14 33 04.8	
	comp=Z,593nm,20.0s						
PBDV	Barranco-do-Ve	155.29	27	*e*SS	SS	14 04 37.3	+2.9
PBDV	Barranco-do-Ve	155.29	27	*e*LR	LR	14 32 38.0	
	comp=Z,705nm,20.0s						
CEL	Celeste	155.75	340	PFAKE		13 41 00.0	+7.5
CEL				LR	LR		
	comp=Z,582nm,20.0s						
CLTB	Caltabellotta	157.16	345	PFAKE		13 41 00.0	+5.6
CLTB				LR	LR		
	comp=Z,336nm,20.0s						
TOA0	Torodi Ar. Sit	175.36	122	*e*PKPdf	PKPdf	13 41 10.4	+1.3
TOA0				*e*PKPab	PKPab	13 42 48.5	+2.7
TORD	Torodi Ar. Bea	175.36	122	PKP	PKPdf	13 41 09.3	+0.2
	comp=Z,2.9nm,1.1s,baz=302,slow=1.7,SNR=8.3						
TORD				PKPab	PKPab	13 42 46.6	+0.9
	comp=Z,3.2nm,1.1s,baz=204,slow=3.2,SNR=5.0						
TORD				PP	PP	13 46 42.3	+4.1
	comp=Z,0.8nm,1.0s,baz=235,slow=5.1,SNR=4.5						

*IDC **02** 13:27:54.1±1.7,37°.49N×143°.59E,h0km,mb3.5/4, mb1 3.8/7,mb1mx3.5/61,mbtmp3.7/7,ML3.5/3,Error ellipse: s-maj=40.9km s-min=22.1km az=82.0*

*ISCJB **02** 13:27:57.0±0.8,37°.52N±0°.04×143°.48E±0°.06,h33km, mb3.6/4,Error ellipse: s-maj=7.2km s-min=5.0km az=18.1*

*JMA **02** 13:27:57.4±0.3,37°.55N×143°.45E,h40km,M3.4*

ISC 02 13:27:59.2±1.4,37°.53N±0°.05×143°.5E±0°.1,h35km,n23,
σ1°23/35,mb3.6/4,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	1.90	300	P	Pn	13 28 28.3	-0.8
JIO				*e*S	Sn	13 28 49.1	-2.7
JFK	Kawauchi	2.06	266	P	Pn	13 28 30.6	-0.7
JFK				*e*S	Sn	13 28 55.0	-0.7
OFUJ	Ofunato	2.09	318	P	Pn	13 28 30.3	-1.4
JMM	Marumori	2.13	280	P	Pn	13 28 31.7	-0.6
JMM				*e*S	Sn	13 28 57.2	-0.4
ONAJ	Iwakimizuishiy	2.16	259	P	Pn	13 28 32.5	-0.2
ONAJ				S	Sn	13 28 57.9	-0.3
JMK	Ichinoseki	2.26	310	P	Pn	13 28 33.2	-0.8
JOU	Okura	2.36	292	P	Pn	13 28 35.4	0.0
JFT	Otama	2.48	271	P	Pn	13 28 37.6	+0.6
JFT				*e*S	Sn	13 29 06.6	+0.6
JHO	Hitachi	2.48	249	P	Pn	13 28 36.5	-0.5
JOM	Ohasama	2.58	320	P	Pn	13 28 39.0	+0.6
JOM				S	Sn	13 29 06.8	-1.7
JYK	Kaneyama	2.80	301	P	Pn	13 28 41.8	+0.3
JAG	Ashikaga	3.38	252	P	Pn	13 28 49.9	+0.4
JAG				S	Sn	13 29 29.4	+1.0
BSO1	Boso 1	3.50	216	P	Pn	13 28 50.3	-0.3
BSO1				*e*S	Sn	13 29 30.0	-0.4
JRY	Ryogami san	3.95	249	P	Pn	13 28 57.5	+0.2
JRY				S	Sn	13 29 41.9	-0.5
JOD2	Odawara 2	4.18	239	P	Pn	13 29 00.3	-0.2
JOD2				*e*S	Sn	13 29 46.9	-1.2
MJAR	Matsushiro Arr	4.31	258	Pn	Pn	13 29 03.9	+1.7
	3.2nm,0.3s,baz=90,slow=16,SNR=41						
MAT	Matsushiro	4.31	258	P	Pn	13 29 04.4	+2.2
JHJ	Hachijo jima 2	5.32	215	Pn	Pn	13 29 13.6	-2.5
	6.5nm,0.3s,baz=330,slow=21,SNR=7.7						
JHJ				Sn	Sn	13 30 13.1	-3.1
	15nm,0.3s,baz=146,slow=23,SNR=7.0						
ASAJ	Asahikawa	6.61	355	Pn	Pn	13 29 33.0	-0.8
	0.6nm,0.3s,baz=212,slow=16,SNR=7.2						
ASAJ				Sn	Sn	13 30 49.2	+1.3
	0.2nm,0.3s,baz=329,slow=18,SNR=2.0						
CMAR	Chiang Mai Arr	43.19	256	P	P	13 35 56.4	-0.5
	0.6nm,0.4s,baz=56,slow=8.8,SNR=3.5						
MKAR	Makanchi Array	45.23	302	P	P	13 36 14.4	+1.5
	0.4nm,0.6s,baz=73,slow=8.3,SNR=2.7						
WRA	Warramunga Arr	57.80	190	P	P	13 37 47.1	+0.1
	0.7nm,0.7s,baz=8.9,slow=7.5,SNR=6.3						
ASAR	Alice Springs	61.53	190	P	P	13 38 13.1	+0.5
	0.2nm,0.7s,baz=11,slow=7.1,SNR=3.8						

*ISCJB **02** 13:40:31.1±0.5,30°.65N±0°.03×105°.64W±0°.04,h10km, Error ellipse: s-maj=5.5km s-min=4.6km az=22.9*

*NEIC **02** 13:40:32.6±0.7,30°.69N×105°.75W,h10km,ML3.3,Error ellipse: s-maj=10.5km s-min=9.5km az=131.0*

*MEX **02** 13:40:33.6±0.3,30°.68N×105°.57W,h5km,MD4.2*

ISC 02 13:40:30.6±0.8,30°.65N±0°.03×105°.66W±0°.03,h10km,n27,
σ2°14/37,Texas-Mexico border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MNTX	Cornudas Mount	1.07	13	P	Pg	13 40 50.9	-0.3
	baz=198						
MNTX				S	Sg	13 41 04.5	-0.6
	baz=198						
MNTX	Cornudas Mount	1.07	13	*e*P	Pg	13 40 50.9	-0.3
MNTX				*e*Sg	Sg	13 41 04.7	-0.3
CGIG		2.02	262	*e*P	Pn	13 41 06.5	+1.6
CGIG				*i* S	Sn	13 41 32.2	+1.8
CGIG		2.02	262	*e*P	Pn	13 41 06.5	+1.6
CGIG				*i* S	Sn	13 41 32.2	+1.8
TX31	Lajitas Ar. Si	2.17	127	*e*Pn	Pg	13 41 11.2	-0.9
TX31				*e*Pg	Pb	13 41 11.4	+1.5
TX31				*e*Pg	Pn	13 41 11.7	+4.8
121A	Cookes Peak, D	2.61	316	Sb	Sb	13 41 51.7	+1.9
	baz=136						
121A	Cookes Peak, D	2.61	316	*e*P	Pn	13 41 13.7	+0.7
121A	Cookes Peak, D	2.61	316	*e*Pn	Pn	13 41 14.0	+1.0
CPRX	Cap Rock	2.82	32	*e*P	Pb	13 41 19.6	-1.5
HPIG		3.70	180	*i* P	Pn	13 41 29.1	+1.0
HPIG				*e*S	Sn	13 42 13.7	+1.8
HPIG		3.70	180	*i* P	Pn	13 41 29.1	+1.0
HPIG				*e*S	Sn	13 42 13.7	+1.8
MSTX	Muleshoe	4.11	36	Pb	Pb	13 41 45.4	+2.3
	baz=218						
MSTX				Sb	Sg	13 42 40.4	-2.2
	baz=218						
MSTX	Muleshoe	4.11	36	*e*Pn	Pn	13 41 37.1	+3.5
MSTX				*e*Sg	Sg	13 42 41.2	-1.4
ANMO	Albuquerque	4.33	351	*e*Pn	Pn	13 41 38.8	+2.1
TUC	Tucson	4.68	292	P	Pn	13 41 42.8	+1.4
	baz=109						
TUC	Tucson	4.68	292	*e*Pn	Pn	13 41 42.2	+0.8
HSIG		4.88	252	*e*Sg	Sg	13 43 05.2	-2.1
JCT	Junction City	5.05	90	Sb	Sg	13 43 08.9	-3.9
	baz=274						
JCT	Junction City	5.05	90	Pn	Pn	13 41 45.5	-0.9
AMTX	Amarillo	5.38	37	*e*Pn	Pn	13 41 52.0	+0.9
AMTX				*e*Sg	Sg	13 43 19.9	-3.6
ABTX	Abilene, Hawle	5.49	67	Pn	Pn	13 41 55.3	+2.8
ABTX				*e*Pg	Pg	13 42 13.7	-2.0
233A	Rising Star	5.94	75	P	Pn	13 42 01.4	+2.8
	baz=259						
214A	Organ Pipe Nat	6.26	284	P	Pn	13 42 04.7	+1.7
	baz=100						
WUAZ	Wupatki	6.82	317	Pn	Pb	13 42 22.3	-7.1
WUAZ				*e*Sg	Sg	13 44 04.8	-4.8
SDCO	Great Sand Dun	7.08	1	*e*Pg	Pg	13 42 42.9	-3.3
WHTX	Lake Whitney,	7.14	77	*e*Pg	Pg	13 42 45.5	-1.9
MIAR	Mount Ida	10.90	66	*e*Pn	Pn	13 43 11.7	+5.1

*ISCJB **02** 13:41:32.7±0.3,58°.69N±0°.03×18°.54E±0°.05,h0km,Error ellipse: s-maj=3.9km s-min=3.2km az=151.6*

*UPP **02** 13:41:33.4±0.2,58°.70N×18°.52E,h0km,ML2.3,Explosion*

*CSEM **02** 13:41:34.1±0.1,58°.70N×18°.43E,h2km,ML2.3,Error ellipse: s-maj=3.3km s-min=2.7km az=125.0,Mining explosion.*

*IDC **02** 13:41:34.7±1.9,58°.64N×18°.49E,h0km,mb1 2.9/4, mb1mx2.8/56,mbtmp2.8/4,ML2.6/4,Error ellipse: s-maj=21.1km s-min=8.3km az=172.0*

*HEL **02** 13:41:36.1,58°.76N×18°.76E,h0km,ML1.7,Explosion*

*NAO **02** 13:41:38.4±2.1,59°.13N×18°.39E,ML2.4*

*BER **02** 13:41:39.2±4.3,59°.05N×18°.39E,h0km,ML2.4(NAO), Suspected explosion*

ISC 02 13:41:33.4±0.8,58°.71N±0°.02×18°.48E±0°.03,h0km,n100,
σ1°20/118,Baltic Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NYNU	Nynaeshamn	0.39	320	P	Pg	13 41 41.4	+0.6
NYNU				S	Sg	13 41 46.7	+0.8
NYNU	Nynaeshamn	0.39	320	*i* P	Pg	13 41 41.4	+0.6
NYNU				*i* S	Sg	13 41 46.7	+0.8
NYNU	Nynaeshamn	0.39	320	P	Pg	13 41 41.4	+0.6
NYNU				S	Sg	13 41 46.7	+0.8
VIKU	Vikbolandet	0.96	258	P	Pg	13 41 51.5	-0.2
VIKU	Vikbolandet	0.96	258	*e*P	Pg	13 41 51.5	-0.2
VIKU	Vikbolandet	0.96	258	P	Pg	13 41 51.5	-0.2
NRTU	Norrtaelje	0.98	4	P	Pg	13 41 51.9	-0.2
NRTU	Norrtaelje	0.98	4	*e*P	Pg	13 41 51.9	-0.2
NRTU	Norrtaelje	0.98	4	P	Pg	13 41 51.9	-0.2
GOTU	Gotland	1.02	177	P	Pg	13 41 52.4	-0.6
GOTU	Gotland	1.02	177	*e*P	Pg	13 41 52.4	-0.6
GOTU	Gotland	1.02	177	P	Pg	13 41 52.4	-0.6
ESKU	Eskilstuna	1.20	297	P	Pg	13 41 56.0	-0.4
ESKU	Eskilstuna	1.20	297	*e*P	Pg	13 41 56.0	-0.4
ESKU	Eskilstuna	1.20	297	P	Pg	13 41 56.0	-0.4
UPP	Uppsala	1.24	340	P	Pg	13 41 56.8	-0.2
UPP	Uppsala	1.24	340	*e*P	Pg	13 41 56.8	-0.2
UPP	Uppsala	1.24	340	P	Pg	13 41 56.8	-0.2
FIBU	Brunna	1.33	335	P	Pg	13 41 58.5	-0.4
BACU	Backbrunna	1.35	329	P	Pg	13 41 58.7	-0.5
BACU	Backbrunna	1.35	329	*e*P	Pg	13 41 58.7	-0.5
BACU	Backbrunna	1.35	329	P	Pg	13 41 58.7	-0.5
FLYU	Flymyra	1.46	348	P	Pn	13 42 00.6	-0.4
FLYU	Flymyra	1.46	348	*e*P	Pn	13 42 00.6	-0.4
FLYU	Flymyra	1.46	348	P	Pn	13 42 00.6	-0.4
BYXU	Byxelkrok	1.62	210	P	Pn	13 42 03.0	-0.2
BYXU	Byxelkrok	1.62	210	*e*P	Pn	13 42 03.0	-0.2
BYXU	Byxelkrok	1.62	210	P	Pn	13 42 03.0	-0.2
ASPU	Aespoe	1.63	219	P	Pn	13 42 03.4	+0.1
ASPU	Aespoe	1.63	219	*e*P	Pn	13 42 03.4	+0.1
ASPU	Aespoe	1.63	219	P	Pn	13 42 03.4	+0.1
GRAU	Graesoe	1.63	1	P	Pn	13 42 03.5	+0.1
GRAU	Graesoe	1.63	1	*e*P	Pn	13 42 03.5	+0.1
GRAU	Graesoe	1.63	1	P	Pn	13 42 03.5	+0.1
LNKU	Linkoeping	1.64	254	P	Pn	13 42 03.6	+0.2
LNKU	Linkoeping	1.64	254	*e*P	Pn	13 42 03.6	+0.2
LNKU	Linkoeping	1.64	254	P	Pn	13 42 03.6	+0.2
AAL	Aland	1.67	27	P	Pn	13 42 03.7	0.0
AAL	Aland	1.67	27	*e*P	Pn	13 42 04.2	+0.4
AAL				*e*S	Sn	13 42 22.7	-3.1
AAL	Aland	1.67	27	P	Pn	13 42 04.1	+0.4
AAL				S	Sn	13 42 22.7	-3.1
FORU	Forsmark	1.69	355	P	Pn	13 42 04.5	+0.3
FORU	Forsmark	1.69	355	*e*P	Pn	13 42 04.5	+0.3
FORU	Forsmark	1.69	355	P	Pn	13 42 04.5	+0.3
ASKU	Askersund	1.91	277	P	Pn	13 42 08.0	+0.9
ASKU	Askersund	1.91	277	*e*P	Pn	13 42 08.0	+0.9
ASKU	Askersund	1.91	277	P	Pn	13 42 08.0	+0.9
OSKU	Oskarshamn	1.98	221	P	Pn	13 42 09.1	+1.1
OSKU	Oskarshamn	1.98	221	*e*P	Pn	13 42 09.1	+1.1
OSKU	Oskarshamn	1.98	221	P	Pn	13 42 09.1	+1.1
FALU	Falun	2.24	324	P	Pn	13 42 12.4	+0.7
FALU	Falun	2.24	324	*e*P	Pn	13 42 12.4	+0.7
FALU	Falun	2.24	324	P	Pn	13 42 12.4	+0.7
SLIT	Slitere, Latvi	2.29	117	*e*P	Pn	13 42 13.1	+0.7
SLIT				*e*SG	Sn	13 42 43.7	+2.6
SLIT	Slitere, Latvi	2.29	117	P	Pn	13 42 13.0	+0.7
SLIT				Sg	Sn	13 42 43.7	+2.6
SLIT				*e*S	Sb	13 42 44.3	0.0
	383nm,0.8s,SNR=50						
MTSE	Matsula	2.78	88	*e*P	Pn	13 42 19.5	+0.5
MTSE				*e*S	Sn	13 42 54.2	+0.9
MTSE	Matsula	2.78	88	*e*P	Pn	13 42 19.8	+0.7
	SNR=50						
MTSE				*e*S	Sn	13 42 53.8	+0.5
	SNR=50						
MTSE				Sb	Sn	13 42 54.2	+0.9
BLEU	Blekinge	2.81	212	P	Pn	13 42 20.1	+0.6
BLEU	Blekinge	2.81	212	*e*P	Pn	13 42 20.1	+0.6
BLEU	Blekinge	2.81	212	P	Pn	13 42 20.1	+0.6
HFS	Hagfors	2.83	302	Pn	Pn	13 42 21.1	+1.2
	baz=120,slow=14						
HFS				Lg	Lg	13 42 58.6	
	baz=103,slow=28						
HFS	Hagfors	2.83	302	Pn	Pn	13 42 20.9	+1.1
	1.0nm,0.3s,baz=116,slow=15,SNR=19						
HFS				Sn	Sn	13 42 56.9	+2.2
	5.6nm,0.3s,baz=119,slow=31,SNR=20						
HFS	Hagfors	2.83	302	Pn	Pn	13 42 21.1	+1.2
	baz=120,slow=14						
HFS				Lg	Lg	13 42 58.6	
	baz=103,slow=28						
HFS	Hagfors	2.83	302	Pn	Pn	13 42 21.1	+1.2
	baz=120,slow=14,SNR=50						
HFS				Lg	Lg	13 42 58.6	
	SNR=6.2						
RAF	Rauma	2.85	34	*e*PB	Pb	13 42 23.4	-1.7
RAF				*e*S	Sn	13 42 58.1	+3.0
RAF				*e*SB	Sb	13 43 00.1	-0.4
RAF				MSG		13 43 00.2	
	comp=Z,2.4nm,0.1s						
RAF	Rauma	2.85	34	*e*P	Pn	13 42 21.1	+1.0
	SNR=50						
RAF	Rauma	2.85	34	Pb	Pb	13 42 23.3	-1.7
RAF				*e*S	Sn	13 42 55.4	+0.3
	comp=Z,25nm,0.8s,SNR=50						
RAF				Sb	Sn	13 42 58.1	+3.0
RAF				Sg	Sb	13 43 00.1	-0.4
ARNU	Arnoeviken	3.05	350	P	Pn	13 42 23.1	+0.4
ARNU	Arnoeviken	3.05	350	*e*P	Pn	13 42 23.1	+0.4
ARNU	Arnoeviken	3.05	350	P	Pn	13 42 23.1	+0.4
MEF	Metsahovi	3.38	61	*e*PB	Pn	13 42 31.0	+3.7
MEF	Metsahovi	3.38

σ2°22′/11, **Jujuy Province**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YJA	**Yavi**	**0.96**	**45**	*i* P	**Pn**	**13 46 35.2**	**+1.1**
YJA				*i* S	**S**	**13 46 58.2**	**-3.7**
YJA				IAML		13 47 03.4	
	comp=Z,33nm,0.6s						
AZAP	**Zapla**	**1.74**	**142**	*i* P	**Pn**	**13 46 40.0**	**+0.8**
AZAP				*i* S	**S**	**13 47 07.7**	**-3.4**
AZAP				IAML		13 47 11.9	
	comp=Z,8.7nm,0.5s						
ASTB	**Santa Barbara**	**1.98**	**124**	*i* P	**Pn**	**13 46 42.2**	**+1.1**
ALOL	**LOMAS DE OLMED**	**2.29**	**115**	*i* P	**Pn**	**13 46 45.0**	**+1.1**
LVC	**Limon Verde**	**2.47**	**275**	*i* P	**Pn**	**13 46 46.6**	**+0.6**
LPAZ	**La Paz**	**6.77**	**344**	P	**Pn**	**13 47 38.0**	**+0.8**
	comp=Z,0.5nm,0.3s,baz=164,slow=7.5,SNR=12						
LPAZ				S	**S**	**13 48 53.8**	**-2.1**
	comp=Z,0.2nm,0.3s,baz=307,slow=21,SNR=6.1						
TORD	**Torodi Ar. Bea**	**75.51**	**69**	P	**P**	**13 57 16.6**	**+0.4**
	comp=Z,0.7nm,0.4s,baz=251,slow=5.2,SNR=18						
MKAR	**Makanchi Array**	**145.21**	**39**	PKP	**PKPab**	**14 05 09.0**	**+2.0**
	comp=Z,0.4nm,0.5s,baz=321,slow=3.1,SNR=6.9						

ISCJB ***02*** *13:46:14.3±0.3, 20°.44N±0°.05×94°.00E±0°.04, h52km, mb4.0/14, Error ellipse: s-maj=7.6km s-min=3.8km az=36.0*

BKK ***02*** *13:46:14.1±5.1, 20°.N±23°×9°.4E±3°.8, h0km, M4.3/6, mB4.6/5, mb4.3/6, MLv4.6/5, Mw(mB)3.8/5*

NEIC ***02*** *13:46:17.4±1.2, 20°.43N×94°.08E, h62km±10km, mb4.2/4, Error ellipse: s-maj=16.7km s-min=6.0km az=53.0*

IDC ***02*** *13:46:18.2±4.3, 20°.43N×94°.09E, h70km±39km, mb3.6/11, mb1 3.7/12, mb1mx3.4/57, mbtmp4.0/12, ML4.7/1, Error ellipse: s-maj=43.7km s-min=13.6km az=57.0*

ISC 02 13:46:15.7±0.6, 20°.38N±0°.06×93°.95E±0°.05, h52km, n46, σ1°68/53, **mb4.0**/14, **Myanmar**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MHMT	**Maesarieng**	**4.35**	**120**	P	**Pn**	**13 47 20.2**	**+0.9**
CHTO	**Chiang Mai**	**4.96**	**107**	P	**Pn**	**13 47 28.0**	**+0.3**
CHTO	**Chiang Mai**	**4.96**	**107**	*e*Pn	**Pn**	**13 47 27.9**	**+0.3**
CHTO				*e*Sn	**Sn**	**13 48 19.2**	**-4.6**
CMAR	**Chiang Mai Arr**	**5.08**	**111**	P	**Pn**	**13 47 29.8**	**+0.4**
	7.5nm,0.3s,baz=286,slow=14,SNR=71						
CMAR				S	**Sn**	**13 48 24.1**	**-2.7**
	6.1nm,0.3s,baz=294,slow=23,SNR=6.0						
SHL	**Shillong**	**5.50**	**340**	*e*P	**Pn**	**13 47 35.9**	**+0.6**
SHL				*e*S	**Sn**	**13 48 35.7**	**-1.7**
SHL				IAML		13 48 42.4	
	comp=E,182nm,0.4s						
SHL				IAML		13 48 43.2	
	comp=N,597nm,0.2s						
LAMP	**Lampang**	**5.67**	**108**	P	**Pn**	**13 47 38.1**	**+0.7**
	comp=N,16nm,0.7s,comp=N,452nmcomp=N,0.3nm						
CRAI	**Chiangrai**	**6.03**	**90**	P	**Pn**	**13 47 42.6**	**+0.2**
	comp=N,255nm,0.5s						
SUKH	**Sukhothai**	**6.10**	**117**	P	**Pn**	**13 47 44.3**	**+1.0**
	comp=N,11nm,0.7s,comp=N,325nmcomp=N,0.2nm						
UMPA	**Umpang Tak**	**6.24**	**131**	P	**Pn**	**13 47 48.2**	**+2.9**
UTTA	**Uttaradit**	**6.77**	**112**	P	**Pn**	**13 47 53.2**	**+0.7**
	comp=N,8.9nm,0.5s,comp=N,325nmcomp=N,0.1nm						
DGPR	**DIGLIPUR**	**7.23**	**188**	*e*P	**Pn**	**13 47 59.5**	**+0.7**
DGPR				*e*S	**Sn**	**13 49 16.2**	**-3.3**
BWNR	**Bhubaneshwar**	**7.64**	**271**	*e*P	**Pn**	**13 48 06.0**	**+1.6**
BWNR				*e*S	**Sn**	**13 49 25.2**	**-4.5**
BWNR				IAML		13 49 29.7	
	comp=E,263nm,0.2s						
BWNR				IAML		13 49 29.8	
	comp=N,405nm,0.2s						
PBKT	**Sadao Pong**	**7.66**	**118**	P	**Pn**	**13 48 05.4**	**+0.7**
	comp=N,24nm,0.6s,comp=N,2μmcomp=N,0.5nm						
BOK	**Bokaro**	**8.21**	**296**	*e*P	**Pn**	**13 48 14.3**	**+2.0**
NONG	**Nongkai**	**8.99**	**103**	P	**Pn**	**13 48 23.9**	**+1.0**
PHET	**Kaeng Krachan**	**9.21**	**143**	P	**Pn**	**13 48 27.1**	**+1.2**
LSA	**Lhasa**	**9.62**	**345**	*e*Pn	**Pn**	**13 48 32.9**	**+0.9**
	comp=N,21nm,0.6s						
VIS	**Vishakhapatnam**	**10.39**	**257**	*e*P	**Pn**	**13 48 43.6**	**+1.6**
PKIN	**Phulchoki**	**10.60**	**314**	*e*P	**Pn**	**13 48 45.3**	**+0.1**
	comp=N,23nm,0.3s						
KKN	**Kakani**	**10.82**	**315**	*e*P	**Pn**	**13 48 48.6**	**+0.4**
	comp=N,12nm,0.2s						
GKN	**Gorkha**	**11.39**	**314**	*e*P	**Pn**	**13 48 55.9**	**0.0**
	comp=N,47nm,0.3s						
GKN				*e*S	**Sn**	**13 50 57.5**	**-4.3**
KOLN	**Koldanda**	**11.98**	**310**	*e*P	**Pn**	**13 49 04.0**	**+0.1**
	comp=N,17nm,0.2s						
KOLN				*e*S	**Sn**	**13 51 12.5**	**-3.7**
PYUN	**Piuthan**	**12.61**	**310**	*e*P	**Pn**	**13 49 12.5**	**0.0**
	comp=N,19nm,0.3s						
HYB	**Hyderabad**	**14.87**	**261**	*i* P	**Pn**	**13 49 44.5**	**+1.6**
HYB	**Hyderabad**	**14.87**	**261**	*e*P	**Pn**	**13 49 44.4**	**+1.6**
BHPL	**Bhopal**	**15.61**	**284**	*e*P	**P**	**13 49 54.4**	**-1.4**
BHPL				IAmb	IAmb	13 52 37.6	
	comp=Z,10.0nm,0.5s						
ENH	**Enshi**	**17.14**	**52**	*e*Pn	**Pn**	**13 50 11.6**	**0.0**
	comp=Z,5.5nm,0.5s						
SMLA	**Simla**	**18.50**	**309**	*e*P	**Pn**	**13 50 29.8**	**+1.6**
SMLA				IAmb	IAmb	13 50 32.4	
DHRM	**DHARAMSHALA**	**19.72**	**310**	*e*P	**Pn**	**13 50 42.6**	**-0.5**
DHRM				IAmb	IAmb	13 50 44.1	
	comp=Z,9.8nm,0.5s						
BHJ	**Bhuj**	**22.73**	**282**	*e*P	**P**	**13 51 13.3**	**-0.2**
AAK	**Ala-Archa**	**27.57**	**328**	P	**P**	**13 52 00.3**	**+2.3**
	comp=Z,0.5nm,0.3s,baz=156,slow=9.3,SNR=3.6						
MKAR	**Makanchi Array**	**28.02**	**343**	P	**P**	**13 52 03.0**	**+1.2**
	comp=Z,1.4nm,0.8s,baz=146,slow=9.8,SNR=14						
SONM	**Songino Array**	**29.19**	**17**	P	**P**	**13 52 12.7**	**+0.4**
	comp=Z,0.4nm,0.3s,baz=201,slow=6.9,SNR=4.2						
KURBB	**Kurchatov Arra**	**32.55**	**342**	P	**P**	**13 52 42.6**	**+0.9**
	comp=Z,2.1nm,0.7s,baz=153,slow=8.4,SNR=21						
KURK	**Kurchatov**	**32.60**	**342**	*e*P	**P**	**13 52 42.7**	**+0.5**
	comp=Z,4.3nm,0.6s						
ZALV	**Zalesovo Beam**	**34.23**	**350**	P	**P**	**13 52 56.7**	**+0.4**
	comp=Z,2.1nm,0.5s,baz=177,slow=8.1,SNR=7.7						
ABKAR	**Akbulak array**	**39.55**	**325**	*e*P	**P**	**13 53 42.9**	**+1.3**
	comp=Z,1.4nm,0.6s						
AKTO	**Aktyubinsk**	**41.24**	**325**	P	**P**	**13 53 56.3**	**+0.7**
	comp=Z,1.6nm,0.7s,baz=120,slow=6.0,SNR=4.6						
FITZ	**Fitzroy Crossi**	**49.28**	**139**	*e*P	**P**	**13 54 59.5**	**0.0**
TIXI	**Tiksi**	**55.11**	**13**	*e*P	**P**	**13 55 41.5**	**-0.6**
	comp=Z,4.6nm,0.4s						
WRA	**Warramunga Arr**	**56.30**	**133**	P	**P**	**13 55 51.5**	**+0.1**
	comp=Z,0.7nm,0.5s,baz=319,slow=7.5,SNR=30						
WRAB	**Tennant Creek**	**56.30**	**133**	*e*P	**P**	**13 55 52.3**	**+0.8**
SEY	**Seymchan**	**57.83**	**27**	P	**P**	**13 56 01.0**	**-0.6**
	comp=Z,0.6nm,0.5s,baz=114,slow=16,SNR=6.3						
ASAR	**Alice Springs**	**58.59**	**136**	P	**P**	**13 56 08.0**	**+0.5**
	comp=Z,1.0nm,0.6s,baz=315,slow=6.8,SNR=33						
FINES	**FINESS Array B**	**61.75**	**330**	P	**P**	**13 56 28.1**	**-0.4**
	comp=Z,0.3nm,0.4s,baz=98,slow=10.0,SNR=2.3						
ARCES	**ARCESS Array B**	**63.56**	**339**	P	**P**	**13 56 40.6**	**+0.1**
	comp=Z,0.6nm,0.6s,baz=91,slow=6.3,SNR=4.0						

JMA 02 13:48:01.6, 36°.86N×140°.59E, h9km±1km, M2.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.25**	**184**	P	Pg	13 48 06.8	+0.2
JHO				S	Sg	13 48 10.3	+0.3
JFT	**Otama**	**0.69**	**343**	S	Sg	13 48 24.2	+0.3
MAT	**Matsushiro**	**1.94**	**261**	P	Pn	13 48 35.9	+1.1
MAT				S	Sb	13 49 01.6	+0.1

IDC ***02*** *13:55:35.7±0.6, 30°.80N×105°.68W, h0km, mb4.2/13, mb1 4.3/22, mb1mx4.1/45, mbtmp4.1/22, ML3.8/8, Error ellipse: s-maj=17.3km s-min=6.5km az=43.0*

NEIC ***02*** *13:55:36.8±1.3, 30°.73N×105°.67W, h5km±9km, mb4.4/43, MD4.4(MEX), MW4.2(SLM), Error ellipse: s-maj=5.0km s-min=3.0km az=193.0*

NEIC Felt at Ciudad Juarez. Felt [II] at El Paso, Texas. Also felt at San Elizario and Sierra Blanca.

MEX ***02*** *13:55:38.8±0.4, 30°.76N×105°.63W, h5km, MD4.4*

ISC 02 13:55:36.5±0.7, 30°.82N±0°.04×105°.69W±0°.03, h5km±3km, n280, σ1°57/307, **mb4.5**/29, **Texas-Mexico border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MNTX	**Cornudas Mount**	**0.92**	**16**	P	**Pb**	**13 55 55.0**	**0.0**
	baz=194						
MNTX	**Cornudas Mount**	**0.92**	**16**	*e*Pg	**Pb**	**13 55 54.8**	**-0.2**
MNTX				*e*Sg	**Sn**	**13 56 08.8**	**-1.0**
GDL2	**Guadalupe Moun**	**1.78**	**39**	*e*Pn	**Pb**	**13 56 10.1**	**+0.3**
CGIG		**2.03**	**258**	*e*P	**Pn**	**13 56 11.0**	**-0.6**
CGIG				*e*S	**Sn**	**13 56 36.4**	**-1.0**
CGIG		**2.03**	**258**	*e*P	**Pn**	**13 56 11.0**	**-0.6**
CGIG				*e*S	**Sn**	**13 56 36.4**	**-1.0**
CLNB	**Carlsbad**	**2.11**	**46**	*e*Pn	**Pb**	**13 56 14.8**	**-0.7**
TX31	**Lajitas Ar. Si**	**2.29**	**130**	*e*Pn	**Pn**	**13 56 16.1**	**+1.0**
TXAR	**Lajitas Array**	**2.29**	**130**	Pn	**Pn**	**13 56 14.9**	**-0.2**
	84nm,0.3s,baz=304,slow=13,SNR=96						
TXAR				Lg	Lg	13 56 47.5	
	913nm,0.3s,baz=307,slow=27,SNR=36						
121A	**Cookes Peak, D**	**2.48**	**314**	P	**Pn**	**13 56 17.7**	**0.0**
	baz=134						
121A				S	**Sb**	**13 56 52.6**	**0.0**
	baz=134						
121A	**Cookes Peak, D**	**2.48**	**314**	*e*P	**Pn**	**13 56 17.7**	**0.0**
121A				*e*S	**Sn**	**13 56 48.1**	**-0.4**
121A	**Cookes Peak, D**	**2.48**	**314**	*e*Pn	**Pn**	**13 56 17.7**	**0.0**
121A				*e*Sg	**Sb**	**13 56 53.8**	**+1.2**
CPRX	**Cap Rock**	**2.70**	**35**	*e*P	**Pn**	**13 56 22.8**	**+2.0**
Y22D	**IRIS PASSCAL I**	**3.41**	**342**	P	**Pn**	**13 56 31.8**	**+1.2**
	baz=162						
Y22D				Sb	**Sg**	**13 57 26.7**	**+0.6**
	baz=162						
Y22D	**IRIS PASSCAL I**	**3.41**	**342**	*e*Pn	**Pn**	**13 56 31.8**	**+1.2**
BNM	**Barren Site**	**3.42**	**347**	*e*Pn	**Pn**	**13 56 31.8**	**+1.0**
LPM	**Los Pinos Moun**	**3.58**	**347**	*e*Pn	**Pn**	**13 56 33.8**	**+0.9**
LAZ	**Ladron**	**3.78**	**341**	*e*Pn	**Pn**	**13 56 36.6**	**+0.9**
HPIG		**3.87**	**180**	*e*P	**Pn**	**13 56 35.6**	**-1.3**
HPIG				*e*S	**Sn**	**13 57 20.7**	**-2.1**
HPIG		**3.87**	**180**	*e*Pn	**Pn**	**13 56 36.1**	**-0.8**
HPIG				*e*S	**Sn**	**13 57 20.7**	**-2.1**
MSTX	**Muleshoe**	**4.00**	**37**	P	**Pn**	**13 56 40.1**	**+1.5**
	baz=218						
MSTX				Sb	**Sg**	**13 57 43.5**	**-1.4**
	baz=218						
MSTX	**Muleshoe**	**4.00**	**37**	*e*Pn	**Pn**	**13 56 40.5**	**+1.9**
ANMO	**Albuquerque**	**4.17**	**351**	**Pn**	**Pn**	**13 56 42.1**	**+1.1**
	2.7nm,0.3s,baz=172,slow=20,SNR=13						
ANMO				Lg	Lg	13 57 47.9	
	35nm,0.3s,baz=16,slow=10,SNR=6.8						
ANMO	**Albuquerque**	**4.17**	**351**	P	**Pn**	**13 56 42.5**	**+1.5**
	baz=171						
ANMO				Sb	**Sg**	**13 57 48.4**	**-2.1**
	baz=171						
ANMO	**Albuquerque**	**4.17**	**351**	*e*P	**Pn**	**13 56 42.1**	**+1.1**
ANMO	**Albuquerque**	**4.17**	**351**	*e*Pn	**Pn**	**13 56 42.6**	**+1.5**
ANMO				Lg	Lg	13 57 47.9	
TUC	**Tucson**	**4.60**	**290**	P	**Pn**	**13 56 46.5**	**-0.4**
	baz=109						
TUC				Sb	**Sg**	**13 57 59.5**	**-4.8**
	baz=109						
TUC	**Tucson**	**4.60**	**290**	*e*Pn	**Pn**	**13 56 46.3**	**-0.5**
TUC				*e*S	**Sn**	**13 57 41.6**	**+0.9**
HSIG		**4.91**	**250**	*e*P	**Pn**	**13 56 50.8**	**-0.2**
HSIG				*i* S	**Sn**	**13 57 47.5**	**-0.7**
HSIG		**4.91**	**250**	*e*Pn	**Pn**	**13 56 49.1**	**-1.9**
HSIG				*i* S	**Sn**	**13 57 47.5**	**-0.7**
JCT	**Junction City**	**5.08**	**92**	P	**Pn**	**13 56 51.5**	**-2.0**
	baz=274						
JCT	**Junction City**	**5.08**	**92**	*e*Pn	**Pn**	**13 56 53.4**	**-0.1**
X18A	**Snowflake**	**5.16**	**317**	*e*Pn	**Pn**	**13 56 55.3**	**+0.6**
AMTX	**Amarillo**	**5.27**	**39**	P	**Pn**	**13 56 56.7**	**+0.5**
	baz=220						
AMTX	**Amarillo**	**5.27**	**39**	*e*Pn	**Pn**	**13 56 58.0**	**+1.9**
ABTX	**Abilene, Hawle**	**5.46**	**69**	P	**Pn**	**13 56 57.8**	**-0.7**
	baz=251						
ABTX	**Abilene, Hawle**	**5.46**	**69**	*e*Pn	**Pn**	**13 56 59.3**	**+0.7**
W18A	**Petrified Fore**	**5.48**	**323**	P	**Pn**	**13 56 59.9**	**+0.9**
	baz=141						
W18A				Sb	**Sg**	**13 58 28.7**	**-3.7**
	baz=141						
W18A	**Petrified Fore**	**5.48**	**323**	*e*Pn	**Pn**	**13 56 59.9**	**+0.9**
433A	**Art**	**5.67**	**89**	P	**Pn**	**13 57 00.1**	**-1.5**
	baz=271						
333A	**Richland Sprin**	**5.77**	**83**	P	**Pn**	**13 57 01.6**	**-1.3**
	baz=266						
233A	**Rising Star**	**5.92**	**77**	P	**Pn**	**13 57 04.0**	**-1.0**
	baz=259						
733A	**Divot King Ran**	**5.94**	**109**	P	**Pn**	**13 57 01.2**	**-3.9**
	baz=292						
133A	**Hamilton Ranch**	**6.04**	**71**	P	**Pn**	**13 57 06.3**	**-0.3**
	baz=254						
X16A	**Lo Mia Camp, P**	**6.04**	**308**	*e*Pn	**Pn**	**13 57 07.7**	**+1.0**
214A	**Organ Pipe Nat**	**6.20**	**282**	P	**Pn**	**13 57 08.4**	**-0.4**
	baz=100						
214A	**Organ Pipe Nat**	**6.20**	**282**	*e*P	**Pn**	**13 57 08.6**	**-0.2**
214A				*e*S	**Sn**	**13 58 20.3**	**+0.2**
214A	**Organ Pipe Nat**	**6.20**	**282**	*e*Pn	**Pn**	**13 57 08.5**	**-0.2**
	337nm,0.8s						
534A	**Blanco**	**6.28**	**95**	P	**Pn**	**13 57 08.4**	**-1.4**
	baz=278						
Z33A	**Whitaker Ranch**	**6.37**	**65**	P	**Pn**	**13 57 11.2**	**+0.1**
	baz=248						
434A	**Burnet**	**6.38**	**88**	P	**Pn**	**13 57 10.3**	**-1.0**
	baz=271						
T25A	**Trinidad**	**6.39**	**9**	Sb	**Sg**	**13 58 55.4**	**-6.5**
	baz=190						
334A	**Lometa**	**6.41**	**83**	P	**Pn**	**13 57 10.2**	**-1.5**
	baz=266						
933A	**Laredo**	**6.45**	**118**	P	**Pn**	**13 57 09.5**	**-2.7**
	baz=301						
X32A	**Elmer**	**6.49**	**55**	P	**Pn**	**13 57 13.5**	**+0.8**
	baz=237						
234A	**Clairette**	**6.56**	**78**	P	**Pn**	**13 57 13.2**	**-0.6**
	baz=261						
WUAZ	**Wupatki**	**6.69**	**316**	Sb	**Sg**	**13 59 06.2**	**-5.0**
	baz=134						
WUAZ	**Wupatki**	**6.69**	**316**	*e*Pn	**Pn**	**13 57 18.9**	**+3.3**
WUAZ				*e*Pg	**Pg**	**13 57 44.1**	**-0.5**
134A	**White-Moore Ra**	**6.71**	**73**	P	**Pn**	**13 57 15.4**	**-0.4**
	baz=256						
Y33A	**Hilltop Ranch,**	**6.76**	**60**	P	**Pn**	**13 57 16.6**	**+0.1**
	baz=243						
MVCO	**Mesa Verde**	**6.79**	**341**	P	**Pn**	**13 57 19.3**	**+2.1**
	baz=159						
MVCO	**Mesa Verde**	**6.79**	**341**	*e*Pn	**Pn**	**13 57 19.1**	**+2.0**
MVCO				*e*Pg	**Pg**	**13 57 44.0**	**-2.6**
SDCO	**Great Sand Dun**	**6.91**	**1**	P	**Pn**	**13 57 21.5**	**+2.6**
	baz=181						
SDCO				Sb	**Sg**	**13 59 13.5**	**-5.0**
	baz=181						
S22A	**4UR Ranch, Cre**	**6.98**	**353**	Sb	**Sg**	**13 59 16.7**	**-3.9**
	baz=172						
WMOK	**Wichita Mounta**	**7.01**	**54**	*e*Pn	**Pn**	**13 57 20.3**	**+0.5**
535A	**Dale**	**7.05**	**94**	P	**Pn**	**13 57 18.9**	**-1.5**
	baz=278						
Z34A	**Collier Ranch,**	**7.07**	**67**	P	**Pn**	**13 57 20.1**	**-0.6**
	baz=250						
X33A	**Lawton**	**7.10**	**57**	P	**Pn**	**13 57 21.1**	**-0.1**
	baz=240						
WHTX	**Lake Whitney,**	**7.13**	**78**	P	**Pn**	**13 57 20.6**	**-1.0**
	baz=262						
WHTX	**Lake Whitney,**	**7.13**	**78**	*e*Pn	**Pn**	**13 57 20.9**	**-0.7**
113A	**Mohawk Valley,**	**7.15**	**288**	*e*Pn	**Pn**	**13 57 21.3**	**-0.5**
135A	**Vickery Place,**	**7.26**	**74**	P	**Pn**	**13 57 22.9**	**-0.5**
	baz=258						
Y34A	**Reagan Ranch,**	**7.40**	**63**	P	**Pn**	**13 57 24.9**	**-0.4**
	baz=246						
W33A	**Caddo, Fort Co**	**7.45**	**53**	P	**Pn**	**13 57 26.7**	**+0.9**
	baz=236						
Z35A	**Perchaven, San**	**7.58**	**69**	P	**Pn**	**13 57 27.3**	**-0.5**
	baz=252						
X34A	**Smith Ranch, M**	**7.62**	**58**	P	**Pn**	**13 57 28.3**	**+0.1**
	baz=242						
PV01	**Paradox Valley**	**7.68**	**343**	*e*Pn	**Pn**	**13 57 31.8**	**+2.5**
PV05	**Paradox Valley**	**7.77**	**340**	*e*Pn	**Pn**	**13 57 33.6**	**+3.0**
U32A	**Winter Ranch,**	**7.86**	**43**	P	**Pn**	**13 57 32.7**	**+1.1**
	baz=226						
236A	**Katherine and**	**7.91**	**79**	P	**Pn**	**13 57 31.6**	**-0.7**
	baz=263						
Y35A	**Marietta**	**7.94**	**65**	P	**Pn**	**13 57 32.0**	**-0.6**
	baz=249						
PDMCI	**Parker Dam,Lak**	**7.94**	**298**	P	**Pn**	**13 57 33.5**	**+0.9**
	baz=114						
V33A	**Lossen Ranch,**	**7.95**	**49**	P	**Pn**	**13 57 33.5**	**+0.7**
	baz=233						
W34A	**Bridge Creek,**	**7.97**	**54**	P	**Pn**	**13 57 33.9**	**+0.8**
	baz=236						
W34A	**Bridge Creek,**	**7.97**	**54**	*e*Pn	**Pn**	**13 57 33.6**	**+0.5**
136A	**Ennis**	**7.98**	**76**	P	**Pn**	**13 57 32.2**	**-1.0**
	baz=260						
PV04	**Paradox Valley**	**8.01**	**342**	*e*Pn	**Pn**	**13 57 36.2**	**+2.4**
PV10	**Paradox Valley**	**8.03**	**341**	*e*Pn	**Pn**	**13 57 33.1**	**-1.1**
Y12C	**Blythe**	**8.03**	**294**	P	**Pn**	**13 57 34.1**	**+0.2**
	baz=110						
Y12C	**Blythe**	**8.03**	**294**	*e*Pn	**Pn**	**13 57 34.2**	**+0.2**
SLBS	**Sierra La Lagu**	**8.05**	**209**	*e*Pn	**Pn**	**13 57 35.0**	**+0.7**
GLA	**Glamis**	**8.08**	**288**	P	**Pn**	**13 57 34.5**	**-0.2**
	baz=104						
GLA	**Glamis**	**8.08**	**288**	*e*Pn	**Pn**	**13 57 34.3**	**-0.4**
W13A	**Hualapai Mount**	**8.11**	**304**	*e*Pn	**Pn**	**13 57 35.8**	**+0.7**
537A	**Green Hill Far**	**8.12**	**93**	P	**Pn**	**13 57 33.8**	**-1.4**
	baz=277						
Q24A	**Divide**	**8.14**	**3**	*e*Pn	**Pn**	**13 57 38.8**	**+3.1**
X35A	**Drake**	**8.17**	**62**	P	**Pn**	**13 57 34.7**	**-1.1**
	baz=246						
PV09	**Paradox Valley**	**8.17**	**341**	*e*Pn	**Pn**	**13 57 38.7**	**+2.5**
U33A	**Lingo Farm, Me**	**8.44**	**46**	P	**Pn**	**13 57 39.9**	**+0.4**
	baz=230						
V34A	**Guthrie**	**8.47**	**52**	*e*Pn	**Pn**	**13 57 39.2**	**-0.7**
V34A				*e*Lg	Lg	14 00 09.2	
ZAIG	**Zacatecas**	**8.48**	**160**	*e*Pn	**Pn**	**13 57 40.6**	**+0.2**
ZAIG				*e*Lg	Lg	14 00 08.2	
KSCO	**Kaye Shedlock'**	**8.55**	**16**	*e*Pn	**Pn**	**13 57 42.3**	**+1.1**
HKT	**Hockley**	**8.55**	**93**	*e*Pn	**Pn**	**13 57 40.4**	**-0.7**
KNB	**Kanab**	**8.57**	**318**	*e*Pn	**Pn**	**13 57 40.4**	**-1.0**
W35A	**Tecumseh**	**8.57**	**57**	P	**Pn**	**13 57 41.5**	**+0.2**
	baz=242						
PKCU	**Pink Cliffs**	**8.59**	**322**	*e*Pn	**Pn**	**13 57 42.8**	**+0.8**
IRM	**Iron Mountain**	**8.66**	**295**	P	**Pn**	**13 57 42.6**	**+0.1**
	baz=111						
BC3	**Big Chuckawall**	**8.74**	**291**	P	**Pn**	**13 57 43.3**	**-0.5**
	baz=107						
U34A	**Anderson Ranch**	**8.81**	**48**	P	**Pn**	**13 57 45.3**	**+0.7**
	baz=232						
U34A	**Anderson Ranch**	**8.81**	**48**	*e*Pn	**Pn**	**13 57 44.6**	**+0.1**
LCMT	**Little Creek M**	**8.81**	**317**	*e*Pn	**Pn**	**13 57 45.3**	**+0.6**
Z37A	**Pogue Cattle C**	**8.87**	**72**	P	**Pn**	**13 57 44.6**	**-0.8**
	baz=257						
ISCO	**Idaho Springs**	**8.96**	**0**	*e*Pn	**Pn**	**13 57 50.8**	**+3.9**
MTPU	**Mount Pierson**	**8.98**	**325**	*e*Pn	**Pn**	**13 57 49.6**	**+2.3**
LDFC	**Landfair**	**8.99**	**301**	*e*Pn	**Pn**	**13 57 48.9**	**+1.8**
LDFC				*e*Lg	Lg	14 00 28.4	
W36A	**Wetumka**	**9.04**	**59**	P	**Pn**	**13 57 46.2**	**-1.5**
	baz=244						
SRU	**San Rafael Swe**	**9.18**	**336**	*e*Pn	**Pn**	**13 57 51.2**	**+1.4**
BELC	**Belle Mtn. Jos**	**9.28**	**293**	P	**Pn**	**13 57 50.9**	**-0.3**
	baz=108						
GMRC	**Granite Mounta**	**9.28**	**298**	P	**Pn**	**13 57 51.5**	**+0.3**
	baz=113						
S33A	**Kaszmaul Farm,**	**9.28**	**41**	P	**Pn**	**13 57 51.3**	**+0.3**
	baz=225						
U35A	**Pawnee**	**9.30**	**51**	P	**Pn**	**13 57 51.4**	**+0.1**
	baz=235						
CBKS	**Cedar Bluff**	**9.36**	**30**	P	**Pn**	**13 57 53.1**	**+1.0**
	baz=213						
CBKS	**Cedar Bluff**	**9.36**	**30**	*e*Pn	**Pn**	**13 57 53.8**	**+1.7**
T34A	**McClaskey Farm**	**9.39**	**46**	P	**Pn**	**13 57 52.2**	**-0.3**
	baz=231						
X37A	**Clayton**	**9.47**	**64**	P	**Pn**	**13 57 52.7**	**-1.0**
	baz=249						
NATX	**Nacogdoches**	**9.48**	**81**	*e*Pn	**Pn**	**13 57 53.5**	**-0.3**
O20A	**White River Ci**	**9.53**	**348**	*e*Pn	**Pn**	**13 57 58.7**	**+4.1**
V36A	**Jenks**	**9.54**	**56**	P	**Pn**	**13 57 53.5**	**-1.1**
	baz=241						
PFO	**Pinyon Flats O**	**9.54**	**290**	Pn	**Pn**	**13 57 54.5**	**-0.2**
	0.8nm,0.3s,baz=96,slow=13,SNR=6.5						
PFO				Lg	Lg	14 00 38.9	
	0.5nm,0.3s,baz=165,slow=16,SNR=6.4						
PFO	**Pinyon Flats O**	**9.54**	**290**	P	**Pn**	**13 57 54.2**	**-0.6**
	baz=105						
PFO	**Pinyon Flats O**	**9.54**	**290**	*e*Pn	**Pn**	**13 57 53.6**	**-1.2**
PFO				*e*Lg	Lg	14 00 40.8	
P18A	**Preston Nutter**	**9.55**	**338**	*e*Pn	**Pn**	**13 57 58.3**	**+3.3**
P17A	**Butcher Ranch,**	**9.57**	**336**	*e*Pn	**Pn**	**13 57 55.8**	**+0.6**

S40A	**Lebanon**	12.83	55	P	Pn	13 58 37.7	-2.0
	baz=242						
NVAR	**Mina Array Bea**	12.86	310	Pn	Pn	13 58 43.9	+3.6
	0.1nm,0.3s,baz=126,slow=13,SNR=14						
NVAR				Lg	Lg	14 02 21.2	
	0.0nm,0.3s,baz=127,slow=25,SNR=2.4						
REDW	**Red Top Meadow**	13.18	343	ePn	Pn	13 58 44.2	-0.3
RSSD	**Black Hills**	13.35	5	ePn	Pn	13 58 44.5	-2.3
IMW	**Indian Meadow**	13.70	344	ePn	P	13 58 59.7	-1.0
FLWY	**Flagg Ranch**	13.82	345	ePn	Pn	13 58 54.1	+0.7
PBMO	**Poplar Bluff**	14.00	61	ePn	Pn	13 58 56.7	+1.1
H17A	**Grant Village**	14.09	345	eP	P	13 59 07.4	+2.4
	4.3nm,1.0s						
CMB	**Columbia Colle**	14.10	305	eP	P	13 59 08.2	+3.3
SAO	**San Andreas Ge**	14.38	299	ePn	Pn	13 59 01.8	+0.9
YMR	**Madison River**	14.44	345	ePn	Pn	13 59 03.0	+1.2
RLMT	**Red Lodge**	14.56	350	ePn	Pn	13 59 05.4	+2.0
RLMT				eP	P	13 59 12.9	+2.8
ECSD	**EROS Data Cent**	14.76	27	ePn	P	13 59 09.5	-2.7
SLM	**Saint Louis**	14.89	54	ePn	Pn	13 59 10.1	+2.3
AFDM	**Forest Hills D**	14.93	307	ePn	Pn	13 59 11.2	+2.9
MFID	**Camas Ranch**	14.94	330	ePn	P	13 59 11.9	-2.3
MCMT	**McKenzie Canyo**	15.08	340	ePn	Pn	13 59 13.0	+2.5
MCMT				eP	sP	13 59 18.3	+0.4
GCMT	**Greycliff**	15.27	349	ePn	Pn	13 59 13.8	+0.8
DLMT	**Dillon**	15.50	341	ePn	Pn	13 59 17.9	+2.0
	22nm,1.5s						
BOZ	**Bozeman (W)**	15.52	344	ePn	P	13 59 19.5	-1.2
WVOR	**Wild Horse Val**	15.55	322	ePn	P	13 59 19.5	-1.6
	17nm,1.4s						
HDIL	**Hopedale**	16.46	49	ePn	Pn	13 59 28.1	-0.1
	55nm,0.6s						
HDIL				ePcP	PcP	14 04 22.2	+2.0
USIN	**University of**	16.48	60	ePn	Pn	13 59 28.2	-0.3
	53nm,0.9s						
USIN				ePcP	PcP	14 04 23.7	+3.4
BMO	**Blue Mountains**	16.73	330	ePn	Pn	13 59 31.6	-0.1
BMO				eP	sP	13 59 37.1	+1.1
CMIG	**Matias Romero**	16.84	142	Pn	P	13 59 34.9	-0.4
	0.3nm,0.3s,baz=336,slow=13,SNR=5.3						
CHMT	**Chamberlain Mo**	17.11	342	ePn	Pn	13 59 36.3	-0.3
SWET	**Sewanee**	17.13	70	ePn	P	13 59 38.1	-0.5
	6.6nm,0.9s						
MSO	**Missoula**	17.22	341	ePn	Pn	13 59 35.4	-2.5
MSO				eP	sP	13 59 43.4	+1.9
JFWS	**Jewell Farm**	17.24	41	ePn	Pn	13 59 35.2	-2.8
JFWS				eP	sP	13 59 42.8	+1.2
EGMT	**Eagleton**	17.47	351	ePn	P	13 59 42.9	+0.7
	20nm,0.8s						
YBH	**Yreka Blue Hor**	17.49	313	P	P	13 59 43.2	+0.7
	0.1nm,0.3s,baz=83,slow=6.1,SNR=7.2						
YBH	**Yreka Blue Hor**	17.49	313	ePn	P	13 59 44.2	+1.7
	14nm,1.8s						
SPMN	**Marine on St.**	17.57	31	ePn	Pn	13 59 42.0	-0.2
WCI	**Wyandotte Cave**	17.59	60	ePn	Pn	13 59 41.8	-0.7
	23nm,0.8s						
BLO	**Bloomington**	17.75	57	ePn	P	13 59 45.8	+0.4
	32nm,0.8s						
SFIN	**Lafayette**	17.85	53	ePn	P	13 59 46.3	-0.1
	32nm,0.6s						
CPCT	**Cooper Cave**	18.31	70	ePn	P	13 59 52.6	+1.1
	4.9nm,0.9s						
TKL	**Tuckaleechee C**	18.94	69	P	P	13 59 58.4	-0.2
	0.3nm,0.3s,baz=100,slow=7.8,SNR=9.1						
TKL	**Tuckaleechee C**	18.94	69	eP	P	13 59 57.2	-1.3
	14nm,1.0s						
H04A	**Detroit Lake**	18.97	321	eP	P	13 59 57.3	-1.5
H04A				ePn	sP	14 00 03.2	+2.5
AGMN	**Agassiz Nation**	19.00	20	eP	Pn	13 59 59.6	0.0
	18nm,1.0s						
D08A	**Wollman Farm,**	19.16	332	eP	P	13 59 59.7	-1.1
	22nm,1.5s						
WALA	**Waterton Lakes**	19.26	343	eP	P	14 00 01.6	-0.4
	11nm,1.4s						
TZTN	**Tazewell**	19.27	67	eP	P	14 00 02.3	+0.2
	21nm,1.1s						
NEW	**Newport**	19.49	337	P	Pn	14 00 05.4	-0.2
	0.1nm,0.3s,baz=140,slow=14,SNR=5.1						
NEW	**Newport**	19.49	337	eP	P	14 00 05.0	+0.5
	11nm,1.3s						
COWI	**Conover**	19.96	35	eP	Pn	14 00 11.1	-0.1
	18nm,1.0s						
LTY	**Liberty**	20.07	329	eP	Pn	14 00 12.2	-0.3
	18nm,1.6s						
LON	**Longmire**	20.21	326	eP	Pn	14 00 14.2	0.0
	7.4nm,1.0s						
EYMN	**Ely**	20.26	28	eP	Pn	14 00 14.7	-0.1
	16nm,0.6s						
D05A	**Enumclaw**	20.61	327	eP	P	14 00 15.4	-1.2
	40nm,1.3s						
ACSO	**Alum Creek Sta**	20.68	57	eP	P	14 00 17.6	+0.2
	98nm,1.5s						
ULM	**Lac du Bonnet**	20.76	18	P	P	14 00 18.4	+0.3
	30nm,0.8s,baz=208,slow=11,SNR=23						
ULM	**Lac du Bonnet**	20.76	18	eP	P	14 00 18.0	-0.1
	59nm,1.1s						
KMSC	**Kings Mountain**	20.86	72	eP	P	14 00 19.9	+0.5
	14nm,0.9s						
AAM	**Ann Arbor**	21.02	51	eP	P	14 00 21.1	+0.1
	64nm,0.9s						
B06A	**Marblemount**	21.38	330	eP	P	14 00 26.8	+1.9
	23nm,0.9s						
BLA	**Blacksburg**	21.86	66	eP	P	14 00 33.2	+3.0
	44nm,1.3s						
MCWV	**Mont Chateau**	22.81	60	eP	P	14 00 42.3	+2.0
	20nm,1.1s						
URVA	**University of**	24.18	66	eP	P	14 00 56.6	+2.7
SSPA	**Standing Stone**	24.52	59	eP	P	14 00 58.2	+1.3
	31nm,0.8s						
SADO	**Sadowa**	25.04	49	P	P	14 01 00.6	-1.0
	4.8nm,0.6s,baz=269,slow=7.8,SNR=5.0						
SADO	**Sadowa**	25.04	49	eP	P	14 01 03.1	+1.5
	6.8nm,0.8s						
YKA	**Yellowknife Ar**	32.21	352	P	P	14 02 05.8	+0.5
	2.3nm,1.0s,baz=161,slow=8.1,SNR=22						
YKA				PcP	PcP	14 04 53.8	0.0
	0.6nm,1.0s,baz=173,slow=2.2,SNR=5.7						
YKB5	**Yellowknife Ar**	32.21	352	eP	P	14 02 04.9	-0.4
YKB5				ePcP	PcP	14 04 56.9	+3.1
INK	**Inuvik**	40.88	345	eP	P	14 03 20.5	+1.3
	3.7nm,0.9s						
IL1	**Eielson Array**	42.44	335	eP	P	14 03 33.6	+1.6
ILAR	**Eielson Array**	42.44	335	P	P	14 03 33.0	+0.9
	1.0nm,0.9s,baz=127,slow=5.4,SNR=10						
RND	**Reindeer**	42.47	333	eP	P	14 03 34.9	+2.5
	11nm,1.4s						
TRF	**Thorofare Moun**	43.06	332	eP	P	14 03 39.1	+1.8
	5.5nm,1.0s						
BWN	**Browne**	43.09	334	eP	P	14 03 39.4	+2.1
	16nm,0.6s						
PPLA	**Purkeypile**	43.58	331	eP	P	14 03 43.2	+1.7
	16nm,1.2s						
BPAW	**Bear Paw Mtn.**	43.64	333	eP	P	14 03 43.5	+1.7
	10nm,1.2s						
CAST	**Castle Rocks**	43.77	332	eP	P	14 03 44.2	+1.4
	17nm,1.6s						
SVW2	**Sparrevohn**	44.37	328	eP	P	14 03 49.3	+1.6
	4.7nm,0.8s						
COLD	**Coldfoot**	44.90	337	eP	P	14 03 53.8	+2.0
	4.4nm,1.0s						
SUMG	**Summit**	54.10	20	*i* P	P	14 05 02.7	+0.3
	9.7nm,0.9s						
SUMG	**Summit**	54.10	20	eP	P	14 05 02.7	+0.3
	10nm,0.9s						
DAG	**Danmarks Havn**	59.58	15	*i* P	P	14 05 40.7	-0.1
	9.6nm,0.9s						
SEY	**Seymchan**	68.17	331	P	P	14 06 37.9	+0.4
	1.3nm,0.8s,baz=91,slow=2.6,SNR=4.8						
PETK	**Petropavlovsk-**	69.70	320	P	P	14 06 47.6	+0.4
	5.2nm,0.9s,baz=95,slow=11,SNR=4.1						
TIXI	**Tiksi**	71.01	344	P	P	14 06 54.3	-0.6
	1.9nm,0.8s,baz=32,slow=4.4,SNR=7.1						
TIXI	**Tiksi**	71.01	344	eP	P	14 06 54.4	-0.6
	7.2nm,1.4s						
ARCES	**ARCESS Array B**	73.86	16	P	P	14 07 11.8	-0.2
	2.9nm,0.6s,baz=323,slow=5.5,SNR=28						
NOA	**NORSAR Array B**	75.18	27	P	P	14 07 19.1	-0.7
	1.0nm,0.8s,baz=307,slow=5.9,SNR=2.4						
FIA1	**FINESS Array S**	80.11	21	eP	P	14 07 47.0	-0.3
FINES	**FINESS Array B**	80.11	21	P	P	14 07 46.9	-0.3
	4.3nm,0.8s,baz=327,slow=3.2,SNR=9.8						
GERES	**GERESS Array B**	84.04	35	P	P	14 08 08.0	-0.4
	0.7nm,0.6s,baz=331,slow=5.0,SNR=6.0						
STHS	**Stebnicka Huta**	87.22	32	eP	P	14 08 22.5	-1.5
ARU	**Arti**	92.07	9	eP	P	14 08 46.7	+0.1
	5.1nm,1.1s						
ZALV	**Zalesovo Beam**	95.10	354	P	P	14 09 00.5	-0.1
	0.4nm,0.4s,baz=344,slow=4.8,SNR=3.6						
SONM	**Songino Array**	96.57	339	P	P	14 09 08.2	+0.6
	0.3nm,0.4s,baz=45,slow=2.4,SNR=2.3						
HHC	**Hu-ho-hao-te**	100.80	332	eP	Pdif	14 09 25.9	-0.8
HHC				pmax	pmax		
	comp=Z,14nm,1.4s						
HHC				pmax	pmax		
	comp=Z,210nm,7.2s						
CD2	**Chengdu**	112.54	333	PKP	PKiKP	14 14 16.1	+1.7
WRA	**Warramunga Arr**	125.25	266	PKP	PKPdf	14 14 38.1	-0.9
	comp=Z,1.2nm,0.7s,baz=62,slow=2.2,SNR=14						
ASAR	**Alice Springs**	127.07	262	PKP	PKPdf	14 14 41.9	-0.5
	comp=Z,0.6nm,0.7s,baz=80,slow=2.9,SNR=9.1						

*INMG **02** 14:15:14.6±0.6, 32°.20N×7°.76W, h18km±6km, ML2.4, Error ellipse: s-maj=9.9km s-min=7.9km az=123.0*
*CSEM **02** 14:15:18.1±0.6, 32°.56N×7°.63W, h10km, ML2.5/4, Error ellipse: s-maj=15.6km s-min=10.8km az=87.0*

MDD 02 14:15:14.4±3.6, 32°.29N×7°.68W, h0km, mb3.6/4, Error ellipse: s-maj=56.4km s-min=32.0km az=93.0, PRXIMO, Morocco

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PFVI	**Vila Bisbo**	4.93	349	ePn	Pn	14 16 28.4	-1.3
PFVI				eSn	Sn	14 17 23.4	-4.0
PFVI	**Vila Bisbo**	4.93	349	ePn	Pn	14 16 28.4	-1.3
PFVI				eSn	Sn	14 17 23.4	-4.0
MORF	**Marmelete**	5.07	351	ePn	Pn	14 16 29.8	-2.0
MORF	**Marmelete**	5.07	351	Pn	Pn	14 16 29.8	-2.0
MORF	**Marmelete**	5.07	351	ePn	Pn	14 16 29.8	-2.0
PVAQ	**Vaqueiros**	5.11	360	ePn	Pn	14 16 30.8	-1.4
PVAQ				eSn	Sn	14 17 27.8	-4.0
PVAQ				A	A	14 17 32.3	
	2.9nm,0.7s						
PVAQ	**Vaqueiros**	5.11	360	Pn	Pn	14 16 30.8	-1.4
PVAQ				Sn	Sn	14 17 27.8	-4.0
	2.9nm,0.7s						
PVAQ	**Vaqueiros**	5.11	360	ePn	Pn	14 16 30.8	-1.4
PVAQ				Sn	Sn	14 17 27.8	-4.0
	2.9nm,0.7s						
EGRO	**El Granado**	5.24	2	Pn	Pn	14 16 32.9	-1.0
	0.3nm,0.1s,SNR=7.9						
EGRO				Sn	Sn	14 17 30.2	-4.9
	0.5nm,0.2s,SNR=7.9						
EGRO	**El Granado**	5.24	2	Pn	Pn	14 16 32.9	-1.1
	0.3nm,0.1s,SNR=7.9						
EGRO				Sn	Sn	14 17 30.2	-4.9
	0.5nm,0.2s,SNR=7.9						
PCVE	**Castro Verde**	5.34	357	ePn	Pn	14 16 34.4	-1.0
PCVE				eSn	Sn	14 17 33.8	-3.9
PCVE	**Castro Verde**	5.34	357	Pn	Pn	14 16 34.4	-1.0
PCVE				Sn	Sn	14 17 33.8	-3.9
PCVE	**Castro Verde**	5.34	357	ePn	Pn	14 16 34.4	-1.0
PCVE				eSn	Sn	14 17 33.8	-3.9
EMIN	**Mina Concepcio**	5.53	8	Pn	Pn	14 16 36.4	-1.6
	0.2nm,0.1s,SNR=7.9						
EMIN				Sn	Sn	14 17 36.7	-5.6
	0.2nm,0.2s,SNR=7.9						
EMIN	**Mina Concepcio**	5.53	8	Pn	Pn	14 16 36.4	-1.6
	0.2nm,0.1s,SNR=7.9						
EMIN				Sn	Sn	14 17 36.7	-5.6
	0.2nm,0.2s,SNR=7.9						
PBAR	**Barrancos**	5.90	5	ePn	Pn	14 16 42.5	-0.6
PBAR				eSn	Sn	14 17 46.3	-5.1
PBAR	**Barrancos**	5.90	5	Pn	Pn	14 16 42.5	-0.6
PBAR				Sn	Sn	14 17 46.3	-5.1
PBAR	**Barrancos**	5.90	5	ePn	Pn	14 16 42.5	-0.6
PBAR				eSn	Sn	14 17 46.3	-5.1
ECAB	**El Cabril**	6.07	17	Pn	Pn	14 16 44.5	-0.9
	0.4nm,0.2s,SNR=6.0						
ECAB				Sn	Sn	14 17 48.9	-6.6
	0.1nm,0.1s,SNR=7.9						
ECAB	**El Cabril**	6.07	17	Pn	Pn	14 16 44.5	-0.9
	0.4nm,0.2s,SNR=6.0						
ECAB				Sn	Sn	14 17 48.9	-6.6
	0.1nm,0.1s,SNR=7.9						
EADA	**Adamuz**	6.39	23	Pn	Pn	14 16 48.9	-1.0
	0.8nm,0.2s,SNR=7.9						
EADA	**Adamuz**	6.39	23	Pn	Pn	14 16 48.9	-1.0
	0.8nm,0.2s,SNR=7.9						

IDC 02 14:15:48.6±4.4, 15°.46S×173°.86W, h0km, mb3.8/2, mb1 4.0/3, mb1mx3.6/42, mbtmp3.8/3, ML3.9/1, Error ellipse: s-maj=264.4km s-min=27.5km az=148.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	2.54	53	Pn	Pn	14 16 30.3	-0.9
	22nm,0.3s,baz=181,slow=4.2,SNR=40						
AFI				Sn	Sn	14 16 56.4	-6.5
	47nm,0.3s,baz=61,slow=23,SNR=26						
ASAR	**Alice Springs**	49.66	252	P	P	14 24 42.5	-0.1
	2.3nm,0.7s,baz=86,slow=8.3,SNR=32						
YKA	**Yellowknife Ar**	90.33	24	P	P	14 28 52.6	+1.4
	0.3nm,0.9s,baz=243,slow=3.7,SNR=4.3						
BRTR	**Keskin Array B**	145.92	321	PKPbc	PKPdf	14 35 28.8	-1.2
	0.3nm,0.5s,baz=23,slow=4.7,SNR=2.9						

IDC 02 14:18:53.5±3.7, 20°.05S×177°.66W, h488km±48km, mb3.3/5, mb1 3.5/6, mb1mx3.1/40, mbtmp4.3/6, Error ellipse: s-maj=97.2km s-min=28.4km az=152.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	8.31	44	P	P	14 20 54.6	+1.6
	2.8nm,0.3s,baz=333,slow=9.0,SNR=7.5						
AFI				S	S	14 22 29.1	-1.9
	2.2nm,0.3s,baz=170,slow=19,SNR=3.8						
CTA	**Charters Tower**	33.85	264	P	P	14 24 55.5	+0.8
	1.4nm,0.3s,baz=90,slow=12,SNR=8.8						
STKA	**Stephens Creek**	38.27	244	P	P	14 25 30.4	-0.9
	0.8nm,0.5s,baz=95,slow=12,SNR=5.0						
ASAR	**Alice Springs**	44.93	256	P	P	14 26 24.0	-0.3
	5.0nm,0.5s,baz=91,slow=7.9,SNR=66						
ASAR				PcP	PcP	14 27 55.6	0.0
	0.2nm,0.5s,baz=116,slow=4.3,SNR=2.9						
WRA	**Warramunga Arr**	44.98	262	P	P	14 26 23.9	-0.7
	2.1nm,0.5s,baz=97,slow=7.7,SNR=61						
FITZ	**Fitzroy Crossi**	53.40	262	P	P	14 27 27.3	+0.2
	1.0nm,0.4s,baz=76,slow=4.2,SNR=11						

*MOS **02** 14:25:12.0±1.1, 6°.00N×126°.96E, h33km, mb4.9/25, Error ellipse: s-maj=19.7km s-min=7.1km az=118.7*
*ISCJB **02** 14:25:18.6±0.5, 5°.97N±0°.02×127°.13E±0°.04, h96km±3km, mb4.4/71, Error ellipse: s-maj=6.6km s-min=3.5km az=166.5*
*MAN **02** 14:25:18, 5°.89N×127°.10E, h66km, mb5.4, ML4.4, MS4.6*
*IDC **02** 14:25:20.3±1.5, 5°.95N×127°.03E, h93km±13km, mb4.0/23, mb1 4.1/25, mb1mx3.9/61, mbtmp4.3/25, MS3.4/5, Ms1 3.4/5, ms1mx3.0/43, Error ellipse: s-maj=21.7km s-min=9.2km az=71.0*
*DJA **02** 14:25:20.7±0.6, 6°N±5°×12°7E±°, h71km±5km, M5.0/26, mb4.8/26, mB5.4/10, MLv5.3/3, Mw(mB)4.9/10, Mwp5.6/1*
*NEIC **02** 14:25:21.6±1.0, 5°.98N×127°.01E, h107km±9km, mb4.6/29, Error ellipse: s-maj=9.6km s-min=5.3km az=73.0*
*KLM **02** 14:25:23.9, 5°.99N×126°.82E, h86km, mb4.7, MS6.0*

ISC 02 14:25:20.5±0.8, 5°.99N±0°.04×127°.04E±0°.06, h94km±6km, n173, σ1.3/77/193, mb4.5/71, 19C-5D, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MATI	**Mati**	1.23	321	eP	Pn	14 25 41.7	-1.5
MATI				eS	Sn	14 25 59.9	-0.4
DAV	**Davao City (W)**	1.81	307	P	Pn	14 25 51.5	+1.1
	568nm,0.3s,baz=117,slow=1.4,SNR=168						
DAV				S	Sn	14 26 15.7	+2.6
	218nm,0.3s,baz=292,slow=21,SNR=17						
DAV				LR	LR	14 26 45.0	
	comp=Z,1μm,18.2s,baz=155,slow=46						
DAV	**Davao City (W)**	1.81	307	ePn	Pn	14 25 50.9	+0.5
DAV				S	Sn	14 26 15.7	+2.6
KCP	**Kidapawan**	2.19	298⇓	eP	Pn	14 25 53.9	-1.6
KCP				*i* S	Sn	14 26 22.4	+0.3
BIPH	**Bislig**	2.28	343	eS	Sn	14 26 23.2	-1.0
BUKP	**Musuan**	2.72	314	eP	Pn	14 26 03.0	+0.6
BUKP				eS	Sn	14 26 35.8	+1.2
SGSI	**Sangihe**	2.74	213	P	Pn	14 26 00.0	-2.7
CTBH	**Cotabato--PC H**	3.03	294	eP	Pn	14 26 06.1	-0.5
CTBH				*i* S	Sn	14 26 43.7	+1.6
CGP	**Cagayan de Oro**	3.38	317⇑	eP	Pn	14 26 12.2	+0.9
CGP				eS	Sn	14 26 51.2	+0.7
SCPH	**Surigao**	4.07	338	eP	Pn	14 26 21.6	+1.0
SCPH				eS	Sn	14 27 09.6	+2.4
PAGZ	**Pagadian**	4.07	297	eP	Pn	14 26 21.2	+0.5
IPIL	**Ipil**	4.78	292	eP	Pn	14 26 31.3	+1.0
TBP	**Tagbilaran**	4.84	320⇑	eP	Pn	14 26 32.0	+0.9
LLP	**Lapu-Lapu**	5.27	325	eP	Pn	14 26 37.2	+0.4
LLP				eS	Sn	14 27 37.5	+1.2
GUIM	**Jordan**	6.37	317	eP	Pn	14 27 03.6	+12
LBMI	**Labuha**	6.60	176	P	Pn	14 26 57.1	+2.1
	148nm,0.9s,2μm1.2nm						
JAP	**San Jose, Anti**	6.91	313⇑	eP	Pn	14 26 58.1	-1.1
JAP				eS	Sn	14 28 08.8	-7.6
RCP	**Roxas**	6.97	323⇑	eP	Pn	14 27 01.6	+1.5
MRSI	**Marisa**	7.48	223	P	Pn	14 27 06.6	-0.4
	362nm,0.7s,4μm						
SWI	**Sorong**	8.01	148	P	Pn	14 27 13.0	-1.2
	175nm,0.8s,2μm						
SANI	**Sanana**	8.06	188	P	Pn	14 27 13.8	-1.1
	50nm,0.9s,2μm						
LUWI	**Luwuk**	8.18	212	P	Pn	14 27 17.6	+1.0
LUWI	**Luwuk**	8.18	212	ePn	Pn	14 27 17.7	+1.0
MYLDM	**Lahad Datu**	8.54	265	ePn	Pn	14 27 23.1	+1.7
NLAI	**Namlea**	9.17	180	P	Pn	14 27 26.7	-3.3
	50nm,0.6s,2μm						
TSM	**Tawau**	9.29	260	⇑P	Pn	14 27 30.4	-1.2
SDKM	**Sandakan**	9.80	268	⇑P	Pn	14 27 38.4	-0.3
KDM	**Kudat**	10.19	276	⇑P	Pn	14 27 43.5	-0.4
FAKI	**Fak Fak**	10.27	149	P	Pn	14 27 42.8	-2.2
	84nm,0.9s						
KKM	**Kota Kinabalu**	10.77	271	⇑P	Pn	14 27 52.4	+0.5
TTSI	**Tana Toraja**	11.51	219	P	Pn	14 28 03.5	+1.6
	66nm,1.1s,1μm						
SPSI	**Sidrap Palu**	12.27	216	P	Pn	14 28 08.6	-3.4
	24nm,0.9s						
BKB	**Balikpapan**	12.43	235	P	Pn	14 28 16.0	+1.8
	127nm,1.0s						
KAPI	**Kappang**	13.13	214	P	Pn	14 28 21.9	-1.6
	1.1nm,0.3s,baz=30,slow=9.2,SNR=7.9						
KAPI				LR	LR	14 34 00.5	
	comp=Z,182nm,18.4s,baz=35,slow=40						
BSSI	**Bau Bau, Buton**	13.71	209	P	Pn	14 28 28.2	-2.9
	37nm,1.1s						
BTM	**Bintulu**	14.19	259	⇑P	Pn	14 28 39.0	+1.8
SBUM	**Sibu**	15.19	257	⇑P	P	14 28 51.6	-1.3
SBUM	**Sibu**	15.19	257	ePn	P	14 28 51.6	-1.3
	159nm,0.7s						
MMRI	**Maumere**	15.30	198	P	Pn	14 28 50.8	-0.6
MMRI	**Maumere**	15.30	198	ePn	Pn	14 28 52.5	+1.1
	37nm,0.7s						
BBKI	**Banjar Baru**	15.38	233	P	P	14 28 54.1	-0.9
SOEI	**Soe**	15.88	190	P	P	14 29 03.7	+3.0
SOEI	**Soe**	15.88	190	ePn	P	14 29 01.3	+0.6
	57nm,0.9s						
BATI	**Baumata**	16.44	192	P	Pn	14 29 05.8	+0.1
STKI	**Sintang**	16.61	250	P	P	14 29 09.2	+0.5
	37nm,1.1s						
KSM	**Kuching**	17.29	256	⇑P	P	14 29 16.6	+0.5
KSM	**Kuching**	17.29	256	eP	P	14 29 17.2	+1.1
	37nm,0.9s						
TWSI	**Taliwang, Sumb**	17.80	215	P	Pn	14 29 22.6	+0.4
	29nm,1.0s,697nm						
TPUB	**Ta-pu**	18.29	341	eP	P	14 29 25.9	-1.2
GUMO	**Guam**	19.11	65	LR	LR	14 35 31.2	
	comp=Z,66nm,21.6s,baz=225,slow=32						
MTN	**Manton Dam**	19.15	168	eP	P	14 29 34.3	-2.2
JAGI	**Jajag, Banyuwa**	19.27	222	P	P	14 29 35.9	-2.0
	46nm,0.9s						
NGJI	**Ngawi**	20.44	230	P	Pn	14 29 54.5	+1.0
	79nm,1.1s						
PPBI	**Pangkal Pinang**	22.39	249	P	P	14 30 10.5	-0.9
	28nm,0.9s						
TPRI	**Tanjung Pinang**	23.02	258	P	P	14 30 15.9	-1.9
	50nm,1.0s						
MYKOM	**Kota Tinggi**	23.51	261	eP	P	14 30 21.7	-0.6
	12nm,0.8s						
CBJI	**Citeko**	23.62	239	P	P	14 30 27.1	+3.8
	152nm,0.9s,17μm						
FITZ	**Fitzroy Crossi**	23.98	183	P	P	14 30 25.5	-0.9
	10nm,0.8s,baz=12,slow=6.5,SNR=20						
FITZ	**Fitzroy Crossi**	23.98	183	eP	P	14 30 25.4	-1.0
	9.9nm,0.8s						
KGM	**Kluang**	23.99	261	⇑P	P	14 30 28.7	+2.1
SKNT	**Sakolnakorn**	25.06	298	P	P	14 30 37.3	+0.9
	18nm,0.9s						
CBIJ	**Chichi jima**	25.46	33	eP	P	14 30 38.8	-1.1
	93nm,0.7s						
FRIM	**Kepong**	25.48	265	⇑P	P	14 30 42.0	+1.8
NAYO	**Nakonayok**	26.61	290	P	P	14 30 52.9	+2.5
	7.6nm,0.7s						
WRAB	**Tennant Creek**	26.75	165⇓	eP	P	14 30 51.0	-0.5
WRAB				pmax	pmax		
	comp=Z,20nm,0.6s						
WRAB	**Tennant Creek**	26.75	165	eP	P	14 30 50.7	-0.8

LZH				PP	PnPn	14 33 51.1	+5.5
LZH				eS	S	14 37 59.3	+3.1
LZH				sS	sS	14 38 41.0	+7.2
LZH				SS	SnSn	14 40 26.0	-11
LZH				pmax	pmax		
	comp=Z,29nm,1.1s						
LZH				pmax	pmax		
	comp=Z,130nm,4.8s						
HHC	**Hu-ho-hao-te**	**37.37**	**341**	*e*P	**P**	**14 32 24.7**	**+0.5**
HHC				pP	pP	14 32 48.7	+2.6
HHC				sP	sP	14 33 08.7	+12
HHC				S	S	**14 38 04.7**	**-0.7**
HHC				pmax	pmax		
	comp=Z,38nm,1.0s						
HHC				pmax	pmax		
	comp=Z,130nm,5.3s						
USRK	**Ussuriysk Ar.**	**38.30**	**6**	P	**P**	**14 32 32.5**	**+0.6**
	comp=Z,2.2nm,0.6s,baz=185,slow=6.2,SNR=5.4						
USRK				LR	LR	14 48 08.1	
	comp=Z,45nm,21.9s,baz=301,slow=36						
STKA	**Stephens Creek**	**40.13**	**161**	P	**P**	**14 32 46.9**	**-0.4**
	comp=Z,4.6nm,0.8s,baz=328,slow=10,SNR=11						
STKA	**Stephens Creek**	**40.13**	**161**	*e*P	**P**	**14 32 46.6**	**-0.7**
STKA				pmax	pmax		
	comp=Z,2.0nm,0.8s						
STKA	**Stephens Creek**	**40.13**	**161**	*e*P	**P**	**14 32 46.6**	**-0.7**
	comp=Z,1.5nm,0.8s						
GTA	**Gaotai**	**41.35**	**328**	P	**P**	**14 32 58.1**	**+0.7**
GTA				pP	pP	14 33 22.6	+3.1
GTA				sP	sP	14 33 35.4	+5.1
GTA				pmax	pmax		
	comp=Z,8.0nm,0.9s						
PKIN	**Phulchoki**	**44.97**	**303**	*e*P	**P**	**14 33 25.8**	**-1.1**
	comp=Z,6.1nm,0.6s						
ULN	**Ulaanbaatar**	**45.09**	**341**	*ce*P	**P**	**14 33 28.3**	**+0.9**
ULN				pmax	pmax		
	comp=Z,7.0nm,1.0s						
ULN	**Ulaanbaatar**	**45.09**	**341**	*e*P	**P**	**14 33 27.6**	**+0.2**
	comp=Z,6.9nm,1.0s						
KKN	**Kakani**	**45.14**	**304**	*e*P	**P**	**14 33 27.8**	**-0.4**
	comp=Z,22nm,1.0s						
DMN	**Daman**	**45.22**	**303**	*e*P	**P**	**14 33 27.7**	**-1.2**
	comp=Z,6.3nm,0.3s						
SONM	**Songino Array**	**45.28**	**340**	P	**P**	**14 33 28.6**	**-0.2**
	comp=Z,2.0nm,0.9s,baz=155,slow=9.1,SNR=10						
SONA1	**Songino Array**	**45.28**	**340**	*e*P	**P**	**14 33 27.5**	**-1.4**
GKN	**Gorkha**	**45.75**	**304**	*e*P	**P**	**14 33 32.4**	**-0.5**
	comp=Z,5.4nm,0.4s						
KOLN	**Koldanda**	**46.53**	**303**	*e*P	**P**	**14 33 39.3**	**+0.2**
	comp=Z,26nm,0.6s						
DANN	**Dangsing**	**46.59**	**304**	*e*P	**P**	**14 33 40.2**	**+0.5**
	comp=Z,1.2nm,0.5s						
PYUN	**Piuthan**	**47.15**	**303**	*e*P	**P**	**14 33 44.2**	**+0.2**
	comp=Z,51nm,1.0s						
TLY	**Talaya**	**49.50**	**341**	*e*P	P	14 34 11.7	+10
TLY				pmax	pmax		
	comp=Z,5.0nm,0.8s						
WMQ	**Urumqi**	**51.08**	**324**	*e*P	**P**	**14 34 11.5**	**-2.0**
WMQ				pmax	pmax		
	comp=Z,5.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,17nm,3.6s						
WMQ				LR	LR		
	comp=N,19nm,18.6s						
WMQ				LR	LR		
	comp=E,11nm,17.0s						
WMQ				LR	LR		
	comp=Z,32nm,18.6s						
SMLA	**Simla**	**52.91**	**305**	*e*P	**P**	**14 34 27.5**	**+0.3**
PETK	**Petropavlovsk-**	**53.23**	**23**	P	**P**	**14 34 29.9**	**+0.7**
	comp=Z,2.2nm,0.7s,baz=203,slow=2.3,SNR=8.5						
MK01	**Makanchi Array**	**55.88**	**324**	*e*P	**P**	**14 34 48.5**	**0.0**
MK31	**Makanchi Array**	**55.90**	**324**	*e*P	**P**	**14 34 48.9**	**+0.2**
MK31	**Makanchi Array**	**55.90**	**324**	*e*P	**P**	**14 34 48.9**	**+0.2**
MKAR	**Makanchi Array**	**55.90**	**324**	P	**P**	**14 34 49.1**	**+0.5**
	comp=Z,3.7nm,0.3s,baz=117,slow=7.3,SNR=71						
MKAR	**Makanchi Array**	**55.90**	**324**	*e*P	**P**	**14 34 49.0**	**+0.3**
MAKZ	**Makanchi**	**56.09**	**324**	*e*P	**P**	**14 34 50.1**	**+0.1**
MAKZ				pmax	pmax		
	comp=Z,10.0nm,1.0s						
MAKZ	**Makanchi**	**56.09**	**324**	*e*P	**P**	**14 34 50.1**	**+0.1**
	comp=Z,10.0nm,1.0s						
KSH	**Kashi**	**56.69**	**314**	P	**P**	**14 34 56.4**	**+1.9**
KSH				*e*pP	pP	14 35 23.0	+5.2
KSH				*e*sP	sP	14 35 35.8	+7.5
KSH				S	**S**	**14 42 38.2**	**-1.9**
KSH				ScS	**ScS**	**14 44 32.2**	**-3.0**
KSH				pmax	pmax		
	comp=Z,77nm,4.5s						
KSH				LR	LR		
	comp=N,66nm,4.5s						
KSH				LR	LR		
	comp=E,86nm,5.2s						
TKM2	**Tokmak 2**	**58.28**	**318**	*e*P	**P**	**14 35 05.4**	**-0.4**
TKM2				pmax	pmax		
	comp=Z,4.0nm,1.0s						
TKM2	**Tokmak 2**	**58.28**	**318**	*e*P	**P**	**14 35 05.4**	**-0.4**
	comp=Z,4.2nm,1.0s						
ZAA0	**Zalesovo Array**	**58.73**	**332**	*e*P	**P**	**14 35 07.6**	**-0.8**
ZALV	**Zalesovo Beam**	**58.73**	**332**	P	**P**	**14 35 07.4**	**-1.0**
	comp=Z,1.2nm,0.3s,baz=116,slow=6.8,SNR=8.7						
AAK	**Ala-Archa**	**58.91**	**317**	||*e*P	**P**	**14 35 10.9**	**+0.8**
AAK				pmax	pmax		
	comp=Z,5.0nm,1.0s						
EKS2	**Erkin-Say**	**59.41**	**317**	*e*P	**P**	**14 35 13.5**	**0.0**
EKS2				pmax	pmax		
	comp=Z,5.0nm,0.8s						
EKS2	**Erkin-Say**	**59.41**	**317**	*e*P	**P**	**14 35 13.5**	**0.0**
	comp=Z,4.7nm,0.8s						
NVS	**Novosibirsk**	**60.02**	**332**	*e*P	**P**	**14 35 16.3**	**-0.9**
KURK	**Kurchatov**	**60.02**	**327**	P	**P**	**14 35 16.7**	**-0.6**
KURK				pmax	pmax		
	comp=Z,38nm,1.0s						
KURK	**Kurchatov**	**60.02**	**327**	*e*P	**P**	**14 35 17.2**	**-0.1**
	comp=Z,15nm,0.8s						
KURBB	**Kurchatov Arra**	**60.02**	**327**	P	**P**	**14 35 17.6**	**+0.2**
	comp=Z,11nm,0.7s,baz=126,slow=6.0,SNR=128						
KBL	**Kabul**	**60.42**	**306**	*e*P	**P**	**14 35 19.0**	**-1.7**
KBL				pmax	pmax		
	comp=Z,7.0nm,0.7s						
KBL	**Kabul**	**60.42**	**306**	*e*P	**P**	**14 35 19.0**	**-1.7**
	comp=Z,7.2nm,0.7s						
TIXI	**Tiksi**	**65.59**	**1**	||*e*P	**P**	**14 35 55.4**	**+1.5**
TIXI				pmax	pmax		
	comp=Z,1.0nm,1.0s						
TIXI	**Tiksi**	**65.59**	**1**	*e*P	**P**	**14 35 53.2**	**-0.6**
	comp=Z,7.7nm,1.5s						
BVA0	**Borovoye Array**	**65.61**	**326**	*i*P	**P**	**14 35 54.6**	**+0.2**
BVA0				pmax	pmax		
	comp=Z,9.0nm,1.0s						
BVAR	**Borovoye Array**	**65.61**	**326**	P	**P**	**14 35 54.9**	**+0.4**
	comp=Z,5.0nm,0.6s,baz=121,slow=7.2,SNR=34						
BRVK	**Borovoye**	**65.69**	**326**	*ce*P	**P**	**14 35 54.8**	**-0.1**
BRVK				pmax	pmax		
	comp=Z,13nm,1.0s						
BRVK	**Borovoye**	**65.69**	**326**	*e*P	**P**	**14 35 54.6**	**-0.3**
	comp=Z,13nm,1.0s						
ZRNK	**Zerenda**	**66.35**	**326**	P	**P**	**14 35 58.2**	**-0.9**
ZRNK				pmax	pmax		
	comp=Z,15nm,0.9s						
ZRNK	**Zerenda**	**66.35**	**326**	*e*P	**P**	**14 35 59.0**	**-0.1**
	comp=Z,12nm,0.6s						
GEYT	**Alibeck**	**69.74**	**308**	P	**P**	**14 36 21.0**	**+0.2**
	comp=Z,7.1nm,0.9s,baz=152,slow=4.4,SNR=12						
AB31	**Akbulak array**	**70.61**	**320**	P	**P**	**14 36 24.3**	**-1.5**
AB31				pmax	pmax		
	comp=Z,1.0nm,0.4s						
AKTO	**Aktyubinsk**	**72.10**	**321**	P	**P**	**14 36 33.7**	**-1.0**
AKTO				pmax	pmax		
	comp=Z,5.0nm,0.8s						
SVE	**Sverdlovsk**	**72.21**	**328**	*e*P	**P**	**14 36 35.3**	**+0.1**
ARU	**Arti**	**73.21**	**327**	P	**P**	**14 36 40.6**	**-0.5**
	comp=Z,1.7nm,0.3s,baz=64,slow=7.5,SNR=4.7						
ARU	**Arti**	**73.21**	**327**	*c i*P	**P**	**14 36 40.7**	**-0.4**
ARU						14 39 26.5	
ARU				S	**SKiKP**	**14 46 08.1**	**+4.2**
ARU				pmax	pmax		
	comp=Z,8.0nm,1.2s						
ARU	**Arti**	**73.21**	**327**	*e*P	**P**	**14 36 40.4**	**-0.7**
	comp=Z,7.0nm,0.7s						
KDAK	**Kodiak Island**	**79.83**	**32**	P	**P**	**14 37 18.9**	**+0.5**
KDAK	**Kodiak Island**	**79.83**	**32**	P	**P**	**14 37 18.9**	**+0.5**
GNI	**Garni**	**80.29**	**310**	||*e*P	**P**	**14 37 22.2**	**+0.7**
GNI				pmax	pmax		
	comp=Z,9.0nm,0.8s						
ZEI	**Tsey**	**80.93**	**312**	*e*P	**P**	**14 37 22.4**	**-2.6**
ZEI				pmax	pmax		
	comp=Z,13nm,0.9s						
BPAW	**Bear Paw Mtn.**	**81.13**	**26**	*e*P	**P**	**14 37 26.0**	**+0.6**
	comp=Z,5.8nm,1.0s						
MLY	**Manley**	**81.31**	**25**	*e*P	**P**	**14 37 27.1**	**+0.8**
	comp=Z,9.1nm,1.4s						
KBZ	**Khabaz**	**81.66**	**313**	P	**P**	**14 37 28.2**	**-0.3**
	comp=Z,1.6nm,0.7s,baz=328,slow=2.2,SNR=5.0						
COLD	**Coldfoot**	**81.70**	**23**	*e*P	**P**	**14 37 29.5**	**+1.2**
	comp=Z,4.2nm,1.0s						
NEY	**Neytrino**	**81.79**	**313**	||*e*P	**P**	**14 37 30.5**	**+1.0**
KIV	**Kislovodsk**	**81.81**	**313**	*e*P	**P**	**14 37 30.4**	**+0.9**
KIV				pmax	pmax		
	comp=Z,6.0nm,0.8s						
PMR	**Palmer**	**81.83**	**29**	*e*P	**P**	**14 37 28.6**	**-0.4**
PMR				pmax	pmax		
	comp=Z,17nm,1.5s						
PMR	**Palmer**	**81.83**	**29**	*e*P	**P**	**14 37 28.6**	**-0.4**
	comp=Z,17nm,1.5s						
RND	**Reindeer**	**82.04**	**27**	*e*P	**P**	**14 37 30.2**	**0.0**
RND				pmax	pmax		
	comp=Z,4.0nm,0.8s						
RND	**Reindeer**	**82.04**	**27**	*e*P	**P**	**14 37 30.2**	**0.0**
	comp=Z,4.4nm,0.8s						
CCB	**Clear Creek Bu**	**82.55**	**26**	*e*P	**P**	**14 37 31.6**	**-1.1**
	comp=Z,8.9nm,1.5s						
DHY	**Denali Highway**	**82.69**	**27**	*e*P	**P**	**14 37 33.2**	**-0.5**
	comp=Z,18nm,1.9s						
ILAR	**Eielson Array**	**82.94**	**26**	P	**P**	**14 37 33.9**	**-0.9**
	comp=Z,0.5nm,0.7s,baz=241,slow=5.1,SNR=5.7						
KLMR	**Klimovskoe**	**83.60**	**331**	*e*P	**P**	**14 37 36.2**	**-2.0**
KLMR				*e**SP	PcP	14 37 51.1	+8.9
KLMR				pmax	pmax		
	comp=Z,9.0nm,1.2s						
VSR	**Storozhevoye**	**84.04**	**321**	*e*P	**P**	**14 37 39.4**	**-1.3**
VSR				pmax	pmax		
	comp=Z,7.0nm,0.9s						
LPSR	**Galich'ya Gora**	**84.14**	**322**	*e*P	**P**	**14 37 40.6**	**-0.5**
LPSR				pmax	pmax		
	comp=Z,10.0nm,0.8s						
OBN	**Obninsk**	**85.40**	**325**	⇑*i*P	**P**	**14 37 47.6**	**+0.2**
OBN				*e*		14 41 09.5	
OBN				pmax	pmax		
	comp=Z,22nm,1.7s						
OBN				MLR	MLR		
	comp=Z,160nm,21.0s						
ASF	**Jabal al Asfar**	**86.97**	**302**	P	**P**	**14 37 56.7**	**+0.9**
	comp=Z,8.3nm,0.8s,baz=61,slow=5.0,SNR=12						
ARCES	**ARCESS Array B**	**88.45**	**340**	P	**P**	**14 38 00.6**	**-1.3**
	comp=Z,1.0nm,0.7s,baz=89,slow=5.6,SNR=7.5						
BRTR	**Keskin Array B**	**88.83**	**310**	P	**P**	**14 38 03.9**	**-0.6**
	comp=Z,1.5nm,0.8s,baz=99,slow=3.9,SNR=6.3						
BRTR	**Keskin Array B**	**88.83**	**310**	*ce*P	**P**	**14 38 05.8**	**+1.3**
BRTR				pmax	pmax		
	comp=Z,1.0nm,0.8s						
FINES	**FINESS Array B**	**90.00**	**332**	P	**P**	**14 38 08.3**	**-1.0**
	comp=Z,1.3nm,0.6s,baz=76,slow=8.0,SNR=5.8						
FINES	**FINESS Array B**	**90.00**	**332**	*i* P	**P**	**14 38 11.3**	**+2.0**
FINES				pmax	pmax		
	comp=Z,2.0nm,0.6s						
AKASG	**Malin Array Be**	**90.34**	**321**	P	**P**	**14 38 09.5**	**-1.6**
	comp=Z,0.2nm,0.3s,baz=65,slow=5.2,SNR=3.5						
CLL	**Collm**	**100.00**	**324**	*e*Pdif	**Pdif**	**14 38 58.0**	**+2.9**
CLL	**Collm**	**100.00**	**324**	*e*P	**Pdif**	**14 38 58.0**	**+2.9**

IDC 02 14:30:35.0±2.0, 2°.62N×124°.77E, h0km, mb3.4/3, mb1 3.6/3, mb1mx3.3/48, mbtmp3.5/3, Error ellipse: s-maj=207.3km s-min=26.6km az=64.0, Celebes Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**24.31**	**158**	P	P	14 35 53.9	-0.6
	0.6nm,0.4s,baz=336,slow=11,SNR=6.4						
ASAR	**Alice Springs**	**27.60**	**162**	P	P	14 36 25.5	+1.2
	0.2nm,0.3s,baz=347,slow=12,SNR=4.4						
MKAR	**Makanchi Array**	**57.37**	**327**	P	P	14 40 24.7	-0.5
	0.3nm,0.4s,baz=117,slow=7.8,SNR=5.9						

ISCJB ***02*** *14:32:34.6±0.9, 11°.95N±0°.06×43°.98E±0°.06, h4km, Error ellipse: s-maj=11.8km s-min=4.0km az=44.1*
DHMR ***02*** *14:32:34.9±1.0, 12°.05N×43°.93E, h9km±8km, ML4.1*
ARO ***02*** *14:32:38.3, 12°N±8°×4°4E±°, h11km±16km, ML3.4*
ISC 02 14:32:33.6±1.2, 12°.04N±0°.07×43°.91E±0°.07, h4km, n13, σ1°15/18, 1C, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OBO	**Obock**	**0.61**	**265**	*e*P	**Pn**	**14 32 48.2**	**-0.9**
MCAD	**Moucha**	**0.75**	**246**	*e*P	**Pn**	**14 32 50.7**	**-0.4**
ATA	**Atar**	**0.91**	**230**	*e*P	**Pn**	**14 32 53.5**	**+0.3**
TDD	**Tadjoura Ara**	**1.01**	**257**	*e*P	**Pn**	**14 32 54.8**	**+0.2**
ATD	**Arta Tunnel**	**1.16**	**244**	*e*P	**Pn**	**14 32 57.0**	**+0.3**
ATD				*e*S	**Sn**	**14 33 13.0**	**-0.1**
TRBA	**At Turbah**	**1.20**	**9**	⇑*i*P	**Pn**	**14 32 57.6**	**+0.3**
TRBA				*i* S	**Sn**	**14 33 13.9**	**-0.3**
ADEN	**Aden**	**1.27**	**55**	*i* P	**Pg**	**14 32 58.0**	**-0.1**
ADEN				*i* S	**Sn**	**14 33 16.1**	**+0.3**
ADEN				AML	AML	14 33 24.3	
	comp=E,4μm,0.3s						
SGH	**Sud-Ghoubbet**	**1.39**	**245**	*e*P	**Pg**	**14 33 00.9**	**+0.6**
LDLD	**Lac de Lave**	**1.46**	**252**	*e*P	**Pg**	**14 33 02.2**	**+0.6**
MAOD	**Malaho**	**1.65**	**272**	*e*P	**Pb**	**14 33 04.9**	**+0.2**
GBR	**Grand-Bara**	**1.67**	**238**	*e*P	**Pg**	**14 33 05.7**	**0.0**
DHBB	**Dhamar BB**	**2.56**	**10**	*i* P	**Pb**	**14 33 18.9**	**-1.3**
DHBB				*i* S	**Sb**	**14 33 53.5**	**+1.4**
HAJJ	**Hajjah**	**3.65**	**355**	*i* P	**Pn**	**14 33 33.7**	**+2.6**
HAJJ				*i* S	**Sb**	**14 34 20.9**	**-2.7**

KRNET ***02*** *14:33:09.2±0.1, 43°.61N×77°.70E, h30km, mb1.6*
SOME 02 14:33:09.3, 43°.62N×77°.65E, h20km, 18C-1D, Lake Issyk-Kul region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KURS	**Kuram**	**0.40**	**109**	*e*P	Pb	14 33 17.3	-0.4
	2.5nm,0.1s						
KURS				*e*S	Sb	14 33 23.4	0.0
	11nm,0.1s						
CHKK	**Chushkaly**	**0.54**	**298**	*e*P	Pb	14 33 19.9	-0.2
	3.6nm,0.1s						
CHKK				*e*S	Sb	14 33 27.5	+0.2
	28nm,0.2s						
KOTS	**Kotyrbulak**	**0.55**	**226**	*e*P	Pb	14 33 20.1	-0.3
	5.4nm,0.1s						
KOTS				*e*S	Sb	14 33 28.1	+0.3
	36nm,0.1s						
ARXS	**Arharly**	**0.61**	**12**	*e*P	Pb	14 33 21.4	0.0
	2.8nm,0.1s						
ARXS				*e*S	Sb	14 33 29.9	+0.3
	36nm,0.1s						
MDOK	**Medeo**	**0.63**	**224**	*e*P	Pb	14 33 21.1	-0.7
	4.2nm,0.3s						
MDOK				*e*S	Sb	14 33 29.8	-0.5
	23nm,0.5s						
MNBS	**Baschi**	**0.71**	**49**	*e*P	Pb	14 33 22.9	-0.2
	0.6nm,0.1s						
MNBS				*e*S	Sb	14 33 32.6	+0.1
	7.8nm,0.2s						
ZHN	**Zhinishke**	**0.73**	**128**	*e*P	Pb	14 33 22.4	-0.9
	6.0nm,0.1s						
ZHN				*e*S	Sb	14 33 31.8	-1.1
	84nm,0.2s						
KPKS	**Kokpek**	**0.77**	**101**	*e*P	Pb	14 33 23.4	-0.6
	6.8nm,0.1s						
KPKS				*e*S	Sb	14 33 33.6	-0.5
	22nm,0.3s						
TNSS	**Tian-Shan**	**0.77**	**222**	*e*P	Pb	14 33 23.8	-0.5
	2.4nm,0.0s						
TNSS				*e*S	Sb	14 33 34.4	-0.1
	21nm,0.2s						
SATY	**Saty**	**0.78**	**135**	||*i*P	Pb	14 33 23.5	-0.8
	20nm,0.1s						
SATY				⇑*i*S	Sb	14 33 33.9	-0.6
	83nm,0.1s						
ANVS	**Anan'yevo**	**0.83**	**179**	⇑*e*P	Pb	14 33 21.8	-3.4
	baz=182						
ANVS				⇑*e*S	Sb	14 33 34.7	-1.4
	baz=182						
KUU	**Kurty**	**0.99**	**287**	*e*P	Pb	14 33 27.4	-0.3
	3.3nm,0.1s						
KUU				*e*S	Sb	14 33 40.6	+0.2
	8.2nm,0.5s						
MTBS	**Maitube**	**1.01**	**242**	*e*P	Pb	14 33 28.1	-0.1
	4.1nm,0.2s						
MTBS				*e*S	Sb	14 33 41.6	+0.4
	15nm,0.2s						
UZB	**Uzynbulak**	**1.10**	**115**	*e*P	Pn	14 33 29.1	-0.7
	8.7nm,0.1s						
UZB				*e*S	Sb	14 33 43.3	-0.6
	9.3nm,0.2s						
PRZ	**Przheval'sk**	**1.26**	**154**	⇑*e*P	Pn	14 33 29.4	-2.5
	baz=156						
PRZ				⇑*e*S	Sb	14 33 47.6	-0.7
	baz=156						
KST	**Kastek**	**1.36**	**246**	*e*P	Pn	14 33 33.6	+0.4
	9.0nm,0.3s						
KST				*e*S	Sb	14 33 51.1	0.0
	48nm,0.3s						
PDGK	**Podgornoye**	**1.37**	**102**	⇑*e*P	Pn	14 33 30.5	-2.7
	baz=103						
PDGK				⇑*e*S	Sn	14 33 50.5	-0.2
	baz=103						
PDGK	**Podgornoye**	**1.37**	**102**	⇑*i*P	Pn	14 33 33.3	+0.1
	baz=101						
PDGK				⇑*i*S	Sn	14 33 50.8	+0.1
	baz=101						
DGS	**Degeres**	**1.42**	**255**	*e*P	Pb	14 33 34.8	-0.3
	2.2nm,0.3s						
DGS				*e*S	Sb	14 33 53.2	+0.3
	6.5nm,0.1s						
KDJ	**Kajisay**	**1.53**	**193**	⇑*e*P	Pn	14 33 35.4	-0.2
	baz=194						
KDJ				⇑*e*S	Sb	14 33 56.8	+0.8
	baz=194						
TKM2	**Tokmak 2**	**1.65**	**246**	⇑*i*P	Pb	14 33 38.6	-0.6
	baz=247						
TKM2				⇑*i*S	Sb	14 34 00.4	+0.7
	baz=247						
BOOM	**Boomskoye usch**	**1.69**	**229**	⇑*e*P	Pn	14 33 37.9	+0.1
	baz=229						
BOOM				⇑*e*S	Sb	14 34 01.5	+0.9
	baz=229						
DJR	**Jarkent**	**1.70**	**64**	*e*P	Pb	14 33 40.0	+0.1
	1.1nm,0.1s						
DJR				*e*S	Sb	14 34 01.9	+0.9
	6.0nm,0.4s						
ULHL	**Ulahol**	**1.72**	**218**	⇑*i*P	Pb	14 33 39.9	-0.4
	baz=219						
ULHL				⇑*i*S	Sb	14 34 02.1	+0.6
	baz=219						
KAPS	**Kapalarasan**	**2.07**	**36**	⇑*i*P	Pb	14 33 45.8	-0.4
	1.1nm,0.2s						
KAPS				*e*S	Sb	14 34 12.5	+1.0
	7.1nm,0.5s						

IDC 02 14:35:55.2±1.1, 3°.61N×126°.84E, h0km, mb3.6/7, mb1 3.8/7, mb1mx3.6/45, mbtmp3.7/7, Error ellipse: s-maj=109.4km s-min=17.3km az=72.0, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**21.60**	**183**	P	P	14 40 47.9	+0.9
	0.9nm,0.5s,baz=0.0,slow=11,SNR=5.5						
WRA	**Warramunga Arr**	**24.53**	**163**	P	P	14 41 16.4	-0.4
	2.4nm,0.7s,baz=341,slow=10,SNR=15						
ASAR	**Alice Springs**	**27.97**	**166**	P	P	14 41 47.6	-0.2
	0.1nm,0.3s,baz=340,slow=10,SNR=9.0						
ASAR				PcP	PcP	14 45 03.9	+0.5
	0.2nm,0.6s,baz=343,slow=2.1,SNR=4.4						
STKA	**Stephens Creek**	**37.97**	**159**	P	P	14 43 14.5	-0.5
	1.1nm,0.7s,baz=332,slow=17,SNR=2.9						
SONM	**Songino Array**	**47.45**	**341**	P	P	14 44 33.2	+1.3
	0.1nm,0.3s,baz=164,slow=2.7,SNR=2.4						
MKAR	**Makanchi Array**	**57.72**	**325**	P	P	14 45 47.1	-0.8
	0.6nm,0.4s,baz=118,slow=7.7,SNR=12						
ARCES	**ARCESS Array B**	**90.60**	**340**	P	P	14 48 58.2	-1.1
	0.7nm,0.7s,baz=80,slow=7.8,SNR=4.7						

IDC ***02*** *14:44:57.9±0.9, 19°.19S×168°.38E, h0km, mb4.1/12, mb1 4.3/13, mb1mx4.1/34, mbtmp4.1/13, ML4.1/1, MS3.7/10, Ms1 3.7/10, ms1mx3.4/40, Error ellipse: s-maj=26.0km s-min=18.3km az=110.0*
NEIC ***02*** *14:44:59.1±0.5, 19°.17S×168°.37E, h10km, mb4.5/6, Error ellipse: s-maj=14.1km s-min=10.9km az=105.0*
ISCJB ***02*** *14:45:01.1±0.6, 19°.25S±0°.07×168°.3E±0°.1, h33km, mb4.2/15, MS3.7/7, Error ellipse: s-maj=15.7km s-min=8.4km az=19.2*
ISC 02 14:45:03.3±0.7, 19°.23S±0°.09×168°.3E±0°.2, h35km, n32, σ0°97/24, mb4.2/15, MS3.8/7, 1D, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**3.30**	**211**	Pn	**Pn**	**14 45 51.4**	**-1.2**
	20nm,0.3s,baz=51,slow=11,SNR=124						
DZM				Sn	**Sn**	**14 46 30.2**	**-0.4**
	24nm,0.3s,baz=87,slow=9.9,SNR=3.8						
DZM				LR	LR	14 46 37.9	
	comp=Z,232nm,18.4s,baz=52,slow=30						
MSVF	**Nonsavu**	**9.40**	**82**	*e*Pn	Pn	14 47 22.0	+5.6
HNR	**Honiara**	**12.64**	**319**	LR	LR	14 52 16.7	
	comp=Z,239nm,19.9s,baz=152,slow=35						
AFI	**Afiamalu**	**19.84**	**78**	LR	LR	14 55 34.7	
	comp=Z,293nm,20.1s,baz=268,slow=32						
URZ	**Urewera**	**20.46**	**160**	P	**P**	**14 49 38.0**	**+0.1**
	10.0nm,0.7s,baz=315,slow=7.2,SNR=5.5						
CTA	**Charters Tower**	**20.75**	**264**	P	Pn	14 49 43.5	-0.1
	2.6nm,0.4s,baz=90,slow=14,SNR=4.5						
STKA	**Stephens Creek**	**27.08**	**237**	P	**P**	**14 50 44.2**	**+1.5**
	3.8nm,0.7s,baz=74,slow=8.5,SNR=12						
STKA				LR	LR	15 01 09.7	
	comp=Z,111nm,18.5s,baz=36,slow=36						
STKA	**Stephens Creek**	**27.08**	**237**	*e*P	**P**	**14 50 43.8**	**+1.1**
	4.7nm,1.4s						
RAR	**Rarotonga**	**30.03**	**99**	LR	LR	15 01 37.3	
	comp=Z,75nm,20.0s,baz=264,slow=33						
WRA	**Warramunga Arr**	**31.94**	**263**	P	**P**	**14 51 25.2**	**-0.8**
	0.5nm,0.7s,baz=85,slow=8.3,SNR=4.1						
WRA				LR	LR	15 04 09.3	
	comp=Z,201nm,18.7s,baz=95,slow=36

az=67.0
ISCJB ***02*** *14:50:12.2±0.4,25°.31N±0°.07×124°.54E±0°.05, h117km±5km, mb3.5/5, Error ellipse: s-maj=12.5km s-min=4.4km az=149.1*
JMA ***02*** *14:50:14.4±0.1,25°.24N×124°.52E, h107km±3km, M3.2*
ISC 02 14:50:13.2±0.9, 25°.32N±0°.09×124°.54E±0°.06, h113km±9km, n28, σ0s89/42, mb3.4/5, Northeast of Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTJ	**Tarama**	**0.69**	**168**	P	**Pn**	**14 50 32.0**	**+0.2**
JTJ				S	**Sn**	**14 50 45.3**	**-0.4**
JIKM	**Ikemajima**	**0.75**	**122**	P	**Pn**	**14 50 32.8**	**+0.6**
JIKM				S	**Sn**	**14 50 46.6**	**+0.1**
JIRB	**Irabujima**	**0.75**	**131**	P	**Pn**	**14 50 32.4**	**+0.2**
JIRB				S	**Sn**	**14 50 46.0**	**-0.6**
JISG	**Ishigakijimahi**	**0.76**	**196**	P	**Pn**	**14 50 32.4**	**+0.1**
JISG				S	**Sn**	**14 50 45.9**	**-0.8**
JMJ	**Miyako jima 2**	**0.85**	**126**	P	**Pn**	**14 50 33.7**	**+0.6**
JMJ				S	**Sn**	**14 50 48.2**	**+0.1**
JOGS	**Gusukube**	**0.96**	**125**	P	**Pn**	**14 50 35.0**	**+0.8**
JOGS				S	**Sn**	**14 50 50.4**	**+0.3**
JIJ	**Ishigaki jima**	**1.02**	**201**	P	**Pn**	**14 50 34.5**	**-0.3**
JIJ				S	**Sn**	**14 50 49.4**	**-1.7**
JKRS	**Kuro-shima**	**1.19**	**204**	P	**Pn**	**14 50 36.5**	**0.0**
JKRS				S	**Sn**	**14 50 53.3**	**-0.9**
IRIF	**Iriomote-Funau**	**1.23**	**217**	P	**Pn**	**14 50 37.0**	**0.0**
IRIF				S	**Sn**	**14 50 54.2**	**-0.9**
HATJ	**Hateruma jima**	**1.43**	**208**	P	**Pn**	**14 50 39.4**	**+0.1**
HATJ				S	**Sn**	**14 50 58.2**	**-0.9**
YOJ	**Yonaguni jima**	**1.64**	**239**	P	**Pn**	**14 50 42.6**	**+0.9**
YOJ				S	**Sn**	**14 51 03.6**	**+0.1**
JYNG	**Yonagunijimaku**	**1.69**	**239**	P	**Pn**	**14 50 43.5**	**+1.1**
JYNG				S	**Sn**	**14 51 04.6**	**-0.1**
JKE	**Kume jima 2**	**2.25**	**63**	P	**Pn**	**14 50 50.3**	**+0.8**
JKE				S	**Sn**	**14 51 18.1**	**+0.8**
JAGN	**Aguni-jima**	**2.74**	**62**	P	**Pn**	**14 50 56.5**	**+0.8**
JAGN				S	**Sn**	**14 51 29.2**	**+0.7**
JNTH	**Nagotoyohara**	**3.35**	**68**	P	**Pn**	**14 51 03.5**	**-0.4**
JIH	**Iheya**	**3.52**	**60**	P	**Pn**	**14 51 06.5**	**+0.4**
JOW	**Kunigami**	**3.68**	**65**	P	**Pn**	**14 51 08.3**	**+0.1**
JOW	baz=102,slow=10.0			S	**Sn**	**14 51 48.2**	**-2.6**
	1.8nm,0.3s,baz=349,slow=19,SNR=2.5						
JOW	**Kunigami**	**3.68**	**65**	P	**Pn**	**14 51 08.3**	**+0.1**
JOKE	**Okinoerabujima**	**4.14**	**60**	P	**Pn**	**14 51 14.0**	**-0.5**
JTK	**Tokunoshima**	**4.65**	**57**	P	**Pn**	**14 51 20.9**	**-0.3**
JAMN	**Amaminishikomi**	**5.06**	**54**	P	**Pn**	**14 51 25.6**	**-1.2**
JAM	**Amami Oshima**	**5.47**	**55**	P	**Pn**	**14 51 31.6**	**-0.7**
KSRS	**Korea Array**	**12.43**	**13**	LR	LR	14 57 14.1	
	comp=Z,35nm,22.0s,baz=275,slow=34						
MKAR	**Makanchi Array**	**39.71**	**314**	P	**P**	**14 57 34.9**	**+0.5**
	0.5nm,0.5s,baz=98,slow=7.9,SNR=12						
ZALV	**Zalesovo Beam**	**41.01**	**325**	P	**P**	**14 57 43.2**	**-1.8**
	0.6nm,0.4s,baz=107,slow=7.8,SNR=4.5						
WRA	**Warramunga Arr**	**45.99**	**167**	P	**P**	**14 58 24.2**	**-1.1**
	0.6nm,0.8s,baz=349,slow=8.7,SNR=4.0						
ASAR	**Alice Springs**	**49.54**	**169**	P	**P**	**14 58 54.1**	**+1.5**
	0.2nm,0.5s,baz=352,slow=7.9,SNR=13						
YKA	**Yellowknife Ar**	**80.72**	**24**	P	**P**	**15 02 14.8**	**+1.2**
	0.2nm,0.5s,baz=305,slow=5.5,SNR=6.2						

IDC 02 15:04:46.2±44.0, 16°.10S×174°.22W, h0km, mb4.4/3, mb1 4.6/3, mb1mx3.7/46, mbtmp4.4/3, Error ellipse: s-maj=847.1km s-min=163.6km az=79.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**43.00**	**240**	P	P	15 12 48.0	+0.5
	2.1nm,0.5s,baz=100,slow=10,SNR=11						
WRA	**Warramunga Arr**	**48.91**	**257**	P	P	15 13 34.1	-0.3
	1.7nm,0.7s,baz=95,slow=7.1,SNR=13						
ASAR	**Alice Springs**	**49.14**	**252**	P	P	15 13 35.6	-0.5
	9.7nm,0.6s,baz=88,slow=8.4,SNR=155						

IDC 02 15:10:17.1±5.7, 36°.35N×141°.76E, h0km, mb3.3/2, mb1 3.4/3, mb1mx3.1/43, mbtmp3.1/3, ML2.3/1, Error ellipse: s-maj=126.7km s-min=40.6km az=36.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**2.87**	**275**	Pn	Pn	15 11 03.4	-0.7
	0.5nm,0.3s,baz=90,slow=16,SNR=7.7						
WRA	**Warramunga Arr**	**56.42**	**188**	P	P	15 19 59.2	-1.3
	0.3nm,0.9s,baz=13,slow=8.9,SNR=5.4						
ASAR	**Alice Springs**	**60.15**	**188**	P	P	15 20 27.6	+1.0
	0.3nm,0.9s,baz=15,slow=7.7,SNR=3.5						

NIED ***02*** *15:11:00, 37°.70N×143°.50E, h5km, Mw4.1 Best double couple: M0=1.71000×10^15 NP1:φ0=14.00000°, δ=19.00000°, λ=-125.00000°. NP2:φ0=231.00000°, δ=74.00000°, λ=-79.00000°.*
IDC ***02*** *15:11:42.0±0.6, 37°.56N×143°.67E, h0km, mb3.8/15, mb1 4.0/21, mb1mx3.9/48, mbtmp3.9/21, ML3.6/6, MS3.0/4, Ms1 3.0/4, ms1mx2.7/68, Error ellipse: s-maj=18.1km s-min=12.5km az=110.0*
NEIC ***02*** *15:11:43.3±0.4, 37°.61N×143°.70E, h10km, mb4.5/11, Error ellipse: s-maj=8.2km s-min=5.8km az=123.0*
MOS ***02*** *15:11:44.6±1.4, 37°.71N×143°.71E, h33km, mb4.2/20, Error ellipse: s-maj=9.5km s-min=6.1km az=101.8*
JMA ***02*** *15:11:45.2±0.2, 37°.68N×143°.49E, h46km, M3.9*
ISC 02 15:11:41.8±2.6, 37°.64N±0°.05×143°.70E±0°.05, h1km±16km, n108, σ2s53/126, mb4.1/40, MS3.9/5, 9C-4D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.03**	**294**	P	**Pn**	**15 12 15.9**	**-1.2**
JIO				eS	**Sn**	**15 12 36.7**	**-6.4**
OFUJ	**Ofunato**	**2.15**	**313**	P	**Pn**	**15 12 17.4**	**-1.4**
OFUJ				eS	**Sn**	**15 12 40.6**	**-5.5**
JFK	**Kawauchi**	**2.26**	**264**	P	**Pn**	**15 12 18.9**	**-1.5**
JFK				eS	**Sn**	**15 12 43.4**	**-5.6**
JMM	**Marumori**	**2.31**	**277**	P	**Pn**	**15 12 19.7**	**-1.4**
JMM				eS	**Sn**	**15 12 44.7**	**-5.5**
JMK	**Ichinoseki**	**2.35**	**305**	P	**Pn**	**15 12 20.4**	**-1.2**
ONAJ	**Iwakimizuishiy**	**2.37**	**258**	P	**Pn**	**15 12 20.8**	**-1.1**
ONAJ				S	**Sn**	**15 12 46.1**	**-5.6**
JOU	**Okura**	**2.50**	**288**	P	**Pn**	**15 12 23.2**	**-0.5**
JOU				S	**Sn**	**15 12 49.4**	**-5.6**
JOM	**Ohasama**	**2.63**	**315**	P	**Pn**	**15 12 24.6**	**-0.8**
JOM				eS	**Sn**	**15 12 53.9**	**-4.1**
JFT	**Otama**	**2.67**	**268**	P	**Pn**	**15 12 25.7**	**-0.4**
JFT				eS	**Sn**	**15 12 54.2**	**-4.9**
JHO	**Hitachi**	**2.70**	**249**	P	**Pn**	**15 12 24.8**	**-1.6**
JHO				eS	**Sn**	**15 12 53.2**	**-6.6**
JTH	**Tanohata**	**2.71**	**329**	eS	**Sn**	**15 12 55.6**	**-4.3**
JYK	**Kaneyama**	**2.92**	**297**	P	**Pn**	**15 12 29.2**	**-0.3**
JYK				S	**Sn**	**15 13 00.9**	**-4.3**
JRG	**Rokugo**	**2.98**	**307**	P	**Pn**	**15 12 29.7**	**-0.5**
ERM	**Erimo**	**4.39**	**355**	eP	**Pn**	**15 12 49.1**	**-0.5**
ERM	**Erimo**	**4.39**	**355**	ePn	**Pn**	**15 12 48.9**	**-0.8**
MJAR	**Matsushiro Arr**	**4.52**	**258**	Pn	**Pn**	**15 12 52.4**	**+0.9**
	14nm,0.3s,baz=91,slow=14,SNR=178						
MJAR				LR	LR	15 14 46.0	
	comp=Z,116nm,18.2s,baz=30,slow=41						
MAJO	**Matsushiro**	**4.53**	**258**	*c iP*	**Pn**	**15 12 52.6**	**+1.1**
MAJO	**Matsushiro**	**4.53**	**258**	ePn	**Pn**	**15 12 52.5**	**+1.1**
MAT	**Matsushiro**	**4.53**	**258**	P	**Pn**	**15 12 52.6**	**+1.1**
MAT				S	**Sn**	**15 13 43.1**	**-1.7**
MJB9	**Matsu-Tunnel**	**4.53**	**258**	ePn	**Pn**	**15 12 52.5**	**+0.9**
JHJ2	**Mitsune**	**5.52**	**216**	ePn	**Pn**	**15 13 02.7**	**-2.4**
JHJ	**Hachijo jima 2**	**5.53**	**217**	Pn	**Pn**	**15 13 02.4**	**-2.9**
	30nm,0.3s,baz=291,slow=19,SNR=19						
JHJ				Sn	**Sn**	**15 14 02.0**	**-7.5**
	32nm,0.3s,baz=53,slow=23,SNR=6.4						
INU	**Inuyama**	**5.85**	**249**	ePn	**Pn**	**15 13 10.2**	**+0.6**
ASAJ	**Asahikawa**	**6.53**	**353**	Pn	**Pn**	**15 13 18.5**	**-0.4**
	2.1nm,0.3s,baz=204,slow=14,SNR=16						
ASAJ				Sn	**Sn**	**15 14 30.7**	**-3.3**
	baz=24,slow=7.9,SNR=2.2						
ASAJ	**Asahikawa**	**6.53**	**353**	ePn	**Pn**	**15 13 16.9**	**-2.1**
ASAJ				Sn	**Sn**	**15 14 30.7**	**-3.3**
YUK	**Yuzh-Kuril'sk**	**6.60**	**14**	P	**Pn**	**15 13 18.6**	**-1.3**
YUK				eS	**Sn**	**15 14 30.1**	**-5.6**
YUK				pmax	pmax		
	comp=Z,196nm,0.6s						
SHO	**Shikotan**	**6.66**	**20**	*eP*	**Pn**	**15 13 19.1**	**-1.7**
SHO				*eS*	**Sn**	**15 14 31.1**	**-6.3**
SHO				pmax	pmax		
	comp=Z,64nm,0.7s						
KUR	**Kuril'sk**	**8.21**	**21**	P	**Pn**	**15 13 41.1**	**-0.9**
KUR				*eS*	**Sn**	**15 15 07.9**	**-7.5**
KUR				smax	smax		
	comp=N,7.0nm,0.5s						
KUR				smax	smax		
	comp=E,20nm,0.5s						
YSS	**Yuzh-Sakhalins**	**9.34**	**356**	*eP*	**Pn**	**15 13 56.6**	**-0.9**
YSS	**Yuzh-Sakhalins**	**9.34**	**356**	*ePn*	**Pn**	**15 13 56.6**	**-0.9**
CBIJ	**Chichi jima**	**10.59**	**187**	Pn	Pn	15 14 10.9	-3.9
CBIJ				Sn	Sn	15 16 01.2	-13
JCJ	**Chichijima**	**10.59**	**187**	Pn	Pn	15 14 10.9	-3.9
	baz=133,slow=19						
JCJ				Sn	Sn	15 16 01.2	-13
	baz=260,slow=11						
MSHR	**Mys Shultsa**	**10.80**	**301**	*eP*	**Pn**	**15 14 20.8**	**+3.3**
USRK	**Ussuriysk Ar.**	**11.02**	**310**	Pn	**Pn**	**15 14 22.0**	**+1.5**
	comp=E,0.6nm,0.3s,baz=120,slow=12,SNR=16						
USRK				LR	LR	15 18 22.4	
	comp=E,112nm,18.9s,baz=131,slow=36						
JNU	**Nakatsue**	**11.39**	**251**	Pn	**Pn**	**15 14 25.9**	**+0.1**
	comp=E,0.2nm,0.3s,baz=53,slow=8.2,SNR=6.9						
JNU	**Nakatsue**	**11.39**	**251**	*ePn*	**Pn**	**15 14 26.3**	**+0.5**
KSRS	**Korea Array**	**12.53**	**274**	**Pn**	**Pn**	**15 14 41.9**	**+0.7**
	comp=E,0.1nm,0.3s,baz=92,slow=13,SNR=6.1						
KSRS				LR	LR	15 19 08.5	
	comp=E,86nm,18.4s,baz=66,slow=36						
KSAR	**Wonju Array Be**	**12.56**	**274**	P	**Pn**	**15 14 41.9**	**+0.3**
KSAR	**Wonju Array Be**	**12.56**	**274**	Pn	**Pn**	**15 14 41.9**	**+0.3**
KLR	**Kul'dur**	**14.46**	**327**	Pn	**Pn**	**15 15 05.8**	**-1.7**
	comp=E,0.3nm,0.3s,baz=134,slow=10,SNR=15						
KLR				LR	LR	15 20 47.5	
	comp=E,63nm,20.1s,baz=172,slow=38						
BJI	**Beijing**	**21.54**	**285**	P	**P**	**15 16 32.4**	**-0.1**
BJI				S	**S**	**15 20 32.5**	**+0.5**
BJI				pmax	pmax		
	comp=Z,5.0nm,0.8s						
BJI				LR	LR		
	comp=N,190nm,8.7s						
BJI				LR	LR		
	comp=E,95nm,9.2s						
BJI				LR	LR		
	comp=Z,58nm,17.3s						
MA2	**Magadan**	**22.42**	**9**	P	**P**	**15 16 43.1**	**+1.4**
	comp=Z,2.1nm,0.5s,baz=242,slow=10,SNR=3.2						
HHC	**Hu-ho-hao-te**	**25.02**	**287**	*eP*	**P**	**15 17 07.0**	**-0.4**
HHC				sP		15 17 17.6	
HHC				S	**S**	**15 21 33.6**	**+1.2**
HHC				pmax	pmax		
	comp=Z,34nm,0.8s						
HHC				pmax	pmax		
	comp=Z,110nm,4.2s						
HHC				LR	LR		
	comp=N,690nm,13.3s						
HHC				LR	LR		
	comp=E,730nm,14.5s						
HHC				LR	LR		
	comp=Z,750nm,13.7s						
WHN	**Wuhan**	**25.25**	**262**	P	**P**	**15 17 14.0**	**+4.6**
SEY	**Seymchan**	**25.88**	**9**	P	**P**	**15 17 15.3**	**+0.5**
	comp=Z,0.9nm,0.7s,baz=192,slow=7.5,SNR=6.5						
SEY	**Seymchan**	**25.88**	**9**	*eP*	**P**	**15 17 16.5**	**+1.7**
YAK	**Yakutsk**	**25.92**	**345**	*eP*	**P**	**15 17 15.6**	**+0.4**
YAK				pmax	pmax		
	comp=Z,10.0nm,1.1s						
YAK				pmax	pmax		
	comp=N,6.0nm,1.1s						
YAK				pmax	pmax		
	comp=E,4.0nm,1.1s						
BOD	**Bodaibo**	**28.02**	**326**	*eP*	**P**	**15 17 33.3**	**-0.9**
BOD				pmax	pmax		
	comp=Z,8.0nm,1.9s						
ULN	**Ulaanbaatar**	**28.54**	**303**	*eP*	**P**	**15 17 40.0**	**+0.8**
ULN				pmax	pmax		
	comp=Z,5.0nm,1.2s						
ULN	**Ulaanbaatar**	**28.54**	**303**	*eP*	**P**	**15 17 41.5**	**+2.3**
	comp=Z,3.5nm,0.8s						
SONM	**Songino Array**	**28.98**	**303**	P	**P**	**15 17 42.5**	**-0.5**
	comp=Z,1.2nm,1.0s,baz=107,slow=9.9,SNR=5.2						
ENH	**Enshi**	**29.20**	**266**	*eP*	**P**	**15 17 46.4**	**+1.4**
	comp=Z,11nm,1.0s						
ZAK	**Zakamensk**	**31.34**	**307**	*eP*	**P**	**15 18 03.2**	**-0.7**
ZAK				pmax	pmax		
	comp=Z,3.0nm,1.2s						
LZH	**Lanzhou**	**31.76**	**280**	*eP*	**P**	**15 18 07.1**	**-0.7**
LZH				pP		15 18 12.0	
LZH				sP		15 18 15.7	
LZH				pmax	pmax		
	comp=Z,24nm,1.2s						
BILL	**Bilibino**	**32.95**	**15**	*eP*	**P**	**15 18 21.2**	**+3.6**
BILL				*i *PP*		15 18 30.2	
BILL				PPP	PPP	15 19 38.0	
BILL						15 21 08.0	
BILL				pmax	pmax		
	comp=Z,6.0nm,1.9s						
CD2	**Chengdu**	**33.49**	**271**	P	**P**	**15 18 21.3**	**-1.5**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
GTA	**Gaotai**	**34.13**	**287**	*eP*	**P**	**15 18 29.8**	**+1.4**
GTA				pP		15 18 40.2	
GTA				sP		15 18 44.4	
GTA				S	**S**	**15 23 57.0**	**+1.6**
GTA				sS		15 24 13.7	
GTA				SS	**SnSn**	**15 26 10.5**	**+8.2**
GTA				pmax	pmax		
	comp=Z,4.0nm,1.4s						
GTA				pmax	pmax		
	comp=Z,27nm,5.3s						
GTA				LR	LR		
	comp=N,190nm,19.5s						
GTA				LR	LR		
	comp=E,190nm,19.0s						
GTA				LR	LR		
	comp=Z,150nm,15.7s						
KMI	**Kunming**	**36.85**	**262**	P	**P**	**15 18 53.4**	**+1.4**
KMI				pmax	pmax		
	comp=Z,6.0nm,0.5s						
KMI				pmax	pmax		
	comp=Z,46nm,3.5s						
WMQ	**Urumqi**	**42.20**	**297**	*eP*	**P**	**15 19 36.7**	**+0.5**
WMQ				pmax	pmax		
	comp=Z,2.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,68nm,3.8s						
WMQ				LR	LR		
	comp=N,23nm,22.4s						
WMQ				LR	LR		
	comp=E,34nm,22.4s						
WMQ				LR	LR		
	comp=Z,42nm,24.0s						
ZALV	**Zalesovo Beam**	**42.86**	**312**	P	**P**	**15 19 41.7**	**+0.3**
	comp=Z,0.5nm,0.4s,baz=98,slow=10,SNR=4.0						
CMAR	**Chiang Mai Arr**	**43.41**	**257**	P	**P**	**15 19 46.1**	**-0.2**
	comp=Z,0.5nm,0.8s,baz=44,slow=7.7,SNR=3.2						
CMAR	**Chiang Mai Arr**	**43.41**	**257**	*eP*	**P**	**15 19 50.5**	**+4.2**
MK01	**Makanchi Array**	**45.34**	**302**	*eP*	**P**	**15 20 01.5**	**0.0**
MK31	**Makanchi Array**	**45.34**	**302**	*eP*	**P**	**15 20 01.8**	**+0.3**
MK31	**Makanchi Array**	**45.34**	**302**	*eP*	**P**	**15 20 01.8**	**+0.3**
MKAR	**Makanchi Array**	**45.34**	**302**	P	**P**	**15 20 01.8**	**+0.3**
	comp=Z,0.7nm,0.8s,baz=88,slow=9.7,SNR=7.4						
MAKZ	**Makanchi**	**45.55**	**302**	*eP*	**P**	**15 20 02.9**	**-0.2**
MAKZ				pmax	pmax		
	comp=Z,5.0nm,1.1s						
MAKZ	**Makanchi**	**45.55**	**302**	*eP*	**P**	**15 20 02.9**	**-0.2**
	comp=Z,4.6nm,1.1s						
KURK	**Kurchatov**	**46.99**	**308**	*eP*	**P**	**15 20 13.6**	**-0.8**
KURK				pmax	pmax		
	comp=Z,8.0nm,0.9s						
KURK	**Kurchatov**	**46.99**	**308**	*eP*	**P**	**15 20 13.6**	**-0.8**
	comp=Z,8.3nm,0.9s						
IL1	**Eielson Array**	**48.01**	**33**	*eP*	**P**	**15 20 23.4**	**+1.3**
ILAR	**Eielson Array**	**48.01**	**33**	P	**P**	**15 20 22.8**	**+0.7**
	comp=Z,1.0nm,0.7s,baz=264,slow=6.5,SNR=15						
ILB	**Eielson Array**	**48.01**	**33**	*eP*	**P**	**15 20 23.1**	**+1.0**
TKM2	**Tokmak 2**	**50.94**	**299**	*eP*	**P**	**15 20 46.0**	**+0.9**
TKM2				pmax	pmax		
	comp=Z,4.0nm,0.8s						
TKM2	**Tokmak 2**	**50.94**	**299**	*eP*	**P**	**15 20 46.0**	**+0.9**
	comp=Z,3.7nm,0.8s						
BRVK	**Borovoye**	**51.57**	**312**	*eP*	**P**	**15 20 50.3**	**+1.0**
BRVK				pmax	pmax		
	comp=Z,1.0nm,0.8s						
BRVK	**Borovoye**	**51.57**	**312**	*eP*	**P**	**15 20 49.8**	**+0.5**
	comp=Z,3.3nm,1.1s						
MTN	**Manton Dam**	**51.58**	**196**	*eP*	**P**	**15 20 48.8**	**-0.9**
	comp=Z,10nm,0.9s						
AAK	**Ala-Archa**	**51.80**	**299**	*eP*	**P**	**15 20 52.4**	**+0.9**
AAK				pmax	pmax		
	comp=Z,1.0nm,0.8s						
ZRNK	**Zerenda**	**52.34**	**313**	*eP*	**P**	**15 20 55.0**	**-0.1**
ZRNK				pmax	pmax		
	comp=Z,3.0nm,1.0s						
ZRNK	**Zerenda**	**52.34**	**313**	*eP*	**P**	**15 20 55.0**	**-0.1**
	comp=Z,2.5nm,1.0s						
INK	**Inuvik**	**53.02**	**27**	P	**P**	**15 21 01.2**	**+1.4**
	comp=Z,0.7nm,0.8s,baz=282,slow=6.8,SNR=3.3						
ARU	**Arti**	**57.11**	**319**	P	**P**	**15 21 27.9**	**-1.7**
WRAB	**Tennant Creek**	**57.94**	**190**	*d iP*	**P**	**15 21 34.7**	**-1.1**
WRAB				pmax	pmax		
	comp=Z,17nm,0.8s						
WRAB	**Tennant Creek**	**57.94**	**190**	*eP*	**P**	**15 21 34.7**	**-1.1**
	comp=Z,9.3nm,0.8s						
WRA	**Warramunga Arr**	**57.95**	**190**	P	**P**	**15 21 35.0**	**-0.8**
	comp=Z,8.8nm,0.7s,baz=10,slow=7.4,SNR=84						
FITZ	**Fitzroy Crossi**	**57.99**	**200**	P	**P**	**15 21 36.4**	**+0.2**
	comp=Z,1.8nm,0.9s,baz=17,slow=8.2,SNR=5.5						
KBS	**Kingsbay**	**60.37**	**350**	P	**P**	**15 21 50.6**	**-1.4**
KBS	**Kingsbay**	**60.37**	**350**	P	**P**	**15 21 50.6**	**-1.4**
AS01	**Alice Springs**	**61.66**	**190**	*eP*	**P**	**15 22 00.7**	**-0.7**
AS31	**Alice Springs**	**61.67**	**190**	*eP*	**P**	**15 22 00.9**	**-0.6**
	comp=Z,0.8nm,0.6s						
ASAR	**Alice Springs**	**61.67**	**190**	P	**P**	**15 22 01.1**	**-0.4**
	comp=Z,1.2nm,0.6s,baz=12,slow=14,SNR=26						
ASAR	**Alice Springs**	**61.67**	**190**	P	**P**	**15 22 01.1**	**-0.4**
ASAR				pmax	pmax		
	comp=Z,2.0nm,0.8s						
YKA	**Yellowknife Ar**	**62.36**	**31**	P	**P**	**15 22 06.9**	**+1.2**
	comp=Z,0.2nm,0.7s,baz=304,slow=7.1,SNR=4.5						
FINES	**FINESS Array B**	**69.12**	**333**	P	**P**	**15 22 49.7**	**+0.5**
	comp=Z,1.0nm,0.7s,baz=57,slow=7.0,SNR=4.6						
FINES	**FINESS Array B**	**69.12**	**333**	*ceP*	**P**	**15 22 50.5**	**+1.2**
FINES				pmax	pmax		
	comp=Z,1.0nm,0.6s						
STKA	**Stephens Creek**	**69.18**	**182**	P	**P**	**15 22 50.0**	**+0.1**
	comp=Z,0.6nm,0.5s,baz=340,slow=11,SNR=5.2						
STKA	**Stephens Creek**	**69.18**	**182**	P	**P**	**15 22 50.0**	**+0.1**
STKA				pmax	pmax		
	comp=Z,1.0nm,0.5s						
SUMG	**Summit**	**70.07**	**1**	*eP*	**P**	**15 22 53.6**	**-1.9**
SUMG				pmax	pmax		
	comp=Z,7.0nm,0.8s						
SUMG	**Summit**	**70.07**	**1**	*eP*	**P**	**15 22 53.6**	**-1.9**
	comp=Z,7.5nm,0.8s						
KIV	**Kislovodsk**	**71.88**	**312**	*eP*	**P**	**15 23 08.9**	**+2.3**
KIV				pmax	pmax		
	comp=Z,6.0nm,1.1s						
KBZ	**Khabaz**	**71.88**	**311**	P	**P**	**15 23 08.5**	**+2.1**
	comp=Z,0.8nm,0.5s,baz=52,slow=3.0,SNR=5.4						
GNI	**Garni**	**72.79**	**308**	*eP*	**P**	**15 23 12.0**	**-0.2**
GNI				pmax	pmax		
	comp=Z,6.0nm,0.9s						
PDAR	**Pinedale Array**	**75.94**	**47**	P	**P**	**15 23 31.4**	**+0.8**
	comp=Z,0.7nm,0.9s,baz=270,slow=4.3,SNR=3.5						
MLR	**Muntele Rosu**	**80.08**	**321**	LR	LR	16 00 35.9	
	comp=Z,309nm,21.2s,baz=266,slow=37						
CLL	**Collm**	**81.46**	**331**	*eP*	**P**	**15 24 00.0**	**-0.5**
CLL	**Collm**	**81.46**	**331**	*eP*	**P**	**15 24 00.0**	**-0.5**
TX31	**Lajitas Ar. Si**	**88.30**	**54**	*eP*	**P**	**15 24 35.2**	**-0.3**

NIED ***02*** *15:14:00, 36°.70N×141°.10E, h53km, Mw3.8 Best double couple: M0=5.17000×10^14 NP1:φ0=327.00000°, δ=26.00000°, λ=20.00000°. NP2:φ0=219.00000°, δ=81.00000°, λ=115.00000°.*
IDC ***02*** *15:14:15.9±0.9, 36°.72N×141°.35E, h0km, mb3.6/9, mb1 3.8/12, mb1mx3.6/48, mbtmp3.7/12, ML3.5/3, MS3.7/1, Ms1 3.7/1, ms1mx2.6/66, Error ellipse: s-maj=24.3km s-min=15.9km az=100.0*
ISCJB ***02*** *15:14:20.3±1.0, 36°.69N±0°.04×141°.25E±0°.09, h44km±8km, mb3.5/9, MS3.8/1, Error ellipse: s-maj=12.7km s-min=5.8km az=11.3*
JMA ***02*** *15:14:22.6±0.1, 36°.72N×141°.05E, h46km±1km, M3.6*
JMA Felt I J1.
ISC 02 15:14:20.8±1.6, 36°.72N±0°.05×141°.24E±0°.08, h32km±10km, n21, σ0s82/29, mb3.5/9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.52**	**318**	P	**Pb**	**15 14 32.0**	**+0.3**
ONAJ				S	**Sn**	**15 14 39.5**	**-0.4**
JHO	**Hitachi**	**0.55**	**259**	P	**Pn**	**15 14 32.4**	**0.0**
JHO				S	**Sb**	**15 14 39.2**	**-0.7**
JFK	**Kawauchi**	**0.71**	**336**	P	**Pb**	**15 14 35.3**	**+0.5**
JFK				S	**Sn**	**15 14 44.3**	**-0.3**
JYT	**Yasato**	**0.97**	**240**	P	**Pn**	**15 14 38.2**	**0.0**
JYT				S	**Sn**	**15 14 49.1**	**-1.8**
JFT	**Otama**	**1.08**	**318**	P	**Pb**	**15 14 40.8**	**-0.1**
JFT				S	**Sn**	**15 14 53.4**	**-0.2**
JMM	**Marumori**	**1.20**	**343**	P	**Pn**	**15 14 42.3**	**+0.9**
JMM				S	**Sn**	**15 14 56.5**	**-0.1**
JFY	**Yanaizu**	**1.41**	**300**	P	**Pn**	**15 14 44.7**	**+0.4**
MJAR	**Matsushiro Arr**	**2.44**	**267**	Pn	**Pn**	**15 14 58.0**	**-0.5**
	16nm,0.3s,baz=354,slow=15,SNR=20						
MAT	**Matsushiro**	**2.44**	**267**	P	**Pn**	**15 14 59.5**	**+1.0**
MAT				S	**Sn**	**15 15 28.7

32nm,0.8s,0.2nm
BNDI Bandanaira 5.70 259 P **Pn 15 23 45.9 +2.2**
232nm,1.7s,4μm1.9nm
BNDI S **Sn 15 24 50.5 +2.1**
232nm,1.7s,4μm1.9nm
SAUI Saumlaki 6.13 223 *e*Pn **Pn 15 23 53.7 +4.0**
MSAI Masohi 6.58 271 P **Pn 15 23 57.5 +1.6**
23nm,0.9s,350nm0.2nm
MSAI S **Sn 15 25 10.6 +0.3**
23nm,0.9s,350nm0.2nm
MMPI Merauke 6.91 136 P **Pn 15 24 01.3 +0.9**
258nm,1.0s,2.8nm
NLAI Namlea 8.41 271 P **Pn 15 24 23.1 +2.1**
41nm,0.8s,554nm
NLAI S **Sn 15 25 56.5 +1.2**
41nm,0.8s,554nm
LBMI Labuha 8.50 289 P **Pn 15 24 22.6 +0.4**
100nm,1.0s
LBMI S **Sn 15 25 57.4 -0.2**
100nm,1.0s
SANI Sanana 9.63 278 P **Pn 15 24 40.1 +2.4**
48nm,0.8s
SANI S **Sn 15 26 20.8 -4.5**
48nm,0.8s
MTN Manton Dam 10.26 205 *e*Pn **Pn 15 24 48.2 +2.0**
SOEI Soe 12.79 240 P **Pn 15 25 22.9 +1.8**
180nm,0.9s,1μm
SOEI Soe 12.79 240 *e*Pn **Pn 15 25 22.9 +1.8**
COEN Coen 12.85 144 *e*Pn **Pn 15 25 22.1 +0.2**
COEN *e*Sn **Sn 15 27 41.3 -3.1**
PMG Port Moresby 12.97 117 Pn **Pn 15 25 25.1 +1.7**
0.6nm,0.3s,baz=163,slow=11,SNR=2.7
PMG LR LR 15 31 46.9
comp=Z,207nm,18.7s,baz=316,slow=44
BATI Baumata 13.53 240 Pn **Pn 15 25 32.1 +1.0**
baz=73,slow=19
WRAB Tennant Creek 16.38 184 *e*Pn **Pn 15 26 07.2 -1.9**
51nm,0.6s
WRA Warramunga Arr 16.39 184 Pn **Pn 15 26 07.5 -1.7**
1.0nm,0.3s,baz=4.3,slow=13,SNR=40
WRA Sn **Sn 15 29 03.5 -7.1**
1.3nm,0.3s,baz=4.8,slow=23,SNR=7.3
WRA LR LR 15 32 54.8
comp=Z,166nm,20.7s,baz=345,slow=38
FITZ Fitzroy Crossi 17.45 213 P **Pn 15 26 21.4 -1.1**
0.9nm,0.3s,baz=37,slow=9.6,SNR=28
FITZ S Sn 15 29 27.0 -9.3
1.1nm,0.3s,baz=180,slow=16,SNR=4.1
FITZ Fitzroy Crossi 17.45 213 *e*Pn **Pn 15 26 22.4 -0.1**
16nm,1.0s
FITZ S Sn 15 29 27.0 -9.3
GUMO Guam 19.34 28 LR LR 15 34 07.7
comp=Z,96nm,18.6s,baz=182,slow=37
CTA Charters Tower 19.54 148 P **Pn 15 26 49.6 +1.7**
0.5nm,0.3s,baz=322,slow=12,SNR=5.9
AS01 Alice Springs 20.11 184 *e*P **P 15 26 54.9 +2.0**
AS31 Alice Springs 20.12 184 *e*P Pn 15 26 55.5 +0.7
20nm,0.6s
ASAR Alice Springs 20.12 184 P Pn 15 26 55.7 +0.9
46nm,0.7s,baz=9.2,slow=11,SNR=367
ASAR S **S 15 30 32.9 -5.2**
1.5nm,0.7s,baz=5.5,slow=21,SNR=5.4
ASAR LR LR 15 35 57.5
comp=Z,55nm,18.1s,baz=7.5,slow=40
MBWA Marble Bar 23.33 220 *e*P **P 15 27 29.8 +2.6**
16nm,0.6s
STKA Stephens Creek 28.81 169 P **P 15 28 18.0 +1.1**
4.6nm,0.7s,baz=340,slow=8.6,SNR=19
STKA LR LR 15 41 16.5
comp=Z,110nm,20.7s,baz=0.2,slow=39
STKA Stephens Creek 28.81 169 *e*P **P 15 28 17.6 +0.7**
1.0nm,0.8s
JNU Nakatsue 36.68 353 *e*P **P 15 29 24.1 -1.6**
17nm,0.9s
WHN Wuhan 39.43 331 ⇑P **P 15 29 49.5 +0.7**
MJAR Matsushiro Arr 39.91 3 P **P 15 29 50.8 -2.0**
1.8nm,0.7s,baz=180,slow=8.8,SNR=6.2
GYA Guiyang 40.81 319 *e*P **P 15 30 01.0 +0.4**
GYA pmax pmax
comp=Z,10.0nm,1.0s
KSAR Wonju Array Be 41.34 351 P **P 15 30 02.8 -1.8**
KSRS Korea Array 41.34 351 P **P 15 30 02.8 -1.8**
comp=Z,2.1nm,1.0s,baz=168,slow=9.5,SNR=7.6
CM01 Chiang Mai Arr 42.08 302 *e*P **P 15 30 10.4 -0.6**
CMAR Chiang Mai Arr 42.11 302 P **P 15 30 10.3 -0.9**
comp=Z,1.0nm,0.9s,baz=124,slow=6.4,SNR=7.4
KMI Kunming 42.68 314 P **P 15 30 16.7 +0.7**
KMI pmax pmax
comp=Z,11nm,0.7s
KMI pmax pmax
comp=Z,81nm,4.6s
CD2 Chengdu 45.69 321 P **P 15 30 39.2 -0.7**
CD2 pmax pmax
comp=Z,5.0nm,0.7s
BJI Beijing 46.82 340 P **P 15 30 47.5 -1.0**
BJI S **S 15 37 38.4 +0.7**
BJI pmax pmax
comp=Z,15nm,0.8s
BJI pmax pmax
comp=Z,89nm,5.4s
BJI LR LR
comp=Z,93nm,24.8s
USRK Ussuriysk Ar. 47.58 357 P **P 15 30 53.1 -1.2**
comp=Z,4.2nm,0.7s,baz=180,slow=5.7,SNR=15
MDJ Mudanjiang 48.19 354 P **P 15 30 58.3 -0.8**
MDJ pmax pmax
comp=Z,11nm,0.8s
MDJ pmax pmax
comp=Z,67nm,3.5s
MDJ Mudanjiang 48.19 354 *e*P **P 15 30 57.6 -1.4**
comp=Z,9.9nm,0.8s
LZH Lanzhou 49.26 326 *e*P **P 15 31 08.6 +0.9**
LZH pP pP 15 31 11.3 -3.3
LZH sP sP 15 31 13.4 -3.9
LZH pmax pmax
comp=Z,28nm,1.3s
HHC Hu-ho-hao-te 49.27 336 *e*P **P 15 31 08.0 +0.4**
HHC sP pP 15 31 14.5 0.0
HHC S **S 15 38 16.9 +4.3**
HHC pmax pmax
comp=Z,17nm,1.1s
HHC pmax pmax
comp=Z,140nm,6.5s
HHC LR LR
comp=N,290nm,15.9s
HHC LR LR
comp=E,200nm,15.5s
HHC LR LR
comp=Z,340nm,16.0s
GTA Gaotai 53.87 326 ⇑P **P 15 31 42.7 +0.6**
GTA pP pP 15 31 46.2 -2.8
GTA sP sP 15 31 48.9 -2.8
GTA pmax pmax
comp=Z,15nm,0.9s
SONM Songino Array 57.13 337 P **P 15 32 04.7 -0.7**
comp=Z,0.9nm,0.5s,baz=158,slow=8.4,SNR=5.5
KKN Kakani 57.48 306 *e*P **P 15 32 06.9 -1.5**
comp=Z,7.9nm,0.6s
DMN Daman 57.55 306 *e*P **P 15 32 07.5 -1.4**
comp=Z,5.5nm,0.3s
GKN Gorkha 58.09 306 *e*P **P 15 32 11.6 -1.0**
comp=Z,8.6nm,0.6s
KOLN Koldanda 58.84 305 *e*P **P 15 32 18.5 +0.6**
comp=Z,12nm,0.6s
PYUN Piuthan 59.46 306 *e*P **P 15 32 23.0 +0.8**
comp=Z,33nm,0.5s
WMQ Urumqi 63.68 323 P **P 15 32 51.0 +0.8**
WMQ pP pP 15 32 54.5 -2.8
WMQ sP sP 15 32 57.5 -2.4
WMQ PP **PP 15 35 12.6 +2.1**
WMQ PcS 15 37 29.4
WMQ ScS **ScS 15 42 35.4 -7.2**
WMQ pmax pmax
comp=Z,7.0nm,0.6s
WMQ pmax pmax
comp=Z,39nm,3.8s
WMQ LR LR
comp=N,41nm,39.0s
WMQ LR LR
comp=E,47nm,20.4s
WMQ LR LR
comp=Z,17nm,20.0s
MK01 Makanchi Array 68.48 324 *e*P **P 15 33 19.4 -1.5**
MK31 Makanchi Array 68.50 324 *e*P **P 15 33 20.9 -0.1**
MKAR Makanchi Array 68.50 324 P **P 15 33 21.6 +0.5**
comp=Z,4.3nm,0.6s,baz=112,slow=8.0,SNR=52
MKAR Makanchi Array 68.50 324 *e*P **P 15 33 21.0 0.0**
MAKZ Makanchi 68.69 324 *e*P **P 15 33 22.1 -0.2**
comp=Z,6.7nm,0.8s
KSH Kashi 69.33 315 P **P 15 33 28.8 +2.3**
KSH *e*pP pP 15 33 33.1 -0.5
KSH *e*sP sP 15 33 35.7 -0.6
KSH *e*PcP **PcP 15 33 51.7 +1.7**
KSH S **S 15 42 34.8 +2.5**
KSH ScS **SKSac 15 43 25.5 -0.3**
KSH pmax pmax
comp=Z,90nm,4.5s
KSH LR LR
comp=N,150nm,6.9s
KSH LR LR
comp=E,110nm,6.3s
ZALV Zalesovo Beam 71.04 331 P **P 15 33 35.6 -0.9**
comp=E,5.6nm,0.7s,baz=115,slow=5.7,SNR=25
BVAR Borovoye Array 78.15 326 P **P 15 34 17.8 0.0**
comp=E,2.0nm,0.7s,baz=116,slow=6.8,SNR=13
BRVK Borovoye 78.22 326 *e*P **P 15 34 17.9 -0.3**
comp=E,2.9nm,0.7s
ZRNK Zerenda 78.90 326 *e*P **P 15 34 21.8 -0.1**
comp=E,2.4nm,0.8s
GEYT Alibeck 82.24 309 P **P 15 34 40.9 +0.6**
comp=E,1.4nm,0.5s,baz=235,slow=5.2,SNR=4.7
MLY Manley 86.34 24 *e*P **P 15 34 59.5 -1.0**
comp=E,4.1nm,0.7s
RND Reindeer 86.70 26 *e*P **P 15 35 00.6 -1.8**
comp=E,6.3nm,0.8s
CCB Clear Creek Bu 87.45 25 *e*P **P 15 35 03.9 -1.9**
comp=E,3.8nm,0.7s
ILAR Eielson Array 87.86 25 P **P 15 35 05.7 -2.1**
comp=E,1.8nm,0.7s,baz=263,slow=4.5,SNR=23
ILB Eielson Array 87.86 25 *e*P **P 15 35 05.3 -2.5**
IL1 Eielson Array 87.86 25 *e*P **P 15 35 05.4 -2.4**
LPAZ La Paz 149.45 131 PKPbc **PKPbc 15 42 11.3 +1.6**
comp=E,1.4nm,0.7s,baz=267,slow=4.9,SNR=4.8

MEX 02 15:26:11.4±0.8, 16°.85N×95°.12W, h116km±21km, MD3.7, Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HUIG	**Huatulco**	**1.43**	**221**	*e*P	Pn	15 26 35.6	-2.2
HUIG				*i* S	Sn	15 26 56.6	-1.3
VHO	**Vista Hermosa**	**1.56**	**278**	*e*P	Pn	15 26 38.6	-0.9
VHO				*i* S	Sn	15 26 58.9	-1.9
TGIG		**1.92**	**92**	*i* P	Pn	15 26 42.9	-0.8
TGIG				*i* S	Sn	15 27 06.5	-1.9
PCIG		**2.15**	**122**	*i* P	Pn	15 26 46.2	-0.5
PCIG				*e*S	Sn	15 27 12.4	-1.1
TPIG	**Tehuac#an**	**2.65**	**307**	*i* P	Pn	15 26 52.5	-0.6
TPIG				*i* S	Sn	15 27 23.5	-1.6

JMA 02 15:27:48.5, 36°.99N×140°.53E, h6km±1km, M2.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.24**	**62**	P	Pg	15 27 53.4	+0.1
JHO	**Hitachi**	**0.38**	**175**	P	Pg	15 27 55.8	-0.1
JHO				S	Sg	15 28 00.9	+0.1
JFK	**Kawauchi**	**0.47**	**36**	P	Pg	15 27 57.4	-0.1
JFT	**Otama**	**0.55**	**344**	P	Pg	15 27 59.3	+0.2
JFT				S	Sg	15 28 07.1	+0.8
JFY	**Yanaizu**	**0.78**	**303**	P	Pg	15 28 03.4	-0.1
JFY				S	Sg	15 28 13.7	+0.1
JMM	**Marumori**	**0.90**	**13**	P	Pg	15 28 05.3	-0.5
JMM				S	Sg	15 28 17.0	-0.5
MAT	**Matsushiro**	**1.92**	**257**	P	Pn	15 28 22.7	+1.0
MAT				S	Sb	15 28 48.0	-0.1

*CSEM **02** 15:29:25.5±0.2, 34°.48N×36°.24E, h2km, ML1.8, Error ellipse: s-maj=5.2km s-min=2.3km az=80.0*
NSSC 02 15:29:26.0±1.5, 34°.49N×36°.23E, h6km±7km, ML1.8, Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HAWK	**Haweek**	**0.15**	**76**	*e*P	Pg	15 29 27.6	-1.5
HAWK				*e*S	Sg	15 29 29.6	-1.6
HAWK				AML	AML	15 29 30.9	
comp=E,2μm,0.5s							
HAWK				AML	AML	15 29 32.1	
comp=N,3μm,0.4s							
HAWK	**Haweek**	**0.15**	**76**	*e*P	Pg	15 29 27.6	-1.5
HAWK				*e*S	Sg	15 29 29.6	-1.6
comp=N,3μm,0.4s							
MARH	**Ras Al Marh**	**0.50**	**155**	*e*P	Pg	15 29 34.7	-1.1
MARH				*e*S	Sg	15 29 42.8	+0.4
MARH				AML	AML	15 29 45.4	
comp=N,51nm,0.3s							
MARH				AML	AML	15 29 46.5	
comp=E,89nm,0.3s							
MARH	**Ras Al Marh**	**0.50**	**155**	*e*P	Pg	15 29 35.0	-0.8
MARH				*e*S	Sg	15 29 42.9	+0.5
MARH				AML	AML	15 29 45.5	
comp=N,50nm,0.3s							
MARH				AML	AML	15 29 46.5	
comp=E,90nm,0.3s							
MARH	**Ras Al Marh**	**0.50**	**155**	*e*P	Pg	15 29 34.7	-1.0
MARH				*e*S	Sg	15 29 42.8	+0.5
comp=E,89nm,0.3s							
BIDA	**Albida**	**0.53**	**8**	*e*P	Pg	15 29 36.2	-0.1
BIDA				*e*S	Sb	15 29 45.2	-0.7
BIDA				AML	AML	15 29 54.6	
comp=N,36nm,0.6s							
BIDA				AML	AML	15 29 56.1	
comp=E,104nm,0.6s							
BIDA	**Albida**	**0.53**	**8**	*e*P	Pg	15 29 36.2	-0.1
BIDA				*e*S	Sb	15 29 45.2	-0.7
comp=E,104nm,0.6s							
RABH	**Abou Rabah**	**0.81**	**93**	*e*P	Pg	15 29 41.1	-0.4
RABH				*e*S	Sg	15 29 51.9	-0.1
RABH				AML	AML	15 29 56.0	
comp=N,24nm,0.4s							
RABH				AML	AML	15 30 05.4	
comp=E,21nm,0.3s							
RABH	**Abou Rabah**	**0.81**	**93**	*e*P	Pg	15 29 41.1	-0.4
RABH				*e*S	Sg	15 29 51.9	-0.2
comp=E,21nm,0.3s							
ROOS	**tI_alroos**	**0.93**	**109**	*e*P	Pg	15 29 43.6	-0.3
ROOS				*e*S	Sg	15 29 55.7	-0.3
ROOS				AML	AML	15 30 04.7	
comp=N,62nm,0.5s							
ROOS				AML	AML	15 30 06.5	
comp=E,26nm,0.7s							
ROOS	**tI_alroos**	**0.93**	**109**	*e*P	Pb	15 29 44.9	+0.2
ROOS				*e*S	Sg	15 29 56.6	+0.6
ROOS				AML	AML	15 30 04.7	
comp=N,62nm,0.5s							
ROOS				AML	AML	15 30 06.6	
comp=E,26nm,0.7s							
ROOS	**tI_alroos**	**0.93**	**109**	*e*P	Pg	15 29 43.6	-0.3
ROOS				*e*S	Sg	15 29 55.7	-0.3
comp=E,27nm,0.7s							
WRDH	**Warideh**	**1.03**	**8**	*e*P	Pg	15 29 45.5	-0.4
WRDH				*e*S	Sg	15 29 59.7	+0.5
WRDH				AML	AML	15 30 09.1	
comp=N,15nm,0.4s							
WRDH	**Warideh**	**1.03**	**8**	*e*P	Pg	15 29 45.8	0.0
WRDH				*e*S	Sb	15 29 59.8	-0.4
WRDH	**Warideh**	**1.03**	**8**	*e*P	Pg	15 29 45.5	-0.3
WRDH				*e*S	Sg	15 29 59.7	+0.5
comp=N,15nm,0.4s							
BRBR	**Barbar**	**1.10**	**192**	*e*P	Pg	15 29 47.2	+0.1
BRBR				*e*S	Sg	15 30 01.6	+0.3
BRBR				AML	AML	15 30 11.4	
comp=E,24nm,0.6s							
BRBR				AML	AML	15 30 12.3	
comp=N,24nm,0.6s							
BRBR	**Barbar**	**1.10**	**192**	*e*P	Pg	15 29 47.2	+0.2
BRBR				*e*S	Sg	15 30 01.6	+0.4
SLNF	**Slenfeh**	**1.11**	**360**	*e*P	Pg	15 29 46.6	-0.7
SLNF				*e*S	Sg	15 30 01.7	0.0
SLNF				AML	AML	15 30 08.8	
comp=N,64nm,0.4s							
SLNF				AML	AML	15 30 08.9	
comp=E,56nm,0.3s							
SLNF	**Slenfeh**	**1.11**	**360**	*e*P	Pg	15 29 46.6	-0.7
SLNF				*e*S	Sg	15 30 01.7	0.0
ARNB	**Al Arnab**	**1.39**	**351**	*e*P	Pn	15 29 51.4	-0.7
ARNB				*e*S	Sn	15 30 11.2	+0.3
ARNB				AML	AML	15 30 13.9	
comp=E,12nm,0.3s							
ARNB				AML	AML	15 30 16.0	
comp=N,20nm,0.3s							
ARNB	**Al Arnab**	**1.39**	**351**	*e*P	Pn	15 29 51.5	-0.6
ARNB				*e*S	Sb	15 30 09.0	-1.5
ARNB				AML	AML	15 30 14.0	
comp=E,12nm,0.3s							
ARNB				AML	AML	15 30 16.1	
comp=N,20nm,0.3s							
ARNB	**Al Arnab**	**1.39**	**351**	*e*P	Pn	15 29 51.3	-0.8
ARNB				*e*S	Sn	15 30 11.1	+0.3
comp=N,20nm,0.3s							
BTCH	**Batrach**	**1.56**	**7**	*e*P	Pb	15 29 55.1	-0.2
BTCH				*e*S	Sn	15 30 14.2	-0.8
BTCH				AML	AML	15 30 23.8	
comp=E,14nm,0.3s							
BTCH				AML	AML	15 30 24.6	
comp=N,28nm,0.5s							
BTCH	**Batrach**	**1.56**	**7**	*e*P	Pb	15 29 55.2	-0.2
BTCH				*e*S	Sn	15 30 14.2	-0.8
comp=N,28nm,0.5s							
ZALF	**Zalf**	**1.81**	**149**	*e*P	Pn	15 29 57.2	-0.7
ZALF				*e*S	Sn	15 30 21.1	-0.1
ZALF				AML	AML	15 30 25.6	
comp=E,18nm,0.7s							
ZALF				AML	AML	15 30 25.6	
comp=N,11nm,0.6s							
ZALF	**Zalf**	**1.81**	**149**	*e*P	Pb	15 29 58.9	-0.7
ZALF				*e*S	Sn	15 30 20.6	-0.6
ZALF				AML	AML	15 30 25.7	
comp=E,18nm,0.7s							
ZALF				AML	AML	15 30 25.7	
comp=N,11nm,0.6s							
ZALF	**Zalf**	**1.81**	**149**	*e*P	Pn	15 29 57.2	-0.6
ZALF				*e*S	Sn	15 30 21.1	0.0
comp=N,11nm,0.6s							
SALA	**Sala**	**1.82**	**166**	*e*P	Pn	15 29 57.9	-0.2
SALA				*e*S	Sn	15 30 22.1	+0.6
SALA				AML	AML	15 30 30.0	
comp=E,1.6nm,0.4s							
SALA				AML	AML	15 30 33.5	
comp=N,14nm,0.6s							
SALA	**Sala**	**1.82**	**166**	AML	AML	15 30 26.7	
comp=Z,20nm,0.6s							
SALA	**Sala**	**1.82**	**166**	*e*P	Pn	15 29 57.9	-0.2
SALA				*e*S	Sn	15 30 22.1	+0.6
comp=Z,14nm,0.6s							
DRWC	**Darouich**	**2.16**	**9**	*e*P	Pn	15 30 03.2	+0.6
DRWC				*e*S	Sn	15 30 28.5	-1.4
DRWC	**Darouich**	**2.16**	**9**	*e*P	Pn	15 30 03.2	+0.5
DRWC				*e*S	Sn	15 30 28.5	-1.4

*ISCJB **02** 15:30:38.5±0.8, 16°.54S±0°.08×74°.61W±0°.08, h33km, mb3.6/2, MS3.4/1, Error ellipse: s-maj=15.4km s-min=5.7km az=44.3*
*NEIC **02** 15:30:38.7±1.0, 16°.43S×74°.65W, h16km±6km, ML4.1(ARE), Error ellipse: s-maj=31.4km s-min=9.0km az=224.0*
NEIC Felt [II] at Yauca.
*IDC **02** 15:30:44.9±2.6, 16°.19S×74°.34W, h78km±20km, mb3.3/2, mb1 3.7/5, mb1mx3.5/31, mbtmp3.9/5, MS3.1/2, Ms1 3.1/2, ms1mx2.8/14, Error ellipse: s-maj=36.3km s-min=13.4km az=35.0*
ISC 02 15:30:41.7±0.9, 16°.39S±0°.09×74°.48W±0°.10, h35km, n13, σ2°.18/14, Near coast of Peru

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NNA	**Nana**	**4.94**	**332**	P	**Pn**	**15 31 54.5**	**+1.0**
14nm,0.3s,baz=128,slow=9.2,SNR=15							
NNA				S	**Sn**	**15 32 51.6**	**+2.1**
16nm,0.3s,baz=192,slow=5.5,SNR=4.6							
NNA				LR	LR	15 33 47.1	
comp=Z,89nm,21.6s,baz=44,slow=38							
NNA	**Nana**	**4.94**	**332**	*e*Pn	**Pn**	**15 31 52.3**	**-1.3**
PB11	**IPOC Station P**	**5.68**	**127**	*e*Pn	**Pn**	**15 32 03.7**	**0.0**
LPAZ	**La Paz**	**6.09**	**90**	P	**Pn**	**15 32 11.2**	**+1.4**
1.6nm,0.3s,baz=269,slow=11,SNR=32							
LPAZ				S	**Sn**	**15 33 20.5**	**+1.8**
baz=80,slow=11,SNR=1.2							
LPAZ	**La Paz**	**6.09**	**90**	*e*Pn	**Pn**	**15 32 11.0**	**+1.2**
PB01	**IPOC Station P**	**6.61**	**135**	*e*Pn	**Pn**	**15 32 17.3**	**+0.7**
LVC	**Limon Verde**	**8.11**	**141**	P	**Pn**	**15 32 40.0**	**+2.7**
16nm,0.3s,baz=304,slow=9.6,SNR=4.1							
LVC				S	**Sn**	**15 34 06.3**	**-1.7**
9.0nm,0.3s,baz=84,slow=19,SNR=4.4							
PTGA	**Pitinga**	**21.13**	**44**	P	**P**	**15 35 19.3**	**-4.4**
1.1nm,0.3s,baz=17,slow=20,SNR=2.8							
PTGA				LR	LR	15 44 07.2	
comp=Z,144nm,18.1s,baz=42,slow=38							
TX31	**Lajitas Ar. Si**	**53.49**	**328**	*e*P	**P**	**15 39 58.3**	**-0.5**
HONU	**Honeyville**	**67.30**	**330**	*e*pP	P	15 41 37.8	+4.7
BGMT	**Barton Gulch**	**70.17**	**333**	*e*P	**P**	**15 41 50.0**	**-1.0**
YKA	**Yellowknife Ar**	**84.70**	**343**	P	P	15 43 07.9	-3.6
0.3nm,0.7s,baz=137,slow=5.4,SNR=8.2							
SONM	**Songino Array**	**148.64**	**359**	PKPbc	**PKPdf**	**15 50 24.2**	**+2.6**
0.9nm,1.0s,baz=333,slow=2.0,SNR=4.5							

*ISK **02** 15:36:47.8, 39°.37N×31°.55E, h4km, MD2.9*
*CSEM **02** 15:36:48.2±0.3, 39°.46N×31°.62E, h2km, MD2.9, Error ellipse: s-maj=7.9km s-min=4.9km az=49.0*
ISC 02 15:36:48.6±1.1, 39°.44N±0°.05×31°.60E±0°.04, h3km±7km, n22, σ0°.56/31, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AUSIV	**SIVRIHISAR**	**0.05**	**274**	P	**Pg**	**15 36 49.5**	**-0.3**
AUSIV				S	**Sg**	**15 36 50.8**	**+0.2**
AUSIV	**SIVRIHISAR**	**0.05**	**274**	*i* P	**Pg**	**15 36 49.5**	**-0.3**
AUSIV				*i* S	**Sg**	**15 36 50.8**	**+0.2**
SVRH	**Sivrihisar-ESK**	**0.06**	**280**	*e*PG	**Pg**	**15 36 49.7**	**-0.3**
SVRH				*e*SG	**Sg**	**15 36 51.4**	**+0.4**
SVRH	**Sivrihisar-ESK**	**0.06**	**280**	*e*Pg	**Pg**	**15 36 49.7**	**-0.3**
SVRH				*e*Sg	**Sg**	**15 36 51.4**	**+0.4**
ESKT	**Eskisehir**	**0.58**	**278**	*i* P	**Pg**	**15 36 59.4**	**-0.5**
SEYT	**Eskypehyr**	**0.58**	**278**	P	**Pg**	**15 36 59.4**	**-0.5**
KIZT	**Kizilcal**	**0.60**	**158**	*e*PG	**Pg**	**15 36 59.4**	**-0.7**
KIZT	**Kizilcal**	**0.60**	**158**	*e*Pg	**Pg**	**15 36 59.4**	**-0.7**
BOLV	**Bolvadin**	**0.88**	**215**	P	**Pb**	**15 37 06.8**	**+0.2**
BOLV				S	**Sg**	**15 37 16.8**	**0.0**
BOLV	**Bolvadin**	**0.88**	**215**	*i* P	**Pb**	**15 37 06.8**	**+0.2**
BOLV				*i* S	**Sg**	**15 37 16.8**	**0.0**
BORA	**Eskisehir**	**0.99**	**297**	P	**Pb**	**15 37 08.1**	**-0.3**
BORA				S	**Sn**	**15 37 24.8**	**+0.8**
BORA	**Eskisehir**	**0.99**	**297**	*i* P	**Pb**	**15 37 08.2**	**-0.3**
BORA				*i* S	**Sn**	**15 37 24.8**	**+0.8**
KDHN	**Kadinhani**	**1.00**	**156**	P	**Pb**	**15 37 09.0**	**+0.4**
KDHN	**Kadinhani**	**1.00**	**156**	*i* P	**Pb**	**15 37 09.0**	**+0.4**
KDHN				*i* S	**Sn**	**15 37 25.7**	**+1.4**
MDUB	**Mudurnu**	**1.08**	**344**	*e*PN	**Pn**	**15 37 10.4**	**-0.3**
MDUB	**Mudurnu**	**1.08**	**344**	*e*Pn	**Pn**	**15 37 10.4**	**-0.3**
GULT	**Gulveren**	**1.30**	**320**	*e*PN	**Pn**	**15 37 13.8**	**+0.1**
GULT	**Gulveren**	**1.30**	**320**	*e*Pn	**Pn**	**15 37 13.8**	**+0.1**
CHBY	**Cihanbeyli**	**1.32**	**130**	*e*PN	**Pg**	**15 37 13.3**	**-0.6**
CHBY	**Cihanbeyli**	**1.32**	**130**	*e*Pn	**Pg**	**15 37 13.3**	**-0.6**
TVSB	**Tavsanli**	**1.66**	**271**	*e*PN	**Pn**	**15 37 17.8**	**-0.8**
TVSB	**Tavsanli**	**1.66**	**271**	*e*Pn	**Pn**	**15 37 17.8**	**-0.8**

*ISCJB **02** 15:39:52.2±1.1, 35°.56N±0°.08×141°.1E±0°.1, h33km, mb3.4/3, MS3.4/1, Error ellipse: s-maj=13.7km s-min=10.5km az=163.0*
*IDC **02** 15:39:52.2±4.4, 36°.16N×140°.85E, h0km, mb3.4/3, mb1 3.5/4, mb1mx3.2/65, mbtmp3.3/4, ML2.7/1, MS3.2/2, Ms1 3.2/2, ms1mx2.5/39, Error ellipse: s-maj=105.3km s-min=30.4km az=166.0*
*JMA **02** 15:39:53.0±0.2, 35°.55N×140°.93E, h40km±2km, M3.0*
ISC 02 15:39:53.1±1.4, 35°.49N±0°.06×141°.0E±0°.1, h33km, n12, σ0°.74/12, mb3.5/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.25**	**331**	P	**Pn**	**15 39 59.9**	**-0.4**
CHOJ				*e*S	**Sn**	**15 40 05.2**	**+1.1**
KTR	**Katsuura**	**0.66**	**239**	P	**Pn**	**15 40 06.7**	**+0.6**
JCN	**Nagara**	**0.66**	**264**	P	**Pn**	**15 40 06.2**	**+0.1**
BSO4	**Boso 4**	**0.74**	**228**	P	**Pn**	**15 40 07.6**	**+0.5**
BSO3	**Boso 3**	**0.79**	**211**	P	**Pn**	**15 40 07.5**	**-0.3**

BSO3 X 15 40 20.7
MJAR Matsushiro Arr 2.50 296 Pn **Pn 15 40 31.0 -0.5**
2.6nm,0.3s,baz=100,slow=14,SNR=29
MAT Matsushiro 2.50 296 P **Pn 15 40 32.3 +0.8**
MAT S **Sn 15 41 00.2 -0.7**
JNU Nakatsue 8.70 257 LR LR 15 45 49.1
comp=Z,135nm,18.1s,baz=124,slow=41
MKAR Makanchi Array 44.68 303 P **P 15 48 01.8 -0.9**
0.2nm,0.5s,baz=79,slow=7.5,SNR=2.9
KURBB Kurchatov Arra 46.71 309 P **P 15 48 18.1 -0.6**
0.3nm,0.4s,baz=84,slow=8.1,SNR=4.1
ILAR Eielson Array 50.98 32 P **P 15 48 51.9 +0.7**
0.4nm,0.7s,baz=268,slow=6.1,SNR=4.0
MMAI Mount Meron Ar 82.59 305 LR LR 16 31 08.7
comp=Z,16nm,18.4s,baz=30,slow=38

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*ISCJB **02** 15:41:46.7±0.3, 58°.73N±0°.02×18°.42E±0°.04, h0km, Error ellipse: s-maj=3.5km s-min=3.0km az=151.6*
*UPP **02** 15:41:46.4±0.2, 58°.70N×18°.54E, h0km, ML2.2, Explosion*
*CSEM **02** 15:41:47.3±0.2, 58°.74N×18°.42E, h2km, ML2.2, Error ellipse: s-maj=5.5km s-min=4.5km az=120.0, Mining explosion.*
*NAO **02** 15:41:48.8±2.0, 58°.76N×18°.49E, ML2.4*
*HEL **02** 15:41:50.0, 58°.84N×18°.47E, h0km, ML2.2, Explosion*
*IDC **02** 15:41:51.2±1.9, 58°.95N×18°.58E, h0km, mb1 2.9/4, mb1mx2.8/60, mbtmp2.8/4, ML2.6/4, Error ellipse: s-maj=21.7km s-min=8.6km az=173.0*
*BER **02** 15:41:52.0±2.9, 58°.94N×18°.54E, h0km, ML2.4(NAO), Suspected explosion*
ISC 02 15:41:45.4±0.7,**58°.76N**±0°.02×**18°.28E**±0°.02,**h0**km,**n93,** σ2§**13**/116,**Baltic Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NYNU	**Nynaeshamn**	**0.28**	**329**	P	**Pb**	**15 41 54.4**	**+1.1**
NYNU				S	**Sb**	**15 41 59.7**	**+1.1**
NYNU	**Nynaeshamn**	**0.28**	**329**	*i* P	**Pb**	**15 41 54.4**	**+1.1**
NYNU				*i* S	**Sb**	**15 41 59.7**	**+1.1**
NYNU	**Nynaeshamn**	**0.28**	**329**	P	**Pb**	**15 41 54.4**	**+1.1**
NYNU				S	**Sb**	**15 41 59.7**	**+1.1**
VIKU	**Vikbolandet**	**0.87**	**253**	P	**Pb**	**15 42 04.8**	**+1.5**
VIKU				S	**Sn**	**15 42 18.1**	**-0.1**
VIKU	**Vikbolandet**	**0.87**	**253**	*e*P	**Pb**	**15 42 04.8**	**+1.5**
VIKU				*e*S	**Sn**	**15 42 18.1**	**-0.1**
VIKU	**Vikbolandet**	**0.87**	**253**	P	**Pb**	**15 42 04.8**	**+1.5**
VIKU				S	**Sn**	**15 42 18.1**	**-0.1**
NRTU	**Norrtaelje**	**0.93**	**11**	P	**Pg**	**15 42 04.9**	**+1.7**
NRTU	**Norrtaelje**	**0.93**	**11**	*e*P	**Pg**	**15 42 04.9**	**+1.7**
NRTU	**Norrtaelje**	**0.93**	**11**	P	**Pg**	**15 42 04.9**	**+1.7**
ESKU	**Eskilstuna**	**1.08**	**296**	P	**Pn**	**15 42 09.1**	**+1.3**
ESKU	**Eskilstuna**	**1.08**	**296**	*e*P	**Pn**	**15 42 09.1**	**+1.3**
ESKU	**Eskilstuna**	**1.08**	**296**	P	**Pn**	**15 42 09.1**	**+1.3**
GOTU	**Gotland**	**1.09**	**172**	P	**Pg**	**15 42 05.4**	**-0.9**
GOTU	**Gotland**	**1.09**	**172**	*e*P	**Pg**	**15 42 05.4**	**-0.9**
GOTU	**Gotland**	**1.09**	**172**	P	**Pg**	**15 42 05.4**	**-0.9**
UPP	**Uppsala**	**1.15**	**343**	P	**Pn**	**15 42 09.8**	**+1.2**
UPP	**Uppsala**	**1.15**	**343**	*e*P	**Pn**	**15 42 09.8**	**+1.2**
UPP	**Uppsala**	**1.15**	**343**	P	**Pn**	**15 42 09.8**	**+1.2**
FIBU	**Brunna**	**1.24**	**338**	P	**Pn**	**15 42 11.6**	**+1.7**
BACU	**Backbrunna**	**1.25**	**332**	P	**Pn**	**15 42 11.8**	**+1.8**
BACU	**Backbrunna**	**1.25**	**332**	*e*P	**Pn**	**15 42 11.8**	**+1.8**
BACU	**Backbrunna**	**1.25**	**332**	P	**Pn**	**15 42 11.8**	**+1.8**
FLYU	**Flymyra**	**1.38**	**352**	P	**Pb**	**15 42 13.6**	**+1.5**
FLYU	**Flymyra**	**1.38**	**352**	*e*P	**Pb**	**15 42 13.6**	**+1.5**
FLYU	**Flymyra**	**1.38**	**352**	P	**Pb**	**15 42 13.6**	**+1.5**
VSTU	**Vaestervik**	**1.44**	**221**	P	**Pn**	**15 42 13.7**	**+1.0**
VSTU	**Vaestervik**	**1.44**	**221**	*e*P	**Pn**	**15 42 13.7**	**+1.0**
VSTU	**Vaestervik**	**1.44**	**221**	P	**Pn**	**15 42 13.7**	**+1.0**
LNKU	**Linkoeping**	**1.56**	**251**	P	**Pg**	**15 42 16.8**	**+1.6**
LNKU	**Linkoeping**	**1.56**	**251**	*e*P	**Pg**	**15 42 16.8**	**+1.6**
LNKU	**Linkoeping**	**1.56**	**251**	P	**Pg**	**15 42 16.8**	**+1.6**
GRAU	**Graesoe**	**1.58**	**5**	P	**Pn**	**15 42 16.5**	**+1.9**
GRAU	**Graesoe**	**1.58**	**5**	*e*P	**Pn**	**15 42 16.5**	**+1.9**
GRAU	**Graesoe**	**1.58**	**5**	P	**Pn**	**15 42 16.5**	**+1.9**
OSTU	**Oestervaala**	**1.58**	**339**	P	**Pg**	**15 42 17.5**	**+1.8**
OSTU	**Oestervaala**	**1.58**	**339**	*e*P	**Pg**	**15 42 17.5**	**+1.8**
OSTU	**Oestervaala**	**1.58**	**339**	P	**Pg**	**15 42 17.5**	**+1.8**
ASPU	**Aespoe**	**1.62**	**214**	P	**Pn**	**15 42 16.5**	**+1.4**
ASPU	**Aespoe**	**1.62**	**214**	*e*P	**Pn**	**15 42 16.5**	**+1.4**
ASPU	**Aespoe**	**1.62**	**214**	P	**Pn**	**15 42 16.5**	**+1.4**
BYXU	**Byxelkrok**	**1.63**	**205**	P	**Pn**	**15 42 16.2**	**+1.0**
BYXU	**Byxelkrok**	**1.63**	**205**	*e*P	**Pn**	**15 42 16.2**	**+1.0**
BYXU	**Byxelkrok**	**1.63**	**205**	P	**Pn**	**15 42 16.2**	**+1.0**
AAL	**Aland**	**1.67**	**31**	P	**Pn**	**15 42 16.7**	**+1.0**
AAL	**Aland**	**1.67**	**31**	*e*P	**Pn**	**15 42 16.9**	**+1.1**
AAL				*e*S	**Sn**	**15 42 37.1**	**-0.7**
AAL	**Aland**	**1.67**	**31**	P	**Pn**	**15 42 16.8**	**+1.0**
AAL				S	**Sn**	**15 42 37.1**	**-0.7**
FALU	**Falun**	**2.14**	**325**	P	**Pb**	**15 42 25.6**	**+0.7**
FALU	**Falun**	**2.14**	**325**	*e*P	**Pb**	**15 42 25.6**	**+0.7**
FALU	**Falun**	**2.14**	**325**	P	**Pb**	**15 42 25.6**	**+0.7**
SLIT	**Slitere, Latvi**	**2.41**	**117**	*e*P	**Pb**	**15 42 29.4**	**-0.1**
SLIT				*e*		15 43 01.3	
SLIT	**Slitere, Latvi**	**2.41**	**117**	*e*P	**Pn**	**15 42 26.3**	**+0.3**
SNR=50
SLIT *e*S **Sn 15 42 58.2 +2.1**
446nm,0.5s,SNR=50
SLIT Sb **Sb 15 43 01.2 +1.5**
VXJU Vaexsjoe 2.57 225 P **Pn 15 42 30.8 +2.6**
VXJU Vaexsjoe 2.57 225 *e*P **Pn 15 42 30.8 +2.6**
VXJU Vaexsjoe 2.57 225 P **Pn 15 42 30.8 +2.6**
HFS Hagfors 2.72 302 Pn **Pb 15 42 34.3 -0.5**
baz=114,slow=12
HFS Sn **Sb 15 43 09.2 +0.5**
baz=127,slow=22
HFS Lg Lg 15 43 16.4
baz=121,slow=37
HFS Hagfors 2.72 302 Pn **Pb 15 42 34.8 +0.1**
0.6nm,0.3s,baz=105,slow=16,SNR=18
HFS Sn **Sb 15 43 10.3 +1.7**
1.8nm,0.3s,baz=121,slow=23,SNR=6.1
HFS Hagfors 2.72 302 Pn **Pb 15 42 34.3 -0.5**
baz=114,slow=12
HFS Sn **Sb 15 43 09.2 +0.5**
baz=127,slow=22
HFS Lg Lg 15 43 16.4
baz=121,slow=37
HFS Hagfors 2.72 302 Pn **Pb 15 42 34.3 -0.5**
SNR=50
HFS Sn **Sb 15 43 09.1 +0.5**
SNR=50
HFS Lg Lg 15 43 16.4
SNR=91
BLEU Blekinge 2.80 209 P **Pn 15 42 33.2 +1.8**
BLEU Blekinge 2.80 209 *e*P **Pn 15 42 33.2 +1.8**
BLEU Blekinge 2.80 209 P **Pn 15 42 33.2 +1.8**
RAF Rauma 2.87 36 *e*P **Pn 15 42 35.9 +3.6**
RAF *e*SB **Sb 15 43 12.3 -0.6**
RAF *e*SG **Sg 15 43 14.4 -2.9**
RAF MSG 15 43 20.4
comp=Z,8.8nm,0.2s
RAF Rauma 2.87 36 P **Pn 15 42 35.8 +3.6**
RAF Sb **Sb 15 43 12.2 -0.6**
RAF Sg **Sg 15 43 14.4 -2.9**
MTSE Matsula 2.88 89 *e*P **Pn 15 42 35.4 +2.9**
MTSE Matsula 2.88 89 *e*P **Pn 15 42 32.8 +0.3**
SNR=50
MTSE *e*S **Sn 15 43 07.8 0.0**
SNR=50
MEF Metsahovi 3.44 62 *e*PG **Pb 15 42 49.0 +1.9**
MEF Metsahovi 3.44 62 Pg **Pb 15 42 49.0 +1.9**
MEF *e*S **Sn 15 43 25.3 +3.7**
comp=Z,12nm,0.2s,SNR=50
BSD Bornholm Skovb 4.10 208 *i* P **Pn 15 42 53.2 +4.0**
BSD Bornholm Skovb 4.10 208 *e*P **Pn 15 42 53.2 +4.0**
BSD *e*S **Sn 15 43 40.4 +2.6**
comp=Z,1.8nm,0.7s,SNR=49
NB2 NORSAR Subarra 4.23 306 Pn **Pb 15 42 57.5 -3.1**
baz=112,slow=16
NB2 Lg Lg 15 44 02.0
baz=117,slow=28
NB2 NORSAR Subarra 4.23 306 Pn **Pb 15 42 57.5 -3.1**
baz=112,slow=16
NB2 Lg Lg 15 44 02.0
baz=117,slow=28
NB2 NORSAR Subarra 4.23 306 Pn **Pb 15 42 57.5 -3.1**
SNR=50
NB2 Lg Lg 15 44 02.0
NOA NORSAR Array B 4.23 306 Pn **Pb 15 42 57.3 -3.3**
comp=Z,0.7nm,0.3s,baz=129,slow=13,SNR=7.5
NOA Lg Lg 15 44 02.5
comp=Z,2.0nm,0.3s,baz=191,slow=5.4,SNR=8.8
PVF Pernaja 4.24 62 *e*P **Pn 15 42 55.7 +4.6**
KEF Keuruu 4.72 41 *e*P **Pn 15 42 60.0 +2.2**
KEF Keuruu 4.72 41 P **Pn 15 42 59.9 +2.2**
FIA0 FINESS Array S 4.74 52 Pn **Pn 15 42 59.9 +1.9**
baz=241,slow=12
FIA0 Lg Lg 15 44 12.7
baz=242,slow=28
FIA0 FINESS Array S 4.74 52 Pn **Pn 15 42 59.9 +1.9**
baz=241,slow=12
FIA0 Lg Lg 15 44 12.7
baz=242,slow=28
FIA0 FINESS Array S 4.74 52 *e*P **Pn 15 43 02.7 +4.7**
FIA0 FINESS Array S 4.74 52 Pn **Pn 15 42 59.8 +1.9**
SNR=50
FIA0 FINESS Array S 4.74 52 P **Pn 15 43 02.6 +4.7**
FIA0 Lg Lg 15 44 12.7
SNR=90
FINES FINESS Array B 4.74 52 Pn **Pn 15 42 59.7 +1.8**
comp=Z,0.4nm,0.3s,baz=242,slow=12,SNR=19
FINES Lg Lg 15 44 12.8
comp=Z,1.6nm,0.3s,baz=240,slow=22,SNR=6.8
VAF Ylistaro 4.80 25 *e*PB **Pb 15 43 09.9 -0.3**
VAF Ylistaro 4.80 25 Pb **Pb 15 43 09.9 -0.3**
HOMB Homborsund 5.15 269 *e*P **Pn 15 43 06.0 +2.4**
SNR=49
KAF Kangasniemi 5.20 46 *e*P **Pn 15 43 08.5 +4.2**
KAF Kangasniemi 5.20 46 P **Pn 15 43 08.5 +4.2**
SUF Sumiainen 5.53 41 *e*P **Pn 15 43 10.4 +1.5**
SUF Sumiainen 5.53 41 P **Pn 15 43 10.3 +1.5**
ARA0 ARCESS Array S 11.25 13 Pn **Pn 15 44 26.6 -0.6**
baz=196,slow=14
ARA0 Sn **Sn 15 46 26.9 -6.5**
baz=197,slow=22
ARA0 ARCESS Array S 11.25 13 Pn **Pn 15 44 26.6 -0.6**
baz=196,slow=14
ARA0 Sn **Sn 15 46 26.9 -6.5**
baz=197,slow=22
ARA0 ARCESS Array S 11.25 13 Pn **Pn 15 44 26.6 -0.6**
SNR=50
ARCES ARCESS Array B 11.25 13 Pn **Pn 15 44 26.5 -0.7**
comp=Z,0.1nm,0.3s,baz=197,slow=14,SNR=7.3
ARCES Sn Sn 15 46 24.4 -9.1
comp=Z,0.1nm,0.3s,baz=194,slow=22,SNR=3.6
ARCES Lg Lg 15 47 36.6
comp=Z,0.1nm,0.3s,baz=198,slow=24,SNR=3.4

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*IDC **02** 15:42:33.8±0.4, 3°.27S×135°.55E, h0km, mb4.8/30, mb1 4.8/34, mb1mx4.8/48, mbtmp4.8/34, ML3.1/3, MS4.2/30, Ms1 4.2/30, ms1mx4.1/53, Error ellipse: s-maj=17.0km s-min=9.9km az=68.0*
*ISCJB **02** 15:42:35.1±0.1, 3°.36S±0°.02×135°.61E±0°.02, h22km, mb5.1/147, MS4.2/40, Error ellipse: s-maj=3.2km s-min=2.9km az=25.2*
*NEIC **02** 15:42:36.9±1.6, 3°.29S×135°.55E, h22km±12km, mb5.2/69, Error ellipse: s-maj=5.5km s-min=4.4km az=46.0*
NEIC Felt [IV] at Nabire.
*GCMT **02** 15:42:36.9±0.2, 3°.31S×135°.43E, h17km±1km, MW5.2/98, Moment Tensor Solution. s60,c91; s98,c154; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-0.09±.10; $M_{\theta\theta}$-1.41±.08; $M_{\phi\phi}$1.51±.10; $M_{r\theta}$-5.06±.44; $M_{\theta\phi}$-3.66±.08; $M_{\phi r}$0.93±.22; Best double couple: $M_0$6.48100×10^{16} NP1:ϕ_s101.00000°, δ89.00000°, λ-127.00000°. NP2: ϕ_s10.00000°, δ37.00000°, λ-1.00000°. Principal axes: T 6.4650, Plg34.0000°, Azm222.0000°; N 0.0390, Plg37.0000°, Azm102.0000°; P -6.4970, Plg35.0000°, Azm340.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*MOS **02** 15:42:36.8±0.9, 3°.31S×135°.53E, h33km, mb5.3/44 Error ellipse: s-maj=10.3km s-min=5.8km az=112.1*
*BJI **02** 15:42:36.9, 3°.13S×135°.79E, h31km, mb5.3/70, mB5.2/44, Ms4.6/44, Ms7 4.3/36*
*DJA **02** 15:42:38.5±0.7, 3°S±2°×13°6E±°, h16km±6km, M5.1/62, mB5.5/35, mb5.3/62, MLv5.4/2, Mw(mB)5.0/35*
ISC 02 15:42:37.2±0.3,**3°.41S**±0°.03×**135°.50E**±0°.03,**h22**km,**n362,** σ1§**90**/382,**mb5.2**/147,**MS4.2**/40,**18C-16D,Irian Jaya region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RKPI	**Ransiki, Papua**	**2.30**	**325**	P	**Pn**	**15 43 13.1**	**-0.7**
RKPI				S	**Sb**	**15 43 45.7**	**-0.3**
FAKI	**Fak Fak**	**3.28**	**278**	P	**Pn**	**15 43 28.6**	**+1.3**
FAKI				S	**Sn**	**15 44 09.0**	**+3.3**
FAKI	**Fak Fak**	**3.28**	**278**	*e*Pn	**Pn**	**15 43 28.7**	**+1.4**
GENI	**Genyem**	**4.74**	**80**	P	**Pn**	**15 43 49.1**	**+1.8**
GENI				S	**Sn**	**15 44 41.7**	**+0.1**
SWI	**Sorong**	**4.93**	**301**	P	**Pn**	**15 43 50.1**	**+0.1**
SWI				S	**Sn**	**15 44 47.7**	**+1.3**
JAY	**Jayapura**	**5.28**	**80**	Pn	**Pn**	**15 43 55.1**	**+0.3**
0.5nm,0.3s,baz=256,slow=22,SNR=21
JAY Sn **Sn 15 44 53.7 -1.3**
0.2nm,0.3s,baz=90,slow=20,SNR=2.1
JAY Jayapura 5.28 80 P **Pn 15 43 54.7 -0.1**
JAY S **Sn 15 44 57.7 +2.7**
BNDI Bandanaira 5.69 259 P **Pn 15 44 03.3 +2.9**
BNDI S **Sn 15 45 05.1 0.0**
SAUI Saumlaki 6.17 222 P **Pn 15 44 09.3 +2.2**
SAUI Saumlaki 6.17 222 *e*Pn **Pn 15 44 08.8 +1.8**
MSAI Masohi 6.56 270 P **Pn 15 44 15.0 +2.6**
122nm,0.7s,2μm0.9nm
MSAI S **Sn 15 45 27.5 +1.0**
122nm,0.7s,2μm0.9nm
MMPI Merauke 6.99 136 P Pn 15 44 26.9 +8.6
NLAI Namlea 8.38 271 P **Pn 15 44 39.8 +2.3**
203nm,0.9s,2μm
NLAI S **Sn 15 46 12.0 +0.5**
203nm,0.9s,2μm
LBMI Labuha 8.45 289 P **Pn 15 44 40.4 +2.0**
625nm,0.9s,5μm
LBMI S **Sn 15 46 11.3 -1.9**
625nm,0.9s,5μm
SANI Sanana 9.59 278 P **Pn 15 44 56.5 +2.4**
246nm,0.8s,2μm
SANI S **Sn 15 46 40.6 -0.7**
246nm,0.8s,2μm
KDU Kakadu 9.69 198 P **Pn 15 44 55.8 +0.3**
baz=9.7,SNR=75
MTN Manton Dam 10.32 204 P **Pn 15 45 04.5 +0.4**
baz=10,SNR=403
MTN Manton Dam 10.32 204 *e*Pn **Pn 15 45 04.8 +0.7**
PALU Palau 10.73 355 P **Pn 15 45 12.4 +2.8**
baz=11,SNR=4.3
MANU Manus Island 11.93 84 *e*Pn **Pn 15 45 29.4 +3.2**
SOEI Soe 12.81 240 P **Pn 15 45 39.7 +1.5**
SOEI Soe 12.81 240 *e*Pn **Pn 15 45 39.2 +0.9**
LUWI Luwuk 12.93 280 P **Pn 15 45 43.6 +3.8**
324nm,1.3s,3μm
LUWI Luwuk 12.93 280 *e*Pn **Pn 15 45 39.7 0.0**
COEN Coen 12.94 145 P **Pn 15 45 38.4 -1.5**
baz=13,SNR=72
COEN Coen 12.94 145 *e*Pn **Pn 15 45 38.2 -1.7**
PMG Port Moresby 13.03 118 Pn **Pn 15 45 42.3 +1.2**
1.0nm,0.3s,baz=350,slow=5.1,SNR=5.8
PMG Sn **Sn 15 48 02.9 -2.6**
0.6nm,0.3s,baz=240,slow=20,SNR=1.8
PMG LR LR 15 52 03.7
comp=Z,2μm,18.1s,baz=312,slow=44
PMG Port Moresby 13.03 118 *d i*P **Pn 15 45 43.9 +2.8**
PMG pmax pmax
comp=Z,469nm,1.2s
PMG Port Moresby 13.03 118 *e*Pn **Pn 15 45 43.5 +2.4**
PMG Sn **Sn 15 48 02.9 -2.6**
BATI Baumata 13.55 240 Pn **Pn 15 45 49.6 +1.4**
baz=107,slow=19
BATI Baumata 13.55 240 P **Pn 15 45 49.4 +1.2**
comp=Z,206nm,1.1s,comp=Z,2μm
KNRA Kununurra 13.88 208 P **Pn 15 45 51.0 -1.7**
baz=14
MRSI Marisa 14.09 286 P **Pn 15 45 57.5 +1.9**
comp=Z,139nm,0.7s,comp=Z,2μm
MMRI Maumere 14.17 248 P **Pn 15 45 59.7 +3.0**
comp=Z,186nm,1.2s,comp=Z,2μm
MMRI Maumere 14.17 248 *e*Pn **Pn 15 45 55.6 -1.1**
DAV Davao City (W) 14.36 316 *e*Pn **Pn 15 45 57.4 -2.0**
EDFI Ende, Flores 14.71 248 P **Pn 15 46 07.1 +2.8**
comp=Z,157nm,0.9s,comp=Z,12μm
BSSI Bau Bau, Buton 15.20 259 P **Pn 15 46 12.9 +2.3**
comp=Z,124nm,2.0s,comp=Z,2μm
TTSI Tana Toraja 15.66 271 P **P 15 46 19.7 -0.9**
comp=Z,167nm,1.2s,comp=Z,2μm
SPSI Sidrap Palu 15.70 267 P **Pn 15 46 19.8 +2.5**
comp=Z,86nm,1.1s,comp=Z,980nm
KAPI Kappang 15.78 264 Pn **Pn 15 46 17.2 -1.1**
comp=Z,0.6nm,0.3s,baz=71,slow=10,SNR=4.1
KAPI Kappang 15.78 264 *e*Pn **Pn 15 46 16.5 -1.8**
comp=Z,87nm,1.3s
KAPI *e*pP **P 15 46 25.2 +3.2**
WB8 Warramunga Arr 16.34 184 P **Pn 15 46 21.7 -3.7**
baz=16
PAGZ Pagadian 16.46 313 *e*P **P 15 46 30.7 +1.1**
WRAB Tennant Creek 16.46 184 *ce*P **Pn 15 46 23.6 -3.4**
WRAB pmax pmax
comp=Z,110nm,1.0s
WRAB Tennant Creek 16.46 184 *e*Pn **Pn 15 46 23.1 -3.8**
comp=Z,370nm,0.8s
WB2 Warramunga Arr 16.47 184 *e*Pn **Pn 15 46 23.3 -3.8**
comp=Z,352nm,0.8s
WRA Warramunga Arr 16.47 184 Pn **Pn 15 46 23.0 -4.1**
comp=Z,3.1nm,0.3s,baz=5.5,slow=13,SNR=70
WRA Sn **Sn 15 49 20.7 -8.8**
comp=Z,2.8nm,0.3s,baz=5.1,slow=22,SNR=5.2
WRA LR LR 15 52 42.5
comp=Z,1μm,20.6s,baz=5.0,slow=37
MTSU Mount Surprise 17.00 150 P **Pn 15 46 30.8 -2.9**
baz=17,SNR=88
FITZ Fitzroy Crossi 17.51 213 P **Pn 15 46 38.5 -1.5**
comp=Z,4.5nm,0.3s,baz=37,slow=10,SNR=111
FITZ S Sn 15 49 44.3 -10
comp=Z,2.9nm,0.3s,baz=166,slow=11,SNR=6.1
FITZ LR LR 15 54 10.7
comp=Z,864nm,20.4s,baz=37,slow=40
FITZ Fitzroy Crossi 17.51 213 P **Pn 15 46 37.7 -2.3**
baz=18,SNR=147
FITZ Fitzroy Crossi 17.51 213 *e*Pn **Pn 15 46 37.9 -2.2**
comp=Z,117nm,1.0s
FITZ S Sn 15 49 44.3 -10
QIS Mount Isa 17.51 167 P **Pn 15 46 37.0 -3.1**
baz=18,SNR=15
OCLP Ormoc 17.99 323 *e*P **Pn 15 46 46.3 +0.2**
PLAI Plampang 18.42 252 P **P 15 46 51.7 +0.5**
comp=Z,116nm,1.6s,comp=Z,1μm
BKB Balikpapan 18.70 276 P Pn 15 47 02.1 +7.3
GUIM Jordan 18.96 317 *e*P **P 15 46 57.6 +0.5**
MYLDM Lahad Datu 19.00 297 ⇑P **Pn 15 47 02.1 +3.7**
MYLDM Lahad Datu 19.00 297 *e*P **Pn 15 46 60.0 +1.6**
comp=Z,218nm,1.0s
TSM Tawau 19.20 293 ⇑P **Pn 15 47 02.1 +1.3**
TWSI Taliwang, Sumb 19.25 253 P **P 15 47 00.4 +0.1**
comp=Z,48nm,0.8s,comp=Z,1μm
GUMO Guam 19.28 29 LR LR 15 55 08.3
comp=Z,955nm,18.2s,baz=205,slow=39
RCP Roxas 19.54 320 ⇑*e*P **Pn 15 47 05.4 +0.5**
CTA Charters Tower 19.62 149 P **Pn 15 47 06.2 +0.4**
comp=Z,1.5nm,0.3s,baz=326,slow=12,SNR=40
CTA S **Sn 15 50 53.8 +8.1**
comp=Z,0.3nm,0.3s,baz=37,slow=20,SNR=3.0
AS01 Alice Springs 20.19 184 *e*P **P 15 47 11.7 +1.1**
AS31 Alice Springs 20.20 184 *e*P **P 15 47 12.2 +1.5**
comp=Z,123nm,0.6s
ASAR Alice Springs 20.20 184 P Pn 15 47 13.2 +0.6
comp=Z,257nm,0.7s,baz=8.8,slow=11,SNR=1911
ASAR S **S 15 50 49.3 -7.3**
comp=Z,7.4nm,0.7s,baz=4.4,slow=24,SNR=3.7
ASAR LR LR 15 54 48.6
comp=Z,1μm,21.9s,baz=6.5,slow=36
CUYO Cuyo Island 20.21 315 *e*P **P 15 47 11.8 +1.1**
SDKM Sandakan 20.37 296 ⇑P Pn 15 47 14.8 +0.1
BBKI Banjar Baru 20.62 269 P Pn 15 47 19.8 +2.2
comp=Z,256nm,1.2s,comp=Z,3μm
DNP Denpasar 20.84 255 P **P 15 47 19.1 +1.5**
comp=Z,431nm,0.8s
KDM Kudat 21.27 299 ⇓P **P 15 47 26.6 +4.4**
SJMP San Jose 21.27 318 *e*P **P 15 47 24.1 +1.7**
KKM Kota Kinabalu 21.42 296 ⇑P **P 15 47 28.1 +4.1**
KKM Kota Kinabalu 21.42 296 *e*P **P 15 47 25.3 +1.3**
comp=Z,77nm,1.0s
BOAC Boac 21.55 321 *e*P **P 15 47 26.3 +1.0**
BUSP Coron 21.58 315 *e*P **P 15 47 26.6 +1.0**
ENPP El Nido 21.60 312 *e*P **P 15 47 26.3 +0.5**
ABJI Asem Bagus 21.60 257 P **P 15 47 29.3 +3.5**
comp=Z,189nm,1.0s
JAGI Jajag, Banyuwa 21.81 256 P **P 15 47 28.5 +0.4**
comp=Z,99nm,1.5s
JAGI Jajag, Banyuwa 21.81 256 *e*P **P 15 47 27.5 -0.6**
comp=Z,182nm,1.3s
LQP Lukban 22.24 322 ⇑*e*P **P 15 47 33.4 +0.5**
WRKA Warakurna 22.59 197 P **P 15 47 36.9 +0.4**
baz=23,SNR=197
BTM Bintulu 23.34 286 ⇑P **P 15 47 47.7 +3.5**
MBWA Marble Bar 23.38 220 *e*P **P 15 47 45.5 +1.0**
comp=Z,156nm,1.0s
PBKI Pangkalan Bun 23.80 271 P **P 15 47 53.0 +4.3**
comp=Z,540nm,1.1s,comp=Z,4μm
SBUM Sibu 23.98 284 *e*P **P 15 47 52.9 +2.5**
comp=Z,282nm,1.6s
PWJI Pagerwojo 24.01 258 P **P 15 47 52.3 +1.6**
comp=Z,58nm,1.0s
STKI Sintang 24.25 278 P **P 15 47 55.6 +2.7**
comp=Z,135nm,1.3s,comp=Z,5μm
QLP Quilpie 24.52 161 P **P 15 47 55.3 +0.1**
baz=25,SNR=1000
WOJI Wonogiri, Jawa 24.84 259 P **P 15 47 59.2 +0.9**
comp=Z,93nm,1.5s,comp=Z,6μm
HNR Honiara 25.01 105 P **P 15 48 01.1 +1.2**
comp=Z,44nm,0.8s,baz=202,slow=6.0,SNR=5.8
HNR LR LR 15 57 45.6
comp=Z,379nm,20.5s,baz=284,slow=36
HNR Honiara 25.01 105 *e*P **P 15 48 04.9 +5.1**
HNR pmax pmax
comp=Z,75nm,0.9s
HNR Honiara 25.01 105 *e*P **P 15 48 04.9 +5.1**
comp=Z,75nm,0.9s
KSM Kuching 25.64 281 ⇓P **P 15 48 07.2 +1.7**
KSM Kuching 25.64 281 *e*P **P 15 48 05.5 -0.1**
comp=Z,94nm,1.0s
EIDS Eidsvold 26.49 147 *e*P **P 15 48 14.0 +1.0**
comp=Z,27nm,1.0s
CISI Cisompet, Garu 27.85 260 P **P 15 48 26.1 +0.5**
comp=Z,116nm,1.2s
CISI Cisompet, Garu 27.85 260 *e*P **P 15 48 23.3 -2.2**
comp=Z,73nm,0.8s
LEM Lembang 27.97 262 LR LR 16 01 24.0
comp=Z,600nm,21.9s,baz=86,slow=40
LEM Lembang 27.97 262 P P 15 48 31.6 +4.9
comp=Z,500nm,1.3s
CBJI Citeko 28.69 263 P P 15 48 38.5 +5.5
comp=Z,148nm,1.0s
STKA Stephens Creek 28.89 169 P **P 15 48 34.8 +0.2**
comp=Z,30nm,0.7s,baz=339,slow=8.7,SNR=111
STKA LR LR 16 00 44.6
comp=Z,927nm,19.1s,baz=344,slow=38
STKA Stephens Creek 28.89 169 P **P 15 48 34.5 -0.1**
baz=29,SNR=52
STKA Stephens Creek 28.89 169 *e*P **P 15 48 34.1 -0.5**
STKA pmax pmax
comp=Z,8.0nm,0.8s
STKA Stephens Creek 28.89 169 *e*P **P 15 48 34.1 -0.5**
comp=Z,8.2nm,0.8s
BBOO Buckleboo 29.25 179 P **P 15 48 37.8 +0.1**
baz=29,SNR=24
BBOO Buckleboo 29.25 179 *e*P **P 15 48 37.2 -0.6**
comp=Z,48nm,1.0s
CMSA Cobar Meteorol 29.58 162 P **P 15 48 41.5 +0.8**
baz=30,SNR=16
HTT Hallett 30.04 174 P **P 15 48 45.5 +0.7**
baz=30,SNR=14
SSLB Suanglung 30.52 333 *e*P **P 15 48 46.4 -2.6**
comp=Z,27nm,1.1s
KMBL Kambalda 30.63 203 P **P 15 48 51.0 +1.1**
baz=31,SNR=17
MDSI Maura Dua 31.26 267 P **P 15 48 57.3 +1.6**
comp=Z,28nm,1.1s
MORW Morawa 31.51 214 P **P 15 48 59.0 +1.2**
baz=32,SNR=8.4
LHSI Lahat 31.91 268 P **P 15 49 03.3 +1.8**
comp=Z,48nm,0.8s
MYKOM Kota Tinggi 32.05 279 ⇓P **P 15 49 04.2 +1.6**
MYKOM Kota Tinggi 32.05 279 *e*P **P 15 49 03.6 +0.9**
comp=Z,51nm,1.1s
BLDU Ballidu 32.36 211 P **P 15 49 06.5 +1.3**
baz=32,SNR=11
KGM Kluang 32.61 279 ⇑P **P 15 49 10.3 +2.7**
QZH Quanzhou 32.62 331 ⇓ *i*P **P 15 49 04.0 -3.4**
QZH S **S 15 54 14.7 -7.5**
KLBR Kellerberrin 32.63 209 P **P 15 49 08.7 +1.1**
baz=33,SNR=12
YNG Young 33.00 160 P **P 15 49 12.1 +1.3**

baz=33,SNR=9.9
MASI Maura Aman, Be 33.20 269 P P 15 49 24.1 +11
KTGM Kuala Trenggan 33.47 285 ⇓P **P** **15 49 16.7 +1.6**
QIZ Qiongzhong 33.68 312 P **P** **15 49 16.1 -0.8**
QIZ S **S** **15 54 42.0 +3.0**
QIZ pmax pmax
comp=Z,8.0nm,0.8s
ARPS Mount Arapiles 33.71 171 P **P** **15 49 17.9 +1.0**
baz=34,SNR=28
NWAO Narrogin (SRO) 33.98 208 P **P** **15 49 20.5 +1.2**
baz=34,SNR=4.8
NWAO Narrogin (SRO) 33.98 208 *e*P **P** **15 49 20.3 +0.9**
NWAO Narrogin (SRO) 33.98 208 *e*P **P** **15 49 20.2 +0.9**
SDSI Sungai Dareh 34.13 273 P P 15 49 31.2 +10
CAN Canberra 34.13 160 *e*P **P** **15 49 21.0 +0.3**
CAN pmax pmax
comp=Z,22nm,1.0s
CAN Canberra 34.13 160 *e*P **P** **15 49 21.0 +0.3**
comp=Z,22nm,1.0s
FRIM Kepong 34.49 281 ⇓P **P** **15 49 25.2 +1.3**
BKNI Bangkinang 34.64 275 P P 15 49 35.8 +11
BKNI Bangkinang 34.64 275 *e*P **P** **15 49 26.8 +1.5**
comp=Z,110nm,0.5s
PDSI Padang 35.09 273 P **P** **15 49 30.2 +0.9**
comp=Z,38nm,1.0s
DZM Mont Dzumac 35.29 124 P **P** **15 49 31.5 +0.6**
comp=Z,15nm,1.1s,baz=344,slow=14,SNR=3.9
IPM Ipoh 35.32 283 *e*P **P** **15 49 31.5 +0.3**
comp=Z,29nm,0.9s
RKGY Rocky Gully 35.50 207 P **P** **15 49 34.7 +2.2**
baz=36,SNR=13
KULM Kulim 35.86 284 ⇑P **P** **15 49 37.5 +1.6**
KULM Kulim 35.86 284 *e*P **P** **15 49 35.2 -0.7**
comp=Z,18nm,0.8s
MNSI Mandailing Nat 36.14 276 P **P** **15 49 39.5 +1.3**
comp=Z,38nm,0.7s
JNU Nakatsue 36.59 353 P **P** **15 49 40.6 -1.2**
comp=Z,60nm,0.8s,baz=185,slow=3.9,SNR=60
JNU Nakatsue 36.59 353 *e*P **P** **15 49 39.9 -1.9**
comp=Z,72nm,0.9s
CHBT CHBT 36.65 297 P **P** **15 49 43.5 +1.0**
comp=Z,54nm,0.9s,comp=Z,2μm
PANO Nakornpanom 36.70 305 P **P** **15 49 43.4 +0.5**
comp=Z,19nm,1.0s
SSE Sheshan 36.92 339 P **P** **15 49 44.0 -0.6**
SSE S **S** **15 55 23.8 -4.7**
SSE pmax pmax
comp=Z,43nm,1.1s
SSE pmax pmax
comp=Z,95nm,3.8s
SSE LR LR
comp=Z,270nm,15.3s
SSE LR LR
comp=Z,340nm,15.9s
SSE LR LR
comp=Z,480nm,17.4s
PSI Prapat 37.07 279 *e*P **P** **15 49 45.1 -1.2**
PSI pmax pmax
comp=Z,43nm,1.0s
PSI Prapat 37.07 279 *e*P **P** **15 49 45.1 -1.2**
comp=Z,43nm,1.0s
TRTT Trang 37.43 287 P **P** **15 49 50.5 +1.4**
comp=Z,73nm,0.9s,comp=Z,734nm
TSI Tuntungan 37.54 280 P P 15 50 00.1 +10
NAYO Nakonayok 38.18 298 P **P** **15 49 56.8 +1.3**
comp=Z,40nm,0.9s
GSI Gunungsitoli 38.19 276 P P 15 50 04.3 +8.6
GSI Gunungsitoli 38.19 276 *e*P **P** **15 49 54.5 -1.1**
comp=Z,42nm,0.9s
KCSI Kotacane, Aceh 38.33 280 P P 15 50 05.2 +8.4
NONG Nongkai 38.37 305 P **P** **15 49 56.9 -0.1**
comp=Z,45nm,0.9s
INU Inuyama 38.58 2 *e*P **P** **15 49 57.0 -1.5**
comp=Z,22nm,1.2s
SURT Suratani 38.59 289 P P 15 50 08.7 +10
NJ2 Nanjing 38.65 337 *e*P **P** **15 49 59.0 -0.2**
NJ2 S **S** **15 55 58.3 +3.7**
NJ2 pmax pmax
comp=Z,24nm,0.7s
NJ2 LR LR
comp=Z,270nm,7.1s
NJ2 LR LR
comp=Z,390nm,10.8s
NJ2 LR LR
comp=Z,200nm,10.3s
PHET Kaeng Krachan 39.13 295 P P 15 50 09.5 +6.0
comp=Z,13nm,1.0s,comp=Z,162nm
WHN Wuhan 39.34 331 ⇓*i*P **P** **15 50 06.1 +1.1**
WHN pP **sP** **15 50 19.0 +4.5**
WHN S **S** **15 56 06.7 +1.6**
WHN pmax pmax
comp=Z,120nm,0.8s
PBKT Sadao Pong 39.47 301 P P 15 50 16.7 +10
LOEI Loei 39.65 303 P **P** **15 50 05.7 -2.1**
comp=Z,7.6nm,1.1s
MLSI Meulaboh, Aceh 39.80 281 P **P** **15 50 10.0 +0.9**
comp=Z,127nm,1.1s
MJAR Matsushiro Arr 39.82 3 P **P** **15 50 07.1 -1.8**
comp=Z,8.1nm,0.7s,baz=181,slow=8.5,SNR=37
MJAR LR LR 16 04 17.5
comp=Z,471nm,19.8s,baz=180,slow=33
MAJO Matsushiro 39.82 3 *de*P **P** **15 50 07.1 -1.9**
MAJO pmax pmax
comp=Z,62nm,0.8s
MAJO Matsushiro 39.82 3 *e*P **P** **15 50 06.2 -2.7**
comp=Z,14nm,0.8s
MAT Matsushiro 39.82 3 P **P** **15 50 06.6 -2.4**
MJB9 Matsu-Tunnel 39.83 3 *e*P **P** **15 50 06.2 -2.8**
comp=Z,3.6nm,0.8s
SRDT SRDT 40.14 297 P P 15 50 22.1 +10
GYA Guiyang 40.73 319 ⇑*i*P **P** **15 50 17.2 +0.4**
GYA pP sP 15 50 29.4 +3.1
GYA PP **PnPn** **15 51 56.2 +1.2**
GYA ScP **ScP** **15 56 05.5 -1.1**
GYA S **S** **15 56 27.0 +0.7**
GYA sS sS 15 56 43.8 +6.3
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,130nm,5.2s
NANT Nan 40.74 304 P **P** **15 50 17.8 +0.9**
comp=Z,4.1nm,1.0s
SUKH Sukhothai 41.02 302 P P 15 50 29.6 +10
KS15 Wonju Array Si 41.25 351 *e*P **P** **15 50 19.6 -1.2**
KSAR Wonju Array Be 41.25 351 P **P** **15 50 19.9 -0.8**
KSAR Wonju Array Be 41.25 351 P **P** **15 50 19.9 -0.8**
KSRS Korea Array 41.26 351 P **P** **15 50 19.9 -0.9**
comp=Z,11nm,1.0s,baz=170,slow=9.7,SNR=38
KS01 Wonju Array Si 41.28 351 *e*P **P** **15 50 18.7 -2.3**
LAMP Lampang 41.50 303 P **P** **15 50 24.9 +1.8**
comp=Z,4.7nm,0.9s
ENH Enshi 41.71 325 *e*P **P** **15 50 23.8 -0.8**
comp=Z,18nm,0.8s
CRAI Chiangrai 41.72 306 P **P** **15 50 25.6 +0.7**
comp=Z,557nm,1.0s,comp=Z,74μm
CM01 Chiang Mai Arr 42.02 302 *e*P **P** **15 50 27.1 -0.2**
CMAR Chiang Mai Arr 42.05 302 P **P** **15 50 28.4 +0.9**
comp=Z,5.7nm,0.9s,baz=124,slow=6.8,SNR=33
CHTO Chiang Mai 42.21 303 P **P** **15 50 29.4 +0.5**
comp=Z,55nm,0.9s
CHTO Chiang Mai 42.21 303 *e*P **P** **15 50 28.9 0.0**
CHTO pmax pmax
comp=Z,8.0nm,0.8s
CHTO Chiang Mai 42.21 303 *e*P **P** **15 50 28.9 0.0**
comp=Z,8.2nm,0.8s
KMI Kunming 42.60 314 P **P** **15 50 33.4 +1.1**
KMI pP sP 15 50 43.4 +1.6
KMI sP pP 15 50 48.0 +8.9
KMI S **S** **15 56 55.0 +0.7**
KMI pmax pmax
comp=Z,24nm,1.0s
KMI pmax pmax
comp=Z,65nm,3.1s
KMI LR LR
comp=Z,95nm,14.8s
KMI LR LR
comp=Z,190nm,15.5s
TIA Tai'an 42.99 338 ⇓P **P** **15 50 34.0 -1.0**
TIA pmax pmax
comp=Z,30nm,0.9s
MSVF Nonsavu 44.05 112 *e*P **P** **15 50 44.1 +0.2**
MSVF pmax pmax
comp=Z,29nm,1.1s
MSVF Nonsavu 44.05 112 *e*P **P** **15 50 44.1 +0.2**
comp=Z,29nm,1.1s
XAN Xi'an 44.89 328 P **P** **15 50 49.7 -0.6**
XAN pP sP 15 50 59.7 -0.2
XAN sP pP 15 51 04.7 +7.5
XAN PP **PP** **15 52 35.5 0.0**
XAN S **S** **15 57 23.8 -3.3**
XAN sS sS 15 57 39.5 +1.1
XAN SS ScS 16 00 34.3 -13
XAN pmax pmax
comp=Z,33nm,1.4s
XAN pmax pmax
comp=Z,110nm,5.6s
XAN LR LR
comp=Z,210nm,20.4s
XAN LR LR
comp=Z,220nm,19.1s
CD2 Chengdu 45.61 321 P **P** **15 50 55.6 -0.5**
CD2 sP sP 15 51 10.2 +4.5
CD2 PP **PP** **15 52 43.1 -0.1**
CD2 S **S** **15 57 37.0 -0.7**
CD2 sS sS 15 57 54.5 +5.5
CD2 pmax pmax
comp=Z,20nm,1.3s
CD2 pmax pmax
comp=Z,180nm,4.1s
CD2 LR LR
comp=Z,330nm,20.2s
CD2 LR LR
comp=Z,290nm,17.8s
MSHR Mys Shultsa 45.94 356 ⇑*e*P **P** **15 50 59.6 +1.2**
BJT Baijiatuau 46.72 340 *e*P **P** **15 51 03.9 -0.7**
BJT pmax pmax
comp=Z,200nm,1.7s
BJT Baijiatuau 46.72 340 *e*P **P** **15 51 03.9 -0.7**
comp=Z,200nm,1.7s
BJI Beijing 46.73 340 P **P** **15 51 04.2 -0.5**
BJI S **S** **15 57 55.8 +2.4**
BJI pmax pmax
comp=Z,57nm,1.3s
BJI LR LR
comp=Z,340nm,16.7s
BJI LR LR
comp=Z,290nm,18.1s
USRK Ussuriysk Ar. 47.50 357 P **P** **15 51 10.1 -0.5**
comp=Z,20nm,0.7s,baz=181,slow=6.7,SNR=60
USRK LR LR 16 09 30.1
comp=Z,478nm,18.9s,baz=161,slow=34
ASAJ Asahikawa 47.74 7 P **P** **15 51 11.3 -1.2**
comp=Z,13nm,0.8s,baz=219,slow=8.6,SNR=5.8
CN2 Changchun 47.86 350 *e*P **P** **15 51 11.8 -1.6**
CN2 pmax pmax
comp=Z,30nm,0.7s
CN2 pmax pmax
comp=Z,200nm,4.0s
CN2 LR LR
comp=Z,200nm,15.0s
CN2 LR LR
comp=Z,300nm,15.0s
CN2 LR LR
comp=Z,300nm,17.0s
MDJ Mudanjiang 48.10 354 P **P** **15 51 14.8 -0.5**
MDJ pP sP 15 51 24.0 -0.8
MDJ sP pP 15 51 27.6 +5.5
MDJ S **S** **15 58 14.3 +1.6**
MDJ pmax pmax
comp=Z,58nm,0.9s
MDJ pmax pmax
comp=Z,150nm,4.2s
MDJ LR LR
comp=Z,81nm,22.2s
MDJ LR LR
comp=Z,210nm,29.7s
MDJ LR LR
comp=Z,220nm,21.5s
MDJ Mudanjiang 48.10 354 *e*P **P** **15 51 14.3 -1.0**
comp=Z,49nm,0.8s
HHC Hu-ho-hao-te 49.18 336 *e*P **P** **15 51 24.0 +0.2**
HHC S **S** **15 58 32.5 +4.2**
HHC sS sS 15 58 40.7 +1.1
HHC pmax pmax
comp=Z,48nm,1.1s
HHC pmax pmax
comp=Z,130nm,6.2s
HHC LR LR
comp=Z,290nm,15.5s
HHC LR LR
comp=Z,460nm,16.3s
HHC LR LR
comp=Z,440nm,15.1s
LZH Lanzhou 49.18 326 *e*P **P** **15 51 25.1 +1.1**
LZH pP sP 15 51 35.5 +2.0
LZH sP pP 15 51 39.6 +8.8
LZH *e*S **S** **15 58 30.5 +1.9**
LZH SS **SS** **16 01 54.5 -5.7**
LZH pmax pmax
comp=Z,57nm,1.1s
LZH pmax pmax
comp=Z,170nm,4.9s
LZH LR LR
comp=Z,210nm,13.6s
LZH LR LR
comp=Z,130nm,12.4s
LZH LR LR
comp=Z,160nm,14.4s
YSS Yuzh-Sakhalins 50.55 6 *e*P **P** **15 51 33.5 -0.5**
RPZ Rata Peaks 50.98 147 P **P** **15 51 37.2 -0.1**
comp=Z,15nm,1.0s,baz=297,slow=6.2,SNR=3.1
RPZ LR LR 16 12 43.5
comp=Z,941nm,19.7s,baz=302,slow=35
SHL Shillong 51.14 307 *e*P **P** **15 51 40.0 +1.0**
HABR Khabarovsk 51.67 360 *e*P **P** **15 51 40.1 -2.2**
HABR *e**PP **pP** **15 51 50.3 +1.1**
HABR *e**SP **sP** **15 51 54.5 +2.6**
HABR *e* 15 52 53.0
HABR *e* 15 53 38.1
HABR *e*PPP PPP 15 54 39.1
HABR *e*S **S** **15 59 00.8 -1.6**
HABR *e**SS **sS** **15 59 17.2 +3.5**
HABR *e* 16 01 27.5
HABR *e*SS **SS** **16 02 37.4 -1.7**
HABR *e*SSS SSS 16 04 17.6
HABR pmax pmax
comp=E,90nm,2.0s
HABR pmax pmax
comp=N,28nm,2.0s
HABR pmax pmax
comp=Z,84nm,2.0s
HABR MLR MLR
comp=Z,129nm,18.0s
KLR Kul'dur 52.52 357 P **P** **15 51 48.1 -0.5**
comp=Z,25nm,0.8s,baz=190,slow=4.7,SNR=80
KLR LR LR 16 12 28.3
comp=Z,547nm,19.1s,baz=182,slow=34
AFI Afiamalu 53.05 105 LR LR 16 13 39.4
comp=Z,188nm,18.6s,slow=35
LSA Lhasa 53.70 311 *e*P **P** **15 51 59.3 +1.0**
LSA pmax pmax
comp=Z,29nm,1.3s
LSA Lhasa 53.70 311 *e*P **P** **15 51 59.3 +1.0**
comp=Z,29nm,1.3s
GTA Gaotai 53.78 326 ⇓P **P** **15 51 59.1 +0.8**
GTA pP sP 15 52 09.1 +1.1
GTA sP pP 15 52 13.0 +7.7
GTA S **S** **15 59 32.0 +0.1**
GTA sS sS 15 59 48.7 +5.3
GTA SS **SKiKP** **16 03 11.2 -0.4**
GTA pmax pmax
comp=Z,85nm,1.1s
GTA pmax pmax
comp=Z,300nm,5.5s
GTA LR LR
comp=Z,120nm,20.4s
GTA LR LR
comp=Z,200nm,20.4s
GTA LR LR
comp=Z,210nm,20.4s
TYV Tymovskoe 54.41 6 *e*P **P** **15 52 02.8 +0.3**
TYV pmax pmax
comp=Z,35nm,1.0s
ULN Ulaanbaatar 56.81 337 *d i*P **P** **15 52 20.0 -0.1**
ULN pmax pmax
comp=Z,31nm,1.7s
ULN Ulaanbaatar 56.81 337 *e*P **P** **15 52 19.9 -0.1**
comp=Z,13nm,0.8s
SONM Songino Array 57.04 337 P **P** **15 52 21.7 +0.1**
comp=Z,7.3nm,0.9s,baz=154,slow=7.6,SNR=34
SONM LR LR 16 17 33.3
comp=Z,198nm,20.4s,baz=142,slow=37
SONA1 Songino Array 57.05 337 *e*P **P** **15 52 21.0 -0.7**
PKIN Phulchoki 57.23 306 *e*P **P** **15 52 23.6 0.0**
comp=Z,17nm,0.7s
KKN Kakani 57.41 306 *e*P **P** **15 52 25.2 +0.4**
comp=Z,76nm,1.0s
DMN Daman 57.48 306 *e*P **P** **15 52 25.9 +0.6**
comp=Z,50nm,0.6s
GKN Gorkha 58.02 306 *e*P **P** **15 52 29.3 +0.3**
comp=Z,100nm,0.8s
KOLN Koldanda 58.77 305 *e*P **P** **15 52 34.9 +0.6**
comp=Z,77nm,0.7s
PETK Petropavlovsk- 59.33 15 P **P** **15 52 37.0 -0.4**
comp=Z,3.2nm,0.9s,baz=165,slow=6.2,SNR=2.3
PETK LR LR 16 15 08.0
comp=Z,137nm,21.7s,baz=202,slow=33
PETK Petropavlovsk- 59.33 15 P **P** **15 52 37.0 -0.4**
PYUN Piuthan 59.39 305 *e*P **P** **15 52 39.3 +0.7**
comp=Z,202nm,0.6s
HYB Hyderabad 59.85 292 *i*P **P** **15 52 42.0 +0.3**
ZAK Zakamensk 60.31 337 *e*P **P** **15 52 43.2 -1.1**
ZAK pmax pmax
comp=Z,23nm,1.4s
TLY Talaya 61.20 338 P **P** **15 52 50.9 +0.7**
comp=Z,9.2nm,0.6s,baz=158,slow=3.7,SNR=5.5
TLY LR LR 16 20 17.1
comp=Z,183nm,19.5s,baz=146,slow=37
TLY Talaya 61.20 338 *e*P **P** **15 52 50.2 -0.1**
TLY pmax pmax
comp=Z,27nm,1.5s
TLY MLR MLR
comp=Z,143nm,18.0s
IRK Irkutsk 61.42 339 *e*P **P** **15 52 51.0 -0.7**
IRK pmax pmax
comp=Z,49nm,2.5s
MOY Mondy 62.22 336 *e*P **P** **15 52 57.6 +0.4**
MOY pmax pmax
comp=Z,68nm,3.4s
BOD Bodaibo 63.44 347 *e*P **P** **15 53 03.3 -1.7**
BOD pmax pmax
comp=Z,20nm,1.0s
WMQ Urumqi 63.60 323 P **P** **15 53 07.6 +1.1**
WMQ pP sP 15 53 18.0 +1.7
WMQ sP pP 15 53 24.4 +11
WMQ PcP **PcP** **15 53 46.1 +3.2**
WMQ S **S** **16 01 38.8 -0.6**
WMQ sS sS 16 01 55.3 +4.3
WMQ ScS **SKSac** **16 02 52.4 -6.5**
WMQ SS **SS** **16 05 49.8 +2.6**
WMQ pmax pmax
comp=Z,54nm,0.8s
WMQ pmax pmax
comp=Z,52nm,3.6s
WMQ LR LR
comp=Z,86nm,14.8s
WMQ LR LR
comp=Z,43nm,11.0s
MA2 Magadan 63.94 9 P **P** **15 53 06.5 -1.9**
comp=Z,3.8nm,0.6s,baz=185,slow=11,SNR=7.2
MA2 LR LR 16 19 28.4
comp=Z,148nm,19.6s,baz=218,slow=35
YAK Yakutsk 65.41 357 P **P** **15 53 16.2 -1.6**
comp=Z,7.8nm,0.5s,baz=219,slow=3.4,SNR=7.4
YAK Yakutsk 65.41 357 *e*P **P** **15 53 17.2 -0.7**
YAK *e* 15 53 50.8
YAK pmax pmax
comp=Z,20nm,1.4s
YAK pmax pmax
comp=N,15nm,1.6s
YAK pmax pmax
comp=Z,28nm,1.0s
YAK pmax pmax
comp=E,5.0nm,1.1s
SEY Seymchan 67.39 8 ⇑*e*P **P** **15 53 30.7 +0.2**
MK01 Makanchi Array 68.40 324 *e*P **P** **15 53 37.5 +0.2**
MK31 Makanchi Array 68.41 324 P **P** **15 53 37.2 -0.2**
MK31 pmax pmax
comp=Z,20nm,0.7s
MK31 Makanchi Array 68.41 324 *e*P **P** **15 53 37.6 +0.2**
MKAR Makanchi Array 68.41 324 P **P** **15 53 38.1 +0.7**
comp=Z,20nm,0.6s,baz=113,slow=8.3,SNR=103
MKAR LR LR 16 25 52.1
comp=Z,71nm,19.1s,baz=108,slow=38
MKAR Makanchi Array 68.41 324 *ce*P **P** **15 53 38.0 +0.6**
MKAR pmax pmax
comp=Z,20nm,0.6s
MKAR Makanchi Array 68.41 324 *e*P **P** **15 53 37.7 +0.3**
PDGK Podgornoye 68.48 319 P **P** **15 53 37.2 -0.6**
PDGK pmax pmax
comp=Z,66nm,1.2s
MAKZ Makanchi 68.61 324 *e*P **P** **15 53 38.8 +0.2**
MAKZ pmax pmax
comp=Z,51nm,0.8s
MAKZ Makanchi 68.61 324 *e*P **P** **15 53 38.8 +0.2**
comp=Z,50nm,0.8s
KSH Kashi 69.25 315 P **P** **15 53 44.9 +2.0**
KSH *e*pP sP 15 53 55.4 +2.7
KSH *e*sP PcP 15 53 59.3 -7.2
KSH *e*PcP pP 15 54 08.7 +19
KSH *e*ScP 15 58 08.7
KSH S **S** **16 02 47.0 -1.3**
KSH sS sS 16 03 04.1 +4.1
KSH ScS **SKSac** **16 03 39.3 -2.8**
KSH pmax pmax
comp=Z,20nm,0.9s
KSH LR LR
comp=Z,55nm,5.8s
KSH LR LR
comp=Z,93nm,4.5s
KSH LR LR
comp=Z,160nm,5.0s
TKM2 Tokmak 2 70.87 318 P **P** **15 53 52.5 -0.4**
TKM2 pmax pmax
comp=Z,27nm,1.2s
TKM2 Tokmak 2 70.87 318 *e*P **P** **15 53 53.4 +0.5**
comp=Z,15nm,0.8s
ZAA0 Zalesovo Array 70.96 331 *e*P **P** **15 53 51.9 -1.0**
ZALV Zalesovo Beam 70.96 331 P **P** **15 53 52.1 -0.8**
comp=Z,27nm,0.7s,baz=113,slow=5.9,SNR=82
ZALV LR LR 16 26 12.5
comp=Z,55nm,20.2s,baz=70,slow=37
SFK Sufi-Kurgan 71.20 314 P **P** **15 53 55.7 +0.7**
SFK pmax pmax
comp=Z,15nm,1.0s
FRU Bishkek 71.50 317 *e*P **P** **15 53 55.0 -1.4**
FRU *i* 15 54 05.0
FRU pmax pmax
comp=Z,45nm,1.8s
AAK Ala-Archa 71.50 317 P **P** **15 53 57.2 +0.5**
comp=Z,5.7nm,0.9s,baz=115,slow=6.6,SNR=13
AAK Ala-Archa 71.50 317 ⇑*e*P **P** **15 53 56.9 +0.3**
AAK pmax pmax
comp=Z,10.0nm,0.7s
AAK Ala-Archa 71.50 317 *e*P **P** **15 53 57.1 +0.4**
comp=Z,30nm,1.1s
EKS2 Erkin-Say 72.00 317 *e*P **P** **15 54 00.4 +0.8**
EKS2 pmax pmax
comp=Z,21nm,1.0s
EKS2 Erkin-Say 72.00 317 *e*P **P** **15 54 00.4 +0.8**
comp=Z,21nm,1.0s
NVS Novosibirsk 72.23 331 *e*P **P** **15 53 59.4 -1.1**
NVS *e*S **S** **16 03 19.4 -2.5**
NVS pmax pmax
comp=Z,49nm,1.0s
NVS pmax pmax
comp=N,22nm,1.1s
NVS pmax pmax
comp=E,27nm,1.1s
NVS smax smax
comp=N,24nm,2.2s
NVS smax smax
comp=E,21nm,2.4s
KURK Kurchatov 72.47 326 *e*P **P** **15 54 01.8 -0.2**
KURK pmax pmax
comp=Z,23nm,0.9s
KURK Kurchatov 72.47 326 *e*P **P** **15 54 01.8 -0.2**
comp=Z,23nm,0.9s
KURBB Kurchatov Arra 72.47 326 P **P** **15 54 02.0 0.0**
comp=Z,11nm,0.8s,baz=120,slow=5.7,SNR=44
KBL Kabul 72.79 308 *e*P **P** **15 54 04.4 -0.2**
KBL pmax pmax
comp=Z,51nm,1.6s
KBL Kabul 72.79 308 *e*P **P** **15 54 04.4 -0.2**
comp=Z,51nm,1.6s
MNAS Manas 72.81 316 P **P** **15 54 04.7 +0.3**
MNAS pmax pmax
comp=Z,49nm,1.4s

KK31	Karatay Array	74.40	316	*i* P		P	15 54 13.8 +0.2
KK31				pmax	pmax		
comp=Z,11nm,0.9s							
BILL	Bilibino	74.46	12	*e*P		P	15 54 14.5 +1.1
BILL				*e*			15 54 26.0
BILL				pmax	pmax		
comp=Z,4.0nm,1.5s							
BILL				MLR	MLR		
comp=Z,105nm,19.0s							
PPT	Papeete	74.61	107	LR	LR		16 23 30.1
comp=Z,153nm,21.7s,baz=278,slow=33							
PPT2	Papeete2	74.61	107	*e*LQ	LQ		16 14 09.7
comp=Z,895nm,35.5s							
PPT2				*e*LR	LR		16 17 27.0
comp=Z,294nm,22.2s							
TIXI	Tiksi	75.04	358	P		P	15 54 15.3 -1.4
comp=Z,0.9nm,0.3s,baz=251,slow=1.6,SNR=9.1							
TIXI	Tiksi	75.04	358⇑	*e*P		P	15 54 15.9 -0.8
TIXI				pmax	pmax		
comp=Z,2.0nm,0.7s							
TIXI	Tiksi	75.04	358	*e*P		P	15 54 15.6 -1.1
comp=Z,4.5nm,0.8s							
OTUK	Ortayu	75.08	322	P		P	15 54 17.3 -0.2
OTUK				pmax	pmax		
comp=Z,22nm,0.9s							
VNDA	Vanda	75.39	174	P		P	15 54 18.2 -0.4
comp=Z,1.9nm,0.9s,baz=327,slow=7.3,SNR=8.1							
VNDA				LR	LR		16 26 05.0
comp=Z,914nm,20.7s,baz=351,slow=35							
BVA0	Borovoye Array	78.07	326	*i* P		P	15 54 34.3 +0.1
BVA0				pmax	pmax		
comp=Z,21nm,0.9s							
BVAR	Borovoye Array	78.07	326	P		P	15 54 34.3 0.0
comp=Z,9.0nm,0.6s,baz=114,slow=7.3,SNR=48							
BRVK	Borovoye	78.14	326	*d* P		P	15 54 34.4 -0.2
BRVK				pmax	pmax		
comp=Z,31nm,1.2s							
BRVK	Borovoye	78.14	326	*e*P		P	15 54 34.4 -0.2
comp=Z,19nm,0.8s							
ZRNK	Zerenda	78.82	326	P		P	15 54 38.1 -0.3
ZRNK				pmax	pmax		
comp=Z,20nm,1.0s							
ZRNK	Zerenda	78.82	326	*e*P		P	15 54 37.9 -0.4
comp=Z,27nm,1.1s							
WSAR	Wadi Sarin	79.31	294	LR	LR		16 30 27.6
comp=Z,44nm,21.8s,slow=36							
NRIK	Noril'sk	79.51	344	P		P	15 54 41.1 -0.6
comp=Z,6.4nm,0.8s,baz=134,slow=5.9,SNR=13							
NRIK				LR	LR		16 29 41.0
comp=Z,194nm,20.6s,baz=114,slow=36							
MAW	Mawson	80.28	202	P		P	15 54 46.5 +0.4
comp=Z,7.2nm,0.8s,baz=82,slow=9.3,SNR=6.6							
MAW				LR	LR		16 27 20.6
comp=Z,302nm,20.0s,baz=60,slow=33							
MAW	Mawson	80.28	202	*e*P		P	15 54 47.1 +1.1
MAW				pmax	pmax		
comp=Z,2.0nm,0.8s							
MAW	Mawson	80.28	202	*e*P		P	15 54 47.1 +1.1
comp=Z,1.7nm,0.8s							
GEYT	Alibeck	82.16	309	P		P	15 54 57.1 +0.4
comp=Z,6.5nm,0.7s,baz=144,slow=2.8,SNR=16							
GEYT				LR	LR		16 35 40.6
comp=Z,52nm,19.6s,baz=40,slow=39							
OHAK	Old Harbor	82.80	31	*e*P		P	15 54 58.7 -0.8
comp=Z,83nm,2.0s							
AB31	Akbulak array	83.19	320	*i* P		P	15 55 01.0 -0.8
AB31				pmax	pmax		
comp=Z,3.0nm,0.8s							
KDAK	Kodiak Island	83.33	31	*i* P		P	15 55 01.7 -0.6
KDAK	Kodiak Island	83.33	31	*e*P		P	15 55 01.6 -0.7
comp=Z,28nm,1.2s							
TT01	Tatalina	83.39	25	*e*P		P	15 55 02.2 -0.3
TTA	Tatalina	83.40	25	*e*P		P	15 55 02.4 -0.3
TTA				pmax	pmax		
comp=Z,10.0nm,0.9s							
TTA	Tatalina	83.40	25	*e*P		P	15 55 02.4 -0.3
comp=Z,9.9nm,0.9s							
TAOE	Nuku Hiva Isla	83.91	98	*e*LR	LR		16 21 38.5
comp=Z,273nm,22.5s							
SVE	Sverdlovsk	84.61	328⇓	*i* P		P	15 55 09.0 +0.2
SVE				pmax	pmax		
comp=Z,37nm,1.5s							
AKTO	Aktyubinsk	84.66	321	P		P	15 55 08.6 -0.7
comp=Z,4.3nm,0.9s,baz=113,slow=6.0,SNR=14							
AKTO				LR	LR		16 34 27.9
comp=Z,59nm,21.9s,baz=109,slow=37							
AKTO	Aktyubinsk	84.66	321	P		P	15 55 07.8 -1.5
AKTO				pmax	pmax		
comp=Z,11nm,1.2s							
CAST	Castle Rocks	85.25	25	*e*P		P	15 55 11.0 -1.0
comp=Z,5.7nm,0.6s							
ARU	Arti	85.62	327	P		P	15 55 12.6 -1.3
comp=Z,6.9nm,0.9s,baz=57,slow=2.7,SNR=7.9							
ARU	Arti	85.62	327	*c i* P		P	15 55 13.0 -0.9
ARU							15 58 29.1
ARU				S	S		16 05 35.1 -10
ARU				pmax	pmax		
comp=Z,13nm,1.2s							
ARU	Arti	85.62	327	*e*P		P	15 55 12.7 -1.2
comp=Z,10nm,0.9s							
RC01	Rabbit Creek A	85.65	28	*e*P		P	15 55 12.6 -1.3
comp=Z,7.8nm,0.7s							
KTH	Kantishna Hill	85.78	26	*e*P		P	15 55 13.2 -1.5
comp=Z,12nm,1.0s							
BPAW	Bear Paw Mtn.	85.91	25	*e*P		P	15 55 13.7 -1.6
comp=Z,13nm,1.6s							
MLY	Manley	86.27	24	*e*P		P	15 55 16.2 -0.9
comp=Z,12nm,0.7s							
SML	Sawmill	86.48	28	*e*P		P	15 55 17.2 -0.9
SML				pmax	pmax		
comp=Z,15nm,0.8s							
SML	Sawmill	86.48	28	*e*P		P	15 55 17.2 -0.9
comp=Z,15nm,0.8s							
QSPA	South Pole Qui	86.54	180	*e*P		P	15 55 18.6 +0.1
BWN	Browne	86.57	25	*e*P		P	15 55 17.7 -0.7
comp=Z,24nm,0.9s							
RND	Reindeer	86.64	26	*e*P		P	15 55 17.3 -1.6
RND				pmax	pmax		
comp=Z,23nm,0.8s							
RND	Reindeer	86.64	26	*e*P		P	15 55 17.3 -1.6
comp=Z,23nm,0.8s							
MCK	McKinley	86.69	26	*e*P		P	15 55 17.2 -1.9
MCK				pmax	pmax		
comp=Z,14nm,0.8s							
MCK	McKinley	86.69	26	*e*P		P	15 55 17.2 -1.9
comp=Z,14nm,0.8s							
SCM	Sheep Creek Mo	86.95	28	*e*P		P	15 55 19.6 -0.9
SCM				pmax	pmax		
comp=Z,26nm,1.2s							
SCM	Sheep Creek Mo	86.95	28	*e*P		P	15 55 19.6 -0.9
comp=Z,26nm,1.2s							
COLD	Coldfoot	87.09	22	*e*P		P	15 55 20.3 -0.7
comp=Z,4.0nm,0.9s							
DHY	Denali Highway	87.21	26	*e*P		P	15 55 21.0 -0.8
comp=Z,18nm,0.8s							
SOKR	Solikamsk	87.21	330	*e*P		P	15 55 18.4 -3.2
SOKR				pmax	pmax		
comp=Z,7.0nm,0.6s							
WRH	Wood River Hil	87.23	25	*e*P		P	15 55 20.1 -1.6
comp=Z,14nm,0.8s							
MDM	Murphy Dome	87.28	24	*e*P		P	15 55 20.1 -1.8
comp=Z,4.6nm,0.8s							
CCB	Clear Creek Bu	87.39	25	*e*P		P	15 55 20.3 -2.1
comp=Z,16nm,0.8s							
COLA	College	87.42	25⇓	*e*P		P	15 55 21.5 -1.0
COLA				pmax	pmax		
comp=Z,6.0nm,0.9s							
DIV	Divide	87.53	28	*e*P		P	15 55 22.0 -1.3
comp=Z,24nm,0.8s							
HDA	Harding Lake	87.69	25	*e*P		P	15 55 21.9 -2.0
comp=Z,13nm,0.9s							
ILAR	Eielson Array	87.80	25	P		P	15 55 22.2 -2.2
comp=Z,7.9nm,0.8s,baz=262,slow=4.7,SNR=57							
ILAR				LR	LR		16 34 03.9
comp=Z,121nm,18.5s,baz=275,slow=35							
ILB	Eielson Array	87.80	25	*e*P		P	15 55 21.4 -3.0
IL1	Eielson Array	87.80	25	*e*P		P	15 55 21.6 -2.8
PAX	Paxson	88.04	27	*e*P		P	15 55 24.2 -1.5
PAX				pmax	pmax		
comp=Z,9.0nm,1.2s							
PAX	Paxson	88.04	27	*e*P		P	15 55 24.2 -1.5
comp=Z,9.4nm,1.2s							
BMRM	Bremner River	88.06	29	*e*P		P	15 55 24.4 -1.4
comp=Z,20nm,1.1s							
RKT	Rikitea	88.25	113	*e*LR	LR		16 23 40.2
comp=Z,224nm,39.0s							
DOT	Dot Lake	88.79	26	*e*P		P	15 55 28.1 -1.1
comp=Z,20nm,1.1s							
FYU	Fort Yukon	88.84	23	*e*P		P	15 55 29.8 +0.5
comp=Z,30nm,1.3s							
SYO	Syowa Base	88.96	201⇑	*e*PcP		PcP	15 55 33.6 +2.3
SYO	Syowa Base	88.96	201⇓	*i*sP		sP	15 55 41.0 +1.3
DAMY	Dhamar	91.91	284	P		P	15 55 46.0 +0.9
comp=Z,8.7nm,0.5s							
ZEI	Tsey	93.46	313	*e*P		P	15 55 49.4 -2.2
ZEI				pmax	pmax		
comp=Z,10.0nm,0.9s							
INK	Inuvik	93.51	22	P		P	15 55 48.5 -2.3
comp=Z,1.2nm,0.9s,baz=287,slow=4.6,SNR=4.1							
KLMR	Klimovskoe	95.88	331	*e*P		P	15 55 58.3 -3.6
KLMR				*e*			15 59 52.5
KLMR				pmax	pmax		
comp=Z,11nm,1.1s							
BBB	Bella Bella	96.60	38	LR	LR		16 34 53.8
comp=Z,178nm,19.5s,baz=280,slow=33							
KMBO	Kilima Mbogo	98.16	268	LR	LR		16 41 13.8
comp=Z,46nm,18.2s,baz=92,slow=36							
ARCES	ARCESS Array B	100.10	340	LR	LR		16 49 15.2
comp=Z,67nm,18.2s,baz=76,slow=40							
YKA	Yellowknife Ar	102.12	27	P		Pdif	15 56 27.7 -2.2
comp=Z,0.3nm,0.7s,baz=288,slow=4.6,SNR=5.3							
FINES	FINESS Array B	102.20	332	P		Pdif	15 56 28.8 -1.4
comp=Z,0.9nm,0.7s,baz=174,slow=7.1,SNR=4.1							
CLL	Collm	112.49	325	*e*Pdif		Pdif	15 57 17.0 +0.7
comp=Z,3.0nm,0.4s							
CLL				*e*PP		PP	16 01 58.0 +0.3
CLL				LmV			16 54 00.0
comp=Z,100nm,19.8s							
CLL	Collm	112.49	325	*e*P		Pdif	15 57 17.0 +0.7
CLL				pmax	pmax		
comp=Z,3.0nm,0.4s							
ERPA	Erie	130.11	34	*e*PKPdf		PKPdf	16 01 45.4 -0.5
OTAV	Otavalo	145.93	95	*e*PKPbc		PKPdf	16 02 16.4 +0.2
OTAV	Otavalo	145.93	95	*e*P		PKPab	16 02 17.4 +0.1
PB11	IPOC Station P	146.22	134	*e*PKPdf		PKPab	16 02 17.7 -0.1
CPUP	Villa Florida	147.94	158	PKPbc		PKPbc	16 02 22.2 +0.7
comp=Z,3.0nm,0.4s,baz=200,slow=1.0,SNR=13							
DBBC	Dabeiba	148.23	82	*e*P		PKPab	16 02 30.4 +4.6
TOLC	Tolima	149.24	87	*e*P		PKPdf	16 02 22.1 +0.6
LPAZ	La Paz	149.53	131	PKPbc		PKPbc	16 02 28.3 +1.6
comp=Z,5.1nm,0.7s,baz=358,slow=0.7,SNR=19							
LPAZ	La Paz	149.53	131	*e*PKP2		PKPbc	16 02 26.0 -0.7
LPAZ	La Paz	149.53	131	*e*PKPbc		PKPbc	16 02 26.0 -0.7
NORC	Norcasia	149.66	85	*e*P		PKPdf	16 02 17.4 -4.4
PRAC	Prado	149.68	88	*e*P		PKPbc	16 02 29.1 +2.7
RUSC	La Rusia	151.41	84	*e*P		PKPbc	16 02 30.3 -0.8
GRMC	Gramalote, San	151.52	80	*e*P		PKPbc	16 02 30.0 -0.9
CBRI	Barrientos, No	151.52	80	*e*P		PKPbc	16 02 29.2 -1.8
PAMC	Pamplona, Colo	151.66	81	*e*P		PKPdf	16 02 17.4 -8.0

IDC 02 15:48:05.7±17.0, 23°.44S×174°.75W, h0km, mb4.5/5, mb1 4.6/5, mb1mx4.0/35, mbtmp4.5/5, Error ellipse: s-maj=327.1km s-min=141.5km az=83.0, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	Charters Tower	36.29	268	P	P	15 55 12.1	+0.8
4.2nm,0.3s,baz=91,slow=9.8,SNR=6.3							
STKA	Stephens Creek	39.35	248	P	P	15 55 36.6	-0.4
18nm,1.3s,baz=85,slow=12,SNR=6.1							
ASAR	Alice Springs	46.85	259	P	P	15 56 37.1	-0.8
2.1nm,0.9s,baz=92,slow=7.4,SNR=4.4							
WRA	Warramunga Arr	47.24	264	P	P	15 56 40.2	-0.7
1.8nm,0.4s,baz=102,slow=8.3,SNR=25							
FITZ	Fitzroy Crossi	55.66	264	P	P	15 57 44.5	+0.5
8.4nm,1.0s,baz=90,slow=8.1,SNR=3.1							

IDC 02 15:57:28.0±1.3, 28°.42N×95°.17E, h0km, mb3.4/6, mb1 3.7/6, mb1mx3.3/45, mbtmp3.5/6, Error ellipse: s-maj=67.4km s-min=19.1km az=65.0
ISCJB 02 15:57:30.6±0.8, 28°.3N±0°.1×94°.75E±0°.05, h33km, mb3.6/5, Error ellipse: s-maj=17.4km s-min=6.8km az=0.4
ISC 02 15:57:32.4±1.0, 28°.4N±0°.2×94°.85E±0°.08, h35km, n11, σ1§57/15, mb3.8/5, Eastern Xizang-India border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PKIN	Phulchoki	8.40	266	*e*P	Pn	15 59 34.1	+2.2
7.9nm,0.2s							
PKIN				*e*S	Sn	16 01 06.1	+0.4
KKN	Kakani	8.48	268	*e*P	Pn	15 59 34.8	+1.9
11nm,0.2s							
KKN				*e*S	Sn	16 01 06.3	-1.2
GKN	Gorkha	9.02	270	*e*P	Pn	15 59 41.9	+1.5
4.4nm,0.2s							
GKN				*e*S	Sn	16 01 19.4	-1.4
KOLN	Koldanda	9.96	269	*e*P	Pn	15 59 54.5	+1.3
3.0nm,0.2s							
KOLN				*e*S	Sn	16 01 42.1	-1.8
PYUN	Piuthan	10.47	271	*e*P	Pn	16 00 00.7	+0.5
5.2nm,0.3s							
PYUN				*e*S	Sn	16 01 53.7	-2.6
MKAR	Makanchi Array	20.82	335	P	Pn	16 02 13.1	-0.3
0.2nm,0.3s,baz=145,slow=10,SNR=3.4							
SONM	Songino Array	21.36	22	P	P	16 02 15.6	-1.1
0.4nm,0.5s,baz=216,slow=10,SNR=3.2							
KURBB	Kurchatov Arra	25.38	335	P	P	16 02 57.5	+1.3
0.2nm,0.6s,baz=154,slow=9.5,SNR=2.3							
WRA	Warramunga Arr	61.38	137	P	P	16 07 44.8	-0.3
1.0nm,0.7s,baz=324,slow=8.0,SNR=17							
ASAR	Alice Springs	64.02	140	P	P	16 08 02.7	+0.1
0.9nm,0.4s,baz=323,slow=6.4,SNR=49							
STKA	Stephens Creek	74.65	140	P	P	16 09 07.7	-0.6
0.8nm,0.7s,baz=335,slow=11,SNR=3.0							

UPP 02 16:10:46.8±0.2, 58°.69N×18°.54E, h0km, ML2.4, Explosion
ISCJB 02 16:10:46.7±0.3, 58°.68N±0°.02×18°.42E±0°.04, h0km, Error ellipse: s-maj=3.6km s-min=3.3km az=158.9
CSEM 02 16:10:47.5±0.2, 58°.71N×18°.45E, h2km, ML2.4, Error ellipse: s-maj=5.0km s-min=4.1km az=130.0, Mining explosion.
HEL 02 16:10:47.8±0.0, 58°.70N×18°.51E, h0km, ML2.0, ML2.4(UPP), Explosion
IDC 02 16:10:49.6±2.0, 58°.80N×18°.61E, h0km, mb1 2.9/4, mb1mx2.7/67, mbtmp2.8/4, ML2.7/4, Error ellipse: s-maj=24.1km s-min=8.7km az=167.0
NAO 02 16:10:49.9±2.0, 58°.86N×18°.44E, ML2.4
BER 02 16:10:51.4±2.0, 58°.93N×18°.51E, h0km, ML2.4(NAO), Suspected explosion
ISC 02 16:10:47.0±0.8, 58°.69N±0°.02×18°.50E±0°.03, h0km, n90, σ1§15/106, Baltic Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NYNU	Nynaeshamn	0.41	321	P	Pg	16 10 54.9	+0.1
NYNU				S	Sg	16 11 00.1	0.0
NYNU	Nynaeshamn	0.41	321	*i* P	Pg	16 10 54.9	+0.1
NYNU				*i* S	Sg	16 11 00.1	0.0
NYNU	Nynaeshamn	0.41	321	P	Pg	16 10 54.9	+0.1
NYNU				S	Sg	16 11 00.1	0.0
VIKU	Vikbolandet	0.96	260	P	Pg	16 11 05.2	-0.1
VIKU	Vikbolandet	0.96	260	*e*P	Pg	16 11 05.2	-0.1
VIKU	Vikbolandet	0.96	260	P	Pg	16 11 05.2	-0.1
NRTU	Norrtaelje	1.00	4	P	Pg	16 11 05.4	-0.7
NRTU	Norrtaelje	1.00	4	*e*P	Pg	16 11 05.4	-0.7
NRTU	Norrtaelje	1.00	4	P	Pg	16 11 05.4	-0.7
GOTU	Gotland	1.00	178	P	Pg	16 11 05.9	-0.2
GOTU	Gotland	1.00	178	*e*P	Pg	16 11 05.9	-0.2
GOTU	Gotland	1.00	178	P	Pg	16 11 05.9	-0.2
ESKU	Eskilstuna	1.22	298	P	Pg	16 11 09.7	-0.6
ESKU	Eskilstuna	1.22	298	*e*P	Pg	16 11 09.7	-0.6
ESKU	Eskilstuna	1.22	298	P	Pg	16 11 09.7	-0.6
UPP	Uppsala	1.26	340	P	Pg	16 11 10.2	-0.9
UPP	Uppsala	1.26	340	*e*P	Pg	16 11 10.2	-0.9
UPP	Uppsala	1.26	340	P	Pg	16 11 10.2	-0.9
FIBU	Brunna	1.35	335	P	Pg	16 11 12.0	-0.9
BACU	Backbrunna	1.37	329	P	Pg	16 11 12.3	-0.9
BACU	Backbrunna	1.37	329	*e*P	Pg	16 11 12.3	-0.9
BACU	Backbrunna	1.37	329	P	Pg	16 11 12.3	-0.9
VSTU	Vaestervik	1.46	226	P	Pn	16 11 14.1	-0.4
VSTU	Vaestervik	1.46	226	*e*P	Pn	16 11 14.1	-0.4
VSTU	Vaestervik	1.46	226	P	Pn	16 11 14.1	-0.4
FLYU	Flymyra	1.48	348	P	Pn	16 11 14.1	-0.7
FLYU	Flymyra	1.48	348	*e*P	Pn	16 11 14.1	-0.7
FLYU	Flymyra	1.48	348	P	Pn	16 11 14.1	-0.7
BYXU	Byxelkrok	1.61	210	P	Pn	16 11 16.6	+0.1
BYXU	Byxelkrok	1.61	210	*e*P	Pn	16 11 16.6	+0.1
BYXU	Byxelkrok	1.61	210	P	Pn	16 11 16.6	+0.1
ASPU	Aespoe	1.62	219	P	Pn	16 11 16.9	+0.2
ASPU	Aespoe	1.62	219	*e*P	Pn	16 11 16.9	+0.2
ASPU	Aespoe	1.62	219	P	Pn	16 11 16.9	+0.2
LNKU	Linkoeping	1.64	255	P	Pn	16 11 17.3	+0.3
LNKU	Linkoeping	1.64	255	*e*P	Pn	16 11 17.3	+0.3
LNKU	Linkoeping	1.64	255	P	Pn	16 11 17.3	+0.3
GRAU	Graesoe	1.66	1	P	Pn	16 11 16.9	-0.3
GRAU	Graesoe	1.66	1	*e*P	Pn	16 11 16.9	-0.3
GRAU	Graesoe	1.66	1	P	Pn	16 11 16.9	-0.3
AAL	Aland	1.68	26	P	Pn	16 11 17.1	-0.5
AAL	Aland	1.68	26	*e*P	Pn	16 11 17.3	-0.2
AAL				*e*SN	Sg	16 11 42.8	+1.9
AAL	Aland	1.68	26	P	Pn	16 11 17.3	-0.2
AAL				Sn	Sg	16 11 42.8	+1.9
OSTU	Oestervaala	1.70	336	P	Pn	16 11 18.0	+0.2
OSTU	Oestervaala	1.70	336	*e*P	Pn	16 11 18.0	+0.2
OSTU	Oestervaala	1.70	336	P	Pn	16 11 18.0	+0.2
FORU	Forsmark	1.71	355	P	Pn	16 11 17.9	-0.1
FORU	Forsmark	1.71	355	*e*P	Pn	16 11 17.9	-0.1
FORU	Forsmark	1.71	355	P	Pn	16 11 17.9	-0.1
SLIT	Slitere, Latvi	2.27	116	*e*P	Pn	16 11 26.4	+0.7
SLIT				*e*SG	Sb	16 11 57.7	+0.4
SLIT	Slitere, Latvi	2.27	116	P	Pn	16 11 26.4	+0.7
SLIT				Sb	Sb	16 11 57.7	+0.4
SLIT				*e*S	Sg	16 11 58.3	-1.5
477nm,0.6s,SNR=50							
MTSE	Matsula	2.77	87	*e*P	Pn	16 11 33.1	+0.5
MTSE	Matsula	2.77	87	P	Pn	16 11 33.1	+0.5
MTSE				*e*S	Sb	16 12 10.8	-1.0
SNR=50							
HFS	Hagfors	2.85	303	Pn	Pn	16 11 34.6	+0.9
baz=121,slow=14							
HFS				Lg	Lg	16 12 14.9	
baz=118,slow=37							
HFS	Hagfors	2.85	303	Pn	Pn	16 11 34.6	+0.9
0.8nm,0.3s,baz=111,slow=14,SNR=16							
HFS				Sn	Sn	16 12 11.0	+2.3
1.6nm,0.3s,baz=120,slow=20,SNR=6.2							
HFS	Hagfors	2.85	303	Pn	Pn	16 11 34.6	+0.9
baz=121,slow=14							
HFS				Lg	Lg	16 12 14.9	
baz=118,slow=37							
HFS	Hagfors	2.85	303	Pn	Pn	16 11 34.6	+0.9
SNR=50							
HFS				Lg	Lg	16 12 14.9	
SNR=3.7							
RAF	Rauma	2.87	34	*e*PB	Pb	16 11 37.1	-1.8
RAF				*e*SG	Sb	16 12 16.0	+1.5
RAF				*e*		16 12 18.4	
RAF				MSG		16 12 20.0	
comp=Z,4.2nm,0.1s							
RAF	Rauma	2.87	34	Pb	Pb	16 11 37.0	-1.8
RAF				*e*S	Sb	16 12 13.2	-1.2
comp=Z,18nm,0.1s,SNR=50							
RAF				Sb	Sb	16 12 15.9	+1.5
RAF				Sg	Sn	16 12 18.3	+9.3
MEF	Metsahovi	3.38	60	*e*P	Pn	16 11 41.8	+0.9
SNR=50							
MEF				*e*S	Sn	16 12 25.8	+4.2
comp=Z,12nm,0.3s,SNR=50							
HEMU	Hemsoen	4.01	357	*e*P	Pn	16 11 50.6	+1.0
HEMU	Hemsoen	4.01	357	P	Pn	16 11 50.6	+1.0
BSD	Bornholm Skovb	4.08	210	*i* P	Pn	16 11 51.0	+0.4
BSD	Bornholm Skovb	4.08	210	*e*P	Pn	16 11 51.0	+0.4
BSD				*e*S	Sn	16 12 40.1	+1.1
comp=Z,1.2nm,0.7s,SNR=49							
PVF	Pernaja	4.18	60	*e*P	Pn	16 11 53.3	+1.5
PVF	Pernaja	4.18	60	P	Pn	16 11 53.3	+1.5
NB2	NORSAR Subarra	4.37	306	Pn	Pn	16 11 56.5	+2.0
baz=118,slow=14							
NB2				Lg	Lg	16 13 02.7	
baz=123,slow=37							
NB2	NORSAR Subarra	4.37	306	Pn	Pn	16 11 56.5	+2.0
baz=118,slow=14							
NB2				Lg	Lg	16 13 02.7	
baz=123,slow=37							
NB2	NORSAR Subarra	4.37	306	Pn	Pn	16 11 56.5	+2.0
SNR=50							
NB2				Lg	Lg	16 13 02.7	
SNR=5.4							
NOA	NORSAR Array B	4.37	306	Pn	Pn	16 11 55.0	+0.5
comp=Z,0.3nm,0.3s,baz=118,slow=13,SNR=4.6							
NOA				Lg	Lg	16 12 59.6	
comp=Z,1.8nm,0.3s,baz=162,slow=19,SNR=7.8							
FIA0	FINESS Array S	4.70	51	Pn	Pn	16 12 00.2	+1.2
baz=240,slow=14							
FIA0				Lg	Lg	16 13 11.6	
baz=236,slow=28							
FIA0	FINESS Array S	4.70	51	Pn	Pn	16 12 00.2	+1.2
baz=240,slow=14							
FIA0				Lg	Lg	16 13 11.6	
baz=236,slow=28							
FIA0	FINESS Array S	4.70	51	*e*P	Pn	16 12 00.8	+1.8
FIA0	FINESS Array S	4.70	51	Pn	Pn	16 12 00.2	+1.2
SNR=50							
FIA0	FINESS Array S	4.70	51	P	Pn	16 12 00.8	+1.8
FIA0				Lg	Lg	16 13 11.6	
SNR=50							
FINES	FINESS Array B	4.70	51	Pn	Pn	16 12 00.3	+1.4
comp=Z,0.5nm,0.3s,baz=243,slow=12,SNR=13							
FINES				Sn	Sn	16 12 52.4	-1.7
comp=Z,0.4nm,0.3s,baz=240,slow=22,SNR=3.8							
FINES				Lg	Lg	16 13 11.7	
comp=Z,1.7nm,0.3s,baz=242,slow=21,SNR=12							
KEF	Keuruu	4.71	39	*e*P	Pn	16 12 00.0	+0.9
KEF	Keuruu	4.71	39	P	Pn	16 12 00.0	+0.9
VAF	Ylistaro	4.82	23	*e*P	Pn	16 12 03.4	+2.6
VAF	Ylistaro	4.82	23	P	Pn	16 12 03.3	+2

BSO1	Boso 1	1.37 203	P	Pn	16 11 59.9	0.0
BSO3	Boso 3	1.44 220	P	Pn	16 12 01.0	-0.2
JFK	Kawauchi	1.57 337	P	Pn	16 12 01.8	-1.5
JAG	Ashikaga	1.84 287	P	Pn	16 12 04.7	-2.2
JFT	Otama	1.91 327	P	Pn	16 12 06.7	-1.2
JMM	Marumori	2.06 341	P	Pn	16 12 07.8	-2.2
MJAR	Matsushiro Arr	2.84 284	Pn	Pn	16 12 19.8	-0.9
	9.2nm,0.3s,baz=86,slow=9.5,SNR=120					
MJAR			LR	LR	16 13 34.1	
	comp=Z,288nm,19.3s,baz=200,slow=44					
MAJO	Matsushiro	2.84 284	*c iP*	Pn	16 12 19.7	-1.0
MAJO	Matsushiro	2.84 284	*e*Pn	Pn	16 12 19.8	-0.9
MAT	Matsushiro	2.84 284	P	Pn	16 12 20.0	-0.7
MAT			*e*S	Sn	16 12 54.7	+0.6
MJB9	Matsu-Tunnel	2.84 284	*e*Pn	Pn	16 12 20.0	-0.7
JHJ2	Mitsune	3.17 209	*e*Pn	Pn	16 12 25.0	-0.3
JHJ	Hachijo jima 2	3.18 209	Pn	Pn	16 12 25.1	-0.3
	43nm,0.3s,baz=326,slow=16,SNR=36					
JHJ			Sn	Sn	16 13 02.6	+0.2
	77nm,0.3s,baz=271,slow=23,SNR=6.5					
INU	Inuyama	3.80 263	*e*Pn	Pn	16 12 35.0	+1.1
ERM	Erimo	6.21 11	⇓*e*P	Pn	16 13 08.5	+1.6
ERM	Erimo	6.21 11	*e*Pn	Pn	16 13 04.7	-2.2
ASAJ	Asahikawa	8.23 5	Pn	Pn	16 13 31.9	-2.7
	1.4nm,0.3s,baz=204,slow=14,SNR=14					
ASAJ			Sn	Sn	16 15 04.4	-2.3
	0.4nm,0.3s,baz=29,slow=27,SNR=2.5					
CBIJ	Chichi jima	8.80 177	*e*Pn	Pn	16 13 38.4	-4.2
CBIJ			Sn	Sn	16 15 11.6	-9.4
JCJ	Chichijima	8.80 177	Pn	Pn	16 13 39.9	-2.7
JCJ			Sn	Sn	16 15 11.6	-9.4
	8.5nm,0.3s,baz=305,slow=21,SNR=2.4					
JNU	Nakatsue	9.30 256	Pn	Pn	16 13 51.1	+1.6
	0.4nm,0.3s,baz=201,slow=0.9,SNR=5.1					
JNU	Nakatsue	9.30 256	*e*Pn	Pn	16 13 48.8	-0.7
KUR	Kuril'sk	10.44 25	*e*P	Pn	16 14 03.5	-1.5
MSHR	Mys Shultsa	10.50 313	⇓*e*P	Pn	16 14 07.6	+1.8
USRK	Ussuriysk Ar.	11.09 321	Pn	Pn	16 14 13.3	-0.5
	0.3nm,0.3s,baz=132,slow=14,SNR=3.1					
KSRS	Korea Array	11.12 282	Pn	Pn	16 14 17.4	+3.2
	0.1nm,0.3s,baz=89,slow=13,SNR=5.8					
KSAR	Wonju Array Be	11.15 282	P	Pn	16 14 17.4	+2.7
KSAR	Wonju Array Be	11.15 282	Pn	Pn	16 14 17.4	+2.7
CN2	Changchun	14.70 307	*e*P	Pn	16 15 03.2	0.0
CN2			pmax	pmax		
	comp=Z,10.0nm,0.6s					
CN2			pmax	pmax		
	comp=Z,200nm,3.0s					
CN2			LR	LR		
	comp=N,200nm,19.0s					
CN2			LR	LR		
	comp=E,300nm,19.0s					
CN2			LR	LR		
	comp=Z,200nm,15.0s					
TYV	Tymovskoe	14.96 3	*e*P	P	16 15 12.5	+0.6
TYV			pmax	pmax		
	comp=Z,11nm,0.8s					
KLR	Kul'dur	15.15 334	Pn	Pn	16 15 06.8	-2.4
	comp=Z,0.1nm,0.3s,baz=145,slow=11,SNR=6.0					
BJI	Beijing	20.46 289	P	P	16 16 10.6	-2.0
BJI			pmax	pmax		
	comp=Z,9.0nm,0.8s					
BJI			pmax	pmax		
	comp=Z,280nm,4.6s					
WHN	Wuhan	23.41 265	⇑P	P	16 16 43.6	-0.3
HHC	Hu-ho-hao-te	24.02 291	*e*P	P	16 16 50.3	+0.5
HHC			S	S	16 21 00.9	-4.5
HHC			pmax	pmax		
	comp=Z,22nm,1.0s					
HHC			pmax	pmax		
	comp=Z,120nm,4.1s					
HHC			LR	LR		
	comp=N,1μm,13.2s					
HHC			LR	LR		
	comp=E,1μm,12.7s					
HHC			LR	LR		
	comp=Z,1μm,13.1s					
MA2	Magadan	24.41 11	P	P	16 16 53.5	+0.4
	comp=Z,2.1nm,0.5s,baz=194,slow=13,SNR=4.6					
XAN	Xi'an	26.80 276	P	P	16 17 14.8	-0.3
XAN			pmax	pmax		
	comp=Z,4.0nm,0.6s					
XAN			pmax	pmax		
	comp=Z,49nm,6.2s					
YAK	Yakutsk	27.20 348	P	P	16 17 17.6	-0.6
	comp=Z,8.5nm,0.6s,baz=292,slow=3.0,SNR=6.7					
YAK	Yakutsk	27.20 348	*e*P	P	16 17 25.8	+7.5
YAK			pmax	pmax		
	comp=E,2.0nm,0.8s					
YAK			pmax	pmax		
	comp=Z,15nm,0.8s					
YAK			pmax	pmax		
	comp=N,12nm,1.0s					
YAK	Yakutsk	27.20 348	*e*P	P	16 17 16.1	-2.1
	comp=N,16nm,0.7s					
ENH	Enshi	27.44 267	*e*P	P	16 17 19.3	-1.6
	comp=N,7.7nm,0.8s					
SEY	Seymchan	27.86 11	P	P	16 17 25.0	+0.8
	comp=N,1.4nm,0.7s,baz=212,slow=13,SNR=6.0					
SEY	Seymchan	27.86 11	⇓*e*P	P	16 17 26.1	+2.0
ULN	Ulaanbaatar	28.14 306	⇓*e*P	P	16 17 28.5	+1.4
ULN			pmax	pmax		
	comp=Z,2.0nm,0.8s					
SONM	Songino Array	28.57 306	P	P	16 17 30.6	-0.2
	comp=Z,1.6nm,0.6s,baz=110,slow=9.2,SNR=10					
BOD	Bodaibo	28.57 329	*e*P	P	16 17 30.0	-0.6
BOD			pmax	pmax		
	comp=Z,6.0nm,0.7s					
LZH	Lanzhou	30.45 282	*e*P	P	16 17 47.6	-0.1
LZH			pP	sP	16 17 59.2	+0.6
LZH			sP	pP	16 18 04.3	+8.9
LZH			pmax	pmax		
	comp=Z,31nm,1.2s					
LZH			pmax	pmax		
	comp=Z,74nm,4.5s					
LZH			LR	LR		
	comp=N,230nm,13.1s					
LZH			LR	LR		
	comp=E,210nm,13.0s					
LZH			LR	LR		
	comp=Z,170nm,13.7s					
ZAK	Zakamensk	31.11 310	*e*P	P	16 17 52.3	-1.0
ZAK			pmax	pmax		
	comp=Z,3.0nm,1.2s					
TLY	Talaya	31.21 312	*e*P	P	16 17 55.1	+1.1
TLY			pmax	pmax		
	comp=Z,4.0nm,0.8s					
GYA	Guiyang	31.23 262	*e*P	P	16 17 54.2	-0.4
GYA			pmax	pmax		
	comp=Z,10.0nm,1.0s					
CD2	Chengdu	31.87 272	P	P	16 17 58.6	-1.5
CD2			pmax	pmax		
	comp=Z,1.0nm,0.6s					
GTA	Gaotai	33.08 289	*e*P	P	16 18 10.8	+0.1
GTA			pP	pP	16 18 18.6	+0.2
GTA			sP	sP	16 18 22.3	+0.7
GTA			pmax	pmax		
	comp=Z,4.0nm,1.1s					
BILL	Bilibino	35.05 16	⇓*iP*	P	16 18 29.0	+1.7
BILL			*e*		16 18 42.1	
BILL					16 20 59.0	
BILL			S	S	16 23 52.0	-5.8
BILL			pmax	pmax		
	comp=Z,2.0nm,1.2s					
TIXI	Tiksi	36.42 353	⇓*e*P	P	16 18 41.9	+2.9
TIXI			pmax	pmax		
	comp=Z,2.0nm,1.0s					
TIXI	Tiksi	36.42 353	P	P	16 18 40.1	+1.2
	comp=Z,3.4nm,0.8s					
CMAR	Chiang Mai Arr	41.40 257	P	P	16 19 20.8	-0.5
	comp=Z,0.3nm,0.4s,baz=60,slow=6.6,SNR=2.8					
WMQ	Urumqi	41.51 298	*e*P	P	16 19 22.6	+0.5
WMQ			pP	sP	16 19 31.3	-1.8
WMQ			sP	pP	16 19 34.9	+5.0
WMQ			ScP	ScP	16 25 06.2	-1.4
WMQ			SS	SS	16 28 35.8	-5.1
WMQ	Urumqi	41.51 298	ScS	ScS	16 29 23.1	-0.8
WMQ			pmax	pmax		
	comp=Z,4.0nm,0.6s					
WMQ			pmax	pmax		
	comp=Z,120nm,4.2s					
WMQ			LR	LR		
	comp=N,76nm,39.0s					
WMQ			LR	LR		
	comp=E,17nm,26.4s					
WMQ			LR	LR		
	comp=Z,20nm,18.0s					
ZAA0	Zalesovo Array	42.81 313	*e*P	P	16 19 32.4	0.0
ZALV	Zalesovo Beam	42.81 313	P	P	16 19 32.5	+0.2
	comp=Z,4.6nm,0.6s,baz=92,slow=6.5,SNR=19					
ZALV			PcP	PcP	16 21 22.2	-1.0
	comp=Z,0.8nm,0.5s,baz=94,slow=4.9,SNR=3.0					
MKAR	Makanchi Array	44.87 303	P	P	16 19 49.2	+0.1
	comp=Z,2.0nm,0.7s,baz=86,slow=9.9,SNR=17					
MAKZ	Makanchi	45.08 303	*e*P	P	16 19 50.2	-0.6
MAKZ			pmax	pmax		
	comp=Z,12nm,1.0s					
MAKZ	Makanchi	45.08 303	*e*P	P	16 19 50.2	-0.6
	comp=Z,12nm,1.0s					
KURK	Kurchatov	46.77 309	P	P	16 20 04.6	+0.6
KURK			pmax	pmax		
	comp=Z,5.0nm,0.6s					
KURK	Kurchatov	46.77 309	P	P	16 20 04.6	+0.6
KURBB	Kurchatov Arra	46.84 309	P	P	16 20 04.6	0.0
	comp=Z,4.7nm,0.6s,baz=84,slow=8.0,SNR=58					
KDAK	Kodiak Island	47.82 41	*i P*	P	16 20 12.5	+0.5
SOEI	Soe	48.29 203	*e*P	P	16 20 17.0	+0.7
	comp=Z,25nm,1.0s					
KTH	Kantishna Hill	48.58 33	*e*P	P	16 20 19.9	+1.9
MTN	Manton Dam	49.50 194	*e*P	P	16 20 25.2	-0.2
	comp=Z,22nm,1.4s					
MDM	Murphy Dome	49.77 32	*e*P	P	16 20 28.1	+1.1
	comp=Z,7.7nm,1.0s					
TKM2	Tokmak 2	50.33 299	*e*P	P	16 20 32.3	+0.5
TKM2			pmax	pmax		
	comp=Z,4.0nm,0.7s					
TKM2	Tokmak 2	50.33 299	*e*P	P	16 20 32.3	+0.5
	comp=Z,4.3nm,0.7s					
ILAR	Eielson Array	50.35 32	P	P	16 20 32.0	+0.7
	comp=Z,1.4nm,0.8s,baz=267,slow=6.2,SNR=13					
KSH	Kashi	51.03 295	*e*P	P	16 20 41.9	+4.9
KSH			*e*pP	sP	16 20 52.0	+3.8
KSH			*e*PP	PP	16 22 39.5	+6.0
KSH			S	S	16 27 57.4	+4.5
KSH			ScS	ScS	16 30 27.1	+1.0
KSH	Kashi	51.03 295	SS	SS	16 31 33.4	+5.6
KSH			pmax	pmax		
	comp=Z,44nm,4.4s					
KSH			LR	LR		
	comp=N,56nm,5.9s					
KSH			LR	LR		
	comp=E,72nm,6.7s					
KSH			LR	LR		
	comp=Z,140nm,4.6s					
AAK	Ala-Archa	51.19 299	P	P	16 20 37.1	-1.1
	comp=Z,0.9nm,0.4s,baz=25,slow=22,SNR=2.9					
AAK	Ala-Archa	51.19 299	⇑*e*P	P	16 20 38.3	+0.1
AAK			pmax	pmax		
	comp=Z,3.0nm,1.0s					
BVAR	Borovoye Array	51.46 313	P	P	16 20 40.1	+0.2
	comp=Z,0.8nm,0.5s,baz=81,slow=9.2,SNR=6.8					
BRVK	Borovoye	51.52 313	⇓*e*P	P	16 20 40.7	+0.4
BRVK			pmax	pmax		
	comp=Z,2.0nm,0.7s					
ZRNK	Zerenda	52.30 313	*e*P	P	16 20 46.2	+0.1
ZRNK			pmax	pmax		
	comp=Z,6.0nm,0.8s					
ZRNK	Zerenda	52.30 313	*e*P	P	16 20 46.1	+0.1
	comp=Z,5.7nm,0.8s					
KKAR	Karatay Array	53.85 301	*e*P	P	16 20 57.4	-0.3
KKAR			pmax	pmax		
	comp=Z,2.0nm,0.8s					
KKAR	Karatay Array	53.85 301	*e*P	P	16 20 57.4	-0.3
	comp=Z,2.1nm,0.8s					
INK	Inuvik	55.30 27	P	P	16 21 09.0	+1.2
	comp=Z,0.6nm,0.6s,baz=297,slow=7.3,SNR=3.9					
FITZ	Fitzroy Crossi	55.82 198	*e*P	P	16 21 12.2	+0.2
	comp=Z,27nm,1.8s					
WRAB	Tennant Creek	55.97 188	⇑*e*P	P	16 21 12.0	-1.1
WRAB			pmax	pmax		
	comp=Z,25nm,1.0s					
WB2	Warramunga Arr	55.98 188	*e*P	P	16 21 12.6	-0.7
	comp=Z,8.4nm,0.9s					
WRA	Warramunga Arr	55.98 188	P	P	16 21 12.7	-0.5
	comp=Z,4.9nm,0.8s,baz=6.1,slow=7.5,SNR=35					
WRA	Warramunga Arr	55.98 188	*i P*	P	16 21 12.6	-0.6
WRA			pmax	pmax		
	comp=Z,5.0nm,0.8s					
ARU	Arti	57.32 319	P	P	16 21 22.6	+0.1
	comp=Z,4.1nm,0.5s,baz=108,slow=3.1,SNR=9.4					
ARU	Arti	57.32 319	*c iP*	P	16 21 22.3	-0.1
ARU					16 23 29.8	
ARU			S	S	16 29 18.5	+1.6
ARU			SS	SS	16 33 06.8	+0.9
ARU			pmax	pmax		
	comp=Z,4.0nm,0.7s					
ARU	Arti	57.32 319	*e*P	P	16 21 22.1	-0.3
	comp=Z,7.4nm,0.6s					
ABKAR	Akbulak array	58.80 311	*e*P	P	16 21 32.2	-0.7
AKTO	Aktyubinsk	59.56 313	P	P	16 21 36.9	-1.2
	comp=Z,0.7nm,0.5s,baz=44,slow=6.7,SNR=3.6					
AKTO	Aktyubinsk	59.56 313	P	P	16 21 36.9	-1.2
AKTO			pmax	pmax		
	comp=Z,2.0nm,0.6s					
ASAR	Alice Springs	59.71 188	P	P	16 21 39.2	-0.1
	comp=Z,1.0nm,0.6s,baz=17,slow=12,SNR=30					
ASAR	Alice Springs	59.71 188	P	P	16 21 39.3	-0.1
ASAR			pmax	pmax		
	comp=Z,2.0nm,0.8s					
RES	Resolute Bay	63.64 14	P	P	16 22 05.7	+0.5
	comp=Z,1.0nm,0.5s,baz=306,slow=8.5,SNR=8.2					
YKA	Yellowknife Ar	64.69 30	P	P	16 22 12.6	+0.3
	comp=Z,1.0nm,0.7s,baz=303,slow=6.7,SNR=19					
ARCES	ARCESS Array B	65.11 340	P	P	16 22 15.4	+0.4
	comp=Z,1.1nm,0.8s,baz=40,slow=9.6,SNR=5.7					
FINES	FINESS Array B	69.89 333	P	P	16 22 45.2	0.0
	comp=Z,2.1nm,0.8s,baz=60,slow=11,SNR=6.0					
KIV	Kislovodsk	71.78 311	*e*P	P	16 22 55.6	-1.6
KIV			pmax	pmax		
	comp=Z,3.0nm,0.9s					
LRM	Limekiln Ridge	74.82 44	*e*P	P	16 23 15.9	+0.6
NB2	NORSAR Subarra	75.29 337	P	P	16 23 17.7	+0.2
	comp=Z,2.5nm,0.8s,baz=42,slow=5.9					
NOA	NORSAR Array B	75.29 337	P	P	16 23 17.6	+0.2
	comp=Z,0.9nm,0.7s,baz=40,slow=5.9,SNR=4.6					
AKASG	Malin Array Be	75.29 323	P	P	16 23 17.3	-0.3
	comp=Z,1.4nm,0.5s,baz=49,slow=6.1,SNR=6.9					
NVAR	Mina Array Bea	75.52 53	P	P	16 23 20.1	+0.6
	comp=Z,0.7nm,0.7s,baz=290,slow=5.8,SNR=5.4					
BW06	Boulder Array	78.32 45	*e*P	P	16 23 35.4	+0.2
PDAR	Pinedale Array	78.32 45	P	P	16 23 35.9	+0.7
	comp=Z,0.7nm,0.6s,baz=230,slow=0.9,SNR=7.8					
BRTR	Keskin Array B	79.73 312	P	P	16 23 43.4	+0.5
	comp=Z,0.9nm,0.8s,baz=78,slow=3.5,SNR=4.9					
BRTR	Keskin Array B	79.73 312	*i P*	P	16 23 46.7	+3.9
BRTR			pmax	pmax		
	comp=Z,1.0nm,0.8s					
CLL	Collm	82.16 330	*e*P	P	16 23 55.0	-0.3
CLL	Collm	82.16 330	*e*P	P	16 23 55.0	-0.3
LPAZ	La Paz	147.09 61	PKPbc	PKPbc	16 31 18.9	+0.1
	comp=Z,1.3nm,0.5s,baz=12,slow=7.4,SNR=7.1					
LPAZ	La Paz	147.09 61	PKP2	PKPbc	16 31 19.0	+0.1
LPAZ			pmax	pmax		
	comp=Z,1.0nm,0.5s					
KTMS			*e*S	Sg	16 21 26.9	-1.0
	12nm,0.3s					
KTMS			*e*S	Sg	16 21 26.9	-1.0
	96nm,0.3s					
WMQ	Urumqi	3.11 59	Pn	Pn	16 20 43.2	+0.5
WMQ			Sn	Sb	16 21 27.0	+0.1
WMQ			smax	smax		
	comp=N,180nm,0.4s					
WMQ			smax	smax		
	comp=E,170nm,0.3s					
PDGK	Podgornoye	3.50 289	⇑Pn	Pn	16 20 50.0	+2.0
PDGK			⇓Pg	Pb	16 20 57.7	+2.2
	6.8nm,0.6s					
PDGK			⇓Lg	Lg	16 21 43.7	
	26nm,0.5s					
DJR	Jarkent	3.71 305	*e*P	Pg	16 21 02.7	-1.8
	13nm,0.3s					
DJR			*e*S	Sg	16 21 50.4	-2.1
	39nm,0.5s					
UZB	Uzynbulak	3.78 285	*e*P	Pg	16 21 07.1	+1.1
	16nm,0.4s					
UZB			*e*S	Sg	16 21 56.7	+1.7
	26nm,0.4s					
KPKS	Kokpek	4.09 289	*e*P	Pg	16 21 11.7	-0.3
	23nm,0.4s					
KPKS			*e*S	Sg	16 22 05.1	0.0
	44nm,0.2s					
ZHN	Zhinishke	4.21 284	*e*P	Pg	16 21 12.7	-1.4
	7.4nm,0.3s					
ZHN			*e*S	Sg	16 22 06.8	-1.9
	59nm,0.3s					
SATY	Saty	4.21 283	*e*P	Pg	16 21 13.0	-1.2
	18nm,0.5s					
SATY			*e*S	Sg	16 22 07.1	-1.6
	36nm,0.3s					
KURS	Kuram	4.46 288	*e*P	Pg	16 21 20.2	+1.1
KURS			*e*S	Sg	16 22 20.3	+3.4
MNBS	Baschi	4.48 296	*e*P	Pg	16 21 18.0	-1.5
	4.0nm,0.4s					
MNBS			*e*S	Sg	16 22 15.3	-2.2
	40nm,0.3s					
KAPS	Kapalarasan	4.52 313	*e*P	Pg	16 21 18.4	-1.7
	15nm,0.4s					
KAPS			*e*S	Sg	16 22 16.4	-2.2
	18nm,0.6s					
MK31	Makanchi Array	4.68 345	Pn	Pn	16 21 06.4	+2.1
	0.2nm,0.2s,baz=165,slow=15,SNR=34					
MK31			⇑Pg	Pb	16 21 19.7	+3.9
	2.7nm,0.4s,baz=151,slow=17,SNR=25					
MK31			⇓Lg	Lg	16 22 22.2	
	19nm,0.6s,baz=166,slow=32,SNR=9.9					
MKAR	Makanchi Array	4.68 345	Pn	Pn	16 21 06.2	+2.0
	0.4nm,0.3s,baz=165,slow=14,SNR=15					
MKAR			Pg	Pb	16 21 18.0	+2.3
	2.9nm,0.3s,baz=158,slow=16,SNR=22					
MKAR			Sn	Sn	16 22 03.1	+4.5
	2.2nm,0.3s,baz=174,slow=16,SNR=5.4					
MKAR			Lg	Lg	16 22 22.0	
	5.7nm,0.3s,baz=170,slow=26,SNR=8.4					
MAKZ	Makanchi	4.76 343	Pn	Pn	16 21 07.1	+1.8
MAKZ			⇓Pg	Pb	16 21 20.0	+3.0
	5.6nm,0.6s					
MAKZ			⇓Lg	Lg	16 22 22.8	
	15nm,0.6s					
TDK	Taldyqorghan	4.90 306	*e*P	Pg	16 21 25.5	-1.9
	13nm,0.2s					
TDK			*e*S	Sg	16 22 28.3	-2.5
	41nm,0.4s					
ARXS	Arharly	4.92 295	*e*P	Pg	16 21 25.7	-2.0
	6.5nm,0.5s					
ARXS			*e*S	Sg	16 22 29.9	-1.5
	29nm,0.3s					
ZSN	Zaisan	5.18 3	*e*P	Pg	16 21 31.6	-1.2
	7.1nm,0.4s					
ZSN			*e*S	Sg	16 22 38.6	-1.1
	59nm,0.5s					
MDOK	Medeo	5.21 282	*e*P	Pg	16 21 31.2	-2.1
	4.3nm,0.3s					
MDOK			*e*S	Sg	16 22 38.1	-2.6
	15nm,0.5s					
TNSS	Tian-Shan	5.27 281	*e*P	Pg	16 21 34.7	+0.1
	6.6nm,0.4s					
TNSS			*e*S	Sg	16 22 45.1	+2.3
	9.0nm,0.3s					
CHKK	Chushkaly	5.38 290	*e*P	Pg	16 21 33.2	-3.4
	5.2nm,0.4s					
CHKK			*e*S	Sg	16 22 42.8	-3.4
	16nm,0.4s					
DGS	Degeres	6.14 282	*e*P	Pg	16 21 49.7	-1.5
	2.9nm,0.4s					
DGS			*e*S	Sg	16 23 10.5	-0.3
	11nm,0.5s					
TKM2	Tokmak 2	6.25 279	⇑Pn	Pn	16 21 29.4	+3.5
	2.1nm,0.6s					
TKM2			⇓Lg	Lg	16 23 13.4	
	3.0nm,0.5s					
AAK	Ala-Archa	7.05 276	Pn	Pn	16 21 36.3	-0.7
	0.1nm,0.3s,baz=185,slow=11,SNR=1.9					
AAK			Lg	Lg	16 23 34.5	
	0.0nm,0.3s,baz=53,slow=20,SNR=2.4					
KURBB	Kurchatov Arra	9.16 338	Pn	Pn	16 22 07.3	+1.6
	0.0nm,0.3s,baz=155,slow=12,SNR=2.6					
KURBB			Lg	Lg	16 24 46.2	
	0.1nm,0.3s,baz=155,slow=30,SNR=6.7					
ZALV	Zalesovo Beam	11.69 2	Pn	Pn	16 22 39.5	-0.8
	0.2nm,0.3s,baz=185,slow=14,SNR=2.3					
ZALV			Lg	Lg	16 26 03.0	
	0.1nm,0.3s,baz=192,slow=26,SNR=2.5					
BVAR	Borovoye Array	14.11 324	Pn	Pn	16 23 11.1	-2.3
	0.1nm,0.3s,baz=130,slow=15,SNR=2.9					
BVAR			Lg	Lg	16 27 20.8	
	0.1nm,0.3s,baz=132,slow=24,SNR=2.2					
SONM	Songino Array	16.73 63	Pn	Pn	16 23 47.0	-1.1
	0.1nm,0.3s,baz=254,slow=11,SNR=3.5					
CMAR	Chiang Mai Arr	26.93 147	LR	LR	16 36 39.8	
	comp=Z,25nm,18.8s,baz=165,slow=38					
GNI	Garni	29.45 279	LR	LR	16 38 47.9	
	comp=Z,28nm,18.5s,baz=85,slow=39					
ARCES	ARCESS Array B	40.20 332	P	P	16 27 29.1	-0.7
	1.3nm,0.9s,baz=94,slow=7.4,SNR=6.1					
YKA	Yellowknife Ar	74.51 9	P	P	16 31 28.6	-3.2
	0.1nm,0.4s,baz=339,slow=6.2,SNR=4.1					

JMA 02 16:15:57.7±0.2, 36°.02N×141°.56E, h21km±3km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
CHOJ	Chosi	0.65	241	P		Pb	16 16 10.1	-0.3
CHOJ				S		Sb	16 16 19.0	-0.1
ONAJ	Iwakimizuishiy	1.24	331	S		Sb	16 16 36.9	+0.9

*IDC **02** 16:19:49.0±2.0, 42°.08N×84°.04E, h0km, mb3.5/2, mb1 3.4/8, mb1mx3.2/56, mbtmp3.2/8, ML2.8/6, MS3.0/2, Ms1 3.1/2, ms1mx2.7/44, Error ellipse: s-maj=22.3km s-min=21.2km az=77.0*

*BJI **02** 16:19:52.7, 42°.09N×84°.17E, h6km, ML3.2/11*

*NNC **02** 16:19:56.1±1.2, 42°.39N×83°.92E, h0km, mb3.6, mpv3.2, Error ellipse: s-maj=11.3km s-min=6.0km az=136.0*

*SOME **02** 16:19:57.6, 42°.37N×83°.98E, h5km*

ISC 02 16:19:53.6±1.2, 42°.28N±0°.07×84°.02E±0°.05, h10km, n31, σ2.9 09/50, 3C-6D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
KTMS	Ketmen	2.94	295	*e*P		Pg	16 20 49.2	-0.7

JMA 02 16:28:39.6, 36°.99N×140°.53E, h7km±1km, M2.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.24	62	P		Pg	16 28 44.6	+0.2
JHO	Hitachi	0.38	175	P		Pg	16 28 47.0	0.0
JHO				S		Sg	16 28 52.1	+0.1
JFK	Kawauchi	0.47	36	P		Pg	16 28 48.6	0.0
JFT	Otama	0.55	344	P		Pg	16 28 50.5	+0.3
JFY	Yanaizu	0.78	303	P		Pg	16 28 54.7	+0.1
JFY				S		Sg	16 29 04.9	+0.2
JMM	Marumori	0.90	13	P		Pg	16 28 56.7	-0.2
MAT	Matsushiro	1.92	257	P		Pb	16 29 14.0	-0.9
MAT				S		Sb	16 29 39.0	-0.1

DHMR 02 16:35:18.9±0.8, 12°.14N×43°.96E, h16km±6km, ML3.5, 1C, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
TRBA	At Turbah	1.09	8	⇑*iP*		Pb	16 35 39.3	-0.3
TRBA				*i* S		Sn	16 35 54.7	0.0
TRBA				AML		AML	16 35 55.7	
	comp=Z,2μm,0.5s							
ADEN	Aden	1.18	58	*i* P		Pn	16 35 40.6	-0.2
ADEN				*i* S		Sg	16 35 57.1	+0.1
ADEN				AML		AML	16 36 04.7	
	comp=N,1μm,0.4s							
UDYN	Al 'Udayn	1.81	0	*i* P		Pn	16 35 50.3	+0.6
UDYN				*i* S		Sb	16

2.9nm,0.4s,baz=93,slow=11,SNR=13
STKA Stephens Creek 34.36 248 P P 16 45 06.3 0.0
1.0nm,0.6s,baz=98,slow=13,SNR=6.6
ASAR Alice Springs 41.63 261 P P 16 46 05.3 +0.2
1.8nm,0.8s,baz=102,slow=9.3,SNR=29
WRA Warramunga Arr 42.00 266 P P 16 46 07.8 -0.2
1.4nm,0.4s,baz=92,slow=8.5,SNR=51
ARCES ARCESS Array B 131.74 348 PKP PKPdf 16 57 10.9 -0.7
0.9nm,0.7s,baz=58,slow=3.0,SNR=6.1
AKASG Malin Array Be 144.69 327 PKP PKPdf 16 57 35.2 -0.4
1.2nm,0.6s,baz=44,slow=3.8,SNR=6.6
BRTR Keskin Array B 147.21 307 PKPbc PKPbc 16 57 43.3 -0.5
0.8nm,0.8s,baz=68,slow=3.9,SNR=4.8
CLL Collm 150.67 343 ||*i*P PKPbc 16 57 52.0 +0.4
comp=Z,5.0nm,0.8s

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*IDC **02** 16:41:43.9±0.6, 10°.03S×160°.42E, h0km, mb4.5/22, mb1 4.6/23, mb1mx4.5/47, mbtmp4.5/23, ML3.3/1, MS3.5/15, Ms1 3.5/15, ms1mx3.3/36, Error ellipse: s-maj=16.8km s-min=12.9km az=88.0*
*BJI **02** 16:41:45.1, 9°.74S×160°.43E, h6km, mb4.8/43, mB5.1/30, Ms5.0/12, Ms7 4.6/12*
*NEIC **02** 16:41:46.5±1.3, 10°.04S×160°.46E, h18km±8km, mb5.0/49, Error ellipse: s-maj=6.9km s-min=4.7km az=125.0*
*ISCJB **02** 16:41:47.5±0.2, 10°.10S±0°.04×160°.44E±0°.05, h37km, mb4.8/91, MS3.5/14, Error ellipse: s-maj=7.0km s-min=5.6km az=37.4*
*MOS **02** 16:41:47.1±0.9, 10°.01S×160°.42E, h33km, mb5.0/19, Error ellipse: s-maj=12.4km s-min=10.0km az=103.5*
ISC 02 16:41:49.0±0.4, 10°.08S±0°.06×160°.50E±0°.07, h37km, n157, σ1§40/149, mb4.8/92, MS3.4/14, 8C-4D, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	**Honiara**	**0.85**	**320**	Pn	**Pn**	**16 42 01.5**	**-2.8**
	484nm,0.3s,baz=164,slow=2.8,SNR=418						
HNR				Sn	**Sn**	**16 42 14.9**	**-0.7**
	2μm,0.3s,baz=18,slow=20,SNR=37						
HNR				LR	LR	16 42 24.0	
	comp=Z,2μm,18.3s,baz=96,slow=53						
HNR	**Honiara**	**0.85**	**320**	*i* P	**Pn**	**16 42 01.0**	**-3.4**
HNR				*i* S	**Sn**	**16 42 20.0**	**+4.4**
PMG	**Port Moresby**	**13.17**	**272**	LR	LR	16 49 44.7	
	comp=Z,669nm,18.5s,baz=114,slow=37						
PMG	**Port Moresby**	**13.17**	**272**	‖*e*P	**P**	**16 45 06.1**	**+3.1**
PMG				pmax	pmax		
	comp=Z,115nm,1.2s						
DZM	**Mont Dzumac**	**13.21**	**155**	Pn	**Pn**	**16 44 54.9**	**+0.7**
	comp=Z,0.2nm,0.3s,baz=217,slow=20,SNR=3.0						
DZM				LR	LR	16 48 48.5	
	comp=Z,184nm,18.9s,baz=48,slow=32						
TARA	**Tarawa**	**16.80**	**48**	Pn	**Pn**	**16 45 40.7**	**-0.8**
CTA	**Charters Tower**	**16.96**	**232**	Pn	**P**	**16 45 47.1**	**+1.9**
	comp=Z,0.9nm,0.3s,baz=61,slow=14,SNR=15						
COEN	**Coen**	**17.38**	**255**	*e*Pn	**P**	**16 45 50.8**	**+1.0**
	comp=Z,20nm,0.9s						
EIDS	**Eidsvold**	**17.64**	**209**	*e*Pn	**Pn**	**16 45 49.3**	**-2.6**
	comp=Z,9.7nm,0.9s						
JAY	**Jayapura**	**21.05**	**290**	P	**P**	**16 46 29.9**	**-0.2**
	comp=Z,2.2nm,0.8s,baz=89,slow=21,SNR=4.6						
ARMA	**Armidale**	**21.86**	**201**	*e*P	**P**	**16 46 38.8**	**+0.2**
	comp=Z,24nm,0.9s						
WRAB	**Tennant Creek**	**27.05**	**246**	*ce*P	**P**	**16 47 29.4**	**+1.3**
WRAB				pmax	pmax		
	comp=Z,68nm,1.2s						
WRAB	**Tennant Creek**	**27.05**	**246**	*e*P	**P**	**16 47 27.8**	**-0.4**
	comp=Z,46nm,1.4s						
WRA	**Warramunga Arr**	**27.06**	**246**	P	**P**	**16 47 27.9**	**-0.4**
	comp=Z,12nm,0.7s,baz=75,slow=9.3,SNR=64						
WRA				LR	LR	16 57 56.3	
	comp=Z,128nm,21.4s,baz=45,slow=36						
WRA	**Warramunga Arr**	**27.06**	**246**	*i* P	**P**	**16 47 29.5**	**+1.2**
WRA				pmax	pmax		
	comp=Z,12nm,0.6s						
AFI	**Afiamalu**	**27.37**	**101**	LR	LR	16 56 09.5	
	comp=Z,101nm,20.5s,baz=270,slow=32						
STKA	**Stephens Creek**	**27.87**	**216**	P	**P**	**16 47 35.0**	**-0.3**
	comp=Z,1.8nm,0.7s,baz=60,slow=16,SNR=4.6						
STKA				LR	LR	16 58 25.6	
	comp=Z,113nm,18.5s,baz=29,slow=36						
STKA	**Stephens Creek**	**27.87**	**216**	*e*P	**P**	**16 47 35.8**	**+0.5**
STKA				pmax	pmax		
	comp=Z,2.0nm,0.9s						
STKA	**Stephens Creek**	**27.87**	**216**	*e*P	**P**	**16 47 35.8**	**+0.5**
	comp=Z,2.4nm,0.9s						
GUMO	**Guam**	**28.17**	**326**	LR	LR	16 57 08.5	
	comp=Z,36nm,22.0s,baz=108,slow=33						
AS01	**Alice Springs**	**28.70**	**239**	*e*P	**P**	**16 47 41.7**	**-1.1**
AS31	**Alice Springs**	**28.74**	**239**	*e*P	**P**	**16 47 43.6**	**+0.3**
	comp=Z,2.1nm,1.1s						
ASAR	**Alice Springs**	**28.74**	**239**	P	**P**	**16 47 42.0**	**-1.2**
	comp=Z,2.4nm,0.6s,baz=62,slow=10.0,SNR=32						
ASAR				LR	LR	16 58 57.2	
	comp=Z,253nm,18.2s,baz=64,slow=36						
MTN	**Manton Dam**	**28.90**	**262**	*e*P	**P**	**16 47 44.2**	**-0.5**
	comp=Z,9.0nm,1.0s						
BBOO	**Buckleboo**	**31.92**	**221**	*e*P	**P**	**16 48 10.9**	**-0.3**
	comp=Z,18nm,0.6s						
FOZ	**Fox Glacier**	**34.30**	**168**	*e*P	**P**	**16 48 31.9**	**+0.2**
	comp=Z,81nm,1.3s						
FITZ	**Fitzroy Crossi**	**34.69**	**253**	P	**P**	**16 48 34.9**	**-0.6**
	comp=Z,7.3nm,0.5s,baz=74,slow=7.9,SNR=40						
FITZ				LR	LR	17 02 25.3	
	comp=Z,83nm,19.4s,baz=61,slow=36						
FITZ	**Fitzroy Crossi**	**34.69**	**253**	*e*P	**P**	**16 48 34.7**	**-0.8**
	comp=Z,8.3nm,0.6s						
MMRI	**Maumere**	**37.77**	**269**	*e*P	**P**	**16 48 59.9**	**-2.0**
	comp=Z,57nm,1.1s						
KAPI	**Kappang**	**40.68**	**274**	LR	LR	17 07 00.0	
	comp=Z,42nm,19.7s,baz=106,slow=37						
JAGI	**Jajag, Banyuwa**	**45.74**	**268**	*e*P	**P**	**16 50 06.5**	**-0.6**
	comp=Z,117nm,1.6s						
PPT	**Papeete**	**48.93**	**104**	LR	LR	17 05 53.9	
	comp=Z,24nm,21.1s,baz=312,slow=30						
MAJO	**Matsushiro**	**50.90**	**337**	‖*e*P	P	16 50 52.4	+5.9
KSM	**Kuching**	**51.26**	**280**	*e*P	**P**	**16 50 49.3**	**-0.3**
	comp=Z,32nm,1.0s						
KSRS	**Korea Array**	**56.29**	**329**	P	**P**	**16 51 26.4**	**+0.5**
	comp=Z,4.7nm,0.8s,baz=144,slow=7.3,SNR=13						
KSRS				LR	LR	17 13 26.1	
	comp=Z,15nm,20.5s,baz=60,slow=34						
KSAR	**Wonju Array Be**	**56.30**	**329**	P	**P**	**16 51 26.4**	**+0.4**
KSAR	**Wonju Array Be**	**56.30**	**329**	P	**P**	**16 51 26.4**	**+0.4**
KS01	**Wonju Array Si**	**56.32**	**329**	*e*P	**P**	**16 51 25.4**	**-0.8**
NJ2	**Nanjing**	**57.79**	**318**	*e*P	**P**	**16 51 37.4**	**+0.7**
NJ2				pmax	pmax		
	comp=Z,12nm,0.7s						
USRK	**Ussuriysk Ar.**	**59.90**	**337**	P	**P**	**16 51 52.0**	**+0.9**
	comp=Z,9.3nm,0.8s,baz=156,slow=6.2,SNR=9.6						
IPM	**Ipoh**	**60.98**	**281**	*e*P	**P**	**16 52 00.4**	**+1.3**
	comp=Z,12nm,1.0s						
MDJ	**Mudanjiang**	**61.21**	**335**	P	**P**	**16 52 00.8**	**+0.8**
MDJ				pmax	pmax		
	comp=Z,16nm,2.4s						
MDJ				pmax	pmax		
	comp=Z,160nm,4.1s						
MDJ	**Mudanjiang**	**61.21**	**335**	*e*P	**P**	**16 52 00.3**	**+0.2**
	comp=Z,19nm,1.1s						
SKNT	**Sakolnakorn**	**62.00**	**295**	P	P	16 52 13.6	+7.6
	comp=Z,12nm,2.0s						
CN2	**Changchun**	**62.37**	**332**	*e*P	**P**	**16 52 06.9**	**-1.0**
CN2				*ep*P	pP	16 52 12.3	-6.8
CN2				pmax	pmax		
	comp=Z,20nm,0.7s						
CN2				pmax	pmax		
	comp=Z,200nm,4.0s						
PETK	**Petropavlovsk-**	**62.99**	**358**	LR	LR	17 15 28.9	
	comp=Z,31nm,21.9s,baz=146,slow=32						
GSI	**Gunungsitoli**	**63.63**	**276**	*e*P	**P**	**16 52 17.5**	**+0.6**
	comp=Z,32nm,1.1s						
GYA	**Guiyang**	**63.65**	**306**	*e*P	**P**	**16 52 19.0**	**+2.1**
GYA				pmax	pmax		
	comp=Z,10.0nm,1.0s						
KLR	**Kul'dur**	**64.24**	**340**	P	**P**	**16 52 20.6**	**+0.4**
	comp=Z,8.6nm,0.9s,baz=110,slow=2.5,SNR=11						
BJI	**Beijing**	**64.57**	**324**	P	**P**	**16 52 25.4**	**+2.9**
BJI				pmax	pmax		
	comp=Z,7.0nm,0.6s						
LOEI	**Loei**	**64.62**	**295**	P	**P**	**16 52 25.8**	**+2.5**
	comp=Z,5.2nm,0.8s						
SRDT	**SRDT**	**65.52**	**291**	P	P	16 52 34.6	+5.4
	comp=Z,32nm,1.2s,comp=Z,2μm						
NANT	**Nan**	**65.57**	**296**	P	P	16 52 34.0	+4.5
	comp=Z,2.8nm,0.9s						
XAN	**Xi'an**	**65.72**	**314**	P	**P**	**16 52 30.1**	**-0.1**
XAN				pmax	pmax		
	comp=Z,3.0nm,0.7s						
XAN				pmax	pmax		
	comp=Z,17nm,3.6s						
SUKH	**Sukhothai**	**66.07**	**294**	P	P	16 52 37.9	+5.2
	comp=Z,3.7nm,0.8s						
KMI	**Kunming**	**66.25**	**303**	P	**P**	**16 52 35.9**	**+1.9**
KMI				pP	pP	16 52 41.2	-4.1
KMI				sP	sP	16 52 43.4	-6.2
KMI				pmax	pmax		
	comp=Z,15nm,0.5s						
KMI				pmax	pmax		
	comp=Z,60nm,4.7s						
KMI				LR	LR		
	comp=Z,46nm,4.6s						
KMI				LR	LR		
	comp=Z,70nm,4.8s						
KMI				LR	LR		
	comp=Z,52nm,5.8s						
CRAI	**Chiangrai**	**66.37**	**297**	P	**P**	**16 52 35.4**	**+0.8**
	comp=Z,631nm,1.3s						
LAMP	**Lampang**	**66.42**	**295**	P	P	16 52 40.3	+5.4
	comp=Z,5.9nm,0.8s						
CM01	**Chiang Mai Arr**	**66.99**	**295**	*e*P	**P**	**16 52 38.6**	**+0.1**
CMAR	**Chiang Mai Arr**	**67.02**	**295**	P	**P**	**16 52 39.3**	**+0.6**
	comp=Z,3.8nm,0.7s,baz=123,slow=4.5,SNR=17						
CMAR				LR	LR	17 23 19.4	
	comp=Z,18nm,18.3s,baz=210,slow=37						
CHTO	**Chiang Mai**	**67.14**	**295**	P	**P**	**16 52 41.4**	**+1.9**
	comp=Z,27nm,1.1s						
CHTO	**Chiang Mai**	**67.14**	**295**	*e*P	**P**	**16 52 39.0**	**-0.5**
CHTO				pmax	pmax		
	comp=Z,6.0nm,1.0s						
CHTO	**Chiang Mai**	**67.14**	**295**	*e*P	**P**	**16 52 39.0**	**-0.5**
	comp=Z,5.9nm,1.0s						
VNDA	**Vanda**	**67.42**	**180**	P	**P**	**16 52 41.6**	**+1.3**
	comp=Z,3.1nm,0.9s,baz=284,slow=4.6,SNR=3.5						
VNDA				LR	LR	17 17 49.3	
	comp=Z,37nm,18.5s,baz=305,slow=32						
HHC	**Hu-ho-hao-te**	**67.83**	**322**	*e*P	**P**	**16 52 46.8**	**+3.2**
HHC				pmax	pmax		
	comp=Z,17nm,1.2s						
HHC				pmax	pmax		
	comp=Z,130nm,6.6s						
CD2	**Chengdu**	**67.96**	**309**	P	**P**	**16 52 44.7**	**+0.2**
CD2				sP	pP	16 52 51.9	-3.9
CD2				PP	**PP**	**16 55 14.7**	**-0.2**
CD2				S	**S**	**17 01 44.2**	**+3.0**
CD2				sS	sS	17 01 53.1	-6.8
CD2				SS	**SS**	**17 06 07.6**	**+3.6**
CD2				pmax	pmax		
	comp=Z,20nm,0.7s						
CD2				pmax	pmax		
	comp=Z,90nm,4.5s						
CD2				LR	LR		
	comp=Z,160nm,5.3s						
CD2				LR	LR		
	comp=Z,100nm,8.3s						
MA2	**Magadan**	**69.86**	**355**	P	**P**	**16 52 54.9**	**-0.8**
	comp=Z,6.8nm,0.8s,baz=181,slow=7.9,SNR=5.7						
LZH	**Lanzhou**	**70.34**	**314**	*e*P	P	16 53 03.3	+4.0
LZH				pP	pP	16 53 06.5	-4.2
LZH				sP	sP	16 53 09.4	-5.6
LZH				pmax	pmax		
	comp=Z,15nm,1.0s						
SEY	**Seymchan**	**73.06**	**356**	P	**P**	**16 53 14.7**	**-0.2**
	comp=Z,2.5nm,0.8s,baz=161,slow=6.8,SNR=8.8						
SEY	**Seymchan**	**73.06**	**356**	‖*e*P	**P**	**16 53 15.5**	**+0.6**
ULN	**Ulaanbaatar**	**74.56**	**326**	*de*P	**P**	**16 53 25.4**	**+1.2**
ULN				pmax	pmax		
	comp=Z,7.0nm,1.2s						
ULN	**Ulaanbaatar**	**74.56**	**326**	*e*P	**P**	**16 53 24.5**	**+0.3**
	comp=Z,5.5nm,1.0s						
GTA	**Gaotai**	**74.72**	**316**	P	**P**	**16 53 26.6**	**+1.3**
GTA				pP	pP	16 53 31.2	-5.5
GTA				sP	PcP	16 53 33.6	-5.8
GTA				pmax	pmax		
	comp=Z,5.0nm,1.2s						
SONM	**Songino Array**	**74.90**	**326**	P	**P**	**16 53 27.0**	**+0.9**
	comp=Z,2.4nm,0.8s,baz=143,slow=5.9,SNR=8.6						
SONA1	**Songino Array**	**74.91**	**326**	*e*P	**P**	**16 53 26.1**	**-0.1**
YAK	**Yakutsk**	**75.80**	**346**	P	**P**	**16 53 30.5**	**-0.3**
	comp=Z,6.1nm,0.4s,baz=178,slow=2.2,SNR=15						
YAK	**Yakutsk**	**75.80**	**346**	*e*P	**P**	**16 53 30.5**	**-0.3**
YAK				pmax	pmax		
	comp=Z,14nm,0.9s						
YAK				pmax	pmax		
	comp=N,3.0nm,1.1s						
YAK				pmax	pmax		
	comp=Z,32nm,0.9s						
YAK				pmax	pmax		
	comp=N,5.0nm,1.2s						
YAK	**Yakutsk**	**75.80**	**346**	*e*P	**P**	**16 53 29.9**	**-0.8**
	comp=N,33nm,0.8s						
LSA	**Lhasa**	**77.50**	**303**	*e*P	**P**	**16 53 41.4**	**-0.4**
LSA				pmax	pmax		
	comp=Z,9.0nm,1.4s						
LSA	**Lhasa**	**77.50**	**303**	*e*P	**P**	**16 53 41.4**	**-0.4**
	comp=Z,8.8nm,1.4s						
BOD	**Bodaibo**	**77.53**	**337**	*e*P	**P**	**16 53 38.6**	**-2.1**
BOD				pmax	pmax		
	comp=Z,4.0nm,1.9s						
ZAK	**Zakamensk**	**78.01**	**327**	*e*P	**P**	**16 53 42.7**	**-1.0**
ZAK				pmax	pmax		
	comp=Z,2.0nm,1.4s						
BILL	**Biiibino**	**78.03**	**2**	||*i*P	**P**	**16 53 44.1**	**+0.8**
BILL				*i*		16 53 49.1	
BILL				*i*		16 53 59.2	
BILL				*e*S	S	17 03 48.7	+15
BILL				pmax	pmax		
	comp=Z,14nm,1.2s						
BILL				MLR	MLR		
	comp=Z,57nm,17.0s						
BILL	**Biiibino**	**78.03**	**2**	*e*P	**P**	**16 53 43.4**	**+0.1**
	comp=Z,13nm,0.9s						
SVW2	**Sparrevohn**	**78.90**	**20**	*e*P	**P**	**16 53 49.7**	**+1.4**
	comp=Z,11nm,0.7s						
QSPA	**South Pole Qui**	**79.91**	**180**	*e*P	**P**	**16 53 55.2**	**+1.3**
	comp=Z,9.9nm,0.7s						
TT01	**Tatalina**	**80.06**	**19**	*e*P	**P**	**16 53 55.5**	**+1.0**
TTA	**Tatalina**	**80.08**	**19**	*e*P	**P**	**16 53 55.4**	**+0.7**
TTA				pmax	pmax		
	comp=Z,7.0nm,0.8s						
TTA	**Tatalina**	**80.08**	**19**	*e*P	**P**	**16 53 55.4**	**+0.7**
	comp=Z,7.0nm,0.8s						
SEW	**Seward**	**80.43**	**23**	*e*P	**P**	**16 53 56.8**	**+0.3**
CAST	**Castle Rocks**	**81.70**	**20**	*e*P	**P**	**16 54 03.1**	**-0.2**
	comp=Z,12nm,0.8s						
SML	**Sawmill**	**81.94**	**22**	*e*P	**P**	**16 54 04.1**	**-0.5**
SML				pmax	pmax		
	comp=Z,3.0nm,1.2s						
SML	**Sawmill**	**81.94**	**22**	*e*P	**P**	**16 54 04.1**	**-0.5**
	comp=Z,3.2nm,1.2s						
KTH	**Kantishna Hill**	**82.17**	**20**	*e*P	**P**	**16 54 05.3**	**-0.5**
	comp=Z,13nm,0.9s						
TRF	**Thorofare Moun**	**82.32**	**20**	*e*P	**P**	**16 54 06.3**	**-0.4**
	comp=Z,11nm,1.1s						
BPAW	**Bear Paw Mtn.**	**82.52**	**19**	*e*P	**P**	**16 54 07.3**	**-0.3**
	comp=Z,5.0nm,0.8s						
KLU	**Klutina**	**82.65**	**23**	*e*P	**P**	**16 54 10.0**	**+1.6**
	comp=Z,9.3nm,0.9s						
RND	**Reindeer**	**82.78**	**21**	*e*P	**P**	**16 54 09.2**	**+0.2**
RND				pmax	pmax		
	comp=Z,8.0nm,0.8s						
RND	**Reindeer**	**82.78**	**21**	*e*P	**P**	**16 54 09.2**	**+0.2**
	comp=Z,8.0nm,0.8s						
MCK	**McKinley**	**82.96**	**20**	*e*P	**P**	**16 54 09.8**	**-0.1**
MCK				pmax	pmax		
	comp=Z,32nm,0.8s						
MCK	**McKinley**	**82.96**	**20**	*e*P	**P**	**16 54 09.8**	**-0.1**
	comp=Z,32nm,0.8s						
BWN	**Browne**	**83.07**	**20**	*e*P	**P**	**16 54 11.0**	**+0.6**
	comp=Z,19nm,0.8s						
MLY	**Manley**	**83.22**	**19**	*e*P	**P**	**16 54 11.4**	**+0.2**
	comp=Z,10nm,0.9s						
MAW	**Mawson**	**83.65**	**202**	P	**P**	**16 54 14.2**	**+0.8**
	comp=Z,6.1nm,0.9s,baz=101,slow=8.2,SNR=5.4						
MAW	**Mawson**	**83.65**	**202**	*e*P	**P**	**16 54 14.4**	**+1.0**
	comp=Z,11nm,1.9s						
WRH	**Wood River Hil**	**83.72**	**20**	*e*P	**P**	**16 54 13.3**	**-0.4**
	comp=Z,12nm,1.0s						
BALM	**Baldy**	**83.80**	**24**	*e*P	**P**	**16 54 16.2**	**+1.8**
BALM				pmax	pmax		
	comp=Z,12nm,0.8s						
BALM	**Baldy**	**83.80**	**24**	*e*P	**P**	**16 54 16.1**	**+1.8**
	comp=Z,12nm,0.8s						
CCB	**Clear Creek Bu**	**83.93**	**20**	*e*P	**P**	**16 54 13.8**	**-1.0**
	comp=Z,7.6nm,0.8s						
MDM	**Murphy Dome**	**83.98**	**20**	*e*P	**P**	**16 54 14.8**	**-0.3**
	comp=Z,10.0nm,0.8s						
COLA	**College**	**84.06**	**20**	‖*e*P	**P**	**16 54 13.9**	**-1.5**
COLA				pmax	pmax		
	comp=Z,11nm,0.8s						
HDA	**Harding Lake**	**84.07**	**20**	*e*P	**P**	**16 54 15.1**	**-0.4**
	comp=Z,10nm,0.8s						
TIXI	**Tiksi**	**84.23**	**350**	||*e*P	**P**	**16 54 14.7**	**-1.4**
TIXI				pmax	pmax		
	comp=Z,1.0nm,1.1s						
ILAR	**Eielson Array**	**84.31**	**20**	P	**P**	**16 54 16.5**	**-0.2**
	comp=Z,2.7nm,0.7s,baz=250,slow=5.0,SNR=25						
ILB	**Eielson Array**	**84.31**	**20**	*e*P	**P**	**16 54 15.9**	**-0.8**
IL1	**Eielson Array**	**84.31**	**20**	*e*P	**P**	**16 54 15.8**	**-0.9**
MENT	**Mentasta**	**84.34**	**22**	*e*P	**P**	**16 54 18.4**	**+1.5**
	comp=Z,7.4nm,0.9s						
DOT	**Dot Lake**	**84.63**	**22**	*e*P	**P**	**16 54 19.1**	**+0.7**
	comp=Z,16nm,0.8s						
WMQ	**Urumqi**	**84.80**	**316**	*e*P	**P**	**16 54 21.1**	**+1.4**
WMQ				pmax	pmax		
	comp=Z,7.0nm,0.5s						
WMQ				pmax	pmax		
	comp=Z,75nm,3.8s						
COLD	**Coldfoot**	**84.85**	**17**	*e*P	**P**	**16 54 20.2**	**+0.8**
	comp=Z,4.5nm,0.9s						
EGAK	**Eagle**	**86.31**	**21**	*e*P	**P**	**16 54 28.0**	**+1.3**
	comp=Z,12nm,0.9s						
DAWY	**Dawson**	**86.59**	**22**	*e*P	**P**	**16 54 29.3**	**+1.2**
	comp=Z,11nm,1.0s						
MK01	**Makanchi Array**	**89.31**	**318**	*e*P	**P**	**16 54 40.5**	**-1.0**
MK31	**Makanchi Array**	**89.32**	**318**	*e*P	**P**	**16 54 41.2**	**-0.4**
MK31	**Makanchi Array**	**89.32**	**318**	*e*P	**P**	**16 54 41.2**	**-0.4**
MKAR	**Makanchi Array**	**89.32**	**318**	P	**P**	**16 54 41.5**	**-0.1**
	comp=Z,1.9nm,0.8s,baz=106,slow=5.9,SNR=11						
MKAR	**Makanchi Array**	**89.32**	**318**	*ce*P	**P**	**16 54 42.5**	**+0.9**
MKAR				pmax	pmax		
	comp=Z,2.0nm,0.8s						
MKAR	**Makanchi Array**	**89.32**	**318**	*e*P	**P**	**16 54 41.2**	**-0.3**
NVAR	**Mina Array Bea**	**89.39**	**51**	P	**P**	**16 54 43.7**	**+1.3**
	comp=Z,1.4nm,0.8s,baz=234,slow=5.0,SNR=8.0						
DAC	**Darwin (Calif)**	**89.45**	**53**	*e*P	**P**	**16 54 42.8**	**+0.2**
DAC				pmax	pmax		
	comp=Z,4.0nm,1.0s						
DAC	**Darwin (Calif)**	**89.45**	**53**	*e*P	**P**	**16 54 42.8**	**+0.2**
	comp=Z,3.8nm,1.0s						
MAKZ	**Makanchi**	**89.53**	**318**	*e*P	**P**	**16 54 42.4**	**-0.1**
MAKZ				pmax	pmax		
	comp=Z,3.0nm,1.0s						
MAKZ	**Makanchi**	**89.53**	**318**	*e*P	**P**	**16 54 42.4**	**-0.1**
	comp=Z,2.7nm,1.0s						
ZALV	**Zalesovo Beam**	**89.79**	**325**	P	**P**	**16 54 43.2**	**-0.3**
	comp=Z,0.4nm,0.5s,baz=123,slow=5.5,SNR=4.4						
INK	**Inuvik**	**90.71**	**20**	P	**P**	**16 54 48.1**	**+0.6**
	comp=Z,1.7nm,0.9s,baz=309,slow=3.1,SNR=4.7						
SYO	**Syowa Base**	**91.15**	**198**	‖*e*P	**P**	**16 54 47.6**	**-2.0**
R11A	**Troy Canyon, C**	**91.46**	**51**	*e*P	**P**	**16 54 50.1**	**-1.8**
	comp=Z,4.1nm,1.4s						
F10A	**Beach Ranch, E**	**91.85**	**44**	*e*P	**P**	**16 54 54.1**	**+0.7**
	comp=Z,6.2nm,0.8s						
KSH	**Kashi**	**92.15**	**310**	*e*P	**P**	**16 54 53.8**	**-1.3**
KSH				*ep*P	PcP	16 54 58.5	+2.7
KSH				*es*P	pP	16 55 00.6	-6.1
KSH				*e*PP	**PP**	**16 58 34.6**	**-1.0**
KSH				SKS	**SKSac**	**17 05 23.9**	**-1.8**
KSH				S	**S**	**17 05 50.8**	**-4.5**
KSH				pmax	pmax		
	comp=Z,76nm,4.7s						
KSH				LR	LR		
	comp=Z,92nm,4.8s						
KSH				LR	LR		
	comp=Z,75nm,5.3s						
KSH				LR	LR		
	comp=Z,89nm,4.9s						
NEW	**Newport**	**92.42**	**42**	*e*P	**P**	**16 54 56.3**	**+0.3**
NEW				pmax	pmax		
	comp=Z,4.0nm,0.8s						
NEW	**Newport**	**92.42**	**42**	*e*P	**P**	**16 54 56.3**	**+0.3**
	comp=Z,4.1nm,0.8s						
HLID	**Hailey**	**93.33**	**47**	*e*P	**P**	**16 55 02.3**	**+1.8**
	comp=Z,6.7nm,1.2s						
AAK	**Ala-Archa**	**93.83**	**312**	‖*e*P	**P**	**16 55 04.8**	**+2.0**
AAK				pmax	pmax		
	comp=Z,2.0nm,1.2s						
BOZ	**Bozeman (W)**	**95.64**	**45**	*e*P	**P**	**16 55 09.9**	**-1.1**
BOZ				pmax	pmax		
	comp=Z,7.0nm,0.6s						
BOZ	**Bozeman (W)**	**95.64**	**45**	*e*P	**P**	**16 55 09.9**	**-1.1**
	comp=Z,7.1nm,0.6s						
YKA	**Yellowknife Ar**	**96.51**	**28**	P	**P**	**16 55 14.3**	**0.0**
	comp=Z,2.9nm,0.8s,baz=258,slow=4.7,SNR=34						
YKB5	**Yellowknife Ar**	**96.51**	**28**	*e*P	**P**	**16 55 13.6**	**-0.7**
BW06	**Boulder Array**	**96.72**	**48**	*e*P	**P**	**16 55 15.1**	**-1.0**
PDAR	**Pinedale Array**	**96.72**	**48**	P	**P**	**16 55 17.7**	**+1.6**
	comp=Z,0.5nm,0.7s,baz=246,slow=1.5,SNR=4.9						
BRVK	**Borovoye**	**98.10**	**322**	‖*e*P	Pdif	16 55 21.0	-0.8
BRVK				pmax	pmax		
	comp=Z,1.0nm,0.8s						
TXAR	**Lajitas Array**	**99.92**	**62**	LR	LR	17 33 01.8	
	comp=Z,33nm,20.4s,baz=0.0,slow=31						
OBN	**Obninsk**	**117.27**	**328**	*i* PKIKP	**PKPdf**	**17 00 26.0**	**-4.2**
OBN				pmax	pmax		
	comp=Z,4.0nm,0.9s						
BOSA	**Boshof**	**122.14**	**227**	PKP	**PKPdf**	**17 00 43.1**	**+2.5**
	comp=Z,2.9nm,0.9s,baz=69,slow=7.0,SNR=3.7						
BRG	**Berggiesshubel**	**130.94**	**332**	*e*

*IDC **02** 16:43:54.4±2.0, 37.°07N×140.°68E, h0km, mb3.2/3, mb1 3.4/5, mb1mx3.2/49, mbtmp3.3/5, ML3.1/2, MS2.9/3, Ms1 2.9/3, ms1mx2.4/25, Error ellipse: s-maj=39.8km s-min=25.8km az=50.0*

*ISCJB **02** 16:43:56.5±0.6, 36.°99N±0.°03×140.°60E±0.°04, h17km±7km, mb3.2/3, MS3.0/2, Error ellipse: s-maj=5.9km s-min=5.6km az=9.6*

*JMA **02** 16:43:56.6, 36.°99N×140.°53E, h5km±1km, M3.2 Broadband fault plane solution: P waves. NP1: φs75.00000°, δ54.00000°, λ-83.00000°. NP2: φs243.00000°, δ36.00000°, λ-99.00000°. Principal axes: T Plg9.0000°, Azm160.0000°; N Plg6.0000°, Azm251.0000°; P Plg79.0000°, Azm11.0000°;*

JMA Felt I J1.

ISC 02 16:43:56.4±1.2, 37.°01N±0.°04×140.°49E±0.°06, h6km±11km, n15, σ0s67/21, mb3.3/3, 6C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.26**	**70**	⇑P	**Pg**	**16 44 01.6**	**0.0**
ONAJ				S	**Sg**	**16 44 05.2**	**+0.1**
JHO	**Hitachi**	**0.41**	**171**	⇑P	**Pg**	**16 44 03.9**	**-0.4**
JHO				S	**Sg**	**16 44 09.1**	**-0.5**
JSB	**Shiboa**	**0.46**	**265**	⇑P	**Pb**	**16 44 06.9**	**+0.1**
JSB				S	**Sb**	**16 44 14.1**	**+0.2**
JFK	**Kawauchi**	**0.47**	**41**	⇑P	**Pg**	**16 44 05.6**	**+0.1**
JFK				S	**Sg**	**16 44 11.9**	**+0.3**
JFT	**Otama**	**0.52**	**347**	⇑P	**Pb**	**16 44 07.4**	**-0.5**
JFT				S	**Sb**	**16 44 15.2**	**-0.5**
JFY	**Yanaizu**	**0.74**	**302**	⇑P	**Pb**	**16 44 11.6**	**-0.1**
JFY				S	**Sb**	**16 44 21.8**	**-0.2**
MJAR	**Matsushiro Arr**	**1.89**	**256**	Pn	**Pb**	**16 44 30.5**	**-0.8**
	4.3nm,0.3s,baz=77,slow=15,SNR=40						
MJAR				Sn	**Sb**	**16 44 55.5**	**+0.4**
	7.3nm,0.3s,baz=103,slow=25,SNR=12						
MAT	**Matsushiro**	**1.89**	**256**	P	**Pb**	**16 44 30.8**	**-0.5**
MAT				S	**Sb**	**16 44 55.7**	**+0.6**
JHJ	**Hachijo jima 2**	**3.93**	**189**	Pn	**Pn**	**16 44 59.1**	**+1.9**
	5.0nm,0.3s,baz=79,slow=19,SNR=2.5						
JHJ				Sn	**Sn**	**16 45 43.5**	**0.0**
	4.8nm,0.3s,baz=73,slow=20,SNR=2.7						
JNU	**Nakatsue**	**8.78**	**247**	LR	LR	16 50 13.6	
	comp=Z,53nm,18.7s,baz=117,slow=42						
JAY	**Jayapura**	**39.33**	**180**	LR	LR	17 04 29.2	
	comp=Z,5.0nm,21.4s,baz=176,slow=31						
MKAR	**Makanchi Array**	**43.50**	**302**	P	**P**	**16 52 00.3**	**-0.2**
	0.1nm,0.5s,baz=77,slow=6.2,SNR=2.5						
BVAR	**Borovoye Array**	**50.04**	**312**	LR	LR	17 15 24.2	
	comp=Z,86nm,21.2s,baz=74,slow=38						
WRA	**Warramunga Arr**	**56.95**	**187**	P	**P**	**16 53 41.3**	**-1.2**
	0.3nm,0.9s,baz=2.9,slow=7.6,SNR=5.0						
ASAR	**Alice Springs**	**60.67**	**187**	P	**P**	**16 54 07.9**	**-0.4**
	0.2nm,0.7s,baz=7.0,slow=9.5,SNR=3.4						

IDC 02 16:47:57.0±25.0, 16.°67S×173.°25W, h0km, mb3.9/4, mb1 4.0/4, mb1mx3.6/41, mbtmp3.9/4, Error ellipse: s-maj=473.2km s-min=154.6km az=71.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**38.51**	**259**	P	P	16 55 22.0	+0.6
	1.3nm,0.5s,baz=79,slow=5.2,SNR=3.2						
STKA	**Stephens Creek**	**43.54**	**241**	P	P	16 56 03.2	+0.6
	0.5nm,0.4s,baz=100,slow=17,SNR=3.2						
WRA	**Warramunga Arr**	**49.70**	**258**	P	P	16 56 50.5	-0.7
	0.5nm,0.3s,baz=96,slow=7.6,SNR=29						
ASAR	**Alice Springs**	**49.86**	**253**	P	P	16 56 51.8	-0.7
	0.9nm,0.5s,baz=91,slow=7.7,SNR=47						

*NIED **02** 16:48:00, 37.°70N×143.°50E, h5km, Mw3.9 Best double couple: M0 7.10000×10^14 NP1: φs1.00000°, δ23.00000°, λ-116.00000°. NP2: φs209.00000°, δ69.00000°, λ-79.00000°.*

*IDC **02** 16:48:09.6±0.8, 37.°53N×143.°50E, h0km, mb3.7/7, mb1 3.9/15, mb1mx3.7/51, mbtmp3.9/15, ML3.7/7, MS2.9/3, Ms1 2.9/3, ms1mx2.4/50, Error ellipse: s-maj=20.3km s-min=14.9km az=112.0*

*JMA **02** 16:48:12.8±0.2, 37.°67N×143.°49E, h42km, M3.7*

ISC 02 16:48:10.4±4.3, 37.°58N±0.°05×143.°53E±0.°07, h9km±28km, n31, σ1s62/46, mb3.6/7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.93**	**297**	P	**Pn**	**16 48 43.5**	**+0.1**
JIO				eS	**Sn**	**16 49 05.8**	**-2.1**
OFUJ	**Ofunato**	**2.09**	**316**	P	**Pn**	**16 48 45.1**	**-0.6**
OFUJ				S	**Sn**	**16 49 09.4**	**-2.5**
JFK	**Kawauchi**	**2.13**	**265**	P	**Pn**	**16 48 46.4**	**+0.2**
JMM	**Marumori**	**2.19**	**278**	P	**Pn**	**16 48 47.3**	**+0.3**
JMM				eS	**Sn**	**16 49 12.7**	**-1.6**
ONAJ	**Iwakimizuishiy**	**2.23**	**258**	P	**Pn**	**16 48 48.4**	**+0.8**
ONAJ				S	**Sn**	**16 49 14.4**	**-1.0**
JMK	**Ichinoseki**	**2.28**	**308**	P	**Pn**	**16 48 48.1**	**-0.1**
JMK				eS	**Sn**	**16 49 15.4**	**-1.0**
JOU	**Okura**	**2.40**	**290**	P	**Pn**	**16 48 50.8**	**+0.9**
JOU				eS	**Sn**	**16 49 17.8**	**-1.6**
JFT	**Otama**	**2.54**	**269**	P	**Pn**	**16 48 53.3**	**+1.4**
JFT				eS	**Sn**	**16 49 22.4**	**-0.6**
JHO	**Hitachi**	**2.56**	**249**	P	**Pn**	**16 48 52.8**	**+0.7**
JHO				eS	**Sn**	**16 49 21.3**	**-2.1**
JOM	**Ohasama**	**2.58**	**318**	P	**Pn**	**16 48 52.2**	**-0.1**
JOM				eS	**Sn**	**16 49 21.2**	**-2.6**
JTH	**Tanohata**	**2.69**	**331**	P	**Pn**	**16 48 54.5**	**+0.6**
JTH				eS	**Sn**	**16 49 24.6**	**-2.0**
JYK	**Kaneyama**	**2.83**	**299**	P	**Pn**	**16 48 56.9**	**+1.1**
JYK				eS	**Sn**	**16 49 28.3**	**-1.8**
CHOJ	**Chosi**	**2.86**	**230**	eS	**Sn**	**16 49 28.9**	**-1.7**
JRG	**Rokugo**	**2.91**	**309**	P	**Pn**	**16 48 57.7**	**+0.8**
JRG				eS	**Sn**	**16 49 31.1**	**-0.9**
MJAR	**Matsushiro Arr**	**4.38**	**258**	Pn	**Pn**	**16 49 18.2**	**+1.0**
	3.6nm,0.3s,baz=88,slow=15,SNR=54						
MJAR				Sn	**Sn**	**16 50 08.9**	**+0.5**
	0.6nm,0.3s,baz=213,slow=17,SNR=2.8						
MJAR				LR	LR	16 51 15.8	
	comp=Z,103nm,19.6s,baz=135,slow=43						
MAT	**Matsushiro**	**4.39**	**258**	P	**Pn**	**16 49 20.3**	**+3.1**
MAT				S	**Sn**	**16 50 10.7**	**+2.3**
JHJ	**Hachijo jima 2**	**5.41**	**216**	Pn	**Pn**	**16 49 29.7**	**-1.5**
	17nm,0.3s,baz=357,slow=22,SNR=13						
JHJ				Sn	**Sn**	**16 50 29.6**	**-3.9**
	25nm,0.3s,baz=102,slow=23,SNR=5.3						
ASAJ	**Asahikawa**	**6.56**	**354**	Pn	**Pn**	**16 49 46.1**	**-1.0**
	1.7nm,0.3s,baz=190,slow=14,SNR=20						
ASAJ				Sn	**Sn**	**16 50 59.1**	**-2.9**
	0.6nm,0.3s,baz=56,slow=30,SNR=2.6						
JCJ	**Chichijima**	**10.52**	**187**	Pn	**Pn**	**16 50 38.9**	**-2.5**
	3.8nm,0.3s,baz=30,slow=20,SNR=6.2						
JCJ				Sn	Sn	16 52 29.3	-10
	2.8nm,0.3s,baz=291,slow=22,SNR=2.9						
USRK	**Ussuriysk Ar.**	**10.95**	**311**	Pn	**Pn**	**16 50 49.1**	**+1.9**
	0.2nm,0.3s,baz=119,slow=11,SNR=5.4						
JNU	**Nakatsue**	**11.25**	**250**	Pn	**Pn**	**16 50 49.9**	**-1.5**
	0.4nm,0.3s,baz=83,slow=5.7,SNR=9.2						
KSRS	**Korea Array**	**12.40**	**274**	Pn	**Pn**	**16 51 08.2**	**+1.1**
	0.1nm,0.3s,baz=82,slow=14,SNR=2.9						
KLR	**Kul'dur**	**14.43**	**328**	Pn	**Pn**	**16 51 34.1**	**-0.7**
	0.1nm,0.3s,baz=179,slow=8.8,SNR=5.3						
KLR				LR	LR	16 56 38.1	
	comp=Z,39nm,19.4s,baz=182,slow=35						
ZALV	**Zalesovo Beam**	**42.80**	**312**	P	**P**	**16 56 08.9**	**+0.7**
	0.5nm,0.4s,baz=72,slow=7.7,SNR=2.4						
NRIK	**Noril'sk**	**43.48**	**335**	LR	LR	17 14 55.7	
	comp=Z,31nm,19.1s,baz=54,slow=37						
MKAR	**Makanchi Array**	**45.26**	**302**	P	**P**	**16 56 28.4**	**+0.2**
	0.1nm,0.4s,baz=162,slow=22,SNR=2.5						
ILAR	**Eielson Array**	**48.12**	**33**	P	**P**	**16 56 50.8**	**+0.5**
	0.6nm,0.8s,baz=260,slow=5.5,SNR=4.9						
INK	**Inuvik**	**53.12**	**27**	P	**P**	**16 57 29.8**	**+1.9**
	0.4nm,0.6s,baz=307,slow=13,SNR=3.5						
WRA	**Warramunga Arr**	**57.87**	**190**	P	**P**	**16 58 02.8**	**+0.2**
	4.4nm,0.7s,baz=10,slow=7.4,SNR=47						
ASAR	**Alice Springs**	**61.59**	**190**	P	**P**	**16 58 28.7**	**+0.5**
	0.6nm,0.6s,baz=11,slow=13,SNR=14						
YKA	**Yellowknife Ar**	**62.48**	**31**	P	**P**	**16 58 34.9**	**+1.2**
	0.2nm,0.7s,baz=306,slow=6.8,SNR=3.6						

JMA 02 17:02:08.3±0.2, 36.°96N×142.°20E, h43km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**1.13**	**278**	P	Pn	17 02 27.8	+0.1
JFK	**Kawauchi**	**1.13**	**291**	P	Pn	17 02 27.8	0.0
JFK				S	Sn	17 02 42.3	+0.1
JHO	**Hitachi**	**1.35**	**256**	P	Pn	17 02 31.1	+0.4
JHO				S	Sn	17 02 48.2	+0.7
JMM	**Marumori**	**1.44**	**309**	P	Pn	17 02 32.7	+0.8
JMM				eS	Sn	17 02 50.4	+0.8
JFT	**Otama**	**1.59**	**291**	P	Pn	17 02 35.5	+1.5
JFT				eS	Sn	17 02 54.5	+1.2
JIO	**Ouri**	**1.64**	**336**	P	Pn	17 02 35.1	+0.5
JIO				S	Sn	17 02 54.7	+0.3
JOU	**Okura**	**1.86**	**319**	P	Pn	17 02 39.7	+2.0
JOU				eS	Sn	17 03 02.6	+2.6
JFY	**Yanaizu**	**2.04**	**283**	P	Pn	17 02 43.2	+3.0
JFY				eS	Sn	17 03 06.3	+1.8
JYS	**Shiratake**	**2.11**	**307**	P	Pn	17 02 43.2	+2.1
JYS				S	Sn	17 03 09.9	+3.7
JMK	**Ichinoseki**	**2.13**	**339**	P	Pn	17 02 43.0	+1.6
JAG	**Ashikaga**	**2.27**	**257**	P	Pn	17 02 45.1	+1.8
JYK	**Kaneyama**	**2.44**	**324**	P	Pn	17 02 47.4	+1.8
MAT	**Matsushiro**	**3.23**	**264**	P	Pn	17 02 59.7	+3.1
MAT				eS	Sn	17 03 38.1	+4.3

*ISCJB **02** 17:08:23.7±0.5, 6.°65S±0.°04×131.°52E±0.°06, h100km, mb3.5/3, Error ellipse: s-maj=9.2km s-min=5.4km az=164.5*

*DJA **02** 17:08:25.4±0.3, 7.°5S±3.°×13.°2E±.°, h100km±9km, M4.8/10, mB5.3/5, mb4.8/10, MLv4.8/10, Mw(mB)4.7/5*

*IDC **02** 17:08:27.6±4.1, 6.°98S×131.°38E, h119km±48km, mb3.2/3, mb1 3.7/7, mb1mx3.4/28, mbtmp4.0/7, MS3.0/2, Ms1 3.0/2, ms1mx2.6/16, Error ellipse: s-maj=29.9km s-min=20.3km az=26.0*

ISC 02 17:08:24.4±0.7, 6.°62S±0.°05×131.°51E±0.°07, h100km, n20, σ2s69/25, mb3.5/3, Tanimbar Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SAUI	**Saumlaki**	**1.36**	**189**	P	**Pn**	**17 08 51.0**	**+2.0**
BNDI	**Bandanaira**	**2.63**	**322**	P	**Pn**	**17 09 05.4**	**+0.2**
BNDI				S	**Sn**	**17 09 37.2**	**+0.6**
FAKI	**Fak Fak**	**3.75**	**11**	P	**Pn**	**17 09 19.3**	**-1.0**
FAKI				S	**Sn**	**17 09 57.4**	**-6.2**
MSAI	**Masohi**	**4.15**	**322**	P	**Pn**	**17 09 26.1**	**+0.5**
NLAI	**Namlea**	**5.53**	**307**	P	**Pn**	**17 09 45.4**	**+1.0**
	85nm,0.6s,2μm0.4nm						
SWI	**Sorong**	**5.73**	**357**	P	**Pn**	**17 09 44.7**	**-2.3**
	56nm,0.4s,9μm1.3nm						
SWI				S	Sn	17 10 36.7	-15
	56nm,0.4s,9μm1.3nm						
RKPI	**Ransiki, Papua**	**5.73**	**28**	P	**Pn**	**17 09 47.4**	**+0.3**
	487nm,0.7s,5μm1.7nm						
LBMI	**Labuha**	**7.17**	**326**	P	**Pn**	**17 10 07.2**	**+0.6**
	44nm,0.7s,0.2nm						
LBMI				S	**Sn**	**17 11 21.4**	**-5.1**
	44nm,0.7s,0.2nm						
SOEI	**Soe**	**7.81**	**246**	P	**Pn**	**17 10 17.2**	**+1.7**
	108nm,0.8s,0.5nm						
BATI	**Baumata**	**8.54**	**245**	P	**Pn**	**17 10 26.0**	**+0.7**
	baz=90,slow=20						
BATI				S	**Sn**	**17 11 56.5**	**-3.5**
	baz=343,slow=19						
BATI				LR	LR	17 14 08.5	
	comp=Z,143nm,19.6s,baz=8.0,slow=41						
BATI	**Baumata**	**8.54**	**245**	P	**Pn**	**17 10 27.0**	**+1.7**
	18nm,0.5s,478nm						
MMRI	**Maumere**	**9.40**	**257**	P	**Pn**	**17 10 37.4**	**+0.3**
	19nm,1.1s						
FITZ	**Fitzroy Crossi**	**12.76**	**206**	P	**Pn**	**17 11 20.8**	**-1.5**
	5.1nm,0.3s,baz=34,slow=9.6,SNR=146						
FITZ				S	Sn	17 13 35.5	-7.2
	3.8nm,0.3s,baz=212,slow=11,SNR=8.9						
WRA	**Warramunga Arr**	**13.52**	**169**	P	**Pn**	**17 11 30.7**	**-1.5**
	1.3nm,0.3s,baz=351,slow=13,SNR=35						
WRA				S	Sn	17 13 53.0	-8.1
	2.4nm,0.3s,baz=332,slow=22,SNR=8.6						
PMG	**Port Moresby**	**15.74**	**101**	P	**P**	**17 12 03.3**	**+0.9**
	0.4nm,0.3s,baz=8.5,slow=3.9,SNR=5.5						
PMG				LR	LR	17 19 16.7	
	comp=Z,38nm,20.6s,baz=79,slow=41						
ASAR	**Alice Springs**	**17.10**	**173**	P	**Pn**	**17 12 17.1**	**-0.2**
	0.6nm,0.3s,baz=348,slow=9.3,SNR=46						
ASAR				S	**Sn**	**17 15 21.6**	**-6.0**
	1.1nm,0.3s,baz=353,slow=28,SNR=8.1						
CTA	**Charters Tower**	**19.59**	**134**	P	**Pn**	**17 12 47.8**	**+0.7**
	0.3nm,0.3s,baz=324,slow=14,SNR=6.6						
CMAR	**Chiang Mai Arr**	**40.66**	**308**	P	**P**	**17 15 57.0**	**+1.9**
	0.4nm,0.5s,baz=132,slow=7.0,SNR=6.5						
MJAR	**Matsushiro Arr**	**43.40**	**8**	P	**P**	**17 16 20.2**	**+3.1**
	0.3nm,0.5s,baz=199,slow=8.9,SNR=2.8						
MKAR	**Makanchi Array**	**68.74**	**326**	P	**P**	**17 19 20.6**	**+3.0**
	0.6nm,0.3s,baz=114,slow=8.0,SNR=17						

*ISK **02** 17:28:12.5, 36.°05N×36.°05E, h10km, ML2.9*

*DDA **02** 17:28:13.3, 36.°10N×36.°04E, h26km, Md3.1*

*ISCJB **02** 17:28:14.7±0.4, 36.°14N±0.°02×36.°03E±0.°02, h10km±3km, Error ellipse: s-maj=3.4km s-min=2.6km az=158.6*

*CSEM **02** 17:28:14.7±0.1, 36.°15N×36.°04E, h10km, MD3.1, Error ellipse: s-maj=2.6km s-min=2.2km az=72.0*

*NSSC **02** 17:28:14.7±1.1, 36.°23N×36.°05E, h14km±11km, ML3.1*

ISC 02 17:28:14.9±0.8, 36.°16N±0.°02×36.°06E±0.°02, h12km±6km, n82, σ0s67/119, Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YAYL	**Yayladag**	**0.13**	**162**	P	**Pg**	**17 28 18.1**	**-0.3**
YAYL				S	**Sg**	**17 28 21.2**	**+0.4**
YAYL	**Yayladag**	**0.13**	**162**	iP	**Pg**	**17 28 18.1**	**-0.3**
YAYL				iS	**Sg**	**17 28 21.2**	**+0.4**
TAHT	**Tahtakopru-Hat**	**0.24**	**26**	ePG	**Pg**	**17 28 19.8**	**-0.2**
TAHT	**Tahtakopru-Hat**	**0.24**	**26**	ePg	**Pg**	**17 28 19.8**	**-0.2**
BTCH	**Batrach**	**0.35**	**110**	eP	**Pb**	**17 28 22.9**	**-0.2**
BTCH				eS	**Sb**	**17 28 27.9**	**-0.6**
BTCH				AML	AML	17 28 29.8	
	comp=N,2μm,0.2s						
BTCH				AML	AML	17 28 29.9	
	comp=E,3μm,0.2s						
BTCH	**Batrach**	**0.35**	**110**	eP	**Pb**	**17 28 22.9**	**-0.2**
BTCH				eS	**Sb**	**17 28 27.9**	**-0.6**
	comp=E,3μm,0.2s						
KRTS	**Karatas**	**0.69**	**307**	ePG	**Pg**	**17 28 27.8**	**-0.5**
KRTS	**Karatas**	**0.69**	**307**	ePg	**Pg**	**17 28 27.8**	**-0.5**
YURE	**YUREGIR**	**0.75**	**333**	P	**Pg**	**17 28 29.5**	**0.0**
YURE				S	**Sn**	**17 28 41.4**	**-1.2**
YURE	**YUREGIR**	**0.75**	**333**	iP	**Pg**	**17 28 29.4**	**0.0**
YURE				iS	**Sn**	**17 28 41.4**	**-1.2**
CEYT	**Ceyhan**	**0.88**	**344**	ePG	**Pg**	**17 28 31.8**	**-0.2**
CEYT				eSG	**Sn**	**17 28 46.0**	**+0.1**
CEYT	**Ceyhan**	**0.88**	**344**	ePg	**Pg**	**17 28 31.8**	**-0.2**
CEYT				eSg	**Sn**	**17 28 46.0**	**+0.1**
KUZU	**Kuzuini**	**1.02**	**53**	P	**Pn**	**17 28 35.1**	**0.0**
KUZU				S	**Sn**	**17 28 49.3**	**-0.1**
KUZU	**Kuzuini**	**1.02**	**53**	iP	**Pn**	**17 28 35.1**	**0.0**
KUZU				iS	**Sn**	**17 28 49.3**	**-0.1**
KFRA	**Kufra**	**1.12**	**147**	eP	**Pb**	**17 28 36.0**	**-0.2**
KFRA				eS	**Sn**	**17 28 51.6**	**-0.2**
KFRA				AML	AML	17 28 53.0	
	comp=E,1μm,0.1s						
KFRA				AML	AML	17 28 53.5	
	comp=N,3μm,0.3s						
KFRA	**Kufra**	**1.12**	**147**	eP	**Pb**	**17 28 36.0**	**-0.2**
KFRA				eS	**Sn**	**17 28 51.6**	**-0.2**
	comp=N,3μm,0.3s						
KAMA	**Osmaniye**	**1.14**	**25**	iP	**Pb**	**17 28 35.7**	**-0.9**
KAMA				iS	**Sn**	**17 28 52.4**	**+0.2**
BIDA	**Albida**	**1.16**	**169**	eP	**Pb**	**17 28 36.5**	**-0.5**
BIDA				eS	**Sb**	**17 28 51.9**	**-0.1**
BIDA				AML	AML	17 28 54.1	
	comp=E,1μm,0.4s						
BIDA				AML	AML	17 28 56.3	
	comp=N,557nm,0.3s						
BIDA	**Albida**	**1.16**	**169**	eP	**Pb**	**17 28 36.7**	**-0.3**
BIDA				eS	**Sb**	**17 28 51.9**	**-0.1**
	comp=N,557nm,0.3s						
DED	**Mersin**	**1.29**	**309**	iP	**Pn**	**17 28 37.7**	**-1.1**
DED				iS	**Sb**	**17 28 55.2**	**-0.5**
KARA	**Karaisali**	**1.36**	**324**	ePN	**Pn**	**17 28 39.7**	**0.0**
KARA	**Karaisali**	**1.36**	**324**	ePn	**Pn**	**17 28 39.7**	**0.0**
HCB	**Kahramanmara¯**	**1.37**	**30**	iP	**Pn**	**17 28 39.2**	**-0.6**
HCB				iS	**Sg**	**17 28 58.8**	**-0.2**
GAZ	**Gaziantep**	**1.37**	**42**	ePN	**Pn**	**17 28 39.5**	**-0.4**
GAZ				eSN	**Sg**	**17 28 59.6**	**+0.4**
GAZ	**Gaziantep**	**1.37**	**42**	ePn	**Pn**	**17 28 39.5**	**-0.4**
GAZ				eSn	**Sg**	**17 28 59.6**	**+0.4**
AKO	**Adana**	**1.39**	**340**	iP	**Pn**	**17 28 40.2**	**+0.1**
AKO				iS	**Sg**	**17 28 59.1**	**-0.5**
MERS	**Mersin**	**1.42**	**300**	ePN	**Pn**	**17 28 40.0**	**-0.6**
MERS				eSN	**Sb**	**17 28 59.6**	**+0.1**
MERS	**Mersin**	**1.42**	**300**	ePn	**Pn**	**17 28 40.0**	**-0.6**
MERS				eSn	**Sb**	**17 28 59.6**	**+0.1**
ANDN	**Andirin**	**1.44**	**9**	P	**Pn**	**17 28 40.4**	**-0.5**
ANDN	**Andirin**	**1.44**	**9**	iP	**Pn**	**17 28 40.4**	**-0.5**
ANDN				iS	**Sg**	**17 29 02.9**	**+1.6**
KMRS	**Kahramanmaras**	**1.50**	**26**	ePN	**Pn**	**17 28 41.8**	**+0.1**
KMRS	**Kahramanmaras**	**1.50**	**26**	ePn	**Pn**	**17 28 41.8**	**+0.1**
GULE	**Gulek**	**1.52**	**318**	S	**Sb**	**17 29 02.9**	**+0.5**
GULE	**Gulek**	**1.52**	**318**	iS	**Sb**	**17 29 02.9**	**+0.5**
KIZK	**Mersin**	**1.58**	**282**	P	**Pn**	**17 28 42.5**	**-0.2**
KIZK				S	**Sb**	**17 29 03.8**	**-0.1**
KIZK	**Mersin**	**1.58**	**282**	iP	**Pn**	**17 28 42.5**	**-0.2**
KIZK				iS	**Sb**	**17 29 03.8**	**-0.1**
HAWK	**Haweek**	**1.66**	**170**	eP	**Pn**	**17 28 44.2**	**+0.3**
HAWK				eS	**Sb**	**17 29 06.1**	**-0.2**
HAWK				AML	AML	17 29 07.2	
	comp=E,232nm,0.3s						
HAWK				AML	AML	17 29 07.7	
	comp=N,238nm,0.3s						
HAWK	**Haweek**	**1.66**	**170**	eP	**Pn**	**17 28 44.2**	**+0.3**
HAWK				eS	**Sb**	**17 29 06.1**	**-0.2**
	comp=N,238nm,0.3s						
GZT	**Gaziantep**	**1.70**	**45**	iP	**Pg**	**17 28 47.2**	**-0.4**
HWQ	**Hawqa**	**1.88**	**183**	eP	**Pn**	**17 28 46.8**	**-0.1**
HWQ	**Hawqa**	**1.88**	**183**	ePn	**Pn**	**17 28 46.8**	**-0.1**
IKL	**Isikli**	**1.92**	**273**	ePN	**Pn**	**17 28 46.3**	**-1.0**
IKL	**Isikli**	**1.92**	**273**	ePn	**Pn**	**17 28 46.3**	**-1.0**
KERG	**Konya-Eregli**	**1.99**	**310**	P	**Pn**	**17 28 48.8**	**+0.3**
KERG	**Konya-Eregli**	**1.99**	**310**	iP	**Pn**	**17 28 48.8**	**+0.3**
KERG				iS	**Sb**	**17 29 17.1**	**+1.1**
MARH	**Ras Al Marh**	**2.16**	**171**	eP	**Pn**	**17 28 52.1**	**+1.2**
MARH				eS	**Sn**	**17 29 19.0**	**+1.3**
MARH				AML	AML	17 29 25.5	
	comp=N,81nm,0.2s						
MARH				AML	AML	17 29 27.3	
	comp=E,101nm,0.3s						
MARH	**Ras Al Marh**	**2.16**	**171**	eP	**Pn**	**17 28 52.1**	**+1.2**
MARH				eS	**Sn**	**17 29 19.0**	**+1.3**
	comp=E,101nm,0.3s						
SURC	**SANLIURFA_SURC**	**2.18**	**70**	P	**Pn**	**17 28 51.2**	**+0.2**
SURC	**SANLIURFA_SURC**	**2.18**	**70**	iP	**Pn**	**17 28 51.2**	**+0.2**
SURC				iS	**Sg**	**17 29 24.8**	**-0.2**
ATAB	**Bozova**	**2.22**	**53**	iS	**Sg**	**17 29 27.6**	**+1.2**
NIG	**Nigde**	**2.26**	**330**	ePN	**Pn**	**17 28 52.1**	**-0.2**
NIG	**Nigde**	**2.26**	**330**	ePn	**Pn**	**17 28 52.2**	**-0.2**
BHL	**Bhannes**	**2.27**	**188**	eP	**Pn**	**17 28 52.3**	**0.0**
BHL	**Bhannes**	**2.27**	**188**	eP	**Pn**	**17 28 52.3**	**0.0**
DQRL	**Deir Qamar**	**2.48**	**189**	eP	**Pn**	**17 28 55.0**	**-0.2**
DQRL	**Deir Qamar**	**2.48**	**189**	eP	**Pn**	**17 28 55.0**	**-0.2**
URFA	**Urfa**	**2.56**	**59**	ePN	**Pn**	**17 28 56.2**	**-0.1**
URFA	**Urfa**	**2.56**	**59**	ePn	**Pn**	**17 28 56.2**	**-0.1**
ERMK	**Ermenek**	**2.58**	**282**	P	**Pn**	**17 28 57.8**	**+1.1**
ERMK				S	**Sn**	**17 29 29.9**	**+1.8**
ERMK	**Ermenek**	**2.58**	**282**	iP	**Pn**	**17 28 57.8**	**+1.1**
ERMK				iS	**Sn**	**17 29 29.9**	**+1.8**
AKDN	**Akdeniz- K¨–br**	**2.66**	**252**	ePN	**Pn**	**17 28 56.2**	**-1.3**
AKDN	**Akdeniz- K¨–br**	**2.66**	**252**	ePn	**Pn**	**17 28 56.2**	**-1.3**
DARE	**Darende-Malaty**	**2.66**	**25**	ePN	**Pn**	**17 28 58.2**	**+0.5**
DARE	**Darende-Malaty**	**2.66**	**25**	ePn	**Pn**	**17 28 58.2**	**+0.5**
RCY	**Rachaya**	**2.66**	**184**	eP	**Pn**	**17 28 57.9**	**+0.2**
RCY	**Rachaya**	**2.66**	**184**	eP	**Pn**	**17 28 57.9**	**+0.2**
BNN	**Bunyan**	**2.69**	**357**	ePN	**Pn**	**17 28 59.0**	**+0.9**
BNN	**Bunyan**	**2.69**	**357**	ePn	**Pn**	**17 28 59.0**	**+0.9**
LEF	**Lefka**	**2.78**	**249**	ePN	**Pn**	**17 28 58.0**	**-1.2**
LEF	**Lefka**	**2.78**	**249**	ePn	**Pn**	**17 28 58.0**	**-1.2**
GAZI	**Gazipasa**	**3.03**	**273**	P	**Pn**	**17 29 02.9**	**+0.3**
GAZI				S	**Sn**	**17 29 39.2**	**+0.5**
GAZI	**Gazipasa**	**3.03**	**273**	iP	**Pn**	**17 29 02.9**	**+0.3**
GAZI				iS	**Sn**	**17

KAND	Kocaeli-Kandir	0.70	71	P	Pg	17 35 24.5	-0.3
KAND				S	Sg	17 35 34.0	0.0
KAND	Kocaeli-Kandir	0.70	71	*i* P	Pg	17 35 24.5	-0.3
KAND				*i* S	Sg	17 35 34.0	0.0
CTKS	Kestanelik-??a	0.71	301	*e*PG	Pg	17 35 24.8	-0.2
CTKS	Kestanelik-??a	0.71	301	*e*Pg	Pg	17 35 24.8	-0.2
ULDT	Uludag	0.74	191	P	Pn	17 35 27.0	-0.7
ULDT	Uludag	0.74	191	*i* P	Pn	17 35 27.0	-0.7
SPNC	Sapanca-Adapaz	0.78	104	*e*PG	Pg	17 35 26.1	-0.2
SPNC	Sapanca-Adapaz	0.78	104	*e*Pg	Pg	17 35 26.1	-0.2
CAVI	Cavuskoy	0.78	149	*e*PG	Pg	17 35 26.3	0.0
CAVI	Cavuskoy	0.78	149	*e*Pg	Pg	17 35 26.3	0.0
KCTX	Karacabey (Bur	0.95	231	*e*PG	Pg	17 35 29.7	+0.2
KCTX	Karacabey (Bur	0.95	231	*e*Pg	Pg	17 35 29.7	+0.2
GPA	Golpazari	0.96	127	*e*PG	Pn	17 35 30.1	-0.4
GPA	Golpazari	0.96	127	*e*Pg	Pn	17 35 30.1	-0.4
CTYL	Yalikoy Yolu	0.98	308	*e*PG	Pb	17 35 29.7	-0.4
CTYL	Yalikoy Yolu	0.98	308	*e*Pg	Pb	17 35 29.7	-0.4
GULT	Gulveren	1.01	115	*e*PG	Pg	17 35 30.7	-0.1
GULT	Gulveren	1.01	115	*e*Pg	Pg	17 35 30.7	-0.1
SAHE	Sakarya_HENDEK	1.17	90	P	Pn	17 35 32.9	-0.4
SAHE				S	Sg	17 35 49.2	+0.4
SAHE	Sakarya_HENDEK	1.17	90	*i* P	Pn	17 35 32.9	-0.4
SAHE				*i* S	Sg	17 35 49.2	+0.4
EDC	Edincik	1.22	245	*e*PN	Pb	17 35 34.2	0.0
EDC	Edincik	1.22	245	*e*Pn	Pb	17 35 34.2	0.0
BORA	Eskisehir	1.32	138	P	Pg	17 35 36.9	+0.3
BORA				S	Sg	17 35 55.4	+1.7
BORA	Eskisehir	1.32	138	*i* P	Pg	17 35 36.9	+0.3
BORA				*i* S	Sg	17 35 55.4	+1.7
MRMT	Marmara Adasi	1.33	259	*e*PN	Pb	17 35 35.8	-0.4
MRMT	Marmara Adasi	1.33	259	*e*Pn	Pb	17 35 35.8	-0.4
TKR	Tekirdag	1.35	276	*e*PN	Pb	17 35 36.2	-0.3
TKR	Tekirdag	1.35	276	*e*Pn	Pb	17 35 36.2	-0.3
DURS	Dursunbey	1.42	207	P	Pg	17 35 38.6	0.0
DURS				S	Sg	17 35 57.3	+0.2
DURS	Dursunbey	1.42	207	*i* P	Pg	17 35 38.6	0.0
DURS				*i* S	Sg	17 35 57.3	+0.2
TVSB	Tavsanli	1.43	175	*e*PN	Pn	17 35 36.8	-0.2
TVSB	Tavsanli	1.43	175	*e*Pn	Pn	17 35 36.8	-0.2
MDUB	Mudurnu	1.49	105	*e*PN	Pn	17 35 37.8	0.0
MDUB	Mudurnu	1.49	105	*e*Pn	Pn	17 35 37.8	0.0
PHSR	Pinarhisar	1.55	300	*e*PN	Pn	17 35 38.7	+0.1
PHSR	Pinarhisar	1.55	300	*e*Pn	Pn	17 35 38.7	+0.1
BALY	Balya	1.72	229	*i* P	Pg	17 35 44.9	+0.7
EDRB	Edirne	2.17	298	*e*PN	Pn	17 35 47.7	+0.6
EDRB	Edirne	2.17	298	*e*Pn	Pn	17 35 47.7	+0.6

*IDC **02** 17:36:12.2±0.8, 55.°78S×26.°64W, h0km, mb4.3/6, mb1 4.4/6, mb1mx3.9/27, mbtmp4.3/6, Error ellipse: s-maj=34.7km s-min=23.8km az=57.0*
*NEIC **02** 17:36:13.6±0.5, 55.°79S×26.°74W, h10km, mb4.7/1, Error ellipse: s-maj=17.1km s-min=11.3km az=224.0*
ISC 02 17:36:20.3±0.7, 55.°9S±0.°2×27.°1W±0.°1, h63km, n21, σ1ŝ18/15, mb4.4/6, 1C, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HOPE	Hope Point	5.62	283	*e*Pn	Pn	17 37 39.3	-1.9
SYO	Syowa Base	31.68	141⇑	*e*P	P	17 42 35.0	-2.2
QSPA	South Pole Qui	34.37	180	*e*P	P	17 43 01.7	+0.8
	6.7nm,0.6s						
CPUP	Villa Florida	36.74	311	P	P	17 43 21.4	+0.1
	1.5nm,0.6s,baz=180,slow=3.9,SNR=3.2						
LVC	Limon Verde	45.26	300	P	P	17 44 32.7	+0.9
	24nm,0.6s,baz=136,slow=5.6,SNR=7.4						
VNDA	Vanda	46.74	183	P	P	17 44 43.6	+1.2
	2.2nm,0.6s,baz=182,slow=5.8,SNR=25						
H10S2	ASCENSION HYDR	47.83	17	T	T	18 36 13.5	
	baz=189,slow=75,SNR=19						
H10S3	ASCENSION HYDR	47.83	17	T	T	18 36 14.8	
	baz=189,slow=75,SNR=21						
H10S1	ASCENSION HYDR	47.85	17	T	T	18 36 14.8	
	baz=189,slow=75,SNR=13						
H10N1	ASCENSION HYDR	48.95	17	T	T	18 37 39.2	
	SNR=6.1						
H10N3	ASCENSION HYDR	48.95	17	T	T	18 37 40.3	
	SNR=13						
H10N2	ASCENSION HYDR	48.96	17	T	T	18 37 39.8	
	SNR=9.8						
LPAZ	La Paz	50.32	305	P	P	17 45 12.8	+1.5
	3.1nm,0.6s,baz=173,slow=6.7,SNR=13						
TORD	Torodi Ar. Bea	72.89	29	P	P	17 47 41.9	-0.5
	0.3nm,0.3s,baz=199,slow=6.8,SNR=9.1						
ASAR	Alice Springs	99.13	162	P	Pdif	17 49 54.0	-0.6
	0.2nm,0.6s,baz=182,slow=3.9,SNR=6.0						
WRAB	Tennant Creek	102.86	162	*e*P	Pdif	17 50 11.2	-0.1
YKA	Yellowknife Ar	136.08	318	PKP	PKPdf	17 55 32.9	+0.2
	0.3nm,0.5s,baz=128,slow=2.2,SNR=8.2						
ZALV	Zalesovo Beam	142.26	64	PKP	PKPdf	17 55 45.5	+1.2
	0.4nm,0.5s,baz=183,slow=2.9,SNR=2.5						
INK	Inuvik	145.70	321	PKPbc	PKPab	17 55 50.9	+0.1
	1.9nm,0.6s,baz=76,slow=3.2,SNR=14						
ILAR	Eielson Array	150.04	312	PKPbc	PKPbc	17 56 02.7	+0.6
	1.7nm,0.7s,baz=129,slow=2.0,SNR=21						
SONM	Songino Array	150.67	86	PKPbc	PKPbc	17 56 04.0	-0.4
	1.1nm,0.5s,baz=236,slow=2.6,SNR=9.9						

*NIED **02** 17:44:00, 37.°20N×141.°50E, h35km, Mw3.5 Best double couple: M0:2.25000×10^14 NP1:φs=91.00000°, δ53.00000°, λ131.00000°. NP2:φs=216.00000°, δ53.00000°, λ49.00000°.*
*IDC **02** 17:44:04.5±1.4, 37.°06N×141.°93E, h0km, mb3.5/3, mb1 3.6/6, mb1mx3.3/47, mbtmp3.6/6, ML3.4/3, MS2.3/2, Ms1 2.3/2, ms1mx2.1/34, Error ellipse: s-maj=30.3km s-min=20.3km az=114.0*
*JMA **02** 17:44:10.5±0.2, 37.°20N×141.°52E, h46km±2km, M3.9*
JMA Felt I J1.
ISC 02 17:44:09.1±1.1, 37.°20N±0.°06×141.°61E±0.°07, h33km, n15, σ1ŝ52/19, mb3.4/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	0.61	286	P	Pb	17 44 22.1	+0.6
JFK				S	Sn	17 44 29.9	-0.3
ONAJ	Iwakimizuishiy	0.66	262	P	Pb	17 44 22.6	+0.4
ONAJ				S	Sn	17 44 30.9	-0.4
JMM	Marumori	0.93	316	P	Pn	17 44 26.2	+0.4
JHO	Hitachi	1.02	235	P	Pn	17 44 27.0	-0.1
JFT	Otama	1.06	288	P	Pb	17 44 29.1	+0.1
JIO	Ouri	1.27	351	P	Pb	17 44 31.7	-0.8
JOU	Okura	1.38	328	P	Pb	17 44 33.7	-0.7
MJAR	Matsushiro Arr	2.80	257	Pn	Pn	17 44 53.8	+2.1
	2.0nm,0.3s,baz=83,slow=16,SNR=20						
MJAR				Sn	Sb	17 45 29.3	-3.1
	4.8nm,0.3s,baz=42,slow=20,SNR=7.2						
MJAR				LR	LR	17 46 18.5	
	comp=Z,42nm,19.9s,baz=125,slow=45						
MAT	Matsushiro	2.81	257	P	Pn	17 44 54.2	+2.5
MAT				S	Sb	17 45 30.3	-2.2
JHJ	Hachijo jima 2	4.34	201	Pn	Pn	17 45 12.9	+0.2
	6.4nm,0.3s,baz=148,slow=23,SNR=16						
JHJ				Sn	Sn	17 46 01.4	-0.7
	23nm,0.3s,baz=135,slow=23,SNR=7.6						
ASAJ	Asahikawa	6.95	6	Pn	Pn	17 45 49.4	+0.8
	0.8nm,0.3s,baz=207,slow=15,SNR=6.4						
KSRS	Korea Array	10.90	275	LR	LR	17 50 20.0	
	comp=Z,17nm,20.3s,baz=90,slow=34						
SONM	Songino Array	27.82	304	P	P	17 49 58.2	+2.8
	0.2nm,0.4s,baz=96,slow=8.4,SNR=4.0						
ILAR	Eielson Array	49.27	32	P	P	17 52 54.1	-0.2
	0.5nm,0.8s,baz=269,slow=6.3,SNR=4.5						
WRA	Warramunga Arr	57.25	188	P	P	17 53 52.7	-0.6
	0.3nm,0.8s,baz=4.1,slow=7.4,SNR=4.1						

*SJA **02** 17:54:25.4±0.6, 28.°33S×70.°56W, h170km±11km, ML3.0, MW3.0*
*ISCJB **02** 17:54:26.5±0.9, 28.°35S±0.°03×70.°81W±0.°08, h77km±8km, Error ellipse: s-maj=11.2km s-min=5.5km az=177.0*
*GUC **02** 17:54:26.9±0.5, 28.°38S×70.°63W, h70km±3km, ML2.9*
ISC 02 17:54:27.7±1.6, 28.°34S±0.°04×70.°77W±0.°08, h67km±12km, n13, σ1ŝ01/24, 1C-2D, Central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VACH	Vallenar	0.23	177	⇓*i* P	Pn	17 54 38.0	-0.2
VACH				*i* S	Sn	17 54 46.3	+0.4
LCO	Las Campanas	0.67	175	⇑*i* P	Pn	17 54 41.8	-0.6
LCO				*i* S	Sn	17 54 53.0	-0.1
LCO				IAML		17 54 54.2	
	comp=E,698nm,0.2s						
CPCH	Copiapo	1.05	21	*e*P	Pn	17 54 46.4	-0.4
CPCH				*i* S	Sn	17 55 00.9	0.0
CDCH	Caldera	1.27	358	*e*P	Pn	17 54 49.7	+0.2
CDCH				*i* S	Sn	17 55 06.5	+0.5
TLL	Tololo Astrono	1.82	181	⇓*i* P	Pn	17 54 56.9	-0.2
TLL				*i* S	Sn	17 55 19.7	+0.4
TLL				IAML		17 55 25.7	
	comp=E,239nm,0.5s						
VCA	Vinchina	2.29	100	*i* P	Pn	17 55 03.9	+0.5
VCA				*i* S	Sn	17 55 32.3	+1.6
VCA				IAML		17 55 38.9	
	comp=Z,46nm,0.2s						
AGUA	GUANDACOL	2.30	120	*i* P	Pn	17 55 04.2	+0.7
AGUA				*i* S	Sn	17 55 32.9	+2.1
AMOG	MOGNA	3.26	143	*i* P	Pn	17 55 16.7	+0.2
AMOG				*i* S	Sn	17 55 54.6	+0.4
RTLL	Cerro Villicun	3.58	147	*i* P	Pn	17 55 20.4	-0.5
RTLL				*i* S	Sn	17 56 01.5	-0.5
RTLS	Leoncito	3.67	160	*i* P	Pn	17 55 22.7	+0.3
RTLS				*i* S	Sn	17 56 05.7	+1.1
AVFE	Valle Fertil	3.70	129	*i* P	Pn	17 55 21.6	-0.9
AVFE				*i* S	Sn	17 56 02.6	-2.3
AVFE				IAML		17 56 09.8	
	comp=Z,26nm,0.3s						
AUSP	Uspallata	4.05	163	*i* P	Pn	17 55 27.6	+0.1
CYA	Choya	4.38	92	*i* P	Pn	17 55 29.8	-1.9

IDC 02 18:03:58.4±27.0, 22.°68S×178.°61W, h461km±97km, mb3.3/5, mb1 3.4/5, mb1mx3.0/25, mbtmp4.1/5, Error ellipse: s-maj=359.0km s-min=101.6km az=80.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	Charters Tower	32.77	268	P	P	18 09 53.0	+0.8
	5.4nm,0.4s,baz=92,slow=11,SNR=19						
STKA	Stephens Creek	36.37	247	P	P	18 10 21.1	-1.2
	0.7nm,0.4s,baz=72,slow=9.6,SNR=4.6						
ASAR	Alice Springs	43.51	259	P	P	18 11 19.4	-0.6
	1.0nm,0.5s,baz=93,slow=7.1,SNR=40						
ASAR				ScP	ScP	18 16 04.6	-0.6
	0.5nm,1.0s,baz=108,slow=4.3,SNR=4.7						
WRA	Warramunga Arr	43.78	264	P	P	18 11 21.6	-0.6
	1.7nm,0.5s,baz=91,slow=8.3,SNR=83						
FITZ	Fitzroy Crossi	52.21	264	P	P	18 12 26.2	+0.7
	0.4nm,0.3s,baz=122,slow=6.6,SNR=8.7						

*DDA **02** 18:25:25.4, 39.°26N×25.°79E, h7km, Md2.5*
*ISCJB **02** 18:25:26.5±0.7, 39.°28N±0.°03×25.°82E±0.°06, h13km±4km, Error ellipse: s-maj=7.4km s-min=4.8km az=160.4*
*ATH **02** 18:25:26.4, 39.°29N×25.°82E, h14km±2km, ML1.9/3, Error ellipse: s-maj=2.9km s-min=1.1km az=146.0*
*CSEM **02** 18:25:26.4±0.2, 39.°27N×25.°81E, h12km, ML1.9, Error ellipse: s-maj=5.0km s-min=3.5km az=48.0*
ISC 02 18:25:26.0±1.0, 39.°28N±0.°03×25.°82E±0.°04, h19km±2km, n15, σ0ŝ37/28, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SIGR	SIGRI	0.07	157	P	Pg	18 25 29.6	+0.1
SIGR				S	Sg	18 25 31.5	-0.5
SIGR	SIGRI	0.07	157	P	Pg	18 25 29.6	+0.1
SIGR				S	Sg	18 25 31.5	-0.5
SIGR				AML	AML	18 25 31.6	
	comp=E,1174μm,0.1s						
SIGR				AML	AML	18 25 31.8	
	comp=N,3969μm,0.3s						
PRK	Paraskevi	0.35	95	P	Pg	18 25 33.4	-0.1
PRK				S	Sb	18 25 38.7	-0.2
PRK	Paraskevi	0.35	95	P	Pg	18 25 33.4	-0.1
PRK				S	Sb	18 25 38.7	-0.2
PRK				AML	AML	18 25 39.1	
	comp=E,322μm,0.5s						
PRK				AML	AML	18 25 39.2	
	comp=N,481μm,0.4s						
BOZC	Bozcaada	0.59	18	*i* P	Pb	18 25 37.2	-0.3
BOZC				*i* S	Sg	18 25 46.7	+1.0
AYVA	Ayvalik	0.68	87	P	Pg	18 25 39.4	0.0
AYVA				S	Sg	18 25 49.0	+0.6
AYVA	Ayvalik	0.68	87	*i* P	Pg	18 25 39.4	0.0
AYVA				*i* S	Sg	18 25 49.0	+0.6
LIA	Limnos Island	0.79	322	P	Pn	18 25 41.9	-0.1
LIA				S	Sb	18 25 51.5	+0.2
CHOS	Chios island	0.91	168	P	Pn	18 25 43.9	+0.1
CHOS				S	Sn	18 25 56.7	+0.2
CHOS	Chios island	0.91	168	P	Pn	18 25 43.9	+0.1
CHOS				S	Sn	18 25 56.7	+0.2
CHOS				AML	AML	18 25 58.1	
	comp=N,258μm,0.5s						
CHOS				AML	AML	18 25 58.9	
	comp=E,383μm,0.4s						
URLA	Izmir	1.10	146	P	Pb	18 25 46.4	0.0
URLA				S	Sn	18 26 01.3	+0.2
URLA	Izmir	1.10	146	*i* P	Pb	18 25 46.4	0.0
URLA				*i* S	Sn	18 26 01.3	+0.2
ZEY	¯zmir	1.17	153	*i* P	Pn	18 25 47.2	-0.1
ZEY				*i* S	Sb	18 26 02.1	-0.2
BALY	Balya	1.47	71	P	Pg	18 25 53.7	-0.6
BALY	Balya	1.47	71	*i* P	Pg	18 25 53.7	-0.6

IDC 02 18:25:33.6±4.1, 19.°14N×122.°04E, h0km, mb3.2/3, mb1 3.5/3, mb1mx3.2/38, mbtmp3.2/3, Error ellipse: s-maj=328.7km s-min=26.6km az=61.0, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	40.67	162	P	P	18 33 15.8	-0.1
	0.4nm,0.6s,baz=342,slow=8.9,SNR=5.1						
MKAR	Makanchi Array	42.59	320	P	P	18 33 31.3	-0.1
	0.1nm,0.5s,baz=131,slow=7.9,SNR=2.5						
ASAR	Alice Springs	44.09	164	P	P	18 33 43.6	-0.1
	0.3nm,0.7s,baz=354,slow=7.5,SNR=4.9						

*NIED **02** 18:42:00, 37.°60N×141.°70E, h11km, Mw3.4 Best double couple: M0:1.42000×10^14 NP1:φs=98.00000°, δ45.00000°, λ31.00000°. NP2:φs=345.00000°, δ68.00000°, λ131.00000°.*
JMA 02 18:42:35.3±0.1, 37.°58N×141.°70E, h22km±2km, M3.7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	0.69	252	P	Pb	18 42 48.6	-0.1
JFK				S	Sb	18 42 57.2	-0.6
JMM	Marumori	0.77	292	P	Pb	18 42 49.7	-0.4
JMM				S	Sb	18 42 59.7	-0.4
ONAJ	Iwakimizuishiy	0.86	237	P	Pb	18 42 51.2	-0.4
JIO	Ouri	0.92	342	P	Pb	18 42 52.0	-0.5
JIO				S	Sb	18 43 03.1	-1.1
JFT	Otama	1.08	267	P	Pb	18 42 55.4	0.0
JFT				S	Sb	18 43 09.2	+0.1
JOU	Okura	1.13	314	P	Pb	18 42 56.2	0.0
JOU				S	Sb	18 43 10.6	+0.1
JHO	Hitachi	1.32	223	P	Pn	18 42 58.2	-0.3
JHO				S	Sn	18 43 14.5	-0.9
MAT	Matsushiro	2.98	251	P	Pn	18 43 24.3	+3.0
MAT				*e*S	Sb	18 44 00.4	-3.2

*JMA **02** 18:50:51.9±0.3, 37.°28N×142.°19E, h30km±5km, M3.2*
*IDC **02** 18:50:53.1±3.0, 37.°52N×141.°94E, h0km, mb3.4/2, mb1 3.5/3, mb1mx3.1/35, mbtmp3.2/3, ML3.3/1, Error ellipse: s-maj=67.8km s-min=38.1km az=54.0*
ISC 02 18:50:53.5±2.3, 37.°31N±0.°07×142.°1E±0.°1, h24km, n11, σ1ŝ33/15, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	0.95	274	P	Pn	18 51 10.7	-0.6
JFK				*e*S	Sb	18 51 24.1	+0.7
ONAJ	Iwakimizuishiy	1.03	259	P	Pb	18 51 12.0	-0.7
JMM	Marumori	1.15	299	P	Pn	18 51 13.6	-0.5
JMM				*e*S	Sn	18 51 29.3	+0.3
JIO	Ouri	1.27	334	P	Pn	18 51 14.6	-1.2
JHO	Hitachi	1.38	240	P	Pn	18 51 16.1	-1.2
JHO				*e*S	Sn	18 51 33.3	-1.5
JFT	Otama	1.39	279	P	Pb	18 51 18.1	-0.7
JOU	Okura	1.53	314	P	Pn	18 51 19.4	+0.1
JOU				S	Sb	18 51 40.2	+0.1
MJAR	Matsushiro Arr	3.18	257	Pn	Pn	18 51 43.6	+1.6
	3.9nm,0.3s,baz=82,slow=15,SNR=34						
MAT	Matsushiro	3.18	257	P	Pn	18 51 44.3	+2.3
MAT				S	Sn	18 52 17.2	-2.0
MKAR	Makanchi Array	44.41	302	P	P	18 59 03.7	+1.5
	0.4nm,0.8s,baz=79,slow=8.0,SNR=3.9						
WRA	Warramunga Arr	57.41	189	P	P	19 00 44.7	+4.6
	0.5nm,1.0s,baz=5.5,slow=7.4,SNR=3.0						

WEL 02 18:55:22.2±0.4, 38.°77S×177.°91E, h28km±3km, ML2.5/1, 1C-1D, Error ellipse: s-maj=3.0km s-min=2.0km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RIGZ	Rimuhau	0.13	301	⇓P*	Pb	18 55 26.9	-0.6
RIGZ				S*	Sb	18 55 31.9	+0.7
KNZ	Kokohu	0.31	216	P*	Pb	18 55 29.4	-0.2
KNZ				S*	Sb	18 55 35.5	+1.0
CNGZ	Carnagh Statio	0.37	39	P*	Pb	18 55 30.7	+0.1
SNGZ	Shannon Statio	0.44	269	P*	Pb	18 55 31.8	+0.1
SNGZ				S*	Sn	18 55 39.9	0.0
RAGZ	Rawiri	0.48	306	P*	Pb	18 55 32.0	-0.2
MWZ	Matawai	0.53	326	⇑P*	Pb	18 55 32.7	-0.4
MWZ				S*	Sn	18 55 41.3	-0.8

MAN 02 19:00:01, 13.°14N×120.°77E, h45km, mb4.1, ML2.9, MS2.6, 1C, Mindoro

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PGP	Puerto Galera	0.41	26⇑	*e*P	Pn	19 00 13.1	+2.2
PGP				*i* S	Sn	19 00 20.7	+2.9
SJMP	San Jose	0.75	153	*e*P	Pn	19 00 16.6	+1.4
SJMP				*e*S	Sn	19 00 28.0	+2.4
BUSP	Coron	1.26	206	*e*P	Pn	19 00 22.9	+0.8
BUSP				*e*S	Sn	19 00 39.1	+1.3
CUYO	Cuyo Island	2.28	174	*e*P	Pn	19 00 37.0	+0.7
ENPP	El Nido	2.33	215	*e*P	Pn	19 00 37.8	+0.9

*ISCJB **02** 19:03:01.9±1.5, 20.°4S±0.°4×178.°0W±0.°2, h534km, mb3.6/9, Error ellipse: s-maj=55.0km s-min=9.5km az=147.4*
*IDC **02** 19:03:01.6±2.1, 20.°68S×178.°00W, h511km±23km, mb3.2/9, mb1 3.5/11, mb1mx3.3/32, mbtmp4.2/11, Error ellipse: s-maj=49.4km s-min=13.0km az=150.0*
ISC 02 19:03:02.5±1.5, 20.°5S±0.°3×177.°9W±0.°2, h534km, n12, σ2ŝ27/14, mb3.6/9, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	Afiamalu	8.80	43	P	P	19 05 06.6	-1.6
	12nm,0.3s,baz=84,slow=2.6,SNR=11						
AFI				S	S	19 06 46.7	-4.4
	18nm,0.3s,baz=48,slow=23,SNR=6.4						
DZM	Mont Dzumac	14.65	261	P	P	19 06 05.8	-2.9
	0.4nm,0.3s,baz=104,slow=17,SNR=6.2						
CTA	Charters Tower	33.56	264	P	P	19 08 58.2	-0.2
	2.9nm,0.5s,baz=87,slow=9.3,SNR=8.2						
STKA	Stephens Creek	37.85	244	P	P	19 09 33.3	-0.5
	0.9nm,0.5s,baz=86,slow=7.9,SNR=7.6						
ASAR	Alice Springs	44.58	257	P	P	19 10 27.7	+0.3
	4.4nm,0.8s,baz=97,slow=8.0,SNR=58						
ASAR				S	S	19 16 23.4	-1.2
	0.4nm,0.9s,baz=95,slow=15,SNR=4.3						
WRA	Warramunga Arr	44.67	262	P	P	19 10 27.8	-0.3
	0.9nm,0.3s,baz=96,slow=7.5,SNR=118						
MJAR	Matsushiro Arr	70.25	324	P	P	19 13 23.5	+1.5
	1.3nm,0.8s,baz=155,slow=5.6,SNR=4.6						
USRK	Ussuriysk Ar.	79.00	326	P	P	19 14 14.2	+3.2
	1.4nm,0.8s,baz=75,slow=7.3,SNR=4.8						
NVAR	Mina Array Bea	80.98	43	P	P	19 14 24.9	+3.1
	1.0nm,0.8s,baz=228,slow=9.3,SNR=6.3						
ILAR	Eielson Array	88.30	13	P	P	19 14 57.6	+1.0
	0.4nm,0.6s,baz=206,slow=6.8,SNR=4.2						
PDAR	Pinedale Array	88.92	43	P	P	19 15 01.2	+0.9
	0.6nm,0.7s,baz=212,slow=5.3,SNR=3.6						
AKASG	Malin Array Be	143.05	331	PKP	PKPdf	19 21 35.0	-0.3
	0.3nm,0.3s,baz=42,slow=4.6,SNR=4.7						

*ISCJB **02** 19:07:13.9±0.3, 33.°05N±0.°02×100.°84W±0.°02, h10km, Error ellipse: s-maj=3.2km s-min=2.4km az=140.0*
*NEIC **02** 19:07:15.0±0.4, 33.°06N×100.°79W, h5km, MN3.2, Error ellipse: s-maj=6.8km s-min=4.3km az=185.0*
NEIC Felt at Snyder.
ISC 02 19:07:14.8±0.8, 33.°04N±0.°03×100.°79W±0.°03, h10km, n100, σ1ŝ51/128, Western Texas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ABTX	Abilene, Hawle	1.05	113	P	Pg	19 07 34.4	-0.6
	baz=295,SNR=187						
ABTX				S	Sg	19 07 48.8	+0.1
	baz=295						
ABTX	Abilene, Hawle	1.05	113	*e*Pg	Pg	19 07 34.4	-0.6
ABTX				*e*Sn	Sn	19 07 51.3	+0.9
133A	Hamilton Ranch	1.64	105	P	Pb	19 07 45.1	0.0
	baz=287,SNR=128						
133A				S	Sb	19 08 06.9	+1.1
	baz=287						
Z33A	Whitaker Ranch	1.72	81	P	Pb	19 07 46.3	-0.2
	baz=263						
Z33A				S	Sg	19 08 09.6	-0.4
	baz=263						
X32A	Elmer	1.86	42	P	Pb	19 07 48.7	-0.2
	baz=223						
233A	Rising Star	1.90	122	P	Pn	19 07 48.2	+1.0
	baz=304,SNR=187						
MSTX	Muleshoe	1.90	300	P	Pn	19 07 48.1	+0.8
	baz=118						
MSTX				S	Sb	19 08 13.4	+0.1
	baz=118						
MSTX	Muleshoe	1.90	300	*e*Pn	Pn	19 07 48.1	+0.8
MSTX				*e*Sn	Sn	19 08 08.8	-2.6
AMTX	Amarillo	1.98	338	P	Pb	19 07 50.4	-0.6
	baz=158						
AMTX				S	Sg	19

baz=292,SNR=13
WHTX Lake Whitney, 3.01 110 *e*Pn **Pn 19 08 03.5 +1.0**
V32A Arapaho 3.04 28 P **Pn 19 08 04.2 +1.2**
baz=209
434A Burnet 3.09 135 P **Pn 19 08 04.5 +0.9**
baz=317,SNR=60
434A S **Sn 19 08 41.2 +0.6**
baz=317
GDL2 Guadalupe Moun 3.13 255 *e*Pn **Pn 19 08 07.3 +2.9**
Y35A Marietta 3.25 74 P **Pn 19 08 07.6 +1.7**
baz=256
533A Kerrville 3.32 153 P **Pn 19 08 06.9 +0.1**
baz=334
533A S **Sn 19 08 47.1 +0.7**
baz=334
W34A Bridge Creek, 3.32 48 P **Pn 19 08 09.1 +2.2**
baz=230
W34A Bridge Creek, 3.32 48 *e*Pn **Pn 19 08 09.1 +2.2**
W34A *e*Pg **Pg 19 08 17.4 -1.1**
335A Moody 3.35 121 P **Pn 19 08 08.5 +1.3**
baz=303
X35A Drake 3.46 66 P **Pn 19 08 10.4 +1.7**
baz=248
X35A S **Sn 19 08 52.5 +2.8**
baz=248
435B Jarrell 3.54 129 P **Pn 19 08 11.4 +1.6**
baz=311
534A Blanco 3.60 146 P **Pn 19 08 10.9 +0.3**
baz=328,SNR=38
U32A Winter Ranch, 3.64 23 P **Pn 19 08 12.6 +1.4**
baz=204
U32A S **Sn 19 08 58.5 +4.3**
baz=204
Z36A Blue Ridge 3.66 85 S **Sn 19 08 56.8 +2.1**
baz=268
336A Riesel 3.73 115 S **Sn 19 08 58.2 +1.8**
baz=298
236A Katherine and 3.75 105 S **Sn 19 08 58.4 +1.6**
baz=288
633A Saathoff Ranch 3.83 158 P **Pn 19 08 14.3 +0.5**
baz=340
633A S **Sn 19 09 00.0 +1.1**
baz=340
W35A Tecumseh 3.87 56 P **Pn 19 08 16.2 +1.8**
baz=238
V34A Guthrie 3.88 43 *e*Pn **Pn 19 08 15.8 +1.2**
V34A *e*Pg **Pg 19 08 26.7 -2.5**
X36A Centrahoma 4.00 66 P **Pn 19 08 16.8 +0.7**
baz=249
535A Dale 4.07 137 S **Sn 19 09 05.6 +0.7**
baz=319
MNTX Cornudas Mount 4.11 252 P **Pn 19 08 18.2 +0.5**
baz=69
MNTX Cornudas Mount 4.11 252 *e*Pn **Pn 19 08 18.0 +0.3**
634A China Grove, S 4.21 150 P **Pn 19 08 20.0 +1.0**
baz=331
634A S **Sn 19 09 09.1 +0.9**
baz=331
U34A Anderson Ranch 4.32 37 *e*Pn **Pn 19 08 21.7 +1.2**
U34A *e*Sg **Sg 19 09 33.1 -0.4**
W36A Wetumka 4.33 60 P **Pn 19 08 21.4 +0.8**
baz=242
Y37A Hugo 4.42 76 P **Pn 19 08 23.5 +1.6**
baz=259
635A Leesville 4.47 144 P **Pn 19 08 23.7 +1.1**
baz=326
733A Divot King Ran 4.50 163 P **Pn 19 08 23.3 +0.3**
baz=344
734A La Parita Cree 4.60 155 P **Pn 19 08 24.9 +0.5**
baz=336
833A Chaparral WMA, 4.86 165 P **Pn 19 08 28.1 +0.2**
baz=346
S32A Newby Ranch, P 4.89 18 P **Pn 19 08 29.2 +0.8**
baz=199
735A Kenedy 4.90 148 P **Pn 19 08 29.1 +0.6**
baz=330
BNM Barren Site 5.00 284 *e*Pn **Pn 19 08 30.5 +0.4**
TUL1 Leonard 5.02 54 *e*Pn **Pn 19 08 30.1 -0.1**
LPM Los Pinos Moun 5.03 286 *e*Pn **Pn 19 08 30.9 +0.3**
T25A Trinidad 5.05 325 P **Pn 19 08 32.9 +2.1**
baz=143
T25A Trinidad 5.05 325 *e*Pn **Pn 19 08 32.7 +1.9**
ANMO Albuquerque 5.08 294 *e*Pn **Pn 19 08 32.4 +1.3**
ANMO *e*Pg **Pb 19 08 44.0 +0.2**
ANMO *e*Sg **Sb 19 09 49.6 +4.6**
Y38A Idabel 5.14 78 P **Pn 19 08 33.0 +1.2**
baz=262
X38A Whitesboro 5.22 70 P **Pn 19 08 34.2 +1.3**
baz=254
Y22D IRIS PASSCAL I 5.22 283 *e*Pn **Pn 19 08 36.9 +3.8**
T35A Sooner Cattle 5.22 41 P **Pn 19 08 34.2 +1.2**
baz=224
HKT Hockley 5.24 125 *e*Pn **Pn 19 08 34.6 +1.5**
HKT *e*Sg **Sg 19 09 58.8 -4.2**
LAZ Ladron 5.46 286 *e*Pn **Pn 19 08 36.6 +0.2**
W38A Poteau 5.58 67 P **Pn 19 08 39.3 +1.4**
baz=251
R32A Long Quarter, 5.63 17 P **Pn 19 08 40.0 +1.5**
baz=198
X39A Fountain Ranch 5.75 73 P **Pn 19 08 41.7 +1.5**
baz=257
CBKS Cedar Bluff 5.82 8 *e*Pn **Pn 19 08 39.9 -1.3**
121A Cookes Peak, D 5.91 267 Pn **Pn 19 08 42.4 -0.2**
V38A Canehill 5.98 60 P **Pn 19 08 44.4 +1.1**
baz=244
SDCO Great Sand Dun 6.07 322 *e*Pn **Pn 19 08 44.0 -0.8**
KSCO Kaye Shedlock' 6.14 346 *e*Pn **Pn 19 08 46.5 +0.8**
KSCO *e*Pg Pb 19 09 06.6 +4.7
KSCO *e*Sg **Sg 19 10 28.4 -3.5**
MIAR Mount Ida 6.19 74 *e*Pn **Pn 19 08 46.5 +0.2**
MIAR *e*Sg **Sg 19 10 30.2 -3.3**
Q32A Meitler Ranch, 6.20 16 P **Pn 19 08 47.2 +0.8**
baz=198
T37A Cheneyville 18 6.30 48 P **Pn 19 08 48.7 +0.9**
baz=232
S36A Lake Cedric, C 6.31 41 P **Pn 19 08 48.4 +0.5**
baz=224
WLAR White Oak Lake 6.46 82 *e*Pn **Pn 19 08 50.7 +0.8**
T38A Diamond 6.65 51 P **Pn 19 08 53.3 +0.7**
baz=235
P32A Huiting Farm, 6.80 14 P **Pn 19 08 54.7 +0.1**
baz=196
V40A Witts Springs 7.14 65 P **Pn 19 09 00.1 +0.8**
baz=250
R37A Teagarden Farm 7.15 41 P **Pn 19 09 00.1 +0.7**
baz=224
O31A Woolen Ranch, 7.19 9 P **Pn 19 09 01.1 +1.0**
baz=190
X301 Greenbrier Sit 7.29 70 *e*Pn **Pn 19 09 02.0 +0.6**
X301 *e*Sg **Sg 19 11 04.4 -4.5**
U40A Yellville 7.32 61 P **Pn 19 09 02.6 +0.8**
baz=246
342A Flagon Creek P 7.37 101 P **Pn 19 09 03.0 +0.7**
baz=286
WHAR Wooly Hollow 7.39 70 *e*Pn **Pn 19 09 03.3 +0.5**
W41A Tony Mavity, V 7.40 71 P **Pn 19 09 03.8 +1.0**
baz=256
W41B Gary Mavity, V 7.40 71 P **Pn 19 09 03.7 +0.9**
baz=256
O33A Hebron 7.48 19 P **Pn 19 09 05.1 +1.1**
baz=201
Y42A Garnett, Star 7.57 82 P **Pn 19 09 06.0 +0.9**
baz=267
OGNE Ogallala 7.95 353 *e*Pn **Pn 19 09 08.8 -1.7**
S40A Lebanon 8.16 54 P **Pn 19 09 13.6 +0.4**
baz=239

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*IDC **02** 19:22:26.5±0.8, 15°.21S×174°.44W, h0km, mb3.9/9, mb1 4.2/10, mb1mx3.9/37, mbtmp3.9/10, ML3.3/1, MS4.2/32, Ms1 4.2/32, ms1mx4.2/42, Error ellipse: s-maj=40.5km s-min=18.4km az=139.0*
*ISCJB **02** 19:22:29.8±0.6, 15°.2S±0°.2×174°.4W±0°.1, h33km, mb4.1/12, MS4.2/28, Error ellipse: s-maj=26.6km s-min=12.3km az=147.6*
*NEIC **02** 19:22:29.0±0.6, 15°.20S×174°.25W, h20km, mb4.9/3, Error ellipse: s-maj=27.6km s-min=10.5km az=151.0*
*GCMT **02** 19:22:29.0±0.2, 15°.06S×174°.22W, h23km±1km, MW5.0/92, Moment Tensor Solution. s27,c32; s92,c130; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-0.14±.14; $M_{\theta\theta}$0.21±.12; $M_{\phi\phi}$-0.06±.10; $M_{r\theta}$0.00±.16; $M_{\theta\phi}$3.26±.09; $M_{\phi r}$1.10±.16; Best double couple: $M_0$3.44400×10^{16} NP1:ϕ_s181.00000°, δ89.00000°, λ-161.00000°. NP2: ϕ_s=91.00000°, δ71.00000°, λ-1.00000°. Principal axes: T 3.4980, Plg12.0000°, Azm315.0000°; N -0.1070, Plg71.0000°, Azm185.0000°; P -3.3910, Plg14.0000°, Azm48.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 02 19:22:32.0±0.8, 15°.3S±0°.2×174°.4W±0°.2, h35km, n49, σ1§67/17, mb4.0/12, MS4.3/28, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	**2.84**	**62**	Pn	Pn	19 23 09.3	-5.6
	7.6nm,0.3s,baz=234,slow=20,SNR=31						
AFI				LR	LR	19 24 12.6	
	comp=Z,4μm,20.6s,baz=315,slow=37						
MSVF	**Nonsavu**	**7.68**	**250**	*e*P	**Pn**	**19 24 22.7**	**+1.2**
	36nm,1.1s						
RAO	**Raoul Island**	**14.30**	**193**	LR	LR	19 30 32.9	
	comp=Z,1μm,18.4s,baz=358,slow=34						
RAR	**Rarotonga**	**15.06**	**115**	LR	LR	19 30 27.4	
	comp=Z,793nm,20.8s,baz=286,slow=32						
DZM	**Mont Dzumac**	**19.40**	**247**	P	**P**	**19 26 55.2**	**0.0**
	0.1nm,0.3s,baz=324,slow=19,SNR=4.6						
DZM				LR	LR	19 33 09.5	
	comp=Z,1μm,21.2s,baz=74,slow=33						
PAE	**Paea**	**23.88**	**99**	*e*T	T	19 52 11.5	
	3.6nm,0.2s						
PPT	**Papeete**	**23.88**	**99**	LR	LR	19 35 47.4	
	comp=Z,101nm,18.6s,baz=276,slow=33						
PPT2	**Papeete2**	**23.88**	**99**	*e*LQ	LQ	19 32 23.1	
	3μm,25.0s						
PPT2				*e*LR	LR	19 33 33.8	
	319nm,24.8s						
PPT2	**Papeete2**	**23.88**	**99**	*e*T	T	19 52 13.1	
	8.5nm,0.3s						
TIAR	**Tiarei**	**24.10**	**99**	*e*T	T	19 52 27.7	
	5.1nm,0.3s						
URZ	**Urewera**	**24.11**	**197**	LR	LR	19 35 55.0	
	comp=Z,1μm,20.9s,baz=14,slow=34						
TVO	**Taravao**	**24.20**	**99**	*e*T	T	19 52 35.8	
	3.1nm,0.3s						
PMOR	**Pomariorio Ree**	**25.54**	**93**	*e*T	T	19 54 16.4	
	5.8nm,0.2s						
HNR	**Honiara**	**25.75**	**280**	LR	LR	19 36 59.5	
	comp=Z,389nm,21.1s,baz=123,slow=34						
TAOE	**Nuku Hiva Isla**	**34.02**	**83**	*e*LR	LR	19 38 17.1	
	545nm,22.6s						
RKT	**Rikitea**	**37.92**	**108**	*e*LQ	LQ	19 38 29.4	
	544nm,24.8s						
RKT				*e*LR	LR	19 40 09.2	
	412nm,25.5s						
PMG	**Port Moresby**	**38.00**	**274**	LR	LR	19 42 58.9	
	comp=Z,428nm,21.6s,baz=40,slow=32						
STKA	**Stephens Creek**	**43.30**	**240**	P	**P**	**19 30 30.8**	**+0.2**
	4.5nm,1.0s,baz=82,slow=14,SNR=5.5						
STKA				LR	LR	19 46 31.3	
	comp=Z,380nm,20.3s,baz=41,slow=33						
WRAB	**Tennant Creek**	**48.96**	**257**	P	**P**	**19 31 15.4**	**+0.1**
	10nm,1.3s						
WRA	**Warramunga Arr**	**48.97**	**257**	P	**P**	**19 31 13.4**	**-2.0**
	1.4nm,1.1s,baz=83,slow=6.8,SNR=6.3						
ASAR	**Alice Springs**	**49.27**	**252**	P	**P**	**19 31 16.4**	**-1.3**
	2.4nm,0.9s,baz=88,slow=7.9,SNR=26						
ASAR				LR	LR	19 50 35.6	
	comp=Z,391nm,21.6s,baz=94,slow=34						
GUMO	**Guam**	**49.48**	**303**	LR	LR	19 49 10.9	
	comp=Z,205nm,19.5s,baz=120,slow=32						
FITZ	**Fitzroy Crossi**	**57.33**	**258**	LR	LR	19 55 11.8	
	comp=Z,202nm,20.7s,baz=98,slow=34						
JCJ	**Chichijima**	**59.60**	**315**	LR	LR	19 52 59.3	
	comp=Z,429nm,21.6s,baz=132,slow=31						
SOEI	**Soe**	**60.01**	**267**	*e*P	**P**	**19 32 35.5**	**-0.3**
	14nm,1.3s						
VNDA	**Vanda**	**63.42**	**186**	P	**P**	**19 32 57.5**	**-0.1**
	0.7nm,1.0s,baz=354,slow=9.2,SNR=1.9						
VNDA				LR	LR	19 54 49.9	
	comp=Z,118nm,21.9s,baz=28,slow=31						
KAPI	**Kappang**	**65.45**	**271**	LR	LR	20 00 13.0	
	comp=Z,91nm,18.2s,baz=114,slow=35						
ASAJ	**Asahikawa**	**70.94**	**329**	LR	LR	19 59 59.5	
	comp=Z,211nm,21.3s,baz=118,slow=32						
PETK	**Petropavlovsk-**	**72.22**	**343**	LR	LR	19 58 45.5	
	comp=Z,53nm,21.2s,baz=158,slow=30						
QSPA	**South Pole Qui**	**74.78**	**180**	*e*P	**P**	**19 34 08.6**	**+0.2**
	18nm,1.2s						
NVAR	**Mina Array Bea**	**74.85**	**42**	P	**P**	**19 34 09.6**	**+0.3**
	1.0nm,0.4s,baz=225,slow=10,SNR=3.9						
NVAR				LR	LR	20 00 04.7	
	comp=Z,243nm,20.6s,baz=254,slow=30						
KSRS	**Korea Array**	**75.42**	**316**	LR	LR	20 04 53.8	
	comp=Z,161nm,18.8s,baz=127,slow=34						
LEM	**Lembang**	**76.72**	**266**	LR	LR	20 07 58.0	
	comp=Z,100nm,21.6s,baz=94,slow=36						
USRK	**Ussuriysk Ar.**	**76.72**	**323**	LR	LR	20 02 08.7	
	comp=Z,271nm,21.3s,baz=118,slow=31						
MA2	**Madan**	**79.76**	**343**	LR	LR	20 07 02.5	
	comp=Z,77nm,19.9s,baz=182,slow=34						
KLR	**Kul'dur**	**79.90**	**327**	LR	LR	20 05 07.9	
	comp=Z,125nm,21.8s,baz=140,slow=32						
TXAR	**Lajitas Array**	**81.31**	**56**	LR	LR	20 03 06.7	
	comp=Z,172nm,21.7s,baz=0.0,slow=30						
ILAR	**Eielson Array**	**82.49**	**12**	P	**P**	**19 34 50.0**	**-0.6**
	0.4nm,0.8s,baz=209,slow=7.2,SNR=3.3						
ILAR				LR	LR	20 05 35.8	
	comp=Z,74nm,19.7s,baz=218,slow=31						
PDAR	**Pinedale Array**	**82.78**	**42**	P	**P**	**19 34 53.1**	**+0.3**
	0.5nm,0.7s,baz=242,slow=3.8,SNR=4.1						
PDAR				LR	LR	20 05 06.0	
	comp=Z,176nm,21.2s,baz=243,slow=31						
MAW	**Mawson**	**87.62**	**199**	LR	LR	20 11 23.5	
	comp=Z,240nm,21.1s,baz=68,slow=34						
YAK	**Yakutsk**	**88.62**	**337**	LR	LR	20 08 29.8	
	comp=Z,36nm,21.0s,baz=126,slow=31						
PLCA	**Paso Flores**	**90.29**	**132**	LR	LR	20 06 48.7	
	comp=Z,231nm,21.1s,baz=282,slow=30						
YKA	**Yellowknife Ar**	**90.34**	**24**	P	**P**	**19 35 28.0**	**-1.0**
	0.1nm,0.4s,baz=237,slow=3.8,SNR=2.8						
CMAR	**Chiang Mai Arr**	**91.69**	**289**	P	**P**	**19 35 35.2**	**-1.1**
	0.1nm,0.3s,baz=116,slow=2.1,SNR=3.4						
CMAR				LR	LR	20 12 07.8	
	comp=Z,106nm,20.9s,baz=100,slow=32						
SONM	**Songino Array**	**94.13**	**318**	LR	LR	20 12 59.5	
	comp=Z,124nm,21.9s,baz=105,slow=32						
ULM	**Lac du Bonnet**	**94.41**	**39**	LR	LR	20 12 12.5	
	comp=Z,268nm,20.6s,baz=254,slow=32						
BRTR	**Keskin Array B**	**145.47**	**320**	PKPbc	**PKPab**	**19 42 07.0**	**-0.1**
	1.2nm,1.0s,baz=100,slow=3.5,SNR=5.2						
KHC	**Kasperske Hory**	**145.60**	**351**	*e*PKP	**PKPab**	**19 42 12.4**	**+5.3**
KHC				*ex*	x	19 42 35.4	
GERES	**GERESS Array B**	**145.86**	**350**	PKPbc	**PKPab**	**19 42 09.2**	**+1.0**
	0.2nm,0.3s,baz=75,slow=1.5,SNR=4.2						

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*NIED **02** 19:24:00, 33°.10N×139°.10E, h5km, Mw3.6 Best double couple: $M_0$2.72000×10^{14} NP1:ϕ_s100.00000°, δ51.00000°, λ-159.00000°. NP2:ϕ_s356.00000°, δ74.00000°, λ-41.00000°.*
*ISCJB **02** 19:24:28.4±1.6, 33°.10N±0°.06×139°.06E±0°.04, h15km±12km, mb3.5/3, MS2.7/1, Error ellipse: s-maj=9.8km s-min=4.6km az=14.8*
*JMA **02** 19:24:28.9±0.1, 33°.14N×139°.07E, h20km, M3.5*
*IDC **02** 19:24:38.8±3.5, 33°.55N×138°.51E, h43km±32km, mb3.3/3, mb1 3.4/5, mb1mx3.1/51, mbtmp3.4/5, ML3.3/2, MS2.8/1, Ms1 2.8/1, ms1mx2.1/25, Error ellipse: s-maj=45.2km s-min=27.5km az=77.0*

ISC 02 19:24:28.6±1.3, 33°.18N±0°.06×139°.06E±0°.04, h7km±11km, n20, σ0§44/29, mb3.6/3, Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHCJ	**Hachijojimakas**	**0.62**	**99**	P	**Pg**	**19 24 40.6**	**-0.1**
JHCJ				S	**Sg**	**19 24 48.9**	**+0.1**
JHJ2	**Mitsune**	**0.64**	**96**	P	**Pg**	**19 24 40.8**	**-0.1**
JHJ2				S	**Sg**	**19 24 49.1**	**0.0**
JKO	**Kozu shima**	**1.01**	**3**	P	**Pg**	**19 24 48.0**	**0.0**
JKO				S	**Sb**	**19 25 02.1**	**+0.1**
TK02	**Tokai 2**	**1.33**	**306**	P	**Pn**	**19 24 53.1**	**-0.4**
TK02				S	**Sg**	**19 25 11.5**	**0.0**
TK03	**Tokai 3**	**1.35**	**317**	P	**Pb**	**19 24 53.9**	**-0.2**
TK03				S	**Sg**	**19 25 12.6**	**+0.7**
TK01	**Tokai 1**	**1.36**	**296**	S	**Sb**	**19 25 11.6**	**-0.3**
TTO4	**TONANKAI O.B.S**	**1.52**	**304**	P	**Pn**	**19 24 55.3**	**-0.7**
TTO4				S	**Sn**	**19 25 15.8**	**-0.2**
JIZS	**Izushimoda**	**1.54**	**354**	P	**Pn**	**19 24 56.3**	**-0.3**
JIZS				S	**Sb**	**19 25 17.3**	**-0.1**
TTO3	**TONANKAI O.B.S**	**1.55**	**297**	P	**Pn**	**19 24 56.2**	**-0.4**
TTO5	**TONANKAI O.B.S**	**1.55**	**314**	P	**Pn**	**19 24 56.3**	**-0.3**
TTO5				S	**Sn**	**19 25 16.7**	**-0.3**
TK04	**Tokai 4**	**1.56**	**321**	P	**Pn**	**19 24 56.8**	**+0.1**
TK04				S	**Sb**	**19 25 17.6**	**-0.1**
JIM2	**Oshima 3**	**1.57**	**11**	P	**Pn**	**19 24 57.0**	**0.0**
JSG	**Sagara**	**1.66**	**334**	P	**Pn**	**19 24 58.5**	**+0.3**
JSG				*e*S	**Sn**	**19 25 19.6**	**-0.3**
KTJJ	**Kamata 2**	**1.75**	**0**	P	**Pn**	**19 24 59.1**	**-0.3**
KTJJ				*e*S	**Sb**	**19 25 22.4**	**-0.8**
MJAR	**Matsushiro Arr**	**3.43**	**348**	P	**Pn**	**19 25 23.6**	**+1.0**
	1.8nm,0.3s,baz=175,slow=14,SNR=26						
JNU	**Nakatsue**	**6.87**	**272**	P	**Pn**	**19 26 10.4**	**+0.6**
	1.0nm,0.3s,baz=100,slow=3.6,SNR=11						
PETK	**Petropavlovsk-**	**23.99**	**28**	LR	LR	19 39 29.1	
	comp=Z,22nm,18.9s,baz=34,slow=37						
MKAR	**Makanchi Array**	**44.65**	**305**	P	**P**	**19 32 42.8**	**+0.9**
	0.6nm,0.7s,baz=88,slow=9.6,SNR=7.1						
KURBB	**Kurchatov Arra**	**46.95**	**311**	P	**P**	**19 32 59.8**	**-0.1**
	0.5nm,0.7s,baz=92,slow=8.5,SNR=5.4						
WRA	**Warramunga Arr**	**53.01**	**186**	P	P	19 33 53.7	+7.4
	0.4nm,0.9s,baz=4.5,slow=7.2,SNR=2.6						

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*IDC **02** 19:40:02.8±2.8, 27°.94N×56°.53E, h0km, mb3.5/3, mb1 3.6/3, mb1mx3.1/56, mbtmp3.6/3, MS2.7/1, Ms1 2.7/1, ms1mx2.2/37, Error ellipse: s-maj=78.6km s-min=30.4km az=157.0*
*ISCJB **02** 19:40:08.9±0.5, 28°.11N±0°.04×56°.29E±0°.07, h28km, mb3.4/3, MS2.5/1, Error ellipse: s-maj=9.2km s-min=5.4km az=179.8*
*CSEM **02** 19:40:08.9±0.3, 28°.13N×56°.36E, h20km, ML3.0, Error ellipse: s-maj=12.8km s-min=7.4km az=87.0*
*TEH **02** 19:40:09.9, 28°.07N×56°.35E, h25km, ML3.0*

ISC 02 19:40:08.1±0.9, 28°.15N±0°.03×56°.48E±0°.06, h28km, n28, σ1§35/29, mb3.2/3, Southern Iran

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
NIAN	**Nian**	**0.67**	**152**	*e*Pg	**Pn**	**19 40 22.6**	**+0.9**
NIAN	**Nian**	**0.67**	**152**	*e*Pg	**Pn**	**19 40 22.6**	**+0.9**
IBND	**Bandar-abas**	**0.70**	**176**	*e*Pg	**Pn**	**19 40 22.6**	**+0.4**
IBND				*e*AMB	AMB	19 40 44.7	
	comp=Z,12μm,0.3s						
IBND	**Bandar-abas**	**0.70**	**176**	*e*Pg	**Pn**	**19 40 22.6**	**+0.4**
GENO	**Geno**	**0.80**	**200**	*e*Pg	**Pb**	**19 40 22.6**	**-0.9**
GENO	**Geno**	**0.80**	**200**	*e*Pg	**Pb**	**19 40 22.6**	**-0.9**
BNDS	**Bandar-Abbas**	**0.80**	**200**	*e*Pg	**Pn**	**19 40 24.6**	**+0.9**
BNDS				*e*Sg	**Sn**	**19 40 36.9**	**+2.2**
NGRK	**Negar Kerman**	**1.50**	**8**	*e*Pn	**Pb**	**19 40 34.1**	**-1.5**
NGRK	**Negar Kerman**	**1.50**	**8**	*e*Pn	**Pb**	**19 40 34.1**	**-1.5**
KRBR	**Kerman**	**1.84**	**8**	*e*Pn	**Pb**	**19 40 40.2**	**-1.1**
KRBR				*e*Sg	**Sb**	**19 41 04.3**	**+0.3**
TVBK	**TV Kerman**	**1.84**	**8**	*e*Pn	**Pb**	**19 40 40.9**	**-0.5**
TVBK	**TV Kerman**	**1.84**	**8**	*e*Pn	**Pb**	**19 40 40.9**	**-0.5**
CHMN	**Cheshme madani**	**1.94**	**28**	*e*Pn	**Pb**	**19 40 40.9**	**-2.1**
CHMN	**Cheshme madani**	**1.94**	**28**	*e*Pn	**Pb**	**19 40 40.9**	**-2.1**
KHGB	**Koh Gabri**	**2.22**	**360**	*e*Pn	**Pb**	**19 40 46.6**	**-1.0**
KHGB	**Koh Gabri**	**2.22**	**360**	*e*Pn	**Pb**	**19 40 46.6**	**-1.0**
GHIR	**Ghir-Karzin**	**3.09**	**273**	*e*Pn	**Pn**	**19 40 52.9**	**-2.2**
ISRV	**Sarvestan**	**3.20**	**293**	*e*Pn	**Pn**	**19 40 57.7**	**+0.9**
ISRV				*e*AMB	AMB	19 42 08.3	
	comp=Z,478nm,0.2s						
ISRV	**Sarvestan**	**3.20**	**293**	*e*Pn	**Pn**	**19 40 57.7**	**+0.9**
IMEH	**Mehriz**	**3.61**	**334**	*e*AMB	AMB	19 41 18.6	
	comp=Z,228nm,0.2s						
IMEH				*e*Pn	**Pn**	**19 41 04.3**	**+1.9**
IKAZ	**Kazeroun**	**4.38**	**293**	*e*Pn	**Pn**	**19 41 13.5**	**+0.5**
IKAZ				*e*AMB	AMB	19 41 15.1	
	comp=Z,540nm,0.0s						
IKAZ	**Kazeroun**	**4.38**	**293**	*e*Pn	**Pn**	**19 41 13.5**	**+0.5**
ISAD	**Sadrabad**	**4.46**	**328**	*e*Pn	**Pn**	**19 41 16.4**	**+2.2**
ISAD				*e*AMB	AMB	19 41 20.1	
	comp=Z,135nm,0.1s						
ISAD	**Sadrabad**	**4.46**	**328**	*e*Pn	**Pn**	**19 41 16.4**	**+2.2**
AAK	**Ala-Archa**	**20.54**	**41**	LR	LR	19 53 04.2	
	comp=Z,21nm,20.3s,baz=12,slow=38						
BRTR	**Keskin Array B**	**22.12**	**307**	P	**P**	**19 45 01.8**	**+0.3**
	comp=Z,0.7nm,0.7s,baz=121,slow=12,SNR=4.4						
MKAR	**Makanchi Array**	**27.48**	**40**	P	**P**	**19 45 51.8**	**-0.1**
	comp=Z,0.2nm,0.3s,baz=224,slow=7.4,SNR=5.1						
TORD	**Torodi Ar. Bea**	**52.98**	**265**	P	**P**	**19 49 21.7**	**-0.9**
	comp=Z,0.9nm,0.5s,baz=61,slow=7.8,SNR=12						

IDC 02 19:41:21.7±1.6, 8°.35S×118°.27E, h0km, mb3.7/4, mb1 3.8/7, mb1mx3.5/44, mbtmp3.7/7, ML3.7/3, MS3.9/3, Ms1 3.8/3, ms1mx3.0/41, Error ellipse: s-maj=62.9km s-min=18.8km az=63.0, Sumbawa region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KAPI	**Kappang**	**3.63**	**24**	Pn	Pn	19 42 19.5	+0.3
	28nm,0.3s,baz=225,slow=5.2,SNR=278						
KAPI				Sn	Sn	19 42 57.0	-5.7
	45nm,0.3s,baz=129,slow=22,SNR=34						
KAPI				LR	LR	19 44 13.2	
	comp=Z,71nm,19.1s,baz=124,slow=47						
FITZ	**Fitzroy Crossi**	**12.05**	**144**	Pn	Pn	19 44 15.0	+0.2
	0.2nm,0.3s,baz=330,slow=11,SNR=10						
FITZ				Sn	Sn	19 46 22.2	-8.0
	0.1nm,0.3s,baz=30,slow=20,SNR=4.1						
WRA	**Warramunga Arr**	**19.36**	**128**	P	P	19 45 48.0	-1.1
	0.2nm,0.3s,baz=303,slow=12,SNR=8.3						
ASAR	**Alice Springs**	**21.36**	**137**	P	P	19 46 11.5	+0.7
	1.1nm,0.4s,baz=312,slow=9.1,SNR=24						
STKA	**Stephens Creek**	**31.91**	**140**	P	P	19 47 49.1	+0.1
	0.8nm,0.4s,baz=317,slow=8.8,SNR=5.9						
SONM	**Songino Array**	**56.92**	**350**	P	P	19 51 08.7	0.0
	0.6nm,0.7s,baz=159,slow=4.4,SNR=4.1						
MKAR	**Makanchi Array**	**63.55**	**333**	LR	LR	20 22 52.5	
	comp=Z,90nm,21.6s,baz=88,slow=39						
ZALV	**Zalesovo Beam**	**68.18**	**339**	P	P	19 52 23.5	-0.2
	0.3nm,0.4s,baz=84,slow=5.9,SNR=2.9						
BOSA	**Boshof**	**88.68**	**241**	LR	LR	20 29 40.2	
	comp=Z,48nm,20.7s,baz=145,slow=33						
AKASG	**Malin Array Be**	**95.79**	**320**	LR	LR	20 44 35.5	
	comp=Z,72nm,20.8s,baz=65,slow=40						

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*NIED **02** 19:42:00, 37°.20N×141°.70E, h32km, Mw3.9 Best double couple: $M_0$8.50000×10^{14} NP1:ϕ_s184.00000°, δ73.00000°, λ-164.00000°. NP2:ϕ_s89.00000°, δ75.00000°, λ-17.00000°.*
*JMA **02** 19:42:28.4±0.2, 37°.18N×141°.73E, h34km±3km, M3.6*
*IDC **02** 19:42:31.9±3.2, 36°.98N×141°.89E, h66km±35km, mb3.3/6, mb1 3.5/8, mb1mx3.2/47, mbtmp3.6/8, ML3.2/2, Error ellipse: s-maj=25.4km s-min=17.8km az=41.0*

ISC 02 19:42:25.9±1.9, 37°.19N±0°.04×141°.84E±0°.06, h9km±10km, n18, σ1§44/29, mb3.5/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.79**	**283**	P	**Pg**	**19 42 42.0**	**+0.8**
JFK				S	**Sg**	**19 42 51.1**	**-0.4**
ONAJ	**Iwakimizuishiy**	**0.84**	**264**	P	**Pg**	**19 42 42.6**	**+0.5**
ONAJ				S	**Sg**	**19 42 52.4**	**-0.6**
JMM	**Marumori**	**1.07**	**309**	P	**Pb**	**19 42 46.3**

SONM Songino Array 27.98 304 P P 19 48 18.1 +1.1
0.3nm,0.4s,baz=90,slow=8.6,SNR=3.3
MKAR Makanchi Array 44.33 302 P P 19 50 35.6 -0.6
0.9nm,0.7s,baz=87,slow=9.6,SNR=10
KURBB Kurchatov Arra 46.18 308 P P 19 50 50.7 -0.1
0.6nm,0.5s,baz=84,slow=8.2,SNR=12
ILAR Eielson Array 49.18 32 P P 19 51 14.6 +0.7
0.3nm,0.7s,baz=267,slow=7.3,SNR=7.5
YKA Yellowknife Ar 63.50 30 P P 19 52 56.1 +0.1
0.2nm,0.6s,baz=304,slow=6.5,SNR=5.3

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*KLM **02** 19:43:10.9, 5°.06N×94°.85E, h44km, mb4.2, ML4.4, MS5.5*
*IDC **02** 19:43:19.2±6.0, 4°.14N×95°.01E, h0km, mb3.7/4, mb1 3.9/5, mb1mx3.4/52, mbtmp3.6/5, ML3.6/1, Error ellipse:*
s-maj=186.8km s-min=25.6km az=71.0
ISC 02 19:43:31.0±1.9, 4°.8N±0°.2×96°.3E±0°.2, h48km, n15, σ0s78/12, mb3.7/4, 7C, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KULM	**Kulim**	**4.32**	**83**	⇑P	**Pn**	**19 44 34.2**	**0.0**
IPM	**Ipoh**	**4.68**	**94**	⇑P	**Pn**	**19 44 39.3**	**+0.1**
FRIM	**Kepong**	**5.50**	**106**	⇑P	**Pn**	**19 44 50.7**	**+0.3**
KTGM	**Kuala Trenggan**	**6.79**	**85**	⇑P	**Pn**	**19 45 08.4**	**+0.3**
KGM	**Kluang**	**7.50**	**111**	⇑P	**Pn**	**19 45 18.1**	**+0.3**
MYKOM	**Kota Tinggi**	**8.08**	**112**	⇑P	**Pn**	**19 45 26.5**	**+0.8**
CMAR	**Chiang Mai Arr**	**13.80**	**10**	Pn	**P**	**19 46 50.0**	**-1.2**
0.1nm,0.3s,baz=205,slow=11,SNR=7.6							
KSM	**Kuching**	**14.34**	**103**	⇑P	**Pn**	**19 46 50.7**	**-0.6**
H08S2	**Diego Garcia H**	**26.82**	**243**	T	T	20 16 04.8	
baz=62,slow=76,SNR=8.0							
H08S3	**Diego Garcia H**	**26.82**	**243**	T	T	20 16 02.6	
baz=62,slow=76,SNR=8.4							
H08S1	**Diego Garcia H**	**26.83**	**243**	T	T	20 16 08.9	
baz=62,slow=76,SNR=8.2							
FITZ	**Fitzroy Crossi**	**36.79**	**129**	P	**P**	**19 50 34.0**	**-0.5**
1.7nm,0.9s,baz=319,slow=11,SNR=3.0							
SONM	**Songino Array**	**43.73**	**10**	P	**P**	**19 51 33.1**	**+1.5**
0.2nm,0.5s,baz=188,slow=7.5,SNR=2.8							
WRA	**Warramunga Arr**	**44.72**	**125**	P	**P**	**19 51 40.4**	**+0.5**
0.5nm,0.6s,baz=302,slow=9.2,SNR=8.1							
ASAR	**Alice Springs**	**46.29**	**129**	P	**P**	**19 51 52.1**	**-0.2**
1.2nm,0.6s,baz=300,slow=7.6,SNR=34							

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*ISCJB **02** 19:46:01.6±0.8, 11°.30N±0°.04×71°.65W±0°.03, h98km±7km, Error ellipse: s-maj=7.3km s-min=4.9km az=154.8*
*FUNV **02** 19:46:02.5, 11°.36N×71°.66W, h20km, MW2.8*
*RSNC **02** 19:46:04.2±0.6, 11°.23N×71°.67W, h80km±11km, ML3.0*
ISC 02 19:46:01.0±2.0, 11°.35N±0°.07×71°.69W±0°.05, h106km±15km, n23, σ1s27/37, 1D, Near coast of Venezuela

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URIC	**Uribia, Colomb**	**0.46**	**319**	⇓iP	**Pn**	**19 46 18.0**	**+0.8**
URIC				*eS*	**Sn**	**19 46 29.2**	**-0.1**
URIC				*i*		19 46 30.0	
comp=Z,683nm,0.1s							
VIRV	**Villa del Rosa**	**1.10**	**220**	*eP*	**Pn**	**19 46 23.7**	**+0.7**
VIRV				*eS*	**Sn**	**19 46 38.1**	**-1.4**
DABV	**Dabajuro**	**1.11**	**112**	*eS*	**Sn**	**19 46 38.1**	**-1.7**
MONV	**Montecano**	**1.78**	**70**	*eP*	**Pn**	**19 46 32.2**	**+1.1**
MONV				*eS*	**Sn**	**19 46 52.7**	**-1.3**
SIQV	**Siquisique**	**1.97**	**111**	*eP*	**Pn**	**19 46 34.3**	**+0.8**
SIQV				*eS*	**Sn**	**19 46 58.0**	**-0.3**
CURV	**Curarigua**	**2.15**	**128**	*eP*	**Pn**	**19 46 36.9**	**+1.0**
CURV				*eS*	**Sn**	**19 47 02.6**	**0.0**
VIGV	**El Vigia**	**2.52**	**173**	*eP*	**Pn**	**19 46 42.0**	**+1.4**
VIGV				*eS*	**Sn**	**19 47 10.5**	**-0.4**
SDV	**Santo Domingo**	**2.66**	**157**	*eP*	**Pn**	**19 46 43.9**	**+1.3**
SDV				*eS*	**Sn**	**19 47 13.4**	**-1.1**
SDV				*i*		19 47 15.1	
comp=Z,42nm,0.2s							
SANV	**Sanarito**	**2.80**	**131**	*eP*	**Pn**	**19 46 46.0**	**+1.6**
SANV				*eS*	**Sn**	**19 47 17.0**	**-0.8**
SOCV	**Socops**	**3.15**	**165**	*eP*	**Pn**	**19 46 50.5**	**+1.5**
SOCV				*eS*	**Sn**	**19 47 25.1**	**-1.0**
OCAC	**Ocana**	**3.49**	**208**	*eP*	**Pn**	**19 46 54.5**	**+0.9**
OCAC				*eS*	**Sn**	**19 47 33.5**	**-0.7**
MAPV	**Macapo**	**3.52**	**115**	*eP*	**Pn**	**19 46 54.6**	**+0.8**
CAPV	**Capacho**	**3.52**	**190**	*eP*	**Pn**	**19 46 55.1**	**+1.0**
CAPV				*eS*	**Sn**	**19 47 34.7**	**-0.3**
CBRI	**Barrientos, No**	**3.77**	**197**	*eP*	**Pn**	**19 46 58.2**	**+0.7**
GRMC	**Gramalote, San**	**3.77**	**197**	*eP*	**Pn**	**19 46 55.8**	**-1.7**
GRMC				*eS*	**Sn**	**19 47 37.3**	**-3.8**
GRMC				*i*		19 47 40.9	
comp=Z,28nm,0.3s							
TURV	**Turiamo**	**3.88**	**103**	*eP*	**Pn**	**19 46 58.9**	**+0.2**
TURV				*eS*	**Sn**	**19 47 42.3**	**-1.1**
PAMC	**Pamplona, Colo**	**4.11**	**194**	*eP*	**Pn**	**19 47 03.4**	**+1.2**
PAMC				*i*		19 47 05.3	
comp=Z,7.2nm,0.2s							
PAMC				*eS*	**Sn**	**19 47 49.2**	**-0.4**
BAUV	**El Baul**	**4.31**	**123**	*eP*	**Pn**	**19 47 05.5**	**+1.0**
BRRC	**Barranca, Sant**	**4.67**	**206**	*eP*	**Pn**	**19 47 10.5**	**+1.1**
BRRC				*i*		19 47 12.3	
comp=Z,27nm,0.1s							
BTLC	**Betulia, Santa**	**4.67**	**200**	*eP*	**Pn**	**19 47 11.3**	**+1.7**
RUSC	**La Rusia**	**5.60**	**194**	*eP*	**Pn**	**19 47 23.7**	**+1.3**
RUSC				*i*		19 47 24.7	
comp=Z,9.6nm,0.4s							
MERV	**Las Mercedes**	**5.70**	**111**	*eP*	**Pn**	**19 47 23.8**	**+0.5**
CUPV	**Cœpira**	**5.94**	**102**	*eP*	**Pn**	**19 47 26.6**	**+0.1**

IDC 02 19:51:50.9±1.1, 5°.15N×126°.99E, h0km, mb3.9/7, mb1 4.1/7, mb1mx3.7/38, mbtmp4.0/7, Error ellipse: s-maj=102.9km s-min=16.6km az=72.0, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**23.14**	**183**	P	P	19 56 58.9	-0.1
2.2nm,0.7s,baz=2.9,slow=10.0,SNR=12							
WRA	**Warramunga Arr**	**25.96**	**164**	P	P	19 57 25.9	+0.5
9.9nm,0.5s,baz=344,slow=10,SNR=67							
ASAR	**Alice Springs**	**29.42**	**167**	P	P	19 57 56.4	-0.1
0.5nm,0.5s,baz=354,slow=7.9,SNR=15							
STKA	**Stephens Creek**	**39.36**	**160**	P	P	19 59 22.0	-0.3
4.5nm,0.6s,baz=342,slow=8.0,SNR=17							
SONM	**Songino Array**	**46.05**	**341**	P	P	20 00 17.4	+0.8
0.4nm,0.7s,baz=150,slow=8.5,SNR=4.9							
MKAR	**Makanchi Array**	**56.55**	**325**	P	P	20 01 35.4	0.0
0.5nm,0.5s,baz=121,slow=7.7,SNR=16							
ARCES	**ARCESS Array B**	**89.22**	**340**	P	P	20 04 47.3	-1.2
0.5nm,0.6s,baz=83,slow=6.1,SNR=5.6							

MEX 02 19:55:39.6±0.3, 14°.27N×92°.42W, h16km±140km, MD3.5, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		**1.62**	**332**	*eP*	Pn	19 56 04.0	-3.5
PCIG				*i S*	Sn	19 56 23.1	-5.0
TGIG		**2.58**	**345**	*i P*	Pn	19 56 21.6	+0.8
TGIG				*i S*	Sn	19 56 48.2	-3.7

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*NIED **02** 20:01:00, 36°.70N×141°.10E, h44km, Mw4.0 Best double couple: M0 1.23000×10^15 NP1:φs120.00000°, δ1.00000°, λ-177.00000°. NP2:φs27.00000°, δ90.00000°, λ-89.00000°.*
*ISCJB **02** 20:01:46.0±0.8, 36°.64N±0°.04×141°.20E±0°.08, h45km±6km, mb3.9/13, MS3.3/3, Error ellipse: s-maj=11.6km s-min=5.4km az=13.6*
*JMA **02** 20:01:47.3±0.1, 36°.66N×141°.10E, h45km±1km, M4.0*
JMA Felt II J1.
*IDC **02** 20:01:51.1±2.2, 36°.56N×140°.98E, h77km±20km, mb3.6/13, mb1 3.8/18, mb1mx3.6/46, mbtmp4.0/18, MS3.4/3, Ms1 3.4/3, ms1mx2.8/51, Error ellipse: s-maj=20.1km s-min=9.6km az=67.0*
ISC 02 20:01:47.6±1.4, 36°.66N±0°.05×141°.2E±0°.1, h43km±12km, n30, σ1s32/32, mb3.9/13, MS3.1/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.48**	**265**	P	**Pn**	**20 01 57.3**	**-0.9**
JHO				S	**Sn**	**20 02 04.2**	**-1.5**
ONAJ	**Iwakimizuishiy**	**0.53**	**327**	P	Pn	20 01 58.0	-1.0
ONAJ				S	**Sn**	**20 02 05.6**	**-1.4**
JFK	**Kawauchi**	**0.75**	**342**	P	Pn	20 02 00.8	-1.0
JFK				S	**Sn**	**20 02 10.4**	**-1.6**
JYT	**Yasato**	**0.89**	**242**	P	**Pn**	**20 02 02.7**	**-1.0**
JYT				S	**Sn**	**20 02 13.4**	**-2.0**
JFT	**Otama**	**1.09**	**323**	P	**Pn**	**20 02 06.6**	**+0.2**
JFT				S	**Sn**	**20 02 19.9**	**-0.4**
JMM	**Marumori**	**1.25**	**346**	P	**Pn**	**20 02 07.9**	**-0.6**
JMM				*eS*	**Sn**	**20 02 23.4**	**-0.7**
MJAR	**Matsushiro Arr**	**2.38**	**268**	P	**Pn**	**20 02 24.7**	**+0.5**
50nm,0.3s,baz=89,slow=16,SNR=321							
MJAR				S	**Sn**	**20 02 53.1**	**+0.9**
37nm,0.3s,baz=88,slow=18,SNR=15							
JHJ	**Hachijo jima 2**	**3.71**	**198**	P	**Pn**	**20 02 42.8**	**+0.5**
59nm,0.3s,baz=332,slow=21,SNR=46							
JHJ				S	**Sn**	**20 03 25.1**	**+0.4**
70nm,0.3s,baz=292,slow=22,SNR=9.9							
ASAJ	**Asahikawa**	**7.53**	**8**	P	**Pn**	**20 03 34.7**	**-0.1**
1.4nm,0.3s,baz=206,slow=9.9,SNR=12							
JNU	**Nakatsue**	**9.16**	**250**	P	**Pn**	**20 03 59.5**	**+2.3**
0.3nm,0.3s,baz=86,slow=8.8,SNR=6.0							
JCJ	**Chichijima**	**9.57**	**175**	P	Pn	20 04 00.1	-2.7
9.9nm,0.3s,baz=300,slow=22,SNR=14							
USRK	**Ussuriysk Ar.**	**10.28**	**320**	P	**Pn**	**20 04 15.4**	**+3.0**
0.9nm,0.3s,baz=135,slow=13,SNR=33							
KSRS	**Korea Array**	**10.62**	**278**	P	**Pn**	**20 04 19.8**	**+2.8**
0.2nm,0.3s,baz=86,slow=14,SNR=12							
GUMO	**Guam**	**23.21**	**171**	LR	LR	20 17 13.9	
comp=Z,21nm,18.9s,baz=11,slow=40							
YAK	**Yakutsk**	**26.40**	**348**	LR	LR	20 17 27.8	
comp=Z,61nm,20.2s,baz=160,slow=35							
SONM	**Songino Array**	**27.83**	**305**	P	**P**	**20 07 32.0**	**-1.0**
2.9nm,0.7s,baz=104,slow=8.1,SNR=25							
ZALV	**Zalesovo Beam**	**42.02**	**313**	P	**P**	**20 09 33.0**	**-1.6**
3.8nm,0.8s,baz=96,slow=7.6,SNR=15							
MKAR	**Makanchi Array**	**44.15**	**302**	P	**P**	**20 09 50.8**	**-1.1**
0.5nm,0.5s,baz=84,slow=10,SNR=12							
WRA	**Warramunga Arr**	**56.66**	**188**	P	**P**	**20 11 25.9**	**-0.7**
2.6nm,0.5s,baz=5.8,slow=7.4,SNR=73							
ASAR	**Alice Springs**	**60.39**	**188**	P	**P**	**20 11 51.2**	**-1.3**
1.1nm,0.7s,baz=11,slow=6.2,SNR=12							
YKA	**Yellowknife Ar**	**64.23**	**30**	P	**P**	**20 12 18.5**	**+0.7**
0.1nm,0.6s,baz=300,slow=6.3,SNR=3.1							
ARCES	**ARCESS Array B**	**64.28**	**339**	P	**P**	**20 12 18.6**	**+0.6**
4.2nm,1.1s,baz=60,slow=7.2,SNR=4.0							
STKA	**Stephens Creek**	**68.18**	**180**	P	**P**	**20 12 43.1**	**-0.2**
1.2nm,0.5s,baz=13,slow=4.3,SNR=6.7							
FINES	**FINESS Array B**	**69.06**	**332**	P	**P**	**20 12 48.9**	**+0.3**
0.9nm,0.6s,baz=61,slow=11,SNR=4.1							
YBH	**Yreka Blue Hor**	**70.73**	**52**	LR	LR	20 35 58.6	
comp=Z,151nm,21.1s,baz=82,slow=29							
NOA	**NORSAR Array B**	**74.46**	**337**	P	**P**	**20 13 21.2**	**+0.1**
0.5nm,0.6s,baz=40,slow=5.9,SNR=3.6							
AKASG	**Malin Array Be**	**74.47**	**322**	P	**P**	**20 13 20.5**	**-0.8**
0.5nm,0.4s,baz=45,slow=5.9,SNR=4.3							
NVAR	**Mina Array Bea**	**75.37**	**53**	P	**P**	**20 13 27.8**	**+0.7**
0.7nm,0.8s,baz=287,slow=6.8,SNR=4.3							
PDAR	**Pinedale Array**	**78.07**	**45**	P	**P**	**20 13 43.4**	**+1.2**
0.4nm,0.6s,baz=263,slow=5.8,SNR=3.0							
LPAZ	**La Paz**	**147.06**	**60**	PKPbc	**PKPbc**	**20 21 26.2**	**-0.8**
1.0nm,0.5s,baz=3.2,slow=8.3,SNR=4.5							

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*NIED **02** 20:15:00, 41°.40N×141°.30E, h5km, Mw3.6 Best double couple: M0 3.23000×10^14 NP1:φs320.00000°, δ37.00000°, λ90.00000°. NP2:φs140.00000°, δ53.00000°, λ90.00000°.*
*ISCJB **02** 20:15:43.3±0.7, 41°.39N±0°.03×141°.24E±0°.08, h22km±5km, mb3.7/7, Error ellipse: s-maj=10.2km s-min=5.8km az=179.6*
*JMA **02** 20:15:43.5, 41°.40N×141°.26E, h7km±1km, M3.5*
JMA Felt II J1.
*IDC **02** 20:15:50.4±1.7, 41°.50N×141°.18E, h69km±17km, mb3.4/7, mb1 3.5/10, mb1mx3.2/42, mbtmp3.7/10, MS2.6/3, Ms1 2.6/3, ms1mx2.3/30, Error ellipse: s-maj=24.1km s-min=12.3km az=112.0*
ISC 02 20:15:43.7±1.1, 41°.38N±0°.03×141°.22E±0°.06, h13km±7km, n18, σ0s90/21, mb3.8/7, 1C-2D, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JOT	**Ohata**	**0.13**	**270**	⇓P	**Pg**	**20 15 47.0**	**0.0**
JOT				*eS*	**Sg**	**20 15 49.4**	**+0.1**
JKB	**Kayabe**	**0.52**	**345**	⇑P	**Pg**	**20 15 53.5**	**-0.4**
JKB				S	**Sg**	**20 16 00.4**	**-0.5**
JTM	**Tenmabayashi**	**0.60**	**191**	P	**Pg**	**20 15 55.5**	**0.0**
JTM				*eS*	**Sg**	**20 16 03.8**	**+0.3**
JSR	**Shiriuchi**	**0.62**	**284**	P	**Pb**	**20 15 56.1**	**-0.3**
JSR				S	**Sb**	**20 16 05.0**	**0.0**
JSI2	**Shiura 2**	**0.69**	**242**	P	**Pg**	**20 15 57.4**	**+0.3**
JSI2				S	**Sg**	**20 16 06.7**	**+0.6**
JYM2	**Yakumo 2**	**0.97**	**319**	⇓P	**Pb**	**20 16 02.0**	**-0.4**
JANG	**Nango**	**1.03**	**167**	P	**Pb**	**20 16 02.5**	**-0.9**
ASAJ	**Asahikawa**	**2.92**	**20**	P	**Pn**	**20 16 31.4**	**+1.7**
7.2nm,0.3s,baz=216,slow=16,SNR=80							
ASAJ				S	**Sn**	**20 17 06.7**	**+2.1**
5.7nm,0.3s,baz=114,slow=18,SNR=4.8							
MJAR	**Matsushiro Arr**	**5.37**	**207**	P	Pn	20 17 09.9	+6.3
0.4nm,0.3s,baz=20,slow=14,SNR=12							
MJAR				LR	LR	20 19 30.6	
comp=Z,54nm,18.3s,baz=20,slow=40							
KSRS	**Korea Array**	**11.01**	**253**	P	Pn	20 18 27.2	+6.4
0.4nm,0.3s,baz=67,slow=14,SNR=6.2							
KSRS				LR	LR	20 21 57.8	
comp=Z,30nm,20.9s,baz=310,slow=33							
JNU	**Nakatsue**	**11.65**	**228**	LR	LR	20 22 55.6	
comp=Z,28nm,18.3s,baz=100,slow=36							
ZALV	**Zalesovo Beam**	**38.98**	**308**	P	**P**	**20 23 08.3**	**-1.0**
1.4nm,0.6s,baz=94,slow=7.1,SNR=7.6							
MKAR	**Makanchi Array**	**41.81**	**298**	P	**P**	**20 23 32.1**	**-0.9**
1.1nm,0.8s,baz=82,slow=10.0,SNR=10							
ILAR	**Eielson Array**	**45.95**	**35**	P	**P**	**20 24 05.6**	**-0.3**
0.3nm,0.7s,baz=247,slow=4.6,SNR=3.9							
RES	**Resolute Bay**	**58.44**	**15**	P	**P**	**20 25 38.4**	**-0.1**
1.3nm,0.8s,baz=353,slow=7.1,SNR=4.1							
WRA	**Warramunga Arr**	**61.34**	**187**	P	**P**	**20 25 58.5**	**-0.6**
0.3nm,0.4s,baz=7.8,slow=7.7,SNR=7.8							
FINES	**FINESS Array B**	**64.92**	**331**	P	**P**	**20 26 21.6**	**-0.8**
1.1nm,0.6s,baz=54,slow=8.7,SNR=8.5							
ASAR	**Alice Springs**	**65.07**	**187**	P	**P**	**20 26 25.1**	**+1.3**
0.2nm,1.0s,baz=13,slow=8.6,SNR=3.8							

IDC 02 20:16:53.7±13.0, 29°.67N×68°.82E, h0km, mb3.3/4, mb1 3.4/4, mb1mx3.2/45, mbtmp3.3/4, MS3.6/2, Ms1 3.6/2, ms1mx2.8/28, Error ellipse: s-maj=476.0km s-min=30.8km az=141.0, Pakistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AAK	**Ala-Archa**	**13.72**	**18**	LR	LR	20 26 45.7	
comp=Z,94nm,19.7s,baz=16,slow=43							
MKAR	**Makanchi Array**	**20.05**	**28**	P	P	20 21 26.9	-1.5
0.3nm,0.6s,baz=203,slow=11,SNR=3.4							
ZALV	**Zalesovo Beam**	**26.90**	**21**	P	P	20 22 37.1	+0.8
0.6nm,0.5s,baz=219,slow=9.8,SNR=3.8							
TORD	**Torodi Ar. Bea**	**63.84**	**271**	P	P	20 27 28.1	-0.3
0.3nm,0.9s,baz=46,slow=7.7,SNR=2.7							
TORD				LR	LR	20 57 12.6	
comp=Z,119nm,20.7s,baz=280,slow=38							
YKA	**Yellowknife Ar**	**88.11**	**2**	P	P	20 29 46.4	+0.4
0.1nm,0.5s,baz=349,slow=5.3,SNR=3.2							

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*ISCJB **02** 20:28:15.9±0.7, 33°.79N±0°.09×87°.8E±0°.2, h10km, mb3.8/8, Error ellipse: s-maj=21.2km s-min=10.3km az=155.9*
*IDC **02** 20:28:16.2±0.8, 33°.77N×87°.72E, h0km, mb3.8/9, mb1 3.9/13, mb1mx3.6/69, mbtmp3.8/13, ML3.6/4, Error ellipse: s-maj=29.3km s-min=15.8km az=60.0*
ISC 02 20:28:17.4±0.8, 33°.8N±0°.1×87°.8E±0°.2, h10km, n16, σ0s93/15, mb3.8/8, Xizang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LSA	**Lhasa**	**4.96**	**144**	P	**Pg**	**20 29 52.1**	**-0.3**
WMQ	**Urumqi**	**10.06**	**360**	*eP*	**Pn**	**20 30 43.9**	**+1.9**
MKAR	**Makanchi Array**	**13.68**	**344**	Pn	**Pn**	**20 31 30.6**	**-0.9**
0.1nm,0.3s,baz=153,slow=14,SNR=11							
KURBB	**Kurchatov Arra**	**18.18**	**341**	P	**P**	**20 32 29.2**	**-0.8**
0.1nm,0.3s,baz=156,slow=12,SNR=28							
CMAR	**Chiang Mai Arr**	**18.21**	**144**	P	**P**	**20 32 30.3**	**-0.3**
0.3nm,0.3s,baz=331,slow=10,SNR=4.4							
SONM	**Songino Array**	**19.85**	**39**	P	**Pn**	**20 32 49.2**	**-1.0**
0.1nm,0.3s,baz=226,slow=12,SNR=11							
ZALV	**Zalesovo Beam**	**20.30**	**355**	P	Pn	20 32 53.5	-1.8
0.7nm,0.5s,baz=168,slow=9.1,SNR=4.9							
BVAR	**Borovoye Array**	**22.93**	**332**	P	**P**	**20 33 22.3**	**+0.8**
1.5nm,0.7s,baz=128,slow=9.6,SNR=6.7							
TIXI	**Tiksi**	**43.67**	**18**	P	**P**	**20 36 21.4**	**-0.5**
1.9nm,0.5s,baz=254,slow=6.1,SNR=13							
NB2	**NORSAR Subarra**	**54.74**	**325**	P	**P**	**20 37 46.8**	**0.0**
comp=Z,0.9nm,0.8s,baz=84,slow=7.4							
NOA	**NORSAR Array B**	**54.74**	**325**	P	**P**	**20 37 46.6**	**-0.2**
comp=Z,0.4nm,0.8s,baz=84,slow=7.4,SNR=3.8							
GERES	**GERESS Array B**	**55.51**	**310**	P	**P**	**20 37 53.4**	**+0.7**
comp=Z,0.6nm,0.7s,baz=77,slow=6.0,SNR=5.5							
WRA	**Warramunga Arr**	**69.43**	**133**	P	**P**	**20 39 26.9**	**+1.0**
comp=Z,1.2nm,0.5s,baz=326,slow=6.7,SNR=32							
ASAR	**Alice Springs**	**72.02**	**136**	P	**P**	**20 39 42.9**	**+1.2**
comp=Z,1.0nm,0.7s,baz=320,slow=6.0,SNR=15							
TORD	**Torodi Ar. Bea**	**79.60**	**279**	P	**P**	**20 40 24.8**	**-0.4**
comp=Z,0.8nm,0.6s,baz=44,slow=5.2,SNR=10							
YKA	**Yellowknife Ar**	**82.42**	**10**	P	**P**	**20 40 38.8**	**-0.6**
comp=Z,0.4nm,0.8s,baz=337,slow=5.3,SNR=7.0							

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*NIED **02** 20:31:00, 37°.20N×141°.40E, h20km, Mw4.2 Best double couple: M0 2.12000×10^15 NP1:φs244.00000°, δ33.00000°, λ-98.00000°. NP2:φs73.00000°, δ58.00000°, λ-85.00000°.*
*ISCJB **02** 20:31:14.8±0.8, 37°.18N±0°.03×141°.38E±0°.06, h28km±5km, mb4.4/46, MS3.1/1, Error ellipse: s-maj=8.0km s-min=5.2km az=23.6*
*JMA **02** 20:31:16.0±0.2, 37°.17N×141°.31E, h34km±1km, M4.3*
JMA Felt II J1.
*IDC **02** 20:31:16.6±0.6, 37°.21N×141°.25E, h28km±3km, mb4.2/28, mb1 4.3/33, mb1mx4.2/59, mbtmp4.4/33, ML3.8/5, MS3.1/5, Ms1 3.1/5, ms1mx2.8/34, Error ellipse: s-maj=13.0km s-min=11.5km az=140.0*
*NEIC **02** 20:31:17.9±0.8, 37°.23N×141°.27E, h37km±7km, mb4.5/17, Error ellipse: s-maj=8.2km s-min=6.5km az=136.0*
NEIC Recorded [2 JMA] in Fukushima and Miyagi.
ISC 02 20:31:16.3±0.6, 37°.18N±0°.04×141°.33E±0°.06, h27km±3km, h27km:pP-P, n95, σ1s17/110, mb4.5/49, 5C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.41**	**297**	P	**Pb**	**20 31 24.7**	**-0.4**
JFK				S	**Sb**	**20 31 30.8**	**-0.3**
ONAJ	**Iwakimizuishiy**	**0.43**	**260**	P	**Pb**	**20 31 25.1**	**-0.4**
ONAJ				S	**Sb**	**20 31 31.4**	**-0.4**
JMM	**Marumori**	**0.81**	**328**	P	**Pb**	**20 31 30.7**	**-1.0**
JMM				*eS*	**Sb**	**20 31 41.3**	**-0.9**
JHO	**Hitachi**	**0.83**	**227**	P	**Pb**	**20 31 30.2**	**-1.9**
JFT	**Otama**	**0.86**	**293**	P	**Pn**	**20 31 32.3**	**-0.3**
JSB	**Shiboa**	**1.15**	**260**	P	**Pb**	**20 31 37.0**	**-0.5**
MJAR	**Matsushiro Arr**	**2.58**	**257**	Pn	**Pn**	**20 31 57.5**	**+1.2**
19nm,0.3s,baz=85,slow=15,SNR=149							
MAJO	**Matsushiro**	**2.58**	**257**	*e*Pn	**Pn**	**20 31 57.5**	**+1.2**
MAT	**Matsushiro**	**2.58**	**257**	P	**Pn**	**20 31 57.7**	**+1.4**
MAT				S	**Sn**	**20 32 29.5**	**+2.7**
JHJ2	**Mitsune**	**4.25**	**197**	*e*Pn	**Pn**	**20 32 18.9**	**-0.2**
JHJ	**Hachijo jima 2**	**4.25**	**198**	Pn	**Pn**	**20 32 19.2**	**+0.1**
149nm,0.3s,baz=104,slow=23,SNR=87							
JHJ				Sn	**Sn**	**20 33 07.3**	**-0.5**
76nm,0.3s,baz=188,slow=21,SNR=6.5							
JHJ				LR	LR	20 34 11.2	
comp=Z,257nm,20.0s,baz=60,slow=41							
ASAJ	**Asahikawa**	**6.99**	**8**	Pn	**Pn**	**20 32 56.3**	**-0.6**
4.0nm,0.3s,baz=213,slow=11,SNR=34							
ASAJ				Sn	**Sn**	**20 34 15.2**	**-0.3**
3.9nm,0.3s,baz=127,slow=20,SNR=3.1							
ASAJ	**Asahikawa**	**6.99**	**8**	*e*Pn	**Pn**	**20 32 55.9**	**-1.0**
13nm,0.7s							
ASAJ				Sn	**Sn**	**20 34 15.2**	**-0.3**
JNU	**Nakatsue**	**9.47**	**248**	Pn	**Pn**	**20 33 32.5**	**+1.7**
0.2nm,0.3s,baz=38,slow=4.0,SNR=3.8							
USRK	**Ussuriysk Ar.**	**9.97**	**318**	Pn	**Pn**	**20 33 40.7**	**+3.1**
0.4nm,0.3s,baz=129,slow=13,SNR=11							
CBIJ	**Chichi jima**	**10.08**	**176**	Sn	**Sn**	**20 35 28.4**	**-3.1**
JCJ	**Chichijima**	**10.08**	**176**	Sn	**Sn**	**20 35 28.4**	**-3.1**
11nm,0.3s,baz=270,slow=20,SNR=4.2							
KSRS	**Korea Array**	**10.68**	**276**	Pn	**Pn**	**20 33 49.3**	**+1.9**
0.2nm,0.3s,baz=85,slow=13,SNR=6.0							
KSRS				LR	LR	20 37 38.4	
comp=Z,103nm,21.0s,baz=84,slow=36							
KSAR	**Wonju Array Be**	**10.71**	**275**	Pn	**Pn**	**20 33 49.3**	**+1.4**
MDJ	**Mudanjiang**	**11.57**	**

STKA Stephens Creek 68.70 180 P P 20 42 17.3 +0.1
3.3nm,0.8s,baz=334,slow=4.7,SNR=7.0
YBH Yreka Blue Hor 70.31 52 P P 20 42 28.3 +0.9
1.9nm,0.9s,baz=276,slow=9.0,SNR=3.8
KBZ Khabaz 70.75 311 P P **20 42 29.6 -0.3**
5.6nm,0.8s,baz=18,slow=2.6,SNR=15
KIV Kislovodsk 70.76 311 *eP* **P 20 42 30.7 +0.6**
18nm,1.0s
NB2 NORSAR Subarra 74.02 337 P P **20 42 49.1 -0.1**
comp=Z,8.2nm,1.1s,baz=40,slow=6.2
NOA NORSAR Array B 74.02 337 P P **20 42 49.2 +0.1**
comp=Z,4.7nm,0.9s,baz=39,slow=5.8,SNR=13
NOA pP **pP 20 42 57.8 0.0**
comp=Z,1.9nm,0.6s,baz=40,slow=5.9,SNR=7.0
AKASG Malin Array Be 74.14 322 P P **20 42 49.7 -0.3**
comp=Z,5.4nm,0.5s,baz=47,slow=6.1,SNR=35
AKASG pP **pP 20 42 58.6 0.0**
comp=Z,1.7nm,0.4s,baz=47,slow=6.1,SNR=7.0
KIEV Kiev 74.15 322 *eP* **P 20 42 49.3 -0.8**
comp=Z,8.7nm,0.8s
NVAR Mina Array Bea 74.95 53 P P **20 42 56.6 +1.3**
comp=Z,2.2nm,0.8s,baz=296,slow=5.2,SNR=14
ELK Elko 75.50 50 *eP* **P 20 42 60.0 +1.6**
H17A Grant Village 76.01 45 *eP* **P 20 43 04.2 +2.9**
comp=Z,4.0nm,0.9s
MOOW Moose Ponds 76.32 45 *eP* **P 20 43 04.2 +1.2**
comp=Z,1.7nm,0.8s
R11A Troy Canyon, C 76.72 52 *eP* **P 20 43 06.0 +0.7**
DUG Dugway, Tooele 77.31 49 *eP* **P 20 43 09.9 +1.4**
PDAR Pinedale Array 77.61 45 P **P 20 43 10.8 +0.6**
comp=Z,1.2nm,0.5s,baz=279,slow=2.3,SNR=18
PDAR pP **PcP 20 43 20.1 -0.3**
comp=Z,1.0nm,0.6s,baz=276,slow=2.3,SNR=4.9
KWP Kalwaria Pacla 77.97 324⇑*iP* **P 20 43 13.1 +1.2**
BURAR Bucovina Array 78.15 322⇑*iP* **P 20 43 13.5 +0.5**
TESR Tescani 78.18 320⇑*iP* **P 20 43 13.4 +0.3**
KOLS Kolonicke sedl 78.66 324 *eP* **P 20 43 16.3 +0.6**
BRTR Keskin Array B 78.70 311 P **P 20 43 16.4 +0.2**
comp=Z,1.8nm,0.9s,baz=98,slow=5.1,SNR=6.7
STHS Stebnicka Huta 78.80 325 *eP* **P 20 43 17.8 +1.4**
DOPR Dopca 79.19 320⇑*iP* **P 20 43 22.2 +3.5**
LANS Liptovska Anna 79.80 325 *eP* **P 20 43 23.1 +1.2**
DRGR 79.96 322⇓*iP* **P 20 43 23.5 +0.6**
ARR Arges 79.99 320⇑*iP* **P 20 43 24.6 +1.5**
DPC Dobruska-Polom 80.30 328 *eP* **P 20 43 25.6 +1.0**
DPC *ep*P **pP 20 43 34.6 +1.3**
KRLC Kraliky 80.31 327 *eP* **P 20 43 25.2 +0.5**
VYHS Vyhne 80.56 325 *eP* **P 20 43 25.7 -0.3**
BRG Berggiesshubel 80.89 329 *eP* **P 20 43 28.2 +0.5**
comp=Z,3.6nm,0.8s
PRU Pruhonice 81.32 328 *eP* **P 20 43 30.8 +0.8**
KHC Kasperske Hory 82.38 328 *eP* **P 20 43 36.2 +0.5**
KHC *ep*P **pP 20 43 45.1 +0.7**
GERES GERESS Array B 82.55 328 P **P 20 43 36.4 -0.3**
comp=Z,1.9nm,0.5s,baz=58,slow=3.3,SNR=3.6
GERES pP **pP 20 43 44.9 -0.5**
comp=Z,1.0nm,0.5s,baz=43,slow=6.4,SNR=5.7
SOKA Soboth 83.63 326 *ep*P **P 20 43 42.8 +0.5**
comp=Z,6.7nm,1.0s
RETA Reutte 84.84 329 *i* pP **P 20 43 48.9 +0.5**
comp=Z,3.3nm,0.6s
FETA Feichten 85.22 329 *i* PcP **P 20 43 50.7 +0.2**
comp=Z,5.1nm,1.1s
TXAR Lajitas Array 90.08 52 P **P 20 44 14.9 +0.9**
comp=Z,1.1nm,0.6s,baz=303,slow=3.3,SNR=11
TXAR pP **pP 20 44 23.4 +0.5**
comp=Z,0.8nm,0.5s,baz=273,slow=2.9,SNR=5.6
TORD Torodi Ar. Bea 117.18 315 PKP **PKPdf 20 49 58.7 -0.7**
comp=Z,0.4nm,0.4s,baz=36,slow=1.9,SNR=16
LPAZ La Paz 146.68 59 PKPbc **PKPbc 20 50 56.6 0.0**
comp=Z,3.3nm,0.5s,baz=325,slow=2.4,SNR=12
SIV San Ignacio 151.04 49 PKPbc **PKPbc 20 51 06.4 -0.8**
comp=Z,4.4nm,0.9s,baz=225,slow=4.1,SNR=4.3

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*IDC **02** 20:31:55.6±0.7, 14°.29N×93°.17E, h0km, mb4.1/17, mb1 4.2/18, mb1mx3.9/59, mbtmp4.1/18, ML4.2/1, MS3.1/3, Ms1 3.1/3, ms1mx2.8/33, Error ellipse: s-maj=22.6km s-min=14.7km az=53.0*
*BKK **02** 20:31:57.8±2.2, 15°.N±5°.×9°.3E±2°.0, h10km, M4.2/15, mB4.9/9, mb4.4/15, MLv4.2/10, Mw(mB)4.2/9*
*ISCJB **02** 20:31:59.1±0.3, 14°.38N±0°.04×93°.13E±0°.03, h33km, mb4.1/19, MS3.3/2, Error ellipse: s-maj=5.9km s-min=3.9km az=32.1*
*NEIC **02** 20:32:01.1±0.5, 14°.36N×93°.25E, h35km, mb4.1/1, Error ellipse: s-maj=9.9km s-min=8.6km az=214.0*
*DJA **02** 20:32:07.8±0.9, 15°.N±6°.×9°.4E±°., h85km±11km, M4.7/11, mb4.6/11, mB5.4/5, MLv4.6/2, Mw(mB)4.9/5*
ISC 02 20:32:00.9±0.5,**14°.30N**±0°.05×**93°.01E**±0°.05,**h35**km,**n66,**
σ**1**§**91**/67,**mb4.0**/19,**1D, Andaman Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DGPR	**DIGLIPUR**	**1.12**	**184**	*eP*	**Pn**	**20 32 23.4**	**+3.3**
DGPR				*ex*	**Sn**	**20 32 32.8**	**-1.4**
DGPR				IAML		20 32 33.3	
	comp=Z,3μm,0.4s						
KHLT	**Khaolaem Dam**	**5.43**	**84**	P	**Pn**	**20 33 19.6**	**+0.2**
	comp=Z,52nm,0.6s,comp=Z,509nmcomp=Z,0.2nm						
SRDT	**SRDT**	**5.93**	**89**	P	**Pn**	**20 33 26.7**	**+0.5**
	comp=Z,184nm,0.5s,comp=Z,7μmcomp=Z,0.8nm						
UMPA	**Umpang Tak**	**5.96**	**71**	P	**Pn**	**20 33 25.8**	**-0.9**
MHMT	**Maesarieng**	**6.10**	**50**	P	**Pn**	**20 33 27.1**	**-1.5**
	comp=Z,42nm,0.7s,comp=Z,380nmcomp=Z,0.1nm						
PHET	**Kaeng Krachan**	**6.59**	**101**	P	**Pn**	**20 33 35.8**	**+0.5**
CMAR	**Chiang Mai Arr**	**7.04**	**53**	Pn	**Pn**	**20 33 37.0**	**-4.6**
	comp=Z,1.2nm,0.3s,baz=242,slow=15,SNR=33						
CMAR				Sn	**Sn**	**20 35 04.8**	**+4.4**
	comp=Z,1.4nm,0.3s,baz=240,slow=27,SNR=5.0						
CMAR				LR	LR	20 36 16.9	
	comp=Z,52nm,20.9s,baz=210,slow=38						
SUKH	**Sukhothai**	**7.12**	**63**	P	**Pn**	**20 33 41.5**	**-1.1**
	comp=Z,17nm,0.7s,comp=Z,167nm						
CHTO	**Chiang Mai**	**7.25**	**51**	P	**Pn**	**20 33 42.1**	**-2.4**
	comp=Z,91nm,0.8s,comp=Z,0.5nm						
CHTO	**Chiang Mai**	**7.25**	**51**	*e*Pn	**Pn**	**20 33 42.0**	**-2.4**
	comp=Z,14nm,0.7s						
CMBY	**CAMPBELL BAY**	**7.30**	**173**	*eP*	**Pn**	**20 33 46.6**	**+1.5**
LAMP	**Lampang**	**7.62**	**56**	P	**Pn**	**20 33 48.2**	**-1.3**
	comp=Z,12nm,0.8s,comp=Z,0.0nm						
PATY	**Pattaya**	**7.76**	**99**	P	**Pn**	**20 33 51.7**	**+0.3**
	comp=Z,13nm,0.6s,comp=Z,788nmcomp=Z,0.1nm						
SURT	**Suratani**	**7.77**	**132**	P	**Pn**	**20 33 53.9**	**+2.4**
	comp=Z,7.4nm,0.7s,comp=Z,0.0nm						
UTTA	**Uttaradit**	**8.03**	**64**	P	**Pn**	**20 33 53.9**	**-1.1**
	comp=Z,5.3nm,0.7s,comp=Z,61nmcomp=Z,0.0nm						
NAYO	**Nakonayok**	**8.06**	**89**	P	**Pn**	**20 33 55.7**	**+0.2**
	comp=Z,9.7nm,0.6s,comp=Z,6μm						
LOEI	**Loei**	**8.56**	**67**	P	**Pn**	**20 34 06.8**	**+4.4**
KRAB	**Krabi**	**8.56**	**134**	P	**Pn**	**20 34 01.8**	**-0.6**
BWNR	**Bhubaneshwar**	**9.10**	**312**	*eP*	**Pn**	**20 34 09.1**	**-0.7**
BWNR				*ex*	Sn	20 35 41.7	-9.3
BWNR				IAML		20 35 46.8	
	comp=N,142nm,0.3s						
BWNR				IAML		20 35 47.6	
	comp=E,138nm,0.7s						
CRAI	**Chiangrai**	**9.18**	**49**	P	**Pn**	**20 34 09.9**	**-1.0**
	comp=E,47nm,1.1s						
CHBT	**CHBT**	**9.20**	**99**	P	**Pn**	**20 34 12.0**	**+0.9**
VIS	**Vishakhapatnam**	**9.91**	**291**	*eP*	**Pn**	**20 34 22.2**	**+1.3**
VIS				*i* S	**Sn**	**20 36 04.8**	**-6.1**
VIS				*i* S	**Sn**	**20 36 06.3**	**-4.5**
VIS				IAML		20 36 07.4	
	comp=Z,61nm,0.2s						
MLSI	**Meulaboh, Aceh**	**10.52**	**161**	P	**Pn**	**20 34 29.7**	**+0.5**
SKNT	**Sakolnakorn**	**10.90**	**74**	P	**Pn**	**20 34 35.2**	**+0.7**
SHL	**Shillong**	**11.26**	**355**	*eP*	**Pn**	**20 34 37.5**	**-2.0**
BOK	**Bokaro**	**11.59**	**326**	*eP*	**Pn**	**20 34 43.8**	**-0.2**
BOK				IAmb	IAmb	20 34 45.8	
	comp=Z,31nm,0.6s						
KCSI	**Kotacane, Aceh**	**11.70**	**156**	P	**Pn**	**20 34 47.0**	**+1.6**
	comp=Z,30nm,1.0s						
TSI	**Tuntungan**	**12.05**	**152**	P	Pn	20 34 56.3	+6.1
	comp=Z,60nm,0.8s						
HYB	**Hyderabad**	**14.25**	**284**	*i* P	**Pn**	**20 35 23.0**	**+2.7**
HYB				*e*S	**Sn**	**20 38 02.0**	**+4.8**
PKIN	**Phulchoki**	**14.99**	**333**	*eP*	**Pn**	**20 35 29.8**	**-0.7**
	comp=Z,44nm,0.3s						
DMN	**Daman**	**15.15**	**332**	*eP*	**Pn**	**20 35 32.2**	**-0.4**
	comp=Z,22nm,0.3s						
KKN	**Kakani**	**15.23**	**333**	*eP*	**Pn**	**20 35 32.7**	**-0.9**
	comp=Z,13nm,0.3s						
LSA	**Lhasa**	**15.42**	**354**	*e*Pn	**Pn**	**20 35 35.1**	**-1.3**
GKN	**Gorkha**	**15.70**	**332**	*eP*	**Pn**	**20 35 39.1**	**-0.6**
	comp=Z,53nm,0.3s						
KOLN	**Koldanda**	**16.01**	**328**	*eP*	**Pn**	**20 35 43.1**	**-0.6**
	comp=Z,24nm,0.4s						
PYUN	**Piuthan**	**16.59**	**327**	*eP*	**Pn**	**20 35 50.8**	**-0.3**
	comp=Z,26nm,0.4s						
PDSI	**Padang**	**16.82**	**153**	P	**Pn**	**20 35 52.7**	**-1.2**
	comp=Z,24nm,0.8s,comp=Z,6μm						
BHPL	**Bhopal**	**17.21**	**303**	*eP*	**P**	**20 36 01.6**	**+1.5**
BHPL				IAmb	IAmb	20 36 03.0	
	comp=Z,14nm,0.9s						
PPBI	**Pangkal Pinang**	**20.90**	**140**	P	**P**	**20 36 40.9**	**+0.5**
	comp=Z,30nm,0.8s,comp=Z,1μm						
ENH	**Enshi**	**21.98**	**41**	*eP*	**P**	**20 36 50.3**	**-1.7**
BBKI	**Banjar Baru**	**27.93**	**128**	P	**P**	**20 37 48.7**	**+0.6**
H08S3	**Diego Garcia H**	**29.82**	**224**	T	T	21 09 21.5	
	baz=42,slow=76,SNR=23						
H08S2	**Diego Garcia H**	**29.82**	**224**	T	T	21 09 18.7	
	baz=42,slow=76,SNR=11						
H08S1	**Diego Garcia H**	**29.84**	**224**	T	T	21 09 16.2	
	baz=42,slow=76,SNR=14						
MKAR	**Makanchi Array**	**33.62**	**347**	P	**P**	**20 38 38.8**	**+0.8**
	comp=Z,1.2nm,0.5s,baz=160,slow=8.9,SNR=23						
SONM	**Songino Array**	**35.24**	**16**	P	**P**	**20 38 51.9**	**-0.2**
	comp=Z,1.8nm,0.8s,baz=203,slow=8.4,SNR=8.3						
KURBB	**Kurchatov Arra**	**38.09**	**345**	*e*P	**P**	**20 39 17.1**	**+1.0**
	comp=Z,2.0nm,0.7s,baz=162,slow=8.0,SNR=28						
KURK	**Kurchatov**	**38.15**	**345**	*e*P	**P**	**20 39 17.4**	**+0.8**
KSAR	**Wonju Array Be**	**38.60**	**47**	P	**P**	**20 39 19.2**	**-1.5**
KSRS	**Korea Array**	**38.63**	**47**	P	**P**	**20 39 19.2**	**-1.7**
	comp=Z,0.8nm,0.5s,baz=243,slow=9.5,SNR=4.1						
KSRS				LR	LR	20 57 58.9	
	comp=Z,41nm,18.4s,baz=278,slow=41						
ZALV	**Zalesovo Beam**	**40.08**	**352**	P	**P**	**20 39 33.1**	**+0.3**
	comp=Z,1.6nm,0.6s,baz=166,slow=7.3,SNR=3.8						
ABKAR	**Akbulak array**	**44.13**	**329**	*eP*	**P**	**20 40 07.0**	**+1.1**
	comp=Z,1.7nm,0.5s						
USRK	**Ussuriysk Ar.**	**44.56**	**40**	P	**P**	**20 40 08.4**	**-1.0**
	comp=Z,1.4nm,0.7s,baz=258,slow=7.9,SNR=4.1						
FITZ	**Fitzroy Crossi**	**45.52**	**134**	P	**P**	**20 40 16.2**	**-1.1**
	comp=Z,5.3nm,0.5s,baz=332,slow=7.4,SNR=46						
AKTO	**Aktyubinsk**	**45.85**	**329**	P	**P**	**20 40 20.3**	**+0.7**
	comp=Z,0.9nm,0.5s,baz=41,slow=11,SNR=3.7						
MJAR	**Matsushiro Arr**	**45.93**	**53**	P	**P**	**20 40 20.5**	**+0.1**
	comp=Z,1.6nm,0.8s,baz=262,slow=10,SNR=7.4						
ASAR	**Alice Springs**	**54.98**	**133**	P	**P**	**20 41 28.3**	**-0.7**
	comp=Z,2.8nm,0.6s,baz=311,slow=6.9,SNR=49						
ASAR				LR	LR	21 06 28.0	
	comp=Z,28nm,19.4s,baz=338,slow=38						
BRTR	**Keskin Array B**	**57.51**	**308**	P	**P**	**20 41 48.2**	**+1.2**
	comp=Z,0.7nm,0.8s,baz=112,slow=8.1,SNR=6.1						
TIXI	**Tiksi**	**61.21**	**12**	P	**P**	**20 42 10.8**	**-1.0**
	comp=Z,4.5nm,0.7s,baz=226,slow=3.5,SNR=15						
STKA	**Stephens Creek**	**65.38**	**135**	P	**P**	**20 42 39.5**	**-0.6**
	comp=Z,2.4nm,0.6s,baz=318,slow=8.9,SNR=8.4						
GERES	**GERESS Array B**	**72.36**	**317**	P	**P**	**20 43 24.4**	**+1.0**
	comp=Z,1.0nm,0.7s,baz=86,slow=6.0,SNR=9.0						
CLL	**Colln**	**72.74**	**320**⇓*iP*		**P**	**20 43 27.7**	**+2.2**
	comp=Z,5.0nm,0.7s						
CLL				*i*		20 43 37.1	
CLL				*i*		20 43 43.2	
NOA	**NORSAR Array B**	**73.63**	**330**	P	**P**	**20 43 30.4**	**-0.2**
	comp=Z,0.7nm,0.7s,baz=91,slow=5.8,SNR=3.9						
TORD	**Torodi Ar. Bea**	**88.06**	**283**	P	**P**	**20 44 48.9**	**+0.5**
	comp=Z,0.7nm,0.8s,baz=80,slow=4.8,SNR=4.3						
MCK	**McKinley**	**89.03**	**23**	*eP*	**P**	**20 44 52.2**	**+0.1**
ILAR	**Eielson Array**	**89.24**	**22**	P	**P**	**20 44 52.0**	**-1.0**
	comp=Z,0.7nm,0.7s,baz=295,slow=3.8,SNR=7.4						

IDC 02 20:36:41.9±2.0,**1°.66N×126°.50E,h0**km,**mb3.7**/3,
mb1 4.0/3,**mb1mx3.4**/33,**mbtmp3.7**/3,**MS3.6**/1,**Ms1 3.6**/1,
ms1mx2.5/30,**Error ellipse: s-maj=169.6km**
s-min=24.3km az=66.0,Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LEM	**Lembang**	**20.65**	**246**	LR	LR	20 49 46.7	
	comp=Z,163nm,19.2s,baz=278,slow=38						
WRA	**Warramunga Arr**	**22.80**	**161**	P	P	20 41 45.2	-1.3
	1.6nm,0.5s,baz=339,slow=11,SNR=7.1						
ASAR	**Alice Springs**	**26.18**	**164**	P	P	20 42 19.3	+0.9
	1.0nm,0.5s,baz=351,slow=14,SNR=7.8						
MKAR	**Makanchi Array**	**59.13**	**326**	P	P	20 46 44.4	0.0
	0.3nm,0.4s,baz=118,slow=8.7,SNR=10						

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*ISCJB **02** 20:45:19.7±0.6, 21°.82S±0°.04×68°.51W±0°.10, h135km±7km, mb3.7/3, Error ellipse: s-maj=15.4km s-min=7.3km az=173.9*
*IDC **02** 20:45:19.8±0.8, 21°.91S×68°.09W, h114km±9km, mb3.6/3, mb1 3.8/6, mb1mx3.5/24, mbtmp4.0/6, Error ellipse: s-maj=34.7km s-min=14.6km az=125.0*
*GUC **02** 20:45:20.5±0.7, 21°.79S×68°.69W, h141km±7km, ML4.0*
ISC 02 20:45:19.6±0.8,**21°.80S**±0°.05×**68°.33W**±0°.08,**h120**km±8km,
n17,σ**1**§**39**/27,**mb3.9**/3,**3C-3D, Chile-Bolivia border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB09	**IPOC Station P**	**0.85**	**270**⇑*iP*		**Pn**	**20 45 41.7**	**+1.3**
PB09				*e*S	**Sn**	**20 45 57.6**	**+1.4**
PB09				IAML		20 46 00.1	
	comp=N,4μm,0.1s						
LVC	**Limon Verde**	**0.97**	**214**	P	**Pn**	**20 45 42.4**	**+0.6**
	comp=N,6μm,0.3s,baz=348,slow=11,SNR=1624						
LVC				S	**Sn**	**20 45 58.9**	**+0.4**
	comp=N,11μm,0.3s,baz=291,slow=9.3,SNR=78						
PB01	**IPOC Station P**	**1.32**	**304**⇓*iP*		**Pn**	**20 45 45.4**	**+0.3**
PB01				*i* S	**Sn**	**20 46 04.8**	**+0.4**
PB01				IAML		20 46 07.0	
	comp=N,2μm,0.2s						
PB07	**IPOC Station P**	**1.45**	**272**⇑*iP*		**Pn**	**20 45 46.9**	**+0.2**
PB07				*i* S	**Sn**	**20 46 06.3**	**-0.9**
PB07				IAML		20 46 07.8	
	comp=N,3μm,0.1s						
PB06	**IPOC Station P**	**1.47**	**232**⇓*iP*		**Pn**	**20 45 47.1**	**+0.3**
PB06				*i* S	**Sn**	**20 46 06.6**	**-0.9**
PB06				IAML		20 46 07.4	
	comp=E,3μm,0.2s						
PB04	**IPOC Station P**	**1.77**	**252**⇑*iP*		**Pn**	**20 45 50.1**	**-0.4**
PB04				*i* S	**Sn**	**20 46 11.9**	**-2.1**
PB04				IAML		20 46 16.2	
	comp=N,2μm,0.3s						
PATCX	**Punta Patache**	**1.96**	**299**	*e*P	**Pn**	**20 45 53.1**	**+0.5**
PATCX				*i* S	**Sn**	**20 46 16.7**	**-1.2**
PATCX				IAML		20 46 18.6	
	comp=E,2μm,0.2s						
PB11	**IPOC Station P**	**2.38**	**328**⇓*iP*		**Pn**	**20 45 58.9**	**+0.8**
PB11				*e*S	**Sn**	**20 46 27.8**	**+0.4**
PSGC	**Pisagua**	**2.76**	**322**	*eP*	**Pn**	**20 46 02.4**	**-0.6**
PSGC				*e*S	**Sn**	**20 46 34.7**	**-1.5**
PSGC				IAML		20 46 35.9	
	comp=N,559nm,0.4s						
LPAZ	**La Paz**	**5.48**	**2**	P	**Pn**	**20 46 42.9**	**+3.2**
	comp=N,9.7nm,0.3s,baz=187,slow=6.6,SNR=171						
SIV	**San Ignacio**	**8.97**	**51**	P	**Pn**	**20 47 26.1**	**-0.2**
	comp=N,3.1nm,0.3s,baz=242,slow=11,SNR=25						
SIV				S	**Sn**	**20 49 01.5**	**-4.2**
	comp=N,0.6nm,0.3s,baz=322,slow=23,SNR=8.1						
PLCA	**Paso Flores**	**18.97**	**185**	P	**P**	**20 49 31.8**	**+0.1**
	comp=N,0.1nm,0.3s,baz=20,slow=10.0,SNR=3.4						
PTGA	**Pitinga**	**22.47**	**22**	P	**P**	**20 50 09.7**	**+0.6**
	comp=N,2.8nm,0.3s,baz=212,slow=18,SNR=7.1						
TORD	**Torodi Ar. Bea**	**76.94**	**70**	P	**P**	**20 56 59.4**	**-0.1**
	comp=N,0.2nm,0.3s,baz=257,slow=5.2,SNR=7.0						
YKA	**Yellowknife Ar**	**91.65**	**340**	P	**P**	**20 58 13.4**	**+0.7**
	comp=N,0.6nm,0.8s,baz=133,slow=4.5,SNR=12						
WRA	**Warramunga Arr**	**132.97**	**210**	PKP	**PKPdf**	**21 04 21.9**	**+0.1**
	comp=N,0.3nm,0.6s,baz=149,slow=1.9,SNR=5.0						
MKAR	**Makanchi Array**	**145.55**	**37**	PKPbc	**PKPab**	**21 04 44.9**	**+0.4**
	comp=N,0.1nm,0.3s,baz=270,slow=2.4,SNR=3.6						

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*ISCJB **02** 20:56:22.5±0.5, 39°.75N±0°.03×25°.55E±0°.03, h4km±5km, Error ellipse: s-maj=5.1km s-min=3.8km az=44.4*
*ATH **02** 20:56:22.4, 39°.77N×25°.54E, h19km±5km, ML1.7/4, Error ellipse: s-maj=5.8km s-min=1.0km az=267.0*
*THE **02** 20:56:22.5, 39°.77N×25°.56E, h5km±2km, ML1.9/4, Error ellipse: s-maj=2.6km s-min=0.5km az=314.0*
*CSEM **02** 20:56:22.7±0.2, 39°.75N×25°.54E, h10km, ML1.7, Error ellipse: s-maj=5.1km s-min=3.9km az=52.0*
*DDA **02** 20:56:29.6, 39°.81N×26°.28E, h8km, Md2.8*
ISC 02 20:56:22.5±0.9,**39°.76N**±0°.02×**25°.55E**±0°.02,**h14**km±8km,
n29,σ**0**§**70**/50,**Aegean Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LIA	**Limnos Island**	**0.31**	**296**	P	**Pg**	**20 56 28.9**	**-0.1**
LIA				S	**Sg**	**20 56 33.1**	**-0.3**
LIA	**Limnos Island**	**0.31**	**296**	P	**Pg**	**20 56 29.2**	**+0.2**
LIA				S	**Sg**	**20 56 33.7**	**+0.3**
BOZC	**Bozcaada**	**0.40**	**78**	*i* P	**Pg**	**20 56 30.1**	**-0.4**
BOZC				*i* S	**Sg**	**20 56 36.2**	**+0.2**
SIGR	**SIGRI**	**0.60**	**156**	P	**Pg**	**20 56 34.0**	**-0.2**
SIGR				S	**Sb**	**20 56 42.8**	**-0.2**
SIGR	**SIGRI**	**0.60**	**156**	P	**Pg**	**20 56 34.0**	**-0.2**
SIGR				S	**Sb**	**20 56 42.6**	**-0.4**
SIGR	**SIGRI**	**0.60**	**156**	P	**Pg**	**20 56 33.8**	**-0.4**
SIGR				S	**Sb**	**20 56 42.6**	**-0.4**
SIGR				AML	AML	20 56 43.8	
	comp=N,434μm,0.6s						
SIGR				AML	AML	20 56 43.8	
	comp=E,312μm,0.3s						
EZN	**Ezine**	**0.60**	**84**	P	**Pg**	**20 56 33.9**	**-0.4**
EZN				S	**Sg**	**20 56 42.1**	**-0.2**
EZN	**Ezine**	**0.60**	**84**	P	**Pg**	**20 56 33.9**	**-0.4**
EZN				S	**Sg**	**20 56 42.1**	**-0.2**
SMTH	**Samothraki Isl**	**0.71**	**359**	P	**Pg**	**20 56 36.1**	**-0.3**
SMTH	**Samothraki Isl**	**0.71**	**359**	P	**Pg**	**20 56 36.1**	**-0.3**
SMTH				S	**Sb**	**20 56 47.2**	**+0.9**
SMTH	**Samothraki Isl**	**0.71**	**359**	P	**Pb**	**20 56 36.6**	**0.0**
SMTH				S	**Sb**	**20 56 47.2**	**+0.9**
SMTH				AML	AML	20 56 48.8	
	comp=E,76μm,0.2s						
SMTH				AML	AML	20 56 49.2	
	comp=N,52μm,0.2s						
PRK	**Paraskevi**	**0.76**	**132**	P	**Pg**	**20 56 37.1**	**-0.2**
PRK				S	**Sb**	**20 56 47.7**	**0.0**
PRK	**Paraskevi**	**0.76**	**132**	P	**Pb**	**20 56 37.4**	**-0.1**
PRK				S	**Sb**	**20 56 47.7**	**0.0**
PRK	**Paraskevi**	**0.76**	**132**	P	**Pb**	**20 56 37.4**	**-0.1**
PRK				S	**Sn**	**20 56 48.7**	**-1.3**
PRK				AML	AML	20 56 51.5	
	comp=E,224μm,0.6s						
PRK				AML	AML	20 56 54.5	
	comp=N,170μm,0.8s						
AYVA	**Ayvalik**	**0.99**	**117**	P	**Pn**	**20 56 41.8**	**-0.2**
AYVA				S	**Sn**	**20 56 55.8**	**0.0**
AYVA	**Ayvalik**	**0.99**	**117**	*i* P	**Pn**	**20 56 41.8**	**-0.2**
AYVA				*i* S	**Sn**	**20 56 55.8**	**0.0**
ALN	**Alexandroupoli**	**1.20**	**18**	P	**Pn**	**20 56 44.5**	**-0.3**
ALN				S	**Sg**	**20 57 01.2**	**0.0**
ALN	**Alexandroupoli**	**1.20**	**18**	P	**Pn**	**20 56 44.5**	**-0.3**
ALN				S	**Sg**	**20 57 01.2**	**0.0**
ALN	**Alexandroupoli**	**1.20**	**18**	P	**Pn**	**20 56 44.2**	**-0.6**
ALN				S	**Sb**	**20 57 00.5**	**+0.2**
ALN				AML	AML	20 57 01.6	
	comp=E,46μm,0.6s						
ALN				AML	AML	20 57 03.4	
	comp=N,28μm,0.3s						
OUR	**Ouranopolis**	**1.33**	**296**	P	**Pn**	**20 56 46.3**	**-0.4**
OUR	**Ouranopolis**	**1.33**	**296**	P	**Pn**	**20 56 46.3**	**-0.4**
KESN	**Edirne-Kesan**	**1.37**	**39**	P	**Pg**	**20 56 50.4**	**+1.4**
KESN				S	**Sg**	**20 57 07.0**	**+0.2**
KESN	**Edirne-Kesan**	**1.37**	**39**	*i* P	**Pg**	**20 56 50.4**	**+1.4**
KESN				*i* S	**Sg**	**20 57 07.0**	**+0.2**
AOS	**Alonnisos**	**1.42**	**246**	P	**Pg**	**20 56 49.5**	**-0.3**
AOS	**Alonnisos**	**1.42**	**246**	P	**Pg**	**20 56 49.5**	**-0.3**
CHOS	**Chios island**	**1.43**	**164**	P	**Pn**	**20 56 48.0**	**0.0**
CHOS	**Chios island**	**1.43**	**164**	P	**Pn**	**20 56 48.0**	**0.0**
CHOS	**Chios island**	**1.43**	**164**	P	**Pg**	**20 56 50.7**	**+0.7**
CHOS				S	**Sg**	**20 57 11.9**	**+3.4**
BALY	**Balya**	**1.60**	**90**	*i* P	Pn	20 56 42.0	-8.4
BALY				*i* S	**Sb**	**20 57 11.4**	**-0.4**

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*NIED **02** 21:05:00, 39°.40N×144°.00E, h14km, Mw3.7 Best double couple: M0=4.70000×10^14 NP1:φ=198.00000°, δ=40.00000°, λ=87.00000°. NP2:φ=21.00000°, δ=50.00000°, λ=92.00000°.*
*JMA **02** 21:05:40.4±0.2, 39°.42N×143°.99E, h18km, M3.9*
*IDC **02** 21:05:41.1±1.1, 39°.22N×143°.84E, h0km, mb3.6/7, mb1 3.8/11, mb1mx3.6/36, mbtmp3.7/11, ML3.3/4, MS2.9/5, Ms1 2.9/5, ms1mx2.4/60, Error ellipse: s-maj=25.6km s-min=18.9km az=115.0*
*ISCJB **02** 21:05:42.3±0.8, 39°.29N±0°.07×143°.84E±0°.08, h20km, mb3.5/7, MS3.9/1, Error ellipse: s-maj=10.2km s-min=8.0km az=144.0*
ISC 02 21:05:44.0±0.9,**39°.25N**±0°.07×**143°.75E**±0°.09,**h20**km,**n26,**
σ**1**§**46**/25,**mb3.6**/7,**Off east coast of Honshu**

| Code |

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ARG				S	Sn	21 19 57.7	-0.1
ZKR	**Zakros**	**1.36**	**266**	P	Pn	21 19 47.9	-0.6
ZKR				S	Sn	21 20 06.5	-0.1
ZKR	**Zakros**	**1.36**	**266**	P	Pn	21 19 47.9	-0.6
ZKR				S	Sn	21 20 06.5	-0.1
ZKR	**Zakros**	**1.36**	**266**	P	Pn	21 19 47.6	-0.8
ZKR				AML	AML	21 20 18.4	
	comp=E,342μm,0.4s						
ZKR				AML	AML	21 20 22.1	
	comp=N,400μm,0.5s						
NIS1	**Nisyros Isl.**	**1.48**	**338**	P	Pn	21 19 50.5	+0.3
NIS1	**Nisyros Isl.**	**1.48**	**338**	P	Pb	21 19 50.9	-0.2
NIS1	**Nisyros Isl.**	**1.48**	**338**	P	Pb	21 19 50.9	-0.2
NIS1				AML	AML	21 20 21.7	
	comp=N,602μm,0.4s						
NIS1				AML	AML	21 20 21.7	
	comp=E,653μm,0.4s						
KSL	**Kastellorizon**	**1.67**	**56**	P	Pn	21 19 52.3	-0.4
AKAS	**Kas**	**1.73**	**54**	P	Pb	21 19 54.4	-1.0
AKAS	**Kas**	**1.73**	**54**	*i* P	Pb	21 19 54.4	-1.0
TURN	**Turunc**	**1.74**	**20**	*i* P	Pn	21 19 51.8	-1.9
BDRM	**Kayabasi**	**1.86**	**349**	P	Pb	21 19 57.0	-0.6
BDRM	**Kayabasi**	**1.86**	**349**	*i* P	Pb	21 19 57.0	-0.6
BODT	**Bodrum**	**1.89**	**346**	P	Pn	21 19 56.1	+0.4
BODT	**Bodrum**	**1.89**	**346**	P	Pn	21 19 56.1	+0.4
LAST	**Lasithi**	**1.96**	**269**	P	Pn	21 19 57.0	+0.2
LAST	**Lasithi**	**1.96**	**269**	P	Pn	21 19 57.0	+0.2
LAST	**Lasithi**	**1.96**	**269**	P	Pn	21 19 57.8	+1.0
SANT	**Santorini**	**2.27**	**301**	P	Pn	21 20 02.0	+1.0
SANT	**Santorini**	**2.27**	**301**	P	Pn	21 20 02.0	+1.0
THR3	**Thira Island,**	**2.33**	**301**	P	Pn	21 20 02.3	+0.5
THR3	**Thira Island,**	**2.33**	**301**	P	Pn	21 20 02.3	+0.5
GOLH	**Golhisar**	**2.42**	**34**	P	Pn	21 20 04.8	+1.6
GOLH	**Golhisar**	**2.42**	**34**	*i* P	Pn	21 20 04.8	+1.6
AYDN	**Tasoluk**	**2.43**	**0**	P	Pn	21 20 03.5	+0.3
AYDN	**Tasoluk**	**2.43**	**0**	*i* P	Pn	21 20 03.5	+0.3
IDI	**Anoyia**	**2.44**	**272**	P	Pn	21 20 04.3	+0.9
IDI	**Anoyia**	**2.44**	**272**	P	Pn	21 20 04.3	+0.9
GCAM	**G?zelcaml?**	**2.52**	**348**	P	Pn	21 20 06.1	+1.7
GCAM	**G?zelcaml?**	**2.52**	**348**	*i* P	Pn	21 20 06.0	+1.7
SMG	**Samos**	**2.61**	**342**	P	Pn	21 20 06.5	+0.8
SMG	**Samos**	**2.61**	**342**	P	Pn	21 20 06.5	+0.8
APE	**Apeiranthos**	**2.64**	**315**	P	Pn	21 20 04.3	-1.8
APE	**Apeiranthos**	**2.64**	**315**	P	Pn	21 20 04.3	-1.8
IMMV	**Iera Moni Meta**	**3.19**	**275**	P	Pn	21 20 16.0	+2.4
IMMV	**Iera Moni Meta**	**3.19**	**275**	P	Pn	21 20 16.0	+2.4
KHAL	**Karahalli**	**3.39**	**22**	P	Pn	21 20 15.1	-1.4
KHAL	**Karahalli**	**3.39**	**22**	*i* P	Pn	21 20 15.1	-1.4
DEMI	**Demirci**	**3.87**	**10**	P	Pn	21 20 22.9	-0.1
DEMI	**Demirci**	**3.87**	**10**	*i* P	Pn	21 20 22.9	-0.1
ERMK	**Ermenek**	**4.33**	**70**	P	Pn	21 20 30.7	+1.2
ERMK	**Ermenek**	**4.33**	**70**	*i* P	Pn	21 20 30.7	+1.2

NIED ***02*** *21:25:00, 40.°10N×142.°70E, h35km, Mw5.1 Best double couple: M0=4.51000×10^16 NP1:φs=182.00000°, δ=20.00000°, λ=69.00000°. NP2:φs=24.00000°, δ=71.00000°, λ=98.00000°.*
BJI ***02*** *21:25:45.0, 39.°93N×142.°81E, h31km, mb5.1/81, mB5.0/56, Ms4.7/90, Ms7 4.6/83*
JMA ***02*** *21:25:47.9±0.2, 40.°06N×142.°72E, h31km±2km, M5.1*
JMA Felt III J1.
ISCJB ***02*** *21:25:48.8±0.4, 40.°08N±0.°02×142.°59E±0.°02, h40km±3km, mb5.1/228, MS4.5/78, Error ellipse: s-maj=3.8km s-min=2.5km az=138.6*
MOS ***02*** *21:25:48.3±0.8, 40.°21N×142.°55E, h31km, mb5.4/84, MS4.7/29, Error ellipse: s-maj=6.3km s-min=3.6km az=107.3*
NEIC ***02*** *21:25:49.5±0.1, 40.°10N×142.°56E, mb5.1/110, Error ellipse: s-maj=4.3km s-min=2.7km az=140.0*
NEIC Recorded [3 JMA] in Iwate.
GCMT ***02*** *21:25:49.5±0.2, 40.°13N×142.°77E, h37km, MW5.1/86, Moment Tensor Solution. s55,c76; s86,c150; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr4.08±.17; Mθθ-0.30±.10; Mφφ-3.78±.11; Mrθ1.27±.10; Mrφ-0.71±.06; Mθφ3.27±.11; Best double couple: M0=5.31900×10^16 NP1:φs18.00000°, δ66.00000°, λ95.00000°. NP2: φs185.00000°, δ25.00000°, λ79.00000°. Principal axes: T 5.4240, Plg69.0000°, Azm298.0000°; N -0.2120, Plg5.0000°, Azm195.0000°; P -5.2140, Plg21.0000°, Azm104.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
IDC ***02*** *21:25:50.0±1.8, 40.°08N×142.°71E, h40km±15km, mb4.7/48, mb1 4.7/56, mb1mx4.6/79, mbtmp4.9/56, ML4.1/7, MS4.3/44, Ms1 4.3/44, ms1mx4.2/57 Error ellipse: s-maj=11.6km s-min=9.0km az=113.0*
ISC 02 21:25:49.7±0.3, 40.°07N±0.°03×142.°67E±0.°04, h38km±1km, h38km:pP-P, n807, σ1≑45/884, mb5.1/242, MS4.6/83, 101C-32D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JTH	**Tanohata**	**0.63**	**259**	⇓P	Pn	21 26 01.0	-1.2
JTH				S	Sn	21 26 09.9	-1.1
MIYJ	**Miyakonagasawa**	**0.82**	**233**	⇓P	Pn	21 26 03.5	-1.1
MIYJ				S	Sn	21 26 14.2	-1.3
JANG	**Nango**	**0.94**	**290**	⇓P	Pn	21 26 05.4	-0.9
JKZ	**Kuzumaki**	**1.03**	**266**	⇓P	Pn	21 26 07.2	-0.4
JOM	**Ohasama**	**1.21**	**241**	⇓P	Pn	21 26 09.9	-0.2
JTM	**Tenmabayashi**	**1.42**	**301**	⇓P	Pn	21 26 13.3	+0.4
JMK	**Ichinoseki**	**1.58**	**226**	⇓P	Pn	21 26 15.6	+0.5
JMK				S	Sn	21 26 35.5	+1.3
JRG	**Rokugo**	**1.71**	**248**	⇓P	Pn	21 26 17.5	+0.7
ERM	**Erimo**	**1.98**	**11**	⇑*e*P	Pn	21 26 19.9	-0.7
ERM				pmax	pmax		
	comp=Z,926nm,1.0s						
ERM	**Erimo**	**1.98**	**11**	*e*Pn	Pn	21 26 20.2	-0.4
ERM				*e*Sn	Sn	21 26 44.5	+0.3
ASAJ	**Asahikawa**	**4.05**	**359**	P	Pn	21 26 49.5	+0.5
	comp=Z,14nm,0.3s,baz=219,slow=9.9,SNR=35						
ASAJ				S	Sn	21 27 36.7	+1.5
	comp=Z,84nm,0.3s,baz=215,slow=32,SNR=6.3						
ASAJ	**Asahikawa**	**4.05**	**359**	*e*Pn	Pn	21 26 49.5	+0.5
ASAJ				*e*Sn	Sn	21 27 38.2	+3.1
YUK	**Yuzh-Kuril'sk**	**4.62**	**30***c*	*i*P	Pn	21 26 57.3	+0.4
YUK				*i* S	Sn	21 27 46.4	-2.9
YUK				pmax	pmax		
	comp=E,245nm,0.3s						
YUK				pmax	pmax		
	comp=Z,651nm,0.3s						
YUK				pmax	pmax		
	comp=N,484nm,0.2s						
YUK				MLR	MLR		
	comp=Z,4μm,16.0s						
SHO	**Shikotan**	**4.91**	**38**	⇑*i*P	Pn	21 26 59.2	-1.6
SHO				*i* S	Sn	21 27 50.4	-5.9
SHO				pmax	pmax		
	comp=Z,194nm,0.6s						
SHO				pmax	pmax		
	comp=N,117nm,0.3s						
SHO				pmax	pmax		
	comp=E,152nm,0.7s						
MJAR	**Matsushiro Arr**	**4.97**	**226**	P	Pn	21 27 03.4	+1.7
	comp=E,14nm,0.3s,baz=31,slow=14,SNR=711						
MJAR				LR	LR	21 29 14.0	
	comp=E,4μm,19.9s,baz=50,slow=41						
MJB9	**Matsu-Tunnel**	**4.97**	**226**	*e*Pn	Pn	21 27 04.3	+2.6
MAJO	**Matsushiro**	**4.97**	**226***c*	*i*P	Pn	21 27 03.7	+2.0
MAJO	**Matsushiro**	**4.97**	**226**	*e*Pn	Pn	21 27 04.3	+2.6
MAT	**Matsushiro**	**4.97**	**226**	P	Pn	21 27 04.1	+2.4
MAT				S	Sn	21 27 59.1	+1.2
KUR	**Kuril'sk**	**6.43**	**35**	*e*P	Pn	21 27 21.3	-0.4
KUR				*e*S	Sn	21 28 30.3	-3.5
KUR				pmax	pmax		
	comp=N,81nm,0.6s						
KUR				pmax	pmax		
	comp=E,41nm,0.6s						
KUR				pmax	pmax		
	comp=Z,104nm,0.6s						
KUR				smax	smax		
	comp=E,209nm,0.9s						
KUR				smax	smax		
	comp=N,214nm,1.0s						
INU	**Inuyama**	**6.50**	**225**	*e*Pn	Pn	21 27 24.6	+1.9
YSS	**Yuzh-Sakhalins**	**6.89**	**0**	⇑*i*P	Pn	21 27 30.0	+2.0
YSS				*e*S	Sn	21 28 48.2	+3.2
YSS				pmax	pmax		
	comp=Z,150nm,0.8s						
YSS				MLR	MLR		
	comp=Z,2μm,15.0s						
YSS	**Yuzh-Sakhalins**	**6.89**	**0**	*e*Pn	Pn	21 27 29.2	+1.3
JHJ2	**Mitsune**	**7.31**	**199**	*e*Pn	Pn	21 27 33.3	-0.5
JHJ	**Hachijo jima 2**	**7.31**	**199**	P	Pn	21 27 34.5	+0.7
	comp=Z,29nm,0.3s,baz=339,slow=23,SNR=10.0						
JHJ				S	Sn	21 28 51.0	-4.6
	comp=Z,27nm,0.3s,baz=72,slow=20,SNR=3.3						
VLA	**Vladivostok**	**8.64**	**294**	⇓*e*P	Pn	21 27 54.2	+2.2
VLA				*e*S	Sn	21 29 28.9	+0.9
VLA				pmax	pmax		
	comp=Z,61nm,0.6s						
USRK	**Ussuriysk Ar.**	**8.94**	**301**	P	Pn	21 27 57.6	+1.5
	comp=Z,10nm,0.3s,baz=109,slow=14,SNR=79						
USRK				LR	LR	21 31 20.1	
	comp=Z,4μm,18.7s,baz=106,slow=37						
HABR	**Khabarovsk**	**10.02**	**330**	*e*P	Pn	21 28 08.1	-2.8
HABR				*e*S	Sn	21 29 59.6	-2.3
HABR				pmax	pmax		
	comp=Z,55nm,1.2s						
HABR				pmax	pmax		
	comp=N,36nm,1.2s						
HABR				pmax	pmax		
	comp=E,33nm,1.2s						
HABR				MLR	MLR		
	comp=Z,2μm,15.0s						
MDJ	**Mudanjiang**	**10.69**	**299**	P	Pn	21 28 22.3	+2.2
MDJ				S	Sn	21 30 19.5	+1.1
MDJ				PcP	PcP	21 34 19.6	-0.8
MDJ				ScP	ScP	21 37 49.9	+0.2
MDJ				PcS	PcS	21 37 54.2	+0.3
MDJ				pmax	pmax		
	comp=Z,76nm,1.1s						
MDJ				pmax	pmax		
	comp=Z,280nm,4.7s						
MDJ				LR	LR		
	comp=Z,980nm,14.8s						
MDJ				LR	LR		
	comp=Z,2μm,16.4s						
MDJ				LR	LR		
	comp=Z,4μm,16.2s						
MDJ	**Mudanjiang**	**10.69**	**299**	*e*Pn	Pn	21 28 23.8	+3.7
TYV	**Tymovskoe**	**10.80**	**360**	*e*P	Pn	21 28 21.8	+0.3
TYV				*e*S	Sn	21 30 16.0	-5.0
TYV				pmax	pmax		
	comp=N,44nm,1.0s						
TYV				pmax	pmax		
	comp=Z,62nm,1.0s						
TYV				smax	smax		
	comp=E,1μm,6.0s						
TYV				MLR	MLR		
	comp=N,3μm,20.0s						
TYV				MLR	MLR		
	comp=Z,3μm,18.0s						
JNU	**Nakatsue**	**11.73**	**237**	P	Pn	21 28 35.1	+0.7
	comp=Z,0.7nm,0.3s,baz=45,slow=5.2,SNR=19						
JNU				LR	LR	21 33 16.5	
	comp=Z,1μm,19.5s,baz=40,slow=38						
KSRS	**Korea Array**	**11.80**	**262**	P	Pn	21 28 36.7	+1.3
	comp=Z,0.8nm,0.3s,baz=78,slow=12,SNR=68						
KSRS				LR	LR	21 32 45.9	
	comp=Z,2μm,20.1s,baz=74,slow=35						
KS01	**Wonju Array Si**	**11.82**	**262**	*e*Pn	Pn	21 28 39.5	+4.0
KS15	**Wonju Array Si**	**11.84**	**262**	*e*Pn	Pn	21 28 36.7	+0.9
KSAR	**Wonju Array Be**	**11.84**	**262**	P	Pn	21 28 36.7	+0.9
KSAR	**Wonju Array Be**	**11.84**	**262**	P	Pn	21 28 36.7	+0.9
KLR	**Kul'dur**	**12.00**	**323**	P	Pn	21 28 39.1	+1.1
	comp=Z,0.7nm,0.3s,baz=127,slow=12,SNR=20						
KLR				LR	LR	21 33 29.5	
	comp=Z,3μm,18.2s,baz=136,slow=38						
KLR	**Kul'dur**	**12.00**	**323**	P	Pn	21 28 39.1	+1.1
KLR				pmax	pmax		
	comp=Z,1.0nm,0.3s						
KLR				MLR	MLR		
	comp=Z,3μm,18.2s						
INCN	**Inchon**	**12.78**	**263**	*e*Pn	P	21 28 55.5	-3.6
NKL	**Nikolayevsk**	**13.16**	**355**	*e*P	Pn	21 28 53.0	-0.7
NKL				pmax	pmax		
	comp=N,22nm,1.0s						
NKL				pmax	pmax		
	comp=Z,43nm,1.0s						
NKL				MLR	MLR		
	comp=N,500nm,16.0s						
NKL				MLR	MLR		
	comp=Z,1μm,16.0s						
CN2	**Changchun**	**13.35**	**292**	*e*P	Pn	21 28 58.4	+1.9
CN2				*e*pP	P	21 29 05.6	+0.2
CN2				*e*S	Sn	21 31 26.4	+2.9
CN2				pmax	pmax		
	comp=Z,20nm,1.2s						
CN2				pmax	pmax		
	comp=Z,200nm,5.0s						
CN2				LR	LR		
	comp=Z,1μm,14.0s						
CN2				LR	LR		
	comp=Z,2μm,14.0s						
CN2				LR	LR		
	comp=Z,2μm,18.0s						
SNY	**Shenyang**	**14.54**	**283**	⇓P	Pn	21 29 14.0	+1.4
SNY				pmax	pmax		
	comp=Z,5.0nm,0.5s						
SNY				pmax	pmax		
	comp=Z,410nm,4.9s						
SNY				LR	LR		
	comp=Z,1μm,12.8s						
SNY				LR	LR		
	comp=Z,2μm,21.8s						
SNY				LR	LR		
	comp=Z,3μm,19.4s						
DL2	**Dalian**	**16.29**	**273**	⇑P	Pn	21 29 35.6	+0.2
DL2				S	Sn	21 32 37.7	+2.8
DL2				pmax	pmax		
	comp=Z,57nm,0.6s						
DL2				pmax	pmax		
	comp=Z,640nm,7.0s						
DL2				LR	LR		
	comp=Z,360nm,15.0s						
DL2				LR	LR		
	comp=Z,1μm,17.7s						
DL2				LR	LR		
	comp=Z,1μm,18.7s						
PETK	**Petropavlovsk-**	**16.59**	**33**	P	P	21 29 40.5	-0.8
	comp=Z,0.2nm,0.3s,baz=155,slow=11,SNR=4.0						
PETK				LR	LR	21 36 58.1	
	comp=Z,454nm,20.0s,baz=219,slow=40						
PEA1	**Petropavlovsk-**	**16.60**	**33**	*e*Pn	P	21 29 40.5	-0.8
HIA	**Hailar**	**18.66**	**307**	*e*P	P	21 30 02.6	-1.6
HIA				pmax	pmax		
	comp=Z,45nm,0.8s						
HIA	**Hailar**	**18.66**	**307**	*e*P	P	21 30 02.5	-1.6
	comp=Z,45nm,0.8s						
SSE	**Sheshan**	**19.59**	**250**	P	P	21 30 15.2	+0.7
SSE				S	S	21 33 47.1	-6.4
SSE				pmax	pmax		
	comp=Z,68nm,0.9s						
SSE				pmax	pmax		
	comp=Z,160nm,6.7s						
SSE				LR	LR		
	comp=Z,520nm,19.5s						
SSE				LR	LR		
	comp=Z,400nm,19.8s						
SSE				LR	LR		
	comp=Z,750nm,15.3s						
MA2	**Magadan**	**20.19**	**12**	P	P	21 30 19.7	-1.0
	comp=Z,12nm,0.6s,baz=232,slow=8.6,SNR=12						
MA2				LR	LR	21 39 19.5	
	comp=Z,937nm,18.6s,baz=222,slow=40						
BJI	**Beijing**	**20.26**	**279**	P	P	21 30 19.7	-1.9
BJI				sP	pP	21 30 32.9	+1.5
BJI				S	S	21 34 06.9	+0.2
BJI				sS	sS	21 34 19.4	-2.9
BJI				pmax	pmax		
	comp=Z,34nm,1.3s						
BJI				pmax	pmax		
	comp=Z,140nm,3.2s						
BJI				LR	LR		
	comp=Z,470nm,14.8s						
BJI				LR	LR		
	comp=Z,1μm,17.6s						
BJI				LR	LR		
	comp=Z,1μm,19.8s						
BJT	**Baijiatuau**	**20.27**	**278**	*e*P	P	21 30 20.3	-1.5
BJT				pmax	pmax		
	comp=Z,56nm,0.9s						
BJT	**Baijiatuau**	**20.27**	**278**	*e*P	P	21 30 20.3	-1.5
	comp=Z,56nm,0.9s						
CLNS	**Chul'man**	**20.40**	**331**	*e*P	P	21 30 23.1	0.0
CLNS				*e*		21 30 38.4	
CLNS				*e*S	S	21 34 09.2	-0.2
CLNS				*e*SS	SnSn	21 34 21.7	-7.2
CLNS				*e*		21 34 34.3	
CLNS				pmax	pmax		
	comp=E,10.0nm,1.1s						
CLNS				pmax	pmax		
	comp=Z,81nm,0.8s						
CLNS				pmax	pmax		
	comp=N,49nm,1.1s						
CLNS				pmax	pmax		
	comp=E,44nm,1.0s						
CLNS				pmax	pmax		
	comp=Z,51nm,1.0s						
CLNS				pmax	pmax		
	comp=N,85nm,1.1s						
CLNS				smax	smax		
	comp=E,52nm,9.1s						
CLNS				smax	smax		
	comp=N,194nm,10.7s						
CLNS				MLR	MLR		
	comp=N,1μm,15.0s						
CLNS				MLR	MLR		
	comp=Z,1μm,15.0s						
CLNS				MLR	MLR		
	comp=E,660nm,16.0s						
TIA	**Tai'an**	**20.43**	**267**	⇓P	P	21 30 22.2	-1.4
TIA				pmax	pmax		
	comp=E,40nm,0.8s						
TIA				LR	LR		
	comp=E,680nm,17.7s						
TIA				LR	LR		
	comp=E,2μm,16.9s						
TIA				LR	LR		
	comp=E,2μm,16.9s						
NJ2	**Nanjing**	**20.80**	**255**	*e*P	P	21 30 26.8	-0.8
NJ2				S	Sn	21 34 22.8	-1.3
NJ2				pmax	pmax		
	comp=E,62nm,0.6s						
NJ2				LR	LR		
	comp=E,500nm,8.7s						
NJ2				LR	LR		
	comp=E,1μm,14.6s						
NJ2				LR	LR		
	comp=E,1μm,16.3s						
CIT	**Chita**	**23.31**	**311**	*e*P	P	21 30 50.7	-3.3
CIT				*e*		21 31 04.8	
CIT				*e*		21 31 23.4	
CIT				pmax	pmax		
	comp=Z,211nm,1.3s						
YAK	**Yakutsk**	**23.37**	**345**	P	P	21 30 51.8	-2.6
	comp=Z,139nm,0.8s,baz=345,slow=2.3,SNR=30						
YAK				LR	LR	21 41 39.5	
	comp=Z,410nm,18.2s,baz=150,slow=41						
YAK	**Yakutsk**	**23.37**	**345**	*e*P	P	21 30 51.3	-3.1
YAK				*e*		21 34 41.2	
YAK				*e*S	S	21 35 00.2	-4.2
YAK				*e*		21 42 02.0	
YAK				pmax	pmax		
	comp=Z,107nm,0.9s						
YAK				pmax	pmax		
	comp=N,31nm,1.0s						
YAK				pmax	pmax		
	comp=E,16nm,1.1s						
YAK				pmax	pmax		
	comp=Z,75nm,0.9s						
YAK				pmax	pmax		
	comp=E,32nm,1.1s						
YAK				pmax	pmax		
	comp=N,37nm,0.8s						
YAK				smax	smax		
	comp=N,522nm,2.2s						
YAK				smax	smax		
	comp=E,364nm,2.3s						
YAK				MLR	MLR		
	comp=E,553nm,18.0s						
YAK				MLR	MLR		
	comp=Z,570nm,15.0s						
YAK				MLR	MLR		
	comp=N,549nm,16.0s						
YAK	**Yakutsk**	**23.37**	**345**	*e*P	P	21 30 51.8	-2.6
	comp=N,118nm,0.8s						
YHNB	**Yeheng**	**23.56**	**236**	*e*P	P	21 30 56.7	0.0
	comp=N,67nm,1.3s						
HHC	**Hu-ho-hao-te**	**23.62**	**282**	*e*P	P	21 30 54.8	-2.4
HHC				sP	pP	21 31 07.7	+0.1
HHC				S	S	21 35 08.0	-1.1
HHC				sS	sS	21 35 22.4	-4.4
HHC				pmax	pmax		
	comp=N,31nm,0.9s						
HHC				pmax	pmax		
	comp=N,230nm,4.2s						
HHC				LR	LR		
	comp=N,1μm,12.4s						
HHC				LR	LR		
	comp=N,2μm,13.5s						
HHC				LR	LR		
	comp=N,2μm,12.5s						
SEY	**Seymchan**	**23.63**	**11**	P	P	21 30 55.6	-1.3
	comp=N,46nm,0.8s,baz=193,slow=6.5,SNR=30						
SEY	**Seymchan**	**23.63**	**11**	⇓*e*P	P	21 30 55.7	-1.2
NACB	**Ninganchiao**	**23.78**	**235**	*e*P	P	21 30 54.5	-4.1
	comp=N,20nm,0.7s						
SSLB	**Suanglung**	**24.46**	**235**	*e*P	P	21 31 02.9	-2.1
	comp=N,18nm,0.8s						
YULB	**Yu-li**	**24.53**	**234**	*e*P	P	21 31 03.7	-2.0
	comp=N,29nm,0.9s						
BTO	**Baotou**	**24.82**	**282**	*e*P	P	21 31 05.4	-2.8
WHN	**Wuhan**	**24.90**	**256**	⇑*i*P	P	21 31 08.5	-0.4
WHN				pP	pP	21 31 13.9	-5.6
WHN				sP	sP	21 31 16.8	-7.4
WHN				S	S	21 35 23.3	-6.2
WHN				pmax	pmax		
	comp=N,72nm,0.8s						
WHN				LR	LR		
	comp=N,620nm,11.7s						
WHN				LR	LR		
	comp=N,2μm,17.1s						
WHN				LR	LR		
	comp=N,3μm,16.8s						
TPUB	**Ta-pu**	**25.02**	**235**	*e*P	P	21 31 09.8	-0.2
	comp=N,29nm,0.8s						
TWG	**Pinlang**	**25.09**	**233**	*e*P	P	21 31 10.8	0.0
	comp=N,188nm,0.7s						
QZH	**Quanzhou**	**25.18**	**240**	⇑P	P	21 31 07.2	-4.3
QZH				pP	pP	21 31 17.1	-5.0
QZH				S	S	21 35 29.2	-4.9
QZH				sS	sS	21 35 49.4	-2.4
QZH				LR	LR		
	comp=N,1μm,16.3s						
QZH				LR	LR		
	comp=N,1μm,14.4s						
QZH				LR	LR		
	comp=N,2μm,15.0s						
BOD	**Bodaibo**	**25.58**	**324**	⇑*i*P	P	21 31 14.5	-0.3
BOD				pmax	pmax		
	comp=Z,129nm,0.8s						
GUMO	**Guam**	**26.45**	**175**	LR	LR	21 40 31.1	
	comp=Z,484nm,21.6s,baz=18,slow=33						
ULN	**Ulaanbaatar**	**26.61**	**299***c*	*i*P	P	21 31 24.1	-0.3
ULN				pmax	pmax		
	comp=Z,12nm,0.6s						
ULN	**Ulaanbaatar**	**26.61**	**299**	*e*P	P	21 31 24.3	-0.1
	comp=Z,15nm,0.7s						
SONA1	**Songino Array**	**27.04**	**299**	*e*P	P	21 31 27.7	-0.6
SONA0	**Songino Array**	**27.05**	**299**	*e*P	P	21 31 27.4	-0.9
	comp=Z,85nm,1.6s						
SONM	**Songino Array**	**27.05**	**299**	P	P	21 31 27.4	-0.9
	comp=Z,24nm,0.9s,baz=99,slow=8.9,SNR=82						
SONM				LR	LR	21 42 46.1	
	comp=Z,2μm,18.7s,baz=96,slow=38						
XAN	**Xi'an**	**27.49**	**268**	P	P	21 31 31.0	-1.3
XAN				pP	pP	21 31 40.0	-3.0
XAN				sP	sP	21 31 44.2	-3.4
XAN				PP	PnPn	21 32 23.2	+5.2
XAN				S	S	21 36 15.2	+4.7
XAN				pmax	pmax		
	comp=Z,14nm,0.7s						
XAN				pmax	pmax		
	comp=Z,85nm,8.4s						
XAN				LR	LR		
	comp=Z,280nm,16.5s						
XAN				LR	LR		
	comp=Z,910nm,16.5s						
XAN				LR	LR		
	comp=Z,880nm,16.7s						
ENH	**Enshi**	**28.69**	**260**	*e*P	P	21 31 41.9	-1.1

comp=Z,70nm,1.1s
IRK Irkutsk 28.90 308 *e*P P 21 31 44.4 -0.3
IRK *e* 21 32 02.1
IRK pmax pmax
comp=Z,47nm,0.8s
TLY Talaya 29.20 307 P **P 21 31 47.5 +0.1**
comp=Z,8.1nm,0.7s,baz=131,slow=9.5,SNR=17
TLY LR LR 21 44 14.1
comp=Z,1μm,18.4s,baz=100,slow=38
TLY Talaya 29.20 307*c i*P P 21 31 47.7 +0.3
TLY *e*S **S 21 36 38.5 +1.4**
TLY pmax pmax
comp=Z,29nm,1.2s
TLY MLR MLR
comp=Z,871nm,15.0s
TLY Talaya 29.20 307 *e*P **P 21 31 47.9 +0.5**
ZAK Zakamensk 29.28 304 *e*P **P 21 31 47.6 -0.6**
ZAK pmax pmax
comp=Z,30nm,1.3s
GZH Guangzhou 29.99 244 *e*P **P 21 31 50.0 -4.5**
LZH Lanzhou 30.65 275 *e*P **P 21 31 59.9 -0.7**
LZH pP pP 21 32 09.1 -2.2
LZH sP sP 21 32 12.9 -3.0
LZH PP **PnPn 21 33 02.3 +1.5**
LZH *e*S S 21 36 50.0 -10
LZH SS **SnSn 21 38 41.8 +2.0**
LZH pmax pmax
comp=Z,60nm,1.5s
LZH pmax pmax
comp=Z,160nm,4.5s
LZH LR LR
comp=Z,1μm,13.4s
LZH LR LR
comp=Z,2μm,14.6s
LZH LR LR
comp=Z,2μm,16.2s
MOY Mondy 30.84 306 *e*P **P 21 32 01.7 -0.3**
MOY pmax pmax
comp=Z,47nm,3.1s
BILL Bilibino 30.84 17*c i*P P 21 32 01.3 -0.4
BILL *e* 21 32 06.7
BILL *i* 21 32 15.1
BILL *e* 21 33 07.7
BILL *i* 21 34 58.9
BILL *e*SSS SSS 21 39 04.3
BILL pmax pmax
comp=Z,25nm,1.2s
BILL MLR MLR
comp=Z,410nm,20.0s
BILL Bilibino 30.84 17 *e*P **P 21 32 00.9 -0.7**
comp=Z,18nm,1.0s
TIXI Tiksi 32.41 352 P **P 21 32 14.5 -0.9**
comp=Z,5.2nm,0.6s,baz=144,slow=6.5,SNR=22
TIXI Tiksi 32.41 352*c e*P P 21 32 14.4 -1.0
TIXI pmax pmax
comp=Z,23nm,1.7s
TIXI MLR MLR
comp=Z,290nm,18.0s
GTA Gaotai 32.73 283 P **P 21 32 18.6 -0.1**
GTA pP pP 21 32 27.6 -1.9
GTA sP sP 21 32 31.7 -2.4
GTA PP **PP 21 33 30.4 -2.6**
GTA PcP **PcP 21 35 04.3 +0.8**
GTA S **S 21 37 32.2 -0.5**
GTA sS sS 21 37 48.4 -2.2
GTA ScP **ScP 21 38 44.6 +0.2**
GTA PcS **PcS 21 38 49.2 +0.3**
GTA SS **SnSn 21 39 32.0 +1.9**
GTA pmax pmax
comp=Z,31nm,1.1s
GTA pmax pmax
comp=Z,150nm,5.0s
GTA LR LR
comp=Z,540nm,20.9s
GTA LR LR
comp=Z,2μm,18.5s
GTA LR LR
comp=Z,2μm,20.0s
CD2 Chengdu 32.76 266 P **P 21 32 18.1 -0.8**
CD2 sP pP 21 32 30.8 +1.1
CD2 PP **PP 21 33 32.2 -1.1**
CD2 S **S 21 37 33.0 -0.2**
CD2 sS sS 21 37 48.0 -3.1
CD2 pmax pmax
comp=Z,40nm,0.7s
CD2 pmax pmax
comp=Z,130nm,5.1s
CD2 LR LR
comp=Z,830nm,15.5s
CD2 LR LR
comp=Z,840nm,15.5s
GYA Guiyang 32.79 257⇑*i*P P 21 32 18.7 -0.7
GYA pP pP 21 32 28.9 -1.2
GYA PP **PnPn 21 33 30.0 +1.5**
GYA PcP **PcP 21 35 05.6 +1.7**
GYA S **S 21 37 33.2 -0.7**
GYA sS sS 21 37 49.8 -2.0
GYA ScP **ScP 21 38 45.6 +0.8**
GYA SS **SnSn 21 39 31.5 -0.4**
GYA pmax pmax
comp=Z,150nm,0.8s
GYA LR LR
comp=Z,590nm,16.9s
GYA LR LR
comp=Z,550nm,17.2s
GYA LR LR
comp=Z,560nm,17.0s
QIZ Qiongzhong 35.13 243 P **P 21 32 39.0 -0.5**
QIZ sP **sP 21 32 53.2 -1.8**
QIZ LR LR
comp=Z,100nm,16.2s
QIZ LR LR
comp=Z,180nm,14.2s
KRAR Krasnoyarsk 36.03 313⇑*e*P **P 21 32 47.2 +0.3**
KRAR pmax pmax
comp=Z,66nm,1.1s
KMI Kunming 36.47 258 P **P 21 32 51.5 +0.2**
KMI pP pP 21 33 00.6 -1.5
KMI PP **PP 21 34 16.1 +1.5**
KMI S **S 21 38 30.8 0.0**
KMI sS sS 21 38 46.1 -2.7
KMI pmax pmax
comp=Z,86nm,0.9s
KMI pmax pmax
comp=Z,230nm,3.1s
KMI LR LR
comp=Z,620nm,15.9s
KMI LR LR
comp=Z,800nm,17.3s
KMI LR LR
comp=Z,1μm,17.7s
KDM Kudat 40.32 222 ⇑P **P 21 33 22.0 -1.4**
WMQ Urumqi 40.43 294 P **P 21 33 25.1 +0.9**
WMQ pP pP 21 33 35.9 +0.8
WMQ sP sP 21 33 39.7 0.0
WMQ PP **PnPn 21 35 04.6 +3.1**
WMQ PcP **PcP 21 35 28.2 +1.7**
WMQ ScP **ScP 21 39 13.1 +0.4**
WMQ S **S 21 39 30.5 +0.5**
WMQ pmax pmax
comp=Z,39nm,0.8s
WMQ pmax pmax
comp=Z,120nm,3.6s
WMQ LR LR
comp=Z,280nm,12.2s
WMQ LR LR
comp=Z,200nm,13.4s
SKNT Sakolnakorn 40.60 247 P **P 21 33 26.1 +0.4**
comp=Z,52nm,1.1s
ZAA1 Zalesovo Array 40.66 310 *e*P **P 21 33 24.8 -1.1**
ZAA1 *e*PcP **PcP 21 35 26.6 -0.4**
ZAA0 Zalesovo Array 40.66 310 *e*P **P 21 33 25.9 0.0**
ZALV Zalesovo Beam 40.66 310 P **P 21 33 24.8 -1.1**
comp=Z,57nm,0.6s,baz=89,slow=7.7,SNR=267
ZALV PcP **PcP 21 35 26.6 -0.4**
comp=Z,9.6nm,0.7s,baz=105,slow=3.4,SNR=5.1
ZALV LR LR 21 51 07.4
comp=Z,1μm,18.7s,baz=68,slow=37
NRIK Noril'sk 40.96 334 P **P 21 33 28.0 -0.1**
comp=Z,14nm,0.7s,baz=111,slow=9.0,SNR=24
NRIK LR LR 21 51 30.9
comp=Z,1μm,19.2s,baz=105,slow=38
MYLDM Lahad Datu 40.99 218 ⇑P **P 21 33 29.0 +0.1**
MYLDM Lahad Datu 40.99 218 *e*P **P 21 33 31.7 +2.7**
comp=Z,96nm,1.2s

CRAI Chiangrai 41.11 254 P **P 21 33 30.5 +0.5**
comp=Z,308nm,0.8s
SDKM Sandakan 41.23 221 ⇑P **P 21 33 31.3 +0.4**
KKM Kota Kinabalu 41.38 222 ⇑P **P 21 33 32.2 -0.1**
KKM Kota Kinabalu 41.38 222 *e*P **P 21 33 34.3 +2.0**
comp=Z,75nm,1.4s
NVS Novosibirsk 41.52 311⇑*i*P **P 21 33 33.3 +0.4**
NVS pmax pmax
comp=Z,29nm,0.7s
NVS pmax pmax
comp=E,21nm,0.8s
KHON Khomkaen 41.84 247 P **P 21 33 36.4 +0.4**
comp=E,25nm,1.1s
TSM Tawau 42.06 219 ⇑P **P 21 33 39.0 +1.3**
LOEI Loei 42.18 250 P **P 21 33 36.1 -2.6**
comp=E,52nm,1.4s,comp=E,12μm
TTA Tatalina 42.39 37 *e*P pP 21 33 50.2 -0.8
TTA Tatalina 42.39 37 *e*P pP 21 33 50.2 -0.8
SVW2 Sparrevohn 42.54 39 *e*P P 21 33 47.0 +5.9
comp=E,29nm,1.5s
UTTA Uttaradit 42.54 251 P **P 21 33 41.9 +0.2**
comp=E,11nm,0.9s,comp=E,81nm
LAMP Lampang 42.72 253 P **P 21 33 44.0 +0.9**
comp=E,14nm,0.8s
LSA Lhasa 42.98 273 *e*P **P 21 33 44.8 -0.9**
LSA pmax pmax
comp=Z,27nm,1.0s
LSA Lhasa 42.98 273 *e*P **P 21 33 44.8 -0.9**
comp=Z,27nm,1.0s
CHTO Chiang Mai 43.04 254 P **P 21 33 46.0 +0.3**
comp=Z,134nm,1.2s,comp=Z,2μm
CHTO Chiang Mai 43.04 254 *e*P **P 21 33 46.1 +0.3**
CHTO pmax pmax
comp=Z,17nm,0.8s
CHTO Chiang Mai 43.04 254 *e*P **P 21 33 46.1 +0.4**
comp=Z,17nm,0.8s
CM31 Chiang Mai Arr 43.27 253 *e*P **P 21 33 48.0 +0.5**
CM31 *e*PP **PcP 21 35 36.8 +0.6**
CMAR Chiang Mai Arr 43.27 253 P **P 21 33 48.0 +0.5**
comp=Z,6.6nm,0.7s,baz=43,slow=7.2,SNR=64
CMAR PcP **PcP 21 35 36.8 +0.6**
comp=Z,3.1nm,0.8s,baz=355,slow=2.7,SNR=4.9
CMAR LR LR 21 54 35.3
comp=Z,139nm,18.4s,baz=52,slow=40
CM01 Chiang Mai Arr 43.28 253 *e*P **P 21 33 47.0 -0.6**
SUKH Sukhothai 43.38 251 P **P 21 33 49.0 +0.6**
comp=Z,14nm,0.8s,comp=Z,122nm
MK01 Makanchi Array 43.41 300 *e*P **P 21 33 47.8 -0.6**
MK31 Makanchi Array 43.41 300 *e*P **P 21 33 48.8 +0.4**
MK31 Makanchi Array 43.41 300 *e*P **P 21 33 48.8 +0.4**
MK32 Makanchi Array 43.41 300 *e*P **P 21 33 48.7 +0.3**
MKAR Makanchi Array 43.41 300 P **P 21 33 48.7 +0.3**
comp=Z,26nm,0.7s,baz=83,slow=9.7,SNR=246
MKAR LR LR 21 52 43.8
comp=Z,988nm,19.7s,baz=83,slow=37
MKAR Makanchi Array 43.41 300 P **P 21 33 48.7 +0.3**
MKAR pmax pmax
comp=Z,27nm,0.7s
MKAR MLR MLR
comp=Z,988nm,19.7s
MKAR Makanchi Array 43.41 300 *e*P **P 21 33 48.8 +0.4**
MAKZ Makanchi 43.61 300 *e*P **P 21 33 50.4 +0.3**
MAKZ pmax pmax
comp=Z,40nm,0.8s
MAKZ Makanchi 43.61 300 *e*P **P 21 33 50.4 +0.3**
comp=Z,40nm,0.8s
MRSI Marisa 43.69 211 P **P 21 33 51.9 +1.0**
comp=Z,99nm,0.9s,comp=Z,2μm
RSO Redoubt South 43.94 40 *e*P **P 21 33 54.0 +1.3**
PPLA Purkeypile 44.14 37 *e*P P 21 33 59.3 +5.1
comp=Z,34nm,1.5s
CAST Castle Rocks 44.18 36 *e*P **P 21 33 56.0 +1.6**
comp=Z,16nm,1.0s
MHMT Maesarieng 44.19 254 P **P 21 33 55.8 +0.9**
comp=Z,26nm,1.0s,comp=Z,279nm
SPU Mount Spurr 44.25 39 *e*P **P 21 33 59.4 +4.4**
NAYO Nakonayok 44.27 247 P **P 21 33 56.2 +0.6**
comp=Z,121nm,1.1s,comp=Z,6μm
SANI Sanana 44.61 204 P **P 21 33 59.3 +1.1**
comp=Z,58nm,0.9s,comp=Z,812nm
CHBT CHBT 44.66 244 P **P 21 33 59.3 +0.6**
comp=Z,65nm,1.0s
BPAW Bear Paw Mtn. 44.67 35 *e*P **P 21 33 59.5 +1.2**
comp=Z,11nm,1.2s
KTH Kantishna Hill 44.70 36 *e*P **P 21 33 59.9 +1.3**
comp=Z,32nm,1.0s
MLY Manley 44.77 34 *e*P **P 21 34 00.6 +1.5**
comp=Z,14nm,1.1s
KURK Kurchatov 44.90 306 P **P 21 34 00.9 +0.7**
KURK pmax pmax
comp=Z,120nm,0.7s
KURK Kurchatov 44.90 306 *e*P **P 21 34 00.0 -0.2**
comp=Z,120nm,0.7s
KURBB Kurchatov Arra 44.97 306 P **P 21 34 00.9 +0.1**
comp=Z,120nm,0.7s,baz=80,slow=8.5,SNR=688
TRF Thorofare Moun 44.99 36 *e*P **P 21 34 03.1 +2.1**
comp=Z,12nm,0.8s
COLD Coldfoot 45.04 30 *e*P **P 21 34 02.5 +1.4**
comp=Z,9.4nm,0.9s
BWN Browne 45.33 35 *e*P **P 21 34 05.6 +2.1**
comp=Z,79nm,1.2s
RC01 Rabbit Creek A 45.37 39 *e*P **P 21 34 04.7 +0.8**
comp=Z,16nm,0.8s
BTM Bintulu 45.42 224 ⇑P **P 21 34 05.1 +0.3**
PATY Pattaya 45.55 246 P **P 21 34 07.1 +1.3**
comp=Z,13nm,0.8s,comp=Z,957nm
MCK McKinley 45.58 35 *e*P **P 21 34 08.3 +2.8**
MCK pmax pmax
comp=Z,18nm,1.0s
MCK McKinley 45.58 35 *e*P **P 21 34 08.3 +2.8**
comp=Z,18nm,1.0s
PMR Palmer 45.62 38 *e*P pP 21 34 14.6 -2.3
PMR Palmer 45.62 38 *e*pP pP 21 34 14.6 -2.3
RND Reindeer 45.63 36 *e*P **P 21 34 06.3 +0.3**
RND pmax pmax
comp=Z,22nm,1.1s
RND Reindeer 45.63 36 *e*P **P 21 34 06.3 +0.3**
comp=Z,22nm,1.1s
SRDT SRDT 45.81 249 P **P 21 34 09.8 +1.9**
comp=Z,67nm,0.9s,comp=Z,7μm
MDM Murphy Dome 45.84 34 *e*P **P 21 34 08.8 +1.2**
comp=Z,56nm,1.7s
WRH Wood River Hil 45.92 34 *e*P **P 21 34 05.2 -2.9**
comp=Z,9.9nm,0.8s
COLA College 46.00 34*de*P **P 21 34 09.4 +0.7**
COLA pmax pmax
comp=Z,6.0nm,0.7s
CCB Clear Creek Bu 46.03 34 *e*P **P 21 34 11.4 +2.4**
comp=Z,32nm,1.7s
DHY Denali Highway 46.33 36 *e*P **P 21 34 12.5 +0.9**
comp=Z,13nm,0.8s
HDA Harding Lake 46.42 34 *e*P **P 21 34 12.8 +0.7**
comp=Z,18nm,1.1s
ILAR Eielson Array 46.42 34 P **P 21 34 12.1 0.0**
comp=Z,3.0nm,0.8s,baz=266,slow=6.3,SNR=36
ILAR LR LR 21 55 02.1
comp=Z,180nm,20.9s,baz=290,slow=38
ILB Eielson Array 46.42 34 *e*P **P 21 34 12.1 0.0**
IL1 Eielson Array 46.42 34 *e*P **P 21 34 10.4 -1.7**
PHET Kaeng Krachan 46.43 247 P **P 21 34 13.8 +1.1**
comp=Z,33nm,0.8s,comp=Z,236nm
SBUM Sibu 46.51 224 ⇑P **P 21 34 14.1 +0.8**
FYU Fort Yukon 47.00 31 *e*P **P 21 34 18.7 +2.1**
comp=Z,39nm,1.2s
KLU Klutina 47.16 38 *e*P **P 21 34 19.4 +1.3**
comp=Z,18nm,0.9s
DOT Dot Lake 47.75 35 *e*P **P 21 34 22.8 +0.2**
comp=Z,24nm,1.0s
MENT Mentasta 48.00 36 *e*P **P 21 34 26.0 +1.6**
comp=Z,12nm,0.7s
KSM Kuching 48.36 226 ⇑P **P 21 34 28.8 +1.1**
KKN Kakani 48.41 274 *e*P **P 21 34 28.7 +0.4**
comp=Z,203nm,0.7s
PKIN Phulchoki 48.43 274 *e*P **P 21 34 28.5 0.0**
comp=Z,60nm,0.9s
GKN Gorkha 48.80 274 *e*P **P 21 34 31.3 +0.1**
comp=Z,68nm,0.7s
STKI Sintang 48.91 223 P **P 21 34 33.6 +1.7**
comp=Z,23nm,0.6s
BALM Baldy 48.94 39 *e*P **P 21 34 32.9 +1.1**
BALM pmax pmax
comp=Z,12nm,0.8s
BALM Baldy 48.94 39 *e*P **P 21 34 32.9 +1.1**
comp=Z,12nm,0.8s
TKM2 Tokmak 2 49.11 296 *i* P **P 21 34 33.6 +0.1**
TKM2 pmax pmax
comp=Z,132nm,0.9s

TKM2 Tokmak 2 49.11 296 *e*P **P 21 34 34.3 +0.8**
comp=Z,123nm,0.8s
BVAR Borovoye Array 49.30 311 P **P 21 34 35.0 +0.4**
comp=Z,44nm,0.5s,baz=80,slow=9.2,SNR=269
BVAR Borovoye Array 49.30 311 P **P 21 34 35.0 +0.4**
BVAR pmax pmax
comp=Z,44nm,0.5s
BRVK Borovoye 49.36 311*c i*P P 21 34 35.4 +0.5
BRVK pmax pmax
comp=Z,83nm,1.0s
BRVK Borovoye 49.36 311 *e*P **P 21 34 35.6 +0.6**
comp=Z,70nm,0.9s
KAPI Kappang 49.57 211 P **P 21 34 36.5 -0.4**
comp=Z,8.8nm,0.9s,baz=66,slow=20,SNR=3.2
KAPI LR LR 21 55 26.1
comp=Z,93nm,21.4s,baz=28,slow=36
KAPI Kappang 49.57 211 *e*P **P 21 34 36.5 -0.4**
comp=Z,50nm,1.1s
KAPI *es*P **pP 21 34 49.8 +1.7**
KTGM Kuala Trenggan 49.57 236 ⇑P **P 21 34 37.8 +0.8**
KOLN Koldanda 49.71 275 *e*P **P 21 34 38.7 +0.5**
comp=Z,69nm,0.8s
SURT Suratani 49.78 244 P **P 21 34 39.8 +1.2**
comp=Z,18nm,0.9s
FRU Bishkek 49.81 297⇑*i*P **P 21 34 38.0 -0.6**
FRU *i* 21 34 48.0
FRU pmax pmax
comp=Z,72nm,1.5s
AAK Ala-Archa 49.97 297 P **P 21 34 40.3 +0.3**
comp=Z,26nm,0.7s,baz=106,slow=5.5,SNR=107
AAK Ala-Archa 49.97 297*c i*P P 21 34 39.8 -0.2
AAK pmax pmax
comp=Z,61nm,0.7s
AAK Ala-Archa 49.97 297 *e*P **P 21 34 40.3 +0.3**
comp=Z,38nm,1.0s
TRTT Trang 49.97 242 P **P 21 34 41.0 +0.9**
comp=Z,30nm,1.0s
PYUN Piuthan 50.01 276 *e*P **P 21 34 41.0 +0.5**
comp=Z,252nm,1.1s
KSH Kashi 50.12 292 P **P 21 34 45.5 +4.4**
KSH *e*pP sP 21 34 55.7 -1.1
KSH *es*P pP 21 34 59.4 +7.1
KSH *e*PP **PP 21 36 41.9 +5.6**
KSH PcS **PcS 21 39 59.6 +2.2**
KSH S **S 21 41 55.0 +5.0**
KSH pmax pmax
comp=Z,31nm,0.8s
KSH pmax pmax
comp=Z,160nm,3.5s
KSH LR LR
comp=Z,780nm,16.5s
KSH LR LR
comp=Z,550nm,16.3s
KSH LR LR
comp=Z,1μm,17.2s
EKS2 Erkin-Say 50.45 297 *e*P **P 21 34 44.0 +0.4**
EKS2 pmax pmax
comp=Z,50nm,0.8s
EKS2 Erkin-Say 50.45 297 *e*P **P 21 34 44.0 +0.4**
comp=Z,50nm,0.8s
PKDT Phuket 50.86 243 P **P 21 34 48.1 +1.4**
comp=Z,86nm,1.0s
KULM Kulim 51.21 239 ⇑P **P 21 34 49.2 -0.2**
KULM Kulim 51.21 239 *e*P **P 21 34 49.9 +0.5**
INK Inuvik 51.25 28 P **P 21 34 49.8 +0.8**
comp=Z,8.9nm,0.7s,baz=287,slow=6.5,SNR=31
INK Inuvik 51.25 28 *e*P **P 21 34 49.8 +0.8**
comp=Z,22nm,1.3s
IPM Ipoh 51.57 238 ⇑P **P 21 34 51.7 -0.4**
IPM Ipoh 51.57 238 *e*P **P 21 34 51.8 -0.4**
comp=Z,27nm,1.0s
TPRI Tanjung Pinang 52.14 231 P **P 21 34 57.7 +1.4**
comp=Z,23nm,0.9s,comp=Z,1μm
SOEI Soe 52.42 203 P **P 21 34 57.9 -0.6**
comp=Z,89nm,1.0s
KKAR Karatay Array 52.50 299 *e*P **P 21 34 58.7 -0.1**
KKAR Karatay Array 52.50 299 *e*P **P 21 34 58.7 -0.1**
SMLA Simla 52.94 282 *e*P **P 21 35 02.0 -0.1**
SVE Sverdlovsk 53.55 317*d i*P **P 21 35 07.0 +0.7**
SVE pmax pmax
comp=Z,107nm,1.0s
SVE MLR MLR
comp=Z,2μm,16.0s
PPBI Pangkal Pinang 53.69 228 P **P 21 35 08.2 +0.5**
comp=Z,21nm,1.1s
MTN Manton Dam 53.72 194 *e*P **P 21 35 07.6 -0.3**
comp=Z,35nm,0.9s
PSI Prapat 54.20 238 *e*P **P 21 35 11.9 +0.2**
PSI pmax pmax
comp=Z,19nm,0.9s
PSI Prapat 54.20 238 *e*P **P 21 35 11.9 +0.2**
comp=Z,19nm,0.9s
SOKR Solikamsk 54.55 321*c i*P P 21 35 12.3 -1.1
SOKR pmax pmax
comp=Z,83nm,1.4s
SOKR MLR MLR
comp=Z,719nm,18.0s
ARU Arti 54.77 317 P **P 21 35 15.5 +0.3**
comp=Z,52nm,1.0s,baz=72,slow=5.2,SNR=83
ARU Arti 54.77 317*c i*P **P 21 35 15.3 +0.2**
ARU *PP **pP 21 35 26.2 -0.2**
ARU 21 36 18.1
ARU 21 37 16.8
ARU PPP PPP 21 38 27.4
ARU S **S 21 42 55.1 +2.3**
ARU SS **SS 21 46 38.1 +2.4**
ARU pmax pmax
comp=Z,95nm,1.0s
ARU MLR MLR
comp=Z,2μm,17.0s
ARU Arti 54.77 317 *e*P **P 21 35 15.5 +0.3**
comp=Z,118nm,1.2s
SDSI Sungai Dareh 55.48 233 P **P 21 35 21.5 +0.7**
comp=Z,78nm,1.0s,comp=Z,52μm
GSI Gunungsitoli 56.21 238 P **P 21 35 27.1 +1.1**
comp=Z,66nm,1.4s
GSI Gunungsitoli 56.21 238 *e*P **P 21 35 25.9 -0.1**
comp=Z,112nm,1.4s
MDSI Maura Dua 56.70 228 P **P 21 35 29.4 0.0**
LEM Lembang 56.76 223 P **P 21 35 34.2 +4.2**
comp=Z,36nm,0.7s,baz=324,slow=22,SNR=8.2
ABKAR Akbulak array 56.77 309 *e*P **P 21 35 29.8 +0.2**
KBL Kabul 57.28 290 *e*P **P 21 35 33.5 -0.2**
KBL pmax pmax
comp=Z,151nm,0.9s
KBL Kabul 57.28 290 *e*P **P 21 35 33.5 -0.2**
comp=Z,151nm,0.9s
AKTO Aktyubinsk 57.41 311 P **P 21 35 34.0 -0.1**
comp=Z,30nm,0.8s,baz=69,slow=12,SNR=50
SPITS Spitsbergen Ar 57.75 349 P **P 21 35 36.5 +0.4**
comp=Z,5.5nm,0.7s,baz=78,slow=9.5,SNR=6.4
SPITS Spitsbergen Ar 57.75 349 P **P 21 35 36.5 +0.4**
SPITS pmax pmax
comp=Z,5.0nm,0.7s
HYB Hyderabad 59.30 267 *i* P **P 21 35 47.5 -0.2**
RES Resolute Bay 59.42 15 P **P 21 35 47.6 -0.1**
comp=Z,16nm,0.8s,baz=301,slow=6.9,SNR=50
RES Resolute Bay 59.42 15 *e*P **P 21 35 47.6 -0.1**
RES pmax pmax
comp=Z,19nm,0.8s
RES Resolute Bay 59.42 15 *e*P **P 21 35 47.6 -0.1**
comp=Z,19nm,0.8s
BJO Bjornoya 59.75 345 *e*P **P 21 35 52.6 +2.6**
FITZ Fitzroy Crossi 60.01 199 P **P 21 35 52.5 +0.1**
comp=Z,8.2nm,0.8s,baz=41,slow=5.8,SNR=12
FITZ LR LR 21 59 55.6
comp=Z,44nm,21.6s,slow=34
FITZ Fitzroy Crossi 60.01 199 *e*P **P 21 35 52.5 +0.1**
comp=Z,19nm,1.0s
WRAB Tennant Creek 60.19 189*de*P **P 21 35 53.0 -0.6**
WRAB pmax pmax
comp=Z,27nm,1.2s
WRAB Tennant Creek 60.19 189 *e*P **P 21 35 53.4 -0.3**
comp=Z,41nm,0.8s
WR1 Warramunga Arr 60.20 189 *e*P **P 21 35 52.6 -1.0**
WRA Warramnga Arr 60.20 189 P **P 21 35 52.6 -1.0**
comp=Z,5.1nm,0.6s,baz=5.7,slow=6.9,SNR=32
WRA LR LR 22 00 31.3
comp=Z,145nm,21.6s,baz=10.0,slow=35
APA Apatity 60.34 335⇑*i*P **P 21 35 54.2 +0.1**
APA pmax pmax
comp=Z,31nm,1.0s
APA MLR MLR
comp=Z,400nm,19.0s
YKW3 Yellowknife Ar 60.66 31 *e*P **P 21 35 56.8 +0.4**
comp=Z,6.1nm,0.5s

YKA Yellowknife Ar 60.70 31 P **P 21 35 55.9 -0.7**
comp=Z,2.1nm,0.7s,baz=302,slow=6.6,SNR=46
YKA Yellowknife Ar 60.70 31 P **P 21 35 56.0 -0.7**
YKB5 Yellowknife Ar 60.70 31 *eP* **P 21 35 55.9 -0.7**
KEV Kevo 60.96 339 *eP* **P 21 35 58.5 +0.2**
KEV pmax pmax
comp=Z,22nm,0.9s
KEV Kevo 60.96 339 *eP* **P 21 35 58.5 +0.2**
comp=Z,22nm,0.9s
HAMF Hammerfest 61.29 341 *eP* **P 21 36 00.1 -0.4**
HAMF IAmb IAmb 21 36 00.7
comp=Z,19nm,0.8s
ARA0 ARCESS Array S 61.51 339 *eP* **P 21 36 02.1 0.0**
ARA0 *e*PP PP 21 38 25.6 +8.3
ARCES ARCESS Array B 61.51 339 P **P 21 36 01.8 -0.3**
comp=Z,10nm,0.8s,baz=49,slow=7.6,SNR=39
ARCES PP PP 21 38 25.6 +8.3
comp=Z,3.8nm,0.8s,baz=40,slow=9.6,SNR=3.8
ARCES LR LR 22 08 26.1
comp=Z,230nm,18.3s,baz=48,slow=42
ARE0 ARCESS Array S 61.51 339 *eP* **P 21 36 02.7 +0.6**
comp=Z,16nm,1.0s
KLMR Klimovskoe 61.73 327 *eP* **P 21 36 01.7 -2.0**
KLMR *e**SP **pP 21 36 15.0 -0.1**
KLMR *e* 21 38 18.1
KLMR pmax pmax
comp=Z,43nm,1.4s
KTK1 Kautokeino 62.47 339 *eP* **P 21 36 08.8 +0.3**
KTK1 IAmb IAmb 21 36 09.5
comp=Z,26nm,0.8s
DAG Danmarks Havn 62.84 355⇑ *iP* **P 21 36 10.8 0.0**
comp=Z,31nm,1.0s
DAG Danmarks Havn 62.84 355⇑ *iP* **P 21 36 10.8 0.0**
DAG pmax pmax
comp=Z,31nm,1.0s
TRO Tromso 63.17 341 *eP* **P 21 36 13.4 +0.3**
TRO IAmb IAmb 21 36 13.9
comp=Z,26nm,0.8s
TRO IAMs_20 IAMs_20 22 11 29.9
comp=Z,326nm,22.0s
GEYT Alibeck 63.25 298 P **P 21 36 14.3 +0.1**
comp=Z,34nm,0.8s,baz=29,slow=3.4,SNR=75
GEYT LR LR 22 05 46.1
comp=Z,317nm,18.3s,baz=60,slow=38
AS01 Alice Springs 63.92 189 *eP* **P 21 36 16.0 -2.6**
AS31 Alice Springs 63.92 189 *eP* **P 21 36 18.4 -0.3**
comp=Z,6.0nm,0.8s
ASAR Alice Springs 63.93 189 P **P 21 36 18.4 -0.3**
comp=Z,3.0nm,0.8s,baz=5.2,slow=5.4,SNR=29
ASAR LR LR 22 03 41.5
comp=Z,111nm,21.8s,baz=5.0,slow=36
STEI Steigen 65.33 341 *eP* **P 21 36 27.3 0.0**
STEI IAmb IAmb 21 36 28.3
comp=Z,15nm,0.7s
MOS Moscow 65.41 323 *eP* **P 21 36 27.9 -0.1**
MOS *i* 21 36 40.4
MOS *e* 21 36 56.8
MOS *e* 21 38 49.6
MOS pmax pmax
comp=Z,34nm,0.7s
MOS pmax pmax
comp=Z,200nm,1.7s
EIDS Eidsvold 65.57 172 *ep*P pP 21 36 37.0 -3.8
LOF Lofoten 65.61 341 *eP* **P 21 36 28.6 -0.4**
LOF IAmb IAmb 21 36 29.6
comp=Z,27nm,0.9s
DZM Mont Dzumac 65.67 156 LR LR 22 01 28.6
comp=Z,237nm,21.3s,baz=56,slow=33
VRH Novokhopyorsk 66.00 317 *eP* **P 21 36 31.3 -0.6**
VRH pmax pmax
comp=Z,50nm,0.6s
VRH MLR MLR
comp=Z,1μm,16.0s
OBN Obninsk 66.27 323 P **P 21 36 33.5 0.0**
comp=Z,28nm,0.8s,baz=115,slow=2.3,SNR=17
OBN Obninsk 66.27 323*c iP* **P 21 36 33.3 -0.2**
OBN *i* 21 36 46.5
OBN *e* 21 37 03.6
OBN *e* 21 38 59.3
OBN *e*SS SS 21 49 40.9 +5.4
OBN pmax pmax
comp=Z,70nm,1.7s
OBN MLR MLR
comp=Z,785nm,16.0s
OBN Obninsk 66.27 323 *eP* **P 21 36 33.5 0.0**
comp=Z,35nm,0.9s
FIA1 FINESS Array S 66.59 332 *eP* **P 21 36 35.6 +0.1**
FIA0 FINESS Array S 66.60 332 *eP* **P 21 36 35.5 0.0**
FIA0 FINESS Array S 66.60 332 *eP* **P 21 36 35.5 0.0**
FINES FINESS Array B 66.60 332 P **P 21 36 35.5 0.0**
comp=Z,34nm,0.7s,baz=46,slow=8.2,SNR=126
FINES LR LR 22 08 43.5
comp=Z,826nm,18.7s,baz=42,slow=39
LPSR Galich'ya Gora 66.62 320 *eP* **P 21 36 35.8 0.0**
LPSR pmax pmax
comp=Z,60nm,0.8s
LPSR MLR MLR
comp=Z,620nm,16.0s
MOR8 Moi Rana 66.86 340 *eP* **P 21 36 36.1 -1.1**
MOR8 IAmb IAmb 21 36 37.0
comp=Z,49nm,0.8s
VSR Storozhevoye 67.31 318 *eP* **P 21 36 40.0 -0.2**
VSR pmax pmax
comp=Z,60nm,0.8s
VSR MLR MLR
comp=Z,830nm,18.0s
SUMG Summit 67.66 0⇑ *iP* **P 21 36 43.6 +1.0**
comp=Z,32nm,0.8s
SUMG Summit 67.66 0⇑ *iP* **P 21 36 43.6 +1.0**
SUMG pmax pmax
comp=Z,32nm,0.8s
SUMG Summit 67.66 0 *eP* **P 21 36 43.4 +0.8**
comp=Z,39nm,0.9s
K05A Summer Lake 68.28 52 *eP* **P 21 36 48.6 +1.8**
comp=Z,20nm,1.0s
VSU Vasula 68.34 329*c iP* **P 21 36 46.4 -0.2**
VSU pmax pmax
comp=Z,123nm,1.0s
AFI Afiamalu 68.37 132 LR LR 22 00 34.2
comp=Z,226nm,19.9s,baz=329,slow=30
WALA Waterton Lakes 68.55 43 *eP* **P 21 36 49.2 +0.9**
comp=Z,15nm,1.4s
NSS Namsos 68.80 339 *eP* **P 21 36 49.4 +0.1**
NSS IAmb IAmb 21 36 50.3
comp=Z,9.1nm,0.7s
GOF Gofitskoye 68.82 311⇑ *iP* **P 21 36 50.5 +0.7**
GOF *e*S **S 21 45 49.3 -1.5**
GOF pmax pmax
comp=Z,87nm,0.8s
JTMT Jette 69.14 45 *eP* **P 21 36 53.3 +1.3**
SCO Scoresbysund 69.20 355⇑ *iP* **P 21 36 52.4 +0.7**
comp=Z,11nm,1.0s
SCO Scoresbysund 69.20 355⇑ *iP* **P 21 36 52.4 +0.7**
SCO pmax pmax
comp=Z,11nm,1.0s
YBMT Yellow Bay 69.21 44 *eP* **P 21 36 53.6 +1.2**
NCK Nalchik 69.41 310⇑ *iP* **P 21 36 53.8 +0.2**
NCK pmax pmax
comp=Z,29nm,1.0s
SWMT Swartz Lake 69.43 45 *eP* **P 21 36 54.9 +1.1**
GUDG Gudauri 69.49 309 P **P 21 36 56.1 +1.7**
DUS Dusheti 69.57 308 P **P 21 36 56.5 +1.8**
DUS Dusheti 69.57 308 P **P 21 36 56.5 +1.8**
ZEI Tsey 69.64 309 *eP* **P 21 36 52.5 -2.8**
ZEI pmax pmax
comp=Z,50nm,0.8s
KVAR Kislovodsk Arr 69.67 311 P **P 21 36 56.1 +0.9**
comp=Z,60nm,0.9s,baz=345,slow=0.9,SNR=64
KIV Kislovodsk 69.67 311 *i* P **P 21 36 56.2 +0.9**
SNR=59
KIV Kislovodsk 69.67 311 *eP* **P 21 36 56.2 +0.9**
KIV *e*S **S 21 46 02.7 +1.6**
KIV *e*SS **SS 21 50 32.3 +3.4**
KIV pmax pmax
comp=Z,94nm,0.9s
KIV pmax pmax
comp=Z,43nm,4.0s
KIV MLR MLR
comp=Z,588nm,17.0s
KIV Kislovodsk 69.67 311 *eP* **P 21 36 56.1 +0.9**
comp=Z,89nm,0.9s
KBZ Khabaz 69.68 310 P **P 21 36 56.0 +0.8**
comp=Z,31nm,0.8s,baz=58,slow=4.6,SNR=92
KBZ LR LR 22 10 11.1
comp=Z,391nm,20.3s,baz=40,slow=38
KBZ Khabaz 69.68 310 P **P 21 36 56.0 +0.8**
KBZ pmax pmax
comp=Z,31nm,0.8s
KBZ MLR MLR
comp=Z,391nm,20.3s
TBLG Delisi 69.76 308 P **P 21 36 58.2 +2.4**
TBLG Delisi 69.76 308 P **P 21 36 58.2 +2.4**
MSO Missoula 69.88 45 *eP* **P 21 36 57.2 +0.7**
comp=Z,7.7nm,1.0s
ONI Oni 70.03 309 P **P 21 36 58.4 +0.9**
ONI Oni 70.03 309 P **P 21 36 58.4 +0.9**
NEY Neytrino 70.07 310*ce*P **P 21 36 58.6 +0.8**
NEY pmax pmax
comp=Z,5.0nm,0.8s
IZAR Zarasai 70.38 327 *eP* **P 21 36 59.5 +0.2**
IZAR IAmb IAmb 21 37 00.9
comp=Z,19nm,0.6s
IDID Didziasalis 70.47 327 *eP* **P 21 37 00.1 +0.2**
IDID IAmb IAmb 21 37 01.7
comp=Z,20nm,0.8s
ISAL Salakas 70.55 327 *eP* **P 21 37 00.6 +0.2**
ISAL IAmb IAmb 21 37 02.2
comp=Z,27nm,0.7s
GNI Garni 70.69 306 P **P 21 37 03.0 +1.3**
comp=Z,9.7nm,0.8s,baz=189,slow=1.3,SNR=14
GNI Garni 70.69 306 *i* P **P 21 37 03.1 +1.3**
SNR=11
GNI Garni 70.69 306*c iP* **P 21 37 02.6 +0.9**
GNI pmax pmax
comp=Z,98nm,1.2s
NACGM Naroch 70.74 327 *e* **P 21 37 01.0 -0.4**
NACGM *e*LR LR 22 07 44.0
CHVG Ch'k'valeri 70.76 310 P **P 21 37 02.6 +0.7**
FCC Fort Churchill 70.86 27 *eP* **P 21 37 02.3 +0.2**
FCC pmax pmax
comp=Z,17nm,1.0s
FCC Fort Churchill 70.86 27 *eP* **P 21 37 02.3 +0.2**
comp=Z,17nm,1.0s
WSAR Wadi Sarin 71.04 285 P **P 21 37 04.5 +0.6**
comp=Z,9.8nm,1.0s,baz=93,slow=5.0,SNR=5.2
EPOS Posof 71.11 309 *i* P **P 21 37 04.6 +0.4**
BANOM Banah 71.18 288 P **P 21 37 04.9 +0.2**
LRM Limekiln Ridge 71.31 46 *eP* **P 21 37 05.9 +0.5**
EGMT Eagleton 71.36 42 P **P 21 37 05.8 +0.3**
baz=310
DLMT Dillon 71.51 46 *eP* **P 21 37 08.1 +1.5**
comp=Z,18nm,1.2s
NC405 NORSAR Array S 71.56 337 *eP* **P 21 37 06.8 +0.4**
NC303 NORSAR Array S 71.58 337 *eP* **P 21 37 06.8 +0.3**
STKA Stephens Creek 71.59 181 P **P 21 37 07.8 +1.0**
comp=Z,1.1nm,0.7s,baz=338,slow=7.2,SNR=3.4
STKA LR LR 22 07 44.4
comp=Z,63nm,21.8s,baz=21,slow=35
STKA Stephens Creek 71.59 181 *eP* **P 21 37 07.8 +1.0**
STKA *ep*P **pP 21 37 19.9 +1.5**
SOC Sochi 71.61 312 *eP* **P 21 37 06.2 -0.8**
SOC *e*S **S 21 46 24.1 +0.7**
SOC *e*SS **SS 21 50 54.0 -4.4**
SOC pmax pmax
comp=Z,29nm,0.9s
SOC MLR MLR
comp=Z,503nm,22.0s
NC204 NORSAR Array S 71.71 338 *eP* **P 21 37 07.3 -0.1**
NB201 NORSAR Array S 71.74 337 *eP* **P 21 37 07.7 +0.2**
NB2 NORSAR Subarra 71.77 337 P **P 21 37 07.4 -0.3**
comp=Z,35nm,0.8s,baz=38,slow=6.2
NB2 NORSAR Subarra 71.77 337 P **P 21 37 07.4 -0.3**
baz=38,slow=6.2
NB200 NORSAR Array S 71.77 337 *eP* **P 21 37 07.7 0.0**
NB200 *e*PP **PP 21 39 51.1 +4.5**
NOA NORSAR Array B 71.77 337 P **P 21 37 07.7 0.0**
comp=Z,31nm,0.8s,baz=39,slow=6.0,SNR=158
NOA PP **PP 21 39 51.1 +4.5**
comp=Z,1.5nm,0.8s,baz=39,slow=8.0,SNR=3.3
NOA LR LR 22 13 46.3
comp=Z,220nm,18.4s,baz=30,slow=40
NOA NORSAR Array B 71.77 337 P **P 21 37 07.7 0.0**
NOA 21 39 51.1
NOA pmax pmax
comp=Z,32nm,0.8s
NOA pmax pmax
comp=Z,2.0nm,0.8s
NOA MLR MLR
comp=Z,220nm,18.4s
UOSS Minazif 71.83 288 *eP* **P 21 37 08.9 +0.3**
comp=Z,2.9nm,0.9s
BOZ Bozeman (W) 71.87 45 P **P 21 37 08.9 +0.3**
baz=309
NBO02 NORSAR Array S 71.87 338 *eP* **P 21 37 08.2 -0.1**
NBO00 NORSAR Array S 71.91 338 *eP* **P 21 37 08.9 +0.4**
NC602 NORSAR Array S 71.92 337 *eP* **P 21 37 08.2 -0.2**
HATD Hatta, Dubai 71.95 287 *i* P **P 21 37 09.8 +0.4**
SNR=9.3
AKN Aaknes 72.02 340 *eP* **P 21 37 09.8 +0.7**
NAO01 NORSAR Array S 72.02 337 *eP* **P 21 37 09.1 -0.1**
ANN Anapa 72.14 314 *eP* **P 21 37 10.1 0.0**
ANN *e* 21 37 21.9
ANN pmax pmax
comp=Z,39nm,1.0s
ANN MLR MLR
comp=E,349nm,18.0s
ANN MLR MLR
comp=N,648nm,18.0s
ANN MLR MLR
comp=Z,437nm,18.0s
NV01 Mina Array Sit 72.41 54 *eP* **P 21 37 13.2 +1.1**
NVAR Mina Array Bea 72.41 54 P **P 21 37 13.2 +1.1**
comp=Z,1.4nm,0.8s,baz=286,slow=6.2,SNR=8.0
NVAR LR LR 22 05 20.0
comp=Z,39nm,19.9s,baz=281,slow=33
AKASG Malin Array Be 72.50 322 P **P 21 37 12.1 -0.1**
comp=Z,24nm,0.7s,baz=45,slow=6.1,SNR=100
AKASG PP **PP 21 39 56.1 +3.0**
comp=Z,1.8nm,0.6s,baz=40,slow=9.8,SNR=4.1
AKASG LR LR 22 12 39.8
comp=Z,178nm,20.4s,baz=40,slow=39
AKBB Malin Array Si 72.50 322 *eP* **P 21 37 12.1 -0.1**
AKBB *e* 21 39 56.1
AKBB pmax pmax
comp=Z,38nm,0.9s
AKBB Malin Array Si 72.50 322 *eP* **P 21 37 12.1 -0.1**
comp=Z,38nm,0.9s
AKBB *e*PP **PP 21 39 56.1 +3.0**
KIEV Kiev 72.52 322*c iP* **P 21 37 11.8 -0.4**
KIEV pmax pmax
comp=Z,31nm,0.9s
KIEV Kiev 72.52 322 *eP* **P 21 37 11.8 -0.4**
comp=Z,34nm,0.9s
AK11 Malin Array Si 72.55 322 *eP* **P 21 37 12.1 -0.3**
SFJD Kangerlussuaq 72.78 5⇑ *iP* **P 21 37 13.8 +0.3**
comp=Z,16nm,0.9s
SFJD Kangerlussuaq 72.78 5⇑ *iP* **P 21 37 13.8 +0.3**
SFJD pmax pmax
comp=Z,16nm,0.9s
SFJD Kangerlussuaq 72.78 5 *eP* **P 21 37 14.2 +0.7**
comp=Z,18nm,0.9s
OSL Oslo 72.80 337 *eP* **P 21 37 14.3 +0.6**
OSL *ep*P **pP 21 37 23.7 -1.7**
SUW Suwalki 72.86 327 *eP* **P 21 37 14.0 -0.2**
SUW Suwalki 72.86 327 *eP* **P 21 37 14.0 -0.2**
ERZM Erzurum 72.90 308 *i* P **P 21 37 17.0 +1.9**
H17A Grant Village 73.24 46 *eP* **P 21 37 19.9 +2.9**
comp=Z,13nm,1.1s
IMW Indian Meadow 73.36 46 *eP* **P 21 37 19.6 +1.8**
comp=Z,8nm,1.0s
KOPT Kop Dagi 73.36 308 *i* P **P 21 37 19.3 +1.5**
KONO Kongsberg 73.37 337 *eP* **P 21 37 17.5 +0.3**
KONO IAmb IAmb 21 37 18.5
comp=Z,12nm,0.8s
KONO IAMs_20 IAMs_20 22 13 20.4
comp=Z,356nm,20.3s
KONO Kongsberg 73.37 337 *eP* **P 21 37 17.7 +0.6**
KONO pmax pmax
comp=Z,12nm,0.8s
KONO Kongsberg 73.37 337 *eP* **P 21 37 17.7 +0.6**
comp=Z,12nm,0.8s
FXWY Fox Creek 73.47 47 *eP* **P 21 37 19.9 +1.5**
comp=Z,5.8nm,1.0s
RLMT Red Lodge 73.48 45 P **P 21 37 19.2 +0.9**
baz=311
MOOW Moose Ponds 73.56 46 *eP* **P 21 37 20.3 +1.5**
comp=Z,11nm,1.3s
FRB Frobisher Bay 73.60 14 P **P 21 37 18.4 0.0**
comp=Z,29nm,0.8s,baz=341,slow=6.1,SNR=17
SIM Simferopol' 73.86 316*ce*P **P 21 37 20.2 -0.1**
SIM pmax pmax
comp=Z,46nm,0.9s
GRAC Grapevine Rang 73.87 55 P **P 21 37 21.7 +1.2**
baz=308
ASK Askoy 73.92 340 *eP* **P 21 37 21.2 +0.9**
ASK IAmb IAmb 21 37 21.3
comp=Z,24nm,0.9s
ODD1 Odda 74.01 339 *eP* **P 21 37 21.5 +0.5**
ODD1 IAmb IAmb 21 37 22.7
comp=Z,24nm,0.9s
KELT Kelkit 74.02 309 *i* P **P 21 37 22.7 +1.1**
R11A Troy Canyon, C 74.14 53 P **P 21 37 23.3 +1.0**
baz=309
R11A Troy Canyon, C 74.14 53 *eP* **P 21 37 23.3 +1.0**
comp=Z,7.8nm,1.3s
MPMC Manual Prospec 74.37 56 P **P 21 37 24.1 +0.4**
baz=308
BLS5 Blasjo 74.47 338 *eP* **P 21 37 24.0 +0.4**
BLS5 IAmb IAmb 21 37 25.6
comp=Z,26nm,1.1s
BLS5 IAMs_20 IAMs_20 22 13 19.6
comp=Z,344nm,21.3s
TPNV Topopah Spring 74.60 55 P **P 21 37 25.8 +0.8**
baz=309
TPNV Topopah Spring 74.60 55 *eP* **P 21 37 26.0 +1.0**
TPNV pmax pmax
comp=Z,23nm,1.6s
TPNV Topopah Spring 74.60 55 *eP* **P 21 37 26.0 +1.0**
comp=Z,23nm,1.6s
A26A Wade Farm, Ken 74.61 38 P **P 21 37 25.5 +0.8**
baz=314
DUG Dugway, Tooele 74.65 50 P **P 21 37 26.3 +1.2**
baz=310
SORM Soroca 74.67 321⇑ *iP* **P 21 37 24.9 0.0**
SORM Soroca 74.67 321⇑ P **P 21 37 24.9 0.0**
EDW2 Edwards Air Fo 74.78 57 P **P 21 37 27.0 +1.1**
baz=308
HOMB Homborsund 74.83 337 IAMs_20 IAMs_20 22 12 34.2
comp=Z,457nm,20.7s
BW06 Boulder Array 74.86 47 *eP* **P 21 37 26.5 +0.1**
BW06 *ep*P **pP 21 37 33.9 -4.3**
PD31 Pinedale Array 74.86 47 *eP* **P 21 37 26.6 +0.2**
PDAR Pinedale Array 74.86 47 P **P 21 37 26.6 +0.2**
comp=Z,0.9nm,0.6s,baz=270,slow=2.2,SNR=12
PDAR LR LR 22 06 51.0
comp=Z,75nm,21.9s,baz=333,slow=33
A27A Ledoux Ranch, 74.95 38 P **P 21 37 27.4 +0.8**
baz=315
ERBA Erbaa 75.15 311 *i* P **P 21 37 28.3 +0.4**
SNART Snartemo 75.16 337 *eP* **P 21 37 27.7 +0.1**
SNART IAmb IAmb 21 37 28.8
comp=Z,20nm,0.8s
KIS Kishinev 75.22 320 *eP* **P 21 37 29.0 +0.8**
KIS *e*L L 22 06 12.0
KIS LRM MLR 22 13 44.0
comp=Z,800nm,16.0s
KIS Kishinev 75.22 320 *eP* **P 21 37 29.0 +0.8**
KIS *e* 21 37 41.0
KIS MLR MLR
comp=N,500nm,16.0s
KIS MLR MLR
comp=E,300nm,16.0s
KIS MLR MLR
comp=Z,700nm,16.0s
KIS MLR MLR
comp=Z,800nm,16.0s
NLU North Lily Min 75.23 50 *eP* **P 21 37 30.2 +1.6**
comp=Z,6.9nm,1.3s
BSD Bornholm Skovb 75.24 332⇑ *iP* **P 21 37 27.9 -0.2**
comp=Z,40nm,1.0s
BSD Bornholm Skovb 75.24 332⇑ *iP* **P 21 37 27.9 -0.2**
BSD pmax pmax
comp=Z,40nm,1.0s
BEL Belsk 75.44 327 *eP* **P 21 37 29.9 +0.6**
BEL Belsk 75.44 327 *eP* **P 21 37 29.9 +0.6**
HAVZ Havza 75.49 312 *i* P **P 21 37 29.4 -0.4**
LVV L'vov 75.51 324 *eP* **P 21 37 29.9 +0.2**
LVV MLR MLR
comp=N,400nm,15.0s
LVV MLR MLR
comp=E,500nm,15.0s
LVV MLR MLR
comp=Z,600nm,15.0s
E25A Miller Ranch, 75.61 41 P **P 21 37 31.1 +0.6**
baz=314
CUKAN kangal_SIVAS 75.61 309 *i* P **P 21 37 31.7 +0.9**
COP Copenhagen 75.66 333 *i* P **P 21 37 30.6 +0.2**
comp=Z,30nm,0.9s
COP Copenhagen 75.66 333 *eP* **P 21 37 30.6 +0.2**
COP pmax pmax
comp=Z,30nm,0.9s
BOYT Boyabat 75.73 312 *i* P **P 21 37 31.7 +0.4**
TUQ Turquoise Moun 75.75 56 P **P 21 37 32.2 +0.6**
baz=309
SFNV Sufian 75.85 306 *eP* **P 21 37 32.3 +0.2**
A29A Manning Farm, 75.91 37 P **P 21 37 32.7 +0.6**
baz=316
F25A Bowman 75.98 41 P **P 21 37 32.8 +0.2**
baz=314
AKCD Akcadag 76.00 308 *i* P **P 21 37 34.0 +1.0**
CUALT Altinyayla-SIV 76.06 310 *i* P **P 21 37 35.1 +1.8**
MSU Marysvale 76.10 51 *eP* **P 21 37 35.4 +1.7**
MSU Marysvale 76.10 51 *eP* **P 21 37 35.4 +1.7**
MUD Monsted U'grnd 76.11 335⇑ *iP* **P 21 37 33.4 +0.4**
comp=Z,16nm,0.8s
MUD Monsted U'grnd 76.11 335⇑ *iP* **P 21 37 33.4 +0.4**
MUD pmax pmax
comp=Z,16nm,0.8s
B29A Wagenman Farm, 76.18 37 P **P 21 37 33.8 +0.2**
baz=316
KWP Kalwaria Pacla 76.24 325 *eP* **P 21 37 34.8 +0.8**
KWP Kalwaria Pacla 76.24 325⇑ *iP* **P 21 37 35.0 +1.1**
KWP Kalwaria Pacla 76.24 325⇑ P **P 21 37 35.0 +1.1**
CUSAR Sarkisla-SIVAS 76.27 310 *i* P **P 21 37 36.2 +1.7**
A30A Hoffart Farm, 76.32 36 P **P 21 37 34.5 +0.1**
baz=316
MTPU Mount Pierson 76.40 52 *eP* **P 21 37 37.6 +2.1**
comp=Z,5.1nm,1.0s
LCMT Little Creek M 76.42 53 *eP* **P 21 37 37.3 +1.9**
comp=Z,3.7nm,0.9s
F26A Lodgepole 76.42 41 P **P 21 37 35.5 +0.3**
baz=314
ULM Lac du Bonnet 76.44 34 P **P 21 37 34.6 -0.4**
comp=Z,4.3nm,0.7s,baz=329,slow=7.4,SNR=5.2
ULM Lac du Bonnet 76.44 34 *eP* **P 21 37 35.0 0.0**
ULM pmax pmax
comp=Z,8.0nm,0.9s
ULM Lac du Bonnet 76.44 34 *eP* **P 21 37 35.0 0.0**
comp=Z,7.6nm,0.9s
COAL Corum-Alaca 76.45 311 *i* P **P 21 37 37.3 +1.9**
TLCR 76.48 318⇑ *iP* **P 21 37 36.1 +0.8**
TLCR 76.48 318⇑ P **P 21 37 36.1 +0.8**
SURC SANLIURFA_SURC 76.49 307 *i* P **P 21 37 37.3 +1.7**
BUR08 Bucovina Ar. S 76.53 322 *eP* **P 21 37 36.3 +0.6**
BURAR Bucovina Array 76.54 322⇑ *iP* **P 21 37 36.3 +0.5**
BURAR Bucovina Array 76.54 322⇑ P **P 21 37 36.3 +0.5**
PFO Pinyon Flats O 76.56 57 LR LR 22 04 12.6
comp=Z,193nm,21.4s,baz=232,slow=30
TESR Tescani 76.63 320⇓ *iP* **P 21 37 36.5 +0.3**
ILGA Ilgaz 76.65 313 *i* P **P 21 37 37.3 +0.7**
B30A Myrvik Farm, E 76.66 37 P **P 21 37 36.5 +0.1**
baz=317
KNB Kanab 76.68 53 *eP* **P 21 37 38.9 +2.0**
KNB pmax pmax
comp=Z,18nm,1.5s
KNB Kanab 76.68 53 *eP* **P 21 37 38.9 +2.0**
comp=Z,18nm,1.5s
SRU San Rafael Swe 76.69 50 *eP* **P 21 37 37.9 +1.0**
SRU pmax pmax
comp=Z,9.0nm,1.0s
SRU San Rafael Swe 76.69 50 *eP* **P 21 37 37.9 +1.0**
comp=Z,8.8nm,1.0s
GZT Gaziantep 76.82 308 *i* P **P 21 37 38.5 +0.8**
CFR Carcaliu 76.83 319⇓ *iP* **P 21 37 37.6 +0.3**
CFR Carcaliu 76.83 319⇓ P **P 21 37 37.6 +0.3**
PETR Petresti 76.90 319⇓ *iP* **P 21 37 39.1 +1.4**
RSSD Black Hills 76.93 43 P **P 21 37 38.4 +0.2**
baz=314
KOLS Kolonicke sedl 76.94 324 *eP* **P 21 37 38.4 +0.5**
KOLS pmax pmax
comp=Z,11nm,0.9s
KOLS Kolonicke sedl 76.94 324 *eP* **P 21 37 38.4 +0.5**
KOLS *ep*P **pP 21 40 27.6 -3.1**
KOLS *e*L L 22 14 46.2
ODBI Odobesti 76.96 320⇑ *iP* **P 21 37 40.2 +2.2**
STHS Stebnicka Huta 77.04 325 *eP* **P 21 37 39.3 +0.8**

STHS pmax pmax
comp=Z,13nm,1.0s
STHS Stebnicka Huta 77.04 325 *eP* **P 21 37 39.3 +0.8**
VRI Vrincioaia 77.05 320⇑*iP* **P 21 37 39.2 +0.6**
VRI Vrincioaia 77.05 320⇑P **P 21 37 39.2 +0.6**
OJC Ojcow 77.07 326 *eP* **P 21 37 39.4 +0.8**
OJC Ojcow 77.07 326 *eP* **P 21 37 39.1 +0.5**
OJC pmax pmax
comp=Z,41nm,1.0s
OJC Ojcow 77.07 326 *eP* **P 21 37 39.1 +0.5**
comp=Z,41nm,1.0s
PLOR Plostina 77.10 320⇑*iP* **P 21 37 39.5 +0.6**
PLOR Plostina 77.10 320⇑P **P 21 37 39.5 +0.6**
A32A Rocking H Ranc 77.15 36 P **P 21 37 39.1 0.0**
baz=318
UZH Uzhgorod 77.16 324⇓*iP* **P 21 37 37.5 -1.6**
UZH *i* 21 37 47.3
UZH *e*S **S 21 47 20.9 -4.4**
UZH *e* 21 48 15.3
UZH *i* 21 52 29.9
UZH *e* 21 55 39.1
UZH MLR MLR
comp=N,1μm,14.0s
UZH MLR MLR
comp=E,860nm,14.0s
ELDT Eldivan 77.19 312 *i*P **P 21 37 39.6 0.0**
TIRR Tirgusor 77.19 318⇑*iP* **P 21 37 40.3 +1.0**
TIRR Tirgusor 77.19 318⇑P **P 21 37 40.4 +1.1**
HCB Kahramanmara~ 77.22 308 *i*P **P 21 37 39.6 -0.1**
BMR Baia Mare 77.31 323⇓*iP* **P 21 37 41.4 +1.4**
BMR Baia Mare 77.31 323⇓P **P 21 37 41.4 +1.4**
CRVS Cervenica-Dubn 77.33 325 *eP* **P 21 37 40.7 +0.6**
CRVS Cervenica-Dubn 77.33 325 *eP* **P 21 37 40.7 +0.6**
ARCR ARCALIA 77.33 322⇓*iP* **P 21 37 41.5 +1.4**
ANDN Andirin 77.41 309 *i*P **P 21 37 40.7 -0.1**
C31A Landman Farms, 77.42 37 P **P 21 37 40.9 +0.3**
baz=317
D30A Buchanan 77.44 38 P **P 21 37 41.0 +0.3**
baz=316
NIE Niedzica 77.45 326 *eP* **P 21 37 41.8 +1.0**
NIE Niedzica 77.45 326 *eP* **P 21 37 41.8 +1.0**
B32A Ashes, Strandq 77.52 36 P **P 21 37 41.2 0.0**
baz=318
BR101 Keskin Array S 77.58 312 *eP* **P 21 37 41.6 -0.2**
BR101 *eP*P **PP 21 40 40.8 +4.3**
BR131 Keskin Array S 77.58 312 *eP* **P 21 37 42.4 +0.6**
BRTR Keskin Array B 77.58 312 P **P 21 37 41.6 -0.2**
comp=E,9.5nm,0.9s,baz=91,slow=3.5,SNR=51
BRTR PP **PP 21 40 40.8 +4.3**
comp=E,1.9nm,0.9s,baz=90,slow=4.1,SNR=3.7
BRTR LR LR 22 16 37.1
comp=E,170nm,19.3s,baz=42,slow=39
BRTR Keskin Array B 77.58 312 *i*P **P 21 37 42.2 +0.4**
BRTR pmax pmax
comp=Z,10.0nm,0.9s
PGOR Pogoanele 77.60 319⇑*iP* **P 21 37 43.3 +1.7**
PDMCI Parker Dam,Lak 77.60 56 P **P 21 37 43.0 +1.1**
baz=310
A33A Warroad 77.63 35 P **P 21 37 41.6 -0.2**
baz=318
DOPR Dopca 77.64 321⇑*iP* **P 21 37 44.7 +2.8**
ISR Istrita 77.67 319⇑*iP* **P 21 37 43.3 +1.2**
ISR Istrita 77.67 319⇑P **P 21 37 43.3 +1.2**
MLR Muntele Rosu 77.70 320⇓*iP* **P 21 37 42.9 +0.5**
MLR Muntele Rosu 77.70 320⇓P **P 21 37 42.9 +0.5**
MLR Muntele Rosu 77.70 320 *eP* **P 21 37 43.0 +0.5**
comp=Z,17nm,1.2s
E30A Jud 77.80 38 P **P 21 37 42.9 +0.1**
baz=316
DRWC Darouich 77.84 308 *eP* **P 21 37 44.0 +0.7**
PSN Preselentsi 77.85 318 *eP* **P 21 37 44.4 +1.3**
ANTO Ankara 77.96 312 *eP* **P 21 37 44.7 +0.8**
ANTO pmax pmax
comp=Z,54nm,0.9s
ANTO Ankara 77.96 312 *eP* **P 21 37 44.7 +0.8**
comp=Z,54nm,0.9s
BR231 Keskin MP Arra 77.99 312 *eP* **P 21 37 45.3 +1.2**
LANS Liptovska Anna 78.01 326 *eP* **P 21 37 45.5 +1.5**
LANS Liptovska Anna 78.01 326 *eP* **P 21 37 45.5 +1.5**
KSP Ksiaz 78.04 329 *eP* **P 21 37 44.8 +0.8**
KSP Ksiaz 78.04 329 *eP* **P 21 37 44.8 +0.8**
PV10 Paradox Valley 78.05 50 *eP* **P 21 37 46.3 +1.7**
OKC Ostrava-Krasne 78.05 327 *eP* **P 21 37 44.7 +0.6**
OKC *eP*P **pP 21 37 55.0 -0.9**
OKC AMS AMS 22 15 00.0
comp=Z,500nm,16.8s
OKC Ostrava-Krasne 78.05 327 *eP* **P 21 37 44.7 +0.6**
OKC *e* 21 37 55.0
OKC MLR MLR
comp=Z,500nm,16.8s
KECS Kecovo 78.07 325 *eP* **P 21 37 44.7 +0.5**
KECS pmax pmax
comp=Z,4.0nm,0.8s
KECS Kecovo 78.07 325 *eP* **P 21 37 44.7 +0.5**
H28A Mission Ridge 78.08 41 P **P 21 37 44.7 +0.3**
baz=316
N23A Red Feather La 78.11 46 *eP* **P 21 37 46.8 +1.8**
comp=Z,10nm,1.0s
SULR 78.13 319⇑*iP* **P 21 37 45.3 +0.7**
VOIR 78.18 320⇑*iP* **P 21 37 46.2 +1.2**
VOIR 78.18 320⇑P **P 21 37 46.2 +1.2**
B34A Aery, Baudette 78.29 35 P **P 21 37 45.2 -0.2**
baz=319
DRGR 78.31 323⇓*iP* **P 21 37 46.2 +0.5**
DRGR 78.31 323⇓P **P 21 37 46.2 +0.5**
MORC Moravsky Berou 78.35 327⇓*iP* **P 21 37 46.5 +0.7**
MORC Moravsky Berou 78.35 327⇓P **P 21 37 46.5 +0.7**
MORC Moravsky Berou 78.35 327 *eP* **P 21 37 46.7 +0.9**
comp=Z,108nm,0.9s
KKUL Konya-Kulu 78.36 312 *i*P **P 21 37 46.4 +0.2**
DPC Dobruska-Polom 78.41 328 *i*P **P 21 37 47.2 +1.1**
DPC *e*P **pP 21 37 57.4 -0.5**
DPC *e*sP **sP 21 37 59.8 -2.5**
DPC *e*PP **PP 21 40 36.1 -6.9**
DPC AMS AMS 22 15 10.0
comp=Z,500nm,16.1s
DPC Dobruska-Polom 78.41 328 *i*P **P 21 37 47.2 +1.1**
DPC *e* 21 37 57.4
DPC *e* 21 37 59.8
DPC MLR MLR
comp=Z,500nm,16.1s
UPC Upice 78.41 328 AMS AMS 22 15 10.0
comp=Z,500nm,17.6s
ARR Arges 78.44 321⇑*iP* **P 21 37 47.8 +1.4**
KRLC Kraliky 78.44 328 *eP* **P 21 37 47.0 +0.7**
KRLC *e*P **pP 21 37 59.6 +1.6**
KRLC *e*x x 21 40 32.3
KRLC Kraliky 78.44 328 *eP* **P 21 37 47.0 +0.7**
KRLC *e* 21 37 59.6
I28A Midland 78.49 41 P **P 21 37 47.1 +0.4**
baz=316
DED Mersin 78.74 309 *i*P **P 21 37 47.5 -0.7**
PSZ Piszkesteto 78.76 325⇑*iP* **P 21 37 49.1 +1.0**
PSZ Piszkesteto 78.76 325⇑*eP* **P 21 37 49.0 +1.0**
PSZ Piszkesteto 78.76 325⇑P **P 21 37 49.1 +1.0**
PSZ Piszkesteto 78.76 325 *eP* **P 21 37 49.1 +1.0**
comp=Z,26nm,1.0s
ARNB Al Arnab 78.77 308 *eP* **P 21 37 50.5 +2.1**
VYHS Vyhne 78.78 326 *eP* **P 21 37 49.0 +0.8**
VYHS pmax pmax
comp=Z,8.0nm,0.9s
VYHS Vyhne 78.78 326 *eP* **P 21 37 49.0 +0.8**
VYHS *e*PP **PP 21 40 46.1 0.0**
VYHS *e*L L 22 15 27.1
SLNF Slenfeh 78.79 307 *eP* **P 21 37 48.9 +0.3**
B35A Bob, Littlefor 78.79 34 P **P 21 37 48.3 +0.1**
baz=320
KERG Konya-Eregli 78.84 310 *i*P **P 21 37 48.6 -0.2**
BRG Berggiesshubel 78.94 330 *eP* **P 21 37 49.1 +0.1**
comp=Z,16nm,1.0s
BRG *e*PP PP 21 40 39.1 -8.2
comp=Z,3.3nm,0.9s
comp=N,242nm,15.1s
comp=E,281nm,18.1s
comp=Z,395nm,16.5s
BRG Berggiesshubel 78.94 330 *eP* **P 21 37 49.1 +0.1**
BRG pmax pmax
comp=Z,16nm,1.0s
BRG MLR MLR
comp=N,242nm,15.1s
BRG MLR MLR
comp=E,281nm,18.1s
BRG MLR MLR
comp=Z,395nm,16.5s

RABH Abou Rabah 78.94 306 *eP* **P 21 37 50.1 +0.7**
CLL Collm 78.95 331⇑*iP* **P 21 37 48.9 -0.1**
comp=Z,27nm,0.9s
CLL *i* 21 38 01.7
CLL *i* 21 38 09.3
CLL *i* 21 38 19.2
CLL *i* 21 38 26.6
CLL *e* 21 40 36.0
CLL *e*PP **PP 21 40 49.0 +1.6**
CLL *i* 21 40 57.0
CLL *e*PS **PnS 21 48 30.0 -0.2**
CLL *e*(SS) 21 54 06.0
CLL *e*SSSS 21 58 54.0
CLL Collm 78.95 331⇑*iP* **P 21 37 48.9 -0.1**
CLL *i* 21 38 01.7
CLL pmax pmax
comp=Z,27nm,0.9s
CLL Collm 78.95 331 *eP* **P 21 37 49.2 +0.2**
comp=Z,28nm,0.8s
PVCC Panska Ves 78.97 329 *eP* **P 21 37 50.0 +0.9**
PVCC AMS AMS 22 15 50.0
comp=Z,600nm,18.2s
PVCC Panska Ves 78.97 329 *eP* **P 21 37 50.0 +0.9**
PVCC MLR MLR
comp=Z,600nm,18.2s
VRAC Vranov 79.11 327⇓*iP* **P 21 37 50.8 +0.9**
VRAC Vranov 79.11 327⇓P **P 21 37 50.8 +0.9**
SIRR Siria 79.19 323⇑*iP* **P 21 37 51.8 +1.3**
SZH Strazhica 79.30 318 *eP* **P 21 37 51.1 0.0**
GOPC GO Pecny, Ondr 79.37 329 *eP* **P 21 37 52.2 +0.9**
GOPC AMS AMS 22 15 40.0
comp=Z,500nm,15.8s
GOPC GO Pecny, Ondr 79.37 329 *eP* **P 21 37 52.2 +0.9**
GOPC MLR MLR
comp=Z,500nm,15.8s
SMOL Smolenice 79.37 326 *eP* **P 21 37 52.6 +1.2**
SMOL Smolenice 79.37 326 *eP* **P 21 37 52.6 +1.2**
HAWK Haweek 79.38 306 *eP* **P 21 37 52.2 +0.2**
PRA Prague 79.38 329 *eP* **P 21 37 52.2 +0.8**
PRA Prague 79.38 329 *eP* **P 21 37 52.2 +0.8**
PRU Pruhonice 79.41 329 *eP* **P 21 37 52.2 +0.7**
PRU *e*pP **pP 21 38 05.1 +1.8**
PRU *e*PP **PP 21 40 50.2 -1.0**
PRU AMS AMS 22 15 50.0
comp=Z,500nm,19.4s
PRU Pruhonice 79.41 329 *eP* **P 21 37 52.2 +0.7**
PRU *e* 21 38 05.1
PRU *e* 21 40 50.2
PRU MLR MLR
comp=Z,500nm,19.4s
F33A 5 Mile Ranch, 79.53 38 P **P 21 37 52.6 +0.4**
baz=318
TREC Trest 79.57 328 *eP* **P 21 37 53.2 +0.7**
TREC AMS AMS 22 16 00.0
comp=Z,500nm,17.8s
TREC Trest 79.57 328 *eP* **P 21 37 53.2 +0.7**
TREC MLR MLR
comp=Z,500nm,17.8s
BZS Buzias 79.70 322⇑*iP* **P 21 37 53.3 +0.1**
BZS Buzias 79.70 322⇑P **P 21 37 53.3 +0.1**
ZALF Zalf 79.86 305 *eP* **P 21 37 53.4 -1.0**
EDRB Edirne 79.89 317 P **P 21 37 55.4 +1.1**
EDRB Edirne 79.89 317 P **P 21 37 55.4 +1.1**
NKC Novy Kostel 80.03 330 *eP* **P 21 37 55.4 +0.5**
NKC *e*pP **pP 21 38 08.1 +1.4**
NKC Novy Kostel 80.03 330 *eP* **P 21 37 55.4 +0.5**
NKC *e* 21 38 08.1
MDVR Moldovita 80.27 322⇑*iP* **P 21 37 56.3 -0.1**
C38A Sawbill Land. 80.34 34 P **P 21 37 56.5 -0.1**
baz=321
SOP Sopron 80.39 326⇑*eP* **P 21 37 57.9 +1.0**
E36A McGregor 80.40 35 P **P 21 37 57.0 0.0**
baz=320
BRBR Barbar 80.40 306 *eP* **P 21 37 57.6 +0.1**
KHC Kasperske Hory 80.47 329 *i*P **P 21 37 58.0 +0.7**
KHC *e*x x 21 38 01.2
KHC *e*pP **pP 21 38 11.0 +1.8**
KHC *e*PP **PP 21 40 55.2 -4.9**
KHC AMS AMS 22 16 40.0
comp=Z,500nm,18.7s
KHC Kasperske Hory 80.47 329 *i*P **P 21 37 58.0 +0.7**
KHC *e* 21 38 11.0
KHC *e* 21 40 55.2
KHC MLR MLR
comp=Z,500nm,18.7s
KHC Kasperske Hory 80.47 329 *eP* **P 21 37 58.0 +0.7**
comp=Z,12nm,0.9s
CONA Conrad Observa 80.49 327 *i*P **P 21 37 58.7 +1.1**
comp=Z,24nm,1.0s,SNR=15
PKSM Moragy 80.61 324⇑*iP* **P 21 37 57.9 -0.2**
PKSM Moragy 80.61 324⇑P **P 21 37 57.9 -0.2**
ASF Jabal al Asfar 80.63 304 P **P 21 37 58.5 -0.1**
comp=Z,3.4nm,0.6s,baz=53,slow=2.4,SNR=6.2
GEC2 GERESS Array S 80.65 329 *eP* **P 21 37 58.7 +0.3**
GEC2 pmax pmax
comp=Z,12nm,1.0s
GEC2 GERESS Array S 80.65 329 *eP* **P 21 37 58.7 +0.3**
comp=Z,12nm,1.0s
GERES GERESS Array B 80.65 329 P **P 21 37 58.6 +0.3**
comp=Z,7.4nm,0.8s,baz=36,slow=5.0,SNR=66
GERES PP **PP 21 40 54.6 -7.0**
comp=Z,1.4nm,0.9s,baz=46,slow=7.6,SNR=3.7
GERES LR LR 22 16 40.7
comp=Z,419nm,20.7s,baz=27,slow=38
GEA0 GERESS Array S 80.65 329 *eP* **P 21 37 58.5 +0.1**
GEA0 *e*PP **PP 21 40 54.7 -7.0**
PGB Panagyurishte 80.71 319 *eP* **P 21 37 59.8 +1.0**
GRFO Grafenberg 80.93 330 *eP* **P 21 38 00.9 +1.1**
GRFO pmax pmax
comp=Z,36nm,0.9s
GRFO Grafenberg 80.93 330 *eP* **P 21 38 00.8 +1.1**
comp=Z,36nm,0.9s
ECSD EROS Data Cent 80.94 39 P **P 21 38 00.0 +0.1**
baz=318
MMAI Mount Meron Ar 81.01 306 P **P 21 38 01.4 +0.9**
comp=Z,18nm,0.9s,baz=38,slow=5.5,SNR=21
RZN Rozhen 81.06 318 *eP* **P 21 38 00.5 -0.3**
ARSA Arzberg 81.16 327 *i*P **P 21 38 01.7 +0.7**
comp=Z,9.7nm,0.8s,SNR=8.8
RAR Rarotonga 81.17 127 LR LR 22 07 39.4
comp=Z,248nm,19.6s,baz=296,slow=31
MOA Molln 81.21 328 *i*P **P 21 38 01.9 +0.5**
comp=Z,8.9nm,0.9s
T25A Trinidad 81.57 48 P **P 21 38 04.4 +0.8**
baz=315
T25A Trinidad 81.57 48 *eP* **P 21 38 04.5 +0.8**
comp=Z,26nm,1.5s
MMB Musomiste 81.64 318 *eP* **P 21 38 04.4 +0.7**
NVR Nevrokopi 81.75 318 P **P 21 38 04.6 +0.3**
NVR Nevrokopi 81.75 318 P **P 21 38 04.6 +0.3**
KKB Krupnik 81.76 319 *eP* **P 21 38 04.9 +0.6**
PERS Pernice 81.82 327 *i*P **P 21 38 05.0 +0.4**
SOKA Soboth 81.82 327 *i*P **P 21 38 05.2 +0.5**
comp=Z,39nm,1.0s,SNR=31
ANMO Albuquerque 81.90 51 LR LR 22 09 45.1
comp=Z,46nm,21.1s,baz=345,slow=32
ANMO Albuquerque 81.90 51 P **P 21 38 06.6 +1.2**
baz=314
ANMO Albuquerque 81.90 51⇓*eP* **P 21 38 06.8 +1.4**
ANMO pmax pmax
comp=Z,4.0nm,0.8s
ANMO Albuquerque 81.90 51 *eP* **P 21 38 07.4 +2.0**
comp=Z,6.9nm,1.1s
BEBN Eben Emael 81.99 334 P **P 21 38 05.5 +0.2**
MEM Membach 82.04 334 P **P 21 38 05.8 +0.2**
comp=Z,8.8nm,1.0s
SRS Serrai 82.06 318 P **P 21 38 06.0 +0.1**
SRS Serrai 82.06 318 *eP* **P 21 38 06.0 +0.1**
SRS Serrai 82.06 318 *eP* **P 21 38 06.0 +0.1**
SCHQ Schefferville 82.16 17 P **P 21 38 05.8 -0.4**
comp=Z,6.5nm,0.7s,baz=12,slow=7.7,SNR=4.4
SCHQ LR LR 22 19 54.8
comp=Z,127nm,18.0s,baz=356,slow=40
SCHQ Schefferville 82.16 17 *eP* **P 21 38 05.8 -0.4**
comp=Z,7.8nm,0.8s
OBKA Obir 82.16 327 *i*P **P 21 38 06.5 +0.1**
comp=Z,12nm,0.7s,SNR=6.2
KBA Koelnbreinsper 82.20 328 *i*P **P 21 38 06.7 0.0**
comp=Z,34nm,1.0s,SNR=21
KNT Kendrikon 82.38 319 P **P 21 38 07.9 +0.3**
KNT Kendrikon 82.38 319 P **P 21 38 07.9 +0.3**
KNT Kendrikon 82.38 319 P **P 21 38 07.9 +0.3**
VAY Valandovo 82.42 319 P **P 21 38 08.1 +0.3**
VAY Valandovo 82.42 319 *i*P **P 21 38 08.4 +0.7**

VAY Valandovo 82.42 319 *eP* **P 21 38 08.1 +0.3**
VAY Valandovo 82.42 319 *eP* **P 21 38 08.1 +0.3**
OUR Ouranopolis 82.43 317 P **P 21 38 08.0 +0.2**
OUR Ouranopolis 82.43 317 *eP* **P 21 38 08.0 +0.2**
OUR Ouranopolis 82.43 317 *eP* **P 21 38 08.0 +0.2**
BCLA Clavier 82.44 334 P **P 21 38 07.5 -0.2**
MYKA Terra Mystica 82.44 327 *i*P **P 21 38 07.7 -0.1**
comp=Z,14nm,0.8s,SNR=8.5
STU Stuttgart 82.44 331 *eP* **P 21 38 08.5 +0.7**
STU pmax pmax
comp=Z,30nm,0.9s
STU Stuttgart 82.44 331 *eP* **P 21 38 08.5 +0.7**
comp=Z,30nm,0.9s
SKO Skopje 82.50 320 *i*P **P 21 38 09.3 +1.1**
VISS Visnje 82.59 326 *i*P **P 21 38 08.2 -0.4**
BOJS Bojanci 82.65 326 *i*P **P 21 38 09.0 +0.1**
PLG Polygyros 82.68 318 P **P 21 38 09.2 0.0**
PLG Polygyros 82.68 318 P **P 21 38 09.2 0.0**
PLG Polygyros 82.68 318 P **P 21 38 09.2 0.0**
CHOS Chios island 82.74 315 P **P 21 38 09.7 +0.1**
CHOS Chios island 82.74 315 P **P 21 38 09.7 +0.1**
WTTA Wattenberg 82.74 329 *i*P **P 21 38 10.0 +0.5**
comp=Z,13nm,0.8s,SNR=5.0
GRG Griva 82.78 319 P **P 21 38 09.6 -0.1**
GRG Griva 82.78 319 *eP* **P 21 38 09.6 -0.1**
GRG Griva 82.78 319 *eP* **P 21 38 09.6 -0.1**
LANF Langenberg 82.78 332⇑*eP* **P 21 38 09.8 +0.3**
ABTA Abfaltersbach 82.81 328 *i*P **P 21 38 09.3 -0.5**
comp=Z,14nm,1.0s,SNR=6.5
JAVS Javornik 82.85 327 *i*P **P 21 38 09.3 -0.7**
PAIG Paliouri 82.89 317 P **P 21 38 10.1 -0.1**
PAIG Paliouri 82.89 317 *eP* **P 21 38 10.1 -0.1**
PAIG Paliouri 82.89 317 *eP* **P 21 38 10.1 -0.1**
MOTA Moosalm 82.89 329 *i*P **P 21 38 10.5 +0.2**
comp=Z,32nm,0.9s,SNR=26
RETA Reutte 82.91 329 *i*P **P 21 38 10.9 +0.6**
comp=Z,33nm,1.3s,SNR=11
DOU Dourbes 82.95 334 P **P 21 38 10.4 0.0**
BODT Bodrum 83.00 313 P **P 21 38 11.1 +0.2**
BODT Bodrum 83.00 313 *eP* **P 21 38 11.1 +0.2**
TRI Trieste 83.12 327 *eP* **P 21 38 10.6 -0.7**
TRI pmax pmax
comp=Z,24nm,0.9s
TRI Trieste 83.12 327 *eP* **P 21 38 10.6 -0.7**
comp=Z,24nm,0.9s
BFO Black Forest 83.13 331 *i*P **P 21 38 11.8 +0.4**
BFO Black Forest 83.13 331 *eP* **P 21 38 11.5 +0.1**
comp=Z,16nm,1.0s
ARG Arkhangelos 83.14 312 P **P 21 38 11.8 +0.2**
ARG Arkhangelos 83.14 312 P **P 21 38 11.8 +0.2**
ARG Arkhangelos 83.14 312 P **P 21 38 11.8 +0.2**
PDG Podgorica 83.22 322⇑*iP* **P 21 38 11.9 +0.1**
PDG Podgorica 83.22 322 P **P 21 38 11.9 +0.1**
TTG Podgorica 83.22 322 P **P 21 38 11.9 +0.1**
TTG Podgorica 83.22 322 P **P 21 38 11.9 +0.1**
BIA Bitola 83.27 319 *i*P **P 21 38 12.4 +0.1**
FETA Feichten 83.30 329 *i*P **P 21 38 12.9 +0.4**
comp=Z,22nm,0.9s,SNR=12
AOS Alonnisos 83.34 317 P **P 21 38 12.2 -0.3**
AOS Alonnisos 83.34 317 *eP* **P 21 38 12.2 -0.3**
LIT Litokhoron 83.37 318 P **P 21 38 12.5 -0.2**
LIT Litokhoron 83.37 318 *eP* **P 21 38 12.5 -0.2**
LIT Litokhoron 83.37 318 *eP* **P 21 38 12.5 -0.2**
DAVA Damuels 83.41 330 *i*P **P 21 38 13.2 +0.2**
comp=Z,29nm,1.0s,SNR=10
WLS Welschbruch 83.42 332⇑*eP* **P 21 38 13.1 +0.2**
OHR Ohrid 83.47 320 *i*P **P 21 38 13.3 0.0**
EIL Elat 83.54 303 P **P 21 38 14.3 +0.5**
comp=Z,16nm,0.9s,baz=351,slow=5.2,SNR=15
XOR Xorichti 83.55 317 P **P 21 38 12.8 -0.9**
XOR Xorichti 83.55 317 P **P 21 38 12.8 -0.9**
ECH Echery 83.66 332⇑*eP* **P 21 38 14.1 0.0**
TIR Tirane 83.75 320 *eP* **P 21 38 14.7 +0.1**
TIR pmax pmax
comp=Z,40nm,0.9s
TIR Tirane 83.75 320 *eP* **P 21 38 14.7 +0.1**
comp=Z,40nm,0.9s
FUORN Ofenpass-Fuorn 83.81 329 *eP* **P 21 38 15.8 +0.7**
comp=Z,54nm,1.0s
Q33A Connelly Farm, 83.84 43 P **P 21 38 15.3 +0.1**
baz=318
NEST Nestorio 83.87 319 P **P 21 38 15.3 -0.1**
SMIA Simia 83.90 317 P **P 21 38 15.3 -0.2**
MOF Molkenrain 83.97 332⇑*eP* **P 21 38 15.7 -0.1**
APE Apeiranthos 83.98 314⇑*iP* **P 21 38 15.1 -0.9**
APE Apeiranthos 83.98 314⇑P **P 21 38 15.1 -0.9**
THEF They Montfort 84.07 333⇑*eP* **P 21 38 16.2 +0.1**
LKR Lokris 84.18 317 P **P 21 38 15.9 -1.0**
LKR Lokris 84.18 317 *eP* **P 21 38 15.9 -1.0**
AGG Agios Georgios 84.26 317 P **P 21 38 16.0 -1.3**
AGG Agios Georgios 84.26 317 *eP* **P 21 38 16.6 -0.7**
AGG Agios Georgios 84.26 317 *eP* **P 21 38 16.6 -0.7**
TUE Stuetta 84.29 330 *eP* **P 21 38 17.7 +0.1**
comp=Z,18nm,0.9s
LOMF Lomont 84.51 332⇑*eP* **P 21 38 18.7 +0.2**
PMOR Pomariorio Ree 84.52 115 *e*T T 23 11 28.9
comp=Z,8.8nm,0.3s
T32A Huddler Ranch, 84.59 45 P **P 21 38 19.7 +0.6**
baz=318
EVR Evrytania 84.60 318 P **P 21 38 17.8 -1.4**
EVR Evrytania 84.60 318 P **P 21 38 17.8 -1.4**
DSF Desfina 84.61 317 P **P 21 38 17.5 -1.6**
DSF Desfina 84.61 317 *eP* **P 21 38 17.5 -1.6**
AMTX Amarillo 84.73 48 P **P 21 38 20.8 +1.0**
baz=316
MSTX Muleshoe 84.75 49 P **P 21 38 20.8 +0.8**
baz=316
ANX Ano Chora 84.79 317 P **P 21 38 19.4 -0.7**
MNTX Cornudas Mount 84.80 53 P **P 21 38 21.1 +0.9**
baz=315
MNTX Cornudas Mount 84.80 53 *eP* **P 21 38 21.4 +1.3**
comp=Z,5.8nm,1.1s
SGD Sagiada 84.88 319 P **P 21 38 20.1 -0.3**
LAKA Lakka 85.02 317 P **P 21 38 19.7 -1.5**
LAKA Lakka 85.02 317 *eP* **P 21 38 19.7 -1.5**
N39A Derby Farms, D 85.09 39 P **P 21 38 21.8 +0.4**
baz=321
PPT Papeete 85.14 118 LR LR 22 08 09.0
comp=Z,314nm,21.6s,baz=348,slow=30
PPT2 Papeete2 85.15 118 *e*S **S 21 48 46.7 -2.5**
comp=Z,71nm,25.5s
PPT2 Papeete2 85.15 118 *e*LR LR 22 05 10.7
comp=Z,629nm,22.2s,baz=318
PPT2 Papeete2 85.15 118 *e*T T 23 12 38.3
comp=Z,7.4nm,0.3s
SENIN Lac Senin/Sane 85.16 331 *eP* **P 21 38 22.4 +0.4**
comp=Z,15nm,0.8s
PDO Prodromos 85.17 318 P **P 21 38 21.4 -0.4**
R35A Emporia Munici 85.19 43 P **P 21 38 22.4 +0.4**
baz=319
AXS Araxos 85.37 318 P **P 21 38 22.4 -0.4**
DRO Drossia 85.38 317 P **P 21 38 22.2 -0.8**
LAST Lasithi 85.40 313⇑*iP* **P 21 38 23.6 +0.4**
LAST Lasithi 85.40 313 *eP* **P 21 38 23.6 +0.4**
comp=Z,47nm,0.9s
RLS Riolos of Patr 85.43 317 P **P 21 38 23.1 0.0**
RLS Riolos of Patr 85.43 317 P **P 21 38 23.1 0.0**
R36A Gordon, Harris 85.55 42 P **P 21 38 23.8 +0.1**
baz=319
P38A Dawn 85.55 40 P **P 21 38 24.0 +0.2**
baz=320
IDI Anoyia 85.63 313⇑*iP* **P 21 38 23.9 -0.4**
IDI Anoyia 85.63 313 *eP* **P 21 38 23.1 -1.2**
comp=Z,149nm,1.9s
T34A McClaskey Farm 85.64 44 P **P 21 38 24.4 +0.1**
baz=318
VLS Valsamata 85.79 318 P **P 21 38 23.8 -1.2**
VLS Valsamata 85.79 318 P **P 21 38 23.8 -1.2**
VLS Valsamata 85.79 318 P **P 21 38 23.8 -1.2**
TAOE Nuku Hiva Isla 85.97 105 *e*LR LR 22 05 29.1
comp=Z,569nm,21.8s
Q38A Cooks Store, C 86.02 41 P **P 21 38 26.3 +0.2**
baz=320
Q39A Willow Grove F 86.27 40 P **P 21 38 27.4 0.0**
baz=321
T36A Boggs Farm, Ca 86.31 43 P **P 21 38 27.8 +0.3**
baz=319
S37A Fort Scott 86.33 42 P **P 21 38 27.4 -0.2**
baz=320
P40A Paris 86.35 39 P **P 21 38 27.6 -0.1**
baz=321
R38A Fenwick Farm, 86.47 41 P **P 21 38 27.3 -1.0**
baz=320
Q40A Laux Farm, Aux 86.76 40 P **P 21 38 29.7 0.0**

baz=321
T37A Cheneyville 18 86.76 43 P P 21 38 29.6 -0.2
baz=320
R39A Chumby, Stover 86.81 41 P P 21 38 29.6 -0.3
baz=321
PLDF La Plantade 86.83 333 *eP* **P 21 38 30.4 +0.3**
LPIG La Paz 86.85 61 LR LR 22 13 16.9
comp=Z,56nm,18.7s,baz=238,slow=33
S38A Stockton 86.89 42 P P 21 38 30.2 -0.2
baz=320
AGO Saint Agoulin 86.93 333⇑ *eP* **P 21 38 31.1 +0.6**
SSB Saint Sauveur 87.10 332 *eP* **P 21 38 30.8 -0.5**
SSB pmax pmax
comp=Z,9.0nm,0.9s
SSB Saint Sauveur 87.10 332 *eP* **P 21 38 30.8 -0.5**
comp=Z,8.7nm,0.9s
S39A Bolivar 87.14 41 P P 21 38 31.2 -0.4
baz=321
T38A Diamond 87.15 42 P P 21 38 31.5 -0.2
baz=320
R40A Maddies Statio 87.21 40 P P 21 38 31.9 0.0
baz=321
PYM Petit Puy Mans 87.24 333⇑ *eP* **P 21 38 32.6 +0.6**
TX31 Lajitas Ar. Si 87.50 53 *eP* **P 21 38 34.7 +1.1**
LTX Lajitas 87.51 53 *eP* **P 21 38 34.1 +0.4**
LTX Lajitas 87.51 53 *eP* **P 21 38 34.1 +0.4**
TXAR Lajitas Array 87.51 53 P P 21 38 34.1 +0.4
comp=Z,0.9nm,0.8s,baz=299,slow=3.7,SNR=4.6
TXAR LR LR 22 16 55.6
comp=Z,51nm,19.8s,baz=0.0,slow=35
SADO Sadowa 87.56 28 LR LR 22 20 18.6
comp=Z,110nm,20.9s,baz=350,slow=37
S40A Lebanon 87.63 41 P P 21 38 33.8 -0.2
baz=321
TRQ Mont Tremblant 87.87 25 *eP* **P 21 38 35.1 +0.1**
T40A Mansfield 87.97 41 P P 21 38 35.0 -0.6
baz=321
V38A Canehill 87.99 43 P P 21 38 35.8 +0.1
baz=320
U39A Green Forest 88.07 42 P P 21 38 36.0 -0.1
baz=321
V39A Pettigrew 88.40 43 P P 21 38 37.5 -0.3
baz=320
U40A Yellville 88.41 42 P P 21 38 37.4 -0.3
baz=321
333A Richland Sprin 88.86 49 P P 21 38 40.2 +0.3
baz=318
X39A Fountain Ranch 89.17 44 P P 21 38 41.7 +0.3
baz=320
PQI Presque Isle 89.40 21 *eP* **P 21 38 43.3 +1.1**
comp=Z,10μm,0.6s
MIAR Mount Ida 89.43 43 P P 21 38 42.7 +0.2
baz=321
W41B Gary Mavity, V 89.64 42 P P 21 38 43.5 +0.1
baz=321
H06E1 SOCORRO T-PHAS 90.01 65 T T 23 20 24.0
SNR=27
ATD Arta Tunnel 90.06 285 P P 21 38 47.3 +1.5
comp=Z,10nm,0.9s,baz=67,slow=5.6,SNR=5.1
M54A Oil Creek Stat 90.16 30 P P 21 38 46.4 +0.5
baz=329
N54A Moraine State 90.50 31 P P 21 38 47.8 +0.4
baz=329
KEST Kesra 93.19 324 P P 21 39 01.9 +1.8
comp=Z,7.0nm,0.9s,baz=46,slow=11,SNR=3.7
KEST LR LR 22 25 44.1
comp=Z,299nm,18.9s,baz=344,slow=39
KEST Kesra 93.19 324 *eP* **P 21 39 01.9 +1.8**
comp=Z,156nm,1.9s
TKL Tuckaleechee C 93.36 36 LR LR 22 20 58.6
comp=Z,103nm,21.6s,baz=350,slow=35
KMSC Kings Mountain 94.88 35 *eP* **P 21 39 10.5 +2.8**
comp=Z,8.9nm,0.6s
ES19 SONSECA Array 94.94 335 *eP* **P 21 39 07.8 -0.2**
ESDC Sonseca Array 94.99 335 P P 21 39 08.0 -0.2
comp=Z,2.1nm,0.7s,baz=18,slow=4.3,SNR=15
ESDC PP **PP 21 42 54.9 -1.8**
comp=Z,3.6nm,1.1s,baz=26,slow=7.8,SNR=5.4
ESDC LR LR 22 29 19.5
comp=Z,157nm,18.3s,baz=20,slow=40
CCIG Comitan 104.25 54 *ePdif* **Pdif 21 39 46.9 -3.3**
TOA1 Torodi Ar. Sit 115.84 317 *ePKPdf* **PKPdf 21 44 27.9 -0.6**
TOA1 *ePP* PP 21 45 21.8 -10
TOA0 Torodi Ar. Sit 115.84 317 *ePKPdf* **PKPdf 21 44 27.9 -0.6**
TOA0 *ePP* PP 21 45 23.0 -8.4
TORD Torodi Ar. Bea 115.84 317 PKP **PKPdf 21 44 27.9 -0.6**
comp=Z,0.9nm,0.6s,baz=23,slow=1.3,SNR=4.9
TORD PP PP 21 45 21.8 -10
comp=Z,1.6nm,0.8s,baz=31,slow=7.7,SNR=5.7
DBIC Dimbokro 124.69 320 PKP **PKPdf 21 44 45.1 -0.5**
comp=Z,5.0nm,0.8s,baz=24,slow=1.5,SNR=6.7
DBIC PP **PP 21 46 28.8 -3.3**
comp=Z,8.6nm,1.1s,baz=348,slow=2.0,SNR=3.1
LBTB Lobatse 125.91 266 *ePKIKP* **PKPdf 21 44 48.4 +0.8**
LBTB Lobatse 125.91 266 *ePKPdf* **PKPdf 21 44 48.4 +0.8**
BOSA Boshof 128.03 262 PKP **PKPdf 21 44 52.5 +0.8**
comp=Z,4.6nm,0.8s,baz=102,slow=1.5,SNR=6.0
SNAA Sanae 143.93 198 PKP PKPab 21 45 17.0 0.0
SNAA Sanae 143.93 198 *ePKIKP* PKPab 21 45 16.9 -0.1
SNAA Sanae 143.93 198 *ePKPpre* PKPab 21 45 16.9 -0.1
LPAZ La Paz 144.27 57 PKP PKPbc 21 45 20.9 0.0
comp=Z,2.7nm,0.9s,baz=21,slow=9.8,SNR=7.8
VNA2 Neumayer--Watz 145.50 197 PKP **PKPdf 21 45 22.4 +0.1**
baz=116,slow=2.8
PB11 IPOC Station P 145.72 63 *ePKPdf* **PKPab 21 45 25.6 +0.4**
VNA3 Neumayer Olymp 145.75 195 PKP **PKPbc 21 45 23.1 -0.2**
RCBR Riachuelo 145.89 357 *ePKPdf* **PKPab 21 45 25.7 -0.1**
VNA1 Neumayer--Stat 145.90 197 PKP **PKPab 21 45 24.0 -0.2**
PB01 IPOC Station P 146.70 65 *ePKPdf* **PKPbc 21 45 27.4 -0.3**
LVC Limon Verde 148.13 66 *ePKPbc* **PKPbc 21 45 32.2 +0.3**
LCO Las Campanas 150.54 78 *ePKPbc* **PKPbc 21 45 37.8 +0.1**

*IDC **02** 21:35:35.3±7.4, 36°.34N×71°.28E, h132km±57km, mb3.1/4, mb1 3.3/8, mb1mx3.0/54, mbtmp3.6/8, MS2.8/1, Ms1 2.8/1, ms1mx2.1/19, Error ellipse: s-maj=66.7km s-min=26.8km az=58.0*
*NNC **02** 21:35:39.1±2.8, 37°.02N×70°.72E, h0km, mb4.1, mpv3.7, Error ellipse: s-maj=23.2km s-min=19.6km az=135.0*
ISC 02 21:35:43.1±1.3, 36°.9N±0°.1×71°.2E±0°.1, h200km, n14, σ1°96/19, mb3.2/4, 4C-6D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFK	**Sufi-Kurgan**	**3.62**	**30**	⇑Pn	**Pn**	**21 36 38.1**	**-2.3**
	9.0nm,0.3s						
SFK				⇓Sn	**Sn**	**21 37 24.5**	**-0.9**
	31nm,0.2s						
MNAS	**Manas**	**5.68**	**10**	⇑Pn	**Pn**	**21 37 04.4**	**-2.0**
	3.4nm,0.5s						
MNAS				⇓Sn	**Sn**	**21 38 11.4**	**-0.8**
	7.3nm,0.5s						
KK31	**Karatay Array**	**6.22**	**356**	⇓Pn	**Pn**	**21 37 10.6**	**-2.6**
	3.4nm,0.5s,baz=176,slow=12,SNR=74						
KK31				⇑Sn	**Sn**	**21 38 22.0**	**-2.6**
	3.8nm,0.7s,baz=188,slow=24,SNR=4.4						
AAK	**Ala-Archa**	**6.29**	**23**	P	**Pn**	**21 37 12.5**	**-1.7**
	2.0nm,0.3s,baz=171,slow=0.8,SNR=13						
AAK				S	**Sn**	**21 38 26.0**	**-0.3**
	1.2nm,0.3s,baz=324,slow=22,SNR=11						
AAK	**Ala-Archa**	**6.29**	**23**	⇓Pn	**Pn**	**21 37 13.0**	**-1.1**
	2.6nm,0.4s						
AAK				⇓Sn	**Sn**	**21 38 25.7**	**-0.6**
	9.0nm,0.6s						
TKM2	**Tokmak 2**	**6.92**	**28**	⇓Pn	**Pn**	**21 37 22.2**	**-0.3**
	3.9nm,0.7s						
TKM2				⇑Sn	**Sn**	**21 38 42.6**	**+1.4**
	2.3nm,0.7s						
MKAR	**Makanchi Array**	**12.90**	**36**	P	**Pn**	**21 38 40.3**	**+1.1**
	0.1nm,0.3s,baz=228,slow=15,SNR=3.0						
KURBB	**Kurchatov Arra**	**14.71**	**19**	P	**P**	**21 39 04.1**	**+1.5**
	0.0nm,0.3s,baz=204,slow=11,SNR=4.5						
WSAR	**Wadi Sarin**	**17.37**	**222**	LR	LR	21 46 49.6	
	comp=Z,33nm,21.9s,baz=22,slow=40						
ZALV	**Zalesovo Beam**	**19.51**	**25**	P	**Pn**	**21 39 58.3**	**-0.4**
	0.5nm,0.3s,baz=219,slow=11,SNR=8.4						
ARCES	**ARCESS Array B**	**40.83**	**337**	P	**P**	**21 43 07.7**	**+2.9**
	1.1nm,0.7s,baz=108,slow=10,SNR=4.3						
YKA	**Yellowknife Ar**	**80.85**	**3**	P	**P**	**21 47 36.8**	**+2.6**
	0.2nm,0.8s,baz=355,slow=6.2,SNR=3.6						
WRA	**Warramunga Arr**	**82.09**	**122**	P	**P**	**21 47 38.8**	**-2.7**
	0.6nm,1.1s,baz=326,slow=5.0,SNR=6.1						
ASAR	**Alice Springs**	**84.38**	**125**	P	**P**	**21 47 50.9**	**-2.1**
	0.2nm,0.5s,baz=316,slow=5.2,SNR=3.2						

IDC 02 21:51:54.3±64.0, 20°.08S×179°.31E, h0km, mb3.6/3, mb1 3.8/3, mb1mx3.5/39, mbtmp3.6/3, Error ellipse: s-maj=1147.0km s-min=159.1km az=81.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**35.71**	**243**	P	P	21 58 54.2	-0.5
	0.5nm,0.5s,baz=79,slow=10,SNR=3.4						
WRA	**Warramunga Arr**	**42.16**	**262**	P	P	21 59 49.7	+0.7
	0.6nm,0.6s,baz=96,slow=7.7,SNR=8.8						
ASAR	**Alice Springs**	**42.16**	**257**	P	P	21 59 48.2	-0.8
	0.5nm,0.6s,baz=92,slow=8.0,SNR=6.3						

IDC 02 22:09:12.3±1.5, 1°.24N×125°.83E, h0km, mb3.9/4, mb1 4.0/5, mb1mx3.6/40, mbtmp3.9/5, ML3.5/1, Error ellipse: s-maj=107.4km s-min=21.0km az=66.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**19.23**	**181**	P	Pn	22 13 39.4	+0.4
	0.1nm,0.3s,baz=22,slow=11,SNR=3.0						
WRA	**Warramunga Arr**	**22.65**	**159**	P	P	22 14 14.6	-0.6
	3.4nm,0.5s,baz=335,slow=10,SNR=35						
ASAR	**Alice Springs**	**25.98**	**163**	P	P	22 14 46.6	-0.2
	0.5nm,0.4s,baz=350,slow=14,SNR=9.0						
STKA	**Stephens Creek**	**36.17**	**157**	P	P	22 16 16.6	-0.1
	2.0nm,0.6s,baz=329,slow=8.9,SNR=5.2						
MKAR	**Makanchi Array**	**59.09**	**327**	P	P	22 19 14.6	0.0
	0.5nm,0.4s,baz=118,slow=7.9,SNR=22						

DJA 02 22:17:06.3±0.9, 9°S±6°.×11°3E±°, h25km±9km, M3.6/11, MLv3.6/11, South of Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GMJI	**Gumukmas**	**0.98**	**23**	P	Pn	22 17 23.5	-0.9
GMJI				S	Sb	22 17 36.3	-0.8
JAGI	**Jajag, Banyuwa**	**1.29**	**57**	P	Pn	22 17 28.2	-0.6
JAGI				S	Sn	22 17 45.0	-0.2
PWJI	**Pagerwojo**	**1.69**	**313**	P	Pn	22 17 32.7	-1.6
PWJI				S	Sn	22 17 52.9	-2.3
ABJI	**Asem Bagus**	**1.80**	**40**	P	Pn	22 17 37.0	+1.2
PCJI	**Pacitan**	**2.10**	**298**	P	Pn	22 17 37.1	-2.8
DNP	**Denpasar**	**2.18**	**77**	P	Pn	22 17 41.2	+0.2
DNP				S	Sn	22 18 09.3	+2.0
NGJI	**Ngawi**	**2.40**	**319**	P	Pn	22 17 45.5	+1.5
WOJI	**Wonogiri, Jawa**	**2.50**	**302**	P	Pn	22 17 45.0	-0.4
UGM	**Wanagama**	**2.81**	**296**	P	Pn	22 17 48.8	-0.9
TWSI	**Taliwang, Sumb**	**3.80**	**84**	P	Pn	22 18 02.5	-0.8

*NIED **02** 22:35:00, 36°.20N×142°.90E, h5km, Mw3.5 Best double couple: M=2.21000×10^14 NP1:φs=29.00000°, δ28.00000°, λ-75.00000°. NP2:φs=192.00000°, δ63.00000°, λ-98.00000°.*
*IDC **02** 22:35:49.0±2.0, 36°.20N×143°.19E, h0km, mb3.6/2, mb1 3.8/5, mb1mx3.4/39, mbtmp3.7/5, ML3.3/3, MS2.8/2, Ms1 2.8/2, ms1mx2.3/45, Error ellipse: s-maj=46.3km s-min=30.6km az=84.0*
*ISCJB **02** 22:35:51.2±1.0, 36°.31N±0°.06×143°.12E±0°.08, h33km, mb3.7/2, MS3.1/1, Error ellipse: s-maj=9.2km s-min=8.7km az=169.8*
*JMA **02** 22:35:53.4±0.4, 36°.24N×142°.90E, h23km, M3.6*
ISC 02 22:35:53.4±1.6, 36°.23N±0°.07×143°.1E±0°.1, h35km, n15, σ1°52/16, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**2.08**	**281**	*eS*	**Sn**	**22 36 48.9**	**-1.5**
BSO1	**Boso 1**	**2.34**	**228**	P	**Pn**	**22 36 29.4**	**+0.5**
BSO1				*eS*	**Sn**	**22 36 56.5**	**+0.4**
BSO3	**Boso 3**	**2.55**	**237**	P	**Pn**	**22 36 32.6**	**+0.6**
JFT	**Otama**	**2.56**	**301**	S	**Sn**	**22 37 01.4**	**-1.0**
BSO4	**Boso 4**	**2.57**	**242**	P	**Pn**	**22 36 34.2**	**+1.8**
BSO4				*eS*	**Sn**	**22 37 04.0**	**+1.6**
JOD2	**Odawara 2**	**3.40**	**255**	P	**Pn**	**22 36 44.3**	**+0.3**
JRY	**Ryogami san**	**3.41**	**268**	*eS*	**Sn**	**22 37 22.0**	**-1.3**
JYN	**Shimob**	**3.77**	**260**	P	**Pn**	**22 36 50.4**	**+1.3**
MJAR	**Matsushiro Arr**	**3.96**	**276**	Pn	**Pn**	**22 36 51.9**	**+0.2**
	1.2nm,0.3s,baz=97,slow=9.9,SNR=12						
JHJ	**Hachijo jima 2**	**4.14**	**222**	Pn	**Pn**	**22 36 53.0**	**-1.1**
	7.9nm,0.3s,baz=65,slow=18,SNR=3.1						
JHJ				Sn	**Sn**	**22 37 37.5**	**-3.7**
	22nm,0.3s,baz=83,slow=23,SNR=9.4						
ASAJ	**Asahikawa**	**7.89**	**357**	Pn	**Pn**	**22 37 45.0**	**-0.6**
	0.5nm,0.3s,baz=191,slow=16,SNR=3.7						
JNU	**Nakatsue**	**10.53**	**256**	LR	LR	22 42 49.7	
	comp=Z,31nm,18.2s,baz=119,slow=40						
WRA	**Warramunga Arr**	**56.48**	**190**	P	**P**	**22 45 32.9**	**+1.0**
	0.6nm,0.7s,baz=12,slow=7.4,SNR=3.9						
ASAR	**Alice Springs**	**60.20**	**190**	P	**P**	**22 45 58.4**	**+0.6**
	0.5nm,0.7s,baz=13,slow=7.7,SNR=6.5						
VRAC	**Vranov**	**82.53**	**328**	LR	LR	23 27 55.4	
	comp=Z,8.2nm,18.7s,baz=280,slow=38						

*GUC **02** 22:48:53.7±0.8, 34°.72S×72°.78W, h30km±11km, ML3.9*
ISC 02 22:48:40.3±3.6, 34°.94S±0°.08×74°.5W±0°.2, h35km, n17, σ2°04/23, 1C-2D, Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
COCH	**Cobquecura**	**1.83**	**131**	⇓*iP*	Pn	22 49 17.9	+8.7
COCH				*iS*	**Sn**	**22 49 35.1**	**+3.9**
TALC	**Talca**	**2.39**	**102**	⇑*iP*	**Pn**	**22 49 14.6**	**-2.4**
TALC				*iS*	Sn	22 49 29.2	-16
CCHI	**Chillan**	**2.58**	**131**	*eP*	Pn	22 49 26.1	+6.7
CCHI				IAML		22 50 07.8	
	comp=E,2μm,0.4s						
ANTU	**Antumapu**	**3.48**	**68**	*eP*	**Pn**	**22 49 28.6**	**-3.3**
ANTU				IAML		22 50 05.3	
	comp=E,1μm,0.5s						
CLCH	**Cerro Calan**	**3.62**	**66**	*eP*	**Pn**	**22 49 30.7**	**-3.3**
CLCH				*iS*	Sn	22 49 59.7	-16
CLCH				IAML		22 50 23.1	
	comp=E,880nm,0.8s						
PEL	**Peldehue**	**3.64**	**62**	⇓*iP*	**Pn**	**22 49 31.3**	**-2.8**
PEL				IAML		22 50 12.4	
	comp=N,537nm,0.6s						
AUSP	**Uspallata**	**5.05**	**59**	*iP*	**Pn**	**22 49 53.9**	**+0.1**
AUSP				*iS*	**Sn**	**22 50 53.9**	**+2.8**
AAGR	**Agrelo**	**5.06**	**70**	*iP*	**Pn**	**22 49 53.3**	**-0.5**
AAGR				*iS*	**Sn**	**22 50 52.9**	**+1.9**
ARCO	**CERRO ARCO**	**5.08**	**67**	*iP*	**Pn**	**22 49 53.3**	**-0.7**
ARCO				IAML		22 50 56.0	
	comp=Z,41nm,0.6s						
ASAL	**Salagasta**	**5.26**	**65**	*iP*	**Pn**	**22 49 56.2**	**-0.4**
ASAL				*iS*	**Sn**	**22 50 57.4**	**+1.4**
RTLS	**Leoncito**	**5.36**	**56**	*iP*	**Pn**	**22 49 58.2**	**+0.2**
RTLS				*iS*	**Sn**	**22 51 01.8**	**+3.1**
RTCV	**Cerro Valdivia**	**5.85**	**60**	*iP*	**Pn**	**22 50 04.0**	**-0.5**
RTCV				*iS*	**Sn**	**22 51 10.6**	**+0.2**
RTLL	**Cerro Villicun**	**6.20**	**56**	*iP*	**Pn**	**22 50 08.7**	**-0.7**
RTLL				*iS*	**Sn**	**22 51 19.8**	**+0.7**
AMOG	**MOGNA**	**6.43**	**53**	*iP*	**Pn**	**22 50 11.5**	**-1.1**
ACAN	**Cantantal**	**6.65**	**69**	*iP*	**Pn**	**22 50 13.3**	**-2.3**
ACAN				*iS*	**Sn**	**22 51 29.0**	**-1.2**
AGUA	**GUANDACOL**	**7.44**	**45**	*iP*	**Pn**	**22 50 26.2**	**-0.3**
VCA	**Vinchina**	**8.18**	**43**	*iP*	**Pn**	**22 50 36.2**	**-0.4**

*TIF **02** 22:51:29.2, 42°.57N×43°.41E, h12km*
*CSEM **02** 22:51:30.4±0.5, 42°.54N×43°.37E, h2km, ML1.8, Error ellipse: s-maj=10.9km s-min=7.6km az=16.0*
*DDA **02** 22:51:37.7, 41°.67N×43°.56E, h7km, Md2.9*
ISC 02 22:51:29.4±0.9, 42°.57N±0°.05×43°.38E±0°.03, h10km±6km, n20, σ0°69/40, Western Caucasus

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONI	**Oni**	**0.06**	**66**	P	**Pg**	**22 51 31.6**	**0.0**
ONI				S	**Sg**	**22 51 33.0**	**-0.1**
ONI	**Oni**	**0.06**	**66**	P	**Pg**	**22 51 31.6**	**0.0**
ONI				S	**Sg**	**22 51 33.0**	**-0.1**
GUDG	**Gudauri**	**0.82**	**97**	P	**Pg**	**22 51 45.2**	**0.0**
GUDG				S	**Sb**	**22 51 56.6**	**-0.4**
CHVG	**Ch'k'valeri**	**0.96**	**280**	P	**Pn**	**22 51 49.1**	**+0.1**
CHVG				S	**Sn**	**22 52 02.9**	**0.0**
CHVG	**Ch'k'valeri**	**0.96**	**280**	P	**Pn**	**22 51 49.1**	**+0.1**
CHVG				S	**Sn**	**22 52 02.9**	**0.0**
AKH	**Akhalkalaki**	**1.16**	**176**	P	**Pb**	**22 51 51.0**	**-0.6**
AKH				S	**Sn**	**22 52 07.6**	**-0.2**
AKH	**Akhalkalaki**	**1.16**	**176**	P	**Pb**	**22 51 51.0**	**-0.6**
AKH				S	**Sn**	**22 52 07.6**	**-0.2**
EPOS	**Posof**	**1.17**	**205**	P	**Pb**	**22 51 51.5**	**-0.2**
EPOS				S	**Sn**	**22 52 08.1**	**+0.1**
EPOS	**Posof**	**1.17**	**205**	*iP*	**Pb**	**22 51 51.5**	**-0.2**
EPOS				*iS*	**Sn**	**22 52 08.1**	**+0.1**
TBLG	**Delisi**	**1.31**	**129**	P	**Pg**	**22 51 54.5**	**0.0**
TBLG				S	**Sg**	**22 52 13.1**	**+1.5**
TBLG	**Delisi**	**1.31**	**129**	P	**Pg**	**22 51 55.5**	**+0.9**
TBLG				S	**Sg**	**22 52 12.1**	**+0.5**
DBOC	**Borcka**	**1.76**	**227**	P	**Pn**	**22 51 59.6**	**-0.5**
DBOC				S	**Sn**	**22 52 21.1**	**-1.5**
DBOC	**Borcka**	**1.76**	**227**	*iP*	**Pn**	**22 51 59.6**	**-0.5**
DBOC				*iS*	**Sn**	**22 52 21.1**	**-1.5**
DAGI	**Agillar**	**1.84**	**217**	*iP*	**Pb**	**22 52 03.4**	**+0.1**
DAGI				*iS*	**Sb**	**22 52 27.7**	**+1.2**
DGRG	**David-gareji**	**1.86**	**126**	P	**Pg**	**22 52 04.4**	**-0.6**
DGRG				S	**Sg**	**22 52 29.0**	**-0.1**
DGRG	**David-gareji**	**1.86**	**126**	P	**Pb**	**22 52 03.7**	**+0.2**
DGRG				S	**Sg**	**22 52 28.6**	**-0.5**
DBAD	**Bademkaya**	**1.99**	**220**	P	**Pb**	**22 52 05.9**	**+0.1**
DBAD				S	**Sg**	**22 52 32.6**	**-0.8**
DBAD	**Bademkaya**	**1.99**	**220**	*iP*	**Pb**	**22 52 05.9**	**+0.1**
DBAD				*iS*	**Sg**	**22 52 32.6**	**-0.8**
DDEM	**Demirkent**	**2.07**	**217**	P	**Pb**	**22 52 07.3**	**+0.3**
DDEM				S	**Sb**	**22 52 34.3**	**+1.4**
DDEM	**Demirkent**	**2.07**	**217**	*iP*	**Pb**	**22 52 07.3**	**+0.3**
DDEM				*iS*	**Sb**	**22 52 34.3**	**+1.4**

*ISCJB **02** 23:02:54.1±0.7, 27°.8N±0°.1×139°.8E±0°.2, h478km, mb3.3/7, Error ellipse: s-maj=23.8km s-min=14.3km az=135.3*
*IDC **02** 23:02:55.0±0.7, 27°.80N×139°.83E, h470km±13km, mb3.0/7, mb1 3.1/8, mb1mx2.7/53, mbtmp3.8/8, Error ellipse: s-maj=31.2km s-min=14.2km az=75.0*
ISC 02 23:02:55.4±0.9, 27°.8N±0°.2×139°.9E±0°.2, h478km, n8, σ0°80/9, mb3.5/7, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCJ	**Chichijima**	**2.17**	**108**	P	**P**	**23 04 00.4**	**+1.0**
	13nm,0.3s,baz=282,slow=23,SNR=14						
JCJ				S	**S**	**23 04 49.9**	**-1.5**
	baz=287,slow=19						
ZALV	**Zalesovo Beam**	**47.61**	**319**	P	**P**	**23 10 46.0**	**-0.7**
	0.6nm,0.3s,baz=111,slow=9.4,SNR=2.7						
WRA	**Warramunga Arr**	**47.76**	**187**	P	**P**	**23 10 48.0**	**-0.3**
	0.7nm,0.3s,baz=3.0,slow=7.5,SNR=5.9						
MKAR	**Makanchi Array**	**48.44**	**309**	P	**P**	**23 10 53.0**	**-0.2**
	0.3nm,0.4s,baz=85,slow=10,SNR=4.2						
KURBB	**Kurchatov Arra**	**51.08**	**314**	P	**P**	**23 11 12.5**	**0.0**
	1.4nm,0.5s,baz=91,slow=8.2,SNR=13						
ASAR	**Alice Springs**	**51.49**	**187**	P	**P**	**23 11 16.1**	**+0.3**
	0.4nm,0.4s,baz=6.7,slow=5.9,SNR=10						
BVAR	**Borovoye Array**	**56.13**	**317**	P	**P**	**23 11 48.6**	**+0.2**
	1.2nm,0.4s,baz=91,slow=7.4,SNR=10						
YKA	**Yellowknife Ar**	**72.49**	**28**	P	**P**	**23 13 32.6**	**+0.2**
	0.2nm,0.4s,baz=298,slow=6.1,SNR=5.7						

*GUC **02** 23:08:26.9±0.3, 34°.75S×72°.77W, h38km±2km, ML3.7*
*ISCJB **02** 23:08:28.3±1.4, 34°.58S±0°.10×72°.9W±0°.1, h10km, Error ellipse: s-maj=18.1km s-min=10.3km az=37.9*
ISC 02 23:08:26.2±2.1, 34°.70S±0°.05×72°.8W±0°.1, h10km, n13, σ2°13/21, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHPI	**Pichilemu**	**0.74**	**66**	*eP*	**Pg**	**23 08 41.2**	**+0.9**
CHPI				*eS*	**Sb**	**23 08 52.3**	**+1.1**
TALC	**Talca**	**1.19**	**126**	*eP*	**Pb**	**23 08 47.7**	**-1.2**
TALC				*eS*	**Sg**	**23 09 03.5**	**-1.1**
CLCH	**Cerro Calan**	**2.29**	**56**	*eP*	**Pn**	**23 09 05.1**	**+0.9**
CLCH				*eS*	**Sn**	**23 09 33.9**	**+1.4**
CLCH				IAML		23 09 55.7	
	comp=N,583nm,0.5s						
PEL	**Peldehue**	**2.35**	**49**	*eP*	**Pn**	**23 09 06.0**	**+1.1**
PEL				*eS*	**Sn**	**23 09 35.7**	**+1.8**
CANA	**Caviahue**	**3.48**	**157**	*iP*	**Pb**	**23 09 25.4**	**-2.6**
CANA				*iS*	**Sg**	**23 10 18.6**	**+0.5**
AAGR	**Agrelo**	**3.69**	**65**	*iP*	**Pb**	**23 09 29.8**	**-1.7**
ARCO	**CERRO ARCO**	**3.73**	**61**	*iP*	**Pb**	**23 09 29.4**	**-2.8**
ARCO				*iS*	**Sg**	**23 10 25.8**	**-0.1**
ARCO				IAML		23 10 30.0	
	comp=Z,30nm,0.6s						
AUSP	**Uspallata**	**3.78**	**50**	*iP*	**Pn**	**23 09 27.9**	**+3.1**
ASAL	**Salagasta**	**3.93**	**59**	*iP*	Pn	23 09 31.5	+4.8
ASAL				*iS*	**Sg**	**23 10 29.6**	**-2.7**
RTLS	**Leoncito**	**4.13**	**47**	*iP*	**Pn**	**23 09 32.0**	**+2.5**
RTLS				*iS*	**Sb**	**23 10 30.6**	**+1.4**
RTCV	**Cerro Valdivia**	**4.56**	**53**	*iP*	**Pn**	**23 09 38.1**	**+2.8**
RTLL	**Cerro Villicun**	**4.96**	**49**	*iP*	**Pn**	**23 09 42.8**	**+2.0**
RTLL				*iS*	**Sb**	**23 10 48.8**	**-4.0**
AGUA	**GUANDACOL**	**6.36**	**36**	*iP*	**Pn**	**23 09 59.6**	**-0.5**

*IDC **02** 23:10:53.8±2.3, 39°.75N×77°.39E, h0km, mb3.6/5, mb1 3.8/11, mb1mx3.5/63, mbtmp3.6/11, ML3.2/6, MS2.8/4, Ms1 2.8/4, ms1mx2.5/36, Error ellipse: s-maj=33.5km s-min=26.3km az=160.0*
*BJI **02** 23:10:59.8, 40°.32N×77°.26E, h9km, mb4.0/3, mB4.1/2, ML3.7/7*
*SOME **02** 23:11:01.2, 40°.37N×77°.15E, h5km*
*KRNET **02** 23:11:01.5±0.1, 40°.39N×77°.14E, h7km, mb4.2*
*NNC **02** 23:11:03.3±1.2, 40°.40N×77°.14E, h0km, mb4.2, mpv3.7, Error ellipse: s-maj=12.2km s-min=7.2km az=148.0*
ISC 02 23:10:57.0±1.6, 40°.08N±0°.05×76°.99E±0°.03, h0km±10km, n62, σ1°44/101, mb3.7/5, MS2.9/3, 35C-18D, Kyrgyzstan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSH	**Kashi**	**0.97**	**235**	Pg	Pn	23 11 31.7	+14
KSH				Sg	Sn	23 11 55.9	+24
KSH				smax	smax		
	comp=N,510nm,0.6s						
KSH				smax	smax		
	comp=E,800nm,0.7s						
NRN	**Naryn**	**1.55**	**331**	⇓*eP*	**Pg**	**23 11 26.9**	**+0.3**
	baz=320						
NRN				⇓*eS*	**Sg**	**23

TNSS	**Tian-Shan**	**2.96**	**359**	*e*P	**Pb**	**23 11 51.8 +1.0**
TNSS				*e*S	**Sb**	**23 12 28.6 +0.9**
KBK	**Karagaybulak**	**3.00**	**330**	⇑*i*P	**Pb**	**23 11 50.8 -0.5**
	baz=325					
KBK				⇑*i*S	**Sb**	**23 12 27.4 -1.2**
	baz=325					
TKM2	**Tokmak 2**	**3.02**	**340**	⇑*i*P	**Pb**	**23 11 50.7 -1.1**
	baz=336					
TKM2				⇑*i*S	**Sb**	**23 12 27.3 -2.1**
	baz=336					
TKM2	**Tokmak 2**	**3.02**	**340**	⇑Pn	**Pb**	**23 11 50.3 -1.5**
	20nm,0.3s					
TKM2				⇓Lg	Lg	23 12 30.7
	114nm,0.5s					
KST	**Kastek**	**3.06**	**346**	*e*P	**Pb**	**23 11 53.5 +1.2**
	23nm,0.5s					
KST				*e*S	**Sb**	**23 12 31.0 +0.8**
	251nm,0.3s					
MTBS	**Maitube**	**3.08**	**352**	*e*P	**Pb**	**23 11 53.4 +0.8**
	97nm,0.5s					
MTBS				⇓*i*S	**Sb**	**23 12 31.5 +0.8**
	131nm,0.3s					
MDOK	**Medeo**	**3.08**	**1**	*e*P	**Pb**	**23 11 53.3 +0.6**
	176nm,0.5s					
MDOK				*e*S	**Sb**	**23 12 31.2 +0.3**
	549nm,1.6s					
KNDC	**Almaty**	**3.13**	**360**	⇑Pn	**Pn**	**23 11 50.2 +2.6**
	194nm,1.0s					
KNDC				⇑Lg	Lg	23 12 33.5
	693nm,0.7s					
KOTS	**Kotyrbulak**	**3.15**	**2**	*e*P	**Pb**	**23 11 54.3 +0.4**
KOTS				*e*S	**Sb**	**23 12 33.0 +0.1**
SATY	**Saty**	**3.16**	**19**	*e*P	**Pb**	**23 11 54.0 0.0**
	169nm,0.7s					
SATY				*e*S	**Sb**	**23 12 31.9 -1.2**
	378nm,0.7s					
AAK	**Ala-Archa**	**3.17**	**324**	Pn	**Pb**	**23 11 53.7 -0.5**
	12nm,0.3s,baz=134,slow=9.8,SNR=152					
AAK				Sn	**Sg**	**23 12 39.0 +0.2**
	16nm,0.3s,baz=19,slow=22,SNR=21					
AAK	**Ala-Archa**	**3.17**	**324**	⇑*i*P	**Pb**	**23 11 53.2 -1.0**
	baz=319					
AAK				⇑*i*S	**Sb**	**23 12 31.6 -1.8**
	baz=319					
AAK	**Ala-Archa**	**3.17**	**324**	⇑Pn	**Pb**	**23 11 53.3 -0.9**
	61nm,0.8s					
AAK				⇑Lg	Lg	23 12 37.7
	225nm,0.7s					
AAA	**Alma-Ata**	**3.19**	**359**	*e*P	**Pb**	**23 11 54.4 -0.1**
	192nm,0.5s					
AAA				*e*S	**Sb**	**23 12 33.6 -0.2**
	812nm,0.6s					
AML	**Almayashu**	**3.23**	**310**	⇑*i*P	**Pb**	**23 11 55.1 -0.2**
	baz=305					
AML				⇑*i*S	**Sb**	**23 12 34.1 -1.2**
	baz=305					
FRU1	**Bishkek**	**3.25**	**328**	⇓*e*P	**Pb**	**23 11 54.1 -1.5**
	baz=323					
FRU1				⇓*e*S	**Sn**	**23 12 31.7 +2.9**
	baz=323					
ZHN	**Zhinishke**	**3.27**	**19**	*e*P	**Pb**	**23 11 56.0 +0.1**
	63nm,0.5s					
ZHN				*e*S	**Sb**	**23 12 36.0 -0.2**
	103nm,0.4s					
DGS	**Degeres**	**3.29**	**344**	*e*P	**Pb**	**23 11 57.9 +1.6**
DGS				*e*S	**Sb**	**23 12 39.2 +2.3**
CHMS	**Chumysh**	**3.37**	**331**	⇑*i*P	**Pb**	**23 11 55.5 -2.0**
	baz=326					
CHMS				⇑*i*S	**Sb**	**23 12 35.5 -3.5**
	baz=326					
UZB	**Uzynbulak**	**3.42**	**26**	*e*P	**Pb**	**23 11 58.5 +0.1**
	92nm,0.8s					
UZB				*e*S	**Sb**	**23 12 40.0 -0.7**
	197nm,0.9s					
KURS	**Kuram**	**3.52**	**14**	*e*P	**Pb**	**23 12 00.4 +0.3**
KURS				*e*S	**Sb**	**23 12 43.5 +0.2**
KPKS	**Kokpek**	**3.61**	**20**	*e*P	**Pb**	**23 12 02.0 +0.3**
	138nm,0.4s					
KPKS				*e*S	**Sb**	**23 12 46.2 +0.1**
	333nm,1.0s					
PDGK	**Podgornoye**	**3.74**	**29**	⇑*e*P	**Pn**	**23 11 58.0 +2.1**
	baz=30					
PDGK				⇑*e*S	**Sn**	**23 12 40.3 -0.3**
	baz=30					
PDGK	**Podgornoye**	**3.74**	**29**	⇓Pn	**Pn**	**23 11 57.1 +1.2**
	16nm,0.5s					
PDGK				⇑Pg	**Pb**	**23 12 03.8 0.0**
	50nm,0.6s					
PDGK				⇑Lg	Lg	23 12 49.6
	539nm,0.8s					
SHLS	**Shalkode**	**3.76**	**34**	*e*P	**Pb**	**23 12 04.5 +0.2**
	60nm,0.5s					
SHLS				*e*S	**Sb**	**23 12 50.8 +0.3**
	309nm,0.7s					
CHKK	**Chushkaly**	**3.79**	**0**	*e*P	**Pb**	**23 12 05.5 +0.8**
CHKK				*e*S	**Sb**	**23 12 52.2 +1.2**
KUU	**Kurty**	**3.84**	**353**	*e*P	**Pb**	**23 12 07.0 +1.4**
	28nm,0.7s					
KUU				⇓*i*S	**Sb**	**23 12 54.7 +2.1**
	230nm,0.7s					
MRKS	**Merke**	**3.89**	**314**	⇓*i*P	**Pg**	**23 12 10.6 -0.8**
	41nm,0.6s					
MRKS				*e*S	**Sg**	**23 13 00.7 -1.1**
	60nm,1.0s					
MNBS	**Baschi**	**4.13**	**14**	*e*P	**Pb**	**23 12 10.1 -0.4**
MNBS				*e*S	**Sb**	**23 12 60.0 -1.1**
MNAS	**Manas**	**4.15**	**307**	⇑*e*P	**Pb**	**23 12 07.8 -3.1**
	baz=303					
MNAS				⇑*e*S	**Sn**	**23 12 55.3 +4.4**
	baz=303					
MNAS	**Manas**	**4.15**	**307**	⇑Pn	**Pb**	**23 12 07.5 -3.5**
	6.8nm,0.9s					
MNAS				⇓Pg	**Pg**	**23 12 17.2 +0.7**
	54nm,1.2s					
MNAS				⇓Lg	Lg	23 13 09.6
	70nm,1.3s					
ARXS	**Arharly**	**4.17**	**8**	*e*P	**Pb**	**23 12 11.8 +0.5**
ARXS				*e*S	**Sb**	**23 13 02.8 +0.5**
KTMS	**Ketmen**	**4.20**	**36**	*e*P	**Pb**	**23 12 11.7 0.0**
KTMS				*e*S	**Sb**	**23 13 02.8 -0.2**
DJR	**Jarkent**	**4.73**	**25**	*e*P	**Pb**	**23 12 21.1 +0.4**
	34nm,0.8s					
DJR				*e*S	**Sb**	**23 13 19.3 +1.1**
	104nm,0.7s					
TDK	**Taldyqorghan**	**5.03**	**11**	*e*P	**Pb**	**23 12 26.6 +0.7**
	58nm,0.6s					
TDK				*e*S	**Sb**	**23 13 28.5 +1.6**
	202nm,0.9s					
KAPS	**Kapalarasan**	**5.49**	**18**	*e*P	**Pb**	**23 12 35.8 +2.2**
	12nm,0.3s					
KAPS				*e*S	**Sb**	**23 13 44.2 +4.3**
	39nm,0.9s					
KK31	**Karatay Array**	**5.72**	**304**	Pn	Pn	23 12 27.9 +4.8
	1.2nm,0.7s,baz=112,slow=13,SNR=8.7					
KK31				⇑Pg	**Pg**	**23 12 45.5 -1.1**
	4.4nm,0.6s,baz=131,slow=16,SNR=10					
KK31				⇑Lg	Lg	23 14 00.3
	12nm,0.6s,baz=121,slow=27,SNR=8.4					
MKAR	**Makanchi Array**	**7.74**	**28**	Pn	**Pn**	**23 12 51.5 +0.7**
	0.4nm,0.3s,baz=201,slow=15,SNR=15					
MKAR				Lg	Lg	23 14 54.7
	0.6nm,0.3s,baz=214,slow=29,SNR=4.5					
MKAR				LR	LR	23 15 20.8
	comp=Z,20nm,18.4s,baz=198,slow=34					
WMQ	**Urumqi**	**8.80**	**61**	*e*P	**Pn**	**23 13 02.6 -2.9**
OTUK	**Ortayu**	**8.82**	**339**	Pn	**Pn**	**23 13 08.2 +2.6**
OTUK				Lg	Lg	23 15 31.4
KURBB	**Kurchatov Arra**	**10.60**	**5**	Pn	**Pn**	**23 13 29.8 -0.1**
	0.1nm,0.3s,baz=193,slow=12,SNR=19					
KURBB				Lg	Lg	23 16 26.3
	0.1nm,0.3s,baz=193,slow=30,SNR=7.4					
BVAR	**Borovoye Array**	**13.71**	**343**	Pn	**Pn**	**23 14 12.2 -0.3**
	0.1nm,0.3s,baz=159,slow=13,SNR=14					
BVAR				Lg	Lg	23 18 07.3
	0.1nm,0.3s,baz=144,slow=28,SNR=10.0					
ZALV	**Zalesovo Beam**	**14.85**	**18**	Pn	**Pn**	**23 14 26.9 -1.1**
	0.1nm,0.3s,baz=215,slow=13,SNR=8.2					
ZALV				Lg	Lg	23 18 44.6
	0.2nm,0.3s,baz=208,slow=24,SNR=5.4					
AKTO	**Aktyubinsk**	**16.85**	**314**	P	**P**	**23 14 55.4 -0.9**
	0.1nm,0.3s,baz=123,slow=14,SNR=3.6					
ARU	**Arti**	**20.34**	**330**	LR	LR	23 23 46.3
	comp=Z,39nm,20.2s,baz=68,slow=37					
AKASG	**Malin Array Be**	**34.62**	**304**	LR	LR	23 33 28.6
	comp=Z,19nm,18.1s,baz=85,slow=39					
FINES	**FINESS Array B**	**37.36**	**322**	P	**P**	**23 18 11.8 +1.0**
	1.0nm,0.6s,baz=101,slow=8.6,SNR=5.4					
ARCES	**ARCESS Array B**	**39.79**	**335**	P	**P**	**23 18 31.8 +0.6**
	2.5nm,0.9s,baz=82,slow=9.2,SNR=3.7					
ARCES				LR	LR	23 35 29.9
	comp=Z,23nm,20.4s,baz=120,slow=37					
NOA	**NORSAR Array B**	**44.48**	**321**	P	**P**	**23 19 09.0 -0.7**
	0.3nm,0.8s,baz=93,slow=7.6,SNR=2.7					
GERES	**GERESS Array B**	**44.82**	**303**	P	**P**	**23 19 13.3 +0.8**
	0.5nm,0.5s,baz=67,slow=7.5,SNR=6.8					
YKA	**Yellowknife Ar**	**77.35**	**5**	P	**P**	**23 22 51.9 -1.1**
	0.1nm,0.4s,baz=346,slow=5.5,SNR=7.7					

NNC ***02*** *23:18:11.7±2.4, 40°.07N×77°.77E, h0km, mb3.1, mpv2.8,*
Error ellipse: s-maj=19.5km s-min=10.2km az=116.0
KRNET ***02*** *23:18:13.2±0.1, 40°.27N×77°.10E, mb3.2*
SOME ***02*** *23:18:18.0, 40°.33N×77°.20E, h15km*
ISC 02 23:18:19.7±1.5, 40°.44N±0°.06×77°.13E±0°.04, h10km, n28, σ1§92/56, 14C-4D, Kyrgyzstan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NRN	**Naryn**	**1.31**	**320**	⇑*e*P	**Pn**	**23 18 40.7**	**-3.7**
	baz=324						
NRN				⇑*e*S	**Sb**	**23 19 01.2**	**-0.3**
	baz=324						
KDJ	**Kajisay**	**1.69**	**1**	⇑*e*P	**Pn**	**23 18 48.0**	**-1.5**
	baz=2.0						
KDJ				⇑*e*S	**Sg**	**23 19 13.8**	**-0.2**
	baz=2.0						
BOOM	**Boomskoye usch**	**2.23**	**337**	⇑*e*P	**Pn**	**23 18 56.7**	**-0.2**
	baz=339						
BOOM				⇑*e*S	**Sb**	**23 19 27.2**	**-0.8**
	baz=339						
PRZ	**Przheval'sk**	**2.25**	**25**	⇑*e*P	**Pn**	**23 18 56.5**	**-0.7**
	baz=24						
PRZ				⇑*e*S	**Sb**	**23 19 28.0**	**-0.6**
	baz=24						
ANVS	**Anan'yevo**	**2.37**	**10**	⇑*e*P	**Pn**	**23 18 58.4**	**-0.5**
	baz=9.0						
ANVS				⇑*e*S	**Sb**	**23 19 30.4**	**-1.7**
	baz=9.0						
TNSS	**Tian-Shan**	**2.60**	**357**	*e*P	**Pb**	**23 19 07.4**	**+0.8**
	7.4nm,0.3s						
TNSS				*e*S	**Sg**	**23 19 43.0**	**-0.4**
	28nm,0.4s						
MDOK	**Medeo**	**2.72**	**359**	*e*P	**Pb**	**23 19 09.0**	**+0.4**
	5.5nm,0.3s						
MDOK				*e*S	**Sg**	**23 19 45.7**	**-1.3**
	17nm,0.8s						
TKM2	**Tokmak 2**	**2.73**	**336**	⇓Pn	**Pn**	**23 19 04.9**	**+1.1**
	1.5nm,0.4s						
TKM2				⇑Sn	**Sg**	**23 19 45.8**	**-1.6**
	6.1nm,0.6s						
MTBS	**Maitube**	**2.73**	**349**	*e*P	**Pb**	**23 19 09.5**	**+0.7**
	6.6nm,0.2s						
MTBS				*e*S	**Sg**	**23 19 46.4**	**-1.2**
	8.3nm,0.3s						
KST	**Kastek**	**2.74**	**342**	*e*P	**Pb**	**23 19 09.9**	**+1.0**
	3.4nm,0.2s						
KST				*e*S	**Sg**	**23 19 47.0**	**-0.7**
	9.4nm,0.3s						
SATY	**Saty**	**2.78**	**20**	*e*P	**Pb**	**23 19 10.0**	**+0.4**
	5.3nm,0.4s						
SATY				*e*S	**Sg**	**23 19 47.2**	**-1.9**
	13nm,0.5s						
KOTS	**Kotyrbulak**	**2.79**	**360**	*e*P	**Pb**	**23 19 09.8**	**0.0**
	14nm,0.3s						
KOTS				*e*S	**Sb**	**23 19 46.9**	**+2.9**
	47nm,0.4s						
SFK	**Sufi-Kurgan**	**2.81**	**262**	⇑Pn	**Pn**	**23 19 04.7**	**-0.2**
	0.6nm,0.4s						
SFK				⇓Sn	**Sb**	**23 19 45.3**	**+0.6**
	2.8nm,0.4s						
ZHN	**Zhinishke**	**2.89**	**19**	*e*P	**Pb**	**23 19 12.2**	**+0.7**
	3.4nm,0.1s						
ZHN				*e*S	**Sg**	**23 19 51.2**	**-1.5**
	6.8nm,0.4s						
AAK	**Ala-Archa**	**2.95**	**319**	⇑Pn	**Pn**	**23 19 07.5**	**+0.7**
	1.7nm,0.4s						
AAK				⇑Sn	**Sg**	**23 19 52.0**	**-2.4**
	16nm,1.1s						
DGS	**Degeres**	**2.97**	**341**	*e*P	**Pb**	**23 19 14.0**	**+1.1**
	2.2nm,0.3s						
DGS				*e*S	**Sg**	**23 19 54.4**	**-0.8**
	8.6nm,0.3s						
UZB	**Uzynbulak**	**3.05**	**27**	*e*P	**Pb**	**23 19 13.8**	**-0.4**
	0.9nm,0.4s						
UZB				*e*S	**Sb**	**23 19 54.4**	**+2.9**
	3.3nm,0.3s						
KURS	**Kuram**	**3.14**	**14**	*e*P	**Pb**	**23 19 15.7**	**0.0**
	4.0nm,0.6s						
KURS				*e*S	**Sb**	**23 19 57.7**	**+3.7**
	6.0nm,0.6s						
KPKS	**Kokpek**	**3.23**	**21**	*e*P	**Pb**	**23 19 17.9**	**+0.6**
	5.9nm,0.3s						
KPKS				*e*S	**Sg**	**23 20 00.9**	**-2.8**
	17nm,0.3s						
PDGK	**Podgornoye**	**3.38**	**31**	⇓*e*P	**Pn**	**23 19 11.3**	**-1.2**
	baz=29						
PDGK				⇓*e*S	**Sn**	**23 19 55.2**	**+2.6**
	baz=29						
SHLS	**Shalkode**	**3.41**	**36**	*e*P	**Pb**	**23 19 20.5**	**+0.2**
	2.1nm,0.2s						
SHLS				*e*S	**Sg**	**23 20 05.8**	**-3.3**
	9.7nm,0.8s						
CHKK	**Chushkaly**	**3.42**	**358**	*e*P	**Pb**	**23 19 21.4**	**+0.8**
	6.6nm,0.6s						
CHKK				*e*S	**Sg**	**23 20 07.3**	**-2.5**
	11nm,0.6s						
KUU	**Kurty**	**3.50**	**351**	*e*P	**Pb**	**23 19 22.5**	**+0.8**
	2.7nm,0.1s						
KUU				*e*S	**Sg**	**23 20 09.0**	**-3.0**
	7.9nm,0.5s						
MNBS	**Baschi**	**3.75**	**14**	*e*P	**Pb**	**23 19 25.6**	**-0.6**
	1.3nm,0.3s						
MNBS				*e*S	**Sb**	**23 20 14.2**	**+2.5**
	14nm,0.4s						
ARXS	**Arharly**	**3.80**	**8**	*e*P	**Pb**	**23 19 28.2**	**+1.2**
	2.5nm,0.3s						
ARXS				*e*S	**Sg**	**23 20 18.6**	**-3.2**
	5.7nm,0.6s						
KTMS	**Ketmen**	**3.84**	**38**	*e*P	**Pb**	**23 19 27.6**	**-0.1**
	1.3nm,0.3s						
KTMS				*e*S	**Sb**	**23 20 17.9**	**+3.5**
	7.0nm,0.4s						
DJR	**Jarkent**	**4.36**	**26**	*e*P	**Pb**	**23 19 37.6**	**+1.1**
	1.9nm,0.3s						
DJR				*e*S	**Sg**	**23 20 34.7**	**-4.9**
	3.8nm,0.7s						
KAPS	**Kapalarasan**	**5.11**	**18**	*e*P	**Pb**	**23 19 52.5**	**+3.2**
	1.1nm,0.6s						
KAPS				*e*S	**Sg**	**23 21 00.7**	**-3.0**
	1.2nm,0.8s						

ISK ***02*** *23:22:25.9, 37°.91N×27°.46E, h18km, MD2.8*
CSEM ***02*** *23:22:26.5±0.3, 37°.89N×27°.46E, h2km, MD2.5, Error*
ellipse: s-maj=6.9km s-min=5.6km az=66.0
DDA ***02*** *23:22:26.2, 37°.86N×27°.45E, h10km, Md2.5*
ISC 02 23:22:25.8±0.9, 37°.91N±0°.03×27°.43E±0°.03, h12km±8km, n23, σ0§40/34, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GCAM	**G?zelcaml?**	**0.26**	**218**	P	**Pg**	**23 22 31.1**	**-0.1**
GCAM				S	**Sg**	**23 22 34.8**	**0.0**
GCAM	**G?zelcaml?**	**0.26**	**218**	*i* P	**Pg**	**23 22 31.1**	**-0.1**
GCAM				*i* S	**Sg**	**23 22 34.8**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**0.36**	**84**	*e*PG	**Pg**	**23 22 33.2**	**0.0**
AYDB				*e*SG	**Sb**	**23 22 39.4**	**-0.6**
AYDB	**Zeytinkoy-Aydi**	**0.36**	**84**	*e*Pg	**Pg**	**23 22 33.2**	**0.0**
AYDB				*e*Sg	**Sb**	**23 22 39.4**	**-0.6**
AYDN	**Tasoluk**	**0.43**	**125**	P	**Pg**	**23 22 34.5**	**+0.2**
AYDN				S	**Sg**	**23 22 39.9**	**-0.2**
AYDN	**Tasoluk**	**0.43**	**125**	*i* P	**Pg**	**23 22 34.5**	**+0.2**
AYDN				*i* S	**Sg**	**23 22 39.9**	**-0.2**
IZM	**Izmir**	**0.51**	**345**	*e*PG	**Pb**	**23 22 36.6**	**-0.1**
IZM	**Izmir**	**0.51**	**345**	*e*Pg	**Pb**	**23 22 36.6**	**-0.1**
URLA	**Izmir**	**0.80**	**305**	P	**Pb**	**23 22 42.2**	**+0.6**
URLA				S	**Sn**	**23 22 54.9**	**+0.1**
URLA	**Izmir**	**0.80**	**305**	*i* P	**Pb**	**23 22 42.2**	**+0.6**
URLA				*i* S	**Sn**	**23 22 54.9**	**+0.1**
ZEY	**˜zmir**	**0.81**	**295**	*i* P	**Pn**	**23 22 42.5**	**-0.4**
ZEY				*i* S	**Sn**	**23 22 54.1**	**-0.7**
BDRM	**Kayabasi**	**0.84**	**179**	P	**Pb**	**23 22 42.3**	**0.0**
BDRM	**Kayabasi**	**0.84**	**179**	*i* P	**Pb**	**23 22 42.3**	**0.0**
BDRM				*i* S	**Sn**	**23 22 56.3**	**+0.6**
BODT	**Bodrum**	**0.85**	**187**	*e*PG	**Pb**	**23 22 42.9**	**+0.4**
BODT	**Bodrum**	**0.85**	**187**	*e*Pg	**Pb**	**23 22 42.9**	**+0.4**
AKS	**Akhisar**	**1.02**	**17**	*e*PG	**Pb**	**23 22 45.4**	**+0.1**
AKS	**Akhisar**	**1.02**	**17**	*e*Pg	**Pb**	**23 22 45.4**	**+0.1**
YER	**Yerkesik**	**1.02**	**139**	*e*PG	**Pn**	**23 22 46.1**	**+0.1**
YER	**Yerkesik**	**1.02**	**139**	*e*Pg	**Pn**	**23 22 46.1**	**+0.1**
KULA	**Kula-Manisa**	**1.14**	**58**	*e*PN	**Pb**	**23 22 47.5**	**0.0**
KULA	**Kula-Manisa**	**1.14**	**58**	*e*Pn	**Pb**	**23 22 47.5**	**0.0**
DURS	**Dursunbey**	**1.88**	**25**	P	**Pg**	**23 23 01.8**	**0.0**
DURS	**Dursunbey**	**1.88**	**25**	*i* P	**Pg**	**23 23 01.8**	**0.0**
DURS				*i* S	**Sg**	**23 23 27.6**	**+1.4**

IDC ***02*** *23:25:33.0±0.8, 5°.35S×102°.80E, h0km, mb4.4/19,*
mb1 4.5/19, mb1mx4.4/32, mbtmp4.4/19, MS3.7/9,
Ms1 3.7/9, ms1mx3.4/37, Error ellipse: s-maj=29.2km
s-min=12.6km az=46.0
DJA ***02*** *23:25:35.2±0.4, 6°S±2°×10°3E±°, h10km, M4.8/3, mB5.9/1,*
mb4.8/2, MLv4.8/3, Mw(mB)5.4/1
ISCJB ***02*** *23:25:36.4±0.6, 5°.61S±0°.03×102°.62E±0°.04, h45km±5km,*
mb4.6/75, MS3.8/12, Error ellipse: s-maj=7.2km
s-min=4.0km az=138.0
MOS ***02*** *23:25:36.6±1.0, 5°.25S×102°.91E, h33km, mb4.9/31, Error*
ellipse: s-maj=13.9km s-min=6.4km az=114.1
NEIC ***02*** *23:25:38.0±0.7, 5°.53S×102°.68E, h38km±6km, mb4.7/25,*
Error ellipse: s-maj=8.4km s-min=4.7km az=49.0
ISC 02 23:25:38.0±0.7, 5°.59S±0°.05×102°.61E±0°.05, h45km±5km, n199, σ1§77/204, mb4.7/75, MS3.7/12, 11C-15D, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MNAI	**Manna**	**1.27**	**16**	P	**Pn**	**23 25 58.2**	**-1.2**
MNAI				S	**Sn**	**23 26 14.1**	**-1.2**
MNAI	**Manna**	**1.27**	**16**	*e*Pn	**Pn**	**23 25 58.1**	**-1.3**
MNAI				*e*Sn	**Sn**	**23 26 14.0**	**-1.2**
LWLI	**Liwa**	**1.55**	**69**	P	**Pn**	**23 26 01.7**	**-1.6**
LWLI				S	**Sn**	**23 26 22.8**	**+0.5**
KASI	**Kota Agung**	**1.88**	**88**	P	**Pn**	**23 26 06.4**	**-1.3**
KASI				S	**Sn**	**23 26 27.3**	**-2.9**
LHSI	**Lahat**	**1.98**	**28**	P	**Pn**	**23 26 08.5**	**-0.5**
LHSI				S	**Sn**	**23 26 34.1**	**+1.5**
KLI	**Kotabumi**	**2.35**	**72**	P	**Pn**	**23 26 13.5**	**-0.7**
MASI	**Maura Aman, Be**	**2.46**	**351**	P	**Pn**	**23 26 15.3**	**-0.5**
MASI				S	**Sn**	**23 26 47.0**	**+2.4**
BLSI	**Bandar Lampung**	**2.63**	**85**	P	**Pn**	**23 26 18.0**	**-0.1**
BLSI				S	**Sn**	**23 26 50.4**	**+1.6**
CGJI	**Cibinong**	**3.23**	**108**	P	**Pn**	**23 26 25.9**	**-0.4**
CGJI				S	**Sn**	**23 27 04.3**	**+0.8**
PMBI	**Palembang**	**3.41**	**39**	P	**Pn**	**23 26 27.1**	**-1.7**
SBJI	**Serang**	**3.54**	**99**	P	**Pn**	**23 26 30.0**	**-0.6**
PPSI	**Pulau Pagai**	**3.82**	**317**	P	**Pn**	**23 26 34.6**	**+0.2**
PPSI				S	Sn	23 27 43.5	+25
TNG	**Tangerang**	**4.06**	**98**	P	**Pn**	**23 26 36.6**	**-1.0**
SKJI	**Sukabumi**	**4.17**	**110**	P	**Pn**	**23 26 38.4**	**-0.8**
CBJI	**Citeko**	**4.30**	**101**	P	**Pn**	**23 26 42.2**	**+1.3**
CNJI	**Cibinong**	**4.81**	**111**	P	**Pn**	**23 26 47.0**	**-0.9**
PDSI	**Padang**	**5.12**	**335**	P	**Pn**	**23 26 52.5**	**+0.2**
	56nm,0.4s,10μm						
LEM	**Lembang**	**5.13**	**104**	Pn	Pn	23 26 58.7	+6.2
	8.3nm,0.3s,baz=175,slow=21,SNR=11						
LEM				LR	LR	23 29 21.8	
	comp=Z,1μm,18.1s,baz=253,slow=46						
LEM	**Lembang**	**5.13**	**104**	P	Pn	23 26 58.3	+5.8
CISI	**Cisompet, Garu**	**5.53**	**111**	*e*Pn	**Pn**	**23 26 56.9**	**-1.0**
CISI				*e*Sn	**Sn**	**23 27 54.2**	**-6.1**
BKNI	**Bangkinang**	**6.08**	**345**	P	Pn	23 27 10.1	+4.6
CMJI	**Cimerak**	**6.20**	**111**	P	**Pn**	**23 27 06.1**	**-0.9**
MYKOM	**Kota Tinggi**	**7.43**	**10**	*e*Pn	**Pn**	**23 27 25.8**	**+1.8**
UGM	**Wanagama**	**8.19**	**107**	*e*Pn	**Pn**	**23 27 35.8**	**+1.3**
UGM				*e*Sn	**Sn**	**23 29 02.8**	**-3.0**
GSI	**Gunungsitoli**	**8.49**	**324**	P	**Pn**	**23 27 36.6**	**-2.0**
GSI	**Gunungsitoli**	**8.49**	**324**	*e*Pn	**Pn**	**23 27 38.0**	**-0.6**
GSI				*e*Sn	**Sn**	**23 29 10.5**	**-2.7**
COCO	**West Island**	**8.69**	**221**	*e*P	**Pn**	**23 27 42.6**	**+1.4**
COCO	**West Island**	**8.69**	**221**	*e*Pn	**Pn**	**23 27 42.6**	**+1.4**
KULM	**Kulim**	**10.98**	**350**	*e*Pn	**Pn**	**23 28 11.5**	**-1.2**
JAGI	**Jajag, Banyuwa**	**11.81**	**105**	*e*Pn	**Pn**	**23 28 22.2**	**-1.7**
SBUM	**Sibu**	**12.49**	**50**	*e*Pn	**Pn**	**23 28 36.2**	**+3.0**
KAPI	**Kappang**	**17.08**	**89**	LR	LR	23 36 42.3	
	comp=Z,207nm,18.7s,baz=275,slow=40						
CHBT	**CHBT**	**18.23**	**359**	P	**P**	**23 29 47.1**	**-0.5**
	25nm,0.9s,3μm						
MYLDM	**Lahad Datu**	**19.14**	**56**	*e*P	**Pn**	**23 29 58.7**	**-0.2**
	51nm,1.1s						
LUWI	**Luwuk**	**20.62**	**78**	*e*P	Pn	23 30 16.8	+0.3
	55nm,1.0s						
BATI	**Baumata**	**21.35**	**104**	P	**P**	**23 30 21.6**	**-0.1**
	22nm,0.5s,baz=270,slow=20						
SOEI	**Soe**	**21.86**	**102**	*e*P	**P**	**23 30 27.1**	**-0.2**
	38nm,0.9s						
SOEI				*e*S	**S**	**23 34 26.0**	**-0.7**
SUKH	**Sukhothai**	**23.11**	**353**	P	**P**	**23 30 39.9**	**-0.4**
	9.3nm,0.8s						
UTTA	**Uttaradit**	**23.27**	**355**	P	**P**	**23 30 41.1**	**-0.8**
	4.0nm,1.0s						
CM01	**Chiang Mai Arr**	**24.13**	**351**	*e*P	**P**	**23 30 48.6**	**-1.3**
LAMP	**Lampang**	**24.14**	**353**	P	**P**	**23 30 51.7**	**+1.7**
	4.7nm,0.9s						
CM31	**Chiang Mai Arr**	**24.17**	**351**	*e*P	**P**	**23 30 49.4**	**-0.9**
CMAR	**Chiang

comp=Z,8.7nm,0.6s
CD2 Chengdu 36.31 2 P P 23 32 38.4 +0.8
CD2 pmax pmax
comp=Z,3.0nm,0.6s
LSA Lhasa 36.77 343 *e*P **P 23 32 43.1 +1.0**
LSA pmax pmax
comp=Z,10.0nm,0.9s
LSA Lhasa 36.77 343 *e*P **P 23 32 43.0 +1.0**
comp=Z,9.8nm,0.9s
XAN Xi'an 39.86 8 P **P 23 33 06.0 -1.5**
XAN pmax pmax
comp=Z,12nm,0.7s
XAN pmax pmax
comp=Z,43nm,4.8s
COEN Coen 40.78 105 *e*P **P 23 33 16.1 +0.7**
comp=Z,55nm,1.9s
BBOO Buckleboo 41.28 135 *e*P **P 23 33 18.1 -1.2**
comp=Z,28nm,1.5s
PMG Port Moresby 44.31 98 *d i*P **P 23 33 43.4 -0.7**
PMG pmax pmax
comp=Z,116nm,1.0s
STKA Stephens Creek 44.84 131 P **P 23 33 49.6 +1.6**
comp=Z,5.5nm,0.7s,baz=303,slow=8.2,SNR=15
STKA Stephens Creek 44.84 131 *e*P **P 23 33 49.7 +1.6**
STKA pmax pmax
comp=Z,2.0nm,0.7s
STKA Stephens Creek 44.84 131 *e*P **P 23 33 49.6 +1.6**
comp=Z,1.8nm,0.7s
GTA Gaotai 44.85 357 *e*P **P 23 33 48.7 +0.6**
GTA pP pP 23 33 59.0 -1.4
GTA sP sP 23 34 03.1 -2.6
GTA S **S 23 40 22.8 +0.1**
GTA sS sS 23 40 39.5 -3.8
GTA SS **ScS 23 43 35.7 -6.3**
GTA pmax pmax
comp=Z,11nm,1.0s
GTA pmax pmax
comp=Z,50nm,4.3s
GTA LR LR
comp=N,210nm,18.1s
GTA LR LR
comp=E,82nm,15.7s
GTA LR LR
comp=Z,300nm,18.1s
GUMO Guam 46.08 65 *e*P **P 23 33 57.5 -0.5**
GUMO Guam 46.08 65 *e*P **P 23 33 57.5 -0.5**
comp=Z,495nm,1.6s
JNU Nakatsue 46.92 33 *e*P **P 23 34 03.4 -1.0**
comp=Z,40nm,1.7s
HHC Hu-ho-hao-te 46.94 9 *e*P **P 23 34 07.0 +2.5**
HHC sP sP 23 34 23.6 +1.5
HHC S **S 23 40 56.0 +3.3**
HHC pmax pmax
comp=Z,9.0nm,1.0s
HHC pmax pmax
comp=Z,73nm,6.4s
HHC LR LR
comp=N,270nm,15.1s
HHC LR LR
comp=E,110nm,14.3s
HHC LR LR
comp=Z,190nm,15.1s
BJI Beijing 47.09 14 P **P 23 34 08.8 +3.2**
BJI S **S 23 41 00.9 +6.2**
BJI sS **sS 23 41 14.4 -0.9**
BJI Beijing 47.09 14 SS SS 23 44 27.2 +4.8
BJI pmax pmax
comp=Z,5.0nm,0.8s
BJI LR LR
comp=N,220nm,17.8s
BJI LR LR
comp=E,150nm,13.7s
KS15 Wonju Array Si 48.87 27 *e*P **P 23 34 18.6 -0.8**
KSAR Wonju Array Be 48.87 27 P **P 23 34 18.6 -0.8**
KSAR Wonju Array Be 48.87 27 P **P 23 34 18.6 -0.8**
KSRS Korea Array 48.90 27 P **P 23 34 18.6 -1.0**
comp=E,1.7nm,0.6s,baz=208,slow=9.1,SNR=3.9
WMQ Urumqi 50.99 346 P **P 23 34 36.3 +0.8**
WMQ pP pP 23 34 47.3 -0.7
WMQ sP sP 23 34 51.4 -1.8
WMQ PP **PP 23 36 27.0 -5.5**
WMQ ScS ScS 23 44 23.1 +0.6
WMQ pmax pmax
comp=Z,17nm,0.6s
WMQ pmax pmax
comp=Z,56nm,4.6s
WMQ LR LR
comp=N,17nm,26.6s
WMQ LR LR
comp=E,25nm,37.2s
WMQ LR LR
comp=Z,15nm,26.6s
KSH Kashi 51.18 334 P **P 23 34 36.5 -0.6**
KSH *e*pP pP 23 34 46.4 -3.2
KSH *e*sP sP 23 34 50.4 -4.4
KSH *e*ScP **ScP 23 39 46.2 +1.1**
KSH S **S 23 41 47.2 -5.2**
KSH Kashi 51.18 334 SS **SS 23 45 19.0 -9.4**
KSH pmax pmax
comp=Z,7.0nm,0.7s
KSH pmax pmax
comp=Z,77nm,5.0s
KSH LR LR
comp=N,100nm,5.4s
KSH LR LR
comp=E,67nm,5.3s
PAF Port-aux-Franc 51.48 207 *e*P **P 23 34 37.7 -1.3**
PAF pmax pmax
comp=Z,430nm,1.3s
PAF Port-aux-Franc 51.48 207 *e*P **P 23 34 37.7 -1.3**
comp=Z,430nm,1.3s
SFK Sufi-Kurgan 52.71 332 *i*P **P 23 34 48.9 +0.4**
SFK pmax pmax
comp=Z,13nm,1.1s
PDGK Podgornoye 53.00 339 *i*P **P 23 34 51.0 +0.7**
PDGK pmax pmax
comp=Z,9.0nm,0.7s
SONA0 Songino Array 53.30 3 *e*P **P 23 34 53.3 +0.7**
comp=Z,17nm,0.8s
SONM Songino Array 53.30 3 P **P 23 34 53.3 +0.7**
comp=Z,16nm,0.9s,baz=180,slow=8.9,SNR=71
SONM LR LR 23 59 47.8
comp=Z,66nm,18.6s,baz=204,slow=39
SONA1 Songino Array 53.31 3 *e*P **P 23 34 52.5 -0.2**
ULN Ulaanbaatar 53.37 4 *c i*P **P 23 34 53.4 +0.2**
ULN pmax pmax
comp=Z,11nm,1.0s
ULN Ulaanbaatar 53.37 4 *e*P **P 23 34 53.7 +0.5**
comp=Z,8.5nm,0.9s
MJAR Matsushiro Arr 53.53 36 P **P 23 34 51.7 -2.8**
comp=Z,1.8nm,0.7s,baz=221,slow=7.5,SNR=9.7
TKM2 Tokmak 2 54.15 336 *i*P **P 23 34 58.1 -0.9**
TKM2 pmax pmax
comp=Z,7.0nm,0.7s
TKM2 Tokmak 2 54.15 336 *e*P **P 23 34 59.7 +0.7**
comp=Z,9.4nm,0.9s
AAK Ala-Archa 54.37 335 ⇑*i*P **P 23 34 59.7 -0.9**
AAK pmax pmax
comp=Z,9.0nm,1.0s
AAK Ala-Archa 54.37 335 *e*P **P 23 35 01.7 +1.1**
comp=Z,3.3nm,1.0s
EKS2 Erkin-Say 54.70 334 *e*P **P 23 35 04.1 +1.1**
EKS2 Erkin-Say 54.70 334 *e*P **P 23 35 04.1 +1.1**
MK01 Makanchi Array 55.16 343 *e*P **P 23 35 05.9 -0.2**
MK31 Makanchi Array 55.18 343 *e*P **P 23 35 06.6 +0.3**
MK31 Makanchi Array 55.18 343 *e*P **P 23 35 06.6 +0.3**
MK32 Makanchi Array 55.18 343 *e*P **P 23 35 06.2 0.0**
MKAR Makanchi Array 55.18 343 P **P 23 35 06.2 0.0**
comp=Z,3.2nm,0.4s,baz=149,slow=8.4,SNR=56
MKAR Makanchi Array 55.18 343 *e*P **P 23 35 06.6 +0.3**
MAKZ Makanchi 55.29 343 *e*P **P 23 35 07.2 +0.2**
MAKZ pmax pmax
comp=Z,4.0nm,1.0s
MAKZ Makanchi 55.29 343 *e*P **P 23 35 07.2 +0.2**
comp=Z,4.1nm,1.0s
USRK Ussuriysk Ar. 56.18 25 P **P 23 35 12.6 -0.8**
comp=Z,5.6nm,0.7s,baz=217,slow=5.4,SNR=15
KKAR Karatay Array 56.52 332 *e*P **P 23 35 16.5 +0.6**
KKAR Karatay Array 56.52 332 *e*P **P 23 35 16.5 +0.6**
TLY Talaya 57.05 1 *e*P **P 23 35 20.3 +0.8**
TLY pmax pmax
comp=Z,8.0nm,0.8s
TLY MLR MLR
comp=Z,19nm,7.0s
TLY Talaya 57.05 1 *e*P **P 23 35 20.7 +1.2**
comp=Z,7.6nm,0.7s

KURK Kurchatov 59.78 343 *e*P **P 23 35 38.8 +0.3**
KURK pmax pmax
comp=Z,7.0nm,0.8s
KURK Kurchatov 59.78 343 *e*P **P 23 35 38.8 +0.3**
comp=Z,7.4nm,0.8s
OTUK Ortayu 59.83 337 *i*P **P 23 35 38.4 -0.5**
OTUK pmax pmax
comp=Z,5.0nm,0.8s
GEYT Alibeck 59.85 320 P **P 23 35 40.4 +1.0**
comp=Z,5.3nm,0.9s,baz=154,slow=8.1,SNR=14
KLR Kul'dur 60.21 22 *e*P **P 23 35 40.4 -1.1**
ZAA0 Zalesovo Array 61.17 348 *e*P **P 23 35 47.8 -0.2**
ZALV Zalesovo Beam 61.17 348 P **P 23 35 48.1 +0.2**
comp=Z,11nm,0.5s,baz=164,slow=4.8,SNR=62
ZALV LR LR 00 05 38.1
comp=Z,108nm,18.7s,baz=70,slow=39
ZALV Zalesovo Beam 61.17 348 *i*P **P 23 35 48.0 +0.1**
ZALV pmax pmax
comp=Z,11nm,0.5s
ZAA1 Zalesovo Array 61.18 348 *e*P **P 23 35 48.1 +0.2**
KRAR Krasnoyarsk 61.91 354⇓*e*P **P 23 35 53.2 +0.4**
KRAR pmax pmax
comp=Z,11nm,0.6s
BOD Bodaibo 63.87 7 *e*P **P 23 36 04.7 -1.1**
BOD pmax pmax
comp=Z,5.0nm,0.9s
BRVK Borovoye 64.50 339 *c i*P **P 23 36 09.9 -0.2**
BRVK pmax pmax
comp=Z,1.0nm,0.6s
AB31 Akbulak array 66.02 331 *e*P **P 23 36 20.1 +0.1**
AB31 pmax pmax
comp=Z,7.0nm,0.7s
ABKAR Akbulak array 66.02 331 *e*P **P 23 36 20.3 +0.3**
GNI Garni 69.90 316⇓*e*P **P 23 36 46.5 +1.7**
GNI pmax pmax
comp=Z,22nm,1.8s
YAK Yakutsk 70.58 13 *e*P **P 23 36 48.6 +0.3**
YAK pmax pmax
comp=Z,35nm,0.5s
SVE Sverdlovsk 70.98 337 *e*P **P 23 36 51.6 +0.8**
SVE pmax pmax
comp=Z,16nm,1.0s
ARU Arti 71.52 336 *c i*P **P 23 36 54.5 +0.4**
ARU 23 39 33.2
ARU S **S 23 46 13.7 +4.1**
ARU SS **SS 23 50 43.0 -2.5**
ARU pmax pmax
comp=Z,10.0nm,1.0s
ARU Arti 71.52 336 *e*P **P 23 36 53.8 -0.3**
comp=Z,9.2nm,1.0s
ZEI Tsey 71.64 318 *e*P **P 23 36 55.7 +0.3**
ZEI pmax pmax
comp=Z,9.0nm,0.9s
NCK Nalchik 72.15 319⇑*e*P **P 23 36 59.5 +1.3**
NCK pmax pmax
comp=Z,4.0nm,0.9s
NEY Neytrino 72.61 319⇑*e*P **P 23 37 00.7 -0.5**
NEY pmax pmax
comp=Z,1.0nm,1.3s
KBZ Khabaz 72.71 319 P **P 23 37 03.2 +1.8**
comp=Z,2.3nm,0.8s,baz=162,slow=9.3,SNR=7.5
KIV Kislovodsk 72.94 319 *e*P **P 23 37 03.8 +0.8**
KIV pmax pmax
comp=Z,4.0nm,1.1s
SYO Syowa Base 75.34 199⇑*e*X P 23 37 09.1 -7.3
SYO Syowa Base 75.34 199⇓*e*X pP 23 37 26.0 -3.5
NRIK Noril'sk 75.48 355 P **P 23 37 16.3 -0.9**
comp=Z,6.1nm,1.0s,baz=164,slow=6.9,SNR=13
VRH Novokhopyorsk 76.74 326 *e*P P 23 37 34.8 +10
VRH pmax pmax
comp=Z,9.0nm,0.7s
BR101 Keskin Array S 77.65 313 *e*P **P 23 37 31.2 +0.9**
BR131 Keskin Array S 77.65 313 *e*P **P 23 37 31.2 +1.0**
BRTR Keskin Array B 77.65 313 P **P 23 37 31.2 +1.0**
comp=Z,2.1nm,0.8s,baz=128,slow=6.6,SNR=19
SEY Seymchan 78.00 21⇓*e*P **P 23 37 31.3 -0.1**
VSR Storozhevoye 78.19 325 *e*P **P 23 37 33.3 +0.5**
VSR pmax pmax
comp=Z,3.0nm,0.4s
BR231 Keskin MP Arra 78.32 312 *e*P **P 23 37 32.0 -1.9**
TIXI Tiksi 78.99 8⇓*e*P **P 23 37 35.3 -1.5**
TIXI pmax pmax
comp=Z,4.0nm,1.0s
TIXI Tiksi 78.99 8 *e*P **P 23 37 35.6 -1.2**
comp=Z,3.0nm,0.7s
KLMR Klimovskoe 82.18 334 *e*P **P 23 37 52.2 -1.8**
KLMR pmax pmax
comp=Z,7.0nm,1.3s
SORM Soroca 83.74 320⇓*i*P **P 23 38 03.6 +1.2**
SORM Soroca 83.74 320 ⇓P **P 23 38 03.6 +1.2**
AKASG Malin Array Be 83.90 322 P **P 23 38 03.7 +0.6**
comp=Z,0.4nm,0.3s,baz=81,slow=6.0,SNR=4.9
AKBB Malin Array Si 83.90 322 *e*P **P 23 38 03.7 +0.5**
AKBB pmax pmax
comp=Z,7.0nm,0.6s
AKBB Malin Array Si 83.90 322 *e*P **P 23 38 03.7 +0.5**
comp=Z,6.9nm,0.6s
KIEV Kiev 83.91 322⇓*e*P **P 23 38 03.9 +0.7**
KIEV pmax pmax
comp=Z,2.0nm,0.9s
VRI Vrincioaia 84.24 317⇓*i*P **P 23 38 07.9 +2.8**
VRI Vrincioaia 84.24 317 ⇓P **P 23 38 07.9 +2.8**
MLR Muntele Rosu 84.68 317⇓*i*P **P 23 38 09.2 +1.8**
MLR Muntele Rosu 84.68 317 ⇓P **P 23 38 09.2 +1.8**
MLR Muntele Rosu 84.68 317 *e*P **P 23 38 09.3 +1.8**
comp=Z,6.9nm,1.1s
BILL Bilibino 85.62 20⇓*e*P **P 23 38 11.0 -0.5**
BILL pmax pmax
comp=Z,1.0nm,1.0s
BILL MLR MLR
comp=Z,98nm,20.0s
BURAR Bucovina Array 85.66 319⇑*i*P **P 23 38 14.8 +2.5**
BURAR Bucovina Array 85.66 319 ⇑P **P 23 38 14.8 +2.5**
BUR08 Bucovina Ar. S 85.67 319 *e*P **P 23 38 15.1 +2.7**
KOLS Kolonicke sedl 87.86 319 *e*P **P 23 38 25.4 +2.6**
KOLS *e* 23 38 36.8
KOLS pmax pmax
comp=Z,8.0nm,1.0s
KOLS Kolonicke sedl 87.86 319 *e*P **P 23 38 25.3 +2.5**
KOLS *e* 23 38 36.8
CRVS Cervenica-Dubn 88.38 319 *e*P **P 23 38 27.1 +1.8**
CRVS Cervenica-Dubn 88.38 319 *e*P **P 23 38 27.0 +1.8**
FIA0 FINESS Array S 88.48 332 *e*P **P 23 38 26.5 +1.1**
FIA0 FINESS Array S 88.48 332 *e*P **P 23 38 26.5 +1.1**
FINES FINESS Array B 88.48 332 P **P 23 38 26.5 +1.1**
comp=Z,0.7nm,0.6s,baz=123,slow=7.0,SNR=6.6
FINES FINESS Array B 88.48 332 *i*P **P 23 38 28.6 +3.2**
FINES pmax pmax
comp=Z,1.0nm,0.6s
STHS Stebnicka Huta 88.61 320 *e*P **P 23 38 28.7 +2.3**
STHS pmax pmax
comp=Z,3.0nm,0.9s
STHS Stebnicka Huta 88.61 320 *e*P **P 23 38 28.7 +2.3**
PKSM Moragy 89.83 316⇑*i*P **P 23 38 34.0 +1.9**
PKSM Moragy 89.83 316 ⇑P **P 23 38 34.0 +1.9**
GERES GERESS Array B 93.45 319 P **P 23 38 50.2 +1.2**
comp=Z,0.3nm,0.7s,baz=65,slow=7.5,SNR=4.7
NMTM Middletown 127.57 44 *e*PKPdf **PKPdf 23 44 40.8 +2.0**
PQI Presque Isle 138.28 350 *e*PKPdf **PKPdf 23 45 00.3 +1.7**
TUL1 Leonard 145.41 27 *e*PKPbc **PKPdf 23 45 12.6 +0.8**
OLIL Olney 145.61 15 *e*PKPdf **PKPab 23 45 12.6 +0.1**
LTX Lajitas 145.74 43 *e*PKIKP **PKPbc 23 45 13.2 +0.2**
LTX Lajitas 145.74 43 *e*PKPdf **PKPbc 23 45 13.2 +0.2**
TXAR Lajitas Array 145.74 43 PKPbc **PKPbc 23 45 13.2 +0.2**
comp=Z,6.7nm,0.8s,baz=309,slow=2.6,SNR=10
HHAR Hobbs 145.88 24 *e*PKPdf **PKPbc 23 45 13.6 +0.4**
WCI Wyandotte Cave 146.52 13 *e*PKP2 **PKPab 23 45 16.5 +0.5**
WCI Wyandotte Cave 146.52 13 *e*PKPdf **PKPab 23 45 16.5 +0.5**
X301 Greenbrier Sit 147.41 23 *e*PKPdf **PKPbc 23 45 17.3 -0.2**
WVT Waverly 148.13 16 *e*PKP2 **PKPab 23 45 22.1 -0.2**
WVT Waverly 148.13 16 *e*PKPbc **PKPab 23 45 22.1 -0.2**

JMA 02 23:29:19.7, 35°71′N×137°33′E, h14km, M2.5, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JGF	**Kuroka**	**0.11**	**169**	P	Pg	23 29 22.8	-0.2
JGF				S	Sg	23 29 24.9	-0.4
JGM	**Miyama**	**0.50**	**269**	P	Pg	23 29 29.5	-0.1
JTT	**Ttatey**	**0.89**	**0**	P	Pb	23 29 36.7	-0.3
SHZ3	**Shizuoka 3**	**0.96**	**132**	P	Pb	23 29 37.5	-0.7
SHZ3				*e*S	Sb	23 29 50.2	-0.7
JKG	**Kaga**	**0.99**	**305**	P	Pg	23 29 38.7	-0.1
JKG				S	Sg	23 29 51.7	0.0
MAT	**Matsushiro**	**1.09**	**40**	P	Pb	23 29 40.2	-0.2
MAT				S	Sb	23 29 54.3	-0.2

CNRM ***02*** *23:30:06.6, 38′01N×6′71W, h30km, MD3.6*
CSEM ***02*** *23:30:08.1±0.1, 38′00N×6′54W, h10km, ML3.9/27, Error ellipse: s-maj=1.9km s-min=1.4km az=11.0*
INMG ***02*** *23:30:09.6±1.4, 37′97N×6′55W, h13km±2km, MD3.3, ML3.4, Error ellipse: s-maj=1.6km s-min=1.3km az=29.0*
IGIL ***02*** *23:30:09.2, 37′97N×6′55W, h7km, ML2.7*
SFS ***02*** *23:30:10.0, 37′98N×6′56W, h20km, ML3.5*
MDD ***02*** *23:30:10.3±0.2, 37′99N×6′57W, h20km±1km, mbLg3.4/38, Error ellipse: s-maj=2.4km s-min=1.9km az=24.0, PRXIMO*
MDD EMS: III INTENSIDAD MAXIMA.
LDG ***02*** *23:30:10.5±0.1, 37′97N×6′56W, h20km, Ml3.1/11, Error ellipse: s-maj=2.6km s-min=2.3km az=5.0*
ISC 02 23:30:09.2±0.9, 37′99N±0′02×6′53W±0′02, h28km±8km, n208, σ2°22/347, 22C-7D, Spain

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EMIN	**Mina Concepcio**	**0.24**	**207**	⇑Pg	**Pb**	**23 30 15.9**	**+0.1**
	210nm,0.1s,SNR=18						
EMIN				Lg	Lg	23 30 19.6	
	8μm,0.1s,SNR=1557						
EMIN	**Mina Concepcio**	**0.24**	**207**	Pg	**Pb**	**23 30 15.9**	**+0.1**
	210nm,0.1s,SNR=18						
EMIN				Lg	Lg	23 30 19.6	
	8μm,0.1s,SNR=1000						
PBAR	**Barrancos**	**0.44**	**295**⇓	*e*Pg	**Pb**	**23 30 18.7**	**+0.1**
PBAR				*e*Sg	**Sb**	**23 30 24.1**	**-0.9**
PBAR				A	A	23 30 25.5	
	3μm,0.2s						
PBAR	**Barrancos**	**0.44**	**295**	Pg	**Pb**	**23 30 18.7**	**+0.1**
PBAR				Lg	Lg	23 30 24.1	
	3μm,0.2s						
PBAR	**Barrancos**	**0.44**	**295**	Pg	**Pb**	**23 30 18.7**	**+0.1**
PBAR				*e*Sg	**Sb**	**23 30 24.1**	**-0.9**
	3μm,0.2s						
EBAD	**Badajoz**	**0.85**	**334**	⇓Pg	**Pn**	**23 30 26.0**	**+0.5**
	153nm,0.1s,SNR=18						
EBAD				Lg	Lg	23 30 37.6	
	377nm,0.1s,SNR=25						
EBAD	**Badajoz**	**0.85**	**334**	Pg	**Pn**	**23 30 26.0**	**+0.5**
	153nm,0.1s,SNR=18						
EBAD				Lg	Lg	23 30 37.6	
	377nm,0.1s,SNR=25						
EGRO	**El Granado**	**0.88**	**239**	⇑Pn	**Pn**	**23 30 25.9**	**+0.2**
	15nm,0.0s,SNR=18						
EGRO				Pg	**Pn**	**23 30 26.3**	**+0.6**
	268nm,0.1s,SNR=6.0						
EGRO				Lg	Lg	23 30 37.1	
	408nm,0.1s,SNR=19						
EGRO	**El Granado**	**0.88**	**239**	Pn	**Pn**	**23 30 25.9**	**+0.2**
	15nm,0.0s,SNR=18						
EGRO	**El Granado**	**0.88**	**239**	Pg	**Pn**	**23 30 26.3**	**+0.6**
	268nm,0.1s,SNR=6.0						
EGRO				Lg	Lg	23 30 37.1	
	408nm,0.1s,SNR=19						
ECAB	**El Cabril**	**0.88**	**84**	⇑Pg	**Pn**	**23 30 26.6**	**+0.7**
	305nm,0.1s,SNR=18						
ECAB				Lg	Lg	23 30 38.2	
	420nm,0.2s,SNR=8.4						
ECAB	**El Cabril**	**0.88**	**84**	Pg	**Pn**	**23 30 26.6**	**+0.7**
	305nm,0.1s,SNR=18						
ECAB				Lg	Lg	23 30 38.2	
	420nm,0.2s,SNR=8.4						
PBEJ	**Beja**	**1.05**	**273**⇑	*e*P	**Pn**	**23 30 28.4**	**+0.2**
PBEJ				*e*S	**Sn**	**23 30 42.2**	**+0.3**
PBEJ				A	A	23 30 43.5	
	645nm,0.5s						
PBEJ	**Beja**	**1.05**	**273**	Pg	**Pn**	**23 30 28.4**	**+0.2**
PBEJ				Lg	Lg	23 30 42.2	
	322nm,0.5s						
PBEJ	**Beja**	**1.05**	**273**⇑	*e*P	**Pn**	**23 30 28.4**	**+0.2**
PBEJ				*e*S	**Sn**	**23 30 42.2**	**+0.3**
	645nm,0.5s						
PVAQ	**Vaqueiros**	**1.10**	**239**⇑	*e*P	**Pn**	**23 30 28.8**	**-0.1**
PVAQ				*e*S	**Sn**	**23 30 43.3**	**+0.1**
PVAQ				A	A	23 30 44.7	
	532nm,0.4s						
PVAQ	**Vaqueiros**	**1.10**	**239**	Pg	**Pn**	**23 30 28.8**	**-0.1**
PVAQ				Lg	Lg	23 30 43.3	
	532nm,0.4s						
PVAQ	**Vaqueiros**	**1.10**	**239**⇑	*e*P	**Pn**	**23 30 28.8**	**-0.1**
PVAQ				*e*S	**Sn**	**23 30 43.3**	**+0.1**
	532nm,0.4s						
ESPR	**Espera**	**1.24**	**154**	⇓Pg	**Pb**	**23 30 31.8**	**-0.2**
	94nm,0.2s,SNR=18						
ESPR				Lg	Lg	23 30 48.8	
	228nm,0.2s,SNR=6.7						
ESPR	**Espera**	**1.24**	**154**	Pg	**Pb**	**23 30 31.8**	**-0.2**
	94nm,0.2s,SNR=18						
ESPR				Lg	Lg	23 30 48.8	
	228nm,0.2s,SNR=6.7						
GIBL	**Gibalbin**	**1.24**	**159**	Pg	**Pb**	**23 30 33.0**	**+1.0**
GIBL				Lg	Lg	23 30 46.0	
GIBL	**Gibalbin**	**1.24**	**159**	*e*P	**Pb**	**23 30 33.0**	**+1.0**
GIBL				*e*S	**Sn**	**23 30 46.0**	**-0.5**
PCVE	**Castro Verde**	**1.24**	**254**⇑	*e*P	**Pn**	**23 30 30.8**	**0.0**
PCVE				*e*S	**Sb**	**23 30 48.0**	**+0.3**
PCVE				A	A	23 30 48.7	
	322nm,0.2s						
PCVE	**Castro Verde**	**1.24**	**254**	Pg	**Pn**	**23 30 30.8**	**0.0**
PCVE				Lg	Lg	23 30 48.0	
	322nm,0.2s						
PCVE	**Castro Verde**	**1.24**	**254**⇑	*e*P	**Pn**	**23 30 30.8**	**0.0**
PCVE				*e*S	**Sb**	**23 30 48.0**	**+0.3**
	322nm,0.2s						
EVO	**Evora**	**1.29**	**295**	*e*P	**Pn**	**23 30 32.0**	**+0.6**
EVO				*e*S	**Sb**	**23 30 48.9**	**0.0**
EVO				A	A	23 30 50.7	
	1μm,0.2s						
EVO	**Evora**	**1.29**	**295**	Pg	**Pn**	**23 30 32.0**	**+0.6**
EVO				Lg	Lg	23 30 48.9	
	1μm,0.2s						
EVO	**Evora**	**1.29**	**295**	*e*P	**Pn**	**23 30 32.0**	**+0.6**
EVO				*e*S	**Sb**	**23 30 48.9**	**0.0**
	1μm,0.2s						
PBDV	**Barranco-do-Ve**	**1.34**	**237**	*e*P	**Pn**	**23 30 32.2**	**+0.1**
PBDV				*e*S	**Sn**	**23 30 49.6**	**+0.7**
PBDV				A	A	23 30 52.5	
	311nm,0.3s						
PBDV	**Barranco-do-Ve**	**1.34**	**237**	Pn	**Pn**	**23 30 32.2**	**+0.1**
PBDV				Sn	**Sn**	**23 30 49.6**	**+0.7**
	311nm,0.3s						
PBDV	**Barranco-do-Ve**	**1.34**	**237**	*e*P	**Pn**	**23 30 32.2**	**+0.1**
PBDV				*e*S	**Sn**	**23 30 49.6**	**+0.7**
	311nm,0.3s						
MESJ	**Messejana**	**1.34**	**264**	*e*P	**Pn**	**23 30 32.4**	**+0.3**
MESJ				*e*S	**Sn**	**23 30 49.1**	**+0.1**
MESJ				AML	AML	23 30 49.3	
	comp=N,89nm,0.1s						
MESJ	**Messejana**	**1.34**	**264**⇑	*e*P	**Pn**	**23 30 32.4**	**+0.3**
MESJ				*e*S	**Sn**	**23 30 50.0**	**+1.0**
MESJ				A	A	23 30 52.9	
	comp=N,305nm,0.2s						
MESJ	**Messejana**	**1.34**	**264**	Pn	**Pn**	**23 30 32.4**	**+0.3**
MESJ				Sn	**Sn**	**23 30 49.1**	**+0.1**
	comp=N,89nm,0.1s						
MESJ	**Messejana**	**1.34**	**264**⇑	*e*P	**Pn**	**23 30 32.4**	**+0.3**
MESJ				Sn	**Sn**	**23 30 49.1**	**+0.1**
	comp=N,89nm,0.1s						
MESJ				*e*S	**Sn**	**23 30 50.0**	**+1.0**
	comp=N,305nm,0.2s						
MOE	**Montemor**	**1.53**	**291**	*e*P	**Pn**	**23 30 35.4**	**+0.7**
MOE				*e*S	**Sb**	**23 30 55.1**	**-0.7**
MOE	**Montemor**	**1.53**	**291**	Pn	**Pn**	**23 30 35.4**	**+0.7**
MOE				Sn	**Sb**	**23 30 55.1**	**-0.7**
MOE	**Montemor**	**1.53**	**291**	*e*P	**Pn**	**23 30 35.4**	**+0.7**
MOE				*e*S	**Sb**	**23 30 55.1**	**-0.7**
EADA	**Adamuz**	**1.55**	**83**	⇑Pn	**Pb**	**23 30 36.0**	**-1.4**
	comp=N,5.9nm,0.1s,SNR=18						
EADA				Pg	**Pn**	**23 30 38.4**	**+3.3**
	comp=N,46nm,0.1s,SNR=10						
EADA				Sn	**Sb**	**23 30 55.1**	**-1.5**
	comp=N,28nm,0.2s,SNR=4.0						
EADA				Lg	Lg	23 30 58.4	
	comp=N,252nm,0.1s,SNR=4.8						
EADA	**Adamuz**	**1.55**	**83**	Pn	**Pb**	**23 30 36.0**	**-1.4**
	comp=N,5.9nm,0.1s,SNR=18						
PNCL	**Nicolau / Gran**	**1.58**	**275**⇑	*e*Pn	**Pn**	**23 30 35.8**	**+0.4**

PNCL eSg Sb 23 30 57.6 +0.3
PNCL A A 23 30 58.0
comp=N,368nm,0.6s
PNCL Nicolau / Gran 1.58 275⇑ ePn Pn 23 30 35.8 +0.4
PNCL eSg Sb 23 30 57.6 +0.3
comp=N,368nm,0.6s
PMRV Marv??o 1.59 335 ePn Pb 23 30 36.4 -1.5
PMRV eSg Sb 23 30 59.1 +1.5
PMRV A A 23 31 05.8
comp=N,122nm,0.2s
PMRV Marv??o 1.59 335 Pn Pb 23 30 36.4 -1.5
PMRV Lg Lg 23 30 59.1
comp=N,122nm,0.2s
PMRV Marv??o 1.59 335 Pn Pb 23 30 36.4 -1.5
PMRV eSg Sb 23 30 59.1 +1.5
comp=N,122nm,0.2s
ALJ Aljibe 1.62 154 Pn Pb 23 30 43.2 +4.8
ALJ Sn Sb 23 31 00.5 +2.1
ALJ Aljibe 1.62 154 eS Sb 23 31 00.5 +2.1
CNIL Conil 1.66 167 Pn Pb 23 30 43.0 +3.9
PMTG Montargil 1.71 310 ePn Pn 23 30 37.7 +0.5
PMTG eSn Sn 23 30 59.1 +0.9
PMTG eSg Sb 23 31 01.7 +0.6
PMTG A A 23 31 03.4
comp=N,402nm,0.2s
PMTG Montargil 1.71 310 ePn Pn 23 30 37.7 +0.5
PMTG eSn Sn 23 30 59.1 +0.9
PMTG eSg Sb 23 31 01.7 +0.6
comp=N,402nm,0.2s
EJIF Jimena Fronter 1.75 151 Pn Pn 23 30 39.1 +1.3
comp=N,3.0nm,0.2s,SNR=7.9
EJIF Pg Pb 23 30 43.4 +2.7
SNR=7.9
EJIF Lg Lg 23 31 05.3
comp=N,39nm,0.3s,SNR=7.9
EJIF Jimena Fronter 1.75 151 Pn Pn 23 30 39.1 +1.3
comp=N,3.0nm,0.2s,SNR=7.9
PTEO Sao Teotonio 1.79 256⇑ ePn Pn 23 30 38.4 +0.1
PTEO eSg Sb 23 31 04.4 +1.0
PTEO A A 23 31 11.6
comp=N,197nm,0.8s
PTEO Sao Teotonio 1.79 256 Pn Pn 23 30 38.4 +0.1
PTEO Lg Lg 23 31 04.4
comp=N,99nm,0.8s
PTEO Sao Teotonio 1.79 256 Pn Pn 23 30 38.4 +0.1
PTEO eSg Sb 23 31 04.4 +1.0
comp=N,197nm,0.8s
MORF Marmelete 1.81 249 eP Pn 23 30 38.5 -0.2
MORF Marmelete 1.81 249 ePn Pn 23 30 38.4 -0.2
MORF eSg Sb 23 31 05.4 +1.3
MORF A A 23 31 12.4
comp=N,156nm,0.2s
MORF Marmelete 1.81 249 Pn Pn 23 30 38.4 -0.2
MORF Lg Lg 23 31 05.4
comp=N,156nm,0.2s
MORF Marmelete 1.81 249 Pn Pn 23 30 38.4 -0.2
MORF eSg Sb 23 31 05.4 +1.3
comp=N,156nm,0.2s
REAL Reales 1.84 144 Sn Sn 23 30 58.0 -3.4
REAL Reales 1.84 144 eS Sn 23 30 58.0 -3.4
ALMR Almeirim 1.98 307 eP Pn 23 30 41.5 +0.6
ALMR Almeirim 1.98 307 eP Pn 23 30 41.5 +0.6
ALMR Almeirim 1.98 307 Pn Pn 23 30 41.5 +0.6
ALMR Almeirim 1.98 307 eP Pn 23 30 41.5 +0.6
PCBR Castelo Branco 1.99 339⇓ ePn Pn 23 30 42.0 +0.9
PCBR eSg Sb 23 31 11.0 +1.8
PCBR A A 23 31 17.2
comp=N,126nm,0.3s
PCBR Castelo Branco 1.99 339 Pn Pn 23 30 42.0 +0.9
PCBR Lg Lg 23 31 11.0
comp=N,63nm,0.3s
PCBR Castelo Branco 1.99 339 Pn Pn 23 30 42.0 +0.9
PCBR eSg Sb 23 31 11.0 +1.8
comp=N,126nm,0.3s
EMIJ Mijas 2.00 135 Pn Pn 23 30 42.1 +1.0
comp=N,2.7nm,0.2s,SNR=22
EMIJ Pg Pb 23 30 46.3 +1.4
comp=N,6.0nm,0.2s,SNR=16
EMIJ Lg Lg 23 31 12.8
comp=N,65nm,0.3s,SNR=7.6
EMIJ Mijas 2.00 135 Pn Pn 23 30 42.2 +1.0
comp=N,2.7nm,0.2s,SNR=22
PFVI Vila Bisbo 2.01 246 ePn Pn 23 30 41.1 -0.2
PFVI eSg Sb 23 31 11.3 +1.5
PFVI A A 23 31 19.1
comp=N,125nm,0.4s
PFVI Vila Bisbo 2.01 246 Pn Pn 23 30 41.1 -0.2
comp=N,14nm,0.1s,SNR=26
PFVI Pg Pb 23 30 45.4 +0.3
comp=N,49nm,0.2s,SNR=27
PFVI Sn Sn 23 31 04.8 -0.8
comp=N,42nm,0.2s,SNR=5.8
PFVI Lg Lg 23 31 11.3
comp=N,111nm,0.1s,SNR=7.1
PFVI Vila Bisbo 2.01 246 Pn Pn 23 30 41.1 -0.2
comp=N,14nm,0.1s,SNR=26
PFVI Vila Bisbo 2.01 246 Pg Pb 23 30 45.4 +0.3
comp=N,49nm,0.2s,SNR=27
PFVI Sn Sn 23 31 04.8 -0.8
comp=N,42nm,0.2s,SNR=5.8
PFVI eSg Sb 23 31 11.3 +1.5
comp=N,125nm,0.4s
EMAL Malaga-Limoner 2.08 125 Pn Pn 23 30 43.2 +1.0
EMAL Sn Sb 23 31 11.9 +0.4
EMAL Malaga-Limoner 2.08 125 eP Pn 23 30 43.2 +1.0
EMAL eS Sb 23 31 11.9 +0.4
EPLA Plasencia 2.10 10 Pn Pn 23 30 43.9 +1.2
comp=N,3.2nm,0.1s,SNR=31
EPLA Pg Pb 23 30 47.9 +1.2
comp=N,11nm,0.2s,SNR=7.9
EPLA Lg Lg 23 31 14.4
comp=N,160nm,0.2s,SNR=24
EPLA Plasencia 2.10 10 Pn Pn 23 30 43.8 +1.2
comp=N,3.2nm,0.1s,SNR=31
EGOR Sierra Gorda, 2.12 114 Pn Pn 23 30 44.3 +1.4
comp=N,1.9nm,0.1s,SNR=7.9
EGOR Pg Pb 23 30 49.0 +2.0
comp=N,4.8nm,0.2s,SNR=7.9
EGOR Lg Lg 23 31 17.0
comp=N,159nm,0.4s,SNR=7.9
EGOR Sierra Gorda, 2.12 114 Pn Pn 23 30 44.3 +1.4
comp=N,1.9nm,0.1s,SNR=7.9
EGOR Sierra Gorda, 2.12 114 Pg Pb 23 30 49.0 +2.0
comp=N,4.8nm,0.2s,SNR=7.9
EGOR Lg Lg 23 31 17.0
comp=N,159nm,0.4s,SNR=7.9
EBAN Banos Encina 2.17 84 ⇑Pn Pn 23 30 44.5 +0.9
comp=N,328nm,0.2s,SNR=18
EBAN Sn Sn 23 31 09.9 +0.3
comp=N,247nm,0.3s,SNR=7.9
EBAN Lg Lg 23 31 17.4
comp=N,1µm,0.6s,SNR=7.9
EBAN Banos Encina 2.17 84 Pn Pn 23 30 44.5 +0.9
comp=N,328nm,0.2s,SNR=18
EBAN Sn Sn 23 31 09.9 +0.3
comp=N,247nm,0.3s,SNR=7.9
EBAN Lg Lg 23 31 17.4
comp=N,1µm,0.6s,SNR=7.9
LIS Lisbon 2.18 290 eS Sn 23 31 09.3 -0.4
LIS AML AML 23 31 09.8
comp=N,43nm,0.3s
LIS Lisbon 2.18 290 Sn Sn 23 31 09.3 -0.4
comp=N,43nm,0.3s
PTOM Tomar 2.19 319⇓ ePn Pn 23 30 44.6 +0.8
PTOM eSg Sb 23 31 17.1 +2.2
PTOM A A 23 31 23.4
comp=N,246nm,0.6s
PTOM Tomar 2.19 319 Pn Pn 23 30 44.6 +0.8
PTOM Lg Lg 23 31 17.1
comp=N,123nm,0.6s
PTOM Tomar 2.19 319 Pn Pn 23 30 44.6 +0.8
PTOM eSg Sb 23 31 17.1 +2.2
comp=N,246nm,0.6s
PMST Lisbon--Monsan 2.21 291 ePn Pn 23 30 45.0 +0.9
PMST Lisbon--Monsan 2.21 291 ePg Pb 23 30 48.7 +0.1
PMST eSg Sb 23 31 17.3 +1.8
PMST A A 23 31 24.2
comp=N,158nm,0.3s
PMST Lisbon--Monsan 2.21 291 ePn Pn 23 30 45.0 +0.9
PMST Lisbon--Monsan 2.21 291 ePg Pb 23 30 48.7 +0.1
PMST eSg Sb 23 31 17.3 +1.8
comp=N,158nm,0.3s
ECEU Ceuta 2.28 156 Pn Pn 23 30 46.6 +1.6
comp=N,34nm,0.2s,SNR=6.5
ECEU Ceuta 2.28 156 Pn Pn 23 30 46.6 +1.6
comp=N,34nm,0.2s,SNR=6.5

SELV Sierra Elvira 2.35 108 Pn Pn 23 30 47.5 +1.5
comp=N,0.4nm,0.2s,SNR=7.9
SELV Pg Pb 23 30 52.6 +1.7
comp=N,4.8nm,0.2s,SNR=7.9
SELV Sn Sn 23 31 15.6 +1.6
comp=N,7.4nm,0.2s,SNR=7.9
SELV Lg Lg 23 31 23.2
comp=N,73nm,0.5s,SNR=7.9
SELV Sierra Elvira 2.35 108 Pn Pn 23 30 47.5 +1.5
comp=N,0.4nm,0.2s,SNR=7.9
ECOG Cogollos-Vega 2.46 106 Pn Pn 23 30 48.8 +1.2
comp=N,2.1nm,0.2s,SNR=8.4
ECOG Pg Pb 23 30 54.7 +1.9
comp=N,11nm,0.3s,SNR=7.9
ECOG Sn Sn 23 31 17.9 +1.1
comp=N,20nm,0.4s,SNR=8.1
ECOG Lg Lg 23 31 27.0
comp=N,81nm,0.4s,SNR=9.2
ECOG Cogollos-Vega 2.46 106 Pn Pn 23 30 48.8 +1.2
comp=N,2.1nm,0.2s,SNR=8.4
MTE Manteigas 2.53 342 ePn Pn 23 30 49.5 +0.9
MTE eSg Sb 23 31 27.9 +3.1
MTE A A 23 31 34.3
comp=N,174nm,0.5s
MTE Manteigas 2.53 342 Pn Pn 23 30 49.5 +0.9
MTE Lg Lg 23 31 27.9
comp=N,87nm,0.5s
MTE Manteigas 2.53 342 Pn Pn 23 30 49.5 +0.9
MTE eSg Sb 23 31 27.9 +3.1
comp=N,174nm,0.5s
PCAS Casmilo, Conde 2.57 324 ePn Pn 23 30 49.8 +0.8
PCAS eSg Sb 23 31 29.0 +3.2
PCAS A A 23 31 35.7
comp=N,179nm,0.7s
PCAS Casmilo, Conde 2.57 324 ePn Pn 23 30 49.8 +0.8
PCAS eSg Sb 23 31 29.0 +3.2
comp=N,179nm,0.7s
EQUE Quentar 2.58 107 Pn Pn 23 30 50.7 +1.5
comp=N,7.7nm,0.2s,SNR=9.9
EQUE Pg Pb 23 30 56.7 +1.9
comp=N,4.8nm,0.2s,SNR=13
EQUE Sn Sn 23 31 20.5 +0.8
comp=N,17nm,0.2s,SNR=5.0
EQUE Lg Lg 23 31 30.9
comp=N,54nm,0.3s,SNR=5.0
EQUE Quentar 2.58 107 Pn Pn 23 30 50.7 +1.5
comp=N,7.7nm,0.2s,SNR=9.9
ESDC Sonseca Array 2.62 49 Pn Pn 23 30 50.5 +0.7
comp=N,11nm,0.1s,baz=234,slow=13,SNR=62
ESDC Pg Pb 23 30 57.7 +2.2
comp=N,15nm,0.2s,baz=238,slow=16,SNR=7.9
ESDC Lg Lg 23 31 29.5
comp=N,132nm,0.6s,baz=231,slow=30,SNR=199
ESDC Sonseca Array 2.62 49 Pn Pn 23 30 50.5 +0.7
comp=N,11nm,0.1s,SNR=62
ESDC Sonseca Array 2.62 49 Pg Pb 23 30 57.7 +2.2
comp=N,15nm,0.2s,SNR=7.9
ESDC Lg Lg 23 31 29.5
comp=N,132nm,0.6s,SNR=199
EQES Quesada 2.75 93 ⇑Pn Pn 23 30 52.3 +0.8
comp=N,7.8nm,0.1s,SNR=18
EQES Sn Sn 23 31 23.8 -0.1
comp=N,0.4nm,0.5s,SNR=4.7
EQES Lg Lg 23 31 35.6
comp=N,39nm,0.2s,SNR=6.6
EQES Quesada 2.75 93 Pn Pn 23 30 52.3 +0.8
comp=N,7.8nm,0.1s,SNR=18
EQES Sn Sn 23 31 23.8 -0.1
comp=N,0.4nm,0.5s,SNR=4.7
EQES Lg Lg 23 31 35.6
comp=N,39nm,0.2s,SNR=6.6
GORA Gorafe 2.81 99 ⇑Pn Pn 23 30 53.4 +0.9
comp=N,17nm,0.2s,SNR=18
GORA Sn Sn 23 31 25.6 +0.1
comp=N,65nm,0.2s,SNR=7.9
GORA Lg Lg 23 31 38.1
comp=N,243nm,0.4s,SNR=7.9
GORA Gorafe 2.81 99 Pn Pn 23 30 53.4 +0.9
comp=N,17nm,0.2s,SNR=18
GORA Sn Sn 23 31 25.6 +0.1
comp=N,65nm,0.2s,SNR=7.9
GORA Lg Lg 23 31 38.1
comp=N,243nm,0.4s,SNR=7.9
EBER Berja 3.10 109 Pn Pn 23 30 58.2 +1.8
comp=N,1.8nm,0.1s,SNR=19
EBER Sn Sn 23 31 32.9 +0.3
comp=N,14nm,0.2s,SNR=5.6
EBER Lg Lg 23 31 47.4
comp=N,89nm,0.4s,SNR=5.0
EBER Berja 3.10 109 Pn Pn 23 30 58.2 +1.8
comp=N,1.8nm,0.1s,SNR=19
EBER Sn Sn 23 31 32.9 +0.3
comp=N,14nm,0.2s,SNR=5.6
EBER Lg Lg 23 31 47.4
comp=N,89nm,0.4s,SNR=5.0
EHUE Huescar 3.12 92 Pn Pn 23 30 57.9 +1.2
comp=N,4.3nm,0.1s,SNR=7.9
EHUE Sn Sn 23 31 33.3 +0.2
comp=N,19nm,0.2s,SNR=7.9
EHUE Lg Lg 23 31 47.0
comp=N,23nm,0.2s,SNR=5.9
EHUE Huescar 3.12 92 Pn Pn 23 30 57.9 +1.2
comp=N,4.3nm,0.1s,SNR=7.9
EHUE Sn Sn 23 31 33.3 +0.2
comp=N,19nm,0.2s,SNR=7.9
EHUE Lg Lg 23 31 47.0
comp=N,23nm,0.2s,SNR=5.9
SESP Santiago Espad 3.15 86 ⇑Pn Pn 23 30 57.7 +0.6
comp=N,4.2nm,0.2s,SNR=18
SESP Pg Pb 23 31 06.1 +1.5
comp=N,5.0nm,0.1s,SNR=7.9
SESP Sn Sn 23 31 33.7 -0.2
comp=N,29nm,0.2s,SNR=7.9
SESP Lg Lg 23 31 47.3
comp=N,114nm,0.2s,SNR=7.9
SESP Santiago Espad 3.15 86 Pn Pn 23 30 57.7 +0.6
comp=N,4.2nm,0.2s,SNR=18
SESP Sn Sn 23 31 33.7 -0.2
comp=N,29nm,0.2s,SNR=7.9
SESP Lg Lg 23 31 47.3
comp=N,114nm,0.2s,SNR=7.9
MVO Moncorvo 3.20 353 ePn Pn 23 30 58.6 +0.9
MVO eSn Sn 23 31 35.7 +0.8
MVO eSg Sb 23 31 49.2 +5.3
MVO A A 23 31 58.5
comp=N,83nm,0.4s
MVO Moncorvo 3.20 353 ⇓Pn Pn 23 30 58.6 +0.9
comp=N,12nm,0.1s,SNR=18
MVO Sn Sn 23 31 34.2 -0.7
comp=N,30nm,0.2s,SNR=6.2
MVO Lg Lg 23 31 49.2
comp=N,78nm,0.2s,SNR=14
MVO Moncorvo 3.20 353 Pn Pn 23 30 58.6 +0.9
comp=N,12nm,0.1s,SNR=18
MVO eSn Sn 23 31 35.7 +0.8
MVO eSg Sb 23 31 49.2 +5.3
comp=N,83nm,0.4s
GUD Guadarrama 3.23 34 Pn Pn 23 30 59.3 +1.1
comp=N,1.6nm,0.2s,SNR=19
GUD Pg Pb 23 31 07.8 +1.8
comp=N,2.9nm,0.2s,SNR=11
GUD Sn Sn 23 31 35.9 0.0
comp=N,13nm,0.2s,SNR=6.0
GUD Lg Lg 23 31 49.5
comp=N,90nm,0.3s,SNR=16
GUD Guadarrama 3.23 34 Pn Pn 23 30 59.3 +1.1
comp=N,1.6nm,0.2s,SNR=19
GUD Sn Sn 23 31 35.9 0.0
comp=N,13nm,0.2s,SNR=6.0
GUD Lg Lg 23 31 49.5
comp=N,90nm,0.3s,SNR=16
EVIA Vianos 3.24 77 Pn Pn 23 30 58.7 +0.4
SNR=7.9
EVIA Sn Sn 23 31 35.4 -0.6
SNR=7.9
EVIA Lg Lg 23 31 51.3
SNR=7.9
EVIA Vianos 3.24 77 Pn Pn 23 30 58.7 +0.4
SNR=7.9
EVIA Lg Lg 23 31 51.3
SNR=7.9
PVRL Vila Real 3.41 345 ePn Pn 23 31 01.5 +0.9
PVRL eSn Sn 23 31 39.5 -0.6
PVRL Vila Real 3.41 345 Pn Pn 23 31 01.5 +0.9
PVRL Sn Sn 23 31 39.5 -0.6
PVRL Vila Real 3.41 345 Pn Pn 23 31 01.5 +0.9
PVRL Sn Sn 23 31 39.5 -0.6

POLO Lamas de Olo 3.52 344⇑ ePn Pn 23 31 03.1 +0.9
POLO eSn Sn 23 31 42.6 -0.3
POLO A A 23 32 06.3
comp=N,19nm,0.5s
POLO Lamas de Olo 3.52 344⇑ ePn Pn 23 31 03.1 +0.9
POLO eSn Sn 23 31 42.6 -0.3
comp=N,19nm,0.5s
ENIJ Nijar 3.59 105 Pn Pn 23 31 04.3 +1.3
comp=N,0.9nm,0.1s,SNR=7.9
ENIJ Sn Sn 23 31 43.8 -0.6
comp=N,31nm,0.2s,SNR=7.9
ENIJ Lg Lg 23 32 02.2
comp=N,18nm,0.5s,SNR=7.9
ENIJ Nijar 3.59 105 Pn Pn 23 31 04.3 +1.3
comp=N,0.9nm,0.1s,SNR=7.9
ENIJ Lg Lg 23 32 02.2
comp=N,18nm,0.5s,SNR=7.9
PBRG Braganca 3.82 358⇓ ePn Pn 23 31 07.1 +0.9
PBRG eSn Sn 23 31 49.3 -0.9
PBRG eSg Sb 23 32 07.3 +5.6
PBRG A A 23 32 15.6
comp=N,51nm,0.5s
PBRG Braganca 3.82 358 Pn Pn 23 31 07.1 +0.9
PBRG Sn Sn 23 31 49.3 -0.9
PBRG Lg Lg 23 32 07.3
comp=N,26nm,0.5s
PBRG Braganca 3.82 358 Pn Pn 23 31 07.1 +0.9
PBRG eSn Sn 23 31 49.3 -0.9
PBRG eSg Sb 23 32 07.3 +5.6
comp=N,51nm,0.5s
ECAL Calabor 3.95 358 Pn Pn 23 31 09.0 +0.9
comp=N,2.3nm,0.1s,SNR=18
ECAL Sn Sn 23 31 52.4 -1.2
comp=N,12nm,0.2s,SNR=5.5
ECAL Lg Lg 23 32 12.8
comp=N,82nm,0.3s,SNR=5.0
ECAL Calabor 3.95 358 Pn Pn 23 31 09.0 +0.9
comp=N,2.3nm,0.1s,SNR=18
ECAL Lg Lg 23 32 12.8
comp=N,82nm,0.3s,SNR=5.0
ETOB Tobarra 3.98 79 ⇑Pn Pn 23 31 08.7 +0.3
comp=N,4.6nm,0.2s,SNR=18
ETOB Sn Sn 23 31 53.9 -0.3
comp=N,7.1nm,0.3s,SNR=7.9
ETOB Lg Lg 23 32 14.3
comp=N,49nm,0.5s,SNR=5.0
ETOB Tobarra 3.98 79 Pn Pn 23 31 08.7 +0.3
comp=N,4.6nm,0.2s,SNR=18
ETOB Sn Sn 23 31 53.9 -0.3
comp=N,7.1nm,0.3s,SNR=7.9
ETOB Lg Lg 23 32 14.3
comp=N,49nm,0.5s,SNR=5.0
ELOB Lobios 4.05 344 Pn Pn 23 31 10.2 +0.8
comp=N,2.0nm,0.1s,SNR=27
ELOB Sn Sn 23 31 54.7 -1.3
comp=N,6.4nm,0.2s,SNR=7.9
ELOB Lg Lg 23 32 15.8
comp=N,43nm,0.5s,SNR=5.0
ELOB Lobios 4.05 344 Pn Pn 23 31 10.2 +0.8
comp=N,2.0nm,0.1s,SNR=27
ELOB Lg Lg 23 32 15.8
comp=N,43nm,0.5s,SNR=5.0
EMUR La Murta 4.19 90 Pn Pn 23 31 12.0 +0.7
comp=N,5.6nm,0.4s,SNR=9.6
EMUR Sn Sn 23 31 58.1 -1.2
comp=N,5.6nm,0.3s,SNR=7.9
EMUR Lg Lg 23 32 20.3
comp=N,36nm,0.4s,SNR=5.0
EMUR La Murta 4.19 90 Pn Pn 23 31 12.0 +0.7
comp=N,5.6nm,0.4s,SNR=9.6
EMUR Lg Lg 23 32 20.3
comp=N,36nm,0.4s,SNR=5.0
AFON Font Roja 4.76 80 Pn Pn 23 31 20.9 +1.8
comp=N,0.1nm,0.1s,SNR=4.0
AFON Sn Sn 23 32 12.0 -1.5
comp=N,0.1nm,0.4s,SNR=7.9
AFON Lg Lg 23 32 37.7
comp=N,6.2nm,0.4s,SNR=7.9
AFON Font Roja 4.76 80 Pn Pn 23 31 21.0 +1.8
comp=N,0.1nm,0.1s,SNR=4.0
AFON Lg Lg 23 32 37.7
comp=N,6.2nm,0.4s,SNR=7.9
EAGO Agolada(Pontev 4.96 347 Pn Pn 23 31 22.8 +1.0
comp=N,2.1nm,0.1s,SNR=7.9
EAGO Sn Sn 23 32 15.8 -2.4
comp=N,7.9nm,0.4s,SNR=7.9
EAGO Lg Lg 23 32 46.2
comp=N,15nm,0.4s,SNR=7.9
EAGO Agolada(Pontev 4.96 347 Pn Pn 23 31 22.8 +1.0
comp=N,2.1nm,0.1s,SNR=7.9
EAGO Lg Lg 23 32 46.2
comp=N,15nm,0.4s,SNR=7.9
CZD Col de Zad 5.09 166 Pn Pn 23 31 21.0 -2.9
CZD Sn Sn 23 32 16.0 -5.9
CZD Col de Zad 5.09 166 eP Pn 23 31 21.0 -2.9
EMOS Mosqueruela 5.27 61 Pn Pn 23 31 27.8 +1.5
comp=N,0.7nm,0.1s,SNR=17
EMOS Sn Sn 23 32 25.5 -0.7
comp=N,2.0nm,0.2s,SNR=4.0
EMOS Mosqueruela 5.27 61 Pn Pn 23 31 27.8 +1.5
comp=N,0.7nm,0.1s,SNR=17
EMAZ Mazaricos 5.29 340 Pn Pn 23 31 27.2 +0.7
comp=N,4.3nm,0.2s,SNR=7.9
EMAZ Sn Sn 23 32 23.5 -3.0
comp=N,3.2nm,0.2s,SNR=7.9
EMAZ Lg Lg 23 32 53.9
comp=N,16nm,0.5s,SNR=4.0
EMAZ Mazaricos 5.29 340 Pn Pn 23 31 27.2 +0.7
comp=N,4.3nm,0.2s,SNR=7.9
EMAZ Lg Lg 23 32 53.9
comp=N,16nm,0.5s,SNR=4.0
EPON Pontenova 5.36 355 Pn Pn 23 31 28.4 +1.1
comp=N,0.6nm,0.1s,SNR=6.1
EPON Sn Sn 23 32 26.4 -1.6
comp=N,5.3nm,0.5s,SNR=4.5
EPON Lg Lg 23 32 55.2
comp=N,16nm,0.6s,SNR=5.0
EPON Pontenova 5.36 355 Pn Pn 23 31 28.4 +1.1
comp=N,0.6nm,0.1s,SNR=6.1
EPON Lg Lg 23 32 55.2
comp=N,16nm,0.6s,SNR=5.0
EARI Arriondas 5.40 10 Pn Pn 23 31 29.4 +1.4
comp=N,0.5nm,0.2s,SNR=9.7
EARI Sn Sn 23 32 27.4 -1.8
comp=N,2.4nm,0.3s,SNR=4.9
EARI Lg Lg 23 32 56.6
comp=N,21nm,0.6s,SNR=5.0
EARI Arriondas 5.40 10 Pn Pn 23 31 29.4 +1.4
comp=N,0.5nm,0.2s,SNR=9.7
EARI Lg Lg 23 32 56.6
comp=N,21nm,0.6s,SNR=5.0
KIB El Ksiba 5.41 176 Pn Pn 23 31 25.0 -3.2
KIB Sn Sn 23 32 24.0 -5.6
ELAN Lanestosa 5.75 23 Pn Pn 23 31 33.6 +0.9
comp=N,0.4nm,0.1s,SNR=7.9
ELAN Sn Sn 23 32 34.5 -3.1
comp=N,3.9nm,0.2s,SNR=7.9
ELAN Lg Lg 23 33 08.7
comp=N,38nm,0.8s,SNR=4.9
ELAN Lanestosa 5.75 23 Pn Pn 23 31 33.6 +0.9
comp=N,0.4nm,0.1s,SNR=7.9
ELAN Lg Lg 23 33 08.7
comp=N,38nm,0.8s,SNR=4.9
TZC Tazercounte 5.83 180 Pn Pn 23 31 31.0 -3.0
TZC Sn Sn 23 32 33.0 -6.9
ESAC San Caprasio 5.97 49 Pn Pn 23 31 36.6 +0.8
comp=N,6.1nm,0.4s,SNR=7.9
ESAC Sn Sn 23 32 40.6 -2.7
comp=N,21nm,0.3s,SNR=7.9
ESAC Lg Lg 23 33 15.3
comp=N,79nm,0.4s,SNR=4.0
ESAC San Caprasio 5.97 49 Pn Pn 23 31 36.6 +0.8
comp=N,6.1nm,0.4s,SNR=7.9
ESAC Lg Lg 23 33 15.3
comp=N,79nm,0.4s,SNR=4.0
ERTA Horta de San J 6.08 59 Pn Pn 23 31 36.8 -0.5
comp=N,0.4nm,0.2s,SNR=7.9
ERTA Sn Sn 23 32 42.5 -3.6
comp=N,0.7nm,0.2s,SNR=4.0
ERTA Lg Lg 23 33 18.0
comp=N,8.3nm,0.3s,SNR=7.9
ERTA Horta de San J 6.08 59 Pn Pn 23 31 36.8 -0.5
comp=N,0.4nm,0.2s,SNR=7.9
ERTA Lg Lg 23 33 18.0
comp=N,8.3nm,0.3s,SNR=7.9
EIBI Ibiza 6.26 78 Sn Sn 23 32 47.7 -2.7
comp=N,2.1nm,0.2s,SNR=7.9

IELO	**Elcoad**	**6.31**	**38**	Pn	**Pn**	**23 31 42.2**	**+1.7**
	comp=N,0.3nm,0.3s,SNR=7.9						
IELO				Sn	**Sn**	**23 32 49.8**	**-1.9**
	comp=N,4.2nm,0.3s,SNR=7.9						
IELO				Lg	Lg	23 33 24.9	
	comp=N,10nm,0.4s,SNR=4.0						
IELO	**Elcoad**	**6.31**	**38**	Pn	**Pn**	**23 31 42.2**	**+1.7**
	comp=N,0.3nm,0.3s,SNR=7.9						
IELO				Lg	Lg	23 33 24.9	
	comp=N,10nm,0.4s,SNR=4.0						
EALK	**Alkurruntz**	**6.47**	**35**	Pn	**Pn**	**23 31 44.2**	**+1.4**
	comp=N,0.7nm,0.2s,SNR=6.1						
EALK				Sn	**Sn**	**23 32 52.1**	**-3.6**
	comp=N,16nm,0.5s,SNR=7.9						
EALK				Lg	Lg	23 33 30.0	
	comp=N,31nm,0.6s,SNR=4.0						
EALK	**Alkurruntz**	**6.47**	**35**	Pn	**Pn**	**23 31 44.2**	**+1.4**
	comp=N,0.7nm,0.2s,SNR=6.1						
EALK				Lg	Lg	23 33 30.0	
	comp=N,31nm,0.6s,SNR=4.0						
SJPF	**Ste Jean**	**6.52**	**37**	Pn	**Pn**	**23 31 44.1**	**+0.8**
SJPF				Sn	**Sn**	**23 32 51.5**	**-5.3**
	comp=N,2.2nm,0.4s						
SJPF	**Ste Jean**	**6.52**	**37**	*e*Pn	**Pn**	**23 31 44.1**	**+0.8**
SJPF				*e*Sn	**Sn**	**23 32 51.5**	**-5.3**
	comp=N,4.5nm,0.4s						
SJPF	**Ste Jean**	**6.52**	**37**	Pn	**Pn**	**23 31 44.1**	**+0.8**
ETSF	**Etsaut**	**6.69**	**41**	Pn	**Pn**	**23 31 46.9**	**+1.2**
ETSF				Sn	**Sn**	**23 32 55.3**	**-5.8**
	comp=N,3.6nm,0.4s						
ETSF	**Etsaut**	**6.69**	**41**	*e*Pn	**Pn**	**23 31 46.9**	**+1.2**
ETSF				*e*Sn	**Sn**	**23 32 55.3**	**-5.8**
	comp=N,7.2nm,0.4s						
ETSF	**Etsaut**	**6.69**	**41**	Pn	**Pn**	**23 31 46.9**	**+1.2**
ATE	**Arette**	**6.76**	**39**	Pn	**Pn**	**23 31 48.2**	**+1.6**
	comp=N,0.3nm,0.2s,SNR=7.9						
ATE				Sn	**Sn**	**23 32 59.1**	**-3.4**
	comp=N,4.0nm,0.4s,SNR=7.9						
ATE				Lg	Lg	23 33 38.9	
	comp=N,6.0nm,0.7s,SNR=4.0						
ATE	**Arette**	**6.76**	**39**	Pn	**Pn**	**23 31 48.2**	**+1.6**
	comp=N,0.3nm,0.2s,SNR=7.9						
ATE				Lg	Lg	23 33 38.9	
	comp=N,6.0nm,0.7s,SNR=4.0						
EPOB	**Poblet**	**6.76**	**58**	Pn	**Pn**	**23 31 47.5**	**+0.8**
	comp=N,0.5nm,0.2s,SNR=7.9						
EPOB				Sn	**Sn**	**23 33 00.1**	**-2.8**
	comp=N,0.7nm,0.3s,SNR=7.9						
EPOB				Lg	Lg	23 33 38.9	
	comp=N,3.4nm,0.4s,SNR=7.9						
EPOB	**Poblet**	**6.76**	**58**	Pn	**Pn**	**23 31 47.5**	**+0.8**
	comp=N,0.5nm,0.2s,SNR=7.9						
EPOB				Lg	Lg	23 33 38.8	
	comp=N,3.4nm,0.4s,SNR=7.9						
OUK	**Oukaimeden**	**6.85**	**190**	Pn	**Pn**	**23 31 45.0**	**-3.2**
OUK				Sn	Sn	23 32 57.0	-8.4
EPF	**Esparros**	**7.26**	**44**	Pn	**Pn**	**23 31 54.1**	**+0.5**
EPF				Sn	**Sn**	**23 33 08.3**	**-6.8**
	comp=N,2.4nm,0.4s						
EPF	**Esparros**	**7.26**	**44**	*e*Pn	**Pn**	**23 31 54.1**	**+0.5**
EPF				*e*Sn	**Sn**	**23 33 08.3**	**-6.8**
	comp=N,4.8nm,0.4s						
EPF	**Esparros**	**7.26**	**44**	Pn	**Pn**	**23 31 54.1**	**+0.5**
CSOR	**Sort**	**7.32**	**51**	Pn	**Pn**	**23 31 55.4**	**+1.0**
	comp=N,0.3nm,0.2s,SNR=7.9						
CSOR				Sn	**Sn**	**23 33 13.5**	**-3.1**
	comp=N,2.5nm,0.3s,SNR=7.9						
CSOR	**Sort**	**7.32**	**51**	Pn	**Pn**	**23 31 55.4**	**+1.0**
	comp=N,0.3nm,0.2s,SNR=7.9						
CFON	**Fontmartina**	**7.86**	**59**	Pn	**Pn**	**23 32 02.3**	**+0.5**
	comp=N,0.0nm,0.2s,SNR=4.0						
CFON	**Fontmartina**	**7.86**	**59**	Pn	**Pn**	**23 32 02.3**	**+0.5**
	SNR=4.0						
CLLI	**Llivia**	**7.90**	**53**	Pn	**Pn**	**23 32 03.6**	**+1.2**
	comp=N,0.1nm,0.1s,SNR=7.9						
CLLI				Sn	**Sn**	**23 33 26.1**	**-4.9**
	comp=N,0.8nm,0.3s,SNR=7.9						
CLLI	**Llivia**	**7.90**	**53**	Pn	**Pn**	**23 32 03.6**	**+1.2**
	comp=N,0.1nm,0.1s,SNR=7.9						
MTLF	**Montolieu**	**8.53**	**48**	Pn	**Pn**	**23 32 11.3**	**+0.4**
MTLF				Sn	**Sn**	**23 33 38.5**	**-7.7**
	comp=N,0.2nm,0.3s						
MTLF	**Montolieu**	**8.53**	**48**	*e*Pn	**Pn**	**23 32 11.3**	**+0.4**
MTLF				*e*Sn	**Sn**	**23 33 38.5**	**-7.7**
	comp=N,0.5nm,0.3s						
MTLF	**Montolieu**	**8.53**	**48**	Pn	**Pn**	**23 32 11.3**	**+0.4**
LFF	**La Frestale**	**8.83**	**36**	Pn	**Pn**	**23 32 15.9**	**+0.9**
LFF				Sn	**Sn**	**23 33 46.4**	**-7.1**
	comp=N,0.6nm,0.3s						
LFF	**La Frestale**	**8.83**	**36**	*e*Pn	**Pn**	**23 32 15.9**	**+0.9**
LFF				*e*Sn	**Sn**	**23 33 46.4**	**-7.1**
	comp=N,1.2nm,0.3s						
LFF	**La Frestale**	**8.83**	**36**	Pn	**Pn**	**23 32 15.9**	**+0.9**
CAF	**Calviac**	**9.47**	**40**	Pn	**Pn**	**23 32 24.4**	**+0.7**
CAF				Sn	**Sn**	**23 34 01.4**	**-7.8**
	comp=N,0.6nm,0.4s						
CAF	**Calviac**	**9.47**	**40**	*e*Pn	**Pn**	**23 32 24.4**	**+0.7**
CAF				*e*Sn	**Sn**	**23 34 01.4**	**-7.8**
	comp=N,1.2nm,0.4s						
CAF	**Calviac**	**9.47**	**40**	Pn	**Pn**	**23 32 24.4**	**+0.7**
RJF	**Les Rejaudoux**	**9.47**	**37**	Pn	**Pn**	**23 32 24.1**	**+0.4**
RJF				Sn	**Sn**	**23 34 01.5**	**-7.7**
	comp=N,2.0nm,0.3s						
RJF	**Les Rejaudoux**	**9.47**	**37**	*e*Pn	**Pn**	**23 32 24.1**	**+0.4**
RJF				*e*Sn	**Sn**	**23 34 01.5**	**-7.7**
	comp=N,4.0nm,0.3s						
RJF	**Les Rejaudoux**	**9.47**	**37**	Pn	**Pn**	**23 32 24.1**	**+0.4**
MFF	**Saint Martin d**	**9.82**	**27**	Pn	**Pn**	**23 32 29.8**	**+1.3**
MFF				Sn	**Sn**	**23 34 10.9**	**-6.9**
	comp=N,0.2nm,0.3s						
MFF	**Saint Martin d**	**9.82**	**27**	*e*Pn	**Pn**	**23 32 29.8**	**+1.3**
MFF				*e*Sn	**Sn**	**23 34 10.9**	**-6.9**
	comp=N,0.5nm,0.3s						
MFF	**Saint Martin d**	**9.82**	**27**	Pn	**Pn**	**23 32 29.8**	**+1.3**
LASF	**Ste Croix**	**9.93**	**49**	Pn	**Pn**	**23 32 30.0**	**0.0**
LASF				Sn	**Sn**	**23 34 11.9**	**-8.5**
	comp=N,0.2nm,0.3s						
LASF	**Ste Croix**	**9.93**	**49**	*e*Pn	**Pn**	**23 32 30.0**	**0.0**
LASF				*e*Sn	**Sn**	**23 34 11.9**	**-8.5**
	comp=N,0.5nm,0.3s						
LASF	**Ste Croix**	**9.93**	**49**	Pn	**Pn**	**23 32 30.0**	**0.0**

ISCJB ***02*** *23:37:22.7±0.8, 67°.79N±0°.03×20°.3E±0°.1, h0km, Error ellipse: s-maj=6.7km s-min=4.3km az=169.5*
CSEM ***02*** *23:37:23.3, 67°.83N×20°.21E, h0km, ML1.1, Mining explosion.*
UPP ***02*** *23:37:23.3, 67°.83N×20°.21E, h0km, ML1.1, Mining explosion.*
HEL ***02*** *23:37:24.0±0.1, 67°.82N×20°.21E, h0km, ML1.5, ML1.1(UPP), Explosion*
ISC 02 23:37:21.0±0.8, 67°.71N±0°.03×20°.03E±0°.03, h0km, n31, σ1§35/48, Sweden

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUA	**Kurravaara**	**0.27**	**25**	*i* P	**Pg**	**23 37 26.1**	**-0.1**
KUA				*i* S	**Sg**	**23 37 28.1**	**-1.6**
KUA	**Kurravaara**	**0.27**	**25**	P	**Pg**	**23 37 26.1**	**-0.1**
KUA				S	**Sg**	**23 37 28.1**	**-1.6**
SALU	**Saltoluokta**	**0.67**	**241**	*i* P	**Pb**	**23 37 38.2**	**+2.6**
SALU	**Saltoluokta**	**0.67**	**241**	P	**Pb**	**23 37 38.2**	**+2.6**
SALU	**Saltoluokta**	**0.67**	**241**	P	**Pg**	**23 37 32.0**	**-1.9**
MASU	**Masugnsbyn**	**0.80**	**108**	*i* P	**Pb**	**23 37 38.1**	**+0.4**
MASU	**Masugnsbyn**	**0.80**	**108**	P	**Pb**	**23 37 38.1**	**+0.4**
LANU	**Lannavaara**	**0.82**	**64**	*e*P	**Pg**	**23 37 36.9**	**+0.3**
LANU				*e*S	**Sg**	**23 37 46.3**	**-0.9**
LANU	**Lannavaara**	**0.82**	**64**	P	**Pg**	**23 37 36.6**	**0.0**
LANU	**Lannavaara**	**0.82**	**64**	P	**Pg**	**23 37 36.9**	**+0.3**
LANU				S	**Sg**	**23 37 46.2**	**-0.9**
KIF	**Kilpisjarvi**	**1.33**	**12**	*e*P	**Pb**	**23 37 46.8**	**0.0**
KIF				*e*S	**Sg**	**23 38 02.7**	**-1.0**
KIF	**Kilpisjarvi**	**1.33**	**12**	P	**Pb**	**23 37 46.8**	**0.0**
KIF				S	**Sg**	**23 38 02.7**	**-1.0**
PAJU	**Pajala**	**1.38**	**119**	*e*P	**Pb**	**23 37 48.5**	**+0.9**
PAJU	**Pajala**	**1.38**	**119**	P	**Pb**	**23 37 48.5**	**+0.9**
ERTU	**Ertsjaerv**	**1.44**	**143**	*e*P	**Pb**	**23 37 50.5**	**+1.9**
ERTU	**Ertsjaerv**	**1.44**	**143**	P	**Pb**	**23 37 50.5**	**+1.9**
ERTU	**Ertsjaerv**	**1.44**	**143**	P	Pn	23 37 44.4	-3.8
HEF	**Hetta**	**1.53**	**61**	*e*P	**Pn**	**23 37 49.6**	**-0.1**
HEF				*e*S	**Sg**	**23 38 07.8**	**-2.4**
HEF				MSG		23 38 13.6	
	comp=Z,4.1nm,0.2s						
HEF	**Hetta**	**1.53**	**61**	P	**Pn**	**23 37 49.5**	**-0.1**
HEF				S	**Sg**	**23 38 07.7**	**-2.4**
HARU	**Harads**	**1.60**	**166**	P	**Pn**	**23 37 48.0**	**-2.4**
TOF	**Tornio**	**2.35**	**132**	*e*PB	**Pb**	**23 38 05.1**	**+0.8**
TOF				*e*SB	**Sb**	**23 38 35.4**	**+1.6**
TOF	**Tornio**	**2.35**	**132**	Pb	**Pb**	**23 38 05.0**	**+0.8**
TOF				Sb	**Sb**	**23 38 35.4**	**+1.6**
SGF	**Sodankyl**	**2.50**	**93**	*e*PG	**Pb**	**23 38 08.0**	**+1.2**
SGF				*e*SG	**Sb**	**23 38 39.1**	**+1.0**
SGF	**Sodankyl**	**2.50**	**93**	Pg	**Pb**	**23 38 07.9**	**+1.2**
SGF				Sg	**Sb**	**23 38 39.0**	**+1.0**
RNF	**Rovaniemi**	**2.58**	**113**	*e*PB	**Pb**	**23 38 08.4**	**+0.3**
RNF				*e*SG	**Sb**	**23 38 42.0**	**+1.6**
RNF	**Rovaniemi**	**2.58**	**113**	Pb	**Pb**	**23 38 08.3**	**+0.3**
RNF				Sg	**Sb**	**23 38 41.9**	**+1.6**
ARE0	**ARCESS Array S**	**2.72**	**45**	*e*P	**Pn**	**23 38 07.2**	**+1.3**
ARE0				*e*S	**Sn**	**23 38 38.3**	**-1.1**
ARE0	**ARCESS Array S**	**2.72**	**45**	P	**Pn**	**23 38 07.1**	**+1.3**
ARE0				S	**Sn**	**23 38 38.2**	**-1.1**
KEV	**Kevo**	**3.27**	**48**	*e*P	**Pn**	**23 38 14.9**	**+1.5**
KEV				*e*S	**Sn**	**23 38 52.8**	**-0.1**
KEV	**Kevo**	**3.27**	**48**	P	**Pn**	**23 38 14.9**	**+1.5**
KEV				S	**Sn**	**23 38 52.7**	**-0.1**
VLW4	**Vlagtwedde**	**16.05**	**209**	*e*Sg	**S**	**23 44 18.8**	**-1.4**

IDC ***02*** *23:45:56.6±2.7, 39°.20N×142°.94E, h0km, mb3.7/3, mb1 3.8/4, mb1mx3.4/35, mbtmp3.6/4, ML3.0/1, MS2.6/2, Ms1 2.6/2, ms1mx2.5/33, Error ellipse: s-maj=68.4km s-min=29.8km az=71.0*
NIED ***02*** *23:46:00, 39°.10N×142°.40E, h32km, Mw3.5 Best double couple: M0 1.80000×10^14 NP1:φ=22.00000°, δ21.00000°, λ-39.00000°. NP2:φ=149.00000°, δ77.00000°, λ-107.00000°.*
ISCJB ***02*** *23:46:03.4±1.6, 39°.09N±0°.06×142°.3E±0°.2, h46km±12km, mb3.6/3, Error ellipse: s-maj=20.6km s-min=8.1km az=17.3*
JMA ***02*** *23:46:03.3±0.1, 39°.10N×142°.37E, h35km±1km, M3.6*
JMA Felt I J1.
ISC 02 23:46:03.3±2.1, 39°.17N±0°.06×142°.4E±0°.1, h32km±11km, n14, σ1§08/19, mb3.6/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.56**	**261**	P	**Pb**	**23 46 14.4**	**-0.3**
OFUJ				S	**Sb**	**23 46 22.3**	**-0.3**
MIYJ	**Miyakonagasawa**	**0.59**	**313**	P	**Pn**	**23 46 15.7**	**+0.2**
MIYJ				S	**Sn**	**23 46 24.6**	**+0.5**
JTH	**Tanohata**	**0.86**	**333**	P	**Pb**	**23 46 19.8**	**0.0**
JOM	**Ohasama**	**0.89**	**290**	P	**Pn**	**23 46 19.8**	**+0.1**
JOM				S	**Sb**	**23 46 32.5**	**+0.6**
JMK	**Ichinoseki**	**0.93**	**257**	P	**Pn**	**23 46 19.8**	**-0.3**
JMK				S	**Sn**	**23 46 31.8**	**-0.5**
JANG	**Nango**	**1.37**	**331**	P	**Pb**	**23 46 27.6**	**-0.8**
JANG				S	**Sb**	**23 46 45.7**	**+0.1**
JOU	**Okura**	**1.56**	**240**	P	**Pn**	**23 46 28.9**	**0.0**
JYK	**Kaneyama**	**1.59**	**262**	P	**Pn**	**23 46 29.8**	**+0.6**
MAT	**Matsushiro**	**4.21**	**233**	P	**Pn**	**23 47 08.1**	**+2.7**
MAT				S	**Sn**	**23 47 52.0**	**-1.5**
MJAR	**Matsushiro Arr**	**4.21**	**233**	Pn	**Pn**	**23 47 07.1**	**+1.8**
	0.7nm,0.3s,baz=43,slow=11,SNR=29						
MJAR				LR	LR	23 48 43.9	
	comp=Z,35nm,21.6s,baz=195,slow=37						
PETK	**Petropavlovsk-**	**17.47**	**32**	LR	LR	23 56 14.2	
	comp=Z,33nm,18.2s,baz=6.6,slow=36						
ZALV	**Zalesovo Beam**	**41.07**	**311**	P	**P**	**23 53 44.3**	**+0.7**
	0.4nm,0.4s,baz=100,slow=7.9,SNR=2.8						
MKAR	**Makanchi Array**	**43.66**	**300**	P	**P**	**23 54 05.5**	**+0.6**
	0.4nm,0.3s,baz=87,slow=9.3,SNR=7.3						
WRA	**Warramunga Arr**	**59.28**	**189**	P	**P**	**23 56 00.6**	**-1.3**
	0.6nm,0.8s,baz=6.7,slow=7.0,SNR=3.1						

BJI ***02*** *23:55:38.8, 12°.10N×87°.50W, h25km, mB5.4/26, Ms5.4/32, Ms7 5.2/33*
ISCJB ***02*** *23:55:38.4±0.1, 12°.14N±0°.02×87°.45W±0°.02, h33km, mb5.4/261, MS5.0/310, Error ellipse: s-maj=3.5km s-min=1.9km az=41.4*
IDC ***02*** *23:55:38.7±1.7, 12°.36N×87°.19W, h24km±9km, mb5.1/27, mb1 5.2/29, mb1mx5.1/37, mbtmp5.2/29, ML3.9/2, MS4.9/25, Ms1 4.9/25, ms1mx4.8/33, Error ellipse: s-maj=18.1km s-min=10.2km az=60.0*
CASC ***02*** *23:55:39.9±1.7, 12°.06N×87°.68W, h24km, MD5.0, ML5.2, mb5.5(NEIC)*
NEIC ***02*** *23:55:39.5±0.2, 12°.13N×87°.47W, h28km, mb5.6/229, ME5.5, MS5.1/261, MW5.4, MD5.3(SNET), Error ellipse: s-maj=5.6km s-min=3.4km az=37.0, Moment Tensor Solution. s40 Moment tensor: Scale 10^17Nm; M_rr=1.54; M_θθ=0.72; M_φφ=-0.82; M_rθ=0.41; M_φθ=0.83; M_φr=0.28; Best double couple: M_0=1.6000×10^17 NP1:φ=133.00000°, δ54.00000°, λ85.00000°. NP2:φ=321.00000°, δ37.00000°, λ96.00000°. Principal axes: T 1.6200, Plg81.0000°, Azm22.0000°; N 0.0600, Plg4.0000°, Azm136.0000°; P -1.6800, Plg9.0000°, Azm226.0000°; Broadband fault plane solution: P waves. NP1:φs=330.00000°, δ15.00000°, λ90.00000°. NP2:φs=150.00000°, δ75.00000°, λ90.00000°. Principal axes: T Plg60.0000°, Azm60.0000°; N Plg0.0000°, Azm0.0000°; P Plg30.0000°, Azm240.0000°; Complex earthquake observed on broadband displacement seismograms. A large event is followed by a smaller event about 2 seconds later. Depth based on first event. Energy computed from BB mechanism.*
NEIC Felt [II] at Diriamba and Managua. Also felt at Chinandega, Corinto and Leon. Felt [III] at San Salvador, El Salvador. Felt at Santa Cruz, Costa Rica and at Tegucigalpa, Honduras.
SSS ***02*** *23:55:39.9, 12°.07N×87°.67W, h26km, ML5.4, MW5.3, MW5.5(GCMT)*
INET ***02*** *23:55:39.1, 12°.01N×87°.70W, h8km, ML5.5*
MOS ***02*** *23:55:39.2±1.4, 12°.37N×87°.30W, h33km, mb5.4/57, MS5.1/38, Error ellipse: s-maj=9.1km s-min=4.7km az=109.6*
GCMT ***02*** *23:55:40.4±0.1, 11°.90N×87°.95W, h32km, MW5.5/111, Moment Tensor Solution. s108,c197; s111,c216; Duration: 1§4 Moment tensor: Scale 10^17Nm; M_rr=2.06±.04; M_θθ=1.74±.03; M_φφ=-0.32±.03; M_rθ=1.05±.04; M_φθ=1.19±.02; M_φr=0.87±.05; Best double couple: M_0=2.62200×10^17 NP1:φs=126.00000°, δ61.00000°, λ96.00000°. NP2:φs=293.00000°, δ30.00000°, λ79.00000°. Principal axes: T 2.4550, Plg73.0000°, Azm52.0000°; N 0.3290, Plg6.0000°, Azm302.0000°; P -2.7890, Plg16.0000°, Azm211.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
ISC 02 23:55:39.7±0.3, 12°.01N±0°.03×87°.64W±0°.03, h33km±1km, h33km: pP-P, n1322, σ1§86/1425, mb5.5/263, MS5.1/312, 29C-8D, Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRIN	**San Cristobal**	**0.90**	**40**	*e*P	**Pb**	**23 55 57.2**	**+0.2**
CRIN				AML	AML	23 56 22.4	
	comp=N,134μm,0.4s						
CSGN	**Cosiguina Volc**	**0.97**	**5**	*e*P	**Pn**	**23 55 57.1**	**0.0**
CSGN				*e*P	**Pb**	**23 55 57.3**	**-0.8**
CSGN				*e*S	**Sn**	**23 56 09.2**	**-0.5**
CSGN				*e*S	**Sb**	**23 56 11.5**	**+0.8**
COPN	**Copaltepe**	**1.04**	**80**	*e*P	**Pn**	**23 55 57.7**	**-0.3**
CNGN	**Cerro Negro**	**1.04**	**62**	*e*P	**Pb**	**23 55 58.7**	**-0.6**
CNGN				*i* P	**Pb**	**23 55 58.8**	**-0.6**
CNGN				*e*S	**Sb**	**23 56 13.2**	**+0.5**
CNGN				*e*S	**Sn**	**23 56 15.4**	**+3.9**
MOMN	**Momotombo**	**1.15**	**70**	*e*P	**Pn**	**23 55 58.7**	**-0.8**
APYN	**Apoyeque**	**1.28**	**80**	*e*P	**Pn**	**23 56 01.0**	**-0.3**
CRUN	**El Crucero**	**1.31**	**91**	*e*P	**Pn**	**23 56 02.1**	**+0.3**
MGAN	**Managua**	**1.37**	**84**	*e*P	**Pb**	**23 56 03.9**	**-0.8**
MGAN				*e*S	**Sb**	**23 56 22.6**	**+0.6**
MASN	**Masaya**	**1.45**	**91**	*e*P	**Pb**	**23 56 05.3**	**-1.0**
SMIG	**San Miguel**	**1.51**	**340**	*e*P	**Pn**	**23 56 04.6**	**+0.1**
SMIG				*e*S	**Sn**	**23 56 23.3**	**+0.2**
LCY	**Lacayo**	**1.55**	**336**	*e*P	**Pn**	**23 56 04.9**	**-0.2**
PACA	**Pacayal**	**1.60**	**335**	*e*P	**Pn**	**23 56 05.7**	**-0.2**
ESTN	**Estel**	**1.65**	**49**	*e*P	**Pn**	**23 56 07.4**	**+1.0**
ESTN				*e*P	**Pn**	**23 56 07.5**	**+1.0**
ESTN				*e*S	**Sn**	**23 56 27.9**	**+1.3**
UCHI	**Chinameca**	**1.65**	**335**	*e*P	**Pn**	**23 56 06.7**	**+0.2**
UCHI				*e*S	**Sn**	**23 56 27.1**	**+0.6**
UCHI				AML	AML	23 56 31.3	
	comp=Z,67μm,0.5s						
BOAB	**BOACO BROADBAN**	**.98**	**77**	*e*P	**Pn**	**23 56 11.8**	**+0.9**
SNVI	**San Vicente**	**1.98**	**324**	*e*P	**Pn**	**23 56 11.1**	**-0.1**
SNVI				*e*P	**Pb**	**23 56 11.2**	**-4.1**
TGUH	**Tegucigalpa,Un**	**2.07**	**10**	*e*Pn	**Pn**	**23 56 13.4**	**+1.3**
LFRS	**El Faro**	**2.12**	**319**	*e*P	**Pn**	**23 56 12.8**	**-0.3**
LBRS	**Las Brisas**	**2.20**	**322**	*i* P	**Pn**	**23 56 14.4**	**+0.3**
LFU	**La Fuente**	**2.25**	**320**	*e*P	**Pn**	**23 56 15.2**	**+0.4**
SNET	**Serv Nac Est T**	**2.28**	**317**	*e*P	**Pn**	**23 56 15.2**	**0.0**
SNET				*e*P	**Pn**	**23 56 15.4**	**+0.2**
SNET				*e*S	**Sn**	**23 56 42.2**	**-0.1**
SNET				AML	AML	23 56 46.5	
	comp=Z,20μm,0.4s						
SNET				AML	AML	23 56 46.9	
	comp=Z,20μm,0.5s						
COLS	**Colinas**	**2.31**	**316**	*e*P	**Pn**	**23 56 15.8**	**+0.2**
BOQS	**Boqueron**	**2.35**	**317**	*e*P	**Pn**	**23 56 16.6**	**+0.4**
BOQS				*e*S	**Sn**	**23 56 45.4**	**+1.3**
SBLS	**San Blas**	**2.66**	**313**	*e*P	**Pn**	**23 56 20.6**	**0.0**
SBLS				*e*P	**Pn**	**23 56 20.8**	**+0.3**
SNJE	**San Jose**	**2.67**	**314**	*e*P	**Pn**	**23 56 20.9**	**+0.3**
MONT	**Ecomontaæa**	**2.69**	**313**	*e*P	**Pn**	**23 56 21.3**	**+0.3**
RTR	**El Retiro**	**2.71**	**314**	*e*P	**Pn**	**23 56 21.9**	**+0.6**
RBDL	**Robledal**	**2.89**	**317**	*e*P	**Pn**	**23 56 24.0**	**+0.3**
CUS1	**Cusmapa**	**2.94**	**310**	*e*P	**Pn**	**23 56 24.5**	**+0.2**
JTS	**JuntasAbangare**	**3.14**	**123**	*c*eP	**Pn**	**23 56 28.7**	**+1.8**
JTS	**JuntasAbangare**	**3.14**	**123**	*e*P	**Pn**	**23 56 28.8**	**+1.8**
JTS	**JuntasAbangare**	**3.14**	**123**	*e*Pn	**Pn**	**23 56 28.9**	**+2.0**
JTS				*e*Sn	**Sn**	**23 57 02.5**	**-0.8**
ESPN	**Las Esperanzas**	**3.27**	**86**	*e*P	**Pn**	**23 56 30.8**	**+2.1**
JCR	**Jicaral**	**3.28**	**131**	*e*P	**Pn**	**23 56 30.6**	**+1.6**
IXG	**Ixpaco**	**3.49**	**308**	*e*P	**Pn**	**23 56 32.0**	**+0.1**
CGA2	**Cerro Gallo 2**	**3.69**	**122**	*e*P	**Pn**	**23 56 37.7**	**+3.1**
HDC	**Heredia**	**3.99**	**120**	*e*Pn	**Pn**	**23 56 42.6**	**+3.8**
HDC				*e*Sn	**Sn**	**23 57 21.3**	**-3.3**
QCR	**Quepos**	**4.27**	**127**	‖*e*P	**Pn**	**23 56 45.6**	**+3.1**
URSC	**Urasca**	**4.36**	**119**	*e*P	**Pn**	**23 56 47.0**	**+3.1**
BUS	**Buena Vista**	**4.52**	**122**	*e*P	**Pn**	**23 56 50.4**	**+4.0**
CCIG	**Comitan**	**6.09**	**315**	*e*Pn	**Pn**	**23 57 10.3**	**+2.6**
CCIG				*e*Sn	**Sn**	**23 58 10.4**	**-6.0**
BCIP	**Isla Barro Col**	**8.17**	**109**	*e*P	**Pn**	**23 57 36.6**	**+0.5**
BCIP	**Isla Barro Col**	**8.17**	**109**	*e*Pn	**Pn**	**23 57 39.3**	**+3.2**
BCIP				*e*Sn	**Sn**	**23 59 06.9**	**-0.5**
TEIG	**Tepich**	**8.20**	**356**	Pn	**Pn**	**23 57 36.8**	**+0.4**
	comp=Z,9.2nm,0.3s,baz=89,slow=24,SNR=38						
TEIG				LR	LR	00 01 28.5	
	comp=Z,1μm,18.4s,baz=180,slow=44						
TEIG	**Tepich**	**8.20**	**356**	*e*P	**Pn**	**23 57 40.0**	**+3.6**
TEIG	**Tepich**	**8.20**	**356**	*e*Pn	**Pn**	**23 57 36.8**	**+0.4**
TEIG				*e*Sn	**Sn**	**23 59 07.3**	**-0.7**
CMIG	**Matias Romero**	**8.64**	**307**	Pn	**Pn**	**23 57 44.3**	**+1.7**
	comp=Z,4.6nm,0.3s,baz=111,slow=10,SNR=42						
CMIG				Sn	**Sn**	**23 59 25.6**	**+6.5**
	comp=Z,7.3nm,0.3s,baz=126,slow=19,SNR=2.7						
CMIG				LR	LR	00 01 29.4	
	comp=Z,19μm,21.6s,baz=130,slow=40						
CMIG				PKiKP	**PKiKP**	**00 12 10.8**	**-0.1**
	comp=Z,0.1nm,0.3s,baz=194,slow=4.2,SNR=5.5						
CAPC	**Capurgana**	**10.66**	**107**	*e*P	**Pn**	**23 58 12.7**	**+2.4**
MCJ	**Malvern**	**11.27**	**57**	*i* P	Pn	23 58 23.6	+5.0
MCJ	**Malvern**	**11.27**	**57**	*i* P	Pn	23 58 23.6	+5.0
CVJ	**Coleyville**	**11.55**	**56**	*i* P	Pn	23 58 27.3	+4.8
CVJ	**Coleyville**	**11.55**	**56**	*i* P	Pn	23 58 27.3	+4.8
MTDJ	**Mount Denham**	**11.55**	**56**	*e*P	**Pn**	**23 58 25.4**	**+2.9**
MTDJ	**Mount Denham**	**11.55**	**56**	*e*Pn	**Pn**	**23 58 27.2**	**+4.7**
BBJ	**Bamboo Saint A**	**11.84**	**56**	*i* P	Pn	23 58 31.7	+5.2
BBJ	**Bamboo Saint A**	**11.84**	**56**	‖*i*P	Pn	23 58 31.7	+5.2
TLIG	**Tlapa**	**11.92**	**299**	*e*Pn	**Pn**	**23 58 31.1**	**+3.4**
TLIG				*e*Sn	**Sn**	**00 00 37.4**	**-2.3**
STH	**Stony Hill**	**12.07**	**59**	*i* P	**Pn**	**23 58 34.2**	**+4.6**
STH	**Stony Hill**	**12.07**	**59**	*i* P	**Pn**	**23 58 34.2**	**+4.6**
BNJ	**Bonny Gate**	**12.07**	**57**	*i* P	**Pn**	**23 58 34.1**	**+4.5**
BNJ	**Bonny Gate**	**12.07**	**57**	‖*i*P	**Pn**	**23 58 34.0**	**+4.4**

baz=160
443A Delano Plantat 19.06 349 P Pn 00 00 01.7 +1.4
baz=167
442A Mamou 19.14 347 P Pn 00 00 02.5 +1.2
baz=165
637A Eagle Lake 19.14 336 P Pn 00 00 02.2 +1.0
baz=153,SNR=11
539A Cross D Ranch, 19.18 341 P Pn 00 00 03.2 +1.5
baz=158,SNR=13
735A Kenedy 19.26 332 P Pn 00 00 03.5 +0.8
baz=148,SNR=16
348A Jackson 19.31 359 P Pn 00 00 04.1 +0.8
baz=179,SNR=22
347A Saraland 19.32 358 P Pn 00 00 04.3 +0.9
baz=177,SNR=27
345A Thompson Farm, 19.34 354 P Pn 00 00 04.4 +0.8
baz=172,SNR=13
441A DeRidder 19.35 345 P Pn 00 00 05.2 +1.4
baz=163,SNR=36
346A Big Creek Wild 19.36 355 P Pn 00 00 04.8 +0.9
baz=174,SNR=27
HKT Hockley 19.41 338 *eP* **Pn 00 00 04.5 +0.1**
HKT pmax pmax
comp=Z,250nm,1.2s
HKT Hockley 19.41 338 *eP* **Pn 00 00 04.5 +0.1**
comp=Z,245nm,1.2s
636A Smothers Creek 19.47 335 P Pn 00 00 05.4 +0.1
baz=151,SNR=26
343A Vidalia 19.53 350 P Pn 00 00 06.3 +0.3
baz=168
538A Harpers Horsep 19.54 339 P Pn 00 00 06.8 +0.7
baz=156,SNR=7.7
538A S **Sn 00 03 44.9 +0.5**
baz=156
440A Kirbyville 19.54 344 P Pn 00 00 07.1 +1.0
baz=161,SNR=17
344A Westbrook Farm 19.56 352 P Pn 00 00 07.2 +0.9
baz=170,SNR=118
833A Chaparral WMA, 19.60 328 P Pn 00 00 06.4 -0.5
baz=143,SNR=253
734A La Parita Cree 19.61 330 P P 00 00 05.6 +0.3
baz=146,SNR=32
TIGA Tifton 19.70 10 P Pn 00 00 08.3 +0.4
baz=191,SNR=32
TIGA Tifton 19.70 10 *eP* **Pn 00 00 08.3 +0.4**
comp=Z,450nm,0.8s
TIGA *e*ScP **ScP 00 07 54.0 -4.4**
635A Leesville 19.70 333 P P 00 00 06.4 0.0
baz=149,SNR=13
537A Green Hill Far 19.71 337 P Pn 00 00 07.9 -0.1
baz=154,SNR=52
342A Flagon Creek P 19.75 348 P Pn 00 00 09.2 +0.6
baz=166,SNR=80
439A Center Grove, 19.83 342 P Pn 00 00 10.0 +0.5
baz=159,SNR=12
733A Divot King Ran 19.87 329 P P 00 00 09.1 +0.8
baz=144,SNR=100
832A Faith Ranch, C 19.88 326 P P 00 00 08.9 +0.5
baz=142,SNR=313
341A Kurthwood 19.90 346 P Pn 00 00 10.6 +0.3
baz=163,SNR=100
634A China Grove, S 19.96 332 P P 00 00 09.3 +0.1
baz=147,SNR=10
246A Jackson Lee, B 19.96 356 P Pn 00 00 10.3 -0.7
baz=175
247A Quitman 19.97 358 P P 00 00 09.5 +0.2
baz=177,SNR=17
248A Dixon Mills 19.99 360 P Pn 00 00 11.3 -0.1
baz=179,SNR=42
536A Bastrop 20.00 335 P P 00 00 10.1 +0.5
baz=152,SNR=37
438A Sam Houston St 20.01 340 P Pn 00 00 11.7 0.0
baz=157,SNR=17
245A Little AP, Sta 20.04 354 P Pn 00 00 11.8 -0.2
baz=173,SNR=40
243A Waterproof 20.09 350 P Pn 00 00 12.4 -0.2
baz=168,SNR=42
244A Avery, Jackson 20.14 352 P Pn 00 00 13.0 -0.1
baz=171,SNR=28
340A Bronson 20.16 344 P Pn 00 00 13.4 0.0
baz=162,SNR=36
535A Dale 20.17 334 P P 00 00 11.8 +0.3
baz=150,SNR=99
339A Huntington 20.27 343 P Pn 00 00 14.0 -0.6
baz=160,SNR=14
VBMS Vicksburg 20.29 353 P Pn 00 00 14.2 -0.6
baz=171,SNR=11
VBMS Vicksburg 20.29 353 PFAKE 00 00 20.0 +5.1
VBMS LR LR
comp=Z,2µm,18.0s
437A Phantom Ranch, 20.32 339 P P 00 00 14.0 +1.0
baz=155,SNR=18
242A Grayson 20.39 349 P Pn 00 00 15.8 -0.2
baz=167,SNR=46
633A Saathoff Ranch 20.42 330 P P 00 00 14.2 0.0
baz=145,SNR=122
241A Mo Tay, Goldon 20.51 347 P Pn 00 00 17.0 -0.4
baz=165,SNR=75
436A Wall Ranch, Ga 20.51 337 P P 00 00 15.7 +0.5
baz=153,SNR=30
338A Crockett 20.52 341 P Pn 00 00 17.0 -0.6
baz=158,SNR=40
534A Blanco 20.56 332 P P 00 00 15.4 -0.4
baz=148,SNR=104
146A Union 20.57 357 P Pn 00 00 17.2 -1.0
baz=176,SNR=14
147A Livingston 20.58 358 P Pn 00 00 17.3 -0.9
baz=178,SNR=64
145A Houston Renfro 20.61 354 P Pn 00 00 17.7 -0.9
baz=173,SNR=10
337A Centerville 20.67 340 P P 00 00 18.1 +1.2
baz=156,SNR=56
144A Alexander Plac 20.68 353 P Pn 00 00 18.6 -1.0
baz=172
NATX Nacogdoches 20.70 343 P Pn 00 00 18.7 -1.0
baz=160,SNR=19
NATX Nacogdoches 20.70 343 *eP* **Pn** 00 00 18.8 -0.9
comp=Z,389nm,0.9s
NATX LR LR
comp=Z,3µm,18.0s
240A Hunter Patters 20.72 345 P Pn 00 00 18.9 -1.0
baz=162,SNR=29
MPR Mayaguez 20.72 70 *eP* **P 00 00 18.2 +0.6**
comp=Z,89nm,0.9s
AGP Aguadilla 20.77 70 *eP* **Pn** 00 00 21.6 +1.0
comp=Z,542nm,1.3s
142A Monroe 20.82 350 P Pn 00 00 20.0 -1.1
baz=168
435B Jarrell 20.83 335 P P 00 00 18.8 +0.1
baz=151,SNR=46
533A Kerrville 20.86 331 P P 00 00 18.8 -0.2
baz=147,SNR=196
239A Gary 20.89 344 P Pn 00 00 20.7 -1.2
baz=160,SNR=20
143A Socs Landing, 20.89 351 P P 00 00 19.9 +0.7
baz=169,SNR=5.8
LRS Lares 21.01 70 *eP* **P 00 00 20.0 -0.7**
238A Jacksonville 21.06 342 P P 00 00 22.3 +1.2
baz=159,SNR=22
141A Papa Simpson, 21.06 348 P P 00 00 22.6 +1.5
baz=165,SNR=14
336A Riesel 21.08 338 P P 00 00 21.7 +0.4
baz=154,SNR=69
Z47A Carrollton 21.10 359 P P 00 00 22.5 +1.0
baz=178,SNR=57
ATAH Atahualpa 21.12 154 P P 00 00 25.1 +2.8
comp=Z,76nm,1.0s,baz=335,slow=8.1,SNR=25
ATAH LR LR 00 07 40.9
comp=Z,8µm,21.4s,baz=340,slow=34
Z46A Louisville 21.12 357 P P 00 00 23.3 +1.6
baz=176,SNR=38
434A Burnet 21.14 334 P P 00 00 21.2 -0.9
baz=150,SNR=96
335A Moody 21.21 336 P P 00 00 22.8 +0.1
baz=152,SNR=65
140A Cam and Jess, 21.25 346 P P 00 00 24.7 +1.6
baz=163,SNR=65
Z48A Northport 21.27 0 P P 00 00 24.2 +0.9
baz=180,SNR=87
237A Washetta, Mont 21.27 341 P P 00 00 24.3 +0.9
baz=157
Z44A Pea Ridge, Bel 21.33 354 P P 00 00 24.7 +0.8
baz=172,SNR=7.9
Z45A Winona 21.35 355 P P 00 00 25.1 +1.0
baz=174,SNR=9.4
Z43A Armstrong Fami 21.36 352 P P 00 00 24.6 +0.3
baz=170,SNR=8.9
433A Art 21.46 332 P P 00 00 24.7 -0.7
baz=148,SNR=83
139A Bunkhouse Ranc 21.49 344 P P 00 00 27.0 +1.3
baz=161,SNR=40
236A Katherine and 21.52 339 P P 00 00 26.2 +0.2
baz=155,SNR=19
Z42A Norrel Spur, H 21.53 350 P P 00 00 26.7 +0.6
baz=168,SNR=9.0
JCT Junction City 21.56 330 P P 00 00 26.2 -0.4
baz=146,SNR=153
JCT Junction City 21.56 330 PFAKE 00 00 40.0 +13
JCT LR LR
comp=Z,1µm,20.0s
334A Lometa 21.58 335 P P 00 00 26.2 -0.6
baz=150,SNR=96
SJG San Juan 21.61 71 P P 00 00 24.6 -2.5
comp=Z,34nm,0.5s,baz=258,slow=7.8,SNR=19
SJG PcP **PcP 00 04 28.8 +0.4**
comp=Z,16nm,0.2s,baz=333,slow=20,SNR=8.9
SJG ScP **ScP 00 08 04.3 +1.1**
comp=Z,21nm,0.9s,baz=342,slow=2.0,SNR=3.3
SJG San Juan 21.61 71 *eP* **P 00 00 28.2 +1.1**
SJG pmax pmax
comp=Z,120nm,1.1s
SJG San Juan 21.61 71 *eP* **P 00 00 28.2 +1.1**
SJG *e*S **S 00 04 29.2 +4.3**
SJG *e*ScP **ScP 00 08 04.3 +1.1**
SJG LR LR
comp=Z,5µm,19.0s
138A Matatall Enter 21.66 343 P P 00 00 29.0 +1.4
baz=160,SNR=70
Z41A Richland Creek 21.68 348 P P 00 00 28.4 +0.7
baz=166,SNR=39
Y47A UCPARC, Winfie 21.80 360 P P 00 00 29.6 +0.6
baz=179,SNR=62
Z40A Long Farm, Mag 21.80 347 P P 00 00 30.1 +1.0
baz=164,SNR=54
Y46A Houston 21.80 357 P P 00 00 29.6 +0.5
baz=176
137A Heron Place, G 21.81 341 P P 00 00 30.2 +1.1
baz=158,SNR=28
Y45A Yeager Farm, C 21.83 356 P P 00 00 30.1 +0.8
baz=175,SNR=26
WHTX Lake Whitney, 21.85 337 P P 00 00 29.5 -0.1
baz=153,SNR=22
WHTX Lake Whitney, 21.85 337 *eP* **P 00 00 29.8 +0.2**
comp=Z,363nm,1.1s
WHTX LR LR
comp=Z,1µm,19.0s
HUMP Col San Antoni 21.89 71 *eP* **P 00 00 31.3 +1.1**
comp=Z,177nm,1.2s
HUMP *e*S **S 00 04 29.5 -1.0**
HUMP *e*ScP **ScP 00 08 06.5 +2.5**
HUMP LR LR
comp=Z,5µm,19.0s
333A Richland Sprin 21.89 333 P P 00 00 29.6 -0.5
baz=148,SNR=164
RGRS Roger Stewart 21.89 17 *eP* **P 00 00 31.9 +1.9**
comp=Z,1µm,0.9s
CBYP Canovanas 21.92 71 *eP* **P 00 00 28.7 -1.8**
comp=Z,93nm,0.9s
CBYP LR LR
comp=Z,4µm,20.0s
136A Ennis 21.95 340 P P 00 00 31.0 +0.4
baz=156,SNR=135
Z39A Irene McRaven, 21.97 345 P P 00 00 32.3 +1.5
baz=162,SNR=15
Y44A Strider, Charl 21.98 354 P P 00 00 31.1 +0.2
baz=173,SNR=5.7
CSU Charleston Sou 22.00 17 *eP* **P 00 00 33.8 +2.6**
Y43A Makayla and Ka 22.01 353 P P 00 00 31.5 +0.2
baz=171
Y42A Garnett, Star 22.06 351 P P 00 00 32.1 +0.3
baz=169,SNR=7.8
234A Clairette 22.13 336 P P 00 00 32.3 -0.3
baz=151,SNR=92
CCAR Cane Creek 22.13 351 PFAKE 00 00 40.0 +7.4
CCAR LR LR
comp=Z,2µm,20.0s
WLAR White Oak Lake 22.15 348 *eP* **P 00 00 34.2 +1.4**
comp=Z,412nm,1.2s
Z38A Mt. Pleasant 22.19 344 P P 00 00 34.1 +0.9
baz=160,SNR=21
Z37A Pogue Cattle C 22.32 342 P P 00 00 35.4 +0.7
baz=159,SNR=50
135A Vickery Place, 22.34 338 P P 00 00 34.5 -0.3
baz=154,SNR=63
233A Rising Star 22.45 334 P P 00 00 35.6 -0.5
baz=150,SNR=110
Y40A Okolona 22.50 348 P P 00 00 37.0 +0.4
baz=165,SNR=69
HPIG 22.52 314 *eP* **P 00 00 37.7 +0.6**
HPIG LR LR
comp=Z,8µm,21.0s
134A White-Moore Ra 22.61 337 P P 00 00 37.0 -0.7
baz=152,SNR=113
Y39A Lockesburg 22.61 346 P P 00 00 38.1 +0.4
baz=163,SNR=140
Z36A Blue Ridge 22.65 341 P P 00 00 38.0 -0.1
baz=157,SNR=43
Y38A Idabel 22.76 345 P P 00 00 39.5 +0.2
baz=161,SNR=46
STVI Saint Thomas 22.77 71 *eP* **P 00 00 38.5 -1.0**
comp=Z,341nm,1.0s
STVI *e*S **S 00 04 47.5 +1.1**
STVI LR LR
comp=Z,5µm,21.0s
TXAR Lajitas Array 22.80 322 P P 00 00 40.5 +0.5
comp=Z,369nm,0.8s,baz=138,slow=9.4,SNR=1624
TXAR PcP **PcP 00 04 32.7 +1.9**
comp=Z,33nm,1.0s,baz=142,slow=4.3,SNR=11
TXAR ScP **ScP 00 08 08.1 +1.9**
comp=Z,2.4nm,0.6s,baz=142,slow=4.6,SNR=9.5
TXAR PKiKP **PKiKP 00 12 15.3 -0.4**
comp=Z,0.7nm,0.8s,baz=204,slow=2.7,SNR=5.2
TXAR LR LR 00 12 37.6
comp=Z,1µm,18.0s,baz=0.0,slow=45
TXAR P3KPbc 00 34 16.2
comp=Z,0.8nm,0.9s,baz=286,slow=3.7,SNR=4.9
LTX Lajitas 22.80 322 *eP* **P 00 00 40.5 +0.6**
LTX *e* 00 04 32.7
LTX Lajitas 22.80 322 *eP* **P 00 00 40.5 +0.6**
LTX *e*PcP **PcP 00 04 32.7 +1.9**
LTX *e*ScP **ScP 00 08 08.1 +1.9**
TX31 Lajitas Ar. Si 22.80 322 *eP* **P 00 00 40.2 +0.3**
TX31 *e*ScP **ScP 00 08 09.7 +3.4**
CDVI St. Croix 22.82 73 *eP* **P 00 00 40.3 +0.2**
CDVI *ep*P **pP 00 00 48.2 -0.7**
CDVI *e*PcP **PcP 00 04 32.1 +1.3**
X40A Basin Creek Fa 22.87 349 P P 00 00 40.1 -0.3
baz=166,SNR=27
133A Hamilton Ranch 22.97 335 P P 00 00 40.8 -0.8
baz=150,SNR=92
Z35A Perchaven, San 22.98 339 P P 00 00 41.2 -0.4
baz=155,SNR=60
Y37A Hugo 23.05 343 P P 00 00 42.5 +0.2
baz=159,SNR=15
UALR University of 23.07 350 *eP* **P 00 00 42.3 -0.1**
comp=Z,148nm,0.8s
MIAR Mount Ida 23.08 347 P P 00 00 42.5 -0.1
baz=165,SNR=180
SWET Sewanee 23.16 4 *eP* **P 00 00 43.1 -0.4**
comp=Z,31nm,0.7s
X39A Fountain Ranch 23.16 346 P P 00 00 43.5 0.0
baz=163,SNR=163
Y36A Durant 23.18 341 P P 00 00 43.7 +0.1
baz=158
Z34A Collier Ranch, 23.25 338 P P 00 00 43.8 -0.6
baz=153,SNR=58
ABTX Abilene, Hawle 23.29 334 P P 00 00 43.8 -1.0
baz=149,SNR=118
ABTX Abilene, Hawle 23.29 334 *eP* **P 00 00 43.9 -1.0**
comp=Z,450nm,1.0s
ABTX *e*PcP **PcP 00 04 33.3 +1.6**
ABTX LR LR
comp=Z,1µm,21.0s
H06E1 SOCORRO T-PHAS 23.43 290 T T 00 24 52.2
SNR=16
Y35A Marietta 23.43 340 P P 00 00 46.4 +0.3
baz=156,SNR=355
ABVI Anegada Island 23.43 71 *eP* **P 00 00 45.8 -0.4**
ABVI *ep*P **pP 00 00 53.4 -1.9**
W41B Gary Mavity, V 23.44 350 P P 00 00 45.6 -0.5
baz=168,SNR=56
X38A Whitesboro 23.49 345 P P 00 00 47.3 +0.6
baz=162,SNR=247
Z33A Whitaker Ranch 23.50 336 P P 00 00 46.4 -0.5
baz=151,SNR=91
CPCT Cooper Cave 23.51 6 *eP* **P 00 00 47.0 +0.1**
comp=Z,181nm,0.9s
X301 Greenbrier Sit 23.53 350 *eP* **P 00 00 46.5 -0.6**
comp=Z,480nm,2.0s
X301 LR LR
comp=Z,2µm,18.0s
X37A Clayton 23.56 344 P P 00 00 47.7 +0.4
baz=160,SNR=161
WHAR Wooly Hollow 23.56 350 *eP* **P 00 00 46.7 -0.6**
comp=Z,199nm,1.2s
WHAR LR LR
comp=Z,2µm,18.0s
W40A Ferguson Farm, 23.60 349 P P 00 00 47.7 -0.1
baz=166,SNR=31
Y34A Reagan Ranch, 23.72 339 P P 00 00 48.5 -0.4
baz=154,SNR=129
KMSC Kings Mountain 23.73 13 P P 00 00 49.4 +0.4
baz=195,SNR=160
KMSC Kings Mountain 23.73 13 *eP* **P 00 00 49.3 +0.4**
comp=Z,268nm,0.8s
W39A Magazine 23.75 347 P P 00 00 49.3 +0.2
baz=164,SNR=100
W38A Poteau 23.80 346 P P 00 00 49.7 +0.2
baz=163,SNR=112
TKL Tuckaleechee C 23.80 8 P P 00 00 48.6 -1.0
comp=Z,474nm,1.0s,baz=186,slow=8.8,SNR=190
TKL Tuckaleechee C 23.80 8 *eP* **P 00 00 48.7 -1.0**
TKL pmax pmax
comp=Z,625nm,1.0s
TKL Tuckaleechee C 23.80 8 *eP* **P 00 00 48.6 -1.0**
comp=Z,625nm,1.0s
X36A Centrahoma 23.82 342 P P 00 00 49.7 -0.1
baz=158,SNR=104
X35A Drake 23.86 341 P P 00 00 50.1 -0.1
baz=156,SNR=331
WVT Waverly 24.02 360 *eP* **P 00 00 50.1 -1.6**
WVT pmax pmax
comp=Z,45nm,0.9s
WVT Waverly 24.02 360 *eP* **P 00 00 50.1 -1.6**
comp=Z,45nm,0.8s
Y33A Hilltop Ranch, 24.09 337 P P 00 00 52.1 -0.3
baz=152,SNR=131
W37B Quinton 24.09 344 P P 00 00 52.3 -0.1
baz=161,SNR=195
V40A Witts Springs 24.15 350 P P 00 00 52.3 -0.7
baz=167,SNR=104
SLBS Sierra La Lagu 24.16 302 *eP* **P 00 00 56.3 +3.1**
comp=Z,72nm,1.0s
SLBS LR LR
comp=Z,5µm,19.0s
SABA Saba 24.22 74 PFAKE 00 01 00.0 +6.2
SABA LR LR
comp=Z,6µm,20.0s
W36A Wetumka 24.31 343 P P 00 00 53.3 -1.1
baz=159,SNR=110
X34A Smith Ranch, M 24.33 339 P P 00 00 55.1 +0.5
baz=155,SNR=329
V39A Pettigrew 24.34 348 P P 00 00 54.2 -0.5
baz=165,SNR=159
SEUS St. Eustatius 24.45 74 *eP* **P 00 00 55.7 -0.1**
comp=Z,345nm,0.9s
SEUS LR LR
comp=Z,4µm,20.0s
SMRT St. Maarten 24.46 73 *eP* **P 00 00 54.2 -1.7**
comp=Z,219nm,1.0s
SMRT LR LR
comp=Z,4µm,19.0s
X33A Lawton 24.51 338 P P 00 00 56.1 -0.2
baz=153,SNR=629
W35A Tecumseh 24.52 342 P P 00 00 55.3 -1.0
baz=157,SNR=89
V38A Canehill 24.53 347 P P 00 00 55.2 -1.1
baz=164,SNR=95
LPIG La Paz 24.64 302 P P 00 01 00.7 +3.2
comp=Z,21nm,0.3s,baz=235,slow=4.6,SNR=4.0
LPIG LR LR 00 11 20.4
comp=Z,5µm,20.1s,baz=114,slow=38
U40A Yellville 24.70 350 P P 00 00 57.3 -0.6
baz=167,SNR=94
X32A Elmer 24.70 336 P P 00 00 58.1 +0.1
baz=151,SNR=292
TZTN Tazewell 24.71 8 *eP* **P 00 00 58.0 0.0**
comp=Z,267nm,0.8s
V37A Hulbert 24.72 345 P P 00 00 57.3 -0.8
baz=162,SNR=129
PBMO Poplar Bluff 24.79 355 *eP* **P 00 00 57.5 -1.2**
comp=Z,125nm,0.7s
HHAR Hobbs 24.83 348 *eP* **P 00 00 58.3 -0.8**
comp=Z,134nm,1.0s
U39A Green Forest 24.84 349 P P 00 00 58.2 -0.9
baz=166,SNR=105
V36A Jenks 24.84 344 P P 00 00 58.1 -1.0
baz=160,SNR=140
W34A Bridge Creek, 24.89 340 P P 00 00 59.3 -0.3
baz=156,SNR=178
W34A Bridge Creek, 24.89 340 *eP* **P 00 00 59.3 -0.3**
comp=Z,834nm,0.8s
TUL1 Leonard 24.91 344 P P 00 00 59.0 -0.9
baz=160,SNR=236
TUL1 Leonard 24.91 344 *eP* **P 00 00 58.8 -1.0**
comp=Z,619nm,0.9s
W33A Caddo, Fort Co 25.05 339 P P 00 01 01.1 0.0
baz=154,SNR=104
V35A Meyer Ranch, C 25.07 342 P P 00 00 60.0 -1.3
baz=158,SNR=78
U38A Gravette 25.08 347 P P 00 01 00.5 -0.8
baz=164,SNR=168
U37A Salina 25.21 346 P P 00 01 01.7 -0.8
baz=162,SNR=142
W32A Sentinel 25.31 337 P P 00 01 03.2 -0.2
baz=152,SNR=262
V34A Guthrie 25.35 341 P P 00 01 02.7 -1.1
baz=157,SNR=121
V34A Guthrie 25.35 341 *eP* **P 00 01 02.8 -1.1**
comp=Z,578nm,0.9s
U36A Oologah 25.35 345 P P 00 01 02.6 -1.2
baz=161,SNR=79
GRGR Grenville 25.41 87 *eP* **P 00 01 07.9 +3.4**
comp=Z,944nm,1.1s
T40A Mansfield 25.42 351 P P 00 01 03.3 -1.1
baz=168,SNR=49
GDHS Morne Mazeau, 25.43 77 *eP* **P 00 01 04.0 -0.8**
comp=Z,373nm,1.0s
T39A Clever 25.44 349 P P 00 01 03.8 -0.8
baz=166,SNR=112
MNTX Cornudas Mount 25.52 323 P P 00 01 05.1 -0.3
baz=136,SNR=164
V33A Lossen Ranch, 25.59 340 P P 00 01 05.3 -0.7
baz=155,SNR=115
ANWB Willy Bob 25.60 74 *eP* **P 00 01 05.0 -1.2**
comp=Z,203nm,0.9s
ANWB LR LR
comp=Z,2µm,21.0s
U35A Pawnee 25.61 343 P P 00 01 05.0 -1.1
baz=159,SNR=167
T38A Diamond 25.63 348 P P 00 01 05.5 -0.8
baz=164,SNR=128
SIUC Southern Illin 25.64 357 *eP* **P 00 01 05.4 -0.9**
comp=Z,175nm,0.8s
V32A Arapaho 25.77 338 P P 00 01 07.3 -0.3
baz=153,SNR=64
SVB Belmont 25.77 84 *eP* **P 00 01 07.7 -0.2**
comp=Z,337nm,1.1s
USIN University of 25.85 360 *eP* **P 00 01 07.5 -0.7**
comp=Z,104nm,0.6s
T37A Cheneyville 18 25.85 347 P P 00 01 07.6 -0.7
baz=163,SNR=56
S40A Lebanon 25.85 351 P P 00 01 07.2 -1.2
baz=169,SNR=86
MSTX Muleshoe 25.86 330 P P 00 01 08.2 -0.4
baz=144,SNR=621
MSTX Muleshoe 25.86 330 *eP* **P 00 01 08.2 -0.4**
comp=Z,1µm,0.9s
MSTX *e*ScP **ScP 00 08 19.4 +4.8**
FDF Fort de France 25.91 81 *eP* **P 00 01 07.8 -1.3**
FDF pmax pmax
comp=Z,80nm,0.8s
FDF Fort de France 25.91 81 *eP* **P 00 01 07.8 -1.3**
comp=Z,80nm,0.8s
U34A Anderson Ranch 25.91 342 P P 00 01 07.5 -1.4
baz=157,SNR=86
U34A Anderson Ranch 25.91 342 *eP* **P 00 01 07.6 -1.3**
comp=Z,362nm,0.9s
T36A Boggs Farm, Ca 26.02 345 P P 00 01 09.0 -0.8
baz=161,SNR=93
T35A Sooner Cattle 26.05 344 P P 00 01 09.1 -1.1
baz=160,SNR=109
VWCC Virginia Weste 26.05 14 *eP* **P 00 01 10.4 +0.2**

S39A	Bolivar	26.08 350	P	P	00 01 09.2	-1.1
	baz=167,SNR=207					
U33A	Lingo Farm, Me	26.09 341	P	P	00 01 09.2	-1.3
	baz=156,SNR=30					
AMTX	Amarillo	26.10 333	P	P	00 01 10.4	-0.4
	baz=147					
S38A	Stockton	26.13 349	P	P	00 01 09.5	-1.3
	baz=166,SNR=64					
NNA	Nana	26.14 155	LR	LR	00 10 26.3	
	comp=Z,2µm,19.9s,baz=253,slow=34					
WCI	Wyandotte Cave	26.14 2	eP	P	00 01 09.8	-1.1
WCI			pmax	pmax		
	comp=Z,96nm,0.7s					
WCI	Wyandotte Cave	26.14 2	eP	P	00 01 09.8	-1.1
WCI	comp=Z,96nm,0.7s		eScP	ScP	00 08 17.2	+1.9
U32A	Winter Ranch,	26.34 339	P	P	00 01 12.2	-0.6
	baz=154,SNR=108					
T34A	McClaskey Farm	26.35 343	P	P	00 01 11.6	-1.2
	baz=158					
S37A	Fort Scott	26.44 347	P	P	00 01 12.7	-0.9
	baz=164,SNR=168					
R40A	Maddies Statio	26.50 352	P	P	00 01 12.6	-1.6
	baz=169,SNR=84					
S36A	Lake Cedric, C	26.58 346	P	P	00 01 13.9	-1.0
	baz=162,SNR=209					
OLIL	Olney	26.62 359	eP	P	00 01 14.3	-1.0
	comp=Z,108nm,0.7s					
OLIL			eScP	ScP	00 08 17.9	+1.3
SLM	Saint Louis	26.62 355	eP	P	00 01 14.4	-0.8
SLM			pmax	pmax		
	comp=Z,86nm,1.2s					
SLM	Saint Louis	26.62 355	eP	P	00 01 14.4	-0.8
	comp=Z,86nm,1.2s					
R39A	Chumby, Stover	26.64 350	P	P	00 01 14.0	-1.4
	baz=168					
R38A	Fenwick Farm,	26.66 349	P	P	00 01 14.3	-1.4
	baz=166,SNR=54					
S35A	Otter Creek Ra	26.72 345	P	P	00 01 15.4	-0.8
	baz=160,SNR=91					
T33A	Patterson Ranc	26.73 341	P	P	00 01 15.0	-1.2
	baz=156,SNR=51					
S34A	Willow Spring	26.96 343	P	P	00 01 16.9	-1.4
	baz=159					
R37A	Teagarden Farm	26.97 347	P	P	00 01 17.3	-1.1
	baz=164,SNR=53					
URVA	University of	27.02 18	eP	P	00 01 19.0	+0.2
JSRW	J. Sargeant Re	27.03 17	eP	P	00 01 18.8	-0.2
JSRW			eScP	ScP	00 08 18.2	+0.4
T32A	Huddler Ranch,	27.04 340	P	P	00 01 18.1	-1.0
	baz=155,SNR=54					
BLO	Bloomington	27.07 2	eP	P	00 01 18.1	-1.2
BLO			pmax	pmax		
	comp=Z,90nm,1.1s					
BLO	Bloomington	27.07 2	eP	P	00 01 18.1	-1.2
	comp=Z,90nm,1.1s					
S33A	Kaszmaul Farm,	27.12 342	P	P	00 01 18.2	-1.6
	baz=157,SNR=13					
R36A	Gordon, Harris	27.13 346	P	P	00 01 18.8	-1.1
	baz=163,SNR=87					
Q40A	Laux Farm, Aux	27.16 352	P	P	00 01 18.3	-1.8
	baz=170,SNR=37					
R35A	Emporia Munici	27.30 345	P	P	00 01 20.6	-0.8
	baz=161,SNR=36					
Q39A	Willow Grove F	27.34 351	P	P	00 01 20.2	-1.6
	baz=168,SNR=95					
Q38A	Cooks Store, C	27.37 350	P	P	00 01 20.8	-1.2
	baz=167,SNR=76					
Q37A	Longview Farm,	27.44 348	P	P	00 01 21.3	-1.3
	baz=165,SNR=18					
S32A	Newby Ranch, P	27.51 340	P	P	00 01 22.4	-0.9
	baz=155,SNR=30					
HSIG		27.54 311	PFAKE		00 01 30.0	+6.4
HSIG			LR	LR		
	comp=Z,6µm,22.0s					
R34A	Isabella, Hill	27.55 344	P	P	00 01 22.8	-0.8
	baz=159,SNR=31					
SRIG	Santa Rosalia	27.65 307	PFAKE		00 01 40.0	+15
SRIG			LR	LR		
	comp=Z,3µm,21.0s					
P40A	Paris	27.69 353	P	P	00 01 23.2	-1.7
	baz=170,SNR=32					
Q36A	Arnold C. Orve	27.73 347	P	P	00 01 24.3	-0.9
	baz=163,SNR=49					
319A	Douglas	27.76 317	eP	P	00 01 27.5	+1.8
	comp=Z,104nm,1.2s					
319A			LR	LR		
	comp=Z,5µm,20.0s					
Q35A	Mercer Eighty,	27.77 346	P	P	00 01 24.4	-1.2
	baz=162,SNR=41					
R33A	Olander Ranch,	27.77 342	P	P	00 01 24.6	-1.0
	baz=158,SNR=49					
P38A	Dawn	28.00 350	P	P	00 01 26.2	-1.4
	baz=167,SNR=60					
BNM	Barren Site	28.02 325	eP	P	00 01 28.9	+0.7
BNM			eScP	ScP	00 08 26.6	+5.4
Q34A	Chapman	28.05 344	P	P	00 01 27.1	-1.0
	baz=160,SNR=76					
R32A	Long Quarter,	28.10 341	P	P	00 01 27.7	-0.9
	baz=156,SNR=28					
P37A	Lathrop	28.11 349	P	P	00 01 27.1	-1.5
	baz=166,SNR=34					
Y22D	IRIS PASSCAL I	28.14 324	P	P	00 01 30.3	+1.2
	baz=136,SNR=9.9					
Y22D	IRIS PASSCAL I	28.14 324	eP	P	00 01 31.8	+2.7
	comp=Z,360nm,1.0s					
LPM	Los Pinos Moun	28.15 325	eP	P	00 01 29.8	+0.6
LPM			ePcP	PcP	00 04 44.7	+1.8
O40A	La Belle	28.25 353	P	P	00 01 28.2	-1.6
	baz=171,SNR=27					
SFIN	Lafayette	28.26 1	P	P	00 01 28.2	-1.7
	baz=181,SNR=23					
SFIN	Lafayette	28.26 1	eP	P	00 01 28.2	-1.7
	comp=Z,53nm,0.6s					
P36A	Good Intent, A	28.31 348	P	P	00 01 29.3	-1.1
	baz=164,SNR=58					
Q33A	Connelly Farm,	28.37 343	P	P	00 01 29.9	-1.0
	baz=158,SNR=47					
P35A	Duane Minner,	28.40 346	P	P	00 01 30.2	-1.0
	baz=162,SNR=82					
O39A	Kirksville	28.47 352	P	P	00 01 30.1	-1.6
	baz=170,SNR=10					
HDIL	Hopedale	28.47 357	P	P	00 01 30.1	-1.7
	baz=176,SNR=22					
HDIL	Hopedale	28.47 357	PFAKE		00 01 40.0	+8.2
HDIL			LR	LR		
	comp=Z,1µm,21.0s					
O38A	Galt	28.47 351	P	P	00 01 30.2	-1.6
	baz=168,SNR=11					
LAZ	Ladron	28.50 325	eP	P	00 01 31.8	-0.6
LAZ			ePcP	PcP	00 04 45.8	+2.0
ANMO	Albuquerque	28.52 326	P	P	00 01 33.3	+0.7
	comp=Z,18nm,0.8s,baz=146,slow=11,SNR=40					
ANMO			PcP	PcP	00 04 44.4	+0.6
	comp=Z,33nm,0.9s,baz=158,slow=5.7,SNR=11					
ANMO			LR	LR	00 15 02.9	
	comp=Z,1µm,19.7s,baz=140,slow=41					
ANMO	Albuquerque	28.52 326	P	P	00 01 33.1	+0.5
	baz=138					
ANMO	Albuquerque	28.52 326	c iP	P	00 01 32.6	0.0
ANMO			pmax	pmax		
	comp=Z,57nm,1.2s					
ANMO	Albuquerque	28.52 326	eP	P	00 01 33.3	+0.7
	comp=Z,50nm,1.1s					
ANMO			ePcP	PcP	00 04 44.4	+0.6
Q32A	Meitler Ranch,	28.57 342	P	P	00 01 31.8	-1.0
	baz=157,SNR=45					
P34A	Walnut Farm, R	28.61 345	P	P	00 01 32.4	-0.7
	baz=161,SNR=89					
O37A	Wolven Farm, M	28.63 350	P	P	00 01 32.0	-1.3
	baz=166,SNR=21					
P33A	Williams Farm,	28.74 344	P	P	00 01 33.8	-0.5
	baz=159,SNR=27					
O36A	Bolckow	28.75 348	P	P	00 01 32.9	-1.4
	baz=165,SNR=16					
CBKS	Cedar Bluff	28.79 340	P	P	00 01 34.1	-0.6
	baz=154,SNR=24					
SDMD	Soldier's Deli	28.92 17	eP	P	00 01 36.0	+0.1
	comp=Z,51nm,0.7s					
SDMD			eScP	ScP	00 08 24.4	+0.8
N39A	Derby Farms, D	29.07 352	P	P	00 01 35.6	-1.5
	baz=170,SNR=14					
O35A	Humboldt	29.08 347	P	P	00 01 35.7	-1.5
	baz=163,SNR=15					
N38A	Joes South For	29.09 351	P	P	00 01 35.9	-1.5
	baz=168					
P32A	Huiting Farm,	29.17 342	P	P	00 01 37.3	-0.7
	baz=157,SNR=19					
O34A	Beatrice	29.18 346	P	P	00 01 37.4	-0.7
	baz=161,SNR=64					
T25A	Trinidad	29.21 332	P	P	00 01 39.5	+0.8
	baz=144,SNR=33					
T25A	Trinidad	29.21 332	eP	P	00 01 39.2	+0.6
	comp=Z,98nm,1.1s					
N37A	Lee Faris, Mou	29.22 350	P	P	00 01 37.4	-1.1
	baz=166,SNR=14					
BBSR	BB Station	29.24 42	eP	P	00 01 39.5	+0.8
	comp=Z,103nm,0.8s					
BBSR			LR	LR		
	comp=Z,3µm,19.0s					
O56A	Blue Knob Stat	29.27 14	P	P	00 01 38.9	-0.1
	baz=198,SNR=22					
O33A	Hebron	29.31 344	P	P	00 01 38.7	-0.6
	baz=160,SNR=51					
TUC	Tucson	29.34 317	P	P	00 01 40.3	+0.6
	baz=128					
TUC	Tucson	29.34 317	eP	P	00 01 41.1	+1.4
TUC			e		00 04 47.7	
TUC			pmax	pmax		
	comp=Z,85nm,1.3s					
TUC	Tucson	29.34 317	eP	P	00 01 41.1	+1.4
	comp=Z,85nm,1.3s					
TUC			ePcP	PcP	00 04 47.7	+2.0
TUC			LR	LR		
	comp=Z,4µm,18.0s					
N36A	Muff Farm, Cla	29.41 349	P	P	00 01 38.9	-1.3
	baz=165,SNR=10					
N35A	Tabor	29.59 348	P	P	00 01 40.8	-1.0
	baz=164,SNR=21					
N54A	Moraine State	29.62 12	P	P	00 01 41.3	-0.7
	baz=195,SNR=38					
O32A	Brockman Farm,	29.67 343	P	P	00 01 41.9	-0.6
	baz=158,SNR=22					
M38A	Pleasantville	29.70 352	P	P	00 01 41.1	-1.6
	baz=169,SNR=21					
N34A	Lincoln	29.76 346	P	P	00 01 42.1	-1.2
	baz=162,SNR=20					
SSPA	Standing Stone	29.78 15	eP	P	00 01 43.2	-0.2
	comp=Z,107nm,0.8s					
M37A	Trindle Farm,	29.82 350	P	P	00 01 42.5	-1.3
	baz=167,SNR=7.6					
O31A	Woolen Ranch,	29.87 342	P	P	00 01 43.8	-0.6
	baz=156,SNR=12					
N33A	J Bar K, Exete	29.89 345	P	P	00 01 44.0	-0.5
	baz=160					
M36A	Felix, Anita	30.00 349	P	P	00 01 44.2	-1.2
	baz=166,SNR=14					
KSCO	Kaye Shedlock'	30.01 336	P	P	00 01 45.4	-0.2
	baz=149,SNR=14					
KSCO	Kaye Shedlock'	30.01 336	eP	P	00 01 46.0	+0.3
	comp=Z,104nm,0.8s					
N32A	Stulken Farm,	30.14 344	P	P	00 01 46.1	-0.6
	baz=159					
SCIA	State Center	30.18 352	PFAKE		00 02 00.0	+13
SCIA			LR	LR		
	comp=Z,1µm,20.0s					
M35A	Neola	30.18 348	P	P	00 01 45.8	-1.2
	baz=164,SNR=43					
M54A	Oil Creek Stat	30.21 12	P	P	00 01 46.4	-0.8
	baz=195,SNR=60					
SDCO	Great Sand Dun	30.21 331	P	P	00 01 48.7	+1.0
	baz=143					
X18A	Snowflake	30.24 322	eP	P	00 01 49.5	+1.7
	comp=Z,45nm,1.3s					
X18A			ePcP	PcP	00 04 50.3	+2.1
X18A			LR	LR		
	comp=Z,4µm,19.0s					
ALLY	Alegheny Colle	30.25 11	eP	P	00 01 47.3	-0.3
	comp=Z,63nm,0.8s					
ALLY			LR	LR		
	comp=Z,3µm,21.0s					
PTGA	Pitinga	30.25 113	PcP	PcP	00 04 49.0	+0.6
	comp=Z,32nm,0.9s,baz=336,slow=1.9,SNR=13					
PTGA	Pitinga	30.25 113	eP	P	00 01 47.3	-0.7
	comp=Z,16nm,0.8s					
PTGA			ePcP	PcP	00 04 49.0	+0.6
PTGA			eScP	ScP	00 08 35.2	+6.8
PTGA			LR	LR		
	comp=Z,4µm,18.0s					
L38A	Oak Wood Farm,	30.38 352	P	P	00 01 47.2	-1.5
	baz=169,SNR=24					
N31A	Bailey Ranch,	30.38 343	P	P	00 01 48.4	-0.4
	baz=157					
M34A	Aspy Farms, Fr	30.41 347	P	P	00 01 48.2	-0.8
	baz=162,SNR=22					
LUPA	Lehigh Univers	30.46 19	eP	P	00 01 49.9	+0.4
	comp=Z,71nm,0.6s					
L37A	Phoenix Point,	30.48 351	P	P	00 01 48.2	-1.4
	baz=168,SNR=9.6					
214A	Organ Pipe Nat	30.51 315	P	P	00 01 51.2	+1.1
	baz=125,SNR=6.7					
W18A	Petrified Fore	30.51 323	P	P	00 01 51.5	+1.3
	baz=133,SNR=20					
W18A	Petrified Fore	30.51 323	eP	P	00 01 52.0	+1.8
	comp=Z,88nm,1.1s					
W18A			ePcP	PcP	00 04 50.3	+1.4
W18A			LR	LR		
	comp=Z,2µm,21.0s					
L36A	Harm Buss Farm	30.60 350	P	P	00 01 49.2	-1.5
	baz=166,SNR=5.1					
M33A	Taylor Creek F	30.62 346	P	P	00 01 50.0	-0.8
	baz=161,SNR=8.6					
N59A	State Game Lan	30.63 18	P	P	00 01 51.1	+0.2
	baz=203,SNR=74					
L35A	Bielow Farm, R	30.78 348	P	P	00 01 50.8	-1.4
	baz=164,SNR=14					
BRNJ	Basking Ridge	30.80 20	eP	P	00 01 53.0	+0.6
	comp=Z,99nm,0.6s					
BRNJ			LR	LR		
	comp=Z,8µm,19.0s					
L34A	Svendsen Farm,	30.81 347	P	P	00 01 51.0	-1.5
	baz=163,SNR=14					
K38A	Parkersburg	30.85 353	P	P	00 01 51.2	-1.7
	baz=170					
S22A	4UR Ranch, Cre	30.85 329	P	P	00 01 54.0	+0.8
	baz=141,SNR=81					
S22A	4UR Ranch, Cre	30.85 329	eP	P	00 01 54.1	+0.8
	comp=Z,58nm,0.8s					
S22A			LR	LR		
	comp=Z,1µm,21.0s					
M31A	Lambtecht Ranc	30.87 343	P	P	00 01 53.0	-0.1
	baz=158,SNR=24					
JFWS	Jewell Farm	30.88 356	PFAKE		00 02 00.0	+6.9
JFWS			LR	LR		
	comp=Z,1µm,21.0s					
Q24A	Divide	31.03 333	P	P	00 01 55.1	+0.2
	baz=145,SNR=16					
Q24A	Divide	31.03 333	eP	P	00 01 55.7	+0.8
	comp=Z,62nm,1.3s					
K37A	Belmond	31.09 351	P	P	00 01 53.5	-1.4
	baz=168,SNR=34					
K36A	Gilmore City	31.09 350	P	P	00 01 53.4	-1.5
	baz=167,SNR=16					
X16A	Lo Mia Camp, P	31.09 320	eP	P	00 01 56.9	+1.5
	comp=Z,22nm,0.8s					
X16A			ePcP	PcP	00 04 52.6	+2.2
X16A			eScP	ScP	00 08 36.9	+5.8
X16A			LR	LR		
	comp=Z,4µm,19.0s					
CPNY	Central Park	31.09 20	eP	P	00 01 55.1	+0.1
	comp=Z,28nm,0.7s					
CPNY			LR	LR		
	comp=Z,7µm,19.0s					
ODNJ	Ogdensburg	31.14 19	eP	P	00 01 55.6	+0.1
	comp=Z,66nm,1.2s					
ODNJ			LR	LR		
	comp=Z,6µm,19.0s					
L33A	Hoskins	31.20 346	P	P	00 01 55.0	-1.0
	baz=161,SNR=32					
KSPA	Keystone Colle	31.22 17	ePcP	PcP	00 04 50.6	+0.3
KSPA			LR	LR		
	comp=Z,3µm,20.0s					
L32A	Elgin	31.23 345	P	P	00 01 55.1	-1.1
	baz=160,SNR=9.2					
PAL	Palisades	31.30 20	eP	P	00 01 57.0	+0.1
PAL			pmax	pmax		
	comp=Z,51nm,0.8s					
PAL	Palisades	31.30 20	eP	P	00 01 57.0	+0.1
	comp=Z,50nm,0.8s					
PAL			LR	LR		
	comp=Z,6µm,18.0s					
K35A	Storm Lake	31.30 349	P	P	00 01 55.1	-1.8
	baz=165,SNR=13					
MVCO	Mesa Verde	31.31 327	P	P	00 01 58.0	+0.7
	baz=138					
MVCO	Mesa Verde	31.31 327	eP	P	00 01 58.0	+0.7
K34A	Le Mars	31.44 348	P	P	00 01 56.6	-1.4
	baz=164,SNR=5.3					
J38A	Wedel Dairy, R	31.48 353	P	P	00 01 56.5	-1.9
	baz=171,SNR=37					
OGNE	Ogallala	31.48 339	P	P	00 01 58.7	+0.2
	baz=152					
K33A	Hardington	31.55 347	P	P	00 01 58.0	-1.1
	baz=162,SNR=6.6					
L31A	Butterfield Fa	31.60 344	P	P	00 01 59.1	-0.5
	baz=158,SNR=19					
J37A	Redenius Farm,	31.61 352	P	P	00 01 58.2	-1.4
	baz=169,SNR=55					
113A	Mohawk Valley,	31.63 315	eP	P	00 02 01.5	+1.6
	comp=Z,25nm,1.3s					
113A			ePcP	PcP	00 04 53.5	+1.9
113A			LR	LR		
	comp=Z,4µm,21.0s					
BUF	Buffalo	31.73 12	eP	P	00 01 59.3	-1.3
J36A	Seneca 1, Swea	31.74 351	P	P	00 01 59.5	-1.3
	baz=167,SNR=11					
MMNY	Mt. Morris Dam	31.76 14	eP	P	00 02 00.6	-0.3
	comp=Z,76nm,0.6s					
MMNY			ePcP	PcP	00 04 51.6	-0.1
WUAZ	Wupatki	31.77 321	P	P	00 02 02.4	+1.1
	baz=131					
WUAZ	Wupatki	31.77 321	PFAKE		00 02 10.0	+8.7
WUAZ			LR	LR		
	comp=Z,2µm,19.0s					
Y14A	Wickenburg	31.80 317	eP	P	00 02 02.8	+1.3
	comp=Z,63nm,1.1s					
Y14A			ePcP	PcP	00 04 54.0	+1.8
Y14A			eScP	ScP	00 08 38.9	+5.6
Y14A			LR	LR		
	comp=Z,20µm,20.0s					
K32A	Verdigre	31.83 345	P	P	00 02 00.4	-1.2
	baz=160,SNR=50					
YLE	Yale	31.91 21	eP	P	00 02 02.5	+0.3
	comp=Z,136nm,0.9s					
YLE			LR	LR		
	comp=Z,6µm,21.0s					
ISCO	Idaho Springs	31.92 333	P	P	00 02 03.1	+0.3
	baz=145					
ISCO	Idaho Springs	31.92 333	eP	P	00 02 03.0	+0.3
ISCO			pmax	pmax		
	comp=Z,54nm,1.0s					
ISCO	Idaho Springs	31.92 333	eP	P	00 02 03.0	+0.3
	comp=Z,54nm,1.0s					
ISCO			LR	LR		
	comp=Z,500nm,19.0s					
J35A	Milford	31.93 350	P	P	00 02 00.2	-2.2
	baz=166,SNR=7.2					
J34A	George	31.99 348	P	P	00 02 01.2	-1.7
	baz=164,SNR=10					
K31A	O'Neill	32.00 344	P	P	00 02 02.6	-0.4
	baz=159,SNR=52					
SAML	Samuel	32.01 129	eP	P	00 02 03.0	-0.3
	comp=Z,149nm,0.8s					
SAML			LR	LR		
	comp=Z,2µm,19.0s					
PV01	Paradox Valley	32.03 328	eP	P	00 02 04.5	+0.9
SMCO	Snowmass	32.05 331	eP	P	00 02 04.6	+0.7
	comp=Z,126nm,1.0s					
I38A	Scanlan Farm,	32.17 354	P	P	00 02 02.5	-2.0
	baz=171,SNR=33					
J33A	Davis	32.23 347	P	P	00 02 03.2	-1.8
	baz=162,SNR=17					
PV05	Paradox Valley	32.27 327	eP	P	00 02 06.1	+0.4
I37A	Lemond, Wasca	32.28 352	P	P	00 02 03.7	-1.7
	baz=169,SNR=30					
K30A	Basset	32.28 343	P	P	00 02 05.5	-0.1
	baz=157,SNR=86					
I35A	Creekview Farm	32.36 350	P	P	00 02 04.7	-1.5
	baz=166,SNR=11					
I36A	Fitzsimmons Fa	32.37 351	P	P	00 02 04.7	-1.5
	baz=168,SNR=17					
PV10	Paradox Valley	32.46 328	eP	P	00 02 07.5	+0.1
PV10			ePcP	PcP	00 04 55.5	+1.4
J32A	Parkston	32.48 346	P	P	00 02 05.6	-1.6
	baz=161,SNR=26					
GLA	Glamis	32.53 314	P	P	00 02 09.1	+1.2
	baz=124					
GLA	Glamis	32.53 314	eP	P	00 02 09.8	+2.0
GLA			e		00 04 56.1	
GLA			pmax	pmax		
	comp=Z,36nm,1.3s					
GLA	Glamis	32.53 314	eP	P	00 02 09.8	+2.0
	comp=Z,36nm,1.3s					
GLA			ePcP	PcP	00 04 56.1	+1.9
GLA			LR	LR		
	comp=Z,4µm,20.0s					
PV09	Paradox Valley	32.60 328	eP	P	00 02 09.2	+0.5
J31A	Geddes	32.62 345	P	P	00 02 07.2	-1.3
	baz=159,SNR=14					
I34A	Hadley	32.70 349	P	P	00 02 07.5	-1.6
	baz=165,SNR=26					
Y12C	Blythe	32.71 316	P	P	00 02 10.5	+1.2
	baz=125					
Y12C	Blythe	32.71 316	eP	P	00 02 11.1	+1.8
	comp=Z,21nm,1.3s					
Y12C			ePcP	PcP	00 04 56.5	+1.9
Y12C			LR	LR		
	comp=Z,4µm,21.0s					
H37A	Dierke Farm, C	32.77 353	P	P	00 02 07.7	-2.1
	baz=170,SNR=9.0					
PDMCI	Parker Dam,Lak	32.78 317	P	P	00 02 11.1	+1.2
	baz=126					
J30A	Dallas	32.85 344	P	P	00 02 09.8	-0.6
	baz=158					
I33A	Coleman	32.89 348	P	P	00 02 09.0	-1.7
	baz=163,SNR=20					
H36A	Jessenland, He	32.90 352	P	P	00 02 09.5	-1.4
	baz=168,SNR=101					
U15A	North Rim	32.93 322	eP	P	00 02 13.4	+1.9
	comp=Z,42nm,1.4s					
U15A			ePcP	PcP	00 04 57.5	+1.9
U15A			LR	LR		
	comp=Z,2µm,18.0s					
TRY	Troy	32.93 19	eP	P	00 02 11.1	0.0
	comp=Z,120nm,0.9s					
TRY			LR	LR		
	comp=Z,11µm,19.0s					
BRYW	Bryant College	32.95 22	eP	P	00 02 11.1	-0.2
	comp=Z,116nm,0.7s					
BRYW			LR	LR		
	comp=Z,6µm,18.0s					
N23A	Red Feather La	32.97 334	P	P	00 02 12.1	+0.3
	baz=145					
N23A	Red Feather La	32.97 334	eP	P	00 02 12.2	+0.3
	comp=Z,46nm,0.8s					
N23A			LR	LR		
	comp=Z,1µm,22.0s					
I32A	Karley and Nic	33.01 347	P	P	00 02 10.0	-1.9
	baz=162					
W13A	Hualapai Mount	33.09 318	eP	P	00 02 14.2	+1.3
	comp=Z,42nm,1.5s					
W13A			ePcP	PcP	00 04 58.0	+2.1
W13A			eScP	ScP	00 08 41.7	+3.8
W13A			LR	LR		
	comp=Z,4µm,20.0s					
J29A	Okreek	33.16 343	P	P	00 02 12.6	-0.5
	baz=157					
H35A	Sunnyside Ranc	33.16 351	P	P	00 02 11.7	-1.4
	baz=167					
SWSC	Sam W. Stewart	33.16 313	P	P	00 02 14.5	+1.3
	baz=122					
I31A	Royce, Wessing	33.26 346	P	P	00 02 12.7	-1.4
	baz=160					
H34A	Spellman Lake,	33.29 349	P	P	00 02 12.8	-1.5
	baz=165					
BC3	Big Chuckawall	33.30 315	P	P	00 02 15.9	+1.2
	baz=124					
IRM	Iron Mountain	33.37 316	P	P	00 02 16.6	+1.5
	baz=124					
I30A	Oacoma	33.38 344	P	P	00 02 14.2	-0.9
	baz=158					
SPMN	Marine on St.	33.40 353	P	P	00 02 13.3	-1.9
	baz=170					
SPMN	Marine on St.	33.40 353	eP	P	00 02 13.3	-1.9
	comp=Z,339nm,1.3s					
SPMN			eS	S	00 07 35.0	+0.8
O20A	White River Ci	33.40 331	P	P	00 02 16.5	+1.0
	baz=141					
O20A	White River Ci	33.40 331	eP	P	00 02 16.2	+0.7
	comp=Z,286nm,1.1s					
O20A			LR	LR		
	comp=Z,800nm,22.0s					

WES	**Weston**	**33.43**	**22**	*e*P	**P**	**00 02 15.3 -0.2**
WES				pmax	pmax	
	comp=Z,86nm,0.9s					
WES	**Weston**	**33.43**	**22**	*e*P	**P**	**00 02 15.3 -0.2**
WES	comp=Z,86nm,0.9s			LR	LR	
	comp=Z,6µm,19.0s					
J28A	**Allard Ranch,**	**33.44**	**342**	P	**P**	**00 02 15.5 -0.2**
	baz=155					
BCX	**Boston College**	**33.45**	**22**	*e*P	**P**	**00 02 16.1 +0.5**
	comp=Z,196nm,0.8s					
SADO	**Sadowa**	**33.45**	**11**	P	**P**	**00 02 13.6 -2.1**
	comp=Z,49nm,0.6s,baz=215,slow=8.8,SNR=57					
SADO	**Sadowa**	**33.45**	**11**	*e*P	**P**	**00 02 13.6 -2.1**
SADO	comp=Z,54nm,0.7s			LR	LR	
	comp=Z,3µm,18.0s					
HRV	**Adam Dziewonsk**	**33.45**	**22**	*e*P	**P**	**00 02 15.5 -0.2**
HRV				pmax	pmax	
	comp=Z,28nm,0.9s					
HRV	**Adam Dziewonsk**	**33.45**	**22**	*e*P	**P**	**00 02 15.5 -0.2**
	comp=Z,28nm,0.8s					
HRV				LR	LR	
	comp=Z,4µm,20.0s					
H32A	**Carlson Farm,**	**33.46**	**347**	P	**P**	**00 02 14.3 -1.5**
	baz=162					
H33A	**Prehn Over Nor**	**33.48**	**348**	P	**P**	**00 02 14.5 -1.5**
	baz=163					
ACCN	**Adirondack Com**	**33.52**	**19**	*e*P	**P**	**00 02 15.8 -0.4**
	comp=Z,37nm,1.0s					
ACCN				LR	LR	
	comp=Z,7µm,19.0s					
G36A	**St. Michael**	**33.52**	**352**	P	**P**	**00 02 14.8 -1.5**
	baz=169					
J27A	**Elkhorn Farm,**	**33.53**	**341**	P	**P**	**00 02 16.9 +0.4**
	baz=154					
MONP2	**Monument Peak**	**33.57**	**313**	P	**P**	**00 02 19.1 +2.0**
	baz=121					
BTU	**Barney Top**	**33.57**	**324**	*e*P	P	00 02 23.5 +6.2
G35A	**Watkins**	**33.61**	**351**	P	**P**	**00 02 15.4 -1.6**
	baz=168					
PKCU	**Pink Cliffs**	**33.62**	**323**	*e*P	**P**	**00 02 19.8 +2.2**
	comp=Z,94nm,1.1s					
PKCU				LR	LR	
	comp=Z,3µm,20.0s					
KNB	**Kanab**	**33.63**	**322**	*e*P	**P**	**00 02 19.4 +1.8**
KNB				pmax	pmax	
	comp=Z,60nm,1.1s					
KNB	**Kanab**	**33.63**	**322**	*e*P	**P**	**00 02 19.4 +1.8**
	comp=Z,60nm,1.2s					
KNB				LR	LR	
	comp=Z,2µm,18.0s					
BAR	**Barrett**	**33.64**	**312**	*e*PcP	**PcP**	**00 04 59.1 +1.8**
BAR				LR	LR	
	comp=Z,6µm,20.0s					
H31A	**Wolsey**	**33.67**	**346**	P	**P**	**00 02 16.1 -1.5**
	baz=160					
I29A	**Vivian Onida**	**33.72**	**343**	P	**P**	**00 02 17.4 -0.6**
	baz=157					
SUSD	**Miller**	**33.75**	**345**	P	**P**	**00 02 17.1 -1.3**
	baz=160					
SRU	**San Rafael Swe**	**33.78**	**327**	*e*P	**P**	**00 02 19.4 +0.5**
SRU				pmax	pmax	
	comp=Z,140nm,1.2s					
SRU	**San Rafael Swe**	**33.78**	**327**	*e*P	**P**	**00 02 19.4 +0.5**
	comp=Z,145nm,1.2s					
SRU				LR	LR	
	comp=Z,1µm,21.0s					
G34A	**Benson**	**33.82**	**350**	P	**P**	**00 02 17.2 -1.6**
	baz=166					
BELC	**Belle Mtn. Jos**	**33.87**	**315**	P	**P**	**00 02 21.1 +1.4**
	baz=123					
LDFC	**Landfair**	**33.88**	**317**	*e*P	**P**	**00 02 22.2 +2.5**
	comp=Z,60nm,1.1s					
LDFC				LR	LR	
	comp=Z,4µm,21.0s					
LCMT	**Little Creek M**	**33.89**	**322**	*e*P	**P**	**00 02 21.3 +1.5**
	comp=Z,34nm,1.4s					
LCMT				*e*PcP	**PcP**	**00 04 59.9 +1.9**
LCMT				LR	LR	
	comp=Z,3µm,20.0s					
G33A	**Ortonville**	**33.92**	**349**	P	**P**	**00 02 18.1 -1.6**
	baz=164					
J26A	**Sides Ranch, S**	**33.93**	**340**	P	**P**	**00 02 20.5 +0.5**
	baz=152					
I28A	**Midland**	**33.95**	**342**	P	**P**	**00 02 19.9 -0.2**
	baz=156					
MTPU	**Mount Pierson**	**33.95**	**324**	*e*P	**P**	**00 02 21.7 +1.2**
	comp=Z,40nm,0.8s					
MTPU				LR	LR	
	comp=Z,4µm,19.0s					
PFO	**Pinyon Flats O**	**33.98**	**314**	P	**P**	**00 02 21.8 +1.2**
	baz=122,SNR=6.8					
PFO	**Pinyon Flats O**	**33.98**	**314**	*e*P	**P**	**00 02 22.4 +1.8**
PFO				*e*		00 05 00.3
PFO				pmax	pmax	
	comp=Z,18nm,1.0s					
PFO	**Pinyon Flats O**	**33.98**	**314**	*e*P	**P**	**00 02 22.4 +1.8**
	comp=Z,18nm,1.0s					
PFO				*e*PcP	**PcP**	**00 05 00.3 +1.9**
PFO				LR	LR	
	comp=Z,5µm,18.0s					
Q16A	**Castle Valley**	**33.99**	**326**	*e*P	**P**	**00 02 21.8 +1.1**
	comp=Z,55nm,0.9s					
Q16A				LR	LR	
	comp=Z,2µm,20.0s					
P18A	**Preston Nutter**	**34.02**	**328**	*e*P	**P**	**00 02 21.5 +0.5**
	comp=Z,170nm,1.2s					
P18A				*e*S	**S**	**00 07 39.5 -5.1**
P18A				LR	LR	
	comp=Z,800nm,20.0s					
GMRC	**Granite Mounta**	**34.08**	**316**	P	**P**	**00 02 22.4 +0.9**
	baz=125,SNR=11					
LPAZ	**La Paz**	**34.10**	**145**	P	**P**	**00 02 23.9 +1.6**
	comp=Z,6.3nm,0.7s,baz=284,slow=8.1,SNR=7.5					
LPAZ	**La Paz**	**34.10**	**145**	*e*P	**P**	**00 02 23.9 +1.6**
LPAZ				pmax	pmax	
	comp=Z,20nm,1.1s					
LPAZ	**La Paz**	**34.10**	**145**	*e*P	**P**	**00 02 23.9 +1.6**
	comp=Z,20nm,1.1s					
ROA	**Roan Cliffs**	**34.10**	**328**	*e*ScP	**ScP**	**00 08 44.1 +2.6**
F36A	**Milaca**	**34.11**	**353**	P	**P**	**00 02 19.4 -2.0**
	baz=169					
P17A	**Butcher Ranch,**	**34.16**	**327**	*e*P	**P**	**00 02 22.8 +0.7**
	comp=Z,143nm,1.0s					
P17A				LR	LR	
	comp=Z,1µm,21.0s					
G32A	**Webster**	**34.19**	**348**	P	**P**	**00 02 20.6 -1.5**
	baz=162					
MDV	**Middlebury**	**34.23**	**19**	*e*P	**P**	**00 02 21.8 -0.6**
F35A	**Swanville**	**34.25**	**351**	P	**P**	**00 02 21.0 -1.6**
	baz=168					
H29A	**Onida**	**34.25**	**344**	P	**P**	**00 02 21.3 -1.4**
	baz=158					
HNH	**Hanover**	**34.25**	**20**	*e*P	**P**	**00 02 22.4 -0.3**
	comp=Z,79nm,1.3s					
HNH				LR	LR	
	comp=Z,5µm,18.0s					
J25A	**Sunshine Ranch**	**34.26**	**339**	P	**P**	**00 02 23.0 +0.2**
	baz=151					
FFD	**Franklin Falls**	**34.26**	**21**	*e*P	**P**	**00 02 22.9 +0.2**
	comp=Z,144nm,1.0s					
FFD				LR	LR	
	comp=Z,7µm,20.0s					
MSU	**Marysvale**	**34.27**	**325**	*e*P	**P**	**00 02 24.1 +1.0**
MSU	**Marysvale**	**34.27**	**325**	*e*P	**P**	**00 02 24.1 +1.0**
MSU				*e*ScP	**ScP**	**00 08 45.8 +3.9**
I27A	**Quinn**	**34.28**	**341**	P	**P**	**00 02 22.9 -0.1**
	baz=154					
TMUT	**Trail Mountain**	**34.28**	**327**	*e*P	**P**	**00 02 24.2 +0.9**
	comp=Z,86nm,1.3s					
TMUT				LR	LR	
	comp=Z,1µm,21.0s					
F34A	**Alexandria**	**34.29**	**351**	P	**P**	**00 02 21.3 -1.6**
	baz=166					
CCUT	**Cedar City**	**34.31**	**322**	*e*sP	**sP**	**00 02 38.6 +1.5**
CCUT				LR	LR	
	comp=Z,2µm,18.0s					
G31A	**Conde**	**34.31**	**347**	P	**P**	**00 02 21.2 -2.0**
	baz=161					
ARGU	**Argyle Ridge**	**34.32**	**328**	*e*P	**P**	**00 02 24.7 +1.1**
LONY	**Lake Ozonia**	**34.38**	**17**	PFAKE		00 02 30.0 +6.3
LONY				LR	LR	
	comp=Z,4µm,20.0s					
SGU	**Sterling**	**34.44**	**326**	*e*P	**P**	**00 02 24.6 0.0**
G30A	**Faulkton**	**34.44**	**346**	P	**P**	**00 02 22.8 -1.5**
	baz=160					

MURC	**Murrieta**	**34.49**	**313**	P	**P**	**00 02 25.9 +0.9**
	baz=121					
I26A	**New Underwood**	**34.50**	**340**	P	**P**	**00 02 25.3 +0.4**
	baz=153					
F33A	**5 Mile Ranch,**	**34.51**	**349**	P	**P**	**00 02 23.1 -1.7**
	baz=165					
H28A	**Mission Ridge**	**34.52**	**343**	P	**P**	**00 02 24.2 -0.8**
	baz=156					
WCU	**Willow Creek**	**34.53**	**325**	*e*P	**P**	**00 02 28.6 +3.0**
HEC	**Hector,Ludlow**	**34.56**	**316**	P	**P**	**00 02 26.9 +1.4**
	baz=124					
TUQ	**Turquoise Moun**	**34.63**	**317**	P	**P**	**00 02 27.1 +0.9**
	baz=125					
BBRC	**Big Bear Solar**	**34.65**	**315**	P	**P**	**00 02 27.7 +1.2**
	baz=122					
K22A	**Casper**	**34.66**	**335**	P	**P**	**00 02 26.5 0.0**
	baz=146					
K22A	**Casper**	**34.66**	**335**	*e*P	**P**	**00 02 26.6 +0.2**
	comp=Z,117nm,1.0s					
E37A	**Wrenshall**	**34.68**	**354**	P	**P**	**00 02 24.4 -1.9**
	baz=172					
G29A	**Hoven**	**34.70**	**345**	P	**P**	**00 02 25.0 -1.5**
	baz=158					
F32A	**Veblen**	**34.70**	**348**	P	**P**	**00 02 24.5 -2.0**
	baz=163					
E36A	**McGregor**	**34.72**	**353**	P	**P**	**00 02 24.7 -2.0**
	baz=170					
I25A	**Rochford**	**34.78**	**339**	P	**P**	**00 02 27.9 +0.4**
	baz=151,SNR=57					
H27A	**Howes**	**34.79**	**342**	P	**P**	**00 02 27.2 -0.2**
	baz=154					
G28A	**Parade**	**34.86**	**343**	P	**P**	**00 02 27.0 -0.9**
	baz=157					
FRNY	**Flat Rock**	**34.86**	**18**	*e*P	**P**	**00 02 26.9 -1.0**
	comp=Z,156nm,1.8s					
FRNY				LR	LR	
	comp=Z,6µm,20.0s					
E35A	**Pequot Lakes**	**34.91**	**352**	P	**P**	**00 02 26.9 -1.4**
	baz=168					
F31A	**Hecla**	**34.93**	**347**	P	**P**	**00 02 26.3 -2.1**
	baz=161					
RSSD	**Black Hills**	**34.98**	**339**	P	**P**	**00 02 29.6 +0.5**
	baz=151					
RSSD	**Black Hills**	**34.98**	**339**	PFAKE		00 02 40.0 +11
RSSD				LR	LR	
	comp=Z,1µm,22.0s					
E34A	**Wadena**	**34.98**	**351**	P	**P**	**00 02 27.6 -1.3**
	baz=167					
H26A	**Fairpoint**	**35.00**	**341**	P	**P**	**00 02 28.8 -0.3**
	baz=153					
MPU	**Maple Canyon**	**35.03**	**327**	*e*P	**P**	**00 02 30.9 +1.2**
	comp=Z,113nm,1.0s					
MPU				*e*PcP	**PcP**	**00 05 02.9 +1.6**
MPU				LR	LR	
	comp=Z,1µm,19.0s					
F30A	**Leola**	**35.08**	**346**	P	**P**	**00 02 28.1 -1.7**
	baz=160					
E33A	**Westby DABS, E**	**35.10**	**350**	P	**P**	**00 02 28.1 -1.9**
	baz=165					
DAU	**Daniels Canyon**	**35.12**	**328**	*e*P	**P**	**00 02 27.3 -3.3**
DAU	**Daniels Canyon**	**35.12**	**328**	*e*P	**P**	**00 02 27.3 -3.3**
GSC	**Goldstone, Bar**	**35.14**	**316**	P	**P**	**00 02 31.6 +1.0**
	baz=124					
GSC	**Goldstone, Bar**	**35.14**	**316**	*e*P	**P**	**00 02 32.1 +1.5**
GSC				*e*		00 05 03.1
GSC				pmax	pmax	
	comp=Z,14nm,1.0s					
GSC	**Goldstone, Bar**	**35.14**	**316**	*e*P	**P**	**00 02 32.1 +1.5**
	comp=Z,14nm,1.0s					
GSC				*e*PcP	**PcP**	**00 05 03.1 +1.5**
GSC				*e*ScP	**ScP**	**00 08 48.8 +3.8**
GSC				LR	LR	
	comp=Z,4µm,19.0s					
BFSC	**Mount Baldy Ra**	**35.16**	**314**	P	**P**	**00 02 31.6 +0.8**
	baz=122					
SCI2	**San Clemente I**	**35.16**	**311**	P	**P**	**00 02 31.1 +0.4**
	baz=119					
NLU	**North Lily Min**	**35.22**	**327**	*e*P	**P**	**00 02 32.2 +0.8**
	comp=Z,36nm,1.0s					
NLU				*e*PcP	**PcP**	**00 05 03.6 +1.7**
NLU				LR	LR	
	comp=Z,3µm,19.0s					
PSUT	**Pine Spring**	**35.25**	**323**	*e*P	**P**	**00 02 32.8 +1.2**
	comp=Z,50nm,1.1s					
PSUT				LR	LR	
	comp=Z,2µm,19.0s					
H25A	**Fruitdale**	**35.27**	**340**	P	**P**	**00 02 31.8 +0.3**
	baz=152					
D37A	**Cotton**	**35.27**	**354**	P	**P**	**00 02 29.6 -1.8**
	baz=172					
F29A	**Eureka**	**35.27**	**345**	P	**P**	**00 02 29.7 -1.8**
	baz=159,SNR=31					
HTU	**Hoyt Peak**	**35.29**	**328**	*e*P	**P**	**00 02 28.7 -3.3**
JLU	**Jordanelle**	**35.36**	**328**	*e*P	**P**	**00 02 33.2 +0.7**
	comp=Z,68nm,1.0s					
JLU				*e*PcP	**PcP**	**00 05 04.1 +1.8**
JLU				*e*ScP	**ScP**	**00 08 52.6 +6.7**
JLU				LR	LR	
	comp=Z,2µm,22.0s					
D36A	**Goodland**	**35.36**	**353**	P	**P**	**00 02 29.9 -2.3**
	baz=170					
D35A	**Remer**	**35.38**	**352**	P	**P**	**00 02 30.0 -2.3**
	baz=169					
E32A	**Braaten, Kindr**	**35.38**	**349**	P	**P**	**00 02 30.7 -1.6**
	baz=164					
G27A	**Dupree**	**35.43**	**343**	P	**P**	**00 02 32.4 -0.5**
	baz=155,SNR=6.1					
MWC	**Mount Wilson**	**35.43**	**314**	*e*PcP	**PcP**	**00 05 05.0 +2.4**
MWC				LR	LR	
	comp=Z,4µm,19.0s					
PASC	**Pasadena Art C**	**35.49**	**313**	PFAKE		00 02 40.0 +6.5
PASC				LR	LR	
	comp=Z,3µm,19.0s					
GMU	**Granite Mounta**	**35.50**	**328**	*e*P	**P**	**00 02 33.2 -0.5**
E31A	**Nome**	**35.51**	**348**	P	**P**	**00 02 31.9 -1.6**
	baz=162					
F28A	**McLaughlin**	**35.54**	**344**	P	**P**	**00 02 32.5 -1.2**
	baz=157,SNR=7.0					
D34A	**Park Rapids**	**35.54**	**351**	P	**P**	**00 02 31.7 -2.0**
	baz=167					
G26A	**Maurine**	**35.55**	**342**	P	**P**	**00 02 33.3 -0.6**
	baz=154,SNR=5.2					
DECC	**Green Verdugo**	**35.64**	**313**	P	**P**	**00 02 35.6 +0.8**
	baz=121					
E30A	**Jud**	**35.68**	**347**	P	**P**	**00 02 33.3 -1.7**
	baz=161,SNR=24					
D33A	**AnnSam, Waubun**	**35.70**	**350**	P	**P**	**00 02 33.2 -1.9**
	baz=166,SNR=6.2					
TCUT	**Toone Canyon**	**35.72**	**329**	*e*P	**P**	**00 02 36.8 +1.2**
	comp=Z,122nm,0.8s					
TCUT				*e*PcP	**PcP**	**00 05 05.4 +2.0**
TCUT				LR	LR	
	comp=Z,2µm,21.0s					
G25A	**Newell**	**35.72**	**341**	P	**P**	**00 02 35.3 0.0**
	baz=153,SNR=21					
C38A	**Sawbill Land.**	**35.73**	**356**	P	**P**	**00 02 32.8 -2.6**
	baz=174					
TPNV	**Topopah Spring**	**35.73**	**319**	P	**P**	**00 02 37.1 +1.4**
	baz=126,SNR=35					
TPNV	**Topopah Spring**	**35.73**	**319**	PFAKE		00 02 50.0 +14
TPNV				LR	LR	
	comp=Z,3µm,21.0s					
EDW2	**Edwards Air Fo**	**35.73**	**315**	P	**P**	**00 02 36.5 +0.9**
	baz=122,SNR=13					
C39A	**Grand Marais**	**35.76**	**357**	P	**P**	**00 02 32.8 -2.8**
	baz=176,SNR=11					
FSU	**Fish Springs**	**35.78**	**325**	*e*P	**P**	**00 02 37.5 +1.4**
FSU				*ep*P	**pP**	**00 02 45.2 -0.5**
DUG	**Dugway, Tooele**	**35.79**	**326**	P	**P**	**00 02 36.9 +0.7**
	baz=134,SNR=82					
DUG	**Dugway, Tooele**	**35.79**	**326**	*e*P	P	00 02 41.4 +5.2
DUG	**Dugway, Tooele**	**35.79**	**326**	*e*P	P	00 02 41.4 +5.2
DUG				LR	LR	
	comp=Z,3µm,19.0s					
C37A	**Embarrass**	**35.81**	**355**	P	**P**	**00 02 33.8 -2.2**
	baz=172,SNR=7.8					
LRMC	**Laurel Mtn Rad**	**35.84**	**316**	P	**P**	**00 02 37.7 +1.1**
	baz=123,SNR=7.8					
FURC	**Furnace Creek,**	**35.84**	**318**	P	**P**	**00 02 37.6 +1.1**
	baz=125,SNR=7.2					
TRQ	**Mont Tremblant**	**35.86**	**16**	*e*P	**P**	**00 02 35.3 -1.2**
D32A	**Dogwood Acres,**	**35.90**	**349**	P	**P**	**00 02 34.8 -1.9**
	baz=164,SNR=25					
F27A	**Lemmon**	**35.90**	**343**	P	**P**	**00 02 36.1 -0.8**
	baz=155,SNR=43					
C36A	**Pine Crest Far**	**35.90**	**354**	P	**P**	**00 02 34.6 -2.2**
	baz=171,SNR=21					

E29A	**Napoleon**	**35.91**	**346**	P	**P**	**00 02 35.5 -1.5**
	baz=159,SNR=28					
WVL	**Waterville**	**35.93**	**22**	*e*P	**P**	**00 02 37.3 +0.3**
	comp=Z,122nm,0.8s					
WVL				LR	LR	
	comp=Z,5µm,19.0s					
D31A	**Mcclaflin, Tow**	**35.95**	**348**	P	**P**	**00 02 35.5 -1.8**
	baz=163,SNR=57					
EYMN	**Ely**	**35.97**	**356**	PFAKE		00 02 50.0 +13
EYMN				LR	LR	
	comp=Z,1µm,20.0s					
C35A	**Jirik Farms, M**	**35.98**	**353**	P	**P**	**00 02 35.2 -2.2**
	baz=169,SNR=59					
SNCC	**San Nicolas Is**	**36.01**	**311**	P	**P**	**00 02 39.1 +1.2**
	baz=118					
SNCC	**San Nicolas Is**	**36.01**	**311**	PFAKE		00 02 50.0 +12
SNCC				LR	LR	
	comp=Z,3µm,21.0s					
MCU	**Monte Cristo P**	**36.02**	**329**	*e*P	**P**	**00 02 37.2 -1.1**
MPMC	**Manual Prospec**	**36.03**	**317**	P	**P**	**00 02 39.1 +0.8**
	baz=124,SNR=8.8					
C34A	**RKJ Ranch, Bem**	**36.05**	**352**	P	**P**	**00 02 35.8 -2.3**
	baz=168,SNR=10.0					
NAIU	**Northern Antel**	**36.06**	**328**	*e*P	**P**	**00 02 40.5 +2.0**
F26A	**Lodgepole**	**36.07**	**342**	P	**P**	**00 02 37.8 -0.6**
	baz=154,SNR=23					
BW06	**Boulder Array**	**36.08**	**332**	P	**P**	**00 02 38.3 -0.3**
	baz=141,SNR=74					
BW06	**Boulder Array**	**36.08**	**332**	*e*P	**P**	**00 02 38.3 -0.3**
BW06				*e*PcP	**PcP**	**00 05 05.6 +1.2**
BW06				LR	LR	
	comp=Z,700nm,20.0s					
PD31	**Pinedale Array**	**36.08**	**332**	*e*P	**P**	**00 02 38.1 -0.5**
PD31				*e*PcP	**PcP**	**00 05 04.7 +0.3**
PD31				*e*ScP	**ScP**	**00 08 48.4 -0.1**
PDAR	**Pinedale Array**	**36.08**	**332**	P	**P**	**00 02 38.1 -0.5**
	comp=Z,59nm,0.8s,baz=128,slow=6.5,SNR=247					
PDAR				PcP	**PcP**	**00 05 04.7 +0.3**
	comp=Z,18nm,1.1s,baz=132,slow=3.5,SNR=8.3					
PDAR				ScP	**ScP**	**00 08 48.4 -0.1**
	comp=Z,0.5nm,0.7s,baz=138,slow=4.4,SNR=2.7					
PDAR				PKiKP	**PKiKP**	**00 12 23.4 -0.7**
	comp=Z,1.0nm,0.7s,baz=45,slow=0.8,SNR=6.9					
PDAR				LR	LR	00 22 10.3
	comp=Z,2µm,18.2s,baz=144,slow=44					
PDAR				P3KPbc		00 33 16.3
	comp=Z,0.6nm,0.7s,baz=347,slow=2.8,SNR=3.6					
BLG	**Laguna Peak, P**	**36.09**	**313**	P	**P**	**00 02 39.9 +1.3**
	baz=120					
OSI	**Osito Audit: C**	**36.10**	**314**	P	**P**	**00 02 39.9 +1.1**
	baz=121					
OSI	**Osito Audit: C**	**36.10**	**314**	PFAKE		00 02 50.0 +11
OSI				LR	LR	
	comp=Z,3µm,19.0s					
RSUT	**Red Spur Mount**	**36.10**	**329**	*e*P	**P**	**00 02 37.9 -1.1**
SNUT	**Stansbury Nort**	**36.12**	**327**	*e*P	**P**	**00 02 42.3 +3.4**
HWUT	**Hardware Ranch**	**36.16**	**329**	*e*P	**P**	**00 02 39.5 +0.1**
	comp=Z,233nm,0.9s					
HWUT				*e*ScP	**ScP**	**00 08 51.1 +2.4**
HWUT				LR	LR	
	comp=Z,1µm,22.0s					
R11A	**Troy Canyon, C**	**36.17**	**321**	P	**P**	**00 02 40.5 +1.1**
	baz=129,SNR=57					
R11A	**Troy Canyon, C**	**36.17**	**321**	*e*P	**P**	**00 02 40.5 +1.1**
	comp=Z,41nm,1.3s					
R11A				*e*ScP	**ScP**	**00 08 52.4 +3.6**
R11A				LR	LR	
	comp=Z,3µm,20.0s					
E28A	**Huff**	**36.18**	**345**	P	**P**	**00 02 37.9 -1.3**
	baz=158,SNR=46					
PB11	**IPOC Station P**	**36.20**	**151**	*e*P	**P**	**00 02 42.2 +2.5**
	comp=Z,48nm,1.0s					
PB11				LR	LR	
	comp=Z,3µm,22.0s					
DAC	**Darwin (Calif)**	**36.22**	**317**	*e*P	**P**	**00 02 41.3 +1.4**
DAC				*e*		00 05 07.0
DAC				pmax	pmax	
	comp=Z,20nm,1.3s					
DAC	**Darwin (Calif)**	**36.22**	**317**	*e*P	**P**	**00 02 41.3 +1.4**
	comp=Z,20nm,1.4s					
DAC				*e*PcP	**PcP**	**00 05 07.0 +2.1**
DAC				*e*ScP	**ScP**	**00 08 53.4 +4.3**
DAC				LR	LR	
	comp=Z,5µm,20.0s					
D30A	**Buchanan**	**36.22**	**347**	P	**P**	**00 02 38.2 -1.3**
	baz=161,SNR=51					
BMUT	**Black Mountain**	**36.25**	**330**	*e*P	**P**	**00 02 38.9 -1.3**
E27A	**Carson**	**36.28**	**344**	P	**P**	**00 02 39.6 -0.6**
	baz=156,SNR=70					
C33A	**Trail**	**36.29**	**351**	P	**P**	**00 02 37.5 -2.6**
	baz=166,SNR=12					
D29A	**Pettibone, Tap**	**36.37**	**346**	P	**P**	**00 02 39.1 -1.7**
	baz=160,SNR=33					
F25A	**Bowman**	**36.38**	**341**	P	**P**	**00 02 40.7 -0.3**
	baz=153,SNR=71					
SPUT	**South Promonto**	**36.39**	**328**	*e*P	**P**	**00 02 42.4 +1.1**
	comp=Z,114nm,0.9s					
HDU	**Hyde Park**	**36.40**	**329**	*e*P	**P**	**00 02 42.1 +0.7**
BGU	**Big Grassy Mou**	**36.42**	**327**	*e*P	**P**	**00 02 42.2 +0.6**
	comp=Z,117nm,1.2s					
BGU				*e*PcP	**PcP**	**00 05 06.8 +1.4**
BGU				LR	LR	
	comp=Z,3µm,19.0s					
ARVC	**Arvin**	**36.44**	**314**	P	**P**	**00 02 42.8 +1.1**
	baz=121,SNR=6.4					
SCZ2	**Santa Cruz Isl**	**36.44**	**312**	P	**P**	**00 02 42.8 +1.2**
	baz=119					
C32A	**Crookston**	**36.48**	**350**	P	**P**	**00 02 39.8 -1.9**
	baz=165,SNR=11					
GRAC	**Grapevine Rang**	**36.48**	**318**	P	**P**	**00 02 43.4 +1.5**
	baz=125,SNR=18					
ISA	**Isabella, Lake**	**36.48**	**315**	P	**P**	**00 02 43.7 +1.7**
	baz=122					
ISA	**Isabella, Lake**	**36.48**	**315**	*e*P	**P**	**00 02 44.1 +2.1**
ISA				*e*		00 05 07.9
ISA				pmax	pmax	
	comp=Z,18nm,1.2s					
ISA	**Isabella, Lake**	**36.48**	**315**	*e*P	**P**	**00 02 44.1 +2.1**
	comp=Z,18nm,1.2s					
ISA				*e*PcP	**PcP**	**00 05 07.9 +2.4**
ISA				LR	LR	
	comp=Z,4µm,21.0s					
LTU	**Little Mountai**	**36.49**	**328**	*e*P	**P**	**00 02 44.8 +2.6**
E26A	**Carlson Angus**	**36.57**	**343**	P	**P**	**00 02 41.8 -0.8**
	baz=155,SNR=11					
WASM	**Alta Sierra Ca**	**36.58**	**315**	*e*P	**P**	**00 02 41.4 -1.6**
B35A	**Bob, Littlefor**	**36.59**	**353**	P	**P**	**00 02 40.6 -2.1**
	baz=170,SNR=13					
PKME	**Peaks-Kenny Pk**	**36.66**	**22**	PFAKE		00 02 50.0 +6.7
PKME				LR	LR	
	comp=Z,3µm,19.0s					
C31A	**Landman Farms,**	**36.66**	**349**	P	**P**	**00 02 41.6 -1.8**
	baz=163,SNR=180					
MTUT	**Morton Thiokol**	**36.68**	**328**	*e*P	**P**	**00 02 47.5 +3.8**
SBC	**Santa Barbara**	**36.72**	**313**	P	**P**	**00 02 44.8 +0.8**
	baz=119					
D28A	**Regan**	**36.73**	**345**	P	**P**	**00 02 43.0 -0.9**
	baz=158,SNR=95					
C30A	**Mose, Pekin**	**36.73**	**348**	P	**P**	**00 02 42.6 -1.2**
	baz=162,SNR=220					
B33A	**Robert and Kas**	**36.76**	**351**	P	**P**	**00 02 42.0 -2.1**
	baz=167,SNR=20					
AHID	**Auburn Hatcher**	**36.80**	**331**	*e*P	**P**	**00 02 44.9 +0.1**
	comp=Z,145nm,0.7s					
AHID				*e*PcP	**PcP**	**00 05 08.3 +1.8**
AGMN	**Agassiz Nation**	**36.82**	**351**	P	**P**	**00 02 43.0 -1.7**
	baz=166,SNR=246					
AGMN	**Agassiz Nation**	**36.82**	**351**	PFAKE		00 02 50.0 +5.3
AGMN				LR	LR	
	comp=Z,2µm,22.0s					
B34A	**Aery, Baudette**	**36.83**	**352**	P	**P**	**00 02 42

B32A	Ashes, Strandq	37.03 350	P	P	00 02 44.8 -1.6
	baz=165,SNR=370				
NPI	North Pocatell	37.03 329	eP	P	00 02 51.5 +4.7
D26A	Manning	37.07 343	P	P	00 02 45.9 -0.9
	baz=155,SNR=42				
TIN	Tinemaha, Big	37.08 318	P	P	00 02 48.4 +1.2
	baz=124				
REDW	Red Top Meadow	37.13 332	eP	P	00 02 48.0 +0.4
	comp=Z,505nm,0.9s				
REDW			LR	LR	
	comp=Z,1µm,20.0s				
SNOW	Snow King Moun	37.17 332	eP	P	00 02 48.5 +0.5
	comp=Z,480nm,0.8s				
SNOW			LR	LR	
	comp=Z,1µm,21.0s				
C28A	Hausauer Farms	37.17 346	P	P	00 02 46.7 -0.9
	baz=159,SNR=25				
LOHW	Long Hollow	37.21 332	eP	P	00 02 48.6 +0.3
	comp=Z,194nm,1.1s				
LOHW			LR	LR	
	comp=Z,801nm,20.0s				
B31A	Greenbush Farm	37.25 349	P	P	00 02 46.6 -1.7
	baz=163,SNR=87				
RCTC	Rector, Farmer	37.35 316	P	P	00 02 50.7 +1.4
	baz=122,SNR=6.3				
SMMC	Simmler	37.36 314	P	P	00 02 51.3 +1.9
	baz=120				
PB01	IPOC Station P	37.38 151	eP	P	00 02 52.5 +2.7
	comp=Z,38nm,1.2s				
PB01			ePcP	PcP	00 05 10.3 +1.9
PB01			LR	LR	
	comp=Z,2µm,20.0s				
A33A	Warroad	37.38 352	P	P	00 02 47.6 -1.8
	baz=167,SNR=262				
MOOW	Moose Ponds	37.38 332	eP	P	00 02 49.8 0.0
	comp=Z,123nm,0.8s				
MOOW			LR	LR	
	comp=Z,1µm,22.0s				
B30A	Myrvik Farm, E	37.41 348	P	P	00 02 48.3 -1.3
	baz=162,SNR=238				
FXWY	Fox Creek	37.43 332	eP	P	00 02 50.1 0.0
	comp=Z,65nm,0.9s				
FXWY			LR	LR	
	comp=Z,900nm,22.0s				
D25A	Fairfield	37.44 342	P	P	00 02 49.7 -0.3
	baz=154,SNR=18				
C27A	Sayler Ranch,	37.45 345	P	P	00 02 49.2 -0.8
	baz=157,SNR=65				
ELK	Elko	37.52 325	eP	P	00 02 51.8 +0.8
ELK			pmax	pmax	
	comp=Z,80nm,1.2s				
ELK	Elko	37.52 325	eP	P	00 02 51.8 +0.8
	comp=Z,80nm,1.2s				
ELK			eScP	ScP	00 08 56.7 +2.9
ELK			LR	LR	
	comp=Z,2µm,19.0s				
A32A	Rocking H Ranc	37.53 350	P	P	00 02 48.6 -2.0
	baz=165,SNR=86				
IMW	Indian Meadow	37.59 332	eP	P	00 02 51.5 -0.1
	comp=Z,88nm,0.9s				
IMW			LR	LR	
	comp=Z,900nm,21.0s				
FLWY	Flagg Ranch	37.62 332	eP	P	00 02 52.3 +0.5
	comp=Z,179nm,0.9s				
FLWY			LR	LR	
	comp=Z,600nm,20.0s				
B29A	Wagenman Farm,	37.64 347	P	P	00 02 50.7 -0.9
	baz=161,SNR=200				
A31A	Linda, St. Vin	37.66 350	P	P	00 02 49.5 -2.2
	baz=164				
YTP	The Promontory	37.68 333	eP	P	00 02 52.9 +0.6
C26A	Wahner Farm, P	37.71 344	P	P	00 02 51.4 -0.8
	baz=156,SNR=48				
MLAC	Mammoth, Mammo	37.80 318	P	P	00 02 54.6 +1.1
	baz=124				
H17A	Grant Village	37.81 333	P	P	00 02 54.0 +0.6
	baz=141,SNR=62				
H17A	Grant Village	37.81 333	eP	P	00 02 54.1 +0.7
	comp=Z,86nm,0.9s				
H17A			LR	LR	
	comp=Z,2µm,21.0s				
NV11	Mina Array Sit	37.82 319	eP	P	00 02 54.9 +1.4
	comp=Z,79nm,1.4s				
NV11			ePcP	PcP	00 05 11.6 +2.0
NV11			LR	LR	
	comp=Z,3µm,19.0s				
RLMT	Red Lodge	37.83 335	P	P	00 02 53.3 -0.2
	baz=144,SNR=146				
YLT	Little Thumb C	37.85 333	eP	P	00 02 55.8 +2.1
B28A	Dugan Ranch, T	37.85 346	P	P	00 02 52.8 -0.6
	baz=159,SNR=53				
LKWY	Lake	37.87 333	eP	P	00 02 55.1 +1.2
LKWY			pmax	pmax	
	comp=Z,100nm,1.0s				
LKWY	Lake	37.87 333	eP	P	00 02 55.1 +1.2
	comp=Z,101nm,1.0s				
LKWY			LR	LR	
	comp=Z,900nm,19.0s				
A30A	Hoffart Farm,	37.87 349	P	P	00 02 52.0 -1.6
	baz=163,SNR=188				
NV01	Mina Array Sit	37.91 319	eP	P	00 02 54.9 +0.5
NV01			ePcP	PcP	00 05 11.2 +1.2
NV01			eScP	ScP	00 08 56.8 +1.4
NVAR	Mina Array Bea	37.91 319	P	P	00 02 54.9 +0.5
	comp=Z,15nm,1.0s,baz=51,slow=23,SNR=7.6				
NVAR			PcP	PcP	00 05 11.2 +1.2
	comp=Z,63nm,0.8s,baz=140,slow=4.2,SNR=47				
NVAR			ScP	ScP	00 08 56.8 +1.4
	comp=Z,7.7nm,1.0s,baz=142,slow=4.5,SNR=12				
NVAR			LR	LR	00 21 08.2
	comp=Z,3µm,19.5s,baz=141,slow=40				
MCID	Moose Creek	37.92 332	eP	P	00 02 55.0 +0.6
C25A	Freed Ranch, W	37.93 343	P	P	00 02 53.5 -0.6
	baz=154				
YFT	Old Faithful	37.97 333	eP	P	00 02 56.4 +1.7
	comp=Z,165nm,1.0s				
YFT			ePcP	PcP	00 05 12.6 +2.5
B27A	Peters Farms,	38.02 345	P	P	00 02 54.2 -0.6
	baz=158,SNR=23				
A29A	Manning Farm,	38.04 348	P	P	00 02 53.8 -1.2
	baz=161,SNR=26				
YPM	Purple Mountai	38.15 333	eP	P	00 02 56.1 -0.1
YMR	Madison River	38.20 333	eP	P	00 02 57.7 +1.1
	comp=Z,255nm,1.0s				
YMR			LR	LR	
	comp=Z,600nm,19.0s				
YHH	Holmes Hill	38.24 333	eP	P	00 02 57.5 +0.4
B26A	Jensen Ranch,	38.25 344	P	P	00 02 55.7 -1.1
	baz=156,SNR=5.7				
A28A	Rude Farm, Bot	38.26 347	P	P	00 02 55.4 -1.5
	baz=160,SNR=59				
YMC	Maple Creek	38.29 333	eP	P	00 02 58.2 +0.8
LMQ	La Malbaie	38.30 19	eP	P	00 02 56.0 -1.1
	comp=Z,95nm,0.7s				
LMQ			LR	LR	
	comp=Z,3µm,19.0s				
PQI	Presque Isle	38.32 22	ePP	PP	00 04 27.9 +2.5
YHB	Horse Butte	38.37 333	eP	P	00 02 59.5 +1.5
B25A	Knox Farm, Ray	38.41 343	P	P	00 02 57.8 -0.3
	baz=155,SNR=13				
CRMT	Chrome Mountai	38.46 334	eP	P	00 02 58.7 -0.2
A27A	Ledoux Ranch,	38.53 346	P	P	00 02 58.3 -0.8
	baz=158				
GCMT	Greycliff	38.53 335	eP	P	00 02 59.1 -0.2
QLMT	Earthquake Lak	38.53 333	eP	P	00 03 00.5 +1.0
TPMT	Tepee Creek	38.56 332	eP	P	00 03 03.2 +3.5
A26A	Wade Farm, Ken	38.68 345	P	P	00 02 59.4 -1.0
	baz=157,SNR=62				
WAKR	Walker	38.69 319	eP	P	00 03 02.2 +1.4
WAKR			ePcP	PcP	00 05 14.9 +2.5
WAKR			eS	S	00 09 03.8 +8.0
ULM	Lac du Bonnet	38.73 352	P	P	00 02 58.4 -2.3
	comp=Z,263nm,1.0s,baz=170,slow=8.3,SNR=153				
ULM			ScP	ScP	00 08 57.5 -0.4
	comp=Z,15nm,1.0s,baz=175,slow=9.4,SNR=6.6				
ULM			LR	LR	00 21 15.8
	comp=Z,1µm,21.0s,baz=166,slow=40				
ULM	Lac du Bonnet	38.73 352	eP	P	00 02 58.4 -2.3
ULM			pmax	pmax	
	comp=Z,310nm,1.0s				
ULM	Lac du Bonnet	38.73 352	eP	P	00 02 58.4 -2.3
	comp=Z,308nm,1.0s				
ULM			eS	S	00 08 58.0 +2.4
ULM			LR	LR	
	comp=Z,2µm,22.0s				
LMN	Caledonia Moun	38.91 26	eP	P	00 03 01.6 -0.7
LMN			LR	LR	
	comp=Z,2µm,18.0s				
LVC	Limon Verde	38.99 152	eP	P	00 03 06.9 +3.2
	comp=Z,38nm,1.0s				
A25A	Svangstu Ranch	39.00 344	P	P	00 03 02.5 -0.6
	baz=155				
HLID	Hailey	39.02 329	P	P	00 03 03.8 +0.3
	baz=135,SNR=65				
HLID	Hailey	39.02 329	PFAKE		00 03 10.0 +6.5
HLID			LR	LR	
	comp=Z,2µm,19.0s				
CMB	Columbia Colle	39.05 317	eP	P	00 03 04.7 +1.0
CMB	Columbia Colle	39.05 317	eP	P	00 03 04.7 +1.0
	comp=Z,21nm,1.1s				
CMB			ePcP	PcP	00 05 15.0 +1.6
CMB			eS	S	00 09 04.8 +3.9
CMB			LR	LR	
	comp=Z,3µm,20.0s				
SAO	San Andreas Ge	39.10 315	PFAKE		00 03 10.0 +5.9
SAO			LR	LR	
	comp=Z,6µm,19.0s				
MCMT	McKenzie Canyo	39.18 331	eP	P	00 03 06.0 +1.0
MCMT			eS	S	00 09 06.1 +3.0
BOZ	Bozeman (W)	39.25 333	P	P	00 03 05.5 +0.2
	baz=141,SNR=36				
BOZ	Bozeman (W)	39.25 333	eP	P	00 03 05.6 +0.2
BOZ	Bozeman (W)	39.25 333	eP	P	00 03 05.6 +0.2
DLMT	Dillon	39.47 332	eP	P	00 03 07.9 +0.7
	comp=Z,181nm,1.0s				
DLMT			LR	LR	
	comp=Z,899nm,21.0s				
LCCM	Lewis and Clar	39.51 333	eP	P	00 03 08.1 +0.5
MFID	Camas Ranch	39.65 327	eP	P	00 03 09.0 +0.3
	comp=Z,68nm,1.2s				
MFID			LR	LR	
	comp=Z,2µm,21.0s				
AFDM	Forest Hills D	39.93 318	eP	P	00 03 12.1 +1.1
	comp=Z,12nm,1.1s				
AFDM			ePcP	PcP	00 05 17.8 +1.7
AFDM			eScP	ScP	00 09 07.0 +4.1
AFDM			LR	LR	
	comp=Z,3µm,21.0s				
HRY	Holter Researc	40.17 334	eP	P	00 03 13.1 +0.1
YJA	Yavi	40.31 147⇑	iP	P	00 03 17.1 +2.4
	baz=339,slow=11				
YJA			IAmb	IAmb	00 03 20.9
	comp=Z,73nm,1.1s				
EGMT	Eagleton	40.39 337	P	P	00 03 14.4 -0.3
	baz=145,SNR=69				
EGMT	Eagleton	40.39 337	PFAKE		00 03 20.0 +5.3
EGMT			LR	LR	
	comp=Z,2µm,22.0s				
WVOR	Wild Horse Val	40.55 324	PFAKE		00 03 30.0 +14
WVOR			LR	LR	
	comp=Z,3µm,19.0s				
ORV	Oroville	40.60 319	eP	P	00 03 18.3 +1.8
ORV			pmax	pmax	
	comp=Z,23nm,0.8s				
ORV	Oroville	40.60 319	eP	P	00 03 18.3 +1.8
	comp=Z,22nm,0.8s				
ORV			ePcP	PcP	00 05 20.2 +2.0
ORV			LR	LR	
	comp=Z,4µm,21.0s				
MCCM	Marconi Confer	40.78 316	eP	P	00 03 20.8 +2.8
	comp=Z,98nm,1.1s				
MCCM			LR	LR	
	comp=Z,4µm,20.0s				
CHMT	Chamberlain Mo	40.95 333	eP	P	00 03 19.0 -0.5
MSO	Missoula	41.19 332	P	P	00 03 21.0 -0.4
	baz=139,SNR=128				
MSO	Missoula	41.19 332	PFAKE		00 03 30.0 +8.6
MSO			LR	LR	
	comp=Z,1µm,20.0s				
MOD	Modoc Plateau	41.20 322	eP	P	00 03 21.8 +0.2
	comp=Z,33nm,1.0s				
MOD			ePcP	PcP	00 05 22.4 +2.1
MOD			LR	LR	
	comp=Z,3µm,20.0s				
O03D	Paynes Creek	41.20 319	P	P	00 03 20.9 -0.6
	baz=123,SNR=17				
HJA	Humahuaca	41.21 148	iP	P	00 03 24.7 +2.6
HOPS	Hopland Field	41.34 317	eP	P	00 03 25.6 +3.0
	comp=Z,43nm,1.3s				
HOPS			LR	LR	
	comp=Z,3µm,19.0s				
SWMT	Swartz Lake	41.73 333	eP	P	00 03 25.3 -0.5
WDC	Whiskeytown Da	41.83 319	eP	P	00 03 25.2 -1.4
WDC			e		00 05 23.0
WDC			pmax	pmax	
	comp=Z,15nm,1.1s				
WDC	Whiskeytown Da	41.83 319	eP	P	00 03 25.2 -1.4
	comp=Z,15nm,1.1s				
WDC			ePcP	PcP	00 05 23.0 +0.8
WDC			eScP	ScP	00 09 15.0 +4.8
WDC			LR	LR	
	comp=Z,3µm,21.0s				
YBMT	Yellow Bay	42.01 333	eP	P	00 03 27.7 -0.3
JTMT	Jette	42.04 333	eP	P	00 03 27.9 -0.4
K05A	Summer Lake	42.04 323	eP	P	00 03 28.8 +0.2
	comp=Z,24nm,1.0s				
K05A			ePcP	PcP	00 05 25.3 +2.2
K05A			eScP	ScP	00 09 14.9 +3.6
K05A			LR	LR	
	comp=Z,2µm,20.0s				
M04C	Macdoel	42.06 321	P	P	00 03 28.4 -0.2
	baz=125,SNR=16				
F10A	Beach Ranch, E	42.14 329	PFAKE		00 03 40.0 +11
F10A			LR	LR	
	comp=Z,2µm,20.0s				
N02D	Trinity Center	42.15 320	P	P	00 03 28.8 -0.5
	baz=123				
AZAP	Zapla	42.23 149⇑	eP	P	00 03 31.7 +1.5
BLMT	Blacktail Moun	42.27 333	eP	P	00 03 30.0 -0.3
ASTB	Santa Barbara	42.32 148⇑	eP	P	00 03 32.9 +2.0
BSMT	Bassoo Peak	42.34 333	eP	P	00 03 30.6 -0.2
KMRM	Mail Ridge	42.40 318	eP	P	00 03 33.4 +2.1
	comp=Z,86nm,1.0s				
KMRM			ePcP	PcP	00 05 27.1 +2.8
KMRM			LR	LR	
	comp=Z,3µm,21.0s				
ALOL	LOMAS DE OLMED	42.46 147⇑	iP	P	00 03 33.9 +2.0
M02C	Callahan	42.47 320	P	P	00 03 31.0 -1.0
	baz=123				
K04D	Chiloquin, OR	42.50 322	P	P	00 03 32.0 -0.1
	baz=126				
YBH	Yreka Blue Hor	42.57 321	P	P	00 03 30.9 -1.8
	comp=Z,26nm,1.1s,baz=187,slow=7.5				
YBH			PcP	PcP	00 05 25.3 +0.5
	comp=Z,22nm,0.9s,baz=91,slow=3.9,SNR=14				
YBH	Yreka Blue Hor	42.57 321	eP	P	00 03 30.9 -1.8
YBH			e		00 05 25.3
YBH			pmax	pmax	
	comp=Z,29nm,1.3s				
YBH			MLR	MLR	
	comp=Z,3µm,21.0s				
YBH	Yreka Blue Hor	42.57 321	eP	P	00 03 30.9 -1.8
	comp=Z,29nm,1.3s				
YBH			ePcP	PcP	00 05 25.3 +0.5
YBH			LR	LR	
	comp=Z,3µm,21.0s				
J05D	Fort Rock, OR	42.58 323	P	P	00 03 33.2 +0.4
	baz=127,SNR=12				
KHMM	Horse Mountain	42.75 319	eP	P	00 03 36.0 +1.7
	comp=Z,47nm,0.8s				
KHMM			ePcP	PcP	00 05 27.9 +2.4
KHMM			LR	LR	
	comp=Z,3µm,20.0s				
WALA	Waterton Lakes	42.88 335	eP	P	00 03 35.1 -0.1
	comp=Z,70nm,0.9s				
WALA			LR	LR	
	comp=Z,1µm,21.0s				
JCC	Jacoby Creek,	42.92 319	eP	P	00 03 37.2 +1.8
	comp=Z,90nm,1.0s				
JCC			LR	LR	
	comp=Z,3µm,22.0s				
E09A	Wood Farm, Sta	42.98 329	eP	P	00 03 35.0 -0.8
	comp=Z,102nm,1.1s				
E09A			LR	LR	
	comp=Z,2µm,20.0s				
HUMO	Hull Mountain	43.21 321	eP	P	00 03 37.5 -0.3
	comp=Z,28nm,1.5s				
HUMO			ePP	PcP	00 05 28.1 +1.3
HUMO			LR	LR	
	comp=Z,4µm,20.0s				
I05D	Terrebonne, OR	43.28 324	P	P	00 03 38.1 -0.3
	baz=127,SNR=5.4				
FSA	Cafayete	43.36 151⇑	eP	P	00 03 41.3 +2.0
L02D	Cave Junction,	43.36 321	P	P	00 03 39.3 +0.2
	baz=123				
G06A	Carlson Farm,	43.44 326	eP	P	00 03 41.0 +1.3
	comp=Z,48nm,1.3s				
I04A	Tendick Farm,	43.57 323	P	P	00 03 40.0 -0.7
	baz=126,SNR=9.4				
HAWA	Hanford	43.60 328	PFAKE		00 03 50.0 +9.1
HAWA			LR	LR	
	comp=Z,2µm,20.0s				
NEW	Newport	43.71 332	PFAKE		00 03 50.0 +8.2
NEW			LR	LR	
	comp=Z,2µm,19.0s				
D08A	Wollman Farm,	43.74 329	eP	P	00 03 41.6 -0.3
	comp=Z,113nm,0.8s				
D08A			LR	LR	
	comp=Z,2µm,19.0s				
G05D	Wamic, OR	43.82 326	P	P	00 03 42.9 +0.2
	baz=128,SNR=9.7				
E07A	Sunnyside	43.88 328	eP	P	00 03 43.5 +0.4
	comp=Z,168nm,0.8s				
E07A			LR	LR	
	comp=Z,2µm,19.0s				
C09A	Chrisman Ranch	43.93 330	eP	P	00 03 43.2 -0.3
	comp=Z,68nm,0.7s				
C09A			LR	LR	
	comp=Z,2µm,21.0s				
LCO	Las Campanas	43.94 158	eP	P	00 03 46.8 +2.8
	comp=Z,53nm,1.3s				
H04A	Detroit Lake	43.97 324	eP	P	00 03 43.9 0.0
	comp=Z,92nm,1.1s				
H04A			ePP	PcP	00 05 30.5 +1.1
H04A			LR	LR	
	comp=Z,2µm,22.0s				
TRW	Toppenish Ridg	44.07 327	P	P	00 03 45.6 +1.0
I03D	Drain, OR	44.07 323	P	P	00 03 44.4 -0.2
	baz=125,SNR=10.0				
TDH	Tom, Dick, Har	44.11 325	P	P	00 03 45.9 +0.7
AHML	Horco Molle	44.23 151	eP	P	00 03 48.2 +2.0
RPN	Rapa Nui	44.24 208	PFAKE		00 04 00.0 +14
RPN			LR	LR	
	comp=Z,5µm,20.0s				
SAW	Saint Andrews	44.41 329	P	P	00 03 47.6 +0.2
COR	Corvallis	44.55 324	PFAKE		00 04 00.0 +12
COR			LR	LR	
	comp=Z,3µm,19.0s				
VCA	Vinchina	44.65 155	eP	P	00 03 52.8 +3.1
WTV	Waterville	44.69 329	eP	P	00 03 49.9 +0.3
DRLN	Deer Lake	44.72 28	eP	P	00 03 48.3 -1.4
	comp=Z,72nm,1.0s				
LTY	Liberty	44.76 328	eP	P	00 03 49.8 -0.4
	comp=Z,74nm,1.0s				
LTY			LR	LR	
	comp=Z,2µm,20.0s				
B08A	Colville Reser	44.83 330	eP	P	00 03 50.0 -0.7
	comp=Z,99nm,1.0s				
B08A			LR	LR	
	comp=Z,2µm,20.0s				
F04A	Amboy	44.86 326	eP	P	00 03 51.6 +0.7
	comp=Z,72nm,1.0s				
F04A			LR	LR	
	comp=Z,2µm,19.0s				
G03D	McMinnville, O	44.90 324	P	P	00 03 51.0 -0.2
	baz=126,SNR=5.5				
LON	Longmire	45.03 327	eP	P	00 03 52.1 -0.3
LON			pmax	pmax	
	comp=Z,36nm,0.9s				
LON	Longmire	45.03 327	eP	P	00 03 52.1 -0.3
	comp=Z,36nm,0.9s				
LON			LR	LR	
	comp=Z,1µm,21.0s				
AGUA	GUANDACOL	45.20 156	eP	P	00 03 58.1 +4.2
F04D	Rainier, OR	45.27 325	P	P	00 03 54.0 -0.2
	baz=127,SNR=11				
C06D	Leavenworth	45.31 329	P	P	00 03 54.5 -0.1
	baz=131,SNR=16				
D05A	Enumclaw	45.40 327	eP	P	00 03 55.3 +0.1
	comp=Z,86nm,0.9s				
D05A			LR	LR	
	comp=Z,2µm,21.0s				
CYA	Choya	45.42 153	eP	P	00 03 56.2 +0.5
F03A	Seaside	45.49 325	eP	P	00 03 57.2 +1.3
	comp=Z,183nm,1.0s				
F03A			LR	LR	
	comp=Z,4µm,21.0s				
GPW	Glacier Peak	45.56 329	eP	P	00 03 57.0 +0.2
PNT	Penticton	45.62 331	eP	P	00 03 57.3 +0.3
PNT	Penticton	45.62 331	eP	P	00 03 57.0 +0.1
SCHQ	Schefferville	45.75 17	P	P	00 03 55.8 -2.1
	comp=Z,136nm,0.5s,baz=214,slow=5.3,SNR=338				
SCHQ			LR	LR	00 25 05.9
	comp=Z,3µm,18.4s,baz=216,slow=39				
SCHQ	Schefferville	45.75 17	eP	P	00 03 55.8 -2.1
	comp=Z,180nm,0.6s				
SCHQ			LR	LR	
	comp=Z,4µm,18.0s				
E03A	Lebam	45.86 326	eP	P	00 03 59.8 +1.0
	comp=Z,136nm,1.0s				
E03A			LR	LR	
	comp=Z,4µm,21.0s				
RPW	Rockport	45.97 329	eP	P	00 03 58.9 -0.9
B06A	Marblemount	46.00 329	eP	P	00 03 59.2 -0.7
	comp=Z,163nm,0.8s				
B06A			LR	LR	
	comp=Z,1µm,20.0s				
B05A	Bryant	46.15 328	P	P	00 03 59.9 -1.2
	baz=130,SNR=21				
BLN	Blyn Mountain	46.44 328	eP	P	00 04 02.9 -0.5
AMOG	MOGNA	46.49 157	eP	P	00 04 06.3 +2.2
A04D	Lummi Island	46.75 329	P	P	00 04 05.2 -0.5
	baz=129,SNR=9.9				
FCC	Fort Churchill	46.91 355	eP	P	00 04 05.2 -1.7
FCC	Fort Churchill	46.91 355	eP	P	00 04 05.2 -1.7
	comp=Z,126nm,0.8s				
PGC	Sidney	47.09 328	eP	P	00 04 08.6 +0.2
	comp=Z,136nm,1.4s				
CPUP	Villa Florida	48.18 143	P	P	00 04 17.0 -0.1
	comp=Z,29nm,0.8s,baz=332,slow=7.9,SNR=63				
CPUP			LR	LR	00 26 07.8
	comp=Z,2µm,18.7s,baz=326,slow=38				
SPB	Sao Paulo	52.90 132	eP	P	00 04 52.6 -0.2
	comp=Z,36nm,0.9s				
SPB			LR	LR	
	comp=Z,3µm,20.0s				
FRB	Frobisher Bay	53.39 10	P	P	00 04 52.8 -3.1
	comp=Z,97nm,0.6s,baz=214,slow=8.3,SNR=96				
YKA	Yellowknife Ar	53.99 345	P	P	00 04 58.5 -1.8
	comp=Z,73nm,0.9s,baz=138,slow=7.6,SNR=746				
YKA			PcP	PcP	00 06 04.7 -0.5
	comp=Z,15nm,0.7s,baz=147,slow=3.9,SNR=18				
YKA			PP	PP	00 07 00.4 -1.4
	comp=Z,9.4nm,1.0s,baz=144,slow=8.6,SNR=3.6				
YKA			ScP	ScP	00 10 00.6 -0.4
	comp=Z,1.6nm,0.6s,baz=146,slow=4.3,SNR=8.2				
YKB5	Yellowknife Ar	53.99 345	eP	P	00 04 58.5 -1.8
YKB5			ePcP	PcP	00 06 04.7 -0.5
YKB5			ePP	PP	00 07 00.4 -1.4
YKB5			eScP	ScP	00 10 00.6 -0.4
YKW3	Yellowknife Ar	54.05 345	eP	P	00 04 59.1 -1.7
	comp=Z,85nm,0.9s				
RCBR	Riachuelo	54.41 106	eP	P	00 05 04.0 -0.2
	comp=Z,35nm,1.1s				
RCBR			LR	LR	
	comp=Z,3µm,19.0s				
PLCA	Paso Flores	54.81 164	P	P	00 05 07.5 +0.8
	comp=Z,20nm,0.8s,baz=2.1,slow=8.2,SNR=40				
PLCA			LR	LR	00 24 06.0
	comp=Z,1µm,18.6s,baz=40,slow=31				
PLCA	Paso Flores	54.81 164	eP	P	00 05 07.5 +0.8
PLCA			pmax	pmax	
	comp=Z,38nm,0.9s				
PLCA	Paso Flores	54.81 164	eP	P	00 05 07.5 +0.8
	comp=Z,38nm,0.9s				
TRQA	Tornquist	55.30 155	eP	P	00 05 11.3 +1.2
	comp=Z,138nm,1.9s				
TAOE	Nuku Hiva Isla	56.16 251	eS	S	00 13 04.6 +0.1
	comp=Z,1µm,24.8s				
TAOE			eLR	LR	00 21 30.3
	comp=Z,3µm,24.5s				
TAOE	Nuku Hiva Isla	56.16 251	eT	T	01 05 44.2
	comp=Z,28nm,0.2s				
DLBC	Dease Lake	56.23 335	eP	P	00 05 16.8 +0.2
	comp=Z,110nm,0.9s				
NRS	Narsarsuaq	57.85 23	iP	P	00 05 32.1 +4.1
	comp=Z,1µm,22.0s				
NRS	Narsarsuaq	57.85 23	eP	P	00 05 32.1 +4.1
NRS			MLR	MLR	
	comp=Z,2µm,22.0s				

RKT	**Rikitea**	**58.01**	**233**	*e*P	**P**	**00 05 31.7**	**+2.0**
	comp=Z,202nm,1.5s						
RKT				*e*S	**S**	**00 13 25.4**	**-3.0**
	comp=Z,2μm,25.5s						
RKT				*e*SS	**SS**	**00 17 23.8**	**+3.6**
	comp=Z,364nm,30.2s						
RKT				*e*LQ	LQ	00 20 02.7	
	comp=Z,1μm,31.5s						
RKT				*e*LR	LR	00 22 26.8	
	comp=Z,2μm,26.5s,baz=52						
RKT	**Rikitea**	**58.01**	**233**	*e*T	T	01 08 06.2	
	comp=Z,10nm,0.2s						
SKAG	**Skagway**	**59.07**	**334**	*e*P	**P**	**00 05 36.5**	**+0.1**
	comp=Z,19nm,0.9s						
SKAG				LR	LR		
	comp=Z,2μm,20.0s						
SFJD	**Kangerlussuaq**	**60.19**	**16**	P	**P**	**00 05 40.9**	**-3.1**
	comp=Z,34nm,1.1s,baz=222,slow=8.6,SNR=8.4						
SFJD	**Kangerlussuaq**	**60.19**	**16⇑**	*i*P	**P**	**00 05 41.0**	**-3.1**
	comp=Z,27nm,1.0s						
	comp=Z,2μm,18.0s						
SFJD	**Kangerlussuaq**	**60.19**	**16⇑**	*i*P	**P**	**00 05 41.0**	**-3.1**
SFJD				pmax	pmax		
	comp=Z,27nm,1.0s						
SFJD				MLR	MLR		
	comp=Z,2μm,18.0s						
SFJD	**Kangerlussuaq**	**60.19**	**16**	*e*P	**P**	**00 05 41.3**	**-2.8**
SFJD				LR	LR		
	comp=Z,2μm,18.0s						
CHRN	**Cochrane**	**60.50**	**168**	*e*P	**P**	**00 05 49.2**	**+2.7**
	comp=Z,29nm,1.1s						
ILULI	**Ilulissat**	**61.72**	**14**	*i* P	**P**	**00 05 51.6**	**-2.9**
	comp=Z,29nm,1.2s						
	comp=Z,2μm,20.0s						
ILULI	**Ilulissat**	**61.72**	**14**	*i* P	**P**	**00 05 51.6**	**-2.9**
ILULI				pmax	pmax		
	comp=Z,29nm,1.2s						
ILULI				MLR	MLR		
	comp=Z,2μm,20.0s						
RES	**Resolute Bay**	**62.79**	**358**	P	**P**	**00 05 59.5**	**-2.1**
	comp=Z,54nm,0.9s,baz=185,slow=9.9,SNR=170						
RES	**Resolute Bay**	**62.79**	**358**	*e*P	**P**	**00 05 59.5**	**-2.1**
RES				pmax	pmax		
	comp=Z,47nm,0.8s						
RES	**Resolute Bay**	**62.79**	**358**	*e*P	**P**	**00 05 59.5**	**-2.1**
	comp=Z,47nm,0.8s						
BALM	**Baldy**	**62.89**	**333**	*e*P	**P**	**00 06 02.6**	**0.0**
BALM				pmax	pmax		
	comp=Z,42nm,0.9s						
BALM				MLR	MLR		
	comp=Z,2μm,21.0s						
BALM	**Baldy**	**62.89**	**333**	*e*P	**P**	**00 06 02.6**	**0.0**
	comp=Z,42nm,0.9s						
BALM				LR	LR		
	comp=Z,2μm,21.0s						
INK	**Inuvik**	**63.57**	**343**	P	**P**	**00 06 05.6**	**-1.2**
	comp=Z,66nm,1.0s,baz=123,slow=8.0,SNR=164						
RAGM	**Ragged Mountai**	**63.65**	**332**	*e*P	**P**	**00 06 07.4**	**-0.2**
	comp=Z,95nm,1.2s						
RAGM				LR	LR		
	comp=Z,2μm,18.0s						
BMRM	**Bremner River**	**63.86**	**333**	*e*P	**P**	**00 06 09.0**	**+0.1**
	comp=Z,51nm,0.8s						
BMRM				LR	LR		
	comp=Z,2μm,21.0s						
EYAK	**Cordova Ski Ar**	**64.21**	**332**	*e*P	**P**	**00 06 11.6**	**+0.4**
	comp=Z,88nm,0.9s						
EYAK				LR	LR		
	comp=Z,2μm,19.0s						
MENT	**Mentasta**	**64.31**	**335**	*e*P	**P**	**00 06 11.0**	**-0.8**
	comp=Z,16nm,0.7s						
DIV	**Divide**	**64.44**	**333**	*e*P	**P**	**00 06 12.7**	**-0.1**
	comp=Z,52nm,1.0s						
DIV				LR	LR		
	comp=Z,3μm,21.0s						
KLU	**Klutina**	**64.65**	**333**	*e*P	**P**	**00 06 13.6**	**-0.6**
	comp=Z,44nm,0.9s						
KLU				LR	LR		
	comp=Z,1μm,18.0s						
DOT	**Dot Lake**	**64.76**	**336**	*e*P	**P**	**00 06 14.0**	**-0.7**
	comp=Z,131nm,0.8s						
KULLO	**Kullorsuaq**	**64.86**	**9⇑**	*i*P	**P**	**00 06 12.6**	**-2.5**
	comp=Z,25nm,1.3s						
	comp=Z,3μm,19.0s						
KULLO	**Kullorsuaq**	**64.86**	**9⇑**	*i*P	**P**	**00 06 12.6**	**-2.5**
KULLO				pmax	pmax		
	comp=Z,25nm,1.3s						
KULLO				MLR	MLR		
	comp=Z,3μm,19.0s						
PAX	**Paxson**	**65.05**	**335**	*e*P	**P**	**00 06 15.6**	**-1.1**
PAX				pmax	pmax		
	comp=Z,29nm,0.9s						
PAX				MLR	MLR		
	comp=Z,1μm,19.0s						
PAX	**Paxson**	**65.05**	**335**	*e*P	**P**	**00 06 15.6**	**-1.1**
	comp=Z,29nm,0.9s						
PAX				LR	LR		
	comp=Z,1μm,19.0s						
VAH	**Vaihoa**	**65.27**	**247**	*e*P	**P**	**00 06 21.8**	**+3.0**
	comp=Z,56nm,1.1s						
SCM	**Sheep Creek Mo**	**65.40**	**333**	*e*P	**P**	**00 06 18.5**	**-0.6**
SCM				pmax	pmax		
	comp=Z,42nm,0.9s						
SCM				MLR	MLR		
	comp=Z,1μm,20.0s						
SCM	**Sheep Creek Mo**	**65.40**	**333**	*e*P	**P**	**00 06 18.5**	**-0.6**
	comp=Z,42nm,0.9s						
SCM				LR	LR		
	comp=Z,1μm,20.0s						
PMOR	**Pomariorio Ree**	**65.42**	**247**	*e*P	**P**	**00 06 23.0**	**+3.2**
	comp=Z,154nm,1.4s						
PMOR	**Pomariorio Ree**	**65.42**	**247**	*e*T	T	01 17 18.9	
	comp=Z,7.4nm,0.3s						
SML	**Sawmill**	**65.84**	**333**	*e*P	**P**	**00 06 21.2**	**-0.6**
SML				pmax	pmax		
	comp=Z,65nm,1.1s						
SML				MLR	MLR		
	comp=Z,1μm,21.0s						
SML	**Sawmill**	**65.84**	**333**	*e*P	**P**	**00 06 21.2**	**-0.6**
	comp=Z,65nm,1.1s						
SML				LR	LR		
	comp=Z,1μm,21.0s						
PMR	**Palmer**	**66.12**	**333**	*e*P	**P**	**00 06 22.5**	**-1.0**
PMR				pmax	pmax		
	comp=Z,33nm,1.0s						
PMR				MLR	MLR		
	comp=Z,1μm,20.0s						
PMR	**Palmer**	**66.12**	**333**	*e*P	**P**	**00 06 22.5**	**-1.0**
	comp=Z,33nm,1.0s						
PMR				LR	LR		
	comp=Z,1μm,20.0s						
RC01	**Rabbit Creek A**	**66.23**	**332**	*e*P	**P**	**00 06 23.4**	**-0.8**
	comp=Z,75nm,0.9s						
RC01				LR	LR		
	comp=Z,2μm,22.0s						
HDA	**Harding Lake**	**66.23**	**336**	*e*P	**P**	**00 06 23.0**	**-1.2**
	comp=Z,73nm,0.9s						
HDA				LR	LR		
	comp=Z,900nm,20.0s						
IL1	**Eielson Array**	**66.35**	**336**	*e*P	**P**	**00 06 22.3**	**-2.6**
ILAR	**Eielson Array**	**66.35**	**336**	P	**P**	**00 06 23.6**	**-1.4**
	comp=Z,48nm,1.0s,baz=111,slow=5.0,SNR=252						
ILAR				PP	**PP**	**00 08 51.1**	**0.0**
	comp=Z,8.1nm,1.1s,baz=124,slow=5.9,SNR=5.0						
ILAR				LR	LR	00 41 45.8	
	comp=Z,1μm,18.1s,baz=118,slow=42						
ILB	**Eielson Array**	**66.35**	**336**	*e*P	**P**	**00 06 23.6**	**-1.4**
ILB				*e*PP	**PP**	**00 08 51.1**	**0.0**
FYU	**Fort Yukon**	**66.47**	**338**	PFAKE		00 06 40.0	+14
FYU				LR	LR		
	comp=Z,2μm,21.0s						
RND	**Reindeer**	**66.63**	**335**	*e*P	**P**	**00 06 26.2**	**-0.7**
RND				pmax	pmax		
	comp=Z,160nm,0.9s						
RND				MLR	MLR		
	comp=Z,2μm,21.0s						
RND	**Reindeer**	**66.63**	**335**	*e*P	**P**	**00 06 26.2**	**-0.7**
	comp=Z,160nm,0.9s						
RND				LR	LR		
	comp=Z,2μm,21.0s						
KDAK	**Kodiak Island**	**66.64**	**328**	*i* P	**P**	**00 06 26.8**	**-0.1**
KDAK	**Kodiak Island**	**66.64**	**328**	*e*P	**P**	**00 06 26.6**	**-0.3**
	comp=Z,30nm,0.9s						
CCB	**Clear Creek Bu**	**66.66**	**336**	*e*P	**P**	**00 06 25.2**	**-1.8**
	comp=Z,14nm,0.7s						
CCB				LR	LR		
	comp=Z,900nm,22.0s						
WRH	**Wood River Hil**	**66.71**	**336**	*e*P	**P**	**00 06 25.6**	**-1.7**
	comp=Z,29nm,0.8s						
WRH				LR	LR		
	comp=Z,1μm,19.0s						
COLA	**College**	**66.77**	**336**	PFAKE		00 06 40.0	+12
COLA				LR	LR		
	comp=Z,1μm,19.0s						
MCK	**McKinley**	**66.78**	**335**	*e*P	**P**	**00 06 26.7**	**-1.1**
MCK				pmax	pmax		
	comp=Z,90nm,1.0s						
MCK				MLR	MLR		
	comp=Z,1μm,21.0s						
MCK	**McKinley**	**66.78**	**335**	*e*P	**P**	**00 06 26.6**	**-1.1**
	comp=Z,90nm,1.0s						
MCK				LR	LR		
	comp=Z,1μm,21.0s						
OHAK	**Old Harbor**	**66.87**	**327**	*e*P	**P**	**00 06 27.5**	**-0.9**
MDM	**Murphy Dome**	**66.95**	**336**	*e*P	**P**	**00 06 27.2**	**-1.6**
	comp=Z,45nm,1.3s						
MDM				LR	LR		
	comp=Z,1μm,21.0s						
SUMG	**Summit**	**67.06**	**14⇑**	*i*P	**P**	**00 06 27.4**	**-2.5**
	comp=Z,33nm,1.1s						
	comp=Z,1μm,19.0s						
SUMG	**Summit**	**67.06**	**14⇑**	*i*P	**P**	**00 06 27.4**	**-2.5**
SUMG				pmax	pmax		
	comp=Z,33nm,1.1s						
SUMG				MLR	MLR		
	comp=Z,1μm,19.0s						
SUMG	**Summit**	**67.06**	**14**	*e*P	**P**	**00 06 27.1**	**-2.7**
	comp=Z,46nm,1.1s						
SUMG				LR	LR		
	comp=Z,1μm,19.0s						
BWN	**Browne**	**67.16**	**335**	*e*P	**P**	**00 06 29.3**	**-0.8**
	comp=Z,252nm,1.0s						
BWN				LR	LR		
	comp=Z,1μm,19.0s						
PMOZ	**Porto Moniz, M**	**67.21**	**59**	*e*LQ	LQ	00 23 20.7	
PMOZ				*e*LR	LR	00 26 51.0	
	comp=Z,458nm,22.0s						
TRF	**Thorofare Moun**	**67.25**	**334**	*e*P	**P**	**00 06 29.9**	**-1.1**
	comp=Z,70nm,1.0s						
TRF				LR	LR		
	comp=Z,1μm,21.0s						
SPU	**Mount Spurr**	**67.32**	**332**	*e*P	**P**	**00 06 30.1**	**-1.3**
PMAR	**Madeira**	**67.45**	**59**	*e*P	**P**	**00 06 33.0**	**+0.2**
KTH	**Kantishna Hill**	**67.56**	**334**	*e*P	**P**	**00 06 31.2**	**-1.5**
	comp=Z,51nm,1.0s						
KTH				LR	LR		
	comp=Z,1μm,20.0s						
BPAW	**Bear Paw Mtn.**	**67.76**	**335**	*e*P	**P**	**00 06 32.5**	**-1.5**
	comp=Z,69nm,0.9s						
BPAW				LR	LR		
	comp=Z,1μm,19.0s						
PPT	**Papeete**	**67.85**	**245**	LR	LR	00 28 24.5	
	comp=Z,2μm,19.6s,baz=58,slow=29						
PPT2	**Papeete2**	**67.86**	**245**	*e*S	**S**	**00 15 31.7**	**-0.4**
	comp=Z,2μm,28.8s						
PPT2				*e*SS	**SS**	**00 19 57.7**	**+3.3**
	comp=Z,352nm,28.0s						
PPT2				*e*LR	LR	00 27 02.0	
	comp=Z,3μm,23.5s,baz=58						
PPLA	**Purkeypile**	**67.89**	**333**	*e*P	**P**	**00 06 33.6**	**-1.4**
	comp=Z,48nm,1.0s						
PPLA				LR	LR		
	comp=Z,900nm,22.0s						
MLY	**Manley**	**67.97**	**336**	*e*P	**P**	**00 06 34.2**	**-1.2**
	comp=Z,68nm,0.8s						
MLY				LR	LR		
	comp=Z,700nm,20.0s						
CAST	**Castle Rocks**	**68.01**	**334**	*e*P	**P**	**00 06 33.8**	**-1.8**
	comp=Z,43nm,1.0s						
CAST				LR	LR		
	comp=Z,1μm,21.0s						
COLD	**Coldfoot**	**68.54**	**338**	*e*P	**P**	**00 06 38.6**	**-0.2**
	comp=Z,80nm,1.0s						
COLD				LR	LR		
	comp=Z,798nm,22.0s						
SVW2	**Sparrevohn**	**68.95**	**331**	*e*P	**P**	**00 06 39.7**	**-1.8**
	comp=Z,20nm,0.9s						
SVW2				LR	LR		
	comp=Z,1μm,19.0s						
CHGN	**Chignik**	**69.44**	**326**	*e*P	**P**	**00 06 43.6**	**-0.9**
TT01	**Tatalina**	**69.59**	**333**	*e*P	**P**	**00 06 42.7**	**-2.6**
TTA	**Tatalina**	**69.59**	**333**	*e*P	**P**	**00 06 43.6**	**-1.9**
TTA				pmax	pmax		
	comp=Z,27nm,0.9s						
TTA	**Tatalina**	**69.59**	**333**	*e*P	**P**	**00 06 43.6**	**-1.9**
	comp=Z,27nm,0.9s						
SCO	**Scoresbysund**	**70.73**	**19⇑**	*i*P	**P**	**00 06 49.7**	**-2.5**
	comp=Z,9.9nm,1.1s						
	comp=Z,920nm,20.0s						
SCO	**Scoresbysund**	**70.73**	**19⇑**	*i*P	**P**	**00 06 49.7**	**-2.5**
SCO				pmax	pmax		
	comp=Z,10.0nm,1.1s						
SCO				MLR	MLR		
	comp=Z,930nm,20.0s						
FALS	**False Pass**	**72.08**	**324**	*e*P	**P**	**00 07 00.0**	**-0.6**
	comp=Z,184nm,1.0s						
DAG	**Danmarks Havn**	**73.62**	**13⇑**	*i*P	**P**	**00 07 06.2**	**-3.2**
	comp=Z,9.9nm,0.6s						
	comp=Z,2μm,19.0s						
DAG	**Danmarks Havn**	**73.62**	**13⇑**	*i*P	**P**	**00 07 06.2**	**-3.2**
DAG				pmax	pmax		
	comp=Z,7.0nm,0.6s						
DAG				MLR	MLR		
	comp=Z,2μm,19.0s						
UNV	**Unalaska Valle**	**73.83**	**323**	*e*P	**P**	**00 07 11.7**	**+0.7**
	comp=Z,79nm,1.0s						
PFVI	**Vila Bisbo**	**73.98**	**55**	*e*LR	LR	00 30 05.0	
	comp=Z,1μm,22.0s						
PFVI	**Vila Bisbo**	**73.98**	**55**	PFAKE		00 07 20.0	+7.7
PFVI				LR	LR		
	comp=Z,2μm,21.0s						
PCAS	**Casmilo, Conde**	**74.10**	**52**	*e*P	**P**	**00 07 11.8**	**-1.1**
PCAS	**Casmilo, Conde**	**74.10**	**52**	*e*PcP	**PcP**	**00 07 28.6**	**+0.6**
PCAS				*e*S	**S**	**00 16 44.7**	**+0.9**
PCAS	**Casmilo, Conde**	**74.10**	**52**	*e*LR	LR	00 30 00.7	
	comp=Z,1μm,18.0s						
MORF	**Marmelete**	**74.11**	**54**	*e*P	**P**	**00 07 13.5**	**+0.4**
MORF				AMS	AMS	00 35 07.3	
	comp=Z,1μm,18.1s						
MORF	**Marmelete**	**74.11**	**54**	*e*PcP	**PcP**	**00 07 29.1**	**+1.0**
MORF				*e*S	**SKiKP**	**00 16 40.1**	**+1.2**
MORF	**Marmelete**	**74.11**	**54**	*e*LR	LR	00 30 13.6	
	comp=Z,1μm,20.0s						
MORF	**Marmelete**	**74.11**	**54**	*e*P	**P**	**00 07 13.5**	**+0.4**
PNCL	**Nicolau / Gran**	**74.17**	**54**	*e*PcP	**PcP**	**00 07 28.7**	**+0.5**
PNCL				*e*S	**SKiKP**	**00 16 33.5**	**-5.3**
PNCL	**Nicolau / Gran**	**74.17**	**54**	*e*LR	LR	00 29 56.4	
	comp=Z,743nm,18.0s						
PMTG	**Montargil**	**74.35**	**53**	*e*P	**P**	**00 07 11.5**	**-2.9**
PMTG				*e*S	**SKiKP**	**00 16 30.7**	**-8.4**
PMTG	**Montargil**	**74.35**	**53**	*e*LR	LR	00 30 00.7	
	comp=Z,502nm,18.0s						
MESJ	**Messejana**	**74.42**	**54**	*e*P	**P**	**00 07 14.3**	**-0.5**
MESJ				AMS	AMS	00 33 15.0	
	comp=Z,563nm,21.6s						
MESJ	**Messejana**	**74.42**	**54**	*e*P	**P**	**00 07 14.2**	**-0.6**
	comp=Z,32nm,1.9s						
MESJ	**Messejana**	**74.42**	**54**	*e*P	**P**	**00 07 14.3**	**-0.5**
EVO	**Evora**	**74.55**	**53**	*e*P	**P**	**00 07 14.2**	**-1.4**
POLO	**Lamas de Olo**	**74.58**	**50**	*e*P	**P**	**00 07 15.6**	**-0.2**
POLO				*e*S	S	00 17 00.5	+11
POLO	**Lamas de Olo**	**74.58**	**50**	*e*LR	LR	00 30 00.7	
	comp=Z,368nm,22.0s						
PCVE	**Castro Verde**	**74.58**	**54**	*e*P	**P**	**00 07 15.0**	**-0.7**
PCVE				*e*S	S	00 17 08.8	+20
PCVE	**Castro Verde**	**74.58**	**54**	*e*LR	LR	00 30 39.8	
	comp=Z,892nm,20.0s						
PBDV	**Barranco-do-Ve**	**74.69**	**54**	*e*P	**P**	**00 07 15.0**	**-1.4**
	comp=Z,75nm,1.5s						
PBDV				*e*S	**S**	**00 16 47.6**	**-3.0**
PBDV	**Barranco-do-Ve**	**74.69**	**54**	*e*LR	LR	00 30 52.9	
	comp=Z,1μm,20.0s						
PBEJ	**Beja**	**74.69**	**54**	*e*P	**P**	**00 07 15.0**	**-1.4**
	comp=Z,25nm,2.0s						
MTE	**Manteigas**	**74.81**	**51**	*e*P	**P**	**00 07 15.9**	**-1.2**
	comp=Z,32nm,1.0s						
MTE	**Manteigas**	**74.81**	**51**	*e*PcP	**PcP**	**00 07 32.8**	**+1.7**
MTE				*e*S	**SKSac**	**00 17 19.9**	**-3.8**
MTE				*e*LQ	LQ	00 26 58.1	
MTE				*e*LR	LR	00 30 12.0	
	comp=Z,1μm,18.0s						
MTE	**Manteigas**	**74.81**	**51**	*e*P	**P**	**00 07 14.1**	**-3.0**
MTE				*e*pP	**sP**	**00 07 32.4**	**+1.1**
MTE				LR	LR		
	comp=Z,1μm,19.0s						
PVAQ	**Vaqueiros**	**74.85**	**54**	*e*PcP	**PcP**	**00 07 32.5**	**+1.3**
PVAQ				*e*S	**SKSac**	**00 17 23.6**	**-0.3**
PVAQ	**Vaqueiros**	**74.85**	**54**	*e*LR	LR	00 30 37.8	
	comp=Z,1μm,22.0s						
PCBR	**Castelo Branco**	**74.89**	**52**	*e*P	**P**	**00 07 16.0**	**-1.5**
PMRV	**Marv??o**	**74.98**	**52**	*e*P	**P**	**00 07 16.9**	**-1.2**
PMRV	**Marv??o**	**74.98**	**52**	*e*S	**SKSac**	**00 17 21.6**	**-3.3**
PMRV	**Marv??o**	**74.98**	**52**	*e*LR	LR	00 30 17.7	
	comp=Z,731nm,18.0s						
TNA	**Tin City**	**75.13**	**335**	PFAKE		00 07 30.0	+12
TNA				LR	LR		
	comp=Z,1μm,22.0s						
MVO	**Moncorvo**	**75.16**	**50**	*e*P	**P**	**00 07 16.3**	**-2.9**
	comp=Z,21nm,1.2s						
MVO	**Moncorvo**	**75.16**	**50**	*e*PcP	**PcP**	**00 07 34.9**	**+2.3**
MVO				*e*S	**sS**	**00 17 15.3**	**+2.4**
MVO	**Moncorvo**	**75.16**	**50**	*e*LR	LR	00 30 17.7	
	comp=Z,653nm,22.0s						
PBAR	**Barrancos**	**75.33**	**53**	*e*P	**P**	**00 07 18.6**	**-1.5**
PBAR	**Barrancos**	**75.33**	**53**	*e*PcP	**PcP**	**00 07 35.0**	**+1.7**
PBAR				*e*S	**S**	**00 16 49.4**	**-8.3**
PBRG	**Braganca**	**75.34**	**50**	*e*P	**P**	**00 07 17.8**	**-2.4**
PBRG	**Braganca**	**75.34**	**50**	*e*PcP	**PcP**	**00 07 35.6**	**+2.3**
PBRG				*e*S	**S**	**00 17 03.4**	**+5.6**
PBRG	**Braganca**	**75.34**	**50**	*e*LR	LR	00 30 22.4	
	comp=Z,705nm,22.0s						
GAMB	**Gambell**	**76.69**	**333**	*e*P	**P**	**00 07 27.4**	**+0.2**
	comp=Z,34nm,1.0s						
GAMB				LR	LR		
	comp=Z,800nm,21.0s						
DYA	**Yadsworthy**	**76.85**	**41**	PFAKE		00 07 40.0	+12
DYA				LR	LR		
	comp=Z,900nm,20.0s						
ESK	**Eskdalemuir**	**77.06**	**36**	*e*sP	**sP**	**00 07 44.1**	**+0.3**
ESK				LR	LR		
	comp=Z,800nm,19.0s						
PAB	**San Pablo**	**77.32**	**52**	*e*P	**P**	**00 07 30.0**	**-1.5**
PAB				pmax	pmax		
	comp=Z,51nm,1.4s						
PAB				MLR	MLR		
	comp=Z,900nm,19.0s						
PAB	**San Pablo**	**77.32**	**52**	*e*P	**P**	**00 07 30.0**	**-1.5**
	comp=Z,50nm,1.4s						
PAB				LR	LR		
	comp=Z,900nm,19.0s						
ESDC	**Sonseca Array**	**77.61**	**52**	P	**P**	**00 07 29.6**	**-3.4**
	comp=Z,6.2nm,0.6s,baz=284,slow=5.2,SNR=35						
ESDC				LR	LR	00 39 47.2	
	comp=Z,643nm,18.4s,baz=270,slow=34						
ESLA	**Sonseca Array**	**77.61**	**52**	*e*P	**P**	**00 07 30.4**	**-2.7**
	comp=Z,42nm,1.2s						
ESLA				LR	LR		
	comp=Z,1μm,19.0s						
ES19	**SONSECA Array**	**77.65**	**52**	*e*P	**P**	**00 07 29.7**	**-3.6**
CWF	**Charnwood Fore**	**78.33**	**38**	PFAKE		00 07 50.0	+13
CWF				LR	LR		
	comp=Z,1μm,21.0s						
KBS	**Kingsbay**	**80.14**	**11**	PFAKE		00 08 00.0	+14
KBS				LR	LR		
	comp=Z,1μm,22.0s						
DBIC	**Dimbokro**	**81.61**	**85**	P	**P**	**00 07 52.0**	**-3.2**
	comp=Z,11nm,1.1s,baz=278,slow=3.6,SNR=6.0						
DBIC				LR	LR	00 40 49.0	
	comp=Z,485nm,21.3s,baz=260,slow=33						
DBIC	**Dimbokro**	**81.61**	**85**	*e*P	**P**	**00 07 52.0**	**-3.2**
DBIC				pmax	pmax		
	comp=Z,42nm,1.7s						
DBIC	**Dimbokro**	**81.61**	**85**	*e*P	**P**	**00 07 52.0**	**-3.2**
	comp=Z,42nm,1.7s						
PYM	**Petit Puy Mans**	**81.96**	**45**	*e*P	**P**	**00 07 53.3**	**-3.2**
AGO	**Saint Agoulin**	**82.00**	**45**	*e*P	P	00 07 51.2	-5.5
SSB	**Saint Sauveur**	**83.10**	**45**	PFAKE		00 08 10.0	+7.5
SSB				LR	LR		
	comp=Z,1μm,22.0s						
KONO	**Kongsberg**	**83.37**	**30**	PFAKE		00 08 10.0	+6.6
KONO				LR	LR		
	comp=Z,600nm,19.0s						
WLF	**Walferdange**	**83.39**	**41**	P	**P**	**00 08 03.4**	**-0.4**
WLF	**Walferdange**	**83.39**	**41**	*e*sP	**sP**	**00 08 19.3**	**+1.2**
WLF				LR	LR		
	comp=Z,2μm,20.0s						
THEF	**They Montfort**	**83.55**	**42**	*e*P	P	00 07 59.7	-5.0
NC204	**NORSAR Array S**	**83.57**	**29**	*e*P	**P**	**00 08 05.7**	**+1.1**
NBO00	**NORSAR Array S**	**83.64**	**29**	*e*P	**P**	**00 08 03.8**	**-1.1**
NBO02	**NORSAR Array S**	**83.67**	**29**	*e*P	**P**	**00 08 01.9**	**-3.1**
NAO01	**NORSAR Array S**	**83.73**	**29**	*e*P	**P**	**00 08 03.4**	**-1.9**
NAO01				*e*pP	**sP**	**00 08 21.4**	**+1.8**
MUD	**Monsted U'grnd**	**83.83**	**34**	*i* P	**P**	**00 08 01.4**	**-4.4**
	comp=Z,600nm,19.0s						
MUD	**Monsted U'grnd**	**83.83**	**34**	*e*P	**P**	**00 08 01.4**	**-4.4**
MUD				MLR	MLR		
	comp=Z,600nm,19.0s						
NB2	**NORSAR Subarra**	**83.84**	**29**	P	**P**	**00 08 03.0**	**-2.9**
	comp=Z,24nm,1.2s,baz=284,slow=5.1						
NB2	**NORSAR Subarra**	**83.84**	**29**	P	**P**	**00 08 03.0**	**-2.9**
	baz=284,slow=5.1						
NB200	**NORSAR Array S**	**83.84**	**29**	*e*P	**P**	**00 08 03.0**	**-2.9**
NOA	**NORSAR Array B**	**83.84**	**29**	P	**P**	**00 08 03.0**	**-2.9**
	comp=Z,4.3nm,0.9s,baz=285,slow=5.0,SNR=18						
NOA				LR	LR	00 44 03.6	
	comp=Z,466nm,19.2s,baz=275,slow=35						
NC602	**NORSAR Array S**	**84.07**	**29**	*e*P	**P**	**00 08 04.8**	**-2.2**
NC602				*e*pP	**sP**	**00 08 22.0**	**+0.7**
ECH	**Echery**	**84.32**	**42**	*e*P	**P**	**00 08 05.9**	**-2.7**
LANF	**Langenberg**	**84.58**	**41**	*e*P	**P**	**00 08 06.1**	**-3.8**
BNI	**Bardonecchia**	**84.63**	**45**	PFAKE		00 08 20.0	+10
BNI				LR	LR		
	comp=Z,1μm,20.0s						
SENIN	**Lac Senin/Sane**	**84.79**	**44**	*e*P	**P**	**00 08 08.4**	**-2.8**
	comp=Z,14nm,1.0s						
SENIN				LR	LR		
	comp=Z,900nm,18.0s						
BILL	**Bilibino**	**84.86**	**339**	*e*P	**P**	**00 08 09.9**	**-1.0**
BILL				pmax	pmax		
	comp=Z,64nm,1.0s						
BILL				MLR	MLR		
	comp=Z,613nm,20.0s						
BILL	**Bilibino**	**84.86**	**339**	*e*P	**P**	**00 08 09.9**	**-1.0**
	comp=Z,47nm,0.8s						
BFO	**Black Forest**	**85.06**	**42**	*i* P	**P**	**00 08 11.6**	**-0.8**
BFO	**Black Forest**	**85.06**	**42**	*e*P	**P**	**00 08 09.5**	**-2.9**
BFO				*e*pP	**sP**	**00 08 27.1**	**+0.5**
BFO				LR	LR		
	comp=Z,1μm,21.0s						
STU	**Stuttgart**	**85.53**	**41**	PFAKE		00 08 20.0	+5.4
STU				LR	LR		
	comp=Z,1μm,22.0s						
COP	**Copenhagen**	**85.79**	**34**	*i* P	**P**	**00 08 11.2**	**-4.5**
	comp=Z,260nm,21.0s

FETA	Feichten	86.94	43	*i* P		P	00 08 19.7	-2.1
	comp=Z,10.0nm,1.2s							
NKC	Novy Kostel	87.22	39	*e*P		P	00 08 20.5	-2.5
NKC				*e*x		x	00 08 35.9	
NKC				*e*x		x	00 08 38.2	
NKC				AMS		AMS	00 47 20.0	
	comp=Z,900nm,16.5s							
NKC	Novy Kostel	87.22	39	*e*P		P	00 08 20.5	-2.5
NKC				*e*			00 08 35.9	
NKC				MLR		MLR		
	comp=Z,900nm,16.5s							
CLL	Collm	87.28	38⇑	*i*P		P	00 08 19.8	-3.3
	comp=Z,6.0nm,0.9s							
CLL				*i*			00 08 22.2	
	comp=Z,11nm,0.9s							
CLL				*e*Plp			00 08 25.0	
CLL				*i*			00 08 38.0	
CLL				*e*PP		PP	00 11 42.0	-5.1
CLL				*e*S		S	00 19 05.0	+4.0
CLL				*e*			00 19 37.0	
CLL				*e*PS		PnS	00 20 05.0	+0.9
CLL				*e*SS		SS	00 24 55.0	+10
CLL				*e*SSS		SSS	00 28 06.0	
CLL				*e*SSSS			00 31 18.0	
CLL				LmV			00 46 00.0	
	comp=Z,600nm,19.8s							
CLL				LmV			06 52 00.0	
	comp=Z,100nm,19.8s							
CLL	Collm	87.28	38⇑	*i*P		P	00 08 19.8	-3.3
CLL				*i*			00 08 38.0	
CLL				*e*S		S	00 19 05.0	+4.0
CLL				pmax		pmax		
	comp=Z,6.0nm,0.9s							
CLL				MLR		MLR		
	comp=Z,600nm,19.8s							
CLL	Collm	87.28	38	*e*P		P	00 08 20.2	-2.9
CLL				*e*pP		sP	00 08 38.5	+1.1
CLL				LR		LR		
	comp=Z,700nm,20.0s							
BSD	Bornholm Skovb	87.31	34	*i* P		P	00 08 24.6	+1.4
	comp=Z,810nm,19.0s							
BSD	Bornholm Skovb	87.31	34	*e*P		P	00 08 24.6	+1.4
BSD				MLR		MLR		
	comp=Z,820nm,19.0s							
VLC	Villacollemand	87.41	46	PFAKE			00 08 30.0	+6.0
VLC				LR		LR		
	comp=Z,400nm,22.0s							
BRG	Berggiesshubel	87.97	38	*e*P		P	00 08 22.2	-4.3
	comp=Z,20nm,1.8s							
BRG				*e*			00 08 40.9	
	comp=Z,14nm,1.4s							
BRG				PP		PP	00 11 48.0	-4.7
BRG				S		PS	00 20 15.0	+1.0
BRG				SS		SS	00 25 03.0	+7.9
	comp=N,359nm,18.1s							
	comp=E,586nm,20.7s							
	comp=Z,754nm,21.5s							
BRG	Berggiesshubel	87.97	38	*e*P		P	00 08 22.2	-4.3
BRG				*e*			00 08 40.9	
BRG							00 11 48.0	
BRG				S		PS	00 20 15.0	+1.0
BRG				pmax		pmax		
	comp=Z,20nm,1.8s							
BRG				MLR		MLR		
	comp=N,359nm,18.1s							
BRG				MLR		MLR		
	comp=E,586nm,20.7s							
BRG				MLR		MLR		
	comp=Z,754nm,21.5s							
ABTA	Abfaltersbach	88.19	43	*i* P		P	00 08 25.3	-2.4
	comp=Z,8.6nm,1.0s							
ABTA				*i* sP		sP	00 08 43.5	+1.4
	comp=Z,16nm,1.1s							
KHC	Kasperske Hory	88.23	40	*e*P		P	00 08 25.1	-2.7
KHC				*e*x		x	00 08 41.0	
KHC				*e*x		x	00 08 43.1	
KHC				*e*PP		PP	00 11 52.9	-2.0
KHC				*e*S		S	00 19 13.0	+2.7
KHC				*e*PS		PS	00 20 17.1	-0.1
KHC				AMS		AMS	00 43 20.0	
	comp=Z,2μm,21.4s							
KHC	Kasperske Hory	88.23	40	*e*P		P	00 08 25.1	-2.7
KHC				*e*			00 08 41.0	
KHC				*e*			00 11 52.9	
KHC				*e*S		S	00 19 13.0	+2.7
KHC				*e*PS		PS	00 20 17.1	-0.1
KHC				MLR		MLR		
	comp=Z,2μm,21.4s							
KHC	Kasperske Hory	88.23	40	*e*P		P	00 08 25.1	-2.7
	comp=Z,4.7nm,1.0s							
KHC				LR		LR		
	comp=Z,700nm,21.0s							
TAM	Tamanrasset	88.29	67	*e*P		P	00 08 28.9	+0.1
TAM				pmax		pmax		
	comp=Z,5.0nm,1.3s							
TAM				MLR		MLR		
	comp=Z,800nm,20.0s							
TAM	Tamanrasset	88.29	67	*e*P		P	00 08 28.9	+0.1
	comp=Z,4.6nm,1.3s							
TAM				LR		LR		
	comp=Z,800nm,20.0s							
GEC2	GERESS Array S	88.39	40	*e*P		P	00 08 25.7	-3.0
GEC2				pmax		pmax		
	comp=Z,14nm,1.2s							
GEC2				MLR		MLR		
	comp=Z,2μm,21.0s							
GEC2	GERESS Array S	88.39	40	*e*P		P	00 08 25.7	-3.0
	comp=Z,14nm,1.2s							
GEC2				LR		LR		
	comp=Z,2μm,21.0s							
GERES	GERESS Array B	88.39	40	P		P	00 08 25.4	-3.3
	comp=Z,4.7nm,1.0s,baz=274,slow=2.0,SNR=13							
GERES				LR		LR	00 43 56.4	
	comp=Z,1μm,20.9s,baz=272,slow=33							
GEA0	GERESS Array S	88.39	40	*e*P		P	00 08 23.9	-4.7
PVCC	Panska Ves	88.45	39	AMS		AMS	00 47 50.0	
	comp=Z,600nm,18.1s							
PRA	Prague	88.50	39	AMS		AMS	00 43 00.0	
	comp=Z,1μm,23.9s							
PRU	Pruhonice	88.59	39	*e*S		S	00 19 17.9	+4.3
PRU				*e*PS		PS	00 20 21.9	+0.9
PRU				AMS		AMS	00 43 10.0	
	comp=Z,1μm,22.5s							
KBA	Koelnbreinsper	88.65	42	*i* P		P	00 08 27.5	-2.5
	comp=Z,11nm,1.1s							
KEST	Kesra	88.66	54	P		P	00 08 28.7	-1.5
	comp=Z,6.1nm,0.9s,baz=330,slow=1.6,SNR=10							
KEST				LR		LR	00 47 07.4	
	comp=Z,246nm,18.0s,baz=218,slow=35							
KEST	Kesra	88.66	54	*e*P		P	00 08 28.7	-1.5
	comp=Z,127nm,2.0s							
GOPC	GO Pecny, Ondr	88.76	39	*e*S		S	00 19 11.7	-3.6
GOPC				*e*PS		PS	00 20 25.5	+2.5
GOPC				AMS		AMS	00 43 20.0	
	comp=Z,2μm,22.4s							
MOA	Molln	89.03	41	*i* P		P	00 08 30.1	-1.5
	comp=Z,5.4nm,1.2s							
TRI	Trieste	89.32	43	PFAKE			00 08 40.0	+7.1
TRI				LR		LR		
	comp=Z,600nm,21.0s							
UPC	Upice	89.33	38	*e*PS		PS	00 20 30.3	+1.1
UPC				AMS		AMS	00 49 00.0	
	comp=Z,600nm,16.3s							
TREC	Trest	89.38	40	AMS		AMS	00 43 40.0	
	comp=Z,2μm,20.7s							
DPC	Dobruska-Polom	89.57	38	*e*P		P	00 08 31.6	-2.5
DPC				*e*x		x	00 08 47.5	
DPC				*e*x		x	00 08 49.7	
DPC				*e*PP		PP	00 11 58.9	-6.7
DPC				AMS		AMS	00 48 10.0	
	comp=Z,700nm,19.5s							
DPC	Dobruska-Polom	89.57	38	*e*P		P	00 08 31.6	-2.5
DPC				*e*			00 08 47.5	
DPC				*e*			00 11 58.9	
DPC				MLR		MLR		
	comp=Z,700nm,19.5s							
KRLC	Kraliky	89.94	39	*e*x		sP	00 08 51.5	+1.3
ARSA	Arzberg	90.03	42	*i* PcP		P	00 08 35.9	-0.4
	comp=Z,4.6nm,1.0s							
CONA	Conrad Observa	90.04	41	*i* P		P	00 08 33.2	-3.2
	comp=Z,4.5nm,0.8s							
CONA				*i* sP		sP	00 08 52.2	+1.4
	comp=Z,6.8nm,0.9s							
VRAC	Vranov	90.07	39⇑	*i*P		P	00 08 34.4	-2.0
LVZ	Lovozero	90.37	19	PFAKE			00 08 50.0	+13
LVZ				LR		LR		
	comp=Z,400nm,19.0s							
FIA0	FINESS Array S	90.45	26	*e*P		P	00 08 34.7	-3.2
FIA0	FINESS Array S	90.45	26	*e*P		P	00 08 34.6	-3.2
FIA1	FINESS Array S	90.45	26	*e*sP		sP	00 08 52.5	+0.3
FINES	FINESS Array B	90.45	26	P		P	00 08 34.6	-3.2
	comp=Z,3.9nm,0.9s,baz=17,slow=2.0,SNR=9.2							
FINES	FINESS Array B	90.45	26	*i* P		P	00 08 35.5	-2.4
FINES				pmax		pmax		
	comp=Z,4.0nm,0.9s							
MORC	Moravsky Berou	90.50	39	PFAKE			00 08 50.0	+12
MORC				LR		LR		
	comp=Z,4μm,21.0s							
OKC	Ostrava-Krasne	90.85	39	*e*S		S	00 19 28.9	-5.7
OKC				AMS		AMS	00 49 00.0	
	comp=Z,900nm,20.0s							
SEY	Seymchan	92.28	337⇓	*e*P		P	00 08 46.0	-0.4
CUC	Castrocucco	92.44	48	PFAKE			00 09 00.0	+12
CUC				LR		LR		
	comp=Z,700nm,20.0s							
PSZ	Piszkesteto	92.60	40⇓	*i*P		P	00 08 48.0	-0.3
PSZ	Piszkesteto	92.60	40	*e*P		P	00 08 47.6	-0.6
PSZ				pmax		pmax		
	comp=Z,8.0nm,0.9s							
PSZ				MLR		MLR		
	comp=Z,900nm,21.0s							
PSZ	Piszkesteto	92.60	40	*e*P		P	00 08 47.6	-0.6
	comp=Z,7.7nm,0.9s							
PSZ				LR		LR		
	comp=Z,900nm,21.0s							
TIXI	Tiksi	93.04	349*c*	*i*P		P	00 08 47.1	-2.6
TIXI				pmax		pmax		
	comp=Z,21nm,1.2s							
TIXI	Tiksi	93.04	349	*e*PP		PP	00 12 26.4	-5.9
TIXI				LR		LR		
	comp=Z,701nm,22.0s							
TIP	Timpagrande	93.38	49	PFAKE			00 09 00.0	+7.9
TIP				LR		LR		
	comp=Z,900nm,20.0s							
KWP	Kalwaria Pacla	93.68	38⇓	*i*P		P	00 08 49.7	-3.4
UZH	Uzhgorod	93.82	39	*e*P		P	00 08 55.6	+1.9
UZH				*e*			00 09 09.4	
PEA1	Petropavlovsk-	94.66	327	*e*P		P	00 08 55.9	-1.6
PETK	Petropavlovsk-	94.66	327	P		P	00 08 55.9	-1.6
	comp=Z,14nm,0.9s,baz=91,slow=9.0,SNR=7.5							
PETK				LR		LR	00 52 23.3	
	comp=Z,327nm,21.9s,baz=61,slow=36							
KLMR	Klimovskoe	96.26	23	*e*P		P	00 09 00.1	-4.5
KLMR				*e**SP		sP	00 09 17.6	-1.4
KLMR				*e*			00 12 52.2	
KLMR				pmax		pmax		
	comp=Z,9.0nm,1.3s							
KIEV	Kiev	96.98	35	PFAKE			00 09 20.0	+12
KIEV				LR		LR		
	comp=Z,1μm,21.0s							
AKASG	Malin Array Be	96.98	35	PP		PP	00 12 59.1	-4.3
	comp=Z,0.3nm,0.3s,baz=304,slow=6.5,SNR=4.5							
AKASG				LR		LR	00 50 13.9	
	comp=Z,896nm,20.5s,baz=320,slow=34							
AKBB	Malin Array Si	96.98	35	*e*PP		PP	00 12 59.1	-4.3
AKBB				LR		LR		
	comp=Z,1μm,21.0s							
MLR	Muntele Rosu	97.38	41	PFAKE			00 09 20.0	+10
MLR				LR		LR		
	comp=Z,800nm,20.0s							
AGG	Agios Georgios	97.51	48	PFAKE			00 09 20.0	+9.1
AGG				LR		LR		
	comp=Z,1μm,19.0s							
OBN	Obninsk	98.44	29	*e*P		P	00 09 12.7	-1.9
OBN				*e*PPP		PPP	00 15 18.1	
OBN				pmax		pmax		
	comp=Z,3.0nm,1.0s							
OBN				MLR		MLR		
	comp=Z,542nm,19.0s							
OBN	Obninsk	98.44	29	PFAKE			00 09 20.0	+5.4
OBN				LR		LR		
	comp=Z,500nm,19.0s							
NRIK	Noril'sk	98.79	2	P		P	00 09 13.1	-2.8
	comp=Z,3.2nm,1.0s,baz=28,slow=4.4,SNR=5.4							
NRIK				PP		PP	00 13 13.9	-2.7
	comp=Z,7.6nm,1.0s,baz=22,slow=6.7,SNR=8.0							
NRIK				LR		LR	00 55 11.5	
	comp=Z,516nm,21.6s,baz=354,slow=36							
TIRR	Tirgusor	99.41	41	PFAKE			00 09 30.0	+11
TIRR				LR		LR		
	comp=Z,800nm,20.0s							
SNAA	Sanae	99.67	161⇑	*e*P		Pdif	00 09 20.8	+1.1
SNAA				pmax		pmax		
	comp=Z,276nm,1.0s							
YAK	Yakutsk	100.64	343	PFAKE			00 09 30.0	+5.8
YAK				LR		LR		
	comp=Z,700nm,21.0s							
IDI	Anoyia	100.82	50	PFAKE			00 09 40.0	+14
IDI				LR		LR		
	comp=Z,300nm,22.0s							
BKZ	Black Stump Fm	101.99	232	PFAKE			00 09 40.0	+9.2
BKZ				LR		LR		
	comp=Z,1μm,18.0s							
ANN	Anapa	104.78	37	*e*P		Pdif	00 09 39.6	-3.4
BR101	Keskin Array S	105.08	43	*e*PKiKP		PKiKP	00 13 58.0	-1.2
BR101				*e*PKKPbc		PKKPbc	00 25 27.0	0.0
BRTR	Keskin Array B	105.08	43	PKiKP		PKiKP	00 13 58.0	-1.2
	comp=Z,0.9nm,0.8s,baz=252,slow=2.5,SNR=4.5							
BRTR				PKKPbc		PKKPbc	00 25 27.0	0.0
	comp=Z,1.0nm,0.7s,baz=136,slow=4.9,SNR=10.0							
ARU	Arti	106.25	19	*e*P		PP	00 14 08.2	-4.6
ARU				LR		LR		
	comp=Z,700nm,19.0s							
CSS	Mathiatis	107.19	47	PFAKE			00 14 10.0	
CSS				LR		LR		
	comp=Z,100nm,19.0s							
TSUM	Tsumeb	108.08	106	PFAKE			00 14 20.0	
TSUM				LR		LR		
	comp=Z,900nm,21.0s							
KIV	Kislovodsk	108.32	35	*e*P		Pdif	00 09 53.6	-5.4
KIV				*e*			00 20 35.5	
KIV				*e*PS		PS	00 23 50.3	-3.3
KIV				*e*SS		SS	00 29 40.9	-0.1
KIV				pmax		pmax		
	comp=Z,3.0nm,1.0s							
KIV	Kislovodsk	108.32	35	PFAKE			00 14 20.0	
KIV				LR		LR		
	comp=Z,300nm,20.0s							
KBZ	Khabaz	108.58	36	PKiKP		PKiKP	00 14 04.6	-0.8
	comp=Z,0.9nm,0.8s,baz=188,slow=0.7,SNR=4.4							
GNI	Garni	111.88	38	PFAKE			00 14 20.0	
GNI				LR		LR		
	comp=Z,300nm,20.0s							
BRVK	Borovoye	112.48	14⇓	*i*PKIKP		PKiKP	00 14 12.5	-0.1
BRVK	Borovoye	112.48	14	*e*PP		PP	00 14 49.6	-8.3
BRVK				LR		LR		
	comp=Z,1μm,21.0s							
ABKAR	Akbulak array	112.64	22	*e*PKiKP		PKiKP	00 14 13.2	+0.3
USRK	Ussuriysk Ar.	113.48	330	PKiKP		PKiKP	00 14 14.2	-0.6
	comp=Z,7.5nm,0.9s,baz=141,slow=0.8,SNR=12							
HNR	Honiara	113.69	265	PFAKE			00 14 30.0	
HNR				LR		LR		
	comp=Z,600nm,20.0s							
SYO	Syowa Base	113.96	162⇑	*e*PP		PP	00 15 07.6	-1.2
ZAA1	Zalesovo Array	113.99	5	*e*PKiKP		PKiKP	00 14 14.6	-0.8
ZAA1				*e*PP		PP	00 14 57.8	-11
ZAA1				*e*PKKPbc		PKKPab	00 25 02.6	-3.2
ZAA0	Zalesovo Array	113.99	5	*e*PKiKP		PKiKP	00 14 13.8	-1.6
ZALV	Zalesovo Beam	113.99	5	PKiKP		PKiKP	00 14 14.6	-0.8
	comp=Z,4.4nm,0.5s,baz=275,slow=2.1,SNR=24							
ZALV				PP		PP	00 14 57.8	-11
	comp=Z,5.2nm,0.9s,baz=339,slow=5.0,SNR=5.2							
ZALV				PKKPbc		PKKPab	00 25 02.6	-3.2
	comp=Z,0.8nm,0.6s,baz=176,slow=3.8,SNR=4.5							
MDJ	Mudanjiang	114.31	332	PFAKE			00 14 30.0	+14
MDJ				LR		LR		
	comp=Z,500nm,20.0s							
HIA	Hailar	114.39	341	PFAKE			00 14 30.0	+14
HIA				LR		LR		
	comp=Z,400nm,20.0s							
MAJO	Matsushiro	115.23	320⇑	*i*PKIKP		PKPdf	00 14 18.8	+0.4
MJAR	Matsushiro Arr	115.23	320	PKP		PKPdf	00 14 17.0	-1.3
	comp=Z,3.2nm,1.0s,baz=65,slow=1.3,SNR=6.3							
BOSA	Boshof	115.67	116	PKP		PKPdf	00 14 18.3	-1.2
	comp=Z,15nm,0.8s,baz=267,slow=1.1,SNR=24							
BOSA				PKKPbc		PKKPbc	00 24 54.4	+2.1
	comp=Z,4.0nm,1.0s,baz=173,slow=6.4,SNR=3.4							
BOSA	Boshof	115.67	116	*e*PKPdf		PKPdf	00 14 18.3	-1.2
BOSA				*e*PKPdf		PKiKP	00 14 20.0	+0.5
BOSA				*e*PKKPbc		PKKPbc	00 24 54.4	+2.1
TLY	Talaya	115.83	352	PFAKE			00 14 30.0	+11
TLY				LR		LR		
	comp=Z,500nm,20.0s							
LBTB	Lobatse	115.92	112	*e*PKIKP		PKPdf	00 14 20.9	+0.9
LBTB	Lobatse	115.92	112	*e*PKPdf		PKPdf	00 14 20.9	+0.9
KURK	Kurchatov	116.40	10⇑	*i*PKIKP		PKPdf	00 14 19.5	-0.6
KURK				pmax		pmax		
	comp=Z,5.0nm,1.0s							
KURK	Kurchatov	116.40	10	*e*PKPdf		PKPdf	00 14 19.1	-1.1
KURK				LR		LR		
	comp=Z,1μm,20.0s							
ZAK	Zakamensk	117.14	352	*e*PKIKP		PKPdf	00 14 21.3	-0.4
ZAK				pmax		pmax		
	comp=Z,2.0nm,1.0s							
LSZ	Lusaka	117.74	101	*e*PKIKP		PKPdf	00 14 24.7	+0.9
LSZ				MLR		MLR		
	comp=Z,600nm,21.0s							
LSZ	Lusaka	117.74	101	*e*PKPdf		PKPdf	00 14 24.7	+0.9
LSZ				LR		LR		
	comp=Z,600nm,21.0s							
ULN	Ulaanbaatar	118.98	349*d*	*i*PKIKP		PKPdf	00 14 25.7	+0.3
ULN				pmax		pmax		
	comp=Z,8.0nm,0.8s							
ULN	Ulaanbaatar	118.98	349	*e*PKPdf		PKPdf	00 14 25.8	+0.3
ULN				LR		LR		
	comp=Z,700nm,21.0s							
SONA1	Songino Array	119.12	349	*e*PKPdf		PKPdf	00 14 25.0	-0.6
SONA0	Songino Array	119.13	349	*e*PKPdf		PKPdf	00 14 25.3	-0.4
SONA0				*e*PP		PP	00 15 40.4	-4.3
SONA0				*e*PKKPbc		PKKPbc	00 24 38.9	-1.9
SONM	Songino Array	119.13	349	PKP		PKPdf	00 14 25.3	-0.4
	comp=Z,6.0nm,0.7s,baz=325,slow=0.7,SNR=47							
SONM				PP		PP	00 15 40.4	-4.3
	comp=Z,2.6nm,0.9s,baz=20,slow=4.7,SNR=4.1							
SONM				PKKPbc		PKKPbc	00 24 38.9	-1.9
	comp=Z,1.4nm,0.8s,baz=193,slow=4.0,SNR=8.1							
RABL	Rabaul	120.39	272	PFAKE			00 14 40.0	+11
RABL				LR		LR		
	comp=Z,1μm,20.0s							
KS01	Wonju Array Si	120.55	328	*e*PKPdf		PKPdf	00 14 28.0	-0.5
KSRS	Korea Array	120.55	327	PKP		PKPdf	00 14 28.6	+0.1
	comp=Z,45nm,0.8s,baz=10,slow=1.4,SNR=139							
KS15	Wonju Array Si	120.58	328	*e*PKPdf		PKPdf	00 14 28.6	0.0
KSAR	Wonju Array Be	120.58	328	PKiKP		PKPdf	00 14 28.6	0.0
KSAR	Wonju Array Be	120.58	328	PKP		PKPdf	00 14 28.6	0.0
MAKZ	Makanchi	120.72	8	*e*PKIKP		PKPdf	00 14 27.1	-1.5
MAKZ				MLR		MLR		
	comp=Z,600nm,21.0s							
MAKZ	Makanchi	120.72	8	*e*PKPdf		PKPdf	00 14 27.1	-1.5
MAKZ				LR		LR		
	comp=Z,600nm,21.0s							
MK31	Makanchi Array	120.78	8	*e*PKIKP		PKPdf	00 14 27.3	-1.4
MK31	Makanchi Array	120.78	8	*e*PKPdf		PKPdf	00 14 27.3	-1.4
MK32	Makanchi Array	120.78	8	*e*PKPdf		PKPdf	00 14 26.7	-2.0
MK32				*e*PP		PP	00 15 41.9	-14
MK32				*e*PKKPbc		PKKPbc	00 24 35.3	+0.8
MKAR	Makanchi Array	120.78	8	PKP		PKPdf	00 14 26.7	-2.0
	comp=Z,2.0nm,0.4s,baz=303,slow=3.0,SNR=31							
MKAR				PP		PP	00 15 41.9	-14
	comp=Z,1.5nm,0.8s,baz=20,slow=5.1,SNR=4.4							
MKAR				PKKPbc		PKKPbc	00 24 35.3	+0.7
	comp=Z,0.1nm,0.3s,baz=243,slow=4.8,SNR=3.5							
MKAR	Makanchi Array	120.78	8*c*	*i*PKIKP		PKPdf	00 14 27.2	-1.5
MKAR				pmax		pmax		
	comp=Z,2.0nm,0.4s							
MKAR	Makanchi Array	120.78	8	*e*PKPdf		PKPdf	00 14 27.3	-1.4
MK01	Makanchi Array	120.80	8	*e*PKPdf		PKPdf	00 14 27.1	-1.7
GEYT	Alibeck	120.87	31	PKP		PKPdf	00 14 28.2	-0.9
	comp=Z,8.3nm,0.5s,baz=275,slow=4.4,SNR=31							
MAW	Mawson	121.15	167	PKP		PKPdf	00 14 28.8	+0.2
	comp=Z,5.5nm,0.7s,baz=295,slow=4.8,SNR=9.1							
JNU	Nakatsue	122.01	322	*e*PKPdf		PKPdf	00 14 31.4	-0.1
DL2	Dalian	122.46	333	PKP		PKPdf	00 14 31.9	-0.2
EKS2	Erkin-Say	122.99	16	*e*PKIKP		PKPdf	00 14 34.0	+0.8
EKS2				MLR		MLR		
	comp=Z,700nm,20.0s							
EKS2	Erkin-Say	122.99	16	*e*PKPdf		PKPdf	00 14 34.0	+0.8
EKS2				LR		LR		
	comp=Z,700nm,20.0s							
AAK	Ala-Archa	123.21	16*c*	*i*PKIKP		PKPdf	00 14 33.5	-0.2
AAK	Ala-Archa	123.21	16	*e*PKPdf		PKPdf	00 14 33.6	-0.1
AAK				LR		LR		
	comp=Z,700nm,21.0s							
TKM2	Tokmak 2	123.22	15	*e*PKIKP		PKPdf	00 14 33.1	-0.7
TKM2				MLR		MLR		
	comp=Z,799nm,22.0s							
TKM2	Tokmak 2	123.22	15	*e*PKPdf		PKPdf	00 14 33.1	-0.7
TKM2				LR		LR		
	comp=Z,799nm,22.0s							
BJI	Beijing	123.69	338	PKP		PKPdf	00 14 34.8	+0.3
BJI				LR		LR		
	comp=Z,570nm,25.8s							
BJT	Baijiatuau	123.72	338	*e*PKIKP		PKPdf	00 14 34.9	+0.4
BJT				MLR		MLR		
	comp=Z,600nm,22.0s							
BJT	Baijiatuau	123.72	338	*e*PKPdf		PKPdf	00 14 34.9	+0.4
BJT				LR		LR		
	comp=Z,600nm,22.0s							
WMQ	Urumqi	124.28	4	PKP		PKPdf	00 14 35.5	-0.1
WMQ				sPKP			00 14 51.2	
WMQ				PP		PP	00 16 24.1	+4.5
WMQ				SKS		SKSdf	00 21 44.4	-1.0
WMQ				SKKS		SKKSac	00 23 10.8	-6.4
WMQ				SS		SS	00 33 15.9	+7.8
WMQ				AMB		AMB		
	comp=Z,34nm,12.0s							
WMQ				LR		LR		
	comp=Z,240nm,21.4s							
WMQ				LR		LR		
	comp=Z,300nm,18.2s							
WMQ				LR		LR		
	comp=Z,260nm,21.4s							
KMBO	Kilima Mbogo	124.30	83	PKP		PKPdf	00 14 37.4	+0.7
	comp=Z,3.0nm,0.7s,baz=343,slow=1.2,SNR=9.4							
KMBO	Kilima Mbogo	124.30	83	*e*PKPdf		PKPdf	00 14 37.3	+0.7
KMBO				LR		LR		
	comp=Z,400nm,20.0s							
HHC	Hu-ho-hao-te	124.49	342	*e*PKP		PKPdf	00 14 36.8	+0.6
HHC				sPKP			00 14 49.6	
HHC				PP		PP	00 16 25.6	+4.4
HHC				SKS		SKSdf	00 21 48.3	+2.3
HHC				SS		SS	00 33 11.4	+0.2
HHC				AMB		AMB		
	comp=Z,110nm,8.7s							
HHC				LR		LR		
	comp=Z,390nm,20.8s							
HHC				LR		LR		

GTA				LR	LR		
	comp=Z,450nm,20.0s						
KBL	**Kabul**	**128.68**	**25**	*e*PKIKP	**PKPdf**	**00 14 44.0**	**-0.5**
KBL				MLR	MLR		
	comp=Z,300nm,20.0s						
KBL	**Kabul**	**128.68**	**25**	*e*PKPdf	**PKPdf**	**00 14 44.0**	**-0.5**
KBL				LR	LR		
	comp=Z,300nm,20.0s						
UOSS	**Minazif**	**129.08**	**44**	PFAKE		00 15 00.0	+15
UOSS				LR	LR		
	comp=Z,300nm,20.0s						
NJ2	**Nanjing**	**129.38**	**331**	*e*PKP	**PKPdf**	**00 14 46.1**	**+0.5**
STKA	**Stephens Creek**	**130.71**	**238**	PKP	**PKPdf**	**00 14 49.2**	**+1.2**
	comp=Z,8.0nm,0.9s,baz=93,slow=4.3,SNR=14						
LZH	**Lanzhou**	**130.95**	**348**	*e*PKP	**PKPdf**	**00 14 49.8**	**+1.1**
LZH				sPKP		00 15 01.9	
LZH				PP	**PP**	**00 17 10.3**	**+6.5**
LZH				PKS	**PKSdf**	**00 18 27.7**	**+2.3**
LZH				SKS	**SKSdf**	**00 21 56.0**	**-2.2**
LZH				AMB	AMB		
	comp=Z,110nm,4.6s						
LZH				LR	LR		
	comp=Z,1μm,19.5s						
LZH				LR	LR		
	comp=Z,1μm,19.4s						
LZH				LR	LR		
	comp=Z,2μm,20.1s						
XAN	**Xi'an**	**131.57**	**342**	PKP	**PKPdf**	**00 14 50.1**	**+0.3**
XAN				sPKP		00 15 02.5	
XAN				PKS	**PKSdf**	**00 18 21.5**	**-4.9**
XAN				SKS	**SKSdf**	**00 21 53.2**	**-6.0**
XAN				LR	LR		
	comp=Z,280nm,23.9s						
XAN				LR	LR		
	comp=Z,640nm,25.0s						
XAN				LR	LR		
	comp=Z,540nm,22.8s						
WSAR	**Wadi Sarin**	**131.86**	**43**	SKPbc	**SKPbc**	**00 18 12.7**	**-1.4**
	comp=Z,32nm,1.0s,baz=351,slow=1.0,SNR=14						
WHN	**Wuhan**	**132.70**	**334**	⇓PKP	**PKPdf**	**00 14 52.3**	**+0.4**
WHN				LR	LR		
	comp=Z,990nm,25.8s						
SSLB	**Suanglung**	**134.75**	**322**	*e*PKPdf	**PKPdf**	**00 14 56.7**	**+0.7**
SSLB				LR	LR		
	comp=Z,400nm,22.0s						
ENH	**Enshi**	**134.85**	**339**	*e*PKPdf	**PKPdf**	**00 14 56.2**	**+0.2**
ENH				LR	LR		
	comp=Z,500nm,21.0s						
BBOO	**Buckleboo**	**135.01**	**235**	*e*PKPdf	**PKPdf**	**00 14 57.2**	**+1.1**
TPUB	**Ta-pu**	**135.31**	**322**	*e*PKPdf	**PKPdf**	**00 14 59.5**	**+2.4**
TPUB				LR	LR		
	comp=Z,300nm,21.0s						
CD2	**Chengdu**	**135.95**	**346**	PKP	**PKPdf**	**00 14 58.8**	**+0.7**
CD2				PP	**PP**	**00 17 36.8**	**+1.3**
CD2				SKS	**SKSdf**	**00 22 06.4**	**-0.6**
CD2				SKKS	**SKKSac**	**00 24 27.3**	**-2.6**
CD2				AMB	AMB		
	comp=Z,130nm,6.5s						
CD2				LR	LR		
	comp=Z,440nm,20.2s						
CD2				LR	LR		
	comp=Z,490nm,22.6s						
LSA	**Lhasa**	**138.52**	**2**	*e*PKIKP	**PKPdf**	**00 15 04.6**	**+1.2**
LSA				MLR	MLR		
	comp=Z,500nm,21.0s						
LSA	**Lhasa**	**138.52**	**2**	*e*PKPdf	**PKPdf**	**00 15 04.6**	**+1.2**
LSA				LR	LR		
	comp=Z,500nm,21.0s						
AS01	**Alice Springs**	**138.89**	**248**	*e*PKPpre	PKPpre	00 14 57.6	
AS31	**Alice Springs**	**138.93**	**248**	*e*PKPpre	PKPpre	00 14 57.8	
AS31				*e*PKPdf	**PKPdf**	**00 15 04.5**	**+0.8**
AS31				*e*SKPbc	**SKiKP**	**00 18 38.3**	**-1.5**
ASAR	**Alice Springs**	**138.93**	**248**	PKhKP	PKPpre	00 14 57.8	
	comp=Z,2.8nm,0.8s,baz=108,slow=3.0,SNR=22						
ASAR				PKP	**PKPdf**	**00 15 04.5**	**+0.8**
	comp=Z,12nm,0.7s,baz=99,slow=1.9,SNR=41						
ASAR				SKPbc	**SKiKP**	**00 18 38.3**	**-1.5**
	comp=Z,2.0nm,1.1s,baz=113,slow=4.2,SNR=4.1						
WB2	**Warramunga Arr**	**138.96**	**253**	*e*PKPpre	PKPpre	00 14 57.7	
WRAB	**Tennant Creek**	**138.96**	**253**	*c i*PKIKP	**PKPdf**	**00 15 04.8**	**+1.0**
WRAB				pmax	pmax		
	comp=Z,89nm,1.0s						
WR1	**Warramunga Arr**	**138.97**	**253**	*e*PKPpre	PKPpre	00 14 56.5	
WR1				*e*PKPdf	**PKPdf**	**00 15 04.6**	**+0.8**
WR1				*e*SKPbc	**SKPbc**	**00 18 38.1**	**+1.6**
WRA	**Warramunga Arr**	**138.97**	**253**	PKhKP	PKPpre	00 14 56.5	
	comp=Z,2.6nm,0.7s,baz=97,slow=3.2,SNR=15						
WRA				PKP	**PKPdf**	**00 15 04.6**	**+0.8**
	comp=Z,20nm,0.9s,baz=89,slow=1.8,SNR=49						
WRA				SKPbc	**SKPbc**	**00 18 38.1**	**+1.5**
	comp=Z,1.9nm,1.0s,baz=107,slow=1.5,SNR=3.6						
PYUN	**Piuthan**	**139.11**	**13**	*e*P	**PKPdf**	**00 15 01.9**	**-2.3**
	comp=Z,37nm,0.8s						
FAKI	**Fak Fak**	**139.49**	**280**	PFAKE		00 15 20.0	+15
FAKI				LR	LR		
	comp=Z,800nm,22.0s						
GKN	**Gorkha**	**139.53**	**11**	*e*P	**PKPdf**	**00 15 04.1**	**-0.8**
	comp=Z,45nm,0.9s						
KOLN	**Koldanda**	**139.56**	**12**	*e*P	**PKPdf**	**00 15 05.0**	**0.0**
	comp=Z,9.8nm,0.5s						
KKN	**Kakani**	**139.85**	**10**	*e*P	**PKPdf**	**00 15 05.6**	**0.0**
	comp=Z,27nm,0.8s						
PKIN	**Phulchoki**	**140.08**	**10**	*e*P	**PKPdf**	**00 15 08.5**	**+2.5**
	comp=Z,19nm,0.9s						
KMI	**Kunming**	**141.73**	**345**	PKP	**PKPdf**	**00 15 09.0**	**0.0**
KMI				sPKP		00 15 21.1	
KMI				PP	**PP**	**00 18 14.9**	**+3.3**
KMI				SKKS		00 25 05.1	
KMI				SS	**SS**	**00 36 41.2**	**+0.8**
KMI				AMB	AMB		
	comp=Z,73nm,3.6s						
KMI				LR	LR		
	comp=Z,260nm,24.1s						
KMI				LR	LR		
	comp=Z,220nm,22.5s						
KMI				LR	LR		
	comp=Z,360nm,27.4s						
MTN	**Manton Dam**	**142.15**	**264**	*e*PKPdf	**PKPdf**	**00 15 08.3**	**-1.4**
RER	**Riviere de l'E**	**143.82**	**109**	*e*PKPdf	**PKPdf**	**00 15 17.7**	**+5.2**
POO	**Poona**	**144.59**	**31**	*e*P	**PKPab**	**00 15 09.0**	**-3.4**
QIZ	**Qiongzhong**	**144.67**	**331**	PKP	**PKPdf**	**00 15 14.1**	**0.0**
QIZ				SS	SS	00 37 17.9	+3.3
QIZ				LR	LR		
	comp=Z,92nm,19.6s						
QIZ				LR	LR		
	comp=Z,160nm,18.4s						
MRIV	**Mauritius Mete**	**145.57**	**108**	*e*PKPdf	**PKPbc**	**00 15 15.7**	**0.0**
SRSP	**Sriramsagar**	**146.30**	**24**	*e*PKPdf	**PKPdf**	**00 15 14.8**	**-2.0**
SRSP				*e*PKPab	**PKPbc**	**00 15 16.7**	**-1.2**
KLRI	**Killari**	**146.31**	**28**	*e*PKPdf	**PKPdf**	**00 15 15.3**	**-1.7**
KLRI				*e*PKPbc	**PKPbc**	**00 15 16.0**	**-2.1**
RPR	**Rampur**	**146.73**	**23**	*e*PKPdf	**PKPdf**	**00 15 16.2**	**-1.4**
RPR				*e*PKPbc	**PKPbc**	**00 15 17.5**	**-1.7**
HYBB	**Hyderabad (bro**	**147.74**	**25**	*e*PKPdf	**PKPdf**	**00 15 18.4**	**-1.0**
HYBB				*e*PKPbc	**PKPbc**	**00 15 20.3**	**-1.9**
LUWI	**Luwuk**	**147.93**	**288**	*e*PKPbc	**PKPab**	**00 15 24.1**	**-1.2**
CHLP	**Challavanipeta**	**148.59**	**15**	*e*PKPdf	**PKPdf**	**00 15 20.4**	**-0.3**
CHLP				*e*PKPbc	**PKPbc**	**00 15 23.1**	**-1.2**
SOEI	**Soe**	**148.60**	**271**	*e*PKPdf	**PKPbc**	**00 15 23.5**	**-1.1**
CHTO	**Chiang Mai**	**148.69**	**348**	P	**PKPdf**	**00 15 21.1**	**+0.3**
	comp=Z,308nm,1.0s,comp=Z,5μm						
CHTO	**Chiang Mai**	**148.69**	**348**	*e*PKIKP	**PKPdf**	**00 15 21.4**	**+0.6**
CHTO				MLR	MLR		
	comp=Z,400nm,20.0s						
CHTO	**Chiang Mai**	**148.69**	**348**	*e*PKPdf	**PKPdf**	**00 15 21.4**	**+0.6**
CHTO				LR	LR		
	comp=Z,400nm,20.0s						
NJS	**Nagarjunasagar**	**148.82**	**25**	*e*PKPdf	**PKPdf**	**00 15 20.6**	**-0.5**
NJS				*e*PKPbc	**PKPbc**	**00 15 23.3**	**-1.6**
LAMP	**Lampang**	**148.83**	**347**	P	**PKPdf**	**00 15 22.3**	**+1.2**
	comp=Z,37nm,0.8s,comp=Z,310nm						
MYLDM	**Lahad Datu**	**148.90**	**302**	*e*PKPbc	**PKPbc**	**00 15 25.3**	**0.0**
CM31	**Chiang Mai Arr**	**149.04**	**348**	*e*PKPdf	**PKPdf**	**00 15 22.8**	**+1.4**
CM31				*e*PP	**PP**	**00 18 55.2**	**+0.5**
CMAR	**Chiang Mai Arr**	**149.04**	**348**	PKPbc	**PKPdf**	**00 15 22.8**	**+1.4**
	comp=Z,1.8nm,0.3s,baz=324,slow=1.7,SNR=11						
CMAR				PP	**PP**	**00 18 55.2**	**+0.5**
	comp=Z,0.6nm,0.3s,baz=357,slow=5.6,SNR=4.0						
PVM	**Polavaram**	**149.05**	**20**	*e*PKPdf	**PKPdf**	**00 15 20.1**	**-1.3**
PVM				*e*PKPbc	**PKPbc**	**00 15 24.3**	**-1.2**
SRLM	**Srisailam**	**149.06**	**26**	*e*PKPdf	**PKPdf**	**00 15 20.3**	**-1.2**
SRLM				*e*PKPbc	**PKPbc**	**00 15 23.9**	**-1.7**
NWAO	**Narrogin (SRO)**	**149.13**	**224**	*e*PKPdf	**PKPdf**	**00 15 22.8**	**+1.7**
NWAO				*e*PKPdf	**PKPbc**	**00 15 23.9**	**-1.4**
URV	**Uravakonda**	**149.32**	**30**	*e*PKPdf	**PKPdf**	**00 15 21.2**	**-0.7**
URV				*e*PKPbc	**PKPbc**	**00 15 24.4**	**-1.8**
UTTA	**Uttaradit**	**149.35**	**345**	P	**PKPdf**	**00 15 22.8**	**+0.9**
MHMT	**Maesarieng**	**149.51**	**350**	P	**PKPdf**	**00 15 23.6**	**+1.5**
RCLA	**Racherla**	**149.66**	**26**	*e*PKPdf	**PKPdf**	**00 15 21.9**	**-0.5**
RCLA				*e*PKPbc	**PKPbc**	**00 15 25.4**	**-1.7**
ADKI	**Addanki**	**149.73**	**24**	*e*PKPdf	**PKPdf**	**00 15 21.7**	**-0.8**
ADKI				*e*PKPbc	**PKPbc**	**00 15 25.9**	**-1.2**
SUKH	**Sukhothai**	**149.83**	**346**	P	**PKPdf**	**00 15 23.7**	**+1.1**
	comp=Z,72nm,0.7s,comp=Z,649nm						
KKM	**Kota Kinabalu**	**150.26**	**306**	*e*PKPbc	**PKPbc**	**00 15 30.5**	**+1.8**
KKM				LR	LR		
	comp=Z,200nm,20.0s						
MMRI	**Maumere**	**150.43**	**274**	*e*PKPbc	**PKPbc**	**00 15 28.8**	**-0.2**
SKHT	**Srikalahasti**	**151.51**	**26**	*e*PKPdf	**PKPdf**	**00 15 25.0**	**-0.3**
SKHT				*e*PKiKP	**PKPbc**	**00 15 30.8**	**-0.6**
KAPI	**Kappang**	**152.05**	**282**	*e*PKPbc	**PKPbc**	**00 15 34.3**	**+1.5**
KHLT	**Khaolaem Dam**	**152.66**	**347**	P	**PKPdf**	**00 15 28.2**	**+1.2**
	comp=Z,37nm,1.1s,comp=Z,457nm						
SRDT	**SRDT**	**152.97**	**345**	P	**PKPdf**	**00 15 28.5**	**+1.0**
	comp=Z,169nm,1.1s,comp=Z,3μm						
PHET	**Kaeng Krachan**	**154.22**	**344**	P	**PKPdf**	**00 15 30.7**	**+1.4**
	comp=Z,11nm,1.0s,comp=Z,126nm						
SBUM	**Sibu**	**155.59**	**305**	*e*PKPdf	**PKPdf**	**00 15 33.4**	**+2.1**
KSM	**Kuching**	**157.70**	**306**	PFAKE		00 15 40.0	+6.0
KSM				LR	LR		
	comp=Z,500nm,21.0s						
SURT	**Suratani**	**158.21**	**343**	P	**PKPdf**	**00 15 35.0**	**+0.4**
	comp=Z,19nm,1.2s,comp=Z,279nm						
TRTT	**Trang**	**158.98**	**339**	P	**PKPdf**	**00 15 35.7**	**+0.2**
SKLT	**Songkhla**	**159.25**	**336**	P	**PKPab**	**00 16 08.3**	**-4.5**
PKDT	**Phuket**	**159.36**	**343**	P	**PKPdf**	**00 15 37.1**	**+1.2**
	comp=Z,41nm,1.1s						
KULM	**Kulim**	**160.94**	**334**	*e*PKPdf	**PKPdf**	**00 15 38.1**	**+0.4**
IPM	**Ipoh**	**161.49**	**332**	*e*PKPdf	**PKPdf**	**00 15 38.8**	**+0.4**
MYKOM	**Kota Tinggi**	**162.16**	**319**	*e*PKPdf	**PKPdf**	**00 15 40.8**	**+1.8**
CISI	**Cisompet, Garu**	**164.15**	**285**	*e*PKPdf	**PKPdf**	**00 15 41.2**	**+0.3**
GSI	**Gunungsitoli**	**165.80**	**338**	*e*PKPdf	**PKPdf**	**00 15 42.8**	**+0.5**

ISCJB ***02*** *23:55:51.6±0.6, 6°.81N±0°.04×73°.08W±0°.05, h166km±5km, Error ellipse: s-maj=10.3km s-min=4.5km az=33.8*
FUNV ***02*** *23:55:52.8, 6°.74N×73°.13W, h164km, MW3.4*
RSNC ***02*** *23:55:54.4±0.6, 6°.78N×73°.13W, h149km±4km, ML3.6*

ISC 02 23:55:51.3±1.5, 6°.80N±0°.05×73°.09W±0°.06, h170km±9km, n26, σ1°13/39, 3C, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BARC	**Barichara**	**0.22**	**204**	*i* P	**Pn**	**23 56 14.4**	**+0.1**
BARC				*e*S	**Sn**	**23 56 29.7**	**-2.3**
BARC				*i*		23 56 31.2	
	comp=Z,1μm,0.2s						
PAMC	**Pamplona, Colo**	**0.66**	**36**	*e*P	**Pn**	**23 56 17.2**	**+0.9**
PAMC				*e*S	**Sn**	**23 56 34.6**	**-0.9**
BRRC	**Barranca, Sant**	**0.69**	**297**	*e*P	**Pn**	**23 56 16.3**	**+0.4**
BRRC				*i*		23 56 16.6	
	comp=Z,1μm,0.2s						
BRRC				*e*S	**Sn**	**23 56 33.3**	**-1.4**
RUSC	**La Rusia**	**0.90**	**180**	*e*P	**Pn**	**23 56 18.3**	**+0.5**
RUSC				*e*S	**Sn**	**23 56 36.7**	**-1.5**
RUSC				*i*		23 56 38.4	
	comp=Z,544nm,0.4s						
CBRI	**Barrientos, No**	**0.96**	**18**	*i* P	**Pn**	**23 56 18.9**	**+1.1**
CBRI				*e*S	**Sn**	**23 56 37.9**	**-0.5**
GRMC	**Gramalote, San**	**0.96**	**17**	*i* P	**Pn**	**23 56 20.2**	**+2.4**
GRMC				*i*		23 56 21.4	
	comp=Z,419nm,0.4s						
GRMC				*e*S	**Sn**	**23 56 40.4**	**+2.0**
CAPV	**Capacho**	**1.31**	**36**	⇑*i*P	**Pn**	**23 56 22.3**	**+1.4**
CAPV				*e*S	**Sn**	**23 56 43.0**	**-0.6**
OCAC	**Ocana**	**1.45**	**351**	*e*P	**Pn**	**23 56 22.6**	**+0.5**
OCAC				*e*S	**Sn**	**23 56 45.1**	**-0.8**
OCAC				*i*		23 56 51.5	
	comp=Z,393nm,0.3s						
NORC	**Norcasia**	**2.15**	**235**	*e*P	**Pn**	**23 56 30.1**	**+0.7**
NORC				*e*S	**Sn**	**23 56 58.5**	**-0.5**
HELC	**Santa Helena**	**2.50**	**256**	*e*P	**Pn**	**23 56 35.1**	**+1.3**
HELC				*i*		23 57 13.0	
	comp=Z,117nm,0.3s						
VIGV	**El Vigia**	**2.65**	**40**	⇑*i*P	**Pn**	**23 56 36.7**	**+1.4**
VIGV				*e*S	**Sn**	**23 57 08.5**	**-1.0**
SOCV	**Socops**	**2.66**	**56**	⇑*e*P	**Pn**	**23 56 36.5**	**+1.1**
SOCV				*e*S	**Sn**	**23 57 08.6**	**-1.0**
VILC	**Villavicencio,**	**2.73**	**193**	*e*P	**Pn**	**23 56 37.9**	**+1.5**
VILC				*e*S	**Sn**	**23 57 11.9**	**+0.4**
VILC				*i*		23 57 22.8	
	comp=Z,116nm,0.5s						
PRAC	**Prado**	**3.55**	**210**	*e*P	**Pn**	**23 56 47.4**	**+1.0**
PRAC				*e*S	**Sn**	**23 57 29.1**	**-0.3**
ELOV	**Elorza**	**3.59**	**87**	*e*P	**Pn**	**23 56 47.3**	**+0.5**
VIRV	**Villa del Rosa**	**3.74**	**10**	*e*P	**Pn**	**23 56 49.1**	**+0.3**
VIRV				*e*S	**Sn**	**23 57 32.0**	**-1.8**
SANV	**Sanarito**	**4.43**	**52**	*e*P	**Pn**	**23 56 58.4**	**+0.7**
CURV	**Curarigua**	**4.45**	**44**	*e*P	**Pn**	**23 56 58.8**	**+0.8**
DABV	**Dabajuro**	**4.76**	**30**	*e*P	**Pn**	**23 57 02.5**	**+0.5**
TEPV	**Terepaima**	**4.98**	**51**	*e*P	**Pn**	**23 57 05.4**	**+0.6**
SIQV	**Siquisique**	**5.02**	**40**	*e*P	**Pn**	**23 57 05.4**	**+0.1**
BAUV	**El Baul**	**5.44**	**67**	*e*P	**Pn**	**23 57 10.3**	**-0.5**
MONV	**Montecano**	**5.98**	**31**	*e*P	**Pn**	**23 57 18.6**	**+0.7**
TURV	**Turiamo**	**6.33**	**55**	*e*P	**Pn**	**23 57 23.7**	**+1.1**
BCIP	**Isla Barro Col**	**7.08**	**290**	*e*P	Pn	23 57 38.4	+5.9
CUPV	**Cœpira**	**7.92**	**65**	*e*P	**Pn**	**23 57 43.8**	**+0.1**

ISCJB ***02*** *23:59:52.6±0.5, 6°.12S±0°.06×105°.35E±0°.06, h35km, mb3.9/9, Error ellipse: s-maj=10.9km s-min=4.5km az=43.7*
DJA ***02*** *23:59:52.9±0.3, 6°.5±3°×10°.5E±°, h10km, M4.2/6, MLv4.2/6*
IDC ***03*** *00:00:01.8±3.7, 5°.93S×105°.49E, h113km±31km, mb3.6/9, mb1 3.8/10, mb1mx3.5/42, mbtmp3.9/10, Error ellipse: s-maj=71.7km s-min=14.9km az=50.0*

ISC 02 23:59:53.9±0.8, 6°.01S±0°.08×105°.40E±0°.07, h35km, n24, σ1°71/25, mb3.9/9, Sunda Strait

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BLSI	**Bandar Lampung**	**0.66**	**346**	P	**Pn**	**00 00 05.3**	**-1.5**
BLSI				S	**Sn**	**00 00 15.9**	**0.0**
CGJI	**Cibinong**	**0.67**	**154**	P	Pn	00 00 02.5	-4.4
SBJI	**Serang**	**0.73**	**99**	P	**Pn**	**00 00 05.4**	**-2.4**
SBJI				S	**Sn**	**00 00 18.0**	**+0.3**
KASI	**Kota Agung**	**1.02**	**298**	P	**Pn**	**00 00 10.4**	**-1.3**
TNG	**Tangerang**	**1.25**	**97**	P	**Pn**	**00 00 15.6**	**+0.7**
KLI	**Kotabumi**	**1.26**	**335**	P	**Pn**	**00 00 16.3**	**+1.2**
KLI				S	**Sn**	**00 00 33.4**	**+2.6**
SKJI	**Sukabumi**	**1.52**	**131**	P	**Pn**	**00 00 18.4**	**-0.1**
SKJI				S	**Sn**	**00 00 39.4**	**+2.3**
LWLI	**Liwa**	**1.66**	**306**	P	**Pn**	**00 00 22.0**	**+1.4**
CNJI	**Cibinong**	**2.15**	**127**	P	**Pn**	**00 00 27.1**	**-0.1**
LEM	**Lembang**	**2.35**	**110**	P	Pn	00 00 38.6	+8.4
	9.0nm,0.3s,baz=198,slow=18,SNR=6.9						
LEM	**Lembang**	**2.35**	**110**	P	Pn	00 00 37.0	+6.9
BLHSI	**Lahat**	**2.86**	**319**	P	**Pn**	**00 00 39.5**	**+2.4**
JCJI	**Jatiwangi**	**2.89**	**100**	P	**Pn**	**00 00 41.7**	**+4.2**
MNAI	**Manna**	**2.94**	**304**	P	**Pn**	**00 00 40.0**	**+1.9**
CMJI	**Cimerak**	**3.50**	**120**	P	**Pn**	**00 00 46.7**	**+0.8**
CMAR	**Chiang Mai Arr**	**25.13**	**345**	P	**P**	**00 05 17.3**	**+1.5**
	0.8nm,0.3s,baz=170,slow=11,SNR=3.2						
WRA	**Warramunga Arr**	**31.34**	**119**	P	**P**	**00 06 10.8**	**-0.6**
	1.3nm,0.5s,baz=296,slow=9.7,SNR=6.1						
ASAR	**Alice Springs**	**32.55**	**126**	P	**P**	**00 06 22.4**	**+0.4**
	0.8nm,0.5s,baz=299,slow=7.9,SNR=11						
STKA	**Stephens Creek**	**42.48**	**132**	P	**P**	**00 07 46.2**	**+0.3**
	3.0nm,0.6s,baz=309,slow=9.0,SNR=13						
MKAR	**Makanchi Array**	**56.43**	**341**	P	**P**	**00 09 30.5**	**-1.6**
	0.2nm,0.4s,baz=147,slow=8.1,SNR=3.5						
GEYT	**Alibeck**	**61.98**	**319**	P	**P**	**00 10 09.6**	**-1.0**
	1.2nm,0.7s,baz=126,slow=6.0,SNR=5.5						
ZALV	**Zalesovo Beam**	**62.19**	**346**	P	**P**	**00 10 09.8**	**-1.8**
	0.3nm,0.3s,baz=118,slow=2.2,SNR=3.8						
KBZ	**Khabaz**	**74.86**	**318**	P	**P**	**00 11 30.6**	**-0.4**
	1.7nm,0.8s,baz=181,slow=5.5,SNR=4.2						
BRTR	**Keskin Array B**	**79.99**	**312**	P	**P**	**00 11 59.1**	**-0.9**
	0.5nm,0.6s,baz=145,slow=7.3,SNR=4.8						

NIED ***03*** *00:10:00, 38°.90N×142°.40E, h56km, Mw4.5 Best double couple: M0=6.24000×10^15 NP1:φs=7.00000°, δ35.00000°, λ-25.00000°. NP2:φs=117.00000°, δ76.00000°, λ-123.00000°.*

JMA 03 00:10:14.1±0.1, 38°.95N×142°.35E, h33km±2km, M3.9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.55**	**284**	P	Pb	00 10 25.3	-0.1
OFUJ				S	Sb	00 10 32.8	-0.4
JMK	**Ichinoseki**	**0.88**	**270**	P	Pn	00 10 30.3	+0.1
JMK				S	Sn	00 10 41.7	-0.1
JIO	**Ouri**	**0.93**	**238**	P	Pn	00 10 30.5	-0.3
JIO				S	Sn	00 10 41.5	-1.4
JOM	**Ohasama**	**0.97**	**303**	P	Pn	00 10 31.8	+0.3
JOM				S	Sn	00 10 44.2	+0.1
JTH	**Tanohata**	**1.06**	**339**	P	Pn	00 10 32.3	-0.3
JTH				S	Sn	00 10 46.6	+0.4
JRG	**Rokugo**	**1.41**	**289**	P	Pb	00 10 38.6	-1.2
JRG				S	Sb	00 10 57.0	-0.4
JOU	**Okura**	**1.44**	**247**	P	Pn	00 10 38.7	+0.8
JOU				S	Sb	00 10 57.1	-1.3
JYK	**Kaneyama**	**1.55**	**269**	P	Pn	00 10 40.6	+1.2
JANG	**Nango**	**1.56**	**336**	P	Pb	00 10 41.0	-1.4
JMM	**Marumori**	**1.63**	**229**	P	Pn	00 10 40.6	+0.1
JMM				S	Sn	00 11 00.6	+0.2

JMA ***03*** *00:23:26.1±0.3, 35°.50N×142°.98E, h71km, M3.4*
ISCJB ***03*** *00:23:27.7±0.7, 35°.54N±0°.06×142°.88E±0°.05, h33km, mb3.8/9, MS4.5/1, Error ellipse: s-maj=9.4km s-min=5.4km az=157.1*
IDC ***03*** *00:23:28.3±0.8, 36°.16N×142°.89E, h0km, mb3.8/9, mb1 4.0/10, mb1mx3.8/34, mbtmp3.8/10, ML3.5/1, MS2.9/2, Ms1 2.9/2, ms1mx2.5/41, Error ellipse: s-maj=25.2km s-min=19.9km az=123.0*

ISC 03 00:23:29.6±0.9, 35°.52N±0°.07×142°.90E±0°.08, h35km, n27, σ1°35/30, mb3.7/9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.67**	**277**	P	**Pn**	**00 23 55.4**	**-1.0**
CHOJ				*e*S	**Sn**	**00 24 16.5**	**-0.1**
BSO1	**Boso 1**	**1.80**	**242**	P	**Pn**	**00 23 55.6**	**-2.0**
BSO1				*e*S	**Sn**	**00 24 18.4**	**-0.5**
BSO3	**Boso 3**	**2.08**	**251**	*e*S	**Sn**	**00 24 26.3**	**-0.1**
JFT	**Otama**	**2.87**	**315**	P	**Pn**	**00 24 11.7**	**-1.2**
JFT				S	**Sn**	**00 24 45.6**	**-0.6**
JAG	**Ashikaga**	**2.94**	**289**	P	**Pn**	**00 24 12.2**	**-1.6**
JOD2	**Odawara 2**	**3.12**	**266**	P	**Pn**	**00 24 14.9**	**-1.5**
JOD2				S	**Sn**	**00 24 51.3**	**-1.1**
JRY	**Ryogami san**	**3.29**	**280**	P	**Pn**	**00 24 18.1**	**-0.5**
JRY				S	**Sn**	**00 24 57.1**	**+0.6**
JHJ2	**Mitsune**	**3.50**	**228**	*e*S	**Sn**	**00 24 58.8**	**-3.0**
JYN	**Shimob**	**3.55**	**271**	P	**Pn**	**00 24 21.3**	**-1.0**
JYN				*e*S	**Sn**	**00 25 02.4**	**-0.7**
JMK	**Ichinoseki**	**3.68**	**339**	P	**Pn**	**00 24 21.8**	**-2.2**
MJAR	**Matsushiro Arr**	**3.94**	**286**	Pn	**Pn**	**00 24 27.4**	**-0.1**
	3.7nm,0.3s,baz=42,slow=14,SNR=35						
MJAR				LR	LR	00 25 51.2	
	comp=Z,123nm,19.8s,baz=75,slow=38						
MAT	**Matsushiro**	**3.94**	**286**	P	**Pn**	**00 24 27.7**	**+0.2**
MAT				S	**Sn**	**00 25 11.4**	**-1.1**
MAT	**Matsushiro**	**3.94**	**286**	P	**Pn**	**00 24 27.9**	**+0.4**
JYK	**Kaneyama**	**3.95**	**330**	P	**Pn**	**00 24 25.8**	**-1.9**
ASAJ	**Asahikawa**	**8.59**	**359**	Pn	**Pn**	**00 25 28.5**	**-2.9**
	1.3nm,0.3s,baz=202,slow=11,SNR=6.8						
JNU	**Nakatsue**	**10.22**	**260**	LR	LR	00 29 38.4	
	comp=Z,80nm,19.8s,baz=134,slow=36						
SONM	**Songino Array**	**29.63**	**306**	P	**P**	**00 29 34.0**	**+2.3**
	0.6nm,0.6s,baz=115,slow=7.6,SNR=4.1						
MKAR	**Makanchi Array**	**45.95**	**304**	P	**P**	**00 31 48.4**	**-0.6**
	0.5nm,0.6s,baz=89,slow=9.6,SNR=6.4						
ILAR	**Eielson Array**	**50.14**	**32**	P	**P**	**00 32 21.4**	**+0.3**
	1.4nm,0.7s,baz=267,slow=6.5,SNR=14						
INK	**Inuvik**	**55.19**

C,Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWT	**Tachien** baz=141	**0.17**	**137⇑**	*i* P	Pg	00 26 55.9	+0.9
TWT	baz=141			S	Sg	00 26 58.2	+0.8
TWQ1	**Liyutan** baz=263	**0.26**	**264**	*e* P	Pg	00 26 57.4	+0.8
TWQ1	baz=263			*e* S	Sg	00 27 01.1	+1.1
NSTT	**Nanjuang** baz=351	**0.26**	**350⇓**	*i* P	Pb	00 26 57.9	-0.6
NSTT	baz=351			S	Sb	00 27 01.7	-1.4
NSY	**Sanyi** baz=278	**0.27**	**279**	P	Pb	00 26 58.0	-0.7
NSY	baz=278			S	Sb	00 27 02.4	-1.0
NNS	**Nan Shan** baz=78	**0.30**	**78**	*e* P	Pb	00 26 59.2	-0.1
NNS	baz=78			S	Sb	00 27 03.0	-1.4
WHF	**Hehuan Shan** baz=139	**0.30**	**140**	P	Pb	00 26 59.2	-0.3
WHF	baz=139			S	Sb	00 27 03.9	-0.9
NSK	**Sanguang** baz=43	**0.41**	**43**	P	Pb	00 27 00.6	-0.5
NSK	baz=43			*e* S	Sg	00 27 06.0	+1.1
TCU	**Taichung** baz=235	**0.41**	**237**	*e* P	Pb	00 27 01.2	+0.1
TCU	baz=235			*e* S	Sb	00 27 07.0	-0.5
TYC	**Yuchr** baz=199	**0.50**	**201**	*e* P	Pg	00 27 01.6	+0.4
SMLT	**Sun Moon Lake** baz=194	**0.51**	**196**	*e* P	Pg	00 27 01.9	+0.5
ENTT	**Nioudou** baz=61	**0.54**	**61**	*e* P	Pb	00 27 03.2	-0.1
ENTT	baz=61			*e* S	Sb	00 27 10.8	-0.4
TWD	**Chiawan** baz=120	**0.58**	**121**	*e* P	Pb	00 27 04.2	+0.3
TWD	baz=120			*e* S	Sb	00 27 11.7	-0.6
WNT	**Mingjian** baz=213	**0.60**	**214**	*e* P	Pb	00 27 04.9	+0.7
ENA	**Nanau** baz=85	**0.63**	**85**	*e* P	Pb	00 27 05.1	+0.3
ENA	baz=85			*e* S	Sg	00 27 12.8	+0.9
TWE	**Neicheng** baz=59	**0.66**	**58**	*e* S	Sg	00 27 13.4	+0.7
TWC	**Suao** baz=72	**0.76**	**72**	*e* P	Pn	00 27 08.0	-0.7
TWC	baz=72			*e* S	Sg	00 27 16.7	+0.6
EGS	baz=60	**0.93**	**60**	*e* P	Pn	00 27 10.6	-0.4
NWF	**Wu-fen Shan** baz=43	**0.96**	**44**	*e* P	Pn	00 27 11.4	-0.1
NWF	baz=43			*e* S	Sn	00 27 25.1	-0.3

FUNV ***03*** *00:49:03.4, 6°.92N×73°.15W, h195km, MW3.5*
ISCJB ***03*** *00:49:04.7±0.8, 6°.76N±0°.06×73°.00W±0°.07, h159km±7km, Error ellipse: s-maj=13.9km s-min=5.4km az=39.1*
RSNC ***03*** *00:49:07.5±0.7, 6°.76N×73°.08W, h143km±4km, ML2.8*
ISC 03 00:49:03.8±1.5, 6°.80N±0°.06×72°.99W±0°.07, h167km±9km, n17, σ1°71/30, 1C, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BARC	**Barichara**	**0.28**	**222**	*i* P	**Pn**	**00 49 26.7**	**+0.1**
BARC				*e* S	**Sn**	**00 49 41.1**	**-3.0**
BARC	comp=Z,192nm,0.3s			*i*		00 49 42.6	
BTLC	**Betulia, Santa**	**0.30**	**293**	*i* P	**Pn**	**00 49 27.1**	**+0.4**
BTLC				*e* S	**Sn**	**00 49 42.2**	**-1.9**
PAMC	**Pamplona, Colo**	**0.61**	**29**	*e* P	**Pn**	**00 49 29.6**	**+1.4**
PAMC				*e* S	**Sn**	**00 49 46.5**	**-0.5**
BRRC	**Barranca, Sant**	**0.78**	**293⇑**	*i* P	**Pn**	**00 49 28.7**	**0.0**
BRRC	comp=Z,218nm,0.1s			*i*		00 49 29.1	
BRRC				*e* S	**Sn**	**00 49 45.6**	**-2.0**
RUSC	**La Rusia**	**0.91**	**186**	*e* P	**Pn**	**00 49 30.7**	**+0.6**
RUSC				*e* S	**Sn**	**00 49 49.3**	**-1.1**
RUSC	comp=Z,46nm,0.2s			*i*		00 49 50.2	
CBRI	**Barrientos, No**	**0.93**	**12**	*e* P	**Pn**	**00 49 31.4**	**+1.5**
CBRI				*e* S	**Sn**	**00 49 49.8**	**-0.3**
CBRI	comp=Z,98nm,0.5s			*i*		00 49 55.3	
GRMC	**Gramalote, San**	**0.93**	**12**	*i* P	**Pn**	**00 49 32.7**	**+2.8**
GRMC				*e* S	**Sn**	**00 49 52.1**	**+2.0**
GRMC	comp=Z,96nm,0.5s			*i*		00 49 53.4	
CAPV	**Capacho**	**1.25**	**32**	*e* P	**Pn**	**00 49 34.1**	**+1.4**
CAPV				*e* S	**Sn**	**00 49 56.5**	**+1.6**
OCAC	**Ocana**	**1.47**	**347**	*e* P	**Pn**	**00 49 35.5**	**+0.9**
OCAC				*e* S	**Sn**	**00 49 59.2**	**+0.9**
OCAC	comp=Z,73nm,0.3s			*i*		00 50 00.4	
NORC	**Norcasia**	**2.23**	**237**	*e* P	**Pn**	**00 49 43.2**	**+0.5**
NORC				*e* S	**Sn**	**00 50 11.6**	**-1.2**
HELC	**Santa Helena**	**2.59**	**257**	*e* P	**Pn**	**00 49 48.2**	**+1.0**
HELC	comp=Z,23nm,0.2s			*i*		00 50 27.6	
VIGV	**El Vigia**	**2.59**	**38**	*e* P	**Pn**	**00 49 46.5**	**-0.4**
VIGV				*e* S	**Sn**	**00 50 19.5**	**-0.9**
GUYC	**Guyana, Colomb**	**2.85**	**237**	*e* P	**Pn**	**00 49 51.9**	**+1.4**
GUYC				*e* S	**Sn**	**00 50 26.4**	**-0.3**
GUYC	comp=Z,39nm,0.5s			*i*		00 50 32.2	
TOLC	**Tolima**	**3.19**	**227**	*e* P	**Pn**	**00 49 56.4**	**+1.8**
PRAC	**Prado**	**3.60**	**212**	*e* P	**Pn**	**00 50 00.7**	**+1.2**
PRAC				*e* S	**Sn**	**00 50 42.1**	**-0.7**
VIRV	**Villa del Rosa**	**3.72**	**9**	*e* P	Pn	00 49 59.0	-2.0
VIRV				*e* S	**Sn**	**00 50 40.9**	**-4.8**
BAUV	**El Baul**	**5.35**	**66**	*e* P	**Pn**	**00 50 22.4**	**+0.3**
BAUV				*e* S	Sn	00 51 19.7	-3.7

IDC 03 00:56:24.7±4.5, 30°.65N×141°.68E, h0km, mb3.5/4, mb1 3.6/7, mb1mx3.3/36, mbtmp3.6/7, ML3.2/3, Error ellipse: s-maj=179.1km s-min=18.3km az=70.0, Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHJ	**Hachijo jima 2**	**2.95**	**327**	Pn	Pn	00 57 10.9	-1.8
JHJ	3.7nm,0.3s,baz=29,slow=21,SNR=6.7			Sn	Sn	00 57 46.6	-2.3
JCJ	**Chichijima**	**3.57**	**173**	Pn	Pn	00 57 20.8	-0.5
JCJ	12nm,0.3s,baz=109,slow=22,SNR=5.1 2.4nm,0.3s,baz=271,slow=23,SNR=3.6			Sn	Sn	00 58 03.0	-1.2
MJAR	**Matsushiro Arr**	**6.55**	**335**	Pn	Pn	00 58 01.9	-0.4
SONM	6.0nm,0.3s,baz=287,slow=23,SNR=4.9 **Songino Array** 1.2nm,0.3s,baz=154,slow=11,SNR=7.9	**31.92**	**313**	P	P	01 02 53.0	+1.0
MKAR	**Makanchi Array** 0.3nm,0.4s,baz=109,slow=7.8,SNR=3.9	**47.93**	**307**	P	P	01 05 04.7	-0.1
WRA	**Warramunga Arr** 0.6nm,0.6s,baz=90,slow=9.8,SNR=7.2	**50.79**	**189**	P	P	01 05 27.0	+0.1
ASAR	**Alice Springs** 0.3nm,0.3s,baz=4.6,slow=7.4,SNR=3.7	**54.52**	**189**	P	P	01 05 54.1	-0.4
	0.2nm,0.4s,baz=17,slow=9.7,SNR=3.6						

IDC ***03*** *01:11:17.9±1.1, 10°.14N×85°.55W, h0km, mb4.1/10, mb1 4.3/11, mb1mx4.0/34, mbtmp4.1/11, ML3.6/1, Error ellipse: s-maj=38.1km s-min=21.6km az=67.0*
ISCJB ***03*** *01:11:25.1±0.9, 10°.6N±0°.1×85°.78W±0°.07, h33km, mb4.2/26, Error ellipse: s-maj=17.8km s-min=7.9km az=23.1*
NEIC ***03*** *01:11:29.5±1.1, 10°.67N×85°.85W, h51km±11km, mb4.4/17, Error ellipse: s-maj=24.4km s-min=11.1km az=210.0*
ISC 03 01:11:27.0±1.1, 10°.6N±0°.2×85°.8W±0°.1, h33km, n147, σ1°06/149, mb4.3/26, Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTS	**JuntasAbangare**	**0.93**	**110**	*e* Pn	**Pb**	**01 11 46.8**	**+2.0**
JTS				*e* Sn	**Sn**	**01 11 55.4**	**-0.6**
HDC	**Heredia**	**1.81**	**110**	*e* Pn	**Pb**	**01 11 59.0**	**-0.5**
TGUH	**Tegucigalpa,Un**	**3.69**	**338**	*e* Pn	**Pn**	**01 12 23.9**	**+2.1**
CMIG	**Matias Romero** 0.4nm,0.3s,baz=118,slow=10,SNR=7.1	**10.88**	**307**	Pn	**Pn**	**01 14 00.4**	**-0.2**
933A	**Laredo** baz=141	**21.11**	**325**	P	**P**	**01 16 09.3**	**+0.4**
834A	**Tilden** baz=143	**21.11**	**327**	P	**P**	**01 16 10.2**	**+1.2**
637A	**Eagle Lake** baz=150	**21.14**	**334**	P	**P**	**01 16 10.9**	**+1.7**
344A	**Westbrook Farm** baz=167	**21.22**	**348**	P	**P**	**01 16 11.9**	**+1.8**
735A	**Kenedy** baz=146	**21.33**	**330**	P	**P**	**01 16 12.3**	**+1.1**
247A	**Quitman** baz=173	**21.49**	**354**	P	**P**	**01 16 13.6**	**+0.7**
636A	**Smothers Creek** baz=149	**21.50**	**332**	P	**P**	**01 16 13.8**	**+0.8**
245A	**Little AP, Sta** baz=169	**21.64**	**351**	P	**P**	**01 16 15.5**	**+0.9**
833A	**Chaparral WMA,** baz=142	**21.73**	**326**	P	**P**	**01 16 16.4**	**+0.9**
635A	**Leesville** baz=147	**21.75**	**331**	P	**P**	**01 16 16.8**	**+1.0**
733A	**Divot King Ran** baz=142	**21.98**	**327**	P	**P**	**01 16 18.8**	**+0.5**
536A	**Bastrop** baz=149	**22.01**	**333**	P	**P**	**01 16 19.3**	**+0.8**
832A	**Faith Ranch, C** baz=140	**22.02**	**325**	P	**P**	**01 16 19.2**	**+0.5**
147A	**Livingston** baz=174	**22.07**	**355**	P	**P**	**01 16 21.1**	**+1.9**
LRAL	**Lakeview Retre** 9.2nm,0.7s	**22.34**	**357**	*e* P	**P**	**01 16 24.0**	**+2.0**
338A	**Crockett** baz=155	**22.43**	**338**	P	**P**	**01 16 23.7**	**+0.6**
Z47A	**Carrollton** baz=174	**22.57**	**355**	P	**P**	**01 16 25.7**	**+1.1**
534A	**Blanco** baz=146,SNR=5.8	**22.62**	**330**	P	**P**	**01 16 24.4**	**-0.8**
Z46A	**Louisville** baz=172	**22.65**	**353**	P	**P**	**01 16 25.8**	**+0.4**
Z48A	**Northport** baz=176	**22.71**	**356**	P	**P**	**01 16 26.4**	**+0.4**
435B	**Jarrell** baz=149	**22.84**	**333**	P	**P**	**01 16 27.4**	**-0.1**
Z44A	**Pea Ridge, Bel** baz=168	**22.95**	**350**	P	**P**	**01 16 28.4**	**-0.1**
335A	**Moody** baz=150	**23.20**	**334**	P	**P**	**01 16 31.3**	**+0.2**
Y47A	**UCPARC, Winfie** baz=175	**23.25**	**356**	P	**P**	**01 16 32.7**	**+1.1**
Y46A	**Houston** baz=172	**23.32**	**354**	P	**P**	**01 16 32.5**	**+0.2**
433A	**Art** baz=146	**23.52**	**330**	P	**P**	**01 16 33.8**	**-0.5**
334A	**Lometa** baz=148	**23.60**	**333**	P	**P**	**01 16 35.3**	**+0.2**
JCT	**Junction City** baz=144	**23.65**	**329**	P	**P**	**01 16 35.1**	**-0.5**
136A	**Ennis** baz=153,SNR=5.1	**23.88**	**337**	P	**P**	**01 16 38.0**	**+0.3**
333A	**Richland Sprin** baz=147,SNR=13	**23.94**	**331**	P	**P**	**01 16 37.7**	**-0.5**
234A	**Clairette** baz=149	**24.13**	**334**	P	**P**	**01 16 39.6**	**-0.4**
Z37A	**Pogue Cattle C** baz=156	**24.21**	**340**	P	**P**	**01 16 40.9**	**+0.2**
Y40A	**Okolona** baz=162	**24.26**	**345**	P	**P**	**01 16 41.6**	**+0.4**
Y39A	**Lockesburg** baz=160	**24.41**	**343**	P	**P**	**01 16 42.5**	**-0.1**
233A	**Rising Star** baz=148,SNR=5.3	**24.48**	**332**	P	**P**	**01 16 43.5**	**+0.3**
SWET	**Sewanee** 2.6nm,0.7s	**24.49**	**360**	*e* P	**P**	**01 16 43.9**	**+0.6**
Z36A	**Blue Ridge** baz=154	**24.56**	**338**	P	**P**	**01 16 43.9**	**0.0**
134A	**White-Moore Ra** baz=150	**24.59**	**335**	P	**P**	**01 16 43.9**	**-0.3**
X40A	**Basin Creek Fa** baz=163	**24.61**	**346**	P	**P**	**01 16 44.0**	**-0.3**
CPCT	**Cooper Cave** 19nm,1.9s	**24.75**	**3**	*e* P	**P**	**01 16 47.0**	**+1.4**
KMSC	**Kings Mountain** baz=191	**24.76**	**9**	P	**P**	**01 16 45.6**	**-0.1**
UALR	**University of** 13nm,0.8s	**24.77**	**347**	*e* P	**P**	**01 16 45.3**	**-0.5**
MIAR	**Mount Ida** baz=162,SNR=12	**24.85**	**345**	P	**P**	**01 16 46.0**	**-0.5**
X39A	**Fountain Ranch** baz=160	**24.96**	**344**	P	**P**	**01 16 47.2**	**-0.3**
TXAR	**Lajitas Array** 3.2nm,0.6s,baz=140,slow=9.2,SNR=25	**24.98**	**321**	P	**P**	**01 16 48.5**	**+0.6**
TX31	**Lajitas Ar. Si**	**24.98**	**321**	*e* P	**P**	**01 16 48.4**	**+0.4**
TKL	**Tuckaleechee C** 4.0nm,0.8s,baz=193,slow=9.3,SNR=4.8	**25.00**	**4**	P	**P**	**01 16 47.8**	**0.0**
W41A	**Tony Mavity, V** baz=165	**25.13**	**348**	P	**P**	**01 16 48.8**	**-0.3**
W41B	**Gary Mavity, V** baz=165	**25.13**	**348**	P	**P**	**01 16 48.7**	**-0.4**
Z34A	**Collier Ranch,** baz=151	**25.22**	**336**	P	**P**	**01 16 49.6**	**-0.3**
WHAR	**Wooly Hollow** 10nm,1.0s	**25.25**	**348**	*e* P	**P**	**01 16 47.9**	**-2.2**
X38A	**Whitesboro** baz=159	**25.31**	**342**	P	**P**	**01 16 50.4**	**-0.3**
ABTX	**Abilene, Hawle** baz=147,SNR=6.8	**25.33**	**332**	P	**P**	**01 16 51.2**	**+0.2**
ABTX	**Abilene, Hawle** 10nm,0.7s	**25.33**	**332**	*e* P	**P**	**01 16 51.4**	**+0.5**
W40A	**Ferguson Farm,** baz=163	**25.34**	**346**	P	**P**	**01 16 51.4**	**+0.5**
Y35A	**Marietta** baz=154	**25.35**	**338**	P	**P**	**01 16 51.9**	**+0.9**
X37A	**Clayton** baz=158	**25.40**	**341**	P	**P**	**01 16 52.2**	**+0.7**
Z33A	**Whitaker Ranch** baz=149,SNR=7.2	**25.50**	**334**	P	**P**	**01 16 53.1**	**+0.6**
W39A	**Magazine** baz=162	**25.52**	**345**	P	**P**	**01 16 52.4**	**-0.2**
W38A	**Poteau** baz=160,SNR=7.9	**25.59**	**343**	P	**P**	**01 16 53.5**	**+0.2**
Y34A	**Reagan Ranch,** baz=152	**25.67**	**337**	P	**P**	**01 16 54.6**	**+0.6**
X35A	**Drake** baz=154	**25.77**	**338**	P	**P**	**01 16 55.5**	**+0.6**
V40A	**Witts Springs** baz=164	**25.86**	**347**	P	**P**	**01 16 55.0**	**-0.7**
W37B	**Quinton** baz=158	**25.93**	**342**	P	**P**	**01 16 56.1**	**-0.2**
Y33A	**Hilltop Ranch,** baz=150	**26.06**	**335**	P	**P**	**01 16 57.1**	**-0.4**
V39A	**Pettigrew** baz=162,SNR=7.8	**26.09**	**345**	P	**P**	**01 16 57.5**	**-0.3**
W36A	**Wetumka** baz=156	**26.18**	**340**	P	**P**	**01 16 58.4**	**-0.2**
U40A	**Yellville** baz=164	**26.40**	**347**	P	**P**	**01 17 00.2**	**-0.4**
X33A	**Lawton** baz=151,SNR=14	**26.48**	**336**	P	**P**	**01 17 01.5**	**+0.3**
V37A	**Hulbert** baz=159	**26.53**	**343**	P	**P**	**01 17 01.4**	**-0.3**
U39A	**Green Forest** baz=163	**26.57**	**346**	P	**P**	**01 17 01.9**	**-0.2**
V36A	**Jenks** baz=158	**26.68**	**341**	P	**P**	**01 17 02.9**	**-0.2**
X32A	**Elmer** baz=150	**26.69**	**335**	P	**P**	**01 17 02.8**	**-0.4**
TUL1	**Leonard** baz=158	**26.75**	**342**	P	**P**	**01 17 03.2**	**-0.6**
WMOK	**Wichita Mounta** 12nm,0.9s	**26.76**	**336**	*e* P	**P**	**01 17 06.0**	**+2.2**
W34A	**Bridge Creek,** baz=153	**26.81**	**338**	P	**P**	**01 17 03.6**	**-0.6**
U38A	**Gravette** baz=161	**26.85**	**345**	P	**P**	**01 17 04.0**	**-0.6**
U37A	**Salina** baz=160	**27.01**	**343**	P	**P**	**01 17 04.9**	**-1.2**
T40A	**Mansfield** baz=166	**27.10**	**348**	P	**P**	**01 17 05.9**	**-0.9**
SIUC	**Southern Illin** 12nm,0.8s	**27.15**	**354**	*e* P	**P**	**01 17 07.5**	**+0.2**
T38A	**Diamond** baz=162	**27.39**	**345**	P	**P**	**01 17 08.5**	**-0.9**
U35A	**Pawnee** baz=156	**27.47**	**341**	P	**P**	**01 17 09.4**	**-0.8**
WCI	**Wyandotte Cave** 9.4nm,0.8s	**27.50**	**359**	*e* P	**P**	**01 17 11.2**	**+0.7**
S40A	**Lebanon** baz=166	**27.53**	**349**	P	**P**	**01 17 10.0**	**-0.7**
T37A	**Cheneyville 18** baz=160,SNR=5.8	**27.63**	**344**	P	**P**	**01 17 10.9**	**-0.7**
S39A	**Bolivar** baz=164	**27.79**	**347**	P	**P**	**01 17 11.7**	**-1.3**
T36A	**Boggs Farm, Ca** baz=159	**27.84**	**343**	P	**P**	**01 17 12.3**	**-1.2**
MSTX	**Muleshoe** baz=142	**27.94**	**329**	P	**P**	**01 17 13.6**	**-1.0**
MSTX	**Muleshoe** 8.9nm,0.8s	**27.94**	**329**	*e* P	**P**	**01 17 14.5**	**-0.1**
S37A	**Fort Scott** baz=161	**28.21**	**345**	P	**P**	**01 17 15.7**	**-1.0**
R39A	**Chumby, Stover** baz=165	**28.32**	**348**	P	**P**	**01 17 16.4**	**-1.4**
S36A	**Lake Cedric, C** baz=160	**28.38**	**344**	P	**P**	**01 17 17.2**	**-1.1**
S35A	**Otter Creek Ra** baz=158	**28.55**	**342**	P	**P**	**01 17 19.0**	**-0.8**
R36A	**Gordon, Harris** baz=160	**28.92**	**344**	P	**P**	**01 17 21.4**	**-1.7**
SFIN	**Lafayette** baz=178	**29.66**	**358**	P	**P**	**01 17 27.7**	**-1.9**
P38A	**Dawn** baz=165	**29.69**	**348**	P	**P**	**01 17 28.0**	**-1.9**
HDIL	**Hopedale** baz=173	**29.98**	**355**	P	**P**	**01 17 30.6**	**-1.8**
ANMO	**Albuquerque** 1.8nm,0.7s,baz=118,slow=4.8,SNR=9.6	**30.65**	**325**	P	**P**	**01 17 39.9**	**+1.2**
ANMO	**Albuquerque** baz=137	**30.65**	**325**	P	**P**	**01 17 38.5**	**-0.2**
ANMO	**Albuquerque** 1.9nm,0.8s	**30.65**	**325**	*e* P	**P**	**01 17 40.1**	**+1.4**
N59A	**State Game Lan** baz=199	**31.46**	**15**	P	**P**	**01 17 45.8**	**+0.2**
SDCO	**Great Sand Dun** baz=142,SNR=6.4	**32.28**	**330**	P	**P**	**01 17 53.3**	**+0.2**
SDCO	**Great Sand Dun** 2.3nm,0.7s	**32.28**	**330**	*e* P	**P**	**01 17 53.2**	**+0.2**
S22A	**4UR Ranch, Cre** baz=140	**32.94**	**329**	P	**P**	**01 17 59.0**	**+0.1**
MVCO	**Mesa Verde** baz=137	**33.43**	**326**	P	**P**	**01 18 02.5**	**-0.7**
I38A	**Scanlan Farm,** baz=168	**33.77**	**352**	P	**P**	**01 18 04.8**	**-0.9**
SADO	**Sadowa** 3.4nm,0.6s,baz=203,slow=9.8,SNR=4.3	**34.52**	**8**	P	**P**	**01 18 12.0**	**-0.1**
H35A	**Sunnyside Ranc** baz=164	**34.83**	**349**	P	**P**	**01 18 13.5**	**-1.4**
H34A	**Spellman Lake,** baz=163	**34.99**	**348**	P	**P**	**01 18 15.0**	**-1.3**
SPMN	**Marine on St.** baz=168	**35.00**	**351**	P	**P**	**01 18 15.2**	**-1.2**
H32A	**Carlson Farm,** baz=160	**35.22**	**346**	P	**P**	**01 18 17.1**	**-1.1**
F36A	**Milaca** baz=167,SNR=5.7	**35.73**	**351**	P	**P**	**01 18 20.5**	**-2.1**
P18A	**Preston Nutter** 7.3nm,1.0s	**36.13**	**327**	*e* P	P	01 18 21.5	-5.0
F33A	**5 Mile Ranch,** baz=162	**36.22**	**348**	P	**P**	**01 18 24.7**	**-2.1**
H27A	**Howes** baz=153,SNR=5.2	**36.67**	**340**	P	**P**	**01 18 29.9**	**-0.9**
D37A	**Cotton** baz=169	**36.84**	**353**	P	**P**	**01 18 30.2**	**-1.9**
D35A	**Remer** baz=167	**37.00**	**351**	P	**P**	**01 18 31.3**	**-2.2**
PSUT	**Pine Spring** 13nm,2.0s	**37.41**	**323**	*e* P	**P**	**01 18 39.1**	**+1.7**
PDAR	**Pinedale Array** 0.9nm,0.6s,baz=119,slow=7.8,SNR=10.0	**38.13**	**331**	P	**P**	**01 18 42.2**	**-1.2**
PDAR	0.3nm,0.5s,baz=147,slow=5.7,SNR=4.4			PcP	**PcP**	**01 20 58.5**	**+0.6**
HWUT	**Hardware Ranch** 3.0nm,0.6s	**38.25**	**328**	*e* P	**P**	**01 18 43.7**	**-0.6**
B34A	**Aery, Baudette** baz=166	**38.46**	**351**	P	**P**	**01 18 44.1**	**-1.7**
C30A	**Mose, Pekin** baz=160	**38.47**	**346**	P	**P**	**01 18 44.3**	**-1.5**
AGMN	**Agassiz Nation** baz=164	**38.49**	**349**	P	**P**	**01 18 44.4**	**-1.6**
D28A	**Regan** baz=156	**38.53**	**344**	P	**P**	**01 18 45.2**	**-1.2**
B32A	**Ashes, Strandq** baz=163,SNR=8.6	**38.71**	**349**	P	**P**	**01 18 46.3**	**-1.6**
A33A	**Warroad** baz=165,SNR=5.8	**39.02**	**350**	P	**P**	**01 18 48.6**	**-1.9**
B30A	**Myrvik Farm, E** baz=160	**39.14**	**347**	P	**P**	**01 18 49.9**	**-1.5**
REDW	**Red Top Meadow** 4.4nm,0.7s	**39.20**	**331**	*e* P	**P**	**01 18 52.1**	**-0.2**
A32A	**Rocking H Ranc** baz=163	**39.20**	**349**	P	**P**	**01 18 50.2**	**-1.7**
LOHW	**Long Hollow** 12nm,1.9s	**39.27**	**331**	*e* P	**P**	**01 18 52.5**	**-0.4**
B29A	**Wagenman Farm,** baz=159	**39.39**	**346**	P	**P**	**01 18 52.4**	**-1.2**
C26A	**Wahner Farm, P** baz=154	**39.53**	**343**	P	**P**	**01 18 53.6**	**-1.3**
A30A	**Hoffart Farm,** baz=161	**39.60**	**347**	P	**P**	**01 18 54.2**	**-1.1**
A29A	**Manning Farm,** baz=159	**39.79**	**346**	P	**P**	**01 18 55.8**	**-1.1**
NV01	**Mina Array Sit**	**40.11**	**319**	*e* P	**P**	**01 19 01.7**	**+1.7**
NVAR	**Mina Array Bea** 3.9nm,0.8s,baz=131,slow=7.7,SNR=20	**40.11**	**319**	P	**P**	**01 19 01.8**	**+1.8**
NVAR	1.9nm,0.8s,baz=141,slow=4.7,SNR=7.4			PcP	**PcP**	**01 21 05.8**	**+1.6**
HLID	**Hailey** baz=134	**41.12**	**328**	P	**P**	**01 19 07.4**	**-0.8**
MCMT	**McKenzie Canyo**	**41.25**	**331**	*e* P	**P**	**01 19 10.6**	**+1.3**
SCHQ	**Schefferville** 3.0nm,0.7s,baz=193,slow=5.0,SNR=5.9	**46.60**	**15**	P	**P**	**01 19 50.8**	**-1.0**
PLCA	**Paso Flores** 1.1nm,0.7s,baz=345,slow=13,SNR=3.4	**53.01**	**165**	P	P	01 20 32.5	-8.2
YKA	**Yellowknife Ar** 0.8nm,0.8s,baz=140,slow=7.1,SNR=18	**55.79**	**344**	P	**P**	**01 20 58.4**	**-2.2**
YKA	0.2nm,0.6s,baz=141,slow=4.1,SNR=9.7			PcP	**PcP**	**01 21 59.2**	**-0.2**
ILAR	**Eielson Array** 0.8nm,0.8s,baz=115,slow=4.9,SNR=6.7	**68.32**	**336**	P	**P**	**01 22 23.8**	**-0.9**
CMAR	**Chiang Mai Arr** 1.0nm,0.3s,baz=350,slow=2.6,SNR=5.3	**150.73**	**351**	PKPbc	**PKPdf**	**01 31 13.1**	**+1.7**

GUC ***03*** *01:34:30.8±2.7, 33°.82S±0°.07×72°.6W±0°.2, h10km, n13, σ1°67/18, 1C-1D, Off coast of central Chile*

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHPI	**Pichilemu**	**0.75**	**140**	*e* P	**Pg**	**01 34 45.1**	**-0.3**
CHPI				*e* S	**Sg**	**01 34 55.9**	**+0.6**
ROCH	**El Roble**	**1.57**	**58⇑**	*e* P	**Pn**	**01 34 58.0**	**-1.0**
ROCH				*e* S	**Sn**	**01 35 18.9**	**-0.5**
ROCH	comp=E,385nm,0.4s			IAML		01 35 29.6	
PEL	**Peldehue**	**1.73**	**68⇓**	*e* P	**Pn**	**01 35 00.4**	**-0.6**
PEL				*e* S	**Sn**	**01 35 22.9**	**-0.3**
PEL	comp=E,481nm,0.7s			IAML		01 35 32.5	
CLCH	**Cerro Calan**	**1.77**	**77**	*e* P	**Pn**	**01 35 01.1**	**-0.4**
CLCH				*e* S	**Sn**	**01 35 24.0**	**-0.1**
AUSP	**Uspallata**	**3.13**	**60**	*i* P	**Pb**	**01 35 26.6**	**-0.1**
AUSP				*i* S	**Sb**	**01 36 06.4**	**+1.4**
ARCO	**CERRO ARCO**	**3.22**	**73**	*i* P	**Pb**	**01 35 27.3**	**-0.8**
ARCO	comp=Z,63nm,0.5s			IAML		01 35 32.1	
AAGR	**Agrelo**	**3.23**	**78**	*i* P	**Pb**	**01 35 28.1**	**-0.2**
ASAL	**Salagasta**	**3.38**	**70**	*i* P	**Pb**	**01 35 29.4**	**-1.5**
RTLS	**Leoncito**	**3.43**	**55**	*i* P	**Pb**	**01 35 28.2**	**-3.6**
SJA	**San Juan**	**4.10**	**57**	*i* P	**Pn**	**01 35 37.2**	**+3.7**
SJA	comp=Z,255nm,0.3s			IAML		01 35 53.4	
RTLL	**Cerro Villicun**	**4.27**	**56**	*i* P	**Pn**	**01 35 37.9**	**+1.9**
AGUA	**GUANDACOL**	**5.55**	**40**	*i* P	**Pn**	**01 35 55.1**	**+1.5**
VCA	**Vinchina**	**6.30**	**38**	*i* P	**Pn**	**01 36 05.4**	**+1.4**

ISK ***03*** *02:10:23.6, 37°.32N×36°.11E, h14km, MD2.8*
CSEM ***03*** *02:10:24.6±0.3, 37°.35N×36°.00E, h8km, MD2.8, Error*

ellipse: s-maj=8.6km s-min=6.5km az=177.0
DDA ***03*** *02:10:24.6, 37.°38N×36.°03E, h7km, Md2.8*
ISC 03 02:10:24.2±1.1, 37.°34N±0.°03×36.°04E±0.°02, h10km±10km, n29, σ0°92/41, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ANDN	**Andirin**	**0.34**	**46**	P	**Pg**	**02 10 30.9**	**-0.2**
ANDN				S	**Sb**	**02 10 37.5**	**-0.6**
ANDN	**Andirin**	**0.34**	**46**	*i* P	**Pg**	**02 10 30.9**	**-0.2**
ANDN				*i* S	**Sb**	**02 10 37.5**	**-0.6**
CEYT	**Ceyhan**	**0.40**	**215**	*e*PG	**Pg**	**02 10 32.2**	**0.0**
CEYT	**Ceyhan**	**0.40**	**215**	*e*Pg	**Pg**	**02 10 32.2**	**0.0**
AKO	**Adana**	**0.48**	**284**	*i* P	**Pg**	**02 10 32.8**	**-0.9**
AKO				*i* S	**Sg**	**02 10 40.5**	**+0.4**
HCB	**Kahramanmara¯**	**0.69**	**90**	*i* P	**Pb**	**02 10 38.4**	**-0.1**
HCB				*i* S	**Sb**	**02 10 47.9**	**-0.3**
KMRS	**Kahramanmaras**	**0.71**	**76**	*e*PG	**Pg**	**02 10 36.9**	**-1.0**
KMRS	**Kahramanmaras**	**0.71**	**76**	*e*Pg	**Pg**	**02 10 36.9**	**-1.0**
KARA	**Karaisali**	**0.79**	**264**	*e*PG	**Pb**	**02 10 40.3**	**+0.3**
KARA				*e*SG	**Sn**	**02 10 52.8**	**-0.5**
KARA	**Karaisali**	**0.79**	**264**	*e*Pg	**Pb**	**02 10 40.3**	**+0.3**
KARA				*e*Sg	**Sn**	**02 10 52.8**	**-0.5**
TAHT	**Tahtakopru-Hat**	**0.97**	**173**	*e*PG	**Pg**	**02 10 41.9**	**-1.0**
TAHT				*e*SG	**Sb**	**02 10 56.3**	**+0.2**
TAHT	**Tahtakopru-Hat**	**0.97**	**173**	*e*Pg	**Pg**	**02 10 41.9**	**-1.0**
TAHT				*e*Sg	**Sb**	**02 10 56.3**	**+0.2**
GULE	**Gulek**	**1.01**	**267**	P	**Pn**	**02 10 45.3**	**+0.7**
GULE	**Gulek**	**1.01**	**267**	*i* P	**Pn**	**02 10 45.3**	**+0.7**
KUZU	**Kuzuini**	**1.01**	**124**	P	**Pn**	**02 10 44.8**	**+0.3**
KUZU				S	**Sn**	**02 10 59.1**	**+0.3**
KUZU	**Kuzuini**	**1.01**	**124**	*i* P	**Pn**	**02 10 44.8**	**+0.3**
KUZU				*i* S	**Sn**	**02 10 59.1**	**+0.3**
GZT	**Gaziantep**	**1.22**	**89**	*i* P	**Pg**	**02 10 44.7**	**-3.0**
GZT				*i* S	**Sn**	**02 11 07.0**	**+2.8**
MERS	**Mersin**	**1.30**	**249**	*e*PN	**Pn**	**02 10 48.4**	**-0.2**
MERS	**Mersin**	**1.30**	**249**	*e*Pn	**Pn**	**02 10 48.4**	**-0.2**
NIG	**Nigde**	**1.36**	**305**	*e*PN	**Pg**	**02 10 49.8**	**-0.7**
NIG	**Nigde**	**1.36**	**305**	*e*Pn	**Pg**	**02 10 49.8**	**-0.7**
BNN	**Bunyan**	**1.51**	**354**	*e*PN	**Pn**	**02 10 51.6**	**+0.1**
BNN	**Bunyan**	**1.51**	**354**	*e*Pn	**Pn**	**02 10 51.7**	**+0.1**
KERG	**Konya-Eregli**	**1.52**	**273**	P	**Pn**	**02 10 50.8**	**-0.9**
KERG	**Konya-Eregli**	**1.52**	**273**	*i* P	**Pn**	**02 10 50.8**	**-0.9**
GULA	**Gulagac**	**1.74**	**306**	*e*PN	**Pn**	**02 10 54.8**	**+0.1**
GULA	**Gulagac**	**1.74**	**306**	*e*Pn	**Pn**	**02 10 54.8**	**+0.1**
AKCD	**Akcadag**	**1.77**	**57**	P	**Pg**	**02 10 57.6**	**-0.6**
AKCD	**Akcadag**	**1.77**	**57**	*i* P	**Pg**	**02 10 57.6**	**-0.6**
AKCD				*i* S	**Sg**	**02 11 23.0**	**+1.8**

NIED ***03*** *02:13:00, 37.°00N×140.°60E, h8km, Mw3.7 Best double couple: M0=4.03000×10^14 NP1:φ=230.00000°, δ=43.00000°, λ=-77.00000°. NP2:φ=32.00000°, δ=48.00000°, λ=-102.00000°.*
ISCJB ***03*** *02:13:23.4±0.5, 36.°93N±0.°03×140.°74E±0.°05, h19km±4km, mb3.6/7, Error ellipse: s-maj=6.9km s-min=4.3km az=19.1*
JMA ***03*** *02:13:24.2, 36.°96N×140.°62E, h9km±1km, M3.8 Broadband fault plane solution: P waves. NP1: φ=45.00000°, δ=47.00000°, λ=-90.00000°. NP2:φ=225.00000°, δ=43.00000°, λ=-90.00000°. Principal axes: T Plg2.0000°, Azm135.0000°; N Plg0.0000°, Azm45.0000°; P Plg88.0000°, Azm315.0000°;*
JMA Felt II J1.
IDC ***03*** *02:13:29.1±2.6, 36.°82N×140.°64E, h55km±26km, mb3.4/7, mb1 3.6/9, mb1mx3.3/61, mbtmp3.7/9, ML2.9/2 Error ellipse: s-maj=21.0km s-min=11.6km az=55.0*
ISC 03 02:13:23.9±0.9, 36.°95N±0.°03×140.°63E±0.°04, h13km±6km, n22, σ0°55/29, mb3.5/7, 6C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.21**	**41**	P	**Pg**	**02 13 28.5**	**0.0**
ONAJ				S	**Sg**	**02 13 31.5**	**-0.1**
JHO	**Hitachi**	**0.34**	**188**	⇑P	**Pg**	**02 13 30.9**	**+0.2**
JHO				S	**Sg**	**02 13 35.6**	**+0.3**
JFK	**Kawauchi**	**0.47**	**25**	P	**Pg**	**02 13 32.8**	**-0.3**
JFK				S	**Sg**	**02 13 39.4**	**+0.1**
JSB	**Shiboa**	**0.57**	**273**	⇑P	**Pb**	**02 13 35.8**	**+0.1**
JSB				S	**Sb**	**02 13 43.6**	**-0.2**
JFT	**Otama**	**0.62**	**338**	⇑P	**Pg**	**02 13 36.0**	**+0.1**
JFT				S	**Sg**	**02 13 44.4**	**+0.3**
JYT	**Yasato**	**0.80**	**206**	⇑P	**Pg**	**02 13 39.2**	**-0.1**
JYT				S	**Sg**	**02 13 49.6**	**-0.1**
JFY	**Yanaizu**	**0.87**	**302**	⇑P	**Pg**	**02 13 40.5**	**-0.2**
JFY				S	**Sg**	**02 13 51.9**	**-0.2**
JMM	**Marumori**	**0.93**	**8**	⇑P	**Pg**	**02 13 41.0**	**-0.8**
MJAR	**Matsushiro Arr**	**1.98**	**259**	P	**Pn**	**02 13 58.3**	**+1.1**
	20nm,0.3s,baz=102,slow=15,SNR=137						
MJAR				S	**Sb**	**02 14 24.1**	**-0.5**
	77nm,0.3s,baz=91,slow=26,SNR=22						
MAT	**Matsushiro**	**1.98**	**259**	P	**Pb**	**02 13 58.9**	**-1.0**
MAT				S	**Sb**	**02 14 25.0**	**+0.4**
JHJ	**Hachijo jima 2**	**3.88**	**191**	P	**Pn**	**02 14 23.4**	**+0.1**
	7.7nm,0.3s,baz=66,slow=20,SNR=2.6						
JHJ				S	**Sn**	**02 15 07.4**	**-1.3**
	15nm,0.3s,baz=211,slow=23,SNR=3.3						
JNU	**Nakatsue**	**8.86**	**247**	P	Pn	02 15 36.9	+5.2
	0.2nm,0.3s,baz=55,slow=8.0,SNR=4.3						
USRK	**Ussuriysk Ar.**	**9.78**	**320**	P	Pn	02 15 49.9	+5.7
	0.3nm,0.3s,baz=122,slow=11,SNR=3.5						
KSRS	**Korea Array**	**10.15**	**277**	P	Pn	02 15 56.2	+6.9
	baz=91,slow=14,SNR=8.5						
SONM	**Songjino Array**	**27.31**	**304**	P	**P**	**02 19 08.8**	**+0.4**
	0.6nm,0.6s,baz=113,slow=9.3,SNR=5.4						
ZALV	**Zalesovo Beam**	**41.51**	**312**	P	**P**	**02 21 10.4**	**-0.3**
	0.7nm,0.4s,baz=64,slow=5.9,SNR=3.1						
MKAR	**Makanchi Array**	**43.63**	**302**	P	**P**	**02 21 27.6**	**-0.4**
	0.3nm,0.6s,baz=79,slow=11,SNR=2.9						
KURBB	**Kurchatov Arra**	**45.56**	**308**	P	**P**	**02 21 42.9**	**-0.4**
	1.0nm,0.6s,baz=85,slow=8.1,SNR=8.9						
ILAR	**Eielson Array**	**49.91**	**32**	P	**P**	**02 22 18.0**	**+1.1**
	0.3nm,0.7s,baz=265,slow=7.2,SNR=3.8						
WRA	**Warramunga Arr**	**56.89**	**187**	P	**P**	**02 23 08.5**	**-0.1**
	2.0nm,0.7s,baz=4.5,slow=7.3,SNR=3.3						
YKA	**Yellowknife Ar**	**64.20**	**30**	P	**P**	**02 23 58.3**	**+0.3**
	0.2nm,0.8s,baz=303,slow=6.5,SNR=4.5						
LPAZ	**La Paz**	**147.28**	**59**	PKPbc	**PKPbc**	**02 33 08.1**	**-0.3**
	2.0nm,1.0s,baz=288,slow=6.4,SNR=3.6						

NIED ***03*** *02:16:00, 36.°40N×142.°30E, h5km, Mw4.1 Best double couple: M0=1.74000×10^15 NP1:φ=218.00000°, δ=35.00000°, λ=111.00000°. NP2:φ=13.00000°, δ=58.00000°, λ=76.00000°.*
NEIC ***03*** *02:16:44.9±0.9, 36.°23N×142.°58E, h10km, mb4.2/2, Error ellipse: s-maj=15.7km s-min=9.7km az=99.0*
ISCJB ***03*** *02:16:45.1±0.5, 36.°26N±0.°04×142.°41E±0.°05, h18km, mb4.0/14, MS3.4/3, Error ellipse: s-maj=5.7km s-min=4.8km az=34.1*
JMA ***03*** *02:16:47.4±0.2, 36.°38N×142.°34E, h51km, M4.2*
IDC ***03*** *02:16:49.2±0.6, 36.°25N×142.°32E, h30km±4km, mb3.7/10, mb1 3.9/15, mb1mx3.6/55, mbtmp4.0/15, ML3.7/4, MS3.2/8, Ms1 3.2/8, ms1mx2.9/49, Error ellipse: s-maj=17.6km s-min=12.9km az=97.0*
ISC 03 02:16:47.5±0.6, 36.°21N±0.°05×142.°36E±0.°07, h18km, n58, σ1°80/69, mb4.1/14, MS3.4/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.32**	**248**	P	**Pn**	**02 17 10.9**	**-0.1**
JHO	**Hitachi**	**1.50**	**286**	P	**Pn**	**02 17 11.5**	**-2.0**
JHO				*e*S	**Sn**	**02 17 29.2**	**-3.5**
ONAJ	**Iwakimizuishiy**	**1.54**	**306**	P	**Pn**	**02 17 11.6**	**-2.5**
JFK	**Kawauchi**	**1.66**	**314**	P	**Pn**	**02 17 12.8**	**-3.0**
BSO1	**Boso 1**	**1.92**	**217**	P	**Pn**	**02 17 19.8**	**+1.1**
BSO3	**Boso 3**	**2.06**	**228**	P	**Pn**	**02 17 21.8**	**+0.8**
JMM	**Marumori**	**2.08**	**323**	P	**Pn**	**02 17 18.6**	**-2.8**
JFT	**Otama**	**2.09**	**309**	P	**Pn**	**02 17 20.2**	**-1.4**
JAG	**Ashikaga**	**2.36**	**276**	P	**Pn**	**02 17 24.4**	**-0.9**
JAG				S	**Sn**	**02 17 51.4**	**-2.4**
JRY	**Ryogami san**	**2.81**	**267**	P	**Pn**	**02 17 30.8**	**-0.7**
JRY				S	**Sn**	**02 18 04.0**	**-1.0**
JOD2	**Odawara 2**	**2.83**	**251**	P	**Pn**	**02 17 32.0**	**+0.3**
JOD2				*e*S	**Sn**	**02 18 06.2**	**+0.8**
JMK	**Ichinoseki**	**2.89**	**342**	P	**Pn**	**02 17 30.0**	**-2.5**
JYK	**Kaneyama**	**3.14**	**330**	P	**Pn**	**02 17 34.2**	**-1.8**
JYN	**Shimob**	**3.18**	**258**	P	**Pn**	**02 17 37.1**	**+0.4**
JOM	**Ohasama**	**3.37**	**346**	P	**Pn**	**02 17 36.5**	**-2.7**
MJAR	**Matsushiro Arr**	**3.37**	**277**	Pn	**Pn**	**02 17 38.6**	**-0.6**
	9.0nm,0.3s,baz=99,slow=8.1,SNR=21						
MAJO	**Matsushiro**	**3.37**	**277**	*e*Pn	**Pn**	**02 17 39.4**	**+0.2**
MAJO				*e*S	**Sn**	**02 18 17.7**	**-1.1**
MAT	**Matsushiro**	**3.37**	**277**	P	**Pn**	**02 17 39.1**	**-0.1**
MAT				*e*S	**Sn**	**02 18 21.7**	**+2.9**
MAT	**Matsushiro**	**3.37**	**277**	P	**Pn**	**02 17 39.3**	**+0.1**
MJB9	**Matsu-Tunnel**	**3.37**	**277**	*e*Pn	**Pn**	**02 17 39.4**	**+0.2**
JHJ2	**Mitsune**	**3.73**	**215**	*e*Pn	**Pn**	**02 17 43.7**	**-0.4**
JHJ2				*e*S	**Sn**	**02 18 20.6**	**-7.1**
JHJ	**Hachijo jima 2**	**3.74**	**215**	Pn	**Pn**	**02 17 44.2**	**-0.1**
	96nm,0.3s,baz=78,slow=22,SNR=19						
JHJ				Sn	**Sn**	**02 18 26.8**	**-1.2**
	85nm,0.3s,baz=100,slow=23,SNR=7.0						
INU	**Inuyama**	**4.43**	**260**	*e*Pn	**Pn**	**02 17 54.5**	**+0.7**
ERM	**Erimo**	**5.83**	**6**	*e*Pn	**Pn**	**02 18 09.9**	**-3.1**
ERM				*e*S	Sn	02 19 05.7	-14
ASAJ	**Asahikawa**	**7.90**	**1**	Pn	**Pn**	**02 18 38.0**	**-3.4**
	1.9nm,0.3s,baz=193,slow=11,SNR=7.9						
ASAJ				LR	LR	02 22 22.6	
	comp=Z,188nm,18.4s,baz=153,slow=42						
CBIJ	**Chichi jima**	**9.09**	**181**	*e*Pn	**Pn**	**02 18 56.7**	**-1.0**
JCJ	**Chichijima**	**9.09**	**181**	Pn	**Pn**	**02 18 56.8**	**-0.9**
	13nm,0.3s,baz=86,slow=24,SNR=14						
JCJ				Sn	**Sn**	**02 20 36.7**	**-2.9**
JNU	**Nakatsue**	**9.95**	**255**	Pn	**Pn**	**02 19 10.0**	**+0.5**
	0.3nm,0.3s,baz=66,slow=2.6,SNR=2.7						
JNU				LR	LR	02 23 04.2	
	comp=Z,125nm,21.5s,baz=120,slow=38						
USRK	**Ussuriysk Ar.**	**11.25**	**318**	Pn	**Pn**	**02 19 29.5**	**+2.3**
	0.1nm,0.3s,baz=134,slow=12,SNR=2.5						
USRK				LR	LR	02 23 27.9	
	comp=Z,127nm,21.1s,baz=138,slow=36						
KSRS	**Korea Array**	**11.64**	**280**	Pn	**Pn**	**02 19 35.2**	**+2.5**
	0.3nm,0.3s,baz=92,slow=14,SNR=4.6						
KSRS				LR	LR	02 23 34.4	
	comp=Z,81nm,20.2s,baz=60,slow=35						
KLR	**Kul'dur**	**15.15**	**332**	LR	LR	02 26 02.0	
	comp=Z,43nm,20.0s,baz=146,slow=37						
ULN	**Ulaanbaatar**	**28.45**	**305**	*e*P	**P**	**02 22 41.7**	**+0.3**
	6.0nm,1.0s						
SONA1	**Songino Array**	**28.88**	**305**	*e*P	**P**	**02 22 45.0**	**-0.1**
SONM	**Songino Array**	**28.88**	**305**	P	**P**	**02 22 45.1**	**-0.1**
	4.4nm,0.9s,baz=96,slow=8.2,SNR=15						
SONM				pP	**sP**	**02 22 54.3**	**+1.4**
	5.7nm,0.8s,baz=107,slow=8.8,SNR=10						
GTA	**Gaotai**	**33.54**	**289**	*e*P	**P**	**02 23 25.8**	**-0.5**
GTA				pP	sP	02 23 33.4	-0.7
GTA				sP	pP	02 23 36.7	+4.9
GTA				pmax	pmax		
	comp=Z,3.0nm,1.1s						
CMAR	**Chiang Mai Arr**	**42.04**	**257**	LR	LR	02 41 52.5	
	comp=Z,32nm,20.5s,baz=195,slow=36						
ZAA0	**Zalesovo Array**	**43.04**	**313**	*e*P	**P**	**02 24 48.0**	**+2.2**
ZALV	**Zalesovo Beam**	**43.04**	**313**	P	**P**	**02 24 45.3**	**-0.5**
	comp=Z,1.9nm,0.7s,baz=101,slow=4.8,SNR=5.6						
MK01	**Makanchi Array**	**45.20**	**303**	*e*P	**P**	**02 25 03.0**	**-0.4**
MK31	**Makanchi Array**	**45.21**	**303**	*e*P	**P**	**02 25 03.4**	**0.0**
MKAR	**Makanchi Array**	**45.21**	**303**	P	**P**	**02 25 02.8**	**-0.6**
	comp=Z,1.9nm,0.6s,baz=89,slow=10,SNR=19						
MKAR	**Makanchi Array**	**45.21**	**303**	*e*P	**P**	**02 25 03.4**	**0.0**
KURK	**Kurchatov**	**47.04**	**309**	*e*P	**P**	**02 25 16.9**	**-0.8**
	comp=Z,12nm,1.2s						
KURBB	**Kurchatov Arra**	**47.11**	**309**	P	**P**	**02 25 17.3**	**-0.9**
	comp=Z,1.7nm,0.8s,baz=85,slow=8.1,SNR=10						
ILAR	**Eielson Array**	**49.78**	**32**	P	**P**	**02 25 39.0**	**+0.4**
	comp=Z,0.4nm,0.8s,baz=268,slow=6.9,SNR=3.1						
ILAR				pP	**sP**	**02 25 47.5**	**+1.0**
	comp=Z,0.7nm,0.6s,baz=258,slow=7.5,SNR=4.9						
TKM2	**Tokmak 2**	**50.70**	**299**	*e*P	**P**	**02 25 46.7**	**+0.5**
	comp=Z,2.2nm,0.9s						
WRA	**Warramunga Arr**	**56.36**	**189**	P	**P**	**02 26 28.1**	**+0.6**
	comp=Z,0.7nm,0.5s,baz=8.2,slow=7.4,SNR=5.0						
WRA				pP	**sP**	**02 26 37.0**	**+1.6**
	comp=Z,1.9nm,0.6s,baz=3.7,slow=7.4,SNR=6.7						
ABKAR	**Akbulak array**	**59.06**	**311**	*e*P	**P**	**02 26 45.6**	**-0.7**
ASAR	**Alice Springs**	**60.09**	**189**	P	**P**	**02 26 54.2**	**+0.6**
	comp=Z,0.5nm,0.6s,baz=16,slow=9.8,SNR=4.3						
ASAR				pP	**sP**	**02 27 03.4**	**+1.9**
	comp=Z,0.9nm,0.4s,baz=24,slow=11,SNR=6.6						
YKA	**Yellowknife Ar**	**64.14**	**30**	P	**P**	**02 27 20.1**	**-0.2**
	comp=Z,0.4nm,0.9s,baz=296,slow=6.2,SNR=5.3						
YKA				pP	**sP**	**02 27 29.3**	**+1.0**
	comp=Z,0.6nm,0.7s,baz=304,slow=6.8,SNR=13						
YKB5	**Yellowknife Ar**	**64.14**	**30**	*e*P	P	02 27 25.8	+5.5
ARCES	**ARCESS Array B**	**65.04**	**340**	pP	**pP**	**02 27 35.6**	**+3.7**
	comp=Z,1.4nm,0.8s,baz=53,slow=8.1,SNR=1.8						
ARCES				LR	LR	03 02 00.4	
	comp=Z,24nm,19.1s,baz=58,slow=42						
FINES	**FINESS Array B**	**69.90**	**333**	pP	pP	02 28 05.9	+3.1
	comp=Z,1.4nm,0.6s,baz=56,slow=10,SNR=3.1						
NB2	**NORSAR Subarra**	**75.24**	**338**	P	**P**	**02 28 28.6**	**-0.2**
	comp=Z,1.3nm,0.6s,baz=38,slow=6.2						
NOA	**NORSAR Array B**	**75.24**	**338**	P	**P**	**02 28 28.6**	**-0.2**
	comp=Z,0.8nm,0.8s,baz=40,slow=6.0,SNR=3.3						
NOA				pP	**sP**	**02 28 38.0**	**+1.1**
	comp=Z,1.5nm,0.7s,baz=39,slow=5.8,SNR=6.2						
AKASG	**Malin Array Be**	**75.42**	**323**	P	**P**	**02 28 29.3**	**-0.6**
	comp=Z,0.9nm,0.6s,baz=50,slow=6.4,SNR=4.8						
AKASG				pP	**sP**	**02 28 38.6**	**+0.6**
	comp=Z,1.5nm,0.6s,baz=45,slow=5.8,SNR=5.0						
AKASG				LR	LR	03 03 09.2	
	comp=Z,20nm,18.6s,baz=50,slow=37						
BRTR	**Keskin Array B**	**79.97**	**312**	pP	pP	02 29 06.0	+4.3
	comp=Z,0.7nm,0.8s,baz=120,slow=1.7,SNR=4.1						
BR231	**Keskin MP Arra**	**80.41**	**313**	*e*P	**P**	**02 28 56.0**	**-2.1**

NNC 03 02:17:32.5±1.7, 37.°43N×71.°67E, h158km±32km, mb2.8, mpv3.8, 7C-2D, Error ellipse: s-maj=24.0km s-min=13.7km az=68.0, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFK	**Sufi-Kurgan**	**2.95**	**28**	⇑P	Pn	02 18 19.5	-0.2
	26nm,0.3s						
SFK				⇑S	Sn	02 18 56.9	+0.6
	32nm,0.2s						
MNAS	**Manas**	**5.09**	**7**	⇑P	Pn	02 18 47.6	+0.3
	10nm,0.4s						
MNAS				⇑S	Sn	02 19 45.7	0.0
	42nm,0.6s						
AAK	**Ala-Archa**	**5.63**	**22**	⇑P	Pn	02 18 54.3	-0.1
	4.0nm,0.5s						
AAK				⇑S	Sn	02 19 59.5	+1.0
	8.2nm,0.6s						
KK31	**Karatay Array**	**5.73**	**351**	⇓P	Pn	02 18 56.2	+0.6
	1.2nm,0.2s,baz=190,slow=15,SNR=43						
KK31				S	Sn	02 20 01.9	+1.1
	8.3nm,0.3s,baz=164,slow=17,SNR=26						
AB31	**Akbulak array**	**14.55**	**328**	⇓P	Pn	02 20 51.4	+0.6
	0.2nm,0.3s,baz=135,slow=14,SNR=14						
AB31				⇑S	Sn	02 23 30.0	-2.4
	0.7nm,0.5s,baz=161,slow=24,SNR=4.8						

DHMR ***03*** *02:20:36.4±1.6, 14.°97N×42.°27E, h2km±153km, ML3.5*
ARO ***03*** *02:20:40.3, 15.°N±25.°×4.°2E±10.°0, h15km±99km, ML3.3*
ISC 03 02:20:32.7±2.8, 15.°03N±0.°09×42.°1E±0.°1, h10km, n9, σ0°51/13, 1D, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HAJJ	**Hajjah**	**1.63**	**66**	⇓*i* P	**Pb**	**02 21 02.9**	**-0.2**
HAJJ				*i* S	**Sg**	**02 21 25.6**	**+0.4**
DHBB	**Dhamar BB**	**2.30**	**101**	*i* P	**Pb**	**02 21 14.2**	**-0.3**
DHBB				*i* S	**Sb**	**02 21 43.1**	**-0.1**
DHBB				AML	AML	02 21 57.7	
	comp=N,679nm,0.3s						
TRBA	**At Turbah**	**2.67**	**132**	*i* P	**Pb**	**02 21 20.8**	**-0.1**
TRBA				*i* S	**Sb**	**02 21 54.0**	**+0.1**
TRBA				AML	AML	02 22 10.3	
	comp=E,220nm,0.4s						
MAOD	**Malaho**	**2.92**	**177**	*e*P	**Pb**	**02 21 25.5**	**+0.6**
OBO	**Obock**	**3.25**	**158**	*e*P	**Pb**	**02 21 30.3**	**-0.2**
TDD	**Tadjoura Ara**	**3.31**	**165**	*e*P	**Pb**	**02 21 31.5**	**0.0**
LDLD	**Lac de Lave**	**3.45**	**173**	*e*P	**Pb**	**02 21 33.4**	**-0.6**
ATD	**Arta Tunnel**	**3.56**	**167**	*e*P	**Pb**	**02 21 35.2**	**-0.6**
ATD				*e*S	**Sb**	**02 22 19.7**	**+0.5**
SGH	**Sud-Ghoubbet**	**3.61**	**171**	*e*P	**Pb**	**02 21 35.8**	**-0.9**

DJA 03 02:22:05.8±0.7, 9.°S±12.°×11.°3E±.°, h80km±18km, M3.9/6, MLv3.9/6, South of Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GMJI	**Gumukmas**	**1.05**	**15**	P	Pn	02 22 26.5	+1.1
GMJI				S	Sn	02 22 40.8	+0.7
JAGI	**Jajag, Banyuwa**	**1.27**	**50**	P	Pn	02 22 28.6	+0.4
JAGI				S	Sn	02 22 47.6	+2.6
ABJI	**Asem Bagus**	**1.82**	**35**	P	Pn	02 22 36.5	+1.2
PWJI	**Pagerwojo**	**1.85**	**313**	P	Pn	02 22 36.1	+0.4
PWJI				S	Sn	02 22 57.5	-0.9
DNP	**Denpasar**	**2.10**	**73**	P	Pn	02 22 38.8	-0.3
DNP				S	Sn	02 23 03.9	-0.6
PCJI	**Pacitan**	**2.25**	**299**	P	Pn	02 22 41.2	+0.1
PCJI				S	Sn	02 23 07.1	-0.9
SRBI	**Singaraja**	**2.35**	**59**	P	Pn	02 22 42.5	+0.1
GRJI	**Gresik**	**2.46**	**344**	P	Pn	02 22 42.4	-1.4
NGJI	**Ngawi**	**2.55**	**318**	P	Pn	02 22 45.8	+0.7
WOJI	**Wonogiri, Jawa**	**2.65**	**303**	P	Pn	02 22 42.8	-3.6
UGM	**Wanagama**	**2.95**	**297**	P	Pn	02 22 50.5	-0.1
UGM				S	Sn	02 23 25.4	+0.3
TWSI	**Taliwang, Sumb**	**3.71**	**82**	P	Pn	02 23 00.1	-0.7
TWSI				S	Sn	02 23 48.4	+5.0
PLAI	**Plampang**	**4.57**	**85**	P	Pn	02 23 11.9	-0.7

ISCJB ***03*** *02:55:24.3±0.7, 38.°14N±0.°05×144.°61E±0.°05, h33km, mb3.9/6, MS4.0/2, Error ellipse: s-maj=6.6km s-min=5.7km az=165.8*
IDC ***03*** *02:55:25.5±5.1, 37.°97N×144.°68E, h33km±39km, mb3.6/6, mb1 4.0/11, mb1mx3.6/44, mbtmp4.0/11, ML4.2/4, MS2.9/5, Ms1 2.9/5, ms1mx2.6/45, Error ellipse: s-maj=31.1km s-min=17.7km az=96.0*
JMA ***03*** *02:55:26.0±0.2, 38.°17N×144.°51E, h46km, M4.7*
ISC 03 02:55:25.9±1.0, 38.°18N±0.°06×144.°65E±0.°08, h35km, n29, σ1°23/38, mb3.8/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.50**	**292**	P	**Pn**	**02 56 04.3**	**+0.2**
JIO	**Ouri**	**2.61**	**277**	P	**Pn**	**02 56 05.6**	**0.0**
JIO				S	**Sn**	**02 56 34.8**	**-1.2**
JTH	**Tanohata**	**2.79**	**310**	P	**Pn**	**02 56 08.2**	**+0.2**
JTH				S	**Sn**	**02 56 38.8**	**-1.6**
JMK	**Ichinoseki**	**2.80**	**287**	P	**Pn**	**02 56 08.5**	**+0.4**
JOM	**Ohasama**	**2.92**	**297**	P	**Pn**	**02 56 10.4**	**+0.6**
JOM				S	**Sn**	**02 56 43.4**	**-0.3**
JMM	**Marumori**	**3.06**	**265**	P	**Pn**	**02 56 11.7**	**-0.1**
JMM				S	**Sn**	**02 56 45.5**	**-1.7**
JFK	**Kawauchi**	**3.10**	**256**	P	**Pn**	**02 56 11.4**	**-0.9**
JFK				S	**Sn**	**02 56 46.2**	**-2.0**
JOU	**Okura**	**3.14**	**275**	P	**Pn**	**02 56 13.5**	**+0.6**
JOU				S	**Sn**	**02 56 48.7**	**-0.5**
JANG	**Nango**	**3.27**	**313**	P	**Pn**	**02 56 14.7**	**0.0**
JANG				*e*S	**Sn**	**02 56 51.1**	**-1.3**
JRG	**Rokugo**	**3.36**	**292**	P	**Pn**	**02 56 16.9**	**+1.0**
JRG				S	**Sn**	**02 56 54.5**	**-0.1**
JYK	**Kaneyama**	**3.44**	**284**	P	**Pn**	**02 56 17.7**	**+0.7**
JYK				*e*S	**Sn**	**02 56 56.6**	**0.0**
JFT	**Otama**	**3.48**	**260**	P	**Pn**	**02 56 18.1**	**+0.6**
JFT				S	**Sn**	**02 56 57.0**	**-0.5**
JTM	**Tenmabayashi**	**3.80**	**314**	P	**Pn**	**02 56 22.2**	**+0.3**
JTM				S	**Sn**	**02 57 03.5**	**-1.9**
MJAR	**Matsushiro Arr**	**5.38**	**254**	Pn	**Pn**	**02 56 44.6**	**+0.9**
	6.5nm,0.3s,baz=79,slow=16,SNR=45						
MJAR				Sn	**Sn**	**02 57 45.7**	**+1.2**
	4.3nm,0.3s,baz=91,slow=24,SNR=7.2						
MJAR				LR	LR	02 58 50.6	
	comp=Z,81nm,21.7s,baz=85,slow=38						
MAT	**Matsushiro**	**5.39**	**254**	P	**Pn**	**02 56 44.

HPIG				eS	Sn	03 00 12.5	-3.2
MSTX	**Muleshoe**	**3.98**	**37**	Sb	Sg	03 00 35.1	-3.0
	baz=218						
MSTX	**Muleshoe**	**3.98**	**37**	ePn	Pn	02 59 33.9	+2.5
MSTX				eS	Sb	03 00 30.4	+1.7
ANMO	**Albuquerque**	**4.16**	**351**	Pn	Pn	02 59 35.8	+1.8
	0.9nm,0.3s,baz=168,slow=14,SNR=32						
ANMO				Pg	Pg	02 59 47.1	-2.8
	3.4nm,0.3s,baz=167,slow=18,SNR=32						
ANMO				Lg	Lg	03 00 41.0	
	20nm,0.3s,baz=324,slow=12,SNR=10						
ANMO	**Albuquerque**	**4.16**	**351**	P	Pn	02 59 35.5	+1.6
	baz=172						
ANMO	**Albuquerque**	**4.16**	**351**	eP	Pn	02 59 31.3	-2.6
ANMO				i S	Sn	03 00 17.1	-5.6
ANMO	**Albuquerque**	**4.16**	**351**	ePn	Pn	02 59 35.7	+1.8
ANMO				Pg	Pg	02 59 47.1	-2.8
ANMO				eS	Sg	03 00 40.1	-3.6
ANMO				Lg	Lg	03 00 41.0	
TUC	**Tucson**	**4.60**	**290**	P	Pn	02 59 39.3	-0.6
	baz=110						
TUC	**Tucson**	**4.60**	**290**	ePn	Pn	02 59 39.2	-0.6
TUC				i S	Sn	03 00 32.2	-1.3
TUC				eS	Sg	03 00 53.5	-4.5
HSIG		**4.92**	**250**	eP	Pn	02 59 43.4	-0.7
HSIG				eS	Sn	03 00 41.8	+0.7
HSIG		**4.92**	**250**	ePn	Pn	02 59 42.4	-1.7
HSIG				eSn	Sn	03 00 34.1	-7.0
HSIG				eS	Sn	03 00 41.8	+0.7
JCT	**Junction City**	**5.07**	**92**	P	Pn	02 59 47.7	+1.4
	baz=274						
X18A	**Snowflake**	**5.16**	**317**	ePn	Pn	02 59 49.1	+1.5
AMTX	**Amarillo**	**5.26**	**39**	ePn	Pn	02 59 50.8	+1.9
	138nm,0.4s						
AMTX				eS	Sg	03 01 18.4	-0.6
ABTX	**Abilene, Hawle**	**5.45**	**69**	P	Pn	02 59 52.1	+0.7
	baz=251						
ABTX	**Abilene, Hawle**	**5.45**	**69**	ePn	Pn	02 59 52.3	+0.9
ABTX				ePg	Pb	03 00 09.3	+4.0
ABTX				eS	Sg	03 01 18.8	-6.1
W18A	**Petrified Fore**	**5.47**	**323**	Sb	Sg	03 01 22.0	-3.8
	baz=142						
W18A	**Petrified Fore**	**5.47**	**323**	ePn	Pn	02 59 53.8	+1.9
W18A				ePg	Pg	03 00 16.0	+1.1
W18A				eS	Sg	03 01 19.6	-6.3
832A	**Faith Ranch, C**	**5.58**	**116**	P	Pn	02 59 52.8	-0.3
	baz=297						
433A	**Art**	**5.67**	**89**	P	Pn	02 59 54.8	+0.4
	baz=271						
333A	**Richland Sprin**	**5.76**	**83**	P	Pn	02 59 56.1	+0.4
	baz=265						
633A	**Saathoff Ranch**	**5.79**	**102**	P	Pn	02 59 57.2	+1.0
	baz=284						
233A	**Rising Star**	**5.91**	**77**	P	Pn	02 59 58.1	+0.2
	baz=259						
733A	**Divot King Ran**	**5.93**	**109**	P	Pn	02 59 58.7	+0.7
	baz=291						
133A	**Hamilton Ranch**	**6.03**	**71**	P	Pn	02 59 59.7	+0.3
	baz=253						
X16A	**Lo Mia Camp, P**	**6.04**	**308**	ePn	Pn	03 00 00.5	+0.8
214A	**Organ Pipe Nat**	**6.20**	**282**	P	Pn	03 00 01.4	-0.3
	baz=100						
214A	**Organ Pipe Nat**	**6.20**	**282**	eP	Pn	03 00 01.5	-0.3
214A	**Organ Pipe Nat**	**6.20**	**282**	ePn	Pn	03 00 01.2	-0.6
	53nm,0.6s						
214A				ePg	Pg	03 00 31.0	+2.1
214A				eS	Sb	03 01 36.3	+3.7
534A	**Blanco**	**6.27**	**95**	P	Pn	03 00 03.4	+0.6
	baz=278						
Z33A	**Whitaker Ranch**	**6.36**	**66**	P	Pn	03 00 04.6	+0.7
	baz=248						
434A	**Burnet**	**6.37**	**88**	P	Pn	03 00 04.0	-0.1
	baz=271						
334A	**Lometa**	**6.40**	**84**	P	Pn	03 00 04.4	-0.1
	baz=266						
933A	**Laredo**	**6.45**	**118**	P	Pn	03 00 05.4	+0.3
	baz=300						
234A	**Clairette**	**6.55**	**78**	P	Pn	03 00 06.4	-0.2
	baz=260						
WUAZ	**Wupatki**	**6.69**	**316**	ePn	Pn	03 00 12.2	+3.7
	26nm,0.7s						
WUAZ				ePg	Pg	03 00 33.4	-4.8
WUAZ				eS	Sb	03 01 54.8	+8.3
Y33A	**Hilltop Ranch,**	**6.75**	**60**	P	Pn	03 00 10.0	+0.6
	baz=243						
MVCO	**Mesa Verde**	**6.79**	**341**	ePn	Pn	03 00 13.0	+3.0
	14nm,0.6s						
MVCO				ePg	Pg	03 00 37.4	-2.7
MVCO				eS	Sg	03 02 06.7	-1.3
W32A	**Sentinel**	**6.90**	**50**	P	Pn	03 00 12.6	+1.3
	baz=232						
Y14A	**Wickenburg**	**6.93**	**299**	ePn	Pn	03 00 12.1	+0.3
Y14A				eSn	Sn	03 01 27.2	-3.6
WMOK	**Wichita Mounta**	**7.00**	**54**	ePn	Pn	03 00 13.8	+1.1
WMOK				eS	Sb	03 01 43.9	-11
X33A	**Lawton**	**7.09**	**57**	P	Pn	03 00 15.1	+1.1
	baz=240						
WHTX	**Lake Whitney,**	**7.12**	**78**	ePn	Pn	03 00 15.6	+1.2
WHTX				ePg	Pb	03 00 39.0	+5.1
WHTX				eS	Sg	03 02 17.2	-1.6
113A	**Mohawk Valley,**	**7.15**	**288**	ePn	Pn	03 00 14.7	-0.1
X34A	**Smith Ranch, M**	**7.61**	**58**	P	Pn	03 00 22.1	+1.0
	baz=242						
PV01	**Paradox Valley**	**7.67**	**343**	ePn	Pn	03 00 25.7	+3.5
	609nm,0.5s						
LPIG	**La Paz**	**7.86**	**213**	LR	LR	03 03 01.9	
	comp=Z,64nm,20.6s,baz=226,slow=35						
W34A	**Bridge Creek,**	**7.96**	**54**	ePn	Pn	03 00 28.2	+2.3
PV04	**Paradox Valley**	**8.00**	**341**	ePn	Pn	03 00 28.2	+1.6
PV10	**Paradox Valley**	**8.03**	**341**	ePn	Pn	03 00 30.3	+3.3
Y12C	**Blythe**	**8.04**	**294**	ePn	Pn	03 00 26.7	-0.2
GLA	**Glamis**	**8.09**	**288**	ePn	Pn	03 00 27.0	-0.6
W13A	**Hualapai Mount**	**8.11**	**304**	ePn	Pn	03 00 29.2	+1.1
X35A	**Drake**	**8.16**	**62**	P	Pn	03 00 28.2	-0.4
	baz=246						
PV09	**Paradox Valley**	**8.17**	**341**	ePn	Pn	03 00 31.7	+2.7
HKT	**Hockley**	**8.55**	**93**	ePn	Pn	03 00 34.0	+0.1
IRM	**Iron Mountain**	**8.66**	**295**	P	Pn	03 00 35.7	+0.2
	baz=111						
BC3	**Big Chuckawall**	**8.75**	**291**	P	Pn	03 00 36.4	-0.4
	baz=107						
U34A	**Anderson Ranch**	**8.80**	**48**	ePn	Pn	03 00 38.4	+1.0
	12nm,0.6s						
MTPU	**Mount Pierson**	**8.98**	**325**	ePn	Pn	03 00 44.7	+4.5
SRU	**San Rafael Swe**	**9.17**	**336**	ePn	Pn	03 00 44.6	+1.9
CCUT	**Cedar City**	**9.24**	**319**	ePn	Pn	03 00 49.9	+6.2
BELC	**Belle Mtn. Jos**	**9.28**	**293**	P	Pn	03 00 43.9	-0.3
	baz=108						
MSU	**Marysvale**	**9.35**	**327**	ePn	Pn	03 00 47.1	+2.0
NATX	**Nacogdoches**	**9.47**	**82**	ePn	Pn	03 00 47.1	+0.4
PFO	**Pinyon Flats O**	**9.55**	**290**	Pn	Pn	03 00 47.3	-0.4
	0.3nm,0.3s,baz=89,slow=6.2,SNR=6.1						
PFO				LR	LR	03 04 36.7	
	comp=Z,51nm,19.2s,baz=83,slow=39						
PFO	**Pinyon Flats O**	**9.55**	**290**	ePn	Pn	03 00 47.0	-0.8
	0.6nm,0.4s						
P17A	**Butcher Ranch,**	**9.57**	**336**	ePn	Pn	03 00 54.1	+6.0
W37B	**Quinton**	**9.62**	**61**	P	Pn	03 00 48.3	-0.3
	baz=246						
TUL1	**Leonard**	**9.70**	**56**	ePn	Pn	03 00 53.3	+3.6
X38A	**Whitesboro**	**9.91**	**64**	P	Pn	03 00 52.4	-0.2
	baz=249						
S35A	**Otter Creek Ra**	**10.33**	**46**	P	Pn	03 00 58.1	-0.2
	baz=231						
GSC	**Goldstone, Bar**	**10.35**	**298**	ePn	Pn	03 00 59.6	+0.9
X39A	**Fountain Ranch**	**10.41**	**66**	P	Pn	03 00 59.0	-0.5
	baz=252						
V38A	**Canehill**	**10.68**	**59**	P	Pn	03 01 02.1	-1.0
	baz=244						
T38A	**Diamond**	**11.30**	**54**	P	Pn	03 01 10.1	-1.5
	baz=240						
S37A	**Fort Scott**	**11.32**	**49**	P	Pn	03 01 11.1	-0.8
	baz=235						
HWUT	**Hardware Ranch**	**11.76**	**338**	ePn	Pn	03 01 23.8	+5.7
X301	**Greenbrier Sit**	**11.98**	**65**	ePn	Pn	03 01 21.7	+0.8
W41B	**Gary Mavity, V**	**12.08**	**65**	P	Pn	03 01 21.2	-1.1
	baz=252						
WHAR	**Wooly Hollow**	**12.08**	**65**	ePn	Pn	03 01 28.6	+6.3
PDAR	**Pinedale Array**	**12.32**	**346**	Pn	Pn	03 01 28.0	+2.3
	0.1nm,0.3s,baz=158,slow=13,SNR=3.2						
S40A	**Lebanon**	**12.82**	**55**	P	Pn	03 01 31.0	-1.5
	baz=242						
NVAR	**Mina Array Bea**	**12.86**	**310**	Pn	Pn	03 01 38.8	+5.6
	0.2nm,0.3s,baz=133,slow=11,SNR=2.8						
NVAR				LR	LR	03 07 06.5	
	comp=Z,54nm,19.0s,baz=276,slow=41						
HDIL	**Hopedale**	**16.45**	**49**	Pn	P	03 02 23.8	+0.1
	14nm,0.6s						
EGMT	**Eagleton**	**17.46**	**351**	ePn	P	03 02 37.1	+2.1
	8.2nm,0.9s						
TKL	**Tuckaleechee C**	**18.93**	**69**	P	Pn	03 02 52.2	+0.4
	0.1nm,0.3s,baz=258,slow=9.1,SNR=2.9						
ULM	**Lac du Bonnet**	**20.75**	**18**	P	P	03 03 11.6	+0.8
	7.1nm,0.8s,baz=202,slow=11,SNR=8.6						
ULM	**Lac du Bonnet**	**20.75**	**18**	ePn	Pn	03 03 11.9	-1.4
YKA	**Yellowknife Ar**	**32.20**	**352**	P	P	03 04 58.6	+0.6
	0.8nm,1.0s,baz=160,slow=8.1,SNR=8.0						
ARCES	**ARCESS Array B**	**73.85**	**16**	P	P	03 10 04.6	0.0
	3.7nm,1.1s,baz=324,slow=4.5,SNR=5.1						

MEX 03 03:27:12.8±0.4, 27°.93N×112°.00W, h2km±5km, MD3.5, Baja California

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SRIG	**Santa Rosalia**	**0.65**	**199**	i P	Pg	03 27 24.7	-0.5
SRIG				i S	Sg	03 27 34.3	+0.7
GUYB	**Guaymas**	**1.00**	**92**	eP	Pg	03 27 29.7	-2.2
GUYB				eS	Sg	03 27 43.2	-1.7
HSIG		**1.43**	**40**	eP	Pn	03 27 36.2	-3.5
HSIG				eS	Sg	03 27 54.1	-4.5

ISCJB ***03*** *03:35:47.4±0.7, 38°.90N±0°.02×26°.88E±0°.06, h1km±7km, Error ellipse: s-maj=7.7km s-min=4.0km az=177.8*
CSEM ***03*** *03:35:47.6±0.1, 38°.90N×26°.89E, h2km, MD2.7, Error ellipse: s-maj=3.1km s-min=2.3km az=85.0*
DDA ***03*** *03:35:47.9, 38°.88N×26°.74E, h7km, Md2.6*
ISK ***03*** *03:35:47.4, 38°.93N×26°.89E, h5km, MD2.7*
ISC 03 03:35:47.5±1.0, 38°.92N±0°.03×26°.85E±0°.03, h8km±9km, n22, σ0s35/34, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DKL	**Dikili**	**0.16**	**17**	ePG	Pg	03 35 50.8	0.0
DKL	**Dikili**	**0.16**	**17**	ePg	Pg	03 35 50.8	0.0
AYVA	**Ayvalik**	**0.41**	**343**	P	Pg	03 35 56.2	+0.7
AYVA				S	Sb	03 36 03.6	+0.3
AYVA	**Ayvalik**	**0.41**	**343**	i P	Pg	03 35 56.2	+0.7
AYVA				i S	Sb	03 36 03.6	+0.3
URLA	**Izmir**	**0.59**	**199**	P	Pg	03 35 58.8	-0.1
URLA				S	Sg	03 36 06.7	+0.1
URLA	**Izmir**	**0.59**	**199**	i P	Pg	03 35 58.8	-0.1
URLA				i S	Sg	03 36 06.7	+0.1
ZEY	**¯zmir**	**0.73**	**202**	i P	Pn	03 36 04.0	-0.1
ZEY				i S	Sg	03 36 10.2	-0.8
SIGR	**SIGRI**	**0.82**	**291**	ePG	Pb	03 36 04.2	+0.1
SIGR	**SIGRI**	**0.82**	**291**	ePg	Pb	03 36 04.2	+0.1
EZN	**Ezine**	**0.99**	**336**	ePG	Pb	03 36 06.9	0.0
EZN				eSG	Sn	03 36 21.2	-0.7
EZN	**Ezine**	**0.99**	**336**	ePg	Pb	03 36 06.9	0.0
EZN				eSg	Sn	03 36 21.2	-0.7
BALB	**Balikesir**	**1.08**	**48**	ePG	Pg	03 36 08.0	-0.2
BALB	**Balikesir**	**1.08**	**48**	ePg	Pg	03 36 08.0	-0.2
BOZC	**Bozcaada**	**1.11**	**327**	i P	Pg	03 36 08.8	0.0
BOZC				i S	Sn	03 36 24.7	-0.1
AYDB	**Zeytinkoy-Aydi**	**1.27**	**139**	ePN	Pg	03 36 12.1	+0.2
AYDB				eSN	Sn	03 36 29.5	+0.5
AYDB	**Zeytinkoy-Aydi**	**1.27**	**139**	ePn	Pg	03 36 12.1	+0.2
AYDB				eSn	Sn	03 36 29.5	+0.5
DURS	**Dursunbey**	**1.44**	**61**	P	Pb	03 36 14.7	+0.2
DURS				S	Sb	03 36 33.0	-0.1
DURS	**Dursunbey**	**1.44**	**61**	i P	Pb	03 36 14.7	+0.2
DURS				i S	Sb	03 36 33.0	-0.1
LPK	**Lapseki**	**1.45**	**357**	ePN	Pb	03 36 14.9	+0.1
LPK	**Lapseki**	**1.45**	**357**	ePn	Pb	03 36 14.9	+0.1
KRBG	**Karabiga-Canak**	**1.51**	**13**	ePN	Pb	03 36 15.9	+0.1
KRBG	**Karabiga-Canak**	**1.51**	**13**	ePn	Pb	03 36 15.9	+0.1

ISCJB ***03*** *03:37:27.1±0.5, 51°.54N±0°.03×6°.41E±0°.04, h0km, Error ellipse: s-maj=4.1km s-min=3.1km az=162.3*
CSEM ***03*** *03:37:28.9±0.3, 51°.50N×6°.49E, h1km, ML2.9/8, Error ellipse: s-maj=5.7km s-min=4.3km az=141.0*
BUG ***03*** *03:37:29.2, 51°.48N×6°.58E, h1km, ML2.2*
BNS ***03*** *03:37:30.9±1.1, 51°.46N×6°.60E, h1km, ML2.1*
BGR ***03*** *03:37:30.9±0.4, 51°.54N×6°.61E, h1km, ML2.2/7, Error ellipse: s-maj=5.6km s-min=3.3km az=129.0*
LDG ***03*** *03:37:31.3±0.1, 51°.41N×6°.55E, h1km, Md3.0/3, Ml2.5/26, Error ellipse: s-maj=1.8km s-min=1.5km az=6.0, Suspected Mining induced.*
ISC 03 03:37:28.2±0.8, 51°.45N±0°.02×6°.53E±0°.02, h0km, n100, σ1s54/160, 1D, Germany

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BRHE	**Rheinberg**	**0.07**	**21**	Pg	Pg	03 37 30.1	+0.5
BRHE	**Rheinberg**	**0.07**	**21**	Pg	Pg	03 37 30.1	+0.5
BRHE				Sg	Sg	03 37 30.8	+0.3
LAUG	**Laupendahl**	**0.28**	**110**	Pg	Pg	03 37 35.1	+1.6
LAUG	**Laupendahl**	**0.28**	**110**	ePg	Pg	03 37 35.1	+1.6
BUG	**Bochum--Univer**	**0.46**	**91**	||i Pg	Pg	03 37 38.3	+1.2
BUG				Sg	Sg	03 37 44.9	+1.8
PLH	**Pulheim**	**0.48**	**158**	Pg	Pb	03 37 39.9	+0.4
PLH				Sg	Sb	03 37 47.0	-0.1
	170nm,0.2s						
PLH	**Pulheim**	**0.48**	**158**	ePg	Pb	03 37 39.9	+0.4
PLH				eSg	Sb	03 37 47.0	-0.1
	170nm,0.2s						
WTSB	**Winterswijk**	**0.55**	**18**	ePg	Pg	03 37 39.3	+0.6
	48nm,0.4s						
WTSB	**Winterswijk**	**0.55**	**18**	Pg	Pg	03 37 39.5	+0.9
WTSB	**Winterswijk**	**0.55**	**18**	ePg	Pg	03 37 39.5	+0.9
HOBG	**Hohbusch**	**0.69**	**132**	Pg	Pb	03 37 43.6	+0.5
HOBG	**Hohbusch**	**0.69**	**132**	ePg	Pb	03 37 43.6	+0.5
GSH	**Grosshau**	**0.72**	**188**	Pg	Pb	03 37 45.0	+1.4
GSH	**Grosshau**	**0.72**	**188**	ePg	Pb	03 37 45.0	+1.4
GSH				eSg	Sb	03 37 55.6	+1.6
	22nm,0.1s						
HGN	**Heimansgroeve**	**0.78**	**209**	ePg	Pn	03 37 47.4	+0.9
	33nm,0.2s						
HGN				eSg	Sn	03 38 00.1	+1.2
HGN	**Heimansgroeve**	**0.78**	**209**	ePg	Pn	03 37 47.4	+0.9
	33nm,0.2s						
HGN				eSg	Sn	03 38 00.1	+1.2
HGN	**Heimansgroeve**	**0.78**	**209**	ePg	Pn	03 37 47.4	+0.9
HGN				eSg	Sn	03 37 59.9	+1.1
WBS	**Wahnbachtalspe**	**0.80**	**143**	Sg	Sb	03 37 57.0	+0.7
WBS	**Wahnbachtalspe**	**0.80**	**143**	eSg	Sb	03 37 57.0	+0.7
DREG	**Dreilaegerbach**	**0.81**	**194**	Pg	Pb	03 37 46.0	+0.9
DREG	**Dreilaegerbach**	**0.81**	**194**	ePg	Pb	03 37 46.0	+0.9
STB	**Steinbach**	**0.88**	**167**	Pg	Pn	03 37 48.0	+0.2
STB				Sg	Sb	03 37 59.7	+1.2
	52nm,0.3s						
STB	**Steinbach**	**0.88**	**167**	ePg	Pn	03 37 48.0	+0.2
STB				eSg	Sb	03 37 59.7	+1.2
	52nm,0.3s						
MEM	**Membach**	**0.90**	**202**	P	Pn	03 37 48.1	0.0
MEM	**Membach**	**0.90**	**202**	Pg	Pn	03 37 48.1	0.0
MEM	**Membach**	**0.90**	**202**	ePg	Pn	03 37 48.1	0.0
MEM				eSg	Sn	03 38 03.0	+1.2
TDN	**Todenfeld**	**0.91**	**163**	Pg	Pb	03 37 48.1	+1.2
TDN				Sg	Sb	03 38 01.1	+1.5
	38nm,0.1s						
TDN	**Todenfeld**	**0.91**	**163**	ePg	Pb	03 37 48.1	+1.2
TDN				eSg	Sb	03 38 01.1	+1.5
	38nm,0.1s						
OLFT	**Oleftalsperre**	**0.96**	**184**	Pg	Pn	03 37 49.3	+0.4
OLFT	**Oleftalsperre**	**0.96**	**184**	ePg	Pn	03 37 49.3	+0.4
OLFT				eSg	Sn	03 38 02.9	-0.3
AHRW	**Bad Neuenahr-A**	**0.97**	**159**	ePg	Pn	03 37 50.0	+0.9
AHRW				eSg	Sn	03 38 03.7	+0.1
IBBN	**Ibbenburen**	**1.15**	**41**	Pg	Pg	03 37 50.9	+0.7
IBBN	**Ibbenburen**	**1.15**	**41**	ePg	Pg	03 37 50.9	+0.7
HILG	**Hillesheim**	**1.16**	**175**	Pg	Pn	03 37 53.2	+1.5
HILG	**Hillesheim**	**1.16**	**175**	ePg	Pn	03 37 53.2	+1.5
KOE	**Koeppel**	**1.28**	**143**	Pg	Pn	03 37 54.3	+1.0
KOE	**Koeppel**	**1.28**	**143**	ePg	Pn	03 37 54.3	+1.0
BCLA	**Clavier**	**1.29**	**217**	P	Pn	03 37 55.4	+1.9
BCLA	**Clavier**	**1.29**	**217**	P	Pn	03 37 55.4	+1.9
BGG	**Burgeitz**	**1.34**	**157**	Pg	Pb	03 37 55.4	+1.2
BGG	**Burgeitz**	**1.34**	**157**	ePg	Pb	03 37 55.4	+1.2
TNS	**Taunus Mts**	**1.73**	**135**	Pn	Pb	03 38 01.6	+0.8
TNS	**Taunus Mts**	**1.73**	**135**	ePn	Pb	03 38 01.6	+0.8
TNS				ePg	Pg	03 38 03.8	+2.6
TNS				eSn	Sb	03 38 23.5	+0.4
GIVF	**Givet**	**1.73**	**219**	ePn	Pn	03 38 00.4	+0.9
GIVF	**Givet**	**1.73**	**219**	ePg	Pg	03 38 03.0	+1.7
GIVF				eSg	Sg	03 38 25.1	+1.4
	15nm,0.2s						
GIVF	**Givet**	**1.73**	**219**	ePn	Pn	03 38 00.4	+0.9
GIVF	**Givet**	**1.73**	**219**	ePg	Pg	03 38 03.0	+1.7
GIVF				eSg	Sg	03 38 25.1	+1.4
	7.6nm,0.2s						
WLF	**Walferdange**	**1.80**	**188**	P	Pg	03 38 04.0	+1.3
WLF	**Walferdange**	**1.80**	**188**	P	Pg	03 38 04.0	+1.3
WLF	**Walferdange**	**1.80**	**188**	ePn	Pg	03 38 04.5	+1.8
DOU	**Dourbes**	**1.83**	**223**	P	Pg	03 38 03.7	+0.4
DOU	**Dourbes**	**1.83**	**223**	P	Pg	03 38 03.6	+0.4
BAIF	**Baives**	**2.03**	**228**	ePn	Pn	03 38 04.5	+0.9
BAIF	**Baives**	**2.03**	**228**	ePg	Pg	03 38 08.7	+1.7
BAIF				eSg	Sg	03 38 34.7	+1.4
	11nm,0.5s						
BAIF	**Baives**	**2.03**	**228**	ePn	Pn	03 38 04.5	+0.9
BAIF	**Baives**	**2.03**	**228**	ePg	Pg	03 38 08.7	+1.7
BAIF				eSg	Sg	03 38 34.7	+1.4
	5.4nm,0.5s						
CLZ	**Clausthal**	**2.43**	**79**	Pg	Pg	03 38 14.9	+0.2
CLZ	**Clausthal**	**2.43**	**79**	ePg	Pg	03 38 14.9	+0.2
PAGF	**Fort de Pagny**	**2.94**	**190**	ePn	Pn	03 38 16.6	+0.4
PAGF				eSg	Sg	03 39 02.3	-0.4
	2.1nm,0.5s						
PAGF	**Fort de Pagny**	**2.94**	**190**	ePn	Pn	03 38 16.6	+0.4
PAGF				eSg	Sg	03 39 02.3	-0.4
	1.0nm,0.5s						
CDF	**Champ du Feu**	**3.08**	**171**	ePn	Pn	03 38 18.5	+0.4
CDF				eSg	Sg	03 39 06.5	-0.5
	1.6nm,0.2s						
CDF	**Champ du Feu**	**3.08**	**171**	ePn	Pn	03 38 18.5	+0.4
CDF				eSg	Sg	03 39 06.5	-0.5
	0.8nm,0.2s						
MEZF	**Maizieres J'vi**	**3.10**	**198**	ePn	Pn	03 38 18.9	+0.6
	baz=27						
MEZF				eSg	Sg	03 39 07.4	-0.3
	4.9nm,0.4s						
MEZF	**Maizieres J'vi**	**3.10**	**198**	ePn	Pn	03 38 18.9	+0.6
MEZF				eSg	Sg	03 39 07.4	-0.3
	2.5nm,0.4s						
SFTF	**Sexfontaines**	**3.39**	**197**	ePn	Pn	03 38 22.8	+0.5
SFTF				eSg	Sg	03 39 16.4	-0.6
	5.9nm,0.4s						
SFTF	**Sexfontaines**	**3.39**	**197**	ePn	Pn	03 38 22.8	+0.5
SFTF				eSg	Sg	03 39 16.4	-0.6
	3.0nm,0.4s						
HAU	**Haudompre**	**3.45**	**182**	ePn	Pn	03 38 23.3	+0.1
HAU				eSg	Sg	03 39 17.9	-1.0
	5.1nm,0.4s						
HAU	**Haudompre**	**3.45**	**182**	ePn	Pn	03 38 23.3	+0.1
HAU				eSg	Sg	03 39 17.9	-1.0
	2.5nm,0.4s						
HINF	**Hinteralfeld**	**3.64**	**177**	ePn	Pn	03 38 26.1	+0.3
HINF				eSg	Sg	03 39 24.1	-1.0
	2.1nm,0.3s						
HINF	**Hinteralfeld**	**3.64**	**177**	ePn	Pn	03 38 26.1	+0.3
HINF				eSg	Sg	03 39 24.1	-1.0
	1.0nm,0.3s						
LOR	**Lormes**	**4.53**	**204**	ePn	Pn	03 38 38.8	+0.7
	baz=37						
LOR				eSn	Sn	03 39 28.2	-3.2
LOR				eSg	Sg	03 39 52.4	-1.3
	2.1nm,0.3s						
LOR	**Lormes**	**4.53**	**204**	ePn	Pn	03 38 38.8	+0.7
LOR				eSn	Sn	03 39 28.2	-3.2
LOR				eSg	Sg	03 39 52.4	-1.3
	1.0nm,0.3s						
SSF	**Saint Saulge**	**4.82**	**205**	ePn	Pn	03 38 42.5	+0.6
SSF				eSn	Sn	03 39 34.6	-3.8
SSF				eSg	Sg	03 40 01.2	-1.6
	3.6nm,0.5s						
SSF	**Saint Saulge**	**4.82**	**205**	ePn	Pn	03 38 42.5	+0.6
SSF				eSn	Sn	03 39 34.6	-3.8
SSF				eSg	Sg	03 40 01.2	-1.6
	1.8nm,0.5s						
CABF	**La Chapelle**	**4.85**	**184**	ePn	Pn	03 38 42.7	+0.2
CABF				eSg	Sg	03 40 02.0	-1.9
	0.4nm,0.2s						
CABF	**La Chapelle**	**4.85**	**184**	ePn	Pn	03 38 42.7	+0.2
CABF				eSg	Sg	03 40 02.0	-1.9
	0.2nm,0.2s						
HYF	**Humbligny**	**4.89**	**213**	ePn	Pn	03 38 43.5	+0.5
HYF				eSg	Sg	03 40 03.9	-1.5
HYF	**Humbligny**	**4.89**	**213**	ePn	Pn	03 38 43.5	+0.5
HYF				eSg	Sg	03 40 03.9	-1.5
AVF	**Avril sur Loir**	**5.11**	**205**	ePn	Pn	03 38 46.5	+0.6
AVF				eSg	Sg	03 40 10.1	-2.1
	0.4nm,0.3s						
AVF	**Avril sur Loir**	**5.11**	**205**	ePn	Pn	03 38 46.5	+0.6
AVF				eSg	Sg	03

JFY	Yanaizu	1.72 297	P	Pb	03 43 56.8	-1.1
JAG	Ashikaga	1.76 264	P	Pn	03 43 55.7	0.0
JIO	Ouri	1.83 353	P	Pn	03 43 57.0	+0.2
JOU	Okura	1.89 337	P	Pb	03 43 59.5	-1.3
JKT	Katashina	1.91 275	P	Pn	03 43 59.1	+1.2
MJAR	Matsushiro Arr	2.75 269	Pn	Pn	03 44 10.8	+1.4
	22nm,0.3s,baz=105,slow=9.6,SNR=164					
MJAR			LR	LR	03 45 33.5	
	comp=Z,141nm,18.3s,baz=110,slow=45					
MAT	Matsushiro	2.75 269	P	Pn	03 44 11.0	+1.6
MAT			S	Sn	03 44 42.8	+1.1
JHJ	Hachijo jima 2	3.81 204	Pn	Pn	03 44 25.0	+1.0
	24nm,0.3s,baz=147,slow=23,SNR=25					
JHJ			Sn	Sn	03 45 07.2	-0.8
	20nm,0.3s,baz=81,slow=23,SNR=3.8					
ASAJ	Asahikawa	7.51 5	Pn	Pn	03 45 16.6	+1.7
	0.5nm,0.3s,baz=177,slow=9.5,SNR=4.0					
JNU	Nakatsue	9.49 252	LR	LR	03 49 40.5	
	comp=Z,57nm,18.5s,baz=319,slow=39					
JCJ	Chichijima	9.52 177	Pn	Pn	03 45 40.2	-2.2
	3.1nm,0.3s,baz=266,slow=20,SNR=5.1					
KSRS	Korea Array	10.98 278	Pn	Pn	03 46 10.7	+8.4
	0.1nm,0.3s,baz=81,slow=17,SNR=4.6					
KSRS			LR	LR	03 50 15.8	
	comp=Z,42nm,18.4s,baz=118,slow=37					
SONM	Songino Array	28.15 305	P	P	03 49 18.6	+1.6
	1.2nm,0.7s,baz=106,slow=11,SNR=6.6					
MKAR	Makanchi Array	44.47 302	P	P	03 51 35.8	-0.1
	0.4nm,0.4s,baz=82,slow=10,SNR=5.4					
WRA	Warramunga Arr	56.69 188	P	P	03 53 08.4	+0.2
	0.3nm,0.4s,baz=5.7,slow=7.3,SNR=8.1					
YKA	Yellowknife Ar	64.07 30	P	P	03 53 58.7	+0.5
	0.2nm,0.7s,baz=299,slow=5.9,SNR=3.8					

NEIC ***03*** *03:52:15.6, 37°.58S×175°.98E, h244km, MG4.0(WEL), After WEL.*

WEL 03 03:52:16.1±0.4, 37°.64S×176°.00E, h242km±4km, ML3.9/9, Error ellipse: s-maj=5.2km s-min=4.6km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MUGZ	Murupara	1.04	144	PN	Pn	03 52 50.6	+0.2
URZ	Urewera	1.08	125	PN	Pn	03 52 50.4	-0.2
URZ				SN	S	03 53 17.3	-0.4
URZ				AML	AML	03 53 19.5	
URZ	Urewera	1.08	125	ePn	Pn	03 52 50.6	0.0
URZ				eS	S	03 53 18.0	+0.3
MRHZ	Matea Rd	1.24	165	PN	Pn	03 52 52.0	+0.2
MWZ	Matawai	1.40	120	PN	Pn	03 52 52.7	-0.1
MWZ				SN	S	03 53 21.3	-0.4
MWZ				AML	AML	03 53 21.9	
MWZ	Matawai	1.40	120	Pn	Pn	03 52 52.7	-0.1
RAGZ	Rawiri	1.41	128	PN	Pn	03 52 53.2	+0.3
RAGZ				SN	S	03 53 22.0	0.0
RAGZ	Rawiri	1.41	128	Pn	Pn	03 52 53.4	+0.4
HAZ	Te Kaha	1.42	95	PN	Pn	03 52.9	-0.1
HAZ				SN	S	03 53 20.9	-0.9
RAHZ	Arahi	1.54	146	PN	Pn	03 52 54.2	+0.3
RAHZ	Arahi	1.54	146	Pn	Pn	03 52 54.3	+0.5
SNGZ	Shannon Statio	1.56	138	PN	Pn	03 52 54.2	+0.2
SNGZ	Shannon Statio	1.56	138	Pn	Pn	03 52 54.2	+0.2
NGZ	Ngauruhoe	1.56	191	PN	Pn	03 52 54.6	+0.3
NGZ	Ngauruhoe	1.56	191	Pn	Pn	03 52 54.6	+0.3
BKZ	Black Stump Fm	1.57	166	PN	Pn	03 52 54.2	0.0
BKZ				AML	AML	03 53 25.8	
BKZ				AML	AML	03 53 25.9	
BKZ	Black Stump Fm	1.57	166	Pn	Pn	03 52 54.2	0.0
NMHZ	Naumai	1.59	157	PN	Pn	03 52 55.0	+0.7
NMHZ	Naumai	1.59	157	Pn	Pn	03 52 55.0	+0.7
TWGZ	Tauwhareparae	1.66	109	PN	Pn	03 52 55.2	+0.3
TWGZ	Tauwhareparae	1.66	109	Pn	Pn	03 52 55.3	+0.3
TKGZ	Te Karaka	1.67	119	SN	S	03 53 24.6	-0.8
PKGZ	Pakihiroa	1.67	99	PN	Pn	03 52 55.2	+0.2
WNVZ	Wahianoa	1.71	190	PN	Pn	03 52 55.6	+0.1
WNVZ	Wahianoa	1.71	190	Pn	Pn	03 52 55.6	+0.1
RIGZ	Rimuhau	1.75	128	PN	Pn	03 52 55.7	0.0
MOVZ	Moawhango	1.77	186	PN	Pn	03 52 55.5	-0.4
MOVZ	Moawhango	1.77	186	Pn	Pn	03 52 55.6	-0.3
ARHZ	Aropaoanui	1.80	154	PN	Pn	03 52 56.0	-0.1
ARHZ	Aropaoanui	1.80	154	Pn	Pn	03 52 56.0	-0.1
KWHZ	Kaweka Forest	1.81	170	PN	Pn	03 52 56.1	-0.1
PUZ	Puketiti	1.84	104	PN	Pn	03 52 56.2	-0.3
PUZ				SN	S	03 53 26.2	-1.9
BHHZ	Black Hill Sta	1.85	178	PN	Pn	03 52 56.1	-0.4
BHHZ	Black Hill Sta	1.85	178	Pn	Pn	03 52 56.3	-0.2
MCHZ	McNeill Hill	1.88	163	PN	Pn	03 52 56.7	0.0
MCHZ	McNeill Hill	1.88	163	Pn	Pn	03 52 56.8	+0.1
KNZ	Kokohu	1.91	137	PN	Pn	03 52 56.4	-0.6
KNZ	Kokohu	1.91	137	Pn	Pn	03 52 56.4	-0.5
WMGZ	Waiomatatini S	1.93	96	PN	Pn	03 52 57.1	-0.1
WMGZ	Waiomatatini S	1.93	96	Pn	Pn	03 52 57.1	0.0
KRHZ	Kereru	2.02	172	PN	Pn	03 52 57.5	-0.6
WAZ	Wanganui	2.25	200	PN	Pn	03 53 00.1	-0.2
WAZ	Wanganui	2.25	200	Pn	Pn	03 53 00.1	-0.2
KAHZ	Kahuranaki	2.26	163	PN	Pn	03 52 59.6	-0.7
KAHZ	Kahuranaki	2.26	163	Pn	Pn	03 52 59.6	-0.7
PNHZ	Pukenui	2.28	176	PN	Pn	03 52 59.4	-1.1
PNHZ	Pukenui	2.28	176	Pn	Pn	03 52 59.5	-1.0
TSZ	Takapari Road	2.42	181	AML	AML	03 54 09.6	
TSZ	Takapari Road	2.42	181	Pn	Pn	03 53 00.6	-1.2
PXZ	Pawanui	2.48	164	PN	Pn	03 53 01.2	-1.3
PXZ				AML	AML	03 53 39.4	
PXZ	Pawanui	2.48	164	Pn	Pn	03 53 01.3	-1.2
OHWZ	Ohakea	2.62	192	PN	Pn	03 53 03.3	-0.6
DVHZ	Dannevirke	2.66	177	Pn	Pn	03 53 02.5	-1.8
PRHZ	Porangahau	2.67	169	PN	Pn	03 53 03.0	-1.4
PRHZ	Porangahau	2.67	169	Pn	Pn	03 53 03.0	-1.5
ANWZ	Angora Road	2.84	173	PN	Pn	03 53 04.6	-1.7
PRWZ	Pori Road	2.91	180	PN	Pn	03 53 05.4	-1.6
MRZ	Mangatainoka R	3.04	186	PN	Pn	03 53 06.1	-2.3
MRZ	Mangatainoka R	3.04	186	Pn	Pn	03 53 06.1	-2.2
BFZ	Birch Farm	3.04	176	PN	Pn	03 53 06.3	-2.1
BFZ	Birch Farm	3.04	176	Pn	Pn	03 53 06.3	-2.2
TIWZ	Tintock	3.13	182	PN	Pn	03 53 07.3	-2.2
TIWZ				AML	AML	03 53 49.6	
TIWZ				AML	AML	03 53 50.8	
TIWZ	Tintock	3.13	182	Pn	Pn	03 53 07.4	-2.1
OGWZ	Otaki Gorge	3.24	191	Pn	Pn	03 53 08.5	-2.1
HOWZ	Holdsworth Sta	3.27	186	PN	Pn	03 53 08.6	-2.5
HOWZ	Holdsworth Sta	3.27	186	Pn	Pn	03 53 08.5	-2.6
KIW	Kapiti Island	3.33	194	PN	Pn	03 53 09.3	-2.3
KIW				AML	AML	03 53 54.3	
KIW	Kapiti Island	3.33	194	Pn	Pn	03 53 09.4	-2.3
MTW	Mount Morrison	3.54	186	Pn	Pn	03 53 10.9	-3.1
CAW	Cannon Point	3.54	191	PN	Pn	03 53 11.6	-2.4
DUWZ	D'Urville Isla	3.54	206	Pn	Pn	03 53 11.9	-2.3
SNZO	South Karori	3.80	195	ePn	Pn	03 53 14.4	-2.7
SNZO				eS	S	03 53 59.7	-5.7
TCW	Tory Channel	3.81	200	PN	Pn	03 53 14.7	-2.5
TCW				AML	AML	03 54 01.5	
TCW				AML	AML	03 54 02.0	
TCW	Tory Channel	3.81	200	Pn	Pn	03 53 14.8	-2.4
MSWZ	Moikau Station	3.82	188	PN	Pn	03 53 14.4	-2.9
BHW	Baring Head	3.86	193	PN	Pn	03 53 15.0	-2.8
BHW				AML	AML	03 54 02.0	
BHW	Baring Head	3.86	193	Pn	Pn	03 53 15.1	-2.7
PLWZ	Palliser	3.97	188	PN	Pn	03 53 15.6	-3.5
PLWZ	Palliser	3.97	188	Pn	Pn	03 53 15.9	-3.2
TUWZ	Tuamarina	4.11	202	Pn	Pn	03 53 18.1	-2.5
NNZ	Nelson	4.11	209	Pn	Pn	03 53 17.6	-3.1
QRZ	Quartz Range	4.17	219	Pn	Pn	03 53 18.4	-3.0
THZ	Tophouse	4.76	209	PN	Pn	03 53 25.5	-3.2
THZ	Tophouse	4.76	209	Pn	Pn	03 53 25.6	-3.0
KHZ	Kahutara	5.13	201	Pn	Pn	03 53 29.7	-3.4
LTZ	Lake Taylor	5.87	208	PN	Pn	03 53 38.0	-4.4
LTZ	Lake Taylor	5.87	208	Pn	Pn	03 53 38.1	-4.3
OXZ	Oxford	6.43	207	PN	Pn	03 53 44.1	-5.2
OXZ	Oxford	6.43	207	Pn	Pn	03 53 44.2	-5.1
MQZ	McQueen's Vall	6.57	202	Pn	Pn	03 53 45.9	-5.2
ODZ	Otahua Downs	8.42	207	Pn	Pn	03 54 09.9	-4.7

ISCJB ***03*** *03:57:24.1±0.3, 31°.29S±0°.03×68°.52W±0°.04, h114km±3km, mb4.2/12, Error ellipse: s-maj=6.0km s-min=4.8km az=32.2*

NEIC ***03*** *03:57:24.0, 31°.31S×68°.54W, h108km, mb4.4/6, MD4.2(SJA), After SJA.*

NEIC Felt [II] in the epicentral area.

GUC ***03*** *03:57:24.6±0.4, 31°.19S×68°.78W, h137km±38km, ML4.2*

SJA ***03*** *03:57:24.3±1.2, 31°.32S×68°.54W, h108km±6km, ML4.2, MW4.1*

IDC ***03*** *03:57:25.2±0.8, 31°.36S×68°.54W, h112km±5km, mb3.8/6, mb1 4.0/9, mb1mx3.8/23, mbtmp4.1/9, Error ellipse: s-maj=27.7km s-min=19.4km az=71.0*

ISC 03 03:57:24.5±0.5, 31°.21S±0°.05×68°.52W±0°.04, h109km±4km, n58, σ1°.75/84, mb4.3/12, 9D, San Juan Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RTLL	Cerro Villicun	0.13	163	⇓eP	Pn	03 57 39.7	-0.1
AMOG	MOGNA	0.27	5	⇓eP	Pn	03 57 41.0	+0.8
SJA	San Juan	0.32	187	⇓eP	Pn	03 57 40.3	0.0
RTCV	Cerro Valdivia	0.65	182	⇓eP	Pn	03 57 42.1	-0.4
RTCV				eS	Sn	03 57 54.6	-1.4
RTLS	Leoncito	0.89	228	eP	Pn	03 57 45.0	+0.1
AUSP	Uspallata	1.26	216	eP	Pn	03 57 48.7	-0.1
AUSP				eS	Sn	03 58 06.1	-0.9
ASAL	Salagasta	1.41	191	⇓eP	Pn	03 57 50.3	0.0
ASAL				eS	Sn	03 58 08.9	-0.9
ACAN	Cantantal	1.55	134	eP	Pn	03 57 52.6	+0.6
ACAN				eS	Sn	03 58 12.2	-0.6
ARCO	CERRO ARCO	1.67	192	eP	Pn	03 57 53.4	-0.1
ARCO				eS	Sn	03 58 15.4	-0.1
ARCO				IAML		03 58 17.1	
	comp=Z,2μm,0.5s						
AGUA	GUANDACOL	1.71	1	eP	Pn	03 57 56.8	+2.7
AAGR	Agrelo	1.89	188	eP	Pn	03 57 56.0	-0.2
TLL	Tololo Astrono	2.23	297	eP	Pn	03 58 00.4	-0.2
TLL				eS	Sn	03 58 27.3	-0.9
TLL				IAML		03 58 32.0	
	comp=N,2μm,0.6s						
VCA	Vinchina	2.48	6	eP	Pn	03 58 06.5	+2.7
VCA				IAML		03 58 44.6	
	comp=Z,915nm,0.2s						
PEL	Peldehue	2.67	223	eP	Pn	03 58 05.9	-0.2
PEL				eS	Sn	03 58 37.7	-0.5
PEL				IAML		03 58 40.5	
	comp=E,512nm,0.6s						
MRA	San Martin	2.67	118	⇓eP	Pn	03 58 06.5	+0.2
MRA				IAML		03 58 39.2	
	comp=Z,1μm,0.3s						
ROCH	El Roble	2.75	230	eP	Pn	03 58 06.2	-1.2
ROCH				eS	Sn	03 58 38.6	-1.8
ROCH				IAML		03 58 44.9	
	comp=N,855nm,0.4s						
ROC1	El Roble	2.76	230	⇓eP	Pn	03 58 06.9	-0.6
ROC1				eS	Sn	03 58 39.0	-1.6
ROC1	El Roble	2.76	230	ePn	Pn	03 58 06.1	-1.4
ROC1				eSn	Sn	03 58 38.9	-1.7
CLCH	Cerro Calan	2.77	218	eP	Pn	03 58 07.7	+0.2
CLCH				eS	Sn	03 58 40.2	-0.5
CLCH				IAML		03 58 43.4	
	comp=E,1μm,0.5s						
FSR	Penalolen	2.83	216	eP	Pn	03 58 08.4	+0.1
FSR				eS	Sn	03 58 41.9	-0.1
LCO	Las Campanas	2.89	319	ePn	Pn	03 58 10.5	+1.1
LCO				eS	Sn	03 58 40.1	-3.7
ANTU	Antumapu	2.96	217	eS	Sn	03 58 44.5	-0.5
RCDM	Rinconada Maip	2.99	220	eP	Pn	03 58 10.1	-0.3
RCDM				eS	Sn	03 58 44.8	-0.8
SUCO	SUCO	3.74	126	⇓eP	Pn	03 58 20.1	-0.3
SUCO				IAML		03 58 58.2	
	comp=Z,276nm,0.5s						
PB10	IPOC Station P	7.87	346	ePn	Pn	03 59 13.8	-2.5
LVC	Limon Verde	8.57	358	P	Pn	03 59 25.6	-0.5
	comp=Z,196nm,0.3s,baz=200,slow=8.6,SNR=59						
LVC				S	Sn	04 00 56.9	-4.4
	comp=Z,68nm,0.3s,baz=212,slow=7.0,SNR=3.0						
LVC	Limon Verde	8.57	358	ePn	Pn	03 59 25.0	-1.1
LVC				eS	Sn	04 00 56.4	-4.8
TRQA	Tornquist	8.70	144	ePn	Pn	03 59 25.3	-2.2
TRQA				eS	Sn	04 00 57.4	-6.4
PB04	IPOC Station P	8.96	350	ePn	Pn	03 59 27.8	-3.4
PLCA	Paso Flores	9.65	189	P	Pn	03 59 37.9	-2.5
	comp=Z,0.3nm,0.3s,baz=14,slow=12,SNR=5.5						
PB01	IPOC Station P	10.16	355	ePn	Pn	03 59 45.0	-2.4
CPUP	Villa Florida	10.95	66	P	Pn	03 59 56.2	-1.8
	comp=Z,0.2nm,0.3s,baz=234,slow=12,SNR=5.3						
LPAZ	La Paz	14.86	1	P	Pn	04 00 51.2	+1.5
	comp=Z,0.2nm,0.3s,baz=172,slow=6.7,SNR=10.0						
SIV	San Ignacio	16.60	26	P	P	04 01 12.7	+1.2
	comp=Z,0.4nm,0.3s,baz=219,slow=12,SNR=17						
QSPA	South Pole Qui	59.02	180	eP	P	04 07 13.2	+0.5
	comp=Z,12nm,0.5s						
SYO	Syowa Base	67.36	158	⇓eP	P	04 08 05.8	-1.6
TXAR	Lajitas Array	68.87	327	P	P	04 08 19.2	+1.7
	comp=Z,0.9nm,0.6s,baz=154,slow=8.8,SNR=9.1						
TX31	Lajitas Ar. Si	68.87	327	eP	P	04 08 18.6	+1.1
WVT	Waverly	69.39	343	eP	P	04 08 19.9	-0.5
	comp=Z,5.8nm,0.7s						
PBMO	Poplar Bluff	70.68	341	eP	P	04 08 29.1	+0.8
	comp=Z,10nm,1.1s						
MSTX	Muleshoe	72.43	331	eP	P	04 08 40.0	+0.9
	comp=Z,6.1nm,0.9s						
MAW	Mawson	74.98	163	P	P	04 08 53.8	+0.4
	comp=Z,3.7nm,1.0s,baz=238,slow=9.5,SNR=4.2						
X16A	Lo Mia Camp, P	76.78	325	eP	P	04 09 06.8	+2.5
	comp=Z,3.7nm,1.1s						
SMCO	Snowmass	78.63	330	eP	P	04 09 17.2	+2.5
	comp=Z,4.9nm,1.1s						
BOSA	Boshof	78.69	117	P	P	04 09 15.4	+0.2
	comp=Z,4.1nm,0.8s,baz=251,slow=3.4,SNR=6.5						
TORD	Torodi Ar. Bea	80.44	68	P	P	04 09 25.1	+0.5
	comp=Z,4.7nm,0.7s,baz=280,slow=6.6,SNR=50						
TORD				pP	pP	04 09 54.2	+1.7
	comp=Z,1.8nm,0.7s,baz=280,slow=6.2,SNR=5.1						
TORD				sP	sP	04 10 07.3	+3.1
	comp=Z,2.3nm,0.8s,baz=256,slow=5.2,SNR=5.1						
PDAR	Pinedale Array	82.70	331	P	P	04 09 36.6	+0.5
	comp=Z,0.7nm,0.8s,baz=119,slow=5.2,SNR=6.5						
NVAR	Mina Array Bea	83.38	323	P	P	04 09 41.4	+1.7
	comp=Z,0.5nm,0.6s,baz=140,slow=7.1,SNR=4.1						
MCMT	McKenzie Canyo	85.76	330	eP	P	04 09 53.7	+2.2
YKA	Yellowknife Ar	100.41	340	P	Pdif	04 10 58.3	-0.2
	comp=Z,0.2nm,0.6s,baz=147,slow=5.1,SNR=5.9						
WRA	Warramunga Arr	124.61	206	PKP	PKPdf	04 16 10.9	-0.8
	comp=Z,1.0nm,0.8s,baz=159,slow=1.7,SNR=8.8						
AAK	Ala-Archa	148.54	58	ePKPbc	PKPbc	04 17 00.0	+1.3
AAK				ePKPab	PKPab	04 17 03.1	+0.6
TKM2	Tokmak 2	149.29	57	ePKPbc	PKPbc	04 17 01.2	+0.5
TKM2				ePKPab	PKPab	04 17 06.6	+1.0
KSH	Kashi	150.03	64	ePKPbc	PKPdf	04 16 57.2	-0.2
KSH				ePKP	pPKPdf	04 17 23.9	-3.3
KSH				sPKP		04 17 34.0	
KSH				ePP	PP	04 20 41.6	+3.4
KSH				AMB	AMB		
	comp=Z,56nm,4.5s						
ZALV	Zalesovo Beam	150.28	32	PKPbc	PKPbc	04 17 03.1	+0.8
	comp=Z,4.6nm,0.6s,baz=296,slow=4.3,SNR=11						
ZALV				pPKPbc	pPKPbc	04 17 32.7	+0.8
	comp=Z,1.8nm,0.5s,baz=312,slow=4.4,SNR=3.3						
MKAR	Makanchi Array	152.69	47	PKPbc	PKPbc	04 17 08.6	+0.3
	comp=Z,1.6nm,0.7s,baz=318,slow=1.6,SNR=8.8						
MKAR				PKPab	PKPab	04 17 20.2	+0.9
	comp=Z,1.8nm,0.7s,baz=300,slow=3.8,SNR=9.9						
MKAR				pPKPbc	pPKPbc	04 17 38.4	+0.6
	comp=Z,1.6nm,0.7s,baz=323,slow=1.8,SNR=4.0						
LZH	Lanzhou	171.99	51	ePKP	PKPdf	04 17 17.8	-2.8
LZH				pPKP	pPKPdf	04 17 41.5	-9.1
LZH				sPKP		04 17 56.2	
LZH				PKP	PKPab	04 18 43.0	-1.1
LZH				LR	LR		
	comp=N,100nm,18.0s						
LZH				LR	LR		
	comp=E,93nm,18.2s						
LZH				LR	LR		
	comp=Z,130nm,20.1s						
CD2	Chengdu	173.37	91	PKP	PKPdf	04 17 20.7	-0.5

NIED ***03*** *03:57:00, 36°.80N×141°.20E, h8km, Mw3.7 Best double couple: M₀4.18000×10¹⁴ NP1:φ₀29.00000°, δ39.00000°, λ-83.00000°. NP2:φ₀200.00000°, δ51.00000°, λ-95.00000°.*

ISCJB ***03*** *03:57:48.5±1.1, 36°.75N±0°.04×141°.36E±0°.06, h18km±7km, mb3.7/9, MS3.2/1, Error ellipse: s-maj=9.0km s-min=6.3km az=18.5*

IDC ***03*** *03:57:50.7±0.9, 36°.72N×141°.21E, h19km±5km, mb3.6/9, mb1 3.8/12, mb1mx3.6/37, mbtmp3.7/12, ML3.4/3, MS2.9/2, Ms1 2.9/2, ms1mx2.3/46, Error ellipse: s-maj=20.1km s-min=14.8km az=91.0*

JMA ***03*** *03:57:50.2±0.1, 36°.76N×141°.22E, h36km±1km, M3.8*

JMA Felt I J1.

ISC 03 03:57:49.7±0.8, 36°.79N±0°.05×141°.27E±0°.06, h13km±3km, n24, σ0°.68/32, mb3.8/9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.49	309	P	Pb	03 58 00.2	0.0
ONAJ				S	Sb	03 58 07.3	-0.1
JHO	Hitachi	0.59	253	P	Pg	03 58 01.1	-0.2
JHO				S	Sg	03 58 09.0	-0.1
JFK	Kawauchi	0.66	331	P	Pb	03 58 02.9	-0.2
JFK				S	Sb	03 58 11.8	-0.3
JFT	Otama	1.04	314	P	Pb	03 58 09.3	-0.3
JFT				S	Sb	03 58 22.9	-0.3
JMM	Marumori	1.14	341	P	Pb	03 58 10.2	-1.1
JMM				S	Sb	03 58 24.7	-1.3
JFY	Yanaizu	1.40	297	P	Pn	03 58 14.7	-0.2
JFY				S	Sn	03 58 33.0	-0.2
JAG	Ashikaga	1.51	257	P	Pn	03 58 15.5	-0.9
MJAR	Matsushiro Arr	2.48	265	Pn	Pn	03 58 30.1	+0.4
	6.0nm,0.3s,baz=88,slow=15,SNR=53						
MAT	Matsushiro	2.48	265	P	Pn	03 58 30.3	+0.5
MAT				eS	Sn	03 59 01.4	+1.5
JHJ	Hachijo jima 2	3.86	199	Pn	Pn	03 58 48.5	-0.2
	6.7nm,0.3s,baz=126,slow=22,SNR=7.1						
JHJ				Sn	Sn	03 59 33.7	-0.3
	13nm,0.3s,baz=121,slow=22,SNR=3.3						
ASAJ	Asahikawa	7.39	7	Pn	Pn	03 59 37.0	-0.1
	0.9nm,0.3s,baz=193,slow=11,SNR=6.4						
USRK	Ussuriysk Ar.	10.23	319	Pn	Pn	04 00 21.2	+5.1
	0.1nm,0.3s,baz=150,slow=44,SNR=3.3						
KSRS	Korea Array	10.68	278	Pn	Pn	04 00 29.2	+6.9
	0.1nm,0.3s,baz=89,slow=13,SNR=6.1						
KSRS				LR	LR	04 03 57.7	
	comp=Z,34nm,20.4s,baz=183,slow=34						
SONM	Songino Array	27.83	304	P	P	04 03 38.9	+0.1
	0.6nm,0.7s,baz=92,slow=8.7,SNR=3.0						
SONM				pP	sP	04 03 45.2	+0.9
	0.9nm,0.6s,baz=102,slow=8.1,SNR=4.5						
ZALV	Zalesovo Beam	41.99	313	P	P	04 05 40.6	+0.2
	0.7nm,0.3s,baz=92,slow=7.4,SNR=3.5						
MKAR	Makanchi Array	44.15	302	P	P	04 05 57.8	-0.2
	0.8nm,0.6s,baz=86,slow=10.0,SNR=5.2						
MKAR				pP	sP	04 06 03.6	0.0
	0.9nm,0.6s,baz=90,slow=10,SNR=3.4						
ILAR	Eielson Array	49.76	32	P	P	04 06 42.2	+0.8
	0.5nm,0.6s,baz=275,slow=6.8,SNR=7.8						
AAK	Ala-Archa	50.51	298	LR	LR	04 27 33.8	
	comp=Z,23nm,19.5s,baz=76,slow=35						
WRA	Warramunga Arr	56.80	188	P	P	04 07 32.6	-1.2
	1.0nm,0.5s,baz=6.8,slow=7.4,SNR=15						
WRA				pP	sP	04 07 39.0	-0.4
	0.9nm,0.6s,baz=5.9,slow=7.4,SNR=5.6						
ASAR	Alice Springs	60.53	188	P	P	04 07 59.1	-0.5
	0.8nm,0.8s,baz=18,slow=6.6,SNR=7.7						
YKA	Yellowknife Ar	64.08	30	P	P	04 08 23.3	+0.4
	0.2nm,0.7s,baz=303,slow=6.8,SNR=4.5						
AKASG	Malin Array Be	74.42	322	P	P	04 09 26.5	-0.8
	0.5nm,0.4s,baz=47,slow=6.5,SNR=4.9						
NVAR	Mina Array Bea	75.22	53	P	P	04 09 33.8	+1.4
	0.4nm,0.5s,baz=286,slow=5.9,SNR=4.0						
LPAZ	La Paz	146.91	60	PKPbc	PKPbc	04 17 33.5	+0.4
	1.0nm,0.5s,baz=13,slow=0.3,SNR=5.8						

NIED ***03*** *04:06:00, 36°.90N×143°.20E, h14km, Mw3.6 Best double couple: M₀3.30000×10¹⁴ NP1:φ₀50.00000°, δ27.00000°, λ-89.00000°. NP2:φ₀229.00000°, δ63.00000°, λ-90.00000°.*

IDC ***03*** *04:06:31.7±0.8, 36°.63N×143°.35E, h0km, mb3.7/7, mb1 4.0/12, mb1mx3.8/36, mbtmp3.9/12, ML3.3/4, MS3.0/4, Ms1 3.0/4, ms1mx2.4/51, Error ellipse: s-maj=21.3km s-min=17.2km az=109.0*

ISCJB ***03*** *04:06:34.3±0.7, 36°.71N±0°.05×143°.17E±0°.06, h33km, mb3.8/7, MS3.0/2, Error ellipse: s-maj=7.6km s-min=6.7km az=148.4*

JMA ***03*** *04:06:34.7±0.4, 36°.92N×143°.23E, h45km, M3.9*

ISC 03 04:06:36.8±0.9, 36°.83N±0°.07×143°.22E±0°.08, h35km, n26, σ1°.97/28, mb3.9/7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	1.95	287	P	Pn	04 07 05.8	-1.6
ONAJ	Iwakimizuishiy	1.96	279	P	Pn	04 07 06.5	-1.1
ONAJ				e

PMAN			*e*S	Sg	04 19 02.0	-4.0
PMAN			A	A	04 19 02.6	
	25nm,0.3s					
ROSA	**Rosais**	**1.18 269**	*e*P	Pg	04 18 50.5	-3.8
ROSA			*e*S	Sg	04 19 05.0	-4.6
ROSA	**Rosais**	**1.18 269**	*e*P	Pg	04 18 50.5	-3.8
ROSA			*e*S	Sg	04 19 05.0	-4.6
ROSA			A	A	04 19 08.9	
	19nm,0.5s					
PSET	**Sete Cidades**	**1.22 139**	*e*S	Sg	04 19 05.6	-5.3
PSET	**Sete Cidades**	**1.22 139**	*e*S	Sg	04 19 05.6	-5.3
PSET			A	A	04 19 08.5	
	27nm,0.4s					
PDA	**Ponta Delgada**	**1.31 140**	*e*P	Pg	04 18 52.3	-4.5
PDA			*e*S	Sg	04 19 07.9	-5.9
PDA	**Ponta Delgada**	**1.31 140**	*e*P	Pg	04 18 52.3	-4.5
PDA			*e*S	Sg	04 19 07.9	-5.9
PDA			A	A	04 19 09.7	
	18nm,0.2s					
PICO	**Pico**	**1.35 260**	*e*P	Pg	04 18 52.9	-4.7
PICO			*e*S	Sg	04 19 09.1	-5.9
PICO	**Pico**	**1.35 260**	*e*P	Pg	04 18 52.9	-4.7
PICO			*e*S	Sg	04 19 09.1	-5.9
PICO			A	A	04 19 09.7	
	27nm,0.2s					
CMLA	**Cha da Macela**	**1.37 136**	*e*S	Sg	04 19 09.2	-6.5
CMLA	**Cha da Macela**	**1.37 136**	*e*S	Sg	04 19 09.2	-6.5
PCAN	**Candelaria**	**1.40 259**	*e*P	Pn	04 18 53.6	-4.9
PCAN			*e*S	Sg	04 19 10.2	-6.6
PCAN	**Candelaria**	**1.40 259**	*e*P	Pn	04 18 53.6	-4.9
PCAN			*e*S	Sg	04 19 10.2	-6.6
PCAN			A	A	04 19 13.3	
	9.5nm,0.1s					
BART	**Pico Bartolome**	**1.57 128**	*e*S	Sn	04 19 14.3	-7.7
BART	**Pico Bartolome**	**1.57 128**	*e*S	Sn	04 19 14.3	-7.7
BART			A	A	04 19 16.3	
	8.3nm,0.3s					

*ISCJB **03** 04:34:43.1±0.9, 35°.65S±0°.04×72°.92W±0°.09, h17km, Error ellipse: s-maj=11.1km s-min=4.6km az=14.1*
*GUC **03** 04:34:43.2±0.4, 35°.61S×72°.96W, h11km±2km, ML3.6*

ISC 03 04:34:42.0±1.5, 35°.65S±0°.05×72°.9W±0°.1, h17km, n13, σ2°01/15, 1C-1D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
COCH	**Cobquecura**	**0.49**	**167⇑**	*e*P	**Pb**	**04 34 53.0**	**+0.7**
COCH				*e*S	**Sn**	**04 35 00.2**	**-2.2**
COCH				IAML		04 35 03.5	
	comp=E,5μm,0.8s						
TALC	**Talca**	**1.08**	**77⇓**	*e*P	**Pg**	**04 35 02.2**	**-0.7**
TALC				*e*S	**Sn**	**04 35 16.2**	**-0.7**
CCHI	**Chillan**	**1.17**	**145**	*e*P	**Pg**	**04 35 04.0**	**-0.7**
CCHI				*e*S	**Sg**	**04 35 19.9**	**-0.1**
CCHI				IAML		04 35 32.5	
	comp=E,2μm,0.3s						
CCSP	**San Pedro de C**	**1.20**	**187**	*e*P	**Pn**	**04 35 04.2**	**+0.2**
CCSP				*e*S	**Sn**	**04 35 19.9**	**0.0**
CCSP				IAML		04 35 23.2	
	comp=N,3μm,0.4s						
ROC1	**El Roble**	**3.10**	**31**	*i* P	**Pb**	**04 35 34.0**	**-2.8**
AAGR	**Agrelo**	**4.24**	**54**	*i* P	**Pb**	**04 35 55.1**	**-1.1**
ARCO	**CERRO ARCO**	**4.33**	**51**	*i* P	**Pb**	**04 35 55.1**	**-2.7**
ARCO				IAML		04 36 01.2	
	comp=Z,30nm,0.5s						
AUSP	**Uspallata**	**4.51**	**42**	*i* P	Pn	04 35 53.9	+4.1
ASAL	**Salagasta**	**4.56**	**49**	*i* P	Pb	04 35 57.2	-4.4
RTLS	**Leoncito**	**4.88**	**39**	*i* P	**Pn**	**04 35 57.1**	**+2.2**
RTLS				*i* S	**Sb**	**04 37 09.3**	**+3.4**
RTCV	**Cerro Valdivia**	**5.25**	**45**	*i* P	Pn	04 36 03.2	+3.4
SJA	**San Juan**	**5.49**	**43**	*i* P	**Pn**	**04 36 05.6**	**+2.6**
SJA				IAML		04 36 19.5	
	comp=Z,63nm,0.1s						
RTLL	**Cerro Villicun**	**5.69**	**42**	*i* P	**Pn**	**04 36 07.2**	**+1.4**

*IDC **03** 04:35:28.7±1.3, 55°.73S×140°.72W, h0km, mb3.8/3, mb1 4.0/3, mb1mx3.7/28, mbtmp3.8/3, MS3.8/9, Ms1 3.8/9, ms1mx3.6/21, Error ellipse: s-maj=145.5km s-min=37.2km az=165.0*

ISC 03 04:35:29.5±1.0, 56°.1S±0°.3×140°.3W±0°.3, h10km, n32, σ0°78/10, mb4.0/3, MS3.8/9, 1C-1D, Pacific-Antarctic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VNDA	**Vanda**	**29.17**	**202**	LR	LR	04 50 09.1	
	comp=Z,336nm,21.9s,baz=90,slow=30						
RKT	**Rikitea**	**33.17**	**9**	*e*LR	LR	04 50 54.9	
	530nm,29.5s,baz=178						
RKT	**Rikitea**	**33.17**	**9**	*e*T	T	05 16 49.2	
	3.1nm,0.4s						
PPT2	**Papeete2**	**39.08**	**346**	*e*LR	LR	04 54 43.5	
	300nm,26.0s						
PPT	**Papeete**	**39.10**	**346**	LR	LR	04 54 48.6	
	comp=Z,113nm,20.6s,baz=168,slow=30						
TAOE	**Nuku Hiva Isla**	**47.12**	**0**	*e*LR	LR	04 57 21.8	
	222nm,25.0s						
SYO	**Syowa Base**	**55.20**	**180⇑**	*e*P	**P**	**04 45 00.6**	**-1.1**
SYO	**Syowa Base**	**55.20**	**180⇓**	*e*P	**P**	**04 45 02.9**	**+1.2**
MAW	**Mawson**	**55.42**	**191**	LR	LR	05 06 03.0	
	comp=Z,96nm,21.5s,baz=239,slow=33						
STKA	**Stephens Creek**	**57.77**	**260**	LR	LR	05 05 24.1	
	comp=Z,60nm,21.0s,baz=202,slow=31						
LPAZ	**La Paz**	**66.67**	**85**	LR	LR	05 08 29.8	
	comp=Z,36nm,19.0s,baz=132,slow=30						
ASAR	**Alice Springs**	**68.41**	**260**	P	**P**	**04 46 31.1**	**-0.3**
	0.8nm,0.7s,baz=142,slow=6.7,SNR=8.8						
H01W1	**Cape Leeuwin H**	**69.64**	**238**	T	T	06 03 20.4	
	baz=145,slow=76,SNR=32						
H01W2	**Cape Leeuwin H**	**69.64**	**238**	T	T	06 03 21.3	
	baz=145,slow=76,SNR=26						
H01W3	**Cape Leeuwin H**	**69.66**	**238**	T	T	06 03 22.2	
	baz=145,slow=76,SNR=25						
WRA	**Warramunga Arr**	**71.15**	**262**	P	**P**	**04 46 47.7**	**-0.6**
	0.4nm,0.6s,baz=148,slow=5.5,SNR=7.6						
FITZ	**Fitzroy Crossi**	**77.43**	**256**	P	**P**	**04 47 25.2**	**+0.5**
	1.3nm,0.9s,baz=221,slow=15,SNR=3.2						
TXAR	**Lajitas Array**	**90.62**	**31**	LR	LR	05 20 29.6	
	comp=Z,36nm,20.7s,baz=0.0,slow=30						
KAPI	**Kappang**	**91.42**	**259**	LR	LR	05 26 52.2	
	comp=Z,58nm,19.4s,baz=150,slow=34						
BOSA	**Boshof**	**94.73**	**167**	LR	LR	05 30 33.8	
	comp=Z,53nm,18.1s,baz=150,slow=35						
NVAR	**Mina Array Bea**	**96.00**	**17**	LR	LR	05 23 41.7	
	comp=Z,71nm,19.3s,baz=190,slow=30						
H10S3	**ASCENSION HYDR**	**101.20**	**125**	T	T	06 42 26.8	
	baz=207,slow=75,SNR=7.2						
H10S2	**ASCENSION HYDR**	**101.20**	**125**	T	T	06 42 27.0	
	baz=207,slow=75,SNR=7.0						
H10S1	**ASCENSION HYDR**	**101.22**	**125**	T	T	06 42 30.1	
	baz=207,slow=75,SNR=5.9						
H10N3	**ASCENSION HYDR**	**102.25**	**125**	T	T	06 43 50.7	
	baz=206,slow=75,SNR=24						
H10N1	**ASCENSION HYDR**	**102.26**	**125**	T	T	06 43 51.2	
	baz=206,slow=75,SNR=23						
H10N2	**ASCENSION HYDR**	**102.27**	**125**	T	T	06 43 52.1	
	baz=206,slow=75,SNR=26						
YKA	**Yellowknife Ar**	**119.94**	**13**	PKP	**PKPdf**	**04 54 18.7**	**+0.2**
	0.1nm,0.8s,baz=195,slow=2.2,SNR=3.9						
ILAR	**Eielson Array**	**120.65**	**357**	PKP	**PKPdf**	**04 54 20.2**	**+0.3**
	0.6nm,0.8s,baz=208,slow=0.9,SNR=6.8						
SUMG	**Summit**	**145.52**	**31**	*i* P	**PKPbc**	**04 55 07.0**	**+0.3**
	4.2nm,0.8s						
ESDC	**Sonseca Array**	**147.07**	**101**	PKPbc	**PKPab**	**04 55 13.0**	**-0.4**
	0.7nm,0.6s,baz=263,slow=2.8,SNR=4.4						
MKAR	**Makanchi Array**	**152.30**	**269**	PKPbc	**PKPbc**	**04 55 23.8**	**-0.7**
	0.2nm,0.3s,baz=93,slow=4.1,SNR=4.4						

MAN 03 04:51:31, 9°.72N×122°.21E, h29km, mb4.2, ML3.0, MS2.8, 1C, Negros

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUIM	**Jordan**	**0.98**	**22**	*e*P	Pn	04 51 49.0	+0.2
GUIM				*e*S	Sb	04 52 02.6	+0.7
CUYO	**Cuyo Island**	**1.63**	**314**	*e*P	Pn	04 51 59.1	+1.3
RCP	**Roxas**	**1.91**	**16⇑**	*e*P	Pb	04 52 08.0	+2.9
RCP				*e*S	Sb	04 52 29.7	+1.1
PAGZ	**Pagadian**	**2.19**	**148**	*e*P	Pn	04 52 06.8	+1.3
ENPP	**El Nido**	**3.11**	**299**	*e*P	Pn	04 52 19.4	+1.2

*NEIC **03** 05:06:48.2, 36°.38S×178°.57E, h174km, MG4.0(WEL), After WEL.*

WEL 03 05:06:50.4±0.6, 36°.41S×178°.46E, h148km±5km, ML3.8/8, 1D, Error ellipse: s-maj=6.0km s-min=6.0km az=0.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WMGZ	**Waiomatatini S**	**1.41**	**182**	PN	Pn	05 07 18.7	-0.1
WMGZ				SN	Sn	05 07 39.3	-1.4
WMGZ	**Waiomatatini S**	**1.41**	**182**	Pn	Pn	05 07 18.8	-0.1
HAZ	**Te Kaha**	**1.45**	**202**	PN	Pn	05 07 19.0	-0.3
PUZ	**Puketiti**	**1.67**	**186**	PN	Pn	05 07 21.2	-0.5
PUZ				SN	Sn	05 07 44.2	-1.5
PUZ				AML	AML	05 07 46.2	
TWGZ	**Tauwhareparae**	**1.81**	**192**	PN	Pn	05 07 23.6	+0.4
TWGZ	**Tauwhareparae**	**1.81**	**192**	Pn	Pn	05 07 23.6	+0.4
TWGZ				Sn	Sn	05 07 49.4	+0.9
MWZ	**Matawai**	**2.06**	**201**	PN	Pn	05 07 26.7	+0.5
MWZ				AML	AML	05 07 59.6	
MWZ				AML	AML	05 07 59.7	
MWZ	**Matawai**	**2.06**	**201**	Pn	Pn	05 07 26.7	+0.5
TKGZ	**Te Karaka**	**2.09**	**193**	PN	Pn	05 07 26.6	+0.2
TKGZ				SN	Sn	05 07 54.8	+0.6
TKGZ	**Te Karaka**	**2.09**	**193**	Pn	Pn	05 07 26.6	+0.2
TKGZ				Sn	Sn	05 07 54.8	+0.6
URZ	**Urewera**	**2.14**	**210**	PN	Pn	05 07 26.4	-0.6
URZ				SN	Sn	05 07 55.0	-0.2
URZ				AML	AML	05 07 59.2	
URZ	**Urewera**	**2.14**	**210**	Pn	Pn	05 07 26.6	-0.4
RAGZ	**Rawiri**	**2.25**	**201**	PN	Pn	05 07 29.1	+0.7
RAGZ	**Rawiri**	**2.25**	**201**	Pn	Pn	05 07 29.1	+0.7
RIGZ	**Rimuhau**	**2.36**	**193**	PN	Pn	05 07 29.6	-0.1
MUGZ	**Murupara**	**2.47**	**213**	PN	Pn	05 07 31.5	+0.5
SNGZ	**Shannon Statio**	**2.53**	**200**	PN	Pn	05 07 32.2	+0.4
SNGZ	**Shannon Statio**	**2.53**	**200**	Pn	Pn	05 07 32.2	+0.4
KNZ	**Kokohu**	**2.68**	**193**	PN	Pn	05 07 33.0	-0.7
KNZ	**Kokohu**	**2.68**	**193**	Pn	Pn	05 07 33.0	-0.7
MHGZ	**Mahia Peninsul**	**2.78**	**189**	PN	Pn	05 07 34.7	-0.2
MHGZ	**Mahia Peninsul**	**2.78**	**189**	Pn	Pn	05 07 34.7	-0.2
NMHZ	**Naumai**	**2.99**	**206**	Pn	Pn	05 07 37.8	+0.3
BKZ	**Black Stump Fm**	**3.17**	**209**	⇓PN	Pn	05 07 39.7	-0.1
BKZ				AML	AML	05 08 34.4	
BKZ	**Black Stump Fm**	**3.17**	**209**	Pn	Pn	05 07 39.7	-0.1
KWHZ	**Kaweka Forest**	**3.42**	**208**	PN	Pn	05 07 42.4	-0.6
KAHZ	**Kahuranaki**	**3.60**	**200**	PN	Pn	05 07 44.8	-0.7
KAHZ	**Kahuranaki**	**3.60**	**200**	Pn	Pn	05 07 44.8	-0.7
BHHZ	**Black Hill Sta**	**3.61**	**211**	PN	Pn	05 07 45.4	-0.2
BHHZ	**Black Hill Sta**	**3.61**	**211**	Pn	Pn	05 07 45.4	-0.2
WNVZ	**Wahianoa**	**3.69**	**217**	PN	Pn	05 07 48.6	+1.9
WNVZ	**Wahianoa**	**3.69**	**217**	Pn	Pn	05 07 48.6	+1.9
PXZ	**Pawanui**	**3.83**	**199**	PN	Pn	05 07 46.9	-1.4
PRHZ	**Porangahau**	**4.11**	**200**	PN	Pn	05 07 50.5	-1.6
PRHZ	**Porangahau**	**4.11**	**200**	Pn	Pn	05 07 50.5	-1.6
BFZ	**Birch Farm**	**4.61**	**201**	PN	Pn	05 07 56.7	-1.8
BFZ	**Birch Farm**	**4.61**	**201**	Pn	Pn	05 07 56.7	-1.8
TIWZ	**Tintock**	**4.81**	**204**	PN	Pn	05 07 59.9	-1.3
TIWZ	**Tintock**	**4.81**	**204**	Pn	Pn	05 07 59.9	-1.3
MRZ	**Mangatainoka R**	**4.81**	**207**	PN	Pn	05 07 58.9	-2.3
MRZ	**Mangatainoka R**	**4.81**	**207**	Pn	Pn	05 07 58.9	-2.3
HOWZ	**Holdsworth Sta**	**5.04**	**206**	PN	Pn	05 08 01.9	-2.4
HOWZ	**Holdsworth Sta**	**5.04**	**206**	Pn	Pn	05 08 01.9	-2.4
KIW	**Kapiti Island**	**5.24**	**211**	PN	Pn	05 08 05.0	-2.0
KIW	**Kapiti Island**	**5.24**	**211**	Pn	Pn	05 08 05.0	-2.0
TCW	**Tory Channel**	**5.80**	**213**	AML	AML	05 09 20.2	
THZ	**Tophouse**	**6.87**	**217**	PN	Pn	05 08 26.9	-1.9
THZ	**Tophouse**	**6.87**	**217**	Pn	Pn	05 08 26.9	-1.9

*NIED **03** 05:10:00, 38°.30N×142°.10E, h29km, Mw3.5 Best double couple: M0 1.85000×10^14 NP1:φ0=60.00000°, δ30.00000°, λ108.00000°. NP2:φ0=220.00000°, δ62.00000°, λ80.00000°.*
*JMA **03** 05:10:09.2±0.1, 38°.29N×142°.09E, h42km±1km, M3.8*
*IDC **03** 05:10:10.5±4.7, 38°.10N×142°.60E, h45km±4.43km, mb3.1/5, mb1 3.3/7, mb1mx3.2/48, mbtmp3.4/7, ML2.8/2, MS2.2/1, Ms1 2.2/1, ms1mx1.9/19, Error ellipse: s-maj=38.5km s-min=22.5km az=100.0*

ISC 03 05:10:05.0±2.0, 38°.23N±0°.04×142°.14E±0°.08, h5km±12km, n18, σ1°79/25, mb3.4/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.66**	**290**	P	**Pn**	**05 10 21.5**	**+0.5**
JIO				S	**Sn**	**05 10 30.0**	**-1.8**
OFUJ	**Ofunato**	**0.92**	**337**	P	**Pn**	**05 10 24.7**	**0.0**
OFUJ				S	**Sb**	**05 10 35.7**	**-0.4**
JMK	**Ichinoseki**	**1.02**	**315**	P	**Pn**	**05 10 26.4**	**+0.4**
JMK				S	**Sn**	**05 10 38.9**	**-1.8**
JMM	**Marumori**	**1.12**	**251**	P	**Pg**	**05 10 27.9**	**+1.4**
JOU	**Okura**	**1.17**	**277**	P	**Pg**	**05 10 29.1**	**+1.7**
JOU				S	**Sn**	**05 10 43.7**	**-0.7**
JFK	**Kawauchi**	**1.32**	**230**	P	**Pg**	**05 10 30.8**	**+0.5**
JFK				S	**Sb**	**05 10 46.2**	**-1.4**
JOM	**Ohasama**	**1.41**	**332**	P	**Pg**	**05 10 32.2**	**+0.3**
JOM				S	**Sn**	**05 10 48.7**	**-1.5**
JYK	**Kaneyama**	**1.56**	**297**	P	**Pg**	**05 10 34.6**	**-0.2**
JFT	**Otama**	**1.59**	**244**	P	**Pg**	**05 10 35.7**	**+0.2**
MJAR	**Matsushiro Arr**	**3.56**	**243**	P	**Pb**	**05 11 05.4**	**-3.0**
	1.3nm,0.3s,baz=63,slow=10.0,SNR=14						
MJAR				S	**Sb**	**05 11 51.0**	**-0.9**
	0.7nm,0.3s,baz=63,slow=31,SNR=4.5						
MJAR				LR	LR	05 12 43.9	
	comp=Z,36nm,20.5s,baz=5.0,slow=40						
MAT	**Matsushiro**	**3.56**	**243**	P	**Pb**	**05 11 06.3**	**-2.1**
MAT				*e*S	**Sb**	**05 11 54.4**	**+2.5**
JHJ	**Hachijo jima 2**	**5.45**	**201**	S	**Sn**	**05 12 29.5**	**-0.5**
	3.0nm,0.3s,baz=100,slow=22,SNR=3.4						
USRK	**Ussuriysk Ar.**	**9.69**	**311**	P	Pn	05 12 32.6	+7.5
	0.5nm,0.3s,baz=124,slow=14,SNR=4.0						
SONM	**Songino Array**	**27.62**	**302**	P	**P**	**05 15 58.6**	**+5.2**
	0.3nm,0.4s,baz=98,slow=10,SNR=3.0						
MKAR	**Makanchi Array**	**43.98**	**301**	P	**P**	**05 18 14.3**	**+1.1**
	0.2nm,0.4s,baz=87,slow=7.8,SNR=2.6						
WRA	**Warramunga Arr**	**58.33**	**189**	P	**P**	**05 19 59.9**	**-1.2**
	0.4nm,0.7s,baz=6.1,slow=7.3,SNR=3.4						
ASAR	**Alice Springs**	**62.05**	**189**	P	**P**	**05 20 26.4**	**-0.2**
	0.3nm,0.7s,baz=8.9,slow=6.6,SNR=4.8						
YKA	**Yellowknife Ar**	**62.48**	**31**	P	**P**	**05 20 28.6**	**-0.4**
	0.1nm,0.6s,baz=298,slow=5.5,SNR=2.8						

*IDC **03** 05:14:13.6±1.1, 31°.80S×178°.26W, h0km, mb4.5/5, mb1 4.6/7, mb1mx4.2/38, mbtmp4.5/7, ML4.4/2, MS3.2/2, Ms1 3.2/2, ms1mx2.8/28, Error ellipse: s-maj=31.5km s-min=21.7km az=124.0*
*ISCJB **03** 05:14:15.7±0.8, 31°.89S±0°.04×178°.1W±0°.2, h35km, mb4.7/8, MS3.3/1, Error ellipse: s-maj=21.5km s-min=4.4km az=12.6*
*NEIC **03** 05:14:19.4±1.6, 31°.76S×178°.33W, h40km±12km, mb4.5/1, Error ellipse: s-maj=23.3km s-min=12.2km az=110.0*

ISC 03 05:14:18.7±0.8, 31°.82S±0°.06×178°.3W±0°.1, h35km, n50, σ1°57/44, mb4.6/8, 1C, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**2.58**	**6**	Pn	**Pn**	**05 14 58.0**	**+0.1**
	79nm,0.3s,baz=246,slow=12,SNR=2.3						
RAO				Sn	**Sn**	**05 15 27.2**	**-0.8**
	318nm,0.3s,baz=234,slow=23,SNR=4.6						
WMGZ	**Waiomatatini S**	**6.58**	**204**	*e*PN	**Pn**	**05 15 55.0**	**+2.0**
WMGZ				SN	**Sn**	**05 17 08.7**	**+1.9**
HAZ	**Te Kaha**	**6.76**	**208**	PN	**Pn**	**05 15 55.2**	**-0.2**
HAZ				SN	**Sn**	**05 17 12.5**	**+1.3**
TWGZ	**Tauwhareparae**	**7.06**	**205**	PN	**Pn**	**05 15 58.9**	**-0.6**
TWGZ				SN	**Sn**	**05 17 17.5**	**-1.1**
MWZ	**Matawai**	**7.36**	**207**	PN	**Pn**	**05 16 02.3**	**-1.5**
URZ	**Urewera**	**7.47**	**209**	Pn	**Pn**	**05 16 03.6**	**-1.5**
	6.2nm,0.3s,baz=263,slow=6.4,SNR=45						
URZ				Sn	**Sn**	**05 17 27.7**	**-0.9**
	5.1nm,0.3s,baz=270,slow=20,SNR=9.3						
URZ	**Urewera**	**7.47**	**209**	Pn	**Pn**	**05 16 03.6**	**-1.5**
URZ				*e*Pn	Pn	05 16 05.5	+0.4
URZ				Sn	**Sn**	**05 17 27.7**	**-0.9**
URZ	**Urewera**	**7.47**	**209**	PN	**Pn**	**05 16 03.7**	**-1.5**
URZ				SN	**Sn**	**05 17 25.9**	**-2.7**
RAGZ	**Rawiri**	**7.55**	**207**	PN	**Pn**	**05 16 06.1**	**-0.2**
RIGZ	**Rimuhau**	**7.61**	**204**	PN	**Pn**	**05 16 06.6**	**-0.4**
OUZ	**Omahuta**	**7.61**	**241**	*e*PN	**Pn**	**05 16 08.3**	**+1.2**
SNGZ	**Shannon Statio**	**7.83**	**206**	PN	**Pn**	**05 16 11.6**	**+1.5**
MHGZ	**Mahia Peninsul**	**7.96**	**202**	PN	**Pn**	**05 16 11.5**	**-0.4**
NMHZ	**Naumai**	**8.31**	**208**	PN	**Pn**	**05 16 14.4**	**-2.3**
BKZ	**Black Stump Fm**	**8.49**	**209**	PN	**Pn**	**05 16 18.6**	**-0.7**
KAHZ	**Kahuranaki**	**8.89**	**205**	PN	**Pn**	**05 16 21.4**	**-3.2**
BHHZ	**Black Hill Sta**	**8.94**	**210**	PN	**Pn**	**05 16 23.1**	**-2.3**
PRHZ	**Porangahau**	**9.39**	**205**	PN	**Pn**	**05 16 27.9**	**-3.6**
BFZ	**Birch Farm**	**9.90**	**205**	PN	Pn	05 16 33.8	-4.7
TIWZ	**Tintock**	**10.11**	**206**	PN	Pn	05 16 37.0	-4.4
HOWZ	**Holdsworth Sta**	**10.36**	**207**	PN	Pn	05 16 38.9	-5.9
KIW	**Kapiti Island**	**10.57**	**210**	PN	Pn	05 16 41.9	-5.8
MTW	**Mount Morrison**	**10.59**	**207**	PN	Pn	05 16 42.4	-5.5
DUWZ	**D'Urville Isla**	**10.96**	**213**	PN	Pn	05 16 48.2	-4.9
THZ	**Tophouse**	**12.19**	**213**	PN	Pn	05 17 05.3	-4.5
KHZ	**Kahutara**	**12.44**	**209**	PN	Pn	05 17 08.0	-5.1
MSVF	**Nonsavu**	**14.42**	**346**	Pn	**Pn**	**05 17 41.0**	**+0.6**
RAR	**Rarotonga**	**19.59**	**62**	LR	LR	05 25 55.5	
	comp=Z,54nm,18.7s,baz=259,slow=36						
CTA	**Charters Tower**	**33.84**	**281**	P	**P**	**05 20 59.6**	**+1.6**
	6.3nm,0.7s,baz=107,slow=12,SNR=8.4						
STKA	**Stephens Creek**	**33.98**	**259**	P	**P**	**05 20 59.9**	**+0.8**
	1.2nm,0.4s,baz=106,slow=13,SNR=5.7						
ASAR	**Alice Springs**	**42.84**	**269**	P	**P**	**05 22 12.8**	**-0.9**
	3.4nm,0.6s,baz=105,slow=7.6,SNR=48						
ASAR				LR	LR	05 38 10.7	
	comp=Z,33nm,18.3s,baz=108,slow=34						
WRAB	**Tennant Creek**	**43.95**	**274**	*e*P	**P**	**05 22 21.5**	**-1.1**
	9.8nm,0.4s						
WRA	**Warramunga Arr**	**43.96**	**274**	P	**P**	**05 22 21.7**	**-1.0**
	12nm,0.5s,baz=114,slow=7.8,SNR=251						
FITZ	**Fitzroy Crossi**	**52.16**	**271**	P	**P**	**05 23 25.3**	**-0.7**
	2.5nm,0.6s,baz=117,slow=6.8,SNR=8.4						
QSPA	**South Pole Qui**	**58.30**	**180**	P	**P**	**05 24 12.9**	**+3.1**
	38nm,0.6s						
SYO	**Syowa Base**	**75.69**	**193⇑**	*e*P	**P**	**05 26 00.0**	**0.0**
SNAA	**Sanae**	**76.75**	**179**	P	P	05 26 11.8	+5.7
VNA3	**Neumayer Olymp**	**76.91**	**176**	P	P	05 26 13.7	+6.8
VNA2	**Neumayer--Watz**	**77.34**	**177**	P	P	05 26 16.3	+7.0
	baz=173,slow=4.4						
VNA1	**Neumayer--Stat**	**77.57**	**177**	P	P	05 26 17.7	+7.1
JNU	**Nakatsue**	**80.48**	**319**	*e*P	**P**	**05 26 25.0**	**-2.1**
	7.1nm,1.3s						
ASAJ	**Asahikawa**	**83.60**	**333**	P	**P**	**05 26 41.7**	**-1.4**
KURK	**Kurchatov**	**121.87**	**313**	PKP	**PKPdf**	**05 33 07.2**	**-1.5**
KURBB	**Kurchatov Arra**	**121.91**	**313**	PKP	**PKPdf**	**05 33 07.2**	**-1.6**
	0.7nm,0.7s,baz=112,slow=1.9,SNR=6.2						
ARCES	**ARCESS Array B**	**139.93**	**347**	PKhKP	PKPpre	05 33 35.6	
	1.2nm,0.8s,baz=56,slow=2.3,SNR=5.0						
ARCES				PKP	**PKPdf**	**05 33 43.9**	**+1.6**
	1.1nm,0.7s,baz=64,slow=2.1,SNR=5.9						
FINES	**FINESS Array B**	**146.40**	**339**	PKPbc	**PKPdf**	**05 33 54.5**	**+0.7**
	4.0nm,0.4s,baz=46,slow=4.0,SNR=41						
NB2	**NORSAR Subarra**	**150.12**	**351**	PKP	**PKPbc**	**05 34 04.8**	**-0.3**
	comp=Z,0.6nm,0.5s,baz=17,slow=2.5						
NOA	**NORSAR Array B**	**150.12**	**351**	PKPbc	**PKPbc**	**05 34 04.8**	**-0.3**
	comp=Z,0.7nm,0.4s,baz=15,slow=4.1,SNR=3.8						
BRTR	**Keskin Array B**	**153.06**	**296**	PKPbc	**PKPbc**	**05 34 13.7**	**+1.1**
	comp=Z,0.6nm,0.5s,baz=152,slow=5.3,SNR=4.3						
TORD	**Torodi Ar. Bea**	**161.42**	**180**	PKPab	**PKPab**	**05 35 01.6**	**+1.2**
	comp=Z,2.3nm,0.7s,baz=179,slow=3.8,SNR=17						

IDC 03 05:15:54.3±2.5, 5°.42S×146°.69E, h0km, mb3.5/3, mb1 3.7/5, mb1mx3.4/45, mbtmp3.5/5, ML3.5/1, Error ellipse: s-maj=63.0km s-min=27.7km az=93.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**3.99**	**173**	Pn	Pn	05 16 58.2	+1.5
	4.0nm,0.3s,baz=287,slow=16,SNR=10						
PMG				Sn	Sn	05 17 31.2	-13
	5.2nm,0.3s,baz=168,slow=20,SNR=15						
WRA	**Warramunga Arr**	**18.78**	**219**	P	P	05 20 14.3	-1.0
	0.2nm,0.3s,baz=43,slow=12,SNR=6.3				

comp=Z,81nm,18.9s,baz=112,slow=38
ZALV Zalesovo Beam 42.67 314 P **P 05 34 02.6 -0.1**
1.8nm,0.5s,baz=98,slow=7.0,SNR=7.2
MKAR Makanchi Array 44.46 304 P **P 05 34 17.2 0.0**
3.3nm,0.7s,baz=92,slow=9.8,SNR=12
MKAR LR LR 05 53 48.0
comp=Z,29nm,19.3s,baz=127,slow=38
KURK Kurchatov 46.51 310 P **P 05 34 33.6 +0.3**
KURBB Kurchatov Arra 46.58 309 P **P 05 34 33.6 -0.3**
5.1nm,0.5s,baz=83,slow=7.5,SNR=27
MCK McKinley 51.00 33 P **P 05 35 08.3 +0.6**
2.4nm,0.8s
BVAR Borovoye Array 51.31 313 P **P 05 35 11.0 +0.7**
0.3nm,0.3s,baz=97,slow=7.6,SNR=4.6
ILAR Eielson Array 51.87 31 P **P 05 35 15.3 +1.1**
1.9nm,0.8s,baz=273,slow=6.0,SNR=18
WRA Warramunga Arr 54.77 187 P **P 05 35 36.1 +0.1**
7.5nm,0.7s,baz=3.1,slow=7.5,SNR=88
INK Inuvik 56.78 26 P **P 05 35 49.9 0.0**
0.5nm,0.6s,baz=304,slow=3.6,SNR=4.3
ASAR Alice Springs 58.50 187 P **P 05 36 03.0 +0.5**
0.6nm,0.5s,baz=0.0,slow=5.4,SNR=11
ABKAR Akbulak array 58.59 311 *eP* **P 05 36 02.3 -0.5**
1.3nm,0.5s
YKA Yellowknife Ar 66.19 29 P **P 05 36 53.5 +0.1**
0.4nm,0.8s,baz=300,slow=6.5,SNR=8.0
OBN Obninsk 69.24 323 LR LR 06 09 43.2
comp=Z,28nm,18.2s,baz=142,slow=38
FINES FINESS Array B 70.27 332 P **P 05 37 17.7 -1.4**
1.1nm,0.6s,baz=38,slow=5.3,SNR=3.5
AKASG Malin Array Be 75.40 322 LR LR 06 14 06.3
comp=Z,66nm,18.4s,baz=25,slow=38
NVAR Mina Array Bea 77.11 52 P **P 05 38 01.7 +1.8**
0.4nm,0.5s,baz=294,slow=5.6,SNR=4.0
PDAR Pinedale Array 79.92 45 P **P 05 38 15.5 +0.2**
0.2nm,0.6s,baz=298,slow=3.2,SNR=4.0
LPAZ La Paz 148.64 61 PKPbc **PKPbc 05 45 55.4 +0.9**
0.9nm,0.9s,baz=270,slow=1.0,SNR=3.8

*KRNET **03** 05:28:59.5±0.1, 42°.44N×78°.73E, h21km, mb3.0*
*NNC **03** 05:29:00.9±0.9, 42°.52N×78°.71E, h0km, mb3.6, mpv3.2,*
Error ellipse: s-maj=8.0km s-min=2.4km az=158.0
*SOME **03** 05:29:00.3, 42°.38N×78°.73E, h20km*
ISC 03 05:29:00.8±1.2, 42°.50N±0°.04×78°.69E±0°.03, h7km±9km, n37, σ1§16/66, 22C-14D, Lake Issyk-Kul region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PRZ	**Przheval'sk**	**0.22**	**266**	⇑*i*P	**Pg**	**05 29 04.9**	**-0.2**
	baz=276						
PRZ				⇑*i*S	**Sg**	**05 29 08.9**	**+0.8**
	baz=276						
SATY	**Saty**	**0.60**	**339**	*e*P	**Pg**	**05 29 12.8**	**+0.4**
	22nm,0.1s						
SATY				*e*S	**Sb**	**05 29 21.6**	**-0.8**
	203nm,0.1s						
UZB	**Uzynbulak**	**0.69**	**20**	*e*P	**Pg**	**05 29 14.0**	**-0.1**
	6.9nm,0.1s						
UZB				*e*S	**Sb**	**05 29 24.2**	**-0.9**
	87nm,0.2s						
ZHN	**Zhinishke**	**0.69**	**344**	*e*P	**Pg**	**05 29 14.5**	**+0.3**
	26nm,0.2s						
ZHN				*e*S	**Sb**	**05 29 25.0**	**-0.2**
	374nm,0.3s						
ANVS	**Anan'yevo**	**0.81**	**291**	⇑*e*P	**Pg**	**05 29 16.2**	**-0.1**
	baz=293						
ANVS				⇑*e*S	**Sb**	**05 29 27.9**	**-0.6**
	baz=293						
KPKS	**Kokpek**	**0.97**	**360**	*e*P	**Pg**	**05 29 19.2**	**-0.2**
	64nm,0.4s						
KPKS				*e*S	**Sn**	**05 29 33.2**	**-1.8**
	142nm,0.6s						
PDGK	**Podgornoye**	**1.01**	**35**	⇓*e*P	**Pg**	**05 29 19.6**	**-0.6**
	baz=32						
PDGK				⇓*i*S	**Sb**	**05 29 33.6**	**-0.6**
	baz=32						
PDGK	**Podgornoye**	**1.01**	**35**	⇑P	**Pg**	**05 29 19.7**	**-0.6**
	11nm,0.4s						
PDGK				⇑S	**Sb**	**05 29 33.8**	**-0.4**
	132nm,0.6s						
SHLS	**Shalkode**	**1.09**	**53**	*e*P	**Pg**	**05 29 21.4**	**-0.4**
	116nm,0.2s						
SHLS				*e*S	**Sn**	**05 29 36.9**	**-1.4**
	640nm,0.7s						
KDJ	**Kajisay**	**1.18**	**252**	⇓*i*P	**Pb**	**05 29 21.7**	**-2.0**
	baz=255						
KDJ				⇓*i*S	**Sb**	**05 29 37.3**	**-1.9**
	baz=255						
KOTS	**Kotyrbulak**	**1.38**	**303**	*e*P	**Pn**	**05 29 26.5**	**-0.1**
KOTS				*e*S	**Sg**	**05 29 45.4**	**+0.4**
MDOK	**Medeo**	**1.38**	**299**	⇓*i*P	**Pn**	**05 29 26.2**	**-0.4**
	53nm,0.2s						
MDOK				*e*S	**Sn**	**05 29 44.9**	**-0.4**
	78nm,0.6s						
TNSS	**Tian-Shan**	**1.40**	**293**	*e*P	**Pn**	**05 29 27.0**	**-0.2**
	31nm,0.2s						
TNSS				*e*S	**Sg**	**05 29 46.1**	**+0.4**
	52nm,0.3s						
KNDC	**Almaty**	**1.46**	**300**	⇑P	**Pn**	**05 29 27.4**	**-0.3**
KNDC				⇑S	**Sg**	**05 29 48.1**	**+0.5**
KTMS	**Ketmen**	**1.54**	**52**	*e*P	**Pb**	**05 29 28.9**	**-0.9**
	32nm,0.2s						
KTMS				*e*S	**Sg**	**05 29 49.5**	**-0.9**
	124nm,0.5s						
MNBS	**Baschi**	**1.59**	**352**	*e*P	**Pn**	**05 29 29.4**	**-0.2**
	22nm,0.3s						
MNBS				*e*S	**Sb**	**05 29 50.4**	**-0.7**
	369nm,0.5s						
IZV	**Izvestkoviy**	**1.62**	**290**	*e*P	**Pb**	**05 29 30.7**	**-0.5**
	39nm,0.2s						
IZV				*e*S	**Sb**	**05 29 52.6**	**+0.6**
	167nm,0.2s						
MTBS	**Maitube**	**1.78**	**291**	⇑*i*P	**Pb**	**05 29 33.1**	**-0.7**
	15nm,0.2s						
MTBS				⇓*i*S	**Sg**	**05 29 57.5**	**-0.5**
	96nm,0.2s						
ARXS	**Arharly**	**1.83**	**340**	*e*P	**Pg**	**05 29 35.1**	**-0.6**
	28nm,0.4s						
ARXS				*e*S	**Sg**	**05 30 00.2**	**+0.8**
	60nm,0.3s						
ULHL	**Ulahol**	**1.83**	**263**	⇑*i*P	**Pn**	**05 29 33.4**	**+0.4**
	baz=264						
ULHL				⇑*i*S	**Sb**	**05 29 57.8**	**-0.3**
	baz=264						
CHKK	**Chushkaly**	**1.85**	**318**	*e*P	**Pb**	**05 29 35.1**	**+0.2**
	38nm,0.3s						
CHKK				*e*S	**Sg**	**05 30 00.0**	**-0.1**
	111nm,0.2s						
DJR	**Jarkent**	**2.00**	**23**	*e*P	**Pb**	**05 29 37.9**	**+0.3**
	68nm,0.3s						
DJR				⇓*i*S	**Sg**	**05 30 05.0**	**0.0**
	369nm,0.3s						
BOOM	**Boomskoye usch**	**2.04**	**271**	⇑*i*P	**Pn**	**05 29 36.6**	**+0.9**
	baz=272						
BOOM				⇑*e*S	**Sb**	**05 30 02.8**	**-1.0**
	baz=272						
KST	**Kastek**	**2.08**	**286**	*e*P	**Pb**	**05 29 38.9**	**-0.1**
	15nm,0.4s						
KST				*e*S	**Sg**	**05 30 07.3**	**-0.3**
	1μm,0.4s						
KUU	**Kurty**	**2.21**	**310**	*e*P	**Pb**	**05 29 41.6**	**+0.4**
	57nm,0.4s						
KUU				*e*S	**Sg**	**05 30 12.0**	**+0.1**
	64nm,0.3s						
DGS	**Degeres**	**2.27**	**290**	*e*P	**Pb**	**05 29 42.4**	**+0.2**
	43nm,0.7s						
DGS				*e*S	**Sg**	**05 30 12.7**	**-1.1**
	81nm,0.4s						
TKM2	**Tokmak 2**	**2.32**	**282**	⇑Pn	**Pb**	**05 29 42.5**	**-0.6**
	21nm,0.7s						
TKM2				⇓Lg	Lg	05 30 13.4	
	39nm,0.3s						
TDK	**Taldyqorghan**	**2.52**	**355**	*e*P	**Pb**	**05 29 47.1**	**+0.8**
	35nm,0.2s						
TDK				*e*S	**Sg**	**05 30 21.1**	**-0.4**
	140nm,0.3s						
KAPS	**Kapalarasan**	**2.83**	**10**	*e*P	**Pb**	**05 29 52.1**	**+0.5**
	8.1nm,0.3s						
KAPS				*e*S	**Sg**	**05 30 30.3**	**-1.2**
	74nm,0.4s						
AAK	**Ala-Archa**	**3.10**	**274**	⇑Pn	**Pn**	**05 29 51.8**	**+1.4**
	1.1nm,0.3s						
AAK				⇓Pg	**Pb**	**05 29 56.4**	**-0.1**
	5.7nm,0.5s						
AAK				⇓Lg	Lg	05 30 37.0	
	24nm,0.5s						
MRKS	**Merke**	**4.04**	**275**	*e*P	**Pb**	**05 30 12.8**	**+0.4**
	8.5nm,0.4s						
MRKS				*e*S	**Sb**	**05 31 05.2**	**+3.7**
	25nm,0.4s						
MNAS	**Manas**	**4.58**	**272**	⇑Pg	**Pb**	**05 30 24.0**	**+2.5**
	3.9nm,0.6s						
MNAS				⇑Lg	Lg	05 31 25.5	
	7.1nm,0.7s						
SFK	**Sufi-Kurgan**	**4.63**	**239**	⇑Pg	**Pb**	**05 30 25.3**	**+2.8**
	1.8nm,0.5s						
SFK				⇑Lg	Lg	05 31 26.8	
	17nm,1.0s						
MK31	**Makanchi Array**	**5.00**	**30**	⇑Pn	**Pn**	**05 30 18.8**	**+2.4**
	0.5nm,0.3s,baz=212,slow=15,SNR=9.9						
MK31				⇑Sn	**Sn**	**05 31 17.3**	**+2.8**
	2.5nm,0.5s						
MK31				⇓Lg	Lg	05 31 37.0	
	5.0nm,0.5s,baz=205,slow=30,SNR=7.7						
KK31	**Karatay Array**	**6.05**	**278**	⇓Pg	**Pg**	**05 30 53.3**	**-3.3**
	2.4nm,0.8s,baz=94,slow=16,SNR=11						
KK31				⇓Lg	Lg	05 32 12.3	
	1.9nm,0.4s,baz=94,slow=30,SNR=6.0						
OTUK	**Ortayu**	**7.28**	**324**	⇑Lg	Lg	05 32 51.3	
	6.3nm,1.0s						
KURBB	**Kurchatov Arra**	**8.13**	**359**	⇓Lg	Lg	05 33 17.6	
	8.5nm,0.6s						

*RSNC **03** 05:29:50.5±0.9, 10°.89N×73°.74W, h0km±26km, ML3.0*
*FUNV **03** 05:29:53.2, 11°.02N×73°.83W, h35km, MW3.1*
ISC 03 05:29:53.4±2.3, 10°.91N±0°.08×73°.7W±0°.1, h35km, n20, σ1§53/30, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VIRV	**Villa del Rosa**	**1.35**	**107**	*e*P	**Pn**	**05 30 16.5**	**+0.7**
VIRV				*e*S	**Sn**	**05 30 33.9**	**+1.3**
URIC	**Uribia, Colomb**	**1.87**	**65**	*e*P	**Pn**	**05 30 23.4**	**+0.5**
URIC				*i*		05 30 26.7	
	comp=Z,55nm,0.2s						
URIC				*e*S	**Sn**	**05 30 47.2**	**+1.9**
OCAC	**Ocana**	**2.69**	**171**	*e*P	**Pn**	**05 30 33.5**	**-0.8**
OCAC				*e*S	**Sn**	**05 31 07.2**	**+1.5**
OCAC				*i*		05 31 14.7	
	comp=Z,89nm,0.4s						
DABV	**Dabajuro**	**3.03**	**90**	*e*P	**Pn**	**05 30 39.1**	**+0.2**
DABV				*e*S	**Sn**	**05 31 13.4**	**-0.6**
VIGV	**El Vigia**	**3.10**	**131**	*e*P	**Pn**	**05 30 40.7**	**+0.8**
VIGV				*e*S	**Sn**	**05 31 16.6**	**+0.8**
GRMC	**Gramalote, San**	**3.30**	**164**	*i* P	**Pn**	**05 30 39.8**	**-3.0**
GRMC				*e*S	**Sn**	**05 31 18.6**	**-2.2**
GRMC				*i*		05 31 23.2	
	comp=Z,74nm,0.3s						
CBRI	**Barrientos, No**	**3.30**	**164**	*e*P	**Pn**	**05 30 42.5**	**-0.3**
CBRI				*e*S	**Sn**	**05 31 23.0**	**+2.0**
CBRI				*i*		05 31 30.6	
	comp=Z,37nm,0.4s						
CAPV	**Capacho**	**3.33**	**155**	*e*P	**Pn**	**05 30 43.2**	**0.0**
BRRC	**Barranca, Sant**	**3.78**	**180**	*e*P	**Pn**	**05 30 47.9**	**-1.3**
BRRC				*e*S	**Sn**	**05 31 35.9**	**+3.3**
BRRC				*i*		05 31 47.6	
	comp=Z,23nm,0.2s						
CURV	**Curarigua**	**3.80**	**103**	*e*P	**Pn**	**05 30 50.3**	**+0.7**
CURV				*e*S	**Sn**	**05 31 32.7**	**-0.5**
MONV	**Montecano**	**3.82**	**74**	*e*P	**Pn**	**05 30 49.0**	**-0.7**
SOCV	**Socops**	**3.85**	**133**	*e*P	**Pn**	**05 30 50.5**	**+0.4**
SIQV	**Siquisique**	**3.85**	**94**	*e*P	**Pn**	**05 30 50.2**	**0.0**
SANV	**Sanarito**	**4.35**	**108**	*e*P	**Pn**	**05 30 58.0**	**+0.8**
TEPV	**Terepaima**	**4.55**	**102**	*e*P	**Pn**	**05 30 59.8**	**-0.1**
MAPV	**Macapo**	**5.29**	**101**	*e*P	**Pn**	**05 31 09.7**	**-0.3**
MAPV				*e*S	**Sn**	**05 32 05.5**	**-4.3**
ELOV	**Elorza**	**5.71**	**133**	*e*P	**Pn**	**05 31 16.2**	**+0.4**
TURV	**Turiamo**	**5.80**	**94**	*e*P	**Pn**	**05 31 16.6**	**-0.4**
BAUV	**El Baul**	**5.93**	**109**	*e*P	**Pn**	**05 31 18.9**	**+0.2**
CUPV	**Cœpira**	**7.85**	**95**	*e*P	**Pn**	**05 31 44.3**	**-0.9**

MEX 03 05:35:12.5±0.3, 31°.20N×105°.81W, h5km, MD4.1, Texas-Mexico border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CGIG		**2.04**	**247**	*e*P	Pn	05 35 44.3	-3.5
CGIG				*e*S	Sn	05 36 09.2	-4.5
319A	**Douglas**	**2.98**	**274**	*e*P	Pn	05 35 57.9	-2.6
319A				*e*S	Sn	05 36 33.3	-3.5
HPIG		**4.25**	**178**	*e*P	Pn	05 36 15.7	-2.4
HPIG				*i* S	Sn	05 37 05.2	-3.0

DJA 03 05:40:29.1±1.4, 5°N±5°×9°6E±°, h10km, M3.6/6, MLv3.6/6, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MLSI	**Meulaboh, Aceh**	**0.66**	**146**	P	Pg	05 40 40.9	-1.1
LHMI	**Lhok Sumawe**	**1.00**	**66**	P	Pg	05 40 47.7	-0.7
LHMI				S	Sg	05 41 00.7	-0.7
KCSI	**Kotacane, Aceh**	**2.16**	**127**	P	Pn	05 41 05.5	+0.3
KCSI				S	Sn	05 41 33.4	+1.3
TSI	**Tuntungan**	**2.85**	**117**	P	Pn	05 41 14.4	-0.2

PGC 03 05:44:51.0±1.0, 49°.27N×127°.96W, h10km, MLSn2.0/5, Mw3.6/5, 142km Wsw of Gold R., Bc Vancouver Island, Canada Region, Vancouver Island region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EDB	**Eliza Dome**	**0.82**	**42**	P	Pg	05 45 05.6	-1.1
EDB				S	Sg	05 45 16.1	-1.3
BPBC	**Brooks Peninsu**	**0.90**	**8**	P	Pg	05 45 07.1	-1.2
FHRB	**Fair Harbour**	**0.96**	**34**	P	Pg	05 45 07.8	-1.5
FHRB				S	Sg	05 45 19.9	-2.0
MAYB	**Maynard**	**1.25**	**24**	P	Pn	05 45 12.5	-2.0
TLCB	**Telegraph Cove**	**1.47**	**29**	Pn	Pn	05 45 16.0	-1.6
TLCB				Sn	Sn	05 45 33.1	-3.7
PHC	**Port Hardy**	**1.48**	**13**	Pn	Pn	05 45 15.7	-2.0
PHC				Sn	Sn	05 45 33.4	-3.6
BTB	**Buttle Lake**	**1.61**	**82**	Pn	Pn	05 45 17.1	-2.4
NCRB	**Newcastle Ridg**	**1.68**	**47**	Pn	Pn	05 45 18.7	-1.8
CBB	**Campbell River**	**1.85**	**65**	Pn	Pn	05 45 21.0	-1.8

*ISCJB **03** 05:47:01.4±0.4, 12°.56N±0°.05×144°.32E±0°.07, h30km, mb4.4/41, MS3.8/30, Error ellipse: s-maj=9.4km s-min=6.2km az=19.6*
*NEIC **03** 05:47:04.4±1.7, 12°.59N×144°.35E, h40km±15km, mb4.7/17, Error ellipse: s-maj=12.0km s-min=7.8km az=100.0*
*IDC **03** 05:47:04.4±1.9, 12°.65N×144°.41E, h41km±18km, mb4.0/17, mb1 4.1/17, mb1mx3.9/51, mbtmp4.2/17, MS3.7/27, Ms1 3.7/27, ms1mx3.6/46, Error ellipse: s-maj=20.8km s-min=12.5km az=92.0*
ISC 03 05:47:02.9±0.6, 12°.55N±0°.07×144°.44E±0°.10, h30km, n79, σ1§21/65, mb4.5/41, MS3.9/30, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**1.11**	**22**	P	**Pn**	**05 47 22.3**	**-0.1**
	204nm,0.3s,baz=164,slow=16,SNR=58						
GUMO				S	**Sn**	**05 47 36.2**	**-0.6**
	797nm,0.3s,baz=300,slow=20,SNR=40						
DAV	**Davao City (W)**	**19.36**	**255**	LR	LR	05 57 29.6	
	comp=Z,221nm,21.6s,baz=68,slow=32						
JHJ	**Hachijo jima 2**	**20.91**	**349**	LR	LR	05 59 08.2	
	comp=Z,317nm,19.0s,baz=172,slow=35						
JNU	**Nakatsue**	**23.94**	**331**	P	**P**	**05 52 15.7**	**+1.1**
	10nm,0.7s,baz=130,slow=3.9,SNR=9.9						
JNU				LR	LR	06 00 37.5	
	comp=Z,116nm,19.7s,baz=118,slow=34						
JNU	**Nakatsue**	**23.94**	**331**	*e*P	**P**	**05 52 16.2**	**+1.7**
	14nm,0.8s						
MJAR	**Matsushiro Arr**	**24.54**	**348**	P	**P**	**05 52 17.5**	**-2.5**
	3.6nm,1.0s,baz=160,slow=9.9,SNR=5.1						
MJAR				LR	LR	06 01 23.4	
	comp=Z,356nm,18.5s,baz=185,slow=35						
MAJO	**Matsushiro**	**24.54**	**348**	*e*P	**P**	**05 52 22.4**	**+2.4**
	14nm,1.0s						
MJB9	**Matsu-Tunnel**	**24.54**	**348**	*e*P	**P**	**05 52 22.5**	**+2.4**
	3.6nm,1.0s						
LUWI	**Luwuk**	**25.40**	**239**	*e*P	**P**	**05 52 27.0**	**-1.0**
	104nm,1.1s						
HNR	**Honiara**	**26.72**	**144**	LR	LR	06 03 08.8	
	comp=Z,72nm,19.0s,baz=336,slow=36						
KSRS	**Korea Array**	**28.87**	**332**	P	**P**	**05 52 59.3**	**+0.3**
	2.1nm,0.6s,baz=140,slow=9.6,SNR=7.4						
KSRS				LR	LR	06 03 33.3	
	comp=Z,118nm,18.4s,baz=153,slow=34						
KSAR	**Wonju Array Be**	**28.88**	**332**	P	**P**	**05 52 59.3**	**+0.3**
NJ2	**Nanjing**	**30.48**	**314**	*e*P	**P**	**05 53 12.4**	**-0.8**
NJ2				pmax	pmax		
	comp=Z,12nm,0.6s						
USRK	**Ussuriysk Ar.**	**33.30**	**344**	P	**P**	**05 53 37.7**	**-0.2**
	comp=Z,0.9nm,0.5s,baz=140,slow=9.2,SNR=3.1						
USRK				LR	LR	06 06 16.5	
	comp=Z,113nm,18.9s,baz=149,slow=35						
WRAB	**Tennant Creek**	**33.77**	**197**	*e*P	**P**	**05 53 42.6**	**+0.3**
	comp=Z,6.0nm,0.9s						
WB2	**Warramunga Arr**	**33.78**	**197**	*e*P	**P**	**05 53 43.1**	**+0.8**
	comp=Z,9.5nm,1.1s						
WRA	**Warramunga Arr**	**33.79**	**197**	P	**P**	**05 53 43.0**	**+0.6**
	comp=Z,3.4nm,0.7s,baz=21,slow=9.6,SNR=25						
ENH	**Enshi**	**36.81**	**304**	*e*P	**P**	**05 54 07.7**	**-0.7**
AS01	**Alice Springs**	**37.43**	**196**	*e*P	**P**	**05 54 13.5**	**-0.1**
AS31	**Alice Springs**	**37.44**	**196**	*e*P	**P**	**05 54 16.3**	**+2.6**
	comp=Z,1.0nm,0.7s						
ASAR	**Alice Springs**	**37.44**	**196**	P	**P**	**05 54 14.0**	**+0.2**
	comp=Z,1.7nm,0.6s,baz=15,slow=9.3,SNR=20						
ASAR				PcP	**PcP**	**05 56 33.1**	**+1.0**
	comp=Z,0.6nm,0.5s,baz=15,slow=2.6,SNR=4.2						
ASAR				LR	LR	06 09 00.8	
	comp=Z,151nm,21.4s,baz=18,slow=35						
GYA	**Guiyang**	**38.05**	**297**	*e*P	**P**	**05 54 18.2**	**-0.9**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
KLR	**Kul'dur**	**38.05**	**346**	P	**P**	**05 54 20.1**	**+1.5**
	comp=Z,1.1nm,0.5s,baz=150,slow=8.7,SNR=5.8						
KLR				LR	LR	06 08 57.5	
	comp=Z,227nm,19.6s,baz=153,slow=35						
XAN	**Xi'an**	**38.72**	**310**	P	**P**	**05 54 25.8**	**+1.3**
XAN				pmax	pmax		
	comp=Z,6.0nm,0.7s						
XAN				pmax	pmax		
	comp=Z,48nm,4.5s						
HHC	**Hu-ho-hao-te**	**40.30**	**320**	*e*P	**P**	**05 54 38.8**	**+1.2**
HHC				sP	sP	05 54 51.9	+1.7
HHC				S	**S**	**06 00 43.9**	**+0.5**
HHC				pmax	pmax		
	comp=Z,10.0nm,1.1s						
HHC				pmax	pmax		
	comp=Z,110nm,5.9s						
HHC				LR	LR		
	comp=N,240nm,16.9s						
HHC				LR	LR		
	comp=E,220nm,16.5s						
HHC				LR	LR		
	comp=Z,250nm,15.7s						
PETK	**Petropavlovsk-**	**41.82**	**12**	LR	LR	06 10 01.8	
	comp=Z,67nm,20.0s,baz=194,slow=33						
LZH	**Lanzhou**	**43.35**	**310**	*e*P	**P**	**05 55 01.5**	**-1.3**
LZH				pP	pP	05 55 11.2	-0.6
LZH				sP	sP	05 55 15.1	-0.3
LZH				*e*PP	**PP**	**05 56 44.6**	**+0.7**
LZH				pmax	pmax		
	comp=Z,21nm,1.1s						
LZH				pmax	pmax		
	comp=Z,67nm,5.2s						
LZH				LR	LR		
	comp=N,300nm,13.5s						
LZH				LR	LR		
	comp=E,330nm,14.0s						
LZH				LR	LR		
	comp=Z,360nm,17.2s						
CMAR	**Chiang Mai Arr**	**44.15**	**284**	P	**P**	**05 55 09.1**	**-0.1**
	comp=Z,2.7nm,0.2s,baz=84,slow=6.2,SNR=14						
CMAR				LR	LR	06 12 57.1	
	comp=Z,154nm,19.4s,baz=104,slow=35						
STKA	**Stephens Creek**	**44.26**	**183**	P	**P**	**05 55 10.3**	**+0.5**
	comp=Z,1.5nm,0.5s,baz=352,slow=12,SNR=6.0						
STKA				LR	LR	06 13 35.3	
	comp=Z,64nm,19.7s,baz=28,slow=36						
PSI	**Prapat**	**46.07**	**262**	*e*P	**P**	**05 55 24.3**	**-0.4**
	comp=Z,11nm,1.0s						
SONM	**Songino Array**	**47.34**	**326**	P	**P**	**05 55 34.5**	**+0.3**
	comp=Z,1.8nm,0.7s,baz=132,slow=8.4,SNR=4.7						
GTA	**Gaotai**	**47.56**	**312**	*e*P	**P**	**05 55 37.3**	**+1.3**
GTA				pP	sP	05 55 46.8	-1.9
GTA				sP	pP	05 55 50.7	+5.6
GTA				S	**S**	**06 02 31.2**	**+1.7**
GTA				pmax	pmax		
	comp=Z,5.0nm,1.0s						
GTA				pmax	pmax		
	comp=Z,57nm,5.1s						
GTA				LR	LR		
	comp=N,470nm,13.8s						
GTA				LR	LR		
	comp=E,580nm,16.2s						
GTA				LR	LR		
	comp=Z,190nm,18.5s						
YAK	**Yakutsk**	**50.54**	**351**	LR	LR	06 17 43.3	
	comp=Z,113nm,18.2s,baz=167,slow=36						
WMQ	**Urumqi**	**57.55**	**314**	*e*P	**P**	**05 56 52.0**	**+2.1**
WMQ				LR	LR		
	comp=N,52nm,39.0s						
WMQ				LR	LR		
	comp=E,130nm,39.8s						
WMQ				LR	LR		
	comp=Z,26nm,20.4s						
MK01	**Makanchi Array**	**61.94**	**316**	*e*P	**P**	**05 57 19.0**	**-1.0**
MK31	**Makanchi Array**	**61.95**	**316**	*e*P	**P**	**05 57 19.5**	**-0.6**
MKAR	**Makanchi Array**	**61.95**	**316**	P	**P**	**05 57 19.3**	**-0.7**
	comp=Z,1.8nm,0.8s,baz=95,slow=8.8,SNR=9.6						
MKAR				LR	LR	06 25 03.8	
	comp=Z,52nm,20.3s,baz=84,slow=37						
MKAR	**Makanchi Array**	**61.95**	**316**	*e*P	**P**	**05 57 19.5**	**-0.6**
MAKZ	**Makanchi**	**62.16**	**316**	*e*P	**P**	**05 57 21.0**	**-0.5**
	comp=Z,3.7nm,0.9s						
ZALV	**Zalesovo Beam**	**62.23**	**325**	P	**P**	**05 57 21.5**	**-0.2**
	comp=Z,0.8nm,0.5s,baz=100,slow=6.9,SNR=2.9						
ZALV				LR	LR	06 23 40.5	
	comp=Z,81nm,21.1s,baz=72,slow=35						
HYB	**Hyderabad**	**63.58**	**283**	*i* P	**P**	**05 57 30.5**	**-0.9**
KURK	**Kurchatov**	**65.11**	**320**	*e*P	**P**	**05 57 39.6**	**-1.2**
	comp=Z,6.6nm,1.0s						
KURBB	**Kurchatov Arra**	**65.15**	**320**	P	**P**	**05 57 39.4**	**-1.6**
	comp=Z,2.4nm,0.4s,baz=105,slow=6.7,SNR=28						
NRIK	**Noril'sk**	**66.97**	**341**	LR	LR	06 25 20.8	
	comp=Z,72nm,21.1s,baz=106,slow=34						
TRF	**Thorofare Moun**	**67.89**	**26**	*e*P	**P**	**05 57 59.9**	**+1.3**
PMR	**Palmer**	**67.89**	**28**	*e*P	**P**	**05 57 58.4**	**0.0**
	comp=Z,7.6nm,0.6s						
SML	**Sawmill**	**68.31**	**28**	*e*P	**P**	**05 58 01.2**	**+0.1**
	comp=Z,19nm,0.7s						
SCM	**Sheep Creek Mo**	**68.78**	**28**	*e*P	P	05 57 60.0	-4.1
	comp=Z,17nm,0.6s						
KLU	**Klutina**	**69.36**	**29**	*e*P	P	05 58 03.4	-4.3
	comp=Z,8.8nm,0.8s						
**

FINES	FINESS Array B	91.92	335	P	P	06 00 05.9	-2.4
	comp=Z,0.8nm,0.6s,baz=57,slow=5.1,SNR=9.1						
FINES				LR	LR	06 43 11.1	
	comp=Z,44nm,21.9s,baz=12,slow=37						
W13A	Hualapai Mount	92.20	53	eP	P	06 00 11.6	+1.1
	comp=Z,7.1nm,1.6s						
PDAR	Pinedale Array	92.99	45	LR	LR	06 35 14.4	
	comp=Z,52nm,20.7s,baz=308,slow=31						
BRTR	Keskin Array B	97.47	313	LR	LR	06 47 50.2	
	comp=Z,29nm,22.0s,baz=72,slow=37						
NOA	NORSAR Array B	97.87	339	LR	LR	06 46 26.2	
	comp=Z,27nm,21.2s,baz=40,slow=36						
ULM	Lac du Bonnet	98.33	34	LR	LR	06 42 22.0	
	comp=Z,33nm,19.2s,baz=325,slow=34						
RGN	Rugen	101.46	333	ePdif	Pdif	06 00 49.1	-2.5
TORD	Torodi Ar. Bea	135.10	303	PKP	PKPdf	06 06 20.2	-0.1
	comp=Z,0.6nm,0.5s,baz=40,slow=2.6,SNR=11						
KIC	Kosan Boka	144.07	300	ePKP1	PKPab	06 06 33.9	-0.3
	comp=Z,16nm,0.7s						
TIC	Toumodi	144.16	300	ePKP1	PKPab	06 06 33.7	-0.9
LIC	Lamto	144.38	300	ePKP1	PKPab	06 06 34.6	-0.8
	comp=Z,14nm,0.3s						
LPAZ	La Paz	148.25	101	PKPbc	PKPbc	06 06 48.6	+0.7
	comp=Z,1.0nm,0.4s,baz=316,slow=4.0,SNR=8.7						

NIED ***03*** *05:48:00,22°.00N×120°.90E,h65km,Mw4.1 Best double couple: M₀1.86000×10¹⁵ NP1:φ₀s217.00000°,δ24.00000°, λ-51.00000°. NP2:φ₀s356.00000°,δ71.00000°, λ-106.00000°.*

IDC ***03*** *05:48:21.0±2.0,21°.93N×121°.30E,h0km,mb3.7/4, mb1 3.8/4,mb1mx3.4/49,mbtmp3.7/4,Error ellipse: s-maj=167.0km s-min=26.2km az=64.0*

JMA ***03*** *05:48:25.7±0.2,21°.97N×120°.92E,h49km±5km,M4.1*

ISCJB ***03*** *05:48:27.1±0.5,21°.95N±0°.04×121°.07E±0°.03,h48km±3km, mb3.6/4,Error ellipse: s-maj=5.9km s-min=3.9km az=175.0*

TAP ***03*** *05:48:27.5,21°.99N×120°.96E,h42km,ML4.0,C*

ISC 03 05:48:27.6±0.9,21°.94N±0°.05×121°.00E±0°.03,h47km±6km, n65,σ1§19/93,mb3.6/4,2C-4D,Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TSEB	Hengchuen, Pin	0.10	249	⇑iP	Pn	05 48 35.2	+0.2
	baz=227						
TSEB				iS	Sn	05 48 41.5	+1.2
	baz=227						
TWK1	Hengchun	0.18	272	⇓iP	Pn	05 48 35.2	-0.2
	baz=249						
TWK1				iS	Sn	05 48 40.9	-0.2
	baz=249						
HEN	Hengchun	0.25	286	⇓iP	Pn	05 48 35.7	-0.3
	baz=273						
HEN				iS	Sn	05 48 41.6	-0.4
	baz=273						
TAW	Tawu	0.43	347	iP	Pn	05 48 37.1	-0.7
	baz=1.0						
TAW				iS	Sn	05 48 44.0	-1.1
	baz=1.0						
EAST	Anshuo	0.47	342	⇑iP	Pn	05 48 37.8	-0.6
	baz=353						
EAST				iS	Sn	05 48 45.3	-0.7
	baz=353						
LAY	Lan-yu	0.52	79	⇓P	Pn	05 48 38.5	-0.4
	baz=85						
LAY				eS	Sn	05 48 45.8	-1.3
	baz=85						
ECL	Taimali	0.66	356	eP	Pn	05 48 39.7	-1.0
	baz=9.0						
ECL				eS	Sn	05 48 48.3	-1.9
	baz=9.0						
TWP	Hsiaoliuchiu	0.72	305	⇓iP	Pn	05 48 42.0	+0.5
	baz=303						
TWP				eS	Sn	05 48 53.5	+1.9
	baz=303						
TTN	Taitung	0.82	9	eP	Pn	05 48 43.7	+0.8
	baz=14						
SSD	Sandimen	0.88	337	eP	Pn	05 48 43.2	-0.4
	baz=346						
SSD				eS	Sn	05 48 54.6	-0.7
	baz=346						
TWG	Pinlang	0.88	4	P	Pn	05 48 42.3	-1.4
	baz=15						
TWG				S	Sn	05 48 53.4	-2.1
	baz=15						
KAU	Kaohsiung	0.90	315	eP	Pn	05 48 44.1	+0.3
	baz=301						
KAU				eS	Sn	05 48 56.8	+1.0
	baz=301						
SGLT	Jiouru	0.92	329	eP	Pn	05 48 45.2	+1.1
	baz=338						
TWM1	Shoushan	1.03	329	eP	Pn	05 48 46.7	+1.0
	baz=330						
SGST	Jiashian	1.21	341	eP	Pn	05 48 50.0	+2.0
	baz=343						
CHKT	Chengkung	1.21	16	P	Pn	05 48 47.1	-0.9
	baz=28						
CHKT				eS	Sn	05 49 02.4	-0.9
	baz=28						
STYT	Tauyuan	1.24	350	eP	Pn	05 48 48.6	-0.1
	baz=352						
ELDTW	Lidau	1.25	1	eP	Pn	05 48 48.8	0.0
	baz=11						
TAI1	Yung-k'ang	1.31	327	eP	Pn	05 48 49.4	-0.1
	baz=328						
CHN1	Nanshi	1.32	341	eP	Pn	05 48 49.4	-0.2
	baz=342						
WTP	Ta-pu	1.35	345	eP	Pn	05 48 50.2	0.0
	baz=347						
TWK	Hsinying	1.41	340	eP	Pn	05 48 53.2	+2.4
	baz=343						
TWF1	Yuli	1.44	11	eP	Pn	05 48 49.9	-1.4
	baz=22						
SCLT	Jiali	1.44	329	eP	Pn	05 48 50.7	-0.6
	baz=330						
SCLT				eS	Sn	05 49 08.3	-0.7
	baz=330						
CHN4	Tsaushan	1.46	345	eP	Pn	05 48 51.3	-0.3
	baz=347						
YUS	Yu-Shan	1.55	358	eP	Pn	05 48 53.6	+0.4
	baz=1.0						
ALS	Alishan	1.58	353	eP	Pn	05 48 55.6	+2.2
	baz=343						
CHN8	Yiju	1.58	333	eP	Pn	05 48 53.2	0.0
	baz=321						
CHN8				eS	Sn	05 49 11.8	-0.7
	baz=321						
CHY	Chiayi	1.64	341	eP	Pn	05 48 54.1	+0.1
	baz=343						
CHN5	Tsauling	1.68	350	eP	Pn	05 48 54.5	-0.1
	baz=352						
WDGT	Dungji	1.81	317	eP	Pn	05 48 54.1	-2.2
	baz=317						
WDGT				eS	Sn	05 49 14.3	-3.7
	baz=317						
WDT	Danda	1.82	4	eP	Pn	05 48 57.1	+0.4
	baz=18						
WSF	Szhu	1.84	337	eP	Pn	05 48 56.9	+0.2
	baz=338						
WSF				eS	Sn	05 49 17.5	-1.3
	baz=338						
ESL	Shilin	1.91	12	eP	Pn	05 48 57.4	-0.3
	baz=24						
SMLT	Sun Moon Lake	1.94	357	eP	Pn	05 48 58.1	-0.2
	baz=347						
WNT	Mingjian	1.96	351	eP	Pn	05 48 59.5	+1.2
	baz=340						
TYC	Yuchr	1.96	356	eP	Pn	05 48 58.8	+0.4
	baz=347						
PNG	Penghu	2.10	321	eP	Pn	05 48 58.4	-1.9
	baz=321						
PNG				eS	Sn	05 49 20.8	-4.5
	baz=321						
TWD	Chiawan	2.20	14	eP	Pn	05 49 01.5	-0.2
	baz=18						
WHF	Hehuan Shan	2.21	6	eP	Pn	05 49 02.7	+0.4
	baz=20						
WHF				eS	Sn	05 49 28.7	+0.1
	baz=20						
TWT	Tachien	2.31	4	eP	Pn	05 49 03.3	-0.1
	baz=7.0						
TWQ1	Liyutan	2.41	355	eP	Pn	05 49 05.3	+0.7
	baz=346						
NSY	Sanyi	2.48	355	eP	Pn	05 49 07.4	+1.9
	baz=346						
NNS	Nan Shan	2.52	8	eP	Pn	05 49 07.3	+1.2
	baz=357						
NSTT	Nanjuang	2.68	360	eP	Pn	05 49 10.6	+2.3
	baz=3.0						
ENTT	Nioudou	2.74	11	eP	Pn	05 49 10.1	+1.0
	baz=23						
NSK	Sanguang	2.75	7	eP	Pn	05 49 10.5	+1.2
	baz=356						
NSK				eS	Sn	05 49 41.7	+0.4
	baz=356						
TWC	Suao	2.77	16	eP	Pn	05 49 10.5	+0.9
	baz=20						
TWE	Neicheng	2.84	12	eP	Pn	05 49 11.8	+1.4
	baz=25						
JYNG	Yonagunijimaku	3.08	35	P	Pn	05 49 14.7	+1.0
JYNG				eS	Sn	05 49 50.3	+1.0
YOJ	Yonaguni jima	3.12	36	P	Pn	05 49 15.6	+1.3
YOJ				eS	Sn	05 49 50.8	+0.5
YOJ	Yonaguni jima	3.12	36	eP	Pn	05 49 15.6	+1.3
	baz=37						
NWF	Wu-fen Shan	3.20	13	eP	Pn	05 49 16.6	+1.1
	baz=16						
HATJ	Hateruma jima	3.34	50	P	Pn	05 49 17.1	-0.2
HATJ				S	Sn	05 49 54.4	-1.2
KNM	Kinmen	3.42	317	eP	Pn	05 49 18.3	-0.1
	baz=314						
IRIF	Iriomote-Funau	3.47	46	P	Pn	05 49 19.3	+0.3
IRIF				S	Sn	05 49 58.3	-0.5
JKRS	Kuro-shima	3.59	50	P	Pn	05 49 21.1	+0.3
JKRS				eS	Sn	05 50 01.1	-0.9
JIJ	Ishigaki jima	3.77	50	P	Pn	05 49 23.2	0.0
JIJ				S	Sn	05 50 04.3	-2.0
JISG	Ishigakijimahi	4.03	48	P	Pn	05 49 26.6	-0.2
JISG				S	Sn	05 50 12.5	-0.2
JTJ	Tarama	4.34	51	P	Pn	05 49 31.3	+0.3
JTJ				S	Sn	05 50 19.8	-0.5
JIRB	Irabujima	4.79	52	P	Pn	05 49 37.0	-0.3
JIRB				S	Sn	05 50 30.6	-0.9
SONM	Songino Array	28.38	339	P	P	05 54 18.5	+0.9
	0.6nm,0.6s,baz=139,slow=7.1,SNR=2.8						
MKAR	Makanchi Array	39.86	318	P	P	05 55 57.7	+1.0
	0.7nm,0.7s,baz=112,slow=9.9,SNR=4.0						
WRA	Warramunga Arr	43.62	162	P	P	05 56 26.4	-1.1
	0.8nm,0.8s,baz=347,slow=8.5,SNR=4.8						
KURBB	Kurchatov Arra	43.73	322	P	P	05 56 29.1	+0.9
	1.7nm,0.9s,baz=122,slow=7.3,SNR=9.3						

ISCJB ***03*** *05:58:15.1±0.8,10°.28N±0°.04×73°.09W±0°.06,h119km±8km, Error ellipse: s-maj=11.1km s-min=5.0km az=33.0*

FUNV ***03*** *05:58:17.7,10°.26N×73°.08W,h115km,MW3.4*

RSNC ***03*** *05:58:18.0±0.8,10°.30N×73°.22W,h42km±999km,ML3.6*

ISC 03 05:58:14.4±1.7,10°.30N±0°.05×73°.14W±0°.06, h127km±15km,n24,σ1§47/34,2D,Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VIRV	Villa del Rosa	0.75	74	eP	Pn	05 59 35.8	+0.9
VIRV				eS	Sn	05 58 50.3	-0.1
URIC	Uribia, Colomb	1.80	39	⇓iP	Pn	05 58 46.5	+0.8
URIC				eS	Sn	05 59 08.7	-1.0
URIC				i		05 59 10.2	
	comp=Z,126nm,0.3s						
OCAC	Ocana	2.05	185	eP	Pn	05 58 49.7	+0.7
OCAC				eS	Sn	05 59 14.7	-0.8
OCAC				i		05 59 19.2	
	comp=Z,618nm,0.7s						
VIGV	El Vigia	2.27	129	eP	Pn	05 58 53.0	+1.3
VIGV				eS	Sn	05 59 18.1	-2.2
GUEC	Guerrero, Nort	2.46	175	eP	Pn	05 58 56.7	+2.4
DABV	Dabajuro	2.54	76	eP	Pn	05 58 56.7	+1.6
DABV				eS	Sn	05 59 25.3	-0.9
CAPV	Capacho	2.55	161	eP	Pn	05 58 56.8	+1.4
GRMC	Gramalote, San	2.58	173	iP	Pn	05 58 54.5	-1.3
GRMC				eS	Sn	05 59 23.2	-4.3
GRMC				i		05 59 24.7	
	comp=Z,903nm,0.2s						
CBRI	Barrientos, No	2.59	172	eP	Pn	05 58 57.0	+1.2
CBRI				eS	Sn	05 59 26.8	-0.8
CBRI				i		05 59 32.3	
	comp=Z,444nm,0.6s						
MOTC	Monteria, Cord	2.91	239	eP	Pn	05 59 00.2	+0.4
MOTC				eS	Sn	05 59 32.6	-2.1
PAMC	Pamplona, Colo	2.97	171	eP	Pn	05 59 02.3	+1.3
PAMC				eS	Sn	05 59 37.0	+0.1
PAMC				i		05 59 41.0	
	comp=Z,63nm,0.3s						
SOCV	Socops	3.02	131	eP	Pn	05 59 02.4	+1.2
CURV	Curarigua	3.15	95	eP	Pn	05 59 04.0	+1.1
BRRC	Barranca, Sant	3.22	190	⇓iP	Pn	05 59 05.2	+1.4
BRRC				eS	Sn	05 59 42.7	+0.7
BRRC				i		05 59 47.4	
	comp=Z,209nm,0.5s						
SIQV	Siquisique	3.30	84	eP	Pn	05 59 05.2	+0.3
BTLC	Betulia, Santa	3.36	182	eP	Pn	05 59 07.6	+1.7
MONV	Montecano	3.52	62	eP	Pn	05 59 08.5	+0.7
SANV	Sanarito	3.64	102	eP	Pn	05 59 11.4	+1.9
TEPV	Terepaima	3.90	95	eP	Pn	05 59 13.9	+1.1
MAPV	Macapo	4.64	95	eP	Pn	05 59 23.4	+0.8
ELOV	Elorza	4.88	132	eP	Pn	05 59 26.4	+0.5
BAUV	El Baul	5.21	105	eP	Pn	05 59 30.4	+0.1
TURV	Turiamo	5.22	88	eP	Pn	05 59 30.9	+0.5
CUPV	Cepira	7.24	91	eP	Pn	05 59 58.3	+0.5

ISCJB ***03*** *06:01:59.3±0.7,6°.81N±0°.06×73°.13W±0°.05,h152km±6km, Error ellipse: s-maj=11.1km s-min=6.5km az=138.1*

RSNC ***03*** *06:02:00.6±0.7,6°.78N×73°.12W,h148km±6km,ML2.6*

FUNV ***03*** *06:02:05.5,7°.00N×72°.90W,h121km,MW2.8*

ISC 03 06:01:59.7±1.6,6°.79N±0°.06×73°.12W±0°.06,h151km±9km, n18,σ0§44/25,1C,Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BTLC	Betulia, Santa	0.19	310	eP	Pn	06 02 20.8	+0.4
BTLC				eS	Sn	06 02 36.0	0.0
BARC	Barichara	0.21	198	eP	Pn	06 02 20.2	-0.2
BARC				eS	Sn	06 02 35.3	-0.9
BARC				i		06 02 36.2	
	comp=Z,100nm,0.2s						
BRRC	Barranca, Sant	0.67	298	⇑iP	Pn	06 02 22.4	+0.4
BRRC				eS	Sn	06 02 39.4	+0.3
BRRC				i		06 02 40.5	
	comp=Z,112nm,0.2s						
PAMC	Pamplona, Colo	0.68	37	eP	Pn	06 02 23.4	+0.6
RUSC	La Rusia	0.90	178	eP	Pn	06 02 23.9	-0.4
RUSC				eS	Sn	06 02 42.9	-0.1
RUSC				i		06 02 44.8	
	comp=Z,20nm,0.3s						
CAPV	Capacho	1.33	37	eP	Pn	06 02 28.6	+0.7
CAPV				eS	Sn	06 02 43.7	-5.7
OCAC	Ocana	1.45	352	eP	Pn	06 02 28.8	-0.1
OCAC				eS	Sn	06 02 51.3	-0.1
OCAC				i		06 02 54.1	
	comp=Z,88nm,0.5s						
NORC	Norcasia	2.13	235	eP	Pn	06 02 36.7	+0.3
NORC				eS	Sn	06 03 03.9	-0.8
HELC	Santa Helena	2.47	256	eP	Pn	06 02 41.2	+0.3
HELC				eS	Sn	06 03 12.6	+0.1
HELC				i		06 03 19.6	
	comp=Z,13nm,0.2s						
VIGV	El Vigia	2.67	40	eP	Pn	06 02 43.4	+0.3
SOCV	Socops	2.69	56	eP	Pn	06 02 43.4	+0.2
DBBC	Dabeiba	3.08	274	eP	Pn	06 02 48.0	-0.2
PRAC	Prado	3.53	210	eP	Pn	06 02 54.8	+0.8
ELOV	Elorza	3.61	87	eP	Pn	06 02 55.1	+0.2
VIRV	Villa del Rosa	3.75	11	eP	Pn	06 02 56.5	-0.3
CURV	Curarigua	4.47	44	eP	Pn	06 03 06.2	-0.1
DABV	Dabajuro	4.78	31	eP	Pn	06 03 10.6	+0.3
TEPV	Terepaima	5.00	51	eP	Pn	06 03 13.0	-0.2

ISCJB ***03*** *06:02:30.4±1.7,6°.98N±0°.04×71°.78W±0°.03,h0km±12km, Error ellipse: s-maj=7.5km s-min=4.1km az=156.1*

RSNC ***03*** *06:02:32.7±0.8,6°.97N×71°.81W,h4km±10km,ML2.8*

FUNV ***03*** *06:02:32.4,6°.91N×71°.94W,h20km,MW2.9*

ISC 03 06:02:31.8±1.7,6°.97N±0°.05×71°.81W±0°.04,h8km±12km, n16,σ0§70/25,Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PAMC	Pamplona, Colo	0.95	293	eP	Pg	06 02 49.8	-0.3
CAPV	Capacho	1.02	331	eP	Pg	06 02 51.0	-0.3
CAPV				eS	Sg	06 03 05.5	+1.0
BARC	Barichara	1.41	255	eP	Pn	06 02 56.9	-1.1
BARC				eS	Sg	06 03 17.6	+0.4
BARC				i		06 03 29.3	
	comp=Z,120nm,0.5s						
BTLC	Betulia, Santa	1.45	268	eP	Pn	06 02 57.6	-0.8
BTLC				eS	Sb	06 03 17.1	-0.6
SOCV	Socops	1.61	36	eP	Pn	06 03 00.1	-0.5
SOCV				eS	Sn	06 03 21.7	+0.1
RUSC	La Rusia	1.66	230	eP	Pn	06 03 01.8	+0.2
RUSC				eS	Sn	06 03 23.7	+0.4
RUSC				i		06 03 25.6	
	comp=Z,36nm,0.3s						
BRRC	Barranca, Sant	1.89	274	eP	Pn	06 03 04.7	+0.4
BRRC				i		06 03 06.0	
	comp=Z,89nm,0.3s						
BRRC				eS	Sn	06 03 29.7	+1.2
VIGV	El Vigia	1.91	13	eP	Pn	06 03 04.7	0.0
VIGV				eS	Sn	06 03 28.8	-0.1
OCAC	Ocana	1.95	310	eP	Pn	06 03 05.8	+0.4
OCAC				eS	Sn	06 03 30.3	+0.1
OCAC				i		06 03 35.5	
	comp=Z,197nm,0.5s						
ELOV	Elorza	2.31	89	eP	Pn	06 03 10.7	+0.5
ELOV				eS	Sn	06 03 39.2	+0.3
SANV	Sanarito	3.37	42	eP	Pn	06 03 25.6	+0.6
CURV	Curarigua	3.53	31	eP	Pn	06 03 27.5	+0.4
TEPV	Terepaima	3.94	41	eP	Pn	06 03 33.1	+0.4
DABV	Dabajuro	4.09	16	eP	Pn	06 03 33.3	-1.4
BAUV	El Baul	4.22	62	eP	Pn	06 03 35.3	-1.1
MAPV	Macapo	4.37	49	eP	Pn	06 03 38.3	-0.3

IDC 03 06:15:03.8±2.8,53°.39N×87°.38E,h0km,mb1 2.9/2, mb1mx2.8/53,mbtmp2.9/2,ML2.8/2,Error ellipse: s-maj=26.0km s-min=15.0km az=65.0,Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	ZALESOVO INFRA	1.63	291	i		06 25 45.0	
	baz=109,slow=333,SNR=27						
ZALV	Zalesovo Beam	1.63	291	Pg	Pn	06 15 32.0	-1.7
	1.6nm,0.3s,baz=111,slow=15,SNR=14						
ZALV				Lg	Lg	06 15 55.8	
	1.6nm,0.3s,baz=110,slow=26,SNR=6.8						
KURBB	Kurchatov Arra	6.13	247	Pn	Pn	06 16 36.3	+0.8
	0.1nm,0.3s,baz=61,slow=14,SNR=6.9						
KURBB				Sn	Sn	06 17 40.1	-6.1
	0.0nm,0.3s,baz=360,slow=4.8,SNR=3.5						
KURBB				Lg	Lg	06 18 18.5	
	0.0nm,0.3s,baz=64,slow=32,SNR=4.3						
MKAR	Makanchi Array	7.37	208	Pn	Pn	06 16 53.8	+1.3
	0.2nm,0.3s,baz=30,slow=14,SNR=5.6						
MKAR				Lg	Lg	06 18 56.9	
	0.1nm,0.3s,baz=35,slow=30,SNR=3.5						

KRSC 03 06:20:43.0±1.3,52°.79N×161°.59E,h41km±19km,ML3.6, Off east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SPN	Mys Shipunski	0.99	289	eP	Pn	06 21 01.1	+0.6
SPN				eS	Sn	06 21 14.1	+0.8
SDLR	Sedlovina	1.70	288	eP	Pn	06 21 11.8	+1.5
SDLR				eS	Sn	06 21 32.5	+1.5
UGLR	Uglovaya	1.72	285	eP	Pn	06 21 12.8	+2.2
UGLR				eS	Sn	06 21 34.1	+2.7
DALK	Dalny	1.73	279	eP	Pn	06 21 12.5	+1.9
DALK				eS	Sn	06 21 33.2	+1.8
SMAR	Somma	1.75	287	eP	Pn	06 21 13.0	+2.0
SMAR				eS	Sn	06 21 34.4	+2.2
AVH	Avacha	1.78	287	eP	Pn	06 21 14.2	+2.8
KII	Karymskiy	1.79	315	eP	Pn	06 21 11.4	-0.1
KRER	Koryakskii	1.79	288	eP	Pn	06 21 13.7	+2.1
PET	Petropavlovsk	1.79	279	eP	Pn	06 21 13.1	+1.7
PET				eS	Sn	06 21 34.1	+1.2
KOK	Koryaka	1.85	287	eP	Pn	06 21 15.2	+2.9
KRX	Arik	1.86	289	eP	Pn	06 21 14.4	+1.9
RUS	Russkaya	1.91	260	eP	Pn	06 21 15.4	+2.4
RUS				eS	Sn	06 21 37.8	+2.0
MTVR	Mutnovka	2.10	263	eP	Pn	06 21 18.4	+2.6
MTVR				eS	Sn	06 21 43.0	+2.3
KRMR	Karymshinskiy	2.10	272	eP	Pn	06 21 17.6	+2.0
KRMR				eS	Sn	06 21 42.1	+1.6
ASAK	Asacha	2.29	261	eP	Pn	06 21 21.4	+3.1
ASAK				eS	Sn	06 21 49.4	+4.2
GNL	Ganaly	2.37	294	eP	Pn	06 21 22.6	+3.1
GNL				eS	Sn	06 21 50.8	+3.4
TUMD	Tumrok D	2.52	344	eP	Pn	06 21 24.7	+3.3
TUMD				eS	Sn	06 21 55.1	+4.2
TUMR	Tumrok	2.64	342	eP	Pn	06 21 27.2	+4.0
APC	Apacha	2.69	275	eP	Pn	06 21 27.6	+3.9
APC				eS	Sn	06 22 00.0	+5.0
KMNR	Kamenistaya	3.08	346	eP	Pn	06 21 33.8	+4.6
KIRR	Kirishev	3.25	348	eP	Pn	06 21 36.4	+4.8
ZLN	Zelenaya	3.27	352	eP	Pn	06 21 35.5	+3.7
CIRR	Tsirk	3.37	352	eP	Pn	06 21 37.6	+4.4
KRSR	Krestovskiy	3.48	351	eP	Pn	06 21 39.5	+4.7
BKI	Bering	3.54	45	eP	Pn	06 21 38.3	+2.9
BKI				eS	Sn	06 22 18.5	+2.5
BDR	Baidarnaya	3.79	357	eP	Pn	06 21 43.3	+4.3
BDR				eS	Sn	06 22 27.5	+5.2
SMKR	Semkarok	3.80	359	eP	Pn	06 21 43.1	+4.0
SMKR				eS	Sn	06 22 26.4	+3.9
SRKR	Sorokina	3.88	357	eP	Pn	06 21 43.9	+3.7

NIED ***03*** *06:20:00,36°.50N×142°.70E,h8km,Mw4.0 Best double couple: M₀9.49000×10¹⁴ NP1:φ₀s39.00000°,δ45.00000°, λ112.00000°. NP2:φ₀s189.00000°,δ49.00000°,λ69.00000°.*

ISCJB ***03*** *06:20:52.4±0.5,36°.34N±0°.04×142°.78E±0°.06,h15km, mb3.9/15,MS3.2/2,Error ellipse: s-maj=7.7km s-min=5.5km az=27.9*

IDC ***03*** *06:20:52.8±0.8,36°.39N×142°.68E,h0km,mb3.8/12, mb1 4.0/17,mb1mx3.8/58,mbtmp3.9/17,ML3.8/5,MS3.2/3, Ms1 3.2/3,ms1mx2.7/42,Error ellipse: s-maj=20.5km s-min=17.8km az=147.0*

JMA ***03*** *06:20:54.9±0.5,36°.47N×142°.70E,h79km,M3.6*

NEIC ***03*** *06:20:57.3±0.5,36°.35N×142°.65E,h35km,mb4.1/2,Error ellipse: s-maj=10.3km s-min=7.6km az=117.0*

ISC 03 06:20:54.4±0.6,36°.39N±0°.06×142°.75E±0°.08,h15km,n39, σ1§48/39,mb3.8/15,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	Boso 1	2.25	220	P	Pn	06 21 30.9	+0.2
JOU	Okura	2.58	321	P	Pn	06 21 33.5	-2.2
JAG	Ashikaga	2.66	272	P	Pn	06 21 36.2	-0.5
JRY	Ryogami san	3.13	264	P	Pn	06 21 42.4	-0.9
JYK	Kaneyama	3.16	324	P	Pn	06 21 42.4	-1.2
JOD2	Odawara 2	3.18	250	P	Pn	06 21 43.5	-0.4
JYN	Shimob	3.52	257	P	Pn	06 21 49.0	+0.3
MJAR	Matsushiro Arr	3.66	274	Pn	Pn	06 21 50.4	-0.2
	3.7nm,0.3s,baz=85,slow=8.8,SNR=44						
MAJO	Matsushiro	3.66	274	ePn	Pn	06 21 51.0	+0.4
MAT	Matsushiro	3.66	274	P	Pn	06 21 50.5	-0.1
MAT				eS	Sn	06 22 34.3	+0.8
JHJ2	Mitsune	4.06	217	ePn	Pn	06 21 55.4	-0.6
JHJ	Hachijo jima 2	4.07	218	Pn	Pn	06 21 56.3

KLR Kul'dur 15.14 331 Pn Pn 06 24 28.1 +0.4
0.1nm,0.3s,baz=157,slow=10,SNR=3.3
SONM Songino Array 29.03 305 P P 06 26 54.4 +0.4
0.7nm,0.6s,baz=107,slow=9.2,SNR=5.5
TLY Talaya 31.56 311 LR LR 06 40 21.7
comp=Z,36nm,18.4s,baz=120,slow=37
ZALV Zalesovo Beam 43.14 313 P P 06 28 54.3 +0.2
1.0nm,0.6s,baz=93,slow=8.8,SNR=3.9
NRIK Noril'sk 44.30 335 LR LR 06 49 50.7
comp=Z,48nm,19.6s,baz=106,slow=39
MKAR Makanchi Array 45.37 303 P **P 06 29 12.5 +0.4**
1.2nm,0.6s,baz=92,slow=9.6,SNR=8.6
KURK Kurchatov 47.17 309 *e*P **P 06 29 25.7 -0.4**
13nm,0.8s
KURK P **pP 06 29 26.7 -4.2**
KURBB Kurchatov Arra 47.24 309 P **P 06 29 26.7 0.0**
1.6nm,0.5s,baz=83,slow=7.5,SNR=19
ILAR Eielson Array 49.47 32 P **P 06 29 44.4 +0.7**
0.8nm,0.7s,baz=255,slow=6.2,SNR=9.4
TKM2 Tokmak 2 50.88 299 *e*P **P 06 29 54.3 -0.7**
1.5nm,0.6s
KKAR Karatay Array 54.38 301 *e*P **P 06 30 20.6 0.0**
INK Inuvik 54.48 27 P **P 06 30 21.5 +0.7**
0.6nm,0.6s,baz=240,slow=8.1,SNR=6.3
WRA Warramunga Arr 56.59 189 P **P 06 30 37.2 +0.6**
0.7nm,0.7s,baz=8.7,slow=6.9,SNR=3.0
ABKAR Akbulak array 59.17 311 *e*P **P 06 30 54.0 -0.5**
0.9nm,0.5s
YKA Yellowknife Ar 63.83 30 P **P 06 31 25.9 +0.1**
0.4nm,0.8s,baz=302,slow=6.7,SNR=9.7
FINES FINESS Array B 69.88 333 P **P 06 32 04.7 +0.4**
2.0nm,0.7s,baz=64,slow=6.3,SNR=4.7
NVAR Mina Array Bea 74.51 54 P **P 06 32 35.3 +2.5**
0.3nm,0.5s,baz=294,slow=6.8,SNR=0.5
AKASG Malin Array Be 75.46 323 P **P 06 32 38.0 +0.4**
0.6nm,0.5s,baz=50,slow=6.4,SNR=3.1
TXAR Lajitas Array 89.66 53 P **P 06 33 53.1 +0.9**
0.5nm,0.9s,baz=255,slow=3.5,SNR=3.7

NIED ***03*** *06:22:00,35°.80N×141°.40E,h23km,Mw4.2 Best double couple: M₀1.99000×10¹⁵ NP1:φ=42.00000°,δ41.00000°, λ-48.00000°. NP2:φ=172.00000°,δ61.00000°, λ-120.00000°.*
JMA ***03*** *06:22:25.3±0.3,35°.80N×141°.44E,h10km±4km,M4.2*
JMA Felt I J1.
ISCJB ***03*** *06:22:26.4±1.0,35°.72N±0°.04×141°.45E±0°.08,h35km±9km, mb4.0/19,MS3.1/2,Error ellipse: s-maj=11.0km s-min=6.8km az=174.7*
NEIC ***03*** *06:22:28.3±1.1,35°.67N×141°.41E,h37km±9km,mb4.5/1, Error ellipse: s-maj=8.5km s-min=7.1km az=121.0*
NEIC Recorded [1 JMA] in Chiba.
IDC ***03*** *06:22:28.5±3.4,35°.68N×141°.38E,h37km±29km,mb3.8/19, mb1 4.0/21,mb1mx3.9/55,mbtmp4.0/21,ML3.3/2,MS3.5/5, Ms1 3.5/5,ms1mx3.0/42,Error ellipse: s-maj=18.4km s-min=16.4km az=112.0*

ISC 03 06:22:25.5±1.8,35°.76N±0°.05×141°.47E±0°.07,h15km±10km, n42,σ=0°.81/42,mb4.1/19,1C,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.50**	**263**	⇑P	**Pg**	**06 22 34.8**	**-0.7**
CHOJ				S	**Sg**	**06 22 41.7**	**-0.5**
JCN	**Nagara**	**1.09**	**252**	P	**Pn**	**06 22 46.8**	**+0.6**
JCN				S	**Sg**	**06 23 02.1**	**+1.3**
JHO	**Hitachi**	**1.12**	**320**	P	**Pn**	**06 22 44.8**	**-1.8**
JHO				*e*S	**Sb**	**06 23 00.3**	**-0.5**
JYT	**Yasato**	**1.13**	**295**	P	**Pn**	**06 22 46.4**	**-0.4**
JYT				S	**Sb**	**06 23 00.8**	**-0.5**
BSO4	**Boso 4**	**1.20**	**230**	P	**Pb**	**06 22 48.7**	**+0.8**
BSO3	**Boso 3**	**1.24**	**220**	P	**Pn**	**06 22 48.2**	**+0.2**
ONAJ	**Iwakimizuishiy**	**1.44**	**338**	P	**Pn**	**06 22 50.1**	**-1.0**
MJAR	**Matsushiro Arr**	**2.75**	**287**	Pn	**Pn**	**06 23 09.7**	**+0.7**
	16nm,0.3s,baz=90,slow=20,SNR=16						
MAJO	**Matsushiro**	**2.75**	**287**	*e*Pn	**Pn**	**06 23 09.8**	**+0.7**
MAT	**Matsushiro**	**2.75**	**287**	P	**Pn**	**06 23 09.3**	**+0.2**
MAT				S	**Sn**	**06 23 41.9**	**-0.1**
JHJ	**Hachijo jima 2**	**2.98**	**208**	Pn	**Pn**	**06 23 11.3**	**-0.9**
	4.0nm,0.3s,baz=56,slow=19,SNR=2.1						
JHJ				Sn	**Sn**	**06 23 45.5**	**-2.2**
	13nm,0.3s,baz=112,slow=22,SNR=3.1						
JNU	**Nakatsue**	**9.13**	**256**	LR	LR	06 28 40.4	
	comp=Z,686nm,18.1s,baz=122,slow=41						
KSRS	**Korea Array**	**11.02**	**283**	Pn	Pn	06 24 58.8	-3.7
	0.3nm,0.3s,baz=94,slow=16,SNR=4.1						
KSRS				LR	LR	06 29 09.4	
	comp=Z,236nm,19.1s,baz=106,slow=36						
KSAR	**Wonju Array Be**	**11.05**	**283**	Pn	Pn	06 24 58.8	-4.1
USRK	**Ussuriysk Ar.**	**11.12**	**322**	Pn	Pn	06 25 08.1	+4.1
	0.1nm,0.3s,baz=138,slow=12,SNR=2.3						
KLR	**Kul'dur**	**15.23**	**335**	LR	LR	06 31 40.3	
	comp=Z,157nm,18.6s,baz=150,slow=36						
PETK	**Petropavlovsk-**	**20.77**	**28**	P	**P**	**06 27 06.6**	**+0.9**
	4.0nm,0.8s,baz=218,slow=6.8,SNR=3.4						
PETK				LR	LR	06 37 20.0	
	comp=Z,58nm,18.2s,baz=226,slow=43						
SEY	**Seymchan**	**28.03**	**11**	P	**P**	**06 28 16.7**	**+1.1**
	1.9nm,0.5s,baz=205,slow=14,SNR=5.7						
SONM	**Songino Array**	**28.55**	**306**	P	**P**	**06 28 21.3**	**+0.6**
	0.5nm,0.4s,baz=105,slow=8.4,SNR=3.5						
ZALV	**Zalesovo Beam**	**42.81**	**313**	P	**P**	**06 30 22.2**	**-0.2**
	1.0nm,0.6s,baz=102,slow=6.1,SNR=3.5						
MKAR	**Makanchi Array**	**44.84**	**303**	P	**P**	**06 30 38.9**	**0.0**
	2.3nm,0.7s,baz=85,slow=9.3,SNR=6.8						
KURK	**Kurchatov**	**46.76**	**309**	P	**P**	**06 30 53.7**	**-0.2**
KURBB	**Kurchatov Arra**	**46.83**	**309**	P	**P**	**06 30 53.7**	**-0.7**
	2.3nm,0.5s,baz=84,slow=8.1,SNR=6.8						
HNR	**Honiara**	**48.21**	**155**	LR	LR	06 49 21.8	
	comp=Z,35nm,21.1s,baz=274,slow=34						
ILAR	**Eielson Array**	**50.55**	**32**	P	**P**	**06 31 23.4**	**+0.6**
	2.6nm,0.8s,baz=268,slow=6.4,SNR=14						
INK	**Inuvik**	**55.50**	**27**	P	**P**	**06 32 00.0**	**+0.7**
	1.6nm,0.7s,baz=292,slow=5.2,SNR=7.8						
WRAB	**Tennant Creek**	**55.80**	**188**	*e*P	**P**	**06 32 01.1**	**-0.9**
WRA	**Warramunga Arr**	**55.81**	**188**	P	**P**	**06 32 01.1**	**-1.0**
	1.5nm,0.7s,baz=4.6,slow=7.4,SNR=4.2						
ABKAR	**Akbulak array**	**58.80**	**311**	*e*P	**P**	**06 32 22.5**	**-0.4**
ASAR	**Alice Springs**	**59.54**	**188**	P	**P**	**06 32 26.8**	**-1.4**
	0.6nm,0.6s,baz=7.8,slow=7.5,SNR=3.1						
RES	**Resolute Bay**	**63.82**	**14**	*e*P	**P**	**06 32 56.5**	**0.0**
	3.6nm,0.8s						
YKA	**Yellowknife Ar**	**64.89**	**30**	P	**P**	**06 33 03.7**	**+0.1**
	1.1nm,0.7s,baz=301,slow=6.6,SNR=16						
FINES	**FINESS Array B**	**69.96**	**332**	P	**P**	**06 33 35.5**	**-0.3**
	2.3nm,0.7s,baz=33,slow=11,SNR=6.6						
AKASG	**Malin Array Be**	**75.33**	**323**	P	**P**	**06 34 07.5**	**-0.4**
	1.5nm,0.5s,baz=47,slow=6.5,SNR=7.7						
NB2	**NORSAR Subarra**	**75.37**	**337**	P	**P**	**06 34 07.7**	**-0.4**
	comp=Z,1.0nm,0.7s,baz=38,slow=5.9						
NOA	**NORSAR Array B**	**75.37**	**337**	P	**P**	**06 34 07.6**	**-0.5**
	comp=Z,1.3nm,0.7s,baz=39,slow=5.8,SNR=5.3						
NVAR	**Mina Array Bea**	**75.72**	**53**	P	**P**	**06 34 11.8**	**+1.1**
	comp=Z,1.1nm,0.8s,baz=287,slow=4.5,SNR=5.8						
PDAR	**Pinedale Array**	**78.53**	**45**	P	**P**	**06 34 26.7**	**+0.3**
	comp=Z,0.4nm,0.5s,baz=269,slow=1.2,SNR=6.2						
BRTR	**Keskin Array B**	**79.73**	**312**	P	**P**	**06 34 33.5**	**+0.6**
	comp=Z,0.8nm,0.8s,baz=76,slow=7.6,SNR=4.6						
GERES	**GERESS Array B**	**83.81**	**328**	P	**P**	**06 34 54.1**	**-0.1**
	comp=Z,0.3nm,0.2s,baz=34,slow=4.0,SNR=5.9						
TXAR	**Lajitas Array**	**90.86**	**52**	P	**P**	**06 35 29.0**	**+0.2**
	comp=Z,0.6nm,0.7s,baz=290,slow=2.9,SNR=6.0						
LPAZ	**La Paz**	**147.28**	**61**	PKPbc	**PKPbc**	**06 42 09.6**	**0.0**
	comp=Z,1.4nm,0.7s,baz=12,slow=4.9,SNR=3.2						

IDC 03 06:22:26.2±1.9,6°.30S×129°.78E,h0km,mb3.9/2, mb1 4.4/5,mb1mx3.8/47,mbtmp4.2/5,ML4.3/3,Error ellipse: s-maj=90.3km s-min=25.2km az=77.0,Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**12.41**	**199**	Pn	Pn	06 25 25.7	+1.4
	0.7nm,0.3s,baz=21,slow=11,SNR=36						
FITZ				Sn	Sn	06 27 32.6	-11
	1.2nm,0.3s,baz=308,slow=18,SNR=6.4						
WRA	**Warramunga Arr**	**14.27**	**162**	Pn	Pn	06 25 47.9	-1.9
	2.0nm,0.3s,baz=342,slow=13,SNR=62						
WRA				Sn	Sn	06 28 12.3	-17
	1.7nm,0.3s,baz=341,slow=20,SNR=7.4						
ASAR	**Alice Springs**	**17.72**	**167**	P	Pn	06 26 35.0	+0.3
	0.8nm,0.3s,baz=347,slow=10,SNR=32						
ASAR				S	Sn	06 29 38.4	-14
	0.3nm,0.3s,baz=349,slow=26,SNR=5.9						
MKAR	**Makanchi Array**	**67.52**	**327**	P	P	06 33 25.8	+1.5
	1.5nm,0.5s,baz=122,slow=8.0,SNR=9.0						
KURBB	**Kurchatov Arra**	**71.80**	**328**	P	P	06 33 49.0	-1.6
	0.4nm,0.5s,baz=134,slow=5.3,SNR=3.4						

SJA ***03*** *06:35:39.9±0.8,30°.22S×69°.20W,h5km,ML4.4,MW4.1*
IDC ***03*** *06:35:40.8±0.6,30°.28S×69°.26W,h39km±4km,mb4.0/11, mb1 4.1/15,mb1mx4.0/36,mbtmp4.1/15,ML3.9/3,MS3.0/4, Ms1 3.0/4,ms1mx2.9/19,Error ellipse: s-maj=21.2km s-min=16.2km az=54.0*
GUC ***03*** *06:35:40.8±0.4,30°.21S×69°.35W,h32km±2km,ML4.2*
NEIC ***03*** *06:35:41.8±0.6,30°.23S×69°.23W,h48km±5km,mb4.5/3, Error ellipse: s-maj=9.5km s-min=6.1km az=69.0*
ISCJB ***03*** *06:35:42.7±0.4,30°.17S±0°.03×69°.36W±0°.05,h68km±5km, mb4.0/14,Error ellipse: s-maj=7.1km s-min=4.2km az=157.4*

ISC 03 06:35:41.6±0.5,30°.17S±0°.04×69°.37W±0°.04,h44km±5km, n45,σ=0°.49/67,mb4.2/13,1C-3D,Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TLL	**Tololo Astrono**	**1.25**	**270**	⇓*e*P	**Pn**	**06 36 03.4**	**+0.6**
TLL				*e*S	**Sn**	**06 36 20.6**	**+2.0**
TLL				IAML		06 36 21.8	
	comp=N,5μm,0.4s						
RTLL	**Cerro Villicun**	**1.38**	**147**	*i* P	**Pn**	**06 36 04.3**	**-0.2**
SJA	**San Juan**	**1.52**	**153**	*i* P	**Pn**	**06 36 06.9**	**+0.6**
SJA				*i* S	**Sn**	**06 36 27.6**	**+2.7**
SJA				IAML		06 36 30.2	
	comp=Z,4μm,0.2s						
RTLS	**Leoncito**	**1.62**	**178**	*i* P	**Pn**	**06 36 09.9**	**+1.9**
LCO	**Las Campanas**	**1.64**	**315**	⇓*e*P	**Pn**	**06 36 10.2**	**+2.0**
LCO				*e*S	**Sn**	**06 36 32.3**	**+4.0**
LCO				IAML		06 36 36.6	
	comp=E,4μm,0.5s						
LCO	**Las Campanas**	**1.64**	**315**	*e*Pn	**Pn**	**06 36 10.0**	**+1.7**
LCO				*e*Sn	**Sn**	**06 36 31.7**	**+3.4**
LSCH	**La Serena**	**1.65**	**279**	*e*P	**Pn**	**06 36 09.5**	**+1.3**
LSCH				*e*S	**Sn**	**06 36 31.1**	**+2.9**
VCA	**Vinchina**	**1.75**	**36**	*i* P	**Pn**	**06 36 12.3**	**+2.6**
VCA				*i* S	**Sn**	**06 36 37.2**	**+6.3**
VCA				IAML		06 36 43.2	
	comp=Z,6μm,0.5s						
RTCV	**Cerro Valdivia**	**1.83**	**157**	*i* P	**Pn**	**06 36 12.6**	**+2.0**
AUSP	**Uspallata**	**2.04**	**181**	*i* P	**Pn**	**06 36 17.3**	**+3.5**
ASAL	**Salagasta**	**2.45**	**169**	*i* P	**Pn**	**06 36 22.2**	**+3.0**
ASAL				*i* S	**Sn**	**06 36 54.3**	**+6.3**
ARCO	**CERRO ARCO**	**2.69**	**172**	*i* P	**Pn**	**06 36 25.8**	**+3.2**
ARCO				*i* S	**Sn**	**06 37 00.1**	**+6.2**
ARCO				IAML		06 37 06.3	
	comp=Z,2μm,0.5s						
ACAN	**Cantantal**	**2.80**	**139**	*i* P	**Pn**	**06 36 26.2**	**+2.2**
ACAN				*i* S	**Sn**	**06 37 01.2**	**+4.5**
CPCH	**Copiapo**	**2.94**	**343**	*e*P	**Pn**	**06 36 27.8**	**+1.9**
CPCH				*e*S	**Sn**	**06 37 03.7**	**+3.8**
AAGR	**Agrelo**	**2.94**	**171**	*i* P	**Pn**	**06 36 29.5**	**+3.5**
AAGR				*i* S	**Sn**	**06 37 06.5**	**+6.5**
ROCH	**El Roble**	**3.12**	**206**	⇓*e*P	**Pn**	**06 36 30.1**	**+1.6**
ROCH				*e*S	**Sn**	**06 37 07.9**	**+3.1**
ROCH				IAML		06 37 19.9	
	comp=N,1μm,0.3s						
FSR	**Penalolen**	**3.44**	**196**	*e*P	**Pn**	**06 36 34.0**	**+1.2**
FSR				*e*S	**Sn**	**06 37 14.4**	**+2.1**
LVC	**Limon Verde**	**7.54**	**3**	Pn	**Pn**	**06 37 29.8**	**+0.4**
	comp=N,90nm,0.3s,baz=184,slow=8.1,SNR=20						
LVC				Sn	**Sn**	**06 38 54.5**	**+0.7**
	comp=N,88nm,0.3s,baz=54,slow=19,SNR=2.3						
LVC				Lg	Lg	06 39 39.5	
	comp=N,460nm,0.3s,baz=312,slow=20,SNR=5.6						
LVC	**Limon Verde**	**7.54**	**3**	*e*Pn	**Pn**	**06 37 29.7**	**+0.3**
	comp=N,21nm,0.7s						
LVC				Pn	Pn	06 37 29.8	+0.4
LVC				Sn	**Sn**	**06 38 54.5**	**+0.7**
LVC				Lg	Lg	06 39 39.5	
TRQA	**Tornquist**	**9.96**	**144**	*e*Pn	**Pn**	**06 38 01.5**	**-0.7**
	comp=N,11nm,0.6s						
PLCA	**Paso Flores**	**10.58**	**185**	Pn	**Pn**	**06 38 10.0**	**-0.6**
	comp=N,0.2nm,0.3s,baz=32,slow=13,SNR=3.6						
PLCA				Lg	Lg	06 41 16.4	
	comp=N,0.4nm,0.3s,baz=123,slow=13,SNR=3.6						
PLCA				LR	LR	06 41 45.1	
	comp=N,52nm,20.3s,baz=8.5,slow=35						
CPUP	**Villa Florida**	**11.28**	**73**	Pn	**Pn**	**06 38 18.0**	**-2.2**
	comp=N,0.6nm,0.3s,baz=241,slow=13,SNR=13						
CPUP				Sn	**Sn**	**06 40 20.7**	**-4.2**
	comp=N,0.7nm,0.3s,baz=235,slow=16,SNR=2.1						
CPUP				Lg	Lg	06 41 43.0	
	comp=N,1.2nm,0.3s,baz=344,slow=20,SNR=3.3						
CPUP				LR	LR	06 43 03.7	
	comp=N,128nm,19.5s,baz=222,slow=40						
LPAZ	**La Paz**	**13.87**	**5**	Pn	**Pn**	**06 38 58.1**	**+1.9**
	comp=N,0.1nm,0.3s,baz=176,slow=6.2,SNR=3.5						
NNA	**Nana**	**19.38**	**337**	LR	LR	06 47 28.8	
	comp=N,15nm,20.2s,baz=152,slow=36						
USHA	**Ushuaia**	**24.65**	**179**	LR	LR	06 50 23.2	
	comp=N,1μm,19.1s,baz=104,slow=36						
TEIG	**Tepich**	**53.31**	**338**	P	**P**	**06 44 56.5**	**+0.2**
	comp=N,5.1nm,0.5s,baz=270,slow=20,SNR=15						
TXAR	**Lajitas Array**	**67.61**	**328**	P	**P**	**06 46 34.7**	**+0.8**
	comp=N,1.4nm,0.7s,baz=152,slow=7.5,SNR=12						
TXAR				pP	**pP**	**06 46 46.8**	**0.0**
	comp=N,0.5nm,0.6s,baz=144,slow=8.2,SNR=5.0						
VNDA	**Vanda**	**68.28**	**191**	P	**P**	**06 46 37.1**	**-0.3**
	comp=N,0.9nm,0.8s,baz=132,slow=4.2,SNR=4.9						
SYO	**Syowa Base**	**68.58**	**159**	⇑*e*P	**P**	**06 46 37.8**	**-1.6**
MSTX	**Muleshoe**	**71.18**	**331**	*e*P	**P**	**06 46 56.3**	**+0.4**
	comp=N,7.3nm,0.8s						
DBIC	**Dimbokro**	**71.79**	**71**	P	**P**	**06 46 59.2**	**-0.7**
	comp=N,3.4nm,0.8s,baz=193,slow=5.6,SNR=3.6						
DBIC				pP	**pP**	**06 47 11.7**	**-1.2**
	comp=N,4.3nm,0.7s,baz=201,slow=6.5,SNR=2.5						
ANMO	**Albuquerque**	**73.60**	**329**	P	**P**	**06 47 12.0**	**+1.5**
	comp=N,1.0nm,0.9s,baz=141,slow=11,SNR=5.5						
SMCO	**Snowmass**	**77.38**	**331**	*e*P	**P**	**06 47 33.4**	**+1.1**
	comp=N,2.4nm,0.9s						
ECSD	**EROS Data Cent**	**77.67**	**340**	*e*P	**P**	**06 47 33.0**	**-0.2**
	comp=N,4.3nm,0.8s						
BOSA	**Boshof**	**79.81**	**117**	P	**P**	**06 47 45.4**	**-0.4**
	comp=N,1.2nm,0.5s,baz=273,slow=2.9,SNR=6.5						
BOSA				LR	LR	07 19 25.4	
	comp=N,23nm,18.1s,baz=190,slow=33						
TORD	**Torodi Ar. Bea**	**80.75**	**69**	P	**P**	**06 47 50.6**	**-0.1**
	comp=N,2.4nm,0.6s,baz=276,slow=6.5,SNR=30						
TORD				pP	**pP**	**06 48 02.6**	**-1.3**
	comp=N,5.6nm,0.8s,baz=257,slow=4.6,SNR=16						
PDAR	**Pinedale Array**	**81.44**	**331**	P	**P**	**06 47 54.4**	**+0.3**
	comp=N,0.6nm,0.7s,baz=122,slow=6.5,SNR=6.8						
NVAR	**Mina Array Bea**	**82.11**	**323**	P	**P**	**06 47 58.6**	**+0.9**
	comp=N,0.6nm,0.5s,baz=153,slow=6.2,SNR=7.7						
NVAR				pP	**pP**	**06 48 10.4**	**-0.5**
	comp=N,0.6nm,0.8s,baz=142,slow=4.6,SNR=3.8						
YBH	**Yreka Blue Hor**	**86.83**	**323**	P	**P**	**06 48 20.8**	**-0.6**
	comp=N,0.7nm,0.6s,baz=129,slow=6.5,SNR=6.4						
YKA	**Yellowknife Ar**	**99.20**	**340**	P	**Pdif**	**06 49 17.3**	**-0.5**
	comp=N,0.4nm,0.8s,baz=140,slow=4.3,SNR=12						
ASAR	**Alice Springs**	**121.99**	**205**	PKP	**PKPdf**	**06 54 30.4**	**-1.3**
	comp=N,0.7nm,0.6s,baz=141,slow=2.0,SNR=9.9						
ASAR				pPKP	**pPKPdf**	**06 54 43.6**	**-1.9**
	comp=N,0.4nm,0.5s,baz=145,slow=1.5,SNR=3.8						
WRA	**Warramunga Arr**	**125.20**	**208**	PKP	**PKPdf**	**06 54 37.0**	**-0.9**
	comp=N,1.8nm,0.6s,baz=156,slow=1.7,SNR=38						
WRA				pPKP	**pPKPdf**	**06 54 49.8**	**-2.0**
	comp=N,1.3nm,0.6s,baz=160,slow=1.7,SNR=7.3						
ZALV	**Zalesovo Beam**	**149.79**	**31**	PKPbc	**PKPbc**	**06 55 26.4**	**+0.1**
	comp=N,3.0nm,0.4s,baz=303,slow=3.3,SNR=5.6						
ZALV				pPKPbc	**pPKPbc**	**06 55 39.0**	**-1.0**
	comp=N,5.7nm,0.7s,baz=308,slow=3.5,SNR=3.8						
MKAR	**Makanchi Array**	**152.50**	**45**	PKPbc	**PKPbc**	**06 55 32.0**	**-0.8**
	comp=N,0.9nm,0.5s,baz=294,slow=2.2,SNR=9.5						
MKAR				pPKPbc	**PKPab**	**06 55 43.5**	**+0.1**
	comp=N,2.6nm,0.7s,baz=299,slow=4.0,SNR=15						
MJAR	**Matsushiro Arr**	**156.16**	**293**	PKPab	**PKPab**	**06 55 59.6**	**+0.4**
	comp=N,0.3nm,0.3s,baz=100,slow=4.0,SNR=4.2						

ISCJB ***03*** *06:51:25.6±0.6,22°.46N±0°.03×122°.18E±0°.02,h23km±5km, Error ellipse: s-maj=5.1km s-min=2.7km az=158.7*
JMA ***03*** *06:51:26.0±0.2,22°.59N×122°.11E,h15km,M3.5*
TAP ***03*** *06:51:26.7,22°.38N×122°.17E,h33km±1km,ML3.8,D*

ISC 03 06:51:23.9±1.3,22°.54N±0°.03×122°.14E±0°.03,h7km±10km, n53,σ=0°.82/92,Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LAY	**Lan-yu**	**0.74**	**228**	*i* P	**Pb**	**06 51 39.7**	**+0.6**
	baz=238						
LAY				*e*S	**Sg**	**06 51 47.6**	**-0.1**
	baz=238						
CHKT	**Chengkung**	**0.91**	**308**	*e*P	**Pn**	**06 51 42.8**	**-0.3**
	baz=314						
CHKT				*e*S	**Sg**	**06 51 53.4**	**+0.1**
	baz=314						
TTN	**Taitung**	**0.94**	**283**	P	**Pn**	**06 51 43.8**	**+0.2**
	baz=291						
TTN				S	**Sn**	**06 51 57.4**	**+0.1**
	baz=291						
TWG	**Pinlang**	**1.03**	**286**	*i* P	**Pn**	**06 51 45.3**	**+0.6**
	baz=293						
TWG				*e*S	**Sb**	**06 51 57.5**	**-0.2**
	baz=293						
ECL	**Taimali**	**1.10**	**273**	*i* P	**Pn**	**06 51 46.0**	**+0.3**
	baz=280						
ECL				*e*S	**Sg**	**06 51 58.6**	**-0.7**
	baz=280						
TWF1	**Yuli**	**1.12**	**316**	*e*P	**Pn**	**06 51 46.4**	**+0.3**
	baz=320						
TWF1				*e*S	**Sb**	**06 52 00.6**	**0.0**
	baz=320						
TAW	**Tawu**	**1.17**	**261**	*i* P	**Pn**	**06 51 46.9**	**+0.3**
	baz=268						
TAW				S	**Sg**	**06 52 01.3**	**-0.2**
	baz=268						
EAST	**Anshuo**	**1.21**	**263**	*i* P	**Pn**	**06 51 47.6**	**+0.3**
	baz=269						
EAST				S	**Sg**	**06 52 02.7**	**0.0**
	baz=269						
ELDTW	**Lidau**	**1.22**	**302**	*e*P	**Pn**	**06 51 47.6**	**+0.1**
	baz=307						
EHY	**Hungye**	**1.23**	**322**	*e*P	**Pn**	**06 51 48.3**	**+0.8**
	baz=325						
TSEB	**Hengchuen, Pin**	**1.31**	**241**	*e*P	**Pg**	**06 51 50.6**	**+1.5**
	baz=248						
TSEB				*e*S	**Sb**	**06 52 05.3**	**-0.6**
	baz=248						
TWK1	**Hengchun**	**1.37**	**245**	*e*P	**Pb**	**06 51 49.6**	**-0.2**
	baz=250						
TWK1				*e*S	**Sb**	**06 52 05.3**	**-2.3**
	baz=250						
HEN	**Hengchun**	**1.40**	**248**	*e*P	**Pn**	**06 51 49.9**	**0.0**
	baz=254						
HEN				*e*S	**Sb**	**06 52 06.6**	**-1.9**
	baz=254						
SSD	**Sandimen**	**1.41**	**279**	P	**Pb**	**06 51 50.7**	**+0.1**
	baz=284						
SCZT	**Fangliau**	**1.42**	**264**	*i* P	**Pg**	**06 51 51.0**	**-0.1**
	baz=269						
SCZT				*e*S	**Sb**	**06 52 07.7**	**-1.2**
	baz=269						
STYT	**Tauyuan**	**1.42**	**296**	P	**Pg**	**06 51 51.5**	**+0.3**
	baz=300						
STYT				*e*S	**Sb**	**06 52 08.8**	**-0.3**
	baz=300						
ESL	**Shilin**	**1.43**	**333**	*e*P	**Pg**	**06 51 51.2**	**-0.1**
	baz=334						
ESL				*e*S	**Sb**	**06 52 08.0**	**-1.3**
	baz=334						
YUS	**Yu-Shan**	**1.45**	**311**	P	**Pg**	**06 51 52.4**	**+0.6**
	baz=314						
YUS				*e*S	**Sb**	**06 52 09.8**	**-0.5**
	baz=314						
WDT	**Danda**	**1.53**	**323**	P	**Pg**	**06 51 53.1**	**-0.2**
	baz=325						
WDT				*e*S	**Sn**	**06 52 11.1**	**-1.1**
	baz=325						
SGST	**Jiashian**	**1.54**	**291**	*e*P	**Pg**	**06 51 54.3**	**+0.9**
	baz=295						
ALS	**Alishan**	**1.57**	**308**	*e*P	**Pg**	**06 51 54.6**	**+0.6**
	baz=311						
ALS				*e*S	**Sg**	**06 52 14.7**	**+0.3**
	baz=311						
WTP	**Ta-pu**	**1.58**	**297**	*e*P	**Pg**	**06 51 54.4**	**+0.3**
	baz=300						
WTP				*e*S	**Sg**	**06 52 14.7**	**+0.1**
	baz=300						
TWM1	**Shoushan**	**1.61**	**281**	*e*P	**Pb**	**06 51 53.6**	**-0.4**
	baz=285						
TWM1				*e*S	**Sn**	**06 52 14.1**	**+0.3**
	baz=285						
TWD	**Chiawan**	**1.62**	**342**	*e*P	**Pb**	**06 51 53.8**	**-0.3**
	baz=342						
CHN1	**Nanshi**	**1.62**	**294**	P	**Pg**	**06 51 54.7**	**-0.3**
	baz=297						
CHN1				*e*S	**Sg**	**06 52 15.7**	**-0.4**
	baz=297						
CHN4	**Tsaushan**	**1.64**	**300**	P	**Pg**	**06 51 55.6**	**+0.2**
	baz=303						
CHN4				*e*S	**Sg**	**06 52 16.7**	**0.0**
	baz=303						
TWK	**Hsinying**	**1.69**	**296**	*e*P	**Pb**	**06 51 55.5**

JTJ	**Tarama**	**3.15**	**48**	P	**Pn**	**06 52 16.2**	**+2.3**
JTJ				S	**Sn**	**06 52 51.7**	**0.0**
JIRB	**Irabujima**	**3.60**	**50**	*e*S	**Sn**	**06 53 02.3**	**-0.5**

*ISCJB **03** 06:55:17.9±0.3, 41.°51S±0.°03×173.°35E±0.°04, h135km±4km, mb3.7/2, Error ellipse: s-maj=6.5km s-min=2.7km az=40.1*
*IDC **03** 06:55:17.7±1.1, 41.°50S×173.°42E, h94km±12km, mb3.7/2, mb1 4.0/4, mb1mx3.6/21, mbtmp4.1/4, MS2.5/1, Ms1 2.5/1, ms1mx2.3/24, Error ellipse: s-maj=34.1km s-min=8.8km az=131.0*
*NEIC **03** 06:55:20.0, 41.°35S×173.°23E, h114km, MG5.0(WEL), After WEL.*
NEIC Felt in Marlborough, Nelson and Wellington.
*WEL **03** 06:55:20.4±0.2, 41.°40S×173.°25E, h111km±1km, ML4.9/21, Error ellipse: s-maj=1.7km s-min=1.5km az=0.0*
WEL Felt from Whanganui to Canterbury, maximum reported intensity MM 5.

ISC 03 06:55:19.2±0.8, 41.°48S±0.°04×173.°29E±0.°04, h119km±5km, n239, σ1.9±04/248, 15C-38D, South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NNZ	**Nelson**	**0.27**	**15**	PN	**Pn**	**06 55 35.8**	**-0.1**
NNZ				SN	**Sn**	**06 55 46.6**	**-1.7**
NNZ	**Nelson**	**0.27**	**15**	Pn	**Pn**	**06 55 35.8**	**-0.1**
NNZ				Sn	**Sn**	**06 55 46.6**	**-1.7**
THZ	**Tophouse**	**0.40**	**225**	PN	**Pn**	**06 55 37.2**	**+0.7**
THZ				SN	**Sn**	**06 55 48.6**	**-1.0**
THZ	**Tophouse**	**0.40**	**225**	Pn	**Pn**	**06 55 37.2**	**+0.7**
THZ				Sn	**Sn**	**06 55 48.6**	**-1.0**
TUWZ	**Tuamarina**	**0.50**	**85**	↑PN	**Pn**	**06 55 37.8**	**+0.9**
TUWZ				SN	**Sn**	**06 55 49.5**	**-0.7**
TUWZ				AML	AML	06 55 50.0	
TUWZ	**Tuamarina**	**0.50**	**85**	Pn	**Pn**	**06 55 37.8**	**+0.9**
TUWZ				Sn	**Sn**	**06 55 49.5**	**-0.7**
BSWZ	**Blackbirch Sta**	**0.50**	**118**	↑PN	**Pn**	**06 55 38.0**	**+1.0**
BSWZ				AML	AML	06 55 52.1	
BSWZ				AML	AML	06 55 53.7	
BSWZ	**Blackbirch Sta**	**0.50**	**118**	Pn	**Pn**	**06 55 38.0**	**+1.0**
CMWZ	**Cape Campbell**	**0.75**	**112**	↑PN	**Pn**	**06 55 40.3**	**+1.6**
CMWZ				AML	AML	06 55 55.8	
CMWZ				AML	AML	06 56 02.8	
CMWZ	**Cape Campbell**	**0.75**	**112**	Pn	**Pn**	**06 55 40.3**	**+1.6**
TCW	**Tory Channel**	**0.79**	**71**	↑PN	**Pn**	**06 55 40.1**	**+0.9**
TCW				AML	AML	06 55 54.6	
TCW				AML	AML	06 55 54.7	
DUWZ	**D'Urville Isla**	**0.83**	**36**	**PN**	**Pn**	**06 55 40.1**	**+0.6**
QRZ	**Quartz Range**	**0.87**	**319**	PN	**Pn**	**06 55 39.5**	**-0.4**
QRZ	**Quartz Range**	**0.87**	**319**	Pn	**Pn**	**06 55 39.5**	**-0.4**
KHZ	**Kahutara**	**0.96**	**169**	↑Pn	**Pn**	**06 55 42.3**	**+1.7**
SNZO	**South Karori**	**1.08**	**82**	*e*Pn	**Pn**	**06 55 42.7**	**+0.8**
SNZO				*e*Sn	**Sn**	**06 55 58.8**	**-0.2**
WEL	**Wellington**	**1.13**	**81**	PN	**Pn**	**06 55 43.2**	**+0.8**
WEL				AML	AML	06 56 00.4	
WEL				AML	AML	06 56 01.5	
WEL	**Wellington**	**1.13**	**81**	Pn	**Pn**	**06 55 43.2**	**+0.8**
DSZ	**Denniston Nort**	**1.14**	**256**	PN	**Pn**	**06 55 42.6**	**0.0**
DSZ	**Denniston Nort**	**1.14**	**256**	Pn	**Pn**	**06 55 42.6**	**0.0**
BHW	**Baring Head**	**1.19**	**87**	↑PN	**Pn**	**06 55 43.7**	**+0.7**
BHW				AML	AML	06 56 01.7	
BHW				AML	AML	06 56 02.0	
BHW	**Baring Head**	**1.19**	**87**	Pn	**Pn**	**06 55 43.7**	**+0.7**
KIW	**Kapiti Island**	**1.37**	**64**	↓PN	**Pn**	**06 55 45.7**	**+0.7**
KIW				AML	AML	06 56 05.8	
KIW				AML	AML	06 56 06.3	
KIW	**Kapiti Island**	**1.37**	**64**	Pn	**Pn**	**06 55 45.7**	**+0.7**
CAW	**Cannon Point**	**1.39**	**75**	↓PN	**Pn**	**06 55 45.8**	**+0.6**
CAW				AML	AML	06 56 05.6	
CAW				AML	AML	06 56 06.3	
CAW	**Cannon Point**	**1.39**	**75**	Pn	**Pn**	**06 55 45.8**	**+0.6**
MSWZ	**Moikau Station**	**1.48**	**88**	↑PN	**Pn**	**06 55 46.9**	**+0.6**
MSWZ				AML	AML	06 56 07.7	
MSWZ				AML	AML	06 56 08.1	
MSWZ	**Moikau Station**	**1.48**	**88**	Pn	**Pn**	**06 55 46.9**	**+0.6**
PLWZ	**Palliser**	**1.48**	**94**	↑PN	**Pn**	**06 55 47.1**	**+0.7**
PLWZ	**Palliser**	**1.48**	**94**	Pn	**Pn**	**06 55 47.1**	**+0.7**
LTZ	**Lake Taylor**	**1.51**	**210**	↓PN	**Pn**	**06 55 47.9**	**+1.3**
LTZ	**Lake Taylor**	**1.51**	**210**	↓Pn	**Pn**	**06 55 47.9**	**+1.3**
OGWZ	**Otaki Gorge**	**1.57**	**66**	PN	**Pn**	**06 55 47.8**	**+0.5**
OGWZ	**Otaki Gorge**	**1.57**	**66**	Pn	**Pn**	**06 55 47.8**	**+0.5**
PAWZ	**Paruwai Farm**	**1.61**	**87**	↑PN	**Pn**	**06 55 48.3**	**+0.5**
PAWZ				AML	AML	06 56 10.3	
PAWZ				AML	AML	06 56 10.9	
PAWZ	**Paruwai Farm**	**1.61**	**87**	Pn	**Pn**	**06 55 48.3**	**+0.5**
MTW	**Mount Morrison**	**1.70**	**80**	PN	**Pn**	**06 55 49.2**	**+0.3**
MTW				AML	AML	06 56 12.3	
MTW				AML	AML	06 56 12.6	
MTW	**Mount Morrison**	**1.70**	**80**	Pn	**Pn**	**06 55 49.2**	**+0.3**
HOWZ	**Holdsworth Sta**	**1.78**	**72**	↓PN	**Pn**	**06 55 50.1**	**+0.2**
HOWZ	**Holdsworth Sta**	**1.78**	**72**	Pn	**Pn**	**06 55 50.1**	**+0.2**
TRWZ	**Traveller**	**1.81**	**88**	PN	**Pn**	**06 55 50.8**	**+0.6**
TRWZ				AML	AML	06 56 15.2	
TRWZ				AML	AML	06 56 15.5	
TRWZ	**Traveller**	**1.81**	**88**	Pn	**Pn**	**06 55 50.8**	**+0.6**
INZ	**Inchbonnie**	**1.85**	**227**	PN	**Pn**	**06 55 51.4**	**+0.7**
MRZ	**Mangatainoka R**	**1.92**	**66**	↓PN	**Pn**	**06 55 51.6**	**+0.1**
MRZ	**Mangatainoka R**	**1.92**	**66**	↓Pn	**Pn**	**06 55 51.6**	**+0.1**
OHWZ	**Ohakea**	**2.00**	**51**	PN	**Pn**	**06 55 53.3**	**+0.8**
TMWZ	**Te Maipa**	**2.00**	**80**	PN	**Pn**	**06 55 53.0**	**+0.4**
TMWZ	**Te Maipa**	**2.00**	**80**	Pn	**Pn**	**06 55 53.0**	**+0.4**
OXZ	**Oxford**	**2.06**	**206**	PN	**Pn**	**06 55 53.9**	**+0.6**
OXZ	**Oxford**	**2.06**	**206**	Pn	**Pn**	**06 55 53.9**	**+0.6**
TIWZ	**Tintock**	**2.08**	**71**	↓PN	**Pn**	**06 55 53.7**	**0.0**
TIWZ				AML	AML	06 56 20.6	
TIWZ				AML	AML	06 56 21.6	
TIWZ	**Tintock**	**2.08**	**71**	Pn	**Pn**	**06 55 53.7**	**0.0**
NMEZ	**Namu Road**	**2.11**	**13**	↓PN	**Pn**	**06 55 55.1**	**+1.1**
NMEZ	**Namu Road**	**2.11**	**13**	Pn	**Pn**	**06 55 55.1**	**+1.1**
CRLZ	**Canterbury Las**	**2.15**	**193**	PN	**Pn**	**06 55 55.4**	**+1.0**
CRLZ	**Canterbury Las**	**2.15**	**193**	Pn	**Pn**	**06 55 55.4**	**+1.0**
WAZ	**Wanganui**	**2.15**	**37**	PN	**Pn**	**06 55 56.7**	**+2.2**
WAZ	**Wanganui**	**2.15**	**37**	Pn	**Pn**	**06 55 56.7**	**+2.2**
POWZ	**Post Office Ro**	**2.17**	**61**	↓PN	**Pn**	**06 55 54.5**	**-0.3**
POWZ	**Post Office Ro**	**2.17**	**61**	Pn	**Pn**	**06 55 54.5**	**-0.3**
LREZ	**Lake Rotokare**	**2.19**	**23**	↑PN	**Pn**	**06 55 56.5**	**+1.5**
PRWZ	**Pori Road**	**2.23**	**66**	↓PN	**Pn**	**06 55 55.6**	**+0.1**
PRWZ	**Pori Road**	**2.23**	**66**	Pn	**Pn**	**06 55 55.6**	**+0.1**
PREZ	**Palmer Road**	**2.23**	**18**	↓PN	**Pn**	**06 55 56.7**	**+1.1**
PREZ	**Palmer Road**	**2.23**	**18**	Pn	**Pn**	**06 55 56.7**	**+1.1**
NWEZ	**Newall Road**	**2.25**	**12**	Pn	**Pn**	**06 55 56.7**	**+1.0**
KHEZ	**Kahui Hut**	**2.25**	**15**	↓PN	**Pn**	**06 55 57.2**	**+1.4**
KHEZ	**Kahui Hut**	**2.25**	**15**	↓Pn	**Pn**	**06 55 57.2**	**+1.4**
CPWZ	**Castlepoint**	**2.27**	**76**	PN	**Pn**	**06 55 57.0**	**+1.1**
CPWZ	**Castlepoint**	**2.27**	**76**	Pn	**Pn**	**06 55 57.0**	**+1.1**
MQZ	**McQueen's Vall**	**2.27**	**192**	PN	**Pn**	**06 55 56.4**	**+0.5**
MQZ	**McQueen's Vall**	**2.27**	**192**	Pn	**Pn**	**06 55 56.5**	**+0.5**
NEZ	**North Egmont**	**2.29**	**16**	PN	**Pn**	**06 55 57.0**	**+0.7**
NEZ	**North Egmont**	**2.29**	**16**	Pn	**Pn**	**06 55 57.0**	**+0.7**
PKE	**Pukeiti**	**2.34**	**13**	↓PN	**Pn**	**06 55 57.8**	**+0.8**
PKE	**Pukeiti**	**2.34**	**13**	Pn	**Pn**	**06 55 57.8**	**+0.8**
BFZ	**Birch Farm**	**2.38**	**71**	PN	**Pn**	**06 55 57.0**	**-0.2**
BFZ				AML	AML	06 56 27.1	
BFZ				AML	AML	06 56 27.8	
BFZ	**Birch Farm**	**2.38**	**71**	Pn	**Pn**	**06 55 57.0**	**-0.2**
DREZ	**Durham Road**	**2.39**	**17**	↓PN	**Pn**	**06 55 58.4**	**+0.9**
DREZ	**Durham Road**	**2.39**	**17**	Pn	**Pn**	**06 55 58.4**	**+0.9**
WVZ	**Waitaha Valley**	**2.48**	**229**	↓PN	**Pn**	**06 55 58.9**	**+0.4**
WVZ	**Waitaha Valley**	**2.48**	**229**	Pn	**Pn**	**06 55 58.9**	**+0.4**
TSZ	**Takapari Road**	**2.48**	**56**	↓PN	**Pn**	**06 55 58.3**	**-0.4**
TSZ				AML	AML	06 56 30.2	
TSZ				AML	AML	06 56 31.0	
TSZ	**Takapari Road**	**2.48**	**56**	Pn	**Pn**	**06 55 58.3**	**-0.4**
DVHZ	**Dannevirke**	**2.48**	**63**	↓PN	**Pn**	**06 55 58.1**	**-0.6**
DVHZ	**Dannevirke**	**2.48**	**63**	Pn	**Pn**	**06 55 58.1**	**-0.6**
MHEZ	**Mangahewa**	**2.53**	**19**	PN	**Pn**	**06 56 00.6**	**+1.3**
MHEZ	**Mangahewa**	**2.53**	**19**	Pn	**Pn**	**06 56 00.6**	**+1.3**
VRZ	**Vera Road**	**2.61**	**26**	PN	**Pn**	**06 56 01.8**	**+1.5**
VRZ	**Vera Road**	**2.61**	**26**	Pn	**Pn**	**06 56 01.8**	**+1.5**
ANWZ	**Angora Road**	**2.62**	**68**	PN	**Pn**	**06 56 00.9**	**+0.5**
MTVZ	**Mangateitei**	**2.67**	**39**	PN	**Pn**	**06 56 01.7**	**+0.5**
MTVZ	**Mangateitei**	**2.67**	**39**	Pn	**Pn**	**06 56 01.7**	**+0.5**
PKVZ	**Pokaka**	**2.69**	**36**	PN	**Pn**	**06 56 01.7**	**+0.2**
PKVZ	**Pokaka**	**2.69**	**36**	Pn	**Pn**	**06 56 01.7**	**+0.2**
PNHZ	**Pukenui**	**2.71**	**56**	↓PN	**Pn**	**06 56 01.0**	**-0.6**
PNHZ	**Pukenui**	**2.71**	**56**	Pn	**Pn**	**06 56 01.1**	**-0.6**
RPZ	**Rata Peaks**	**2.78**	**216**	P	**Pn**	**06 56 02.5**	**0.0**
	24nm,0.3s,baz=272,slow=2.3,SNR=149						
RPZ				S	**Sn**	**06 56 34.2**	**-1.6**
	93nm,0.3s,baz=40,slow=20,SNR=24						
RPZ				LR	LR	06 56 58.5	
	comp=Z,82nm,19.6s,baz=242,slow=36						
RPZ	**Rata Peaks**	**2.78**	**216**	PN	**Pn**	**06 56 02.5**	**0.0**
WNVZ	**Wahianoa**	**2.78**	**40**	↑PN	**Pn**	**06 56 03.0**	**+0.2**
WNVZ	**Wahianoa**	**2.78**	**40**	Pn	**Pn**	**06 56 03.0**	**+0.2**
WPHZ	**Waipukurau**	**2.78**	**61**	PN	**Pn**	**06 56 02.0**	**-0.5**
WPHZ	**Waipukurau**	**2.78**	**61**	Pn	**Pn**	**06 56 02.0**	**-0.5**
MOVZ	**Moawhango**	**2.80**	**43**	↓PN	**Pn**	**06 56 02.7**	**-0.2**
MOVZ	**Moawhango**	**2.80**	**43**	Pn	**Pn**	**06 56 02.7**	**-0.2**
DRZ	**Dome Shelter**	**2.81**	**39**	Pn	**Pn**	**06 56 03.8**	**+0.6**
WHVZ	**Whangaehu Hut**	**2.81**	**39**	↑PN	**Pn**	**06 56 03.3**	**+0.2**
WHVZ	**Whangaehu Hut**	**2.81**	**39**	Pn	**Pn**	**06 56 03.4**	**+0.2**
PRHZ	**Porangahau**	**2.81**	**66**	PN	**Pn**	**06 56 02.5**	**-0.5**
PRHZ	**Porangahau**	**2.81**	**66**	Pn	**Pn**	**06 56 02.5**	**-0.5**
FWVZ	**Far West T-bar**	**2.82**	**39**	PN	**Pn**	**06 56 03.4**	**+0.1**
FWVZ	**Far West T-bar**	**2.82**	**39**	Pn	**Pn**	**06 56 03.4**	**+0.1**
TUVZ	**Tukino**	**2.85**	**40**	PN	**Pn**	**06 56 04.1**	**+0.4**
TUVZ	**Tukino**	**2.85**	**40**	Pn	**Pn**	**06 56 04.1**	**+0.4**
BHHZ	**Black Hill Sta**	**2.90**	**48**	↓PN	**Pn**	**06 56 04.0**	**-0.3**
BHHZ	**Black Hill Sta**	**2.90**	**48**	Pn	**Pn**	**06 56 04.0**	**-0.3**
TWVZ	**Taurewa**	**2.91**	**35**	Pn	**Pn**	**06 56 04.3**	**-0.1**
OTVZ	**Oturere**	**2.94**	**39**	↓PN	**Pn**	**06 56 05.1**	**+0.3**
WTVZ	**West Tongariro**	**2.94**	**37**	PN	**Pn**	**06 56 04.9**	**0.0**
WTVZ	**West Tongariro**	**2.94**	**37**	Pn	**Pn**	**06 56 04.9**	**0.0**
KRHZ	**Kereru**	**2.98**	**53**	↓PN	**Pn**	**06 56 04.5**	**-0.7**
KRVZ	**Karewarewa**	**2.98**	**38**	↓PN	**Pn**	**06 56 05.3**	**-0.1**
KRVZ	**Karewarewa**	**2.98**	**38**	Pn	**Pn**	**06 56 05.3**	**-0.1**
PXZ	**Pawanui**	**3.08**	**63**	PN	**Pn**	**06 56 05.7**	**-0.7**
PXZ				AML	AML	06 56 42.9	
PXZ				AML	AML	06 56 42.9	
PXZ				AML	AML	06 56 43.8	
PXZ				AML	AML	06 56 43.8	
PXZ	**Pawanui**	**3.08**	**63**	Pn	**Pn**	**06 56 05.8**	**-0.7**
KATZ	**Kakaramea**	**3.11**	**37**	Pn	**Pn**	**06 56 07.4**	**+0.5**
KWHZ	**Kaweka Forest**	**3.15**	**50**	↓PN	**Pn**	**06 56 06.9**	**-0.6**
RITZ	**Rihia Road**	**3.18**	**39**	PN	**Pn**	**06 56 08.1**	**+0.2**
RITZ	**Rihia Road**	**3.18**	**39**	Pn	**Pn**	**06 56 08.1**	**+0.2**
HIZ	**Hauiti**	**3.20**	**23**	PN	**Pn**	**06 56 08.1**	**0.0**
HIZ	**Hauiti**	**3.20**	**23**	Pn	**Pn**	**06 56 08.1**	**0.0**
KAHZ	**Kahuranaki**	**3.21**	**60**	PN	**Pn**	**06 56 07.5**	**-0.7**
KAHZ	**Kahuranaki**	**3.21**	**60**	Pn	**Pn**	**06 56 07.5**	**-0.7**
RATZ	**Rangitukua**	**3.23**	**37**	↑PN	**Pn**	**06 56 08.7**	**+0.2**
RATZ	**Rangitukua**	**3.23**	**37**	Pn	**Pn**	**06 56 08.8**	**+0.2**
FOZ	**Fox Glacier**	**3.29**	**230**	↓PN	**Pn**	**06 56 09.4**	**+0.3**
FOZ	**Fox Glacier**	**3.29**	**230**	Pn	**Pn**	**06 56 09.4**	**+0.3**
MCHZ	**McNeill Hill**	**3.30**	**53**	PN	**Pn**	**06 56 09.1**	**-0.3**
MCHZ	**McNeill Hill**	**3.30**	**53**	Pn	**Pn**	**06 56 09.1**	**-0.3**
WATZ	**Wairara**	**3.34**	**35**	PN	**Pn**	**06 56 10.2**	**+0.2**
WATZ	**Wairara**	**3.34**	**35**	Pn	**Pn**	**06 56 10.2**	**+0.2**
BKZ	**Black Stump Fm**	**3.37**	**48**	↓PN	**Pn**	**06 56 09.5**	**-0.8**
BKZ				AML	AML	06 57 16.2	
BKZ				AML	AML	06 57 23.5	
BKZ	**Black Stump Fm**	**3.37**	**48**	Pn	**Pn**	**06 56 09.5**	**-0.8**
CKHZ	**Cape Kidnapper**	**3.41**	**59**	PN	**Pn**	**06 56 10.2**	**-0.7**
CKHZ	**Cape Kidnapper**	**3.41**	**59**	Pn	**Pn**	**06 56 10.2**	**-0.7**
KUTZ	**Kaahu Road**	**3.56**	**34**	Pn	**Pn**	**06 56 13.0**	**+0.1**
MRHZ	**Matea Rd**	**3.57**	**43**	PN	**Pn**	**06 56 11.7**	**-1.3**
TLZ	**Tolley Road**	**3.59**	**30**	↓PN	**Pn**	**06 56 13.2**	**0.0**
TLZ	**Tolley Road**	**3.59**	**30**	Pn	**Pn**	**06 56 13.2**	**0.0**
NMHZ	**Naumai**	**3.59**	**50**	↓PN	**Pn**	**06 56 12.7**	**-0.7**
NMHZ	**Naumai**	**3.59**	**50**	Pn	**Pn**	**06 56 12.7**	**-0.7**
ARHZ	**Aropaoanui**	**3.59**	**53**	PN	**Pn**	**06 56 12.3**	**-0.9**
ARHZ	**Aropaoanui**	**3.59**	**53**	Pn	**Pn**	**06 56 12.3**	**-0.9**
LBZ	**Lake Benmore**	**3.69**	**217**	PN	**Pn**	**06 56 14.0**	**-0.5**
LBZ	**Lake Benmore**	**3.69**	**217**	Pn	**Pn**	**06 56 14.0**	**-0.5**
ALRZ	**Allen Road**	**3.74**	**40**	PN	**Pn**	**06 56 14.2**	**-1.1**
ALRZ	**Allen Road**	**3.74**	**40**	Pn	**Pn**	**06 56 14.2**	**-1.1**
WHHZ	**Waihua**	**3.86**	**53**	PN	**Pn**	**06 56 15.7**	**-1.1**
RAHZ	**Arahi**	**3.88**	**50**	↓PN	**Pn**	**06 56 15.9**	**-1.1**
RAHZ	**Arahi**	**3.88**	**50**	Pn	**Pn**	**06 56 15.9**	**-1.1**
RRRZ	**Republican Roa**	**4.00**	**39**	PN	**Pn**	**06 56 18.4**	**-0.3**
RRRZ	**Republican Roa**	**4.00**	**39**	Pn	**Pn**	**06 56 18.4**	**-0.3**
MUGZ	**Murupara**	**4.02**	**43**	PN	**Pn**	**06 56 17.1**	**-1.9**
ODZ	**Otahua Downs**	**4.05**	**208**	PN	**Pn**	**06 56 19.9**	**+0.5**
ODZ	**Otahua Downs**	**4.05**	**208**	Pn	**Pn**	**06 56 19.9**	**+0.5**
TARZ	**Mount Tarawera**	**4.08**	**38**	PN	Pn	06 56 24.7	+4.9
TARZ	**Mount Tarawera**	**4.08**	**38**	Pn	Pn	06 56 24.7	+4.9
SNGZ	**Shannon Statio**	**4.11**	**50**	PN	**Pn**	**06 56 18.7**	**-1.5**
SNGZ	**Shannon Statio**	**4.11**	**50**	Pn	**Pn**	**06 56 18.7**	**-1.5**
TOZ	**Tahuroa Road**	**4.12**	**25**	PN	**Pn**	**06 56 20.0**	**-0.3**
TOZ	**Tahuroa Road**	**4.12**	**25**	Pn	**Pn**	**06 56 20.0**	**-0.3**
KNZ	**Kokohu**	**4.16**	**55**	PN	**Pn**	**06 56 18.7**	**-2.0**
KNZ				AML	AML	06 57 07.6	
KNZ				AML	AML	06 57 08.3	
KNZ	**Kokohu**	**4.16**	**55**	Pn	**Pn**	**06 56 18.7**	**-2.0**
JCZ	**Jackson Bay**	**4.21**	**230**	↓PN	**Pn**	**06 56 20.7**	**-0.8**
JCZ	**Jackson Bay**	**4.21**	**230**	Pn	**Pn**	**06 56 20.7**	**-0.8**
MHGZ	**Mahia Peninsul**	**4.23**	**58**	PN	**Pn**	**06 56 20.3**	**-1.5**
MHGZ	**Mahia Peninsul**	**4.23**	**58**	Pn	**Pn**	**06 56 20.3**	**-1.5**
PRGZ	**Paritu Road**	**4.35**	**56**	PN	**Pn**	**06 56 21.4**	**-2.0**
PRGZ	**Paritu Road**	**4.35**	**56**	Pn	**Pn**	**06 56 21.4**	**-2.0**
RAGZ	**Rawiri**	**4.35**	**48**	PN	**Pn**	**06 56 21.7**	**-1.8**
RAGZ	**Rawiri**	**4.35**	**48**	Pn	**Pn**	**06 56 21.7**	**-1.8**
URZ	**Urewera**	**4.36**	**44**	P	**Pn**	**06 56 21.1**	**-2.4**
	16nm,0.3s,baz=249,slow=3.9,SNR=69						
URZ				S	**Sn**	**06 57 10.3**	**-3.1**
	62nm,0.3s,baz=96,slow=23,SNR=29						
URZ	**Urewera**	**4.36**	**44**	PN	**Pn**	**06 56 21.1**	**-2.4**
URZ				AML	AML	06 57 11.4	
URZ				AML	AML	06 57 11.5	
RIGZ	**Rimuhau**	**4.41**	**53**	PN	**Pn**	**06 56 22.3**	**-1.9**
MWZ	**Matawai**	**4.53**	**47**	↑PN	**Pn**	**06 56 23.6**	**-2.1**
MWZ				AML	AML	06 57 00.7	
MWZ				AML	AML	06 57 16.5	
MWZ				AML	AML	06 57 16.6	
MWZ	**Matawai**	**4.53**	**47**	Pn	**Pn**	**06 56 23.6**	**-2.1**
AWAZ	**Awhitu Peninsu**	**4.53**	**14**	PN	**Pn**	**06 56 26.5**	**+0.7**
KBAZ	**Karaka Road Bo**	**4.55**	**16**	PN	**Pn**	**06 56 27.0**	**+0.9**
KBAZ	**Karaka Road Bo**	**4.55**	**16**	Pn	**Pn**	**06 56 27.0**	**+0.9**
WKZ	**Wanaka**	**4.58**	**222**	PN	**Pn**	**06 56 24.7**	**-1.7**
WKZ	**Wanaka**	**4.58**	**222**	Pn	**Pn**	**06 56 24.7**	**-1.7**
MKAZ	**Moumakai**	**4.60**	**19**	↓PN	**Pn**	**06 56 27.1**	**+0.3**
MKAZ	**Moumakai**	**4.60**	**19**	Pn	**Pn**	**06 56 27.1**	**+0.3**
TKGZ	**Te Karaka**	**4.64**	**51**	↓PN	**Pn**	**06 56 25.2**	**-2.0**
TKGZ	**Te Karaka**	**4.64**	**51**	Pn	**Pn**	**06 56 25.2**	**-2.0**
WTAZ	**Waiatarua**	**4.65**	**13**	PN	**Pn**	**06 56 27.8**	**+0.4**
ETAZ	**East Tamaki Re**	**4.70**	**16**	↓PN	**Pn**	**06 56 28.5**	**+0.5**
ETAZ	**East Tamaki Re**	**4.70**	**16**	Pn	**Pn**	**06 56 28.6**	**+0.5**
EAZ	**Earnscleugh**	**4.74**	**216**	PN	**Pn**	**06 56 27.9**	**-0.6**
EAZ	**Earnscleugh**	**4.74**	**216**	Pn	**Pn**	**06 56 27.9**	**-0.6**
RVAZ	**Riverhead Bore**	**4.81**	**12**	↓PN	**Pn**	**06 56 30.4**	**+0.9**
RVAZ	**Riverhead Bore**	**4.81**	**12**	Pn	**Pn**	**06 56 30.4**	**+0.9**
HHSZ	**Highcliff Hill**	**4.82**	**203**	↓PN	**Pn**	**06 56 30.7**	**+1.1**
HHSZ	**Highcliff Hill**	**4.82**	**203**	Pn	**Pn**	**06 56 30.7**	**+1.1**
MTAZ	**Motutapu**	**4.85**	**16**	Pn	**Pn**	**06 56 30.8**	**+0.7**
TWGZ	**Tauwhareparae**	**4.89**	**49**	PN	**Pn**	**06 56 29.1**	**-1.6**
MSZ	**Milford Sound**	**5.06**	**229**	PN	**Pn**	**06 56 32.7**	**-0.1**
MSZ	**Milford Sound**	**5.06**	**229**	Pn	**Pn**	**06 56 32.7**	**-0.1**
HAZ	**Te Kaha**	**5.09**	**45**	PN	**Pn**	**06 56 30.9**	**-2.4**
KUZ	**Kuaotunu**	**5.09**	**23**	↑PN	**Pn**	**06 56 32.9**	**-0.4**
KUZ	**Kuaotunu**	**5.09**	**23**	Pn	**Pn**	**06 56 32.9**	**-0.4**
PUZ	**Puketiti**	**5.12**	**50**	PN	**Pn**	**06 56 31.1**	**-2.7**
PUZ				AML	AML	06 57 30.6	
PUZ				AML	AML	06 57 30.6	
PUZ	**Puketiti**	**5.12**	**50**	Pn	**Pn**	**06 56 31.1**	**-2.7**
PKGZ	**Pakihiroa**	**5.15**	**47**	PN	**Pn**	**06 56 31.9**	**-2.2**
TUZ	**Tuapeka**	**5.20**	**209**	PN	**Pn**	**06 56 34.9**	**+0.2**
TUZ	**Tuapeka**	**5.20**	**209**	Pn	**Pn**	**06 56 34.9**	**+0.2**
WMGZ	**Waiomatatini S**	**5.39**	**49**	PN	**Pn**	**06 56 34.7**	**-2.6**
MLZ	**Mavora Lakes**	**5.41**	**222**	PN	**Pn**	**06 56 36.8**	**-0.8**
MLZ	**Mavora Lakes**	**5.41**	**222**	Pn	**Pn**	**06 56 36.8**	**-0.8**
WCZ	**Waipu Caves**	**5.59**	**9**	PN	**Pn**	**06 56 40.2**	**+0.2**
WCZ	**Waipu Caves**	**5.59**	**9**	Pn	**Pn**	**06 56 40.2**	**+0.2**
WHZ	**Wether Hill Ro**	**5.87**	**219**	PN	**Pn**	**06 56 43.0**	**-0.7**
WHZ	**Wether Hill Ro**	**5.87**	**219**	Pn	**Pn**	**06 56 43.0**	**-0.7**
SYZ	**Scrubby Hill**	**5.88**	**209**	↓PN	**Pn**	**06 56 44.1**	**+0.3**
SYZ	**Scrubby Hill**	**5.88**	**209**	Pn	**Pn**	**06 56 44.1**	**+0.3**
DCZ	**Deep Cove**	**5.98**	**226**	PN	**Pn**	**06 56 44.1**	**-1.2**
DCZ	**Deep Cove**	**5.98**	**226**	Pn	**Pn**	**06 56 44.1**	**-1.2**
OUZ	**Omahuta**	**6.25**	**2**	Pn	**Pn**	**06 56 49.4**	**+0.4**
APZ	**The Paps**	**6.57**	**214**	PN	**Pn**	**06 56 52.6**	**-0.6**
APZ	**The Paps**	**6.57**	**214**	Pn	**Pn**	**06 56 52.6**	**-0.6**
PYZ	**Puysegur Point**	**6.69**	**223**	PN	**Pn**	**06 56 55.2**	**+0.4**
PYZ	**Puysegur Point**	**6.69**	**223**	Pn	**Pn**	**06 56 55.2**	**+0.4**
CTZ	**Chatham Island**	**7.78**	**110**	PN	**Pn**	**06 57 10.6**	**+1.0**
ASAR	**Alice Springs**	**37.26**	**286**	P	**P**	**07 02 21.3**	**+1.7**
	0.9nm,0.8s,baz=124,slow=7.2,SNR=7.7						
ASAR				PcP	**PcP**	**07 04 37.7**	**+1.0**
	0.4nm,0.5s,baz=125,slow=3.9,SNR=6.4						
WRA	**Warramunga Arr**	**39.33**	**291**	P	**P**	**07 02 38.8**	**+1.9**
	2.5nm,0.6s,baz=126,slow=7.9,SNR=40						
WRA				PcP	**PcP**	**07 04 44.2**	**+1.1**
	0.5nm,0.6s,baz=131,slow=3.0,SNR=6.3						
ARCES	**ARCESS Array B**	**147.27**	**340**	PKPbc	**PKPab**	**07 14 48.1**	**-1.5**
	1.4nm,0.8s,baz=42,slow=2.8,SNR=4.9						
BRTR	**Keskin Array B**	**149.50**	**280**	PKPbc	**PKPab**	**07 14 56.0**	**-3.8**
	0.6nm,0.

YUK AMB AMB 07 23 30.8
comp=E,2µm,0.2s
YUK *i* S **S** **07 24 07.2 -2.6**
YUK A A 07 24 13.5
comp=E,1µm,0.6s
YUK A A 07 24 13.5
comp=E,2µm,0.6s
JRA Rausu 3.13 216 P **Pn** **07 23 31.9 -0.4**
YSS Yuzh-Sakhalins 3.41 279⇓*i*PN **Pn** **07 23 35.9 +0.7**
YSS *i* S **S** **07 24 21.4 -0.1**
YSS pmax pmax
comp=Z,1µm,3.0s
YSS pmax pmax
comp=Z,460nm,0.7s
YSS smax smax
comp=N,230nm,1.2s
YSS smax smax
comp=E,510nm,1.3s
YSS Yuzh-Sakhalins 3.41 279 *e*Pn **Pn** **07 23 36.1 +1.0**
YSS *e*S **S** **07 24 25.2 +3.7**
YSS Yuzh-Sakhalins 3.41 279⇓*i*P **Pn** **07 23 35.9 +0.7**
YSS AMB AMB 07 23 36.6
comp=E,1µm,3.0s
YSS AMB AMB 07 23 36.8
comp=E,460nm,0.7s
YSS *e*S **S** **07 24 21.7 +0.2**
YSS A A 07 24 24.7
comp=E,230nm,1.2s
YSS A A 07 24 24.7
comp=E,510nm,1.2s
YSS A A 07 24 27.4
comp=E,2µm,7.0s
NEM2 Nemuro 2 3.42 204 P **Pn** **07 23 32.9 -2.5**
NEM2 *e*S **S** **07 24 15.5 -6.5**
JTKR Abashiri--Toko 3.67 228 P **Pn** **07 23 38.3 +0.2**
JTKR *e*S **S** **07 24 24.8 -2.1**
JSE Soyaes 3.88 248 P **Pn** **07 23 41.4 +1.0**
JSE *e*S **S** **07 24 30.5 -0.5**
JAK Akkeshi 4.09 212 P **Pn** **07 23 40.8 -2.1**
JAK *e*S **S** **07 24 30.0 -5.6**
JWK2 Keihoku 4.20 256 P **Pn** **07 23 45.9 +1.9**
JAR Ashorobuto 4.24 222 P **Pn** **07 23 44.2 -0.4**
JKA Kamikawa-asahi 4.30 238 *e*P **Pn** **07 23 46.3 +1.1**
ASAJ Asahikawa 4.30 238 P **Pn** **07 23 46.3 +1.1**
comp=E,21nm,0.3s,baz=68,slow=11,SNR=203
ASAJ S **S** **07 24 39.7 -0.1**
comp=E,8.8nm,0.3s,baz=119,slow=30,SNR=8.3
ASAJ Asahikawa 4.30 238 *e*Pn **Pn** **07 23 46.6 +1.3**
ASAJ *e*S **S** **07 24 42.2 +2.4**
JKK2 Kamakawa 2 4.36 235 P **Pn** **07 23 46.6 +0.6**
UGL Uglegorsk 4.57 306⇓*i*PN **Pn** **07 23 49.0 +0.7**
UGL *e*S **S** **07 24 45.0 -0.3**
UGL pmax pmax
comp=N,145nm,0.8s
UGL pmax pmax
comp=E,145nm,0.8s
UGL pmax pmax
comp=Z,534nm,0.8s
UGL smax smax
comp=N,3µm,5.0s
UGL smax smax
comp=E,2µm,6.0s
UGL Uglegorsk 4.57 306⇓*i*P **Pn** **07 23 49.0 +0.7**
UGL AMB AMB 07 23 50.0
comp=E,150nm,0.8s
UGL AMB AMB 07 23 50.0
comp=E,530nm,0.8s
UGL *e*S **S** **07 24 45.9 +0.6**
UGL A A 07 24 48.0
comp=E,3µm,5.5s
UGL A A 07 24 48.0
comp=E,2µm,5.5s
JFR Furan 4.92 229 P **Pn** **07 23 52.5 0.0**
JFR *e*S **S** **07 24 50.8 -2.2**
JCH Churui 4.96 220 P **Pn** **07 23 50.9 -2.1**
JCH *e*S **S** **07 24 46.8 -7.1**
TYV Tymovskoe 5.48 325 *e*PN **Pn** **07 24 00.5 +1.4**
TYV *e*S **S** **07 25 06.0 +1.0**
TYV pmax pmax
comp=Z,172nm,1.0s
TYV smax smax
comp=E,380nm,1.6s
TYV smax smax
comp=E,2µm,10.0s
TYV Tymovskoe 5.48 325 *e*P **Pn** **07 24 00.5 +1.4**
TYV AMB AMB 07 24 15.8
comp=E,170nm,1.0s
TYV *e*S **S** **07 25 06.0 +1.0**
TYV A A 07 25 10.0
comp=E,160nm,1.2s
TYV A A 07 25 12.0
comp=E,2µm,10.0s
JNBK Urakawa-nobuka 5.50 222 P **Pn** **07 23 56.6 -2.9**
ERM Erimo 5.53 217 *ce*PN **Pn** **07 23 58.0 -1.9**
ERM pmax pmax
comp=Z,371nm,1.0s
ERM Erimo 5.53 217 *e*Pn **Pn** **07 23 58.4 -1.5**
ERM *e*S **S** **07 24 57.7 -8.7**
ERM Erimo 5.53 217 *e*P **Pn** **07 23 58.4 -1.5**
JKB Kayabe 6.63 228 P **Pn** **07 24 10.8 -2.6**
JKB *e*S S 07 25 21.4 -10
SKR Severo-Kuril's 6.99 50 *e*PN **Pn** **07 24 14.3 -3.3**
SKR *e*S **S** **07 25 32.5 -6.3**
SKR pmax pmax
comp=Z,200nm,0.6s
SKR pmax pmax
comp=N,80nm,0.4s
SKR pmax pmax
comp=E,160nm,0.9s
SKR smax smax
comp=E,350nm,0.5s
SKR smax smax
comp=N,210nm,0.6s
SKR Severo-Kuril's 6.99 50 *e*P **Pn** **07 24 18.7 +1.1**
SKR AMB AMB 07 24 19.3
comp=N,270nm,0.7s
SKR AMB AMB 07 24 23.3
comp=N,1µm,4.5s
SKR *e*S **S** **07 25 38.1 -0.7**
SKR A A 07 25 46.4
comp=N,4µm,4.5s
JOT Ohata 7.00 225 P **Pn** **07 24 14.7 -3.2**
JOT *e*S S 07 25 28.8 -10
JOSM Okushiri--Mats 7.35 236 P **Pn** **07 24 20.9 -1.3**
OKH Okha 7.68 338 *e*P **Pn** **07 24 27.5 +1.3**
OKH *e*S **S** **07 25 56.6 +2.2**
OKH A A 07 26 02.0
comp=N,3µm,5.0s
PAU Pauzhetka 7.80 47 *e*P **Pn** **07 24 28.6 +0.9**
TEY Ternei 7.87 263⇓*e*P **Pn** **07 24 30.6 +1.9**
TEY AMB AMB 07 24 31.5
comp=N,130nm,1.3s
TEY AMB AMB 07 24 31.5
comp=N,160nm,1.3s
NKL Nikolayevsk 8.04 328 *i* PN **Pn** **07 24 31.0 +0.4**
NKL *i* S **S** **07 26 03.0 +0.5**
NKL pmax pmax
comp=N,65nm,1.0s
NKL pmax pmax
comp=E,43nm,1.0s
NKL pmax pmax
comp=Z,130nm,1.0s
NKL pmax pmax
comp=Z,400nm,4.0s
NKL smax smax
comp=N,150nm,2.0s
NKL smax smax
comp=E,170nm,2.0s
NKL smax smax
comp=N,1µm,8.0s
NKL smax smax
comp=E,1µm,8.0s
NKL Nikolayevsk 8.04 328 *i* P **Pn** **07 24 31.0 +0.4**
NKL AMB AMB 07 24 31.8
comp=E,70nm,0.8s
NKL AMB AMB 07 24 31.8
comp=E,40nm,0.8s
NKL AMB AMB 07 24 31.8
comp=E,100nm,0.8s
NKL AMB AMB 07 24 33.0
comp=E,500nm,4.0s
NKL *i* S **S** **07 26 03.0 +0.5**
NKL A A 07 26 05.2
comp=E,150nm,2.0s
NKL A A 07 26 05.2
comp=E,170nm,2.0s
NKL A 07 26 06.5
comp=E,1µm,8.0s
GRNR Gornyy 8.58 304 *e*P **Pn** **07 24 37.9 +0.5**
GRNR AMB AMB 07 24 38.9
comp=E,140nm,1.2s
HABR Khabarovsk 8.77 288 *de*PN **Pn** **07 24 38.0 -1.8**
HABR *e*S **S** **07 26 17.4 -1.9**
HABR pmax pmax
comp=N,29nm,1.1s
HABR pmax pmax
comp=E,337nm,1.1s
HABR pmax pmax
comp=Z,394nm,1.1s
HABR MLR MLR
comp=Z,51nm,11.0s
HABR Khabarovsk 8.77 288⇓*e*P **Pn** **07 24 38.0 -1.8**
HABR AMB AMB 07 24 42.2
comp=Z,30nm,1.1s
HABR AMB AMB 07 24 42.2
comp=Z,340nm,1.1s
HABR AMB AMB 07 24 42.2
comp=Z,390nm,1.1s
HABR *e*S **S** **07 26 17.4 -1.9**
HABR AMS AMS 07 28 20.5
comp=Z,100nm,11.0s
PEA0 Petropavlovsk- 9.26 41 *e*Pn **Pn** **07 24 46.5 +0.6**
PEA0B Petropavlovsk- 9.26 41 *e*Pn **Pn** **07 24 47.0 +1.1**
PETK Petropavlovsk- 9.26 41 P **Pn** **07 24 46.6 +0.8**
comp=Z,4.4nm,0.3s,baz=215,slow=7.9,SNR=56
PET Petropavlovsk 9.64 43 *e*PN **Pn** **07 24 51.1 +0.5**
PET *e*S **S** **07 26 34.6 -4.7**
PET pmax pmax
comp=Z,34nm,0.5s
PET MLR MLR
comp=Z,100nm,8.0s
PET Petropavlovsk 9.64 43 *e*Pn **Pn** **07 24 51.9 +1.3**
PET Petropavlovsk 9.64 43 *e*P **Pn** **07 24 53.4 +2.8**
PET AMB AMB 07 24 54.3
comp=Z,30nm,0.5s
PET *e*S **S** **07 26 38.5 -0.8**
PET A A 07 26 39.6
comp=Z,110nm,1.0s
PET A A 07 26 48.0
comp=Z,800nm,4.5s
PET A A 07 26 48.0
comp=Z,600nm,4.5s
PET AMS AMS 07 28 07.0
comp=Z,100nm,8.0s
KLR Kul'dur 11.03 290 P **Pn** **07 25 08.7 +0.7**
comp=Z,0.7nm,0.3s,baz=103,slow=15,SNR=68
KLR Kul'dur 11.03 290⇑*i*PN **Pn** **07 25 07.4 -0.6**
USRK Ussuriysk Ar. 11.27 264 P **Pn** **07 25 11.7 +0.7**
comp=Z,17nm,0.3s,baz=68,slow=12,SNR=124
USRK S **S** **07 27 13.5 -3.4**
baz=38,slow=23,SNR=2.5
EKMR Ekimchan 11.55 310 *i* P **Pn** **07 25 15.3 +1.0**
EKMR AMB AMB 07 25 16.9
comp=Z,100nm,1.0s
EKMR AMB AMB 07 25 16.9
comp=Z,70nm,1.0s
EKMR AMB AMB 07 25 16.9
comp=Z,160nm,1.0s
VLA Vladivostok 11.71 259*j* *i*PN **Pn** **07 25 15.0 -1.3**
VLA pmax pmax
comp=Z,81nm,0.9s
VLA Vladivostok 11.71 259⇑*i*P **Pn** **07 25 15.0 -1.3**
MJB9 Matsu-Tunnel 12.21 219 *e*Pn **Pn** **07 25 23.0 +0.4**
MAJO Matsushiro 12.21 219 *d i*PN **Pn** **07 25 22.4 -0.2**
MAJO Matsushiro 12.21 219 *e*Pn **Pn** **07 25 23.0 +0.4**
MAJO Matsushiro 12.21 219⇓*i*P **Pn** **07 25 22.4 -0.2**
MAT Matsushiro 12.21 219 P **Pn** **07 25 22.0 -0.6**
MAT Matsushiro 12.21 219 P **Pn** **07 25 22.3 -0.3**
MJAR Matsushiro Arr 12.21 219 P **Pn** **07 25 23.1 +0.6**
comp=Z,5.1nm,0.3s,baz=26,slow=12,SNR=123
MJAR S **S** **07 27 33.0 -5.5**
baz=27,slow=28,SNR=4.2
MSHR Mys Shultsa 12.41 258*c i*PN **Pn** **07 25 24.8 -0.2**
MDJ Mudanjiang 12.81 268 P **Pn** **07 25 29.8 0.0**
MDJ pmax pmax
comp=Z,96nm,1.0s
MDJ pmax pmax
comp=Z,270nm,5.7s
MDJ Mudanjiang 12.81 268 *e*Pn **Pn** **07 25 30.2 +0.4**
MDJ Mudanjiang 12.81 268 *e*P **Pn** **07 25 30.2 +0.4**
JOD2 Odawara 2 12.96 213 P **Pn** **07 25 30.3 -1.5**
MA2 Magadan 13.22 7 P **Pn** **07 25 34.3 -0.3**
comp=Z,5.9nm,0.3s,baz=213,slow=10,SNR=46
JGF Kuroka 13.37 219 P **Pn** **07 25 36.3 -0.5**
INU Inuyama 13.73 220 *e*P **Pn** **07 25 40.8 -0.3**
BMKR Bomnak 14.46 311 *e*P **Pn** **07 25 50.0 +0.3**
BMKR AMB AMB 07 25 52.4
comp=Z,20nm,0.5s
JWT Wachi 14.53 224 P **P** **07 25 50.3 +0.1**
JHJ2 Mitsune 14.66 207 *e*P **Pn** **07 25 54.8 +2.6**
JHJ Hachijo jima 2 14.66 207 P **Pn** **07 25 55.6 +3.3**
comp=Z,5.0nm,0.3s,baz=70,slow=11,SNR=3.5
JHJ S **S** **07 28 28.6 -4.8**
comp=Z,5.0nm,0.3s,baz=233,slow=20,SNR=2.8
JIE Ise 14.68 218 P **Pn** **07 25 52.4 0.0**
ZEA Zeya 14.93 306 *e*P **Pn** **07 25 56.2 +1.0**
ZEA AMB AMB 07 25 57.1
comp=Z,20nm,0.8s
ZEA AMB AMB 07 25 57.1
comp=Z,50nm,0.8s
ZEA AMB AMB 07 25 57.1
comp=Z,80nm,0.8s
KROS Kirovskiy 15.34 309 *e*P **Pn** **07 26 00.5 +0.4**
KROS AMB AMB 07 26 02.0
comp=Z,10.0nm,0.5s
KROS AMB AMB 07 26 02.0
comp=Z,20nm,0.5s
JAD Aida 15.40 226 P **Pn** **07 26 01.1 +0.1**
JWZ Kozaga 15.84 219 P **P** **07 26 05.0 +0.4**
JHS Saijyo 15.89 229 P **Pn** **07 26 07.1 +0.2**
CN2 Changchun 15.90 268 *e*P **P** **07 26 03.6 -1.5**
CN2 pmax pmax
comp=Z,30nm,0.9s
SEY Seymchan 16.68 8 P **P** **07 26 14.2 +0.7**
comp=Z,2.3nm,0.3s,baz=184,slow=7.8,SNR=51
SEY S **S** **07 29 15.8 +2.5**
comp=Z,0.1nm,0.3s,baz=15,slow=20,SNR=1.6
SEY Seymchan 16.68 8*ce*P **P** **07 26 13.8 +0.3**
SEY Seymchan 16.68 8⇑*e*P **P** **07 26 13.8 +0.3**
KSRS Korea Array 17.20 245 P **Pn** **07 26 21.2 -0.9**
comp=Z,1.5nm,0.3s,baz=50,slow=11,SNR=53
KSRS S **S** **07 29 28.2 +4.0**
comp=Z,0.1nm,0.3s,baz=56,slow=20,SNR=6.5
KSRS ScP **ScP** **07 33 58.6 +2.5**
comp=Z,0.3nm,0.3s,baz=64,slow=2.9,SNR=4.4
KS15 Wonju Array Si 17.23 245 *e*P **Pn** **07 26 21.7 -0.7**
KSAR Wonju Array Be 17.23 245 P **Pn** **07 26 21.2 -1.3**
KSAR S **S** **07 29 28.2 +3.3**
KSAR Wonju Array Be 17.23 245 P **Pn** **07 26 21.2 -1.3**
KSAR S **S** **07 29 28.2 +3.3**
KSAR ScP **ScP** **07 33 58.6 +2.4**
KSAR Wonju Array Be 17.23 245 *e*P **Pn** **07 26 21.2 -1.3**
INCN Inchon 18.00 247 *e*P **P** **07 26 29.7 +1.6**
comp=Z,95nm,0.9s
SMY Shemya 18.16 60 *e*P **Pn** **07 26 32.0 -1.0**
SMY pmax pmax
comp=Z,178nm,1.3s
SMY Shemya 18.16 60 *e*P **Pn** **07 26 32.0 -1.0**
comp=Z,178nm,1.3s
SMY Shemya 18.16 60 *e*P **Pn** **07 26 32.0 -1.0**
JTU Tsushima 18.28 236 P **P** **07 26 30.7 -0.4**
JNU Nakatsue 18.52 230 P **P** **07 26 34.9 +1.2**
comp=Z,2.4nm,0.3s,baz=14,slow=5.9,SNR=20
JNU S S 07 30 02.1 +12
comp=Z,0.1nm,0.3s,baz=43,slow=18,SNR=4.0
JNU Nakatsue 18.52 230 P **P** **07 26 34.6 +0.9**
YAK Yakutsk 18.66 333 P **P** **07 26 34.1 -0.6**
comp=Z,0.1nm,0.3s,baz=123,slow=3.8,SNR=33
YAK S **S** **07 29 49.3 -3.0**
baz=156,slow=22,SNR=13
YAK Yakutsk 18.66 333 *e*P **P** **07 26 34.2 -0.6**
YAK *e*S **S** **07 29 49.5 -2.8**
YAK pmax pmax
comp=Z,122nm,1.0s
YAK pmax pmax
comp=N,50nm,1.1s
YAK pmax pmax
comp=E,32nm,1.1s
YAK smax smax
comp=E,232nm,2.4s
YAK smax smax
comp=N,319nm,1.6s
YAK Yakutsk 18.66 333 *e*P **P** **07 26 34.3 -0.5**
comp=N,147nm,1.1s
YAK S **S** **07 29 49.3 -3.0**
YAK Yakutsk 18.66 333 *e*P **P** **07 26 34.3 -0.5**
BOD Bodaibo 23.29 311 *e*P **P** **07 27 18.4 -2.0**
BOD pmax pmax
comp=Z,3.0nm,1.7s
BOD Bodaibo 23.29 311 *e*P **P** **07 27 18.4 -2.0**
BILL Bilibino 23.62 17⇓*i*P **P** **07 27 22.4 -0.9**
BILL *e**PP **pP** **07 28 09.7 -1.5**
BILL *e* 07 30 59.1
BILL *e*S **S** **07 31 16.9 +0.1**
BILL pmax pmax
comp=Z,25nm,0.8s
BILL Bilibino 23.62 17 *e*P **P** **07 27 22.5 -0.9**
comp=Z,23nm,0.7s
BILL Bilibino 23.62 17⇓*i*P **P** **07 27 22.4 -0.9**
BJI Beijing 23.71 266 P **P** **07 27 26.3 +1.8**
BJI sP **sP** **07 28 47.4 +0.2**
BJI S **S** **07 31 17.9 -1.0**
BJI sS **sS** **07 32 50.2 +3.0**
BJI pmax pmax
comp=Z,64nm,0.9s
BJI pmax pmax
comp=Z,140nm,3.1s
BJT Baijiatuau 23.73 266 *e*P **P** **07 27 25.9 +1.3**
BJT pmax pmax
comp=Z,49nm,0.8s
BJT Baijiatuau 23.73 266 *e*P **P** **07 27 25.9 +1.3**
comp=Z,49nm,0.8s
BJT Baijiatuau 23.73 266 *e*P **P** **07 27 25.9 +1.3**
TIA Tai'an 24.98 257 *e*P **P** **07 27 36.1 +0.1**
TIA pmax pmax
comp=Z,10.0nm,1.4s
NJ2 Nanjing 26.38 247 *e*P **P** **07 27 51.2 +2.7**
NJ2 pmax pmax
comp=Z,6.0nm,0.5s
HHC Hu-ho-hao-te 26.55 271 *e*P **P** **07 27 51.4 +1.3**
HHC pP PP 07 28 52.4 -3.7
HHC S **S** **07 32 03.2 -0.7**
HHC sS sS 07 33 31.2 -8.5
HHC pmax pmax
comp=Z,60nm,1.0s
HHC pmax pmax
comp=Z,110nm,4.6s
TIXI Tiksi 26.75 347 P **P** **07 27 49.5 -1.8**
comp=Z,11nm,0.6s,baz=139,slow=7.0,SNR=27
TIXI S **S** **07 32 02.0 -4.0**
comp=Z,1.0nm,0.3s,baz=338,slow=5.4,SNR=3.0
TIXI Tiksi 26.75 347*c i*P **P** **07 27 49.4 -1.9**
TIXI pmax pmax
comp=Z,15nm,0.8s
TIXI Tiksi 26.75 347 *e*P **P** **07 27 49.3 -2.0**
comp=Z,13nm,0.7s
TIXI S **S** **07 32 02.0 -4.0**
TIXI Tiksi 26.75 347⇑*i*P **P** **07 27 49.4 -1.9**
ULN Ulaanbaatar 27.41 288*ce*P **P** **07 27 56.9 -0.8**
ULN pmax pmax
comp=Z,20nm,1.2s
ULN Ulaanbaatar 27.41 288 *e*P **P** **07 27 56.9 -0.8**
comp=Z,17nm,1.1s
ULN Ulaanbaatar 27.41 288⇑*e*P **P** **07 27 56.9 -0.8**
SONA1 Songino Array 27.85 288 *e*P **P** **07 28 00.4 -1.1**
SONM Songino Array 27.85 288 P **P** **07 28 00.9 -0.7**
comp=Z,2.6nm,0.3s,baz=74,slow=8.8,SNR=8.6
SONM ScP **ScP** **07 34 24.9 +1.0**
comp=Z,3.5nm,0.8s,baz=51,slow=1.8,SNR=11
GAMB Gambell 28.27 38 *e*P **P** **07 28 05.7 +0.9**
comp=Z,8.3nm,0.8s
ZAK Zakamensk 29.36 294 *e*P **P** **07 28 11.4 -3.4**
ZAK pmax pmax
comp=Z,2.0nm,1.0s
TNA Tin City 30.36 35 *e*P **P** **07 28 24.0 +0.8**
comp=Z,25nm,0.8s
XAN Xi'an 31.76 261 P **P** **07 28 36.1 +0.2**
XAN pmax pmax
comp=Z,11nm,0.8s
XAN pmax pmax
comp=Z,24nm,5.2s
LZH Lanzhou 34.13 268⇓P **P** **07 28 57.0 +0.5**
LZH pP pP 07 29 55.1 +4.5
LZH PP **sP** **07 30 25.3 +3.2**
LZH sP PP 07 30 28.6 +8.5
LZH pmax pmax
comp=Z,32nm,1.5s
LZH pmax pmax
comp=Z,75nm,5.4s
TT01 Tatalina 35.09 42 *e*P **P** **07 29 05.3 +1.2**
TTA Tatalina 35.09 41 *e*P **P** **07 29 05.5 +1.2**
TTA pmax pmax
comp=Z,25nm,0.9s
TTA Tatalina 35.09 41 *e*P **P** **07 29 05.5 +1.2**
comp=Z,24nm,0.9s
GTA Gaotai 35.28 276 P **P** **07 29 07.1 +0.9**
GTA pP pP 07 30 02.6 +2.1
GTA sP PP 07 30 35.3 +2.8
GTA PcP **PcP** **07 31 32.2 +2.1**
GTA S **S** **07 34 19.6 +0.3**
GTA ScP **ScP** **07 34 52.9 +3.7**
GTA sS sS 07 36 00.6 +3.6
GTA SS **SS** **07 36 59.5 -6.0**
GTA ScS **ScS** **07 38 55.8 +1.5**
GTA pmax pmax
comp=Z,30nm,1.0s
GTA pmax pmax
comp=Z,63nm,6.3s
SVW2 Sparrevohn 35.31 45 *e*P **P** **07 29 07.8 +1.7**
comp=Z,15nm,1.1s
RSO Redoubt South 36.74 46 *e*P **P** **07 29 20.4 +2.0**
PPLA Purkeypile 36.84 41 *e*P **P** **07 29 21.1 +2.0**
comp=Z,64nm,1.4s
OHAK Old Harbor 36.87 51 *e*P **P** **07 29 19.6 +0.4**
comp=Z,22nm,0.8s
CAST Castle Rocks 36.87 41 *e*P **P** **07 29 20.8 +1.6**
comp=Z,31nm,1.0s
SPU Mount Spurr 37.02 44 *e*P **P** **07 29 22.1 +1.6**
NRIK Noril'sk 37.04 329 P **P** **07 29 19.3 -1.2**
comp=Z,1.4nm,0.4s,baz=106,slow=7.7,SNR=7.3
CD2 Chengdu 37.12 261 P **P** **07 29 21.1 -0.6**
CD2 pmax pmax
comp=Z,3.0nm,0.6s
KDAK Kodiak Island 37.16 50 *i* P **P** **07 29 21.7 +0.1**
KDAK Kodiak Island 37.16 50 *e*P **P** **07 29 22.2 +0.6**
comp=Z,26nm,0.9s
BPAW Bear Paw Mtn. 37.34 39 *e*P **P** **07 29 24.2 +1.2**
comp=Z,15nm,1.0s
HOM Homer 37.38 47 *e*P **P** **07 29 24.9 +1.5**
comp=Z,47nm,1.0s
KTH Kantishna Hill 37.39 40 *e*P **P** **07 29 24.8 +1.3**
comp=Z,54nm,1.0s
MLY Manley 37.42 38 *e*P **P** **07 29 24.8 +1.0**
comp=Z,12nm,0.8s
COLD Coldfoot 37.65 34 *e*P **P** **07 29 25.9 +0.3**
comp=Z,15nm,1.0s
TRF Thorofare Moun 37.68 41 *e*P **P** **07 29 27.1 +0.9**
comp=Z,12nm,0.9s
BWN Browne 38.00 39 *e*P **P** **07 29 30.9 +2.3**
comp=Z,86nm,1.0s
GYA Guiyang 38.02 253 *e*P P 07 29 18.9 -10
GYA pP pP 07 30 29.8 +5.4
GYA sP PP 07 31 02.4 -0.2
GYA PcP PcP 07 31 20.0 -19
GYA ScP **ScP** **07 34 58.9 -0.7**
GYA S **S** **07 35 00.2 -0.8**
GYA ScS **ScS** **07 39 06.4 -3.6**
GYA pmax pmax
comp=Z,10.0nm,0.8s
RC01 Rabbit Creek A 38.14 44 *e*P **P** **07 29 30.9 +1.0**
comp=Z,32nm,1.3s
MCK McKinley 38.26 40 *e*P **P** **07 29 31.8 +1.0**
MCK pmax pmax
comp=Z,27nm,0.9s
MCK McKinley 38.26 40 *e*P **P** **07 29 31.8 +1.0**
comp=Z,27nm,0.9s
MCK McKinley 38.26 40 *e*P **P** **07 29 31.8 +1.0**
RND Reindeer 38.32 41 *e*P **P** **07 29 32.1 +0.7**
RND pmax pmax
comp=Z,24nm,1.0s
RND Reindeer 38.32 41 *e*P **P** **07 29 32.1 +0.7**
comp=Z,24nm,1.0s
PMR Palmer 38.37 43 *e*P **P** **07 29 32.2 +0.5**
PMR pmax pmax
comp=Z,14nm,1.0s

PMR **Palmer** 38.37 43 eP P 07 29 32.2 +0.5
comp=Z,14nm,1.0s
SEW **Seward** 38.41 46 eP P 07 29 32.7 +0.7
comp=Z,59nm,1.6s
MDM **Murphy Dome** 38.49 38 eP P 07 29 33.6 +0.9
comp=Z,27nm,1.0s
WRH **Wood River Hil** 38.58 39 eP P 07 29 34.0 +0.7
comp=Z,22nm,0.8s
WRH eS S 07 35 02.4 -5.8
COLA **College** 38.66 38 eP P 07 29 35.1 +1.2
COLA pmax pmax
comp=Z,70nm,0.8s
COLA **College** 38.66 38 eP P 07 29 35.1 +1.2
comp=Z,70nm,0.8s
COLA **College** 38.66 38 eP P 07 29 35.1 +1.2
CCB **Clear Creek Bu** 38.69 38 eP P 07 29 34.9 +0.6
comp=Z,14nm,1.1s
SML **Sawmill** 38.73 43 eP P 07 29 35.7 +1.0
SML pmax pmax
comp=Z,48nm,0.8s
SML **Sawmill** 38.73 43 eP P 07 29 35.6 +1.0
comp=Z,48nm,0.8s
IL1 **Eielson Array** 39.07 38 eP P 07 29 38.2 +0.8
ILAR **Eielson Array** 39.07 38 P P 07 29 37.6 +0.1
comp=Z,28nm,0.8s,baz=269,slow=7.3,SNR=204
ILB **Eielson Array** 39.07 38 eP P 07 29 37.7 +0.2
HDA **Harding Lake** 39.08 39 eP P 07 29 37.8 +0.3
comp=Z,60nm,1.3s
SCM **Sheep Creek Mo** 39.20 43 eP P 07 29 40.2 +1.6
SCM pmax pmax
comp=Z,32nm,1.0s
SCM **Sheep Creek Mo** 39.20 43 eP P 07 29 40.2 +1.6
comp=Z,32nm,1.0s
FYU **Fort Yukon** 39.62 35 eP P 07 29 43.1 +1.2
comp=Z,34nm,0.7s
ZALV **Zalesovo Beam** 39.68 305 P P 07 29 41.3 -1.2
comp=Z,0.9nm,0.3s,baz=70,slow=6.4,SNR=3.7
ZALV PcP PcP 07 31 43.6 +0.4
comp=Z,6.2nm,0.9s,baz=64,slow=3.4,SNR=7.8
PAX **Paxson** 39.90 41 eP P 07 29 46.8 +2.5
PAX pmax pmax
comp=Z,5.0nm,0.7s
PAX **Paxson** 39.90 41 eP P 07 29 46.8 +2.5
comp=Z,5.4nm,0.7s
KLU **Klutina** 39.91 43 eP P 07 29 45.6 +1.2
comp=Z,38nm,1.1s
DIV **Divide** 40.04 44 eP P 07 29 46.8 +1.3
comp=Z,55nm,1.3s
DIV **Divide** 40.04 44 eP P 07 29 46.8 +1.3
EYAK **Cordova Ski Ar** 40.16 45 eP P 07 29 47.7 +1.3
comp=Z,18nm,1.1s
DOT **Dot Lake** 40.43 40 eP P 07 29 48.5 -0.1
comp=Z,41nm,0.8s
BMRM **Bremner River** 40.63 44 eP P 07 29 51.6 +1.3
comp=Z,24nm,1.0s
MENT **Mentasta** 40.69 41 eP P 07 29 51.9 +1.1
comp=Z,9.4nm,0.6s
RAGM **Ragged Mountai** 40.71 45 eP P 07 29 52.7 +1.8
comp=Z,55nm,1.6s
WMQ **Urumqi** 41.48 289 eP P 07 29 58.5 +1.0
WMQ LR LR
comp=N,31nm,26.6s
WMQ LR LR
comp=E,62nm,39.6s
WMQ LR LR
comp=Z,12nm,15.8s
EGAK **Eagle** 41.51 38 eP P 07 29 57.6 +0.3
comp=Z,32nm,0.8s
KMI **Kunming** 41.53 255 P P 07 30 00.5 +2.3
KMI pmax pmax
comp=Z,9.0nm,0.5s
KMI pmax pmax
comp=Z,49nm,3.4s
BALM **Baldy** 41.69 43 eP P 07 30 00.5 +1.5
BALM pmax pmax
comp=Z,24nm,1.0s
BALM **Baldy** 41.69 43 eP P 07 30 00.5 +1.5
comp=Z,24nm,1.0s
DAWY **Dawson** 42.39 39 eP P 07 30 04.9 +0.4
comp=Z,10.0nm,1.1s
MK31 **Makanchi Array** 43.68 295 i P P 07 30 14.3 -0.7
MK31 pmax pmax
comp=Z,2.0nm,0.4s
MK31 **Makanchi Array** 43.68 295 eP P 07 30 14.6 -0.4
MKAR **Makanchi Array** 43.68 295 P P 07 30 14.5 -0.5
comp=Z,1.6nm,0.3s,baz=62,slow=4.3,SNR=45
MKAR PcP PcP 07 31 57.2 +0.5
comp=Z,1.0nm,0.4s,baz=67,slow=5.0,SNR=8.2
MKAR ScP ScP 07 35 22.0 +0.5
comp=Z,0.7nm,0.4s,baz=68,slow=5.1,SNR=12
MK01 **Makanchi Array** 43.69 295 eP P 07 30 14.8 -0.2
INK **Inuvik** 43.86 32 P P 07 30 16.1 +0.1
comp=Z,8.9nm,0.3s,baz=290,slow=8.6,SNR=228
INK **Inuvik** 43.86 32 eP P 07 30 16.1 +0.1
INK pmax pmax
comp=Z,11nm,0.7s
INK **Inuvik** 43.86 32 eP P 07 30 16.1 +0.1
comp=Z,12nm,0.7s
MAKZ **Makanchi** 43.87 295 P P 07 30 15.4 -1.1
MAKZ pmax pmax
comp=Z,4.0nm,0.9s
MAKZ **Makanchi** 43.87 295 eP P 07 30 16.0 -0.5
comp=Z,3.7nm,0.8s
KURK **Kurchatov** 44.34 302 P P 07 30 19.0 -1.0
KURK pmax pmax
comp=Z,10.0nm,0.6s
KURK **Kurchatov** 44.34 302 eP P 07 30 19.3 -0.7
comp=Z,7.5nm,0.5s
KURK **Kurchatov** 44.34 302 eP P 07 30 19.0 -1.0
VOSK **Vostochnaya** 47.88 307 P P 07 30 46.1 -1.4
VOSK pmax pmax
comp=Z,4.0nm,0.7s
BVA0 **Borovoye Array** 48.07 308 i P P 07 30 47.1 -1.9
BVA0 pmax pmax
comp=Z,2.0nm,0.9s
BVAR **Borovoye Array** 48.07 308 P P 07 30 48.5 -0.5
comp=Z,2.2nm,0.7s,baz=52,slow=9.6,SNR=12
BVAR PcP PcP 07 32 12.1 +0.1
comp=Z,2.1nm,0.5s,baz=68,slow=4.0,SNR=6.8
BRVK **Borovoye** 48.12 308 P P 07 30 46.1 -3.2
BRVK pmax pmax
comp=Z,10.0nm,1.4s
BRVK **Borovoye** 48.12 308 eP P 07 30 48.4 -0.9
comp=Z,3.6nm,0.8s
DLBC **Dease Lake** 48.42 44 P P 07 30 53.8 +2.2
comp=Z,5.9nm,0.7s,baz=287,slow=6.4,SNR=19
DLBC **Dease Lake** 48.42 44 eP P 07 30 54.1 +2.5
comp=Z,6.3nm,0.8s
CHTO **Chiang Mai** 48.44 252 eP P 07 30 53.7 +1.6
CHTO pmax pmax
comp=Z,12nm,1.0s
CHTO **Chiang Mai** 48.44 252 eP P 07 30 53.7 +1.6
comp=Z,12nm,1.0s
CMAR **Chiang Mai Arr** 48.69 252 P P 07 30 55.9 +1.8
comp=Z,1.5nm,0.3s,baz=34,slow=7.3,SNR=15
CM01 **Chiang Mai Arr** 48.71 252 eP P 07 30 55.7 +1.5
OTUK **Ortayu** 49.10 301 P P 07 30 56.3 -0.5
OTUK pmax pmax
comp=Z,2.0nm,0.6s
AAK **Ala-Archa** 50.54 294 i P P 07 31 07.9 0.0
AAK pmax pmax
comp=Z,6.0nm,0.7s
AAK **Ala-Archa** 50.54 294 eP P 07 31 07.1 -0.8
comp=Z,2.5nm,0.8s
AAK **Ala-Archa** 50.54 294 eP P 07 31 07.9 0.0
KSH **Kashi** 51.23 290 P P 07 31 17.2 +4.2
KSH epP PcP 07 32 17.9 -6.1
KSH esP sP 07 32 50.3 +8.5
KSH S S 07 38 13.4 +3.4
KSH pmax pmax
comp=Z,56nm,3.8s
KBS **Kingsbay** 52.13 350 eP P 07 31 17.3 -1.6
KBS pmax pmax
comp=Z,119nm,1.9s
KBS **Kingsbay** 52.13 350 eP P 07 31 17.3 -1.6
comp=Z,119nm,1.9s
SPA0 **Spitsbergen Ar** 52.15 349 eP P 07 31 18.1 -0.9
RES **Resolute Bay** 52.23 17 P P 07 31 18.7 -0.9
comp=Z,39nm,0.5s,baz=320,slow=7.7,SNR=214
RES **Resolute Bay** 52.23 17 eP P 07 31 18.9 -0.7
RES pmax pmax
comp=Z,46nm,0.7s
RES **Resolute Bay** 52.23 17 eP P 07 31 18.9 -0.7
comp=Z,46nm,0.7s
RES **Resolute Bay** 52.23 17 eP P 07 31 18.9 -0.7
SFK **Sufi-Kurgan** 52.56 291 P P 07 31 22.6 -0.3
SFK pmax pmax
comp=Z,4.0nm,0.8s
ARU **Arti** 52.61 316 c i P P 07 31 21.6 -1.1
ARU *PP pP 07 32 22.0 +0.6
ARU 07 32 27.6
ARU 07 33 22.8
ARU S S 07 38 27.6 -0.3
ARU pmax pmax
comp=Z,17nm,1.7s
ARU **Arti** 52.61 316 eP P 07 31 21.7 -1.0
comp=Z,7.6nm,0.6s
ARU **Arti** 52.61 316⇑ i P P 07 31 21.6 -1.1
KKAR **Karatay Array** 52.78 296 eP P 07 31 24.0 -0.2
KKAR **Karatay Array** 52.78 296 eP P 07 31 24.0 -0.2
YKW3 **Yellowknife Ar** 53.28 35 eP P 07 31 27.9 +0.5
comp=Z,13nm,0.8s
YKA **Yellowknife Ar** 53.32 35 P P 07 31 28.1 +0.3
comp=Z,9.1nm,0.6s,baz=303,slow=7.0,SNR=219
YKA PcP PcP 07 32 32.1 +0.8
comp=Z,3.8nm,0.9s,baz=304,slow=4.1,SNR=8.4
YKA ScP ScP 07 36 03.5 +1.4
comp=Z,0.5nm,0.8s,baz=301,slow=4.6,SNR=5.7
YKA **Yellowknife Ar** 53.32 35 P P 07 31 28.1 +0.3
YKA 07 32 32.1
YKA pmax pmax
comp=Z,13nm,0.8s
YKA pmax pmax
comp=Z,4.0nm,0.9s
YKA pmax pmax
comp=N,1.0nm,0.8s
YKB5 **Yellowknife Ar** 53.32 35 eP P 07 31 27.5 -0.3
LVZ **Lovozero** 55.45 335 eP P 07 31 42.3 -0.7
LVZ pmax pmax
comp=Z,36nm,1.2s
LVZ **Lovozero** 55.45 335 eP P 07 31 42.3 -0.7
comp=Z,36nm,1.2s
AB31 **Akbulak array** 55.65 308 i P P 07 31 43.8 -0.8
AB31 pmax pmax
comp=Z,3.0nm,0.6s
ABKAR **Akbulak array** 55.65 308 eP P 07 31 44.0 -0.7
KEV **Kevo** 56.27 339 eP P 07 31 47.5 -1.2
KEV pmax pmax
comp=Z,80nm,1.9s
KEV **Kevo** 56.27 339 eP P 07 31 47.5 -1.2
comp=Z,80nm,1.9s
DAG **Danmarks Havn** 56.69 356 i P P 07 31 49.5 -2.1
comp=Z,21nm,1.2s
DAG **Danmarks Havn** 56.69 356 i P P 07 31 49.5 -2.1
DAG pmax pmax
comp=Z,33nm,1.2s
DAG **Danmarks Havn** 56.69 356 eP P 07 31 49.5 -2.1
ARA0 **ARCESS Array S** 56.80 339 eP P 07 31 51.6 -0.8
ARCES **ARCESS Array B** 56.80 339 P P 07 31 51.1 -1.3
comp=Z,6.9nm,0.9s,baz=38,slow=7.1,SNR=15
ARCES PcP PcP 07 32 44.9 +0.2
comp=Z,0.7nm,0.3s,baz=61,slow=5.5,SNR=6.3
B05A **Bryant** 57.58 52 P P 07 31 59.8 +1.6
baz=306
KLMR **Klimovskoe** 58.32 327 eP P 07 32 00.3 -2.7
KLMR pmax pmax
comp=Z,10.0nm,0.8s
LTY **Liberty** 58.95 53 eP P 07 32 08.9 +1.2
comp=Z,13nm,1.4s
B08A **Colville Reser** 59.03 51 eP P 07 32 09.8 +1.6
comp=Z,6.0nm,0.8s
H04A **Detroit Lake** 59.64 56 eP P 07 32 13.6 +1.1
comp=Z,22nm,1.1s
G05D **Wamic, OR** 59.80 55 P P 07 32 15.2 +1.7
baz=307
C09A **Chrisman Ranch** 59.93 51 eP P 07 32 15.6 +1.3
comp=Z,8.0nm,0.8s
I04A **Tendick Farm,** 60.04 57 P P 07 32 16.9 +1.7
baz=308
I05D **Terrebonne, OR** 60.33 56 P P 07 32 18.4 +1.2
baz=308
HUMO **Hull Mountain** 60.45 58 eP P 07 32 20.0 +2.1
comp=Z,15nm,1.5s
E09A **Wood Farm, Sta** 60.78 52 eP P 07 32 21.9 +1.9
comp=Z,25nm,1.3s
J05D **Fort Rock, OR** 61.03 57 P P 07 32 23.8 +1.8
baz=308,SNR=6.6
YBH **Yreka Blue Hor** 61.12 59 eP P 07 32 24.8 +2.3
YBH pmax pmax
comp=Z,12nm,1.4s
YBH **Yreka Blue Hor** 61.12 59 eP P 07 32 24.8 +2.3
comp=Z,12nm,1.4s
SUMG **Summit** 61.15 2 i P P 07 32 21.9 -0.7
comp=Z,19nm,0.9s
SUMG **Summit** 61.15 2 i P P 07 32 22.5 0.0
SUMG eS P 07 32 24.6 +2.1
SUMG **Summit** 61.15 2 i P P 07 32 22.5 0.0
SUMG **Summit** 61.15 2 eP P 07 32 21.9 -0.7
comp=Z,19nm,0.9s
M02C **Callahan** 61.25 59 P P 07 32 25.2 +1.8
baz=308
WALA **Waterton Lakes** 61.44 48 eP P 07 32 25.8 +1.2
comp=Z,8.4nm,0.8s
K05A **Summer Lake** 61.57 57 eP P 07 32 26.5 +0.9
comp=Z,16nm,1.0s
N02D **Trinity Center** 61.59 59 P P 07 32 27.4 +1.7
baz=309
M04C **Macdoel** 61.61 58 P P 07 32 27.2 +1.4
baz=309,SNR=5.0
F10A **Beach Ranch, E** 61.62 52 eP P 07 32 27.7 +1.9
comp=Z,23nm,1.5s
BSMT **Bassoo Peak** 61.75 49 eP P 07 32 28.8 +2.1
BLMT **Blacktail Moun** 61.87 49 eP P 07 32 29.1 +1.6
JTMT **Jette** 62.08 49 eP P 07 32 30.8 +2.0
SWMT **Swartz Lake** 62.38 49 eP P 07 32 32.4 +1.6
MOD **Modoc Plateau** 62.43 57 eP P 07 32 33.3 +2.0
comp=Z,6.6nm,0.8s
O03D **Paynes Creek** 62.55 60 P P 07 32 32.7 +0.6
baz=309,SNR=7.0
FIA1 **FINESS Array S** 62.59 333 eP P 07 32 30.3 -1.5
comp=Z,29nm,0.8s
FINES **FINESS Array B** 62.59 333 P P 07 32 30.4 -1.4
comp=Z,27nm,0.7s,baz=46,slow=8.2,SNR=77
FINES PcP PcP 07 33 07.6 -0.4
comp=Z,1.5nm,0.6s,baz=54,slow=7.2,SNR=2.3
MSO **Missoula** 62.84 50 P P 07 32 34.7 +0.8
baz=310,SNR=15
CHMT **Chamberlain Mo** 63.15 49 eP P 07 32 37.1 +1.1
OBN **Obninsk** 63.32 323⇑ i P P 07 32 35.4 -1.2
OBN e 07 33 11.3
OBN e*PP pP 07 33 37.1 -0.6
OBN e 07 34 59.1
OBN eS S 07 40 45.9 -0.2
OBN eSS SS 07 44 57.1 0.0
OBN pmax pmax
comp=Z,50nm,2.5s
OBN **Obninsk** 63.32 323⇑ i P P 07 32 35.4 -1.2
GEYT **Alibeck** 63.45 298 P P 07 32 37.5 -0.4
comp=Z,4.7nm,0.5s,baz=28,slow=3.5,SNR=5.3
FCC **Fort Churchill** 63.46 31 eP P 07 32 37.6 +0.1
FCC pmax pmax
comp=Z,30nm,1.2s
FCC **Fort Churchill** 63.46 31 eP P 07 32 37.6 +0.1
comp=Z,30nm,1.2s
FCC **Fort Churchill** 63.46 31 eP P 07 32 37.6 +0.1
EGMT **Eagleton** 64.22 47 P P 07 32 43.5 +0.7
baz=312,SNR=14
EGMT **Eagleton** 64.22 47 eP P 07 32 44.2 +1.4
comp=Z,19nm,1.0s
LRM **Limekiln Ridge** 64.28 50 eP P 07 32 44.9 +1.4
DLMT **Dillon** 64.50 50 eP P 07 32 46.5 +1.7
comp=Z,12nm,0.9s
VSU **Vasula** 64.62 330⇓ i P P 07 32 43.5 -1.5
VSU pmax pmax
comp=Z,36nm,1.2s
HLID **Hailey** 64.70 53 P P 07 32 47.2 +1.1
baz=311,SNR=7.8
HLID **Hailey** 64.70 53 eP P 07 32 47.5 +1.4
comp=Z,4.1nm,0.9s
MCMT **McKenzie Canyo** 64.72 51 eP P 07 32 48.0 +1.7
BOZ **Bozeman (W)** 64.83 50 P P 07 32 48.1 +1.2
baz=312,SNR=21
BOZ **Bozeman (W)** 64.83 50 eP P 07 32 48.4 +1.6
BOZ pmax pmax
comp=Z,14nm,0.7s
BOZ **Bozeman (W)** 64.83 50 eP P 07 32 48.4 +1.6
comp=Z,14nm,0.7s
BOZ **Bozeman (W)** 64.83 50 eP P 07 32 48.4 +1.6
CMB **Columbia Colle** 64.84 61 eP P 07 32 48.8 +1.9
CMB pmax pmax
comp=Z,7.0nm,0.9s
CMB **Columbia Colle** 64.84 61 eP P 07 32 48.8 +1.9
comp=Z,7.0nm,0.9s
VSR **Storozhevoye** 64.89 319 eP P 07 32 45.5 -1.4
VSR pmax pmax
comp=Z,10.0nm,0.5s
WAKR **Walker** 65.11 60 eP P 07 32 50.6 +1.8
QLMT **Earthquake Lak** 65.47 50 eP P 07 32 52.8 +1.7
GCMT **Greycliff** 65.75 48 eP P 07 32 54.6 +1.9
NV01 **Mina Array Sit** 65.83 59 eP P 07 32 54.3 +0.8
NVAR **Mina Array Bea** 65.83 59 P P 07 32 55.4 +2.0
comp=Z,6.4nm,0.8s,baz=287,slow=7.1,SNR=50
YMR **Madison River** 65.83 50 eP P 07 32 54.9 +1.5
comp=Z,8.2nm,0.9s
NV11 **Mina Array Sit** 65.92 59 eP P 07 32 55.6 +1.8
comp=Z,6.7nm,0.9s
YFT **Old Faithful** 66.04 50 eP P 07 32 57.6 +2.8
comp=Z,8.3nm,0.8s
ELK **Elko** 66.09 56 eP P 07 32 57.2 +2.1
ELK pmax pmax
comp=Z,3.0nm,0.8s
ELK **Elko** 66.09 56 eP P 07 32 57.2 +2.1
comp=Z,3.2nm,0.8s
LKWY **Lake** 66.20 50 eP P 07 32 58.3 +2.6
LKWY pmax pmax
comp=Z,6.0nm,0.9s
LKWY **Lake** 66.20 50 eP P 07 32 58.2 +2.6
comp=Z,6.5nm,0.9s
H17A **Grant Village** 66.22 50 P P 07 32 58.4 +2.5
baz=313,SNR=11
H17A **Grant Village** 66.22 50 eP P 07 32 59.1 +3.3
comp=Z,16nm,1.0s
IMW **Indian Meadow** 66.36 51 eP P 07 32 59.0 +2.1
comp=Z,8.6nm,0.9s
FLWY **Flagg Ranch** 66.36 50 eP P 07 32 59.4 +2.7
comp=Z,9.5nm,1.1s
RLMT **Red Lodge** 66.42 49 P P 07 32 58.0 +1.0
baz=313
MOOW **Moose Ponds** 66.57 51 eP P 07 33 00.1 +2.1
comp=Z,14nm,1.3s
RCTC **Rector, Farmer** 66.66 61 P P 07 33 00.4 +2.0
baz=312
LOHW **Long Hollow** 66.73 51 eP P 07 33 01.0 +2.0
comp=Z,21nm,1.5s
SNOW **Snow King Moun** 66.75 51 eP P 07 32 60.0 +0.7
comp=Z,6.1nm,0.8s
REDW **Red Top Meadow** 66.77 51 eP P 07 33 01.3 +2.0
comp=Z,25nm,1.4s
HVU **Hansel Valley** 66.78 53 eP P 07 33 01.4 +2.1
HVU pmax pmax
comp=Z,7.0nm,0.9s
HVU **Hansel Valley** 66.78 53 eP P 07 33 01.4 +2.1
comp=Z,6.9nm,0.9s
A25A **Svangstu Ranch** 66.82 43 P P 07 33 00.4 +1.2
baz=315
SMMC **Simmler** 66.86 63 P P 07 33 01.2 +1.4
baz=312
NC303 **NORSAR Array S** 66.97 339 eP P 07 32 58.8 -1.1
NC405 **NORSAR Array S** 66.98 338 eP P 07 32 59.0 -1.0
AHID **Auburn Hatcher** 67.04 52 eP P 07 33 01.9 +1.0
comp=Z,18nm,1.5s
NC204 **NORSAR Array S** 67.08 339 eP P 07 32 58.6 -2.1
NB201 **NORSAR Array S** 67.14 339 eP P 07 33 00.1 -1.0
NB2 **NORSAR Subarra** 67.17 339 P P 07 32 59.9 -1.3
comp=Z,15nm,0.6s,baz=31,slow=6.5
NB2 **NORSAR Subarra** 67.17 339 P P 07 32 59.9 -1.3
baz=31,slow=6.5
NOA **NORSAR Array B** 67.17 339 P P 07 32 59.9 -1.3
comp=Z,17nm,0.8s,baz=32,slow=6.2,SNR=62
WB2 **Warramunga Arr** 67.22 194 eP P 07 33 02.4 +0.5
comp=Z,4.7nm,0.8s
WRA **Warramunga Arr** 67.22 194 P P 07 33 02.5 +0.5
comp=Z,1.3nm,0.5s,baz=9.8,slow=6.7,SNR=21
PKM **Mcpherson Peak** 67.25 63 P P 07 33 04.3 +1.9
baz=312
NBO02 **NORSAR Array S** 67.25 339 eP P 07 33 00.4 -1.3
SPUT **South Promonto** 67.28 54 eP P 07 33 04.1 +1.7
comp=Z,17nm,1.4s
NBO00 **NORSAR Array S** 67.28 339 eP P 07 33 01.0 -0.9
FITZ **Fitzroy Crossi** 67.31 203 eP P 07 33 04.2 +1.7
comp=Z,15nm,1.5s
GRAC **Grapevine Rang** 67.33 60 P P 07 33 04.5 +1.8
baz=312,SNR=10
A26A **Wade Farm, Ken** 67.34 42 P P 07 33 03.6 +1.0
baz=316
NC602 **NORSAR Array S** 67.35 338 eP P 07 33 01.0 -1.3
NAO01 **NORSAR Array S** 67.42 339 eP P 07 33 01.6 -1.1
R11A **Troy Canyon, C** 67.48 58 P P 07 33 05.1 +1.3
baz=312,SNR=11
R11A **Troy Canyon, C** 67.48 58 eP P 07 33 05.2 +1.3
comp=Z,6.5nm,1.1s
ISA **Isabella, Lake** 67.55 62 P P 07 33 05.3 +1.2
baz=312
HWUT **Hardware Ranch** 67.57 53 eP P 07 33 06.0 +1.7
comp=Z,15nm,1.2s
C25A **Freed Ranch, W** 67.61 44 P P 07 33 05.3 +1.0
baz=316
B26A **Jensen Ranch,** 67.63 43 P P 07 33 05.6 +1.3
baz=316
A27A **Ledoux Ranch,** 67.67 42 P P 07 33 05.8 +1.3
baz=316
DUG **Dugway, Tooele** 67.83 55 P P 07 33 07.5 +1.6
baz=313,SNR=18
DUG **Dugway, Tooele** 67.83 55 eP P 07 33 07.6 +1.7
DUG pmax pmax
comp=Z,12nm,0.8s
DUG **Dugway, Tooele** 67.83 55 eP P 07 33 07.6 +1.7
comp=Z,12nm,0.8s
BW06 **Boulder Array** 67.87 51 P P 07 33 07.1 +0.9
baz=314,SNR=15
BW06 **Boulder Array** 67.87 51 eP P 07 33 07.4 +1.2
comp=Z,10nm,1.0s
PD31 **Pinedale Array** 67.87 51 eP P 07 33 07.3 +1.1
PDAR **Pinedale Array** 67.87 51 P P 07 33 07.3 +1.1
comp=Z,5.8nm,0.7s,baz=276,slow=2.1,SNR=58
MPMC **Manual Prospec** 67.89 61 P P 07 33 07.5 +1.1
baz=312,SNR=8.7
D25A **Fairfield** 67.98 44 P P 07 33 07.5 +0.9
baz=316
FURC **Furnace Creek,** 67.99 60 P P 07 33 08.1 +1.4
baz=312,SNR=15
TCUT **Toone Canyon** 67.99 53 eP P 07 33 09.0 +2.0
comp=Z,11nm,0.7s
TPNV **Topopah Spring** 68.03 59 P P 07 33 08.4 +1.2
baz=313,SNR=9.0
NCK **Nalchik** 68.05 310 i P P 07 33 07.3 +0.3
NCK pmax pmax
comp=Z,36nm,0.4s
C26A **Wahner Farm, P** 68.08 43 P P 07 33 08.1 +0.9
baz=316
A28A **Rude Farm, Bot** 68.15 41 P P 07 33 08.3 +0.7
baz=317
LRMC **Laurel Mtn Rad** 68.16 61 P P 07 33 09.1 +1.1
baz=312
KIV **Kislovodsk** 68.21 311 eP P 07 33 09.0 +0.9
KIV pmax pmax
comp=Z,33nm,1.1s
KIV **Kislovodsk** 68.21 311 eP P 07 33 08.9 +0.8
comp=Z,25nm,0.8s
KIV **Kislovodsk** 68.21 311 eP P 07 33 09.0 +0.9
KBZ **Khabaz** 68.26 311 P P 07 33 08.4 +0.2
comp=Z,12nm,0.9s,baz=58,slow=4.8,SNR=27
JLU **Jordanelle** 68.32 54 eP P 07 33 10.9 +1.8
comp=Z,14nm,1.4s
PSUT **Pine Spring** 68.36 57 eP P 07 33 11.2 +1.9
comp=Z,5.8nm,0.8s
EDW2 **Edwards Air Fo** 68.37 62 P P 07 33 10.4 +1.2
baz=313,SNR=5.9
ZEI **Tsey** 68.38 310 eP P 07 33 07.9 -1.4
ZEI pmax pmax
comp=Z,22nm,0.8s
E25A **Miller Ranch,** 68.41 45 P P 07 33 10.0 +0.8
baz=316
NLU **North Lily Min** 68.41 54 eP P 07 33 11.3 +1.7
comp=Z,9.3nm,0.8s
B28A **Dugan Ranch, T** 68.44 42 P P 07 33 10.1 +0.8
baz=317
C27A **Sayler Ranch,** 68.44 43 P P 07 33 10.4 +1.0
baz=316
D26A **Manning** 68.49 44 P P 07 33 10.4 +0.7
baz=316
A29A **Manning Farm,** 68.61 41 P P 07 33 11.1 +0.7
baz=317,SNR=8.7
NEY **Neytrino** 68.68 311 i P P 07 33 12.2 +1.1
NEY pmax pmax
comp=Z,1.0nm,0.7s
SHOC **Shoshone, Teco** 68.72 60 P P 07 33 12.5 +1.2
baz=313
MWC **Mount Wilson** 68.77 62 eP P 07 33 13.3 +1.5

MWC pmax pmax
comp=Z,11nm,1.1s
MWC Mount Wilson 68.77 62 *eP* **P 07 33 13.3 +1.5**
comp=Z,11nm,1.1s
F25A Bowman 68.79 45 P **P 07 33 12.4 +0.8**
baz=316
GSC Goldstone, Bar 68.80 61 P **P 07 33 13.1 +1.2**
baz=313,SNR=5.3
GSC Goldstone, Bar 68.80 61 *eP* **P 07 33 13.3 +1.4**
GSC pmax pmax
comp=Z,6.0nm,0.9s
GSC Goldstone, Bar 68.80 61 *eP* **P 07 33 13.3 +1.4**
comp=Z,5.6nm,0.9s
E26A Carlson Angus 68.88 44 P **P 07 33 12.9 +0.8**
baz=316
B29A Wagenman Farm, 68.89 41 P **P 07 33 13.0 +0.9**
baz=317
C28A Hausauer Farms 68.96 42 P **P 07 33 13.7 +1.1**
baz=317
BFSC Mount Baldy Ra 69.00 62 P **P 07 33 14.4 +1.2**
baz=313
A30A Hoffart Farm, 69.01 40 P **P 07 33 13.7 +0.8**
baz=318
ULM Lac du Bonnet 69.09 38 P **P 07 33 12.2 -1.1**
comp=Z,2.5nm,0.2s,baz=344,slow=5.7,SNR=8.1
F26A Lodgepole 69.23 45 P **P 07 33 15.3 +1.1**
baz=316
TUQ Turquoise Moun 69.24 60 P **P 07 33 16.0 +1.3**
baz=313,SNR=9.0
G25A Newell 69.33 46 P **P 07 33 15.5 +0.6**
baz=316
SUW Suwalki 69.33 329 *eP* **P 07 33 13.4 -1.3**
SUW Suwalki 69.33 329 *eP* **P 07 33 13.4 -1.3**
MSU Marysvale 69.34 56 *eP* **P 07 33 16.9 +1.6**
MSU Marysvale 69.34 56 *eP* **P 07 33 16.9 +1.6**
E27A Carson 69.34 44 P **P 07 33 15.6 +0.7**
baz=317,SNR=5.8
TMUT Trail Mountain 69.35 54 *eP* **P 07 33 17.0 +1.6**
comp=Z,8.4nm,0.8s
B30A Myrvik Farm, E 69.36 41 P **P 07 33 15.6 +0.6**
baz=318,SNR=8.5
HEC Hector,Ludlow 69.41 61 P **P 07 33 17.3 +1.7**
baz=313
BBRC Big Bear Solar 69.44 62 P **P 07 33 17.2 +1.3**
baz=313
P17A Butcher Ranch, 69.49 54 *eP* **P 07 33 18.1 +2.0**
comp=Z,15nm,1.0s
F27A Lemmon 69.53 44 P **P 07 33 16.6 +0.6**
baz=317
K22A Casper 69.56 49 P **P 07 33 17.3 +0.8**
baz=315
K22A Casper 69.56 49 *eP* **P 07 33 17.2 +0.8**
comp=Z,27nm,1.7s
AKASG Malin Array Be 69.58 323 P **P 07 33 15.1 -1.1**
comp=Z,3.4nm,0.3s,baz=37,slow=6.6,SNR=27
AKASG Malin Array Be 69.58 323 P **P 07 33 15.1 -1.1**
AKASG pmax pmax
comp=Z,4.0nm,0.3s
AKBB Malin Array Si 69.58 323 *eP* **P 07 33 15.3 -0.9**
AKBB pmax pmax
comp=Z,15nm,0.8s
AKBB Malin Array Si 69.58 323 *eP* **P 07 33 15.3 -0.9**
comp=Z,15nm,0.8s
KIEV Kiev 69.59 323*c i*P **P 07 33 14.8 -1.5**
KIEV pmax pmax
comp=Z,16nm,0.8s
KIEV Kiev 69.59 323 *eP* **P 07 33 14.9 -1.4**
comp=Z,15nm,0.7s
AK11 Malin Array Si 69.62 323 *eP* **P 07 33 15.4 -1.1**
Q16A Castle Valley 69.63 55 *eP* **P 07 33 17.6 +0.6**
comp=Z,7.4nm,1.1s
E28A Huff 69.65 43 P **P 07 33 17.7 +0.9**
baz=317
H25A Fruitdale 69.65 46 P **P 07 33 17.6 +0.7**
baz=316
MTPU Mount Pierson 69.66 56 *eP* **P 07 33 19.6 +2.2**
comp=Z,7.8nm,0.7s
P18A Preston Nutter 69.66 54 *eP* **P 07 33 19.2 +1.9**
comp=Z,14nm,0.3s
G26A Maurine 69.66 45 P **P 07 33 17.4 +0.5**
baz=316,SNR=11
MURC Murrieta 69.72 62 P **P 07 33 18.6 +1.2**
baz=313
LCMT Little Creek M 69.75 57 *eP* **P 07 33 19.7 +2.0**
comp=Z,8.9nm,0.9s
GNI Garni 69.76 307 *i*P **P 07 33 18.8 +1.1**
GNI pmax pmax
comp=Z,24nm,1.1s
RSSD Black Hills 69.79 47 P **P 07 33 18.6 +0.7**
baz=316
RSSD Black Hills 69.79 47 *eP* **P 07 33 18.8 +0.8**
RSSD pmax pmax
comp=Z,12nm,0.8s
RSSD Black Hills 69.79 47 *eP* **P 07 33 18.8 +0.8**
comp=Z,12nm,0.8s
A32A Rocking H Ranc 69.83 39 P **P 07 33 17.9 +0.1**
baz=319
GMRC Granite Mounta 69.84 61 P **P 07 33 19.4 +1.1**
baz=313,SNR=6.3
C30A Mose, Pekin 69.85 41 P **P 07 33 18.7 +0.7**
baz=318
SRU San Rafael Swe 69.86 54 *eP* **P 07 33 19.8 +1.4**
SRU pmax pmax
comp=Z,18nm,0.7s
SRU San Rafael Swe 69.86 54 *eP* **P 07 33 19.8 +1.4**
comp=Z,18nm,0.7s
G27A Dupree 69.92 45 P **P 07 33 18.7 +0.2**
baz=317,SNR=5.1
LDFC Landfair 69.97 60 *eP* **P 07 33 20.2 +1.1**
comp=Z,15nm,0.9s
KNB Kanab 70.00 57 *eP* **P 07 33 20.6 +1.3**
KNB pmax pmax
comp=Z,11nm,0.9s
KNB Kanab 70.00 57 *eP* **P 07 33 20.6 +1.3**
comp=Z,11nm,0.9s
PKCU Pink Cliffs 70.00 57 *eP* **P 07 33 21.9 +2.5**
comp=Z,7.3nm,1.0s
I25A Rochford 70.02 47 P **P 07 33 19.6 +0.3**
baz=316,SNR=5.9
H26A Fairpoint 70.06 46 P **P 07 33 20.0 +0.6**
baz=317
C31A Landman Farms, 70.12 41 P **P 07 33 19.8 +0.2**
baz=318
F28A McLaughlin 70.13 44 P **P 07 33 20.4 +0.7**
baz=317
E29A Napoleon 70.15 43 P **P 07 33 20.2 +0.4**
baz=318
PFO Pinyon Flats O 70.16 62 P **P 07 33 21.5 +1.3**
baz=314
PFO Pinyon Flats O 70.16 62 *eP* **P 07 33 22.0 +1.8**
PFO pmax pmax
comp=Z,5.0nm,1.0s
PFO Pinyon Flats O 70.16 62 *eP* **P 07 33 22.0 +1.8**
comp=Z,4.6nm,1.0s
D30A Buchanan 70.16 42 P **P 07 33 20.1 +0.3**
baz=318,SNR=7.7
BELC Belle Mtn. Jos 70.17 61 P **P 07 33 21.2 +0.9**
baz=314
B32A Ashes, Strandq 70.20 40 P **P 07 33 20.0 0.0**
baz=319,SNR=5.4
A33A Warroad 70.29 39 P **P 07 33 20.3 -0.3**
baz=320,SNR=7.4
H27A Howes 70.39 45 P **P 07 33 21.8 +0.5**
baz=317,SNR=5.5
O20A White River Ci 70.41 52 P **P 07 33 22.5 +0.8**
baz=315
O20A White River Ci 70.41 52 *eP* **P 07 33 23.1 +1.3**
comp=Z,5.8nm,0.8s
J25A Sunshine Ranch 70.43 47 P **P 07 33 21.9 +0.2**
baz=316
I26A New Underwood 70.44 46 P **P 07 33 22.5 +0.8**
baz=317
E30A Jud 70.54 42 P **P 07 33 22.8 +0.6**
baz=318
AGMN Agassiz Nation 70.57 39 P **P 07 33 21.7 -0.5**
baz=319,SNR=5.1
AGMN Agassiz Nation 70.57 39 *eP* **P 07 33 22.2 -0.1**
comp=Z,10.0nm,1.1s
IRM Iron Mountain 70.58 61 P **P 07 33 23.5 +0.9**
baz=314,SNR=7.5
G28A Parade 70.64 44 P **P 07 33 22.9 +0.1**
baz=317
W13A Hualapai Mount 70.69 59 *eP* **P 07 33 24.9 +1.4**
comp=Z,4.1nm,0.9s
BC3 Big Chuckawall 70.74 61 P **P 07 33 25.0 +1.3**
baz=314
I27A Quinn 70.82 46 P **P 07 33 24.6 +0.7**
baz=317,SNR=6.8

J26A Sides Ranch, S 70.86 47 P **P 07 33 24.8 +0.6**
baz=317
H28A Mission Ridge 70.88 45 P **P 07 33 25.2 +1.0**
baz=317
AS01 Alice Springs 70.93 193 *eP* **P 07 33 26.1 +1.5**
ASAR Alice Springs 70.94 193 P **P 07 33 26.4 +1.7**
comp=Z,0.8nm,0.3s,baz=10,slow=6.1,SNR=17
B34A Aery, Baudette 70.95 39 P **P 07 33 24.1 -0.4**
baz=320
E31A Nome 70.97 42 P **P 07 33 25.1 +0.4**
baz=319
C33A Trail 71.02 40 P **P 07 33 25.3 +0.3**
baz=320
SWSC Sam W. Stewart 71.02 62 P **P 07 33 26.4 +1.2**
baz=314
PV09 Paradox Valley 71.06 54 *eP* **P 07 33 27.6 +1.7**
PHWY Pilot Hill 71.07 50 *eP* **P 07 33 26.7 +0.9**
comp=Z,4.6nm,0.6s
PDMCI Parker Dam,Lak 71.08 60 P **P 07 33 26.6 +1.0**
baz=314,SNR=5.1
N23A Red Feather La 71.11 50 P **P 07 33 27.4 +1.4**
baz=316
N23A Red Feather La 71.11 50 *eP* **P 07 33 27.8 +1.8**
comp=Z,35nm,1.8s
PV10 Paradox Valley 71.20 54 *eP* **P 07 33 28.6 +2.1**
Y12C Blythe 71.24 61 P **P 07 33 27.8 +1.3**
baz=314
Y12C Blythe 71.24 61 *eP* **P 07 33 28.5 +2.0**
comp=Z,8.6nm,0.8s
PV04 Paradox Valley 71.27 54 *eP* **P 07 33 28.0 +1.1**
I28A Midland 71.30 45 P **P 07 33 27.0 +0.2**
baz=318,SNR=8.8
H29A Onida 71.31 44 P **P 07 33 27.3 +0.5**
baz=318
F31A Hecla 71.32 42 P **P 07 33 26.8 -0.1**
baz=319,SNR=5.2
PV05 Paradox Valley 71.38 54 *eP* **P 07 33 29.5 +1.9**
J27A Elkhorn Farm, 71.43 46 P **P 07 33 28.6 +0.9**
baz=317
B35A Bob, Littlefor 71.44 38 P **P 07 33 27.8 +0.3**
baz=321
G30A Faulkton 71.45 43 P **P 07 33 27.8 +0.2**
baz=318,SNR=5.2
D33A AnnSam, Waubun 71.45 40 P **P 07 33 27.5 -0.2**
baz=320,SNR=5.6
C34A RKJ Ranch, Bem 71.48 39 P **P 07 33 27.9 +0.2**
baz=320
GLA Glamis 71.54 61 P **P 07 33 29.9 +1.5**
baz=314
PV01 Paradox Valley 71.64 54 *eP* **P 07 33 30.7 +1.6**
J28A Allard Ranch, 71.69 46 P **P 07 33 30.0 +0.8**
baz=318,SNR=17
I29A Vivian Onida 71.71 45 P **P 07 33 29.1 -0.1**
baz=318,SNR=6.8
SMCO Snowmass 71.78 52 *eP* **P 07 33 31.5 +1.3**
comp=Z,4.6nm,0.8s
D34A Park Rapids 71.78 40 P **P 07 33 29.3 -0.3**
baz=320
C35A Jirik Farms, M 71.84 39 P **P 07 33 29.5 -0.4**
baz=321
E33A Westby DABS, E 71.86 41 P **P 07 33 30.0 0.0**
baz=320,SNR=8.8
WUAZ Wupatki 71.88 57 P **P 07 33 32.4 +1.9**
baz=315
WUAZ Wupatki 71.88 57 *eP* **P 07 33 32.3 +1.8**
comp=Z,4.9nm,0.8s
SORM Soroca 71.92 322⇓*i*P **P 07 33 29.6 -0.7**
BEL Belsk 71.95 329 *eP* **P 07 33 30.4 0.0**
BEL Belsk 71.95 329 *eP* **P 07 33 30.4 0.0**
BEL Belsk 71.95 329 *eP* **P 07 33 30.4 0.0**
Y14A Wickenburg 72.02 60 *eP* **P 07 33 32.8 +1.5**
comp=Z,40nm,0.9s
SUSD Miller 72.05 44 P **P 07 33 32.0 +0.8**
baz=319
ISCO Idaho Springs 72.07 51 P **P 07 33 33.0 +1.2**
baz=316
ISCO Idaho Springs 72.07 51 *eP* **P 07 33 33.3 +1.5**
ISCO pmax pmax
comp=Z,14nm,1.4s
ISCO Idaho Springs 72.07 51 *eP* **P 07 33 33.3 +1.5**
comp=Z,14nm,1.4s
G32A Webster 72.12 42 P **P 07 33 32.0 +0.4**
baz=319
J29A Okreek 72.15 45 P **P 07 33 32.2 +0.4**
baz=318,SNR=9.1
I30A Oacoma 72.21 44 P **P 07 33 32.4 +0.2**
baz=318,SNR=9.9
F33A 5 Mile Ranch, 72.24 41 P **P 07 33 32.4 +0.2**
baz=320,SNR=6.7
H31A Wolsey 72.25 43 P **P 07 33 32.9 +0.6**
baz=319
C36A Pine Crest Far 72.29 38 P **P 07 33 32.6 0.0**
baz=321
MVCO Mesa Verde 72.33 54 P **P 07 33 34.7 +1.4**
baz=316
MVCO Mesa Verde 72.33 54 *eP* **P 07 33 34.6 +1.4**
comp=Z,11nm,0.8s
113A Mohawk Valley, 72.37 61 *eP* **P 07 33 34.8 +1.5**
comp=Z,4.8nm,1.1s
E35A Pequot Lakes 72.54 40 P **P 07 33 34.1 +0.1**
baz=321
C37A Embarrass 72.59 38 P **P 07 33 34.2 -0.1**
baz=322
D36A Goodland 72.60 39 P **P 07 33 34.3 -0.1**
baz=321
X16A Lo Mia Camp, P 72.61 58 *eP* **P 07 33 36.9 +2.0**
comp=Z,9.7nm,0.9s
J30A Dallas 72.62 45 P **P 07 33 35.1 +0.5**
baz=318
G33A Ortonville 72.66 42 P **P 07 33 34.8 0.0**
baz=320,SNR=7.9
EYMN Ely 72.71 37 *eP* **P 07 33 35.1 +0.1**
comp=Z,5.9nm,0.8s
H32A Carlson Farm, 72.72 43 P **P 07 33 35.2 0.0**
baz=319,SNR=5.8
F34A Alexandria 72.74 41 P **P 07 33 35.2 0.0**
baz=320
S22A 4UR Ranch, Cre 72.88 53 P **P 07 33 37.0 +0.5**
baz=316,SNR=12
S22A 4UR Ranch, Cre 72.88 53 *eP* **P 07 33 38.2 +1.7**
comp=Z,8.4nm,0.9s
H33A Prehn Over Nor 72.91 42 P **P 07 33 36.5 +0.3**
baz=320,SNR=10
Q24A Divide 72.92 51 P **P 07 33 36.6 -0.1**
baz=317
Q24A Divide 72.92 51 *eP* **P 07 33 36.9 +0.1**
comp=Z,6.7nm,0.8s
D37A Cotton 72.93 38 P **P 07 33 36.1 -0.2**
baz=322
C38A Sawbill Land. 72.98 37 P **P 07 33 36.4 -0.3**
baz=322,SNR=6.4
F35A Swanville 73.00 40 P **P 07 33 36.6 -0.1**
baz=321
KWP Kalwaria Pacla 73.02 326 *eP* **P 07 33 37.1 +0.3**
KWP Kalwaria Pacla 73.02 326 *eP* **P 07 33 37.1 +0.3**
K30A Basset 73.05 45 P **P 07 33 37.9 +0.7**
baz=319
I32A Karley and Nic 73.07 43 P **P 07 33 37.4 +0.2**
baz=319
E36A McGregor 73.07 39 P **P 07 33 37.0 -0.2**
baz=321,SNR=8.3
W18A Petrified Fore 73.11 57 P **P 07 33 39.1 +1.4**
baz=316
OGNE Ogallala 73.11 48 P **P 07 33 38.4 +0.8**
baz=318
I33A Coleman 73.36 43 P **P 07 33 39.3 +0.4**
baz=320,SNR=9.2
J32A Parkston 73.38 44 P **P 07 33 39.4 +0.4**
baz=319
X18A Snowflake 73.40 57 *eP* **P 07 33 41.6 +2.1**
comp=Z,6.0nm,0.8s
F36A Milaca 73.46 40 P **P 07 33 39.3 -0.1**
baz=321
K31A O'Neill 73.50 45 P **P 07 33 40.3 +0.5**
baz=319,SNR=7.0
G35A Watkins 73.53 41 P **P 07 33 40.0 +0.1**
baz=321
SDCO Great Sand Dun 73.61 52 P **P 07 33 42.2 +1.4**
baz=317
SDCO Great Sand Dun 73.61 52 *eP* **P 07 33 41.8 +1.0**
comp=Z,4.5nm,1.2s
BUR08 Bucovina Ar. S 73.62 324 *eP* **P 07 33 40.4 -0.1**
OJC Ojcow 73.63 328 *eP* **P 07 33 40.1 -0.3**
OJC Ojcow 73.63 328 *eP* **P 07 33 39.5 -0.8**
OJC pmax pmax
comp=Z,15nm,1.1s
OJC Ojcow 73.63 328 *eP* **P 07 33 39.5 -0.8**
comp=Z,15nm,1.1s

OJC Ojcow 73.63 328 *eP* **P 07 33 39.5 -0.8**
BURAR Bucovina Array 73.64 323⇑*i*P **P 07 33 40.3 -0.2**
KOLS Kolonicke sedl 73.75 326 *eP* **P 07 33 40.6 -0.5**
KOLS pmax pmax
comp=Z,7.0nm,0.9s
KOLS Kolonicke sedl 73.75 326 *eP* **P 07 33 40.6 -0.5**
STHS Stebnicka Huta 73.75 327 *eP* **P 07 33 41.5 +0.4**
STHS pmax pmax
comp=Z,7.0nm,0.8s
STHS Stebnicka Huta 73.75 327 *eP* **P 07 33 41.5 +0.4**
comp=Z,6.7nm,0.8s
STHS Stebnicka Huta 73.75 327 *eP* **P 07 33 41.5 +0.4**
H35A Sunnyside Ranc 73.78 41 P **P 07 33 41.5 +0.3**
baz=321,SNR=12
L31A Butterfield Fa 73.80 45 P **P 07 33 41.9 +0.4**
baz=319,SNR=14
I34A Hadley 73.81 42 P **P 07 33 42.0 +0.5**
baz=320
J33A Davis 73.84 43 P **P 07 33 41.9 +0.2**
baz=320
G36A St. Michael 73.85 40 P **P 07 33 42.0 +0.4**
baz=321
K32A Verdigre 73.86 44 P **P 07 33 42.0 +0.2**
baz=319
TESR Tescani 73.91 322⇑*i*P **P 07 33 42.0 0.0**
TLCR 74.00 320⇑*i*P **P 07 33 43.0 +0.5**
CRVS Cervenica-Dubn 74.09 326 *eP* **P 07 33 43.1 +0.1**
CRVS Cervenica-Dubn 74.09 326 *eP* **P 07 33 43.1 +0.1**
CRVS Cervenica-Dubn 74.09 326 *eP* **P 07 33 43.0 +0.1**
NIE Niedzica 74.11 327 *eP* **P 07 33 43.1 0.0**
NIE Niedzica 74.11 327 *eP* **P 07 33 43.1 0.0**
NIE Niedzica 74.11 327 *eP* **P 07 33 43.1 0.0**
KSCO Kaye Shedlock' 74.23 50 P **P 07 33 45.0 +0.9**
baz=318
SPMN Marine on St. 74.28 40 P **P 07 33 43.7 -0.4**
baz=322
H36A Jessenland, He 74.28 41 P **P 07 33 44.5 +0.4**
baz=321,SNR=5.6
CFR Carcaliu 74.31 320⇑*i*P **P 07 33 43.7 -0.6**
L32A Elgin 74.33 45 P **P 07 33 44.7 +0.1**
baz=320,SNR=6.3
KSP Ksiaz 74.35 330 *eP* **P 07 33 44.1 -0.3**
KSP Ksiaz 74.35 330 *eP* **P 07 33 44.1 -0.3**
KSP Ksiaz 74.35 330 *eP* **P 07 33 44.1 -0.3**
I35A Creekview Farm 74.36 42 P **P 07 33 44.7 0.0**
baz=321,SNR=6.2
M31A Lambtecht Ranc 74.36 46 P **P 07 33 45.0 +0.3**
baz=319
K33A Hardington 74.36 44 P **P 07 33 45.4 +0.7**
baz=320
VRI Vrincioaia 74.39 322⇑*i*P **P 07 33 45.4 +0.6**
TUC Tucson 74.48 59 P **P 07 33 47.4 +1.7**
baz=316
J35A Milford 74.63 42 P **P 07 33 45.6 -0.6**
baz=321,SNR=8.5
LANS Liptovska Anna 74.64 328 *eP* **P 07 33 46.5 +0.3**
LANS Liptovska Anna 74.64 328 *eP* **P 07 33 46.5 +0.3**
LANS Liptovska Anna 74.64 328 *eP* **P 07 33 46.5 +0.3**
T25A Trinidad 74.64 52 P **P 07 33 47.6 +0.9**
baz=317,SNR=9.3
T25A Trinidad 74.64 52 *eP* **P 07 33 48.0 +1.4**
comp=Z,8.2nm,0.9s
I36A Fitzsimmons Fa 74.67 41 P **P 07 33 46.7 +0.3**
baz=321
BGNE Belgrade 74.72 45 P **P 07 33 47.0 +0.3**
baz=320
H37A Dierke Farm, C 74.73 40 P **P 07 33 47.0 +0.2**
baz=322
K34A Le Mars 74.73 43 P **P 07 33 46.9 +0.1**
baz=320
DPC Dobruska-Polom 74.75 330 *eP* **P 07 33 46.6 -0.2**
DPC Dobruska-Polom 74.75 330 *eP* **P 07 33 46.6 -0.2**
N31A Bailey Ranch, 74.76 46 P **P 07 33 47.2 +0.1**
baz=319
KECS Kecovo 74.80 327 *eP* **P 07 33 46.3 -0.8**
KECS pmax pmax
comp=Z,3.0nm,0.9s
KECS Kecovo 74.80 327 *eP* **P 07 33 46.3 -0.8**
comp=Z,3.0nm,0.9s
KECS Kecovo 74.80 327 *eP* **P 07 33 46.3 -0.8**
MORC Moravsky Berou 74.81 329⇑*i*P **P 07 33 47.1 -0.1**
MORC Moravsky Berou 74.81 329 *eP* **P 07 33 47.1 -0.1**
MORC pmax pmax
comp=Z,38nm,0.8s
MORC Moravsky Berou 74.81 329 *eP* **P 07 33 46.9 -0.3**
MORC Moravsky Berou 74.81 329 *eP* **P 07 33 47.1 -0.1**
comp=Z,38nm,0.8s
DOPR Dopca 74.88 322⇑*i*P **P 07 33 49.1 +1.5**
SCHQ Schefferville 74.90 20 P **P 07 33 48.1 +0.5**
comp=Z,2.3nm,0.5s,baz=13,slow=6.5,SNR=12
SCHQ Schefferville 74.90 20 *eP* **P 07 33 48.7 +1.1**
comp=Z,22nm,1.6s
I37A Lemond, Waseca 74.95 41 P **P 07 33 48.5 +0.5**
baz=322,SNR=9.8
MLR Muntele Rosu 75.02 322⇑*i*P **P 07 33 49.2 +0.7**
MLR Muntele Rosu 75.02 322 *eP* **P 07 33 48.9 +0.4**
MLR pmax pmax
comp=Z,8.0nm,0.8s
MLR Muntele Rosu 75.02 322 *eP* **P 07 33 48.9 +0.4**
comp=Z,8.3nm,0.8s
CLL Collm 75.04 332⇑*i*P **P 07 33 47.4 -1.0**
comp=Z,15nm,0.9s
CLL Collm 75.04 332⇑*i*P **P 07 33 47.4 -1.0**
CLL pmax pmax
comp=Z,15nm,0.9s
CLL Collm 75.04 332 *eP* **P 07 33 47.7 -0.7**
comp=Z,17nm,0.9s
CLL Collm 75.04 332⇑*i*P **P 07 33 47.4 -1.0**
ISR Istrita 75.06 321⇑*i*P **P 07 33 49.6 +1.0**
M33A Taylor Creek F 75.06 45 P **P 07 33 48.8 +0.1**
baz=320
J36A Seneca 1, Swea 75.06 42 P **P 07 33 48.9 +0.3**
baz=321
O31A Woolen Ranch, 75.08 47 P **P 07 33 49.0 +0.2**
baz=319
ANMO Albuquerque 75.10 55 P **P 07 33 51.1 +1.7**
baz=317
ANMO Albuquerque 75.10 55 *eP* **P 07 33 51.0 +1.7**
ANMO pmax pmax
comp=Z,7.0nm,1.0s
ANMO Albuquerque 75.10 55 *eP* **P 07 33 51.0 +1.7**
comp=Z,6.5nm,1.0s
BRG Berggiesshubel 75.11 332 *e*(P) **P 07 33 48.1 -0.7**
comp=Z,5.7nm,1.2s
BRG Berggiesshubel 75.11 332 *eP* **P 07 33 48.1 -0.7**
BRG pmax pmax
comp=Z,6.0nm,1.2s
LAZ Ladron 75.11 56 *eP* **P 07 33 51.4 +2.1**
K35A Storm Lake 75.11 43 P **P 07 33 48.9 -0.1**
baz=321,SNR=5.8
L34A Svendsen Farm, 75.15 44 P **P 07 33 49.2 0.0**
baz=320,SNR=5.8
COWI Conover 75.16 37 *eP* **P 07 33 49.0 -0.1**
comp=Z,38nm,2.0s
DRGR 75.32 324⇓*i*P **P 07 33 49.9 -0.2**
M34A Aspy Farms, Fr 75.41 44 P **P 07 33 51.3 +0.6**
baz=320
VYHS Vyhne 75.41 328 *eP* **P 07 33 50.5 -0.1**
VYHS pmax pmax
comp=Z,4.0nm,1.1s
VYHS Vyhne 75.41 328 *eP* **P 07 33 50.5 -0.1**
comp=Z,4.4nm,1.1s
VYHS Vyhne 75.41 328 *eP* **P 07 33 50.5 -0.1**
I38A Scanlan Farm, 75.41 40 P **P 07 33 51.1 +0.5**
baz=322
J37A Redenius Farm, 75.44 41 P **P 07 33 50.7 -0.1**
baz=322,SNR=6.4
L35A Bielow Farm, R 75.44 43 P **P 07 33 50.9 +0.1**
baz=321
VOIR 75.44 322⇑*i*P **P 07 33 51.8 +0.9**
LPM Los Pinos Moun 75.46 55 *eP* **P 07 33 52.7 +1.4**
PSZ Piszkesteto 75.49 327⇑*i*P **P 07 33 51.2 +0.1**
PSZ Piszkesteto 75.49 327 *eP* **P 07 33 51.3 +0.1**
PSZ pmax pmax
comp=Z,7.0nm,0.8s
PSZ Piszkesteto 75.49 327 *eP* **P 07 33 51.3 +0.1**
comp=Z,7.4nm,0.8s
O32A Brockman Farm, 75.52 46 P **P 07 33 51.0 -0.3**
baz=320
VRAC Vranov 75.54 329⇑*i*P **P 07 33 51.9 +0.6**
VRAC Vranov 75.54 329 *eP* **P 07 33 51.1 -0.2**
K36A Gilmore City 75.54 42 P **P 07 33 51.4 -0.1**
baz=321,SNR=6.1
N33A J Bar K, Exete 75.57 45 P **P 07 33 52.0 +0.4**
baz=320
BNM Barren Site 75.58 56 *eP* **P 07 33 53.8 +1.7**

PRU	Pruhonice	75.67	331	eP	P	07 33 51.6	-0.4
PRU	Pruhonice	75.67	331	eP	P	07 33 51.6	-0.4
PRU	Pruhonice	75.67	331	eP	P	07 33 51.6	-0.4
K37A	Belmond	75.82	42	P	P	07 33 52.8	-0.2
	baz=322,SNR=8.3						
P32A	Huiting Farm,	75.84	47	P	P	07 33 52.8	-0.4
	baz=320,SNR=9.1						
L36A	Harm Buss Farm	75.86	43	P	P	07 33 53.5	+0.3
	baz=321						
M35A	Neola	75.86	44	P	P	07 33 53.3	+0.1
	baz=321,SNR=7.1						
CBKS	Cedar Bluff	75.88	48	P	P	07 33 53.4	0.0
	baz=319						
CBKS	Cedar Bluff	75.88	48	eP	P	07 33 53.2	-0.2
CBKS				pmax	pmax		
	comp=Z,6.0nm,0.6s						
CBKS	Cedar Bluff	75.88	48	eP	P	07 33 53.2	-0.2
	comp=Z,6.1nm,0.6s						
BR131	Keskin Array S	75.91	313	eP	P	07 33 53.6	-0.1
BRTR	Keskin Array B	75.91	313	P	P	07 33 53.9	+0.1
	comp=Z,5.2nm,0.9s,baz=73,slow=4.5,SNR=26						
J38A	Wedel Dairy, R	75.92	41	P	P	07 33 53.5	0.0
	baz=322						
O33A	Hebron	76.01	46	P	P	07 33 53.6	-0.4
	baz=320						
319A	Douglas	76.04	59	eP	P	07 33 56.2	+1.7
	comp=Z,16nm,1.0s						
SIRR	Siria	76.16	325	⇓ i P	P	07 33 55.4	+0.6
ANTO	Ankara	76.22	314	eP	P	07 33 56.2	+0.8
ANTO				pmax	pmax		
	comp=Z,14nm,0.7s						
ANTO	Ankara	76.22	314	eP	P	07 33 56.2	+0.8
	comp=Z,14nm,0.7s						
BR231	Keskin MP Arra	76.25	314	eP	P	07 33 57.0	+1.4
L37A	Phoenix Point,	76.27	42	P	P	07 33 55.4	0.0
	baz=322,SNR=9.5						
M36A	Felix, Anita	76.30	43	P	P	07 33 56.3	+0.6
	baz=321						
Q32A	Meitler Ranch,	76.34	47	P	P	07 33 55.5	-0.5
	baz=320,SNR=9.5						
N35A	Tabor	76.35	44	P	P	07 33 56.1	+0.1
	baz=321,SNR=6.3						
O34A	Beatrice	76.36	45	P	P	07 33 56.1	0.0
	baz=320						
L38A	Oak Wood Farm,	76.62	42	P	P	07 33 57.3	-0.2
	baz=322						
O35A	Humboldt	76.68	45	P	P	07 33 57.0	-0.8
	baz=321						
M37A	Trindle Farm,	76.69	43	P	P	07 33 58.8	+1.0
	baz=322						
R32A	Long Quarter,	76.70	48	P	P	07 33 57.7	-0.3
	baz=320						
Q33A	Connelly Farm,	76.70	47	P	P	07 33 58.0	0.0
	baz=320,SNR=11						
BZS	Buzias	76.71	324	⇑ i P	P	07 33 58.4	+0.5
KHC	Kasperske Hory	76.73	331	eP	P	07 33 57.7	-0.2
KHC	Kasperske Hory	76.73	331	eP	P	07 33 57.8	-0.2
KHC				pmax	pmax		
	comp=Z,4.0nm,0.9s						
KHC	Kasperske Hory	76.73	331	eP	P	07 33 57.8	-0.2
	comp=Z,4.1nm,0.9s						
KHC	Kasperske Hory	76.73	331	eP	P	07 33 57.8	-0.2
P34A	Walnut Farm, R	76.79	46	P	P	07 33 58.3	-0.2
	baz=321,SNR=7.1						
GEC2	GERESS Array S	76.93	331	eP	P	07 33 59.2	0.0
GEC2				pmax	pmax		
	comp=Z,5.0nm,0.9s						
GEC2	GERESS Array S	76.93	331	eP	P	07 33 59.1	0.0
	comp=Z,4.5nm,0.9s						
GERES	GERESS Array B	76.93	331	P	P	07 33 58.7	-0.5
	comp=Z,3.0nm,0.7s,baz=36,slow=5.0,SNR=18						
GEA0	GERESS Array S	76.94	331	eP	P	07 33 58.6	-0.6
CONA	Conrad Observa	76.97	329	eP	P	07 33 59.7	+0.3
	comp=Z,8.1nm,0.9s						
GRFO	Grafenberg	77.01	333	eP	P	07 33 59.8	+0.3
GRFO				pmax	pmax		
	comp=Z,15nm,0.9s						
GRFO	Grafenberg	77.01	333	eP	P	07 33 59.8	+0.3
	comp=Z,15nm,0.9s						
M38A	Pleasantville	77.08	42	P	P	07 34 00.5	+0.5
	baz=322						
N37A	Lee Faris, Mou	77.12	43	P	P	07 34 00.5	+0.2
	baz=322,SNR=6.2						
S32A	Newby Ranch, P	77.13	48	P	P	07 34 00.4	0.0
	baz=320						
R33A	Olander Ranch,	77.15	47	P	P	07 34 00.1	-0.4
	baz=320						
P35A	Duane Minner,	77.20	45	P	P	07 34 00.8	0.0
	baz=321						
JFWS	Jewell Farm	77.23	40	eP	P	07 34 00.0	-0.8
JFWS				pmax	pmax		
	comp=Z,6.0nm,0.6s						
JFWS	Jewell Farm	77.23	40	eP	P	07 34 00.0	-0.8
	comp=Z,6.1nm,0.6s						
KSU1	Kansas State U	77.24	46	eP	P	07 34 00.6	-0.4
	comp=Z,7.6nm,0.6s						
O36A	Bolckow	77.25	44	P	P	07 34 01.0	0.0
	baz=321						
PKSM	Moragy	77.39	326	⇓ i P	P	07 34 00.9	-0.7
P36A	Good Intent, A	77.53	45	P	P	07 34 02.6	0.0
	baz=321						
T32A	Huddler Ranch,	77.53	49	P	P	07 34 03.0	+0.4
	baz=320						
R34A	Isabella, Hill	77.53	47	P	P	07 34 02.8	+0.2
	baz=320						
N38A	Joes South For	77.55	43	P	P	07 34 02.6	0.0
	baz=322						
MOA	Molln	77.59	330	eP	P	07 34 01.5	-1.3
	comp=Z,6.3nm,1.0s						
O37A	Wolven Farm, M	77.61	44	P	P	07 34 03.6	+0.6
	baz=322						
S33A	Kaszmaul Farm,	77.69	48	P	P	07 34 03.4	-0.1
	baz=320						
Q35A	Mercer Eighty,	77.71	46	P	P	07 34 03.4	-0.2
	baz=321						
AMTX	Amarillo	77.80	52	P	P	07 34 05.1	+0.9
	baz=319						
AMTX	Amarillo	77.80	52	eP	P	07 34 05.0	+0.8
	comp=Z,11nm,0.8s						
N39A	Derby Farms, D	77.83	42	P	P	07 34 04.4	+0.2
	baz=323,SNR=5.9						
MSTX	Muleshoe	77.88	53	P	P	07 34 05.7	+1.0
	baz=319						
T33A	Patterson Ranc	77.96	48	P	P	07 34 05.5	+0.5
	baz=320						
P37A	Lathrop	77.97	44	P	P	07 34 04.8	-0.1
	baz=322,SNR=5.6						
O38A	Galt	77.97	43	P	P	07 34 05.3	+0.4
	baz=322						
R35A	Emporia Munici	78.04	46	P	P	07 34 06.0	+0.6
	baz=321						
S34A	Willow Spring	78.06	47	P	P	07 34 05.5	0.0
	baz=321						
MNTX	Cornudas Mount	78.09	56	P	P	07 34 07.2	+1.5
	baz=318						
U32A	Winter Ranch,	78.10	49	P	P	07 34 06.7	+0.9
	baz=320						
O39A	Kirksville	78.30	43	P	P	07 34 06.8	+0.1
	baz=323,SNR=7.7						
P38A	Dawn	78.33	44	P	P	07 34 07.3	+0.4
	baz=322,SNR=7.4						
SOKA	Soboth	78.33	329	i P	P	07 34 06.7	-0.2
	comp=Z,12nm,1.0s						
R36A	Gordon, Harris	78.39	46	P	P	07 34 07.6	+0.3
	baz=321						
S35A	Otter Creek Ra	78.48	47	P	P	07 34 08.0	+0.2
	baz=321,SNR=7.6						
U33A	Lingo Farm, Me	78.52	49	P	P	07 34 08.3	+0.3
	baz=320,SNR=5.9						
T34A	McClaskey Farm	78.54	48	P	P	07 34 08.5	+0.4
	baz=321,SNR=8.7						
KBA	Koelnbreinsper	78.58	330	eP	P	07 34 08.7	+0.3
	comp=Z,14nm,0.8s						
V32A	Arapaho	78.58	50	P	P	07 34 09.4	+1.0
	baz=320						
OBKA	Obir	78.65	329	i P	P	07 34 09.0	+0.4
	comp=Z,5.3nm,0.8s						
O40A	La Belle	78.72	42	P	P	07 34 09.1	+0.1
	baz=323,SNR=8.8						
R37A	Teagarden Farm	78.73	45	P	P	07 34 09.3	+0.2
	baz=322						
S36A	Lake Cedric, C	78.81	46	P	P	07 34 09.6	+0.1
	baz=321,SNR=6.2						
Q38A	Cooks Store, C	78.81	44	P	P	07 34 09.2	-0.3
	baz=322,SNR=8.6						
U34A	Anderson Ranch	78.82	48	P	P	07 34 09.9	+0.3
	baz=321,SNR=8.9						
U34A	Anderson Ranch	78.82	48	eP	P	07 34 09.8	+0.2
	comp=Z,19nm,0.6s						
V33A	Lossen Ranch,	78.90	49	P	P	07 34 10.4	+0.3
	baz=320						
W32A	Sentinel	78.92	50	P	P	07 34 11.2	+0.9
	baz=320						
T35A	Sooner Cattle	78.97	47	P	P	07 34 10.8	+0.4
	baz=321						
WTTA	Wattenberg	79.00	331	i P	P	07 34 10.9	+0.3
	comp=Z,18nm,1.2s						
Q39A	Willow Grove F	79.05	44	P	P	07 34 11.3	+0.5
	baz=323						
RETA	Reutte	79.09	332	eP	P	07 34 11.0	0.0
	comp=Z,6.2nm,0.9s						
MOTA	Moosalm	79.10	332	i P	P	07 34 11.5	+0.4
	comp=Z,22nm,1.1s						
P40A	Paris	79.11	43	P	P	07 34 11.6	+0.5
	baz=323						
BFO	Black Forest	79.11	334	i P	P	07 34 11.9	+0.9
BFO	Black Forest	79.11	334	eP	P	07 34 10.6	-0.5
	comp=Z,7.1nm,1.1s						
S37A	Fort Scott	79.16	46	P	P	07 34 11.8	+0.3
	baz=322						
T36A	Boggs Farm, Ca	79.18	47	P	P	07 34 12.2	+0.6
	baz=321						
R38A	Fenwick Farm,	79.28	45	P	P	07 34 11.6	-0.4
	baz=322						
U35A	Pawnee	79.28	48	P	P	07 34 12.8	+0.6
	baz=321						
V34A	Guthrie	79.29	49	P	P	07 34 13.2	+1.1
	baz=321						
V34A	Guthrie	79.29	49	eP	P	07 34 13.3	+1.1
	comp=Z,16nm,0.9s						
W33A	Caddo, Fort Co	79.31	50	P	P	07 34 13.8	+1.4
	baz=320						
X32A	Elmer	79.44	51	P	P	07 34 13.6	+0.6
	baz=320						
WMOK	Wichita Mounta	79.46	50	eP	P	07 34 13.7	+0.5
WMOK				pmax	pmax		
	comp=Z,14nm,1.5s						
WMOK	Wichita Mounta	79.46	50	eP	P	07 34 13.7	+0.5
	comp=Z,14nm,1.5s						
FETA	Feichten	79.51	332	eP	P	07 34 13.6	+0.2
	comp=Z,11nm,1.2s						
Q40A	Laux Farm, Aux	79.52	43	P	P	07 34 13.5	+0.1
	baz=323						
DAVA	Damuels	79.55	332	eP	P	07 34 12.9	-0.7
	comp=Z,7.5nm,0.8s						
HDIL	Hopedale	79.55	41	P	P	07 34 13.3	-0.2
	baz=324						
HDIL	Hopedale	79.55	41	eP	P	07 34 14.1	+0.6
	comp=Z,22nm,0.9s						
R39A	Chumby, Stover	79.60	44	P	P	07 34 13.6	-0.2
	baz=323						
T37A	Cheneyville 18	79.61	46	P	P	07 34 14.4	+0.5
	baz=322						
V35A	Meyer Ranch, C	79.69	48	P	P	07 34 14.8	+0.4
	baz=321						
S38A	Stockton	79.71	45	P	P	07 34 14.5	+0.1
	baz=322						
X33A	Lawton	79.76	50	P	P	07 34 15.5	+0.7
	baz=320						
U36A	Oologah	79.77	47	P	P	07 34 15.0	+0.3
	baz=322						
S39A	Bolivar	79.95	45	P	P	07 34 15.5	-0.2
	baz=322						
R40A	Maddies Statio	79.98	44	P	P	07 34 15.9	0.0
	baz=323						
T38A	Diamond	79.99	46	P	P	07 34 16.4	+0.4
	baz=322						
FUORN	Ofenpass-Fuorn	80.01	332	eP	P	07 34 16.4	+0.2
	comp=Z,9.1nm,0.9s						
X34A	Smith Ranch, M	80.07	50	P	P	07 34 18.1	+1.7
	baz=321						
U37A	Salina	80.07	47	P	P	07 34 16.9	+0.5
	baz=322						
Y33A	Hilltop Ranch,	80.11	51	P	P	07 34 17.2	+0.6
	baz=320						
TUL1	Leonard	80.11	47	P	P	07 34 17.6	+1.0
	baz=322						
TUL1	Leonard	80.11	47	eP	P	07 34 17.4	+0.8
	comp=Z,10nm,0.8s						
V36A	Jenks	80.14	48	P	P	07 34 17.5	+0.8
	baz=322						
W35A	Tecumseh	80.15	49	P	P	07 34 17.2	+0.4
	baz=321						
U38A	Gravette	80.41	46	P	P	07 34 18.4	+0.2
	baz=322						
S40A	Lebanon	80.42	44	P	P	07 34 18.4	+0.1
	baz=323						
T39A	Clever	80.45	45	P	P	07 34 18.6	+0.2
	baz=323						
V37A	Hulbert	80.47	47	P	P	07 34 19.1	+0.6
	baz=322						
TRQ	Mont Tremblant	80.49	28	eP	P	07 34 19.1	+0.7
W36A	Wetumka	80.49	48	P	P	07 34 19.3	+0.7
	baz=321						
Z33A	Whitaker Ranch	80.58	51	P	P	07 34 19.4	+0.3
	baz=320						
Y34A	Reagan Ranch,	80.61	50	P	P	07 34 20.1	+0.9
	baz=321						
LMQ	La Malbaie	80.61	25	eP	P	07 34 19.3	+0.2
	comp=Z,32nm,1.3s						
ABTX	Abilene, Hawle	80.61	52	P	P	07 34 20.4	+1.0
	baz=320						
ABTX	Abilene, Hawle	80.61	52	eP	P	07 34 20.6	+1.3
	comp=Z,8.3nm,1.1s						
SFIN	Lafayette	80.67	39	P	P	07 34 19.3	-0.1
	baz=326						
SFIN	Lafayette	80.67	39	eP	P	07 34 19.8	+0.3
	comp=Z,8.8nm,0.8s						
X35A	Drake	80.68	49	P	P	07 34 20.2	+0.6
	baz=321						
HHAR	Hobbs	80.76	46	eP	P	07 34 20.5	+0.5
	comp=Z,9.9nm,1.0s						
T40A	Mansfield	80.77	45	P	P	07 34 19.8	-0.2
	baz=323,SNR=6.8						
TX31	Lajitas Ar. Si	80.83	57	eP	P	07 34 21.9	+1.2
TXAR	Lajitas Array	80.83	57	P	P	07 34 21.9	+1.2
	comp=Z,10nm,0.8s,baz=293,slow=3.9,SNR=90						
V38A	Canehill	80.85	47	P	P	07 34 20.9	+0.3
	baz=322						
X36A	Centrahoma	80.87	49	P	P	07 34 21.5	+0.9
	baz=321						
W37B	Quinton	80.90	48	P	P	07 34 21.7	+0.9
	baz=322						
U39A	Green Forest	80.91	46	P	P	07 34 21.2	+0.4
	baz=323						
Z34A	Collier Ranch,	80.97	50	P	P	07 34 21.9	+0.7
	baz=321						
133A	Hamilton Ranch	81.02	52	P	P	07 34 22.1	+0.6
	baz=320						
Y35A	Marietta	81.02	50	P	P	07 34 22.4	+1.0
	baz=321						
U40A	Yellville	81.23	45	P	P	07 34 23.1	+0.5
	baz=323						
V39A	Pettigrew	81.25	46	P	P	07 34 23.1	+0.4
	baz=323						
W38A	Poteau	81.42	47	P	P	07 34 24.2	+0.8
	baz=322						
Y36A	Durant	81.42	49	P	P	07 34 24.4	+0.8
	baz=322						
HPIG		81.44	60	eP	P	07 34 25.5	+1.5
	comp=Z,5.8nm,1.0s						
233A	Rising Star	81.48	52	P	P	07 34 24.7	+0.8
	baz=320						
OLIL	Olney	81.57	41	eP	P	07 34 25.0	+0.8
	comp=Z,38nm,1.6s						
X38A	Whitesboro	81.58	48	P	P	07 34 25.3	+1.0
	baz=322						
V40A	Witts Springs	81.69	46	P	P	07 34 25.2	+0.3
	baz=323						
W39A	Magazine	81.69	47	P	P	07 34 25.1	+0.2
	baz=323						
Z36A	Blue Ridge	81.83	50	P	P	07 34 26.2	+0.5
	baz=322						
135A	Vickery Place,	81.87	51	P	P	07 34 27.0	+1.1
	baz=321						
SIUC	Southern Illin	81.88	42	eP	P	07 34 26.4	+0.5
	comp=Z,21nm,0.8s						
234A	Clairette	81.90	52	P	P	07 34 27.2	+1.1
	baz=321						
333A	Richland Sprin	81.96	53	P	P	07 34 27.6	+1.2
	baz=321						
W40A	Ferguson Farm,	82.05	46	P	P	07 34 27.5	+0.7
	baz=323						
X39A	Fountain Ranch	82.06	47	P	P	07 34 27.7	+0.9
	baz=322						
PBMO	Poplar Bluff	82.07	43	eP	P	07 34 27.4	+0.6
	comp=Z,42nm,0.8s						
JCT	Junction City	82.16	54	P	P	07 34 28.4	+0.9
	baz=320						
Y38A	Idabel	82.21	48	P	P	07 34 28.1	+0.6
	baz=322						
WHTX	Lake Whitney,	82.28	51	P	P	07 34 28.9	+0.9
	baz=321						
WHTX	Lake Whitney,	82.28	51	eP	P	07 34 29.3	+1.3
	comp=Z,16nm,0.8s						
MIAR	Mount Ida	82.31	47	P	P	07 34 29.0	+0.9
	baz=323						
Z37A	Pogue Cattle C	82.31	49	P	P	07 34 29.2	+1.1
	baz=322						
433A	Art	82.34	53	P	P	07 34 29.1	+0.7
	baz=321						
X301	Greenbrier Sit	82.35	46	eP	P	07 34 28.9	+0.6
	comp=Z,18nm,1.4s						
WHAR	Wooly Hollow	82.36	46	eP	P	07 34 29.1	+0.8
	comp=Z,16nm,0.8s						
334A	Lometa	82.37	52	P	P	07 34 29.3	+0.8
	baz=321						
136A	Ennis	82.40	50	P	P	07 34 29.2	+0.6
	baz=322						
W41A	Tony Mavity, V	82.47	46	P	P	07 34 29.7	+0.7
	baz=323						
W41B	Gary Mavity, V	82.47	46	P	P	07 34 29.7	+0.7
	baz=323						
Y39A	Lockesburg	82.52	48	P	P	07 34 30.3	+1.0
	baz=322						
ACSO	Alum Creek Sta	82.54	37	eP	P	07 34 29.4	+0.2
	comp=Z,7.8nm,0.7s						
X40A	Basin Creek Fa	82.73	46	P	P	07 34 31.2	+1.0
	baz=323						
M54A	Oil Creek Stat	82.77	34	P	P	07 34 30.2	-0.2
	baz=330						
WCI	Wyandotte Cave	82.79	40	eP	P	07 34 31.4	+0.8
WCI				pmax	pmax		
	comp=Z,13nm,0.8s						
WCI	Wyandotte Cave	82.79	40	eP	P	07 34 31.4	+0.8
	comp=Z,12nm,0.8s						
533A	Kerrville	82.90	53	P	P	07 34 32.4	+1.2
	baz=321						
138A	Matatall Enter	83.01	49	P	P	07 34 33.5	+1.7
	baz=322						
N54A	Moraine State	83.12	34	P	P	07 34 32.7	+0.5
	baz=329						
534A	Blanco	83.24	53	P	P	07 34 34.2	+1.2
	baz=321						
633A	Saathoff Ranch	83.29	54	P	P	07 34 34.2	+1.0
	baz=321						
ACCN	Adirondack Com	83.29	29	eP	P	07 34 33.3	+0.3
	comp=Z,14nm,1.1s						
Z40A	Long Farm, Mag	83.42	48	P	P	07 34 34.7	+0.9
	baz=323						
LAST	Lasithi	83.51	316	⇑ i P	P	07 34 34.3	0.0
LAST	Lasithi	83.51	316	eP	P	07 34 33.9	-0.4
	comp=Z,39nm,1.1s						
LMN	Caledonia Moun	83.69	22	eP	P	07 34 35.6	+0.6
	comp=Z,18nm,0.8s						
535A	Dale	83.73	52	P	P	07 34 36.3	+0.8
	baz=321						
832A	Faith Ranch, C	83.74	55	P	P	07 34 37.1	+1.5
	baz=320						
Y42A	Garnett, Star	83.77	46	P	P	07 34 36.9	+1.4
	baz=324						
733A	Divot King Ran	83.79	54	P	P	07 34 37.5	+1.8
	baz=321						
WVT	Waverly	83.82	42	eP	P	07 34 36.5	+0.7
WVT				pmax	pmax		
	comp=Z,7.0nm,0.8s						
WVT	Waverly	83.82	42	eP	P	07 34 36.5	+0.7
	comp=Z,7.1nm,0.8s						
SIVA	Sivas	83.94	316	⇑ i P	P	07 34 36.3	-0.1
NATX	Nacogdoches	83.94	49	P	P	07 34 38.2	+1.7
	baz=322						
536A	Bastrop	83.97	52	P	P	07 34 37.9	+1.2
	baz=322						
Z42A	Norrel Spur, H	84.14	47	P	P	07 34 38.8	+1.4
	baz=324						
141A	Papa Simpson,	84.19	48	P	P	07 34 39.0	+1.3
	baz=323						
SSPA	Standing Stone	84.20	33	eP	P	07 34 38.1	+0.4
	comp=Z,36nm,1.8s						
O56A	Blue Knob Stat	84.26	34	P	P	07 34 38.1	+0.1
	baz=330						
636A	Smothers Creek	84.44	52	P	P	07 34 40.6	+1.6
	baz=322						
Y44A	Strider, Charl	84.44	45	P	P	07 34 39.3	+0.3
	baz=324						
735A	Kenedy	84.51	53	P	P	07 34 41.2	+1.9
	baz=321						
933A	Laredo	84.65	55	P	P	07 34 42.0	+1.9
	baz=321						
834A	Tilden	84.66	54	P	P	07 34 42.0	+1.9
	baz=321						
N59A	State Game Lan	84.74	32	P	P	07 34 40.9	+0.6
	baz=332						
736A	Circle Diamond	84.84	53	P	P	07 34 41.9	+0.9
	baz=322						
Y46A	Houston	85.17	44	P	P	07 34 42.9	+0.4
	baz=325,SNR=7.9						
TZTN	Tazewell	85.40	39	eP	P	07 34 44.5	+0.9
	comp=Z,9.3nm,0.8s						
SWET	Sewanee	85.44	41	eP	P	07 34 44.3	+0.3
	comp=Z,5.3nm,0.6s						
Y47A	UCPARC, Winfie	85.63	43	P	P	07 34 45.1	+0.3
	baz=326						
244A	Avery, Jackson	85.76	46	P	P	07 34 47.0	+1.5
	baz=324						
CPCT	Cooper Cave	85.89	40	eP	P	07 34 46.8	+0.8
	comp=Z,5.2nm,0.8s						
TKL	Tuckaleechee C	86.04	40	eP	P	07 34 47.7	+0.8
TKL				pmax	pmax		
	comp=Z,9.0nm,0.8s						
TKL	Tuckaleechee C	86.04	40	eP	P	07 34 47.7	+0.8
	comp=Z,9.3nm,0.8s						
146A	Union	86.08	45	P	P	07 34 48.5	+1.4
	baz=325						
Z47A	Carrollton	86.10	44	P	P	07 34 47.8	+0.7
	baz=326						
245A	Little AP, Sta	86.16	46	P	P	07 34 48.9	+1.5
	baz=325						
147A	Livingston	86.43	44	P	P	07 34 49.8	+1.1
	baz=325						
345A	Thompson Farm,	86.68	46	P	P	07 34 51.6	+1.6
	baz=325						
247A	Quitman	86.78	45	P	P	07 34 52.1	+1.7
	baz=325						
347A	Saraland	87.34	45	P	P	07 34 54.4	+1.3
	baz=325						
KMSC	Kings Mountain	87.54	38	P	P	07 34 54.4	+0.4
	baz=329						
KMSC	Kings Mountain	87.54	38	eP	P	07 34 54.8	+0.8
	comp=Z,11nm,1.0s						
ESDC	Sonseca Array	90.53	338	P	P	07 35 06.5	-1.4
	comp=Z,0.3nm,0.3s,baz=345,slow=4.5,SNR=3.5						
DBIC	Dimbokro	121.69	327	PKP	PKPdf	07 40 58.0	-0.5
	comp=Z,3.0nm,0.8s,baz=83,slow=0.4,SNR=5.7						
DBIC	Dimbokro	121.69	327	ePKIKP	PKPdf	07 40 57.8	-0.7
DBIC	Dimbokro	121.69	327	ePKPdf	PKPdf	07 40 57.8	-0.7
LPAZ	La Paz	137.70	57	PKP	PKPdf	07 41 31.0	+1.5
	comp=Z,1.2nm,1.0s,baz=335,slow=4.7,SNR=5.4						
LPAZ				SKP		07 44 37.1	
	comp=Z,2.6nm,1.1s,baz=302,slow=1.6,SNR=5.1						
LCO	Las Campanas	145.41	73	ePKPdf	PKPab	07 41 44.0	+0.3
SNAA	Sanae	151.18	199	ePKIKP	PKPbc	07 41 57.0	+0.6
SNAA	Sanae	151.18	199	ePKPbc	PKPbc	07 41 57.0	+0.6
CPUP	Villa Florida	151.74	53	PKPbc	PKPbc	07 41 59.3	+0.3
	comp=Z,1.3nm,0.4s,baz=347,slow=1.0,SNR=5.1						
PLCA	Paso Flores	151.94	92	PKPbc	PKPbc	07 42 00.3	+1.2
	comp=Z,3.0nm,0.7s,baz=311,slow=2.7,SNR=7.7						
PLCA	Paso Flores	151.94	92	ePKPbc	PKPbc	07 42 00.4	+1.3

DJA 03 07:30:10.9±0.9, 8°S±6°, 10°7E±°, h19km±8km, M4.0/11, MLv4.0/11, South of Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CNJI	Cibinong	0.88	23	P	P

CGJI	**Cibinong**	**1.84**	**324**	P	Pn	07 30 41.5	-0.1
TNG	**Tangerang**	**1.94**	**356**	P	Pn	07 30 42.8	-0.1
SBJI	**Serang**	**2.09**	**342**	P	Pn	07 30 45.1	+0.2
UGM	**Wanagama**	**3.71**	**87**	P	Pn	07 31 07.1	-0.2
PCJI	**Pacitan**	**4.35**	**91**	P	Pn	07 31 16.6	+0.5

*CSEM **03** 07:33:08.5±0.7, 50.°99N×19.°68E, h1km, Error ellipse: s-maj=25.2km s-min=15.2km az=141.0*

PRU 03 07:33:36.0, 49.°83N×18.°42E, h0km, Czech and Slovak Republics

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OKC	**Ostrava-Krasne**	**0.18**	**273**	*e*PG	Pg	07 33 39.5	+0.1
OKC				*e*SG	Sg	07 33 41.7	0.0
	comp=Z,14nm,0.3s						
OKC	**Ostrava-Krasne**	**0.18**	**273**	*e*P	Pg	07 33 39.5	+0.1
OKC	**Ostrava-Krasne**	**0.18**	**273**	Pg	Pg	07 33 39.5	+0.1
DPC	**Dobruska-Polom**	**1.45**	**292**	*e*SG	Sg	07 34 22.2	-0.3
	comp=Z,1.3nm,0.2s						
DPC	**Dobruska-Polom**	**1.45**	**292**	Sg	Sg	07 34 22.2	-0.3
	1.3nm,0.2s						

*CSEM **03** 07:41:14.5±0.3, 41.°00N×43.°89E, h2km, ML2.7, Error ellipse: s-maj=7.0km s-min=3.5km az=155.0*
*TIF **03** 07:41:14.5, 41.°07N×43.°90E, h10km±1km*
*DDA **03** 07:41:15.1, 41.°86N×43.°64E, h7km, Md3.2*

ISC 03 07:41:15.4±1.1, 41.°08N±0.°03×43.°87E±0.°02, h13km±9km, n23, σ0.°74/46, Turkey-Georgia-Armenia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKH	**Akhalkalaki**	**0.43**	**319**	P	**Pg**	**07 41 24.1**	**0.0**
AKH				S	**Sg**	**07 41 30.3**	**+0.4**
AKH	**Akhalkalaki**	**0.43**	**319**	P	**Pg**	**07 41 24.1**	**0.0**
AKH				S	**Sg**	**07 41 30.3**	**+0.4**
KZR	**Kazreti**	**0.51**	**54**	P	**Pg**	**07 41 25.1**	**-0.3**
KZR				S	**Sg**	**07 41 31.8**	**-0.3**
KZR	**Kazreti**	**0.51**	**54**	P	**Pg**	**07 41 25.1**	**-0.3**
KZR				S	**Sg**	**07 41 31.8**	**-0.3**
TBLG	**Delisi**	**0.92**	**45**	P	**Pn**	**07 41 34.2**	**+0.1**
TBLG				S	**Sn**	**07 41 46.9**	**-0.3**
TBLG	**Delisi**	**0.92**	**45**	P	**Pn**	**07 41 34.2**	**+0.1**
TBLG				S	**Sn**	**07 41 46.9**	**-0.3**
SEAG	**Tbilisi Sea**	**0.98**	**46**	P	**Pg**	**07 41 33.7**	**-0.5**
SEAG				S	**Sb**	**07 41 47.1**	**0.0**
SEAG	**Tbilisi Sea**	**0.98**	**46**	P	**Pg**	**07 41 33.7**	**-0.5**
SEAG				S	**Sb**	**07 41 47.1**	**0.0**
DUS	**Dusheti**	**1.18**	**31**	P	**Pn**	**07 41 37.9**	**+0.1**
DUS				S	**Sn**	**07 41 55.1**	**+1.3**
DUS	**Dusheti**	**1.18**	**31**	P	**Pn**	**07 41 37.8**	**+0.1**
DUS				S	**Sn**	**07 41 55.1**	**+1.3**
DGRG	**David-gareji**	**1.19**	**72**	P	**Pg**	**07 41 37.8**	**-0.5**
DGRG				S	**Sn**	**07 41 55.4**	**+1.5**
DGRG	**David-gareji**	**1.19**	**72**	P	**Pb**	**07 41 37.6**	**-0.2**
DGRG				S	**Sn**	**07 41 53.8**	**-0.1**
GUDG	**Gudauri**	**1.45**	**18**	P	**Pg**	**07 41 43.0**	**-0.3**
GUDG				S	**Sg**	**07 42 02.9**	**+0.7**
GUDG	**Gudauri**	**1.45**	**18**	P	**Pg**	**07 41 43.0**	**-0.3**
GUDG				S	**Sg**	**07 42 02.9**	**+0.7**
DAGI	**Agillar**	**1.48**	**270**	*i* P	**Pb**	**07 41 43.1**	**+0.3**
DAGI				*i* S	**Sg**	**07 42 03.5**	**+0.5**
ONI	**Oni**	**1.54**	**348**	P	**Pb**	**07 41 43.9**	**+0.1**
ONI				S	**Sg**	**07 42 05.0**	**+0.1**
ONI	**Oni**	**1.54**	**348**	P	**Pb**	**07 41 43.9**	**+0.1**
ONI				S	**Sg**	**07 42 04.7**	**-0.2**
EATA	**Eleskirt**	**1.61**	**221**	P	**Pn**	**07 41 42.5**	**-1.3**
EATA				S	**Sg**	**07 42 09.4**	**+2.2**
EATA	**Eleskirt**	**1.61**	**221**	*e*P	**Pn**	**07 41 42.5**	**-1.3**
EATA				*i* S	**Sg**	**07 42 09.4**	**+2.2**
DBAD	**Bademkaya**	**1.65**	**268**	P	**Pb**	**07 41 45.7**	**0.0**
DBAD				S	**Sg**	**07 42 07.9**	**-0.5**
DBAD	**Bademkaya**	**1.65**	**268**	*i* P	**Pb**	**07 41 45.7**	**0.0**
DBAD				*i* S	**Sg**	**07 42 08.0**	**-0.5**
DBOC	**Borcka**	**1.68**	**280**	P	**Pb**	**07 41 46.4**	**+0.1**
DBOC				S	**Sn**	**07 42 05.6**	**-0.5**
DBOC	**Borcka**	**1.68**	**280**	*i* P	**Pb**	**07 41 46.4**	**+0.1**
DBOC				*i* S	**Sn**	**07 42 05.6**	**-0.5**

*SOME **03** 07:53:55.9, 41.°00N×73.°72E, h5km*
*KRNET **03** 07:53:55.5±0.1, 41.°02N×73.°69E, h16km, mb3.1*
*NNC **03** 07:53:57.0±0.5, 41.°00N×73.°60E, h0km, mb3.6, mpv3.4, Error ellipse: s-maj=8.4km s-min=3.0km az=93.0*

ISC 03 07:53:54.8±1.2, 40.°97N±0.°03×73.°72E±0.°02, h5km±13km, n34, σ1.°40/64, 20C-23D, Kyrgyzstan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OHH	**Osh**	**0.84**	**238**	⇑*i* P	**Pn**	**07 54 12.7**	**-0.6**
OHH	baz=235			⇑*i* S	**Sg**	**07 54 23.5**	**+1.7**
SFK	**Sufi-Kurgan**	**0.97**	**190**	⇑*e*P	**Pb**	**07 54 14.9**	**+0.7**
SFK	baz=188			⇑*i* S	**Sn**	**07 54 30.8**	**+1.2**
SFK	**Sufi-Kurgan**	**0.97**	**190**	⇓P	**Pb**	**07 54 14.9**	**+0.7**
SFK	21nm,0.2s			⇑S	**Sn**	**07 54 30.1**	**+0.6**
AML	**Almayashu**	**1.16**	**359**	⇓*i* P	**Pg**	**07 54 17.6**	**+0.6**
AML	baz=359			⇓*i* S	**Sn**	**07 54 33.1**	**-1.3**
UCH	**Uchtor**	**1.39**	**25**	⇓*i* P	**Pg**	**07 54 21.8**	**+0.4**
UCH	baz=27			⇓*i* S	**Sg**	**07 54 41.0**	**+1.6**
ARK	**Arkit**	**1.56**	**303**	⇑*i* P	**Pg**	**07 54 25.1**	**+0.4**
ARK	baz=301			⇑*i* S	**Sg**	**07 54 45.8**	**+0.9**
KZA	**Kyzart**	**1.59**	**46**	⇓*i* P	**Pg**	**07 54 26.0**	**+0.6**
KZA	baz=47			⇓*i* S	**Sg**	**07 54 47.4**	**+1.4**
EKS2	**Erkin-Say**	**1.69**	**1**	⇑*i* P	**Pg**	**07 54 27.2**	**0.0**
EKS2	baz=3.0			⇑*i* S	**Sg**	**07 54 48.9**	**-0.1**
AAK	**Ala-Archa**	**1.76**	**19**	⇓*i* P	**Pg**	**07 54 28.7**	**+0.2**
AAK	baz=20			⇓*i* S	**Sg**	**07 54 51.9**	**+0.7**
AAK	**Ala-Archa**	**1.76**	**19**	⇑P	**Pg**	**07 54 29.1**	**+0.6**
AAK	26nm,0.5s			⇑S	**Sg**	**07 54 52.0**	**+0.7**
MNAS	**Manas**	**1.77**	**329**	⇑*e*P	**Pg**	**07 54 28.2**	**-0.4**
MNAS	baz=329			⇑*e*S	**Sg**	**07 54 51.5**	**-0.1**
MNAS	**Manas**	**1.77**	**329**	⇓P	**Pg**	**07 54 28.2**	**-0.4**
MNAS	8.7nm,0.4s			⇑S	**Sg**	**07 54 51.5**	**-0.1**
NRN	**Naryn**	**1.78**	**74**	⇓*e*P	**Pb**	**07 54 28.8**	**+0.7**
NRN	baz=76			⇓*e*S	**Sg**	**07 54 52.8**	**+0.8**
KBK	**Karagaybulak**	**1.92**	**28**	⇓*i* P	**Pg**	**07 54 30.9**	**-0.6**
KBK	baz=30			⇓*i* S	**Sg**	**07 54 56.6**	**+0.2**
BOOM	**Boomskoye usch**	**2.25**	**47**	⇓*e*P	**Pb**	**07 54 35.8**	**-0.2**
BOOM	baz=48			⇓*i* S	**Sg**	**07 55 06.6**	**-0.5**
TKM2	**Tokmak 2**	**2.40**	**35**	⇓P	**Pb**	**07 54 39.2**	**+0.7**
TKM2	12nm,0.4s			⇓S	**Sg**	**07 55 11.4**	**-0.5**
KST	**Kastek**	**2.66**	**38**	⇑*i* P	**Pg**	**07 54 45.2**	**-0.6**
KST	107nm,0.5s			⇑*i* S	**Sg**	**07 55 21.7**	**+1.5**
DGS	**Degeres**	**2.73**	**33**	*e*P	**Pg**	**07 54 46.3**	**-0.9**
DGS	19nm,0.4s			*e*S	**Sg**	**07 55 23.3**	**+0.7**
MTBS	**Maitube**	**2.95**	**42**	⇑*i* P	**Pg**	**07 54 50.1**	**-1.3**
MTBS	9.2nm,0.5s			⇓*i* S	**Sg**	**07 55 29.8**	**+0.2**
IZV	**Izvestkoviy**	**2.98**	**45**	*e*P	**Pg**	**07 54 50.7**	**-1.2**
IZV	22nm,0.3s			*e*S	**Sg**	**07 55 30.9**	**+0.3**
IUG	**Iuzhnay**	**3.01**	**294**	*e*P	**Pg**	**07 54 50.3**	**-2.1**
IUG	30nm,0.7s			*e*S	**Sg**	**07 55 30.5**	**-0.8**
TNSS	**Tian-Shan**	**3.17**	**48**	*e*P	**Pg**	**07 54 53.8**	**-1.7**
TNSS	65nm,0.4s			*e*S	**Sg**	**07 55 36.3**	**-0.3**
KK31	**Karatay Array**	**3.20**	**313**	Pg	**Pb**	**07 54 53.2**	**+1.1**
KK31	23nm,0.9s			⇑Lg	Lg	07 55 34.7	
MDOK	**Medeo**	**3.31**	**47**	*e*P	**Pg**	**07 54 56.5**	**-1.7**
MDOK	3.3nm,0.4s,baz=130,slow=15,SNR=22			⇓*i* S	**Sg**	**07 55 40.8**	**-0.1**
KOTS	**Kotyrbulak**	**3.39**	**47**	*e*P	**Pg**	**07 54 57.7**	**-2.0**
KOTS	4.8nm,0.6s			*e*S	**Sg**	**07 55 42.8**	**-0.8**
KUU	**Kurty**	**3.50**	**33**	*e*P	**Pg**	**07 54 59.4**	**-2.5**
KUU	13nm,0.3s			⇑*i* S	**Sg**	**07 55 45.8**	**-1.5**
BRLS	**Borolday**	**3.52**	**302**	*e*P	**Pg**	**07 55 00.3**	**-1.8**
BRLS	23nm,0.5s			⇓*i* S	**Sg**	**07 55 46.6**	**-1.1**
CHKK	**Chushkaly**	**3.78**	**39**	*e*P	**Pg**	**07 55 04.5**	**-2.6**
CHKK	3.5nm,0.5s			*e*S	**Sg**	**07 55 54.8**	**-1.4**
ARXS	**Arharly**	**4.43**	**42**	*e*P	**Pb**	**07 55 16.3**	**+3.1**
ARXS	26nm,0.4s			*e*S	**Sg**	**07 56 14.8**	**-2.5**
UZB	**Uzynbulak**	**4.50**	**59**	*e*P	**Pb**	**07 55 17.8**	**+3.4**
UZB	5.9nm,0.3s			*e*S	**Sg**	**07 56 17.2**	**-2.3**
MNBS	**Baschi**	**4.65**	**47**	*e*P	**Pb**	**07 55 20.1**	**+3.3**
MNBS	6.8nm,0.4s			*e*S	**Sg**	**07 56 21.6**	**-2.4**
PDGK	**Podgornoye**	**4.89**	**59**	⇓Pg	**Pg**	**07 55 27.2**	**-1.2**
PDGK	14nm,0.6s			⇓Lg	Lg	07 56 32.2	
DJR	**Jarkent**	**5.59**	**51**	*e*P	**Pg**	**07 55 40.2**	**-1.8**
DJR	6.9nm,0.7s			*e*S	**Sg**	**07 56 55.2**	**+0.8**
OTUK	**Ortayu**	**7.34**	**353**	⇑Lg	Lg	07 57 49.0	
	2.3nm,1.0s						

*IDC **03** 07:54:41.8±0.9, 6.°72S×154.°76E, h0km, mb4.0/14, mb1 4.2/16, mb1mx4.0/46, mbtmp4.0/16, ML3.2/2, MS3.4/4, Ms1 3.4/4, ms1mx2.8/35, Error ellipse: s-maj=33.8km s-min=16.8km az=124.0*
*ISCJB **03** 07:54:47.3±0.7, 6.°8S±0.°1×154.°6E±0.°1, h48km, mb4.0/16, MS3.3/2, Error ellipse: s-maj=20.9km s-min=10.4km az=33.8*
*NEIC **03** 07:54:48.2±2.3, 6.°75S×154.°68E, h44km±19km, mb4.1/2, Error ellipse: s-maj=19.0km s-min=11.9km az=102.0*

ISC 03 07:54:48.6±0.7, 6.°8S±0.°1×154.°8E±0.°1, h48km, n26, σ1.°62/28, mb4.0/16, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	**Honiara**	**5.74**	**118**	LR	LR	07 58 35.8	
	comp=Z,274nm,20.4s,baz=264,slow=40						
PMG	**Port Moresby**	**8.02**	**250**	Pn	**Pn**	**07 56 40.5**	**-2.2**
	2.8nm,0.3s,baz=44,slow=12,SNR=4.7						
PMG				Sn	**Sn**	**07 58 14.9**	**+2.8**
	3.5nm,0.3s,baz=74,slow=22,SNR=6.2						
PMG				LR	LR	08 00 05.7	
	comp=Z,202nm,18.1s,baz=46,slow=41						
PMG	**Port Moresby**	**8.02**	**250**	*e*Pn	**Pn**	**07 56 41.0**	**-1.6**
	22nm,0.8s						
PMG				Sn	**Sn**	**07 58 14.9**	**+2.8**
JAY	**Jayapura**	**14.67**	**286**	LR	LR	08 04 21.7	
	comp=Z,6.6nm,19.4s,baz=183,slow=40						
CTA	**Charters Tower**	**15.65**	**211**	Pn	**Pn**	**07 58 25.4**	**-0.7**
	0.4nm,0.3s,baz=34,slow=14,SNR=9.3						
WRAB	**Tennant Creek**	**23.80**	**235**	*e*P	**P**	**07 59 55.3**	**-1.9**
	5.7nm,0.8s						
WRA	**Warramunga Arr**	**23.81**	**235**	P	**P**	**07 59 55.6**	**-1.7**
	4.7nm,0.9s,baz=58,slow=9.6,SNR=19						
WRA				PcP	**PcP**	**08 03 40.8**	**+0.9**
	0.3nm,0.4s,baz=54,slow=2.4,SNR=5.8						
ASAR	**Alice Springs**	**26.20**	**228**	P	**P**	**08 00 17.6**	**-1.4**
	1.5nm,0.8s,baz=61,slow=8.5,SNR=21						
ASAR				ScP	**ScP**	**08 07 25.8**	**+4.5**
	0.3nm,0.8s,baz=55,slow=4.3,SNR=4.3						
ASAR				LR	LR	08 10 45.9	
	comp=Z,87nm,18.3s,baz=108,slow=37						
STKA	**Stephens Creek**	**27.88**	**205**	P	**P**	**08 00 33.6**	**-0.4**
	0.7nm,0.4s,baz=22,slow=15,SNR=3.9						
STKA				LR	LR	08 12 00.0	
	comp=Z,81nm,18.4s,baz=23,slow=37						
FITZ	**Fitzroy Crossi**	**30.59**	**246**	P	**P**	**08 00 56.9**	**-1.3**
	2.3nm,0.7s,baz=88,slow=8.6,SNR=8.0						
FITZ	**Fitzroy Crossi**	**30.59**	**246**	*e*P	**P**	**08 00 57.2**	**-1.0**
	1.7nm,0.5s						
PETK	**Petropavlovsk-**	**59.68**	**2**	P	**P**	**08 04 46.4**	**-1.6**
	6.4nm,1.0s,baz=179,slow=12,SNR=2.5						
CMAR	**Chiang Mai Arr**	**60.51**	**295**	P	**P**	**08 04 55.3**	**+0.9**
	0.8nm,0.3s,baz=117,slow=4.5,SNR=6.1						
SONM	**Songino Array**	**69.03**	**327**	P	**P**	**08 05 48.8**	**-0.7**
	0.4nm,0.4s,baz=122,slow=5.2,SNR=2.6						
MKAR	**Makanchi Array**	**83.10**	**319**	P	**P**	**08 07 10.2**	**+0.8**
	0.5nm,0.6s,baz=101,slow=6.4,SNR=5.7						
ILAR	**Eielson Array**	**83.21**	**22**	P	**P**	**08 07 10.5**	**+0.9**
	0.3nm,0.6s,baz=232,slow=5.6,SNR=3.5						
QSPA	**South Pole Qui**	**83.22**	**180**	*e*P	**P**	**08 07 10.0**	**+0.2**
	90nm,1.8s						
ZALV	**Zalesovo Beam**	**83.88**	**326**	P	**P**	**08 07 12.5**	**-0.7**
	0.6nm,0.4s,baz=91,slow=7.7,SNR=2.6						
KURK	**Kurchatov**	**86.53**	**322**	P	**P**	**08 07 26.1**	**-0.3**
KURBB	**Kurchatov Arra**	**86.56**	**322**	P	**P**	**08 07 26.1**	**-0.5**
	0.2nm,0.6s,baz=100,slow=4.7,SNR=3.4						
NVAR	**Mina Array Bea**	**91.71**	**52**	P	**P**	**08 07 51.7**	**+0.2**
	1.0nm,0.8s,baz=257,slow=6.6,SNR=4.9						
BVAR	**Borovoye Array**	**91.99**	**323**	P	**P**	**08 07 51.9**	**-0.3**
	0.2nm,0.3s,baz=129,slow=5.9,SNR=2.3						
YKA	**Yellowknife Ar**	**96.20**	**28**	P	**P**	**08 08 11.8**	**+0.5**
	0.8nm,1.0s,baz=264,slow=4.3,SNR=8.7						
GERES	**GERESS Array B**	**126.75**	**329**	PKP	**PKPdf**	**08 13 47.2**	**+0.1**
	0.8nm,0.6s,baz=93,slow=2.7,SNR=5.1						
CPUP	**Villa Florida**	**134.68**	**138**	PKP	**PKPdf**	**08 14 04.4**	**+1.7**
	2.2nm,0.9s,baz=271,slow=4.3,SNR=3.3						
TORD	**Torodi Ar. Bea**	**152.78**	**286**	PKPbc	**PKPbc**	**08 14 41.3**	**-0.1**
	2.9nm,0.9s,baz=69,slow=2.2,SNR=16						

*IDC **03** 07:55:54.3±3.0, 15.°00N×42.°06E, h0km, mb3.6/7, mb1 3.7/7, mb1mx3.6/41, mbtmp3.6/7, Error ellipse: s-maj=72.0km s-min=28.0km az=163.0*
*ARO **03** 07:56:04.4, 14.°N±32.°×4.°2E±10.°0, h15km±99km, ML3.8*

ISC 03 07:55:53.3±0.8, 14.°85N±0.°06×42.°30E±0.°07, h8km, n17, σ1.°57/21, mb3.6/7, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HAJJ	**Hajjah**	**1.52**	**56**	*i* P	**Pn**	**07 56 19.8**	**-1.2**
HAJJ				*e*		07 56 20.1	
	baz=272,slow=16						
HAJJ				*i* S	**Sn**	**07 56 38.2**	**-2.7**
HAJJ				AML	AML	07 56 39.5	
	comp=Z,1μm,0.4s						
HAJJ	**Hajjah**	**1.52**	**56**	*i* P	**Pn**	**07 56 19.8**	**-1.2**
HAJJ				*e*		07 56 19.9	
	baz=271,slow=18						
HAJJ				*i* S	**Sn**	**07 56 38.4**	**-2.6**
HAJJ				AML	AML	07 56 56.4	
	comp=Z,2μm,0.5s						
TRBA	**At Turbah**	**2.38**	**132**	*i* P	**Pb**	**07 56 37.2**	**+0.6**
TRBA				AML	AML	07 57 06.1	
	comp=Z,172nm,0.6s						
TRBA				*i* S	**Sb**	**07 57 06.9**	**+0.5**
TRBA	**At Turbah**	**2.38**	**132**	*i* P	**Pb**	**07 56 36.8**	**+0.1**
TRBA				*i* S	**Sg**	**07 57 10.8**	**+0.8**
MAOD	**Malaho**	**2.74**	**182**	*e*P	**Pb**	**07 56 41.6**	**-0.9**
OBO	**Obock**	**3.00**	**161**	*e*P	**Pb**	**07 56 47.3**	**+0.2**
TDD	**Tadjoura Ara**	**3.08**	**169**	*e*P	**Pb**	**07 56 47.8**	**-0.7**
LDLD	**Lac de Lave**	**3.25**	**177**	*e*P	**Pb**	**07 56 50.3**	**-1.0**
ATD	**Arta Tunnel**	**3.34**	**171**	*e*P	**Pb**	**07 56 51.9**	**-1.0**
ATD				*e*S	Sg	07 57 56.1	+15
SGH	**Sud-Ghoubbet**	**3.40**	**175**	*e*P	**Pb**	**07 56 52.0**	**-2.0**
BRTR	**Keskin Array B**	**25.92**	**345**	P	**P**	**08 01 26.5**	**+0.3**
	comp=Z,0.4nm,0.6s,baz=171,slow=10,SNR=3.5						
TORD	**Torodi Ar. Bea**	**39.40**	**273**	P	**P**	**08 03 24.3**	**+0.3**
	comp=Z,1.0nm,1.1s,baz=86,slow=9.2,SNR=3.6						
GERES	**GERESS Array B**	**41.23**	**331**	P	**P**	**08 03 38.6**	**-0.2**
	comp=Z,1.1nm,0.8s,baz=124,slow=8.4,SNR=7.1						
BVAR	**Borovoye Array**	**44.09**	**24**	P	**P**	**08 04 04.8**	**+2.9**
	comp=Z,0.5nm,0.8s,baz=210,slow=8.0,SNR=3.6						
MKAR	**Makanchi Array**	**46.05**	**38**	P	**P**	**08 04 19.8**	**+2.2**
	comp=Z,0.6nm,0.6s,baz=232,slow=7.3,SNR=9.4						
KURBB	**Kurchatov Arra**	**46.12**	**31**	P	**P**	**08 04 20.0**	**+1.9**
	comp=Z,1.0nm,0.9s,baz=235,slow=8.4,SNR=7.4						
ZALV	**Zalesovo Beam**	**51.19**	**31**	P	**P**	**08 04 58.1**	**+1.1**
	comp=Z,1.2nm,0.6s,baz=238,slow=8.3,SNR=3.8						

JMA 03 08:05:16.0±0.1, 36.°36N×140.°88E, h37km±1km, M2.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.35**	**315**	S	Sn	08 05 30.3	-1.0
JYT	**Yasato**	**0.57**	**257**	P	Pn	08 05 27.6	-0.1
JYT				S	Sn	08 05 35.3	-0.5
ONAJ	**Iwakimizuishiy**	**0.74**	**355**	P	Pn	08 05 29.8	-0.2
ONAJ				S	Sn	08 05 39.3	-0.8
JFK	**Kawauchi**	**1.00**	**360**	P	Pn	08 05 33.4	-0.2
JFK				S	Sn	08 05 45.5	-1.0
MAT	**Matsushiro**	**2.16**	**276**	P	Pn	08 05 51.3	+1.8
MAT				*e*S	Sn	08 06 17.2	+2.2

*ISCJB **03** 08:10:24.0±0.7, 6.°79N±0.°05×73.°06W±0.°06, h168km±6km, Error ellipse: s-maj=12.0km s-min=4.7km az=40.1*
*FUNV **03** 08:10:25.7, 6.°89N×73.°14W, h174km, MW2.4*
*RSNC **03** 08:10:26.8±0.4, 6.°77N×73.°12W, h151km±3km, ML2.5*

ISC 03 08:10:23.7±1.4, 6.°83N±0.°05×73.°09W±0.°06, h171km±9km, n18, σ1.°37/31, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BTLC	**Betulia, Santa**	**0.20**	**297**	*e*P	**Pn**	**08 10 47.1**	**+0.3**
BARC	**Barichara**	**0.25**	**201**	*e*P	**Pn**	**08 10 46.9**	**-0.1**
BARC				*e*S	**Sn**	**08 11 03.1**	**-1.8**
BARC				*i*		08 11 05.0	
	comp=Z,46nm,0.2s						
PAMC	**Pamplona, Colo**	**0.64**	**37**	*e*P	**Pn**	**08 10 49.8**	**+1.0**
PAMC				*e*S	**Sn**	**08 11 07.5**	**-0.6**
GRMC	**Gramalote, San**	**0.93**	**18**	*i* P	**Pn**	**08 10 52.7**	**+2.5**
GRMC				*e*S	**Sn**	**08 11 12.7**	**+2.0**
GRMC				*i*		08 11 15.3	
	comp=Z,42nm,0.3s						
RUSC	**La Rusia**	**0.93**	**180**	*e*P	**Pn**	**08 10 50.7**	**+0.1**
RUSC				*e*S	**Sn**	**08 11 09.4**	**-2.0**
RUSC				*i*		08 11 11.0	
	comp=Z,27nm,0.5s						
CBRI	**Barrientos, No**	**0.93**	**18**	*e*P	**Pn**	**08 10 51.5**	**+1.2**
CBRI				*e*S	**Sn**	**08 11 10.2**	**-0.5**
CBRI				*i*		08 11 15.5	
	comp=Z,22nm,0.5s						
CAPV	**Capacho**	**1.29**	**37**	*e*P	**Pn**	**08 10 54.1**	**+0.9**
CAPV				*e*S	**Sn**	**08 11 16.1**	**+0.2**
NORC	**Norcasia**	**2.17**	**235**	*e*P	**Pn**	**08 11 02.5**	**+0.3**
NORC				*e*S	**Sn**	**08 11 31.0**	**-0.9**
HELC	**Santa Helena**	**2.50**	**256**	*e*P	**Pn**	**08 11 07.5**	**+1.2**
HELC				*e*S	**Sn**	**08 11 39.2**	**-0.2**
HELC				*i*		08 11 46.6	
	comp=Z,23nm,0.4s						
VIGV	**El Vigia**	**2.63**	**40**	*e*P	**Pn**	**08 11 08.2**	**+0.7**
VIGV				*e*S	**Sn**	**08 11 40.6**	**-1.0**
SOCV	**Socops**	**2.65**	**57**	*e*P	**Pn**	**08 11 09.1**	**+1.4**
SOCV				*e*S	**Sn**	**08 11 40.7**	**-1.2**
PRAC	**Prado**	**3.57**	**210**	*e*P	**Pn**	**08 11 20.5**	**+1.3**
PRAC				*e*S	**Sn**	**08 12 02.2**	**-0.3**
ELOV	**Elorza**	**3.59**	**87**	*e*P	**Pn**	**08 11 20.6**	**+1.3**
SJAC	**San Juan de Ar**	**3.63**	**194**	*e*P	**Pn**	**08 11 21.0**	**+0.9**
SJAC				*e*S	**Sn**	**08 12 03.8**	**-0.2**
SJAC				*i*		08 12 09.8	
	comp=Z,20nm,0.5s						
VIRV	**Villa del Rosa**	**3.71**	**10**	*e*P	**Pn**	**08 11 21.6**	**+0.7**
VIRV				*e*S	**Sn**	**08 12 01.6**	**-4.1**
CURV	**Curarigua**	**4.43**	**44**	*e*P	**Pn**	**08 11 31.1**	**+0.9**
BAUV	**El Baul**	**5.42**	**67**	*e*P	**Pn**	**08 11 43.4**	**+0.2**
MONV	**Montecano**	**5.95**	**31**	*e*P	**Pn**	**08 11 50.0**	**0.0**

*ISCJB **03** 08:21:44.7±0.5, 6.°81S±0.°07×154.°74E±0.°07, h39km, mb4.0/18, MS3.4/4, Error ellipse: s-maj=12.0km s-min=7.9km az=138.8*
*IDC **03** 08:21:49.4±4.0, 6.°89S×154.°69E, h68km±34km, mb3.8/15, mb1 4.0/18, mb1mx3.8/46, mbtmp4.1/18, ML3.2/3, MS3.4/6, Ms1 3.4/6, ms1mx2.9/40, Error ellipse: s-maj=22.0km s-min=18.2km az=94.0*
*NEIC **03** 08:21:50.6±2.4, 6.°92S×154.°62E, h78km±21km, mb4.3/3, Error ellipse: s-maj=17.6km s-min=13.8km az=82.0*

ISC 03 08:21:46.0±0.6, 6.°82S±0.°10×154.°85E±0.°09, h39km, n31, σ1.°37/31, mb4.1/17, MS3.3/4, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	**Honiara**	**5.68**	**118**	LR	LR	08 25 24.9	
	comp=Z,331nm,19.0s,baz=258,slow=37						
PMG	**Port Moresby**	**8.04**	**251**	P	**Pn**	**08 23 41.5**	**+1.2**
	2.0nm,0.3s,baz=44,slow=4.5,SNR=7.3						
PMG				S	**Sn**	**08 25 11.0**	**+1.1**
	5.1nm,0.3s,baz=80,slow=22,SNR=7.6						
PMG				LR	LR	08 26 55.4	
	comp=Z,238nm,18.6s,baz=54,slow=39						
PMG	**Port Moresby**	**8.04**	**251**	*e*Pn	**Pn**	**08 23 42.2**	**+2.0**
	26nm,0.8s						
PMG				*e*Sn	**Sn**	**08 25 11.2**	**+1.2**
COEN	**Coen**	**13.49**	**237**	*e*Pn	**Pn**	**08 24 52.6**	**-2.4**
CTA	**Charters Tower**	**15.61**	**211**	P	**Pn**	**08 25 25.1**	**+1.8**
	0.3nm,0.3s,baz=42,slow=12,SNR=17						
DZM	**Mont Dzumac**	**18.85**	**145**	P	**Pn**	**08 26 05.0**	**+1.3**
	0.2nm,0.3s,baz=347,slow=19,SNR=3.4						
WRAB	**Tennant Creek**	**23.79**	**235**	*e*P	**P**	**08 26

0.6nm,0.5s,baz=106,slow=6.0,SNR=3.3
ILAR Eielson Array 83.26 22 P **P 08 34 07.7 -0.6**
0.5nm,0.6s,baz=240,slow=6.4,SNR=4.9
ZALV Zalesovo Beam 83.95 326 P **P 08 34 10.5 -1.4**
1.3nm,0.3s,baz=130,slow=5.8,SNR=2.9
NVAR Mina Array Bea 91.73 52 P **P 08 34 50.4 +0.3**
1.1nm,0.8s,baz=259,slow=7.0,SNR=6.3
YKA Yellowknife Ar 96.25 28 P **P 08 35 09.8 -0.1**
0.9nm,0.9s,baz=268,slow=4.8,SNR=14
PDAR Pinedale Array 98.69 48 P Pdif 08 35 23.2 +1.4
0.1nm,0.4s,baz=251,slow=4.7,SNR=2.4
PDAR LR LR 09 21 17.4
comp=Z,16nm,18.1s,baz=126,slow=36
AKASG Malin Array Be 117.31 324 PKP **PKPdf 08 40 26.8 -0.5**
0.9nm,0.6s,baz=61,slow=2.2,SNR=3.6
BRTR Keskin Array B 118.16 312 PKP **PKPdf 08 40 27.2 -2.3**
0.4nm,0.6s,baz=339,slow=2.0,SNR=2.7
GERES GERESS Array B 126.83 329 PKP **PKPdf 08 40 45.9 +0.1**
0.5nm,0.3s,baz=0.0,slow=2.7,SNR=7.0
LPAZ La Paz 131.67 119 PKP **PKPdf 08 40 56.6 0.0**
0.9nm,0.8s,baz=214,slow=3.6,SNR=2.8
TORD Torodi Ar. Bea 152.84 285 PKPbc **PKPbc 08 41 39.6 -0.4**
3.2nm,0.8s,baz=61,slow=2.4,SNR=20

*ISCJB **03** 08:27:31.4±0.4,34°.04N±0°.02×117°.87W±0°.02,h7km±3km, Error ellipse: s-maj=3.4km s-min=2.4km az=18.2*
*NEIC **03** 08:27:32.5,34°.07N×117°.87W,h12km,ML3.0(PAS),After PAS.*
NEIC Felt [II] in the Chino-Monrovia-Rancho Cucamonga area. Felt in the Los Angeles area and as far as Lancaster and Palm Springs.

ISC 03 08:27:31.5±0.9,34°.06N±0°.02×117°.85W±0°.02,h13km±7km, n33,σ0s43/58,Southern California

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MWC	**Mount Wilson**	**0.24**	**315**	*e*Pg	**Pg**	**08 27 36.9**	**+0.2**
MWC				*e*Sg	**Sg**	**08 27 40.3**	**0.0**
BFSC	**Mount Baldy Ra**	**0.24**	**42**	P	**Pb**	**08 27 37.4**	**-0.5**
	baz=226,SNR=1000						
BFSC				S	**Sg**	**08 27 40.9**	**+0.5**
	baz=226						
PASC	**Pasadena Art C**	**0.30**	**293**	*e*Pg	**Pg**	**08 27 37.4**	**-0.3**
PASC				*e*Sg	**Sg**	**08 27 41.4**	**-0.5**
DECC	**Green Verdugo**	**0.44**	**296**	P	**Pg**	**08 27 40.3**	**-0.1**
	baz=114,SNR=14						
DECC				S	**Sg**	**08 27 46.4**	**+0.1**
	baz=114						
FMP	**Fort Macarthur**	**0.50**	**227**	P	**Pg**	**08 27 41.7**	**+0.3**
	baz=44,SNR=9.4						
MURC	**Murrieta**	**0.71**	**129**	P	**Pg**	**08 27 45.6**	**+0.2**
	baz=311,SNR=72						
MURC				S	**Sg**	**08 27 55.2**	**+0.4**
	baz=311						
BBRC	**Big Bear Solar**	**0.80**	**75**	P	**Pb**	**08 27 47.5**	**0.0**
	baz=257,SNR=146						
BBRC				S	**Sb**	**08 27 58.6**	**+0.3**
	baz=257						
CIS	**Catalina Islan**	**0.80**	**216**	P	**Pg**	**08 27 47.4**	**+0.3**
	baz=34,SNR=21						
CIS				S	**Sg**	**08 27 58.1**	**+0.4**
	baz=34						
EDW2	**Edwards Air Fo**	**0.83**	**352**	P	**Pg**	**08 27 47.5**	**-0.2**
	baz=172,SNR=72						
OSI	**Osito Audit: C**	**0.91**	**308**	P	**Pg**	**08 27 48.8**	**-0.3**
	baz=127,SNR=17						
OSI				S	**Sg**	**08 28 00.9**	**-0.2**
	baz=127						
BLG	**Laguna Peak, P**	**1.01**	**273**	P	**Pb**	**08 27 49.8**	**-1.0**
	baz=92,SNR=13						
BLG				S	**Sb**	**08 28 04.2**	**+0.1**
	baz=92						
RRX	**Edison Barstow**	**1.08**	**41**	P	**Pn**	**08 27 52.6**	**+0.2**
	baz=222,SNR=8.4						
RRX				S	**Sn**	**08 28 07.2**	**-0.1**
	baz=222						
PFO	**Pinyon Flats O**	**1.24**	**111**	P	**Pn**	**08 27 54.5**	**-0.2**
	baz=292,SNR=26						
PFO				S	**Sn**	**08 28 11.4**	**-0.1**
	baz=292						
PFO	**Pinyon Flats O**	**1.24**	**111**	*e*Pn	**Pn**	**08 27 54.5**	**-0.2**
PFO				*e*Sg	**Sg**	**08 28 11.7**	**+0.1**
109C	**Camp Elliot, M**	**1.32**	**152**	P	**Pn**	**08 27 55.5**	**-0.2**
	baz=332,SNR=11						
109C				S	**Sb**	**08 28 13.0**	**-0.1**
	baz=332						
ARVC	**Arvin**	**1.34**	**323**	P	**Pb**	**08 27 56.5**	**0.0**
	baz=143,SNR=17						
ARVC				S	**Sg**	**08 28 14.2**	**-0.5**
	baz=143						
LRMC	**Laurel Mtn Rad**	**1.43**	**6**	P	**Pb**	**08 27 57.8**	**-0.3**
	baz=186,SNR=73						
LRMC				S	**Sb**	**08 28 16.6**	**+0.3**
	baz=186						
HEC	**Hector,Ludlow**	**1.47**	**58**	P	**Pb**	**08 27 58.5**	**-0.4**
	baz=240,SNR=41						
HEC				S	**Sg**	**08 28 18.2**	**-0.8**
	baz=240						
SCZ2	**Santa Cruz Isl**	**1.48**	**268**	P	**Pn**	**08 27 58.3**	**+0.4**
	baz=86						
SCZ2				Sb	**Sg**	**08 28 19.0**	**-0.1**
	baz=86						
GSC	**Goldstone, Bar**	**1.51**	**35**	P	**Pb**	**08 27 59.4**	**-0.2**
	baz=216,SNR=67						
BELC	**Belle Mtn. Jos**	**1.54**	**92**	P	**Pn**	**08 27 59.4**	**+0.6**
	baz=273,SNR=90						
BELC				Sb	**Sg**	**08 28 20.9**	**-0.3**
	baz=273						
SBC	**Santa Barbara**	**1.59**	**285**	P	**Pn**	**08 27 59.6**	**+0.3**
	baz=103						
SBC				S	**Sb**	**08 28 20.3**	**-0.4**
	baz=103						
SNCC	**San Nicolas Is**	**1.61**	**240**	P	**Pn**	**08 27 59.4**	**-0.2**
	baz=59						
MONP2	**Monument Peak**	**1.67**	**134**	P	**Pn**	**08 28 01.0**	**+0.4**
	baz=315,SNR=21						
MONP2				S	**Sb**	**08 28 23.5**	**+0.2**
	baz=315						
GMRC	**Granite Mounta**	**1.95**	**68**	P	**Pn**	**08 28 04.9**	**+0.3**
	baz=249,SNR=28						
GMRC				Sb	**Sg**	**08 28 33.9**	**-0.6**
	baz=249						
MPMC	**Manual Prospec**	**2.02**	**8**	P	**Pn**	**08 28 06.1**	**+0.6**
	baz=189						
BC3	**Big Chuckawall**	**2.04**	**101**	P	**Pn**	**08 28 06.0**	**+0.3**
	baz=282,SNR=20						
BC3				Sb	**Sg**	**08 28 36.2**	**-0.9**
	baz=282						
SWSC	**Sam W. Stewart**	**2.04**	**122**	Sb	**Sg**	**08 28 36.4**	**-0.9**
	baz=304						
TUQ	**Turquoise Moun**	**2.10**	**49**	P	**Pn**	**08 28 07.1**	**+0.5**
	baz=230,SNR=13						
TUQ				Sb	**Sg**	**08 28 38.3**	**-0.9**
	baz=230						
SMMC	**Simmler**	**2.17**	**306**	P	**Pn**	**08 28 07.6**	**+0.2**
	baz=125						
SMMC				S	**Sn**	**08 28 35.0**	**+0.9**
	baz=125						
DAC	**Darwin (Calif)**	**2.23**	**5**	*e*Pg	**Pb**	**08 28 12.2**	**+0.5**
DAC				*e*Sg	**Sg**	**08 28 43.1**	**0.0**
IRM	**Iron Mountain**	**2.25**	**87**	P	**Pn**	**08 28 08.8**	**+0.3**
	baz=269,SNR=25						
Y12C	**Blythe**	**2.79**	**95**	P	**Pn**	**08 28 16.2**	**+0.4**
	baz=278,SNR=11						

IDC 03 08:34:36.1±6.3,7°.02S×129°.43E,h170km±61km,mb3.2/1, mb1 3.1/4,mb1mx2.9/30,mbtmp3.5/4,Error ellipse: s-maj=74.2km s-min=27.6km az=68.0,Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**11.62**	**198**	P	Pn	08 37 17.6	+0.6
	0.2nm,0.3s,baz=21,slow=11,SNR=8.9						
FITZ				S	Sn	08 39 25.0	-0.9
	0.2nm,0.3s,baz=119,slow=10,SNR=3.5						
WRA	**Warramunga Arr**	**13.70**	**160**	P	Pn	08 37 42.2	-1.4
	0.1nm,0.3s,baz=330,slow=12,SNR=8.1						
WRA				S	Sn	08 40 08.5	-7.4
	0.3nm,0.3s,baz=336,slow=21,SNR=7.2						
ASAR	**Alice Springs**	**17.10**	**166**	P	Pn	08 38 25.8	+0.6
	0.2nm,0.3s,baz=344,slow=10,SNR=19						
ASAR				S	S	08 41 34.0	+0.1
	0.1nm,0.3s,baz=236,slow=40,SNR=2.8						
MKAR	**Makanchi Array**	**67.93**	**327**	P	P	08 45 16.4	-0.2
	0.2nm,0.3s,baz=125,slow=6.2,SNR=2.5						

*CSEM **03** 08:54:38.6,39°.67N×29°.48E,h7km,MD2.6,Suspected Mining explosion.*

DDA 03 08:54:38.6,39°.67N×29°.48E,h7km,Md2.6,Suspected Mining explosion.,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ULDT	**Uludag**	**0.54**	**331**	P	Pg	08 54 49.7	+0.7
ULDT				S	Sb	08 54 57.5	-1.1
ULDT	**Uludag**	**0.54**	**331**	*i* P	Pg	08 54 49.7	+0.6
ULDT				*i* S	Sb	08 54 57.5	-1.0
GDZ	**Gediz**	**0.58**	**180**	P	Pg	08 54 48.2	-1.6
GDZ				S	Sb	08 54 58.7	-0.9
GDZ	**Gediz**	**0.58**	**180**	*i* P	Pg	08 54 48.2	-1.6
GDZ				*i* S	Sb	08 54 58.6	-1.0
DURS	**Dursunbey**	**0.78**	**265**	P	Pg	08 54 53.5	0.0
DURS				S	Sb	08 55 05.3	+0.1
DURS	**Dursunbey**	**0.78**	**265**	*i* P	Pg	08 54 53.5	0.0
DURS				*i* S	Sb	08 55 05.3	+0.1
DEMI	**Demirci**	**0.86**	**223**	P	Pg	08 54 55.1	0.0
DEMI				S	Sn	08 55 12.4	+2.4
DEMI	**Demirci**	**0.86**	**223**	*i* P	Pg	08 54 55.1	0.0
DEMI				*i* S	Sn	08 55 12.4	+2.4

DJA 03 09:07:07.7±2.3,10°S±12°×11°4E±°,h20km±21km,M3.7/13, MLv3.7/13,South of Bali

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAGI	**Jajag, Banyuwa**	**1.37**	**1**	P	Pn	09 07 30.5	-1.2
DNP	**Denpasar**	**1.59**	**43**	P	Pn	09 07 34.9	+0.2
GMJI	**Gumukmas**	**1.70**	**337**	P	Pn	09 07 36.3	0.0
ABJI	**Asem Bagus**	**2.04**	**3**	P	Pn	09 07 41.0	0.0
SRBI	**Singaraja**	**2.06**	**32**	P	Pn	09 07 41.5	+0.3
PWJI	**Pagerwojo**	**2.92**	**308**	P	Pn	09 07 51.6	-1.5
TWSI	**Taliwang, Sumb**	**2.94**	**68**	P	Pn	09 07 53.4	+0.1
PCJI	**Pacitan**	**3.34**	**299**	P	Pn	09 07 58.9	+0.1
PLAI	**Plampang**	**3.75**	**75**	P	Pn	09 08 04.5	0.0
UGM	**Wanagama**	**4.04**	**298**	P	Pn	09 08 08.6	+0.1

PGC 03 09:17:15.2±0.1,50°.56N×130°.34W,h10km,MLSn2.8/5, Mw3.5/5,206km west of Pt. Hardy, Bc Vancouver Island, Canada Region,Vancouver Island region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HOLB	**Holberg**	**1.41**	**86**	Pn	Pn	09 17 38.7	-2.1
HOLB				Sn	Sn	09 17 55.3	-4.2
BPBC	**Brooks Peninsu**	**1.69**	**103**	Pn	Pn	09 17 42.3	-2.5
PHC	**Port Hardy**	**1.85**	**84**	Pn	Pn	09 17 45.1	-1.8
PHC				Sn	Sn	09 18 06.5	-4.0
MAYB	**Maynard**	**2.03**	**93**	Pn	Pn	09 17 47.6	-1.9
BBB	**Bella Bella**	**2.14**	**40**	Pn	Pn	09 17 49.1	-1.8
BBB				Sn	Sn	09 18 13.4	-4.0
TLCB	**Telegraph Cove**	**2.23**	**89**	Pn	Pn	09 17 50.8	-1.3
TLCB				Sn	Sn	09 18 16.3	-3.4

ROM 03 09:22:09.1±0.2,42°.31N×13°.31E,h10km±1km,Md1.4/3, Ml0.9/2,Error ellipse: s-maj=4.8km s-min=0.7km az=40.0,Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
T0104	**Madonna delle**	**0.05**	**22**	Pg	Pg	09 22 11.4	+0.2
T0104				Sg	Sg	09 22 13.0	+0.4
FAGN	**Fagnano**	**0.21**	**102**	Pg	Pg	09 22 14.2	+0.8
FAGN				Sg	Sg	09 22 17.7	+1.4
	30nm,0.4s						
RM33	**Pellescritta (**	**0.21**	**340**	Pg	Pg	09 22 14.1	+0.6
RM33				Sg	Sg	09 22 18.0	+1.5
	16nm,0.5s						

*ISCJB **03** 09:27:19.2±0.5,6°.87N±0°.04×73°.07W±0°.05,h166km±4km, mb3.0/2,Error ellipse: s-maj=10.0km s-min=4.2km az=34.4*
*FUNV **03** 09:27:19.5,6°.77N×73°.17W,h170km,MW2.8*
*IDC **03** 09:27:22.6±4.5,5°.72N×76°.36W,h177km±23km,mb2.8/2, mb1 3.0/3,mb1mx2.8/27,mbtmp3.3/3,Error ellipse: s-maj=165.6km s-min=33.0km az=31.0*
*RSNC **03** 09:27:22.3±0.6,6°.79N×73°.10W,h144km±4km,ML2.8*

ISC 03 09:27:19.9±1.1,6°.85N±0°.04×73°.06W±0°.05,h162km±7km, n29,σ1s07/43,2D,Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BTLC	**Betulia, Santa**	**0.22**	**288**	*e*P	**Pn**	**09 27 42.1**	**+0.1**
GIRC	**Giron, Santand**	**0.27**	**329**	*i* P	**Pn**	**09 27 41.9**	**-0.1**
GIRC				*e*S	**Sn**	**09 27 56.7**	**-2.2**
PAMC	**Pamplona, Colo**	**0.60**	**36**	*e*P	**Pn**	**09 27 44.4**	**+0.7**
PAMC				*e*S	**Sn**	**09 28 01.4**	**-0.6**
BRRC	**Barranca, Sant**	**0.70**	**292**	⇓*i*P	**Pn**	**09 27 43.6**	**-0.1**
BRRC				*e*S	**Sn**	**09 28 00.4**	**-1.5**
BRRC				*i*		09 28 06.0	
	comp=Z,142nm,0.1s						
CBRI	**Barrientos, No**	**0.90**	**17**	*i* P	**Pn**	**09 27 46.1**	**+0.8**
CBRI				*e*S	**Sn**	**09 28 04.8**	**0.0**
CBRI				*i*		09 28 09.3	
	comp=Z,93nm,0.4s						
GRMC	**Gramalote, San**	**0.90**	**16**	*i* P	**Pn**	**09 27 47.3**	**+2.1**
GRMC				*e*S	**Sn**	**09 28 06.8**	**+2.0**
GRMC				*i*		09 28 07.9	
	comp=Z,98nm,0.4s						
RUSC	**La Rusia**	**0.95**	**182**	*e*P	**Pn**	**09 27 45.8**	**-0.2**
RUSC				*e*S	**Sn**	**09 28 04.1**	**-1.9**
RUSC				*i*		09 28 06.1	
	comp=Z,74nm,0.3s						
CAPV	**Capacho**	**1.25**	**36**	⇓*i*P	**Pn**	**09 27 49.3**	**+1.1**
CAPV				*e*S	**Sn**	**09 28 10.0**	**-0.1**
OCAC	**Ocana**	**1.41**	**349**	*e*P	**Pn**	**09 27 49.9**	**+0.2**
OCAC				*e*S	**Sn**	**09 28 12.4**	**-0.2**
OCAC				*i*		09 28 16.9	
	comp=Z,100nm,0.4s						
NORC	**Norcasia**	**2.21**	**235**	*e*P	**Pn**	**09 27 58.5**	**+0.3**
NORC				*e*S	**Sn**	**09 28 25.9**	**-1.9**
ROSC	**El Rosal**	**2.36**	**212**	P	**Pn**	**09 28 01.8**	**+1.5**
	comp=Z,9.5nm,0.3s,baz=300,slow=20,SNR=37						
ROSC				S	**Sn**	**09 28 33.2**	**+1.6**
	comp=Z,17nm,0.3s,baz=14,slow=19,SNR=16						
HELC	**Santa Helena**	**2.54**	**255**	*e*P	**Pn**	**09 28 03.3**	**+0.7**
HELC				*i*		09 28 42.0	
	comp=Z,45nm,0.4s						
VIGV	**El Vigia**	**2.59**	**40**	*e*P	**Pn**	**09 28 03.7**	**+0.9**
VIGV				*e*S	**Sn**	**09 28 36.6**	**+0.5**
SOCV	**Socops**	**2.61**	**57**	*e*P	**Pn**	**09 28 03.6**	**+0.6**
SOCV				*e*S	**Sn**	**09 28 35.7**	**-0.6**
VILC	**Villavicencio,**	**2.79**	**193**	*e*P	**Pn**	**09 28 05.2**	**-0.2**
VILC				*e*S	**Sn**	**09 28 39.9**	**-0.7**
VILC				*i*		09 28 50.8	
	comp=Z,21nm,0.4s						
ELOV	**Elorza**	**3.55**	**87**	*e*P	**Pn**	**09 28 15.3**	**+0.5**
PRAC	**Prado**	**3.61**	**210**	*e*P	**Pn**	**09 28 16.0**	**+0.5**
PRAC				*e*S	**Sn**	**09 28 58.1**	**-0.7**
VIRV	**Villa del Rosa**	**3.69**	**10**	*e*P	**Pn**	**09 28 16.1**	**-0.4**
VIRV				*e*S	**Sn**	**09 28 58.4**	**-2.2**
SANV	**Sanarito**	**4.37**	**53**	*e*P	**Pn**	**09 28 25.6**	**+0.2**
CURV	**Curarigua**	**4.39**	**44**	*e*P	**Pn**	**09 28 25.6**	**-0.1**
DABV	**Dabajuro**	**4.70**	**30**	*e*P	**Pn**	**09 28 28.9**	**-0.8**
TEPV	**Terepaima**	**4.92**	**51**	*e*P	**Pn**	**09 28 32.9**	**+0.3**
SIQV	**Siquisique**	**4.96**	**40**	*e*P	**Pn**	**09 28 32.3**	**-0.7**
BAUV	**El Baul**	**5.38**	**67**	*e*P	**Pn**	**09 28 37.4**	**-1.3**
MAPV	**Macapo**	**5.43**	**57**	*e*P	**Pn**	**09 28 39.2**	**-0.1**
MONV	**Montecano**	**5.92**	**31**	*e*P	**Pn**	**09 28 44.9**	**-0.8**
TURV	**Turiamo**	**6.28**	**55**	*e*P	**Pn**	**09 28 49.5**	**-0.9**
YKA	**Yellowknife Ar**	**63.26**	**340**	P	**P**	**09 37 31.8**	**+0.8**
	comp=Z,0.1nm,0.5s,baz=135,slow=6.6,SNR=7.5						
TORD	**Torodi Ar. Bea**	**73.67**	**78**	P	P	09 38 57.2	+21
	comp=Z,0.3nm,0.8s,baz=270,slow=1.1,SNR=2.2						

*ISCJB **03** 09:33:37.0±0.5,38°.46N±0°.04×27°.35E±0°.04,h12km±4km, Error ellipse: s-maj=7.2km s-min=4.4km az=155.2*
*ISK **03** 09:33:36.5,38°.45N×27°.31E,h18km,MD2.5*
*CSEM **03** 09:33:36.9±0.1,38°.44N×27°.34E,h15km,MD2.5,Error ellipse: s-maj=2.8km s-min=1.9km az=159.0*
*DDA **03** 09:33:37.1,38°.43N×27°.34E,h7km,Md2.6*

ISC 03 09:33:37.0±0.8,38°.44N±0°.04×27°.34E±0°.03,h16km±6km, n21,σ0s14/34,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IZM	**Izmir**	**0.07**	**231**	PG	**Pg**	**09 33 40.3**	**+0.1**
IZM				*e*SG	**Sg**	**09 33 42.4**	**0.0**
IZM	**Izmir**	**0.07**	**231**	*i* Pg	**Pg**	**09 33 40.3**	**+0.1**
IZM				*e*Sg	**Sg**	**09 33 42.4**	**0.0**
BLCB	**Balcova**	**0.24**	**256**	PG	**Pg**	**09 33 42.1**	**-0.3**
BLCB				*e*SG	**Sg**	**09 33 46.0**	**0.0**
BLCB	**Balcova**	**0.24**	**256**	*i* Pg	**Pg**	**09 33 42.1**	**-0.3**
BLCB				*e*Sg	**Sg**	**09 33 46.0**	**0.0**
AKHS	**Akhisar**	**0.57**	**41**	P	**Pg**	**09 33 48.3**	**-0.1**
AKHS				S	**Sb**	**09 33 56.8**	**+0.2**
AKHS	**Akhisar**	**0.57**	**41**	*i* P	**Pg**	**09 33 48.3**	**-0.1**
AKHS				*i* S	**Sb**	**09 33 56.8**	**+0.2**
AKS	**Akhisar**	**0.57**	**41**	*e*PG	**Pg**	**09 33 48.4**	**+0.1**
AKS	**Akhisar**	**0.57**	**41**	*e*Pg	**Pg**	**09 33 48.4**	**+0.1**
URLA	**Izmir**	**0.59**	**262**	P	**Pb**	**09 33 48.9**	**0.0**
URLA				S	**Sb**	**09 33 57.3**	**+0.3**
URLA	**Izmir**	**0.59**	**262**	*i* P	**Pb**	**09 33 48.9**	**0.0**
URLA				*i* S	**Sb**	**09 33 57.3**	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**0.66**	**138**	*e*PG	**Pb**	**09 33 50.3**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**0.66**	**138**	*e*Pg	**Pb**	**09 33 50.3**	**+0.1**
ZEY	**¨zmir**	**0.69**	**253**	*i* P	**Pb**	**09 33 50.6**	**+0.1**
ZEY				*i* S	**Sb**	**09 33 59.8**	**+0.1**
AYDN	**Tasoluk**	**0.89**	**151**	P	**Pb**	**09 33 53.9**	**-0.2**
AYDN				S	**Sg**	**09 34 06.1**	**+0.1**
AYDN	**Tasoluk**	**0.89**	**151**	*i* P	**Pb**	**09 33 53.9**	**-0.2**
AYDN				*i* S	**Sg**	**09 34 06.1**	**+0.1**
CHOS	**Chios island**	**1.01**	**267**	*e*PG	**Pb**	**09 33 56.0**	**-0.1**
CHOS	**Chios island**	**1.01**	**267**	*e*Pg	**Pb**	**09 33 56.0**	**-0.1**
KULA	**Kula-Manisa**	**1.04**	**86**	*e*PG	**Pb**	**09 33 56.6**	**-0.1**
KULA	**Kula-Manisa**	**1.04**	**86**	*e*Pg	**Pb**	**09 33 56.6**	**-0.1**
DURS	**Dursunbey**	**1.46**	**37**	P	**Pn**	**09 34 02.6**	**-0.1**
DURS				S	**Sb**	**09 34 22.0**	**-0.1**
DURS	**Dursunbey**	**1.46**	**37**	*i* P	**Pn**	**09 34 02.6**	**-0.1**
DURS				*i* S	**Sb**	**09 34 22.0**	**-0.1**

IDC 03 09:38:25.9±1.8,5°.23N×123°.04E,h0km,mb3.7/4, mb1 3.9/4,mb1mx3.5/57,mbtmp3.7/4,Error ellipse: s-maj=213.3km s-min=23.9km az=62.0,Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**27.38**	**156**	P	P	09 44 13.0	-0.1
	0.3nm,0.4s,baz=333,slow=10,SNR=7.0						
ASAR	**Alice Springs**	**30.62**	**160**	P	P	09 44 43.1	+1.1
	0.7nm,0.3s,baz=338,slow=7.6,SNR=34						
STKA	**Stephens Creek**	**40.92**	**156**	P	P	09 46 08.8	-1.3
	1.0nm,0.4s,baz=337,slow=8.0,SNR=6.7						
MKAR	**Makanchi Array**	**54.25**	**326**	P	P	09 47 53.6	-0.1
	0.3nm,0.4s,baz=142,slow=6.9,SNR=2.5						

*DHMR **03** 09:40:35.9±1.9,12°.07N×43°.92E,h10km±15km,ML4.3*
*ARO **03** 09:40:39.2,12°.N±7°.×4°.4E±°,h10km±11km,ML3.5*

ISC 03 09:40:35.9±1.6,12°.08N±0°.06×43°.89E±0°.06,h7km±15km, n11,σ1s15/17,2D,Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MCAD	**Moucha**	**0.76**	**242**	*e*P	**Pb**	**09 40 51.2**	**-0.2**
ATA	**Atar**	**0.92**	**227**	*e*P	**Pb**	**09 40 54.0**	**-0.1**
TDD	**Tadjoura Ara**	**1.01**	**254**	*e*P	**Pg**	**09 40 55.3**	**+0.1**
TRBA	**At Turbah**	**1.16**	**11**	⇓*i*P	**Pn**	**09 40 58.5**	**-0.2**
TRBA				*i* S	**Sg**	**09 41 13.8**	**+0.5**
TRBA				AML	AML	09 41 14.8	
	comp=Z,7μm,0.5s						
ATD	**Arta Tunnel**	**1.16**	**242**	*e*P	**Pb**	**09 40 58.0**	**-0.3**
ATD				*e*S	**Sb**	**09 41 13.6**	**-0.1**
ADEN	**Aden**	**1.27**	**57**	⇓*i*P	**Pb**	**09 40 59.7**	**-0.4**
ADEN				*i* S	**Sg**	**09 41 16.2**	**-0.4**
ADEN				AML	AML	09 41 24.6	
	comp=E,8μm,0.3s						
SGH	**Sud-Ghoubbet**	**1.40**	**243**	*e*P	**Pn**	**09 41 01.8**	**0.0**
MAOD	**Malaho**	**1.63**	**271**	*e*P	**Pn**	**09 41 05.7**	**+0.6**
UDYN	**Al 'Udayn**	**1.87**	**2**	*i* P	**Pn**	**09 41 08.9**	**+0.4**
UDYN				*i* S	**Sg**	**09 41 36.0**	**-0.1**
DHBB	**Dhamar BB**	**2.52**	**11**	*i* P	**Pn**	**09 41 19.1**	**+1.6**
DHBB				*i* S	**Sb**	**09 41 53.9**	**+1.0**
HAJJ	**Hajjah**	**3.60**	**355**	*i* P	**Pn**	**09 41 33.9**	**+1.6**
HAJJ				*i* S	**Sb**	**09 42 21.0**	**-3.1**

IDC 03 09:49:37.9±11.0,15°.40S×164°.73E,h0km,mb3.5/3, mb1 3.7/4,mb1mx3.5/31,mbtmp3.6/4,ML3.6/1,Error ellipse: s-maj=199.3km s-min=34.6km az=48.0,Vanuatu Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**6.83**	**166**	Pn	Pn	09 51 19.0	-0.4
	1.0nm,0.3s,baz=343,slow=20,SNR=17						
DZM				Sn	Sn	09 52 40.7	+2.7
	0.1nm,0.3s,baz=273,slow=19,SNR=2.3						
STKA	**Stephens Creek**	**26.70**	**228**	P	P	09 55 19.1	+0.1
	0.7nm,0.5s,baz=48,slow=14,SNR=3.6						
WRA	**Warramunga Arr**	**29.28**	**257**	P	P	09 55 42.3	+0.1
	0.3nm,0.8s,baz=84,slow=10,SNR=4.0						
ASAR	**Alice Springs**	**30.14**	**249**	P	P	09 55 49.6	-0.2
	0.3nm,0.5s,baz=81,slow=8.9,SNR=9.6						

DHMR 03 09:59:27.8±1.5,12°.14N×43°.97E,h6km±11km,ML3.6,1C, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TRBA	**At Turbah**	**1.10**	**7**	⇑*i*P	Pg	09 59 48.8	-0.1
TRBA				*i* S	Sb	10 00 04.1	+0.1
TRBA				AML	AML	10 00 05.0	
	comp=Z,1μm,0.5s						
ADEN	**Aden**	**1.18**	**57**	*i* P	Pg	09 59 50.0	-0.4
ADEN				*i* S	Sb	10 00 06.3	+0.2
ADEN				AML	AML	10 00 14.8	
	comp=E,1μm,0.4s						
UDYN	**Al 'Udayn**	**1.82**	**360**	*i* P	Pn	09 59 59.6	-0.2
UDYN				*i* S	Sg	10 00 26.6	+0.2

**MEX 03 10:00:06.7±0.4,15°.86N×93°.58W,h103km±4km,MD4.0, Near coast of Ch

ABVI	**Anegada Island**	**0.64 95**	*e*P	Pg	10 05 41.6	-0.8
ABVI		*e*S		Sg	10 05 50.3	-0.6
ABV	**Anegada**	**0.64 95**	*e*P	Pg	10 05 41.6	-0.8
ABV	**Anegada**	**0.64 95**	*e*P	Pg	10 05 41.6	-0.8
ABV		*e*S		Sg	10 05 50.3	-0.6
MTP	**Monte Pirata**	**0.86 217**	*e*P	Pg	10 05 44.7	-1.7
MTP	**Monte Pirata**	**0.86 217**	*e*P	Pg	10 05 44.7	-1.7
MTP		*e*S		Sg	10 05 55.8	-1.8
MTP	**Monte Pirata**	**0.86 217**	*e*P	Pg	10 05 44.7	-1.7
MTP		*e*S		Sg	10 05 55.8	-1.8
CBYP	**Canovanas**	**0.95 238**	*e*P	Pg	10 05 46.6	-1.7
CBYP	**Canovanas**	**0.95 238**	*e*P	Pg	10 05 46.6	-1.7
CBYP		*e*S		Sg	10 05 58.5	-2.2
CBYP	**Canovanas**	**0.95 238**	*e*P	Pg	10 05 46.6	-1.7
CBYP		*e*S		Sg	10 05 58.5	-2.2
HUMP	**Col San Antoni**	**1.02 231**	*e*P	Pg	10 05 47.1	-2.5
HUMP	**Col San Antoni**	**1.02 231**	*e*P	Pg	10 05 47.1	-2.5
HUMP		*e*S		Sg	10 06 00.2	-2.7
HUMP	**Col San Antoni**	**1.02 231**	*e*P	Pg	10 05 47.1	-2.5
HUMP		*e*S		Sg	10 06 00.2	-2.7
CDVI	**St. Croix**	**1.05 167**	*e*P	Pb	10 05 48.0	-2.2
CDVI	**St. Croix**	**1.05 167**	*e*P	Pb	10 05 48.0	-2.2
CDVI		*e*S		Sg	10 06 01.7	-2.2
CDVI	**St. Croix**	**1.05 167**	*e*P	Pb	10 05 48.0	-2.2
CDVI		*e*S		Sg	10 06 01.7	-2.2

IDC 03 10:13:18.1±12.0, **6°.06S**×**129°.68E, h110**km±119km, **mb3.6**/2, **mb1 3.8**/5, **mb1mx3.3**/35, **mbtmp4.0**/5, **ML4.1**/3, **Error ellipse: s-maj=123.9km s-min=26.7km az=50.0, Banda Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**12.60**	**198**	P	Pn	10 16 13.8	+0.2
	0.7nm,0.3s,baz=27,slow=13,SNR=15						
FITZ				S	Sn	10 18 24.5	-7.8
	0.9nm,0.3s,baz=140,slow=14,SNR=4.9						
WRA	**Warramunga Arr**	**14.53**	**162**	P	Pn	10 16 37.8	-0.7
	1.0nm,0.3s,baz=343,slow=13,SNR=55						
WRA				S	Sn	10 19 07.0	-12
	1.5nm,0.3s,baz=329,slow=22,SNR=9.0						
ASAR	**Alice Springs**	**17.97**	**167**	P	Pn	10 17 21.4	+0.3
	0.5nm,0.3s,baz=348,slow=10,SNR=50						
ASAR				S	S	10 20 26.0	-15
	0.1nm,0.3s,baz=351,slow=26,SNR=3.5						
STKA	**Stephens Creek**	**28.00**	**158**	P	P	10 18 58.1	-0.6
	1.2nm,0.8s,baz=330,slow=14,SNR=3.1						
CMAR	**Chiang Mai Arr**	**38.89**	**309**	P	P	10 20 33.1	-0.1
	1.0nm,0.4s,baz=139,slow=7.0,SNR=4.0						

ISCJB ***03*** *10:20:29.2*±*1.2, 35°.99N*±*0°.07*×*141°.2E*±*0°.1, h31km, mb3.4/5, Error ellipse: s-maj=15.6km s-min=7.3km az=145.0*
JMA ***03*** *10:20:29.5*±*0.1, 35°.96N*×*141°.11E, h19km*±*2km, M3.4*
IDC ***03*** *10:20:35.4*±*6.8, 35°.58N*×*141°.16E, h33km*±*54km, mb3.1/5, mb1 3.4/7, mb1mx3.2/49, mbtmp3.3/7, ML2.8/2, Error ellipse: s-maj=33.1km s-min=19.9km az=90.0*

ISC 03 10:20:30.3±1.6, **36°.02N**±0°.08×**141°.1E**±0°.1, **h31**km, **n11,** σ1**°33**/12, **mb3.4**/5, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.39**	**216**	P	**Pb**	**10 20 36.4**	**-2.7**
JHO	**Hitachi**	**0.75**	**322**	P	**Pn**	**10 20 44.3**	**-0.5**
JHO				S	**Sb**	**10 20 54.4**	**-0.6**
JYT	**Yasato**	**0.80**	**286**	P	**Pn**	**10 20 44.3**	**-1.1**
JYT				S	**Sb**	**10 20 55.6**	**-0.5**
MJAR	**Matsushiro Arr**	**2.43**	**283**	Pn	**Pb**	**10 21 12.8**	**-0.5**
	3.8nm,0.3s,baz=99,slow=8.3,SNR=29						
MJAR				Sn	**Sb**	**10 21 44.0**	**+1.1**
	4.6nm,0.3s,baz=36,slow=23,SNR=5.9						
MAT	**Matsushiro**	**2.43**	**283**	P	**Pn**	**10 21 08.4**	**+0.5**
MAT				S	**Sn**	**10 21 37.5**	**+0.9**
JHJ	**Hachijo jima 2**	**3.10**	**202**	Pn	**Pn**	**10 21 17.8**	**+0.7**
	1.8nm,0.3s,baz=48,slow=15,SNR=1.8						
MKAR	**Makanchi Array**	**44.48**	**303**	P	P	10 28 46.1	+7.5
	0.3nm,0.4s,baz=84,slow=9.8,SNR=4.2						
ILAR	**Eielson Array**	**50.47**	**32**	P	P	10 29 32.2	+7.3
	0.3nm,0.7s,baz=262,slow=6.2,SNR=3.2						
WRA	**Warramunga Arr**	**56.02**	**188**	P	**P**	**10 30 07.1**	**+0.9**
	0.5nm,0.7s,baz=5.0,slow=7.4,SNR=5.7						
ASAR	**Alice Springs**	**59.75**	**188**	P	**P**	**10 30 33.9**	**+1.6**
	0.2nm,0.6s,baz=12,slow=14,SNR=3.2						
YKA	**Yellowknife Ar**	**64.80**	**30**	P	P	10 31 12.7	+7.1
	0.2nm,0.7s,baz=299,slow=7.2,SNR=4.7						

NIED ***03*** *10:26:00, 36°.60N*×*141°.90E, h26km, Mw4.2 Best double couple: M*o*2.28000*×*10*15 *NP1:*φ*s349.00000°,* δ*6.00000°,* λ*-143.00000°. NP2:*φ*s222.00000°,* δ*86.00000°,* λ*-85.00000°.*
ISCJB ***03*** *10:26:02.5*±*1.0, 36°.54N*±*0°.03*×*142°.01E*±*0°.04, h21km*±*7km, mb4.1/31, MS3.4/12, Error ellipse: s-maj=6.0km s-min=4.4km az=21.4*
JMA ***03*** *10:26:05.5*±*0.2, 36°.61N*×*141°.88E, h38km*±*5km, M4.1*
JMA Felt I J1.
MOS ***03*** *10:26:06.1*±*1.3, 36°.63N*×*141°.96E, h41km, mb4.4/20, Error ellipse: s-maj=10.4km s-min=7.5km az=93.3*
NEIC ***03*** *10:26:06.9*±*0.4, 36°.57N*×*141°.92E, h35km, mb4.3/7, Error ellipse: s-maj=9.7km s-min=7.8km az=124.0*
NEIC Recorded [1 JMA] in Fukushima and Ibaraki.
IDC ***03*** *10:26:09.0*±*2.4, 36°.47N*×*141°.81E, h55km*±*23km, mb3.7/16, mb1 3.9/19, mb1mx3.7/51, mbtmp4.1/19, ML3.9/3, MS3.3/20, Ms1 3.3/20, ms1mx3.2/38, Error ellipse: s-maj=17.6km s-min=10.3km az=79.0*

ISC 03 10:26:02.4±2.6, **36°.55N**±0°.05×**142°.00E**±0°.06, **h7**km±15km, **n81,** σ1**°89**/84, **mb4.2**/31, **MS3.5**/12, **6C-1D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**1.11**	**300**	P	**Pb**	**10 26 23.3**	**-0.7**
ONAJ				*e*S	**Sg**	**10 26 36.4**	**-1.7**
JHO	**Hitachi**	**1.15**	**273**	P	**Pb**	**10 26 24.1**	**-0.6**
JHO				S	**Sb**	**10 26 37.4**	**-2.5**
JFK	**Kawauchi**	**1.21**	**312**	P	**Pb**	**10 26 24.8**	**-1.0**
JMM	**Marumori**	**1.63**	**324**	P	**Pn**	**10 26 30.8**	**-0.7**
JFT	**Otama**	**1.64**	**306**	P	**Pb**	**10 26 32.0**	**-1.1**
JFT				S	**Sn**	**10 26 51.1**	**-2.1**
JIO	**Ouri**	**1.97**	**345**	P	**Pn**	**10 26 35.7**	**-0.5**
JIO				*e*S	**Sn**	**10 26 59.1**	**-2.1**
JFY	**Yanaizu**	**2.03**	**296**	P	**Pn**	**10 26 37.5**	**+0.4**
JFY				S	**Sn**	**10 27 02.3**	**-0.4**
JAG	**Ashikaga**	**2.06**	**267**	P	**Pn**	**10 26 37.3**	**-0.1**
JOU	**Okura**	**2.10**	**330**	P	**Pn**	**10 26 38.8**	**+0.7**
JOU				S	**Sn**	**10 27 03.7**	**-0.8**
MJAR	**Matsushiro Arr**	**3.05**	**271**	P	**Pn**	**10 26 51.9**	**+0.7**
	41nm,0.3s,baz=95,slow=9.5,SNR=406						
MJAR				S	**Sn**	**10 27 27.4**	**-0.6**
	14nm,0.3s,baz=68,slow=7.1,SNR=6.4						
MJAR				LR	LR	10 28 17.8	
	comp=Z,503nm,18.9s,baz=125,slow=45						
MAJO	**Matsushiro**	**3.05**	**271**	*i* P	**Pn**	**10 26 52.3**	**+1.1**
MAJO	**Matsushiro**	**3.05**	**271**	*e*Pn	**Pn**	**10 26 52.4**	**+1.1**
MAJO				*e*Sn	**Sb**	**10 27 32.5**	**-2.2**
MAT	**Matsushiro**	**3.05**	**271**	P	**Pn**	**10 26 52.0**	**+0.8**
MAT				S	**Sn**	**10 27 27.6**	**-0.4**
JHJ2	**Mitsune**	**3.87**	**208**	*e*Pn	**Pn**	**10 27 03.3**	**+0.8**
JHJ2				*e*Sn	**Sn**	**10 27 46.2**	**-2.0**
JHJ	**Hachijo jima 2**	**3.88**	**209**	P	**Pn**	**10 27 02.9**	**+0.4**
	81nm,0.3s,baz=307,slow=10,SNR=90						
JHJ				S	**Sn**	**10 27 46.2**	**-2.1**
	96nm,0.3s,baz=84,slow=21,SNR=10						
JHJ				LR	LR	10 28 47.3	
	comp=Z,256nm,21.1s,baz=56,slow=42						
ERM	**Erimo**	**5.53**	**9**	*i* P	**Pn**	**10 27 24.2**	**-0.9**
ERM	**Erimo**	**5.53**	**9**	*e*Pn	**Pn**	**10 27 24.4**	**-0.8**
ERM				*e*Sn	**Sn**	**10 28 27.0**	**-2.0**
ASAJ	**Asahikawa**	**7.57**	**3**	P	**Pn**	**10 27 52.1**	**-1.0**
	3.6nm,0.3s,baz=198,slow=13,SNR=30						
ASAJ				LR	LR	10 31 39.7	
	comp=Z,172nm,18.3s,baz=180,slow=43						
ASAJ	**Asahikawa**	**7.57**	**3**	*e*Pn	**Pn**	**10 27 53.0**	**-0.2**
ASAJ				*e*Sn	**Sn**	**10 29 21.1**	**+1.9**
YUK	**Yuzh-Kuril'sk**	**8.03**	**20**	*i* P	**Pn**	**10 28 01.3**	**+1.8**
YUK				*i* S	**Sn**	**10 29 23.6**	**-7.0**
YUK				pmax	pmax		
	comp=Z,107nm,0.3s						
YUK				pmax	pmax		
	comp=N,50nm,0.4s						
YUK				pmax	pmax		
	comp=E,28nm,0.4s						
SHO	**Shikotan**	**8.19**	**25**	*e*P	**Pn**	**10 28 01.8**	**+0.1**
SHO				pmax	pmax		
	comp=N,28nm,0.9s						
SHO				pmax	pmax		
	comp=Z,86nm,0.9s						
JCJ	**Chichijima**	**9.43**	**179**	LR	LR	10 32 41.9	
	comp=Z,88nm,20.8s,baz=200,slow=42						
KUR	**Kuril'sk**	**9.74**	**25**	*e*P	**Pn**	**10 28 24.6**	**+1.7**
KUR				*e*S	**Sn**	**10 30 03.9**	**-8.6**
KUR				pmax	pmax		
	comp=N,24nm,0.8s						
KUR				pmax	pmax		
	comp=Z,33nm,0.8s						
KUR				pmax	pmax		
	comp=E,13nm,0.6s						
JNU	**Nakatsue**	**9.76**	**253**	LR	LR	10 32 58.0	
	comp=E,190nm,18.9s,baz=10,slow=43						
USRK	**Ussuriysk Ar.**	**10.79**	**318**	P	Pn	10 28 45.4	+8.0
	comp=E,0.4nm,0.3s,baz=133,slow=12,SNR=11						
USRK				LR	LR	10 32 29.7	
	comp=E,306nm,20.0s,baz=153,slow=35						
KSRS	**Korea Array**	**11.29**	**279**	P	**Pn**	**10 28 46.9**	**+2.7**
	comp=E,0.1nm,0.3s,baz=93,slow=13,SNR=11						
KSRS				LR	LR	10 32 59.2	
	comp=E,236nm,19.2s,baz=84,slow=37						
KSAR	**Wonju Array Be**	**11.32**	**279**	P	**Pn**	**10 28 46.9**	**+2.2**
KSAR	**Wonju Array Be**	**11.32**	**279**	P	**Pn**	**10 28 46.9**	**+2.2**
KLR	**Kul'dur**	**14.71**	**333**	LR	LR	10 35 05.4	
	comp=E,171nm,18.8s,baz=136,slow=36						
PETK	**Petropavlovsk-**	**19.88**	**29**	LR	LR	10 38 26.8	
	comp=E,27nm,19.3s,baz=267,slow=37						
GUMO	**Guam**	**23.01**	**173**	LR	LR	10 40 33.8	
	comp=E,15nm,21.5s,baz=66,slow=38						
MA2	**Magadan**	**23.73**	**11**	LR	LR	10 42 26.3	
	comp=E,29nm,19.4s,baz=206,slow=41						
SEY	**Seymchan**	**27.18**	**10**	P	**P**	**10 31 49.5**	**+3.3**
	comp=E,0.5nm,0.4s,baz=204,slow=10.0,SNR=3.0						
SEY	**Seymchan**	**27.18**	**10**	*i* P	**P**	**10 31 48.8**	**+2.5**
ULN	**Ulaanbaatar**	**28.01**	**305**	*ce*P	**P**	**10 31 51.8**	**-2.4**
ULN				pmax	pmax		
	comp=Z,7.0nm,1.0s						
ULN	**Ulaanbaatar**	**28.01**	**305**	*e*P	**P**	**10 31 54.0**	**-0.1**
	comp=Z,5.2nm,0.8s						
BOD	**Bodaibo**	**28.19**	**328**	*e*P	**P**	**10 31 54.4**	**-1.0**
BOD				pmax	pmax		
	comp=Z,4.0nm,1.2s						
SONM	**Songino Array**	**28.44**	**305**	P	**P**	**10 31 58.4**	**+0.4**
	comp=Z,5.2nm,0.7s,baz=91,slow=8.9,SNR=8.5						
SONM				LR	LR	10 43 37.6	
	comp=Z,58nm,18.3s,baz=103,slow=37						
ZAK	**Zakamensk**	**30.94**	**309**	*e*P	**P**	**10 32 19.4**	**-0.6**
ZAK				pmax	pmax		
	comp=Z,3.0nm,1.0s						
TLY	**Talaya**	**31.00**	**311**	*e*P	**P**	**10 32 19.9**	**-0.6**
TLY				pmax	pmax		
	comp=Z,4.0nm,1.2s						
TLY				MLR	MLR		
	comp=Z,128nm,20.0s						
BILL	**Bilibino**	**34.36**	**16**	*e*P	P	10 32 54.6	+5.0
BILL				pmax	pmax		
	comp=Z,4.0nm,2.0s						
ZALV	**Zalesovo Beam**	**42.59**	**313**	P	**P**	**10 33 58.8**	**-0.1**
	comp=Z,4.0nm,0.6s,baz=90,slow=8.9,SNR=11						
ZALV				LR	LR	10 52 37.8	
	comp=Z,73nm,18.3s,baz=70,slow=37						
NRIK	**Noril'sk**	**43.90**	**335**	LR	LR	10 53 39.8	
	comp=Z,63nm,18.1s,baz=99,slow=38						
MKAR	**Makanchi Array**	**44.77**	**303**	P	**P**	**10 34 15.9**	**-0.8**
	comp=Z,1.6nm,0.7s,baz=83,slow=10,SNR=11						
MKAR	**Makanchi Array**	**44.77**	**303**	*ce*P	**P**	**10 34 15.8**	**-0.9**
MKAR				pmax	pmax		
	comp=Z,2.0nm,0.7s						
KURK	**Kurchatov**	**46.60**	**309**	*ce*P	**P**	**10 34 29.3**	**-1.7**
KURK				pmax	pmax		
	comp=Z,4.0nm,0.7s						
KURK	**Kurchatov**	**46.60**	**309**	*e*P	**P**	**10 34 30.1**	**-0.9**
	comp=Z,10nm,0.7s						
KURBB	**Kurchatov Arra**	**46.67**	**308**	P	**P**	**10 34 30.5**	**-1.0**
	comp=Z,1.8nm,0.4s,baz=82,slow=8.3,SNR=4.4						
ILAR	**Eielson Array**	**49.65**	**32**	P	**P**	**10 34 55.2**	**+0.9**
	comp=Z,0.4nm,0.9s,baz=268,slow=5.4,SNR=4.5						
ILAR	**Eielson Array**	**49.65**	**32**	P	**P**	**10 34 55.3**	**+0.9**
ILAR				pmax	pmax		
	comp=Z,1.0nm,0.9s						
TKM2	**Tokmak 2**	**50.27**	**299**	*e*P	**P**	**10 35 00.1**	**+0.4**
TKM2				pmax	pmax		
	comp=Z,1.0nm,0.6s						
TKM2	**Tokmak 2**	**50.27**	**299**	*e*P	**P**	**10 35 00.1**	**+0.4**
	comp=Z,1.2nm,0.6s						
INK	**Inuvik**	**54.60**	**27**	P	**P**	**10 35 31.6**	**+0.5**
	comp=Z,0.5nm,0.6s,baz=236,slow=6.0,SNR=3.3						
FITZ	**Fitzroy Crossi**	**56.52**	**199**	P	**P**	**10 35 45.9**	**+0.5**
	comp=Z,1.8nm,0.7s,baz=10,slow=7.8,SNR=6.3						
WRAB	**Tennant Creek**	**56.64**	**189**	*e*P	**P**	**10 35 45.9**	**-0.4**
WRAB				pmax	pmax		
	comp=Z,4.0nm,0.9s						
WRAB	**Tennant Creek**	**56.64**	**189**	*e*P	**P**	**10 35 45.9**	**-0.4**
	comp=Z,3.8nm,0.9s						
WRA	**Warramunga Arr**	**56.65**	**189**	P	**P**	**10 35 46.0**	**-0.4**
	comp=Z,4.8nm,0.9s,baz=7.8,slow=7.4,SNR=50						
WRA	**Warramunga Arr**	**56.65**	**189**	P	**P**	**10 35 46.0**	**-0.4**
WRA				pmax	pmax		
	comp=Z,5.0nm,0.9s						
ARU	**Arti**	**57.03**	**319**	*c i* P	**P**	**10 35 48.2**	**-0.6**
ARU						10 37 52.0	
ARU				S	S	10 43 32.5	-11
ARU				pmax	pmax		
	comp=Z,8.0nm,1.7s						
ABKAR	**Akbulak array**	**58.61**	**311**	*e*P	**P**	**10 35 58.8**	**-1.2**
	comp=Z,0.9nm,0.3s						
ASAR	**Alice Springs**	**60.38**	**189**	P	**P**	**10 36 12.2**	**-0.1**
	comp=Z,3.1nm,0.8s,baz=9.1,slow=6.0,SNR=32						
YKA	**Yellowknife Ar**	**63.99**	**30**	P	**P**	**10 36 36.9**	**+0.8**
	comp=Z,0.5nm,0.8s,baz=302,slow=6.7,SNR=11						
GEYT	**Alibeck**	**64.48**	**299**	LR	LR	11 06 39.3	
	comp=Z,25nm,19.0s,baz=295,slow=38						
ARCES	**ARCESS Array B**	**64.61**	**340**	P	**P**	**10 36 38.9**	**-1.3**
	comp=Z,1.6nm,0.8s,baz=44,slow=7.7,SNR=2.6						
ARCES				LR	LR	11 11 00.5	
	comp=Z,29nm,19.9s,baz=60,slow=42						
STKA	**Stephens Creek**	**68.07**	**180**	P	**P**	**10 37 01.9**	**-0.8**
	comp=Z,1.1nm,0.8s,baz=304,slow=7.3,SNR=3.5						
OBN	**Obninsk**	**68.76**	**324**	*e*P	**P**	**10 37 07.6**	**+0.8**
OBN				*e*		10 39 34.9	
OBN				pmax	pmax		
	comp=Z,3.0nm,0.8s						
FINES	**FINESS Array B**	**69.46**	**333**	P	**P**	**10 37 15.0**	**+3.9**
	comp=Z,2.0nm,1.0s,baz=45,slow=7.2,SNR=3.8						
FINES				LR	LR	11 09 50.4	
	comp=Z,43nm,19.9s,baz=14,slow=38						
FINES	**FINESS Array B**	**69.46**	**333**	P	**P**	**10 37 15.0**	**+3.9**
FINES				pmax	pmax		
	comp=Z,2.0nm,1.0s						
FINES				MLR	MLR		
	comp=Z,43nm,19.9s						
NB2	**NORSAR Subarra**	**74.81**	**338**	P	**P**	**10 37 42.4**	**-0.8**
	comp=Z,1.1nm,0.7s,baz=40,slow=6.2						
NOA	**NORSAR Array B**	**74.81**	**338**	P	**P**	**10 37 42.0**	**-1.2**
	comp=Z,0.9nm,0.8s,baz=38,slow=5.9,SNR=4.1						
NOA				LR	LR	11 12 51.9	
	comp=Z,41nm,21.7s,baz=25,slow=38						
NOA	**NORSAR Array B**	**74.81**	**338**	P	**P**	**10 37 42.0**	**-1.2**
NOA				pmax	pmax		
	comp=Z,1.0nm,0.8s						
NOA				MLR	MLR		
	comp=Z,41nm,21.7s						
NVAR	**Mina Array Bea**	**74.90**	**53**	P	**P**	**10 37 46.6**	**+2.2**
	comp=Z,1.6nm,0.9s,baz=286,slow=5.9,SNR=8.4						
DUG	**Dugway, Tooele**	**77.31**	**49**	*e*P	**P**	**10 37 59.0**	**+1.0**
DUG				pmax	pmax		
	comp=Z,2.0nm,0.9s						
DUG	**Dugway, Tooele**	**77.31**	**49**	*e*P	**P**	**10 37 59.0**	**+1.0**
	comp=Z,1.8nm,0.9s						
PDAR	**Pinedale Array**	**77.67**	**46**	P	**P**	**10 38 01.1**	**+1.1**
	comp=Z,0.3nm,0.7s,baz=270,slow=4.4,SNR=4.3						
BRTR	**Keskin Array B**	**79.52**	**312**	LR	LR	11 19 07.2	
	comp=Z,20nm,19.0s,baz=87,slow=40						
WUAZ	**Wupatki**	**81.08**	**52**	*e*P	**P**	**10 38 19.6**	**+0.9**
	comp=Z,0.9nm,0.3s						
CLL	**Collm**	**81.75**	**330**	*e*P	**P**	**10 38 23.0**	**+1.3**
	comp=Z,3.0nm,0.6s						
CLL	**Collm**	**81.75**	**330**	*e*P	**P**	**10 38 23.0**	**+1.3**
CLL				pmax	pmax		
	comp=Z,3.0nm,0.6s						
GERES	**GERESS Array B**	**83.37**	**329**	LR	LR	11 18 59.8	
	comp=Z,40nm,18.7s,baz=34,slow=38						
LPAZ	**La Paz**	**146.52**	**61**	PKPbc	**PKPdf**	**10 45 45.4**	**+1.0**
	comp=Z,2.0nm,0.9s,baz=26,slow=9.7,SNR=7.0						

ISK ***03*** *10:33:38.6, 37°.08N*×*34°.43E, h6km, MD2.0*
DDA ***03*** *10:33:39.7, 36°.99N*×*34°.49E, h7km, Md2.6, Suspected Mining explosion.*
ISCJB ***03*** *10:33:40.3*±*0.6, 37°.03N*±*0°.03*×*34°.49E*±*0°.04, h0km, Error ellipse: s-maj=4.9km s-min=3.6km az=36.2*
CSEM ***03*** *10:33:40.2*±*0.3, 37°.03N*×*34°.47E, h1km, MD2.0, Error ellipse: s-maj=6.9km s-min=4.5km az=117.0, Suspected Mining explosion.*

ISC 03 10:33:39.1±1.0, **37°.08N**±0°.03×**34°.48E**±0°.03, **h0**km, **n13,** σ0**°69**/26, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MERS	**Mersin**	**0.22**	**170**	*e*PG	**Pg**	**10 33 43.7**	**+0.4**
MERS				*e*SG	**Sg**	**10 33 47.2**	**+1.1**
MERS	**Mersin**	**0.22**	**170**	*e*Pg	**Pg**	**10 33 43.7**	**+0.4**
MERS				*e*Sg	**Sg**	**10 33 47.2**	**+1.1**
DED	**Mersin**	**0.29**	**115**	*i* P	**Pg**	**10 33 44.6**	**0.0**
DED				*i* S	**Sg**	**10 33 48.8**	**+0.5**
GULE	**Gulek**	**0.31**	**50**	P	**Pb**	**10 33 47.2**	**-0.6**
GULE				S	**Sb**	**10 33 53.8**	**+0.3**
GULE	**Gulek**	**0.31**	**50**	*i* P	**Pb**	**10 33 47.2**	**-0.6**
GULE				*i* S	**Sb**	**10 33 53.8**	**+0.3**
KERG	**Konya-Eregli**	**0.43**	**320**	P	**Pb**	**10 33 49.3**	**-0.5**
KERG				S	**Sb**	**10 33 57.3**	**+0.4**
KERG	**Konya-Eregli**	**0.43**	**320**	*i* P	**Pb**	**10 33 49.3**	**-0.5**
KERG				*i* S	**Sb**	**10 33 57.3**	**+0.4**
KARA	**Karaisali**	**0.50**	**69**	*e*PG	**Pg**	**10 33 49.2**	**+0.6**
KARA				*e*SG	**Sb**	**10 33 57.1**	**-1.5**
KARA	**Karaisali**	**0.50**	**69**	*e*Pg	**Pg**	**10 33 49.3**	**+0.6**
KARA				*e*Sg	**Sb**	**10 33 57.1**	**-1.5**
KIZK	**Mersin**	**0.66**	**204**	P	**Pg**	**10 33 51.9**	**+0.2**
KIZK				S	**Sb**	**10 34 03.0**	**-0.2**
KIZK	**Mersin**	**0.66**	**204**	*i* P	**Pg**	**10 33 51.9**	**+0.2**
KIZK				*i* S	**Sb**	**10 34 03.0**	**-0.2**
IKL	**Isikli**	**1.05**	**217**	*e*PG	**Pg**	**10 33 58.8**	**-0.5**
IKL				*e*SG	**Sg**	**10 34 13.5**	**+0.5**
IKL	**Isikli**	**1.05**	**217**	*e*Pg	**Pg**	**10 33 58.8**	**-0.5**
IKL				*e*Sg	**Sg**	**10 34 13.5**	**+0.5**

IDC 03 10:39:02.1±11.0, **1°.03N**×**124°.70E, h81**km±101km, **mb3.2**/3, **mb1 3.4**/3, **mb1mx3.1**/41, **mbtmp3.5**/3, **Error ellipse: s-maj=179.5km s-min=24.5km az=63.0, Minahassa Peninsula, Sulawesi**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**22.88**	**156**	P	P	10 43 58.6	-0.6
	0.7nm,0.3s,baz=334,slow=11,SNR=21						
ASAR	**Alice Springs**	**26.12**	**161**	P	P	10 44 29.8	+0.9
	0.3nm,0.5s,baz=340,slow=7.9,SNR=6.7						
ASAR				PcP	PcP	10 47 53.8	-0.8
	0.5nm,0.6s,baz=345,slow=1.9,SNR=10.0						
MKAR	**Makanchi Array**	**58.66**	**327**	P	P	10 48 51.1	0.0
	0.2nm,0.4s,baz=112,slow=6.2,SNR=3.3						

IDC ***03*** *10:42:26.7*±*2.5, 61°.59N*×*150°.19W, h0km, mb3.4/2, mb1 3.6/5, mb1mx3.3/41, mbtmp3.2/5, ML3.1/3, MS2.7/1, Ms1 2.7/1, ms1mx2.2/33, Error ellipse: s-maj=37.5km s-min=15.6km az=87.0*
ISCJB ***03*** *10:42:28.3*±*0.3, 61°.92N*±*0°.02*×*151°.09W*±*0°.05, h85km*±*5km, mb3.3/2, Error ellipse: s-maj=4.0km s-min=3.3km az=10.2*
NEIC ***03*** *10:42:30.1, 61°.90N*×*151°.13W, h72km, MG3.2(AEIC), After AEIC.*

ISC 03 10:42:29.6±1.0, **61°.92N**±0°.03×**151°.13W**±0°.03, **h74**km±9km, **n74,** σ0**°49**/83, **Southern Alaska**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STLK	**Strandline Lak**	**0.54**	**219**	P	**Pn**	**10 42 42.9**	**-0.3**
CUT	**Chulitna**	**0.63**	**39**	P	**Pn**	**10 42 44.1**	**+0.1**
FIB	**Fire Island**	**0.88**	**149**	P	**Pn**	**10 42 47.6**	**+0.9**
SPCR	**Spurr Chakacha**	**0.89**	**216**	P	**Pn**	**10 42 46.4**	**-0.6**
SPCR				S	**Sn**	**10 42 59.4**	**-0.5**
CKL	**Chakachamna La**	**0.93**	**219**	P	**Pn**	**10 42 47.0**	**-0.5**
SPWE	**Spurr West**	**0.94**	**227**	P	**Pn**	**10 42 47.5**	**-0.1**
VOGL	**Vogel Lake**	**0.98**	**160**	P	**Pn**	**10 42 49.2**	**+1.2**
PMR	**Palmer**	**1.00**	**108**	P	**Pn**	**10 42 47.7**	**-0.6**
PMR				S	**Sn**	**10 43 02.1**	**-0.1**
RC01	**Rabbit Creek A**	**1.07**	**141**	P	**Pn**	**10 42 48.7**	**-0.4**
RC01				S	**Sn**	**10 43 03.7**	**+0.1**
PPLA	**Purkeypile**	**1.10**	**334**	P	**Pn**	**10 42 49.3**	**-0.3

LOGN	**Logan Glacier**	**4.99**	**98**	P	**Pn**	**10 43 41.3**	**-0.8**
RKAV	**Rock Avalanche**	**5.01**	**105**	P	**Pn**	**10 43 41.0**	**-1.3**
EGAK	**Eagle**	**5.32**	**53**	*e*Pn	**Pn**	**10 43 46.1**	**-0.3**
	16nm,0.6s						
EGAK				*e*Sn	**Sn**	**10 44 45.8**	**-0.4**
COLD	**Coldfoot**	**5.35**	**4**	P	**Pn**	**10 43 47.0**	**+0.4**
DAWY	**Dawson**	**5.76**	**63**	P	**Pn**	**10 43 52.3**	**-0.1**
BM3	**Burnt Mountain**	**6.19**	**24**	P	**Pn**	**10 43 57.9**	**-0.3**
INK	**Inuvik**	**9.77**	**42**	Pn	**Pn**	**10 44 47.2**	**+0.3**
	0.1nm,0.3s,baz=241,slow=13,SNR=8.9						
YKA	**Yellowknife Ar**	**16.90**	**72**	Pn	**Pn**	**10 46 20.6**	**-0.3**
	0.1nm,0.3s,baz=277,slow=11,SNR=9.4						
RES	**Resolute Bay**	**23.19**	**34**	LR	LR	10 59 05.5	
	comp=Z,18nm,18.4s,baz=50,slow=43						
NVAR	**Mina Array Bea**	**30.95**	**124**	P	**P**	**10 48 40.6**	**+1.0**
	0.5nm,0.7s,baz=329,slow=7.3,SNR=4.4						
PDAR	**Pinedale Array**	**31.05**	**109**	P	**P**	**10 48 40.6**	**+0.3**
	0.2nm,0.4s,baz=335,slow=6.6,SNR=3.8						

NIED ***03*** *11:47:00,37.°70N×143.°90E,h5km,Mw3.6 Best double couple: M₀2.96000×10¹⁴ NP1:φ₀12.00000°,δ29.00000°, λ-114.00000°. NP2:φ₀219.00000°,δ64.00000°, λ-77.00000°.*
IDC ***03*** *10:47:38.5±1.0,37.°48N×144.°10E,h0km,mb3.5/6, mb1 3.8/10,mb1mx3.6/38,mbtmp3.7/10,ML3.6/4,MS2.6/3, Ms1 2.6/3,ms1mx2.3/39,Error ellipse: s-maj=27.8km s-min=18.2km az=111.0*
ISCJB ***03*** *10:47:41.2±0.7,37.°63N±0.°04×143.°92E±0.°05,h33km, mb3.5/6,Error ellipse: s-maj=6.3km s-min=6.0km az=23.3*
JMA ***03*** *10:47:41.6±0.2,37.°65N×143.°87E,h40km,M3.8*
ISC 03 10:47:43.5±1.0,37.°58N±0.°05×143.°91E±0.°08,h35km,n25, σ1§67/35,mb3.6/6,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.20 294**		P	**Pn**	**10 48 15.7**	**-1.8**
JIO				S	**Sn**	**10 48 41.6**	**-1.9**
OFUJ	**Ofunato**	**2.31 311**		P	**Pn**	**10 48 17.4**	**-1.7**
JFK	**Kawauchi**	**2.42 266**		P	**Pn**	**10 48 19.6**	**-1.0**
JMM	**Marumori**	**2.48 278**		P	**Pn**	**10 48 20.0**	**-1.4**
JMM				S	**Sn**	**10 48 49.1**	**-1.4**
JMK	**Ichinoseki**	**2.52 304**		P	**Pn**	**10 48 20.8**	**-1.1**
JMK				S	**Sn**	**10 48 49.9**	**-1.5**
JOU	**Okura**	**2.68 288**		P	**Pn**	**10 48 23.3**	**-0.8**
JOM	**Ohasama**	**2.79 314**		P	**Pn**	**10 48 24.8**	**-0.8**
JOM				*e*S	**Sn**	**10 48 56.4**	**-1.7**
JFT	**Otama**	**2.84 270**		P	**Pn**	**10 48 26.0**	**-0.3**
JFT				*e*S	**Sn**	**10 48 58.6**	**-0.7**
JTH	**Tanohata**	**2.85 327**		*e*S	**Sn**	**10 48 56.7**	**-2.8**
JYK	**Kaneyama**	**3.10 297**		P	**Pn**	**10 48 29.4**	**-0.4**
JYK				S	**Sn**	**10 49 04.7**	**-0.9**
JRG	**Rokugo**	**3.15 306**		P	**Pn**	**10 48 29.9**	**-0.6**
JRG				*e*S	**Sn**	**10 49 05.9**	**-0.9**
JRY	**Ryogami san**	**4.31 250**		P	**Pn**	**10 48 45.5**	**-1.0**
JRY				*e*S	**Sn**	**10 49 32.5**	**-3.0**
MJAR	**Matsushiro Arr**	**4.67 259**		Pn	**Pn**	**10 48 52.3**	**+0.7**
	4.3nm,0.3s,baz=89,slow=15,SNR=76						
MJAR				Sn	**Sn**	**10 49 45.4**	**+0.9**
	1.0nm,0.3s,baz=94,slow=26,SNR=3.8						
MJAR				LR	LR	10 50 50.1	
	comp=Z,47nm,20.8s,baz=195,slow=40						
MAT	**Matsushiro**	**4.67 259**		P	**Pn**	**10 48 52.4**	**+0.9**
MAT				S	**Sn**	**10 49 46.6**	**+2.0**
JCH	**Churui**	**5.05 355**		P	**Pn**	**10 48 54.2**	**-2.5**
JHJ	**Hachijo jima 2**	**5.58 218**		Pn	**Pn**	**10 49 02.7**	**-1.3**
	6.8nm,0.3s,baz=64,slow=18,SNR=6.4						
JHJ				Sn	**Sn**	**10 50 01.9**	**-5.0**
	14nm,0.3s,baz=41,slow=17,SNR=4.5						
ASAJ	**Asahikawa**	**6.61 352**		Pn	**Pn**	**10 49 17.1**	**-1.0**
	1.6nm,0.3s,baz=192,slow=12,SNR=19						
KSRS	**Korea Array**	**12.69 274**		Pn	**Pn**	**10 50 42.5**	**+1.1**
	0.1nm,0.3s,baz=87,slow=13,SNR=5.6						
KSRS				LR	LR	10 55 39.1	
	comp=Z,28nm,18.5s,baz=300,slow=37						
KLR	**Kul'dur**	**14.60 327**		LR	LR	10 56 22.5	
	comp=Z,40nm,18.2s,baz=151,slow=36						
SEY	**Seymchan**	**25.91**	**9**	P	**P**	**10 53 12.4**	**+0.5**
	0.7nm,0.5s,baz=158,slow=7.6,SNR=4.4						
CMAR	**Chiang Mai Arr**	**43.56 257**		P	**P**	**10 55 45.6**	**+1.5**
	0.5nm,0.3s,baz=42,slow=7.4,SNR=5.5						
MKAR	**Makanchi Array**	**45.51 302**		P	**P**	**10 56 00.8**	**+1.3**
	0.8nm,0.7s,baz=87,slow=9.0,SNR=7.4						
WRA	**Warramunga Arr**	**57.92 191**		P	**P**	**10 57 31.3**	**-0.8**
	0.5nm,0.6s,baz=12,slow=7.5,SNR=9.1						
ASAR	**Alice Springs**	**61.64 190**		P	**P**	**10 57 57.7**	**0.0**
	0.3nm,0.6s,baz=7.1,slow=7.4,SNR=5.4						
YKA	**Yellowknife Ar**	**62.33**	**31**	P	**P**	**10 58 02.7**	**+0.8**
	0.1nm,0.7s,baz=298,slow=6.4,SNR=2.7						

NIED ***03*** *11:00:00,37.°80N×143.°80E,h8km,Mw3.8 Best double couple: M₀5.24000×10¹⁴ NP1:φ₀277.00000°,δ43.00000°, λ125.00000°. NP2:φ₀53.00000°,δ56.00000°,λ62.00000°.*
JMA 03 11:00:08.6±0.6,37.°82N×143.°79E,h0km,M3.5,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.03 289**		P	Pn	11 00 44.3	+0.3
JIO				S	Sb	11 01 11.3	-0.7
OFUJ	**Ofunato**	**2.09 308**		P	Pn	11 00 45.0	+0.2
JMK	**Ichinoseki**	**2.31 300**		P	Pn	11 00 49.4	+1.4
MIYJ	**Miyakonagasawa**	**2.33 319**		P	Pn	11 00 49.8	+1.5
MIYJ				*e*S	Sn	11 01 18.3	+0.6
JFK	**Kawauchi**	**2.36 260**		P	Pn	11 00 49.9	+1.3
JMM	**Marumori**	**2.37 272**		P	Pn	11 00 50.1	+1.3
JMM				*e*S	Sn	11 01 19.0	+0.4
ONAJ	**Iwakimizuishiy**	**2.49 254**		P	Pn	11 00 51.2	+0.8
JOU	**Okura**	**2.53 283**		P	Pn	11 00 52.8	+1.9
JOM	**Ohasama**	**2.56 311**		P	Pn	11 00 52.8	+1.5
JOM				S	Sn	11 01 24.9	+1.7
JFT	**Otama**	**2.76 265**		P	Pn	11 00 55.9	+1.8
JFT				*e*S	Sn	11 01 28.9	+0.8
JHO	**Hitachi**	**2.84 246**		P	Pn	11 00 56.6	+1.4
JKZ	**Kuzumaki**	**2.89 319**		P	Pn	11 00 57.2	+1.3
JKZ				*e*S	Sn	11 01 33.4	+2.0
JYK	**Kaneyama**	**2.91 293**		P	Pn	11 00 56.8	+0.6
JYK				*e*S	Sn	11 01 34.4	+2.5
JRG	**Rokugo**	**2.93 303**		P	Pn	11 00 57.3	+0.9
JRG				S	Sn	11 01 35.2	+2.8
JYT	**Yasato**	**3.29 242**		P	Pn	11 01 01.4	+0.1
JYW	**Yuwa**	**3.29 303**		*e*S	Sb	11 01 45.1	-3.2
JAH	**Hinai**	**3.41 315**		S	Sn	11 01 46.3	+2.1
JTM	**Tenmabayashi**	**3.64 325**		*e*S	Sn	11 01 50.6	+0.8
JKT	**Katashina**	**3.77 255**		P	Pn	11 01 10.8	+2.7
JHU	**Hanno**	**4.12 243**		P	Pn	11 01 12.4	-0.3
MAT	**Matsushiro**	**4.64 256**		P	Pn	11 01 22.9	+3.0

IDC ***03*** *11:01:04.0±1.1,36.°25N×142.°16E,h0km,mb3.8/6, mb1 3.9/8,mb1mx3.6/37,mbtmp3.7/8,ML3.4/2,MS2.2/2, Ms1 2.2/2,ms1mx2.1/36,Error ellipse: s-maj=23.9km s-min=21.6km az=126.0*
ISCJB ***03*** *11:01:04.9±0.8,36.°32N±0.°04×142.°27E±0.°08,h19km, mb3.8/6,Error ellipse: s-maj=9.6km s-min=5.7km az=1.5*
JMA ***03*** *11:01:07.2±0.3,36.°39N×142.°14E,h66km,M2.9*
ISC 03 11:01:07.0±0.9,36.°37N±0.°05×142.°16E±0.°08,h19km,n24, σ1§17/28,mb3.7/6,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.25 238**		P	**Pn**	**11 01 29.0**	**-0.3**
JHO	**Hitachi**	**1.30 281**		P	**Pn**	**11 01 29.2**	**-0.9**
ONAJ	**Iwakimizuishiy**	**1.31 304**		P	**Pn**	**11 01 29.8**	**-0.5**
JFK	**Kawauchi**	**1.43 314**		P	**Pn**	**11 01 30.7**	**-1.2**
JMM	**Marumori**	**1.85 324**		P	**Pn**	**11 01 37.3**	**-0.3**
JMM				*e*S	**Sn**	**11 01 57.7**	**-2.7**
JFT	**Otama**	**1.85 309**		P	**Pn**	**11 01 37.5**	**-0.2**
JFT				*e*S	**Sb**	**11 02 02.9**	**-0.1**
BSO1	**Boso 1**	**1.97 210**		P	**Pn**	**11 01 38.5**	**-0.2**
BSO1				*e*S	**Sn**	**11 02 03.4**	**+0.8**
BSO3	**Boso 3**	**2.06 221**		P	**Pn**	**11 01 40.2**	**-0.1**
JAG	**Ashikaga**	**2.18 272**		P	**Pn**	**11 01 42.4**	**+0.2**
JRY	**Ryogami san**	**2.66 263**		P	**Pn**	**11 01 48.8**	**0.0**
JOD2	**Odawara 2**	**2.73 247**		P	**Pn**	**11 01 49.8**	**+0.1**
JYK	**Kaneyama**	**2.91 331**		P	**Pn**	**11 01 53.8**	**+1.5**
JYN	**Shimob**	**3.06 254**		P	**Pn**	**11 01 55.8**	**+1.5**
MJAR	**Matsushiro Arr**	**3.19 274**		Pn	**Pn**	**11 01 56.8**	**+0.8**
	2.1nm,0.3s,baz=102,slow=8.9,SNR=33						
MJAR				Sn	**Sn**	**11 02 34.0**	**+0.5**
	1.1nm,0.3s,baz=78,slow=18,SNR=4.2						
MJAR				LR	LR	11 03 20.4	
	comp=Z,41nm,19.7s,baz=135,slow=43						
MAT	**Matsushiro**	**3.19 274**		P	**Pn**	**11 01 57.0**	**+0.9**
JHJ	**Hachijo jima 2**	**3.79 212**		Pn	**Pn**	**11 02 02.5**	**-1.8**
	18nm,0.3s,baz=246,slow=23,SNR=9.7						
JHJ				Sn	**Sn**	**11 02 46.8**	**-1.6**
	21nm,0.3s,baz=274,slow=22,SNR=6.5						
JHJ				LR	LR	11 03 28.4	
	comp=Z,29nm,21.7s,baz=98,slow=39						
ASAJ	**Asahikawa**	**7.74**	**2**	Pn	**Pn**	**11 02 56.4**	**-2.2**
	0.7nm,0.3s,baz=180,slow=20,SNR=3.9						
JOW	**Kunigami**	**15.16 235**		LR	LR	11 09 33.0	
	comp=Z,2μm,21.6s,baz=148,slow=34						
SONM	**Songino Array**	**28.65 305**		P	**P**	**11 07 02.7**	**+0.3**
	1.1nm,0.4s,baz=110,slow=10.0,SNR=6.2						
ZALV	**Zalesovo Beam**	**42.80 313**		P	**P**	**11 09 03.3**	**+0.1**
	0.5nm,0.3s,baz=106,slow=9.8,SNR=3.1						
MKAR	**Makanchi Array**	**44.98 303**		P	**P**	**11 09 21.2**	**+0.4**
	1.3nm,0.7s,baz=91,slow=11,SNR=6.7						
WRA	**Warramunga Arr**	**56.49 189**		P	**P**	**11 10 46.4**	**-1.4**
	0.4nm,0.5s,baz=7.8,slow=7.7,SNR=7.0						
YKA	**Yellowknife Ar**	**64.08**	**30**	P	**P**	**11 11 39.5**	**+0.2**
	0.3nm,0.7s,baz=302,slow=6.7,SNR=7.6						
TXAR	**Lajitas Array**	**90.05**	**53**	P	**P**	**11 14 07.9**	**+2.1**
	0.5nm,1.0s,baz=318,slow=1.7,SNR=3.4						

MEX 03 11:25:42.3±0.3,14.°00N×91.°76W,h26km±13km,MD3.9, Near coast of Guatemala

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		**2.21 320**		*i* P	Pn	11 26 15.0	-2.3
PCIG				*e*S	Sn	11 26 40.9	-2.9
CCIG	**Comitan**	**2.30 351**		*e*P	Pn	11 26 16.1	-2.7
CCIG				*e*S	Sn	11 26 43.7	-2.6

IDC 03 11:28:47.8±4.1,24.°20S×179.°56E,h550km±45km,mb2.9/6, mb1 3.1/7,mb1mx2.9/37,mbtmp3.8/7,Error ellipse: s-maj=29.3km s-min=26.0km az=11.0,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**12.25 277**		P	P	11 31 30.3	+1.2
	0.2nm,0.3s,baz=112,slow=19,SNR=4.8						
URZ	**Urewera**	**14.17 188**		P	P	11 31 44.4	-4.2
	7.4nm,0.3s,baz=343,slow=1.8,SNR=37						
URZ				S	S	11 34 14.1	-3.3
	0.9nm,0.3s,baz=225,slow=23,SNR=8.3						
RPZ	**Rata Peaks**	**20.68 198**		P	P	11 32 49.3	-0.6
	3.5nm,0.5s,baz=29,slow=6.0,SNR=5.2						
STKA	**Stephens Creek**	**34.24 248**		P	P	11 34 47.5	-0.7
	0.7nm,0.5s,baz=102,slow=9.9,SNR=4.3						
ASAR	**Alice Springs**	**41.59 261**		P	P	11 35 47.7	-0.5
	0.2nm,0.3s,baz=94,slow=7.5,SNR=2.9						
WRA	**Warramunga Arr**	**41.99 267**		P	P	11 35 51.5	+0.2
	0.4nm,0.3s,baz=97,slow=8.4,SNR=17						
NVAR	**Mina Array Bea**	**85.24**	**44**	P	P	11 40 25.9	-1.0
	0.5nm,0.7s,baz=215,slow=8.3,SNR=4.6						
TXAR	**Lajitas Array**	**90.93**	**58**	P	P	11 40 54.1	+0.6
	0.7nm,0.7s,baz=211,slow=6.2,SNR=7.4						
BVAR	**Borovoye Array**	**120.40 319**		PKP	PKPdf	11 46 35.4	-1.1
	0.4nm,0.3s,baz=174,slow=1.5,SNR=3.7						
ARCES	**ARCESS Array B**	**132.09 348**		PKP	PKPdf	11 46 58.1	-0.3
	0.9nm,0.7s,baz=80,slow=2.5,SNR=6.2						
AKASG	**Malin Array Be**	**145.00 327**		PKPbc	PKPdf	11 47 22.4	+0.1
	0.4nm,0.3s,baz=44,slow=4.6,SNR=4.9						
BRTR	**Keskin Array B**	**147.43 307**		PKPbc	PKPbc	11 47 29.7	-0.7
	0.4nm,0.4s,baz=140,slow=6.1,SNR=4.4						
TORD	**Torodi Ar. Bea**	**168.82 191**		PKPab	PKPab	11 49 07.8	+0.8
	1.0nm,0.8s,baz=172,slow=4.9,SNR=5.3						

HLW ***03*** *11:32:18.4,29.°93N×36.°32E,h10km±12km,Md2.9,Ml3.1*
SGS ***03*** *11:32:18.9,29.°93N×36.°19E,h0km*
ISC 03 11:32:18.1±2.5,29.°9N±0.°1×36.°22E±0.°09,h3km,n13, σ0§54/16,Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HQLS		**1.18 238**		P	**Pg**	**11 32 40.7**	**-0.1**
JLOS		**1.35 208**		P	**Pg**	**11 32 43.5**	**-0.4**
HAQS	**Haql**	**1.43 232**		P	**Pn**	**11 32 44.5**	**-0.5**
HBST	**Basata**	**1.47 242**		P	**Pn**	**11 32 45.5**	**-0.1**
	baz=244						
HBST				AMP		11 33 00.0	
	comp=E,230μm,0.3s,logA/T=5.9,baz=244						
HBST				S	**Sg**	**11 33 05.7**	**+0.3**
	baz=244						
NUB		**1.64 237**		P	**Pn**	**11 32 48.0**	**+0.2**
	baz=238						
TBKS	**Tabuk**	**1.73 170**		S	**Sg**	**11 33 15.0**	**+1.4**
TBKS				P	**Pn**	**11 32 48.6**	**-0.4**
BDAS	**Al Bad'**	**1.78 213**		P	**Pn**	**11 32 49.7**	**-0.2**
HDHB	**Dhahab**	**1.84 230**		P	**Pn**	**11 32 50.1**	**-0.4**
	baz=232						
HNKL	**Nakhl**	**1.94 271**		P	**Pn**	**11 32 52.0**	**0.0**
	baz=271						
RSHS		**2.04 218**		S	**Sg**	**11 33 24.1**	**+0.3**
RSHS				P	**Pn**	**11 32 52.7**	**-0.7**
TR2	**Tor 2**	**2.67 235**		P	**Pn**	**11 33 01.7**	**-0.3**
	baz=237						
SUZ	**Suez**	**2.94 269**		P	**Pn**	**11 33 05.6**	**-0.1**
	baz=270						
ZNM	**Zenema**	**2.96 260**		P	**Pn**	**11 33 06.3**	**+0.3**
	baz=261						

KRNET ***03*** *11:33:47.9±0.1,43.°61N×77.°67E,h24km,mb3.8*
NNC ***03*** *11:33:47.5±0.4,43.°66N×77.°70E,h1km,2km,mb3.9, mpv3.7,Error ellipse: s-maj=4.0km s-min=1.5km az=167.0*
ISCJB ***03*** *11:33:48.4±0.3,43.°63N±0.°02×77.°68E±0.°02,h7km,2km, Error ellipse: s-maj=2.8km s-min=2.0km az=160.8*
SOME ***03*** *11:33:48.8,43.°63N×77.°68E,h15km*
MOS ***03*** *11:33:49.6±2.0,43.°76N×77.°54E,h25km,mb4.1/1,Error ellipse: s-maj=12.4km s-min=8.2km az=87.6*
ISC 03 11:33:49.3±1.0,43.°59N±0.°02×77.°67E±0.°02,h25km±10km, n73,σ1§34/120,54C-23D,Lake Issyk-Kul region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KURS	**Kuram**	**0.38 106**		⇑*i*P	**Pb**	**11 33 56.9**	**-0.7**
	984nm,0.3s						
KURS				⇑*i*S	**Sb**	**11 34 02.6**	**-0.7**
	3μm,0.2s						
KOTS	**Kotyrbulak**	**0.54 229**		*e*P	**Pn**	**11 33 59.9**	**-1.6**
KOTS				*e*S	**Sb**	**11 34 07.5**	**-0.3**
CHKK	**Chushkaly**	**0.56 300**		*e*P	**Pn**	**11 33 59.6**	**-2.0**
	429nm,0.2s						
CHKK				*e*S	**Sn**	**11 34 07.7**	**-2.5**
	2μm,0.6s						
AAA	**Alma-Ata**	**0.61 239**		⇑*i*P	**Pn**	**11 34 02.3**	**-0.3**
	1μm,0.1s						
AAA				⇑*i*S	**Sn**	**11 34 12.0**	**+0.3**
	12μm,0.1s						
AAA	**Alma-Ata**	**0.61 239**		*i* PG	**Pn**	**11 34 02.2**	**-0.3**
AAA				*i* S	**Sn**	**11 34 11.9**	**+0.3**
AAA				pmax	pmax		
	comp=Z,1μm,0.2s						
AAA				smax	smax		
	comp=E,12μm,0.2s						
MDOK	**Medeo**	**0.62 227**		⇓*i*P	**Pn**	**11 34 01.3**	**-1.4**
	comp=E,263nm,0.1s						
MDOK				⇓*i*S	**Sn**	**11 34 10.1**	**-1.8**
	comp=E,3μm,0.6s						
ARXS	**Arharly**	**0.63**	**10**	*e*P	**Pn**	**11 34 01.0**	**-1.8**
ARXS				*e*S	**Sn**	**11 34 09.5**	**-2.6**
KNDC	**Almaty**	**0.63 234**		⇑P	**Pn**	**11 34 01.6**	**-1.1**
KNDC				⇓S	**Sn**	**11 34 10.9**	**-1.2**
ZHN	**Zhinishke**	**0.70 127**		*e*P	**Pn**	**11 34 02.2**	**-1.6**
	comp=E,390nm,0.1s						
ZHN				*e*S	**Sb**	**11 34 11.5**	**-0.8**
	comp=E,12μm,0.3s						
MNBS	**Baschi**	**0.72**	**47**	*e*P	**Pn**	**11 34 02.7**	**-1.3**
	comp=E,188nm,0.2s						
MNBS				*e*S	**Sn**	**11 34 12.4**	**-1.9**
	comp=E,2μm,0.3s						
KPKS	**Kokpek**	**0.75**	**99**	*e*P	**Pn**	**11 34 03.0**	**-1.4**
	comp=E,2μm,0.1s						
KPKS				*e*S	**Sb**	**11 34 13.0**	**-0.6**
	comp=E,4μm,0.2s						
SATY	**Saty**	**0.76 134**		*e*P	**Pn**	**11 34 03.4**	**-1.2**
	comp=E,420nm,0.1s						
SATY				*e*S	**Sb**	**11 34 13.5**	**-0.3**
	comp=E,6μm,0.2s						
TNSS	**Tian-Shan**	**0.76 224**		⇓*i*P	**Pn**	**11 34 03.6**	**-1.2**
	comp=E,404nm,0.2s						
TNSS				*e*S	**Sn**	**11 34 14.3**	**-1.4**
	comp=E,2μm,0.4s						
ANVS	**Anan'yevo**	**0.81 180**		⇑*e*P	**Pn**	**11 34 04.1**	**-1.2**
	baz=181						
ANVS				⇑*i*S	**Sb**	**11 34 15.1**	**-0.3**
	baz=181						
IZV	**Izvestkoviy**	**0.95 235**		*e*P	**Pn**	**11 34 06.8**	**-0.4**
IZV				*e*S	**Sn**	**11 34 19.6**	**-0.5**
KUU	**Kurty**	**1.01 288**		⇑*i*P	**Pb**	**11 34 07.2**	**-0.9**
	comp=E,300nm,0.1s						
KUU				*e*S	**Sn**	**11 34 20.8**	**-0.6**
	comp=E,593nm,0.2s						
MTBS	**Maitube**	**1.01 243**		⇑*i*P	**Pb**	**11 34 07.8**	**-0.5**
	comp=E,844nm,0.2s						
MTBS				⇓*i*S	**Sn**	**11 34 21.7**	**+0.2**
	comp=E,2μm,0.3s						
UZB	**Uzynbulak**	**1.08 114**		*e*P	**Pb**	**11 34 08.7**	**-0.8**
	comp=E,881nm,0.2s						
UZB				*e*S	**Sn**	**11 34 22.8**	**-0.5**
	comp=E,890nm,0.2s						
PRZ	**Przheval'sk**	**1.23 154**		⇑*e*P	**Pb**	**11 34 12.4**	**+0.4**
	baz=155						
PRZ				⇑*i*S	**Sb**	**11 34 29.5**	**+2.0**
	baz=155						
PDGK	**Podgornoye**	**1.35 101**		⇑*e*P	**Pb**	**11 34 13.0**	**-0.9**
	baz=102						
PDGK				⇑*e*S	**Sb**	**11 34 30.9**	**+0.2**
	baz=102						
PDGK	**Podgornoye**	**1.35 101**		⇑P	**Pb**	**11 34 13.0**	**-0.9**
	comp=E,308nm,0.4s						
PDGK				⇑S	**Sb**	**11 34 30.7**	**0.0**
	comp=E,227nm,0.5s						
PDGK	**Podgornoye**	**1.35 101**		PG	**Pb**	**11 34 12.8**	**-1.1**
PDGK				pmax	pmax		
	comp=Z,309nm,0.4s						
KST	**Kastek**	**1.36 247**		*e*P	**Pb**	**11 34 13.6**	**-0.5**
	comp=Z,102nm,0.1s						
KST				⇑*i*S	**Sb**	**11 34 31.7**	**+0.5**
	comp=Z,842nm,0.3s						
DGS	**Degeres**	**1.43 256**		*e*P	**Pb**	**11 34 14.3**	**-0.9**
DGS				*e*S	**Sb**	**11 34 32.4**	**-0.6**
KDJ	**Kajisay**	**1.50 194**		⇑*i*P	**Pb**	**11 34 16.8**	**+0.2**
	baz=194						
KDJ				⇑*i*S	**Sb**	**11 34 36.3**	**+0.9**
	baz=194						
TDK	**Taldyqorghan**	**1.51**	**20**	*e*P	**Pb**	**11 34 16.2**	**-0.4**
	comp=Z,511nm,0.3s						
TDK				*e*S	**Sb**	**11 34 35.9**	**+0.5**
	comp=Z,2μm,0.3s						
TKM2	**Tokmak 2**	**1.66 247**		⇑*i*P	**Pb**	**11 34 18.1**	**-1.1**
	baz=246						
TKM2				⇑*i*S	**Sb**	**11 34 40.3**	**+0.6**
	baz=246						
TKM2	**Tokmak 2**	**1.66 247**		⇓P	**Pb**	**11 34 18.1**	**-1.1**
	comp=Z,92nm,0.6s						
TKM2				⇑S	**Sb**	**11 34 40.4**	**+0.7**
	comp=Z,271nm,0.3s						
TKM2	**Tokmak 2**	**1.66 247**		PN	**Pb**	**11 34 17.8**	**-1.4**
TKM2				S	**Sb**	**11 34 40.4**	**+0.7**
TKM2				pmax	pmax		
	comp=Z,92nm,0.6s						
TKM2				smax	smax		
	comp=N,25nm,0.2s						
SHLS	**Shalkode**	**1.67 104**		*e*P	**Pb**	**11 34 18.7**	**-0.8**
	comp=N,197nm,0.2s						
SHLS				*e*S	**Sb**	**11 34 41.0**	**+0.8**
	comp=N,534nm,0.4s						
BOOM	**Boomskoye usch**	**1.68 230**		⇑*e*P	**Pb**	**11 34 18.9**	**-0.7**
	baz=229						
BOOM				⇑*e*S	**Sb**	**11 34 40.6**	**+0.2**
	baz=229						
DJR	**Jarkent**	**1.70**	**63**	*e*P	**Pb**	**11 34 19.0**	**-0.9**
	comp=N,262nm,0.2s						
DJR				*e*S	**Sb**	**11 34 41.3**	**+0.4**
	comp=N,988nm,0.3s						
ULHL	**Ulahol**	**1.71 218**		⇑*i*P	**Pb**	**11 34 19.8**	**-0.3**
	baz=218						
ULHL				⇑*i*S	**Sb**	**11 34 42.4**	**+1.2**
	baz=218						
KTMS	**Ketmen**	**1.96**	**93**	*e*P	**Pb**	**11 34 23.5**	**-0.8**
	comp=N,216nm,0.3s						
KTMS				*e*S	**Sb**	**11 34 49.3**	**+0.9**
	comp=N,256nm,0.2s						
KAPS	**Kapalarasan**	**2.08**	**35**	⇑*i*P	**Pb**	**11 34 25.7**	**-0.7**
	comp=N,84nm,0.3s						
KAPS				⇓*i*S	**Sb**	**11 34 53.4**	**+1.5**
	comp=N,931nm,0.5s						
KBK	**Karagaybulak**	**2.20 246**		⇑*i*P	**Pb**	**11 34 26.4**	**-2.1**
	baz=245						
KBK				⇑*i*S	**Sb**	**11 34 55.7**	**+0.3**
	baz=245						
CHMS	**Chumysh**	**2.21 255**		⇓*i*P	**Pn**	**11 34 25.1**	**+0.7**
	baz=255						
CHMS				⇓*i*S	**Sb**	**11 34 55.5**	**0.0**
	baz=255						
USP	**Ospenovka**	**2.33 263**		⇑*i*P	**Pb**	**11 34

MK31							11 36 09.2
MK31				pmax	pmax		
comp=N,25nm,0.7s							
MKAR	**Makanchi Array**	**4.57**	**44**	*i* PN	**Pn**	**11 34 59.0**	**+2.1**
MKAR				pmax	pmax		
comp=Z,2.0nm,0.4s							
SFK	**Sufi-Kurgan**	**4.74**	**222**	⇓Pg	**Pb**	**11 35 14.6**	**+2.8**
comp=Z,4.9nm,0.4s							
SFK				⇓Lg	Lg	11 36 19.1	
comp=Z,44nm,1.0s							
SFK	**Sufi-Kurgan**	**4.74**	**222**	PN	Pb	11 35 19.1	+7.3
SFK						11 36 18.9	
SFK				pmax	pmax		
comp=Z,5.0nm,0.4s							
SFK				pmax	pmax		
comp=N,13nm,0.6s							
KK31	**Karatay Array**	**5.24**	**267**	⇑Pg	**Pb**	**11 35 21.3**	**+1.1**
comp=N,4.7nm,0.5s,baz=81,slow=16,SNR=47							
KK31				Lg	Lg	11 36 33.5	
comp=N,22nm,0.5s,baz=86,slow=29,SNR=10							
KK31	**Karatay Array**	**5.24**	**267**	*i* PN	**Pb**	**11 35 21.5**	**+1.3**
KK31				pmax	pmax		
comp=Z,5.0nm,0.5s							
KK31				pmax	pmax		
comp=N,22nm,0.5s							
IUG	**Iuzhnay**	**5.79**	**258**	*e*P	Pb	11 35 35.5	+5.8
comp=N,17nm,0.4s							
IUG				*e*S	Sb	11 36 53.0	+14
comp=N,58nm,0.7s							
OTUK	**Ortayu**	**5.96**	**323**	⇓Pn	**Pn**	**11 35 15.9**	**+0.1**
comp=N,4.4nm,0.9s							
OTUK				⇓Sn	**Sn**	**11 36 25.6**	**+2.4**
comp=N,4.8nm,0.5s							
OTUK				⇑Lg	Lg	11 36 53.7	
comp=N,44nm,0.5s							
OTUK	**Ortayu**	**5.96**	**323**	PN	**Pn**	**11 35 15.9**	**+0.1**
KURBB	**Kurchatov Arra**	**7.06**	**4**	⇑Pn	**Pn**	**11 35 31.9**	**+1.0**
comp=N,2.2nm,0.3s							
KURBB				⇑Lg	Lg	11 37 27.8	
comp=N,44nm,0.6s							
KURK	**Kurchatov**	**7.16**	**5**	⇑Lg	Lg	11 37 29.8	
comp=N,48nm,1.0s							
KURK	**Kurchatov**	**7.16**	**5**	*i* PN	**Pn**	**11 35 33.4**	**+1.1**
VOSK	**Vostochnaya**	**10.17**	**336**	⇓Pn	**Pn**	**11 36 12.8**	**-0.7**
comp=N,1.2nm,0.6s							
VOSK				⇑Sn	**Sn**	**11 38 07.3**	**+0.7**
comp=N,1.8nm,0.9s							
VOSK				⇓Lg	Lg	11 39 07.6	
comp=N,14nm,0.8s							
VOSK	**Vostochnaya**	**10.17**	**336**	P	**Pn**	**11 36 10.8**	**-2.7**
VOSK				pmax	pmax		
comp=Z,1.0nm,0.6s							
BVA0	**Borovoye Array**	**10.61**	**335**	⇑Pn	**Pn**	**11 36 19.7**	**+0.2**
comp=Z,1.4nm,0.7s,baz=157,slow=13,SNR=5.8							
BVA0				⇑Sn	**Sn**	**11 38 19.6**	**+2.2**
comp=Z,1.3nm,0.5s,baz=148,slow=23,SNR=3.5							
BVA0				⇑Lg	Lg	11 39 20.4	
comp=Z,9.4nm,0.9s,baz=225,slow=42,SNR=3.5							
BVA0	**Borovoye Array**	**10.61**	**335**	P	**Pn**	**11 36 22.1**	**+2.6**
BVA0						11 38 12.0	
BVA0				pmax	pmax		
comp=Z,1.0nm,0.6s							
BVA0				smax	smax		
comp=N,1.0nm,0.6s							
BVA0				pmax	pmax		
comp=N,9.0nm,0.9s							
BVAR	**Borovoye Array**	**10.61**	**335**	P	**Pn**	**11 36 18.0**	**-1.5**
BRVK	**Borovoye**	**10.67**	**335**	*i* P	**Pn**	**11 36 19.6**	**-0.8**
AB31	**Akbulak array**	**13.46**	**301**	⇑Pn	**Pn**	**11 36 59.7**	**+1.1**
comp=N,0.3nm,0.6s,baz=104,slow=10,SNR=4.2							
AB31				⇓Lg	Lg	11 40 54.8	
comp=N,5.1nm,0.9s							
AB31	**Akbulak array**	**13.46**	**301**	*i* P	**Pn**	**11 36 59.6**	**+1.1**
AKTO	**Aktyubinsk**	**15.03**	**304**	⇓Lg	Lg	11 41 44.2	
comp=N,3.6nm,0.9s							
ARU	**Arti**	**17.69**	**323**	P	**P**	**11 37 54.6**	**+0.2**
ARU				S	**S**	**11 41 11.8**	**-5.0**
TLY	**Talaya**	**19.21**	**56**	*i* P	**Pn**	**11 38 13.9**	**+1.7**
TLY				pmax	pmax		
comp=Z,1.0nm,0.5s							

IDC 03 11:37:19.6±3.9, 19°.63S×176°.27W, h0km, mb3.5/2, mb1 3.8/2, mb1mx3.4/38, mbtmp3.5/2, Error ellipse: s-maj=262.1km s-min=78.8km az=163.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**46.31**	**256**	P	P	11 45 47.8	+0.2
0.4nm,0.6s,baz=94,slow=7.8,SNR=12							
ASAR				PcP	PcP	11 47 21.8	-1.2
0.1nm,0.5s,baz=112,slow=4.3,SNR=4.5							
WRA	**Warramunga Arr**	**46.34**	**261**	P	P	11 45 47.6	-0.2
0.2nm,0.3s,baz=95,slow=8.5,SNR=15							
AKASG	**Malin Array Be**	**143.02**	**333**	PKP	PKPdf	11 56 56.6	+1.3
0.4nm,0.4s,baz=42,slow=4.2,SNR=4.6							

*ISCJB **03** 11:41:20.4±1.2, 12°.00N±0°.07×43°.95E±0°.07, h4km±10km, Error ellipse: s-maj=15.2km s-min=5.8km az=138.5*
*DHMR **03** 11:41:21.4±1.5, 12°.10N×43°.93E, h7km±17km, ML4.0*
*ARO **03** 11:41:22.8, 12°N±10°×4°.4E±°, h9km±20km, ML3.0*

ISC 03 11:41:20.7±1.7, 12°.05N±0°.06×43°.93E±0°.07, h7km±15km, n12, σ0°80/17, 2C, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OBO	**Obock**	**0.62**	**265**	*e*P	**Pg**	**11 41 33.6**	**+0.9**
MCAD	**Moucha**	**0.77**	**246**	*e*P	**Pg**	**11 41 36.4**	**+0.9**
ATA	**Atar**	**0.92**	**230**	*e*P	**Pg**	**11 41 39.2**	**+0.9**
TDD	**Tadjoura Ara**	**1.03**	**257**	*e*P	**Pg**	**11 41 40.4**	**0.0**
ATD	**Arta Tunnel**	**1.18**	**244**	*e*P	**Pb**	**11 41 43.0**	**-0.4**
ATD	**Arta Tunnel**	**1.18**	**244**	*e*P	**Pb**	**11 41 43.0**	**-0.4**
ATD				*e*S	**Sb**	**11 41 59.0**	**+0.2**
TRBA	**At Turbah**	**1.19**	**9**	⇑*i*P	**Pg**	**11 41 43.4**	**-0.2**
TRBA				*i* S	**Sg**	**11 41 58.8**	**-0.4**
TRBA				AML	AML	11 42 01.5	
comp=Z,4μm,0.4s							
ADEN	**Aden**	**1.26**	**55**	⇑*i*P	**Pn**	**11 41 44.5**	**-0.2**
ADEN				*i* S	**Sb**	**11 42 01.5**	**+0.2**
ADEN				AML	AML	11 42 08.6	
comp=N,2μm,0.4s							
LDLD	**Lac de Lave**	**1.47**	**252**	*e*P	**Pn**	**11 41 47.4**	**-0.3**
GBR	**Grand-Bara**	**1.69**	**238**	*e*P	**Pn**	**11 41 49.8**	**-0.9**
UDYN	**Al 'Udayn**	**1.91**	**1**	*i* P	**Pn**	**11 41 54.0**	**+0.2**
UDYN				*i* S	**Sg**	**11 42 20.9**	**-1.3**
DHBB	**Dhamar BB**	**2.55**	**10**	*i* P	**Pn**	**11 42 04.3**	**+1.5**
DHBB				*i* S	**Sb**	**11 42 39.4**	**+0.6**

*NEIC **03** 11:42:03.8±0.9, 30°.49N×105°.68W, h10km, ML2.8, Error ellipse: s-maj=14.5km s-min=11.2km az=144.0*

MEX 03 11:42:04.9±0.6, 30°.53N×105°.42W, h7km±26km, MD4.1, Texas-Mexico border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CGIG		**2.21**	**266**	*i* P	Pn	11 42 39.8	-2.4
CGIG				*e*S	Sn	11 43 05.6	-4.3
CGIG		**2.21**	**266**	*i* P	Pn	11 42 39.8	-2.4
CGIG				*e*S	Sn	11 43 05.6	-4.3
121A	**Cookes Peak, D**	**2.83**	**315**	*e*Pn	Pn	11 42 46.2	-4.6
121A				*e*Sn	Sn	11 43 24.6	-0.7
319A	**Douglas**	**3.42**	**285**	*e*P	Pn	11 42 55.5	-3.2
319A				*e*S	Sn	11 43 34.8	-4.8
HPIG		**3.59**	**183**	*e*P	Pn	11 42 58.0	-3.3
HPIG		**3.59**	**183**	*e*P	Pn	11 42 58.0	-3.3
MSTX	**Muleshoe**	**4.10**	**33**	*e*Pn	Pn	11 43 09.4	+1.3
MSTX				*e*Sn	Sn	11 43 56.9	+0.5
ANMO	**Albuquerque**	**4.49**	**349**	*e*P	Pn	11 43 12.2	-1.3
ANMO				*i* S	Sn	11 44 03.5	-2.5
ANMO	**Albuquerque**	**4.49**	**349**	Pn	Pn	11 43 11.7	-1.8
ANMO				*e*Pg	Pb	11 43 24.2	+0.1
ANMO				*e*Sg	Sb	11 44 17.2	-1.3
TUC	**Tucson**	**4.91**	**292**	*e*Pn	Pn	11 43 15.2	-4.1
TUC				*e*Sg	Sb	11 44 29.9	-0.8
ABTX	**Abilene, Hawle**	**5.36**	**66**	*e*Pg	Pg	11 43 47.0	-0.5
AMTX	**Amarillo**	**5.36**	**35**	*e*Pn	Pn	11 43 25.8	+0.3
AMTX				Sg	Sg	11 44 54.4	-2.8
214A	**Organ Pipe Nat**	**6.48**	**285**	*i* P	Pn	11 43 37.4	-3.4
WMOK	**Wichita Mounta**	**7.00**	**51**	*e*Pn	Pn	11 43 50.4	+2.6
WMOK				*e*Sg	Sg	11 45 43.0	-6.6
WUAZ	**Wupatki**	**7.04**	**316**	*e*Sg	Sb	11 45 36.9	+4.8
MVCO	**Mesa Verde**	**7.13**	**340**	*e*Pg	Pg	11 44 15.7	-5.8
MVCO				*e*Sg	Sg	11 45 45.4	-8.5

*NIED **03** 11:44:00, 37°.50N×141°.40E, h47km, Mw4.2 Best double couple: M0=2.17000×10^15 NP1:φ=216.00000°, δ18.00000°, λ107.00000°. NP2:φ=18.00000°, δ73.00000°, λ85.00000°.*
*MOS **03** 11:44:07.6±1.0, 37°.54N×141°.41E, h62km, mb4.7/33, Error ellipse: s-maj=8.9km s-min=6.2km az=99.2*
*ISCJB **03** 11:44:07.0±0.5, 37°.48N±0°.03×141°.47E±0°.05, h57km±3km, mb4.4/48, MS3.4/13, Error ellipse: s-maj=7.1km s-min=4.3km az=23.8*
*JMA **03** 11:44:08.5±0.1, 37°.51N×141°.38E, h49km±1km, M4.3*
JMA Felt II J1.
*IDC **03** 11:44:09.1±1.9, 37°.47N×141°.26E, h56km±17km, mb4.0/21, mb1 4.1/25, mb1mx4.0/42, mbtmp4.2/25, ML3.7/4, MS3.2/18, Ms1 3.2/18, ms1mx3.0/38, Error ellipse: s-maj=16.0km s-min=10.3km az=91.0*
*NEIC **03** 11:44:10.2±0.8, 37°.48N×141°.41E, h70km±6km, mb4.5/15, Error ellipse: s-maj=8.6km s-min=6.8km az=115.0*
NEIC Recorded [2 JMA] in Fukushima and Miyagi.

ISC 03 11:44:08.8±0.7, 37°.49N±0°.04×141°.48E±0°.05, h57km±5km, n120, σ1§41/130, mb4.5/48, MS3.2/14, 7C-2D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.50**	**256**	P	**Pn**	**11 44 18.9**	**-1.6**
JFK				S	**Sn**	**11 44 26.0**	**-3.1**
JMM	**Marumori**	**0.67**	**305**	P	**Pn**	**11 44 20.9**	**-1.5**
JMM				S	**Sn**	**11 44 29.7**	**-2.7**
ONAJ	**Iwakimizuishiy**	**0.67**	**235**	P	**Pn**	**11 44 21.0**	**-1.5**
ONAJ				S	**Sn**	**11 44 29.9**	**-2.6**
JFT	**Otama**	**0.91**	**272**	P	**Pn**	**11 44 24.6**	**-0.9**
JFT				S	**Sn**	**11 44 35.8**	**-2.1**
JIO	**Ouri**	**0.97**	**354**	P	**Pn**	**11 44 25.4**	**-1.0**
JIO				S	**Sn**	**11 44 37.3**	**-2.0**
JOU	**Okura**	**1.09**	**324**	P	**Pn**	**11 44 26.5**	**-1.4**
JOU				S	**Sn**	**11 44 40.2**	**-2.0**
JYS	**Shiratake**	**1.34**	**304**	P	**Pn**	**11 44 30.1**	**-1.1**
JYS				S	**Sn**	**11 44 46.3**	**-1.8**
MJAR	**Matsushiro Arr**	**2.78**	**251**	P	**Pn**	**11 44 50.5**	**-0.4**
9.3nm,0.3s,baz=45,slow=10,SNR=69							
MJAR				LR	LR	11 46 10.8	
comp=Z,404nm,19.6s,baz=70,slow=47							
MAJO	**Matsushiro**	**2.78**	**251**	*i* P	**Pn**	**11 44 50.8**	**-0.1**
MAJO	**Matsushiro**	**2.78**	**251**	*e*Pn	**Pn**	**11 44 51.1**	**+0.2**
MAT	**Matsushiro**	**2.78**	**251**	P	**Pn**	**11 44 50.9**	**0.0**
MAT				S	**Sn**	**11 45 26.1**	**+2.8**
MJB9	**Matsu-Tunnel**	**2.78**	**251**	*e*Pn	**Pn**	**11 44 51.1**	**+0.2**
INU	**Inuyama**	**4.18**	**241**	*e*Pn	**Pn**	**11 45 11.0**	**+0.9**
JHJ2	**Mitsune**	**4.57**	**198**	*e*Pn	**Pn**	**11 45 15.2**	**-0.1**
JHJ2				*e*Sn	**Sn**	**11 46 04.2**	**-2.9**
JHJ	**Hachijo jima 2**	**4.57**	**198**	P	**Pn**	**11 45 15.4**	**+0.1**
23nm,0.3s,baz=122,slow=23,SNR=16							
JHJ				S	**Sn**	**11 46 05.4**	**-1.8**
30nm,0.3s,baz=107,slow=22,SNR=9.0							
ERM	**Erimo**	**4.71**	**15**	*e*P	**Pn**	**11 45 17.3**	**+0.1**
ERM	**Erimo**	**4.71**	**15**	*e*Pn	**Pn**	**11 45 16.9**	**-0.2**
ERM				*e*Sn	**Sn**	**11 46 11.9**	**+1.5**
ASAJ	**Asahikawa**	**6.68**	**7**	P	**Pn**	**11 45 44.4**	**+0.2**
2.0nm,0.3s,baz=218,slow=13,SNR=23							
ASAJ				LR	LR	11 49 16.6	
comp=Z,51nm,18.2s,baz=92,slow=46							
ASAJ	**Asahikawa**	**6.68**	**7**	*e*Pn	**Pn**	**11 45 45.1**	**+1.0**
YUK	**Yuzh-Kuril'sk**	**7.34**	**26**	P	**Pn**	**11 45 54.7**	**+1.5**
YUK				*i* S	**Sn**	**11 47 11.9**	**-3.1**
YUK				pmax	pmax		
comp=Z,68nm,0.5s							
YUK				pmax	pmax		
comp=E,23nm,0.3s							
YUK				pmax	pmax		
comp=N,40nm,0.6s							
SHO	**Shikotan**	**7.56**	**31**	*e*P	**Pn**	**11 45 55.4**	**-0.9**
SHO				*i* S	Sn	11 47 13.0	-7.5
KUR	**Kuril'sk**	**9.11**	**30**	*e*P	**Pn**	**11 46 18.0**	**+0.6**
KUR				*i* S	**Sn**	**11 47 53.5**	**-4.8**
KUR				pmax	pmax		
comp=Z,35nm,0.8s							
KUR				pmax	pmax		
comp=N,26nm,0.6s							
KUR				pmax	pmax		
comp=E,31nm,0.8s							
JNU	**Nakatsue**	**9.69**	**246**	LR	LR	11 50 34.3	
comp=E,139nm,20.4s,baz=120,slow=40							
USRK	**Ussuriysk Ar.**	**9.83**	**316**	P	**Pn**	**11 46 29.4**	**+2.1**
comp=E,1.2nm,0.3s,baz=135,slow=13,SNR=21							
USRK				LR	LR	11 49 60.0	
comp=E,123nm,18.8s,baz=130,slow=36							
KSRS	**Korea Array**	**10.78**	**274**	P	Pn	11 46 42.8	+2.5
comp=E,0.5nm,0.3s,baz=89,slow=13,SNR=26							
KSRS				LR	LR	11 50 29.2	
comp=E,151nm,21.0s,baz=144,slow=36							
KS01	**Wonju Array Si**	**10.80**	**274**	*e*Pn	Pn	11 46 43.6	+3.1
KS15	**Wonju Array Si**	**10.81**	**274**	*e*Pn	Pn	11 46 44.2	+3.5
KSAR	**Wonju Array Be**	**10.81**	**274**	P	**Pn**	**11 46 42.8**	**+2.1**
KSAR	**Wonju Array Be**	**10.81**	**274**	P	**Pn**	**11 46 42.8**	**+2.1**
MDJ	**Mudanjiang**	**11.45**	**312**	P	Pn	11 46 52.5	+3.1
MDJ				pmax	pmax		
comp=Z,12nm,1.0s							
MDJ				pmax	pmax		
comp=Z,140nm,4.5s							
MDJ	**Mudanjiang**	**11.45**	**312**	*e*Pn	Pn	11 46 52.4	+3.0
comp=Z,6.5nm,0.4s							
MDJ				*e*Sn	**Sn**	**11 48 52.1**	**-3.7**
KLR	**Kul'dur**	**13.69**	**332**	P	**Pn**	**11 47 19.8**	**-0.2**
comp=Z,0.1nm,0.3s,baz=148,slow=11,SNR=4.9							
KLR				LR	LR	11 52 34.1	
comp=Z,76nm,19.2s,baz=147,slow=37							
PETK	**Petropavlovsk-**	**19.27**	**31**	LR	LR	11 55 27.4	
comp=Z,21nm,20.9s,baz=239,slow=35							
NJ2	**Nanjing**	**19.34**	**260**	*e*P	**Pn**	**11 48 31.0**	**0.0**
NJ2				pmax	pmax		
comp=Z,16nm,0.7s							
BJI	**Beijing**	**19.88**	**285**	P	**Pn**	**11 48 36.6**	**-0.7**
BJI				sP	**sP**	**11 48 58.4**	**+3.3**
BJI				S	**Sn**	**11 52 20.3**	**+0.3**
BJI				pmax	pmax		
comp=Z,8.0nm,0.5s							
BJI				pmax	pmax		
comp=Z,65nm,3.8s							
BJI				LR	LR		
comp=N,170nm,14.5s							
MA2	**Magadan**	**22.90**	**12**	LR	LR	11 59 14.3	
comp=N,27nm,19.3s,baz=102,slow=39							
HHC	**Hu-ho-hao-te**	**23.38**	**288**	*e*P	**P**	**11 49 13.3**	**+0.8**
HHC				S	**S**	**11 53 21.0**	**-0.2**
HHC				pmax	pmax		
comp=Z,18nm,1.0s							
HHC				pmax	pmax		
comp=Z,140nm,4.2s							
HHC				LR	LR		
comp=N,440nm,13.2s							
HHC				LR	LR		
comp=E,590nm,12.7s							
HHC				LR	LR		
comp=Z,520nm,13.7s							
YAK	**Yakutsk**	**25.64**	**347**	P	**P**	**11 49 31.9**	**-0.7**
comp=Z,11nm,0.4s,baz=331,slow=2.0,SNR=4.6							
YAK				LR	LR	12 00 02.2	
comp=Z,53nm,18.0s,baz=188,slow=37							
YAK	**Yakutsk**	**25.64**	**347**	*e*P	**P**	**11 49 32.1**	**-0.6**
YAK				pmax	pmax		
comp=Z,20nm,1.0s							
SEY	**Seymchan**	**26.34**	**11**	P	**P**	**11 49 39.8**	**+0.8**
comp=Z,7.5nm,1.0s,baz=199,slow=8.3,SNR=16							
SEY	**Seymchan**	**26.34**	**11**	*c*eP	**P**	**11 49 40.6**	**+1.6**
ULN	**Ulaanbaatar**	**27.15**	**303**	*c*eP	**P**	**11 49 45.5**	**-1.1**
ULN				pmax	pmax		
comp=Z,2.0nm,0.6s							
ULN	**Ulaanbaatar**	**27.15**	**303**	*e*P	**P**	**11 49 45.9**	**-0.8**
comp=Z,3.4nm,0.7s							
BOD	**Bodaibo**	**27.18**	**327**	*e*P	**P**	**11 49 45.5**	**-1.1**
BOD				pmax	pmax		
comp=Z,5.0nm,0.7s							
ENH	**Enshi**	**27.43**	**264**	*e*P	**P**	**11 49 47.8**	**-1.3**
comp=Z,18nm,0.8s							
SONM	**Songino Array**	**27.58**	**303**	P	**P**	**11 49 48.7**	**-1.7**
comp=Z,5.3nm,0.8s,baz=104,slow=8.4,SNR=9.8							
SONM				LR	LR	12 02 13.3	
comp=Z,74nm,20.3s,baz=98,slow=40							
LZH	**Lanzhou**	**30.05**	**279**	*e*P	P	11 50 15.5	+3.0
LZH				pP	sP	11 50 32.1	-1.5
LZH				sP	pP	11 50 39.2	+12
LZH				PP	**PnPn**	**11 51 15.3**	**+4.0**
LZH				pmax	pmax		
comp=Z,23nm,1.2s							
LZH				pmax	pmax		
comp=Z,75nm,5.0s							
LZH				LR	LR		
comp=N,320nm,13.2s							
LZH				LR	LR		
comp=E,350nm,13.3s							
LZH				LR	LR		
comp=Z,380nm,16.8s							
TLY	**Talaya**	**30.08**	**310**	*e*P	**P**	**11 50 12.7**	**+0.2**
TLY				pmax	pmax		
comp=Z,3.0nm,0.8s							
TLY				MLR	MLR		
comp=Z,9.0nm,5.0s							
TLY	**Talaya**	**30.08**	**310**	*e*P	**P**	**11 50 12.6**	**+0.1**
comp=Z,2.8nm,0.8s							
CD2	**Chengdu**	**31.73**	**269**	P	**P**	**11 50 25.8**	**-1.5**
CD2				pmax	pmax		
comp=Z,1.0nm,0.5s							
BILL	**Bilibino**	**33.58**	**17**	⇑*e*P	**P**	**11 50 43.8**	**+0.8**
BILL				*e*		11 51 01.1	
BILL				pmax	pmax		
comp=Z,8.0nm,2.7s							
TIXI	**Tiksi**	**34.85**	**353**	*i* P	**P**	**11 50 53.0**	**-0.9**
TIXI				pmax	pmax		
comp=Z,12nm,3.6s							
WMQ	**Urumqi**	**40.69**	**296**	P	**P**	**11 51 43.2**	**-0.4**
WMQ				pP	pP	11 52 00.5	+2.2
WMQ				sP	sP	11 52 07.4	+2.4
WMQ				pmax	pmax		
comp=Z,4.0nm,0.6s							
WMQ				pmax	pmax		
comp=Z,56nm,4.4s							
WMQ				LR	LR		
comp=N,4.0nm,37.2s							
WMQ				LR	LR		
comp=E,38nm,31.8s							
WMQ				LR	LR		
comp=Z,25nm,20.4s							
ZAA0	**Zalesovo Array**	**41.65**	**312**	*e*P	**P**	**11 51 51.0**	**-0.2**
ZALV	**Zalesovo Beam**	**41.65**	**312**	P	**P**	**11 51 51.0**	**-0.2**
comp=Z,5.7nm,0.7s,baz=87,slow=7.2,SNR=24							
ZALV				LR	LR	12 11 24.0	
comp=Z,31nm,18.4s,baz=70,slow=39							
ZALV	**Zalesovo Beam**	**41.65**	**312**	P	**P**	**11 51 51.0**	**-0.2**
ZALV				pmax	pmax		
comp=Z,6.0nm,0.7s							
ZALV				MLR	MLR		
comp=Z,31nm,18.4s							
NVS	**Novosibirsk**	**42.57**	**313**	*e*P	**P**	**11 51 56.5**	**-2.2**
MK01	**Makanchi Array**	**43.92**	**302**	*e*P	**P**	**11 52 09.2**	**-0.6**
MK31	**Makanchi Array**	**43.93**	**302**	*e*P	**P**	**11 52 09.7**	**-0.1**
MK31	**Makanchi Array**	**43.93**	**302**	*e*P	**P**	**11 52 09.7**	**-0.1**
MKAR	**Makanchi Array**	**43.93**	**302**	P	**P**	**11 52 09.8**	**-0.1**
comp=Z,8.1nm,0.9s,baz=88,slow=9.7,SNR=45							
MKAR				LR	LR	12 12 25.9	
comp=Z,14nm,19.2s,baz=142,slow=39							
MAKZ	**Makanchi**	**44.13**	**302**	*e*P	**P**	**11 52 11.1**	**-0.4**
MAKZ				pmax	pmax		
comp=Z,9.0nm,0.9s							
MAKZ	**Makanchi**	**44.13**	**302**	*e*P	**P**	**11 52 11.1**	**-0.4**
comp=Z,8.6nm,0.9s							
KURK	**Kurchatov**	**45.70**	**308**	*c*eP	**P**	**11 52 22.9**	**-0.9**
KURK				pmax	pmax		
comp=Z,13nm,0.7s							
KURK	**Kurchatov**	**45.70**	**308**	*e*P	**P**	**11 52 22.8**	**-0.9**
comp=Z,15nm,0.9s							
ILAR	**Eielson Array**	**49.09**	**33**	P	**P**	**11 52 51.1**	**+1.2**
comp=Z,1.8nm,0.7s,baz=270,slow=6.7,SNR=18							
TKM2	**Tokmak 2**	**49.46**	**298**	*e*P	**P**	**11 52 53.1**	**-0.3**
TKM2				pmax	pmax		
comp=Z,8.0nm,0.6s							
TKM2	**Tokmak 2**	**49.46**	**298**	*e*P	**P**	**11 52 53.1**	**-0.3**
comp=Z,7.7nm,0.6s							
AAK	**Ala-Archa**	**50.32**	**298**	⇓*e*P	**P**	**11 52 59.5**	**-0.4**
AAK				pmax	pmax		
comp=Z,8.0nm,0.7s							
AAK	**Ala-Archa**	**50.32**	**298**	*e*P	**P**	**11 52 59.8**	**0.0**
comp=Z,17nm,0.6s							
BRVK	**Borovoye**	**50.37**	**312**	*c*eP	**P**	**11 52 59.0**	**-0.8**
BRVK				pmax	pmax		
comp=Z,4.0nm,0.8s							
BRVK	**Borovoye**	**50.37**	**312**	*e*P	**P**	**11 52 59.4**	**-0.4**
comp=Z,4.1nm,0.6s							
EKS2	**Erkin-Say**	**50.82**	**298**	*e*P	**P**	**11 53 03.3**	**-0.2**
EKS2				pmax	pmax		
comp=Z,3.0nm,0.7s							
EKS2	**Erkin-Say**	**50.82**	**298**	*e*P	**P**	**11 53 03.3**	**-0.2**
comp=Z,3.0nm,0.7s							
KKAR	**Karatay Array**	**52.95**	**300**	*e*P	**P**	**11 53 19.0**	**-0.2**
KKAR				pmax	pmax		
comp=Z,1.0nm,0.2s							
KKAR	**Karatay Array**	**52.95**	**300**	*e*P	**P**	**11 53 19.0**	**-0.2**
comp=Z,0.9nm,0.2s							
ARU	**Arti**	**56.06**	**318**	*c i*P	**P**	**11 53 41.1**	**-0.4**
ARU						11 55 44.8	
ARU				S	**S**	**12 01 27.4**	**+1.7**
ARU				SS	**SS**	**12 05 10.4**	**-1.5**
ARU				pmax	pmax		
comp=Z,12nm,1.0s							
ARU	**Arti**	**56.06**	**318**	*e*P	**P**	**11 53 41.5**	**0.0**
comp=Z,17nm,1.2s							
WRAB	**Tennant Creek**	**57.50**	**188**	*e*P	**P**	**11 53 52.4**	**+0.3**
WRAB				pmax	pmax		
comp=Z,2.0nm,0.4s							
WRAB	**Tennant Creek**	**57.50**	**188**	*e*P	**P**	**11 53 52.4**	**+0.3**
comp=Z,1.6nm,0.4s							
WRA	**Warramunga Arr**	**57.51**	**188**	P	**P**	**11 53 52.3**	**+0.1**
comp=Z,2.0nm,0.4s,baz=5.1,slow=7.2,SNR=60							
WRA				LR	LR	12 16 47.9	
comp=Z,21nm,20.9s,baz=180,slow=34							
WRA	**Warramunga Arr**	**57.51**	**188**	*c*eP	**P**	**11 53 52.2**	**0.0**
WRA				pmax	pmax		
comp=Z,2.0nm,0.4s							
ABKAR	**Akbulak array**	**57.69**	**310**	*e*P	**P**	**11 53 52.6**	**-0.6**
comp=Z,4.5nm,0.5s							
**AS

NOA	**NORSAR Array B**	**73.79**	**337**	P	**P**	**11 55 36.6**	**-0.1**
	comp=Z,3.0nm,0.8s,baz=38,slow=5.8,SNR=8.9						
NOA				LR	LR	12 31 23.4	
	comp=Z,14nm,20.3s,baz=45,slow=38						
AKASG	**Malin Array Be**	**73.97**	**322**	P	**P**	**11 55 37.0**	**-0.9**
	comp=Z,3.2nm,0.5s,baz=46,slow=5.9,SNR=15						
AKASG				LR	LR	12 31 30.1	
	comp=Z,31nm,18.9s,baz=55,slow=38						
AKASG	**Malin Array Be**	**73.97**	**322**	P	**P**	**11 55 37.0**	**-0.9**
AKASG				pmax	pmax		
	comp=Z,4.0nm,0.5s						
AKASG				MLR	MLR		
	comp=Z,31nm,18.9s						
KIEV	**Kiev**	**73.99**	**322**	‖ *i* P	**P**	**11 55 37.0**	**-0.9**
KIEV				pmax	pmax		
	comp=Z,8.0nm,1.0s						
KIEV	**Kiev**	**73.99**	**322**	*e* P	**P**	**11 55 37.2**	**-0.7**
	comp=Z,6.3nm,0.9s						
NVAR	**Mina Array Bea**	**74.68**	**53**	P	**P**	**11 55 44.9**	**+2.4**
	comp=Z,0.9nm,0.8s,baz=287,slow=6.1,SNR=7.9						
DUG	**Dugway, Tooele**	**77.02**	**49**	*e* P	**P**	**11 55 58.1**	**+2.4**
DUG	**Dugway, Tooele**	**77.02**	**49**	*e* P	**P**	**11 55 58.0**	**+2.4**
PDAR	**Pinedale Array**	**77.31**	**46**	P	**P**	**11 55 58.9**	**+1.4**
	comp=Z,0.5nm,0.5s,baz=306,slow=2.6,SNR=4.9						
BUR08	**Bucovina Ar. S**	**77.98**	**322**	*e* P	P	11 55 55.5	-5.4
BRTR	**Keskin Array B**	**78.59**	**312**	P	**P**	**11 56 05.2**	**+0.7**
	comp=Z,1.3nm,0.9s,baz=79,slow=6.4,SNR=6.1						
CLL	**Collm**	**80.73**	**330**	*e* P	**P**	**11 56 16.0**	**+0.4**
	comp=Z,5.0nm,1.0s						
CLL	**Collm**	**80.73**	**330**	*e* P	**P**	**11 56 16.0**	**+0.4**
CLL				pmax	pmax		
	comp=Z,5.0nm,1.0s						
GERES	**GERESS Array B**	**82.36**	**328**	P	**P**	**11 56 24.0**	**-0.4**
	comp=Z,0.6nm,0.4s,baz=64,slow=6.1,SNR=5.8						
GERES				LR	LR	12 38 00.8	
	comp=Z,28nm,18.9s,baz=59,slow=39						
GERES	**GERESS Array B**	**82.36**	**328**	P	**P**	**11 56 24.0**	**-0.4**
PPT	**Papeete**	**84.79**	**117**	LR	LR	12 28 22.7	
	comp=Z,26nm,21.6s,baz=322,slow=31						
BFO	**Black Forest**	**84.94**	**331**	*i* P	**P**	**11 56 38.8**	**+1.3**
TXAR	**Lajitas Array**	**89.80**	**52**	P	**P**	**11 57 03.0**	**+1.6**
	comp=Z,1.2nm,0.7s,baz=291,slow=3.4,SNR=7.3						
LPAZ	**La Paz**	**146.42**	**59**	PKPbc	**PKPbc**	**12 03 44.6**	**+0.1**
	comp=Z,1.2nm,0.5s,baz=291,slow=2.7,SNR=9.2						
LVC	**Limon Verde**	**149.96**	**69**	*e* PKPdf	**PKPdf**	**12 03 46.0**	**-2.5**
LVC				*e* PKPbc	**PKPbc**	**12 03 50.3**	**-3.1**
LVC				*e* PKPab	**PKPab**	**12 04 00.5**	**+1.2**

*ISK **03** 11:44:17.2, 37.84N×27.28E, h12km, MD2.3*
*ISCJB **03** 11:44:18.2±0.5, 37.87N±0.03×27.31E±0.04, h12km±5km, Error ellipse: s-maj=5.8km s-min=4.3km az=154.8*
*CSEM **03** 11:44:18.2±0.2, 37.85N×27.29E, h15km, MD2.8, Error ellipse: s-maj=4.9km s-min=3.6km az=61.0*
*DDA **03** 11:44:18.4, 37.88N×27.30E, h7km, Md2.8*
ISC 03 11:44:18.2±1.0, 37.85N±0.03×27.29E±0.03, h19km±3km, n21, σ0.36/33, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GCAM	**G?zelcaml?**	**0.16**	**196**	P	**Pg**	**11 44 22.7**	**0.0**
GCAM				S	**Sg**	**11 44 25.9**	**+0.1**
GCAM	**G?zelcaml?**	**0.16**	**196**	*i* P	**Pg**	**11 44 22.7**	**0.0**
GCAM				*i* S	**Sg**	**11 44 25.9**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**0.49**	**79**	*e*PG	**Pg**	**11 44 27.9**	**-0.3**
AYDB				*e*SG	**Sg**	**11 44 34.8**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**0.49**	**79**	*e*Pg	**Pg**	**11 44 27.9**	**-0.3**
AYDB				*e*Sg	**Sg**	**11 44 34.8**	**-0.1**
AYDN	**Tasoluk**	**0.51**	**112**	P	**Pb**	**11 44 29.1**	**+0.6**
AYDN				S	**Sg**	**11 44 35.5**	**+0.1**
AYDN	**Tasoluk**	**0.51**	**112**	*i* P	**Pb**	**11 44 29.1**	**+0.6**
AYDN				*i* S	**Sg**	**11 44 35.5**	**+0.1**
IZM	**Izmir**	**0.55**	**358**	*e*PG	**Pg**	**11 44 28.7**	**-0.6**
IZM				*e*SG	**Sg**	**11 44 36.7**	**0.0**
BLCB	**Balcova**	**0.57**	**340**	*e*PG	**Pb**	**11 44 28.9**	**-0.6**
ZEY	**¨zmir**	**0.73**	**302**	*i* P	**Pb**	**11 44 32.5**	**+0.2**
ZEY				*i* S	**Sg**	**11 44 42.6**	**+0.2**
URLA	**Izmir**	**0.74**	**313**	P	**Pg**	**11 44 33.0**	**+0.1**
URLA				S	**Sg**	**11 44 43.4**	**+0.5**
URLA	**Izmir**	**0.74**	**313**	*i* P	**Pg**	**11 44 33.0**	**+0.1**
URLA				*i* S	**Sg**	**11 44 43.4**	**+0.5**
BODT	**Bodrum**	**0.79**	**179**	*e*PG	**Pb**	**11 44 32.9**	**-0.4**
BODT	**Bodrum**	**0.79**	**179**	*e*Pg	**Pb**	**11 44 32.9**	**-0.4**
BDRM	**Kayabasi**	**0.80**	**171**	P	**Pg**	**11 44 34.2**	**+0.4**
BDRM				S	**Sn**	**11 44 45.6**	**-0.1**
BDRM	**Kayabasi**	**0.80**	**171**	*i* P	**Pg**	**11 44 34.2**	**+0.4**
BDRM				*i* S	**Sn**	**11 44 45.6**	**-0.1**
YER	**Yerkesik**	**1.07**	**132**	*e*PG	**Pb**	**11 44 37.9**	**-0.2**
YER	**Yerkesik**	**1.07**	**132**	*e*Pg	**Pb**	**11 44 37.9**	**-0.2**
AKS	**Akhisar**	**1.10**	**22**	*e*PN	**Pn**	**11 44 38.9**	**+0.2**
AKS	**Akhisar**	**1.10**	**22**	*e*Pn	**Pn**	**11 44 38.9**	**+0.2**
NIS1	**Nisyros Isl.**	**1.25**	**184**	*e*PN	**Pn**	**11 44 40.0**	**-0.7**
KULA	**Kula-Manisa**	**1.27**	**58**	*e*PN	**Pn**	**11 44 41.5**	**+0.5**

*NIED **03** 11:45:00, 29.30N×130.60E, h32km, Mw4.0 Best double couple: M0:1.31000×10^15 NP1:φ=43.00000°, δ=32.00000°, λ=-63.00000°. NP2:φ=193.00000°, δ=62.00000°, λ=-106.00000°.*
JMA 03 11:45:01.2±0.2, 29.32N×130.58E, h22km±3km, M3.5, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JNN	**Nakanoshima**	**0.81**	**310**	P	Pb	11 45 16.2	-0.3
JNN				*e*S	Sb	11 45 27.3	+0.3
JYAK	**Yakushimahirau**	**0.92**	**356**	P	Pb	11 45 18.5	+0.1
JYAK				*e*S	Sn	11 45 31.1	-0.2
JZK	**Kikaishima**	**1.14**	**208**	P	Pb	11 45 25.4	+3.3
JZK				*e*S	Sn	11 45 41.4	+4.7
JKC	**Kuchinoerabu**	**1.19**	**344**	P	Pn	11 45 22.4	-0.1
JKC				*e*S	Sn	11 45 38.6	+0.7
JTAJ	**Takarajima**	**1.22**	**262**	P	Pb	11 45 23.2	-0.3
JTAJ				*e*S	Sb	11 45 39.0	+0.3
JAM	**Amami Oshima**	**1.25**	**224**	P	Pn	11 45 23.6	+0.3
JAM				*e*S	Sb	11 45 40.2	+0.6
JTN	**Tanegashima 3**	**1.37**	**15**	P	Pn	11 45 25.3	+0.2
JTN				*e*S	Sb	11 45 43.7	+0.3
JAMN	**Amaminishikomi**	**1.64**	**229**	P	Pn	11 45 28.9	+0.3
JAMN				*e*S	Sb	11 45 50.5	-0.3
JTSR	**Tashiro 2**	**1.86**	**9**	P	Pn	11 45 32.5	+0.7
JTSR				*e*S	Sn	11 45 55.6	+0.9
JTK	**Tokunoshima**	**2.10**	**224**	P	Pn	11 45 36.0	+1.0
JTK				*e*S	Sn	11 46 01.5	+1.1
JOKE	**Okinoerabujima**	**2.63**	**223**	P	Pn	11 45 43.2	+0.8
JOW	**Kunigami**	**3.21**	**220**	P	Pn	11 45 51.1	+0.8
JIH	**Iheya**	**3.24**	**226**	P	Pn	11 45 50.8	+0.1
JIH				*e*S	Sn	11 46 27.6	-1.0
JJT2	**Tamagusuku 2**	**4.04**	**219**	*e*S	Sn	11 46 47.8	-0.6
JKE	**Kume jima 2**	**4.49**	**229**	P	Pn	11 46 07.7	-0.3
JKE				*e*S	Sn	11 46 59.3	-0.2

MEX 03 11:45:53.3±0.6, 15.02N×91.72W, h106km±12km, MD3.9, Mexico-Guatemala border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CCIG	**Comitan**	**1.31**	**342**	*e*P	Pn	11 46 17.6	-0.3
CCIG				*i* S	Sn	11 46 34.7	-1.7
PCIG		**1.60**	**295**	*e*P	Pn	11 46 20.5	-0.5
PCIG				*i* S	Sn	11 46 40.3	-1.8

*IDC **03** 12:07:58.7±2.6, 37.52N×143.08E, h0km, mb3.6/3, mb1 3.7/4, mb1mx3.4/38, mbtmp3.5/4, ML3.2/1, Error ellipse: s-maj=67.6km s-min=30.9km az=64.0*
*NIED **03** 12:08:00, 37.60N×142.60E, h5km, Mw3.5 Best double couple: M0:1.86000×10^14 NP1:φ=260.00000°, δ=44.00000°, λ=-82.00000°. NP2:φ=69.00000°, δ=46.00000°, λ=-98.00000°.*
*JMA **03** 12:08:00.5±0.2, 37.59N×142.63E, h0km, M3.6*
*ISCJB **03** 12:08:01.2±1.5, 37.61N±0.10×142.8E±0.1, h24km, mb3.6/3, Error ellipse: s-maj=17.1km s-min=11.4km az=141.6*
ISC 03 12:08:03.0±1.7, 37.62N±0.08×142.6E±0.1, h24km, n11, σ1.41/13, mb3.7/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.31**	**310**	P	**Pn**	**12 08 25.7**	**0.0**
JIO				*e*S	**Sb**	**12 08 43.7**	**+0.5**
JFK	**Kawauchi**	**1.42**	**260**	P	**Pn**	**12 08 27.3**	**0.0**
JMM	**Marumori**	**1.47**	**280**	P	**Pn**	**12 08 28.3**	**+0.3**
JMM				*e*S	**Sb**	**12 08 48.3**	**+0.4**
ONAJ	**Iwakimizuishiy**	**1.54**	**251**	P	**Pn**	**12 08 29.1**	**0.0**
JFT	**Otama**	**1.82**	**267**	P	**Pb**	**12 08 34.1**	**-1.5**
JHO	**Hitachi**	**1.93**	**239**	P	**Pn**	**12 08 34.7**	**+0.4**
MJAR	**Matsushiro Arr**	**3.69**	**254**	Pn	**Pn**	**12 09 00.9**	**+2.4**
	1.7nm,0.3s,baz=78,slow=14,SNR=25						
MAT	**Matsushiro**	**3.69**	**254**	P	**Pn**	**12 09 01.6**	**+3.0**
MAT				*e*S	**Sb**	**12 09 51.0**	**-0.9**
MKAR	**Makanchi Array**	**44.63**	**302**	P	P	12 16 16.7	+3.3
	0.2nm,0.3s,baz=93,slow=8.2,SNR=3.9						
KURBB	**Kurchatov Arra**	**46.41**	**308**	P	**P**	**12 16 28.1**	**+0.8**
	0.5nm,0.5s,baz=82,slow=7.8,SNR=4.8						
WRA	**Warramunga Arr**	**57.78**	**189**	P	**P**	**12 17 51.5**	**-0.8**
	0.6nm,0.6s,baz=7.7,slow=7.1,SNR=8.7						

*ISCJB **03** 12:42:08.9±0.6, 40.55N±0.04×25.70E±0.04, h9km±5km, Error ellipse: s-maj=7.1km s-min=4.5km az=144.7*
*CSEM **03** 12:42:08.9±0.1, 40.55N×25.72E, h5km, ML1.4, Error ellipse: s-maj=3.9km s-min=2.2km az=155.0*
*ATH **03** 12:42:09.3, 40.57N×25.68E, h6km±14km, ML1.4/2, Error ellipse: s-maj=14.6km s-min=1.3km az=175.0*
*DDA **03** 12:42:09.7, 40.53N×25.77E, h7km, Md2.6*
ISC 03 12:42:08.5±0.9, 40.56N±0.04×25.71E±0.04, h12km±8km, n12, σ0.30/23, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SMTH	**Samothraki Isl**	**0.17**	**237**	P	**Pg**	**12 42 12.3**	**-0.1**
SMTH				S	**Sg**	**12 42 15.1**	**+0.1**
SMTH	**Samothraki Isl**	**0.17**	**237**	P	**Pg**	**12 42 12.3**	**-0.1**
SMTH				S	**Sg**	**12 42 15.1**	**+0.1**
SMTH				AML	AML	12 42 15.6	
	comp=N,822μm,0.3s						
SMTH				AML	AML	12 42 16.3	
	comp=E,910μm,0.2s						
ALN	**Alexandroupoli**	**0.42**	**37**	P	**Pg**	**12 42 17.2**	**+0.4**
ALN				S	**Sb**	**12 42 23.6**	**-0.6**
ALN	**Alexandroupoli**	**0.42**	**37**	P	**Pg**	**12 42 17.2**	**+0.4**
ALN				S	**Sb**	**12 42 23.6**	**-0.6**
ALN				AML	AML	12 42 23.9	
	comp=N,33μm,0.2s						
ALN				AML	AML	12 42 23.9	
	comp=E,50μm,0.1s						
BOZC	**Bozcaada**	**0.77**	**160**	*i* P	**Pb**	**12 42 23.9**	**+0.1**
BOZC				*i* S	**Sb**	**12 42 34.0**	**-0.2**
LIA	**Limnos Island**	**0.78**	**212**	P	**Pb**	**12 42 24.1**	**+0.1**
LIA				S	**Sg**	**12 42 33.6**	**-0.2**
KESN	**Edirne-Kesan**	**0.78**	**70**	P	**Pb**	**12 42 24.2**	**-0.1**
KESN				S	**Sb**	**12 42 34.6**	**-0.4**
KESN	**Edirne-Kesan**	**0.78**	**70**	*i* P	**Pb**	**12 42 24.2**	**-0.1**
KESN				*i* S	**Sb**	**12 42 34.6**	**-0.4**
KAVA	**Kavala**	**1.01**	**296**	P	**Pn**	**12 42 28.7**	**+0.2**
KAVA				S	**Sg**	**12 42 40.9**	**-0.2**
KAVA	**Kavala**	**1.01**	**296**	P	**Pn**	**12 42 28.7**	**+0.2**
SART	**Tekirdag**	**1.12**	**83**	P	**Pg**	**12 42 30.1**	**-0.1**
SART				S	**Sn**	**12 42 45.9**	**+0.3**
SART	**Tekirdag**	**1.12**	**83**	*i* P	**Pg**	**12 42 30.1**	**-0.1**
SART				*i* S	**Sn**	**12 42 45.9**	**+0.3**

*ISCJB **03** 12:51:36.2±1.0, 18.3S±0.2×175.4W±0.2, h205km, mb3.8/6, Error ellipse: s-maj=34.8km s-min=10.0km az=44.2*
*IDC **03** 12:51:38.0±2.5, 18.41S×175.57W, h193km±30km, mb3.8/5, mb1 3.9/6, mb1mx3.4/33, mbtmp4.3/6, Error ellipse: s-maj=43.5km s-min=20.4km az=123.0*
*NEIC **03** 12:51:38.3±1.4, 18.40S×175.54W, h200km±18km, mb4.0/2, Error ellipse: s-maj=30.2km s-min=13.9km az=121.0*
ISC 03 12:51:36.8±1.3, 18.3S±0.2×175.3W±0.3, h205km, n10, σ1.28/10, mb3.8/6, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**5.50**	**38**	P	Pn	12 53 02.4	+4.5
	6.3nm,0.3s,baz=201,slow=3.0,SNR=24						
AFI				S	**S**	**12 54 02.0**	**+0.4**
	18nm,0.3s,baz=223,slow=20,SNR=9.3						
URZ	**Urewera**	**20.97**	**197**	P	**P**	**12 56 04.3**	**+0.3**
	8.4nm,0.6s,baz=315,slow=1.1,SNR=9.7						
STKA	**Stephens Creek**	**41.08**	**242**	P	**P**	**12 59 00.1**	**-0.4**
	0.8nm,0.4s,baz=73,slow=11,SNR=5.6						
WRAB	**Tennant Creek**	**47.49**	**259**	*e*P	**P**	**12 59 50.9**	**-0.7**
	1.6nm,0.4s						
WRA	**Warramunga Arr**	**47.50**	**259**	P	**P**	**12 59 51.4**	**-0.3**
	1.7nm,0.4s,baz=94,slow=8.1,SNR=46						
ASAR	**Alice Springs**	**47.56**	**254**	P	**P**	**12 59 52.3**	**+0.2**
	11nm,0.6s,baz=92,slow=8.7,SNR=185						
FITZ	**Fitzroy Crossi**	**55.91**	**260**	*e*P	**P**	**13 00 54.2**	**+0.4**
	1.7nm,0.4s						
CMAR	**Chiang Mai Arr**	**91.83**	**289**	P	**P**	**13 04 24.2**	**+2.1**
	0.3nm,0.4s,baz=121,slow=3.1,SNR=4.7						
BRTR	**Keskin Array B**	**147.15**	**317**	PKPbc	**PKPab**	**13 10 57.7**	**-0.5**
	1.1nm,0.7s,baz=134,slow=3.6,SNR=5.1						
GERES	**GERESS Array B**	**148.68**	**349**	PKPbc	**PKPab**	**13 11 01.6**	**-2.4**
	0.5nm,0.6s,baz=3.4,slow=3.3,SNR=3.9						

IDC 03 12:54:26.6±13.0, 15.66S×165.97E, h0km, mb4.3/3, mb1 4.4/4, mb1mx3.8/33, mbtmp4.3/4, ML4.3/1, Error ellipse: s-maj=227.2km s-min=35.8km az=57.0, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**6.40**	**176**	Pn	Pn	12 56 02.6	+0.3
	6.2nm,0.3s,baz=61,slow=8.0,SNR=87						
DZM				Sn	Sn	12 57 15.4	-0.7
	1.8nm,0.3s,baz=150,slow=20,SNR=1.7						
STKA	**Stephens Creek**	**27.44**	**230**	P	P	13 00 14.1	-0.3
	1.0nm,0.4s,baz=42,slow=11,SNR=5.5						
WRA	**Warramunga Arr**	**30.39**	**257**	P	P	13 00 40.9	+0.1
	1.3nm,0.5s,baz=86,slow=9.0,SNR=12						
ASAR	**Alice Springs**	**31.18**	**250**	P	P	13 00 47.8	+0.1
	6.7nm,0.9s,baz=77,slow=9.2,SNR=14						

*IDC **03** 13:03:26.8±5.1, 22.56S×177.03W, h379km±35km, mb3.1/5, mb1 3.3/7, mb1mx3.1/28, mbtmp4.0/7, Error ellipse: s-maj=110.0km s-min=17.8km az=145.0*
ISC 03 13:03:25.1±1.8, 22.5S±0.4×177.2W±0.3, h350km, n11, σ1.65/12, mb3.3/5, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**9.94**	**32**	P	**Pn**	**13 05 43.7**	**+1.2**
	2.7nm,0.3s,baz=194,slow=3.6,SNR=7.2						
AFI				S	S	13 07 24.9	-10
	2.1nm,0.3s,baz=24,slow=20,SNR=4.0						
DZM	**Mont Dzumac**	**15.18**	**268**	P	**P**	**13 06 42.6**	**+0.8**
	0.9nm,0.3s,baz=104,slow=12,SNR=15						
STKA	**Stephens Creek**	**37.67**	**247**	P	**P**	**13 10 09.9**	**+1.8**
	1.1nm,0.5s,baz=82,slow=6.2,SNR=4.1						
ASAR	**Alice Springs**	**44.86**	**259**	P	**P**	**13 11 05.3**	**-0.8**
	0.8nm,0.7s,baz=90,slow=8.0,SNR=12						
ASAR				PcP	**PcP**	**13 12 41.2**	**+0.1**
	0.5nm,0.9s,baz=110,slow=4.4,SNR=4.1						
WRA	**Warramunga Arr**	**45.13**	**264**	P	**P**	**13 11 06.9**	**-1.4**
	0.6nm,0.6s,baz=96,slow=7.8,SNR=19						
FITZ	**Fitzroy Crossi**	**53.56**	**264**	P	**P**	**13 12 11.3**	**0.0**
	1.1nm,0.7s,baz=76,slow=7.4,SNR=6.9						
ILAR	**Eielson Array**	**90.07**	**12**	P	**P**	**13 15 43.9**	**-1.4**
	0.4nm,0.4s,baz=217,slow=5.7,SNR=6.5						
ARCES	**ARCESS Array B**	**131.00**	**350**	PKP	**PKPdf**	**13 21 53.2**	**-1.5**
	2.2nm,0.8s,baz=51,slow=0.8,SNR=5.3						
AKASG	**Malin Array Be**	**145.12**	**330**	PKPbc	**PKPdf**	**13 22 19.4**	**-1.6**
	1.7nm,0.3s,baz=41,slow=4.4,SNR=11						
BRTR	**Keskin Array B**	**148.73**	**310**	PKPbc	**PKPdf**	**13 22 30.7**	**+3.1**
	0.4nm,0.6s,baz=42,slow=3.0,SNR=3.2						
GERES	**GERESS Array B**	**152.31**	**344**	PKPbc	**PKPbc**	**13 22 39.1**	**-0.7**
	0.4nm,0.4s,baz=52,slow=2.2,SNR=4.6						

DJA 03 13:05:32.3±0.3, 3.N±3.×9.8E±., h10km, M3.8/11, MLv3.8/11, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KCSI	**Kotacane, Aceh**	**0.45**	**302**	P	Pg	13 05 39.2	-1.9
KCSI				S	Sg	13 05 46.8	-0.2
TSI	**Tuntungan**	**0.47**	**62**	P	Pg	13 05 40.2	-1.3
MLSI	**Meulaboh, Aceh**	**2.00**	**299**	P	Pn	13 06 07.0	+0.8
GSI	**Gunungsitoli**	**2.04**	**196**	P	Pn	13 06 07.7	+0.9
LHMI	**Lhok Sumawe**	**2.28**	**328**	P	Pn	13 06 10.5	+0.5
MNSI	**Mandailing Nat**	**2.85**	**150**	P	Pn	13 06 18.6	+0.7

*IGIL **03** 13:05:45.2, 32.29N×6.37W, h2km, ML2.3*
*MDD **03** 13:05:47.0±2.6, 32.35N×7.61W, h0km, mb4.0/3, Error ellipse: s-maj=39.6km s-min=22.7km az=91.0, PRXIMO*
*CSEM **03** 13:05:50.9±0.2, 32.64N×7.55W, h10km, ML3.1/9, Error ellipse: s-maj=6.5km s-min=4.0km az=90.0*
INMG 03 13:05:48.5±0.8, 32.32N×7.66W, h22km±3km, ML2.6, Error ellipse: s-maj=8.8km s-min=3.6km az=99.0, Morocco

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PFVI	**Vila Bisbo**	**4.90**	**349**	*e*Pn	Pn	13 07 00.3	-0.5
PFVI	**Vila Bisbo**	**4.90**	**349**	*e*Pn	Pn	13 07 00.3	-0.5
PBDV	**Barranco-do-Ve**	**4.92**	**357**	*e*Pn	Pn	13 07 00.7	-0.4
PBDV				*e*Sn	Sn	13 07 55.2	-2.2
PBDV	**Barranco-do-Ve**	**4.92**	**357**	Pn	Pn	13 07 00.7	-0.4
PBDV				Sn	Sn	13 07 55.2	-2.2
PBDV	**Barranco-do-Ve**	**4.92**	**357**	Pn	Pn	13 07 00.7	-0.4
PBDV				Sn	Sn	13 07 55.2	-2.2
MORF	**Marmelete**	**5.04**	**351**	*e*Pn	Pn	13 07 02.2	-0.7
MORF				*e*Sn	Sn	13 07 57.4	-3.1
MORF				A	A	13 08 02.8	
	3.9nm,0.6s						
MORF	**Marmelete**	**5.04**	**351**	Pn	Pn	13 07 02.2	-0.7
MORF				Sn	Sn	13 07 57.4	-3.1
	3.9nm,0.6s						
MORF	**Marmelete**	**5.04**	**351**	Pn	Pn	13 07 02.2	-0.7
MORF				*e*Sn	Sn	13 07 57.4	-3.1
	3.9nm,0.6s						
PVAQ	**Vaqueiros**	**5.08**	**359**	*e*Pn	Pn	13 07 02.7	-0.5
PVAQ				*e*Sn	Sn	13 07 58.5	-2.7
PVAQ				A	A	13 08 00.1	
	5.2nm,0.6s						
PVAQ	**Vaqueiros**	**5.08**	**359**	Pn	Pn	13 07 02.7	-0.5
PVAQ				Sn	Sn	13 07 58.5	-2.7
	5.2nm,0.6s						
PVAQ	**Vaqueiros**	**5.08**	**359**	Pn	Pn	13 07 02.7	-0.5
PVAQ				*e*Sn	Sn	13 07 58.5	-2.7
	5.2nm,0.6s						
EGRO	**El Granado**	**5.21**	**2**	Pn	Pn	13 07 04.2	-0.9
	0.9nm,0.1s,SNR=7.9						
EGRO				Sn	Sn	13 08 01.0	-3.4
	2.9nm,0.2s,SNR=7.9						
EGRO	**El Granado**	**5.21**	**2**	Pn	Pn	13 07 04.2	-0.8
	0.9nm,0.1s,SNR=7.9						
EGRO				Sn	Sn	13 08 01.0	-3.4
	2.9nm,0.2s,SNR=7.9						
PTEO	**Sao Teotonio**	**5.29**	**351**	*e*Pn	Pn	13 07 05.5	-0.7
PTEO	**Sao Teotonio**	**5.29**	**351**	Pn	Pn	13 07 05.5	-0.7
PTEO	**Sao Teotonio**	**5.29**	**351**	Pn	Pn	13 07 05.5	-0.7
PCVE	**Castro Verde**	**5.31**	**357**	*e*Pn	Pn	13 07 06.2	-0.3
PCVE				*e*Sn	Sn	13 08 03.5	-3.5
PCVE				A	A	13 08 18.6	
	4.4nm,0.7s						
PCVE	**Castro Verde**	**5.31**	**357**	Pn	Pn	13 07 06.2	-0.3
PCVE				Sn	Sn	13 08 03.5	-3.5
	4.4nm,0.7s						
PCVE	**Castro Verde**	**5.31**	**357**	Pn	Pn	13 07 06.2	-0.3
PCVE				*e*Sn	Sn	13 08 03.5	-3.5
	4.4nm,0.7s						
EMIN	**Mina Concepcio**	**5.50**	**8**	Pn	Pn	13 07 08.4	-0.6
	1.5nm,0.2s,SNR=12						
EMIN				Sn	Sn	13 08 07.5	-4.1
	2.7nm,0.3s,SNR=11						
EMIN	**Mina Concepcio**	**5.50**	**8**	Pn	Pn	13 07 08.4	-0.6
	1.5nm,0.2s,SNR=12						
EMIN				Sn	Sn	13 08 07.5	-4.1
	2.7nm,0.3s,SNR=11						
MESJ	**Messejana**	**5.53**	**355**	*e*P	Pn	13 07 09.4	0.0
MESJ				*e*S	Sn	13 08 10.3	-2.1
MESJ				AML	AML	13 08 11.8	
	comp=N,3.3nm,0.7s						
MESJ	**Messejana**	**5.53**	**355**	*e*Pn	Pn	13 07 09.5	0.0
MESJ				*e*Sn	Sn	13 08 09.5	-2.8
MESJ	**Messejana**	**5.53**	**355**	Pn	Pn	13 07 09.5	0.0
MESJ				Sn	Sn	13 08 09.5	-2.8
MESJ	**Messejana**	**5.53**	**355**	Pn	Pn	13 07 09.5	0.0
MESJ				Sn	Sn	13 08 09.5	-2.8
PBEJ	**Beja**	**5.70**	**358**	*e*Sn	Sn	13 08 13.7	-2.8
PBEJ	**Beja**	**5.70**	**358**	Sn	Sn	13 08 13.7	-2.8
PBEJ	**Beja**	**5.70**	**358**	Sn	Sn	13 08 13.7	-2.8
PNCL	**Nicolau / Gran**	**5.83**	**353**	*e*Pn	Pn	13 07 13.2	-0.3
PNCL				*e*Sn	Sn	13 08 16.1	-3.5
PNCL	**Nicolau / Gran**	**5.83**	**353**	*e*Pn	Pn	13 07 13.2	-0.3
PNCL				*e*Sn	Sn	13 08 16.1	-3.5
PBAR	**Barrancos**	**5.87**	**5**	*e*Pn	Pn	13 07 13.8	-0.3
PBAR				*e*Sn	Sn	13 08 17.6	-3.1
PBAR				A	A	13 08 20.5	
	comp=N,5.0nm,0.4s						
PBAR	**

JYK	Kaneyama	3.67 301	P	Pn	13 06 55.1	+2.5
JYK			S	Sn	13 07 38.6	+3.9
BSO1	Boso 1	3.70 230	P	Pn	13 06 55.0	+2.5
BSO1			S	Sn	13 07 35.6	+1.0
JRG	Rokugo	3.75 309	P	Pn	13 06 56.3	+2.6
JRG			eS	Sn	13 07 39.3	+2.8
JKZ	Kuzumaki	3.75 321	P	Pn	13 06 55.5	+1.7
JKZ			S	Sn	13 07 37.8	+1.1
JANG	Nango	3.97 326	P	Pn	13 06 58.4	+1.6
JANG			eS	Sn	13 07 41.9	-0.1
JAG	Ashikaga	4.03 262	P	Pn	13 06 59.3	+1.7
JAG			S	Sn	13 07 43.8	+0.3
JYW	Yuwa	4.10 308	S	Sn	13 07 49.3	+4.2
JKT	Katashina	4.14 267	S	Sn	13 07 49.3	+2.9
JHU	Hanno	4.31 255	P	Pn	13 07 02.6	+1.2
JRY	Ryogami san	4.56 258	P	Pn	13 07 05.9	+1.1
JRY			eS	Sn	13 07 56.4	-0.1
JOD2	Odawara 2	4.67 248	P	Pn	13 07 08.8	+2.4
JOD2			S	Sn	13 07 58.2	-1.1
JIM2	Oshima 3	4.68 241	P	Pn	13 07 07.0	+0.5
JYN	Shimob	4.99 253	P	Pn	13 07 12.9	+2.0
JYN			eS	Sn	13 08 08.0	+0.7
MAT	Matsushiro	5.00 265	P	Pn	13 07 13.9	+3.0
MAT			eS	Sn	13 08 05.5	-1.9
JEM	Erimo	5.00 349	P	Pn	13 07 11.6	+0.7
JEM			eS	Sn	13 08 05.7	-1.7
JOT	Ohata	5.00 330	P	Pn	13 07 13.9	+3.0
JOT			eS	Sn	13 08 06.3	-1.1
JNG	Nsakai	5.11 264	P	Pn	13 07 15.5	+3.1
JNBK	Urakawa-nobuka	5.33 347	P	Pn	13 07 16.5	+1.2
JNBK			eS	Sn	13 08 14.5	-0.9
JKB	Kayabe	5.44 332	P	Pn	13 07 19.3	+2.4
JKB			S	Sn	13 08 18.5	+0.3
JHJ2	Mitsune	5.47 225	P	Pn	13 07 17.2	-0.2
JHJ2			S	Sn	13 08 16.3	-2.7
JNY	Yasuok	5.56 254	P	Pn	13 07 21.5	+2.8
JCH	Churui	5.56 352	P	Pn	13 07 18.3	-0.3
JCH			eS	Sn	13 08 18.1	-3.1
JYM2	Yakumo 2	5.90 329	P	Pn	13 07 25.9	+2.7
JAR	Ashorobuto	6.21 356	P	Pn	13 07 26.0	-1.4
JAR			S	Sn	13 08 32.6	-4.5
NEM2	Nemuro 2	6.34 9	S	Sn	13 08 33.6	-6.7

MEX 03 13:16:05.0±0.6, 18°.15N×103°.35W, h5km, MD3.9, Near coast of Michoacan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MMIG	Aquila	0.14	0	i P	Pg	13 16 06.9	-0.8
MMIG				eS	Sg	13 16 09.7	+0.1
R15V		1.18	329	eP	Pg	13 16 24.3	-3.3
R15V				i S	Sg	13 16 39.3	-3.6
EZ5V		1.34	350	eP	Pn	13 16 27.5	-3.2
EZ5V				eS	Sg	13 16 44.7	-3.5
ZIIG	Zihuatanejo	1.87	107	i P	Pn	13 16 34.4	-3.3
ZIIG				i S	Sn	13 16 57.0	-4.7
ARIG	Puente Sto Nin	2.85	87	eP	Pn	13 16 49.1	-2.2
ARIG				i S	Sn	13 17 22.2	-3.8

IDC 03 13:18:01.3±1.9, 2°.18N×125°.42E, h0km, mb3.5/4, mb1 3.7/4, mb1mx3.4/39, mbtmp3.6/4, Error ellipse: s-maj=197.6km s-min=25.8km az=64.0, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	23.66	159	P	P	13 23 13.8	-0.8
	0.7nm,0.5s,baz=337,slow=11,SNR=12						
ASAR	Alice Springs	26.98	163	P	P	13 23 46.4	+1.4
	0.2nm,0.5s,baz=340,slow=9.3,SNR=4.7						
STKA	Stephens Creek	37.19	157	P	P	13 25 13.9	-0.4
	0.9nm,0.5s,baz=333,slow=11,SNR=5.1						
MKAR	Makanchi Array	58.10	326	P	P	13 27 56.4	-0.2
	0.3nm,0.6s,baz=119,slow=8.9,SNR=3.8						

IDC 03 13:25:08.6±1.8, 2°.31N×125°.82E, h0km, mb3.6/4, mb1 3.8/4, mb1mx3.4/42, mbtmp3.6/4, Error ellipse: s-maj=168.0km s-min=23.2km az=64.0, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	23.65	160	P	P	13 30 20.8	-1.0
	2.2nm,0.9s,baz=337,slow=10,SNR=14						
ASAR	Alice Springs	27.00	164	P	P	13 30 53.7	+1.2
	0.2nm,0.4s,baz=345,slow=7.6,SNR=7.1						
STKA	Stephens Creek	37.16	157	P	P	13 32 21.1	-0.3
	1.3nm,0.6s,baz=344,slow=9.1,SNR=4.8						
MKAR	Makanchi Array	58.21	326	P	P	13 35 04.6	-0.1
	0.3nm,0.5s,baz=126,slow=7.4,SNR=3.3						

DDA 03 13:30:34.0, 38°.73N×39°.23E, h8km, Md2.3, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res
ELZG	Elazig	0.30	220	i P	Pg	13 30 40.1	0.0
ELZG				i S	Sg	13 30 45.3	+1.3
TNCL	Tunceli-Merkez	0.46	32	i P	Pg	13 30 42.9	-0.1
TNCL				i S	Sb	13 30 50.4	-1.0

*ISCJB **03** 13:34:41.7±2.2, 36°.21N±0°.05×142°.5E±0°.1, h21km±25km, mb3.5/3, MS3.6/2, Error ellipse: s-maj=14.3km s-min=7.5km az=10.9*
*JMA **03** 13:34:41.9±0.3, 36°.21N×142°.55E, h71km, M3.1*
*IDC **03** 13:34:46.3±1.8, 36°.64N×141°.91E, h0km, mb3.5/3, mb1 3.6/5, mb1mx3.3/64, mbtmp3.4/5, ML3.0/2, MS3.5/3, Ms1 3.5/3, ms1mx2.8/21, Error ellipse: s-maj=45.9km s-min=26.0km az=74.0*

ISC 03 13:34:44.1±2.3, 36°.25N±0°.06×142°.3E±0°.1, h20km±13km, n19, σ1°.92/22, mb3.6/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	1.32	246	P	Pn	13 35 07.1	-0.2
CHOJ				eS	Sb	13 35 26.0	+1.4
JHO	Hitachi	1.47	285	P	Pn	13 35 09.2	-0.3
JHO				eS	Sb	13 35 28.7	-0.4
ONAJ	Iwakimizuishiy	1.50	305	P	Pn	13 35 09.2	-0.7
JFK	Kawauchi	1.62	314	eS	Sb	13 35 32.7	-0.7
BSO1	Boso 1	1.94	215	P	Pn	13 35 14.0	-1.4
BSO1				eS	Sn	13 35 39.2	+0.3
JMM	Marumori	2.03	323	S	Sn	13 35 42.9	+0.9
JFT	Otama	2.05	309	P	Pn	13 35 18.2	+0.8
JFT				eS	Sb	13 35 45.3	-0.3
JAG	Ashikaga	2.34	275	P	Pn	13 35 21.5	+0.1
JAG				eS	Sn	13 35 50.3	+0.8
JRY	Ryogami san	2.79	266	P	Pn	13 35 27.4	-0.3
JRY				eS	Sn	13 36 01.0	+0.2
JOD2	Odawara 2	2.82	251	P	Pn	13 35 28.0	0.0
JMK	Ichinoseki	2.84	342	P	Pn	13 35 27.8	-0.5
MJAR	Matsushiro Arr	3.35	276	Pn	Pn	13 35 35.6	+0.3
	1.1nm,0.3s,baz=88,slow=16,SNR=8.7						
MAT	Matsushiro	3.35	276	P	Pn	13 35 36.4	+1.1
MAT				eS	Sn	13 36 11.4	-3.0
ASAJ	Asahikawa	7.86	1	Pn	Pn	13 36 37.7	+0.5
	0.3nm,0.3s,baz=185,slow=8.5,SNR=4.1						
ASAJ				LR	LR	13 39 52.3	
	comp=Z,437nm,20.0s,baz=189,slow=41						
MKAR	Makanchi Array	45.17	303	P	P	13 42 59.6	+0.2
	0.3nm,0.3s,baz=89,slow=9.3,SNR=4.6						
WRA	Warramunga Arr	56.40	189	P	P	13 44 31.3	+7.2
	0.5nm,0.8s,baz=6.9,slow=7.5,SNR=4.0						
ASAR	Alice Springs	60.12	189	P	P	13 44 58.4	+8.3
	0.3nm,0.8s,baz=6.7,slow=7.8,SNR=4.9						
ARCES	ARCESS Array B	64.99	340	LR	LR	14 15 43.1	
	comp=Z,66nm,22.0s,baz=50,slow=38						
TXAR	Lajitas Array	90.00	53	LR	LR	14 21 54.3	
	comp=Z,14nm,21.9s,baz=0.0,slow=31						

JMA 03 13:35:41.2, 36°.74N×140°.56E, h9km, M2.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	Hitachi	0.13	177	P	Pg	13 35 44.1	0.0
JHO				S	Sg	13 35 46.0	-0.1
ONAJ	Iwakimizuishiy	0.41	28	P	Pg	13 35 49.4	+0.2
ONAJ				S	Sg	13 35 55.3	+0.7
JSB	Shiboa	0.56	294	P	Pg	13 35 52.6	+0.5
JSB				eS	Sb	13 36 01.4	0.0
JYT	Yasato	0.59	210	P	Pg	13 35 52.3	-0.3
JYT				S	Sg	13 36 00.0	-0.3
JFK	Kawauchi	0.67	22	S	Sg	13 36 02.7	-0.4

*ISCJB **03** 13:35:54.3±0.3, 38°.86N±0°.02×141°.93E±0°.03, h56km±2km, mb4.8/209, MS4.0/25, Error ellipse: s-maj=4.6km s-min=3.0km az=136.7*
*MOS **03** 13:35:54.3±0.9, 39°.04N×141°.90E, h49km, mb5.1/83, Error ellipse: s-maj=6.4km s-min=3.9km az=105.5*
*IDC **03** 13:35:54.9±1.7, 38°.86N×141°.95E, h47km±16km, mb4.5/43, mb1 4.6/48, mb1mx4.5/64, mbtmp4.7/48, ML4.2/4, MS3.7/12, Ms1 3.7/12, ms1mx3.5/26, Error ellipse: s-maj=12.3km s-min=9.6km az=107.0*
*JMA **03** 13:35:54.1±0.1, 38°.80N×142°.04E, h47km±1km, M4.8*
JMA Felt III J1.
*NEIC **03** 13:35:56.2±0.5, 38°.85N×141°.90E, h60km±4km, mb4.7/95, Error ellipse: s-maj=4.6km s-min=3.0km az=137.0*
NEIC Recorded [3 JMA] in Iwate and Miyagi.

ISC 03 13:35:54.3±0.5, 38°.89N±0°.03×141°.98E±0°.04, h46km±3km, h45km:pP-P, n450, σ1°.45/497, mb4.8/215, MS4.1/27, 42C-14D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.31	309	P	Pn	13 36 04.2	+1.1
OFUJ				S	Sn	13 36 11.0	+1.6
JMK	Ichinoseki	0.60	277	P	Pn	13 36 07.3	+0.8
JMK				S	Sn	13 36 16.8	+1.5
JIO	Ouri	0.66	229	P	Pn	13 36 06.9	-0.4
JIO				S	Sn	13 36 15.8	-0.8
JOM	Ohasama	0.80	318	P	Pn	13 36 10.4	+1.3
JOM				S	Sn	13 36 22.1	+2.2
JOU	Okura	1.16	244	P	Pn	13 36 14.2	+0.2
JOU				eS	Sn	13 36 29.6	+0.9
JRG	Rokugo	1.17	296	P	Pn	13 36 15.4	+1.2
JRG				eS	Sn	13 36 30.8	+1.9
JYK	Kaneyama	1.27	272	P	Pn	13 36 16.0	+0.5
JMM	Marumori	1.38	223	P	Pn	13 36 16.5	-0.6
JMM				eS	Sn	13 36 33.2	-1.0
ERM	Erimo	3.25	16	ceP	Pn	13 36 44.0	+1.3
ERM				pmax	pmax		
	comp=Z,143nm,1.0s						
ERM	Erimo	3.25	16	ePn	Pn	13 36 43.8	+1.0
MJAR	Matsushiro Arr	3.80	233	P	Pn	13 36 52.2	+1.9
	comp=Z,23nm,0.3s,baz=40,slow=11,SNR=52						
MJAR				LR	LR	13 38 31.3	
	comp=Z,2μm,20.3s,baz=50,slow=42						
MAJO	Matsushiro	3.80	233	i P	Pn	13 36 52.3	+2.0
MAJO	Matsushiro	3.80	233	ePn	Pn	13 36 52.0	+1.7
MAT	Matsushiro	3.80	233	P	Pn	13 36 51.9	+1.6
MAT				S	Sn	13 37 35.3	+1.6
MJB9	Matsu-Tunnel	3.80	233	ePn	Pn	13 36 49.9	-0.4
ASAJ	Asahikawa	5.25	5	P	Pn	13 37 11.3	+1.2
	comp=Z,10nm,0.3s,baz=207,slow=14,SNR=60						
ASAJ	Asahikawa	5.25	5	ePn	Pn	13 37 11.5	+1.4
INU	Inuyama	5.31	230	ePn	Pn	13 37 13.0	+2.0
YUK	Yuzh-Kuril'sk	5.91	28	d iP	Pn	13 37 19.1	-0.1
YUK				i S	Sn	13 38 22.4	-3.2
YUK				pmax	pmax		
	comp=Z,469nm,0.3s						
YUK				pmax	pmax		
	comp=E,137nm,0.2s						
YUK				pmax	pmax		
	comp=N,233nm,0.4s						
JHJ2	Mitsune	6.02	198	ePn	Pn	13 37 19.7	-1.1
JHJ	Hachijo jima 2	6.02	198	P	Pn	13 37 20.1	-0.7
	comp=N,22nm,0.3s,baz=325,slow=22,SNR=11						
JHJ				S	Sn	13 38 25.1	-3.3
	comp=N,77nm,0.3s,baz=60,slow=23,SNR=9.1						
JHJ				LR	LR	13 39 54.0	
	comp=N,494nm,21.4s,baz=0.0,slow=40						
SHO	Shikotan	6.17	35	eP	Pn	13 37 21.3	-1.5
SHO				i S	Sn	13 38 27.1	-4.9
SHO				pmax	pmax		
	comp=Z,85nm,0.5s						
SHO				pmax	pmax		
	comp=N,84nm,0.4s						
SHO				pmax	pmax		
	comp=E,83nm,0.5s						
KUR	Kuril'sk	7.71	33	eP	Pn	13 37 43.5	-0.3
KUR				i S	Sn	13 39 06.7	-3.0
KUR				pmax	pmax		
	comp=Z,60nm,0.9s						
KUR				pmax	pmax		
	comp=E,29nm,0.5s						
KUR				pmax	pmax		
	comp=N,22nm,0.3s						
KUR				smax	smax		
	comp=N,191nm,0.7s						
KUR				smax	smax		
	comp=E,244nm,0.7s						
YSS	Yuzh-Sakhalins	8.09	4	eP	Pn	13 37 50.3	+1.3
YSS				eS	Sn	13 39 20.0	+1.0
YSS				pmax	pmax		
	comp=Z,90nm,1.2s						
YSS				smax	smax		
	comp=N,80nm,1.1s						
YSS				MLR	MLR		
	comp=Z,800nm,14.0s						
YSS	Yuzh-Sakhalins	8.09	4	ePn	Pn	13 37 50.5	+1.5
VLA	Vladivostok	8.73	302	c iP	Pn	13 38 00.4	+2.6
VLA				i S	Sn	13 39 36.8	+2.0
VLA				pmax	pmax		
	comp=Z,262nm,1.2s						
USRK	Ussuriysk Ar.	9.18	309	P	Pn	13 38 09.2	+5.2
	comp=Z,4.1nm,0.3s,baz=116,slow=12,SNR=103						
JNU	Nakatsue	10.67	241	P	Pn	13 38 27.3	+2.7
	comp=Z,1.0nm,0.3s,baz=81,slow=8.3,SNR=12						
JNU	Nakatsue	10.67	241	ePn	Pn	13 38 25.6	+1.1
HABR	Khabarovsk	10.81	335	ceP	Pn	13 38 23.6	-2.7
HABR				eS	Sn	13 40 21.6	-4.2
HABR				pmax	pmax		
	comp=N,28nm,2.0s						
HABR				pmax	pmax		
	comp=E,18nm,2.0s						
HABR				pmax	pmax		
	comp=Z,28nm,2.0s						
HABR				MLR	MLR		
	comp=Z,449nm,12.0s						
MDJ	Mudanjiang	10.88	306	P	Pn	13 38 33.3	+6.0
MDJ				pmax	pmax		
	comp=Z,76nm,1.0s						
MDJ				pmax	pmax		
	comp=Z,250nm,3.4s						
MDJ				LR	LR		
	comp=N,320nm,19.6s						
MDJ				LR	LR		
	comp=E,550nm,18.0s						
MDJ				LR	LR		
	comp=Z,1μm,21.4s						
MDJ	Mudanjiang	10.88	306	ePn	Pn	13 38 31.1	+3.9
KSRS	Korea Array	11.16	267	P	Pn	13 38 35.4	+4.2
	comp=Z,2.0nm,0.3s,baz=82,slow=14,SNR=29						
KSRS				LR	LR	13 42 30.1	
	comp=Z,730nm,20.3s,baz=79,slow=35						
KS01	Wonju Array Si	11.18	267	ePn	Pn	13 38 35.2	+3.8
KS15	Wonju Array Si	11.19	267	ePn	Pn	13 38 36.3	+4.7
KSAR	Wonju Array Be	11.19	267	P	Pn	13 38 35.4	+3.8
KSAR	Wonju Array Be	11.19	267	P	Pn	13 38 35.4	+3.8
TYV	Tymovskoe	11.99	2	eP	Pn	13 38 43.8	+1.4
TYV				pmax	pmax		
	comp=Z,15nm,0.8s						
TYV				MLR	MLR		
	comp=Z,500nm,20.0s						
KLR	Kul'dur	12.68	328	P	Pn	13 38 52.0	+0.2
	comp=Z,0.2nm,0.3s,baz=130,slow=13,SNR=40						
KLR	Kul'dur	12.68	328	‖ iP	Pn	13 38 52.3	+0.5
CN2	Changchun	13.35	297	eP	Pn	13 39 04.3	+3.2
CN2				eS	Sn	13 41 22.0	-6.0
CN2				pmax	pmax		
	comp=Z,10.0nm,0.6s						
CN2				LR	LR		
	comp=N,300nm,17.0s						
CN2				LR	LR		
	comp=E,300nm,17.0s						
CN2				LR	LR		
	comp=Z,400nm,19.0s						
NKL	Nikolayevsk	14.30	357	eP	Pn	13 39 12.3	-1.4
NKL				pmax	pmax		
	comp=N,10.0nm,1.1s						
NKL				pmax	pmax		
	comp=Z,30nm,1.1s						
PETK	Petropavlovsk-	17.87	32	P	Pn	13 39 58.6	-0.7
	comp=Z,0.1nm,0.3s,baz=284,slow=18,SNR=4.0						
SSE	Sheshan	18.70	252	P	P	13 40 08.8	0.0
SSE				S	S	13 43 39.5	+0.1
SSE				pmax	pmax		
	comp=Z,160nm,1.0s						
SSE				pmax	pmax		
	comp=Z,110nm,3.8s						
SSE				LR	LR		
	comp=N,170nm,14.5s						
SSE				LR	LR		
	comp=E,250nm,14.5s						
SSE				LR	LR		
	comp=Z,300nm,28.3s						
TIA	Tai'an	19.88	270	⇑P	P	13 40 20.1	-1.5
TIA				S	S	13 44 00.0	-2.9
TIA				pmax	pmax		
	comp=Z,50nm,0.9s						
TIA				pmax	pmax		
	comp=Z,260nm,10.0s						
TIA				LR	LR		
	comp=N,400nm,21.0s						
TIA				LR	LR		
	comp=E,240nm,22.0s						
TIA				LR	LR		
	comp=Z,570nm,24.0s						
BJI	Beijing	19.94	282	P	P	13 40 20.7	-1.6
BJI				sP	sP	13 40 40.4	+1.5
BJI				S	S	13 44 02.3	-1.8
BJI				sS	sS	13 44 22.3	+0.8
BJI				pmax	pmax		
	comp=Z,18nm,1.3s						
BJI				LR	LR		
	comp=N,130nm,15.8s						
BJI				LR	LR		
	comp=E,520nm,15.8s						
NJ2	Nanjing	20.00	257	eP	P	13 40 22.4	-0.6
NJ2				pmax	pmax		
	comp=Z,32nm,1.1s						
CLNS	Chul'man	21.20	333	eP	P	13 40 34.9	-0.9
CLNS				pmax	pmax		
	comp=Z,28nm,1.0s						
CLNS				pmax	pmax		
	comp=N,20nm,0.9s						
CLNS				pmax	pmax		
	comp=E,13nm,0.9s						
CLNS				MLR	MLR		
	comp=E,181nm,12.0s						
CLNS				MLR	MLR		
	comp=Z,417nm,15.0s						
CLNS				MLR	MLR		
	comp=N,383nm,17.0s						
MA2	Magadan	21.45	12	P	P	13 40 38.4	0.0
	comp=N,36nm,0.9s,baz=218,slow=8.1,SNR=25						
HHC	Hu-ho-hao-te	23.38	285	eP	P	13 40 57.0	-1.9
HHC				S	S	13 45 01.6	-7.0
HHC				pmax	pmax		
	comp=Z,39nm,1.0s						
HHC				pmax	pmax		
	comp=Z,120nm,4.2s						
HHC				LR	LR		
	comp=N,460nm,13.3s						
HHC				LR	LR		
	comp=E,600nm,12.2s						
HHC				LR	LR		
	comp=Z,640nm,12.5s						
TPUB	Ta-pu	23.91	236	eP	P	13 41 01.8	-2.1
	comp=Z,56nm,1.2s						
TWG	Pinlang	23.97	234	eP	P	13 41 04.2	-0.3
	comp=Z,46nm,0.5s						
WHN	Wuhan	24.12	258	⇑P	P	13 41 06.0	+0.2
WHN				S	S	13 45 02.0	-18
WHN				pmax	pmax		
	comp=Z,98nm,1.2s						
WHN				LR	LR		
	comp=N,520nm,11.4s						
WHN				LR	LR		
	comp=E,3μm,26.5s						
WHN				LR	LR		
	comp=Z,1μm,21.1s						
YAK	Yakutsk	24.38	346	P	P	13 41 07.3	-0.5
	comp=Z,81nm,0.7s,baz=348,slow=4.9,SNR=39						
YAK	Yakutsk	24.38	346	eP	P	13 41 07.2	-0.6
YAK				e*PP	pP	13 41 17.3	-2.5
YAK				ePPP	PPP	13 41 46.5	
YAK				eS	S	13 45 24.8	+0.9
YAK				e*SS	sS	13 45 41.8	-2.1
YAK				eSS	SnSn	13 46 07.8	-2.7
YAK				pmax	pmax		
	comp=N,44nm,1.0s						
YAK				pmax	pmax		
	comp=Z,130nm,1.1s						
YAK				pmax	pmax		
	comp=E,26nm,1.0s						
YAK				pmax	pmax		
	comp=N,47nm,1.4s						
YAK				pmax	pmax		
	comp=Z,60nm,1.1s						
YAK				pmax	pmax		
	comp=E,28nm,1.1s						
YAK				smax	smax		
	comp=E,121nm,1.5s						
YAK				smax	smax		
	comp=N,410nm,4.6s						
YAK				MLR	MLR		
	comp=Z,237nm,13.0s						
YAK	Yakutsk	24.38	346	eP	P	13 41 07.1	-0.7
	comp=Z,111nm,0.9s						
SEY	Seymchan	24.89	11	P	P	13 41 13.9	+1.4
	comp=Z,38nm,0.9s,baz=200,slow=6.8,SNR=83						
SEY	Seymchan	24.89	11	ceP	P	13 41 13.4	+0.9
GUMO	Guam	25.32	173	LR	LR	13 51 09.6	
	comp=Z,73nm,21.6s,baz=8.5,slow=36						
BOD	Bodaibo	26.23	325	eP	P	13 41 24.1	-0.6
BOD				pmax	pmax		
	comp=Z,28nm,1.1s						
ULN	Ulaanbaatar	26.74	301	ceP	P	13 41 30.0	+0.4
ULN				pmax	pmax		
	comp=Z,16nm,1.2s						
ULN	Ulaanbaatar	26.74	301	eP	P	13 41 30.0	+0.4
	comp=Z,12nm,1.0s						
XAN	Xi'an	26.94	270	P	P	13 41 32.1	+0.7
XAN				pP	sP	13 41 46.7	-2.1
XAN				sP	pP	13 41 54.0	+11
XAN				PP	PnPn	13 42 22.1	+7.1
XAN				S	S	13 46 06.8	+1.5
XAN				sS	sS	13 46 32.1	+6.6
XAN				SS	SnSn	13 47 29.4	+16
XAN				pmax	pmax		
	comp=Z,14nm,0.7s						
XAN				pmax	pmax		
	comp=Z,65nm,5.0s						
XAN				LR	LR		
	comp=N,230nm,20.7s						
XAN				LR	LR		
	comp=E,250nm,19.4s						
XAN				LR	LR		
	comp=Z,220nm,23.3s						
SONA1	Songino Array	27.17	301	eP	P	13 41 32.6	-0.8
SONM	Songino Array	27.17	301	P	P	13 41 34.6	+1.1
	comp=Z,11nm,0.9s,baz=95,slow=7.7,SNR=30						
IRK	Irkutsk	29.23	310	eP	P	13 41 51.0	-0.5
IRK				pmax	pmax		
	comp=Z,41nm,1.0s						
TLY	Talaya	29.50	308	P	P	13 41 55.1	+1.2
	comp=Z,14nm,0.9s,baz=107,slow=5.9,SNR=28						
TLY	Talaya	29.50	308	eP	P	13 41 54.4	+0.4
TLY				pmax	pmax		
	comp=Z,22nm,0.9s						
TLY				MLR	MLR		
	comp=Z,325nm,15.0s						
TLY	Talaya	29.50	308	eP	P	13 41 54.2	+0.3
	comp=Z,19nm,0.9s						
ZAK	Zakamensk	29.52	306	eP	P	13 41 54.7	+0.5
ZAK				pmax	pmax		
	comp=Z,21nm,1.0s						
LZH	Lanzhou	30.25	277	eP	P	13 41 59.5	-1.4
LZH				pP	pP	13 42 14.0	+1.0
LZH				sP	sP	13 42 21.5	+3.0
LZH				PP	PnPn	13 43 00.0	+0.1
LZH				eS	S	13 46 53.0	-4.5
LZH				sS	sS	13 47 17.0	-0.8
LZH				eSS	SnSn	13 48 32.0	-2.4
LZH				pmax	pmax		
	comp=Z,31nm,1.1s						

LZH pmax pmax
comp=Z,130nm,4.9s
LZH LR LR
comp=N,470nm,13.0s
LZH LR LR
comp=E,380nm,14.3s
LZH LR LR
comp=Z,670nm,15.2s
MOY Mondy 31.12 308 *e*P **P 13 42 09.1 +0.7**
MOY pmax pmax
comp=Z,21nm,1.9s
GYA Guiyang 32.01 258⇓ *i*P **P 13 42 16.2 -0.3**
GYA pP sP 13 42 32.0 -2.0
GYA sP pP 13 42 38.9 +10
GYA PP **PnPn 13 43 24.5 +1.6**
GYA PcP **PcP 13 45 06.2 +0.7**
GYA S **S 13 47 23.0 -2.2**
GYA sS sS 13 47 48.6 +3.1
GYA ScP **ScP 13 48 44.2 -1.0**
GYA Guiyang 32.01 258 ScS ScS 13 52 41.0 -3.1
GYA pmax pmax
comp=Z,30nm,0.8s
GYA pmax pmax
comp=Z,120nm,5.0s
BILL Bilibino 32.13 17⇓ *i*P **P 13 42 17.7 +0.8**
BILL *e* 13 43 26.5
BILL pmax pmax
comp=Z,12nm,1.0s
BILL MLR MLR
comp=Z,64nm,19.0s
BILL Bilibino 32.13 17 *e*P **P 13 42 17.2 +0.3**
comp=Z,10.0nm,0.9s
CD2 Chengdu 32.16 268 P **P 13 42 15.7 -2.0**
CD2 pmax pmax
comp=Z,2.0nm,0.6s
GTA Gaotai 32.49 285 P **P 13 42 21.0 +0.4**
GTA pP pP 13 42 34.9 +2.2
GTA sP sP 13 42 43.5 +5.3
GTA PcP **PcP 13 45 07.9 +1.2**
GTA S **S 13 47 30.8 -1.7**
GTA sS sS 13 47 55.6 +2.8
GTA ScP **ScP 13 48 47.6 +0.9**
GTA PcS **PcS 13 48 53.0 +1.2**
GTA SS **SnSn 13 49 30.5 +1.7**
GTA pmax pmax
comp=Z,16nm,1.0s
GTA pmax pmax
comp=Z,120nm,5.4s
GTA LR LR
comp=N,250nm,20.0s
GTA LR LR
comp=E,560nm,20.9s
GTA LR LR
comp=Z,520nm,20.0s
TIXI Tiksi 33.51 353 P **P 13 42 29.0 +0.1**
comp=Z,6.5nm,0.8s,baz=142,slow=7.0,SNR=34
TIXI Tiksi 33.51 353⇑ *i*P **P 13 42 28.7 -0.2**
TIXI pmax pmax
comp=Z,10.0nm,1.0s
TIXI Tiksi 33.51 353 *e*P **P 13 42 28.1 -0.8**
comp=Z,9.5nm,1.0s
KMI Kunming 35.72 259 P **P 13 42 49.0 +0.2**
KMI pP sP 13 43 06.0 -0.4
KMI sP pP 13 43 14.0 +13
KMI S **S 13 48 20.2 -2.5**
KMI pmax pmax
comp=Z,30nm,1.3s
KMI pmax pmax
comp=Z,110nm,5.0s
KMI LR LR
comp=N,240nm,18.7s
KMI LR LR
comp=E,220nm,20.5s
KMI LR LR
comp=Z,280nm,20.1s
KRAR Krasnoyarsk 36.47 314 *i*P **P 13 42 55.7 +1.2**
KRAR pmax pmax
comp=Z,120nm,1.1s
NONG Nongkai 39.55 250 P **P 13 43 21.7 +0.7**
comp=Z,14nm,0.9s,comp=Z,9μm
SKNT Sakolnakorn 39.65 247 P **P 13 43 22.9 +1.1**
comp=Z,13nm,1.8s,comp=Z,2μm
CRAI Chiangrai 40.28 255 P **P 13 43 27.7 +0.7**
comp=Z,449nm,1.1s,comp=Z,33μm
WMQ Urumqi 40.44 295⇓ *i*P **P 13 43 28.7 +0.5**
WMQ pP sP 13 43 47.2 +1.3
WMQ sP pP 13 43 54.5 +14
WMQ S **S 13 49 30.4 -3.0**
WMQ sS sS 13 50 00.6 +6.5
WMQ pmax pmax
comp=Z,31nm,0.8s
WMQ pmax pmax
comp=Z,74nm,4.2s
WMQ LR LR
comp=N,37nm,21.2s
WMQ LR LR
comp=E,79nm,29.0s
WMQ LR LR
comp=Z,87nm,29.0s
ZAA0 Zalesovo Array 41.02 311 *e*P **P 13 43 32.6 -0.2**
ZALV Zalesovo Beam 41.02 311 P **P 13 43 33.5 +0.8**
comp=Z,36nm,0.9s,baz=90,slow=7.4,SNR=95
ZALV PcP **PcP 13 45 32.1 +0.2**
comp=Z,7.6nm,0.8s,baz=112,slow=4.0,SNR=4.4
LOEI Loei 41.29 251 P **P 13 43 33.0 -2.4**
comp=Z,9.0nm,0.9s
CMAI Chiengmai2 41.46 255 P **P 13 43 37.9 +1.0**
comp=Z,199nm,0.7s,comp=Z,11μm
NRIK Noril'sk 41.79 334 P **P 13 43 39.0 +0.2**
comp=Z,11nm,0.8s,baz=112,slow=9.7,SNR=11
CHAI Chaiyaphum 41.79 248 P **P 13 43 39.8 +0.3**
comp=Z,5.2nm,1.0s
NVS Novosibirsk 41.91 312⇓ *i*P **P 13 43 40.9 +0.9**
NVS *i* 13 43 57.6
NVS pmax pmax
comp=Z,48nm,1.2s
NVS pmax pmax
comp=N,6.0nm,1.1s
NVS pmax pmax
comp=E,30nm,1.3s
PBKT Sadao Pong 42.10 250 P **P 13 43 42.5 +0.5**
comp=E,8.2nm,1.4s,comp=E,562nm
CHTO Chiang Mai 42.20 254 P **P 13 43 43.3 +0.4**
comp=E,58nm,0.8s
CHTO Chiang Mai 42.20 254 *e*P **P 13 43 41.5 -1.3**
CHTO pmax pmax
comp=Z,9.0nm,0.6s
CHTO Chiang Mai 42.20 254 *e*P **P 13 43 41.5 -1.3**
comp=Z,8.6nm,0.6s
MRSI Marisa 42.41 211 P **P 13 43 45.3 +0.8**
comp=Z,29nm,1.2s
CMAR Chiang Mai Arr 42.42 254 P **P 13 43 44.9 +0.2**
comp=Z,1.2nm,0.8s,baz=44,slow=7.9,SNR=10
CMAR PcP **PcP 13 45 38.1 +1.0**
comp=Z,1.6nm,0.8s,baz=19,slow=2.3,SNR=5.3
CM01 Chiang Mai Arr 42.43 254 *e*P **P 13 43 43.8 -0.9**
SUKH Sukhothai 42.51 252 P **P 13 43 46.4 +1.1**
comp=Z,3.8nm,0.8s
SRAK Srakaew 43.01 246 P **P 13 43 47.2 -2.2**
comp=Z,24nm,1.0s,comp=Z,1μm
NAYO Nakonayok 43.32 247 P **P 13 43 52.8 +0.9**
comp=Z,7.6nm,1.1s,comp=Z,321nm
MHMT Maesarieng 43.35 254 P **P 13 43 53.2 +1.1**
comp=Z,12nm,1.0s
MK01 Makanchi Array 43.54 301 *e*P **P 13 43 53.7 +0.3**
MK31 Makanchi Array 43.54 301 *i*P **P 13 43 53.4 0.0**
MK31 pmax pmax
comp=Z,34nm,0.8s
MK31 Makanchi Array 43.54 301 *e*P **P 13 43 53.8 +0.4**
MKAR Makanchi Array 43.54 301 P **P 13 43 54.0 +0.6**
comp=Z,28nm,0.8s,baz=83,slow=9.9,SNR=139
MKAR Makanchi Array 43.54 301 *e*P **P 13 43 53.9 +0.5**
MKAR Makanchi Array 43.54 301 *e*P **P 13 43 53.9 +0.5**
CHBT CHBT 43.66 244 P **P 13 43 55.4 +0.8**
comp=Z,13nm,1.1s
MAKZ Makanchi 43.75 301 *e*P **P 13 43 55.6 +0.5**
MAKZ pmax pmax
comp=Z,59nm,1.2s
MAKZ Makanchi 43.75 301 *e*P **P 13 43 55.6 +0.5**
comp=Z,59nm,1.2s
SVW2 Sparrevohn 43.79 38 *e*P **P 13 43 57.5 +2.3**
comp=Z,8.8nm,1.0s
UTHA Uthaitani 43.87 250 P **P 13 43 58.0 +1.7**
comp=Z,2.9nm,1.1s
SHL Shillong 43.90 268 *e*P **P 13 43 55.0 -1.7**
SRDT SRDT 44.89 249 P **P 13 44 05.9 +1.4**
comp=Z,38nm,1.1s
KURK Kurchatov 45.16 307 P **P 13 44 07.3 +1.0**
KURK pmax pmax
comp=Z,71nm,0.7s
KURK Kurchatov 45.16 307 *e*P **P 13 44 06.5 +0.3**
comp=Z,87nm,0.7s
RSO Redoubt South 45.18 39 *e*P **P 13 44 08.2 +1.7**
KURBB Kurchatov Arra 45.24 307 P **P 13 44 07.3 +0.5**
comp=Z,71nm,0.7s,baz=82,slow=8.1,SNR=186
PPLA Purkeypile 45.40 36 *e*P **P 13 44 10.4 +2.2**
comp=Z,21nm,1.3s
KDAK Kodiak Island 45.43 43 P **P** 13 44 24.1 +16
comp=Z,17nm,1.0s,baz=244,slow=2.8,SNR=6.1
KDAK Kodiak Island 45.43 43 *i*P **P 13 44 10.8 +2.5**
CAST Castle Rocks 45.45 35 *e*P **P 13 44 10.4 +2.0**
comp=Z,5.5nm,0.9s
SPU Mount Spurr 45.50 38 *e*P **P 13 44 10.6 +1.8**
BPAW Bear Paw Mtn. 45.94 34 *e*P **P 13 44 13.9 +1.6**
comp=Z,23nm,1.9s
KTH Kantishna Hill 45.97 35 *e*P **P 13 44 14.2 +1.7**
comp=Z,14nm,1.0s
MLY Manley 46.05 33 *e*P **P 13 44 15.0 +1.9**
comp=Z,9.9nm,1.1s
TRF Thorofare Moun 46.26 35 *e*P **P 13 44 17.1 +2.2**
comp=Z,7.1nm,1.0s
COLD Coldfoot 46.32 30 *e*P **P 13 44 16.8 +1.6**
comp=Z,3.8nm,0.9s
PDGK Podgornoye 46.33 297 P **P 13 44 15.9 +0.3**
PDGK pmax pmax
comp=Z,19nm,0.8s
RC01 Rabbit Creek A 46.62 38 *e*P **P 13 44 18.6 +1.0**
comp=Z,12nm,1.0s
MCK McKinley 46.85 35 *e*P **P 13 44 20.6 +1.2**
MCK pmax pmax
comp=Z,7.0nm,1.0s
MCK McKinley 46.85 35 *e*P **P 13 44 20.6 +1.2**
comp=Z,6.9nm,1.0s
PMR Palmer 46.88 38 *e*P **P 13 44 20.2 +0.6**
PMR pmax pmax
comp=Z,8.0nm,0.8s
PMR Palmer 46.88 38 *e*P **P 13 44 20.2 +0.6**
comp=Z,7.6nm,0.8s
RND Reindeer 46.90 35 *e*P **P 13 44 20.7 +0.8**
RND pmax pmax
comp=Z,11nm,1.1s
RND Reindeer 46.90 35 *e*P **P 13 44 20.7 +0.8**
comp=Z,11nm,1.1s
MDM Murphy Dome 47.12 33 *e*P **P 13 44 23.1 +1.7**
comp=Z,12nm,1.1s
KSM Kuching 47.16 226 *e*P **P 13 44 23.1 +0.8**
comp=Z,21nm,1.1s
WRH Wood River Hil 47.19 34 *e*P **P 13 44 23.4 +1.3**
comp=Z,6.5nm,1.0s
SML Sawmill 47.24 37 *e*P **P 13 44 24.0 +1.5**
SML pmax pmax
comp=Z,3.0nm,0.9s
SML Sawmill 47.24 37 *e*P **P 13 44 24.0 +1.5**
comp=Z,3.5nm,0.9s
COLA College 47.28 33 *e*P **P 13 44 24.2 +1.5**
COLA pmax pmax
comp=Z,6.0nm,0.7s
COLA College 47.28 33 *e*P **P 13 44 24.2 +1.5**
comp=Z,6.1nm,0.7s
CCB Clear Creek Bu 47.31 33 *e*P **P 13 44 23.8 +0.9**
comp=Z,3.8nm,1.0s
HDA Harding Lake 47.69 34 *e*P **P 13 44 26.8 +0.9**
comp=Z,7.7nm,0.9s
ILAR Eielson Array 47.70 33 P **P 13 44 26.9 +1.0**
comp=Z,6.3nm,0.7s,baz=269,slow=6.4,SNR=57
SCM Sheep Creek Mo 47.72 37 *e*P **P 13 44 27.6 +1.3**
SCM pmax pmax
comp=Z,10.0nm,0.8s
SCM Sheep Creek Mo 47.72 37 *e*P **P 13 44 27.6 +1.3**
comp=Z,10nm,0.8s
KAPI Kappang 48.28 210 P **P 13 44 31.3 +0.3**
comp=Z,2.4nm,0.3s,baz=34,slow=8.0,SNR=4.2
KAPI Kappang 48.28 210 *e*P **P 13 44 31.9 +0.9**
comp=Z,21nm,1.0s
KLU Klutina 48.42 38 *e*P **P 13 44 33.0 +1.4**
comp=Z,10.0nm,1.0s
DIV Divide 48.54 38 *e*P **P 13 44 31.8 -0.7**
comp=Z,13nm,1.0s
BBKI Banjar Baru 49.02 217 P **P 13 44 36.5 -0.2**
comp=Z,31nm,1.0s,comp=Z,5μmcomp=Z,521μm
DOT Dot Lake 49.02 35 *e*P **P 13 44 36.6 +0.4**
comp=Z,11nm,0.6s
BMRM Bremner River 49.12 38 *e*P **P 13 44 38.5 +1.5**
comp=Z,11nm,0.9s
TKM2 Tokmak 2 49.16 297 *e*P **P 13 44 38.5 +0.7**
TKM2 pmax pmax
comp=Z,21nm,0.8s
TKM2 Tokmak 2 49.16 297 *e*P **P 13 44 38.5 +0.7**
comp=Z,21nm,0.8s
MENT Mentasta 49.26 36 *e*P **P 13 44 40.1 +2.1**
comp=Z,9.3nm,1.0s
VOSK Vostochnaya 49.40 311 *e*P **P 13 44 39.3 +0.1**
VOSK pmax pmax
comp=Z,30nm,0.8s
VOSK Vostochnaya 49.40 311 *e*P **P 13 44 39.3 +0.1**
comp=Z,30nm,0.8s
BVA0 Borovoye Array 49.68 311 *i*P **P 13 44 41.3 0.0**
BVA0 pmax pmax
comp=Z,20nm,0.8s
BVAR Borovoye Array 49.68 311 P **P 13 44 41.8 +0.5**
comp=Z,16nm,0.6s,baz=71,slow=8.0,SNR=102
BVAR PcP **PcP 13 46 02.6 +0.6**
comp=Z,6.7nm,0.7s,baz=80,slow=3.3,SNR=5.5
OTUK Ortayu 49.72 305 P **P 13 44 41.3 -0.5**
OTUK pmax pmax
comp=Z,27nm,0.9s
BRVK Borovoye 49.73 311 *c i*P **P 13 44 42.1 +0.4**
BRVK pmax pmax
comp=Z,34nm,1.0s
BRVK Borovoye 49.73 311 *e*P **P 13 44 41.5 -0.1**
comp=Z,27nm,0.8s
PKDT Phuket 49.85 243 P **P 13 44 44.9 +1.8**
comp=Z,39nm,1.1s
FRU Bishkek 49.87 297 *e*P **P 13 44 43.0 0.0**
FRU pmax pmax
comp=Z,40nm,2.0s
AAK Ala-Archa 50.03 297 *c i*P **P 13 44 44.8 +0.5**
AAK pmax pmax
comp=Z,17nm,0.8s
AAK Ala-Archa 50.03 297 *e*P **P 13 44 43.9 -0.4**
comp=Z,7.4nm,1.0s
KSH Kashi 50.08 293 P **P 13 44 49.4 +4.7**
KSH *ep*P sP 13 45 05.0 +2.3
KSH *es*P pP 13 45 12.0 +15
KSH PcS **PcS 13 50 03.7 +2.7**
KSH S **S 13 51 56.7 +3.9**
KSH pmax pmax
comp=Z,80nm,4.2s
KSH LR LR
comp=N,100nm,5.6s
KSH LR LR
comp=E,99nm,5.1s
KSH LR LR
comp=Z,120nm,7.0s
EGAK Eagle 50.14 33 *e*P **P 13 44 45.4 +0.8**
comp=Z,14nm,1.4s
KULM Kulim 50.15 239 *e*P **P 13 44 45.7 +0.4**
comp=Z,13nm,1.0s
IPM Ipoh 50.49 238 *e*P **P 13 44 47.5 -0.5**
comp=Z,22nm,1.1s
EKS2 Erkin-Say 50.51 297 *e*P **P 13 44 48.2 +0.2**
EKS2 pmax pmax
comp=Z,7.0nm,0.7s
EKS2 Erkin-Say 50.51 297 *e*P **P 13 44 48.2 +0.2**
comp=Z,7.2nm,0.7s
SOEI Soe 51.13 203 P **P 13 44 52.2 -0.5**
comp=Z,27nm,2.3s
MNAS Manas 51.46 298 P **P 13 44 55.0 -0.1**
MNAS pmax pmax
comp=Z,21nm,0.8s
SFK Sufi-Kurgan 51.66 294 P **P 13 44 56.8 0.0**
SFK pmax pmax
comp=Z,16nm,1.0s
MTN Manton Dam 52.45 193 *e*P **P 13 45 01.4 -1.0**
comp=Z,18nm,1.3s
INK Inuvik 52.54 28 P **P 13 45 04.1 +1.6**
comp=Z,7.5nm,0.8s,baz=299,slow=6.4,SNR=34
INK Inuvik 52.54 28 *e*P **P 13 45 03.7 +1.2**
comp=Z,10nm,1.0s
KK31 Karatay Array 52.60 299 P **P 13 45 03.3 -0.1**
KK31 pmax pmax
comp=Z,13nm,0.8s
KKAR Karatay Array 52.60 299 *e*P **P 13 45 03.4 0.0**
KKAR Karatay Array 52.60 299 *e*P **P 13 45 03.4 0.0**
PSI Prapat 53.13 238 *e*P **P 13 45 07.2 -0.6**
PSI pmax pmax
comp=Z,11nm,1.0s
PSI Prapat 53.13 238 *e*P **P 13 45 07.2 -0.6**
comp=Z,10nm,1.0s
SVE Sverdlovsk 54.07 318 *de*P **P 13 45 14.9 +1.0**
SVE pmax pmax
comp=Z,82nm,0.9s
SDSI Sungai Dareh 54.35 233 P **P 13 45 17.7 +1.2**
comp=Z,33nm,1.4s
SOKR Solikamsk 55.14 322 *e*P **P 13 45 21.3 -0.3**
SOKR pmax pmax
comp=Z,24nm,0.8s
GSI Gunungsitoli 55.14 238 P **P 13 45 22.5 +0.3**
comp=Z,39nm,1.3s
GSI Gunungsitoli 55.14 238 *e*P **P 13 45 22.4 +0.2**
comp=Z,38nm,1.1s
ARU Arti 55.28 318 *d i*P **P 13 45 23.2 +0.5**
ARU 13 46 21.5
ARU 13 47 23.0
ARU S **S 13 53 04.0 +1.0**
ARU SS **SS 13 56 43.8 -3.4**
ARU pmax pmax
comp=Z,71nm,1.0s
ARU MLR MLR
comp=Z,329nm,18.0s
ARU Arti 55.28 318 *e*P **P 13 45 22.9 +0.2**
comp=Z,57nm,0.9s
LHSI Lahat 55.36 229 P **P 13 45 23.8 0.0**
comp=Z,37nm,1.1s,comp=Z,2μm
DLBC Dease Lake 56.90 39 P **P 13 45 37.1 +2.8**
comp=Z,2.8nm,1.0s,baz=262,slow=7.9,SNR=5.0
AB31 Akbulak array 57.10 309 *i*P **P 13 45 35.3 -0.5**
AB31 pmax pmax
comp=Z,17nm,0.7s
ABKAR Akbulak array 57.10 309 *e*P **P 13 45 35.8 0.0**
KBL Kabul 57.19 290 *e*P **P 13 45 36.5 -0.4**
KBL pmax pmax
comp=Z,17nm,0.9s
KBL Kabul 57.19 290 *e*P **P 13 45 36.5 -0.4**
comp=Z,17nm,0.9s
AKTO Aktyubinsk 57.78 311 P **P 13 45 40.1 -0.5**
AKTO pmax pmax
comp=Z,25nm,0.9s
HYB Hyderabad 58.72 268 *i*P **P 13 45 47.5 -0.1**
FITZ Fitzroy Crossi 58.72 198 P **P 13 45 47.5 +0.1**
comp=Z,3.4nm,0.9s,baz=0.8,slow=6.7,SNR=5.0
WRAB Tennant Creek 58.94 188 *ce*P **P 13 45 47.3 -1.6**
WRAB pmax pmax
comp=Z,18nm,1.2s
WRAB Tennant Creek 58.94 188 *e*P **P 13 45 47.8 -1.1**
comp=Z,9.3nm,0.8s
WRA Warramunga Arr 58.95 188 P **P 13 45 48.0 -1.0**
comp=Z,6.9nm,0.7s,baz=6.3,slow=7.0,SNR=47
RES Resolute Bay 60.70 15 *e*P **P 13 46 00.4 +0.1**
RES Resolute Bay 60.70 15 *e*P **P 13 46 00.4 +0.1**
TMCR Tamitsa 61.34 331 *e*P **P 13 46 05.2 +0.4**
TMCR pmax pmax
comp=Z,18nm,0.5s
YKW3 Yellowknife Ar 61.95 31 *e*P **P 13 46 09.5 +0.6**
comp=Z,2.6nm,0.8s
YKA Yellowknife Ar 61.99 31 P **P 13 46 09.9 +0.7**
comp=Z,2.3nm,0.8s,baz=301,slow=6.7,SNR=42
YKA Yellowknife Ar 61.99 31 *i*P **P 13 46 09.8 +0.6**
YKA pmax pmax
comp=Z,2.0nm,0.8s
YKB5 Yellowknife Ar 61.99 31 *e*P **P 13 46 09.4 +0.2**
ARCES ARCESS Array B 62.43 339 P **P 13 46 12.8 +0.7**
comp=Z,5.2nm,0.8s,baz=50,slow=8.1,SNR=13
KLMR Klimovskoe 62.44 327 *e*P **P 13 46 11.1 -1.2**
KLMR *e* 13 48 28.2
KLMR pmax pmax
comp=Z,21nm,1.3s
AS01 Alice Springs 62.67 188 *e*P **P 13 46 13.6 -0.6**
AS31 Alice Springs 62.68 188 *e*P **P 13 46 13.5 -0.8**
comp=Z,1.1nm,0.6s
ASAR Alice Springs 62.68 188 P **P 13 46 13.8 -0.6**
comp=Z,3.5nm,0.8s,baz=8.3,slow=5.0,SNR=45
ASAR LR LR 14 12 54.1
comp=Z,58nm,21.7s,baz=10,slow=35
GEYT Alibeck 63.34 298 P **P 13 46 18.8 +0.1**
comp=Z,12nm,1.0s,baz=40,slow=2.5,SNR=14
DAG Danmarks Havn 63.97 355 *i*P **P 13 46 22.1 -0.1**
comp=Z,15nm,1.0s
DAG Danmarks Havn 63.97 355 *i*P **P 13 46 22.1 -0.1**
DAG pmax pmax
comp=Z,15nm,1.0s
MOS Moscow 66.04 323 *e*P **P 13 46 34.4 -1.5**
MOS *e* 13 47 09.4
MOS pmax pmax
comp=Z,46nm,1.3s
VRH Novokhopyorsk 66.52 318 *e*P **P 13 46 38.3 -0.7**
VRH *e**SP **sP 13 46 55.8 -1.6**
VRH pmax pmax
comp=Z,10.0nm,0.8s
VRH MLR MLR
comp=Z,290nm,17.0s
OBN Obninsk 66.89 323⇑ *e*P **P 13 46 41.2 -0.1**
OBN *e* 13 46 56.9
OBN *e* 13 47 10.3
OBN *e* 13 49 08.1
OBN *e*S **S 13 55 26.4 -4.1**
OBN *e*SS **SS 13 59 49.9 +1.4**
OBN pmax pmax
comp=Z,20nm,0.5s
OBN MLR MLR
comp=Z,111nm,15.0s
LPSR Galich'ya Gora 67.17 320 *e*P **P 13 46 42.9 -0.3**
LPSR *e**SP **sP 13 46 59.8 -1.8**
LPSR pmax pmax
comp=Z,20nm,0.9s
LPSR MLR MLR
comp=Z,260nm,27.0s
FIA1 FINESS Array S 67.39 332 *e*P **P 13 46 44.4 0.0**
FINES FINESS Array B 67.39 332 P **P 13 46 44.7 +0.2**
comp=Z,18nm,0.7s,baz=51,slow=7.6,SNR=53
VSR Storozhevoye 67.84 319 *e*P **P 13 46 46.6 -0.9**
VSR *e**SP **sP 13 47 05.0 -0.8**
VSR pmax pmax
comp=Z,10.0nm,0.9s
VSR MLR MLR
comp=Z,330nm,22.0s
SUMG Summit 68.84 0 *i*P **P 13 46 55.0 +1.2**
comp=Z,19nm,1.0s
SUMG Summit 68.84 0 *i*P **P 13 46 55.0 +1.2**
SUMG pmax pmax
comp=Z,19nm,1.0s
SUMG Summit 68.84 0 *e*P **P 13 46 54.5 +0.7**
comp=Z,17nm,0.9s
VSU Vasula 69.09 329 *c i*P **P 13 46 55.6 +0.5**
VSU pmax pmax
comp=Z,38nm,0.8s
GOF Gofitskoye 69.20 311⇑ *e*P **P 13 46 56.8 +0.7**
GOF pmax pmax
comp=Z,68nm,1.1s
GUDG Gudauri 69.81 309 P **P 13 47 01.5 +1.3**
DGRG David-gareji 69.83 307 P **P 13 46 59.1 -1.0**
DGRG David-gareji 69.83 307 P **P 13 46 59.1 -1.0**
ZEI Tsey 69.98 309 *e*P **P 13 47 00.2 -1.0**
ZEI pmax pmax
comp=Z,37nm,1.2s
KVAR Kislovodsk Arr 70.03 311 P **P 13 47 02.3 +0.9**
comp=Z,62nm,1.1s,baz=308,slow=1.0,SNR=40
KIV Kislovodsk 70.04 311 *e*P **P 13 47 02.0 +0.6**
KIV pmax pmax
comp=Z,74nm,1.0s
KIV Kislovodsk 70.04 311 *e*P **P 13 47 02.0 +0.6**
comp=Z,71nm,1.0s
KBZ Khabaz 70.04 310 P **P 13 47 01.8 +0.5**
comp=Z,20nm,0.9s,baz=55,slow=4.4,SNR=48
TBLG Delisi 70.07 308 P **P 13 47 04.6 +3.1**
TBLG Delisi 70.07 308 P **P 13 47 04.6 +3.1**
ONI Oni 70.36 309 P **P 13 47 04.0 +0.7**
ONI Oni 70.36 309 P **P 13 47 04.0 +0.7**
STKA Stephens Creek 70.40 180 P **P 13 47 05.3 +2.0**
comp=Z,1.8nm,0.9s,baz=335,slow=5.7,SNR=3.5
NEY Neytrino 70.42 310⇓ *e*P **P 13 47 05.5 +1.6**
GNI Garni 70.97 306⇑ *i*P **P 13 47 08.2 +1.0**
GNI pmax pmax
comp=Z,61nm,1.2s
GNI Garni 70.97 306 *e*P **P 13 47 07.7 +0.5**
BGD Bogdanovka 71.03 308 P **P 13 47 08.9 +1.3**
NACGM Naroch 71.43 327 *e* **P 13 47 10.0 +0.5**
NACGM *e*LR LR 14 20 16.0

SOC Sochi 72.00 312 *eP* **P 13 47 12.4 -0.7**
SOC *e* 13 50 01.8
SOC *e*PPP PPP 13 51 43.4
SOC *e*S **S 13 56 29.7 -1.5**
SOC pmax pmax
comp=Z,8.0nm,0.4s
SOC MLR MLR
comp=Z,134nm,17.0s
FCC Fort Churchill 72.15 27 *eP* **P 13 47 13.7 0.0**
FCC pmax pmax
comp=Z,10.0nm,1.0s
FCC Fort Churchill 72.15 27 *eP* **P 13 47 13.7 0.0**
comp=Z,9.8nm,1.0s
NC405 NORSAR Array S 72.45 337 *eP* **P 13 47 15.4 -0.1**
NC303 NORSAR Array S 72.46 337 *eP* **P 13 47 16.1 +0.5**
ANN Anapa 72.57 314 *eP* **P 13 47 14.7 -1.8**
ANN *e**PP **pP 13 47 29.3 -0.5**
ANN pmax pmax
comp=Z,20nm,1.0s
HFS Hagfors 72.59 336 P **P 13 47 16.9 +0.5**
comp=Z,18nm,0.9s,baz=54,slow=7.5,SNR=20
EGMT Eagleton 72.59 42 *eP* **P 13 47 17.3 +0.6**
comp=Z,12nm,1.3s
NC204 NORSAR Array S 72.60 338 *eP* **P 13 47 16.3 -0.2**
NB201 NORSAR Array S 72.62 337 *eP* **P 13 47 16.9 +0.3**
NB2 NORSAR Subarra 72.66 337 P **P 13 47 16.8 0.0**
comp=Z,25nm,1.1s,baz=40,slow=6.2
NB2 NORSAR Subarra 72.66 337 P **P 13 47 16.8 0.0**
baz=40,slow=6.2
NOA NORSAR Array B 72.66 337 P **P 13 47 17.5 +0.7**
comp=Z,11nm,0.9s,baz=39,slow=5.9,SNR=28
NBO02 NORSAR Array S 72.75 337 *eP* **P 13 47 17.3 0.0**
NBO00 NORSAR Array S 72.79 337 *eP* **P 13 47 18.4 +0.8**
BOZ Bozeman (W) 73.08 45 *eP* **P 13 47 20.8 +1.1**
BOZ pmax pmax
comp=Z,3.0nm,1.0s
BOZ Bozeman (W) 73.08 45 *eP* **P 13 47 20.8 +1.1**
comp=Z,3.1nm,1.0s
AKASG Malin Array Be 73.11 322 P **P 13 47 19.6 0.0**
comp=Z,8.4nm,0.6s,baz=45,slow=6.6,SNR=50
AKASG Malin Array Be 73.11 322 P **P 13 47 19.6 0.0**
AKASG pmax pmax
comp=Z,9.0nm,0.6s
AKBB Malin Array Si 73.11 322 *eP* **P 13 47 19.4 -0.2**
AKBB pmax pmax
comp=Z,22nm,1.0s
AKBB Malin Array Si 73.11 322 *eP* **P 13 47 19.4 -0.2**
comp=Z,22nm,1.0s
KIEV Kiev 73.12 322*c i*P **P 13 47 19.6 -0.1**
KIEV pmax pmax
comp=Z,31nm,1.2s
KIEV Kiev 73.12 322 *eP* **P 13 47 19.3 -0.4**
comp=Z,28nm,1.1s
AK11 Malin Array Si 73.15 322 *eP* **P 13 47 19.3 -0.6**
NV01 Mina Array Sit 73.53 54 *eP* **P 13 47 22.3 -0.3**
NVAR Mina Array Bea 73.53 54 P **P 13 47 23.8 +1.2**
comp=Z,1.9nm,0.9s,baz=290,slow=5.9,SNR=7.1
NVAR LR LR 14 17 18.6
comp=Z,29nm,18.5s,baz=266,slow=34
SUW Suwalki 73.57 327 *eP* **P 13 47 22.9 +0.6**
SUW Suwalki 73.57 327 *eP* **P 13 47 22.9 +0.6**
SIM Simferopol' 74.33 315 *eP* **P 13 47 28.0 +1.1**
SIM pmax pmax
comp=Z,15nm,0.8s
SIM MLR MLR
comp=Z,50nm,11.4s
MOOW Moose Ponds 74.76 46 *eP* **P 13 47 31.4 +1.7**
comp=Z,13nm,1.8s
SORM Soroca 75.25 321⇑*i*P **P 13 47 28.5 -3.5**
SORM Soroca 75.25 321⇑P **P 13 47 28.6 -3.5**
R11A Troy Canyon, C 75.28 53 *eP* **P 13 47 33.7 +1.0**
comp=Z,3.3nm,0.9s
HWUT Hardware Ranch 75.65 48 *eP* **P 13 47 36.4 +1.6**
comp=Z,7.8nm,1.2s
DUG Dugway, Tooele 75.81 50 *eP* **P 13 47 37.0 +1.3**
DUG pmax pmax
comp=Z,3.0nm,0.8s
DUG Dugway, Tooele 75.81 50 *eP* **P 13 47 37.0 +1.3**
comp=Z,3.0nm,0.8s
BSD Bornholm Skovb 76.03 332 *i* P **P 13 47 36.4 0.0**
comp=Z,26nm,0.9s
BSD Bornholm Skovb 76.03 332 *i* P **P 13 47 36.4 0.0**
BSD pmax pmax
comp=Z,26nm,0.9s
BW06 Boulder Array 76.06 46 *eP* **P 13 47 37.6 +0.5**
comp=Z,2.7nm,0.9s
PD31 Pinedale Array 76.06 46 *eP* **P 13 47 37.7 +0.5**
PDAR Pinedale Array 76.06 46 P **P 13 47 38.2 +1.0**
comp=Z,1.5nm,0.7s,baz=264,slow=2.6,SNR=15
PDAR LR LR 14 20 35.9
comp=Z,10.0nm,21.0s,baz=307,slow=35
BEL Belsk 76.14 327 *eP* **P 13 47 38.5 +1.4**
BEL Belsk 76.14 327 *eP* **P 13 47 38.5 +1.4**
LVV L'vov 76.15 324 *eP* **P 13 47 37.3 0.0**
PSUT Pine Spring 76.22 52 *eP* **P 13 47 40.9 +2.7**
comp=Z,4.3nm,1.0s
NLU North Lily Min 76.40 50 *eP* **P 13 47 40.8 +1.6**
comp=Z,3.4nm,0.9s
KWP Kalwaria Pacla 76.89 324 *eP* **P 13 47 43.0 +1.6**
KWP Kalwaria Pacla 76.89 324 *eP* **P 13 47 43.0 +1.6**
BUR08 Bucovina Ar. S 77.13 322 *eP* **P 13 47 43.5 +0.6**
TESR Tescani 77.20 320⇑*i*P **P 13 47 44.0 +0.7**
CFR Carcaliu 77.36 318⇑*i*P **P 13 47 44.5 +0.4**
CFR Carcaliu 77.36 318⇑P **P 13 47 44.5 +0.4**
P17A Butcher Ranch, 77.50 49 *eP* **P 13 47 46.9 +1.6**
comp=Z,5.9nm,1.0s
MTPU Mount Pierson 77.55 51 *eP* **P 13 47 47.2 +1.4**
comp=Z,3.2nm,0.8s
LCMT Little Creek M 77.56 52 *eP* **P 13 47 47.0 +1.3**
comp=Z,18nm,1.9s
KOLS Kolonicke sedl 77.59 324 *eP* **P 13 47 46.1 +0.7**
KOLS *e* 13 47 53.8
KOLS pmax pmax
comp=Z,9.0nm,1.2s
KOLS Kolonicke sedl 77.59 324 *eP* **P 13 47 46.1 +0.7**
KOLS *e* 13 47 53.8
VRI Vrincioaia 77.61 320⇑*i*P **P 13 47 45.9 +0.3**
VRI Vrincioaia 77.61 320⇑P **P 13 47 45.9 +0.3**
PLOR Plostina 77.66 320⇑*i*P **P 13 47 46.4 +0.5**
PLOR Plostina 77.66 320⇑P **P 13 47 46.4 +0.5**
P18A Preston Nutter 77.69 49 *eP* **P 13 47 47.8 +1.3**
comp=Z,5.7nm,1.1s
STHS Stebnicka Huta 77.70 325 *eP* **P 13 47 47.3 +1.2**
STHS pmax pmax
comp=Z,7.0nm,0.9s
STHS Stebnicka Huta 77.70 325 *eP* **P 13 47 47.2 +1.2**
TIRR Tirgusor 77.71 318⇑*i*P **P 13 47 46.5 +0.4**
TIRR Tirgusor 77.71 318⇑P **P 13 47 46.5 +0.4**
ULM Lac du Bonnet 77.72 34 P **P 13 47 45.5 -0.6**
comp=Z,2.7nm,0.6s,baz=302,slow=6.0,SNR=3.2
OJC Ojcow 77.75 326 *eP* **P 13 47 47.5 +1.2**
OJC Ojcow 77.75 326 *eP* **P 13 47 46.9 +0.6**
OJC pmax pmax
comp=Z,34nm,1.1s
OJC Ojcow 77.75 326 *eP* **P 13 47 46.9 +0.6**
comp=Z,34nm,1.1s
SRU San Rafael Swe 77.86 49 *eP* **P 13 47 48.5 +1.2**
SRU pmax pmax
comp=Z,6.0nm,0.8s
SRU San Rafael Swe 77.86 49 *eP* **P 13 47 48.5 +1.2**
comp=Z,5.8nm,0.8s
BR131 Keskin Array S 77.96 312 *eP* **P 13 47 48.0 +0.2**
BRTR Keskin Array B 77.96 312 P **P 13 47 48.2 +0.4**
comp=Z,2.2nm,0.5s,baz=72,slow=4.4,SNR=20
BRTR PP **PP 13 50 45.8 +2.1**
comp=Z,3.9nm,1.0s,baz=90,slow=4.9,SNR=8.7
BRTR LR LR 14 27 11.3
comp=Z,38nm,19.5s,baz=48,slow=40
CRVS Cervenica-Dubn 77.98 324 *eP* **P 13 47 48.3 +0.7**
CRVS *e* 13 50 45.9
CRVS Cervenica-Dubn 77.98 324 *eP* **P 13 47 48.3 +0.7**
CRVS *e*PP **PP 13 50 45.9 +2.5**
NIE Niedzica 78.12 325 *eP* **P 13 47 49.9 +1.5**
NIE Niedzica 78.12 325 *eP* **P 13 47 49.9 +1.5**
DOPR Dopca 78.21 320⇑*i*P **P 13 47 52.6 +3.7**
ISR Istrita 78.22 319⇑*i*P **P 13 47 50.2 +1.2**
ISR Istrita 78.22 319⇑P **P 13 47 50.2 +1.2**
MLR Muntele Rosu 78.26 320 P **P 13 47 48.9 -0.5**
comp=Z,1.3nm,0.9s,baz=358,slow=4.4,SNR=8.3
MLR Muntele Rosu 78.26 320⇑*i*P **P 13 47 49.3 -0.1**
MLR Muntele Rosu 78.26 320⇑P **P 13 47 49.3 -0.1**
MLR Muntele Rosu 78.26 320 *eP* **P 13 47 49.3 -0.1**
comp=Z,14nm,1.2s
BR231 Keskin MP Arra 78.39 312 *eP* **P 13 47 48.6 -1.5**
LANS Liptovska Anna 78.69 326 *eP* **P 13 47 52.9 +1.4**
LANS Liptovska Anna 78.69 326 *eP* **P 13 47 52.9 +1.4**
KECS Kecovo 78.73 325 *eP* **P 13 47 52.9 +1.2**
KECS pmax pmax
comp=Z,2.0nm,0.8s
KECS Kecovo 78.73 325 *eP* **P 13 47 52.9 +1.2**
KECS *e*PP **PP 13 50 49.5 -0.1**
OKC Ostrava-Krasne 78.75 327 *eP* **P 13 47 52.8 +1.0**
OKC Ostrava-Krasne 78.75 327 *eP* **P 13 47 52.8 +1.0**
KSP Ksiaz 78.77 328 *eP* **P 13 47 53.0 +1.1**
KSP Ksiaz 78.77 328 *eP* **P 13 47 53.0 +1.1**
MORC Moravsky Berou 79.05 327⇑*i*P **P 13 47 54.6 +1.1**
MORC Moravsky Berou 79.05 327⇑P **P 13 47 54.6 +1.1**
MORC Moravsky Berou 79.05 327 *eP* **P 13 47 54.4 +0.8**
comp=Z,56nm,1.0s
DPC Dobruska-Polom 79.13 328 *eP* **P 13 47 55.2 +1.3**
DPC *e*PCP **PcP 13 47 59.7 -2.5**
DPC Dobruska-Polom 79.13 328 *eP* **P 13 47 55.2 +1.3**
DPC *e* 13 47 59.7
KRLC Kraliky 79.15 328 *eP* **P 13 47 54.9 +0.9**
KRLC Kraliky 79.15 328 *eP* **P 13 47 54.9 +0.9**
AGMN Agassiz Nation 79.16 35 *eP* **P 13 47 53.6 -0.5**
comp=Z,4.0nm,1.0s
PV10 Paradox Valley 79.22 49 *eP* **P 13 47 56.1 +1.2**
PV05 Paradox Valley 79.38 49 *eP* **P 13 47 56.5 +0.7**
PSZ Piszkesteto 79.41 325⇑*i*P **P 13 47 53.4 -2.1**
PSZ Piszkesteto 79.41 325⇑P **P 13 47 53.4 -2.1**
PSZ Piszkesteto 79.41 325 *eP* **P 13 47 55.5 0.0**
comp=Z,16nm,1.0s
VYHS Vyhne 79.46 325 *eP* **P 13 47 56.7 +1.0**
VYHS pmax pmax
comp=Z,5.0nm,1.0s
VYHS Vyhne 79.46 325 *eP* **P 13 47 56.7 +1.0**
VYHS *e*PP **PP 13 50 55.8 +0.1**
WUAZ Wupatki 79.67 53 *eP* **P 13 47 59.2 +1.9**
comp=Z,3.6nm,0.9s
BRG Berggiesshubel 79.69 330 *eP* **P 13 47 57.6 +0.7**
comp=Z,12nm,0.9s
BRG Berggiesshubel 79.69 330 *eP* **P 13 47 57.6 +0.7**
BRG pmax pmax
comp=Z,12nm,0.9s
PVCC Panska Ves 79.71 329 *eP* **P 13 47 57.8 +0.8**
PVCC Panska Ves 79.71 329 *eP* **P 13 47 57.8 +0.8**
CLL Collm 79.72 330⇑*i*P **P 13 47 57.4 +0.4**
comp=Z,24nm,1.0s
CLL *e*PP **PP 13 50 57.0 -0.7**
CLL LmV 14 26 00.0
comp=Z,100nm,18.2s
CLL Collm 79.72 330⇑*i*P **P 13 47 57.4 +0.4**
CLL pmax pmax
comp=Z,24nm,1.0s
CLL Collm 79.72 330 *eP* **P 13 47 57.2 +0.2**
comp=Z,27nm,0.9s
VRAC Vranov 79.81 327 P **P 13 47 58.4 +0.8**
comp=Z,8.6nm,0.8s,baz=46,slow=4.5,SNR=12
VRAC Vranov 79.81 327⇑*i*P **P 13 47 59.5 +1.9**
VRAC Vranov 79.81 327⇑P **P 13 47 59.5 +1.9**
SMCO Snowmass 79.89 47 *eP* **P 13 47 59.7 +1.0**
comp=Z,12nm,1.7s
GOPC GO Pecny, Ondr 80.10 328 *eP* **P 13 48 00.1 +1.0**
PRU Pruhonice 80.14 329 *eP* **P 13 48 00.4 +1.1**
PRU Pruhonice 80.14 329 *eP* **P 13 48 00.4 +1.1**
BZS Buzias 80.30 322⇓*i*P **P 13 48 00.8 +0.5**
BZS Buzias 80.30 322⇓P **P 13 48 00.8 +0.5**
NKC Novy Kostel 80.78 330 *eP* **P 13 48 03.2 +0.4**
NKC Novy Kostel 80.78 330 *eP* **P 13 48 03.2 +0.4**
ASF Jabal al Asfar 80.85 304 P **P 13 48 03.2 -0.4**
comp=Z,3.7nm,0.7s,baz=349,slow=4.2,SNR=6.3
MDVR Moldovita 80.87 321⇑*i*P **P 13 48 03.3 -0.1**
S22A 4UR Ranch, Cre 80.94 48 *eP* **P 13 48 05.8 +1.5**
comp=Z,13nm,1.8s
CONA Conrad Observa 81.18 327 *i* P **P 13 48 05.9 +0.8**
comp=Z,12nm,0.9s,SNR=8.0
KHC Kasperske Hory 81.20 329 *eP* **P 13 48 06.0 +0.9**
KHC *e*PCP **PcP 13 48 09.7 -1.6**
KHC Kasperske Hory 81.20 329 *eP* **P 13 48 06.0 +0.9**
KHC Kasperske Hory 81.20 329 *eP* **P 13 48 04.8 -0.2**
comp=Z,6.0nm,0.9s
PKSM Moragy 81.26 324⇓*i*P **P 13 48 05.7 +0.3**
PKSM Moragy 81.26 324⇓P **P 13 48 05.7 +0.3**
MMAI Mount Meron Ar 81.26 305 P **P 13 48 06.7 +1.0**
comp=Z,8.0nm,0.7s,baz=51,slow=6.6,SNR=8.5
EYMN Ely 81.34 33 *eP* **P 13 48 05.2 -0.7**
comp=Z,6.1nm,0.6s
GEC2 GERESS Array S 81.38 328 *eP* **P 13 48 06.1 0.0**
GEC2 pmax pmax
comp=Z,8.0nm,0.9s
GEC2 GERESS Array S 81.38 328 *eP* **P 13 48 06.1 0.0**
comp=Z,7.7nm,0.9s
GERES GERESS Array B 81.38 328 P **P 13 48 06.6 +0.5**
comp=Z,4.2nm,0.8s,baz=35,slow=4.9,SNR=23
GERES LR LR 14 27 07.8
comp=Z,167nm,19.9s,baz=45,slow=38
GEA0 GERESS Array S 81.38 328 *eP* **P 13 48 06.3 +0.2**
EKA Eskdalemuir Ar 81.54 341 P **P 13 48 07.6 +0.9**
comp=Z,5.1nm,0.9s,baz=38,slow=5.6,SNR=5.5
GRFO Grafenberg 81.69 330 *eP* **P 13 48 09.0 +1.4**
GRFO pmax pmax
comp=Z,30nm,1.0s
GRFO Grafenberg 81.69 330 *eP* **P 13 48 09.0 +1.4**
comp=Z,30nm,1.0s
SDCO Great Sand Dun 81.71 48 *eP* **P 13 48 09.4 +1.0**
comp=Z,3.6nm,1.3s
ARSA Arzberg 81.85 326 *i* P **P 13 48 09.7 +1.2**
comp=Z,4.1nm,0.7s
MOA Molln 81.92 327 *i* PcP **P 13 48 11.2 +2.3**
comp=Z,11nm,1.1s
ECSD EROS Data Cent 82.19 39 *eP* **P 13 48 10.7 +0.3**
comp=Z,3.9nm,0.8s
PERS Pernice 82.50 326 *i* P **P 13 48 12.6 +0.6**
SOKA Soboth 82.51 326 *i* P **P 13 48 12.7 +0.6**
comp=Z,28nm,1.0s,SNR=15
T25A Trinidad 82.76 48 *eP* **P 13 48 14.2 +0.5**
comp=Z,4.8nm,0.8s
OBKA Obir 82.85 326 *i* P **P 13 48 13.0 -0.9**
comp=Z,11nm,1.0s
MEM Membach 82.86 333 P **P 13 48 14.4 +0.7**
comp=Z,8.3nm,1.2s
KBA Koelnbreinsper 82.92 327 *i* P **P 13 48 14.7 +0.5**
comp=Z,12nm,0.8s,SNR=8.3
ANMO Albuquerque 83.06 50*cePP* **13 48 17.1 +1.8**
ANMO pmax pmax
comp=Z,2.0nm,1.0s
ANMO Albuquerque 83.06 50 *eP* **P 13 48 17.4 +2.1**
comp=Z,6.5nm,1.3s
MYKA Terra Mystica 83.14 327 *i* P **P 13 48 15.3 0.0**
comp=Z,10nm,0.8s
BCLA Clavier 83.26 334 P **P 13 48 16.3 +0.5**
SCHQ Schefferville 83.44 16 P **P 13 48 17.4 +0.8**
comp=Z,6.2nm,0.8s,baz=7.7,slow=4.8,SNR=4.1
WTTA Wattenberg 83.47 329 *i* PcP **P 13 48 18.0 +0.8**
comp=Z,5.1nm,0.5s
ABTA Abfaltersbach 83.53 328 *i* P **P 13 48 14.2 -3.1**
comp=Z,11nm,1.1s
JAVS Javornik 83.54 326 *eP* **P 13 48 16.8 -0.6**
MOTA Moosalm 83.62 329 *i* PcP **P 13 48 18.7 +0.8**
comp=Z,17nm,0.9s,SNR=7.4
RETA Reutte 83.65 329 *i* PcP **P 13 48 19.0 +1.0**
comp=Z,30nm,1.1s,SNR=10
EIL Elat 83.74 303 P **P 13 48 19.2 +0.5**
comp=Z,7.7nm,0.9s,baz=50,slow=2.7,SNR=6.9
DOU Dourbes 83.78 334 P **P 13 48 19.0 +0.6**
PDG Podgorica 83.81 321⇓*i*P **P 13 48 19.8 +1.1**
BFO Black Forest 83.91 331 *i* P **P 13 48 20.3 +1.1**
BFO Black Forest 83.91 331 *eP* **P 13 48 19.5 +0.3**
comp=Z,20nm,1.0s
FETA Feichten 84.04 329 *i* PcP **P 13 48 20.6 +0.5**
comp=Z,18nm,1.0s,SNR=7.6
DAVA Damuels 84.16 329 *i* PcP **P 13 48 21.2 +0.6**
comp=Z,32nm,1.0s,SNR=9.3
PMOR Pomariorio Ree 84.52 114 *eT* T 15 21 46.6
comp=Z,51nm,0.2s
FUORN Ofenpass-Fuorn 84.55 329 *eP* **P 13 48 23.1 +0.4**
comp=Z,30nm,0.8s
DAVOX Davos/Dischmat 84.57 329 P **P 13 48 23.6 +0.8**
comp=Z,12nm,0.9s,baz=52,slow=4.3,SNR=11
TUE Stuetta 85.04 329 *eP* **P 13 48 25.6 +0.4**
comp=Z,12nm,0.9s
PPT Papeete 85.07 117 LR LR 14 16 49.7
comp=Z,112nm,21.4s,baz=316,slow=29
PPT2 Papeete2 85.08 117 *eLR* LR 14 15 13.9
comp=Z,192nm,24.0s,baz=297
PPT2 Papeete2 85.08 117 *eT* T 15 22 29.4
comp=Z,15nm,0.3s
TIAR Tiarei 85.22 117 *eT* T 15 22 39.0
comp=Z,4.9nm,0.3s
SENIN Lac Senin/Sane 85.93 330 *eP* **P 13 48 29.3 -0.3**
comp=Z,9.4nm,0.9s
TAOE Nuku Hiva Isla 86.19 104 *eLR* LR 14 15 39.9
comp=Z,149nm,22.6s
MEH Mehetia 86.33 116 *eT* T 15 24 02.1
comp=Z,71nm,0.2s
WMOK Wichita Mounta 87.67 46 *eP* **P 13 48 37.8 -0.2**
WMOK pmax pmax
comp=Z,2.0nm,0.8s
WMOK Wichita Mounta 87.67 46 *eP* **P 13 48 37.8 -0.2**
comp=Z,1.7nm,0.8s
TX31 Lajitas Ar. Si 88.64 53 *eP* **P 13 48 43.0 +0.1**
TXAR Lajitas Array 88.64 53 P **P 13 48 43.9 +1.0**
comp=Z,1.0nm,0.7s,baz=292,slow=3.1,SNR=14
TXAR LR LR 14 30 15.5
comp=Z,15nm,18.0s,baz=0.0,slow=37
WHAR Wooly Hollow 90.76 42 *eP* **P 13 48 51.9 -0.6**
comp=Z,39nm,1.9s
KEST Kesra 93.82 323 LR LR 14 36 13.8
comp=Z,138nm,19.3s,baz=328,slow=39
ESDC Sonseca Array 95.83 334 P **P 13 49 16.1 +0.2**
comp=Z,0.2nm,0.3s,baz=14,slow=4.4,SNR=4.4
RKT Rikitea 99.04 112 *eLR* LR 14 21 33.3
comp=Z,150nm,25.5s
VNA2 Neumayer--Watz 144.22 197 PKP PKPbc 13 55 22.1 -0.1
baz=109,slow=3.4
VNA3 Neumayer Olymp 144.47 195 PKP **PKPab 13 55 22.7 0.0**
VNA1 Neumayer--Stat 144.62 197 PKP PKPbc 13 55 23.4 0.0
LPAZ La Paz 145.35 58 PKPbc **PKPab 13 55 28.4 +0.1**
comp=Z,3.2nm,0.6s,baz=346,slow=4.2,SNR=12

IDC 03 13:43:20.1±1.9,2°.62N×126°.06E,h0km,mb3.5/4,
mb1 3.6/4,mb1mx3.4/45,mbtmp3.5/4,MS3.5/1,Ms1 3.5/1,
ms1mx2.4/27,Error ellipse: s-maj=175.4km
s-min=23.7km az=65.0,Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**23.85**	**160**	P	P	13 48 34.5	-0.9
	0.7nm,0.6s,baz=340,slow=10,SNR=5.1						
ASAR	**Alice Springs**	**27.22**	**164**	P	P	13 49 05.4	-0.6
	0.4nm,0.7s,baz=346,slow=7.5,SNR=2.7						
STKA	**Stephens Creek**	**37.35**	**158**	P	P	13 50 36.1	+1.6
	1.4nm,1.1s,baz=349,slow=6.9,SNR=3.0						
SONM	**Songino Array**	**48.14**	**342**	LR	LR	14 13 34.8	
	comp=Z,46nm,18.1s,baz=246,slow=38						
MKAR	**Makanchi Array**	**58.09**	**326**	P	P	13 53 15.2	-0.2
	0.2nm,0.7s,baz=123,slow=5.3,SNR=2.7						

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*SJA **03** 13:48:34.4±1.2,32°.64S×68°.91W,h22km±3km,ML3.7,*
MW3.7
*IASPEI **03** 13:48:34.6±0.9,32°.64S×68°.91W,h21km,Argentina GT5*
from local network data INPRES Catalog, 2013, personal
communication with Gerardo S¨¡nchez, Dpto.
Investigaciones Sismol¨‡gicas, INPRES - Argentina
*ISCJB **03** 13:48:35.4±0.6,32°.63S±0°.03×68°.96W±0°.03,h7km±4km,*
Error ellipse: s-maj=5.2km s-min=3.4km az=41.1
*GUC **03** 13:48:35.9±0.6,32°.86S×68°.87W,h105km±36km,ML3.5*
ISC 03 13:48:35.1±0.9,32°.61S±0°.02×68°.98W±0°.02,h11km±8km,
n36,σ1°.28/54,Mendoza Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAL	**Salagasta**	**0.12**	**83**	*eP*	**Pb**	**13 48 39.5**	**0.0**
ASAL	**Salagasta**	**0.12**	**83**	*eP*	**Pb**	**13 48 39.5**	**0.0**
ARCO	**CERRO ARCO**	**0.24**	**171**	*eP*	**Pg**	**13 48 40.3**	**+0.2**
ARCO				*eS*	**Sg**	**13 48 44.3**	**+0.8**
ARCO				IAML		13 48 46.8	
	comp=Z,3μm,0.5s						
ARCO	**CERRO ARCO**	**0.24**	**171**	*eP*	**Pg**	**13 48 40.3**	**+0.2**
ARCO				*eS*	**Sg**	**13 48 44.3**	**+0.8**
ARCO				IAML		13 48 47.3	
	comp=Z,3μm,0.3s						
AAGR	**Agrelo**	**0.49**	**165**	*eP*	**Pg**	**13 48 44.4**	**-0.5**
AAGR	**Agrelo**	**0.49**	**165**	*eP*	**Pg**	**13 48 44.4**	**-0.5**
AUSP	**Uspallata**	**0.52**	**318**	*eP*	**Pb**	**13 48 46.7**	**+0.4**
AUSP	**Uspallata**	**0.52**	**318**	*eP*	**Pb**	**13 48 46.7**	**+0.4**
AUSP				*eS*	**Sg**	**13 48 51.4**	**-0.6**
RTCV	**Cerro Valdivia**	**0.83**	**27**	*eP*	**Pg**	**13 48 50.4**	**-0.7**
RTCV	**Cerro Valdivia**	**0.83**	**27**	*eP*	**Pg**	**13 48 50.9**	**-0.2**
RTCV				*eS*	**Sb**	**13 49 03.3**	**+0.6**
RTLS	**Leoncito**	**0.85**	**341**	*eP*	**Pb**	**13 48 52.2**	**+0.2**
RTLS	**Leoncito**	**0.85**	**341**	*eP*	**Pb**	**13 48 52.2**	**+0.2**
RTLS				*i* S	**Sn**	**13 49 05.2**	**-0.7**
SJA	**San Juan**	**1.13**	**18**	*eP*	**Pb**	**13 48 56.5**	**-0.3**
SJA				IAML		13 49 13.0	
	comp=Z,1μm,0.2s						
SJA	**San Juan**	**1.13**	**18**	*i* P	**Pn**	**13 48 56.9**	**-0.1**
SJA				*eS*	**Sn**	**13 49 12.5**	**-0.1**
SJA				IAML		13 49 13.0	
	comp=Z,1μm,0.2s						
RTLL	**Cerro Villicun**	**1.34**	**19**	*eP*	**Pn**	**13 48 59.8**	**-0.1**
RTLL	**Cerro Villicun**	**1.34**	**19**	*eP*	**Pn**	**13 48 59.8**	**-0.1**
RTLL				*eS*	**Sg**	**13 49 18.5**	**+0.2**
CLCH	**Cerro Calan**	**1.53**	**239**	*i* P	**Pn**	**13 49 02.5**	**+0.1**
CLCH				*i* S	**Sb**	**13 49 22.8**	**-0.1**
CLCH				IAML		13 49 29.1	
	comp=E,698nm,0.3s						
PEL	**Peldehue**	**1.53**	**249**	*i* P	**Pb**	**13 49 02.9**	**-0.7**
PEL				*i* S	**Sg**	**13 49 23.4**	**-1.1**
PEL				IAML		13 49 24.1	
	comp=N,769nm,0.4s						
ACAN	**Cantantal**	**1.55**	**78**	*eP*	**Pn**	**13 49 02.6**	**-0.1**
ACAN	**Cantantal**	**1.55**	**78**	*eP*	**Pn**	**13 49 02.6**	**-0.1**
ACAN				*eS*	**Sn**	**13 49 22.7**	**-0.2**
ROCH	**El Roble**	**1.75**	**257**	*i* P	**Pb**	**13 49 06.9**	**-0.5**
ROCH				*i* S	**Sg**	**13 49 30.6**	**-0.8**
ROCH				IAML		13 49 37.7	
	comp=E,722nm,0.5s						
ROC1	**El Roble**	**1.75**	**257**	*eP*	**Pb**	**13 49 07.0**	**-0.5**
ROC1	**El Roble**	**1.75**	**257**	*eP*	**Pb**	**13 49 07.0**	**-0.5**
ROC1				*eS*	**Sg**	**13 49 31.2**	**-0.4**
RCDM	**Rinconada Maip**	**1.77**	**240**	*eP*	**Pn**	**13 49 04.6**	**-1.1**
RCDM				*i* S	**Sn**	**13 49 28.0**	**-0.3**
RCDM				IAML		13 49 29.6	
	comp=N,371nm,0.8s						
AVFE	**Valle Fertil**	**2.33**	**34**	*eP*	**Pn**	**13 49 14.6**	**+1.0**
AVFE				IAML		13 49 48.2	
	comp=Z,1μm,0.7s						
AVFE	**Valle Fertil**	**2.33**	**34**	*eP*	**Pn**	**13 49 14.6**	**+1.0**
AVFE				*eS*	**Sb**	**13 49 47.1**	**+0.9**
AVFE				IAML		13 49 48.0	
	comp=Z,1μm,0.8s						
MRA	**San Martin**	**2.76**	**87**	*eP*	**Pn**	**13 49 18.4**	**-1.0**
MRA				IAML		13 50 02.3	
	comp=Z,378nm,0.3s						
MRA	**San Martin**	**2.76**	**87**	*eP*	**Pn**	**13 49 18.5**	**-1.0**
MRA				*eS*	**Sb**	**13 49 59.7**	**+1.2**
MRA				IAML		13 50 02.3	
	comp=Z,378nm,0.3s						
AGUA	**GUANDACOL**	**3.14**	**8**	*eP*	**Pb**	**13 49 28.2**	**-2.7**
AGUA				*eS*	**Sg**	**13 50 12.9**	**-3.0**
SUCO	**SUCO**	**3.52**	**103**	*i* P	**Pb**	**13 49 38.0**	**+0.5**
SUCO				IAML		13 50 27.0	
	comp=Z,171nm,0.3s						
LCO	**Las Campanas**	**3.88**	**337**	*eP*	**Pn**	**13 49 37.9**	**+3.0**
LCO				*eS*	**Sn**	**13 50 24.0**	**+3.4**
VCA	**Vinchina**	**3.91**	**10**	*eP*	**Pb**	**13 49 44.1**	**-0.1**
VCA				IAML		13 49 47.1	
	comp=Z,139nm,0.3s						
VCA				*eS*	**Sb**	**13 50 34.6**	**+2.9**
AANI	**Anillaco**	**4.17**	**25**	*eP*	**Pb**	**13 49 50.7**	**+2.1**
AANI				*i* S	**Sg**	**13 50 45.0**	**-4.0**
AANI				IAML		13 51 01.7	
	comp=Z,191nm,0.7s						
CYA	**Choya**	**4.97**	**34**	*i* P	**Pn**	**13 49 50.0**	**+0.2**
CYA				*eS*	**Sb**	**13 51 01.2**	**-0.9**
CYA				IAML		13 51 15.3	
	comp=Z,76nm,0.4s						
AHML	**Horco Molle**	**6.61**	**30**	*eP*	Pb	13 50 21.2	-8.9
AHML				IAML		13 52 17.5	
	comp=Z,22nm,0.5s						
FSA	**Cafayete**	**6.98**	**23**	*eP*	Pn	13 50 22.0	+4.5
FSA				IAML		13 52 22.5	
	comp=Z,8.7nm,0.4s						

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*NIED **03** 13:57:00,37°.00N×140°.60E,h5km,Mw4.3 Best double*
couple: M0:2.75000×10^15 NP1:φs:127.00000°,δ30.00000°,
λ-63.00000°. NP2:φs:277.00000°,δ64.00000°,

λ-105.00000°.
JMA ***03*** *13:57:14.8, 37.01N×140.59E, h8km±1km, M4.5*
Broadband fault plane solution: P waves. NP1: φ±292.00000°, δ53.00000°, λ-74.00000°. NP2: φ±85.00000°, δ40.00000°, λ-111.00000°. Principal axes: T Plg7.0000°, Azm10.0000°; N Plg13.0000°, Azm102.0000°; P Plg75.0000°, Azm252.0000°;
JMA Felt IV J1.
ISCJB ***03*** *13:57:14.6±0.4, 37.02N±0.02×140.60E±0.03, h21km±2km, mb4.4/64, MS3.3/10 Error ellipse: s-maj=4.4km s-min=3.4km az=33.0*
MOS ***03*** *13:57:16.5±1.4, 37.02N×140.71E, h38km, mb4.6/37, Error ellipse: s-maj=8.9km s-min=5.7km az=92.2*
IDC ***03*** *13:57:19.8±1.5, 37.03N×140.39E, h47km±15km, mb4.0/26, mb1 4.2/28, mb1mx4.1/43, mbtmp4.3/28, ML4.1/2, MS3.0/10, Ms1 3.0/10, ms1mx2.8/46, Error ellipse: s-maj=14.7km s-min=9.3km az=92.0*
NEIC ***03*** *13:57:20.1±0.7, 36.97N×140.42E, h50km±6km, mb4.5/29, Error ellipse: s-maj=7.6km s-min=5.4km az=120.0*
NEIC Recorded [4 JMA] in Fukushima.
ISC 03 13:57:15.1±0.8, 37.05N±0.03×140.52E±0.04, h14km±5km, n151, σ1.980/169, mb4.5/64, MS3.2/10, 13C-5D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.23**	**76**	⇑P	**Pg**	**13 57 19.0**	**-1.1**
ONAJ				S	**Sg**	**13 57 22.1**	**-1.5**
JFK	**Kawauchi**	**0.43**	**42**	⇑P	**Pg**	**13 57 22.9**	**-0.7**
JFK				S	**Sg**	**13 57 28.8**	**-0.6**
JHO	**Hitachi**	**0.44**	**175**	⇑P	**Pg**	**13 57 22.6**	**-1.1**
JHO				S	**Sg**	**13 57 28.1**	**-1.5**
JSB	**Shiboa**	**0.48**	**261**	⇓P	**Pn**	**13 57 25.9**	**-1.8**
JSB				S	**Sb**	**13 57 33.5**	**+1.0**
JFT	**Otama**	**0.49**	**343**	⇑P	**Pb**	**13 57 25.5**	**-0.1**
JFT				S	**Sb**	**13 57 33.1**	**+0.4**
JFY	**Yanaizu**	**0.74**	**299**	⇓P	**Pn**	**13 57 30.2**	**-1.0**
JFY				S	**Sn**	**13 57 40.8**	**-1.6**
JMM	**Marumori**	**0.85**	**15**	⇑P	**Pg**	**13 57 30.8**	**-0.7**
JYT	**Yasato**	**0.86**	**198**	⇑P	**Pg**	**13 57 30.5**	**-1.2**
JYT				S	**Sg**	**13 57 41.5**	**-1.4**
MJAR	**Matsushiro Arr**	**1.92**	**256**	P	**Pb**	**13 57 48.9**	**-1.0**
	97nm,0.3s,baz=82,slow=16,SNR=170						
MJAR				S	**Sg**	**13 58 14.2**	**-2.7**
	139nm,0.3s,baz=92,slow=23,SNR=31						
MJAR				LR	LR	13 58 14.7	
	comp=Z,189nm,21.1s,baz=80,slow=31						
MAJO	**Matsushiro**	**1.92**	**256**	*d iP*	**Pb**	**13 57 49.3**	**-0.7**
MAJO	**Matsushiro**	**1.92**	**256**	*e*Pn	**Pb**	**13 57 49.3**	**-0.7**
MJB9	**Matsu-Tunnel**	**1.92**	**256**	*e*Pn	**Pb**	**13 57 49.3**	**-0.7**
INU	**Inuyama**	**3.30**	**240**	*e*Pn	**Pn**	**13 58 08.5**	**+2.1**
JHJ	**Hachijo jima 2**	**3.96**	**189**	P	**Pn**	**13 58 16.3**	**+0.8**
	24nm,0.3s,baz=290,slow=23,SNR=15						
JHJ				S	**Sn**	**13 59 04.2**	**+2.4**
	62nm,0.3s,baz=179,slow=20,SNR=4.6						
JHJ				LR	LR	13 59 36.0	
	comp=Z,362nm,21.7s,baz=10.0,slow=35						
JHJ2	**Mitsune**	**3.97**	**189**	*e*Pn	**Pn**	**13 58 16.0**	**+0.5**
ERM	**Erimo**	**5.37**	**22**	*ce*P	**Pn**	**13 58 34.2**	**-0.5**
ERM				pmax	pmax		
	comp=Z,47nm,1.0s						
ERM	**Erimo**	**5.37**	**22**	*e*Pn	**Pn**	**13 58 36.5**	**+1.7**
ASAJ	**Asahikawa**	**7.24**	**12**	P	**Pn**	**13 59 02.1**	**+1.6**
	comp=Z,4.0nm,0.3s,baz=223,slow=9.3,SNR=22						
ASAJ				LR	LR	14 02 56.8	
	comp=Z,32nm,21.2s,baz=174,slow=46						
ASAJ	**Asahikawa**	**7.24**	**12**	*e*Pn	**Pn**	**13 59 02.4**	**+2.0**
YUK	**Yuzh-Kuril'sk**	**8.08**	**29**	P	**Pn**	**13 59 12.4**	**+0.4**
YUK				*e*S	**Sn**	**14 00 37.2**	**-5.9**
YUK				pmax	pmax		
	comp=Z,82nm,0.5s						
YUK				pmax	pmax		
	comp=N,27nm,0.3s						
YUK				pmax	pmax		
	comp=E,47nm,0.3s						
SHO	**Shikotan**	**8.34**	**33**	*e*P	**Pn**	**13 59 15.8**	**+0.2**
SHO				*i* S	**Sn**	**14 00 42.0**	**-7.5**
SHO				pmax	pmax		
	comp=Z,70nm,0.7s						
SHO				pmax	pmax		
	comp=N,36nm,0.5s						
SHO				pmax	pmax		
	comp=E,33nm,0.4s						
JNU	**Nakatsue**	**8.82**	**246**	P	**Pn**	**13 59 25.6**	**+3.4**
	comp=E,0.6nm,0.3s,baz=338,slow=1.5,SNR=8.3						
JNU				LR	LR	14 03 00.0	
	comp=E,233nm,20.3s,baz=122,slow=39						
JNU	**Nakatsue**	**8.82**	**246**	*e*Pn	**Pn**	**13 59 25.3**	**+3.1**
USRK	**Ussuriysk Ar.**	**9.64**	**320**	P	Pn	13 59 40.0	+6.6
	comp=E,0.7nm,0.3s,baz=136,slow=12,SNR=25						
KUR	**Kuril'sk**	**9.88**	**32**	P	**Pn**	**13 59 38.2**	**+1.6**
KUR				*e*S	**Sn**	**14 01 21.7**	**-5.5**
KUR				pmax	pmax		
	comp=Z,41nm,0.7s						
KUR				pmax	pmax		
	comp=N,8.0nm,0.4s						
KUR				pmax	pmax		
	comp=E,18nm,0.6s						
CBIJ	**Chichi jima**	**10.02**	**171**	*e*Pn	**Pn**	**13 59 34.9**	**-3.7**
YSS	**Yuzh-Sakhalins**	**10.04**	**9**	*e*P	**Pn**	**13 59 40.2**	**+1.4**
YSS				pmax	pmax		
	comp=Z,30nm,0.6s						
YSS	**Yuzh-Sakhalins**	**10.04**	**9**	*e*Pn	**Pn**	**13 59 42.2**	**+3.3**
KSRS	**Korea Array**	**10.05**	**276**	P	Pn	13 59 46.5	+7.5
	comp=Z,0.3nm,0.3s,baz=92,slow=13,SNR=40						
KSRS				LR	LR	14 03 27.1	
	comp=Z,50nm,21.6s,baz=92,slow=37						
KS01	**Wonju Array Si**	**10.07**	**276**	*e*Pn	**Pn**	**13 59 42.2**	**+2.9**
KSAR	**Wonju Array Be**	**10.08**	**276**	P	Pn	13 59 46.5	+7.0
KSAR	**Wonju Array Be**	**10.08**	**276**	P	Pn	13 59 46.5	+7.0
KLR	**Kul'dur**	**13.74**	**335**	P	**P**	**14 00 35.0**	**-3.1**
	comp=Z,0.2nm,0.3s,baz=141,slow=13,SNR=6.5						
KLR				LR	LR	14 05 47.4	
	comp=Z,81nm,18.0s,baz=154,slow=37						
KLR	**Kul'dur**	**13.74**	**335**	⇓*e*P	**P**	**14 00 34.9**	**-3.2**
TYV	**Tymovskoe**	**13.90**	**6**	*e*P	**Pn**	**14 00 33.8**	**+2.2**
TYV				pmax	pmax		
	comp=Z,15nm,0.8s						
NKL	**Nikolayevsk**	**16.11**	**0**	*e*P	**P**	**14 01 07.0**	**+2.8**
NJ2	**Nanjing**	**18.52**	**261**	*e*P	**Pn**	**14 01 31.1**	**-0.1**
NJ2				pmax	pmax		
	comp=Z,13nm,0.5s						
BJI	**Beijing**	**19.26**	**286**	P	**Pn**	**14 01 39.6**	**-0.6**
BJI				S	**Sn**	**14 05 11.5**	**-4.3**
BJI				pmax	pmax		
	comp=Z,8.0nm,0.8s						
BJI				pmax	pmax		
	comp=Z,140nm,4.9s						
BJI				LR	LR		
	comp=N,140nm,10.8s						
BJI				LR	LR		
	comp=E,170nm,12.6s						
PETK	**Petropavlovsk-**	**20.04**	**31**	P	Pn	14 01 51.9	+2.4
	comp=E,3.8nm,0.9s,baz=224,slow=6.4,SNR=6.6						
PETK				LR	LR	14 09 32.0	
	comp=E,27nm,18.8s,baz=217,slow=36						
HHC	**Hu-ho-hao-te**	**22.79**	**289**	*e*P	**P**	**14 02 17.8**	**+0.4**
HHC				pP	sP	14 02 32.7	+10
HHC				S	**S**	**14 06 21.1**	**-5.0**
HHC				pmax	pmax		
	comp=Z,22nm,0.9s						
HHC				pmax	pmax		
	comp=Z,130nm,4.4s						
HHC				LR	LR		
	comp=N,630nm,11.0s						
HHC				LR	LR		
	comp=E,740nm,12.8s						
HHC				LR	LR		
	comp=Z,710nm,13.9s						
MA2	**Magadan**	**23.50**	**13**	P	**P**	**14 02 26.8**	**+2.5**
	comp=Z,5.6nm,0.6s,baz=223,slow=9.7,SNR=8.9						
MA2				LR	LR	14 11 52.5	
	comp=Z,38nm,19.4s,baz=294,slow=37						
YAK	**Yakutsk**	**25.91**	**348**	P	**P**	**14 02 45.8**	**-0.6**
	comp=Z,4.5nm,0.4s,baz=0.9,slow=1.5,SNR=4.3						
YAK	**Yakutsk**	**25.91**	**348**	*e*P	**P**	**14 02 45.4**	**-1.0**
YAK				pmax	pmax		
	comp=Z,10.0nm,1.0s						
YAK	**Yakutsk**	**25.91**	**348**	*e*P	**P**	**14 02 44.8**	**-1.6**
	comp=Z,16nm,1.2s						
ULN	**Ulaanbaatar**	**26.76**	**304**	*e*P	**P**	**14 02 57.3**	**+2.8**
ULN				pmax	pmax		
	comp=Z,4.0nm,1.1s						
ULN	**Ulaanbaatar**	**26.76**	**304**	*e*P	**P**	**14 02 57.3**	**+2.8**
	comp=Z,3.7nm,1.1s						
SEY	**Seymchan**	**26.92**	**12**	P	**P**	**14 02 58.0**	**+2.4**
	comp=Z,4.2nm,1.0s,baz=197,slow=11,SNR=9.2						
SEY	**Seymchan**	**26.92**	**12**	*ce*P	**P**	**14 02 56.2**	**+0.6**
BOD	**Bodaibo**	**27.14**	**328**	*e*P	**P**	**14 02 57.3**	**-0.3**
BOD				pmax	pmax		
	comp=Z,3.0nm,1.3s						
SONA1	**Songino Array**	**27.18**	**304**	*e*P	**P**	**14 02 56.0**	**-2.3**
SONM	**Songino Array**	**27.18**	**304**	P	**P**	**14 02 58.0**	**-0.3**
	comp=Z,3.4nm,0.8s,baz=102,slow=9.4,SNR=9.5						
SONM				PcP	**PcP**	**14 06 18.9**	**+0.6**
	comp=Z,0.5nm,0.6s,baz=98,slow=3.0,SNR=3.6						
LZH	**Lanzhou**	**29.36**	**279**	*e*P	**P**	**14 03 18.5**	**+0.7**
LZH				pP	sP	14 03 30.2	+6.5
LZH				sP	pP	14 03 35.8	+14
LZH				*e*PP	**PnPn**	**14 04 14.7**	**+3.4**
LZH				pmax	pmax		
	comp=Z,20nm,1.0s						
LZH				pmax	pmax		
	comp=Z,52nm,5.1s						
LZH				LR	LR		
	comp=N,230nm,13.2s						
LZH				LR	LR		
	comp=E,250nm,12.9s						
LZH				LR	LR		
	comp=Z,290nm,16.5s						
TLY	**Talaya**	**29.78**	**311**	LR	LR	14 14 47.8	
	comp=Z,12nm,19.3s,baz=72,slow=35						
CD2	**Chengdu**	**30.96**	**270**	P	**P**	**14 03 30.6**	**-1.3**
CD2				pmax	pmax		
	comp=Z,10.0nm,0.7s						
GTA	**Gaotai**	**31.87**	**287**	P	**P**	**14 03 40.4**	**+0.4**
GTA				pP	sP	14 03 52.3	+6.5
GTA				sP	pP	14 03 57.7	+14
GTA				PcP	**PcP**	**14 06 31.4**	**+0.9**
GTA				S	**S**	**14 08 46.8**	**-3.6**
GTA				pmax	pmax		
	comp=Z,3.0nm,0.9s						
GTA				pmax	pmax		
	comp=Z,41nm,4.1s						
GTA				LR	LR		
	comp=N,240nm,17.6s						
GTA				LR	LR		
	comp=E,310nm,21.4s						
GTA				LR	LR		
	comp=Z,110nm,15.2s						
BILL	**Bilibino**	**34.22**	**17**	*e*P	**P**	**14 03 59.9**	**-0.1**
BILL				*e*		14 05 13.4	
BILL				pmax	pmax		
	comp=Z,4.0nm,1.5s						
BILL				MLR	MLR		
	comp=Z,57nm,19.0s						
KMI	**Kunming**	**34.26**	**261**	P	**P**	**14 04 03.1**	**+2.1**
KMI				pP	sP	14 04 14.4	+7.5
KMI				sP	pP	14 04 19.8	+15
KMI				pmax	pmax		
	comp=Z,8.0nm,0.5s						
KMI				pmax	pmax		
	comp=Z,85nm,4.8s						
KMI				LR	LR		
	comp=N,99nm,6.1s						
KMI				LR	LR		
	comp=E,85nm,5.7s						
KMI				LR	LR		
	comp=Z,96nm,6.5s						
TIXI	**Tiksi**	**35.20**	**354**	⇓*i P*	**P**	**14 04 07.4**	**-0.9**
TIXI				pmax	pmax		
	comp=Z,2.0nm,0.8s						
TIXI	**Tiksi**	**35.20**	**354**	*e*P	**P**	**14 04 07.6**	**-0.7**
	comp=Z,1.9nm,0.6s						
WMQ	**Urumqi**	**40.20**	**297**	*e*P	**P**	**14 04 52.6**	**+1.5**
WMQ				LR	LR		
	comp=N,23nm,26.6s						
WMQ				LR	LR		
	comp=E,17nm,26.6s						
WMQ				LR	LR		
	comp=Z,10.0nm,16.8s						
CMAR	**Chiang Mai Arr**	**40.81**	**255**	LR	LR	14 23 03.3	
	comp=Z,29nm,19.8s,baz=35,slow=38						
ZAA0	**Zalesovo Array**	**41.38**	**312**	*e*P	**P**	**14 04 59.8**	**-0.7**
ZALV	**Zalesovo Beam**	**41.38**	**312**	P	**P**	**14 05 00.2**	**-0.4**
	comp=Z,3.9nm,0.7s,baz=99,slow=8.2,SNR=12						
ZALV				PcP	**PcP**	**14 06 58.4**	**-0.2**
	comp=Z,1.0nm,0.4s,baz=58,slow=3.7,SNR=4.5						
NRIK	**Noril'sk**	**42.96**	**335**	P	**P**	**14 05 13.2**	**-0.1**
	comp=Z,4.2nm,0.5s,baz=125,slow=6.8,SNR=5.3						
MK01	**Makanchi Array**	**43.50**	**302**	*e*P	**P**	**14 05 17.6**	**-0.4**
MK31	**Makanchi Array**	**43.51**	**302**	*e*P	**P**	**14 05 18.4**	**+0.4**
MK31	**Makanchi Array**	**43.51**	**302**	*e*P	**P**	**14 05 18.4**	**+0.4**
MKAR	**Makanchi Array**	**43.51**	**302**	P	**P**	**14 05 17.9**	**-0.2**
	comp=Z,1.4nm,0.7s,baz=88,slow=9.6,SNR=15						
MKAR				PcP	**PcP**	**14 07 06.3**	**+0.5**
	comp=Z,0.6nm,0.8s,baz=74,slow=5.1,SNR=4.2						
MKAR	**Makanchi Array**	**43.51**	**302**	*ce*P	**P**	**14 05 18.7**	**+0.6**
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.7s						
MKAR	**Makanchi Array**	**43.51**	**302**	*e*P	**P**	**14 05 18.4**	**+0.4**
MKAR				PcP	**PcP**	**14 07 06.3**	**+0.5**
KURK	**Kurchatov**	**45.36**	**308**	*ce*P	**P**	**14 05 32.6**	**-0.2**
KURK				pmax	pmax		
	comp=Z,13nm,1.0s						
KURK	**Kurchatov**	**45.36**	**308**	*e*P	**P**	**14 05 31.9**	**-0.9**
	comp=Z,9.4nm,0.7s						
SVW2	**Sparrevohn**	**45.95**	**37**	*e*P	**P**	**14 05 41.2**	**+4.0**
	comp=Z,12nm,1.2s						
KAPI	**Kappang**	**46.12**	**209**	P	**P**	**14 05 39.6**	**+0.5**
	comp=Z,1.9nm,0.3s,baz=118,slow=15,SNR=3.5						
MLY	**Manley**	**48.22**	**32**	*e*P	**P**	**14 05 58.3**	**+3.3**
	comp=Z,2.9nm,0.9s						
SOEI	**Soe**	**48.99**	**201**	*e*P	**P**	**14 06 02.2**	**+0.6**
	comp=Z,24nm,0.9s						
TKM2	**Tokmak 2**	**48.99**	**298**	*e*P	**P**	**14 06 02.4**	**+0.9**
TKM2				pmax	pmax		
	comp=Z,16nm,1.3s						
TKM2	**Tokmak 2**	**48.99**	**298**	*e*P	**P**	**14 06 02.4**	**+0.9**
	comp=Z,16nm,1.3s						
MDM	**Murphy Dome**	**49.29**	**32**	*e*P	**P**	**14 06 06.1**	**+2.9**
	comp=Z,4.6nm,0.9s						
VOSK	**Vostochnaya**	**49.74**	**312**	*e*P	**P**	**14 06 06.4**	**-0.4**
VOSK				pmax	pmax		
	comp=Z,5.0nm,0.9s						
VOSK	**Vostochnaya**	**49.74**	**312**	*e*P	**P**	**14 06 06.4**	**-0.4**
	comp=Z,5.4nm,0.9s						
KSH	**Kashi**	**49.75**	**294**	*e*P	P	14 06 12.0	+4.8
KSH				*e*pP	sP	14 06 24.2	+11
KSH				*e*sP	pP	14 06 29.7	+18
KSH				*e*ScP	**ScP**	**14 11 21.9**	**-1.4**
KSH				S	**S**	**14 13 17.6**	**+1.6**
KSH				ScS	**ScS**	**14 15 55.1**	**-3.5**
KSH				pmax	pmax		
	comp=Z,46nm,4.5s						
AAK	**Ala-Archa**	**49.85**	**298**	*i* P	**P**	**14 06 08.0**	**0.0**
AAK				pmax	pmax		
	comp=Z,11nm,1.5s						
ILAR	**Eielson Array**	**49.87**	**32**	P	**P**	**14 06 08.2**	**+0.6**
	comp=Z,2.0nm,0.8s,baz=272,slow=6.7,SNR=20						
BRVK	**Borovoye**	**50.09**	**312**	*ce*P	**P**	**14 06 09.8**	**+0.4**
BRVK				pmax	pmax		
	comp=Z,5.0nm,1.0s						
BRVK	**Borovoye**	**50.09**	**312**	*e*P	**P**	**14 06 09.5**	**0.0**
	comp=Z,4.9nm,1.0s						
MENT	**Mentasta**	**51.43**	**35**	*e*P	**P**	**14 06 23.7**	**+4.3**
	comp=Z,20nm,1.7s						
INK	**Inuvik**	**54.70**	**27**	P	**P**	**14 06 43.2**	**-0.2**
	comp=Z,1.8nm,0.7s,baz=292,slow=7.1,SNR=9.1						
INK	**Inuvik**	**54.70**	**27**	*e*P	**P**	**14 06 44.0**	**+0.7**
	comp=Z,5.2nm,1.2s						
ARU	**Arti**	**55.88**	**318**	*c iP*	**P**	**14 06 51.8**	**-0.3**
ARU						14 08 54.9	
ARU				S	**S**	**14 14 40.9**	**+2.0**
ARU				SS	**SS**	**14 18 24.0**	**-0.1**
ARU				pmax	pmax		
	comp=Z,10.0nm,1.0s						
ARU	**Arti**	**55.88**	**318**	*e*P	**P**	**14 06 51.7**	**-0.3**
	comp=Z,9.3nm,1.0s						
FITZ	**Fitzroy Crossi**	**56.62**	**197**	P	**P**	**14 06 58.1**	**+0.4**
	comp=Z,2.9nm,0.9s,baz=13,slow=9.0,SNR=9.4						
WRAB	**Tennant Creek**	**56.97**	**187**	*e*P	**P**	**14 06 59.1**	**-1.1**
WRAB				pmax	pmax		
	comp=Z,13nm,0.9s						
WRAB	**Tennant Creek**	**56.97**	**187**	*e*P	**P**	**14 06 59.1**	**-1.1**
	comp=Z,13nm,0.9s						
WB2	**Warramunga Arr**	**56.98**	**187**	*e*P	**P**	**14 06 58.8**	**-1.4**
	comp=Z,11nm,0.8s						
WRA	**Warramunga Arr**	**56.98**	**187**	P	**P**	**14 06 59.4**	**-0.9**
	comp=Z,9.3nm,0.8s,baz=4.3,slow=7.4,SNR=51						
ABKAR	**Akbulak array**	**57.38**	**310**	*e*P	**P**	**14 07 02.7**	**-0.2**
AS01	**Alice Springs**	**60.70**	**187**	*e*P	**P**	**14 07 25.2**	**-0.9**
AS31	**Alice Springs**	**60.70**	**187**	*e*P	**P**	**14 07 25.3**	**-0.9**
	comp=Z,1.1nm,0.9s						
ASAR	**Alice Springs**	**60.71**	**187**	P	**P**	**14 07 25.6**	**-0.5**
	comp=Z,2.9nm,0.7s,baz=9.4,slow=6.1,SNR=23						
KEV	**Kevo**	**63.18**	**339**	*e*P	**P**	**14 07 44.3**	**+2.1**
KEV	**Kevo**	**63.18**	**339**	*e*P	**P**	**14 07 44.3**	**+2.1**
GEYT	**Alibeck**	**63.20**	**299**	P	**P**	**14 07 42.6**	**-0.4**
	comp=Z,2.8nm,0.6s,baz=53,slow=5.7,SNR=7.2						
KLMR	**Klimovskoe**	**63.36**	**327**	*e*P	**P**	**14 07 44.4**	**+0.8**
KLMR				pmax	pmax		
	comp=Z,4.0nm,0.6s						
ARCES	**ARCESS Array B**	**63.73**	**339**	P	**P**	**14 07 45.7**	**-0.2**
	comp=Z,3.0nm,0.7s,baz=56,slow=7.8,SNR=18						
ARCES				LR	LR	14 37 41.2	
	comp=Z,24nm,20.3s,baz=64,slow=38						
YKA	**Yellowknife Ar**	**64.16**	**30**	P	**P**	**14 07 49.0**	**+0.2**
	comp=Z,0.9nm,0.8s,baz=302,slow=6.9,SNR=18						
YKA	**Yellowknife Ar**	**64.16**	**30**	P	**P**	**14 07 49.0**	**+0.2**
YKA				pmax	pmax		
	comp=Z,1.0nm,0.8s						
OBN	**Obninsk**	**67.66**	**323**	*e*P	**P**	**14 08 11.2**	**-0.2**
OBN				pmax	pmax		
	comp=Z,3.0nm,0.7s						
FIA1	**FINESS Array S**	**68.47**	**332**	*e*P	**P**	**14 08 16.2**	**-0.2**
FINES	**FINESS Array B**	**68.47**	**332**	P	**P**	**14 08 16.9**	**+0.5**
	comp=Z,5.6nm,0.7s,baz=66,slow=7.1,SNR=16						
FINES	**FINESS Array B**	**68.47**	**332**	*i* P	**P**	**14 08 18.7**	**+2.3**
FINES				pmax	pmax		
	comp=Z,6.0nm,0.7s						
STKA	**Stephens Creek**	**68.57**	**179**	P	**P**	**14 08 16.3**	**-1.0**
	comp=Z,2.2nm,0.8s,baz=354,slow=4.6,SNR=5.0						
KBZ	**Khabaz**	**70.35**	**310**	P	**P**	**14 08 28.0**	**-0.3**
	comp=Z,2.1nm,0.6s,baz=110,slow=4.0,SNR=5.9						
KIV	**Kislovodsk**	**70.36**	**311**	*e*P	**P**	**14 08 28.6**	**+0.1**
KIV				pmax	pmax		
	comp=Z,11nm,1.1s						
AKASG	**Malin Array Be**	**73.85**	**322**	P	**P**	**14 08 48.8**	**-0.4**
	comp=Z,1.7nm,0.5s,baz=46,slow=6.1,SNR=9.6						
AKASG	**Malin Array Be**	**73.85**	**322**	*ce*P	**P**	**14 08 51.4**	**+2.2**
AKASG				pmax	pmax		
	comp=Z,2.0nm,0.5s						
KIEV	**Kiev**	**73.86**	**322**	*i* P	**P**	**14 08 47.8**	**-1.4**
KIEV				pmax	pmax		
	comp=Z,5.0nm,0.9s						
KIEV	**Kiev**	**73.86**	**322**	*e*P	**P**	**14 08 50.6**	**+1.3**
	comp=Z,3.8nm,0.7s						
NB2	**NORSAR Subarra**	**73.90**	**337**	P	**P**	**14 08 49.1**	**-0.3**
	comp=Z,7.0nm,1.1s,baz=38,slow=6.2						
NOA	**NORSAR Array B**	**73.90**	**337**	P	**P**	**14 08 49.5**	**+0.1**
	comp=Z,3.7nm,0.9s,baz=39,slow=5.8,SNR=9.5						
FCC	**Fort Churchill**	**74.31**	**26**	*e*P	**P**	**14 08 51.8**	**+0.1**
FCC				pmax	pmax		
	comp=Z,7.0nm,1.3s						
FCC	**Fort Churchill**	**74.31**	**26**	*e*P	**P**	**14 08 51.8**	**+0.1**
	comp=Z,6.6nm,1.3s						
LRM	**Limekiln Ridge**	**74.64**	**44**	*e*P	**P**	**14 08 58.0**	**+3.8**
EGMT	**Eagleton**	**74.73**	**41**	*e*P	**P**	**14 08 55.3**	**+0.8**
	comp=Z,5.3nm,0.9s						
BOZ	**Bozeman (W)**	**75.20**	**44**	*e*P	**P**	**14 08 58.0**	**+0.6**
BOZ				pmax	pmax		
	comp=Z,2.0nm,0.7s						
BOZ	**Bozeman (W)**	**75.20**	**44**	*e*P	**P**	**14 08 58.0**	**+0.6**
	comp=Z,2.3nm,0.7s						
NV01	**Mina Array Sit**	**75.55**	**53**	*e*P	**P**	**14 09 00.9**	**+1.3**
NVAR	**Mina Array Bea**	**75.55**	**53**	P	**P**	**14 09 01.1**	**+1.5**
	comp=Z,1.4nm,0.8s,baz=298,slow=4.2,SNR=9.5						
H17A	**Grant Village**	**76.56**	**44**	*e*P	**P**	**14 09 08.0**	**+2.7**
	comp=Z,4.3nm,0.9s						
R11A	**Troy Canyon, C**	**77.32**	**51**	*e*P	**P**	**14 09 10.7**	**+1.1**
	comp=Z,4.7nm,1.4s						
BW06	**Boulder Array**	**78.17**	**45**	*e*P	**P**	**14 09 14.9**	**+0.6**
PD31	**Pinedale Array**	**78.17**	**45**	*e*P	**P**	**14 09 14.8**	**+0.5**
PDAR	**Pinedale Array**	**78.17**	**45**	P	**P**	**14 09 14.9**	**+0.6**
	comp=Z,1.1nm,0.8s,baz=259,slow=1.5,SNR=9.7						
BRTR	**Keskin Array B**	**78.31**	**311**	P	**P**	**14 09 15.2**	**+0.2**
	comp=Z,1.0nm,0.5s,baz=74,slow=4.5,SNR=6.9						
OJC	**Ojcow**	**78.63**	**326**	*e*P	**P**	**14 09 17.5**	**+1.1**
OJC				pmax	pmax		
	comp=Z,9.0nm,1.1s						
OJC	**Ojcow**	**78.63**	**326**	*e*P	**P**	**14 09 17.5**	**+1.1**
	comp=Z,9.3nm,1.1s						
BR231	**Keskin MP Arra**	**78.75**	**312**	*e*P	**P**	**14 09 15.7**	**-1.7**
LCMT	**Little Creek M**	**79.60**	**51**	*e*P	**P**	**14 09 23.5**	**+1.4**
	comp=Z,4.9nm,1.3s						
MTPU	**Mount Pierson**	**79.61**	**50**	*e*P	**P**	**14 09 22.1**	**-0.4**
	comp=Z,14nm,1.8s						
KNB	**Kanab**	**79.86**	**51**	*e*P	**P**	**14 09 24.7**	**+1.1**
KNB				pmax	pmax		
	comp=Z,7.0nm,1.3s						
KNB	**Kanab**	**79.86**	**51**	*e*P	**P**	**14 09 24.7**	**+1.1**
	comp=Z,7.4nm,1.3s						
SRU	**San Rafael Swe**	**79.94**	**48**	*e*P	**P**	**14 09 25.1**	**+1.1**
SRU				pmax	pmax		
	comp=Z,4.0nm,0.8s						
SRU	**San Rafael Swe**	**79.94**	**48**	*e*P	**P**	**14 09 25.1**	**+1.1**
	comp=Z,3.7nm,0.8s						
CLL	**Collm**	**80.73**	**330**	*i* P	**P**	**14 09 27.9**	**+0.1**
CLL				*i*		14 09 29.9	
	comp=Z,7.0nm,1.0s						
CLL	**Collm**	**80.73**	**330**	*i* P	**P**	**14 09 27.9**	**+0.1**
GERES	**GERESS Array B**	**82.32**	**328**	P	**P**	**14 09 36.4**	**0.0**
	comp=Z,1.1nm,0.4s,baz=29,slow=6.3,SNR=10.0						
GEA0	**GERESS Array S**	**82.33**	**328**	*e*P	**

MJAR Sn **Sn** **14 03 41.5 +0.5**
3.0nm,0.3s,baz=80,slow=30,SNR=2.7
MAT Matsushiro 2.59 257 P Pn 14 03 03.0 -6.4
JHJ Hachijo jima 2 4.24 198 Pn **Pn** **14 03 32.8 +0.8**
3.4nm,0.3s,baz=324,slow=23,SNR=1.9
JHJ Sn **Sn** **14 04 21.2 -0.4**
MKAR Makanchi Array 44.00 302 P **P** **14 10 34.2 -0.7**
0.1nm,0.7s,baz=99,slow=8.5,SNR=1.4
ILAR Eielson Array 49.41 32 P **P** **14 11 17.3 +0.3**
0.4nm,0.7s,baz=259,slow=7.2,SNR=2.1
YKA Yellowknife Ar 63.72 30 P **P** **14 12 58.5 -0.3**
0.1nm,0.7s,baz=305,slow=6.7,SNR=1.9

MEX 03 14:05:27.1±0.4, 15°.77N×92°.66W, h92km±5km, MD3.6, Mexico-Guatemala border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		**0.54**	**263**	*i* P	Pn	14 05 41.0	-1.3
PCIG				*e*S	Sn	14 05 52.1	-1.6
CCIG	**Comitan**	**0.71**	**45**	*i* P	Pn	14 05 42.7	-1.4
CCIG				*i* S	Sn	14 05 55.6	-1.2

IDC 03 14:07:02.9±1.7, 1°.53N×124°.64E, h0km, mb3.3/4, mb1 3.5/4, mb1mx3.3/37, mbtmp3.3/4, Error ellipse: s-maj=189.1km s-min=23.5km az=63.0, Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**23.36**	**156**	P	P	14 12 12.7	-0.5
0.5nm,0.5s,baz=335,slow=11,SNR=8.0							
ASAR	**Alice Springs**	**26.61**	**161**	P	P	14 12 43.0	-0.3
0.2nm,0.8s,baz=335,slow=7.6,SNR=4.7							
STKA	**Stephens Creek**	**36.91**	**156**	P	P	14 14 14.3	+0.8
0.5nm,0.3s,baz=331,slow=10,SNR=3.8							
MKAR	**Makanchi Array**	**58.21**	**327**	P	P	14 16 58.8	-0.1
0.1nm,0.4s,baz=120,slow=6.4,SNR=3.2							

IDC 03 14:12:21.8±2.2, 2°.78N×126°.60E, h0km, mb3.1/3, mb1 3.4/3, mb1mx3.2/39, mbtmp3.1/3, MS3.1/1, Ms1 3.1/1, ms1mx2.3/17, Error ellipse: s-maj=195.9km s-min=25.1km az=66.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**23.83**	**162**	P	P	14 17 35.7	-1.1
0.3nm,0.4s,baz=340,slow=10,SNR=7.7							
ASAR	**Alice Springs**	**27.23**	**165**	P	P	14 18 08.9	+1.2
0.1nm,0.5s,baz=349,slow=12,SNR=5.4							
ASAR				LR	LR	14 30 08.3	
comp=Z,39nm,19.8s,baz=10,slow=39							
MKAR	**Makanchi Array**	**58.26**	**326**	P	P	14 22 18.0	-0.2
0.1nm,0.5s,baz=111,slow=7.9,SNR=2.7							

*IDC **03** 14:35:04.4±2.9, 27°.49S×70°.50W, h0km, mb3.8/1, mb1 3.7/2, mb1mx3.5/23, mbtmp3.6/2, ML3.4/1, Error ellipse: s-maj=123.9km s-min=66.3km az=90.0*
*ISCJB **03** 14:35:11.7±0.9, 25°.92S±0°.04×70°.8W±0°.3, h52km±15km, mb3.6/1, Error ellipse: s-maj=45.9km s-min=5.6km az=2.7*
*GUC **03** 14:35:11.3±0.7, 25°.92S×70°.65W, h50km±4km, ML3.5*
ISC 03 14:35:12.7±1.2, 25°.93S±0°.04×70°.7W±0°.3, h42km±11km, n9, σ0°49/14, Near coast of northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CDCH	**Caldera**	**1.14**	**185**	*i* P	**Pn**	**14 35 31.7**	**-0.5**
CDCH				*i* S	**Sn**	**14 35 46.9**	**+0.3**
CDCH				IAML		14 35 48.6	
comp=E,1μm,0.2s							
PB14	**IPOC Station P**	**1.32**	**12**	*i* P	**Pn**	**14 35 34.8**	**-0.1**
PB14				*i* S	**Sn**	**14 35 51.8**	**+0.2**
CPCH	**Copiapo**	**1.46**	**167**	*i* P	**Pn**	**14 35 36.2**	**-0.4**
CPCH				*i* S	**Sn**	**14 35 54.3**	**-0.3**
PB10	**IPOC Station P**	**2.41**	**3**	*i* P	**Pn**	**14 35 49.4**	**-0.2**
PB10				*e*S	**Sn**	**14 36 17.1**	**-0.6**
PB10				IAML		14 36 32.4	
comp=E,465nm,0.3s							
VACH	**Vallenar**	**2.64**	**181**	*i* P	**Pn**	**14 35 52.5**	**-0.3**
VACH				*i* S	**Sn**	**14 36 24.2**	**+0.6**
LPAZ	**La Paz**	**9.89**	**15**	Pn	Pn	14 37 48.7	+16
comp=E,0.1nm,0.3s,baz=210,slow=9.0,SNR=2.3							
TORD	**Torodi Ar. Bea**	**80.39**	**70**	P	**P**	**14 47 20.1**	**-0.1**
comp=E,0.5nm,0.6s,baz=258,slow=4.8,SNR=3.1							
TORD				pP	**pP**	**14 47 33.2**	**+0.4**
comp=E,0.8nm,0.7s,baz=269,slow=5.5,SNR=4.6							
ZALV	**Zalesovo Beam**	**146.64**	**26**	PKPbc	**PKPab**	**14 54 50.2**	**-0.3**
comp=E,0.9nm,0.4s,baz=303,slow=4.5,SNR=4.7							
MKAR	**Makanchi Array**	**150.14**	**39**	PKPbc	**PKPbc**	**14 54 59.6**	**+0.7**
comp=E,0.6nm,0.6s,baz=316,slow=2.0,SNR=8.9							

*IDC **03** 14:38:53.9±1.9, 23°.65N×90°.95E, h0km, mb3.7/7, mb1 3.8/8, mb1mx3.5/54, mbtmp3.7/8, ML3.6/1, MS2.9/7, Ms1 2.9/7, ms1mx2.7/55, Error ellipse: s-maj=84.5km s-min=19.0km az=60.0*
*ISCJB **03** 14:38:54.6±0.4, 23°.37N±0°.04×90°.68E±0°.04, h33km, mb3.7/10, MS2.8/6, Error ellipse: s-maj=5.8km s-min=4.7km az=178.7*
*NEIC **03** 14:39:00.2±1.0, 23°.69N×91°.32E, h10km, mb4.0/4, Error ellipse: s-maj=16.8km s-min=14.2km az=202.0*
NEIC Felt at Comilla, Feni, Lakshmipur and in the Dhaka area, Bangladesh.
ISC 03 14:38:56.9±0.7, 23°.37N±0°.05×90°.72E±0°.05, h35km, n36, σ2°13/36, mb3.7/10, MS2.9/6, Bangladesh

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHL	**Shillong**	**2.43**	**26**	*e*P	**Pn**	**14 39 32.5**	**-1.8**
SHL				*e*S	**Sn**	**14 40 00.1**	**-2.8**
SHL				IAML		14 40 07.9	
comp=N,884nm,0.3s							
SHL				IAML		14 40 08.4	
comp=E,746nm,0.4s							
BOK	**Bokaro**	**4.46**	**276**	*e*P	**Pn**	**14 40 03.6**	**+1.6**
BOK				*e*S	**Sn**	**14 40 52.1**	**-0.6**
BWNR	**Bhubaneshwar**	**5.50**	**237**	*e*P	**Pn**	**14 40 16.9**	**+0.7**
BWNR				*e*S	**Sn**	**14 41 16.4**	**-1.9**
BWNR				IAML		14 42 21.7	
comp=E,165nm,0.6s							
BWNR				IAML		14 42 21.9	
comp=N,146nm,0.5s							
GUN	**Gumba**	**6.29**	**317**	*e*Sn	Sn	14 41 26.9	-11
comp=N,509nm,0.8s							
LSA	**Lhasa**	**6.32**	**3**	*e*Pn	**Pn**	**14 40 28.9**	**+0.9**
PKIN	**Phulchoki**	**6.38**	**312**	*e*Pn	**Pn**	**14 40 28.8**	**+0.1**
KKN	**Kakani**	**6.60**	**313**	*e*Pn	**Pn**	**14 40 31.7**	**+0.1**
KKN				*e*Sn	**Sn**	**14 41 40.2**	**-5.6**
comp=N,35nm,0.2s							
DMN	**Daman**	**6.60**	**311**	*e*Pn	**Pn**	**14 40 33.9**	**+2.2**
DMN				*e*Sn	**Sn**	**14 41 45.3**	**-0.6**
comp=N,244nm,0.8s							
GKN	**Gorkha**	**7.17**	**311**	*e*Pn	**Pn**	**14 40 39.0**	**-0.4**
KOLN	**Koldanda**	**7.78**	**306**	*e*Pn	**Pn**	**14 40 48.5**	**+0.6**
KOLN				*e*Sn	**Sn**	**14 42 16.0**	**+1.1**
comp=N,141nm,0.5s							
PYUN	**Piuthan**	**8.42**	**306**	*e*Pn	**Pn**	**14 40 57.0**	**+0.5**
PYUN				*e*Sn	**Sn**	**14 42 25.8**	**-4.6**
comp=N,160nm,0.7s							
CHTO	**Chiang Mai**	**8.91**	**119**	*e*Pn	**Pn**	**14 41 03.2**	**0.0**
CHTO				*e*Sn	**Sn**	**14 42 38.8**	**-3.6**
CMAR	**Chiang Mai Arr**	**9.10**	**121**	Pn	**Pn**	**14 41 06.7**	**+0.9**
comp=N,0.2nm,0.3s,baz=304,slow=13,SNR=6.4							
CMAR				LR	LR	14 45 30.5	
comp=N,47nm,18.9s,baz=336,slow=44							
DGPR	**DIGLIPUR**	**10.35**	**168**	*e*P	**Pn**	**14 41 21.7**	**-1.2**
DGPR				*e*S	**Sn**	**14 43 13.9**	**-3.8**
DGPR				IAML		14 43 45.7	
comp=N,40nm,1.2s							
DGPR				IAML		14 43 46.5	
comp=E,38nm,1.2s							
BHPL	**Bhopal**	**12.22**	**272**	*e*P	**Pn**	**14 41 47.0**	**-1.5**
BHPL				*ex*	x	14 43 35.4	
HYB	**Hyderabad**	**12.85**	**245**	*i* P	P	14 42 13.0	+5.5
HYB				*e*S	**Sn**	**14 44 20.5**	**+1.5**
HYB	**Hyderabad**	**12.85**	**245**	*e*P	P	14 42 13.0	+5.5
HYB				*e*S	**Sn**	**14 44 20.5**	**+1.5**
SMLA	**Simla**	**14.32**	**306**	*e*P	**Pn**	**14 42 14.8**	**-2.2**
SMLA				*e*S	Sn	14 44 41.4	-13
DHRM	**DHARAMSHALA**	**15.52**	**308**	*e*P	**Pn**	**14 42 30.7**	**-2.6**
DHRM				*e*S	Sn	14 45 08.8	-15
ENH	**Enshi**	**18.09**	**64**	*e*P	**Pn**	**14 43 05.9**	**+0.4**
comp=E,16nm,0.6s							
TKM2	**Tokmak 2**	**23.19**	**331**	*e*P	P	14 44 07.0	+6.4
comp=E,6.0nm,1.2s							
AAK	**Ala-Archa**	**23.47**	**329**	LR	LR	14 53 46.5	
comp=E,37nm,21.4s,baz=134,slow=38							
AAK	**Ala-Archa**	**23.47**	**329**	P	P	14 44 10.6	+7.1
comp=E,2.5nm,1.0s							
EKS2	**Erkin-Say**	**23.84**	**328**	P	P	14 44 12.2	+5.3
comp=E,2.5nm,0.7s							
MKAR	**Makanchi Array**	**24.34**	**346**	P	**P**	**14 44 11.7**	**+0.3**
comp=E,1.3nm,0.6s,baz=164,slow=9.9,SNR=9.1							
MKAR				LR	LR	14 55 41.5	
comp=E,22nm,20.0s,baz=172,slow=42							
ULN	**Ulaanbaatar**	**27.70**	**24**	P	**P**	**14 44 44.8**	**+2.9**
KURBB	**Kurchatov Arra**	**28.82**	**344**	P	**P**	**14 44 51.9**	**+0.3**
comp=E,1.3nm,0.2s,baz=163,slow=8.9,SNR=1.5							
TLY	**Talaya**	**29.97**	**16**	LR	LR	14 59 17.8	
comp=E,17nm,19.6s,baz=229,slow=41							
ZALV	**Zalesovo Beam**	**30.86**	**353**	P	**P**	**14 45 10.4**	**+0.8**
comp=E,0.4nm,0.3s,baz=204,slow=9.5,SNR=1.9							
BVAR	**Borovoye Array**	**33.41**	**338**	P	**P**	**14 45 30.5**	**-1.5**
comp=E,0.2nm,0.4s,baz=108,slow=7.7,SNR=1.9							
KSRS	**Korea Array**	**34.78**	**58**	LR	LR	14 59 45.1	
comp=E,28nm,21.3s,baz=255,slow=36							
JNU	**Nakatsue**	**36.50**	**65**	LR	LR	15 03 59.5	
comp=E,28nm,21.4s,baz=298,slow=42							
AKTO	**Aktyubinsk**	**37.09**	**325**	LR	LR	15 03 01.1	
comp=E,23nm,21.0s,baz=144,slow=39							
TIXI	**Tiksi**	**52.92**	**14**	P	**P**	**14 48 09.5**	**+0.4**
comp=E,0.3nm,0.5s,baz=208,slow=2.8,SNR=1.5							
WRA	**Warramunga Arr**	**60.52**	**132**	P	**P**	**14 49 06.0**	**+2.3**
comp=E,0.6nm,0.7s,baz=325,slow=7.0,SNR=5.0							
ASAR	**Alice Springs**	**62.81**	**135**	P	**P**	**14 49 21.9**	**+2.7**
comp=E,0.2nm,0.6s,baz=316,slow=6.8,SNR=3.1							

*DDA **03** 14:47:02.9, 37°.22N×28°.19E, h7km, Md2.5*
*ISK **03** 14:47:02.2, 37°.25N×28°.19E, h5km, MD2.6*
*CSEM **03** 14:47:03.4±0.2, 37°.24N×28°.20E, h5km, MD2.6, Error ellipse: s-maj=4.1km s-min=2.9km az=32.0*
ISC 03 14:47:02.9±1.0, 37°.24N±0°.03×28°.23E±0°.02, h9km±9km, n23, σ0°71/34, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.11**	**157**	*e*PG	**Pg**	**14 47 05.5**	**-0.2**
YER	**Yerkesik**	**0.11**	**157**	*e*Pg	**Pg**	**14 47 05.5**	**-0.2**
TURN	**Turunc**	**0.47**	**140**	*i* P	**Pg**	**14 47 11.3**	**-0.8**
TURN				*i* S	**Sg**	**14 47 18.7**	**+0.4**
AYDN	**Tasoluk**	**0.51**	**327**	P	**Pg**	**14 47 12.6**	**-0.1**
AYDN				S	**Sg**	**14 47 19.6**	**+0.2**
AYDN	**Tasoluk**	**0.51**	**327**	*i* P	**Pg**	**14 47 12.6**	**-0.1**
AYDN				*i* S	**Sg**	**14 47 19.6**	**+0.2**
DALY	**Dalyan (Mu¨la**	**0.54**	**141**	*e*PG	**Pb**	**14 47 14.5**	**0.0**
DALY	**Dalyan (Mu¨la**	**0.54**	**141**	*e*Pg	**Pb**	**14 47 14.5**	**0.0**
BDRM	**Kayabasi**	**0.65**	**255**	P	**Pg**	**14 47 14.7**	**-0.8**
BDRM				S	**Sg**	**14 47 24.5**	**+0.5**
BDRM	**Kayabasi**	**0.65**	**255**	*i* P	**Pg**	**14 47 14.7**	**-0.8**
BDRM				*i* S	**Sg**	**14 47 24.5**	**+0.5**
BODT	**Bodrum**	**0.75**	**257**	*e*PG	**Pg**	**14 47 17.4**	**0.0**
BODT				*e*SG	**Sb**	**14 47 28.6**	**0.0**
BODT	**Bodrum**	**0.75**	**257**	*e*Pg	**Pg**	**14 47 17.4**	**0.0**
BODT				*e*Sg	**Sb**	**14 47 28.6**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**0.76**	**339**	*e*PG	**Pg**	**14 47 17.5**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**0.76**	**339**	*e*Pg	**Pg**	**14 47 17.5**	**0.0**
DNZL	**Cakiroluk**	**0.79**	**55**	P	**Pg**	**14 47 16.2**	**-2.0**
DNZL				S	**Sb**	**14 47 31.1**	**+1.3**
DNZL	**Cakiroluk**	**0.79**	**55**	*i* P	**Pg**	**14 47 16.2**	**-2.0**
DNZL				*i* S	**Sb**	**14 47 31.1**	**+1.3**
FETY	**Fethiye**	**0.91**	**131**	*e*PG	**Pn**	**14 47 21.5**	**-0.4**
FETY	**Fethiye**	**0.91**	**131**	*e*Pg	**Pn**	**14 47 21.5**	**-0.4**
GCAM	**G?zelcaml?**	**0.92**	**301**	P	**Pb**	**14 47 20.9**	**0.0**
GCAM				S	**Sb**	**14 47 33.0**	**-0.2**
GCAM	**G?zelcaml?**	**0.92**	**301**	*i* P	**Pb**	**14 47 20.9**	**0.0**
GCAM				*i* S	**Sb**	**14 47 33.0**	**-0.2**
KULA	**Kula-Manisa**	**1.32**	**15**	*e*PN	**Pg**	**14 47 28.5**	**+0.2**
KULA	**Kula-Manisa**	**1.32**	**15**	*e*Pn	**Pg**	**14 47 28.5**	**+0.2**
ELL	**Elmali**	**1.43**	**109**	*e*PN	**Pg**	**14 47 30.9**	**+0.5**
ELL	**Elmali**	**1.43**	**109**	*e*Pn	**Pg**	**14 47 30.9**	**+0.5**

*NIED **03** 14:53:00, 37°.00N×140°.80E, h5km, Mw3.4 Best double couple: M0:1.62000×10^14 NP1:φ=210.00000°, δ=26.00000°, λ=-101.00000°. NP2:φ=42.00000°, δ=65.00000°, λ=-85.00000°.*
*IDC **03** 14:53:04.8±2.7, 37°.13N×140°.89E, h0km, mb3.3/2, mb1 3.5/3, mb1mx3.2/50, mbtmp3.2/3, ML3.1/1, Error ellipse: s-maj=45.4km s-min=36.1km az=34.0*
*ISCJB **03** 14:53:05.4±1.0, 37°.02N±0°.04×140°.89E±0°.08, h12km±4km, mb3.4/2, Error ellipse: s-maj=10.4km s-min=5.8km az=11.8*
*JMA **03** 14:53:06.3, 37°.04N×140°.82E, h10km±1km, M3.5 Broadband fault plane solution: P waves. NP1: φ=50.00000°, δ=62.00000°, λ=-77.00000°. NP2:φ=203.00000°, δ=31.00000°, λ=-113.00000°. Principal axes: T Plg16.0000°, Azm130.0000°; N Plg12.0000°, Azm223.0000°; P Plg70.0000°, Azm348.0000°;*
JMA Felt II J1.
ISC 03 14:53:06.6±1.1, 37°.05N±0°.04×140°.77E±0°.09, h8km±7km, n10, σ0°55/17, 4C, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.05**	**27**	⇑P	**Pg**	**14 53 08.3**	**-0.2**
ONAJ				S	**Sg**	**14 53 10.0**	**+0.2**
JFK	**Kawauchi**	**0.32**	**15**	P	**Pg**	**14 53 13.0**	**0.0**
JFK				S	**Sg**	**14 53 17.9**	**+0.5**
JHO	**Hitachi**	**0.47**	**200**	P	**Pg**	**14 53 15.3**	**-0.4**
JHO				S	**Sg**	**14 53 21.7**	**-0.2**
JFT	**Otama**	**0.58**	**324**	⇑P	**Pb**	**14 53 18.4**	**-0.6**
JFT				S	**Sb**	**14 53 26.9**	**-0.5**
JSB	**Shiboa**	**0.68**	**263**	⇑P	**Pb**	**14 53 20.8**	**0.0**
JSB				S	**Sb**	**14 53 30.9**	**+0.5**
JMM	**Marumori**	**0.81**	**1**	P	**Pg**	**14 53 21.9**	**-0.3**
JFY	**Yanaizu**	**0.92**	**293**	⇑P	**Pb**	**14 53 24.6**	**-0.2**
JFY				S	**Sb**	**14 53 37.1**	**-0.1**
MJAR	**Matsushiro Arr**	**2.12**	**257**	Pn	**Pn**	**14 53 43.5**	**+1.2**
5.3nm,0.3s,baz=77,slow=16,SNR=30							
MJAR				Sn	**Sb**	**14 54 11.0**	**-0.6**
13nm,0.3s,baz=79,slow=32,SNR=7.1							
MKAR	**Makanchi Array**	**43.67**	**302**	P	**P**	**15 01 11.1**	**-0.7**
0.2nm,0.4s,baz=99,slow=8.9,SNR=2.0							
WRA	**Warramunga Arr**	**57.01**	**187**	P	**P**	**15 02 53.0**	**+0.2**
0.3nm,0.5s,baz=3.8,slow=7.2,SNR=2.4							

*ISK **03** 15:10:06.9, 39°.67N×30°.69E, h9km, MD2.8*
*CSEM **03** 15:10:07.4±0.1, 39°.72N×30°.73E, h5km, MD2.8, Error ellipse: s-maj=3.8km s-min=2.9km az=34.0*
*DDA **03** 15:10:08.9, 39°.78N×30°.56E, h8km, Md2.8*
ISC 03 15:10:07.0±1.3, 39°.72N±0°.03×30°.72E±0°.03, h1km±11km, n41, σ0°89/49, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BORA	**Eskisehir**	**0.26**	**308**	P	**Pg**	**15 10 12.1**	**+0.1**
BORA	**Eskisehir**	**0.26**	**308**	*i* P	**Pg**	**15 10 12.1**	**+0.1**
BORA				*i* S	**Sg**	**15 10 12.8**	**-2.5**
SVRH	**Sivrihisar-ESK**	**0.68**	**114**	*e*PG	**Pg**	**15 10 20.3**	**+0.2**
SVRH	**Sivrihisar-ESK**	**0.68**	**114**	*e*Pg	**Pg**	**15 10 20.3**	**+0.2**
AUSIV	**SIVRIHISAR**	**0.69**	**114**	P	**Pg**	**15 10 20.4**	**+0.1**
AUSIV	**SIVRIHISAR**	**0.69**	**114**	*i* P	**Pg**	**15 10 20.4**	**+0.1**
GULT	**Gulveren**	**0.73**	**348**	*e*PG	**Pg**	**15 10 22.0**	**+1.1**
GULT	**Gulveren**	**0.73**	**348**	*e*Pg	**Pg**	**15 10 22.0**	**+1.1**
CAVI	**Cavuskoy**	**0.83**	**306**	*e*PG	**Pb**	**15 10 23.8**	**-0.4**
CAVI	**Cavuskoy**	**0.83**	**306**	*e*Pg	**Pb**	**15 10 23.8**	**-0.4**
MDUB	**Mudurnu**	**0.83**	**26**	*e*PG	**Pg**	**15 10 23.8**	**+0.8**
MDUB				*e*SG	**Sn**	**15 10 38.0**	**-0.9**
MDUB	**Mudurnu**	**0.83**	**26**	*e*Pg	**Pg**	**15 10 23.8**	**+0.8**
MDUB				*e*Sg	**Sn**	**15 10 38.0**	**-0.9**
BTAS	**Taskesti**	**0.87**	**14**	P	**Pg**	**15 10 24.6**	**+0.8**
BTAS	**Taskesti**	**0.87**	**14**	*i* P	**Pg**	**15 10 24.6**	**+0.8**
TVSB	**Tavsanli**	**1.01**	**255**	*e*PG	**Pb**	**15 10 26.3**	**-1.0**
TVSB	**Tavsanli**	**1.01**	**255**	*e*Pg	**Pb**	**15 10 26.3**	**-1.0**
BOLV	**Bolvadin**	**1.02**	**170**	P	**Pn**	**15 10 28.1**	**-0.5**
BOLV	**Bolvadin**	**1.02**	**170**	*i* P	**Pn**	**15 10 28.1**	**-0.5**
BOLV				*i* S	**Sn**	**15 10 45.8**	**+2.2**
ADVT	**Abdulvahap**	**1.03**	**314**	*e*PG	**Pb**	**15 10 27.5**	**-0.2**
ADVT	**Abdulvahap**	**1.03**	**314**	*e*Pg	**Pb**	**15 10 27.5**	**-0.2**
IZI	**Iznik**	**1.14**	**303**	*e*PN	**Pn**	**15 10 29.5**	**-0.6**
IZI	**Iznik**	**1.14**	**303**	*e*Pn	**Pn**	**15 10 29.5**	**-0.6**
GDZ	**Gediz**	**1.15**	**237**	P	**Pn**	**15 10 29.6**	**-0.7**
GDZ	**Gediz**	**1.15**	**237**	*i* P	**Pn**	**15 10 29.6**	**-0.7**
KIZT	**Kizilcal**	**1.23**	**133**	*e*PN	**Pg**	**15 10 31.1**	**+0.5**
KIZT	**Kizilcal**	**1.23**	**133**	*e*Pn	**Pg**	**15 10 31.1**	**+0.5**
IGD	**Bursa**	**1.28**	**295**	*i* P	**Pn**	**15 10 30.9**	**-1.2**
IGD				*i* S	**Sn**	**15 10 51.0**	**+1.1**
ULDT	**Uludag**	**1.29**	**289**	P	**Pg**	**15 10 32.1**	**+0.4**
ULDT				S	**Sn**	**15 10 50.9**	**+0.6**
ULDT	**Uludag**	**1.29**	**289**	*i* P	**Pg**	**15 10 32.1**	**+0.4**
ULDT				*i* S	**Sn**	**15 10 50.9**	**+0.6**
HRT	**Hereke**	**1.36**	**324**	*e*PN	**Pb**	**15 10 32.9**	**-0.4**
HRT	**Hereke**	**1.36**	**324**	*e*Pn	**Pb**	**15 10 32.9**	**-0.4**
GEMT	**Gemlik**	**1.37**	**302**	*e*PN	**Pg**	**15 10 33.6**	**+0.3**
GEMT	**Gemlik**	**1.37**	**302**	*e*Pn	**Pg**	**15 10 33.6**	**+0.3**
SILT	**Sile**	**1.65**	**330**	*e*PN	**Pn**	**15 10 37.2**	**+0.1**
SILT	**Sile**	**1.65**	**330**	*e*Pn	**Pn**	**15 10 37.2**	**+0.1**
ARMT	**Armutlu**	**1.65**	**301**	*e*PN	**Pn**	**15 10 37.0**	**-0.2**
ARMT	**Armutlu**	**1.65**	**301**	*e*Pn	**Pn**	**15 10 37.0**	**-0.2**
DURS	**Dursunbey**	**1.74**	**267**	P	**Pb**	**15 10 39.2**	**-0.5**
DURS	**Dursunbey**	**1.74**	**267**	*i* P	**Pb**	**15 10 39.2**	**-0.5**
DURS				*i* S	**Sg**	**15 11 05.5**	**+2.7**
KCTX	**Karacabey (Bur**	**1.89**	**287**	*e*PN	**Pn**	**15 10 40.4**	**-0.1**
KCTX	**Karacabey (Bur**	**1.89**	**287**	*e*Pn	**Pn**	**15 10 40.4**	**-0.1**

*DHMR **03** 15:12:06.4±1.3, 15°.17N×42°.24E, h9km±46km, ML4.3*
*IDC **03** 15:12:08.3±1.5, 15°.00N×41°.67E, h0km, mb3.8/6, mb1 4.0/7, mb1mx3.6/54, mbtmp3.8/7, ML3.6/1, MS3.4/14, Ms1 3.4/14, ms1mx3.1/50, Error ellipse: s-maj=40.3km s-min=17.6km az=71.0*
*ISCJB **03** 15:12:09.1±0.6, 15°.05N±0°.04×42°.23E±0°.05, h10km, mb3.9/7, MS3.4/10, Error ellipse: s-maj=7.7km s-min=5.3km az=27.6*
*NEIC **03** 15:12:10.9±1.1, 14°.96N×42°.27E, h10km, mb4.5/1, Error ellipse: s-maj=24.0km s-min=13.4km az=79.0*
*ARO **03** 15:12:11.2, 15°.N×27°.×42°.E×10°.0, h15km, 99km, ML3.6*
ISC 03 15:12:09.8±1.0, 15°.12N±0°.06×42°.25E±0°.07, h10km, n36, σ1°39/25, mb3.9/7, MS3.4/10, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HAJJ	**Hajjah**	**1.42**	**66**	*i* P	Pn	15 12 32.2	-3.7
HAJJ				*i* S	**Sn**	**15 12 53.4**	**-1.3**
SANA	**San'a**	**1.91**	**82**	*i* P	**Pn**	**15 12 41.0**	**-1.6**
SANA				*i* S	**Sn**	**15 13 06.3**	**-0.5**
UDYN	**Al 'Udayn**	**2.02**	**124**	*i* P	**Pn**	**15 12 42.8**	**-1.2**
UDYN				*i* S	**Sb**	**15 13 11.9**	**0.0**
DHBB	**Dhamar BB**	**2.14**	**104**	*i* P	**Pn**	**15 12 44.8**	**-1.1**
DHBB				*i* S	**Sn**	**15 13 13.7**	**+1.1**
DHBB				AML	AML	15 13 25.6	
comp=N,3μm,0.5s							
DAMY	**Dhamar**	**2.14**	**104**	*e*Pn	**Pn**	**15 12 45.2**	**-0.6**
TRBA	**At Turbah**	**2.60**	**136**	*i* P	**Pn**	**15 12 51.6**	**-0.6**
TRBA				*i* S	**Sb**	**15 13 28.0**	**-0.9**
MAOD	**Malaho**	**3.00**	**180**	*e*P	**Pn**	**15 12 55.6**	**-1.9**
OBO	**Obock**	**3.27**	**162**	*e*P	**Pn**	**15 13 00.6**	**-0.5**
TDD	**Tadjoura Ara**	**3.35**	**169**	*e*P	**Pn**	**15 13 01.6**	**-0.7**
LDLD	**Lac de Lave**	**3.52**	**176**	*e*P	**Pn**	**15 13 03.9**	**-0.7**
ATD	**Arta Tunnel**	**3.61**	**171**	Pn	**Pn**	**15 13 05.2**	**-0.7**
comp=N,5.2nm,0.3s,baz=91,slow=5.5,SNR=10							
ATD				Lg	Lg	15 14 04.5	
comp=N,9.0nm,0.3s,baz=125,slow=22,SNR=3.3							
ATD	**Arta Tunnel**	**3.61**	**171**	*e*P	**Pn**	**15 13 04.8**	**-1.1**
ATD				*e*S	**Sn**	**15 13 49.1**	**+0.4**
SGH	**Sud-Ghoubbet**	**3.68**	**174**	*e*P	**Pn**	**15 13 05.3**	**-1.5**
ATA	**Atar**	**3.76**	**166**	*e*P	**Pn**	**15 13 07.8**	**0.0**
GBR	**Grand-Bara**	**3.95**	**177**	*e*P	**Pn**	**15 13 09.6**	**-0.8**
EIL	**Elat**	**15.97**	**336**	LR	LR	15 20 54.9	
comp=N,141nm,18.1s,baz=221,slow=33							
KMBO	**Kilima Mbogo**	**16.88**	**197**	LR	LR	15 22 18.8	
comp=N,109nm,18.5s,baz=160,slow=37							
WSAR	**Wadi Sarin**	**17.44**	**60**	LR	LR	15 24 40.7	
comp=N,135nm,20.5s,baz=245,slow=42							
MMAI	**Mount Meron Ar**	**18.87**	**342**	LR	LR	15 22 33.1	
comp=N,30nm,20.1s,baz=160,slow=33							
GNI	**Garni**	**25.04**	**5**	LR	LR	15 28 06.3	
comp=N,56nm,18.0s,baz=186,slow=38							
**

NIED ***03*** *15:22:00, 38°.30N×143°.90E, h8km, Mw3.5 Best double couple: M0=2.04000×10^14 NP1:φ=71.00000°, δ51.00000°, λ-13.00000°. NP2:φ=170.00000°, δ80.00000°, λ-140.00000°.*
JMA ***03*** *15:22:27.6±0.2, 38°.35N×143°.90E, h35km, M3.6*
IDC ***03*** *15:22:32.6±1.7, 38°.77N×143°.01E, h0km, mb3.7/2, mb1 3.7/4, mb1mx3.3/53, mbtmp3.5/4, ML3.2/2, Error ellipse: s-maj=60.7km s-min=25.9km az=94.0*
ISC 03 15:22:24.8±2.2, 38°.30N±0°.07×144°.0E±0°.1, h15km, n17, σ1$85/26, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.00**	**294**	P	**Pn**	**15 22 58.7**	**+0.7**
OFUJ				*e*S	**Sn**	**15 23 21.4**	**-1.4**
JIO	**Ouri**	**2.10**	**275**	P	**Pn**	**15 23 00.1**	**+0.6**
JIO				S	**Sn**	**15 23 24.0**	**-1.4**
JMK	**Ichinoseki**	**2.29**	**287**	P	**Pn**	**15 23 02.9**	**+0.9**
JMK				*e*S	**Sn**	**15 23 29.0**	**-0.9**
JOM	**Ohasama**	**2.43**	**300**	P	**Pn**	**15 23 04.9**	**+0.9**
JOM				*e*S	**Sn**	**15 23 32.9**	**-0.5**
JANG	**Nango**	**2.84**	**318**	*e*S	**Sn**	**15 23 44.1**	**+0.6**
JYK	**Kaneyama**	**2.93**	**283**	P	**Pn**	**15 23 12.6**	**+1.7**
JYK				S	**Sn**	**15 23 46.2**	**+0.3**
JFT	**Otama**	**3.02**	**256**	P	**Pn**	**15 23 13.9**	**+1.8**
JFT				S	**Sn**	**15 23 47.9**	**0.0**
JNBK	**Urakawa-nobuka**	**4.09**	**347**	P	**Pn**	**15 23 28.2**	**+1.4**
JNBK				*e*S	**Sn**	**15 24 13.0**	**-1.4**
JAG	**Ashikaga**	**4.09**	**244**	P	**Pn**	**15 23 27.5**	**+0.7**
JKB	**Kayabe**	**4.25**	**328**	S	**Sn**	**15 24 16.0**	**-2.3**
JCH	**Churui**	**4.34**	**354**	P	**Pn**	**15 23 30.8**	**+0.6**
JCH				S	**Sn**	**15 24 18.2**	**-2.2**
JRY	**Ryogami san**	**4.68**	**242**	P	**Pn**	**15 23 36.2**	**+1.2**
JRY				*e*S	**Sn**	**15 24 25.8**	**-3.2**
MJAR	**Matsushiro Arr**	**4.95**	**251**	Pn	**Pn**	**15 23 40.6**	**+2.0**
	0.9nm,0.3s,baz=17,slow=13,SNR=9.9						
MAT	**Matsushiro**	**4.95**	**251**	P	**Pn**	**15 23 41.5**	**+2.9**
MAT				*e*S	**Sn**	**15 24 31.5**	**-4.1**
ASAJ	**Asahikawa**	**5.91**	**350**	Pn	**Pn**	**15 23 53.7**	**+1.9**
	0.7nm,0.3s,baz=213,slow=19,SNR=13						
ASAJ				Sn	**Sn**	**15 24 57.0**	**-2.1**
	0.9nm,0.3s,baz=107,slow=33,SNR=3.5						
WRA	**Warrumunga Arr**	**58.64**	**191**	P	P	15 32 32.8	+11
	1.1nm,0.6s,baz=12,slow=7.5,SNR=13						
ASAR	**Alice Springs**	**62.37**	**190**	P	P	15 33 00.4	+14
	0.4nm,1.0s,baz=3.3,slow=6.5,SNR=5.1						

IDC ***03*** *15:27:41.8±2.0, 35°.72N×140°.98E, h0km, mb3.4/2, mb1 3.5/5, mb1mx3.2/48, mbtmp3.5/5, ML3.4/3, MS2.0/2, Ms1 2.0/2, ms1mx1.9/37, Error ellipse: s-maj=47.4km s-min=24.5km az=78.0*
ISCJB ***03*** *15:27:46.7±0.8, 35°.76N±0°.05×140°.82E±0°.09, h58km±6km, mb3.5/2, MS4.0/1, Error ellipse: s-maj=13.3km s-min=7.4km az=159.3*
JMA ***03*** *15:27:48.2±0.1, 35°.76N×140°.66E, h47km±1km, M3.0*
JMA Felt I J1.
ISC 03 15:27:48.1±1.1, 35°.74N±0°.05×140°.75E±0°.08, h49km±9km, n17, σ1$01/18, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.10**	**112**	P	**Pn**	**15 27 55.9**	**+0.1**
CHOJ				S	**Sn**	**15 28 01.7**	**+0.5**
JCN	**Nagara**	**0.55**	**235**	P	**Pn**	**15 28 00.1**	**+0.2**
JYT	**Yasato**	**0.66**	**317**	P	**Pn**	**15 28 00.7**	**-0.6**
JYT				S	**Sn**	**15 28 09.3**	**-1.6**
BSO4	**Boso 4**	**0.82**	**204**	P	**Pn**	**15 28 03.3**	**+0.1**
BSO4				X		15 28 14.8	
JHO	**Hitachi**	**0.88**	**351**	P	**Pn**	**15 28 04.3**	**+0.1**
BSO3	**Boso 3**	**0.95**	**192**	P	**Pn**	**15 28 05.2**	**+0.3**
BSO1	**Boso 1**	**1.10**	**170**	P	**Pn**	**15 28 07.4**	**+0.8**
JAG	**Ashikaga**	**1.25**	**304**	P	**Pn**	**15 28 08.4**	**-0.8**
MJAR	**Matsushiro Arr**	**2.21**	**292**	Pn	**Pn**	**15 28 22.8**	**+0.6**
	8.1nm,0.3s,baz=97,slow=8.7,SNR=136						
MAT	**Matsushiro**	**2.21**	**292**	P	**Pn**	**15 28 22.9**	**+0.6**
MAT				*e*S	**Sn**	**15 28 50.4**	**+2.0**
JHJ	**Hachijo jima 2**	**2.73**	**197**	Pn	**Pn**	**15 28 29.2**	**-0.2**
	19nm,0.3s,baz=140,slow=22,SNR=9.7						
JHJ				Sn	**Sn**	**15 28 59.1**	**-2.1**
	26nm,0.3s,baz=347,slow=23,SNR=8.9						
ASAJ	**Asahikawa**	**8.49**	**9**	Pn	**Pn**	**15 29 47.8**	**-0.6**
	0.4nm,0.3s,baz=249,slow=22,SNR=5.6						
JNU	**Nakatsue**	**8.56**	**255**	LR	LR	15 32 38.2	
	comp=Z,10.0nm,21.1s,baz=124,slow=34						
KSRS	**Korea Array**	**10.46**	**283**	LR	LR	15 34 29.8	
	comp=Z,8.3nm,19.0s,baz=10.0,slow=38						
DAV	**Davao City (W)**	**31.74**	**210**	LR	LR	15 45 42.2	
	comp=Z,323nm,20.4s,baz=134,slow=34						
MKAR	**Makanchi Array**	**44.36**	**303**	P	**P**	**15 35 53.9**	**+0.4**
	0.2nm,0.2s,baz=92,slow=9.1,SNR=4.3						
WRA	**Warrumunga Arr**	**55.71**	**187**	P	**P**	**15 37 19.5**	**0.0**
	0.3nm,0.5s,baz=1.0,slow=7.6,SNR=5.3						

IDC ***03*** *15:31:07.8±1.7, 7°.76N×127°.48E, h0km, mb3.5/4, mb1 3.6/5, mb1mx3.4/46, mbtmp3.5/5, ML4.2/1, MS2.9/1, Ms1 2.9/1, ms1mx2.3/32, Error ellipse: s-maj=46.6km s-min=27.5km az=61.0*
ISCJB ***03*** *15:31:16.8±1.1, 7°.40N±0°.07×126°.9E±0°.1, h73km±9km, mb3.2/4, Error ellipse: s-maj=18.5km s-min=10.4km az=157.5*
MAN ***03*** *15:31:18, 7°.44N×126°.86E, h33km, mb4.2, ML3.1, MS2.9*
ISC 03 15:31:17.1±1.7, 7°.44N±0°.07×127°.0E±0°.1, h61km±15km, n12, σ1$60/17, mb3.2/4, 3C, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MATI	**Mati**	**0.89**	**237**	*e*P	**Pn**	**15 31 33.0**	**-0.7**
MATI				*e*S	**Sn**	**15 31 43.6**	**-2.4**
BIPH	**Bislig**	**0.98**	**319**	⇑*i*P	**Pn**	**15 31 36.1**	**+1.2**
BIPH				*i* S	**Sn**	**15 31 47.8**	**-0.2**
DAV	**Davao City (W)**	**1.46**	**256**	Pn	**Pn**	**15 31 43.3**	**+2.1**
	90nm,0.3s,baz=244,slow=3.9,SNR=3.9						
DAV				Sn	**Sn**	**15 32 02.8**	**+3.4**
	58nm,0.3s,baz=258,slow=23,SNR=1.7						
BUKP	**Musuan**	**1.97**	**283**	*e*P	**Pn**	**15 31 48.8**	**+0.6**
BUKP				*e*S	**Sn**	**15 32 09.5**	**-2.4**
CGP	**Cagayan de Oro**	**2.50**	**294**	⇑*e*P	**Pn**	**15 31 55.7**	**+0.4**
CGP				*e*S	**Sn**	**15 32 24.2**	**-0.5**
PAGZ	**Pagadian**	**3.61**	**277**	*e*P	**Pn**	**15 32 10.6**	**0.0**
TBP	**Tagbilaran**	**3.83**	**306**	⇑*i*P	**Pn**	**15 32 14.1**	**+0.5**
JCJ	**Chichijima**	**24.29**	**35**	LR	LR	15 45 17.1	
	comp=Z,30nm,19.9s,baz=117,slow=36						
FITZ	**Fitzroy Crossi**	**25.41**	**183**	P	**P**	**15 36 39.9**	**+0.9**
	1.6nm,0.8s,baz=30,slow=8.1,SNR=2.5						
WRA	**Warrumunga Arr**	**28.15**	**165**	P	**P**	**15 37 03.8**	**+0.1**
	0.1nm,0.3s,baz=346,slow=10,SNR=1.4						
ASAR	**Alice Springs**	**31.64**	**168**	P	**P**	**15 37 34.8**	**+0.2**
	0.1nm,0.3s,baz=343,slow=7.8,SNR=1.7						
ASAR				PcP	**PcP**	**15 40 25.8**	**+0.1**
	0.1nm,0.6s,baz=348,slow=2.2,SNR=1.5						
MKAR	**Makanchi Array**	**54.71**	**324**	P	**P**	**15 40 38.9**	**-1.3**
	0.2nm,0.5s,baz=115,slow=7.0,SNR=3.9						

NIED ***03*** *15:31:00, 39°.00N×142°.40E, h32km, Mw3.2 Best double couple: M0=8.22000×10^13 NP1:φ=308.00000°, δ14.00000°, λ-145.00000°. NP2:φ=184.00000°, δ82.00000°, λ-79.00000°.*
JMA ***03*** *15:31:21.0±0.1, 39°.04N×142°.40E, h31km±2km, M3.6*
IDC ***03*** *15:31:22.5±2.8, 39°.44N×141°.87E, h0km, mb3.4/3, mb1 3.5/4, mb1mx3.2/43, mbtmp3.3/4, ML3.0/1, MS3.0/1, Ms1 3.0/1, ms1mx2.2/35, Error ellipse: s-maj=72.5km s-min=35.4km az=64.0*
ISC 03 15:31:22.1±2.4, 39°.09N±0°.06×142°.3E±0°.1, h27km±12km, n16, σ1$24/22, mb3.4/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.51**	**269**	P	**Pb**	**15 31 32.4**	**-0.2**
OFUJ				S	**Sb**	**15 31 40.0**	**+0.4**
MIYJ	**Miyakonagasawa**	**0.62**	**322**	P	**Pb**	**15 31 34.0**	**-0.5**
MIYJ				S	**Sb**	**15 31 43.3**	**+0.4**
JMK	**Ichinoseki**	**0.87**	**261**	P	**Pn**	**15 31 37.7**	**-0.8**
JMK				S	**Sn**	**15 31 49.3**	**-1.0**
JOM	**Ohasama**	**0.89**	**296**	P	**Pn**	**15 31 38.6**	**-0.2**
JOM				S	**Sn**	**15 31 50.9**	**+0.1**
JTH	**Tanohata**	**0.92**	**338**	P	**Pn**	**15 31 38.7**	**-0.6**
JIO	**Ouri**	**0.99**	**231**	P	**Pn**	**15 31 38.7**	**-1.5**
JIO				S	**Sn**	**15 31 50.0**	**-3.2**
JRG	**Rokugo**	**1.35**	**284**	P	**Pb**	**15 31 46.2**	**-0.5**
JRG				*e*S	**Sb**	**15 32 04.0**	**+0.5**
JANG	**Nango**	**1.43**	**334**	P	**Pn**	**15 31 46.8**	**+0.6**
JANG				S	**Sb**	**15 32 05.6**	**-0.2**
JOU	**Okura**	**1.48**	**241**	P	**Pn**	**15 31 46.7**	**-0.3**
JOU				*e*S	**Sn**	**15 32 05.1**	**-0.4**
JYK	**Kaneyama**	**1.54**	**264**	P	**Pn**	**15 31 48.3**	**+0.5**
MAT	**Matsushiro**	**4.13**	**233**	P	**Pn**	**15 32 24.7**	**+1.3**
MAT				*e*S	**Sn**	**15 33 12.1**	**+1.3**
MJAR	**Matsushiro Arr**	**4.13**	**233**	Pn	**Pn**	**15 32 26.2**	**+2.8**
	0.9nm,0.3s,baz=35,slow=13,SNR=8.5						
KLR	**Kul'dur**		**12.65**	**327**	LR	LR	15 38 23.8
	comp=Z,72nm,21.5s,baz=198,slow=35						
MKAR	**Makanchi Array**	**43.67**	**300**	P	**P**	**15 39 24.9**	**+0.5**
	0.2nm,0.3s,baz=79,slow=6.3,SNR=4.2						
WRA	**Warrumunga Arr**	**59.19**	**189**	P	P	15 41 26.2	+5.5
	0.3nm,0.4s,baz=6.3,slow=6.7,SNR=8.2						
ASAR	**Alice Springs**	**62.92**	**189**	P	P	15 41 54.0	+8.0
	0.2nm,0.7s,baz=12,slow=9.5,SNR=4.0						

IDC 03 15:41:06.1±7.2, 6°.49S×148°.52E, h110km±57km, mb2.9/1, mb1 3.0/3, mb1mx2.8/49, mbtmp3.2/3, Error ellipse: s-maj=137.6km s-min=58.7km az=119.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**3.19**	**205**	P	Pn	15 41 55.2	+0.4
	0.9nm,0.3s,baz=214,slow=11,SNR=1.9						
PMG				S	Sn	15 42 32.6	+0.4
	1.3nm,0.3s,baz=16,slow=23,SNR=1.9						
WRA	**Warrumunga Arr**	**19.20**	**225**	P	P	15 45 20.4	-1.0
	0.1nm,0.3s,baz=48,slow=11,SNR=2.4						
ASAR	**Alice Springs**	**22.12**	**218**	P	P	15 45 53.4	+0.6
	0.5nm,0.5s,baz=54,slow=8.8,SNR=6.4						
TORD	**Torodi Ar. Bea**	**146.68**	**284**	PKPbc	PKPbc	16 00 35.4	-0.8
	0.2nm,0.3s,baz=69,slow=1.7,SNR=2.4						

NIED ***03*** *15:41:00, 44°.80N×148°.20E, h107km, Mw4.2 Best double couple: M0=2.29000×10^15 NP1:φ=94.00000°, δ30.00000°, λ142.00000°. NP2:φ=218.00000°, δ72.00000°, λ66.00000°.*
ISCJB ***03*** *15:41:34.0±0.3, 45°.15N±0°.03×147°.99E±0°.04, h134km±2km, mb4.0/50, Error ellipse: s-maj=5.3km s-min=3.7km az=38.6*
MOS ***03*** *15:41:33.8±1.2, 45°.23N×147°.97E, h132km, mb4.1/24, Error ellipse: s-maj=8.3km s-min=6.0km az=83.0*
SKHL ***03*** *15:41:34.4±0.7, 45°.10N×148°.10E, h128km±11km, mb4.9/13, mbv5.5/3, msh5.2/4, msha5.4/8*
JMA ***03*** *15:41:35.5±0.7, 44°.84N×148°.21E, h119km, M4.5*
IDC ***03*** *15:41:36.5±1.5, 45°.34N×147°.85E, h138km±14km, mb3.8/26, mb1 3.9/34, mb1mx3.8/69, mbtmp4.2/34, MS2.8/3, Ms1 2.8/3, ms1mx2.4/47, Error ellipse: s-maj=11.5km s-min=8.7km az=125.0*
NEIC ***03*** *15:41:36.2±0.5, 45°.28N×147°.82E, h137km±4km, mb4.3/17, Error ellipse: s-maj=8.3km s-min=4.6km az=143.0*
ISC 03 15:41:35.0±0.6, 45°.16N±0°.04×147°.98E±0°.05, h131km±4km, n188, σ1$45/217, mb4.1/50, 4C-8D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUR	**Kuril'sk**	**0.11**	**312**	*c i*PN	**Pn**	**15 41 52.0**	**-0.8**
KUR				*i* S	**Sn**	**15 42 05.0**	**-1.3**
KUR				pmax	pmax		
	comp=N,184nm,0.3s						
KUR				pmax	pmax		
	comp=E,84nm,0.3s						
KUR				pmax	pmax		
	comp=Z,880nm,0.3s						
KUR				smax	smax		
	comp=N,2μm,0.6s						
KUR				smax	smax		
	comp=E,1μm,0.6s						
KUR	**Kuril'sk**	**0.11**	**312**	⇑*i*P	**Pn**	**15 41 52.0**	**-0.8**
KUR				AMB	AMB	15 41 52.2	
	comp=E,180nm,0.3s						
KUR				AMB	AMB	15 41 52.2	
	comp=E,80nm,0.3s						
KUR				AMB	AMB	15 41 52.2	
	comp=E,880nm,0.3s						
KUR				*i* S	**Sn**	**15 42 04.9**	**-1.3**
KUR				A	A	15 42 05.4	
	comp=E,2μm,0.6s						
KUR				A	A	15 42 05.4	
	comp=E,1μm,0.6s						
SHO	**Shikotan**	**1.53**	**213**	*c i*PN	**Pn**	**15 42 02.3**	**-1.2**
SHO				*i* S	**Sn**	**15 42 22.0**	**-3.2**
SHO				pmax	pmax		
	comp=N,389nm,0.6s						
SHO				pmax	pmax		
	comp=E,274nm,0.6s						
SHO				pmax	pmax		
	comp=Z,892nm,0.6s						
SHO				smax	smax		
	comp=N,846nm,0.5s						
SHO				smax	smax		
	comp=E,2μm,0.5s						
SHO	**Shikotan**	**1.53**	**213**	⇓*i*P	**Pn**	**15 42 02.3**	**-1.2**
SHO				AMB	AMB	15 42 02.9	
	comp=E,890nm,0.5s						
SHO				*i* S	**Sn**	**15 42 22.5**	**-2.7**
SHO				A	A	15 42 28.5	
	comp=E,3μm,0.3s						
SHO				A	A	15 42 28.5	
	comp=E,2μm,0.3s						
YUK	**Yuzh-Kuril'sk**	**1.89**	**234**	*c i*PN	**Pn**	**15 42 08.0**	**+0.4**
YUK				*i* S	**Sn**	**15 42 34.0**	**+1.5**
YUK				pmax	pmax		
	comp=Z,995nm,0.3s						
YUK				pmax	pmax		
	comp=N,116nm,0.2s						
YUK				pmax	pmax		
	comp=E,469nm,0.3s						
YUK				smax	smax		
	comp=E,1μm,0.5s						
YUK				smax	smax		
	comp=N,597nm,0.3s						
YUK	**Yuzh-Kuril'sk**	**1.89**	**234**	⇑*i*P	**Pn**	**15 42 08.0**	**+0.4**
YUK				AMB	AMB	15 42 09.3	
	comp=N,120nm,0.3s						
YUK				AMB	AMB	15 42 09.3	
	comp=N,470nm,0.3s						
YUK				AMB	AMB	15 42 09.3	
	comp=N,1μm,0.3s						
YUK				*i* S	**Sn**	**15 42 34.0**	**+1.5**
YUK				A	A	15 42 42.4	
	comp=N,600nm,0.4s						
YUK				A	A	15 42 42.4	
	comp=N,1μm,0.4s						
JRA	**Rausu**	**2.38**	**240**	P	**Pn**	**15 42 14.1**	**+0.4**
NEM2	**Nemuro 2**	**2.41**	**223**	P	**Pn**	**15 42 13.0**	**-1.0**
NEM2				*e*S	**Sn**	**15 42 42.5**	**-1.5**
JNK	**Nakash**	**2.82**	**237**	P	**Pn**	**15 42 20.0**	**+0.7**
JTKR	**Abashiri--Toko**	**3.14**	**249**	P	**Pn**	**15 42 24.3**	**+0.9**
JTKR				*e*S	**Sn**	**15 43 02.3**	**+1.4**
JAK	**Akkeshi**	**3.21**	**229**	P	**Pn**	**15 42 23.7**	**-0.6**
JAK				*e*S	**Sn**	**15 43 01.6**	**-0.7**
JAR	**Ashorobuto**	**3.55**	**240**	P	**Pn**	**15 42 30.0**	**+1.2**
JKK2	**Kamakawa 2**	**3.96**	**253**	P	**Pn**	**15 42 35.7**	**+1.5**
JKA	**Kamikawa-asahi**	**3.98**	**257**	*e*P	**Pn**	**15 42 36.3**	**+1.9**
ASAJ	**Asahikawa**	**3.98**	**257**	P	**Pn**	**15 42 36.3**	**+1.9**
	comp=N,26nm,0.3s,baz=56,slow=5.7,SNR=138						
ASAJ	**Asahikawa**	**3.98**	**257**	*e*Pn	**Pn**	**15 42 36.1**	**+1.6**
ASAJ	**Asahikawa**	**3.98**	**257**	*e*P	**Pn**	**15 42 36.1**	**+1.6**
YSS	**Yuzh-Sakhalins**	**4.06**	**298**	*e*PN	**Pn**	**15 42 36.8**	**+1.3**
YSS				*e*S	**Sn**	**15 43 23.8**	**+1.5**
YSS				pmax	pmax		
	comp=Z,50nm,0.3s						
YSS				smax	smax		
	comp=N,160nm,1.2s						
YSS				smax	smax		
	comp=E,270nm,1.0s						
YSS	**Yuzh-Sakhalins**	**4.06**	**298**	*e*Pn	**Pn**	**15 42 36.7**	**+1.3**
YSS	**Yuzh-Sakhalins**	**4.06**	**298**	*e*P	**Pn**	**15 42 36.7**	**+1.3**
YSS				AMB	AMB	15 42 37.6	
	comp=E,50nm,0.3s						
YSS				AMB	AMB	15 42 50.0	
	comp=E,700nm,5.0s						
YSS				*e*S	**Sn**	**15 43 23.6**	**+1.3**
YSS				A	A	15 43 28.0	
	comp=E,230nm,0.7s						
YSS				A	A	15 43 28.0	
	comp=E,140nm,0.7s						
YSS				A	A	15 43 28.6	
	comp=E,700nm,4.0s						
JCH	**Churui**	**4.20**	**234**	P	**Pn**	**15 42 37.2**	**-0.1**
JCH				*e*S	**Sn**	**15 43 24.7**	**-1.0**
JWK2	**Keihoku**	**4.30**	**274**	P	**Pn**	**15 42 41.6**	**+2.9**
JFR	**Furan**	**4.36**	**245**	P	**Pn**	**15 42 41.1**	**+1.6**
ERM	**Erimo**	**4.71**	**230**	*e*PN	**Pn**	**15 42 44.5**	**+0.4**
ERM	**Erimo**	**4.71**	**230**	*e*Pn	**Pn**	**15 42 44.5**	**+0.4**
ERM	**Erimo**	**4.71**	**230**	*e*P	**Pn**	**15 42 44.5**	**+0.4**
JNBK	**Urakawa-nobuka**	**4.76**	**235**	P	**Pn**	**15 42 43.8**	**-1.0**
JEW	**Eniwo**	**5.25**	**246**	P	**Pn**	**15 42 53.2**	**+1.8**
UGL	**Uglegorsk**	**5.62**	**316**	*e*P	**Pn**	**15 42 58.1**	**+1.8**
UGL				AMB	AMB	15 42 59.0	
	comp=E,40nm,0.6s						
UGL				*e*S	**Sn**	**15 44 01.6**	**+1.8**
UGL				A	A	15 44 05.1	
	comp=E,2μm,4.0s						
UGL				A	A	15 44 22.2	
	comp=E,80nm,0.9s						
JKB	**Kayabe**	**6.02**	**240**	P	**Pn**	**15 43 00.7**	**-1.0**
JKB				*e*S	**Sn**	**15 44 04.7**	**-4.6**
JOT	**Ohata**	**6.31**	**236**	P	**Pn**	**15 43 04.0**	**-1.6**
JOT				*e*S	**Sn**	**15 44 10.9**	**-5.6**
TYV	**Tymovskoe**	**6.73**	**330**	*e*PN	**Pn**	**15 43 13.0**	**+1.8**
TYV				pmax	pmax		
	comp=Z,40nm,1.0s						
TYV	**Tymovskoe**	**6.73**	**330**	*e*P	**Pn**	**15 43 12.2**	**+1.0**
TYV				AMB	AMB	15 43 16.8	
	comp=Z,40nm,1.0s						
TYV				*e*S	**Sn**	**15 44 26.0**	**-0.4**
TYV				A	A	15 44 36.0	
	comp=Z,20nm,1.0s						
TYV				A	A	15 44 44.2	
	comp=Z,800nm,5.0s						
JOSM	**Okushiri--Mats**	**6.90**	**246**	P	**Pn**	**15 43 13.4**	**-0.1**
SKR	**Severo-Kuril's**	**7.77**	**42**	*e*PN	**Pn**	**15 43 21.2**	**-3.9**
SKR				*e*		15 44 46.1	
SKR				pmax	pmax		
	comp=N,50nm,0.4s						
SKR				pmax	pmax		
	comp=E,50nm,0.4s						
SKR				pmax	pmax		
	comp=Z,100nm,0.4s						
SKR	**Severo-Kuril's**	**7.77**	**42**	*e*P	**Pn**	**15 43 25.3**	**+0.2**
SKR				AMB	AMB	15 43 30.9	
	comp=Z,900nm,3.5s						
SKR				*e*S	**Sn**	**15 44 47.8**	**-3.7**
SKR				A	A	15 45 15.7	
	comp=Z,2μm,4.5s						
SKR				A	A	15 45 15.7	
	comp=Z,2μm,4.5s						
TEY	**Ternei**	**8.05**	**273**	*e*P	**Pn**	**15 43 32.6**	**+3.6**
TEY				AMB	AMB	15 43 33.3	
	comp=Z,70nm,0.8s						
TEY				AMB	AMB	15 43 33.3	
	comp=Z,60nm,0.8s						
PAU	**Pauzhetka**	**8.62**	**40**	*e*P	**Pn**	**15 43 35.4**	**-1.2**
PAU				AMB	AMB	15 43 39.6	
	comp=Z,270nm,1.0s						
OKH	**Okha**	**9.02**	**340**	*e*P	**Pn**	**15 43 43.2**	**+1.3**
NKL	**Nikolayevsk**	**9.31**	**332**	*e*PN	**Pn**	**15 43 46.0**	**+0.2**
NKL				pmax	pmax		
	comp=N,20nm,1.0s						
NKL				pmax	pmax		
	comp=E,14nm,1.0s						
NKL				pmax	pmax		
	comp=Z,24nm,1.0s						
NKL	**Nikolayevsk**	**9.31**	**332**	*e*P	**Pn**	**15 43 46.0**	**+0.2**
NKL				AMB	AMB	15 43 47.4	
	comp=Z,10.0nm,0.7s						
HABR	**Khabarovsk**	**9.46**	**295**	*e*PN	**Pn**	**15 43 46.2**	**-1.7**
HABR				*e*S	**Sn**	**15 45 30.9**	**-1.6**
HABR				pmax	pmax		
	comp=E,17nm,0.9s						
HABR				pmax	pmax		
	comp=N,3.0nm,0.9s						
HABR				pmax	pmax		
	comp=Z,24nm,0.9s						
HABR				MLR	MLR		
	comp=Z,14nm,12.0s						
HABR	**Khabarovsk**	**9.46**	**295**	*e*P	**Pn**	**15 43 46.2**	**-1.7**
HABR				AMB	AMB	15 43 52.4	
	comp=Z,20nm,0.9s						
HABR				*e*S	**Sn**	**15 45 30.9**	**-1.6**
GRNR	**Gornyy**	**9.57**	**310**	⇓*e*P	**Pn**	**15 43 51.1**	**+1.8**
GRNR				AMB	AMB	15 43 52.0	
	comp=Z,30nm,1.0s						
PEA0	**Petropavlovsk-**	**10.18**	**35**	*e*Pn	**Pn**	**15 43 57.4**	**-0.1**
PEA0B	**Petropavlovsk-**	**10.18**	**35**	*e*Pn	**Pn**	**15 43 57.6**	**+0.1**
PETK	**Petropavlovsk-**	**10.18**	**35**	P	**Pn**	**15 43 57.1**	**-0.4**
	comp=Z,2.3nm,0.3s,baz=187,slow=9.7,SNR=58						
PET	**Petropavlovsk**	**10.52**	**38**	*e*P	**Pn**	**15 43 59.6**	**-2.4**
PET				AMB	AMB	15 44 01.1	
	comp=Z,600nm,4.0s						
MJA0	**Matsu Arr-Jizo**	**11.32**	**224**	*e*PN	**Pn**	**15 44 14.9**	**+2.0**
MJA0				pmax	pmax		
	comp=Z,1.0nm,0.3s						
MJB9	**Matsu-Tunnel**	**11.34**	**224**	*e*Pn	**Pn**	**15 44 11.2**	**-2.0**
MAJO	**Matsushiro**	**11.34**	**224**	*i* PN	**Pn**	**15 44 13.9**	**+0.7**
MAJO	**Matsushiro**	**11.34**	**224**	*e*Pn	**Pn**	**15 44 11.2**	**-2.0**
MAJO	**Matsushiro**	**11.34**	**224**	*e*P	**Pn**	**15 44 13.9**	**+0.7**
MJAR	**Matsushiro Arr**	**11.34**	**224**	P	**Pn**	**15 44 11.6**	**-1.6**
	comp=Z,1.3nm,0.3s,baz=34,slow=14,SNR=22						
USRK	**Ussuriysk Ar.**	**11.43**	**271**	P	**Pn**	**15 44 15.0**	**+0.8**
	comp=Z,1.3nm,0.3s,baz=93,slow=12,SNR=21						
KLR	**Kul'dur**	**11.77**	**296**	P	**Pn**	**15 44 20.1**	**+1.6**
	comp=Z,0.3nm,0.3s,baz=104,slow=15,SNR=35						
KLR				LR	LR	15 48 24.9	
	comp=Z,47nm,20.9s,baz=114,slow=35						
KLR	**Kul'dur**	**11.77**	**296**	⇓*i*PN	**Pn**	**15 44 19.4**	**+0.8**
KLR	**Kul'dur**	**11.77**	**296**	⇓*i*P	**Pn**	**15 44 19.4**	**+0.8**
EKMR	**Ekimchan**	**12.62**	**314**	⇓*e*P	**Pn**	**15 44 30.6**	**+1.0**
EKMR				AMB	AMB	15 44 31.6	
	comp=Z,40nm,0.9s						
INU	**Inuyama**	**12

BJI LR LR
comp=Z,39nm,23.4s
JOW Kunigami 24.15 227 P **P 15 46 39.9 +1.1**
comp=Z,15nm,0.8s,baz=81,slow=15,SNR=4.8
BOD Bodaibo 24.36 314 *e*P **P 15 46 36.0 -4.4**
BOD pmax pmax
comp=Z,3.0nm,2.3s
BILL Bilibino 24.84 16 *e*P **P 15 46 44.9 +0.2**
BILL *e**PP **pP 15 47 14.8 +2.4**
BILL *e* 15 47 22.4
BILL pmax pmax
comp=Z,1.0nm,0.9s
BILL Bilibino 24.84 16 *e*P **P 15 46 44.7 0.0**
comp=Z,1.0nm,0.4s
BILL Bilibino 24.84 16 *e*P **P 15 46 44.9 +0.2**
HHC Hu-ho-hao-te 26.83 274 *e*P **P 15 47 03.2 +0.2**
HHC pmax pmax
comp=Z,7.0nm,1.1s
HHC pmax pmax
comp=Z,88nm,5.1s
ULN Ulaanbaatar 28.06 290 *e*pP pP 15 47 40.7 -1.4
TIXI Tiksi 28.11 347 P **P 15 47 11.5 -2.4**
comp=Z,0.9nm,0.4s,baz=144,slow=7.2,SNR=7.5
TIXI Tiksi 28.11 347⇓*i*P **P 15 47 11.6 -2.3**
TIXI pmax pmax
comp=Z,2.0nm,1.2s
TIXI Tiksi 28.11 347 *e*P **P 15 47 10.9 -3.0**
comp=Z,3.2nm,1.1s
SONM Songino Array 28.51 290 P **P 15 47 18.8 +0.9**
comp=Z,0.7nm,0.3s,baz=80,slow=10,SNR=3.0
SONM pP **pP 15 47 48.4 +2.4**
comp=Z,1.4nm,0.6s,baz=76,slow=9.5,SNR=3.1
LZH Lanzhou 34.34 270 *e*P **P 15 48 10.5 +1.3**
LZH pP pP 15 48 41.0 +3.3
LZH sP sP 15 48 57.2 +4.4
LZH PP **PP 15 49 29.6 +0.2**
LZH pmax pmax
comp=Z,23nm,1.0s
LZH pmax pmax
comp=Z,65nm,4.9s
GTA Gaotai 35.66 278 *e*P **P 15 48 20.9 +0.4**
GTA pP pP 15 48 53.7 +4.5
GTA sP sP 15 49 12.3 +8.1
GTA S **S 15 53 47.2 0.0**
GTA sS sS 15 54 40.4 +3.1
GTA SS **SnSn 15 56 17.3 -6.1**
GTA pmax pmax
comp=Z,3.0nm,0.9s
GTA pmax pmax
comp=Z,100nm,5.4s
GTA LR LR
comp=N,180nm,19.0s
GTA LR LR
comp=E,220nm,19.0s
GTA LR LR
comp=Z,100nm,17.8s
CD2 Chengdu 37.15 263 P **P 15 48 31.3 -1.8**
CD2 pmax pmax
comp=Z,1.0nm,0.5s
PPLA Purkeypile 37.71 40 *e*P **P 15 48 38.9 +1.4**
CAST Castle Rocks 37.76 39 *e*P **P 15 48 39.1 +1.3**
comp=Z,2.5nm,0.7s
KDAK Kodiak Island 37.86 49 *i*P **P 15 48 39.9 +1.3**
KDAK Kodiak Island 37.86 49 *e*P **P 15 48 39.9 +1.3**
COLD Coldfoot 38.64 33 *e*P **P 15 48 44.9 -0.2**
comp=Z,1.8nm,1.0s
MDM Murphy Dome 39.42 37 *e*PP PP 15 50 27.1 +2.6
SML Sawmill 39.57 42 *e*P **P 15 48 52.5 -0.4**
SML pmax pmax
comp=Z,33nm,1.8s
SML Sawmill 39.57 42 *e*P **P 15 48 52.5 -0.4**
comp=Z,33nm,1.8s
SML Sawmill 39.57 42 *e*P **P 15 48 52.5 -0.4**
COLA College 39.59 37 *e*sP sP 15 49 40.2 +3.2
ILAR Eielson Array 40.00 37 P **P 15 48 57.0 +0.6**
comp=Z,1.4nm,0.8s,baz=273,slow=7.6,SNR=11
ILAR Eielson Array 40.00 37 *e*P **P 15 48 57.3 +0.9**
ILAR pmax pmax
comp=Z,1.0nm,0.8s
ILAR Eielson Array 40.00 37 *e*P **P 15 48 57.3 +0.9**
ZALV Zalesovo Beam 40.64 306 P **P 15 49 02.3 +0.5**
comp=Z,0.5nm,0.4s,baz=79,slow=7.5,SNR=2.1
ZALV PcP **PcP 15 51 01.8 +0.8**
comp=Z,1.5nm,0.6s,baz=83,slow=1.9,SNR=6.9
ZALV ScP **ScP 15 54 38.3 +0.3**
comp=Z,1.7nm,0.7s,baz=76,slow=3.6,SNR=5.5
DOT Dot Lake 41.33 39 *e*P **P 15 49 06.9 -0.4**
comp=Z,36nm,1.9s
WMQ Urumqi 42.14 290 *e*P **P 15 49 14.8 +0.5**
WMQ LR LR
comp=N,32nm,37.2s
WMQ LR LR
comp=E,30nm,26.6s
WMQ LR LR
comp=Z,10.0nm,39.6s
MK31 Makanchi Array 44.47 297 *e*P **P 15 49 31.6 -1.3**
MK31 Makanchi Array 44.47 297 *e*P **P 15 49 31.6 -1.3**
MKAR Makanchi Array 44.47 297 P **P 15 49 32.5 -0.3**
comp=Z,0.7nm,0.4s,baz=79,slow=8.7,SNR=13
MKAR PcP **PcP 15 51 14.7 +0.8**
comp=Z,1.0nm,0.6s,baz=70,slow=4.6,SNR=5.3
MKAR ScP **ScP 15 54 53.0 -0.7**
comp=Z,0.2nm,0.3s,baz=70,slow=4.7,SNR=3.3
MKAR Makanchi Array 44.47 297 *e*P **P 15 49 31.6 -1.3**
MKAR PcP **PcP 15 51 14.7 +0.8**
MKAR ScP **ScP 15 54 53.0 -0.7**
MK01 Makanchi Array 44.47 297 *e*P **P 15 49 31.3 -1.5**
MAKZ Makanchi 44.66 297 *e*P **P 15 49 34.4 0.0**
MAKZ pmax pmax
comp=Z,1.0nm,0.8s
MAKZ Makanchi 44.66 297 *e*P **P 15 49 34.4 0.0**
comp=Z,1.4nm,0.8s
INK Inuvik 44.89 31 P **P 15 49 36.0 +0.3**
comp=Z,1.6nm,0.4s,baz=308,slow=6.1,SNR=17
INK Inuvik 44.89 31 *e*P **P 15 49 36.1 +0.3**
INK pmax pmax
comp=Z,2.0nm,0.4s
INK Inuvik 44.89 31 *e*P **P 15 49 36.0 +0.3**
comp=Z,2.1nm,0.4s
INK Inuvik 44.89 31 *e*P **P 15 49 36.1 +0.3**
KURK Kurchatov 45.25 303⇓*e*P **P 15 49 39.6 +0.8**
KURK pmax pmax
comp=Z,3.0nm,1.1s
KURK Kurchatov 45.25 303 P **P 15 49 38.0 -0.9**
KURK Kurchatov 45.25 303 *e*P **P 15 49 39.6 +0.8**
KURBB Kurchatov Arra 45.33 303 P **P 15 49 38.0 -1.6**
comp=Z,2.1nm,0.3s,baz=71,slow=8.2,SNR=6.7
CHTO Chiang Mai 48.25 253 *e*P **P 15 50 03.4 +0.8**
CHTO pmax pmax
comp=Z,7.0nm,1.1s
CHTO Chiang Mai 48.25 253 *e*P **P 15 50 03.4 +0.8**
comp=Z,6.9nm,1.1s
CMAR Chiang Mai Arr 48.50 253 P **P 15 50 06.0 +1.5**
comp=Z,1.9nm,0.6s,baz=41,slow=7.2,SNR=18
CM01 Chiang Mai Arr 48.51 253 *e*P **P 15 50 05.0 +0.4**
KKN Kakani 52.03 273 *e*P **P 15 50 31.9 +0.6**
comp=Z,14nm,0.6s
PKIN Phulchoki 52.08 273 *e*P **P 15 50 33.2 +1.5**
comp=Z,10.0nm,0.6s
GKN Gorkha 52.36 274 *e*P **P 15 50 34.6 +1.0**
comp=Z,20nm,0.5s
KOLN Koldanda 53.23 274 *e*P **P 15 50 41.3 +1.2**
comp=Z,11nm,0.4s
RES Resolute Bay 53.45 17 P **P 15 50 40.9 +0.2**
comp=Z,1.2nm,0.4s,baz=344,slow=10,SNR=8.1
PYUN Piuthan 53.46 275 *e*P **P 15 50 42.9 +1.1**
comp=Z,28nm,0.6s
YKA Yellowknife Ar 54.30 35 P **P 15 50 47.6 +0.5**
comp=Z,0.6nm,0.5s,baz=299,slow=6.8,SNR=12
ABKAR Abkulak array 56.65 308 *e*P **P 15 51 02.9 -1.3**
ARCES ARCESS Array B 58.13 340 P **P 15 51 12.9 -1.3**
comp=Z,1.5nm,0.8s,baz=58,slow=8.4,SNR=5.7
KBL Kabul 59.27 290 *e*P **P 15 51 22.2 -0.7**
KBL pmax pmax
comp=Z,8.0nm,1.0s
KBL Kabul 59.27 290 *e*P **P 15 51 22.2 -0.7**
comp=Z,8.2nm,1.0s
HYB Hyderabad 63.41 268 *i*P **P 15 51 51.5 +0.8**
FINES FINESS Array B 63.89 333 P **P 15 51 51.2 -1.9**
comp=Z,3.3nm,0.5s,baz=37,slow=7.6,SNR=30
GEYT Alibeck 64.28 299 P **P 15 51 55.2 -1.0**
comp=Z,1.0nm,0.5s,baz=350,slow=4.5,SNR=3.7
FCC Fort Churchill 64.50 31 *e*P **P 15 51 57.8 +0.6**
FCC pmax pmax
comp=Z,16nm,1.8s
FCC Fort Churchill 64.50 31 *e*P **P 15 51 57.8 +0.6**
comp=Z,16nm,1.8s
FCC Fort Churchill 64.50 31 *e*P **P 15 51 57.8 +0.6**
OBN Obninsk 64.53 324 *e*P **P 15 51 57.6 +0.2**
OBN *e* 15 52 24.5
OBN *e**PP **pP 15 52 28.5 -0.6**
OBN *e* 15 54 20.6
OBN pmax pmax
comp=Z,4.0nm,0.7s
OBN Obninsk 64.53 324 *e*P **P 15 51 57.6 +0.2**
CTA Charters Tower 64.95 182 P **P 15 52 01.9 +1.4**
comp=Z,1.0nm,0.5s,baz=333,slow=6.8,SNR=3.4
BOZ Bozeman (W) 65.53 49 *e*P **P 15 52 05.7 +1.4**
BOZ pmax pmax
comp=Z,2.0nm,0.6s
BOZ Bozeman (W) 65.53 49 *e*P **P 15 52 05.7 +1.4**
comp=Z,1.5nm,0.6s
BOZ Bozeman (W) 65.53 49 *e*P **P 15 52 05.7 +1.4**
WRAB Tennant Creek 65.96 194 *e*P **P 15 52 07.7 +0.7**
WRAB pmax pmax
comp=Z,26nm,0.8s
WRAB Tennant Creek 65.96 194 *e*P **P 15 52 07.7 +0.7**
comp=Z,26nm,0.8s
WRA Warramunga Arr 65.97 194 P **P 15 52 07.6 +0.5**
comp=Z,0.9nm,0.4s,baz=12,slow=6.7,SNR=16
NV01 Mina Array Sit 66.33 59 *e*P **P 15 52 10.4 +0.8**
NVAR Mina Array Bea 66.33 59 P **P 15 52 11.2 +1.6**
comp=Z,1.7nm,0.6s,baz=294,slow=7.7,SNR=16
R11A Troy Canyon, C 68.02 57 *e*P **P 15 52 21.2 +1.0**
NB2 NORSAR Subarra 68.50 339 P **P 15 52 21.1 -1.5**
comp=Z,1.2nm,0.4s,baz=30,slow=6.5
NOA NORSAR Array B 68.50 339 P **P 15 52 21.4 -1.2**
comp=Z,0.8nm,0.4s,baz=30,slow=6.7,SNR=18
PD31 Pinedale Array 68.55 51 *e*P **P 15 52 24.2 +0.7**
PDAR Pinedale Array 68.55 51 P **P 15 52 23.8 +0.3**
comp=Z,1.3nm,0.6s,baz=260,slow=2.4,SNR=16
NLU North Lily Min 69.02 54 *e*P **P 15 52 27.4 +1.0**
comp=Z,2.9nm,1.0s
KIV Kislovodsk 69.27 312 *e*P **P 15 52 29.8 +2.1**
KIV pmax pmax
comp=Z,5.0nm,0.9s
KIV Kislovodsk 69.27 312 *e*P **P 15 52 29.8 +2.1**
KBZ Khabaz 69.31 312 P **P 15 52 28.8 +1.0**
comp=Z,1.6nm,0.6s,baz=65,slow=5.0,SNR=5.8
ZEI Tsey 69.41 310 *e*P **P 15 52 27.9 -0.9**
ZEI pmax pmax
comp=Z,5.0nm,0.6s
AS01 Alice Springs 69.68 194 *e*P **P 15 52 31.4 +1.2**
ASAR Alice Springs 69.69 194 P **P 15 52 31.8 +1.5**
comp=Z,0.8nm,0.5s,baz=10,slow=6.3,SNR=23
MTPU Mount Pierson 70.23 56 *e*P **P 15 52 35.3 +1.3**
comp=Z,3.2nm,0.9s
SRU San Rafael Swe 70.47 54 *e*P **P 15 52 36.5 +1.2**
SRU pmax pmax
comp=Z,8.0nm,1.1s
SRU San Rafael Swe 70.47 54 *e*P **P 15 52 36.5 +1.2**
comp=Z,7.6nm,1.1s
AKASG Malin Array Be 70.79 324 P **P 15 52 36.2 -0.5**
comp=Z,0.7nm,0.4s,baz=42,slow=6.9,SNR=5.0
BUR08 Bucovina Ar. S 74.83 324 *e*P **P 15 53 01.2 +0.4**
STKA Stephens Creek 76.89 186 P **P 15 53 14.6 +2.3**
comp=Z,1.0nm,0.5s,baz=349,slow=3.1,SNR=6.4
BRTR Keskin Array B 77.00 314 P **P 15 53 13.7 +0.3**
comp=Z,1.0nm,0.8s,baz=96,slow=2.5,SNR=7.5
BR231 Keskin MP Arra 77.35 314 *e*P **P 15 53 13.6 -1.6**
KHC Kasperske Hory 78.01 331 *e*P **P 15 53 19.2 +0.6**
KHC Kasperske Hory 78.01 331 *e*P **P 15 53 19.2 +0.6**
KHC Kasperske Hory 78.01 331 *e*P **P 15 53 19.2 +0.6**
TX31 Lajitas Ar. Si 81.38 57 *e*P **P 15 53 38.3 +1.1**
TXAR Lajitas Array 81.38 57 P **P 15 53 38.6 +1.4**
comp=Z,3.3nm,0.5s,baz=292,slow=4.1,SNR=63
PKME Peaks-Kenny Pk 84.10 25 P **P 15 53 50.4 -0.5**
IDI Anoyia 84.81 317 P **P 15 53 53.7 -1.0**
comp=Z,4.9nm,0.4s,baz=46,slow=11,SNR=7.8
SNAA Sanae 149.98 198 PKP **PKPbc 16 01 09.3 +0.8**
VNA2 Neumayer--Watz 151.51 197 PKP **PKPbc 16 01 13.0 +1.0**
baz=143,slow=0.8
VNA3 Neumayer Olymp 151.69 195 PKP **PKPbc 16 01 13.0 +0.5**
VNA1 Neumayer--Stat 151.90 197 PKP **PKPbc 16 01 12.5 -0.4**

*ISCJB **03** 15:41:35.3±0.7, 2°.57N±0°.09×125°.9E±0°.1, h10km, mb4.2/7, MS3.0/1, Error ellipse: s-maj=17.4km s-min=11.7km az=161.5*
*IDC **03** 15:41:36.0±1.0, 2°.79N×126°.46E, h0km, mb4.1/7, mb1 4.2/7, mb1mx3.8/60, mbtmp4.1/7, MS3.1/1, Ms1 3.1/1, ms1mx2.6/32, Error ellipse: s-maj=76.3km s-min=16.6km az=71.0*
*NEIC **03** 15:41:37.1±0.7, 2°.62N×126°.02E, h10km, mb4.4/1, Error ellipse: s-maj=14.7km s-min=11.2km az=80.0*
ISC 03 15:41:37.1±1.0, 2°.6N±0°.1×126°.0E±0°.1, h10km, n13, σ0§97/10, mb4.3/7, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LUWI	**Luwuk**	**4.86**	**222**	*e*Pg	**Pg**	**15 43 09.7**	**-0.4**
FAKI	**Fak Fak**	**8.29**	**131**	*e*Pg	**Pn**	**15 43 37.1**	**-0.3**
FITZ	**Fitzroy Crossi**	**20.57**	**181**	P	Pn	15 46 20.7	+2.3
	1.0nm,0.4s,baz=27,slow=13,SNR=14						
FITZ	**Fitzroy Crossi**	**20.57**	**181**	*e*Pn	Pn	15 46 20.6	+2.2
GUMO	**Guam**	**21.60**	**59**	LR	LR	15 53 31.3	
	comp=Z,52nm,19.1s,baz=196,slow=34						
WRAB	**Tennant Creek**	**23.83**	**160**	*e*P	**P**	**15 46 50.5**	**-0.1**
	8.6nm,0.8s						
WRA	**Warramunga Arr**	**23.84**	**160**	P	**P**	**15 46 50.5**	**-0.1**
	6.8nm,0.8s,baz=335,slow=11,SNR=70						
ASAR	**Alice Springs**	**27.21**	**164**	P	**P**	**15 47 22.2**	**+1.0**
	0.4nm,0.3s,baz=342,slow=37.4,SNR=24						
STKA	**Stephens Creek**	**37.34**	**158**	P	**P**	**15 48 50.4**	**+0.6**
	3.8nm,0.6s,baz=348,slow=9.1,SNR=13						
MKAR	**Makanchi Array**	**58.09**	**326**	P	**P**	**15 51 31.4**	**+0.7**
	0.5nm,0.4s,baz=117,slow=6.6,SNR=7.0						
KURBB	**Kurchatov Arra**	**62.31**	**328**	P	**P**	**15 52 01.1**	**+1.5**
	2.4nm,0.2s,baz=124,slow=6.3,SNR=6.7						
KURK	**Kurchatov**	**62.32**	**328**	*e*P	**P**	**15 51 59.9**	**+0.3**
TIXI	**Tiksi**	**68.98**	**1**	P	**P**	**15 52 40.8**	**-1.4**
	1.0nm,0.3s,baz=184,slow=4.9,SNR=3.1						

*NIED **03** 15:44:00, 37°.20N×141°.40E, h44km, Mw3.9 Best double couple: M0 7.85000×10^14 NP1:φs82.00000°, δ49.00000°, λ142.00000°. NP2:φs199.00000°, δ62.00000°, λ48.00000°.*
*IDC **03** 15:44:50.7±0.8, 37°.07N×141°.77E, h0km, mb3.8/8, mb1 4.0/13, mb1mx3.7/70, mbtmp3.9/13, ML3.1/4, MS2.6/2, Ms1 2.6/2, ms1mx2.3/41, Error ellipse: s-maj=20.7km s-min=18.0km az=130.0*
*ISCJB **03** 15:44:52.3±1.3, 37°.05N±0°.04×141°.62E±0°.08, h22km±8km, mb3.8/8, MS4.3/1, Error ellipse: s-maj=10.4km s-min=6.9km az=11.1*
*JMA **03** 15:44:55.5±0.1, 37°.18N×141°.38E, h48km±1km, M3.9*
JMA Felt I J1.
ISC 03 15:44:54.6±1.9, 37°.10N±0°.06×141°.54E±0°.08, h24km±13km, n22, σ1§89/25, mb3.8/8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.59**	**271**	P	**Pb**	**15 45 06.3**	**-0.1**
ONAJ				S	**Sb**	**15 45 13.7**	**-0.7**
JFK	**Kawauchi**	**0.60**	**297**	P	**Pb**	**15 45 05.8**	**-0.6**
JFK				S	**Sb**	**15 45 13.0**	**-1.5**
JHO	**Hitachi**	**0.92**	**238**	P	Pn	15 45 10.9	-1.1
JHO				S	**Sn**	**15 45 22.0**	**-2.4**
JMM	**Marumori**	**0.97**	**323**	P	Pn	15 45 10.8	-1.9
JMM				S	**Sn**	**15 45 21.8**	**-4.0**
JFT	**Otama**	**1.05**	**294**	P	Pn	15 45 12.7	-1.1
JFT				S	**Sn**	**15 45 24.8**	**-2.9**
MJAR	**Matsushiro Arr**	**2.73**	**259**	Pn	**Pn**	**15 45 37.1**	**+0.2**
	4.9nm,0.3s,baz=79,slow=16,SNR=30						
MJAR				LR	LR	15 46 59.1	
	comp=Z,103nm,19.4s,baz=90,slow=45						
MAT	**Matsushiro**	**2.73**	**259**	P	**Pn**	**15 45 37.2**	**+0.3**
MAT				S	**Sn**	**15 46 09.0**	**-0.2**
JHJ	**Hachijo jima 2**	**4.22**	**200**	Pn	**Pn**	**15 45 58.5**	**+1.1**
	19nm,0.3s,baz=102,slow=23,SNR=23						
JHJ				Sn	**Sn**	**15 46 44.5**	**-1.5**
	46nm,0.3s,baz=123,slow=22,SNR=12						
JHJ				LR	LR	15 47 49.4	
	comp=Z,69nm,20.8s,baz=80,slow=42						
JCJ	**Chichijima**	**9.98**	**177**	Pn	**Pn**	**15 47 15.2**	**-1.4**
	5.4nm,0.3s,baz=100,slow=23,SNR=6.7						
JCJ				Sn	Sn	15 48 58.4	-9.4
	6.7nm,0.3s,baz=268,slow=20,SNR=4.9						

USRK Ussuriysk Ar. 10.14 317 Pn **Pn 15 47 21.4 +2.7**
0.3nm,0.3s,baz=129,slow=13,SNR=12
KSRS Korea Array 10.86 276 Pn **Pn 15 47 32.3 +3.9**
0.1nm,0.3s,baz=94,slow=14,SNR=5.7
KLR Kul'dur 14.06 333 Pn **Pn 15 48 15.2 +3.0**
0.1nm,0.3s,baz=134,slow=12,SNR=6.7
SONM Songino Array 27.83 304 P **P 15 50 43.8 +1.6**
1.8nm,0.6s,baz=99,slow=9.3,SNR=4.7
TLY Talaya 30.37 311 LR LR 16 04 34.0
comp=Z,633nm,19.2s,baz=122,slow=39
ZALV Zalesovo Beam 41.95 312 P **P 15 52 42.9 -0.3**
0.5nm,0.4s,baz=90,slow=10,SNR=2.9
KURBB Kurchatov Arra 46.04 308 P **P 15 53 16.9 +0.7**
2.2nm,0.2s,baz=82,slow=8.3,SNR=6.8
ILAR Eielson Array 49.39 32 P **P 15 53 40.9 -1.0**
1.1nm,0.7s,baz=268,slow=6.6,SNR=12
INK Inuvik 54.29 27 P **P 15 54 17.8 -0.5**
1.4nm,1.1s,baz=312,slow=1.4,SNR=3.8
WRA Warramunga Arr 57.13 188 P **P 15 54 38.4 -0.9**
0.4nm,0.5s,baz=6.9,slow=7.5,SNR=6.3
YKA Yellowknife Ar 63.70 30 P **P 15 55 23.4 -0.3**
0.1nm,0.5s,baz=304,slow=7.0,SNR=4.5
PDAR Pinedale Array 77.55 46 P **P 15 56 48.4 -0.3**
0.2nm,0.6s,baz=262,slow=3.0,SNR=3.6
LPAZ La Paz 146.58 60 PKPbc **PKPdf 16 04 34.2 +0.6**

*NIED **03** 15:52:00, 23°.90N×121°.70E, h47km, Mw4.6 Best double couple: M0 1.04000×10^16 NP1:φs56.00000°, δ50.00000°, λ-155.00000°. NP2:φs309.00000°, δ71.00000°, λ-43.00000°.*
*BKK **03** 15:52:01.4±2.0, 26°N±19'×12°.5E±1°.9, h10km, M5.0/19, mB4.5/8, mb4.4/19, MLv6.7/1, Mw(mB)3.7/8*
*MOS **03** 15:52:31.2±1.2, 23°.98N×121°.86E, h33km, mb5.2/58, Error ellipse: s-maj=8.2km s-min=5.1km az=114.5*
*JMA **03** 15:52:33.2±0.1, 23°.88N×121°.69E, h39km±2km, M4.7*
*BJI **03** 15:52:33.3, 24°.05N×121°.58E, h47km, mb4.6/63, mB4.8/49, ML4.9/11, Ms4.3/58, Ms7 4.1/56*
*NEIC **03** 15:52:34.3±0.4, 23°.88N×121°.76E, h43km±3km, mb5.0/78, MW4.7, Error ellipse: s-maj=5.1km s-min=3.7km az=137.0, Moment Tensor Solution. s20 Moment tensor: Scale 10^16Nm; Mrr0.26; Mθθ0.07; Mφφ-0.34; Mrθ-0.41; Mθφ-0.48; Mφr-1.12; Best double couple: M0 1.30000×10^16 NP1: φs69.00000°, δ15.00000°, λ141.00000°. NP2: φs198.00000°, δ81.00000°, λ78.00000°. Principal axes: T 1.1200, Plg53.0000°, Azm94.0000°; N 0.3300, Plg12.0000°, Azm200.0000°; P -1.4600, Plg35.0000°, Azm298.0000°;*
NEIC Felt [II] at Hsinchu and Taipei. Also felt at Taichung, Taoyuan, Xindian, Yilan, Yungho and Zhunan. Recorded [4 TAP] in Hualien and Nantou; [3 TAP] in Taichung and Yilan; [2 TAP] in Changhua, Hsinchu, Miaoli, Taitung, Taoyuan and Yunlin; [1 TAP] in Chiayi and Penghu.
*TAP **03** 15:52:34.4, 23°.93N×121°.71E, h41km, ML5.2, B*
*ISCJB **03** 15:52:34.1±0.1, 23°.92N±0°.01×121°.77E±0°.01, h53km±1km, mb4.8/141, MS3.8/20, Error ellipse: s-maj=2.4km s-min=1.6km az=146.6*
*IDC **03** 15:52:36.5±2.7, 23°.99N×121°.89E, h65km±25km, mb4.3/33, mb1 4.4/36, mb1mx4.2/59, mbtmp4.6/36, ML4.1/3, MS3.7/14, Ms1 3.7/14, ms1mx3.5/36, Error ellipse: s-maj=14.0km s-min=10.6km az=71.0*
ISC 03 15:52:34.2±0.5, 23°.92N±0°.02×121°.78E±0°.02, h41km±4km, n402, σ1§43/472, mb4.9/140, MS3.8/20, 31C-38D, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HWA	**Hwalien**	**0.17**	**289**	⇓*i*P	**Pn**	**15 52 41.4**	**+0.1**
	baz=296						
TWD	**Chiawan**	**0.23**	**314**	⇓*i*P	**Pn**	**15 52 41.7**	**-0.2**
	baz=330						
TWD				*e*S	**Sn**	**15 52 47.2**	**0.0**
	baz=330						
ESF	**Shoufeng Towns**	**0.25**	**259**	*e*P	**Pn**	**15 52 42.6**	**+0.6**
	baz=263						
ESF				S	**Sn**	**15 52 48.2**	**+0.7**
	baz=263						
NACB	**Ninganchiao**	**0.30**	**326**	*e*Pn	Pn	15 52 42.0	-0.6
NACB				*e*Sn	**Sn**	**15 52 47.7**	**-0.8**
TEGC	**Jichi Village**	**0.30**	**226**	*e*P	**Pn**	**15 52 43.7**	**+1.2**
	baz=207						
ESL	**Shilin**	**0.33**	**252**	⇓*i*P	**Pn**	**15 52 42.5**	**-0.5**
	baz=252						
EHP	**Heping Village**	**0.39**	**355**	*e*P	**Pn**	**15 52 44.4**	**+0.8**
	baz=12						
EHP				*e*S	**Sn**	**15 52 51.8**	**+1.6**
	baz=12						
ENA	**Nanau**	**0.51**	**356**	⇓*i*P	**Pn**	**15 52 45.1**	**0.0**
	baz=11						
WHF	**Hehuan Shan**	**0.52**	**296**	⇓*i*P	**Pn**	**15 52 44.9**	**-0.8**
	baz=294						
EHY	**Hungye**	**0.59**	**226**	⇓P	**Pn**	**15 52 45.5**	**-0.7**
	baz=226						
NNS	**Nan Shan**	**0.64**	**324**	⇓*i*P	**Pn**	**15 52 46.6**	**-0.3**
	baz=329						
TWT	**Tachien**	**0.64**	**301**	⇓*i*P	**Pn**	**15 52 47.0**	**-0.1**
	baz=305						
YULB	**Yu-li**	**0.69**	**220**	*e*Pn	**Pn**	**15 52 46.1**	**-1.4**
TWC	**Suao**	**0.69**	**5**	⇓*i*P	**Pn**	**15 52 48.2**	**+0.7**
	baz=14						
TWF1	**Yuli**	**0.72**	**218**	⇓P	**Pn**	**15 52 47.3**	**-0.6**
	baz=221						
ENTT	**Nioudou**	**0.74**	**345**	⇓*i*P	**Pn**	**15 52 48.4**	**+0.1**
	baz=351						
SSLB	**Suanglung**	**0.77**	**260**	*e*Pn	**Pn**	**15 52 48.1**	**-0.6**
SSLB				*e*Sn	**Sn**	**15 52 57.3**	**-1.7**
TWE	**Neicheng**	**0.80**	**353**	⇓*i*P	**Pn**	**15 52 49.5**	**+0.4**
	baz=349						
TWE				*e*S	**Sn**	**15 53 00.4**	**+0.6**
	baz=349						
SMLT	**Sun Moon Lake**	**0.81**	**268**	⇓P	**Pn**	**15 52 49.0**	**-0.2**
	baz=258						
YHNB	**Yeheng**	**0.83**	**334**	*e*Pn	**Pn**	**15 52 49.1**	**-0.4**
YHNB				*e*Sn	**Sn**	**15 52 59.5**	**-1.1**
ILA	**Ilan**	**0.84**	**358**	*e*P	**Pn**	**15 52 50.3**	**+0.7**
	baz=355						
ILA				*e*S	**Sn**	**15 53 02.5**	**+1.7**
	baz=355						
NSK	**Sanguang**	**0.84**	**333**	⇓*i*P	**Pn**	**15 52 49.9**	**+0.2**
	baz=337						
TYC	**Yuchr**	**0.84**	**269**	⇓P	**Pn**	**15 52 49.4**	**-0.2**
	baz=268						
TYC				S	**Sn**	**15 52 59.4**	**-1.4**
	baz=268						
YUS	**Yu-Shan**	**0.87**	**241**	⇓*i*P	**Pn**	**15 52 50.6**	**+0.1**
	baz=236						
YUS				S	**Sn**	**15 53 01.1**	**-1.1**
	baz=236						
CHKT	**Chengkung**	**0.90**	**205**	*e*P	**Pn**	**15 52 49.6**	**-0.8**
	baz=187						
CHKT				*e*S	**Sn**	**15 53 01.3**	**-0.9**
	baz=187						
EGS		**0.93**	**9**	⇓*i*P	**Pn**	**15 52 52.6**	**+1.8**
	baz=15						
EGS				*e*S	**Sn**	**15 53 06.2**	**+3.2**
	baz=15						
ALS	**Alishan**	**0.98**	**246**	⇑P	**Pn**	**15 52 52.3**	**+0.5**
	baz=242						
NSTT	**Nanjuang**	**1.00**	**315**	⇑P	**Pn**	**15 52 52.8**	**+1.0**
	baz=317						
WNT	**Mingjian**	**1.00**	**268**	⇑P	**Pn**	**15 52 52.8**	**+1.0**
	baz=266						
WNT				S	**Sn**	**15 53 05.4**	**+0.6**
	baz=266						
ELDTW	**Lidau**	**1.01**	**224**	⇑P	**Pn**	**15 52 51.5**	**-0.5**
	baz=211						
ELDTW				*e*S	**Sn**	**15 53 04.7**	**-0.4**
	baz=211						
TWQ1	**Liyutan**	**1.01**	**295**	⇑*i*P	**Pn**	**15 52 52.7**	**+0.8**
	baz=296						
TWQ1				S	**Sn**	**15 53 04.7**	**-0.3**
	baz=296						
TCU	**Taichung**	**1.03**	**283**	⇑*i*P	**Pn**	**15 52 53.3**	**+1.1**
	baz=283						
TCU				S	**Sn**	**15 53 06.4**	**+0.9**
	baz=283						
NSY	**Sanyi**	**1.05**	**298**	⇑P	**Pn**	**15 52 53.3**	**+0.8**
	baz=299						
NSY				S	**Sn**	**15 53 07.3**	**+1.3**
	baz=299						
CHN5	**Tsauling**	**1.06**	**253**	⇑*i*P	**Pn**	**15 52 53.4**	**+0.7**
	baz=250						

TATO	**Taipei**	**1.08 346**	*e*Pn	**Pn**	**15 52 53.2**	**+0.3**
TATO			*e*Sn	**Sn**	**15 53 07.3**	**+0.5**
TWB1	**Santiao Chiao**	**1.10 10**	*e*P	**Pn**	**15 52 54.7**	**+1.5**
	baz=16					
TWB1			*e*S	**Sn**	**15 53 10.1**	**+3.0**
	baz=16					
TAP1	**Taipei**	**1.14 348⇑**	*i*P	**Pn**	**15 52 54.2**	**+0.5**
	baz=352					
TAP1			S	**Sn**	**15 53 09.1**	**+1.1**
	baz=352					
WGK	**Gukeng**	**1.14 258**	⇑P	**Pn**	**15 52 54.7**	**+1.0**
	baz=256					
WGK			S	**Sn**	**15 53 09.4**	**+1.3**
	baz=256					
TAP	**Taipei**	**1.14 347**	*e*P	**Pn**	**15 52 54.1**	**+0.4**
	baz=352					
TAP			*e*S	**Sn**	**15 53 09.1**	**+0.9**
	baz=352					
NWF	**Wu-fen Shan**	**1.15 0⇑**	*i*P	**Pn**	**15 52 55.0**	**+1.2**
	baz=353					
NWF			*e*S	**Sn**	**15 53 11.2**	**+2.8**
	baz=353					
HSN	**Hsinchu**	**1.15 320⇑**	*i*P	**Pn**	**15 52 54.9**	**+1.1**
	baz=325					
HSN			S	**Sn**	**15 53 10.4**	**+2.1**
	baz=325					
NCU	**National Centr**	**1.18 333⇑**	*i*P	**Pn**	**15 52 55.2**	**+1.0**
	baz=336					
NCU			S	**Sn**	**15 53 10.6**	**+1.6**
	baz=336					
JYNG	**Yonagunijimaku**	**1.19 63**	P	**Pn**	**15 52 55.8**	**+1.5**
JYNG			S	**Sn**	**15 53 11.5**	**+2.2**
STYT	**Tauyuan**	**1.20 231⇓**	*i*P	**Pn**	**15 52 55.5**	**+0.9**
	baz=219					
STYT			S	**Sn**	**15 53 11.6**	**+1.8**
	baz=219					
TWS1	**Kuangyinshan**	**1.22 344**	*e*P	**Pn**	**15 52 55.5**	**+0.8**
	baz=348					
TWS1			*e*S	**Sn**	**15 53 11.3**	**+1.2**
	baz=348					
TPUB	**Ta-pu**	**1.22 240**	*e*Pn	**Pn**	**15 52 56.0**	**+1.1**
CHN4	**Tsaushan**	**1.23 243**	⇓P	**Pn**	**15 52 56.1**	**+1.2**
	baz=230					
CHN4			*e*S	**Sn**	**15 53 11.9**	**+1.7**
	baz=230					
YOJ	**Yonaguni jima**	**1.25 64**	P	**Pn**	**15 52 56.4**	**+1.3**
YOJ			*e*S	**Sn**	**15 53 12.5**	**+1.8**
YOJ	**Yonaguni jima**	**1.25 64⇓**	*i*P	**Pn**	**15 52 56.7**	**+1.6**
	baz=68					
YOJ			S	**Sn**	**15 53 12.6**	**+1.8**
	baz=68					
YOJ	**Yonaguni jima**	**1.25 64**	*e*P	**Pn**	**15 52 56.7**	**+1.6**
YOJ	**Yonaguni jima**	**1.25 64**	*e*Pn	**Pn**	**15 52 56.7**	**+1.6**
CHN2	**Minshiung**	**1.26 252**	⇓P	**Pn**	**15 52 56.6**	**+1.3**
	baz=250					
CHN2			*e*S	**Sn**	**15 53 12.6**	**+1.6**
	baz=250					
WTP	**Ta-pu**	**1.26 238**	P	**Pn**	**15 52 56.7**	**+1.3**
	baz=235					
WTP			*e*S	**Sn**	**15 53 12.6**	**+1.4**
	baz=235					
TWG	**Pinlang**	**1.27 211**	⇓P	**Pn**	**15 52 54.6**	**-1.0**
	baz=196					
TWG	**Pinlang**	**1.27 211**	*e*Pn	**Pn**	**15 52 54.2**	**-1.3**
TTN	**Taitung**	**1.30 207**	*e*P	**Pn**	**15 52 56.1**	**+0.3**
	baz=201					
CHY	**Chiayi**	**1.31 252**	⇑P	**Pn**	**15 52 57.1**	**+1.1**
	baz=249					
CHY			S	**Sn**	**15 53 13.4**	**+1.1**
	baz=249					
TWK	**Hsinying**	**1.35 241**	*e*P	**Pn**	**15 52 57.9**	**+1.2**
	baz=239					
TWK			S	**Sn**	**15 53 14.8**	**+1.3**
	baz=239					
TWY	**Chenhua**	**1.36 353⇑**	*e*P	**Pn**	**15 52 57.3**	**+0.6**
	baz=344					
CHN1	**Nanshi**	**1.36 238**	⇑P	**Pn**	**15 52 57.9**	**+1.1**
	baz=235					
CHN1			S	**Sn**	**15 53 15.4**	**+1.8**
	baz=235					
WTCT	**Ta-ch'eng**	**1.37 268**	⇑P	**Pn**	**15 52 57.7**	**+0.8**
	baz=278					
WTCT			S	**Sn**	**15 53 15.8**	**+1.9**
	baz=278					
SGST	**Jiashian**	**1.38 233**	⇓P	**Pn**	**15 52 58.6**	**+1.6**
	baz=230					
SGST			S	**Sn**	**15 53 15.9**	**+1.9**
	baz=230					
WSF	**Szhu**	**1.45 259⇑**	*i*P	**Pn**	**15 52 59.1**	**+1.1**
	baz=258					
WSF			S	**Sn**	**15 53 17.5**	**+1.7**
	baz=258					
ECL	**Taimali**	**1.52 210**	*e*P	**Pn**	**15 52 57.6**	**-1.3**
	baz=197					
CHN3	**Shinhua**	**1.55 237**	P	**Pn**	**15 53 01.2**	**+1.9**
	baz=235					
CHN3			S	**Sn**	**15 53 21.8**	**+3.7**
	baz=235					
CHN8	**Yiju**	**1.55 249⇑**	*i*P	**Pn**	**15 53 00.2**	**+0.9**
	baz=248					
CHN8			S	**Sn**	**15 53 19.8**	**+1.7**
	baz=248					
SSD	**Sandimen**	**1.57 222**	*e*P	**Pn**	**15 53 00.5**	**+0.8**
	baz=218					
SSD			*e*S	**Sn**	**15 53 21.2**	**+2.4**
	baz=218					
SCLT	**Jiali**	**1.63 243⇑**	*e*P	**Pn**	**15 53 01.9**	**+1.4**
	baz=243					
SCLT			S	**Sn**	**15 53 22.0**	**+1.8**
	baz=243					
TWM1	**Shoushan**	**1.66 229**	*e*P	**Pn**	**15 53 03.0**	**+2.1**
	baz=226					
TAI1	**Yung-k'ang**	**1.67 239**	*e*P	**Pn**	**15 53 02.1**	**+1.1**
	baz=236					
TAI1			*e*S	**Sn**	**15 53 22.9**	**+1.8**
	baz=236					
SGLT	**Jiouru**	**1.68 225**	*e*P	**Pn**	**15 53 03.6**	**+2.5**
	baz=221					
PCYT	**Pengchaiyu**	**1.72 9**	P	**Pn**	**15 53 02.8**	**+1.1**
	baz=16					
PCYT			S	**Sn**	**15 53 25.7**	**+3.2**
	baz=16					
EAST	**Anshuo**	**1.75 209**	*e*P	**Pn**	**15 53 01.5**	**-0.7**
	baz=197					
TAW	**Tawu**	**1.75 208**	*e*P	**Pn**	**15 53 01.5**	**-0.7**
	baz=196					
IRIF	**Iriomote-Funau**	**1.83 77**	P	**Pn**	**15 53 04.9**	**+1.8**
IRIF			S	**Sn**	**15 53 27.6**	**+2.5**
HATJ	**Hateruma jima**	**1.86 85**	P	**Pn**	**15 53 05.4**	**+1.9**
HATJ			*e*S	**Sn**	**15 53 28.0**	**+2.2**
SCZT	**Fangliau**	**1.88 215⇓**	*e*P	**Pn**	**15 53 04.8**	**+1.0**
	baz=226					
SCZT			*e*S	**Sn**	**15 53 29.1**	**+2.9**
	baz=226					
LAY	**Lan-yu**	**1.89 186**	*e*P	**Pn**	**15 53 02.9**	**-1.1**
	baz=182					
KAU	**Kaohsiung**	**1.91 225**	*e*P	**Pn**	**15 53 04.7**	**+0.4**
	baz=223					
TWP	**Hsiaoliuchiu**	**2.04 220**	*e*P	**Pn**	**15 53 08.4**	**+2.3**
	baz=216					
WDGT	**Dungji**	**2.05 252⇑**	*i*P	**Pn**	**15 53 06.4**	**+0.2**
	baz=252					
WDGT			*e*S	**Sn**	**15 53 29.4**	**-1.2**
	baz=252					
JKRS	**Kuro-shima**	**2.06 81**	P	**Pn**	**15 53 08.5**	**+2.2**
JKRS			S	**Sn**	**15 53 33.5**	**+2.7**
PNG	**Penghu**	**2.07 261**	⇑P	**Pn**	**15 53 06.5**	**0.0**
	baz=260					
PNG			*e*S	**Sn**	**15 53 30.1**	**-0.9**
	baz=260					
HEN	**Hengchun**	**2.13 207**	*e*P	**Pn**	**15 53 09.4**	**+2.1**
	baz=192					
TWK1	**Hengchun**	**2.16 205**	*e*P	**Pn**	**15 53 08.1**	**+0.3**
	baz=191					
TSEB	**Hengchuen, Pin**	**2.17 202**	*e*P	**Pn**	**15 53 08.7**	**+0.8**
	baz=191					
JIJ	**Ishigaki jima**	**2.20 78**	P	**Pn**	**15 53 09.8**	**+1.5**
JIJ			S	**Sn**	**15 53 35.4**	**+1.1**
JISG	**Ishigakijimahi**	**2.40 73**	P	**Pn**	**15 53 12.4**	**+1.4**
JISG			S	**Sn**	**15 53 40.3**	**+1.0**
JTJ	**Tarama**	**2.76 74**	P	**Pn**	**15 53 17.8**	**+1.8**
JTJ			S	**Sn**	**15 53 49.7**	**+1.6**
QZH	**Quanzhou**	**3.08 290⇓**	*i*P	Pn	15 53 14.9	-5.4
QZH			sP		15 53 27.8	
QZH			S	Sn	15 53 47.1	-8.8
QZH			smax	smax		
	comp=N,4μm,0.8s					
QZH			smax	smax		
	comp=E,10μm,1.5s					
KNM	**Kinmen**	**3.10 280⇑**	*e*P	**Pn**	**15 53 21.6**	**+1.0**
	baz=278					
JIRB	**Irabujima**	**3.22 73**	P	**Pn**	**15 53 23.8**	**+1.5**
JIRB			S	**Sn**	**15 54 00.8**	**+1.3**
JIKM	**Ikemajima**	**3.32 72**	P	**Pn**	**15 53 25.5**	**+1.9**
JIKM			S	**Sn**	**15 54 03.3**	**+1.6**
JMJ	**Miyako jima 2**	**3.33 74**	P	**Pn**	**15 53 25.5**	**+1.8**
JMJ			S	**Sn**	**15 54 03.6**	**+1.6**
JMJ	**Miyako jima 2**	**3.33 74**	*e*P	**Pn**	**15 53 25.3**	**+1.6**
	baz=76					
JOGS	**Gusukube**	**3.41 75**	P	**Pn**	**15 53 27.1**	**+2.2**
JOGS			*e*S	**Sn**	**15 54 05.5**	**+1.4**
JKE	**Kume jima 2**	**5.13 61**	P	**Pn**	**15 53 50.1**	**+1.6**
JKE			*e*S	**Sn**	**15 54 46.2**	**-0.3**
JAGN	**Aguni-jima**	**5.61 61**	P	**Pn**	**15 53 56.5**	**+1.3**
JAGN			*e*S	**Sn**	**15 54 58.6**	**+0.2**
JJT2	**Tamagusuku 2**	**5.85 67**	P	**Pn**	**15 54 00.0**	**+1.6**
JNTH	**Nagotoyohara**	**6.22 64**	P	**Pn**	**15 54 04.5**	**+1.1**
JNTH			*e*S	**Sn**	**15 55 11.4**	**-1.9**
JIH	**Iheya**	**6.39 60**	P	**Pn**	**15 54 06.7**	**+0.8**
JOW	**Kunigami**	**6.55 62**	P	**Pn**	**15 54 08.2**	**+0.1**
	29nm,0.3s,baz=120,slow=14,SNR=162					
JOW			S	**Sn**	**15 55 18.7**	**-2.8**
	1.7nm,0.3s,baz=355,slow=23,SNR=2.6					
JOW	**Kunigami**	**6.55 62**	P	**Pn**	**15 54 08.1**	**+0.1**
JOW			*e*S	**Sn**	**15 55 18.4**	**-3.1**
JOW	**Kunigami**	**6.55 62**	*e*P	**Pn**	**15 54 08.2**	**+0.1**
	baz=64					
JOKE	**Okinoerabujima**	**7.02 59**	P	**Pn**	**15 54 14.0**	**-0.5**
JOKE			*e*S	**Sn**	**15 55 30.3**	**-2.8**
JTK	**Tokunoshima**	**7.52 58**	P	**Pn**	**15 54 20.7**	**-0.6**
JTK			S	**Sn**	**15 55 42.6**	**-2.7**
MCO	**Taipa Grande**	**7.78 258**	P	**Pn**	**15 54 26.0**	**+1.1**
GZH	**Guangzhou**	**7.79 266**	P	Pn	15 54 19.9	-5.1
GZH			smax	smax		
	comp=N,1μm,0.8s					
GZH			smax	smax		
	comp=E,1μm,0.9s					
JAMN	**Amaminishikomi**	**7.92 56**	P	**Pn**	**15 54 25.9**	**-0.9**
JAMN			*e*S	**Sn**	**15 55 52.2**	**-2.9**
JAM	**Amami Oshima**	**8.33 56**	P	**Pn**	**15 54 31.3**	**-1.1**
JAM			*e*S	**Sn**	**15 56 00.6**	**-4.6**
NJ2	**Nanjing**	**8.50 343**	*e*P	**Pn**	**15 54 34.0**	**-0.8**
NJ2			S	**Sn**	**15 56 05.8**	**-3.6**
NJ2			pmax	pmax		
	comp=Z,93nm,0.5s					
NJ2			smax	smax		
	comp=N,240nm,0.9s					
NJ2			smax	smax		
	comp=E,250nm,1.0s					
NJ2			LR	LR		
	comp=N,230nm,14.8s					
NJ2			LR	LR		
	comp=E,250nm,14.9s					
JMZ	**Minamidaito 2**	**8.78 76**	P	Pn	15 54 35.9	-2.7
JMZ			*e*S	Sn	15 56 07.0	-9.3
WHN	**Wuhan**	**9.34 317**	⇓P	Pn	15 54 40.9	-5.3
WHN			S	Sn	15 56 23.6	-6.3
WHN			LR	LR		
	comp=Z,2μm,16.8s					
QIZ	**Qiongzhong**	**12.13 249**	P	**Pn**	**15 55 25.6**	**+1.1**
QIZ			S	**Sn**	**15 57 37.8**	**-0.7**
JNU	**Nakatsue**	**12.16 39**	P	**Pn**	**15 55 27.2**	**+2.3**
	0.6nm,0.3s,baz=189,slow=4.3,SNR=13					
JNU	**Nakatsue**	**12.16 39**	*e*Pn	**Pn**	**15 55 26.9**	**+2.0**
ENH	**Enshi**	**12.64 303**	*e*Pn	**Pn**	**15 55 31.9**	**+0.5**
GYA	**Guiyang**	**13.92 284⇓**	*i*P	**Pn**	**15 55 48.0**	**-1.0**
GYA			pP	P	15 55 58.0	+1.6
GYA			PP	**PnPn**	**15 56 01.2**	**+4.2**
GYA			S	**Sn**	**15 58 25.4**	**+3.2**
GYA			sS	S	15 58 37.5	-5.2
GYA			pmax	pmax		
	comp=Z,30nm,1.0s					
GYA			pmax	pmax		
	comp=Z,120nm,4.9s					
GYA			LR	LR		
	comp=N,600nm,7.5s					
GYA			LR	LR		
	comp=E,780nm,14.3s					
GYA			LR	LR		
	comp=Z,1μm,12.4s					
INCN	**Inchon**	**14.14 16**	*e*P	**P**	**15 55 58.9**	**+0.2**
KS15	**Wonju Array Si**	**14.46 20**	*e*Pn	**P**	**15 55 59.6**	**-2.6**
KSAR	**Wonju Array Be**	**14.46 20**	P	**Pn**	**15 55 59.0**	**+2.8**
KSAR	**Wonju Array Be**	**14.46 20**	P	**Pn**	**15 55 59.0**	**+2.8**
KSRS	**Korea Array**	**14.48 20**	P	**Pn**	**15 55 59.0**	**+2.5**
	0.6nm,0.3s,baz=198,slow=13,SNR=42					
KS01	**Wonju Array Si**	**14.49 20**	*e*Pn	**Pn**	**15 55 58.5**	**+1.9**
DL2	**Dalian**	**14.94 360**	P	**P**	**15 56 05.9**	**-1.6**
DL2			pmax	pmax		
	comp=Z,91nm,0.8s					
DL2			LR	LR		
	comp=E,510nm,18.2s					
DL2			LR	LR		
	comp=Z,540nm,12.6s					
XAN	**Xi'an**	**15.09 315**	P	**Pn**	**15 56 04.5**	**-0.2**
XAN			pP	P	15 56 12.5	+3.2
XAN			S	**Sn**	**15 58 49.9**	**-0.8**
XAN			sS	S	15 59 02.5	-4.1
XAN			pmax	pmax		
	comp=Z,20nm,1.1s					
XAN			pmax	pmax		
	comp=Z,72nm,6.3s					
XAN			LR	LR		
	comp=N,390nm,12.2s					
XAN			LR	LR		
	comp=E,480nm,12.2s					
XAN			LR	LR		
	comp=Z,730nm,14.2s					
TIY	**Taiyuan**	**15.90 332**	*e*P	**Pn**	**15 56 16.5**	**+1.3**
TIY			pmax	pmax		
	comp=Z,210nm,3.9s					
TIY			LR	LR		
	comp=N,450nm,9.4s					
TIY			LR	LR		
	comp=E,200nm,3.7s					
TIY			LR	LR		
	comp=Z,520nm,16.4s					
BJI	**Beijing**	**16.75 345**	P	**P**	**15 56 29.0**	**+1.4**
BJI			S	**Sn**	**15 59 32.7**	**+1.9**
BJI			pmax	pmax		
	comp=Z,9.0nm,1.0s					
BJI			pmax	pmax		
	comp=Z,120nm,4.0s					
BJI			LR	LR		
	comp=N,280nm,16.4s					
KMI	**Kunming**	**17.37 278**	P	**P**	**15 56 35.8**	**+1.0**
KMI			pP	pP	15 56 44.3	-0.5
KMI			sP	sP	15 56 47.1	-2.9
KMI			S	**Sn**	**15 59 43.1**	**-3.2**
KMI			pmax	pmax		
	comp=Z,13nm,1.1s					
KMI			pmax	pmax		
	comp=Z,170nm,4.6s					
KMI			LR	LR		
	comp=N,450nm,7.6s					
KMI			LR	LR		
	comp=E,350nm,4.1s					
KMI			LR	LR		
	comp=Z,580nm,13.6s					
PANO	**Nakornpanom**	**17.43 250**	P	P	15 56 42.0	+6.8
	30nm,1.4s					
CD2	**Chengdu**	**17.44 297**	P	**Pn**	**15 56 33.9**	**-0.6**
CD2			pP	pP	15 56 44.2	-1.1
CD2			PP	**sP**	**15 56 50.6**	**+0.1**
CD2			S	**Sn**	**15 59 47.7**	**0.0**
CD2			pmax	pmax		
	comp=Z,40nm,0.8s					
CD2			pmax	pmax		
	comp=Z,160nm,5.9s					
CD2			LR	LR		
	comp=N,1μm,6.5s					
CD2			LR	LR		
	comp=E,1μm,11.9s					
CD2			LR	LR		
	comp=Z,1μm,11.9s					
SNY	**Shenyang**	**17.92 4**	⇑P	**Pn**	**15 56 38.1**	**-2.1**
SNY			pmax	pmax		
	comp=Z,5.0nm,0.3s					
SNY			pmax	pmax		
	comp=Z,130nm,6.1s					
SNY			LR	LR		
	comp=N,240nm,11.8s					
SNY			LR	LR		
	comp=E,380nm,23.1s					
SNY			LR	LR		
	comp=Z,500nm,14.9s					
SKNT	**Sakolnakorn**	**18.04 251**	P	Pn	15 56 48.7	+6.7
	22nm,1.6s					
JHJ	**Hachijo jima 2**	**18.26 56**	LR	LR	16 03 37.4	
	comp=Z,158nm,21.9s,baz=251,slow=36					
NONG	**Nongkai**	**18.34 255**	P	**Pn**	**15 56 48.5**	**+2.9**
	12nm,1.0s					
JCJ	**Chichijima**	**18.69 76**	LR	LR	16 02 59.0	
	comp=Z,417nm,21.8s,baz=62,slow=34					
HHC	**Hu-ho-hao-te**	**18.93 336**	*e*P	**Pn**	**15 56 54.3**	**+1.6**
HHC			S	**Sn**	**16 00 18.8**	**-4.9**
HHC			pmax	pmax		
	comp=Z,45nm,0.7s					
HHC			pmax	pmax		
	comp=Z,240nm,3.6s					
HHC			LR	LR		
	comp=N,2μm,10.3s					
HHC			LR	LR		
	comp=E,2μm,10.3s					
HHC			LR	LR		
	comp=Z,2μm,11.4s					
MAJO	**Matsushiro**	**18.93 45**	*i*P	**P**	**15 56 49.3**	**-2.4**
MAJO	**Matsushiro**	**18.93 45**	*e*P	**P**	**15 56 51.5**	**-0.2**
	9.1nm,0.8s					
MAT	**Matsushiro**	**18.93 45**	P	**P**	**15 56 50.1**	**-1.6**
MJAR	**Matsushiro Arr**	**18.93 45**	P	**P**	**15 56 49.5**	**-2.2**
	0.2nm,0.3s,baz=238,slow=9.5,SNR=18					
MJB9	**Matsu-Tunnel**	**18.93 45**	*e*P	**P**	**15 56 51.5**	**-0.2**
	2.3nm,0.9s					
LZH	**Lanzhou**	**19.67 312**	*e*P	**Pn**	**15 57 01.8**	**+0.2**
LZH			pP	pP	15 57 11.3	+1.3
LZH			sP	sP	15 57 17.0	+1.9
LZH			PP	**PnPn**	**15 57 21.4**	**+5.5**
LZH			sS	Sn	16 00 50.0	+8.4
LZH			pmax	pmax		
	comp=Z,110nm,1.3s					
LZH			pmax	pmax		
	comp=Z,290nm,5.2s					
LZH			LR	LR		
	comp=N,460nm,10.2s					
LZH			LR	LR		
	comp=E,450nm,12.1s					
LZH			LR	LR		
	comp=Z,770nm,15.0s					
CN2	**Changchun**	**20.06 8**	*e*P	**P**	**15 57 03.3**	**-0.6**
CRAI	**Chiangrai**	**20.17 264**	P	Pn	15 57 07.8	+0.3
	576nm,0.8s					
LOEI	**Loei**	**20.21 255**	P	**P**	**15 57 04.5**	**-1.3**
	30nm,1.1s					
CHAI	**Chaiyaphum**	**20.23 250**	P	Pn	15 57 08.9	+0.7
	4.1nm,1.1s,51nm					
UTTA	**Uttaradit**	**20.76 257**	P	Pn	15 57 14.6	+0.3
	2.1nm,0.7s					
PBKT	**Sadao Pong**	**20.83 253**	P	**P**	**15 57 14.3**	**+1.8**
	21nm,1.1s					
VLA	**Vladivostok**	**20.89 21⇑**	*i*P	**P**	**15 57 09.0**	**-3.9**
VLA			*i*		15 57 27.7	
VLA			*e*S	**S**	**16 00 59.9**	**-3.6**
VLA			*e*		16 01 16.8	
VLA			pmax	pmax		
	comp=Z,36nm,1.7s					
LAMP	**Lampang**	**21.32 260**	P	**P**	**15 57 19.8**	**+2.0**
	comp=Z,11nm,1.0s,comp=Z,96nm					
CMAI	**Chiengmai2**	**21.45 264**	P	**P**	**15 57 21.5**	**+2.1**
	comp=Z,23nm,1.2s,comp=Z,4μm					
CHBT	**CHBT**	**21.52 242**	P	P	15 57 24.8	+5.0
	comp=Z,21nm,1.0s,comp=Z,1μm					
MDJ	**Mudanjiang**	**21.61 15**	P	**P**	**15 57 21.6**	**+1.0**
MDJ			pP	pP	15 57 31.6	+0.8
MDJ			sP	sP	15 57 36.9	+0.9
MDJ			S	**S**	**16 01 20.3**	**+2.5**
MDJ			PcS	**PcS**	**16 04 59.5**	**0.0**
MDJ			pmax	pmax		
	comp=Z,25nm,1.4s					
MDJ			pmax	pmax		
	comp=Z,27nm,3.4s					
MDJ			LR	LR		
	comp=Z,260nm,13.0s					
MDJ			LR	LR		
	comp=Z,160nm,14.4s					
MDJ			LR	LR		
	comp=Z,330nm,14.1s					
MDJ	**Mudanjiang**	**21.61 15**	*e*P	**P**	**15 57 20.5**	**-0.1**
SUKH	**Sukhothai**	**21.67 257**	P	**P**	**15 57 23.5**	**+2.0**
	comp=Z,5.2nm,1.1s,comp=Z,51nm					
CHTO	**Chiang Mai**	**21.85 261**	P	**P**	**15 57 24.8**	**+1.3**
	comp=Z,115nm,1.2s					
CHTO	**Chiang Mai**	**21.85 261**	*e*P	**P**	**15 57 24.8**	**+1.3**
CHTO			pmax	pmax		
	comp=Z,28nm,1.1s					
CHTO	**Chiang Mai**	**21.85 261**	*e*P	**P**	**15 57 24.8**	**+1.3**
	comp=Z,28nm,1.1s					
USRK	**Ussuriysk Ar.**	**21.89 20**	P	**P**	**15 57 23.4**	**-0.2**
	comp=Z,8.7nm,0.8s,baz=209,slow=10,SNR=16					
CM01	**Chiang Mai Arr**	**21.96 260**	*e*P	**P**	**15 57 25.4**	**+0.7**
CM31	**Chiang Mai Arr**	**21.96 260**	*e*P	**P**	**15 57 26.1**	**+1.4**
CMAR	**Chiang Mai Arr**	**21.96 260**	P	**P**	**15 57 26.1**	**+1.4**
	comp=Z,10nm,1.0s,baz=61,slow=8.4,SNR=60					
CMAR			LR	LR	16 06 30.2	
	comp=Z,184nm,19.3s,baz=82,slow=38					
MHMT	**Maesarieng**	**22.96 260**	P	**P**	**15 57 36.7**	**+1.4**
	comp=Z,7.4nm,1.4s,comp=Z,181nm					
SBUM	**Sibu**	**23.26 205**	*e*P	**P**	**15 57 36.5**	**-1.7**
	comp=Z,18nm,0.9s					
GTA	**Gaotai**	**24.16 315**	⇓P	**P**	**15 57 46.8**	**+0.1**
GTA			pP	pP	15 57 59.0	+1.2
GTA			sP	sP	15 58 05.5	+2.8
GTA			S	**S**	**16 01 59.2**	**-2.9**
GTA			sS	sS	16 02 19.2	-1.2
GTA			pmax	pmax		
	comp=Z,20nm,1.4s					
GTA			pmax	pmax		
	comp=Z,110nm,4.5s					
GTA			LR	LR		
	comp=Z,220nm,14.7s					
GTA			LR	LR		
	comp=Z,350nm,18.1s					
GTA			LR	LR		
	comp=Z,460nm,15.2s					
KSM	**Kuching**	**24.93 208**	*e*P	**P**	**15 57 52.9**	**-0.8**
	comp=Z,44nm,1.2s					
HIA	**Hailar**	**25.35 357**	*e*P	**P**	**15 57 57.1**	**-0.2**
HIA			pmax	pmax		
	comp=Z,7.0nm,0.4s					
HIA	**Hailar**	**25.35 357**	*e*P	**P**	**15 57 57.1**	**-0.2**
	comp=Z,7.2nm,0.4s					
STKI	**Sintang**	**25.73 204**	P	**P**	**15 58 02.4**	**+1.4**
	comp=Z,17nm,0.5s					
ASAJ	**Asahikawa**	**26.39 35**	P	**P**	**15 58 05.3**	**-1.4**
	comp=Z,10.0nm,0.9s,baz=248,slow=9.3,SNR=8.6					
ASAJ			LR	LR	16 09 24.5	
	comp=Z,165nm,19.1s,baz=218,slow=38					
KLR	**Kul'dur**	**26.45 15**	P	**P**	**15 58 06.8**	**-0.4**
	comp=Z,14nm,0.9s,baz=226,slow=8.4,SNR=34					
KLR	**Kul'dur**	**26.45 15**	*d i*P	**P**	**15 58 06.1**	**-1.1**
ULN	**Ulaanbaatar**	**26.61 338**	*d i*P	**P**	**15 58 08.9**	**0.0**
ULN			pmax	pmax		
	comp=Z,45nm,1.0s					
ULN	**Ulaanbaatar**	**26.61 338**	*e*P	**P**	**15 58 08.6**	**-0.3**
	comp=Z,33nm,0.8s					
HABR	**Khabarovsk**	**26.66 20**	*e*P	**P**	**15 58 05.4**	**-3.7**
HABR			*e**PP	pP	15 58 14.8	-5.4
HABR			*e**SP	sP	15 58 19.2	-5.9
HABR			*e*PPP	PPP	15 58 55.1	
HABR			*e*		16 01 29.0	
HABR			*e*S	**S**	**16 02 38.6**	**-2.8**
HABR			*e**SS	sS	16 02 54.9	-5.1
HABR			*e*SS	**SnSn**	**16 03 43.7**	**-3.3**
HABR			*e*		16 08 56.5	
HABR			pmax	pmax		
	comp=N,40nm,3.3s					
HABR			pmax	pmax		
	comp=Z,27nm,3.3s					
HABR			pmax	pmax		
	comp=E,93nm,3.5s					
HABR			MLR	MLR		
	comp=Z,71nm,17.0s					
SONM	**Songino Array**	**26.82 337**	P	**P**	**15 58 10.9**	**+0.1**
	comp=Z,15nm,0.8s,baz=153,slow=9.4,SNR=36					
SONA1	**Songino Array**	**26.83 337**	*e*P	**P**	**15 58 10.4**	**-0.4**
SHL	**Shillong**	**27.18 280**	*e*P	**P**	**15 58 11.0**	**-3.2**
NLAI	**Namlea**	**27.49 168**	P	**P**	**15 58 18.6**	**+1.8**
	comp=Z,33nm,0.9s					

KULM Kulim 27.51 231 *eP* **P 15 58 18.5 +1.4**
comp=Z,11nm,1.0s
LSA Lhasa 27.89 289 *eP* **P 15 58 22.1 +1.2**
LSA pmax pmax
comp=Z,14nm,0.7s
LSA Lhasa 27.89 289 *eP* **P 15 58 22.1 +1.2**
comp=Z,14nm,0.7s
YSS Yuzh-Sakhalins 28.47 31 *eP* **P 15 58 26.7 +1.4**
YSS pmax pmax
comp=Z,30nm,0.9s
YSS Yuzh-Sakhalins 28.47 31 *eP* **P 15 58 26.8 +1.4**
comp=Z,28nm,0.9s
KAPI Kappang 28.83 184 LR LR 16 09 43.1
comp=Z,69nm,21.5s,baz=19,slow=36
ZAK Zakamensk 30.08 336 *eP* **P 15 58 39.0 -0.7**
ZAK pmax pmax
comp=Z,4.0nm,1.0s
PSI Prapat 30.48 230 *eP* **P 15 58 42.6 -0.9**
PSI pmax pmax
comp=Z,10.0nm,0.5s
PSI Prapat 30.48 230 *eP* **P 15 58 42.6 -0.9**
comp=Z,10nm,0.5s
TLY Talaya 31.02 338 P **P 15 58 47.8 -0.1**
comp=Z,9.8nm,0.8s,baz=174,slow=5.8,SNR=20
TLY Talaya 31.02 338 *eP* **P 15 58 48.0 +0.1**
TLY pmax pmax
comp=Z,12nm,0.9s
TLY MLR MLR
comp=Z,172nm,15.0s
TLY Talaya 31.02 338 *eP* **P 15 58 47.4 -0.5**
comp=Z,11nm,0.8s
MNSI Mandailing Nat 31.49 226 P **P 15 58 53.8 +1.5**
comp=Z,26nm,0.4s,comp=Z,2μm
MOY Mondy 31.97 335 *eP* **P 15 58 56.1 -0.3**
MOY pmax pmax
comp=Z,16nm,1.6s
NKL Nikolayevsk 32.51 21 *eP* **P 15 59 00.5 -0.4**
PWJI Pagerwojo 33.21 198 P **P 15 59 07.2 -0.2**
BATI Baumata 33.97 177 LR LR 16 12 28.0
comp=Z,122nm,21.0s,baz=126,slow=35
WMQ Urumqi 34.23 314 P **P 15 59 17.3 +1.2**
WMQ S **S 16 04 44.5 +4.3**
WMQ pmax pmax
comp=Z,7.0nm,1.0s
WMQ pmax pmax
comp=Z,40nm,3.5s
MTN Manton Dam 37.67 165 *eP* P 15 59 42.8 -2.9
comp=Z,18nm,1.3s
YAK Yakutsk 38.47 6 P **P 15 59 50.7 -1.3**
comp=Z,9.2nm,0.6s,baz=221,slow=9.1,SNR=11
YAK LR LR 16 17 40.6
comp=Z,114nm,18.1s,baz=192,slow=39
YAK Yakutsk 38.47 6 *eP* **P 15 59 50.5 -1.4**
YAK pmax pmax
comp=Z,14nm,1.1s
YAK Yakutsk 38.47 6 *eP* **P 15 59 49.6 -2.4**
comp=Z,12nm,0.7s
MK01 Makanchi Array 38.89 316 *eP* **P 15 59 55.9 +0.2**
MK01 *eS* **S 16 05 50.0 -1.2**
MK31 Makanchi Array 38.90 316 *eP* **P 15 59 56.0 +0.1**
MK31 Makanchi Array 38.90 316 *eP* **P 15 59 56.0 +0.1**
MKAR Makanchi Array 38.90 316 P **P 15 59 56.2 +0.3**
comp=Z,25nm,0.8s,baz=109,slow=9.7,SNR=173
MKAR PcP **PcP 16 02 05.2 -0.8**
comp=Z,1.2nm,0.7s,baz=89,slow=5.1,SNR=4.0
MAKZ Makanchi 39.11 316 P **P 15 59 56.9 -0.7**
MAKZ pmax pmax
comp=Z,38nm,1.0s
MAKZ Makanchi 39.11 316 *eP* **P 15 59 57.8 +0.2**
comp=Z,38nm,1.0s
PDGK Podgornoye 39.68 310 P **P 16 00 02.5 +0.2**
PDGK pmax pmax
comp=Z,27nm,0.8s
PETK Petropavlovsk- 39.78 34 LR LR 16 18 10.2
comp=Z,61nm,18.0s,baz=227,slow=39
ZALV Zalesovo Beam 40.76 327 P **P 16 00 10.3 -0.8**
comp=Z,37nm,0.7s,baz=113,slow=7.8,SNR=159
MA2 Magadan 41.02 22 LR LR 16 19 19.2
comp=Z,94nm,18.1s,baz=238,slow=39
KSH Kashi 41.50 303 P P 16 00 21.2 +3.6
KSH *epP* *sP* 16 00 33.7 -0.2
KSH *esP* *pP* 16 00 38.9 +10
KSH *eScP* **ScP 16 06 02.3 +0.7**
KSH PcS **PcS 16 06 07.7 +1.6**
KSH S **S 16 06 34.7 +4.2**
KSH SS **SS 16 09 36.5 +0.6**
KSH pmax pmax
comp=Z,10.0nm,0.9s
KSH pmax pmax
comp=Z,140nm,4.7s
KSH LR LR
comp=Z,140nm,5.2s
KSH LR LR
comp=Z,110nm,5.1s
KSH LR LR
comp=Z,340nm,15.6s
NVS Novosibirsk 42.02 327⇑ *iP* **P 16 00 21.0 -0.4**
NVS pmax pmax
comp=N,7.0nm,0.9s
NVS pmax pmax
comp=E,9.0nm,0.9s
NVS pmax pmax
comp=Z,15nm,0.9s
TKM2 Tokmak 2 42.35 308 P **P 16 00 25.3 +0.7**
TKM2 pmax pmax
comp=Z,19nm,0.9s
TKM2 Tokmak 2 42.35 308 *eP* **P 16 00 25.4 +0.8**
comp=Z,18nm,0.8s
KURK Kurchatov 42.64 320*d iP* **P 16 00 26.4 -0.1**
KURK pmax pmax
comp=Z,24nm,0.8s
KURK Kurchatov 42.64 320 *eP* **P 16 00 26.5 -0.1**
comp=Z,22nm,0.9s
FRU Bishkek 43.04 308 *eP* **P 16 00 28.0 -2.0**
AAK Ala-Archa 43.10 307⇓ *iP* **P 16 00 31.6 +1.0**
AAK pmax pmax
comp=Z,18nm,1.0s
AAK Ala-Archa 43.10 307 *eP* **P 16 00 31.2 +0.6**
comp=Z,6.3nm,0.9s
SFK Sufi-Kurgan 43.45 304 P **P 16 00 34.4 +0.8**
SFK pmax pmax
comp=Z,11nm,0.7s
EKS2 Erkin-Say 43.62 307 *eP* **P 16 00 35.6 +0.8**
EKS2 pmax pmax
comp=Z,7.0nm,0.8s
EKS2 Erkin-Say 43.62 307 *eP* **P 16 00 35.6 +0.8**
comp=Z,6.7nm,0.8s
SEY Seymchan 44.04 20 P **P 16 00 37.1 -0.6**
comp=Z,2.2nm,0.8s,baz=226,slow=7.2,SNR=9.4
SEY Seymchan 44.04 20*ceP* **P 16 00 36.5 -1.2**
MNAS Manas 44.52 307 P **P 16 00 43.2 +1.1**
MNAS pmax pmax
comp=Z,21nm,1.0s
WRAB Tennant Creek 45.28 163*ceP* **P 16 00 46.6 -1.4**
WRAB pmax pmax
comp=Z,12nm,1.0s
WRA Warramunga Arr 45.28 163 P **P 16 00 46.9 -1.2**
comp=Z,4.5nm,0.6s,baz=346,slow=8.7,SNR=36
OTUK Ortayu 45.76 315 P **P 16 00 51.8 +0.1**
OTUK pmax pmax
comp=Z,26nm,1.1s
KK31 Karatay Array 46.06 307 *i P* **P 16 00 54.3 +0.2**
KK31 pmax pmax
comp=Z,5.0nm,0.7s
KKAR Karatay Array 46.06 307 *eP* **P 16 00 54.5 +0.4**
KKAR Karatay Array 46.06 307 *eP* **P 16 00 54.5 +0.4**
KBL Kabul 46.77 296 *eP* **P 16 01 00.5 +0.5**
KBL pmax pmax
comp=Z,12nm,1.0s
KBL Kabul 46.77 296 *eP* **P 16 01 00.5 +0.5**
comp=Z,12nm,1.0s
VOSK Vostochnaya 47.79 320 P **P 16 01 05.3 -2.1**
VOSK pmax pmax
comp=Z,14nm,0.9s
VOSK Vostochnaya 47.79 320 *eP* **P 16 01 06.5 -0.9**
comp=Z,14nm,0.8s
TIXI Tiksi 47.93 3 P **P 16 01 06.4 -1.8**
comp=Z,15nm,0.8s,baz=164,slow=4.9,SNR=55
TIXI Tiksi 47.93 3⇓ *iP* **P 16 01 05.7 -2.4**
TIXI pmax pmax
comp=Z,24nm,1.0s
TIXI Tiksi 47.93 3 *eP* **P 16 01 05.9 -2.2**
comp=Z,18nm,0.9s
BVA0 Borovoye Array 48.22 321 *i P* **P 16 01 10.1 -0.6**
BVA0 pmax pmax
comp=Z,10.0nm,0.8s

BRVK Borovoye 48.29 321*d iP* **P 16 01 11.2 -0.1**
BRVK pmax pmax
comp=Z,28nm,0.8s
BRVK Borovoye 48.29 321 *eP* **P 16 01 10.5 -0.8**
comp=Z,29nm,0.9s
AS31 Alice Springs 48.74 165 *eP* **P 16 01 13.8 -1.2**
comp=Z,1.4nm,0.5s
ASAR Alice Springs 48.75 165 P **P 16 01 14.7 -0.4**
comp=Z,3.8nm,0.7s,baz=339,slow=6.8,SNR=78
ASAR LR LR 16 23 01.3
comp=Z,49nm,18.6s,baz=356,slow=37
AS01 Alice Springs 48.76 165 *eP* **P 16 01 13.7 -1.4**
NRIK Noril'sk 49.80 345 P **P 16 01 21.1 -1.4**
comp=Z,6.6nm,0.9s,baz=125,slow=7.6,SNR=16
CTA Charters Tower 49.82 149 P **P 16 01 25.1 +1.7**
comp=Z,4.0nm,0.9s,baz=350,slow=6.8,SNR=4.3
BILL Bilibino 51.75 20⇓ *iP* **P 16 01 35.5 -1.7**
BILL *e* 16 02 45.5
BILL *e* 16 03 34.3
BILL pmax pmax
comp=Z,11nm,1.2s
BILL MLR MLR
comp=Z,101nm,16.0s
BILL Bilibino 51.75 20 *eP* **P 16 01 36.4 -0.8**
comp=Z,23nm,1.6s
AB31 Akbulak array 54.01 314 *i P* **P 16 01 54.1 -0.1**
AB31 pmax pmax
comp=Z,10.0nm,0.7s
ABKAR Akbulak array 54.01 314 *eP* **P 16 01 54.0 -0.3**
SVE Sverdlovsk 54.58 324*c iP* **P 16 01 58.1 -0.1**
SVE pmax pmax
comp=Z,41nm,0.9s
AKTO Aktyubinsk 55.34 316 P **P 16 02 04.2 +0.4**
comp=Z,8.0nm,0.8s,baz=79,slow=7.9,SNR=20
AKTO Aktyubinsk 55.34 316 P **P 16 02 03.0 -0.9**
AKTO pmax pmax
comp=Z,9.0nm,0.9s
GEYT Alibeck 55.40 301 P **P 16 02 05.7 +1.2**
comp=Z,7.5nm,0.9s,baz=64,slow=3.4,SNR=15
GEYT LR LR 16 30 00.3
comp=Z,144nm,18.2s,baz=60,slow=40
ARU Arti 55.64 323 P **P 16 02 05.2 -0.7**
comp=Z,23nm,0.7s,baz=104,slow=2.3,SNR=38
ARU Arti 55.64 323*c iP* **P 16 02 04.9 -1.0**
ARU 16 03 03.6
ARU S **S 16 09 51.1 +2.1**
ARU SS **SS 16 13 37.7 +3.5**
ARU pmax pmax
comp=Z,38nm,1.0s
ARU Arti 55.64 323 *eP* **P 16 02 04.9 -1.0**
comp=Z,28nm,0.8s
SOKR Solikamsk 57.05 327 *eP* **P 16 02 13.6 -2.2**
SOKR pmax pmax
comp=Z,14nm,0.8s
STKA Stephens Creek 58.63 160 P **P 16 02 26.8 -0.5**
comp=Z,2.7nm,0.7s,baz=326,slow=7.9,SNR=12
GNI Garni 65.40 305 *i P* **P 16 03 13.4 +0.4**
GNI pmax pmax
comp=Z,19nm,1.0s
TTA Tatalina 65.46 30 *eP* **P 16 03 12.5 -0.4**
TTA pmax pmax
comp=Z,25nm,1.6s
TTA Tatalina 65.46 30 *eP* **P 16 03 12.4 -0.4**
comp=Z,25nm,1.6s
ZEI Tsey 65.52 308 *eP* **P 16 03 12.2 -1.6**
ZEI pmax pmax
comp=Z,19nm,0.6s
VRH Novokhopyorsk 65.62 317 *eP* **P 16 03 13.8 -0.1**
VRH pmax pmax
comp=Z,10.0nm,0.4s
KLMR Klimovskoe 65.67 328 *eP* **P 16 03 12.1 -2.0**
KLMR *e* 16 03 44.1
KLMR pmax pmax
comp=Z,22nm,1.0s
SVW2 Sparrevohn 65.83 32 *eP* **P 16 03 15.8 +0.6**
comp=Z,7.9nm,1.0s
TMCR Tamitsa 66.04 332 *eP* **P 16 03 15.6 -0.8**
TMCR pmax pmax
comp=Z,24nm,1.0s
KBZ Khabaz 66.07 309 P **P 16 03 17.1 +0.1**
comp=Z,6.6nm,0.9s,baz=103,slow=3.0,SNR=19
KIV Kislovodsk 66.17 309 *eP* **P 16 03 18.2 +0.4**
KIV pmax pmax
comp=Z,13nm,0.9s
KIV MLR MLR
comp=Z,62nm,17.0s
NEY Neytrino 66.28 308 *i P* **P 16 03 19.7 +1.1**
NEY pmax pmax
comp=Z,1.0nm,0.7s
LPSR Galich'ya Gora 67.11 319 *eP* **P 16 03 22.5 -1.0**
LPSR pmax pmax
comp=Z,20nm,1.1s
CAST Castle Rocks 67.18 29 *eP* **P 16 03 24.5 +0.7**
comp=Z,15nm,0.9s
VSR Storozhevoye 67.20 317 *eP* **P 16 03 22.8 -1.3**
VSR pmax pmax
comp=Z,10.0nm,1.0s
PPLA Purkeypile 67.21 30 *eP* **P 16 03 24.0 -0.1**
comp=Z,91nm,2.0s
RSO Redoubt South 67.29 32 *eP* **P 16 03 25.1 +0.4**
COLD Coldfoot 67.44 25 *eP* **P 16 03 25.7 +0.4**
comp=Z,8.7nm,1.0s
SPU Mount Spurr 67.52 32 *eP* **P 16 03 27.2 +1.2**
MLY Manley 67.53 27 *eP* **P 16 03 26.9 +0.8**
comp=Z,21nm,1.2s
BPAW Bear Paw Mtn. 67.57 28 *eP* **P 16 03 26.4 +0.2**
comp=Z,13nm,1.0s
KTH Kantishna Hill 67.68 29 *eP* **P 16 03 26.7 -0.3**
comp=Z,11nm,0.8s
TRF Thorofare Moun 67.97 29 *eP* **P 16 03 29.8 +0.8**
comp=Z,7.1nm,0.7s
OBN Obninsk 68.04 322 P **P 16 03 27.7 -1.6**
comp=Z,6.6nm,0.3s,baz=304,slow=4.5,SNR=3.4
OBN Obninsk 68.04 322⇓ *eP* **P 16 03 28.2 -1.1**
OBN pmax pmax
comp=Z,23nm,1.5s
OBN MLR MLR
comp=Z,63nm,20.0s
BWN Browne 68.21 28 *eP* **P 16 03 31.7 +1.4**
comp=Z,15nm,0.7s
MCK McKinley 68.52 29 *eP* **P 16 03 32.6 +0.4**
MCK pmax pmax
comp=Z,68nm,1.7s
MCK McKinley 68.52 29 *eP* **P 16 03 32.6 +0.4**
comp=Z,68nm,1.7s
MDM Murphy Dome 68.60 27 *eP* **P 16 03 33.1 +0.5**
comp=Z,65nm,1.5s
RND Reindeer 68.62 29 *eP* **P 16 03 32.6 -0.3**
RND pmax pmax
comp=Z,36nm,0.8s
RND Reindeer 68.62 29 *eP* **P 16 03 32.6 -0.3**
comp=Z,36nm,0.8s
WRH Wood River Hil 68.75 28 *eP* **P 16 03 34.0 +0.5**
comp=Z,36nm,1.7s
CCB Clear Creek Bu 68.83 27 *eP* **P 16 03 34.9 +0.8**
comp=Z,6.3nm,1.3s
PMR Palmer 68.83 31 *eP* **P 16 03 33.7 -0.4**
PMR pmax pmax
comp=Z,63nm,1.8s
PMR Palmer 68.83 31 *eP* **P 16 03 33.7 -0.4**
comp=Z,63nm,1.8s
SEW Seward 68.97 32 *eP* **P 16 03 35.8 +0.8**
comp=Z,22nm,1.1s
SML Sawmill 69.17 31 *eP* **P 16 03 36.3 0.0**
SML pmax pmax
comp=Z,29nm,1.3s
SML Sawmill 69.17 31 *eP* **P 16 03 36.3 0.0**
comp=Z,29nm,1.3s
ILAR Eielson Array 69.20 27 P **P 16 03 35.5 -0.9**
comp=Z,2.9nm,0.7s,baz=287,slow=8.9,SNR=40
HDA Harding Lake 69.25 28 *eP* **P 16 03 35.9 -0.7**
comp=Z,43nm,1.8s
FYU Fort Yukon 69.48 25 *eP* **P 16 03 39.0 +1.0**
comp=Z,51nm,1.5s
SCM Sheep Creek Mo 69.63 30 *eP* **P 16 03 39.6 +0.4**
SCM pmax pmax
comp=Z,27nm,0.8s
SCM Sheep Creek Mo 69.63 30 *eP* **P 16 03 39.5 +0.4**
comp=Z,27nm,0.8s
ANN Anapa 69.68 311 *eP* **P 16 03 37.2 -2.4**
ANN *eS* **S 16 12 46.3 +0.9**
ANN pmax pmax
comp=Z,16nm,0.9s
ARCES ARCESS Array B 69.98 338 P **P 16 03 40.9 -0.3**
comp=Z,3.9nm,0.8s,baz=64,slow=8.5,SNR=7.2
PAX Paxson 70.21 29 *eP* **P 16 03 42.5 -0.3**

PAX pmax pmax
comp=Z,44nm,1.8s
PAX Paxson 70.21 29 *eP* **P 16 03 42.5 -0.3**
comp=Z,44nm,1.8s
KLU Klutina 70.36 31 *eP* **P 16 03 43.3 -0.3**
comp=Z,29nm,1.5s
DIV Divide 70.52 31 *eP* **P 16 03 45.3 +0.6**
comp=Z,18nm,1.2s
DOT Dot Lake 70.66 28 *eP* **P 16 03 45.2 -0.2**
comp=Z,101nm,1.7s
MENT Mentasta 70.99 29 *eP* **P 16 03 48.1 +0.7**
comp=Z,11nm,0.9s
BMRM Bremner River 71.11 31 *eP* **P 16 03 49.3 +1.1**
comp=Z,18nm,1.1s
EGAK Eagle 71.57 27 *eP* **P 16 03 50.9 0.0**
comp=Z,77nm,1.9s
FIA1 FINESS Array S 71.94 330 *eP* **P 16 03 52.5 -0.6**
FINES FINESS Array B 71.95 330 P **P 16 03 51.8 -1.4**
comp=Z,4.8nm,0.7s,baz=57,slow=7.0,SNR=14
BALM Baldy 72.14 31 *eP* **P 16 03 55.5 +1.0**
BALM pmax pmax
comp=Z,14nm,1.2s
BALM Baldy 72.14 31 *eP* **P 16 03 55.5 +1.0**
comp=Z,14nm,1.2s
DAWY Dawson 72.52 27 *eP* **P 16 03 57.2 +0.5**
INK Inuvik 73.26 22 *eP* **P 16 04 00.7 -0.1**
INK pmax pmax
comp=Z,33nm,1.0s
INK Inuvik 73.26 22 *eP* **P 16 04 00.7 -0.1**
comp=Z,33nm,1.0s
AKASG Malin Array Be 73.43 318 P **P 16 04 00.8 -1.3**
comp=Z,2.2nm,0.6s,baz=59,slow=6.7,SNR=11
NACGM Naroch 73.55 323 *e* **P 16 04 03.0 +0.2**
ASF Jabal al Asfar 73.57 298 P **P 16 04 04.5 +1.1**
comp=Z,3.9nm,0.9s,baz=98,slow=6.1,SNR=4.1
BR131 Keskin Array S 73.77 307 *eP* **P 16 04 04.2 -0.3**
BRTR Keskin Array B 73.77 307 P **P 16 04 04.5 0.0**
comp=Z,5.1nm,0.9s,baz=104,slow=5.2,SNR=27
CSS Mathiatis 75.50 302 *eP* **P 16 04 14.1 -0.5**
comp=Z,2.2nm,0.7s
SKAG Skagway 75.97 31 *eP* **P 16 04 17.1 +0.4**
comp=Z,19nm,0.9s
VRI Vrincioaia 76.58 314⇓ *iP* **P 16 04 21.2 +0.7**
BURAR Bucovina Array 76.93 316⇑ *iP* **P 16 04 23.2 +0.7**
MLR Muntele Rosu 77.22 314⇓ *iP* **P 16 04 25.2 +0.9**
MLR Muntele Rosu 77.22 314 *eP* **P 16 04 22.8 -1.5**
MLR pmax pmax
comp=Z,3.0nm,0.8s
MLR Muntele Rosu 77.22 314 *eP* **P 16 04 22.8 -1.5**
comp=Z,3.2nm,0.8s
HFS Hagfors 78.06 331 P **P 16 04 27.4 -1.0**
comp=Z,2.7nm,0.7s,baz=90,slow=11,SNR=6.7
NC405 NORSAR Array S 78.46 332 *eP* **P 16 04 29.9 -0.8**
NB2 NORSAR Subarra 78.71 332 P **P 16 04 30.5 -1.6**
comp=Z,4.4nm,0.8s,baz=61,slow=5.6
NOA NORSAR Array B 78.71 332 P **P 16 04 30.9 -1.1**
comp=Z,3.8nm,0.7s,baz=60,slow=5.6,SNR=14
NOA NORSAR Array B 78.71 332 P **P 16 04 31.0 -1.1**
CRVS Cervenica-Dubn 78.77 319 *eP* **P 16 04 31.1 -1.5**
CRVS Cervenica-Dubn 78.77 319 *eP* **P 16 04 31.1 -1.5**
DLBC Dease Lake 78.89 31 *eP* **P 16 04 33.0 -0.2**
comp=Z,29nm,1.4s
KECS Kecovo 79.53 318 *eP* **P 16 04 35.8 -1.0**
KECS Kecovo 79.53 318 *eP* **P 16 04 35.8 -1.0**
VYHS Vyhne 80.52 319 *eP* **P 16 04 42.7 +0.6**
VYHS pmax pmax
comp=Z,4.0nm,0.9s
VYHS Vyhne 80.52 319 *eP* **P 16 04 42.7 +0.6**
DPC Dobruska-Polom 81.18 321 *eP* **P 16 04 44.1 -1.6**
DPC *e*PCP **PcP 16 04 52.8 +0.9**
DPC Dobruska-Polom 81.18 321 *eP* **P 16 04 44.1 -1.6**
DPC *e* 16 04 52.8
BRG Berggiesshubel 82.28 323 *e*(P) P 16 04 46.8 -4.6
comp=Z,18nm,2.0s
BRG Berggiesshubel 82.28 323 P 16 04 46.8 -4.6
BRG pmax pmax
comp=Z,18nm,2.0s
CLL Collm 82.59 323 *i P* **P 16 04 52.2 -0.8**
CLL *e* 16 05 07.0
CLL LmV 16 45 00.0
comp=Z,100nm,19.3s
CLL Collm 82.59 323 *i P* **P 16 04 52.2 -0.8**
YKW3 Yellowknife Ar 82.95 23 *eP* **P 16 04 53.5 -1.1**
comp=Z,19nm,0.8s
YKA Yellowknife Ar 83.00 23 P **P 16 04 54.3 -0.5**
comp=Z,14nm,0.8s,baz=314,slow=5.0,SNR=244
YKA Yellowknife Ar 83.00 23 *i P* **P 16 04 54.2 -0.7**
YKA pmax pmax
comp=Z,14nm,0.8s
YKB5 Yellowknife Ar 83.00 23 *eP* **P 16 04 53.9 -0.9**
KHC Kasperske Hory 83.32 321 *eP* **P 16 04 57.0 +0.1**
KHC Kasperske Hory 83.32 321 *eP* **P 16 04 57.0 +0.1**
GERES GERESS Array B 83.39 321 P **P 16 04 56.9 -0.5**
comp=Z,2.2nm,0.8s,baz=57,slow=4.9,SNR=17
GERES LR LR 16 45 30.1
comp=Z,57nm,20.2s,baz=72,slow=38
GEA0 GERESS Array S 83.39 321 *eP* **P 16 04 56.6 -0.8**
KMBO Kilima Mbogo 85.45 267 P **P 16 05 09.2 +0.7**
comp=Z,3.9nm,0.8s,baz=60,slow=6.0,SNR=9.3
KMBO Kilima Mbogo 85.45 267 *eP* **P 16 05 09.5 +1.0**
KMBO pmax pmax
comp=Z,15nm,1.6s
KMBO Kilima Mbogo 85.45 267 *eP* **P 16 05 09.5 +1.0**
comp=Z,15nm,1.6s
B05A Bryant 88.24 37 P **P 16 05 22.4 +1.2**
baz=305
B06A Matlemount 88.43 36 *eP* **P 16 05 22.1 +0.1**
comp=Z,20nm,0.9s
C05A Tolt Reservoir 88.79 37 *eP* **P 16 05 24.5 +0.7**
D05A Enumclaw 88.91 38 *eP* **P 16 05 25.4 +1.0**
comp=Z,28nm,0.8s
LON Longmire 89.26 38 *eP* **P 16 05 27.0 +0.8**
LON pmax pmax
comp=Z,8.0nm,1.0s
LON Longmire 89.26 38 *eP* **P 16 05 26.9 +0.8**
comp=Z,7.7nm,1.0s
F04A Amboy 89.38 39 *eP* **P 16 05 27.3 +0.6**
comp=Z,25nm,0.8s
LTY Liberty 89.61 37 *eP* **P 16 05 28.6 +0.9**
comp=Z,10nm,0.6s
B08A Colville Reser 89.68 36 *eP* **P 16 05 28.8 +0.8**
comp=Z,16nm,0.9s
I03D Drain, OR 90.09 41 P **P 16 05 30.9 +1.0**
baz=304
I04A Tendick Farm, 90.60 41 P **P 16 05 33.2 +0.8**
baz=305
D08A Wollman Farm, 90.69 37 *eP* **P 16 05 32.8 +0.1**
comp=Z,15nm,1.1s
NEW Newport 90.91 35 P **P 16 05 34.2 +0.4**
baz=308
HUMO Hull Mountain 90.94 42 *eP* **P 16 05 34.9 +0.9**
comp=Z,30nm,1.6s
YBH Yreka Blue Hor 91.58 43 *eP* **P 16 05 37.7 +0.6**
YBH pmax pmax
comp=Z,11nm,1.1s
YBH Yreka Blue Hor 91.58 43 *eP* **P 16 05 37.7 +0.6**
comp=Z,11nm,1.1s
J05D Fort Rock, OR 91.59 41 P **P 16 05 38.1 +0.9**
baz=305
K04D Chiloquin, OR 91.66 41 P **P 16 05 38.4 +0.9**
baz=305
M02C Callahan 91.68 43 P **P 16 05 38.9 +1.3**
baz=304
WALA Waterton Lakes 92.04 33 *eP* **P 16 05 39.8 +0.7**
comp=Z,10nm,1.0s
M04C Macdoel 92.09 42 P **P 16 05 40.7 +1.2**
baz=305
K05A Summer Lake 92.12 41 *eP* **P 16 05 40.9 +1.2**
comp=Z,16nm,0.9s
F10A Beach Ranch, E 92.27 37 *eP* **P 16 05 41.7 +1.5**
BSMT Bassoo Peak 92.38 34 *eP* **P 16 05 41.7 +0.9**
FCC Fort Churchill 92.43 18 *eP* **P 16 05 39.7 -0.8**
FCC pmax pmax
comp=Z,7.0nm,0.9s
FCC Fort Churchill 92.43 18 *eP* **P 16 05 39.7 -0.8**
comp=Z,7.2nm,0.9s
MOD Modoc Plateau 92.96 41 *eP* **P 16 05 44.4 +0.9**
comp=Z,10nm,0.8s
SWMT Swartz Lake 93.01 34 *eP* **P 16 05 44.0 +0.4**
AFDM Forest Hills D 94.26 44 *eP* **P 16 05 49.3 -0.1**
comp=Z,4.1nm,0.9s
CMB Columbia Colle 95.16 45 *eP* **P 16 05 53.7 +0.1**
CMB pmax pmax
comp=Z,6.0nm,0.8s
CMB Columbia Colle 95.16 45 *eP* **P 16 05 53.7 +0.1**
comp=Z,6.0nm,0.8s

HLID	Hailey	95.35	37	P	P	16 05 55.4	+0.9
	baz=310							
HLID	Hailey	95.35	37	eP	P	16 05 55.2	+0.7
	comp=Z,3.8nm,1.0s							
PPT	Papeete	95.76	107	LR	LR	16 40 21.5	
	comp=Z,48nm,19.7s,baz=332,slow=30							
PPT2	Papeete2	95.77	107	eLR	LR	16 37 01.3	
	comp=Z,136nm,26.8s							
NV01	Mina Array Sit	96.25	43	eP	P	16 05 58.9	+0.1
NVAR	Mina Array Bea	96.25	43	P	P	16 05 59.0	+0.3
	comp=Z,2.3nm,0.8s,baz=288,slow=5.0,SNR=13							
R11A	Troy Canyon, C	97.98	42	eP	Pdif	16 06 07.3	+0.7
	comp=Z,4.1nm,1.5s							
ULM	Lac du Bonnet	98.97	23	LR	LR	16 54 35.6	
	comp=Z,26nm,18.2s,baz=288,slow=38							
VNA2	Neumayer--Watz	124.81	198	PKP	PKPdf	16 11 25.7	-3.1
	baz=26,slow=1.4							
VNA3	Neumayer Olymp	125.27	197	PKP	PKPdf	16 11 24.4	-5.3

ISK ***03*** *16:17:20.8, 36°.33N×28°.66E, h8km, MD2.7*
CSEM ***03*** *16:17:21.4±0.4, 36°.31N×28°.68E, h5km, MD2.7, Error ellipse: s-maj=8.6km s-min=4.8km az=13.0*
DDA ***03*** *16:17:24.3, 36°.59N×28°.78E, h7km, Md2.5*
ISC 03 16:17:22.0±1.6,**36°.38N**±0°.07×**28°.71E**±0°.04,**h11**km±11km,
n17,σ0$34/26,**Dodecanese Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FETY	Fethiye	0.40	49	ePG	Pg	16 17 30.3	+0.3
FETY				eSG	Sb	16 17 37.0	-0.2
FETY	Fethiye	0.40	49	ePg	Pg	16 17 30.3	+0.3
FETY				eSg	Sb	16 17 37.1	-0.2
DALY	Dalyan (Mu¨la	0.44	355	ePG	Pg	16 17 30.7	0.0
DALY				eSG	Sb	16 17 38.1	-0.4
DALY	Dalyan (Mu¨la	0.44	355	ePg	Pg	16 17 30.7	0.0
DALY				eSg	Sb	16 17 38.1	-0.4
TURN	Turunc	0.50	351	iP	Pb	16 17 33.1	+0.2
TURN				iS	Sb	16 17 41.1	+0.9
AKAS	Kas	0.74	101	P	Pg	16 17 36.1	-0.2
AKAS				S	Sn	16 17 50.1	+0.3
AKAS	Kas	0.74	101	iP	Pg	16 17 36.1	-0.2
AKAS				iS	Sn	16 17 50.1	+0.3
YER	Yerkesik	0.83	336	ePG	Pg	16 17 37.8	-0.3
YER	Yerkesik	0.83	336	ePg	Pg	16 17 37.8	-0.3
GLHS	Gihisar (BURDU	1.01	39	ePG	Pb	16 17 41.8	+0.3
GLHS	Gihisar (BURDU	1.01	39	ePg	Pb	16 17 41.8	+0.3
BDRM	Kayabasi	1.23	305	P	Pg	16 17 46.0	+0.4
BDRM	Kayabasi	1.23	305	iP	Pg	16 17 46.0	+0.4
BODT	Bodrum	1.31	302	ePN	Pn	16 17 46.0	-0.3
BODT	Bodrum	1.31	302	ePn	Pn	16 17 46.0	-0.3
AYDN	Tasoluk	1.44	333	P	Pg	16 17 49.5	-0.2
AYDN				S	Sg	16 18 08.4	-0.1
AYDN	Tasoluk	1.44	333	iP	Pg	16 17 49.5	-0.2
AYDN				iS	Sg	16 18 08.4	-0.1

IDC ***03*** *16:18:17.9±3.2, 8°.99S×110°.86E, h0km, mb3.3/3, mb1 3.5/3, mb1mx3.3/35, mbtmp3.3/3, Error ellipse: s-maj=162.1km s-min=31.3km az=48.0*
ISCJB ***03*** *16:18:25.2±0.7, 9°.01S±0°.08×111°.15E±0°.05, h55km, mb3.2/3, Error ellipse: s-maj=12.6km s-min=6.0km az=24.3*
DJA ***03*** *16:18:26.4±0.7, 9°S±5°×11°1E±°, h28km±7km, M4.0/17, mb4.0/3, MLv4.0/17*
ISC 03 16:18:26.7±1.3,**8°.9S**±0°.1×**111°.16E**±0°.08,**h55**km,**n16,**
σ0$93/17,**mb3.1/3,Jawa**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCJI	Pacitan	0.70	1	P	Pn	16 18 39.8	-1.0
WOJI	Wonogiri, Jawa	1.09	347	P	Pn	16 18 46.0	+0.3
UGM	Wanagama	1.17	327	P	Pn	16 18 47.4	+0.5
UGM				S	Sn	16 19 03.2	+1.3
NGJI	Ngawi	1.56	11	P	Pn	16 18 52.5	+0.4
GMJI	Gumukmas	2.34	75	P	Pn	16 19 02.7	-0.1
CMJI	Cimerak	2.91	292	P	Pn	16 19 11.5	+1.0
JAGI	Jajag, Banyuwa	2.99	82	P	Pn	16 19 11.4	-0.2
ABJI	Asem Bagus	3.23	70	P	Pn	16 19 17.1	+2.1
CISI	Cisompet, Garu	3.58	292	P	Pn	16 19 19.7	0.0
CNJI	Cibinong	4.30	291	P	Pn	16 19 30.4	+0.8
TWSI	Taliwang, Sumb	5.65	89	P	Pn	16 19 48.9	+0.7
	9.3nm,0.8s,0.1nm						
CGJI	Cibinong	5.88	292	P	Pn	16 19 51.7	+0.4
	22nm,2.0s,0.3nm						
PLAI	Plampang	6.54	90	P	Pn	16 20 00.4	+0.1
WRA	Warramunga Arr	24.95	119	P	P	16 23 45.2	0.0
	0.6nm,0.9s,baz=291,slow=11,SNR=4.2						
ASAR	Alice Springs	26.24	127	P	P	16 23 56.8	-0.1
	0.2nm,0.5s,baz=304,slow=8.8,SNR=2.6						
MKAR	Makanchi Array	61.13	338	P	P	16 28 33.9	-1.5
	0.2nm,0.4s,baz=146,slow=8.8,SNR=1.5						

IASPEI ***03*** *16:25:40.9±0.9, 45°.78N±0°.02×27°.11E±0°.02, h29km±4km, Error ellipse: s-maj=3.2km s-min=2.8km az=21.1, GT5 selection from ISC bulletin GT5 identified by Bond¨jr and McLaughlin (2009) selection criteria Bond¨jr and McLaughlin, A new ground truth data set for seismic studies, Seism. Res. Let., 80, 465-472, 2009*
ISCJB ***03*** *16:25:40.9±0.3, 45°.77N±0°.02×27°.11E±0°.02, h29km±3km, Error ellipse: s-maj=2.9km s-min=2.6km az=38.3*
BUC ***03*** *16:25:40.7±0.5, 45°.77N×27°.10E, h29km±5km, MD3.6/2, Error ellipse: s-maj=7.2km s-min=5.2km az=21.0*
CSEM ***03*** *16:25:41.2±0.2, 45°.78N×27°.10E, h24km±1km, MD3.6, Error ellipse: s-maj=3.2km s-min=2.9km az=49.0*
SIGU ***03*** *16:25:41.8, 45°.57N×27°.44E, h25km, mb3.2*
ISC 03 16:25:40.8±0.8,**45°.76N**±0°.01×**27°.12E**±0°.02,**h30**km±3km,
n147,σ1$23/222,**42C-63D,Romania**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ODBI	Odobesti	0.04	272	↑iP	Pb	16 25 46.0	+0.2
ODBI	Odobesti	0.04	272	S	Sb	16 25 49.0	-0.3
ODBI	Odobesti	0.04	272	↑iP	Pb	16 25 46.0	+0.2
ODBI				iS	Sb	16 25 49.0	-0.3
ODBI	Odobesti	0.04	272	↑iP	Pb	16 25 46.0	+0.2
ODBI				iS	Sb	16 25 49.0	-0.3
PETR	Petresti	0.09	116	↓iP	Pb	16 25 46.7	+0.7
PETR	Petresti	0.09	116	S	Sb	16 25 49.6	0.0
PETR	Petresti	0.09	116	↓iP	Pb	16 25 46.7	+0.7
PETR				iS	Sb	16 25 49.6	0.0
PETR	Petresti	0.09	116	↓iP	Pb	16 25 46.7	+0.7
PETR				iS	Sb	16 25 49.6	0.0
VRI	Vrincioaia	0.29	291	↓iP	Pb	16 25 47.3	-0.9
VRI	Vrincioaia	0.29	291	↓iP	Pb	16 25 47.3	-0.9
VRI				iS	Sb	16 25 51.9	-1.3
VRI	Vrincioaia	0.29	291	↓iP	Pb	16 25 47.3	-0.9
VRI				iS	Sb	16 25 51.9	-1.3
PLOR	Plostina	0.34	285	↓iP	Pb	16 25 48.2	-0.6
PLOR	Plostina	0.34	285	↓iP	Pb	16 25 48.2	-0.6
PLOR				iS	Sb	16 25 53.8	-0.5
PLOR	Plostina	0.34	285	↓iP	Pb	16 25 48.2	-0.6
PLOR				iS	Sb	16 25 53.8	-0.5
GRER		0.40	195	↓iP	Pn	16 25 51.6	+1.2
GRER		0.40	195	↓iP	Pn	16 25 51.6	+1.2
GRER				iS	Sb	16 25 55.3	-0.3
GRER		0.40	195	↓iP	Pn	16 25 51.6	+1.2
GRER				iS	Sb	16 25 55.3	-0.3
ISR	Istrita	0.76	212	↓iP	Pn	16 25 56.4	+0.9
ISR	Istrita	0.76	212	↓iP	Pn	16 25 56.4	+0.9
ISR				iS	Sn	16 26 06.4	+0.4
ISR	Istrita	0.76	212	↓iP	Pn	16 25 56.4	+0.9
ISR				iS	Sn	16 26 06.4	+0.4
GIUM	Giurgiulesti	0.81	110	↑iP	Pb	16 25 56.7	+0.3
GIUM	Giurgiulesti	0.81	110	↑iP	Pb	16 25 56.7	+0.3
GIUM				iS	Sn	16 26 07.5	+0.3
GIUM	Giurgiulesti	0.81	110	↑iP	Pb	16 25 56.7	+0.3
GIUM				iS	Sn	16 26 07.5	+0.3
TESR	Tescani	0.82	337	↓iP	Pn	16 25 56.0	-0.3
TESR	Tescani	0.82	337	↓iP	Pn	16 25 56.0	-0.3
TESR				iS	Sn	16 26 07.6	+0.2
TESR	Tescani	0.82	337	↓iP	Pn	16 25 56.0	-0.3
TESR				iS	Sn	16 26 07.6	+0.2
PGOR	Pogoanele	0.86	186	S	Sn	16 26 09.1	+0.8
PGOR	Pogoanele	0.86	186	iS	Sn	16 26 09.1	+0.8
PGOR	Pogoanele	0.86	186	iS	Sn	16 26 09.1	+0.8
MLR	Muntele Rosu	0.87	252	↑iP	Pb	16 25 57.9	+0.5
MLR	Muntele Rosu	0.87	252	↑iP	Pb	16 25 57.9	+0.5
MLR				iS	Sn	16 26 09.6	+0.8
MLR	Muntele Rosu	0.87	252	↑iP	Pb	16 25 57.9	+0.5
MLR				iS	Sn	16 26 09.6	+0.8
CFR	Carcaliu	0.92	129	↓iP	Pn	16 25 57.1	-0.6
CFR	Carcaliu	0.92	129	↓iP	Pn	16 25 57.1	-0.6
CFR				iS	Sn	16 26 09.4	-0.5
CFR	Carcaliu	0.92	129	↓iP	Pn	16 25 57.1	-0.6
CFR				iS	Sn	16 26 09.4	-0.5
SECR		1.04	226	↓iP	Pb	16 26 01.0	+0.8
SECR		1.04	226	↓iP	Pb	16 26 01.0	+0.8
SECR				iS	Sn	16 26 13.0	+0.2
SECR		1.04	226	↓iP	Pb	16 26 01.0	+0.8
SECR				iS	Sn	16 26 13.0	+0.2
LEOM	Leova	1.06	47	↑iP	Pb	16 26 00.9	+0.4
LEOM	Leova	1.06	47	↑iP	Pb	16 26 00.9	+0.4
LEOM				iS	Sb	16 26 14.2	+0.2
LEOM	Leova	1.06	47	↑iP	Pb	16 26 00.9	+0.4
LEOM				iS	Sb	16 26 14.2	+0.2
AMRR	Amara	1.16	172	↓iP	Pn	16 26 01.5	+0.5
AMRR	Amara	1.16	172	↓iP	Pn	16 26 01.5	+0.5
AMRR				iS	Sb	16 26 17.0	+0.1
AMRR	Amara	1.16	172	↓iP	Pn	16 26 01.5	+0.5
AMRR				iS	Sb	16 26 17.0	+0.1
HARR	Harsova	1.22	152	↓iP	Pn	16 26 02.0	+0.3
HARR	Harsova	1.22	152	↓iP	Pn	16 26 02.0	+0.3
HARR	Harsova	1.22	152	↓iP	Pn	16 26 02.0	+0.3
DOPR	Dopca	1.23	280	↑iP	Pn	16 26 02.3	+0.4
DOPR	Dopca	1.23	280	↑iP	Pn	16 26 02.3	+0.4
DOPR				iS	Sn	16 26 18.2	+0.7
DOPR	Dopca	1.23	280	↑iP	Pn	16 26 02.3	+0.4
DOPR				iS	Sn	16 26 18.2	+0.7
SULR		1.24	210	↓iP	Pn	16 26 02.7	+0.6
SULR		1.24	210	↓iP	Pn	16 26 02.7	+0.6
SULR				iS	Sb	16 26 19.0	-0.2
SULR		1.24	210	↓iP	Pn	16 26 02.7	+0.6
SULR				iS	Sb	16 26 19.0	-0.2
GIRR	Girov	1.27	340	↓iP	Pb	16 26 04.1	+0.1
GIRR	Girov	1.27	340	↓iP	Pb	16 26 04.1	+0.1
GIRR	Girov	1.27	340	↓iP	Pb	16 26 04.1	+0.1
TLCR		1.32	115	↓iP	Pb	16 26 05.3	+0.3
TLCR		1.32	115	↓iP	Pb	16 26 05.3	+0.3
TLCR				iS	Sb	16 26 22.3	+0.7
TLCR		1.32	115	↓iP	Pb	16 26 05.3	+0.3
TLCR				iS	Sb	16 26 22.3	+0.7
IAS	Iasi	1.46	12	↓iP	Pb	16 26 06.8	-0.6
IAS	Iasi	1.46	12	↓iP	Pb	16 26 06.8	-0.6
IAS				iS	Sn	16 26 24.1	+0.8
IAS	Iasi	1.46	12	↓iP	Pb	16 26 06.8	-0.6
IAS				iS	Sn	16 26 24.1	+0.8
VOIR		1.49	258	↑iP	Pn	16 26 06.4	+0.9
VOIR		1.49	258	↑iP	Pn	16 26 06.4	+0.9
VOIR				iS	Sn	16 26 25.1	+1.1
VOIR		1.49	258	↑iP	Pn	16 26 06.4	+0.9
VOIR				iS	Sn	16 26 25.1	+1.1
CVDA	Cernavoda	1.57	155	↓iP	Pb	16 26 08.1	-1.0
CVDA	Cernavoda	1.57	155	↓iP	Pb	16 26 08.1	-1.0
CVDA				iS	Sn	16 26 26.2	+0.4
CVDA	Cernavoda	1.57	155	↓iP	Pb	16 26 08.1	-1.0
CVDA				iS	Sn	16 26 26.2	+0.4
TIRR	Tirgusor	1.59	144	↓iP	Pn	16 26 07.5	+0.6
TIRR	Tirgusor	1.59	144	↓iP	Pn	16 26 07.5	+0.6
TIRR				iS	Sn	16 26 26.8	+0.4
TIRR	Tirgusor	1.59	144	↓iP	Pn	16 26 07.5	+0.6
TIRR				iS	Sn	16 26 26.8	+0.4
BUC1	Bucharest	1.61	209	↓iP	Pb	16 26 08.7	-1.1
BUC1	Bucharest	1.61	209	↓iP	Pb	16 26 08.7	-1.1
BUC1				iS	Sb	16 26 28.6	-1.2
BUC1	Bucharest	1.61	209	↓iP	Pb	16 26 08.7	-1.1
BUC1				iS	Sb	16 26 28.6	-1.2
MILM	Milestii Mici	1.65	45	↓iP	Pb	16 26 09.2	-1.3
MILM	Milestii Mici	1.65	45	↓iP	Pb	16 26 09.2	-1.3
MILM				iS	Sn	16 26 29.1	+1.3
MILM	Milestii Mici	1.65	45	↓iP	Pb	16 26 09.2	-1.3
MILM				iS	Sn	16 26 29.1	+1.3
KIS	Kishinev	1.71	43	eP	Pn	16 26 10.0	+1.5
KIS				iS	Sb	16 26 34.0	+1.5
	1μm,0.5s						
KIS	Kishinev	1.71	43	↑iP	Pb	16 26 10.6	-0.9
KIS	Kishinev	1.71	43	↑iP	Pb	16 26 10.6	-0.9
KIS				iS	Sn	16 26 30.4	+1.1
KIS	Kishinev	1.71	43	eP	Pn	16 26 10.0	+1.5
KIS				iS	Sb	16 26 34.0	+1.5
KIS				Sm		16 26 34.5	
KIS	Kishinev	1.71	43	↑iP	Pb	16 26 10.6	-0.9
KIS				iS	Sn	16 26 30.4	+1.1
MDB	Medias	1.95	282	↑iP	Pn	16 26 12.7	+0.9
MDB	Medias	1.95	282	↑iP	Pn	16 26 12.7	+0.9
MDB	Medias	1.95	282	↑iP	Pn	16 26 12.7	+0.9
EFOR	EFORIE	2.00	147	↓iP	Pn	16 26 14.0	+1.6
EFOR	EFORIE	2.00	147	↓iP	Pn	16 26 14.0	+1.6
EFOR				iS	Sn	16 26 37.4	+1.0
EFOR	EFORIE	2.00	147	↓iP	Pn	16 26 14.0	+1.6
EFOR				iS	Sn	16 26 37.4	+1.0
MANR	Mangalia	2.21	151	↑iP	Pn	16 26 16.4	+1.1
MANR	Mangalia	2.21	151	↑iP	Pn	16 26 16.4	+1.1
MANR				iS	Sn	16 26 41.0	-0.6
MANR	Mangalia	2.21	151	↑iP	Pn	16 26 16.4	+1.1
MANR				iS	Sn	16 26 41.0	-0.6
BURAR	Bucovina Array	2.27	325	↑iP	Pn	16 26 17.6	+1.3
BURAR	Bucovina Array	2.27	325	↑iP	Pn	16 26 17.6	+1.3
BURAR				iS	Sn	16 26 45.3	+2.0
BURAR	Bucovina Array	2.27	325	↑iP	Pn	16 26 17.6	+1.3
BURAR				iS	Sn	16 26 45.3	+2.0
LOT	Lotru	2.37	264	↓iP	Pn	16 26 18.4	+0.7
LOT	Lotru	2.37	264	↓iP	Pn	16 26 18.4	+0.7
LOT				iS	Sn	16 26 46.0	+0.1
LOT	Lotru	2.37	264	↓iP	Pn	16 26 18.4	+0.7
LOT				iS	Sn	16 26 46.0	+0.1
SORM	Soroca	2.52	19	↓iP	Pn	16 26 19.9	+0.3
SORM	Soroca	2.52	19	↓iP	Pn	16 26 19.9	+0.3
SORM				iS	Sn	16 26 48.7	-0.6
SORM	Soroca	2.52	19	↓iP	Pn	16 26 19.9	+0.3
SORM				iS	Sn	16 26 48.7	-0.6
CJR	Cluj-Napoca	2.62	293	↑iP	Pn	16 26 22.0	+0.9
CJR	Cluj-Napoca	2.62	293	↑iP	Pn	16 26 22.0	+0.9
CJR				iS	Sn	16 26 50.7	-1.2
CJR	Cluj-Napoca	2.62	293	↑iP	Pn	16 26 22.0	+0.9
CJR				iS	Sn	16 26 50.7	-1.2
CHRU	Chernivtsi	2.67	343	eP	Pb	16 26 27.9	+0.1
CHRU				Pm		16 26 34.5	
CHRU				iS	Sb	16 27 02.9	+2.9
CHRU				Sm		16 27 03.8	
KMPD	K-Podol'skiy	2.84	351	eP	Pb	16 26 29.5	-1.2
KMPD				iS	Sb	16 27 05.4	+0.4
NDNU	Novodnistrovsk	2.84	3	eP	Pb	16 26 28.8	-1.9
NDNU				Pm		16 26 34.3	
NDNU				iS	Sb	16 27 05.1	+0.1
NDNU				Sm		16 27 06.4	
PVL	Pavlikeni	2.85	207	eP	Pn	16 26 26.8	+2.7
KSV	Kosov	2.91	332	iP	Pb	16 26 32.1	+0.1
KSV				Pm		16 26 36.9	
KSV				iS	Sb	16 27 09.7	+2.5
KSV				Sm		16 27 23.1	
RAKU	Rahkiv	3.04	319	eP	Pb	16 26 34.1	0.0
RAKU				iS	Sb	16 27 13.3	+2.6
NSLU	Nyzhne Selyshc	3.04	324	iP	Pb	16 26 40.5	+6.3
NSLU				Pm		16 26 44.5	
NSLU				eS	Sb	16 27 25.3	+14
NSLU				Sm		16 27 53.7	
DRGR		3.23	290	↑iP	Pn	16 26 30.6	+1.2
DRGR		3.23	290	↑iP	Pn	16 26 30.6	+1.2
DRGR				iS	Sn	16 27 05.8	-1.0
DRGR		3.23	290	↑iP	Pn	16 26 30.6	+1.2
DRGR				iS	Sn	16 27 05.8	-1.0
STNU	Starunia	3.45	330	eP	Pb	16 26 39.5	-1.6
STNU				iS	Sb	16 27 23.7	+1.2
KORU	Korolevo	3.63	313	eP	Pb	16 26 42.2	-2.0
KORU				Pm		16 26 52.4	
KORU				eS	Sb	16 27 28.4	+0.6
KORU				Sm		16 27 57.4	
MEZ	Mezhgor'ye	3.69	320	eP	Pb	16 26 43.0	-2.2
MEZ				Pm		16 26 55.0	
MEZ				iS	Sb	16 27 30.0	+0.5
MEZ				Sm		16 27 55.8	
SIRR	Siria	3.84	280	↑iP	Pn	16 26 37.8	0.0
SIRR	Siria	3.84	280	↑iP	Pn	16 26 37.8	0.0
SIRR	Siria	3.84	280	↑iP	Pn	16 26 37.8	0.0
BZS	Buzias	3.86	270	↑iP	Pn	16 26 39.2	+1.2
BZS	Buzias	3.86	270	↑iP	Pn	16 26 39.2	+1.2
BZS				iS	Sn	16 27 21.3	-1.0
BZS	Buzias	3.86	270	↑iP	Pn	16 26 39.2	+1.2
BZS				iS	Sn	16 27 21.3	-1.0
EDRB	Edirne	3.92	184	eP	Pn	16 26 41.1	+2.2
EDRB	Edirne	3.92	184	eP	Pn	16 26 41.1	+2.2
KUBS	Kucevo	4.08	253	ePn	Pn	16 26 40.6	-0.6
PHSR	Pinarhisar	4.14	176	eP	Pn	16 26 42.7	+0.8
PHSR	Pinarhisar	4.14	176	eP	Pn	16 26 42.7	+0.8
SHIU	Shidnytsya	4.30	325	eP	Pb	16 26 51.1	-4.5
SHIU				Pm		16 26 58.3	
SHIU				iS	Sb	16 27 44.1	-2.9
SHIU				Sm		16 27 49.7	
CTYL	Yalikoy Yolu	4.37	168	eP	Pn	16 26 43.8	-1.3
CTYL	Yalikoy Yolu	4.37	168	eP	Pn	16 26 43.8	-1.3
CTKS	Kestanelik-??a	4.63	167	eP	Pn	16 26 46.9	-1.8
CTKS	Kestanelik-??a	4.63	167	eP	Pn	16 26 46.9	-1.8
SEV	Sevastopol'	4.79	102	eP	Pn	16 26 51.6	+0.8
SEV				Pm		16 26 53.2	
SEV				eS	Sn	16 27 44.7	-0.6
SEV				Sm		16 27 45.7	
ISK	Istanbul-Kandi	4.90	163	eP	Pn	16 26 49.2	-3.2
ISK	Istanbul-Kandi	4.90	163	eP	Pn	16 26 49.2	-3.2
GRUS	Gruza	4.92	250	ePn	Pn	16 26 55.3	+2.6
SILT	Sile	4.96	157	eP	Pn	16 26 48.8	-4.4
RKY	Sarkoy-Tekirda	5.07	179	eP	Pn	16 26 56.6	+1.8
RKY	Sarkoy-Tekirda	5.07	179	eP	Pn	16 26 56.6	+1.8
ERIK	Erikli-Kesan	5.11	185	eP	Pn	16 26 58.7	+3.5
ERIK	Erikli-Kesan	5.11	185	eP	Pn	16 26 58.7	+3.5
YAL	Yalta	5.14	102	eP	Pn	16 26 55.5	-0.1
YAL				Pm		16 26 57.5	
YAL				eS	Sn	16 27 51.8	-2.1
YAL				Sm		16 27 55.7	
ALU	Alushta	5.26	99	eS	Sn	16 27 55.2	-1.6
ALU				Sm		16 27 57.2	
DIVS	Divibare	5.33	254	ePn	Pn	16 26 58.6	+0.3
GELI	Tayfur-Gelibol	5.38	185	eP	Pn	16 27 02.5	+3.5
GELI	Tayfur-Gelibol	5.38	185	eP	Pn	16 27 02.5	+3.5
SUDU	Sudak	5.63	96	eP	Pn	16 27 02.5	+0.2
SUDU				Pm		16 27 03.1	
SUDU				eS	Sn	16 28 04.2	-1.7
SUDU				Sm		16 28 10.0	

IDC 03 16:30:39.0±1.8,**3°.67S**×**152°.25E,h0km,mb3.6/6,**
mb1 3.9/7,mb1mx3.6/43,mbtmp3.7/7,ML1.6/1,MS3.2/10,
Ms1 3.2/10,ms1mx2.9/37,Error ellipse: s-maj=62.0km
s-min=23.5km az=117.0,New Ireland region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	Port Moresby	7.62	221	Pn	Pn	16 32 31.9	+0.6
	0.5nm,0.3s,baz=16,slow=7.4,SNR=2.8						
PMG				LR	LR	16 34 58.2	
	comp=Z,123nm,21.3s,baz=24,slow=34						
HNR	Honiara	9.55	127	LR	LR	16 37 02.7	
	comp=Z,135nm,18.1s,baz=194,slow=40						
GUMO	Guam	18.65	337	LR	LR	16 42 40.7	
	comp=Z,30nm,18.6s,baz=77,slow=39						
DZM	Mont Dzumac	22.89	144	LR	LR	16 43 28.6	
	comp=Z,83nm,18.9s,baz=56,slow=34						
WRA	Warramunga Arr	23.80	226	P	P	16 35 52.2	-1.5
	2.2nm,0.8s,baz=49,slow=9.7,SNR=9.8						
ASAR	Alice Springs	26.63	220	P	P	16 36 20.9	+1.4
	0.3nm,0.5s,baz=55,slow=8.7,SNR=5.2						
ASAR				LR	LR	16 46 52.6	
	comp=Z,62nm,18.1s,baz=38,slow=37						
STKA	Stephens Creek	29.79	198	LR	LR	16 47 48.4	
	comp=Z,50nm,21.8s,baz=26,slow=35						
MJAR	Matsushiro Arr	42.10	343	LR	LR	16 53 39.0	
	comp=Z,14nm,21.8s,baz=205,slow=33						
KSRS	Korea Array	46.75	333	LR	LR	16 58 07.3	
	comp=Z,19nm,18.7s,baz=196,slow=35						
PETK	Petropavlovsk-	56.76	4	LR	LR	17 00 26.5	
	comp=Z,27nm,20.0s,baz=173,slow=32						
CMAR	Chiang Mai Arr	56.91	295	P	P	16 40 26.3	0.0
	0.4nm,0.5s,baz=124,slow=5.5,SNR=4.8						
ILAR	Eielson Array	81.33	22	P	P	16 42 56.4	-0.8
	0.5nm,0.7s,baz=247,slow=5.3,SNR=5.4						
ILAR				LR	LR	17 10 54.9	
	comp=Z,27nm,21.7s,baz=108,slow=30						
KURBB	Kurchatov Arra	82.58	322	P	P	16 43 04.7	+0.8
	0.3nm,0.8s,baz=111,slow=4.3,SNR=3.0						
BVAR	Borovoye Array	88.02	323	P	P	16 43 30.9	-0.2
	0.8nm,0.7s,baz=102,slow=6.2,SNR=4.3						

NIED ***03*** *16:38:00, 35°.60N×142°.70E, h5km, Mw3.5 Best double couple: M0 1.96000×10^14 NP1:φ=224.00000°, δ=37.00000°, λ=-97.00000°. NP2:φ=54.00000°, δ=53.00000°, λ=-84.00000°.*
IDC ***03*** *16:38:33.0±1.0, 35°.42N×142°.77E, h0km, mb3.5/6, mb1 3.6/10, mb1mx3.4/60, m

*NEIC **03** 16:39:06.1±0.3, 35°.59S×53°.76E, h10km, mb4.7/1, Error ellipse: s-maj=14.0km s-min=10.0km az=49.0*

ISC 03 16:39:07.3±0.6, 35°.4S±0°.1×53°.9E±0°.2, h17km, n38, σ1§24/30, mb4.3/18, MS3.5/3, Southwest Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RER	**Riviere de l'E**	**14.30**	**7**	*eP*	**Pn**	**16 42 26.2**	**-3.1**
OPO	**Ambohidratompo**	**17.80**	**339**	P	**P**	**16 43 15.7**	**+0.6**
	0.8nm, 0.3s, baz=194, slow=14, SNR=4.9						
OPO				LR	LR	16 48 48.0	
	comp=Z, 184nm, 18.2s, baz=181, slow=32						
BOSA	**Boshof**	**25.13**	**278**	P	**P**	**16 44 31.7**	**0.0**
	4.7nm, 1.0s, baz=108, slow=6.7, SNR=3.9						
LBTB	**Lobatse**	**26.45**	**285**	P	**P**	**16 44 41.5**	**-2.1**
	4.3nm, 0.9s, baz=113, slow=11, SNR=4.4						
H08S1	**Diego Garcia H**	**32.49**	**36**	T	T	17 19 48.2	
	baz=208, slow=76, SNR=30						
H08S2	**Diego Garcia H**	**32.50**	**36**	T	T	17 19 48.8	
	baz=208, slow=76, SNR=27						
H08S3	**Diego Garcia H**	**32.51**	**36**	T	T	17 19 46.0	
	baz=208, slow=76, SNR=34						
MAW	**Mawson**	**32.64**	**174**	P	**P**	**16 45 37.8**	**-0.1**
	1.9nm, 0.6s, baz=318, slow=11, SNR=3.6						
MAW				LR	LR	16 55 23.5	
	comp=Z, 131nm, 21.1s, baz=57, slow=30						
H08N3	**Diego Garcia H**	**32.95**	**33**	T	T	17 20 41.4	
	baz=206, slow=76, SNR=11						
H08N1	**Diego Garcia H**	**32.96**	**33**	T	T	17 20 42.3	
	baz=206, slow=76, SNR=8.4						
H08N2	**Diego Garcia H**	**32.97**	**33**	T	T	17 20 43.0	
	baz=206, slow=76, SNR=10						
H09N1	**TRISTAN DA CUN**	**52.40**	**247**	T	T	17 44 13.2	
	SNR=6.5						
QSPA	**South Pole Qui**	**54.76**	**180**	*eP*	**P**	**16 48 35.0**	**-0.8**
	27nm, 0.9s						
FITZ	**Fitzroy Crossi**	**65.09**	**95**	P	**P**	**16 49 47.2**	**-0.1**
	2.6nm, 0.8s, baz=191, slow=7.8, SNR=6.8						
CMAR	**Chiang Mai Arr**	**68.54**	**46**	P	**P**	**16 50 09.2**	**0.0**
	1.8nm, 0.9s, baz=230, slow=6.4, SNR=15						
ASAR	**Alice Springs**	**68.91**	**105**	P	**P**	**16 50 11.8**	**+0.2**
	1.9nm, 0.6s, baz=232, slow=6.0, SNR=53						
TORD	**Torodi Ar. Bea**	**69.05**	**305**	P	**P**	**16 50 13.0**	**+0.6**
	2.7nm, 0.9s, baz=122, slow=5.6, SNR=12						
TORD	**Torodi Ar. Bea**	**69.05**	**305**	P	**P**	**16 50 13.0**	**+0.6**
ASF	**Jabal al Asfar**	**69.10**	**345**	P	**P**	**16 50 14.3**	**+1.9**
	0.9nm, 0.4s, baz=189, slow=5.2, SNR=3.8						
WRA	**Warramunga Arr**	**71.17**	**101**	P	**P**	**16 50 25.8**	**+0.3**
	6.1nm, 1.0s, baz=235, slow=5.2, SNR=28						
WRAB	**Tennant Creek**	**71.18**	**101**	*eP*	**P**	**16 50 26.0**	**+0.4**
	5.6nm, 0.8s						
BRTR	**Keskin Array B**	**77.07**	**344**	P	**P**	**16 51 00.6**	**+1.1**
	1.6nm, 0.9s, baz=169, slow=7.2, SNR=9.5						
BRTR				LR	LR	17 23 43.2	
	comp=Z, 17nm, 19.6s, baz=117, slow=35						
KBZ	**Khabaz**	**79.41**	**352**	P	**P**	**16 51 13.9**	**+1.8**
	0.8nm, 0.6s, baz=128, slow=7.8, SNR=3.6						
KVAR	**Kislovodsk Arr**	**79.65**	**352**	P	**P**	**16 51 15.2**	**+1.5**
	1.5nm, 0.3s, baz=358, slow=1.3, SNR=6.3						
AAK	**Ala-Archa**	**79.94**	**15**	P	**P**	**16 51 17.4**	**+2.2**
	0.5nm, 0.3s, baz=217, slow=5.3, SNR=3.8						
AKTO	**Aktyubinsk**	**85.56**	**3**	P	**P**	**16 51 45.2**	**+1.1**
	1.6nm, 0.6s, baz=351, slow=1.3, SNR=4.1						
MKAR	**Makanchi Array**	**85.74**	**19**	P	**P**	**16 51 46.1**	**+1.0**
	0.2nm, 0.4s, baz=202, slow=6.1, SNR=5.7						
AKASG	**Malin Array Be**	**88.46**	**345**	P	**P**	**16 51 59.3**	**+1.1**
	1.0nm, 0.5s, baz=165, slow=4.7, SNR=5.8						
TLY	**Talaya**	**97.08**	**29**	LR	LR	17 35 41.4	
	comp=Z, 15nm, 18.4s, baz=235, slow=35						
INK	**Inuvik**	**146.80**	**5**	PKPbc	**PKPbc**	**16 58 47.0**	**-0.4**
	7.8nm, 1.0s, baz=345, slow=4.3, SNR=18						
BPAW	**Bear Paw Mtn.**	**147.55**	**20**	*e*PKPbc	**PKPab**	**16 58 50.9**	**-1.0**
ILAR	**Eielson Array**	**148.06**	**17**	PKPbc	**PKPbc**	**16 58 50.4**	**-0.7**
	3.3nm, 0.8s, baz=320, slow=3.2, SNR=20						
FCC	**Fort Churchill**	**148.56**	**328**	*e*PKPbc	**PKPbc**	**16 58 51.6**	**-0.9**
SML	**Sawmill**	**150.10**	**21**	*e*PKPbc	**PKPbc**	**16 58 56.0**	**-0.3**
DAWY	**Dawson**	**150.20**	**12**	*e*PKPbc	**PKPbc**	**16 58 56.6**	**+0.1**
EYMN	**Ely**	**151.51**	**307**	*e*PKPbc	**PKPbc**	**16 58 59.2**	**-0.8**
YKA	**Yellowknife Ar**	**151.96**	**349**	PKPbc	**PKPbc**	**16 58 59.8**	**-0.8**
	1.2nm, 0.6s, baz=12, slow=1.9, SNR=21						
PDAR	**Pinedale Array**	**165.20**	**305**	PKP	**PKPdf**	**16 59 08.9**	**-1.8**
	0.8nm, 0.9s, baz=64, slow=3.4, SNR=3.9						

*NIED **03** 16:41:00, 36°.80N×141°.30E, h41km, Mw3.6 Best double couple: M0=2.62000×10^14 NP1:φs=148.00000°, δ32.00000°, λ=2.00000°. NP2:φs=56.00000°, δ=89.00000°, λ=122.00000°.*
*ISCJB **03** 16:41:32.1±1.2, 36°.71N±0°.04×141°.55E±0°.07, h31km±6km, mb3.3/3, Error ellipse: s-maj=9.4km s-min=6.8km az=6.4*
*IDC **03** 16:41:34.5±2.6, 36°.80N×141°.55E, h44km±24km, mb3.2/3, mb1 3.4/6, mb1mx3.1/55, mbtmp3.5/6, ML3.4/3, Error ellipse: s-maj=24.1km s-min=16.0km az=127.0*
*JMA **03** 16:41:35.1±0.1, 36°.75N×141°.33E, h48km±2km, M3.5*

ISC 03 16:41:32.0±1.9, 36°.74N±0°.05×141°.58E±0°.08, h24km±13km, n14, σ1§14/25, mb3.2/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.72**	**300**	P	**Pb**	**16 41 46.5**	**+0.5**
ONAJ				S	**Sb**	**16 41 54.8**	**-0.7**
JHO	**Hitachi**	**0.82**	**261**	P	**Pb**	**16 41 47.6**	**-0.1**
JHO				S	**Sb**	**16 41 57.0**	**-1.4**
JFK	**Kawauchi**	**0.84**	**318**	P	**Pn**	**16 41 48.7**	**+0.3**
JFK				S	**Sb**	**16 41 58.4**	**-0.5**
JFT	**Otama**	**1.26**	**308**	P	**Pb**	**16 41 55.2**	**+0.1**
JFT				S	**Sn**	**16 42 09.9**	**-0.4**
JMM	**Marumori**	**1.28**	**331**	P	**Pb**	**16 41 55.7**	**+0.2**
JMM				S	**Sn**	**16 42 10.5**	**-0.4**
JFY	**Yanaizu**	**1.64**	**294**	P	**Pn**	**16 42 00.6**	**+1.3**
JFY				S	**Sn**	**16 42 20.0**	**+0.3**
JAG	**Ashikaga**	**1.74**	**260**	P	**Pn**	**16 42 00.9**	**+0.2**
JAG				S	**Sn**	**16 42 19.7**	**-2.5**
MJAR	**Matsushiro Arr**	**2.72**	**267**	P	**Pn**	**16 42 15.4**	**+1.2**
	6.7nm, 0.3s, baz=89, slow=15, SNR=49						
MJAR				S	**Sn**	**16 42 46.5**	**+0.1**
	7.6nm, 0.3s, baz=88, slow=16, SNR=6.1						
MAT	**Matsushiro**	**2.72**	**267**	P	**Pn**	**16 42 15.8**	**+1.6**
MAT				S	**Sn**	**16 42 46.1**	**-0.3**
JHJ	**Hachijo jima 2**	**3.91**	**203**	P	**Pn**	**16 42 33.4**	**+2.9**
	7.2nm, 0.3s, baz=234, slow=23, SNR=1.0						
JHJ				S	**Sn**	**16 43 15.1**	**-0.5**
	32nm, 0.3s, baz=69, slow=24, SNR=3.9						
ASAJ	**Asahikawa**	**7.41**	**6**	P	**Pn**	**16 43 19.9**	**+1.4**
	0.7nm, 0.3s, baz=242, slow=19, SNR=1.5						
ASAJ				S	**Sn**	**16 44 40.5**	**-1.1**
	baz=353, slow=9.9, SNR=1.7						
MKAR	**Makanchi Array**	**44.39**	**302**	P	**P**	**16 49 40.5**	**+0.1**
	0.1nm, 0.3s, baz=92, slow=8.6, SNR=1.6						
KURBB	**Kurchatov Arra**	**46.29**	**308**	P	**P**	**16 49 55.0**	**-0.4**
	0.5nm, 0.6s, baz=83, slow=8.5, SNR=3.3						
WRA	**Warramunga Arr**	**56.79**	**188**	P	**P**	**16 51 14.0**	**-0.3**
	0.1nm, 0.4s, baz=5.1, slow=7.5, SNR=1.2						

*IDC **03** 16:42:27.7±5.9, 35°.81N×71°.39E, h90km±36km, mb3.2/4, mb1 3.3/9, mb1mx3.1/54, mbtmp3.6/9, MS3.1/1, Ms1 3.1/1, ms1mx2.1/26, Error ellipse: s-maj=78.6km s-min=23.9km az=145.0*
*ISCJB **03** 16:42:34.3±1.2, 36°.55N±0°.08×71°.11E±0°.08, h100km, mb3.2/3, Error ellipse: s-maj=13.1km s-min=8.0km az=149.6*
*NNC **03** 16:42:39.9±1.9, 37°.07N×71°.06E, h0km, mb3.9, mpv3.7, Error ellipse: s-maj=16.1km s-min=7.3km az=166.0*

ISC 03 16:42:32.5±1.7, 36°.3N±0°.1×71°.07E±0°.10, h100km, n17, σ1§80/21, mb3.1/3, 9C-3D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**3.04**	**325**	⇑P	**Pn**	**16 43 21.9**	**+3.1**
	17nm, 0.5s						
DZET				⇓S	Sn	16 43 54.3	-0.2
	150nm, 0.5s						
SFK	**Sufi-Kurgan**	**4.14**	**27**	⇑P	**Pn**	**16 43 36.5**	**+2.8**
	9.2nm, 0.3s						
SFK				⇑S	**Sn**	**16 44 19.9**	**-1.2**
	24nm, 0.3s						
MNAS	**Manas**	**6.24**	**10**	⇑P	**Pn**	**16 44 03.2**	**+1.1**
	2.5nm, 0.4s						
MNAS				⇑S	Sn	16 45 08.2	-3.7
	46nm, 1.1s						
KK31	**Karatay Array**	**6.77**	**357**	P	**Pn**	**16 44 10.2**	**+1.0**
	1.5nm, 0.3s, baz=180, slow=13, SNR=24						
KK31				⇓S	Sn	16 45 21.2	-3.4
	5.2nm, 0.5s, baz=182, slow=21, SNR=10						
AAK	**Ala-Archa**	**6.82**	**22**	P	**Pn**	**16 44 10.6**	**+0.7**
	2.5nm, 0.3s, baz=164, slow=4.4, SNR=21						
AAK				S	**Sn**	**16 45 23.1**	**-3.0**
	1.2nm, 0.3s, baz=326, slow=21, SNR=16						
AAK	**Ala-Archa**	**6.82**	**22**	⇓P	**Pn**	**16 44 11.8**	**+1.8**
	3.9nm, 0.6s						
AAK				⇑S	**Sn**	**16 45 25.0**	**-1.1**
	24nm, 0.7s						
TKM2	**Tokmak 2**	**7.44**	**27**	⇑P	**Pn**	**16 44 20.5**	**+2.0**
	5.2nm, 0.5s						
TKM2				⇑S	**Sn**	**16 45 40.0**	**-1.3**
	6.3nm, 0.8s						
GEYT	**Alibeck**	**10.46**	**283**	P	**Pn**	**16 45 01.3**	**+1.8**
	0.5nm, 0.3s, baz=97, slow=12, SNR=4.3						
GEYT				S	**Sn**	**16 46 53.0**	**-1.7**
	0.4nm, 0.3s, baz=99, slow=19, SNR=3.5						
MKAR	**Makanchi Array**	**13.39**	**35**	P	**Pn**	**16 45 37.9**	**-0.4**
	0.1nm, 0.3s, baz=212, slow=11, SNR=5.6						
AB31	**Akbulak array**	**15.25**	**331**	⇑P	**Pn**	**16 46 03.2**	**+1.1**
	0.2nm, 0.5s, baz=163, slow=11, SNR=9.8						
KURBB	**Kurchatov Arra**	**15.26**	**18**	P	**P**	**16 46 04.1**	**-0.7**
	0.1nm, 0.3s, baz=205, slow=11, SNR=12						
BVAR	**Borovoye Array**	**16.69**	**359**	P	**Pn**	**16 46 21.0**	**+1.0**
	0.4nm, 0.3s, baz=165, slow=12, SNR=6.2						
ZALV	**Zalesovo Beam**	**20.04**	**24**	P	**P**	**16 46 56.5**	**-0.7**
	1.7nm, 0.3s, baz=209, slow=10.0, SNR=11						
NRIK	**Noril'sk**	**34.27**	**10**	LR	LR	17 04 50.4	
	comp=Z, 28nm, 18.0s, baz=154, slow=39						
ARCES	**ARCESS Array B**	**41.31**	**338**	P	**P**	**16 50 08.5**	**+0.8**
	0.8nm, 0.8s, baz=101, slow=7.4, SNR=2.5						
TORD	**Torodi Ar. Bea**	**65.77**	**269**	P	**P**	**16 53 04.4**	**-2.7**
	0.1nm, 0.4s, baz=55, slow=5.8, SNR=2.7						
YKA	**Yellowknife Ar**	**81.40**	**3**	P	**P**	**16 54 38.2**	**+0.4**
	0.2nm, 0.7s, baz=351, slow=5.8, SNR=4.7						

*CSEM **03** 16:45:23.4±0.6, 36°.47N×28°.80E, h5km, MD2.7, Error ellipse: s-maj=14.5km s-min=6.1km az=22.0*
*ISK **03** 16:45:24.4, 36°.83N×28°.97E, h5km, MD2.7*
*DDA **03** 16:45:24.3, 36°.67N×28°.88E, h7km, Md2.4*
*ISCJB **03** 16:45:25.0±1.1, 36°.56N±0°.09×28°.84E±0°.08, h15km±15km, Error ellipse: s-maj=18.4km s-min=6.2km az=33.1*

ISC 03 16:45:24.4±1.1, 36°.53N±0°.06×28°.85E±0°.04, h19km±2km, n17, σ0§84/26, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FETY	**Fethiye**	**0.21**	**61**	*e*PG	**Pb**	**16 45 29.4**	**+0.2**
FETY				*e*SG	**Sg**	**16 45 33.9**	**+0.7**
FETY	**Fethiye**	**0.21**	**61**	*e*Pg	**Pb**	**16 45 29.4**	**+0.2**
FETY				*e*Sg	**Sg**	**16 45 33.9**	**+0.7**
DALY	**Dalyan (Mu¨la**	**0.33**	**331**	*e*PG	**Pg**	**16 45 30.5**	**-0.9**
DALY				*e*SG	**Sb**	**16 45 35.5**	**-0.9**
DALY	**Dalyan (Mu¨la**	**0.33**	**331**	*e*Pg	**Pg**	**16 45 30.5**	**-0.9**
DALY				*e*Sg	**Sb**	**16 45 35.6**	**-0.9**
TURN	**Turunc**	**0.39**	**329**	*i* P	**Pb**	**16 45 33.8**	**+1.0**
TURN				*i* S	**Sn**	**16 45 41.9**	**-0.1**
AKAS	**Kas**	**0.68**	**116**	P	**Pb**	**16 45 37.6**	**0.0**
AKAS				S	**Sn**	**16 45 49.5**	**+0.3**
AKAS	**Kas**	**0.68**	**116**	*i* P	**Pb**	**16 45 37.6**	**0.0**
AKAS				*i* S	**Sn**	**16 45 49.5**	**+0.3**
YER	**Yerkesik**	**0.75**	**323**	*e*PG	**Pb**	**16 45 37.7**	**-1.2**
YER	**Yerkesik**	**0.75**	**323**	*e*Pg	**Pb**	**16 45 37.7**	**-1.2**
ELL	**Elmali**	**0.88**	**76**	*e*PG	**Pb**	**16 45 40.3**	**-0.8**
ELL	**Elmali**	**0.88**	**76**	*e*Pg	**Pb**	**16 45 40.3**	**-0.8**
BDRM	**Kayabasi**	**1.25**	**296**	P	**Pn**	**16 45 47.6**	**+0.8**
BDRM	**Kayabasi**	**1.25**	**296**	*i* P	**Pn**	**16 45 47.6**	**+0.8**
AYDN	**Tasoluk**	**1.37**	**326**	P	**Pb**	**16 45 49.9**	**+0.5**
AYDN				S	**Sg**	**16 46 10.0**	**+1.3**
AYDN	**Tasoluk**	**1.37**	**326**	*i* P	**Pb**	**16 45 49.9**	**+0.5**
AYDN				*i* S	**Sg**	**16 46 10.0**	**+1.3**
AYDB	**Zeytinkoy-Aydi**	**1.60**	**332**	*e*PN	**Pn**	**16 45 52.3**	**+0.4**
AYDB	**Zeytinkoy-Aydi**	**1.60**	**332**	*e*Pn	**Pn**	**16 45 52.3**	**+0.4**

*ISCJB **03** 17:00:54.9±0.6, 67°.08N±0°.04×21°.2E±0°.1, h0km, Error ellipse: s-maj=7.9km s-min=4.8km az=22.1*
*NAO **03** 17:00:56.9±0.9, 67°.16N×21°.41E, ML2.2*
*CSEM **03** 17:00:56.3±0.3, 67°.14N×21°.04E, h1km, ML2.2, Error ellipse: s-maj=11.5km s-min=7.6km az=113.0, Suspected Mining explosion.*
*IDC **03** 17:00:57.4±1.6, 67°.18N×21°.39E, h0km, mb1 2.8/3, mb1mx2.7/38, mbtmp2.7/3, ML2.4/3, Error ellipse: s-maj=26.2km s-min=15.2km az=99.0*
*BER **03** 17:00:59.1±4.2, 67°.16N×21°.13E, h0km, ML2.2(NAO), Suspected explosion*

ISC 03 17:00:56.1±0.9, 67°.16N±0°.04×21°.07E±0°.06, h0km, n29, σ1§07/39, 2D, Sweden

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HEF	**Hetta**	**1.59**	**37**	⇓*e*P	**Pn**	**17 01 25.8**	**+0.3**
HEF				*e*		17 01 27.7	
HEF	**Hetta**	**1.59**	**37**	⇓*e*P	**Pn**	**17 01 25.8**	**+0.3**
	SNR=50						
KIF	**Kilpisjarvi**	**1.85**	**357**	Pn	**Pn**	**17 01 29.6**	**+0.5**
KIF				Lg	Lg	17 01 58.1	
KIF	**Kilpisjarvi**	**1.85**	**357**	Pn	**Pn**	**17 01 29.6**	**+0.5**
KIF				Lg	Lg	17 01 58.1	
KIF	**Kilpisjarvi**	**1.85**	**357**	Pn	**Pn**	**17 01 29.6**	**+0.5**
	SNR=50						
KIF				Lg	Lg	17 01 58.1	
	SNR=55						
KTK1	**Kautokeino**	**2.03**	**23**	*e*P	**Pb**	**17 01 33.3**	**-0.5**
KTK1				*e*Sg	**Sg**	**17 02 04.1**	**+2.9**
KTK1	**Kautokeino**	**2.03**	**23**	*e*P	**Pb**	**17 01 33.3**	**-0.5**
	SNR=50						
KTK1				*e*Sg	**Sg**	**17 02 04.1**	**+2.9**
	SNR=90						
MOR8	**Moi Rana**	**2.82**	**252**	*e*P	**Pn**	**17 01 43.3**	**+0.9**
MOR8	**Moi Rana**	**2.82**	**252**	*e*P	**Pn**	**17 01 43.3**	**+0.9**
	SNR=50						
ARA0	**ARCESS Array S**	**2.90**	**33**	Pn	**Pn**	**17 01 44.3**	**+0.9**
	baz=206, slow=16						
ARA0				Sn	**Sn**	**17 02 19.0**	**+0.1**
	baz=204, slow=28						
ARA0				Lg	Lg	17 02 25.4	
	baz=208, slow=28						
ARA0	**ARCESS Array S**	**2.90**	**33**	Pn	**Pn**	**17 01 44.3**	**+0.9**
	baz=206, slow=16						
ARA0				Sn	**Sn**	**17 02 19.0**	**+0.1**
	baz=204, slow=28						
ARA0				Lg	Lg	17 02 25.4	
	baz=208, slow=28						
ARA0	**ARCESS Array S**	**2.90**	**33**	Pn	**Pn**	**17 01 44.3**	**+0.9**
	SNR=50						
ARA0				Sn	**Sn**	**17 02 19.0**	**+0.1**
	SNR=50						
ARA0				Lg	Lg	17 02 25.5	
	SNR=7.0						
ARCES	**ARCESS Array B**	**2.90**	**33**	Pn	**Pn**	**17 01 44.2**	**+0.8**
	0.3nm, 0.3s, baz=211, slow=14, SNR=3.0						
ARCES				Sn	**Sb**	**17 02 24.2**	**-0.3**
	1.0nm, 0.3s, baz=209, slow=24, SNR=3.6						
LOF	**Lofoten**	**3.04**	**292**	*e*P	**Pn**	**17 01 45.2**	**-0.1**
LOF	**Lofoten**	**3.04**	**292**	*e*P	**Pn**	**17 01 45.2**	**-0.1**
	SNR=50						
APA0	**Apatity Array**	**4.62**	**79**	Sn	**Sn**	**17 03 00.1**	**-1.3**
	baz=263, slow=18						
APA0				Lg	Lg	17 03 19.8	
	baz=259, slow=28						
APA0	**Apatity Array**	**4.62**	**79**	Sn	**Sn**	**17 03 00.1**	**-1.3**
	baz=263, slow=18						
APA0				Lg	Lg	17 03 19.8	
	baz=259, slow=28						
APA0	**Apatity Array**	**4.62**	**79**	Sn	**Sn**	**17 03 00.1**	**-1.3**
	SNR=50						
FIA0	**FINESS Array S**	**6.14**	**157**	Pn	**Pn**	**17 02 28.1**	**+0.2**
	baz=346, slow=16						
FIA0				Sn	**Sn**	**17 03 39.4**	**+0.7**
	baz=351, slow=28						
FIA0	**FINESS Array S**	**6.14**	**157**	Pn	**Pn**	**17 02 28.1**	**+0.2**
	baz=346, slow=16						
FIA0				Sn	**Sn**	**17 03 39.4**	**+0.7**
	baz=351, slow=28						
FIA0	**FINESS Array S**	**6.14**	**157**	Pn	**Pn**	**17 02 28.1**	**+0.2**
	SNR=50						
FIA0				Sn	**Sn**	**17 03 39.3**	**+0.7**
	SNR=50						
FINES	**FINESS Array B**	**6.14**	**157**	Pn	**Pn**	**17 02 28.9**	**+1.0**
	0.1nm, 0.3s, baz=348, slow=13, SNR=2.2						
FINES				Sn	**Sn**	**17 03 39.0**	**+0.3**
	0.2nm, 0.3s, baz=351, slow=21, SNR=2.0						
NOA	**NORSAR Array B**	**7.50**	**220**	Pn	**Pn**	**17 02 47.7**	**+1.1**
	0.1nm, 0.3s, baz=26, slow=11, SNR=1.8						
NOA				Lg	Lg	17 04 46.3	
	0.2nm, 0.3s, baz=38, slow=16, SNR=1.3						
HFS	**Hagfors**	**7.77**	**208**	Pn	**Pn**	**17 02 49.6**	**-0.8**
	baz=28, slow=14						
HFS	**Hagfors**	**7.77**	**208**	Pn	**Pn**	**17 02 49.6**	**-0.8**
	baz=28, slow=14						
HFS	**Hagfors**	**7.77**	**208**	Pn	**Pn**	**17 02 49.6**	**-0.8**
	SNR=50						
SPA0	**Spitsbergen Ar**	**11.16**	**355**	Pn	**Pn**	**17 03 35.0**	**-1.6**
	baz=172, slow=14						
SPA0	**Spitsbergen Ar**	**11.16**	**355**	Pn	**Pn**	**17 03 35.0**	**-1.6**
	baz=172, slow=14						
SPA0	**Spitsbergen Ar**	**11.16**	**355**	Pn	**Pn**	**17 03 35.0**	**-1.6**
	SNR=50						

*ISCJB **03** 17:04:50.3±0.4, 35°.42S±0°.09×78°.8E±0°.1, h14km, mb4.3/16, MS3.9/15, Error ellipse: s-maj=13.8km s-min=11.6km az=33.4*
*IDC **03** 17:04:50.0±0.8, 35°.37S×78°.72E, h0km, mb3.8/10, mb1 4.1/10, mb1mx3.8/33, mbtmp3.8/10, MS3.9/15, Ms1 3.9/15, ms1mx3.7/27, Error ellipse: s-maj=30.0km s-min=20.6km az=21.0*
*NEIC **03** 17:04:51.4±0.4, 35°.34S×78°.73E, h10km, mb5.1/6, Error ellipse: s-maj=15.3km s-min=10.5km az=204.0*
*GCMT **03** 17:04:51.4±0.4, 35°.41S×78°.69E, h29km±2km, MW5.0/58, Moment Tensor Solution. s26,c28; s58,c84; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr-0.59±.24; Mθθ-2.75±.19; Mφφ3.34±.19; Mrθ0.48±.33; Mφθ-0.11±.16; Mφr-1.40±.29; Best double couple: M0=3.32800×10^16 NP1:φs=134.00000°, δ=87.00000°, λ=158.00000°. NP2: φs=226.00000°, δ=68.00000°, λ=4.00000°. Principal axes: T 3.7970, Plg18.0000°, Azm88.0000°; N -0.9390, Plg68.0000°, Azm306.0000°; P -2.8580, Plg13.0000°, Azm182.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 03 17:04:52.0±0.6, 35°.4S±0°.1×78°.7E±0°.1, h14km, n38, σ1§01/25, mb4.1/16, MS3.9/15, 1D, Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08S2	**Diego Garcia H**	**28.22**	**347**	T	T	17 39 48.9	
	baz=170, slow=76, SNR=168						
H08S1	**Diego Garcia H**	**28.22**	**347**	T	T	17 39 46.6	
	baz=170, slow=76, SNR=197						
H08S3	**Diego Garcia H**	**28.23**	**347**	T	T	17 39 47.8	
	baz=170, slow=76, SNR=226						
H01W2	**Cape Leeuwin H**	**28.86**	**99**	T	T	17 41 10.0	
	baz=259, slow=74, SNR=65						
H01W3	**Cape Leeuwin H**	**28.86**	**99**	T	T	17 41 12.6	
	baz=259, slow=74, SNR=62						
H01W1	**Cape Leeuwin H**	**28.88**	**99**	T	T	17 41 11.4	
	baz=259, slow=74, SNR=60						
MAW	**Mawson**	**33.50**	**191**	LR	LR	17 22 24.2	
	comp=Z, 226nm, 20.0s, baz=55, slow=31						
SYO	**Syowa Base**	**39.97**	**201**	⇓*e*P	**P**	**17 12 24.6**	**-1.0**
MYKOM	**Kota Tinggi**	**43.83**	**38**	*e*P	**P**	**17 12 56.5**	**-1.3**
	13nm, 1.2s						
BOSA	**Boshof**	**45.39**	**263**	LR	LR	17 27 47.6	
	comp=Z, 271nm, 21.9s, baz=120, slow=30						
LBTB	**Lobatse**	**46.59**	**268**	P	**P**	**17 13 19.8**	**0.0**
	3.3nm, 0.9s, baz=100, slow=6.9, SNR=4.5						
BBOO	**Buckleboo**	**46.97**	**104**	*e*P	**P**	**17 13 22.7**	**+0.2**
	76nm, 2.0s						
ASAR	**Alice Springs**	**48.85**	**92**	P	**P**	**17 13 37.1**	**-0.2**
	1.3nm, 0.9s, baz=241, slow=6.1, SNR=12						
ASAR				LR	LR	17 32 05.3	
	comp=Z, 110nm, 20.1s, baz=252, slow=34						
AS01	**Alice Springs**	**48.89**	**92**	*e*P	**P**	**17 13 36.4**	**-1.3**
WRA	**Warramunga Arr**	**50.98**	**88**	P	**P**	**17 13 55.0**	**+1.6**
	2.3nm, 0.8s, baz=241, slow=7.7, SNR=7.1						
WR1	**Warramunga Arr**	**50.98**	**88**	*e*P	**P**	**17 13 55.0**	**+1.6**
STKA	**Stephens Creek**	**51.68**	**105**	P	**P**	**17 13 58.7**	**+0.1**
	0.9nm, 0.5s, baz=253, slow=4.3, SNR=3.6						
STKA				LR	LR	17 32 22.5	
	comp=Z, 182nm, 20.2s, baz=207, slow=32						
VNDA	**Vanda**	**54.25**	**165**	P	**P**	**17 14 17.1**	**+0.2**
	1.4nm, 0.9s, baz=268, slow=8.4, SNR=4.8						
VNDA				LR	LR	17 34 57.5	
	comp=Z, 132nm, 19.7s, baz=273, slow=33						
QSPA	**South Pole Qui**	**54.75**	**180**	*e*P	**P**	**17 14 21.4**	**+0.6**
CMAR	**Chiang Mai Arr**	**56.90**	**23**	P	**P**	**17 14 36.8**	**+0.3**
	0.6nm, 0.4s, baz=320, slow=25, SNR=6.1						
CMAR				LR	LR	17 36 29.5	
	comp=Z, 32nm, 18.6s,

GRMC *i* 17 08 53.0
comp=Z,18nm,0.3s
TURV Turiamo 4.33 96 *eP* **Pn 17 08 26.5 +0.7**
BARC Barichara 4.45 192 *eP* **Pn 17 08 29.5 +1.8**
BAUV El Baul 4.58 116 *eP* **Pn 17 08 29.1 0.0**
RUSC La Rusia 5.11 190 *eP* **Pn 17 08 38.6 +1.7**
RUSC *i* 17 08 40.8
comp=Z,4.1nm,0.2s

NIED ***03*** *17:35:00,35°.80N×141°.50E,h8km,Mw3.9 Best double couple: M0:8.95000×10^14 NP1:φs:311.00000°,δ7.00000°, λ-127.00000°. NP2:φs:167.00000°,δ85.00000°, λ-86.00000°.*
IDC ***03*** *17:35:23.1±0.9,35°.65N×141°.50E,h0km,mb3.5/6, mb1 3.8/9,mb1mx3.6/41,mbtmp3.6/9,ML3.2/3,MS2.9/5, Ms1 2.9/5,ms1mx2.6/39,Error ellipse: s-maj=28.4km s-min=17.0km az=112.0*
ISCJB ***03*** *17:35:24.4±1.3,35°.75N±0°.04×141°.54E±0°.07,h21km±8km, mb3.6/6,MS3.4/1,Error ellipse: s-maj=9.5km s-min=5.8km az=7.3*
JMA ***03*** *17:35:25.4±0.2,35°.77N×141°.46E,h18km±2km,M3.5*
ISC 03 17:35:23.9±1.8,35°.75N±0°.04×141°.45E±0°.07,h4km±11km, n20,σ0:67/25,mb3.6/6,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.48**	**264**	P	**Pb**	**17 35 35.2**	**+0.2**
CHOJ				S	**Sb**	**17 35 41.9**	**-0.6**
JCN	**Nagara**	**1.07**	**252**	P	**Pn**	**17 35 46.9**	**+1.2**
JCN				*eS*	**Sb**	**17 35 59.7**	**+0.3**
KTR	**Katsuura**	**1.11**	**237**	*eS*	**Sb**	**17 36 00.9**	**+0.5**
JHO	**Hitachi**	**1.11**	**320**	P	**Pg**	**17 35 45.3**	**0.0**
JHO				S	**Sn**	**17 36 01.6**	**-0.6**
JYT	**Yasato**	**1.12**	**295**	P	**Pg**	**17 35 45.0**	**-0.5**
JYT				*eS*	**Sb**	**17 36 01.4**	**+0.4**
BSO1	**Boso 1**	**1.16**	**200**	P	**Pg**	**17 35 46.2**	**0.0**
BSO1				*eS*	**Sn**	**17 36 03.1**	**+0.5**
BSO3	**Boso 3**	**1.22**	**219**	P	**Pn**	**17 35 47.7**	**+0.1**
BSO3				*eS*	**Sg**	**17 36 03.2**	**0.0**
MJAR	**Matsushiro Arr**	**2.74**	**288**	**Pn**	**Pn**	**17 36 09.0**	**+0.3**
	2.4nm,0.3s,baz=105,slow=9.2,SNR=76						
MJAR				LR	LR	17 37 34.4	
	comp=Z,111nm,21.9s,baz=125,slow=47						
MAT	**Matsushiro**	**2.74**	**288**	P	**Pn**	**17 36 09.4**	**+0.6**
MAT				*eS*	**Sn**	**17 36 43.0**	**+0.6**
JHJ	**Hachijo jima 2**	**2.97**	**208**	Pn	**Pn**	**17 36 11.4**	**-0.4**
	5.9nm,0.3s,baz=332,slow=21,SNR=9.5						
JHJ				Sn	**Sn**	**17 36 47.3**	**-0.6**
	20nm,0.3s,baz=62,slow=23,SNR=8.4						
JHJ				LR	LR	17 37 32.4	
	comp=Z,88nm,21.8s,baz=117,slow=45						
ASAJ	**Asahikawa**	**8.40**	**6**	Pn	**Pn**	**17 37 25.9**	**-0.6**
	0.4nm,0.3s,baz=205,slow=17,SNR=6.8						
JNU	**Nakatsue**	**9.12**	**256**	LR	LR	17 41 32.0	
	comp=Z,172nm,18.9s,baz=120,slow=40						
KSRS	**Korea Array**	**11.01**	**283**	LR	LR	17 42 10.9	
	comp=Z,71nm,20.5s,baz=86,slow=37						
MKAR	**Makanchi Array**	**44.84**	**303**	P	**P**	**17 43 39.3**	**+0.2**
	0.3nm,0.3s,baz=93,slow=10,SNR=5.7						
ILAR	**Eielson Array**	**50.56**	**32**	P	**P**	**17 44 23.9**	**+0.7**
	0.5nm,0.7s,baz=264,slow=6.3,SNR=4.4						
WRA	**Warramunga Arr**	**55.80**	**188**	P	**P**	**17 45 00.6**	**-1.7**
	1.1nm,0.8s,baz=3.0,slow=7.9,SNR=7.7						
ASAR	**Alice Springs**	**59.53**	**188**	P	**P**	**17 45 27.4**	**-1.0**
	0.7nm,1.1s,baz=18,slow=12,SNR=7.0						
YKA	**Yellowknife Ar**	**64.90**	**30**	P	**P**	**17 46 04.3**	**+0.2**
	0.3nm,0.7s,baz=300,slow=7.0,SNR=5.1						
NWAO	**Narrogin (SRO)**	**71.99**	**201**	LR	LR	18 18 10.0	
	comp=Z,18nm,18.2s,slow=36						
PDAR	**Pinedale Array**	**78.54**	**45**	P	**P**	**17 47 27.1**	**+0.3**
	0.2nm,0.5s,baz=308,slow=4.5,SNR=2.7						

ISCJB ***03*** *17:39:55.8±1.3,24°.84S±0°.09×69°.23W±0°.08,h101km, mb3.5/1,Error ellipse: s-maj=13.2km s-min=10.3km az=164.8*
GUC ***03*** *17:39:57.4±0.6,24°.78S×69°.19W,h65km±30km,ML3.4*
IDC ***03*** *17:39:57.7±2.5,24°.79S×69°.16W,h101km±8km,mb3.5/1, mb1 3.2/2,mb1mx3.1/22,mbtmp3.5/2,Error ellipse: s-maj=88.2km s-min=52.7km az=73.0*
ISC 03 17:39:56.9±1.2,24°.81S±0°.10×69°.28W±0°.09,h101km,n10, σ0:44/16,3C-3D,Northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB14	**IPOC Station P**	**1.04**	**280**	⇑*iP*	**Pn**	**17 40 17.9**	**-0.3**
PB14				*i S*	**Sn**	**17 40 33.9**	**-0.2**
PB14				IAML		17 40 38.5	
	comp=E,1μm,0.3s						
ANCH	**Antofagasta**	**1.53**	**317**	⇓*iP*	**Pn**	**17 40 23.9**	**+0.4**
ANCH				*i S*	**Sn**	**17 40 43.4**	**-0.3**
PB10	**IPOC Station P**	**1.74**	**318**	⇓*iP*	**Pn**	**17 40 26.4**	**+0.2**
PB10				*i S*	**Sn**	**17 40 48.3**	**-0.2**
PB10				IAML		17 40 54.0	
	comp=N,876nm,0.3s						
PB06	**IPOC Station P**	**2.11**	**353**	⇑*iP*	**Pn**	**17 40 31.4**	**+0.3**
PB06				*eS*	**Sn**	**17 40 57.1**	**-0.1**
PB06				IAML		17 41 01.6	
	comp=N,166nm,0.7s						
LVC	**Limon Verde**	**2.21**	**9**	⇑*iP*	**Pn**	**17 40 32.6**	**0.0**
PB09	**IPOC Station P**	**3.00**	**1**	⇓*iP*	**Pn**	**17 40 43.4**	**+0.5**
PB09				*i S*	Sn	17 41 10.8	-7.3
LPAZ	**La Paz**	**8.54**	**7**	P	**Pn**	**17 41 57.5**	**-0.9**
	comp=N,0.2nm,0.3s,baz=174,slow=5.2,SNR=1.9						
TORD	**Torodi Ar. Bea**	**78.79**	**70**	P	**P**	**17 51 48.7**	**-0.3**
	comp=N,0.4nm,0.5s,baz=253,slow=4.8,SNR=3.8						
TORD				pP	**pP**	**17 52 15.6**	**+0.5**
	comp=N,0.6nm,0.7s,baz=259,slow=5.5,SNR=3.5						
ZALV	**Zalesovo Beam**	**145.06**	**27**	PKPbc	**PKPbc**	**17 59 22.2**	**+0.6**
	comp=N,0.7nm,0.5s,baz=308,slow=5.3,SNR=2.6						
ZALV				pPKPbc	pPKPbc	17 59 48.7	-0.4
	comp=N,0.3nm,0.5s,baz=282,slow=6.6,SNR=1.0						
MKAR	**Makanchi Array**	**148.46**	**39**	PKPbc	**PKPbc**	**17 59 31.8**	**+0.1**
	comp=N,0.2nm,0.3s,baz=294,slow=3.9,SNR=2.5						
MKAR				pPKPbc	**pPKPbc**	**17 59 59.1**	**-0.1**
	comp=N,0.1nm,0.2s,baz=299,slow=4.1,SNR=1.2						

JMA 03 17:55:00.8,37°.01N×140°.71E,h9km±1km,M2.5,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.12**	**38**	P	Pg	17 55 03.6	0.0
ONAJ				S	Sg	17 55 05.5	0.0
JFK	**Kawauchi**	**0.38**	**20**	P	Pg	17 55 08.1	-0.2
JFK				S	Sg	17 55 13.4	+0.1
JHO	**Hitachi**	**0.41**	**196**	P	Pg	17 55 08.8	-0.1
JHO				S	Sg	17 55 14.3	-0.1
JFT	**Otama**	**0.59**	**330**	P	Pg	17 55 12.3	+0.1
JFT				S	Sg	17 55 20.1	+0.2

IDC 03 17:55:42.6±2.9,37°.74N×142°.55E,h0km,mb3.3/3, mb1 3.6/4,mb1mx3.3/40,mbtmp3.3/4,ML3.4/1,Error ellipse: s-maj=70.3km s-min=35.6km az=52.0,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**3.67**	**252**	Pn	Pn	17 56 40.5	-0.1
	2.8nm,0.3s,baz=89,slow=15,SNR=15						
MAT	**Matsushiro**	**3.67**	**252**	P	Pn	17 56 40.6	0.0
MAT				*eS*	Sb	17 57 29.1	-4.2
MKAR	**Makanchi Array**	**44.52**	**302**	P	P	18 03 55.6	-0.2
	0.1nm,0.3s,baz=78,slow=7.5,SNR=2.0						
WRA	**Warramunga Arr**	**57.89**	**189**	P	P	18 05 36.1	-0.2
	0.5nm,0.6s,baz=10,slow=7.3,SNR=5.2						
ASAR	**Alice Springs**	**61.62**	**189**	P	P	18 06 02.0	0.0
	0.2nm,0.5s,baz=4.3,slow=7.2,SNR=5.6						

ISCJB ***03*** *18:10:06.2±0.5,8°.32S±0°.05×119°.98E±0°.05,h172km, mb3.7/3,Error ellipse: s-maj=8.0km s-min=5.0km az=135.5*
IDC ***03*** *18:10:08.5±1.2,8°.02S×120°.33E,h204km±11km,mb3.3/4, mb1 3.5/9,mb1mx3.1/38,mbtmp4.0/9,Error ellipse: s-maj=34.6km s-min=7.5km az=53.0*
DJA ***03*** *18:10:09.0±0.5,8°.S±4°.×12°.0E±°,h126km±12km,M4.1/12, mB5.3/1,mb4.7/3,MLv3.9/4,MLv4.0/12,Mw(mB)4.7/1*
ISC 03 18:10:06.0±0.8,8°.32S±0°.06×119°.97E±0°.07,h172km,n20, σ1:47/24,mb3.6/3,Flores region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EDFI	**Ende, Flores**	**1.75**	**104**	P	**Pn**	**18 10 40.4**	**+0.4**
BASI	**Baing, Sumba**	**1.98**	**162**	P	**Pn**	**18 10 43.6**	**+1.3**
BSSI	**Bau Bau, Buton**	**2.22**	**13**	P	**Pn**	**18 10 45.4**	**+0.4**
PLAI	**Plampang**	**2.23**	**257**	P	**Pn**	**18 10 46.1**	**+1.0**
MMRI	**Maumere**	**2.26**	**98**	P	**Pn**	**18 10 46.5**	**+1.0**
MMRI				S	**Sn**	**18 11 15.7**	**-0.4**
TWSI	**Taliwang, Sumb**	**3.08**	**262**	P	**Pn**	**18 10 56.0**	**+0.7**
KAPI	**Kappang**	**3.29**	**356**	P	**Pn**	**18 10 58.3**	**+0.4**
	5.4nm,0.3s,baz=168,slow=9.7,SNR=21						
KAPI				S	**Sn**	**18 11 39.0**	**+0.6**
	3.6nm,0.3s,baz=24,slow=22,SNR=2.2						
BATI	**Baumata**	**4.10**	**118**	P	**Pn**	**18 11 10.2**	**+2.1**
	baz=232,slow=20						
BATI				S	**Sn**	**18 11 58.0**	**+1.2**
	baz=232,slow=19						
BATI	**Baumata**	**4.10**	**118**	P	**Pn**	**18 11 10.4**	**+2.2**
SPSI	**Sidrap Palu**	**4.33**	**357**	P	**Pn**	**18 11 12.7**	**+1.6**
SOEI	**Soe**	**4.48**	**109**	P	**Pn**	**18 11 14.8**	**+1.7**
ABJI	**Asem Bagus**	**5.71**	**275**	P	Pn	18 11 32.9	+3.8
	37nm,2.0s,0.2nm0.2nm						
PCJI	**Pacitan**	**8.71**	**270**	P	**Pn**	**18 12 09.1**	**+0.4**
FITZ	**Fitzroy Crossi**	**11.18**	**151**	P	**Pn**	**18 12 42.1**	**+1.0**
	0.9nm,0.3s,baz=327,slow=11,SNR=24						
FITZ				S	**Sn**	**18 14 42.3**	**-2.8**
	0.4nm,0.3s,baz=295,slow=14,SNR=2.1						
LEM	**Lembang**	**12.34**	**276**	P	**P**	**18 13 01.5**	**+0.1**
	2.6nm,0.3s,baz=168,slow=19,SNR=3.7						
WRA	**Warramunga Arr**	**18.08**	**131**	P	**P**	**18 14 05.5**	**+0.8**
	0.6nm,0.3s,baz=306,slow=13,SNR=24						
WRA				S	**S**	**18 17 20.7**	**-2.4**
	0.3nm,0.3s,baz=302,slow=25,SNR=7.5						
ASAR	**Alice Springs**	**20.27**	**140**	P	**P**	**18 14 29.6**	**+1.2**
	1.1nm,0.4s,baz=322,slow=11,SNR=30						
ASAR				S	**S**	**18 18 04.6**	**-1.9**
	1.5nm,0.7s,baz=329,slow=25,SNR=9.8						
STKA	**Stephens Creek**	**30.88**	**142**	P	**P**	**18 16 06.7**	**+0.4**
	1.4nm,0.4s,baz=312,slow=9.1,SNR=9.2						
MKAR	**Makanchi Array**	**64.30**	**332**	P	**P**	**18 20 21.3**	**-1.8**
	0.4nm,0.5s,baz=141,slow=8.0,SNR=6.9						
ZALV	**Zalesovo Beam**	**68.75**	**339**	P	P	18 20 48.9	-2.1
	0.3nm,0.3s,baz=146,slow=8.0,SNR=3.0						

IDC 03 18:20:00.3±9.5,36°.28N×143°.85E,h0km,mb3.5/2, mb1 3.6/3,mb1mx3.2/57,mbtmp3.3/3,ML2.7/1,Error ellipse: s-maj=205.6km s-min=35.3km az=28.0,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**4.55**	**275**	Pn	Pn	18 21 09.9	-0.6
	0.4nm,0.3s,baz=92,slow=11,SNR=11						
MJAR				Sn	Sn	18 22 05.2	+1.0
	0.3nm,0.3s,baz=55,slow=24,SNR=5.2						
WRA	**Warramunga Arr**	**56.63**	**191**	P	P	18 29 45.2	-0.1
	0.6nm,0.5s,baz=12,slow=7.1,SNR=7.1						
ASAR	**Alice Springs**	**60.36**	**190**	P	P	18 30 11.2	0.0
	0.2nm,0.5s,baz=7.8,slow=7.5,SNR=3.8						

IDC 03 18:21:44.5±1.1,0°.59S×121°.66E,h0km,mb3.5/5, mb1 3.6/6,mb1mx3.4/49,mbtmp3.5/6,ML3.6/1,MS2.2/1, Ms1 2.2/1,ms1mx2.1/27,Error ellipse: s-maj=41.8km s-min=18.6km az=70.0,Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAPI	**Kappang**	**4.79**	**203**	Pn	Pn	18 22 57.8	-0.2
	2.8nm,0.3s,baz=40,slow=8.1,SNR=4.5						
KAPI				Sn	Sn	18 23 55.3	+1.0
	0.8nm,0.3s,baz=54,slow=19,SNR=3.1						
KAPI				LR	LR	18 24 22.1	
	comp=Z,29nm,21.6s,baz=114,slow=33						
WRA	**Warramunga Arr**	**22.89**	**148**	P	P	18 26 49.5	-0.6
	1.0nm,0.7s,baz=330,slow=9.9,SNR=7.0						
ASAR	**Alice Springs**	**25.84**	**154**	P	P	18 27 17.8	-0.1
	0.2nm,0.7s,baz=329,slow=10,SNR=3.9						
CTA	**Charters Tower**	**30.90**	**130**	P	P	18 28 02.7	-0.4
	0.5nm,0.3s,baz=300,slow=8.1,SNR=3.0						
SONM	**Songino Array**	**50.03**	**347**	P	P	18 30 40.7	-0.3
	0.5nm,0.9s,baz=163,slow=6.4,SNR=2.1						
MKAR	**Makanchi Array**	**58.42**	**329**	P	P	18 31 42.9	+0.9
	0.6nm,0.8s,baz=127,slow=8.4,SNR=6.1						

IDC ***03*** *18:22:05.4±2.8,39°.08S×74°.61W,h0km,mb3.7/3, mb1 4.1/5,mb1mx3.8/27,mbtmp3.8/5,ML4.4/2,MS3.6/3, Ms1 3.5/3,ms1mx3.1/18,Error ellipse: s-maj=55.2km s-min=34.2km az=39.0*
GUC ***03*** *18:22:05.1±0.5,38°.96S×74°.62W,h12km±13km,ML4.3*
ISC 03 18:22:06.0±2.3,39°.03S±0°.07×74°.9W±0°.2,h35km,n22, σ1:11/20,mb3.5/3,3C-3D,Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PSCH	**Puerto Saavedr**	**1.23**	**80**	⇓*iP*	**Pn**	**18 22 27.1**	**+0.3**
PSCH				*i S*	**Sn**	**18 22 40.3**	**-1.8**
VLCH	**Valdivia**	**1.52**	**121**	*eP*	**Pn**	**18 22 30.0**	**-0.7**
VLCH				*i S*	**Sn**	**18 22 47.5**	**-1.8**
CCSP	**San Pedro de C**	**2.62**	**34**	*eS*	**Sn**	**18 23 16.2**	**-0.2**
CCSP				IAML		18 23 18.5	
	comp=N,1μm,0.3s						
CANA	**Caviahue**	**3.25**	**71**	*i P*	**Pn**	**18 22 56.3**	**+1.6**
CANA				*i S*	**Sn**	**18 23 32.0**	**-0.3**
CCHI	**Chillan**	**3.32**	**44**	IAML		18 23 38.6	
	comp=N,671nm,0.8s						
COCH	**Cobquecura**	**3.36**	**31**	⇓*iP*	**Pn**	**18 22 55.4**	**-0.6**
COCH				*i S*	**Sn**	**18 23 34.1**	**-0.6**
COCH				IAML		18 23 36.9	
	comp=E,1000nm,0.3s						
PLCA	**Paso Flores**	**3.78**	**118**	*i P*	**Pn**	**18 23 01.9**	**0.0**
PLCA				IAML		18 23 11.2	
	comp=Z,252nm,0.6s						
PLCA	**Paso Flores**	**3.78**	**118**	Pn	**Pn**	**18 23 01.9**	**0.0**
	comp=Z,9.6nm,0.3s,baz=309,slow=14,SNR=203						
PLCA				Sn	Sn	18 23 55.0	+10
	comp=Z,5.2nm,0.3s,baz=240,slow=18,SNR=2.6						
PLCA	**Paso Flores**	**3.78**	**118**	⇑*iP*	**Pn**	**18 23 01.9**	**0.0**
RCDM	**Rinconada Maip**	**6.46**	**32**	⇓*iP*	**Pn**	**18 23 37.6**	**-1.1**
CLCH	**Cerro Calan**	**6.66**	**34**	⇑*iP*	**Pn**	**18 23 40.9**	**-0.5**
PEL	**Peldehue**	**6.81**	**32**	⇑*iP*	**Pn**	**18 23 42.7**	**-0.8**
ROCH	**El Roble**	**6.83**	**29**	*eP*	**Pn**	**18 23 43.1**	**-0.8**
AUSP	**Uspallata**	**8.16**	**35**	*i P*	**Pn**	**18 24 00.8**	**-1.5**
RTLS	**Leoncito**	**8.56**	**34**	*i P*	**Pn**	**18 24 07.2**	**-0.5**
AMOG	**MOGNA**	**9.65**	**35**	*i P*	Pn	18 24 19.1	-3.4
LVC	**Limon Verde**	**17.16**	**19**	LR	LR	18 31 26.8	
	comp=Z,276nm,19.0s,baz=230,slow=33						
CPUP	**Villa Florida**	**19.45**	**55**	P	**Pn**	**18 26 31.5**	**+0.5**
	comp=Z,0.1nm,0.3s,baz=240,slow=11,SNR=7.1						
CPUP				LR	LR	18 34 44.4	
	comp=Z,119nm,21.6s,baz=229,slow=39						
LPAZ	**La Paz**	**23.43**	**17**	P	P	18 27 18.2	+5.5
	comp=Z,1.0nm,0.7s,baz=199,slow=18,SNR=3.0						
SIV	**San Ignacio**	**25.98**	**32**	P	**P**	**18 27 37.7**	**+2.1**
	comp=Z,2.0nm,0.9s,baz=184,slow=14,SNR=3.5						
MAW	**Mawson**	**69.01**	**164**	LR	LR	19 01 08.9	
	comp=Z,43nm,18.9s,baz=232,slow=34						
TXAR	**Lajitas Array**	**73.10**	**334**	P	P	18 33 38.4	+5.6
	comp=Z,0.3nm,0.5s,baz=165,slow=7.5,SNR=4.1						

IDC ***03*** *18:30:29.7±1.1,35°.08N×26°.85E,h0km,mb3.4/3, mb1 3.3/7,mb1mx3.2/49,mbtmp3.3/7,ML3.3/4,MS3.5/1, Ms1 3.5/1,ms1mx2.0/32,Error ellipse: s-maj=29.6km s-min=15.3km az=170.0*
DDA ***03*** *18:30:31.1,35°.36N×26°.64E,h5km,Md3.5*
ISCJB ***03*** *18:30:33.3±0.4,35°.07N±0°.04×26°.75E±0°.02,h46km±7km, mb3.3/3,MS3.5/1,Error ellipse: s-maj=6.3km s-min=2.9km az=167.7*
ISK ***03*** *18:30:33.3,35°.11N×26°.73E,h57km,ML3.0*
ATH ***03*** *18:30:34.7,35°.35N×26°.57E,h25km±1km,ML3.3/5,Error ellipse: s-maj=2.8km s-min=0.7km az=152.0*
THE ***03*** *18:30:35.2,35°.22N×26°.65E,h15km,ML3.4/6,Error ellipse: s-maj=1.3km s-min=0.3km az=151.0*
CSEM ***03*** *18:30:35.1±0.2,35°.16N×26°.72E,h30km,ML3.4,Error ellipse: s-maj=7.0km s-min=2.7km az=167.0*
ISC 03 18:30:33.8±1.0,35°.12N±0°.04×26°.72E±0°.02,h28km±8km, n161,σ1:14/201,mb3.3/3,Crete

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZKR	**Zakros**	**0.41**	**270**	P	**Pb**	**18 30 42.5**	**-0.2**
ZKR				S	**Sb**	**18 30 48.7**	**-0.1**
ZKR	**Zakros**	**0.41**	**270**	P	**Pb**	**18 30 42.0**	**-0.7**
ZKR				S	**Sb**	**18 30 49.1**	**+0.3**
ZKR	**Zakros**	**0.41**	**270**	P	**Pb**	**18 30 42.0**	**-0.7**
ZKR				S	**Sb**	**18 30 49.1**	**+0.3**
ZKR				AML	AML	18 30 50.3	
	comp=E,23196μm,0.4s						
ZKR				AML	AML	18 30 51.0	
	comp=N,22664μm,0.3s						
KARP	**Karpathos**	**0.56**	**40**	*e*PG	**Pn**	**18 30 46.1**	**0.0**
KARP				*e*SG	**Sn**	**18 30 55.8**	**+1.3**
KARP	**Karpathos**	**0.56**	**40**	P	**Pn**	**18 30 45.6**	**-0.5**
KARP				S	**Sn**	**18 30 54.0**	**-0.5**
KARP	**Karpathos**	**0.56**	**40**	P	**Pn**	**18 30 46.1**	**0.0**
KARP				S	**Sn**	**18 30 53.9**	**-0.5**
KARP				*e*Sg	**Sn**	**18 30 55.8**	**+1.3**
KARP	**Karpathos**	**0.56**	**40**	P	**Pn**	**18 30 46.1**	**0.0**
KARP				S	**Sn**	**18 30 53.9**	**-0.5**
KARP				AML	AML	18 30 56.0	
	comp=N,9517μm,0.4s						
KARP				AML	AML	18 31 00.4	
	comp=E,6840μm,0.3s						
NPS	**Neapolis**	**0.92**	**279**	P	**Pn**	**18 30 50.7**	**-0.2**
NPS				S	**Sn**	**18 31 03.1**	**-0.1**
NPS	**Neapolis**	**0.92**	**279**	P	**Pn**	**18 30 51.2**	**+0.3**
NPS				S	**Sn**	**18 31 03.1**	**-0.1**
NPS	**Neapolis**	**0.92**	**279**	P	**Pn**	**18 30 51.2**	**+0.3**
NPS				AML	AML	18 31 10.5	
	comp=N,3848μm,0.5s						
NPS				AML	AML	18 31 12.2	
	comp=E,3505μm,0.4s						
LAST	**Lasithi**	**1.02**	**273**	P	**Pn**	**18 30 52.3**	**0.0**
LAST				S	**Sn**	**18 31 05.9**	**+0.1**
LAST	**Lasithi**	**1.02**	**273**	P	**Pn**	**18 30 52.3**	**0.0**
LAST				S	**Sn**	**18 31 05.9**	**+0.1**
LAST	**Lasithi**	**1.02**	**273**	P	**Pn**	**18 30 52.3**	**0.0**
IACM	**Heraklion**	**1.36**	**278**	P	**Pb**	**18 30 59.0**	**+0.3**
IACM	**Heraklion**	**1.36**	**278**	P	**Pb**	**18 30 59.0**	**+0.3**
IDI	**Anoyia**	**1.51**	**277**	Pn	**Pb**	**18 31 00.7**	**-0.4**
	comp=E,29nm,0.3s,baz=91,slow=16,SNR=22						
IDI				Sn	**Sb**	**18 31 23.3**	**+3.4**
	comp=E,46nm,0.3s,baz=135,slow=11,SNR=9.2						
IDI				LR	LR	18 31 49.5	
	comp=E,69nm,18.9s,baz=89,slow=49						
IDI	**Anoyia**	**1.51**	**277**	P	**Pn**	**18 30 59.4**	**+0.3**
IDI				S	**Sn**	**18 31 17.9**	**+0.1**
IDI	**Anoyia**	**1.51**	**277**	P	**Pb**	**18 31 00.5**	**-0.7**
IDI				S	**Sn**	**18 31 17.9**	**+0.1**
IDI	**Anoyia**	**1.51**	**277**	P	**Pb**	**18 31 00.5**	**-0.7**
NIS1	**Nisyros Isl.**	**1.53**	**14**	*e*PN	**Pn**	**18 30 59.4**	**+0.1**
NIS1	**Nisyros Isl.**	**1.53**	**14**	*e*Pn	**Pn**	**18 30 59.4**	**+0.1**
NISR	**Nisiros**	**1.53**	**12**	P	**Pn**	**18 30 58.3**	**-1.0**
NISR	**Nisiros**	**1.53**	**12**	P	**Pn**	**18 30 58.3**	**-1.0**
SIVA	**Sivas**	**1.57**	**267**	P	**Pb**	**18 31 01.7**	**-0.5**
SIVA				S	**Sn**	**18 31 20.1**	**+0.9**
SIVA	**Sivas**	**1.57**	**267**	P	**Pb**	**18 31 03.2**	**+1.0**
SIVA				S	**Sn**	**18 31 20.1**	**+0.9**
SIVA	**Sivas**	**1.57**	**267**	P	**Pb**	**18 31 03.2**	**+1.0**
SIVA				AML	AML	18 31 38.7	
	comp=N,1554μm,0.6s						
SIVA				AML	AML	18 31 45.2	
	comp=E,1922μm,0.6s						
ARG	**Arkhangelos**	**1.59**	**46**	P	**Pb**	**18 31 01.8**	**-0.7**
ARG	**Arkhangelos**	**1.59**	**46**	P	**Pb**	**18 31 02.0**	**-0.5**
SANT	**Santorini**	**1.62**	**321**	P	**Pn**	**18 31 00.4**	**-0.2**
SANT	**Santorini**	**1.62**	**321**	P	**Pn**	**18 31 00.6**	**+0.1**
SANT	**Santorini**	**1.62**	**321**	P	**Pn**	**18 31 00.6**	**+0.1**
THR6	**Thira Island,**	**1.64**	**319**	P	**Pn**	**18 31 00.5**	**-0.3**
THR6	**Thira Island,**	**1.64**	**319**	P	**Pn**	**18 31 00.5**	**-0.3**
THR7	**Fira-Santorini**	**1.67**	**322**	P	**Pn**	**18 31 00.8**	**-0.5**
THR7				S	**Sn**	**18 31 21.3**	**-0.5**
THR7	**Fira-Santorini**	**1.67**	**322**	P	**Pn**	**18 31 00.8**	**-0.5**
THR7				S	**Sn**	**18 31 21.3**	**-0.5**
THR3	**Thira Island,**	**1.68**	**321**	P	**Pn**	**18 31 01.1**	**-0.2**
THR3	**Thira Island,**	**1.68**	**321**	P	**Pn**	**18 31 01.1**	**-0.2**
THR2	**Thira island,**	**1.69**	**322**	P	**Pn**	**18 31 01.0**	**-0.5**
THR2	**Thira island,**	**1.69**	**322**	P	**Pn**	**18 31 01.0**	**-0.5**
THR5	**Thira Island,**	**1.71**	**320**	*e*PN	**Pn**	**18 31 01.9**	**+0.2**
THR5	**Thira Island,**	**1.71**	**320**	P	**Pn**	**18 31 01.8**	**0.0**
THR5	**Thira Island,**	**1.71**	**320**	*e*Pn	**Pn**	**18 31 02.0**	**+0.2**
CMBO	**Columbo, Santo**	**1.72**	**322**	P	**Pn**	**18 31 02.0**	**0.0**
CMBO				S	**Sn**	**18 31 22.3**	**-0.7**
CMBO	**Columbo, Santo**	**1.72**	**322**	P	**Pn**	**18 31 02.0**	**0.0**
CMBO				S	**Sn**	**18 31 22.3**	**-0.7**
CMBO	**Columbo, Santo**	**1.72**	**322**	P	**Pn**	**18 31 02.0**	**0.0**
BODT	**Bodrum**	**2.00**	**14**	*e*PN	**Pn**	**18 31 06.3**	**+0.5**
BODT	**Bodrum**	**2.00**	**14**	*e*Pn	**Pn**	**18 31 06.3**	**+0.5**
BDRM	**Kayabasi**

DENT	Denizli	3.23	35	*e*PN	Pn	18 31 23.0	+0.3
DENT	Denizli	3.23	35	*e*Pn	Pn	18 31 23.0	+0.3
BLCB	Balcova	3.27	4	*e*PN	Pn	18 31 24.1	+0.8
BLCB	Balcova	3.27	4	*e*Pn	Pn	18 31 24.1	+0.8
IZM	Izmir	3.30	7	*e*PN	Pn	18 31 24.6	+0.9
IZM	Izmir	3.30	7	*e*Pn	Pn	18 31 24.6	+0.9
CHOS	Chios island	3.31	351	P	Pn	18 31 23.1	-0.7
CHOS	Chios island	3.31	351	P	Pn	18 31 23.1	-0.7
VLI	Veliai	3.46	299	P	Pn	18 31 25.8	-0.1
VLI	Veliai	3.46	299	P	Pn	18 31 26.0	+0.1
VLI	Veliai	3.46	299	P	Pn	18 31 25.9	+0.1
KORT	Korkueli	3.49	56	P	Pn	18 31 27.7	+1.3
KORT				S	Sn	18 32 11.0	+4.1
KORT	Korkueli	3.49	56	*i* P	Pn	18 31 27.7	+1.3
KORT				*i* S	Sn	18 32 11.0	+4.1
KRND	KRANIDI	3.66	309	P	Pn	18 31 30.4	+1.7
KRND	KRANIDI	3.66	309	P	Pn	18 31 30.4	+1.7
DID	Didima	3.69	311	P	Pn	18 31 29.1	+0.1
DID	Didima	3.69	311	P	Pn	18 31 29.1	+0.1
DID	Didima	3.69	311	P	Pn	18 31 29.1	+0.1
KULA	Kula-Manisa	3.73	24	*e*PN	Pn	18 31 30.7	+1.0
KULA	Kula-Manisa	3.73	24	*e*Pn	Pn	18 31 30.7	+1.0
KHAL	Karahalli	3.94	34	P	Pn	18 31 32.8	+0.3
KHAL				S	Sn	18 32 15.0	-2.8
KHAL	Karahalli	3.94	34	*i* P	Pn	18 31 32.9	+0.3
KHAL				*i* S	Sn	18 32 15.0	-2.8
VILL	Villia	4.09	319	P	Pn	18 31 35.4	+0.8
VIL2	Platees	4.15	319	P	Pn	18 31 35.4	+0.1
VLX	Vlachokerasia	4.17	304	P	Pn	18 31 37.5	+1.9
VLX	Vlachokerasia	4.17	304	P	Pn	18 31 37.5	+1.9
SUTC	Sutluce-Ispart	4.18	55	*e*PN	Pn	18 31 36.7	+0.8
SUTC	Sutluce-Ispart	4.18	55	*e*Pn	Pn	18 31 36.7	+0.8
LTK	Loutraki	4.18	315	P	Pn	18 31 36.4	+0.6
LTK	Loutraki	4.18	315	P	Pn	18 31 36.4	+0.6
DEMI	Demirci	4.23	22	P	Pn	18 31 38.1	+1.6
DEMI	Demirci	4.23	22	*i* P	Pn	18 31 38.1	+1.6
TRIP	Tripoli	4.32	305	P	Pn	18 31 39.0	+1.2
TRIP	Tripoli	4.32	305	P	Pn	18 31 39.0	+1.2
PROD	Prodromos	4.39	317	P	Pn	18 31 40.1	+1.5
PROD	Prodromos	4.39	317	P	Pn	18 31 40.1	+1.5
ITM	Ithomi	4.39	299	P	Pn	18 31 39.0	+0.4
ITM	Ithomi	4.39	299	P	Pn	18 31 39.0	+0.4
PYL	PYLOS	4.41	295	P	Pn	18 31 41.7	+2.8
PYL	PYLOS	4.41	295	P	Pn	18 31 41.6	+2.8
GAZI	Gazipasa	4.69	75	P	Pn	18 31 42.1	-0.7
GAZI	Gazipasa	4.69	75	*i* P	Pn	18 31 42.1	-0.7
GAZI				*i* S	Sn	18 32 32.4	-3.9
KLV	Kalavryta, Ach	4.69	310	P	Pn	18 31 44.8	+1.9
KLV	Kalavryta, Ach	4.69	310	P	Pn	18 31 44.8	+1.9
DSF	Desfina	4.70	316	P	Pn	18 31 44.6	+1.6
DSF	Desfina	4.70	316	P	Pn	18 31 44.6	+1.6
AMT	Artemida-Makis	4.71	302	P	Pn	18 31 45.6	+2.6
AMT	Artemida-Makis	4.71	302	P	Pn	18 31 45.6	+2.6
KALE	Kalithea	4.92	313	P	Pn	18 31 48.1	+2.1
KALE	Kalithea	4.92	313	P	Pn	18 31 48.1	+2.1
LAKA	Lakka	4.92	311	P	Pn	18 31 48.3	+2.3
LAKA	Lakka	4.92	311	P	Pn	18 31 48.3	+2.3
DRO	Drossia	4.92	307	P	Pn	18 31 46.5	+0.5
DRO	Drossia	4.92	307	P	Pn	18 31 46.5	+0.5
ERMK	Ermenek	5.25	71	P	Pn	18 31 52.7	+2.0
ERMK				S	Sn	18 32 51.7	+1.2
ERMK	Ermenek	5.25	71	*i* P	Pn	18 31 52.7	+2.0
ERMK				*i* S	Sn	18 32 51.7	+1.2
KIZT	Kizilcal	5.58	46	*e*PN	Pn	18 31 55.8	+0.7
KIZT	Kizilcal	5.58	46	*e*Pn	Pn	18 31 55.8	+0.7
BRTR	Keskin Array B	7.17	48	Pn	Pn	18 32 15.8	-1.2
	comp=N,0.1nm,0.3s,baz=216,slow=16,SNR=2.4						
BRTR				Sn	Sn	18 33 36.1	-1.5
	comp=N,0.1nm,0.3s,baz=222,slow=23,SNR=2.5						
MMAI	Mount Meron Ar	7.51	104	Pn	Pn	18 32 20.1	-1.5
	comp=N,1.8nm,0.3s,baz=289,slow=12,SNR=5.7						
MMAI				Sn	Sn	18 33 40.9	-4.9
	comp=N,1.7nm,0.3s,baz=262,slow=19,SNR=3.2						
EIL	Elat	8.83	126	Pn	Pn	18 32 38.0	-1.6
	comp=N,0.5nm,0.3s,baz=324,slow=18,SNR=3.7						
EIL				Sn	Sn	18 34 09.7	-8.5
	comp=N,0.5nm,0.3s,baz=306,slow=14,SNR=2.5						
ASF	Jabal al Asfar	8.98	106	Pn	Pn	18 32 40.0	-1.8
	comp=N,0.4nm,0.3s,baz=253,slow=1.5,SNR=3.1						
TORD	Torodi Ar. Bea	31.45	232	P	P	18 36 51.9	-1.2
	comp=N,0.2nm,0.3s,baz=34,slow=9.0,SNR=5.4						
KURBB	Kurchatov Arra	40.16	51	P	P	18 38 07.0	-0.3
	comp=N,0.3nm,0.5s,baz=275,slow=8.5,SNR=6.6						
MKAR	Makanchi Array	42.73	57	P	P	18 38 28.2	-0.4
	comp=N,0.3nm,0.5s,baz=268,slow=8.6,SNR=5.8						
LSZ	Lusaka	50.14	178	LR	LR	19 01 58.9	
	comp=N,44nm,19.3s,baz=260,slow=38						

NIED ***03*** *18:40:00,36°.20N×141°.00E,h26km,Mw3.9 Best double couple: M₀7.04000×10¹⁴ NP1:φ=30.00000°,δ32.00000°, λ-66.00000°. NP2:φ=183.00000°,δ61.00000°, λ-104.00000°.*
JMA ***03*** *18:40:09.1,36°.25N×141°.01E,h38km±1km,M3.8*
JMA Felt I J1.
IDC ***03*** *18:40:11.7±2.9,36°.24N×141°.04E,h44km±30km,mb3.3/6, mb1 3.6/8,mb1mx3.3/49,mbtmp3.6/8,ML3.2/2,MS2.8/5, Ms1 2.8/5,ms1mx2.6/28,Error ellipse: s-maj=25.8km s-min=11.8km az=69.0*

ISC 03 18:40:08.1±1.1,36°.32N±0°.03×140°.91E±0°.05,h19km±4km, n19,σ1=04/23,mb3.7/7,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	Hitachi	0.40	317	P	Pn	18 40 19.7	+0.7
JHO				S	Sn	18 40 27.4	+1.3
JYT	Yasato	0.59	262	P	Pn	18 40 21.9	+0.4
JYT				S	Sn	18 40 31.1	+0.6
CHOJ	Chosi	0.61	184	P	Pg	18 40 20.4	+0.1
CHOJ				S	Sg	18 40 28.9	+0.3
ONAJ	Iwakimizuishiy	0.79	353	P	Pn	18 40 24.8	+0.4
JFK	Kawauchi	1.05	358	P	Pg	18 40 28.1	-0.5
JAG	Ashikaga	1.18	276	P	Pg	18 40 30.7	-0.4
JAG				*e*S	Sg	18 40 46.4	-0.2
JFT	Otama	1.29	339	P	Pg	18 40 33.4	+0.4
JFT				S	Sg	18 40 50.5	+0.6
MJAR	Matsushiro Arr	2.19	277	P	Pb	18 40 46.4	-0.8
	12nm,0.3s,baz=99,slow=8.5,SNR=178						
MJAR				S	Sb	18 41 14.2	+0.2
	8.3nm,0.3s,baz=95,slow=14,SNR=6.4						
MJAR				LR	LR	18 41 50.2	
	comp=Z,224nm,18.0s,baz=105,slow=43						
JHJ	Hachijo jima 2	3.32	197	P	Pn	18 40 59.9	+0.7
	2.9nm,0.3s,baz=24,slow=20,SNR=3.7						
JHJ				S	Sn	18 41 39.0	+0.9
	9.2nm,0.3s,baz=48,slow=18,SNR=3.6						
JHJ				LR	LR	18 42 00.8	
	comp=Z,46nm,21.3s,baz=78,slow=33						
JNU	Nakatsue	8.85	252	LR	LR	18 46 22.1	
	comp=Z,99nm,19.7s,baz=120,slow=42						
KSRS	Korea Array	10.47	280	LR	LR	18 46 45.3	
	comp=Z,56nm,19.7s,baz=96,slow=37						
KLR	Kul'dur	14.54	335	LR	LR	18 48 35.3	
	comp=Z,53nm,18.4s,baz=130,slow=34						
ZALV	Zalesovo Beam	42.10	313	P	P	18 48 00.5	+1.7
	1.1nm,0.7s,baz=85,slow=7.8,SNR=4.4						
ILAR	Eielson Array	50.31	32	P	P	18 49 04.2	+1.0
	0.6nm,0.8s,baz=278,slow=6.6,SNR=5.0						
INK	Inuvik	55.21	27	P	P	18 49 39.9	+0.6
	0.7nm,0.7s,baz=298,slow=6.3,SNR=3.6						
WRA	Warramunga Arr	56.30	187	P	P	18 49 47.4	-0.2
	0.7nm,0.7s,baz=5.9,slow=7.3,SNR=7.0						
ASAR	Alice Springs	60.02	187	P	P	18 50 13.1	-0.6
	0.4nm,0.8s,baz=8.9,slow=6.6,SNR=5.1						
YKA	Yellowknife Ar	64.63	30	P	P	18 50 43.6	-0.4
	0.2nm,0.7s,baz=299,slow=7.1,SNR=3.8						
NB2	NORSAR Subarra	74.69	337	P	P	18 51 43.1	-3.1
	comp=Z,1.3nm,0.8s,baz=40,slow=6.2						

IDC 03 18:40:10.2±1.8,40°.50N×141°.76E,h0km,mb3.6/5, mb1 3.5/7,mb1mx3.3/49,mbtmp3.5/7,ML2.7/1,Error ellipse: s-maj=43.0km s-min=25.6km az=74.0,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAJ	Asahikawa	3.67	9	Pn	Pn	18 41 08.0	-0.2
	0.5nm,0.3s,baz=192,slow=14,SNR=10						
ASAJ				Sn	Sb	18 42 01.4	+0.4
	0.9nm,0.3s,baz=191,slow=16,SNR=2.9						
KSRS	Korea Array	11.20	259	Pn	Pn	18 42 52.1	+0.7
	baz=88,slow=13,SNR=4.6						
SONM	Songino Array	26.24	298	P	P	18 45 46.5	-0.4
	0.3nm,0.4s,baz=96,slow=9.4,SNR=2.9						
ZALV	Zalesovo Beam	39.86	309	P	P	18 47 46.0	+0.8
	0.9nm,0.5s,baz=79,slow=7.7,SNR=5.2						
MKAR	Makanchi Array	42.60	299	P	P	18 48 07.7	-0.2
	0.5nm,0.6s,baz=82,slow=9.7,SNR=7.1						
KURBB	Kurchatov Arra	44.16	305	P	P	18 48 20.0	-0.4
	1.2nm,0.6s,baz=80,slow=8.8,SNR=15						
ASAR	Alice Springs	64.25	188	P	P	18 50 47.0	0.0
	0.2nm,0.7s,baz=7.0,slow=8.4,SNR=2.9						

DHMR ***03*** *18:50:26.4±2.1,15°.21N×41°.95E,h6km±21km,ML4.8*
ISCJB ***03*** *18:50:30.6±0.2, 15°.09N±0°.03×42°.08E±0°.03,h10km, mb4.3/63,MS3.9/33,Error ellipse: s-maj=4.8km s-min=3.0km az=146.2*
IDC ***03*** *18:50:30.8±0.9,15°.07N×42°.03E,h0km,mb4.0/19, mb1 4.1/24,mb1mx4.0/56,mbtmp4.0/24,ML4.0/5,MS3.9/34, Ms1 3.9/34,ms1mx3.8/49,Error ellipse: s-maj=19.6km s-min=15.8km az=36.0*
NEIC ***03*** *18:50:32.0±0.4, 15°.05N×42°.06E,h10km,mb4.4/21,Error ellipse: s-maj=7.6km s-min=6.4km az=211.0*
SGS ***03*** *18:50:31.3,15°.22N×41°.92E,h18km*
CSEM ***03*** *18:50:32.3±0.2,15°.07N×42°.09E,h10km,mb4.4/26,Error ellipse: s-maj=8.4km s-min=6.9km az=39.0*
ARO ***03*** *18:50:33.3,15°.N±18°.×4°.2E±9°.7,h15km±99km,ML4.0*

ISC 03 18:50:32.9±0.4,15°.25N±0°.03×42°.16E±0°.03,h10km,n204, σ2=90/206,mb4.2/64,MS4.0/33,5C-6D,Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HAJJ	Hajjah	1.46	72	*i* P	Pn	18 50 56.0	-3.5
HAJJ				*i* S	Sg	18 51 20.8	+0.9
HAJJ	Hajjah	1.46	72	⇑*i* P	Pn	18 50 55.8	-3.7
HAJJ				*i* S	Sn	18 51 15.2	-3.6
FRSS	Farasan al Kab	1.49	358	S	Sn	18 51 15.1	-4.1
FRSS				P	Pn	18 50 56.2	-3.5
SANA	San'a	1.98	86	*i* P	Pn	18 51 04.5	-2.3
SANA				*i* S	Sb	18 51 34.6	+0.5
SANA				AML	AML	18 51 43.3	
	comp=N,8μm,0.5s						
SANA	San'a	1.98	86	⇑*i* P	Pn	18 51 04.6	-2.1
SANA				*i* S	Sn	18 51 28.4	-3.4
SANA				AML	AML	18 51 48.0	
	comp=E,32μm,0.4s						
UDYN	Al 'Udayn	2.16	126	*i* P	Pn	18 51 07.0	-2.2
UDYN				*i* S	Sb	18 51 39.8	+0.6
UDYN	Al 'Udayn	2.16	126	⇓*i* P	Pn	18 51 06.5	-2.7
UDYN				*i* S	Sn	18 51 31.7	-4.5
DHBB	Dhamar BB	2.26	107	*i* P	Pn	18 51 09.7	-0.9
DHBB				*i* S	Sb	18 51 42.7	+0.6
DHBB	Dhamar BB	2.26	107	*i* P	Pn	18 51 08.1	-2.5
DHBB				*i* S	Sn	18 51 35.1	-3.6
DAMY	Dhamar	2.26	107	*e*Pn	Pn	18 51 07.8	-2.8
DAMY	Dhamar	2.26	107	*e*Pn	Pn	18 51 07.8	-2.8
TRBA	At Turbah	2.76	136	*i* P	Pn	18 51 14.8	-2.6
TRBA				*i* S	Sb	18 51 53.6	-2.9
TRBA	At Turbah	2.76	136	⇑*i* P	Pn	18 51 14.6	-2.8
TRBA				*i* S	Sn	18 51 48.4	-2.5
DJNS	Zahran al Janu	2.78	28	S	Sn	18 51 49.0	-2.6
DJNS				P	Pn	18 51 15.9	-1.9
MAOD	Malaho	3.13	179	*e*P	Pn	18 51 18.5	-3.9
OBO	Obock	3.42	161	*e*P	Pn	18 51 23.1	-3.3
TDD	Tadjoura Ara	3.50	168	*e*P	Pn	18 51 24.1	-3.3
BDHA	Al Bayda'	3.53	111	*i* P	Pn	18 51 28.9	+0.8
BDHA				*i* S	Sb	18 52 14.5	-4.2
BDHA				AML	AML	18 52 29.1	
	comp=N,6μm,0.5s						
BDHA	Al Bayda'	3.53	111	*i* P	Pn	18 51 26.3	-1.8
BDHA				*i* S	Sn	18 52 10.1	0.0
BDHA				AML	AML	18 52 29.1	
	comp=N,6μm,0.5s						
MCAD	Moucha	3.64	164	*e*P	Pn	18 51 26.0	-3.4
LDLD	Lac de Lave	3.65	175	*e*P	Pn	18 51 26.2	-3.4
ADEN	Aden	3.68	132	*i* P	Pn	18 51 28.4	-1.5
ADEN				*i* S	Sn	18 52 15.9	+2.5
ADEN	Aden	3.68	132	*i* P	Pn	18 51 27.0	-2.9
ADEN				*i* S	Sn	18 52 11.2	-2.1
ATD	Arta Tunnel	3.75	170	Pn	Pn	18 51 28.3	-2.7
	comp=N,27nm,0.3s,baz=319,slow=3.8,SNR=27						
ATD				Sn	Sn	18 52 12.3	-2.9
	comp=N,60nm,0.3s,baz=323,slow=15,SNR=9.5						
ATD				LR	LR	18 52 36.8	
	comp=N,356nm,20.6s,baz=35,slow=35						
ATD	Arta Tunnel	3.75	170	*e*P	Pn	18 51 28.0	-3.0
ATD				*e*S	Sn	18 52 12.5	-2.8
SGH	Sud-Ghoubbet	3.81	173	*e*P	Pn	18 51 28.8	-3.0
ATA	Atar	3.90	165	*e*P	Pn	18 51 30.5	-2.5
NAMS	An Nimas	3.90	1	P	Pn	18 51 31.3	-2.0
GBR	Grand-Bara	4.08	176	*e*P	Pn	18 51 33.1	-2.3
FURI	Furi	7.17	209	P	Pn	18 52 18.1	-0.1
FURI				S	Sb	18 54 08.8	+5.3
FURI	Furi	7.17	209	*e*Pn	Pn	18 52 15.5	-2.7
FURI	Furi	7.17	209	*e*Pn	Pn	18 52 15.5	-2.7
EIL	Elat	15.82	336	Pn	Pn	18 54 17.4	+1.6
	comp=N,0.2nm,0.3s,baz=106,slow=18,SNR=3.2						
EIL				LR	LR	18 59 09.3	
	comp=N,708nm,19.8s,baz=156,slow=32						
UOSS	Minazif	16.33	52	*e*Pn	Pn	18 54 18.0	-4.5
	comp=N,5.5nm,1.4s						
KMBO	Kilima Mbogo	16.98	197	LR	LR	19 00 41.9	
	comp=N,446nm,18.2s,baz=199,slow=36						
WSAR	Wadi Sarin	17.45	60	P	P	18 54 38.0	+0.1
	comp=N,0.9nm,0.3s,baz=258,slow=10,SNR=9.3						
WSAR				LR	LR	19 03 04.1	
	comp=N,662nm,19.2s,baz=244,slow=43						
ASF	Jabal al Asfar	17.52	345	P	P	18 54 38.5	-0.1
	comp=N,0.1nm,0.3s,baz=140,slow=2.1,SNR=6.0						
MMAI	Mount Meron Ar	18.73	342	P	Pn	18 54 53.1	+0.9
	comp=N,0.9nm,0.3s,baz=141,slow=9.3,SNR=3.7						
CSS	Mathiatis	21.18	340	*e*P	P	18 55 19.7	+1.2
	comp=N,3.7nm,0.9s						
CSS	Mathiatis	21.18	340	*e*P	P	18 55 19.7	+1.2
	comp=N,3.7nm,0.9s						
GNI	Garni	24.91	5	P	P	18 55 59.4	+3.0
	comp=N,15nm,1.2s,baz=147,slow=5.2,SNR=8.9						
GNI				LR	LR	19 05 28.5	
	comp=N,143nm,18.0s,baz=188,slow=36						
IDI	Anoyia	25.27	325	P	P	18 55 59.6	+0.2
	comp=N,5.7nm,0.6s,baz=136,slow=10,SNR=5.2						
IDI				LR	LR	19 06 37.9	
	comp=N,55nm,18.5s,baz=132,slow=38						
IDI	Anoyia	25.27	325	*e*P	P	18 55 59.7	+0.2
	comp=N,84nm,1.6s						
IDI	Anoyia	25.27	325	*e*P	P	18 55 59.7	+0.2
	comp=N,84nm,1.6s						
BR101	Keskin Array S	25.50	345	*e*P	P	18 56 03.7	+2.0
BR101	Keskin Array S	25.50	345	*e*P	P	18 56 03.6	+2.0
BR131	Keskin Array S	25.50	345	*e*P	P	18 56 04.2	+2.5
BR131	Keskin Array S	25.50	345	*e*P	P	18 56 04.2	+2.5
BRTR	Keskin Array B	25.50	345	P	P	18 56 03.6	+1.9
	comp=N,1.8nm,0.8s,baz=164,slow=9.8,SNR=15						
BRTR				LR	LR	19 05 30.1	
	comp=N,234nm,18.6s,baz=151,slow=35						
BR231	Keskin MP Arra	25.84	343	*e*P	P	18 56 04.6	-0.2
BR231	Keskin MP Arra	25.84	343	*e*P	P	18 56 04.6	-0.2
GEYT	Alibeck	26.64	29	P	P	18 56 13.8	+1.9
	comp=N,1.2nm,0.6s,baz=207,slow=6.2,SNR=4.2						
GEYT				LR	LR	19 07 57.8	
	comp=N,394nm,18.3s,baz=215,slow=39						
KBZ	Khabaz	28.40	1	P	P	18 56 28.4	+1.0
	comp=N,0.5nm,0.4s,baz=180,slow=9.1,SNR=2.6						
KBZ				LR	LR	19 08 36.6	
	comp=N,134nm,18.7s,baz=194,slow=38						
KIV	Kislovodsk	28.62	1	*e*P	P	18 56 30.1	+0.5
	comp=N,7.4nm,1.1s						
KIV	Kislovodsk	28.62	1	*e*P	P	18 56 30.1	+0.5
	comp=N,7.4nm,1.1s						
KVAR	Kislovodsk Arr	28.62	1	P	P	18 56 30.3	+0.7
	comp=N,2.7nm,0.8s,baz=127,slow=23,SNR=4.5						
AGG	Agios Georgios	29.41	327	*e*P	P	18 56 37.1	+0.5
AGG	Agios Georgios	29.41	327	*e*P	P	18 56 37.1	+0.5
CFR	Carcaliu	32.10	341	⇓*i* P	P	18 57 00.8	+0.5
MLR	Muntele Rosu	33.10	339	⇓*i* P	P	18 57 11.1	+1.9
MLR	Muntele Rosu	33.10	339	*e*P	P	18 57 08.3	-0.9
	comp=N,5.1nm,0.9s						
MLR	Muntele Rosu	33.10	339	*e*P	P	18 57 08.3	-0.9
	comp=N,5.1nm,0.9s						
VRI	Vrincioaia	33.17	340	⇓*i* P	P	18 57 10.9	+1.3
PLOR	Plostina	33.18	340	⇓*i* P	P	18 57 11.2	+1.4
VOIR		33.37	338	⇓*i* P	P	18 57 12.5	+1.0
CUC	Castrocucco	33.72	322	*e*P	P	18 57 11.6	-2.9
	comp=N,24nm,1.1s						
BURAR	Bucovina Array	35.20	340	⇑*i* P	P	18 57 29.4	+2.0
BUR08	Bucovina Ar. S	35.23	340	*e*P	P	18 57 29.5	+1.9
BUR08	Bucovina Ar. S	35.23	340	*e*P	P	18 57 29.5	+1.9
TAM	Tamanrasset	35.37	288	*e*P	P	18 57 27.3	-1.9
	comp=N,4.1nm,1.0s						
TAM	Tamanrasset	35.37	288	*e*P	P	18 57 27.3	-1.9
	comp=N,4.1nm,1.0s						
KEST	Kesra	35.71	311	LR	LR	19 13 31.3	
	comp=N,263nm,19.0s,baz=327,slow=39						
KKAR	Karatay Array	36.86	35	*e*P	P	18 57 44.5	+2.9
KKAR	Karatay Array	36.86	35	*e*P	P	18 57 44.5	+2.9
KIEV	Kiev	36.88	346	*e*P	P	18 57 42.0	+0.5
	comp=N,6.5nm,1.3s						
KIEV	Kiev	36.88	346	*e*P	P	18 57 42.0	+0.5
	comp=N,6.5nm,1.3s						
AKASG	Malin Array Be	36.88	346	P	P	18 57 41.3	-0.2
	comp=N,0.1nm,0.2s,baz=160,slow=7.3,SNR=6.4						
AKASG				LR	LR	19 14 56.3	
	comp=N,84nm,18.7s,baz=175,slow=40						
AKBB	Malin Array Si	36.88	346	*e*P	P	18 57 39.8	-1.7
	comp=N,6.6nm,0.4s						
AKBB	Malin Array Si	36.88	346	*e*P	P	18 57 39.8	-1.7
	comp=N,6.6nm,0.4s						
ABKAR	Abkulak array	36.91	19	*e*P	P	18 57 43.7	+1.9
ABKAR	Abkulak array	36.91	19	*e*P	P	18 57 43.7	+1.9
KOLS	Kolonicke sedl	37.34	338	*e*P	P	18 57 47.2	+1.6
KOLS	Kolonicke sedl	37.34	338	*e*P	P	18 57 47.2	+1.6
CRVS	Cervenica-Dubn	37.61	338	*e*P	P	18 57 48.8	+1.0
CRVS	Cervenica-Dubn	37.61	338	*e*P	P	18 57 48.8	+1.0
VYHS	Vyhne	38.30	335	*e*P	P	18 57 54.4	+0.7
VYHS	Vyhne	38.30	335	*e*P	P	18 57 54.4	+0.7
EKS2	Erkin-Say	38.49	38	*e*P	P	18 57 57.2	+1.8
	comp=N,4.2nm,1.0s						
EKS2	Erkin-Say	38.49	38	*e*P	P	18 57 57.2	+1.8
	comp=N,4.2nm,1.0s						
SOKA	Soboth	38.65	330	*i* P	P	18 57 57.8	+1.1
	comp=N,6.7nm,1.3s						
SOKA	Soboth	38.65	330	P	P	18 57 57.8	+1.1
	comp=N,6.7nm,1.3s						
OBKA	Obir	38.77	329	*i* sP	P	18 58 02.2	+4.5
	comp=N,5.0nm,1.1s						
ARSA	Arzberg	38.82	331	*i* P	P	18 57 58.4	+0.3
	comp=N,3.6nm,0.7s						
ARSA	Arzberg	38.82	331	P	P	18 57 58.4	+0.3
	comp=N,3.6nm,0.7s						
AAK	Ala-Archa	38.90	39	LR	LR	19 16 39.7	
	comp=N,617nm,18.9s,baz=238,slow=40						
AAK	Ala-Archa	38.90	39	*e*P	P	18 57 59.7	+0.7
	comp=N,4.2nm,1.0s						
AAK	Ala-Archa	38.90	39	*e*P	P	18 57 59.7	+0.7
	comp=N,4.2nm,1.0s						
CONA	Conrad Observa	39.16	332	*i* P	P	18 58 00.8	-0.2
	comp=N,8.8nm,1.6s						
CONA	Conrad Observa	39.16	332	P	P	18 58 00.8	-0.2
	comp=N,8.8nm,1.6s						
TOA0	Torodi Ar. Sit	39.25	272	*e*P	P	18 58 00.4	-1.6
TOA0	Torodi Ar. Sit	39.25	272	*e*P	P	18 58 00.4	-1.6
TORD	Torodi Ar. Bea	39.25	272	P	P	18 58 00.6	-1.4
	comp=N,1.6nm,0.9s,baz=85,slow=7.0,SNR=8.3						
TORD				LR	LR	19 13 06.2	
	comp=N,239nm,18.8s,baz=135,slow=35						
TOA1	Torodi Ar. Sit	39.25	272	*e*P	P	18 58 00.6	-1.4
	comp=N,15nm,1.6s						
TOA1	Torodi Ar. Sit	39.25	272	*e*P	P	18 58 00.7	-1.4
	comp=N,15nm,1.6s						
MYKA	Terra Mystica	39.30	329	*i* pP	pP	18 58 05.1	-0.1
	comp=N,3.7nm,1.2s						
OJC	Ojcow	39.31	337	*e*P	P	18 58 01.8	-0.3
	comp=N,6.2nm,1.2s						
OJC	Ojcow	39.31	337	*e*P	P	18 58 01.8	-0.3
	comp=N,6.2nm,1.2s						
KBA	Koelnbreinsper	39.76	329	*i* P	P	18 58 02.3	-3.7
	comp=N,4.2nm,1.2s						
MORC	Moravsky Berou	39.84	335	*e*P	P	18 58 06.5	0.0
	comp=N,33nm,1.6s						
MORC	Moravsky Berou	39.84	335	*e*P	P	18 58 06.5	0.0
	comp=N,33nm,1.6s						
MOA

comp=Z,2.1nm,1.0s,baz=138,slow=7.8,SNR=2.9
NOA LR LR 19 24 13.8
comp=Z,31nm,18.1s,baz=155,slow=40
ZAA0 Zalesovo Array 50.92 31 *eP* **P 18 59 34.1 -0.2**
ZAA0 Zalesovo Array 50.92 31 *eP* **P 18 59 34.1 -0.2**
ZALV Zalesovo Beam 50.92 31 P **P 18 59 34.7 +0.4**
comp=Z,3.2nm,0.7s,baz=246,slow=7.4,SNR=16
ZALV LR LR 19 24 09.8
comp=Z,92nm,18.3s,baz=251,slow=40
ZAA1 Zalesovo Array 50.92 31 *eP* **P 18 59 34.7 +0.4**
ZAA1 Zalesovo Array 50.92 31 *eP* **P 18 59 34.7 +0.4**
MHMT Maesarieng 53.33 79 P P 19 00 00.2 +7.4
comp=Z,5.4nm,1.2s,comp=Z,228nm
CMAI Chiengmai2 54.22 76 P **P 19 00 02.8 +3.3**
comp=Z,29nm,0.9s
CM31 Chiang Mai Arr 54.26 78 *eP* **P 18 59 58.8 -0.8**
CM31 Chiang Mai Arr 54.26 78 *eP* **P 18 59 58.8 -0.8**
CMAR Chiang Mai Arr 54.26 78 P **P 18 59 59.5 -0.1**
comp=Z,1.8nm,0.9s,baz=283,slow=7.6,SNR=15
CMAR LR LR 19 24 25.2
comp=Z,37nm,18.1s,baz=244,slow=37
CM01 Chiang Mai Arr 54.28 78 *eP* **P 18 59 59.3 -0.5**
CM01 Chiang Mai Arr 54.28 78 *eP* **P 18 59 59.3 -0.5**
KHLT Khaolaem Dam 54.37 83 P P 19 00 07.8 +7.4
comp=Z,5.3nm,1.4s
LAMP Lampang 54.90 78 P P 19 00 10.3 +6.0
comp=Z,3.2nm,1.0s
ARA0 ARCESS Array S 55.26 353 *eP* **P 19 00 04.7 -1.3**
ARA0 ARCESS Array S 55.26 353 *eP* **P 19 00 04.7 -1.3**
ARCES ARCESS Array B 55.26 353 P **P 19 00 04.7 -1.3**
comp=Z,1.0nm,0.7s,baz=107,slow=1.3,SNR=5.5
ARCES LR LR 19 23 46.5
comp=Z,77nm,20.2s,baz=156,slow=36
CRAI Chiangrai 55.44 76 P **P 19 00 10.8 +2.6**
comp=Z,91nm,1.0s,comp=Z,53μm
GTA Gaotai 55.58 53 *eP* **P 19 00 10.8 +1.8**
GTA pP sP 19 00 15.3 +1.9
GTA sP pP 19 00 17.9 +5.7
GTA S **S 19 08 00.3 +5.4**
GTA sS sS 19 08 08.8 +8.6
GTA pmax pmax
comp=Z,2.0nm,0.8s
GTA pmax pmax
comp=Z,67nm,4.8s
GTA LR LR
comp=N,150nm,14.7s
GTA LR LR
comp=E,220nm,15.7s
GTA LR LR
comp=Z,210nm,16.2s
UTTA Uttaradit 55.86 79 P P 19 00 18.2 +7.1
comp=Z,1.7nm,1.0s
NANT Nan 55.88 77 P **P 19 00 15.6 +4.3**
comp=Z,3.2nm,1.1s
PBKT Sadao Pong 56.40 80 P **P 19 00 19.7 +4.7**
comp=Z,6.4nm,1.0s
CD2 Chengdu 58.12 63 P **P 19 00 26.1 -1.0**
CD2 pmax pmax
comp=Z,1.0nm,0.6s
NONG Nongkai 58.27 78 P **P 19 00 32.1 +3.8**
comp=Z,57nm,1.7s
CHBT CHBT 58.28 84 P P 19 00 35.0 +6.7
comp=Z,7.2nm,1.1s
LZH Lanzhou 58.39 57 *eP* **P 19 00 28.8 -0.3**
LZH pP sP 19 00 33.2 -0.3
LZH sP pP 19 00 35.9 +3.6
LZH *e*PP **PP 19 02 40.0 +1.7**
LZH pmax pmax
comp=Z,19nm,1.2s
LZH pmax pmax
comp=Z,45nm,6.3s
LZH LR LR
comp=N,140nm,14.9s
LZH LR LR
comp=E,150nm,15.2s
LZH LR LR
comp=Z,170nm,18.5s
PANO Nakornpanom 59.77 79 P P 19 00 45.3 +6.6
comp=Z,47nm,1.1s
NRIK Noril'sk 61.00 17 LR LR 19 30 48.1
comp=Z,65nm,21.4s,baz=232,slow=40
SONA0 Songino Array 61.59 44 *eP* **P 19 00 52.0 +1.2**
comp=Z,8.6nm,1.2s
SONA0 Songino Array 61.59 44 *eP* **P 19 00 52.0 +1.2**
comp=Z,8.6nm,1.2s
SONM Songino Array 61.59 44 P **P 19 00 52.0 +1.2**
comp=Z,3.1nm,1.0s,baz=263,slow=5.8,SNR=17
SONM LR LR 19 31 16.4
comp=Z,287nm,18.9s,baz=259,slow=40
SONM Songino Array 61.59 44 P **P 19 00 52.0 +1.2**
SONA1 Songino Array 61.60 44 *eP* **P 19 00 52.0 +1.1**
SONA1 Songino Array 61.60 44 *eP* **P 19 00 52.0 +1.1**
ULN Ulaanbaatar 62.03 44 *eP* **P 19 00 53.5 -0.3**
comp=Z,4.5nm,1.2s
ULN Ulaanbaatar 62.03 44 *eP* **P 19 00 53.5 -0.3**
comp=Z,4.5nm,1.2s
HHC Hu-ho-hao-te 64.67 52 *eP* **P 19 01 13.0 +1.6**
HHC pmax pmax
comp=Z,9.0nm,0.9s
HHC pmax pmax
comp=Z,120nm,5.6s
YAK Yakutsk 75.52 29 LR LR 19 40 04.5
comp=Z,149nm,19.0s,baz=267,slow=39
KSAR Wonju Array Be 77.56 54 P **P 19 02 30.6 +1.2**
KSAR Wonju Array Be 77.56 54 P **P 19 02 30.6 +1.2**
KSRS Korea Array 77.58 54 P **P 19 02 30.6 +1.0**
comp=Z,0.8nm,0.8s,baz=258,slow=9.2,SNR=3.4
KSRS LR LR 19 40 48.2
comp=Z,47nm,18.4s,baz=272,slow=39
KLR Kul'dur 78.35 42 LR LR 19 41 01.1
comp=Z,173nm,19.3s,baz=310,slow=39
USRK Ussuriysk Ar. 79.42 47 LR LR 19 43 48.9
comp=Z,80nm,18.3s,baz=262,slow=40
JNU Nakatsue 80.78 58 LR LR 19 46 15.0
comp=Z,58nm,18.2s,baz=304,slow=41
MAW Mawson 83.99 172 LR LR 19 38 04.9
comp=Z,74nm,18.2s,baz=234,slow=34
MJAR Matsushiro Arr 85.81 53 P **P 19 03 14.6 +1.5**
comp=Z,1.9nm,1.1s,baz=273,slow=5.1,SNR=4.5
MJAR LR LR 19 46 23.7
comp=Z,61nm,20.1s,baz=295,slow=39
ASAJ Asahikawa 86.83 45 LR LR 19 46 39.6
comp=Z,126nm,18.3s,baz=303,slow=39
PETK Petropavlovsk- 92.43 33 LR LR 19 49 35.5
comp=Z,56nm,19.1s,baz=291,slow=38
ASAR Alice Springs 97.54 112 LR LR 19 46 11.9
comp=Z,51nm,19.0s,baz=268,slow=34
TXAR Lajitas Array 124.75 323 PKP **PKPdf 19 09 33.5 -0.3**
comp=Z,0.2nm,0.7s,baz=22,slow=1.0,SNR=3.6

IDC 03 18:55:20.4±1.9, 6°.91S×129°.10E, h0km, mb3.6/2, mb1 3.9/5, mb1mx3.5/47, mbtmp3.7/5, ML3.7/3, Error ellipse: s-maj=87.8km s-min=26.1km az=76.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
FITZ	**Fitzroy Crossi**	**11.62**	**197**	Pn	Pn	18 58 07.2	-0.4
	0.7nm,0.3s,baz=17,slow=9.7,SNR=58						
FITZ				Sn	Sn	19 00 01.2	-17
	1.3nm,0.3s,baz=104,slow=9.0,SNR=9.1						
WRA	**Warramunga Arr**	**13.91**	**159**	Pn	Pn	18 58 39.2	+0.2
	0.3nm,0.3s,baz=342,slow=14,SNR=15						
WRA				Sn	Sn	19 00 59.9	-14
	1.1nm,0.3s,baz=333,slow=22,SNR=13						
ASAR	**Alice Springs**	**17.29**	**165**	Pn	Pn	18 59 23.6	+0.2
	0.3nm,0.3s,baz=342,slow=10,SNR=47						
ASAR				Sn	Sn	19 02 21.5	-15
	0.3nm,0.3s,baz=348,slow=26,SNR=7.3						
MKAR	**Makanchi Array**	**67.67**	**327**	P	P	19 06 19.8	+0.4
	0.3nm,0.4s,baz=117,slow=7.9,SNR=5.1						
KURBB	**Kurchatov Arra**	**71.97**	**329**	P	P	19 06 45.4	-0.4
	0.2nm,0.5s,baz=129,slow=4.7,SNR=4.4						

*SOME **03** 19:02:03.0, 42°.02N×81°.18E, h25km*
ISC 03 19:02:04.0±2.7, 42°.1N±0°.1×81°.17E±0°.09, h10km, n15, σ1°24/30, 2C-3D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SHLS	**Shalkode**	**1.43**	**319**	*eP*	**Pn**	**19 02 30.0**	**-0.3**
	18nm,0.1s						
SHLS				*e*S	**Sn**	**19 02 49.4**	**+0.1**
	102nm,0.4s						
KTMS	**Ketmen**	**1.49**	**336**	*eP*	**Pn**	**19 02 30.7**	**-0.2**
	15nm,0.2s						
KTMS				*e*S	**Sn**	**19 02 50.8**	**+0.3**
	78nm,0.3s						
PDGK	**Podgornoye**	**1.76**	**316**	⇓Pn	**Pn**	**19 02 33.1**	**-1.4**
	2.0nm,0.4s						
PDGK				⇑Sn	**Sn**	**19 02 57.5**	**+0.6**
	17nm,0.6s						
UZB	**Uzymbulak**	**1.91**	**305**	*eP*	**Pn**	**19 02 37.3**	**+0.6**
	4.0nm,0.4s						
UZB				*e*S	**Sb**	**19 03 02.5**	**-0.4**
	11nm,0.3s						
SATY	**Saty**	**2.26**	**296**	*eP*	**Pb**	**19 02 43.9**	**-1.1**
	6.7nm,0.2s						
SATY				*e*S	**Sb**	**19 03 13.4**	**+0.3**
	11nm,0.2s						
ZHN	**Zhinishke**	**2.29**	**299**	*eP*	**Pb**	**19 02 44.3**	**-1.2**
	3.8nm,0.2s						
ZHN				*e*S	**Sb**	**19 03 14.3**	**+0.4**
	30nm,0.3s						
DJR	**Jarkent**	**2.46**	**336**	*eP*	**Pb**	**19 02 47.6**	**-0.8**
	1.8nm,0.1s						
DJR				*e*S	**Sb**	**19 03 19.8**	**+0.9**
	17nm,0.6s						
KURS	**Kuram**	**2.62**	**303**	*eP*	**Pb**	**19 02 49.4**	**-1.6**
	3.1nm,0.4s						
KURS				*e*S	**Sb**	**19 03 22.8**	**-0.4**
	3.7nm,0.4s						
MNBS	**Baschi**	**2.84**	**315**	*eP*	**Pb**	**19 02 52.5**	**-2.5**
	0.6nm,0.3s						
MNBS				*e*S	**Sb**	**19 03 28.1**	**-1.7**
	32nm,0.4s						
MDOK	**Medeo**	**3.23**	**291**	*eP*	**Pb**	**19 03 00.4**	**-1.1**
	1.0nm,0.6s						
MDOK				*e*S	**Sb**	**19 03 41.7**	**+0.8**
	3.2nm,0.4s						
ARXS	**Arharly**	**3.24**	**312**	*eP*	**Pb**	**19 03 01.2**	**-0.4**
	2.0nm,0.3s						
ARXS				*e*S	**Sb**	**19 03 43.1**	**+1.8**
	6.0nm,0.4s						
TNSS	**Tian-Shan**	**3.27**	**288**	*eP*	**Pb**	**19 03 02.1**	**-0.1**
	1.2nm,0.2s						
TNSS				*e*S	**Sb**	**19 03 44.7**	**+2.5**
	4.5nm,0.5s						
KAPS	**Kapalarasan**	**3.46**	**338**	*eP*	**Pb**	**19 03 04.4**	**-0.9**
	1.3nm,0.3s						
KAPS				*e*S	**Sb**	**19 03 48.7**	**+1.3**
	3.8nm,0.3s						
CHKK	**Chushkaly**	**3.54**	**302**	*eP*	**Pb**	**19 03 06.6**	**-0.2**
	0.8nm,0.1s						
CHKK				*e*S	**Sb**	**19 03 52.4**	**+2.6**
	4.0nm,0.2s						
MK31	**Makanchi Array**	**4.78**	**9**	⇓Pn	**Pn**	**19 03 16.2**	**+0.2**
	0.1nm,0.2s,baz=161,slow=22,SNR=9.5						
MK31				⇓Sn	**Sn**	**19 04 12.8**	**+1.3**
	0.3nm,0.5s,baz=195,slow=24,SNR=3.8						
MK31				⇑Lg	Lg	19 04 34.0	
	0.9nm,0.7s,baz=190,slow=28,SNR=4.2						

*NIED **03** 19:15:00, 38°.00N×140°.60E, h8km, Mw3.6 Best double couple: M0:3.13000×10^14 NP1:φs:233.00000°, δ22.00000°, λ:154.00000°. NP2:φs:346.00000°, δ:81.00000°, λ:70.00000°.*
*IDC **03** 19:15:31.6±0.8, 38°.04N×140°.65E, h0km, mb3.6/8, mb1 3.8/11, mb1mx3.5/51, mbtmp3.6/11, ML3.2/3, MS2.5/4, Ms1 2.5/4, ms1mx2.3/48, Error ellipse: s-maj=21.2km s-min=16.3km az=109.0*
*ISCJB **03** 19:15:33.9±0.4, 37°.98N±0°.02×140°.61E±0°.04, h24km±3km, mb3.5/8, Error ellipse: s-maj=5.1km s-min=3.9km az=10.4*
*JMA **03** 19:15:34.3, 37°.98N×140°.56E, h10km±1km, M3.9 Broadband fault plane solution: P waves. NP1: φs:344.00000°, δ:79.00000°, λ:64.00000°. NP2: φs:232.00000°, δ:28.00000°, λ:155.00000°. Principal axes: T Plg50.0000°, Azm226.0000°; N Plg25.0000°, Azm350.0000°; P Plg29.0000°, Azm95.0000°;*
JMA Felt II J1.
ISC 03 19:15:33.9±1.0, 38°.00N±0°.03×140°.59E±0°.03, h14km±7km, n25, σ0°81/34, mb3.5/8, 4C-5D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JMM	**Marumori**	**0.21**	**129**	⇓P	**Pb**	**19 15 38.8**	**-0.7**
JMM				S	**Sg**	**19 15 42.0**	**+0.4**
JOU	**Okura**	**0.37**	**9**	⇑P	**Pb**	**19 15 42.1**	**-0.3**
JOU				*e*S	**Sb**	**19 15 47.6**	**-0.5**
JYS	**Shirataka**	**0.47**	**299**	⇓P	**Pg**	**19 15 43.3**	**0.0**
JFT	**Otama**	**0.52**	**203**	⇑P	**Pg**	**19 15 43.9**	**-0.2**
JFT				S	**Sg**	**19 15 50.8**	**-0.2**
JFK	**Kawauchi**	**0.67**	**160**	⇓P	**Pg**	**19 15 46.7**	**-0.2**
JFK				S	**Sg**	**19 15 55.6**	**-0.2**
JIO	**Ouri**	**0.75**	**52**	⇓P	**Pb**	**19 15 48.5**	**-0.3**
JIO				S	**Sb**	**19 15 58.6**	**-0.4**
JYA	**Atsumi**	**0.91**	**311**	⇓P	**Pb**	**19 15 51.1**	**-0.5**
JYA				S	**Sb**	**19 16 03.2**	**-0.4**
JFY	**Yanaizu**	**0.92**	**230**	P	**Pb**	**19 15 51.2**	**-0.4**
JFY				S	**Sb**	**19 16 02.9**	**-0.8**
JYK	**Kaneyama**	**0.94**	**349**	⇑P	**Pb**	**19 15 51.7**	**-0.3**
JYK				S	**Sg**	**19 16 04.3**	**-0.1**
JNS	**Sasagawa**	**1.02**	**260**	⇑P	**Pb**	**19 15 52.9**	**-0.5**
JNS				*e*S	**Sb**	**19 16 05.8**	**-0.9**
MAT	**Matsushiro**	**2.39**	**233**	P	**Pn**	**19 16 13.6**	**+0.9**
MAT				S	**Sb**	**19 16 46.4**	**+0.2**
MJAR	**Matsushiro Arr**	**2.39**	**233**	Pn	**Pn**	**19 16 14.2**	**+1.5**
	2.8nm,0.3s,baz=38,slow=12,SNR=149						
MJAR				Sn	**Sb**	**19 16 44.8**	**-1.3**
	3.0nm,0.3s,baz=54,slow=27,SNR=4.4						
MJAR				LR	LR	19 17 26.6	
	comp=Z,131nm,18.1s,baz=50,slow=47						
JHJ	**Hachijo jima 2**	**4.91**	**188**	Pn	**Pn**	**19 16 48.2**	**+0.9**
	6.6nm,0.3s,baz=321,slow=17,SNR=4.2						
JHJ				Sn	**Sn**	**19 17 45.6**	**+1.7**
	6.4nm,0.3s,baz=53,slow=18,SNR=2.4						
ASAJ	**Asahikawa**	**6.30**	**13**	Pn	Pn	19 17 10.0	+3.6
	0.6nm,0.3s,baz=165,slow=12,SNR=8.7						
USRK	**Ussuriysk Ar.**	**8.97**	**316**	LR	LR	19 20 09.8	
	comp=Z,15nm,18.9s,baz=166,slow=31						
JNU	**Nakatsue**	**9.29**	**241**	LR	LR	19 21 36.9	
	comp=Z,44nm,19.9s,baz=119,slow=39						
KSRS	**Korea Array**	**10.05**	**271**	Pn	**Pn**	**19 17 59.9**	**+2.0**
	0.1nm,0.3s,baz=82,slow=14,SNR=2.6						
KSRS				LR	LR	19 21 45.7	
	comp=Z,19nm,18.4s,baz=136,slow=37						
SONM	**Songino Array**	**26.71**	**303**	P	**P**	**19 21 12.0**	**-0.9**
	0.3nm,0.6s,baz=103,slow=7.9,SNR=3.1						
ZALV	**Zalesovo Beam**	**40.79**	**312**	P	**P**	**19 23 13.8**	**-0.8**
	0.4nm,0.4s,baz=77,slow=13,SNR=4.4						
KURBB	**Kurchatov Arra**	**44.90**	**307**	P	**P**	**19 23 47.5**	**-0.4**
	2.8nm,0.8s,baz=83,slow=8.3,SNR=33						
WRA	**Warramunga Arr**	**57.93**	**187**	P	**P**	**19 25 25.4**	**-0.3**
	0.8nm,0.7s,baz=4.0,slow=7.2,SNR=13						
ASAR	**Alice Springs**	**61.66**	**187**	P	**P**	**19 25 51.2**	**-0.1**
	0.5nm,0.8s,baz=14,slow=5.3,SNR=8.0						
YKA	**Yellowknife Ar**	**63.31**	**30**	P	**P**	**19 26 02.8**	**+0.8**
	0.1nm,0.5s,baz=304,slow=6.9,SNR=3.0						
PDAR	**Pinedale Array**	**77.46**	**45**	P	**P**	**19 27 28.1**	**-1.0**
	0.2nm,0.5s,baz=256,slow=2.5,SNR=2.9						
TXAR	**Lajitas Array**	**90.05**	**52**	P	**P**	**19 28 33.6**	**-0.1**
	0.2nm,0.6s,baz=330,slow=2.7,SNR=3.7						

MEX 03 19:34:41.7±0.3, 16°.58N×93°.33W, h19km±205km, MD3.6, 1D, Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PCIG		**0.88**	**173**	*eP*	Pb	19 34 55.4	-3.0
PCIG				*e*S	Sb	19 35 06.4	-3.4
CCIG	**Comitan**	**1.18**	**104**	⇓*i*P	Pn	19 35 00.0	-3.4
CCIG				*i* S	Sb	19 35 14.4	-4.3

MAN 03 19:39:44, 6°.89N×123°.86E, h34km, mb4.5, ML3.3, MS3.2, 2D, Mindanao

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CTBH	**Cotabato--PC H**	**0.50**	**50**	⇓*e*P	Pn	19 39 55.2	+0.4
CTBH				*i* S	Sn	19 40 03.2	+0.8
PAGZ	**Pagadian**	**1.06**	**334**	*eP*	Pn	19 40 02.8	+0.3
PAGZ				*e*S	Sn	19 40 10.9	-5.1
BUKP	**Musuan**	**1.54**	**51**	*eP*	Pn	19 40 09.8	+0.6
IPIL	**Ipil**	**1.56**	**305**	*eP*	Pn	19 40 10.3	+1.1
CGP	**Cagayan de Oro**	**1.76**	**28**	⇓*e*P	Pb	19 40 15.0	-0.7
CGP				*e*S	Sn	19 40 34.4	+1.1

*ISCJB **03** 19:42:18.9±0.5, 45°.64N±0°.05×143°.9E±0°.1, h329km, mb2.8/5, Error ellipse: s-maj=10.5km s-min=6.6km az=7.5*
*JMA **03** 19:42:19.8±0.4, 45°.67N×144°.02E, h322km, M3.4*
*IDC **03** 19:42:20.3±0.8, 45°.80N×143°.67E, h318km±14km, mb2.7/5, mb1 2.9/9, mb1mx2.7/38, mbtmp3.5/9, Error ellipse: s-maj=31.8km s-min=18.1km az=153.0*
ISC 03 19:42:19.6±0.7, 45°.56N±0°.07×143°.91E±0°.08, h329km, n19, σ1°13/24, mb2.8/5, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JWK2	**Keihoku**	**1.44**	**261**	P	**Pn**	**19 43 05.2**	**0.0**
JTKR	**Abashiri--Toko**	**1.58**	**180**	P	**Pn**	**19 43 07.5**	**+1.3**
ASAJ	**Asahikawa**	**1.71**	**213**	P	**Pn**	**19 43 07.7**	**+0.7**
	2.4nm,0.3s,baz=330,slow=3.6,SNR=29						
ASAJ				S	**S**	**19 43 45.5**	**+0.6**
	baz=156,slow=16,SNR=2.1						
JAR	**Ashorobuto**	**2.26**	**183**	P	**Pn**	**19 43 12.8**	**+1.8**
NEM2	**Nemuro 2**	**2.56**	**148**	P	**Pn**	**19 43 12.9**	**-0.5**
NEM2				*e*S	**S**	**19 43 54.5**	**-2.0**
JAK	**Akkeshi**	**2.62**	**167**	P	**Pn**	**19 43 14.5**	**+0.5**
JAK				*e*S	**S**	**19 43 56.9**	**-0.7**
JCH	**Churui**	**2.97**	**188**	P	**Pn**	**19 43 17.8**	**+0.7**
JCH				*e*S	**S**	**19 44 01.2**	**-2.0**
JNBK	**Urakawa-nobuka**	**3.38**	**195**	P	**Pn**	**19 43 22.4**	**+1.4**
JKB	**Kayabe**	**4.22**	**211**	P	**Pn**	**19 43 30.5**	**+0.8**
JKB				*e*S	**S**	**19 44 25.1**	**-1.0**
JOT	**Ohata**	**4.66**	**208**	P	**Pn**	**19 43 35.4**	**+0.9**
KLR	**Kul'dur**	**9.03**	**298**	P	**Pn**	**19 44 24.6**	**-1.0**
	0.1nm,0.3s,baz=120,slow=14,SNR=4.0						
MJAR	**Matsushiro Arr**	**9.98**	**207**	P	**P**	**19 44 40.2**	**+0.5**
	0.5nm,0.3s,baz=12,slow=11,SNR=14						
PETK	**Petropavlovsk-**	**11.74**	**45**	P	**Pn**	**19 44 58.4**	**+0.2**
	0.3nm,0.3s,baz=203,slow=10,SNR=3.0						
SEY	**Seymchan**	**18.07**	**13**	P	**P**	**19 46 06.8**	**-1.2**
	0.1nm,0.3s,baz=162,slow=20,SNR=4.8						
SONM	**Songino Array**	**25.67**	**289**	P	**P**	**19 47 19.5**	**-0.8**
	0.3nm,0.5s,baz=77,slow=8.2,SNR=3.8						
ILAR	**Eielson Array**	**41.43**	**37**	P	**P**	**19 49 35.9**	**+1.5**
	0.2nm,0.5s,baz=275,slow=11,SNR=3.3						
MKAR	**Makanchi Array**	**41.71**	**295**	P	**P**	**19 49 37.1**	**+0.1**
	0.4nm,0.6s,baz=83,slow=7.9,SNR=4.5						
YKA	**Yellowknife Ar**	**55.58**	**33**	P	**P**	**19 51 22.0**	**+0.7**
	0.1nm,0.4s,baz=304,slow=7.4,SNR=1.5						
FINES	**FINESS Array B**	**62.20**	**331**	P	**P**	**19 52 05.5**	**-0.9**
	1.3nm,1.0s,baz=62,slow=9.3,SNR=7.9						

*ISCJB **03** 19:43:38.3±1.1, 14°.28S±0°.08×167°.1E±0°.2, h170km, mb3.9/7, Error ellipse: s-maj=30.0km s-min=10.8km az=179.2*
*IDC **03** 19:43:43.4±5.7, 14°.62S×167°.38E, h219km±59km, mb3.7/7, mb1 3.8/8, mb1mx3.4/38, mbtmp4.2/8, Error ellipse: s-maj=53.7km s-min=28.1km az=155.0*
ISC 03 19:43:38.7±1.1, 14°.31S±0°.10×167°.3E±0°.2, h170km, n9, σ1°24/10, mb4.0/7, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**7.77**	**186**	P	**Pn**	**19 45 28.6**	**-0.4**
	1.9nm,0.3s,baz=31,slow=17,SNR=22						
DZM				S	**Sn**	**19 46 57.6**	**+1.4**
	0.5nm,0.3s,baz=160,slow=21,SNR=2.1						
STKA	**Stephens Creek**	**29.30**	**229**	P	**P**	**19 49 24.2**	**-1.0**
	2.3nm,0.6s,baz=61,slow=9.1,SNR=13						
WRA	**Warramunga Arr**	**31.97**	**255**	P	**P**	**19 49 48.7**	**-0.2**
	0.5nm,0.3s,baz=84,slow=8.5,SNR=21						
ASAR	**Alice Springs**	**32.86**	**248**	P	**P**	**19 49 56.1**	**-0.6**
	2.9nm,0.4s,baz=77,slow=9.2,SNR=84						
SONM	**Songino Array**	**82.19**	**324**	P	**P**	**19 55 42.1**	**+1.3**
	0.5nm,0.5s,baz=150,slow=9.6,SNR=6.6						
MKAR	**Makanchi Array**	**96.93**	**316**	P	**P**	**19 56 52.3**	**+1.5**
	0.4nm,0.6s,baz=86,slow=6.3,SNR=4.6						
ZALV	**Zalesovo Beam**	**97.08**	**324**	P	**P**	**19 56 51.7**	**+0.6**
	0.5nm,0.5s,baz=90,slow=5.8,SNR=2.7						
YKA	**Yellowknife Ar**	**97.15**	**27**	P	**P**	**19 56 50.6**	**-0.7**
	0.2nm,0.7s,baz=260,slow=4.5,SNR=4.2						
ARCES	**ARCESS Array B**	**119.86**	**345**	PKP	**PKPdf**	**20 02 06.7**	**-1.5**
	1.0nm,0.6s,baz=64,slow=2.2,SNR=11						

*ISCJB **03** 20:00:54.1±0.7, 26°.8S±0°.1×67°.5E±0°.1, h10km, mb4.2/22, MS3.4/2, Error ellipse: s-maj=20.8km s-min=11.6km az=21.6*
*IDC **03** 20:00:54.5±1.1, 26°.74S×67°.47E, h0km, mb4.0/11, mb1 4.1/11, mb1mx3.8/50, mbtmp4.0/11, MS3.4/2, Ms1 3.2/2, ms1mx2.8/27, Error ellipse: s-maj=37.1km s-min=20.4km az=16.0*
*NEIC **03** 20:00:55.4±0.5, 26°.85S×67°.42E, h10km, mb4.5/11, Error ellipse: s-maj=15.4km s-min=9.0km az=202.0*
ISC 03 20:00:55.6±1.1, 26°.8S±0°.2×67°.4E±0°.1, h10km, n50, σ0°79/40, mb4.2/22, Indian Ocean Triple Junction

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
H08S1	**Diego Carcia H**	**19.64**	**15**	T	T	20 25 33.7	
	baz=194,slow=76,SNR=24						
H08S2	**Diego Garcia H**	**19.65**	**15**	T	T	20 25 32.6	
	baz=194,slow=76,SNR=37						
H08S3	**Diego Garcia H**	**19.66**	**15**	T	T	20 25 33.7	
	baz=194,slow=76,SNR=29						
BOSA	**Boshof**	**37.26**	**257**	LR	LR	20 19 55.1	
	comp=Z,60nm,19.8s,baz=153,slow=31						
LSZ	**Lusaka**	**38.24**	**279**	P	**P**	**20 08 16.4**	**+0.1**
	1.5nm,0.8s,baz=100,slow=3.6,SNR=3.6						
H01W2	**Cape Leeuwin H**	**40.59**	**113**	T	T	20 51 29.6	
	baz=269,slow=75,SNR=14						
H01W3	**Cape Leeuwin H**	**40.59**	**113**	T	T	20 51 29.7	
	baz=269,slow=75,SNR=13						
H01W1	**Cape Leeuwin H**	**40.61**	**113**	T	T	20 51 30.5	
	baz=269,slow=75,SNR=9.7						
DAMY	**Dhamar**	**46.83**	**329**	*eP*	**P**	**20 09 24.6**	**-1.6**
	9.6nm,1.0s						
KSM	**Kuching**	**49.95**	**63**	*eP*	**P**	**20 09 48.8**	**-1.2**
	4.7nm,1.0s						
CM01	**Chiang Mai Arr**	**54.37**	**38**	*eP*	**P**	**20 10 24.1**	**+1.2**
CM31	**Chiang Mai Arr**	**54.39**	**38**	*eP*	**P**	**20 10 22.4**	**-0.6**
CMAR	**Chiang Mai Arr**	**54.39**	**38**	P	**P**	**20 10 22.1**	**-0.9**
	1.8nm,0.8s,baz=233,slow=7.3,SNR=15						
ASAR	**Alice Springs**	**59.58**	**103**	P	**P**	**20 11 00.2**	**+0.3**
	1.1nm,0.7s,baz=248,slow=6.2,SNR=15						
AS31	**Alice Springs**	**59.58**	**103**	*eP*	**P**	**20 10 59.1**	**-0.8**
	3.6nm,1.9s						
AS01	**Alice Springs**	**59.62**	**103**	*eP*	**P**	**20 11 00.5**	**+0.3**
KBL	**Kabul**	**61.03**	**2**	*eP*	**P**	**20 11 09.3**	**-0.4**
	11nm,0.4s						
WR1	**Warramunga Arr**	**61.18**	**99**	*eP*	**P**	**20 11 11.4**	**+0.5**
	32nm,1.9s						
WRA	**Warramunga Arr**	**61.18**	**99**	P	**P**	**20 11 11.4**	**+0.5**
	1.3nm,0.6s,baz=249,slow=6.5,SNR=13						
H09W1	**TRISTAN DA CUN**	**66.66**	**239**	T	T	21 24 51.3	
	SNR=7.9						
EKS2	**Erkin-Say**	**69.36**	**5**	*eP*	**P**	**20 12 03.6**	**+0.2**
	2.1nm,0.8s						
AAK	**Ala-Archa**	**69.39**	**6**	*eP*	**P**	**20 12 03.7**	**0.0**
	1.6nm,0.8s						
**

2.6nm,0.9s
SONM Songino Array 82.13 25 P **P 20 13 17.1 +0.7**
1.8nm,0.8s,baz=218,slow=4.9,SNR=14
SONA1 Songino Array 82.15 25 *e*P **P 20 13 17.0 +0.4**
AKASG Malin Array Be 84.24 337 P **P 20 13 26.9 -0.2**
0.7nm,0.5s,baz=150,slow=4.5,SNR=4.9
KS15 Wonju Array Si 85.44 44 *e*P **P 20 13 34.1 +0.6**
KSAR Wonju Array Be 85.44 44 P **P 20 13 34.4 +0.9**
KSRS Korea Array 85.48 44 P **P 20 13 34.4 +0.8**
0.7nm,0.5s,baz=226,slow=7.0,SNR=3.8
YKA Yellowknife Ar 144.29 2 PKP PKPbc 20 20 29.6 +0.1
0.4nm,0.7s,baz=345,slow=3.4,SNR=23
YKB5 Yellowknife Ar 144.29 2 *e*PKPdf PKPbc 20 20 29.8 +0.3
T25A Trinidad 167.60 328 *e*PKPdf **PKPdf 20 21 00.3 -2.2**
T25A *e*PKPab **PKPab 20 22 08.8 +0.4**

IDC 03 20:04:35.8±2.0, 20°68S×172°97W, h0km, mb3.6/3, mb1 3.8/3, mb1mx3.5/42, mbtmp3.6/3, MS3.2/1, Ms1 3.2/1, ms1mx2.4/27, Error ellipse: s-maj=96.7km s-min=37.6km az=7.0, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**19.22**	**262**	LR	LR	20 15 17.9	
	comp=Z,69nm,18.3s,baz=18,slow=33						
CTA	**Charters Tower**	**38.16**	**264**	P	P	20 11 57.0	-0.2
	0.7nm,0.3s,baz=96,slow=9.2,SNR=3.3						
ASAR	**Alice Springs**	**49.06**	**256**	P	P	20 13 26.2	+1.1
	0.5nm,0.7s,baz=94,slow=8.2,SNR=7.5						
WRA	**Warramunga Arr**	**49.23**	**261**	P	P	20 13 25.1	-1.3
	0.4nm,0.9s,baz=95,slow=7.6,SNR=12						
BRTR	**Keskin Array B**	**150.36**	**316**	PKPbc	PKPbc	20 24 30.1	+0.5
	0.2nm,0.5s,baz=22,slow=5.0,SNR=2.7						
TORD	**Torodi Ar. Bea**	**170.94**	**145**	PKPab	PKPab	20 26 04.4	-1.0
	0.6nm,0.9s,baz=191,slow=5.9,SNR=2.7						

IDC 03 20:11:20.3±1.9, 8°46S×71°32W, h0km, mb3.4/2, mb1 3.7/3, mb1mx3.5/35, mbtmp3.4/3, ML3.5/1, Error ellipse: s-maj=80.7km s-min=37.6km az=64.0, Western Brazil

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LPAZ	**La Paz**	**8.38**	**159**	Pn	Pn	20 13 23.2	-0.5
	0.3nm,0.3s,baz=316,slow=11,SNR=6.8						
LPAZ				Sn	Sn	20 15 07.7	+8.3
	0.3nm,0.3s,baz=5.9,slow=20,SNR=2.4						
TORD	**Torodi Ar. Bea**	**75.61**	**74**	P	P	20 23 07.9	+0.1
	0.4nm,0.7s,baz=272,slow=5.3,SNR=2.9						
YKA	**Yellowknife Ar**	**78.17**	**341**	P	P	20 23 21.1	-0.1
	0.1nm,0.3s,baz=138,slow=6.0,SNR=4.9						
WRA	**Warramunga Arr**	**142.13**	**222**	PKP	PKPdf	20 30 57.2	+1.6
	0.2nm,0.6s,baz=123,slow=1.8,SNR=3.0						

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*ISCJB **03** 20:16:51.9±0.6, 34°21N±0°09×136°88E±0°08, h361km±6km, mb2.7/4, Error ellipse: s-maj=14.7km s-min=10.6km az=4.2*
*IDC **03** 20:16:52.2±0.9, 34°16N×136°95E, h348km±16km, mb2.7/4, mb1 2.8/8, mb1mx2.6/45, mbtmp3.4/8, Error ellipse: s-maj=28.7km s-min=18.3km az=54.0*
*JMA **03** 20:16:53.3±0.4, 34°33N×136°83E, h355km±4km, M2.2*
ISC 03 20:16:53.0±0.9, 34°29N±0°10×136°82E±0°07, h358km±8km, n20, σ1§41/25, mb2.7/4, Western Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIE	**Ise**	**0.14**	**318**	P	**Pn**	**20 17 37.7**	**+0.1**
TK02	**Tokai 2**	**0.85**	**113**	P	**Pn**	**20 17 39.7**	**+0.9**
JGM	**Miyama**	**1.41**	**357**	P	**Pn**	**20 17 41.8**	**+0.3**
JWT	**Wachi**	**1.53**	**311**	P	**Pn**	**20 17 42.0**	**-0.1**
JWT				S	**S**	**20 18 19.7**	**-1.8**
JKG	**Kaga**	**2.02**	**349**	P	**Pn**	**20 17 45.1**	**0.0**
JKG				S	**S**	**20 18 27.3**	**+0.3**
JOD2	**Odawara 2**	**2.11**	**62**	P	**Pn**	**20 17 46.1**	**+0.3**
JOD2				*e*S	**S**	**20 18 31.6**	**+3.4**
JRY	**Ryogami san**	**2.43**	**44**	P	**Pn**	**20 17 48.3**	**+0.1**
JRY				*e*S	**S**	**20 18 33.4**	**+0.8**
MAT	**Matsushiro**	**2.52**	**26**	P	**Pn**	**20 17 48.3**	**-0.6**
MAT				*e*S	S	20 18 26.5	-7.3
MAT	**Matsushiro**	**2.52**	**26**	S	**S**	**20 18 33.5**	**-0.3**
MJAR	**Matsushiro Arr**	**2.52**	**26**	P	**Pn**	**20 17 48.9**	**0.0**
	0.5nm,0.3s,baz=202,slow=9.2,SNR=20						
MJAR				S	**S**	**20 18 32.7**	**-1.2**
	0.1nm,0.3s,baz=196,slow=15,SNR=5.3						
JAG	**Ashikaga**	**3.03**	**45**	*e*S	**S**	**20 18 37.8**	**-3.9**
JHS	**Saijyo**	**3.13**	**284**	P	**Pn**	**20 17 54.3**	**+0.1**
BSO1	**Boso 1**	**3.46**	**83**	*e*S	**S**	**20 18 46.2**	**-1.6**
JNU	**Nakatsue**	**5.09**	**258**	P	**Pn**	**20 18 13.8**	**-0.2**
	0.2nm,0.3s,baz=90,slow=11,SNR=3.0						
KSRS	**Korea Array**	**7.88**	**296**	P	**P**	**20 18 46.8**	**-0.2**
	0.3nm,0.3s,baz=109,slow=12,SNR=7.4						
USRK	**Ussuriysk Ar.**	**10.58**	**341**	P	**P**	**20 19 18.6**	**+0.2**
	0.2nm,0.3s,baz=142,slow=10,SNR=5.5						
SONM	**Songino Array**	**26.44**	**310**	P	**P**	**20 22 00.6**	**+2.1**
	0.1nm,0.3s,baz=116,slow=9.8,SNR=2.7						
MKAR	**Makanchi Array**	**42.48**	**304**	P	**P**	**20 24 14.5**	**+0.3**
	0.1nm,0.2s,baz=86,slow=8.9,SNR=2.5						
WRA	**Warramunga Arr**	**53.98**	**183**	P	**P**	**20 25 40.4**	**-1.0**
	0.5nm,0.5s,baz=359,slow=7.7,SNR=12						
ASAR	**Alice Springs**	**57.70**	**183**	P	**P**	**20 26 06.7**	**-0.8**
	0.2nm,0.5s,baz=12,slow=13,SNR=7.4						

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*IDC **03** 20:45:07.5±3.5, 35°97N×141°19E, h0km, mb3.7/2, mb1 3.7/4, mb1mx3.3/29, mbtmp3.5/4, ML3.4/2, Error ellipse: s-maj=92.6km s-min=28.4km az=49.0*
*ISCJB **03** 20:45:19.5±0.8, 35°65N±0°05×140°08E±0°07, h75km±5km, mb3.7/2, Error ellipse: s-maj=9.7km s-min=7.4km az=165.3*
*JMA **03** 20:45:20.6±0.1, 35°67N×140°07E, h67km±2km, M3.1*
ISC 03 20:45:20.2±1.1, 35°66N±0°05×140°06E±0°07, h73km±8km, n14, σ0§62/21, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TOK	**Tokyo**	**0.25**	**277**	P	**Pn**	**20 45 32.2**	**+0.9**
TOK				S	**Sn**	**20 45 39.4**	**-0.1**
JYT	**Yasato**	**0.58**	**10**	P	**Pn**	**20 45 33.7**	**-0.3**
JYT				S	**Sn**	**20 45 43.2**	**-1.0**
JHU	**Hanno**	**0.67**	**287**	P	**Pn**	**20 45 35.3**	**+0.4**
JHU				S	**Sn**	**20 45 46.3**	**+0.4**
JOD2	**Odawara 2**	**0.89**	**244**	P	**Pn**	**20 45 37.2**	**-0.3**
JOD2				S	**Sn**	**20 45 49.1**	**-1.3**
JAG	**Ashikaga**	**0.91**	**327**	P	**Pn**	**20 45 37.9**	**+0.1**
JAG				S	**Sn**	**20 45 50.4**	**-0.4**
BSO3	**Boso 3**	**0.93**	**157**	S	**Sn**	**20 45 51.3**	**+0.5**
JRY	**Ryogami san**	**1.01**	**291**	P	**Pn**	**20 45 39.5**	**+0.5**
JYN	**Shimob**	**1.25**	**263**	P	**Pn**	**20 45 42.1**	**0.0**
JYN				S	**Sn**	**20 45 58.0**	**-0.5**
JKT	**Katashina**	**1.29**	**329**	P	**Pn**	**20 45 43.1**	**+0.5**
JKT				S	**Sn**	**20 45 59.3**	**-0.1**
MJAR	**Matsushiro Arr**	**1.74**	**301**	Pn	**Pn**	**20 45 48.8**	**+0.3**
	12nm,0.3s,baz=155,slow=14,SNR=72						
MAT	**Matsushiro**	**1.74**	**301**	P	**Pn**	**20 45 49.1**	**+0.6**
MAT				S	**Sn**	**20 46 09.4**	**-0.6**
KSRS	**Korea Array**	**9.93**	**284**	Pn	Pn	20 47 44.6	+4.5
	0.2nm,0.3s,baz=98,slow=15,SNR=4.0						
MKAR	**Makanchi Array**	**43.94**	**303**	P	**P**	**20 53 20.4**	**+0.5**
	0.2nm,0.3s,baz=86,slow=9.4,SNR=4.5						
WRA	**Warramunga Arr**	**55.56**	**187**	P	**P**	**20 54 47.6**	**-0.5**
	0.6nm,0.4s,baz=0.5,slow=7.3,SNR=26						

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*NIED **03** 20:58:00, 37°40N×141°30E, h44km, Mw3.6 Best double couple: M0:2.96000×10^14 NP1:φs=45.00000°, δ=81.00000°, λ=-7.00000°. NP2:φs=136.00000°, δ=83.00000°, λ=-171.00000°.*
JMA 03 20:58:32.4±0.1, 37°41N×141°28E, h34km±1km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.33**	**262**	P	Pb	20 58 40.3	-0.3
JFK				S	Sn	20 58 45.6	-0.2
ONAJ	**Iwakimizuishiy**	**0.49**	**231**	P	Pb	20 58 42.4	-0.6
ONAJ				S	Sb	20 58 49.4	-0.9
JMM	**Marumori**	**0.60**	**320**	P	Pn	20 58 43.9	-0.5
JMM				S	Sn	20 58 52.3	-0.6
JFT	**Otama**	**0.76**	**278**	P	Pb	20 58 47.0	-0.3
JFT				S	Sb	20 58 57.2	-0.2
JHO	**Hitachi**	**0.98**	**216**	P	Pn	20 58 49.1	-0.6
JHO				S	Sn	20 59 01.0	-1.4
JIO	**Ouri**	**1.04**	**3**	P	Pn	20 58 50.3	-0.3
JIO				S	Sn	20 59 03.1	-0.9
JOU	**Okura**	**1.07**	**333**	P	Pn	20 58 51.1	+0.1
JOU				S	Sb	20 59 05.5	-0.7
JFY	**Yanaizu**	**1.25**	**270**	P	Pn	20 58 54.3	+0.8
JFY				S	Sb	20 59 10.4	-1.0
JYS	**Shirataka**	**1.26**	**310**	P	Pn	20 58 54.3	+0.7
JYS				S	Sb	20 59 11.1	-0.4
MAT	**Matsushiro**	**2.61**	**252**	P	Pn	20 59 13.0	+0.8
MAT				*e*S	Sn	20 59 45.9	+3.2

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*ISCJB **03** 21:02:34.5±0.4, 43°73N±0°03×105°23W±0°04, h0km, mb4.0/2, Error ellipse: s-maj=4.3km s-min=4.0km az=35.3*
*IDC **03** 21:02:35.3±0.9, 44°17N×105°80W, h0km, mb3.9/2, mb1 3.8/6, mb1mx3.5/40, mbtmp3.6/6, ML2.8/3, MS2.7/1, Ms1 2.6/1, ms1mx2.3/45, Error ellipse: s-maj=24.8km s-min=8.1km az=144.0*
*NEIC **03** 21:02:35.9±0.5, 43°74N×105°20W, h0km, ML3.7, Error ellipse: s-maj=6.8km s-min=6.4km az=74.0, Suspected Mining explosion.*
NEIC 66 km [41 miles] SSE of Gillette.
ISC 03 21:02:34.7±0.7, 43°77N±0°04×105°16W±0°05, h0km, n61, σ1§15/66, Wyoming

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RSSD	**Black Hills**	**0.89**	**66**	*e*Pg	**Pn**	**21 02 54.5**	**-0.2**
RSSD				*e*Sg	**Sb**	**21 03 06.7**	**+1.1**
K22A	**Casper**	**1.50**	**222**	*e*Pn	**Pn**	**21 03 00.8**	**-2.2**
K22A				*e*Sg	**Sg**	**21 03 21.6**	**-1.1**
PHWY	**Pilot Hill**	**2.47**	**185**	*e*Pn	**Pn**	**21 03 17.3**	**+0.8**
PHWY				*e*Sn	**Sn**	**21 03 46.6**	**-0.9**
N23A	**Red Feather La**	**2.93**	**192**	*e*Pn	**Pn**	**21 03 23.6**	**+0.9**
N23A				*e*Sn	**Sn**	**21 03 58.1**	**-0.6**
BW06	**Boulder Array**	**3.37**	**254**	*e*Pn	**Pn**	**21 03 29.2**	**+0.4**
BW06				*e*Sn	**Sn**	**21 04 09.0**	**-0.5**
PD31	**Pinedale Array**	**3.37**	**254**	*e*Pn	**Pn**	**21 03 28.8**	**+0.1**
PD31				*e*Lg	Lg	21 04 10.3	
PDAR	**Pinedale Array**	**3.37**	**254**	Pn	**Pn**	**21 03 28.8**	**+0.1**
	8.1nm,0.3s,baz=76,slow=15,SNR=111						
PDAR				Lg	Lg	21 04 10.3	
	9.1nm,0.3s,baz=74,slow=29,SNR=4.3						
YTP	**The Promontory**	**3.75**	**281**	*e*Pn	**Pn**	**21 03 34.7**	**+0.7**
GCMT	**Greycliff**	**3.80**	**304**	*e*Pn	**Pn**	**21 03 33.2**	**-1.4**
GCMT				*e*Sn	**Sn**	**21 04 21.8**	**+1.8**
LOHW	**Long Hollow**	**3.95**	**270**	*e*Pn	**Pn**	**21 03 37.9**	**+1.1**
H17A	**Grant Village**	**3.96**	**281**	*e*Pn	**Pn**	**21 03 38.1**	**+1.2**
ISCO	**Idaho Springs**	**3.98**	**185**	*e*Pn	**Pn**	**21 03 38.7**	**+1.5**
FLWY	**Flagg Ranch**	**4.02**	**276**	*e*Pn	**Pn**	**21 03 37.6**	**0.0**
MOOW	**Moose Ponds**	**4.05**	**272**	*e*Pn	**Pn**	**21 03 39.5**	**+1.4**
SNOW	**Snow King Moun**	**4.08**	**268**	*e*Pn	**Pn**	**21 03 38.8**	**+0.3**
REDW	**Red Top Meadow**	**4.16**	**266**	*e*Pn	**Pn**	**21 03 41.5**	**+1.9**
IMW	**Indian Meadow**	**4.18**	**274**	*e*Pn	**Pn**	**21 03 42.2**	**+2.1**
FXWY	**Fox Creek**	**4.26**	**270**	*e*Pn	**Pn**	**21 03 41.9**	**+0.9**
O20A	**White River Ci**	**4.29**	**213**	*e*Pn	**Pn**	**21 03 39.5**	**-1.9**
AHID	**Auburn Hatcher**	**4.45**	**259**	*e*Pn	**Pn**	**21 03 45.1**	**+1.4**
SMCO	**Snowmass**	**4.78**	**197**	*e*Pb	**Pb**	**21 04 00.0**	**+0.4**
Q24A	**Divide**	**4.80**	**180**	*e*Pb	**Pb**	**21 04 00.2**	**+0.4**
RSUT	**Red Spur Mount**	**5.08**	**247**	*e*Pn	**Pn**	**21 03 52.7**	**+0.4**
KSCO	**Kaye Shedlock'**	**5.12**	**157**	*e*Pn	**Pn**	**21 03 53.4**	**+0.6**
KSCO				*e*Pg	**Pg**	**21 04 13.3**	**+0.6**
MCU	**Monte Cristo P**	**5.22**	**246**	*e*Pn	**Pn**	**21 03 54.1**	**-0.2**
TCUT	**Toone Canyon**	**5.33**	**242**	*e*Pn	**Pn**	**21 03 56.3**	**+0.6**
HTU	**Hoyt Peak**	**5.46**	**238**	*e*Pn	**Pn**	**21 03 57.9**	**+0.3**
P18A	**Preston Nutter**	**5.62**	**224**	*e*Pn	**Pn**	**21 04 00.5**	**+0.8**
NPI	**North Pocatell**	**5.64**	**256**	*e*Pn	**Pn**	**21 04 01.0**	**+1.1**
JLU	**Jordanelle**	**5.64**	**238**	*e*Pn	**Pn**	**21 04 01.0**	**+1.0**
FPU	**Francis Peak**	**5.65**	**243**	*e*Pn	**Pn**	**21 04 00.9**	**+0.6**
SPUT	**South Promonto**	**5.92**	**248**	*e*Pg	Pg	21 04 25.2	-2.9
HVU	**Hansel Valley**	**5.95**	**253**	*e*Pn	**Pn**	**21 04 05.3**	**+1.2**
P17A	**Butcher Ranch,**	**5.99**	**226**	*e*Pn	**Pn**	**21 04 06.4**	**+1.7**
P17A				*e*Pb	**Pb**	**21 04 20.9**	**+0.9**
PV09	**Paradox Valley**	**6.06**	**211**	*e*Pn	**Pn**	**21 04 07.2**	**+1.4**
MPU	**Maple Canyon**	**6.11**	**234**	*e*Pb	Pb	21 04 27.0	+4.8
S22A	**4UR Ranch, Cre**	**6.14**	**192**	*e*Pn	**Pn**	**21 04 10.1**	**+3.1**
S22A				*e*Lg	Lg	21 05 56.3	
SRU	**San Rafael Swe**	**6.15**	**223**	*e*Pn	**Pn**	**21 04 07.8**	**+0.8**
PV01	**Paradox Valley**	**6.19**	**206**	*e*Pn	**Pn**	**21 04 08.9**	**+1.4**
TMUT	**Trail Mountain**	**6.37**	**228**	*e*Pn	**Pn**	**21 04 11.0**	**+1.0**
NLU	**North Lily Min**	**6.41**	**236**	*e*Pb	**Pb**	**21 04 27.0**	**-0.3**
PV05	**Paradox Valley**	**6.42**	**209**	*e*Pn	**Pn**	**21 04 10.7**	**+0.1**
BGU	**Big Grassy Mou**	**6.49**	**247**	*e*Pn	**Pn**	**21 04 13.4**	**+1.9**
Q16A	**Castle Valley**	**6.63**	**225**	*e*Pn	**Pn**	**21 04 13.7**	**+0.2**
T25A	**Trinidad**	**6.64**	**175**	*e*Pn	**Pn**	**21 04 14.9**	**+1.2**
DUG	**Dugway, Tooele**	**6.73**	**241**	*e*Pn	**Pn**	**21 04 14.5**	**-0.4**
MMU	**Miners Mountai**	**7.24**	**222**	*e*Pn	**Pn**	**21 04 21.9**	**-0.1**
MSU	**Marysvale**	**7.45**	**228**	*e*Pn	**Pn**	**21 04 25.5**	**+0.6**
MTPU	**Mount Pierson**	**7.81**	**225**	*e*Pn	**Pn**	**21 04 30.3**	**+0.4**
PSUT	**Pine Spring**	**8.38**	**234**	*e*Pn	**Pn**	**21 04 38.9**	**+1.3**
ULM	**Lac du Bonnet**	**9.07**	**41**	Pn	**Pn**	**21 04 44.8**	**-2.0**
	0.7nm,0.3s,baz=228,slow=11,SNR=3.3						
ULM				Lg	Lg	21 07 17.4	
	0.2nm,0.3s,baz=315,slow=20,SNR=2.1						
ULM				LR	LR	21 08 25.2	
	comp=Z,50nm,21.8s,baz=28,slow=38						
LCMT	**Little Creek M**	**9.14**	**225**	*e*Pn	Pn	21 04 52.6	+4.7
NV01	**Mina Array Sit**	**11.26**	**246**	*e*Pn	**Pn**	**21 05 17.5**	**+0.5**
NVAR	**Mina Array Bea**	**11.26**	**246**	Pn	**Pn**	**21 05 17.5**	**+0.5**
	0.1nm,0.3s,baz=51,slow=18,SNR=2.5						
WSHM	**Spangler Hills**	**12.51**	**233**	*e*Pn	**Pn**	**21 05 34.6**	**+0.6**
LTX	**Lajitas**	**14.45**	**175**	*e*P	**P**	**21 06 08.8**	**+1.2**
TXAR	**Lajitas Array**	**14.45**	**175**	Pn	**P**	**21 06 08.8**	**+1.2**
	0.0nm,0.3s,baz=345,slow=9.1,SNR=3.9						
TXAR				Lg	Lg	21 10 15.2	
	0.0nm,0.3s,baz=355,slow=30,SNR=6.9						
YKA	**Yellowknife Ar**	**19.56**	**347**	P	**Pn**	**21 07 05.3**	**+0.3**
	0.0nm,0.3s,baz=165,slow=12,SNR=3.0						
YKB5	**Yellowknife Ar**	**19.56**	**347**	*e*P	**Pn**	**21 07 05.3**	**+0.3**
ARCES	**ARCESS Array B**	**61.37**	**18**	P	**P**	**21 12 51.4**	**-0.5**
	1.6nm,0.9s,baz=332,slow=6.9,SNR=11						
MKAR	**Makanchi Array**	**89.58**	**355**	P	**P**	**21 15 31.8**	**-2.2**
	0.2nm,0.2s,baz=26,slow=6.0,SNR=3.0						

IDC 03 21:03:16.2±1.4, 3°73N×127°12E, h0km, mb3.5/5, mb1 3.7/5, mb1mx3.4/42, mbtmp3.5/5, Error ellipse: s-maj=105.1km s-min=19.0km az=73.0, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**21.74**	**184**	P	P	21 08 09.4	-0.1
	0.8nm,0.6s,baz=5.1,slow=9.3,SNR=2.9						
WRA	**Warramunga Arr**	**24.57**	**163**	P	P	21 08 37.4	-0.7
	1.6nm,0.6s,baz=343,slow=9.9,SNR=17						
ASAR	**Alice Springs**	**28.02**	**167**	P	P	21 09 10.2	+0.9
	0.2nm,0.3s,baz=344,slow=11,SNR=3.0						
SONM	**Songino Array**	**47.42**	**341**	P	P	21 11 52.6	-0.1
	0.2nm,0.5s,baz=163,slow=7.4,SNR=2.8						
MKAR	**Makanchi Array**	**57.78**	**325**	P	P	21 13 09.1	-0.2
	0.5nm,0.5s,baz=117,slow=8.4,SNR=8.7						

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*IDC **03** 21:20:17.0±2.3, 27°88N×53°95E, h0km, mb3.5/3, mb1 3.6/4, mb1mx3.2/53, mbtmp3.6/4, ML3.5/1, MS3.4/1, Ms1 3.6/1, ms1mx2.3/41, Error ellipse: s-maj=56.2km s-min=29.5km az=41.0*
*CSEM **03** 21:20:18.2±0.3, 27°79N×53°94E, h2km, ML3.4, Error ellipse: s-maj=11.9km s-min=5.8km az=54.0*
*ISCJB **03** 21:20:18.8±0.5, 27°81N±0°05×53°89E±0°07, h23km, mb3.7/2, MS3.4/1, Error ellipse: s-maj=10.5km s-min=4.7km az=144.9*
*TEH **03** 21:20:20.6, 27°74N×53°92E, h27km, ML3.3*
*OMAN **03** 21:20:20.6, 27°74N×53°92E, h27km*
*DSN **03** 21:20:21.3±2.2, 27°62N×53°91E, h15km, ML3.4, Error ellipse: s-maj=30.0km s-min=12.9km az=11.0*
ISC 03 21:20:20.2±0.8, 27°75N±0°06×53°92E±0°05, h23km, n43, σ1§84/47, Southern Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GHIR	**Ghir-Karzin**	**0.99**	**303**	*e*Pg	**Pb**	**21 20 36.5**	**-2.2**
BNDS	**Bandar-Abbas**	**2.02**	**99**	*e*Pg	**Pn**	**21 20 52.7**	**-0.4**
GENO	**Geno**	**2.03**	**99**	*e*Pn	**Pn**	**21 20 50.8**	**-2.3**
GENO	**Geno**	**2.03**	**99**	*e*Pn	**Pn**	**21 20 50.8**	**-2.3**
IBND	**Bandar-abas**	**2.34**	**97**	*e*Pn	**Pn**	**21 20 57.6**	**+0.4**
IBND				*e*Sg	**Sb**	**21 21 33.7**	**+3.6**
IBND				*e*AMB	AMB	21 22 05.7	
	comp=Z,4μm,0.3s						
IBND	**Bandar-abas**	**2.34**	**97**	*e*Pn	**Pn**	**21 20 57.6**	**+0.4**
IBND				*e*Sg	**Sb**	**21 21 33.7**	**+3.6**
NIAN	**Nian**	**2.59**	**93**	*e*Pn	**Pn**	**21 21 01.1**	**+0.4**
NIAN	**Nian**	**2.59**	**93**	*e*Pn	**Pn**	**21 21 01.1**	**+0.4**
IKAZ	**Kazeroun**	**2.73**	**318**	*e*Pn	**Pn**	**21 21 02.4**	**-0.5**
IKAZ				*e*Sg	**Sb**	**21 21 46.6**	**+4.9**
IKAZ				*e*AMB	AMB	21 21 51.3	
	comp=Z,2μm,0.2s						
IKAZ	**Kazeroun**	**2.73**	**318**	*e*Pn	**Pn**	**21 21 02.4**	**-0.5**
IKAZ				*e*Sg	**Sb**	**21 21 46.6**	**+4.9**
BANOM	**Banah**	**2.79**	**130**	*e*P	**Pn**	**21 21 04.4**	**+0.9**
	SNR=8.7						
BANOM	**Banah**	**2.79**	**130**	P	**Pn**	**21 21 04.4**	**+0.9**
	SNR=8.7						
NAZ	**Nazwa, Dubai**	**3.16**	**150**	*i* P	**Pn**	**21 21 10.7**	**+2.2**
	SNR=8.1						
NAZ	**Nazwa, Dubai**	**3.16**	**150**	P	**Pn**	**21 21 10.7**	**+2.2**
	SNR=8.1						
KRBR	**Kerman**	**3.34**	**47**	*e*Pn	**Pn**	**21 21 11.5**	**+0.2**
FAQ	**Al Faqa, Dubai**	**3.34**	**153**	*i* P	**Pn**	**21 21 12.8**	**+1.8**
	SNR=31						
FAQ	**Al Faqa, Dubai**	**3.34**	**153**	P	**Pn**	**21 21 12.8**	**+1.8**
	SNR=31						
UOSS	**Minazif**	**3.46**	**143**	P	**Pn**	**21 21 13.7**	**+1.1**
	SNR=14						
ASHO	**Ashiyiah**	**3.60**	**147**	*i* P	**Pn**	**21 21 16.1**	**+1.4**
	SNR=8.7						
ASHO	**Ashiyiah**	**3.60**	**147**	P	**Pn**	**21 21 16.1**	**+1.4**
	SNR=8.7						
ASHO	**Ashiyiah**	**3.60**	**147**	P	**Pn**	**21 21 16.7**	**+2.0**
	SNR=7.3						
ASHO	**Ashiyiah**	**3.60**	**147**	Pn	**Pn**	**21 21 16.7**	**+2.0**
	SNR=7.3						
IMEH	**Mehriz**	**3.68**	**9**	*e*Pn	**Pn**	**21 21 16.0**	**+0.1**
IMEH				*e*AMB	AMB	21 21 17.7	
	comp=Z,323nm,0.1s						
IMEH	**Mehriz**	**3.68**	**9**	*e*Pn	**Pn**	**21 21 16.0**	**+0.1**
ISAD	**Sadrabad**	**4.16**	**357**	*e*Pn	**Pn**	**21 21 22.6**	**+0.1**
ISAD				*e*AMB	AMB	21 21 28.4	
	comp=Z,275nm,0.1s						
ISAD	**Sadrabad**	**4.16**	**357**	*e*Pn	**Pn**	**21 21 22.6**	**+0.1**
IRAM	**Ramesheh**	**4.27**	**342**	*e*Pn	**Pn**	**21 21 23.3**	**-0.6**
IRAM				*e*AMB	AMB	21 22 21.8	
	comp=Z,155nm,0.2s						
IRAM	**Ramesheh**	**4.27**	**342**	*e*Pn	**Pn**	**21 21 23.3**	**-0.6**
IGAR	**Garneh**	**4.92**	**341**	*e*Pn	**Pn**	**21 21 32.3**	**-0.6**
IGAR				*e*AMB	AMB	21 21 34.0	
	comp=Z,185nm,0.1s						
ARQ	**Araqi**	**4.98**	**151**	P	**Pn**	**21 21 35.0**	**+1.4**
ARQ	**Araqi**	**4.98**	**151**	P	**Pn**	**21 21 35.0**	**+1.4**
ARQ	**Araqi**	**4.98**	**151**	Pn	**Pn**	**21 21 35.0**	**+1.4**
IZEF	**Zefreh**	**5.32**	**345**	*e*Pn	**Pn**	**21 21 37.1**	**-1.3**
IZEF				*e*AMB	AMB	21 21 40.9	
	comp=Z,87nm,0.1s						
IZEF	**Zefreh**	**5.32**	**345**	*e*Pn	**Pn**	**21 21 37.1**	**-1.3**
SMDO	**Samad**	**5.97**	**140**	P	**Pn**	**21 21 48.4**	**+1.1**
	SNR=7.4						
SMDO	**Samad**	**5.97**	**140**	P	**Pn**	**21 21 48.4**	**+1.1**
	SNR=7.4						
SMDO	**Samad**	**5.97**	**140**	Pn	**Pn**	**21 21 48.4**	**+1.1**
	SNR=7.4						
WSAR	**Wadi Sarin**	**6.18**	**135**	Pn	**Pn**	**21 21 50.8**	**+0.6**
	comp=Z,1.1nm,0.3s,baz=324,slow=8.6,SNR=21						
WSAR				Sn	**Sn**	**21 22 56.9**	**-3.2**
	comp=Z,0.6nm,0.3s,baz=300,slow=20,SNR=3.4						
SHAO	**Shalim**	**9.80**	**170**	P	**Pn**	**21 22 38.8**	**-1.0**
	SNR=10.0						
BRTR	**Keskin Array B**	**20.62**	**311**	P	**P**	**21 24 57.0**	**-1.0**
	comp=Z,0.8nm,0.8s,baz=129,slow=12,SNR=2.9						
ZALV	**Zalesovo Beam**	**34.60**	**32**	P	**P**	**21 27 06.3**	**-0.9**
	comp=Z,0.4nm,0.4s,baz=251,slow=9.0,SNR=2.4						
FINES	**FINESS Array B**	**38.49**	**339**	P	**P**	**21 27 39.9**	**-0.4**
	comp=Z,1.0nm,0.8s,ba

MEIG	Mezcala	1.24	2	eP	Pn	21 38 57.7	-3.7
MEIG				eS	Sb	21 39 12.9	-4.6
TLIG	Tlapa	1.37	50	eP	Pn	21 39 00.1	-3.1
TLIG				eS	Sn	21 39 15.5	-5.6
PNIG	Pinotepa	1.50	101	eP	Pn	21 39 02.1	-2.8
PNIG				eS	Sn	21 39 19.2	-5.0
ARIG	Puente Sto Nin	1.72	338	eP	Pn	21 39 04.3	-3.6
ARIG				eS	Sn	21 39 24.7	-4.9
ZIIG	Zihuatanejo	1.95	299	eP	Pn	21 39 08.7	-2.3
ZIIG				i S	Sn	21 39 30.4	-4.8
YAIG	Yautepec	2.25	15	i P	Pn	21 39 12.3	-3.0
YAIG				i S	Sn	21 39 38.0	-4.8

NIED ***03*** *21:38:00, 37°.20N×142°.40E, h17km, Mw4.0 Best double couple: M₀1.23000×10¹⁵ NP1:φ₀58.00000°, δ15.00000°, λ-37.00000°. NP2:φ₀184.00000°, δ81.00000°, λ-102.00000°.*
JMA ***03*** *21:38:50.7±0.4, 37°.20N×142°.39E, h12km±4km, M4.3*
ISCJB ***03*** *21:38:52.3±1.1, 37°.17N±0°.03×142°.32E±0°.03, h13km±7km, mb4.2/49, MS3.1/5, Error ellipse: s-maj=4.8km s-min=4.1km az=43.6*
IDC ***03*** *21:38:52.4±0.7, 37°.20N×142°.32E, h0km, mb4.0/20, mb1 4.1/27, mb1mx4.1/50, mbtmp4.0/27, ML3.8/6, MS3.0/11, Ms1 3.1/11, ms1mx2.8/49, Error ellipse: s-maj=17.4km s-min=13.6km az=113.0*
NEIC ***03*** *21:38:54.1±2.3, 37°.19N×142°.38E, h12km±14km, mb4.5/18, Error ellipse: s-maj=6.8km s-min=5.2km az=105.0*
MOS ***03*** *21:38:55.3±1.0, 37°.25N×142°.33E, h33km, mb4.6/32, Error ellipse: s-maj=9.2km s-min=6.3km az=118.7*

ISC 03 21:38:53.2±1.4, 37°.23N±0°.04×142°.26E±0°.04, h5km±8km, n136, σ1°.20/143, mb4.3/49, MS3.2/5, 9C, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	1.12	277	P	Pg	21 39 13.0	-1.6
JFK				eS	Sg	21 39 29.9	+0.8
ONAJ	Iwakimizuishiy	1.18	264	P	Pg	21 39 13.9	-1.9
JMM	Marumori	1.33	299	P	Pn	21 39 16.1	-2.3
JIO	Ouri	1.42	330	P	Pn	21 39 17.3	-2.3
JFT	Otama	1.56	281	P	Pn	21 39 20.4	-1.2
JFT				eS	Sn	21 39 43.3	+1.1
JOU	Okura	1.70	312	P	Pn	21 39 22.2	-1.3
JMK	Ichinoseki	1.91	335	P	Pn	21 39 25.2	-1.1
JYS	Shiratake	2.00	300	P	Pn	21 39 27.4	-0.3
JYS				eS	Sn	21 39 53.6	+0.5
JFY	Yanaizu	2.05	276	P	Pn	21 39 27.3	-1.0
JFY				eS	Sn	21 39 52.6	-1.6
JYK	Kaneyama	2.26	319	P	Pn	21 39 29.9	-1.3
JYK				eS	Sn	21 39 59.2	-0.2
JOM	Ohasama	2.37	341	P	Pn	21 39 31.7	-0.9
JOM				eS	Sn	21 40 02.6	+0.6
JAG	Ashikaga	2.39	251	P	Pn	21 39 31.7	-1.3
MJAR	Matsushiro Arr	3.32	259	Pn	Pn	21 39 45.8	0.0
	13nm,0.3s,baz=84,slow=14,SNR=57						
MJAR				Sn	Sn	21 40 29.9	+4.2
	13nm,0.3s,baz=76,slow=16,SNR=5.5						
MJAR				LR	LR	21 40 44.5	
	comp=Z,65nm,20.7s,baz=80,slow=34						
MAJO	Matsushiro	3.32	259	i P	Pn	21 39 46.3	+0.5
MAJO	Matsushiro	3.32	259	ePn	Pn	21 39 46.1	+0.3
MAJO				eSn	Sn	21 40 25.8	+0.2
MAT	Matsushiro	3.32	259	P	Pn	21 39 46.0	+0.2
MAT				eS	Sn	21 40 23.6	-2.1
MJB9	Matsu-Tunnel	3.33	259	ePn	Pn	21 39 46.5	+0.6
MJB9				eSn	Sn	21 40 23.1	-2.6
JHJ2	Mitsune	4.57	207	ePn	Pn	21 40 02.2	-0.7
JHJ2				eSn	Sn	21 40 51.8	-4.6
JHJ	Hachijo jima 2	4.58	207	Pn	Pn	21 40 01.8	-1.2
	50nm,0.3s,baz=88,slow=22,SNR=14						
JHJ				Sn	Sn	21 40 53.6	-2.9
	95nm,0.3s,baz=58,slow=18,SNR=4.7						
JHJ				LR	LR	21 42 02.6	
	comp=Z,125nm,21.1s,baz=120,slow=42						
INU	Inuyama	4.63	248	ePn	Pn	21 40 05.7	+1.9
INU				eSn	Sn	21 40 56.6	-1.3
ERM	Erimo	4.83	8	i P	Pn	21 40 06.5	+0.1
ERM	Erimo	4.83	8	ePn	Pn	21 40 05.7	-0.7
ERM				eSn	Sn	21 41 02.5	-0.3
ASAJ	Asahikawa	6.88	2	Pn	Pn	21 40 35.1	+0.4
	1.6nm,0.3s,baz=212,slow=9.3,SNR=15						
ASAJ				Sn	Sn	21 41 50.8	-2.5
	0.3nm,0.3s,baz=252,slow=20,SNR=4.4						
SHO	Shikotan	7.49	26	eP	Pn	21 40 42.3	-0.6
SHO				eS	Sn	21 42 00.6	-7.6
SHO				pmax	pmax		
	comp=Z,42nm,0.7s						
SHO				pmax	pmax		
	comp=N,31nm,0.6s						
SHO				pmax	pmax		
	comp=E,19nm,0.5s						
CBIJ	Chichi jima	10.10	180	ePn	Pn	21 41 17.9	-1.0
CBIJ				eSn	Sn	21 43 02.2	-10
JCJ	Chichijima	10.10	180	Pn	Pn	21 41 17.9	-1.0
	comp=E,5.7nm,0.3s,baz=335,slow=14,SNR=4.8						
JCJ				Sn	Sn	21 43 02.2	-10
	baz=90,slow=20						
JNU	Nakatsue	10.18	250	Pn	Pn	21 41 21.8	+1.9
	comp=E,0.3nm,0.3s,baz=49,slow=11,SNR=9.0						
JNU				LR	LR	21 45 26.3	
	comp=E,103nm,19.8s,baz=115,slow=39						
USRK	Ussuriysk Ar.	10.45	315	Pn	Pn	21 41 25.3	+1.8
	comp=E,0.5nm,0.3s,baz=132,slow=14,SNR=10						
USRK				LR	LR	21 45 08.5	
	comp=E,97nm,19.3s,baz=89,slow=36						
KSRS	Korea Array	11.42	275	Pn	Pn	21 41 40.9	+4.0
	comp=E,0.3nm,0.3s,baz=91,slow=13,SNR=18						
KSRS				LR	LR	21 45 51.2	
	comp=E,157nm,19.2s,baz=76,slow=36						
KS15	Wonju Array Si	11.45	275	ePn	Pn	21 41 40.9	+3.6
KSAR	Wonju Array Be	11.45	275	P	Pn	21 41 40.9	+3.6
KSAR	Wonju Array Be	11.45	275	Pn	Pn	21 41 40.9	+3.6
KLR	Kul'dur	14.22	331	Pn	Pn	21 42 17.8	+2.8
	comp=E,0.1nm,0.3s,baz=183,slow=19,SNR=3.3						
KLR				LR	LR	21 47 40.2	
	comp=E,114nm,18.3s,baz=151,slow=37						
PETK	Petropavlovsk-	19.18	29	LR	LR	21 50 25.4	
	comp=E,30nm,21.5s,baz=244,slow=36						
SSLB	Suanglung	22.66	240	eP	P	21 44 01.0	+5.7
	comp=E,67nm,1.5s						
MA2	Magadan	23.03	11	LR	LR	21 52 16.1	
	comp=E,24nm,21.3s,baz=158,slow=35						
SEY	Seymchan	26.47	10	P	P	21 44 30.8	-0.1
	comp=E,1.2nm,0.5s,baz=139,slow=19,SNR=4.4						
SEY	Seymchan	26.47	10	i P	P	21 44 32.9	+2.0
BOD	Bodaibo	27.73	327	eP	P	21 44 42.5	+0.2
BOD				pmax	pmax		
	comp=Z,4.0nm,0.7s						
ULN	Ulaanbaatar	27.81	304	ceP	P	21 44 43.5	+0.2
ULN				pmax	pmax		
	comp=Z,9.0nm,1.2s						
ULN	Ulaanbaatar	27.81	304	eP	P	21 44 44.0	+0.7
	comp=Z,11nm,1.3s						
ENH	Enshi	28.03	265	eP	P	21 44 44.8	-0.4
	comp=Z,26nm,0.8s						
SONA1	Songino Array	28.24	303	eP	P	21 44 47.1	0.0
SONA0	Songino Array	28.24	303	eP	P	21 44 47.4	+0.3
	comp=Z,9.0nm,1.2s						
SONM	Songino Array	28.24	303	P	P	21 44 47.4	+0.3
	comp=Z,4.2nm,0.7s,baz=97,slow=8.7,SNR=31						
ZAK	Zakamensk	30.68	308	eP	P	21 45 08.4	-0.3
ZAK				pmax	pmax		
	comp=Z,5.0nm,1.2s						
TLY	Talaya	30.72	310	LR	LR	21 58 11.5	
	comp=Z,55nm,19.6s,baz=110,slow=38						
MOY	Mondy	32.33	310	eP	P	21 45 23.5	+0.3
BILL	Bilibino	33.65	16	eP	P	21 45 33.4	-1.0
BILL				e		21 45 48.6	
BILL				e		21 46 51.4	
BILL				pmax	pmax		
	comp=Z,1.0nm,1.1s						
BILL				MLR	MLR		
	comp=Z,38nm,18.0s						
CM31	Chiang Mai Arr	42.20	256	eP	P	21 46 47.6	+0.4
CMAR	Chiang Mai Arr	42.20	256	P	P	21 46 47.6	+0.4
	comp=Z,0.4nm,0.4s,baz=39,slow=5.8,SNR=4.0						
CMAR				LR	LR	22 06 05.1	
	comp=Z,34nm,18.1s,baz=270,slow=39						
CMAR	Chiang Mai Arr	42.20	256	P	P	21 46 47.6	+0.4
CMAR				pmax	pmax		
	comp=Z,1.0nm,0.3s						
CMAR				MLR	MLR		
	comp=Z,34nm,18.1s						
ZAA1	Zalesovo Array	42.29	312	eP	P	21 46 47.2	-0.1
ZAA0	Zalesovo Array	42.29	312	eP	P	21 46 47.9	+0.5
ZALV	Zalesovo Beam	42.29	312	P	P	21 46 47.2	-0.1
	comp=Z,4.5nm,0.8s,baz=93,slow=6.8,SNR=15						
LSA	Lhasa	42.87	275	eP	P	21 46 55.1	+2.1
LSA				pmax	pmax		
	comp=Z,6.0nm,1.0s						
LSA	Lhasa	42.87	275	eP	P	21 46 55.1	+2.1
	comp=Z,6.2nm,1.0s						
NVS	Novosibirsk	43.20	314	eP	P	21 46 55.1	+0.3
MK01	Makanchi Array	44.59	302	eP	P	21 47 05.8	-0.3
MK31	Makanchi Array	44.59	302	ceP	P	21 47 05.6	-0.5
MK31				pmax	pmax		
	comp=Z,10.0nm,0.8s						
MK31	Makanchi Array	44.59	302	eP	P	21 47 06.2	+0.1
MK32	Makanchi Array	44.59	302	eP	P	21 47 06.2	+0.1
MKAR	Makanchi Array	44.59	302	P	P	21 47 06.2	+0.1
	comp=Z,8.3nm,0.8s,baz=86,slow=9.3,SNR=57						
MKAR				LR	LR	22 05 59.0	
	comp=Z,21nm,18.9s,baz=82,slow=36						
MAKZ	Makanchi	44.80	302	i P	P	21 47 06.7	-1.1
MAKZ				pmax	pmax		
	comp=Z,10.0nm,0.8s						
MAKZ	Makanchi	44.80	302	eP	P	21 47 07.9	+0.1
	comp=Z,8.7nm,0.8s						
KURK	Kurchatov	46.35	308	c i P	P	21 47 18.3	-1.6
KURK				pmax	pmax		
	comp=Z,22nm,0.6s						
KURK	Kurchatov	46.35	308	eP	P	21 47 19.5	-0.4
	comp=Z,14nm,0.6s						
KKN	Kakani	48.34	276	eP	P	21 47 36.4	+0.3
	comp=Z,13nm,0.6s						
PKIN	Phulchoki	48.34	276	eP	P	21 47 36.1	0.0
	comp=Z,5.6nm,0.5s						
GKN	Gorkha	48.76	277	eP	P	21 47 39.4	+0.2
	comp=Z,21nm,0.7s						
ILAR	Eielson Array	48.97	32	P	P	21 47 40.5	+0.4
	comp=Z,1.4nm,0.7s,baz=267,slow=6.3,SNR=19						
ILB	Eielson Array	48.97	32	eP	P	21 47 40.5	+0.4
KOLN	Koldanda	49.68	277	eP	P	21 47 46.6	+0.3
	comp=Z,4.8nm,0.4s						
PYUN	Piuthan	50.02	278	eP	P	21 47 49.1	+0.2
	comp=Z,16nm,0.5s						
TKM2	Tokmak 2	50.13	299	i P	P	21 47 49.7	+0.1
TKM2				pmax	pmax		
	comp=Z,6.0nm,0.6s						
TKM2	Tokmak 2	50.13	299	eP	P	21 47 50.4	+0.8
	comp=Z,7.1nm,0.7s						
VOSK	Vostochnaya	50.66	312	eP	P	21 47 53.0	-0.1
VOSK				pmax	pmax		
	comp=Z,4.0nm,1.0s						
VOSK	Vostochnaya	50.66	312	eP	P	21 47 53.0	-0.1
	comp=Z,4.2nm,1.0s						
OTUK	Ortayu	50.86	306	i P	P	21 47 54.5	-0.3
OTUK				pmax	pmax		
	comp=Z,5.0nm,0.6s						
AAK	Ala-Archa	51.00	298	i P	P	21 47 55.5	-0.6
AAK				pmax	pmax		
	comp=Z,2.0nm,0.6s						
AAK	Ala-Archa	51.00	298	eP	P	21 47 58.9	+2.8
	comp=Z,2.6nm,0.6s						
BRVK	Borovoye	51.00	312	ceP	P	21 47 55.9	+0.2
BRVK				pmax	pmax		
	comp=Z,8.0nm,2.5s						
EKS2	Erkin-Say	51.49	299	eP	P	21 48 01.3	+1.6
EKS2				pmax	pmax		
	comp=Z,3.0nm,0.8s						
EKS2	Erkin-Say	51.49	299	eP	P	21 48 01.2	+1.6
	comp=Z,2.7nm,0.8s						
MNAS	Manas	52.44	299	i P	P	21 48 07.7	+0.9
MNAS				pmax	pmax		
	comp=Z,6.0nm,0.7s						
SFK	Sufi-Kurgan	52.56	296	i P	P	21 48 07.7	-0.2
SFK				pmax	pmax		
	comp=Z,3.0nm,0.5s						
KK31	Karatay Array	53.62	300	ceP	P	21 48 16.3	+1.0
KK31				pmax	pmax		
	comp=Z,2.0nm,0.5s						
KKAR	Karatay Array	53.62	300	eP	P	21 48 18.7	+3.4
KKAR	Karatay Array	53.62	300	eP	P	21 48 18.7	+3.4
INK	Inuvik	53.90	27	eP	P	21 48 17.6	+0.7
	comp=Z,1.3nm,0.7s,baz=277,slow=7.5,SNR=8.0						
INK	Inuvik	53.90	27	eP	P	21 48 17.6	+0.7
	comp=Z,2.6nm,0.9s						
ARU	Arti	56.66	319	c i P	P	21 48 36.8	-0.3
ARU				S	S	21 56 25.4	-4.2
ARU				SS	SS	22 00 15.5	-1.2
ARU				pmax	pmax		
	comp=Z,4.0nm,1.0s						
ARU	Arti	56.66	319	eP	P	21 48 37.3	+0.2
	comp=Z,5.0nm,1.1s						
WRAB	Tennant Creek	57.34	189	eP	P	21 48 41.0	-1.2
WRAB				pmax	pmax		
	comp=Z,8.0nm,0.8s						
WRAB	Tennant Creek	57.34	189	eP	P	21 48 41.0	-1.2
	comp=Z,7.8nm,0.8s						
WB2	Warramunga Arr	57.35	189	eP	P	21 48 42.5	+0.2
	comp=Z,4.7nm,0.9s						
WR1	Warramunga Arr	57.35	189	eP	P	21 48 42.2	-0.1
	comp=Z,3.9nm,0.8s						
WRA	Warramunga Arr	57.35	189	P	P	21 48 42.2	-0.1
	comp=Z,0.9nm,0.6s,baz=6.7,slow=7.1,SNR=13						
AB31	Akbulak array	58.33	310	ceP	P	21 48 48.4	-0.6
AB31				pmax	pmax		
	comp=Z,1.0nm,0.5s						
ABKAR	Akbulak array	58.33	310	eP	P	21 48 48.8	-0.2
AS31	Alice Springs	61.08	189	eP	P	21 49 08.3	+0.3
	comp=Z,0.7nm,0.8s						
ASAR	Alice Springs	61.08	189	P	P	21 49 08.3	+0.3
	comp=Z,0.6nm,0.8s,baz=14,slow=11,SNR=6.5						
YKA	Yellowknife Ar	63.30	30	P	P	21 49 22.8	+0.3
	comp=Z,0.5nm,0.7s,baz=302,slow=6.6,SNR=9.4						
YKB5	Yellowknife Ar	63.30	30	eP	P	21 49 22.8	+0.3
ARA0	ARCESS Array S	64.05	340	eP	P	21 49 28.3	+0.9
ARCES	ARCESS Array B	64.05	340	P	P	21 49 28.3	+0.9
	comp=Z,1.5nm,0.9s,baz=57,slow=9.8,SNR=3.5						
GEYT	Alibeck	64.33	299	P	P	21 49 30.6	+0.7
	comp=Z,1.4nm,0.6s,baz=69,slow=8.1,SNR=3.8						
OBN	Obninsk	68.34	323	eP	P	21 49 54.1	-1.1
OBN				e		21 50 21.9	
OBN				e		21 52 25.0	
OBN				pmax	pmax		
	comp=Z,3.0nm,1.0s						
FIA0	FINESS Array S	68.96	332	eP	P	21 49 59.2	+0.3
FIA0	FINESS Array S	68.96	332	eP	P	21 49 59.2	+0.3
FINES	FINESS Array B	68.96	332	P	P	21 49 59.2	+0.3
	comp=Z,2.2nm,0.8s,baz=60,slow=11,SNR=9.0						
FINES	FINESS Array B	68.96	332	i P	P	21 49 58.7	-0.2
FINES				pmax	pmax		
	comp=Z,2.0nm,0.8s						
KBZ	Khabaz	71.29	311	P	P	21 50 14.0	+0.5
	comp=Z,1.9nm,0.8s,baz=44,slow=2.6,SNR=6.8						
KIV	Kislovodsk	71.29	311	eP	P	21 50 14.5	+0.8
KIV				pmax	pmax		
	comp=Z,7.0nm,1.1s						
NB200	NORSAR Array S	74.27	338	eP	P	21 50 31.0	0.0
NOA	NORSAR Array B	74.27	338	P	P	21 50 31.0	0.0
	comp=Z,0.9nm,0.9s,baz=39,slow=5.5,SNR=2.7						
NOA	NORSAR Array B	74.27	338	P	P	21 50 31.0	0.0
NOA				pmax	pmax		
	comp=Z,1.0nm,1.0s						
AKASG	Malin Array Be	74.56	323	P	P	21 50 32.6	-0.1
	comp=Z,0.8nm,0.5s,baz=48,slow=5.7,SNR=5.1						
AKASG	Malin Array Be	74.56	323	ceP	P	21 50 32.5	-0.3
AKASG				pmax	pmax		
	comp=Z,1.0nm,0.5s						
AKBB	Malin Array Si	74.56	323	eP	P	21 50 32.6	-0.1
AKBB				pmax	pmax		
	comp=Z,5.0nm,0.6s						
AKBB	Malin Array Si	74.56	323	eP	P	21 50 32.6	-0.1
	comp=Z,5.1nm,0.6s						
PD31	Pinedale Array	77.04	46	eP	P	21 50 46.8	-0.6
PDAR	Pinedale Array	77.04	46	P	P	21 50 46.8	-0.6
	comp=Z,0.4nm,0.6s,baz=321,slow=2.1,SNR=3.9						
STHS	Stebnicka Huta	79.19	325	eP	P	21 50 59.2	+0.2
STHS	Stebnicka Huta	79.19	325	eP	P	21 50 59.2	+0.2
BR101	Keskin Array S	79.23	312	eP	P	21 51 00.2	+0.7
BRTR	Keskin Array B	79.23	312	P	P	21 51 00.2	+0.7
	comp=Z,0.3nm,0.6s,baz=153,slow=8.3,SNR=3.6						
BRTR	Keskin Array B	79.23	312	ceP	P	21 51 02.0	+2.5
VYHS	Vyhne	80.95	326	eP	P	21 51 07.1	-1.4
VYHS	Vyhne	80.95	326	eP	P	21 51 07.1	-1.4
CLL	Collm	81.26	331	eP	P	21 51 10.0	-0.1
CLL	Collm	81.26	331	eP	P	21 51 10.0	-0.1
GERES	GERESS Array B	82.90	329	P	P	21 51 19.0	+0.1
	comp=Z,0.3nm,0.5s,baz=36,slow=6.2,SNR=5.2						
LTX	Lajitas	89.46	53	eP	P	21 51 51.6	0.0
LTX	Lajitas	89.46	53	eP	P	21 51 51.6	0.0
TXAR	Lajitas Array	89.46	53	P	P	21 51 51.6	0.0
	comp=Z,0.2nm,0.7s,baz=305,slow=3.2,SNR=2.8						

SGS 03 21:39:08.2, 25°.19N×37°.79E, h14km, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LNY06	LNY06	0.03	336	S	Sg	21 39 13.7	+0.9
LNY06				P	Pg	21 39 11.4	+0.5
LNY06	LNY06	0.03	336	S	Sg	21 39 13.7	+0.9
LNY06				P	Pg	21 39 11.4	+0.5
LNY06	LNY06	0.03	336	P	Pg	21 39 11.4	+0.5
LNY02	LNY02	0.08	127	S	Sg	21 39 13.9	+0.5
LNY02				P	Pg	21 39 11.1	-0.2
LNY02	LNY02	0.08	127	S	Sg	21 39 13.7	+0.3
LNY02				P	Pg	21 39 11.2	-0.1
LNY12	LNY12	0.09	349	S	Sg	21 39 13.8	+0.3
LNY12				P	Pg	21 39 11.6	+0.2
LNY12	LNY12	0.09	349	S	Sg	21 39 13.8	+0.3
LNY12				P	Pg	21 39 11.6	+0.2
LNY12	LNY12	0.09	349	P	Pg	21 39 11.6	+0.2
LNY10	LNY10	0.11	38	S	Sg	21 39 14.2	+0.4
LNY10				P	Pg	21 39 11.8	+0.2
LNY10	LNY10	0.11	38	S	Sg	21 39 14.1	+0.3
LNY10				P	Pg	21 39 11.9	+0.3
LNY10	LNY10	0.11	38	P	Pg	21 39 11.8	+0.3
LNY11	LNY11	0.13	353	S	Sg	21 39 14.6	+0.2
LNY11				P	Pg	21 39 12.1	+0.2
LNY11	LNY11	0.13	353	S	Sg	21 39 14.3	-0.1
LNY11				P	Pg	21 39 12.1	+0.2
LNY11	LNY11	0.13	353	P	Pg	21 39 12.1	+0.2
LNY11				P	Pb	21 39 14.6	+2.0
LNY04	LNY04	0.16	303	S	Sg	21 39 15.2	+0.3
LNY04				P	Pg	21 39 12.5	+0.3
LNY04	LNY04	0.16	303	S	Sg	21 39 15.1	+0.2
LNY04				P	Pg	21 39 12.5	+0.3
LNY04	LNY04	0.16	303	P	Pb	21 39 15.2	+2.2
LNY01	LNY01	0.16	78	S	Sg	21 39 15.5	+0.5
LNY01				P	Pg	21 39 12.3	+0.1
LNY01	LNY01	0.16	78	S	Sg	21 39 14.7	-0.3
LNY01				P	Pg	21 39 12.3	+0.1
LNY01	LNY01	0.16	78	P	Pg	21 39 12.4	+0.1
LNY01				P	Pb	21 39 15.2	+2.2
LNY05	LNY05	0.16	212	S	Sg	21 39 15.6	+0.6
LNY05				P	Pg	21 39 12.6	+0.3
LNY05	LNY05	0.16	212	P	Pg	21 39 12.7	+0.4
LNY03	LNY03	0.20	17	S	Sg	21 39 16.1	0.0
LNY03				P	Pg	21 39 12.9	0.0
LNY03	LNY03	0.20	17	S	Sg	21 39 16.1	0.0
LNY03				P	Pg	21 39 13.0	+0.1
LNY03	LNY03	0.20	17	P	Pg	21 39 13.0	+0.1
LNY07	LNY07	0.21	254	S	Sg	21 39 16.7	+0.6
LNY07				P	Pg	21 39 13.3	+0.4
LNY07	LNY07	0.21	254	S	Sg	21 39 16.6	+0.5
LNY07				P	Pg	21 39 13.2	+0.3
LNY07	LNY07	0.21	254	P	Pg	21 39 13.3	+0.4
LNY09	LNY09	0.24	332	S	Sg	21 39 17.2	0.0
LNY09				P	Pg	21 39 13.7	+0.1
LNY09	LNY09	0.24	332	S	Sg	21 39 17.2	0.0
LNY09				P	Pg	21 39 13.6	0.0
LNY09	LNY09	0.24	332	P	Pb	21 39 17.2	+2.7
UMJS	Umm Lajj	0.44	276	P	Pg	21 39 17.0	0.0

IDC ***03*** *21:41:18.4±1.0, 36°.43N×143°.31E, h0km, mb3.7/6, mb1 3.9/8, mb1mx3.6/44, mbtmp3.7/8, ML3.6/1, Error ellipse: s-maj=32.5km s-min=20.7km az=114.0*
ISCJB ***03*** *21:41:20.5±0.8, 36°.4N±0°.1×143°.3E±0°.2, h29km, mb3.6/6, Error ellipse: s-maj=20.2km s-min=10.6km az=36.6*

ISC 03 21:41:22.5±1.0, 36°.54N±0°.08×143°.1E±0°.1, h29km, n10, σ2°.15/11, mb3.7/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	3.97	272	Pn	Pn	21 42 23.4	+2.0
	baz=82,slow=11,SNR=2.4						
JHJ	Hachijo jima 2	4.39	220	Pn	Pn	21 42 28.2	+1.0
	8.8nm,0.3s,baz=257,slow=23,SNR=1.7						
JHJ				Sn	Sn	21 43 14.2	-3.1
	10nm,0.3s,baz=31,slow=23,SNR=2.6						
ASAJ	Asahikawa	7.58	357	Pn	Pn	21 43 08.1	-3.0
	1.8nm,0.3s,baz=234,slow=8.7,SNR=5.7						
ASAJ				Sn	Sn	21 44 31.8	-4.1
	0.3nm,0.3s,baz=108,slow=17,SNR=2.5						
SONM	Songino Array	29.21	304	P	P	21 47 21.9	+0.3
	0.4nm,0.6s,baz=106,slow=11,SNR=2.1						
ILAR	Eielson Array	49.17	32	P	P	21 50 07.8	+0.4
	0.4nm,0.7s,baz=261,slow=6.9,SNR=4.9						
INK	Inuvik	54.20	27	P	P	21 50 45.9	+1.1
	0.9nm,0.8s,baz=277,slow=4.6,SNR=3.8						
WRA	Warramunga Arr	56.78	190	P	P	21 51 03.1	-1.0
	0.8nm,0.6s,baz=9.6,slow=7.3,SNR=4.7						
ASAR	Alice Springs	60.51	190	P	P	21 51 29.4	-0.5
	0.4nm,0.7s,baz=21,slow=10,SNR=4.3						
NB2	NORSAR Subarra	75.17	338	P	P	21 53 03.0	+1.2
	comp=Z,0.6nm,0.7s,baz=40,slow=6.2						
NOA	NORSAR Array B	75.17	338	P	P	21 53 03.2	+1.3
	comp=Z,1.0nm,0.8s,baz=39,slow=5.8,SNR=4.1						

NEIC ***03*** *21:41:49.8, 36°.40N×117°.87W, h2km, ML4.5(PAS), After PAS.*
*NEIC Felt [III] at

baz=60,SNR=161
VES S Sg 21 42 26.4 +0.8
baz=60
SHOC Shoshone, Teco 1.39 110 P Pn 21 42 14.1 -1.5
baz=292,SNR=1000
SHOC S Sg 21 42 34.7 +0.5
baz=292
GSC Goldstone, Bar 1.39 141 P Pn 21 42 14.9 -0.8
baz=322,SNR=1000
GSC S Sg 21 42 34.6 +0.3
baz=322
GSC Goldstone, Bar 1.39 141 *e*Pn Pn 21 42 14.9 -0.8
TPNV Topopah Spring 1.43 66 P Pn 21 42 15.6 -0.7
baz=247,SNR=1000
TPNV S Sg 21 42 35.0 -0.5
baz=247
TPNV Topopah Spring 1.43 66 *e*Pn Pn 21 42 15.6 -0.7
TPNV *e*Sn Sg 21 42 35.3 -0.2
MLAC Mammoth, Mammo 1.46 329 P Pn 21 42 16.4 -0.4
baz=148,SNR=162
MLAC S Sg 21 42 36.3 -0.4
baz=148
ARVC Arvin 1.47 212 P Pb 21 42 17.4 -0.1
baz=31,SNR=408
ARVC S Sg 21 42 37.2 +0.2
baz=31
EDW2 Edwards Air Fo 1.50 184 P Pn 21 42 17.0 -0.2
baz=3.8,SNR=733
EDW2 S Sb 21 42 37.6 +0.2
baz=3.8
TJR Tejon Ranch 1.52 208 *e*Pn Pb 21 42 18.4 0.0
FLSC Flash Two Peak 1.57 154 *e*Pn Pb 21 42 17.8 -0.3
RRX Edison Barstow 1.67 154 P Pn 21 42 19.2 -0.3
baz=335,SNR=32
MARC Maricopa 1.82 221 *e*Pn Pb 21 42 23.6 +0.2
TUQ Turquoise Moun 1.85 120 P Pn 21 42 21.0 -1.1
baz=302,SNR=1000
TUQ Sb Sg 21 42 49.3 +0.3
baz=302
OSI Osito Audit: C 1.90 202 Pb Pb 21 42 24.6 -0.1
baz=21
OSI Osito Audit: C 1.90 202 *e*Pn Pb 21 42 24.4 -0.3
HEC Hector,Ludlow 2.00 141 P Pn 21 42 23.2 -0.8
baz=322,SNR=912
SMMC Simmler 2.02 239 Pb Pb 21 42 26.3 -0.6
baz=57
NV11 Mina Array Sit 2.06 354 *e*Pn Pn 21 42 24.5 -0.4
NV01 Mina Array Sit 2.07 351 *e*Pn Pb 21 42 26.2 -1.6
NV01 *e*Lg Lg 21 42 55.1
NVAR Mina Array Bea 2.07 351 Pn Pn 21 42 25.1 -0.1
59nm,0.3s,baz=177,slow=16,SNR=101
NVAR Lg Lg 21 42 55.1
94nm,0.3s,baz=174,slow=34,SNR=5.6
BFSC Mount Baldy Ra 2.15 175 P Pn 21 42 25.9 -0.2
baz=356,SNR=514
BFSC Sb Sg 21 42 57.8 -0.9
baz=356
DECC Green Verdugo 2.16 190 P Pn 21 42 26.2 0.0
baz=9.9,SNR=30
MWC Mount Wilson 2.16 184 *e*Pn Pn 21 42 26.7 +0.3
PKM Mcpherson Peak 2.17 227 Pb Pb 21 42 28.3 -1.2
baz=46,SNR=99
SSK Sunset Peak 2.17 176 *e*Pn Pn 21 42 26.9 +0.3
PASC Pasadena Art C 2.22 187 *e*Pn Pn 21 42 27.5 +0.4
BBRC Big Bear Solar 2.26 159 Pg Pg 21 42 32.4 -0.5
baz=340
GMRC Granite Mounta 2.41 131 P Pn 21 42 28.4 -1.4
baz=312,SNR=173
GMRC Sb Sg 21 43 05.5 -1.6
baz=312
SBC Santa Barbara 2.45 218 Pb Pb 21 42 33.6 -0.5
baz=37
SBC Sb Sg 21 43 06.8 -1.5
baz=37
WAKR Walker 2.45 330 *e*Pn Pb 21 42 34.5 +0.1
BLG Laguna Peak, P 2.47 204 P Pn 21 42 30.3 -0.2
baz=23,SNR=23
CMB Columbia Colle 2.59 310 *e*Pn Pn 21 42 33.6 +1.4
CMB *e*Sn Sb 21 43 07.9 -0.9
LDFC Landfair 2.60 119 *e*Pn Pn 21 42 30.5 -1.9
R11A Troy Canyon, C 2.68 42 P Pn 21 42 32.5 -1.0
baz=224,SNR=95
R11A Troy Canyon, C 2.68 42 *e*Pn Pn 21 42 32.4 -1.1
R11A *e*Pg Pb 21 42 38.1 0.0
FMP Fort Macarthur 2.69 187 Pg Pg 21 42 40.7 -0.5
baz=7.2
BELC Belle Mtn. Jos 2.83 147 P Pn 21 42 35.1 -0.5
baz=328,SNR=22
MURC Murrieta 2.83 168 P Pn 21 42 35.6 +0.1
baz=349,SNR=19
SAO San Andreas Ge 2.90 279 *e*Pn Pn 21 42 37.8 +1.4
PFO Pinyon Flats O 3.00 157 Pn Pn 21 42 37.7 -0.2
6.7nm,0.3s,baz=351,slow=12,SNR=39
PFO Lg Lg 21 43 24.5
164nm,0.3s,baz=61,slow=23,SNR=18
PFO Pinyon Flats O 3.00 157 P Pn 21 42 37.5 -0.4
baz=338,SNR=23
CIS Catalina Islan 3.01 189 P Pn 21 42 37.6 -0.3
baz=8.3
IRM Iron Mountain 3.15 134 P Pn 21 42 38.6 -1.3
baz=316,SNR=41
ICU Indian Springs 3.27 75 *e*Pg Pb 21 42 49.1 +1.0
BC3 Big Chuckawall 3.37 143 P Pn 21 42 41.8 -1.2
baz=325,SNR=47
SNCC San Nicolas Is 3.41 204 *e*Pn Pn 21 42 45.8 +2.4
W13A Hualapai Mount 3.49 110 *e*Pn Pn 21 42 44.1 -0.6
109C Camp Elliot, M 3.54 169 P Pn 21 42 45.5 +0.3
baz=350
AFDM Forest Hills D 3.55 317 *e*Pn Pb 21 42 48.7 -4.1
MONP2 Monument Peak 3.68 161 P Pn 21 42 46.9 -0.5
baz=342
PDMCI Parker Dam,Lak 3.69 123 P Pn 21 42 46.2 -1.1
baz=306,SNR=26
LCMT Little Creek M 3.78 79 *e*Pn Pn 21 42 48.9 +0.3
CCUT Cedar City 3.80 71 *e*Pn Pb 21 42 54.9 -2.3
Y12C Blythe 3.80 133 P Pn 21 42 47.6 -1.2
baz=315,SNR=20
Y12C Blythe 3.80 133 *e*Pn Pn 21 42 47.6 -1.2
ARUT Antelope Range 3.82 67 *e*Pg Pg 21 43 00.9 -1.9
BAR Barrett 3.83 165 *e*Pn Pn 21 42 49.5 +0.3
SWSC Sam W. Stewart 3.83 153 P Pn 21 42 48.1 -1.1
baz=334
PSUT Pine Spring 3.85 55 *e*Pn Pn 21 42 52.0 +2.3
KNB Kanab 4.11 80 *e*Pn Pn 21 42 53.8 +0.5
GLA Glamis 4.17 142 P Pn 21 42 52.4 -1.4
baz=324,SNR=12
GLA Glamis 4.17 142 *e*Pn Pn 21 42 52.4 -1.4
BHU Blowhard Mount 4.20 72 *e*Pg Pg 21 43 07.4 -2.7
DWU Dry Willow Pea 4.26 65 *e*Pg Pg 21 43 09.0 -2.2
ORV Oroville 4.27 319 *e*Pn Pb 21 43 01.9 -3.1
MCCM Marconi Confer 4.36 295 *e*Pn Pn 21 42 59.1 +2.7
IMU Iron Mountain 4.37 58 *e*Pg Pg 21 43 12.8 -0.6
EKU East Kanab 4.38 79 *e*Pg Pb 21 43 09.3 +2.2
U15A North Rim 4.51 88 *e*Pn Pn 21 43 00.1 +1.4
PKCU Pink Cliffs 4.58 75 *e*Pn Pn 21 43 03.9 +4.0
Y14A Wickenburg 4.68 120 *e*Pn Pn 21 43 00.2 -0.6
ELK Elko 4.82 25 Lg Lg 21 44 21.0
52nm,0.3s,baz=199,slow=0.0,SNR=8.9
ELK Elko 4.82 25 *e*Pn Pn 21 43 03.4 +0.4
ELK *e*Lg Lg 21 44 21.0
MTPU Mount Pierson 4.84 68 *e*Pn Pn 21 43 05.8 +2.5
113A Mohawk Valley, 4.95 136 *e*Pn Pn 21 43 05.4 +0.9
MSU Marysvale 5.01 63 *e*Pn Pn 21 43 08.1 +2.5
WUAZ Wupatki 5.35 97 P Pn 21 43 11.2 +1.0
baz=281
WUAZ Wupatki 5.35 97 *e*Pn Pn 21 43 12.1 +1.9
WUAZ *e*Pg Pg 21 43 28.6 -3.5
DUG Dugway, Tooele 5.51 45 *e*Pg Pb 21 43 30.3 +4.0
WDC Whiskeytown Da 5.56 320 *e*Pn Pb 21 43 22.9 -4.2
X16A Lo Mia Camp, P 5.61 109 *e*Pn Pn 21 43 14.9 +1.1
NLU North Lily Min 5.80 50 *e*Pn Pn 21 43 23.1 +6.7
MOD Modoc Plateau 5.82 342 *e*Pn Pb 21 43 25.1 -6.6
Q16A Castle Valley 5.89 63 *e*Pg Pg 21 43 40.9 -1.6
Q16A *e*Lg Lg 21 45 01.5
BGU Big Grassy Mou 5.91 38 *e*Pn Pn 21 43 20.8 +2.9
TMUT Trail Mountain 6.03 59 *e*Pn Pn 21 43 24.5 +4.8
WVOR Wild Horse Val 6.07 355 *e*Pn Pn 21 43 22.6 +2.6
214A Organ Pipe Nat 6.09 135 P Pn 21 43 18.9 -1.4
baz=318
MPU Maple Canyon 6.11 52 *e*Pg Pg 21 43 46.7 0.0
SRU San Rafael Swe 6.43 63 *e*Pn Pn 21 43 29.4 +4.3
YBH Yreka Blue Hor 6.53 326 Pn Pn 21 43 28.6 +2.2
0.0nm,0.3s,baz=141,slow=14,SNR=2.0
YBH Lg Lg 21 45 13.2
0.8nm,0.3s,baz=238,slow=23,SNR=7.0
YBH LR LR 21 45 47.8
comp=Z,158nm,19.1s,baz=160,slow=37
JLU Jordanelle 6.57 48 *e*Pn Pn 21 43 31.0 +3.9
HVU Hansel Valley 6.69 35 *e*Pn Pn 21 43 31.9 +3.2
X18A Snowflake 6.73 104 *e*Pn Pn 21 43 31.9 +2.7
W18A Petrified Fore 6.74 98 *e*Pg Pb 21 43 50.0 +2.6
K05A Summer Lake 6.75 341 *e*Pn Pn 21 43 33.4 +3.9
P18A Preston Nutter 6.84 59 *e*Pn Pn 21 43 36.6 +5.8
TCUT Toone Canyon 6.92 45 *e*Pn Pn 21 43 37.1 +5.2
TCUT *e*Lg Lg 21 45 33.0
TUC Tucson 7.14 123 P Pn 21 43 34.2 -0.5
baz=307
TUC Tucson 7.14 123 *e*Pn Pn 21 43 35.9 +1.3
HWUT Hardware Ranch 7.17 41 *e*Pn Pn 21 43 38.3 +3.2
PV05 Paradox Valley 7.21 74 *e*Pg Pg 21 44 03.1 -4.5
PV09 Paradox Valley 7.27 71 *e*Pn Pn 21 43 40.3 +3.6
PV10 Paradox Valley 7.31 72 *e*Pn Pn 21 43 34.7 -2.6
PV10 *e*Pg Pg 21 44 07.6 -2.1
HUMO Hull Mountain 7.35 329 *e*Pn Pb 21 43 49.5 -8.1
J05D Fort Rock, OR 7.36 341 P Pn 21 43 41.1 +3.3
baz=158
PV01 Paradox Valley 7.63 74 *e*Pn Pn 21 43 38.8 -2.8
PV01 *e*Pg Pg 21 44 10.1 -5.6
HLID Hailey 7.65 19 *e*Pn Pn 21 43 45.6 +3.9
319A Douglas 8.72 122 *e*Pn Pn 21 43 57.5 +1.0
319A *e*Lg Lg 21 46 31.4
FXWY Fox Creek 8.95 34 *e*Pn Pn 21 44 04.0 +4.4
BW06 Boulder Array 9.05 43 *e*Pn Pn 21 44 06.4 +5.4
PD31 Pinedale Array 9.05 43 *e*Pn Pn 21 44 04.4 +3.4
PD31 *e*Lg Lg 21 46 34.2
PDAR Pinedale Array 9.05 43 Pn Pn 21 44 04.4 +3.4
0.2nm,0.3s,baz=230,slow=13,SNR=7.9
PDAR Lg Lg 21 46 34.2
0.3nm,0.3s,baz=225,slow=23,SNR=5.6
SMCO Snowmass 9.07 69 *e*Pn Pn 21 44 04.2 +2.7
LOHW Long Hollow 9.12 35 *e*Pn Pn 21 44 06.5 +4.5
MOOW Moose Ponds 9.16 34 *e*Pn Pn 21 44 06.4 +3.9
121A Cookes Peak, D 9.18 112 P Pn 21 44 02.5 -0.3
baz=298
MCMT McKenzie Canyo 9.26 23 *e*Pn Pn 21 44 09.4 +5.5
MONO Monmouth DOGAM 9.39 336 *e*Pn Pn 21 44 06.5 +1.1
ANMO Albuquerque 9.40 95 Pn Pn 21 44 08.8 +3.0
0.2nm,0.3s,baz=284,slow=17,SNR=3.3
ANMO Lg Lg 21 46 46.9
0.1nm,0.3s,baz=219,slow=15,SNR=2.9
ANMO Albuquerque 9.40 95 P Pn 21 44 07.4 +1.5
baz=282
FLWY Flagg Ranch 9.44 33 *e*Pn Pn 21 44 10.5 +4.1
F10A Beach Ranch, E 9.59 3 *e*Pn Pn 21 44 16.1 +7.8
SEPW September Lobe 10.33 343 *e*Pn Pn 21 44 24.4 +5.9
N23A Red Feather La 10.36 61 *e*Pn Pn 21 44 29.4 +10
N23A *e*Lg Lg 21 47 20.9
MNTX Cornudas Mount 11.37 111 P Pn 21 44 34.6 +2.0
baz=298
LTX Lajitas 13.85 116 *e*Pn P 21 45 11.1 -4.1
TX31 Lajitas Ar. Si 13.85 116 *e*Pn P 21 45 11.0 -4.1
TXAR Lajitas Array 13.85 116 Pn P 21 45 11.1 -4.1
0.1nm,0.3s,baz=289,slow=12,SNR=11
TXAR Lg Lg 21 49 07.6
0.1nm,0.3s,baz=263,slow=30,SNR=4.4
TXAR LR LR 21 50 46.0
comp=Z,91nm,19.2s,baz=0.0,slow=39
LPIG La Paz 13.87 150 LR LR 21 49 57.9
comp=Z,85nm,18.6s,baz=50,slow=35
ULM Lac du Bonnet 21.07 42 P P 21 46 34.2 -0.2
3.4nm,0.5s,baz=234,slow=9.2,SNR=3.6
DLBC Dease Lake 23.47 344 LR LR 21 56 10.0
comp=Z,98nm,19.2s,baz=132,slow=37
YKA Yellowknife Ar 26.21 3 P P 21 47 24.9 -0.1
0.2nm,0.5s,baz=182,slow=8.9,SNR=10
YKB5 Yellowknife Ar 26.21 3 *e*P P 21 47 24.9 -0.1
TKL Tuckaleechee C 27.51 81 LR LR 21 58 53.5
comp=Z,38nm,19.7s,baz=318,slow=37
ILAR Eielson Array 33.27 338 P P 21 48 27.9 +0.3
1.2nm,0.8s,baz=150,slow=8.1,SNR=9.9
ILB Eielson Array 33.27 338 *e*P P 21 48 27.9 +0.3
SCHQ Schefferville 39.17 45 LR LR 22 04 43.9
comp=Z,49nm,18.4s,baz=70,slow=35
RES Resolute Bay 39.93 9 LR LR 22 05 32.4
comp=Z,47nm,20.1s,baz=92,slow=36
SFJD Kangerlussuaq 48.27 29 LR LR 22 09 29.0
comp=Z,35nm,18.3s,baz=184,slow=34
GUMO Guam 87.78 285 LR LR 22 31 30.6
comp=Z,20nm,19.2s,baz=109,slow=34
HHC Hu-ho-hao-te 90.76 325 *e*P P 21 54 54.1 +0.3
HHC pmax pmax
comp=Z,8.0nm,1.4s
HHC pmax pmax
comp=Z,140nm,7.2s
WMQ Urumqi 96.86 342 *e*P P 21 55 22.9 +1.2
LZH Lanzhou 98.14 327 *e*P P 21 55 27.0 -0.8
LZH pP pP 21 55 30.2 +0.5
LZH sP sP 21 55 31.7 +1.3
LZH *e*PP PP 21 59 29.1 +3.1
LZH pmax pmax
comp=Z,17nm,1.3s
LZH pmax pmax
comp=Z,46nm,9.2s
LZH LR LR
comp=N,100nm,17.5s
LZH LR LR
comp=E,110nm,18.0s
LZH LR LR
comp=Z,140nm,19.8s
CD2 Chengdu 102.50 324 P Pdif 21 55 45.2 -2.0
CD2 pmax pmax
comp=Z,1.0nm,0.5s

NEIC 03 21:44:25.9±0.6, 19°.64N×70°.65W, h10^{km}, mb4.5/1, MD3.9(SDD), Error ellipse: s-maj=10.2km s-min=6.3km az=0.0, Dominican Republic region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SDDR	**Presa de Saban**	**0.89**	**223**	*e*Pg	Pg	21 44 43.1	0.0
SDDR				*e*Sg	Sg	21 44 51.2	-3.5
BANI	**BANI**	**1.27**	**167**	*e*Pn	Pb	21 44 50.0	0.0
BANI				*e*Sn	Sn	21 45 07.1	+0.1
SDD	**Santo Domingo**	**1.37**	**149**	*e*Pn	Pn	21 44 50.2	-0.8
SDD				*e*Sn	Sb	21 45 07.6	-1.5
GRTK	**Grand Turk**	**1.92**	**346**	*e*Pn	Pn	21 44 58.8	+0.2
GRTK				*e*Pg	Pb	21 45 00.6	-0.4
GRTK				*e*Sn	Sn	21 45 22.6	-0.1
PAPH	**Port-au-Prince**	**1.92**	**235**	*e*Pn	Pn	21 44 59.2	+0.6
PAPH				*e*Sn	Sn	21 45 21.7	-1.1
AGP	**Aguadilla**	**3.54**	**110**	*e*Pn	Pn	21 45 22.1	+1.2
AGP				*e*Sn	Sn	21 46 03.5	+0.7
AGP				*e*Sg	Sg	21 46 16.6	-3.0
MPR	**Mayaguez**	**3.61**	**113**	*e*Pn	Pn	21 45 23.1	+1.1
MPR				*e*Sn	Sn	21 46 02.0	-2.7
LRS	**Lares**	**3.84**	**110**	*e*Pn	Pn	21 45 25.1	0.0
LRS				*e*Pg	Pb	21 45 25.9	-7.9
LRS				*e*Sn	Sn	21 46 08.6	-1.8
CELP	**Cerrillos**	**4.16**	**111**	*e*Pn	Pn	21 45 31.8	+2.3
CELP				*e*Sn	Sn	21 46 18.8	+0.7
GTBY	**Guantanamo Bay**	**4.21**	**275**	*e*Pn	Pn	21 45 29.6	-0.6
GTBY				*e*Sn	Sn	21 46 17.5	-1.9
SJG	**San Juan**	**4.52**	**109**	*e*Pn	Pn	21 45 34.8	+0.3
SJG				*e*Sn	Sn	21 46 23.8	-3.3
CBYP	**Canovanas**	**4.74**	**106**	*e*Pn	Pn	21 45 37.2	-0.2
CBYP				*e*Sn	Sn	21 46 31.4	-1.1
HUMP	**Col San Antoni**	**4.78**	**107**	*e*Pn	Pn	21 45 35.6	-2.4
HUMP				*e*Sn	Sn	21 46 27.5	-6.0
MTP	**Monte Pirata**	**5.06**	**107**	*e*Pn	Pn	21 45 42.3	+0.4
MTP				*e*Sn	Sn	21 46 36.5	-4.0
STVI	**Saint Thomas**	**5.54**	**102**	*e*Pn	Pn	21 45 44.8	-3.6
STVI				*e*Sn	Sn	21 46 46.9	-5.3
SMRT	**St. Maarten**	**7.34**	**101**	*e*Pn	Pn	21 46 13.3	0.0
GDHS	**Morne Mazeau,**	**9.09**	**110**	*e*Pn	Pn	21 46 32.8	-4.5
TGUH	**Tegucigalpa,Un**	**16.85**	**253**	*e*Pn	Pn	21 48 14.3	-7.7
18nm,0.5s							

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*IDC **03** 22:01:09.6±1.9, 32°.84S×178°.68W, h0^{km}, mb4.0/3, mb1 4.2/4, mb1mx3.8/32, mbtmp4.0/4, ML3.9/1, MS3.2/1, Ms1 3.2/1, ms1mx2.5/29, Error ellipse: s-maj=53.9km s-min=37.2km az=146.0*

*ISCJB **03** 22:01:14.5±2.1, 32°.96S±0°.07×178°.8W±0°.3, h45^{km}, mb3.9/3, Error ellipse: s-maj=39.6km s-min=9.5km az=6.9*

ISC 03 22:01:16.2±1.8, 32°.9S±0°.1×178°.8W±0°.3, h45^{km}, n16, σ1 22/19, mb4.0/3, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WMGZ	**Waiomatatini S**	**5.41**	**204**	PN	Pn	22 02 34.0	-0.3
WMGZ				SN	Sn	22 03 37.5	+2.2
PKGZ	**Pakihiroa**	**5.59**	**206**	PN	Pn	22 02 37.8	+0.9
HAZ	**Te Kaha**	**5.59**	**209**	PN	Pn	22 02 36.9	+0.1
HAZ				SN	Sn	22 03 41.9	+2.1
PUZ	**Puketiti**	**5.69**	**204**	PN	Pn	22 02 38.7	+0.5
PUZ				SN	Sn	22 03 41.1	-1.2
MWZ	**Matawai**	**6.19**	**208**	PN	Pn	22 02 44.2	-0.9
URZ	**Urewera**	**6.30**	**211**	Pn	Pn	22 02 45.0	-1.5
2.6nm,0.3s,baz=36,slow=17,SNR=11							
URZ				Sn	Sn	22 03 55.1	-2.1
2.6nm,0.3s,baz=109,slow=13,SNR=6.2							
URZ	**Urewera**	**6.30**	**211**	PN	Pn	22 02 45.3	-1.2
RIGZ	**Rimuhau**	**6.43**	**205**	PN	Pn	22 02 48.0	-0.4
DZM	**Mont Dzumac**	**16.97**	**306**	LR	LR	22 09 12.4	
comp=Z,86nm,22.0s,baz=15,slow=28							
CTA	**Charters Tower**	**33.64**	**283**	P	P	22 07 54.2	+1.5
1.5nm,0.5s,baz=98,slow=7.1,SNR=2.3							
ASAR	**Alice Springs**	**42.38**	**270**	P	P	22 09 06.0	-0.4
1.4nm,0.8s,baz=107,slow=7.6,SNR=15							
WRA	**Warramunga Arr**	**43.60**	**275**	P	P	22 09 15.7	-0.6
1.5nm,0.5s,baz=114,slow=7.8,SNR=19							
FINES	**FINESS Array B**	**147.25**	**338**	PKPbc	PKPbc	22 20 53.5	-0.3
0.9nm,0.6s,baz=46,slow=5.5,SNR=5.0							
NB2	**NORSAR Subarra**	**151.11**	**350**	PKP	PKPbc	22 21 03.2	-0.5
comp=Z,0.6nm,0.6s,baz=13,slow=2.6							
NOA	**NORSAR Array B**	**151.11**	**350**	PKPbc	PKPbc	22 21 03.5	-0.2
comp=Z,0.9nm,0.7s,baz=15,slow=4.1,SNR=4.7							
MMAI	**Mount Meron Ar**	**151.39**	**280**	PKPbc	PKPbc	22 21 05.2	-0.1
comp=Z,0.2nm,0.3s,baz=139,slow=3.3,SNR=2.7							

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*NIED **03** 22:01:00, 38°.40N×142°.00E, h50^{km}, Mw4.0 Best double couple: $M_0$1.26000×10^{15} NP1:ϕ_0±1.00000°, δ19.00000°, λ66.00000°. NP2:ϕ_0±207.00000°, δ73.00000°, λ98.00000°.*

*NEIC **03** 22:01:11.6±1.7, 37°.16N×144°.61E, h37^{km}±13^{km}, mb4.5/11, Error ellipse: s-maj=18.1km s-min=11.2km az=132.0*

NEIC Recorded [2 JMA] in Iwate and Miyagi.

*ISCJB **03** 22:01:28.7±0.6, 38°.33N±0°.03×142°.09E±0°.06, h46^{km}±5^{km}, mb4.1/32, MS3.1/5, Error ellipse: s-maj=7.6km s-min=4.1km az=19.8*

*JMA **03** 22:01:30.4, 38°.39N×141°.98E, h47^{km}±1^{km}, M4.2*

JMA Felt II J1.

*IDC **03** 22:01:30.9±1.4, 38°.30N×142°.02E, h52^{km}±13^{km}, mb3.7/24, mb1 4.0/32, mb1mx3.9/57, mbtmp4.1/32, ML3.6/7, MS3.0/11, Ms1 3.0/11, ms1mx2.8/44, Error ellipse: s-maj=12.4km s-min=8.1km az=109.0*

ISC 03 22:01:30.1±1.1, 38°.34N±0°.04×142°.07E±0°.07, h42^{km}±10^{km}, n70, σ0 96/82, mb4.1/32, MS3.0/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.58**	**282**	P	Pn	22 01 41.5	-0.4
JIO				S	Sn	22 01 49.2	-1.2
OFUJ	**Ofunato**	**0.81**	**337**	P	Pn	22 01 44.4	-0.6
OFUJ				S	Sn	22 01 54.4	-1.4
JMK	**Ichinoseki**	**0.91**	**313**	P	Pn	22 01 45.7	-0.6
JMK				S	Sn	22 01 56.9	-1.3
JOU	**Okura**	**1.11**	**272**	P	Pn	22 01 48.7	-0.4
JOU				S	Sn	22 02 02.2	-1.0
JMM	**Marumori**	**1.11**	**245**	P	Pn	22 01 48.6	-0.6
JOM	**Ohasama**	**1.29**	**332**	P	Pn	22 01 51.2	-0.4
JOM				*e*S	Sn	22 02 06.8	-0.8
JFK	**Kawauchi**	**1.35**	**225**	P	Pn	22 01 52.5	0.0
JFK				*e*S	Sn	22 02 09.1	-0.2
JYK	**Kaneyama**	**1.46**	**294**	P	Pn	22 01 53.5	-0.4
JYK				*e*S	Sn	22 02 10.7	-1.2
JRG	**Rokugo**	**1.54**	**314**	P	Pn	22 01 54.6	-0.5
JYS	**Shiratake**	**1.58**	**266**	P	Pn	22 01 55.5	-0.1
JYS				*e*S	Sn	22 02 14.0	-0.9
JFT	**Otama**	**1.60**	**240**	P	Pn	22 01 56.2	+0.4
JFT				S	Sn	22 02 15.2	0.0
MJAR	**Matsushiro Arr**	**3.56**	**241**	P	Pn	22 02 23.9	+1.1
6.4nm,0.3s,baz=59,slow=10,SNR=53							
MJAR				S	Sn	22 03 03.7	+0.1
3.8nm,0.3s,baz=77,slow=19,SNR=3.7							
MJAR				LR	LR	22 04 03.3	
comp=Z,181nm,20.7s,baz=65,slow=44							
MAJO	**Matsushiro**	**3.56**	**241**	*e*Pn	Pn	22 02 24.3	+1.5
MAT	**Matsushiro**	**3.56**	**241**	P	Pn	22 02 23.9	+1.1
MAT				*e*S	Sn	22 03 05.2	+1.6
MJB9	**Matsu-Tunnel**	**3.56**	**241**	*e*Pn	Pn	22 02 24.5	+1.7
ERM	**Erimo**	**3.77**	**12**	*e*Pn	Pn	22 02 25.3	-0.3
ERM				*e*Sn	Sn	22 03 18.1	+10
INU	**Inuyama**	**5.03**	**235**	*e*Pn	Pn	22 02 45.5	+2.5
JHJ	**Hachijo jima 2**	**5.53**	**200**	P	Pn	22 02 48.6	-1.3
30nm,0.3s,baz=91,slow=22,SNR=8.7							
JHJ				S	Sn	22 03 51.0	-1.1
18nm,0.3s,baz=72,slow=19,SNR=4.5							
ASAJ	**Asahikawa**	**5.79**	**4**	P	Pn	22 02 52.9	-0.4
2.0nm,0.3s,baz=202,slow=9.4,SNR=13							
ASAJ				S	Sn	22 04 01.5	+3.1
1.5nm,0.3s,baz=198,slow=20,SNR=2.4							
ASAJ				LR	LR	22 05 35.0	
comp=Z,47nm,19.9s,baz=180,slow=42							
ASAJ	**Asahikawa**	**5.79**	**4**	*e*Pn	Pn	22 02 53.8	+0.5
USRK	**Ussuriysk Ar.**	**9.58**	**311**	P	Pn	22 03 46.4	+1.1
1.3nm,0.3s,baz=121,slow=15,SNR=11							
USRK				LR	LR	22 07 18.8	
comp=Z,78nm,20.6s,baz=138,slow=36							
JNU	**Nakatsue**	**10.48**	**244**	P	Pn	22 03 58.9	+1.2
0.3nm,0.3s,baz=73,slow=8.0,SNR=4.5							
JNU				LR	LR	22 08 02.5	
comp=Z,93nm,22.0s,baz=110,slow=38							
JCJ	**Chichijima**	**11.21**	**179**	P	Pn	22 04 06.8	-0.9
baz=360,slow=14							
KSRS	**Korea Array**	**11.22**	**270**	P	Pn	22 04 08.5	+0.8
0.4nm,0.3s,baz=79,slow=14,SNR=8.6							
KSRS				LR	LR	22 07 46.3	
comp=Z,69nm,21.8s,baz=83,slow=34							
KLR	**Kul'dur**	**13.18**	**329**	P	Pn	22 04 35.4	+0.9
0.1nm,0.3s,baz=144,slow=15,SNR=2.3							
KLR				LR	LR	22 09 44.2	
comp=Z,72nm,18.3s,baz=142,slow=37							
MA2	**Magadan**	**21.97**	**12**	P	P	22 06 21.0	+1.0
2.5nm,0.3s,baz=209,slow=12,SNR=5.8							
MA2				LR	LR	22 14 25.8	
comp=Z,25nm,19.4s,baz=150,slow=35							
SEY	**Seymchan**	**25.41**	**11**	P	P	22 06 54.2	+0.9
2.5nm,0.7s,baz=200,slow=6.3,SNR=9.7							
SONA1	**Songino Array**	**27.51**	**302**	*e*P	P	22 07 13.4	+0.8
SONM	**Songino Array**	**27.52**	**302**	P	P	22 07 12.9	+0.3
0.5nm,0.4s,baz=106,slow=11,SNR=4.3							
SONM				LR	LR	22 17 52.9	
comp=Z,34nm,21.3s,baz=95,slow=36							
ENH	**Enshi**	**27.98**	**263**	*e*P	P	22 07 16.0	-0.8
25nm,0.8s							
TLY	**Talaya**	**29.89**	**309**	LR	LR	22 19 42.6	
comp=Z,40nm,20.3s,baz=50,slow=36							
ZAA0	**Zalesovo Array**	**41.44**	**311**	*e*P	P	22 09 11.9	-0.4
ZALV	**Zalesovo Beam**	**41.44**	**311**	P	P	22 09 11.6	-0.6
1.6nm,0.5s,baz=90,slow=5.9,SNR=6.5							
ZALV				PcP	PcP	22 11 08.7	-0.7
0.4nm,0.4s,baz=64,slow=3.4,SNR=3.5							
CHTO	**Chiang Mai**	**42.13**	**255**	P	P	22 09 13.4	-5.0
2.8nm,0.7s							
CMAR	**Chiang Mai Arr**	**42.34**	**254**	P	P	22 09 19.1	-0.9
0.3nm,0.4s,baz=72,slow=8.6,SNR=3.1							
LSA	**Lhasa**	**42.62**	**274**	*e*P	P	22 09 22.0	-0.9
2.6nm,0.7s							
MK01	**Makanchi Array**	**43.88**	**301**	*e*P	P	22 09 32.4	+0.1
MK31	**Makanchi Array**	**43.88**	**301**	*e*P	P	22 09 33.4	+1.2
MKAR	**Makanchi Array**	**43.88**	**301**	P	P	22 09 32.5	+0.2
1.0nm,0.4s,baz=86,slow=10.0,SNR=12							
MKAR	**Makanchi Array**	**43.88**	**301**	*e*P	P	22 09 33.4	+1.2
MAKZ	**Makanchi**	**44.09**	**301**	*e*P	P	22 09 34.0	0.0
1.9nm,0.8s							
KURK	**K

3.2nm,1.0s
PYUN Piuthan 49.73 277 *e*P **P 22 10 19.2 +0.8**
30nm,0.9s
VOSK Vostochnaya 49.81 311 *e*P **P 22 10 20.3 +1.8**
2.1nm,0.8s
BVAR Borovoye Array 50.09 312 P **P 22 10 20.6 0.0**
1.0nm,0.5s,baz=60,slow=8.8,SNR=3.1
INK Inuvik 52.99 28 P **P 22 10 42.4 +0.4**
1.5nm,0.9s,baz=269,slow=5.9,SNR=6.1
DLBC Dease Lake 57.28 39 P **P 22 11 13.2 0.0**
1.3nm,0.6s,baz=312,slow=12,SNR=3.2
AKTO Aktyubinsk 58.20 312 P **P 22 11 19.8 +0.1**
0.7nm,0.5s,baz=54,slow=8.7,SNR=3.0
WRA Warramunga Arr 58.42 189 P **P 22 11 20.8 -0.7**
6.1nm,0.6s,baz=6.6,slow=7.2,SNR=80
RES Resolute Bay 61.21 15 P **P 22 11 39.7 -0.3**
1.9nm,0.5s,baz=321,slow=3.7,SNR=2.5
ASAR Alice Springs 62.15 188 P **P 22 11 46.8 -0.2**
2.9nm,0.6s,baz=8.5,slow=5.0,SNR=32
YKA Yellowknife Ar 62.42 31 P **P 22 11 48.2 -0.1**
0.7nm,0.7s,baz=301,slow=6.6,SNR=14
AFI Afiamalu 67.58 131 P **P 22 12 23.0 +0.6**
14nm,0.3s,baz=297,slow=4.5,SNR=2.5
FINES FINESS Array B 67.91 332 P **P 22 12 22.8 -1.1**
1.0nm,0.8s,baz=35,slow=7.0,SNR=4.8
STKA Stephens Creek 69.86 180 P **P 22 12 35.7 -0.5**
1.6nm,0.7s,baz=322,slow=6.7,SNR=3.5
KBZ Khabaz 70.45 311 P **P 22 12 40.3 +0.4**
0.5nm,0.4s,baz=326,slow=5.7,SNR=2.4
KBZ LR LR 22 46 16.5
comp=Z,27nm,18.7s,baz=79,slow=38
NB2 NORSAR Subarra 73.19 337 P **P 22 12 55.1 -1.0**
comp=Z,1.7nm,0.9s,baz=42,slow=6.2
NOA NORSAR Array B 73.19 337 P **P 22 12 55.1 -1.0**
comp=Z,1.2nm,0.8s,baz=40,slow=5.9,SNR=6.6
NOA LR LR 22 49 11.0
comp=Z,14nm,19.4s,baz=90,slow=39
AKASG Malin Array Be 73.59 322 P **P 22 12 57.3 -1.3**
comp=Z,0.7nm,0.5s,baz=48,slow=6.9,SNR=3.2
NVAR Mina Array Bea 73.79 54 P **P 22 13 00.9 +0.6**
comp=Z,0.4nm,0.3s,baz=293,slow=4.6,SNR=3.0
PDAR Pinedale Array 76.39 46 P **P 22 13 15.3 +0.1**
comp=Z,1.1nm,0.5s,baz=270,slow=1.2,SNR=14
GERES GERESS Array B 81.88 328 P **P 22 13 44.4 -0.5**
comp=Z,0.2nm,0.6s,baz=23,slow=5.3,SNR=3.3
TXAR Lajitas Array 88.92 53 P **P 22 14 20.6 +0.2**
comp=Z,0.6nm,0.6s,baz=301,slow=3.5,SNR=8.9
LPAZ La Paz 145.58 59 PKPbc **PKPdf 22 21 04.7 -0.1**
comp=Z,2.2nm,0.8s,baz=346,slow=4.2,SNR=7.6

*NIED **03** 22:05:00,39.°20N×143.°90E,h14km,Mw3.6 Best double couple: M0=3.30000×10^14 NP1:φs=202.00000°,δ39.00000°, λ107.00000°. NP2:φs=360.00000°,δ53.00000°,λ76.00000°.*
JMA 03 22:05:07.9±0.2,39.°18N×143.°89E,h18km,M3.8,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**1.65**	**285**	P	Pn	22 05 36.5	+0.5
OFUJ	**Ofunato**	**1.73**	**267**	P	Pn	22 05 37.8	+0.7
JTH	**Tanohata**	**1.74**	**296**	P	Pn	22 05 38.0	+0.8
JOM	**Ohasama**	**2.04**	**279**	P	Pn	22 05 42.3	+1.0
JMK	**Ichinoseki**	**2.09**	**265**	P	Pn	22 05 43.1	+1.1
JANG	**Nango**	**2.18**	**304**	P	Pn	22 05 43.9	+0.6
JRG	**Rokugo**	**2.54**	**276**	P	Pn	22 05 49.5	+1.3
JOU	**Okura**	**2.65**	**253**	P	Pn	22 05 51.3	+1.6
JOU				S	Sn	22 06 21.7	+0.3
JTM	**Tenmabayashi**	**2.70**	**307**	P	Pn	22 05 52.0	+1.6
JYK	**Kaneyama**	**2.76**	**266**	P	Pn	22 05 52.6	+1.3
JNBK	**Urakawa-nobuka**	**3.21**	**345**	P	Pn	22 06 00.1	+2.6
JNBK				*e*S	Sn	22 06 37.3	+2.0
MAT	**Matsushiro**	**5.21**	**241**	P	Pn	22 06 27.9	+3.0

*NIED **03** 22:06:00,39.°20N×144.°20E,h5km,Mw3.6 Best double couple: M0=2.87000×10^14 NP1:φs=341.00000°,δ46.00000°, λ-125.00000°. NP2:φs=207.00000°,δ54.00000°, λ-59.00000°.*
JMA 03 22:06:44.6±0.2,39.°21N×144.°22E,h45km,M3.8,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**1.90**	**282**	P	Pn	22 07 15.5	+1.0
MIYJ				*e*S	Sn	22 07 37.6	+0.5
JTH	**Tanohata**	**1.96**	**293**	P	Pn	22 07 16.1	+0.7
JTH				S	Sn	22 07 40.1	+1.4
OFUJ	**Ofunato**	**1.99**	**267**	P	Pn	22 07 16.4	+0.7
OFUJ				S	Sn	22 07 40.4	+1.0
JOM	**Ohasama**	**2.29**	**278**	P	Pn	22 07 21.3	+1.5
JOM				S	Sn	22 07 48.0	+1.3
JMK	**Ichinoseki**	**2.35**	**265**	P	Pn	22 07 21.9	+1.2
JMK				*e*S	Sn	22 07 49.2	+0.9
JANG	**Nango**	**2.39**	**300**	P	Pn	22 07 22.0	+0.8
JRG	**Rokugo**	**2.79**	**275**	P	Pn	22 07 29.2	+2.5
JRG				*e*S	Sn	22 08 01.6	+2.5
JTM	**Tenmabayashi**	**2.89**	**304**	P	Pn	22 07 29.9	+1.8
JTM				*e*S	Sn	22 08 02.2	+0.7
JOU	**Okura**	**2.90**	**254**	P	Pn	22 07 29.6	+1.3
JOU				S	Sn	22 08 02.6	+0.6
JYK	**Kaneyama**	**3.02**	**266**	P	Pn	22 07 31.6	+1.7
JOT	**Ohata**	**3.25**	**313**	S	Sn	22 08 10.6	0.0
JNBK	**Urakawa-nobuka**	**3.26**	**340**	P	Pn	22 07 34.5	+1.3
JNBK				*e*S	Sn	22 08 11.4	+0.6
JCH	**Churui**	**3.46**	**349**	P	Pn	22 07 36.2	+0.2
JKB	**Kayabe**	**3.61**	**319**	P	Pn	22 07 40.5	+2.5
JKB				S	Sn	22 08 19.5	+0.1
JAR	**Ashorobuto**	**4.10**	**355**	P	Pn	22 07 43.0	-1.7
JAR				*e*S	Sn	22 08 27.8	-3.5
NEM2	**Nemuro 2**	**4.31**	**15**	P	Pn	22 07 45.5	-2.0
NEM2				S	Sn	22 08 31.8	-4.6
JTKR	**Abashiri--Toko**	**4.76**	**357**	P	Pn	22 07 53.5	-0.3
JTKR				S	Sn	22 08 45.0	-2.7
MAT	**Matsushiro**	**5.45**	**243**	P	Pn	22 08 05.1	+1.8
MAT				*e*S	Sn	22 09 06.5	+1.8

*SGS **03** 22:18:38.8,15.°25N×41.°57E,h17km*
*ISCJB **03** 22:18:40.9±0.8,15.°35N±0.°05×42.°13E±0.°08,h10km,Error ellipse: s-maj=11.6km s-min=6.1km az=12.5*
*ARO **03** 22:18:44.5,15.°N±31.°×4.°2E±10.°0,h15km±99km,ML3.1*
ISC 03 22:18:35.7±1.4,15.°26N±0.°05×41.°99E±0.°09,h10km,n9, σ0.°90/11,Red Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FRSS	**Farasan al Kab**	**1.47**	**5**	S	**Sg**	**22 19 23.9**	**+0.7**
FRSS				P	**Pg**	**22 19 04.6**	**+0.5**
HAJJ	**Hajjah**	**1.61**	**74**	*i* P	**Pg**	**22 19 07.4**	**+0.7**
HAJJ				*e*		22 19 07.7
baz=281,slow=3.7							
HAJJ				*i* S	**Sb**	**22 19 26.3**	**+0.1**
HAJJ				AML	AML	22 19 27.0
comp=Z,721nm,0.5s							
DJNS	**Zahran al Janu**	**2.85**	**31**	P	**Pb**	**22 19 25.6**	**-1.2**
MAOD	**Malaho**	**3.16**	**176**	*e*P	**Pb**	**22 19 32.3**	**+0.4**
OBO	**Obock**	**3.49**	**159**	*e*P	**Pb**	**22 19 37.0**	**-0.7**
TDD	**Tadjoura Ara**	**3.55**	**165**	*e*P	**Pb**	**22 19 38.4**	**-0.3**
LDLD	**Lac de Lave**	**3.69**	**172**	*e*P	**Pb**	**22 19 40.1**	**-0.9**
ATD	**Arta Tunnel**	**3.80**	**167**	*e*P	**Pb**	**22 19 41.8**	**-1.2**
SGH	**Sud-Ghoubbet**	**3.85**	**171**	*e*P	**Pb**	**22 19 42.9**	**-0.9**

*NIED **03** 22:22:00,38.°20N×144.°30E,h5km,Mw4.1 Best double couple: M0=1.63000×10^15 NP1:φs=3.00000°,δ31.00000°, λ-102.00000°. NP2:φs=197.00000°,δ60.00000°, λ-83.00000°.*
*IDC **03** 22:22:43.5±0.6,38.°08N×144.°51E,h0km,mb3.9/19, mb1 4.1/26,mb1mx4.0/48,mbtmp3.9/26,ML3.7/6,MS3.1/9, Ms1 3.1/9,ms1mx2.8/44, Error ellipse: s-maj=16.6km s-min=13.4km az=125.0*
*ISCJB **03** 22:22:44.7±1.3,38.°16N±0.°03×144.°37E±0.°04,h17km±9km, mb4.0/31,MS3.1/4, Error ellipse: s-maj=5.7km s-min=5.0km az=145.8*
*MOS **03** 22:22:46.8±1.3,38.°27N×144.°53E,h33km,mb4.3/19,Error ellipse: s-maj=10.2km s-min=6.9km az=104.2*
*JMA **03** 22:22:47.4±0.2,38.°22N×144.°31E,h42km,M4.2*
*NEIC **03** 22:22:48.4±0.4,38.°00N×144.°45E,h35km,mb4.6/3,Error ellipse: s-maj=8.9km s-min=6.6km az=129.0*

ISC 03 22:22:47.8±1.6,38.°20N±0.°03×144.°37E±0.°03,h28km±11km, n96,σ1.°63/96,mb4.0/31,MS3.1/4,7C-2D,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.29**	**293**	P	Pn	22 23 23.3	-0.4
OFUJ				*e*S	**Sn**	**22 23 50.4**	**-0.7**
JIO	**Ouri**	**2.39**	**277**	P	Pn	22 23 24.7	-0.4
JIO				S	**Sn**	**22 23 52.2**	**-1.3**
MIYJ	**Miyakonagasawa**	**2.42**	**305**	P	Pn	22 23 24.7	-0.8
MIYJ				S	**Sn**	**22 23 52.2**	**-2.0**
JMK	**Ichinoseki**	**2.58**	**288**	P	**Pn**	**22 23 27.7**	**0.0**
JMK				*e*S	**Sn**	**22 23 57.4**	**-0.8**
JOM	**Ohasama**	**2.72**	**299**	P	**Pn**	**22 23 29.9**	**+0.3**
JOM				*e*S	**Sn**	**22 24 01.0**	**-0.6**
JANG	**Nango**	**3.10**	**315**	P	Pn	22 23 34.2	-0.7
JANG				*e*S	**Sn**	**22 24 09.7**	**-1.4**
JYK	**Kaneyama**	**3.23**	**284**	P	**Pn**	**22 23 37.2**	**+0.6**
JYK				*e*S	**Sn**	**22 24 14.3**	**+0.2**
JFT	**Otama**	**3.27**	**259**	P	**Pn**	**22 23 37.8**	**+0.7**
JFT				S	**Sn**	**22 24 14.3**	**-0.8**
ERM	**Erimo**	**3.92**	**347**	*e*P	**Pn**	**22 23 46.1**	**0.0**
ERM				*e*		22 24 29.7
ERM	**Erimo**	**3.92**	**347**	*e*Pn	**Pn**	**22 23 46.1**	**0.0**
ERM				*e*Sn	Sn	22 24 18.0	-13
ERM				*e*Sg	**Sn**	**22 24 29.7**	**-1.5**
JOT	**Ohata**	**4.08**	**322**	P	**Pn**	**22 23 48.8**	**+0.5**
BSO1	**Boso 1**	**4.47**	**219**	*e*S	**Sn**	**22 24 42.4**	**-1.6**
JCH	**Churui**	**4.48**	**350**	P	**Pn**	**22 23 52.3**	**-1.4**
JCH				*e*S	**Sn**	**22 24 39.9**	**-5.0**
JKB	**Kayabe**	**4.49**	**326**	*e*S	**Sn**	**22 24 42.6**	**-2.5**
JRY	**Ryogami san**	**4.89**	**245**	P	**Pn**	**22 23 59.0**	**-0.4**
JRY				*e*S	Sn	22 24 51.1	-3.9
JOD2	**Odawara 2**	**5.16**	**237**	P	**Pn**	**22 24 03.3**	**+0.2**
JOD2				*e*S	Sn	22 24 58.1	-3.6
MJAR	**Matsushiro Arr**	**5.18**	**253**	Pn	**Pn**	**22 24 04.0**	**+0.5**
2.2nm,0.3s,baz=64,slow=8.5,SNR=40							
MJAR				Sn	**Sn**	**22 25 04.2**	**+1.8**
1.8nm,0.3s,baz=87,slow=30,SNR=6.6							
MAJO	**Matsushiro**	**5.18**	**253**	‖*e*P	**Pn**	**22 24 05.2**	**+1.7**
MAJO	**Matsushiro**	**5.18**	**253**	*e*Pn	**Pn**	**22 24 05.1**	**+1.6**
MAJO				*e*Sn	Sn	22 24 54.9	-7.5
MAT	**Matsushiro**	**5.18**	**253**	P	**Pn**	**22 24 04.2**	**+0.7**
MAT				*e*S	**Sn**	**22 25 01.4**	**-0.9**
MJB9	**Matsu-Tunnel**	**5.18**	**253**	*e*Pn	Pn	22 24 02.5	-1.0
MJB9				*e*Sn	Sn	22 24 46.0	-16
NEM2	**Nemuro 2**	**5.26**	**11**	P	Pn	22 24 00.9	-3.6
YUK	**Yuzh-Kuril'sk**	**5.94**	**10**	P	Pn	22 24 10.6	-3.2
YUK				*e*S	**Sn**	**22 25 15.1**	**-5.7**
YUK				pmax	pmax		
comp=Z,126nm,0.5s							
YUK				pmax	pmax		
comp=E,70nm,0.1s							
YUK				pmax	pmax		
comp=N,96nm,0.5s							
SHO	**Shikotan**	**5.96**	**17**	*i* P	Pn	22 24 10.1	-4.0
SHO				*i* S	Sn	22 25 13.5	-7.9
SHO				pmax	pmax		
comp=Z,64nm,0.6s							
SHO				pmax	pmax		
comp=N,62nm,0.5s							
SHO				pmax	pmax		
comp=E,17nm,0.3s							
ASAJ	**Asahikawa**	**6.06**	**348**	Pn	**Pn**	**22 24 14.8**	**-0.7**
comp=E,2.0nm,0.3s,baz=212,slow=11,SNR=9.3							
ASAJ				Sn	**Sn**	**22 25 25.2**	**+1.3**
comp=E,1.0nm,0.3s,baz=355,slow=19,SNR=6.2							
ASAJ	**Asahikawa**	**6.06**	**348**	*e*Pn	Pn	22 24 12.9	-2.6
ASAJ				*e*Sn	Sn	22 25 16.3	-7.6
ASAJ				Sn	Sn	22 25 25.2	+1.3
JHJ2	**Mitsune**	**6.29**	**218**	*e*Pn	Pn	22 24 15.3	-3.3
JHJ	**Hachijo jima 2**	**6.30**	**218**	Pn	Pn	22 24 16.9	-1.8
comp=E,7.2nm,0.3s,baz=53,slow=23,SNR=9.0							
JHJ				Sn	**Sn**	**22 25 25.6**	**-4.1**
comp=E,42nm,0.3s,baz=58,slow=19,SNR=7.4							
INU	**Inuyama**	**6.55**	**247**	*e*Pn	Pn	22 24 19.9	-2.4
KUR	**Kuril'sk**	**7.50**	**19**	*e*P	Pn	22 24 30.3	-4.9
KUR				*e*S	Sn	22 25 50.8	-8.4
KUR				smax	smax		
comp=N,35nm,0.5s							
KUR				smax	smax		
comp=E,20nm,0.5s							
USRK	**Ussuriysk Ar.**	**11.09**	**307**	Pn	**Pn**	**22 25 26.2**	**+1.8**
comp=E,0.1nm,0.3s,baz=112,slow=14,SNR=6.8							
USRK				LR	LR	22 29 27.1	
comp=E,94nm,19.0s,baz=125,slow=36							
CBIJ	**Chichi jima**	**11.22**	**190**	*e*Pn	Pn	22 25 21.5	-4.8
CBIJ				*e*Sn	Sn	22 27 19.7	-11
JCJ	**Chichijima**	**11.22**	**190**	Pn	**Pn**	**22 25 24.3**	**-2.0**
comp=E,2.2nm,0.3s,baz=343,slow=23,SNR=2.6							
JCJ				Sn	Sn	22 27 19.7	-11
baz=300,slow=20							
JNU	**Nakatsue**	**12.09**	**249**	LR	LR	22 30 33.4	
comp=E,114nm,19.1s,baz=114,slow=39							
KSRS	**Korea Array**	**13.03**	**272**	Pn	**Pn**	**22 25 53.1**	**+2.2**
comp=E,0.2nm,0.3s,baz=87,slow=14,SNR=4.9							
KSRS				LR	LR	22 30 44.5	
comp=E,93nm,18.1s,baz=71,slow=36							
KSAR	**Wonju Array Be**	**13.06**	**272**	P	**Pn**	**22 25 53.1**	**+1.7**
KSAR	**Wonju Array Be**	**13.06**	**272**	Pn	**Pn**	**22 25 53.1**	**+1.7**
KLR	**Kul'dur**	**14.29**	**325**	Pn	**Pn**	**22 26 09.6**	**+1.5**
comp=E,0.1nm,0.3s,baz=126,slow=15,SNR=2.5							
KLR				LR	LR	22 31 34.5	
comp=E,68nm,19.6s,baz=147,slow=37							
PETK	**Petropavlovsk-**	**17.54**	**27**	LR	LR	22 35 12.4	
comp=E,21nm,18.7s,baz=127,slow=43							
SEY	**Seymchan**	**25.24**	**9**	P	**P**	**22 28 12.6**	**+1.5**
comp=E,3.5nm,0.6s,baz=192,slow=7.3,SNR=14							
SEY	**Seymchan**	**25.24**	**9**	*ce*P	**P**	**22 28 11.9**	**+0.8**
BOD	**Bodaibo**	**27.87**	**325**	*e*P	**P**	**22 28 35.2**	**+0.4**
BOD				pmax	pmax		
comp=Z,4.0nm,1.6s							
SONA0	**Songino Array**	**29.13**	**302**	*e*P	**P**	**22 28 48.1**	**+1.7**
comp=Z,1.8nm,0.9s							
SONM	**Songino Array**	**29.13**	**302**	P	**P**	**22 28 48.1**	**+1.7**
comp=Z,0.8nm,0.7s,baz=85,slow=7.6,SNR=6.2							
SONM				LR	LR	22 40 29.1	
comp=Z,40nm,21.4s,baz=90,slow=36							
BILL	**Bilibino**	**32.27**	**15**	‖*e*P	**P**	**22 29 13.6**	**0.0**
BILL				*e*		22 29 22.0	
BILL				pmax	pmax		
comp=Z,6.0nm,1.7s							
TIXI	**Tiksi**	**34.45**	**351**	*ce*P	**P**	**22 29 32.2**	**-0.4**
TIXI				pmax	pmax		
comp=Z,3.0nm,1.4s							
ZAA1	**Zalesovo Array**	**42.89**	**312**	*e*P	**P**	**22 30 44.6**	**+1.1**
ZALV	**Zalesovo Beam**	**42.89**	**312**	P	**P**	**22 30 44.6**	**+1.1**
comp=Z,1.1nm,0.6s,baz=94,slow=9.5,SNR=5.7							
ZALV				PcP	**PcP**	**22 32 34.5**	**+0.5**
comp=Z,1.2nm,0.6s,baz=77,slow=3.2,SNR=4.8							
NRIK	**Noril'sk**	**43.22**	**334**	LR	LR	22 49 46.3	
comp=Z,38nm,20.0s,baz=104,slow=37							
CM31	**Chiang Mai Arr**	**44.06**	**257**	*e*P	**P**	**22 30 54.6**	**+1.2**
CMAR	**Chiang Mai Arr**	**44.06**	**257**	P	**P**	**22 30 54.6**	**+1.2**
comp=Z,0.3nm,0.4s,baz=48,slow=7.6,SNR=4.0							
CMAR				LR	LR	22 51 14.3	
comp=Z,14nm,18.5s,baz=60,slow=39							
CMAR	**Chiang Mai Arr**	**44.06**	**257**	*c i* P	**P**	**22 30 53.7**	**+0.3**
KDAK	**Kodiak Island**	**44.66**	**43**	*e*P	**P**	**22 30 54.1**	**-3.5**
KDAK				pmax	pmax		
comp=Z,68nm,1.8s							
KDAK	**Kodiak Island**	**44.66**	**43**	*e*P	**P**	**22 30 54.1**	**-3.5**
comp=Z,68nm,1.8s							
MK01	**Makanchi Array**	**45.50**	**302**	*e*P	**P**	**22 31 05.4**	**+0.8**
MK31	**Makanchi Array**	**45.50**	**302**	*e*P	**P**	**22 31 06.0**	**+1.4**
MK31	**Makanchi Array**	**45.50**	**302**	*e*P	**P**	**22 31 06.0**	**+1.4**
MK32	**Makanchi Array**	**45.50**	**302**	*e*P	**P**	**22 31 05.8**	**+1.2**
MKAR	**Makanchi Array**	**45.50**	**302**	P	**P**	**22 31 05.8**	**+1.2**
comp=Z,1.3nm,0.7s,baz=82,slow=9.2,SNR=11							
MKAR				LR	LR	22 50 13.0	
comp=Z,44nm,19.9s,baz=34,slow=36							
MKAR	**Makanchi Array**	**45.50**	**302**	*e*P	**P**	**22 31 06.0**	**+1.4**
MAKZ	**Makanchi**	**45.71**	**302**	*e*P	**P**	**22 31 07.2**	**+1.0**
MAKZ	**Makanchi**	**45.71**	**302**	*e*P	**P**	**22 31 07.2**	**+1.0**
KURK	**Kurchatov**	**47.07**	**308**	*ce*P	**P**	**22 31 17.6**	**+0.8**
KURK				pmax	pmax		
comp=Z,6.0nm,1.2s							
KURK	**Kurchatov**	**47.07**	**308**	*e*P	**P**	**22 31 16.4**	**-0.4**
ILAR	**Eielson Array**	**47.25**	**33**	P	**P**	**22 31 18.3**	**+0.3**
comp=Z,0.4nm,0.7s,baz=252,slow=6.9,SNR=4.8							
ILB	**Eielson Array**	**47.25**	**33**	*e*P	**P**	**22 31 18.3**	**+0.3**
TKM2	**Tokmak 2**	**51.14**	**298**	*e*P	**P**	**22 31 50.5**	**+2.1**
TKM2	**Tokmak 2**	**51.14**	**298**	*e*P	**P**	**22 31 50.5**	**+2.1**
VOSK	**Vostochnaya**	**51.26**	**312**	*e*P	**P**	**22 31 50.1**	**+1.2**
VOSK	**Vostochnaya**	**51.26**	**312**	*e*P	**P**	**22 31 50.1**	**+1.2**
BRVK	**Borovoye**	**51.59**	**312**	*ce*P	**P**	**22 31 52.3**	**+1.0**
BRVK				pmax	pmax		
comp=Z,5.0nm,1.2s							
INK	**Inuvik**	**52.27**	**28**	P	**P**	**22 31 56.8**	**+0.7**
comp=Z,0.7nm,0.6s,baz=312,slow=7.3,SNR=6.4							
ARU	**Arti**	**57.04**	**319**	*d i* P	**P**	**22 32 31.9**	**+1.0**
ARU						22 34 34.6	
ARU				S	**S**	**22 40 27.3**	**+3.7**
ARU				SS	**SS**	**22 44 08.1**	**-3.7**
ARU				pmax	pmax		
comp=Z,11nm,1.7s							
WB2	**Warramunga Arr**	**58.59**	**191**	*e*P	**P**	**22 32 40.4**	**-1.7**
comp=Z,4.1nm,0.7s							
WRA	**Warramunga Arr**	**58.59**	**191**	P	**P**	**22 32 40.6**	**-1.5**
comp=Z,2.6nm,0.6s,baz=12,slow=7.3,SNR=25							
YKA	**Yellowknife Ar**	**61.61**	**31**	P	**P**	**22 33 02.2**	**-0.1**
comp=Z,0.6nm,0.7s,baz=303,slow=6.6,SNR=10							
ASAR	**Alice Springs**	**62.32**	**191**	P	**P**	**22 33 07.0**	**-0.6**
comp=Z,0.6nm,0.7s,baz=9.5,slow=7.0,SNR=11							
ASAR	**Alice Springs**	**62.32**	**191**	P	**P**	**22 33 07.0**	**-0.6**
ASAR				pmax	pmax		
comp=Z,1.0nm,0.7s							
OBN	**Obninsk**	**68.55**	**324**	*e*P	P	22 33 45.2	-2.3
OBN				*e*		22 34 13.5	
OBN				*e*		22 36 19.0	
OBN				pmax	pmax		
comp=Z,3.0nm,0.9s							
FINES	**FINESS Array B**	**68.86**	**333**	P	**P**	**22 33 49.9**	**+0.5**
comp=Z,1.8nm,0.7s,baz=42,slow=8.8,SNR=8.8							
FINES	**FINESS Array B**	**68.86**	**333**	*i* P	**P**	**22 33 49.0**	**-0.4**
FINES				pmax	pmax		
comp=Z,2.0nm,0.7s							
KIV	**Kislovodsk**	**71.90**	**312**	*e*P	**P**	**22 34 09.3**	**+0.9**
KIV				pmax	pmax		
comp=Z,11nm,1.1s							
KBZ	**Khabaz**	**71.91**	**312**	P	**P**	**22 34 09.2**	**+1.0**
comp=Z,3.1nm,0.8s,baz=62,slow=4.6,SNR=10							
NVAR	**Mina Array Bea**	**72.40**	**55**	P	**P**	**22 34 12.4**	**+0.8**
comp=Z,0.9nm,0.6s,baz=291,slow=6.4,SNR=4.2							
NB2	**NORSAR Subarra**	**74.00**	**338**	P	**P**	**22 34 19.8**	**-0.6**
comp=Z,0.6nm,0.6s,baz=36,slow=6.2							
NOA	**NORSAR Array B**	**74.00**	**338**	P	**P**	**22 34 20.6**	**+0.2**
comp=Z,1.1nm,0.8s,baz=36,slow=6.1,SNR=4.1							
AKASG	**Malin Array Be**	**74.79**	**323**	P	**P**	**22 34 25.7**	**+0.6**
comp=Z,1.1nm,0.6s,baz=42,slow=5.4,SNR=7.2							
PDAR	**Pinedale Array**	**75.16**	**47**	P	**P**	**22 34 28.3**	**+0.5**
comp=Z,0.6nm,0.6s,baz=270,slow=1.5,SNR=6.0							
BRTR	**Keskin Array B**	**79.81**	**313**	P	**P**	**22 34 55.0**	**+1.3**
comp=Z,0.5nm,0.7s,baz=70,slow=5.4,SNR=4.5							
CLL	**Collm**	**81.23**	**332**	*e*P	**P**	**22 35 01.0**	**+0.1**
comp=Z,4.0nm,0.8s							
CLL	**Collm**	**81.23**	**332**	*e*P	**P**	**22 35 01.0**	**+0.1**
CLL				pmax	pmax		
comp=Z,4.0nm,0.8s							
GERES	**GERESS Array B**	**82.93**	**330**	P	**P**	**22 35 10.0**	**0.0**
comp=Z,0.2nm,0.3s,baz=51,slow=7.7,SNR=3.0							
GERES	**GERESS Array B**	**82.93**	**330**	P	**P**	**22 35 10.0**	**0.0**
BFO	**Black Forest**	**85.40**	**332**	*i* P	**P**	**22 35 24.5**	**+2.0**
TXAR	**Lajitas Array**	**87.54**	**54**	P	**P**	**22 35 33.8**	**+0.4**
comp=Z,0.4nm,0.8s,baz=283,slow=3.3,SNR=5.1							
LPAZ	**La Paz**	**144.07**	**62**	PKP	**PKPdf**	**22 42 23.4**	**+1.5**
comp=Z,0.3nm,0.3s,baz=333,slow=4.5,SNR=2.9							

*ISCJB **03** 22:24:51.5±0.3,37.°96N±0.°02×16.°75E±0.°03,h73km±6km, Error ellipse: s-maj=3.7km s-min=3.2km az=144.6*
*PDG **03** 22:24:51.0±0.5,37.°91N×16.°57E,h82km±3km,ML3.8/12, Error ellipse: s-maj=0.9km s-min=1.6km az=0.0*
*ROM **03** 22:24:52.1±0.2,37.°78N×16.°68E,h38km±1km,Ml3.3/27, Error ellipse: s-maj=2.6km s-min=2.1km az=2.0*
*CSEM **03** 22:24:52.7±0.1,37.°94N×16.°75E,h30km,ML3.3,Error ellipse: s-maj=3.9km s-min=2.4km az=166.0*
*THE **03** 22:24:55.5,38.°00N×16.°98E,h28km±3km,ML3.5/10,Error ellipse: s-maj=4.0km s-min=0.7km az=225.0*
ISC 03 22:24:52.1±1.1,37.°90N±0.°03×16.°70E±0.°03,h61km±10km, n164,σ1.°52/234,20C-13D,Ionian Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SOI	**Samo**	**0.54**	**289**	Pg	**Pn**	**22 25 04.1**	**-0.4**
SOI				Sg	**Sn**	**22 25 12.8**	**-0.8**
551nm,0.7s							
SOI	**Samo**	**0.54**	**289**	Pg	**Pn**	**22 25 04.1**	**-0.4**
SOI				Sg	**Sn**	**22 25 12.8**	**-0.8**
551nm,0.7s							
MPAZ	**Palizzi**	**0.55**	**276**	Pg	**Pn**	**22 25 04.3**	**-0.4**
1μm,0.3s							
MPAZ	**Palizzi**	**0.55**	**276**	Pg	**Pn**	**22 25 04.3**	**-0.4**
1μm,0.3s							
PLAC	**Placanica**	**0.59**	**339**	Pg	**Pn**	**22 25 05.3**	**+0.1**
PLAC				Sg	**Sn**	**22 25 16.1**	**+1.4**
2μm,0.4s							
PLAC	**Placanica**	**0.59**	**339**	Pg	**Pn**	**22 25 05.3**	**+0.1**
PLAC				Sg	**Sn**	**22 25 16.1**	**

HCRL				Sg	Sn	22 25 32.2	-2.2
	1µm,0.3s						
SSY	Sortino	1.49	241	Pg	Pn	22 25 15.5	-1.2
SSY				Sg	Sn	22 25 32.5	-2.7
	635nm,0.2s						
HLNI	Lentini	1.55	250	Pg	Pn	22 25 16.6	-0.9
	336nm,0.3s						
PIPA	Pietrapaola	1.59	3	Pg	Pn	22 25 19.9	+1.9
	118nm,0.5s						
PIPA	Pietrapaola	1.59	3	Pg	Pn	22 25 19.9	+1.9
	118nm,0.5s						
ECNV	Catenanuova	1.61	260	Pg	Pn	22 25 19.5	+1.3
	557nm,0.7s						
ECNV	Catenanuova	1.61	260	Pg	Pn	22 25 19.5	+1.3
	557nm,0.7s						
GALF	Gagliano Caste	1.70	264	Pg	Pn	22 25 21.0	+1.5
	183nm,0.6s						
GALF	Gagliano Caste	1.70	264	Pg	Pn	22 25 21.0	+1.5
	183nm,0.6s						
HVZN	Vizzini	1.73	246	Pg	Pn	22 25 19.5	-0.5
	2µm,0.6s						
HVZN	Vizzini	1.73	246	Pg	Pn	22 25 19.5	-0.5
	2µm,0.6s						
IFIL	Filicudi I Eol	1.81	292	Pg	Pn	22 25 20.6	-0.3
IFIL	Filicudi I Eol	1.81	292	Pg	Pn	22 25 20.6	-0.3
IACL	Alicudi	1.96	290	Pg	Pn	22 25 24.8	+1.9
IACL	Alicudi	1.96	290	Pg	Pn	22 25 24.8	+1.9
RAFF	Raffo Rosso	1.98	251	Pg	Pn	22 25 23.5	+0.3
RAFF	Raffo Rosso	1.98	251	Pg	Pn	22 25 23.5	+0.3
SALB	San Lorenzo Be	2.00	352	Pg	Pn	22 25 25.3	+1.7
SALB	San Lorenzo Be	2.00	352	Pg	Pn	22 25 25.3	+1.7
PLLN	Pollina	2.03	274	Pg	Pn	22 25 26.2	+2.3
	108nm,0.7s						
PLLN	Pollina	2.03	274	Pg	Pn	22 25 26.2	+2.3
	108nm,0.7s						
MMN	Mormanno	2.07	345	Pg	Pn	22 25 27.5	+3.1
	66nm,0.7s						
MGR	Morigerati	2.41	339	Pg	Pn	22 25 31.7	+2.6
MGR	Morigerati	2.41	339	Pg	Pn	22 25 31.7	+2.6
TAR1	Taranto	2.67	10	*i* Pn	Pn	22 25 32.8	+0.2
TAR1				Sn	Sn	22 26 04.1	+0.4
WDD	Wied Dalam	2.67	221	Pg	Pn	22 25 33.8	+1.1
WDD	Wied Dalam	2.67	221	Pg	Pn	22 25 33.8	+1.1
MATE	Matera	2.75	0	0⇑*iP*	Pn	22 25 34.8	+1.1
MATE	Matera	2.75	0	S	Sn	22 26 04.4	-1.4
SG1	Sgolgore (BA)	2.94	360	*e*Pn	Pn	22 25 37.1	+0.7
SG1				Sn	Sn	22 26 09.9	-0.6
KEK	Kerkira	3.02	52	P	Pn	22 25 37.6	+0.1
KEK				S	Sn	22 26 10.9	-1.6
KEK	Kerkira	3.02	52	Pg	Pn	22 25 37.3	-0.2
	93nm,0.3s						
KEK	Kerkira	3.02	52	Pg	Pn	22 25 37.3	-0.2
	93nm,0.3s						
KEK	Kerkira	3.02	52	P	Pn	22 25 37.6	+0.1
KEK				S	Sn	22 26 10.9	-1.6
VLS	Valsamata	3.08	84	P	Pn	22 25 38.7	+0.4
VLS				S	Sn	22 26 13.0	-0.9
VLS	Valsamata	3.08	84	P	Pn	22 25 38.7	+0.4
VLS				S	Sn	22 26 13.0	-0.9
CDT	Castel del Mon	3.20	354	*e*Pn	Pn	22 25 40.6	+0.7
CDT				Sn	Sn	22 26 16.8	-0.1
BAI	Bari	3.21	2	*e*Pn	Pn	22 25 40.2	+0.2
BAI				Sn	Sn	22 26 16.1	-0.9
KFL	Anninata	3.23	85	P	Pn	22 25 40.7	+0.3
KFL	Anninata	3.23	85	P	Pn	22 25 40.7	+0.3
LKD2	Lefkada island	3.23	73	P	Pn	22 25 41.0	+0.6
LKD2				S	Sn	22 26 16.2	-1.5
LKD2	Lefkada island	3.23	73	P	Pn	22 25 41.0	+0.6
LKD2				S	Sn	22 26 16.2	-1.5
SGD	Sagiada	3.25	57	P	Pn	22 25 41.0	+0.4
SGD				S	Sn	22 26 16.9	-1.1
SGD	Sagiada	3.25	57	P	Pn	22 25 41.0	+0.4
SGD				S	Sn	22 26 16.9	-1.1
IGT	Igoumenitsa	3.28	59	P	Pn	22 25 41.3	+0.4
IGT	Igoumenitsa	3.28	59	P	Pn	22 25 41.3	+0.4
PDO	Prodromos	3.60	77	P	Pn	22 25 46.0	+0.7
PDO				S	Sn	22 26 25.6	-0.9
PDO	Prodromos	3.60	77	P	Pn	22 25 46.0	+0.7
PDO				S	Sn	22 26 25.6	-0.9
DSL	Palaion Diasel	3.66	69	P	Pn	22 25 47.1	+0.9
DSL				S	Sn	22 26 26.9	-1.3
DSL	Palaion Diasel	3.66	69	P	Pn	22 25 47.1	+0.9
DSL				S	Sn	22 26 26.9	-1.3
JAN	Janina	3.69	60	P	Pn	22 25 47.5	+0.9
JAN				S	Sn	22 26 27.8	-1.0
JAN	Janina	3.69	60	P	Pn	22 25 47.5	+0.9
JAN				S	Sn	22 26 27.8	-1.0
DRO	Drossia	3.96	88	P	Pn	22 25 51.5	+1.2
DRO				S	Sn	22 26 35.2	-0.3
DRO	Drossia	3.96	88	P	Pn	22 25 51.5	+1.2
DRO				S	Sn	22 26 35.2	-0.3
ANX	Ano Chora	4.17	79	P	Pn	22 25 54.2	+1.0
ANX	Ano Chora	4.17	79	P	Pn	22 25 54.2	+1.0
KPRO	Kipourio	4.18	59	P	Pn	22 25 54.1	+0.8
KPRO	Kipourio	4.18	59	P	Pn	22 25 54.1	+0.8
NEST	Nestorio	4.21	52	P	Pn	22 25 55.0	+1.2
NEST	Nestorio	4.21	52	P	Pn	22 25 55.0	+1.2
ITM	Ithomi	4.21	98	P	Pn	22 25 55.0	+1.2
ITM	Ithomi	4.21	98	P	Pn	22 25 55.0	+1.2
TIR	Tirane	4.22	34	0⇓*iP*	Pn	22 25 53.3	-0.6
TIR	Tirane	4.22	34	S	Sn	22 26 40.4	-1.5
THL	Klokotos Trika	4.48	66	P	Pn	22 25 58.5	+1.2
THL				S	Sn	22 26 47.5	-0.6
THL	Klokotos Trika	4.48	66	P	Pn	22 25 58.5	+1.2
THL				S	Sn	22 26 47.5	-0.6
ULC	Ulcinj	4.51	25	0⇑*iPn*	Pn	22 25 57.6	-0.2
ULC				*e*Sn	Sn	22 26 48.3	-0.7
ULC	Ulcinj	4.51	25	0⇑*iPn*	Pn	22 25 57.6	-0.2
ULC				*e*Sn	Sn	22 26 48.3	-0.7
AGG	Agios Georgios	4.56	74	P	Pn	22 26 00.5	+2.0
AGG				S	Sn	22 26 49.8	-0.4
AGG	Agios Georgios	4.56	74	P	Pn	22 26 00.5	+2.0
AGG				S	Sn	22 26 49.8	-0.4
FNA	Florina	4.63	50	P	Pn	22 26 00.5	+1.0
FNA				S	Sn	22 26 51.7	-0.3
FNA	Florina	4.63	50	P	Pn	22 26 00.5	+1.0
FNA				S	Sn	22 26 51.7	-0.3
DRME	Dracevica, Mon	4.69	23	0⇑*iPn*	Pn	22 26 00.1	-0.2
DRME				*e*Sn	Sn	22 26 52.5	-0.9
DRME	Dracevica, Mon	4.69	23	0⇑*iPn*	Pn	22 26 00.1	-0.2
DRME				*e*Sn	Sn	22 26 52.5	-0.9
BUM	Brajici-Budva	4.71	20	0⇑*iPn*	Pn	22 26 00.8	+0.2
BUM				*e*Sn	Sn	22 26 52.9	-1.1
BUM	Brajici-Budva	4.71	20	0⇑*iPn*	Pn	22 26 00.8	+0.2
BUM				*e*Sn	Sn	22 26 52.9	-1.1
BIA	Bitola	4.75	47	*i* Sn	Sn	22 26 54.5	-0.3
HCY	Herceg Novi	4.75	16	0⇓*iPn*	Pn	22 26 00.1	-1.0
HCY				*e*Sn	Sn	22 26 53.6	-1.2
HCY	Herceg Novi	4.75	16	0⇓*iPn*	Pn	22 26 00.1	-1.0
HCY				*e*Sn	Sn	22 26 53.6	-1.2
PDG	Podgorica	4.93	23	0⇓*iP*	Pn	22 26 03.2	-0.4
PDG	Podgorica	4.93	23	S	Sn	22 26 56.4	-2.9
PDG	Podgorica	4.93	23	0⇑*iPn*	Pn	22 26 04.1	+0.5
PDG				*e*Sn	Sn	22 26 58.3	-1.0
TTG	Podgorica	4.93	23	0⇑*iPn*	Pn	22 26 04.1	+0.5
TTG				*e*Sn	Sn	22 26 58.3	-1.0
CEME	Cevo	4.95	19	*e*Pn	Pn	22 26 04.0	+0.2
CEME				*e*Sn	Sn	22 26 58.5	-1.2
CEME	Cevo	4.95	19	*e*Pn	Pn	22 26 04.0	+0.2
CEME				*e*Sn	Sn	22 26 58.5	-1.2
TREB	Trebinje	4.98	14	*e*Pn	Pn	22 26 03.1	-1.1
STON	Ston	5.03	8	*i* Pn	Pn	22 26 04.4	-0.6
STON				Sn	Sn	22 26 56.1	-5.5
STON	Ston	5.03	8	*i* Pn	Pn	22 26 04.3	-0.6
STON				Sn	Sn	22 26 56.1	-5.5
VLI	Veliai	5.11	101	P	Pn	22 26 08.0	+2.0
VLI	Veliai	5.11	101	P	Pn	22 26 08.0	+2.0
NKME	Niksic	5.16	19	0⇑*iPn*	Pn	22 26 07.1	+0.3
NKME				*e*Sn	Sn	22 27 04.3	-0.7
NKME	Niksic	5.16	19	0⇑*iPn*	Pn	22 26 07.1	+0.3
NKME				*e*Sn	Sn	22 27 04.3	-0.7
BRY	Bratogost	5.19	15	0⇑*iPn*	Pn	22 26 07.4	+0.1
BRY				*e*Sn	Sn	22 27 04.9	-1.0
BRY	Bratogost	5.19	15	0⇑*iPn*	Pn	22 26 07.4	+0.1
BRY				*e*Sn	Sn	22 27 04.9	-1.0
SMIA	Simia	5.21	77	P	Pn	22 26 08.7	+1.3
SMIA	Simia	5.21	77	P	Pn	22 26 08.7	+1.3
NKY	Niksic	5.21	19	0⇑*iPn*	Pn	22 26 07.2	-0.4
NKY				*e*Sn	Sn	22 27 04.8	-1.6
NKY	Niksic	5.21	19	0⇑*iPn*	Pn	22 26 07.2	-0.4
NKY				*e*Sn	Sn	22 27 04.8	-1.6
PVY	Plav	5.31	27	0⇑*iPn*	Pn	22 26 09.8	+0.9
PVY				*e*Sn	Sn	22 27 08.5	-0.4
PVY	Plav	5.31	27	0⇑*iPn*	Pn	22 26 09.8	+0.9
PVY				*e*Sn	Sn	22 27 08.5	-0.4
BEY	Berane	5.54	25	0⇓*iPn*	Pn	22 26 13.5	+1.6
BEY				*e*Sn	Sn	22 27 13.3	-0.9
IVA	Berane	5.54	25	0⇓*iPn*	Pn	22 26 13.5	+1.6
IVA				*e*Sn	Sn	22 27 13.3	-0.9
UPM	Unac-Piva	5.56	17	0⇓*iPn*	Pn	22 26 13.3	+0.9
UPM				*e*Sn	Sn	22 27 13.6	-1.4
UPM	Unac-Piva	5.56	17	0⇓*iPn*	Pn	22 26 13.3	+0.9
UPM				*e*Sn	Sn	22 27 13.6	-1.4
PLE	Pljevlja	5.80	20	0⇓*iPn*	Pn	22 26 17.2	+1.6
PLE				*e*Sn	Sn	22 27 19.2	-1.6
PLE	Pljevlja	5.80	20	0⇓*iPn*	Pn	22 26 17.2	+1.6
PLE				*e*Sn	Sn	22 27 19.2	-1.6
SJES	Sjenica	5.91	24	*e*Pn	Pn	22 26 18.6	+1.5
IVAS	Ivanjica	6.25	24	*e*Pn	Pn	22 26 22.5	+0.8
BBLS	Lazići	6.31	18	*e*Pn	Pn	22 26 23.4	+0.9
UDBI	Udbina	6.67	354	*e*Pn	Pn	22 26 28.4	+1.0
UDBI				Sn	Sn	22 27 38.4	-3.5
UDBI	Udbina	6.67	354	*e*Pn	Pn	22 26 28.4	+1.0
DIVS	Divibare	6.68	21	*e*Pn	Pn	22 26 27.8	+0.2
NVLJ	Novalja	6.80	349	Sn	Sn	22 27 42.1	-3.0
NVLJ	Novalja	6.80	349	Sn	Sn	22 27 42.1	-3.0
BLY	Banja Luka	6.86	3	0⇓*iP*	Pn	22 26 31.0	+1.0
BLY	Banja Luka	6.86	3	*e*Pn	Pn	22 26 30.9	+1.0
TEKS	Tekeris	6.98	17	*e*Pn	Pn	22 26 32.0	+0.4
IDI	Anoyia	7.08	109	0⇓*iP*	Pn	22 26 35.1	+2.0
BOLS	Boljevac	7.14	32	*e*Pn	Pn	22 26 32.4	-1.4
KUBS	Kucevo	7.51	28	*e*Pn	Pn	22 26 37.7	-1.2
LAST	Lasithi	7.57	108	0⇑*iP*	Pn	22 26 42.1	+2.2
MDVR	Moldovita	7.84	27	0⇓*iP*	Pn	22 26 43.5	0.0
MDVR	Moldovita	7.84	27	S	Sn	22 28 04.7	-6.1
CRES	Cresnjev	7.98	354	*e*Pn	Pn	22 26 44.8	-0.5
BZS	Buzias	8.54	24	0⇑*iP*	Pn	22 26 52.7	-0.3
BZS	Buzias	8.54	24	S	Sn	22 28 21.0	-6.8
DRGR		9.94	25	S	Sn	22 28 54.9	-7.1
CLL	Collm	13.66	350	*e*(P)	P	22 28 11.0	+1.4
CLL				Lm	MLR	22 34 00.0	
	comp=Z,100nm,18.2s						

NEIC ***03*** *22:27:34.5±0.3, 19°.17S×168°.87E, h10km, mb4.9/23, Error ellipse: s-maj=13.4km s-min=9.3km az=166.0*
IDC ***03*** *22:27:41.5±3.8, 19°.31S×168°.93E, h65km±36km, mb4.1/13, mb1 4.3/14, mb1mx4.1/33, mbtmp4.4/14, ML4.4/1, MS3.2/2, Ms1 3.2/2, ms1mx2.7/25, Error ellipse: s-maj=26.7km s-min=21.3km az=171.0*
ISCJB ***03*** *22:27:44.3±0.3, 19°.44S±0°.07×168°.76E±0°.08, h104km, mb4.6/32, Error ellipse: s-maj=12.7km s-min=7.0km az=39.1*

ISC 03 22:27:45.4±0.5,**19°.47S**±0°.10×**168°.8E**±0°.1,**h104km**,**n78**, σ1°**23**/77,**mb4.5**/31,**Vanuatu Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	3.43	221	P	Pn	22 28 35.1	-1.9
	35nm,0.3s,baz=130,slow=6.7,SNR=288						
DZM				S	Sn	22 29 16.4	-0.5
	39nm,0.3s,baz=311,slow=23,SNR=12						
MSVF	Nonsavu	8.90	80	*e*Pn	Pn	22 29 43.8	-7.4
HNR	Honiara	13.18	318	LR	LR	22 34 37.3	
	comp=Z,83nm,18.9s,baz=156,slow=32						
URZ	Urewera	20.06	161	P	P	22 32 11.2	+0.9
	12nm,0.6s,baz=35,slow=4.9,SNR=8.5						
WR1	Warramunga Arr	32.45	263	*e*P	P	22 34 06.7	+0.6
	12nm,1.4s						
WR1				*e*PcP	PcP	22 36 52.0	+1.0
WRA	Warramunga Arr	32.45	263	P	P	22 34 06.6	+0.6
	0.5nm,0.6s,baz=99,slow=8.0,SNR=5.2						
WRA				PcP	PcP	22 36 52.0	+1.0
	0.5nm,0.7s,baz=100,slow=3.4,SNR=5.0						
AS31	Alice Springs	32.71	256	*e*PcP	PcP	22 36 53.0	+1.3
ASAR	Alice Springs	32.71	256	P	P	22 34 09.0	+0.8
	2.3nm,0.6s,baz=84,slow=8.7,SNR=27						
ASAR				PcP	PcP	22 36 53.0	+1.3
	0.9nm,1.1s,baz=93,slow=1.9,SNR=3.5						
MJAR	Matsushiro Arr	62.78	333	P	P	22 37 59.9	+0.1
	1.8nm,0.9s,baz=157,slow=6.6,SNR=6.6						
QSPA	South Pole Qui	70.59	180	*e*P	P	22 38 50.6	+1.4
	22nm,1.1s						
USRK	Ussuriysk Ar.	71.77	333	P	P	22 38 56.3	0.0
	1.9nm,0.8s,baz=134,slow=8.3,SNR=4.0						
PETK	Petropavlovsk-	72.92	353	P	P	22 39 02.7	-0.3
	4.3nm,0.7s,baz=144,slow=8.4,SNR=3.0						
PEA1	Petropavlovsk-	72.92	353	*e*P	P	22 39 02.6	-0.4
CM31	Chiang Mai Arr	78.26	294	*e*P	P	22 39 34.9	+0.6
CMAR	Chiang Mai Arr	78.26	294	P	P	22 39 34.9	+0.6
	0.6nm,0.3s,baz=124,slow=4.5,SNR=3.4						
MA2	Magadan	80.14	351	LR	LR	23 06 59.6	
	comp=Z,18nm,21.9s,baz=121,slow=30						
SONA0	Songino Array	87.18	323	*e*P	P	22 40 21.0	+1.0
	2.6nm,0.8s						
SONM	Songino Array	87.18	323	P	P	22 40 21.0	+1.0
	1.9nm,0.8s,baz=145,slow=5.7,SNR=15						
SONA1	Songino Array	87.18	323	*e*P	P	22 40 20.5	+0.5
AFDM	Forest Hills D	87.59	47	*e*P	P	22 40 22.5	+0.4
	4.3nm,0.7s						
YBH	Yreka Blue Hor	87.72	44	P	P	22 40 23.1	+0.5
	3.1nm,0.8s,baz=19,slow=8.9,SNR=4.7						
YBH	Yreka Blue Hor	87.72	44	*e*P	P	22 40 23.1	+0.5
	7.2nm,1.0s						
CAST	Castle Rocks	88.07	16	*e*P	P	22 40 21.7	-2.0
	2.7nm,0.8s						
PFO	Pinyon Flats O	88.55	54	P	P	22 40 27.5	+0.7
	2.9nm,0.8s,baz=258,slow=5.5,SNR=4.3						
PFO	Pinyon Flats O	88.55	54	*e*P	P	22 40 27.5	+0.7
	4.7nm,1.0s						
SNAA	Sanae	88.92	183	P	P	22 40 27.3	-0.5
NV01	Mina Array Sit	89.23	49	*e*P	P	22 40 30.6	+0.5
NVAR	Mina Array Bea	89.23	49	P	P	22 40 30.6	+0.5
	1.5nm,0.7s,baz=235,slow=8.6,SNR=7.8						
MOD	Modoc Plateau	89.39	45	*e*P	P	22 40 30.7	+0.1
	5.8nm,0.8s						
VNA3	Neumayer Olymp	89.52	180	P	P	22 40 30.3	-0.4
VNA2	Neumayer--Watz	89.81	181	P	P	22 40 32.2	+0.2
	baz=165,slow=3.1						
TPNV	Topopah Spring	90.08	51	*e*P	P	22 40 34.4	+0.4
	7.5nm,0.8s						
HDA	Harding Lake	90.27	18	*e*P	P	22 40 33.0	-0.9
	13nm,1.7s						
ILAR	Eielson Array	90.56	17	P	P	22 40 33.4	-2.0
	1.8nm,0.8s,baz=235,slow=5.8,SNR=14						
ILB	Eielson Array	90.56	17	*e*P	P	22 40 33.4	-2.0
IL1	Eielson Array	90.56	17	*e*P	P	22 40 33.0	-2.3
DOT	Dot Lake	90.56	19	*e*P	P	22 40 35.1	-0.3
	35nm,1.8s						
WVOR	Wild Horse Val	90.74	45	*e*P	P	22 40 37.4	+0.5
	5.0nm,0.9s						
W13A	Hualapai Mount	91.10	53	*e*P	P	22 40 39.4	+0.6
	4.6nm,0.8s						
R11A	Troy Canyon, C	91.14	50	*e*P	P	22 40 39.0	+0.1
	2.9nm,0.9s						
COLD	Coldfoot	91.59	15	*e*P	P	22 40 40.8	+0.8
	2.8nm,0.9s						
EGAK	Eagle	92.26	19	*e*P	P	22 40 43.1	-0.1
LCMT	Little Creek M	92.32	52	*e*P	P	22 40 44.9	+0.6
	6.3nm,0.9s						
DLBC	Dease Lake	92.42	27	P	P	22 40 42.6	-1.6
	4.0nm,1.0s,baz=234,slow=4.1,SNR=5.9						
DLBC	Dease Lake	92.42	27	*e*P	P	22 40 42.6	-1.6
	34nm,2.0s						
TUC	Tucson	92.44	57	*e*P	P	22 40 45.8	+0.9
	5.8nm,1.0s						
X16A	Lo Mia Camp, P	92.70	55	*e*P	P	22 40 47.0	+0.8
	6.0nm,0.8s						
U15A	North Rim	92.80	52	*e*P	P	22 40 47.1	+0.4
	7.2nm,0.8s						
319A	Douglas	93.30	58	*e*P	P	22 40 50.4	+1.4
	9.9nm,0.8s						
AHID	Auburn Hatcher	95.98	47	*e*P	P	22 40 56.7	-4.4
	9.1nm,0.9s						
BW06	Boulder Array	97.04	47	*e*P	P	22 41 09.6	+3.7
N23A	Red Feather La	99.00	50	*e*P	Pdif	22 41 20.4	+5.6
	17nm,0.7s						
CCIG	Comitan	103.56	77	*e*Pdif	Pdif	22 41 30.8	-4.6
ARA0	ARCESS Array S	125.19	345	*e*PKPdf	PKPdf	22 46 32.6	-0.5
ARCES	ARCESS Array B	125.19	345	PKP	PKPdf	22 46 32.6	-0.5
	0.6nm,0.3s,baz=65,slow=1.9,SNR=36						
NKC	Novy Kostel	144.02	334	*e*PKP	PKPbc	22 47 07.3	+0.5
CONA	Conrad Observa	144.14	329	*i* PKPdf	PKPdf	22 47 09.4	+0.4
	3.1nm,0.7s						
KHC	Kasperske Hory	144.36	332	*e*PKP	PKPdf	22 47 08.6	-0.7
KHC	Kasperske Hory	144.36	332	*e*PKPdf	PKPdf	22 47 08.7	-0.7
GEC2	GERESS Array S	144.51	331	*e*PKPdf	PKPdf	22 47 09.3	-0.3
GERES	GERESS Array B	144.51	331	PKP	PKPdf	22 47 09.2	-0.5
	3.2nm,0.7s,baz=35,slow=3.3,SNR=37						
GEA0	GERESS Array S	144.52	331	*e*PKPdf	PKPdf	22 47 08.9	-0.8
ARSA	Arzberg	144.77	328	*i* PKPdf	PKPdf	22 47 10.3	+0.2
	1.5nm,0.5s						
MOA	Molln	144.97	330	*i* PKPdf	PKPdf	22 47 10.8	+0.4
	12nm,0.8s						
SOKA	Soboth	145.41	328	*i* PKPdf	PKPab	22 47 12.4	+0.8
	8.3nm,0.9s						
OBKA	Obir	145.77	328	*i* pPKPbc	PKPab	22 47 14.2	+1.2
	3.5nm,0.7s						
KBA	Koelnbreinsper	145.96	330	*i* PKPab	PKPab	22 47 13.4	-0.4
	1.0nm,0.3s						
MYKA	Terra Mystica	146.13	329	*i* PKPbc	PKPbc	22 47 13.5	-0.1
	4.1nm,0.7s						
ABTA	Abfaltersbach	146.59	330	*i* PKPbc	PKPbc	22 47 14.7	-0.2
	2.0nm,0.5s						
WTTA	Wattenberg	146.62	331	*i* PKPab	PKPab	22 47 15.6	-0.8
	2.2nm,0.3s						
MOTA	Moosalm	146.79	332	*i* PKPab	PKPab	22 47 16.1	-1.0
	6.8nm,0.8s						
RETA	Reutte	146.84	332	*i* PKPbc	PKPbc	22 47 15.9	+0.3
	1.2nm,0.4s						
WLF	Walferdange	146.84	339	*e*PKPdf	PKPab	22 47 15.9	-1.0
BFO	Black Forest	147.17	336	*e*PKPdf	PKPbc	22 47 16.9	+0.4
FETA	Feichten	147.21	332	*i* PKPbc	PKPbc	22 47 16.5	-0.2
	6.3nm,0.8s						
DAVA	Damuels	147.37	333	*i* PKPdf	PKPdf	22 47 15.3	+0.6
	4.1nm,0.7s						
FUORN	Ofenpass-Fuorn	147.72	332	*e*PKPbc	PKPab	22 47 19.3	-1.5
TUE	Stuetta	148.24	333	*e*PKPbc	PKPbc	22 47 19.9	+0.3

ISCJB ***03*** *22:31:57.8±1.2, 37°.60N±0°.05×29°.6E±0°.1, h8km±8km, Error ellipse: s-maj=14.4km s-min=7.7km az=16.8*
CSEM ***03*** *22:31:57.6±0.5, 37°.60N×29°.61E, h15km, MD2.8, Error ellipse: s-maj=11.8km s-min=6.7km az=92.0*
ISK ***03*** *22:31:57.7, 37°.62N×29°.50E, h7km, MD2.8*
DDA ***03*** *22:32:05.5, 37°.87N×29°.25E, h7km, Md2.4*

ISC 03 22:31:57.9±1.6,**37°.63N**±0°.04×**29°.49E**±0°.05,**h2km**±13**km**, **n12**, σ0°**95**/20,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DNZL	Cakiroluk	0.36	279	*i* P	Pg	22 32 02.1	-2.7
DNZL				*i* S	Sb	22 32 14.7	+1.5
DENT	Denizli	0.38	289	*e*PG	Pg	22 32 05.9	+0.6
DENT	Denizli	0.38	289	*e*Pg	Pg	22 32 05.9	+0.6
GLHS	Glhisar (BURDU	0.47	179	*e*PG	Pg	22 32 07.0	0.0
GLHS	Glhisar (BURDU	0.47	179	*e*Pg	Pg	22 32 07.0	0.0
KHL	Karahalli	0.69	2	*e*PG	Pg	22 32 11.6	+0.4
KHL				*e*SG	Sb	22 32 22.1	-0.7
KHL	Karahalli	0.69	2	*e*Pg	Pg	22 32 11.6	+0.4
KHL				*e*Sg	Sb	22 32 22.1	-0.7
KHAL	Karahalli	0.74	0	*i* P	Pn	22 32 16.1	+0.7
KHAL				*i* S	Sb	22 32 23.8	-0.4
KULA	Kula-Manisa	1.10	324	*e*PN	Pb	22 32 19.4	-0.3
KULA				*e*SN	Sn	22 32 35.3	-0.9
KULA	Kula-Manisa	1.10	324	*e*Pn	Pb	22 32 19.4	-0.3
KULA				*e*Sn	Sn	22 32 35.3	-0.9
AYDB	Zeytinkoy-Aydi	1.31	284	*e*PN	Pg	22 32 23.5	+0.5
AYDB				*e*SN	Sn	22 32 41.5	+0.1
AYDB	Zeytinkoy-Aydi	1.31	284	*e*Pn	Pg	22 32 23.5	+0.5
AYDB				*e*Sn	Sn	22 32 41.5	+0.1

IDC ***03*** *22:40:44.0±2.8, 5°.13S×130°.51E, h70km±30km, mb3.2/2, mb1 3.7/6, mb1mx3.3/26, mbtmp3.8/6, ML3.7/4, Error ellipse: s-maj=46.0km s-min=12.0km az=77.0*
ISCJB ***03*** *22:40:44.9±0.5, 5°.07S±0°.05×130°.66E±0°.08, h100km, mb3.4/2, Error ellipse: s-maj

comp=Z,6.1nm,0.2s
GOPC GO Pecny, Ondr 1.85 208 Pn **Pn 22 58 26.5 +0.6**
PRU Pruhonice 1.87 213 *e*PN **Pn 22 58 25.8 -0.2**
PRU *e*PG **Pb 22 58 27.7 -0.1**
PRU *e*SG **Sb 22 58 51.5 -0.2**
comp=Z,13nm,0.6s
PRU Pruhonice 1.87 213 Pn **Pn 22 58 25.8 -0.2**
CLL Collm 1.98 264 *e*Pg **Pg 22 58 31.0 +0.3**
CLL *e*Sg **Sg 22 58 56.0 -0.3**
comp=Z,7.0nm,0.6s
CLL *i* 22 59 05.5
MORC Moravsky Berou 1.99 153 *e*Pn **Pn 22 58 28.0 +0.2**
MORC *e*Sg **Sb 22 58 54.5 -0.8**
comp=Z,5.6nm,0.3s,baz=335
OKC Ostrava-Krasne 2.14 143 *e*PG **Pg 22 58 33.9 0.0**
OKC *e*SG **Sg 22 59 00.6 -1.0**
comp=Z,9.8nm,0.6s
OKC Ostrava-Krasne 2.14 143 Pg **Pg 22 58 33.9 0.0**
OKC Sg **Sg 22 59 00.6 -1.0**
comp=Z,9.8nm,0.6s
VRAC Vranov 2.27 172 *e*Pn **Pn 22 58 31.9 +0.3**
VRAC *e*Sg **Sb 22 59 03.6 +0.4**
comp=Z,6.5nm,0.4s,baz=354
TREC Trest 2.30 191 *e*PN **Pn 22 58 33.2 +1.2**
TREC *e*PG **Pb 22 58 36.0 +0.8**
TREC *e*SG **Sb 22 59 05.3 +1.1**
comp=Z,7.7nm,0.2s
TREC Trest 2.30 191 Pn **Pn 22 58 33.2 +1.2**
KRUC Moravsky 2.50 176 *e*Pn **Pn 22 58 35.5 +0.7**
baz=357
KRUC Moravsky 2.50 176 *e*Pg **Pb 22 58 39.1 +0.5**
baz=357
KRUC *e*Sg **Sg 22 59 11.6 -1.6**
comp=Z,5.1nm,0.4s,baz=357
OJC Ojcow 2.68 119 *e*Pn **Pn 22 58 36.3 -0.9**
OJC *e*Pg **Pg 22 58 44.7 +0.6**
OJC *e*Sg **Sg 22 59 20.9 +2.2**
OJC Ojcow 2.68 119 *e*Pn **Pn 22 58 36.3 -0.9**
OJC Ojcow 2.68 119 *e*Pn **Pn 22 58 36.3 -0.9**
OJC *e*Pg **Pg 22 58 44.7 +0.6**
OJC *e*Sg **Sg 22 59 20.9 +2.2**
NKC Novy Kostel 2.69 242 *e*PN **Pn 22 58 38.5 +1.2**
NKC *e*PG **Pg 22 58 44.6 +0.3**
NKC *e*SG **Sg 22 59 18.5 -0.6**
comp=Z,12nm,0.2s
NKC Novy Kostel 2.69 242 Pn **Pn 22 58 38.5 +1.2**
KHC Kasperske Hory 2.93 215 *e*PN **Pn 22 58 41.0 +0.3**
KHC *e*PG **Pb 22 58 47.2 +1.3**
KHC *e*SN **Sn 22 59 15.2 -1.4**
KHC *e*SG **Sg 22 59 25.1 -1.8**
comp=Z,4.1nm,0.5s
KHC Kasperske Hory 2.93 215 Pn **Pn 22 58 41.0 +0.3**
CONA Conrad Observa 3.64 183 *i* Pn **Pn 22 58 51.1 +0.7**
CONA *e*Sn **Sn 22 59 33.6 -0.4**
comp=Z,0.2nm,0.1s
CONA Conrad Observa 3.64 183 Pn **Pn 22 58 51.1 +0.7**
BSD Bornholm Skovb 3.64 349 *i* P **Pn 22 58 51.3 +1.0**
BSD *i* S **Sn 22 59 31.4 -2.5**
BSD Bornholm Skovb 3.64 349 *i* P **Pn 22 58 51.3 +1.0**
BSD *i* S **Sn 22 59 31.4 -2.5**
MOA Molln 3.90 199 *i* Pn **Pn 22 58 54.6 +0.6**
comp=Z,0.5nm,0.2s
MOA Molln 3.90 199 Pn **Pn 22 58 54.6 +0.6**
comp=Z,0.5nm,0.2s
LUNU Lund 4.39 340 *i* P **Pn 22 59 01.0 +0.4**
SNR=49
LUNU *i* S **Sn 22 59 51.5 -0.9**
SNR=49

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*CSEM **03** 23:04:57.3±0.5, 37°.99N×37°.20E, h12km, MD2.5, Error ellipse: s-maj=11.5km s-min=10.6km az=16.0*
*ISK **03** 23:04:57.1, 38°.00N×37°.21E, h15km, MD2.4*
*DDA **03** 23:05:03.6, 37°.43N×37°.38E, h7km, Md2.5*
ISC 03 23:04:57.4±1.3, 37°.97N±0°.05×37°.19E±0°.04, h27km±14km, n18, σ1°.16/23, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KMRS	**Kahramanmaras**	**0.52**	**207**	*e*PG	**Pb**	**23 05 08.2**	**+0.2**
KMRS	**Kahramanmaras**	**0.52**	**207**	*e*Pg	**Pb**	**23 05 08.2**	**+0.2**
HCB	**Kahramanmara¯**	**0.66**	**200**	*i* P	**Pb**	**23 05 11.2**	**+0.8**
HCB				*i* S	**Sb**	**23 05 17.1**	**-2.2**
AKCD	**Akcadag**	**0.66**	**60**	*i* P	Pn	23 05 23.0	+12
AKCD				*i* S	Sn	23 05 35.4	+15
GZT	**Gaziantep**	**0.68**	**154**	*i* P	Pb	23 05 06.5	-4.4
GAZ	**Gaziantep**	**0.80**	**179**	*e*PG	**Pn**	**23 05 13.5**	**+0.6**
GAZ	**Gaziantep**	**0.80**	**179**	*e*Pg	**Pn**	**23 05 13.5**	**+0.6**
KAMA	**Osmaniye**	**0.88**	**208**	*i* P	Pn	23 05 18.3	+4.1
KAMA				*i* S	**Sn**	**23 05 29.1**	**+2.9**
KUZU	**Kuzuini**	**1.20**	**184**	P	**Pn**	**23 05 18.5**	**0.0**
KUZU	**Kuzuini**	**1.20**	**184**	*i* P	**Pn**	**23 05 18.5**	**0.0**
KUZU				*i* S	**Sn**	**23 05 31.6**	**-2.2**
BNN	**Bunyan**	**1.38**	**310**	*e*PN	**Pb**	**23 05 22.2**	**-0.3**
BNN	**Bunyan**	**1.38**	**310**	*e*Pn	**Pb**	**23 05 22.3**	**-0.3**
URFA	**Urfa**	**1.40**	**112**	*e*PN	**Pb**	**23 05 23.3**	**+0.4**
URFA				*e*SN	**Sb**	**23 05 40.9**	**+0.6**
URFA	**Urfa**	**1.40**	**112**	*e*Pn	**Pb**	**23 05 23.3**	**+0.4**
URFA				*e*Sn	**Sb**	**23 05 40.9**	**+0.6**
SURC	**SANLIURFA_SURC**	**1.57**	**133**	P	**Pb**	**23 05 25.4**	**-0.4**
SURC	**SANLIURFA_SURC**	**1.57**	**133**	*i* P	**Pb**	**23 05 25.4**	**-0.4**
SURC				*i* S	**Sn**	**23 05 41.4**	**-1.7**
TAHT	**Tahtakopru-Hat**	**1.78**	**207**	*e*PN	**Pb**	**23 05 28.8**	**-0.6**
TAHT				*e*SN	**Sb**	**23 05 52.0**	**+0.7**
TAHT	**Tahtakopru-Hat**	**1.78**	**207**	*e*Pn	**Pb**	**23 05 28.8**	**-0.6**
TAHT				*e*Sn	**Sb**	**23 05 52.0**	**+0.7**

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*ISCJB **03** 23:26:32.7±2.3, 6°.34N±0°.04×123°.71E±0°.04, h4km±15km, mb3.5/7, Error ellipse: s-maj=7.3km s-min=6.8km az=170.7*
*IDC **03** 23:26:34.0±0.9, 6°.30N×123°.75E, h0km, mb3.7/7, mb1 3.8/8, mb1mx3.6/36, mbtmp3.6/8, Error ellipse: s-maj=23.5km s-min=16.8km az=58.0*
*MAN **03** 23:26:36, 6°.51N×123°.79E, h21km, mb4.6, ML3.5, MS3.4*
ISC 03 23:26:34.0±2.5, 6°.42N±0°.07×123°.78E±0°.06, h3km±16km, n16, σ0°.87/22, mb3.6/7, 1C-2D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTBH	**Cotabato--PC H**	**0.93**	**30**	*e*P	**Pg**	**23 26 52.1**	**+0.3**
CTBH				*e*S	**Sb**	**23 27 05.0**	**-0.3**
KCP	**Kidapawan**	**1.43**	**66**	*e*P	**Pn**	**23 26 59.9**	**-1.1**
KCP				*i* S	**Sg**	**23 27 19.2**	**-0.8**
PAGZ	**Pagadian**	**1.47**	**345**	*e*P	**Pn**	**23 27 01.5**	**+0.1**
PAGZ				*e*S	**Sb**	**23 27 19.9**	**-1.3**
IPIL	**Ipil**	**1.81**	**319**	*e*P	**Pn**	**23 27 06.3**	**+0.2**
IPIL				*e*S	**Sn**	**23 27 28.1**	**-1.5**
DAV	**Davao City (W)**	**1.91**	**70**	Pn	**Pb**	**23 27 09.2**	**-0.2**
	58nm,0.3s,baz=348,slow=11,SNR=11						
DAV				Sn	**Sg**	**23 27 35.5**	**+0.2**
	25nm,0.3s,baz=223,slow=19,SNR=5.4						
DAV				LR	LR	23 28 02.1	
	comp=Z,700nm,18.7s,baz=296,slow=45						
BUKP	**Musuan**	**1.93**	**41**	*e*P	**Pn**	**23 27 08.6**	**+0.8**
CGP	**Cagayan de Oro**	**2.22**	**24**	*e*P	**Pb**	**23 27 14.3**	**-0.5**
CGP				*e*S	**Sb**	**23 27 43.4**	**+0.8**
MATI	**Mati**	**2.52**	**78**	*e*P	**Pn**	**23 27 16.8**	**+0.9**
JAY	**Jayapura**	**19.09**	**117**	P	**P**	**23 30 57.2**	**-0.8**
FITZ	**Fitzroy Crossi**	**24.43**	**176**	P	**P**	**23 31 54.2**	**+0.1**
	1.3nm,0.8s,baz=12,slow=6.8,SNR=2.2						
CMAR	**Chiang Mai Arr**	**27.00**	**299**	P	**P**	**23 32 18.1**	**+0.7**
	0.5nm,0.3s,baz=98,slow=3.7,SNR=2.4						
WRA	**Warramunga Arr**	**28.18**	**159**	P	**P**	**23 32 26.7**	**-1.2**
	0.9nm,0.7s,baz=338,slow=9.9,SNR=4.6						
ASAR	**Alice Springs**	**31.50**	**162**	P	**P**	**23 32 56.9**	**-0.4**
	0.4nm,0.7s,baz=338,slow=7.0,SNR=5.0						
STKA	**Stephens Creek**	**41.70**	**157**	P	**P**	**23 34 24.0**	**-0.2**
	1.8nm,0.6s,baz=339,slow=9.4,SNR=4.2						
SONM	**Songino Array**	**43.86**	**343**	P	**P**	**23 34 42.7**	**+1.0**
	0.4nm,0.6s,baz=166,slow=7.4,SNR=3.9						
MKAR	**Makanchi Array**	**53.69**	**326**	P	**P**	**23 35 58.2**	**+1.0**
	0.2nm,0.3s,baz=134,slow=7.0,SNR=3.7						

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*GUC **03** 23:43:28.4±0.7, 34°.06S×72°.14W, h21km±142km, ML3.0*
*ISCJB **03** 23:43:29.7±1.1, 34°.06S±0°.05×72°.1W±0°.1, h10km, Error ellipse: s-maj=14.9km s-min=4.2km az=24.5*
*SJA **03** 23:44:07.4±1.0, 32°.74S×69°.46W, h33km±5km, ML2.0, MW3.1*
ISC 03 23:43:28.9±1.8, 34°.05S±0°.07×72°.1W±0°.1, h10km, n14, σ1°.72/20, 1C, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHPI	**Pichilemu**	**0.35**	**169**	*i* P	**Pg**	**23 43 35.6**	**-0.2**
CHPI				*i* S	**Sg**	**23 43 40.8**	**+0.3**
ANTU	**Antumapu**	**1.30**	**69**	*i* P	**Pn**	**23 43 52.1**	**-1.0**
ANTU				*i* S	**Sb**	**23 44 10.1**	**-0.1**
ROCH	**El Roble**	**1.40**	**40**	*i* P	**Pn**	**23 43 53.8**	**-0.9**
ROCH				*i* S	**Sn**	**23 44 12.9**	**-0.5**
ROCH				IAML		23 44 21.1	
	comp=E,460nm,0.6s						
CLCH	**Cerro Calan**	**1.45**	**64**	*i* P	**Pn**	**23 43 54.8**	**-0.4**
CLCH				*i* S	**Sn**	**23 44 13.9**	**-0.4**
CLCH				IAML		23 44 17.4	
	comp=N,400nm,0.6s						
PEL	**Peldehue**	**1.48**	**53**	*i* P	**Pn**	**23 43 54.7**	**-0.9**
PEL				*i* S	**Sn**	**23 44 14.9**	**-0.1**
PEL				IAML		23 44 22.1	
	comp=E,374nm,0.4s						
CCHI	**Chillan**	**2.55**	**180**	*e*P	**Pn**	**23 44 11.8**	**+1.5**
CCHI				*e*S	**Sb**	**23 44 44.0**	**-2.0**
AAGR	**Agrelo**	**2.88**	**71**	*i* P	**Pb**	**23 44 20.9**	**+0.4**
ARCO	**CERRO ARCO**	**2.90**	**66**	*i* P	**Pb**	**23 44 19.9**	**-0.9**
ARCO				*i* S	Sn	23 44 25.5	-25
ARCO				IAML		23 44 26.2	
	comp=Z,98nm,0.5s						
AUSP	**Uspallata**	**2.91**	**52**	*i* P	**Pb**	**23 44 19.6**	**-1.4**
ASAL	**Salagasta**	**3.09**	**63**	*i* P	**Pn**	**23 44 20.1**	**+2.3**
RTLS	**Leoncito**	**3.25**	**47**	*i* P	**Pb**	**23 44 26.5**	**-0.3**
RTCV	**Cerro Valdivia**	**3.69**	**55**	*i* P	**Pn**	**23 44 29.8**	**+3.7**
RTLL	**Cerro Villicun**	**4.08**	**49**	*i* P	**Pn**	**23 44 35.6**	**+4.2**
AMOG	**MOGNA**	**4.34**	**45**	*i* P	**Pn**	**23 44 35.8**	**+0.8**

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*DDA **03** 23:45:42.9, 36°.96N×26°.33E, h17km, Md3.0*
*ISK **03** 23:45:44.6, 36°.96N×26°.47E, h16km, MD3.0*
*ATH **03** 23:45:44.5, 37°.06N×26°.45E, h32km±6km, ML2.5/3, Error ellipse: s-maj=6.3km s-min=1.1km az=255.0*
*ISCJB **03** 23:45:45.2±0.7, 37°.00N±0°.03×26°.45E±0°.03, h12km±6km, Error ellipse: s-maj=5.5km s-min=3.9km az=178.3*
*CSEM **03** 23:45:45.3±0.2, 37°.02N×26°.45E, h15km, MD3.0, Error ellipse: s-maj=4.3km s-min=3.7km az=171.0*
ISC 03 23:45:43.3±1.3, 36°.97N±0°.03×26°.36E±0°.03, h4km±10km, n46, σ0°.90/64, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
APE	**Apeiranthos**	**0.67**	**279**	*e*PG	**Pn**	**23 45 59.8**	**+0.1**
APE				*e*SG	**Sn**	**23 46 10.8**	**+0.1**
APE	**Apeiranthos**	**0.67**	**279**	P	**Pn**	**23 45 59.2**	**-0.5**
APE	**Apeiranthos**	**0.67**	**279**	*e*Pg	**Pn**	**23 45 59.8**	**+0.1**
APE				S	**Sn**	**23 46 10.6**	**-0.1**
APE	**Apeiranthos**	**0.67**	**279**	P	**Pn**	**23 45 59.2**	**-0.5**
APE				S	**Sn**	**23 46 10.6**	**-0.1**
APE				AML	AML	23 46 12.7	
	comp=E,232μm,0.2s						
APE				AML	AML	23 46 13.3	
	comp=N,246μm,0.2s						
NISR	**Nisiros**	**0.71**	**120**	P	**Pn**	**23 45 59.2**	**-0.9**
NISR				S	**Sb**	**23 46 09.4**	**+1.1**
NISR	**Nisiros**	**0.71**	**120**	P	**Pn**	**23 45 59.2**	**-0.9**
NISR				S	**Sb**	**23 46 09.4**	**+1.1**
NISR				AML	AML	23 46 12.3	
	comp=N,728μm,0.3s						
NISR				AML	AML	23 46 13.6	
	comp=E,1241μm,0.4s						
BODT	**Bodrum**	**0.76**	**83**	*e*PG	**Pg**	**23 45 58.1**	**+0.1**
BODT				*e*SG	**Sg**	**23 46 08.7**	**+0.8**
BODT	**Bodrum**	**0.76**	**83**	*e*Pg	**Pg**	**23 45 58.1**	**+0.1**
BODT				*e*Sg	**Sg**	**23 46 08.7**	**+0.8**
SMG	**Samos**	**0.83**	**27**	P	**Pg**	**23 45 59.1**	**-0.1**
SMG				S	**Sg**	**23 46 09.7**	**-0.3**
SMG	**Samos**	**0.83**	**27**	P	**Pg**	**23 45 59.1**	**-0.1**
SMG				S	**Sg**	**23 46 09.7**	**-0.3**
SMG				AML	AML	23 46 12.4	
	comp=N,1286μm,0.4s						
SMG				AML	AML	23 46 12.7	
	comp=E,1584μm,0.2s						
BDRM	**Kayabasi**	**0.87**	**83**	P	**Pg**	**23 45 59.9**	**-0.1**
BDRM				S	**Sb**	**23 46 12.9**	**-0.1**
BDRM	**Kayabasi**	**0.87**	**83**	*i* P	**Pg**	**23 45 59.9**	**-0.1**
BDRM				*i* S	**Sb**	**23 46 12.9**	**-0.1**
GCAM	**G?zelcaml?**	**1.01**	**43**	P	**Pb**	**23 46 03.1**	**-0.2**
GCAM				S	**Sg**	**23 46 15.9**	**+0.3**
GCAM	**G?zelcaml?**	**1.01**	**43**	*i* P	**Pb**	**23 46 03.1**	**-0.2**
GCAM				*i* S	**Sg**	**23 46 15.9**	**+0.3**
ZEY	**¯zmir**	**1.27**	**5**	*i* P	**Pn**	**23 46 07.2**	**-0.7**
ZEY				*i* S	**Sn**	**23 46 25.1**	**-0.3**
AYDN	**Tasoluk**	**1.39**	**60**	P	**Pg**	**23 46 10.0**	**0.0**
AYDN				S	**Sn**	**23 46 30.7**	**+2.2**
AYDN	**Tasoluk**	**1.39**	**60**	*i* P	**Pg**	**23 46 10.0**	**0.0**
AYDN				*i* S	**Sn**	**23 46 30.7**	**+2.2**
URLA	**Izmir**	**1.40**	**8**	P	**Pg**	**23 46 10.1**	**-0.1**
URLA				S	**Sn**	**23 46 30.2**	**+1.6**
URLA	**Izmir**	**1.40**	**8**	*i* P	**Pg**	**23 46 10.1**	**-0.1**
URLA				*i* S	**Sn**	**23 46 30.2**	**+1.6**
CHOS	**Chios island**	**1.44**	**350**	P	**Pn**	**23 46 08.9**	**-1.3**
CHOS	**Chios island**	**1.44**	**350**	P	**Pn**	**23 46 08.9**	**-1.3**
BLCB	**Balcova**	**1.51**	**21**	*e*PN	**Pn**	**23 46 11.1**	**-0.1**
BLCB	**Balcova**	**1.51**	**21**	*e*Pn	**Pn**	**23 46 11.1**	**-0.1**
YER	**Yerkesik**	**1.54**	**83**	*e*PN	**Pn**	**23 46 10.8**	**-0.9**
YER	**Yerkesik**	**1.54**	**83**	*e*Pn	**Pn**	**23 46 10.8**	**-0.9**
AYDB	**Zeytinkoy-Aydi**	**1.56**	**51**	*e*PN	**Pn**	**23 46 11.6**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**1.56**	**51**	*e*Pn	**Pn**	**23 46 11.6**	**-0.3**
KARP	**Karpathos**	**1.56**	**155**	*e*PN	**Pn**	**23 46 11.7**	**-0.1**
KARP	**Karpathos**	**1.56**	**155**	*e*Pn	**Pn**	**23 46 11.7**	**-0.1**
KARP	**Karpathos**	**1.56**	**155**	P	**Pb**	**23 46 12.5**	**-0.3**
KARP	**Karpathos**	**1.56**	**155**	P	**Pb**	**23 46 12.5**	**-0.3**
IZM	**Izmir**	**1.59**	**26**	*e*PN	**Pb**	**23 46 12.7**	**-0.6**
IZM	**Izmir**	**1.59**	**26**	*e*Pn	**Pb**	**23 46 12.7**	**-0.6**
TURN	**Turunc**	**1.80**	**92**	*i* P	Pn	23 46 11.1	-4.0
TURN				*i* S	**Sn**	**23 46 33.8**	**-4.5**
NPS	**Neapolis**	**1.81**	**200**	P	**Pb**	**23 46 16.8**	**-0.2**
NPS	**Neapolis**	**1.81**	**200**	P	**Pb**	**23 46 16.8**	**-0.2**
LAST	**Lasithi**	**1.94**	**202**	P	**Pb**	**23 46 19.4**	**+0.1**
LAST	**Lasithi**	**1.94**	**202**	P	**Pb**	**23 46 19.4**	**+0.1**
FETY	**Fethiye**	**2.21**	**98**	*e*PN	**Pn**	**23 46 20.6**	**-0.2**
FETY	**Fethiye**	**2.21**	**98**	*e*Pn	**Pn**	**23 46 20.6**	**-0.2**
VLY	**Voula,Athens**	**2.23**	**294**	P	**Pb**	**23 46 23.9**	**-0.2**
VLY	**Voula,Athens**	**2.23**	**294**	P	**Pb**	**23 46 23.9**	**-0.2**
PRK	**Paraskevi**	**2.27**	**358**	P	**Pn**	**23 46 21.2**	**-0.4**
PRK	**Paraskevi**	**2.27**	**358**	P	**Pn**	**23 46 21.2**	**-0.4**
KULA	**Kula-Manisa**	**2.39**	**49**	*e*PN	**Pn**	**23 46 23.3**	**0.0**
KULA	**Kula-Manisa**	**2.39**	**49**	*e*Pn	**Pn**	**23 46 23.3**	**0.0**

IDC 03 23:55:09.4±1.1, 24°.31N×46°.06W, h0km, mb3.8/12, mb1 3.9/12, mb1mx3.7/43, mbtmp3.8/12, MS3.5/2, Ms1 3.5/2, ms1mx2.8/41, Error ellipse: s-maj=34.1km s-min=21.9km az=155.0, Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BBTS	**Babate**	**29.39**	**104**	LR	LR	00 09 40.6	
	comp=Z,86nm,19.6s,baz=252,slow=30						
H10N2	**ASCENSION HYDR**	**44.38**	**132**	T	T	00 51 04.0	
	baz=317,slow=75,SNR=78						
H10N3	**ASCENSION HYDR**	**44.38**	**132**	T	T	00 51 04.0	
	baz=317,slow=75,SNR=98						
H10N1	**ASCENSION HYDR**	**44.40**	**132**	T	T	00 51 05.3	
	baz=317,slow=75,SNR=82						
H10S3	**ASCENSION HYDR**	**45.08**	**133**	T	T	00 51 56.8	
	baz=318,slow=75,SNR=169						
H10S1	**ASCENSION HYDR**	**45.08**	**133**	T	T	00 51 56.9	
	baz=318,slow=75,SNR=115						
H10S2	**ASCENSION HYDR**	**45.10**	**133**	T	T	00 51 50.6	
	baz=318,slow=75,SNR=147						
LPAZ	**La Paz**	**45.74**	**210**	P	P	00 03 32.7	-0.6
	1.3nm,0.9s,baz=14,slow=4.2,SNR=4.4						
ULM	**Lac du Bonnet**	**46.22**	**317**	P	P	00 03 35.5	-0.7
	2.0nm,0.6s,baz=124,slow=3.6,SNR=2.7						
TXAR	**Lajitas Array**	**51.22**	**289**	P	P	00 04 15.8	+0.8
	0.3nm,0.8s,baz=83,slow=7.4,SNR=2.8						
GERES	**GERESS Array B**	**52.35**	**46**	P	P	00 04 22.7	-0.5
	1.1nm,1.1s,baz=243,slow=8.3,SNR=3.8						
NOA	**NORSAR Array B**	**53.30**	**31**	P	P	00 04 29.4	-0.5
	0.8nm,0.9s,baz=255,slow=7.1,SNR=2.7						
YKA	**Yellowknife Ar**	**58.83**	**330**	P	P	00 05 06.4	-3.0
	0.3nm,0.8s,baz=101,slow=7.6,SNR=3.8						
FINES	**FINESS Array B**	**60.43**	**32**	P	P	00 05 19.6	-0.9
	0.6nm,0.6s,baz=270,slow=5.7,SNR=4.8						
ARCES	**ARCESS Array B**	**61.01**	**22**	P	P	00 05 25.2	+0.9
	1.6nm,0.8s,baz=277,slow=9.7,SNR=4.8						
NVAR	**Mina Array Bea**	**61.84**	**302**	LR	LR	00 29 52.2	
	comp=Z,42nm,20.6s,baz=220,slow=34						
INK	**Inuvik**	**66.73**	**336**	P	P	00 06 01.5	-0.5
	1.4nm,1.1s,baz=85,slow=7.4,SNR=3.1						
BRTR	**Keskin Array B**	**67.27**	**55**	P	P	00 06 07.0	+0.8
	0.7nm,0.8s,baz=260,slow=6.0,SNR=6.7						
ILAR	**Eielson Array**	**72.76**	**334**	P	P	00 06 39.4	+0.1
	0.8nm,0.9s,baz=72,slow=4.7,SNR=6.0						
BVAR	**Borovoye Array**	**85.37**	**33**	P	P	00 07 48.6	0.0
	0.5nm,0.5s,baz=329,slow=5.4,SNR=2.8						
KURBB	**Kurchatov Arra**	**90.82**	**32**	P	P	00 08 14.5	-0.1
	0.5nm,0.7s,baz=315,slow=5.0,SNR=2.3						

JMA 03 23:57:59.9, 36°.70N×140°.63E, h5km±1km, M1.8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.10**	**209**	P	Pg	23 58 02.2	+0.2
JHO				S	Sg	23 58 03.8	+0.3

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*NIED **03** 23:58:00, 36°.70N×141°.80E, h35km, Mw4.3 Best double couple: M0=2.93000×10^15 NP1:φ=202.00000°, δ=23.00000°, λ=95.00000°. NP2:φ=17.00000°, δ=67.00000°, λ=88.00000°.*
*JMA **03** 23:58:03.8±0.4, 36°.72N×141°.85E, h40km, M4.1*
*ISCJB **03** 23:58:05.0±0.5, 36°.77N±0°.04×141°.77E±0°.06, h33km, mb4.0/26, MS3.5/12, Error ellipse: s-maj=7.2km s-min=5.1km az=41.2*
*IDC **03** 23:58:12.2±2.1, 37°.19N×141°.33E, h59km±17km, mb3.7/24, mb1 3.9/30, mb1mx3.8/41, mbtmp4.0/30, MS3.4/18, Ms1 3.4/18, ms1mx3.2/41, Error ellipse: s-maj=17.0km s-min=12.3km az=123.0*
ISC 03 23:58:07.6±0.6, 36°.91N±0°.06×141°.55E±0°.06, h33km, n55, σ1°.27/56, mb4.1/26, MS3.5/12, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.63**	**288**	P	**Pb**	**23 58 21.6**	**+1.2**
JFK	**Kawauchi**	**0.71**	**310**	P	**Pn**	**23 58 21.4**	**+0.1**
JHO	**Hitachi**	**0.84**	**250**	P	**Pn**	**23 58 21.6**	**-1.6**
JMM	**Marumori**	**1.13**	**328**	P	**Pn**	**23 58 27.4**	**+0.3**
JFT	**Otama**	**1.15**	**302**	P	**Pb**	**23 58 28.6**	**-0.3**
JIO	**Ouri**	**1.55**	**354**	P	**Pn**	**23 58 32.7**	**-0.2**
JFY	**Yanaizu**	**1.56**	**289**	P	**Pb**	**23 58 34.8**	**-1.0**
JOU	**Okura**	**1.62**	**334**	P	**Pb**	**23 58 35.5**	**-1.3**
JOU				S	**Sb**	**23 58 57.5**	**+0.6**
JAG	**Ashikaga**	**1.76**	**255**	P	**Pn**	**23 58 35.3**	**-0.4**
JYS	**Shiratake**	**1.76**	**318**	P	**Pn**	**23 58 37.6**	**+1.8**
JMK	**Ichinoseki**	**2.06**	**353**	P	**Pn**	**23 58 40.4**	**+0.6**
MJAR	**Matsushiro Arr**	**2.71**	**263**	P	**Pn**	**23 58 49.7**	**+0.9**
	34nm,0.3s,baz=98,slow=11,SNR=139						
MJAR				S	**Sb**	**23 59 24.4**	**-3.9**
	5.3nm,0.3s,baz=75,slow=23,SNR=4.8						
MJAR				LR	LR	00 00 12.4	
	comp=Z,600nm,18.5s,baz=105,slow=47						
MAT	**Matsushiro**	**2.71**	**263**	P	**Pn**	**23 58 50.0**	**+1.1**
MAT				*e*S	**Sn**	**23 59 23.6**	**+3.0**
JHJ	**Hachijo jima 2**	**4.05**	**202**	P	**Pn**	**23 59 06.7**	**-0.6**
	19nm,0.3s,baz=4.4,slow=13,SNR=22						
JHJ				S	**Sn**	**23 59 50.4**	**-3.1**
	15nm,0.3s,baz=50,slow=23,SNR=6.0						
JHJ				LR	LR	00 01 05.3	
	comp=Z,168nm,18.5s,baz=124,slow=41						
ASAJ	**Asahikawa**	**7.24**	**6**	P	**Pn**	**23 59 50.8**	**-0.3**
	1.6nm,0.3s,baz=251,slow=6.7,SNR=7.4						
ASAJ				S	**Sn**	**00 01 10.8**	**-1.3**
	1.5nm,0.3s,baz=109,slow=18,SNR=2.8						
JNU	**Nakatsue**	**9.53**	**250**	P	**Pn**	**00 00 26.1**	**+3.5**
	0.4nm,0.3s,baz=25,slow=14,SNR=3.6						
USRK	**Ussuriysk Ar.**	**10.29**	**318**	P	**Pn**	**00 00 31.0**	**-1.8**
	0.1nm,0.3s,baz=137,slow=18,SNR=3.1						
USRK				LR	LR	00 04 31.3	
	comp=Z,211nm,18.2s,baz=112,slow=38						
KSRS	**Korea Array**	**10.89**	**277**	P	**Pn**	**00 00 43.5**	**+2.4**
	0.4nm,0.3s,baz=94,slow=14,SNR=4.6						
KSRS				LR	LR	00 05 01.9	
	comp=Z,190nm,18.1s,baz=83,slow=38						
KLR	**Kul'dur**	**14.23**	**333**	P	**Pn**	**00 01 27.2**	**+0.6**
	0.1nm,0.3s,baz=139,slow=13,SNR=2.7						
JOW	**Kunigami**	**15.09**	**232**	LR	LR	00 07 07.7	
	comp=Z,82nm,21.3s,slow=35						
PETK	**Petropavlovsk-**	**19.74**	**30**	LR	LR	00 10 58.9	
	comp=Z,38nm,19.1s,baz=224,slow=39						
MA2	**Magadan**	**23.45**	**12**	P	**P**	**00 03 13.8**	**0.0**
	2.3nm,0.3s,baz=170,slow=9.2,SNR=4.2						
YAK	**Yakutsk**	**26.21**	**347**	P	**P**	**00 03 38.8**	**-0.2**
	15nm,0.4s,baz=160,slow=0.2,SNR=3.2						
SEY	**Seymchan**	**26.89**	**11**	P	**P**	**00 03 46.7**	**+1.6**
	1.8nm,0.7s,baz=193,slow=

CLL	Collm	81.26	330	*i* P	P	00 10 19.8	-0.3
	comp=Z,8.0nm,1.3s						
KHC	Kasperske Hory	82.71	329	*e*P	P	00 10 28.2	+0.3
GERES	GERESS Array B	82.88	328	P	P	00 10 28.5	-0.4
	comp=Z,0.9nm,0.7s,baz=31,slow=6.2,SNR=8.0						
GERES				LR	LR	00 49 05.9	
	comp=Z,40nm,19.9s,baz=258,slow=37						
TXAR	Lajitas Array	90.11	52	P	P	00 11 04.4	-0.2
	comp=Z,0.3nm,0.9s,baz=298,slow=5.7,SNR=3.1						
LPAZ	La Paz	146.66	60	PKPbc	PKPdf	00 17 45.3	-0.1
	comp=Z,0.7nm,0.8s,baz=4.0,slow=12,SNR=3.5						

*ISCJB **04** 00:11:19.4±0.4,28°.68N±0°.05×128°.68E±0°.09, h136km±5km, mb3.4/6, Error ellipse: s-maj=14.3km s-min=4.8km az=30.3*
*JMA **04** 00:11:20.6±0.2,28°.71N×128°.59E, h123km±3km, M3.7*
*IDC **04** 00:11:20.8±1.4,28°.66N×128°.80E, h138km±14km, mb3.2/7, mb1 3.4/9, mb1mx3.2/42, mbtmp3.7/9, Error ellipse: s-maj=26.9km s-min=15.7km az=94.0*

ISC 04 00:11:20.2±0.8, 28°.68N±0°.06×128°.65E±0°.08, h131km±8km, n27, σ0°87/37, mb3.4/6, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAMN	Amaminishikomi	0.63	133	P	Pn	00 11 40.4	+0.2
JAMN				*e*S	Sn	00 11 54.9	-0.4
JTAJ	Takarajima	0.68	46	P	Pn	00 11 40.6	+0.1
JTAJ				*e*S	Sn	00 11 55.4	-0.5
JAM	Amami Oshima	0.88	107	P	Pn	00 11 42.2	+0.1
JAM				*e*S	Sn	00 11 58.0	-0.7
JTK	Tokunoshima	0.93	163	P	Pn	00 11 43.0	+0.4
JTK				*e*S	Sn	00 12 00.1	+0.6
JZK	Kikaishima	1.22	107	P	Pn	00 11 46.8	+1.5
JZK				*e*S	Sn	00 12 06.1	+1.7
JOKE	Okinoerabujima	1.31	183	P	Pn	00 11 46.9	+0.5
JNN	Nakanoshima	1.58	42	P	Pn	00 11 49.6	+0.3
JIH	Iheya	1.75	200	P	Pn	00 11 51.8	+0.6
JIH				*e*S	Sn	00 12 15.0	+0.2
JOW	Kunigami	1.87	190	P	Pn	00 11 53.0	+0.3
	130nm,0.3s,baz=108,slow=22,SNR=654						
JOW				S	Sn	00 12 16.6	-0.9
	128nm,0.3s,baz=136,slow=28,SNR=18						
JOW	Kunigami	1.87	190	P	Pn	00 11 52.8	+0.1
JOW				*e*S	Sn	00 12 17.2	-0.3
JNTH	Nagotoyohara	2.22	195	P	Pn	00 11 57.5	+0.5
JKC	Kuchinoerabu	2.23	37	P	Pn	00 11 57.7	+0.7
JKC				*e*S	Sn	00 12 25.3	0.0
JYAK	Yakushimahirau	2.25	46	P	Pn	00 11 56.9	-0.4
JYAK				*e*S	Sn	00 12 24.2	-1.5
JAGN	Aguni-jima	2.43	211	P	Pn	00 12 00.0	+0.5
JAGN				*e*S	Sn	00 12 29.4	-0.3
JJT2	Tamagusuku 2	2.65	198	P	Pn	00 12 03.3	+0.9
JTN	Tanegashima 3	2.83	45	P	Pn	00 12 05.1	+0.5
JKE	Kume jima 2	2.87	216	P	Pn	00 12 05.2	0.0
JNU	Nakatsue	4.83	23	P	Pn	00 12 32.9	+1.9
	5.5nm,0.3s,baz=337,slow=4.8,SNR=34						
KSRS	Korea Array	8.77	356	P	Pn	00 13 25.6	+1.6
	0.5nm,0.3s,baz=174,slow=14,SNR=17						
MJAR	Matsushiro Arr	11.24	43	P	P	00 14 01.7	-4.2
	0.1nm,0.3s,baz=230,slow=8.0,SNR=2.7						
KLR	Kul'dur	20.66	6	P	P	00 15 47.6	-1.8
	0.4nm,0.3s,baz=133,slow=4.6,SNR=3.5						
SONM	Songino Array	25.75	324	P	P	00 16 39.5	+0.8
	0.3nm,0.4s,baz=141,slow=9.3,SNR=3.2						
MKAR	Makanchi Array	40.22	310	P	P	00 18 44.7	+0.8
	0.1nm,0.3s,baz=92,slow=10,SNR=2.3						
WRA	Warramunga Arr	48.65	173	P	P	00 19 51.3	+0.3
	1.3nm,0.7s,baz=352,slow=8.2,SNR=5.1						
ILAR	Eielson Array	62.12	29	P	P	00 21 25.8	-1.2
	0.5nm,0.6s,baz=295,slow=8.8,SNR=7.7						
INK	Inuvik	66.50	24	P	P	00 21 55.0	-0.4
	0.3nm,0.5s,baz=328,slow=3.3,SNR=3.7						
YKA	Yellowknife Ar	76.16	25	P	P	00 22 53.1	-0.4
	0.4nm,0.5s,baz=302,slow=5.9,SNR=21						

*NIED **04** 00:16:00, 39°.10N×144°.10E, h5km, Mw3.5 Best double couple: M0:1.83000×10^14 NP1:φs32.00000°, δ36.00000°, λ-76.00000°. NP2:φs195.00000°, δ55.00000°, λ-100.00000°.*

JMA 04 00:16:17.3±0.3, 39°.08N×144°.07E, h25km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	Miyakonagasawa	1.81	287	S	Sn	00 17 10.6	+1.5
JTH	Tanohata	1.91	297	*e*S	Sb	00 17 13.2	-1.7
JOM	Ohasama	2.19	281	P	Pn	00 16 54.0	+1.9
JOM				S	Sn	00 17 19.8	+1.4
JMK	Ichinoseki	2.22	268	P	Pn	00 16 54.1	+1.6
JMK				*e*S	Sn	00 17 20.6	+1.4

*ISK **04** 00:19:43.5, 38°.78N×38°.10E, h9km, MD2.7*
*DDA **04** 00:19:44.8, 38°.78N×38°.07E, h7km, Md2.7*
*CSEM **04** 00:19:44.4±0.2, 38°.76N×38°.12E, h10km, MD2.7, Error ellipse: s-maj=6.4km s-min=5.3km az=19.0*

ISC 04 00:19:44.6±1.1, 38°.79N±0°.03×38°.10E±0°.02, h8km±10km, n27, σ0°64/37, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKCD	Akcadag	0.51	196	P	Pg	00 19 54.5	0.0
AKCD	Akcadag	0.51	196	*i* P	Pg	00 19 54.5	0.0
AKCD				*i* S	Sb	00 20 03.2	-0.3
DARE	Darende-Malaty	0.53	246	*e*PG	Pg	00 19 54.6	-0.3
DARE				*e*SG	Sg	00 20 01.8	-0.1
DARE	Darende-Malaty	0.53	246	*e*Pg	Pg	00 19 54.6	-0.3
DARE				*e*Sg	Sg	00 20 01.8	-0.1
CUKAN	kangal_SIVAS	0.72	317	*i* P	Pg	00 19 58.2	-0.3
CUKAN				*i* S	Sg	00 20 08.3	+0.2
ELZG	Elazig	0.75	112	P	Pb	00 19 59.9	0.0
ELZG	Elazig	0.75	112	*i* P	Pb	00 19 59.9	0.0
ELZG				*i* S	Sb	00 20 11.1	+0.8
ILIC	ilic-Erzincan	0.76	28	*e*PG	Pg	00 19 58.9	-0.3
ILIC	ilic-Erzincan	0.76	28	*e*Pg	Pg	00 19 58.9	-0.3
PTK	Pertek	1.01	84	PG	Pg	00 20 03.4	-0.6
PTK	Pertek	1.01	84	*i* Pg	Pg	00 20 03.4	-0.6
SVRC	Sivrice-ELAZID	1.03	113	*e*PG	Pg	00 20 03.6	-0.7
SVRC	Sivrice-ELAZID	1.03	113	*e*Pg	Pg	00 20 03.6	-0.7
CUZAR	Zara_SIVAS	1.13	347	P	Pn	00 20 07.8	+1.0
CUZAR	Zara_SIVAS	1.13	347	*i* P	Pn	00 20 07.8	+1.0
CUALT	Altinyayla-SIV	1.16	295	P	Pg	00 20 05.8	-1.0
CUALT				S	Sn	00 20 22.8	-0.3
CUALT	Altinyayla-SIV	1.16	295	*i* P	Pg	00 20 05.8	-1.0
CUALT				*i* S	Sn	00 20 22.8	-0.3
SVSK	Karacayir	1.42	323	*e*PN	Pn	00 20 10.2	-0.3
SVSK	Karacayir	1.42	323	*e*Pn	Pn	00 20 10.2	-0.3
URFA	Urfa	1.46	157	*e*PN	Pn	00 20 10.6	-0.6
URFA	Urfa	1.46	157	*e*Pn	Pn	00 20 10.6	-0.6
GZT	Gaziantep	1.49	197	*i* P	Pg	00 20 14.9	+1.7
GZT				*i* S	Sg	00 20 33.0	+0.4
CUSAR	Sarkisla-SIVAS	1.58	294	P	Pg	00 20 14.6	-0.3
CUSAR	Sarkisla-SIVAS	1.58	294	*i* P	Pg	00 20 14.6	-0.3
CUSAR				*i* S	Sg	00 20 36.6	+1.2
KELT	Kelkit	1.63	33	*i* P	Pg	00 20 16.5	+0.7
KELT				*i* S	Sg	00 20 37.1	+0.3
TOKT	Tokat	1.95	322	*e*PN	Pn	00 20 17.7	-0.3
TOKT	Tokat	1.95	322	*e*Pn	Pn	00 20 17.7	-0.3

*JMA **04** 00:23:10.0±0.2, 29°.71N×139°.34E, h495km, M3.7*
*ISCJB **04** 00:23:12.2±0.4, 29°.71N±0°.04×138°.91E±0°.07, h445km, mb3.3/16, Error ellipse: s-maj=7.9km s-min=5.4km az=160.0*
*IDC **04** 00:23:12.6±1.0, 29°.70N×138°.69E, h436km±9km, mb3.1/17, mb1 3.2/23, mb1mx3.1/47, mbtmp3.9/23, Error ellipse: s-maj=14.2km s-min=13.0km az=106.0*

ISC 04 00:23:13.1±0.6, 29°.71N±0°.06×138°.90E±0°.09, h445km, n36, σ1°33/40, mb3.4/16, Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHJ2	Mitsune	3.48	13	P	P	00 24 24.7	+1.4
JHJ	Hachijo jima 2	3.48	12	P	P	00 24 24.3	+1.0
	11nm,0.3s,baz=104,slow=23,SNR=9.2						
JHJ				S	S	00 25 19.8	-0.8
	24nm,0.3s,baz=65,slow=23,SNR=6.2						
CBIJ	Chichi jima	3.90	131	P	P	00 24 25.4	-1.6
CBIJ				*e*S	S	00 25 25.4	-1.7
JCJ	Chichijima	3.90	131	P	P	00 24 25.7	-1.3
	13nm,0.3s,baz=298,slow=22,SNR=9.9						
JCJ				S	S	00 25 25.4	-1.8
	28nm,0.3s,baz=279,slow=22,SNR=8.2						
JHHJ	Haha-jima-NKT	4.22	136	*e*S	S	00 25 30.9	-1.5
JIE	Ise	5.02	339	P	P	00 24 39.6	+2.4
BSO1	Boso 1	5.23	19	P	P	00 24 39.2	+0.5
BSO1				S	S	00 25 46.9	-1.8
BSO3	Boso 3	5.25	15	*e*S	S	00 25 47.8	-1.8
BSO4	Boso 4	5.40	13	*e*S	S	00 25 51.0	-1.6
JOD2	Odawara 2	5.54	2	P	P	00 24 43.1	+0.8
JHU	Hanno	6.13	3	*e*S	S	00 26 04.7	-1.7
MJAR	Matsushiro Arr	6.83	355	P	P	00 24 54.2	-1.6
	0.4nm,0.3s,baz=204,slow=6.8,SNR=5.7						
JNU	Nakatsue	7.65	298	P	P	00 25 06.2	+1.5
	1.2nm,0.3s,baz=356,slow=4.4,SNR=9.5						
JSJ	Shimokoshiki	8.15	286	P	P	00 25 11.0	+1.1
JOW	Kunigami	9.80	256	P	P	00 25 30.9	+2.9
	baz=165,slow=19						
KSRS	Korea Array	11.96	313	P	P	00 25 51.3	-0.1
	0.3nm,0.3s,baz=130,slow=12,SNR=5.0						
ASAJ	Asahikawa	14.67	11	P	P	00 26 21.9	+1.3
	0.8nm,0.3s,baz=208,slow=9.2,SNR=5.2						
USRK	Ussuriysk Ar.	15.47	341	P	P	00 26 29.3	+0.2
	0.4nm,0.3s,baz=159,slow=14,SNR=6.7						
KLR	Kul'dur	20.24	346	P	P	00 27 17.5	+0.9
	1.6nm,0.6s,baz=137,slow=5.9,SNR=7.8						
SONM	Songino Array	30.82	315	P	P	00 28 50.9	0.0
	0.4nm,0.5s,baz=114,slow=7.0,SNR=3.2						
CMAR	Chiang Mai Arr	37.99	262	P	P	00 29 48.5	-3.1
	1.2nm,0.4s,baz=52,slow=7.2,SNR=4.5						
TIXI	Tiksi	42.34	355	P	P	00 30 25.4	-0.5
	1.1nm,0.4s,baz=125,slow=4.6,SNR=2.6						
MKAR	Makanchi Array	46.59	308	P	P	00 30 58.6	-0.8
	0.2nm,0.3s,baz=91,slow=10,SNR=3.3						
MKAR				PcP	pP	00 32 25.2	-0.1
	0.1nm,0.2s,baz=114,slow=2.5,SNR=2.1						
KURBB	Kurchatov Arra	49.15	313	P	P	00 31 17.6	-0.9
	0.4nm,0.3s,baz=100,slow=5.2,SNR=9.4						
WRA	Warramunga Arr	49.56	186	P	P	00 31 22.8	+0.8
	0.5nm,0.3s,baz=0.2,slow=7.5,SNR=3.5						
ILAR	Eielson Array	56.84	30	P	P	00 32 13.7	+0.2
	0.6nm,0.6s,baz=257,slow=4.3,SNR=6.7						
INK	Inuvik	61.87	25	P	P	00 32 47.8	+0.6
	1.2nm,0.4s,baz=286,slow=5.3,SNR=7.2						
ARCES	ARCESS Array B	70.11	340	P	P	00 33 39.1	+0.2
	0.9nm,0.5s,baz=46,slow=7.7,SNR=16						
YKA	Yellowknife Ar	71.21	28	P	P	00 33 46.1	+0.7
	0.9nm,0.6s,baz=297,slow=6.0,SNR=20						
FINES	FINESS Array B	74.31	333	P	P	00 34 03.2	-0.2
	0.5nm,0.3s,baz=58,slow=4.7,SNR=12						
NB2	NORSAR Subarra	80.10	337	P	P	00 34 34.7	-0.5
	comp=Z,0.3nm,0.5s,baz=44,slow=5.6						
NOA	NORSAR Array B	80.10	337	P	P	00 34 34.2	-1.0
	comp=Z,0.7nm,0.6s,baz=60,slow=6.2,SNR=4.5						
NVAR	Mina Array Bea	81.15	51	P	P	00 34 43.6	+2.2
	comp=Z,1.2nm,0.7s,baz=289,slow=6.0,SNR=4.5						
BRTR	Keskin Array B	82.11	311	P	P	00 34 45.9	-0.2
	comp=Z,0.2nm,0.4s,baz=110,slow=3.7,SNR=3.0						
PDAR	Pinedale Array	84.35	43	P	P	00 34 59.0	+1.5
	comp=Z,0.3nm,0.7s,baz=243,slow=1.3,SNR=3.7						
TXAR	Lajitas Array	96.29	51	P	P	00 35 53.9	+0.7
	comp=Z,0.3nm,0.8s,baz=302,slow=5.9,SNR=4.0						

*ATH **04** 00:31:02.5, 38°.85N×24°.92E, h27km±1km, ML2.3/7, Error ellipse: s-maj=1.6km s-min=0.7km az=41.0*
*DDA **04** 00:31:02.9, 38°.97N×25°.01E, h7km, Md2.8*
*ISCJB **04** 00:31:03.8±0.5, 38°.87N±0°.03×24°.93E±0°.03, h25km±5km, Error ellipse: s-maj=5.6km s-min=3.0km az=156.2*
*CSEM **04** 00:31:03.8±0.1, 38°.84N×24°.92E, h20km, ML2.3, Error ellipse: s-maj=4.8km s-min=2.4km az=154.0*
*ISK **04** 00:31:04.6, 39°.09N×24°.94E, h12km, MD3.2*

ISC 04 00:31:03.2±1.1, 38°.85N±0°.03×24°.91E±0°.02, h18km±3km, n60, σ0°55/82, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SIGR	SIGRI	0.82	64	P	Pg	00 31 19.3	+0.1
SIGR				S	Sb	00 31 29.6	0.0
SIGR	SIGRI	0.82	64	P	Pg	00 31 19.3	+0.1
SIGR				S	Sb	00 31 29.6	0.0
SIGR				AML	AML	00 31 32.4	
	comp=E,452μm,0.5s						
SIGR				AML	AML	00 31 33.0	
	comp=N,360μm,0.3s						
AOS	Alonnisos	0.86	292	P	Pg	00 31 19.9	-0.1
AOS				S	Sg	00 31 31.3	0.0
AOS	Alonnisos	0.86	292	P	Pg	00 31 19.9	-0.1
AOS				S	Sg	00 31 31.3	0.0
AOS				AML	AML	00 31 35.2	
	comp=E,206μm,0.2s						
AOS				AML	AML	00 31 36.7	
	comp=N,261μm,0.3s						
EREA	Eretria	0.88	241	P	Pb	00 31 19.6	-0.3
EREA				S	Sn	00 31 33.4	+0.5
EREA	Eretria	0.88	241	P	Pb	00 31 19.6	-0.3
EREA				S	Sn	00 31 33.4	+0.5
EREA				AML	AML	00 31 35.7	
	comp=E,424μm,0.4s						
EREA				AML	AML	00 31 36.1	
	comp=N,524μm,0.3s						
CHOS	Chios island	1.01	117	P	Pb	00 31 22.1	-0.1
CHOS				S	Sb	00 31 34.7	-0.5
CHOS	Chios island	1.01	117	P	Pb	00 31 22.1	-0.1
CHOS				S	Sb	00 31 34.7	-0.5
CHOS				AML	AML	00 31 37.0	
	comp=N,480μm,0.4s						
CHOS				AML	AML	00 31 37.5	
	comp=E,569μm,0.4s						
LIA	Limnos Island	1.06	12	P	Pb	00 31 23.0	-0.1
LIA				S	Sb	00 31 37.3	+0.7
PRK	Paraskevi	1.13	69	P	Pg	00 31 24.9	-0.3
PRK	Paraskevi	1.13	69	P	Pg	00 31 24.9	-0.3
PTL	Penteli	1.15	226	P	Pn	00 31 24.1	-0.2
PTL				S	Sg	00 31 41.1	+0.7
PTL	Penteli	1.15	226	P	Pn	00 31 24.1	-0.2
PTL				S	Sg	00 31 41.1	+0.7
PTL				AML	AML	00 31 44.6	
	comp=N,178μm,0.4s						
PTL				AML	AML	00 31 45.0	
	comp=E,156μm,0.5s						
SKIA	Skiathos	1.17	286	P	Pg	00 31 25.5	-0.3
SKIA	Skiathos	1.17	286	P	Pg	00 31 25.5	-0.3
ATH	Athens Observa	1.28	227	P	Pb	00 31 26.4	-0.4
SMIA	Simia	1.32	272	P	Pg	00 31 29.0	+0.2
SMIA				S	Sg	00 31 45.7	-0.4
SMIA	Simia	1.32	272	P	Pg	00 31 29.0	+0.2
SMIA				S	Sg	00 31 45.7	-0.4
SMIA				AML	AML	00 31 50.3	
	comp=E,328μm,0.6s						
SMIA				AML	AML	00 31 52.4	
	comp=N,384μm,0.5s						
VLY	Voula,Athens	1.33	222	P	Pn	00 31 25.9	-0.9
VLY	Voula,Athens	1.33	222	P	Pn	00 31 25.9	-0.9
BOZC	Bozcaada	1.33	42	*i* P	Pn	00 31 25.5	-1.3
BOZC				*i* S	Sn	00 31 42.3	-1.7
NEO	Neokhori	1.39	290	P	Pb	00 31 28.2	-0.4
NEO				S	Sb	00 31 46.7	+0.8
NEO	Neokhori	1.39	290	P	Pb	00 31 28.2	-0.4
NEO				S	Sb	00 31 46.6	+0.8
NEO				AML	AML	00 31 51.8	
	comp=E,128μm,0.5s						
NEO				AML	AML	00 31 52.3	
	comp=N,176μm,0.3s						
ZEY	Ζmir	1.39	116	*i* P	Pb	00 31 28.7	+0.1
VILL	Villia	1.43	242	P	Pn	00 31 28.2	0.0
XOR	Xorichti	1.43	292	P	Pb	00 31 29.8	+0.5
XOR	Xorichti	1.43	292	P	Pb	00 31 29.8	+0.5
VIL2	Platees	1.44	244	P	Pn	00 31 28.2	-0.1
AYVA	Ayvalik	1.46	71	P	Pn	00 31 29.1	+0.5
AYVA				S	Sn	00 31 47.7	+0.5
AYVA	Ayvalik	1.46	71	*i* P	Pn	00 31 29.1	+0.5
AYVA				*i* S	Sn	00 31 47.7	+0.5
EZN	Ezine	1.47	48	*e*PN	Pb	00 31 29.6	-0.3
EZN				*e*SN	Sn	00 31 47.5	+0.1
EZN	Ezine	1.47	48	*e*Pn	Pb	00 31 29.6	-0.3
EZN				*e*Sn	Sn	00 31 47.5	+0.1
LKR	Lokris	1.50	263	P	Pn	00 31 29.2	0.0
LKR	Lokris	1.50	263	P	Pn	00 31 29.2	0.0
DKL	Dikili	1.57	81	*e*PN	Pb	00 31 32.2	+0.5
DKL	Dikili	1.57	81	*e*Pn	Pb	00 31 32.2	+0.5
SMTH	Samothraki Isl	1.69	16	P	Pn	00 31 31.1	-0.6
SMTH	Samothraki Isl	1.69	16	P	Pn	00 31 31.1	-0.6
LTK	Loutraki	1.73	242	P	Pn	00 31 32.3	-0.1
LTK	Loutraki	1.73	242	P	Pn	00 31 32.3	-0.1
GELI	Tayfur-Gelibol	1.96	38	*e*PN	Pn	00 31 35.7	+0.2
GELI				*e*SN	Sn	00 31 58.2	-1.4
GELI	Tayfur-Gelibol	1.96	38	*e*Pn	Pn	00 31 35.7	+0.2
GELI				*e*Sn	Sn	00 31 58.2	-1.4
LPK	Lapseki	2.09	43	*e*PN	Pn	00 31 37.9	+0.7
LPK	Lapseki	2.09	43	*e*Pn	Pn	00 31 37.9	+0.7
ENEZ	Enez	2.11	27	*e*PN	Pn	00 31 37.9	+0.3
ENEZ	Enez	2.11	27	*e*Pn	Pn	00 31 37.9	+0.3
ERIK	Erikli-Kesan	2.20	34	*e*PN	Pn	00 31 38.9	+0.2
ERIK	Erikli-Kesan	2.20	34	*e*Pn	Pn	00 31 38.9	+0.2
AYDB	Zeytinkoy-Aydi	2.51	110	*e*PN	Pb	00 31 47.8	0.0
AYDB	Zeytinkoy-Aydi	2.51	110	*e*Pn	Pb	00 31 47.8	0.0
RKY	Sarkoy-Tekirda	2.53	43	*e*PN	Pn	00 31 44.0	+0.6
RKY	Sarkoy-Tekirda	2.53	43	*e*Pn	Pn	00 31 44.0	+0.6
MRMT	Marmara Adasi	2.71	49	*e*PN	Pn	00 31 46.7	+0.8
MRMT	Marmara Adasi	2.71	49	*e*Pn	Pn	00 31 46.7	+0.8
EDC	Edincik	2.73	56	*e*PN	Pn	00 31 46.7	+0.7
EDC	Edincik	2.73	56	*e*Pn	Pn	00 31 46.7	+0.7
CRLT	Corlu	3.15	43	*e*PN	Pn	00 31 52.3	+0.6
CRLT	Corlu	3.15	43	*e*Pn	Pn	00 31 52.3	+0.6
EDRB	Edirne	3.30	25	*e*PN	Pn	00 31 54.5	+0.6
EDRB	Edirne	3.30	25	*e*Pn	Pn	00 31 54.5	+0.6

CASC 04 00:34:16.7±2.5, 12°.23N×87°.06W, h82km±11km, MD3.9, ML3.7, 1C-1D, Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TELN	Telica	0.44	31	*e*P	Pn	00 34 30.2	-0.1
TELN				*e*S	Sn	00 34 41.8	+1.4
CNGN	Cerro Negro	0.45	53	*e*P	Pn	00 34 30.2	-0.1
CNGN				*e*S	Sn	00 34 41.6	+1.2
CNGN				AML	AML	00 34 47.3	
	comp=E,3μm,0.2s						
COPN	Copaltepe	0.46	96	*e*P	Pn	00 34 30.8	+0.4
COPN				*e*S	Sn	00 34 40.4	-0.1
CRIN	San Cristobal	0.47	2	*e*P	Pn	00 34 30.8	+0.2
CRIN				*e*S	Sn	00 34 41.8	+1.0
MOMN	Momotombo	0.54	70	*e*P	Pn	00 34 30.8	-0.3
APYN	Apoyeque	0.70	89	*e*P	Pn	00 34 32.3	-0.2
XAVN	Gruta Xavier	0.72	96	*e*P	Pn	00 34 32.8	0.0
TISN	Laguna Tiscapa	0.78	96	*e*P	Pn	00 34 33.2	-0.2
CRUN	El Crucero	0.79	108	*e*P	Pn	00 34 34.1	+0.6
MGAN	Managua	0.80	96	*e*P	Pn	00 34 33.3	-0.4
MGAN				AML	AML	00 34 48.4	
	comp=N,1μm,0.3s						
CSGN	Cosiguina Volc	0.89	327	*e*P	Pn	00 34 34.5	-0.2
CSGN				*e*S	Sn	00 34 48.8	+0.7
CSGN				*e*S	S	00 34 48.9	+0.8
CSGN				*e*S	S	00 34 48.9	+0.8
MASN	Masaya	0.92	105	*e*P	Pn	00 34 35.0	-0.1
ESTN	Estel	1.10	38	*i*P	Pn	00 34 36.6	-0.6
CNCH	Conchagua	1.29	324	*e*P	Pn	00 34 39.1	-0.4
CNCH				*e*S	Sn	00 34 57.2	+0.6
BOAB	BOACO BROADBAN	.38	81	*e*P	Pn	00 34 40.1	-0.5
BOAB				*e*S	Sn	00 34 58.4	-0.2
VSM	San Miguel	1.68	315	*e*P	Pn	00 34 45.9	+1.2
VSM				*e*S	Sn	00 35 08.5	+2.6
LCY	Lacayo	1.69	315	*e*P	Pn	00 34 44.7	0.0
LCY				*e*S	Sn	00 35 07.8	+1.8
PACA	Pacayal	1.74	315	*e*P	Pn	00 34 45.6	+0.2
PACA				*e*S	Sn	00 35 06.6	-0.6
TECA	Tecapa	1.89	312	*e*P	Pn	00 34 47.5	+0.1
TECA				*e*S	Sn	00 35 08.3	-2.3
CAHU	Cacacuatique	1.90	324	*e*P	Pn	00 34 48.1	+0.6
CAHU				*e*S	Sn	00 35 12.5	+1.5
SNVI	San Vicente	2.21	309	*e*P	Pn	00 34 53.0	+1.4
SNVI				*e*S	Sn	00 35 20.2	+1.9
LFRS	El Faro	2.39	306	*e*P	Pn	00 34 54.6	+0.6
LFRS				*e*S	Sn	00 35 22.6	+0.1
LBRS	Las Brisas	2.45	308	*e*P	Pn	00 34 55.4	+0.7
BOQS	Boqueron	2.63	305	*e*P	Pn	00 34 58.3	+1.0
BOQS				*e*S	Sn	00 35 28.9	+0.4
ESPN	Las Esperanzas	2.70	90	*e*P	Pn	00 34 57.9	-0.2
SBLS	San Blas	2.96	303	*e*P	Pn	00 35 03.4	+1.6
SNJE	San Jose	2.97	304	*e*P	Pn	00 35 02.8	+1.0
JCR	Jicaral	3.04	141	⇑*e*P	Pn	00 35 04.2	+1.4
JCR				*e*S	Sn	00 35 37.9	-0.3
CGA2	Cerro Gallo 2	3.37	130	*e*P	Pn	00 35 09.9	+2.8
CGA2				*e*S	Sn	00 35 46.5	+0.3
IXG	Ixpaco	3.83	301	*e*P	Pn	00 35 14.9	+1.4
URSC	Urasca	4.01	126	*e*P	Pn	00 35 17.8	+1.9
BUS	Buena Vista	4.19	129	*e*P	Pn	00 35 21.3	+2.5
BUS				*e*S	Sn	00 36 09.0	+2.2

*NNC **04**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YKLR	**Yuktali**	**0.07**	**196**	*e*Sg	**Sg**	**01 15 21.7**	**-1.3**
KHNR	**Khani**	**0.98**	**286**	⇑*i*Pg	**Pg**	**01 15 36.6**	**-1.3**
KHNR				*e*Sg	**Sg**	**01 15 49.1**	**-1.5**
KHNR				*e*Sb	**Sn**	**01 15 54.2**	**+1.4**
KHN	**Khani**	**1.08**	**285**	*i* P	**Pg**	**01 15 36.6**	**-3.2**
KHN				*e*S	**Sg**	**01 15 48.2**	**-5.6**
CLNS	**Chul'man**	**1.77**	**83**	*e*Pg	**Pg**	**01 15 54.1**	**+1.0**
CLNS				*e*Sg	**Sg**	**01 16 17.9**	**+1.9**
CLNS	**Chul'man**	**1.77**	**83**	*e*P	**Pg**	**01 15 54.0**	**+1.0**
CLNS				*e*		01 16 18.1	
CLNS				pmax	pmax		
	comp=Z,22nm,0.2s						
CLNS				pmax	pmax		
	comp=E,13nm,0.2s						
CLNS				pmax	pmax		
	comp=N,9.0nm,0.2s						
CLNS				smax	smax		
	comp=Z,161nm,0.5s						
CLNS				smax	smax		
	comp=E,322nm,0.5s						
CLNS				smax	smax		
	comp=N,519nm,0.5s						
CLNS	**Chul'man**	**1.77**	**83**	*e*P	**Pg**	**01 15 53.6**	**+0.5**
CLNS				*e*S	**Sg**	**01 16 17.0**	**+1.0**
IENR	**Iengra**	**1.81**	**103**	*e*Pn	**Pg**	**01 15 53.6**	**-0.2**
IENR				*e*Pg	**Pb**	**01 15 54.5**	**+2.1**
IENR				*e*Sg	**Sg**	**01 16 18.8**	**+1.5**
IENR	**Iengra**	**1.81**	**103**	*e*P	**Pg**	**01 15 53.2**	**-0.6**
IENR				*e*P	**Pb**	**01 15 54.5**	**+2.1**
IENR				*e*S	**Sb**	**01 16 15.8**	**+0.7**
IENR				*e*S	**Sg**	**01 16 18.0**	**+0.7**
CRS	**Chara**	**1.90**	**279**	*e*Pn	**Pb**	**01 15 52.8**	**-1.0**
CRS				*e*Pg	**Pb**	**01 15 53.5**	**-0.3**
CRS				*e*Sg	**Sb**	**01 16 16.8**	**-0.8**
CRS				Pmax			
	comp=N,308nm,0.2s						
CRS				Smax			
	comp=N,2μm,0.6s						
CRS	**Chara**	**1.90**	**279**	*e*P	**Pb**	**01 15 53.5**	**-0.3**
CRS				*e*		01 16 17.7	
CRS				pmax	pmax		
	comp=Z,305nm,0.2s						
CRS				smax	smax		
	comp=E,1μm,0.4s						
CRS	**Chara**	**1.90**	**279**	*e*P	**Pb**	**01 15 52.8**	**-1.0**
CRS				*e*P	**Pb**	**01 15 53.5**	**-0.3**
CRS				Pmax		01 15 53.5	
	comp=Z,308nm,0.2s						
CRS				*e*S	**Sb**	**01 16 16.8**	**-0.8**
CRS				Smax		01 16 16.8	
	comp=N,2μm,0.6s						
TNDR	**Tynda**	**2.29**	**130**	*e*Pn	**Pb**	**01 15 59.2**	**-1.2**
TNDR				*e*Pg	**Pg**	**01 16 00.7**	**-2.2**
TNDR				*e*Sn	**Sn**	**01 16 26.0**	**+1.0**
TNDR				*e*Sg	**Sg**	**01 16 31.3**	**-1.1**
TNDR	**Tynda**	**2.29**	**130**	*e*P	**Pb**	**01 15 59.2**	**-1.2**
TNDR				*e*P	**Pg**	**01 16 01.2**	**-1.7**
TNDR				*e*S	**Sn**	**01 16 26.2**	**+1.2**
TNDR				*e*S	**Sg**	**01 16 31.8**	**-0.6**
TUP	**Tupik**	**2.45**	**204**	*e*Pn	**Pn**	**01 15 58.8**	**-0.3**
TUP				*e*Pg	**Pb**	**01 16 01.6**	**-1.6**
TUP				*e*Sg	**Sb**	**01 16 32.8**	**-0.7**
TUP				Pmax			
	comp=N,141nm,0.2s						
TUP				Smax			
	comp=N,576nm,0.4s						
TUP	**Tupik**	**2.45**	**204**	*e*P	**Pn**	**01 15 58.4**	**-0.7**
TUP				*e*S	**Sn**	**01 16 28.3**	**-0.8**
TUP				pmax	pmax		
	comp=Z,141nm,0.2s						
TUP				smax	smax		
	comp=E,576nm,0.6s						
TUP	**Tupik**	**2.45**	**204**	*e*P	**Pn**	**01 15 58.8**	**-0.3**
TUP				*e*P	**Pb**	**01 16 01.6**	**-1.6**
TUP				Pmax		01 16 01.6	
	comp=Z,141nm,0.2s						
TUP				*e*S	**Sb**	**01 16 32.8**	**-0.7**
TUP				Smax		01 16 32.8	
	comp=E,576nm,0.4s						
ALDR	**Aldan**	**2.79**	**44**	*e*P	**Pg**	**01 16 11.1**	**-1.5**
ALDR				*e*S	**Sg**	**01 16 47.2**	**-1.6**
NLYR	**Nelyaty**	**3.32**	**270**	*e*Pn	**Pn**	**01 16 12.3**	**+1.3**
NLYR				*e*Pg	**Pb**	**01 16 17.9**	**-0.1**
NLYR				*e*Sn	**Sn**	**01 16 49.5**	**-1.0**
NLYR				*e*Sg	**Sb**	**01 16 58.7**	**+0.3**
NLYR				Pmax			
	comp=E,38nm,0.3s						
NLYR				Smax			
	comp=E,566nm,0.6s						
NLYR	**Nelyaty**	**3.32**	**270**	*e*P	**Pn**	**01 16 12.3**	**+1.3**
NLYR				*e*		01 16 58.7	
NLYR				pmax	pmax		
	comp=Z,38nm,0.3s						
NLYR				smax	smax		
	comp=E,681nm,1.7s						
NLYR	**Nelyaty**	**3.32**	**270**	*e*P	**Pn**	**01 16 12.3**	**+1.3**
NLYR				*e*P	**Pb**	**01 16 17.9**	**-0.1**
NLYR				Pmax		01 16 17.9	
	comp=Z,38nm,0.3s						
NLYR				*e*S	**Sn**	**01 16 49.5**	**-1.0**
NLYR				*e*S	**Sb**	**01 16 58.7**	**+0.3**
NLYR				Smax		01 16 58.7	
	comp=N,566nm,0.6s						
KROS	**Kirovskiy**	**3.74**	**124**	*e*Pn	**Pn**	**01 16 19.3**	**+2.5**
KROS				*e*Sg	**Sg**	**01 17 15.9**	**-3.2**
KROS				Smax			
	comp=N,170nm,0.6s						
KROS	**Kirovskiy**	**3.74**	**124**	*e*S	**Sg**	**01 17 15.9**	**-3.2**
OLMR	**Olekminsk**	**3.78**	**351**	*e*P	**Pn**	**01 16 18.7**	**+1.4**
OLMR				*e*P	**Pb**	**01 16 27.8**	**+2.0**
OLMR				*e*S	**Sn**	**01 17 01.6**	**-0.2**
OLMR				*e*S	**Sg**	**01 17 16.6**	**-3.7**
BOD	**Bodaibo**	**4.33**	**289**	*e*Pn	**Pn**	**01 16 25.0**	**0.0**
BOD				*e*Pg	**Pb**	**01 16 36.2**	**+0.9**
BOD				*e*Sg	**Sb**	**01 17 30.2**	**+2.6**
BOD				*e*		01 17 35.0	
BOD				Pmax			
	comp=N,17nm,0.3s						
BOD				max			
	comp=N,99nm,0.4s						
BOD	**Bodaibo**	**4.33**	**289**	*e*P	**Pn**	**01 16 24.1**	**-0.9**
BOD				pmax	pmax		
	comp=Z,16nm,0.3s						
BOD	**Bodaibo**	**4.33**	**289**	*e*S	**Sb**	**01 17 30.2**	**+2.6**
BOD				Smax		01 17 30.2	
	comp=N,99nm,0.4s						
BMKR	**Bomnak**	**4.50**	**113**	*i* P	**Pg**	**01 16 41.5**	**-3.6**
BMKR				*e*S	**Sg**	**01 17 41.9**	**-1.4**
SVKR	**Severomuysk**	**4.55**	**266**	*e*Pn	**Pn**	**01 16 29.2**	**+1.2**
SVKR				*e*Pg	**Pb**	**01 16 40.5**	**+1.4**
SVKR				*e*Sg	**Sb**	**01 17 37.6**	**+3.7**
SVKR				Pmax			
	comp=N,28nm,0.2s						
SVKR				Smax			
	comp=N,375nm,0.7s						
SVKR	**Severomuysk**	**4.55**	**266**	*e*P	**Pb**	**01 16 40.5**	**+1.4**
SVKR				Pmax		01 16 40.5	
	comp=Z,28nm,0.2s						
SVKR				*e*S	**Sb**	**01 17 37.6**	**+3.7**
SVKR				Smax		01 17 37.6	
	comp=N,375nm,0.7s						
UKT	**Uakit**	**4.67**	**259**	*e*Pn	**Pn**	**01 16 30.4**	**+0.7**
UKT				*e*Pg	**Pb**	**01 16 41.0**	**-0.1**
UKT				*e*Sg	**Sb**	**01 17 40.3**	**+3.0**
UKT				Pmax			
	comp=N,10.0nm,0.5s						
UKT				Smax			
	comp=N,121nm,0.7s						
UKT	**Uakit**	**4.67**	**259**	*e*P	**Pb**	**01 16 41.3**	**+0.2**
UKT	**Uakit**	**4.67**	**259**	*e*P	**Pn**	**01 16 30.4**	**+0.7**
UKT				*e*P	**Pb**	**01 16 41.0**	**-0.1**
UKT				Pmax		01 16 41.0	
	comp=Z,10.0nm,0.5s						
UKT				*e*S	**Sb**	**01 17 40.3**	**+3.0**
UKT				Smax		01 17 40.3	
	comp=N,121nm,0.7s						
CGD	**Chagda**	**5.22**	**63**	*e*P	**Pn**	**01 16 40.0**	**+2.8**
CGD				*e*P	**Pg**	**01 16 54.8**	**-4.3**
CGD				*e*S	**Sn**	**01 17 37.8**	**+0.4**
CGD				*e*S	**Sg**	**01 18 03.0**	**-3.6**
VTMR	**Vitim**	**5.59**	**304**	*e*S	**Sb**	**01 18 10.7**	**+6.9**
KMO	**Kumora**	**5.90**	**267**	*e*Pn	**Pn**	**01 16 47.8**	**+1.4**
KMO				*e*Sg	**Sb**	**01 18 19.6**	**+7.1**
KMO				Smax			
	comp=N,176nm,1.2s						
KMO	**Kumora**	**5.90**	**267**	*e*S	**Sb**	**01 18 19.6**	**+7.1**
KMO				Smax		01 18 19.6	
	comp=N,176nm,1.2s						
YLYR	**Ulyunkhan**	**6.21**	**258**	*e*Pn	**Pn**	**01 16 51.2**	**+0.5**
YLYR				*e*Pg	**Pb**	**01 17 09.3**	**+2.1**
YLYR				*e*		01 17 15.3	
YLYR				*e*Sg	**Sb**	**01 18 28.0**	**+6.6**
YLYR				max			
	comp=N,5.0nm,0.6s						
YLYR				Smax			
	comp=N,84nm,1.2s						
YLYR	**Ulyunkhan**	**6.21**	**258**	*e*P	**Pb**	**01 17 09.3**	**+2.1**
YLYR				Pmax		01 17 09.3	
	comp=Z,5.0nm,0.6s						
YLYR				*e*S	**Sb**	**01 18 28.0**	**+6.6**
YLYR				Smax		01 18 28.0	
	comp=N,84nm,1.2s						
TBGR	**Tabaga**	**6.58**	**35**	*e*P	**Pn**	**01 16 57.9**	**+2.1**
TBGR				*e*S	**Sn**	**01 18 10.3**	**-0.5**
TBGR				*e*S	**Sg**	**01 18 44.8**	**-5.4**
NBS	**Nizhniy Bestya**	**6.75**	**35**	*e*P	**Pn**	**01 16 59.7**	**+1.7**
NBS				*e*S	**Sn**	**01 18 13.3**	**-1.5**
NBS				*e*S	**Sg**	**01 18 49.0**	**-6.4**
YAK	**Yakutsk**	**6.75**	**34**	*e*S	**Sn**	**01 18 13.9**	**-1.1**
YAK				*e*S	**Sg**	**01 18 50.1**	**-5.6**
NIZ	**Nizh Angarsk**	**6.84**	**268**	*e*Pn	**Pn**	**01 17 00.6**	**+1.3**
NIZ				*e*Pg	**Pb**	**01 17 21.9**	**+4.0**
NIZ				*e*Sn	**Sn**	**01 18 12.6**	**-4.5**
NIZ				*e*Sg	**Sb**	**01 18 47.3**	**+7.8**
NIZ				Pmax			
	comp=N,2.0nm,0.1s						
NIZ				Smax			
	comp=N,48nm,1.2s						
NIZ	**Nizh Angarsk**	**6.84**	**268**	*e*P	**Pb**	**01 17 21.9**	**+4.0**
NIZ				Pmax		01 17 21.9	
	comp=Z,2.0nm,0.1s						
NIZ				*e*S	**Sb**	**01 18 47.3**	**+7.8**
NIZ				Smax		01 18 47.3	
	comp=N,48nm,1.2s						
SYVR	**Suvo**	**7.34**	**251**	*e*Sg	Sb	01 19 02.6	+8.5
SYVR				Smax			
	comp=N,98nm,1.0s						
SYVR	**Suvo**	**7.34**	**251**	*e*S	Sb	01 19 02.6	+8.5
SYVR				Smax		01 19 02.6	
	comp=E,98nm,1.0s						
OGRR	**Ongureny**	**8.62**	**255**	*e*Sg	Sg	01 19 43.8	-12
OGRR				Smax			
	comp=E,43nm,1.2s						
OGRR	**Ongureny**	**8.62**	**255**	*e*S	Sg	01 19 43.8	-12
OGRR				Smax		01 19 43.8	
	comp=N,43nm,1.2s						
OGRR				*e*S		01 20 26.3	
OGRR				Smax		01 20 26.3	
	comp=E,173nm,0.7s						
OGRR				*e*S		01 21 16.6	
OGRR				Smax		01 21 16.6	
	comp=E,11nm,1.4s						
OGRR				*e*S		01 21 46.0	
OGRR				Smax		01 21 46.0	
	comp=E,26nm,1.5s						
HRMR	**Khuramsha**	**10.00**	**246**	*e*Sg	Sn	01 20 26.3	+51
HRMR				Smax			
	comp=E,173nm,0.7s						
TLY	**Talaya**	**11.68**	**252**	*e*Sg		01 21 16.6	
TLY				Smax			
	comp=E,11nm,1.4s						
ARS	**Arshan**	**12.20**	**255**	*e*Sg		01 21 33.4	
ARS				Smax			
	comp=E,34nm,1.0s						
ZAK	**Zakamensk**	**12.61**	**248**	*e*Sg		01 21 46.0	
ZAK				Smax			
	comp=E,26nm,1.5s						

*IDC **04** 01:16:43.6±3.1, 35°.85N×70°.39E, h81km±26km, mb3.5/11, mb1 3.7/17, mb1mx3.5/46, mbtmp3.9/17, Error ellipse: s-maj=23.5km s-min=17.8km az=10.0*
*ISCJB **04** 01:16:45.0±0.4, 36°.01N±0°.03×70°.59E±0°.06, h110km, mb3.6/13, Error ellipse: s-maj=7.0km s-min=4.4km az=154.9*
*MOS **04** 01:16:45.3±1.4, 36°.07N×70°.43E, h97km, mb4.1/10, Error ellipse: s-maj=12.9km s-min=5.6km az=85.3*
*NNC **04** 01:16:51.6±2.4, 36°.52N×70°.17E, h139km±19km, mb3.6, mpv4.3, Error ellipse: s-maj=20.9km s-min=12.4km az=173.0*

ISC 04 01:16:45.5±0.6, 35°.98N±0°.05×70°.42E±0°.05, h110km, n65, σ2.36/79, mb3.5/13, 15C-12D, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**3.10**	**336**	⇓P	**Pn**	**01 17 31.6**	**-1.3**
	26nm,0.3s						
DZET				⇓S	**Sn**	**01 18 05.1**	**-4.4**
	630nm,0.4s						
DZET	**Dzherino**	**3.10**	**336**	PN	**Pn**	**01 17 31.6**	**-1.3**
DZET				pmax	pmax		
	comp=Z,35nm,0.4s						
SFK	**Sufi-Kurgan**	**4.71**	**30**	⇓P	**Pn**	**01 17 56.1**	**+1.5**
	comp=Z,17nm,0.2s						
SFK				⇑S	**Sn**	**01 18 48.4**	**+0.1**
	comp=Z,207nm,0.3s						
SFK	**Sufi-Kurgan**	**4.71**	**30**	PN	**Pn**	**01 17 55.7**	**+1.1**
SFK				S	**Sn**	**01 18 48.3**	**+0.1**
SFK				pmax	pmax		
	comp=Z,17nm,0.2s						
SFK				smax	smax		
	comp=N,218nm,0.3s						
KSH	**Kashi**	**5.64**	**50**	Pn	**Pn**	**01 18 04.6**	**-2.5**
KSH				Sn	Sn	01 19 02.0	-8.7
KSH				smax	smax		
	comp=N,350nm,0.6s						
KSH				smax	smax		
	comp=E,250nm,0.3s						
MNAS	**Manas**	**6.70**	**13**	⇑P	**Pn**	**01 18 21.2**	**-0.2**
	comp=E,12nm,0.6s						
MNAS				⇓S	**Sn**	**01 19 31.6**	**-4.7**
	comp=E,40nm,0.3s						
MNAS	**Manas**	**6.70**	**13**	PN	**Pn**	**01 18 20.9**	**-0.5**
MNAS				pmax	pmax		
	comp=Z,12nm,0.6s						
KK31	**Karatay Array**	**7.12**	**1**	⇓P	**Pn**	**01 18 26.1**	**-0.9**
	comp=Z,8.4nm,0.3s,baz=181,slow=12,SNR=272						
KK31				⇑S	**Sn**	**01 19 41.8**	**-4.5**
	comp=Z,6.9nm,0.3s,baz=181,slow=26,SNR=4.4						
KK31	**Karatay Array**	**7.12**	**1**	PN	**Pn**	**01 18 25.6**	**-1.4**
KK31				pmax	pmax		
	comp=Z,8.0nm,0.4s						
AAK	**Ala-Archa**	**7.36**	**24**	P	**Pn**	**01 18 30.5**	**+0.1**
	comp=Z,4.7nm,0.3s,baz=288,slow=2.8,SNR=26						
AAK				S	**Sn**	**01 19 49.7**	**-2.6**
	comp=Z,8.2nm,0.3s,baz=201,slow=13,SNR=23						
AAK	**Ala-Archa**	**7.36**	**24**	⇑P	**Pn**	**01 18 30.3**	**-0.1**
	comp=Z,9.7nm,0.4s						
AAK				⇑S	**Sn**	**01 19 49.8**	**-2.6**
	comp=Z,77nm,0.5s						
AAK	**Ala-Archa**	**7.36**	**24**	*i* PN	**Pn**	**01 18 30.1**	**-0.3**
AAK				pmax	pmax		
	comp=Z,10.0nm,0.4s						
SMLA	**Simla**	**7.42**	**129**	*e*P	**Pn**	**01 18 32.2**	**+1.1**
SMLA				*e*S	**Sn**	**01 19 52.2**	**-1.5**
FRU	**Bishkek**	**7.58**	**24**	*e*PN	**Pn**	**01 18 36.0**	**+2.8**
TKM2	**Tokmak 2**	**8.01**	**28**	⇑P	**Pn**	**01 18 38.8**	**-0.4**
	comp=Z,6.9nm,0.4s						
TKM2				⇓S	**Sn**	**01 20 04.1**	**-4.1**
	comp=Z,26nm,0.6s						
TKM2	**Tokmak 2**	**8.01**	**28**	PN	**Pn**	**01 18 38.2**	**-1.0**
TKM2				pmax	pmax		
	comp=Z,12nm,0.7s						
NDI	**New Delhi**	**9.27**	**140**	*e*P	**Pn**	**01 18 54.0**	**-2.2**
NDI				*e*S	**Sn**	**01 20 31.0**	**-7.6**
GEYT	**Alibeck**	**10.04**	**285**	P	**Pn**	**01 19 04.5**	**-2.2**
	comp=Z,4.1nm,0.3s,baz=107,slow=10.0,SNR=35						
GEYT				S	**Sn**	**01 20 51.4**	**-5.9**
	comp=Z,6.6nm,0.3s,baz=94,slow=15,SNR=11						
OTUK	**Ortayu**	**12.34**	**6**	⇑P	**Pn**	**01 19 35.9**	**-1.4**
	comp=Z,2.5nm,0.6s						
OTUK				⇑S	Sn	01 21 42.1	-11
	comp=Z,6.7nm,0.7s						
PYUN	**Piuthan**	**13.23**	**123**	*e*P	**Pn**	**01 19 47.4**	**-1.9**
	comp=Z,25nm,0.3s						
MAKZ	**Makanchi**	**13.85**	**35**	⇓P	**Pn**	**01 19 57.7**	**+0.6**
	comp=Z,11nm,0.7s						
MAKZ	**Makanchi**	**13.85**	**35**	P	**Pn**	**01 19 57.6**	**+0.6**
MAKZ				pmax	pmax		
	comp=Z,11nm,0.7s						
KOLN	**Koldanda**	**13.86**	**122**	*e*P	**Pn**	**01 19 55.7**	**-1.7**
	comp=Z,12nm,0.3s						
MK31	**Makanchi Array**	**13.99**	**36**	P	**Pn**	**01 19 59.4**	**+0.5**
	comp=Z,3.3nm,0.6s,baz=214,slow=12,SNR=24						
MK31	**Makanchi Array**	**13.99**	**36**	*i* P	**Pn**	**01 19 59.3**	**+0.5**
MK31				pmax	pmax		
	comp=Z,3.0nm,0.6s						
MKAR	**Makanchi Array**	**13.99**	**36**	P	**Pn**	**01 19 59.9**	**+1.1**
	comp=Z,0.3nm,0.3s,baz=224,slow=12,SNR=10						
GKN	**Gorkha**	**14.44**	**119**	*e*P	**Pn**	**01 20 03.3**	**-1.5**
	comp=Z,28nm,0.3s						
KKN	**Kakani**	**15.02**	**119**	*e*P	**Pn**	**01 20 10.8**	**-1.5**
	comp=Z,19nm,0.4s						
PKIN	**Phulchoki**	**15.23**	**119**	*e*P	**Pn**	**01 20 12.9**	**-2.0**
	comp=Z,12nm,0.3s						
AB31	**Akbulak array**	**15.33**	**333**	P	**Pn**	**01 20 14.1**	**-1.6**
	comp=Z,4.7nm,0.4s,baz=153,slow=13,SNR=201						
AB31				⇓S	Sn	01 22 51.5	-14
	comp=Z,4.7nm,0.5s						
AB31	**Akbulak array**	**15.33**	**333**	*e*P	**Pn**	**01 20 14.1**	**-1.6**
AB31				pmax	pmax		
	comp=Z,6.0nm,0.5s						
KURBB	**Kurchatov Arra**	**15.77**	**19**	P	**P**	**01 20 22.8**	**-0.1**
	comp=Z,0.2nm,0.3s,baz=210,slow=10,SNR=30						
KURBB	**Kurchatov Arra**	**15.77**	**19**	⇑P	**P**	**01 20 25.1**	**+2.2**
	comp=Z,6.0nm,0.6s						
KURK	**Kurchatov**	**15.88**	**19**	⇑P	**P**	**01 20 25.4**	**+1.3**
	comp=Z,6.6nm,0.7s						
KURK	**Kurchatov**	**15.88**	**19**	P	**Pn**	**01 20 22.8**	**+0.2**
VOSK	**Vostochnaya**	**16.75**	**1**	⇑P	**Pn**	**01 20 32.3**	**-1.0**
	comp=Z,4.5nm,0.7s						
VOSK	**Vostochnaya**	**16.75**	**1**	P	**Pn**	**01 20 32.3**	**-1.0**
VOSK				pmax	pmax		
	comp=Z,5.0nm,0.7s						
AKTO	**Aktyubinsk**	**17.01**	**332**	P	**P**	**01 20 37.0**	**+0.4**
	comp=Z,1.1nm,0.3s,baz=122,slow=14,SNR=19						
AKTO	**Aktyubinsk**	**17.01**	**332**	⇓P	**P**	**01 20 36.8**	**+0.2**
	comp=Z,5.9nm,0.7s						
AKTO				⇑S	Sn	01 23 30.5	-15
	comp=Z,7.5nm,0.7s						
AKTO	**Aktyubinsk**	**17.01**	**332**	P	**P**	**01 20 36.8**	**+0.2**
AKTO				pmax	pmax		
	comp=Z,6.0nm,0.7s						
BVA0	**Borovoye Array**	**17.05**	**360**	⇓P	**Pn**	**01 20 36.8**	**-0.1**
	comp=Z,4.0nm,0.8s						
BVA0				⇓S	**Sn**	**01 23 40.2**	**-6.2**
	comp=Z,5.2nm,1.1s,baz=186,slow=25,SNR=3.8						
BVA0	**Borovoye Array**	**17.05**	**360**	P	**Pn**	**01 20 36.8**	**-0.1**
BVA0				pmax	pmax		
	comp=Z,4.0nm,0.8s						
BVAR	**Borovoye Array**	**17.05**	**360**	P	**Pn**	**01 20 37.2**	**+0.3**
	comp=Z,1.0nm,0.3s,baz=162,slow=13,SNR=20						
BRVK	**Borovoye**	**17.08**	**360**	*e*P	**P**	**01 20 35.8**	**-1.5**
BRVK				pmax	pmax		
	comp=Z,7μm,0.7s						
ZALV	**Zalesovo Beam**	**20.59**	**25**	P	**P**	**01 21 17.1**	**+1.6**
	comp=Z,44nm,0.5s,baz=220,slow=12,SNR=139						
ZALV	**Zalesovo Beam**	**20.59**	**25**	P	**P**	**01 21 17.1**	**+1.6**
ZALV				pmax	pmax		
	comp=Z,44nm,0.5s						
GNI	**Garni**	**20.62**	**289**	P	**P**	**01 21 16.7**	**+0.5**
	comp=Z,4.2nm,0.6s,baz=332,slow=2.1,SNR=5.7						
GNI	**Garni**	**20.62**	**289**	⇑*i*P	Pn	01 21 19.8	+0.3
GNI				pmax	pmax		
	comp=Z,43nm,1.2s						
NVS	**Novosibirsk**	**20.84**	**21**	⇑*i*P	Pn	01 21 20.8	-0.9
NVS				pmax	pmax		
	comp=Z,9.0nm,0.6s						
NVS				pmax	pmax		
	comp=N,9.0nm,0.7s						
NVS				pmax	pmax		
	comp=E,4.0nm,0.7s						
ZEI	**Tsey**	**21.55**	**296**	*e*P	**P**	**01 21 29.1**	**+3.0**
ZEI				pmax	pmax		
	comp=Z,3.0nm,0.6s						
ARU	**Arti**	**21.98**	**342**	P	**P**	**01 21 32.9**	**+2.5**
	comp=Z,2.0nm,0.3s,baz=156,slow=5.5,SNR=6.7						
ARU	**Arti**	**21.98**	**342**	*d i* P	**P**	**01 21 32.8**	**+2.5**
ARU						01 22 01.4	
ARU				S	**S**	**01 25 24.9**	**-0.9**
ARU				SS	**SnSn**	**01 26 05.1**	**+2.4**
ARU				pmax	pmax		
	comp=Z,4.0nm,0.6s						
KIV	**Kislovodsk**	**22.63**	**299**	*e*P	**P**	**01 21 40.9**	**+3.7**
KIV				*e*S	**S**	**01 25 37.9**	**+1.0**
KIV				pmax	pmax		
	comp=Z,2.0nm,1.0s						
ANN	**Anapa**	**26.48**	**300**	*e*P	**P**	**01 22 07.6**	**-4.7**
ANN				*e**PP	**pP**	**01 22 39.3**	**+3.0**
ANN				*e*		01 23 00.9	
ANN				pmax	pmax		
	comp=Z,13nm,1.1s						
BRTR	**Keskin Array B**	**29.15**	**289**	P	**P**	**01 22 38.4**	**+2.0**
	comp=Z,0.3nm,0.7s,baz=120,slow=8.5,SNR=2.6						
FINES	**FINESS Array B**	**37.66**	**327**	P	**P**	**01 23 51.4**	**+1.8**
	comp=Z,1.0nm,0.4s,baz=112,slow=7.4,SNR=12						
FINES	**FINESS Array B**	**37.66**	**327**	*i* P	**P**	**01 23 53.2**	**+3.6**
FINES				pmax	pmax		
	comp=Z,1.0nm,0.4s						
ARCES	**ARCESS Array B**	**41.45**	**338**	P	**P**	**01 24 21.8**	**+0.9**
	comp=Z,1.2nm,0.7s,baz=112,slow=9.3,SNR=13						
NB2	**NORSAR Subarra**	**44.52**	**323**	P	**P**	**01 24 46.6**	**+0.8**
	comp=Z,1.1nm,0.5s,baz=99,slow=7.9						
NOA	**NORSAR Array B**	**44.52**	**323**	P	**P**	**01 24 46.8**	**+0.9**
	comp=Z,1.2nm,0.5s,baz=98,slow=7.9,SNR=9.0						
INK	**Inuvik**	**74.50**	**9**	P	**P**	**01 28 14.7**	**+3.3**
	comp=Z,0.5nm,0.5s,baz=346,slow=6.3,SNR=4.2						
ILAR	**Eielson Array**	**75.41**	**16**	P	**P**	**01 28 19.4**	**+2.7**
	comp=Z,0.2nm,0.4s,baz=328,slow=3.2,SNR=4.4						
YKA	**Yellowknife Ar**	**81.79**	**2**	P	**P**	**01 28 53.2**	**+1.4**
	comp=Z,0.4nm,0.6s,baz=351,slow=5.4,SNR=14						
WRA	**Warramunga Arr**	**82.11**	**121**	P	**P**	**01 28 55.2**	**+1.1**
	comp=Z,0.5nm,0.7s,baz=327,slow=4.9,SNR=3.3						
ASAR	**Alice Springs**	**84.34**	**124**	P	**P**	**01 29 06.5**	**+1.0**
	comp=Z,0.3nm,0.5s,baz=313,slow=5.8,SNR=4.2						

*NSSP **04** 01:29:53.2, 41°.53N×44°.18E, h8km, Ms2.9*
*MOS **04** 01:29:54.6±1.7, 41°.56N×44°.08E, h10km, mb3.8/1, Error ellipse: s-maj=11.5km s-min=4.7km az=89.4*
*TIF **04** 01:29:54.4, 41°.59N×44°.23E, h18km*
*CSEM **04** 01:29:55.1±0.2, 41°.60N×44°.24E, h2km, ML2.9, Error ellipse: s-maj=5.6km s-min=3.6km az=104.0*
*ISK **04** 01:29:57.4, 41°.36N×44°.21E, h5km, MD3.2*
*DDA **04** 01:29:57.

EPOS	Posof	1.08	267	*i* P		Pb	01 30 15.9	0.0
ONI	Oni	1.14	333	P		Pg	01 30 16.4	+0.2
ONI				S		Sb	01 30 32.5	+0.2
ONI	Oni	1.14	333	PG		Pg	01 30 16.4	+0.2
ONI				S		Sb	01 30 32.5	+0.2
ONI	Oni	1.14	333	P		Pg	01 30 16.4	+0.2
ONI				S		Sb	01 30 32.5	+0.2
ZEI	Tsey	1.23	351	⇑*i*PG		Pg	01 30 17.7	-0.2
ZEI				*e*S		Sg	01 30 34.0	+0.2
KARS	Kars	1.25	221	*e*PN		Pn	01 30 20.1	+0.9
KARS				*e*SN		Sn	01 30 36.6	-0.2
KARS	Kars	1.25	221	PG		Pn	01 30 20.1	+0.9
KARS	Kars	1.25	221	*e*Pn		Pn	01 30 20.1	+0.9
KARS				*e*Sn		Sn	01 30 36.6	-0.2
LACR	Lac	1.25	5	*i* PG		Pg	01 30 17.7	-0.7
LACR				*e*S		Sg	01 30 32.7	-2.0
LACR				pmax	pmax			
	comp=Z,27nm,0.1s							
LACR	Lac	1.25	5	*i* Pg		Pg	01 30 17.7	-0.7
	comp=Z,27nm,0.1s							
LACR				*e*Sg		Sg	01 30 32.7	-2.0
DIGR	Digorskoe uzhe	1.39	342	⇑*i*PG		Pn	01 30 21.0	-0.2
DIGR				*e*S		Sb	01 30 39.7	+0.1
DIGR	Digorskoe uzhe	1.39	342	*i* Pg		Pn	01 30 21.0	-0.2
DIGR				*e*Sg		Sb	01 30 39.7	+0.1
GNI	Garni	1.49	163	⇑*i*P		Pn	01 30 21.8	-0.7
GNI				⇑*i*S		Sb	01 30 41.9	-0.7
GNI	Garni	1.49	163	*d*/PG		Pn	01 30 21.9	-0.7
GNI	Garni	1.49	163	⇑P		Pn	01 30 21.8	-0.7
GNI				S		Sb	01 30 41.9	-0.7
KORR	Kora	1.51	357	*i* PG		Pg	01 30 23.5	+0.2
KORR				*e*S		Sg	01 30 43.5	+0.6
KORR	Kora	1.51	357	*i* Pg		Pg	01 30 23.5	+0.2
KORR				*e*Sg		Sg	01 30 43.5	+0.6
VLKR	Vladikavkaz	1.52	15	*e*PG		Pn	01 30 22.9	+0.1
VLKR				*e*S		Sn	01 30 42.6	-0.7
VLKR	Vladikavkaz	1.52	15	*e*Pg		Pn	01 30 22.9	+0.1
VLKR				*e*Sg		Sn	01 30 42.6	-0.7
KMGR	Komgaron	1.57	19	*e*PG		Pn	01 30 23.3	-0.2
KMGR				*e*S		Sn	01 30 43.4	-1.1
KMGR	Komgaron	1.57	19	*e*Pg		Pn	01 30 23.3	-0.2
KMGR				*e*Sg		Sn	01 30 43.4	-1.1
ARNR	Ardon	1.60	3	*e*PN		Pb	01 30 25.0	+0.1
ARNR				*e*S		Sn	01 30 44.4	-0.9
ARNR				pmax	pmax			
	comp=Z,18nm,0.2s							
LSNR	Lesken	1.72	352	*i* PN		Pb	01 30 26.7	-0.1
LSNR				*e*S		Sn	01 30 48.1	-0.1
LSNR				pmax	pmax			
	comp=Z,8.0nm,0.2s							
LSNR	Lesken	1.72	352	*i* Pn		Pb	01 30 26.7	-0.1
	comp=Z,8.0nm,0.2s							
LSNR				*e*Sg		Sn	01 30 48.1	-0.1
DAGI	Agillar	1.76	254	*i* P		Pg	01 30 28.7	+0.6
DAGI				*i* S		Sg	01 30 53.6	+2.7
STDR	Stavd-Durt	1.79	358	*e*PN		Pg	01 30 28.9	+0.2
STDR				*e*S		Sg	01 30 52.5	+0.5
STDR	Stavd-Durt	1.79	358	*e*Pn		Pg	01 30 28.9	+0.2
STDR				*e*Sg		Sg	01 30 52.5	+0.5
BTKR	Batakoyurt	1.82	9	⇑*i*PN		Pb	01 30 28.8	+0.3
BTKR				*e*S		Sb	01 30 52.2	+0.4
BTKR	Batakoyurt	1.82	9	*i* Pn		Pb	01 30 28.8	+0.3
BTKR				*e*Sg		Sb	01 30 52.2	+0.4
CHVG	Ch'k'valeri	1.92	307	*e*PN		Pg	01 30 31.4	+0.2
CHVG				*e*SN		Sg	01 30 56.7	+0.7
CHVG	Ch'k'valeri	1.92	307	P		Pg	01 30 31.0	-0.1
CHVG				S		Sg	01 30 56.8	+0.8
CHVG	Ch'k'valeri	1.92	307	P		Pg	01 30 31.0	-0.1
CHVG	Ch'k'valeri	1.92	307	*e*Pn		Pg	01 30 31.4	+0.2
CHVG				*e*Sn		Sg	01 30 56.7	+0.7
DBAD	Bademkaya	1.94	254	P		Pg	01 30 31.4	-0.1
DBAD				S		Sg	01 30 57.2	+0.6
DBAD	Bademkaya	1.94	254	*i* P		Pg	01 30 31.4	-0.1
DBAD				*i* S		Sg	01 30 57.2	+0.6
DDEM	Demirkent	1.94	250	P		Pg	01 30 31.9	+0.3
DDEM				S		Sg	01 30 58.2	+1.5
DDEM	Demirkent	1.94	250	*i* P		Pg	01 30 31.9	+0.3
DDEM				*i* S		Sg	01 30 58.2	+1.5
NCK	Nalchik	1.96	348	*e*PN		Pn	01 30 29.5	+0.6
NCK	Nalchik	1.96	348	*e*Pn		Pn	01 30 29.5	+0.6
NEY	Neytrino	1.98	328	*i* PN		Pn	01 30 28.4	-0.9
NEY	Neytrino	1.98	328	*i* Pn		Pn	01 30 28.4	-0.9
GROC	Groznyy	2.03	36	*e*PN		Pb	01 30 31.9	-0.1
GROC				*e*S		Sb	01 30 57.9	+0.1
GROC	Groznyy	2.03	36	*e*Pn		Pb	01 30 31.9	-0.1
GROC				*e*Sb		Sb	01 30 57.9	+0.1
EATA	Eleskirt	2.13	217	P		Pn	01 30 32.5	+1.1
EATA	Eleskirt	2.13	217	*i* P		Pn	01 30 32.5	+1.1
CLDR	Caldiran	2.44	184	*e*PN		Pn	01 30 36.9	+1.3
CLDR	Caldiran	2.44	184	*e*Pn		Pn	01 30 36.9	+1.3
KIV	Kislovodsk	2.61	336	*i* PN		Pn	01 30 35.7	-2.2
KIV	Kislovodsk	2.61	336	*i* Pn		Pn	01 30 35.7	-2.2
AKT	Akhty	2.68	91	⇓*i*PN		Pn	01 30 38.3	-0.5
AKT				*e*S		Sn	01 31 12.4	+0.3
AKT	Akhty	2.68	91	*i* Pn		Pn	01 30 38.3	-0.5
AKT				*e*Sn		Sn	01 31 12.4	+0.3
EZM	Erzurum	2.70	233	*e*PN		Pb	01 30 42.1	-1.6
BAYT	Ayd¨–ntepe-Bay	3.26	250	*e*PN		Pb	01 30 51.2	-2.0
BAYT	Ayd¨–ntepe-Bay	3.26	250	*e*Pn		Pb	01 30 51.2	-2.0
ANN	Anapa	5.88	305	*e*P		Pn	01 31 21.9	-0.7
ANN				*e*			01 32 29.9	
ANN				pmax	pmax			
	comp=Z,5.0nm,0.7s							
ANN	Anapa	5.88	305	*e*P		Pn	01 31 21.9	-0.7
	comp=Z,5.0nm,0.7s							
ANN				*e*S		Sn	01 32 29.9	-0.7
KIEV	Kiev	13.78	316	*i* P		Pn	01 33 10.1	-0.7
KIEV				pmax	pmax			
	comp=Z,1.0nm,0.5s							
KIEV	Kiev	13.78	316	*i* P		Pn	01 33 10.1	-0.7
	comp=Z,1.0nm,0.5s							
OBN	Obninsk	14.44	342	*e*P		Pn	01 33 18.0	-1.8
OBN				pmax	pmax			
	comp=Z,2.0nm,0.9s							
ARU	Arti	17.55	27	*i* P		P	01 34 02.1	+0.7
ARU				pmax	pmax			
	comp=Z,1.0nm,0.8s							
ARU	Arti	17.55	27	*i* P		P	01 34 02.1	+0.7
	comp=Z,1.0nm,0.8s							
KURK	Kurchatov	25.37	57	*i* P		P	01 35 24.6	+1.7
KURK	Kurchatov	25.37	57	*i* P		P	01 35 24.6	+1.7

JMA 04 01:38:27.9±0.2, 38°.25N×144°.53E, h33km, M3.7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	2.39	291	P	Pn	01 39 06.3	+1.6
OFUJ				S	Sn	01 39 34.8	+2.0
JIO	Ouri	2.51	276	P	Pn	01 39 08.1	+1.8
JIO				S	Sn	01 39 37.5	+1.7
JTH	Tanohata	2.67	310	*e*S	Sn	01 39 41.6	+1.7
JMK	Ichinoseki	2.69	286	P	Pn	01 39 10.6	+1.8
JMK				S	Sn	01 39 42.4	+2.2
JOM	Ohasama	2.81	297	P	Pn	01 39 12.3	+1.8
JOM				*e*S	Sn	01 39 45.4	+2.2
JMM	Marumori	2.98	264	P	Pn	01 39 14.0	+1.2
JMM				S	Sn	01 39 48.6	+1.3
JOU	Okura	3.04	273	P	Pn	01 39 16.3	+2.6
JOU				S	Sn	01 39 51.9	+2.9
JRG	Rokugo	3.25	292	S	Sn	01 39 57.8	+3.7
JYK	Kaneyama	3.34	283	P	Pn	01 39 20.3	+2.6
JYK				S	Sn	01 39 59.5	+3.3
JFT	Otama	3.40	259	P	Pn	01 39 20.2	+1.6
JFT				S	Sn	01 40 00.1	+2.4
JNBK	Urakawa-nobuka	4.25	342	*e*S	Sn	01 40 19.8	+1.1
JCH	Churui	4.45	349	S	Sn	01 40 22.0	-1.6

NIED ***04*** *01:43:00, 37°.10N×141°.20E, h44km, Mw3.6 Best double couple: M₀3.27000×10¹⁴ NP1:φ₀199.00000°, δ11.00000°, λ94.00000°. NP2:φ₀15.00000°, δ79.00000°, λ89.00000°.*
IDC ***04*** *01:43:33.2±4.2, 37°.15N×141°.59E, h36km±35km, mb3.5/3, mb1 3.6/6, mb1mx3.3/37, mbtmp3.7/6, ML3.5/3, MS2.7/2, Ms1 2.7/2, ms1mx2.3/34, Error ellipse: s-maj=45.6km s-min=22.7km az=83.0*
ISCJB ***04*** *01:43:34.7±1.1, 37°.04N±0°.05×141°.2E±0°.1, h52km±6km, mb3.6/3, MS3.0/1, Error ellipse: s-maj=15.0km s-min=8.2km az=7.5*

JMA ***04*** *01:43:35.7±0.1, 37°.07N×141°.18E, h51km±1km, M3.8*
JMA Felt II J1.
ISC 04 01:43:35.0±1.5, 37°.05N±0°.05×141°.3E±0°.1, h44km±11km, n15, σ0°.94/20, mb3.8/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.39	278	P	Pn	01 43 44.9	+0.4
ONAJ				S	Sn	01 43 51.3	0.0
JFK	Kawauchi	0.45	315	P	Pn	01 43 45.4	+0.1
JFK				S	Sn	01 43 52.3	-0.3
JHO	Hitachi	0.72	233	P	Pn	01 43 48.8	+0.1
JHO				S	Sn	01 43 57.8	-0.8
JFT	Otama	0.88	302	P	Pn	01 43 51.7	+0.7
JFT				S	Sn	01 44 02.7	0.0
JMM	Marumori	0.90	335	P	Pn	01 43 51.3	+0.1
JMM				S	Sn	01 44 02.5	-0.6
JSB	Shiboa	1.09	266	P	Pn	01 43 54.3	+0.5
JFY	Yanaizu	1.30	286	P	Pn	01 43 57.0	+0.3
MJAR	Matsushiro Arr	2.51	259	Pn	Pn	01 44 14.3	+1.0
	6.9nm,0.3s,baz=81,slow=16,SNR=46						
MJAR				LR	LR	01 45 04.0	
	comp=Z,40nm,20.9s,baz=70,slow=33						
MAT	Matsushiro	2.52	259	P	Pn	01 44 14.7	+1.3
MAT				*e*S	Sn	01 44 41.6	-1.2
JHJ	Hachijo jima 2	4.11	198	Pn	Pn	01 44 37.0	+1.8
	23nm,0.3s,baz=333,slow=23,SNR=10						
JHJ				Sn	Sn	01 45 19.9	-2.1
	18nm,0.3s,baz=101,slow=23,SNR=7.5						
ASAJ	Asahikawa	7.13	8	Pn	Pn	01 45 12.7	-4.0
	0.5nm,0.3s,baz=106,slow=18,SNR=2.7						
MA2	Magadan	23.36	12	LR	LR	01 57 55.5	
	comp=Z,54nm,18.7s,baz=117,slow=37						
ZALV	Zalesovo Beam	41.82	312	P	P	01 51 20.4	+0.1
	1.0nm,0.4s,baz=95,slow=6.3,SNR=5.4						
MKAR	Makanchi Array	44.02	302	P	P	01 51 38.1	-0.1
	0.3nm,0.5s,baz=84,slow=9.8,SNR=3.9						
WRA	Warramunga Arr	57.06	188	P	P	01 53 16.4	-0.2
	0.3nm,0.3s,baz=5.5,slow=7.2,SNR=4.2						

GUC ***04*** *01:45:37.3±0.4, 34°.72S×73°.75W, h36km±2km, ML3.5*
ISC 04 01:45:37.9±4.9, 34°.71S±0°.09×73°.6W±0°.2, h1km±20km, n15, σ1°.07/22, Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHPI	Pichilemu	1.36	77	*e*P	Pn	01 46 02.8	-1.3
CHPI				*e*S	Sg	01 46 21.3	-0.2
TALC	Talca	1.76	114	*e*P	Pn	01 46 09.2	-0.3
TALC				*e*S	Sn	01 46 32.4	-0.2
ANTU	Antumapu	2.71	66	*e*S	Sn	01 46 56.1	-0.2
ANTU				IAML		01 46 57.3	
	comp=N,265nm,0.3s						
ROC1	El Roble	2.76	52	*i* P	Pn	01 46 22.7	-0.9
ROC1				*i* S	Sn	01 46 58.0	+0.3
ROCH	El Roble	2.77	52	*e*P	Pn	01 46 22.5	-1.2
ROCH				*e*S	Sn	01 46 57.1	-0.8
ROCH				IAML		01 47 00.3	
	comp=N,133nm,0.1s						
CLCH	Cerro Calan	2.86	64	*e*P	Pn	01 46 23.9	-1.0
CLCH				*e*S	Sn	01 46 59.6	-0.4
CLCH				IAML		01 47 09.3	
	comp=N,124nm,0.4s						
PEL	Peldehue	2.88	58	*e*P	Pn	01 46 24.4	-0.8
PEL				*e*S	Sn	01 47 00.1	-0.4
PEL				IAML		01 47 04.1	
	comp=N,132nm,0.3s						
AAGR	Agrelo	4.29	69	*i* P	Pn	01 46 46.6	+2.1
AUSP	Uspallata	4.31	56	*i* P	Pn	01 46 46.2	+1.3
ASAL	Salagasta	4.50	63	*i* P	Pn	01 46 49.3	+1.9
RTLS	Leoncito	4.63	52	*i* P	Pn	01 46 50.4	+1.1
RTLS				*i* S	Sn	01 47 44.3	+0.4
RTCV	Cerro Valdivia	5.10	58	*i* P	Pn	01 46 56.5	+0.9
RTLL	Cerro Villicun	5.47	53	*i* P	Pn	01 47 01.2	+0.6
AMOG	MOGNA	5.71	50	*i* P	Pn	01 47 03.6	-0.4
ACAN	Cantantal	5.88	67	*i* P	Pn	01 47 07.6	+1.3

JMA 04 01:55:24.4±0.2, 37°.74N×144°.49E, h35km, M3.7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	2.58	287	P	Pn	01 56 05.2	+1.6
OFUJ	Ofunato	2.59	302	P	Pn	01 56 05.3	+1.5
JMK	Ichinoseki	2.84	296	P	Pn	01 56 09.4	+2.2
JFK	Kawauchi	2.90	264	P	Pn	01 56 09.3	+1.2
JFK				*e*S	Sn	01 56 42.9	+1.2
JMM	Marumori	2.93	274	P	Pn	01 56 10.0	+1.5
JMM				*e*S	Sn	01 56 44.4	+2.0
JTH	Tanohata	3.00	318	P	Pn	01 56 12.0	+2.5
JTH				S	Sn	01 56 45.9	+1.6
JOM	Ohasama	3.04	306	P	Pn	01 56 12.1	+2.1
JOM				*e*S	Sn	01 56 47.8	+2.5
JOU	Okura	3.08	283	P	Pn	01 56 13.0	+2.4
JFT	Otama	3.31	267	P	Pn	01 56 16.1	+2.5
JFT				*e*S	Sn	01 56 54.0	+2.3
JRG	Rokugo	3.44	300	*e*S	Sn	01 56 58.2	+3.1
JYK	Kaneyama	3.46	291	P	Pn	01 56 18.1	+2.4
JYK				*e*S	Sn	01 56 58.6	+3.2
JANG	Nango	3.50	320	*e*S	Sn	01 56 57.0	+0.4
JNBK	Urakawa-nobuka	4.73	344	P	Pn	01 56 33.4	+0.3
JNBK				*e*S	Sn	01 57 27.9	+1.2
JRY	Ryogami san	4.80	251	P	Pn	01 56 35.0	+0.8
JRY				*e*S	Sn	01 57 27.4	-1.2

CSEM ***04*** *02:11:59.0, 36°.42N×25°.43E, h4km, ML0.8/2*
THE 04 02:11:59.0, 36°.42N×25°.43E, h4km±1km, ML0.8/2, Error ellipse: s-maj=1.7km s-min=0.4km az=58.0, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THR7	Fira-Santorini	0.00	59	P	Pg	02 11 59.9	+0.1
THR7	Fira-Santorini	0.00	59	P	Pg	02 11 59.9	+0.1
THR3	Thira Island,	0.02	239	P	Pg	02 11 59.9	+0.1
THR3	Thira Island,	0.02	239	P	Pg	02 11 59.9	+0.1
CMBO	Columbo, Santo	0.05	342	P	Pg	02 12 00.4	+0.1
CMBO				S	Sg	02 12 01.3	+0.2
CMBO	Columbo, Santo	0.05	342	P	Pg	02 12 00.4	+0.1
CMBO				S	Sg	02 12 01.3	+0.2
SANT	Santorini	0.06	152	P	Pg	02 12 00.4	+0.1
SANT				S	Sg	02 12 01.5	+0.2
SANT	Santorini	0.06	152	P	Pg	02 12 00.4	+0.1
SANT				S	Sg	02 12 01.5	+0.2
THR6	Thira Island,	0.07	199	P	Pg	02 12 00.7	+0.2
THR6	Thira Island,	0.07	199	P	Pg	02 12 00.7	+0.2

CSEM ***04*** *02:12:59.3, 36°.42N×25°.42E, h3km, ML1.0/2*
THE 04 02:12:59.3, 36°.42N×25°.42E, h3km±1km, ML1.0/2, Error ellipse: s-maj=1.3km s-min=0.3km az=64.0, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THR7	Fira-Santorini	0.01	34	P	Pg	02 13 00.1	+0.1
THR7	Fira-Santorini	0.01	34	P	Pg	02 13 00.1	+0.1
THR3	Thira Island,	0.02	247	P	Pg	02 13 00.0	0.0
THR3	Thira Island,	0.02	247	P	Pg	02 13 00.0	0.0
THR2	Thira island,	0.03	17	P	Pg	02 13 00.0	-0.2
THR2	Thira island,	0.03	17	P	Pg	02 13 00.4	+0.2
THR2	Thira island,	0.03	17	P	Pg	02 13 00.4	+0.2
THR2	Thira island,	0.03	17	P	Pg	02 13 00.0	-0.2
SANT	Santorini	0.05	148	P	Pg	02 13 00.7	+0.2
SANT				S	Sg	02 13 01.7	+0.4
SANT	Santorini	0.05	148	P	Pg	02 13 00.7	+0.2
SANT				S	Sg	02 13 01.7	+0.4
CMBO	Columbo, Santo	0.06	345	P	Pg	02 13 00.6	+0.1
CMBO				S	Sg	02 13 01.9	+0.5
CMBO	Columbo, Santo	0.06	345	P	Pg	02 13 00.6	+0.1
CMBO				S	Sg	02 13 01.9	+0.5
THR5	Thira Island,	0.06	270	P	Pg	02 13 00.9	+0.3
THR5	Thira Island,	0.06	270	P	Pg	02 13 00.9	+0.3
THR6	Thira Island,	0.06	199	P	Pg	02 13 01.1	+0.5
THR6	Thira Island,	0.06	199	P	Pg	02 13 01.1	+0.5

DDA ***04*** *02:14:33.4, 36°.93N×29°.29E, h7km, Md2.7*

CSEM ***04*** *02:14:33.6±0.2, 36°.90N×29°.35E, h5km, MD2.8, Error ellipse: s-maj=4.2km s-min=2.8km az=157.0*
ATH ***04*** *02:14:36.7, 36°.94N×29°.00E, h15km±3km, ML2.3, Error ellipse: s-maj=7.3km s-min=1.7km az=270.0*
THE ***04*** *02:15:27.0, 36°.41N×25°.41E, h4km±1km, ML1.1/2, Error ellipse: s-maj=2.0km s-min=0.4km az=247.0*
ISK 04 02:14:32.0, 36°.93N×29°.33E, h5km, MD2.8, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GLHS	Glhisar (BURDU	0.27	30	*e*PG	Pb	02 14 38.5	-0.8
GLHS				*e*SG	Sb	02 14 43.4	-0.9
GLHS	Glhisar (BURDU	0.27	30	*e*Pg	Pb	02 14 38.6	-0.8
GLHS				*e*Sg	Sb	02 14 43.4	-0.9
FETY	Fethiye	0.35	215	*e*PG	Pb	02 14 40.1	-0.7
FETY	Fethiye	0.35	215	*e*Pg	Pb	02 14 40.1	-0.7
GOLH	Golhisar	0.36	30	P	Pb	02 14 40.7	-0.3
GOLH				S	Sb	02 14 47.1	+0.1
GOLH	Golhisar	0.36	30	*i* P	Pb	02 14 40.7	-0.3
GOLH				*i* S	Sb	02 14 47.1	+0.1
ELL	Elmali	0.49	111	*e*PG	Pb	02 14 42.8	-0.5
ELL	Elmali	0.49	111	*e*Pg	Pb	02 14 42.8	-0.5
DALY	Dalyan (Mu¨la	0.56	259	*e*PG	Pb	02 14 43.9	-0.3
DALY				*e*SG	Sb	02 14 52.9	+0.5
DALY	Dalyan (Mu¨la	0.56	259	*e*Pg	Pb	02 14 43.9	-0.3
DALY				*e*Sg	Sb	02 14 52.9	+0.5
TURN	Turunc	0.59	265	*i* P	Pn	02 14 50.0	+3.0
TURN				*i* S	Sn	02 15 02.4	+5.4
DNZL	Cakiroluk	0.80	343	P	Pn	02 14 50.6	+0.5
DNZL				S	Sb	02 14 59.9	+0.3
DNZL	Cakiroluk	0.80	343	*i* P	Pn	02 14 50.6	+0.5
DNZL				*i* S	Sb	02 14 59.9	+0.3
KORT	Korkueli	0.82	84	P	Pn	02 14 49.7	-0.6
KORT				S	Sb	02 15 01.5	+1.3
KORT	Korkueli	0.82	84	*i* P	Pn	02 14 49.7	-0.6
KORT				*i* S	Sb	02 15 01.5	+1.3
YER	Yerkesik	0.87	284	*e*PG	Pb	02 14 49.8	+0.3
YER	Yerkesik	0.87	284	*e*Pg	Pb	02 14 49.8	+0.2
ANTB	Antalya	1.06	91	*e*PG	Pn	02 14 53.2	-0.3
ANTB	Antalya	1.06	91	*e*Pg	Pn	02 14 53.2	-0.3
BCK	Bucak	1.14	62	*e*PN	Pn	02 14 55.3	+0.7
BCK	Bucak	1.14	62	*e*Pn	Pn	02 14 55.3	+0.6
ARG	Arkhangelos	1.20	234	P	Pn	02 14 56.0	+0.5
ARG				S	Sg	02 15 09.9	-0.7
AYDN	Tasoluk	1.37	303	P	Pg	02 14 59.9	+1.6
AYDN				S	Sn	02 15 19.2	+2.7
AYDN	Tasoluk	1.37	303	*i* P	Pg	02 14 59.9	+1.6
AYDN				*i* S	Sn	02 15 19.2	+2.8
SUTC	Sutluce-Ispart	1.44	67	*e*PN	Pg	02 15 00.6	+1.0
SUTC	Sutluce-Ispart	1.44	67	*e*Pn	Pg	02 15 00.6	+1.0
KHAL	Karahalli	1.45	5	P	Pg	02 15 00.8	+1.0
KHAL				S	Sg	02 15 20.0	+1.4
KHAL	Karahalli	1.45	5	*i* P	Pg	02 15 00.8	+1.0
KHAL				*i* S	Sg	02 15 20.1	+1.5
BDRM	Kayabasi	1.52	276	P	Pg	02 15 02.5	+1.4
BDRM				S	Sg	02 15 22.4	+1.6
BDRM	Kayabasi	1.52	276	*i* P	Pg	02 15 02.5	+1.4
BDRM				*i* S	Sg	02 15 22.4	+1.6
AYDB	Zeytinkoy-Aydi	1.54	312	*e*PN	Pg	02 15 01.7	+0.3
AYDB	Zeytinkoy-Aydi	1.54	312	*e*Pn	Pg	02 15 01.7	+0.2
BODT	Bodrum	1.62	275	*e*PN	Pg	02 15 03.1	-0.1
BODT	Bodrum	1.62	275	*e*Pn	Pg	02 15 03.1	-0.1
KULA	Kula-Manisa	1.67	342	*e*PN	Pb	02 15 03.6	+0.2
KULA	Kula-Manisa	1.67	342	*e*Pn	Pb	02 15 03.6	+0.2
NIS1	Nisyros Isl.	1.76	260	P	Pb	02 15 04.8	0.0
NIS1	Nisyros Isl.	1.76	260	P	Pb	02 15 04.8	0.0
SMG	Samos	2.14	292	P	Pb	02 15 10.4	-0.8
SMG	Samos	2.14	292	P	Pb	02 15 10.4	-0.8
KARP	Karpathos	2.23	233	*e*PN	Pb	02 15 12.1	-0.7
KARP	Karpathos	2.23	233	*e*Pn	Pb	02 15 12.1	-0.7
KARP	Karpathos	2.23	233	P	Pb	02 15 12.3	-0.5
ZKR	Zakros	3.10	235	P	Pb	02 15 25.2	-2.5
ZKR	Zakros	3.10	235	P	Pb	02 15 25.2	-2.5
SANT	Santorini	3.16	261	P	Pb	02 15 28.6	-0.1
SANT	Santorini	3.16	261	P	Pb	02 15 28.6	-0.1
THR2	Thira island,	3.17	263	P	Pb	02 15 28.2	-0.6
THR2	Thira island,	3.17	263	P	Pb	02 15 28.2	-0.6
THR7	Fira-Santorini	3.18	262	P	Pb	02 15 28.1	-0.9
THR7	Fira-Santorini	3.18	262	P	Pb	02 15 28.1	-0.9
CMBO	Columbo, Santo	3.19	263	P	Pb	02 15 28.5	-0.6
CMBO	Columbo, Santo	3.19	263	P	Pb	02 15 28.5	-0.6
THR3	Thira Island,	3.20	262	P	Pb	02 15 27.9	-1.5
THR3	Thira Island,	3.20	262	P	Pb	02 15 27.9	-1.5
LAST	Lasithi	3.58	242	P	Pb	02 15 32.6	-3.3

ISK ***04*** *02:16:38.3, 36°.96N×29°.32E, h3km, ML3.5*
ATH ***04*** *02:16:38.6, 36°.96N×29°.25E, h5km±1km, ML3.4/6, Error ellipse: s-maj=1.9km s-min=0.8km az=191.0*
CSEM ***04*** *02:16:39.6±0.1, 36°.95N×29°.35E, h2km, ML3.5, Error ellipse: s-maj=2.6km s-min=2.2km az=155.0*
ISCJB ***04*** *02:16:39.1±0.4, 36°.95N±0°.02×29°.34E±0°.02, h7km±3km, mb3.5/8, MS3.1/1, Error ellipse: s-maj=2.8km s-min=2

ARG	**Arkhangelos**	**1.22 233**	P		**Pg**	**02 17 01.3**	**-1.8**
ARG			S		**Sb**	**02 17 19.6**	**+0.7**
ARG	**Arkhangelos**	**1.22 233**	P		**Pg**	**02 17 01.5**	**-1.6**
ARG			S		**Sb**	**02 17 19.6**	**+0.7**
AYDN	**Tasoluk**	**1.36 302**	P		**Pg**	**02 17 05.4**	**-0.4**
AYDN			S		**Sn**	**02 17 25.3**	**+1.9**
AYDN	**Tasoluk**	**1.36 302**	*i* P		**Pg**	**02 17 05.5**	**-0.4**
AYDN			*i* S		**Sn**	**02 17 25.3**	**+1.9**
KHL	**Karahalli**	**1.38 6**	*e*PN		**Pg**	**02 17 05.5**	**-0.8**
KHL	**Karahalli**	**1.38 6**	*e*Pn		**Pg**	**02 17 05.5**	**-0.8**
KHAL	**Karahalli**	**1.42 5**	P		**Pn**	**02 17 06.3**	**+0.2**
KHAL			S		**Sn**	**02 17 27.2**	**+2.1**
KHAL	**Karahalli**	**1.42 5**	*i* P		**Pn**	**02 17 06.3**	**+0.2**
KHAL			*i* S		**Sn**	**02 17 27.2**	**+2.1**
SUTC	**Sutluce-Ispart**	**1.43 68**	*e*PN		**Pn**	**02 17 05.9**	**-0.4**
SUTC	**Sutluce-Ispart**	**1.43 68**	*e*Pn		**Pn**	**02 17 05.9**	**-0.4**
AYDB	**Zeytinkoy-Aydi**	**1.52 311**	*e*PN		**Pn**	**02 17 07.1**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**1.52 311**	*e*Pn		**Pn**	**02 17 07.1**	**-0.3**
BAGO	**Egridir - ISPA**	**1.56 48**	*i* P		**Pb**	**02 17 08.8**	**-0.2**
BODT	**Bodrum**	**1.62 275**	*e*PN		**Pn**	**02 17 08.9**	**+0.2**
BODT	**Bodrum**	**1.62 275**	P		**Pn**	**02 17 09.6**	**+0.9**
BODT			S		**Sn**	**02 17 30.8**	**+1.0**
BODT	**Bodrum**	**1.62 275**	*e*Pn		**Pn**	**02 17 08.9**	**+0.2**
BODT	**Bodrum**	**1.62 275**	P		**Pn**	**02 17 09.6**	**+0.9**
BODT			S		**Sn**	**02 17 30.8**	**+1.0**
KULA	**Kula-Manisa**	**1.65 341**	*e*PN		**Pn**	**02 17 08.7**	**-0.5**
KULA	**Kula-Manisa**	**1.65 341**	P		**Pn**	**02 17 09.5**	**+0.3**
KULA			S		**Sg**	**02 17 32.5**	**-0.3**
KULA	**Kula-Manisa**	**1.65 341**	*e*Pn		**Pn**	**02 17 08.7**	**-0.5**
KULA	**Kula-Manisa**	**1.65 341**	P		**Pn**	**02 17 09.5**	**+0.3**
KULA			S		**Sg**	**02 17 32.5**	**-0.3**
NIS1	**Nisyros Isl.**	**1.76 259**	*e*PN		**Pn**	**02 17 10.6**	**-0.1**
NIS1	**Nisyros Isl.**	**1.76 259**	P		**Pn**	**02 17 11.5**	**+0.8**
NIS1	**Nisyros Isl.**	**1.76 259**	*e*Pn		**Pn**	**02 17 10.6**	**-0.1**
NIS1	**Nisyros Isl.**	**1.76 259**	P		**Pn**	**02 17 11.5**	**+0.8**
NISR	**Nisiros**	**1.80 260**	P		**Pn**	**02 17 11.4**	**+0.2**
NISR			S		**Sn**	**02 17 34.8**	**+0.6**
NISR	**Nisiros**	**1.80 260**	P		**Pn**	**02 17 11.3**	**+0.2**
NISR			S		**Sn**	**02 17 34.8**	**+0.6**
NISR			AML		AML	02 17 48.9	
	comp=E,5161μm,0.7s						
NISR			AML		AML	02 17 50.9	
	comp=N,1616μm,0.8s						
GCAM	**G?zelcaml?**	**1.83 295**	P		**Pn**	**02 17 12.2**	**+0.6**
GCAM			S		**Sn**	**02 17 33.3**	**-1.7**
GCAM	**G?zelcaml?**	**1.83 295**	*i* P		**Pn**	**02 17 12.2**	**+0.6**
GCAM			*i* S		**Sn**	**02 17 33.3**	**-1.7**
SMG	**Samos**	**2.13 292**	P		**Pn**	**02 17 16.0**	**+0.3**
SMG			S		**Sn**	**02 17 42.7**	**+0.4**
SMG	**Samos**	**2.13 292**	P		**Pn**	**02 17 16.0**	**+0.3**
SMG			S		**Sn**	**02 17 42.7**	**+0.4**
SMG	**Samos**	**2.13 292**	P		**Pn**	**02 17 16.0**	**+0.3**
SMG			S		**Sn**	**02 17 42.4**	**+0.1**
SMG			AML		AML	02 17 54.4	
	comp=E,1434μm,0.5s						
SMG			AML		AML	02 17 57.5	
	comp=N,1906μm,0.7s						
IZM	**Izmir**	**2.19 312**	*e*PN		**Pn**	**02 17 16.3**	**-0.2**
IZM	**Izmir**	**2.19 312**	*e*Pn		**Pn**	**02 17 16.3**	**-0.2**
KARP	**Karpathos**	**2.24 232**	*e*PN		**Pn**	**02 17 17.8**	**+0.5**
KARP	**Karpathos**	**2.24 232**	P		**Pn**	**02 17 18.0**	**+0.6**
KARP			S		**Sn**	**02 17 44.9**	**-0.3**
KARP	**Karpathos**	**2.24 232**	P		**Pn**	**02 17 17.9**	**+0.6**
KARP			S		**Sn**	**02 17 44.9**	**-0.3**
KARP	**Karpathos**	**2.24 232**	P		**Pn**	**02 17 17.9**	**+0.5**
KARP			S		**Sb**	**02 17 48.1**	**-0.5**
KARP			AML		AML	02 18 00.1	
	comp=E,1171μm,0.7s						
KARP			AML		AML	02 18 03.0	
	comp=N,1132μm,0.9s						
AKHS	**Akhisar**	**2.27 329**	P		**Pn**	**02 17 18.0**	**+0.4**
AKHS	**Akhisar**	**2.27 329**	*i* P		**Pn**	**02 17 18.0**	**+0.4**
AKS	**Akhisar**	**2.27 329**	*e*PN		**Pn**	**02 17 17.0**	**-0.7**
AKS	**Akhisar**	**2.27 329**	*e*Pn		**Pn**	**02 17 17.0**	**-0.7**
BLCB	**Balcova**	**2.31 309**	*e*PN		**Pn**	**02 17 18.1**	**-0.1**
BLCB	**Balcova**	**2.31 309**	*e*Pn		**Pn**	**02 17 18.1**	**-0.1**
TVSB	**Tavsanli**	**2.50 2**	*e*PN		**Pn**	**02 17 21.1**	**+0.2**
TVSB	**Tavsanli**	**2.50 2**	*e*Pn		**Pn**	**02 17 21.1**	**+0.2**
URLA	**Izmir**	**2.59 304**	P		**Pn**	**02 17 22.7**	**+0.6**
URLA	**Izmir**	**2.59 304**	*i* P		**Pn**	**02 17 22.7**	**+0.6**
ZEY	**¨zmir**	**2.59 301**	*i* P		**Pn**	**02 17 22.9**	**+0.9**
KONT	**Konya--Tatoy**	**2.61 67**	*e*PN		**Pn**	**02 17 22.3**	**-0.1**
KONT	**Konya--Tatoy**	**2.61 67**	*e*Pn		**Pn**	**02 17 22.3**	**-0.1**
KDHN	**Kadinhani**	**2.71 54**	P		**Pn**	**02 17 25.3**	**+1.5**
KDHN	**Kadinhani**	**2.71 54**	*i* P		**Pn**	**02 17 25.3**	**+1.5**
LADK	**Ladik-KONYA**	**2.71 62**	*e*PN		**Pn**	**02 17 24.4**	**+0.5**
LADK	**Ladik-KONYA**	**2.71 62**	*e*Pn		**Pn**	**02 17 24.4**	**+0.5**
KIZT	**Kizilcal**	**2.79 46**	*e*PN		**Pn**	**02 17 25.1**	**+0.2**
KIZT	**Kizilcal**	**2.79 46**	*e*Pn		**Pn**	**02 17 25.1**	**+0.2**
DKL	**Dikili**	**2.85 319**	*e*PN		**Pn**	**02 17 25.8**	**+0.1**
DKL	**Dikili**	**2.85 319**	*e*Pn		**Pn**	**02 17 25.8**	**+0.1**
CHOS	**Chios island**	**2.97 300**	P		**Pn**	**02 17 28.1**	**+0.8**
CHOS	**Chios island**	**2.97 300**	P		**Pn**	**02 17 28.1**	**+0.8**
SVRH	**Sivrihisar-ESK**	**3.03 34**	*e*PN		**Pn**	**02 17 29.0**	**+0.7**
SVRH	**Sivrihisar-ESK**	**3.03 34**	*e*Pn		**Pn**	**02 17 29.0**	**+0.7**
APE	**Apeiranthos**	**3.04 273**	*e*PN		**Pn**	**02 17 28.7**	**+0.4**
APE	**Apeiranthos**	**3.04 273**	⇑*i*P		**Pn**	**02 17 30.5**	**+2.2**
APE	**Apeiranthos**	**3.04 273**	P		**Pn**	**02 17 29.2**	**+0.9**
APE			S		**Sn**	**02 18 06.1**	**+1.1**
APE	**Apeiranthos**	**3.04 273**	*e*Pn		**Pn**	**02 17 28.7**	**+0.4**
APE	**Apeiranthos**	**3.04 273**	P		**Pn**	**02 17 29.2**	**+0.9**
APE			S		**Sn**	**02 18 06.1**	**+1.1**
APE	**Apeiranthos**	**3.04 273**	P		**Pn**	**02 17 29.5**	**+1.2**
APE			S		**Sn**	**02 18 06.1**	**+1.1**
APE			AML		AML	02 18 08.5	
	comp=N,316μm,0.4s						
APE			AML		AML	02 18 08.9	
	comp=E,836μm,0.8s						
ZKR	**Zakros**	**3.12 235**	P		**Pn**	**02 17 30.7**	**+1.4**
ZKR	**Zakros**	**3.12 235**	P		**Pn**	**02 17 29.6**	**+0.3**
ZKR			S		**Sn**	**02 18 08.4**	**+1.6**
ZKR	**Zakros**	**3.12 235**	P		**Pn**	**02 17 29.6**	**+0.3**
ZKR			S		**Sn**	**02 18 08.4**	**+1.6**
ZKR			AML		AML	02 18 19.8	
	comp=N,549μm,0.6s						
ZKR			AML		AML	02 18 21.5	
	comp=E,412μm,0.6s						
CHBY	**Cihanbeyli**	**3.26 59**	*e*PN		**Pn**	**02 17 31.8**	**+0.4**
CHBY	**Cihanbeyli**	**3.26 59**	*e*Pn		**Pn**	**02 17 31.8**	**+0.4**
CAVI	**Cavuskoy**	**3.27 7**	*e*PN		**Pn**	**02 17 32.0**	**+0.5**
CAVI	**Cavuskoy**	**3.27 7**	*e*Pn		**Pn**	**02 17 32.0**	**+0.5**
PRK	**Paraskevi**	**3.33 314**	P		**Pn**	**02 17 33.1**	**+0.9**
PRK	**Paraskevi**	**3.33 314**	P		**Pn**	**02 17 33.1**	**+0.9**
PRK	**Paraskevi**	**3.33 314**	P		**Pn**	**02 17 33.2**	**+1.0**
GONE	**Gonen-Balikesi**	**3.35 338**	*e*PN		**Pn**	**02 17 32.9**	**+0.4**
GONE	**Gonen-Balikesi**	**3.35 338**	*e*Pn		**Pn**	**02 17 32.9**	**+0.4**
IZI	**Iznik**	**3.38 2**	*e*PN		**Pn**	**02 17 33.1**	**+0.1**
IZI	**Iznik**	**3.38 2**	*e*Pn		**Pn**	**02 17 33.1**	**+0.1**
KCTX	**Karacabey (Bur**	**3.40 347**	*e*PN		**Pn**	**02 17 33.8**	**+0.6**
KCTX	**Karacabey (Bur**	**3.40 347**	*e*Pn		**Pn**	**02 17 33.8**	**+0.6**
EDC	**Edincik**	**3.58 342**	*e*PN		**Pn**	**02 17 36.6**	**+0.9**
EDC	**Edincik**	**3.58 342**	*e*Pn		**Pn**	**02 17 36.6**	**+0.9**
LAST	**Lasithi**	**3.59 241**	⇓*i*P		**Pn**	**02 17 36.9**	**+0.9**
LAST	**Lasithi**	**3.59 241**	S		**Sn**	**02 18 19.2**	**+0.5**
LAST	**Lasithi**	**3.59 241**	P		**Pn**	**02 17 36.8**	**+0.8**
LAST	**Lasithi**	**3.59 241**	P		**Pn**	**02 17 36.8**	**+0.8**
GULT	**Gulveren**	**3.60 15**	*e*PN		**Pn**	**02 17 36.5**	**+0.5**
GULT	**Gulveren**	**3.60 15**	*e*Pn		**Pn**	**02 17 36.5**	**+0.5**
EZN	**Ezine**	**3.72 321**	*e*PN		**Pn**	**02 17 38.2**	**+0.7**
EZN	**Ezine**	**3.72 321**	*e*Pn		**Pn**	**02 17 38.2**	**+0.7**
KRBG	**Karabiga-Canak**	**3.79 336**	*e*PN		**Pn**	**02 17 39.1**	**+0.6**
KRBG	**Karabiga-Canak**	**3.79 336**	*e*Pn		**Pn**	**02 17 39.1**	**+0.6**
CSS	**Mathiatis**	**3.80 120**	P		**Pn**	**02 17 40.4**	**+1.6**
CSS	**Mathiatis**	**3.80 120**	P		**Pn**	**02 17 40.4**	**+1.6**
HRT	**Hereke**	**3.87 4**	*e*PN		**Pn**	**02 17 40.1**	**+0.3**
HRT	**Hereke**	**3.87 4**	*e*Pn		**Pn**	**02 17 40.1**	**+0.3**
MRMT	**Marmara Adasi**	**3.89 340**	*e*PN		**Pn**	**02 17 40.5**	**+0.5**
MRMT	**Marmara Adasi**	**3.89 340**	*e*Pn		**Pn**	**02 17 40.5**	**+0.5**
IDI	**Anoyia**	**3.96 247**	Pn		**Pn**	**02 17 42.8**	**+1.8**
	comp=E,5.4nm,0.3s,baz=76,slow=16,SNR=29						
IDI			Sn		**Sn**	**02 18 28.2**	**+0.6**
	comp=E,4.8nm,0.3s,baz=149,slow=19,SNR=3.9						
IDI	**Anoyia**	**3.96 247**	⇓*i*P		**Pn**	**02 17 42.5**	**+1.6**
IDI	**Anoyia**	**3.96 247**	S		**Sn**	**02 18 26.4**	**-1.2**
IDI	**Anoyia**	**3.96 247**	P		**Pn**	**02 17 41.4**	**+0.5**
IDI			S		**Sn**	**02 18 27.9**	**+0.3**
IDI	**Anoyia**	**3.96 247**	P		**Pn**	**02 17 41.4**	**+0.5**
IDI			S		**Sn**	**02 18 27.9**	**+0.3**
IDI	**Anoyia**	**3.96 247**	P		**Pn**	**02 17 41.8**	**+0.9**
SIVA	**Sivas**	**4.14 244**	⇓*i*P		**Pn**	**02 17 45.6**	**+2.2**
SIVA	**Sivas**	**4.14 244**	S		**Sn**	**02 18 35.4**	**+3.4**
SIVA	**Sivas**	**4.14 244**	P		**Pn**	**02 17 44.6**	**+1.2**
SIVA	**Sivas**	**4.14 244**	P		**Pn**	**02 17 44.6**	**+1.2**
BRTR	**Keskin Array B**	**4.38 49**	Pn		**Pn**	**02 17 47.7**	**+0.9**
	comp=E,1.2nm,0.3s,baz=228,slow=15,SNR=39						
BRTR			Sn		**Sn**	**02 18 40.4**	**+2.3**
	comp=E,1.2nm,0.3s,baz=351,slow=8.5,SNR=8.6						
LIA	**Limnos Island**	**4.39 313**	P		**Pn**	**02 17 48.1**	**+1.3**
LIA	**Limnos Island**	**4.39 313**	P		**Pn**	**02 17 47.9**	**+1.1**
VAM	**Vamos**	**4.43 251**	P		Pn	02 17 51.5	+4.2
ENEZ	**Enez**	**4.52 328**	P		**Pn**	**02 17 49.8**	**+1.2**
ENEZ			S		**Sn**	**02 18 42.9**	**+1.6**
ENEZ	**Enez**	**4.52 328**	P		**Pn**	**02 17 49.8**	**+1.2**
ENEZ			S		**Sn**	**02 18 42.9**	**+1.6**
IMMV	**Iera Moni Meta**	**4.57 253**	P		**Pn**	**02 17 50.5**	**+1.2**
IMMV	**Iera Moni Meta**	**4.57 253**	P		**Pn**	**02 17 50.5**	**+1.2**
SMTH	**Samothraki Isl**	**4.60 321**	P		**Pn**	**02 17 50.4**	**+0.7**
SMTH	**Samothraki Isl**	**4.60 321**	P		**Pn**	**02 17 50.4**	**+0.7**
ALN	**Alexandroupoli**	**4.70 328**	P		**Pn**	**02 17 51.8**	**+0.8**
ALN	**Alexandroupoli**	**4.70 328**	P		**Pn**	**02 17 51.8**	**+0.8**
GVD	**Gavdhos**	**4.75 245**	P		**Pn**	**02 17 54.3**	**+2.6**
GVD	**Gavdhos**	**4.75 245**	P		**Pn**	**02 17 54.3**	**+2.6**
DID	**Didima**	**4.89 278**	P		**Pn**	**02 17 55.5**	**+1.7**
DID	**Didima**	**4.89 278**	P		**Pn**	**02 17 55.5**	**+1.7**
ANKY	**Antikythira Is**	**4.98 259**	P		**Pn**	**02 17 57.3**	**+2.4**
ANKY	**Antikythira Is**	**4.98 259**	P		**Pn**	**02 17 57.3**	**+2.4**
VLI	**Veliai**	**5.13 269**	P		**Pn**	**02 17 59.5**	**+2.5**
VLI	**Veliai**	**5.13 269**	P		**Pn**	**02 17 58.1**	**+1.1**
VLI	**Veliai**	**5.13 269**	P		**Pn**	**02 17 58.1**	**+1.1**
EDRB	**Edirne**	**5.28 339**	P		**Pn**	**02 17 59.9**	**+0.8**
EDRB	**Edirne**	**5.28 339**	P		**Pn**	**02 17 59.9**	**+0.8**
ARNB	**Al Arnab**	**5.47 99**	*e*P		**Pn**	**02 18 03.4**	**+1.7**
ARNB			*e*S		**Sn**	**02 19 02.6**	**-2.3**
ARNB			AML		AML	02 19 13.9	
	comp=N,20nm,0.5s						
ARNB			AML		AML	02 19 19.3	
	comp=E,22nm,1.1s						
KAVA	**Kavala**	**5.51 319**	P		**Pn**	**02 18 03.1**	**+0.9**
KAVA	**Kavala**	**5.51 319**	P		**Pn**	**02 18 03.1**	**+0.9**
BTCH	**Batrach**	**5.82 97**	*e*P		**Pn**	**02 18 07.9**	**+1.4**
BTCH			*e*S		**Sn**	**02 19 08.4**	**-5.0**
BTCH			AML		AML	02 19 29.4	
	comp=N,28nm,0.5s						
BTCH			AML		AML	02 19 31.6	
	comp=E,45nm,0.6s						
DIM	**Dimitrovgrad**	**5.88 331**	*e*P		**Pn**	**02 18 07.1**	**-0.1**
DRWC	**Darouich**	**5.90 91**	*e*P		**Pn**	**02 18 09.1**	**+1.4**
DRWC			*e*S		Sn	02 19 08.2	-7.3
DRWC			AML		AML	02 19 34.0	
	comp=E,15nm,0.6s						
DRWC			AML		AML	02 19 37.8	
	comp=N,8.6nm,0.6s						
AGG	**Agios Georgios**	**5.90 293**	P		**Pn**	**02 18 09.7**	**+2.1**
AGG	**Agios Georgios**	**5.90 293**	P		**Pn**	**02 18 09.7**	**+2.1**
RZN	**Rozhen**	**5.93 324**	*e*P		**Pn**	**02 18 08.7**	**+0.6**
BIDA	**Albida**	**5.99 107**	*e*P		**Pn**	**02 18 09.7**	**+0.8**
BIDA			*e*S		Sn	02 19 12.3	-5.5
BIDA			AML		AML	02 19 26.1	
	comp=N,39nm,0.6s						
BIDA			AML		AML	02 19 26.8	
	comp=E,43nm,0.5s						
NVR	**Nevrokopi**	**6.11 318**	P		**Pn**	**02 18 11.7**	**+1.2**
NVR	**Nevrokopi**	**6.11 318**	P		**Pn**	**02 18 11.7**	**+1.2**
HAWK	**Haweek**	**6.25 111**	*e*P		**Pn**	**02 18 14.0**	**+1.6**
HAWK			*e*S		Sn	02 19 19.0	-5.1
HAWK			AML		AML	02 19 33.2	
	comp=E,12nm,0.6s						
HAWK			AML		AML	02 19 35.9	
	comp=N,6.7nm,0.4s						
MMAI	**Mount Meron Ar**	**6.34 126**	Pn		**Pn**	**02 18 13.2**	**-0.6**
	comp=N,4.1nm,0.3s,baz=308,slow=12,SNR=12						
MMAI			Sn		**Sn**	**02 19 24.0**	**-2.5**
	comp=N,1.3nm,0.3s,baz=313,slow=25,SNR=2.4						
MMB	**Musomiste**	**6.35 319**	*e*P		**Pn**	**02 18 14.4**	**+0.6**
KNT	**Kendrikon**	**6.54 312**	P		**Pn**	**02 18 18.5**	**+2.2**
KNT	**Kendrikon**	**6.54 312**	P		**Pn**	**02 18 18.5**	**+2.2**
GRG	**Griva**	**6.72 309**	P		**Pn**	**02 18 21.5**	**+2.7**
GRG	**Griva**	**6.72 309**	P		**Pn**	**02 18 21.5**	**+2.7**
RABH	**Abou Rabah**	**6.88 109**	*e*P		**Pn**	**02 18 22.4**	**+1.3**
RABH			*e*S		Sn	02 19 30.0	-10
KKB	**Krupnik**	**6.89 317**	*e*P		**Pn**	**02 18 22.5**	**+1.4**
SALA	**Sala**	**7.41 123**	*e*P		**Pn**	**02 18 30.8**	**+2.3**
TIRR	**Tirgusor**	**7.53 355**	⇓*i*P		**Pn**	**02 18 31.1**	**+1.2**
ASF	**Jabal al Asfar**	**7.85 125**	Pn		**Pn**	**02 18 36.2**	**+1.7**
	comp=N,0.2nm,0.3s,baz=248,slow=5.4,SNR=2.9						
ASF			Sn		Sn	02 20 10.6	+7.0
	comp=N,0.1nm,0.3s,baz=72,slow=20,SNR=1.9						
TLCR		**8.24 357**	⇑*i*P		**Pn**	**02 18 41.3**	**+1.7**
CFR	**Carcaliu**	**8.27 354**	⇓*i*P		**Pn**	**02 18 41.8**	**+1.8**
EIL	**Elat**	**8.65 145**	Pn		**Pn**	**02 18 44.4**	**-1.0**
	comp=N,1.0nm,0.3s,baz=267,slow=4.6,SNR=12						
MLR	**Muntele Rosu**	**8.90 344**	Pn		**Pn**	**02 18 50.0**	**+1.1**
	baz=198,slow=9.6						
MLR	**Muntele Rosu**	**8.90 344**	⇑*i*P		**Pn**	**02 18 50.7**	**+1.8**
VOIR		**9.07 341**	⇑*i*P		**Pn**	**02 18 52.4**	**+1.3**
VRI	**Vrincioaia**	**9.12 348**	⇑*i*P		**Pn**	**02 18 53.9**	**+2.2**
DOPR	**Dopca**	**9.48 343**	⇑*i*P		**Pn**	**02 18 59.2**	**+2.5**
MILM	**Milestii Mici**	**9.97 358**	⇑*i*P		**Pn**	**02 19 04.8**	**+1.5**
TIP	**Timpagrande**	**10.16 286**	⇓*i*P		**Pn**	**02 19 07.5**	**+1.4**
SORM	**Soroca**	**11.20 357**	⇓*i*P		**Pn**	**02 19 20.9**	**+0.7**
GNI	**Garni**	**12.48 70**	LR		LR	02 25 16.7	
	comp=N,106nm,18.8s,baz=274,slow=41						
GERES	**GERESS Array B**	**16.47 321**	Pn		**P**	**02 20 35.8**	**+1.8**
	comp=N,0.0nm,0.3s,baz=130,slow=12,SNR=6.5						
AKTO	**Aktyubinsk**	**24.55 48**	P		**P**	**02 21 58.7**	**-1.3**
	comp=N,0.8nm,0.7s,baz=248,slow=10,SNR=4.0						
FINES	**FINESS Array B**	**24.60 356**	P		**P**	**02 21 59.5**	**-0.7**
	comp=N,0.7nm,0.6s,baz=168,slow=9.8,SNR=5.3						
ESDC	**Sonseca Array**	**26.18 286**	P		**P**	**02 22 14.8**	**0.0**
	comp=N,0.9nm,0.7s,baz=80,slow=9.0,SNR=5.2						
ESDC			LR		LR	02 34 01.2	
	comp=N,53nm,18.4s,baz=200,slow=40						
NOA	**NORSAR Array B**	**26.69 340**	P		**P**	**02 22 18.9**	**-0.4**
	comp=N,1.0nm,0.8s,baz=143,slow=9.4,SNR=4.2						
TORD	**Torodi Ar. Bea**	**34.25 233**	P		**P**	**02 23 25.6**	**-0.8**
	comp=N,1.5nm,0.8s,baz=36,slow=8.8,SNR=14						
MKAR	**Makanchi Array**	**39.97 59**	P		**P**	**02 24 14.3**	**-0.4**
	comp=N,0.5nm,0.6s,baz=295,slow=6.1,SNR=4.8						
YKA	**Yellowknife Ar**	**76.73 344**	P		**P**	**02 28 30.8**	**-0.4**
	comp=N,0.5nm,0.9s,baz=39,slow=5.3,SNR=7.6						
PDAR	**Pinedale Array**	**92.26 331**	P		**P**	**02 29 49.4**	**-1.4**
	comp=N,0.1nm,0.4s,baz=117,slow=3.1,SNR=2.1						

MEX 04 02:21:15.1±0.9, 30.°45N×105.°13W, h5km, MD4.0,
Texas-Mexico border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CGIG		**2.46**	**269**	*e*P	Pn	02 21 53.8	-2.3
CGIG				*i* S	Sn	02 22 21.7	-4.9
121A	**Cookes Peak, D**	**3.08**	**313**	*i* P	Pn	02 22 01.1	-3.5
121A				*e*S	Sn	02 22 38.5	-3.4
319A	**Douglas**	**3.69**	**286**	*i* P	Pn	02 22 11.8	-1.1
319A				*i* S	Sn	02 22 54.8	-2.0
ANMO	**Albuquerque**	**4.62**	**346**	*i* P	Pn	02 22 23.8	-2.0
ANMO				*i* S	Sn	02 23 17.1	-3.0

ATH ***04*** *02:21:49.7, 36.°56N×28.°75E, h18km±1km, ML2.7/10, Error ellipse: s-maj=1.9km s-min=1.0km az=154.0*
ISK ***04*** *02:21:49.8, 36.°56N×28.°77E, h5km, MD3.1*
ISCJB ***04*** *02:21:50.5±0.5, 36.°50N±0.°02×28.°76E±0.°03, h8km±4km, Error ellipse: s-maj=4.0km s-min=3.6km az=172.1*
DDA ***04*** *02:21:50.7, 36.°55N×28.°79E, h7km, Md3.0*
CSEM ***04*** *02:21:50.4±0.1, 36.°51N×28.°76E, h2km, MD3.1, Error ellipse: s-maj=3.1km s-min=2.3km az=169.0*

ISC 04 02:21:50.4±1.1, 36.°49N±0.°02×28.°76E±0.°02, h5km±9km,
n63, σ0.°81/97, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FETY	**Fethiye**	**0.30**	**61**	*e*PG	**Pg**	**02 21 55.8**	**-0.4**
FETY				*e*SG	**Sg**	**02 22 00.9**	**+0.7**
FETY	**Fethiye**	**0.30**	**61**	*e*Pg	**Pg**	**02 21 55.8**	**-0.4**
FETY				*e*Sg	**Sg**	**02 22 00.9**	**+0.7**
DALY	**Dalyan (Mu¨la**	**0.34**	**345**	*e*PG	**Pg**	**02 21 56.3**	**-0.6**
DALY	**Dalyan (Mu¨la**	**0.34**	**345**	*e*Pg	**Pg**	**02 21 56.3**	**-0.6**
TURN	**Turunc**	**0.40**	**342**	*i* P	**Pb**	**02 22 00.5**	**+0.5**
TURN				*i* S	**Sb**	**02 22 08.1**	**+1.7**
ARG	**Arkhangelos**	**0.58**	**242**	P	**Pg**	**02 22 01.0**	**-0.6**
ARG				S	**Sb**	**02 22 11.1**	**-0.5**
AKAS	**Kas**	**0.73**	**111**	P	**Pg**	**02 22 03.8**	**-0.7**
AKAS				S	**Sb**	**02 22 15.5**	**-0.5**
AKAS	**Kas**	**0.73**	**111**	*i* P	**Pg**	**02 22 03.8**	**-0.7**
AKAS				*i* S	**Sb**	**02 22 15.5**	**-0.5**
YER	**Yerkesik**	**0.75**	**329**	*e*PG	**Pg**	**02 22 04.4**	**-0.4**
YER				*e*SG	**Sg**	**02 22 15.1**	**+0.6**
YER	**Yerkesik**	**0.75**	**329**	*e*Pg	**Pg**	**02 22 04.4**	**-0.4**
YER				*e*Sg	**Sg**	**02 22 15.1**	**+0.6**
KSL	**Kastellorizon**	**0.75**	**117**	P	**Pg**	**02 22 04.0**	**-0.8**
KSL				S	**Sb**	**02 22 16.7**	**+0.3**
KSL				AML	AML	02 22 21.1	
	comp=E,590μm,0.4s						
KSL				AML	AML	02 22 22.5	
	comp=N,390μm,0.7s						
GLHS	**Glhisar (BURDU**	**0.89**	**42**	*e*PG	**Pg**	**02 22 07.2**	**-0.3**
GLHS				*e*SG	**Sg**	**02 22 19.5**	**+0.4**
GLHS	**Glhisar (BURDU**	**0.89**	**42**	*e*Pg	**Pg**	**02 22 07.2**	**-0.3**
GLHS				*e*Sg	**Sg**	**02 22 19.5**	**+0.4**
ELL	**Elmali**	**0.96**	**74**	*e*PG	**Pb**	**02 22 09.0**	**-0.6**
ELL	**Elmali**	**0.96**	**74**	*e*Pg	**Pb**	**02 22 09.0**	**-0.6**
BDRM	**Kayabasi**	**1.20**	**299**	P	**Pb**	**02 22 13.5**	**-0.2**
BDRM				S	**Sb**	**02 22 30.3**	**+0.8**
BDRM	**Kayabasi**	**1.20**	**299**	*i* P	**Pb**	**02 22 13.5**	**-0.2**
BDRM				*i* S	**Sb**	**02 22 30.3**	**+0.8**
DENT	**Denizli**	**1.28**	**10**	*e*PN	**Pg**	**02 22 14.0**	**-0.9**
DENT	**Denizli**	**1.28**	**10**	*e*Pn	**Pg**	**02 22 14.0**	**-0.9**
NIS1	**Nisyros Isl.**	**1.28**	**275**	*e*PN	**Pn**	**02 22 15.6**	**+0.7**
NIS1	**Nisyros Isl.**	**1.28**	**275**	P	**Pg**	**02 22 13.2**	**-1.7**
NIS1	**Nisyros Isl.**	**1.28**	**275**	*e*Pn	**Pn**	**02 22 15.6**	**+0.7**
NIS1				S	**Sb**	**02 22 31.4**	**-0.3**
NIS1	**Nisyros Isl.**	**1.28**	**275**	P	**Pg**	**02 22 13.2**	**-1.7**
NIS1				S	**Sb**	**02 22 31.4**	**-0.3**
NIS1				AML	AML	02 22 39.5	
	comp=E,1328μm,0.5s						
NIS1				AML	AML	02 22 39.6	
	comp=N,1402μm,0

176nm,0.2s
KNDC ⇑S Sb 02 26 06.4 +0.6
900nm,0.2s
MNBS Baschi 0.71 48 eP Pb 02 25 58.3 +0.4
45nm,0.2s
MNBS eS Sb 02 26 08.0 -0.1
767nm,0.4s
ZHN Zhinishke 0.71 128 eP Pb 02 25 57.8 -0.1
64nm,0.1s
ZHN eS Sb 02 26 07.1 -1.0
3μm,0.3s
KPKS Kokpek 0.76 100 eP Pb 02 25 58.5 0.0
214nm,0.1s
KPKS eS Sb 02 26 08.8 -0.5
686nm,0.2s
TNSS Tian-Shan 0.77 223⇓iP Pb 02 25 59.2 +0.3
225nm,0.3s
TNSS ⇑iS Sb 02 26 10.2 +0.3
405nm,0.4s
SATY Saty 0.77 135⇓iP Pb 02 25 59.0 +0.1
388nm,0.1s
SATY ⇑iS Sb 02 26 09.1 -0.7
4μm,0.1s
ANVS Anan'yevo 0.82 180⇓eP Pb 02 25 59.6 -0.2
baz=181
ANVS ⇓eS Sb 02 26 11.0 -0.3
baz=181
IZV Izvestkoviy 0.95 234 eP Pn 02 26 02.7 -0.4
176nm,0.2s
IZV eS Sb 02 26 15.8 +0.8
644nm,0.2s
KUU Kurty 1.00 287⇓iP Pb 02 26 02.9 +0.3
91nm,0.2s
KUU ⇓iS Sb 02 26 16.6 +0.4
712nm,0.3s
MTBS Maitube 1.02 242⇓iP Pb 02 26 03.4 +0.4
99nm,0.1s
MTBS ⇑iS Sb 02 26 17.3 +0.6
520nm,0.3s
UZB Uzynbulak 1.09 114 eP Pb 02 26 04.3 0.0
283nm,0.2s
UZB eS Sg 02 26 18.4 +0.4
256nm,0.2s
PRZ Przheval'sk 1.25 154⇑eP Pn 02 26 07.9 +0.8
baz=155
PRZ ⇑eS Sn 02 26 25.6 +1.1
baz=155
PDGK Podgornoye 1.36 101⇑eP Pn 02 26 08.5 0.0
baz=102
PDGK ⇑eS Sb 02 26 26.4 0.0
baz=102
PDGK Podgornoye 1.36 101 ⇑P Pn 02 26 08.3 -0.2
83nm,0.5s
PDGK ⇑S Sb 02 26 26.2 -0.3
96nm,0.4s
KST Kastek 1.36 246 eP Pg 02 26 09.2 +0.4
18nm,0.1s
KST eS Sn 02 26 27.2 0.0
336nm,0.3s
DGS Degeres 1.42 256 eP Pg 02 26 10.7 +0.7
36nm,0.3s
DGS eS Sn 02 26 29.6 +0.8
321nm,0.4s
TDK Taldyqorghan 1.50 21 eP Pg 02 26 11.8 +0.3
352nm,0.4s
TDK eS Sg 02 26 31.4 +0.5
836nm,0.5s
KDJ Kajisay 1.52 194⇑eP Pg 02 26 12.3 +0.5
baz=194
KDJ ⇑eS Sg 02 26 32.2 +0.7
baz=194
TKM2 Tokmak 2 1.66 246⇑iP Pb 02 26 14.1 +0.1
baz=246
TKM2 ⇑iS Sg 02 26 36.3 +0.3
baz=246
TKM2 Tokmak 2 1.66 246 ⇑P Pb 02 26 13.8 -0.2
12nm,0.3s
TKM2 ⇓S Sg 02 26 36.1 +0.1
144nm,0.3s
SHLS Shalkode 1.68 105 eP Pb 02 26 14.4 -0.1
42nm,0.2s
SHLS eS Sb 02 26 36.3 +0.3
142nm,0.3s
BOOM Boomskoye usch 1.68 229⇑eP Pb 02 26 14.7 +0.3
baz=229
BOOM ⇑eS Sg 02 26 37.6 +0.8
baz=229
DJR Jarkent 1.70 64 eP Pb 02 26 14.7 +0.1
40nm,0.1s
DJR ⇓iS Sg 02 26 37.0 -0.4
378nm,0.2s
ULHL Ulahol 1.71 218⇑iP Pg 02 26 15.5 -0.1
baz=218
ULHL ⇑iS Sg 02 26 37.5 -0.3
baz=218
KTMS Ketmen 1.96 94 eP Pb 02 26 18.9 -0.3
32nm,0.3s
KTMS eS Sb 02 26 44.6 +0.5
92nm,0.2s
KAPS Kapalarasan 2.07 35 eP Pb 02 26 21.1 +0.1
76nm,0.3s
KAPS eS Sb 02 26 48.0 +0.9
229nm,0.3s
KBK Karagaybulak 2.20 245⇓iP Pb 02 26 22.5 -0.7
baz=245
KBK ⇓iS Sb 02 26 50.7 -0.2
baz=245
CHMS Chumysh 2.21 255⇑iP Pb 02 26 22.7 -0.6
baz=255
CHMS ⇑iS Sb 02 26 51.3 +0.3
baz=255
USP Ospenovka 2.33 263⇑iP Pb 02 26 25.1 -0.2
baz=262
USP ⇑iS Sb 02 26 55.0 +0.6
baz=262
KZA Kyzart 2.34 230⇓iP Pb 02 26 25.0 -0.7
baz=230
KZA ⇓iS Sb 02 26 54.8 -0.3
baz=230
NRN Naryn 2.49 210⇓eP Pb 02 26 27.1 -1.2
baz=210
NRN ⇓eS Sb 02 26 59.7 +0.2
baz=210
AAK Ala-Archa 2.51 248⇑iP Pb 02 26 28.1 -0.5
baz=248
AAK ⇑iS Sb 02 26 59.9 0.0
baz=248
AAK Ala-Archa 2.51 248 ⇓Pg Pb 02 26 28.6 0.0
8.6nm,0.3s
AAK ⇓Lg Lg 02 27 02.9
41nm,0.6s
UCH Uchtor 2.69 240⇑iP Pb 02 26 29.9 -1.9
baz=240
UCH ⇑iS Sb 02 27 05.2 -0.1
baz=240
MRKS Merke 3.35 257⇓iP Pg 02 26 45.8 -1.3
12nm,0.4s
MRKS ⇓iS Sg 02 27 28.6 -1.9
62nm,0.4s
MNAS Manas 3.94 255⇓eP Pn 02 26 45.7 +1.5
baz=255
MNAS ⇓eS Sn 02 27 33.3 +2.4
baz=255
MNAS Manas 3.94 255 ⇓Pg Pg 02 26 56.8 -1.4
2.1nm,0.8s
MNAS ⇓Lg Lg 02 27 47.2
9.1nm,0.5s
MAKZ Makanchi 4.42 42 ⇑Pn Pn 02 26 52.3 +1.6
1.3nm,0.4s
MAKZ ⇓Lg Lg 02 28 01.9
4.4nm,0.5s
MK31 Makanchi Array 4.57 44 Pn Pn 02 26 54.2 +1.5
0.2nm,0.2s,baz=222,slow=15,SNR=18
MK31 ⇓Pg Pb 02 27 01.8 -1.6
1.3nm,0.3s,baz=220,slow=15,SNR=12
MK31 ⇑Lg Lg 02 28 04.1
1.6nm,0.3s,baz=221,slow=27,SNR=11
SFK Sufi-Kurgan 4.75 222 ⇑Lg Lg 02 28 13.4
7.9nm,0.6s
KK31 Karatay Array 5.24 267 Pg Pb 02 27 18.1 +3.2
1.1nm,0.5s,baz=79,slow=16,SNR=8.3
KK31 ⇑Lg Lg 02 28 29.7
6.1nm,0.5s,baz=77,slow=28,SNR=10.0
OTUK Ortayu 5.94 323 ⇓Pn Pn 02 27 11.6 +0.1
1.1nm,0.6s
OTUK ⇓Sn Sn 02 28 16.5 -3.4
2.1nm,0.5s
OTUK ⇑Lg Lg 02 28 47.1
14nm,0.6s

KURBB Kurchatov Arra 7.04 5 ⇓Pn Pn 02 27 26.5 -0.1
0.9nm,0.3s
KURBB ⇑Lg Lg 02 29 28.6
22nm,0.6s
KURK Kurchatov 7.14 5 ⇓Pn Pn 02 27 25.5 -2.4
1.4nm,0.3s
KURK ⇑Lg Lg 02 29 28.3
22nm,0.8s

IDC 04 02:35:17.7±1.4, 27°.10N×143°.47E, h0km, mb3.6/3, mb1 4.0/4, mb1mx3.5/38, mbtmp3.6/4, ML3.7/1, Error ellipse: s-maj=70.8km s-min=27.2km az=101.0, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	10.42	336	Pn	Pn	02 37 48.2	-0.2
	0.6nm,0.3s,baz=161,slow=11,SNR=8.2						
WRA	Warramunga Arr	47.59	192	P	P	02 43 55.3	-0.1
	1.0nm,0.9s,baz=12,slow=8.5,SNR=3.7						
ILAR	Eielson Array	57.16	29	P	P	02 45 05.4	-0.6
	0.8nm,0.9s,baz=234,slow=6.6,SNR=5.2						
YKA	Yellowknife Ar	71.59	29	P	P	02 46 41.1	+0.5
	0.4nm,0.9s,baz=294,slow=6.1,SNR=4.7						

IDC 04 02:46:07.5±29.0, 22°.13N×143°.45E, h320km±201km, mb3.1/6, mb1 3.2/6, mb1mx2.8/57, mbtmp3.8/6, MS2.8/1, Ms1 2.8/1, ms1mx2.2/17, Error ellipse: s-maj=262.7km s-min=38.8km az=174.0, Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHJ	Hachijo jima 2	11.42	344	LR	LR	02 52 14.2	
	comp=Z,50nm,21.9s,baz=218,slow=32						
KSRS	Korea Array	20.32	322	P	P	02 50 20.2	-0.1
	1.7nm,0.6s,baz=146,slow=8.9,SNR=6.2						
MKAR	Makanchi Array	54.59	312	P	P	02 55 04.0	+0.4
	0.2nm,0.4s,baz=88,slow=8.9,SNR=2.3						
KURBB	Kurchatov Arra	57.38	317	P	P	02 55 22.9	-0.2
	1.1nm,0.4s,baz=92,slow=7.6,SNR=20						
YKA	Yellowknife Ar	75.96	28	P	P	02 57 19.6	+0.2
	0.2nm,0.3s,baz=291,slow=5.8,SNR=9.7						
ARCES	ARCESS Array B	78.59	342	P	P	02 57 34.4	+0.5
	1.8nm,0.9s,baz=72,slow=8.6,SNR=3.4						
FINES	FINESS Array B	82.90	335	P	P	02 57 55.7	-0.9
	0.2nm,0.4s,baz=54,slow=7.1,SNR=3.3						

*IDC **04** 02:48:13.6±1.2, 14°.92S×172°.42W, h0km, mb4.0/6, mb1 4.2/6, mb1mx3.8/46, mbtmp4.0/6, Error ellipse: s-maj=57.6km s-min=17.6km az=129.0*
*ISCJB **04** 02:48:16.9±0.9, 14°.9S±0°.2×172°.5W±0°.3, h35km, mb3.9/6, Error ellipse: s-maj=46.3km s-min=9.0km az=39.6*
ISC 04 02:48:18.5±1.3, 14°.9S±0°.3×172°.4W±0°.3, h35km, n9, σ1§19/10, mb4.0/6, Samoa Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	Afiamalu	1.13	31	Pn	Pn	02 48 36.4	-1.5
	70nm,0.3s,baz=173,slow=1.4,SNR=28						
AFI				Sn	Sn	02 48 51.8	-0.5
	771nm,0.3s,baz=90,slow=20,SNR=36						
URZ	Urewera	25.07	200	P	P	02 53 39.3	-0.3
	5.9nm,0.6s,baz=28,slow=17,SNR=3.5						
STKA	Stephens Creek	45.15	240	P	P	02 56 30.8	-1.1
	2.3nm,0.7s,baz=96,slow=11,SNR=4.0						
WRA	Warramunga Arr	50.92	256	P	P	02 57 16.2	-0.6
	0.6nm,0.5s,baz=93,slow=6.8,SNR=4.6						
ASAR	Alice Springs	51.21	251	P	P	02 57 18.6	-0.3
	3.6nm,0.6s,baz=87,slow=8.1,SNR=49						
ILAR	Eielson Array	81.76	11	P	P	03 00 34.5	+1.3
	0.3nm,0.7s,baz=221,slow=6.6,SNR=5.9						
YKA	Yellowknife Ar	89.24	23	P	P	03 01 11.2	+0.8
	0.2nm,0.8s,baz=238,slow=4.7,SNR=5.1						
KHC	Kasperske Hory	145.50	353	eP	PKPab	03 07 55.0	+1.7
BRTR	Keskin Array B	146.37	322	PKPbc	PKPab	03 07 57.8	+0.7
	0.6nm,0.6s,baz=132,slow=1.8,SNR=3.9						

MEX 04 02:59:02.7±0.9, 16°.69N×96°.65W, h59km±13km, MD3.7, Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VHO	Vista Hermosa	0.39	348	eP	Pn	02 59 12.3	-1.4
VHO				eS	Sn	02 59 20.0	-1.7
PANG	Puerto Angel	1.03	171	eP	Pn	02 59 20.4	-0.7
PANG				iS	Sn	02 59 32.0	-2.7
HUIG	Huatulco	1.05	150	eP	Pn	02 59 20.8	-0.6
HUIG				eS	Sn	02 59 32.9	-2.3
PNIG	Pinotepa	1.45	259	eP	Pn	02 59 24.8	-1.9
PNIG				iS	Sn	02 59 43.1	-1.6
PCIG		3.44	106	iP	Pn	02 59 52.7	-1.0
PCIG				iS	Sn	03 00 31.4	-1.8

*ISCJB **04** 03:01:45.6±0.9, 31°.8S±0°.2×58°.9E±0°.2, h10km, mb3.7/5, Error ellipse: s-maj=38.4km s-min=18.1km az=40.5*
*IDC **04** 03:01:46.1±1.0, 31°.70S×58°.85E, h0km, mb3.7/5, mb1 4.0/6, mb1mx3.6/34, mbtmp3.8/6, ML3.8/1, Error ellipse: s-maj=39.7km s-min=24.4km az=35.0*
ISC 04 03:01:47.6±1.0, 31°.7S±0°.2×58°.9E±0°.2, h10km, n7, σ1§11/7, mb3.9/5, Southwest Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OPO	Ambohidratompo	16.81	318	Pn	Pn	03 05 43.7	+0.4
	0.3nm,0.3s,baz=126,slow=14,SNR=2.7						
VNDA	Vanda	62.05	166	P	P	03 12 07.0	-0.7
	0.6nm,0.3s,baz=255,slow=12,SNR=5.2						
CMAR	Chiang Mai Arr	62.95	43	P	P	03 12 13.2	-1.2
	0.6nm,0.4s,baz=225,slow=6.8,SNR=4.5						
ASAR	Alice Springs	65.74	104	P	P	03 12 33.7	+0.8
	0.2nm,0.4s,baz=236,slow=6.4,SNR=3.7						
WRA	Warramunga Arr	67.74	100	P	P	03 12 47.1	+1.4
	0.7nm,0.9s,baz=245,slow=5.7,SNR=2.6						
TORD	Torodi Ar. Bea	70.63	300	P	P	03 13 03.6	0.0
	0.2nm,0.8s,baz=117,slow=6.8,SNR=3.2						
YKA	Yellowknife Ar	148.91	354	PKPbc	PKPbc	03 21 35.1	+0.3
	0.5nm,0.6s,baz=358,slow=2.9,SNR=23						

*NIED **04** 03:05:00, 38°.40N×142°.20E, h35km, Mw3.9 Best double couple: $M_0$7.72000×10^14 NP1:φs343.00000°, δ34.00000°, λ-68.00000°. NP2:φs137.00000°, δ59.00000°, λ-104.00000°.*
JMA 04 03:05:49.3±0.1, 38°.45N×142°.23E, h25km±2km, M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.69	271	P	Pb	03 06 02.4	-0.3
JIO				S	Sb	03 06 11.4	-0.5
OFUJ	Ofunato	0.77	325	P	Pb	03 06 03.8	-0.2
OFUJ				S	Sb	03 06 14.2	+0.2
JMK	Ichinoseki	0.94	303	P	Pn	03 06 06.5	-0.3
JMK				S	Sb	03 06 19.0	+0.1
MIYJ	Miyakonagasawa	1.17	344	P	Pn	03 06 09.4	-0.7
JOU	Okura	1.23	267	P	Pn	03 06 11.2	+0.2
JOU				eS	Sn	03 06 26.8	0.0
JOM	Ohasama	1.26	325	P	Pn	03 06 11.4	+0.1
JOM				S	Sn	03 06 27.7	+0.3
JMM	Marumori	1.27	243	P	Pn	03 06 10.6	-0.9
JMM				S	Sn	03 06 26.5	-1.3
JYK	Kaneyama	1.54	288	P	Pn	03 06 15.8	+0.7
JRG	Rokugo	1.56	308	P	Pb	03 06 16.6	-0.9
JRG				S	Sb	03 06 36.9	0.0
MAT	Matsushiro	3.72	240	P	Pn	03 06 47.0	+1.8
MAT				eS	Sb	03 07 37.1	-1.9

*DHMR **04** 03:12:06.8±3.1, 15°.14N×42°.28E, h17km±43km, ML3.8*
*ARO **04** 03:12:09.0, 15°.N±26°×4°.2E±9°5, h15km±99km, ML3.3*
ISC 04 03:12:05.2±2.8, 15°.3N±0°.1×42°.1E±0°.1, h10km, n10, σ0§83/15, 1D, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HAJJ	Hajjah	1.48	73	iP	Pn	03 12 31.8	-0.3
HAJJ				iS	Sg	03 12 52.5	-0.2
HAJJ				AML	AML	03 12 58.1	
	comp=Z,2μm,0.5s						

DHBB Dhamar BB 2.29 107 iP Pn 03 12 43.8 +0.6
DHBB iS Sn 03 13 11.9 +0.2
TRBA At Turbah 2.79 136⇓iP Pn 03 12 50.4 +0.3
TRBA iS Sb 03 13 27.9 -1.6
MAOD Malaho 3.15 178 eP Pn 03 12 54.2 -0.7
OBO Obock 3.44 161 eP Pn 03 12 59.4 +0.5
TDD Tadjoura Ara 3.52 168 eP Pn 03 13 00.1 +0.2
BDHA Al Bayda' 3.56 111 iP Pn 03 13 02.1 +1.4
BDHA iS Sn 03 13 43.1 +0.1
BDHA AML AML 03 14 09.1
comp=N,439nm,0.7s
ATD Arta Tunnel 3.77 169 eP Pn 03 13 04.2 +0.7
ATD eS Sn 03 13 48.6 +0.5
SGH Sud-Ghoubbet 3.83 173 eP Pn 03 13 04.6 +0.2
ATA Atar 3.93 164 eP Pn 03 13 06.8 +1.2

*KRSC **04** 03:21:41.3±0.8, 53°.11N×160°.06E, h58km±9km, ML4.9*
*ISCJB **04** 03:21:42.9±0.3, 53°.15N±0°.03×159°.84E±0°.05, h78km±2km, mb4.3/75, Error ellipse: s-maj=6.0km s-min=2.7km az=41.8*
*MOS **04** 03:21:42.4±1.2, 53°.16N×159°.80E, h75km, mb4.5/36, Error ellipse: s-maj=7.7km s-min=4.3km az=86.7*
MOS Felt (II-III) at Viluchinsk, Ribachiy, Petropavlovsk-Kamchatskiy.
*NEIC **04** 03:21:44.7±0.5, 53°.36N×159°.66E, h74km±4km, mb4.5/34, Error ellipse: s-maj=7.0km s-min=3.9km az=161.0*
NEIC Felt [III] at Petropavlovsk-Kamchatskiy.
*IDC **04** 03:21:46.3±1.0, 53°.37N×159°.60E, h87km±8km, mb3.9/26, mb1 4.1/28, mb1mx4.1/36, mbtmp4.2/28, MS3.4/8, Ms1 3.4/8, ms1mx3.1/41, Error ellipse: s-maj=15.4km s-min=10.4km az=153.0*
ISC 04 03:21:42.7±0.6, 53°.14N±0°.03×159°.94E±0°.04, h63km±4km, n243, σ1§42/282, mb4.4/75, 15C-10D, Near east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SPN	Mys Shipunski	0.07	130	iP	Pn	03 21 51.5	-0.5
SPN	Mys Shipunski	0.07	130	PN	Pn	03 21 51.5	-0.5
NLC	Nalytchevo	0.36	275	iP	Pn	03 21 53.5	0.0
NLC				iS	Sn	03 22 01.2	-0.1
NLC	Nalytchevo	0.36	275	PN	Pn	03 21 53.5	0.0
NLC				S	Sn	03 22 01.2	-0.1
SDLR	Sedlovina	0.65	283	iP	Pn	03 21 57.0	+0.4
SDLR	Sedlovina	0.65	283	PN	Pn	03 21 57.0	+0.4
UGLR	Uglovaya	0.67	276	iP	Pn	03 21 57.6	+0.7
SMAR	Somma	0.69	281	iP	Pn	03 21 57.4	+0.1
SMAR				eS	Sn	03 22 08.8	+0.9
SMAR	Somma	0.69	281	PN	Pn	03 21 57.4	+0.1
SMAR				S	Sn	03 22 08.8	+0.9
DALK	Dalny	0.72	262	iP	Pn	03 21 57.5	+0.2
DALK				iS	Sn	03 22 08.4	+0.3
AVH	Avacha	0.73	280	iP	Pn	03 21 58.2	+0.6
AVH	Avacha	0.73	280	PN	Pn	03 21 58.2	+0.6
KRER	Koryakskii	0.73	283	iP	Pn	03 21 58.3	+0.6
PET	Petropavlovsk	0.78	262	iP	Pn	03 21 58.4	+0.3
PET	Petropavlovsk	0.78	262	κiPN	Pn	03 21 58.1	0.0
PET				eS	Sn	03 22 09.5	+0.1
PET				pmax	pmax		
	comp=Z,3μm,0.3s						
PET				smax	smax		
	comp=E,2μm,1.7s						
PET				smax	smax		
	comp=E,15μm,0.5s						
PET				smax	smax		
	comp=E,17μm,0.4s						
PET	Petropavlovsk	0.78	262	ePn	Pn	03 21 58.4	+0.3
PET				eSn	Sn	03 22 06.9	-2.4
KOK	Koryaka	0.80	281	eP	Pn	03 21 58.9	+0.5
KOK	Koryaka	0.80	281	PN	Pn	03 21 58.9	+0.5
KRX	Arik	0.80	286	iP	Pn	03 21 58.8	+0.3
INSR	Institute	0.81	265	eP	Pn	03 21 58.2	-0.2
INSR				eS	Sn	03 22 10.6	+0.7
KII	Karymskiy	0.94	342	iP	Pn	03 22 00.5	+0.3
KII	Karymskiy	0.94	342	PN	Pn	03 22 00.5	+0.3
RUS	Russkaya	1.12	231	iP	Pn	03 22 02.5	+0.1
RUS				iP	Pn	03 22 02.5	+0.1
RUS				iS	Sn	03 22 17.2	+0.2
RUS	Russkaya	1.12	231	PN	Pn	03 22 02.5	+0.1
RUS				S	Sn	03 22 17.2	+0.2
KRMR	Karymshinskiy	1.14	255	iP	Pn	03 22 03.1	+0.5
KRMR				iS	Sn	03 22 18.3	+0.9
MTVR	Mutnovka	1.25	239	iP	Pn	03 22 05.0	+0.7
GRL	Gorelyy	1.27	243	iP	Pn	03 22 05.8	+1.2
GRL				eS	Sn	03 22 22.5	+1.6
GRL	Gorelyy	1.27	243	PN	Pn	03 22 05.8	+1.2
GRL				S	Sn	03 22 22.5	+1.6
GNL	Ganaly	1.32	296	iP	Pn	03 22 05.9	+0.8
GNL	Ganaly	1.32	296	PN	Pn	03 22 05.9	+0.8
PEA0	Petropavlovsk-	1.35	269	ePn	Pn	03 22 06.3	+0.9
PEA0				eSn	Sn	03 22 23.3	+0.8
PEA0B	Petropavlovsk-	1.35	269	ePn	Pn	03 22 06.5	+1.1
PEA0B				eSn	Sn	03 22 12.5	-10
PETK	Petropavlovsk-	1.35	269	P	Pn	03 22 06.5	+1.1
	comp=E,949nm,0.3s,baz=90,slow=19,SNR=48						25
PETK				S	Sn	03 22 24.4	+1.9
	comp=E,779nm,0.3s,baz=21,slow=14,SNR=21						
PETK				LR	LR	03 22 53.2	
	comp=E,270nm,19.7s,baz=137,slow=57						
ASAK	Asacha	1.45	239	iP	Pn	03 22 08.0	+1.1
ASAK				eS	Sn	03 22 27.4	+2.4
APC	Apacha	1.69	264	iP	Pn	03 22 11.6	+1.6
APC				eS	Sn	03 22 33.7	+3.1
APC	Apacha	1.69	264	PN	Pn	03 22 11.6	+1.6
APC				S	Sn	03 22 33.7	+3.1
MKZ	Mys Kozlova	1.77	36	iP	Pn	03 22 10.5	-0.6
MKZ				eS	Sn	03 22 31.3	-1.2
MKZ	Mys Kozlova	1.77	36	PN	Pn	03 22 10.5	-0.6
MKZ				S	Sn	03 22 31.3	-1.2
KZV	Kizimen	1.99	6	eP	Pn	03 22 15.2	+1.0
KZV				eS	Sn	03 22 39.6	+1.6
TUMR	Tumrok	2.15	3	eP	Pn	03 22 17.8	+1.5
TUMR				eS	Sn	03 22 44.0	+2.1
TUMR	Tumrok	2.15	3	PN	Pn	03 22 17.8	+1.5
TUMR				S	Sn	03 22 44.0	+2.1
PAU	Pauzhetka	2.55	230	eP	Pn	03 22 23.6	+2.0
PAU				eS	Sn	03 22 55.4	+3.9
PAU	Pauzhetka	2.55	230	PN	Pn	03 22 23.6	+2.0
PAU				S	Sn	03 22 55.4	+3.9
KMNR	Kamenistaya	2.63	4	iP	Pn	03 22 24.9	+2.1
KMNR	Kamenistaya	2.63	4	PN	Pn	03 22 24.9	+2.1
KIRR	Kirishev	2.83	5	eP	Pn	03 22 27.4	+1.8
KPT	Kopyto	2.83	3	eP	Pn	03 22 27.1	+1.5
KPT	Kopyto	2.83	3	PN	Pn	03 22 27.1	+1.5
ESO	Esso	2.88	346	iP	Pn	03 22 27.4	+1.2
ESO	Esso	2.88	346	PN	Pn	03 22 27.4	+1.2
KOZ	Kozyrevsk	2.92	359	eP	Pn	03 22 28.6	+1.8
KOZ	Kozyrevsk	2.92	359	PN	Pn	03 22 28.6	+1.8
ZLN	Zelenaya	2.92	10	eP	Pn	03 22 29.2	+2.3
ZLN	Zelenaya	2.92	10	PN	Pn	03 22 29.2	+2.3
LGNR	Loginova	2.98	8	iP	Pn	03 22 30.3	+2.5
LGNR				eS	Sn	03 23 05.9	+3.5
LGNR	Loginova	2.98	8	PN	Pn	03 22 30.3	+2.5
LGNR				S	Sn	03 23 05.9	+3.5
CIRR	Tsirk	3.02	9	eP	Pn	03 22 30.4	+2.2
CIRR	Tsirk	3.02	9	PN	Pn	03 22 30.4	+2.2
KRSR	Krestovskiy	3.10	7	eP	Pn	03 22 30.8	+1.5
KRSR				eS	Sn	03 23 06.3	+1.1
KRSR	Krestovskiy	3.10	7	PN	Pn	03 22 30.8	+1.5
KRSR				S	Sn	03 23 06.3	+1.1
KLY	Klyuchi	3.21	7	eP	Pn	03 22 32.6	+2.0
KLY				eS	Sn	03 23 11.4	+3.9
SKR	Severo-Kuril's	3.41	225	eP	Pn	03 22 35.0	+1.6
SKR				eS	Sn	03 23 14.0	+1.4
SKR	Severo-Kuril's	3.41	225	ePN	Pn	03 22 29.5	-3.9
SKR				eS	Sn	03 23 09.5	-3.1
SKR				pmax	pmax		
	comp=Z,90nm,0.5s						
SKR				smax	smax		
	comp=N,830nm,0.5s						
SKR				smax	smax		
	comp=E,390nm,0.5s						
KBG	Krutoberegovo	3.51	26	eP	Pn	03 22 38.4	+3.7
KBG				eS	Sn	03 23 18.6	+3.7
BDR	Baidarnaya	3.51	12	iP	Pn	03 22 37.1	+2.2
BDR				eS	Sn	03 23 17.8	+2.6
SMKR	Semkarok	3.56	14	eP	Pn	03 22 37.4	+1.9
SMKR	Semkarok	3.56	14	PN	Pn	03 22 37.4	+1.9

SRKR	Sorokina	3.59	11	eP	Pn	03 22 38.4	+2.5
SRKR				eS	Sn	03 23 18.2	+1.1
SRKR	Sorokina	3.59	11	PN	Pn	03 22 38.4	+2.5
SRKR				S	Sn	03 23 18.2	+1.1
BKI	Bering	4.10	57	eP	Pn	03 22 42.7	-0.1
BKI	Bering	4.10	57	PN	Pn	03 22 42.7	-0.1
MA2	Magadan	8.21	325	P	Pn	03 23 42.1	+3.1
	comp=E,1.2nm,0.3s,baz=126,slow=14,SNR=3.6						
MA2				LR	LR	03 26 59.7	
	comp=E,116nm,21.4s,baz=130,slow=40						
SEY	Seymchan	10.59	341	P	Pn	03 24 14.7	+3.2
	comp=E,0.2nm,0.3s,baz=139,slow=11,SNR=9.2						
SEY	Seymchan	10.59	341	*i* PN	Pn	03 24 10.8	-0.7
TYV	Tymovskoe	10.89	265	ePN	Pn	03 24 21.0	+5.3
NKL	Nikolayevsk	11.56	278	ePN	Pn	03 24 28.8	+4.0
ASAJ	Asahikawa	14.56	239	P	Pn	03 25 06.6	+1.4
	comp=E,1.1nm,0.3s,baz=73,slow=18,SNR=8.4						
BILL	Biiibino	15.25	9⇑	eP	P	03 25 16.8	-0.8
BILL				pmax	pmax		
	comp=Z,5.0nm,0.8s						
BILL	Biiibino	15.25	9	ePn	P	03 25 18.0	+0.4
	comp=Z,4.7nm,0.7s						
ERM	Erimo	15.83	232	*i* P	Pn	03 25 20.9	-0.6
HABR	Khabarovsk	16.37	263	eP	Pn	03 25 26.7	-1.6
HABR				S	Sn	03 28 27.6	-1.3
HABR				pmax	pmax		
	comp=N,8.0nm,0.9s						
HABR				pmax	pmax		
	comp=E,9.0nm,0.9s						
HABR				pmax	pmax		
	comp=Z,22nm,0.9s						
HABR				MLR	MLR		
	comp=Z,22nm,15.0s						
KLR	Kul'dur	18.04	269	P	Pn	03 25 49.9	+1.0
	comp=Z,0.9nm,0.3s,baz=66,slow=9.1,SNR=15						
KLR	Kul'dur	18.04	269	*i* P	Pn	03 25 48.4	-0.4
YAK	Yakutsk	18.34	311	eP	Pn	03 25 51.8	-0.5
YAK				pmax	pmax		
	comp=Z,22nm,0.8s						
USRK	Ussuriysk Ar.	20.40	255	P	P	03 26 13.4	-0.9
	comp=Z,1.3nm,0.4s,baz=51,slow=11,SNR=5.3						
MJB9	Matsu-Tunnel	22.50	231	eP	P	03 26 37.2	+0.3
	comp=Z,8.9nm,0.7s						
MAJO	Matsushiro	22.50	231	*i* P	P	03 26 37.6	+0.6
MAJO	Matsushiro	22.50	231	eP	P	03 26 37.8	+0.8
	comp=Z,35nm,0.7s						
MAT	Matsushiro	22.50	231	P	P	03 26 37.7	+0.7
MJAR	Matsushiro Arr	22.50	231	P	P	03 26 37.9	+0.9
	comp=Z,11nm,0.6s,baz=19,slow=12,SNR=57						
MJAR				LR	LR	03 35 01.0	
	comp=Z,29nm,19.7s,baz=100,slow=35						
MJAR	Matsushiro Arr	22.50	231	P	P	03 26 37.9	+0.9
MJAR				pmax	pmax		
	comp=Z,19nm,0.7s						
MJAR				MLR	MLR		
	comp=Z,29nm,19.7s						
TIXI	Tiksi	23.00	335	P	P	03 26 40.2	-1.6
	comp=Z,2.7nm,0.3s,baz=118,slow=13,SNR=5.5						
TIXI				PcP	PcP	03 30 29.2	+0.2
	comp=Z,1.2nm,0.5s,baz=103,slow=3.4,SNR=3.7						
TIXI	Tiksi	23.00	335	⇓ *i* P	P	03 26 40.0	-1.7
TIXI				pmax	pmax		
	comp=Z,2.0nm,0.6s						
TIXI	Tiksi	23.00	335	eP	P	03 26 39.8	-2.0
	comp=Z,4.7nm,0.8s						
TIXI				PcP	PcP	03 30 29.2	+0.2
INU	Inuyama	24.03	231	eP	P	03 26 52.5	+0.8
	comp=Z,18nm,1.3s						
TT01	Tatalina	24.79	49	eP	P	03 26 59.7	+1.4
TTA	Tatalina	24.79	49	eP	P	03 26 58.8	+0.3
TTA				pmax	pmax		
	comp=Z,12nm,1.4s						
TTA	Tatalina	24.79	49	eP	P	03 26 58.8	+0.3
	comp=Z,12nm,1.4s						
BOD	Bodaibo	26.04	299	eP	P	03 27 07.4	-2.3
BOD				e		03 27 23.8	
BOD				pmax	pmax		
	comp=Z,2.0nm,0.8s						
CAST	Castle Rocks	26.59	48	eP	P	03 27 14.9	+0.3
	comp=Z,3.2nm,0.8s						
KTH	Kantishna Hill	27.11	48	eP	P	03 27 19.6	+0.3
	comp=Z,0.9nm,0.5s						
KSRS	Korea Array	27.15	248	P	P	03 27 21.1	+1.3
	comp=Z,1.5nm,0.6s,baz=38,slow=10.0,SNR=6.0						
KSRS				LR	LR	03 37 02.0	
	comp=Z,32nm,19.9s,baz=58,slow=34						
KSAR	Wonju Array Be	27.18	248	P	P	03 27 21.2	+1.1
KSAR	Wonju Array Be	27.18	248	P	P	03 27 21.1	+1.1
WRH	Wood River Hil	28.34	46	eP	P	03 27 30.2	0.0
	comp=Z,21nm,1.8s						
ILAR	Eielson Array	28.85	45	P	P	03 27 35.1	+0.4
	comp=Z,1.2nm,0.7s,baz=263,slow=8.0,SNR=18						
ILB	Eielson Array	28.85	45	eP	P	03 27 34.0	-0.7
SONM	Songino Array	33.80	283	P	P	03 28 18.0	-0.6
	comp=Z,0.7nm,0.5s,baz=53,slow=7.7,SNR=3.9						
SONM				PcP	PcP	03 30 57.0	+0.7
	comp=Z,1.1nm,0.6s,baz=46,slow=6.4,SNR=4.1						
SONM				LR	LR	03 44 06.9	
	comp=Z,69nm,19.2s,baz=248,slow=40						
INK	Inuvik	33.89	38	eP	P	03 28 19.4	+0.4
INK				pmax	pmax		
	comp=Z,3.0nm,0.8s						
INK	Inuvik	33.89	38	eP	P	03 28 19.4	+0.4
	comp=Z,3.2nm,0.8s						
HHC	Hu-ho-hao-te	34.55	269	eP	P	03 28 25.5	+0.4
HHC				S	S	03 33 55.4	+5.9
HHC				pmax	pmax		
	comp=Z,16nm,0.9s						
HHC				pmax	pmax		
	comp=Z,130nm,5.4s						
HHC				LR	LR		
	comp=N,590nm,13.9s						
HHC				LR	LR		
	comp=E,500nm,12.9s						
HHC				LR	LR		
	comp=Z,510nm,12.9s						
NRIK	Noril'sk	35.81	325	LR	LR	03 44 37.9	
	comp=Z,89nm,18.6s,baz=100,slow=39						
BBB	Bella Bella	41.94	61	LR	LR	03 44 07.6	
	comp=Z,46nm,20.2s,baz=190,slow=32						
LZH	Lanzhou	42.24	269	eP	P	03 29 25.7	-4.1
LZH				pP	pP	03 29 42.5	-3.0
LZH				sP	sP	03 29 49.8	-3.0
LZH				ePP	PP	03 31 07.0	-1.4
LZH				pmax	pmax		
	comp=Z,20nm,1.2s						
LZH				pmax	pmax		
	comp=Z,47nm,7.8s						
LZH				LR	LR		
	comp=N,170nm,13.5s						
LZH				LR	LR		
	comp=E,190nm,14.0s						
LZH				LR	LR		
	comp=Z,220nm,18.2s						
ZALV	Zalesovo Beam	42.67	303	P	P	03 29 29.6	-3.2
	comp=Z,1.2nm,0.5s,baz=70,slow=7.0,SNR=4.8						
ZALV				PcP	PcP	03 31 24.0	+0.4
	comp=Z,0.9nm,0.5s,baz=107,slow=1.5,SNR=3.3						
NVS	Novosibirsk	43.01	304	eP	P	03 29 33.6	-1.9
YKA	Yellowknife Ar	43.19	43	P	P	03 29 37.9	+1.0
	comp=Z,1.6nm,0.4s,baz=299,slow=7.1,SNR=70						
YKB5	Yellowknife Ar	43.19	43	eP	P	03 29 37.1	+0.2
CD2	Chengdu	45.88	264	P	P	03 29 56.5	-2.3
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
WMQ	Urumqi	46.86	289	eP	P	03 30 06.9	+0.5
KURK	Kurchatov	47.63	302	eP	P	03 30 09.7	-2.4
KURK				pmax	pmax		
	comp=Z,6.0nm,0.5s						
KURK	Kurchatov	47.63	302	eP	P	03 30 09.7	-2.4
	comp=Z,5.8nm,0.5s						
MK31	Makanchi Array	48.05	296	eP	P	03 30 13.8	-1.7
MK31	Makanchi Array	48.05	296	eP	P	03 30 13.8	-1.7
MKAR	Makanchi Array	48.05	296	P	P	03 30 13.2	-2.3
	comp=Z,1.3nm,0.6s,baz=49,slow=6.4,SNR=17						
MKAR	Makanchi Array	48.05	296	*ce*P	P	03 30 17.7	+2.2
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.5s						
MKAR	Makanchi Array	48.05	296	eP	P	03 30 13.8	-1.7
MK01	Makanchi Array	48.06	295	eP	P	03 30 13.6	-1.9
MAKZ	Makanchi	48.21	296	eP	P	03 30 15.1	-1.6
MAKZ				pmax	pmax		
	comp=Z,2.0nm,0.8s						
MAKZ	Makanchi	48.21	296	eP	P	03 30 15.1	-1.6
	comp=Z,1.7nm,0.8s						
VOSK	Vostochnaya	50.19	308	eP	P	03 30 29.9	-1.8
VOSK				pmax	pmax		
	comp=Z,2.0nm,0.8s						
VOSK	Vostochnaya	50.19	308	eP	P	03 30 29.9	-1.8
	comp=Z,1.6nm,0.8s						
BRVK	Borovoye	50.31	308	*ce*P	P	03 30 32.7	+0.1
BRVK				pmax	pmax		
	comp=Z,5.0nm,0.5s						
BRVK	Borovoye	50.31	308	eP	P	03 30 30.4	-2.2
	comp=Z,5.5nm,0.4s						
DAG	Damarks Havn	50.35	360	*i* P	P	03 30 32.0	-0.6
	comp=Z,5.8nm,0.9s						
DAG	Danmarks Havn	50.35	360	*i* P	P	03 30 32.0	-0.6
DAG				pmax	pmax		
	comp=Z,5.0nm,0.9s						
KMI	Kunming	50.74	260	P	P	03 30 37.4	+1.0
KMI				pmax	pmax		
	comp=Z,24nm,0.6s						
KMI				pmax	pmax		
	comp=Z,72nm,6.1s						
BSMT	Bassoo Peak	51.44	59	eP	P	03 30 43.3	+1.9
ARCES	ARCESS Array B	53.21	342	P	P	03 30 51.8	-2.2
	comp=Z,1.9nm,0.9s,baz=37,slow=7.1,SNR=11						
ARCES				PcP	PcP	03 32 01.2	+0.1
	comp=Z,1.8nm,0.5s,baz=28,slow=4.0,SNR=14						
ARU	Arti	53.30	317	*d i* P	P	03 30 53.3	-1.5
ARU						03 32 00.9	
ARU						03 32 52.9	
ARU				S	S	03 38 20.5	-0.7
ARU				SS	SS	03 41 59.1	-1.8
ARU				pmax	pmax		
	comp=Z,6.0nm,0.8s						
FCC	Fort Churchill	53.50	39	eP	P	03 30 56.9	+0.7
FCC				pmax	pmax		
	comp=Z,4.0nm,1.0s						
FCC	Fort Churchill	53.50	39	eP	P	03 30 56.9	+0.7
	comp=Z,4.3nm,1.0s						
SUMG	Summit	53.92	7⇑	*i* P	P	03 30 59.8	+0.2
	comp=Z,10nm,0.8s						
SUMG	Summit	53.92	7⇑	*i* P	P	03 30 59.8	+0.2
SUMG				pmax	pmax		
	comp=Z,10.0nm,0.8s						
SUMG	Summit	53.92	7	eP	P	03 30 58.1	-1.5
	comp=Z,11nm,0.8s						
AAK	Ala-Archa	54.97	296	eP	P	03 31 05.5	-1.9
AAK				pmax	pmax		
	comp=Z,4.0nm,0.9s						
AAK	Ala-Archa	54.97	296	eP	P	03 31 05.5	-1.9
	comp=Z,3.6nm,0.9s						
EKS2	Erkin-Say	55.34	297	eP	P	03 31 09.2	-0.8
EKS2				pmax	pmax		
	comp=Z,3.0nm,0.7s						
EKS2	Erkin-Say	55.34	297	eP	P	03 31 09.2	-0.8
	comp=Z,3.2nm,0.7s						
NV01	Mina Array Sit	55.81	70	eP	P	03 31 14.5	+1.0
NVAR	Mina Array Bea	55.81	70	P	P	03 31 15.4	+1.8
	comp=Z,1.5nm,0.6s,baz=298,slow=7.4,SNR=10.0						
SCO	Scoresbysund	56.67	1	*i* P	P	03 31 19.3	+0.4
	comp=Z,2.2nm,0.6s						
SCO	Scoresbysund	56.67	1	*i* P	P	03 31 19.3	+0.4
SCO				pmax	pmax		
	comp=Z,2.0nm,0.6s						
KKAR	Karatay Array	56.78	299	eP	P	03 31 18.6	-1.5
KKAR	Karatay Array	56.78	299	eP	P	03 31 18.6	-1.5
HWUT	Hardware Ranch	57.33	63	eP	P	03 31 25.1	+0.8
	comp=Z,3.2nm,0.8s						
BW06	Boulder Array	57.58	61	eP	P	03 31 27.9	+1.8
PD31	Pinedale Array	57.58	61	eP	P	03 31 27.4	+1.4
PDAR	Pinedale Array	57.58	61	P	P	03 31 27.8	+1.8
	comp=Z,2.1nm,0.7s,baz=306,slow=2.1,SNR=26						
DUG	Dugway, Tooele	57.64	65	eP	P	03 31 26.7	+0.3
DUG				pmax	pmax		
	comp=Z,4.0nm,1.2s						
DUG	Dugway, Tooele	57.64	65	eP	P	03 31 26.6	+0.3
	comp=Z,4.3nm,1.2s						
ABKAR	Abkulak array	57.69	310	eP	P	03 31 25.0	-1.4
CMAR	Chiang Mai Arr	58.10	258	P	P	03 31 30.3	+0.6
	comp=Z,0.7nm,0.3s,baz=24,slow=7.2,SNR=4.4						
CMAR	Chiang Mai Arr	58.10	258	*ce*P	P	03 31 31.7	+2.1
CMAR				pmax	pmax		
	comp=Z,1.0nm,0.3s						
ULM	Lac du Bonnet	58.86	47	P	P	03 31 35.5	+1.0
	comp=Z,4.8nm,0.4s,baz=310,slow=5.4,SNR=8.0						
RSSD	Black Hills	59.46	56	eP	P	03 31 40.4	+1.3
RSSD				pmax	pmax		
	comp=Z,12nm,0.8s						
RSSD	Black Hills	59.46	56	eP	P	03 31 40.4	+1.3
	comp=Z,12nm,0.8s						
SRU	San Rafael Swe	59.65	64	eP	P	03 31 41.3	+0.9
SRU				pmax	pmax		
	comp=Z,3.0nm,0.8s						
SRU	San Rafael Swe	59.65	64	eP	P	03 31 41.3	+0.9
	comp=Z,3.3nm,0.8s						
FINES	FINESS Array B	60.04	336	P	P	03 31 41.5	-1.0
	comp=Z,1.7nm,0.5s,baz=31,slow=8.0,SNR=17						
FINES				PcP	PcP	03 32 26.6	-1.2
	comp=Z,0.9nm,0.5s,baz=35,slow=5.1,SNR=3.8						
AGMN	Agassiz Nation	60.30	48	eP	P	03 31 44.3	-0.2
	comp=Z,3.2nm,0.8s						
ISCO	Idaho Springs	61.78	61	eP	P	03 31 57.7	+2.7
ISCO				pmax	pmax		
	comp=Z,3.0nm,0.9s						
ISCO	Idaho Springs	61.78	61	eP	P	03 31 57.7	+2.7
	comp=Z,2.7nm,0.9s						
OBN	Obninsk	62.42	327	eP	P	03 31 57.4	-1.2
OBN				*e*		03 32 34.5	
OBN				pmax	pmax		
	comp=Z,2.0nm,0.9s						
EYMN	Ely	62.49	46	eP	P	03 31 59.3	0.0
	comp=Z,3.4nm,0.7s						
NC405	NORSAR Array S	63.31	343	eP	P	03 32 03.1	-1.4
NC204	NORSAR Array S	63.32	344	eP	P	03 32 04.5	-0.1
ECSD	EROS Data Cent	63.37	52	eP	P	03 32 05.8	+0.6
	comp=Z,3.7nm,0.8s						
NB2	NORSAR Subarra	63.47	344	P	P	03 32 04.5	-1.0
	comp=Z,3.3nm,0.8s,baz=21,slow=6.9						
NOA	NORSAR Array B	63.47	344	P	P	03 32 04.6	-1.0
	comp=Z,2.3nm,0.6s,baz=23,slow=6.0,SNR=18						
LPSR	Galich'ya Gora	63.69	324	eP	P	03 32 07.0	-0.1
LPSR				pmax	pmax		
	comp=Z,6.0nm,0.5s						
VRH	Novokhopyorsk	63.82	322	eP	P	03 32 05.7	-2.2
VRH				pmax	pmax		
	comp=Z,6.0nm,0.5s						
VSR	Storozhevoye	64.74	323	eP	P	03 32 12.8	-1.2
VSR				pmax	pmax		
	comp=Z,8.0nm,1.0s						
COWI	Conover	64.94	46	eP	P	03 32 15.8	+0.3
	comp=Z,4.9nm,0.8s						
SCHQ	Schefferville	65.65	28	P	P	03 32 19.7	-0.2
	comp=Z,4.0nm,0.8s,baz=347,slow=6.0,SNR=15						
SCIA	State Center	66.37	51	eP	P	03 32 26.0	+1.3
	comp=Z,32nm,0.6s						
AKASG	Malin Array Be	68.52	329	P	P	03 32 36.5	-1.6
	comp=Z,1.5nm,0.4s,baz=29,slow=6.8,SNR=3.5						
AKASG	Malin Array Be	68.52	329	P	P	03 32 36.5	-1.6
AKASG				pmax	pmax		
	comp=Z,1.0nm,0.4s						
KBZ	Khabaz	69.44	316	P	P	03 32 43.6	-0.2
	comp=Z,1.7nm,0.5s,baz=182,slow=9.1,SNR=5.9						
KBZ				LR	LR	04 05 42.7	
	comp=Z,55nm,19.4s,baz=53,slow=38						
HHAR	Hobbs	70.42	55	eP	P	03 32 50.6	+0.5
	comp=Z,6.3nm,0.6s						
TX31	Lajitas Ar. Si	70.70	67	eP	P	03 32 53.4	+1.4
TXAR	Lajitas Array	70.70	67	P	P	03 32 53.8	+1.7
	comp=Z,2.4nm,0.6s,baz=300,slow=5.1,SNR=36						
KWP	Kalwaria Pacla	71.41	332⇑	*i* P	P	03 32 56.5	+0.7
KWP	Kalwaria Pacla	71.41	332⇑	P	P	03 32 56.5	+0.7
STHS	Stebnicka Huta	72.00	333	eP	P	03 32 58.3	-1.1
STHS	Stebnicka Huta	72.00	333	eP	P	03 32 58.3	-1.1
CLL	Collm	72.27	339	*i* P	P	03 32 59.8	-1.1
	comp=Z,5.0nm,0.8s						
CLL				*i*		03 33 01.4	
	comp=Z,5.0nm,0.8s						
CLL	Collm	72.27	339	*i* P	P	03 32 59.8	-1.1
CLL				pmax	pmax		
	comp=Z,5.0nm,0.8s						
DPC	Dobruska-Polom	72.41	337	eP	P	03 33 01.9	0.0
DPC				*ep*P	pP	03 33 22.9	+4.0
DPC	Dobruska-Polom	72.41	337	eP	P	03 33 01.9	0.0
DPC				*e*		03 33 22.9	
BUR08	Bucovina Ar. S	72.46	330	eP	P	03 33 01.6	-0.7
BURAR	Bucovina Array	72.48	330⇑	*i* P	P	03 33 02.0	-0.4
BURAR	Bucovina Array	72.48	330⇑	P	P	03 33 02.0	-0.4
MORC	Moravsky Berou	72.64	336	eP	P	03 33 03.1	-0.1
MORC				pmax	pmax		
	comp=Z,56nm,1.9s						
MORC	Moravsky Berou	72.64	336	eP	P	03 33 03.1	-0.1
	comp=Z,56nm,1.9s						
WVT	Waverly	73.50	51	eP	P	03 33 07.1	-1.3
WVT				pmax	pmax		
	comp=Z,6.0nm,0.8s						
WVT	Waverly	73.50	51	eP	P	03 33 07.1	-1.3
	comp=Z,6.2nm,0.8s						
DRGR		73.97	331⇑	*i* P	P	03 33 10.1	-1.1
DRGR		73.97	331⇑	P	P	03 33 10.1	-1.1
MLR	Muntele Rosu	74.16	328⇑	*i* P	P	03 33 12.9	+0.6
MLR	Muntele Rosu	74.16	328⇑	P	P	03 33 12.9	+0.6
MLR	Muntele Rosu	74.16	328	eP	P	03 33 12.3	-0.1
	comp=Z,3.3nm,0.6s						
KHC	Kasperske Hory	74.19	338	eP	P	03 33 13.3	+0.9
KHC				*ep*P	pP	03 33 30.7	+1.3
KHC	Kasperske Hory	74.19	338	eP	P	03 33 13.3	+0.9
KHC				*e*		03 33 30.7	
MEM	Membach	74.31	343	P	P	03 33 13.3	+0.3
GERES	GERESS Array B	74.43	338	P	P	03 33 13.8	-0.1
	comp=Z,0.6nm,0.4s,baz=30,slow=6.1,SNR=10						
GERES				LR	LR	04 11 07.1	
	comp=Z,62nm,18.7s,baz=234,slow=40						
GEA0	GERESS Array S	74.44	338	eP	P	03 33 13.4	-0.5
VOIR		74.49	329⇓	*i* P	P	03 33 14.5	+0.3
VOIR		74.49	329⇓	P	P	03 33 14.5	+0.3
SWET	Sewanee	75.13	51	eP	P	03 33 17.6	-0.5
	comp=Z,3.3nm,0.6s						
BZS	Buzias	75.36	331⇓	*i* P	P	03 33 19.3	+0.2
BZS	Buzias	75.36	331⇓	P	P	03 33 19.3	+0.2
WRA	Warramunga Arr	76.08	205	P	P	03 33 23.9	+0.6
	comp=Z,1.5nm,0.8s,baz=5.5,slow=6.6,SNR=4.6						
WRA	Warramunga Arr	76.08	205	P	P	03 33 24.0	+0.6
WRA				pmax	pmax		
	comp=Z,2.0nm,0.8s						
SOKA	Soboth	76.14	336	*i* P	P	03 33 24.4	+0.8
	comp=Z,5.3nm,1.1s						
KBA	Koelnbreinsper	76.17	337	*i* P	P	03 33 24.6	+0.7
	comp=Z,10nm,0.7s						
BRTR	Keskin Array B	76.52	320	P	P	03 33 25.5	-0.5
	comp=Z,0.3nm,0.5s,baz=37,slow=5.6,SNR=4.2						
BRTR	Keskin Array B	76.52	320	*i* P	P	03 33 29.5	+3.5
BRTR				pmax	pmax		
	comp=Z,1.0nm,0.8s						
ABTA	Abfaltersbach	76.68	338	*i* P	P	03 33 25.9	-0.8
	comp=Z,8.3nm,1.3s						
BR231	Keskin MP Arra	76.75	321	eP	P	03 33 26.0	-1.2
FETA	Feichten	76.82	339	*i* P	P	03 33 27.6	0.0
	comp=Z,2.4nm,0.6s						
TUE	Stuetta	77.63	340	eP	P	03 33 31.7	-0.5
	comp=Z,6.1nm,0.6s						
PDG	Podgorica	78.96	331⇓	*i* P	P	03 33 40.6	+1.3
AS01	Alice Springs	79.75	204	eP	P	03 33 45.0	+1.3
ASAR	Alice Springs	79.76	204	P	P	03 33 45.0	+1.3
	comp=Z,1.2nm,0.5s,baz=11,slow=4.8,SNR=14						
LAST	Lasithi	83.58	324⇑	*i* P	P	03 34 03.7	-0.3
SIVA	Sivas	83.94	324⇓	*i* P	P	03 34 05.1	-0.7
ES19	SONSECA Array	86.48	348	eP	P	03 34 19.2	+0.8
ESDC	Sonseca Array	86.51	348	P	P	03 34 18.9	+0.3
	comp=Z,2.5nm,0.5s,baz=3.2,slow=4.9,SNR=36						
ESLA	Sonseca Array	86.51	348	eP	P	03 34 19.1	+0.4
	comp=Z,4.9nm,0.8s						
KEST	Kesra	87.87	336	P	P	03 34 25.0	-0.3
	comp=Z,5.3nm,0.8s,baz=302,slow=4.2,SNR=7.4						
TORD	Torodi Ar. Bea	111.38	337	PKIKP	PKiKP	03 40 09.8	0.0
	comp=Z,0.2nm,0.3s,baz=19,slow=1.9,SNR=10						
PLCA	Paso Flores	144.10	91	PKP	PKPbc	03 41 09.6	+0.7
	comp=Z,2.0nm,0.6s,baz=319,slow=4.8,SNR=5.9						

TAP ***04*** *03:30:00.7,25°.03N×122°.28E,h133km±1km,ML3.7,D*
JMA ***04*** *03:30:00.4±0.2,24°.83N×122°.28E,h137km±3km,M2.6*
ISCJB ***04*** *03:30:01.3±0.8,24°.91N±0°.06×122°.34E±0°.02,*
h126km±5km, Error ellipse: s-maj=9.7km s-min=3.3km
az=170.0

ISC 04 03:30:01.0±1.9,24°.93N±0°.09×122°.32E±0°.03,
h131km±11km,n30,σ0.52/56,Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWB1	Santiao Chiao	0.31	284	eP	Pn	03 30 20.3	+1.1
	baz=265						
TWB1				eS	Sn	03 30 33.3	+0.3
	baz=265						
NWF	Wu-fen Shan	0.51	286	eP	Pn	03 30 20.6	+0.4
	baz=275						
NWF				eS	Sn	03 30 33.2	-1.7
	baz=275						
TWC	Suao	0.54	233	eP	Pn	03 30 20.4	0.0
	baz=222						
TWC				eS	Sn	03 30 34.6	-0.4
	baz=222						
TWE	Neicheng	0.63	250	eP	Pn	03 30 21.1	+0.1
	baz=240						
TWE				eS	Sn	03 30 35.3	-0.7
	baz=240						
ENA	Nanau	0.73	226	eP	Pn	03 30 22.1	+0.5
	baz=218						
ENA				eS	Sn	03 30 37.4	+0.1
	baz=218						
ENTT	Nioudou	0.74	247	eP	Pn	03 30 22.4	+0.6
	baz=238						
ENTT				eS	Sn	03 30 37.6	0.0
	baz=238						
JYNG	Yonagunijimaku	0.75	130	P	Pn	03 30 21.8	0.0
JYNG				S	Sn	03 30 37.7	+0.2
YOJ	Yonaguni jima	0.79	127	P	Pn	03 30 22.2	+0.1
YOJ				S	Sn	03 30 38.7	+0.6
NSK	Sanguang	0.91	254	eP	Pn	03 30 23.3	+0.1
	baz=246						
NSK				eS	Sn	03 30 39.4	-0.6
	baz=246						
TWD	Chiawan	1.07	218	eP	Pn	03 30 24.5	-0.2
	baz=213						
TWD				eS	Sn	03 30 42.4	-0.3
	baz=213						
NSTT	Nanjuang	1.23	256	eP	Pn	03 30 26.2	-0.1
	baz=251						
NSTT				eS	Sn	03 30 44.9	-0.6
	baz=251						
WHF	Hehuan Shan	1.24	231	eP	Pn	03 30 27.2	+0.4
	baz=226						
WHF				eS	Sn	03 30 46.2	-0.2
	baz=226						
TWT	Tachien	1

JTJ	Tarama	2.19	97	P	Pn	03 30 37.8	+0.5
JTJ				S	Sn	03 31 04.7	-0.4
CHN4	Tsaushan	2.23	225	eS	Sn	03 31 05.6	-0.5
	baz=222						
JIRB	Irabujima	2.59	92	S	Sn	03 31 14.0	-0.3
JIKM	Ikemajima	2.66	90	S	Sn	03 31 15.6	-0.1
JOGS	Gusukube	2.81	93	S	Sn	03 31 19.4	+0.2

NIED ***04*** *03:47:00, 35°.90N×140°.60E, h53km, Mw4.1 Best double couple: M0 1.36000×10^15 NP1:φs 183.00000°, δ18.00000°, λ121.00000°. NP2:φs 331.00000°, δ75.00000°, λ80.00000°.*
ISCJB ***04*** *03:47:28.8±0.4, 35°.80N±0°.04×140°.44E±0°.08, h50km, mb3.8/9, Error ellipse: s-maj=9.4km s-min=5.6km az=165.4*
JMA ***04*** *03:47:30.1±0.1, 35°.88N×140°.55E, h45km±1km, M3.3 Broadband fault plane solution: P waves. NP1: φs 336.00000°, δ79.00000°, λ76.00000°. NP2: φs 208.00000°, δ17.00000°, λ141.00000°. Principal axes: T Plg54.0000°, Azm229.0000°; N Plg13.0000°, Azm338.0000°; P Plg33.0000°, Azm77.0000°;*
JMA Felt I J1.
IDC ***04*** *03:47:31.5±2.1, 35°.84N×140°.32E, h60km±20km, mb3.6/9, mb1 3.8/11, mb1mx3.5/36, mbtmp3.9/11, MS3.0/3, Ms1 3.0/3, ms1mx2.7/44 Error ellipse: s-maj=23.2km s-min=14.5km az=80.0*

ISC 04 03:47:30.0±0.7, 35°.81N±0°.06×140°.52E±0°.08, h50km, n22, σ1§30/23, mb3.7/9, 2C-2D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	0.29	111	⇑P	Pn	03 47 38.7	-0.3
CHOJ				S	Sn	03 47 45.6	+0.1
JYT	Yasato	0.50	328	⇓P	Pn	03 47 40.6	-0.6
JYT				S	Sn	03 47 47.9	-1.3
JHO	Hitachi	0.80	3	⇑P	Pn	03 47 44.1	-1.0
BSO3	Boso 3	1.00	180	P	Pn	03 47 48.5	+1.0
JAG	Ashikaga	1.06	306	⇓P	Pn	03 47 48.4	-0.1
BSO1	Boso 1	1.21	162	P	Pn	03 47 51.0	+1.0
MJAR	Matsushiro Arr	2.01	292	P	Pn	03 48 01.8	+0.3
	19nm,0.3s,baz=90,slow=21,SNR=110						
MJAR				LR	LR	03 48 21.8	
	comp=Z,29nm,20.7s,baz=150,slow=28						
JHJ	Hachijo jima 2	2.75	193	P	Pn	03 48 12.9	+1.4
	123nm,0.3s,baz=309,slow=21,SNR=38						
JHJ				S	Sn	03 48 41.2	-2.4
	39nm,0.3s,baz=49,slow=19,SNR=4.4						
JNU	Nakatsue	8.40	254	LR	LR	03 53 08.0	
	comp=Z,112nm,20.0s,baz=18,slow=41						
ASAJ	Asahikawa	8.45	10	P	Pn	03 49 29.3	-0.4
	0.9nm,0.3s,baz=207,slow=16,SNR=6.5						
JCJ	Chichijima	8.80	170	P	Pn	03 49 32.3	-2.3
	9.4nm,0.3s,baz=300,slow=20,SNR=4.3						
JCJ				S	Sn	03 51 03.8	-8.6
	3.7nm,0.3s,baz=336,slow=20,SNR=2.4						
JCJ				LR	LR	03 52 37.9	
	comp=Z,82nm,19.1s,baz=112,slow=35						
KSRS	Korea Array	10.26	283	LR	LR	03 53 49.7	
	comp=Z,76nm,20.1s,baz=88,slow=37						
SONM	Songino Array	27.90	306	P	P	03 53 14.1	-1.1
	0.8nm,0.7s,baz=105,slow=11,SNR=2.6						
MKAR	Makanchi Array	44.17	303	P	P	03 55 33.0	-0.7
	0.8nm,0.6s,baz=93,slow=9.7,SNR=8.5						
KURBB	Kurchatov Arra	46.20	309	P	P	03 55 47.1	-2.6
	2.6nm,0.9s,baz=84,slow=7.9,SNR=6.2						
ILAR	Eielson Array	50.91	32	P	P	03 56 26.4	+0.7
	0.5nm,0.8s,baz=268,slow=6.6,SNR=5.0						
WRA	Warramunga Arr	55.75	187	P	P	03 57 01.9	+0.2
	2.1nm,0.6s,baz=2.7,slow=7.4,SNR=15						
ASAR	Alice Springs	59.48	187	P	P	03 57 28.4	+0.5
	1.3nm,0.8s,baz=11,slow=8.3,SNR=12						
STKA	Stephens Creek	67.34	179	P	P	03 58 20.3	+0.7
	2.1nm,0.8s,baz=5.2,slow=6.7,SNR=4.7						
NB2	NORSAR Subarra	75.03	337	P	P	03 59 07.4	+1.4
	comp=Z,0.9nm,0.8s,baz=42,slow=5.9						
NOA	NORSAR Array B	75.03	337	P	P	03 59 07.3	+1.3
	comp=Z,0.5nm,0.7s,baz=41,slow=5.7,SNR=4.4						
NVAR	Mina Array Bea	76.30	52	P	P	03 59 15.4	+1.6
	comp=Z,0.3nm,0.5s,baz=286,slow=6.4,SNR=2.8						

ISCJB ***04*** *04:08:25.5±0.8, 26°.39S±0°.04×27°.38E±0°.04, h10km±5km, Error ellipse: s-maj=7.6km s-min=3.8km az=138.7*
PRE ***04*** *04:08:26.0±1.4, 26°.44S×27°.42E, h2km, ML3.2*

ISC 04 04:08:26.4±1.1, 26°.42S±0°.04×27°.40E±0°.04, h8km±8km, n14, σ1§55/28, South Africa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KLOF	Kloof	0.20	69	eP	Pg	04 08 29.3	-1.3
KLOF				eS	Sg	04 08 33.1	-0.4
KLOF				AML	AML	04 08 37.8	
	comp=Z,2μm,0.3s						
PRYS	Parys	0.50	184	eP	Pg	04 08 36.1	-0.1
PRYS				eS	Sg	04 08 42.6	-0.2
PRYS				AML	AML	04 08 48.3	
	comp=Z,851nm,0.8s						
BFSD	Buffelsfontein	0.70	231	eP	Pg	04 08 40.2	+0.2
BFSD				eS	Sg	04 08 48.8	-0.5
BFSD				AML	AML	04 08 51.0	
	comp=Z,342nm,0.5s						
ERPM	east rand prop	0.76	84	eP	Pg	04 08 41.0	0.0
ERPM				eS	Sg	04 08 51.1	+0.1
ERPM				AML	AML	04 09 00.2	
	comp=Z,161nm,0.5s						
MOAB	Moab Khotsong	0.78	223	eP	Pg	04 08 40.9	-0.5
MOAB				eS	Sg	04 08 51.6	0.0
MOAB				AML	AML	04 08 57.8	
	comp=Z,389nm,0.5s						
TLEK	Tau Lekoa	0.84	230	eP	Pg	04 08 42.8	+0.1
TLEK				eS	Sg	04 08 53.7	0.0
TLEK				AML	AML	04 09 02.5	
	comp=Z,229nm,0.7s						
BOSA	Boshof	2.90	221	i P	Pn	04 09 14.8	+1.8
BOSA				i S	Sb	04 09 55.7	+1.6
POGA	Pongola	3.88	105	eP	Pn	04 09 28.8	+2.4
POGA				eS	Sn	04 10 12.5	+0.3
POGA				AML	AML	04 10 33.3	
	comp=Z,79nm,0.6s						
UPI	Upington	5.80	249	eP	Pn	04 09 54.5	+1.7
UPI				eS	Sn	04 10 58.0	-1.6
UPI				AML	AML	04 11 29.9	
	comp=Z,33nm,0.6s						
MATP	Matopo	6.05	10	i P	Pn	04 09 58.2	+1.8
MATP				i S	Sn	04 11 05.9	-0.1
BLWY	Bulawayo	6.35	10	i P	Pn	04 10 01.4	+0.9
BLWY				i S	Sn	04 11 13.7	+0.3
BUFB	Buffelsbos	8.04	196	eP	Pn	04 10 24.1	+0.6
BUFB				eS	Sn	04 11 51.3	-3.4
BUFB				AML	AML	04 12 15.3	
	comp=Z,5.5nm,0.7s						
CVNA	Calvinia	8.38	231	eP	Pn	04 10 28.4	+0.2
CVNA				eS	Sn	04 11 59.5	-3.6
CVNA				AML	AML	04 12 29.4	
	comp=Z,6.7nm,0.4s						
KOMG	Komaggas	9.38	247	eP	Pn	04 10 43.1	+1.2
KOMG				eS	Sn	04 12 24.8	-2.9
KOMG				AML	AML	04 13 19.0	
	comp=Z,7.8nm,0.6s						

NIED ***04*** *04:12:00, 37°.60N×141°.60E, h68km, Mw3.8 Best double couple: M0 5.92000×10^14 NP1:φs 30.00000°, δ79.00000°, λ170.00000°. NP2:φs 122.00000°, δ80.00000°, λ11.00000°.*

JMA 04 04:12:01.2±0.1, 37°.65N×141°.61E, h47km±2km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	0.65	244	P	Pn	04 12 14.1	-0.1
JFK				S	Sn	04 12 23.2	-0.4
JMM	Marumori	0.68	289	P	Pn	04 12 14.6	0.0
JMM				S	Sn	04 12 24.1	-0.2
JIO	Ouri	0.83	346	P	Pn	04 12 16.6	+0.1
JIO				S	Sn	04 12 27.3	-0.4
ONAJ	Iwakimizuishiy	0.85	230	P	Pn	04 12 16.6	-0.2
ONAJ				S	Sn	04 12 27.5	-0.7
JFT	Otama	1.02	263	P	Pn	04 12 19.8	+0.7
JFT				S	Sn	04 12 33.2	+0.8
JOU	Okura	1.03	314	P	Pn	04 12 19.3	0.0
MAT	Matsushiro	2.94	249	P	Pn	04 12 48.9	+3.5
MAT				eS	Sn	04 13 24.7	+5.3

IDC 04 04:31:54.5±1.6, 3°.76S×123°.73E, h0km, mb3.6/2, mb1 3.9/3, mb1mx3.5/30, mbtmp3.6/3, ML3.3/1, MS2.8/1, Ms1 2.8/1, ms1mx2.5/44, 1C-1D, Error ellipse: s-maj=247.9km s-min=25.2km az=61.0, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DAV	Davao City (W)	10.92	10	LR	LR	04 39 26.1	
	comp=Z,46nm,19.9s,baz=259,slow=41						
PLP	Palo	14.88	5	⇓eP	P	04 35 31.9	-0.4
RCP	Roxas	15.25	356	⇑eP	P	04 35 45.5	+9.0
WRA	Warramunga Arr	19.13	148	P	P	04 36 18.6	-0.8
	0.1nm,0.3s,baz=318,slow=13,SNR=6.6						
ASAR	Alice Springs	22.10	154	P	P	04 36 52.3	+0.7
	2.7nm,0.9s,baz=341,slow=14,SNR=15						
MKAR	Makanchi Array	62.18	329	P	P	04 42 17.7	-0.1
	0.2nm,0.5s,baz=114,slow=6.6,SNR=2.6						

DJA 04 04:41:21.5±0.8, 10°S±7°×11°6E±°, h90km, M3.7/9, MLv3.7/9, South of Bali

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DNP	Denpasar	1.43	346	P	Pn	04 41 47.1	+0.8
DNP				S	Sn	04 42 06.9	+1.8
TWSI	Taliwang, Sumb	1.86	45	P	Pn	04 41 52.0	+0.1
TWSI				S	Sn	04 42 15.6	+0.6
SRBI	Singaraja	2.00	350	P	Pn	04 41 52.5	-1.3
SRBI				S	Sn	04 42 16.4	-1.9
JAGI	Jajag, Banyuwa	2.11	319	P	Pn	04 41 55.5	+0.3
JAGI				S	Sn	04 42 21.6	+0.7
PLAI	Plampang	2.51	61	P	Pn	04 42 00.4	-0.1
PLAI				S	Sn	04 42 30.9	+0.5
ABJI	Asem Bagus	2.61	330	P	Pn	04 42 00.4	-1.4
GMJI	Gumukmas	2.75	310	P	Pn	04 42 03.6	-0.1
GMJI				S	Sn	04 42 36.4	+0.3
PWJI	Pagerwojo	4.23	298	P	Pn	04 42 22.5	-1.2

IDC ***04*** *04:50:04.8±0.5, 49°.27S×121°.10E, h0km, mb4.8/13, mb1 4.9/14, mb1mx4.7/23, mbtmp4.8/14, ML3.7/1, MS4.5/16, Ms1 4.5/16, ms1mx4.2/31, Error ellipse: s-maj=23.8km s-min=15.5km az=118.0*
ISCJB ***04*** *04:50:04.4±0.2, 49°.22S±0°.04×120°.81E±0°.07, h10km, mb5.0/50, MS4.6/23, Error ellipse: s-maj=7.0km s-min=4.9km az=14.9*
MOS ***04*** *04:50:05.0±1.8, 49°.19S×120°.85E, h10km, mb5.3/11, Error ellipse: s-maj=20.1km s-min=9.3km az=80.1*
BJI ***04*** *04:50:06.6, 48°.87S×120°.29E, h10km, mb5.1/46, mB5.2/27, Ms5.1/28, Ms7 4.7/28*
GCMT ***04*** *04:50:06.1±0.1, 49°.17S×120°.83E, h15km, MW5.3/99, Moment Tensor Solution. s69,c107; s99,c181; Duration: 1§0 Moment tensor: Scale 10^17Nm; Mrr-0.11±.02; Mθθ0.63±.01; Mφφ-0.51±.02; Mrθ0.40±.05; Mrφ0.78±.01; Mθφ-0.13±.05; Best double couple: M0 1.05900×10^17 NP1:φs 287.00000°, δ87.00000°, λ-24.00000°. NP2:φs 19.00000°, δ66.00000°, λ-176.00000°. Principal axes: T 1.1010, Plg14.0000°, Azm335.0000°; N -0.0850, Plg66.0000°, Azm100.0000°; P -1.0160, Plg19.0000°, Azm240.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
NEIC ***04*** *04:50:06.1±0.2, 49°.24S×120°.85E, h10km, mb5.1/30 Error ellipse: s-maj=9.4km s-min=6.3km az=102.0*

ISC 04 04:50:06.2±0.3, 49°.25S±0°.05×120°.85E±0°.07, h10km, n348, σ1§17/340, mb5.1/49, MS4.5/23, 1C-1D, Western Indian-Antarctic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RKGY	Rocky Gully	14.91	347	P	Pn	04 53 34.4	-2.6
	baz=15,SNR=82						
H01W2	Cape Leeuwin H	15.18	338	T	T	05 09 02.8	
	baz=162,slow=74,SNR=711						
H01W1	Cape Leeuwin H	15.18	339	T	T	05 09 12.4	
	baz=162,slow=74,SNR=806						
H01W3	Cape Leeuwin H	15.19	338	T	T	05 09 10.6	
	baz=162,slow=74,SNR=709						
NWAO	Narrogin (SRO)	16.53	349	Pn	Pn	04 53 58.5	+0.4
	14nm,0.3s,baz=43,slow=10.0,SNR=84						
NWAO				Sn	Sn	04 56 56.9	-4.7
	1.6nm,0.3s,baz=150,slow=21,SNR=5.8						
NWAO				LR	LR	04 58 39.1	
	comp=Z,5μm,21.2s,baz=42,slow=31						
NWAO	Narrogin (SRO)	16.53	349	P	Pn	04 53 55.8	-2.4
	baz=16,SNR=86						
NWAO	Narrogin (SRO)	16.53	349	eP	Pn	04 53 56.1	-2.0
NWAO				e		04 56 58.2	
NWAO				pmax	pmax		
	comp=Z,381nm,0.6s						
NWAO	Narrogin (SRO)	16.53	349	ePn	Pn	04 53 56.0	-2.0
	comp=Z,381nm,0.6s						
NWAO				eSn	Sn	04 56 58.2	-3.4
MUN	Mundaring	17.61	347	P	Pn	04 54 09.5	-2.0
	baz=17						
KMBL	Kambalda	17.88	3	P	Pn	04 54 14.6	-0.4
	baz=18,SNR=9.2						
CASY	Casey	17.89	194	ePn	Pn	04 54 12.8	-2.1
	comp=Z,54nm,1.1s						
BLDU	Ballidu	18.88	349	P	P	04 54 24.5	-2.1
	baz=19,SNR=10						
TAU	Tasmania Unive	19.37	81	eP	Pn	04 54 33.5	+0.6
TAU				pmax	pmax		
	comp=Z,69nm,0.9s						
TAU	Tasmania Unive	19.37	81	eP	Pn	04 54 33.5	+0.6
	comp=Z,69nm,0.9s						
MOO	Moorlands	19.51	80	P	Pn	04 54 35.0	+0.3
	baz=20,SNR=5.2						
ARPS	Mount Arapiles	19.70	59	P	Pn	04 54 36.3	-0.7
	baz=20,SNR=33						
BBOO	Buckleboo	19.97	40	P	P	04 54 37.4	-1.2
	baz=20,SNR=21						
BBOO	Buckleboo	19.97	40	eP	P	04 54 37.7	-0.9
	comp=Z,64nm,0.9s						
MORW	Morawa	20.49	348	P	P	04 54 43.1	-1.1
	baz=20,SNR=14						
HTT	Hallett	20.75	47	P	P	04 54 46.9	-0.2
	baz=21,SNR=35						
TOO	Toolangi	21.27	66	P	P	04 54 54.1	+1.5
	baz=21,SNR=40						
MIR	Mirnyy	22.46	209	i P	P	04 55 05.5	+0.5
MIR				pmax	pmax		
	comp=Z,8.0nm,1.5s						
STKA	Stephens Creek	23.32	50	P	P	04 55 13.9	-0.4
	comp=Z,58nm,0.8s,baz=200,slow=11,SNR=125						
STKA				LR	LR	05 02 37.8	
	comp=Z,1μm,21.1s,baz=206,slow=32						
STKA	Stephens Creek	23.32	50	P	P	04 55 14.0	-0.4
	baz=23,SNR=87						
STKA	Stephens Creek	23.32	50	eP	P	04 55 13.9	-0.4
STKA				pmax	pmax		
	comp=Z,51nm,1.5s						
STKA	Stephens Creek	23.32	50	eP	P	04 55 13.9	-0.4
	comp=Z,51nm,1.5s						
WRKA	Warakurna	24.86	16	P	P	04 55 28.1	-0.8
	baz=25,SNR=26						
CAN	Canberra	24.87	67	eP	P	04 55 30.4	+1.4
CAN				pmax	pmax		
	comp=Z,189nm,1.8s						
CAN	Canberra	24.87	67	eP	P	04 55 30.4	+1.4
	comp=Z,189nm,1.8s						
YNG	Young	25.22	64	P	P	04 55 31.5	-0.6
	baz=25,SNR=5.7						
CMSA	Cobar Meteorol	25.72	56	P	P	04 55 36.8	+0.2
	baz=26,SNR=50						
ASAR	Alice Springs	27.53	27	P	P	04 55 52.0	-1.0
	comp=Z,47nm,1.0s,baz=202,slow=8.9,SNR=217						
ASAR				LR	LR	05 05 42.5	
	comp=Z,655nm,20.3s,baz=200,slow=34						
ASAR	Alice Springs	27.53	27	P	P	04 55 52.0	-1.0
AS31	Alice Springs	27.53	27	eP	P	04 55 52.0	-1.0
	comp=Z,12nm,0.8s						
AS01	Alice Springs	27.54	27	eP	P	04 55 51.3	-1.8
MBWA	Marble Bar	28.05	358	P	P	04 55 58.0	+0.5
	comp=Z,54nm,1.4s						
QLP	Quilpie	28.98	47	P	P	04 56 06.1	+0.2
	baz=29,SNR=43						
ARMA	Armidale	29.90	62	P	P	04 56 13.9	-0.3
	baz=30,SNR=6.4						
ARMA	Armidale	29.90	62	eP	P	04 56 14.9	+0.7
	comp=Z,15nm,0.7s						
WB1	Warramunga Ar.	31.16	25	P	P	04 56 23.3	-2.0
	baz=31						
WRA	Warramunga Arr	31.18	25	P	P	04 56 24.0	-1.4
	comp=Z,15nm,0.9s,baz=199,slow=8.9,SNR=26						
WRA				LR	LR	05 08 06.6	
	comp=Z,494nm,19.9s,baz=175,slow=35						
WRA	Warramunga Arr	31.18	25	P	P	04 56 24.0	-1.4
WB2	Warramunga Arr	31.18	25	eP	P	04 56 24.4	-1.0
	comp=Z,27nm,1.1s						
WRAB	Tennant Creek	31.19	25	eP	P	04 56 24.1	-1.4
WRAB				pmax	pmax		
	comp=Z,29nm,1.1s						
WRAB	Tennant Creek	31.19	25	eP	P	04 56 24.1	-1.4
	comp=Z,29nm,1.1s						
FITZ	Fitzroy Crossi	31.31	9	P	P	04 56 26.2	-0.3
	baz=31,SNR=17						
FITZ	Fitzroy Crossi	31.31	9	eP	P	04 56 26.2	-0.3
	comp=Z,27nm,0.8s						
RMQ	Roma	31.34	54	P	P	04 56 26.8	0.0
	baz=31,SNR=6.3						
QIS	Mount Isa	32.31	34	P	P	04 56 34.9	-0.5
	baz=32,SNR=4.0						
VNDA	Vanda	32.34	165	P	P	04 56 34.9	-0.1
	comp=Z,24nm,0.7s,baz=308,slow=9.0,SNR=124						
VNDA				LR	LR	05 08 57.1	
	comp=Z,3μm,18.3s,baz=316,slow=35						
VNDA	Vanda	32.34	165	eP	P	04 56 35.0	-0.1
VNDA				pmax	pmax		
	comp=Z,28nm,0.8s						
VNDA	Vanda	32.34	165	eP	P	04 56 35.0	-0.1
	comp=Z,28nm,0.8s						
SBA	Scott Base	33.40	164	eP	P	04 56 44.8	+0.5
SBA				pmax	pmax		
	comp=Z,56nm,1.6s						
SBA	Scott Base	33.40	164	eP	P	04 56 44.8	+0.5
	comp=Z,56nm,1.6s						
EIDS	Eidsvold	33.48	56	eP	P	04 56 45.5	-0.1
	comp=Z,33nm,1.5s						
MAW	Mawson	33.81	216	P	P	04 56 48.1	+0.2
	comp=Z,12nm,0.9s,baz=88,slow=12,SNR=11						
MAW				LR	LR	05 08 57.7	
	comp=Z,545nm,18.9s,baz=120,slow=33						
MAW	Mawson	33.81	216	P	P	04 56 48.1	+0.2
MAW				pmax	pmax		
	comp=Z,6.0nm,1.0s						
MAW	Mawson	33.81	216	P	P	04 56 48.1	+0.2
	comp=Z,5.9nm,1.0s						
CTA	Charters Tower	35.49	44	LR	LR	05 11 07.0	
	comp=Z,596nm,19.4s,slow=36						
MTSU	Mount Surprise	36.36	40	P	P	04 57 10.3	-0.2
	baz=36,SNR=5.1						
MTN	Manton Dam	37.28	17	eP	P	04 57 18.8	+0.6
	comp=Z,54nm,1.3s						
KDU	Kakadu	37.70	19	P	P	04 57 21.4	-0.5
	baz=38,SNR=7.8						
BATI	Baumata	38.99	4	LR	LR	05 12 22.1	
	comp=Z,562nm,21.0s,baz=120,slow=34						
SOEI	Soe	39.47	5	P	P	04 57 37.4	+0.5
	comp=Z,48nm,1.1s,comp=Z,3μm						
SOEI	Soe	39.47	5	eP	P	04 57 39.2	+2.4
	comp=Z,42nm,1.1s						
COEN	Coen	39.69	35	P	P	04 57 38.3	-0.3
	baz=40,SNR=6.1						
COEN	Coen	39.69	35	eP	P	04 57 38.2	-0.3
	comp=Z,17nm,0.8s						
QSPA	South Pole Qui	40.87	180	eP	P	04 57 47.6	-0.5
	comp=Z,429nm,1.1s						
URZ	Urewera	41.21	96	P	P	04 57 50.3	-0.6
	comp=Z,7.7nm,0.8s,baz=190,slow=10.0,SNR=3.5						
URZ				LR	LR	05 13 34.3	
	comp=Z,282nm,18.4s,baz=181,slow=34						
SYO	Syowa Base	42.22	212	i P	P	04 57 57.0	-1.8
SYO	Syowa Base	42.22	212	i eSP	P	04 58 04.2	+5.4
KAPI	Kappang	44.09	358	LR	LR	05 16 20.3	
	comp=Z,455nm,19.9s,baz=193,slow=36						
KAPI	Kappang	44.09	358	eP	P	04 58 14.3	-0.2
	comp=Z,69nm,1.4s						
DZM	Mont Dzumac	44.97	70	LR	LR	05 13 52.6	
	comp=Z,492nm,20.6s,baz=238,slow=32						
SPSI	Sidrap Palu	45.13	358	P	P	04 58 22.4	-0.4
BBKI	Banjar Baru	45.91	352	P	P	04 58 34.0	+5.0
FAKI	Fak Fak	47.18	16	P	P	04 58 42.3	+3.4
FAKI	Fak Fak	47.18	16	eP	P	04 58 39.5	+0.5
	comp=Z,61nm,0.9s						
NVL	N'lazarevskaya	50.06	204	eP	P	04 58 58.8	-1.7
HNR	Honiara	51.34	53	LR	LR	05 18 41.9	
	comp=Z,454nm,20.4s,baz=219,slow=34						
SBUM	Sibu	52.04	349	eP	P	04 59 15.6	-0.3
	comp=Z,15nm,1.2s						
SNAA	Sanae	53.01	199	P	P	04 59 22.3	-0.4
SNAA	Sanae	53.01	199	eP	P	04 59 22.1	-0.6
SNAA	Sanae	53.01	199	eP	P	04 59 22.1	-0.6
	comp=Z,4μm,1.0s						
VNA2	Neumayer--Watz	54.55	198	P	P	04 59 33.3	-0.5
	baz=138,slow=7.1						
VNA3	Neumayer Olymp	54.76	198	P	P	04 59 34.3	-1.0
VNA1	Neumayer--Stat	54.94	198	P	P	04 59 36.9	+0.2
PSI	Prapat	55.22	333	eP	P	04 59 36.5	-2.9
PSI				pmax	pmax		
	comp=Z,13nm,0.9s						
PSI	Prapat	55.22	333	eP	P	04 59 36.5	-2.9
	comp=Z,13nm,0.9s						
MSVF	Nonsavu	55.46	77	eP	P	04 59 40.0	-1.2
MSVF				pmax	pmax		
	comp=Z,30nm,1.1s						
MSVF	Nonsavu	55.46	77	eP	P	04 59 40.0	-1.2
	comp=Z,30nm,1.1s						
IPM	Ipoh	56.23	336	eP	P	04 59 45.0	-1.6
	comp=Z,21nm,1.0s						
H08S2	Diego Garcia H	57.90	299	T	T	06 02 31.2	
	baz=144,slow=76,SNR=13						
H08S1	Diego Garcia H	57.91	299	T	T	06 02 26.9	
	baz=144,slow=76,SNR=10						
H08S3	Diego Garcia H	57.92	299	T	T	06 02 33.1	
	baz=144,slow=76,SNR=12						
CM01	Chiang Mai Arr	70.13	338	eP	P	05 01 17.5	-1.1
CHTO	Chiang Mai	70.51	338	eP	P	05 01 19.7	-1.3
CHTO				pmax	pmax		
	comp=Z,18nm,1.5s						
CHTO	Chiang Mai	70.51	338	eP	P	05 01 19.7	-1.3
	comp=Z,18nm,1.5s						
TPUB	Ta-pu	72.22	360	eP	P	05 01 33.1	+1.8
	comp=Z,65nm,1.4s						
BOSA	Boshof	72.32	247	P	P	05 01 33.3	+1.1
	comp=Z,5.2nm,1.1s,baz=194,slow=8.3,SNR=3.5						
BOSA				LR	LR	05 26 47.4	
	comp=Z,410nm,19.1s,baz=167,slow=30						
KMI	Kunming	75.78	343	P	P	05 01 54.4	+2.1
KMI				pP	sP	05 01 59.5	+2.7
KMI				sP	PcP	05 02 01.3	-3.6
KMI				PP	PP	05 04 45.6	+2.9
KMI				S	S	05 11 35.1	+0.8
KMI				sS	sS	05 11 44.2	+4.5
KMI				pmax	pmax		
	comp=Z,28nm,0.9s						
KMI				pmax	pmax		
	comp=Z,160nm,4.9s						
KMI				LR	LR		
	comp=Z,470nm,21.0s						
KMI				LR	LR		
	comp=Z,310nm,18.3s						
KMI				LR	LR		
	comp=Z,620nm,21.0s						
GYA	Guiyang	76.43	347	eP	P	05 01 58.2	+2.4
GYA				P

comp=Z,24nm,1.2s
LSZ Lusaka 80.31 258 *e*P **P** **05 02 18.7 +1.0**
LSZ pmax pmax
comp=Z,9.0nm,0.9s
LSZ Lusaka 80.31 258 *e*P **P** **05 02 18.7 +1.0**
comp=Z,8.6nm,0.9s
CD2 Chengdu 81.25 345 P **P** **05 02 21.9 -0.2**
CD2 sP PcP 05 02 28.4 +0.1
CD2 PP **PP** **05 05 28.0 -0.1**
CD2 S **S** **05 12 34.1 +1.8**
CD2 SKS **SKSac** **05 12 40.0 -1.1**
CD2 sS SKKSac 05 12 42.0 -1.7
CD2 pmax pmax
comp=Z,30nm,0.7s
CD2 pmax pmax
comp=Z,120nm,5.7s
CD2 LR LR
comp=Z,520nm,19.6s
CD2 LR LR
comp=Z,550nm,21.4s
RKT Rikitea 81.53 116 *e*LQ LQ 05 24 34.4
comp=Z,603nm,34.2s
RKT *e*LR LR 05 28 02.7
comp=Z,555nm,29.5s
DMN Daman 82.89 329 *e*P **P** **05 02 31.5 +0.4**
GUN Gumba 82.91 329 *e*P **P** **05 02 30.2 -1.1**
LSA Lhasa 82.94 334 *e*P **P** **05 02 31.0 -0.6**
LSA pmax pmax
comp=Z,25nm,0.9s
LSA Lhasa 82.94 334 *e*P **P** **05 02 31.0 -0.6**
comp=Z,25nm,0.9s
KKN Kakani 83.00 329 *e*P **P** **05 02 32.0 +0.4**
comp=Z,26nm,0.6s
GKN Gorkha 83.42 328 *e*P **P** **05 02 32.2 -1.5**
comp=Z,57nm,0.9s
KOLN Koldanda 83.57 327 *e*P **P** **05 02 32.7 -1.8**
comp=Z,37nm,0.7s
XAN Xi'an 83.60 350 P **P** **05 02 35.8 +1.5**
XAN pP sP 05 02 40.3 +1.4
XAN sP PcP 05 02 42.5 +4.0
XAN PP **PP** **05 05 50.0 +2.5**
XAN S **S** **05 12 56.5 +0.3**
XAN sS sS 05 13 04.6 +2.9
XAN SS **SS** **05 18 25.8 +2.2**
XAN pmax pmax
comp=Z,17nm,1.4s
XAN pmax pmax
comp=Z,56nm,6.3s
XAN LR LR
comp=Z,250nm,18.7s
XAN LR LR
comp=Z,130nm,20.9s
XAN LR LR
comp=Z,400nm,17.6s
PYUN Piuthan 84.08 327 *e*P **P** **05 02 35.3 -1.9**
comp=Z,69nm,0.8s
KMBO Kilima Mbogo 84.96 274 P **P** **05 02 44.3 +2.2**
comp=Z,1.2nm,0.8s,baz=52,slow=19,SNR=2.9
KMBO LR LR 05 35 38.8
comp=Z,199nm,18.3s,baz=173,slow=32
TIA Tai'an 85.15 357 *e*P **P** **05 02 42.2 +0.1**
TIA pmax pmax
comp=Z,20nm,1.5s
LZH Lanzhou 86.30 346 *e*P **P** **05 02 48.4 +0.4**
LZH pP sP 05 02 53.3 +0.8
LZH sP pP 05 02 55.5 +4.2
LZH PP **PP** **05 06 12.5 +3.0**
LZH pmax pmax
comp=Z,42nm,1.4s
LZH pmax pmax
comp=Z,140nm,7.0s
LZH LR LR
comp=Z,450nm,18.0s
LZH LR LR
comp=Z,410nm,18.7s
LZH LR LR
comp=Z,700nm,19.6s
KSAR Wonju Array Be 86.54 6 P **P** **05 02 49.8 +0.8**
KSAR Wonju Array Be 86.54 6 P **P** **05 02 49.8 +0.8**
KSRS Korea Array 86.56 6 P **P** **05 02 49.8 +0.8**
comp=Z,6.8nm,1.1s,baz=177,slow=4.9,SNR=14
KS01 Wonju Array Si 86.58 6 *e*P **P** **05 02 49.4 +0.3**
MJAR Matsushiro Arr 86.80 14 P **P** **05 02 50.5 +0.2**
comp=Z,1.9nm,0.8s,baz=182,slow=6.1,SNR=5.1
BJI Beijing 89.01 356 P **P** **05 03 02.6 +1.9**
BJI pmax pmax
comp=Z,13nm,1.2s
TAOE Nuku Hiva Isla 89.19 103 *e*LR LR 05 31 24.4
comp=Z,230nm,23.4s
PLCA Paso Flores 89.83 171 P **P** **05 03 04.0 -1.0**
comp=Z,4.5nm,0.9s,baz=264,slow=3.3,SNR=5.7
PLCA LR LR 05 43 04.3
comp=Z,487nm,18.4s,baz=207,slow=35
HHC Hu-ho-hao-te 90.09 353 *e*P **P** **05 03 08.1 +2.2**
HHC S **S** **05 14 02.3 +3.4**
HHC pmax pmax
comp=Z,18nm,1.1s
HHC pmax pmax
comp=Z,110nm,7.6s
HHC LR LR
comp=Z,200nm,17.5s
HHC LR LR
comp=Z,220nm,17.1s
HHC LR LR
comp=Z,160nm,17.3s
GTA Gaotai 90.22 344 P **P** **05 03 05.9 -0.7**
GTA pP pP 05 03 10.4 +0.5
GTA sP sP 05 03 12.9 +1.8
GTA PP **PP** **05 06 44.8 +3.8**
GTA SKS **SKSac** **05 13 35.7 -1.7**
GTA S **S** **05 13 59.3 -0.9**
GTA sS sS 05 14 08.0 +2.3
GTA pmax pmax
comp=Z,6.0nm,1.0s
GTA pmax pmax
comp=Z,100nm,5.7s
GTA LR LR
comp=Z,220nm,23.3s
GTA LR LR
comp=Z,220nm,21.4s
GTA LR LR
comp=Z,350nm,22.8s
CN2 Changchun 92.76 3 *e*P **P** **05 03 20.0 +2.0**
CN2 pmax pmax
comp=Z,10.0nm,1.0s
USRK Ussuriysk Ar. 93.58 8 P **P** **05 03 22.1 +0.3**
comp=Z,6.0nm,1.1s,baz=216,slow=6.1,SNR=7.1
MDJ Mudanjiang 93.80 6 P **P** **05 03 24.8 +2.0**
MDJ pmax pmax
comp=Z,10.0nm,1.3s
MDJ pmax pmax
comp=Z,40nm,3.5s
WMQ Urumqi 97.13 336 *e*P Pdif 05 03 40.3 +2.0
WMQ LR LR
comp=Z,80nm,23.0s
WMQ LR LR
comp=Z,100nm,23.0s
WMQ LR LR
comp=Z,110nm,23.0s
SONM Songino Array 97.51 350 P Pdif 05 03 40.3 +0.4
comp=Z,1.5nm,0.8s,baz=174,slow=2.7,SNR=8.9
SONA1 Songino Array 97.52 350 *e*P Pdif 05 03 40.5 +0.5
ZAK Zakamensk 100.39 349 *e*P **Pdif** **05 03 53.1 +0.5**
ZAK pmax pmax
comp=Z,1.0nm,1.0s
MKAR Makanchi Array 101.35 334 P **Pdif** **05 03 57.0 +0.1**
comp=Z,0.3nm,0.6s,baz=123,slow=5.3,SNR=3.4
H10S2 ASCENSION HYDR 110.17 228 T T 07 08 52.4
baz=149,slow=75,SNR=15
H10S3 ASCENSION HYDR 110.19 228 T T 07 08 57.6
baz=149,slow=75,SNR=16
H10S1 ASCENSION HYDR 110.19 228 T T 07 09 02.6
baz=149,slow=75,SNR=17
BRTR Keskin Array B 117.15 300 PKP **PKPdf** **05 08 51.7 +0.6**
comp=Z,0.3nm,0.4s,baz=106,slow=2.7,SNR=3.5
TORD Torodi Ar. Bea 118.80 256 PKP **PKPdf** **05 08 53.8 -1.0**
comp=Z,1.0nm,0.7s,baz=102,slow=1.4,SNR=9.5
TIXI Tiksi 120.73 3 PKP **PKPdf** **05 08 54.5 -2.3**
comp=Z,2.5nm,0.8s,baz=164,slow=1.4,SNR=6.6
BILL Bilibino 121.80 18 *e*PKIKP **PKPdf** **05 08 59.9 +0.9**
BILL *e* 05 10 37.6
BILL pmax pmax
comp=Z,1.0nm,1.0s
OBN Obninsk 125.51 315 *e*PKIKP **PKPdf** **05 09 11.1 +4.7**
OBN pmax pmax
comp=Z,7.0nm,1.0s

AKASG Malin Array Be 126.50 308 PKP **PKPdf** **05 09 10.1 +1.6**
comp=Z,0.5nm,0.5s,baz=80,slow=2.5,SNR=5.5
FINES FINESS Array B 133.53 319 PKP **PKPdf** **05 09 21.2 -0.3**
comp=Z,1.4nm,0.7s,baz=190,slow=6.9,SNR=4.2
ILAR Eielson Array 133.92 36 PKIKP **PKPdf** **05 09 21.9 -0.2**
comp=Z,0.5nm,0.6s,baz=264,slow=3.6,SNR=4.9
ILAR Eielson Array 133.92 36 PKIKP **PKPdf** **05 09 22.0 -0.2**
GERES GERESS Array B 134.01 299 PKP **PKPdf** **05 09 24.4 +1.4**
comp=Z,0.3nm,0.4s,baz=62,slow=3.2,SNR=4.3
FETA Feichten 134.84 295 *e*PKPdf **PKPdf** **05 09 24.1 -0.6**
comp=Z,12nm,1.0s
RETA Reutte 135.05 296 *e*PKPdf **PKPdf** **05 09 26.4 +1.4**
comp=Z,4.4nm,1.0s
ARCES ARCESS Array B 136.77 329 PKP **PKPdf** **05 09 28.3 +0.9**
comp=Z,1.6nm,0.8s,baz=111,slow=4.9,SNR=3.6
NVAR Mina Array Bea 137.01 81 PKP **PKPdf** **05 09 30.1 +1.0**
comp=Z,0.7nm,0.8s,baz=237,slow=5.1,SNR=4.6
INK Inuvik 140.08 34 PKhKP PKPpre 05 09 30.1
comp=Z,0.9nm,0.7s,baz=272,slow=4.8,SNR=3.3
INK PKP **PKPdf** **05 09 33.6 +0.2**
comp=Z,1.1nm,0.9s,baz=180,slow=1.0,SNR=4.7
ESDC Sonseca Array 140.27 278 PKhKP PKPpre 05 09 29.0
comp=Z,0.2nm,0.3s,baz=342,slow=0.5,SNR=4.1
TXAR Lajitas Array 140.91 104 PKhKP PKPpre 05 09 29.0
comp=Z,0.9nm,0.8s,baz=199,slow=5.2,SNR=8.6
TXAR PKP **PKPdf** **05 09 33.6 -2.7**
comp=Z,0.9nm,0.8s,baz=201,slow=4.8,SNR=8.4
MNTX Cornudas Mount 141.38 99 P **PKPdf** **05 09 36.1 -0.9**
baz=229
DUG Dugway, Tooele 141.54 83 P **PKPdf** **05 09 37.3 +0.1**
baz=238
DUG Dugway, Tooele 141.54 83 *e*PKIKP **PKPdf** **05 09 37.4 +0.1**
DUG Dugway, Tooele 141.54 83 *e*PKPdf **PKPdf** **05 09 37.4 +0.1**
MVCO Mesa Verde 142.72 90 P **PKPdf** **05 09 39.1 -0.4**
baz=235
MVCO Mesa Verde 142.72 90 *e*PKPdf **PKPdf** **05 09 39.8 +0.3**
ANMO Albuquerque 142.72 94 PKhKP PKPpre 05 09 34.7
comp=Z,1.0nm,0.6s,baz=163,slow=3.1,SNR=5.7
ANMO Albuquerque 142.72 94 P **PKPdf** **05 09 36.5 -3.1**
baz=233
ANMO Albuquerque 142.72 94 PKHKP PKPpre 05 09 34.7
ANMO *e* 05 09 34.9
ANMO Albuquerque 142.72 94 PKPpre PKPpre 05 09 34.7
ANMO *e*PKPdf PKPpre 05 09 34.9
PBRG Braganca 143.18 279 *e*PKPdf PKPbc 05 09 37.8 +0.9
POLO Lamas de Olo 143.65 277 *e*PKPdf **PKPdf** **05 09 39.9 -0.9**
633A Saathoff Ranch 143.82 108 P PKPbc 05 09 39.0 -0.1
baz=225
AHID Auburn Hatcher 143.94 80 *e*PKPdf **PKPdf** **05 09 40.6 -0.8**
PCAB Cabril 143.97 278 *e*PKPdf **PKPdf** **05 09 40.9 -0.4**
S22A 4UR Ranch, Cre 144.12 90 P PKPbc 05 09 40.8 +0.6
baz=236
DLMT Dillon 144.18 75 *e*PKPdf **PKPdf** **05 09 42.4 +0.6**
REDW Red Top Meadow 144.39 79 *e*PKPdf PKPbc 05 09 40.6 -0.1
O20A White River Ci 144.49 86 *e*PKPdf **PKPdf** **05 09 43.4 +0.9**
SNOW Snow King Moun 144.50 79 *e*PKPdf **PKPdf** **05 09 41.9 -0.6**
MSTX Muleshoe 144.52 99 *e*PKPdf **PKPab** **05 09 40.8 -0.2**
IMW Indian Meadow 144.58 79 *e*PKPdf PKPbc 05 09 41.8 +0.4
MOOW Moose Ponds 144.64 79 *e*PKPdf **PKPab** **05 09 41.2 -0.1**
534A Blanco 144.66 108 P **PKPab** **05 09 40.6 -0.9**
baz=226
LOHW Long Hollow 144.66 79 *e*PKPdf PKPbc 05 09 41.6 0.0
433A Art 144.77 107 P **PKPab** **05 09 41.5 -0.4**
baz=227
FLWY Flagg Ranch 144.82 78 *e*PKPdf **PKPdf** **05 09 42.8 -0.2**
WALA Waterton Lakes 144.85 69 *e*PKPdf **PKPdf** **05 09 43.3 +0.6**
PMOZ Porto Moniz, M 144.87 258 *e*PKPdf **PKPab** **05 09 41.1 -1.3**
BOZ Bozeman (W) 144.92 75 P **PKPdf** **05 09 42.6 -0.3**
baz=245
BOZ Bozeman (W) 144.92 75 *e*PKIKP PKPbc 05 09 42.3 +0.1
BOZ Bozeman (W) 144.92 75 *e*PKPdf PKPbc 05 09 42.3 +0.1
BW06 Boulder Array 144.94 81 P **PKPab** **05 09 42.0 -0.5**
baz=242,SNR=7.1
BW06 Boulder Array 144.94 81 *e*PKPdf **PKPab** **05 09 41.9 -0.6**
PDAR Pinedale Array 144.94 81 PKP **PKPab** **05 09 41.6 -0.9**
comp=Z,4.3nm,1.0s,baz=204,slow=3.3,SNR=18
SDCO Great Sand Dun 144.99 91 P **PKPab** **05 09 42.5 -0.4**
baz=236
SDCO Great Sand Dun 144.99 91 *e*PKPdf **PKPab** **05 09 41.8 -1.1**
H17A Grant Village 145.04 78 P **PKPdf** **05 09 43.5 +0.2**
baz=243,SNR=6.6
H17A Grant Village 145.04 78 *e*PKPdf **PKPdf** **05 09 44.0 +0.7**
333A Richland Sprin 145.22 106 P **PKPbc** **05 09 42.7 -0.8**
baz=227
LKWY Lake 145.23 78 *e*PKIKP **PKPdf** **05 09 45.5 +1.8**
LKWY Lake 145.23 78 *e*PKPdf **PKPdf** **05 09 45.5 +1.8**
434A Burnet 145.33 107 P **PKPbc** **05 09 43.8 0.0**
baz=226
T25A Trinidad 145.35 93 P **PKPbc** **05 09 43.9 -0.1**
baz=235
ABTX Abilene, Hawle 145.67 104 P **PKPdf** **05 09 44.6 +0.1**
baz=229
ABTX Abilene, Hawle 145.67 104 *e*PKPdf **PKPdf** **05 09 44.1 -0.4**
334A Lometa 145.70 107 P **PKPdf** **05 09 44.4 -0.2**
baz=227
435B Jarrell 145.73 108 P **PKPdf** **05 09 44.8 +0.1**
baz=226
233A Rising Star 145.74 105 P **PKPdf** **05 09 44.8 +0.1**
baz=228
AMTX Amarillo 145.79 99 P **PKPbc** **05 09 45.4 +0.1**
baz=232
AMTX Amarillo 145.79 99 *e*PKPdf **PKPdf** **05 09 44.6 -0.1**
Q24A Divide 145.89 90 P **PKPbc** **05 09 45.8 0.0**
baz=237
537A Green Hill Far 146.03 110 P **PKPab** **05 09 46.7 +0.2**
baz=225
ISCO Idaho Springs 146.03 88 P **PKPab** **05 09 47.2 +0.4**
baz=238
ISCO Idaho Springs 146.03 88 *e*PKP2 **PKPab** **05 09 46.7 0.0**
ISCO Idaho Springs 146.03 88 *e*PKPbc **PKPab** **05 09 46.7 0.0**
133A Hamilton Ranch 146.12 104 P **PKPbc** **05 09 46.1 -0.1**
baz=229
RLMT Red Lodge 146.20 78 P **PKPab** **05 09 47.4 +0.3**
baz=245
RLMT Red Lodge 146.20 78 *e*PKPbc **PKPab** **05 09 47.3 +0.2**
HKT Hockley 146.23 111 *e*PKP2 **PKPab** **05 09 47.0 -0.3**
HKT Hockley 146.23 111 *e*PKPbc **PKPab** **05 09 47.0 -0.3**
N23A Red Feather La 146.38 86 P **PKPab** **05 09 48.1 +0.1**
baz=240
134A White-Moore Ra 146.63 105 P **PKPbc** **05 09 47.7 -0.1**
baz=228
WHTX Lake Whitney, 146.63 107 P **PKPbc** **05 09 47.2 -0.5**
baz=228
WHTX Lake Whitney, 146.63 107 *e*PKPdf **PKPdf** **05 09 46.3 +0.2**
WHTX *e*PKPbc **PKPbc** **05 09 47.3 -0.5**
Z33A Whitaker Ranch 146.66 104 P **PKPbc** **05 09 47.4 -0.4**
baz=229
K22A Casper 146.86 83 P **PKPbc** **05 09 47.8 -0.5**
baz=242,SNR=6.9
K22A Casper 146.86 83 *e*PKPbc **PKPbc** **05 09 48.7 +0.4**
PHWY Pilot Hill 146.90 86 *e*PKPbc **PKPbc** **05 09 47.8 -0.9**
135A Vickery Place, 147.04 106 P **PKPbc** **05 09 48.3 -0.6**
baz=228
EGMT Eagleton 147.04 72 P **PKPab** **05 09 49.9 -0.2**
baz=248
EGMT Eagleton 147.04 72 *e*PKPbc **PKPab** **05 09 50.3 +0.2**
X32A Elmer 147.05 102 P **PKPbc** **05 09 48.6 -0.3**
baz=231
Y33A Hilltop Ranch, 147.21 103 P **PKPbc** **05 09 49.2 -0.1**
baz=290
236A Katherine and 147.22 108 P **PKPbc** **05 09 49.0 -0.4**
baz=227
YKA Yellowknife Ar 147.31 45 PKPbc **PKPbc** **05 09 48.4 -0.2**
comp=Z,9.8nm,0.8s,baz=268,slow=2.8,SNR=140
W32A Sentinel 147.52 101 P **PKPbc** **05 09 50.1 -0.1**
baz=232
338A Crockett 147.54 110 P **PKPbc** **05 09 50.6 +0.3**
baz=226
136A Ennis 147.54 107 P **PKPbc** **05 09 50.1 -0.2**
baz=228
KSCO Kaye Shedlock' 147.57 92 P **PKPbc** **05 09 50.8 +0.4**
baz=237
KSCO Kaye Shedlock' 147.57 92 *e*PKPbc **PKPbc** **05 09 50.7 +0.3**
WMOK Wichita Mounta 147.57 102 *e*PKIKP **PKPdf** **05 09 47.7 0.0**
WMOK *e* 05 09 49.6
WMOK *e* 05 09 53.2
WMOK Wichita Mounta 147.57 102 *e*PKPdf **PKPdf** **05 09 47.7 0.0**
WMOK *e*PKPbc **PKPbc** **05 09 49.6 -0.7**
WMOK *e*PKPab **PKPab** **05 09 53.2 +0.7**
X33A Lawton 147.63 102 P **PKPbc** **05 09 50.8 +0.3**
baz=231
237A Washetta, Mont 147.67 108 P **PKPbc** **05 09 50.8 +0.2**
baz=227
Y34A Reagan Ranch, 147.74 104 P **PKPbc** **05 09 51.5 +0.8**
baz=230
V32A Arapaho 148.01 100 P **PKPbc** **05 09 52.1 +0.6**
baz=232
W33A Caddo, Fort Co 148.03 101 P **PKPbc** **05 09 51.8 +0.2**
baz=232
X34A Smith Ranch, M 148.10 103 P **PKPbc** **05 09 52.0 +0.3**
baz=231
137A Heron Place, G 148.10 108 P **PKPbc** **05 09 51.9 +0.1**
baz=228
Z36A Blue Ridge 148.13 106 P **PKPbc** **05 09 51.8 0.0**
baz=229
Y35A Marietta 148.16 104 P **PKPbc** **05 09 52.1 +0.2**
baz=230
NATX Nacogdoches 148.21 110 P **PKPbc** **05 09 52.3 +0.2**
baz=226
340A Bronson 148.45 111 P **PKPbc** **05 09 52.6 -0.1**
baz=225
X35A Drake 148.52 104 P **PKPbc** **05 09 52.4 -0.4**
baz=230
W34A Bridge Creek, 148.53 102 P **PKPbc** **05 09 52.7 -0.2**
baz=232
W34A Bridge Creek, 148.53 102 *e*PKPbc **PKPbc** **05 09 52.6 -0.2**
V33A Lossen Ranch, 148.56 100 P **PKPbc** **05 09 52.4 -0.5**
baz=232
Y36A Durant 148.63 105 P **PKPbc** **05 09 52.8 -0.3**
baz=229
341A Kurthwood 148.83 112 P **PKPbc** **05 09 53.6 -0.1**
baz=225
J25A Sunshine Ranch 148.97 84 P **PKPbc** **05 09 53.7 -0.2**
baz=243
X36A Centrahoma 149.02 104 P **PKPbc** **05 09 53.7 -0.4**
baz=230
W35A Tecumseh 149.06 103 P **PKPbc** **05 09 53.9 -0.3**
baz=231
V34A Guthrie 149.06 101 P **PKPbc** **05 09 54.1 -0.1**
baz=232
V34A Guthrie 149.06 101 *e*PKPbc **PKPbc** **05 09 54.1 -0.1**
Y37A Hugo 149.10 106 P **PKPbc** **05 09 54.2 -0.1**
baz=229
RSSD Black Hills 149.14 82 P **PKPbc** **05 09 54.2 -0.1**
baz=244
RSSD Black Hills 149.14 82 *e*PKP2 **PKPbc** **05 09 54.3 -0.1**
RSSD Black Hills 149.14 82 *e*PKPbc **PKPbc** **05 09 54.2 -0.1**
RSSD *e*PKPab **PKPab** **05 09 57.6 -1.3**
I25A Rochford 149.29 83 P **PKPbc** **05 09 54.3 -0.4**
baz=244
CBKS Cedar Bluff 149.35 94 *e*PKPdf **PKPdf** **05 09 48.4 -2.1**
CBKS *e*PKPbc **PKiKP** **05 09 55.5 -0.5**
CBKS *e*PKPab **PKPab** **05 09 58.7 -0.9**
342A Flagon Creek P 149.37 113 P **PKPbc** **05 09 54.5 -0.5**
baz=225
J26A Sides Ranch, S 149.41 84 P **PKPbc** **05 09 55.0 +0.1**
baz=243
U34A Anderson Ranch 149.42 100 P **PKPbc** **05 09 54.9 -0.2**
baz=233
U34A Anderson Ranch 149.42 100 *e*PKPbc **PKPbc** **05 09 54.7 -0.4**
V35A Meyer Ranch, C 149.46 102 P **PKPbc** **05 09 54.7 -0.5**
baz=232
W36A Wetumka 149.46 103 P **PKPbc** **05 09 55.2 0.0**
baz=231,SNR=9.2
Y38A Idabel 149.63 107 P **PKPbc** **05 09 54.7 -0.9**
baz=229
H25A Fruitdale 149.64 82 P **PKPbc** **05 09 56.7 +1.3**
baz=245
X37A Clayton 149.65 105 P **PKPbc** **05 09 55.6 -0.1**
baz=230
R32A Long Quarter, 149.80 96 P **PKPbc** **05 09 56.5 +0.6**
baz=236
U35A Pawnee 149.90 101 P **PKPbc** **05 09 56.5 +0.3**
baz=233,SNR=6.7
W37B Quinton 149.97 104 P **PKPbc** **05 09 56.3 -0.1**
baz=231
T34A McClaskey Farm 149.99 100 P **PKPbc** **05 09 56.3 -0.2**
baz=234
G25A Newell 149.99 81 P **PKPbc** **05 09 57.9 +1.6**
baz=246
Y39A Lockesburg 150.03 108 P **PKPbc** **05 09 56.3 -0.3**
baz=229,SNR=5.9
V36A Jenks 150.04 103 P **PKPbc** **05 09 56.9 +0.3**
baz=232,SNR=7.9
X38A Whitesboro 150.05 106 P **PKPbc** **05 09 56.9 +0.2**
baz=230,SNR=7.8
J27A Elkhorn Farm, 150.08 85 P **PKPbc** **05 09 57.4 +0.9**
baz=243
H26A Fairpoint 150.17 82 P **PKPbc** **05 09 57.0 +0.4**
baz=245
Q32A Meitler Ranch, 150.22 95 P **PKPbc** **05 09 57.0 +0.1**
baz=237
TUL1 Leonard 150.22 103 P **PKPbc** **05 09 56.9 -0.1**
baz=232,SNR=5.4
TUL1 Leonard 150.22 103 *e*PKPdf **PKPdf** **05 09 52.1 +0.3**
TUL1 *e*PKPbc **PKPbc** **05 09 56.7 -0.3**
F25A Bowman 150.25 79 P **PKPbc** **05 09 57.3 +0.4**
baz=247
T35A Sooner Cattle 150.36 100 P **PKPbc** **05 09 57.3 0.0**
baz=233,SNR=6.7
344A Westbrook Farm 150.38 115 P **PKPbc** **05 09 57.8 +0.4**
baz=224
X39A Fountain Ranch 150.40 107 P **PKPbc** **05 09 57.6 +0.2**
baz=229,SNR=5.7
I27A Quinn 150.41 84 P **PKPbc** **05 09 58.0 +0.8**
baz=245
RES Resolute Bay 150.41 18 *e*PKIKP **PKPbc** **05 09 57.2 +0.9**
RES Resolute Bay 150.41 18 *e*PKPbc **PKPbc** **05 09 57.1 +0.9**
S34A Willow Spring 150.43 99 P **PKPbc** **05 09 57.8 +0.4**
baz=235
W38A Poteau 150.50 105 P **PKPbc** **05 09 57.9 +0.2**
baz=230,SNR=6.8
P32A Huiting Farm, 150.53 94 P **PKPbc** **05 09 58.1 +0.5**
baz=238
G26A Maurine 150.56 81 P **PKPbc** **05 09 57.7 +0.1**
baz=246
Y40A Okolona 150.59 108 P **PKPbc** **05 09 57.7 -0.2**
baz=228
V37A Hulbert 150.62 103 P **PKPbc** **05 09 57.5 -0.5**
baz=232
J28A Allard Ranch, 150.66 85 P **PKPbc** **05 09 58.4 +0.5**
baz=244
R34A Isabella, Hill 150.69 97 P **PKPbc** **05 09 58.2 +0.2**
baz=236
Q33A Connelly Farm, 150.69 96 P **PKPbc** **05 09 58.1 0.0**
baz=237
F26A Lodgepole 150.73 80 P **PKPbc** **05 09 57.9 -0.1**
baz=247
MIAR Mount Ida 150.75 107 P **PKPbc** **05 09 57.8 -0.5**
baz=229
244A Avery, Jackson 150.82 114 P **PKPbc** **05 09 58.0 -0.5**
baz=225
T36A Boggs Farm, Ca 150.86 101 P **PKPbc** **05 09 58.4 -0.1**
baz=234,SNR=7.5
Z42A Norrel Spur, H 150.92 111 P **PKPbc** **05 09 57.9 -0.8**
baz=227
S35A Otter Creek Ra 150.94 99 P **PKPbc** **05 09 58.5 -0.2**
baz=234
U37A Salina 150.95 103 P **PKPbc** **05 09 58.3 -0.4**
baz=232
G27A Dupree 151.03 81 P **PKPbc** **05 09 58.1 -0.6**
baz=247
W39A Magazine 151.04 106 P **PKPbc** **05 09 58.9 -0.1**
baz=230
V38A Canehill 151.07 104 P **PKPbc** **05 09 58.3 -0.7**
baz=231,SNR=5.4
E26A Carlson Angus 151.10 79 P **PKPbc** **05 09 58.7 -0.1**
baz=248
Q34A Chapman 151.23 97 P **PKPbc** **05 09 59.1 -0.3**
baz=236
S36A Lake Cedric, C 151.43 100 P **PKPbc** **05 09 59.4 -0.4**
baz=234
U38A Gravette 151.44 103 P **PKPbc** **05 09 59.1 -0.8**
baz=232
T37A Cheneyville 18 151.51 102 P **PKPbc** **05 09 59.6 -0.4**
baz=233
V39A Pettigrew 151.54 105 P **PKPbc** **05 09 59.5 -0.7**
baz=231
KSU1 Kansas State U 151.55 97 *e*PKPdf **PKPdf** **05 09 55.0 +1.1**
KSU1 *e*PKPbc **PKiKP** **05 10 00.3 -0.1**
E27A Carson 151.66 79 P **PKPbc** **05 09 59.3 -0.8**
baz=249
T38A Diamond 151.86 102 P **PKPbc** **05 10 00.4 -0.4**
baz=233
S37A Fort Scott 151.94 101 P **PKPbc** **05 10 00.1 -0.8**
baz=234
U39A Green Forest 151.98 104 P **PKPbc** **05 10 00.3 -0.8**
baz=232
W41A Tony Mavity, V 151.99 108 P **PKPbc** **05 10 00.2 -0.9**
baz=230
W41B Gary Mavity, V 151.99 108 P **PKPbc** **05 10 00.4 -0.7**
baz=230
V40A Witts Springs 152.03 106 P **PKPbc** **05 10 00.5 -0.8**
baz=231

O34A	**Beatrice**	**152.07**	**95**	P	**PKPbc**	**05 10 00.9**	**-0.3**
	baz=238						
P35A	**Duane Minner,**	**152.16**	**96**	P	**PKPbc**	**05 10 01.2**	**-0.2**
	baz=237						
A26A	**Wade Farm, Ken**	**152.18**	**74**	P	**PKPbc**	**05 10 01.7**	**+0.5**
	baz=253						
U40A	**Yellville**	**152.36**	**105**	P	**PKPbc**	**05 10 01.3**	**-0.6**
	baz=232						
T39A	**Clever**	**152.44**	**103**	P	**PKPbc**	**05 10 01.3**	**-0.8**
	baz=233						
S39A	**Bolivar**	**152.87**	**102**	P	**PKPbc**	**05 10 02.2**	**-0.8**
	baz=234						
Z47A	**Carrollton**	**153.20**	**116**	P	**PKPbc**	**05 10 02.8**	**-1.1**
	baz=224						
Y46A	**Houston**	**153.21**	**114**	P	**PKPbc**	**05 10 02.3**	**-1.5**
	baz=226						
OXF	**Oxford**	**153.30**	**112**	*e*PKIKP	**PKPbc**	**05 10 02.5**	**-1.6**
OXF	**Oxford**	**153.30**	**112**	*e*PKPbc	**PKPbc**	**05 10 02.5**	**-1.6**
S40A	**Lebanon**	**153.34**	**103**	P	**PKPbc**	**05 10 02.8**	**-1.3**
	baz=233						
ECSD	**EROS Data Cent**	**153.82**	**88**	*e*PKPab	**PKPab**	**05 10 18.7**	**+0.6**
FCC	**Fort Churchill**	**157.62**	**52**	*e*PKP2	**PKPab**	**05 10 32.5**	**-1.3**
FCC	**Fort Churchill**	**157.62**	**52**	*e*PKPab	**PKPab**	**05 10 32.5**	**-1.3**

NIED ***04*** *04:52:00, 35°.90N×141°.10E, h8km, Mw3.7 Best double couple: M₀3.98000×10¹⁴ NP1:φs245.00000°, δ39.00000°, λ26.00000°. NP2:φs134.00000°, δ74.00000°, λ126.00000°.*
IDC ***04*** *04:52:20.6±1.4, 35°.89N×141°.29E, h0km, mb3.4/3, mb1 3.5/4, mb1mx3.3/40, mbtmp3.3/4, ML3.1/1, MS3.2/5, Ms1 3.2/5, ms1mx2.8/37, Error ellipse: s-maj=35.6km s-min=31.7km az=60.0*
ISCJB ***04*** *04:52:22.8±1.1, 35°.94N±0°.06×141°.13E±0°.09, h29km±6km, mb3.5/3, MS3.8/3, Error ellipse: s-maj=12.8km s-min=8.9km az=153.6*
JMA ***04*** *04:52:22.7±0.1, 35°.95N×141°.15E, h24km±2km, M3.8*
JMA Felt I J1.
ISC 04 04:52:22.9±2.0, 36°.01N±0°.08×141°.08E±0°.10, h14km±13km, n13, σ1°.23/14, mb3.5/3, MS3.9/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.35**	**210**	P	**Pg**	**04 52 30.1**	**0.0**
CHOJ				S	**Sb**	**04 52 35.9**	**-0.5**
JHO	**Hitachi**	**0.73**	**326**	P	**Pn**	**04 52 37.8**	**-0.9**
JHO				S	**Sn**	**04 52 48.7**	**-0.9**
JYT	**Yasato**	**0.75**	**287**	P	**Pn**	**04 52 38.2**	**-0.8**
JYT				S	**Sn**	**04 52 49.1**	**-1.0**
JAG	**Ashikaga**	**1.38**	**288**	P	**Pn**	**04 52 46.9**	**-0.8**
MJAR	**Matsushiro Arr**	**2.38**	**284**	Pn	**Pn**	**04 53 02.0**	**+0.6**
	4.1nm,0.3s,baz=93,slow=9.0,SNR=24						
MJAR				Sn	**Sn**	**04 53 31.3**	**+0.9**
	7.0nm,0.3s,baz=97,slow=27,SNR=7.0						
MJAR				LR	LR	04 54 01.1	
	comp=Z,59nm,19.6s,baz=95,slow=40						
MAT	**Matsushiro**	**2.38**	**284**	P	**Pn**	**04 53 01.8**	**+0.3**
MAT				S	**Sn**	**04 53 28.9**	**-1.5**
JHJ	**Hachijo jima 2**	**3.08**	**201**	LR	LR	04 53 59.2	
	comp=Z,47nm,18.2s,baz=181,slow=33						
MKAR	**Makanchi Array**	**44.44**	**303**	P	**P**	**05 00 35.8**	**+2.6**
	0.5nm,0.7s,baz=90,slow=10,SNR=4.5						
AAK	**Ala-Archa**	**50.74**	**299**	LR	LR	05 22 26.9	
	comp=Z,59nm,18.3s,baz=185,slow=36						
BVAR	**Borovoye Array**	**51.06**	**313**	LR	LR	05 24 19.7	
	comp=Z,149nm,20.6s,baz=258,slow=37						
WRA	**Warramunga Arr**	**56.01**	**188**	P	**P**	**05 02 00.1**	**-1.0**
	0.4nm,0.4s,baz=5.2,slow=7.3,SNR=5.0						
ARU	**Arti**	**56.95**	**319**	LR	LR	05 28 51.3	
	comp=Z,84nm,19.1s,baz=116,slow=38						
YKA	**Yellowknife Ar**	**64.83**	**30**	P	**P**	**05 03 00.7**	**-0.1**
	0.1nm,0.4s,baz=307,slow=7.7,SNR=4.1						

IDC ***04*** *05:07:00.5±1.0, 6°.49S×148°.12E, h0km, mb4.1/7, mb1 4.3/9, mb1mx4.0/42, mbtmp4.1/9, ML4.3/1, MS4.0/5, Ms1 4.0/5, ms1mx3.4/37, Error ellipse: s-maj=40.1km s-min=16.0km az=102.0*
ISCJB ***04*** *05:07:06.0±0.9, 6°.55S±0°.07×148°.10E±0°.2, h51km, mb4.3/9, MS4.0/5, Error ellipse: s-maj=28.5km s-min=8.6km az=12.2*
NEIC ***04*** *05:07:07.4±2.0, 6°.58S×148°.04E, h48km±17km, mb4.0/1, Error ellipse: s-maj=25.1km s-min=14.7km az=103.0*
ISC 04 05:07:07.6±1.0, 6°.6S±0°.1×148°.1E±0°.3, h51km, n18, σ0°.82/17, mb4.1/9, MS4.0/5, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.96**	**198**	Pn	**Pn**	**05 07 51.8**	**-0.3**
	19nm,0.3s,baz=12,slow=7.5,SNR=21						
PMG				Sn	**Sn**	**05 08 26.9**	**+0.5**
	12nm,0.3s,baz=352,slow=12,SNR=4.2						
COEN	**Coen**	**8.78**	**213**	*e*Pn	**Pn**	**05 09 12.0**	**-0.1**
WRAB	**Tennant Creek**	**18.82**	**224**	*e*P	**P**	**05 11 22.6**	**-0.7**
	6.5nm,0.6s						
WRA	**Warramunga Arr**	**18.83**	**224**	P	**P**	**05 11 22.4**	**-0.9**
	1.0nm,0.3s,baz=48,slow=11,SNR=23						
ASAR	**Alice Springs**	**21.78**	**217**	P	**P**	**05 11 54.7**	**-0.7**
	20nm,0.7s,baz=55,slow=9.5,SNR=164						
ASAR				LR	LR	05 21 14.7	
	comp=Z,250nm,19.7s,baz=49,slow=39						
FITZ	**Fitzroy Crossi**	**24.70**	**240**	P	**P**	**05 12 23.8**	**-0.4**
	30nm,0.5s,baz=56,slow=8.5,SNR=150						
STKA	**Stephens Creek**	**25.89**	**193**	P	**P**	**05 12 34.5**	**-0.4**
	7.8nm,0.9s,baz=350,slow=8.2,SNR=14						
STKA				LR	LR	05 22 15.8	
	comp=Z,241nm,18.8s,baz=59,slow=35						
KLR	**Kul'dur**	**57.38**	**347**	P	**P**	**05 16 51.6**	**+1.0**
	0.9nm,0.5s,baz=279,slow=0.9,SNR=4.8						
TLY	**Talaya**	**69.35**	**332**	LR	LR	05 51 54.1	
	comp=Z,75nm,18.7s,baz=146,slow=39						
VNDA	**Vanda**	**71.28**	**177**	P	**P**	**05 18 22.2**	**+1.0**
	0.9nm,0.6s,baz=318,slow=5.2,SNR=6.1						
MKAR	**Makanchi Array**	**78.62**	**320**	P	**P**	**05 19 04.4**	**+0.3**
	0.2nm,0.3s,baz=98,slow=8.7,SNR=5.4						
ZALV	**Zalesovo Beam**	**80.07**	**328**	P	**P**	**05 19 10.5**	**-1.3**
	0.5nm,0.4s,baz=128,slow=9.3,SNR=2.8						
ZALV				LR	LR	05 52 51.4	
	comp=Z,135nm,21.4s,baz=219,slow=34						
EKS2	**Erkin-Say**	**83.02**	**314**	*e*P	**P**	**05 19 28.8**	**+0.9**
	6.1nm,0.3s						
ILAR	**Eielson Array**	**85.59**	**23**	P	**P**	**05 19 38.8**	**-1.4**
	0.8nm,0.8s,baz=257,slow=5.3,SNR=7.0						
NVAR	**Mina Array Bea**	**96.87**	**52**	LR	LR	05 58 40.0	
	comp=Z,125nm,20.8s,baz=261,slow=32						
GERES	**GERESS Array B**	**122.99**	**326**	PKP	**PKPdf**	**05 25 58.9**	**+0.3**
	0.3nm,0.5s,baz=1.9,slow=2.9,SNR=2.5						
TORD	**Torodi Ar. Bea**	**146.27**	**284**	PKPbc	**PKPab**	**05 26 44.5**	**0.0**
	1.7nm,0.6s,baz=66,slow=3.5,SNR=35						
DBIC	**Dimbokro**	**153.12**	**272**	PKPbc	**PKPbc**	**05 27 01.3**	**+0.5**
	1.4nm,0.6s,baz=69,slow=8.1,SNR=5.0						

ISCJB ***04*** *05:09:25.3±0.8, 21°.16S±0°.04×68°.6W±0°.1, h142km±8km, mb3.3/2, Error ellipse: s-maj=19.5km s-min=6.9km az=179.2*
GUC ***04*** *05:09:25.6±0.4, 21°.11S×68°.61W, h136km±3km, ML3.6*
IDC ***04*** *05:09:25.4±1.1, 21°.23S×68°.16W, h129km±15km, mb3.4/2, mb1 3.4/4, mb1mx3.2/22, mbtmp3.7/4, Error ellipse: s-maj=38.3km s-min=18.2km az=113.0*
ISC 04 05:09:25.8±1.1, 21°.16S±0°.05×68°.6W±0°.1, h138km±10km, n13, σ0°.50/21, 7C, Chile-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB01	**IPOC Station P**	**0.86**	**278**	⇑*e*P	**Pn**	**05 09 48.1**	**-0.2**
PB01				*e*S	**Sn**	**05 10 05.3**	**-0.1**
PB09	**IPOC Station P**	**0.89**	**224**	⇑*e*P	**Pn**	**05 09 48.9**	**+0.3**
PB09				*e*S	**Sn**	**05 10 06.6**	**+0.6**
PB09				IAML		05 10 09.3	
	comp=E,3μm,0.4s						
PB08	**IPOC Station P**	**1.15**	**332**	⇑*e*P	**Pn**	**05 09 51.3**	**0.0**
PB08				*e*S	**Sn**	**05 10 10.5**	**0.0**
PB08				IAML		05 10 11.8	
	comp=N,552nm,0.4s						
PB07	**IPOC Station P**	**1.34**	**245**	⇑*e*P	**Pn**	**05 09 53.3**	**+0.3**
PB07				*e*S	**Sn**	**05 10 14.1**	**+0.5**
PB07				IAML		05 10 15.0	
	comp=E,846nm,0.2s						
LVC	**Limon Verde**	**1.48**	**192**	P	**Pn**	**05 09 54.7**	**+0.1**
	comp=E,385nm,0.3s,baz=22,slow=9.2,SNR=103						
LVC				S	**Sn**	**05 10 16.1**	**-0.5**
	comp=E,1μm,0.3s,baz=318,slow=15,SNR=57						
HMBC	**Humberstone**	**1.51**	**305**	⇑*e*P	**Pn**	**05 09 54.5**	**-0.2**
HMBC				*e*S	**Sn**	**05 10 16.6**	**-0.1**
HMBC				IAML		05 10 16.9	
	comp=N,1μm,0.4s						
PB11	**IPOC Station P**	**1.72**	**324**	⇑*e*P	**Pn**	**05 09 56.8**	**-0.3**
PB11				*e*S	**Sn**	**05 10 20.6**	**-0.4**
PB06	**IPOC Station P**	**1.79**	**211**	⇑*e*P	**Pn**	**05 09 58.0**	**+0.1**
PB06				*e*S	**Sn**	**05 10 22.7**	**+0.1**
PB06				IAML		05 10 24.3	
	comp=E,367nm,0.2s						
PB04	**IPOC Station P**	**1.87**	**231**	*e*P	**Pn**	**05 09 58.9**	**0.0**
PB04				*e*S	**Sn**	**05 10 23.8**	**-0.4**
PB04				IAML		05 10 29.0	
	comp=E,414nm,0.3s						
LPAZ	**La Paz**	**4.86**	**5**	P	**Pn**	**05 10 38.5**	**+0.7**
	comp=E,0.4nm,0.3s,baz=171,slow=6.3,SNR=17						
SIV	**San Ignacio**	**8.78**	**55**	P	Pn	05 11 24.6	-5.2
	comp=E,1.1nm,0.3s,baz=269,slow=10,SNR=12						
TORD	**Torodi Ar. Bea**	**76.95**	**70**	P	**P**	**05 21 02.5**	**-1.1**
	comp=E,1.0nm,0.6s,baz=251,slow=5.4,SNR=12						
YKA	**Yellowknife Ar**	**90.97**	**340**	P	**P**	**05 22 14.6**	**+0.9**
	comp=E,0.1nm,0.6s,baz=129,slow=4.3,SNR=5.4						

MEX 04 05:18:09.2±0.6, 17°.19N×100°.05W, h35km±9km, MD3.5, Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CAIG	**El Cayaco**	**0.26**	**235**	*e*P	Pn	05 18 14.7	-1.9
CAIG				*e*S	Sn	05 18 20.2	-1.5
MEIG	**Mezcala**	**0.83**	**29**	*e*P	Pn	05 18 23.0	-1.6
MEIG				*e*S	Sn	05 18 32.6	-3.1
ARIG	**Puente Sto Nin**	**1.12**	**345**	*e*P	Pn	05 18 26.5	-1.9
ARIG				*e*S	Sn	05 18 40.6	-2.0
ZIIG	**Zihuatanejo**	**1.42**	**287**	*i* P	Pn	05 18 30.9	-1.5
ZIIG				*e*S	Sn	05 18 47.4	-2.4
TLIG	**Tlapa**	**1.46**	**75**	*e*P	Pn	05 18 32.5	-0.8
TLIG				*e*S	Sn	05 18 49.5	-1.7
YAIG	**Yautepec**	**1.90**	**29**	*i* P	Pn	05 18 38.4	-0.9
YAIG				*i* S	Sn	05 18 59.8	-2.4
PNIG	**Pinotepa**	**2.00**	**113**	*i* P	Pn	05 18 39.5	-1.1
PNIG				*i* S	Sn	05 19 02.5	-1.9

IDC ***04*** *05:36:22.3±1.2, 33°.54S×71°.95W, h0km, mb3.9/5, mb1 4.1/8, mb1mx3.9/31, mbtmp3.9/8, ML3.8/3, Error ellipse: s-maj=34.7km s-min=29.0km az=67.0*
ISCJB ***04*** *05:36:24.4±1.1, 33°.59S±0°.04×72°.11W±0°.07, h17km±8km, mb3.9/4, Error ellipse: s-maj=10.1km s-min=5.4km az=25.4*
GUC ***04*** *05:36:26.0±0.3, 33°.68S×71°.88W, h28km±2km, ML4.1*
ISC 04 05:36:23.3±1.6, 33°.53S±0°.04×72°.04W±0°.06, h8km±10km, n26, σ0°.98/37, mb4.2/4, Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHPI	**Pichilemu**	**0.86**	**178**	*e*P	**Pg**	**05 36 39.8**	**0.0**
CHPI				*e*S	**Sg**	**05 36 50.5**	**-0.6**
ROC1	**El Roble**	**1.02**	**58**	*i* P	**Pn**	**05 36 44.8**	**+0.6**
ROCH	**El Roble**	**1.03**	**58**	*e*P	**Pb**	**05 36 43.8**	**+0.3**
ROCH				*e*S	**Sn**	**05 36 58.6**	**-0.4**
ANTU	**Antumapu**	**1.18**	**92**	*e*P	**Pb**	**05 36 45.8**	**-0.1**
ANTU				*e*S	**Sb**	**05 37 00.7**	**-0.7**
ANTU				IAML		05 37 03.3	
	comp=E,7μm,0.4s						
PEL	**Peldehue**	**1.20**	**72**	*e*P	**Pg**	**05 36 47.1**	**+0.8**
PEL				*e*S	**Sn**	**05 37 03.0**	**0.0**
PEL				IAML		05 37 05.0	
	comp=N,7μm,0.5s						
CLCH	**Cerro Calan**	**1.27**	**84**	*e*P	**Pb**	**05 36 47.5**	**0.0**
CLCH				*e*S	**Sg**	**05 37 03.9**	**-0.2**
CLCH				IAML		05 37 08.1	
	comp=E,9μm,0.6s						
YECH	**El Yeso**	**1.64**	**95**	*e*P	**Pb**	**05 36 53.5**	**-0.5**
YECH				*e*S	**Sb**	**05 37 14.4**	**-0.5**
TALC	**Talca**	**1.89**	**170**	*e*P	**Pn**	**05 36 56.3**	**+0.4**
TALC				*e*S	**Sn**	**05 37 19.2**	**-0.8**
AUSP	**Uspallata**	**2.59**	**60**	*i* P	**Pb**	**05 37 10.8**	**+0.6**
AUSP				*i* S	**Sg**	**05 37 47.8**	**+1.3**
ARCO	**CERRO ARCO**	**2.70**	**76**	*i* P	**Pb**	**05 37 12.7**	**+0.8**
ARCO				*i* S	**Sg**	**05 37 49.9**	**-0.1**
ARCO				IAML		05 37 55.2	
	comp=Z,697nm,0.5s						
AAGR	**Agrelo**	**2.73**	**82**	*i* P	**Pb**	**05 37 11.9**	**-0.5**
AAGR				*i* S	**Sg**	**05 37 50.9**	**-0.1**
ASAL	**Salagasta**	**2.85**	**72**	*i* P	**Pb**	**05 37 15.1**	**+0.5**
RTLS	**Leoncito**	**2.89**	**54**	*i* P	**Pb**	**05 37 14.3**	**-1.0**
RTLS				*i* S	**Sg**	**05 37 54.8**	**-1.4**
RTCV	**Cerro Valdivia**	**3.39**	**62**	*i* P	**Pb**	**05 37 21.0**	**-2.7**
SJA	**San Juan**	**3.56**	**57**	*i* P	**Pb**	**05 37 23.7**	**-2.8**
SJA				*i* S	**Sb**	**05 38 08.2**	**-1.6**
SJA				IAML		05 38 35.5	
	comp=Z,166nm,0.4s						
RTLL	**Cerro Villicun**	**3.73**	**55**	*i* P	Pn	05 37 25.0	+3.8
RTLL				*i* S	**Sb**	**05 38 13.6**	**-1.3**
AVFE	**Valle Fertil**	**4.83**	**55**	*i* P	Pn	05 37 41.7	+5.3
PLCA	**Paso Flores**	**7.29**	**171**	Pn	**Pn**	**05 38 10.7**	**+0.6**
	comp=Z,0.8nm,0.3s,baz=355,slow=11,SNR=31						
PLCA				Lg	Lg	05 40 07.7	
	comp=Z,0.2nm,0.3s,baz=287,slow=19,SNR=2.1						
CPUP	**Villa Florida**	**14.63**	**64**	Pn	**Pn**	**05 39 51.6**	**+1.0**
	comp=Z,0.1nm,0.3s,baz=266,slow=16,SNR=2.6						
LPAZ	**La Paz**	**17.53**	**13**	Pn	**Pn**	**05 40 29.1**	**+0.3**
	comp=Z,0.1nm,0.3s,baz=192,slow=7.5,SNR=15						
SIV	**San Ignacio**	**20.08**	**32**	P	**P**	**05 40 57.1**	**-0.2**
	comp=Z,1.1nm,0.8s,baz=220,slow=12,SNR=4.0						
TXAR	**Lajitas Array**	**69.32**	**331**	P	**P**	**05 47 32.5**	**+1.2**
	comp=Z,1.0nm,0.7s,baz=153,slow=8.6,SNR=13						
DBIC	**Dimbokro**	**75.03**	**71**	P	**P**	**05 48 05.3**	**-0.4**
	comp=Z,2.7nm,0.8s,baz=157,slow=7.7,SNR=3.4						
PDAR	**Pinedale Array**	**83.34**	**333**	P	**P**	**05 48 50.6**	**-0.3**
	comp=Z,0.2nm,0.7s,baz=134,slow=6.4,SNR=4.4						
TORD	**Torodi Ar. Bea**	**84.05**	**70**	P	**P**	**05 48 54.6**	**-0.2**
	comp=Z,1.5nm,0.7s,baz=257,slow=3.9,SNR=10						
ZALV	**Zalesovo Beam**	**153.83**	**32**	PKPbc	**PKPbc**	**05 56 22.6**	**+0.1**
	comp=Z,1.4nm,0.5s,baz=300,slow=2.9,SNR=4.3						

NIED ***04*** *05:41:00, 40°.80N×141°.40E, h83km, Mw4.7 Best double couple: M₀1.23000×10¹⁶ NP1:φs45.00000°, δ28.00000°, λ124.00000°. NP2:φs189.00000°, δ67.00000°, λ74.00000°.*
BJI ***04*** *05:41:34.0, 40°.66N×141°.94E, h36km, mb5.1/63, mB5.0/39, Ms4.4/35, Ms7 4.0/32*
NEIC ***04*** *05:41:40.5±0.1, 40°.79N×141°.27E, h35km, mb5.0/186, Error ellipse: s-maj=3.8km s-min=2.5km az=158.0*
NEIC Recorded [3 JMA] in Aomori and Iwate.
MOS ***04*** *05:41:45.0±1.1, 40°.90N×141°.26E, h89km, mb4.8/86, Error ellipse: s-maj=5.6km s-min=3.9km az=90.6*
ISCJB ***04*** *05:41:46.0±0.2, 40°.87N±0°.02×141°.26E±0°.02, h97km±1km, mb4.8/264, Error ellipse: s-maj=3.6km s-min=2.5km az=155.3*
IDC ***04*** *05:41:46.6±0.6, 40°.86N×141°.30E, h94km±4km, mb4.6/30, mb1 4.7/39, mb1mx4.6/51, mbtmp4.9/39, MS3.5/7, Ms1 3.5/7, ms1mx3.2/50, Error ellipse: s-maj=9.3km s-min=8.2km az=101.0*
JMA ***04*** *05:41:46.4±0.1, 40°.85N×141°.41E, h92km±1km, M4.6 Broadband fault plane solution: P waves. NP1: φs190.00000°, δ71.00000°, λ58.00000°. NP2:φs72.00000°, δ37.00000°, λ146.00000°. Principal axes: T Plg53.0000°, Azm61.0000°; N Plg30.0000°, Azm201.0000°; P Plg19.0000°, Azm303.0000°;*
JMA Felt III J1.
ISC 04 05:41:45.7±0.4, 40°.88N±0°.03×141°.43E±0°.03, h85km±3km, h85km:pP-P, n895, σ1°.49/954, mb4.9/271, 42C-21D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTM	**Tenmabayashi**	**0.29**	**252**	⇑P	**Pn**	**05 41 59.7**	**+1.2**
JTM				*e*S	**Sn**	**05 42 09.7**	**+1.7**
JANG	**Nango**	**0.51**	**172**	⇑P	**Pn**	**05 42 01.0**	**+0.9**
JANG				*e*S	**Sn**	**05 42 11.6**	**+1.0**
JOT	**Ohata**	**0.58**	**331**	⇑P	**Pn**	**05 42 02.4**	**+1.7**
JOT				*e*S	**Sn**	**05 42 14.5**	**+2.7**
JAH	**Hinai**	**0.91**	**222**	⇑P	**Pn**	**05 42 05.2**	**+1.1**
JAH				*e*S	**Sn**	**05 42 19.4**	**+1.6**
JSR	**Shiriuchi**	**1.00**	**311**	⇓P	**Pn**	**05 42 06.4**	**+1.3**
JSR				*e*S	**Sn**	**05 42 21.4**	**+1.8**
JKB	**Kayabe**	**1.05**	**344**	P	**Pn**	**05 42 07.7**	**+2.0**
JKB				*e*S	**Sn**	**05 42 23.4**	**+2.7**
JIW	**Iwasaki**	**1.12**	**256**	⇑P	**Pn**	**05 42 07.5**	**+1.0**
JOM	**Ohasama**	**1.40**	**184**	⇓P	**Pn**	**05 42 11.1**	**+1.0**
JOM				*e*S	**Sn**	**05 42 29.8**	**+1.4**
JYM2	**Yakumo 2**	**1.47**	**328**	⇓P	**Pn**	**05 42 12.7**	**+1.8**
JYM2				*e*S	**Sn**	**05 42 32.6**	**+2.7**
JRG	**Rokugo**	**1.60**	**203**	⇑P	**Pn**	**05 42 14.0**	**+1.5**
JNB	**Noboribetsu**	**1.62**	**350**	P	**Pn**	**05 42 14.7**	**+1.9**
JNBK	**Urakawa-nobuka**	**1.72**	**35**	P	**Pn**	**05 42 16.3**	**+2.2**
ERM	**Erimo**	**1.73**	**48**	*c i* P	**Pn**	**05 42 16.7**	**+2.5**
ERM				pmax	pmax		
	comp=Z,587nm,0.6s						
ERM	**Erimo**	**1.73**	**48**	*e*Pn	**Pn**	**05 42 16.7**	**+2.5**
ERM				*e*Sn	**Sn**	**05 42 38.7**	**+2.9**
ASAJ	**Asahikawa**	**3.35**	**15**	P	**Pn**	**05 42 37.7**	**+1.8**
	comp=Z,27nm,0.3s,baz=220,slow=9.6,SNR=176						
ASAJ				S	**Sn**	**05 43 13.6**	**-1.1**
	comp=Z,26nm,0.3s,baz=234,slow=31,SNR=4.6						
YUK	**Yuzh-Kuril'sk**	**4.55**	**45**	*e*P	**Pn**	**05 42 53.5**	**+1.4**
YUK				*i* S	**Sn**	**05 43 42.8**	**-1.0**
YUK				pmax	pmax		
	comp=N,574nm,0.3s						
YUK				pmax	pmax		
	comp=Z,2μm,0.3s						
YUK				pmax	pmax		
	comp=E,395nm,0.2s						
SHO	**Shikotan**	**5.00**	**51**	*c i* P	**Pn**	**05 42 58.1**	**-0.1**
SHO				*i* S	**Sn**	**05 43 50.6**	**-4.0**
SHO				pmax	pmax		
	comp=N,220nm,0.4s						
SHO				pmax	pmax		
	comp=E,407nm,0.4s						
SHO				pmax	pmax		
	comp=Z,610nm,0.4s						
MJB9	**Matsu-Tunnel**	**5.00**	**211**	*e*Pn	**Pn**	**05 42 59.3**	**+0.9**
MAJO	**Matsushiro**	**5.01**	**211**	*c i* P	**Pn**	**05 42 59.0**	**+0.6**
MAJO	**Matsushiro**	**5.01**	**211**	*e*Pn	**Pn**	**05 42 59.1**	**+0.7**
MJAR	**Matsushiro Arr**	**5.01**	**211**	P	**Pn**	**05 43 00.1**	**+1.7**
	comp=Z,7.6nm,0.3s,baz=22,slow=15,SNR=90						
YSS	**Yuzh-Sakhalins**	**6.15**	**9**	⇑*e*P	**Pn**	**05 43 15.6**	**+1.7**
YSS				*e*S	**Sn**	**05 44 28.3**	**+5.5**
YSS				pmax	pmax		
	comp=Z,60nm,0.4s						
YSS				MLR	MLR		
	comp=Z,300nm,15.0s						
YSS	**Yuzh-Sakhalins**	**6.15**	**9**	*e*Pn	**Pn**	**05 43 15.8**	**+1.8**
KUR	**Kuril'sk**	**6.42**	**45**	*c i*P	**Pn**	**05 43 19.1**	**+1.5**
KUR				*i* S	**Sn**	**05 44 29.1**	**-0.2**
KUR				pmax	pmax		
	comp=N,43nm,0.4s						
KUR				pmax	pmax		
	comp=E,52nm,0.4s						
KUR				pmax	pmax		
	comp=Z,223nm,0.4s						
KUR				smax	smax		
	comp=N,924nm,2.1s						
KUR				smax	smax		
	comp=E,967nm,2.1s						
KUR				smax	smax		
	comp=N,130nm,0.7s						
KUR				smax	smax		
	comp=E,412nm,0.7s						
INU	**Inuyama**	**6.52**	**214**	*e*Pn	**Pn**	**05 43 20.7**	**+1.7**
VLA	**Vladivostok**	**7.45**	**291**	*d i*P	**Pn**	**05 43 33.9**	**+2.2**
USRK	**Ussuriysk Ar.**	**7.72**	**299**	P	**Pn**	**05 43 36.9**	**+1.5**
	comp=E,17nm,0.3s,baz=106,slow=14,SNR=403						
JHJ	**Hachijo jima 2**	**7.85**	**190**	P	**Pn**	**05 43 33.9**	**-3.3**
	comp=E,38nm,0.3s,baz=338,slow=22,SNR=12						
JHJ				S	**Sn**	**05 44 56.0**	**-8.4**
	comp=E,21nm,0.3s,baz=90,slow=20,SNR=3.8						
JHJ2	**Mitsune**	**7.86**	**190**	*e*Pn	**Pn**	**05 43 34.4**	**-2.8**
MSHR	**Mys Shultsa**	**7.87**	**286**	*de*P	**Pn**	**05 43 38.1**	**+0.7**
HABR	**Khabarovsk**	**8.85**	**331**	*e*P	**Pn**	**05 43 49.2**	**-1.5**
HABR				*e*S	**Sn**	**05 45 27.4**	**-1.2**
HABR				pmax	pmax		
	comp=N,16nm,0.9s						
HABR				pmax	pmax		
	comp=E,23nm,0.9s						
HABR				pmax	pmax		
	comp=Z,17nm,0.9s						
HABR				MLR	MLR		
	comp=Z,97nm,14.0s						
MDJ	**Mudanjiang**	**9.48**	**297**	P	**Pn**	**05 44 01.3**	**+2.0**
MDJ				pmax	pmax		
	comp=Z,150nm,1.0s						
MDJ				pmax	pmax		
	comp=Z,260nm,6.7s						
MDJ				LR	LR		
	comp=Z,330nm,16.3s						
MDJ				LR	LR		
	comp=Z,320nm,21.5s						
MDJ				LR	LR		
	comp=Z,380nm,12.6s						
MDJ	**Mudanjiang**	**9.48**	**297**	*e*Pn	**Pn**	**05 44 01.5**	**+2.2**
	comp=Z,133nm,0.9s						
TYV	**Tymovskoe**	**10.03**	**4**	*e*P	**Pn**	**05 44 08.0**	**+1.3**
TYV				pmax	pmax		
	comp=E,13nm,0.8s						
TYV				pmax	pmax		
	comp=Z,31nm,0.8s						
KLR	**Kul'dur**	**10.79**	**324**	P	**Pn**	**05 44 18.8**	**+1.6**
	comp=Z,1.5nm,0.3s,baz=130,slow=13,SNR=45						
KSRS	**Korea Array**	**11.03**	**256**	P	**Pn**	**05 44 21.3**	**+0.9**
	comp=Z,1.

comp=Z,110nm,3.0s
BJT Baijiatuau 19.23 276 *e*P **P 05 46 01.5 -1.5**
BJT pmax pmax
comp=Z,21nm,0.5s
BJT Baijiatuau 19.23 276 *e*P **P 05 46 01.5 -1.5**
comp=Z,20nm,0.5s
CLNS Chul'man 19.24 332 *e*P **P 05 46 03.6 +0.5**
CLNS pmax pmax
comp=Z,57nm,0.9s
CLNS pmax pmax
comp=N,23nm,0.9s
CLNS pmax pmax
comp=E,15nm,0.8s
TIA Tai'an 19.55 264 ⇓P **P 05 46 04.3 -2.3**
TIA pmax pmax
comp=E,110nm,0.8s
MA2 Magadan 19.61 14 P **P 05 46 06.2 -0.8**
comp=E,2.2nm,0.3s,baz=212,slow=11,SNR=8.7
NJ2 Nanjing 20.14 251 *e*P **P 05 46 11.8 -1.1**
NJ2 pmax pmax
comp=E,93nm,0.5s
YAK Yakutsk 22.34 345 P **P 05 46 34.0 -2.2**
comp=E,36nm,0.4s,baz=194,slow=0.2,SNR=4.3
YAK S **S 05 50 27.3 -8.7**
comp=E,16nm,0.4s,baz=74,slow=2.0,SNR=3.6
YAK Yakutsk 22.34 345 *e*P **P 05 46 33.5 -2.8**
YAK *e*S **S 05 50 28.4 -7.6**
YAK *e* 05 50 31.3
YAK pmax pmax
comp=Z,15nm,0.7s
YAK smax smax
comp=N,205nm,1.9s
YAK smax smax
comp=E,223nm,1.3s
HHC Hu-ho-hao-te 22.54 280 *e*P **P 05 46 35.9 -2.8**
HHC PP **sP 05 47 07.4 +1.0**
HHC S **S 05 50 37.6 -2.3**
HHC pmax pmax
comp=E,50nm,0.7s
HHC pmax pmax
comp=E,730nm,3.9s
HHC LR LR
comp=E,1μm,11.1s
HHC LR LR
comp=E,1μm,12.4s
HHC LR LR
comp=E,1μm,10.5s
SEY Seymchan 23.04 13 P **P 05 46 42.6 -0.8**
comp=E,10nm,0.4s,baz=201,slow=7.9,SNR=30
SEY S **S 05 50 45.4 -1.7**
comp=E,1.3nm,0.2s,baz=38,slow=21,SNR=6.7
SEY Seymchan 23.04 13 ⇓*i*P **P 05 46 41.2 -2.2**
YHNB Yeheng 23.27 232 *e*P **P 05 46 45.2 -0.8**
comp=E,154nm,1.7s
WHN Wuhan 24.20 253 P **P 05 46 52.8 -1.4**
WHN pP pP 05 47 04.3 -9.0
WHN sP sP 05 47 09.5 -14
WHN S **S 05 51 05.2 -1.3**
WHN LR LR
comp=E,410nm,15.3s
BOD Bodaibo 24.37 323 *e*P **P 05 46 53.8 -1.7**
BOD pmax pmax
comp=Z,67nm,0.7s
ULN Ulaanbaatar 25.39 298*c i*P **P 05 47 04.3 -0.9**
ULN pmax pmax
comp=Z,16nm,0.7s
ULN Ulaanbaatar 25.39 298 *e*P **P 05 47 03.7 -1.4**
comp=Z,16nm,0.6s
SONA1 Songino Array 25.83 297 *e*P **P 05 47 07.5 -1.6**
SONM Songino Array 25.83 297 P **P 05 47 07.9 -1.2**
comp=Z,15nm,0.5s,baz=91,slow=9.0,SNR=69
SONM ScP **ScP 05 54 06.4 -1.6**
comp=Z,2.5nm,1.0s,baz=70,slow=1.7,SNR=5.2
XAN Xi'an 26.59 266 P **P 05 47 14.7 -1.3**
XAN pmax pmax
comp=Z,24nm,0.6s
XAN pmax pmax
comp=Z,75nm,4.7s
IRK Irkutsk 27.66 307 *e*P **P 05 47 23.8 -1.5**
IRK pmax pmax
comp=Z,34nm,1.6s
ENH Enshi 27.91 258 *e*P **P 05 47 25.1 -2.7**
comp=Z,17nm,0.4s
TLY Talaya 27.96 306 P **P 05 47 27.5 -0.5**
comp=Z,12nm,0.7s,baz=113,slow=4.0,SNR=5.9
TLY Talaya 27.96 306 *e*P **P 05 47 27.5 -0.5**
TLY pmax pmax
comp=Z,16nm,0.9s
TLY Talaya 27.96 306 *e*P **P 05 47 28.4 +0.3**
comp=Z,12nm,0.7s
ZAK Zakamensk 28.05 303 *e*P **P 05 47 28.3 -0.6**
ZAK pmax pmax
comp=Z,12nm,1.1s
MOY Mondy 29.60 305 *e*P **P 05 47 41.7 -1.0**
MOY pmax pmax
comp=Z,25nm,2.3s
LZH Lanzhou 29.65 273 *e*P **P 05 47 42.7 -0.7**
LZH pP pP 05 47 53.2 -10
LZH sP sP 05 47 57.6 -15
LZH PP **PnPn 05 48 39.0 -3.1**
LZH *e*S **S 05 52 33.1 +0.2**
LZH sS sS 05 52 49.0 -18
LZH pmax pmax
comp=Z,32nm,1.3s
LZH pmax pmax
comp=Z,190nm,6.0s
BILL Bilibino 30.36 18*c i*P **P 05 47 49.1 0.0**
BILL *e* 05 48 09.2
BILL *e* 05 48 52.8
BILL pmax pmax
comp=Z,27nm,1.7s
BILL MLR MLR
comp=Z,124nm,20.0s
BILL Bilibino 30.36 18 *e*P **P 05 47 49.3 +0.3**
comp=Z,12nm,0.9s
TIXI Tiksi 31.48 352 ⇓*i*P **P 05 47 58.6 -0.3**
TIXI pmax pmax
comp=Z,6.0nm,1.0s
TIXI Tiksi 31.48 352 *e*P **P 05 47 58.2 -0.7**
comp=Z,22nm,1.7s
GTA Gaotai 31.63 281 P **P 05 47 59.8 -1.0**
GTA pP pP 05 48 08.9 -11
GTA sP sP 05 48 12.8 -17
GTA PcP **PcP 05 50 51.0 +0.1**
GTA S **S 05 53 05.2 +1.4**
GTA ScP **ScP 05 54 25.7 -0.7**
GTA pmax pmax
comp=Z,14nm,0.9s
GTA pmax pmax
comp=Z,75nm,4.5s
GTA LR LR
comp=Z,130nm,21.1s
GTA LR LR
comp=Z,210nm,20.5s
GTA LR LR
comp=Z,210nm,17.1s
CD2 Chengdu 31.89 264 P **P 05 48 00.0 -2.9**
CD2 sP pP 05 48 14.6 -8.0
CD2 PP **PnPn 05 49 11.9 +1.1**
CD2 S **S 05 53 07.7 +0.1**
CD2 sS sS 05 53 25.0 -17
CD2 pmax pmax
comp=Z,20nm,0.5s
CD2 pmax pmax
comp=Z,140nm,10.3s
CD2 LR LR
comp=Z,210nm,7.7s
CD2 LR LR
comp=Z,190nm,5.7s
GYA Guiyang 32.08 254 ⇓*i*P **P 05 48 04.8 0.0**
GYA pP pP 05 48 14.6 -10
GYA PP **PnPn 05 49 11.0 -2.4**
GYA PcP **PcP 05 50 54.2 +1.9**
GYA S **S 05 53 12.8 +2.0**
GYA sS sS 05 53 29.4 -15
GYA ScP **ScP 05 54 33.3 +5.2**
GYA ScS **ScS 05 58 31.0 +3.8**
GYA pmax pmax
comp=Z,30nm,0.8s
GYA pmax pmax
comp=Z,120nm,5.0s
GYA LR LR
comp=Z,540nm,17.0s
GYA LR LR
comp=Z,520nm,17.2s
GYA LR LR
comp=Z,490nm,17.4s
KRAR Krasnoyarsk 34.79 312 ⇑*i*P **P 05 48 29.0 +1.2**
KRAR pmax pmax
comp=Z,93nm,0.7s
GAMB Gambell 35.48 34 *e*P **P 05 48 34.9 +1.3**
comp=Z,4.0nm,0.9s
KMI Kunming 35.73 256 P **P 05 48 35.8 -0.7**
KMI pmax pmax
comp=Z,22nm,0.7s
KMI pmax pmax
comp=Z,69nm,4.3s
WMQ Urumqi 39.24 293 ⇑*i*P **P 05 49 05.9 +0.1**
WMQ pP pP 05 49 17.2 -8.7
WMQ sP sP 05 49 21.4 -14
WMQ S **S 05 55 00.2 +0.2**
WMQ pmax pmax
comp=Z,52nm,0.6s
WMQ pmax pmax
comp=Z,62nm,5.0s
ZAA0 Zalesovo Array 39.42 309 *e*P **P 05 49 06.2 -0.8**
ZAA0 *e*P **P 05 49 06.4 -0.6**
ZAA0 *e*PcP **PcP 05 51 13.1 -0.4**
ZALV Zalesovo Beam 39.42 309 P **P 05 49 06.2 -0.8**
comp=Z,34nm,0.5s,baz=88,slow=8.4,SNR=109
ZALV PcP **PcP 05 51 13.1 -0.3**
comp=Z,8.1nm,0.5s,baz=105,slow=2.8,SNR=7.0
ZALV pPcP 05 51 38.2
comp=Z,6.1nm,0.5s,baz=111,slow=2.8,SNR=4.5
ZALV ScP **ScP 05 54 52.2 -2.1**
comp=Z,8.3nm,0.8s,baz=88,slow=3.3,SNR=17
NRIK Noril'sk 39.81 333 P **P 05 49 11.2 +1.1**
comp=Z,6.3nm,0.3s,baz=112,slow=5.1,SNR=9.6
NRIK S **S 05 55 02.7 -5.1**
comp=Z,1.3nm,0.4s,baz=90,slow=18,SNR=4.1
NRIK LR LR 06 06 05.5
comp=Z,198nm,21.9s,baz=112,slow=37
SKNT Sakolnakorn 40.07 245 P **P 05 49 12.6 -0.2**
comp=Z,27nm,0.9s,comp=Z,3μm
NVS Novosibirsk 40.27 310 ⇑*i*P **P 05 49 13.9 -0.2**
NVS *i* S **S 05 55 13.9 -1.1**
NVS pmax pmax
comp=Z,14nm,0.6s
NVS pmax pmax
comp=E,11nm,0.5s
NVS smax smax
comp=N,13nm,1.9s
NVS smax smax
comp=E,26nm,1.9s
KHON Khomkaen 41.30 245 P **P 05 49 22.8 -0.2**
comp=E,18nm,0.7s,comp=E,899nm
LOEI Loei 41.59 248 P **P 05 49 22.3 -3.0**
comp=E,12nm,0.7s,comp=E,496nm
CMAI Chiengmai2 41.59 253 P **P 05 49 25.8 +0.3**
comp=E,31nm,0.6s,comp=E,702nm
UTTA Uttaradit 41.93 249 P **P 05 49 28.4 +0.3**
comp=E,7.5nm,0.7s,comp=E,61nm
LSA Lhasa 42.01 271 *e*P **P 05 49 28.9 -0.4**
LSA pmax pmax
comp=Z,32nm,0.8s
LSA Lhasa 42.01 271 *e*P **P 05 49 28.9 -0.4**
comp=Z,32nm,0.8s
LAMP Lampang 42.08 251 P **P 05 49 30.2 +0.9**
comp=Z,14nm,0.7s,comp=Z,107nm
CHAI Chaiyaphum 42.18 246 P **P 05 49 29.4 -0.8**
comp=Z,8.4nm,0.8s,comp=Z,183nm
MK01 Makanchi Array 42.19 299 *e*P **P 05 49 29.4 -0.5**
MK31 Makanchi Array 42.19 299 *i* P **P 05 49 29.4 -0.6**
MK31 pmax pmax
comp=Z,43nm,0.5s
MK31 Makanchi Array 42.19 299 *e*P **P 05 49 29.6 -0.4**
MKAR Makanchi Array 42.19 299 P **P 05 49 29.6 -0.3**
comp=Z,58nm,0.6s,baz=84,slow=9.9,SNR=489
MKAR ScP **ScP 05 55 03.1 -2.3**
comp=Z,3.1nm,0.7s,baz=64,slow=5.5,SNR=9.8
MKAR S **S 05 55 41.5 -2.1**
comp=Z,2.7nm,1.1s,baz=81,slow=19,SNR=7.2
MKAR Makanchi Array 42.19 299 *i* P **P 05 49 29.3 -0.7**
MKAR pmax pmax
comp=Z,58nm,0.6s
TT01 Tatalina 42.30 37 *e*P **P 05 49 31.7 +1.1**
TTA Tatalina 42.31 37 *e*P **P 05 49 32.2 +1.5**
TTA pmax pmax
comp=Z,8.0nm,0.9s
TTA Tatalina 42.31 37 *e*P **P 05 49 32.2 +1.5**
comp=Z,8.2nm,0.9s
CHTO Chiang Mai 42.38 252 P **P 05 49 31.5 -0.3**
comp=Z,145nm,0.8s,comp=Z,1μm
CHTO Chiang Mai 42.38 252 *e*P **P 05 49 31.5 -0.3**
CHTO pmax pmax
comp=Z,23nm,0.6s
CHTO Chiang Mai 42.38 252 *e*P **P 05 49 31.5 -0.3**
comp=Z,23nm,0.6s
MAKZ Makanchi 42.40 299 *e*P **P 05 49 31.2 -0.4**
MAKZ pmax pmax
comp=Z,65nm,0.6s
MAKZ Makanchi 42.40 299 *e*P **P 05 49 31.2 -0.4**
comp=Z,65nm,0.6s
PBKT Sadao Pong 42.43 247 P **P 05 49 32.5 +0.3**
comp=Z,8.7nm,0.6s,comp=Z,2μm
SVW2 Sparrevohn 42.52 40 *e*P **P 05 49 34.6 +2.2**
comp=Z,29nm,1.3s
CMAR Chiang Mai Arr 42.61 251 P **P 05 49 33.0 -0.6**
comp=Z,6.9nm,0.6s,baz=43,slow=6.9
CM01 Chiang Mai Arr 42.62 251 *e*P **P 05 49 33.2 -0.5**
SUKH Sukhothai 42.76 250 P **P 05 49 35.1 +0.3**
comp=Z,6.1nm,1.0s
SRAK Srakaew 43.47 244 P **P 05 49 37.3 -3.3**
comp=Z,60nm,0.8s
KURK Kurchatov 43.66 305 *e*P **P 05 49 41.0 -0.7**
KURK pmax pmax
comp=Z,128nm,1.2s
KURK Kurchatov 43.66 305 *e*P **P 05 49 41.0 -0.7**
comp=Z,128nm,1.2s
KURBB Kurchatov Arra 43.73 305 P **P 05 49 41.6 -0.6**
comp=Z,37nm,0.4s,baz=80,slow=8.6,SNR=272
RSO Redoubt South 43.93 41 *e*P **P 05 49 45.8 +1.7**
OHAK Old Harbor 43.99 45 *e*P **P 05 49 44.9 +0.7**
comp=Z,47nm,1.4s
PPLA Purkeypile 44.06 37 *e*P **P 05 49 47.2 +2.3**
comp=Z,103nm,1.7s
CAST Castle Rocks 44.09 36 *e*P **P 05 49 47.2 +2.2**
comp=Z,23nm,0.8s
CHBT CHBT 44.18 242 P **P 05 49 46.4 +0.2**
comp=Z,28nm,0.7s,comp=Z,1μm
SPU Mount Spurr 44.22 40 *e*P **P 05 49 47.9 +1.7**
KDAK Kodiak Island 44.29 44 P P 05 50 02.0 +15
comp=Z,30nm,0.8s,baz=285,slow=4.8,SNR=28
KDAK Kodiak Island 44.29 44 *i* P **P 05 49 47.0 +0.4**
KDAK Kodiak Island 44.29 44 *e*P **P 05 49 46.7 0.0**
comp=Z,26nm,0.8s
KDAK P **pP 05 50 02.0 -5.0**
BPAW Bear Paw Mtn. 44.55 35 *e*P **P 05 49 50.5 +1.8**
comp=Z,11nm,0.8s
KTH Kantishna Hill 44.60 36 *e*P **P 05 49 51.2 +2.0**
comp=Z,42nm,0.9s
MLY Manley 44.63 34 *e*P **P 05 49 51.3 +2.0**
comp=Z,30nm,0.9s
COLD Coldfoot 44.82 31 *e*P **P 05 49 52.1 +1.3**
comp=Z,20nm,1.1s
TRF Thorofare Moun 44.89 36 *e*P **P 05 49 53.1 +1.6**
comp=Z,15nm,1.1s
PDGK Podgornoye 45.09 295 P **P 05 49 52.2 -1.0**
PDGK pmax pmax
comp=Z,39nm,0.6s
BWN Browne 45.21 35 *e*P **P 05 49 56.4 +2.5**
comp=Z,59nm,0.9s
KHLT Khaolaem Dam 45.31 248 P **P 05 49 57.7 +2.5**
comp=Z,5.7nm,0.9s
RC01 Rabbit Creek A 45.35 40 *e*P **P 05 49 56.1 +1.1**
comp=Z,16nm,0.8s
MCK McKinley 45.48 36 *e*P **P 05 49 57.6 +1.6**
MCK pmax pmax
comp=Z,20nm,1.0s
MCK McKinley 45.48 36 *e*P **P 05 49 57.5 +1.6**
comp=Z,20nm,1.0s
RND Reindeer 45.54 36 *e*P **P 05 49 57.4 +0.8**
RND pmax pmax
comp=Z,24nm,1.0s
RND Reindeer 45.54 36 *e*P **P 05 49 57.4 +0.8**
comp=Z,24nm,1.0s
PMR Palmer 45.58 39 *e*P **P 05 49 57.5 +0.7**
PMR pmax pmax
comp=Z,11nm,0.7s
PMR Palmer 45.58 39 *e*P **P 05 49 57.5 +0.7**
comp=Z,10nm,0.7s
MDM Murphy Dome 45.70 34 *e*P **P 05 49 59.6 +1.8**
comp=Z,27nm,0.6s
WRH Wood River Hil 45.79 35 *e*P **P 05 49 59.6 +1.1**
comp=Z,12nm,0.9s
COLA College 45.86 34 ⇓*i*P **P 05 50 01.0 +2.0**
COLA pmax pmax
comp=Z,38nm,1.4s
COLA College 45.86 34 *e*P **P 05 50 00.8 +1.8**
comp=Z,32nm,0.8s
CCB Clear Creek Bu 45.90 34 *e*P **P 05 50 00.5 +1.2**
comp=Z,7.9nm,0.9s
PHET Kaeng Krachan 45.90 245 P **P 05 50 00.3 +0.4**
comp=Z,19nm,0.7s,comp=Z,183nm
SML Sawmill 45.94 38 *e*P **P 05 50 01.2 +1.5**
SML pmax pmax
comp=Z,17nm,0.6s
SML Sawmill 45.94 38 *e*P **P 05 50 01.2 +1.5**
comp=Z,17nm,0.6s
IL1 Eielson Array 46.28 34 *e*P **P 05 50 02.8 +0.5**
ILAR Eielson Array 46.28 34 P **P 05 50 03.0 +0.7**
comp=Z,16nm,0.6s,baz=270,slow=6.0,SNR=158
ILAR PcP **PcP 05 51 35.3 -0.9**
comp=Z,2.5nm,0.7s,baz=283,slow=4.3,SNR=2.7
ILB Eielson Array 46.28 34 *e*P **P 05 50 03.2 +0.9**
HDA Harding Lake 46.29 35 *e*P **P 05 50 03.0 +0.7**
comp=Z,19nm,0.6s
SCM Sheep Creek Mo 46.41 38 *e*P **P 05 50 04.8 +1.4**
SCM pmax pmax
comp=Z,21nm,0.7s
SCM Sheep Creek Mo 46.41 38 *e*P **P 05 50 04.8 +1.4**
comp=Z,21nm,0.7s
FYU Fort Yukon 46.81 32 *e*P **P 05 50 08.9 +2.5**
comp=Z,102nm,0.7s
GUN Gumba 46.91 272 *e*P **P 05 50 08.1 0.0**
comp=Z,542nm,0.6s
PAX Paxson 47.11 37 *e*P **P 05 50 10.7 +1.8**
PAX pmax pmax
comp=Z,11nm,0.8s
PAX Paxson 47.11 37 *e*P **P 05 50 10.7 +1.8**
comp=Z,11nm,0.8s
KLU Klutina 47.12 39 *e*P **P 05 50 10.5 +1.5**
comp=Z,18nm,0.8s
DIV Divide 47.25 39 *e*P **P 05 50 11.8 +1.8**
comp=Z,28nm,0.9s
EYAK Cordova Ski Ar 47.36 40 *e*P **P 05 50 12.7 +2.0**
comp=Z,18nm,0.8s
KKN Kakani 47.42 272 *e*P **P 05 50 12.0 0.0**
comp=Z,369nm,0.7s
DOT Dot Lake 47.64 36 *e*P **P 05 50 13.7 +0.7**
comp=Z,26nm,0.6s
DMN Daman 47.65 272 *e*P **P 05 50 13.9 +0.1**
comp=Z,143nm,0.6s
VOSK Vostochnaya 47.79 309 P **P 05 50 13.1 -1.2**
VOSK pmax pmax
comp=Z,18nm,0.7s
VOSK Vostochnaya 47.79 309 *e*P **P 05 50 13.4 -0.9**
comp=Z,20nm,0.6s
GKN Gorkha 47.80 273 *e*P **P 05 50 14.5 -0.3**
comp=Z,335nm,0.6s
BMRM Bremner River 47.84 39 *e*P **P 05 50 16.4 +1.9**
comp=Z,21nm,0.9s
TKM2 Tokmak 2 47.90 295 P **P 05 50 15.2 -0.3**
TKM2 pmax pmax
comp=Z,67nm,0.9s
TKM2 Tokmak 2 47.90 295 *e*P **P 05 50 15.2 -0.3**
comp=Z,61nm,0.8s
MENT Mentasta 47.91 37 *e*P **P 05 50 16.9 +1.9**
comp=Z,17nm,0.6s
BVA0 Borovoye Array 48.06 310 *i* P **P 05 50 15.7 -0.6**
BVA0 pmax pmax
comp=Z,15nm,0.6s
BVAR Borovoye Array 48.06 310 P **P 05 50 15.9 -0.4**
comp=Z,19nm,0.5s,baz=76,slow=8.9,SNR=42
BVAR PcP **PcP 05 51 42.4 -0.4**
comp=Z,3.5nm,0.5s,baz=76,slow=3.5,SNR=3.6
BVAR ScP **ScP 05 55 27.5 -2.0**
comp=Z,1.6nm,0.7s,baz=78,slow=3.6,SNR=5.7
BRVK Borovoye 48.11 310*d i*P **P 05 50 16.4 -0.3**
BRVK pmax pmax
comp=Z,15nm,0.8s
BRVK Borovoye 48.11 310 *e*P **P 05 50 16.4 -0.3**
comp=Z,15nm,0.8s
OTUK Ortayu 48.26 303 P **P 05 50 17.1 -0.8**
OTUK pmax pmax
comp=Z,23nm,0.8s
FRU Bishkek 48.60 296 *e*P **P 05 50 19.0 -1.7**
FRU *e* 06 50 46.0
FRU pmax pmax
comp=Z,70nm,2.0s
KOLN Koldanda 48.71 273 *e*P **P 05 50 21.6 -0.2**
comp=Z,154nm,0.5s
EGAK Eagle 48.71 34 *e*P **P 05 50 22.0 +0.8**
comp=Z,63nm,1.8s
AAK Ala-Archa 48.76 295 ⇓*i*P **P 05 50 21.7 -0.4**
AAK pmax pmax
comp=Z,39nm,0.9s
AAK Ala-Archa 48.76 295 *e*P **P 05 50 21.6 -0.5**
comp=Z,16nm,0.9s
BALM Baldy 48.90 39 *e*P **P 05 50 24.3 +1.5**
BALM pmax pmax
comp=Z,19nm,0.8s
BALM Baldy 48.90 39 *e*P **P 05 50 24.3 +1.5**
comp=Z,19nm,0.8s
KSH Kashi 48.94 291 P **P 05 50 27.0 +3.6**
KSH *e*pP pP 05 50 36.5 -7.7
KSH *e*sP sP 05 50 40.6 -13
KSH *e*ScP **ScP 05 55 41.3 +7.6**
KSH PcS **PcS 05 55 45.8 +2.9**
KSH S **S 05 57 28.7 +7.6**
KSH ScS **ScS 06 00 13.4 +6.0**
KSH pmax pmax
comp=Z,15nm,0.5s
KSH pmax pmax
comp=Z,130nm,2.9s
KSH LR LR
comp=Z,160nm,8.9s
KSH LR LR
comp=Z,100nm,6.4s
KSH LR LR
comp=Z,180nm,9.3s
PYUN Piuthan 49.00 274 *e*P **P 05 50 23.9 -0.2**
comp=Z,241nm,0.3s
EKS2 Erkin-Say 49.24 296 *e*P **P 05 50 25.0 -0.7**
EKS2 pmax pmax
comp=Z,12nm,0.7s
EKS2 Erkin-Say 49.24 296 *e*P **P 05 50 25.0 -0.7**
comp=Z,12nm,0.7s
DAWY Dawson 49.60 35 *e*P **P 05 50 29.4 +1.4**
comp=Z,3.9nm,0.8s
KAPI Kappang 49.80 209 *e*P **P 05 50 29.6 -0.4**
comp=Z,15nm,0.9s
SFK Sufi-Kurgan 50.48 293 P **P 05 50 34.3 -0.9**
SFK pmax pmax
comp=Z,23nm,0.7s
KULM Kulim 50.84 237 *e*P **P 05 50 38.2 +0.4**
comp=Z,22nm,0.8s
INK Inuvik 50.99 28 P **P 05 50 39.7 +1.5**
comp=Z,35nm,0.5s,baz=295,slow=6.7,SNR=469
INK Inuvik 50.99 28 *e*P **P 05 50 39.8 +1.5**
INK pmax pmax
comp=Z,37nm,0.5s
INK Inuvik 50.99 28 *e*P **P 05 50 39.8 +1.5**
comp=Z,38nm,0.5s
KKAR Karatay Array 51.29 297 *e*P **P 05 50 40.1 -0.8**
KKAR Karatay Array 51.29 297 *e*P **P 05 50 40.1 -0.8**
SVE Sverdlovsk 52.32 317 *e*P **P 05 50 48.3 -0.1**
SOEI Soe 52.81 201 *e*P **P 05 50 52.9 +0.4**
comp=Z,42nm,1.0s
HNR Honiara 52.89 157 LR LR 06 11 34.2
comp=Z,46nm,20.1s,baz=184,slow=34
NDI New Delhi 53.05 278 *e*P P 05 50 49.0 -5.2
ARU Arti 53.53 317 LR LR 06 16 26.0
comp=Z,142nm,18.4s,baz=106,slow=39
ARU Arti 53.53 317*d i*P **P 05 50 56.7 -0.6**
ARU 05 52 03.0
ARU 05 52 56.8
ARU S **S 05 58 24.1 +0.5**
ARU SS **SS 06 02 04.6 +0.3**
ARU pmax pmax
comp=Z,15nm,0.8s
ARU Arti 53.53 317 *e*P **P 05 50 56.9 -0.4**
comp=Z,13nm,0.8s
PSI Prapat 53.84 237 *e*P **P 05 51 00.3 +0.1**
PSI pmax pmax
comp=Z,9.0nm,0.7s
PSI Prapat 53.84 237 *e*P **P 05 51 00.3 +0.1**
comp=Z,9.0nm,0.7s

MTN **Manton Dam** 54.29 192 *eP* P 05 51 02.5 -0.7
comp=Z,23nm,0.8s
AB31 **Akbulak array** 55.52 308 *i* P P 05 51 11.2 -0.6
AB31 pmax pmax
comp=Z,23nm,0.5s
ABKAR **Akbulak array** 55.52 308 *eP* P 05 51 11.2 -0.7
KBL **Kabul** 56.13 289 *eP* P 05 51 15.8 -0.8
KBL pmax pmax
comp=Z,22nm,0.8s
KBL **Kabul** 56.13 289 *eP* P 05 51 15.8 -0.8
comp=Z,22nm,0.8s
AKTO **Aktyubinsk** 56.16 310 LR LR 06 16 44.3
comp=Z,90nm,19.6s,baz=47,slow=37
HYB **Hyderabad** 58.40 266 *i* P P 05 51 32.0 -0.6
RES **Resolute Bay** 58.89 15 P P 05 51 35.4 +0.3
comp=Z,36nm,0.6s,baz=312,slow=5.7,SNR=79
RES **Resolute Bay** 58.89 15 *eP* P 05 51 35.5 +0.4
RES pmax pmax
comp=Z,37nm,0.7s
RES **Resolute Bay** 58.89 15 *eP* P 05 51 35.5 +0.4
comp=Z,38nm,0.7s
TMCR **Tamitsa** 59.40 330 *eP* P 05 51 38.5 -0.3
TMCR pmax pmax
comp=Z,26nm,0.9s
ARCES **ARCESS Array B** 60.42 339 P P 05 51 45.4 -0.4
comp=Z,1.0nm,0.4s,baz=54,slow=7.4,SNR=23
YKW3 **Yellowknife Ar** 60.46 31 *eP* P 05 51 46.5 +0.4
comp=Z,9.2nm,0.8s
YKA **Yellowknife Ar** 60.50 31 P P 05 51 47.0 +0.6
comp=Z,8.8nm,0.8s,baz=302,slow=6.5,SNR=171
YKA **Yellowknife Ar** 60.50 31 P P 05 51 47.0 +0.6
YKA pmax pmax
comp=Z,9.0nm,0.8s
YKA **Yellowknife Ar** 60.50 31 P P 05 51 47.0 +0.6
YKB5 **Yellowknife Ar** 60.50 31 *eP* P 05 51 45.3 -1.1
KLMR **Klimovskoe** 60.54 327 *eP* P 05 51 45.0 -1.6
KLMR *e* 05 53 58.3
KLMR pmax pmax
comp=Z,7.0nm,0.9s
WRAB **Tennant Creek** 60.85 188⇑ *iP* P 05 51 47.7 -1.5
WRAB pmax pmax
comp=Z,52nm,1.2s
WRAB **Tennant Creek** 60.85 188 *eP* P 05 51 46.9 -2.3
comp=Z,18nm,1.0s
WB2 **Warramunga Arr** 60.86 188 *eP* P 05 51 47.8 -1.4
comp=Z,22nm,0.9s
WRA **Warramunga Arr** 60.86 188 P P 05 51 47.6 -1.6
comp=Z,8.0nm,0.5s,baz=5.8,slow=7.1,SNR=51
WRA pP pP 05 52 11.2 +0.4
comp=Z,21nm,0.9s,baz=3.7,slow=7.1,SNR=10
POO **Poona** 61.29 270 *eP* P 05 51 49.0 -3.4
DAG **Danmarks Havn** 61.95 355 *i* P P 05 51 55.6 -0.3
comp=Z,13nm,0.8s
DAG **Danmarks Havn** 61.95 355 *i* P P 05 51 55.6 -0.3
DAG pmax pmax
comp=Z,9.0nm,0.8s
GEYT **Alibeck** 62.04 297 P P 05 51 56.7 -0.5
comp=Z,14nm,0.4s,baz=29,slow=3.4,SNR=16
NLWA **Neilton Lookou** 64.15 49 *eP* P 05 52 12.5 +1.5
comp=Z,35nm,1.0s
KULLO **Kullorsuaq** 64.16 5 *i* P P 05 52 10.8 +0.3
KULLO **Kullorsuaq** 64.16 5 *eP* P 05 52 10.8 +0.3
CMW **Cultus Mountai** 64.57 47 P P 05 52 15.3 +1.5
AS01 **Alice Springs** 64.58 188 *eP* P 05 52 12.6 -1.4
AS31 **Alice Springs** 64.59 188 *eP* P 05 52 13.3 -0.7
AS31 *eP*cP pP 05 52 36.7 +1.0
ASAR **Alice Springs** 64.59 188 P P 05 52 13.1 -0.9
comp=Z,8.2nm,0.8s,baz=11,slow=6.3,SNR=71
ASAR pP pP 05 52 37.0 +1.3
comp=Z,14nm,0.8s,baz=11,slow=6.6,SNR=18
ASAR S S 06 00 37.2 -10
comp=Z,2.0nm,0.9s,baz=340,slow=14,SNR=11
B05A **Bryant** 64.67 47 P P 05 52 15.4 +1.1
baz=304,SNR=6.0
VRH **Novokhopyorsk** 64.77 317 *eP* P 05 52 13.4 -1.5
VRH pmax pmax
comp=Z,9.0nm,0.7s
E03A **Lebam** 64.78 49 *eP* P 05 52 17.4 +2.3
comp=Z,37nm,0.9s
JCW **Jim Creek** 64.80 47 P P 05 52 16.6 +1.4
B06A **Marblemount** 64.87 47 *eP* P 05 52 17.0 +1.4
comp=Z,23nm,1.0s
PUL **Pulkovo** 64.91 329⇑ *eP* P 05 52 15.2 -0.5
PUL pmax pmax
comp=Z,65nm,0.7s
OBN **Obninsk** 65.05 322⇑ *eP* P 05 52 16.7 +0.1
OBN *e* 05 52 49.4
OBN pmax pmax
comp=Z,6.0nm,0.9s
OBN MLR MLR
comp=Z,84nm,17.0s
D05A **Enumclaw** 65.33 48 *eP* P 05 52 21.1 +2.4
comp=Z,36nm,1.1s
LPSR **Galich'ya Gora** 65.39 319 *eP* P 05 52 18.2 -0.7
LPSR pmax pmax
comp=Z,6.0nm,0.9s
FIA1 **FINESS Array S** 65.44 331 *eP* P 05 52 18.6 -0.5
FIA1 *eP* P 05 52 19.0 -0.1
FINES **FINESS Array B** 65.44 331 P P 05 52 18.7 -0.3
comp=Z,12nm,0.6s,baz=35,slow=8.5,SNR=69
FINES pP pP 05 52 42.5 +1.7
comp=Z,10nm,0.7s,baz=57,slow=7.0,SNR=4.1
C06D **Leavenworth** 65.53 47 P P 05 52 21.6 +1.7
baz=304
TDL **Tradedollar La** 65.67 49 P P 05 52 22.7 +1.7
LON **Longmire** 65.67 49 *eP* P 05 52 22.5 +1.5
LON pmax pmax
comp=Z,11nm,1.3s
LON **Longmire** 65.67 49 *eP* P 05 52 22.5 +1.5
comp=Z,11nm,1.3s
ETW **Entiat** 66.02 47 P P 05 52 24.2 +1.0
LTY **Liberty** 66.03 48 *eP* P 05 52 24.4 +1.1
comp=Z,21nm,1.2s
VSR **Storozhevoye** 66.08 318 *eP* P 05 52 22.2 -1.1
VSR pmax pmax
comp=Z,10.0nm,0.9s
TBM **Table Mountain** 66.12 48 P P 05 52 25.4 +1.6
B08A **Colville Reser** 66.14 46 *eP* P 05 52 24.9 +1.0
comp=Z,38nm,1.6s
EBG **Ellensburg** 66.28 48 P P 05 52 26.5 +1.6
I03D **Drain, OR** 66.50 52 P P 05 52 28.2 +2.0
baz=305
EIDS **Eidsvold** 66.51 170 *eP* P 05 52 26.6 +0.3
comp=Z,10nm,0.7s
H04A **Detroit Lake** 66.63 51 *eP* P 05 52 28.5 +1.5
comp=Z,29nm,1.1s
VFP **Flag Point** 66.69 50 P P 05 52 29.4 +1.8
DZM **Mont Dzumac** 66.80 155 P P 05 52 29.6 +1.2
comp=Z,10nm,0.9s,baz=96,slow=20,SNR=8.5
G05D **Wamic, OR** 66.81 50 P P 05 52 30.0 +1.8
baz=305
SUMG **Summit** 66.85 360 *i* P P 05 52 29.1 +0.7
comp=Z,11nm,0.6s
SUMG **Summit** 66.85 360 *i* P P 05 52 29.1 +0.7
SUMG pmax pmax
comp=Z,11nm,0.6s
SUMG **Summit** 66.85 360 *eP* P 05 52 29.3 +0.9
comp=Z,37nm,1.4s
I04A **Tendick Farm,** 67.00 51 P P 05 52 30.8 +1.3
baz=305,SNR=5.1
C09A **Chrisman Ranch** 67.04 46 *eP* P 05 52 30.7 +1.1
comp=Z,21nm,0.8s
D08A **Wollman Farm,** 67.12 47 *eP* P 05 52 31.2 +1.1
comp=Z,22nm,0.6s
HAWA **Hanford** 67.17 48 *eP* P 05 52 31.8 +1.4
comp=Z,19nm,0.8s
VSU **Vasula** 67.17 329⇓ *eP* P 05 52 30.7 +0.6
VSU pmax pmax
comp=Z,26nm,0.9s
L02D **Cave Junction,** 67.23 53 P P 05 52 32.8 +1.9
baz=305
I05D **Terrebonne, OR** 67.32 50 P P 05 52 32.8 +1.3
baz=306
NEW **Newport** 67.39 45 *eP* P 05 52 33.1 +1.3
NEW pmax pmax
comp=Z,14nm,0.8s
NEW **Newport** 67.39 45 *eP* P 05 52 33.1 +1.3
comp=Z,14nm,0.8s
E09A **Wood Farm, Sta** 67.87 47 *eP* P 05 52 36.5 +1.7
comp=Z,27nm,0.8s
J05D **Fort Rock, OR** 68.00 51 P P 05 52 37.4 +1.6
baz=306,SNR=8.4
YBH **Yreka Blue Hor** 68.02 53 *eP* P 05 52 37.9 +2.0
YBH pmax pmax
comp=Z,15nm,1.0s
YBH **Yreka Blue Hor** 68.02 53 *eP* P 05 52 37.9 +2.0
comp=Z,15nm,1.0s
K04D **Chiloquin, OR** 68.07 52 P P 05 52 38.2 +1.9
baz=306
M02C **Callahan** 68.13 54 P P 05 52 38.6 +1.9
baz=306
SCO **Scoresbysund** 68.30 354 *i* P P 05 52 37.2 +0.1
comp=Z,4.3nm,1.0s
SCO **Scoresbysund** 68.30 354 *eP* P 05 52 37.2 +0.1
SCO pmax pmax
comp=Z,4.0nm,1.0s
ZEI **Tsey** 68.40 308 *eP* P 05 52 36.0 -2.5
ZEI pmax pmax
comp=Z,15nm,0.6s
KIV **Kislovodsk** 68.43 310 P P 05 52 39.4 +0.8
KIV **Kislovodsk** 68.43 310 *eP* P 05 52 39.3 +0.8
KIV pmax pmax
comp=Z,36nm,1.1s
KIV **Kislovodsk** 68.43 310 *eP* P 05 52 39.7 +1.2
comp=Z,25nm,0.8s
KBZ **Khabaz** 68.44 310 P P 05 52 38.3 -0.1
comp=Z,10nm,0.7s,baz=50,slow=4.2,SNR=29
N02D **Trinity Center** 68.46 54 P P 05 52 40.7 +2.0
baz=306,SNR=6.6
M04C **Macdoel** 68.52 53 P P 05 52 40.7 +1.6
baz=306,SNR=10.0
K05A **Summer Lake** 68.53 52 *eP* P 05 52 41.1 +1.8
comp=Z,28nm,0.9s
WALA **Waterton Lakes** 68.61 43 *eP* P 05 52 40.6 +1.0
comp=Z,15nm,0.8s
F10A **Beach Ranch, E** 68.70 47 *eP* P 05 52 41.5 +1.4
comp=Z,6.3nm,0.8s
WDC **Whiskeytown Da** 68.79 54 *eP* P 05 52 42.5 +1.8
WDC pmax pmax
comp=Z,12nm,0.9s
WDC **Whiskeytown Da** 68.79 54 *eP* P 05 52 42.5 +1.8
comp=Z,12nm,0.9s
NEY **Neytrino** 68.83 309⇑ *iP* P 05 52 41.5 +0.4
BSMT **Bassoo Peak** 68.89 45 *eP* P 05 52 42.6 +1.2
BLMT **Blacktail Moun** 69.02 44 *eP* P 05 52 44.0 +1.8
JTMT **Jette** 69.22 44 *eP* P 05 52 44.8 +1.4
YBMT **Yellow Bay** 69.29 44 *eP* P 05 52 45.2 +1.3
BMO **Blue Mountains** 69.34 48 P P 05 52 45.4 +1.3
MOD **Modoc Plateau** 69.37 52 *eP* P 05 52 45.6 +1.1
comp=Z,15nm,1.4s
O03D **Paynes Creek** 69.42 54 P P 05 52 45.6 +1.0
baz=307,SNR=7.7
GNI **Garni** 69.45 306⇑ *eP* P 05 52 46.6 +1.6
GNI pmax pmax
comp=Z,30nm,1.2s
AKH **Akhalkalaki** 69.46 307⇑ *iP* P 05 52 48.3 +3.3
SWMT **Swartz Lake** 69.52 44 *eP* P 05 52 46.4 +1.2
MSO **Missoula** 69.97 45 P P 05 52 48.4 +0.4
baz=309,SNR=6.1
MSO **Missoula** 69.97 45 *eP* P 05 52 49.1 +1.1
comp=Z,12nm,0.9s
WVOR **Wild Horse Val** 70.04 51 *eP* P 05 52 50.1 +1.6
WVOR pmax pmax
comp=Z,9.0nm,1.0s
WVOR **Wild Horse Val** 70.04 51 *eP* P 05 52 50.1 +1.6
comp=Z,9.3nm,1.0s
CHMT **Chamberlain Mo** 70.29 45 *eP* P 05 52 50.8 +0.8
NC405 **NORSAR Array S** 70.45 337 *eP* P 05 52 50.8 +0.3
FCC **Fort Churchill** 70.57 27 *eP* P 05 52 51.5 +0.3
FCC pmax pmax
comp=Z,46nm,1.4s
FCC **Fort Churchill** 70.57 27 *eP* P 05 52 51.5 +0.3
comp=Z,46nm,1.4s
NC204 **NORSAR Array S** 70.61 337 *eP* P 05 52 52.4 +0.9
NB201 **NORSAR Array S** 70.63 337 *eP* P 05 52 52.1 +0.5
NB2 **NORSAR Subarra** 70.66 337 P P 05 52 51.5 -0.3
comp=Z,6.2nm,0.8s,baz=39,slow=6.5
NOA **NORSAR Array B** 70.66 337 P P 05 52 51.6 -0.2
comp=Z,6.1nm,0.8s,baz=39,slow=6.1,SNR=19
NOA pP pP 05 53 14.9 +1.1
comp=Z,3.1nm,0.7s,baz=40,slow=6.0,SNR=3.2
UOSS **Minazif** 70.69 287 *eP* P 05 52 52.2 -0.3
comp=Z,2.3nm,0.8s
NBO02 **NORSAR Array S** 70.76 337 *eP* P 05 52 52.4 0.0
NBO00 **NORSAR Array S** 70.80 337 *eP* P 05 52 53.5 +0.9
HATD **Hatta, Dubai** 70.81 286 *i* P P 05 52 54.0 +0.6
SNR=7.5
ANN **Anapa** 70.90 313 *eP* P 05 52 50.5 -3.0
ANN *e*PP PcP 05 53 14.0 +0.4
ANN *e*S S 06 01 57.9 -4.1
ANN *e*SS SS 06 06 33.4 -1.9
ANN pmax pmax
comp=Z,16nm,1.1s
ASHO **Ashiyiah** 70.95 286 P P 05 52 54.1 -0.1
MFID **Camas Ranch** 71.06 49 *eP* P 05 52 55.7 +1.0
comp=Z,12nm,1.2s
AKASG **Malin Array Be** 71.28 322 P P 05 52 55.1 -0.6
comp=Z,4.8nm,0.6s,baz=46,slow=6.7,SNR=21
AKBB **Malin Array Si** 71.28 322 *eP* P 05 52 55.8 +0.1
AKBB **Malin Array Si** 71.28 322 *eP* P 05 52 55.8 +0.1
KIEV **Kiev** 71.30 322 *d iP* P 05 52 54.9 -0.9
KIEV pmax pmax
comp=Z,8.0nm,0.8s
KIEV **Kiev** 71.30 322 *eP* P 05 52 55.3 -0.5
comp=Z,8.9nm,0.9s
EGMT **Eagleton** 71.40 42 P P 05 52 57.3 +0.7
baz=311,SNR=30
EGMT **Eagleton** 71.40 42 *eP* P 05 52 57.5 +0.9
comp=Z,33nm,0.8s
LRM **Limekiln Ridge** 71.41 45 *eP* P 05 52 58.0 +1.1
DLMT **Dillon** 71.63 46 *eP* P 05 52 59.0 +0.9
comp=Z,30nm,0.8s
CMB **Columbia Colle** 71.66 55 *eP* P 05 52 59.6 +1.3
CMB pmax pmax
comp=Z,7.0nm,0.8s
CMB **Columbia Colle** 71.66 55 *eP* P 05 52 59.5 +1.3
comp=Z,7.2nm,0.8s
HLID **Hailey** 71.77 48 P P 05 53 00.3 +1.2
baz=309,SNR=10
HLID **Hailey** 71.77 48 *eP* P 05 53 00.2 +1.2
comp=Z,9.3nm,1.0s
MCMT **McKenzie Canyo** 71.83 46 *eP* P 05 53 00.4 +0.9
WAKR **Walker** 71.96 55 *eP* P 05 53 01.9 +1.6
BOZ **Bozeman (W)** 71.97 45 P P 05 53 01.3 +1.1
baz=310,SNR=47
BOZ **Bozeman (W)** 71.97 45 *eP* P 05 53 01.0 +0.9
BOZ pmax pmax
comp=Z,22nm,0.7s
BOZ **Bozeman (W)** 71.97 45 *eP* P 05 53 01.0 +0.9
comp=Z,22nm,0.7s
STKA **Stephens Creek** 72.39 180 P P 05 53 02.3 0.0
comp=Z,3.3nm,0.7s,baz=353,slow=8.7,SNR=8.2
QLMT **Earthquake Lak** 72.60 45 *eP* P 05 53 05.6 +1.5
NV01 **Mina Array Sit** 72.70 54 *eP* P 05 53 06.0 +1.3
NVAR **Mina Array Bea** 72.70 54 P P 05 53 06.5 +1.7
comp=Z,7.3nm,0.7s,baz=290,slow=5.7,SNR=11
NV11 **Mina Array Sit** 72.79 54 *eP* P 05 53 06.9 +1.7
comp=Z,5.5nm,0.8s
MLAC **Mammoth, Mammo** 72.87 55 P P 05 53 07.3 +1.6
baz=309
GCMT **Greycliff** 72.91 44 *eP* P 05 53 07.0 +1.3
YMR **Madison River** 72.96 45 *eP* P 05 53 07.7 +1.6
comp=Z,14nm,0.7s
ELK **Elko** 73.08 51 *eP* P 05 53 08.5 +1.5
ELK pmax pmax
comp=Z,5.0nm,0.9s
ELK **Elko** 73.08 51 *eP* P 05 53 08.5 +1.5
comp=Z,4.8nm,0.9s
YFT **Old Faithful** 73.17 45 *eP* P 05 53 10.2 +2.8
comp=Z,12nm,0.8s
LKWY **Lake** 73.33 45 *eP* P 05 53 10.0 +1.6
LKWY pmax pmax
comp=Z,13nm,1.1s
LKWY **Lake** 73.33 45 *eP* P 05 53 10.0 +1.6
comp=Z,13nm,1.1s
H17A **Grant Village** 73.35 45 P P 05 53 11.1 +2.6
baz=311,SNR=23
H17A **Grant Village** 73.35 45 *eP* P 05 53 11.3 +2.9
comp=Z,21nm,0.8s
RCTC **Rector, Farmer** 73.44 56 P P 05 53 10.5 +1.7
baz=309
SORM **Soroca** 73.45 320⇑ *iP* P 05 53 08.2 -0.4
SORM **Soroca** 73.45 320⇑ P P 05 53 08.2 -0.4
IMW **Indian Meadow** 73.48 46 *eP* P 05 53 11.2 +2.0
comp=Z,14nm,0.8s
FLWY **Flagg Ranch** 73.49 46 *eP* P 05 53 11.1 +1.9
comp=Z,8.3nm,0.8s
RLMT **Red Lodge** 73.57 44 P P 05 53 10.9 +1.2
baz=312,SNR=19
RLMT **Red Lodge** 73.57 44 *eP* P 05 53 10.5 +0.8
comp=Z,8.8nm,0.6s
FXWY **Fox Creek** 73.60 46 *eP* P 05 53 11.7 +1.7
comp=Z,10nm,0.8s
MOOW **Moose Ponds** 73.68 46 *eP* P 05 53 12.0 +1.6
comp=Z,13nm,1.0s
VES **Vestal, Richgr** 73.83 57 P P 05 53 12.4 +1.3
baz=309
HVU **Hansel Valley** 73.84 49 *eP* P 05 53 12.6 +1.3
HVU pmax pmax
comp=Z,7.0nm,0.8s
HVU **Hansel Valley** 73.84 49 *eP* P 05 53 12.6 +1.3
comp=Z,7.4nm,0.8s
DGMT **Dagmar** 73.84 39 *eP* P 05 53 11.1 +0.1
comp=Z,40nm,1.1s
LOHW **Long Hollow** 73.85 46 *eP* P 05 53 12.9 +1.5
comp=Z,4.9nm,0.9s
SNOW **Snow King Moun** 73.86 46 *eP* P 05 53 13.3 +1.7
comp=Z,10nm,0.8s
REDW **Red Top Meadow** 73.88 46 *eP* P 05 53 13.1 +1.5
comp=Z,11nm,0.9s
PKM **Mcpherson Peak** 73.96 58 P P 05 53 13.6 +1.4
baz=309
A25A **Svangstu Ranch** 74.03 38 P P 05 53 12.8 +0.7
baz=315
CWC **Cottonwood Cre** 74.09 56 P P 05 53 14.0 +1.2
baz=309
AHID **Auburn Hatcher** 74.13 47 *eP* P 05 53 14.1 +1.1
comp=Z,8.1nm,0.9s
GRAC **Grapevine Rang** 74.18 55 P P 05 53 14.8 +1.6
baz=310,SNR=11
R11A **Troy Canyon, C** 74.41 53 P P 05 53 15.8 +1.1
baz=310,SNR=16
R11A **Troy Canyon, C** 74.41 53 *eP* P 05 53 15.8 +1.1
comp=Z,5.8nm,0.6s
DAC **Darwin (Calif)** 74.49 55 *eP* P 05 53 16.2 +1.0
DAC pmax pmax
comp=Z,11nm,1.3s
DAC **Darwin (Calif)** 74.49 55 *eP* P 05 53 16.2 +1.0
comp=Z,11nm,1.3s
A26A **Wade Farm, Ken** 74.56 38 P P 05 53 15.7 +0.6
baz=315,SNR=11
HWUT **Hardware Ranch** 74.64 48 *eP* P 05 53 17.4 +1.4
comp=Z,16nm,1.1s
MPMC **Manual Prospec** 74.70 56 P P 05 53 17.4 +1.0
baz=310,SNR=9.9
C25A **Freed Ranch, W** 74.82 39 P P 05 53 17.7 +1.0
baz=315
FURC **Furnace Creek,** 74.83 55 P P 05 53 18.3 +1.4
baz=310,SNR=14
B26A **Jensen Ranch,** 74.84 38 P P 05 53 17.7 +0.9
baz=315
DUG **Dugway, Tooele** 74.85 50 P P 05 53 18.4 +1.2
baz=311,SNR=9.7
DUG **Dugway, Tooele** 74.85 50 *eP* P 05 53 18.5 +1.4
DUG pmax pmax
comp=Z,8.0nm,0.7s
DUG **Dugway, Tooele** 74.85 50 *eP* P 05 53 18.5 +1.4
comp=Z,7.6nm,0.7s
A27A **Ledoux Ranch,** 74.89 37 P P 05 53 17.9 +0.9
baz=316,SNR=6.5
TPNV **Topopah Spring** 74.90 54 P P 05 53 18.7 +1.2
baz=310,SNR=17
TPNV **Topopah Spring** 74.90 54 *eP* P 05 53 18.9 +1.4
TPNV pmax pmax
comp=Z,19nm,1.1s
TPNV **Topopah Spring** 74.90 54 *eP* P 05 53 18.9 +1.4
comp=Z,19nm,1.1s
BLG **Laguna Peak, P** 74.93 58 P P 05 53 18.7 +1.2
baz=309
LRMC **Laurel Mtn Rad** 74.94 56 P P 05 53 18.7 +1.0
baz=310
BW06 **Boulder Array** 74.98 46 P P 05 53 18.5 +0.6
baz=312,SNR=21
BW06 **Boulder Array** 74.98 46 *eP* P 05 53 18.7 +0.7
PD31 **Pinedale Array** 74.98 46 *eP* P 05 53 18.6 +0.7
PDAR **Pinedale Array** 74.98 46 P P 05 53 18.6 +0.7
comp=Z,7.6nm,0.7s,baz=258,slow=2.2,SNR=91
TCUT **Toone Canyon** 75.05 48 *eP* P 05 53 19.9 +1.4
comp=Z,111nm,0.3s
EDW2 **Edwards Air Fo** 75.13 57 P P 05 53 19.8 +1.1
baz=310,SNR=7.8
D25A **Fairfield** 75.19 40 P P 05 53 19.7 +0.8
baz=315,SNR=7.5
C26A **Wahner Farm, P** 75.29 39 P P 05 53 20.3 +0.8
baz=316
BUR08 **Bucovina Ar. S** 75.31 321 *eP* P 05 53 20.1 +0.5
BURAR **Bucovina Array** 75.32 321⇑ *iP* P 05 53 20.1 +0.4
BURAR **Bucovina Array** 75.32 321 ⇑P P 05 53 20.1 +0.4
PSUT **Pine Spring** 75.32 52 *eP* P 05 53 21.6 +1.6
comp=Z,5.7nm,0.8s
A28A **Rude Farm, Bot** 75.36 37 P P 05 53 20.2 +0.4
baz=316,SNR=5.3
JLU **Jordanelle** 75.37 49 *eP* P 05 53 21.9 +1.6
comp=Z,21nm,1.7s
TESR **Tescani** 75.41 320⇑ *iP* P 05 53 18.2 -1.8
NLU **North Lily Min** 75.44 50 *eP* P 05 53 22.2 +1.6
comp=Z,6.9nm,0.8s
MWC **Mount Wilson** 75.50 57 *eP* P 05 53 22.3 +1.2
MWC pmax pmax
comp=Z,20nm,1.1s
MWC **Mount Wilson** 75.50 57 *eP* P 05 53 22.3 +1.2
comp=Z,20nm,1.1s
SHOC **Shoshone, Teco** 75.56 55 P P 05 53 22.0 +0.9
baz=310
CFR **Carcaliu** 75.60 318⇑ *iP* P 05 53 21.0 -0.1
CFR **Carcaliu** 75.60 318 ⇑P P 05 53 21.0 -0.1
E25A **Miller Ranch,** 75.61 40 P P 05 53 21.8 +0.6
baz=315,SNR=18
GSC **Goldstone, Bar** 75.61 56 P P 05 53 22.2 +0.7
baz=310,SNR=6.3
GSC **Goldstone, Bar** 75.61 56 *eP* P 05 53 22.6 +1.1
GSC pmax pmax
comp=Z,16nm,1.3s
GSC **Goldstone, Bar** 75.61 56 *eP* P 05 53 22.6 +1.1
comp=Z,16nm,1.3s
C27A **Sayler Ranch,** 75.65 38 P P 05 53 22.2 +0.7
baz=316,SNR=5.2
B28A **Dugan Ranch, T** 75.66 37 P P 05 53 22.0 +0.6
baz=316
FMP **Fort Macarthur** 75.68 58 P P 05 53 22.9 +1.1
baz=310
D26A **Manning** 75.70 39 P P 05 53 22.4 +0.6
baz=316,SNR=8.2
BFSC **Mount Baldy Ra** 75.75 57 P P 05 53 23.2 +0.8
baz=310,SNR=5.5
CIS **Catalina Islan** 75.80 58 P P 05 53 23.5 +0.9
baz=310
VRI **Vrincioaia** 75.82 319⇓ *iP* P 05 53 25.8 +3.4
VRI **Vrincioaia** 75.82 319 ⇓P P 05 53 25.8 +3.4
A29A **Manning Farm,** 75.82 36 P P 05 53 22.7 +0.3
baz=317,SNR=13
STHS **Stebnicka Huta** 75.84 324 *eP* P 05 53 23.9 +1.4
STHS **Stebnicka Huta** 75.84 324 *eP* P 05 53 23.9 +1.4
OJC **Ojcow** 75.87 326 *eP* P 05 53 23.9 +1.3
OJC pmax pmax
comp=Z,12nm,0.7s
OJC **Ojcow** 75.87 326 *eP* P 05 53 23.9 +1.3
comp=Z,12nm,0.7s
PLOR **Plostina** 75.87 319⇑ *iP* P 05 53 25.6 +2.8
PLOR **Plostina** 75.87 319 ⇑P P 05 53 25.6 +2.8
UZH **Uzhgorod** 75.94 323 *eP* P 05 53 18.6 -4.4
F25A **Bowman** 75.98 41 P P 05 53 24.0 +0.6
baz=315
TUQ **Turquoise Moun** 76.07 55 P P 05 53 25.6 +1.4
baz=310,SNR=9.2
D27A **Center** 76.08 39 P P 05 53 24.9 +1.0
baz=316
E26A **Carlson Angus** 76.08 40 P P 05 53 24.1 +0.1
baz=316,SNR=6.0
B29A **Wagenman Farm,** 76.10 37 P P 05 53 24.5 +0.5
baz=317
C28A **Hausauer Farms** 76.17 38 P P 05 53 25.2 +0.7
baz=317
BBRC **Big Bear Solar** 76.20 57 P P 05 53 25.7 +0.6
baz=310
HEC **Hector,Ludlow** 76.21 56 P P 05 53 25.9 +0.9
baz=310,SNR=9.8
A30A **Hoffart Farm,** 76.23 36 P P 05 53 25.1 +0.5
baz=318
ULM **Lac du Bonnet** 76.30 34 P P 05 53 24.9 -0.1
comp=Z,11nm,0.8s,baz=313,slow=6.4,SNR=14
ULM **Lac du Bonnet** 76.30 34 *eP* P 05 53 25.0 -0.1
ULM pmax pmax
comp=Z,15nm,0.9s
ULM **Lac du Bonnet** 76.30 34 *eP* P 05 53 25.0 0.0
comp=Z,15nm,0.9s
MSU **Marysvale** 76.33 51 *eP* P 05 53 27.4 +1.7
MSU **Marysvale** 76.33 51 *eP* P 05 53 27.4 +1.7
BR131 **Keskin Array S** 76.33 311 *eP* P 05 53 25.7 +0.1

BRTR	Keskin Array B	76.33	311	P	P	05 53 25.6	0.0
	comp=Z,2.6nm,0.5s,baz=90,slow=3.6,SNR=16						
BRTR				PP	PP	05 56 20.9	+3.4
	comp=Z,1.5nm,0.8s,baz=54,slow=6.9,SNR=5.1						
BRTR	Keskin Array B	76.33	311	*i* P	P	05 53 27.6	+2.0
BRTR				pmax	pmax		
	comp=Z,3.0nm,0.5s						
TMUT	Trail Mountain	76.37	50	*e*P	P	05 53 27.6	+1.5
	comp=Z,5.8nm,0.6s						
DOPR	Dopca	76.41	320⇑	*i*P	P	05 53 31.8	+6.0
F26A	Lodgepole	76.42	40	P	P	05 53 26.4	+0.5
	baz=316						
MURC	Murrieta	76.45	57	P	P	05 53 27.1	+0.8
	baz=310						
MLR	Muntele Rosu	76.48	319⇑	*i*P	P	05 53 29.3	+3.0
MLR	Muntele Rosu	76.48	319⇑	P	P	05 53 29.3	+3.0
G25A	Newell	76.52	41	P	P	05 53 27.0	+0.5
	baz=315						
P17A	Butcher Ranch,	76.52	49	*e*P	P	05 53 24.8	-1.9
	comp=Z,18nm,0.7s						
E27A	Carson	76.55	39	P	P	05 53 27.2	+0.6
	baz=316,SNR=12						
B30A	Myrvik Farm, E	76.58	36	P	P	05 53 27.0	+0.3
	baz=318,SNR=15						
MTPU	Mount Pierson	76.64	51	*e*P	P	05 53 29.6	+2.0
	comp=Z,8.9nm,0.7s						
Q16A	Castle Valley	76.65	50	*e*P	P	05 53 29.2	+1.7
	comp=Z,25nm,1.8s						
GMRC	Granite Mounta	76.66	56	P	P	05 53 28.5	+1.0
	baz=311,SNR=11						
LCMT	Little Creek M	76.69	52	*e*P	P	05 53 29.2	+1.6
	comp=Z,8.2nm,0.9s						
K22A	Casper	76.70	45	P	P	05 53 27.9	+0.3
	baz=314,SNR=6.6						
K22A	Casper	76.70	45	*e*P	P	05 53 28.5	+0.8
	comp=Z,12nm,1.0s						
F27A	Lemmon	76.73	40	P	P	05 53 28.0	+0.3
	baz=316						
BR231	Keskin MP Arra	76.75	311	*e*P	P	05 53 25.9	-2.0
LDFC	Landfair	76.81	55	*e*P	P	05 53 29.5	+1.2
	comp=Z,27nm,1.1s						
H25A	Fruitdale	76.84	42	P	P	05 53 28.6	+0.3
	baz=315						
G26A	Maurine	76.86	41	P	P	05 53 28.6	+0.2
	baz=316,SNR=28						
E28A	Huff	76.86	39	P	P	05 53 28.8	+0.5
	baz=317						
SRU	San Rafael Swe	76.89	49	*e*P	P	05 53 30.3	+1.4
SRU				pmax	pmax		
	comp=Z,16nm,0.9s						
SRU	San Rafael Swe	76.89	49	*e*P	P	05 53 30.3	+1.4
	comp=Z,16nm,0.9s						
B31A	Greenbush Farm	76.90	36	P	P	05 53 28.6	+0.1
	baz=318						
PFO	Pinyon Flats O	76.91	57	P	P	05 53 29.6	+0.7
	baz=311,SNR=6.9						
PFO	Pinyon Flats O	76.91	57	*e*P	P	05 53 30.2	+1.2
PFO				pmax	pmax		
	comp=Z,13nm,1.0s						
PFO	Pinyon Flats O	76.91	57	*e*P	P	05 53 30.2	+1.2
	comp=Z,13nm,1.0s						
KNB	Kanab	76.94	52	*e*P	P	05 53 30.8	+1.7
KNB				pmax	pmax		
	comp=Z,14nm,1.2s						
KNB	Kanab	76.94	52	*e*P	P	05 53 30.8	+1.7
	comp=Z,14nm,1.2s						
BELC	Belle Mtn. Jos	76.95	56	P	P	05 53 29.7	+0.5
	baz=311,SNR=5.7						
VOIR		76.96	320⇓	*i*P	P	05 53 30.2	+1.3
VOIR		76.96	320⇓	P	P	05 53 30.2	+1.3
RSSD	Black Hills	76.97	42	P	P	05 53 29.4	+0.2
	baz=315						
RSSD	Black Hills	76.97	42	*e*P	P	05 53 29.6	+0.4
RSSD				pmax	pmax		
	comp=Z,16nm,1.1s						
RSSD	Black Hills	76.97	42	*e*P	P	05 53 29.6	+0.4
	comp=Z,16nm,1.1s						
A32A	Rocking H Ranc	77.04	35	P	P	05 53 29.0	-0.3
	baz=319,SNR=10						
MMU	Miners Mountai	77.06	51	*e*P	P	05 53 31.6	+1.7
C30A	Mose, Pekin	77.06	37	P	P	05 53 29.3	-0.1
	baz=318						
G27A	Dupree	77.12	40	P	P	05 53 30.0	+0.1
	baz=316,SNR=7.7						
MORC	Moravsky Berou	77.16	326⇑	*i*P	P	05 53 32.4	+2.5
MORC	Moravsky Berou	77.16	326⇑	P	P	05 53 32.4	+2.5
MORC	Moravsky Berou	77.16	326	*e*P	P	05 53 32.5	+2.5
	comp=Z,35nm,1.0s						
I25A	Rochford	77.19	42	P	P	05 53 30.7	+0.2
	baz=315,SNR=9.3						
DPC	Dobruska-Polom	77.22	327	*e*P	P	05 53 32.9	+2.6
DPC				*ep*P	PcP	05 53 38.8	-1.9
DPC				*ex*	x	05 53 54.9	
DPC	Dobruska-Polom	77.22	327	*e*P	P	05 53 32.9	+2.6
DPC				*e*		05 53 38.8	
DPC				*e*		05 53 54.9	
KRLC	Kraliky	77.25	327	*e*P	P	05 53 32.7	+2.3
KRLC				*ex*	x	05 53 54.5	
KRLC	Kraliky	77.25	327	*e*P	P	05 53 32.7	+2.3
KRLC				*e*		05 53 54.5	
H26A	Fairpoint	77.25	41	P	P	05 53 30.8	+0.2
	baz=316						
C31A	Landman Farms,	77.33	36	P	P	05 53 30.9	0.0
	baz=318,SNR=6.2						
F28A	McLaughlin	77.33	39	P	P	05 53 31.4	+0.4
	baz=317						
D30A	Buchanan	77.37	37	P	P	05 53 31.3	+0.1
	baz=318,SNR=8.4						
IRM	Iron Mountain	77.39	56	P	P	05 53 32.8	+1.3
	baz=311,SNR=12						
MONP2	Monument Peak	77.40	57	P	P	05 53 32.8	+0.9
	baz=311						
B32A	Ashes, Strandq	77.41	35	P	P	05 53 31.1	-0.3
	baz=319						
O20A	White River Ci	77.49	47	P	P	05 53 32.7	+0.5
	baz=313,SNR=8.5						
O20A	White River Ci	77.49	47	*e*P	P	05 53 33.2	+1.0
	comp=Z,8.1nm,0.8s						
A33A	Warroad	77.50	34	P	P	05 53 31.7	-0.1
	baz=320,SNR=25						
BC3	Big Chuckawall	77.52	56	P	P	05 53 33.2	+0.8
	baz=311,SNR=13						
PSZ	Piszkesteto	77.55	324⇑	*i*P	P	05 53 40.0	+7.8
PSZ	Piszkesteto	77.55	324⇑	P	P	05 53 40.0	+7.8
W13A	Hualapai Mount	77.55	54	*e*P	P	05 53 33.8	+1.2
	comp=Z,13nm,1.1s						
H27A	Howes	77.59	41	P	P	05 53 32.8	+0.4
	baz=316,SNR=12						
J25A	Sunshine Ranch	77.61	43	P	P	05 53 33.2	+0.6
	baz=315						
I26A	New Underwood	77.63	42	P	P	05 53 33.3	+0.6
	baz=316,SNR=8.5						
E30A	Jud	77.75	38	P	P	05 53 32.8	-0.5
	baz=318						
BRG	Berggiesshubel	77.76	329	*e*P	P	05 53 35.2	+2.0
	comp=Z,4.8nm,1.1s						
BRG	Berggiesshubel	77.76	329	*e*P	P	05 53 35.2	+2.0
BRG				pmax	pmax		
	comp=Z,5.0nm,1.1s						
SWSC	Sam W. Stewart	77.77	57	P	P	05 53 34.2	+0.6
	baz=311						
CLL	Collm	77.78	330⇓	*i*P	P	05 53 35.3	+2.0
	comp=Z,9.0nm,0.8s						
CLL				*i*		05 53 45.4	
CLL				*i*		05 53 56.6	
CLL				LmV		06 09 00.0	
	comp=Z,200nm,19.8s						
CLL	Collm	77.78	330⇓	*i*P	P	05 53 35.3	+2.0
CLL				*i*		05 53 45.4	
CLL				*i*		05 53 56.6	
CLL				pmax	pmax		
	comp=Z,9.0nm,0.8s						
AGMN	Agassiz Nation	77.78	35	P	P	05 53 32.9	-0.5
	baz=319,SNR=9.5						
AGMN	Agassiz Nation	77.78	35	*e*P	P	05 53 33.0	-0.5
	comp=Z,14nm,1.0s						
F29A	Eureka	77.81	39	P	P	05 53 33.9	+0.2
	baz=317						
G28A	Parade	77.84	40	P	P	05 53 34.6	+0.7
	baz=317						
D31A	Mcclaflin, Tow	77.89	37	P	P	05 53 34.0	0.0
	baz=318						
B33A	Robert and Kas	77.92	35	P	P	05 53 33.8	-0.4
	baz=320						
PDMCI	Parker Dam,Lak	77.92	55	P	P	05 53 35.3	+0.9
	baz=311						
I27A	Quinn	78.01	41	P	P	05 53 35.4	+0.6
	baz=316,SNR=12						
J26A	Sides Ranch, S	78.03	42	P	P	05 53 35.2	+0.2
	baz=316,SNR=5.0						
Y12C	Blythe	78.05	56	P	P	05 53 36.1	+0.9
	baz=311,SNR=9.1						
Y12C	Blythe	78.05	56	*e*P	P	05 53 36.5	+1.4
	comp=Z,19nm,0.9s						
H28A	Mission Ridge	78.08	40	P	P	05 53 35.8	+0.6
	baz=317						
PV09	Paradox Valley	78.11	49	*e*P	P	05 53 37.3	+1.5
B34A	Aery, Baudette	78.16	34	P	P	05 53 34.8	-0.7
	baz=320,SNR=11						
E31A	Nome	78.18	37	P	P	05 53 35.4	-0.3
	baz=318						
F30A	Leola	78.19	38	P	P	05 53 35.6	-0.1
	baz=318						
C33A	Trail	78.23	35	P	P	05 53 35.5	-0.4
	baz=320,SNR=8.3						
N23A	Red Feather La	78.23	46	P	P	05 53 37.3	+0.9
	baz=314,SNR=6.8						
N23A	Red Feather La	78.23	46	*e*P	P	05 53 37.6	+1.2
	comp=Z,7.1nm,0.8s						
PV10	Paradox Valley	78.24	49	*e*P	P	05 53 38.2	+1.8
PV04	Paradox Valley	78.31	49	*e*P	P	05 53 38.1	+1.4
GLA	Glamis	78.31	56	P	P	05 53 37.8	+1.1
	baz=311,SNR=5.9						
GLA	Glamis	78.31	56	*e*P	P	05 53 38.4	+1.7
GLA				pmax	pmax		
	comp=Z,25nm,0.9s						
GLA	Glamis	78.31	56	*e*P	P	05 53 38.4	+1.7
	comp=Z,25nm,0.9s						
PV05	Paradox Valley	78.41	49	*e*P	P	05 53 39.0	+1.6
I28A	Midland	78.50	41	P	P	05 53 37.5	0.0
	baz=317,SNR=9.6						
H29A	Onida	78.51	40	P	P	05 53 37.7	+0.1
	baz=317						
F31A	Hecla	78.53	38	P	P	05 53 37.5	-0.1
	baz=318,SNR=5.0						
J27A	Elkhorn Farm,	78.62	42	P	P	05 53 39.1	+0.8
	baz=316,SNR=7.9						
B35A	Bob, Littlefor	78.65	34	P	P	05 53 38.0	-0.2
	baz=321,SNR=19						
G30A	Faulkton	78.66	39	P	P	05 53 38.3	0.0
	baz=318,SNR=10						
D33A	AnnSam, Waubun	78.67	36	P	P	05 53 37.9	-0.4
	baz=320,SNR=7.2						
PV01	Paradox Valley	78.68	49	*e*P	P	05 53 39.9	+1.1
C34A	RKJ Ranch, Bem	78.69	35	P	P	05 53 38.1	-0.3
	baz=320,SNR=8.0						
WUAZ	Wupatki	78.81	53	P	P	05 53 41.0	+1.5
	baz=312,SNR=13						
WUAZ	Wupatki	78.81	53	*e*P	P	05 53 41.4	+1.9
	comp=Z,18nm,1.0s						
SMCO	Snowmass	78.86	47	*e*P	P	05 53 41.1	+1.1
	comp=Z,22nm,1.4s						
Y14A	Wickenburg	78.87	55	*e*P	P	05 53 41.0	+1.3
	comp=Z,45nm,0.9s						
J28A	Allard Ranch,	78.88	41	P	P	05 53 40.1	+0.5
	baz=317,SNR=11						
I29A	Vivian Onida	78.91	40	P	P	05 53 40.0	+0.3
	baz=317,SNR=5.9						
D34A	Park Rapids	79.00	36	P	P	05 53 39.6	-0.5
	baz=320,SNR=9.7						
G31A	Conde	79.03	38	P	P	05 53 40.7	+0.4
	baz=318						
F32A	Veblen	79.05	37	P	P	05 53 40.4	0.0
	baz=319						
C35A	Jirik Farms, M	79.05	34	P	P	05 53 39.6	-0.8
	baz=321,SNR=17						
E33A	Westby DABS, E	79.08	36	P	P	05 53 40.5	-0.1
	baz=320,SNR=18						
113A	Mohawk Valley,	79.17	56	*e*P	P	05 53 42.3	+1.0
	comp=Z,14nm,1.0s						
ISCO	Idaho Springs	79.18	46	P	P	05 53 42.6	+1.0
	baz=315,SNR=9.5						
ISCO	Idaho Springs	79.18	46	*e*P	P	05 53 42.7	+1.0
ISCO				pmax	pmax		
	comp=Z,5.0nm,0.8s						
ISCO	Idaho Springs	79.18	46	*e*P	P	05 53 42.7	+1.0
	comp=Z,4.7nm,0.8s						
SUSD	Miller	79.25	39	P	P	05 53 42.1	+0.5
	baz=318						
KHC	Kasperske Hory	79.28	328	*e*P	P	05 53 44.2	+2.5
KHC				*e*PCP	PcP	05 53 47.8	-1.9
KHC				*ex*	x	05 54 05.8	
KHC	Kasperske Hory	79.28	328	*e*P	P	05 53 44.2	+2.5
KHC				*e*		05 53 47.8	
KHC				*e*		05 54 05.8	
KHC	Kasperske Hory	79.28	328	*e*P	P	05 53 43.4	+1.7
	comp=Z,2.3nm,0.7s						
CONA	Conrad Observa	79.29	326	*i* P	P	05 53 44.5	+2.6
	comp=Z,4.2nm,0.9s						
G32A	Webster	79.34	38	P	P	05 53 42.5	+0.5
	baz=319						
MVCO	Mesa Verde	79.35	50	P	P	05 53 43.2	+0.6
	baz=314,SNR=8.9						
MVCO	Mesa Verde	79.35	50	*e*P	P	05 53 43.0	+0.5
	comp=Z,5.0nm,0.6s						
I30A	Oacoma	79.42	40	P	P	05 53 42.8	+0.3
	baz=318,SNR=9.1						
F33A	5 Mile Ranch,	79.45	37	P	P	05 53 42.4	-0.2
	baz=319,SNR=14						
H31A	Wolsey	79.45	39	P	P	05 53 42.7	0.0
	baz=318						
GERES	GERESS Array B	79.46	328	P	P	05 53 45.0	+2.2
	comp=Z,2.1nm,0.6s,baz=32,slow=5.3,SNR=15						
GERES	GERESS Array B	79.46	328	P	P	05 53 45.0	+2.2
GERES				pmax	pmax		
	comp=Z,2.0nm,0.6s						
GEA0	GERESS Array S	79.47	328	*e*P	P	05 53 43.9	+1.1
C36A	Pine Crest Far	79.50	34	P	P	05 53 42.4	-0.4
	baz=321,SNR=13						
X16A	Lo Mia Camp, P	79.51	53	*e*P	P	05 53 45.1	+1.7
E35A	Pequot Lakes	79.75	35	P	P	05 53 43.7	-0.5
	baz=320,SNR=7.4						
GRFO	Grafenberg	79.76	330	*e*P	P	05 53 46.0	+1.8
GRFO	Grafenberg	79.76	330	*e*P	P	05 53 46.0	+1.8
C37A	Embarrass	79.79	34	P	P	05 53 44.3	-0.2
	baz=322						
D36A	Goodland	79.81	34	P	P	05 53 44.1	-0.4
	baz=321						
G33A	Ortonville	79.88	37	P	P	05 53 44.7	-0.2
	baz=319,SNR=11						
EYMN	Ely	79.91	33	*e*P	P	05 53 45.0	-0.1
	comp=Z,17nm,0.8s						
H32A	Carlson Farm,	79.93	38	P	P	05 53 45.4	+0.1
	baz=319						
S22A	4UR Ranch, Cre	79.94	48	P	P	05 53 47.2	+1.4
	baz=314,SNR=11						
S22A	4UR Ranch, Cre	79.94	48	*e*P	P	05 53 47.1	+1.4
	comp=Z,6.0nm,0.8s						
ARSA	Arzberg	79.96	326	*i* PcP	P	05 53 50.2	+4.8
	comp=Z,2.0nm,0.5s						
Q24A	Divide	80.02	47	P	P	05 53 46.9	+0.6
	baz=315						
Q24A	Divide	80.02	47	*e*P	P	05 53 47.4	+1.1
	comp=Z,7.1nm,0.9s						
H33A	Prehn Over Nor	80.12	38	P	P	05 53 46.3	0.0
	baz=319,SNR=15						
D37A	Cotton	80.14	34	P	P	05 53 46.0	-0.3
	baz=322						
C38A	Sawbill Land.	80.18	33	P	P	05 53 46.3	-0.2
	baz=322,SNR=24						
G34A	Benson	80.21	37	P	P	05 53 46.6	-0.1
	baz=320,SNR=8.3						
F35A	Swnville	80.21	36	P	P	05 53 46.7	0.0
	baz=320						
K30A	Basset	80.24	41	P	P	05 53 47.4	+0.4
	baz=318						
OGNE	Ogallala	80.28	43	P	P	05 53 47.3	0.0
	baz=317						
I32A	Karley and Nic	80.28	39	P	P	05 53 47.0	-0.1
	baz=319						
E36A	McGregor	80.28	35	P	P	05 53 46.7	-0.4
	baz=321,SNR=12						
214A	Organ Pipe Nat	80.31	56	P	P	05 53 48.2	+0.7
	baz=312,SNR=8.2						
214A	Organ Pipe Nat	80.31	56	*e*P	P	05 53 48.2	+0.7
	comp=Z,40nm,1.0s						
X18A	Snowflake	80.33	53	*e*P	P	05 53 49.5	+1.7
	comp=Z,15nm,1.0s						
C39A	Grand Marais	80.57	32	P	P	05 53 47.9	-0.7
	baz=323						
I33A	Coleman	80.58	38	P	P	05 53 49.1	+0.4
	baz=319						
H34A	Spellman Lake,	80.58	37	P	P	05 53 48.9	+0.1
	baz=320						
J32A	Parkston	80.58	39	P	P	05 53 48.7	-0.1
	baz=319						
PERS	Pernice	80.62	326	*i* P	P	05 53 51.9	+2.9
PERS	Pernice	80.62	326	*i* P	P	05 53 51.9	+2.9
SOKA	Soboth	80.62	326	*i* P	P	05 53 49.9	+0.9
	comp=Z,8.3nm,1.1s						
SDCO	Great Sand Dun	80.69	48	P	P	05 53 50.5	+0.7
	baz=315,SNR=9.6						
SDCO	Great Sand Dun	80.69	48	*e*P	P	05 53 50.2	+0.4
	comp=Z,4.2nm,1.0s						
K31A	O'Neill	80.70	40	P	P	05 53 49.8	+0.4
	baz=318						
G35A	Watkins	80.75	36	P	P	05 53 49.7	+0.1
	baz=321,SNR=5.2						
OBKA	Obir	80.96	326	*i* PcP	P	05 53 53.3	+2.5
	comp=Z,5.4nm,0.6s						
H35A	Sunnyside Ranc	80.99	37	P	P	05 53 50.9	0.0
	baz=320,SNR=16						
L31A	Butterfield Fa	81.00	41	P	P	05 53 51.2	+0.1
	baz=318,SNR=6.0						
K32A	Verdigre	81.06	40	P	P	05 53 51.4	0.0
	baz=319						
G36A	St. Michael	81.06	36	P	P	05 53 51.1	-0.1
	baz=321						
MYKA	Terra Mystica	81.25	327	*i* PcP	P	05 53 54.7	+2.3
	comp=Z,5.1nm,0.6s						
TUC	Tucson	81.34	55	P	P	05 53 54.3	+1.2
	baz=313						
TUC	Tucson	81.34	55	*e*P	P	05 53 54.3	+1.2
TUC				pmax	pmax		
	comp=Z,8.0nm,0.9s						
TUC	Tucson	81.34	55	*e*P	P	05 53 54.3	+1.2
	comp=Z,7.6nm,0.9s						
VISS	Visnje	81.39	325	*i* P	P	05 53 55.2	+2.2
VISS	Visnje	81.39	325	*i* P	P	05 53 55.2	+2.2
BOJS	Bojanci	81.45	325	*i* P	P	05 53 56.1	+2.8
BOJS	Bojanci	81.45	325	*i* P	P	05 53 56.1	+2.8
SPMN	Marine on St.	81.49	35	P	P	05 53 53.3	-0.3
	baz=322						
SPMN	Marine on St.	81.49	35	*e*P	P	05 53 53.6	+0.1
	comp=Z,7.7nm,0.8s						
H36A	Jessenland, He	81.49	36	P	P	05 53 53.8	+0.3
	baz=321,SNR=6.0						
M31A	Lambtecht Ranc	81.55	41	P	P	05 53 54.1	+0.1
	baz=318						
WTTA	Wattenberg	81.56	328	*i* PcP	P	05 53 57.1	+3.0
	comp=Z,4.2nm,0.5s						
ABTA	Abfaltersbach	81.62	327	*i* P	P	05 53 56.1	+1.8
	comp=Z,5.2nm,0.9s						
SCHQ	Schefferville	81.65	16	P	P	05 53 54.6	+0.4
	comp=Z,16nm,0.7s,baz=352,slow=5.7,SNR=36						
SCHQ	Schefferville	81.65	16	*e*P	P	05 53 54.6	+0.4
	comp=Z,18nm,0.8s						
JAVS	Javornik	81.65	326	*i* P	P	05 53 56.4	+1.9
JAVS	Javornik	81.65	326	*i* P	P	05 53 56.4	+1.9
MOTA	Moosalm	81.71	328	*i* PcP	P	05 53 56.7	+1.9
	comp=Z,10nm,0.7s						
RETA	Reutte	81.73	329	*i* P	P	05 53 55.7	+0.9
	comp=Z,7.9nm,0.7s						
T25A	Trinidad	81.73	47	P	P	05 53 55.7	+0.5
	baz=316,SNR=13						
T25A	Trinidad	81.73	47	*e*P	P	05 53 55.9	+0.6
	comp=Z,14nm,0.8s						
J35A	Milford	81.84	38	P	P	05 53 55.2	-0.2
	baz=320						
I36A	Fitzsimmons Fa	81.89	37	P	P	05 53 55.5	-0.1
	baz=321						
BGNE	Belgrade	81.91	41	P	P	05 53 55.9	0.0
	baz=319						
H37A	Dierke Farm, C	81.94	36	P	P	05 53 55.9	0.0
	baz=322						
K34A	Le Mars	81.94	39	P	P	05 53 55.6	-0.4
	baz=320,SNR=5.5						
N31A	Bailey Ranch,	81.94	42	P	P	05 53 56.6	+0.5
	baz=318						
PDG	Podgorica	81.99	321⇑	*i*P	P	05 53 58.6	+2.4
LAZ	Ladron	82.09	51	*e*P	P	05 53 58.8	+1.6
ANMO	Albuquerque	82.11	50	P	P	05 53 58.6	+1.3
	baz=315						
ANMO	Albuquerque	82.11	50	*c i*P	P	05 53 58.8	+1.5
ANMO				pmax	pmax		
	comp=Z,15nm,1.2s						
ANMO	Albuquerque	82.11	50	*e*P	P	05 53 59.0	+1.8
	comp=Z,13nm,1.1s						
FETA	Feichten	82.12	328	*i* PcP	P	05 53 59.8	+2.8
	comp=Z,6.0nm,0.7s						
I37A	Lemond, Waseca	82.17	37	P	P	05 53 57.4	+0.2
	baz=321,SNR=11						
DAVA	Damuels	82.23	329	*i* PcP	P	05 53 59.4	+1.8
	comp=Z,14nm,0.8s						
M33A	Taylor Creek F	82.26	40	P	P	05 53 57.9	+0.3
	baz=319						
J36A	Seneca 1, Swea	82.27	38	P	P	05 53 57.7	0.0
	baz=321						
N32A	Stulken Farm,	82.32	41	P	P	05 53 57.9	-0.1
	baz=319						
COWI	Conover	82.35	33	*e*P	P	05 53 57.5	-0.6
	comp=Z,9.3nm,0.8s						
L34A	Svendsen Farm,	82.36	40	P	P	05 53 58.2	0.0
	baz=320						
BNM	Barren Site	82.57	51	*e*P	P	05 54 01.1	+1.4
I38A	Scanlan Farm,	82.63	36	P	P	05 53 59.0	-0.5
	baz=322,SNR=5.2						
FUORN	Ofenpass-Fuorn	82.63	328	*e*P	P	05 54 00.5	+0.6
	comp=Z,16nm,0.6s						
J37A	Redenius Farm,	82.65	37	P	P	05 53 59.4	-0.2
	baz=321,SNR=7.0						
K36A	Gilmore City	82.76	38	P	P	05 53 59.9	-0.4
	baz=321,SNR=5.2						
319A	Douglas	82.91	54	*e*P	P	05 54 03.0	+1.7
121A	Cookes Peak, D	83.02	53	P	P	05 54 03.1	+1.2
	baz=315,SNR=13						
121A	Cookes Peak, D	83.02	53	*e*P	P	05 54 03.0	+1.0
	comp=Z,14nm,1.0s						
P32A	Huiting Farm,	83.02	42	P	P	05 54 01.0	-0.7
	baz=319,SNR=8.2						
K37A	Belmond	83.03	37	P	P	05 54 01.2	-0.5
	baz=321,SNR=8.0						
M35A	Neola	83.07	39	P	P	05 54 01.6	-0.2
	baz=320,SNR=5.3						
L36A	Harm Buss Farm	83.07	38	P	P	05 54 01.9	0.0
	baz=321						
J38A	Wedel Dairy, R	83.13	36	P	P	05 54 02.0	-0.1
	baz=322						
N34A	Lincoln	83.16	40	P	P	05 54 01.9	-0.5
	baz=320						
O33A	Hebron	83.20	41	P	P	05 54 02.0	-0.6
	baz=319						
L37A	Phoenix Point,	83.48	38	P	P	05 54 03.7	-0.2
	baz=321,SNR=5.5						
Q32A	Meitler Ranch,	83.52	43	P	P	05 54 04.0	-0.2
	baz=319						
K38A	Parkersburg	83.53	37	P	P	05 54 03.9	-0.2
	baz=322						
N35A	Tabor	83.56	40	P	P	05 54 04.2	-0.2
	baz=320,SNR=8.0						
O34A	Beatrice	83.56	41	P	P	05 54 04.0	-0.4
	baz=320						
L38A	Oak Wood Farm,	83.84	37	P	P	05 54 06.0	+0.3
	baz=322						
O35A	Humboldt	83.88	40	P	P	05 54 06.0	-0.1
	baz=320						
Q33A	Connelly Farm,	83.88

JFWS pmax pmax
comp=Z,18nm,1.2s
JFWS Jewell Farm 84.44 35 *eP* P 05 54 08.6 -0.2
comp=Z,18nm,1.2s
O36A Bolckow 84.45 40 P P 05 54 09.1 +0.2
baz=321,SNR=6.2
T32A Huddler Ranch, 84.68 44 P P 05 54 10.3 +0.1
baz=319
P36A Good Intent, A 84.72 40 P P 05 54 10.5 +0.2
baz=321
N38A Joes South For 84.76 38 P P 05 54 10.6 +0.2
baz=322
O37A Wolven Farm, M 84.82 39 P P 05 54 11.2 +0.4
baz=321,SNR=6.9
AMTX Amarillo 84.88 47 P P 05 54 12.0 +0.7
baz=317
AMTX Amarillo 84.88 47 *eP* P 05 54 11.4 +0.1
comp=Z,14nm,1.0s
Q35A Mercer Eighty, 84.90 41 P P 05 54 11.1 -0.1
baz=320
MSTX Muleshoe 84.94 49 P P 05 54 12.2 +0.5
baz=317
MSTX Muleshoe 84.94 49 *eP* P 05 54 12.4 +0.8
comp=Z,11nm,1.0s
MNTX Cornudas Mount 85.05 52 P P 05 54 12.9 +0.9
baz=316,SNR=13
P37A Lathrop 85.17 40 P P 05 54 12.7 +0.2
baz=321
O38A Galt 85.18 39 P P 05 54 12.8 +0.3
baz=322
R35A Emporia Munici 85.23 42 P P 05 54 13.2 +0.3
baz=320,SNR=8.9
O39A Kirksville 85.51 38 P P 05 54 14.3 0.0
baz=322,SNR=6.5
P38A Dawn 85.54 39 P P 05 54 14.5 +0.2
baz=322,SNR=6.4
R36A Gordon, Harris 85.58 41 P P 05 54 14.8 +0.2
baz=321
S35A Otter Creek Ra 85.66 42 P P 05 54 15.3 +0.3
baz=320,SNR=16
Q37A Longview Farm, 85.67 40 P P 05 54 15.2 +0.2
baz=321
U33A Lingo Farm, Me 85.67 44 P P 05 54 15.2 +0.1
baz=319
V32A Arapaho 85.71 45 P P 05 54 16.7 +1.3
baz=319
T34A McClaskey Farm 85.71 43 P P 05 54 15.5 +0.2
baz=320,SNR=8.2
R37A Teagarden Farm 85.92 41 P P 05 54 15.9 -0.4
baz=321
O40A La Belle 85.93 38 P P 05 54 16.5 +0.2
baz=323,SNR=13
U34A Anderson Ranch 85.97 44 P P 05 54 17.1 +0.5
baz=320,SNR=5.3
U34A Anderson Ranch 85.97 44 *eP* P 05 54 17.3 +0.7
comp=Z,22nm,1.0s
S36A Lake Cedric, C 85.99 42 P P 05 54 16.5 -0.2
baz=320,SNR=6.2
Q38A Cooks Store, C 86.01 40 P P 05 54 16.8 +0.1
baz=322
V33A Lossen Ranch, 86.04 45 P P 05 54 17.4 +0.5
baz=319
W32A Sentinel 86.05 46 P P 05 54 17.9 +0.9
baz=319,SNR=7.5
T35A Sooner Cattle 86.14 43 P P 05 54 17.8 +0.3
baz=320,SNR=6.0
P40A Paris 86.32 39 P P 05 54 18.4 +0.2
baz=322,SNR=11
S37A Fort Scott 86.35 41 P P 05 54 18.0 -0.4
baz=321,SNR=6.7
T36A Boggs Farm, Ca 86.36 42 P P 05 54 18.4 0.0
baz=320
V34A Guthrie 86.44 44 P P 05 54 19.3 +0.4
baz=320
U35A Pawnee 86.44 43 P P 05 54 19.0 +0.1
baz=320,SNR=8.2
W33A Caddo, Fort Co 86.45 45 P P 05 54 19.4 +0.5
baz=319
R38A Fenwick Farm, 86.48 40 P P 05 54 18.2 -0.8
baz=322
X32A Elmer 86.55 46 P P 05 54 19.9 +0.4
baz=319
WMOK Wichita Mounta 86.59 46 *eP* P 05 54 20.0 +0.3
WMOK pmax pmax
comp=Z,5.0nm,0.8s
WMOK Wichita Mounta 86.59 46 *eP* P 05 54 20.0 +0.3
comp=Z,5.2nm,0.8s
Q40A Laux Farm, Aux 86.73 39 P P 05 54 20.2 -0.1
baz=322,SNR=6.1
W34A Bridge Creek, 86.76 45 P P 05 54 20.7 +0.2
baz=319
HDIL Hopedale 86.77 36 P P 05 54 20.1 -0.2
baz=324
HDIL Hopedale 86.77 36 *eP* P 05 54 20.5 +0.1
comp=Z,15nm,0.9s
T37A Cheneyville 18 86.80 42 P P 05 54 20.7 +0.1
baz=321
R39A Chumby, Stover 86.80 40 P P 05 54 20.4 -0.2
baz=322,SNR=11
V35A Meyer Ranch, C 86.85 44 P P 05 54 20.8 -0.1
baz=320
X33A Lawton 86.89 46 P P 05 54 21.3 +0.1
baz=319
S38A Stockton 86.91 41 P P 05 54 20.7 -0.4
baz=322
U36A Oologah 86.94 43 P P 05 54 21.4 +0.1
baz=320
S39A Bolivar 87.15 40 P P 05 54 21.6 -0.7
baz=322,SNR=8.5
T38A Diamond 87.18 41 P P 05 54 22.3 -0.2
baz=321,SNR=11
R40A Maddies Statio 87.19 39 P P 05 54 22.3 -0.2
baz=322
X34A Smith Ranch, M 87.20 45 P P 05 54 23.0 +0.4
baz=319
Y33A Hilltop Ranch, 87.22 46 P P 05 54 22.9 +0.2
baz=319
U37A Salina 87.25 42 P P 05 54 23.0 +0.2
baz=321,SNR=6.0
TUL1 Leonard 87.28 43 P P 05 54 23.0 0.0
baz=320
TUL1 Leonard 87.28 43 *eP* P 05 54 23.3 +0.3
comp=Z,12nm,0.6s
W35A Tecumseh 87.30 44 P P 05 54 22.7 -0.4
baz=320
V36A Jenks 87.30 43 P P 05 54 23.1 0.0
baz=320
TRQ Mont Tremblant 87.53 24 *eP* P 05 54 23.9 -0.2
U38A Gravette 87.60 42 P P 05 54 24.6 +0.1
baz=321
S40A Lebanon 87.62 40 P P 05 54 24.3 -0.3
baz=322,SNR=5.6
V37A Hulbert 87.64 43 P P 05 54 24.7 0.0
baz=321,SNR=6.5
T39A Clever 87.64 41 P P 05 54 24.4 -0.3
baz=322
W36A Wetumka 87.65 44 P P 05 54 24.9 +0.1
baz=320,SNR=5.5
Z33A Whitaker Ranch 87.69 47 P P 05 54 25.4 +0.4
baz=319
ABTX Abilene, Hawle 87.69 48 P P 05 54 25.6 +0.5
baz=318
Y34A Reagan Ranch, 87.73 46 P P 05 54 25.6 +0.4
baz=320
TX31 Lajitas Ar. Si 87.77 52 *eP* P 05 54 25.9 +0.3
TX31 *eP* P 05 54 26.2 +0.7
TXAR Lajitas Array 87.77 52 P P 05 54 26.4 +0.8
comp=Z,3.6nm,0.7s,baz=301,slow=3.4,SNR=46
X35A Drake 87.82 45 P P 05 54 26.0 +0.4
baz=320
SFIN Lafayette 87.88 35 P P 05 54 25.8 +0.1
baz=326
HHAR Hobbs 87.94 42 *eP* P 05 54 26.3 +0.1
comp=Z,6.1nm,0.7s
T40A Mansfield 87.97 40 P P 05 54 25.7 -0.6
baz=322,SNR=6.6
X36A Centrahoma 88.02 44 P P 05 54 26.9 +0.4
baz=320,SNR=11
V38A Canehill 88.03 42 P P 05 54 26.7 +0.1
baz=321,SNR=10.0
W37B Quinton 88.06 43 P P 05 54 27.0 +0.2
baz=321,SNR=6.7
U39A Green Forest 88.10 41 P P 05 54 26.7 -0.2
baz=322,SNR=8.7
133A Hamilton Ranch 88.11 47 P P 05 54 27.0 0.0
baz=319
U40A Yellville 88.43 41 P P 05 54 28.4 -0.1
baz=322,SNR=16
V39A Pettigrew 88.44 42 P P 05 54 28.3 -0.2
baz=322,SNR=7.9
Z35A Perchaven, San 88.48 46 P P 05 54 29.1 +0.4
baz=320
X37A Clayton 88.52 44 P P 05 54 28.9 0.0
baz=321
233A Rising Star 88.56 48 P P 05 54 29.4 +0.3
baz=319
Y36A Durant 88.57 45 P P 05 54 29.4 +0.3
baz=320
W38A Poteau 88.59 43 P P 05 54 29.4 +0.2
baz=321
134A White-Moore Ra 88.60 47 P P 05 54 29.5 +0.2
baz=319
X38A Whitesboro 88.74 43 P P 05 54 30.4 +0.5
baz=321,SNR=8.3
Y37A Hugo 88.86 44 P P 05 54 30.6 +0.1
baz=321
W39A Magazine 88.87 42 P P 05 54 30.6 +0.1
baz=322
V40A Witts Springs 88.88 41 P P 05 54 30.4 -0.2
baz=322
Z36A Blue Ridge 88.97 45 P P 05 54 31.0 0.0
baz=320,SNR=7.4
333A Richland Sprin 89.03 48 P P 05 54 31.7 +0.3
baz=319,SNR=7.8
SIUC Southern Illin 89.10 38 *eP* P 05 54 32.0 +0.5
comp=Z,34nm,0.8s
JCT Junction City 89.20 49 P P 05 54 32.4 +0.2
baz=318
X39A Fountain Ranch 89.23 43 P P 05 54 32.7 +0.5
baz=321,SNR=7.8
W40A Ferguson Farm, 89.24 42 P P 05 54 31.9 -0.3
baz=322
PBMO Poplar Bluff 89.28 39 *eP* P 05 54 32.8 +0.4
comp=Z,20nm,1.0s
Y38A Idabel 89.37 44 P P 05 54 33.1 +0.3
baz=321
WHTX Lake Whitney, 89.39 47 P P 05 54 33.5 +0.6
baz=320
433A Art 89.40 49 P P 05 54 33.4 +0.3
baz=319
334A Lometa 89.45 48 P P 05 54 33.5 +0.2
baz=319,SNR=6.9
Z37A Pogue Cattle C 89.46 45 P P 05 54 33.6 +0.3
baz=321
MIAR Mount Ida 89.48 43 P P 05 54 33.8 +0.4
baz=322,SNR=19
X201 Greenbrier Sit 89.51 41 *eP* P 05 54 33.9 +0.4
comp=Z,15nm,0.9s
136A Ennis 89.53 46 P P 05 54 33.8 +0.2
baz=320
X301 Greenbrier Sit 89.54 41 *eP* P 05 54 34.1 +0.5
comp=Z,9.2nm,0.9s
WHAR Wooly Hollow 89.55 41 *eP* P 05 54 34.2 +0.5
comp=Z,20nm,0.9s
W41A Tony Mavity, V 89.66 41 P P 05 54 33.8 -0.4
baz=322
W41B Gary Mavity, V 89.66 41 P P 05 54 33.7 -0.5
baz=322
Y39A Lockesburg 89.69 43 P P 05 54 34.5 +0.1
baz=322,SNR=11
ACSO Alum Creek Sta 89.73 32 *eP* P 05 54 35.2 +0.7
comp=Z,20nm,0.8s
Z38A Mt. Pleasant 89.76 44 P P 05 54 35.0 +0.4
baz=321
434A Burnet 89.82 48 P P 05 54 34.7 -0.3
baz=319
X40A Basin Creek Fa 89.91 42 P P 05 54 35.7 +0.3
baz=322,SNR=5.7
M54A Oil Creek Stat 89.93 30 P P 05 54 35.5 +0.1
baz=330,SNR=7.3
533A Kerrville 89.94 49 P P 05 54 36.0 +0.3
baz=319
Y40A Okolona 90.05 43 P P 05 54 36.7 +0.6
baz=322
Z39A Irene McRaven, 90.19 44 P P 05 54 37.6 +0.9
baz=321
N54A Moraine State 90.28 30 P P 05 54 37.4 +0.4
baz=330,SNR=5.5
534A Blanco 90.30 49 P P 05 54 37.3 0.0
baz=319,SNR=5.7
633A Saathoff Ranch 90.32 49 P P 05 54 37.9 +0.4
baz=319,SNR=5.8
WLAR White Oak Lake 90.39 43 *eP* P 05 54 38.8 +1.2
comp=Z,28nm,0.9s
139A Bunkhouse Ranc 90.51 44 P P 05 54 38.7 +0.5
baz=321
Z40A Long Farm, Mag 90.58 43 P P 05 54 39.3 +0.7
baz=322,SNR=6.7
832A Faith Ranch, C 90.73 51 P P 05 54 39.9 +0.6
baz=318
733A Divot King Ran 90.81 50 P P 05 54 40.3 +0.6
baz=319
Z41A Richland Creek 90.89 43 P P 05 54 40.6 +0.6
baz=322
CCAR Cane Creek 90.90 42 *eP* P 05 54 40.7 +0.8
comp=Z,20nm,0.8s
Y42A Garnett, Star 90.95 42 P P 05 54 40.7 +0.5
baz=323
WVT Waverly 91.03 38 *eP* P 05 54 40.9 +0.3
WVT pmax pmax
comp=Z,8.0nm,0.9s
WVT Waverly 91.03 38 *eP* P 05 54 40.9 +0.3
comp=Z,8.1nm,0.9s
833A Chaparral WMA, 91.05 50 P P 05 54 41.1 +0.4
baz=319
536A Bastrop 91.06 48 P P 05 54 41.0 +0.2
baz=320
734A La Parita Cree 91.14 49 P P 05 54 41.5 +0.3
baz=319
635A Leesville 91.18 49 P P 05 54 41.7 +0.3
baz=320
Z42A Norrel Spur, H 91.32 42 P P 05 54 42.3 +0.4
baz=323
SSPA Standing Stone 91.35 29 *eP* P 05 54 43.0 +1.1
comp=Z,7.4nm,0.8s
O56A Blue Knob Stat 91.42 29 P P 05 54 42.4 0.0
baz=331
636A Smothers Creek 91.51 48 P P 05 54 44.4 +1.4
baz=320
735A Kenedy 91.56 49 P P 05 54 44.6 +1.5
baz=320
OXF Oxford 91.59 40 *eP* P 05 54 42.9 -0.3
OXF pmax pmax
comp=Z,29nm,1.1s
OXF Oxford 91.59 40 *eP* P 05 54 42.9 -0.3
comp=Z,29nm,1.1s
933A Laredo 91.64 51 P P 05 54 44.9 +1.3
baz=319,SNR=5.8
834A Tilden 91.68 50 P P 05 54 44.8 +1.1
baz=319
N59A State Game Lan 91.86 27 P P 05 54 45.3 +0.9
baz=333
736A Circle Diamond 91.91 48 P P 05 54 46.6 +1.8
baz=320,SNR=5.1
835A Beeville 91.98 49 P P 05 54 46.9 +1.8
baz=320
Y45A Yeager Farm, C 92.05 40 P P 05 54 46.4 +1.0
baz=324
934A Benavides 92.10 50 P P 05 54 47.9 +2.2
baz=319
Y46A Houston 92.37 40 P P 05 54 46.9 +0.2
baz=324
Y47A UCPARC, Winfie 92.84 39 P P 05 54 48.6 -0.4
baz=325
244A Avery, Jackson 92.94 42 P P 05 54 49.9 +0.5
baz=323
Z47A Carrollton 93.31 40 P P 05 54 51.3 +0.2
baz=325
147A Livingston 93.64 40 P P 05 54 53.0 +0.4
baz=325
ES19 SONSECA Array 93.81 334 *eP* P 05 54 53.3 -0.1
ESDC Sonseca Array 93.85 334 P P 05 54 53.2 -0.4
comp=Z,0.7nm,0.5s,baz=15,slow=4.5,SNR=6.1
TORD Torodi Ar. Bea 114.60 316 PKP PKPdf 06 00 15.1 -1.4
comp=Z,0.8nm,0.4s,baz=34,slow=1.5,SNR=19
TORD PP PP 06 01 11.9 -1.9
comp=Z,0.7nm,0.8s,baz=25,slow=6.7,SNR=4.9
VNDA Vanda 118.80 175 PKP PKPdf 06 00 22.4 -0.3
comp=Z,1.3nm,0.8s,baz=312,slow=3.6,SNR=6.5
DBIC Dimbokro 123.46 319 PKP PKPdf 06 00 32.2 -1.3
comp=Z,2.3nm,0.5s,baz=40,slow=2.0,SNR=10.0
BOSA Boshof 127.20 262 PKP PKPdf 06 00 40.1 -0.3
comp=Z,1.2nm,0.6s,baz=100,slow=6.1,SNR=3.3
SNAA Sanae 144.41 199 PKP PKPab 06 01 08.9 -0.3
LPAZ La Paz 144.60 55 PKP PKPab 06 01 11.8 -0.4
comp=Z,5.6nm,0.7s,baz=349,slow=2.8,SNR=16
VNA2 Neumayer--Watz 145.99 198 PKP PKPdf 06 01 13.9 +0.4
baz=113,slow=2.9
VNA3 Neumayer Olymp 146.26 196 PKP PKPdf 06 01 14.6 +0.6
VNA1 Neumayer--Stat 146.39 198 PKP PKPbc 06 01 15.3 -0.3
LVC Limon Verde 148.64 64 *e*PKPbc PKPbc 06 01 24.2 +0.6
LCO Las Campanas 151.28 76 *e*PKPbc PKPbc 06 01 29.8 0.0
PLCA Paso Flores 155.86 100 PKPab PKPab 06 01 58.0 +1.1
comp=Z,4.4nm,0.8s,baz=289,slow=4.0,SNR=8.0
CPUP Villa Florida 158.74 53 PKPab PKPab 06 02 09.7 +0.2
comp=Z,2.6nm,0.9s,baz=345,slow=6.5,SNR=5.6

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*LJU **04** 05:57:50.8, 46°.39N×15°.07E, h0km, ML0.4 Rockburst*
CSEM 04 05:57:50.8, 46°.39N×15°.07E, h0km, Mining explosion., Northwestern Balkan Peninsula

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*ISCJB **04** 05:59:40.7±0.5, 43°.55N±0°.03×45°.81E±0°.03, h1km±3km, mb3.3/2, Error ellipse: s-maj=5.3km s-min=2.7km az=19.4*
*CSEM **04** 05:59:43.0, 43°.49N×45°.76E, h24km, mb4.1*
*MOS **04** 05:59:43.5±0.9, 43°.49N×45°.76E, h24km, mb4.1/1, Error ellipse: s-maj=7.4km s-min=6.1km az=26.7*
ISC 04 05:59:43.2±1.1, 43°.41N±0°.03×45°.78E±0°.02, h10km±8km, n73, σ1.21/107, 8C-8D, Eastern Caucasus

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
GROC	**Groznyy**	**0.21**	**177**	*d* PG		**Pg**	**05 59 46.9**	**-0.7**
GROC				pmax		pmax		
	comp=Z,474nm,0.2s							
GROC	**Groznyy**	**0.21**	**177**	*i* Pg		**Pg**	**05 59 46.9**	**-0.7**
	comp=Z,474nm,0.2s							
KMGR	**Komgaron**	**0.76**	**242**	⇓*i* PG		**Pb**	**05 59 58.1**	**-0.5**
KMGR				*e*S		**Sn**	**06 00 10.5**	**-1.1**
KMGR	**Komgaron**	**0.76**	**242**	*i* Pg		**Pb**	**05 59 58.1**	**-0.5**
TRKR	**Terskaya**	**0.82**	**292**	⇑*e*PG		**Pb**	**05 59 58.1**	**-1.5**
TRKR				pmax		pmax		
	comp=Z,63nm,0.1s							
TRKR	**Terskaya**	**0.82**	**292**	*e*Pg		**Pb**	**05 59 58.1**	**-1.5**
	comp=Z,63nm,0.1s							
DBC	**Dubki**	**0.86**	**117**	⇓*i* PG		**Pn**	**06 00 02.4**	**+0.9**
DBC				*i* S		**Sn**	**06 00 15.2**	**+0.9**
DBC				pmax		pmax		
	comp=Z,30nm,0.2s							
DBC	**Dubki**	**0.86**	**117**	*i* Pg		**Pn**	**06 00 02.4**	**+0.9**
	comp=Z,30nm,0.2s							
DBC				*i* Sg		**Sn**	**06 00 15.2**	**+0.9**
VLKR	**Vladikavkaz**	**0.89**	**246**	*e*PG		**Pb**	**06 00 00.4**	**-0.3**
VLKR				*e*S		**Sn**	**06 00 14.4**	**-0.4**
VLKR	**Vladikavkaz**	**0.89**	**246**	*e*Pg		**Pb**	**06 00 00.4**	**-0.3**
VLKR				*e*Sg		**Sn**	**06 00 14.4**	**-0.4**
BTKR	**Batakoyurt**	**0.90**	**268**	⇑*i* PG		**Pb**	**06 00 00.5**	**-0.5**
BTKR				*i* S		**Sn**	**06 00 15.0**	**-0.2**
BTKR	**Batakoyurt**	**0.90**	**268**	*i* Pg		**Pb**	**06 00 00.5**	**-0.5**
BTKR				*i* Sg		**Sn**	**06 00 15.0**	**-0.2**
KRNR	**Karanay**	**1.01**	**125**	PG		**Pb**	**06 00 02.0**	**-0.9**
KRNR				*i* S		**Sn**	**06 00 18.8**	**+0.8**
KRNR				pmax		pmax		
	comp=Z,52nm,0.2s							
KRNR	**Karanay**	**1.01**	**125**	Pg		**Pb**	**06 00 02.0**	**-0.9**
	comp=Z,52nm,0.2s							
KRNR				*i* Sg		**Sn**	**06 00 18.8**	**+0.8**
UNCR	**Uncukul**	**1.02**	**133**	*e*PG		**Pb**	**06 00 01.5**	**-1.5**
UNCR				*e*S		**Sn**	**06 00 18.0**	**-0.1**
UNCR				pmax		pmax		
	comp=Z,71nm,0.2s							
UNCR	**Uncukul**	**1.02**	**133**	*e*Pg		**Pb**	**06 00 01.5**	**-1.5**
	comp=Z,71nm,0.2s							
UNCR				*e*Sg		**Sn**	**06 00 18.0**	**-0.1**
XNZR	**Khunzakh**	**1.10**	**142**	*e*PG		**Pb**	**06 00 03.0**	**-1.6**
XNZR				*e*S		**Sb**	**06 00 19.0**	**-0.1**
XNZR				pmax		pmax		
	comp=Z,73nm,0.2s							
XNZR	**Khunzakh**	**1.10**	**142**	*e*Pg		**Pb**	**06 00 03.0**	**-1.6**
	comp=Z,73nm,0.2s							
XNZR				*e*Sg		**Sb**	**06 00 19.0**	**-0.1**
ARNR	**Ardon**	**1.12**	**258**	*c i* PG		**Pb**	**06 00 04.0**	**-0.7**
ARNR				pmax		pmax		
	comp=Z,75nm,0.2s							
ARNR	**Ardon**	**1.12**	**258**	*i* Pg		**Pb**	**06 00 04.0**	**-0.7**
	comp=Z,75nm,0.2s							
BUJR	**Buynaksk**	**1.14**	**121**	PG		Pg	06 00 16.2	+11
BUJR				*e*S		**Sg**	**06 00 22.0**	**+2.2**
BUJR				pmax		pmax		
	comp=Z,81nm,0.2s							
BUJR	**Buynaksk**	**1.14**	**121**	Pg		Pg	06 00 16.2	+11
	comp=Z,81nm,0.2s							
BUJR				*e*Sg		**Sg**	**06 00 22.0**	**+2.2**
PRTR	**Priterechnaya**	**1.14**	**288**	*de*PG		**Pn**	**06 00 03.9**	**-1.4**
PRTR				pmax		pmax		
	comp=Z,80nm,0.1s							
PRTR	**Priterechnaya**	**1.14**	**288**	*e*Pg		**Pn**	**06 00 03.9**	**-1.4**
	comp=Z,80nm,0.1s							
ARKR	**Arakani**	**1.20**	**132**	*i* PG		**Pn**	**06 00 05.0**	**-1.2**
ARKR				*i* S		**Sg**	**06 00 22.5**	**+0.5**
ARKR				pmax		pmax		
	comp=Z,50nm,0.2s							
ARKR	**Arakani**	**1.20**	**132**	*i* Pg		**Pn**	**06 00 05.0**	**-1.2**
	comp=Z,50nm,0.2s							
ARKR				*i* Sg		**Sg**	**06 00 22.5**	**+0.5**
LACR	**Lac**	**1.23**	**242**	*de*PG		**Pn**	**06 00 04.7**	**-2.0**
LACR				pmax		pmax		
	comp=Z,45nm,0.1s							
LACR	**Lac**	**1.23**	**242**	*e*Pg		**Pn**	**06 00 04.7**	**-2.0**
	comp=Z,45nm,0.1s							
STDR	**Stavd-Durt**	**1.25**	**269**	⇓*i* PG		**Pn**	**06 00 06.1**	**-0.7**
STDR				*i* S		**Sg**	**06 00 25.5**	**+2.0**
STDR	**Stavd-Durt**	**1.25**	**269**	*i* Pg		**Pn**	**06 00 06.1**	**-0.7**
STDR				*i* Sg		**Sg**	**06 00 25.5**	**+2.0**
KORR	**Kora**	**1.29**	**256**	⇑*i* PG		**Pn**	**06 00 06.4**	**-1.0**
KORR				*e*S		**Sg**	**06 00 25.8**	**+1.0**
KORR	**Kora**	**1.29**	**256**	*i* Pg		**Pn**	**06 00 06.4**	**-1.0**
KORR				*e*Sg		**Sg**	**06 00 25.8**	**+1.0**
GNBR	**Gunib**	**1.34**	**139**	*e*PG		**Pn**	**06 00 07.4**	**-0.8**
GNBR				*e*			06 00 27.0	
GNBR				pmax		pmax		
	comp=Z,57nm,0.4s							
GNBR				smax		smax		
	comp=E,1μm,0.8s							
GNBR				smax		smax		
	comp=E,777nm,0.8s							
GNBR				smax		smax		
	comp=N,461nm,0.5s							
GNBR	**Gunib**	**1.34**	**139**	*e*Pg		**Pn**	**06 00 07.4**	**-0.8**
	comp=N,57nm,0.4s							
GNBR				*e*Sg		**Sg**	**06 00 27.0**	**+0.6**
	comp=N,461nm,0.5s							
GUDG	**Gudauri**	**1.35**	**226**	P		**Pn**	**06 00 07.4**	**-0.9**
GUDG				S		**Sb**	**06 00 26.2**	**+0.1**
LSNR	**Lesken**	**1.43**	**265**	*e*PG		**Pn**	**06 00 08.3**	**-1.1**
LSNR				pmax		pmax		
	comp=Z,14nm,0.1s							
LSNR	**Lesken**	**1.43**	**265**	*e*Pg		**Pn**	**06 00 08.3**	**-1.1**
	comp=Z,14nm,0.1s							
ZEI	**Tsey**	**1.51**	**246**	⇑*i* PG		**Pn**	**06 00 08.9**	**-1.7**
ZEI				*e*S		**Sn**	**06 00 29.8**	**-0.7**
DUS	**Dusheti**	**1.54**	**211**	P		**Pn**	**06 00 11.0**	**+0.1**
DUS				S		**Sg**	**06 00 33.6**	**+0.8**
DUS	**Dusheti**	**1.54**	**211**	PG		**Pn**	**06 00 11.0**	**+0.1**
DUS				S		**Sg**	**06 00 33.6**	**+0.8**
DUS	**Dusheti**	**1.54**	**211**	Pg		**Pn**	**06 00 11.0**	**+0.1**
DUS				Sg		**Sg**	**06 00 33.6**	**+0.8**
KMKR	**Kumukh**	**1.61**	**142**	⇑*i* PN		**Pn**	**06 00 11.8**	**-0.1**
KMKR				*i* S		**Sg**	**06 00 35.0**	**+0.1**
KMKR				pmax		pmax		
	comp=Z,83nm,0.3s							
KMKR	**Kumukh**	**1.61**	**142**	*i* Pn		**Pn**	**06 00 11.8**	**-0.1**
	comp=Z,83nm,0.3s							
KMKR				*i* Sg		**Sg**	**06 00 35.0**	**+0.1**
DIGR	**Digorskoe uzhe**	**1.69**	**253**	*e*PN		**Pn**	**06 00 11.4**	**-1.6**
DIGR	**Digorskoe uzhe**	**1.69**	**253**	*e*Pn		**Pn**	**06 00 11.4**	**-1.6**
URKR	**Urkarakh**	**1.85**	**132**	*e*PN		**Pb**	**06 00 15.8**	**-1.4**
URKR				pmax		pmax		
	comp=Z,126nm,0.3s							
URKR	**Urkarakh**	**1.85**	**132**	*e*Pn		**Pb**	**06 00 15.8**	**-1.4**
	comp=Z,126nm,0.3s							
ONI	**Oni**	**1.90**	**245**	P		**Pn**	**06 00 16.3**	**+0.6**
ONI				S		**Sb**	**06 00 41.5**	**-0.3**
ONI	**Oni**	**1.90**	**245**	PN		**Pn**	**06 00 16.3**	**+0.6**
ONI	**Oni**	**1.90**	**245**	Pn		**Pn**	**06 00 16.3**	**+0.6**
BEYR	**Belyy Ugol+**	**2.23**	**287**	⇑*e*PN		**Pn**	**06 00 19.1**	**-1.2**
BEYR	**Belyy Ugol+**	**2.23**	**287**	*e*Pn		**Pn**	**06 00 19.1**	**-1.2**
NEY	**Neytrino**	**2.24**	**267**	*de*PN		**Pn**	**06 00 19.9**	**-0.6**

NEY	**Neytrino**	**2.24 267**	*e*Pn	**Pn**	**06 00 19.9**	**-0.6**
KIV	**Kislovodsk**	**2.31 285**	*e*PN	**Pb**	**06 00 24.0**	**-1.0**
KIV	**Kislovodsk**	**2.31 285**	*e*Pn	**Pb**	**06 00 24.0**	**-1.0**
AKT	**Akhty**	**2.41 143**	*e*PN	**Pb**	**06 00 25.5**	**-1.3**
AKT			*e*Sn	**Sb**	**06 00 57.3**	**+0.7**
AKT	**Akhty**	**2.41 143**	*e*Pn	**Pb**	**06 00 25.5**	**-1.3**
AKT			*e*Sn	**Sb**	**06 00 57.3**	**+0.7**
GOF	**Gofitskoye**	**2.56 311⇑**	*e*PN	**Pn**	**06 00 23.6**	**-1.3**
GOF			*e*S	**Sb**	**06 01 02.3**	**+1.4**
GOF	**Gofitskoye**	**2.56 311**	*e*Pn	**Pn**	**06 00 23.6**	**-1.3**
GOF			*e*Sb	**Sb**	**06 01 02.3**	**+1.4**
BGD	**Bogdanovka**	**2.69 218**	P	**Pb**	**06 00 32.9**	**+1.3**
BGD			S	**Sb**	**06 01 05.8**	**+1.1**
ANN	**Anapa**	**6.17 286**	*e*P	**Pn**	**06 01 13.9**	**-0.4**
ANN			*e*		06 02 26.3	
ANN			pmax	pmax		
	comp=Z,3.0nm,0.5s					
ANN	**Anapa**	**6.17 286**	*e*P	**Pn**	**06 01 13.9**	**-0.4**
	comp=Z,3.0nm,0.5s					
ANN			*e*S	**Sn**	**06 02 26.3**	**+1.4**
KIEV	**Kiev**	**13.42 309⇓**	*e*P	**Pn**	**06 02 52.6**	**-1.1**
KIEV			pmax	pmax		
	comp=Z,2.0nm,1.2s					
KIEV	**Kiev**	**13.42 309**	*e*P	**Pn**	**06 02 52.6**	**-1.1**
	comp=Z,2.0nm,1.2s					
ARU	**Arti**	**15.37 28**	*e*P	**Pn**	**06 03 19.9**	**-0.2**
ARU			pmax	pmax		
	comp=Z,2.0nm,0.9s					
ARU	**Arti**	**15.37 28**	*e*P	**Pn**	**06 03 19.9**	**-0.2**
	comp=Z,2.0nm,0.9s					
FINES	**FINESS Array B**	**21.53 334**	*i*P	**P**	**06 04 36.5**	**+4.3**
FINES			pmax	pmax		
	comp=Z,1.0nm,0.6s					
FINES	**FINESS Array B**	**21.53 334**	*i*P	**P**	**06 04 36.5**	**+4.3**
	comp=Z,1.0nm,0.6s					
KURK	**Kurchatov**	**23.39 60**	*i*P	**P**	**06 04 51.7**	**-0.3**
KURK			pmax	pmax		
	comp=Z,1.0nm,1.2s					
KURK	**Kurchatov**	**23.39 60**	*i*P	**P**	**06 04 51.7**	**-0.3**
	comp=Z,1.0nm,1.2s					
YKA	**Yellowknife Ar**	**73.27 351**	*e*P	**P**	**06 11 12.5**	**-1.8**
YKA	**Yellowknife Ar**	**73.27 351**	*e*P	**P**	**06 11 12.5**	**-1.8**

*ISCJB **04** 06:01:59.8±0.5, 18°.05S±0°.1×178°.5W±0°.1, h579km, mb3.9/14, Error ellipse: s-maj=21.8km s-min=8.7km az=149.6*
*IDC **04** 06:02:01.3±1.8, 18°.04S×178°.43W, h586km±20km, mb3.5/14, mb1 3.7/16, mb1mx3.4/39, mbtmp4.4/16, Error ellipse: s-maj=20.1km s-min=12.2km az=139.0*

ISC 04 06:02:00.4±0.6, 18°.1S±0°.2×178°.4W±0°.1, h579km, n47, σ1°05/50, mb4.0/14, 12C, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**7.60**	**58**	P	**P**	**06 03 55.6**	**+0.3**
	3.9nm,0.3s,baz=81,slow=1.0,SNR=6.0						
AFI				S	**S**	**06 05 27.6**	**-1.7**
	2.3nm,0.3s,baz=12,slow=19,SNR=3.1						
DZM	**Mont Dzumac**	**14.77**	**252**	P	**P**	**06 05 07.7**	**+0.6**
	0.7nm,0.3s,baz=118,slow=22,SNR=12						
STKA	**Stephens Creek**	**38.55**	**241**	P	**P**	**06 08 35.5**	**+1.0**
	4.8nm,0.7s,baz=93,slow=9.3,SNR=11						
WRA	**Warramunga Arr**	**44.60**	**260**	P	**P**	**06 09 22.3**	**-0.1**
	2.1nm,0.7s,baz=96,slow=7.0,SNR=34						
WRA				PcP	**PcP**	**06 10 52.6**	**+0.1**
	0.7nm,0.3s,baz=90,slow=3.8,SNR=8.4						
ASAR	**Alice Springs**	**44.74**	**254**	P	**P**	**06 09 23.8**	**+0.3**
	6.7nm,0.6s,baz=88,slow=8.4,SNR=82						
ASAR				PcP	**PcP**	**06 10 52.9**	**-0.2**
	1.9nm,0.6s,baz=103,slow=4.1,SNR=12						
ASAR				S	**S**	**06 15 16.6**	**-2.6**
	0.8nm,0.8s,baz=89,slow=16,SNR=4.8						
VNDA	**Vanda**	**60.30**	**185**	P	**P**	**06 11 13.9**	**+0.6**
	0.4nm,0.6s,baz=18,slow=4.9,SNR=3.8						
MJAR	**Matsushiro Arr**	**68.01**	**323**	P	**P**	**06 12 02.8**	**0.0**
	2.7nm,0.6s,baz=153,slow=6.2,SNR=12						
PETK	**Petropavlovsk-**	**73.81**	**345**	P	**P**	**06 12 36.0**	**-0.4**
	4.4nm,0.6s,baz=123,slow=11,SNR=3.9						
NVAR	**Mina Array Bea**	**79.53**	**44**	P	**P**	**06 13 09.6**	**+1.4**
	1.7nm,0.8s,baz=224,slow=7.6,SNR=3.5						
MAW	**Mawson**	**83.72**	**200**	P	**P**	**06 13 27.8**	**-1.0**
	1.2nm,0.5s,baz=90,slow=1.0,SNR=3.8						
SEY	**Seymchan**	**83.91**	**347**	P	**P**	**06 13 30.1**	**+0.5**
	4.4nm,0.6s,baz=143,slow=5.8,SNR=18						
ILAR	**Eielson Array**	**86.03**	**13**	P	**P**	**06 13 39.1**	**-0.7**
	2.0nm,0.7s,baz=230,slow=5.5,SNR=18						
TXAR	**Lajitas Array**	**86.08**	**58**	P	**P**	**06 13 42.6**	**+1.6**
	2.1nm,0.8s,baz=220,slow=6.4,SNR=28						
PDAR	**Pinedale Array**	**87.46**	**43**	P	**P**	**06 13 47.9**	**+0.5**
	1.3nm,0.7s,baz=211,slow=3.4,SNR=15						
CMAR	**Chiang Mai Arr**	**88.92**	**290**	P	**P**	**06 13 56.3**	**+1.9**
	2.0nm,0.2s,baz=106,slow=4.8						
YKA	**Yellowknife Ar**	**94.46**	**25**	P	**P**	**06 14 18.6**	**-0.2**
	0.4nm,0.6s,baz=240,slow=4.5,SNR=16						
MKAR	**Makanchi Array**	**109.22**	**314**	PKiKP	**PKiKP**	**06 19 23.7**	**-1.5**
	0.3nm,0.4s,baz=91,slow=2.2,SNR=4.2						
BVAR	**Borovoye Array**	**116.95**	**321**	PKP	**PKPdf**	**06 19 38.6**	**-1.2**
	1.0nm,0.5s,baz=158,slow=0.8,SNR=5.3						
AKTO	**Aktyubinsk**	**124.97**	**319**	PKP	**PKPdf**	**06 19 54.6**	**-0.6**
	0.7nm,0.3s,baz=106,slow=3.8,SNR=5.2						
ARCES	**ARCESS Array B**	**126.45**	**350**	PKP	**PKPdf**	**06 19 57.1**	**-0.4**
	1.5nm,0.6s,baz=2.9,slow=2.4,SNR=13						
FINES	**FINESS Array B**	**133.32**	**344**	PKP	**PKPdf**	**06 20 11.3**	**+0.6**
	0.7nm,0.6s,baz=44,slow=5.8,SNR=4.0						
NOA	**NORSAR Array B**	**136.51**	**353**	PKP	**PKPdf**	**06 20 18.1**	**+1.4**
	0.4nm,0.6s,baz=324,slow=2.6,SNR=3.4						
AKASG	**Malin Array Be**	**140.68**	**332**	PKhKP	PKPpre	06 20 18.2	
	0.8nm,0.3s,baz=44,slow=4.1,SNR=4.8						
SORM	**Soroca**	**142.91**	**330⇑**	*i*P	**PKPdf**	**06 20 26.4**	**-2.2**
KWP	**Kalwaria Pacla**	**144.19**	**336⇑**	*i*P	**PKPab**	**06 20 31.0**	**0.0**
BURAR	**Bucovina Array**	**144.73**	**332⇑**	*i*P	**PKPab**	**06 20 33.5**	**+0.3**
BRTR	**Keskin Array B**	**144.87**	**315**	PKP	**PKPdf**	**06 20 32.8**	**+0.2**
	1.6nm,0.5s,baz=116,slow=2.9,SNR=12						
CFR	**Carcaliu**	**145.05**	**327⇑**	*i*P	**PKPbc**	**06 20 33.8**	**+0.5**
VRI	**Vrincioaia**	**145.29**	**329⇑**	*i*P	**PKPbc**	**06 20 34.7**	**+0.6**
GRER		**145.51**	**328⇑**	*i*P	**PKPdf**	**06 20 29.9**	**-3.3**
CLL	**Collm**	**145.60**	**347⇑**	*i*PKP	**PKPbc**	**06 20 34.9**	**+0.2**
	comp=Z,17nm,0.8s						
DPC	**Dobruska-Polom**	**145.68**	**343**	*e*PKP	**PKPbc**	**06 20 35.6**	**+0.5**
DPC				*ex*	x	06 20 37.6	
KRLC	**Kraliky**	**145.80**	**343**	*e*PKP	**PKPbc**	**06 20 35.8**	**+0.4**
BRG	**Berggiesshubel**	**145.80**	**346**	*i*P	**PKPbc**	**06 20 35.5**	**+0.2**
	comp=Z,6.5nm,0.7s						
MORC	**Moravsky Berou**	**145.84**	**341⇑**	*i*P	**PKPbc**	**06 20 35.9**	**+0.3**
MLR	**Muntele Rosu**	**145.95**	**329⇑**	*i*P	**PKPbc**	**06 20 36.7**	**+0.6**
DRGR		**146.46**	**333⇑**	*i*P	**PKPbc**	**06 20 37.9**	**+0.5**
PRU	**Pruhonice**	**146.48**	**345**	*e*PKP	**PKPbc**	**06 20 37.6**	**+0.4**
PSZ	**Piszkesteto**	**146.66**	**337⇑**	*i*P	**PKPbc**	**06 20 38.6**	**+0.7**
KHC	**Kasperske Hory**	**147.51**	**345**	*e*PKP	**PKPbc**	**06 20 40.4**	**+0.4**
KHC				*ex*	x	06 20 44.9	
GERES	**GERESS Array B**	**147.74**	**345**	PKPbc	**PKPbc**	**06 20 40.6**	**-0.2**
	comp=Z,3.8nm,0.6s,baz=27,slow=3.3,SNR=28						
CONA	**Conrad Observa**	**147.99**	**342**	*e*PKPbc	**PKPbc**	**06 20 41.7**	**+0.4**
	comp=Z,6.7nm,1.0s						
PKSM	**Moragy**	**148.56**	**337⇑**	*i*P	**PKPbc**	**06 20 42.9**	**+0.2**
KBA	**Koelnbreinsper**	**149.47**	**344**	*i*PKPbc	**PKPbc**	**06 20 43.8**	**-1.4**
	comp=Z,8.0nm,1.4s						
ABTA	**Abfaltersbach**	**149.99**	**345**	*i*PKPbc	**PKPbc**	**06 20 45.4**	**-0.9**
FETA	**Feichten**	**150.14**	**347**	*i*PKPbc	**PKPbc**	**06 20 46.7**	**0.0**
TORD	**Torodi Ar. Bea**	**175.13**	**181**	PKP	**PKPdf**	**06 21 03.9**	**-1.4**
	comp=Z,0.5nm,0.8s,baz=199,slow=0.1,SNR=2.9						

IDC 04 06:14:56.9±2.7, 30°.32S×138°.36E, h0km, mb1 3.6/4, mb1mx3.4/36, mbtmp3.4/4, ML3.0/4, Error ellipse: s-maj=69.1km s-min=14.4km az=42.0, South Australia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**3.17**	**120**	Pn	Pn	06 15 48.1	0.0
	0.5nm,0.3s,baz=300,slow=11,SNR=7.7						
STKA				Pg	Pg	06 15 56.1	-1.6
	3.0nm,0.3s,baz=302,slow=16,SNR=26						
STKA				Sn	Sn	06 16 25.8	-0.8
	4.8nm,0.3s,baz=293,slow=13,SNR=5.4						
STKA				Lg	Lg	06 16 36.6	
	4.4nm,0.3s,baz=33,slow=22,SNR=4.8						
ASAR	**Alice Springs**	**7.73**	**328**	Pn	Pn	06 16 52.2	+1.5
	0.3nm,0.3s,baz=151,slow=11,SNR=12						
ASAR				Sn	Sn	06 18 19.2	+0.1
	0.3nm,0.3s,baz=152,slow=22,SNR=6.2						
WRA	**Warramunga Arr**	**10.96**	**340**	Pn	Pn	06 17 35.5	+0.5
	0.2nm,0.3s,baz=162,slow=12,SNR=6.2						
WRA				Sn	Sn	06 19 37.7	-0.7
	0.1nm,0.3s,baz=161,slow=23,SNR=3.2						
FITZ	**Fitzroy Crossi**	**16.80**	**314**	Pn	Pn	06 18 51.7	-1.9
	0.1nm,0.3s,baz=174,slow=14,SNR=2.8						

MEX 04 06:51:02.8±0.9, 15°.36N×93°.08W, h86km±13km, MD3.6, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		**0.37**	**338**	*i*P	Pn	06 51 14.0	-2.1
PCIG				*i*S	Sn	06 51 24.7	-1.3
CCIG	**Comitan**	**1.28**	**45**	*e*P	Pn	06 51 24.9	-0.9
CCIG				*i*S	Sn	06 51 41.3	-1.8

MEX 04 06:58:30.3±0.8, 16°.43N×99°.58W, h16km±13km, MD3.5, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CAIG	**El Cayaco**	**0.90**	**313**	*e*P	Pb	06 58 43.8	-3.7
CAIG				*e*S	Sb	06 58 56.0	-3.3
PNIG	**Pinotepa**	**1.40**	**91**	*i*P	Pn	06 58 51.5	-3.7
PNIG				*i*S	Sn	06 59 07.6	-5.7
TLIG	**Tlapa**	**1.49**	**41**	*e*P	Pn	06 58 53.1	-3.4
TLIG				*e*S	Sn	06 59 11.0	-4.7
MEIG	**Mezcala**	**1.49**	**359**	*e*P	Pn	06 58 53.4	-3.1
MEIG				*e*S	Sn	06 59 09.7	-6.0
ARIG	**Puente Sto Nin**	**1.98**	**338**	*e*P	Pn	06 59 00.2	-3.0
ARIG				*e*S	Sn	06 59 23.0	-4.7
ZIIG	**Zihuatanejo**	**2.15**	**303**	*i*P	Pn	06 59 02.9	-2.6
ZIIG				*e*S	Sn	06 59 27.0	-4.8
YAIG	**Yautepec**	**2.47**	**11**	*i*P	Pn	06 59 07.7	-2.4
YAIG				*i*S	Sn	06 59 36.1	-3.8

*NIED **04** 06:59:00.38°.70N×142°.20E, h65km, Mw3.9 Best double couple: M07.63000×10^14 NP1:φs118.00000°, δ42.00000°, λ7.00000°. NP2:φs23.00000°, δ85.00000°, λ132.00000°.*
*IDC **04** 06:59:26.6±2.4, 38°.91N×142°.10E, h0km, mb3.7/6, mb1 3.7/8, mb1mx3.5/46, mbtmp3.6/8, ML2.9/2, Error ellipse: s-maj=55.8km s-min=26.1km az=142.0*
*JMA **04** 06:59:30.4±0.1, 38°.67N×142°.17E, h40km±2km, M3.9*
JMA Felt I J1.

ISC 04 06:59:27.5±2.7, 38°.74N±0°.06×142°.28E±0°.08, h13km±16km, n16, σ0°92/22, mb3.8/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.58**	**306**	P	**Pn**	**06 59 42.2**	**+0.7**
OFUJ				S	**Sn**	**06 59 50.2**	**-0.7**
JIO	**Ouri**	**0.78**	**249**	P	**Pb**	**06 59 43.3**	**+0.4**
JIO				S	**Sg**	**06 59 52.4**	**-0.5**
JMK	**Ichinoseki**	**0.85**	**285**	P	**Pn**	**06 59 45.3**	**+0.1**
JMK				S	**Sb**	**06 59 55.8**	**+0.3**
MIYJ	**Miyakonagasawa**	**0.91**	**337**	P	**Pn**	**06 59 47.2**	**+1.2**
MIYJ				S	**Sn**	**06 59 59.1**	**+0.2**
JOM	**Ohasama**	**1.06**	**314**	P	**Pn**	**06 59 49.2**	**+1.1**
JOM				S	**Sb**	**07 00 00.9**	**-0.6**
JOU	**Okura**	**1.32**	**254**	P	**Pn**	**06 59 51.3**	**-0.3**
JMM	**Marumori**	**1.46**	**234**	P	**Pn**	**06 59 52.5**	**-1.0**
MJAR	**Matsushiro Arr**	**3.91**	**237**	Pn	**Pn**	**07 00 28.6**	**+1.4**
	1.7nm,0.3s,baz=40,slow=12,SNR=20						
MAT	**Matsushiro**	**3.91**	**237**	P	**Pn**	**07 00 28.9**	**+1.7**
MAT				S	**Sn**	**07 01 13.9**	**+1.0**
ASAJ	**Asahikawa**	**5.38**	**2**	Pn	**Pn**	**07 00 46.9**	**-0.4**
	0.3nm,0.3s,baz=256,slow=4.2,SNR=2.6						
SEY	**Seymchan**	**24.99**	**11**	P	**P**	**07 04 51.3**	**+0.7**
	2.9nm,0.9s,baz=184,slow=11,SNR=8.2						
ZALV	**Zalesovo Beam**	**41.29**	**311**	P	**P**	**07 07 12.0**	**-0.3**
	0.7nm,0.4s,baz=72,slow=9.3,SNR=2.8						
MKAR	**Makanchi Array**	**43.81**	**301**	P	**P**	**07 07 32.2**	**-0.8**
	0.5nm,0.6s,baz=77,slow=10,SNR=5.6						
YKA	**Yellowknife Ar**	**61.99**	**31**	P	**P**	**07 09 47.5**	**+0.6**
	0.1nm,0.8s,baz=299,slow=6.3,SNR=2.5						
FINES	**FINESS Array B**	**67.62**	**332**	P	**P**	**07 10 22.8**	**-0.8**
	1.1nm,0.6s,baz=44,slow=5.8,SNR=4.1						
NOA	**NORSAR Array B**	**72.88**	**337**	P	**P**	**07 10 54.8**	**-1.0**
	0.6nm,0.7s,baz=38,slow=5.8,SNR=3.3						

IDC 04 07:08:19.7±1.9, 3°.26S×148°.41E, h0km, mb3.5/3, mb1 3.8/3, mb1mx3.5/26, mbtmp3.5/3, MS3.3/2, Ms1 3.3/2, ms1mx2.8/33, Error ellipse: s-maj=129.6km s-min=31.2km az=121.0, Bismarck Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**21.53**	**219**	P	P	07 13 10.6	-0.1
	1.7nm,0.8s,baz=42,slow=11,SNR=7.6						
ASAR	**Alice Springs**	**24.66**	**213**	P	P	07 13 42.2	-0.2
	0.7nm,0.6s,baz=39,slow=7.7,SNR=8.2						
JNU	**Nakatsue**	**39.81**	**337**	LR	LR	07 30 31.7	
	comp=Z,44nm,21.4s,baz=126,slow=34						
MJAR	**Matsushiro Arr**	**40.73**	**347**	LR	LR	07 31 59.8	
	comp=Z,43nm,18.8s,baz=85,slow=35						
YKA	**Yellowknife Ar**	**96.11**	**28**	P	P	07 21 48.5	-0.6
	0.1nm,0.7s,baz=272,slow=4.4,SNR=4.1						
TORD	**Torodi Ar. Bea**	**145.67**	**289**	PKPbc	PKPdf	07 28 01.4	+0.1
	1.0nm,1.1s,baz=70,slow=2.5,SNR=3.9						

*MEX **04** 07:24:06.8±0.5, 32°.49N×115°.12W, h15km±3km, MD3.5*
*ECX **04** 07:24:07.3±0.6, 32°.31N×115°.29W, h6km, MD2.6, ML2.7*

ISC 04 07:24:05.5±1.2, 32°.38N±0°.04×115°.26W±0°.04, h22km±8km, n16, σ0°40/23, 8C-6D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CPBX	**Cerro Prieto**	**0.05**	**312⇓**	*e*P	**Pb**	**07 24 09.1**	**-0.4**
CPBX				⇓*e*P	**Pb**	**07 24 09.1**	**-0.4**
CPBX				*e*		07 24 12.3	
CPBX				AML	AML	07 24 12.3	
	comp=N,8μm,0.1s						
MBIG	**Mexicali**	**0.06**	**64**	*e*P	**Pb**	**07 24 09.4**	**0.0**
MBIG				*e*S	**Sb**	**07 24 12.0**	**-0.1**
MBIG	**Mexicali**	**0.06**	**64⇓**	*e*P	**Pb**	**07 24 09.8**	**+0.4**
DREC	**Desert Rsrch C**	**0.45**	**339⇓**	*e*P	**Pn**	**07 24 16.7**	**+0.1**
SGL	**Mount Signal**	**0.48**	**304⇓**	*i*P	**Pb**	**07 24 15.9**	**+0.7**
WESC	**Westside Schoo**	**0.55**	**313**	*e*P	**Pn**	**07 24 17.6**	**-0.4**
WESC				*e*S	**Sn**	**07 24 25.9**	**-0.6**
COK	**Cook Ranch**	**0.61**	**320⇑**	*i*P	**Pn**	**07 24 18.6**	**-0.3**
YUH	**Yuha Desert**	**0.62**	**295⇑**	*i*P	**Pb**	**07 24 18.1**	**+0.3**
YMD	**Yuma Desert**	**0.63**	**74⇑**	*i*P	**Pn**	**07 24 19.5**	**+0.4**
RMX	**La Rumorosa**	**0.73**	**288**	*e*P	**Pb**	**07 24 19.3**	**-0.3**
RMX				*e*S	**Sb**	**07 24 29.0**	**-0.2**
RMX				⇑*e*		07 24 29.3	
RMX				AML	AML	07 24 29.3	
	comp=N,198nm,0.1s						
IKP	**In-Ko-Pah, Jac**	**0.77**	**291⇓**	*i*P	**Pn**	**07 24 21.0**	**-0.1**
ECBX	**El Chinero**	**0.92**	**169⇓**	*e*P	**Pb**	**07 24 22.5**	**-0.3**
ECBX				*e*S	**Sb**	**07 24 34.6**	**-0.1**
ECBX				AML	AML	07 24 35.1	
	comp=E,269nm,0.5s						
ECBX				⇑*e*		07 24 35.1	
CBX	**Cerro Bola**	**1.19**	**267**	*e*P	**Pn**	**07 24 27.4**	**+0.4**
CBX				*e*S	**Sn**	**07 24 42.7**	**+0.1**
CBX	**Cerro Bola**	**1.19**	**267⇑**	*e*P	**Pn**	**07 24 27.7**	**+0.7**
CBX				*e*S	**Sn**	**07 24 43.0**	**+0.4**
SPIG	**San Pedro Mart**	**1.34**	**188⇑**	*e*P	**Pn**	**07 24 29.3**	**0.0**
SPX	**San Pedro Mart**	**1.34**	**188**	*e*P	**Pn**	**07 24 29.4**	**+0.1**

*NIED **04** 07:28:00.38°.60N×142°.40E, h38km, Mw3.6 Best double couple: M03.00000×10^14 NP1:φs31.00000°, δ16.00000°, λ68.00000°. NP2:φs234.00000°, δ75.00000°, λ96.00000°.*

JMA 04 07:28:51.4±0.1, 38°.57N×142°.40E, h36km±2km, M3.7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.77**	**312**	P	Pn	07 29 05.9	+0.2
OFUJ				S	Sn	07 29 16.0	0.0
JIO	**Ouri**	**0.83**	**262**	P	Pn	07 29 06.8	+0.2
JIO				S	Sn	07 29 17.5	-0.1
JMK	**Ichinoseki**	**1.00**	**293**	P	Pn	07 29 09.3	+0.5
JOM	**Ohasama**	**1.25**	**317**	P	Pn	07 29 13.1	+0.8
JOM				S	Sn	07 29 29.0	+1.2
JOU	**Okura**	**1.38**	**262**	P	Pn	07 29 14.9	+0.8
JOU				*e*S	Sn	07 29 32.6	+1.5
JTH	**Tanohata**	**1.43**	**343**	P	Pn	07 29 15.9	+1.1
JMM	**Marumori**	**1.45**	**241**	P	Pn	07 29 15.1	+0.1
JMM				S	Sn	07 29 32.6	-0.1
JRG	**Rokugo**	**1.60**	**301**	P	Pn	07 29 18.4	+1.2

KRSC 04 07:29:24.2±1.4, 50°.30N×156°.44E, h98km±21km, ML3.6, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**0.44**	**332**	*e*P	Pn	07 29 39.9	+0.6
SKR				*e*S	Sn	07 29 51.4	+0.8
PAU	**Pauzhetka**	**1.20**	**11**	*e*P	Pn	07 29 47.5	+0.9
PAU				*e*S	Sn	07 30 04.8	+1.3
ASAK	**Asacha**	**2.28**	**23**	*e*P	Pn	07 30 02.6	+2.2
RUS	**Russkaya**	**2.50**	**31**	*e*P	Pn	07 30 05.9	+2.7
RUS				*e*S	Sn	07 30 35.5	+2.4
UGLR	**Uglovaya**	**3.27**	**26**	*e*P	Pn	07 30 16.6	+3.1
AVH	**Avacha**	**3.30**	**25**	*e*P	Pn	07 30 16.7	+2.8
SDLR	**Sedlovina**	**3.35**	**26**	*e*P	Pn	07 30 16.4	+1.8
KRX	**Arik**	**3.36**	**23**	*e*P	Pn	07 30 17.3	+2.5
GNL	**Ganaly**	**3.53**	**15**	*e*P	Pn	07 30 19.1	+2.1
MKZ	**Mys Kozlova**	**5.36**	**35**	*e*P	Pn	07 30 42.3	+0.8

*ISCJB **04** 07:30:36.3±0.8, 7°.27S±0°.06×129°.5E±0°.1, h100km, mb4.0/3, Error ellipse: s-maj=18.8km s-min=8.0km az=1.9*
*IDC **04** 07:30:36.9±2.5, 7°.21S×129°.40E, h82km±23km, mb3.8/4, mb1 3.9/8, mb1mx3.6/36, mbtmp4.2/8, Error ellipse: s-maj=33.7km s-min=15.9km az=76.0*

ISC 04 07:30:38.2±0.8, 7°.32S±0°.07×129°.6E±0°.2, h100km, n11, σ2°25/13, mb4.0/3, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SIJI	**Sorong**	**6.62**	**15**	P	**Pn**	**07 32 11.4**	**-1.6**
	43nm,0.3s,baz=356,slow=13,SNR=3.7						
SIJI				S	Sn	07 33 15.5	-12
	39nm,0.3s,baz=270,slow=20,SNR=3.2						
FITZ	**Fitzroy Crossi**	**11.39**	**199**	P	**Pn**	**07 33 18.7**	**+0.9**
	1.0nm,0.3s,baz=25,slow=9.8,SNR=28						
FITZ				S	**Sn**	**07 35 21.9**	**-1.2**
	1.6nm,0.3s,baz=141,slow=20,SNR=7.8						
WRA	**Warramunga Arr**	**13.37**	**160**	P	**Pn**	**07 33 43.7**	**-0.4**
	1.2nm,0.3s,baz=339,slow=14,SNR=52						
WRA				S	Sn	07 36 04.4	-6.8
	2.5nm,0.3s,baz=346,slow=24,SNR=11						
ASAR	**Alice Springs**	**16.77**	**166**	P	**P**	**07 34 29.6**	**+1.8**
	0.5nm,0.3s,baz=340,slow=9.6,SNR=33						
ASAR				S	**Sn**	**07 37 28.2**	**-5.3**
	0.5nm,0.3s,baz=349,slow=25,SNR=7.0						
CTA	**Charters Tower**	**20.54**	**130**	P	**P**	**07 35 11.0**	**+2.1**
	3.3nm,0.7s,baz=270,slow=7.1,SNR=2.5						
STKA	**Stephens Creek**	**26.88**	**157**	P	**P**	**07 36 11.6**	**+1.8**
	0.9nm,0.3s,baz=331,slow=10,SNR=8.4						
MKAR	**Makanchi Array**	**68.27**	**327**	P	**P**	**07 41 28.2**	**-0.2**
	1.7nm,0.5s,baz=117,slow=8.6,SNR=25						
ZALV	**Zalesovo Beam**	**71.69**	**334**	P	**P**	**07 41 47.8**	**-1.3**
	1.3nm,0.6s,baz=126,slow=5.7,SNR=3.7						
TORD	**Torodi Ar. Bea**	**128.47**	**281**	PKP	**PKPdf**	**07 49 34.9**	**+0.5**
	0.4nm,0.7s,baz=72,slow=2.8,SNR=3.2						
CPUP	**Villa Florida**	**145.88**	**169**	PKPbc	**PKPab**	**07 50 06.8**	**-0.6**
	1.3nm,0.8s,baz=211,slow=2.9,SNR=3.2						
LPAZ	**La Paz**	**150.71**	**143**	PKPbc	**PKPbc**	**07 50 22.6**	**+2.0**
	0.6nm,0.3s,baz=245,slow=2.1,SNR=8.6						

*DDA **04** 07:36:36.6, 38°.12N×39°.01E, h8km, Md2.5*
*ISK **04** 07:36:36.7, 38°.14N×38°.98E, h6km, MD2.0*
*CSEM **04** 07:36:37.1±0.1, 38°.12N×38°.99E, h2km, MD2.0, Error ellipse: s-maj=4.0km s-min=2.6km az=108.0*

ISC 04 07:36:36.5±1.0, 38°.16N±0°.03×38°.94E±0°.04, h12km±11km, n18, σ0°36/27, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ELZG	**Elazig**	**0.34**	**6**	P	**Pb**	**07 36 44.4**	**-0.1**
ELZG				S	**Sb**	**07 36 49.8**	**-0.2**
ELZG	**Elazig**	**0.34**	**6**	*i*P	**Pb**	**07 36 44.4**	**-0.1**
ELZG

mb1 4.1/13, mb1mx3.8/55, mbtmp4.0/13, Error ellipse: s-maj=40.3km s-min=14.8km az=54.0
*ISCJB **04** 07:53:40.4±0.7, 10°.1N±0°.2×93°.2E±0°.2, h43km, mb3.9/13, Error ellipse: s-maj=34.0km s-min=13.5km az=143.7*

ISC 04 07:53:42.3±0.8, 10°.1N±0°.2×93°.2E±0°.2, h43km, n18, σ0s64/17, mb3.9/13, Andaman Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08S3	**Diego Garcia H**	**27.08**	**230**	T	T	08 27 29.2	
	baz=48,slow=75,SNR=24						
H08S2	**Diego Garcia H**	**27.09**	**230**	T	T	08 27 32.8	
	baz=48,slow=75,SNR=26						
H08S1	**Diego Garcia H**	**27.10**	**230**	T	T	08 27 29.8	
	baz=48,slow=75,SNR=8.6						
AAK	**Ala-Archa**	**36.31**	**336**	P	**P**	**08 00 40.6**	**-1.5**
	0.9nm,0.4s,baz=79,slow=5.2,SNR=2.3						
MKAR	**Makanchi Array**	**37.74**	**348**	P	**P**	**08 00 53.8**	**-0.2**
	0.7nm,0.7s,baz=170,slow=7.9,SNR=7.7						
SONM	**Songino Array**	**39.25**	**14**	P	**P**	**08 01 07.2**	**+0.5**
	1.2nm,0.6s,baz=196,slow=9.8,SNR=3.0						
GEYT	**Alibeck**	**41.93**	**317**	P	**P**	**08 01 30.2**	**+1.3**
	1.3nm,0.4s,baz=160,slow=4.6,SNR=3.3						
KURBB	**Kurchatov Arra**	**42.19**	**346**	P	**P**	**08 01 31.2**	**+0.5**
	0.6nm,0.6s,baz=167,slow=7.5,SNR=6.8						
KURBB				PcP	**PcP**	**08 03 24.3**	**-0.1**
	0.1nm,0.3s,baz=156,slow=2.3,SNR=4.3						
WRA	**Warramunga Arr**	**50.33**	**126**	P	**P**	**08 02 35.2**	**0.0**
	2.3nm,0.4s,baz=306,slow=8.3,SNR=58						
WRA				PcP	**PcP**	**08 03 53.2**	**-0.3**
	0.4nm,0.7s,baz=312,slow=3.6,SNR=3.4						
ASAR	**Alice Springs**	**52.07**	**131**	P	**P**	**08 02 48.2**	**0.0**
	1.0nm,0.5s,baz=306,slow=7.0,SNR=22						
STKA	**Stephens Creek**	**62.32**	**134**	P	**P**	**08 04 00.7**	**+0.2**
	0.9nm,0.4s,baz=270,slow=3.1,SNR=4.7						
FINES	**FINESS Array B**	**70.32**	**332**	P	**P**	**08 04 50.4**	**-0.8**
	0.8nm,0.5s,baz=92,slow=9.5,SNR=5.3						
ARCES	**ARCESS Array B**	**72.88**	**340**	P	**P**	**08 05 06.3**	**-0.2**
	0.8nm,0.7s,baz=91,slow=6.2,SNR=6.1						
GERES	**GERESS Array B**	**75.55**	**318**	P	**P**	**08 05 22.4**	**-0.2**
	0.9nm,0.6s,baz=79,slow=2.9,SNR=7.1						
TORD	**Torodi Ar. Bea**	**89.16**	**283**	P	**P**	**08 06 34.2**	**+0.1**
	0.4nm,0.6s,baz=99,slow=4.0,SNR=3.4						
ILAR	**Eielson Array**	**93.07**	**22**	P	**P**	**08 06 50.6**	**-0.7**
	0.6nm,0.7s,baz=305,slow=4.2,SNR=6.8						
PDAR	**Pinedale Array**	**123.45**	**20**	PKP	**PKPdf**	**08 12 35.7**	**+0.2**
	0.2nm,0.5s,baz=4.6,slow=4.5,SNR=2.6						
TXAR	**Lajitas Array**	**137.59**	**22**	PKP	**PKPdf**	**08 13 02.9**	**+0.4**
	0.1nm,0.5s,baz=272,slow=1.6,SNR=3.6						

JMA 04 07:55:38.2±0.2, 39°.46N×143°.86E, h0km, M3.7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**1.58**	**275**	P	Pn	07 56 07.6	+0.1
MIYJ				*e*S	Sn	07 56 28.1	-0.6
JTH	**Tanohata**	**1.61**	**288**	P	Pn	07 56 07.8	-0.1
JTH				*e*S	Sg	07 56 31.0	+1.0
OFUJ	**Ofunato**	**1.74**	**258**	P	Pn	07 56 10.1	+0.4
JOM	**Ohasama**	**1.99**	**271**	P	Pn	07 56 13.8	+0.7
JOM				*e*S	Sb	07 56 40.7	+0.2
JANG	**Nango**	**2.02**	**298**	P	Pn	07 56 13.5	0.0
JMK	**Ichinoseki**	**2.11**	**257**	P	Pn	07 56 15.7	+0.9
JIO	**Ouri**	**2.20**	**244**	P	Pn	07 56 16.5	+0.5
JRG	**Rokugo**	**2.50**	**270**	P	Pn	07 56 21.5	+1.4
JTM	**Tenmabayashi**	**2.52**	**303**	P	Pn	07 56 21.4	+1.0
JAH	**Hinai**	**2.59**	**287**	P	Pn	07 56 22.4	+1.1
JOU	**Okura**	**2.72**	**247**	P	Pn	07 56 24.6	+1.4
JYK	**Kaneyama**	**2.77**	**260**	P	Pn	07 56 25.1	+1.2

*ISCJB **04** 08:10:45.3±0.5, 36°.38N±0°.02×117°.87W±0°.02, h6km±4km, Error ellipse: s-maj=3.9km s-min=3.0km az=24.4*
*NEIC **04** 08:10:45.9, 36°.39N×117°.87W, h2km, ML3.6(PAS), After PAS.*

ISC 04 08:10:45.6±1.0, 36°.38N±0°.02×117°.88W±0°.02, h5km±9km, n38, σ0s69/53, California-Nevada border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CWC	**Cottonwood Cre**	**0.18**	**291**	P	**Pg**	**08 10 49.6**	**+0.4**
	baz=108						
CWC				S	**Sg**	**08 10 51.6**	**0.0**
	baz=108						
DAC	**Darwin (Calif)**	**0.25**	**114**	*e*Pg	**Pg**	**08 10 50.7**	**+0.2**
DAC				*e*Sg	**Sg**	**08 10 53.5**	**-0.4**
MPMC	**Manual Prospec**	**0.45**	**135**	P	**Pg**	**08 10 54.5**	**+0.3**
	baz=317,SNR=542						
MPMC				S	**Sg**	**08 11 00.9**	**+0.8**
	baz=317						
TIN	**Tinemaha, Big**	**0.73**	**337**	P	**Pg**	**08 10 59.5**	**-0.2**
	baz=157,SNR=28						
TIN				S	**Sg**	**08 11 09.8**	**+0.5**
	baz=157						
GRAC	**Grapevine Rang**	**0.74**	**33**	P	**Pg**	**08 10 59.8**	**-0.1**
	baz=214,SNR=524						
GRAC				S	**Sg**	**08 11 10.0**	**+0.4**
	baz=214						
FURC	**Furnace Creek,**	**0.82**	**83**	P	**Pg**	**08 11 01.3**	**-0.1**
	baz=265,SNR=983						
FURC				S	**Sg**	**08 11 12.7**	**+0.6**
	baz=265						
ISA	**Isabella, Lake**	**0.86**	**214**	P	**Pg**	**08 11 02.3**	**+0.2**
	baz=34,SNR=146						
ISA				S	**Sg**	**08 11 14.0**	**+0.6**
	baz=34						
LRMC	**Laurel Mtn Rad**	**0.91**	**170**	P	**Pg**	**08 11 03.4**	**+0.3**
	baz=350,SNR=464						
LRMC				S	**Sb**	**08 11 15.7**	**-0.6**
	baz=350						
RCTC	**Rector, Farmer**	**1.11**	**267**	P	**Pg**	**08 11 06.4**	**-0.4**
	baz=85,SNR=172						
RCTC				S	**Sg**	**08 11 21.3**	**0.0**
	baz=85						
VES	**Vestal, Richgr**	**1.12**	**242**	P	**Pg**	**08 11 07.2**	**+0.1**
	baz=60,SNR=164						
VES				S	**Sb**	**08 11 22.4**	**+0.2**
	baz=60						
GSC	**Goldstone, Bar**	**1.38**	**141**	P	**Pn**	**08 11 10.9**	**-0.7**
	baz=322,SNR=241						
GSC				S	**Sn**	**08 11 30.6**	**+0.3**
	baz=322						
SHOC	**Shoshone, Teco**	**1.38**	**110**	P	**Pn**	**08 11 11.3**	**-0.2**
	baz=291,SNR=386						
SHOC				S	**Sn**	**08 11 30.7**	**+0.5**
	baz=291						
TPNV	**Topopah Spring**	**1.43**	**66**	P	**Pn**	**08 11 11.8**	**-0.6**
	baz=247,SNR=352						
TPNV				S	**Sb**	**08 11 31.0**	**-0.3**
	baz=247						
ARVC	**Arvin**	**1.47**	**212**	P	**Pb**	**08 11 13.4**	**0.0**
	baz=31,SNR=93						
MLAC	**Mammoth, Mammo**	**1.47**	**329**	P	**Pn**	**08 11 12.7**	**-0.3**
	baz=148,SNR=30						
EDW2	**Edwards Air Fo**	**1.50**	**184**	P	**Pn**	**08 11 12.9**	**-0.3**
	baz=3.7,SNR=136						
TUQ	**Turquoise Moun**	**1.84**	**120**	P	**Pn**	**08 11 17.0**	**-0.9**
	baz=302,SNR=108						
HEC	**Hector,Ludlow**	**1.99**	**140**	P	**Pn**	**08 11 19.0**	**-1.0**
	baz=322,SNR=66						
PASC	**Pasadena Art C**	**2.21**	**187**	*e*Pn	**Pn**	**08 11 23.3**	**+0.3**
BBRC	**Big Bear Solar**	**2.25**	**159**	P	**Pn**	**08 11 23.6**	**-0.1**
	baz=340						
BBRC				Sb	**Sg**	**08 11 57.9**	**0.0**
	baz=340						
GMRC	**Granite Mounta**	**2.41**	**131**	P	**Pn**	**08 11 24.4**	**-1.3**
	baz=312,SNR=83						
BLG	**Laguna Peak, P**	**2.46**	**204**	P	**Pn**	**08 11 26.0**	**-0.5**
	baz=23,SNR=7.0						
CMB	**Columbia Colle**	**2.60**	**310**	*e*Pn	**Pb**	**08 11 30.9**	**-1.8**
CMB				*e*Sn	**Sn**	**08 12 01.4**	**+1.1**
R11A	**Troy Canyon, C**	**2.68**	**42**	P	**Pn**	**08 11 29.3**	**-0.3**
	baz=224,SNR=53						
R11A	**Troy Canyon, C**	**2.68**	**42**	Pn	**Pb**	**08 11 34.1**	**-0.2**
BELC	**Belle Mtn. Jos**	**2.83**	**146**	P	**Pn**	**08 11 31.2**	**-0.3**
	baz=328,SNR=20						
MURC	**Murrieta**	**2.83**	**168**	P	**Pn**	**08 11 31.4**	**0.0**
	baz=349,SNR=11						
SAO	**San Andreas Ge**	**2.90**	**279**	*e*Pn	**Pn**	**08 11 33.1**	**+0.7**
PFO	**Pinyon Flats O**	**2.99**	**157**	P	**Pn**	**08 11 33.7**	**-0.1**
	baz=338,SNR=18						
PFO	**Pinyon Flats O**	**2.99**	**157**	*e*Pn	**Pn**	**08 11 34.6**	**+0.8**
CIS	**Catalina Islan**	**3.00**	**189**	P	**Pn**	**08 11 34.0**	**+0.1**
	baz=8.3,SNR=6.6						
IRM	**Iron Mountain**	**3.15**	**134**	P	**Pn**	**08 11 34.7**	**-1.1**
	baz=316,SNR=15						
BC3	**Big Chuckawall**	**3.36**	**143**	P	**Pn**	**08 11 38.0**	**-1.0**
	baz=325						
MONP2	**Monument Peak**	**3.68**	**161**	P	**Pn**	**08 11 43.3**	**-0.1**
	baz=342,SNR=18						
Y12C	**Blythe**	**3.80**	**133**	P	**Pn**	**08 11 43.7**	**-1.1**
	baz=315						
ELK	**Elko**	**4.83**	**25**	*e*Pn	**Pn**	**08 11 59.8**	**+0.7**
WUAZ	**Wupatki**	**5.34**	**97**	Pn	**Pn**	**08 12 08.4**	**+2.2**
	13nm,0.7s						
DUG	**Dugway, Tooele**	**5.51**	**45**	Pn	**Pn**	**08 12 09.1**	**+0.6**
	5.6nm,0.6s						

*NIED **04** 08:23:00, 37°.00N×143°.30E, h5km, Mw5.5 Best double couple: M0 1.84000×10^17 NP1:φs29.00000°, δ41.00000°, λ-82.00000°. NP2:φs198.00000°, δ50.00000°, λ-97.00000°.*
*IDC **04** 08:23:47.2±0.4, 36°.97N×143°.33E, h0km, mb4.9/46, mb1 5.0/53, mb1mx4.9/67, mbtmp4.9/53, ML4.7/5, MS5.1/47, Ms1 5.1/47, ms1mx4.9/70, Error ellipse: s-maj=10.7km s-min=10.0km az=156.0*
*ISCJB **04** 08:23:48.1±0.6, 37°.10N±0°.02×143°.31E±0°.01, h12km±3km, mb5.2/352, MS5.2/230, Error ellipse: s-maj=3.4km s-min=1.8km az=169.0*
*JMA **04** 08:23:49.4±0.2, 37°.05N×143°.35E, h44km, M5.5*
JMA Felt I J1.
*BJI **04** 08:23:50.0, 37°.17N×143°.16E, h18km, mb5.2/68, mB5.4/67, Ms5.7/89, Ms7 5.5/79*
*GCMT **04** 08:23:53.1±0.1, 37°.03N×143°.38E, h12km, MW5.5/129, Moment Tensor Solution. s93,c161; s129,c270; Duration: 1s3 Moment tensor: Scale 10^17Nm; Mrr-1.85±.02; Mθθ0.40±.02; Mφφ1.46±.02; Mrθ-0.06±.05; Mθφ0.73±.02; Mφr0.10±.05; Best double couple: M0 1.84500×10^17 NP1:φs204.00000°, δ46.00000°, λ-94.00000°. NP2:φs30.00000°, δ44.00000°, λ-86.00000°. Principal axes: T 1.8340, Plg1.0000°, Azm297.0000°; N 0.0270, Plg3.0000°, Azm207.0000°; P -1.8560, Plg87.0000°, Azm45.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*MOS **04** 08:23:53.4±1.0, 37°.44N×143°.21E, h36km, mb5.4/131, MS5.3/58 Error ellipse: s-maj=5.7km s-min=3.5km az=103.4*
*NEIC **04** 08:23:53.1±0.1, 37°.04N×143°.25E, h35km, mb5.3/223, MS5.1/139, Error ellipse: s-maj=3.3km s-min=2.0km az=151.0*
NEIC Recorded [1 JMA] in Miyagi.

ISC 04 08:23:52.0±0.3, 37°.05N±0°.03×143°.33E±0°.03, h29km±1km, h29km:pP-P, n1255, σ1s47/1301, mb5.3/365, MS5.3/245, 39C-27D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.99**	**280**	P	**Pn**	**08 24 21.7**	**-2.0**
JFK				S	**Sn**	**08 24 45.2**	**-2.4**
ONAJ	**Iwakimizuishiy**	**2.02**	**272**	P	**Pn**	**08 24 22.2**	**-2.0**
ONAJ				*e*S	**Sn**	**08 24 46.8**	**-1.8**
JIO	**Ouri**	**2.11**	**312**	⇓P	**Pn**	**08 24 23.3**	**-2.0**
JIO				S	**Sn**	**08 24 47.8**	**-2.7**
JMM	**Marumori**	**2.18**	**293**	⇓P	**Pn**	**08 24 24.2**	**-2.1**
JHO	**Hitachi**	**2.26**	**260**	P	**Pn**	**08 24 25.3**	**-2.0**
JHO				*e*S	**Sn**	**08 24 52.2**	**-2.0**
JFT	**Otama**	**2.43**	**282**	P	**Pn**	**08 24 28.9**	**-0.9**
JFT				*e*S	**Sn**	**08 24 57.5**	**-1.1**
JOU	**Okura**	**2.49**	**303**	P	**Pn**	**08 24 29.4**	**-1.2**
JMK	**Ichinoseki**	**2.53**	**319**	P	**Pn**	**08 24 29.3**	**-1.8**
JOM	**Ohasama**	**2.91**	**327**	P	**Pn**	**08 24 34.9**	**-1.4**
JOM				*e*S	**Sn**	**08 25 08.2**	**-2.0**
JYK	**Kaneyama**	**3.00**	**309**	P	**Pn**	**08 24 36.2**	**-1.4**
BSO1	**Boso 1**	**3.06**	**219**	P	**Pn**	**08 24 36.5**	**-1.3**
JAG	**Ashikaga**	**3.17**	**260**	P	**Pn**	**08 24 38.1**	**-1.9**
JAG				S	**Sn**	**08 25 15.9**	**-0.9**
JAW	**Awa shima**	**3.53**	**295**	P	**Pn**	**08 24 45.2**	**+0.4**
JANG	**Nango**	**3.61**	**337**	P	**Pn**	**08 24 44.4**	**-1.6**
JANG				*e*S	**Sn**	**08 25 24.1**	**-3.6**
JRY	**Ryogami san**	**3.71**	**255**	P	**Pn**	**08 24 45.4**	**-2.0**
JRY				S	**Sn**	**08 25 27.4**	**-2.7**
JOD2	**Odawara 2**	**3.87**	**244**	P	**Pn**	**08 24 47.8**	**-1.7**
MJAR	**Matsushiro Arr**	**4.14**	**265**	Pn	**Pn**	**08 24 53.2**	**-0.1**
	52nm,0.3s,baz=77,slow=11,SNR=396						
MJAR				Sn	**Sn**	**08 25 40.1**	**-0.6**
	23nm,0.3s,baz=94,slow=18,SNR=5.2						
MJAR				LR	LR	08 26 33.8	
	comp=Z,25μm,21.8s,baz=90,slow=41						
MAJO	**Matsushiro**	**4.14**	**265**	*d*P	**Pn**	**08 24 52.8**	**-0.5**
MAJO	**Matsushiro**	**4.14**	**265**	*e*Pn	**Pn**	**08 24 52.7**	**-0.5**
MAJO				*e*Sn	**Sn**	**08 25 41.5**	**+0.7**
MAT	**Matsushiro**	**4.14**	**265**	P	**Pn**	**08 24 52.8**	**-0.5**
MAT				S	**Sn**	**08 25 40.8**	**+0.1**
MAT	**Matsushiro**	**4.14**	**265**	P	**Pn**	**08 24 52.9**	**-0.4**
MJB9	**Matsu-Tunnel**	**4.14**	**265**	*e*Pn	**Pn**	**08 24 52.8**	**-0.6**
JHJ2	**Mitsune**	**4.87**	**217**	*e*Pn	**Pn**	**08 25 00.1**	**-3.2**
JHJ	**Hachijo jima 2**	**4.88**	**218**	Pn	**Pn**	**08 25 01.0**	**-2.4**
	145nm,0.3s,baz=323,slow=12,SNR=62						
JHJ				Sn	**Sn**	**08 25 52.1**	**-6.8**
	165nm,0.3s,baz=234,slow=23,SNR=3.9						
JHJ				LR	LR	08 26 46.3	
	comp=Z,10μm,20.6s,baz=47,slow=37						
ERM	**Erimo**	**4.96**	**359**	⇓*i*P	**Pn**	**08 25 01.3**	**-3.3**
ERM				pmax	pmax		
	comp=Z,251nm,1.2s						
ERM	**Erimo**	**4.96**	**359**	*e*Pn	**Pn**	**08 25 01.6**	**-3.0**
INU	**Inuyama**	**5.38**	**254**	*e*Pn	**Pn**	**08 25 09.9**	**-0.3**
ASAJ	**Asahikawa**	**7.09**	**356**	Pn	**Pn**	**08 25 31.7**	**-2.0**
	comp=Z,34nm,0.3s,baz=216,slow=9.7,SNR=142						
ASAJ				Sn	**Sn**	**08 26 49.1**	**-4.1**
	comp=Z,13nm,0.3s,baz=30,slow=31,SNR=6.2						
ASAJ	**Asahikawa**	**7.09**	**356**	*e*Pn	**Pn**	**08 25 31.2**	**-2.5**
ASAJ				Sn	**Sn**	**08 26 49.1**	**-4.1**
YUK	**Yuzh-Kuril'sk**	**7.24**	**15**	*e*P	**Pn**	**08 25 32.8**	**-3.0**
YUK				*i* S	**Sn**	**08 26 48.5**	**-8.5**
YUK				pmax	pmax		
	comp=Z,438nm,0.6s						
YUK				pmax	pmax		
	comp=E,297nm,0.7s						
YUK				pmax	pmax		
	comp=N,224nm,0.5s						
YUK				MLR	MLR		
	comp=Z,7μm,13.0s						
YUK				MLR	MLR		
	comp=E,7μm,11.0s						
YUK				MLR	MLR		
	comp=N,11μm,12.0s						
SHO	**Shikotan**	**7.32**	**20**	*e*P	**Pn**	**08 25 32.9**	**-4.0**
SHO				*i* S	Sn	08 26 49.3	-10
SHO				pmax	pmax		
	comp=Z,532nm,0.6s						
SHO				pmax	pmax		
	comp=E,371nm,0.7s						
SHO				pmax	pmax		
	comp=N,391nm,0.5s						
KUR	**Kuril'sk**	**8.87**	**21**	*e*P	**Pn**	**08 25 55.4**	**-2.7**
KUR				*i* S	Sn	08 27 26.6	-10
KUR				pmax	pmax		
	comp=Z,648nm,3.1s						
KUR				pmax	pmax		
	comp=Z,107nm,1.0s						
KUR				pmax	pmax		
	comp=E,52nm,0.6s						
KUR				pmax	pmax		
	comp=N,43nm,1.0s						
KUR				smax	smax		
	comp=N,179nm,0.6s						
KUR				smax	smax		
	comp=E,132nm,0.6s						
KUR				smax	smax		
	comp=N,1μm,4.4s						
KUR				smax	smax		
	comp=E,673nm,4.4s						
KUR				MLR	MLR		
	comp=N,3μm,10.0s						
KUR				MLR	MLR		
	comp=Z,5μm,10.0s						
YSS	**Yuzh-Sakhalins**	**9.91**	**358**	⇑*e*P	**Pn**	**08 26 10.1**	**-2.3**
YSS				*e*S	**Sn**	**08 27 59.6**	**-3.0**
YSS				pmax	pmax		
	comp=Z,20nm,1.1s						
YSS				MLR	MLR		
	comp=Z,12μm,14.0s						
YSS				MLR	MLR		
	comp=N,5μm,11.0s						
YSS				MLR	MLR		
	comp=E,5μm,13.0s						
YSS	**Yuzh-Sakhalins**	**9.91**	**358**	*e*Pn	**Pn**	**08 26 11.5**	**-0.8**
CBIJ	**Chichi jima**	**9.97**	**186**	*e*Pn	**Pn**	**08 26 08.9**	**-4.4**
CBIJ				*e*Sn	Sn	08 27 50.7	-13
JCJ	**Chichijima**	**9.97**	**186**	Pn	**Pn**	**08 26 08.9**	**-4.3**
	baz=287,slow=19						
JCJ				Sn	Sn	08 27 51.9	-12
	baz=330,slow=20						
JCJ				LR	LR	08 33 04.8	
	comp=E,717nm,19.1s,baz=3.5,slow=56						
VLA	**Vladivostok**	**10.66**	**308**	*ce*P	**Pn**	**08 26 23.5**	**+0.9**
MSHR	**Mys Shultsa**	**10.87**	**304**	*d i*P	**Pn**	**08 26 24.9**	**-0.6**
JNU	**Nakatsue**	**10.93**	**253**	Pn	**Pn**	**08 26 25.6**	**-0.8**
	comp=E,1.7nm,0.3s,baz=54,slow=8.7,SNR=48						
JNU	**Nakatsue**	**10.93**	**253**	*e*Pn	**Pn**	**08 26 26.4**	**0.0**
USRK	**Ussuriysk Ar.**	**11.19**	**313**	Pn	**Pn**	**08 26 31.8**	**+1.9**
	comp=E,2.2nm,0.3s,baz=124,slow=13,SNR=37						
USRK				LR	LR	08 30 33.8	
	comp=E,18μm,18.9s,baz=119,slow=36						
UGL	**Uglegorsk**	**12.06**	**356**	*e*P	**Pn**	**08 26 38.2**	**-3.6**
UGL				pmax	pmax		
	comp=Z,300nm,1.8s						
UGL				pmax	pmax		
	comp=Z,110nm,1.0s						
UGL				MLR	MLR		
	comp=N,19μm,17.0s						
UGL				MLR	MLR		
	comp=E,17μm,17.0s						
UGL				MLR	MLR		
	comp=Z,12μm,17.0s						
KSRS	**Korea Array**	**12.29**	**277**	Pn	**Pn**	**08 26 45.6**	**+0.7**
	comp=Z,1.3nm,0.3s,baz=91,slow=14,SNR=122						
KSRS				LR	LR	08 31 19.8	
	comp=Z,11μm,18.3s,baz=78,slow=37						
KS01	**Wonju Array Si**	**12.31**	**277**	*e*Pn	**Pn**	**08 26 45.7**	**+0.4**
KS15	**Wonju Array Si**	**12.32**	**277**	*e*Pn	**Pn**	**08 26 47.2**	**+1.8**
KSAR	**Wonju Array Be**	**12.32**	**277**	P	**Pn**	**08 26 45.6**	**+0.2**
KSAR	**Wonju Array Be**	**12.32**	**277**	Pn	**Pn**	**08 26 45.6**	**+0.2**
MDJ	**Mudanjiang**	**12.85**	**310**	P	**Pn**	**08 26 52.3**	**-0.3**
MDJ				S	**Sn**	**08 29 16.2**	**+1.6**
MDJ				pmax	pmax		
	comp=Z,21nm,1.3s						
MDJ				pmax	pmax		
	comp=Z,1μm,10.1s						
MDJ				LR	LR		
	comp=Z,8μm,13.1s						
MDJ				LR	LR		
	comp=Z,10μm,15.3s						
MDJ				LR	LR		
	comp=Z,17μm,15.3s						
MDJ	**Mudanjiang**	**12.85**	**310**	*e*Pn	**Pn**	**08 26 51.9**	**-0.8**
HABR	**Khabarovsk**	**12.93**	**335**	*de*P	**Pn**	**08 26 50.5**	**-3.1**
HABR				S	**Sn**	**08 29 12.6**	**-3.8**
HABR				pmax	pmax		
	comp=Z,187nm,1.6s						
HABR				pmax	pmax		
	comp=N,116nm,1.6s						
HABR				pmax	pmax		
	comp=E,92nm,1.6s						
HABR				MLR	MLR		
	comp=Z,5μm,11.0s						
INCN	**Inchon**	**13.31**	**277**	Pn	**Pn**	**08 27 01.0**	**+2.0**
	SNR=8.4						
INCN	**Inchon**	**13.31**	**277**	P	**Pn**	**08 27 01.0**	**+2.0**
	SNR=8.4						
TYV	**Tymovskoe**	**13.82**	**358**	*e*P	**Pn**	**08 27 03.8**	**-2.0**
TYV				*e*S	**Sn**	**08 29 36.0**	**-2.2**
TYV				pmax	pmax		
	comp=E,35nm,0.8s						
TYV				pmax	pmax		
	comp=Z,57nm,0.8s						
TYV				smax	smax		
	comp=E,2μm,10.0s						
TYV				MLR	MLR		
	comp=E,22μm,16.0s						
TYV				MLR	MLR		
	comp=Z,10μm,15.0s						
KLR	**Kul'dur**	**14.80**	**329**	Pn	**Pn**	**08 27 15.8**	**-3.4**
	comp=Z,1.4nm,0.3s,baz=133,slow=12,SNR=66						
KLR				LR	LR	08 33 09.2	
	comp=Z,9μm,18.1s,baz=142,slow=38						
CN2	**Changchun**	**15.19**	**302**	*e*P	**Pn**	**08 27 22.0**	**-2.3**
CN2				*es*P	P	08 27 29.0	-0.1
CN2				*e*S	**Sn**	**08 30 08.9**	**-2.6**
CN2				pmax	pmax		
	comp=Z,200nm,5.0s						
CN2				LR	LR		
	comp=Z,6μm,16.0s						
CN2				LR	LR		
	comp=Z,8μm,16.0s						
CN2				LR	LR		
	comp=Z,10μm,19.0s						
SNY	**Shenyang**	**15.98**	**293**	⇑P	**Pn**	**08 27 33.1**	**-1.5**
SNY				pmax	pmax		
	comp=Z,25nm,0.9s						
SNY				pmax	pmax		
	comp=Z,2μm,11.4s						
SNY				LR	LR		
	comp=Z,9μm,15.1s						
SNY				LR	LR		
	comp=Z,17μm,16.9s						
SNY				LR	LR		
	comp=Z,24μm,12.8s						
NKL	**Nikolayevsk**	**16.21**	**354**	*e*P	**Pn**	**08 27 33.0**	**-4.5**
NKL				pmax	pmax		
	comp=Z,300nm,2.0s						
NKL				pmax	pmax		
	comp=N,66nm,1.5s						
NKL				pmax	pmax		
	comp=Z,120nm,1.5s						
NKL				MLR	MLR		
	comp=N,8μm,17.0s						
NKL				MLR	MLR		
	comp=E,4μm,17.0s						
NKL				MLR	MLR		
	comp=Z,13μm,17.0s						
JOW	**Kunigami**	**16.32**	**236**	Pn	**Pn**	**08 27 40.0**	**+0.9**
	comp=Z,1.6nm,0.3s,baz=54,slow=16,SNR=7.7						
JOW	**Kunigami**	**16.32**	**236**	Pn	**Pn**	**08 27 38.2**	**-0.9**
	comp=Z,20nm,1.0s						
JOW				Pn	**Pn**	**08 27 40.0**	**+0.9**
SKR	**Severo-Kuril's**	**16.42**	**30**	*e*P	**Pn**	**08 27 37.0**	**-3.2**
SKR				*es*S	Sn	08 30 26.0	-15
SKR				pmax	pmax		
	comp=N,180nm,1.0s						
SKR				pmax	pmax		
	comp=E,180nm,1.0s						
SKR				pmax	pmax		
	comp=Z,220nm,1.0s						
SKR				MLR	MLR		
	comp=Z,6μm,12.0s						
SKR				MLR	MLR		
	comp=N,5.0nm,12.0s						
SKR				MLR	MLR		
	comp=E,11nm,10.0s						
OKH	**Okha**	**16.51**	**359**	*e*P	**P**	**08 27 46.9**	**+3.3**
OKH				pmax	pmax		
	comp=Z,1μm,6.0s						
DL2	**Dalian**	**17.21**	**283**	P	**Pn**	**08 27 49.8**	**-0.4**
DL2				S	**Sn**	**08 31 02.6**	**+1.9**
DL2				pmax	pmax		
	com

PET				MLR	MLR	
	comp=Z,4μm,16.0s					
PET				MLR	MLR	
	comp=Z,4μm,14.0s					
PET	**Petropavlovsk**	**19.23**	**29**	*e*P	**P**	**08 28 14.0 +0.4**
	comp=Z,235nm,2.0s					
SSE	**Sheshan**	**19.26 259**		P	**P**	**08 28 14.3 +0.1**
SSE				S	**Sn**	**08 31 49.1 -1.3**
SSE				pmax	pmax	
	comp=Z,46nm,1.0s					
SSE				pmax	pmax	
	comp=Z,1μm,12.0s					
SSE				LR	LR	
	comp=Z,4μm,14.5s					
SSE				LR	LR	
	comp=Z,7μm,14.5s					
SSE				LR	LR	
	comp=Z,11μm,13.9s					
NJ2	**Nanjing**	**20.74 263**		*e*P	Pn	08 28 33.2 +0.4
NJ2				LR	LR	
	comp=Z,6μm,14.6s					
NJ2				LR	LR	
	comp=Z,9μm,19.5s					
NJ2				LR	LR	
	comp=Z,11μm,17.3s					
HIA	**Hailar**	**21.00 313**		*e*P	**P**	**08 28 31.6 -1.4**
HIA				pmax	pmax	
	comp=Z,81nm,0.7s					
HIA	**Hailar**	**21.00 313**		*e*P	**P**	**08 28 31.6 -1.4**
	comp=Z,81nm,0.7s					
HIA				LR	LR	
	comp=Z,10μm,21.0s					
TIA	**Tai'an**	**21.03 276**		⇑P	**P**	**08 28 31.6 -1.8**
TIA				pmax	pmax	
	comp=Z,70nm,1.4s					
TIA				pmax	pmax	
	comp=Z,2μm,9.0s					
TIA				LR	LR	
	comp=Z,6μm,16.0s					
TIA				LR	LR	
	comp=Z,12μm,15.0s					
TIA				LR	LR	
	comp=Z,14μm,17.0s					
BJI	**Beijing**	**21.42 286**		P	**P**	**08 28 35.1 -2.4**
BJI				pmax	pmax	
	comp=Z,68nm,2.1s					
BJI				pmax	pmax	
	comp=Z,550nm,3.6s					
BJI				LR	LR	
	comp=Z,6μm,12.6s					
BJI				LR	LR	
	comp=Z,3μm,15.8s					
BJT	**Baijiatuau**	**21.42 286**		*e*P	**P**	**08 28 35.3 -2.3**
BJT				pmax	pmax	
	comp=Z,52nm,0.8s					
BJT	**Baijiatuau**	**21.42 286**		*e*P	**P**	**08 28 35.3 -2.3**
	comp=Z,52nm,0.8s					
BJT				LR	LR	
	comp=Z,4μm,20.0s					
TATO	**Taipei**	**22.19 243**		PFAKE		08 29 00.0 +14
TATO				LR	LR	
	comp=Z,5μm,19.0s					
YHNB	**Yeheng**	**22.46 243**		*e*P	**P**	**08 28 48.8 -0.1**
	comp=Z,285nm,2.0s					
YHNB				LR	LR	
	comp=Z,4μm,20.0s					
NACB	**Ninganchiao**	**22.62 242**		*e*P	**P**	**08 28 49.7 -0.8**
	comp=Z,40nm,0.8s					
MA2	**Magadan**	**23.05**	**10**	*e*P	**P**	**08 28 53.8 -0.9**
MA2				pmax	pmax	
	comp=Z,138nm,0.8s					
MA2				MLR	MLR	
	comp=Z,4μm,19.0s					
MA2	**Magadan**	**23.05**	**10**	*e*P	**P**	**08 28 53.8 -0.9**
	comp=Z,138nm,0.8s					
MA2				LR	LR	
	comp=Z,4μm,19.0s					
SSLB	**Suanglung**	**23.32 242**		*e*P	**P**	**08 28 58.4 +0.7**
	comp=Z,90nm,1.1s					
CLNS	**Chul'man**	**23.32 334**		*e*P	**P**	**08 28 57.5 0.0**
CLNS				*e**PP	**sP**	**08 29 09.6 +0.3**
CLNS				*e*		08 29 22.2
CLNS				*e*		08 32 47.0
CLNS				*e*S	**S**	**08 33 06.2 -1.8**
CLNS				*e*SS	SnSn	08 34 04.9 +21
CLNS				pmax	pmax	
	comp=Z,38nm,0.8s					
CLNS				pmax	pmax	
	comp=E,23nm,0.9s					
CLNS				pmax	pmax	
	comp=N,45nm,0.9s					
CLNS				pmax	pmax	
	comp=N,125nm,1.2s					
CLNS				pmax	pmax	
	comp=Z,54nm,1.0s					
CLNS				pmax	pmax	
	comp=E,58nm,1.0s					
CLNS				smax	smax	
	comp=E,2μm,11.5s					
CLNS				smax	smax	
	comp=N,3μm,12.4s					
CLNS				MLR	MLR	
	comp=N,4μm,12.0s					
CLNS				MLR	MLR	
	comp=Z,9μm,16.0s					
CLNS				MLR	MLR	
	comp=N,6μm,13.0s					
YULB	**Yu-li**	**23.33 240**		*e*P	**P**	**08 28 56.3 -1.5**
	comp=N,51nm,0.9s					
GUMO	**Guam**	**23.40 176**		PFAKE		08 29 10.0 +12
GUMO				LR	LR	
	comp=Z,3μm,20.0s					
TPUB	**Ta-pu**	**23.86 241**		*e*P	**P**	**08 29 02.3 -0.6**
	comp=Z,251nm,1.1s					
TWG	**Pinlang**	**23.86 240**		*e*P	**P**	**08 29 02.4 -0.5**
	comp=Z,393nm,1.0s					
QZH	**Quanzhou**	**24.32 247**		⇓*i*P	**P**	**08 29 00.2 -6.9**
QZH				S	**S**	**08 33 22.0 -2.5**
QZH				pmax	pmax	
	comp=Z,150nm,1.0s					
QZH				LR	LR	
	comp=N,8μm,14.7s					
QZH				LR	LR	
	comp=E,14μm,12.4s					
QZH				LR	LR	
	comp=Z,18μm,15.4s					
TIY	**Taiyuan**	**24.51 281**		*e*P	**P**	**08 29 07.3 -1.6**
TIY				SS	SS	08 34 20.8
TIY				pmax	pmax	
	comp=Z,130nm,1.0s					
TIY				pmax	pmax	
	comp=Z,1μm,4.2s					
TIY				LR	LR	
	comp=Z,12μm,12.6s					
TIY				LR	LR	
	comp=Z,16μm,12.9s					
WHN	**Wuhan**	**24.88 263**		⇓*i*P	**P**	**08 29 11.6 -0.6**
WHN				sP	**sP**	**08 29 24.0 -0.3**
WHN				S	**S**	**08 33 38.6 +5.1**
WHN				pmax	pmax	
	comp=Z,500nm,1.4s					
WHN				pmax	pmax	
	comp=Z,2μm,4.3s					
WHN				LR	LR	
	comp=Z,17μm,12.6s					
WHN				LR	LR	
	comp=Z,15μm,11.8s					
WHN				LR	LR	
	comp=Z,26μm,13.1s					
HHC	**Hu-ho-hao-te**	**24.92 289**		*e*P	**P**	**08 29 11.4 -1.2**
HHC				sP	pP	08 29 17.6 -3.5
HHC				S	**S**	**08 33 33.9 -0.3**
HHC				SS	**SnSn**	**08 34 25.0 +1.8**
HHC				pmax	pmax	
	comp=Z,51nm,0.8s					
HHC				pmax	pmax	
	comp=Z,1μm,4.6s					
HHC				LR	LR	
	comp=Z,5μm,13.8s					
HHC				LR	LR	
	comp=Z,8μm,12.5s					
HHC				LR	LR	
	comp=Z,8μm,12.4s					
BTO	**Baotou**	**26.10 288**		*e*P	**P**	**08 29 22.3 -1.0**
YAK	**Yakutsk**	**26.42 346**		P	**P**	**08 29 25.3 -0.5**
	comp=Z,91nm,0.7s,baz=343,slow=4.2,SNR=16					
YAK				LR	LR	08 40 27.9
	comp=Z,6μm,18.2s,baz=156,slow=38					
YAK	**Yakutsk**	**26.42 346**		*e*P	**P**	**08 29 24.8 -1.0**
YAK				*e**PP	**pP**	**08 29 35.6 +1.3**
YAK				*e*		08 29 59.6
YAK				*e*PPP	PPP	08 30 16.6
YAK				*e*S	**S**	**08 33 55.5 -1.7**
YAK				*e*SS	**SnSn**	**08 34 59.5 +0.3**
YAK				pmax	pmax	
	comp=Z,122nm,0.9s					
YAK				pmax	pmax	
	comp=N,71nm,1.2s					
YAK				pmax	pmax	
	comp=E,25nm,1.3s					
YAK				pmax	pmax	
	comp=Z,405nm,2.7s					
YAK				pmax	pmax	
	comp=N,488nm,3.3s					
YAK				pmax	pmax	
	comp=E,101nm,1.7s					
YAK				smax	smax	
	comp=N,869nm,4.1s					
YAK				smax	smax	
	comp=E,815nm,4.4s					
YAK				MLR	MLR	
	comp=Z,6μm,15.0s					
YAK				MLR	MLR	
	comp=N,4μm,16.0s					
YAK				MLR	MLR	
	comp=E,3μm,15.0s					
YAK	**Yakutsk**	**26.42 346**		*e*P	**P**	**08 29 25.6 -0.2**
	comp=E,177nm,0.7s					
SEY	**Seymchan**	**26.51**	**9**	P	**P**	**08 29 27.1 +0.5**
	comp=E,102nm,1.1s,baz=189,slow=7.4,SNR=50					
SEY	**Seymchan**	**26.51**	**9**	⇓*i*P	**P**	**08 29 26.6 0.0**
XAN	**Xi'an**	**28.07 274**		P	**P**	**08 29 41.0 0.0**
XAN				pP	pP	08 29 50.5 +1.0
XAN				sP	sP	08 29 54.5 +1.4
XAN				PP	**PnPn**	**08 30 34.4 +5.5**
XAN				S	**S**	**08 34 26.8 +2.8**
XAN				pmax	pmax	
	comp=E,66nm,1.2s					
XAN				pmax	pmax	
	comp=E,600nm,4.7s					
XAN				LR	LR	
	comp=E,5μm,15.0s					
XAN				LR	LR	
	comp=E,7μm,15.0s					
XAN				LR	LR	
	comp=E,7μm,14.6s					
BOD	**Bodaibo**	**28.35 327**		*e*P	**P**	**08 29 42.5 -0.7**
BOD				pmax	pmax	
	comp=Z,100nm,1.5s					
ULN	**Ulaanbaatar**	**28.62 304**		*d*iP	**P**	**08 29 46.4 +0.5**
ULN				pmax	pmax	
	comp=Z,204nm,2.5s					
ULN				MLR	MLR	
	comp=Z,6μm,17.0s					
ULN	**Ulaanbaatar**	**28.62 304**		P	**P**	**08 29 46.9 +1.0**
	SNR=89					
ULN	**Ulaanbaatar**	**28.62 304**		P	**P**	**08 29 46.9 +1.0**
	SNR=89					
ULN	**Ulaanbaatar**	**28.62 304**		*e*P	**P**	**08 29 47.3 +1.4**
	comp=Z,51nm,0.6s					
ULN				LR	LR	
	comp=Z,3μm,19.0s					
ENH	**Enshi**	**28.86 266**		*e*P	**P**	**08 29 47.8 -0.3**
	comp=Z,143nm,1.2s					
ENH				LR	LR	
	comp=Z,6μm,19.0s					
SONA1	**Songino Array**	**29.05 304**		*e*P	**P**	**08 29 50.0 +0.3**
SONM	**Songino Array**	**29.05 304**		P	**P**	**08 29 51.2 +1.5**
	comp=Z,28nm,0.9s,baz=97,slow=7.1,SNR=51					
SONM				LR	LR	08 41 47.8
	comp=Z,4μm,18.1s,baz=107,slow=37					
HKC	**Hong Kong Obse**	**29.14 248**		P	**P**	**08 29 53.0 +2.5**
GZH	**Guangzhou**	**29.30 250**		P	**P**	**08 29 48.6 -3.3**
GZH				PP	**PnPn**	**08 30 46.1 +0.3**
GZH				S	**S**	**08 34 46.8 +3.5**
GZH				pmax	pmax	
	comp=Z,1μm,6.8s					
GZH				LR	LR	
	comp=Z,9μm,14.4s					
GZH				LR	LR	
	comp=Z,7μm,14.4s					
IRK	**Irkutsk**	**31.23 312**		*e*P	**P**	**08 30 09.3 +0.5**
IRK				pmax	pmax	
	comp=Z,151nm,2.9s					
ZAK	**Zakamensk**	**31.47 308**		*e*P	**P**	**08 30 11.1 +0.1**
ZAK				*e*		08 33 05.1
ZAK				pmax	pmax	
	comp=Z,38nm,1.6s					
ZAK				pmax	pmax	
	comp=Z,11nm,1.2s					
TLY	**Talaya**	**31.49 310**		LR	LR	08 43 37.7
	comp=Z,8μm,18.4s,baz=104,slow=38					
TLY	**Talaya**	**31.49 310**		*e*P	**P**	**08 30 10.3 -0.7**
TLY				*e*PPP	PPP	08 31 35.5
TLY				pmax	pmax	
	comp=Z,48nm,1.7s					
TLY				MLR	MLR	
	comp=Z,6μm,15.0s					
TLY	**Talaya**	**31.49 310**		*e*P	**P**	**08 30 11.3 +0.3**
	comp=Z,155nm,2.0s					
LZH	**Lanzhou**	**31.57 280**		⇓P	**P**	**08 30 12.8 +0.6**
LZH				pP	sP	08 30 23.3 -1.0
LZH				PP	**PnPn**	**08 31 13.0 -2.9**
LZH				S	S	08 35 09.1 -10
LZH				pmax	pmax	
	comp=Z,180nm,1.5s					
LZH				pmax	pmax	
	comp=Z,1μm,8.0s					
LZH				LR	LR	
	comp=Z,5μm,13.5s					
LZH				LR	LR	
	comp=Z,7μm,13.0s					
LZH				LR	LR	
	comp=Z,9μm,15.2s					
GYA	**Guiyang**	**32.74 262**		⇑*i*P	**P**	**08 30 22.0 -0.4**
GYA				pP	sP	08 30 33.0 -1.5
GYA				PP	**PnPn**	**08 31 32.2 +1.2**
GYA				PcP	**PcP**	**08 33 09.6 +2.1**
GYA				S	**S**	**08 35 35.9 -1.4**
GYA				sS	sS	08 35 52.4 +0.9
GYA				ScP	**ScP**	**08 36 49.0 -0.3**
GYA				SS	**SnSn**	**08 37 33.7 -0.3**
GYA				ScS	**ScS**	**08 40 47.5 -1.9**
GYA				pmax	pmax	
	comp=Z,40nm,0.8s					
GYA				pmax	pmax	
	comp=Z,180nm,5.0s					
GYA				LR	LR	
	comp=Z,3μm,17.4s					
GYA				LR	LR	
	comp=Z,2μm,17.8s					
GYA				LR	LR	
	comp=Z,2μm,17.6s					
MOY	**Mondy**	**33.10 310**		*e*P	**P**	**08 30 26.1 +0.8**
MOY				pmax	pmax	
	comp=Z,79nm,2.1s					
BILL	**Bilibino**	**33.60**	**15**	*d*iP	**P**	**08 30 28.3 -1.0**
BILL				*e*		08 30 39.8
BILL				*e*		08 31 40.2
BILL				*e*PPP	PPP	08 31 50.6
BILL				*e*S	**S**	**08 35 53.7 +4.1**
BILL				pmax	pmax	
	comp=Z,77nm,1.7s					
BILL	**Bilibino**	**33.60**	**15**	*e*P	**P**	**08 30 27.6 -1.6**
	comp=Z,107nm,1.6s					
BILL				LR	LR	
	comp=Z,1μm,20.0s					
DAV	**Davao City (W)**	**33.94 213**		PFAKE		08 30 40.0 +7.2
DAV				LR	LR	
	comp=Z,1μm,20.0s					
GTA	**Gaotai**	**34.02 288**		P	**P**	**08 30 33.8 +0.3**
GTA				pP	pP	08 30 43.3 +1.2
GTA				sP	sP	08 30 47.4 +1.7
GTA				PcP	**PcP**	**08 33 12.3 +1.4**
GTA				S	**S**	**08 35 56.2 -0.9**
GTA				sS	sS	08 36 11.9 +0.6
GTA				ScP	**ScP**	**08 36 51.6 -2.0**
GTA				PcS	**PcS**	**08 36 56.6 -0.5**
GTA				SS	**SnSn**	**08 38 04.4 -0.5**
GTA				pmax	pmax	
	comp=Z,32nm,1.7s					
GTA				pmax	pmax	
	comp=Z,710nm,4.7s					
GTA				LR	LR	
	comp=Z,5μm,17.1s					
GTA				LR	LR	
	comp=Z,4μm,12.8s					
GTA				LR	LR	
	comp=Z,5μm,18.1s					
QIZ	**Qiongzhong**	**34.34 248**		P	**P**	**08 30 37.1 +0.8**
QIZ				S	**S**	**08 36 09.5 +7.4**
QIZ				LR	LR	
	comp=Z,680nm,10.4s					
QIZ				LR	LR	
	comp=Z,2μm,14.9s					
TIXI	**Tiksi**	**35.47 352**		P	**P**	**08 30 44.2 -1.2**
	comp=Z,10nm,1.0s,baz=147,slow=11,SNR=24					
TIXI				LR	LR	08 46 47.0
	comp=Z,3μm,19.0s,baz=162,slow=39					
TIXI	**Tiksi**	**35.47 352**		*e*P	**P**	**08 30 44.4 -1.1**
	comp=Z,29nm,1.3s					
KMI	**Kunming**	**36.48 263**		P	**P**	**08 30 55.9 +1.0**
KMI				pP	sP	08 31 05.8 -1.3
KMI				sP	pP	08 31 09.3 +5.8
KMI				PP	**PP**	**08 32 19.7 +1.6**
KMI				S	**S**	**08 36 34.4 -0.9**
KMI				sS	sS	08 36 53.2 +3.6
KMI				SS	**SnSn**	**08 38 57.8 -7.2**
KMI				pmax	pmax	
	comp=Z,78nm,0.9s					
KMI				pmax	pmax	
	comp=Z,530nm,5.5s					
KMI				LR	LR	
	comp=Z,4μm,14.3s					
KMI				LR	LR	
	comp=Z,3μm,14.7s					
KMI				LR	LR	
	comp=Z,4μm,14.7s					
GAMB	**Gambell**	**37.92**	**31**	*e*P	**P**	**08 31 05.7 -0.6**
	comp=Z,93nm,2.5s					
KDM	**Kudat**	**38.49 225**		⇑P	**P**	**08 31 13.4 +1.7**
KRAR	**Krasnoyarsk**	**38.52 316**		P	**P**	**08 31 13.0 +1.5**
KRAR				pmax	pmax	
	comp=Z,39nm,0.6s					
KRAR				MLR	MLR	
	comp=Z,6μm,16.0s					
MYLDM	**Lahad Datu**	**39.01 222**		⇑P	**P**	**08 31 18.5 +2.5**
MYLDM	**Lahad Datu**	**39.01 222**		*e*P	**P**	**08 31 18.8 +2.7**
	comp=Z,64nm,0.9s					
SDKM	**Sandakan**	**39.34 224**		⇑P	**P**	**08 31 21.0 +2.2**
PANO	**Nakornpanom**	**39.41 250**		P	P	08 31 24.3 +4.9
	comp=Z,22nm,1.4s					
KKM	**Kota Kinabalu**	**39.55 225**		*e*P	**P**	**08 31 21.9 +1.2**
	comp=Z,40nm,1.0s					
KKM				LR	LR	
	comp=Z,2μm,20.0s					
NONG	**Nongkai**	**39.97 253**		P	**P**	**08 31 25.6 +1.6**
	comp=Z,45nm,0.7s,comp=Z,3μm					
SKNT	**Sakolnakorn**	**39.99 251**		P	**P**	**08 31 25.5 +1.3**
	comp=Z,57nm,2.0s,comp=Z,4μm					
TSM	**Tawau**	**40.09 222**		⇑P	**P**	**08 31 27.5 +2.5**
LOEI	**Loei**	**41.74 254**		P	**P**	**08 31 36.4 -2.3**
	comp=Z,19nm,0.7s,comp=Z,1μm					
UTTA	**Uttaradit**	**42.15 255**		P	**P**	**08 31 43.9 +1.9**
	comp=Z,6.2nm,0.7s,comp=Z,56nm					
CHAI	**Chaiyaphum**	**42.15 251**		P	**P**	**08 31 42.5 +0.5**
	comp=Z,11nm,0.9s,comp=Z,132nm					
WMQ	**Urumqi**	**42.20 297**		P	**P**	**08 31 43.2 +1.0**
WMQ				PP	**PP**	**08 33 22.5 +2.4**
WMQ				PcP	**PcP**	**08 33 35.4 -0.6**
WMQ				S	**S**	**08 38 03.0 +2.5**
WMQ				SS	**SS**	**08 41 03.8 -5.0**
WMQ				ScS	**ScS**	**08 41 38.7 -3.6**
WMQ				pmax	pmax	
	comp=Z,16nm,1.2s					
WMQ				pmax	pmax	
	comp=Z,630nm,7.8s					
WMQ				LR	LR	
	comp=Z,3μm,13.6s					
WMQ				LR	LR	
	comp=Z,2μm,14.8s					
WMQ				LR	LR	
	comp=Z,1μm,26.6s					
LAMP	**Lampang**	**42.41 256**		P	**P**	**08 31 46.4 +2.2**
	comp=Z,5.6nm,1.1s,comp=Z,188nm					
PBKT	**Sadao Pong**	**42.52 253**		P	**P**	**08 31 46.1 +1.1**
	comp=Z,23nm,0.9s,comp=Z,1μm					
CMMT	**Chiang Mai**	**42.78 257**		P	**P**	**08 31 48.2 +1.0**
	comp=Z,24nm,1.7s,comp=Z,699nm					
CHTO	**Chiang Mai**	**42.78 257**		P	**P**	**08 31 48.2 +1.0**
	comp=Z,90nm,1.4s,comp=Z,3μm					
CHTO	**Chiang Mai**	**42.78 257**		*e*P	**P**	**08 31 46.8 -0.4**
CHTO				pmax	pmax	
	comp=Z,35nm,1.3s					
CHTO	**Chiang Mai**	**42.78 257**		P	**P**	**08 31 48.4 +1.2**
	SNR=11					
CHTO	**Chiang Mai**	**42.78 257**		P	**P**	**08 31 48.4 +1.2**
	SNR=11					
CHTO	**Chiang Mai**	**42.78 257**		*e*P	**P**	**08 31 46.8 -0.4**
	comp=Z,35nm,1.4s					
CHTO				LR	LR	
	comp=Z,3μm,19.0s					
CMAR	**Chiang Mai Arr**	**42.99 257**		P	**P**	**08 31 48.1 -0.7**
	comp=Z,2.2nm,0.4s,baz=48,slow=7.0,SNR=13					
CMAR				LR	LR	08 51 50.5
	comp=Z,3μm,18.4s,baz=52,slow=39					
CMAR	**Chiang Mai Arr**	**42.99 257**		P	**P**	**08 31 48.1 -0.7**
CMAR				pmax	pmax	
	comp=Z,6.0nm,0.9s					
CMAR				MLR	MLR	
	comp=Z,3μm,18.4s					
CM01	**Chiang Mai Arr**	**42.99 257**		*e*P	**P**	**08 31 49.2 +0.4**
SUKH	**Sukhothai**	**43.01 255**		P	**P**	**08 31 50.7 +1.7**
	comp=Z,5.0nm,1.0s,comp=Z,61nm					
ZAA0	**Zalesovo Array**	**43.04 312**		*e*P	**P**	**08 31 48.0 -0.8**
ZALV	**Zalesovo Beam**	**43.04 312**		P	**P**	**08 31 48.9 +0.1**
	comp=Z,18nm,0.7s,baz=93,slow=6.8,SNR=37					
ZALV				PcP	**PcP**	**08 33 38.4 -0.1**
	comp=Z,6.7nm,0.5s,baz=91,slow=3.5,SNR=4.9					
ZALV				LR	LR	08 50 24.7
	comp=Z,5μm,18.8s,baz=76,slow=37					
SRAK	**Srakaew**	**43.29 249**		P	**P**	**08 31 49.4 -1.9**
NAYO	**Nakonayok**	**43.64 250**		P	**P**	**08 31 55.6 +1.5**
	comp=Z,15nm,1.2s,comp=Z,528nm					
BTM	**Bintulu**	**43.66 227**		⇑P	**P**	**08 31 56.1 +1.8**
LSA	**Lhasa**	**43.73 276**		P	**P**	**08 31 56.5 +1.2**
LSA				LR	LR	
	comp=Z,530nm,12.9s					
LSA				LR	LR	
	comp=Z,940nm,11.8s					
LSA				LR	LR	
	comp=Z,1μm,13.5s					
LSA	**Lhasa**	**43.73 276**		*e*P	**P**	**08 31 57.7 +2.4**
LSA				pmax	pmax	
	comp=Z,19nm,0.9s					
LSA	**Lhasa**	**43.73 276**		*e*P	**P**	**08 31 57.7 +2.4**
	comp=Z,19nm,0.8s					
LSA				LR	LR	
	comp=Z,2μm,19.0s					
ZSN	**Zaisan**	**43.88 303**		*e*P	**P**	**08 31 53.8 -1.9**
	comp=Z,234nm,2.0s					
ZSN				*e*S	**S**	**08 38 23.3 -1.7**
ZSN				LR	LR	08 50 29.4
	comp=Z,2μm,12.8s					
NRIK	**Noril'sk**	**43.90 335**		P	**P**	**08 31 55.9 +0.4**
	comp=Z,18nm,0.8s,baz=111,slow=7.5,SNR=36					
NRIK				LR	LR	08 51 23.7
	comp=Z,5μm,18.3s,baz=104,slow=38					
NVS	**Novosibirsk**	**43.94 314**		⇑*i*P	**P**	**08 31 57.6 +1.6**
NVS				*e*S	S	08 38 11.9 -14
NVS				pmax	pmax	
	comp=Z,59nm,1.1s					
NVS				pmax	pmax	
	comp=N,50nm,0.9s					
NVS				pmax	pmax	
	comp=E,22nm,1.2s					
NVS				smax	smax	
	comp=N,29nm,2.5s					
NVS				smax	smax	
	comp=E,47nm,2.5s					
TT01	**Tatalina**	**44.53**	**35**	*e*P	**P**	**08 32 01.1 +0.4**
TTA	**Tatalina**	**44.54**	**35**	*e*P	**P**	**08 32 01.6 +0.8**
TTA	**Tatalina**	**44.54**	**35**	*e*P	**P**	**08 32 01.6 +0.8**
SVW2	**Sparrevohn**	**44.58**	**37**	*e*P	**P**	**08 32 02.2 +1.1**
	comp=E,26nm,1.0s					
SBUM	**Sibu**	**44.77 227**		⇑P	**P**	**08 32 03.3 +0.2**
SBUM	**Sibu**	**44.77 227**		*e*P	**P**	**08 32 02.7 -0.4**
	comp=E,64nm,1.5s					

TARA Tarawa 44.80 136 PFAKE 08 32 20.0 +17
TARA LR LR
comp=Z,293nm,20.0s
PATY Pattaya 44.86 249 P **P** **08 32 06.6 +2.7**
comp=Z,13nm,1.0s
SHL Shillong 44.94 270⇑ *i*P **P** **08 32 04.0 -0.6**
SHL *e*S **S** **08 38 33.5 -7.7**
SRDT SRDT 45.28 252 P **P** **08 32 08.7 +1.5**
comp=Z,85nm,1.2s,comp=Z,7μm
MK01 Makanchi Array 45.41 302 *e*P **P** **08 32 07.6 -0.3**
MK31 Makanchi Array 45.41 302 *i* P **P** **08 32 08.2 +0.3**
MK31 pmax pmax
comp=Z,40nm,0.7s
MK31 Makanchi Array 45.41 302 *e*P **P** **08 32 08.1 +0.2**
MKAR Makanchi Array 45.41 302 P **P** **08 32 08.1 +0.1**
comp=Z,6.2nm,0.7s,baz=83,slow=9.9,SNR=32
MKAR LR LR 08 52 37.9
comp=Z,2μm,19.6s,baz=82,slow=38
KHLT Khaolaem Dam 45.42 253 P **P** **08 32 10.2 +1.9**
comp=Z,10nm,1.4s,comp=Z,439nm
MAKZ Makanchi 45.62 302 *e*P **P** **08 32 09.5 -0.1**
MAKZ pmax pmax
comp=Z,35nm,0.8s
MAKZ Makanchi 45.62 302 *e*P **P** **08 32 09.5 -0.1**
comp=Z,35nm,0.8s
PHET Kaeng Krachan 45.80 250 P **P** **08 32 12.5 +1.2**
comp=Z,35nm,0.8s,comp=Z,435nm
RSO Redoubt South 45.95 38 *e*P **P** **08 32 13.5 +1.3**
KDAK Kodiak Island 46.07 42 *i* P **P** **08 32 12.1 -0.8**
KDAK Kodiak Island 46.07 42 *e*P **P** **08 32 11.2 -1.7**
KDAK LR LR
comp=Z,2μm,20.0s
JOHN Johnston Islan 46.12 103 PFAKE 08 32 30.0 +16
JOHN LR LR
comp=Z,314nm,19.0s
SEM Semipalatinsk 46.15 308 *e*P **P** **08 32 12.6 -1.1**
comp=Z,188nm,1.7s
SEM *i* PP **PP** **08 34 04.2 +2.2**
SEM *e*S **S** **08 38 57.1 -0.6**
SEM LR LR 08 51 43.4
comp=Z,3μm,13.8s
PPLA Purkeyplie 46.28 35 *e*P **P** **08 32 16.5 +1.8**
comp=Z,132nm,1.6s
SPU Mount Spurr 46.30 37 *e*P **P** **08 32 16.0 +1.2**
PMG Port Moresby 46.34 175 PFAKE 08 32 30.0 +15
PMG LR LR
comp=Z,977nm,20.0s
CAST Castle Rocks 46.35 34 *e*P **P** **08 32 15.7 +0.6**
comp=Z,104nm,1.7s
KSM Kuching 46.69 228 *e*P **P** **08 32 18.5 +0.2**
comp=Z,31nm,0.8s
KSM LR LR
comp=Z,536nm,20.0s
BPAW Bear Paw Mtn. 46.88 33 *e*P **P** **08 32 20.5 +1.3**
comp=Z,21nm,1.2s
KTH Kantishna Hill 46.88 34 *e*P **P** **08 32 20.2 +0.9**
comp=Z,114nm,1.6s
MLY Manley 47.03 32 *e*P **P** **08 32 21.2 +0.8**
comp=Z,38nm,1.0s
KURK Kurchatov 47.13 308 *e*P **P** **08 32 20.7 -0.6**
KURK pmax pmax
comp=Z,320nm,0.6s
KURK Kurchatov 47.13 308 *e*P **P** **08 32 20.7 -0.6**
comp=Z,315nm,0.6s
KURK LR LR
comp=Z,7μm,21.0s
TRF Thorofare Moun 47.16 34 *e*P **P** **08 32 22.3 +0.7**
comp=Z,52nm,1.5s
KURBB Kurchatov Arra 47.20 308 P **P** **08 32 21.4 -0.5**
comp=Z,33nm,0.8s,baz=83,slow=8.3,SNR=65
KAPI Kappang 47.28 213 *e*P **P** **08 32 23.0 +0.2**
comp=Z,57nm,0.8s
KAPI LR LR
comp=Z,660nm,19.0s
COLD Coldfoot 47.40 29 *e*P **P** **08 32 23.4 +0.2**
comp=Z,8.2nm,0.8s
RC01 Rabbit Creek A 47.42 37 *e*P **P** **08 32 23.2 -0.2**
RC01 *e*pP **sP** **08 32 36.5 +0.6**
comp=Z,90nm,1.7s
BWN Browne 47.54 33 *e*P **P** **08 32 24.7 +0.3**
comp=Z,151nm,1.2s
PMR Palmer 47.70 37 *e*P **P** **08 32 25.8 +0.2**
PMR pmax pmax
comp=Z,19nm,0.7s
PMR Palmer 47.70 37 *e*P **P** **08 32 25.8 +0.2**
comp=Z,19nm,0.7s
MCK McKinley 47.77 34 *e*P **P** **08 32 26.4 +0.2**
MCK pmax pmax
comp=Z,71nm,1.5s
MCK McKinley 47.77 34 *e*P **P** **08 32 26.4 +0.2**
comp=Z,71nm,1.5s
RND Reindeer 47.81 34 *e*P **P** **08 32 25.3 -1.2**
RND pmax pmax
comp=Z,41nm,1.0s
RND Reindeer 47.81 34 *e*P **P** **08 32 25.3 -1.2**
comp=Z,41nm,1.1s
SHLS Shalkode 47.89 298 *e*P **P** **08 32 27.4 -0.2**
comp=Z,86nm,1.2s
SHLS *e*S **S** **08 39 23.1 -0.1**
SHLS LR LR 08 53 00.0
comp=Z,754nm,13.7s
SML Sawmill 48.08 36 *e*P **P** **08 32 28.5 -0.1**
SML pmax pmax
comp=Z,48nm,1.0s
SML Sawmill 48.08 36 *e*P **P** **08 32 28.5 -0.1**
comp=Z,48nm,1.0s
MDM Murphy Dome 48.09 32 *e*P **P** **08 32 29.2 +0.5**
comp=Z,59nm,1.0s
PDGK Podgornoye 48.12 298 P **P** **08 32 27.7 -1.4**
PDGK pmax pmax
comp=Z,76nm,1.5s
WRH Wood River Hil 48.15 33 *e*P **P** **08 32 29.3 +0.3**
comp=Z,16nm,0.8s
COLA College 48.25 32 *de*P **P** **08 32 30.1 +0.3**
COLA pmax pmax
comp=Z,28nm,0.9s
COLA MLR MLR
comp=Z,1μm,18.0s
COLA College 48.25 32 *e*P **P** **08 32 31.0 +1.2**
comp=Z,31nm,0.8s
COLA LR LR
comp=Z,1μm,20.0s
CCB Clear Creek Bu 48.27 33 *e*P **P** **08 32 30.7 +0.7**
comp=Z,12nm,1.0s
KTGM Kuala Trenggan 48.40 239 ⇑P **P** **08 32 32.1 +0.5**
UZB Uzynbulak 48.50 298 *i* P **P** **08 32 31.4 -0.9**
comp=Z,79nm,1.4s
UZB *e*S **S** **08 39 30.9 -0.7**
UZB LR LR 08 53 28.0
comp=Z,1μm,15.0s
HDA Harding Lake 48.64 33 *e*P **P** **08 32 32.6 -0.2**
comp=Z,94nm,1.6s
KPKS Kokpek 48.65 299 *e*P **P** **08 32 34.0 +0.6**
comp=Z,186nm,1.4s
KPKS *e*S **S** **08 39 34.4 +0.7**
KPKS LR LR 08 53 34.5
comp=Z,2μm,14.0s
ILAR Eielson Array 48.66 32 P **P** **08 32 32.5 -0.5**
comp=Z,18nm,0.7s,baz=263,slow=6.4,SNR=67
ILAR Eielson Array 48.66 32 P **P** **08 32 32.5 -0.5**
ILAR pmax pmax
comp=Z,17nm,0.7s
ILB Eielson Array 48.66 32 *e*P **P** **08 32 32.7 -0.3**
IL1 Eielson Array 48.66 32 *e*P **P** **08 32 31.9 -1.1**
GUN Gumba 48.68 277 *e*P **P** **08 32 34.1 0.0**
HNR Honiara 48.79 158 PFAKE 08 32 50.0 +16
HNR LR LR
comp=Z,3μm,19.0s
ZHN Zhinishke 48.91 298 *e*P **P** **08 32 34.9 -0.5**
comp=Z,67nm,2.5s
ZHN LR LR 08 53 40.1
comp=Z,2μm,14.0s
SATY Saty 48.96 298 *e*P **P** **08 32 36.0 +0.2**
comp=Z,216nm,2.2s
SATY *e*S **S** **08 39 38.5 +0.4**
SATY LR LR 08 53 30.9
comp=Z,3μm,14.1s
SURT Suratani 48.98 247 P **P** **08 32 37.9 +1.8**
comp=Z,20nm,1.2s,comp=Z,325nm
TRTT Trang 49.08 245 P **P** **08 32 38.6 +1.7**
comp=Z,42nm,1.2s,comp=Z,873nm
KKN Kakani 49.21 277 *e*P **P** **08 32 38.5 +0.5**
comp=Z,98nm,1.0s
PKIN Phulchoki 49.21 277 *e*P **P** **08 32 38.1 0.0**
KLU Klutina 49.24 37 *e*P **P** **08 32 38.3 +0.7**
comp=Z,29nm,0.9s

FYU Fort Yukon 49.33 30 *e*P **P** **08 32 39.2 +1.1**
comp=Z,248nm,1.7s
DIV Divide 49.34 37 *e*P **P** **08 32 40.0 +1.6**
comp=Z,135nm,1.6s
PAX Paxson 49.35 35 *e*P **P** **08 32 38.5 0.0**
PAX pmax pmax
comp=Z,13nm,1.0s
PAX Paxson 49.35 35 *e*P **P** **08 32 38.5 0.0**
comp=Z,13nm,1.0s
EYAK Cordova Ski Ar 49.40 38 *e*P **P** **08 32 38.9 +0.2**
comp=Z,137nm,1.7s
DMN Daman 49.42 277 *e*P **P** **08 32 40.0 +0.3**
MMRI Maumere 49.56 208 *e*P **P** **08 32 39.0 -1.3**
comp=Z,60nm,0.8s
GKN Gorkha 49.62 277 *e*P **P** **08 32 41.1 0.0**
comp=Z,295nm,1.1s
SOEI Soe 49.88 205 *e*P **P** **08 32 43.2 +0.3**
comp=Z,98nm,1.0s
MDOK Medeo 49.88 299 *i* P **P** **08 32 42.8 -0.1**
comp=Z,125nm,1.2s
MDOK *i* PP **PP** **08 34 36.6 -0.9**
MDOK *e*S **S** **08 39 51.2 +0.1**
MDOK *i* SS **SS** **08 43 23.3 -0.3**
MDOK *i* LQ LQ 08 50 26.7
MDOK LR LR 08 53 50.5
comp=Z,2μm,19.9s
AAA Alma-Ata 49.92 299 *e*P **P** **08 32 44.0 +1.0**
AAA *e*S **S** **08 39 49.4 -2.0**
AAA pmax pmax
comp=Z,600nm,4.4s
AAA smax smax
comp=E,2μm,18.5s
AAA MLR MLR
comp=E,6μm,20.0s
BMRM Bremner River 49.92 37 *e*P **P** **08 32 42.9 +0.1**
comp=Z,128nm,1.7s
DOT Dot Lake 49.94 34 *e*P **P** **08 32 41.9 -0.9**
comp=Z,137nm,1.7s
RAGM Ragged Mountai 49.95 38 *e*P **P** **08 32 43.5 +0.5**
comp=Z,33nm,1.0s
PKDT Phuket 50.03 246 P **P** **08 32 46.3 +2.2**
comp=Z,171nm,0.9s,comp=Z,6μm
MENT Mentasta 50.15 35 *e*P **P** **08 32 45.3 +0.8**
comp=Z,20nm,0.8s
KULM Kulim 50.16 242 ⇑P **P** **08 32 46.4 +1.4**
KULM Kulim 50.16 242 *e*P **P** **08 32 45.5 +0.5**
comp=Z,33nm,1.0s
KULM LR LR
comp=Z,2μm,19.0s
KUU Kurty 50.17 300 *i* P **P** **08 32 44.1 -0.7**
comp=Z,194nm,1.0s
KUU *i* PP **PP** **08 34 39.4 -0.6**
KUU *e*S **S** **08 39 53.8 -1.0**
KUU LR LR 08 54 15.8
comp=Z,2μm,13.0s
IPM Ipoh 50.47 240 ⇑P **P** **08 32 48.9 +1.5**
IPM Ipoh 50.47 240 *e*P **P** **08 32 46.4 -1.0**
comp=Z,45nm,0.8s
IPM *e*pP **sP** **08 32 59.6 -0.2**
MYKOM Kota Tinggi 50.52 235 ⇑P **P** **08 32 49.3 +1.6**
MYKOM Kota Tinggi 50.52 235 *e*P **P** **08 32 47.4 -0.3**
comp=Z,56nm,1.5s
KOLN Koldanda 50.55 278 *e*P **P** **08 32 48.6 +0.4**
comp=Z,51nm,0.8s
COEN Coen 50.73 180 *e*P **P** **08 32 49.7 +0.5**
comp=Z,74nm,1.4s
PYUN Piuthan 50.89 278 *e*P **P** **08 32 51.3 +0.6**
comp=Z,177nm,1.0s
MTN Manton Dam 50.93 195 *e*P **P** **08 32 49.6 -1.2**
comp=Z,52nm,0.9s
TKM2 Tokmak 2 50.97 299 P **P** **08 32 50.8 -0.3**
TKM2 pmax pmax
comp=Z,27nm,0.5s
TKM2 Tokmak 2 50.97 299 *e*P **P** **08 32 50.9 -0.3**
TKM2 *e*pP **pP** **08 32 59.3 -0.7**
TKM2 LR LR
comp=Z,4μm,19.0s
BRZS Berezniki 51.01 308 *e*P **P** **08 32 50.6 -0.5**
comp=Z,33nm,1.4s
BRZS *i* PP **PP** **08 34 45.9 -1.6**
BRZS *e*S **S** **08 40 05.7 -0.5**
BRZS LR LR 08 54 34.6
comp=Z,139nm,15.7s
BALM Baldy 51.01 37 *e*P **P** **08 32 52.4 +1.4**
BALM pmax pmax
comp=Z,71nm,1.7s
BALM Baldy 51.01 37 *e*P **P** **08 32 52.4 +1.4**
comp=Z,71nm,1.7s
EGAK Eagle 51.11 32 *e*P **P** **08 32 52.0 +0.3**
comp=Z,97nm,2.0s
EGAK LR LR
comp=Z,875nm,19.0s
VOSK Vostochnaya 51.41 312 P **P** **08 32 52.9 -1.2**
VOSK pmax pmax
comp=Z,35nm,0.9s
VOSK Vostochnaya 51.41 312 *e*P **P** **08 32 53.6 -0.5**
comp=Z,32nm,0.9s
OTUK Ortayu 51.66 306 P **P** **08 32 55.5 -0.5**
OTUK pmax pmax
comp=Z,51nm,0.8s
FRU Bishkek 51.68 299 *e*P **P** **08 32 55.0 -1.3**
FRU *i* 08 33 09.5
FRU *i* 08 34 56.0
FRU *e*S **S** **08 40 24.0 +8.2**
FRU *e* 08 40 29.0
FRU pmax pmax
comp=Z,110nm,2.0s
BVA0 Borovoye Array 51.70 313 P **P** **08 32 55.4 -0.8**
BVA0 pmax pmax
comp=Z,61nm,2.0s
BVAR Borovoye Array 51.70 313 P **P** **08 32 56.2 0.0**
comp=Z,12nm,0.8s,baz=80,slow=7.4,SNR=36
BVAR LR LR 08 55 53.5
comp=Z,3μm,18.4s,baz=70,slow=37
BRVK Borovoye 51.75 313 *d i*P **P** **08 32 56.8 +0.2**
BRVK pmax pmax
comp=Z,71nm,2.5s
BRVK MLR MLR
comp=Z,6μm,16.0s
BRVK Borovoye 51.75 313 *e*P **P** **08 32 56.5 -0.1**
BRVK *e*pP **sP** **08 33 09.1 +0.1**
BRVK LR LR
comp=Z,2μm,19.0s
KSH Kashi 51.80 295 P P 08 33 02.1 +4.8
KSH *e*pP sP 08 33 12.3 +2.6
KSH *e*sP pP 08 33 16.0 +10
KSH *e*PP **PP** **08 35 01.2 +6.2**
KSH S **S** **08 40 23.6 +6.0**
KSH ScS **ScS** **08 42 46.4 +0.9**
KSH pmax pmax
comp=Z,54nm,1.7s
KSH pmax pmax
comp=Z,770nm,7.3s
KSH LR LR
comp=Z,5μm,14.4s
KSH LR LR
comp=Z,5μm,16.0s
KSH LR LR
comp=Z,8μm,15.6s
AAK Ala-Archa 51.83 299 *d i*P **P** **08 32 57.7 +0.2**
AAK pmax pmax
comp=Z,46nm,1.6s
AAK MLR MLR
comp=Z,8μm,18.0s
AAK Ala-Archa 51.83 299 *e*P **P** **08 32 57.2 -0.3**
AAK *e*pP **sP** **08 33 14.1 +4.1**
AAK LR LR
comp=Z,4μm,20.0s
DAWY Dawson 51.96 33 *e*P **P** **08 32 57.2 -0.8**
comp=Z,12nm,1.1s
EKS2 Erkin-Say 52.32 299 *e*P **P** **08 33 02.0 +0.8**
EKS2 pmax pmax
comp=Z,14nm,0.7s
EKS2 Erkin-Say 52.32 299 PFAKE 08 33 10.0 +8.8
EKS2 LR LR
comp=Z,2μm,21.0s
PSI Prapat 53.13 241 LR LR 08 55 46.8
comp=Z,1μm,21.1s,slow=36
PSI Prapat 53.13 241 *e*P **P** **08 33 07.9 +0.5**
PSI pmax pmax
comp=Z,36nm,0.9s
PSI Prapat 53.13 241 *e*P **P** **08 33 07.9 +0.5**
comp=Z,36nm,0.9s
MNAS Manas 53.27 299 P **P** **08 33 08.0 -0.2**
MNAS pmax pmax
comp=Z,33nm,0.7s

INK Inuvik 53.68 27 P **P** **08 33 10.9 +0.4**
comp=Z,18nm,0.8s,baz=289,slow=6.5,SNR=64
INK Inuvik 53.68 27 *e*P **P** **08 33 10.5 0.0**
comp=Z,20nm,0.8s
INK *e*P **P** **08 33 10.9 +0.4**
UGM Wanagama 54.26 221 *e*P **P** **08 33 15.7 +0.2**
comp=Z,195nm,1.2s
KK31 Karatay Array 54.44 301 *i* P **P** **08 33 16.7 +0.1**
KK31 pmax pmax
comp=Z,24nm,0.8s
KKAR Karatay Array 54.44 301 *e*P **P** **08 33 16.8 +0.2**
KKAR *e**SP **sP** **08 33 29.3 +0.2**
KKAR Karatay Array 54.44 301 *es*P sP 08 33 29.2 +0.2
SKAG Skagway 54.74 38 *e*P **P** **08 33 19.5 +1.1**
comp=Z,52nm,1.5s
IUG Iuzhnay 55.11 300 *i* P **P** **08 33 20.8 -0.8**
comp=Z,645nm,1.5s
IUG *e*S **S** **08 41 02.5 0.0**
IUG LR LR 08 57 15.1
comp=Z,2μm,15.9s
BRLS Borolday 55.12 301 *e*P **P** **08 33 21.2 -0.3**
comp=Z,17nm,1.6s
BRLS *e*S **S** **08 41 02.5 +0.1**
BRLS LQ LQ 08 53 13.7
BRLS LR LR 08 57 11.1
comp=Z,180nm,13.2s
GSI Gunungsitoli 55.13 241 *e*P **P** **08 33 21.2 -0.7**
comp=Z,191nm,1.1s
SVE Sverdlovsk 56.15 319 *e*P **P** **08 33 29.1 +0.5**
SVE *e*S **S** **08 41 20.2 +4.5**
SVE pmax pmax
comp=Z,57nm,1.4s
SVE MLR MLR
comp=Z,10μm,16.0s
SVE MLR MLR
comp=E,7μm,16.0s
FUNA Funafuti 56.43 136 PFAKE 08 33 40.0 +8.9
FUNA LR LR
comp=Z,7μm,19.0s
CTAO Charters Tower 56.89 177 PFAKE 08 33 50.0 +16
CTAO LR LR
comp=Z,1μm,22.0s
WRAK Wrangell Islan 57.13 41 PFAKE 08 33 50.0 +14
WRAK LR LR
comp=Z,1μm,20.0s
DZET Dzherino 57.22 296 P **P** **08 33 36.4 -0.3**
DZET pmax pmax
comp=Z,37nm,0.7s
SOKR Solikamsk 57.24 323 *c i*P **P** **08 33 36.0 -0.3**
SOKR S **S** **08 41 35.6 +5.6**
SOKR pmax pmax
comp=Z,13nm,0.7s
SOKR MLR MLR
comp=Z,3μm,17.0s
WRAB Tennant Creek 57.30 190 *d i*P **P** **08 33 36.2 -1.0**
WRAB MLR MLR
comp=Z,1μm,17.0s
WRAB Tennant Creek 57.30 190 *e*P **P** **08 33 36.1 -1.0**
comp=Z,121nm,0.8s
WRAB LR LR
comp=Z,775nm,20.0s
WB2 Warramunga Arr 57.31 190 *e*P **P** **08 33 36.1 -1.1**
comp=Z,127nm,0.8s
WRA Warramunga Arr 57.31 190 P **P** **08 33 35.5 -1.7**
comp=Z,97nm,0.8s,baz=11,slow=7.4,SNR=234
WRA LR LR 09 03 29.2
comp=Z,272nm,18.6s,baz=45,slow=42
FITZ Fitzroy Crossi 57.33 200 LR LR 09 00 04.3
comp=Z,325nm,18.6s,baz=28,slow=38
FITZ Fitzroy Crossi 57.33 200 *e*P **P** **08 33 37.6 +0.2**
comp=Z,30nm,0.9s
ARU Arti 57.36 319 P **P** **08 33 37.4 +0.2**
comp=Z,7.2nm,0.3s,baz=76,slow=4.7,SNR=41
ARU LR LR 09 00 32.2
comp=Z,6μm,18.9s,baz=61,slow=38
ARU Arti 57.36 319 *d i*P **P** **08 33 36.8 -0.4**
ARU *e* 08 34 31.2
ARU 08 35 39.7
ARU PPP PPP 08 37 02.3
ARU S **S** **08 41 32.2 +0.5**
ARU 08 43 22.9
ARU SS **SS** **08 45 22.8 +2.0**
ARU pmax pmax
comp=Z,98nm,1.7s
ARU MLR MLR
comp=Z,9μm,17.0s
ARU Arti 57.36 319 *e*P **P** **08 33 37.0 -0.3**
comp=Z,38nm,0.7s
DLBC Dease Lake 57.67 38 P **P** **08 33 40.4 +0.9**
comp=Z,8.1nm,0.8s,baz=314,slow=6.4,SNR=16
KBL Kabul 58.84 292 *e*P **P** **08 33 46.6 -1.6**
KBL pmax pmax
comp=Z,14nm,0.9s
KBL Kabul 58.84 292 *e*P **P** **08 33 46.6 -1.6**
comp=Z,14nm,0.8s
AB31 Akbulak array 59.10 311 *i* P **P** **08 33 48.6 -0.9**
AB31 pmax pmax
comp=Z,18nm,0.6s
ABKAR Akbulak array 59.10 311 *e*P **P** **08 33 48.9 -0.6**
HYB Hyderabad 59.74 270 ⇑*i*P **P** **08 33 54.0 -0.4**
comp=Z,50nm,1.0s
HYB *e*S **S** **08 42 03.0 -0.7**
AKTO Aktyubinsk 59.80 312 P **P** **08 33 53.9 -0.5**
comp=Z,9.6nm,1.0s,baz=74,slow=12,SNR=23
AKTO LR LR 09 00 51.7
comp=Z,2μm,18.3s,baz=60,slow=37
AKTO Aktyubinsk 59.80 312 P **P** **08 33 53.9 -0.5**
AKTO pmax pmax
comp=Z,16nm,0.9s
AKTO MLR MLR
comp=Z,2μm,18.3s
HOPEN Hopen 60.40 346 IAMs_20 IAMs_20 09 02 47.5
comp=Z,4μm,18.0s
SPA0 Spitsbergen Ar 60.80 349 *e*P **P** **08 34 01.3 +0.5**
SPITS Spitsbergen Ar 60.80 349 P **P** **08 34 00.1 -0.7**
comp=Z,5.1nm,0.7s,baz=65,slow=12,SNR=11
KBS Kingsbay 60.90 350 *e*P **P** **08 34 05.5 +4.0**
KBS IAMs_20 IAMs_20 09 05 08.2
comp=Z,1μm,14.7s
KBS Kingsbay 60.90 350 PFAKE 08 34 10.0 +8.6
KBS LR LR
comp=Z,974nm,20.0s
AS01 Alice Springs 61.03 190 *e*P **P** **08 34 01.6 -1.3**
AS31 Alice Springs 61.03 190 *e*P **P** **08 34 02.2 -0.7**
comp=Z,16nm,0.8s
ASAR Alice Springs 61.04 190 P **P** **08 34 02.2 -0.8**
comp=Z,49nm,0.8s,baz=12,slow=6.7,SNR=155
ASAR LR LR 08 59 55.5
comp=Z,325nm,22.0s,baz=6.5,slow=36
ASAR PKP2bc 09 03 30.1
comp=Z,1.9nm,1.1s,baz=167,slow=1.9,SNR=8.0
HSPB Hornsund (broa 61.75 348 *e*P **P** **08 34 09.5 +2.4**
HSPB IAMs_20 IAMs_20 09 12 53.9
comp=Z,2μm,16.4s
HSPB Hornsund (broa 61.75 348 *e*P **P** **08 34 08.6 +1.4**
MBWA Marble Bar 62.02 205 *e*P **P** **08 34 09.7 +0.1**
comp=Z,66nm,0.8s
MBWA LR LR
comp=Z,466nm,19.0s
RES Resolute Bay 62.20 15 *e*P **P** **08 34 10.2 0.0**
RES pmax pmax
comp=Z,29nm,1.0s
RES Resolute Bay 62.20 15 *e*P **P** **08 34 10.2 0.0**
comp=Z,29nm,1.0s
LVZ Lovozero 62.72 336 ⇑*e*P **P** **08 34 13.9 0.0**
LVZ pmax pmax
comp=Z,47nm,1.7s
LVZ MLR MLR
comp=Z,2μm,16.0s
LVZ Lovozero 62.72 336 *e*P **P** **08 34 14.1 +0.2**
LVZ LR LR
comp=Z,2μm,20.0s
BJO Bjornoya 62.80 346 IAMs_20 IAMs_20 09 05 43.3
comp=Z,4μm,18.3s
POO Poona 62.90 273 *ex* **P** **08 34 14.0 -1.8**
YKW3 Yellowknife Ar 62.99 31 *e*P **P** **08 34 15.6 0.0**
comp=Z,70nm,1.7s
YKA Yellowknife Ar 63.02 31 P **P** **08 34 15.4 -0.4**
comp=Z,7.9nm,0.7s,baz=304,slow=6.6,SNR=87
YKB5 Yellowknife Ar 63.02 31 *e*P **P** **08 34 15.1 -0.7**
APA Apatity 63.30 336 ⇓*i*P **P** **08 34 18.0 +0.4**
APA MLR MLR
comp=Z,3μm,15.0s
TMCR Tamitsa 63.47 332 *e*P **P** **08 34 19.4 +0.7**
TMCR pmax pmax
comp=Z,58nm,1.3s

MSVF	**Nonsavu**	**63.57**	**143**	*e*P	**P**	**08 34 21.4 +1.3**
MSVF				pmax	pmax	
	comp=Z,110nm,1.6s					
MSVF	**Nonsavu**	**63.57**	**143**	*e*P	**P**	**08 34 21.4 +1.3**
	comp=Z,113nm,1.6s					
MSVF				LR	LR	
	comp=Z,2μm,19.0s					
KEV	**Kevo**	**63.97**	**340**	*e*P	**P**	**08 34 23.8 +1.8**
KEV				pmax	pmax	
	comp=Z,19nm,0.9s					
KEV	**Kevo**	**63.97**	**340**	*e*P	**P**	**08 34 23.8 +1.8**
	comp=Z,19nm,0.8s					
KEV				LR	LR	
	comp=Z,2μm,19.0s					
HAMF	**Hammerfest**	**64.31**	**341**	*e*P	**P**	**08 34 28.3 +4.1**
HAMF				IAMs_20	IAMs_20	09 11 43.1
	comp=Z,2μm,16.2s					
ARA0	**ARCESS Array S**	**64.52**	**340**	*e*P	**P**	**08 34 25.5 -0.1**
ARCES	**ARCESS Array B**	**64.52**	**340**	P	**P**	**08 34 25.2 -0.4**
	comp=Z,10.0nm,0.8s,baz=55,slow=8.1,SNR=33					
ARCES				LR	LR	09 05 38.9
	comp=Z,1μm,19.9s,baz=52,slow=39					
ARE0	**ARCESS Array S**	**64.52**	**340**	*e*P	**P**	**08 34 27.3 +1.7**
	comp=Z,63nm,1.6s					
KLMR	**Klimovskoe**	**64.56**	**328**	*e*P	**P**	**08 34 24.6 -1.4**
KLMR				pmax	pmax	
	comp=Z,28nm,1.1s					
GEYT	**Alibeck**	**65.17**	**300**	P	**P**	**08 34 29.9 -0.6**
	comp=Z,22nm,0.9s,baz=28,slow=3.8,SNR=19					
GEYT				LR	LR	09 06 06.2
	comp=Z,1μm,18.0s,baz=75,slow=39					
NLWA	**Neilton Lookou**	**65.57**	**48**	*e*P	**P**	**08 34 35.9 +3.0**
	comp=Z,101nm,1.7s					
NLWA				LR	LR	
	comp=Z,620nm,19.0s					
A04D	**Lummi Island**	**65.62**	**46**	P	**P**	**08 34 33.6 +0.5**
	baz=299					
DAG	**Danmarks Havn**	**65.89**	**356**	*i* P	**P**	**08 34 33.7 -0.7**
	comp=Z,11nm,0.9s					
DAG				*i*		08 34 46.4
DAG	**Danmarks Havn**	**65.89**	**356**	*e*P	**P**	**08 34 33.7 -0.7**
DAG				*i*		08 34 46.4
DAG				pmax	pmax	
	comp=Z,9.0nm,0.9s					
AFI	**Afiamalu**	**65.98**	**131**	LR	LR	08 56 53.8
	comp=Z,596nm,21.7s,baz=320,slow=30					
B05A	**Bryant**	**66.19**	**47**	P	**P**	**08 34 37.0 +0.2**
	baz=300					
TRO	**Tromso**	**66.19**	**342**	*e*	P	08 34 54.4 +18
TRO				IAMs_20	IAMs_20	09 09 48.1
	comp=Z,4μm,16.2s					
B06A	**Marblemount**	**66.42**	**46**	*e*P	**P**	**08 34 38.8 +0.6**
	comp=Z,31nm,1.4s					
D05A	**Enumclaw**	**66.79**	**48**	*e*P	**P**	**08 34 41.2 +0.6**
	comp=Z,21nm,0.8s					
D05A				*e*pP	**sP**	**08 34 51.5 -1.8**
C06D	**Leavenworth**	**67.06**	**47**	P	**P**	**08 34 43.9 +1.5**
	baz=300					
LON	**Longmire**	**67.11**	**48**	*e*P	**P**	**08 34 44.8 +2.0**
LON				pmax	pmax	
	comp=Z,25nm,1.7s					
LON	**Longmire**	**67.11**	**48**	*e*P	**P**	**08 34 44.8 +2.0**
	comp=Z,25nm,1.8s					
LTY	**Liberty**	**67.53**	**47**	*e*P	**P**	**08 34 46.0 +0.5**
	comp=Z,11nm,0.8s					
ARMA	**Armidale**	**67.56**	**172**	*e*P	**P**	**08 34 46.8 +1.2**
	comp=Z,46nm,1.0s					
ARMA				*e*pP	**sP**	**08 34 58.9 +0.6**
I03D	**Drain, OR**	**67.71**	**51**	P	**P**	**08 34 48.8 +2.3**
	baz=300					
KULLO	**Kullorsuaq**	**67.82**	**6**	*i* P	**P**	**08 34 45.3 -1.4**
	comp=Z,31nm,1.1s					
	comp=Z,2μm,18.0s					
KULLO	**Kullorsuaq**	**67.82**	**6**	*e*P	**P**	**08 34 45.3 -1.4**
KULLO				pmax	pmax	
	comp=Z,31nm,1.1s					
KULLO				MLR	MLR	
	comp=Z,2μm,18.0s					
H04A	**Detroit Lake**	**67.93**	**50**	*e*P	**P**	**08 34 49.0 +1.0**
	comp=Z,102nm,1.7s					
MOS	**Moscow**	**68.15**	**324**	*e*P	**P**	**08 34 47.2 -1.8**
MOS				*e*		08 35 01.0
MOS				*e*		08 35 11.2
MOS				*e*		08 37 17.5
MOS				pmax	pmax	
	comp=Z,47nm,0.8s					
MOS				pmax	pmax	
	comp=Z,200nm,1.7s					
MOS				MLR	MLR	
	comp=N,2μm,16.0s					
MOS				MLR	MLR	
	comp=E,2μm,16.0s					
MOS				MLR	MLR	
	comp=Z,3μm,16.0s					
G05D	**Wamic, OR**	**68.17**	**49**	P	**P**	**08 34 50.9 +1.4**
	baz=301					
I04A	**Tendick Farm,**	**68.24**	**51**	P	**P**	**08 34 51.6 +1.6**
	baz=301					
L02D	**Cave Junction,**	**68.33**	**53**	P	**P**	**08 34 52.0 +1.5**
	baz=301					
STKA	**Stephens Creek**	**68.58**	**182**	P	**P**	**08 34 51.0 -0.9**
	comp=Z,27nm,0.9s,baz=349,slow=7.6,SNR=43					
STKA				LR	LR	09 06 05.8
	comp=Z,419nm,19.8s,baz=6.2,slow=37					
STKA	**Stephens Creek**	**68.58**	**182**	*e*P	**P**	**08 34 51.9 0.0**
	comp=Z,6.4nm,0.9s					
G06A	**Carlson Farm,**	**68.59**	**49**	*e*P	**P**	**08 34 52.2 +0.1**
	comp=Z,30nm,1.3s					
VRH	**Novokhopyorsk**	**68.59**	**319**	*e*P	**P**	**08 34 53.4 +1.5**
VRH				*e**SP	**sP**	**08 35 03.4 -1.1**
VRH				*e*		08 35 15.6
VRH				*e*		08 37 20.3
VRH				*e*S	**S**	**08 43 53.7 +1.4**
VRH				*e*SS	**SS**	**08 48 11.6 -4.4**
VRH				pmax	pmax	
	comp=Z,10.0nm,0.6s					
VRH				smax	smax	
	comp=N,340nm,6.0s					
VRH				MLR	MLR	
	comp=Z,11μm,21.0s					
I05D	**Terrebonne, OR**	**68.63**	**50**	P	**P**	**08 34 52.8 +0.5**
	baz=301					
C09A	**Chrisman Ranch**	**68.64**	**46**	*e*P	**P**	**08 34 53.0 +0.6**
	comp=Z,64nm,1.7s					
C09A				*e*pP	**sP**	**08 35 05.6 +0.6**
HAWA	**Hanford**	**68.64**	**48**	*e*P	**P**	**08 34 53.6 +1.2**
	comp=Z,34nm,1.6s					
HAWA				LR	LR	
	comp=Z,586nm,19.0s					
D08A	**Wollman Farm,**	**68.66**	**47**	*e*P	**P**	**08 34 53.5 +1.0**
	comp=Z,13nm,0.9s					
D08A				*e*pP	**sP**	**08 35 05.2 +0.2**
OBN	**Obninsk**	**69.00**	**324**	⇑ *i* P	**P**	**08 34 54.8 +0.5**
OBN				*i*		08 35 16.7
OBN				*i*		08 37 29.4
OBN				*e*PPP	PPP	08 39 11.0
OBN				*e*S	**S**	**08 43 58.5 +1.5**
OBN				*e*SS	**SS**	**08 48 21.5 -0.5**
OBN				pmax	pmax	
	comp=Z,54nm,1.2s					
OBN				MLR	MLR	
	comp=Z,3μm,15.0s					
OBN	**Obninsk**	**69.00**	**324**	*e*P	**P**	**08 34 54.5 +0.2**
OBN				LR	LR	
	comp=Z,1μm,19.0s					
NEW	**Newport**	**69.05**	**45**	P	**P**	**08 34 54.0 -0.9**
	baz=302					
NEW	**Newport**	**69.05**	**45**	*e*P	**P**	**08 34 55.8 +0.9**
NEW				pmax	pmax	
	comp=Z,41nm,1.7s					
NEW	**Newport**	**69.05**	**45**	*e*P	**P**	**08 34 55.8 +0.9**
	comp=Z,41nm,1.7s					
NEW				LR	LR	
	comp=Z,750nm,19.0s					
YBH	**Yreka Blue Hor**	**69.12**	**53**	P	**P**	**08 34 55.9 +0.4**
	comp=Z,4.6nm,1.0s,baz=274,slow=2.7,SNR=4.9					
YBH				LR	LR	08 56 43.0
	comp=Z,254nm,20.8s,baz=298,slow=29					
YBH	**Yreka Blue Hor**	**69.12**	**53**	*e*P	**P**	**08 34 57.7 +2.2**
	comp=Z,48nm,1.8s					
M02C	**Callahan**	**69.20**	**53**	P	**P**	**08 34 57.0 +1.0**
	baz=302					
J05D	**Fort Rock, OR**	**69.24**	**51**	P	**P**	**08 34 57.0 +0.7**
	baz=302					
K04D	**Chiloquin, OR**	**69.26**	**52**	P	**P**	**08 34 57.1 +0.6**
	baz=302					
LPSR	**Galich'ya Gora**	**69.27**	**321**	*e*P	**P**	**08 34 55.6 -0.5**
LPSR				*e**SP	**sP**	**08 35 07.1 -1.6**
LPSR				*e*		08 35 18.8
LPSR				*e*		08 37 24.0
LPSR				*e*S	**S**	**08 44 01.0 +0.7**
LPSR				*e*SS	**SS**	**08 48 22.1 -4.3**
LPSR				pmax	pmax	
	comp=Z,30nm,0.9s					
LPSR				smax	smax	
	comp=N,230nm,5.4s					
LPSR				MLR	MLR	
	comp=Z,8μm,20.0s					
FIA1	**FINESS Array S**	**69.51**	**333**	*e*P	**P**	**08 34 57.0 -0.4**
FIA1				*e*P	**P**	**08 34 57.5 +0.1**
FINES	**FINESS Array B**	**69.51**	**333**	P	**P**	**08 34 57.4 0.0**
	comp=Z,24nm,0.7s,baz=46,slow=8.2,SNR=36					
FINES				LR	LR	09 07 39.2
	comp=Z,2μm,18.5s,baz=38,slow=38					
N02D	**Trinity Center**	**69.52**	**54**	P	**P**	**08 34 58.3 +0.3**
	baz=302					
M04C	**Macdoel**	**69.65**	**53**	P	**P**	**08 34 59.6 +0.7**
	baz=302					
K05A	**Summer Lake**	**69.75**	**51**	*e*P	**P**	**08 35 01.4 +1.9**
	comp=Z,63nm,1.3s					
LHI	**Lord Howe Isla**	**69.78**	**166**	*e*P	**P**	**08 34 59.9 +0.6**
	comp=Z,105nm,1.1s					
BBOO	**Buckleboo**	**69.83**	**187**	*e*P	**P**	**08 34 59.5 -0.1**
	comp=Z,36nm,0.8s					
WDC	**Whiskeytown Da**	**69.83**	**54**	*e*P	**P**	**08 35 00.3 +0.5**
WDC				pmax	pmax	
	comp=Z,15nm,1.1s					
WDC	**Whiskeytown Da**	**69.83**	**54**	*e*P	**P**	**08 35 00.3 +0.5**
	comp=Z,15nm,1.1s					
MOR8	**Moi Rana**	**69.88**	**340**	*e*	**P**	**08 34 58.5 -1.2**
VSR	**Storozhevoye**	**69.92**	**320**	*e*P	**P**	**08 35 00.1 -0.1**
VSR				*e**SP	**pP**	**08 35 10.7 +1.3**
VSR				*e*		08 35 22.6
VSR				*e*		08 37 29.2
VSR				*e*S	**S**	**08 44 06.6 -1.5**
VSR				*e*SSS	SSS	08 51 39.2
VSR				pmax	pmax	
	comp=Z,30nm,0.8s					
VSR				smax	smax	
	comp=E,160nm,7.5s					
VSR				MLR	MLR	
	comp=Z,13μm,20.0s					
WALA	**Waterton Lakes**	**70.39**	**43**	*e*P	**P**	**08 35 03.7 +0.4**
	comp=Z,11nm,0.9s					
JMIC	**Jan Mayen**	**70.39**	**351**	LR	LR	09 05 38.5
	comp=Z,213nm,20.9s,baz=57,slow=36					
JMIC	**Jan Mayen**	**70.39**	**351**	*e*	**PcP**	**08 35 29.4 +5.3**
O03D	**Paynes Creek**	**70.46**	**54**	P	**P**	**08 35 04.0 +0.2**
	baz=302					
MOD	**Modoc Plateau**	**70.56**	**52**	*e*P	**P**	**08 35 04.7 +0.3**
	comp=Z,33nm,1.6s					
MOD				*e*pP	**sP**	**08 35 17.9 +0.8**
BSMT	**Bassoo Peak**	**70.58**	**44**	*e*P	**P**	**08 35 05.1 +0.5**
SUMG	**Summit**	**70.67**	**1**	*i* P	**P**	**08 35 05.6 +0.7**
	comp=Z,30nm,0.8s					
	comp=Z,2μm,18.0s					
SUMG	**Summit**	**70.67**	**1**	*i* P	**P**	**08 35 05.6 +0.7**
SUMG				pmax	pmax	
	comp=Z,30nm,0.8s					
SUMG				MLR	MLR	
	comp=Z,2μm,18.0s					
SUMG	**Summit**	**70.67**	**1**	*e*P	**P**	**08 35 05.2 +0.4**
	comp=Z,33nm,0.8s					
BMO	**Blue Mountains**	**70.79**	**48**	*e*P	**P**	**08 35 06.5 +0.7**
BMO				pmax	pmax	
	comp=Z,14nm,1.0s					
BMO				MLR	MLR	
	comp=Z,408nm,20.0s					
BMO	**Blue Mountains**	**70.79**	**48**	*e*P	**P**	**08 35 06.5 +0.7**
	comp=Z,14nm,1.0s					
BMO				LR	LR	
	comp=Z,408nm,20.0s					
JTMT	**Jette**	**70.92**	**44**	*e*P	**P**	**08 35 07.2 +0.7**
YBMT	**Yellow Bay**	**71.01**	**44**	*e*P	**P**	**08 35 08.6 +1.5**
VSU	**Vasula**	**71.21**	**330**	*de*P	**P**	**08 35 07.9 0.0**
VSU				pmax	pmax	
	comp=Z,78nm,1.2s					
VSU				MLR	MLR	
	comp=Z,7μm,17.0s					
SWMT	**Swartz Lake**	**71.22**	**44**	*e*P	**P**	**08 35 08.8 +0.5**
WVOR	**Wild Horse Val**	**71.31**	**51**	*e*P	**P**	**08 35 09.6 +0.6**
WVOR				pmax	pmax	
	comp=Z,39nm,1.6s					
WVOR	**Wild Horse Val**	**71.31**	**51**	*e*P	**P**	**08 35 09.6 +0.6**
	comp=Z,39nm,1.6s					
WVOR				LR	LR	
	comp=Z,880nm,19.0s					
MSO	**Missoula**	**71.64**	**45**	P	**P**	**08 35 10.5 -0.4**
	baz=305					
MSO	**Missoula**	**71.64**	**45**	*e*P	**P**	**08 35 10.9 0.0**
	comp=Z,39nm,1.8s					
AFDM	**Forest Hills D**	**71.72**	**55**	*e*P	**P**	**08 35 12.0 +0.6**
	comp=Z,42nm,1.7s					
NCK	**Nalchik**	**71.76**	**311**	⇑ *e*P	**P**	**08 35 14.1 +2.6**
NCK				pmax	pmax	
	comp=Z,28nm,0.4s					
NCK				MLR	MLR	
	comp=Z,2μm,15.0s					
GUDG	**Gudauri**	**71.80**	**310**	P	**P**	**08 35 13.7 +1.7**
NSS	**Namsos**	**71.80**	**340**	*e*	**PcP**	**08 35 35.7 +5.6**
NSS				IAMs_20	IAMs_20	09 14 22.2
	comp=Z,3μm,17.6s					
ZEI	**Tsey**	**71.97**	**310**	*e*P	**P**	**08 35 10.1 -2.9**
ZEI				pmax	pmax	
	comp=Z,59nm,1.6s					
CHMT	**Chamberlain Mo**	**71.97**	**45**	*e*P	**P**	**08 35 13.4 +0.4**
KVAR	**Kislovodsk Arr**	**72.04**	**312**	P	**P**	**08 35 14.6 +1.3**
	comp=Z,32nm,1.0s,baz=37,slow=6.0,SNR=41					
KVAR				LR	LR	09 11 40.6
	comp=Z,2μm,18.2s,baz=30,slow=40					
KIV	**Kislovodsk**	**72.05**	**312**	*i* P	**P**	**08 35 13.9 +0.5**
	SNR=22					
KIV	**Kislovodsk**	**72.05**	**312**	*e*P	**P**	**08 35 13.6 +0.2**
KIV				*e*S	**S**	**08 44 33.1 -0.1**
KIV				*e*SS	**SS**	**08 49 11.2 +1.5**
KIV				pmax	pmax	
	comp=Z,52nm,1.1s					
KIV				pmax	pmax	
	comp=Z,83nm,3.1s					
KIV				MLR	MLR	
	comp=Z,3μm,17.0s					
KIV	**Kislovodsk**	**72.05**	**312**	*e*P	**P**	**08 35 14.7 +1.4**
	comp=Z,50nm,0.8s					
KIV				LR	LR	
	comp=Z,2μm,19.0s					
KBZ	**Khabaz**	**72.05**	**311**	P	**P**	**08 35 13.4 +0.2**
	comp=Z,15nm,0.9s,baz=65,slow=6.0,SNR=34					
KBZ				LR	LR	09 09 26.7
	comp=Z,1μm,18.2s,baz=40,slow=38					
CAN	**Canberra**	**72.19**	**175**	*e*P	**P**	**08 35 14.3 +0.3**
CAN				pmax	pmax	
	comp=Z,56nm,1.3s					
CAN	**Canberra**	**72.19**	**175**	*e*P	**P**	**08 35 14.2 +0.3**
	comp=Z,56nm,1.3s					
CAN				LR	LR	
	comp=Z,1μm,20.0s					
SCO	**Scoresbysund**	**72.25**	**355**	*i* P	**P**	**08 35 14.6 +0.7**
	comp=Z,17nm,1.1s					
SCO	**Scoresbysund**	**72.25**	**355**	*i* P	**P**	**08 35 14.6 +0.7**
SCO				pmax	pmax	
	comp=Z,17nm,1.1s					
ONI	**Oni**	**72.35**	**310**	P	**P**	**08 35 16.0 +0.8**
ONI	**Oni**	**72.35**	**310**	P	**P**	**08 35 16.0 +0.8**
NEY	**Neytrino**	**72.43**	**311**	*c i* P	**P**	**08 35 17.3 +1.6**
NEY				pmax	pmax	
	comp=Z,4.0nm,1.1s					
NEY				MLR	MLR	
	comp=Z,624nm,15.0s					
MFID	**Camas Ranch**	**72.47**	**49**	*e*P	**P**	**08 35 16.7 +0.7**
	comp=Z,68nm,1.8s					
CMB	**Columbia Colle**	**72.61**	**55**	*e*P	**P**	**08 35 18.1 +1.4**
CMB				pmax	pmax	
	comp=Z,44nm,1.6s					
CMB	**Columbia Colle**	**72.61**	**55**	*e*P	**P**	**08 35 18.1 +1.4**
	comp=Z,44nm,1.6s					
GNI	**Garni**	**72.92**	**308**	P	**P**	**08 35 20.5 +1.8**
	comp=Z,2.6nm,0.3s,baz=219,slow=1.6,SNR=14					
GNI	**Garni**	**72.92**	**308**	P	**P**	**08 35 19.6 +0.8**
GNI	**Garni**	**72.92**	**308**	*d i* P	**P**	**08 35 19.5 +0.8**
GNI				pmax	pmax	
	comp=Z,123nm,1.7s					
GNI				MLR	MLR	
	comp=Z,5μm,15.0s					
GNI	**Garni**	**72.92**	**308**	P	**P**	**08 35 20.7 +2.0**
	SNR=8.7					
GNI	**Garni**	**72.92**	**308**	P	**P**	**08 35 20.7 +2.0**
	SNR=8.7					
GNI	**Garni**	**72.92**	**308**	*e*P	**P**	**08 35 19.4 +0.7**
GNI				*e*pP	**pP**	**08 35 26.7 -1.3**
GNI				LR	LR	
	comp=Z,2μm,21.0s					
WAKR	**Walker**	**72.97**	**54**	*e*P	**P**	**08 35 19.6 +0.6**
AKH	**Akhalkalaki**	**73.00**	**309**	⇑ *i* P	**P**	**08 35 21.6 +2.5**
LRM	**Limekiln Ridge**	**73.06**	**45**	*e*P	**P**	**08 35 19.9 +0.4**
HLID	**Hailey**	**73.23**	**48**	P	**P**	**08 35 21.6 +1.1**
	baz=305					
HLID	**Hailey**	**73.23**	**48**	*e*P	**P**	**08 35 21.8 +1.3**
	comp=Z,7.3nm,0.9s					
HLID				LR	LR	
	comp=Z,620nm,19.0s					
EGMT	**Eagleton**	**73.24**	**42**	P	**P**	**08 35 20.5 +0.2**
	baz=307					
EGMT	**Eagleton**	**73.24**	**42**	PFAKE		08 35 30.0 +10
EGMT				LR	LR	
	comp=Z,587nm,20.0s					
DLMT	**Dillon**	**73.25**	**46**	*e*P	**P**	**08 35 21.4 +0.8**
	comp=Z,20nm,0.8s					
UOSS	**Minazif**	**73.26**	**289**	*e*P	**P**	**08 35 21.2 +0.4**
	comp=Z,1.9nm,0.8s					
TBLU	**Trondheim**	**73.28**	**340**	IAMs_20	IAMs_20	09 12 43.7
	comp=Z,2μm,14.8s					
FCC	**Fort Churchill**	**73.30**	**27**	*e*P	**P**	**08 35 20.1 -0.2**
FCC				pmax	pmax	
	comp=Z,140nm,1.9s					
FCC	**Fort Churchill**	**73.30**	**27**	*e*P	**P**	**08 35 20.1 -0.2**
	comp=Z,138nm,1.9s					
MICGM	**Minsk**	**73.34**	**327**	*e*P	**P**	**08 35 21.0 +0.3**
MICGM				*e*		08 38 13.0
MICGM				*e*		08 40 18.0
MICGM				*e*LR	LR	09 08 10.0
MICGM				LRM	MLR	09 11 53.0
	comp=Z,6.3nm,15.0s					
MNK	**Minsk**	**73.34**	**327**	*e*P	**P**	**08 35 21.0 +0.3**
MNK				*e*		08 38 13.0
MNK				MLR	MLR	
	comp=Z,6μm,15.0s					
HATD	**Hatta, Dubai**	**73.38**	**289**	*i* P	**P**	**08 35 21.9 +0.4**
	SNR=7.3					
ASHO	**Ashiyiah**	**73.51**	**289**	P	**P**	**08 35 22.0 -0.3**
NACGM	**Naroch**	**73.55**	**327**	*e*	**P**	**08 35 25.0 +3.1**
NACGM				*e*LQ	LQ	09 04 26.0
NACGM				*e*LR	LR	09 07 29.0
NACGM				LRM	MLR	09 10 40.0
BOZ	**Bozeman (W)**	**73.63**	**45**	P	**P**	**08 35 23.1 +0.4**
	baz=306					
BOZ	**Bozeman (W)**	**73.63**	**45**	PFAKE		08 35 40.0 +17
BOZ				LR	LR	
	comp=Z,582nm,20.0s					
NV01	**Mina Array Sit**	**73.75**	**54**	*e*P	**P**	**08 35 24.1 +0.4**
NVAR	**Mina Array Bea**	**73.75**	**54**	P	**P**	**08 35 25.1 +1.4**
	comp=Z,11nm,0.7s,baz=296,slow=6.5,SNR=33					
NVAR				LR	LR	09 05 33.9
	comp=Z,426nm,18.2s,baz=290,slow=34					
NWAO	**Narrogin (SRO)**	**73.75**	**203**	*e*P	**P**	**08 35 21.4 -1.8**
NWAO				pmax	pmax	
	comp=Z,100nm,0.8s					
NWAO	**Narrogin (SRO)**	**73.75**	**203**	*e*P	**P**	**08 35 21.4 -1.8**
	comp=Z,100nm,0.8s					
NWAO				LR	LR	
	comp=Z,494nm,20.0s					
NV11	**Mina Array Sit**	**73.84**	**54**	*e*P	**P**	**08 35 25.4 +1.2**
	comp=Z,42nm,1.7s					
MLAC	**Mammoth, Mammo**	**73.85**	**55**	P	**P**	**08 35 25.0 +0.6**
	baz=304					
ARQ	**Araqi**	**73.90**	**287**	P	**P**	**08 35 26.2 +1.7**
	SNR=5.5					
ARQ	**Araqi**	**73.90**	**287**	P	**P**	**08 35 26.2 +1.7**
	SNR=5.5					
SOC	**Sochi**	**74.02**	**313**	*e*P	**P**	**08 35 24.7 -0.2**
SOC				*e*PPP	PPP	08 39 54.4
SOC				*e*S	**S**	**08 44 54.5 -0.9**
SOC				*e*SSS	SSS	08 52 56.1
SOC				pmax	pmax	
	comp=Z,13nm,0.6s					
SOC				MLR	MLR	
	comp=Z,2μm,16.0s					
QLMT	**Earthquake Lak**	**74.23**	**46**	*e*P	**P**	**08 35 27.5 +1.1**
ELK	**Elko**	**74.36**	**51**	*e*P	**P**	**08 35 26.7 -0.6**
ELK				pmax	pmax	
	comp=Z,41nm,2.0s					
ELK	**Elko**	**74.36**	**51**	*e*P	**P**	**08 35 26.7 -0.6**
	comp=Z,41nm,2.0s					
SMMC	**Simmler**	**74.39**	**58**	P	**P**	**08 35 27.6 +0.4**
	baz=305					
NC405	**NORSAR Array S**	**74.55**	**338**	*e*P	**P**	**08 35 27.9 +0.3**
NC303	**NORSAR Array S**	**74.57**	**338**	*e*P	**P**	**08 35 28.1 +0.4**
MOL	**Molde**	**74.57**	**340**	IAMs_20	IAMs_20	09 13 30.7
	comp=Z,3μm,20.6s					
YMR	**Madison River**	**74.59**	**45**	*e*P	**P**	**08 35 30.4 +1.9**
	comp=Z,19nm,0.7s					
ANN	**Anapa**	**74.62**	**315**	*e*P	**P**	**08 35 26.8 -1.5**
ANN				*e**PP	**pP**	**08 35 36.5 -1.1**
ANN				*e*		08 35 40.6
ANN				*e*		08 38 12.4
ANN				*e*S	**S**	**08 44 59.7 -2.3**
ANN				pmax	pmax	
	comp=Z,54nm,1.8s					
GCMT	**Greycliff**	**74.64**	**44**	*e*P	**P**	**08 35 29.9 +1.2**
VES	**Vestal, Richgr**	**74.70**	**57**	P	**P**	**08 35 29.1 +0.1**
	baz=305,SNR=9.0					
NC204	**NORSAR Array S**	**74.71**	**338**	*e*P	**P**	**08 35 29.1 +0.4**
NB201	**NORSAR Array S**	**74.73**	**338**	*e*P	**P**	**08 35 28.9 +0.1**
PKM	**Mcpherson Peak**	**74.75**	**58**	P	**P**	**08 35 30.8 +1.3**
	baz=305					
NB2	**NORSAR Subarra**	**74.76**	**338**	P	**P**	**08 35 28.7 -0.2**
	comp=Z,28nm,0.9s,baz=38,slow=5.9					
NB2	**NORSAR Subarra**	**74.76**	**338**	P	**P**	**08 35 28.7 -0.2**
	baz=38,slow=5.9					
NOA	**NORSAR Array B**	**74.76**	**338**	P	**P**	**08 35 28.5 -0.4**
	comp=Z,17nm,0.8s,baz=39,slow=5.8,SNR=39					
NOA				LR	LR	09 13 09.8
	comp=Z,2μm,18.7s,baz=50,slow=40					
NBO02	**NORSAR Array S**	**74.86**	**338**	*e*P	**P**	**08 35 29.4 -0.1**
NBO00	**NORSAR Array S**	**74.90**	**338**	*e*P	**P**	**08 35 30.5 +0.8**
NC602	**NORSAR Array S**	**74.90**	**338**	*e*P	**P**	**08 35 29.5 -0.2**
LKWY	**Lake**	**74.97**	**45**	*e*P	**P**	**08 35 32.8 +2.0**
LKWY				pmax	pmax	
	comp=Z,59nm,1.6s					
LKWY				MLR	MLR	
	comp=Z,878nm,19.0s					
LKWY	**Lake**	**74.97**	**45**	*e*P	**P**	**08 35 32.8 +2.0**
	comp=Z,59nm,1.6s					
LKWY				LR	LR	
	comp=Z,878nm,19.0s					
H17A	**Grant Village**	**74.98**	**45**	P	**P**	**08 35 32.1 +1.3**
	baz=307					
H17A	**Grant Village**	**74.98**	**45**	*e*P	**P**	**08 35 33.3 +2.5**
	comp=Z,34nm,0.8s					
NAO01	**NORSAR Array S**	**75.01**	**338**	*e*P	**P**	**08 35 30.2 -0.2**
AKN	**Aaknes**	**75.04**	**340**	*e*P	**P**	**08 35 32.0 +1.5**
AKN				IAMs_20	IAMs_20	09 14 02.7
	comp=Z,3μm,15.7s					
IMW	**Indian Meadow**	**75.07**	**46**	*e*P	**P**	**08 35 32.8 +1.5**
	comp=Z,23nm,0.8s					
SBC	**Santa Barbara**	**75.07**	**58**	P	**P**	**08 35 31.2 +0.1**
	baz=305					
FLWY	**Flagg Ranch**	**75.09**	**46**	*e*P	**P**	**08 35 33.5 +2.1**
	comp=Z,109nm,1.8s					
GRAC	**Grapevine Rang**	**75.18**	**55**	P	**P**	**08 35 31.6 -0.2**
	baz=305					
ISA	**Isabella, Lake**	**75.21**	**56**	P	**P**	**08 35 32.0 0.0**
	baz=305					
AKASG	**Malin Array Be**	**75.22**	**323**	P	**P**	**08 35 31.2 -0.5**
	comp=Z,7.1nm,0.6s,baz=45,slow=6.3,SNR=22					
AKASG				LR	LR	09 11 30.

KIEV MLR MLR
comp=Z,5µm,16.0s
KIEV Kiev 75.23 323 *e*P **P 08 35 32.0 +0.3**
KIEV LR LR
comp=Z,21nm,0.9s
comp=Z,1µm,20.0s
AK11 Malin Array Si 75.26 323 *e*P **P 08 35 32.6 +0.7**
HVU Hansel Valley 75.26 49 *e*P **P 08 35 33.9 +1.6**
HVU pmax pmax
comp=Z,11nm,0.8s
HVU Hansel Valley 75.26 49 *e*P **P 08 35 33.9 +1.6**
comp=Z,11nm,0.8s
RLMT Red Lodge 75.27 44 P **P 08 35 32.0 -0.4**
baz=308
RLMT Red Lodge 75.27 44 *e*P **P 08 35 33.1 +0.6**
comp=Z,36nm,1.2s
RLMT LR LR
comp=Z,468nm,20.0s
ARVC Arvin 75.28 57 P **P 08 35 32.3 0.0**
baz=305
RAO Raoul Island 75.31 146 PFAKE 08 35 40.0 +7.7
RAO LR LR
comp=Z,2µm,20.0s
LOHW Long Hollow 75.44 46 *e*P **P 08 35 35.0 +1.6**
comp=Z,37nm,1.6s
SNOW Snow King Moun 75.44 46 *e*P **P 08 35 34.5 +1.1**
comp=Z,25nm,1.2s
DAC Darwin (Calif) 75.44 56 *e*P **P 08 35 34.2 +0.7**
DAC pmax pmax
comp=Z,7.0nm,0.8s
DAC Darwin (Calif) 75.44 56 *e*P **P 08 35 34.1 +0.7**
comp=Z,6.7nm,0.8s
REDW Red Top Meadow 75.44 46 *e*P **P 08 35 34.8 +1.4**
comp=Z,20nm,0.9s
MTUT Morton Thiokol 75.49 49 *e*P **P 08 35 34.6 +1.0**
R11A Troy Canyon, C 75.54 53 P **P 08 35 34.4 +0.3**
baz=306
R11A Troy Canyon, C 75.54 53 *e*P **P 08 35 34.8 +0.8**
comp=Z,58nm,1.7s
BGU Big Grassy Mou 75.61 49 *e*P **P 08 35 36.1 +1.7**
comp=Z,6.6nm,0.8s
MPMC Manual Prospec 75.64 56 P **P 08 35 34.9 +0.3**
baz=306,SNR=13
OSI Osito Audit: C 75.64 57 P **P 08 35 35.1 +0.6**
baz=305
AHID Auburn Hatcher 75.66 47 *e*P **P 08 35 34.7 +0.1**
comp=Z,73nm,1.8s
AHID LR LR
comp=Z,403nm,19.0s
SUW Suwalki 75.69 328 *e*P **P 08 35 35.7 +1.4**
SUW LMZ LR 09 11 19.2
comp=Z,2µm,19.3s
SUW Suwalki 75.69 328 *e*P **P 08 35 35.7 +1.4**
SUW MLR MLR
comp=Z,2µm,19.3s
BLG Laguna Peak, P 75.70 58 P **P 08 35 34.7 -0.1**
baz=305
SFJD Kangerlussuaq 75.73 6 PFAKE 08 35 50.0 +16
SFJD LR LR
comp=Z,1µm,19.0s
FURC Furnace Creek, 75.81 55 P **P 08 35 35.3 -0.1**
baz=306
LRMC Laurel Mtn Rad 75.84 56 P **P 08 35 35.6 -0.1**
baz=306,SNR=7.6
DGMT Dagmar 75.87 39 *e*P **P 08 35 35.9 +0.3**
comp=Z,24nm,0.9s
DGMT LR LR
comp=Z,707nm,21.0s
SNCC San Nicolas Is 75.88 59 P **P 08 35 36.3 +0.5**
baz=305
TPNV Topopah Spring 75.93 54 P **P 08 35 36.4 +0.1**
baz=306
TPNV Topopah Spring 75.93 54 *e*P **P 08 35 37.0 +0.7**
TPNV pmax pmax
comp=Z,19nm,0.9s
TPNV Topopah Spring 75.93 54 *e*P **P 08 35 37.0 +0.7**
comp=Z,19nm,0.8s
EDW2 Edwards Air Fo 75.98 57 P **P 08 35 37.0 +0.5**
baz=306,SNR=9.7
FOO Floro 76.04 341 *e*P **P 08 35 39.9 +3.7**
FOO IAMs_20 IAMs_20 09 12 44.9
comp=Z,3µm,15.7s
HWUT Hardware Ranch 76.09 48 *e*P **P 08 35 38.1 +1.0**
comp=Z,84nm,1.8s
HWUT LR LR
comp=Z,466nm,19.0s
HYA Hoyanger 76.09 340 *e*P **P 08 35 40.1 +3.6**
A25A Svangstu Ranch 76.11 39 P **P 08 35 36.8 -0.1**
baz=311
DECC Green Verdugo 76.11 58 P **P 08 35 37.4 +0.2**
baz=306
DUG Dugway, Tooele 76.18 50 P **P 08 35 38.3 +0.7**
baz=307
DUG Dugway, Tooele 76.18 50 *e*P **P 08 35 38.6 +1.0**
DUG pmax pmax
comp=Z,65nm,1.6s
DUG Dugway, Tooele 76.18 50 *e*P **P 08 35 38.6 +1.0**
comp=Z,65nm,1.6s
DUG LR LR
comp=Z,822nm,19.0s
KONO Kongsberg 76.36 338 *e*P **P 08 35 40.8 +2.8**
KONO IAMs_20 IAMs_20 09 13 31.5
comp=Z,3µm,16.4s
KONO Kongsberg 76.36 338 *e*P **P 08 35 38.9 +0.9**
KONO pmax pmax
comp=Z,16nm,0.9s
KONO Kongsberg 76.36 338 *e*P **P 08 35 38.9 +0.9**
comp=Z,16nm,0.9s
KONO LR LR
comp=Z,2µm,19.0s
SIM Simferopol' 76.39 316 *e*P **P 08 35 39.7 +1.2**
SIM *e* 08 35 51.0
SIM *e* 08 38 33.0
SIM *e*PPP PPP 08 40 15.0
SIM *e*S **S 08 45 26.0 +4.4**
SIM pmax pmax
comp=Z,18nm,0.7s
SIM pmax pmax
comp=Z,220nm,9.6s
FMP Fort Macarthur 76.45 58 P **P 08 35 39.2 +0.2**
baz=306
TCUT Toone Canyon 76.48 49 *e*P **P 08 35 39.8 +0.4**
comp=Z,126nm,1.7s
B25A Knox Farm, Ray 76.52 39 P **P 08 35 39.3 +0.1**
baz=311
GSC Goldstone, Bar 76.53 56 P **P 08 35 39.5 -0.1**
baz=306
GSC Goldstone, Bar 76.53 56 *e*P **P 08 35 40.9 +1.3**
GSC pmax pmax
comp=Z,37nm,1.6s
GSC Goldstone, Bar 76.53 56 *e*P **P 08 35 40.9 +1.3**
comp=Z,37nm,1.6s
PSUT Pine Spring 76.53 52 *e*P **P 08 35 39.2 -0.5**
comp=Z,12nm,0.8s
SHOC Shoshone, Teco 76.53 55 P **P 08 35 39.3 -0.2**
baz=306
CIS Catalina Islan 76.55 58 P **P 08 35 39.8 +0.1**
baz=306
BW06 Boulder Array 76.56 46 P **P 08 35 39.5 -0.4**
baz=308
BW06 Boulder Array 76.56 46 *e*P **P 08 35 39.0 -0.8**
BW06 *e*P **P 08 35 40.0 +0.2**
BW06 LR LR
comp=Z,544nm,19.0s
PD31 Pinedale Array 76.56 46 *e*P **P 08 35 40.0 +0.1**
PDAR Pinedale Array 76.56 46 P **P 08 35 39.9 +0.1**
comp=Z,6.2nm,0.8s,baz=270,slow=1.7,SNR=32
SUE Sulen 76.57 341 *e*P **P 08 35 41.3 +2.2**
SUE IAMs_20 IAMs_20 09 12 60.0
comp=Z,3µm,19.8s
BFSC Mount Baldy Ra 76.58 57 P **P 08 35 40.0 0.0**
baz=306
RRX Edison Barstow 76.65 56 P **P 08 35 40.1 -0.1**
baz=306
A26A Wade Farm, Ken 76.67 38 P **P 08 35 39.8 -0.2**
baz=312
JLU Jordanelle 76.77 49 *e*P **P 08 35 42.3 +1.3**
comp=Z,37nm,1.5s
NLU North Lily Min 76.78 50 *e*P **P 08 35 42.5 +1.4**
comp=Z,13nm,1.0s
C25A Freed Ranch, W 76.84 40 P **P 08 35 41.1 +0.1**
baz=311
B26A Jensen Ranch, 76.92 39 P **P 08 35 41.7 +0.2**
baz=312,SNR=7.1
MPU Maple Canyon 77.01 50 *e*P **P 08 35 43.8 +1.5**
comp=Z,62nm,1.7s
A27A Ledoux Ranch, 77.02 38 P **P 08 35 42.2 +0.2**
baz=312
TUQ Turquoise Moun 77.03 55 P **P 08 35 42.6 +0.1**
baz=306,SNR=7.3
BBRC Big Bear Solar 77.06 57 P **P 08 35 43.1 +0.3**
baz=306
HEC Hector,Ludlow 77.12 56 P **P 08 35 43.6 +0.7**
baz=306
D25A Fairfield 77.17 40 P **P 08 35 43.5 +0.5**
baz=311
MURC Murrieta 77.26 58 P **P 08 35 44.2 +0.5**
baz=306
SORM Soroca 77.34 322⇑ *i*P **P 08 35 45.0 +1.2**
C26A Wahner Farm, P 77.35 39 P **P 08 35 44.8 +0.8**
baz=312
B27A Peters Farms, 77.38 38 P **P 08 35 44.3 +0.3**
baz=312
BLS5 Blasjo 77.47 339 *e*P **P 08 35 48.0 +3.7**
BLS5 IAMs_20 IAMs_20 09 15 57.9
comp=Z,3µm,15.7s
A28A Rude Farm, Bot 77.52 37 P **P 08 35 44.4 -0.5**
baz=313
E25A Miller Ranch, 77.56 41 P **P 08 35 45.1 0.0**
baz=311,SNR=15
MSU Marysvale 77.59 51 *e*P **P 08 35 46.7 +1.0**
MSU Marysvale 77.59 51 *e*P **P 08 35 46.6 +1.0**
GMRC Granite Mounta 77.59 56 P **P 08 35 45.6 0.0**
baz=307,SNR=8.1
D26A Manning 77.71 40 P **P 08 35 45.7 -0.2**
baz=312
C27A Sayler Ranch, 77.72 39 P **P 08 35 46.2 +0.2**
baz=312
109C Camp Elliot, M 77.74 58 P **P 08 35 46.6 +0.3**
baz=306
PFO Pinyon Flats O 77.75 57 P **P 08 35 47.4 +0.8**
comp=Z,5.2nm,0.8s,baz=294,slow=6.6,SNR=9.8
PFO Pinyon Flats O 77.75 57 P **P 08 35 46.7 +0.2**
baz=306,SNR=6.8
PFO Pinyon Flats O 77.75 57 *e*P **P 08 35 46.8 +0.2**
PFO pmax pmax
comp=Z,37nm,1.5s
PFO Pinyon Flats O 77.75 57 *e*P **P 08 35 46.8 +0.2**
comp=Z,37nm,1.5s
PFO LR LR
comp=Z,2µm,19.0s
LDFC Landfair 77.78 55 *e*P **P 08 35 47.1 +0.4**
comp=Z,61nm,1.5s
B28A Dugan Ranch, T 77.79 38 P **P 08 35 46.3 -0.1**
baz=313
HOMB Homborsund 77.81 337 *e* P 08 36 09.0 +23
HOMB IAMs_20 IAMs_20 09 13 21.2
comp=Z,4µm,18.0s
BORG Borgarnes 77.83 353 P **P 08 35 47.2 +1.1**
comp=Z,20nm,0.8s,baz=31,slow=2.5,SNR=6.6
BORG Borgarnes 77.83 353 P **P 08 35 47.2 +1.1**
BORG LR LR
comp=Z,567nm,20.0s
LCMT Little Creek M 77.83 53 *e*P **P 08 35 48.0 +1.1**
comp=Z,18nm,0.9s
BELC Belle Mtn. Jos 77.83 57 P **P 08 35 47.0 0.0**
baz=307
KIS Kishinev 77.87 320 *e*P **P 08 35 47.0 +0.2**
KIS Kishinev 77.87 320 *e*PP PP 08 38 44.0 +1.9
KIS Kishinev 77.87 320 *e*P **P 08 35 47.0 +0.2**
KIS *e* 08 38 44.0
KIS *e*PS **PnS 08 46 20.0 0.0**
KIS MLR MLR
comp=Z,6µm,16.0s
KIS MLR MLR
comp=N,4µm,15.0s
KIS MLR MLR
comp=E,3µm,16.0s
KIS MLR MLR
comp=Z,5µm,20.0s
MTPU Mount Pierson 77.87 51 *e*P **P 08 35 48.4 +1.0**
comp=Z,74nm,1.7s
P17A Butcher Ranch, 77.89 50 *e*P **P 08 35 48.3 +1.1**
comp=Z,28nm,1.0s
F25A Bowman 77.91 41 P **P 08 35 47.2 +0.1**
baz=311
Q16A Castle Valley 77.97 50 *e*P **P 08 35 48.9 +1.1**
comp=Z,81nm,1.7s
A29A Manning Farm, 78.01 37 P **P 08 35 47.4 -0.2**
baz=314,SNR=12
E26A Carlson Angus 78.07 40 P **P 08 35 48.0 0.0**
baz=312
P18A Preston Nutter 78.09 49 *e*P **P 08 35 49.8 +1.2**
comp=Z,14nm,0.9s
KNB Kanab 78.09 53 *e*P **P 08 35 49.7 +1.2**
KNB pmax pmax
comp=Z,110nm,1.7s
KNB Kanab 78.09 53 *e*P **P 08 35 49.7 +1.2**
comp=Z,112nm,1.8s
D27A Center 78.12 39 P **P 08 35 48.1 -0.1**
baz=312
BAR Barrett 78.16 58 *e*P **P 08 35 49.6 +0.9**
comp=Z,41nm,1.6s
MONP2 Monument Peak 78.20 58 P **P 08 35 49.4 +0.2**
baz=307,SNR=5.9
SRU San Rafael Swe 78.24 50 *e*P **P 08 35 50.0 +0.7**
SRU pmax pmax
comp=Z,29nm,0.7s
SRU San Rafael Swe 78.24 50 *e*P **P 08 35 50.0 +0.7**
comp=Z,29nm,0.7s
BEL Belsk 78.27 328 *e*P **P 08 35 50.8 +1.9**
BEL LMZ LR 09 13 01.8
comp=Z,2µm,21.5s
BEL Belsk 78.27 328 *e*P **P 08 35 50.8 +1.9**
BEL MLR MLR
comp=Z,2µm,21.5s
B29A Wagenman Farm, 78.27 37 P **P 08 35 48.8 -0.2**
baz=314
C28A Hausauer Farms 78.28 38 P **P 08 35 49.1 0.0**
baz=313
IRM Iron Mountain 78.31 56 P **P 08 35 49.8 +0.3**
baz=307,SNR=11
MMU Miners Mountai 78.33 51 *e*P **P 08 35 50.5 +0.7**
K22A Casper 78.37 45 P **P 08 35 49.6 -0.3**
baz=310,SNR=11
K22A Casper 78.37 45 *e*P **P 08 35 50.1 +0.2**
comp=Z,88nm,1.7s
F26A Lodgepole 78.37 41 P **P 08 35 49.8 +0.1**
baz=312,SNR=21
BC3 Big Chuckawall 78.40 57 P **P 08 35 50.5 +0.4**
baz=307,SNR=7.6
G25A Newell 78.42 42 P **P 08 35 49.4 -0.6**
baz=312,SNR=7.1
A30A Hoffart Farm, 78.44 36 P **P 08 35 49.8 -0.1**
baz=314
D28A Regan 78.54 39 P **P 08 35 50.4 -0.2**
baz=313
E27A Carson 78.56 40 P **P 08 35 50.0 -0.6**
baz=312
W13A Hualapai Mount 78.57 55 *e*P **P 08 35 51.7 +0.5**
comp=Z,28nm,1.8s
SWSC Sam W. Stewart 78.59 57 P **P 08 35 51.1 +0.1**
baz=307
COP Copenhagen 78.59 334 *i* P P 08 35 58.9 +8.3
comp=Z,2µm,16.0s
COP Copenhagen 78.59 334 *e*P P 08 35 58.9 +8.3
COP MLR MLR
comp=Z,2µm,16.0s
ULM Lac du Bonnet 78.64 34 P **P 08 35 50.8 -0.2**
comp=Z,8.0nm,0.8s,baz=320,slow=6.4,SNR=8.5
ULM LR LR 09 17 23.4
comp=Z,316nm,18.3s,baz=294,slow=41
ULM Lac du Bonnet 78.64 34 *e*P **P 08 35 51.0 0.0**
comp=Z,36nm,1.4s
F27A Lemmon 78.70 40 P **P 08 35 51.3 -0.2**
baz=312,SNR=15
H25A Fruitdale 78.70 42 P **P 08 35 50.5 -1.0**
baz=312
B30A Myrvik Farm, E 78.77 37 P **P 08 35 51.1 -0.7**
baz=314,SNR=5.7
G26A Maurine 78.78 41 P **P 08 35 51.6 -0.3**
baz=312,SNR=26
U15A North Rim 78.79 53 *e*P **P 08 35 53.6 +1.2**
comp=Z,85nm,1.8s
RSSD Black Hills 78.79 43 P **P 08 35 51.2 -1.1**
baz=311
RSSD Black Hills 78.79 43 *e*P **P 08 35 53.0 +0.8**
RSSD pmax pmax
comp=Z,11nm,0.8s
RSSD Black Hills 78.79 43 *e*P **P 08 35 53.0 +0.8**
comp=Z,11nm,0.8s
PDMCI Parker Dam,Lak 78.88 55 P **P 08 35 52.8 +0.2**
baz=307,SNR=6.8
E28A Huff 78.90 39 P **P 08 35 51.2 -1.3**
baz=313
Y12C Blythe 78.96 56 P **P 08 35 53.3 +0.2**
baz=307
Y12C Blythe 78.96 56 *e*P **P 08 35 53.4 +0.4**
comp=Z,59nm,1.7s
O20A White River Ci 78.98 48 P **P 08 35 52.7 -0.6**
baz=310,SNR=13
KWP Kalwaria Pacla 79.00 325 *e*P **P 08 35 53.4 +0.4**
KWP LMZ LR 09 13 51.7
comp=Z,1µm,19.2s
KWP Kalwaria Pacla 79.00 325⇓ *i*P **P 08 35 55.1 +2.1**
KWP Kalwaria Pacla 79.00 325 *e*P **P 08 35 53.4 +0.4**
KWP MLR MLR
comp=Z,1µm,19.2s
I25A Rochford 79.02 43 P **P 08 35 53.0 -0.4**
baz=312,SNR=9.0
G27A Dupree 79.07 41 P **P 08 35 53.0 -0.5**
baz=312,SNR=18
B31A Greenbush Farm 79.11 36 P **P 08 35 52.7 -0.9**
baz=315
D29A Pettibone, Tap 79.12 38 P **P 08 35 53.0 -0.7**
baz=314
H26A Fairpoint 79.14 42 P **P 08 35 53.9 0.0**
baz=312,SNR=8.9
GLA Glamis 79.18 57 P **P 08 35 54.2 -0.2**
baz=307,SNR=6.1
GLA Glamis 79.18 57 *e*P **P 08 35 55.1 +0.7**
GLA pmax pmax
comp=Z,74nm,1.9s
GLA Glamis 79.18 57 *e*P **P 08 35 55.1 +0.7**
comp=Z,74nm,1.9s
C30A Mose, Pekin 79.22 37 P **P 08 35 53.4 -0.8**
baz=314
BUR08 Bucovina Ar. S 79.23 323 *e*P **P 08 35 54.9 +0.4**
BURAR Bucovina Array 79.24 323⇑ *i*P **P 08 35 54.9 +0.4**
A32A Rocking H Ranc 79.31 35 P **P 08 35 53.7 -1.0**
baz=315
F28A McLaughlin 79.34 40 P **P 08 35 54.5 -0.5**
baz=312
J25A Sunshine Ranch 79.40 43 P **P 08 35 54.5 -1.0**
baz=312
E29A Napoleon 79.43 39 P **P 08 35 54.9 -0.6**
baz=314
CFR Carcaliu 79.44 319⇑ *i*P **P 08 35 57.1 +1.7**
DGAR Diego Garcia 79.45 252 PFAKE 08 36 10.0 +14
DGAR LR LR
comp=Z,827nm,19.0s
PV09 Paradox Valley 79.47 50 *e*P **P 08 35 57.3 +1.1**
I26A New Underwood 79.48 42 P **P 08 35 55.0 -0.9**
baz=312
D30A Buchanan 79.50 38 P **P 08 35 55.0 -0.8**
baz=314
H27A Howes 79.50 41 P **P 08 35 55.5 -0.3**
baz=312,SNR=24
C31A Landman Farms, 79.52 37 P **P 08 35 55.1 -0.7**
baz=315
PV10 Paradox Valley 79.61 50 *e*P **P 08 35 57.9 +1.1**
B32A Ashes, Strandq 79.66 36 P **P 08 35 55.5 -1.1**
baz=315,SNR=11
PV04 Paradox Valley 79.68 50 *e*P **P 08 35 57.1 -0.1**
VRI Vrincioaia 79.70 321⇑ *i*P **P 08 35 59.3 +2.4**
KOLS Kolonicke sedl 79.70 325 *e*P **P 08 35 57.2 +0.4**
KOLS *e* 08 38 57.6
KOLS pmax pmax
comp=Z,17nm,1.7s
KOLS Kolonicke sedl 79.70 325 *e*P **P 08 35 57.2 +0.4**
KOLS *e* 08 36 23.0
KOLS *e*PP **PP 08 38 57.6 +0.3**
PV05 Paradox Valley 79.76 50 *e*P **P 08 35 58.6 +0.9**
A33A Warroad 79.80 35 P **P 08 35 56.5 -0.8**
baz=316
G28A Parade 79.81 40 P **P 08 35 56.7 -0.8**
baz=313
STHS Stebnicka Huta 79.82 326 *e*P **P 08 35 58.5 +1.0**
STHS pmax pmax
comp=Z,12nm,1.3s
STHS Stebnicka Huta 79.82 326 *e*P **P 08 35 58.5 +1.0**
N23A Red Feather La 79.83 46 P **P 08 35 57.9 -0.1**
baz=311,SNR=16
N23A Red Feather La 79.83 46 *e*P **P 08 35 59.4 +1.3**
comp=Z,39nm,1.1s
E30A Jud 79.84 38 P **P 08 35 56.9 -0.8**
baz=314
F29A Eureka 79.85 39 P **P 08 35 57.3 -0.4**
baz=314
J26A Sides Ranch, S 79.85 43 P **P 08 35 57.7 -0.2**
baz=312,SNR=5.4
Y14A Wickenburg 79.85 55 *e*P **P 08 35 58.6 +0.6**
comp=Z,253nm,1.8s
OJC Ojcow 79.87 327 *e*P **P 08 35 58.0 +0.3**
OJC LMZ LR 09 14 12.1
comp=Z,4µm,18.6s
OJC Ojcow 79.87 327 *e*P **P 08 35 57.8 +0.1**
OJC pmax pmax
comp=Z,36nm,1.1s
OJC Ojcow 79.87 327 *e*P **P 08 35 57.8 +0.1**
comp=Z,36nm,1.1s
I27A Quinn 79.89 42 P **P 08 35 57.5 -0.5**
baz=312,SNR=17
UZH Uzhgorod 79.91 325 *e*P **P 08 35 58.6 +0.7**
UZH *e*S **S 08 46 00.6 +1.2**
UZH *e* 08 47 01.8
UZH *e* 08 51 03.8
UZH MLR MLR
comp=N,6µm,15.0s
UZH MLR MLR
comp=E,5µm,15.0s
UZH MLR MLR
comp=Z,3µm,15.0s
WUAZ Wupatki 79.94 53 P **P 08 35 59.1 +0.5**
baz=309,SNR=15
WUAZ Wupatki 79.94 53 *e*P **P 08 35 59.6 +1.0**
comp=Z,16nm,1.0s
WUAZ LR LR
comp=Z,911nm,20.0s
BR131 Keskin Array S 79.98 312 *e*P **P 08 35 59.5 +0.9**
BRTR Keskin Array B 79.98 312 P **P 08 35 58.8 0.0**
comp=Z,2.6nm,0.6s,baz=83,slow=3.9,SNR=16
BRTR LR LR 09 16 10.7
comp=Z,523nm,18.9s,baz=42,slow=39
H28A Mission Ridge 80.03 41 P **P 08 35 58.0 -0.7**
baz=313,SNR=5.7
AGMN Agassiz Nation 80.04 36 P **P 08 35 57.8 -0.9**
baz=316,SNR=7.6
AGMN Agassiz Nation 80.04 36 *e*P **P 08 35 58.1 -0.6**
AGMN LR LR
comp=Z,582nm,19.0s
D31A Mcclaflin, Tow 80.05 37 P **P 08 35 58.0 -0.7**
baz=315
PV01 Paradox Valley 80.05 50 *e*P **P 08 36 00.0 +0.8**
113A Mohawk Valley, 80.06 56 *e*P **P 08 35 60.0 +0.9**
comp=Z,39nm,1.6s
C32A Crookston 80.07 36 P **P 08 35 57.5 -1.3**
baz=316
CRVS Cervenica-Dubn 80.10 325 *e*P **P 08 36 00.1 +1.1**
CRVS Cervenica-Dubn 80.10 325 *e*P **P 08 36 00.1 +1.1**
TRPA Tarpa 80.16 324⇓ *e*P **P 08 35 59.0 -0.2**
B33A Robert and Kas 80.19 35 P **P 08 35 58.1 -1.4**
baz=316
NIE Niedzica 80.24 326 *e*P **P 08 36 00.7 +0.9**
NIE LMZ LR 09 14 45.7
comp=Z,3µm,17.1s
NIE Niedzica 80.24 326 *e*P **P 08 36 00.7 +0.9**
NIE MLR MLR
comp=Z,3µm,17.1s
F30A Leola 80.25 39 P **P 08 35 59.0 -0.8**
baz=314
DOPR Dopca 80.31 321⇑ *i*P **P 08 36 02.6 +2.4**
ISR Istrita 80.31 320⇑ *i*P **P 08 36 02.5 +2.3**
E31A Nome 80.31 38 P **P 08 35 59.6 -0.5**
baz=315,SNR=5.9
D32A Dogwood Acres, 80.33 37 P **P 08 35 59.4 -0.8**
baz=315
SMCO Snowmass 80.34 48 *e*P **P 08 36 01.7 +0.7**
comp=Z,46nm,1.7s
MLR Muntele Rosu 80.36 321 P **P 08 36 00.8 +0.2**
comp=Z,0.7nm,0.5s,baz=2.6,slow=4.5,SNR=7.3
MLR LR LR 09 14 29.8
comp=Z,708nm,18.2s,baz=44,slow=38
MLR Muntele Rosu 80.36 321⇑ *i*P **P 08 36 01.3 +0.7**
MLR Muntele Rosu 80.36 321 *e*P **P 08 36 01.2 +0.7**
MLR pmax pmax
comp=Z,43nm,1.4s
MLR Muntele Rosu 80.36 321 *e*P **P 08 36 01.2 +0.7**
comp=Z,43nm,1.4s
I28A Midland 80.41 41 P **P 08 36 00.4 -0.3**

baz=313,SNR=22
BR231 Keskin MP Arra 80.41 313 *e*P **P 08 36 00.6 -0.4**
J27A Elkhorn Farm, 80.47 42 P **P 08 36 01.4 +0.2**
baz=313,SNR=9.0
B34A Aery, Baudette 80.47 35 P **P 08 35 59.7 -1.2**
baz=317,SNR=6.6
C33A Trail 80.47 36 P **P 08 35 59.7 -1.3**
baz=316,SNR=6.4
H29A Onida 80.48 40 P **P 08 36 00.5 -0.7**
baz=314
X16A Lo Mia Camp, P 80.58 54 *e*P **P 08 36 03.2 +1.2**
comp=Z,11nm,0.8s
F31A Hecla 80.62 39 P **P 08 36 00.4 -1.4**
baz=315
MVCO Mesa Verde 80.68 50 P **P 08 36 01.9 -0.7**
baz=310,SNR=11
MVCO Mesa Verde 80.68 50 *e*P **P 08 36 03.0 +0.4**
comp=Z,92nm,1.2s
MVCO LR LR
comp=Z,466nm,19.0s
G30A Faulkton 80.68 40 P **P 08 36 00.8 -1.4**
baz=314
E32A Braaten, Kindr 80.69 37 P **P 08 36 01.2 -1.0**
baz=315
ISCO Idaho Springs 80.74 47 P **P 08 36 02.9 0.0**
baz=311,SNR=14
ISCO Idaho Springs 80.74 47 *e*P **P 08 36 03.3 +0.3**
ISCO pmax pmax
comp=Z,43nm,1.7s
ISCO Idaho Springs 80.74 47 *e*P **P 08 36 03.3 +0.3**
comp=Z,43nm,1.7s
ISCO LR LR
comp=Z,519nm,19.0s
J28A Allard Ranch, 80.76 42 P **P 08 36 02.5 -0.3**
baz=313,SNR=9.8
LANS Liptovska Anna 80.81 326 *e*P **P 08 36 05.9 +3.1**
LANS Liptovska Anna 80.81 326 *e*P **P 08 36 05.9 +3.1**
KECS Kecovo 80.84 326 *e*P **P 08 36 03.4 +0.4**
KECS pmax pmax
comp=Z,9.0nm,1.8s
KECS Kecovo 80.84 326 *e*P **P 08 36 03.4 +0.4**
VOIR 80.85 321⇑*i*P **P 08 36 05.1 +1.9**
I29A Vivian Onida 80.85 41 P **P 08 36 02.3 -0.8**
baz=314
OKC Ostrava-Krasne 80.87 328 *e*P **P 08 36 03.9 +0.8**
OKC AMS AMS 09 15 00.0
comp=Z,3μm,16.9s
OKC Ostrava-Krasne 80.87 328 *e*P **P 08 36 03.9 +0.8**
OKC MLR MLR
comp=Z,3μm,16.9s
D33A AnnSam, Waubun 80.88 36 P **P 08 36 01.5 -1.7**
baz=316
KSP Ksiaz 80.89 329 *e*P **P 08 36 03.3 +0.1**
KSP LMZ LR 09 15 01.4
comp=Z,4μm,17.6s
KSP Ksiaz 80.89 329 *e*P **P 08 36 03.3 +0.1**
KSP MLR MLR
comp=Z,4μm,17.6s
C34A RKJ Ranch, Bem 80.95 36 P **P 08 36 02.1 -1.5**
baz=317
B35A Bob, Littlefor 80.98 35 P **P 08 36 02.3 -1.5**
baz=317,SNR=11
G31A Conde 81.09 39 P **P 08 36 03.3 -1.1**
baz=315
F32A Veblen 81.17 38 P **P 08 36 03.2 -1.5**
baz=315
MORC Moravsky Berou 81.17 328⇑*i*P **P 08 36 05.9 +1.1**
MORC Moravsky Berou 81.17 328 *e*P **P 08 36 05.3 +0.5**
MORC pmax pmax
comp=Z,190nm,1.4s
MORC Moravsky Berou 81.17 328 *e*P **P 08 36 05.3 +0.5**
comp=Z,189nm,1.5s
214A Organ Pipe Nat 81.20 57 P **P 08 36 05.9 +0.7**
baz=308,SNR=6.4
214A Organ Pipe Nat 81.20 57 *e*P **P 08 36 05.7 +0.5**
comp=Z,42nm,1.0s
D34A Park Rapids 81.23 36 P **P 08 36 04.0 -1.1**
baz=316,SNR=6.8
W18A Petrified Fore 81.23 53 P **P 08 36 03.2 -2.3**
baz=309
DPC Dobruska-Polom 81.25 329 *e*P **P 08 36 06.6 +1.4**
DPC *e*pP **sP 08 36 18.5 +0.6**
DPC *e*x x 08 36 32.1
DPC *e*x x 08 36 43.1
DPC *e*PP **PP 08 39 08.9 -1.2**
DPC *e*SKS **S 08 46 19.1 +5.6**
DPC AMS AMS 09 19 20.0
comp=Z,4μm,13.4s
DPC Dobruska-Polom 81.25 329 *e*P **P 08 36 06.6 +1.4**
DPC *e* 08 36 18.5
DPC *e* 08 39 08.9
DPC *e*S **S 08 46 19.1 +5.6**
DPC MLR MLR
comp=Z,4μm,13.4s
SUSD Miller 81.25 40 P **P 08 36 03.9 -1.4**
baz=314
J29A Okreek 81.26 41 P **P 08 36 03.7 -1.6**
baz=314
UPC Upice 81.26 329 *e*S **S 08 46 16.2 +2.7**
UPC *e*SS **SS 08 51 37.6 +10**
UPC AMS AMS 09 16 10.0
comp=Z,3μm,15.5s
E33A Westby DABS, E 81.26 37 P **P 08 36 04.4 -0.9**
baz=316
KRLC Kraliky 81.27 328 *e*P **P 08 36 05.9 +0.6**
KRLC *e*x x 08 36 30.7
KRLC Kraliky 81.27 328 *e*P **P 08 36 05.9 +0.6**
C35A Jirik Farms, M 81.35 35 P **P 08 36 04.6 -1.1**
baz=317,SNR=11
S22A 4UR Ranch, Cre 81.35 49 P **P 08 36 06.0 -0.3**
baz=311,SNR=29
S22A 4UR Ranch, Cre 81.35 49 *e*P **P 08 36 07.5 +1.2**
comp=Z,67nm,1.7s
I30A Oacoma 81.38 41 P **P 08 36 05.5 -0.4**
baz=314,SNR=7.6
G32A Webster 81.42 39 P **P 08 36 04.7 -1.5**
baz=315
H31A Wolsey 81.47 40 P **P 08 36 04.9 -1.5**
baz=315
PSZ Piszkesteto 81.53 325⇑*i*P **P 08 36 09.0 +2.3**
PSZ Piszkesteto 81.53 325⇓*e*P **P 08 36 07.0 +0.3**
PSZ Piszkesteto 81.53 325 *e*P **P 08 36 07.4 +0.7**
PSZ pmax pmax
comp=Z,48nm,1.5s
PSZ Piszkesteto 81.53 325 *e*P **P 08 36 07.4 +0.7**
comp=Z,48nm,1.5s
PSZ LR LR
comp=Z,3μm,19.0s
Q24A Divide 81.56 47 P **P 08 36 04.6 -2.8**
baz=311
VYHS Vyhne 81.58 326 *e*P **P 08 36 07.6 +0.7**
VYHS pmax pmax
comp=Z,19nm,1.7s
VYHS Vyhne 81.58 326 *e*P **P 08 36 07.5 +0.7**
VYHS *e*PP **PP 08 39 09.4 -3.4**
F33A 5 Mile Ranch, 81.60 38 P **P 08 36 06.4 -0.6**
baz=316,SNR=9.5
E34A Wadena 81.66 37 P **P 08 36 06.0 -1.4**
baz=317
J30A Dallas 81.75 41 P **P 08 36 07.0 -1.0**
baz=314
D35A Remer 81.77 36 P **P 08 36 06.6 -1.3**
baz=317
BRG Berggiesshubel 81.81 330 *e*P **P 08 36 08.6 +0.6**
comp=Z,67nm,1.9s
BRG *e* 08 36 20.7
comp=Z,13nm,0.9s
BRG *e*PP **PP 08 39 14.9 +0.3**
comp=Z,16nm,1.6s
BRG S **S 08 46 20.0 +0.9**
BRG SS **SS 08 51 34.0 -2.2**
comp=N,117nm,12.6s
comp=E,85nm,17.2s
comp=Z,182nm,20.4s
BRG Berggiesshubel 81.81 330 *e*P **P 08 36 08.6 +0.6**
BRG *e* 08 36 20.7
BRG *e* 08 39 14.9
BRG S **S 08 46 20.0 +0.9**
BRG SS **SS 08 51 34.0 -2.2**
BRG pmax pmax
comp=Z,67nm,1.9s
BRG MLR MLR
comp=N,117nm,12.6s
BRG MLR MLR
comp=E,85nm,17.2s
BRG MLR MLR
comp=Z,182nm,20.4s
C36A Pine Crest Far 81.83 34 P **P 08 36 07.4 -0.9**
baz=318,SNR=6.1
PVCC Panska Ves 81.83 330 *e*P **P 08 36 09.5 +1.3**
PVCC AMS AMS 09 15 40.0
comp=Z,3μm,16.0s
PVCC Panska Ves 81.83 330 *e*P **P 08 36 09.5 +1.3**
PVCC MLR MLR
comp=Z,3μm,16.0s
CLL Collm 81.84 331 *i* P **P 08 36 07.9 -0.3**
comp=Z,48nm,1.5s
CLL *e*Pmax 08 36 12.0
CLL *i* 08 36 20.2
comp=Z,26nm,0.9s
CLL *i* 08 36 34.0
CLL *i* 08 36 44.9
CLL *e*PP **PP 08 39 14.0 -0.8**
CLL *e*PPP PPP 08 41 12.0
CLL *e*S **S 08 46 18.0 -1.4**
CLL *e*PS **PnS 08 47 18.0 +8.5**
CLL *e*SS **SS 08 51 37.0 +0.5**
CLL *e* 08 52 42.0
CLL *e*(SSS) 08 55 30.0
CLL Lmax 09 20 00.0
CLL Collm 81.84 331 *i* P **P 08 36 07.9 -0.3**
CLL *i* 08 36 20.2
CLL *e*S **S 08 46 18.0 -1.4**
CLL pmax pmax
comp=Z,48nm,1.5s
CLL Collm 81.84 331 *e*P **P 08 36 08.2 +0.1**
comp=Z,26nm,0.9s
VRAC Vranov 81.93 328 P **P 08 36 08.9 +0.2**
comp=Z,12nm,0.8s,baz=51,slow=5.5,SNR=16
VRAC LR LR 09 17 11.7
comp=Z,2μm,18.6s,baz=34,slow=39
VRAC Vranov 81.93 328⇑*i*P **P 08 36 10.4 +1.6**
VRAC Vranov 81.93 328 P **P 08 36 09.0 +0.2**
VRAC pmax pmax
comp=Z,12nm,0.9s
H32A Carlson Farm, 81.98 39 P **P 08 36 08.1 -1.0**
baz=315
E35A Pequot Lakes 81.99 36 P **P 08 36 07.9 -1.2**
baz=317,SNR=6.1
G33A Ortonville 81.99 38 P **P 08 36 08.4 -0.7**
baz=316,SNR=10
OGNE Ogallala 82.01 44 P **P 08 36 08.3 -1.1**
baz=313
OGNE Ogallala 82.01 44 *e*P **P 08 36 11.3 +1.9**
comp=Z,195nm,1.9s
OGNE LR LR
comp=Z,562nm,19.0s
D36A Goodland 82.11 35 P **P 08 36 08.6 -1.1**
baz=318
JMB Yambol 82.12 318 *e*P **P 08 36 08.1 -1.7**
F34A Alexandria 82.13 37 P **P 08 36 08.9 -1.0**
baz=317
K30A Basset 82.14 42 P **P 08 36 09.0 -1.0**
baz=314
C37A Embarrass 82.14 34 P **P 08 36 08.9 -1.0**
baz=318,SNR=7.0
SDCO Great Sand Dun 82.15 48 P **P 08 36 10.4 0.0**
baz=311,SNR=15
SDCO Great Sand Dun 82.15 48 *e*P **P 08 36 10.7 +0.2**
comp=Z,40nm,1.7s
SDCO LR LR
comp=Z,674nm,19.0s
J31A Geddes 82.17 41 P **P 08 36 09.1 -1.1**
baz=315
H33A Prehn Over Nor 82.21 39 P **P 08 36 08.8 -1.5**
baz=316
GOPC GO Pecny, Ondr 82.22 329 *e*P **P 08 36 10.8 +0.6**
GOPC *e*pP **sP 08 36 23.1 +0.1**
GOPC *e*x x 08 36 36.2
GOPC *e*S **S 08 46 26.3 +2.9**
GOPC AMS AMS 09 15 50.0
comp=Z,3μm,17.0s
GOPC GO Pecny, Ondr 82.22 329 *e*P **P 08 36 10.8 +0.6**
GOPC *e* 08 36 23.1
GOPC *e*S **S 08 46 26.3 +2.9**
GOPC MLR MLR
comp=Z,3μm,17.0s
BUD Budapest 82.25 326⇓*e*P **P 08 36 11.3 +0.9**
PRU Pruhonice 82.26 329 *e*P **P 08 36 11.1 +0.7**
PRU *e*x x 08 36 37.1
PRU AMS AMS 09 15 50.0
comp=Z,4μm,15.9s
PRU Pruhonice 82.26 329 *e*P **P 08 36 11.1 +0.7**
PRU MLR MLR
comp=Z,4μm,15.9s
EYMN Ely 82.29 34 *e*P **P 08 36 10.1 -0.5**
comp=Z,70nm,1.8s
EYMN LR LR
comp=Z,582nm,19.0s
I32A Karley and Nic 82.31 39 P **P 08 36 09.7 -1.1**
baz=315
TUC Tucson 82.32 55 P **P 08 36 10.6 -0.6**
baz=309
TUC Tucson 82.32 55 *e*P **P 08 36 12.1 +0.9**
TUC pmax pmax
comp=Z,38nm,1.8s
TUC Tucson 82.32 55 PFAKE 08 36 20.0 +8.8
TUC LR LR
comp=Z,1μm,19.0s
G34A Benson 82.35 38 P **P 08 36 10.3 -0.7**
baz=316
BZS Buzias 82.41 323⇓*i*P **P 08 36 11.7 +0.4**
TREC Trest 82.41 329 *e*P **P 08 36 11.8 +0.5**
TREC *e*pP **sP 08 36 24.0 0.0**
TREC *e*x x 08 36 37.8
TREC AMS AMS 09 20 00.0
comp=Z,4μm,14.3s
TREC Trest 82.41 329 *e*P **P 08 36 11.8 +0.5**
TREC *e* 08 36 24.0
TREC MLR MLR
comp=Z,4μm,14.3s
F35A Swanville 82.42 37 P **P 08 36 10.5 -0.9**
baz=317,SNR=5.7
D37A Cotton 82.46 35 P **P 08 36 10.3 -1.3**
baz=318
E36A McGregor 82.55 36 P **P 08 36 11.1 -0.9**
baz=318,SNR=6.5
C38A Sawbill Land. 82.56 34 P **P 08 36 10.6 -1.5**
baz=319
J32A Parkston 82.58 40 P **P 08 36 11.1 -1.2**
baz=315
I33A Coleman 82.63 39 P **P 08 36 11.6 -0.9**
baz=316
K31A O'Neill 82.63 41 P **P 08 36 11.2 -1.3**
baz=315
H34A Spellman Lake, 82.70 38 P **P 08 36 11.9 -0.9**
baz=316
ASF Jabal al Asfar 82.77 305 P **P 08 36 13.9 +0.4**
comp=Z,3.0nm,0.7s,baz=314,slow=1.3,SNR=17
PMOR Pomariorio Ree 82.79 115 *e*T T 10 07 16.3
comp=Z,2.1nm,0.2s
L31A Butterfield Fa 82.90 41 P **P 08 36 12.7 -1.2**
baz=315
NKC Novy Kostel 82.91 331 AMS AMS 09 21 00.0
comp=Z,4μm,13.9s
F36A Milaca 82.91 36 P **P 08 36 12.9 -1.0**
baz=318
E37A Wrenshall 82.91 35 P **P 08 36 14.4 +0.5**
baz=318
G35A Watkins 82.93 37 P **P 08 36 13.8 -0.1**
baz=317,SNR=6.4
ECSD EROS Data Cent 82.95 39 *e*P **P 08 36 13.6 -0.6**
comp=Z,42nm,1.4s
ECSD LR LR
comp=Z,911nm,20.0s
MDVR Moldovita 82.97 322⇑*i*P **P 08 36 14.8 +0.5**
MPEP Malo Peshtene 82.98 320 *e*P **P 08 36 14.5 +0.2**
KSCO Kaye Shedlock' 82.99 46 P **P 08 36 14.2 -0.4**
baz=313
KSCO Kaye Shedlock' 82.99 46 *e*P **P 08 36 14.6 0.0**
comp=Z,68nm,1.4s
C39A Grand Marais 82.99 33 P **P 08 36 13.2 -1.0**
baz=320
K32A Verdigre 83.02 41 P **P 08 36 13.8 -0.7**
baz=315
ISP Isparta 83.07 313 PFAKE 08 36 30.0 +15
ISP LR LR
comp=Z,1μm,22.0s
J33A Davis 83.07 40 P **P 08 36 13.4 -1.4**
baz=316
SNZO South Karori 83.10 157 PFAKE 08 36 30.0 +15
SNZO LR LR
comp=Z,1μm,20.0s
I34A Hadley 83.11 39 P **P 08 36 14.1 -0.9**
baz=316
H35A Sunnyside Ranc 83.14 38 P **P 08 36 14.9 -0.2**
baz=317,SNR=25
SOP Sopron 83.19 327⇓*e*P **P 08 36 16.1 +0.8**
T25A Trinidad 83.20 48 P **P 08 36 15.5 -0.3**
baz=312,SNR=14
T25A Trinidad 83.20 48 *e*P **P 08 36 15.9 +0.1**
comp=Z,122nm,1.9s
MMAI Mount Meron Ar 83.20 306 P **P 08 36 16.1 +0.3**
comp=Z,10nm,0.7s,baz=51,slow=6.6,SNR=18
MMAI LR LR 09 17 12.5
comp=Z,1μm,18.4s,baz=35,slow=38
CSS Mathiatis 83.25 309 PFAKE 08 36 30.0 +14
CSS LR LR
comp=Z,268nm,20.0s
G36A St. Michael 83.27 37 P **P 08 36 15.4 -0.4**
baz=318
PPT Papeete 83.28 118 LR LR 09 13 08.0
comp=Z,831nm,18.1s,baz=278,slow=36
PPT2 Papeete2 83.29 118 *e*S **S 08 46 34.7 -0.4**
comp=Z,1μm,32.2s
PPT2 Papeete2 83.29 118 *e*LR LR 09 02 10.9
comp=Z,2μm,25.0s,baz=315
CONA Conrad Observa 83.30 327 *i* PcP **P 08 36 17.5 +1.5**
comp=Z,25nm,1.2s,SNR=7.7
KHC Kasperske Hory 83.32 329 *e*P **P 08 36 16.6 +0.6**
KHC *e*pP **sP 08 36 28.7 -0.1**
KHC *e*x x 08 36 42.6
KHC *e*x x 08 37 09.7
KHC *e*PP **PP 08 39 29.4 +2.3**
KHC *e*S **S 08 46 38.8 +4.0**
KHC AMS AMS 09 20 40.0
comp=Z,3μm,13.6s
KHC Kasperske Hory 83.32 329 *e*P **P 08 36 16.6 +0.6**
KHC *e* 08 36 28.7
KHC *e* 08 39 29.4
KHC *e*S **S 08 46 38.8 +4.0**
KHC MLR MLR
comp=Z,3μm,13.6s
KHC Kasperske Hory 83.32 329 *e*P **P 08 36 16.0 0.0**
comp=Z,6.0nm,0.9s
LAZ Ladron 83.33 52 *e*P **P 08 36 16.4 -0.1**
ANMO Albuquerque 83.40 51 P **P 08 36 17.4 +0.5**
comp=Z,10nm,1.0s,baz=316,slow=6.5,SNR=22
ANMO Albuquerque 83.40 51 P **P 08 36 16.8 -0.1**
baz=311
ANMO Albuquerque 83.40 51 *de*P **P 08 36 17.5 +0.6**
ANMO pmax pmax
comp=Z,26nm,1.5s
ANMO MLR MLR
comp=Z,670nm,19.0s
ANMO Albuquerque 83.40 51 *e*P **P 08 36 17.2 +0.3**
comp=Z,19nm,1.1s
ANMO LR LR
comp=Z,714nm,19.0s
M31A Lambtecht Ranc 83.41 42 P **P 08 36 15.4 -1.3**
baz=315
L32A Elgin 83.46 41 P **P 08 36 16.1 -0.7**
baz=315
GEC2 GERESS Array S 83.50 329 *e*P **P 08 36 17.6 +0.6**
GEC2 pmax pmax
comp=Z,8.0nm,0.8s
GEC2 GERESS Array S 83.50 329 *e*P **P 08 36 17.6 +0.6**
comp=Z,7.7nm,0.8s
GERES GERESS Array B 83.50 329 P **P 08 36 17.1 0.0**
comp=Z,4.6nm,0.7s,baz=39,slow=6.8,SNR=19
GERES LR LR 09 16 58.2
comp=Z,3μm,18.1s,baz=28,slow=38
GEA0 GERESS Array S 83.50 329 *e*P **P 08 36 17.1 +0.1**
K33A Hardington 83.56 40 P **P 08 36 16.4 -0.9**
baz=316
J34A George 83.60 39 P **P 08 36 16.7 -0.9**
baz=316
EKA Eskdalemuir Ar 83.62 341 P **P 08 36 17.4 0.0**
comp=Z,2.4nm,0.6s,baz=24,slow=4.9,SNR=7.3
EKA LR LR 09 18 02.6
comp=Z,1μm,18.4s,baz=0.0,slow=39
ESK Eskdalemuir 83.65 342 PFAKE 08 36 30.0 +13
ESK LR LR
comp=Z,1μm,19.0s
RZN Rozhen 83.66 319 *e*P **P 08 36 18.6 +0.5**
H36A Jessenland, He 83.67 37 P **P 08 36 17.9 +0.1**
baz=318,SNR=14
LPM Los Pinos Moun 83.70 51 *e*P **P 08 36 19.7 +1.2**
SPMN Marine on St. 83.72 36 P **P 08 36 16.4 -1.7**
baz=318
SPMN Marine on St. 83.72 36 *e*P **P 08 36 17.3 -0.8**
comp=Z,24nm,1.3s
L33A Hoskins 83.73 41 P **P 08 36 16.4 -1.8**
baz=316
N31A Bailey Ranch, 83.79 43 P **P 08 36 16.5 -2.0**
baz=315
BGNE Belgrade 83.81 42 P **P 08 36 16.9 -1.7**
baz=315
BGNE Belgrade 83.81 42 *e*P **P 08 36 17.9 -0.7**
comp=Z,57nm,1.0s
BNM Barren Site 83.81 52 *e*P **P 08 36 20.2 +1.1**
GRFO Grafenberg 83.82 331 *e*P **P 08 36 18.9 +0.4**
GRFO pmax pmax
comp=Z,71nm,1.4s
GRFO Grafenberg 83.82 331 *e*P **P 08 36 18.9 +0.4**
comp=Z,71nm,1.4s
319A Douglas 83.90 55 *e*P **P 08 36 20.1 +0.7**
comp=Z,23nm,1.0s
J35A Milford 83.92 39 P **P 08 36 16.9 -2.2**
baz=317
K34A Le Mars 83.97 40 P **P 08 36 17.9 -1.5**
baz=316
ARSA Arzberg 83.97 327 *i* PcP **P 08 36 20.3 +1.0**
comp=Z,13nm,1.5s
I36A Fitzsimmons Fa 84.03 38 P **P 08 36 19.2 -0.6**
baz=318
MOA Molln 84.04 328 *i* PcP **P 08 36 20.5 +0.8**
comp=Z,17nm,1.4s
O31A Woolen Ranch, 84.05 43 P **P 08 36 18.4 -1.5**
baz=315
121A Cookes Peak, D 84.13 53 P **P 08 36 20.9 +0.2**
baz=311
121A Cookes Peak, D 84.13 53 *e*P **P 08 36 21.2 +0.5**
comp=Z,17nm,0.8s
H37A Dierke Farm, C 84.15 37 P **P 08 36 19.5 -0.8**
baz=318
N32A Stulken Farm, 84.18 42 P **P 08 36 19.3 -1.3**
baz=315
M33A Taylor Creek F 84.19 41 P **P 08 36 19.0 -1.6**
baz=316
MMB Musomiste 84.25 319 *e*P **P 08 36 20.4 -0.5**
I37A Lemond, Waseca 84.34 37 P **P 08 36 21.0 -0.3**
baz=318,SNR=17
L34A Svendsen Farm, 84.34 40 P **P 08 36 20.1 -1.2**
baz=316
K35A Storm Lake 84.38 39 P **P 08 36 20.2 -1.3**
baz=317
J36A Seneca 1, Swea 84.38 38 P **P 08 36 20.5 -1.0**
baz=317
O32A Brockman Farm, 84.55 43 P **P 08 36 20.8 -1.6**
baz=315
M34A Aspy Farms, Fr 84.56 41 P **P 08 36 20.9 -1.6**
baz=316
SOKA Soboth 84.63 327 *i* PcP **P 08 36 24.0 +1.2**
comp=Z,25nm,1.2s,SNR=7.1
N33A J Bar K, Exete 84.65 42 P **P 08 36 21.3 -1.6**
baz=316
L35A Bielow Farm, R 84.66 40 P **P 08 36 21.4 -1.5**
baz=317
TAOE Nuku Hiva Isla 84.69 105 *e*S **S 08 46 45.6 -3.9**
comp=Z,306nm,26.5s
TAOE Nuku Hiva Isla 84.69 105 *e*LR LR 09 02 56.2
comp=Z,3μm,25.9s,baz=315
COWI Conover 84.74 34 *e*P **P 08 36 23.5 +0.3**
comp=Z,39nm,1.8s
COWI LR LR
comp=Z,731nm,19.0s
CBKS Cedar Bluff 84.76 44 P **P 08 36 22.6 -0.9**
baz=314
CBKS Cedar Bluff 84.76 44 PFAKE 08 36 40.0 +16
CBKS LR LR
comp=Z,597nm,20.0s
J37A Redenius Farm, 84.78 38 P **P 08 36 22.7 -0.8**
baz=318,SNR=6.1
P32A Huiting Farm, 84.82 43 P **P 08 36 22.8 -1.0**
baz=315
I38A Scanlan Farm, 84.83 37 P **P 08 36 23.1 -0.7**
baz=319,SNR=8.2
K36A Gilmore City 84.83 39 P **P 08 36 22.3 -1.5**

baz=317
SCHQ Schefferville 84.89 17 P P 08 36 23.7 -0.2
comp=Z,7.2nm,0.6s,baz=332,slow=5.3,SNR=22
SCHQ LR LR 09 20 43.9
comp=Z,697nm,18.0s,baz=8.5,slow=40
SCHQ Schefferville 84.89 17 *eP* **P 08 36 24.8 +0.9**
comp=Z,66nm,1.8s
SCHQ *ep*P **sP 08 36 36.8 +0.1**
BEBN Eben Emael 84.93 335 P **P 08 36 24.7 +0.6**
OBKA Obir 84.97 327 *i* P **P 08 36 22.8 -1.7**
comp=Z,14nm,1.3s
MEM Membach 84.98 334 P P 08 36 25.5 +1.2
comp=Z,18nm,1.5s
KBA Koelnbreinsper 85.04 328 *i* PcP **P 08 36 25.8 +0.9**
comp=Z,22nm,2.4s
VAY Valandovo 85.05 319 *i* P **P 08 36 25.8 +0.9**
M35A Neola 85.05 40 P P 08 36 23.4 -1.5
baz=317
O33A Hebron 85.05 42 P P 08 36 23.0 -2.0
baz=316
N34A Lincoln 85.09 41 P P 08 36 23.3 -1.8
baz=316
K37A Belmond 85.14 38 P P 08 36 24.6 -0.7
baz=318,SNR=6.7
SKO Skopje 85.15 321 *i* P **P 08 36 26.7 +1.3**
MYKA Terra Mystica 85.26 328 *i* PcP **P 08 36 27.1 +1.1**
comp=Z,8.9nm,1.0s
Q32A Meitler Ranch, 85.29 44 P P 08 36 24.8 -1.4
baz=315
J38A Wedel Dairy, R 85.30 37 P P 08 36 24.3 -1.8
baz=318
BCLA Clavier 85.38 335 P P 08 36 26.9 +0.5
comp=Z,18nm,1.5s
CWF Charnwood Fore 85.44 339 *eP* **P 08 36 28.0 +1.4**
comp=Z,82nm,1.5s
P33A Williams Farm, 85.45 43 P P 08 36 24.7 -2.2
baz=316
O34A Beatrice 85.45 42 P P 08 36 25.0 -2.0
baz=316
N35A Tabor 85.52 41 P P 08 36 25.8 -1.4
baz=317
M36A Felix, Anita 85.52 40 P P 08 36 26.1 -1.2
baz=317
L37A Phoenix Point, 85.56 39 P P 08 36 26.3 -1.1
baz=318
WTTA Wattenberg 85.60 329 *i* PcP **P 08 36 28.2 +0.5**
comp=Z,12nm,1.5s
R32A Long Quarter, 85.61 44 P P 08 36 26.1 -1.7
baz=315
ABTA Abfaltersbach 85.65 329 *i* PcP **P 08 36 27.8 -0.1**
comp=Z,12nm,1.4s
SNF Seneffe 85.65 335 P P 08 36 28.4 +0.8
K38A Parkersburg 85.66 38 P P 08 36 26.2 -1.7
baz=318
Q33A Connelly Farm, 85.69 43 P P 08 36 27.0 -1.1
baz=316,SNR=6.2
LANF Langenberg 85.69 332 *eP* **P 08 36 28.8 +0.8**
WLF Walferdange 85.72 334 *eP* **P 08 36 30.5 +2.4**
WLF pmax pmax
comp=Z,35nm,1.2s
WLF Walferdange 85.72 334 *eP* **P 08 36 30.5 +2.4**
comp=Z,34nm,1.2s
WLF LR LR
comp=Z,2µm,20.0s
MOTA Moosalm 85.75 330 *i* PcP **P 08 36 30.2 +1.7**
comp=Z,17nm,1.1s
RETA Reutte 85.77 330 *i* PcP **P 08 36 29.6 +1.2**
comp=Z,18nm,0.9s,SNR=8.5
O35A Humboldt 85.81 41 P P 08 36 26.7 -2.1
baz=317
P34A Walnut Farm, R 85.84 42 P P 08 36 27.7 -1.2
baz=316,SNR=12
DOU Dourbes 85.90 335 P P 08 36 29.4 +0.5
comp=Z,16nm,2.1s
N36A Muff Farm, Cla 85.91 40 P P 08 36 27.9 -1.3
baz=317
PDG Podgorica 85.91 322 *i* P **P 08 36 30.4 +1.3**
BIA Bitola 85.91 320 *i* P **P 08 36 29.3 0.0**
M37A Trindle Farm, 85.94 39 P P 08 36 27.8 -1.5
baz=318
L38A Oak Wood Farm, 85.94 38 P P 08 36 28.5 -0.8
baz=318,SNR=6.3
S32A Newby Ranch, P 85.99 45 P P 08 36 27.7 -2.0
baz=315
SCIA State Center 85.99 39 PFAKE 08 36 40.0 +10
SCIA LR LR
comp=Z,634nm,19.0s
BFO Black Forest 86.03 332 *eP* **P 08 36 29.8 +0.1**
BFO pmax pmax
comp=Z,26nm,0.9s
BFO Black Forest 86.03 332 *eP* **P 08 36 29.8 +0.1**
comp=Z,26nm,0.9s
BFO LR LR
comp=Z,1µm,20.0s
R33A Olander Ranch, 86.09 44 P P 08 36 29.0 -1.1
baz=315
OHR Ohrid 86.11 320 *i* P **P 08 36 30.6 +0.4**
FETA Feichten 86.16 330 *i* PcP **P 08 36 31.4 +0.9**
comp=Z,11nm,1.3s
MNTX Cornudas Mount 86.21 53 P P 08 36 29.7 -1.2
baz=312
Q34A Chapman 86.23 43 P P 08 36 29.8 -1.0
baz=316,SNR=6.4
KSU1 Kansas State U 86.28 42 *eP* **P 08 36 30.7 -0.3**
comp=Z,22nm,0.7s
KSU1 LR LR
comp=Z,779nm,19.0s
DAVA Damuels 86.28 330 *i* PcP **P 08 36 32.1 +1.0**
comp=Z,14nm,0.9s
P35A Duane Minner, 86.29 42 P P 08 36 30.0 -1.1
baz=317
MSTX Muleshoe 86.32 50 P P 08 36 30.5 -1.0
baz=313
N37A Lee Faris, Mou 86.34 40 P P 08 36 30.4 -0.9
baz=318
AMTX Amarillo 86.35 48 P P 08 36 30.9 -0.8
baz=314
T32A Huddler Ranch, 86.36 45 P P 08 36 30.5 -1.1
baz=315
M38A Pleasantville 86.36 39 P P 08 36 31.1 -0.4
baz=318,SNR=9.4
O36A Bolckow 86.40 41 P P 08 36 30.6 -1.0
baz=317,SNR=6.8
TIR Tirane 86.41 321 PFAKE 08 36 40.0 +8.4
TIR LR LR
comp=Z,4µm,20.0s
R34A Isabella, Hill 86.50 43 P P 08 36 30.8 -1.4
baz=316
ECH Echery 86.56 332 *eP* **P 08 36 32.8 +0.5**
S33A Kaszmaul Farm, 86.59 44 P P 08 36 31.5 -1.1
baz=316
P36A Good Intent, A 86.65 41 P P 08 36 31.9 -0.9
baz=317,SNR=5.2
FUORN Ofenpass-Fuorn 86.67 330 *eP* **P 08 36 33.9 +0.7**
comp=Z,52nm,1.4s
FUORN *ep*P **sP 08 36 45.3 -0.6**
JFWS Jewell Farm 86.68 36 *eP* **P 08 36 32.8 -0.1**
JFWS pmax pmax
comp=Z,13nm,0.8s
JFWS Jewell Farm 86.68 36 *eP* **P 08 36 32.8 -0.1**
comp=Z,12nm,0.8s
JFWS LR LR
comp=Z,708nm,20.0s
DAVOX Davos/Dischmat 86.70 330 P P 08 36 32.9 -0.3
comp=Z,4.3nm,0.5s,baz=34,slow=7.3,SNR=4.6
DAVOX LR LR 09 18 59.6
comp=Z,1µm,19.4s,baz=21,slow=38
Q35A Mercer Eighty, 86.76 42 P P 08 36 32.6 -0.9
baz=317,SNR=12
O37A Wolven Farm, M 86.81 40 P P 08 36 32.0 -1.6
baz=318
N38A Joes South For 86.81 39 P P 08 36 33.0 -0.6
baz=318
T33A Patterson Ranc 86.81 45 P P 08 36 32.1 -1.6
baz=315
MOF Molkenrain 86.88 332 *eP* **P 08 36 33.1 -0.8**
U32A Winter Ranch, 86.88 46 P P 08 36 32.4 -1.7
baz=315
THEF They Montfort 86.99 333 *eP* **P 08 36 35.0 +0.7**
Q36A Arnold C. Orve 87.00 42 P P 08 36 33.5 -1.1
baz=317
SANT Santorini 87.00 314 PFAKE 08 36 50.0 +15
SANT LR LR
comp=Z,741nm,19.0s
S34A Willow Spring 87.01 44 P P 08 36 33.7 -1.0
baz=316,SNR=5.7
R35A Emporia Munici 87.06 43 P P 08 36 34.3 -0.6
baz=316,SNR=5.9
P37A Lathrop 87.12 41 P P 08 36 34.6 -0.5
baz=318,SNR=8.9
TUE Stuetta 87.16 330 PFAKE 08 36 50.0 +15
TUE LR LR
comp=Z,1µm,21.0s
O38A Galt 87.19 40 P P 08 36 34.7 -0.8
baz=318
V32A Arapaho 87.32 46 P P 08 36 35.1 -1.2
baz=315
U33A Lingo Farm, Me 87.35 45 P P 08 36 35.0 -1.4
baz=316
LOMF Lomont 87.41 332 *eP* **P 08 36 35.4 -1.1**
R36A Gordon, Harris 87.44 42 P P 08 36 36.0 -0.7
baz=317,SNR=7.0
T34A McClaskey Farm 87.45 44 P P 08 36 36.4 -0.4
baz=316,SNR=7.2
S35A Otter Creek Ra 87.46 43 P P 08 36 36.4 -0.5
baz=316,SNR=7.9
P38A Dawn 87.52 40 P P 08 36 36.6 -0.5
baz=318,SNR=7.8
O39A Kirksville 87.56 39 P P 08 36 36.7 -0.6
baz=319
Q37A Longview Farm, 87.59 41 P P 08 36 36.2 -1.3
baz=318
W32A Sentinel 87.62 47 P P 08 36 37.5 -0.1
baz=315
U34A Anderson Ranch 87.67 45 P P 08 36 37.0 -0.9
baz=316
U34A Anderson Ranch 87.67 45 *eP* **P 08 36 39.1 +1.2**
comp=Z,62nm,1.3s
V33A Lossen Ranch, 87.69 46 P P 08 36 36.6 -1.4
baz=315
R37A Teagarden Farm 87.81 42 P P 08 36 37.3 -1.2
baz=317
S36A Lake Cedric, C 87.82 43 P P 08 36 38.0 -0.6
baz=317,SNR=5.5
T35A Sooner Cattle 87.90 44 P P 08 36 38.3 -0.7
baz=316,SNR=6.8
Q38A Cooks Store, C 87.97 41 P P 08 36 37.9 -1.4
baz=318
O40A La Belle 88.00 39 P P 08 36 38.9 -0.4
baz=319,SNR=7.2
W33A Caddo, Fort Co 88.05 46 P P 08 36 39.4 -0.4
baz=315
X32A Elmer 88.09 47 P P 08 36 39.6 -0.4
baz=315,SNR=6.7
IDI Anoyia 88.09 314 P P 08 36 38.7 -1.3
comp=Z,5.1nm,0.5s,baz=34,slow=11,SNR=7.6
V34A Guthrie 88.11 45 P P 08 36 39.9 -0.1
baz=316,SNR=6.5
V34A Guthrie 88.11 45 *eP* **P 08 36 40.6 +0.6**
comp=Z,122nm,1.8s
T36A Boggs Farm, Ca 88.15 43 P P 08 36 39.1 -1.1
baz=317
WMOK Wichita Mounta 88.16 47 *eP* **P 08 36 40.6 +0.3**
WMOK pmax pmax
comp=Z,51nm,1.7s
WMOK Wichita Mounta 88.16 47 *eP* **P 08 36 40.6 +0.3**
comp=Z,51nm,1.8s
WMOK LR LR
comp=Z,774nm,19.0s
U35A Pawnee 88.17 44 P P 08 36 39.3 -1.0
baz=316
S37A Fort Scott 88.21 42 P P 08 36 40.1 -0.3
baz=317,SNR=7.7
P40A Paris 88.36 40 P P 08 36 40.6 -0.5
baz=319,SNR=9.4
SLBS Sierra La Lagu 88.37 61 *eP* **P 08 36 42.7 +1.2**
comp=Z,60nm,1.8s
R38A Fenwick Farm, 88.39 42 P P 08 36 39.6 -1.6
baz=318
W34A Bridge Creek, 88.39 46 P P 08 36 40.9 -0.5
baz=316
W34A Bridge Creek, 88.39 46 *eP* **P 08 36 42.2 +0.9**
comp=Z,35nm,1.3s
X33A Lawton 88.47 47 P P 08 36 41.5 -0.2
baz=315,SNR=5.5
V35A Meyer Ranch, C 88.55 45 P P 08 36 41.3 -0.7
baz=316
VLC Villacollemand 88.62 328 PFAKE 08 36 50.0 +7.8
VLC LR LR
comp=Z,853nm,19.0s
T37A Cheneyville 18 88.63 43 P P 08 36 41.8 -0.6
baz=317,SNR=6.8
U36A Oologah 88.71 44 P P 08 36 41.6 -1.2
baz=317
AQU L'Aquila 88.74 325 PFAKE 08 36 50.0 +7.1
AQU LR LR
comp=Z,2µm,20.0s
Q40A Laux Farm, Aux 88.74 40 P P 08 36 42.7 -0.2
baz=319,SNR=10
R39A Chumby, Stover 88.75 41 P P 08 36 42.2 -0.8
baz=318,SNR=9.3
Y33A Hilltop Ranch, 88.77 47 P P 08 36 41.5 -1.6
baz=315
S38A Stockton 88.80 42 P P 08 36 41.9 -1.3
baz=318,SNR=8.1
X34A Smith Ranch, M 88.81 46 P P 08 36 42.5 -0.9
baz=316
TX31 Lajitas Ar. Si 88.89 54 *eP* **P 08 36 43.6 -0.3**
TX31 *eP* **P 08 36 44.1 +0.3**
TXAR Lajitas Array 88.89 54 P P 08 36 44.0 +0.1
comp=Z,5.0nm,0.8s,baz=300,slow=3.1,SNR=31
TXAR LR LR 09 14 52.4
comp=Z,1µm,18.6s,baz=0.0,slow=34
HDIL Hopedale 88.94 37 P P 08 36 43.1 -0.7
baz=321
HDIL Hopedale 88.94 37 *eP* **P 08 36 43.9 +0.1**
comp=Z,33nm,0.8s
HDIL LR LR
comp=Z,653nm,20.0s
W35A Tecumseh 88.97 45 P P 08 36 43.9 -0.1
baz=316,SNR=7.6
TUL1 Leonard 89.03 44 P P 08 36 43.5 -0.8
baz=317
TUL1 Leonard 89.03 44 *eP* **P 08 36 44.5 +0.2**
comp=Z,35nm,1.4s
T38A Diamond 89.03 43 P P 08 36 44.1 -0.2
baz=318,SNR=13
V36A Jenks 89.04 44 P P 08 36 43.8 -0.6
baz=317
U37A Salina 89.04 43 P P 08 36 43.8 -0.6
baz=317,SNR=6.6
S39A Bolivar 89.07 42 P P 08 36 43.5 -0.9
baz=318,SNR=9.2
ABTX Abilene, Hawle 89.14 49 P P 08 36 43.8 -1.1
baz=315
ABTX Abilene, Hawle 89.14 49 *eP* **P 08 36 44.9 0.0**
comp=Z,25nm,1.3s
R40A Rudies Statio 89.17 40 P P 08 36 43.8 -1.1
baz=319
HPIG 89.18 56 *eP* **P 08 36 46.3 +0.9**
comp=Z,9.4nm,1.1s
Z33A Whitaker Ranch 89.20 48 P P 08 36 44.7 -0.5
baz=315
Y34A Reagan Ranch, 89.31 47 P P 08 36 45.0 -0.7
baz=316
W36A Wetumka 89.34 45 P P 08 36 45.5 -0.3
baz=317
BNI Bardonecchia 89.39 331 PFAKE 08 37 00.0 +14
BNI LR LR
comp=Z,3µm,19.0s
V37A Hulbert 89.41 44 P P 08 36 45.5 -0.6
baz=317,SNR=7.0
U38A Gravette 89.42 43 P P 08 36 45.7 -0.4
baz=318,SNR=6.1
CUC Castrocucco 89.44 322 PFAKE 08 37 00.0 +14
CUC LR LR
comp=Z,1µm,20.0s
X35A Drake 89.45 46 P P 08 36 46.0 -0.3
baz=316,SNR=7.4
T39A Clever 89.53 42 P P 08 36 45.9 -0.8
baz=318
S40A Lebanon 89.57 41 P P 08 36 45.9 -0.9
baz=319
133A Hamilton Ranch 89.58 48 P P 08 36 46.0 -1.0
baz=315
TIP Timpagrande 89.61 321 PFAKE 08 37 00.0 +13
TIP LR LR
comp=Z,3µm,19.0s
Z34A Collier Ranch, 89.64 47 P P 08 36 46.6 -0.6
baz=316
X36A Centrahoma 89.68 45 P P 08 36 46.7 -0.7
baz=316,SNR=6.3
Y35A Marietta 89.77 46 P P 08 36 47.0 -0.8
baz=316
HHAR Hobbs 89.78 43 *eP* **P 08 36 47.6 -0.2**
comp=Z,46nm,1.8s
W37B Quinton 89.79 44 P P 08 36 47.4 -0.5
baz=317,SNR=8.8
V38A Canehill 89.83 43 P P 08 36 47.4 -0.7
baz=318,SNR=16
T40A Mansfield 89.89 41 P P 08 36 47.4 -0.9
baz=319
U39A Green Forest 89.95 42 P P 08 36 47.8 -0.8
baz=318,SNR=13
SSB Saint Sauveur 90.01 332 PFAKE 08 37 00.0 +11
SSB LR LR
comp=Z,1µm,19.0s
233A Rising Star 90.01 49 P P 08 36 48.5 -0.5
baz=315
Z35A Perchaven, San 90.06 47 P P 08 36 48.6 -0.6
baz=316
134A White-Moore Ra 90.11 48 P P 08 36 49.3 -0.1
baz=316
SFIN Lafayette 90.13 36 P P 08 36 49.2 -0.2
baz=322
SFIN Lafayette 90.13 36 *eP* **P 08 36 50.0 +0.6**
comp=Z,91nm,1.7s
SFIN *ep*P **sP 08 37 01.8 -0.4**
AAM Ann Arbor 90.15 33 PFAKE 08 37 00.0 +11
AAM LR LR
comp=Z,551nm,20.0s
Y36A Durant 90.21 46 P P 08 36 49.3 -0.6
baz=316
X37A Clayton 90.23 45 P P 08 36 49.8 -0.1
baz=317,SNR=5.4
V39A Pettigrew 90.27 43 P P 08 36 49.0 -1.1
baz=318,SNR=8.8
U40A Yellville 90.31 42 P P 08 36 49.6 -0.7
baz=318
W38A Poteau 90.35 44 P P 08 36 50.2 -0.3
baz=318,SNR=6.5
TRQ Mont Tremblant 90.38 25 *eP* **P 08 36 50.4 -0.1**
333A Richland Sprin 90.45 49 P P 08 36 51.0 -0.1
baz=315,SNR=5.8
X38A Whitesboro 90.47 44 P P 08 36 51.2 +0.2
baz=317,SNR=9.0
234A Clairette 90.48 48 P P 08 36 50.7 -0.5
baz=316,SNR=11
135A Vickery Place, 90.52 47 P P 08 36 50.6 -0.7
baz=316
Y37A Hugo 90.53 45 P P 08 36 51.3 -0.1
baz=317
JCT Junction City 90.54 50 P P 08 36 51.2 -0.4
baz=315
JCT Junction City 90.54 50 *eP* **P 08 36 51.8 +0.3**
JCT pmax pmax
comp=Z,45nm,1.8s
JCT Junction City 90.54 50 *eP* **P 08 36 51.8 +0.3**
comp=Z,45nm,1.8s
Z36A Blue Ridge 90.57 46 P P 08 36 50.9 -0.7
baz=316
W39A Magazine 90.67 43 P P 08 36 51.0 -0.9
baz=318
V40A Witts Springs 90.74 42 P P 08 36 51.0 -1.3
baz=318
CEL Celeste 90.74 321 PFAKE 08 37 00.0 +7.7
CEL LR LR
comp=Z,2µm,22.0s
433A Art 90.78 50 P P 08 36 52.0 -0.6
baz=315
WHTX Lake Whitney, 90.89 48 P P 08 36 52.6 -0.4
baz=316
WHTX Lake Whitney, 90.89 48 *eP* **P 08 36 53.5 +0.4**
WHTX *ep*P **sP 08 37 06.1 +0.2**
334A Lometa 90.89 49 P P 08 36 52.5 -0.6
baz=316
OLIL Olney 90.94 38 *eP* **P 08 36 53.1 0.0**
comp=Z,71nm,1.7s
X39A Fountain Ranch 90.99 44 P P 08 36 53.4 -0.1
baz=318
W40A Ferguson Farm, 91.06 43 P P 08 36 53.2 -0.5
baz=318
Y38A Idabel 91.07 45 P P 08 36 53.0 -0.8
baz=317
136A Ennis 91.09 47 P P 08 36 53.3 -0.7
baz=316
Z37A Pogue Cattle C 91.09 46 P P 08 36 53.2 -0.8
baz=317
SIUC Southern Illin 91.17 39 *eP* **P 08 36 55.2 +1.0**
comp=Z,71nm,1.6s
434A Burnet 91.24 49 P P 08 36 54.0 -0.7
baz=315
MIAR Mount Ida 91.26 44 P P 08 36 53.9 -0.8
baz=318
PBMO Poplar Bluff 91.27 40 *eP* **P 08 36 55.1 +0.4**
comp=Z,101nm,1.9s
533A Kerrville 91.30 50 P P 08 36 54.3 -0.7
baz=315
X201 Greenbrier Sit 91.37 43 *eP* **P 08 36 56.1 +0.8**
comp=Z,77nm,1.7s
X301 Greenbrier Sit 91.39 43 *eP* **P 08 36 55.5 +0.2**
comp=Z,86nm,1.9s
WHAR Wooly Hollow 91.41 42 *eP* **P 08 36 55.4 0.0**
comp=Z,22nm,1.0s
335A Moody 91.42 48 P P 08 36 55.1 -0.4
baz=316
Y39A Lockesburg 91.42 44 P P 08 36 55.0 -0.4
baz=318
Z38A Mt. Pleasant 91.42 46 P P 08 36 55.0 -0.5
baz=317
236A Katherine and 91.43 47 P P 08 36 55.0 -0.6
baz=316
137A Heron Place, G 91.45 46 P P 08 36 55.0 -0.7
baz=317
W41B Gary Mavity, V 91.52 43 P P 08 36 55.4 -0.5
baz=319
W41A Tony Mavity, V 91.52 43 P P 08 36 55.3 -0.6
baz=319
633A Saathoff Ranch 91.64 51 P P 08 36 56.8 +0.2
baz=315
534A Blanco 91.67 50 P P 08 36 56.2 -0.6
baz=315
435B Jarrell 91.68 49 P P 08 36 56.4 -0.3
baz=316
336A Riesel 91.69 48 P P 08 36 56.2 -0.6
baz=316
PARMO Parma 91.71 40 *eP* **P 08 36 57.4 +0.6**
comp=Z,77µm,0.7s
X40A Basin Creek Fa 91.71 43 P P 08 36 56.9 +0.1
baz=318
LONY Lake Ozonia 91.77 26 PFAKE 08 37 10.0 +13
LONY LR LR
comp=Z,971nm,19.0s
138A Matatall Enter 91.79 46 P P 08 36 57.0 -0.2
baz=317
Y40A Okolona 91.82 44 P P 08 36 57.3 -0.1
baz=318
Z39A Irene McRaven, 91.88 45 P P 08 36 57.6 -0.1
baz=318
832A Faith Ranch, C 91.96 52 P P 08 36 57.7 -0.4
baz=314
VAE Valguarnera 92.09 322 LR LR 09 22 52.4
comp=Z,1µm,18.9s,baz=63,slow=38
ACSO Alum Creek Sta 92.13 34 PFAKE 08 37 10.0 +11
ACSO LR LR
comp=Z,587nm,20.0s
WLAR White Oak Lake 92.16 44 *eP* **P 08 36 58.8 -0.1**
comp=Z,40nm,1.1s
436A Wall Ranch, Ga 92.16 48 P P 08 36 59.1 +0.2
baz=316
634A China Grove, S 92.20 50 P P 08 36 58.5 -0.7
baz=315
WCI Wyandotte Cave 92.21 37 *eP* **P 08 36 59.5 +0.4**
WCI pmax pmax
comp=Z,44nm,1.7s
WCI Wyandotte Cave 92.21 37 *eP* **P 08 36 59.5 +0.4**
comp=Z,44nm,1.8s
535A Dale 92.22 49 P P 08 36 58.8 -0.4
baz=316
238A Jacksonville 92.25 46 P P 08 36 59.0 -0.3
baz=317
337A Centerville 92.31 47 P P 08 36 59.5 -0.1
baz=317
Z40A Long Farm, Mag 92.31 45 P P 08 36 59.5 -0.1
baz=318
734A La Parita Cree 92.45 51 P P 08 37 00.1 -0.3
baz=315
CLTB Caltabellotta 92.60 323 PFAKE 08 37 10.0 +9.0
CLTB LR LR
comp=Z,1µm,19.0s
Z41A Richland Creek 92.65 44 P P 08 37 01.3 +0.2
baz=318
NATX Nacogdoches 92.70 46 P P 08 37 01.5 0.0

baz=317
NATX Nacogdoches 92.70 46 *e*P **P 08 37 01.5 0.0**
NATX LR LR
comp=Z,909nm,19.0s
Y42A Garnett, Star 92.78 43 P **P 08 37 01.4 -0.3**
baz=319
VSL Villasalto 92.85 326 PFAKE 08 37 10.0 +8.0
VSL LR LR
comp=Z,2μm,19.0s
933A Laredo 92.87 52 P **P 08 37 02.8 +0.5**
baz=315
636A Smothers Creek 92.92 49 P **P 08 37 02.9 +0.4**
baz=316
PKME Peaks-Kenny Pk 92.94 22 PFAKE 08 37 10.0 +7.8
PKME LR LR
comp=Z,956nm,19.0s
537A Green Hill Far 92.94 48 P **P 08 37 02.8 +0.2**
baz=316
438A Sam Houston St 92.96 48 P **P 08 37 02.7 +0.1**
baz=317
834A Tilden 92.97 51 P **P 08 37 02.6 -0.2**
baz=315
WVT Waverly 93.10 39 *e*P **P 08 37 03.4 +0.2**
WVT pmax pmax
comp=Z,29nm,1.8s
WVT Waverly 93.10 39 *e*P **P 08 37 03.4 +0.2**
comp=Z,29nm,1.8s
Z42A Norrel Spur, H 93.11 44 P **P 08 37 03.6 +0.3**
baz=319
WDD Wied Dalam 93.29 321 PFAKE 08 37 20.0 +16
WDD LR LR
comp=Z,2μm,19.0s
736A Circle Diamond 93.30 50 P **P 08 37 04.9 +0.7**
baz=316
HKT Hockley 93.33 48 *e*P **P 08 37 05.8 +1.6**
HKT pmax pmax
comp=Z,35nm,1.8s
HKT Hockley 93.33 48 *e*P **P 08 37 05.8 +1.6**
comp=Z,35nm,1.8s
934A Benavides 93.36 52 P **P 08 37 05.0 +0.5**
baz=315
637A Eagle Lake 93.39 49 P **P 08 37 05.0 +0.3**
baz=316
340A Bronson 93.39 46 P **P 08 37 03.9 -0.7**
baz=318
241A Mo Tay, Goldon 93.50 45 P **P 08 37 04.8 -0.3**
baz=318
OXF Oxford 93.54 41 *e*P **P 08 37 05.9 +0.6**
OXF pmax pmax
comp=Z,30nm,1.0s
OXF Oxford 93.54 41 *e*P **P 08 37 05.8 +0.6**
comp=Z,30nm,1.0s
Z43A Armstrong Fami 93.54 43 P **P 08 37 05.2 -0.1**
baz=319
LMN Caledonia Moun 93.68 19 *e*P **P 08 37 06.2 +0.5**
comp=Z,11nm,0.8s
KVTX Kingsville 93.79 51 PFAKE 08 37 20.0 +14
KVTX LR LR
comp=Z,951nm,20.0s
Z44A Pea Ridge, Bel 93.94 43 P **P 08 37 07.1 +0.1**
baz=320
638A Rosharon 93.94 48 P **P 08 37 07.0 -0.2**
baz=317
Y45A Yeager Farm, C 93.96 42 P **P 08 37 07.8 +0.6**
baz=320
ZAIG Zacatecas 94.06 58 *e*P **P 08 37 09.8 +1.6**
comp=Z,22nm,1.7s
Y46A Houston 94.31 41 P **P 08 37 09.0 +0.2**
baz=321
035Z Hargill 94.44 52 P **P 08 37 09.9 +0.4**
baz=315
BLA Blacksburg 95.75 34 PFAKE 08 37 30.0 +15
BLA LR LR
comp=Z,697nm,19.0s
KEST Kesra 95.93 324 LR LR 09 25 29.1
comp=Z,2μm,18.4s,baz=343,slow=39
CBN Corbin Frederi 96.22 31 PFAKE 08 37 30.0 +13
CBN LR LR
comp=Z,573nm,21.0s
RKT Rikitea 97.34 113 *e*SKSac **SKSac 08 47 55.8 -2.1**
comp=Z,290nm,26.5s
RKT Rikitea 97.34 113 *e*PS PS 08 50 08.6 -2.1
comp=Z,294nm,28.5s
RKT Rikitea 97.34 113 *e*LR LR 09 08 45.6
comp=Z,2μm,27.8s,baz=306
GOGA Godfrey 97.44 38 PFAKE 08 37 30.0 +6.9
GOGA LR LR
comp=Z,741nm,19.0s
ESDC Sonseca Array 97.94 335 P **P 08 37 24.4 -0.9**
comp=Z,0.2nm,0.3s,baz=5.7,slow=3.9,SNR=3.1
ESDC LR LR 09 26 43.4
comp=Z,1μm,18.5s,baz=40,slow=38
PAB San Pablo 98.19 335 PFAKE 08 37 40.0 +14
PAB LR LR
comp=Z,2μm,19.0s
MTE Manteigas 98.42 338 PFAKE 08 37 40.0 +13
MTE LR LR
comp=Z,2μm,19.0s
NHSC New Hope 99.26 36 PFAKE 08 37 40.0 +8.8
NHSC LR LR
comp=Z,739nm,20.0s
KMBO Kilima Mbogo 103.49 279 PFAKE 08 38 00.0 +9.4
KMBO LR LR
comp=Z,571nm,21.0s
TEIG Tepich 105.10 50 PFAKE 08 42 20.0
TEIG LR LR
comp=Z,245nm,19.0s
CASY Casey 106.05 193 PFAKE 08 42 20.0
CASY LR LR
comp=Z,64nm,19.0s
BBSR BB Station 106.14 24 PFAKE 08 42 30.0
BBSR LR LR
comp=Z,574nm,19.0s
TAM Tamanrasset 108.42 319 PFAKE 08 42 30.0
TAM LR LR
comp=Z,963nm,19.0s
GTBY Guantanamo Bay 112.73 39 PFAKE 08 42 40.0
GTBY LR LR
comp=Z,438nm,22.0s
MTDJ Mount Denham 112.87 42 PFAKE 08 42 40.0
MTDJ LR LR
comp=Z,547nm,19.0s
GRTK Grand Turk 113.30 35 PFAKE 08 42 40.0
GRTK LR LR
comp=Z,1μm,19.0s
JTS JuntasAbangare 114.68 54 PFAKE 08 42 40.0 +10
JTS LR LR
comp=Z,387nm,19.0s
VNDA Vanda 114.86 176 PKP PKPdf 08 42 27.7 -0.8
comp=Z,0.8nm,0.8s,baz=304,slow=3.7,SNR=4.2
SDDR Presa de Saban 115.41 37 PFAKE 08 42 40.0 +8.5
SDDR LR LR
comp=Z,775nm,19.0s
TOA0 Torodi Ar. Sit 118.39 317 *e*PKPdf **PKPdf 08 42 36.5 -0.8**
TORD Torodi Ar. Bea 118.39 317 PKP **PKPdf 08 42 35.6 -1.6**
comp=Z,0.7nm,0.5s,baz=16,slow=2.0,SNR=9.6
TORD PKKPbc **PKKPbc 08 52 53.9 +0.3**
comp=Z,1.7nm,0.8s,baz=237,slow=2.4,SNR=7.1
SJG San Juan 118.50 32 PFAKE 08 42 50.0 +13
SJG LR LR
comp=Z,342nm,19.0s
BCIP Isla Barro Col 118.77 50 PFAKE 08 42 50.0 +12
BCIP LR LR
comp=Z,448nm,20.0s
PAYG Puerto Ayora 118.79 67 PFAKE 08 42 50.0 +12
PAYG LR LR
comp=Z,1μm,21.0s
LSZ Lusaka 119.02 272 PFAKE 08 42 50.0 +12
LSZ LR LR
comp=Z,599nm,19.0s
MAW Mawson 120.22 206 PKP **PKPdf 08 42 37.9 -1.0**
comp=Z,3.9nm,0.9s,baz=287,slow=8.7,SNR=4.4
MAW Mawson 120.22 206 *e*PKPdf **PKPdf 08 42 39.8 +0.8**
ANWB Willy Bob 120.65 28 PFAKE 08 42 50.0 +8.5
ANWB LR LR
comp=Z,473nm,19.0s
FDF Fort de France 123.57 29 PFAKE 08 43 00.0 +13
FDF LR LR
comp=Z,495nm,20.0s
SDV Santo Domingo 124.31 42 PFAKE 08 43 00.0 +11
SDV LR LR
comp=Z,544nm,20.0s
GRGR Grenville 125.73 31 PFAKE 08 43 00.0 +8.7
GRGR LR LR
comp=Z,414nm,20.0s
OTAV Otavalo 126.45 56 PFAKE 08 43 10.0 +17
OTAV LR LR
comp=Z,410nm,20.0s
QSPA South Pole Qui 126.79 180 *e*PKPdf **PKPdf 08 42 51.9 +0.2**
QSPA LR LR
comp=Z,676nm,19.0s
DBIC Dimbokro 127.31 319 PKP **PKPdf 08 42 53.4 -0.9**
comp=Z,2.3nm,0.7s,baz=343,slow=2.7,SNR=6.8
SYO Syowa Base 128.91 207 ⇑*e*PKPdf **PKPdf 08 42 55.0 -0.6**
TSUM Tsumeb 129.63 275 PFAKE 08 43 10.0 +11
TSUM LR LR
comp=Z,669nm,19.0s
SUR Sutherland 133.13 258 PFAKE 08 43 20.0 +15
SUR LR LR
comp=Z,866nm,20.0s
NNA Nana 136.22 66 PFAKE 08 43 20.0 +8.8
NNA LR LR
comp=Z,491nm,19.0s
NVL N'lazarevskaya 137.87 202 *e*PKHKP PKPpre 08 43 02.5
SNAA Sanae 141.20 196 PKP PKPpre 08 43 11.8
SNAA Sanae 141.20 196 *e*PKHKP PKPpre 08 43 12.7
SNAA Sanae 141.20 196 *e*PKPpre PKPpre 08 43 12.7
VNA2 Neumayer--Watz 142.75 195 PKP PKPpre 08 43 17.3
baz=61,slow=1.8
VNA3 Neumayer Olymp 142.96 194 PKP PKPpre 08 43 17.2
SAML Samuel 143.14 47 PFAKE 08 43 40.0 +16
SAML LR LR
comp=Z,1μm,19.0s
VNA1 Neumayer--Stat 143.14 195 PKP PKPbc 08 43 18.5 -0.4
ASCN Ascension 144.63 319 PFAKE 08 43 40.0 +14
ASCN LR LR
comp=Z,1μm,20.0s
LPAZ La Paz 145.35 62 PKPbc **PKPbc 08 43 27.9 -0.2**
comp=Z,7.8nm,0.6s,baz=359,slow=3.1,SNR=50
LPAZ La Paz 145.35 62 *e*PKPbc **PKPbc 08 43 27.1 -1.0**
PB11 IPOC Station P 146.48 68 *e*PKPdf **PKPbc 08 43 30.9 0.0**
PB01 IPOC Station P 147.38 70 *e*PKPbc **PKPbc 08 43 33.7 +0.3**
RCBR Riachuelo 148.92 359 PFAKE 08 43 50.0 +8.5
RCBR LR LR
comp=Z,593nm,19.0s
LCO Las Campanas 150.49 84 *e*PKPbc **PKPbc 08 43 42.0 +0.8**
PLCA Paso Flores 153.47 108 PKPbc **PKPbc 08 43 48.2 +0.8**
comp=Z,2.8nm,0.8s,baz=267,slow=2.9,SNR=6.9
PLCA PKPab **PKPab 08 44 00.1 +0.2**
comp=Z,3.2nm,0.6s,baz=280,slow=3.0,SNR=13
CPUP Villa Florida 159.47 65 PKPab **PKPab 08 44 25.2 -0.7**
comp=Z,2.4nm,0.7s,baz=290,slow=3.5,SNR=7.5

JMA 04 08:26:20.8±0.2, 37°.07N×143°.27E, h48km, M4.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.94**	**280**	P	Pn	08 26 52.2	+0.9
JFK				S	Sn	08 27 14.7	+0.3
ONAJ	**Iwakimizuishiy**	**1.98**	**272**	P	Pn	08 26 53.0	+1.2
ONAJ				S	Sn	08 27 16.3	+0.8
JIO	**Ouri**	**2.06**	**313**	P	Pn	08 26 53.9	+1.0
JIO				S	Sn	08 27 17.8	+0.5
JMM	**Marumori**	**2.12**	**293**	P	Pn	08 26 55.1	+1.3
JMM				S	Sn	08 27 19.9	+0.9
JHO	**Hitachi**	**2.21**	**259**	P	Pn	08 26 56.0	+0.9
OFUJ	**Ofunato**	**2.37**	**328**	P	Pn	08 26 57.7	+0.5
OFUJ				*e*S	Sn	08 27 24.5	-0.6
CHOJ	**Chosi**	**2.38**	**236**	P	Pn	08 26 58.2	+0.9
CHOJ				*e*S	Sn	08 27 25.6	+0.4
JFT	**Otama**	**2.38**	**282**	*e*S	Sn	08 27 27.1	+1.7
JOU	**Okura**	**2.44**	**303**	P	Pn	08 26 59.9	+1.8
JMK	**Ichinoseki**	**2.48**	**320**	*e*S	Sn	08 27 28.3	+0.6

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*ISCJB **04** 08:38:10.2±0.8, 36°.79N±0°.04×140°.61E±0°.06, h13km±5km, mb3.5/5, Error ellipse: s-maj=8.8km s-min=5.5km az=36.0*
*JMA **04** 08:38:10.5, 36°.80N×140°.55E, h8km±1km, M3.5*
Broadband fault plane solution: P waves. NP1: ϕ_s=179.00000°, δ=55.00000°, λ=-75.00000°. NP2: ϕ_s=335.00000°, δ=38.00000°, λ=-110.00000°. Principal axes: T Plg=9.0000°, Azm=259.0000°; N Plg=12.0000°, Azm=351.0000°; P Plg=75.0000°, Azm=133.0000°;
JMA Felt I J1.
*IDC **04** 08:38:14.0±5.9, 36°.68N×140°.58E, h31km±45km, mb3.3/5, mb1 3.7/7, mb1mx3.3/57, mbtmp3.6/7, ML3.5/2 Error ellipse: s-maj=26.2km s-min=21.3km az=121.0*

ISC 04 08:38:10.4±1.2, 36°.80N±0°.04×140°.50E±0°.05, h5km±9km, n14, σ0°80/20, mb3.6/5, 5C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.20**	**163**	⇑P	**Pg**	**08 38 14.4**	**+0.1**
ONAJ	**Iwakimizuishiy**	**0.39**	**39**	⇑P	**Pg**	**08 38 17.6**	**-0.3**
ONAJ				S	**Sg**	**08 38 22.7**	**-0.3**
JSB	**Shiboa**	**0.49**	**290**	⇑P	**Pb**	**08 38 21.3**	**-0.3**
JSB				S	**Sb**	**08 38 28.8**	**-0.3**
JFK	**Kawauchi**	**0.64**	**28**	⇑P	**Pg**	**08 38 22.0**	**-0.8**
JFK				S	**Sg**	**08 38 30.4**	**-0.7**
JFT	**Otama**	**0.73**	**350**	⇑P	**Pg**	**08 38 24.5**	**+0.1**
JFT				S	**Sg**	**08 38 34.5**	**+0.6**
MJAR	**Matsushiro Arr**	**1.86**	**263**	Pn	**Pn**	**08 38 43.2**	**+0.3**
MJAR				Sn	**Sb**	**08 39 08.3**	**-0.1**
MAT	**Matsushiro**	**1.86**	**263**	P	**Pn**	**08 38 43.3**	**+0.4**
MAT				S	**Sb**	**08 39 08.9**	**+0.5**
JHJ	**Hachijo jima 2**	**3.72**	**189**	Pn	**Pn**	**08 39 09.2**	**+0.7**
	5.7nm,0.3s,baz=254,slow=17,SNR=2.6						
ASAJ	**Asahikawa**	**7.48**	**12**	Pn	**Pn**	**08 40 01.8**	**+1.6**
	1.1nm,0.3s,baz=210,slow=14,SNR=7.6						
MKAR	**Makanchi Array**	**43.62**	**302**	P	**P**	**08 46 16.5**	**+0.8**
	0.2nm,0.2s,baz=81,slow=10.0,SNR=2.5						
WRA	**Warramunga Arr**	**56.73**	**187**	P	**P**	**08 47 53.4**	**-1.8**
	0.4nm,0.5s,baz=2.9,slow=7.5,SNR=7.7						
YKA	**Yellowknife Ar**	**64.38**	**30**	P	**P**	**08 48 46.9**	**0.0**
	0.2nm,0.8s,baz=288,slow=6.1,SNR=4.8						
NVAR	**Mina Array Bea**	**75.72**	**53**	P	**P**	**08 49 57.6**	**+0.4**
	0.3nm,0.5s,baz=297,slow=6.9,SNR=4.0						
TXAR	**Lajitas Array**	**90.84**	**52**	P	**P**	**08 51 14.4**	**-0.9**
	0.2nm,0.5s,baz=331,slow=1.1,SNR=3.1						

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*ISCJB **04** 08:39:15.9±0.8, 39°.36N±0°.07×143°.9E±0°.1, h11km, mb3.6/7, Error ellipse: s-maj=14.4km s-min=8.7km az=24.0*
*IDC **04** 08:39:16.0±1.2, 39°.35N×143°.79E, h0km, mb3.6/7, mb1 3.8/10, mb1mx3.6/55, mbtmp3.6/10, ML2.8/2, Error ellipse: s-maj=27.6km s-min=21.2km az=121.0*

ISC 04 08:39:17.7±1.0, 39°.36N±0°.09×143°.9E±0°.1, h11km, n13, σ1°00/13, mb3.7/7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAJ	**Asahikawa**	**4.86**	**349**	Pn	**Pn**	**08 40 30.2**	**-0.5**
	0.6nm,0.3s,baz=179,slow=17,SNR=3.2						
ASAJ				Sn	**Sn**	**08 41 27.2**	**+0.2**
	0.7nm,0.3s,baz=297,slow=30,SNR=6.2						
MJAR	**Matsushiro Arr**	**5.32**	**240**	Pn	**Pn**	**08 40 37.2**	**0.0**
	baz=44,slow=12,SNR=4.4						
MAT	**Matsushiro**	**5.32**	**240**	P	**Pn**	**08 40 37.0**	**-0.2**
JHJ	**Hachijo jima 2**	**7.07**	**210**	Sn	Sn	08 42 14.1	-7.3
	13nm,0.3s,baz=66,slow=20,SNR=5.1						
USRK	**Ussuriysk Ar.**	**10.14**	**302**	Pn	**Pn**	**08 41 43.7**	**+0.4**
	0.2nm,0.3s,baz=97,slow=12,SNR=11						
KSRS	**Korea Array**	**12.70**	**266**	Pn	**Pn**	**08 42 19.8**	**+1.6**
	0.1nm,0.3s,baz=86,slow=12,SNR=3.2						
SEY	**Seymchan**	**24.16**	**9**	P	**P**	**08 44 34.4**	**+0.8**
	2.0nm,0.8s,baz=184,slow=7.2,SNR=4.6						
ZALV	**Zalesovo Beam**	**41.87**	**311**	P	**P**	**08 47 06.1**	**-1.5**
	2.2nm,0.6s,baz=90,slow=7.4,SNR=5.3						
MKAR	**Makanchi Array**	**44.61**	**301**	P	**P**	**08 47 28.3**	**-1.6**
	1.2nm,0.7s,baz=83,slow=10.0,SNR=8.9						
ILAR	**Eielson Array**	**46.47**	**34**	P	**P**	**08 47 44.6**	**+0.2**
	0.2nm,0.6s,baz=267,slow=6.3,SNR=2.8						
INK	**Inuvik**	**51.41**	**28**	P	**P**	**08 48 23.2**	**+1.1**
	0.7nm,0.6s,baz=256,slow=5.1,SNR=3.2						
WRA	**Warramunga Arr**	**59.66**	**190**	P	**P**	**08 49 21.6**	**-0.4**
	0.5nm,0.7s,baz=8.9,slow=6.7,SNR=4.1						
YKA	**Yellowknife Ar**	**60.80**	**31**	P	**P**	**08 49 29.7**	**+0.3**
	0.1nm,0.6s,baz=299,slow=6.2,SNR=4.2						

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*IDC **04** 08:44:30.5±0.9, 38°.82N×142°.09E, h0km, mb3.5/5, mb1 3.7/8, mb1mx3.5/65, mbtmp3.5/8, ML3.4/3, Error ellipse: s-maj=35.6km s-min=17.2km az=109.0*
*ISCJB **04** 08:44:34.4±0.8, 38°.92N±0°.10×141°.6E±0°.3, h51km, mb3.5/5, Error ellipse: s-maj=34.6km s-min=8.6km az=18.5*

ISC 04 08:44:36.5±0.9, 39°.0N±0°.1×141°.4E±0°.2, h51km, n8, σ0°64/8, mb3.4/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**3.52**	**227**	Pn	**Pn**	**08 45 28.5**	**-0.1**
	5.4nm,0.3s,baz=98,slow=16,SNR=27						
ASAJ	**Asahikawa**	**5.22**	**9**	Pn	**Pn**	**08 45 52.4**	**+0.5**
	0.4nm,0.3s,baz=180,slow=11,SNR=4.2						
JHJ	**Hachijo jima 2**	**5.99**	**193**	Pn	**Pn**	**08 46 02.2**	**-0.3**
	10nm,0.3s,baz=39,slow=23,SNR=5.1						
JHJ				Sn	**Sn**	**08 47 09.8**	**+0.1**
	6.6nm,0.3s,baz=52,slow=19,SNR=2.5						
MKAR	**Makanchi Array**	**43.12**	**300**	P	P	08 52 36.9	+5.2
	0.2nm,0.3s,baz=88,slow=11,SNR=3.5						
ILAR	**Eielson Array**	**47.87**	**33**	P	**P**	**08 53 08.0**	**-0.9**
	0.4nm,0.7s,baz=264,slow=6.3,SNR=4.8						
WRA	**Warramunga Arr**	**58.98**	**188**	P	**P**	**08 54 31.3**	**+0.6**
	0.9nm,0.9s,baz=6.7,slow=7.0,SNR=8.6						
YKA	**Yellowknife Ar**	**62.14**	**31**	P	**P**	**08 54 51.7**	**-0.1**
	0.1nm,0.7s,baz=303,slow=3.5,SNR=3.1						
ASAR	**Alice Springs**	**62.70**	**188**	P	**P**	**08 54 56.8**	**+0.7**
	0.1nm,0.3s,baz=13,slow=7.0,SNR=5.2						

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*IDC **04** 08:47:06.6±0.7, 36°.82N×140°.65E, h0km, mb3.7/12, mb1 3.9/15, mb1mx3.7/67, mbtmp3.7/15, ML3.4/3, Error ellipse: s-maj=17.6km s-min=14.8km az=120.0*
*ISCJB **04** 08:47:07.7±0.6, 36°.78N±0°.03×140°.66E±0°.05, h19km±4km, mb3.6/12, Error ellipse: s-maj=7.1km s-min=5.3km az=21.3*
*JMA **04** 08:47:08.7, 36°.80N×140°.55E, h8km±1km, M3.8*
Broadband fault plane solution: P waves. NP1: ϕ_s=178.00000°, δ=48.00000°, λ=-74.00000°. NP2: ϕ_s=335.00000°, δ=44.00000°, λ=-107.00000°. Principal axes: T Plg=2.0000°, Azm=257.0000°; N Plg=12.0000°, Azm=347.0000°; P Plg=78.0000°, Azm=158.0000°;
JMA Felt III J1.

ISC 04 08:47:08.5±1.0, 36°.80N±0°.03×140°.54E±0°.04, h12km±6km, n25, σ0°73/31, mb3.8/12, 7C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.19**	**174**	⇑P	**Pg**	**08 47 12.6**	**-0.1**
JHO				S	**Sg**	**08 47 15.6**	**0.0**
ONAJ	**Iwakimizuishiy**	**0.36**	**34**	⇑P	**Pg**	**08 47 15.8**	**0.0**
JSB	**Shiboa**	**0.53**	**289**	⇑P	**Pb**	**08 47 19.5**	**-0.2**
JSB				S	**Sb**	**08 47 26.9**	**-0.4**
JFK	**Kawauchi**	**0.62**	**25**	⇑P	**Pg**	**08 47 20.3**	**-0.4**
JYT	**Yasato**	**0.64**	**206**	⇑P	**Pg**	**08 47 20.6**	**-0.3**
JYT				S	**Sg**	**08 47 29.1**	**-0.2**
JFT	**Otama**	**0.73**	**347**	⇑P	**Pg**	**08 47 22.6**	**-0.1**
JFY	**Yanaizu**	**0.90**	**312**	P	**Pg**	**08 47 25.8**	**-0.1**
JAG	**Ashikaga**	**0.95**	**247**	⇑P	**Pg**	**08 47 26.0**	**-0.9**
MJAR	**Matsushiro Arr**	**1.89**	**263**	Pn	**Pn**	**08 47 41.2**	**+0.5**
	34nm,0.3s,baz=86,slow=15,SNR=96						
MJAR				Sn	**Sb**	**08 48 06.1**	**-0.5**
	68nm,0.3s,baz=82,slow=27,SNR=13						
MAT	**Matsushiro**	**1.90**	**263**	P	**Pn**	**08 47 41.5**	**+0.8**
MAT				S	**Sb**	**08 48 07.3**	**+0.6**
JHJ	**Hachijo jima 2**	**3.73**	**190**	Pn	**Pn**	**08 48 07.4**	**+1.6**
	15nm,0.3s,baz=29,slow=13,SNR=4.2						
JHJ				Sn	**Sn**	**08 48 48.7**	**-0.9**
	17nm,0.3s,baz=252,slow=20,SNR=4.0						
ASAJ	**Asahikawa**	**7.47**	**11**	Pn	**Pn**	**08 48 57.8**	**+0.4**
	0.4nm,0.3s,baz=185,slow=12,SNR=3.9						
KSRS	**Korea Array**	**10.10**	**277**	Pn	**Pn**	**08 49 34.6**	**+1.2**
	0.3nm,0.3s,baz=99,slow=14,SNR=3.2						
SONM	**Songino Array**	**27.34**	**305**	P	**P**	**08 52 54.4**	**+1.0**
	1.1nm,0.5s,baz=80,slow=12,SNR=2.6						
ZALV	**Zalesovo Beam**	**41.56**	**313**	P	**P**	**08 54 55.5**	**-0.3**
	1.2nm,0.3s,baz=95,slow=13,SNR=1.8						
MKAR	**Makanchi Array**	**43.65**	**302**	P	**P**	**08 55 13.2**	**+0.3**
	0.1nm,0.3s,baz=89,slow=8.8,SNR=2.7						
ILAR	**Eielson Array**	**50.06**	**32**	P	**P**	**08 56 01.6**	**-1.2**
	0.2nm,0.7s,baz=270,slow=7.7,SNR=4.4						
FITZ	**Fitzroy Crossi**	**56.39**	**197**	P	**P**	**08 56 50.7**	**+0.9**
	2.5nm,0.9s,baz=350,slow=12,SNR=3.0						
WRA	**Warramunga Arr**	**56.74**	**187**	P	**P**	**08 56 51.6**	**-0.7**
	0.9nm,0.6s,baz=3.0,slow=7.3,SNR=12						
ASAR	**Alice Springs**	**60.47**	**187**	P	**P**	**08 57 17.9**	**-0.3**
	0.4nm,0.8s,baz=35,slow=5.7,SNR=3.9						
YKA	**Yellowknife Ar**	**64.36**	**30**	P	**P**	**08 57 43.6**	**-0.2**
	0.1nm,0.7s,baz=299,slow=6.5,SNR=3.5						
FINES	**FINESS Array B**	**68.69**	**332**	P	**P**	**08 58 11.4**	**-0.1**
	1.2nm,0.9s,baz=15,slow=5.8,SNR=2.9						
NVAR	**Mina Array Bea**	**75.69**	**53**	P	**P**	**08 58 53.3**	**-0.8**
	0.9nm,0.6s,baz=294,slow=5.3,SNR=7.8						
PDAR	**Pinedale Array**	**78.33**	**45**	P	**P**	**08 59 08.4**	**-0.4**
	0.4nm,0.8s,baz=259,slow=1.5,SNR=3.6						
TXAR	**Lajitas Array**	**90.81**	**52**	P	**P**	**09 00 13.2**	**+1.1**
	0.4nm,0.7s,baz=281,slow=2.0,SNR=4.2						

JMA 04 08:47:48.0, 36°.80N×140°.55E, h7km±1km, M3.7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.19**	**175**	*e*S	Sg	08 47 54.7	+0.3
ONAJ	**Iwakimizuishiy**	**0.36**	**33**	P	Pg	08 47 55.0	-0.1
ONAJ				*e*S	Sg	08 47 59.8	-0.1
JSB	**Shiboa**	**0.53**	**289**	P	Pg	08 47 58.8	+0.5
JSB				*e*S	Sg	08 48 05.4	+0.1
JFK	**Kawauchi**	**0.62**	**25**	*e*S	Sg	08 48 07.7	-0.4
JYT	**Yasato**	**0.64**	**207**	P	Pg	08 48 00.0	-0.3
JYT				*e*S	Sg	08 48 08.4	-0.2
JFT	**Otama**	**0.74**	**347**	*e*S	Sg	08 48 11.7	-0.1
MAT	**Matsushiro**	**1.90**	**263**	P	Pn	08 48 21.1	+0.2
MAT				S	Sb	08 48 46.6	-0.4

DJA 04 08:51:19.2±1.2, 5°S±9°×10°3E±°, h40km±9km, M3.6/6, MLv3.6/6, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MNAI	**Manna**	**0.66**	**0**	P	Pn	08 51 33.3	+1.2
MNAI				S	Sn	08 51 42.4	+1.1
LWLI	**Liwa**	**1.10**	**90**	P	Pn	08 51 38.4	+0.1
LWLI				S	Sn	08 51 53.4	+1.0
KASI	**Kota Agung**	**1.62**	**108**	P	Pn	08 51 45.1	-0.2
KASI				S	Sn	08 52 05.2	+0.3
MASI	**Maura Aman, Be**	**2.00**	**339**	P	Pn	08 51 50.4	-0.1
CGJI	**Cibinong**	**3.15**	**120**	P	Pn	08 52 06.5	+0.1

JMA 04 08:53:44.2±0.1, 39°.25N×143°.37E, h21km±3km, M3.7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**1.24**	**286**	P	Pn	08 54 06.4	0.0
MIYJ				S	Sb	08 54 22.6	+0.1
OFUJ	**Ofunato**	**1.33**	**263**	P	Pn	08 54 07.8	+0.2
OFUJ				S	Sn	08 54 24.7	0.0
JTH	**Tanohata**	**1.35**	**301**	P	Pn	08 54 08.0	+0.2
JTH				*e*S	Sb	08 54 25.6	0.0
JOM	**Ohasama**	**1.63**	**279**	P	Pn	08 54 12.3	+0.7
JOM				S	Sb	08 54 32.9	-0.6
JMK	**Ichinoseki**	**1.70**	**261**	P	Pn	08 54 13.4	+0.8
JKZ	**Kuzumaki**	**1.74**	**296**	P	Pn	08 54 13.9	+0.7
JKZ				S	Sb	08 54 35.9	-0.9
JIO	**Ouri**	**1.77**	**244**	P	Pn	08 54 14.0	+0.5
JANG	**Nango**	**1.82**	**309**	P	Pn	08 54 15.4	+1.2
JRG	**Rokugo**	**2.13**	**275**	P	Pn	08 54 20.0	+1.5
JAH	**Hinai**	**2.31**	**295**	P	Pn	08 54 22.2	+1.2
JAH				*e*S	Sn	08 54 49.7	+1.0
JTM	**Tenmabayashi**	**2.34**	**312**	P	Pn	08 54 23.1	+1.7
JTM				*e*S	Sn	08 54 50.6	+1.1
JYK	**Kaneyama**	**2.37**	**263**	P	Pn	08 54 23.2	+1.4

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*IDC **04** 09:15:14.5±1.8, 37°.82N×142°.26E, h0km, mb3.6/5, mb1 3.6/7, mb1mx3.4/58, mbtmp3.5/7, ML3.0/1, Error ellipse: s-maj=43.8km s-min=23.1km az=62.0*
*JMA **04** 09:15:20.4±0.1, 37°.65N×141°.78E, h35km±3km, M3.6*

ISC 04 09:15:15.8±3.2, 37°.63N×0°.05×142°.0E±0°.1, h1km±17km, n15, σ1§11/23, mb3.6/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.91**	**253**	P	**Pb**	**09 15 34.9**	**+0.6**
JFK				S	**Sg**	**09 15 44.9**	**0.0**
JIO	**Ouri**	**0.95**	**330**	P	**Pn**	**09 15 36.2**	**-0.1**
JIO				S	**Sg**	**09 15 46.8**	**+0.4**
JMM	**Marumori**	**0.96**	**284**	P	**Pb**	**09 15 35.5**	**+0.4**
JMM				S	**Sg**	**09 15 45.8**	**-0.7**
ONAJ	**Iwakimizuishiy**	**1.07**	**241**	P	**Pb**	**09 15 37.4**	**+0.3**
ONAJ				S	**Sg**	**09 15 49.4**	**-0.7**
JOU	**Okura**	**1.26**	**306**	P	**Pb**	**09 15 40.5**	**+0.2**
JOU				S	**Sg**	**09 15 54.8**	**-1.4**
JFT	**Otama**	**1.30**	**265**	P	**Pn**	**09 15 41.2**	**+0.2**
JFT				S	**Sg**	**09 15 55.8**	**-1.7**
MJAR	**Matsushiro Arr**	**3.19**	**251**	Pn	**Pn**	**09 16 09.1**	**+2.0**
	1.5nm,0.3s,baz=64,slow=11,SNR=15						
MJAR				Sn	**Sb**	**09 16 53.1**	**+0.4**
	1.8nm,0.3s,baz=326,slow=27,SNR=5.0						
MAT	**Matsushiro**	**3.19**	**251**	P	**Pn**	**09 16 08.5**	**+1.4**
MAT				*e*S	**Sn**	**09 16 46.1**	**+0.2**
JHJ	**Hachijo jima 2**	**4.84**	**202**	Sn	**Sn**	**09 17 23.8**	**-2.8**
	4.5nm,0.3s,baz=243,slow=18,SNR=2.1						
USRK	**Ussuriysk Ar.**	**9.99**	**314**	Pn	**Pn**	**09 17 40.9**	**+0.5**
	baz=112,slow=14,SNR=2.8						
SONM	**Songino Array**	**27.82**	**303**	P	**P**	**09 21 07.0**	**+0.4**
	2.0nm,0.6s,baz=81,slow=9.5,SNR=3.4						
MKAR	**Makanchi Array**	**44.17**	**302**	P	**P**	**09 23 25.0**	**-1.1**
	0.2nm,0.3s,baz=84,slow=8.9,SNR=2.2						
KURBB	**Kurchatov Arra**	**45.98**	**308**	P	**P**	**09 23 39.5**	**-0.8**
	0.8nm,0.5s,baz=81,slow=8.0,SNR=8.6						
WRA	**Warramunga Arr**	**57.72**	**188**	P	**P**	**09 25 09.2**	**+1.0**
	0.2nm,0.4s,baz=7.8,slow=7.7,SNR=7.4						
ASAR	**Alice Springs**	**61.44**	**188**	P	**P**	**09 25 33.6**	**-0.3**
	0.6nm,1.2s,baz=3.2,slow=6.9,SNR=4.3						

GUC 04 09:15:57.4±0.3, 21°.94S×66°.71W, h326km±7km, ML4.1, Southern Bolivia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB09	**IPOC Station P**	**2.36**	**273**	*e*P	Pn	09 16 51.3	+1.8
PB09				*e*S	S	09 17 32.5	+1.3
PB09				IAML		09 17 34.8	
	comp=N,130nm,0.1s						
PB01	**IPOC Station P**	**2.74**	**289**	*e*P	Pn	09 16 54.7	+2.0
PB01				*e*S	S	09 17 38.4	+1.3
PB06	**IPOC Station P**	**2.76**	**253**	*e*P	Pn	09 16 55.1	+2.1
PB06				*e*S	S	09 17 38.9	+1.5
PB06				IAML		09 17 42.8	
	comp=N,70nm,0.1s						
PB07	**IPOC Station P**	**2.96**	**274**	*e*P	Pn	09 16 57.1	+2.3
PB07				*e*S	S	09 17 42.2	+1.4
PB07				IAML		09 17 44.1	
	comp=N,136nm,0.3s						
PB04	**IPOC Station P**	**3.22**	**262**	*e*P	Pn	09 16 59.7	+2.5
PB04				*e*S	S	09 17 46.9	+1.7
PB04				IAML		09 17 51.7	
	comp=N,96nm,0.1s						
HMBC	**Humberstone**	**3.40**	**299**	*e*P	Pn	09 17 01.0	+1.9
HMBC				*e*S	S	09 17 49.7	+1.2
PATCX	**Punta Patache**	**3.40**	**289**	*e*P	Pn	09 17 01.6	+2.6
PATCX				*e*S	S	09 17 50.2	+1.8
MNMC	**Minye Minye**	**3.89**	**315**	*e*P	Pn	09 17 07.0	+2.7
MNMC				*e*S	S	09 17 59.8	+1.9
PSGC	**Pisagua**	**3.96**	**305**	*e*P	Pn	09 17 06.4	+1.7
PSGC				*e*S	S	09 17 59.3	+0.4

IDC 04 09:22:43.6±2.7, 53°.49N×87°.73E, h0km, mb1 3.0/3, mb1mx2.9/60, mbtmp3.0/3, ML2.8/3, Error ellipse: s-maj=25.6km s-min=15.6km az=56.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**1.79**	**286**	*i*		09 34 10.0	
	baz=101,slow=332,SNR=57						
ZALV	**Zalesovo Beam**	**1.79**	**286**	Pn	Pn	09 23 14.8	-0.9
	2.4nm,0.3s,baz=100,slow=14,SNR=17						
ZALV				Lg	Lg	09 23 39.9	
	2.5nm,0.3s,baz=105,slow=21,SNR=8.3						
KURBB	**Kurchatov Arra**	**6.36**	**247**	Pn	Pn	09 24 18.5	0.0
	0.1nm,0.3s,baz=61,slow=14,SNR=13						
KURBB				Lg	Lg	09 26 04.1	
	0.0nm,0.3s,baz=63,slow=33,SNR=12						
MKAR	**Makanchi Array**	**7.56**	**210**	Pn	Pn	09 24 36.3	+1.3
	0.1nm,0.3s,baz=29,slow=12,SNR=4.8						
MKAR				Lg	Lg	09 26 43.8	
	0.2nm,0.3s,baz=30,slow=32,SNR=10						
BVAR	**Borovoye Array**	**10.40**	**274**	Pn	Pn	09 25 14.1	+0.1
	0.2nm,0.3s,baz=76,slow=1.8,SNR=3.1						
BVAR				Sn	Sn	09 27 06.5	-4.6
	0.2nm,0.3s,baz=83,slow=26,SNR=3.7						

*IDC **04** 09:30:27.6±0.6, 39°.37N×143°.60E, h0km, mb3.8/16, mb1 3.9/20, mb1mx3.8/51, mbtmp3.8/20, ML3.3/4, Error ellipse: s-maj=18.1km s-min=13.6km az=125.0*
*JMA **04** 09:30:28.6±0.2, 39°.44N×143°.85E, h28km, M4.2*
*ISCJB **04** 09:30:30.8±0.8, 39°.46N±0°.03×143°.73E±0°.06, h34km±7km, mb3.9/23, Error ellipse: s-maj=8.5km s-min=4.5km az=29.8*
*NEIC **04** 09:30:33.0±1.0, 39°.44N×143°.64E, h36km±9km, mb4.4/7, Error ellipse: s-maj=11.0km s-min=6.9km az=121.0*

ISC 04 09:30:31.9±2.5, 39°.44N±0°.05×143°.61E±0°.07, h28km±17km, n50, σ1§50/63, mb3.9/23, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**1.39**	**276**	P	**Pn**	**09 30 55.5**	**+0.1**
MIYJ				*e*S	**Sb**	**09 31 16.0**	**+1.4**
JTH	**Tanohata**	**1.44**	**291**	P	**Pn**	**09 30 55.8**	**-0.2**
JTH				*e*S	**Sb**	**09 31 15.3**	**-0.6**
OFUJ	**Ofunato**	**1.55**	**257**	P	**Pn**	**09 30 57.6**	**0.0**
OFUJ				*e*S	**Sb**	**09 31 18.4**	**-0.7**
JOM	**Ohasama**	**1.80**	**272**	P	**Pn**	**09 31 01.6**	**+0.6**
JOM				*e*S	**Sb**	**09 31 25.3**	**-0.9**
JANG	**Nango**	**1.86**	**301**	P	**Pn**	**09 31 01.5**	**-0.4**
JANG				*e*S	**Sn**	**09 31 24.2**	**-0.3**
JMK	**Ichinoseki**	**1.92**	**256**	P	**Pn**	**09 31 03.1**	**+0.4**
JMK				*e*S	**Sb**	**09 31 28.4**	**-1.4**
JRG	**Rokugo**	**2.31**	**270**	P	**Pn**	**09 31 08.9**	**+0.9**
JTM	**Tenmabayashi**	**2.37**	**305**	P	**Pn**	**09 31 09.4**	**+0.6**
JAH	**Hinai**	**2.41**	**289**	P	**Pn**	**09 31 10.4**	**+1.0**
JOU	**Okura**	**2.54**	**246**	P	**Pn**	**09 31 11.5**	**+0.3**
JOU				S	**Sn**	**09 31 43.7**	**+2.5**
JYK	**Kaneyama**	**2.58**	**259**	P	**Pn**	**09 31 12.7**	**+0.9**
ERM	**Erimo**	**2.59**	**352**	*e*Pn	**Pn**	**09 31 10.8**	**-1.2**
ERM				*e*Sn	**Sn**	**09 31 41.5**	**-1.0**
JOT	**Ohata**	**2.76**	**316**	*e*S	**Sn**	**09 31 46.8**	**+0.3**
JNBK	**Urakawa-nobuka**	**2.91**	**347**	P	**Pn**	**09 31 16.2**	**-0.1**
JNBK				S	**Sn**	**09 31 50.7**	**+0.4**
JCH	**Churui**	**3.18**	**357**	P	**Pn**	**09 31 18.6**	**-1.3**
JCH				*e*S	**Sn**	**09 31 54.8**	**-2.1**
ASAJ	**Asahikawa**	**4.73**	**351**	Pn	**Pn**	**09 31 41.7**	**+0.3**
	2.3nm,0.3s,baz=200,slow=14,SNR=14						
ASAJ				Sn	**Sn**	**09 32 33.2**	**-2.0**
	1.5nm,0.3s,baz=226,slow=32,SNR=3.6						
MJAR	**Matsushiro Arr**	**5.16**	**238**	Pn	**Pn**	**09 31 47.4**	**+0.2**
	2.7nm,0.3s,baz=38,slow=12,SNR=64						
MJAR				Sn	**Sn**	**09 32 45.8**	**0.0**
	2.5nm,0.3s,baz=77,slow=17,SNR=5.7						
MAJO	**Matsushiro**	**5.16**	**238**	*e*Pn	**Pn**	**09 31 48.9**	**+1.7**
	43nm,0.6s						
MAJO				*e*Sn	**Sn**	**09 32 46.5**	**+0.7**
MAT	**Matsushiro**	**5.16**	**238**	P	**Pn**	**09 31 48.6**	**+1.4**
JHJ	**Hachijo jima 2**	**7.02**	**207**	Sn	**Sn**	**09 33 24.9**	**-6.8**
	20nm,0.3s,baz=43,slow=23,SNR=7.2						
USRK	**Ussuriysk Ar.**	**9.89**	**302**	Pn	**Pn**	**09 32 55.0**	**+2.9**
	0.4nm,0.3s,baz=97,slow=13,SNR=27						
MDJ	**Mudanjiang**	**11.63**	**301**	Pn	**Pn**	**09 33 17.3**	**+1.3**
KSRS	**Korea Array**	**12.46**	**266**	Pn	**Pn**	**09 33 30.1**	**+2.8**
	0.2nm,0.3s,baz=85,slow=13,SNR=6.7						
KSAR	**Wonju Array Be**	**12.49**	**266**	Pn	**Pn**	**09 33 30.1**	**+2.4**
KLR	**Kul'dur**	**12.94**	**323**	Pn	**Pn**	**09 33 33.7**	**-0.1**
	0.1nm,0.3s,baz=124,slow=7.6,SNR=3.9						
PETK	**Petropavlovsk-**	**16.74**	**31**	Pn	**Pn**	**09 34 23.9**	**-0.2**
	0.1nm,0.3s,baz=195,slow=10,SNR=2.4						
HIA	**Hailar**	**19.62**	**308**	*e*P	**Pn**	**09 34 59.4**	**-0.1**
	7.6nm,0.4s						
BJT	**Baijiatuau**	**21.09**	**280**	*e*P	**P**	**09 35 10.6**	**-3.4**
	10nm,1.2s						
SEY	**Seymchan**	**24.11**	**10**	P	**P**	**09 35 45.2**	**+0.3**
	2.1nm,0.8s,baz=201,slow=11,SNR=8.2						
ULN	**Ulaanbaatar**	**27.55**	**300**	*e*P	**P**	**09 36 17.2**	**+0.8**
	2.7nm,0.9s						
SONM	**Songino Array**	**27.99**	**300**	P	**P**	**09 36 20.2**	**0.0**
	1.0nm,0.5s,baz=79,slow=7.8,SNR=2.4						
ZALV	**Zalesovo Beam**	**41.62**	**310**	P	**P**	**09 38 17.6**	**+0.4**
	2.3nm,0.5s,baz=89,slow=7.9,SNR=5.9						
CMAR	**Chiang Mai Arr**	**43.79**	**255**	P	**P**	**09 38 33.7**	**-1.6**
	0.5nm,0.4s,baz=51,slow=7.1,SNR=4.4						
MKAR	**Makanchi Array**	**44.35**	**300**	P	**P**	**09 38 40.3**	**+0.8**
	2.0nm,0.8s,baz=82,slow=8.7,SNR=14						
KURK	**Kurchatov**	**45.85**	**307**	*e*P	**P**	**09 38 52.1**	**+0.8**
	15nm,0.8s						
KURBB	**Kurchatov Arra**	**45.93**	**306**	P	**P**	**09 38 52.6**	**+0.8**
	2.9nm,0.8s,baz=81,slow=8.2,SNR=22						
ILAR	**Eielson Array**	**46.54**	**34**	P	**P**	**09 38 56.8**	**+0.2**
	0.3nm,0.7s,baz=261,slow=7.0,SNR=5.2						
TKM2	**Tokmak 2**	**50.04**	**297**	*e*P	**P**	**09 39 22.1**	**-2.1**
	3.3nm,0.8s						
INK	**Inuvik**	**51.46**	**28**	P	**P**	**09 39 34.9**	**+0.8**
	0.9nm,0.7s,baz=293,slow=6.7,SNR=7.5						
ABKAR	**Akbulak array**	**57.73**	**310**	*e*P	**P**	**09 40 20.9**	**+0.9**
	1.6nm,0.6s						
FITZ	**Fitzroy Crossi**	**59.66**	**200**	P	**P**	**09 40 33.6**	**+0.1**
	2.9nm,1.0s,baz=0.0,slow=4.0,SNR=2.2						
WRAB	**Tennant Creek**	**59.69**	**190**	*e*P	**P**	**09 40 33.8**	**0.0**
	22nm,1.9s						
WRA	**Warramunga Arr**	**59.70**	**190**	P	**P**	**09 40 32.7**	**-1.2**
	0.5nm,0.5s,baz=7.9,slow=6.9,SNR=7.7						
YKA	**Yellowknife Ar**	**60.86**	**31**	P	**P**	**09 40 42.1**	**+0.8**
	0.2nm,0.6s,baz=302,slow=6.5,SNR=9.0						
ASAR	**Alice Springs**	**63.43**	**190**	P	**P**	**09 40 58.9**	**-0.1**
	0.4nm,0.8s,baz=23,slow=7.7,SNR=4.2						
FINES	**FINESS Array B**	**67.49**	**333**	P	**P**	**09 41 24.4**	**-0.4**
	1.6nm,0.8s,baz=66,slow=4.8,SNR=4.1						
NVAR	**Mina Array Bea**	**72.17**	**55**	P	**P**	**09 41 55.6**	**+1.2**
	0.3nm,0.7s,baz=286,slow=4.6,SNR=5.2						
NOA	**NORSAR Array B**	**72.63**	**338**	P	**P**	**09 41 55.5**	**-0.9**
	0.3nm,0.5s,baz=39,slow=6.0,SNR=3.2						
PDAR	**Pinedale Array**	**74.75**	**47**	P	**P**	**09 42 09.9**	**+0.5**
	0.3nm,0.7s,baz=218,slow=1.7,SNR=4.6						
TXAR	**Lajitas Array**	**87.29**	**54**	P	**P**	**09 43 16.4**	**+0.2**
	0.2nm,0.7s,baz=298,slow=1.9,SNR=2.2						

*NEIC **04** 09:39:58.1, 55°.10N×134°.42W, h8km, ML3.6(OTT), After AEIC.*
*PGC **04** 09:39:59.5±18.0, 54°.99N×134°.68W, h20km, ML3.6/7, 195km Wnw of Masset, Bc Haida Gwaii Region*

ISC 04 09:39:57.3±2.2, 55°.07N±0°.04×134°.74W±0°.08, h4km±13km, n30, σ2§59/35, Southeastern Alaska

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRAG	**Craig**	**1.00**	**66**	P	**Pg**	**09 40 16.1**	**-0.5**
CRAG				S	**Sg**	**09 40 28.9**	**-0.7**
NDB	**Naden**	**1.53**	**136**	Pn	**Pn**	**09 40 24.5**	**-0.9**
NDB				Sg	**Sg**	**09 40 44.7**	**-1.7**
NDB	**Naden**	**1.53**	**136**	P	**Pn**	**09 40 24.9**	**-0.5**
WRAK	**Wrangell Islan**	**1.91**	**44**	P	**Pn**	**09 40 29.7**	**-0.8**
WRAK				S	**Sn**	**09 40 54.4**	**-0.6**
VIB	**Van Inlet**	**2.23**	**144**	Pn	**Pn**	**09 40 34.2**	**-0.9**
VIB				Sg	**Sn**	**09 41 06.4**	**+3.3**
VIB	**Van Inlet**	**2.23**	**144**	P	**Pn**	**09 40 34.2**	**-0.9**
VIB				S	**Sn**	**09 41 05.6**	**+2.5**
MOBC	**Moresby Island**	**2.53**	**139**	Pn	**Pn**	**09 40 38.1**	**-0.9**
MOBC				Sg	**Sb**	**09 41 15.3**	**+0.8**
MOBC	**Moresby Island**	**2.53**	**139**	P	**Pn**	**09 40 38.2**	**-0.9**
MOBC				S	**Sn**	**09 41 14.6**	**+4.3**
BNB	**Barry Inlet**	**3.06**	**144**	Pn	Pn	09 40 44.8	-1.7
BNB				Sg	**Sb**	**09 41 31.9**	**+1.9**
BNB	**Barry Inlet**	**3.06**	**144**	P	**Pn**	**09 40 46.2**	**-0.2**
BESE	**Bessie Mountai**	**3.52**	**359**	P	**Pn**	**09 40 53.4**	**+0.7**
DLBC	**Dease Lake**	**4.25**	**36**	Pn	**Pn**	**09 41 03.3**	**+0.5**
DLBC				Sg	**Sb**	**09 42 07.9**	**+3.7**
DLBC	**Dease Lake**	**4.25**	**36**	P	**Pn**	**09 41 03.4**	**+0.6**
SKAG	**Skagway**	**4.41**	**356**	P	**Pn**	**09 41 06.7**	**+1.9**
PLBC	**Pleasant Camp**	**4.49**	**349**	Pn	**Pn**	**09 41 06.5**	**+0.6**
PLBC	**Pleasant Camp**	**4.49**	**349**	P	**Pn**	**09 41 07.0**	**+1.1**
BBB	**Bella Bella**	**4.89**	**124**	Pn	**Pn**	**09 41 10.3**	**-1.1**
BBB				Sn	**Sn**	**09 42 02.8**	**-5.6**
BBB	**Bella Bella**	**4.89**	**124**	P	**Pn**	**09 41 10.9**	**-0.5**
WHY	**Whitehorse**	**5.61**	**359**	Pn	**Pn**	**09 41 21.8**	**+0.4**
WHY				Sn	**Sn**	**09 42 22.9**	**-3.3**
WHY	**Whitehorse**	**5.61**	**359**	P	**Pn**	**09 41 21.9**	**+0.5**
YUK7	**Dusty Glacier**	**5.77**	**343**	Sn	Sn	09 42 26.3	-4.0
HOLB	**Holberg**	**5.97**	**135**	Sn	Sn	09 42 26.8	-8.4
CHX	**Chaix Hills**	**6.07**	**328**	P	**Pn**	**09 41 29.0**	**+1.3**
PHC	**Port Hardy**	**6.21**	**132**	Pn	Pn	09 41 28.0	-1.7
PHC				Sn	**Sn**	**09 42 35.1**	**-5.9**
MAYB	**Maynard**	**6.55**	**132**	Pn	Pn	09 41 32.8	-1.7
MAYB				Sn	Sn	09 42 42.5	-7.1
UBRB	**Upper Baezaeko**	**6.65**	**105**	Sg	**Sb**	**09 43 20.5**	**+7.2**
BARK	**Barkley Ridge**	**6.77**	**325**	P	Pn	09 41 37.9	+0.6
CTGM	**Chitina Glacie**	**6.87**	**332**	Pn	**Pn**	**09 41 40.6**	**+1.9**
ISLE	**Juniper Island**	**6.87**	**327**	P	Pn	09 41 39.8	+1.0
BALM	**Baldy**	**7.21**	**329**	Pn	**Pn**	**09 41 45.1**	**+1.7**

WEL 04 09:50:48.5±0.1, 45°.60S×166°.95E, h71km±1km, ML3.5/14, 6C-6D, Error ellipse: s-maj=1.6km s-min=0.8km az=90.0, Off west coast of South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DCZ	**Deep Cove**	**0.20**	**47**	PN	Pn	09 50 58.7	-0.5
DCZ				SN	Sn	09 51 06.8	-0.3
DCZ				AML	AML	09 51 07.3	
DCZ				AML	AML	09 51 07.4	
DCZ				AML	AML	09 51 07.4	
PYZ	**Puysegur Point**	**0.60**	**198**	⇑PN	Pn	09 51 02.2	-0.2
PYZ				SN	Sn	09 51 12.8	+0.2
WHZ	**Wether Hill Ro**	**0.76**	**113**	⇓PN	Pn	09 51 04.0	-0.2
WHZ				SN	Sn	09 51 15.8	0.0
WHZ				AML	AML	09 51 16.2	
MLZ	**Mavora Lakes**	**0.86**	**75**	⇑PN	Pn	09 51 05.2	-0.2
MLZ				AML	AML	09 51 18.7	
MLZ				AML	AML	09 51 18.8	
MSZ	**Milford Sound**	**1.16**	**37**	PN	Pn	09 51 08.9	-0.1
MSZ				AML	AML	09 51 24.9	
MSZ				AML	AML	09 51 24.9	
MSZ				AML	AML	09 51 25.0	
MSZ				AML	AML	09 51 25.0	
APZ	**The Paps**	**1.43**	**150**	⇑PN	Pn	09 51 12.4	-0.2
APZ				AML	AML	09 51 31.9	
APZ				AML	AML	09 51 32.4	
WKZ	**Wanaka**	**1.66**	**63**	⇓PN	Pn	09 51 15.7	+0.1
WKZ				AML	AML	09 51 36.5	
WKZ				AML	AML	09 51 36.5	
WKZ				AML	AML	09 51 40.4	
WKZ				AML	AML	09 51 40.5	
EAZ	**Earnscleugh**	**1.71**	**78**	⇓PN	Pn	09 51 16.0	-0.2
EAZ				AML	AML	09 51 37.3	
EAZ				AML	AML	09 51 38.4	
SYZ	**Scrubby Hill**	**1.79**	**122**	⇑PN	Pn	09 51 16.9	-0.4
SYZ				AML	AML	09 51 39.6	
SYZ				AML	AML	09 51 40.8	
SYZ				AML	AML	09 51 40.8	
TUZ	**Tuapeka**	**1.91**	**102**	PN	Pn	09 51 18.4	-0.6
TUZ				AML	AML	09 51 43.6	
TUZ				AML	AML	09 51 43.6	
TUZ				AML	AML	09 51 44.0	
TUZ				AML	AML	09 51 44.0	
JCZ	**Jackson Bay**	**2.01**	**41**	PN	Pn	09 51 19.6	-0.8
JCZ				AML	AML	09 51 48.9	
JCZ				AML	AML	09 51 49.4	
HHSZ	**Highcliff Hill**	**2.57**	**98**	⇓PN	Pn	09 51 27.2	-0.7
LBZ	**Lake Benmore**	**2.60**	**63**	⇑PN	Pn	09 51 26.8	-1.4
LBZ				AML	AML	09 51 56.5	
ODZ	**Otahua Downs**	**2.67**	**79**	⇓PN	Pn	09 51 27.6	-1.6
ODZ				AML	AML	09 51 31.3	
FOZ	**Fox Glacier**	**2.91**	**46**	PN	Pn	09 51 31.2	-1.3
FOZ				AML	AML	09 51 46.9	
FOZ				AML	AML	09 51 56.2	
RPZ	**Rata Peaks**	**3.49**	**59**	⇓PN	Pn	09 51 37.9	-2.4
RPZ				AML	AML	09 52 18.5	
RPZ				AML	AML	09 52 18.6	
OXZ	**Oxford**	**4.30**	**60**	PN	Pn	09 51 48.1	-3.2
MQZ	**McQueen's Vall**	**4.49**	**67**	⇑PN	Pn	09 51 51.3	-2.7
LTZ	**Lake Taylor**	**4.75**	**56**	PN	Pn	09 51 53.8	-3.8

*CSEM **04** 09:54:19.1, 46°.01N×15°.69E, h0km, ML1.2*
LJU 04 09:54:19.1, 46°.01N×15°.69E, h5km, ML1.2, 2C-2D, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GOLS	**Golise**	**0.05**	**270**	⇑*i*Pg	Pg	09 54 20.4	-0.1
GOLS				*i* Sg	Sg	09 54 21.3	-0.1
	comp=Z,188nm,0.1s						
GOLS	**Golise**	**0.05**	**270**	⇑*i*Pg	Pg	09 54 20.4	0.0
GOLS				*i* Sg	Sg	09 54 21.3	-0.1
	comp=Z,188nm,0.1s						
GCIS	**Gornji Cirnik**	**0.15**	**198**	*i* Pg	Pg	09 54 21.9	-0.2
GCIS				*i* Sg	Sg	09 54 24.4	+0.2
	comp=Z,16nm,0.1s						
GCIS	**Gornji Cirnik**	**0.15**	**198**	*i* Pg	Pg	09 54 21.9	-0.2
GCIS				*i* Sg	Sg	09 54 24.4	+0.3
	comp=Z,16nm,0.1s						
CESS	**Cesta pri Krsk**	**0.17**	**257**	*i* Pg	Pg	09 54 22.6	+0.2
CESS	**Cesta pri Krsk**	**0.17**	**257**	*i* Pg	Pg	09 54 22.6	+0.2
DOBS	**Dobrina**	**0.21**	**312**	⇓*i*Pg	Pg	09 54 23.2	0.0
DOBS				*i* Sg	Sg	09 54 26.3	+0.3
	comp=Z,20nm,0.1s						
DOBS	**Dobrina**	**0.21**	**312**	⇓*i*Pg	Pg	09 54 23.2	0.0
DOBS				*i* Sg	Sg	09 54 26.3	+0.3
	comp=Z,20nm,0.1s						
CRES	**Cresnjev**	**0.25**	**222**	*i* Pg	Pg	09 54 23.9	0.0
CRES				*i* Sg	Sg	09 54 27.9	+0.7
	comp=Z,16nm,0.1s						
CRES	**Cresnjev**	**0.25**	**222**	*i* Pg	Pg	09 54 23.9	0.0
CRES				*i* Sg	Sg	09 54 27.9	+0.7
	comp=Z,16nm,0.1s						
LEGS	**Legarje**	**0.27**	**257**	*i* Pg	Pg	09 54 24.5	+0.2
LEGS				*i* Sg	Sg	09 54 28.6	+0.7
LEGS	**Legarje**	**0.27**	**257**	*i* Pg	Pg	09 54 24.5	+0.2
LEGS				*i* Sg	Sg	09 54 28.6	+0.7
BOJS	**Bojanci**	**0.59**	**211**	*i* Pg	Pg	09 54 30.1	-0.4

*IDC **04** 09:56:38.7±0.9, 51°.66S×13°.43E, h0km, mb3.9/5, mb1 4.1/5, mb1mx3.9/34, mbtmp3.9/5, MS4.1/5, Ms1 4.1/5, ms1mx3.7/37, Error ellipse: s-maj=46.4km s-min=28.6km az=53.0*

ISC 04 09:56:40.1±0.9, 51°.7S±0°.2×13°.5E±0°.3, h10km, n23, σ1§19/9, mb3.8/5, MS4.0/5, Southwest of Africa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SNAA	**Sanae**	**21.36**	**194**	P	P	10 01 19.7	-7.5
VNA2	**Neumayer--Watz**	**21.53**	**199**	P	P	10 01 21.3	-7.6
	baz=22,slow=11						
VNA3	**Neumayer Olymp**	**22.24**	**200**	P	P	10 01 26.1	-11
BOSA	**Boshof**	**24.67**	**26**	LR	LR	10 10 16.4	
	comp=Z,505nm,20.0s,baz=238,slow=33						
LBTB	**Lobatse**	**28.18**	**24**	LR	LR	10 13 08.8	
	comp=Z,390nm,18.6s,baz=264,slow=35						
MAW	**Mawson**	**28.61**	**143**	LR	LR	10 12 12.0	
	comp=Z,390nm,18.6s,baz=229,slow=33						
H10S2	**ASCENSION HYDR**	**48.40**	**322**	T	T	10 58 07.9	
	baz=158,slow=75,SNR=5.3						
H10S3	**ASCENSION HYDR**	**48.42**	**322**	T	T	10 58 13.5	
	baz=158,slow=75,SNR=6.0						
H10S1	**ASCENSION HYDR**	**48.42**	**322**	T	T	10 58 09.2	
	baz=158,slow=75,SNR=6.1						
VNDA	**Vanda**	**49.59**	**171**	P	**P**	**10 05 29.4**	**-1.2**
	0.6nm,0.7s,baz=229,slow=8.4,SNR=3.8						
TORD	**Torodi Ar. Bea**	**65.34**	**347**	P	**P**	**10 07 20.7**	**-1.7**
	0.3nm,0.7s,baz=166,slow=7.0,SNR=3.3						
H01W2	**Cape Leeuwin H**	**69.47**	**120**	T	T	11 24 07.4	
	baz=221						
H01W3	**Cape Leeuwin H**	**69.48**	**120**	T	T	11 24 11.9	
	baz=221						
H01W1	**Cape Leeuwin H**	**69.49**	**120**	T	T	11 24 08.4	
	baz=221						
LPAZ	**La Paz**	**72.20**	**266**	P	**P**	**10 08 06.2**	**+0.3**
	3.0nm,0.8s,baz=156,slow=4.8,SNR=10						
MMAI	**Mount Meron Ar**	**86.50**	**18**	LR	LR	10 49 21.0	
	comp=Z,88nm,18.4s,baz=195,slow=37						
ASAR	**Alice Springs**	**88.69**	**128**	P	**P**	**10 09 34.7**	**+0.9**
	1.3nm,0.8s,baz=206,slow=4.8,SNR=12						
WRA	**Warramunga Arr**	**92.04**	**126**	P	**P**	**10 09 49.7**	**+0.3**

HNR			LR	LR	10 12 35.1	
	comp=Z,305nm,21.1s,baz=174,slow=35					
HNR	**Honiara**	**9.52 307**	*eP*	**Pn**	**10 09 14.0**	**-0.4**
HNR			*e*S	Sn	10 10 51.0	-9.4
MSVF	**Nonsavu**	**10.26 105**	*eP*	**Pn**	**10 09 26.1**	**+2.1**
MSVF	**Nonsavu**	**10.26 105**	*e*Pn	**Pn**	**10 09 26.1**	**+2.1**
TARA	**Tarawa**	**17.34 18**	*eP*	**Pn**	**10 10 54.0**	**+1.2**
	283nm,1.0s					
LHI	**Lord Howe Isla**	**17.96 204**	P	**Pn**	**10 11 00.6**	**+0.6**
	baz=18,SNR=4.1					
EIDS	**Eidsvold**	**18.48 235**	P	**Pn**	**10 11 06.4**	**+0.3**
	baz=19,SNR=35					
EIDS	**Eidsvold**	**18.48 235**	*eP*	**Pn**	**10 11 06.0**	**-0.1**
	71nm,0.8s					
RABL	**Rabaul**	**18.82 304**	*eP*	**P**	**10 11 08.5**	**+0.7**
	92nm,0.9s					
AFI	**Afiamalu**	**19.95 89**	P	**P**	**10 11 21.6**	**+1.7**
	53nm,0.6s,baz=136,slow=14,SNR=13					
AFI	**Afiamalu**	**19.95 89**	*eP*	**P**	**10 11 20.7**	**+0.8**
	88nm,0.8s					
OUZ	**Omahuta**	**20.54 166**	*eP*	**P**	**10 11 27.3**	**+1.3**
	84nm,0.8s					
RMQ	**Roma**	**20.84 235**	P	**P**	**10 11 31.3**	**+1.9**
	baz=21,SNR=35					
PMG	**Port Moresby**	**20.86 284***c i*P		**P**	**10 11 30.6**	**+1.0**
PMG			pmax	pmax		
	comp=Z,259nm,1.1s					
CTA	**Charters Tower**	**20.94 254**	P	**P**	**10 11 31.4**	**+1.0**
	comp=Z,42nm,0.9s,baz=82,slow=12,SNR=38					
CTA			PcP	**PcP**	**10 15 31.6**	**+0.4**
	comp=Z,3.5nm,0.7s,baz=62,slow=1.6,SNR=3.4					
CTA	**Charters Tower**	**20.94 254**	P	**P**	**10 11 31.4**	**+1.0**
	baz=21					
CTAO	**Charters Tower**	**20.94 254**	*eP*	**P**	**10 11 31.5**	**+1.0**
CTAO			pmax	pmax		
	comp=Z,526nm,1.2s					
CTAO	**Charters Tower**	**20.94 254**	*eP*	**P**	**10 11 31.4**	**+1.0**
	comp=Z,526nm,1.2s					
ARMA	**Armidale**	**21.05 222**	P	**P**	**10 11 33.5**	**+1.9**
	baz=21,SNR=20					
ARMA	**Armidale**	**21.05 222**	*eP*	**P**	**10 11 32.1**	**+0.5**
	comp=Z,76nm,0.9s					
MTSU	**Mount Surprise**	**22.53 260**	P	**P**	**10 11 47.6**	**+0.9**
	baz=23,SNR=32					
MGCD	**Mangrove Creek**	**23.30 217**	P	**P**	**10 11 55.0**	**+1.6**
	baz=24,SNR=21					
RIV	**Riverview**	**23.72 216**	P	**P**	**10 11 59.2**	**+1.9**
	baz=24					
MANU	**Manus Island**	**23.96 301**	*eP*	**P**	**10 12 00.8**	**+1.1**
	comp=Z,49nm,0.8s					
HIZ	**Hauiti**	**23.98 166**	*eP*	**P**	**10 11 59.8**	**+0.2**
	comp=Z,164nm,1.2s					
URZ	**Urewera**	**24.35 162**	P	**P**	**10 12 03.5**	**+0.6**
	comp=Z,19nm,0.4s,baz=279,slow=2.4,SNR=35					
URZ	**Urewera**	**24.35 162**	*eP*	**P**	**10 12 03.3**	**+0.4**
	comp=Z,61nm,1.0s					
URZ	**Urewera**	**24.35 162**	PN	**P**	**10 12 03.7**	**+0.8**
QLP	**Quilpie**	**24.55 239**	P	**P**	**10 12 05.7**	**+0.8**
	baz=25,SNR=42					
MWZ	**Matawai**	**24.55 161**	PN	**P**	**10 12 05.0**	**+0.2**
MWZ			SN	**S**	**10 16 10.2**	**-2.7**
RIGZ	**Rimuhau**	**24.96 161**	PN	**P**	**10 12 08.6**	**+0.1**
BKZ	**Black Stump Fm**	**25.01 164**	*eP*	**P**	**10 12 10.1**	**+1.1**
	comp=Z,76nm,0.5s					
BKZ			*e*S	**S**	**10 16 26.9**	**+6.6**
BKZ	**Black Stump Fm**	**25.01 164**	PN	**P**	**10 12 09.8**	**+0.8**
BKZ			SN	**S**	**10 16 18.7**	**-1.6**
KNZ	**Kokohu**	**25.22 161**	PN	**P**	**10 12 10.8**	**0.0**
YNG	**Young**	**25.68 219**	P	**P**	**10 12 16.4**	**+1.3**
	baz=26,SNR=6.5					
CMSA	**Cobar Meteorol**	**25.76 227**	P	**P**	**10 12 16.4**	**+0.6**
	baz=26,SNR=23					
CNB	**Canberra Magne**	**25.82 216**	P	**P**	**10 12 17.3**	**+0.9**
	baz=26,SNR=22					
CAN	**Canberra**	**26.03 217**	P	**P**	**10 12 19.2**	**+1.0**
	baz=26					
CAN	**Canberra**	**26.03 217**	*eP*	**P**	**10 12 18.9**	**+0.7**
CAN			pmax	pmax		
	comp=Z,20nm,0.9s					
CAN	**Canberra**	**26.03 217**	*eP*	**P**	**10 12 18.9**	**+0.7**
	comp=Z,20nm,0.9s					
BFZ	**Birch Farm**	**26.37 165**	*eP*	**P**	**10 12 22.0**	**+0.8**
	comp=Z,32nm,0.6s					
SNZO	**South Karori**	**26.63 168**	*eP*	**P**	**10 12 25.5**	**+2.1**
KHZ	**Kahutara**	**27.50 171**	*eP*	**P**	**10 12 32.0**	**+0.9**
RPZ	**Rata Peaks**	**28.47 175**	P	**P**	**10 12 40.5**	**+0.7**
	comp=Z,10nm,0.6s,baz=128,slow=6.0,SNR=4.4					
STKA	**Stephens Creek**	**28.92 231**	P	**P**	**10 12 45.2**	**+1.3**
	comp=Z,86nm,0.8s,baz=48,slow=7.8,SNR=129					
STKA			PcP	**PcP**	**10 15 48.1**	**-0.7**
	comp=Z,11nm,0.7s,baz=86,slow=4.0,SNR=7.1					
STKA			ScP	**ScP**	**10 19 18.3**	**+4.0**
	comp=Z,1.8nm,0.6s,baz=90,slow=2.0,SNR=3.5					
STKA			PKiKP	**PKiKP**	**10 23 20.6**	**-2.3**
	comp=Z,0.7nm,0.2s,baz=23,slow=7.0,SNR=2.4					
STKA	**Stephens Creek**	**28.92 231**	P	**P**	**10 12 45.3**	**+1.3**
	baz=29,SNR=82					
STKA	**Stephens Creek**	**28.92 231**	*eP*	**P**	**10 12 45.2**	**+1.3**
STKA					10 15 48.1	
STKA			pmax	pmax		
	comp=Z,19nm,0.8s					
STKA	**Stephens Creek**	**28.92 231**	*eP*	**P**	**10 12 45.2**	**+1.3**
	comp=Z,19nm,0.8s					
STKA			PcP	**PcP**	**10 15 48.1**	**-0.7**
STKA			ScP	**ScP**	**10 19 18.3**	**+4.0**
STKA			PKiKP	**PKiKP**	**10 23 20.6**	**-2.3**
TOO	**Toolangi**	**29.62 217**	P	**P**	**10 12 51.1**	**+0.9**
	baz=30,SNR=13					
MLZ	**Mavora Lakes**	**29.98 179**	*eP*	**P**	**10 12 53.8**	**+0.6**
	comp=Z,92nm,1.8s					
DCZ	**Deep Cove**	**30.08 181**	*eP*	**P**	**10 12 54.3**	**+0.4**
	comp=Z,47nm,0.9s					
ARPS	**Mount Arapiles**	**31.38 222**	P	**P**	**10 13 06.4**	**+0.9**
	baz=32,SNR=7.1					
RAR	**Rarotonga**	**31.44 106**	P	**P**	**10 13 06.9**	**+0.6**
	comp=Z,44nm,0.8s,baz=57,slow=7.8,SNR=3.4					
HTT	**Hallett**	**31.64 230**	P	**P**	**10 13 08.8**	**+0.9**
	baz=32,SNR=52					
WB8	**Warramunga Arr**	**32.01 257**	P	**P**	**10 13 10.5**	**-0.9**
	baz=32					
WB2	**Warramunga Arr**	**32.05 257**	*eP*	**P**	**10 13 10.2**	**-1.5**
	comp=Z,27nm,0.9s					
WRAB	**Tennant Creek**	**32.05 257***de*P		**P**	**10 13 10.2**	**-1.4**
WRAB			pmax	pmax		
	comp=Z,63nm,1.0s					
WRAB	**Tennant Creek**	**32.05 257**	*eP*	**P**	**10 13 10.3**	**-1.4**
	comp=Z,22nm,0.9s					
WRA	**Warramunga Arr**	**32.06 257**	P	**P**	**10 13 10.5**	**-1.3**
	comp=Z,23nm,0.9s,baz=86,slow=8.6,SNR=94					
WRA			PcP	**PcP**	**10 15 57.4**	**0.0**
	comp=Z,15nm,0.9s,baz=87,slow=2.6,SNR=18					
WRA			S	**S**	**10 18 05.4**	**-5.9**
	comp=Z,2.3nm,1.0s,baz=90,slow=14,SNR=5.7					
WRA			ScP	**ScP**	**10 19 26.6**	**+1.7**
	comp=Z,2.3nm,1.0s,baz=85,slow=3.8,SNR=5.4					
WRA			PKiKP	**PKiKP**	**10 23 22.9**	**-2.4**
	comp=Z,0.7nm,0.6s,baz=17,slow=0.6,SNR=7.9					
AS01	**Alice Springs**	**32.79 250**	*eP*	**P**	**10 13 17.6**	**-0.5**
AS31	**Alice Springs**	**32.83 250**	*eP*	**P**	**10 13 17.7**	**-0.8**
	comp=Z,15nm,0.8s					
ASAR	**Alice Springs**	**32.83 250**	P	**P**	**10 13 17.7**	**-0.8**
	comp=Z,41nm,0.8s,baz=78,slow=9.1,SNR=340					
ASAR			PcP	**PcP**	**10 15 59.2**	**-0.2**
	comp=Z,9.5nm,0.8s,baz=86,slow=2.5,SNR=14					
ASAR			S	**S**	**10 18 20.1**	**-3.1**
	comp=Z,1.6nm,0.9s,baz=76,slow=18,SNR=5.3					
ASAR			ScP	**ScP**	**10 19 28.1**	**+0.7**
	comp=Z,2.4nm,0.8s,baz=84,slow=3.3,SNR=9.4					
ASAR			PKiKP	**PKiKP**	**10 23 23.6**	**-2.3**
	comp=Z,0.4nm,0.7s,baz=115,slow=1.2,SNR=7.2					
ASAR			LR	LR	10 26 57.7	
	comp=Z,131nm,18.8s,baz=158,slow=36					
BBOO	**Buckleboo**	**33.53 233**	P	**P**	**10 13 25.4**	**+0.9**
	baz=34,SNR=146					
BBOO	**Buckleboo**	**33.53 233**	*eP*	**P**	**10 13 25.2**	**+0.8**
	comp=Z,143nm,0.8s					
MTN	**Manton Dam**	**35.49 269**	*eP*	**P**	**10 13 42.4**	**+1.0**
	comp=Z,30nm,1.3s					
GUMO	**Guam**	**36.50 321**	P	**P**	**10 13 50.8**	**+0.9**
	comp=Z,34nm,0.4s,baz=37,slow=7.4,SNR=2.6					
KNRA	**Kununurra**	**37.45 264**	P	**P**	**10 13 57.4**	**-0.6**
	baz=38					
WRKA	**Warakurna**	**38.08 249**	P	**P**	**10 14 02.9**	**-0.4**
	baz=38,SNR=21					
FITZ	**Fitzroy Crossi**	**40.28 260**	P	**P**	**10 14 21.4**	**-0.2**
	comp=Z,47nm,0.8s,baz=112,slow=6.7,SNR=63					
FITZ			PcP	**PcP**	**10 16 22.2**	**+0.3**
	comp=Z,10nm,0.8s,baz=79,slow=4.1,SNR=3.7					
FITZ	**Fitzroy Crossi**	**40.28 260**	P	**P**	**10 14 21.4**	**-0.2**
	baz=40,SNR=42					
FITZ	**Fitzroy Crossi**	**40.28 260**	*eP*	**P**	**10 14 21.3**	**-0.2**
	comp=Z,53nm,0.8s					
FITZ			PcP	**PcP**	**10 16 22.2**	**+0.3**
PAE	**Paea**	**41.01 99**⇓*i*P		**P**	**10 14 28.0**	**+0.5**
	comp=Z,36nm,1.0s					
PPT2	**Papeete2**	**41.02 99**⇓*i*P		**P**	**10 14 28.3**	**+0.6**
	comp=Z,120nm,0.9s					
PPT	**Papeete**	**41.02 99**	P	**P**	**10 14 28.4**	**+0.8**
	comp=Z,167nm,0.9s,baz=62,slow=14,SNR=7.8					
TIAR	**Tiarei**	**41.24 99**⇓*i*P		**P**	**10 14 30.0**	**+0.6**
	comp=Z,59nm,0.9s					
TVO	**Taravao**	**41.32 100**⇓*i*P		**P**	**10 14 30.6**	**+0.5**
	comp=Z,61nm,1.0s					
MEH	**Mehetia**	**42.44 100**⇓*i*P		**P**	**10 14 39.7**	**+0.6**
	comp=Z,92nm,1.1s					
PMOR	**Pomariorio Ree**	**42.84 96**⇓*i*P		**P**	**10 14 43.5**	**+1.1**
	comp=Z,506nm,1.2s					
VAH	**Vaihoa**	**43.08 96**⇓*i*P		**P**	**10 14 45.3**	**+1.1**
	comp=Z,242nm,1.2s					
KMBL	**Kambalda**	**44.64 241**	P	**P**	**10 14 56.3**	**-0.2**
	baz=45,SNR=19					
MBWA	**Marble Bar**	**45.76 255**	*eP*	**P**	**10 15 05.3**	**-0.2**
	comp=Z,123nm,1.5s					
KAPI	**Kappang**	**48.15 277**	*eP*	**P**	**10 15 24.4**	**+0.2**
	comp=Z,27nm,0.9s					
KLBR	**Kellerberrin**	**48.16 241**	P	**P**	**10 15 23.3**	**-0.7**
	baz=48,SNR=32					
NWAO	**Narrogin (SRO)**	**48.78 240**	P	**P**	**10 15 28.5**	**-0.3**
NWAO	**Narrogin (SRO)**	**48.78 240**	P	**P**	**10 15 28.2**	**-0.6**
	baz=49,SNR=32					
NWAO	**Narrogin (SRO)**	**48.78 240**	*eP*	**P**	**10 15 28.4**	**-0.3**
	comp=Z,438nm,0.9s					
CBIJ	**Chichi jima**	**48.86 329**	P	**P**	**10 15 28.8**	**-0.4**
JCJ	**Chichijima**	**48.86 329**	P	**P**	**10 15 28.8**	**-0.4**
	comp=Z,80nm,0.8s,baz=268,slow=14,SNR=3.4					
BLDU	**Ballidu**	**48.93 243**	P	**P**	**10 15 29.1**	**-0.7**
	baz=49,SNR=14					
PLAI	**Plampang**	**49.12 272**	P	**P**	**10 15 29.8**	**-1.7**
	comp=Z,48nm,1.1s					
MORW	**Morawa**	**49.36 245**	P	**P**	**10 15 32.9**	**-0.3**
	baz=50,SNR=17					
MUN	**Mundaring**	**49.52 241**	P	**P**	**10 15 34.2**	**-0.1**
	baz=50					
TWSI	**Taliwang, Sumb**	**50.00 271**	P	**P**	**10 15 38.7**	**+0.5**
	comp=Z,103nm,1.0s,comp=Z,1μm					
GIRL	**Giralia**	**50.83 253**	P	**P**	**10 15 45.0**	**+0.7**
	baz=51,SNR=4.2					
TAOE	**Nuku Hiva Isla**	**51.34 89**	*eP*	**P**	**10 15 49.8**	**+1.5**
	comp=Z,141nm,0.8s					
KKM	**Kota Kinabalu**	**55.20 289**	*eP*	**P**	**10 16 16.6**	**+0.1**
PCJI	**Pacitan**	**55.62 270**	P	**P**	**10 16 19.8**	**+0.4**
	comp=Z,108nm,1.1s					
UGM	**Wanagama**	**56.32 271**	P	**P**	**10 16 23.3**	**-1.1**
	comp=Z,128nm,1.1s					
UGM	**Wanagama**	**56.32 271**	*eP*	**P**	**10 16 24.4**	**0.0**
	comp=Z,121nm,1.1s					
JOW	**Kunigami**	**56.72 317**	P	**P**	**10 16 28.7**	**+1.8**
	comp=Z,7.2nm,0.6s,baz=177,slow=12,SNR=5.2					
SBUM	**Sibu**	**57.60 283**	*eP*	**P**	**10 16 34.3**	**+0.9**
	comp=Z,14nm,1.1s					
MJAR	**Matsushiro Arr**	**58.58 332**	P	**P**	**10 16 39.0**	**-0.7**
	comp=Z,5.9nm,0.7s,baz=167,slow=8.7,SNR=15					
MJAR			pP	**pP**	**10 17 18.9**	**-0.4**
	comp=Z,2.5nm,0.6s,baz=171,slow=8.2,SNR=3.8					
MJAR			PcP	**PcP**	**10 17 29.0**	**+0.9**
	comp=Z,7.5nm,0.9s,baz=162,slow=3.8,SNR=6.7					
MJAR	**Matsushiro Arr**	**58.58 332**	P	**P**	**10 16 39.0**	**-0.7**
MJAR			*PP	**pP**	**10 17 19.0**	**-0.4**
MJAR					10 17 29.0	
MJAR			pmax	pmax		
	comp=Z,8.0nm,0.8s					
MJAR			pmax	pmax		
	comp=Z,3.0nm,0.6s					
MJAR			pmax	pmax		
	comp=Z,8.0nm,0.9s					
MAJO	**Matsushiro**	**58.58 332***c i*P		**P**	**10 16 39.0**	**-0.7**
MAJO			pmax	pmax		
	comp=Z,48nm,0.9s					
MAJO	**Matsushiro**	**58.58 332**	*eP*	**P**	**10 16 39.5**	**-0.2**
	comp=Z,12nm,0.9s					
MAT	**Matsushiro**	**58.58 332**	P	**P**	**10 16 38.9**	**-0.8**
MAT			S	**S**	**10 24 28.2**	**-2.1**
MJB9	**Matsu-Tunnel**	**58.59 332**	*eP*	**P**	**10 16 39.9**	**+0.1**
	comp=Z,3.2nm,0.9s					
CISI	**Cisompet, Garu**	**59.01 270**	*eP*	**P**	**10 16 42.5**	**-0.8**
	comp=Z,56nm,0.8s					
KSM	**Kuching**	**59.09 281**	*eP*	**P**	**10 16 43.7**	**0.0**
	comp=Z,19nm,1.1s					
LEM	**Lembang**	**59.37 271**	P	P	10 16 51.2	+5.4
	comp=Z,44nm,0.7s,baz=161,slow=18,SNR=8.7					
LEM			pP	**PcP**	**10 17 32.0**	**0.0**
	comp=Z,25nm,0.6s,baz=337,slow=22,SNR=2.0					
JNU	**Nakatsue**	**59.60 324**	*eP*	**P**	**10 16 47.3**	**+0.5**
	comp=Z,17nm,0.7s					
VNDA	**Vanda**	**62.31 181**	P	**P**	**10 17 04.5**	**+0.1**
	comp=Z,10nm,0.6s,baz=355,slow=8.1,SNR=69					
VNDA			PcP	**PcP**	**10 17 42.5**	**+0.1**
	comp=Z,4.0nm,0.8s,baz=192,slow=2.0,SNR=3.9					
VNDA	**Vanda**	**62.31 181**	*eP*	**P**	**10 17 04.0**	**-0.4**
VNDA					10 17 42.5	
VNDA			pmax	pmax		
	comp=Z,13nm,0.8s					
VNDA	**Vanda**	**62.31 181**	*eP*	**P**	**10 17 04.0**	**-0.4**
	comp=Z,13nm,0.8s					
VNDA			PcP	**PcP**	**10 17 42.5**	**+0.1**
SBA	**Scott Base**	**62.57 180**	*eP*	**P**	**10 17 07.2**	**+1.1**
SBA			pmax	pmax		
	comp=Z,98nm,1.4s					
SBA	**Scott Base**	**62.57 180**	*eP*	**P**	**10 17 07.2**	**+1.1**
	comp=Z,98nm,1.4s					
CASY	**Casey**	**63.15 202**	*eP*	**P**	**10 17 10.2**	**+0.1**
	comp=Z,12nm,1.2s					
ASAJ	**Asahikawa**	**63.40 340**	P	**P**	**10 17 14.6**	**+2.6**
	comp=Z,2.2nm,0.5s,baz=166,slow=11,SNR=4.3					
ASAJ			pP	**pP**	**10 17 54.0**	**+1.8**
	comp=Z,9.6nm,0.9s,baz=214,slow=9.2,SNR=3.0					
KSRS	**Korea Array**	**64.42 326**	P	**P**	**10 17 19.3**	**+0.5**
	comp=Z,2.1nm,0.7s,baz=138,slow=6.9,SNR=13					
KSRS			PcP	**PcP**	**10 17 52.9**	**+1.2**
	comp=Z,4.4nm,1.0s,baz=143,slow=5.4,SNR=7.8					
KSRS			pP	**pP**	**10 18 00.1**	**+0.9**
	comp=Z,2.0nm,0.8s,baz=139,slow=7.2,SNR=2.9					
KSAR	**Wonju Array Be**	**64.43 326**	P	**P**	**10 17 19.3**	**+0.4**
KSAR					10 17 52.9	
KSAR			*PP	**pP**	**10 18 00.1**	**+0.8**
KSAR	**Wonju Array Be**	**64.43 326**	P	**P**	**10 17 19.3**	**+0.4**
KSAR			PcP	**PcP**	**10 17 52.9**	**+1.1**
KSAR			pP	**pP**	**10 18 00.1**	**+0.8**
YSS	**Yuzh-Sakhalins**	**65.88 342**	*eP*	**P**	**10 17 25.0**	**-3.0**
MSHR	**Mys Shultsa**	**66.66 331**	P	**P**	**10 17 36.0**	**+2.9**
USRK	**Ussuriysk Ar.**	**67.56 333**	P	**P**	**10 17 40.2**	**+1.5**
	comp=Z,6.6nm,0.7s,baz=144,slow=5.8,SNR=15					
USRK			PcP	**PcP**	**10 18 05.2**	**+0.6**
	comp=Z,5.4nm,0.9s,baz=76,slow=1.9,SNR=5.9					
USRK			pP	**pP**	**10 18 21.4**	**+1.9**
	comp=Z,3.2nm,0.7s,baz=159,slow=8.1,SNR=2.7					
BKNI	**Bangkinang**	**67.58 277**	*eP*	**P**	**10 17 39.9**	**+0.4**
WHN	**Wuhan**	**68.60 312**	P	**P**	**10 17 48.4**	**+2.9**
PETK	**Petropavlovsk-**	**68.66 354**	P	**P**	**10 17 45.6**	**+0.2**
	comp=Z,2.7nm,0.8s,baz=164,slow=12,SNR=2.9					
PETK			pP	**pP**	**10 18 25.7**	**-0.5**
	comp=Z,7.2nm,1.0s,baz=141,slow=9.6,SNR=3.5					
IPM	**Ipoh**	**68.82 281**	*eP*	**P**	**10 17 46.6**	**-0.7**
	comp=Z,22nm,0.9s					
MDJ	**Mudanjiang**	**68.96 332**	P	**P**	**10 17 48.7**	**+1.3**
MDJ			pmax	pmax		
	comp=Z,15nm,0.8s					
MDJ			pmax	pmax		
	comp=Z,280nm,8.6s					
HABR	**Khabarovsk**	**69.80 338**	*eP*	**P**	**10 17 51.1**	**-1.4**
HABR			*e*		10 18 12.6	
HABR			*e**PP	**pP**	**10 18 31.7**	**-1.8**
HABR			*e**SP	**sP**	**10 18 50.5**	**-1.3**
HABR			*e*		10 20 27.3	
HABR			*e*S	**S**	**10 26 46.2**	**-1.5**
HABR			*e*		10 27 36.4	
HABR			*e*SS	**SS**	**10 31 19.2**	**-1.2**
HABR			pmax	pmax		
	comp=E,9.0nm,0.9s					
HABR			pmax	pmax		
	comp=N,13nm,0.9s					
HABR			pmax	pmax		
	comp=Z,11nm,0.9s					
HABR			MLR	MLR		
	comp=Z,84nm,16.0s					
MIR	**Mirnyy**	**69.97 204**	*i* P	**P**	**10 17 54.0**	**+0.7**
MIR			pmax	pmax		
	comp=Z,6.0nm,1.0s					
SKLT	**Songkhla**	**70.06 284**	P	**P**	**10 17 56.2**	**+1.4**
	comp=Z,23nm,1.1s					
PSI	**Prapat**	**70.31 279**	*e*P	**P**	**10 17 55.7**	**-0.9**
PSI			pmax	pmax		
	comp=Z,26nm,1.0s					
PSI	**Prapat**	**70.31 279**	*e*P	**P**	**10 17 55.7**	**-0.9**
	comp=Z,26nm,1.0s					
CN2	**Changchun**	**70.32 329**	*e*P	**P**	**10 17 56.4**	**+0.6**
CN2			pmax	pmax		
	comp=Z,10.0nm,0.7s					
SKNT	**Sakolnakorn**	**70.52 295**	P	**P**	**10 17 58.1**	**+0.5**
	comp=Z,29nm,1.0s,comp=Z,2μm					
TRTT	**Trang**	**71.15 284**	P	**P**	**10 18 02.7**	**+1.3**
	comp=Z,18nm,1.0s					
GSI	**Gunungsitoli**	**71.17 277**	*e*P	**P**	**10 18 01.1**	**-0.5**
	comp=Z,63nm,1.0s					
KLR	**Kul'dur**	**71.68 336**	P	**P**	**10 18 05.1**	**+1.3**
	comp=Z,6.5nm,0.8s					
KLR			pP	**pP**	**10 18 45.5**	**+0.5**
	comp=Z,2.5nm,0.2s,baz=318,slow=18,SNR=1.7					
NAYO	**Nakonayok**	**71.88 291**	P	**P**	**10 18 07.0**	**+1.3**
	comp=Z,12nm,1.2s					
ENH	**Enshi**	**72.02 309**	*e*P	**P**	**10 18 06.0**	**-0.3**
	comp=Z,9.6nm,0.8s					
GYA	**Guiyang**	**72.34 305**	P	**P**	**10 18 10.2**	**+1.7**
GYA			pP	pP	10 18 51.5	+1.8
GYA			sP	sP	10 19 11.0	+3.0
GYA			PP	**PP**	**10 20 54.6**	**+2.7**
GYA			S	**S**	**10 27 18.2**	**0.0**
GYA			SKS	**SKSac**	**10 27 52.3**	**-4.9**
GYA			pmax	pmax		
	comp=Z,20nm,1.0s					
GYA			pmax	pmax		
	comp=Z,130nm,6.8s					
BJI	**Beijing**	**72.94 321**	P	**P**	**10 18 12.5**	**+1.0**
BJI			pmax	pmax		
	comp=Z,13nm,0.8s					
PBKT	**Sadao Pong**	**73.03 293**	P	**P**	**10 18 13.7**	**+1.2**
	comp=Z,12nm,1.1s,comp=Z,938nm					
LOEI	**Loei**	**73.12 294**	P	**P**	**10 18 11.8**	**-1.3**
	comp=Z,13nm,0.9s,comp=Z,1μm					
UTTA	**Uttaradit**	**73.84 294**	P	**P**	**10 18 18.5**	**+1.3**
	comp=Z,3.5nm,0.9s,comp=Z,56nm					
NANT	**Nan**	**74.11 295**	P	**P**	**10 18 19.6**	**+0.8**
	comp=Z,9.3nm,0.7s					
XAN	**Xi'an**	**74.35 313**	P	**P**	**10 18 20.5**	**+0.6**
XAN			pmax	pmax		
	comp=Z,15nm,1.1s					
XAN			pmax	pmax		
	comp=Z,52nm,5.4s					
QSPA	**South Pole Qui**	**74.73 180**	*e*P	**P**	**10 18 21.4**	**-0.4**
	comp=Z,195nm,1.0s					
KMI	**Kunming**	**74.92 302**	P	**P**	**10 18 24.8**	**+1.1**
KMI			pmax	pmax		
	comp=Z,29nm,0.7s					
KMI			pmax	pmax		
	comp=Z,160nm,10.1s					
LAMP	**Lampang**	**74.94 294**	P	**P**	**10 18 25.1**	**+1.5**
	comp=Z,9.9nm,0.8s					
CM01	**Chiang Mai Arr**	**75.50 294**	*e*P	**P**	**10 18 27.4**	**+0.7**
CMAR	**Chiang Mai Arr**	**75.52 294**	P	**P**	**10 18 28.1**	**+1.1**
	comp=Z,5.2nm,0.6s,baz=130,slow=4.4,SNR=24					
CMAR			pP	**pP**	**10 19 08.8**	**+0.3**
	comp=Z,1.1nm,0.3s,baz=118,slow=3.6,SNR=1.6					
CMAR	**Chiang Mai Arr**	**75.52 294**	P	**P**	**10 18 28.1**	**+1.1**
CMAR			*PP	**pP**	**10 19 08.8**	**+0.3**
CMAR			pmax	pmax		
	comp=Z,5.0nm,0.6s					
CMAR			pmax	pmax		
	comp=Z,4.0nm,1.0s					
CHTO	**Chiang Mai**	**75.65 294**	P	**P**	**10 18 28.7**	**+1.0**
	comp=Z,62nm,1.2s					
CHTO	**Chiang Mai**	**75.65 294**	*e*P	**P**	**10 18 28.4**	**+0.7**
CHTO			pmax	pmax		
	comp=Z,8.0nm,0.8s					
CHTO	**Chiang Mai**	**75.65 294**	*e*P	**P**	**10 18 28.4**	**+0.7**
	comp=Z,7.7nm,0.8s					
HHC	**Hu-ho-hao-te**	**76.26 320**	*e*P	**P**	**10 18 32.4**	**+1.6**
HHC			S	**S**	**10 28 04.9**	**+3.6**
HHC			pmax	pmax		
	comp=Z,22nm,1.2s					
HHC			pmax	pmax		
	comp=Z,140nm,7.0s					
CD2	**Chengdu**	**76.65 308**	P	**P**	**10 18 33.4**	**+0.3**
CD2			pP	pP	10 19 15.2	+0.4
CD2			sP	sP	10 19 33.8	+0.8
CD2			PP	**PP**	**10 21 28.1**	**0.0**
CD2			S	**S**	**10 28 06.7**	**+0.9**
CD2			sS	sS	10 29 20.0	+1.8
CD2			SS	**SS**	**10 33 07.3**	**+1.8**
CD2			pmax	pmax		
	comp=Z,20nm,0.4s					
CD2			pmax	pmax		
	comp=Z,170nm,7.5s					
SEY	**Seymchan**	**78.89 353**	P	**P**	**10 18 44.7**	**0.0**
	comp=Z,2.5nm,0.8s,baz=145,slow=9.9,SNR=8.4					
SEY			pP	**pP**	**10 19 24.7**	**-1.9**
	comp=Z,8.0nm,0.9s,baz=165,slow=6.5,SNR=7.0					
LZH	**Lanzhou**	**78.98 312** ⇑P		**P**	**10 18 47.2**	**+1.2**
LZH			sP	sP	10 19 47.5	+1.4
LZH			PP	**PP**	**10

ZAK pmax pmax
comp=Z,18nm,1.2s
EDW2 Edwards Air Fo 86.28 52 P P 10 19 23.2 -0.5
baz=249
HDA Harding Lake 86.67 18 *e*P **P 10 19 23.3 -1.4**
TLY Talaya 86.67 326 P **P 10 19 25.9 +0.8**
comp=Z,3.8nm,0.6s,baz=71,slow=3.1,SNR=3.2
MDM Murphy Dome 86.69 17 *e*P **P 10 19 23.1 -1.8**
COLA College 86.74 17 *de*P **P 10 19 23.5 -1.5**
COLA pmax pmax
comp=Z,7.0nm,0.8s
COLA College 86.74 17 *e*P **P 10 19 24.1 -0.9**
ILAR Eielson Array 86.95 18 P **P 10 19 23.9 -2.3**
comp=Z,3.1nm,0.8s,baz=235,slow=5.5,SNR=34
ILAR pP **pP 10 20 06.1 -2.7**
comp=Z,12nm,0.8s,baz=234,slow=5.7,SNR=14
ILAR PKPPKP **P'P'df 10 45 21.9 -2.3**
comp=Z,0.3nm,0.4s,baz=62,slow=10,SNR=6.4
ILB Eielson Array 86.95 18 *e*P **P 10 19 23.9 -2.3**
PFO Pinyon Flats O 87.02 54 P **P 10 19 26.7 -0.7**
comp=Z,2.3nm,1.0s,baz=301,slow=6.7,SNR=3.6
PFO pP **pP 10 20 09.9 -0.1**
comp=Z,4.6nm,0.7s,baz=265,slow=7.4,SNR=4.2
BBB Bella Bella 87.03 34 LR LR 10 54 11.1
comp=Z,37nm,18.6s,baz=232,slow=32
MPMC Manual Prospec 87.09 52 P **P 10 19 28.0 +0.2**
baz=249
J05D Fort Rock, OR 87.19 44 P **P 10 19 28.3 +0.3**
baz=246
GSC Goldstone, Bar 87.34 52 P **P 10 19 29.2 +0.4**
baz=249
NV01 Mina Array Sit 87.35 49 *e*P **P 10 19 28.6 -0.3**
NVAR Mina Array Bea 87.35 49 P **P 10 19 28.7 -0.3**
comp=Z,2.6nm,0.9s,baz=232,slow=8.4,SNR=13
NVAR pP **pP 10 20 11.9 +0.3**
comp=Z,3.5nm,0.8s,baz=227,slow=7.0,SNR=8.3
NVAR PKKPbc **PKKPbc 10 37 18.6 -1.1**
comp=Z,0.7nm,0.7s,baz=82,slow=3.2,SNR=7.5
NVAR PKPPKP **P'P'df 10 45 25.6 -0.1**
comp=Z,1.1nm,1.0s,baz=55,slow=0.9,SNR=5.1
NV11 Mina Array Sit 87.46 49 *e*P **P 10 19 29.6 +0.2**
BELC Belle Mtn. Jos 87.51 54 P **P 10 19 30.2 +0.5**
baz=250
HEC Hector,Ludlow 87.54 53 P **P 10 19 29.3 -0.4**
baz=250
FURC Furnace Creek, 87.71 51 P **P 10 19 31.1 +0.7**
baz=249
BC3 Big Chuckawall 87.82 54 P **P 10 19 31.8 +0.7**
baz=250
GMRC Granite Mounta 88.05 53 P **P 10 19 32.1 -0.1**
baz=250
TUQ Turquoise Moun 88.07 53 P **P 10 19 32.5 +0.2**
baz=250
GLA Glamis 88.11 55 *e*P **P 10 19 33.3 +0.8**
GLA Glamis 88.11 55 *e*P **P 10 19 33.3 +0.8**
IRM Iron Mountain 88.23 54 P **P 10 19 33.6 +0.6**
baz=250
SYO Syowa Base 88.27 196⇑ *i*P **P 10 19 30.3 -2.2**
SYO Syowa Base 88.27 196‖ *e*PcP **P 10 19 33.0 +0.5**
TPNV Topopah Spring 88.34 51 P **P 10 19 33.8 +0.2**
baz=250
PDMCI Parker Dam,Lak 89.07 54 P **P 10 19 36.9 0.0**
baz=251
LPIG La Paz 89.10 65 LR LR 10 51 41.4
comp=Z,58nm,18.6s,baz=160,slow=30
R11A Troy Canyon, C 89.32 50 P **P 10 19 38.2 0.0**
baz=250
214A Organ Pipe Nat 89.37 57 P **P 10 19 39.3 +0.9**
baz=252
214A Organ Pipe Nat 89.37 57 *e*P **P 10 19 39.1 +0.7**
comp=Z,23nm,1.2s
TIXI Tiksi 90.60 349 P **pP 10 19 42.3 -0.8**
comp=Z,0.9nm,0.4s,baz=136,slow=7.9,SNR=5.3
TIXI pP **pP 10 20 26.4 +0.4**
comp=Z,0.8nm,0.3s,baz=146,slow=5.5,SNR=2.5
TIXI Tiksi 90.60 349⇑ *e*P **P 10 19 42.5 -0.6**
TIXI pmax pmax
comp=Z,5.0nm,1.1s
LCMT Little Creek M 90.63 52 *e*P **P 10 19 44.9 +0.6**
PSUT Pine Spring 90.66 50 *e*P **P 10 19 45.4 +0.9**
PSUT *e*pP **pP 10 20 27.1 -0.3**
KNB Kanab 90.95 52 *e*P **P 10 19 47.0 +1.2**
KNB *e**PP **pP 10 20 28.9 +0.2**
KNB Kanab 90.95 52 *e*P **P 10 19 47.0 +1.2**
KNB *e*pP **pP 10 20 28.9 +0.2**
TUC Tucson 91.11 57 P **P 10 19 47.3 +0.7**
baz=253
TUC Tucson 91.11 57 *e*P **P 10 19 47.1 +0.6**
TUC *e**PP **pP 10 20 29.5 0.0**
TUC Tucson 91.11 57 *e*P **P 10 19 47.1 +0.6**
TUC *e*pP **pP 10 20 29.5 0.0**
X16A Lo Mia Camp, P 91.22 55 *e*P **P 10 19 47.8 +0.6**
WUAZ Wupatki 91.61 54 P **P 10 19 49.5 +0.6**
baz=252
WUAZ Wupatki 91.61 54 *e*P **P 10 19 51.0 +2.1**
WUAZ *e*pP **pP 10 20 30.3 -1.5**
NVL N'lazarevskaya 92.55 188 *e*P **P 10 19 52.2 -0.1**
SNAA Sanae 93.00 183 P **P 10 19 53.3 -1.3**
SNAA Sanae 93.00 183‖ *e*P **P 10 19 53.2 -1.3**
SNAA Sanae 93.00 183 *e*P **P 10 19 53.0 -1.5**
INK Inuvik 93.30 19 P **P 10 19 54.6 -1.0**
comp=Z,0.3nm,0.6s,baz=180,slow=2.2,SNR=2.2
WMQ Urumqi 93.39 314 P **P 10 19 57.1 +0.3**
WMQ pP pP 10 20 43.2 +3.5
WMQ sP sP 10 20 57.3 -0.3
WMQ pmax pmax
comp=Z,2.0nm,0.8s
WMQ pmax pmax
comp=Z,63nm,9.8s
WMQ LR LR
comp=Z,35nm,33.6s
WMQ LR LR
comp=Z,45nm,35.4s
WMQ LR LR
comp=Z,28nm,29.8s
VNA3 Neumayer Olymp 93.66 181 P **P 10 19 55.9 -1.6**
VNA2 Neumayer--Watz 93.93 182 P **P 10 19 57.5 -1.2**
baz=182,slow=3.7
VNA1 Neumayer--Stat 94.22 181 P **P 10 19 58.7 -1.3**
PDAR Pinedale Array 95.05 47 pP **pP 10 20 47.8 +0.2**
comp=Z,0.7nm,0.6s,baz=223,slow=3.7,SNR=2.9
PDAR PP **PP 10 23 56.5 -0.2**
comp=Z,1.0nm,1.0s,baz=224,slow=5.6,SNR=4.1
PDAR PKKPbc **PKKPdf 10 36 58.1 -2.2**
comp=Z,0.7nm,0.8s,baz=100,slow=3.3,SNR=4.8
TXAR Lajitas Array 96.22 61 pP **pP 10 20 54.3 +1.2**
comp=Z,0.9nm,0.7s,baz=223,slow=5.1,SNR=4.2
TXAR PP **PP 10 24 05.2 -0.6**
comp=Z,1.0nm,1.1s,baz=219,slow=7.7,SNR=6.2
TXAR PKKPbc **PKKPbc 10 36 56.7 +0.3**
comp=Z,0.4nm,0.8s,baz=29,slow=2.9,SNR=4.9
MKAR Makanchi Array 97.87 316 P Pdif 10 20 17.1 +0.1
comp=Z,5.3nm,0.8s,baz=98,slow=6.5,SNR=38
MKAR pP pP 10 20 59.4 -0.7
comp=Z,2.4nm,0.6s,baz=92,slow=6.9,SNR=2.7
MKAR PKiKP **PKiKP 10 24 49.8 0.0**
comp=Z,1.0nm,0.7s,baz=76,slow=2.7,SNR=6.0
YKA Yellowknife Ar 97.88 27 P **P 10 20 14.9 -1.6**
comp=Z,1.7nm,0.7s,baz=256,slow=4.5,SNR=34
YKA pP **pP 10 20 57.4 -2.3**
comp=Z,2.4nm,0.9s,baz=256,slow=4.3,SNR=5.3
YKA PKiKP **PKiKP 10 24 48.3 -0.9**
comp=Z,0.2nm,0.6s,baz=241,slow=1.5,SNR=7.9
YKA PKKPbc **PKKPbc 10 36 49.9 -3.2**
comp=Z,0.9nm,0.8s,baz=72,slow=2.6,SNR=18
ZALV Zalesovo Beam 98.07 324 P **P 10 20 17.0 -0.7**
comp=Z,7.2nm,0.7s,baz=110,slow=4.6,SNR=21
ZALV pP **pP 10 20 58.7 -2.0**
comp=Z,2.0nm,0.5s,baz=132,slow=6.6,SNR=1.4
ZALV PKiKP **PKiKP 10 24 49.3 -0.5**
comp=Z,0.4nm,0.3s,baz=197,slow=4.6,SNR=2.7
MAKZ Makanchi 98.08 316 *e*P Pdif 10 20 18.7 +0.7
MAKZ Makanchi 98.08 316 *e*P Pdif 10 20 18.7 +0.7
NRIK Noril'sk 100.73 339 P **Pdif 10 20 29.0 -0.2**
comp=Z,2.7nm,0.6s,baz=107,slow=7.3,SNR=5.2
NRIK pP pP 10 21 14.7 +2.3
comp=Z,2.2nm,0.5s,baz=155,slow=1.4,SNR=2.9
NRIK PKiKP **PKiKP 10 24 53.9 -0.3**
comp=Z,2.5nm,0.6s,baz=166,slow=1.3,SNR=2.9
NRIK Noril'sk 100.73 339 P **Pdif 10 20 29.0 -0.2**
NRIK pmax pmax
comp=Z,2.0nm,0.5s
KSH Kashi 100.84 308 *e*P **Pdif 10 20 32.2 +1.6**
KSH S **Sdif 10 31 50.7 -3.0**
KSH SS **SS 10 38 58.7 +2.7**
KSH pmax pmax
comp=Z,120nm,4.5s
KSH LR LR
comp=Z,290nm,12.9s
KSH LR LR
comp=Z,270nm,14.5s
KSH LR LR
comp=Z,180nm,7.2s
KURK Kurchatov 101.08 320 P **Pdif 10 20 31.3 +0.2**
KURK pmax pmax
comp=Z,1.0nm,0.6s
KURK Kurchatov 101.08 320 P **Pdif 10 20 31.3 +0.2**
KURK PKiKP **PKiKP 10 24 54.9 -0.4**
KURBB Kurchatov Arra 101.11 320 P **Pdif 10 20 31.3 0.0**
comp=Z,0.5nm,0.6s,baz=96,slow=4.5,SNR=5.5
KURBB PKiKP **PKiKP 10 24 54.9 -0.5**
comp=Z,2.1nm,0.7s,baz=112,slow=1.8,SNR=17
KKAR Karatay Array 105.45 311 *e*PKPdf **PKiKP 10 25 03.3 -0.3**
BVAR Borovoye Array 106.42 321 Pdiff **Pdif 10 20 54.6 -0.2**
comp=Z,0.6nm,0.6s,baz=108,slow=4.8,SNR=4.0
BVAR PKiKP **PKiKP 10 25 04.6 -0.5**
comp=Z,2.2nm,0.8s,baz=0.0,slow=0.1,SNR=12
BVAR PP **PP 10 25 21.1 -0.6**
comp=Z,1.3nm,0.8s,baz=123,slow=5.5,SNR=4.4
RES Resolute Bay 106.62 16 PKKP **PKKPdf 10 36 39.9 +0.6**
comp=Z,1.3nm,0.9s,baz=29,slow=2.7,SNR=3.8
ABKAR Akbulak array 112.98 317 *e*PKPdf **PKiKP 10 25 16.9 -0.6**
ARU Arti 113.17 325 PKiKP **PKiKP 10 25 17.0 -0.6**
comp=Z,5.4nm,0.6s,baz=303,slow=0.4,SNR=9.5
ARU Arti 113.17 325 *i* PKIKP **PKiKP 10 25 16.8 -0.9**
ARU 10 26 06.6
ARU 10 32 12.6
ARU SP SP 10 35 24.9 -2.2
AKTO Aktyubinsk 114.14 319 PKP PKPdf 10 25 19.4 -0.3
comp=Z,4.4nm,0.6s,baz=107,slow=2.5,SNR=25
GEYT Alibeck 114.57 305 PKP PKPdf 10 25 20.5 -0.5
comp=Z,5.6nm,0.7s,baz=259,slow=1.5,SNR=8.2
SPITS Spitsbergen Ar 115.53 354 PKP **PKPdf 10 25 20.8 -0.9**
comp=Z,9.3nm,0.8s,baz=169,slow=4.8,SNR=4.4
LPAZ La Paz 116.61 117 PKP **PKPdf 10 25 24.8 -1.5**
comp=Z,0.8nm,0.7s,baz=79,slow=6.6,SNR=3.5
CPUP Villa Florida 119.79 133 PKP **PKPdf 10 25 30.1 -1.3**
comp=Z,0.9nm,0.6s,baz=334,slow=11,SNR=2.6
ARCES ARCESS Array B 120.89 345 PKP **PKPdf 10 25 31.2 -1.0**
comp=Z,12nm,0.6s,baz=71,slow=1.6,SNR=71
ARCES pPKP **pPKPdf 10 26 19.5 +2.4**
comp=Z,2.5nm,0.6s,baz=54,slow=2.1,SNR=3.5
KLMR Klimovskoe 121.36 333 *e*PKIKP **PKPdf 10 25 29.8 -3.5**
KLMR pmax pmax
comp=Z,12nm,0.8s
SCHQ Schefferville 122.56 34 PKP **PKPdf 10 25 34.7 -1.1**
comp=Z,2.6nm,0.8s,baz=360,slow=1.5,SNR=4.2
BOSA Boshof 123.19 220 PKP **PKPdf 10 25 37.9 -0.2**
comp=Z,8.0nm,0.8s,baz=48,slow=1.0,SNR=11
VRH Novokhopyorsk 124.06 322 *e*PKIKP **PKPdf 10 25 38.2 -0.5**
VRH pmax pmax
comp=Z,30nm,0.8s
JMIC Jan Mayen 124.28 358 PKP **PKPdf 10 25 38.5 -0.1**
comp=Z,12nm,0.3s,baz=165,slow=11,SNR=2.4
TBLG Delisi 124.50 310 P **Pdif 10 22 19.4 +3.8**
GNI Garni 124.78 308 PKP **PKPdf 10 25 40.6 -0.1**
comp=Z,14nm,0.8s,baz=193,slow=1.1,SNR=8.8
GNI Garni 124.78 308‖ *i*PKIKP **PKPdf 10 25 40.9 +0.2**
ZEI Tsey 124.90 312 *i* PKIKP **PKPdf 10 25 40.3 -0.6**
ZEI pmax pmax
comp=Z,35nm,0.9s
DAMY Dhamar 125.32 277 *e*PKPdf **PKPdf 10 25 44.2 +1.6**
OBN Obninsk 125.38 328 PKP **PKPdf 10 25 40.7 -0.5**
comp=Z,13nm,0.4s,baz=240,slow=6.7,SNR=6.1
OBN Obninsk 125.38 328‖ *e*PKIKP **PKPdf 10 25 40.6 -0.5**
OBN *e* 10 26 27.2
OBN *e*PPP PPP 10 30 14.6
OBN pmax pmax
comp=Z,28nm,1.1s
KBZ Khabaz 125.41 313 PKP **PKPdf 10 25 41.5 0.0**
comp=Z,6.9nm,0.8s,baz=162,slow=2.0,SNR=16
KVAR Kislovodsk Arr 125.50 313 PKP **PKPdf 10 25 41.8 -0.1**
comp=Z,4.9nm,0.4s,baz=329,slow=3.0,SNR=8.7
KIV Kislovodsk 125.51 313 *e*PKIKP **PKPdf 10 25 41.6 -0.3**
KIV pmax pmax
comp=Z,17nm,1.1s
VSR Storozhevoye 125.56 323 *e*PKIKP **PKPdf 10 25 40.8 -0.8**
VSR pmax pmax
comp=Z,20nm,0.6s
NEY Neytrino 125.65 313‖ *i*PKIKP **PKPdf 10 25 43.6 +1.3**
FINES FINESS Array B 126.39 338 PKP **PKPdf 10 25 42.2 -0.7**
comp=Z,5.6nm,0.7s,baz=105,slow=4.3,SNR=20
SOC Sochi 127.68 314 *i* PKIKP **PKPdf 10 25 44.7 -1.2**
SOC *e* 10 27 46.0
SOC *e*PPP PPP 10 30 39.4
SOC *e* 10 32 39.5
SOC *e*SSS SSS 10 49 31.2
SOC pmax pmax
comp=Z,6.0nm,0.4s
VSU Vasula 128.08 335‖ *i*PKIKP **PKPdf 10 25 46.5 +0.3**
KMBO Kilima Mbogo 128.34 256 PKP **PKPdf 10 25 49.6 +1.2**
comp=Z,0.9nm,0.3s,baz=71,slow=4.9,SNR=5.6
KMBO Kilima Mbogo 128.34 256 PKIKP **PKPdf 10 25 49.6 +1.2**
KMBO pmax pmax
comp=Z,3.0nm,0.7s
LSZ Lusaka 129.74 235 *e*PKIKP **PKPdf 10 25 50.9 +0.1**
LSZ Lusaka 129.74 235 *e*PKPdf **PKPdf 10 25 50.9 +0.1**
BORG Borgarnes 130.22 5 PKP **PKPdf 10 25 51.7 +1.7**
comp=Z,5.2nm,0.6s,baz=253,slow=8.0,SNR=2.5
BORG SKPab **SKPbc 10 28 59.4 +2.2**
comp=Z,9.3nm,0.8s,baz=358,slow=8.2,SNR=3.8
NB2 NORSAR Subarra 131.27 345 PKPdf **PKPdf 10 25 52.0 -0.3**
comp=Z,2.4nm,0.7s,baz=31,slow=1.9
NOA NORSAR Array B 131.27 345 PKP **PKPdf 10 25 51.1 -1.1**
comp=Z,5.0nm,0.8s,baz=34,slow=2.0,SNR=18
NOA SKPab **SKPab 10 29 01.7 -0.1**
comp=Z,4.4nm,0.8s,baz=32,slow=2.8,SNR=9.0
AKASG Malin Array Be 131.41 326 PKP **PKPdf 10 25 52.0 -0.7**
comp=Z,3.1nm,0.7s,baz=52,slow=2.6,SNR=11
AKASG SKPab **SKPbc 10 29 02.0 0.0**
comp=Z,0.3nm,0.3s,baz=45,slow=4.0,SNR=6.0
KIEV Kiev 131.43 326⇑ *e*PKIKP **PKPdf 10 25 52.2 -0.6**
ASF Jabal al Asfar 132.32 300 PKP **PKPdf 10 25 55.7 +0.4**
comp=Z,4.5nm,0.7s,baz=47,slow=4.0,SNR=9.7
BRTR Keskin Array B 133.16 311 PKP **PKPdf 10 25 55.9 -0.8**
comp=Z,6.0nm,0.9s,baz=132,slow=1.8,SNR=25
MMAI Mount Meron Ar 133.42 301 PKP **PKPdf 10 25 57.7 +0.5**
comp=Z,4.5nm,0.7s,baz=59,slow=6.9,SNR=8.0
EIL Elat 134.33 297 PKP **PKPdf 10 25 59.1 +0.2**
comp=Z,3.3nm,0.5s,baz=198,slow=2.0,SNR=5.4
KWP Kalwaria Pacla 135.47 328 *e*PKIP **PKPdf 10 26 00.9 +0.4**
KWP Kalwaria Pacla 135.47 328 *e*PKIKP **PKPdf 10 26 00.9 +0.4**
KOLS Kolonicke sedl 136.12 327 *e*PKIKP **PKPdf 10 26 02.2 +0.5**
KOLS Kolonicke sedl 136.12 327 *e*PKP **PKPdf 10 26 02.2 +0.5**
KOLS *e* 10 44 41.7
KOLS *e* 10 45 48.8
UZH Uzhgorod 136.30 327 *e*PKHKP PKPpre 10 25 49.6
UZH *e* 10 26 02.2
UZH *e* 10 26 48.6
STHS Stebnicka Huta 136.35 328 *e*PKIKP **PKPdf 10 26 03.4 +1.2**
STHS Stebnicka Huta 136.35 328 *e*PKP **PKPdf 10 26 03.4 +1.2**
OJC Ojcow 136.54 330 *e*PKP **PKPdf 10 26 02.4 0.0**
OJC Ojcow 136.54 330 *e*PKIKP **PKPdf 10 26 02.4 0.0**
CRVS Cervenica-Dubn 136.56 328 *e*PKIKP **PKPdf 10 26 03.1 +0.5**
CRVS Cervenica-Dubn 136.56 328 *e*PKP **PKPdf 10 26 03.1 +0.5**
NIE Niedzica 136.82 329 *e*PKP **PKPdf 10 26 03.8 +0.8**
NIE Niedzica 136.82 329 *e*PKIKP **PKPdf 10 26 03.8 +0.8**
KECS Kecovo 137.33 328 *e*PKIKP **PKPdf 10 26 04.4 +0.4**
KECS Kecovo 137.33 328 *e*PKP **PKPdf 10 26 04.4 +0.4**
KSP Ksiaz 137.71 333 *e*PKP **PKPdf 10 26 05.0 +0.4**
KSP Ksiaz 137.71 333 *e*PKIKP **PKPdf 10 26 05.0 +0.4**
KRLC Kraliky 138.04 332 *e*PKPdf **PKPdf 10 26 05.8 +0.5**
KRLC Kraliky 138.04 332 *e*PKIKP **PKPdf 10 26 05.8 +0.5**
DPC Dobruska-Polom 138.05 333 *e*PKPdf **PKPdf 10 26 05.0 -0.3**
DPC Dobruska-Polom 138.05 333 *e*PKIKP **PKPdf 10 26 05.0 -0.3**
UPC Upice 138.08 333 *e*PKPdf **PKPdf 10 26 06.0 +0.7**
UPC Upice 138.08 333 *e*PKIKP **PKPdf 10 26 06.0 +0.7**
VYHS Vyhne 138.16 329 *e*PKIKP **PKPdf 10 26 05.5 0.0**
VYHS Vyhne 138.16 329 *e*PKP **PKPdf 10 26 05.5 0.0**
BRG Berggiesshubel 138.68 335 *e*PKP PKPpre 10 25 58.2
comp=Z,4.5nm,1.1s
BRG *e* 10 26 08.5
comp=Z,9.5nm,1.2s
BRG Berggiesshubel 138.68 335 *e*P **SKPbc 10 29 26.4 +1.3**
comp=Z,5.9nm,0.9s
BRG Berggiesshubel 138.68 335 *e*PKHKP PKPpre 10 25 58.2
BRG pmax pmax
comp=Z,10.0nm,1.2s
CLL Collm 138.72 336 *e*PKPpre PKPpre 10 26 00.0
CLL *e*PKPdf **PKPdf 10 26 06.0 -0.4**
CLL *e*pPKPdf pPKPdf 10 26 50.0 -1.4
CLL *e*SKPdf **SKPdf 10 29 26.0 +0.8**
comp=Z,6.0nm,0.9s
CLL Collm 138.72 336 *e*PKIKP **PKPdf 10 26 06.0 -0.4**
GOPC GO Pecny, Ondr 139.05 333 *e*PKPdf **PKPdf 10 26 07.5 +0.4**
GOPC GO Pecny, Ondr 139.05 333 *e*PKIKP **PKPdf 10 26 07.5 +0.4**
PRU Pruhonice 139.10 334 *e*PKPdf **PKPdf 10 26 07.8 +0.6**
PRU Pruhonice 139.10 334 *e*PKIKP **PKPdf 10 26 07.8 +0.6**
NKC Novy Kostel 139.78 335 *e*PKPdf **PKPdf 10 26 10.3 +1.9**
NKC Novy Kostel 139.78 335 *e*PKIKP **PKPdf 10 26 10.3 +1.9**
KHC Kasperske Hory 140.16 333 *e*PKPpre PKPpre 10 26 03.8
KHC *e*PKPdf **PKPdf 10 26 09.2 0.0**
KHC Kasperske Hory 140.16 333 *e*PKHKP PKPpre 10 26 03.8
KHC *e* 10 26 09.2
GERES GERESS Array B 140.32 333 PKhKP PKPpre 10 26 01.8
comp=Z,0.5nm,0.4s,baz=30,slow=3.7,SNR=6.3
GERES PKP **PKPdf 10 26 08.7 -0.9**
comp=Z,3.6nm,0.7s,baz=48,slow=2.0,SNR=16
GERES SKPbc **SKPbc 10 29 30.2 +0.4**
comp=Z,3.1nm,0.8s,baz=29,slow=3.0,SNR=13
ARSA Arzberg 140.63 330 *i* PKPdf PKPpre 10 26 05.2
comp=Z,6.6nm,1.1s
MOA Molln 140.80 331 *i* PKPdf PKPpre 10 26 06.0
comp=Z,2.5nm,0.7s
IDI Anoyia 141.20 308 PKP **PKPdf 10 26 12.3 +0.7**
comp=Z,17nm,0.8s,baz=113,slow=3.8,SNR=9.3
IDI Anoyia 141.20 308 *e*PKPdf **PKPdf 10 26 12.4 +0.8**
PERS Pernice 141.27 329 *e*P **PKPdf 10 26 10.7 -0.6**
SOKA Soboth 141.28 330 *i* PKPdf **PKPdf 10 26 09.7 -1.7**
comp=Z,9.6nm,1.0s
OBKA Obir 141.63 330 *i* PKPdf PKPpre 10 26 07.1
comp=Z,11nm,1.0s
BEBN Eben Emael 141.72 342 PKP **PKPdf 10 26 12.4 +0.5**
KBA Koelnbreinsper 141.79 331 *i* PKPdf PKPpre 10 26 07.0
comp=Z,9.0nm,0.9s
MYKA Terra Mystica 141.98 331 *i* PKPdf PKPpre 10 26 07.9
comp=Z,5.7nm,0.9s
BOJS Bojanci 141.99 328 *i* P **PKPdf 10 26 12.8 +0.3**
VISS Visnje 141.99 329 *i* P **PKPdf 10 26 12.6 +0.1**
JAVS Javornik 142.31 329 *i* P PKPpre 10 26 10.2
ABTA Abfaltersbach 142.42 332 *i* PKPdf **PKPdf 10 26 08.7 -4.7**
comp=Z,23nm,0.8s,SNR=8.4
WTTA Wattenberg 142.42 333 *i* PKPdf **PKPdf 10 26 10.4 -3.0**
comp=Z,12nm,1.0s
WLF Walferdange 142.56 340 PKP **PKPdf 10 26 10.4 -3.0**
WLF Walferdange 142.56 340 *e*PKIKP **PKPdf 10 26 09.7 -3.7**
WLF Walferdange 142.56 340 *e*PKPdf **PKPdf 10 26 09.7 -3.7**
LANF Langenberg 142.57 338 PKP **PKPdf 10 26 11.0 -2.5**
MOTA Moosalm 142.59 334 *i* PKPdf **PKPdf 10 26 10.5 -3.2**
comp=Z,25nm,0.9s,SNR=13
RETA Reutte 142.62 334 *i* PKPdf **PKPdf 10 26 10.6 -3.1**
comp=Z,17nm,1.3s
DOU Dourbes 142.67 342 PKP **PKPdf 10 26 11.2 -2.4**
FETA Feichten 143.00 334 *i* PKPdf PKPbc 10 26 11.6 -0.1
comp=Z,38nm,0.9s,SNR=14
DAVA Damuels 143.15 335 *i* PKPdf **PKPdf 10 26 12.2 -2.6**
comp=Z,15nm,0.7s,SNR=6.0
WLS Welschbruch 143.21 338 PKP PKPbc 10 26 11.7 -0.4
ECH Echery 143.45 338 PKP PKPbc 10 26 12.3 -0.5
MOF Molkenrain 143.76 338 PKP PKPbc 10 26 13.5 -0.3
THEF They Montfort 143.85 339 PKP PKPbc 10 26 14.1 +0.2
TUE Stuetta 144.02 334 *e*PKPdf PKPbc 10 26 14.9 +0.1
LOMF Lomont 144.30 338 PKP PKPbc 10 26 16.0 +0.6
AQU L'Aquila 145.12 326 *e*PKIKP **PKPab 10 26 19.2 +1.0**
AQU L'Aquila 145.12 326 *e*PKPbc **PKPab 10 26 19.2 +1.0**
TIP Timpagrande 145.12 319 *e*PKPbc **PKPbc 10 26 18.1 -0.1**
OG01 Vacheresse 145.21 337 PKP **PKPab 10 26 18.6 +0.1**
GDM Grand'Maison 146.36 336 PKP **PKPbc 10 26 22.1 +0.2**
GRN Grenoble 146.47 337 PKP **PKPbc 10 26 22.7 +0.6**
PLDF La Plantade 146.61 340 PKP **PKPbc 10 26 22.8 +0.3**
AGO Saint Agoulin 146.70 340 PKP **PKPbc 10 26 22.9 +0.3**
AUTN L'Aution 146.81 334 PKP **PKPbc 10 26 22.7 -0.6**
SSB Saint Sauveur 146.89 338 PKP **PKPbc 10 26 23.6 +0.4**
SSB Saint Sauveur 146.89 338 *e*PKIKP **PKPdf 10 26 20.8 -0.3**
SSB *e* 10 26 23.7
SSB Saint Sauveur 146.89 338 *e*PKPdf **PKPdf 10 26 20.8 -0.3**
SSB *e*PKPbc **PKPbc 10 26 23.7 +0.4**
LUCF Luceram 146.93 333 PKP **PKPbc 10 26 22.9 -0.6**
PYM Petit Puy Mans 147.01 340 PKP **PKPbc 10 26 24.0 +0.4**
MVIF Mont Vial 147.01 334 PKP **PKPbc 10 26 22.8 -0.9**
REVF Revere 147.04 333 PKP **PKPbc 10 26 22.7 -1.0**
CALN Calern 147.24 334 PKP **PKPdf 10 26 22.7 +0.8**
LBL Lubilhac 147.39 339 PKP **PKPbc 10 26 25.4 +0.8**
FRNF Fournols 147.48 340 PKP **PKPbc 10 26 25.5 +0.7**
VSL Villasalto 149.29 326 *e*PKPdf **PKPdf 10 26 25.1 -0.1**
VSL *e*PKPbc **PKPbc 10 26 29.6 0.0**
VIEF Viey 150.53 341 PKP **PKPbc 10 26 33.3 +0.7**
LARF Larrau 150.69 343 PKP **PKPbc 10 26 33.5 +0.6**
KEST Kesra 151.89 320 PKPbc **PKPbc 10 26 35.9 -0.1**
comp=Z,39nm,1.0s,baz=210,slow=1.4,SNR=23
KEST pPKPbc **pPKPbc 10 27 21.6 +0.9**
comp=Z,11nm,0.8s,baz=144,slow=3.3,SNR=2.5
ESDC Sonseca Array 154.63 345 PKP **PKPdf 10 26 33.1 -0.1**
comp=Z,0.2nm,0.3s,baz=3.8,slow=2.7,SNR=7.3
ESDC PKPbc **PKPbc 10 26 41.6 -0.2**
comp=Z,0.4nm,0.4s,baz=6.5,slow=3.3,SNR=6.6
ESDC PKPab **PKPab 10 26 57.4 +0.3**
comp=Z,2.2nm,0.8s,baz=22,slow=3.3,SNR=9.3
ESDC pPKPab **pPKPab 10 27 43.0 +2.6**
comp=Z,0.4nm,0.4s,baz=33,slow=3.4,SNR=2.4
MTE Manteigas 154.64 351 *e*PKPdf **PKPdf 10 26 33.0 -0.2**
MTE *e*PKPbc **PKPbc 10 26 41.8 0.0**
MTE *e*PKPab **PKPab 10 26 57.4 +0.3**
MDT Midelt 161.20 339 PKP **PKPdf 10 26 41.0 -0.5**
comp=Z,3.4nm,1.0s,baz=235,slow=3.0,SNR=5.5
MDT PKPab **PKPab 10 27 26.6 +0.8**
comp=Z,3.8nm,1.0s,baz=354,slow=4.0,SNR=5.0
TAM Tamanrasset 161.55 297 *e*PKIKP **PKPdf 10 26 42.5 +0.3**
TAM Tamanrasset 161.55 297 *e*PKPdf **PKPdf 10 26 42.5 +0.3**
TORD Torodi Ar. Bea 166.23 263 PKP **PKPdf 10 26 45.1 -1.3**
comp=Z,2.7nm,0.6s,baz=352,slow=0.6,SNR=28
TORD PKPab **PKPab 10 27 47.8 -0.6**
comp=Z,5.7nm,0.8s,baz=106,slow=3.9,SNR=16
TORD pPKPab **pPKPab 10 28 32.0 +0.5**
comp=Z,1.3nm,0.8s,baz=125,slow=2.4,SNR=2.1
KIC Kosan Boka 168.40 221 *e*PKP2 **PKPab 10 27 57.8 -0.1**
comp=Z,60nm,1.2s
LIC Lamto 168.48 219 *e*PKP2 **PKPab 10 27 58.2 0.0**
comp=Z,35nm,1.2s
DBIC Dimbokro 168.71 221 PKP **PKPdf 10 26 47.0 -1.3**
comp=Z,4.8nm,0.8s,baz=336,slow=2.1,SNR=5.8
DBIC PKPab **PKPab 10 27 59.1 -0.1**
comp=Z,4.4nm,0.9s,baz=96,slow=4.7,SNR=4.2
TIC Toumodi 168.80 221 *e*PKP2 **PKPab 10 27 59.3 -0.3**

JMA 04 10:13:01.5±0.2, 37°.85N×142°.56E, h30km±3km, M3.7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.13**	**303**	P	Pn	10 13 21.6	+0.4
JIO				*e*S	Sn	10 13 36.1	+0.4
JMM	**Marumori**	**1.40**	**271**	P	Pn	10 13 25.4	+0.4
JMM				S	Sn	10 13 42.3	-0.1
JFK	**Kawauchi**	**1.42**	**251**	P	Pn	10 13 25.7	+0.4
JFK				*e*S	Sn	10 13 43.0	-0.1
JMK	**Ichinoseki**	**1.52**	**317**	P	Pn	10 13 27.4	+0.7
JOU	**Okura**	**1.58**	**290**	P	Pn	10 13 28.7	+1.2
JOU				*e*S	Sb	10 13 48.7	-1.0
JFT	**Otama**	**1.79**	**260**	P	Pn	10 13 32.0	+1.6
JFT				*e*S	Sb	10 13 54.4	-1.4
JOM	**Ohasama**	**1.90**	**329**	P	Pn	10 13 32.8	+0.9
JOM				*e*S	Sn	10 13 56.3	+1.5
JYS	**Shiratake**	**2.00**	**281**	P	Pb	10 13 35.3	-2.0
JYS				*e*S	Sb	10 14 00.1	-1.7
JYK	**Kaneyama**	**2.03**	**302**	P	Pn	10 13 35.3	+1.6
JRG	**Rokugo**	**2.16**	**316**	P	Pb	10 13 37.8	-2.1

JMA ***04*** *10:13:06.2±0.1, 24°.06N×121°.83E, h0km, M3.1*
TAP ***04*** *10:13:07.6, 24°.12N×121°.80E, h8km, ML3.8, C*
ISC 04 10:13:07.6±1.0, 24°.08N±0°.02×121°.87E±0°.02, h7km±9km, n67, g0°78/116, 9C-3D, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWD	**Chiawan**	**0.25**	**271**⇑	*i*P	**Pg**	**10 13 12.1**	**-0.4**
TWD	baz=258			*i* S	**Sg**	**10

EHP	**Heping Village**	**0.26 334**	*e*P	**Pg**	**10 13 13.2 +0.4**
	baz=346				
EHP			*e*S	**Sg**	**10 13 17.6 +1.3**
	baz=346				
ENA	**Nanau**	**0.37 342**⇑	*i*P	**Pg**	**10 13 14.4 -0.4**
	baz=351				
ENA			S	**Sg**	**10 13 19.7 0.0**
	baz=351				
ESF	**Shoufeng Towns**	**0.39 238**	*e*P	**Pb**	**10 13 16.4 -0.4**
	baz=227				
ESF			*e*S	**Sb**	**10 13 22.9 -0.1**
	baz=227				
TEGC	**Jichi Village**	**0.47 219**	*e*P	**Pb**	**10 13 19.0 +0.7**
	baz=209				
ESL	**Shilin**	**0.47 237**⇓	*i*P	**Pg**	**10 13 16.9 +0.1**
	baz=227				
ESL			*e*S	**Sg**	**10 13 24.2 +1.2**
	baz=227				
TWC	**Suao**	**0.53 358** ⇑	P	**Pg**	**10 13 17.8 -0.1**
	baz=6.0				
TWC			*i* S	**Sb**	**10 13 26.4 -0.9**
	baz=6.0				
WHF	**Hehuan Shan**	**0.55 277**⇑	*i*P	**Pg**	**10 13 17.8 -0.7**
	baz=273				
WHF			S	**Sg**	**10 13 25.5 -0.2**
	baz=273				
NNS	**Nan Shan**	**0.58 309**	P	**Pg**	**10 13 18.1 -0.8**
	baz=310				
NNS			S	**Sg**	**10 13 25.9 -0.5**
	baz=310				
ENTT	**Nioudou**	**0.62 334**⇑	*i*P	**Pg**	**10 13 19.3 -0.4**
	baz=338				
ENTT			S	**Sg**	**10 13 28.2 +0.4**
	baz=338				
TWT	**Tachien**	**0.65 286**⇑	*i*P	**Pg**	**10 13 20.2 -0.1**
	baz=282				
TWT			*i* S	**Sg**	**10 13 29.1 +0.3**
	baz=282				
TWE	**Neicheng**	**0.67 344**⇑	*i*P	**Pg**	**10 13 20.3 -0.2**
	baz=350				
TWE			S	**Sg**	**10 13 29.7 +0.5**
	baz=350				
ILA	**Ilan**	**0.69 351**	*e*P	**Pb**	**10 13 22.1 -0.1**
	baz=356				
ILA			*e*S	**Sb**	**10 13 32.6 +0.6**
	baz=356				
WDT	**Danda**	**0.74 245**⇓	*i*P	**Pg**	**10 13 21.9 0.0**
	baz=239				
WDT			*e*S	**Sb**	**10 13 33.1 -0.6**
	baz=239				
EHY	**Hungye**	**0.75 221**	*e*P	**Pg**	**10 13 21.8 -0.4**
	baz=215				
EHY			*e*S	**Sb**	**10 13 34.0 +0.3**
	baz=215				
NSK	**Sanguang**	**0.76 322**⇑	*i*P	**Pg**	**10 13 21.8 -0.4**
	baz=324				
NSK			*i* S	**Sg**	**10 13 32.0 -0.1**
	baz=324				
EGS		**0.77 5**	*e*P	**Pb**	**10 13 23.1 -0.3**
	baz=10.0				
EGS			*e*S	**Sn**	**10 13 35.7 -1.2**
	baz=10.0				
TWF1	**Yuli**	**0.89 216**	*e*P	**Pg**	**10 13 23.8 -0.9**
	baz=210				
SMLT	**Sun Moon Lake**	**0.90 258**	P	**Pg**	**10 13 24.8 -0.2**
	baz=253				
SMLT			*i* S	**Sg**	**10 13 36.8 0.0**
	baz=253				
TWB1	**Santiao Chiao**	**0.94 7**	*e*P	**Pb**	**10 13 26.0 -0.3**
	baz=11				
TWB1			*e*S	**Sb**	**10 13 39.8 +0.9**
	baz=11				
TWA	**Mucha**	**0.94 344**	*e*P	**Pg**	**10 13 25.9 +0.2**
	baz=347				
TWA			*e*S	**Sb**	**10 13 38.9 -0.1**
	baz=347				
TYC	**Yuchr**	**0.94 260**	P	**Pg**	**10 13 24.7 -0.9**
	baz=256				
TYC			S	**Sg**	**10 13 37.6 -0.2**
	baz=256				
NSTT	**Nanjuang**	**0.96 305**	*e*P	**Pg**	**10 13 25.7 -0.4**
	baz=305				
NSTT			S	**Sg**	**10 13 38.2 -0.5**
	baz=305				
NWF	**Wu-fen Shan**	**0.99 356** ⇑	P	**Pg**	**10 13 26.9 +0.1**
	baz=359				
NWF			*e*S	**Sb**	**10 13 40.8 +0.1**
	baz=359				
TAP1	**Taipei**	**1.01 342**	*e*P	**Pg**	**10 13 27.1 0.0**
	baz=344				
TAP1			*e*S	**Sb**	**10 13 40.9 -0.1**
	baz=344				
TAP	**Taipei**	**1.01 341**	*e*P	**Pg**	**10 13 27.2 +0.1**
	baz=344				
TAP			*e*S	**Sg**	**10 13 40.4 +0.1**
	baz=344				
YUS	**Yu-Shan**	**1.02 235**	*e*P	**Pg**	**10 13 27.1 -0.2**
	baz=230				
YUS			*e*S	**Sb**	**10 13 41.9 +0.1**
	baz=230				
TWQ1	**Liyutan**	**1.03 285**	*e*P	**Pb**	**10 13 27.8 -0.1**
	baz=283				
TWQ1			*e*S	**Sb**	**10 13 42.3 +0.6**
	baz=283				
JYNG	**Yonagunijimaku**	**1.05 69**	P	**Pg**	**10 13 27.5 -0.4**
NSY	**Sanyi**	**1.06 289**	P	**Pb**	**10 13 28.5 +0.1**
	baz=287				
NSY			*e*S	**Sn**	**10 13 44.3 +0.1**
	baz=287				
CHKT	**Chengkung**	**1.07 205**	*e*P	**Pg**	**10 13 27.1 -1.2**
	baz=201				
NCU	**National Centr**	**1.08 325**	P	**Pg**	**10 13 28.4 -0.1**
	baz=327				
NCU			S	**Sn**	**10 13 44.6 -0.1**
	baz=327				
TCU	**Taichung**	**1.09 274**	*e*P	**Pg**	**10 13 28.6 +0.1**
	baz=271				
TCU			S	**Sn**	**10 13 45.2 +0.5**
	baz=271				
HSN	**Hsinchu**	**1.09 312**	*e*P	**Pb**	**10 13 28.7 -0.2**
	baz=314				
HSN			*e*S	**Sn**	**10 13 44.9 +0.1**
	baz=314				
WNT	**Mingjian**	**1.10 260**	*e*P	**Pg**	**10 13 28.7 0.0**
	baz=256				
WNT			*e*S	**Sn**	**10 13 44.8 -0.1**
	baz=256				
TWS1	**Kuangyinshan**	**1.10 338**	*e*P	**Pg**	**10 13 28.4 -0.3**
	baz=340				
TWS1			*e*S	**Sb**	**10 13 44.0 +0.4**
	baz=340				
YOJ	**Yonaguni jima**	**1.11 70**	P	**Pb**	**10 13 29.3 0.0**
YOJ			S	**Sn**	**10 13 46.3 +1.0**
YOJ	**Yonaguni jima**	**1.11 70**	*e*P	**Pb**	**10 13 29.4 0.0**
	baz=72				
YOJ			*e*S	**Sn**	**10 13 46.4 +1.0**
	baz=72				
ALS	**Alishan**	**1.12 240**	*e*P	**Pg**	**10 13 28.3 -0.9**
	baz=236				
ALS			*e*S	**Sb**	**10 13 44.3 -0.3**
	baz=236				
ELDTW	**Lidau**	**1.18 222**	*e*P	**Pg**	**10 13 28.4 -1.9**
	baz=217				
CHN5	**Tsauling**	**1.19 247**⇓	*i*P	**Pg**	**10 13 30.2 -0.3**
	baz=243				
CHN5			S	**Sn**	**10 13 47.6 +0.3**
	baz=243				
TWY	**Chenhua**	**1.22 349**	*e*P	**Pg**	**10 13 31.0 0.0**
	baz=351				
WGK	**Gukeng**	**1.25 252**	*e*P	**Pb**	**10 13 31.5 -0.2**
	baz=249				
STYT	**Tauyuan**	**1.36 228**	*e*P	**Pn**	**10 13 32.4 -0.9**
	baz=224				
STYT			*e*S	**Sn**	**10 13 51.7 +0.1**
	baz=224				
CHN4	**Tsaushan**	**1.37 239**	*e*P	**Pn**	**10 13 33.1 -0.1**
	baz=235				
CHN4			*e*S	**Sn**	**10 13 54.4 +2.6**
	baz=235				
CHN2	**Minshiung**	**1.38 247**	*e*P	**Pg**	**10 13 34.8 +0.6**
	baz=244				
CHN2			*e*S	**Sg**	**10 13 54.4 +2.2**
	baz=244				
WTP	**Ta-pu**	**1.41 235**	*e*P	**Pn**	**10 13 33.6 -0.3**
	baz=231				
WTP			*e*S	**Sg**	**10 13 54.3 +1.2**
	baz=231				
CHY	**Chiayi**	**1.44 247**	*e*P	**Pb**	**10 13 35.0 +0.2**
	baz=243				
CHY			*e*S	**Sg**	**10 13 56.0 +2.0**
	baz=243				
TWG	**Pinlang**	**1.45 210**	*e*P	**Pn**	**10 13 33.0 -1.3**
	baz=207				
WTCT	**Ta-ch'eng**	**1.47 262**	*e*P	**Pn**	**10 13 34.0 -0.5**
	baz=259				
TWK	**Hsinying**	**1.50 238**	*e*P	**Pn**	**10 13 34.2 -0.9**
	baz=234				
TWK			*e*S	**Sg**	**10 13 56.9 +1.1**
	baz=234				
CHN1	**Nanshi**	**1.51 234**	*e*P	**Pn**	**10 13 35.3 0.0**
	baz=231				
CHN1			*e*S	**Sg**	**10 13 57.4 +1.1**
	baz=231				
SGST	**Jiashian**	**1.54 230**	*e*P	**Pb**	**10 13 36.5 -0.1**
	baz=227				
SGST			*e*S	**Sg**	**10 13 59.1 +2.0**
	baz=227				
PCYT	**Pengchaiyu**	**1.56 7**	*e*P	**Pn**	**10 13 35.0 -0.8**
	baz=9.0				
WSF	**Szhu**	**1.57 254**	*e*P	**Pn**	**10 13 36.4 +0.5**
	baz=251				
WSF			*e*S	**Sg**	**10 13 58.2 +0.2**
	baz=251				
IRIF	**Iriomote-Funau**	**1.72 81**	P	**Pn**	**10 13 38.0 -0.1**
IRIF			*e*S	**Sg**	**10 14 02.7 -0.3**
SSD	**Sandimen**	**1.74 221**	*e*P	**Pn**	**10 13 38.9 +0.5**
	baz=217				
HATJ	**Hateruma jima**	**1.77 90**	*e*S	**Sb**	**10 14 03.1 +0.1**
TWM1	**Shoushan**	**1.82 227**	*e*P	**Pn**	**10 13 39.2 -0.2**
	baz=224				
EAST	**Anshuo**	**1.93 209**	*e*P	**Pn**	**10 13 41.3 +0.3**
	baz=206				
JKRS	**Kuro-shima**	**1.96 85**	P	**Pn**	**10 13 41.9 +0.5**
LAY	**Lan-yu**	**2.05 188**	*e*P	**Pn**	**10 13 39.0 -3.6**
	baz=186				
JIJ	**Ishigaki jima**	**2.10 82**	P	**Pn**	**10 13 43.0 -0.3**
JIJ			*e*S	**Sn**	**10 14 09.9 +0.2**
WDGT	**Dungji**	**2.18 249**	*e*P	**Pn**	**10 13 44.1 -0.3**
	baz=246				
JISG	**Ishigakijimahi**	**2.29 77**	P	**Pn**	**10 13 45.7 -0.2**
JISG			S	**Sn**	**10 14 15.0 +0.7**
TWK1	**Hengchun**	**2.34 205**	*e*P	**Pn**	**10 13 47.1 +0.6**
	baz=202				

*DJA **04** 10:19:26.2±0.6, 6°S±5°×10°5E±°, h107km±7km, M4.1/14, mb4.0/1, MLv4.2/14*
*IDC **04** 10:19:30.2±2.0, 5°81S×105°61E, h205km±18km, mb3.7/19, mb1 3.7/20, mb1mx3.6/48, mbtmp4.2/20, Error ellipse: s-maj=20.6km s-min=9.4km az=64.0*
ISC 04 10:19:23.8±0.6, **6°11S**±0°08×**105°45E**±0°07, **h150**km, **n41**, σ**1§62/36**, **mb4.2/19**, **Sunda Strait**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CGJI	**Cibinong**	**0.56**	**154**	P	**Pn**	**10 19 45.0**	**-0.4**
SBJI	**Serang**	**0.68**	**91**	P	**Pn**	**10 19 46.0**	**-0.1**
BLSI	**Bandar Lampung**	**0.77**	**345**	P	**Pn**	**10 19 46.2**	**-0.6**
KASI	**Kota Agung**	**1.11**	**301**	P	**Pn**	**10 19 49.4**	**-0.1**
KASI				S	**Sn**	**10 20 06.9**	**-2.3**
KLI	**Kotabumi**	**1.37**	**334**	P	**Pn**	**10 19 51.8**	**-0.3**
SKJI	**Sukabumi**	**1.42**	**129**	P	**Pn**	**10 19 51.9**	**-0.6**
CBJI	**Citeko**	**1.43**	**103**	P	Pn	10 20 00.7	+8.1
LWLI	**Liwa**	**1.76**	**308**	P	**Pn**	**10 19 57.9**	**+1.6**
CNJI	**Cibinong**	**2.05**	**126**	P	**Pn**	**10 19 59.5**	**0.0**
CNJI				S	**Sn**	**10 20 24.9**	**-2.1**
LEM	**Lembang**	**2.27**	**108**	P	Pn	10 20 12.2	+10
	10nm,0.3s,baz=187,slow=20,SNR=3.7						
CISI	**Cisompet, Garu**	**2.75**	**122**	P	**Pn**	**10 20 08.2**	**+0.1**
CISI				S	**Sn**	**10 20 41.0**	**-1.4**
MNAI	**Manna**	**3.03**	**305**	P	**Pn**	**10 20 13.8**	**+2.2**
CMJI	**Cimerak**	**3.41**	**119**	P	**Pn**	**10 20 16.5**	**+0.1**
PPBI	**Pangkal Pinang**	**3.98**	**10**	P	**Pn**	**10 20 27.8**	**+4.0**
PCJI	**Pacitan**	**6.05**	**110**	P	**Pn**	**10 20 53.9**	**+2.7**
FITZ	**Fitzroy Crossi**	**23.03**	**123**	P	**P**	**10 24 17.3**	**+1.4**
	3.0nm,0.8s,baz=315,slow=7.1,SNR=3.8						
CMAR	**Chiang Mai Arr**	**25.24**	**345**	P	**P**	**10 24 35.5**	**-0.6**
	1.3nm,0.6s,baz=179,slow=7.4,SNR=4.2						
H01W3	**Cape Leeuwin H**	**29.74**	**166**	T	T	10 56 07.9	
	baz=345,slow=76,SNR=9.2						
H01W1	**Cape Leeuwin H**	**29.75**	**165**	T	T	10 56 09.5	
	baz=345,slow=76,SNR=7.9						
H01W2	**Cape Leeuwin H**	**29.75**	**166**	T	T	10 56 09.3	
	baz=345,slow=76,SNR=9.9						
WRA	**Warramunga Arr**	**31.25**	**119**	P	**P**	**10 25 30.3**	**+0.8**
	0.4nm,0.3s,baz=310,slow=9.0,SNR=8.9						
WRA				PcP	**PcP**	**10 28 19.8**	**-0.9**
	0.1nm,0.4s,baz=322,slow=2.3,SNR=4.9						
ASAR	**Alice Springs**	**32.46**	**126**	P	**P**	**10 25 41.5**	**+1.3**
	0.8nm,0.5s,baz=297,slow=7.9,SNR=25						
H08S2	**Diego Garcia H**	**32.75**	**265**	T	T	11 00 04.0	
	baz=90,slow=76,SNR=13						
H08S3	**Diego Garcia H**	**32.76**	**265**	T	T	10 59 55.2	
	baz=90,slow=76,SNR=12						
H08S1	**Diego Carcia H**	**32.77**	**265**	T	T	11 00 15.2	
	baz=90,slow=76,SNR=13						
STKA	**Stephens Creek**	**42.38**	**132**	P	**P**	**10 27 05.2**	**+1.7**
	4.1nm,0.6s,baz=302,slow=8.9,SNR=14						
MJAR	**Matsushiro Arr**	**52.35**	**33**	P	**P**	**10 28 18.4**	**-2.1**
	1.0nm,0.6s,baz=206,slow=7.8,SNR=5.4						
SONM	**Songino Array**	**53.72**	**1**	P	**P**	**10 28 29.9**	**-0.5**
	2.0nm,0.5s,baz=181,slow=8.6,SNR=3.3						
USRK	**Ussuriysk Ar.**	**55.50**	**23**	P	**P**	**10 28 42.6**	**-0.5**
	7.7nm,0.7s,baz=196,slow=4.8,SNR=16						
MKAR	**Makanchi Array**	**56.54**	**341**	P	**P**	**10 28 48.9**	**-1.6**
	1.8nm,0.5s,baz=147,slow=7.8,SNR=16						
KLR	**Kul'dur**	**59.70**	**20**	P	**P**	**10 29 10.8**	**-1.6**
	1.7nm,0.4s,baz=214,slow=6.3,SNR=5.4						
KURBB	**Kurchatov Arra**	**61.10**	**341**	P	**P**	**10 29 20.4**	**-1.5**
	1.1nm,0.7s,baz=154,slow=6.3,SNR=6.7						
GEYT	**Alibeck**	**62.08**	**319**	P	**P**	**10 29 28.6**	**-0.2**
	3.5nm,0.5s,baz=187,slow=7.5,SNR=5.9						
ZALV	**Zalesovo Beam**	**62.30**	**346**	P	**P**	**10 29 28.3**	**-1.5**
	3.6nm,0.3s,baz=152,slow=6.5,SNR=2.4						
BVAR	**Borovoye Array**	**65.96**	**338**	P	**P**	**10 29 51.8**	**-2.0**
	0.6nm,0.5s,baz=140,slow=7.8,SNR=4.2						
MAW	**Mawson**	**67.78**	**196**	P	**P**	**10 30 08.3**	**+3.3**
	2.9nm,0.7s,baz=34,slow=8.5,SNR=6.8						
VNDA	**Vanda**	**77.12**	**169**	P	**P**	**10 31 02.4**	**+2.2**
	0.5nm,0.5s,baz=298,slow=8.3,SNR=3.8						
BRTR	**Keskin Array B**	**80.09**	**312**	P	**P**	**10 31 17.1**	**-0.2**
	0.8nm,0.8s,baz=142,slow=6.3,SNR=3.9						
FINES	**FINESS Array B**	**90.26**	**332**	P	**P**	**10 32 07.3**	**0.0**
	1.2nm,0.4s,baz=105,slow=4.0,SNR=13						
ARCES	**ARCESS Array B**	**92.17**	**340**	P	**P**	**10 32 15.1**	**-0.8**
	1.6nm,0.9s,baz=101,slow=6.3,SNR=7.5						
TXAR	**Lajitas Array**	**144.10**	**46**	PKP	PKPbc	10 38 42.0	+1.1
	0.5nm,0.6s,baz=194,slow=1.7,SNR=5.8						

*CSEM **04** 10:43:02.5±0.1, 45°08N×29°83E, h10km, MD4.1, Error ellipse: s-maj=4.0km s-min=2.2km az=49.0*
*BUC **04** 10:43:03.1±1.2, 45°09N×29°71E, h10km, MD4.1/2, Error ellipse: s-maj=11.2km s-min=4.7km az=91.0*
*SIGU **04** 10:43:03.4, 44°94N×29°97E, h10km, mb3.6*
*IDC **04** 10:43:04.3±2.5, 45°10N×29°77E, h33km±29km, mb3.4/2, mb1 3.4/7, mb1mx3.1/63, mbtmp3.3/7, ML2.6/4, Error ellipse: s-maj=11.6km s-min=8.3km az=55.0*
ISC 04 10:43:00.8±1.4, **45°11N**±0°02×**29°82E**±0°02, **h7**km±10km, **n172**, σ**1§91/237**, **39C-39D,**
Ukraine-Moldova-Southwestern Russia region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TIRR	**Tirgusor**	**1.20**	**237**⇑	*i*P	**Pn**	**10 43 24.8**	**+0.9**
TIRR	**Tirgusor**	**1.20**	**237**⇑	*i*P	**Pn**	**10 43 24.8**	**+0.9**
TIRR				*i* S	**Sb**	**10 43 40.3**	**+0.8**
TIRR	**Tirgusor**	**1.20**	**237**⇑	*i*P	**Pn**	**10 43 24.8**	**+0.9**
TIRR				*i* S	**Sb**	**10 43 40.3**	**+0.8**
GIUM	**Giurgiulesti**	**1.20**	**289**⇑	*i*P	**Pb**	**10 43 24.6**	**+0.8**
GIUM	**Giurgiulesti**	**1.20**	**289**⇑	*i*P	**Pb**	**10 43 24.6**	**+0.8**
GIUM				*i* S	**Sb**	**10 43 40.5**	**+1.0**
GIUM	**Giurgiulesti**	**1.20**	**289**⇑	*i*P	**Pb**	**10 43 24.6**	**+0.8**
GIUM				*i* S	**Sb**	**10 43 40.5**	**+1.0**
EFOR	**EFORIE**	**1.34**	**220**⇑	*i*P	**Pg**	**10 43 27.2**	**+0.7**
EFOR	**EFORIE**	**1.34**	**220**⇑	*i*P	**Pg**	**10 43 27.2**	**+0.7**
EFOR				*i* S	**Sn**	**10 43 44.4**	**+0.6**
EFOR	**EFORIE**	**1.34**	**220**⇑	*i*P	**Pg**	**10 43 27.2**	**+0.7**
EFOR				*i* S	**Sn**	**10 43 44.4**	**+0.6**
HARR	**Harsova**	**1.41**	**253**⇓	*i*P	**Pb**	**10 43 28.1**	**+0.7**
HARR	**Harsova**	**1.41**	**253**⇓	*i*P	**Pb**	**10 43 28.1**	**+0.7**
HARR	**Harsova**	**1.41**	**253**⇓	*i*P	**Pb**	**10 43 28.1**	**+0.7**
CVDA	**Cernavoda**	**1.49**	**239**⇓	*i*P	**Pg**	**10 43 29.8**	**+0.4**
CVDA	**Cernavoda**	**1.49**	**239**⇓	*i*P	**Pg**	**10 43 29.8**	**+0.4**
CVDA				*i* S	**Sn**	**10 43 48.0**	**+0.4**
CVDA	**Cernavoda**	**1.49**	**239**⇓	*i*P	**Pg**	**10 43 29.8**	**+0.4**
CVDA				*i* S	**Sn**	**10 43 48.0**	**+0.4**
MANR	**Mangalia**	**1.57**	**215**⇓	*i*P	**Pb**	**10 43 30.7**	**+0.6**
MANR	**Mangalia**	**1.57**	**215**⇓	*i*P	**Pb**	**10 43 30.7**	**+0.6**
MANR				*i* S	**Sb**	**10 43 50.9**	**+0.8**
MANR	**Mangalia**	**1.57**	**215**⇓	*i*P	**Pb**	**10 43 30.7**	**+0.6**
MANR				*i* S	**Sb**	**10 43 50.9**	**+0.8**
LEOM	**Leova**	**1.75**	**322**⇓	*i*P	**Pb**	**10 43 34.2**	**+0.9**
LEOM	**Leova**	**1.75**	**322**⇓	*i*P	**Pb**	**10 43 34.2**	**+0.9**
LEOM				*i* S	**Sb**	**10 43 56.8**	**+1.4**
LEOM	**Leova**	**1.75**	**322**⇓	*i*P	**Pb**	**10 43 34.2**	**+0.9**
LEOM				*i* S	**Sb**	**10 43 56.8**	**+1.4**
PETR	**Petresti**	**1.93**	**289**⇓	*i*P	**Pb**	**10 43 36.3**	**+0.1**
PETR	**Petresti**	**1.93**	**289**⇓	*i*P	**Pb**	**10 43 36.3**	**+0.1**
PETR				*i* S	**Sn**	**10 43 58.7**	**+0.3**
PETR	**Petresti**	**1.93**	**289**⇓	*i*P	**Pb**	**10 43 36.3**	**+0.1**
PETR				*i* S	**Sn**	**10 43 58.7**	**+0.3**
MILM	**Milestii Mici**	**1.94**	**339**⇓	*i*P	**Pn**	**10 43 36.0**	**+1.9**
MILM	**Milestii Mici**	**1.94**	**339**⇓	*i*P	**Pn**	**10 43 36.0**	**+1.9**
MILM				*i* S	**Sb**	**10 44 01.8**	**+1.0**
MILM	**Milestii Mici**	**1.94**	**339**⇓	*i*P	**Pn**	**10 43 36.0**	**+1.9**
MILM				*i* S	**Sb**	**10 44 01.8**	**+1.0**
KIS	**Kishinev**	**2.01**	**340**	*e*P	**Pb**	**10 43 39.0**	**+1.3**
KIS				*i* S	**Sb**	**10 44 04.0**	**+1.1**
	5μm,0.5s						
KIS	**Kishinev**	**2.01**	**340**⇑	*i*P	**Pg**	**10 43 39.6**	**+0.2**
KIS	**Kishinev**	**2.01**	**340**⇑	*i*P	**Pg**	**10 43 39.6**	**+0.2**
KIS				*i* S	**Sb**	**10 44 03.1**	**+0.2**
KIS	**Kishinev**	**2.01**	**340**	*e*P	**Pb**	**10 43 39.0**	**+1.3**
KIS				*i* S	**Sb**	**10 44 04.0**	**+1.1**
KIS				Sm		10 44 12.0	
KIS	**Kishinev**	**2.01**	**340**⇑	*i*P	**Pg**	**10 43 39.6**	**+0.2**
KIS				*i* S	**Sb**	**10 44 03.1**	**+0.2**
PGOR	**Pogoanele**	**2.02**	**265**⇑	*i*P	**Pn**	**10 43 36.8**	**+1.5**
PGOR	**Pogoanele**	**2.02**	**265**⇑	*i*P	**Pn**	**10 43 36.8**	**+1.5**
PGOR				*i* S	**Sn**	**10 44 02.4**	**+1.6**
PGOR	**Pogoanele**	**2.02**	**265**⇑	*i*P	**Pn**	**10 43 36.8**	**+1.5**
PGOR				*i* S	**Sn**	**10 44 02.4**	**+1.6**
GRER		**2.03**	**279**⇑	*i*P	**Pn**	**10 43 36.8**	**+1.4**
GRER		**2.03**	**279**⇑	*i*P	**Pn**	**10 43 36.8**	**+1.4**
GRER				*i* S	**Sn**	**10 44 02.6**	**+1.6**
GRER		**2.03**	**279**⇑	*i*P	**Pn**	**10 43 36.8**	**+1.4**
GRER				*i* S	**Sn**	**10 44 02.6**	**+1.6**
ODBI	**Odobesti**	**2.06**	**289**⇓	*i*P	**Pb**	**10 43 38.7**	**+0.3**
ODBI	**Odobesti**	**2.06**	**289**⇓	*i*P	**Pb**	**10 43 38.7**	**+0.3**
ODBI				*i* S	**Sn**	**10 44 03.1**	**+1.5**
ODBI	**Odobesti**	**2.06**	**289**⇓	*i*P	**Pb**	**10 43 38.7**	**+0.3**
ODBI				*i* S	**Sn**	**10 44 03.1**	**+1.5**
VRI	**Vrincioaia**	**2.31**	**290**⇑	*i*P	**Pn**	**10 43 41.4**	**+2.2**
VRI	**Vrincioaia**	**2.31**	**290**⇑	*i*P	**Pn**	**10 43 41.4**	**+2.2**
VRI	**Vrincioaia**	**2.31**	**290**⇑	*i*P	**Pn**	**10 43 41.4**	**+2.2**
ISR	**Istrita**	**2.32**	**271**⇑	*i*P	**Pb**	**10 43 42.2**	**-0.8**
ISR	**Istrita**	**2.32**	**271**⇑	*i*P	**Pb**	**10 43 42.2**	**-0.8**
ISR				*i* S	**Sn**	**10 44 09.6**	**+1.3**
ISR	**Istrita**	**2.32**	**271**⇑	*i*P	**Pb**	**10 43 42.2**	**-0.8**
ISR				*i* S	**Sn**	**10 44 09.6**	**+1.3**
PLOR	**Plostina**	**2.35**	**289**⇓	*i*P	**Pn**	**10 43 42.1**	**+2.2**
PLOR	**Plostina**	**2.35**	**289**⇓	*i*P	**Pn**	**10 43 42.1**	**+2.2**
PLOR				*i* S	**Sn**	**10 44 10.6**	**+1.6**
PLOR	**Plostina**	**2.35**	**289**⇓	*i*P	**Pn**	**10 43 42.1**	**+2.2**
PLOR				*i* S	**Sn**	**10 44 10.6**	**+1.6**
SULR		**2.57**	**262**⇑	*i*P	**Pn**	**10 43 44.8**	**+2.0**
SULR		**2.57**	**262**⇑	*i*P	**Pn**	**10 43 44.8**	**+2.0**
SULR				*i* S	**Sn**	**10 44 15.8**	**+1.5**
SULR		**2.57**	**262**⇑	*i*P	**Pn**	**10 43 44.8**	**+2.0**
SULR				*i* S	**Sn**	**10 44 15.8**	**+1.5**
IAS	**Iasi**	**2.61**	**324**⇑	*i*P	**Pn**	**10 43 44.8**	**+1.5**
IAS	**Iasi**	**2.61**	**324**⇑	*i*P	**Pn**	**10 43 44.8**	**+1.5**
IAS				*i* S	**Sn**	**10 44 17.2**	**+2.0**
IAS	**Iasi**	**2.61**	**324**⇑	*i*P	**Pn**	**10 43 44.8**	**+1.5**
IAS				*i* S	**Sn**	**10 44 17.2**	**+2.0**
TESR	**Tescani**	**2.62**	**303**⇓	*i*P	**Pn**	**10 43 44.8**	**+1.2**
TESR	**Tescani**	**2.62**	**303**⇓	*i*P	**Pn**	**10 43 44.8**	**+1.2**
TESR				*i* S	**Sn**	**10 44 17.1**	**+1.4**
TESR	**Tescani**	**2.62**	**303**⇓	*i*P	**Pn**	**10 43 44.8**	**+1.2**
TESR				*i* S	**Sn**	**10 44 17.1**	**+1.4**
MLR	**Muntele Rosu**	**2.76**	**279**	Pn	**Pn**	**10 43 47.8**	**+2.2**
	0.7nm,0.3s,baz=98,slow=7.2,SNR=12						
MLR				Sn	**Sn**	**10 44 17.6**	**-1.6**
	1.9nm,0.3s,baz=100,slow=19,SNR=8.7						
MLR	**Muntele Rosu**	**2.76**	**279**⇓	*i*P	**Pn**	**10 43 47.7**	**+2.1**
MLR	**Muntele Rosu**	**2.76**	**279**⇓	*i*P	**Pn**	**10 43 47.7**	**+2.1**
MLR				*i* S	**Sn**	**10 44 20.1**	**+0.8**
MLR	**Muntele Rosu**	**2.76**	**279**⇓	*i*P	**Pn**	**10 43 47.7**	**+2.1**
MLR				*i* S	**Sn**	**10 44 20.1**	**+0.8**
SEV	**Sevastopol'**	**2.79**	**100**	*e*P	**Pn**	**10 43 47.4**	**+1.6**
SEV				Pm		10 43 54.7	
SEV				*e*S	**Sn**	**10 44 18.8**	**-0.9**
SEV				Sm		10 44 23.7	
BUC1	**Bucharest**	**2.81**	**256**⇑	*i*P	**Pn**	**10 43 48.1**	**+2.0**
BUC1	**Bucharest**	**2.81**	**256**⇑	*i*P	**Pn**	**10 43 48.1**	**+2.0**
BUC1				*i* S	**Sn**	**10 44 21.4**	**+1.2**
BUC1	**Bucharest**	**2.81**	**256**⇑	*i*P	**Pn**	**10 43 48.1**	**+2.0**
BUC1				*i* S	**Sn**	**10 44 21.4**	**+1.2**

ISK	Istanbul-Kandi	4.08 188	*e*PN	Pn	10 44 04.9	+1.3
ISK	Istanbul-Kandi	4.08 188	*e*Pn	Pn	10 44 04.9	+1.3
KMPD	K-Podol'skiy	4.15 327	*e*P	Pb	10 44 10.9	-3.3
KMPD			*i* S	Sb	10 45 02.5	-2.0
CHRU	Chernivtsi	4.17 321	*e*P	Pb	10 44 12.2	-2.2
CHRU			*i* S	Sb	10 45 03.4	-1.5
HRT	Hereke	4.29 182	*e*PN	Pn	10 44 07.3	+0.8
HRT	Hereke	4.29 182	*e*Pn	Pn	10 44 07.3	+0.8
SAHE	Sakarya_HENDEK	4.32 170	P	Pn	10 44 07.5	+0.6
SAHE	Sakarya_HENDEK	4.32 170	*i* P	Pn	10 44 07.5	+0.6
KSV	Kosov	4.58 316	*e*P	Pb	10 44 17.3	-4.1
KSV			Pm		10 44 30.9	
KSV			*i* S	Sb	10 45 13.7	-3.1
KSV			Sm		10 45 33.1	
BCAM	Yenicaga	4.60 158	P	Pn	10 44 12.0	+1.2
BCAM	Yenicaga	4.60 158	*i* P	Pn	10 44 12.0	+1.2
BTAS	Taskesti	4.62 169	P	Pn	10 44 12.4	+1.3
BTAS	Taskesti	4.62 169	*i* P	Pn	10 44 12.3	+1.3
ADVT	Abdulvahap	4.68 181	*e*PN	Pn	10 44 13.4	+1.6
ADVT	Abdulvahap	4.68 181	*e*Pn	Pn	10 44 13.4	+1.6
SRE	Strehaia	4.72 267	S	Sn	10 45 07.0	-0.4
SRE	Strehaia	4.72 267	*i* S	Sn	10 45 07.0	-0.4
SRE	Strehaia	4.72 267	*i* S	Sn	10 45 07.0	-0.4
IZI	Iznik	4.78 183	*e*PN	Pn	10 44 14.4	+1.2
IZI	Iznik	4.78 183	*e*Pn	Pn	10 44 14.5	+1.2
NSLU	Nyzhne Selyshc	4.81 312	*e*P	Pb	10 44 28.5	+3.1
NSLU			Pm		10 44 31.1	
NSLU			*i* S	Sg	10 45 33.3	-2.1
NSLU			Sm		10 46 00.3	
NSLU			Sm		10 46 00.3	
KESN	Edirne-Kesan	4.86 209	P	Pn	10 44 15.0	+0.3
KESN	Edirne-Kesan	4.86 209	*i* P	Pn	10 44 15.0	+0.3
RAKU	Rahkiv	4.87 309	*e*P	Pb	10 44 22.1	-4.3
RAKU			Pm		10 44 37.5	
RAKU			*i* S	Sb	10 45 20.9	-4.2
RAKU			Sm		10 45 54.9	
RAKU			Sm		10 45 54.9	
CAVI	Cavuskoy	4.91 180	*e*PN	Pn	10 44 16.6	+1.6
CAVI	Cavuskoy	4.91 180	*e*Pn	Pn	10 44 16.6	+1.6
KCTX	Karacabey (Bur	4.96 193	*e*PN	Pn	10 44 16.6	+0.9
KCTX	Karacabey (Bur	4.96 193	*e*Pn	Pn	10 44 16.6	+0.9
STNU	Starunia	5.12 317	*e*P	Pn	10 44 24.9	+7.0
STNU			*i* S	Sb	10 45 27.3	-5.1
DRGR		5.24 291 ‖	*i*P	Pn	10 44 20.4	+0.9
DRGR		5.24 291 ‖	*i*P	Pn	10 44 20.4	+0.9
DRGR			*i* S	Sn	10 45 17.0	-3.1
DRGR		5.24 291 ‖	*i*P	Pn	10 44 20.4	+0.9
LPK	Lapseki	5.25 207	*e*PN	Pn	10 44 21.0	+1.4
LPK	Lapseki	5.25 207	*e*Pn	Pn	10 44 21.0	+1.4
BORA	Eskisehir	5.25 175	P	Pn	10 44 20.6	+0.9
BORA			S	Sn	10 45 17.1	-3.4
BORA	Eskisehir	5.25 175	*i* P	Pn	10 44 20.6	+0.9
BORA			*i* S	Sn	10 45 17.1	-3.4
GELI	Tayfur-Gelibol	5.32 209	*e*PN	Pn	10 44 21.8	+1.3
GELI	Tayfur-Gelibol	5.32 209	*e*Pn	Pn	10 44 21.8	+1.3
ZAPS	Zavoj	5.49 253	*e*Pn	Pn	10 44 24.4	+1.5
MEZ	Mezhgor'ye	5.51 310	*e*P	Pn	10 44 30.4	+7.2
MEZ			Pm		10 44 38.2	
MEZ			*i* S	Sb	10 45 37.6	-5.9
MEZ			Sm		10 46 08.1	
KORU	Korolevo	5.52 306	*e*P	Pn	10 44 30.9	+7.5
KORU			Pm		10 44 51.7	
KORU			*i* S	Sb	10 45 37.9	-6.0
KORU			Sm		10 46 13.7	
TRSU	Trosnyk	5.59 305	*e*P	Pn	10 44 31.8	+7.5
TRSU			Pm		10 44 52.8	
TRSU			*i* S	Sb	10 45 39.4	-6.5
TRSU			Sm		10 46 24.2	
DURS	Dursunbey	5.60 191	P	Pn	10 44 25.2	+0.7
DURS	Dursunbey	5.60 191	*i* P	Pn	10 44 25.2	+0.7
AKASG	Malin Array Be	5.61 356	Pn	Pn	10 44 24.7	+0.2
	3.4nm,0.3s,baz=176,slow=10,SNR=8.7					
AKASG			Sn	Sn	10 45 26.4	-2.8
	10.0nm,0.3s,baz=221,slow=30,SNR=7.0					
BRIU	Brid	5.68 307	*e*P	Pn	10 44 32.9	+7.4
BRIU			Pm		10 44 38.7	
BRIU			*i* S	Sb	10 45 41.9	-6.6
BRIU			Sm		10 45 51.7	
BRIU			Sm		10 45 51.7	
MORU	Morshyn	5.71 317	*e*P	Pn	10 44 33.3	+7.4
MORU			Pm		10 44 38.8	
MORU			*i* S	Sb	10 45 41.9	-7.3
MORU			Sm		10 46 09.1	
BOLS	Boljevac	5.78 260	*e*PN	Pn	10 44 27.0	+0.1
BERU	Beregovo	5.84 305	*e*P	Pn	10 44 35.2	+7.4
BERU			*i* S	Sb	10 45 45.4	-7.7
SAMS	Samsun-Alacam	5.97 127	P	Pn	10 44 30.1	+0.6
SAMS			S	Sn	10 45 35.2	-2.9
SAMS	Samsun-Alacam	5.97 127	*i* P	Pn	10 44 30.1	+0.6
SAMS			*i* S	Sn	10 45 35.1	-2.9
SHIU	Shidnytsya	6.03 315	*i* P	Pn	10 44 37.9	+7.6
SHIU			Pm		10 44 44.3	
SHIU			*i* S	Sb	10 45 50.1	-8.3
SHIU			Sm		10 46 19.1	
BRTR	Keskin Array B	6.08 151	Pn	Pn	10 44 33.4	+2.2
	0.1nm,0.3s,baz=336,slow=3.2,SNR=3.8					
BRTR			Sn	Sn	10 45 37.6	-3.4
	0.4nm,0.3s,baz=327,slow=18,SNR=5.4					
COAL	Corum-Alaca	6.17 140	P	Pn	10 44 33.8	+1.5
COAL	Corum-Alaca	6.17 140	*i* P	Pn	10 44 33.8	+1.5
UZH	Uzhgorod	6.25 307	*e*P	Pn	10 44 41.2	+7.9
UZH			Pm		10 44 48.0	
UZH			*i* S	Sn	10 45 55.2	+10
UZH			Sm		10 45 57.2	
DIVS	Divibare	7.09 265	*e*PN	Pn	10 44 45.5	+0.5
IVAS	Ivanjica	7.10 261	*e*Pn	Pn	10 44 45.9	+0.8
STHS	Stebnicka Huta	7.25 309	*e*PN	Pn	10 44 48.0	+0.9
STHS	Stebnicka Huta	7.25 309	*e*PN	Pn	10 44 48.0	+0.9
TEKS	Tekeris	7.34 269	*e*Pn	Pn	10 44 47.8	-0.6
BBLS	Lazići	7.55 264	*e*Pn	Pn	10 44 51.9	+0.5
KBZ	Khabaz	9.46 94	Pn	Pn	10 45 19.7	+2.3
	0.1nm,0.3s,baz=293,slow=8.1,SNR=2.7					
DBAD	Bademkaya	9.60 111	P	Pn	10 45 18.9	-0.6
DBAD	Bademkaya	9.60 111	*i* P	Pn	10 45 18.9	-0.6
DAGI	Agillar	9.72 110	*i* P	Pn	10 45 21.0	-0.1
BRG	Berggiesshubel	12.09 304	*e*(P)		10 59 57.1	
	5.6nm,1.1s					
FINES	FINESS Array B	16.51 354	Pn	Pn	10 46 45.6	-7.0
	0.3nm,0.3s,baz=157,slow=14,SNR=7.9					
FINES			Sn	Sn	10 49 42.4	-13
	0.4nm,0.3s,baz=20,slow=28,SNR=12					
ARCES	ARCESS Array B	24.59 356	P	P	10 48 21.6	+0.5
	2.5nm,0.9s,baz=177,slow=8.5,SNR=5.6					
TORD	Torodi Ar. Bea	39.83 226	P	P	10 50 35.0	+0.2
	0.1nm,0.3s,baz=32,slow=9.0,SNR=4.0					

*ISCJB **04** 10:47:33.9±0.4, 17°.44N±0°.03×120°.53E±0°.05, h46km±4km, mb4.0/18, Error ellipse: s-maj=7.9km s-min=4.7km az=15.1*
*MAN **04** 10:47:33, 17°.48N×120°.49E, h27km, mb4.7, MLJ3.6, MS3.6*
*IDC **04** 10:47:37.8±3.8, 17°.28N×120°.72E, h75km±36km, mb3.7/20, mb1 3.7/22, mb1mx3.6/67, mbtmp4.0/22, MLJ3.6/1, Error ellipse: s-maj=21.7km s-min=12.7km az=73.0*
ISC 04 10:47:34.0±1.0, 17°.43N±0°.03×120°.52E±0°.05, h32km±7km, n35, σ1°.16/43, mb4.1/18, 4C, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ABRA	Dolores	0.29	39	*e*P	Pb	10 47 41.0	-0.6
ABRA				*e*S	Sn	10 47 47.7	+0.5
SIPP	Brgy, Tapao	0.50	353	⇑*e*P	Pb	10 47 43.3	-1.3
SIPP				*e*S	Sn	10 47 52.4	0.0
APYP	Conner	0.81	58	*e*P	Pn	10 47 48.2	-1.1
APYP				*e*S	Sb	10 48 00.7	+0.2
PIP	Pasuquin	0.90	6	⇑*i*P	Pn	10 47 50.3	-0.2
PIP				*e*S	Sb	10 48 03.8	+0.9
BCPH	Baguio City Da	1.04	177	⇑*i*P	Pb	10 47 53.9	+0.2
BCPH				*i* S	Sn	10 48 06.9	+0.8
BOLP	Bolinao	1.19	209	*e*P	Pn	10 47 53.8	-0.6
BOLP				*e*S	Sb	10 48 11.2	0.0
CVP	Callao Caves	1.27	77	*e*P	Pn	10 47 55.8	+0.2
CVP				*e*S	Sb	10 48 13.7	+0.2
CAUP	Cauayan	1.33	111	*e*P	Pb	10 47 58.6	+0.1
SGCP	Mt. Cagua	1.66	61	*e*P	Pn	10 47 59.0	-2.0
SCZP	Santa Cruz	1.74	200	*e*P	Pn	10 48 01.9	-0.1
PCPH	Palayan	1.93	163	⇑*e*P	Pn	10 48 04.0	-0.7
PCPH				*e*S	Sb	10 48 33.8	+1.4
BALP	Baler	1.96	149	*e*P	Pn	10 48 05.0	0.0
JOW	Kunigami	11.80	36	P	Pn	10 50 22.2	+2.1
JNU	Nakatsue	18.20	29	P	P	10 51 45.6	+1.3
	0.1nm,0.3s,baz=207,slow=4.5,SNR=3.6						
CMAR	Chiang Mai Arr	20.55	276	P	Pn	10 52 13.3	+0.8
	0.9nm,0.4s,baz=90,slow=8.6,SNR=7.8						
KSRS	Korea Array	20.99	17	P	P	10 52 15.6	+0.9
	1.6nm,0.6s,baz=198,slow=11,SNR=9.8						
KLR	Kul'dur	33.01	14	P	P	10 54 06.8	+0.7
	3.2nm,0.9s,baz=230,slow=6.7,SNR=14						
WRA	Warramunga Arr	39.54	159	P	P	10 54 58.6	-3.5
	0.4nm,0.7s,baz=341,slow=8.9,SNR=5.8						
ASAR	Alice Springs	42.88	162	P	P	10 55 27.9	-1.7
	0.4nm,0.4s,baz=339,slow=7.1,SNR=16						
MKAR	Makanchi Array	42.99	321	P	P	10 55 31.6	+1.2
	0.7nm,0.7s,baz=113,slow=9.3,SNR=6.7						
MKAR				PcP	PcP	10 57 20.2	-0.2
	0.7nm,0.6s,baz=110,slow=3.0,SNR=5.6						
KURBB	Kurchatov Arra	47.05	324	P	P	10 56 03.3	+0.8
	3.2nm,0.7s,baz=121,slow=8.5,SNR=29						
SEY	Seymchan	50.54	18	P	P	10 56 29.4	+0.3
	0.9nm,0.6s,baz=309,slow=9.0,SNR=4.6						
BVAR	Borovoye Array	52.64	324	P	P	10 56 45.5	+0.5
	0.6nm,0.4s,baz=115,slow=9.9,SNR=4.7						
STKA	Stephens Creek	53.02	157	P	P	10 56 45.8	-2.2
	1.0nm,0.5s,baz=331,slow=19,SNR=2.6						
TIXI	Tiksi	54.44	3	P	P	10 56 57.3	-0.6
	0.8nm,0.3s,baz=139,slow=5.0,SNR=2.6						
NRIK	Noril'sk	55.77	346	P	P	10 57 08.6	+1.1
	2.0nm,0.4s,baz=129,slow=3.0,SNR=3.0						
GEYT	Alibeck	57.87	304	P	P	10 57 24.6	+1.6
	1.3nm,0.3s,baz=90,slow=13,SNR=2.7						
AKTO	Aktyubinsk	59.29	319	P	P	10 57 32.5	-0.1
	0.7nm,0.3s,baz=98,slow=10,SNR=3.7						
KBZ	Khabaz	69.31	311	P	P	10 58 39.0	+0.7
	1.3nm,0.8s,baz=171,slow=7.0,SNR=3.9						
ARCES	ARCESS Array B	75.57	339	P	P	10 59 15.1	-0.1
	1.6nm,0.8s,baz=65,slow=8.6,SNR=5.5						
SPITS	Spitsbergen Ar	75.93	348	P	P	10 59 17.7	+0.5
	6.4nm,0.9s,baz=104,slow=6.1,SNR=3.7						
FINES	FINESS Array B	76.97	331	P	P	10 59 22.6	-0.7
	1.0nm,0.5s,baz=74,slow=6.8,SNR=6.4						
AKASG	Malin Array Be	77.53	319	P	P	10 59 25.5	-1.1
	0.4nm,0.4s,baz=64,slow=4.4,SNR=3.4						
NB2	NORSAR Subarra	83.89	332	P	P	10 59 59.2	-1.4
	comp=Z,0.8nm,0.5s,baz=65,slow=4.8						
NOA	NORSAR Array B	83.89	332	P	P	10 59 59.5	-1.1
	comp=Z,0.7nm,0.6s,baz=65,slow=4.9,SNR=4.7						

*NIED **04** 10:57:00, 36°.90N×141°.90E, h23km, Mw3.8 Best double couple: M0=6.47000×10^14 NP1:φ0=192.00000°, δ49.00000°, λ150.00000°. NP2:φ0=303.00000°, δ68.00000°, λ46.00000°.*
*IDC **04** 10:57:26.8±0.8, 36°.80N×142°.12E, h0km, mb3.7/8, mb1 3.9/13, mb1mx3.7/51, mbtmp3.9/13, MLJ3.8/5, MS3.0/1, Ms1 3.0/1, ms1mx2.4/52, Error ellipse: s-maj=24.6km s-min=14.8km az=109.0*
*ISCJB **04** 10:57:27.5±1.1, 36°.85N±0°.04×142°.00E±0°.05, h19km±7km, mb3.6/8, Error ellipse: s-maj=7.3km s-min=6.0km az=8.1*
*JMA **04** 10:57:29.8±0.3, 36°.95N×141°.92E, h45km±5km, M4.0*
ISC 04 10:57:27.1±1.9, 36°.88N±0°.05×141°.97E±0°.06, h7km±11km, n28, σ1°.26/37, mb3.7/8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.96	284	P	Pb	10 57 46.3	+0.1
ONAJ				S	Sb	10 57 58.1	-1.1
JFK	Kawauchi	1.00	299	P	Pb	10 57 46.6	-0.2
JFK				*e*S	Sg	10 57 58.8	-0.6
JHO	Hitachi	1.16	257	P	Pg	10 57 49.2	-0.1
JHO				*e*S	Sg	10 58 04.0	-0.4
JMM	Marumori	1.36	317	P	Pn	10 57 51.8	-0.7
JFT	Otama	1.45	296	P	Pb	10 57 54.2	-0.3
JIO	Ouri	1.65	343	P	Pn	10 57 55.1	-1.4
JOU	Okura	1.81	325	P	Pn	10 57 59.2	+0.4
JOU				S	Sn	10 58 20.6	-1.4
JFY	Yanaizu	1.89	287	P	Pb	10 58 01.1	-0.8
JFY				S	Sn	10 58 23.2	-0.7
JYS	Shiratake	2.02	312	P	Pb	10 58 03.6	-0.6
JYS				S	Sn	10 58 27.1	-0.1
JAG	Ashikaga	2.08	258	P	Pn	10 58 02.8	+0.4
JAG				S	Sn	10 58 27.5	-1.0
JMK	Ichinoseki	2.15	344	P	Pn	10 58 03.2	-0.2
MJAR	Matsushiro Arr	3.04	265	Pn	Pn	10 58 17.3	+1.6
	16nm,0.3s,baz=89,slow=15,SNR=53						
MJAR				Sn	Sb	10 59 00.1	+1.1
	11nm,0.3s,baz=104,slow=21,SNR=7.4						
MAT	Matsushiro	3.04	265	P	Pn	10 58 17.9	+2.2
MAT				S	Sn	10 58 51.5	-0.9
JHJ	Hachijo jima 2	4.16	206	Pn	Pn	10 58 32.2	+1.1
	55nm,0.3s,baz=276,slow=22,SNR=21						
JHJ				Sn	Sn	10 59 19.5	-0.5
	46nm,0.3s,baz=228,slow=23,SNR=5.9						
ASAJ	Asahikawa	7.24	4	Pn	Pn	10 59 13.0	-0.4
	1.6nm,0.3s,baz=209,slow=7.4,SNR=16						
ASAJ				Sn	Sn	11 00 34.1	-1.8
	0.6nm,0.3s,baz=135,slow=33,SNR=3.0						
JCJ	Chichijima	9.76	179	Pn	Pn	10 59 47.6	-0.3
	4.5nm,0.3s,baz=0.7,slow=21,SNR=4.5						
JCJ				Sn	Sn	11 01 33.4	-4.4
	3.8nm,0.3s,baz=297,slow=21,SNR=3.2						
JNU	Nakatsue	9.84	251	Pn	Pn	10 59 50.5	+1.4
	0.2nm,0.3s,baz=292,slow=2.4,SNR=2.5						
USRK	Ussuriysk Ar.	10.54	317	LR	LR	11 03 25.3	
	comp=Z,75nm,18.2s,baz=105,slow=34						
KSRS	Korea Array	11.23	277	Pn	Pn	11 00 15.8	+7.9
	0.3nm,0.3s,baz=98,slow=14,SNR=5.5						
KLR	Kul'dur	14.41	332	Pn	P	11 00 58.3	-0.2
	0.1nm,0.3s,baz=146,slow=11,SNR=3.6						
SEY	Seymchan	26.86	11	P	P	11 03 10.0	+1.9
	0.5nm,0.3s,baz=155,slow=6.8,SNR=4.7						
ZALV	Zalesovo Beam	42.35	313	P	P	11 05 25.0	+3.4
	0.6nm,0.4s,baz=81,slow=9.3,SNR=3.0						
MKAR	Makanchi Array	44.58	302	P	P	11 05 40.2	+0.5
	0.4nm,0.4s,baz=90,slow=4.3,SNR=3.7						
ILAR	Eielson Array	49.38	32	P	P	11 06 17.2	+0.2
	0.5nm,0.8s,baz=266,slow=6.2,SNR=5.2						
INK	Inuvik	54.32	27	P	P	11 06 55.4	+1.6
	0.8nm,0.9s,baz=233,slow=6.0,SNR=3.4						
WRA	Warramunga Arr	56.97	189	P	P	11 07 13.2	-0.1
	0.6nm,0.3s,baz=6.6,slow=6.9,SNR=11						
ASAR	Alice Springs	60.70	188	P	P	11 07 39.6	+0.4
	0.5nm,0.6s,baz=2.5,slow=5.1,SNR=4.8						
YKA	Yellowknife Ar	63.72	30	P	P	11 07 59.6	+0.6
	0.2nm,0.9s,baz=304,slow=6.7,SNR=4.2						

IDC 04 11:01:06.0±2.8, 6°.55S×147°.73E, h0km, mb3.9/3, mb1 4.0/5, mb1mx3.6/39, mbtmp3.9/5, MLJ3.8/1, MS3.5/1, Ms1 3.5/1, ms1mx2.6/37, Error ellipse: s-maj=58.6km s-min=38.1km az=93.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	Port Moresby	2.90	191	Pn	Pn	11 01 54.1	+0.8
	17nm,0.3s,baz=18,slow=7.4,SNR=49						
PMG				Sn	Sb	11 02 34.3	-0.2
	10nm,0.3s,baz=25,slow=15,SNR=9.2						
CTA	Charters Tower	13.54	186	Pn	P	11 04 25.0	-3.8
	0.2nm,0.3s,baz=4.1,slow=14,SNR=3.0						
WRA	Warramunga Arr	18.61	223	P	P	11 05 24.5	-0.7
	0.3nm,0.3s,baz=49,slow=11,SNR=19						
ASAR	Alice Springs	21.60	217	P	P	11 05 57.5	-0.1
	1.0nm,0.4s,baz=53,slow=9.1,SNR=40						
DZM	Mont Dzumac	23.76	132	LR	LR	11 12 29.0	
	comp=Z,112nm,21.5s,baz=177,slow=29						
FITZ	Fitzroy Crossi	24.41	240	P	P	11 06 26.2	-0.2
	6.1nm,0.5s,baz=51,slow=8.0,SNR=42						
STKA	Stephens Creek	25.84	192	P	P	11 06 39.3	+0.1
	1.1nm,0.5s,baz=359,slow=9.3,SNR=3.3						
TORD	Torodi Ar. Bea	145.93	284	PKPbc	PKPdf	11 20 48.0	0.0
	0.6nm,0.5s,baz=82,slow=3.7,SNR=4.3						

*NIED **04** 11:02:00, 39°.40N×142°.60E, h38km, Mw3.7 Best double couple: M0=4.14000×10^14 NP1:φ0=185.00000°, δ7.00000°, λ83.00000°. NP2:φ0=12.00000°, δ83.00000°, λ91.00000°.*
*JMA **04** 11:02:26.4±0.1, 39°.43N×142°.56E, h34km±1km, M4.0*
JMA Felt I J1.
*IDC **04** 11:02:29.3±1.9, 39°.41N×142°.56E, h56km±18km, mb3.4/9, mb1 3.6/13, mb1mx3.4/45, mbtmp3.7/13, MLJ3.2/4, Error ellipse: s-maj=25.6km s-min=10.8km az=103.0*
ISC 04 11:02:25.2±1.4, 39°.47N±0°.04×142°.54E±0°.05, h18km±5km, n29, σ1°.16/39, mb3.6/9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	Miyakonagasawa	0.57	281	P	Pn	11 02 38.2	-0.2
MIYJ				S	Sn	11 02 46.3	-1.0
JTH	Tanohata	0.70	312	P	Pn	11 02 40.0	-0.3
OFUJ	Ofunato	0.78	240	P	Pg	11 02 40.9	+0.4
OFUJ				S	Sg	11 02 51.4	+0.6
JOM	Ohasama	0.97	271	P	Pg	11 02 44.3	+0.3
JOM				S	Sn	11 02 57.5	+0.3
JMK	Ichinoseki	1.15	244	P	Pn	11 02 46.5	+0.1
JMK				S	Sb	11 03 01.4	+0.3
JANG	Nango	1.20	319	P	Pb	11 02 47.5	+0.1
JANG				S	Sn	11 03 03.3	+0.3
JIO	Ouri	1.37	223	P	Pn	11 02 49.3	-0.2
JIO				S	Sn	11 03 06.0	-1.2
JRG	Rokugo	1.48	268	P	Pb	11 02 52.4	+0.2
JRG				S	Sg	11 03 12.8	-0.2
JAH	Hinai	1.63	297	P	Pb	11 02 54.7	-0.1
JAH				S	Sb	11 03 16.5	+1.4
JTM	Tenmabayashi	1.73	320	P	Pb	11 02 55.9	-0.6
JTM				S	Sb	11 03 18.2	+0.2
JYK	Kaneyama	1.78	253	P	Pn	11 02 56.2	+1.1
JOU	Okura	1.83	234	P	Pn	11 02 56.6	+0.8
JMM	Marumori	2.10	221	P	Pn	11 02 59.6	+0.1
MAT	Matsushiro	4.50	231	P	Pn	11 03 35.4	+2.9
MAT				*e*S	Sn	11 04 24.8	+0.4
MJAR	Matsushiro Arr	4.50	231	P	Pn	11 03 35.5	+3.0
	3.7nm,0.3s,baz=40,slow=11,SNR=33						
ASAJ	Asahikawa	4.64	0	P	Pn	11 03 36.3	+1.9
	0.8nm,0.3s,baz=202,slow=12,SNR=6.3						
ASAJ				S	Sn	11 04 31.2	+3.4
	0.8nm,0.3s,baz=143,slow=4.8,SNR=2.5						
JHJ	Hachijo jima 2	6.71	200	P	Pn	11 04 04.7	+1.8
	4.2nm,0.3s,baz=327,slow=23,SNR=4.5						
JHJ				S	Sn	11 05 19.0	0.0
	5.6nm,0.3s,baz=234,slow=22,SNR=2.6						
USRK	Ussuriysk Ar.	9.18	304	P	Pn	11 04 41.1	+4.3
	0.3nm,0.3s,baz=97,slow=16,SNR=7.0						
KSRS	Korea Array	11.64	265	P	Pn	11 05 16.3	+5.9
	0.2nm,0.3s,baz=92,slow=12,SNR=3.1						
KLR	Kul'dur	12.43	325	P	P	11 05 32.4	-0.6
	0.2nm,0.3s,baz=142,slow=8.9,SNR=5.5						
SEY	Seymchan	24.23	11	P	P	11 07 40.9	+0.2
	1.2nm,0.8s,baz=228,slow=16,SNR=2.8						
ZALV	Zalesovo Beam	40.97	310	P	P	11 10 06.7	0.0
	2.0nm,0.5s,baz=87,slow=8.0,SNR=7.1						
MKAR	Makanchi Array	43.62	300	P	P	11 10 28.1	-0.4
	0.6nm,0.5s,baz=86,slow=9.2,SNR=4.8						
ILAR	Eielson Array	46.97	34	P	P	11 10 54.0	-0.7
	0.4nm,0.7s,baz=267,slow=6.8,SNR=4.6						
INK	Inuvik	51.82	28	P	P	11 11 32.3	+0.7
	0.4nm,0.8s,baz=263,slow=5.2,SNR=3.0						
WRA	Warramunga Arr	59.59	189	P	P	11 12 26.8	-1.1
	0.6nm,1.0s,baz=6.2,slow=6.8,SNR=4.4						
YKA	Yellowknife Ar	61.26	31	P	P	11 12 38.5	-0.3
	0.1nm,0.5s,baz=300,slow=6.2,SNR=4.8						
FINES	FINESS Array B	67.08	332	P	P	11 13 16.5	-0.5
	0.7nm,0.5s,baz=40,slow=9.9,SNR=4.1						
AKASG	Malin Array Be	72.92	322	P	P	11 13 52.2	-0.9
	0.8nm,0.3s,baz=43,slow=5.9,SNR=4.7						

IDC 04 11:15:03.8±6.9, 34°.83N×141°.44E, h0km, mb3.4/3, mb1 3.5/4, mb1mx3.3/58, mbtmp3.3/4, ML2.7/1, Error ellipse: s-maj=229.7km s-min=25.6km az=60.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	3.14	304	Pn	Pn	11 15 53.3	-1.3
	1.0nm,0.3s,baz=86,slow=15,SNR=12						
MAT	Matsushiro	3.14	304	P	Pn	11 15 53.9	-0.7
MAT				*e*S	Sb	11 16 39.5	+0.1
MKAR	Makanchi Array	45.34	304	P	P	11 23 23.9	+0.3
	0.2nm,0.2s,baz=77,slow=6.2,SNR=2.5						
WRA	Warramunga Arr	54.89	188	P	P	11 24 36.4	+0.2
	0.5nm,0.7s,baz=7.5,slow=7.0,SNR=6.0						
ASAR	Alice Springs	58.61	188	P	P	11 25 02.2	-0.4
	0.4nm,0.8s,baz=3.0,slow=6.7,SNR=4.1						

GUC 04 11:17:07.2±0.4, 20°.86S×69°.08W, h107km±3km, ML3.6, 4C-1D, Northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB01	IPOC Station P	0.42	244	⇑*e*P	Pn	11 17 23.6	+0.3
PB01				*e*S	Sn	11 17 35.9	+0.5
PB01

mb1 3.5/5, mb1mx3.3/57, mbtmp3.5/5, ML3.1/3, Error ellipse: s-maj=47.5km s-min=31.1km az=89.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**4.24**	**266**	Pn	Pn	11 42 56.2	-0.2
	1.3nm,0.3s,baz=88,slow=14,SNR=13						
MAT	**Matsushiro**	**4.24**	**266**	P	Pn	11 42 56.3	-0.1
JHJ	**Hachijo jima 2**	**4.89**	**219**	Pn	Pn	11 43 04.7	-0.6
	1.3nm,0.3s,baz=139,slow=24,SNR=3.8						
JHJ				Sn	Sn	11 43 56.3	-6.3
	5.0nm,0.3s,baz=75,slow=23,SNR=3.6						
ASAJ	**Asahikawa**	**7.16**	**355**	Pn	Pn	11 43 36.2	-0.4
	0.4nm,0.3s,baz=218,slow=13,SNR=5.2						
WRA	**Warramunga Arr**	**57.26**	**190**	P	P	11 51 39.1	-0.9
	0.2nm,0.6s,baz=7.6,slow=7.0,SNR=3.7						
ASAR	**Alice Springs**	**60.98**	**190**	P	P	11 52 06.8	+1.1
	0.2nm,0.6s,baz=18,slow=12,SNR=4.8						

NIED ***04*** *11:43:00, 36°.30N×141°.20E, h38km, Mw4.3 Best double couple: M0 2.83000×10^15 NP1:φs 199.00000°, δ11.00000°, λ-44.00000°. NP2:φs 332.00000°, δ82.00000°, λ-98.00000°.*
MOS ***04*** *11:43:16.4±1.4, 36°.39N×141°.38E, h33km, mb4.4/29, Error ellipse: s-maj=9.0km s-min=5.8km az=92.2*
ISCJB ***04*** *11:43:16.1±0.7, 36°.30N±0°.02×141°.28E±0°.04, h28km±4km, mb4.4/59, MS3.9/6, Error ellipse: s-maj=5.2km s-min=3.7km az=12.0*
JMA ***04*** *11:43:17.5±0.1, 36°.31N×141°.17E, h47km±2km, M4.2*
JMA Felt II J1.
NEIC ***04*** *11:43:18.9±0.2, 36°.26N×141°.19E, h35km, mb4.7/12, Error ellipse: s-maj=5.4km s-min=4.2km az=132.0*
NEIC Recorded [2 JMA] in Ibaraki.
IDC ***04*** *11:43:19.0±0.4, 36°.26N×141°.19E, h36km±3km, mb4.0/31, mb1 4.1/35, mb1mx4.1/57, mbtmp4.3/35, ML4.3/4, MS3.3/5, Ms1 3.3/5, ms1mx3.0/54, Error ellipse: s-maj=11.4km s-min=9.3km az=98.0*

ISC 04 11:43:17.3±0.4, 36°.30N±0°.03×141°.33E±0°.04, h27km±2km, h27km: pP-P, n127, σ1§86/165, mb4.4/59, MS4.0/6, 7C-4D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.69**	**297**	P	**Pb**	**11 43 29.2**	**-1.5**
JHO				S	**Sb**	**11 43 37.4**	**-2.5**
CHOJ	**Chosi**	**0.71**	**213**	P	**Pb**	**11 43 30.6**	**-0.4**
CHOJ				S	**Sb**	**11 43 39.6**	**-0.7**
ONAJ	**Iwakimizuishiy**	**0.91**	**332**	P	**Pn**	**11 43 32.8**	**-1.6**
ONAJ				S	**Sb**	**11 43 43.3**	**-2.9**
JYT	**Yasato**	**0.92**	**266**	P	**Pn**	**11 43 32.4**	**-2.0**
JYT				S	**Sb**	**11 43 42.3**	**-4.1**
JFK	**Kawauchi**	**1.13**	**341**	P	**Pn**	**11 43 36.0**	**-1.3**
JFT	**Otama**	**1.46**	**327**	P	**Pn**	**11 43 41.6**	**-0.2**
JFT				S	**Sn**	**11 43 58.6**	**-1.4**
JAG	**Ashikaga**	**1.52**	**275**	P	**Pn**	**11 43 41.0**	**-1.7**
JMM	**Marumori**	**1.62**	**345**	P	**Pn**	**11 43 43.6**	**-0.5**
JMM				S	**Sn**	**11 44 02.0**	**-2.1**
MJAR	**Matsushiro Arr**	**2.53**	**276**	Pn	**Pn**	**11 43 55.8**	**-0.8**
	72nm,0.3s,baz=84,slow=10,SNR=308						
MJAR				Sn	**Sn**	**11 44 28.6**	**+2.1**
	40nm,0.3s,baz=59,slow=6.2,SNR=5.7						
MAJO	**Matsushiro**	**2.53**	**276**	*c iP*	**Pn**	**11 43 56.5**	**-0.1**
MAJO	**Matsushiro**	**2.53**	**276**	*e*Pn	**Pn**	**11 43 56.8**	**+0.1**
MAJO				*e*Sn	**Sn**	**11 44 26.4**	**-0.1**
MAT	**Matsushiro**	**2.53**	**276**	P	**Pn**	**11 43 56.1**	**-0.5**
MAT				*e*S	**Sn**	**11 44 26.3**	**-0.3**
MJB9	**Matsu-Tunnel**	**2.53**	**277**	*e*Pn	**Pn**	**11 43 56.6**	**0.0**
JHJ2	**Mitsune**	**3.41**	**202**	*e*Pn	**Pn**	**11 44 09.0**	**+0.2**
JHJ2				*e*Sn	**Sn**	**11 44 48.1**	**-0.2**
JHJ	**Hachijo jima 2**	**3.42**	**202**	Pn	**Pn**	**11 44 09.7**	**+0.9**
	108nm,0.3s,baz=90,slow=23,SNR=31						
JHJ				Sn	**Sn**	**11 44 48.3**	**-0.1**
	188nm,0.3s,baz=55,slow=22,SNR=8.0						
JHJ				LR	LR	11 45 43.7	
	comp=Z,421nm,20.4s,baz=45,slow=43						
INU	**Inuyama**	**3.63**	**256**	*e*Pn	**Pn**	**11 44 12.8**	**+1.1**
ERM	**Erimo**	**5.88**	**13**	‖ *e*P	**Pn**	**11 44 42.9**	**+0.3**
ERM	**Erimo**	**5.88**	**13**	*e*Pn	**Pn**	**11 44 45.1**	**+2.5**
ASAJ	**Asahikawa**	**7.87**	**7**	Pn	**Pn**	**11 45 09.1**	**-0.9**
	3.5nm,0.3s,baz=203,slow=14,SNR=26						
ASAJ				Sn	**Sn**	**11 46 36.7**	**-1.3**
	0.8nm,0.3s,baz=64,slow=33,SNR=3.3						
ASAJ				LR	LR	11 49 10.4	
	comp=Z,102nm,20.5s,baz=176,slow=44						
ASAJ	**Asahikawa**	**7.87**	**7**	*e*Pn	**Pn**	**11 45 09.0**	**-0.9**
ASAJ				*e*Sn	**Sn**	**11 46 37.9**	**-0.2**
YUK	**Yuzh-Kuril'sk**	**8.47**	**23**	*i* P	**Pn**	**11 45 15.9**	**-2.2**
YUK				*i* S	**Sn**	**11 46 49.3**	**-3.4**
YUK				pmax	pmax		
	comp=Z,84nm,0.3s						
YUK				pmax	pmax		
	comp=N,20nm,0.2s						
YUK				pmax	pmax		
	comp=E,39nm,0.2s						
SHO	**Shikotan**	**8.66**	**27**	*i* P	**Pn**	**11 45 17.7**	**-3.0**
SHO				*i* S	**Sn**	**11 46 50.4**	**-6.9**
SHO				pmax	pmax		
	comp=Z,37nm,0.7s						
JNU	**Nakatsue**	**9.17**	**253**	Pn	**Pn**	**11 45 29.2**	**+1.4**
	comp=Z,0.8nm,0.3s,baz=78,slow=8.4,SNR=8.0						
JNU	**Nakatsue**	**9.17**	**253**	*e*Pn	**Pn**	**11 45 27.5**	**-0.3**
CBIJ	**Chichi jima**	**9.20**	**175**	*e*Pn	**Pn**	**11 45 26.5**	**-1.7**
CBIJ				*e*Sn	**Sn**	**11 47 08.2**	**-2.8**
JCJ	**Chichijima**	**9.20**	**175**	Pn	**Pn**	**11 45 26.7**	**-1.5**
	comp=Z,28nm,0.3s,baz=4.0,slow=18,SNR=20						
JCJ				Sn	**Sn**	**11 47 03.4**	**-7.5**
KUR	**Kuril'sk**	**10.21**	**27**	*i* P	**Pn**	**11 45 40.6**	**-1.3**
KUR				*i* S	**Sn**	**11 47 28.4**	**-7.0**
KUR				pmax	pmax		
	comp=Z,36nm,0.5s						
KUR				pmax	pmax		
	comp=N,12nm,0.2s						
KUR				pmax	pmax		
	comp=E,13nm,0.5s						
USRK	**Ussuriysk Ar.**	**10.64**	**321**	Pn	**Pn**	**11 45 51.1**	**+3.3**
	comp=E,0.5nm,0.3s,baz=137,slow=12,SNR=5.9						
YSS	**Yuzh-Sakhalins**	**10.70**	**5**	‖ *e*P	**Pn**	**11 45 46.7**	**-2.0**
YSS				pmax	pmax		
	comp=Z,10.0nm,0.3s						
YSS				MLR	MLR		
	comp=Z,200nm,14.0s						
KSRS	**Korea Array**	**10.80**	**280**	Pn	**Pn**	**11 45 53.9**	**+3.7**
	comp=Z,0.4nm,0.3s,baz=93,slow=14,SNR=23						
KS15	**Wonju Array Si**	**10.83**	**280**	*e*Pn	**Pn**	**11 45 51.4**	**+0.8**
KSAR	**Wonju Array Be**	**10.83**	**280**	P	**Pn**	**11 45 53.9**	**+3.3**
KSAR	**Wonju Array Be**	**10.83**	**280**	Pn	**Pn**	**11 45 53.9**	**+3.3**
JOW	**Kunigami**	**14.58**	**233**	Pn	**P**	**11 46 47.3**	**-0.6**
	comp=Z,1.9nm,0.3s,baz=339,slow=15,SNR=7.4						
TYV	**Tymovskoe**	**14.59**	**3**	*e*P	**Pn**	**11 46 38.0**	**-3.8**
KLR	**Kul'dur**	**14.70**	**335**	Pn	**P**	**11 46 53.0**	**+3.9**
	comp=Z,0.2nm,0.3s,baz=160,slow=12,SNR=3.7						
KLR				LR	LR	11 51 55.2	
	comp=Z,103nm,18.4s,baz=138,slow=35						
PETK	**Petropavlovsk-**	**20.36**	**29**	P	Pn	11 47 53.0	-0.7
	comp=Z,3.6nm,0.9s,baz=225,slow=6.8,SNR=4.9						
PETK				LR	LR	11 55 35.0	
	comp=Z,77nm,21.4s,baz=202,slow=36						
PETK	**Petropavlovsk-**	**20.36**	**29**	P	Pn	11 47 53.0	-0.7
PETK				pmax	pmax		
	comp=Z,2.0nm,0.7s						
PETK				MLR	MLR		
	comp=Z,77nm,21.4s						
PET	**Petropavlovsk**	**20.68**	**31**	*i* P	**P**	**11 47 56.2**	**+1.3**
WHN	**Wuhan**	**23.20**	**263**	*e*P	**P**	**11 48 19.8**	**-2.2**
HHC	**Hu-ho-hao-te**	**23.65**	**290**	*e*P	**P**	**11 48 26.6**	**+0.1**
HHC				S	S	11 52 26.8	-13
HHC				pmax	pmax		
	comp=Z,91nm,1.0s						
HHC				pmax	pmax		
	comp=Z,1μm,4.2s						
HHC				LR	LR		
	comp=N,1μm,13.2s						
HHC				LR	LR		
	comp=E,1μm,13.7s						
HHC				LR	LR		
	comp=Z,1μm,11.8s						
SEY	**Seymchan**	**27.52**	**11**	P	**P**	**11 49 03.0**	**+1.7**
	comp=Z,3.1nm,0.9s,baz=203,slow=9.3,SNR=10.0						
SEY	**Seymchan**	**27.52**	**11**	P	**P**	**11 49 03.0**	**+1.7**
SEY				pmax	pmax		
	comp=Z,3.0nm,0.9s						
ULN	**Ulaanbaatar**	**27.72**	**305**	‖ *e*P	**P**	**11 49 04.2**	**+0.8**
ULN				pmax	pmax		
	comp=Z,5.0nm,1.2s						
BOD	**Bodaibo**	**28.12**	**329**	*e*P	**P**	**11 49 03.9**	**-2.8**
BOD				pmax	pmax		
	comp=Z,3.0nm,0.9s						
SONM	**Songino Array**	**28.15**	**305**	P	**P**	**11 49 06.7**	**-0.5**
	comp=Z,2.3nm,0.6s,baz=88,slow=6.5,SNR=2.7						
LZH	**Lanzhou**	**30.13**	**281**	*e*P	**P**	**11 49 25.2**	**+0.2**
LZH				pP	sP	11 49 36.7	+0.4
LZH				sP	pP	11 49 40.5	+7.5
LZH				*e*PP	**PnPn**	**11 50 23.5**	**+0.9**
LZH				pmax	pmax		
	comp=Z,23nm,1.1s						
LZH				pmax	pmax		
	comp=Z,75nm,5.2s						
LZH				LR	LR		
	comp=N,380nm,13.2s						
LZH				LR	LR		
	comp=E,350nm,12.9s						
LZH				LR	LR		
	comp=Z,440nm,16.7s						
TLY	**Talaya**	**30.77**	**312**	P	**P**	**11 49 29.7**	**-0.5**
	comp=Z,3.8nm,0.8s,baz=30,slow=2.2,SNR=3.5						
TLY	**Talaya**	**30.77**	**312**	*e*P	**P**	**11 49 30.3**	**0.0**
TLY				pmax	pmax		
	comp=Z,3.0nm,0.8s						
GYA	**Guiyang**	**31.04**	**261**	*e*P	**P**	**11 49 33.2**	**+0.2**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
CD2	**Chengdu**	**31.61**	**271**	P	**P**	**11 49 36.9**	**-1.1**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.6s						
BILL	**Bilibino**	**34.75**	**16**	‖ *e*P	**P**	**11 50 05.2**	**+0.4**
BILL				pmax	pmax		
	comp=Z,11nm,3.5s						
KMI	**Kunming**	**34.79**	**262**	P	**P**	**11 50 06.4**	**+0.5**
KMI				pmax	pmax		
	comp=Z,17nm,0.7s						
KMI				pmax	pmax		
	comp=Z,100nm,6.6s						
TIXI	**Tiksi**	**36.01**	**353**	P	**P**	**11 50 17.0**	**+1.4**
TIXI				pmax	pmax		
	comp=Z,2.0nm,2.5s						
WMQ	**Urumqi**	**41.12**	**298**	P	**P**	**11 51 00.0**	**+1.1**
WMQ				pP	pP	11 51 08.1	+1.1
WMQ				sP	sP	11 51 13.8	+3.5
WMQ				PP	**PnPn**	**11 52 40.4**	**+2.0**
WMQ				SS	SS	12 00 06.4	-6.7
WMQ				ScS	**ScS**	**12 00 53.0**	**-8.5**
WMQ				pmax	pmax		
	comp=Z,6.0nm,0.5s						
WMQ				pmax	pmax		
	comp=Z,78nm,5.6s						
WMQ				LR	LR		
	comp=N,31nm,19.2s						
WMQ				LR	LR		
	comp=E,43nm,23.4s						
WMQ				LR	LR		
	comp=Z,10.0nm,19.2s						
ZAA0	**Zalesovo Array**	**42.36**	**313**	*e*P	**P**	**11 51 08.4**	**-0.4**
ZALV	**Zalesovo Beam**	**42.36**	**313**	P	**P**	**11 51 08.6**	**-0.3**
	comp=Z,3.8nm,0.5s,baz=100,slow=7.2,SNR=9.9						
ZALV				pP	**sP**	**11 51 19.6**	**-0.6**
	comp=Z,2.2nm,0.3s,baz=94,slow=6.6,SNR=5.2						
NRIK	**Noril'sk**	**43.91**	**336**	P	**P**	**11 51 23.2**	**+2.0**
	comp=Z,2.1nm,0.4s,baz=86,slow=5.5,SNR=3.8						
MK01	**Makanchi Array**	**44.45**	**303**	*e*P	**P**	**11 51 25.2**	**-0.7**
MK01				*e*pP	**pP**	**11 51 33.3**	**-0.8**
MKAR	**Makanchi Array**	**44.46**	**303**	P	**P**	**11 51 25.6**	**-0.3**
	comp=Z,2.0nm,0.7s,baz=87,slow=7.5,SNR=9.0						
MKAR				pP	**sP**	**11 51 37.3**	**-0.1**
	comp=Z,1.8nm,0.6s,baz=95,slow=9.2,SNR=5.2						
KAPI	**Kappang**	**45.80**	**211**	P	**P**	**11 51 37.1**	**+0.3**
	comp=Z,8.0nm,0.5s,baz=257,slow=0.6,SNR=8.0						
KURK	**Kurchatov**	**46.34**	**309**	P	**P**	**11 51 40.4**	**-0.3**
KURK				*PP	**sP**	**11 51 51.8**	**-0.3**
KURK				pmax	pmax		
	comp=Z,12nm,0.5s						
KURK				pmax	pmax		
	comp=Z,4.0nm,0.5s						
KURK	**Kurchatov**	**46.34**	**309**	*e*P	**P**	**11 51 40.0**	**-0.7**
	comp=Z,12nm,0.7s						
KURK				pP	**sP**	**11 51 51.8**	**-0.3**
KURBB	**Kurchatov Arra**	**46.40**	**309**	P	**P**	**11 51 40.4**	**-0.8**
	comp=Z,12nm,0.5s,baz=83,slow=7.6,SNR=54						
KURBB				pP	**sP**	**11 51 51.8**	**-0.9**
	comp=Z,3.8nm,0.5s,baz=83,slow=7.6,SNR=7.2						
KDAK	**Kodiak Island**	**47.69**	**41**	P	P	11 52 07.3	+16
	comp=Z,8.3nm,0.7s,baz=279,slow=8.8,SNR=11						
KDAK	**Kodiak Island**	**47.69**	**41**	*i* P	**P**	**11 51 52.2**	**+1.0**
CAST	**Castle Rocks**	**47.87**	**34**	*e*P	**P**	**11 51 55.3**	**+2.7**
	comp=Z,30nm,2.0s						
BPAW	**Bear Paw Mtn.**	**48.38**	**33**	*e*P	**P**	**11 51 58.8**	**+2.3**
	comp=Z,25nm,2.0s						
MLY	**Manley**	**48.51**	**32**	*e*P	**P**	**11 51 59.8**	**+2.3**
	comp=Z,4.1nm,0.8s						
MLY				*e*pP	**sP**	**11 52 10.1**	**+1.2**
BATI	**Baumata**	**49.16**	**203**	P	**P**	**11 52 03.6**	**+0.6**
	comp=Z,11nm,0.5s						
WRH	**Wood River Hil**	**49.64**	**32**	*e*P	**P**	**11 52 07.8**	**+1.7**
	comp=Z,25nm,2.0s						
COLA	**College**	**49.74**	**32**	‖ *e*P	**P**	**11 52 08.5**	**+1.7**
COLA				pmax	pmax		
	comp=Z,3.0nm,0.7s						
MTN	**Manton Dam**	**49.81**	**193**	*e*P	**P**	**11 52 10.4**	**+2.6**
	comp=Z,21nm,1.1s						
TKM2	**Tokmak 2**	**49.92**	**299**	*e*P	**P**	**11 52 09.5**	**+0.7**
TKM2				pmax	pmax		
	comp=Z,4.0nm,0.6s						
TKM2	**Tokmak 2**	**49.92**	**299**	*e*P	**P**	**11 52 09.5**	**+0.7**
	comp=Z,4.5nm,0.6s						
HDA	**Harding Lake**	**50.14**	**32**	*e*P	**P**	**11 52 11.2**	**+1.3**
	comp=Z,3.4nm,0.7s						
ILAR	**Eielson Array**	**50.15**	**32**	P	**P**	**11 52 10.9**	**+1.0**
	comp=Z,3.8nm,0.7s,baz=267,slow=6.3,SNR=45						
ILAR				pP	**sP**	**11 52 22.0**	**+0.6**
	comp=Z,1.7nm,0.8s,baz=278,slow=8.1,SNR=6.1						
ILB	**Eielson Array**	**50.15**	**32**	*e*P	**P**	**11 52 11.3**	**+1.3**
IL1	**Eielson Array**	**50.15**	**32**	*e*P	**P**	**11 52 10.8**	**+0.9**
KSH	**Kashi**	**50.65**	**295**	*e*P	**P**	**11 52 17.4**	**+3.2**
KSH				*e*pP	sP	11 52 27.4	+1.6
KSH				*e*sP	pP	11 52 31.3	+8.8
KSH				*e*ScP	**ScP**	**11 57 26.6**	**+0.9**
KSH				PcS	**PcS**	**11 57 30.5**	**+1.6**
KSH				S	**S**	**11 59 29.6**	**+2.0**
KSH	**Kashi**	**50.65**	**295**	SS	**SS**	**12 03 00.7**	**-1.0**
KSH				pmax	pmax		
	comp=Z,120nm,7.0s						
KSH				LR	LR		
	comp=N,99nm,5.3s						
KSH				LR	LR		
	comp=E,59nm,5.3s						
KSH				LR	LR		
	comp=Z,170nm,8.6s						
AAK	**Ala-Archa**	**50.78**	**299**	P	**P**	**11 52 14.6**	**-0.7**
	comp=Z,1.6nm,0.5s,baz=84,slow=6.2,SNR=4.6						
AAK	**Ala-Archa**	**50.78**	**299**	‖ *e*P	**P**	**11 52 15.9**	**+0.6**
AAK				pmax	pmax		
	comp=Z,7.0nm,1.2s						
BVAR	**Borovoye Array**	**51.02**	**313**	P	**P**	**11 52 16.2**	**-0.5**
	comp=Z,0.7nm,0.3s,baz=69,slow=8.1,SNR=7.9						
BRVK	**Borovoye**	**51.08**	**313**	*c iP*	**P**	**11 52 17.1**	**0.0**
BRVK				pmax	pmax		
	comp=Z,3.0nm,1.0s						
PSI	**Prapat**	**51.36**	**240**	LR	LR	12 15 09.5	
	comp=Z,1μm,18.3s,slow=37						
DOT	**Dot Lake**	**51.45**	**33**	*e*P	**P**	**11 52 21.2**	**+1.4**
	comp=Z,8.0nm,0.8s						
EGAK	**Eagle**	**52.60**	**32**	*e*P	**P**	**11 52 29.7**	**+1.4**
	comp=Z,18nm,1.9s						
LEM	**Lembang**	**53.30**	**223**	P	P	11 52 39.5	+5.3
	comp=Z,23nm,0.6s,baz=347,slow=11,SNR=6.2						
GSI	**Gunungsitoli**	**53.37**	**239**	*e*P	**P**	**11 52 34.7**	**+0.1**
	comp=Z,36nm,0.6s						
KKAR	**Karatay Array**	**53.44**	**301**	*e*P	**P**	**11 52 35.2**	**+0.3**
KKAR	**Karatay Array**	**53.44**	**301**	*e*P	**P**	**11 52 35.2**	**+0.3**
INK	**Inuvik**	**55.07**	**27**	P	**P**	**11 52 47.8**	**+1.6**
	comp=Z,1.6nm,0.5s,baz=294,slow=7.0,SNR=20						
INK				pP	**sP**	**11 52 58.1**	**+0.3**
	comp=Z,1.7nm,0.8s,baz=281,slow=10,SNR=5.1						
FITZ	**Fitzroy Crossi**	**56.10**	**198**	P	**P**	**11 52 54.8**	**+0.6**
	comp=Z,1.8nm,0.5s,baz=342,slow=5.9,SNR=10						
WRAB	**Tennant Creek**	**56.31**	**188**	*cei*P	**P**	**11 52 56.0**	**+0.3**
WRAB				pmax	pmax		
	comp=Z,21nm,1.7s						
WRA	**Warramunga Arr**	**56.32**	**188**	P	**P**	**11 52 55.3**	**-0.5**
	comp=Z,3.2nm,0.6s,baz=2.5,slow=7.4,SNR=38						
ARU	**Arti**	**56.87**	**319**	P	**P**	**11 53 00.9**	**+1.6**
	comp=Z,2.0nm,0.4s,baz=83,slow=9.5,SNR=4.8						
ARU	**Arti**	**56.87**	**319**	*d iP*	**P**	**11 52 58.6**	**-0.7**
ARU						11 53 53.8	
ARU						11 55 01.3	
ARU				S	**S**	**12 00 51.4**	**+0.4**
ARU				SS	**SS**	**12 04 37.3**	**-1.5**
ARU				pmax	pmax		
	comp=Z,4.0nm,1.0s						
ABKAR	**Akbulak array**	**58.36**	**310**	*e*P	**P**	**11 53 09.5**	**-0.4**
AKTO	**Aktyubinsk**	**59.12**	**312**	P	**P**	**11 53 15.1**	**-0.1**
	comp=Z,0.5nm,0.3s,baz=86,slow=5.8,SNR=2.9						
AKTO				pP	**sP**	**11 53 26.4**	**-0.4**
	comp=Z,0.8nm,0.2s,baz=62,slow=9.9,SNR=2.0						
AS01	**Alice Springs**	**60.04**	**188**	*e*P	**P**	**11 53 21.3**	**-0.5**
AS01				*e*pP	**sP**	**11 53 35.1**	**+1.7**
AS31	**Alice Springs**	**60.05**	**188**	*e*P	**P**	**11 53 21.6**	**-0.3**
	comp=Z,1.2nm,0.6s						
ASAR	**Alice Springs**	**60.05**	**188**	P	**P**	**11 53 21.5**	**-0.3**
	comp=Z,2.0nm,0.7s,baz=14,slow=6.5,SNR=25						
YKA	**Yellowknife Ar**	**64.48**	**30**	P	**P**	**11 53 51.8**	**+0.8**
	comp=Z,0.6nm,0.7s,baz=302,slow=6.6,SNR=14						
YKA				pP	**sP**	**11 54 02.3**	**-0.4**
	comp=Z,1.2nm,0.8s,baz=302,slow=6.6,SNR=13						
ARCES	**ARCESS Array B**	**64.66**	**339**	P	**P**	**11 53 52.3**	**+0.2**
	comp=Z,1.5nm,0.9s,baz=47,slow=8.9,SNR=3.8						
ARCES				pP	**sP**	**11 54 04.3**	**+0.5**
	comp=Z,3.1nm,1.0s,baz=46,slow=6.9,SNR=2.0						
STKA	**Stephens Creek**	**67.82**	**180**	P	**P**	**11 54 13.3**	**+0.6**
	comp=Z,1.8nm,0.6s,baz=346,slow=17,SNR=5.1						
OBN	**Obninsk**	**68.64**	**323**	*e*P	**P**	**11 54 18.1**	**+0.4**
OBN				pmax	pmax		
	comp=Z,4.0nm,0.9s						
FINES	**FINESS Array B**	**69.43**	**332**	P	**P**	**11 54 22.9**	**+0.3**
	comp=Z,1.1nm,0.7s,baz=73,slow=6.6,SNR=4.0						
FINES	**FINESS Array B**	**69.43**	**332**	*i* P	**P**	**11 54 22.3**	**-0.3**
FINES				pmax	pmax		
	comp=Z,1.0nm,0.7s						
KBZ	**Khabaz**	**71.33**	**311**	P	**P**	**11 54 33.9**	**-0.6**
	comp=Z,0.8nm,0.6s,baz=96,slow=3.8,SNR=5.1						
KBZ	**Khabaz**	**71.33**	**311**	P	**P**	**11 54 33.9**	**-0.6**
KBZ				pmax	pmax		
	comp=Z,2.0nm,0.9s						
KIV	**Kislovodsk**	**71.34**	**311**	*e*P	**P**	**11 54 35.1**	**+0.4**
KIV				pmax	pmax		
	comp=Z,7.0nm,0.9s						
NWAO	**Narrogin (SRO)**	**72.46**	**201**	P	**P**	**11 54 41.0**	**-0.2**
	comp=Z,5.7nm,0.9s,baz=257,slow=6.9,SNR=3.8						
LRM	**Limekiln Ridge**	**74.72**	**44**	*e*P	**P**	**11 54 56.6**	**+1.8**
AKASG	**Malin Array Be**	**74.84**	**322**	P	**P**	**11 54 54.7**	**-0.4**
	comp=Z,1.3nm,0.4s,baz=45,slow=5.9,SNR=5.2						
NB2	**NORSAR Subarra**	**74.84**	**337**	P	**P**	**11 54 54.6**	**-0.4**
	comp=Z,1.2nm,0.6s,baz=40,slow=6.2						
NOA	**NORSAR Array B**	**74.84**	**337**	P	**P**	**11 54 54.5**	**-0.4**
	comp=Z,0.8nm,0.5s,baz=41,slow=5.8,SNR=4.2						
NOA				pP	**sP**	**11 55 06.3**	**-0.4**
	comp=Z,1.2nm,0.7s,baz=40,slow=5.8,SNR=4.6						
KIEV	**Kiev**	**74.85**	**322**	‖ *e*P	**P**	**11 54 54.7**	**-0.4**
KIEV				pmax	pmax		
	comp=Z,6.0nm,1.2s						
NVAR	**Mina Array Bea**	**75.48**	**53**	P	**P**	**11 55 00.9**	**+1.5**
	comp=Z,0.8nm,0.6s,baz=286,slow=5.7,SNR=6.4						
NVAR				pP	**PcP**	**11 55 12.1**	**-0.3**
	comp=Z,1.8nm,0.7s,baz=288,slow=5.4,SNR=9.6						
NVAR				LR	LR	12 23 30.7	
	comp=Z,39nm,20.3s,baz=222,slow=32						
DUG	**Dugway, Tooele**	**77.89**	**49**	*e*pP	pP	11 55 26.8	+5.3
BW06	**Boulder Array**	**78.23**	**45**	*e*P	**P**	**11 55 15.6**	**+0.9**
PDAR	**Pinedale Array**	**78.23**	**45**	P	**P**	**11 55 15.9**	**+1.1**
	comp=Z,0.6nm,0.5s,baz=297,slow=1.1,SNR=9.4						
PDAR				pP	**sP**	**11 55 27.2**	**+0.6**
	comp=Z,0.6nm,0.5s,baz=261,slow=1.6,SNR=5.4						
PV10	**Paradox Valley**	**81.31**	**48**	*e*P	**P**	**11 55 33.8**	**+2.2**
GERES	**GERESS Array B**	**83.30**	**328**	P	**P**	**11 55 40.9**	**-0.7**
	comp=Z,0.5nm,0.4s,baz=28,slow=6.3,SNR=4.1						
TXAR	**Lajitas Array**	**90.62**	**52**	P	**P**	**11 56 18.9**	**+1.3**
	comp=Z,0.2nm,0.6s,baz=288,slow=2.9,SNR=4.0						
TXAR				pP	**sP**	**11 56 28.6**	**-0.8**
	comp=Z,0.5nm,0.7s,baz=325,slow=6.1,SNR=5.6						
TORD	**Torodi Ar. Bea**	**117.80**	**315**	PKP	**PKPdf**	**12 02 01.2**	**-0.5**
	comp=Z,0.4nm,0.7s,baz=21,slow=2.0,SNR=2.6						
LPAZ	**La Paz**	**147.12**	**60**	PKPbc	**PKPab**	**12 03 00.3**	**-0.3**
	comp=Z,0.5nm,0.5s,baz=293,slow=8.4,SNR=3.1						
LPAZ				pPKPbc	**pPKPbc**	**12 03 09.5**	**+1.6**
	comp=Z,2.0nm,0.7s,baz=346,slow=5.6,SNR=5.7						

JMA 04 11:45:31.9±0.1, 38°.12N×141°.97E, h17km±1km, M3.6, Near east coast of eastern Honshu

| Code | Station Name | Δ° | AZ° | Ph

GMJI	**Gumukmas**	**4.90**	**92**	P	**Pn**	**12 10 29.7**	**+0.8**
JAGI	**Jajag, Banyuwa**	**5.61**	**94**	P	**Pn**	**12 10 39.6**	**+1.0**
FITZ	**Fitzroy Crossi**	**19.41**	**122**	P	**P**	**12 13 38.5**	**+0.8**
0.1nm,0.3s,baz=283,slow=18,SNR=3.5							
WRA	**Warramunga Arr**	**27.64**	**118**	P	**P**	**12 14 58.3**	**0.0**
0.4nm,0.8s,baz=291,slow=12,SNR=5.5							
ASAR	**Alice Springs**	**28.84**	**125**	P	**P**	**12 15 09.6**	**+0.7**
0.2nm,0.3s,baz=308,slow=9.7,SNR=4.6							
STKA	**Stephens Creek**	**38.80**	**132**	P	**P**	**12 16 35.5**	**+0.5**
3.4nm,0.5s,baz=312,slow=7.3,SNR=22							
JCJ	**Chichijima**	**47.86**	**42**	LR	LR	12 35 47.3	
comp=Z,61nm,21.8s,baz=131,slow=34							
MKAR	**Makanchi Array**	**59.44**	**339**	P	**P**	**12 19 10.2**	**-2.1**
0.2nm,0.4s,baz=150,slow=8.0,SNR=2.4							

NIED ***04*** *12:12:00, 37.°40N×142.°30E, h5km, Mw3.4 Best double couple: M0 1.66000×10^14 NP1:φs 155.00000°, δ45.00000°, λ-69.00000°. NP2:φs 307.00000°, δ48.00000°, λ-109.00000°.*

JMA 04 12:12:16.8±0.3, 37.°38N×142.°28E, h8km±4km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.12**	**270**	P	Pg	12 12 37.8	-0.5
JFK				S	Sg	12 12 53.0	+0.2
JMM	**Marumori**	**1.28**	**293**	P	Pn	12 12 40.3	-0.6
JMM				S	Sg	12 12 57.9	0.0
JIO	**Ouri**	**1.30**	**326**	P	Pn	12 12 40.6	-0.7
JFT	**Otama**	**1.55**	**276**	P	Pn	12 12 45.1	+0.3
JFT				S	Sb	12 13 05.9	+0.3
JOU	**Okura**	**1.61**	**308**	P	Pn	12 12 46.2	+0.6
MAT	**Matsushiro**	**3.37**	**257**	P	Pn	12 13 12.7	+3.0
MAT				*e*S	Sb	12 13 57.0	-0.9

NIED ***04*** *12:14:00, 37.°40N×142.°30E, h5km, Mw3.7 Best double couple: M0 3.65000×10^14 NP1:φs 308.00000°, δ40.00000°, λ-107.00000°. NP2:φs 150.00000°, δ53.00000°, λ-76.00000°.*
ISCJB ***04*** *12:14:18.0±1.0, 37.°27N±0.°06×142.°4E±0.°1, h21km, mb3.7/4, Error ellipse: s-maj=13.7km s-min=8.3km az=6.8*
IDC ***04*** *12:14:17.5±1.3, 37.°22N×142.°53E, h0km, mb3.7/4, mb1 3.7/7, mb1mx3.5/44, mbtmp3.6/7, ML3.2/3, MS2.6/2, Ms1 2.6/2, ms1mx2.3/47, Error ellipse: s-maj=39.8km s-min=21.0km az=97.0*
JMA ***04*** *12:14:18.2±0.3, 37.°35N×142.°28E, h4km±3km, M3.6*

ISC 04 12:14:20.8±1.4, 37.°35N±0.°08×142.°3E±0.°2, h21km, n14, σ1§60/15, mb3.8/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.11**	**271**	P	**Pn**	**12 14 39.6**	**-1.4**
ONAJ	**Iwakimizuishiy**	**1.19**	**259**	P	**Pn**	**12 14 41.3**	**-1.0**
JMM	**Marumori**	**1.28**	**294**	P	**Pn**	**12 14 42.1**	**-1.2**
JIO	**Ouri**	**1.32**	**327**	P	**Pn**	**12 14 42.6**	**-1.3**
JFT	**Otama**	**1.54**	**277**	P	**Pn**	**12 14 46.9**	**-0.1**
JOU	**Okura**	**1.62**	**309**	P	**Pn**	**12 14 47.8**	**-0.3**
MJAR	**Matsushiro Arr**	**3.34**	**257**	Pn	**Pn**	**12 15 14.2**	**+2.4**
0.6nm,0.3s,baz=84,slow=16,SNR=6.4							
MAT	**Matsushiro**	**3.35**	**257**	P	**Pn**	**12 15 14.0**	**+2.1**
JHJ	**Hachijo jima 2**	**4.68**	**206**	Pn	**Pn**	**12 15 30.1**	**-0.1**
8.1nm,0.3s,baz=121,slow=22,SNR=4.2							
JHJ				Sn	**Sn**	**12 16 21.4**	**-2.5**
14nm,0.3s,baz=78,slow=23,SNR=4.1							
JHJ				LR	LR	12 16 48.3	
comp=Z,51nm,19.9s,baz=77,slow=32							
ASAJ	**Asahikawa**	**6.76**	**2**	Pn	**Pn**	**12 15 58.3**	**-0.5**
0.4nm,0.3s,baz=216,slow=12,SNR=3.7							
ASAJ				LR	LR	12 18 48.4	
comp=Z,68nm,19.4s,baz=146,slow=39							
SEY	**Seymchan**	**26.36**	**10**	P	**P**	**12 19 57.2**	**+2.1**
0.6nm,0.3s,baz=201,slow=16,SNR=3.9							
MKAR	**Makanchi Array**	**44.53**	**302**	P	**P**	**12 22 31.9**	**+1.2**
0.2nm,0.5s,baz=80,slow=9.0,SNR=3.7							
WRA	**Warramunga Arr**	**57.47**	**189**	P	**P**	**12 24 07.2**	**-1.1**
0.9nm,0.9s,baz=7.0,slow=6.9,SNR=4.6							
ASAR	**Alice Springs**	**61.20**	**189**	P	**P**	**12 24 33.2**	**-0.8**
0.3nm,0.2s,baz=0.0,slow=7.4,SNR=3.0							

IDC ***04*** *12:15:31.1±2.4, 7.°27S×155.°16E, h189km±23km, mb3.5/5, mb1 3.6/9, mb1mx3.4/41, mbtmp4.1/9, MS3.3/2, Ms1 3.3/2, ms1mx2.8/33, Error ellipse: s-maj=25.7km s-min=19.0km az=170.0*

ISC 04 12:15:15.0±1.2, 6.°9S±0.°2×155.°11E±0.°10, h31km, n12, σ2§04/11, mb3.7/5, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	**Honiara**	**5.40**	**118**	P	**Pb**	**12 16 49.1**	**+0.6**
19nm,0.3s,baz=276,slow=10,SNR=3.7							
HNR	**Honiara**	**5.40**	**118**	P	Pn	12 16 39.0	+5.6
HNR				S	**Sn**	**12 17 34.0**	**-0.5**
PMG	**Port Moresby**	**8.25**	**252**	P	Pn	12 17 25.2	+13
3.2nm,0.3s,baz=41,slow=9.2,SNR=9.9							
PMG				LR	LR	12 20 27.5	
comp=Z,85nm,19.8s,baz=151,slow=36							
CTA	**Charters Tower**	**15.66**	**212**	P	**P**	**12 18 58.6**	**+1.3**
0.3nm,0.3s,baz=22,slow=13,SNR=3.1							
DZM	**Mont Dzumac**	**18.61**	**145**	P	**P**	**12 19 30.3**	**+0.2**
0.3nm,0.3s,baz=302,slow=19,SNR=3.5							
WRA	**Warramunga Arr**	**23.95**	**235**	P	**P**	**12 20 27.9**	**+1.2**
0.8nm,0.4s,baz=61,slow=9.5,SNR=23							
ASAR	**Alice Springs**	**26.31**	**228**	P	**P**	**12 20 47.8**	**-0.4**
0.7nm,0.3s,baz=59,slow=10,SNR=14							
ASAR				PcP	**PcP**	**12 24 10.3**	**-3.7**
0.1nm,0.3s,baz=63,slow=3.1,SNR=4.7							
STKA	**Stephens Creek**	**27.85**	**205**	P	**P**	**12 20 59.7**	**-2.1**
0.9nm,0.7s,baz=32,slow=16,SNR=2.6							
FITZ	**Fitzroy Crossi**	**30.79**	**246**	P	**P**	**12 21 29.0**	**+0.9**
3.6nm,0.6s,baz=79,slow=7.2,SNR=14							
KLR	**Kul'dur**	**59.53**	**342**	LR	LR	12 50 04.3	
comp=Z,54nm,20.0s,baz=120,slow=35							
MKAR	**Makanchi Array**	**83.43**	**319**	P	**P**	**12 27 39.0**	**-0.5**
1.8nm,0.7s,baz=106,slow=5.5,SNR=14							
TORD	**Torodi Ar. Bea**	**153.12**	**285**	PKPbc	**PKPdf**	**12 35 06.5**	**+3.2**
0.3nm,0.5s,baz=68,slow=2.6,SNR=3.5							

ISCJB ***04*** *12:29:16.7±0.7, 32.°02S±0.°06×138.°00E±0.°06, h10km, Error ellipse: s-maj=9.7km s-min=6.0km az=36.8*
AUST ***04*** *12:29:17.9±0.8, 32.°27S×137.°93E, h0km±5km, Error ellipse: s-maj=4.7km s-min=3.3km az=171.0*
IDC ***04*** *12:29:21.1±4.8, 31.°82S×138.°11E, h0km, mb1 3.7/4, mb1mx3.5/33, mbtmp3.6/4, ML3.6/4, Error ellipse: s-maj=64.5km s-min=16.9km az=28.0*

ISC 04 12:29:17.7±1.0, 32.°19S±0.°08×137.°96E±0.°05, h10km, n11, σ1§98/15, Near coast of South Australia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HTT	**Hallett**	**1.48**	**147**	P	**Pn**	**12 29 44.6**	**+0.2**
baz=1.4,SNR=177							
BBOO	**Buckleboo**	**1.72**	**249**	P	**Pn**	**12 29 49.3**	**+1.7**
baz=1.7,SNR=404							
STKA	**Stephens Creek**	**3.11**	**85**	Pn	**Pn**	**12 30 09.3**	**+2.6**
3.7nm,0.3s,baz=248,slow=12,SNR=29							
STKA				Pg	**Pg**	**12 30 16.1**	**-1.0**
12nm,0.3s,baz=254,slow=14,SNR=79							
STKA				Sn	**Sn**	**12 30 45.2**	**+1.2**
8.0nm,0.3s,baz=270,slow=16,SNR=3.8							
STKA				Lg	Lg	12 30 55.1	
20nm,0.3s,baz=351,slow=22,SNR=15							
STKA	**Stephens Creek**	**3.11**	**85**	P	**Pn**	**12 30 09.4**	**+2.6**
baz=3.1,SNR=33							
ARPS	**Mount Arapiles**	**5.58**	**146**	P	**Pn**	**12 30 40.8**	**+0.2**
baz=5.5,SNR=14							
CMSA	**Cobar Meteorol**	**6.61**	**86**	P	**Pn**	**12 30 56.6**	**+1.6**
baz=6.6							
ASAR	**Alice Springs**	**9.22**	**336**	Pn	**Pn**	**12 31 33.3**	**+2.6**
0.6nm,0.3s,baz=158,slow=13,SNR=54							
ASAR				Sn	**Sn**	**12 33 13.8**	**-0.9**
0.9nm,0.3s,baz=156,slow=23,SNR=8.4							
WRKA	**Warakurna**	**11.08**	**308**	P	**Pn**	**12 31 57.4**	**+1.1**
baz=11							
WRA	**Warramunga Arr**	**12.62**	**344**	Pn	**Pn**	**12 32 17.7**	**+0.3**
0.4nm,0.3s,baz=169,slow=11,SNR=27							
WRA				Sn	**Sn**	**12 34 34.9**	**-3.2**
0.3nm,0.3s,baz=170,slow=24,SNR=6.2							
CTA	**Charters Tower**	**14.16**	**34**	Pn	**Pn**	**12 32 36.0**	**-2.4**
0.2nm,0.3s,baz=248,slow=19,SNR=2.3							

FITZ	**Fitzroy Crossi**	**17.90**	**319**	P	**Pn**	**12 33 26.5**	**-0.3**
0.2nm,0.3s,baz=151,slow=1.2,SNR=7.0							

ISCJB ***04*** *12:31:37.0±0.8, 7.°88S±0.°04×107.°23E±0.°04, h32km±6km, mb4.4/1, Error ellipse: s-maj=7.4km s-min=5.7km az=24.0*
NEIC ***04*** *12:31:38.4±0.7, 7.°83S×107.°20E, h35km, mb4.4/1, Error ellipse: s-maj=12.2km s-min=10.7km az=164.0*
NEIC Felt [III] at Pangalengan.
DJA ***04*** *12:31:38.6±0.5, 8.°S±4.°×10.°7E±.°, h25km±4km, M4.1/10, MLv4.1/10*

ISC 04 12:31:37.3±1.4, 7.°86S±0.°05×107.°27E±0.°04, h27km±13km, n16, σ1§10/23, Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CNJI	**Cibinong**	**0.56**	**346**	P	**Pn**	**12 31 49.5**	**-0.1**
CNJI				S	**Sb**	**12 31 56.1**	**-0.3**
CISI	**Cisompet, Garu**	**0.62**	**61**	P	**Pn**	**12 31 50.4**	**-0.1**
CISI				S	**Sn**	**12 31 59.1**	**-0.5**
CISI	**Cisompet, Garu**	**0.62**	**61**	*e*Pg	**Pn**	**12 31 50.4**	**-0.1**
CISI				*e*Sg	**Sb**	**12 31 58.2**	**0.0**
LEM	**Lembang**	**1.09**	**19**	P	**Pn**	**12 31 56.8**	**-0.1**
LEM				S	**Sn**	**12 32 10.2**	**-0.9**
SKJI	**Sukabumi**	**1.10**	**320**	P	**Pn**	**12 31 57.3**	**+0.3**
SKJI				S	**Sn**	**12 32 11.2**	**-0.1**
CMJI	**Cimerak**	**1.18**	**86**	P	**Pb**	**12 31 58.7**	**-0.2**
CMJI				S	**Sb**	**12 32 14.0**	**+0.2**
CGJI	**Cibinong**	**1.99**	**308**	P	**Pn**	**12 32 09.7**	**+0.5**
CGJI				S	**Sn**	**12 32 33.2**	**-0.1**
SBJI	**Serang**	**2.06**	**327**	P	**Pn**	**12 32 10.2**	**0.0**
XMIS	**Christmas Isla**	**3.05**	**211**	*e*Pn	**Pn**	**12 32 24.0**	**+0.2**
XMIS				*e*Sn	**Sn**	**12 32 57.9**	**-1.6**
PWJI	**Pagerwojo**	**4.50**	**92**	P	**Pn**	**12 32 46.5**	**+2.8**
MNAI	**Manna**	**5.52**	**309**	Pn	**Pn**	**12 32 57.1**	**-0.7**
JAGI	**Jajag, Banyuwa**	**6.84**	**96**	*e*Pn	**Pn**	**12 33 17.8**	**+1.8**
JAGI				*e*Sn	**Sn**	**12 34 30.6**	**-2.6**
ABJI	**Asem Bagus**	**6.91**	**90**	P	Pn	12 33 24.4	+7.6
KSM	**Kuching**	**9.76**	**18**	*e*Pn	**Pn**	**12 33 56.5**	**+0.6**
COCO	**West Island**	**11.13**	**246**	Pn	Pn	12 34 20.4	+5.6
WRAB	**Tennant Creek**	**28.85**	**117**	*e*P	**P**	**12 37 34.6**	**+0.8**
10nm,1.3s							

NEIC ***04*** *12:39:43.5, 38.°28N×22.°43E, h6km, ML4.0(THE), After THE.*
PDG ***04*** *12:39:43.4±0.6, 38.°31N×22.°47E, h11km, ML3.6/9, Error ellipse: s-maj=0.5km s-min=0.7km az=0.0*
ISCJB ***04*** *12:39:43.3±0.3, 38.°29N±0.°01×22.°40E±0.°01, h12km±2km, mb3.8/15, MS3.1/2, Error ellipse: s-maj=2.1km s-min=1.6km az=32.3*
ATH ***04*** *12:39:43.2, 38.°29N×22.°41E, h14km±1km, ML3.8/28, Error ellipse: s-maj=1.2km s-min=0.5km az=169.0*
CSEM ***04*** *12:39:43.4±0.1, 38.°28N×22.°44E, h5km, ML3.8, Error ellipse: s-maj=1.7km s-min=1.4km az=22.0*
THE ***04*** *12:39:43.5, 38.°28N×22.°43E, h6km, ML4.0/27, Error ellipse: s-maj=0.9km s-min=0.4km az=202.0*
IDC ***04*** *12:39:45.3±3.6, 38.°35N×22.°40E, h21km±22km, mb3.7/16, mb1 3.9/21, mb1mx3.7/53, mbtmp3.8/21, ML3.6/5, MS3.1/6, Ms1 3.1/6, ms1mx2.7/60, Error ellipse: s-maj=15.0km s-min=13.7km az=131.0*

ISC 04 12:39:43.6±0.7, 38.°27N±0.°01×22.°44E±0.°01, h13km±4km, n329, σ1§02/466, mb3.8/15, 17C-14D, Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DSF	**Desfina**	**0.16**	**27**	P	**Pg**	**12 39 47.1**	**-0.4**
DSF				S	**Sg**	**12 39 50.1**	**0.0**
DSF	**Desfina**	**0.16**	**27**	P	**Pg**	**12 39 47.2**	**-0.2**
DSF				S	**Sg**	**12 39 50.1**	**0.0**
DSF	**Desfina**	**0.16**	**27**	P	**Pg**	**12 39 47.2**	**-0.2**
DSF				S	**Sg**	**12 39 50.0**	**-0.2**
DSF				AML	AML	12 39 50.2	
DSF				AML	AML	12 39 51.6	
comp=E,82476μm,0.2s							
DSF	**Desfina**	**0.16**	**27**	P	**Pg**	**12 39 47.1**	**-0.4**
DSF				S	**Sg**	**12 39 50.1**	**0.0**
KALE	**Kalithea**	**0.26**	**298**	P	**Pg**	**12 39 48.3**	**-0.9**
KALE				S	**Sg**	**12 39 52.2**	**-0.7**
KALE	**Kalithea**	**0.26**	**298**	P	**Pg**	**12 39 48.4**	**-0.7**
KALE				S	**Sg**	**12 39 52.1**	**-0.8**
KALE	**Kalithea**	**0.26**	**298**	P	**Pg**	**12 39 48.4**	**-0.7**
KALE				S	**Sg**	**12 39 52.6**	**-0.3**
KALE				AML	AML	12 39 52.8	
comp=N,70710μm,0.2s							
KALE				AML	AML	12 39 52.8	
comp=E,69213μm,0.4s							
KALE	**Kalithea**	**0.26**	**298**	P	**Pg**	**12 39 48.3**	**-0.9**
KALE				S	**Sg**	**12 39 52.2**	**-0.7**
THAL	**Thalero**	**0.29**	**142**	P	**Pb**	**12 39 50.1**	**-0.7**
THAL				S	**Sb**	**12 39 54.4**	**-1.2**
THAL	**Thalero**	**0.29**	**142**	P	**Pb**	**12 39 50.0**	**-0.7**
THAL				S	**Sb**	**12 39 54.3**	**-1.3**
THAL	**Thalero**	**0.29**	**142**	P	**Pb**	**12 39 50.4**	**-0.4**
THAL				S	**Sb**	**12 39 54.4**	**-1.2**
THAL				AML	AML	12 39 55.0	
THAL				AML	AML	12 39 56.8	
KLV	**Kalavryta, Ach**	**0.32**	**225**	P	**Pg**	**12 39 49.5**	**-0.7**
KLV				S	**Sg**	**12 39 53.7**	**-0.8**
KLV	**Kalavryta, Ach**	**0.32**	**225**	P	**Pg**	**12 39 49.5**	**-0.7**
KLV				S	**Sg**	**12 39 53.7**	**-0.8**
KLV	**Kalavryta, Ach**	**0.32**	**225**	P	**Pg**	**12 39 49.2**	**-0.9**
KLV				S	**Sg**	**12 39 53.8**	**-0.8**
KLV				AML	AML	12 39 54.3	
comp=E,12163μm,0.4s							
KLV				AML	AML	12 39 54.4	
comp=N,12257μm,0.3s							
KLV	**Kalavryta, Ach**	**0.32**	**225**	P	**Pg**	**12 39 49.5**	**-0.7**
KLV				S	**Sg**	**12 39 53.7**	**-0.8**
SERG	**Sergoula**	**0.33**	**296**	P	**Pg**	**12 39 49.4**	**-1.0**
SERG				S	**Sg**	**12 39 54.3**	**-0.6**
LAKA	**Lakka**	**0.36**	**265**	P	**Pg**	**12 39 50.2**	**-0.7**
LAKA	**Lakka**	**0.36**	**265**	P	**Pg**	**12 39 50.2**	**-0.7**
LAKA				S	**Sg**	**12 39 54.7**	**-1.1**
LAKA	**Lakka**	**0.36**	**265**	P	**Pg**	**12 39 50.5**	**-0.4**
LAKA				S	**Sg**	**12 39 54.9**	**-0.8**
LAKA				AML	AML	12 39 55.9	
comp=E,7551μm,0.6s							
LAKA				AML	AML	12 39 58.6	
comp=N,10722μm,0.4s							
LAKA	**Lakka**	**0.36**	**265**	P	**Pg**	**12 39 50.2**	**-0.7**
EFP	**Efpalio**	**0.44**	**291**	P	**Pg**	**12 39 51.5**	**-0.9**
EFP				S	**Sg**	**12 39 58.0**	**-0.4**
EFP	**Efpalio**	**0.44**	**291**	P	**Pg**	**12 39 51.5**	**-0.9**
EFP				S	**Sg**	**12 39 58.0**	**-0.4**
EFP	**Efpalio**	**0.44**	**291**	P	**Pg**	**12 39 51.1**	**-1.3**
EFP				S	**Sg**	**12 39 58.0**	**-0.4**
EFP				AML	AML	12 39 58.8	
comp=E,36075μm,0.4s							
EFP				AML	AML	12 40 00.1	
comp=N,25646μm,0.4s							
LTK	**Loutraki**	**0.49**	**120**	P	**Pb**	**12 39 53.4**	**-0.7**
LTK				S	**Sg**	**12 39 59.2**	**-0.5**
LTK	**Loutraki**	**0.49**	**120**	P	**Pb**	**12 39 53.4**	**-0.7**
LTK				S	**Sb**	**12 40 00.6**	**-0.6**
LTK	**Loutraki**	**0.49**	**120**	P	**Pb**	**12 39 53.7**	**-0.4**
LTK				S	**Sb**	**12 40 00.6**	**-0.6**
LTK				AML	AML	12 40 07.9	
comp=N,18738μm,0.3s							
LTK				AML	AML	12 40 09.9	
comp=E,13013μm,0.4s							
LTK	**Loutraki**	**0.49**	**120**	P	**Pb**	**12 39 53.4**	**-0.7**
LTK				S	**Sg**	**12 39 59.2**	**-0.5**
UPR	**University Cam**	**0.51**	**272**	P	**Pg**	**12 39 53.2**	**-0.5**
UPR	**University Cam**	**0.51**	**272**	P	**Pg**	**12 39 53.1**	**-0.6**
UPR	**University Cam**	**0.51**	**272**	P	**Pg**	**12 39 53.5**	**-0.1**
ANX	**Ano Chora**	**0.52**	**309**	P	**Pg**	**12 39 52.6**	**-1.2**
ANX				S	**Sg**	**12 40 00.7**	**0.0**
ANX	**Ano Chora**	**0.52**	**309**	P	**Pg**	**12 39 52.7**	**-1.1**
ANX				S	**Sg**	**12 40 00.5**	**-0.2**
LKR	**Lokris**	**0.58**	**49**	P	**Pg**	**12 39 54.3**	**-0.8**
LKR				S	**Sb**	**12 40 03.9**	**-0.1**
LKR	**Lokris**	**0.58**	**49**	P	**Pg**	**12 39 54.3**	**-0.8**
LKR				S	**Sb**	**12 40 03.5**	**-0.4**
LKR	**Lokris**	**0.58**	**49**	P	**Pg**	**12 39 54.2**	**-0.8**
LKR				S	**Sb**	**12 40 03.5**	**-0.4**
LKR				AML	AML	12 40 07.0	
comp=E,55819μm,0.2s							
LKR				AML	AML	12 40 07.4	
comp=N,45022μm,0.2s							
LKR	**Lokris**	**0.58**	**49**	P	**Pg**	**12 39 54.3**	**-0.8**
DRO	**Drossia**	**0.65**	**241**	P	**Pg**	**12 39 55.6**	**-0.8**
DRO	**Drossia**	**0.65**	**241**	P	**Pg**	**12 39 55.7**	**-0.7**
DRO				S	**Sg**	**12 40 05.0**	**0.0**
DRO	**Drossia**	**0.65**	**241**	P	**Pg**	**12 39 55.7**	**-0.7**
DRO				S	**Sg**	**12 40 05.0**	**0.0**
DRO				AML	AML	12 40 09.6	
comp=N,15430μm,0.3s							
DRO				AML	AML	12 40 12.9	
comp=E,26042μm,0.4s							
VIL2	**Platees**	**0.66**	**95**	P	**Pn**	**12 39 57.8**	**-1.0**
VIL2				S	**Sn**	**12 40 07.8**	**-1.2**
VIL2				AML	AML	12 40 11.2	
comp=E,31060μm,0.3s							
VIL2				AML	AML	12 40 11.6	
comp=N,29224μm,0.4s							
VILL	**Villia**	**0.70**	**98**	P	**Pb**	**12 39 57.6**	**-0.1**
VILL				S	**Sb**	**12 40 07.9**	**+0.6**
VILL	**Villia**	**0.70**	**98**	P	**Pb**	**12 39 57.6**	**-0.1**
VILL				S	**Sb**	**12 40 07.8**	**+0.5**
AGG	**Agios Georgios**	**0.76**	**354**	PG	**Pg**	**12 39 56.8**	**-1.4**
AGG	**Agios Georgios**	**0.76**	**354**	P	**Pg**	**12 39 56.9**	**-1.4**
AGG				S	**Sg**	**12 40 08.4**	**+0.2**
AGG	**Agios Georgios**	**0.76**	**354**	P	**Pg**	**12 39 56.9**	**-1.4**
AGG				S	**Sg**	**12 40 07.6**	**-0.7**
AGG	**Agios Georgios**	**0.76**	**354**	P	**Pg**	**12 39 56.3**	**-2.0**
AGG				S	**Sg**	**12 40 07.5**	**-0.7**
AGG				AML	AML	12 40 09.2	
comp=E,47522μm,0.6s							
AGG				AML	AML	12 40 11.3	
comp=N,43836μm,0.3s							
AGG	**Agios Georgios**	**0.76**	**354**	P	**Pg**	**12 39 56.9**	**-1.4**
RLS	**Riolos of Patr**	**0.79**	**255**	P	**Pg**	**12 39 57.5**	**-1.5**
RLS	**Riolos of Patr**	**0.79**	**255**	P	**Pg**	**12 39 57.5**	**-1.5**
RLS				S	**Sg**	**12 40 09.1**	**-0.3**
RLS	**Riolos of Patr**	**0.79**	**255**	S	**Sg**	**12 40 09.1**	**-0.3**
RLS				AML	AML	12 40 16.0	
comp=E,4344μm,0.3s							
RLS				AML	AML	12 40 16.4	
comp=N,5619μm,0.5s							
RLS	**Riolos of Patr**	**0.79**	**255**	P	**Pg**	**12 39 57.5**	**-1.5**
PVO	**Paravola**	**0.79**	**296**	P	**Pg**	**12 39 58.2**	**-0.8**
PVO				S	**Sg**	**12 40 08.1**	**-1.3**
PVO	**Paravola**	**0.79**	**296**	P	**Pg**	**12 39 58.2**	**-0.8**
PVO				S	**Sg**	**12 40 08.1**	**-1.3**
PVO				AML	AML	12 40 12.9	
comp=N,7374μm,0.7s							
PVO				AML	AML	12 40 15.3	
comp=E,7069μm,0.3s							
EVR	**Evrytania**	**0.81**	**323**	P	**Pg**	**12 39 57.9**	**-1.5**
EVR				S	**Sb**	**12 40 10.9**	**+0.3**
EVR	**Evrytania**	**0.81**	**323**	P	**Pg**	**12 39 57.9**	**-1.5**
EVR				S	**Sg**	**12 40 08.9**	**-1.1**
EVR	**Evrytania**	**0.81**	**323**	P	**Pg**	**12 39 57.6**	**-1.8**
EVR				S	**Sg**	**12 40 08.8**	**-1.1**
EVR				AML	AML	12 40 13.2	
comp=N,16355μm,0.5s							
EVR	**Evrytania**	**0.81**	**323**	P	**Pg**	**12 39 57.9**	**-1.5**
EVR				S	**Sb**	**12 40 10.9**	**+0.3**
AXS	**Araxos**	**0.84**	**265**	P	**Pg**	**12 39 59.0**	**-0.8**
AXS	**Araxos**	**0.84**	**265**	P	**Pg**	**12 39 59.2**	**-0.6**
AXS	**Araxos**	**0.84**	**265**	P	**Pg**	**12 39 59.2**	**-0.6**
SMIA	**Simia**	**0.86**	**45**	P	**Pg**	**12 39 59.5**	**-0.8**
SMIA				S	**Sb**	**12 40 12.4**	**+0.5**
SMIA	**Simia**	**0.86**	**45**	P	**Pg**	**12 39 59.5**	**-0.8**
SMIA				S	**Sb**	**12 40 12.4**	**+0.5**
SMIA	**Simia**	**0.86**	**45**	P	**Pg**	**12 39 58.9**	**-1.4**
VLX	**Vlachokerasia**	**0.90**	**183**	P	**Pg**	**12 40 00.2**	**-0.8**
VLX				S	**Sb**	**12 40 13.7**	**+0.6**
VLX	**Vlachokerasia**	**0.90**	**183**	P	**Pg**	**12 40 00.2**	**-0.8**
VLX				S	**Sb**	**12 40 13.1**	**0.0**
VLX	**Vlachokerasia**	**0.90**	**183**	P	**Pg**	**12 40 00.0**	**-1.0**
VLX				S	**Sb**	**12 40 13.1**	**0.0**
VLX				AML	AML	12 40 18.7	
comp=E,15538μm,0.4s							
VLX				AML	AML	12 40 20.4	
comp=N,15961μm,0.6s							
VLX	**Vlachokerasia**	**0.90**	**183**	P	**Pg**	**12 40 00.2**	**-0.8**
VLX				S	**Sb**	**12 40 13.7**	**+0.6**
AMT	**Artemida-Makis**	**0.93**	**218**	P	**Pg**	**12 40 00.7**	**-1.0**
AMT				S	**Sb**	**12 40 15.5**	**+1.5**
AMT	**Artemida-Makis**	**0.93**	**218**	P	**Pg**	**12 40 00.9**	**-0.8**
AMT				S	**Sg**	**12 40 12.7**	**-1.1**
AMT	**Artemida-Makis**	**0.93**	**218**	P	**Pg**	**12 40 00.9**	**-0.8**
AMT				S	**Sg**	**12 40 12.7**	**-1.1**
AMT				AML	AML	12 40 16.5	
comp=E,8110μm,0.6s							
AMT				AML	AML	12 40 19.8	
comp=N,18926μm,0.4s							
DID	**Didima**	**0.99**	**140**	P	**Pb**	**12 40 02.1**	**-0.6**
DID				S	**Sn**	**12 40 17.6**	**+0.4**
DID	**Didima**	**0.99**	**140**	P	**Pb**	**12 40 02.1**	**-0.6**
DID				S	**Sb**	**12 40 15.8**	**+0.1**
DID	**Didima**	**0.99**	**140**	P	**Pb**	**12 40 02.1**	**-0.6**
DID				S	**Sb**	**12 40 15.8**	**+0.1**
DID				AML	AML	12 40 18.9	
comp=N,10926μm,0.5s							
DID				AML	AML	12 40 20.2	
comp=E,9875μm,0.5s							
DID	**Didima

comp=E,6243μm,0.8s
ITM AML AML 12 40 31.2
comp=N,4838μm,0.5s
ITM Ithomi 1.16 200 P **Pg** **12 40 04.5 -1.5**
EREA Eretria 1.19 82 P **Pn** **12 40 06.3 +0.3**
EREA S **Sn** **12 40 23.0 +1.0**
EREA Eretria 1.19 82 P **Pn** **12 40 06.3 +0.3**
EREA S **Sn** **12 40 22.8 +0.7**
EREA Eretria 1.19 82 P **Pb** **12 40 05.5 -0.5**
EREA S **Sn** **12 40 22.8 +0.7**
EREA AML AML 12 40 24.8
comp=E,5101μm,0.4s
EREA AML AML 12 40 27.6
comp=N,6838μm,0.3s
FYTO Fytoko, Volos 1.20 19 P **Pb** **12 40 06.3 0.0**
FYTO S **Sn** **12 40 23.7 +1.3**
FYTO Fytoko, Volos 1.20 19 P **Pb** **12 40 06.3 0.0**
FYTO S **Sn** **12 40 23.7 +1.3**
FYTO Fytoko, Volos 1.20 19 P **Pb** **12 40 06.3 0.0**
FYTO S **Sn** **12 40 23.7 +1.3**
NEO Neokhori 1.21 31 P **Pg** **12 40 05.7 -1.1**
NEO S **Sn** **12 40 23.3 +0.8**
NEO Neokhori 1.21 31 P **Pb** **12 40 06.0 -0.3**
NEO S **Sb** **12 40 22.3 +0.4**
NEO Neokhori 1.21 31 P **Pb** **12 40 06.0 -0.3**
NEO S **Sb** **12 40 22.3 +0.4**
NEO AML AML 12 40 26.8
comp=E,5392μm,0.4s
NEO AML AML 12 40 27.2
comp=N,9055μm,0.6s
NEO Neokhori 1.21 31 P **Pg** **12 40 05.7 -1.1**
NEO S **Sn** **12 40 23.3 +0.8**
SKIA Skiathos 1.21 42 P **Pg** **12 40 05.8 -1.0**
SKIA S **Sn** **12 40 23.2 +0.7**
SKIA Skiathos 1.21 42 P **Pg** **12 40 05.8 -1.0**
SKIA S **Sn** **12 40 23.2 +0.7**
SKIA Skiathos 1.21 42 P **Pg** **12 40 05.6 -1.3**
SKIA S **Sb** **12 40 22.1 +0.3**
SKIA AML AML 12 40 26.3
comp=N,6388μm,1.0s
SKIA AML AML 12 40 27.7
comp=E,5752μm,0.4s
XOR Xorichti 1.24 28 P **Pg** **12 40 05.9 -1.7**
XOR S **Sn** **12 40 23.9 +0.4**
XOR Xorichti 1.24 28 P **Pg** **12 40 05.9 -1.7**
XOR S **Sn** **12 40 23.9 +0.4**
XOR Xorichti 1.24 28 P **Pg** **12 40 05.8 -1.8**
XOR S **Sb** **12 40 23.5 +0.5**
XOR AML AML 12 40 29.0
comp=E,4728μm,0.7s
XOR AML AML 12 40 30.7
comp=N,5825μm,0.4s
XOR Xorichti 1.24 28 P **Pg** **12 40 05.9 -1.7**
XOR S **Sn** **12 40 23.9 +0.4**
KFL Anninata 1.31 263 P **Pg** **12 40 08.2 -0.6**
KFL Anninata 1.31 263 P **Pg** **12 40 08.2 -0.6**
KFL Anninata 1.31 263 P **Pg** **12 40 06.7 -2.1**
THL Klokotos Trika 1.33 346 P **Pn** **12 40 08.0 0.0**
THL S **Sb** **12 40 26.1 +0.6**
THL Klokotos Trika 1.33 346 P **Pn** **12 40 08.3 +0.3**
THL S **Sb** **12 40 26.1 +0.6**
DSL Palaion Diasel 1.36 310 P **Pn** **12 40 08.7 +0.4**
DSL Palaion Diasel 1.36 310 P **Pn** **12 40 08.7 +0.4**
DSL S **Sg** **12 40 25.9 -1.5**
DSL Palaion Diasel 1.36 310 P **Pn** **12 40 08.3 0.0**
DSL S **Sg** **12 40 25.9 -1.5**
DSL AML AML 12 40 34.4
comp=E,4165μm,0.4s
DSL AML AML 12 40 35.1
comp=N,7232μm,0.6s
DSL Palaion Diasel 1.36 310 P **Pn** **12 40 08.7 +0.4**
ZKS Zakynthos 1.42 247 P **Pg** **12 40 10.6 -0.4**
ZKS Zakynthos 1.42 247 P **Pg** **12 40 10.6 -0.4**
AOS Alonnisos 1.44 51 *e*PN **Pn** **12 40 09.3 -0.2**
AOS Alonnisos 1.44 51 P **Pn** **12 40 09.0 -0.5**
AOS S **Sb** **12 40 28.5 -0.2**
AOS Alonnisos 1.44 51 P **Pn** **12 40 09.0 -0.5**
AOS Alonnisos 1.44 51 *e*Pn **Pn** **12 40 09.3 -0.2**
AOS S **Sb** **12 40 28.5 -0.2**
AOS Alonnisos 1.44 51 P **Pn** **12 40 09.0 -0.5**
AOS S **Sb** **12 40 28.5 -0.2**
VLS Valsamata 1.46 267 P **Pn** **12 40 09.6 -0.1**
VLS Valsamata 1.46 267 P **Pn** **12 40 09.6 -0.1**
VLS Valsamata 1.46 267 P **Pn** **12 40 09.6 -0.1**
PYL PYLOS 1.48 202 P **Pn** **12 40 10.0 0.0**
PYL PYLOS 1.48 202 P **Pn** **12 40 10.6 +0.6**
PYL PYLOS 1.48 202 P **Pn** **12 40 10.6 +0.6**
PYL PYLOS 1.48 202 P **Pn** **12 40 10.0 0.0**
LKD2 Lefkada island 1.49 291 P **Pn** **12 40 10.7 +0.6**
LKD2 Lefkada island 1.49 291 P **Pn** **12 40 10.7 +0.6**
LKD2 Lefkada island 1.49 291 P **Pn** **12 40 10.8 +0.7**
LKD2 Lefkada island 1.49 291 P **Pn** **12 40 10.7 +0.6**
VLI Veliai 1.60 165 P **Pn** **12 40 11.5 -0.1**
VLI Veliai 1.60 165 P **Pb** **12 40 13.0 -0.1**
VLI S **Sg** **12 40 35.4 +0.3**
VLI Veliai 1.60 165 P **Pb** **12 40 13.0 -0.1**
VLI S **Sg** **12 40 35.4 +0.3**
VLI AML AML 12 40 40.1
comp=E,3766μm,0.7s
VLI AML AML 12 40 40.7
comp=N,5721μm,0.7s
VLI Veliai 1.60 165 P **Pn** **12 40 11.5 -0.1**
LIT Litokhoron 1.83 1 P **Pn** **12 40 15.1 +0.3**
LIT Litokhoron 1.83 1 P **Pn** **12 40 15.1 +0.3**
LIT Litokhoron 1.83 1 P **Pn** **12 40 15.1 +0.3**
KPRO Kipourio 1.88 334 P **Pn** **12 40 16.3 +0.8**
KPRO Kipourio 1.88 334 P **Pn** **12 40 16.3 +0.8**
KPRO Kipourio 1.88 334 P **Pn** **12 40 16.6 +1.0**
PAIG Paliouri 1.92 30 P **Pn** **12 40 15.4 -0.6**
PAIG Paliouri 1.92 30 P **Pn** **12 40 15.4 -0.6**
PAIG Paliouri 1.92 30 P **Pn** **12 40 15.4 -0.6**
KYTH Kithira 2.04 166 P **Pb** **12 40 19.3 -1.3**
KYTH Kithira 2.04 166 P **Pb** **12 40 19.3 -1.3**
IGT Igoumenitsa 2.07 308 P **Pb** **12 40 20.5 -0.5**
IGT Igoumenitsa 2.07 308 P **Pb** **12 40 20.5 -0.5**
KZN Kozani 2.10 346 P **Pn** **12 40 19.2 +0.6**
PENT Pentalofos 2.17 333 P **Pn** **12 40 20.6 +1.0**
PENT Pentalofos 2.17 333 P **Pn** **12 40 20.6 +1.0**
PENT Pentalofos 2.17 333 P **Pn** **12 40 21.1 +1.5**
SGD Sagiada 2.18 309 P **Pn** **12 40 21.5 +1.9**
SGD Sagiada 2.18 309 P **Pn** **12 40 21.5 +1.9**
PLG Polygyros 2.24 20 P **Pn** **12 40 20.1 -0.4**
PLG Polygyros 2.24 20 P **Pn** **12 40 20.1 -0.4**
PLG Polygyros 2.24 20 P **Pn** **12 40 20.1 -0.4**
HORT Hortiatis 2.38 12 P **Pn** **12 40 22.2 -0.3**
HORT Hortiatis 2.38 12 P **Pn** **12 40 22.2 -0.3**
HORT Hortiatis 2.38 12 P **Pn** **12 40 22.2 -0.3**
OUR Ouranopolis 2.38 30 P **Pn** **12 40 22.2 -0.2**
OUR Ouranopolis 2.38 30 P **Pn** **12 40 22.2 -0.2**
OUR Ouranopolis 2.38 30 P **Pn** **12 40 22.2 -0.2**
NEST Nestorio 2.40 334 P **Pn** **12 40 24.4 +1.7**
NEST Nestorio 2.40 334 P **Pn** **12 40 24.4 +1.7**
NEST Nestorio 2.40 334 P **Pn** **12 40 24.5 +1.7**
KEK Kerkira 2.51 306 P **Pn** **12 40 26.2 +2.0**
KEK Kerkira 2.51 306 P **Pn** **12 40 26.2 +2.0**
KEK Kerkira 2.51 306 P **Pn** **12 40 26.2 +2.0**
FNA Florina 2.64 342 P **Pn** **12 40 27.0 +1.0**
FNA Florina 2.64 342 P **Pn** **12 40 27.0 +1.0**
FNA Florina 2.64 342 P **Pn** **12 40 27.0 +1.0**
SOH Sokhos 2.65 15 P **Pn** **12 40 26.7 +0.6**
SOH S **Sn** **12 40 59.2 +1.1**
SOH Sokhos 2.65 15 P **Pn** **12 40 26.7 +0.6**
SOH S **Sn** **12 40 59.2 +1.1**
SOH Sokhos 2.65 15 P **Pn** **12 40 26.7 +0.6**
SOH S **Sn** **12 40 59.2 +1.1**
LIA Limnos Island 2.69 52 P **Pn** **12 40 26.6 0.0**
LIA Limnos Island 2.69 52 P **Pn** **12 40 26.6 0.0**
LIA Limnos Island 2.69 52 P **Pn** **12 40 26.6 0.0**
APE Apeiranthos 2.73 115 ⇑*i*P **Pn** **12 40 27.8 +0.5**
APE Apeiranthos 2.73 115 S **Sn** **12 41 00.1 -0.1**
SIGR SIGRI 2.83 70 P **Pn** **12 40 28.6 0.0**
SIGR SIGRI 2.83 70 P **Pn** **12 40 28.6 0.0**
SIGR SIGRI 2.83 70 P **Pn** **12 40 28.6 0.0**
CHOS Chios island 2.85 87 P **Pn** **12 40 29.8 +0.9**
CHOS Chios island 2.85 87 P **Pn** **12 40 29.8 +0.9**
CHOS Chios island 2.85 87 P **Pn** **12 40 29.8 +0.9**
BIA Bitola 2.88 343 *i* Pn **Pn** **12 40 31.1 +1.9**
BIA Bitola 2.88 343 *i* Pn **Pn** **12 40 31.1 +1.9**
SRS Serrai 2.98 17 P **Pn** **12 40 30.7 0.0**
SRS Serrai 2.98 17 P **Pn** **12 40 30.7 0.0**
SRS Serrai 2.98 17 P **Pn** **12 40 30.7 0.0**
VAY Valandovo 3.05 2 *i* Pn **Pn** **12 40 32.4 +0.8**
VAY Valandovo 3.05 2 *i* Pn **Pn** **12 40 32.3 +0.8**
SANT Santorini 3.07 127 ⇑*i*P **Pn** **12 40 30.8 -1.1**
OHR Ohrid 3.10 337 *i* Pn **Pn** **12 40 34.3 +1.9**
OHR Ohrid 3.10 337 *i* Pn **Pn** **12 40 34.3 +1.9**
KAVA Kavala 3.16 30 P **Pn** **12 40 32.5 -0.6**
KAVA Kavala 3.16 30 P **Pn** **12 40 32.5 -0.6**
KAVA Kavala 3.16 30 P **Pn** **12 40 32.5 -0.6**
SMTH Samothraki Isl 3.25 47 P **Pn** **12 40 33.6 -0.8**
SMTH Samothraki Isl 3.25 47 P **Pn** **12 40 33.6 -0.8**
SMTH Samothraki Isl 3.25 47 P **Pn** **12 40 33.6 -0.8**
NVR Nevrokopi 3.27 19 P **Pn** **12 40 34.5 -0.1**
NVR Nevrokopi 3.27 19 P **Pn** **12 40 34.5 -0.1**
NVR Nevrokopi 3.27 19 P **Pn** **12 40 34.5 -0.1**
EZN Ezine 3.40 62 *e*PN **Pn** **12 40 36.8 +0.4**
EZN Ezine 3.40 62 *e*Pn **Pn** **12 40 36.8 +0.4**
IDI Anoyia 3.57 146 Pn **Pn** **12 40 39.5 +0.7**
comp=N,4.1nm,0.3s,baz=324,slow=11,SNR=19
IDI Sn **Sn** **12 41 23.0 +2.1**
comp=N,20nm,0.3s,baz=285,slow=20,SNR=5.2
IDI LR LR 12 42 33.7
comp=N,153nm,21.0s,baz=286,slow=46
IDI Anoyia 3.57 146 ⇑*i*P **Pn** **12 40 39.9 +1.1**
IDI Anoyia 3.57 146 S **Sn** **12 41 17.5 -3.4**
IDI Anoyia 3.57 146 P **Pn** **12 40 39.5 +0.7**
TIR Tirane 3.66 328 ⇑*i*P **Pn** **12 40 41.5 +1.6**
SIVA Sivas 3.77 149 ⇑*i*P **Pn** **12 40 42.5 +1.1**
SKO Skopje 3.77 349 *i* Pn **Pn** **12 40 42.7 +1.1**
SKO Skopje 3.77 349 *i* Pn **Pn** **12 40 42.7 +1.1**
GELI Tayfur-Gelibol 3.79 55 *e*PN **Pn** **12 40 41.9 +0.2**
GELI Tayfur-Gelibol 3.79 55 *e*Pn **Pn** **12 40 41.9 +0.2**
ENEZ Enez 3.79 48 *e*PN **Pn** **12 40 41.3 -0.4**
ENEZ Enez 3.79 48 *e*Pn **Pn** **12 40 41.3 -0.4**
LAST Lasithi 3.95 141 ⇑*i*P **Pn** **12 40 45.4 +1.3**
LAST Lasithi 3.95 141 P **Pn** **12 40 44.8 +0.7**
LAST Lasithi 3.95 141 P **Pn** **12 40 44.8 +0.7**
LAST Lasithi 3.95 141 P **Pn** **12 40 44.8 +0.7**
LPK Lapseki 3.96 57 *e*PN **Pn** **12 40 44.8 +0.7**
LPK Lapseki 3.96 57 *e*Pn **Pn** **12 40 44.8 +0.7**
RKY Sarkoy-Tekirda 4.39 55 *e*PN **Pn** **12 40 50.5 +0.4**
RKY Sarkoy-Tekirda 4.39 55 *e*Pn **Pn** **12 40 50.5 +0.4**
ULC Ulcinj 4.43 327 ⇓*i*Pn **Pn** **12 40 51.6 +1.1**
ULC *e*Sn **Sn** **12 41 43.3 +1.4**
ULC Ulcinj 4.43 327 ⇓*i*Pn **Pn** **12 40 51.6 +1.1**
ULC *e*Sn **Sn** **12 41 43.6 +1.4**
BALB Balikesir 4.46 70 *e*PN **Pn** **12 40 51.2 +0.2**
BALB Balikesir 4.46 70 *e*Pn **Pn** **12 40 51.2 +0.2**
TIP Timpagrande 4.53 283 ⇑*i*P **Pn** **12 40 53.6 +1.5**
TIP Timpagrande 4.53 283 S **Sn** **12 41 44.7 +0.1**
TIP Timpagrande 4.53 283 P **Pn** **12 40 53.5 +1.5**
TIP Timpagrande 4.53 283 P **Pn** **12 40 53.5 +1.5**
TIP Timpagrande 4.53 283 P **Pn** **12 40 53.5 +1.5**
BARS Barje 4.57 354 *e*Pn **Pn** **12 40 53.3 +0.9**
TAR1 Taranto 4.58 301 *e*Pn **Pn** **12 40 54.3 +1.7**
MRMT Marmara Adasi 4.62 58 *e*PN **Pn** **12 40 53.1 -0.2**
MRMT Marmara Adasi 4.62 58 *e*Pn **Pn** **12 40 53.1 -0.2**
DRME Dracevica, Mon 4.63 329 *e*Pn **Pn** **12 40 54.8 +1.4**
DRME *e*Sn **Sn** **12 41 48.4 +1.3**
DRME Dracevica, Mon 4.63 329 *e*Pn **Pn** **12 40 54.8 +1.4**
DRME *e*Sn **Sn** **12 41 48.4 +1.3**
PVY Plav 4.71 337 ⇓*i*Pn **Pn** **12 40 55.9 +1.3**
PVY *e*Sn **Sn** **12 41 50.3 +1.1**
PVY Plav 4.71 337 ⇓*i*Pn **Pn** **12 40 55.9 +1.3**
PVY *e*Sn **Sn** **12 41 50.3 +1.1**
PDG Podgorica 4.81 331 ⇑*i*P **Pn** **12 40 57.7 +1.9**
PDG Podgorica 4.81 331 ⇓*i*Pn **Pn** **12 40 56.9 +1.1**
PDG *e*Sn **Sn** **12 41 53.1 +1.7**
TTG Podgorica 4.81 331 ⇓*i*Pn **Pn** **12 40 56.9 +1.1**
TTG *e*Sn **Sn** **12 41 53.1 +1.7**
BUM Brajici-Budva 4.85 327 ⇓*i*Pn **Pn** **12 40 57.7 +1.3**
BUM *e*Sn **Sn** **12 41 53.9 +1.4**
BUM Brajici-Budva 4.85 327 ⇓*i*Pn **Pn** **12 40 57.7 +1.3**
BUM *e*Sn **Sn** **12 41 53.9 +1.4**
BEY Berane 4.99 338 *e*Pn **Pn** **12 41 00.0 +1.7**
BEY *e*Sn **Sn** **12 41 57.2 +1.3**
IVA Berane 4.99 338 *e*Pn **Pn** **12 41 00.0 +1.7**
IVA *e*Sn **Sn** **12 41 57.2 +1.3**
MATE Matera 5.03 300 ⇑*i*P **Pn** **12 40 59.3 +0.5**
CEME Cevo 5.04 329 ⇑*i*Pn **Pn** **12 40 59.9 +0.8**
CEME *e*Sn **Sn** **12 41 58.2 +1.0**
CEME Cevo 5.04 329 ⇑*i*Pn **Pn** **12 40 59.9 +0.8**
CEME *e*Sn **Sn** **12 41 58.2 +1.0**
SG1 Sgolgore (BA) 5.13 302 *e*Pn **Pn** **12 41 01.1 +0.8**
BAI Bari 5.14 305 *e*Pn **Pn** **12 41 01.2 +1.0**
HCY Herceg Novi 5.14 325 ⇓*i*Pn **Pn** **12 41 01.1 +0.7**
HCY *e*Sn **Sn** **12 42 00.6 +1.0**
HCY Herceg Novi 5.14 325 ⇓*i*Pn **Pn** **12 41 01.1 +0.7**
HCY *e*Sn **Sn** **12 42 00.6 +1.0**
NKME Niksic 5.22 331 ⇑*i*Pn **Pn** **12 41 02.5 +1.1**
NKME *e*Sn **Sn** **12 42 02.5 +1.0**
NKME Niksic 5.22 331 ⇑*i*Pn **Pn** **12 41 02.5 +1.1**
NKME *e*Sn **Sn** **12 42 02.5 +1.0**
BRY Bratogost 5.49 329 *e*Pn **Pn** **12 41 06.7 +1.4**
BRY *e*Sn **Sn** **12 42 09.4 +1.0**
BRY Bratogost 5.49 329 *e*Pn **Pn** **12 41 06.7 +1.4**
BRY *e*Sn **Sn** **12 42 09.4 +1.0**
CDT Castel del Mon 5.52 303 *e*Pn **Pn** **12 41 06.4 +0.8**
PLE Pljevlja 5.56 336 ⇓*i*Pn **Pn** **12 41 06.6 +0.4**
PLE *e*Sn **Sn** **12 42 10.3 +0.3**
PLE Pljevlja 5.56 336 ⇓*i*Pn **Pn** **12 41 06.6 +0.4**
PLE *e*Sn **Sn** **12 42 10.3 +0.3**
IVAS Ivanjica 5.58 343 *e*Pn **Pn** **12 41 07.8 +1.4**
UPM Unac-Piva 5.61 333 ⇓*i*Pn **Pn** **12 41 09.1 +2.2**
UPM *e*Sn **Sn** **12 42 12.0 +0.7**
UPM Unac-Piva 5.61 333 ⇓*i*Pn **Pn** **12 41 09.1 +2.2**
UPM *e*Sn **Sn** **12 42 12.0 +0.7**
GRUS Gruza 5.76 348 *e*Pn **Pn** **12 41 10.5 +1.7**
STON Ston 5.84 323 *e*Pn **Pn** **12 41 09.2 -0.7**
STON Sn **Sn** **12 42 12.8 -3.9**
STON Ston 5.84 323 *e*Pn **Pn** **12 41 09.2 -0.7**
BBLS Lazići 6.04 339 *e*Pn **Pn** **12 41 13.8 +1.1**
MS1 Monte Sant'Ang 6.05 307 *e*Pn **Pn** **12 41 15.4 +2.5**
TRUS Trudelj 6.14 346 *e*Pn **Pn** **12 41 15.4 +1.3**
KUBS Kucevo 6.16 355 *e*Pn **Pn** **12 41 14.2 -0.2**
TEKS Tekeris 6.64 342 *e*Pn **Pn** **12 41 21.7 +0.7**
FGSL Fruska Gora 7.16 345 *e*Pn **Pn** **12 41 29.5 +1.5**
VOIR 7.42 14 ⇑*i*P **Pn** **12 41 32.6 +0.9**
MLR Muntele Rosu 7.67 19 Pn **Pn** **12 41 36.6 +1.4**
comp=N,0.1nm,0.3s,baz=184,slow=12,SNR=6.4
MLR Muntele Rosu 7.67 19 ⇑*i*P **Pn** **12 41 36.5 +1.3**
UDBI Udbina 8.01 323 *e*Pn **Pn** **12 41 40.6 +0.8**
UDBI Udbina 8.01 323 *e*Pn **Pn** **12 41 40.6 +0.8**
PLOR Plostina 8.20 21 ⇑*i*P **Pn** **12 41 43.8 +1.5**
VRI Vrincioaia 8.23 21 ⇑*i*P **Pn** **12 41 43.8 +1.0**
NVLJ Novalja 8.47 320 *e*Pn **Pn** **12 41 44.8 -1.3**
NVLJ Sn **Sn** **12 43 17.3 -4.1**
NVLJ Novalja 8.47 320 *e*Pn **Pn** **12 41 44.7 -1.3**
BRTR Keskin Array B 8.85 77 Pn **Pn** **12 41 53.9 +2.5**
comp=N,0.7nm,0.3s,baz=257,slow=14,SNR=13
BOJS Bojanci 8.99 326 *i* Pn **Pn** **12 41 54.8 +1.6**
BOJS *i* Sn **Sn** **12 43 30.1 -4.1**
BOJS Bojanci 8.99 326 Pn **Pn** **12 41 54.8 +1.6**
VISS Visnje 9.41 326 *i* Pn **Pn** **12 42 00.3 +1.4**
VISS *i* Sn **Sn** **12 43 42.9 -1.6**
VISS Visnje 9.41 326 *i* Pn **Pn** **12 42 00.3 +1.4**
JAVS Javornik 9.83 323 *i* Pn **Pn** **12 42 04.5 -0.2**
JAVS *i* Sn **Sn** **12 43 51.0 -4.0**
JAVS Javornik 9.83 323 *i* Pn **Pn** **12 42 04.5 -0.2**
MMAI Mount Meron Ar 11.78 113 LR LR 12 49 33.4
comp=N,63nm,19.2s,baz=240,slow=50
VRAC Vranov 11.81 341 Pn **Pn** **12 42 31.1 -0.6**
comp=N,0.9nm,0.3s,baz=139,slow=19,SNR=7.0
VRAC LR LR 12 48 09.1
comp=N,59nm,19.1s,baz=210,slow=43
GERES GERESS Array B 12.31 332 LR LR 12 48 06.4
comp=N,111nm,20.3s,baz=145,slow=41
KBZ Khabaz 16.37 64 Pn **P** **12 43 38.1 +2.2**
comp=N,0.0nm,0.3s,baz=233,slow=9.1,SNR=4.1
ESDC Sonseca Array 20.55 282 P **P** **12 44 22.5 +0.5**
comp=N,0.5nm,0.4s,baz=74,slow=10,SNR=8.1
FINES FINESS Array B 23.31 4 P **P** **12 44 49.9 -1.2**
comp=N,1.1nm,0.6s,baz=169,slow=11,SNR=5.4
FINES PcP **PcP** **12 48 38.0 +0.1**
comp=N,1.9nm,0.9s,baz=180,slow=1.9,SNR=4.4
FINES LR LR 12 54 33.2
comp=N,67nm,18.7s,baz=194,slow=38
NB2 NORSAR Subarra 23.85 346 P **P** **12 44 55.3 -1.2**
comp=Z,1.9nm,0.7s,baz=153,slow=10
NB2 NORSAR Subarra 23.85 346 P **P** **12 44 55.3 -1.2**
comp=Z,1.9nm,0.7s,SNR=5.9
NOA NORSAR Array B 23.85 346 P **P** **12 44 55.8 -0.7**
comp=Z,1.3nm,0.7s,baz=148,slow=9.7,SNR=6.7
EKA Eskdalemuir Ar 24.24 323 P **P** **12 45 00.0 -0.1**
comp=Z,1.2nm,0.5s,baz=122,slow=9.8,SNR=6.8
AKTO Aktyubinsk 27.92 53 LR LR 12 59 27.8
comp=Z,39nm,18.3s,baz=215,slow=42
TORD Torodi Ar. Bea 31.08 222 P **P** **12 46 02.0 +0.4**
comp=Z,1.3nm,0.6s,baz=30,slow=9.0,SNR=8.8
ARCES ARCESS Array B 31.37 2 P **P** **12 46 02.5 -1.3**
comp=Z,0.9nm,0.6s,baz=185,slow=9.6,SNR=6.2
ARCES PcP **PcP** **12 48 56.8 -0.3**
comp=Z,0.6nm,0.4s,baz=185,slow=2.5,SNR=7.5
BVAR Borovoye Array 35.91 50 P **P** **12 46 45.1 +1.7**
comp=Z,0.6nm,0.6s,baz=205,slow=38,SNR=3.3
DBIC Dimbokro 40.00 225 P **P** **12 47 20.0 +1.7**
comp=Z,1.6nm,0.7s,baz=57,slow=4.2,SNR=2.9
SPITS Spitsbergen Ar 40.10 358 P **P** **12 47 18.3 -0.2**
comp=Z,2.9nm,0.7s,baz=159,slow=12,SNR=6.4
KURBB Kurchatov Arra 40.96 54 P **P** **12 47 25.9 0.0**
comp=Z,0.7nm,0.3s,baz=280,slow=8.6,SNR=10
MKAR Makanchi Array 43.97 59 P **P** **12 47 50.2 -0.2**
comp=Z,3.5nm,0.5s,baz=278,slow=7.0,SNR=42
MKAR ScP **ScP** **12 53 26.3 -1.2**
comp=Z,0.2nm,0.3s,baz=281,slow=3.1,SNR=2.5
ZALV Zalesovo Beam 44.51 48 P **P** **12 47 54.2 -0.3**
comp=Z,1.7nm,0.3s,baz=263,slow=9.6,SNR=1.2
YKA Yellowknife Ar 73.81 341 P **P** **12 51 17.0 -0.4**
comp=Z,0.6nm,0.5s,baz=34,slow=5.4,SNR=27
ILAR Eielson Array 76.95 355 P **P** **12 51 35.9 +0.4**
comp=Z,0.5nm,0.7s,baz=351,slow=3.9,SNR=6.1
PDAR Pinedale Array 88.31 327 P **P** **12 52 35.0 -0.3**
comp=Z,0.3nm,0.6s,baz=31,slow=5.5,SNR=3.1
TXAR Lajitas Array 95.99 315 P **P** **12 53 12.2 +1.3**
comp=Z,0.3nm,0.7s,baz=64,slow=4.2,SNR=2.8
WRA Warramunga Arr 119.04 93 PKP **PKPdf** **12 58 31.3 -1.2**
comp=Z,0.3nm,0.9s,baz=326,slow=1.8,SNR=4.7
ASAR Alice Springs 120.69 97 PKP **PKPdf** **12 58 34.8 -0.9**
comp=Z,0.2nm,0.3s,baz=305,slow=1.7,SNR=8.8

PRE 04 12:44:08.5±0.5, 28°.24S×16°.47E, h5km, ML3.6, Namibia

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time	Res ISC
KOMG	**Komaggas**	**1.78**	**151**	*e*P		Pn	12 44 40.3	+0.3
KOMG				*e*S		Sb	12 45 04.1	-0.3
KOMG				AML		AML	12 45 07.0	
comp=Z,358nm,0.3s								
UPI	**Upington**	**4.21**	**93**	*e*P		Pn	12 45 14.3	+0.7
UPI				*e*S		Sn	12 46 02.1	-1.1
UPI				AML		AML	12 46 20.3	
comp=Z,59nm,0.5s								
CVNA	**Calvinia**	**4.31**	**139**	*e*S		Sn	12 46 04.1	-1.5
CVNA				AML		AML	12 46 24.6	
comp=Z,130nm,0.3s								

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*JMA **04** 12:46:52.6, 23°.90N×121°.69E, h35km±1km, M3.4*
*ISCJB **04** 12:46:53.4±0.3, 23°.91N±0°.01×121°.77E±0°.01, h32km±2km, mb3.5/7, Error ellipse: s-maj=2.8km s-min=1.9km az=142.2*
*TAP **04** 12:46:53.6, 23°.95N×121°.68E, h40km, ML3.9, B*
*IDC **04** 12:46:54.5±5.4, 23°.89N×121°.87E, h53km±53km, mb3.3/7, mb1 3.4/8, mb1mx3.2/42, mbtmp3.6/8, ML3.2/1, MS3.9/1, Ms1 3.9/1, ms1mx2.7/23, Error ellipse: s-maj=33.7km s-min=17.8km az=64.0*

ISC 04 12:46:52.4±1.0, 23°.87N±0°.02×121°.78E±0°.02, h31km±8km, n80, σ0°93/136, mb3.4/7, 11C-11D, Taiwan

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time	Res ISC
HWA	**Hwalien**	**0.19**	**302**	⇓*i*P		**Pn**	**12 47 00.4**	**+1.2**
baz=292								
HWA				S		Sb	12 47 06.3	+3.4
baz=292								
ESF	**Shoufeng Towns**	**0.25**	**269**	*e*P		**Pn**	**12 47 01.7**	**+1.7**
baz=258								
ESF				*e*S		**Sn**	**12 47 07.0**	**+2.1**
baz=258								
TWD	**Chiawan**	**0.27**	**320**	⇓*i*P		**Pn**	**12 47 00.6**	**+0.5**
baz=330								
TWD				*i* S		**Sn**	**12 47 05.8**	**+0.6**
baz=330								
TEGC	**Jichi Village**	**0.28**	**233**	*e*P		**Pn**	**12 47 02.6**	**+2.3**
baz=205								
TEGC				*e*S		Sn	12 47 09.6	+4.2
baz=205								
ESL	**Shilin**	**0.32**	**259**	⇓*i*P		**Pn**	**12 47 01.4**	**+0.5**
baz=247								
ESL				S		**Sn**	**12 47 06.8**	**+0.2**
baz=247								
EHP	**Heping Village**	**0.43**	**355**	*e*P		**Pn**	**12 47 03.2**	**+0.6**
baz=13								
WHF	**Hehuan Shan**	**0.54**	**300**	⇓*i*P		**Pb**	**12 47 03.8**	**-0.1**
baz=291								
WHF				*i* S		**Sb**	**12 47 10.8**	**-0.9**
baz=291								
ENA	**Nanau**	**0.55**	**356**	*e*P		**Pn**	**12 47 04.0**	**-0.2**
baz=13								
ENA				*e*S		**Sn**	**12 47 12.2**	**-0.1**
baz=13								
EHY	**Hungye**	**0.56**	**229**	⇑P		**Pn**	**12 47 04.4**	**+0.2**
baz=216								
EHY				*e*S		**Sn**	**12 47 12.3**	**-0.1**
baz=216								
WDT	**Danda**	**0.60**	**259**	*i* P		**Pn**	**12 47 05.3**	**+0.1**
baz=242								
WDT				S		**Sb**	**12 47 13.2**	**-0.1**
baz=242								
TWT	**Tachien**	**0.67**	**304**	⇓P		**Pn**	**12 47 05.9**	**0.0**
baz=304								
TWT				*i* S		**Sb**	**12 47 14.0**	**-0.9**
baz=304								
NNS	**Nan Shan**	**0.68**	**327**	⇓*i*P		**Pb**	**12 47 05.5**	**-0.4**
baz=325								
NNS				*i* S		**Sb**	**12 47 13.6**	**-1.4**
baz=325								
TWF1	**Yuli**	**0.68**	**221**	⇑*i*P		**Pn**	**12 47 06.3**	**+0.4**
baz=221								
TWF1				*e*S		**Sn**	**12 47 15.3**	**-0.2**
baz=221								
TWC	**Suao**	**0.73**	**5**	P		**Pn**	**12 47 07.0**	**+0.3**
baz=20								
TWC				S		**Sn**	**12 47 17.3**	**+0.6**
baz=20								
ENTT	**Nioudou**	**0.79**	**346**	⇓*i*P		**Pb**	**12 47 07.3**	**-0.4**
baz=350								
ENTT				*e*S		**Sb**	**12 47 17.3**	**-0.8**
baz=350								
SMLT	**Sun Moon Lake**	**0.81**	**271**	P		**Pn**	**12 47 07.8**	**0.0**
baz=263								
SMLT				*e*S		**Sb**	**12 47 17.5**	**-1.1**
baz=263								
TYC	**Yuchr**	**0.85**	**272**	⇑*i*P		**Pn**	**12 47 08.3**	**+0.2**
baz=267								
TYC				S		**Sb**	**12 47 18.9**	**-0.7**
baz=267								
TWE	**Neicheng**	**0.85**	**353**	⇓*i*P		**Pb**	**12 47 08.3**	**-0.4**
baz=350								
TWE				*e*S		**Sb**	**12 47 19.1**	**-0.7**
baz=350								
CHKT	**Chengkung**	**0.86**	**206**	*e*P		**Pn**	**12 47 09.1**	**+0.7**
baz=189								
NSK	**Sanguang**	**0.89**	**334**	⇓*i*P		**Pn**	**12 47 08.7**	**-0.1**
baz=337								
NSK				*i* S		**Sb**	**12 47 19.0**	**-1.9**
baz=337								
ALS	**Alishan**	**

NSTT	baz=317			S	Sn	12 47 23.6	-0.6
TCU	**Taichung**	**1.05 285**	⇑	P	Pb	12 47 12.2	+0.2
TCU	baz=282			S	Sb	12 47 25.5	+0.1
CHN5	**Tsauling**	**1.05 255**	⇑	*i* P	Pb	12 47 12.3	+0.3
CHN5	baz=241			S	Sb	12 47 26.5	+1.0
NSY	**Sanyi**	**1.08 300**		P	Pb	12 47 12.2	-0.3
NSY	baz=298			*e*S	Sn	12 47 25.6	+0.3
WGK	**Gukeng**	**1.13 261**		*e*P	Pb	12 47 13.4	0.0
WGK	baz=257			*e*S	Sb	12 47 28.4	+0.6
TWB1	**Santiao Chiao**	**1.15 9**		*e*P	Pb	12 47 13.6	0.0
TWB1	baz=14			*e*S	Sb	12 47 28.8	+0.6
STYT	**Tauyuan**	**1.18 233**	⇑	P	Pb	12 47 14.3	+0.1
STYT	baz=230			S	Sb	12 47 29.8	+0.7
HSN	**Hsinchu**	**1.18 321**		*e*P	Pb	12 47 13.7	-0.5
HSN	baz=323			*e*S	Sb	12 47 29.1	-0.1
NWF	**Wu-fen Shan**	**1.19 360**	⇓	*e*P	Pb	12 47 14.0	-0.5
NWF	baz=350			*e*S	Sb	12 47 29.7	+0.1
CHN4	**Tsaushan**	**1.21 245**		*e*P	Pb	12 47 15.1	+0.4
CHN4	baz=232			S	Sb	12 47 31.4	+1.5
JYNG	**Yonagunijimaku**	**1.21 61**		P	Pb	12 47 14.7	0.0
JYNG				S	Sb	12 47 30.6	+0.6
NCU	**National Centr**	**1.22 334**		*e*P	Pb	12 47 14.1	-0.8
NCU	baz=334			*e*S	Sn	12 47 29.4	+0.7
TWG	**Pinlang**	**1.23 212**		*e*P	Pn	12 47 13.5	0.0
TWG	baz=199			*e*S	Sn	12 47 29.0	-0.2
WTP	**Ta-pu**	**1.24 240**	⇑	*i* P	Pb	12 47 15.6	+0.3
WTP	baz=236			*e*S	Sb	12 47 31.6	+0.6
CHN2	**Minshiung**	**1.25 254**		*e*P	Pb	12 47 15.6	+0.3
TTN	**Taitung**	**1.26 208**		*e*P	Pb	12 47 14.6	-1.0
TWS1	**Kuangyinshan**	**1.27 345**		*e*P	Pn	12 47 14.6	+0.6
TWS1	baz=346			*e*S	Sn	12 47 30.8	+0.9
YOJ	**Yonaguni jima**	**1.27 62**		P	Pb	12 47 15.6	-0.1
YOJ				S	Sb	12 47 31.8	+0.2
YOJ	**Yonaguni jima**	**1.27 62**		P	Pb	12 47 15.5	-0.2
YOJ	baz=69			S	Sb	12 47 32.1	+0.5
CHY	**Chiayi**	**1.30 253**		*e*P	Pb	12 47 16.0	-0.2
CHY	baz=250			*e*S	Sb	12 47 32.6	+0.1
TWK	**Hsinying**	**1.33 243**		*e*P	Pb	12 47 16.4	-0.4
TWK	baz=240			*e*S	Sb	12 47 34.3	+0.7
CHN1	**Nanshi**	**1.34 239**	⇑	P	Pb	12 47 16.8	-0.1
CHN1	baz=237			S	Sb	12 47 34.8	+1.0
SGST	**Jiashian**	**1.35 235**	⇑	*i* P	Pb	12 47 17.7	+0.6
SGST	baz=232			*e*S	Sb	12 47 35.3	+1.1
WTCT	**Ta-ch'eng**	**1.37 270**		*e*P	Pb	12 47 16.8	-0.7
WTCT	baz=277			*e*S	Sb	12 47 34.4	-0.2
TWY	**Chenhua**	**1.41 353**		*e*P	Pn	12 47 16.5	+0.7
WSF	**Szhu**	**1.45 261**		P	Pb	12 47 18.1	-0.7
WSF	baz=258			S	Sb	12 47 36.8	0.0
CHN8	**Yiju**	**1.53 250**		*e*P	Pb	12 47 19.0	-1.1
CHN8	baz=248			*e*S	Sb	12 47 38.2	-1.0
SSD	**Sandimen**	**1.54 223**		*e*P	Pb	12 47 19.7	-0.6
SSD	baz=223			S	Sb	12 47 40.3	+0.8
TWM1	**Shoushan**	**1.63 230**		*e*P	Pb	12 47 22.3	+0.5
EAST	**Anshuo**	**1.71 210**		*e*P	Pn	12 47 20.8	+0.6
TAW	**Tawu**	**1.72 209**		*e*P	Pb	12 47 22.2	-1.1
PCYT	**Pengchaiyu**	**1.77 9**		*e*P	Pn	12 47 22.2	+1.4
SCZT	**Fangliau**	**1.84 216**		*e*P	Pb	12 47 24.8	-0.6
SCZT	baz=230			*e*S	Sb	12 47 47.1	-0.9
IRIF	**Iriomote-Funau**	**1.84 75**		P	Pb	12 47 23.7	-1.7
IRIF				S	Sb	12 47 46.9	-1.1
LAY	**Lan-yu**	**1.84 187**		*e*P	Pn	12 47 21.9	0.0
HATJ	**Hateruma jima**	**1.86 84**		P	Pb	12 47 24.3	-1.4
HATJ				S	Sb	12 47 47.1	-1.5
WDGT	**Dungji**	**2.04 253**		*e*P	Pn	12 47 25.5	+0.9
WDGT	baz=252			*e*S	Sn	12 47 49.3	+0.3
JKRS	**Kuro-shima**	**2.07 79**		P	Pb	12 47 27.4	-1.9
JKRS				S	Sb	12 47 53.2	-1.4
TWK1	**Hengchun**	**2.12 205**		*e*P	Pn	12 47 27.5	+1.8
TWK1	baz=192			*e*S	Sb	12 47 54.4	-1.8
TSEB	**Hengchuen, Pin**	**2.13 203**		*e*P	Pb	12 47 28.8	-1.4
JIJ	**Ishigaki jima**	**2.21 77**		P	Pn	12 47 28.7	+1.7
JIJ				S	Sn	12 47 54.3	+1.0
JISG	**Ishigakijimahi**	**2.42 72**		P	Pn	12 47 31.3	+1.5
JISG				S	Sn	12 47 59.1	+0.8
JTJ	**Tarama**	**2.77 73**		P	Pn	12 47 36.7	+2.0
JTJ				S	Sn	12 48 08.6	+1.5
KNM	**Kinmen**	**3.10 281**		*e*P	Pn	12 47 40.3	+1.0
JIKM	**Ikemajima**	**3.33 71**		P	Pn	12 47 44.4	+2.1
JIKM				S	Sn	12 48 22.7	+1.9
JOGS	**Gusukube**	**3.42 74**		S	Sn	12 48 26.0	+2.9
JOW	**Kunigami**	**6.57 62**		P	Pn	12 48 27.7	+0.8
JOW	1.2nm,0.3s,baz=127,slow=26,SNR=11			S	Sn	12 49 41.0	+0.2
JCJ	**Chichijima**	**18.70 76**		LR	LR	12 56 50.7	
SONM	**Songino Array**	**26.86 337**		P	P	12 52 30.5	+0.1
MKAR	**Makanchi Array**	**38.94 316**		P	P	12 54 15.2	-0.2
WRA	**Warramunga Arr**	**45.24 163**		P	P	12 55 06.0	-1.1
BVAR	**Borovoye Array**	**48.26 321**		P	P	12 55 30.1	-0.2
ASAR	**Alice Springs**	**48.70 165**		P	P	12 55 34.2	+0.2
AKTO	**Aktyubinsk**	**55.38 316**		P	P	12 56 23.8	+0.3
YKA	**Yellowknife Ar**	**83.04 23**		P	P	12 59 13.5	-1.0

*IDC **04** 12:49:26.0±1.0, 37.°34N×142.°72E, h0km, mb3.6/6, mb1 3.7/10, mb1mx3.5/41, mbtmp3.6/10, ML3.5/3, MS2.8/6, Ms1 2.8/6, ms1mx2.6/53, Error ellipse: s-maj=29.2km s-min=17.5km az=91.0*

*ISCJB **04** 12:49:27.7±0.7, 37.°36N±0.°05×142.°44E±0.°06, h21km, mb3.6/7, Error ellipse: s-maj=7.4km s-min=6.3km az=33.1*

*JMA **04** 12:49:28.6±0.2, 37.°40N×142.°22E, h0km, M4.0*

ISC 04 12:49:30.1±0.8, 37.°34N±0.°05×142.°22E±0.°05, h21km, n21, σ1§15/23, mb3.8/7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.07 272**		P	**Pn**	**12 49 49.6**	**-0.3**
ONAJ	**Iwakimizuishiy**	**1.16 258**		P	**Pb**	**12 49 51.6**	**+0.1**
ONAJ				*e*S	**Sn**	**12 50 07.3**	**+0.9**
JMM	**Marumori**	**1.25 295**		P	**Pn**	**12 49 52.1**	**-0.2**
JMM				*e*S	**Sn**	**12 50 09.2**	**+0.7**
JIO	**Ouri**	**1.31 328**		P	**Pn**	**12 49 52.5**	**-0.6**
JIO				*e*S	**Sb**	**12 50 09.6**	**-0.6**
JFT	**Otama**	**1.51 277**		P	**Pb**	**12 49 57.0**	**-0.4**
JFT				S	**Sb**	**12 50 18.0**	**+1.8**
JOU	**Okura**	**1.60 310**		P	**Pb**	**12 49 58.1**	**-0.9**
MJAR	**Matsushiro Arr**	**3.31 257**		Pn	Pb	12 50 24.7	-3.4
MJAR	1.8nm,0.3s,baz=91,slow=15,SNR=21			LR	LR	12 52 09.7	
MAT	**Matsushiro**	**3.31 257**		P	Pb	12 50 24.4	-3.8
MAT				*e*S	**Sb**	**12 51 07.2**	**-0.9**
JHJ	**Hachijo jima 2**	**4.66 206**		Pn	**Pn**	**12 50 39.0**	**-0.3**
JHJ	14nm,0.3s,baz=356,slow=21,SNR=7.8			Sn	**Sn**	**12 51 31.7**	**-1.0**
ASAJ	**Asahikawa**	**6.77 2**		Pn	**Pn**	**12 51 08.2**	**0.0**
ASAJ	0.9nm,0.3s,baz=259,slow=9.5,SNR=9.8			Sn	**Sn**	**12 52 23.6**	**-1.0**
KSRS	**Korea Array**	**11.38 275**		LR	LR	12 56 29.2	
PETK	**Petropavlovsk-**	**19.10 29**		LR	LR	13 02 49.5	
SEY	**Seymchan**	**26.37 10**		P	**P**	**12 55 06.4**	**+1.9**
ZALV	**Zalesovo Beam**	**42.19 312**		P	**P**	**12 57 22.2**	**+1.2**
MKAR	**Makanchi Array**	**44.50 302**		P	**P**	**12 57 41.7**	**+1.8**
WRA	**Warramunga Arr**	**57.46 189**		P	**P**	**12 59 17.0**	**-0.5**
ASAR	**Alice Springs**	**61.19 189**		P	**P**	**12 59 43.4**	**+0.1**
YKA	**Yellowknife Ar**	**63.22 30**		P	**P**	**12 59 53.9**	**-2.4**
AKASG	**Malin Array Be**	**74.45 323**		P	**P**	**13 01 07.6**	**+1.1**

*NIED **04** 13:12:00, 37.°20N×142.°30E, h32km, Mw3.5 Best double couple: M0:1.79000×10^14 NP1:φs=211.00000°, δ33.00000°, λ104.00000°. NP2:φs=14.00000°, δ58.00000°, λ81.00000°.*

JMA 04 13:12:34.9±0.3, 37.°22N×142.°32E, h7km±3km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.16 278**		P	Pg	13 12 56.8	-0.4
ONAJ	**Iwakimizuishiy**	**1.22 265**		P	Pg	13 12 58.0	-0.3
ONAJ				S	Sb	13 13 14.6	+0.3
JMM	**Marumori**	**1.37 298**		P	Pn	13 13 00.1	-0.4
JIO	**Ouri**	**1.45 328**		P	Pn	13 13 01.5	-0.1
JIO				*e*S	Sb	13 13 21.2	+0.3
JFT	**Otama**	**1.61 281**		P	Pn	13 13 04.2	+0.5
JOU	**Okura**	**1.74 312**		P	Pb	13 13 06.4	-0.8
JYS	**Shirataka**	**2.05 300**		P	Pb	13 13 11.5	-0.9
JFY	**Yanaizu**	**2.09 276**		P	Pn	13 13 11.1	+0.7
JYK	**Kaneyama**	**2.29 318**		P	Pn	13 13 13.9	+0.7
MAT	**Matsushiro**	**3.37 260**		P	Pn	13 13 29.8	+1.9
MAT				*e*S	Sb	13 14 12.7	-3.4

*ISCJB **04** 13:17:03.4±0.8, 35.°91N±0.°05×141.°14E±0.°09, h31km, mb3.6/4, Error ellipse: s-maj=10.5km s-min=6.6km az=154.5*

*IDC **04** 13:17:06.6±2.4, 35.°89N×141.°01E, h43km±20km, mb3.3/4, mb1 3.5/8, mb1mx3.3/51, mbtmp3.7/8, ML3.7/4, Error ellipse: s-maj=34.5km s-min=13.1km az=86.0*

*JMA **04** 13:17:07.9±0.1, 35.°89N×140.°81E, h39km±1km, M3.1*

ISC 04 13:17:05.1±0.9, 35.°91N±0.°05×141.°08E±0.°08, h31km, n14, σ1§00/17, mb3.7/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.27 222**		P	**Pn**	**13 17 14.8**	**+1.8**
JYT	**Yasato**	**0.79 294**		P	**Pn**	**13 17 19.8**	**-0.3**
JYT				*e*S	**Sb**	**13 17 29.5**	**-1.2**
JHO	**Hitachi**	**0.82 330**		P	**Pb**	**13 17 22.0**	**+1.2**
BSO4	**Boso 4**	**1.10 214**		P	**Pb**	**13 17 26.4**	**+0.9**
BSO3	**Boso 3**	**1.20 203**		P	**Pb**	**13 17 27.2**	**+0.1**
MJAR	**Matsushiro Arr**	**2.41 286**		P	**Pn**	**13 17 42.9**	**+0.5**
MAT	**Matsushiro**	**2.41 286**		P	**Pn**	**13 17 43.4**	**+1.0**
MAT				*e*S	**Sn**	**13 18 09.8**	**-1.1**
JHJ	**Hachijo jima 2**	**2.98 201**		P	**Pn**	**13 17 51.2**	**+0.9**
JHJ	15nm,0.3s,baz=73,slow=11,SNR=9.6			S	**Sn**	**13 18 25.1**	**+0.2**
ASAJ	**Asahikawa**	**8.28 8**		P	**Pn**	**13 19 04.6**	**+1.5**
JCJ	**Chichijima**	**8.83 174**		P	**Pn**	**13 19 09.8**	**-0.9**
JCJ	6.9nm,0.3s,baz=323,slow=20,SNR=5.2			S	Sn	13 20 40.3	-8.9
MKAR	**Makanchi Array**	**44.50 303**		P	**P**	**13 25 13.1**	**-0.4**
KURBB	**Kurchatov Arra**	**46.49 309**		P	**P**	**13 25 28.7**	**-0.6**
WRA	**Warramunga Arr**	**55.91 188**		P	**P**	**13 26 40.0**	**-0.2**
ASAR	**Alice Springs**	**59.64 188**		P	**P**	**13 27 06.3**	**0.0**

*NIED **04** 13:18:00, 38.°90N×141.°90E, h53km, Mw4.3 Best double couple: M0:2.76000×10^15 NP1:φs=171.00000°, δ21.00000°, λ61.00000°. NP2:φs=21.00000°, δ72.00000°, λ100.00000°.*

*MOS **04** 13:18:46.7±1.3, 38.°89N×142.°01E, h33km, mb4.6/31, Error ellipse: s-maj=7.8km s-min=5.3km az=96.4*

*ISCJB **04** 13:18:48.7±0.5, 38.°92N±0.°03×142.°03E±0.°05, h56km±3km, mb4.3/50, MS3.9/5, Error ellipse: s-maj=7.4km s-min=4.2km az=30.1*

*JMA **04** 13:18:49.9, 38.°88N×141.°99E, h49km±1km, M4.2*

JMA Felt II J1.

*IDC **04** 13:18:51.6±2.0, 38.°88N×141.°88E, h64km±17km, mb3.9/20, mb1 4.0/25, mb1mx3.9/52, mbtmp4.2/25, MS3.4/9, Ms1 3.4/9, ms1mx3.1/49, Error ellipse: s-maj=17.6km s-min=12.3km az=103.0*

*NEIC **04** 13:18:51.2±0.6, 38.°88N×142.°00E, h62km±5km, mb4.7/11, Error ellipse: s-maj=8.2km s-min=4.9km az=115.0*

NEIC Recorded [2 JMA] in Iwate and Miyagi.

ISC 04 13:18:49.4±0.7, 38.°91N±0.°04×142.°03E±0.°06, h44km±5km, n108, σ1§43/120, mb4.5/50, MS3.9/5, 10C-5D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.33 302**		P	**Pn**	**13 18 59.2**	**+1.0**
OFUJ				S	**Sn**	**13 19 05.6**	**+1.1**
JMK	**Ichinoseki**	**0.63 274**		P	**Pn**	**13 19 02.4**	**+0.4**
JMK				S	**Sn**	**13 19 11.2**	**+0.2**
JIO	**Ouri**	**0.70 230**		P	**Pn**	**13 19 02.9**	**0.0**
JIO				S	**Sn**	**13 19 11.8**	**-0.8**
JOM	**Ohasama**	**0.80 315**		S	**Sn**	**13 19 15.8**	**+0.7**
JTH	**Tanohata**	**1.04 353**		P	**Pn**	**13 19 08.8**	**+1.3**
JTH				S	**Sn**	**13 19 22.3**	**+1.5**
JOU	**Okura**	**1.20 243**		P	**Pn**	**13 19 09.7**	**0.0**
JOU				S	**Sn**	**13 19 25.3**	**+0.5**
ERM	**Erimo**	**3.22 15**		*ce*P	**Pn**	**13 19 40.2**	**+2.8**
ERM	**Erimo**	**3.22 15**		*e*Pn	**Pn**	**13 19 39.9**	**+2.5**
MJAR	**Matsushiro Arr**	**3.84 233**		P	**Pn**	**13 19 48.0**	**+2.0**
MJAR	6.0nm,0.3s,baz=39,slow=11,SNR=26			LR	LR	13 21 36.1	
MJAR	**Matsushiro Arr**	**3.84 233**		P	**Pn**	**13 19 48.0**	**+2.0**
MJAR	comp=Z,196nm,19.4s,baz=35,slow=44			pmax	pmax		
MJAR	comp=Z,6.0nm,0.3s			MLR	MLR		
MAJO	**Matsushiro**	**3.84 233**	*d*	*i* P	**Pn**	**13 19 47.9**	**+1.9**
MAJO	**Matsushiro**	**3.84 233**		*e*Pn	**Pn**	**13 19 48.0**	**+2.1**
MAT	**Matsushiro**	**3.84 233**		P	**Pn**	**13 19 48.2**	**+2.2**
MAT				*e*S	**Sn**	**13 20 33.6**	**+3.8**
ASAJ	**Asahikawa**	**5.22 5**		P	**Pn**	**13 20 05.7**	**+0.8**
ASAJ	comp=Z,3.2nm,0.3s,baz=192,slow=14,SNR=19			S	**Sn**	**13 21 04.2**	**+0.5**
YUK	**Yuzh-Kuril'sk**	**5.88 28**		*i* P	**Pn**	**13 20 13.5**	**-0.3**
YUK				*i* S	**Sn**	**13 21 18.1**	**-1.7**
YUK	comp=N,28nm,0.3s			pmax	pmax		
YUK	comp=E,31nm,0.3s			pmax	pmax		
YUK	comp=Z,68nm,0.3s			pmax	pmax		
JHJ	**Hachijo jima 2**	**6.06 198**		P	**Pn**	**13 20 18.1**	**+1.7**
JHJ	comp=Z,6.0nm,0.3s,baz=29,slow=15,SNR=7.4			S	**Sn**	**13 21 21.5**	**-2.9**
JHJ	comp=Z,13nm,0.3s,baz=41,slow=19,SNR=3.5			LR	LR	13 22 50.4	
JHJ	comp=Z,79nm,20.2s,baz=62,slow=40			LR	LR	13 22 50.4	
JHJ2	**Mitsune**	**6.06 198**		*e*Pn	**Pn**	**13 20 16.6**	**+0.3**
SHO	**Shikotan**	**6.13 35**		*i* P	**Pn**	**13 20 16.4**	**-0.9**
SHO				*i* S	Sn	13 21 20.8	-5.3
SHO	comp=Z,28nm,0.5s			pmax	pmax		
KUR	**Kuril'sk**	**7.67 33**		*e*P	**Pn**	**13 20 39.0**	**+0.6**
KUR				*e*S	**Sn**	**13 21 59.8**	**-4.0**
KUR	comp=N,7.0nm,0.6s			pmax	pmax		
KUR	comp=E,5.0nm,0.6s			pmax	pmax		
KUR	comp=Z,13nm,0.6s			pmax	pmax		
KUR	comp=N,75nm,0.7s			smax	smax		
KUR	comp=E,51nm,0.7s			smax	smax		
YSS	**Yuzh-Sakhalins**	**8.06 4**	⇑	*e*P	**Pn**	**13 20 45.2**	**+1.5**
YSS	comp=Z,10.0nm,0.8s			pmax	pmax		
VLA	**Vladivostok**	**8.74 302**	*α*	*i* P	**Pn**	**13 20 53.4**	**+0.3**
VLA				S	**Sn**	**13 22 30.8**	**+0.5**
VLA	comp=Z,79nm,1.3s			pmax	pmax		
MSHR	**Mys Shultsa**	**9.03 297**	⇑	*e*P	**Pn**	**13 20 55.7**	**-1.3**
USRK	**Ussuriysk Ar.**	**9.19 308**		P	**Pn**	**13 21 00.8**	**+1.4**
USRK	comp=Z,1.6nm,0.3s,baz=119,slow=14,SNR=42			LR	LR	13 24 14.6	
USRK	comp=Z,212nm,21.7s,baz=80,slow=35			LR	LR	13 24 45.6	
JNU	**Nakatsue**	**10.71 241**		LR	LR	13 25 45.6	
HABR	**Khabarovsk**	**10.81 334**		*e*P	Pn	13 21 17.8	-3.5
HABR				*e*S	**Sn**	**13 23 16.0**	**-4.8**
HABR	comp=Z,10.0nm,1.3s			pmax	pmax		
HABR	comp=Z,98nm,15.0s			MLR	MLR		
MDJ	**Mudanjiang**	**10.89 306**		P	Pn	13 21 26.1	+3.5
MDJ	comp=Z,7.0nm,1.1s			pmax	pmax		
MDJ	comp=Z,70nm,5.1s			pmax	pmax		
MDJ	comp=N,65nm,23.9s			LR	LR		
MDJ	comp=E,88nm,27.3s			LR	LR		
MDJ	comp=Z,130nm,26.9s			LR	LR		
MDJ	**Mudanjiang**	**10.89 306**		*e*P	**Pn**	**13 21 25.0**	**+2.4**
KSRS	**Korea Array**	**11.20 267**		P	Pn	13 21 30.1	+3.3
KSRS	comp=Z,0.4nm,0.3s,baz=81,slow=14,SNR=13			LR	LR	13 25 23.4	
KSRS	comp=Z,102nm,18.2s,baz=76,slow=35			LR	LR	13 25 23.4	
KSAR	**Wonju Array Be**	**11.23 267**		P	**Pn**	**13 21 30.1**	**+2.9**
KSAR	**Wonju Array Be**	**11.23 267**		P	**Pn**	**13 21 30.1**	**+2.9**
TYV	**Tymovskoe**	**11.96 2**		*e*P	**Pn**	**13 21 38.8**	**+1.7**
KLR	**Kul'dur**	**12.68 328**		P	**Pn**	**13 21 47.8**	**+0.9**
SKR	**Severo-Kuril's**	**15.41 36**		*e*P	**Pn**	**13 22 25.7**	**+2.1**
TIA	**Tai'an**	**19.91 270**		*e*P	**P**	**13 23 15.8**	**-1.4**
TIA	comp=Z,10.0nm,1.0s			pmax	pmax		
MA2	**Magadan**	**21.42 12**		*e*P	**P**	**13 23 33.6**	**+0.3**
MA2	comp=Z,15nm,0.6s			pmax	pmax		
MA2	**Magadan**	**21.42 12**		*e*P	**P**	**13 23 33.6**	**+0.3**
YAK	**Yakutsk**	**24.36 346**		*e*P	**P**	**13 24 01.9**	**-1.0**
YAK				*e**PP	**pP**	**13 24 15.5**	**+0.9**
YAK				*e*		13 24 34.5	
YAK				*e*		13 27 39.1	
YAK				*e*S	**S**	**13 28 17.7**	**-1.4**
YAK				*e**SS	**sS**	**13 28 36.4**	**-2.1**
YAK				*e*SS	**SnSn**	**13 29 06.1**	**+0.9**
YAK				*e*		13 35 00.4	
YAK	comp=Z,10.0nm,0.8s			pmax	pmax		
YAK	comp=N,6.0nm,1.0s			pmax	pmax		
YAK	comp=Z,56nm,4.4s			pmax	pmax		
YAK	comp=N,35nm,4.2s			pmax	pmax		
YAK	comp=E,51nm,4.7s			smax	smax		
YAK	comp=N,25nm,2.8s			smax	smax		
YAK	comp=E,30nm,2.0s			smax	smax		
SEY	**Seymchan**	**24.86 11**		P	**P**	**13 24 08.8**	**+1.4**
SEY	**Seymchan**	**24.86 11**	⇓	*i* P	**P**	**13 24 08.6**	**+1.2**
BOD	**Bodaibo**	**26.23 325**		*e*P	**P**	**13 24 18.9**	**-1.0**
BOD				*e*		13 24 34.9	
BOD	comp=Z,4.0nm,1.6s			pmax	pmax		
ULN	**Ulaanbaatar**	**26.75 301**		P	**P**	**13 24 26.0**	**+1.0**
ULN	comp=Z,2.0nm,0.7s			pmax	pmax		
ENH	**Enshi**	**28.02 262**		*e*P	**P**	**13 24 35.1**	**-1.3**
ZAK	**Zakamensk**	**29.53 306**		*e*P	**P**	**13 24 48.8**	**-0.8**
ZAK	comp=Z,3.0nm,1.0s			pmax	pmax		
BILL	**Bilibino**	**32.09 17**	⇓	*e*P	**P**	**13 25 13.0**	**+1.1**
BILL	comp=Z,3.0nm,1.5s			pmax	pmax		
GTA	**Gaotai**	**32.52 284**		*e*P	**P**	**13 25 17.1**	**+1.0**
GTA				pP	pP	13 25 20.4	-7.5
GTA				sP	sP	13 25 23.1	-10
GTA				PcP	**PcP**	**13 28 02.7**	**+0.7**
GTA				S	**S**	**13 30 32.8**	**+4.5**
GTA	comp=Z,5.0nm,1.0s			pmax	pmax		
GTA	comp=Z,130nm,5.0s			pmax	pmax		
GTA	comp=N,52nm,15.7s			LR	LR		
GTA	comp=E,110nm,18.1s			LR	LR		
GTA	comp=Z,120nm,18.1s			LR	LR		
TIXI	**Tiksi**	**33.49 352**		P	**P**	**13 25 23.4**	**-0.6**
TIXI	**Tiksi**	**33.49 352**	⇓	*e*P	**P**	**13 25 23.7**	**-0.3**
TIXI	comp=Z,4.0nm,2.5s			pmax	pmax		
ZALV	**Zalesovo Beam**	**41.03 311**		P	**P**	**13 26 27.9**	**-0.2**
ZALV	**Zalesovo Beam**	**41.03 311**	*i*	P	**P**	**13 26 28.1**	**0.0**
ZALV	comp=Z,8.0nm,0.7s			pmax	pmax		
NRIK	**Noril'sk**	**41.78 334**		P	**P**	**13 26 31.9**	**-2.2**

comp=Z,1.7nm,0.4s,baz=131,slow=7.0,SNR=3.5
NVS Novosibirsk 41.92 312 *e*P **P 13 26 34.3 -1.0**
CHTO Chiang Mai 42.24 254 *e*P **P 13 26 38.2 -0.2**
CHTO pmax pmax
comp=Z,3.0nm,0.8s
CHTO Chiang Mai 42.24 254 *e*P **P 13 26 38.2 -0.2**
comp=Z,3.3nm,0.8s
CMAR Chiang Mai Arr 42.46 254 P **P 13 26 39.9 -0.3**
comp=Z,0.5nm,0.3s,baz=41,slow=8.4,SNR=4.4
MK31 Makanchi Array 43.56 301 *i* P **P 13 26 48.4 -0.4**
MK31 pmax pmax
comp=Z,10.0nm,0.7s
MKAR Makanchi Array 43.56 301 P **P 13 26 48.6 -0.2**
comp=Z,10nm,0.8s,baz=84,slow=9.9,SNR=62
MKAR Makanchi Array 43.56 301 *i* P **P 13 26 48.7 -0.1**
MKAR pmax pmax
comp=Z,10.0nm,0.8s
KURK Kurchatov 45.18 307 P **P 13 27 01.9 +0.3**
KURK pmax pmax
comp=Z,15nm,0.6s
KURK Kurchatov 45.18 307 *e*P **P 13 27 01.0 -0.6**
comp=Z,52nm,1.1s
KURBB Kurchatov Arra 45.25 307 P **P 13 27 01.9 -0.4**
comp=Z,15nm,0.6s,baz=81,slow=8.2,SNR=41
COLD Coldfoot 46.28 30 P **P 13 27 09.8 -0.4**
ILAR Eielson Array 47.66 33 P **P 13 27 22.2 +1.3**
comp=Z,0.9nm,0.7s,baz=268,slow=6.8,SNR=8.6
TKM2 Tokmak 2 49.19 297 P **P 13 27 33.4 +0.2**
TKM2 pmax pmax
comp=Z,5.0nm,0.7s
TKM2 Tokmak 2 49.19 297 *e*P **P 13 27 33.5 +0.2**
comp=Z,5.9nm,0.7s
VOSK Vostochnaya 49.41 311 P **P 13 27 33.7 -0.8**
VOSK pmax pmax
comp=Z,7.0nm,1.1s
BRVK Borovoye 49.74 311*c i*P **P 13 27 36.9 -0.1**
BRVK pmax pmax
comp=Z,3.0nm,0.6s
BRVK Borovoye 49.74 311 *e*P **P 13 27 37.0 -0.1**
comp=Z,4.3nm,0.6s
AAK Ala-Archa 50.05 297 ⇓*i*P **P 13 27 39.7 0.0**
AAK pmax pmax
comp=Z,24nm,2.3s
MNAS Manas 51.48 298 P **P 13 27 50.3 -0.2**
MNAS pmax pmax
comp=Z,6.0nm,0.8s
INK Inuvik 52.50 28 P **P 13 27 59.0 +1.5**
comp=Z,1.5nm,0.8s,baz=293,slow=7.0,SNR=7.8
INK Inuvik 52.50 28 P **P 13 27 59.0 +1.5**
INK pmax pmax
comp=Z,2.0nm,0.8s
INK Inuvik 52.50 28 *e*P **P 13 27 59.1 +1.6**
KKAR Karatay Array 52.62 299 *e*P **P 13 27 58.3 -0.6**
KKAR pmax pmax
comp=Z,4.0nm,0.8s
KKAR Karatay Array 52.62 299 *e*P **P 13 27 58.3 -0.6**
comp=Z,4.0nm,0.8s
SVE Sverdlovsk 54.07 318 *e*P **P 13 28 09.8 +0.6**
SVE pmax pmax
comp=Z,22nm,0.9s
ARU Arti 55.29 318*c i*P **P 13 28 17.7 -0.3**
ARU 13 29 17.9
ARU 13 30 19.2
ARU S **S 13 35 59.2 +0.7**
ARU pmax pmax
comp=Z,12nm,0.7s
ARU Arti 55.29 318 *e*P **P 13 28 17.7 -0.3**
comp=Z,9.5nm,0.8s
AB31 Akbulak array 57.11 309 *i* P **P 13 28 30.4 -0.8**
AB31 pmax pmax
comp=Z,5.0nm,0.6s
ABKAR Akbulak array 57.11 309 *e*P **P 13 28 30.5 -0.7**
comp=Z,5.5nm,0.6s
WRAB Tennant Creek 58.97 188 *e*P **P 13 28 43.4 -1.0**
WRAB pmax pmax
comp=Z,11nm,1.4s
WRAB Tennant Creek 58.97 188 *e*P **P 13 28 43.4 -1.0**
comp=Z,11nm,1.4s
WRA Warramunga Arr 58.98 188 P **P 13 28 43.7 -0.8**
comp=Z,1.3nm,0.6s,baz=6.0,slow=7.0,SNR=19
YKA Yellowknife Ar 61.95 31 P **P 13 29 05.1 +0.9**
comp=Z,0.6nm,0.9s,baz=305,slow=6.8,SNR=9.0
ARCES ARCESS Array B 62.42 339 P **P 13 29 06.9 -0.4**
comp=Z,1.5nm,0.8s,baz=53,slow=8.2,SNR=3.5
KLMR Klimovskoe 62.44 327 *e*P **P 13 29 05.0 -2.5**
KLMR pmax pmax
comp=Z,4.0nm,0.9s
ASAR Alice Springs 62.71 188 P **P 13 29 09.0 -0.7**
comp=Z,0.6nm,0.7s,baz=11,slow=5.2,SNR=10
GEYT Alibeck 63.36 298 P **P 13 29 13.3 -0.9**
comp=Z,2.4nm,0.6s,baz=57,slow=5.5,SNR=5.4
OBN Obninsk 66.89 323 *e*P **P 13 29 36.5 -0.1**
OBN pmax pmax
comp=Z,8.0nm,1.6s
FINES FINESS Array B 67.39 332 P **P 13 29 39.4 -0.2**
comp=Z,4.0nm,0.6s,baz=46,slow=8.2,SNR=16
FINES LR LR 14 00 15.2
comp=Z,66nm,18.2s,baz=197,slow=37
AFI Afiamalu 67.98 131 LR LR 13 53 58.2
comp=Z,92nm,20.4s,baz=214,slow=31
ZEI Tsey 69.99 309 *e*P P 13 29 52.5 -4.0
ZEI pmax pmax
comp=Z,7.0nm,0.8s
KIV Kislovodsk 70.05 311 *e*P **P 13 29 57.5 +0.8**
KIV pmax pmax
comp=Z,16nm,0.9s
KIV Kislovodsk 70.05 311 *e*P **P 13 29 57.8 +1.0**
comp=Z,9.1nm,0.8s
KBZ Khabaz 70.05 310 P **P 13 29 56.6 0.0**
comp=Z,4.2nm,0.9s,baz=61,slow=5.1,SNR=11
NEY Neytrino 70.43 310 P **P 13 30 01.0 +1.8**
NEY pmax pmax
comp=Z,1.0nm,1.0s
GNI Garni 70.98 306⇑*e*P **P 13 30 04.0 +1.4**
GNI pmax pmax
comp=Z,10.0nm,0.6s
NB2 NORSAR Subarra 72.65 337 P **P 13 30 11.5 -0.5**
comp=Z,1.0nm,0.7s,baz=38,slow=5.9
NOA NORSAR Array B 72.65 337 P **P 13 30 11.9 -0.1**
comp=Z,1.7nm,0.7s,baz=39,slow=5.9,SNR=7.1
AKASG Malin Array Be 73.11 322 P **P 13 30 14.4 -0.5**
comp=Z,1.4nm,0.4s,baz=44,slow=5.8,SNR=9.9
AKASG Malin Array Be 73.11 322 *i* P **P 13 30 14.3 -0.6**
AKASG pmax pmax
comp=Z,1.0nm,0.4s
KIEV Kiev 73.12 322⇑*e*P **P 13 30 14.4 -0.6**
KIEV pmax pmax
comp=Z,6.0nm,1.1s
BRTR Keskin Array B 77.97 312 P **P 13 30 43.1 0.0**
comp=Z,0.8nm,0.5s,baz=111,slow=3.7,SNR=4.7
BRTR LR LR 14 09 51.2
comp=Z,48nm,19.0s,baz=188,slow=39
CLL Collm 79.71 330 *i* P **P 13 30 52.1 -0.2**
comp=Z,6.0nm,1.0s
CLL Collm 79.71 330 *i* P **P 13 30 52.1 -0.2**
CLL pmax pmax
comp=Z,6.0nm,1.0s
GERES GERESS Array B 81.37 328 P **P 13 31 01.1 -0.3**
comp=Z,0.5nm,0.5s,baz=54,slow=5.4,SNR=4.4
ANMO Albuquerque 83.02 50*c i*P **P 13 31 12.8 +2.4**
ANMO pmax pmax
comp=Z,2.0nm,1.2s
SCHQ Schefferville 83.40 16 LR LR 14 12 37.6
comp=Z,49nm,18.0s,baz=70,slow=39
TXAR Lajitas Array 88.60 53 P **P 13 31 38.5 +0.6**
comp=Z,0.2nm,0.6s,baz=330,slow=5.2,SNR=3.3

*ISCJB **04** 13:25:29.9±1.1, 17°.5S±0°.3×178°.6W±0°.2, h547km, mb3.4/12, Error ellipse: s-maj=42.2km s-min=15.1km az=146.7*
*IDC **04** 13:25:29.6±6.2, 17°.60S×178°.46W, h533km±68km, mb3.1/12, mb1 3.3/12, mb1mx3.1/38, mbtmp3.9/12, Error ellipse: s-maj=40.1km s-min=22.5km az=139.0*
ISC 04 13:25:30.8±1.2, 17°.6S±0°.3×178°.5W±0°.2, h547km, n14, σ0§62/15, mb3.4/12, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**38.70**	**241**	P		**P**	**13 32 08.2**	**0.0**
	1.1nm,0.5s,baz=83,slow=12,SNR=4.3							
WRA	**Warramunga Arr**	**44.60**	**259**	P		**P**	**13 32 54.6**	**-0.3**
	0.6nm,0.7s,baz=91,slow=7.3,SNR=7.3							
WRA				PcP		**PcP**	**13 34 25.8**	**-0.2**
	0.4nm,0.8s,baz=94,slow=3.8,SNR=3.1							
ASAR	**Alice Springs**	**44.79**	**254**	P		**P**	**13 32 56.2**	**-0.1**
	3.8nm,0.5s,baz=88,slow=8.1,SNR=96							
ASAR				PcP		**PcP**	**13 34 26.7**	**+0.1**
	0.4nm,0.5s,baz=105,slow=3.7,SNR=5.0							
FITZ	**Fitzroy Crossi**	**52.99**	**260**	P		**P**	**13 33 57.1**	**+0.1**
	4.6nm,1.1s,baz=107,slow=14,SNR=3.3							
MJAR	**Matsushiro Arr**	**67.59**	**323**	P		**P**	**13 35 33.7**	**+0.5**
	0.7nm,0.5s,baz=174,slow=6.8,SNR=4.3							
KSRS	**Korea Array**	**74.39**	**318**	P		**P**	**13 36 14.0**	**+0.9**
	0.5nm,0.6s,baz=113,slow=6.5,SNR=3.5							
NVAR	**Mina Array Bea**	**79.26**	**44**	P		**P**	**13 36 40.5**	**+0.5**
	0.4nm,0.6s,baz=216,slow=7.3,SNR=4.2							
SEY	**Seymchan**	**83.44**	**347**	P		**P**	**13 37 00.6**	**+0.1**
	1.5nm,0.6s,baz=163,slow=19,SNR=7.3							
ILAR	**Eielson Array**	**85.59**	**13**	P		**P**	**13 37 10.3**	**-0.7**
	0.3nm,0.4s,baz=225,slow=5.2,SNR=6.1							
TXAR	**Lajitas Array**	**85.90**	**58**	P		**P**	**13 37 14.3**	**+0.8**
	0.2nm,0.6s,baz=224,slow=3.5,SNR=3.6							
INK	**Inuvik**	**91.60**	**15**	P		**P**	**13 37 37.9**	**-1.0**
	0.4nm,0.7s,baz=228,slow=3.7,SNR=3.5							
YKA	**Yellowknife Ar**	**94.08**	**25**	P		**P**	**13 37 49.5**	**-0.9**
	0.1nm,0.6s,baz=255,slow=4.7,SNR=3.2							
BRTR	**Keskin Array B**	**144.48**	**315**	PKP		PKPbc	13 44 06.0	+0.4
	1.6nm,0.8s,baz=146,slow=2.4,SNR=7.5							
GERES	**GERESS Array B**	**147.27**	**345**	PKPbc		**PKPbc**	**13 44 12.8**	**-0.3**
	1.1nm,0.5s,baz=45,slow=2.1,SNR=6.7							

*SOME **04** 13:29:20.3, 43°.90N×81°.98E, h20km*
*NNC **04** 13:29:26.8±1.9, 43°.88N×81°.51E, h0km, mb2.7, mpv2.6, Error ellipse: s-maj=28.6km s-min=5.8km az=137.0*
ISC 04 13:29:21.6±2.6, 43°.84N±0°.07×81°.87E±0°.07, h2km±17km, n14, σ1§64/26, 1C-3D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
DJR	**Jarkent**	**1.58**	**289**	*e*P		**Pn**	**13 29 49.2**	**-1.5**
	6.7nm,0.5s							
DJR				*e*S		**Sn**	**13 30 10.5**	**-1.3**
	16nm,0.9s							
SHLS	**Shalkode**	**1.60**	**245**	*e*P		**Pn**	**13 29 49.9**	**-1.2**
	9.8nm,0.1s							
SHLS				*e*S		**Sn**	**13 30 11.3**	**-1.2**
	22nm,0.7s							
PDGK	**Podgornoye**	**1.81**	**254**	⇓P		**Pb**	**13 29 55.4**	**0.0**
	5.2nm,0.7s							
PDGK				⇓S		**Sn**	**13 30 16.9**	**-0.3**
	28nm,0.8s							
UZB	**Uzynbulak**	**2.18**	**253**	*e*P		**Pb**	**13 30 01.3**	**-0.6**
	7.5nm,0.7s							
UZB				*e*S		**Sb**	**13 30 31.1**	**+1.6**
	17nm,0.7s							
KAPS	**Kapalarasan**	**2.31**	**310**	*e*P		**Pn**	**13 30 01.6**	**+0.9**
	3.7nm,0.5s							
KAPS				*e*S		**Sb**	**13 30 31.4**	**-1.5**
	18nm,1.1s							
KPKS	**Kokpek**	**2.34**	**262**	*e*P		**Pn**	**13 30 02.2**	**+0.9**
	57nm,0.6s							
KPKS				*e*S		**Sb**	**13 30 32.5**	**-1.5**
	79nm,0.7s							
ZHN	**Zhinishke**	**2.59**	**256**	*e*P		**Pb**	**13 30 07.0**	**-1.8**
	9.8nm,0.1s							
ZHN				*e*S		**Sb**	**13 30 41.1**	**0.0**
	16nm,0.2s							
SATY	**Saty**	**2.64**	**254**	*e*P		**Pb**	**13 30 09.1**	**-0.6**
	14nm,0.1s							
SATY				*e*S		**Sb**	**13 30 44.8**	**+2.1**
	26nm,0.4s							
MK31	**Makanchi Array**	**2.97**	**6**	Pn		**Pn**	**13 30 11.4**	**+1.6**
	1.1nm,0.6s,baz=187,slow=14,SNR=7.2							
MK31				⇑Sn		**Sb**	**13 30 51.2**	**-0.9**
	6.3nm,0.8s,baz=188,slow=27,SNR=3.7							
CHKK	**Chushkaly**	**3.52**	**272**	*e*P		**Pb**	**13 30 26.7**	**+2.0**
	3.3nm,0.7s							
CHKK				*e*S		**Sg**	**13 31 14.6**	**-0.1**
	6.6nm,0.8s							
TNSS	**Tian-Shan**	**3.67**	**259**	*e*P		**Pb**	**13 30 27.8**	**+0.2**
TNSS				*e*S		**Sb**	**13 31 16.8**	**+4.1**
	2.3nm,0.4s							
KUU	**Kurty**	**4.00**	**273**	*e*P		**Pb**	**13 30 34.8**	**+1.9**
	3.4nm,0.2s							
KUU				*e*S		**Sg**	**13 31 29.1**	**-1.0**
	5.5nm,0.7s							
ZSN	**Zaisan**	**4.02**	**25**	*e*P		**Pb**	**13 30 32.1**	**-1.1**
	2.3nm,0.2s							
ZSN				*e*S		**Sb**	**13 31 24.5**	**+2.1**
	4.4nm,0.7s							
TKM2	**Tokmak 2**	**4.66**	**261**	⇓Lg		Lg	13 31 49.4	
	6.3nm,0.8s							

*ISCJB **04** 13:34:25.1±0.4, 5°.38S±0°.05×151°.76E±0°.07, h45km, mb4.4/38, MS3.8/13, Error ellipse: s-maj=11.6km s-min=5.9km az=30.1*
*NEIC **04** 13:34:28.9±0.8, 5°.36S×151°.73E, h67km±7km, mb4.5/17, Error ellipse: s-maj=9.5km s-min=5.5km az=113.0*
*IDC **04** 13:34:29.3±3.9, 5°.37S±151°.71E, h68km±33km, mb4.0/17, mb1 4.2/18, mb1mx4.0/41, mbtmp4.3/18, ML2.8/1, MS3.7/12, Ms1 3.7/12, ms1mx3.4/31, Error ellipse: s-maj=25.2km s-min=15.2km az=98.0*
ISC 04 13:34:26.4±0.5, 5°.41S±0°.07×151°.88E±0°.09, h45km, n68, σ1§04/67, mb4.5/38, MS3.7/13, New Britain region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
RABL	**Rabaul**	**1.24**	**13**	*e*Pn		**Pn**	**13 34 49.0**	**+1.6**
MANU	**Manus Island**	**5.61**	**306**	*e*Pn		**Pn**	**13 35 49.4**	**+2.1**
PMG	**Port Moresby**	**6.14**	**229**	P		**Pn**	**13 35 55.7**	**+1.1**
	16nm,0.3s,baz=40,slow=10,SNR=42							
PMG				S		**Sn**	**13 37 04.8**	**+1.2**
	15nm,0.3s,baz=316,slow=22,SNR=8.1							
PMG	**Port Moresby**	**6.14**	**229**	*e*Pn		**Pn**	**13 35 55.2**	**+0.6**
PMG				S		**Sn**	**13 37 04.8**	**+1.2**
CTA	**Charters Tower**	**15.59**	**200**	P		**P**	**13 38 07.0**	**+0.2**
	0.2nm,0.3s,baz=22,slow=12,SNR=7.5							
EIDS	**Eidsvold**	**19.86**	**182**	*e*P		**P**	**13 38 54.2**	**+0.4**
	12nm,0.9s							
MTN	**Manton Dam**	**21.76**	**249**	*e*P		**P**	**13 39 15.5**	**+1.1**
	17nm,0.8s							
WRAB	**Tennant Creek**	**22.34**	**228**	*e*P		**P**	**13 39 19.9**	**-0.7**
	20nm,0.7s							
WB2	**Warramunga Arr**	**22.35**	**228**	*e*P		**P**	**13 39 19.8**	**-0.9**
	16nm,0.7s							
WRA	**Warramunga Arr**	**22.36**	**228**	P		**P**	**13 39 20.1**	**-0.7**
	8.2nm,0.6s,baz=52,slow=10,SNR=62							
WRA				PcP		**PcP**	**13 43 15.3**	**+0.2**
	0.6nm,0.6s,baz=46,slow=2.2,SNR=2.8							
AS01	**Alice Springs**	**25.05**	**222**	*e*P		**P**	**13 39 45.6**	**-1.1**
AS31	**Alice Springs**	**25.08**	**222**	*e*P		**P**	**13 39 46.2**	**-0.8**
	5.7nm,0.7s							
ASAR	**Alice Springs**	**25.09**	**222**	P		**P**	**13 39 46.3**	**-0.7**
	17nm,0.7s,baz=57,slow=8.6,SNR=119							
ASAR				PcP		**PcP**	**13 43 20.4**	**-0.5**
	0.7nm,0.7s,baz=59,slow=3.6,SNR=2.9							
STKA	**Stephens Creek**	**28.04**	**199**	P		**P**	**13 40 15.2**	**+1.7**
	2.3nm,0.8s,baz=15,slow=11,SNR=6.2							
STKA				LR		LR	13 51 34.4	
	comp=Z,101nm,19.4s,baz=121,slow=37							
FITZ	**Fitzroy Crossi**	**28.57**	**242**	P		**P**	**13 40 17.4**	**-0.9**
	15nm,0.7s,baz=87,slow=7.2,SNR=16							
FITZ	**Fitzroy Crossi**	**28.57**	**242**	*e*P		**P**	**13 40 16.8**	**-1.6**
	15nm,0.8s							
DAV	**Davao City (W)**	**29.02**	**295**	LR		LR	13 51 47.5	
	comp=Z,127nm,19.1s,baz=120,slow=36							
RPZ	**Rata Peaks**	**41.73**	**159**	LR		LR	13 59 01.5	
	comp=Z,162nm,18.1s,baz=286,slow=35							
MJAR	**Matsushiro Arr**	**43.65**	**344**	P		**P**	**13 42 27.6**	**+0.9**
	1.0nm,0.8s,baz=163,slow=7.8,SNR=3.4							
MJAR				LR		LR	13 59 12.9	
	comp=Z,68nm,21.1s,baz=205,slow=34							
KSRS	**Korea Array**	**48.13**	**334**	P		**P**	**13 43 02.0**	**0.0**
	0.5nm,0.6s,baz=148,slow=6.8,SNR=3.0							
KSRS				LR		LR	14 00 11.6	
	comp=Z,47nm,21.8s,baz=156,slow=32							
KSAR	**Wonju Array Be**	**48.14**	**334**	P		**P**	**13 43 02.0**	**-0.1**
USRK	**Ussuriysk Ar.**	**52.53**	**342**	LR		LR	14 04 26.4	
	comp=Z,61nm,20.1s,baz=100,slow=34							
KMI	**Kunming**	**56.57**	**305**	P		**P**	**13 44 06.3**	**+1.1**
KMI				pmax		pmax		
	comp=Z,10.0nm,0.5s							
KMI				pmax		pmax		
	comp=Z,83nm,9.2s							
CM01	**Chiang Mai Arr**	**57.28**	**296**	*e*P		**P**	**13 44 08.8**	**-1.3**
CMAR	**Chiang Mai Arr**	**57.31**	**296**	P		**P**	**13 44 10.3**	**+0.1**
	comp=Z,1.5nm,0.8s,baz=127,slow=4.7,SNR=10							
CHTO	**Chiang Mai**	**57.42**	**296**	*e*P		**P**	**13 44 10.1**	**-0.9**
	comp=Z,21nm,1.9s							
CD2	**Chengdu**	**58.44**	**311**	P		**P**	**13 44 17.2**	**-0.8**
CD2				pmax		pmax		
	comp=Z,1.0nm,0.5s							
PETK	**Petropavlovsk-**	**58.50**	**4**	LR		LR	14 04 36.1	
	comp=Z,49nm,21.1s,baz=154,slow=31							
HHC	**Hu-ho-hao-te**	**59.01**	**325**	*e*P		**P**	**13 44 24.5**	**+2.7**
HHC				pmax		pmax		
	comp=Z,21nm,1.1s							
HHC				pmax		pmax		
	comp=Z,120nm,6.9s							
LZH	**Lanzhou**	**61.03**	**316**	*e*P		**P**	**13 44 35.5**	**-0.4**
LZH				pP		sP	13 44 52.7	-1.2
LZH				sP		pP	13 45 00.3	+12
LZH				*e*PP		PcP	13 45 52.6	+34
LZH				pmax		pmax		
	comp=Z,20nm,1.3s							
LZH				pmax		pmax		
	comp=Z,65nm,7.8s							
LZH				LR		LR		
	comp=N,270nm,15.2s							
LZH				LR		LR		
	comp=E,280nm,16.0s							
LZH				LR		LR		
	comp=Z,310nm,18.7s							
GTA	**Gaotai**	**65.48**	**318**	*e*P		**P**	**13 45 05.8**	**+0.5**
GTA				pP		pP	13 45 20.5	+2.3
GTA				sP		sP	13 45 26.3	+2.9
GTA				pmax		pmax		
	comp=Z,4.0nm,1.2s							
ULN	**Ulaanbaatar**	**66.03**	**329**	*e*P		**P**	**13 45 07.4**	**-1.2**
	comp=Z,2.6nm,0.8s							
SONM	**Songino Array**	**66.35**	**328**	P		**P**	**13 45 10.2**	**-0.5**
	comp=Z,4.6nm,0.6s,baz=124,slow=5.2,SNR=2.7							
VNDA	**Vanda**	**72.26**	**178**	P		**P**	**13 45 47.0**	**+0.4**
	comp=Z,0.8nm,0.8s,baz=360,slow=6.6,SNR=4.0							
WMQ	**Urumqi**	**75.57**	**318**	*e*P		**P**	**13 46 07.0**	**+0.4**
WMQ				pmax		pmax		
	comp=Z,3.0nm,0.6s							
WMQ				pmax		pmax		
	comp=Z,44nm,5.0s							
TIXI	**Tiksi**	**78.38**	**353**	P		**P**	**13 46 21.8**	**+0.1**
	comp=Z,1.2nm,0.3s,baz=150,slow=5.1,SNR=4.5							
MK01	**Makanchi Array**	**80.17**	**319**	*e*P		**P**	**13 46 29.8**	**-2.3**
MK31	**Makanchi Array**	**80.18**	**319**	*e*P		**P**	**13 46 30.2**	**-1.9**
MKAR	**Makanchi Array**	**80.18**	**319**	P		**P**	**13 46 31.5**	**-0.6**
	comp=Z,1.9nm,0.8s,baz=101,slow=6.3,SNR=12							
MKAR				LR		LR	14 22 13.2	
	comp=Z,65nm,20.4s,baz=209,slow=36							
MAKZ	**Makanchi**	**80.39**	**319**	*e*P		**P**	**13 46 32.4**	**-0.8**
	comp=Z,4.7nm,1.1s							
ZALV	**Zalesovo Beam**	**81.15**	**327**	P		**P**	**13 46 35.5**	**-1.6**
	comp=Z,1.4nm,0.4s,baz=108,slow=5.1,SNR=6.4							
MLY	**Manley**	**81.78**	**21**	*e*P		**P**	**13 46 40.8**	**+0.6**
	comp=Z,2.7nm,0.5s							
KSH	**Kashi**	**82.63**	**311**	*e*P		**P**	**13 46 46.9**	**+1.5**
KSH	**Kashi**	**82.63**	**311**	S		**S**	**13 56 58.8**	**-1.0**
KSH				pmax		pmax		
	comp=Z,170nm,6.8s							
KSH				LR		LR		
	comp=N,86nm,5.5s							
KSH				LR		LR		
	comp=E,88nm,5.9s							
ILAR	**Eielson Array**	**83.06**	**22**	P		**P**	**13 46 46.2**	**-0.7**
	comp=E,1.4nm,0.8s,baz=254,slow=4.7,SNR=12							
ILAR				LR		LR	14 21 43.2	
	comp=E,33nm,18.6s,baz=343,slow=34							
IL1	**Eielson Array**	**83.06**	**22**	*e*P		**P**	**13 46 46.0**	**-0.9**
DOT	**Dot Lake**	**83.65**	**24**	*e*P		**P**	**13 46 50.6**	**+0.6**
	comp=E,8.6nm,1.0s							
KURK	**Kurchatov**	**83.68**	**322**	*e*P		**P**	**13 46 48.9**	**-1.5**
	comp=E,3.8nm,0.9s							
TKM2	**Tokmak 2**	**83.69**	**314**	*e*P		**P**	**13 46 50.2**	**-0.7**
	comp=E,3.3nm,0.6s							
AAK	**Ala-Archa**	**84.42**	**314**	*e*P		**P**	**13 46 54.5**	**0.0**
	comp=E,4.6nm,0.9s							
EKS2	**Erkin-Say**	**84.94**	**314**	*e*P		**P**	**13 46 57.4**	**+0.2**
	comp=E,7.3nm,0.9s							
BVAR	**Borovoye Array**	**89.17**	**323**	P		**P**	**13 47 15.5**	**-1.8**
	comp=E,1.1nm,0.5s,baz=111,slow=5.9,SNR=8.4							
YBH	**Yreka Blue Hor**	**90.14**	**48**	P		**P**	**13 47 22.7**	**+0.5**
	comp=E,0.7nm,0.3s,baz=315,slow=2.9,SNR=5.4							
YBH				LR		LR	14 17 37.5	
	comp=E,53nm,21.5s,baz=242,slow=29							
K05A	**Summer Lake**	**91.59**	**47**	*e*P		**P**	**13 47 30.4**	**+1.3**
	comp=E,11nm,0.9s							
NV01	**Mina Array Sit**	**93.18**	**52**	*e*P		**P**	**13 47 37.4**	**+0.9**
NVAR	**Mina Array Bea**	**93.18**	**52**	P		**P**	**13 47 37.7**	**+1.2**
	comp=E,2.9nm,0.8s,baz=252,slow=6.6,SNR=17							
NVAR				LR		LR	14 23 46.1	
	comp=E,59nm,19.8s,baz=258,slow=32							
WVOR	**Wild Horse Val**	**93.23**	**48**	*e*P		**P**	**13 47 37.4**	**+0.9**
	comp=E,5.0nm,1.1s							
GEYT	**Alibeck**	**96.25**	**307**	LR		LR	14 33 56.5	
	comp=E,73nm,19.9s,baz=250,slow=37							
YKA	**Yellowknife Ar**	**96.39**	**28**	P		**P**	**13 47 50.3**	**0.0**
	comp=E,0.2nm,0.6s,baz=270,slow=4.9,SNR=7.0							
PDAR	**Pinedale Array**	**99.93**	**48**	P		**Pdif**	**13 48 07.1**	**+0.1**
	comp=E,1.0nm,0.7s,baz=248,slow=2.7,SNR=8.7							
NOA	**NORSAR Array B**	**117.17**	**340**	PKP		**PKPdf**	**13 53 05.3**	**-1.2**
	comp=E,0.6nm,0.8s,baz=37,slow=4.5,SNR=3.3							
CLL	**Collm**	**122.93**	**331**	*e*PKPdf		**PKPdf**	**13 53 17.0**	**-0.8**
GERES	**GERESS Array B**	**124.08**	**328**	PKP		**PKPdf**	**13 53 19.8**	**-0.4**
	comp=E,0.3nm,0.3s,baz=66,slow=2.4,SNR=14							
EKA	**Eskdalemuir Ar**	**126.34**	**343**	PKP		**PKPdf**	**13 53 24.0**	**-0.2**
	comp=E,0.5nm,0.5s,baz=27,slow=1.7,SNR=3.3							
DAVOX	**Davos/Dischmat**	**127.39**	**328**	PKP		**PKPdf**	**13 53 26.6**	**-0.1**
	comp=E,2.0nm,0.5s,baz=165,slow=4.0,SNR=4.0							
LPAZ	**La Paz**	**134.93**	**119**	PKP		**PKPdf**	**13 53 42.6**	**+0.2**
	comp=E,1.3nm,0.9s,baz=312,slow=0.7,SNR=3.9							
MDT	**Midelt**	**145.01**	**324**	PKP		**PKPbc**	**13 53 58.6**	**-0.4**
	comp=E,0.8nm,0.4s,baz=325,slow=2.0,SNR=6.4							
TORD	**Torodi Ar. Bea**	**149.61**	**287**	PKPbc		**PKPbc**	**13 54 11.6**	**-0.5**
	comp=E,11nm,0.6s,baz=77,slow=3.2,SNR=58							

IDC 04 13:34:59.0±5.2, 0°.48S×97°.35E, h0km, mb4.1/3, mb1 4.1/3, mb1mx3.4/46, mbtmp4.1/3, Error ellipse: s-maj=126.6km s-min=68.8km az=31.0, Southwest of Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
H08S2	**Diego Garcia H**	**25.78**	**253**	T		T	14 07 38.2	
	baz=74,slow=75,SNR=17							
H08S3	**Diego Garcia H**	**25.78**	**253**	T		T	14 07 38.3	
	baz=74,slow=75,SNR=17							
H08S1	**Diego Carcia H**	**25.80**	**253**	T		T	14 07 34.7	
	baz=74,slow=75,SNR=17							
H01W3	**Cape Leeuwin H**	**37.65**	**157**	T		T	14 22 16.7	
	baz=334,slow=76,SNR=4.2							
H01W2	**Cape Leeuwin H**	**37.66**	**157**	T		T	14 22 13.1	
	baz=334,slow=76,SNR=4.9							

IDC 04 13:54:37.5±2.4, 17°.19S×176°.82W, h0km, mb4.1/3, mb1 4.3/4, mb1mx3.8/29, mbtmp4.1/4, ML4.1/1, Error ellipse: s-maj=171.4km s-min=30.8km az=152.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**5.85**	**57**	P	Pn	13 56 05.7	+0.1
	5.1nm,0.3s,baz=243,slow=11,SNR=15						
AFI				Sn	Sn	13 56 59.4	-14
	19nm,0.3s,baz=33,slow=16,SNR=14						
STKA	**Stephens Creek**	**40.30**	**241**	P	P	14 02 17.2	+0.5
	0.7nm,0.3s,baz=93,slow=8.5,SNR=4.4						
WRA	**Warramunga Arr**	**46.25**	**259**	P	P	14 03 04.5	-0.5
	0.2nm,0.3s,baz=96,slow=7.2,SNR=8.9						
ASAR	**Alice Springs**	**46.44**	**253**	P	P	14 03 06.2	-0.3
	6.5nm,0.6s,baz=89,slow=8.4,SNR=80						

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*DDA **04** 13:57:08.0, 37°.28N×28°.34E, h7km, Md2.3*
*ISK **04** 13:57:08.3, 37°.25N×28°.16E, h5km, MD2.6*
*CSEM **04** 13:57:09.7±0.2, 37°.24N×28°.17E, h2km, MD2.6, Error ellipse: s-maj=7.1km s-min=3.5km az=45.0*

ISC 04 13:57:08.7±1.4, 37°.31N±0°.05×28°.24E±0°.05, h3km±12km, n17, σ0s61/28, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.17**	**169**	*e*PG	**Pg**	**13 57 11.8**	**-0.3**
YER				*e*SG	**Sg**	**13 57 14.7**	**+0.3**
YER	**Yerkesik**	**0.17**	**169**	*e*Pg	**Pg**	**13 57 11.8**	**-0.3**
YER				*e*Sg	**Sg**	**13 57 14.7**	**+0.3**
AYDN	**Tasoluk**	**0.46**	**321**	P	**Pb**	**13 57 19.0**	**-0.5**
AYDN				S	**Sb**	**13 57 26.3**	**-0.4**
AYDN	**Tasoluk**	**0.46**	**321**	*i* P	**Pb**	**13 57 19.1**	**-0.5**
AYDN				*i* S	**Sb**	**13 57 26.3**	**-0.4**
TURN	**Turunc**	**0.52**	**146**	*i* P	**Pg**	**13 57 18.1**	**-0.6**
TURN				*i* S	**Sg**	**13 57 25.9**	**+0.5**
DALY	**Dalyan (Mu¨la**	**0.59**	**146**	*e*PG	**Pb**	**13 57 20.7**	**-0.9**
DALY				*e*SG	**Sb**	**13 57 30.2**	**-0.1**
DALY	**Dalyan (Mu¨la**	**0.59**	**146**	*e*Pg	**Pb**	**13 57 20.7**	**-0.9**
DALY				*e*Sg	**Sb**	**13 57 30.3**	**-0.1**
BDRM	**Kayabasi**	**0.68**	**250**	P	**Pg**	**13 57 21.5**	**-0.2**
BDRM				S	**Sb**	**13 57 33.3**	**+0.3**
BDRM	**Kayabasi**	**0.68**	**250**	*i* P	**Pg**	**13 57 21.6**	**-0.2**
BDRM				*i* S	**Sb**	**13 57 33.3**	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**0.70**	**337**	*e*PG	**Pb**	**13 57 23.6**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**0.70**	**337**	*e*Pg	**Pb**	**13 57 23.6**	**0.0**
BODT	**Bodrum**	**0.78**	**252**	*e*PG	**Pg**	**13 57 23.1**	**-0.6**
BODT	**Bodrum**	**0.78**	**252**	*e*Pg	**Pg**	**13 57 23.1**	**-0.6**
GCAM	**G?zelcaml?**	**0.89**	**297**	P	**Pn**	**13 57 29.4**	**+1.2**
GCAM				S	**Sn**	**13 57 40.8**	**-0.8**
GCAM	**G?zelcaml?**	**0.89**	**297**	*i* P	**Pn**	**13 57 29.4**	**+1.2**
GCAM				*i* S	**Sn**	**13 57 40.8**	**-0.8**
FETY	**Fethiye**	**0.95**	**134**	*e*PG	**Pb**	**13 57 28.1**	**+0.2**
FETY	**Fethiye**	**0.95**	**134**	*e*Pg	**Pb**	**13 57 28.1**	**+0.2**

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*SOME **04** 13:58:35.6, 42°.15N×86°.10E, h0km*
*NNC **04** 13:58:36.3±6.6, 42°.05N×86°.17E, h0km, mb3.2, mpv2.8, Error ellipse: s-maj=48.0km s-min=25.4km az=140.0*

ISC 04 13:58:59.4±3.9, 41°.9N±0°.2×85°.4E±0°.1, h23km, n6, σ1s32/9, 3C-2D, Southern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KTMS	**Ketmen**	**4.01**	**294**	*e*P	**Pn**	**13 59 57.5**	**-2.0**
	3.0nm,0.5s						
KTMS				*e*S	**Sb**	**14 00 56.1**	**-1.4**
	3.8nm,0.5s						
SHLS	**Shalkode**	**4.25**	**289**	*e*P	**Pn**	**14 00 02.5**	**-0.3**
	2.0nm,0.2s						
SHLS				*e*S	**Sb**	**14 01 05.0**	**+0.6**
	6.9nm,0.7s						
PDGK	**Podgornoye**	**4.57**	**290**	⇑Pg	**Pn**	**14 00 08.5**	**+1.4**
	0.7nm,0.4s						
PDGK				⇓Lg	Lg	14 01 15.8	
	3.6nm,0.7s						
DJR	**Jarkent**	**4.75**	**302**	*e*P	**Pn**	**14 00 10.9**	**+1.3**
	3.2nm,0.5s						
DJR				*e*S	**Sb**	**14 01 19.3**	**+0.6**
	3.8nm,0.5s						
MK31	**Makanchi Array**	**5.35**	**337**	Pg	**Pn**	**14 00 17.8**	**-0.1**
	0.3nm,0.3s,baz=149,slow=16,SNR=4.6						
MK31				⇓Lg	Lg	14 01 31.7	
	1.3nm,0.5s,baz=146,slow=28,SNR=6.2						
MAKZ	**Makanchi**	**5.46**	**335**	⇑Pg	**Pn**	**14 00 19.2**	**-0.1**
	0.4nm,0.3s						
MAKZ				⇑Lg	Lg	14 01 34.1	
	1.5nm,0.6s						

MAN 04 13:59:45, 15°.32N×119°.90E, h28km, mb4.0, ML2.8, MS2.5, 2C, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SCZP	**Santa Cruz**	**0.46**	**2**	*e*P	Pn	13 59 56.0	+0.3
SCZP				*e*S	Sn	14 00 04.0	+1.1
BOLP	**Bolinao**	**1.06**	**1**	*e*P	Pb	14 00 04.4	-0.3
BOLP				*e*S	Sb	14 00 18.2	0.0
PCPH	**Palayan**	**1.18**	**78**	⇑*e*P	Pn	14 00 03.5	-2.2
PCPH				*e*S	Sn	14 00 16.6	-4.2
BCPH	**Baguio City Da**	**1.25**	**32**	⇑*i*P	Pb	14 00 09.2	+1.2
BCPH				*i* S	Sb	14 00 24.3	+0.5
BALP	**Baler**	**1.67**	**75**	*e*P	Pn	14 00 11.3	-1.1
BALP				*e*S	Sn	14 00 29.5	-3.5
CAUP	**Cauayan**	**2.46**	**49**	*e*P	Pn	14 00 25.2	+1.9
ENPP	**El Nido**	**4.11**	**186**	*e*P	Pn	14 00 47.8	+1.8

MEX 04 14:05:47.6±0.5, 17°.38N×96°.13W, h16km±11km, MD3.6, Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VHO	**Vista Hermosa**	**0.65**	**243**	*e*P	Pg	14 05 58.2	-2.3
VHO				*e*S	Sg	14 06 06.8	-2.4
TPIG	**Tehuac#an**	**1.57**	**312**	*e*P	Pn	14 06 11.8	-3.2
TPIG				*i* S	Sn	14 06 29.7	-5.4
HUIG	**Huatulco**	**1.60**	**179**	*e*P	Pn	14 06 12.7	-2.6
HUIG				*e*S	Sn	14 06 30.5	-5.0
TLIG	**Tlapa**	**2.34**	**275**	*i* P	Pn	14 06 23.4	-2.0
PCIG		**3.25**	**120**	*e*P	Pn	14 06 35.5	-2.3
PCIG				*i* S	Sn	14 07 10.6	-5.6

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*ISCJB **04** 14:11:01.0±0.9, 24°.2S±0°.2×179°.8E±0°.2, h517km, mb3.5/6, Error ellipse: s-maj=25.9km s-min=19.9km az=144.7*
*IDC **04** 14:11:03.7±5.9, 24°.31S×179°.86E, h540km±70km, mb3.0/6, mb1 3.3/7, mb1mx3.1/24, mbtmp3.9/7, Error ellipse: s-maj=35.1km s-min=23.1km az=22.0*

ISC 04 14:11:01.7±1.0, 24°.2S±0°.2×179°.9E±0°.2, h517km, n8, σ0s54/8, mb3.5/6, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**14.22**	**189**	P	**P**	**14 14 03.9**	**+0.5**
	0.6nm,0.3s,baz=18,slow=16,SNR=4.0						
STKA	**Stephens Creek**	**34.51**	**248**	P	**P**	**14 17 06.7**	**+0.2**
	1.1nm,0.8s,baz=92,slow=12,SNR=3.8						
ASAR	**Alice Springs**	**41.87**	**261**	P	**P**	**14 18 06.8**	**+0.2**
	0.8nm,0.4s,baz=94,slow=7.1,SNR=20						
WRA	**Warramunga Arr**	**42.27**	**266**	P	**P**	**14 18 09.4**	**-0.3**
	1.7nm,0.4s,baz=95,slow=8.3,SNR=66						
VNDA	**Vanda**	**54.09**	**185**	P	**P**	**14 19 36.2**	**-0.8**
	0.3nm,0.4s,baz=12,slow=6.0,SNR=4.7						
NVAR	**Mina Array Bea**	**85.04**	**44**	P	**P**	**14 22 43.2**	**+0.4**
	0.3nm,0.5s,baz=221,slow=8.4,SNR=3.5						
TXAR	**Lajitas Array**	**90.68**	**58**	P	**P**	**14 23 09.4**	**0.0**
	0.7nm,0.7s,baz=207,slow=6.7,SNR=8.7						
ARCES	**ARCESS Array B**	**132.14**	**348**	PKP	**PKPdf**	**14 29 15.3**	**-0.5**
	2.2nm,0.9s,baz=47,slow=2.3,SNR=4.0						

MAN 04 14:19:47, 13°.93N×120°.29E, h43km, mb3.9, ML2.7, MS2.3, 1D, Mindoro

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PGP	**Puerto Galera**	**0.77**	**123**	⇓*e*P	Pn	14 20 03.2	+1.7
PGP				*e*S	Sn	14 20 14.1	+2.1
SJMP	**San Jose**	**1.67**	**151**	*e*P	Pn	14 20 15.2	+1.4
SJMP				*e*S	Sn	14 20 35.9	+1.9
BUSP	**Coron**	**1.92**	**183**	*e*P	Pn	14 20 18.6	+1.3
BUSP				*e*S	Sn	14 20 41.6	+1.5
ENPP	**El Nido**	**2.84**	**197**	*e*P	Pn	14 20 31.6	+1.7
CUYO	**Cuyo Island**	**3.14**	**167**	*e*P	Pn	14 20 34.1	+0.1

IDC 04 14:24:17.9±1.9, 5°.81S×151°.95E, h0km, mb4.0/4, mb1 4.3/5, mb1mx3.7/41, mbtmp4.1/5, ML2.1/1, Error ellipse: s-maj=102.5km s-min=23.3km az=133.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**5.94**	**233**	Pn	Pn	14 25 48.5	+1.3
	3.0nm,0.3s,baz=58,slow=9.5,SNR=15						
PMG				Sn	Sn	14 26 57.7	+1.6
	7.9nm,0.3s,baz=135,slow=18,SNR=9.2						
WRA	**Warramunga Arr**	**22.14**	**229**	P	P	14 29 14.3	-1.2
	1.9nm,0.8s,baz=54,slow=10,SNR=19						
ASAR	**Alice Springs**	**24.84**	**223**	P	P	14 29 42.3	+0.1
	1.3nm,0.5s,baz=54,slow=8.8,SNR=18						
FITZ	**Fitzroy Crossi**	**28.44**	**242**	P	P	14 30 15.0	+0.2
	4.2nm,0.5s,baz=64,slow=8.3,SNR=18						
ILAR	**Eielson Array**	**83.41**	**22**	P	P	14 36 47.0	+0.1
	1.0nm,0.7s,baz=249,slow=5.1,SNR=9.5						

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*RSNC **04** 14:28:45.2±0.4, 11°.67N×73°.16W, h24km±13km, ML3.0*
*FUNV **04** 14:28:46.1, 11°.77N×73°.06W, h36km, MW2.8*

ISC 04 14:28:41.7±2.0, 11°.7N±0°.1×73°.12W±0°.08, h14km, n13, σ2s12/21, Near north coast of Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URIC	**Uribia, Colomb**	**1.11**	**91**	*e*P	**Pg**	**14 29 04.6**	**+1.5**
URIC				*i*		14 29 04.8	
	comp=Z,320nm,0.2s						
URIC				*e*S	**Sg**	**14 29 19.8**	**+2.2**
VIRV	**Villa del Rosa**	**1.40**	**150**	*e*P	**Pn**	**14 29 08.2**	**+1.3**
VIRV				*e*S	**Sn**	**14 29 25.1**	**0.0**
DABV	**Dabajuro**	**2.56**	**108**	*e*P	**Pn**	**14 29 24.2**	**+1.3**
DABV				*e*S	**Sn**	**14 29 51.9**	**-2.0**
MONV	**Montecano**	**3.10**	**85**	*e*P	**Pn**	**14 29 30.8**	**+0.6**
MONV				*e*S	**Sn**	**14 30 02.6**	**-4.5**
VIGV	**El Vigia**	**3.34**	**149**	*e*P	**Pn**	**14 29 35.8**	**+2.1**
VIGV				*e*S	**Sn**	**14 30 11.4**	**-1.8**
SIQV	**Siquisique**	**3.42**	**108**	*e*P	**Pn**	**14 29 35.6**	**+0.9**
CURV	**Curarigua**	**3.54**	**118**	*e*P	**Pn**	**14 29 37.6**	**+1.2**
CURV				*e*S	**Sn**	**14 30 15.2**	**-2.9**
MOTC	**Monteria, Cord**	**3.85**	**221**	*e*S	**Sn**	**14 30 24.7**	**-0.9**
GRMC	**Gramalote, San**	**3.99**	**175**	*e*P	**Pn**	**14 29 41.0**	**-1.7**
GRMC				*e*S	**Sn**	**14 30 25.1**	**-4.2**
GRMC				*i*		14 30 36.5	
	comp=Z,27nm,0.3s						
SOCV	**Socops**	**4.08**	**147**	*e*P	**Pn**	**14 29 44.4**	**+0.7**
BRRC	**Barranca, Sant**	**4.62**	**187**	*e*P	**Pn**	**14 29 52.3**	**+1.1**
BRRC				*i*		14 30 04.0	
	comp=Z,19nm,0.5s						
BRRC				*e*S	**Sn**	**14 30 43.2**	**-1.4**
BAUV	**El Baul**	**5.71**	**118**	*e*P	**Pn**	**14 30 05.7**	**-0.5**
CUPV	**Cœpira**	**7.39**	**102**	*e*P	**Pn**	**14 30 27.9**	**-1.5**

WEL 04 14:32:23.8±0.2, 40°.51S×173°.34E, h148km±2km, ML3.6/11, 12C-3D, Error ellipse: s-maj=1.3km s-min=0.7km az=90.0, Cook Strait

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DUWZ	**D'Urville Isla**	**0.53**	**124**	⇑PN	Pn	14 32 45.1	+0.1
DUWZ				SN	Sn	14 33 00.8	-0.5
QRZ	**Quartz Range**	**0.69**	**243**	PN	Pn	14 32 45.9	-0.1
QRZ				SN	Sn	14 33 02.1	-0.8
NNZ	**Nelson**	**0.71**	**178**	⇑PN	Pn	14 32 46.1	0.0
NNZ				SN	Sn	14 33 01.8	-1.3
TCW	**Tory Channel**	**1.00**	**135**	PN	Pn	14 32 48.6	+0.3
TCW				AML	AML	14 33 08.9	
TCW				AML	AML	14 33 09.1	
TUWZ	**Tuamarina**	**1.03**	**154**	PN	Pn	14 32 48.7	+0.2
TUWZ				AML	AML	14 33 07.5	
TUWZ				AML	AML	14 33 10.7	
NMEZ	**Namu Road**	**1.17**	**21**	PN	Pn	14 32 49.8	-0.1
KIW	**Kapiti Island**	**1.24**	**107**	PN	Pn	14 32 50.6	0.0
KIW				AML	AML	14 33 12.1	
KIW				AML	AML	14 33 12.1	
BSWZ	**Blackbirch Sta**	**1.27**	**162**	PN	Pn	14 32 51.2	+0.4
BSWZ				AML	AML	14 33 11.8	
THZ	**Tophouse**	**1.29**	**195**	PN	Pn	14 32 51.2	+0.1
THZ				SN	Sn	14 33 10.8	-1.3
KHEZ	**Kahui Hut**	**1.32**	**23**	PN	Pn	14 32 51.3	-0.1
PREZ	**Palmer Road**	**1.32**	**29**	PN	Pn	14 32 51.3	-0.1
LREZ	**Lake Rotokare**	**1.33**	**38**	PN	Pn	14 32 51.3	-0.1
WEL	**Wellington**	**1.33**	**126**	⇑PN	Pn	14 32 51.5	+0.1
PKE	**Pukeiti**	**1.40**	**21**	PN	Pn	14 32 52.1	-0.2
OGWZ	**Otaki Gorge**	**1.42**	**103**	⇑PN	Pn	14 32 52.4	0.0
CAW	**Cannon Point**	**1.44**	**115**	PN	Pn	14 32 52.4	-0.1
CAW				AML	AML	14 33 15.6	
CAW				AML	AML	14 33 15.6	
BHW	**Baring Head**	**1.47**	**128**	PN	Pn	14 32 52.7	-0.1
BHW				AML	AML	14 33 15.2	
BHW				AML	AML	14 33 15.4	
WAZ	**Wanganui**	**1.47**	**60**	PN	Pn	14 32 53.0	+0.1
OHWZ	**Ohakea**	**1.54**	**79**	PN	Pn	14 32 53.9	+0.4
DSZ	**Denniston Nort**	**1.69**	**223**	⇓PN	Pn	14 32 55.1	-0.2
DSZ				SN	Sn	14 33 16.5	-3.0
HOWZ	**Holdsworth Sta**	**1.70**	**104**	⇑PN	Pn	14 32 55.0	-0.4
MSWZ	**Moikau Station**	**1.71**	**123**	⇑PN	Pn	14 32 55.2	-0.2
MSWZ				AML	AML	14 33 19.7	
MSWZ				AML	AML	14 33 19.8	
MRZ	**Mangatainoka R**	**1.71**	**96**	⇑PN	Pn	14 32 55.0	-0.4
VRZ	**Vera Road**	**1.76**	**39**	⇓PN	Pn	14 32 55.2	-0.9
MTW	**Mount Morrison**	**1.76**	**112**	⇑PN	Pn	14 32 55.7	-0.3
MTW				AML	AML	14 33 20.7	
MTW				AML	AML	14 33 20.8	
PLWZ	**Palliser**	**1.79**	**127**	⇑PN	Pn	14 32 56.1	-0.3
PAWZ	**Paruwai Farm**	**1.80**	**120**	⇑PN	Pn	14 32 56.2	-0.3
PAWZ				AML	AML	14 33 21.3	
PAWZ				AML	AML	14 33 22.0	
POWZ	**Post Office Ro**	**1.85**	**87**	PN	Pn	14 32 56.4	-0.7
TIWZ	**Tintock**	**1.95**	**99**	PN	Pn	14 32 57.4	-0.8
TIWZ				AML	AML	14 33 24.9	
TIWZ				AML	AML	14 33 25.0	
TRWZ	**Traveller**	**1.99**	**117**	PN	Pn	14 32 58.3	-0.3
TRWZ				AML	AML	14 33 23.8	
PRWZ	**Pori Road**	**2.00**	**92**	PN	Pn	14 32 58.6	-0.2
TMWZ	**Te Maipa**	**2.02**	**108**	⇑PN	Pn	14 32 58.7	-0.4
TSZ	**Takapari Road**	**2.05**	**78**	PN	Pn	14 32 58.7	-0.8
WNVZ	**Wahianoa**	**2.10**	**56**	PN	Pn	14 32 59.6	-0.5
DVHZ	**Dannevirke**	**2.17**	**85**	PN	Pn	14 32 59.9	-0.9
CPWZ	**Castlepoint**	**2.21**	**101**	PN	Pn	14 33 01.1	-0.1
BFZ	**Birch Farm**	**2.22**	**95**	⇑PN	Pn	14 33 00.6	-0.7
PNHZ	**Pukenui**	**2.27**	**76**	PN	Pn	14 33 01.0	-1.0
HIZ	**Hauiti**	**2.31**	**31**	⇓PN	Pn	14 33 01.3	-1.2
BHHZ	**Black Hill Sta**	**2.33**	**65**	PN	Pn	14 33 01.2	-1.5
ANWZ	**Angora Road**	**2.39**	**90**	PN	Pn	14 33 02.7	-0.7
LTZ	**Lake Taylor**	**2.41**	**199**	PN	Pn	14 33 02.9	-0.8
WPHZ	**Waipukurau**	**2.41**	**80**	PN	Pn	14 33 02.9	-0.9
KRHZ	**Kereru**	**2.48**	**71**	PN	Pn	14 33 03.3	-1.3
RATZ	**Rangitukua**	**2.49**	**50**	PN	Pn	14 33 03.8	-1.0
INZ	**Inchbonnie**	**2.63**	**212**	PN	Pn	14 33 05.4	-1.0
INZ				SN	Sn	14 33 35.8	-3.5
BKZ	**Black Stump Fm**	**2.77**	**62**	PN	Pn	14 33 06.1	-2.1
KAHZ	**Kahuranaki**	**2.80**	**76**	PN	Pn	14 33 07.6	-1.0
OXZ	**Oxford**	**2.98**	**199**	PN	Pn	14 33 08.2	-2.5
OXZ				SN	Sn	14 33 41.7	-5.4
ARHZ	**Aropaoanui**	**3.07**	**67**	PN	Pn	14 33 10.1	-1.9
CRLZ	**Canterbury Las**	**3.11**	**190**	PN	Pn	14 33 10.3	-2.1
WVZ	**Waitaha Valley**	**3.22**	**216**	PN	Pn	14 33 12.3	-1.5
AWAZ	**Awhitu Peninsu**	**3.59**	**17**	PN	Pn	14 33 18.5	-0.1
RPZ	**Rata Peaks**	**3.63**	**207**	PN	Pn	14 33 17.5	-1.6
KNZ	**Kokohu**	**3.65**	**67**	PN	Pn	14 33 16.9	-2.6
URZ	**Urewera**	**3.68**	**54**	PN	Pn	14 33 16.7	-3.2
MHGZ	**Mahia Peninsul**	**3.77**	**70**	PN	Pn	14 33 18.7	-2.3
RIGZ	**Rimuhau**	**3.86**	**64**	PN	Pn	14 33 19.7	-2.5
FOZ	**Fox Glacier**	**4.00**	**220**	PN	Pn	14 33 22.1	-1.9
HAZ	**Te Kaha**	**4.41**	**53**	PN	Pn	14 33 25.4	-4.0
LBZ	**Lake Benmore**	**4.52**	**210**	PN	Pn	14 33 28.4	-2.4
ODZ	**Otahua Downs**	**4.95**	**203**	PN	Pn	14 33 34.4	-2.0

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*IASPEI **04** 14:35:15.6±0.8, 38°.35N±0°.01×21°.78E±0°.01, h11km±4km, mb3.7/8, Error ellipse: s-maj=2.1km s-min=1.9km az=140.0, GT5 selection from ISC bulletin GT5 identified by Bond¨jr and McLaughlin (2009) selection criteria Bond¨jr and McLaughlin, A new ground truth data set for seismic studies, Seism. Res. Let., 80, 465-472, 2009*
*IDC **04** 14:35:15.3±1.5, 38°.50N×21°.78E, h0km, mb3.6/8, mb1 3.7/12, mb1mx3.5/50, mbtmp3.5/12, ML3.6/4, MS3.2/1, Ms1 3.2/1, ms1mx2.3/52, Error ellipse: s-maj=28.5km s-min=20.7km az=21.0*
*ATH **04** 14:35:15.6, 38°.33N×21°.82E, h17km, ML3.4/17, Error ellipse: s-maj=0.9km s-min=0.6km az=248.0*
*CSEM **04** 14:35:16.1±0.1, 38°.34N×21°.83E, h5km, ML3.4, Error ellipse: s-maj=2.5km s-min=2.4km az=22.0*
*ISCJB **04** 14:35:16.2±0.2, 38°.34N±0°.01×21°.82E±0°.02, h9km±1km, mb3.5/8, MS3.1/1, Error ellipse: s-maj=2.2km s-min=2.0km az=7.4*
*THE **04** 14:35:16.4, 38°.35N×21°.81E, h6km, ML3.6/25, Error ellipse: s-maj=0.8km s-min=0.4km az=245.0*

ISC 04 14:35:15.6±0.7, 38°.36N±0°.01×21°.78E±0°.01, h11km±4km, n195, σ0s85/269, mb3.7/8, 6C-4D, Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
UPR	**University Cam**	**0.07**	**175**	P	**Pg**	**14 35 18.0**	**+0.1**
UPR				S	**Sg**	**14 35 20.1**	**+0.5**
UPR	**University Cam**	**0.07**	**175**	P	**Pg**	**14 35 18.0**	**+0.1**
UPR				S	**Sg**	**14 35 19.7**	**+0.1**
UPR	**University Cam**	**0.07**	**175**	P	**Pg**	**14 35 17.4**	**-0.5**
UPR				S	**Sg**	**14 35 19.3**	**-0.3**
EFP	**Efpalio**	**0.12**	**55**	P	**Pg**	**14 35 18.7**	**+0.1**
EFP				S	**Sg**	**14 35 21.0**	**+0.3**
EFP	**Efpalio**	**0.12**	**55**	P	**Pg**	**14 35 18.1**	**-0.5**
EFP				S	**Sg**	**14 35 20.4**	**-0.3**
EFP	**Efpalio**	**0.12**	**55**	P	**Pg**	**14 35 18.1**	**-0.5**
EFP				S	**Sg**	**14 35 20.4**	**-0.3**
EFP				AML	AML	14 35 21.1	
EFP				AML	AML	14 35 22.0	
LAKA	**Lakka**	**0.20**	**126**	P	**Pg**	**14 35 19.7**	**-0.1**
LAKA				S	**Sg**	**14 35 22.6**	**-0.1**
LAKA	**Lakka**	**0.20**	**126**	P	**Pg**	**14 35 19.8**	**-0.1**
LAKA				S	**Sg**	**14 35 22.6**	**-0.1**
SERG	**Sergoula**	**0.23**	**75**	P	**Pg**	**14 35 20.4**	**+0.1**
SERG				S	**Sg**	**14 35 23.9**	**+0.4**
ANX	**Ano Chora**	**0.26**	**25**	P	**Pg**	**14 35 21.4**	**+0.4**
ANX				S	**Sb**	**14 35 26.0**	**-1.0**
ANX	**Ano Chora**	**0.26**	**25**	P	**Pg**	**14 35 21.3**	**+0.3**
ANX				S	**Sg**	**14 35 25.7**	**+1.0**
ANX	**Ano Chora**	**0.26**	**25**	S	**Sb**	**14 35 26.0**	**-1.0**
ANX				AML	AML	14 35 26.1	
ANX				AML	AML	14 35 27.6	
	comp=E,73180μm,0.4s						
KALE	**Kalithea**	**0.29**	**83**	P	**Pg**	**14 35 21.4**	**-0.1**
KALE				S	**Sg**	**14 35 26.2**	**+0.8**
KALE	**Kalithea**	**0.29**	**83**	P	**Pg**	**14 35 21.4**	**-0.1**
KALE				S	**Sg**	**14 35 26.1**	**+0.7**
KALE	**Kalithea**	**0.29**	**83**	P	**Pg**	**14 35 21.7**	**+0.2**
KALE				AML	AML	14 35 27.3	
	comp=E,14914μm,0.2s						
KALE				S	**Sb**	**14 35 27.4**	**-0.4**
KALE				AML	AML	14 35 30.9	
	comp=N,19982μm,0.3s						
PVO	**Paravola**	**0.33**	**323**	P	**Pg**	**14 35 22.5**	**+0.3**
PVO				S	**Sb**	**14 35 28.4**	**-0.4**
PVO	**Paravola**	**0.33**	**323**	P	**Pg**	**14 35 22.5**	**+0.3**
PVO				S	**Sb**	**14 35 30.0**	**+1.2**
AXS	**Araxos**	**0.35**	**243**	P	**Pb**	**14 35 23.2**	**-0.8**
AXS				S	**Sb**	**14 35 29.1**	**-0.5**
AXS	**Araxos**	**0.35**	**243**	P	**Pb**	**14 35 23.2**	**-0.8**
AXS				S	**Sb**	**14 35 29.1**	**-0.5**
AXS	**Araxos**	**0.35**	**243**	P	**Pb**	**14 35 23.1**	**-0.9**
AXS				S	**Sb**	**14 35 29.6**	**0.0**
RLS	**Riolos of Patr**	**0.39**	**219**	P	**Pb**	**14 35 23.9**	**-0.6**
RLS				S	**Sb**	**14 35 30.3**	**-0.2**
RLS	**Riolos of Patr**	**0.39**	**219**	P	**Pb**	**14 35 23.9**	**-0.6**
RLS				S	**Sb**	**14 35 30.0**	**-0.5**
RLS	**Riolos of Patr**	**0.39**	**219**	S	**Sb**	**14 35 30.2**	**-0.2**
RLS				AML	AML	14 35 30.6	
	comp=N,14567μm,0.3s						
RLS				AML	AML	14 35 31.0	
	comp=E,7406μm,0.2s						
DRO	**Drossia**	**0.41**	**187**	P	**Pg**	**14 35 23.8**	**+0.2**
DRO				S	**Sb**	**14 35 30.6**	**-0.5**
DRO	**Drossia**	**0.41**	**187**	P	**Pb**	**14 35 24.1**	**-0.8**
DRO				S	**Sb**	**14 35 30.2**	**-0.9**
DRO	**Drossia**	**0.41**	**187**	P	**Pb**	**14 35 24.1**	**-0.8**
DRO				S	**Sb**	**14 35 30.2**	**-0.9**
DRO				AML	AML	14 35 31.0	
	comp=E,29159μm,0.4s						
DRO				AML	AML	14 35 36.9	
	comp=N,19410μm,0.3s						
KLV	**Kalavryta, Ach**	**0.43**	**137**	P	**Pg**	**14 35 23.7**	**-0.4**
KLV				S	**Sg**	**14 35 29.6**	**-0.1**
KLV	**Kalavryta, Ach**	**0.43**	**137**	P	**Pg**	**14 35 24.0**	**0.0**
KLV				S	**Sg**	**14 35 29.6**	**-0

AMT				S	Sg	14 35 41.5	-0.8
AMT				AML	AML	14 35 49.3	
	comp=E,6513μm,0.5s						
AMT				AML	AML	14 35 52.6	
	comp=N,8424μm,0.4s						
PROD	**Prodromos**	**0.89**	**96**	P	**Pg**	**14 35 32.4**	**-0.3**
PROD				S	**Sg**	**14 35 43.9**	**-0.4**
PROD	**Prodromos**	**0.89**	**96**	P	**Pg**	**14 35 32.4**	**-0.3**
PROD				S	**Sg**	**14 35 43.9**	**-0.4**
PROD				AML	AML	14 35 49.9	
	comp=N,7822μm,0.3s						
PROD				AML	AML	14 35 50.8	
	comp=E,7156μm,0.3s						
DSL	**Palaion Diasel**	**0.94**	**326**	P	**Pg**	**14 35 33.2**	**-0.6**
DSL	**Palaion Diasel**	**0.94**	**326**	P	**Pg**	**14 35 33.2**	**-0.6**
DSL	**Palaion Diasel**	**0.94**	**326**	P	**Pg**	**14 35 31.9**	**-1.8**
VLS	**Valsamata**	**0.95**	**260**	P	**Pb**	**14 35 33.8**	**-0.4**
VLS				S	**Sn**	**14 35 49.6**	**+1.0**
VLS	**Valsamata**	**0.95**	**260**	P	**Pb**	**14 35 33.8**	**-0.4**
VLS				S	**Sn**	**14 35 48.3**	**-0.3**
LKD2	**Lefkada island**	**0.98**	**297**	P	**Pb**	**14 35 34.6**	**0.0**
LKD2	**Lefkada island**	**0.98**	**297**	P	**Pb**	**14 35 34.6**	**0.0**
LKD2	**Lefkada island**	**0.98**	**297**	P	**Pg**	**14 35 34.1**	**-0.3**
LTK	**Loutraki**	**0.99**	**109**	P	**Pg**	**14 35 34.0**	**-0.8**
LTK				S	**Sg**	**14 35 47.9**	**+0.2**
LTK	**Loutraki**	**0.99**	**109**	P	**Pg**	**14 35 34.2**	**-0.5**
LTK				S	**Sg**	**14 35 47.9**	**+0.2**
LTK	**Loutraki**	**0.99**	**109**	P	**Pg**	**14 35 34.2**	**-0.5**
LTK				S	**Sb**	**14 35 48.7**	**+0.7**
LTK				AML	AML	14 35 51.0	
	comp=N,2352μm,0.5s						
LTK				AML	AML	14 35 51.9	
	comp=E,3552μm,0.6s						
LKR	**Lokris**	**1.00**	**73**	P	**Pg**	**14 35 33.7**	**-1.2**
LKR				S	**Sn**	**14 35 49.5**	**-0.3**
LKR	**Lokris**	**1.00**	**73**	P	**Pg**	**14 35 33.7**	**-1.2**
LKR				S	**Sn**	**14 35 49.5**	**-0.3**
LKR	**Lokris**	**1.00**	**73**	P	**Pg**	**14 35 33.4**	**-1.5**
ZKS	**Zakynthos**	**1.02**	**230**	P	**Pb**	**14 35 35.0**	**-0.4**
ZKS				S	**Sn**	**14 35 51.7**	**+1.3**
ZKS	**Zakynthos**	**1.02**	**230**	P	**Pb**	**14 35 35.0**	**-0.4**
ZKS				S	**Sn**	**14 35 51.7**	**+1.3**
ZKS	**Zakynthos**	**1.02**	**230**	P	**Pg**	**14 35 34.8**	**-0.5**
VLX	**Vlachokerasia**	**1.09**	**154**	P	**Pg**	**14 35 35.9**	**-0.8**
VLX	**Vlachokerasia**	**1.09**	**154**	P	**Pg**	**14 35 35.9**	**-0.8**
VLX	**Vlachokerasia**	**1.09**	**154**	P	**Pg**	**14 35 35.4**	**-1.2**
ITM	**Ithomi**	**1.18**	**174**	P	**Pb**	**14 35 37.5**	**-0.6**
ITM				S	**Sn**	**14 35 55.7**	**+1.4**
ITM	**Ithomi**	**1.18**	**174**	P	**Pb**	**14 35 37.7**	**-0.4**
ITM				S	**Sn**	**14 35 55.7**	**+1.4**
ITM	**Ithomi**	**1.18**	**174**	P	**Pb**	**14 35 37.6**	**-0.4**
VIL2	**Platees**	**1.18**	**97**	P	**Pg**	**14 35 39.9**	**+1.6**
THL	**Klokotos Trika**	**1.22**	**9**	P	**Pg**	**14 35 38.9**	**-0.2**
THL				S	**Sn**	**14 35 56.9**	**+1.7**
THL	**Klokotos Trika**	**1.22**	**9**	P	**Pg**	**14 35 38.9**	**-0.2**
THL				S	**Sn**	**14 35 56.2**	**+1.0**
VILL	**Villia**	**1.22**	**99**	P	**Pg**	**14 35 39.2**	**+0.1**
VILL				S	**Sn**	**14 35 56.1**	**+0.7**
VILL	**Villia**	**1.22**	**99**	P	**Pg**	**14 35 39.2**	**+0.1**
VILL				S	**Sn**	**14 35 56.1**	**+0.7**
SMIA	**Simia**	**1.24**	**65**	P	**Pn**	**14 35 39.0**	**+0.1**
SMIA				S	**Sn**	**14 35 57.0**	**+1.3**
SMIA	**Simia**	**1.24**	**65**	P	**Pn**	**14 35 39.0**	**+0.1**
SMIA				S	**Sn**	**14 35 56.5**	**+0.8**
SMIA	**Simia**	**1.24**	**65**	P	**Pn**	**14 35 38.4**	**-0.5**
SMIA				S	**Sn**	**14 35 56.5**	**+0.8**
SMIA				AML	AML	14 35 59.2	
	comp=E,4570μm,0.5s						
SMIA				AML	AML	14 36 03.8	
	comp=N,4535μm,0.5s						
FYTO	**Fytoko, Volos**	**1.39**	**40**	P	**Pb**	**14 35 41.7**	**+0.1**
FYTO				S	**Sn**	**14 35 59.7**	**+0.4**
FYTO	**Fytoko, Volos**	**1.39**	**40**	P	**Pb**	**14 35 41.7**	**+0.1**
FYTO				S	**Sn**	**14 35 59.7**	**+0.4**
FYTO	**Fytoko, Volos**	**1.39**	**40**	P	**Pg**	**14 35 42.0**	**-0.3**
DID	**Didima**	**1.43**	**126**	P	**Pn**	**14 35 41.7**	**+0.1**
DID				S	**Sb**	**14 36 01.0**	**+0.3**
DID	**Didima**	**1.43**	**126**	P	**Pn**	**14 35 41.9**	**+0.3**
DID				S	**Sb**	**14 36 01.0**	**+0.3**
DID	**Didima**	**1.43**	**126**	P	**Pn**	**14 35 41.9**	**+0.3**
DID				S	**Sg**	**14 36 02.0**	**+0.3**
DID				AML	AML	14 36 04.8	
	comp=N,3730μm,0.6s						
DID				AML	AML	14 36 06.9	
	comp=E,2232μm,0.3s						
KRND	**KRANIDI**	**1.46**	**131**	P	**Pb**	**14 35 42.8**	**0.0**
KRND				S	**Sg**	**14 36 02.7**	**+0.2**
KRND	**KRANIDI**	**1.46**	**131**	P	**Pb**	**14 35 42.5**	**-0.3**
KRND				S	**Sg**	**14 36 02.7**	**+0.2**
KRND	**KRANIDI**	**1.46**	**131**	P	**Pb**	**14 35 42.5**	**-0.3**
PYL	**PYLOS**	**1.46**	**181**	P	**Pb**	**14 35 42.5**	**-0.3**
PYL	**PYLOS**	**1.46**	**181**	P	**Pb**	**14 35 42.5**	**-0.3**
PYL	**PYLOS**	**1.46**	**181**	P	**Pn**	**14 35 41.8**	**-0.1**
NEO	**Neokhori**	**1.48**	**50**	P	**Pn**	**14 35 42.6**	**+0.4**
NEO	**Neokhori**	**1.48**	**50**	P	**Pn**	**14 35 42.6**	**+0.4**
NEO	**Neokhori**	**1.48**	**50**	P	**Pn**	**14 35 42.2**	**0.0**
JAN	**Janina**	**1.48**	**331**	P	**Pg**	**14 35 44.9**	**+0.8**
MEV	**Metsovon**	**1.49**	**344**	P	**Pg**	**14 35 46.0**	**+1.8**
XOR	**Xorichti**	**1.50**	**47**	P	**Pn**	**14 35 42.7**	**+0.2**
XOR				S	**Sg**	**14 36 03.4**	**-0.3**
XOR	**Xorichti**	**1.50**	**47**	P	**Pn**	**14 35 42.7**	**+0.2**
XOR				S	**Sg**	**14 36 03.4**	**-0.3**
XOR	**Xorichti**	**1.50**	**47**	P	**Pn**	**14 35 42.3**	**-0.1**
SKIA	**Skiathos**	**1.55**	**58**	P	**Pn**	**14 35 43.6**	**+0.4**
SKIA	**Skiathos**	**1.55**	**58**	P	**Pn**	**14 35 43.6**	**+0.4**
SKIA	**Skiathos**	**1.55**	**58**	P	**Pn**	**14 35 42.8**	**-0.4**
ATH	**Athens Observa**	**1.58**	**104**	P	**Pn**	**14 35 43.3**	**-0.2**
IGT	**Igoumenitsa**	**1.63**	**317**	P	**Pg**	**14 35 47.8**	**+1.0**
IGT	**Igoumenitsa**	**1.63**	**317**	P	**Pg**	**14 35 47.8**	**+1.0**
KPRO	**Kipourio**	**1.63**	**349**	P	**Pg**	**14 35 46.5**	**-0.3**
KPRO	**Kipourio**	**1.63**	**349**	P	**Pg**	**14 35 46.5**	**-0.3**
ATHU	**Athens Univers**	**1.63**	**103**	P	**Pn**	**14 35 43.7**	**-0.6**
ATHU				S	**Sn**	**14 35 06.6**	**+0.3**
ATHU	**Athens Univers**	**1.63**	**103**	P	**Pn**	**14 35 44.4**	**+0.1**
ATHU				S	**Sn**	**14 35 06.6**	**+0.3**
ATHU	**Athens Univers**	**1.63**	**103**	P	**Pn**	**14 35 44.4**	**+0.1**
VLY	**Voula,Athens**	**1.67**	**107**	P	**Pn**	**14 35 45.4**	**+0.6**
VLY				S	**Sb**	**14 36 07.3**	**-0.1**
VLY	**Voula,Athens**	**1.67**	**107**	P	**Pn**	**14 35 45.4**	**+0.6**
VLY				S	**Sb**	**14 36 07.3**	**-0.1**
VLY	**Voula,Athens**	**1.67**	**107**	P	**Pb**	**14 35 45.9**	**-0.5**
PTL	**Penteli**	**1.67**	**100**	P	**Pn**	**14 35 45.4**	**+0.5**
PTL				S	**Sn**	**14 36 06.5**	**+0.1**
PTL	**Penteli**	**1.67**	**100**	P	**Pn**	**14 35 45.4**	**+0.5**
PTL				S	**Sn**	**14 36 06.5**	**+0.1**
PTL	**Penteli**	**1.67**	**100**	P	**Pn**	**14 35 44.7**	**-0.2**
EREA	**Eretria**	**1.69**	**87**	P	**Pn**	**14 35 46.1**	**+0.9**
EREA	**Eretria**	**1.69**	**87**	P	**Pn**	**14 35 46.1**	**+0.9**
EREA				S	**Sn**	**14 36 06.2**	**-0.7**
EREA	**Eretria**	**1.69**	**87**	P	**Pn**	**14 35 46.1**	**+0.9**
EREA				S	**Sn**	**14 36 06.2**	**-0.7**
EREA				AML	AML	14 36 18.3	
	comp=N,857μm,0.4s						
EREA				AML	AML	14 36 20.7	
	comp=E,1158μm,0.7s						
SGD	**Sagiada**	**1.74**	**317**	P	**Pg**	**14 35 49.8**	**+0.8**
LIT	**Litokhoron**	**1.83**	**17**	P	**Pb**	**14 35 48.5**	**-0.6**
LIT	**Litokhoron**	**1.83**	**17**	P	**Pb**	**14 35 48.3**	**-0.8**
LIT	**Litokhoron**	**1.83**	**17**	P	**Pb**	**14 35 48.3**	**-0.8**
AOS	**Alonnisos**	**1.83**	**63**	P	**Pn**	**14 35 46.9**	**-0.2**
AOS	**Alonnisos**	**1.83**	**63**	P	**Pn**	**14 35 46.9**	**-0.2**
AOS	**Alonnisos**	**1.83**	**63**	P	**Pn**	**14 35 45.5**	**-1.6**
VLI	**Veliai**	**1.88**	**150**	P	**Pn**	**14 35 47.6**	**-0.1**
VLI	**Veliai**	**1.88**	**150**	P	**Pn**	**14 35 47.6**	**-0.1**
KEK	**Kerkira**	**2.05**	**312**	P	**Pb**	**14 35 52.7**	**-0.2**
KEK	**Kerkira**	**2.05**	**312**	P	**Pb**	**14 35 52.7**	**-0.2**
PAIG	**Paliouri**	**2.16**	**43**	P	**Pn**	**14 35 51.8**	**+0.3**
PAIG	**Paliouri**	**2.16**	**43**	P	**Pn**	**14 35 51.8**	**+0.3**
PLG	**Polygyros**	**2.39**	**32**	P	**Pn**	**14 35 54.3**	**-0.5**
PLG	**Polygyros**	**2.39**	**32**	P	**Pn**	**14 35 54.3**	**-0.5**
FNA	**Florina**	**2.44**	**353**	P	**Pb**	**14 35 58.7**	**-0.9**
FNA	**Florina**	**2.44**	**353**	P	**Pb**	**14 35 58.7**	**-0.9**
FNA	**Florina**	**2.44**	**353**	P	**Pb**	**14 35 59.8**	**+0.1**
HORT	**Hortiatis**	**2.46**	**24**	P	**Pn**	**14 35 55.9**	**+0.1**
HORT	**Hortiatis**	**2.46**	**24**	P	**Pn**	**14 35 55.9**	**+0.1**
OUR	**Ouranopolis**	**2.61**	**40**	P	**Pn**	**14 35 56.8**	**-1.0**
OUR	**Ouranopolis**	**2.61**	**40**	P	**Pn**	**14 35 56.8**	**-1.0**
GRG	**Griva**	**2.64**	**10**	P	**Pb**	**14 36 01.3**	**-1.7**
GRG	**Griva**	**2.64**	**10**	P	**Pb**	**14 36 01.3**	**-1.7**
BIA	**Bitola**	**2.68**	**353**	*i* Pn	**Pg**	**14 36 05.4**	**-1.6**
OHR	**Ohrid**	**2.85**	**345**	*i* Pn	**Pg**	**14 36 09.3**	**-1.0**
VAY	**Valandovo**	**3.02**	**11**	*i* Pn	**Pb**	**14 36 07.5**	**-2.0**
VAY	**Valandovo**	**3.02**	**11**	*i* Pn	**Pb**	**14 36 07.4**	**-2.0**
APE	**Apeiranthos**	**3.24**	**112**	⫼*i*P	**Pn**	**14 36 08.3**	**+1.8**
APE	**Apeiranthos**	**3.24**	**112**	S	**Sn**	**14 36 46.6**	**+1.4**
APE	**Apeiranthos**	**3.24**	**112**	P	**Pn**	**14 36 06.4**	**-0.1**
APE	**Apeiranthos**	**3.24**	**112**	P	**Pn**	**14 36 06.4**	**-0.1**
TIR	**Tirane**	**3.33**	**334**	⫼*i*P	**Pg**	**14 36 17.1**	**-2.3**
TIR	**Tirane**	**3.33**	**334**	S	Sg	14 37 15.7	+13
CHOS	**Chios island**	**3.36**	**88**	P	**Pn**	**14 36 09.3**	**+1.1**
CHOS	**Chios island**	**3.36**	**88**	P	**Pn**	**14 36 08.9**	**+0.7**
CHOS	**Chios island**	**3.36**	**88**	P	**Pn**	**14 36 08.9**	**+0.7**
KAVA	**Kavala**	**3.38**	**38**	P	**Pn**	**14 36 08.4**	**+0.1**
KAVA	**Kavala**	**3.38**	**38**	P	**Pn**	**14 36 08.4**	**+0.1**
IMMV	**Iera Moni Meta**	**3.39**	**148**	P	**Pn**	**14 36 09.3**	**+0.8**
IMMV	**Iera Moni Meta**	**3.39**	**148**	P	**Pn**	**14 36 09.3**	**+0.8**
SKO	**Skopje**	**3.62**	**356**	*e*Pn	**Pb**	**14 36 20.0**	**+0.4**
IDI	**Anoyia**	**3.95**	**140**	Pn	**Pn**	**14 36 18.7**	**+2.4**
	comp=E,1.3nm,0.3s,baz=326,slow=11,SNR=8.5						
IDI				Sn	**Sn**	**14 37 03.2**	**+0.5**
	comp=E,2.2nm,0.3s,baz=313,slow=19,SNR=2.8						
IDI	**Anoyia**	**3.95**	**140**	⫼*i*P	Pb	14 36 21.1	-4.2
IDI	**Anoyia**	**3.95**	**140**	P	Pn	14 36 20.0	+3.7
TIP	**Timpagrande**	**4.01**	**283**	⫼*i*P	Pb	14 36 22.4	-3.9
TIP	**Timpagrande**	**4.01**	**283**	S	**Sn**	**14 37 07.9**	**+3.8**
SMG	**Samos**	**4.05**	**98**	P	**Pn**	**14 36 18.5**	**+1.0**
SMG	**Samos**	**4.05**	**98**	P	**Pn**	**14 36 18.5**	**+1.0**
SIVA	**Sivas**	**4.13**	**143**	⫼*i*P	Pn	14 36 22.2	+3.5
LAST	**Lasithi**	**4.36**	**136**	⫼*i*P	**Pn**	**14 36 24.6**	**+2.7**
BARS	**Barje**	**4.46**	**0**	*e*Pn	Pn	14 36 27.4	+4.2
PDG	**Podgorica**	**4.50**	**335**	⫼*i*P	**Pb**	**14 36 31.9**	**-2.8**
IVAS	**Ivanjica**	**5.36**	**347**	*e*Pn	**Pn**	**14 36 38.3**	**+2.7**
BBLS	**Lazići**	**5.79**	**343**	*e*Pn	**Pn**	**14 36 44.4**	**+2.9**
MDVR	**Moldovita**	**6.42**	**360**	⫼*i*P	Pn	14 36 57.2	+7.0
MLR	**Muntele Rosu**	**7.78**	**22**	Pn	**Pn**	**14 37 10.8**	**+2.0**
	comp=E,0.1nm,0.3s,baz=174,slow=15,SNR=3.4						
MLR	**Muntele Rosu**	**7.78**	**22**	⫼*i*P	Pn	14 37 14.0	+5.2
VRI	**Vrincioaia**	**8.36**	**25**	⫼*i*P	Pn	14 37 21.9	+5.2
BRTR	**Keskin Array B**	**9.33**	**78**	Pn	**Pn**	**14 37 32.5**	**+2.2**
	comp=E,0.4nm,0.3s,baz=259,slow=12,SNR=9.1						
ESDC	**Sonseca Array**	**20.03**	**282**	P	Pn	14 39 51.0	+0.6
	comp=E,0.3nm,0.3s,baz=86,slow=12,SNR=3.4						
FINES	**FINESS Array B**	**23.27**	**5**	P	**P**	**14 40 22.4**	**-0.5**
	comp=E,0.6nm,0.4s,baz=178,slow=6.7,SNR=5.2						
NB2	**NORSAR Subarra**	**23.65**	**347**	P	**P**	**14 40 26.6**	**-0.2**
	comp=Z,0.9nm,0.6s,baz=153,slow=10						
NB2	**NORSAR Subarra**	**23.65**	**347**	P	**P**	**14 40 26.6**	**-0.2**
	comp=Z,0.9nm,0.6s,SNR=7.9						
NOA	**NORSAR Array B**	**23.65**	**347**	P	**P**	**14 40 26.4**	**-0.4**
	comp=Z,1.5nm,0.7s,baz=154,slow=9.3,SNR=8.3						
EKA	**Eskdalemuir Ar**	**23.86**	**323**	P	**P**	**14 40 28.1**	**-0.8**
	comp=Z,2.5nm,0.8s,baz=125,slow=11,SNR=6.1						
AKTO	**Aktyubinsk**	**28.28**	**53**	LR	LR	14 54 52.6	
	comp=Z,48nm,18.3s,baz=300,slow=42						
ARCES	**ARCESS Array B**	**31.30**	**3**	P	**P**	**14 41 34.0**	**-1.5**
	comp=Z,1.2nm,0.8s,baz=187,slow=9.3,SNR=6.9						
MKAR	**Makanchi Array**	**44.36**	**59**	P	**P**	**14 43 26.8**	**+0.8**
	comp=Z,1.4nm,0.5s,baz=280,slow=6.9,SNR=22						
ZALV	**Zalesovo Beam**	**44.83**	**48**	P	**P**	**14 43 30.2**	**+0.7**
	comp=Z,0.7nm,0.5s,baz=260,slow=8.6,SNR=3.7						
YKA	**Yellowknife Ar**	**73.56**	**340**	P	**P**	**14 46 48.9**	**+0.6**
	comp=Z,0.1nm,0.5s,baz=32,slow=4.9,SNR=3.6						
ILAR	**Eielson Array**	**76.82**	**355**	P	**P**	**14 47 08.1**	**+1.0**
	comp=Z,0.2nm,0.6s,baz=12,slow=4.6,SNR=3.2						

*ISK **04** 14:38:28.8, 37°.26N×37°.12E, h11km, MD2.9*
*CSEM **04** 14:38:28.7±0.3, 37°.27N×37°.11E, h1km, MD2.9, Error ellipse: s-maj=7.4km s-min=5.5km az=88.0, Suspected Mining explosion.*
*ISCJB **04** 14:38:29.1±0.6, 37°.25N±0°.03×37°.22E±0°.04, h0km, Error ellipse: s-maj=5.1km s-min=4.9km az=170.3*
*DDA **04** 14:38:30.9, 37°.17N×37°.08E, h7km, Md2.7, Suspected Mining explosion.*

ISC 04 14:38:29.5±1.0, 37°.27N±0°.03×37°.18E±0°.03, h0km, n20, σ0s92/29, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GAZ	**Gaziantep**	**0.10**	**164**	*e*PG	**Pg**	**14 38 32.1**	**+0.8**
GAZ				*e*SG	**Sg**	**14 38 34.3**	**+1.7**
GAZ	**Gaziantep**	**0.10**	**164**	*e*Pg	**Pg**	**14 38 32.1**	**+0.8**
GAZ				*e*Sg	**Sg**	**14 38 34.3**	**+1.7**
HCB	**Kahramanmara¯**	**0.23**	**290**	*i* P	**Pg**	**14 38 35.1**	**+1.3**
HCB				*i* S	**Sg**	**14 38 39.5**	**+2.7**
KMRS	**Kahramanmaras**	**0.33**	**317**	*e*PG	**Pg**	**14 38 35.4**	**-0.3**
KMRS	**Kahramanmaras**	**0.33**	**317**	*e*Pg	**Pg**	**14 38 35.4**	**-0.3**
KAMA	**Osmaniye**	**0.41**	**259**	*i* P	**Pg**	**14 38 37.2**	**-0.2**
KAMA				*i* S	**Sg**	**14 38 43.4**	**+0.6**
KUZU	**Kuzuini**	**0.50**	**190**	P	**Pg**	**14 38 38.1**	**-0.9**
KUZU				S	**Sg**	**14 38 45.5**	**0.0**
KUZU	**Kuzuini**	**0.50**	**190**	*i* P	**Pg**	**14 38 38.1**	**-0.9**
KUZU				*i* S	**Sg**	**14 38 45.5**	**0.0**
ANDN	**Andirin**	**0.73**	**295**	P	Pn	**14 38 46.8**	**-0.4**
ANDN	**Andirin**	**0.73**	**295**	*i* P	Pn	**14 38 46.8**	**-0.4**
ANDN				*i* S	**Sn**	**14 38 59.2**	**0.0**
TAHT	**Tahtakopru-Hat**	**1.20**	**222**	*e*PN	**Pg**	**14 38 51.4**	**-1.0**
TAHT				*e*SN	**Sg**	**14 39 07.8**	**0.0**
TAHT	**Tahtakopru-Hat**	**1.20**	**222**	*e*Pn	**Sg**	**14 38 51.4**	**-1.0**
TAHT				*e*Sn	**Sg**	**14 39 07.8**	**0.0**
URFA	**Urfa**	**1.32**	**82**	*e*PN	**Pg**	**14 38 54.5**	**-0.3**
URFA	**Urfa**	**1.32**	**82**	*e*Pn	**Pg**	**14 38 54.5**	**-0.3**
DARE	**Darende-Malaty**	**1.32**	**10**	*e*PN	**Pg**	**14 38 54.0**	**-0.9**
DARE	**Darende-Malaty**	**1.32**	**10**	*e*Pn	**Pg**	**14 38 54.0**	**-0.9**
SVRC	**Sivrice-ELAZID**	**2.02**	**56**	*e*PN	**Pn**	**14 39 04.4**	**-0.5**
SVRC	**Sivrice-ELAZID**	**2.02**	**56**	*e*Pn	**Pn**	**14 39 04.4**	**-0.5**
MAZI	**Mazidag**	**2.61**	**85**	*e*PN	**Pn**	**14 39 13.0**	**0.0**
MAZI	**Mazidag**	**2.61**	**85**	*e*Pn	**Pn**	**14 39 13.0**	**0.0**

*ISCJB **04** 14:42:08.8±0.5, 36°.62N±0°.03×1°.64E±0°.05, h14km, Error ellipse: s-maj=6.2km s-min=3.9km az=5.0*
*CRAAG **04** 14:42:09.4, 36°.47N×1°.69E, Ml3.4*
*CSEM **04** 14:42:09.8±0.3, 36°.49N×1°.67E, h15km, ML3.4, Error ellipse: s-maj=8.5km s-min=5.7km az=105.0*
*MDD **04** 14:42:10.5±0.8, 36°.50N×1°.68E, h13km±12km, mb4.3/5, Error ellipse: s-maj=10.1km s-min=6.9km az=148.0, PRXIMO*

ISC 04 14:42:08.5±0.9, 36°.54N±0°.03×1°.72E±0°.04, h14km, n41, σ1s55/55, Northern Algeria

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EBNR	**Beni Rached**	**0.29**	**213**	P	**Pb**	**14 42 15.2**	**-0.3**
EBNR	**Beni Rached**	**0.29**	**213**	P	**Pb**	**14 42 15.2**	**-0.3**
ECHA	**Ech Chlef**	**0.48**	**217**	P	**Pg**	**14 42 18.2**	**+0.2**
ECHA	**Ech Chlef**	**0.48**	**217**	P	**Pg**	**14 42 18.2**	**+0.2**
ECHF	**Ech Chlef**	**0.49**	**219**	P	**Pg**	**14 42 18.2**	**0.0**
ECHF	**Ech Chlef**	**0.49**	**219**	P	**Pg**	**14 42 18.2**	**0.0**
EANR	**'Ain N'Sour**	**0.77**	**221**	P	**Pg**	**14 42 23.5**	**0.0**
EANR	**'Ain N'Sour**	**0.77**	**221**	P	**Pg**	**14 42 23.5**	**0.0**
EANR	**'Ain N'Sour**	**0.77**	**221**	P	**Pg**	**14 42 23.5**	**0.0**
OKGL	**Djebel Kef Gue**	**1.00**	**241**	P	**Pg**	**14 42 27.9**	**0.0**
	30nm,0.1s,SNR=7.9						
OKGL				S	**Sn**	**14 42 43.5**	**+1.3**
	637nm,0.4s,SNR=7.9						
OKGL	**Djebel Kef Gue**	**1.00**	**241**	P	**Pg**	**14 42 27.9**	**0.0**
	30nm,0.1s,SNR=7.9						
OKGL				S	**Sn**	**14 42 43.5**	**+1.3**
	637nm,0.4s,SNR=7.9						
EMHD	**Djebel Mahouad**	**1.05**	**108**	P	**Pn**	**14 42 30.9**	**+2.0**
EMHD	**Djebel Mahouad**	**1.05**	**108**	P	**Pn**	**14 42 30.9**	**+2.0**
EMHD	**Djebel Mahouad**	**1.05**	**108**	P	**Pn**	**14 42 30.9**	**+2.0**
ETRT	**Tiaret**	**1.19**	**197**	P	**Pg**	**14 42 31.3**	**-0.2**
ETRT	**Tiaret**	**1.19**	**197**	P	**Pg**	**14 42 31.3**	**-0.2**
ETRT	**Tiaret**	**1.19**	**197**	P	**Pg**	**14 42 31.3**	**-0.2**
OJGS	**Djebel Guires**	**1.30**	**218**	P	**Pn**	**14 42 31.0**	**-1.3**
OJGS	**Djebel Guires**	**1.30**	**218**	P	**Pn**	**14 42 31.0**	**-1.3**
OJGS	**Djebel Guires**	**1.30**	**218**	P	**Pn**	**14 42 31.0**	**-1.3**
ODJA	**Bouhanifia**	**1.94**	**232**	P	Pn	14 42 34.0	-7.1
OTSS	**Djebel Tessala**	**2.40**	**239**	P	Pn	14 42 29.0	-18
EIBI	**Ibiza**	**2.51**	**353**	P	**Pn**	**14 42 50.4**	**+1.5**
	3.8nm,0.1s,SNR=16						
EIBI				S	**Sn**	**14 43 17.8**	**-1.4**
	55nm,0.2s,SNR=9.0						
EIBI	**Ibiza**	**2.51**	**353**	P	**Pn**	**14 42 50.4**	**+1.5**
	3.8nm,0.1s,SNR=16						
EIBI				S	**Sn**	**14 43 17.8**	**-1.4**
	55nm,0.2s,SNR=9.0						
OLHC	**Oulhaca**	**2.86**	**244**	P	Pn	14 42 36.0	-18
ETOS	**Mallorca**	**3.34**	**15**	P	**Pn**	**14 43 00.9**	**+0.5**
	1.9nm,0.2s,SNR=8.5						
ETOS				S	**Sn**	**14 43 38.0**	**-1.8**
	3.1nm,0.2s						
ETOS	**Mallorca**	**3.34**	**15**	P	**Pn**	**14 43 00.9**	**+0.5**
	1.9nm,0.2s,SNR=8.5						
ETOS				S	**Sn**	**14 43 38.0**	**-1.8**
	3.1nm,0.2s						
ETOB	**Tobarra**	**3.34**	**310**	P	**Pn**	**14 43 02.2**	**+1.8**
	0.3nm,0.2s,SNR=7.9						
ETOB				S	**Sn**	**14 43 38.0**	**-2.0**
	1.2nm,0.3s,SNR=7.9						
ETOB	**Tobarra**	**3.34**	**310**	P	**Pn**	**14 43 02.2**	**+1.8**
	0.3nm,0.2s,SNR=7.9						
ETOB				S	**Sn**	**14 43 38.0**	**-2.0**
	1.2nm,0.3s,SNR=7.9						
EBER	**Berja**	**3.72**	**277**	P	**Pn**	**14 43 06.1**	**+0.4**
	0.7nm,0.1s,SNR=7.9						
EBER	**Berja**	**3.72**	**277**	P	**Pn**	**14 43 06.1**	**+0.4**
	0.7nm,0.1s,SNR=7.9						
SESP	**Santiago Espad**	**3.75**	**296**	P	**Pn**	**14 43 08.3**	**+2.2**
	0.5nm,0.1s,SNR=7.9						
SESP				S	**Sn**	**14 43 49.3**	**-0.9**
	3.6nm,0.2s,SNR=7.9						
SESP	**Santiago Espad**	**3.75**	**296**	P	**Pn**	**14 43 08.3**	**+2.2**
	0.5nm,0.1s,SNR=7.9						
SESP				S	**Sn**	**14 43 49.3**	**-0.9**
	3.6nm,0.2s,SNR=7.9						
EQES	**Quesada**	**4.03**	**290**	P	**Pn**	**14 43 12.8**	**+2.9**
	0.5nm,0.1s,SNR=7.9						
EQES				S	**Sn**	**14 43 56.8**	**-0.3**
	2.3nm,0.3s,SNR=7.9						
EQES	**Quesada**	**4.03**	**290**	P	**Pn**	**14 43 12.8**	**+2.9**
	0.5nm,0.1s,SNR=7.9						
EQES				S	**Sn**	**14 43 56.8**	**-0.3**
	2.3nm,0.3s,SNR=7.9						
EMOS	**Mosqueruela**	**4.19**	**336**	P	**Pn**	**14 43 14.6**	**+2.4**
	2.8nm,0.1s,SNR=38						
EMOS				S	**Sn**	**14 43 59.0**	**-2.1**
	2.2nm,0.2s						
EMOS	**Mosqueruela**	**4.19**	**336**	P	**Pn**	**14 43 14.6**	**+2.4**
	2.8nm,0.1s,SNR=38						
EMOS				S	**Sn**	**14 43 59.0**	**-2.1**
	2.2nm,0.2s						
EPOB	**Poblet**	**4.84**	**354**	P	**Pn**	**14 43 22.3**	**+1.3**
	0.8nm,0.2s,SNR=7.9						
EPOB				S	**Sn**	**14 44 14.9**	**-1.9**
	2.6nm,0.4s,SNR=7.9						
EPOB	**Poblet**	**4.84**	**354**

0.5nm,0.5s,baz=359,slow=7.7,SNR=7.6
ASAR Alice Springs 60.33 183 P **P 14 56 40.0 +0.1**
0.2nm,0.8s,baz=15,slow=13,SNR=4.1
ARCES ARCESS Array B 62.85 338 P **P 14 56 56.5 +0.4**
1.1nm,0.8s,baz=47,slow=8.0,SNR=4.2
FINES FINESS Array B 67.25 331 P **P 14 57 24.4 +0.1**
0.3nm,0.3s,baz=57,slow=7.0,SNR=4.9

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*ISCJB **04** 14:49:29.2±1.2, 36°.27N±0°.05×143°.2E±0°.1, h33km, mb3.5/3, Error ellipse: s-maj=12.9km s-min=7.5km az=172.8*
*IDC **04** 14:49:29.9±2.2, 35°.80N×143°.02E, h0km, mb3.5/3, mb1 3.6/5, mb1mx3.3/36, mbtmp3.5/5, ML3.3/2, Error ellipse: s-maj=45.8km s-min=28.8km az=64.0*
*JMA **04** 14:49:32.2±0.2, 36°.33N×142°.97E, h51km, M3.3*
ISC 04 14:49:30.6±1.6, 36°.20N±0°.05×143°.2E±0°.1, h35km, n13, σ1º48/16, mb3.5/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.93**	**256**	P	**Pn**	**14 50 01.9**	**+1.0**
CHOJ				S	**Sn**	**14 50 23.8**	**-0.2**
ONAJ	**Iwakimizuishiy**	**2.10**	**296**	P	**Pn**	**14 50 03.4**	**+0.1**
JHO	**Hitachi**	**2.13**	**282**	P	**Pn**	**14 50 03.7**	**0.0**
JMM	**Marumori**	**2.52**	**312**	P	**Pn**	**14 50 09.2**	**+0.2**
JMM				*e*S	**Sn**	**14 50 37.4**	**-1.1**
JFT	**Otama**	**2.62**	**301**	P	**Pn**	**14 50 11.1**	**+0.7**
JAG	**Ashikaga**	**3.00**	**275**	P	**Pn**	**14 50 16.3**	**+0.6**
OFUJ	**Ofunato**	**3.11**	**338**	S	**Sn**	**14 50 50.1**	**-2.9**
JMK	**Ichinoseki**	**3.15**	**331**	P	**Pn**	**14 50 17.9**	**+0.2**
JMK				S	**Sn**	**14 50 52.4**	**-1.6**
MJAR	**Matsushiro Arr**	**4.01**	**276**	Pn	**Pn**	**14 50 30.4**	**+0.9**
	1.0nm,0.3s,baz=54,slow=12,SNR=5.7						
JHJ	**Hachijo jima 2**	**4.15**	**223**	Pn	**Pn**	**14 50 29.7**	**-1.7**
	11nm,0.3s,baz=60,slow=20,SNR=4.2						
JHJ				Sn	**Sn**	**14 51 16.1**	**-2.6**
	19nm,0.3s,baz=73,slow=19,SNR=5.3						
MKAR	**Makanchi Array**	**45.75**	**303**	P	P	14 57 54.1	+5.7
	0.1nm,0.2s,baz=81,slow=9.1,SNR=3.2						
WRA	**Warramunga Arr**	**56.46**	**190**	P	**P**	**14 59 10.2**	**+1.2**
	0.4nm,0.7s,baz=11,slow=7.3,SNR=3.9						
ASAR	**Alice Springs**	**60.18**	**190**	P	**P**	**14 59 36.6**	**+1.6**
	0.5nm,0.8s,baz=5.2,slow=7.5,SNR=7.5						

IDC 04 14:49:38.3±2.1, 2°.65N×125°.74E, h0km, mb3.2/3, mb1 3.5/3, mb1mx3.3/34, mbtmp3.2/3, Error ellipse: s-maj=199.2km s-min=24.8km az=65.0, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**23.99**	**160**	P	P	14 54 54.2	-0.6
	0.2nm,0.3s,baz=338,slow=11,SNR=27						
ASAR	**Alice Springs**	**27.34**	**164**	P	P	14 55 26.4	+1.2
	0.2nm,0.7s,baz=350,slow=7.9,SNR=5.0						
MKAR	**Makanchi Array**	**57.88**	**326**	P	P	14 59 31.7	-0.4
	0.1nm,0.3s,baz=121,slow=7.4,SNR=1.9						

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*ATH **04** 15:00:24.8, 35°.49N×27°.20E, h20km±1km, ML2.8/4, Error ellipse: s-maj=2.8km s-min=0.9km az=325.0*
*ISK **04** 15:00:24.3, 35°.52N×27°.00E, h13km, MD3.3*
*DDA **04** 15:00:25.8, 35°.60N×27°.09E, h30km, Md3.0*
*ISCJB **04** 15:00:26.3±0.6, 35°.56N±0°.04×27°.20E±0°.03, h12km±3km, Error ellipse: s-maj=7.4km s-min=3.2km az=147.9*
*CSEM **04** 15:00:26.2±0.2, 35°.55N×27°.17E, h10km, ML2.8, Error ellipse: s-maj=5.1km s-min=2.5km az=147.0*
*THE **04** 15:00:26.1, 35°.50N×27°.27E, h5km±2km, ML3.0/6, Error ellipse: s-maj=2.6km s-min=1.2km az=328.0*
ISC 04 15:00:24.1±1.0, 35°.43N±0°.04×27°.31E±0°.03, h13km±6km, n65, σ0º85/99, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KARP	**Karpathos**	**0.17**	**314**	*e*PG	**Pg**	**15 00 28.1**	**0.0**
KARP				*e*SG	**Sg**	**15 00 30.8**	**-0.1**
KARP	**Karpathos**	**0.17**	**314**	P	**Pg**	**15 00 28.4**	**+0.3**
KARP				S	**Sg**	**15 00 30.9**	**0.0**
KARP	**Karpathos**	**0.17**	**314**	*e*Pg	**Pg**	**15 00 28.1**	**0.0**
KARP	**Karpathos**	**0.17**	**314**	P	**Pg**	**15 00 28.4**	**+0.3**
KARP				S	**Sg**	**15 00 30.5**	**-0.4**
KARP	**Karpathos**	**0.17**	**314**	P	**Pg**	**15 00 28.4**	**+0.3**
KARP				S	**Sg**	**15 00 30.5**	**-0.4**
KARP				AML	AML	15 00 30.9	
	comp=E,46183μm,0.2s						
KARP				AML	AML	15 00 31.3	
	comp=N,45641μm,0.2s						
ZKR	**Zakros**	**0.95**	**251**	P	**Pg**	**15 00 42.1**	**-0.3**
ZKR				S	**Sn**	**15 00 57.6**	**+1.0**
ZKR	**Zakros**	**0.95**	**251**	P	**Pg**	**15 00 42.1**	**-0.3**
ZKR				S	**Sg**	**15 00 54.6**	**-0.2**
ZKR	**Zakros**	**0.95**	**251**	P	**Pg**	**15 00 41.1**	**-1.3**
ZKR				S	**Sg**	**15 00 54.6**	**-0.2**
ZKR				AML	AML	15 01 00.6	
	comp=E,877μm,0.7s						
ZKR				AML	AML	15 01 05.0	
	comp=N,1150μm,0.4s						
ARG	**Arkhangelos**	**1.03**	**40**	P	**Pn**	**15 00 44.8**	**+0.5**
ARG				S	**Sn**	**15 00 58.6**	**0.0**
ARG	**Arkhangelos**	**1.03**	**40**	P	**Pn**	**15 00 45.0**	**+0.7**
ARG				S	**Sn**	**15 00 58.5**	**0.0**
NIS1	**Nisyros lsl.**	**1.18**	**355**	*e*PN	**Pb**	**15 00 45.6**	**-0.7**
NIS1	**Nisyros lsl.**	**1.18**	**355**	*e*Pn	**Pb**	**15 00 45.7**	**-0.7**
NIS1	**Nisyros lsl.**	**1.18**	**355**	P	**Pg**	**15 00 46.7**	**-0.1**
NIS1	**Nisyros lsl.**	**1.18**	**355**	P	**Pg**	**15 00 46.7**	**-0.1**
NISR	**Nisiros**	**1.19**	**353**	P	**Pn**	**15 00 46.5**	**0.0**
NISR	**Nisiros**	**1.19**	**353**	P	**Pn**	**15 00 46.5**	**0.0**
NISR	**Nisiros**	**1.19**	**353**	P	**Pn**	**15 00 46.3**	**-0.2**
NPS	**Neapolis**	**1.40**	**264**	P	**Pg**	**15 00 50.6**	**-0.4**
NPS				S	**Sg**	**15 01 09.7**	**+0.5**
NPS	**Neapolis**	**1.40**	**264**	P	**Pg**	**15 00 50.6**	**-0.4**
NPS				S	**Sn**	**15 01 07.9**	**+0.2**
NPS	**Neapolis**	**1.40**	**264**	P	**Pb**	**15 00 49.9**	**-0.2**
NPS				S	**Sn**	**15 01 07.9**	**+0.2**
NPS				AML	AML	15 01 15.9	
	comp=N,376μm,0.3s						
NPS				AML	AML	15 01 16.1	
	comp=E,662μm,0.4s						
LAST	**Lasithi**	**1.52**	**261**	P	**Pg**	**15 00 52.8**	**-0.6**
LAST				S	**Sg**	**15 01 13.3**	**+0.1**
LAST	**Lasithi**	**1.52**	**261**	P	**Pb**	**15 00 52.2**	**-0.1**
LAST				S	**Sb**	**15 01 11.6**	**0.0**
LAST	**Lasithi**	**1.52**	**261**	P	**Pb**	**15 00 52.2**	**-0.1**
BODT	**Bodrum**	**1.63**	**360**	*e*PN	**Pn**	**15 00 52.4**	**-0.2**
BODT	**Bodrum**	**1.63**	**360**	P	**Pn**	**15 00 52.7**	**+0.1**
BODT				S	**Sn**	**15 01 13.3**	**-0.2**
BODT	**Bodrum**	**1.63**	**360**	*e*Pn	**Pn**	**15 00 52.4**	**-0.2**
BODT	**Bodrum**	**1.63**	**360**	P	**Pn**	**15 00 52.7**	**+0.1**
BODT				S	**Sn**	**15 01 13.3**	**-0.2**
BDRM	**Kayabasi**	**1.64**	**4**	P	**Pn**	**15 00 52.9**	**+0.2**
BDRM				S	**Sn**	**15 01 12.3**	**-1.4**
BDRM	**Kayabasi**	**1.64**	**4**	*i* P	**Pn**	**15 00 52.9**	**+0.2**
BDRM				*i* S	**Sn**	**15 01 12.3**	**-1.4**
SANT	**Santorini**	**1.78**	**303**	P	**Pn**	**15 00 54.5**	**-0.1**
SANT	**Santorini**	**1.78**	**303**	P	**Pn**	**15 00 54.5**	**-0.1**
TURN	**Turunc**	**1.78**	**36**	*i* P	**Pn**	**15 00 52.8**	**-1.8**
TURN				*i* S	**Sn**	**15 01 13.2**	**-3.9**
CMBO	**Columbo, Santo**	**1.87**	**305**	P	**Pn**	**15 00 56.8**	**+1.0**
CMBO				S	**Sn**	**15 01 19.0**	**-0.2**
CMBO	**Columbo, Santo**	**1.87**	**305**	P	**Pn**	**15 00 56.8**	**+1.0**
CMBO				S	**Sn**	**15 01 19.0**	**-0.2**
FETY	**Fethiye**	**1.88**	**49**	*e*PN	**Pg**	**15 00 59.2**	**-0.9**
FETY	**Fethiye**	**1.88**	**49**	*e*Pn	**Pg**	**15 00 59.2**	**-0.9**
YER	**Yerkesik**	**1.88**	**24**	*e*PN	**Pb**	**15 00 57.9**	**-0.4**
YER	**Yerkesik**	**1.88**	**24**	P	**Pb**	**15 00 57.7**	**-0.6**
YER				S	**Sn**	**15 01 20.7**	**+1.1**
YER	**Yerkesik**	**1.88**	**24**	P	**Pb**	**15 00 57.7**	**-0.6**
YER	**Yerkesik**	**1.88**	**24**	*e*Pn	**Pb**	**15 00 57.9**	**-0.4**
YER				S	**Sn**	**15 01 20.7**	**+1.1**
KSL	**Kastellorizon**	**1.98**	**68**	P	**Pb**	**15 01 00.2**	**+0.2**
KSL	**Kastellorizon**	**1.98**	**68**	P	**Pb**	**15 01 00.2**	**+0.2**
IDI	**Anoyia**	**1.98**	**267**	P	**Pn**	**15 00 58.2**	**+0.7**
IDI	**Anoyia**	**1.98**	**267**	P	**Pn**	**15 00 58.2**	**+0.7**
IDI				S	**Sn**	**15 01 22.8**	**+0.5**
IDI	**Anoyia**	**1.98**	**267**	P	**Pn**	**15 00 57.8**	**+0.3**
IDI				S	**Sn**	**15 01 22.8**	**+0.5**
IDI				AML	AML	15 01 29.8	
	comp=N,197μm,0.4s						
IDI				AML	AML	15 01 30.9	
	comp=E,172μm,0.5s						

AKAS	**Kas**	**2.03**	**66**	P	**Pb**	**15 01 00.4**	**-0.5**
AKAS				S	**Sg**	**15 01 29.5**	**+0.2**
AKAS	**Kas**	**2.03**	**66**	*i* P	**Pb**	**15 01 00.5**	**-0.5**
AKAS				*i* S	**Sg**	**15 01 29.5**	**+0.2**
SIVA	**Sivas**	**2.09**	**259**	P	**Pb**	**15 01 00.6**	**-1.3**
SIVA	**Sivas**	**2.09**	**259**	P	**Pb**	**15 01 00.6**	**-1.3**
APE	**Apeiranthos**	**2.18**	**319**	P	**Pn**	**15 01 00.4**	**+0.2**
APE				S	**Sn**	**15 01 26.6**	**-0.5**
APE	**Apeiranthos**	**2.18**	**319**	P	**Pn**	**15 01 00.4**	**+0.2**
APE				S	**Sn**	**15 01 26.6**	**-0.5**
APE	**Apeiranthos**	**2.18**	**319**	P	**Pn**	**15 00 60.0**	**-0.2**
AYDN	**Tasoluk**	**2.28**	**11**	P	**Pn**	**15 01 02.7**	**+1.2**
AYDN				S	**Sn**	**15 01 29.5**	**+0.1**
AYDN	**Tasoluk**	**2.28**	**11**	*i* P	**Pn**	**15 01 02.7**	**+1.2**
AYDN				*i* S	**Sn**	**15 01 29.5**	**+0.1**
ELL	**Elmali**	**2.48**	**57**	*e*PN	**Pb**	**15 01 08.1**	**-0.5**
ELL	**Elmali**	**2.48**	**57**	*e*Pn	**Pb**	**15 01 08.1**	**-0.5**
VAM	**Vamos**	**2.54**	**270**	P	**Pn**	**15 01 06.6**	**+1.5**
AYDB	**Zeytinkoy-Aydi**	**2.56**	**10**	*e*PN	**Pn**	**15 01 06.0**	**+0.6**
AYDB	**Zeytinkoy-Aydi**	**2.56**	**10**	*e*Pn	**Pn**	**15 01 06.0**	**+0.6**
GOLH	**Golhisar**	**2.56**	**44**	P	**Pb**	**15 01 09.1**	**-0.9**
GOLH	**Golhisar**	**2.56**	**44**	*i* P	**Pb**	**15 01 09.1**	**-0.9**
GOLH				*i* S	**Sg**	**15 01 48.9**	**+2.5**
KULA	**Kula-Manisa**	**3.27**	**19**	*e*PN	**Pn**	**15 01 16.8**	**+1.7**
KULA	**Kula-Manisa**	**3.27**	**19**	*e*Pn	**Pn**	**15 01 16.8**	**+1.7**
DURS	**Dursunbey**	**4.27**	**12**	P	**Pn**	**15 01 30.4**	**+1.5**
DURS				S	**Sn**	**15 02 19.7**	**+1.1**
DURS	**Dursunbey**	**4.27**	**12**	*i* P	**Pn**	**15 01 30.4**	**+1.5**
DURS				*i* S	**Sn**	**15 02 19.7**	**+1.1**

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*CSEM **04** 15:00:44.6±0.2, 43°.89N×17°.31E, h2km, ML2.7, Error ellipse: s-maj=7.3km s-min=3.7km az=58.0*
*BEO **04** 15:00:44.6±0.5, 43°.88N×17°.19E, h13km±4km, M2.6/1*
*PDG **04** 15:00:44.6±0.4, 43°.88N×17°.25E, h3km, ML2.9/10, Error ellipse: s-maj=0.9km s-min=2.3km az=0.0*
*VIE **04** 15:00:44.9±2.4, 44°.01N×17°.92E, h8km, mb2.5/4, ml2.4/4, Error ellipse: s-maj=32.2km s-min=17.6km az=48.0*
ISC 04 15:00:40.9±1.1, 43°.93N±0°.03×16°.96E±0°.04, h9km±10km, n66, σ1º11/106, 5C-17D, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BLY	**Banja Luka**	**0.84**	**11**	*e*Pg	**Pn**	**15 01 01.1**	**+2.2**
BLY	**Banja Luka**	**0.84**	**11**	*e*Pg	**Pn**	**15 00 59.8**	**+0.9**
BLY				*e*Sg	**Sn**	**15 01 11.7**	**+0.4**
UDBI	**Udbina**	**1.05**	**306**	*e*Pg	Pn	15 01 07.3	+5.5
UDBI				Sg	Sn	15 01 25.1	+8.6
STON	**Ston**	**1.19**	**153**	*e*Pg	**Pg**	**15 01 03.1**	**-0.5**
STON				*e*Sg	**Sb**	**15 01 19.2**	**+0.3**
STON	**Ston**	**1.19**	**153**	*e*Pg	**Pg**	**15 01 03.1**	**-0.5**
STON				*e*Sg	**Sg**	**15 01 18.0**	**-1.0**
BRY	**Bratogost**	**1.54**	**131**	⇑*i*Pg	**Pn**	**15 01 08.8**	**+0.1**
BRY				*e*Sg	**Sg**	**15 01 30.4**	**0.0**
BRY	**Bratogost**	**1.54**	**131**	*e*Pg	**Pn**	**15 01 09.0**	**+0.3**
BRY				*e*Sg	**Sg**	**15 01 30.4**	**0.0**
TREB	**Trebinje**	**1.58**	**139**	*e*Pg	**Pn**	**15 01 09.0**	**0.0**
TREB				*e*Sg	**Sn**	**15 01 29.5**	**-0.1**
UPM	**Unac-Piva**	**1.59**	**116**	⇓*i*Pg	**Pb**	**15 01 10.5**	**0.0**
UPM				*e*Sg	**Sn**	**15 01 31.1**	**+1.0**
UPM	**Unac-Piva**	**1.59**	**116**	⇓*i*Pg	**Pb**	**15 01 10.5**	**0.0**
UPM				*e*Sg	**Sn**	**15 01 31.1**	**+1.0**
NVLJ	**Novalja**	**1.63**	**294**	*e*Pn	Pg	15 01 17.9	+5.8
NVLJ				Sn	Sg	15 01 41.6	+8.4
BBLS	**Lazići**	**1.77**	**91**	*e*Pn	**Pn**	**15 01 12.4**	**+0.7**
BBLS	**Lazići**	**1.77**	**91**	*e*Pn	**Pn**	**15 01 12.4**	**+0.7**
BBLS				*e*Sg	**Sn**	**15 01 33.0**	**-1.4**
NKY	**Niksic**	**1.86**	**126**	⇓*i*Pn	**Pb**	**15 01 15.1**	**+0.1**
NKY				*e*Sn	**Sg**	**15 01 40.9**	**+0.4**
NKY	**Niksic**	**1.86**	**126**	⇓*i*Pn	**Pb**	**15 01 15.1**	**+0.1**
NKY				*e*Sn	**Sg**	**15 01 40.9**	**+0.4**
HCY	**Herceg Novi**	**1.86**	**142**	⇑*i*Pn	**Pb**	**15 01 15.4**	**+0.4**
HCY				*e*Sn	**Sg**	**15 01 41.0**	**+0.5**
HCY	**Herceg Novi**	**1.86**	**142**	⇑*i*Pn	**Pb**	**15 01 15.4**	**+0.4**
HCY				*e*Sn	**Sn**	**15 01 36.9**	**+0.5**
NKME	**Niksic**	**1.86**	**128**	⇑*i*Pn	**Pb**	**15 01 15.2**	**+0.1**
NKME				*e*Sn	**Sg**	**15 01 40.3**	**-0.4**
NKME	**Niksic**	**1.86**	**128**	⇑*i*Pn	**Pb**	**15 01 15.2**	**+0.1**
NKME				*e*Sn	**Sg**	**15 01 40.3**	**-0.4**
PLE	**Pljevlja**	**1.86**	**108**	⇓*i*Pn	**Pn**	**15 01 14.2**	**+1.1**
PLE				*e*Sn	**Sb**	**15 01 39.5**	**+0.9**
PLE	**Pljevlja**	**1.86**	**108**	⇓*i*Pn	**Pn**	**15 01 14.2**	**+1.1**
PLE				*e*Sn	**Sb**	**15 01 39.5**	**+0.9**
TEKS	**Tekeris**	**1.95**	**70**	*e*Pn	**Pn**	**15 01 15.2**	**+1.0**
TEKS				*e*Sg	**Sb**	**15 01 42.2**	**+1.2**
TEKS	**Tekeris**	**1.95**	**70**	*e*Pn	**Pn**	**15 01 14.8**	**+0.6**
TEKS				*e*Sn	**Sn**	**15 01 37.9**	**-0.9**
TEKS				*e*Sg	**Sb**	**15 01 42.2**	**+1.2**
CEME	**Cevo**	**1.99**	**133**	⇓*i*Pn	**Pb**	**15 01 17.9**	**+0.7**
CEME				*e*Sn	**Sg**	**15 01 44.1**	**-0.6**
CEME	**Cevo**	**1.99**	**133**	⇓*i*Pn	**Pb**	**15 01 17.9**	**+0.7**
CEME				*e*Sn	**Sg**	**15 01 44.1**	**-0.6**
BUM	**Brajici-Budva**	**2.16**	**138**	⇓*i*Pn	**Pb**	**15 01 20.4**	**+0.3**
BUM				*e*Sn	**Sb**	**15 01 48.5**	**+1.5**
BUM	**Brajici-Budva**	**2.16**	**138**	⇓*i*Pn	**Pb**	**15 01 20.4**	**+0.3**
BUM				*e*Sn	**Sb**	**15 01 48.5**	**+1.5**
CRES	**Cresnjev**	**2.18**	**331**	*e*Pn	**Pg**	**15 01 23.7**	**+1.1**
CRES				*e*Sn	**Sg**	**15 01 52.7**	**+1.9**
DIVS	**Divibare**	**2.20**	**84**	*e*Pn	**Pn**	**15 01 17.5**	**-0.1**
DIVS	**Divibare**	**2.20**	**84**	*e*Pn	**Pn**	**15 01 17.5**	**-0.1**
PDG	**Podgorica**	**2.25**	**131**	*e*Pn	**Pb**	**15 01 20.5**	**-1.1**
PDG	**Podgorica**	**2.25**	**131**	*e*Pn	**Pn**	**15 01 19.8**	**+1.6**
PDG				*e*Sn	**Sn**	**15 01 45.3**	**-0.8**
TTG	**Podgorica**	**2.25**	**131**	⇓*i*Pn	**Pb**	**15 01 21.0**	**-0.6**
TTG				*e*Sn	**Sb**	**15 01 50.1**	**+0.5**
SJES	**Sjenica**	**2.29**	**106**	*e*Pn	**Pn**	**15 01 20.3**	**+1.4**
SJES				*e*Sn	**Sn**	**15 01 46.1**	**-1.2**
IVAS	**Ivanjica**	**2.34**	**97**	*e*Pn	**Pn**	**15 01 20.8**	**+1.2**
IVAS	**Ivanjica**	**2.34**	**97**	*e*Pn	**Pn**	**15 01 20.8**	**+1.2**
FGSL	**Fruska Gora**	**2.38**	**58**	*e*Pn	**Pn**	**15 01 21.4**	**+1.3**
FRGS	**Fruska Gora**	**2.38**	**58**	*e*Pn	**Pn**	**15 01 21.4**	**+1.3**
DRME	**Dracevica, Mon**	**2.38**	**136**	*e*Pn	**Pb**	**15 01 24.3**	**+0.3**
DRME				*e*Sn	**Sb**	**15 01 53.8**	**+0.3**
DRME	**Dracevica, Mon**	**2.38**	**136**	*e*Pn	**Pn**	**15 01 21.8**	**+1.7**
DRME				*e*Sn	**Sn**	**15 01 48.7**	**-0.8**
BEY	**Berane**	**2.39**	**115**	⇓*i*Pn	**Pn**	**15 01 22.3**	**+2.1**
BEY				*e*Sn	**Sb**	**15 01 53.0**	**-0.6**
IVA	**Berane**	**2.39**	**115**	⇓*i*Pn	**Pn**	**15 01 22.3**	**+2.1**
IVA				*e*Sn	**Sb**	**15 01 53.0**	**-0.6**
TRUS	**Trudelj**	**2.50**	**82**	*e*Pn	**Pn**	**15 01 22.4**	**+0.6**
TRUS	**Trudelj**	**2.50**	**82**	*e*Pn	**Pn**	**15 01 22.4**	**+0.6**
CEY	**Cerknica**	**2.55**	**316**	*e*Pn	**Pg**	**15 01 29.0**	**-0.8**
CEY				*e*Sn	**Sg**	**15 02 02.5**	**-0.4**
PVY	**Plav**	**2.57**	**120**	⇓*i*Pn	**Pb**	**15 01 25.4**	**-1.7**
PVY				*e*Sn	**Sb**	**15 01 57.4**	**-1.4**
PVY	**Plav**	**2.57**	**120**	⇓*i*Pn	**Pb**	**15 01 25.4**	**-1.7**
PVY				*e*Sn	**Sb**	**15 01 57.4**	**-1.4**
ULC	**Ulcinj**	**2.58**	**139**	⇓*i*Pn	**Pb**	**15 01 26.6**	**-0.7**
ULC				*e*Sn	**Sb**	**15 01 58.5**	**-0.7**
ULC	**Ulcinj**	**2.58**	**139**	⇓*i*Pn	**Pb**	**15 01 26.6**	**-0.7**
ULC				*e*Sn	**Sb**	**15 01 58.5**	**-0.7**
GRUS	**Gruza**	**2.72**	**89**	*e*Pn	**Pn**	**15 01 25.5**	**+0.8**
GRUS	**Gruza**	**2.72**	**89**	*e*Pn	**Pn**	**15 01 25.5**	**+0.8**
OBKA	**Obir**	**3.09**	**327**	*i* Pn	**Pg**	**15 01 40.7**	**+0.6**
	1.0nm,0.2s						
OBKA	**Obir**	**3.09**	**327**	Pn	**Pg**	**15 01 40.7**	**+0.6**
	1.0nm,0.2s						
SELS	**Selova**	**3.11**	**102**	*e*Pn	**Pn**	**15 01 30.6**	**+0.5**
SELS	**Selova**	**3.11**	**102**	*e*Pn	**Pn**	**15 01 30.6**	**+0.5**
ARSA	**Arzberg**	**3.47**	**344**	*i* Pn	**Pb**	**15 01 42.6**	**+0.1**
	4.9nm,0.4s						
ARSA	**Arzberg**	**3.47**	**344**	Pn	**Pb**	**15 01 42.6**	**+0.1**
	4.9nm,0.4s						
BARS	**Barje**	**3.71**	**106**	*e*Pn	**Pn**	**15 01 39.4**	**+1.0**
BARS	**Barje**	**3.71**	**106**	*e*Pn	**Pn**	**15 01 39.4**	**+1.0**
BZS	**Buzias**	**3.73**	**61**	*e*Pn	**Pn**	**15 01 40.8**	**+2.3**
BZS	**Buzias**	**3.73**	**61**	*e*Pn	**Pn**	**15 01 40.8**	**+2.3**
CONA	**Conrad Observa**	**4.08**	**350**	*i* Pn	**Pb**	**15 01 51.5**	**-1.3**
	1.6nm,0.3s						
CONA				*i* Sn	**Sb**	**15 02 39.3**	**-2.9**
	1.4nm,0.4s						
CONA	**Conrad Observa**	**4.08**	**350**	Pn	**Pb**	**15 01 51.5**	**-1.3**
	1.6nm,0.3s						
CONA				Sn	**Sb**	**15 02 39.3**	**-2.9**
	1.4nm,0.4s						
ZAPS	**Zavoj**	**4.17**	**97**	*e*Pn	**Pn**	**15 01 44.5**	**-0.3**
ZAPS				*e*Sn	**Sn**	**15 02 31.4**	**-2.3**
MOA	**Molln**	**4.35**	**335**	*i* Pn	**Pb**	**15 01 55.4**	**-2.1**
	1.5nm,0.2s						
MOA				*i* Sn	**Sb**	**15 02 50.7**	**+0.7**
	3.4nm,0.4s						
MOA	**Molln**	**4.35**	**335**	Pn	**Pb**	**15 01 55.4**	**-2.1**
	1.5nm,0.2s						
MOA				Sn	**Sb**	**15 02 50.7**	**+0.7**
	3.4nm,0.4s						

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*NIED **04** 15:09:00, 36°.80N×140°.60E, h5km, Mw3.9 Best double couple: M0 9.41000×10^14 NP1:φs 334.00000°, δ31.00000°, λ-117.00000°. NP2:φs 185.00000°, δ63.00000°, λ-75.00000°.*
*ISCJB **04** 15:09:03.8±0.5, 36°.80N±0°.03×140°.62E±0°.04, h20km±3km, mb4.0/23, MS3.5/1, Error ellipse: s-maj=6.0km s-min=4.1km az=30.1*
*JMA **04** 15:09:04.2, 36°.80N×140°.55E, h7km±1km, M4.1 Broadband fault plane solution: P waves. NP1: φs 185.00000°, δ49.00000°, λ-73.00000°. NP2: φs 340.00000°, δ44.00000°, λ-109.00000°. Principal axes: T Plg3.0000°, Azm263.0000°; N Plg13.0000°, Azm354.0000°; P Plg77.0000°, Azm161.0000°;*
JMA Felt III J1.
*IDC **04** 15:09:08.5±2.2, 36°.80N×140°.34E, h41km±21km, mb3.7/17, mb1 4.0/19, mb1mx3.8/52, mbtmp4.0/19, ML4.0/2, MS2.9/3, Ms1 2.9/3, ms1mx2.5/56 Error ellipse: s-maj=17.5km s-min=14.4km az=99.0*
*NEIC **04** 15:09:08.3±0.8, 36°.81N×140°.45E, h42km±7km, mb4.4/6, Error ellipse: s-maj=10.0km s-min=7.4km az=121.0*
NEIC Recorded [3 JMA] in Ibaraki.
ISC 04 15:09:03.1±1.1, 36°.81N±0°.03×140°.43E±0°.03, h4km±7km, n48, σ1º30/54, mb4.1/23, 5C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.23**	**151**	⇑P	**Pg**	**15 09 08.1**	**+0.7**
ONAJ	**Iwakimizuishiy**	**0.41**	**45**	⇑P	**Pg**	**15 09 11.2**	**+0.1**
ONAJ				S	**Sg**	**15 09 16.1**	**-0.4**
JSB	**Shiboa**	**0.44**	**291**	⇑P	**Pn**	**15 09 15.1**	**-1.1**
JSB				S	**Sb**	**15 09 22.3**	**+1.9**
JYT	**Yasato**	**0.61**	**199**	⇑P	**Pb**	**15 09 16.3**	**0.0**
JYT				S	**Sb**	**15 09 24.9**	**-0.3**
JFK	**Kawauchi**	**0.66**	**32**	⇑P	**Pg**	**15 09 15.7**	**0.0**
JFK				S	**Sg**	**15 09 24.1**	**-0.2**
JFT	**Otama**	**0.71**	**354**	P	**Pb**	**15 09 18.3**	**+0.2**
JFT				S	**Sb**	**15 09 28.1**	**-0.1**
JFY	**Yanaizu**	**0.83**	**316**	P	**Pn**	**15 09 21.1**	**-0.5**
JFY				*e*S	**Sn**	**15 09 33.1**	**-1.2**
MJAR	**Matsushiro Arr**	**1.81**	**262**	P	**Pb**	**15 09 36.6**	**-0.1**
	107nm,0.3s,baz=86,slow=15,SNR=1415						
MJAR				S	**Sg**	**15 10 02.4**	**+1.2**
	70nm,0.3s,baz=85,slow=28,SNR=14						
MJAR				LR	LR	15 10 27.1	
	comp=Z,198nm,18.0s,baz=100,slow=46						
MAJO	**Matsushiro**	**1.81**	**262**	*e*Pn	**Pg**	**15 09 37.3**	**-0.5**
MAT	**Matsushiro**	**1.81**	**262**	P	**Pg**	**15 09 37.1**	**-0.7**
MAT				S	**Sg**	**15 10 02.7**	**+1.5**
JHJ	**Hachijo jima 2**	**3.72**	**188**	P	**Pn**	**15 10 02.4**	**+1.2**
	39nm,0.3s,baz=288,slow=23,SNR=14						
JHJ				S	**Sn**	**15 10 48.5**	**+3.0**
	45nm,0.3s,baz=66,slow=20,SNR=3.3						
JHJ				LR	LR	15 11 21.1	
	comp=Z,47nm,21.5s,baz=178,slow=36						
JHJ2	**Mitsune**	**3.72**	**188**	*e*Pn	**

SJA	San Juan	1.66	23	*i* P	Pb	15 12 17.3	-0.7
SJA				*i* S	Sg	15 12 41.5	+1.0
SJA				IAML		15 12 47.4	
	comp=Z,2μm,0.3s						
RTLL	Cerro Villicun	1.88	23	*i* P	Pn	15 12 20.1	+0.6
RTLL				*i* S	Sg	15 12 47.0	-0.2
ACAN	Cantantal	1.97	67	*eP*	Pb	15 12 22.5	-0.8
ACAN				*i* S	Sb	15 12 47.3	-0.8
AMOG	MOGNA	2.23	19	*i* P	Pb	15 12 26.5	-1.3
AGUA	GUANDACOL	3.63	12	*i* P	Pn	15 12 46.4	+2.6
PLCA	Paso Flores	7.72 187		P	Pg	15 14 15.6	+0.8
	comp=Z,0.3nm,0.3s,baz=19,slow=14,SNR=4.2						
PLCA				S	Sg	15 15 54.3	-0.4
	comp=Z,0.5nm,0.3s,baz=110,slow=17,SNR=3.6						
CPUP	Villa Florida	12.40	60	P	Pn	15 14 53.8	+10
	comp=Z,0.2nm,0.3s,baz=234,slow=15,SNR=2.3						
LPAZ	La Paz	16.74	4	P	Pn	15 15 43.4	+0.8
	comp=Z,0.4nm,0.3s,baz=183,slow=9.1,SNR=6.9						
SIV	San Ignacio	18.57	26	P	P	15 16 04.0	-0.6
	comp=Z,0.4nm,0.3s,baz=218,slow=12,SNR=7.2						
TXAR	Lajitas Array	70.07 328		P	P	15 22 59.8	0.0
	comp=Z,0.2nm,0.6s,baz=156,slow=6.9,SNR=2.5						
TORD	Torodi Ar. Bea	81.77	69	P	P	15 24 07.5	+0.6
	baz=269,slow=5.9						
ZALV	Zalesovo Beam	152.21	34	PKPbc	PKPbc	15 31 43.1	+0.3
	comp=Z,1.4nm,0.4s,baz=314,slow=3.4,SNR=7.0						

*NEIC **04** 15:11:56.5,50°.86N×179°.56E,h10km,ML3.7(AEIC), After AEIC.*
*ISCJB **04** 15:11:58.3±0.7,51°.1N±0°.1×179°.39E±0°.06,h48km, mb3.9/14, Error ellipse: s-maj=20.1km s-min=4.6km az=170.6*
*IDC **04** 15:12:00.3±4.5,51°.23N×179°.55E,h45km±42km,mb3.7/14, mb1 3.8/15,mb1mx3.5/58,mbtmp3.9/15,ML2.5/1, Error ellipse: s-maj=33.5km s-min=16.4km az=167.0*

ISC 04 15:12:00.8±1.0,51°.2N±0°.2×179°.40E±0°.06,h48km,n35, σ1§17/38,mb4.1/14,Rat Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GALAA	Gareloi Lava P	1.26	64	P	Pn	15 12 21.0	-1.1
GALAA				S	Sn	15 12 38.3	+0.4
GAEA	Gareloi East	1.29	63	P	Pn	15 12 21.7	-0.7
TANO	Tanaga North	1.69	65	P	Pn	15 12 27.4	-0.5
TASE	Tanaga Southea	1.71	68	P	Pn	15 12 27.3	-1.0
TASE				S	Sn	15 12 51.1	+2.1
TAFP	Tanaga Falls P	1.77	66	P	Pn	15 12 27.8	-1.2
TAFP				S	Sn	15 12 52.5	+2.2
TAFL	Tanaga Flats	1.77	71	P	Pn	15 12 27.7	-1.2
TAPA	Tanaga Point A	1.84	70	P	Pn	15 12 28.9	-1.1
KIKV	Kanaga Island	2.24	72	P	Pn	15 12 34.7	-0.7
KINC	Kanaga Island	2.28	70	P	Pn	15 12 35.8	-0.2
ADAG	Mount Adagdak	2.60	71	P	Pn	15 12 39.5	-0.9
ETKA	Kagalaska Isla	2.69	75	P	Pn	15 12 40.8	-0.8
GSTD	Great Sitkin T	2.90	71	P	Pn	15 12 43.1	-1.4
GSTD				S	Sn	15 13 21.4	+3.3
GSMY	Great Sitkin M	2.95	72	P	Pn	15 12 43.6	-1.5
SMY	Shemya	3.61	297	P	Pn	15 12 55.6	+1.5
KOWE	Korovin West	4.10	71	P	Pn	15 13 00.9	-0.1
KOFP	Korovin Flat P	4.17	73	P	Pn	15 13 02.6	+0.6
MSOM	Makushin Julie	8.72	67	P	Pn	15 14 03.9	-0.2
UNV	Unalaska Valle	8.99	67	P	Pn	15 14 09.1	+1.3
PETK	Petropavlovsk-	13.45	287	P	Pn	15 15 09.1	+0.3
	0.1nm,0.3s,baz=100,slow=16,SNR=3.7						
PETK				S	Sn	15 17 27.5	-9.2
	0.3nm,0.3s,baz=56,slow=17,SNR=8.3						
KDAK	Kodiak Island	17.46	57	P	P	15 16 11.8	+11
	1.0nm,0.3s,baz=277,slow=10,SNR=16						
ILAR	Eielson Array	22.08	39	P	P	15 16 50.5	-0.9
	0.3nm,0.7s,baz=240,slow=8.0,SNR=9.9						
ASAJ	Asahikawa	25.57	268	P	P	15 17 26.8	+1.7
	4.0nm,0.8s,baz=94,slow=10,SNR=4.2						
KLR	Kul'dur	30.14	285	P	P	15 18 05.9	+0.1
	4.8nm,0.6s,baz=69,slow=7.7,SNR=19						
YKA	Yellowknife Ar	36.16	46	P	P	15 18 57.0	-1.1
	0.3nm,0.4s,baz=280,slow=7.9,SNR=8.7						
PDAR	Pinedale Array	47.43	71	P	P	15 20 29.6	-1.0
	0.8nm,0.6s,baz=316,slow=1.9,SNR=8.2						
ARCES	ARCESS Array B	58.05	349	P	P	15 21 47.7	-0.7
	2.8nm,1.0s,baz=15,slow=7.5,SNR=4.2						
KURBB	Kurchatov Arra	58.41	313	P	P	15 21 50.8	-0.3
	1.6nm,0.6s,baz=41,slow=6.6,SNR=11						
MKAR	Makanchi Array	59.24	307	P	P	15 21 56.5	-0.5
	0.5nm,0.3s,baz=50,slow=7.3,SNR=9.9						
BVAR	Borovoye Array	60.27	319	P	P	15 22 04.6	+0.7
	2.2nm,0.6s,baz=46,slow=8.6,SNR=12						
ARU	Arti	62.14	327	P	P	15 22 16.4	0.0
	1.7nm,0.5s,baz=321,slow=3.9,SNR=4.2						
AAK	Ala-Archa	66.09	309	P	P	15 22 44.4	+1.6
	0.7nm,0.3s,baz=312,slow=4.0,SNR=3.5						
AKTO	Aktyubinsk	67.15	324	P	P	15 22 49.2	0.0
	baz=44,slow=9.0						
NOA	NORSAR Array B	67.69	354	P	P	15 22 52.0	-0.5
	1.3nm,0.9s,baz=8.7,slow=6.4,SNR=3.8						
WRA	Warramunga Arr	81.13	222	P	P	15 24 10.6	-0.3
	0.2nm,0.8s,baz=33,slow=6.0,SNR=3.5						
BRTR	Keskin Array B	84.61	334	P	P	15 24 29.5	+0.4
	0.6nm,0.7s,baz=65,slow=4.0,SNR=3.4						

IDC 04 15:13:17.8±408.0,47°.56N×48°.82E,h0km,Error ellipse: s-maj=160.4km s-min=132.8km az=28.0,Western Kazakhstan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I31KZ	AKTYUBINSK INF	6.70	61	*i*		15 53 20.0	
	baz=249,slow=318,SNR=19						
I43RU	DUBNA INFRASONI	1.60	327	*i*		16 28 10.0	
	baz=140,slow=308,SNR=0.4						
I26DE	FREYUNG INFRAS	23.31	286	*i*		17 36 20.0	
	baz=80,slow=335,SNR=0.7						

*ISCJB **04** 15:26:17.1±0.5,6°.19N±0°.10×48°.53W±0°.09,h10km, mb4.1/19, Error ellipse: s-maj=14.7km s-min=12.5km az=154.2*
*IDC **04** 15:26:17.2±0.6,6°.18N×48°.52W,h0km,mb4.1/14, mb1 4.3/14,mb1mx4.0/42,mbtmp4.1/14, Error ellipse: s-maj=20.1km s-min=17.7km az=136.0*
*NEIC **04** 15:26:18.7±0.3,6°.17N×48°.51W,h10km,mb4.3/7, Error ellipse: s-maj=9.4km s-min=8.5km az=137.0*

ISC 04 15:26:18.6±0.6,6°.2N±0°.1×48°.5W±0°.1,h10km,n26, σ0§73/25,mb4.2/19,North Atlantic Ocean

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PTGA	Pitinga	13.31 239		Pn	Pn	15 29 24.0	-3.8
	8.7nm,0.3s,baz=63,slow=17,SNR=44						
PTGA				Sn	Sn	15 31 43.4	-13
	5.6nm,0.3s,baz=313,slow=23,SNR=5.8						
SAML	Samuel	20.95 224		*eP*	P	15 31 02.5	+0.7
	2.4nm,0.6s						
LPAZ	La Paz	29.56 221		P	P	15 32 26.0	+1.5
	0.6nm,0.5s,baz=78,slow=9.0,SNR=2.4						
LVC	Limon Verde	34.86 214		P	P	15 33 10.3	-0.3
	9.0nm,0.6s,baz=40,slow=7.9,SNR=3.0						
DBIC	Dimbokro	43.39 87		P	P	15 34 21.4	-0.4
	2.4nm,0.7s,baz=286,slow=6.0,SNR=3.3						
TORD	Torodi Ar. Bea	49.92 78		P	P	15 35 12.9	-0.1
	1.3nm,0.8s,baz=275,slow=7.3,SNR=5.5						
SCHQ	Schefferville	50.72 346		P	P	15 35 18.1	-0.3
	5.5nm,0.6s,baz=206,slow=3.5,SNR=4.2						
ESDC	Sonseca Array	52.08 43		P	P	15 35 29.2	+0.2
	0.2nm,0.3s,baz=242,slow=7.2,SNR=5.2						
SDCO	Great Sand Dun	60.36 310		P	P	15 36 29.1	+0.7
	1.9nm,1.0s						
BW06	Boulder Array	64.74 315		*eP*	P	15 36 57.2	-0.4
	1.3nm,0.8s						
PDAR	Pinedale Array	64.74 315		P	P	15 36 57.8	+0.2
	0.9nm,0.5s,baz=113,slow=9.6,SNR=9.0						
LOHW	Long Hollow	65.70 315		*eP*	P	15 37 04.2	+0.3
FLWY	Flagg Ranch	65.90 316		*eP*	P	15 37 05.3	+0.2
	2.4nm,0.6s						
IMW	Indian Meadow	66.01 315		*eP*	P	15 37 06.3	+0.4
	2.7nm,0.7s						
HLID	Hailey	68.38 314		P	P	15 37 19.9	-0.9
	1.2nm,0.8s						
NVAR	Mina Array Bea	70.37 309		P	P	15 37 34.3	+1.0
	1.1nm,0.5s,baz=86,slow=6.3,SNR=9.8						
YKA	Yellowknife Ar	73.65 334		P	P	15 37 51.0	-1.1
	0.7nm,0.5s,baz=101,slow=6.1,SNR=16						
YKA	Yellowknife Ar	73.65 334		P	P	15 37 51.0	-1.1
FINES	FINESS Array B	77.27 28		P	P	15 38 13.2	+0.3
	1.5nm,0.7s,baz=214,slow=6.5,SNR=5.2						
BOSA	Boshof	78.85 121		P	P	15 38 22.1	-0.5
	1.3nm,0.6s,baz=294,slow=4.4,SNR=3.1						
BRTR	Keskin Array B	80.07 51		P	P	15 38 30.2	+1.2
	0.6nm,0.7s,baz=294,slow=7.1,SNR=3.1						
INK	Inuvik	82.46 338		P	P	15 38 41.2	+0.3
	2.9nm,0.9s,baz=87,slow=5.6,SNR=10						
KBZ	Khabaz	86.82 47		P	P	15 39 04.4	+1.0
	1.7nm,0.7s,baz=225,slow=2.9,SNR=5.3						
CMAR	Chiang Mai Arr	139.66 52		PKP	PKPdf	15 45 47.7	0.0
	0.5nm,0.9s,baz=305,slow=3.2,SNR=4.5						
ASAR	Alice Springs	162.44 187		PKPab	PKPab	15 47 08.0	-0.9
	0.6nm,0.9s,baz=174,slow=4.5,SNR=4.9						
WRA	Warramunga Arr	166.02 191		PKPab	PKPab	15 47 24.8	+0.1
	0.5nm,0.6s,baz=167,slow=3.7,SNR=6.9						

*IDC **04** 15:26:59.9±0.9,37°.01N×144°.19E,h0km,mb3.8/5, mb1 4.0/10,mb1mx3.7/42,mbtmp4.0/10,ML3.9/3, Error ellipse: s-maj=29.4km s-min=17.0km az=111.0*
*NIED **04** 15:27:00,37°.30N×143°.80E,h8km,Mw3.8 Best double couple: M0=5.06000×10^14 NP1:φs=51.00000°,δ66.00000°, λ2.00000°. NP2:φs=320.00000°,δ88.00000°,λ156.00000°.*
*ISCJB **04** 15:27:01.9±0.6,37°.30N±0°.03×143°.99E±0°.05,h33km, mb3.8/7, Error ellipse: s-maj=5.4km s-min=4.2km az=27.2*
*NEIC **04** 15:27:01.3±0.8,37°.17N×144°.14E,h10km,mb4.1/1, Error ellipse: s-maj=17.0km s-min=12.8km az=132.0*
*JMA **04** 15:27:04.3±0.2,37°.28N×143°.83E,h56km,M4.1*

ISC 04 15:27:04.1±1.0,37°.30N±0°.05×144°.03E±0°.08,h35km,n38, σ2§63/58,mb3.8/7,Off east of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	2.42 299		P	Pn	15 27 40.6	-0.5
JIO				S	Sn	15 28 07.4	-2.1
JFK	Kawauchi	2.52 273		P	Pn	15 27 41.9	-0.6
JFK				*eS*	Sn	15 28 09.2	-2.8
ONAJ	Iwakimizuishiy	2.59 267		P	Pn	15 27 42.3	-1.2
ONAJ				S	Sn	15 28 11.2	-2.6
JMM	Marumori	2.64 283		P	Pn	15 27 43.4	-0.7
JMM				*eS*	Sn	15 28 12.2	-2.6
JMK	Ichinoseki	2.77 308		P	Pn	15 27 45.5	-0.4
JMK				S	Sn	15 28 16.2	-1.9
JFT	Otama	2.95 275		P	Pn	15 27 48.6	+0.1
JFT				*eS*	Sn	15 28 20.8	-1.9
JOM	Ohasama	3.06 316		P	Pn	15 27 49.8	-0.1
JOM				S	Sn	15 28 23.7	-1.6
JYK	Kaneyama	3.32 300		P	Pn	15 27 53.7	+0.2
JYK				*eS*	Sn	15 28 31.1	-0.6
BSO1	Boso 1	3.62 224		P	Pn	15 27 56.3	-0.8
BSO1				S	Sn	15 28 37.5	-0.8
JAG	Ashikaga	3.77 258		P	Pn	15 27 59.4	-0.4
JAG				S	Sn	15 28 40.1	-2.8
JRY	Ryogami san	4.32 254		P	Pn	15 28 06.5	-0.8
JRY				S	Sn	15 28 52.2	-4.2
JOD2	Odawara 2	4.48 245		P	Pn	15 28 08.6	-0.9
JOD2				*eS*	Sn	15 28 55.5	-4.9
JOT	Ohata	4.69 331		P	Pn	15 28 12.6	+0.3
JOT				S	Sn	15 29 01.1	-4.4
MJAR	Matsushiro Arr	4.73 263		Pn	Pn	15 28 13.5	+0.7
	12nm,0.3s,baz=89,slow=15,SNR=75						
MAJO	Matsushiro	4.73 263		*ePn*	Pn	15 28 13.9	+1.0
MAT	Matsushiro	4.73 263		P	Pn	15 28 13.9	+1.0
MAT				S	Sn	15 29 06.1	-0.4
ERM	Erimo	4.76 352		*ePn*	Pn	15 28 12.2	-1.1
JKB	Kayabe	5.14 334		P	Pn	15 28 18.4	-0.1
JKB				*eS*	Sn	15 29 11.4	-5.1
JCH	Churui	5.34 355		P	Pn	15 28 19.8	-1.4
JCH				*eS*	Sn	15 29 16.4	-5.0
JHJ2	Mitsune	5.42 221		P	Pn	15 28 20.3	-2.0
JHJ2				*eS*	Sn	15 29 17.9	-5.5
JHJ	Hachijo jima 2	5.43 221		Pn	Pn	15 28 20.2	-2.3
	16nm,0.3s,baz=333,slow=18,SNR=15						
JHJ				Sn	Sn	15 29 17.9	-5.8
	70nm,0.3s,baz=225,slow=23,SNR=12						
NEM2	Nemuro 2	6.20 12		P	Pn	15 28 29.9	-3.2
NEM2				S	Sn	15 29 35.7	-7.0
JTKR	Abashiri--Toko	6.67 359		P	Pn	15 28 37.9	-1.6
JTKR				*eS*	Sn	15 29 48.9	-5.3
JHR	Hokuryu	6.68 345		P	Pn	15 28 39.5	-0.1
JHR				*eS*	Sn	15 29 52.8	-1.6
ASAJ	Asahikawa	6.90 351		Pn	Pn	15 28 42.4	-0.3
	5.2nm,0.3s,baz=200,slow=14,SNR=79						
ASAJ				Sn	Sn	15 30 00.1	+0.2
	1.0nm,0.3s,baz=44,slow=18,SNR=2.8						
ASAJ	Asahikawa	6.90 351		*ePn*	Pn	15 28 41.9	-0.7
	7.2nm,0.6s						
ASAJ				Sn	Sn	15 30 00.1	+0.2
CBIJ	Chichi jima	10.29 189		*ePn*	Pn	15 29 24.3	-4.9
JCJ	Chichijima	10.29 189		Pn	Pn	15 29 24.4	-4.8
	8.2nm,0.3s,baz=103,slow=23,SNR=9.4						
USRK	Ussuriysk Ar.	11.44 311		Pn	Pn	15 29 48.4	+3.5
	0.1nm,0.3s,baz=123,slow=13,SNR=3.6						
KSRS	Korea Array	12.82 276		Pn	Pn	15 30 06.4	+2.7
	0.2nm,0.3s,baz=84,slow=13,SNR=7.4						
KSAR	Wonju Array Be	12.85 276		Pn	Pn	15 30 06.4	+2.2
SEY	Seymchan	26.17 9		P	P	15 32 37.4	+2.5
	2.2nm,0.9s,baz=200,slow=15,SNR=6.6						
MKAR	Makanchi Array	45.75 302		P	P	15 35 28.1	+6.2
	0.2nm,0.3s,baz=82,slow=9.3,SNR=2.5						
ILAR	Eielson Array	48.15 33		P	P	15 35 42.7	+2.3
	0.5nm,0.9s,baz=277,slow=7.2,SNR=5.3						
INK	Inuvik	53.20 27		P	P	15 36 21.2	+2.9
	0.8nm,0.8s,baz=315,slow=8.6,SNR=3.5						
WRAB	Tennant Creek	57.65 191		*eP*	P	15 36 50.6	-0.3
	1.5nm,0.7s						
WRA	Warramunga Arr	57.66 191		P	P	15 36 50.3	-0.6
	1.1nm,0.6s,baz=8.8,slow=7.1,SNR=15						
ASAR	Alice Springs	61.38 191		P	P	15 37 16.0	-0.5
	0.3nm,0.5s,baz=4.3,slow=7.0,SNR=11						

*NIED **04** 15:30:00,37°.00N×143°.30E,h5km,Mw4.3 Best double couple: M0=3.20000×10^15 NP1:φs=17.00000°,δ20.00000°, λ-94.00000°. NP2:φs=201.00000°,δ70.00000°, λ-88.00000°.*
*IDC **04** 15:30:07.0±0.6,36°.82N×143°.45E,h0km,mb4.0/18, mb1 4.3/24,mb1mx4.2/43,mbtmp4.1/24,ML3.4/5,MS3.5/12, Ms1 3.5/12,ms1mx3.2/56, Error ellipse: s-maj=16.1km s-min=13.1km az=123.0*
*ISCJB **04** 15:30:08.2±1.2,36°.97N±0°.03×143°.28E±0°.03,h18km±8km, mb4.2/41,MS3.6/10, Error ellipse: s-maj=5.1km s-min=4.3km az=139.9*
*JMA **04** 15:30:09.6±0.1,37°.01N×143°.32E,h53km,M4.0*
*NEIC **04** 15:30:12.2±0.2,36°.86N×143°.33E,h35km,mb4.5/15, Error ellipse: s-maj=6.8km s-min=4.3km az=156.0*

ISC 04 15:30:11.1±3.1,37°.00N±0°.04×143°.32E±0°.06,h24km±22km, n97,σ1§56/106,mb4.3/41,MS3.6/10,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	1.99 281		P	Pn	15 30 41.5	-1.8
JFK				*eS*	Sn	15 31 05.3	-2.2
ONAJ	Iwakimizuishiy	2.02 274		P	Pn	15 30 42.4	-1.3
ONAJ				*eS*	Sn	15 31 06.4	-1.9
JIO	Ouri	2.14 313		P	Pn	15 30 43.6	-1.6
JIO				*eS*	Sn	15 31 09.2	-1.8
JMM	Marumori	2.19 294		P	Pn	15 30 44.5	-1.5
JMM				*eS*	Sn	15 31 10.6	-1.8
JFT	Otama	2.44 283		P	Pn	15 30 48.7	-0.7
JFT				*eS*	Sn	15 31 16.6	-1.9
JMK	Ichinoseki	2.56 320		P	Pn	15 30 49.5	-1.6
JMK				*eS*	Sn	15 31 19.2	-2.3
JOM	Ohasama	2.94 328		P	Pn	15 30 55.1	-1.2
JOM				S	Sn	15 31 29.1	-1.8
BSO1	Boso 1	3.02 220		P	Pn	15 30 55.6	-1.3
BSO1				S	Sn	15 31 31.7	-0.3
JYK	Kaneyama	3.03 310		P	Pn	15 30 56.6	-0.9
JAG	Ashikaga	3.16 261		P	Pn	15 30 58.1	-1.3
JAG				*eS*	Sn	15 31 34.8	-1.5
JAW	Awa shima	3.54 295		P	Pn	15 31 05.2	+0.6
JANG	Nango	3.66 338		P	Pn	15 31 05.2	-0.9
JANG				*eS*	Sn	15 31 44.9	-3.6
JRY	Ryogami san	3.69 256		P	Pn	15 31 05.2	-1.5
JRY				*eS*	Sn	15 31 46.7	-2.8
JOD2	Odawara 2	3.84 244		P	Pn	15 31 07.5	-1.2
JOD2				*eS*	Sn	15 31 50.2	-2.9
MJAR	Matsushiro Arr	4.13 265		Pn	Pn	15 31 12.3	-0.4
	8.4nm,0.3s,baz=84,slow=11,SNR=45						
MAJO	Matsushiro	4.13 265		*ePn*	Pn	15 31 12.6	-0.2
MAT	Matsushiro	4.13 265		P	Pn	15 31 12.8	+0.1
MAT				S	Sn	15 32 03.6	+3.3
MJB9	Matsu-Tunnel	4.14 265		*ePn*	Pn	15 31 12.6	-0.1
JOT	Ohata	4.72 339		P	Pn	15 31 20.2	-0.6
JOT				*eS*	Sn	15 32 12.7	-2.0
JHJ2	Mitsune	4.83 218		P	Pn	15 31 19.8	-2.5
JHJ2				S	Sn	15 32 13.4	-4.0
JHJ2	Mitsune	4.83 218		*ePn*	Pn	15 31 19.7	-2.5
JHJ	Hachijo jima 2	4.84 218		Pn	Pn	15 31 19.8	-2.6
	28nm,0.3s,baz=114,slow=20,SNR=5.6						
JHJ				Sn	Sn	15 32 12.9	-4.8
	31nm,0.3s,baz=53,slow=20,SNR=4.2						
ERM	Erimo	5.01 359		*ePn*	Pn	15 31 22.2	-2.5
JKB	Kayabe	5.20 341		P	Pn	15 31 26.1	-1.2
JKB				*eS*	Sn	15 32 23.3	-3.1
INU	Inuyama	5.36 254		*ePn*	Pn	15 31 29.7	+0.2
ASAJ	Asahikawa	7.13 356		Pn	Pn	15 31 52.3	-1.6
	3.8nm,0.3s,baz=191,slow=12,SNR=14						
ASAJ				Sn	Sn	15 33 10.9	-3.3
	0.7nm,0.3s,baz=182,slow=25,SNR=4.1						
ASAJ				LR	LR	15 35 41.6	
	comp=Z,202nm,18.4s,baz=189,slow=46						
CBIJ	Chichi jima	9.92 186		*ePn*	Pn	15 32 24.3	-7.8
CBIJ				Sn	Sn	15 34 10.8	-12
JCJ	Chichijima	9.92 186		Pn	Pn	15 32 26.8	-5.4
	5.5nm,0.3s,baz=298,slow=17,SNR=4.5						
JCJ				Sn	Sn	15 34 10.8	-12
	9.7nm,0.3s,baz=288,slow=20,SNR=5.0						
JNU	Nakatsue	10.91 253		Pn	Pn	15 32 46.1	+0.4
	0.1nm,0.3s,baz=55,slow=15,SNR=4.8						
USRK	Ussuriysk Ar.	11.22 313		Pn	Pn	15 32 51.8	+1.9
	0.3nm,0.3s,baz=122,slow=12,SNR=12						
USRK				LR	LR	15 36 56.8	
	comp=Z,184nm,19.6s,baz=162,slow=36						
KSRS	Korea Array	12.29 277		Pn	Pn	15 33 05.9	+1.4
	0.3nm,0.3s,baz=91,slow=13,SNR=30						
KSRS				LR	LR	15 37 32.5	
	comp=Z,138nm,21.2s,baz=76,slow=36						
KS01	Wonju Array Si	12.31 277		*ePn*	Pn	15 33 03.4	-1.4
KS15	Wonju Array Si	12.32 277		*ePn*	Pn	15 33 05.4	+0.5
KSAR	Wonju Array Be	12.32 277		Pn	Pn	15 33 05.9	+1.0
KLR	Kul'dur	14.84 329		Pn	Pn	15 33 36.3	-3.0
	0.2nm,0.3s,baz=128,slow=14,SNR=19						
KLR				LR	LR	15 39 14.3	
	comp=Z,94nm,20.3s,baz=144,slow=36						
PETK	Petropavlovsk-	18.98 27		LR	LR	15 43 05.0	
	comp=Z,50nm,19.2s,baz=137,slow=41						
TIA	Tai'an	21.03 276		*eP*	P	15 34 51.7	-1.4
TIA				pmax	pmax		
	comp=Z,10.0nm,1.4s						
HHC	Hu-ho-hao-te	24.93 289		*eP*	P	15 35 33.3	+0.8
HHC				pmax	pmax		
	comp=Z,13nm,0.8s						
HHC				pmax	pmax		
	comp=Z,110nm,4.3s						
YAK	Yakutsk	26.46 346		P	P	15 35 44.4	-1.5
	comp=Z,4.8nm,0.3s,baz=77,slow=0.6,SNR=5.8						
SEY	Seymchan	26.55 9		P	P	15 35 48.5	+1.7
	comp=Z,2.5nm,1.0s,baz=185,slow=7.7,SNR=4.6						
XAN	Xi'an	28.07 274		P	P	15 36 02.6	+1.8
XAN				pmax	pmax		
	comp=Z,6.0nm,1.1s						
XAN				pmax	pmax		
	comp=Z,9.0nm,4.2s						
ULN	Ulaanbaatar	28.64 304		*eP*	P	15 36 07.2	+1.3
ENH	Enshi	28.86 267		P	P	15 36 08.8	+1.0
SONM	Songino Array	29.08 304		P	P	15 36 11.4	+1.7
	comp=Z,5.7nm,0.8s,baz=123,slow=11,SNR=3.6						
SONM				LR	LR	15 48 21.5	
	comp=Z,74nm,21.8s,baz=254,slow=37						
TLY	Talaya	31.51 310		LR	LR	15 49 39.9	
	comp=Z,99nm,18.5s,baz=101,slow=37						
LZH	Lanzhou	31.58 280		*eP*	P	15 36 33.5	+1.5
LZH				pP	pP	15 36 43.8	+4.7
LZH				sP	sP	15 36 48.0	+6.0
LZH				*ePP*	PnPn	15 37 37.2	+1.6
LZH				pmax	pmax		
	comp=Z,20nm,1.0s						
LZH				pmax	pmax		
	comp=Z,56nm,4.9s						
LZH				LR	LR		
	comp=N,300nm,13.0s						
LZH				LR	LR		
	comp=E,280nm,13.4s						
LZH				LR	LR		
	comp=Z,320nm,16.5s						
CD2	Chengdu	33.20 271		P	P	15 36 44.8	-1.3
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
GTA	Gaotai	34.03 288		*eP*	P	15 36 54.4	+1.0
GTA				pP	pP	15 37 04.5	+4.0
GTA				sP	sP	15 37 09.5	+6.1
GTA				S	S	15 42 16.8	-0.7
GTA				sS	sS	15 42 32.7	+3.4
GTA				SS	SnSn	15 44 24.4	-0.6
GTA				pmax	pmax		
	comp=Z,5.0nm,1.0s						
GTA				pmax	pmax		
	comp=Z,46nm,5.6s						
GTA				LR	LR		
	comp=N,84nm,21.4s						
GTA				LR	LR		
	comp=E,110nm,21.4s						
GTA				LR	LR		
	comp=Z,110nm,20.0s						
KMI	Kunming	36.47 263		P	P	15 37 15.5	+0.9
KMI				pmax	pm

comp=Z,1.2nm,0.8s
ASAR Alice Springs 60.99 190 P **P 15 40 21.1 -1.3**
comp=Z,2.6nm,0.8s,baz=8.6,slow=6.1,SNR=25
BBB Bella Bella 61.02 45 LR LR 16 04 38.6
comp=Z,173nm,18.8s,slow=34
YKA Yellowknife Ar 63.06 31 P **P 15 40 36.0 0.0**
comp=Z,1.3nm,1.1s,baz=296,slow=6.5,SNR=11
YKB5 Yellowknife Ar 63.06 31 *eP* **P 15 40 35.1 -0.9**
ARCES ARCESS Array B 64.56 340 LR LR 16 13 50.3
comp=Z,57nm,18.5s,baz=258,slow=40
STKA Stephens Creek 68.54 182 P **P 15 41 10.6 -0.9**
comp=Z,1.7nm,0.8s,baz=0.0,slow=4.0,SNR=3.7
FINES FINESS Array B 69.55 333 P **P 15 41 17.7 +0.2**
comp=Z,1.9nm,0.8s,baz=26,slow=4.9,SNR=5.9
KBZ Khabaz 72.08 311 P **P 15 41 34.6 +1.4**
comp=Z,1.0nm,0.6s,baz=53,slow=5.1,SNR=3.7
NVAR Mina Array Bea 73.78 54 P **P 15 41 44.1 +0.4**
comp=Z,1.5nm,0.9s,baz=285,slow=6.6,SNR=7.8
NB2 NORSAR Subarra 74.80 338 P **P 15 41 51.9 +2.9**
comp=Z,0.6nm,0.7s,baz=36,slow=5.9
NOA NORSAR Array B 74.80 338 P **P 15 41 51.0 +1.9**
comp=Z,1.0nm,0.8s,baz=38,slow=5.9,SNR=3.8
NOA LR LR 16 19 38.0
comp=Z,29nm,18.4s,baz=215,slow=40
H17A Grant Village 75.01 45 *eP* **P 15 41 53.0 +2.2**
comp=Z,6.0nm,0.8s
IMW Indian Meadow 75.11 46 *eP* **P 15 41 52.1 +0.7**
comp=Z,3.2nm,0.8s
AKASG Malin Array Be 75.25 323 P **P 15 41 52.3 +0.6**
comp=Z,0.2nm,0.3s,baz=48,slow=5.6,SNR=3.3
MOOW Moose Ponds 75.31 46 *eP* **P 15 41 52.8 +0.3**
comp=Z,3.2nm,1.0s
R11A Troy Canyon, C 75.57 53 *eP* **P 15 41 54.3 +0.3**
comp=Z,1.9nm,0.8s
TPNV Topopah Spring 75.96 54 *eP* **P 15 41 56.9 +0.6**
comp=Z,1.2nm,1.6s
PDAR Pinedale Array 76.59 46 P **P 15 41 59.8 0.0**
comp=Z,0.4nm,0.4s,baz=292,slow=2.8,SNR=4.9
SRU San Rafael Swe 78.28 50 *eP* **P 15 42 09.7 +0.4**
comp=Z,6.3nm,0.9s
CRVS Cervenica-Dubn 80.13 325 *eP* P 15 42 15.8 -3.2
TX31 Lajitas Ar. Si 88.92 54 *eP* **P 15 43 03.6 -0.3**
TXAR Lajitas Array 88.92 54 P **P 15 43 03.8 -0.1**
comp=Z,1.1nm,0.7s,baz=307,slow=3.3,SNR=6.7
LPAZ La Paz 145.38 62 PKPbc **PKPbc 15 49 47.4 -0.6**
comp=Z,1.0nm,0.6s,baz=0.0,slow=3.0,SNR=4.0

*NIED **04** 15:43:00, 35°.50N×143°.00E, h8km, Mw4.0 Best double couple: M0=1.24000×10^15 NP1:φs=12.00000°, δ=29.00000°, λ=-80.00000°. NP2:φs=181.00000°, δ=61.00000°, λ=-96.00000°.*
*IDC **04** 15:43:05.0±0.6, 35°.42N×143°.10E, h0km, mb3.9/17, mb1 4.1/24, mb1mx3.9/61, mbtmp4.0/24, ML4.0/6, MS3.2/3, Ms1 3.2/3, ms1mx2.7/57, Error ellipse: s-maj=16.1km s-min=13.3km az=117.0*
*NEIC **04** 15:43:06.9±3.5, 35°.39N×143°.08E, h13km±21km, mb4.5/8, Error ellipse: s-maj=9.3km s-min=6.9km az=83.0*
*JMA **04** 15:43:08.2±0.3, 35°.55N×142°.97E, h59km, M4.1*
*ISCJB **04** 15:43:10.9±0.4, 35°.50N±0°.04×142°.77E±0°.04, h59km, mb4.1/30, MS3.8/3, Error ellipse: s-maj=5.5km s-min=4.6km az=157.4*
ISC 04 15:43:13.3±0.5, 35°.59N±0°.03×142°.77E±0°.04, h59km, n72, σ1§62/72, mb4.0/30, MS4.1/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.56**	**275**	P	**Pn**	**15 43 36.9**	**-1.8**
BSO1	**Boso 1**	**1.74**	**238**	P	**Pn**	**15 43 37.7**	**-2.9**
BSO1				S	**Sn**	**15 44 00.4**	**-1.0**
BSO3	**Boso 3**	**2.01**	**248**	P	**Pn**	**15 43 42.9**	**-1.6**
JFT	**Otama**	**2.74**	**315**	P	**Pn**	**15 43 53.2**	**-1.7**
JFT				*eS*	**Sn**	**15 44 26.1**	**-0.7**
JAG	**Ashikaga**	**2.81**	**288**	P	**Pn**	**15 43 54.0**	**-1.8**
JOD2	**Odawara 2**	**3.02**	**265**	P	**Pn**	**15 43 56.9**	**-1.7**
JOD2				*eS*	**Sn**	**15 44 33.1**	**-0.5**
JRY	**Ryogami san**	**3.17**	**279**	P	**Pn**	**15 43 59.8**	**-0.9**
JRY				*eS*	**Sn**	**15 44 38.6**	**+1.3**
JYN	**Shimob**	**3.44**	**270**	P	**Pn**	**15 44 03.1**	**-1.4**
JHJ2	**Mitsune**	**3.47**	**225**	P	Pn	15 44 01.4	-3.4
JHJ2	**Mitsune**	**3.47**	**225**	*ePn*	**Pn**	**15 44 01.6**	**-3.1**
JHJ2				*eSn*	**Sn**	**15 44 40.3**	**-4.4**
JHJ	**Hachijo jima 2**	**3.48**	**226**	Pn	Pn	15 44 01.0	-4.0
	31nm,0.3s,baz=41,slow=15,SNR=26						
JHJ				Sn	Sn	15 44 38.6	-6.4
	124nm,0.3s,baz=109,slow=22,SNR=11						
JHJ				LR	LR	15 45 11.8	
	comp=Z,96nm,20.5s,baz=262,slow=36						
JNS	**Sasagawa**	**3.55**	**310**	P	**Pn**	**15 44 05.4**	**-0.5**
JNS				*eS*	**Sn**	**15 44 47.3**	**+0.7**
JMK	**Ichinoseki**	**3.58**	**340**	P	Pn	15 44 02.9	-3.3
JMK				S	**Sn**	**15 44 43.1**	**-4.1**
MJAR	**Matsushiro Arr**	**3.81**	**286**	Pn	**Pn**	**15 44 08.5**	**-0.9**
	29nm,0.3s,baz=95,slow=14,SNR=322						
MAJO	**Matsushiro**	**3.81**	**286**	*ePn*	**Pn**	**15 44 08.9**	**-0.6**
MAT	**Matsushiro**	**3.81**	**286**	P	**Pn**	**15 44 08.2**	**-1.3**
MAT				S	**Sn**	**15 44 58.2**	**+5.1**
MAT	**Matsushiro**	**3.81**	**286**	P	**Pn**	**15 44 09.0**	**-0.5**
MJB9	**Matsu-Tunnel**	**3.82**	**286**	*ePn*	**Pn**	**15 44 08.9**	**-0.6**
JYK	**Kaneyama**	**3.84**	**331**	P	Pn	15 44 06.9	-2.9
JYK				*eS*	**Sn**	**15 44 51.4**	**-2.2**
JAW	**Awa shima**	**4.01**	**317**	P	**Pn**	**15 44 11.4**	**-0.8**
JOM	**Ohasama**	**4.05**	**344**	P	Pn	15 44 09.7	-3.0
JOM				S	**Sn**	**15 44 55.9**	**-3.0**
JSD	**Sado**	**4.36**	**305**	P	**Pn**	**15 44 15.8**	**-1.2**
INU	**Inuyama**	**4.70**	**269**	*ePn*	**Pn**	**15 44 20.8**	**-0.8**
JIE	**Ise**	**5.11**	**258**	P	**Pn**	**15 44 26.7**	**-0.6**
ERM	**Erimo**	**6.42**	**3**	*ePn*	Pn	15 44 40.2	-4.9
ERM				*eSn*	Sn	15 45 51.4	-5.7
CBIJ	**Chichi jima**	**8.48**	**184**	*ePn*	Pn	15 45 06.3	-7.1
CBIJ				Sn	Sn	15 46 34.1	-14
JCJ	**Chichijima**	**8.48**	**184**	Pn	Pn	15 45 06.4	-7.0
	9.4nm,0.3s,baz=91,slow=24,SNR=12						
JCJ				Sn	Sn	15 46 34.1	-14
	baz=287,slow=19						
ASAJ	**Asahikawa**	**8.52**	**359**	Pn	Pn	15 45 09.1	-4.8
	2.0nm,0.3s,baz=215,slow=12,SNR=23						
ASAJ				Sn	Sn	15 46 41.8	-6.6
	1.0nm,0.3s,baz=233,slow=20,SNR=3.6						
JNU	**Nakatsue**	**10.13**	**259**	Pn	**Pn**	**15 45 35.5**	**-0.5**
	0.9nm,0.3s,baz=74,slow=6.5,SNR=11						
USRK	**Ussuriysk Ar.**	**11.93**	**319**	Pn	**Pn**	**15 45 59.6**	**-0.8**
	0.3nm,0.3s,baz=121,slow=14,SNR=5.2						
KSRS	**Korea Array**	**12.09**	**283**	Pn	**Pn**	**15 46 03.9**	**+1.3**
	0.2nm,0.3s,baz=96,slow=14,SNR=12						
KSRS				LR	LR	15 50 35.5	
	comp=Z,61nm,20.7s,baz=128,slow=36						
KSAR	**Wonju Array Be**	**12.12**	**283**	Pn	**Pn**	**15 46 03.9**	**+0.9**
KLR	**Kul'dur**	**15.85**	**333**	Pn	**P**	**15 46 55.1**	**-0.1**
	0.1nm,0.3s,baz=148,slow=12,SNR=4.3						
HHC	**Hu-ho-hao-te**	**24.99**	**292**	*eP*	**P**	**15 48 33.1**	**+1.6**
HHC				pmax	pmax		
	comp=Z,19nm,0.9s						
HHC				pmax	pmax		
	comp=Z,110nm,4.2s						
SEY	**Seymchan**	**28.02**	**9**	P	**P**	**15 48 58.9**	**+0.6**
	comp=Z,0.6nm,0.3s,baz=194,slow=17,SNR=4.2						
ULN	**Ulaanbaatar**	**29.08**	**306**	*eP*	P	15 49 11.1	+2.9
	comp=Z,1.6nm,0.8s						
LZH	**Lanzhou**	**31.42**	**283**	*eP*	**P**	**15 49 27.1**	**-1.9**
LZH				pP	pP	15 49 37.6	-6.0
LZH				sP	sP	15 49 42.0	-8.6
LZH				*ePP*	**PnPn**	**15 50 32.5**	**-1.1**
LZH				pmax	pmax		
	comp=Z,20nm,1.0s						
LZH				pmax	pmax		
	comp=Z,61nm,5.4s						
LZH				LR	LR		
	comp=N,260nm,13.0s						
LZH				LR	LR		
	comp=E,240nm,12.9s						
LZH				LR	LR		
	comp=Z,300nm,16.5s						
CD2	**Chengdu**	**32.80**	**273**	P	**P**	**15 49 40.3**	**-0.8**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.6s						
GTA	**Gaotai**	**34.05**	**289**	*eP*	**P**	**15 49 54.1**	**+2.2**
GTA				pP	pP	15 50 03.6	-3.1
GTA				sP	sP	15 50 07.4	-6.2
GTA				pmax	pmax		
	comp=Z,2.0nm,0.9s						
KMI	**Kunming**	**35.86**	**264**	P	**P**	**15 50 07.4**	**-0.4**
KMI				pmax	pmax		
	comp=Z,8.0nm,0.7s						
KMI				pmax	pmax		
	comp=Z,120nm,4.7s						
CMAR	**Chiang Mai Arr**	**42.23**	**258**	P	**P**	**15 51 02.3**	**+1.6**
	comp=Z,0.3nm,0.5s,baz=50,slow=7.8,SNR=4.0						
WMQ	**Urumqi**	**42.48**	**299**	P	**P**	**15 51 04.5**	**+1.9**
WMQ				pP	pP	15 51 14.4	-3.3
WMQ				sP	sP	15 51 18.5	-6.0
WMQ				pmax	pmax		
	comp=Z,9.0nm,3.6s						
WMQ				LR	LR		
	comp=N,27nm,19.8s						
WMQ				LR	LR		
	comp=E,22nm,23.8s						
WMQ				LR	LR		
	comp=Z,15nm,14.8s						
ZALV	**Zalesovo Beam**	**43.70**	**314**	P	**P**	**15 51 14.1**	**+2.0**
	comp=Z,0.4nm,0.4s,baz=90,slow=8.6,SNR=3.1						
MK31	**Makanchi Array**	**45.82**	**304**	*eP*	**P**	**15 51 30.8**	**+1.5**
MKAR	**Makanchi Array**	**45.82**	**304**	P	**P**	**15 51 30.6**	**+1.4**
	comp=Z,0.6nm,0.6s,baz=88,slow=9.2,SNR=6.8						
MKAR	**Makanchi Array**	**45.82**	**304**	*eP*	**P**	**15 51 30.8**	**+1.5**
MAKZ	**Makanchi**	**46.03**	**304**	*eP*	**P**	**15 51 30.1**	**-0.7**
	comp=Z,2.0nm,0.6s						
KURK	**Kurchatov**	**47.69**	**309**	*eP*	**P**	**15 51 44.5**	**+0.8**
	comp=Z,4.7nm,0.7s						
KURKB	**Kurchatov Arra**	**47.76**	**309**	P	**P**	**15 51 45.5**	**+1.3**
	comp=Z,1.0nm,0.7s,baz=85,slow=7.9,SNR=9.8						
MDM	**Murphy Dome**	**49.57**	**31**	*eP*	**P**	**15 51 58.5**	**+0.5**
	comp=Z,6.5nm,1.0s						
ILAR	**Eielson Array**	**50.14**	**32**	P	**P**	**15 52 01.6**	**-0.6**
	comp=Z,2.3nm,0.9s,baz=269,slow=6.4,SNR=20						
IL1	**Eielson Array**	**50.14**	**32**	*eP*	**P**	**15 52 01.1**	**-1.1**
BVAR	**Borovoye Array**	**52.35**	**313**	P	P	15 52 23.1	+4.0
	comp=Z,0.3nm,0.6s,baz=69,slow=8.5,SNR=2.5						
INK	**Inuvik**	**55.18**	**27**	P	**P**	**15 52 39.4**	**0.0**
	comp=Z,1.5nm,0.5s,baz=292,slow=3.8,SNR=9.5						
INK	**Inuvik**	**55.18**	**27**	*eP*	**P**	**15 52 39.1**	**-0.3**
	comp=Z,5.2nm,1.3s						
WRA	**Warramunga Arr**	**55.80**	**190**	P	**P**	**15 52 42.8**	**-1.6**
	comp=Z,3.7nm,0.8s,baz=8.2,slow=7.4,SNR=24						
AS31	**Alice Springs**	**59.52**	**189**	*eP*	**P**	**15 53 09.4**	**-1.1**
	comp=Z,0.9nm,0.6s						
ASAR	**Alice Springs**	**59.53**	**189**	P	**P**	**15 53 09.5**	**-1.0**
	comp=Z,1.1nm,0.7s,baz=15,slow=11,SNR=25						
ABKAR	**Akbulak array**	**59.71**	**311**	*eP*	**P**	**15 53 13.0**	**+1.5**
RES	**Resolute Bay**	**63.73**	**15**	*eP*	**P**	**15 53 38.5**	**+0.4**
	comp=Z,4.5nm,0.7s						
YKA	**Yellowknife Ar**	**64.51**	**30**	P	**P**	**15 53 43.2**	**-0.3**
	comp=Z,0.9nm,0.8s,baz=298,slow=6.4,SNR=16						
STKA	**Stephens Creek**	**67.12**	**181**	P	**P**	**15 53 59.5**	**-1.0**
	comp=Z,1.0nm,0.6s,baz=351,slow=7.7,SNR=4.2						
FCC	**Fort Churchill**	**74.80**	**27**	*eP*	**P**	**15 54 46.4**	**-0.4**
	comp=Z,9.9nm,1.3s						
NVAR	**Mina Array Bea**	**74.97**	**53**	P	**P**	**15 54 48.3**	**-0.2**
	comp=Z,0.4nm,0.6s,baz=286,slow=5.9,SNR=3.7						
NB2	**NORSAR Subarra**	**75.94**	**338**	P	**P**	**15 54 54.7**	**+1.3**
	comp=Z,1.9nm,1.0s,baz=40,slow=6.2						
NOA	**NORSAR Array B**	**75.94**	**338**	P	**P**	**15 54 54.0**	**+0.6**
	comp=Z,0.9nm,0.8s,baz=40,slow=5.7,SNR=3.8						
AKASG	**Malin Array Be**	**76.11**	**323**	P	**P**	**15 54 55.7**	**+1.2**
	comp=Z,0.9nm,0.6s,baz=45,slow=6.1,SNR=4.2						
PDAR	**Pinedale Array**	**77.89**	**46**	P	**P**	**15 55 04.0**	**-1.1**
	comp=Z,0.6nm,0.5s,baz=302,slow=2.7,SNR=5.7						
BRTR	**Keskin Array B**	**80.63**	**312**	P	**P**	**15 55 22.2**	**+2.4**
	comp=Z,0.8nm,0.6s,baz=64,slow=3.4,SNR=5.3						
BR231	**Keskin MP Arra**	**81.07**	**313**	*eP*	**P**	**15 55 22.8**	**+0.6**
TXAR	**Lajitas Array**	**90.12**	**53**	P	**P**	**15 56 06.1**	**-1.2**
	comp=Z,0.3nm,0.5s,baz=307,slow=3.1,SNR=5.3						
TXAR				LR	LR	16 28 37.4	
	comp=Z,72nm,20.9s,baz=0.0,slow=30						
LPAZ	**La Paz**	**146.43**	**63**	PKPbc	**PKPbc**	**16 02 48.7**	**-0.2**
	comp=Z,0.4nm,0.5s,baz=342,slow=3.4,SNR=4.1						

*DHMR **04** 15:45:39.1±1.6, 15°.08N×42°.28E, h2km±22km, ML4.3*
*ISCJB **04** 15:45:40.2±0.7, 15°.13N±0°.04×42°.14E±0°.05, h10km, mb3.7/7, MS3.6/3, Error ellipse: s-maj=7.2km s-min=5.8km az=143.0*
*IDC **04** 15:45:40.0±1.2, 15°.01N×42°.05E, h0km, mb3.8/7, mb1 4.0/9, mb1mx3.6/53, mbtmp3.9/9, ML3.6/2, MS3.6/4, Ms1 3.6/4, ms1mx2.9/52, Error ellipse: s-maj=32.8km s-min=16.0km az=76.0*
ISC 04 15:45:42.3±0.9, 15°.13N±0°.06×42°.29E±0°.07, h10km, n17, σ1§56/22, mb3.8/7, MS3.6/3, 1C, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HAJJ	**Hajjah**	**1.38**	**66**	*iP*	**Pn**	**15 46 05.0**	**-2.9**
HAJJ				AML	AML	15 46 13.6	
	comp=Z,3μm,0.3s						
HAJJ				*i* S	**Sb**	**15 46 26.2**	**0.0**
SANA	**San'a**	**1.86**	**82**	*iP*	**Pn**	**15 46 13.7**	**-0.9**
SANA				*i* S	**Sb**	**15 46 40.2**	**0.0**
SANA				AML	AML	15 46 55.5	
	comp=E,8μm,0.5s						
UDYN	**Al 'Udayn**	**1.99**	**125**	*iP*	**Pn**	**15 46 15.4**	**-0.8**
UDYN				*i* S	**Sb**	**15 46 44.1**	**+0.4**
DHBB	**Dhamar BB**	**2.10**	**105**	*iP*	**Pn**	**15 46 16.8**	**-1.1**
DHBB				*i* S	**Sb**	**15 46 45.8**	**-1.3**
TRBA	**At Turbah**	**2.59**	**137**	*iP*	**Pn**	**15 46 23.9**	**-0.6**
TRBA				*i* S	**Sn**	**15 46 58.0**	**+1.9**
BDHA	**Al Bayda'**	**3.37**	**110**	*iP*	**Pn**	**15 46 35.7**	**+0.4**
BDHA				*i* S	**Sb**	**15 47 19.9**	**-3.7**
BDHA				AML	AML	15 47 37.8	
	comp=N,1μm,0.5s						
ATD	**Arta Tunnel**	**3.62**	**171**	Pn	**Pn**	**15 46 37.3**	**-1.3**
	comp=N,10nm,0.3s,baz=342,slow=9.6,SNR=24						
ATD				Sn	**Sn**	**15 47 20.9**	**-0.6**
	comp=N,15nm,0.3s,baz=163,slow=18,SNR=5.1						
ATD				Lg	Lg	15 47 32.6	
	comp=N,16nm,0.3s,baz=270,slow=20,SNR=3.7						
WSAR	**Wadi Sarin**	**17.40**	**60**	P	**P**	**15 49 49.3**	**+2.6**
	comp=N,0.1nm,0.3s,baz=249,slow=12,SNR=3.7						
WSAR				LR	LR	15 57 07.9	
	comp=N,76nm,19.4s,baz=238,slow=39						
GNI	**Garni**	**25.02**	**4**	LR	LR	16 01 38.9	
	comp=N,54nm,18.2s,baz=206,slow=38						
BRTR	**Keskin Array B**	**25.65**	**344**	P	**P**	**15 51 13.0**	**+0.6**
	comp=N,0.7nm,0.8s,baz=155,slow=9.6,SNR=5.8						
GERES	**GERESS Array B**	**40.98**	**331**	P	**P**	**15 53 23.5**	**-2.0**
	comp=N,1.7nm,0.8s,baz=143,slow=7.5,SNR=9.6						
MKAR	**Makanchi Array**	**45.83**	**38**	P	**P**	**15 54 05.7**	**+1.2**
	comp=N,1.0nm,0.7s,baz=234,slow=5.8,SNR=7.2						
MKAR				LR	LR	16 16 05.2	
	comp=N,64nm,19.2s,baz=292,slow=40						
KURBB	**Kurchatov Arra**	**45.88**	**32**	P	**P**	**15 54 05.9**	**+1.0**
	comp=N,0.7nm,0.8s,baz=234,slow=8.2,SNR=6.6						
FINES	**FINESS Array B**	**47.69**	**350**	P	**P**	**15 54 19.5**	**+0.6**
	comp=N,1.1nm,0.7s,baz=115,slow=7.2,SNR=4.4						
ZALV	**Zalesovo Beam**	**50.95**	**31**	P	**P**	**15 54 44.4**	**+0.5**
	comp=N,1.5nm,0.6s,baz=248,slow=6.4,SNR=6.2						
CMAR	**Chiang Mai Arr**	**54.16**	**78**	P	**P**	**15 55 08.4**	**+0.1**
	comp=N,0.8nm,0.9s,baz=276,slow=6.6,SNR=5.7						
JHJ	**Hachijo jima 2**	**87.97**	**56**	LR	LR	16 41 37.2	
	comp=N,123nm,21.8s,baz=70,slow=38						

*CSEM **04** 15:48:15.9±0.3, 40°.47N×41°.45E, h2km, MD2.5, Error ellipse: s-maj=10.8km s-min=4.4km az=133.0, Suspected Mining explosion.*
*ISCJB **04** 15:48:17.9±0.5, 40°.75N±0°.08×41°.20E±0°.06, h0km, Error ellipse: s-maj=12.5km s-min=3.1km az=150.0*
*DDA **04** 15:48:17.8, 40°.82N×41°.15E, h14km, Md2.5, Suspected Mining explosion.*
*ISK **04** 15:48:22.3, 39°.81N×40°.61E, h14km, MD2.5*
ISC 04 15:48:16.3±0.9, 40°.58N±0°.08×41°.37E±0°.06, h0km, n21, σ1§32/31, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DDEM	**Demirkent**	**0.43**	**42**	P	**Pb**	**15 48 25.9**	**-0.8**
DDEM	**Demirkent**	**0.43**	**42**	*iP*	**Pb**	**15 48 25.9**	**-0.8**
DDEM				*i* S	**Sb**	**15 48 34.3**	**+0.5**
DBAD	**Bademkaya**	**0.50**	**29**	P	**Pb**	**15 48 27.0**	**-1.1**
DBAD				S	**Sg**	**15 48 33.6**	**+1.1**
DBAD	**Bademkaya**	**0.50**	**29**	*iP*	**Pb**	**15 48 27.0**	**-1.1**
DBAD				*i* S	**Sg**	**15 48 33.6**	**+1.1**
DAGI	**Agillar**	**0.65**	**39**	*iP*	**Pb**	**15 48 30.2**	**-0.3**
DAGI				*i* S	**Sg**	**15 48 37.3**	**+0.3**
EZM	**Erzurum**	**0.67**	**181**	*ePG*	**Pn**	**15 48 34.4**	**+1.1**
ARTV	**Artvin**	**0.74**	**35**	P	**Pb**	**15 48 31.5**	**-0.7**
ARTV	**Artvin**	**0.74**	**35**	*iP*	**Pb**	**15 48 31.5**	**-0.7**
ARTV				*i* S	**Sb**	**15 48 42.2**	**-0.7**
KOPT	**Kop Dagi**	**0.87**	**230**	*iP*	**Pn**	**15 48 37.3**	**+1.2**
KOPT				*i* S	**Sn**	**15 48 54.4**	**+4.8**
BAYT	**Ayd¨–ntepe-Bay**	**0.96**	**259**	*ePG*	**Pb**	**15 48 35.6**	**-0.3**
BAYT				*eSG*	**Sg**	**15 48 46.3**	**-0.7**
BAYT	**Ayd¨–ntepe-Bay**	**0.96**	**259**	*ePg*	**Pb**	**15 48 35.6**	**-0.3**
BAYT				*eSg*	**Sg**	**15 48 46.3**	**-0.7**
GUMT	**Gumushane**	**1.45**	**266**	*ePN*	**Pg**	**15 48 43.7**	**-0.3**
GUMT	**Gumushane**	**1.45**	**266**	*ePn*	**Pg**	**15 48 43.7**	**-0.3**
BNGB	**Bing¶ll**	**1.67**	**199**	*ePG*	Pn	15 48 38.6	-8.3
KELT	**Kelkit**	**1.67**	**256**	P	**Pg**	**15 48 48.0**	**-0.4**
KELT				S	**Sg**	**15 49 09.9**	**-0.1**
KELT	**Kelkit**	**1.67**	**256**	*iP*	**Pg**	**15 48 48.0**	**-0.4**
KELT				*i* S	**Sg**	**15 49 09.9**	**-0.1**
KELT	**Kelkit**	**1.67**	**256**	*iP*	**Pg**	**15 48 48.0**	**-0.3**
KELT				*i* S	**Sb**	**15 49 09.7**	**-0.1**
PTK	**Pertek**	**2.27**	**223**	*ePN*	**Pn**	**15 48 53.8**	**-1.4**
PTK	**Pertek**	**2.27**	**223**	*ePn*	**Pn**	**15 48 53.8**	**-1.4**
MAZI	**Mazidag**	**3.20**	**193**	*ePN*	**Pn**	**15 49 05.7**	**-2.2**
MAZI	**Mazidag**	**3.20**	**193**	*ePn*	**Pn**	**15 49 05.7**	**-2.2**

*CSEM **04** 15:48:30.9±0.4, 38°.18N×38°.12E, h1km, MD2.5, Error ellipse: s-maj=9.3km s-min=8.2km az=156.0, Suspected Mining explosion.*
*ISK **04** 15:48:31.0, 38°.23N×38°.14E, h9km, MD2.7*
*ISCJB **04** 15:48:32.6±0.5, 38°.32N±0°.03×38°.17E±0°.04, h0km, Error ellipse: s-maj=4.3km s-min=4.2km az=0.3*
*DDA **04** 15:48:32.2, 38°.33N×38°.17E, h8km, Md2.5, Suspected Mining explosion.*
ISC 04 15:48:30.8±0.8, 38°.29N±0°.03×38°.27E±0°.03, h0km, n22, σ1§14/32, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKCD	**Akcadag**	**0.27**	**271**	P	**Pg**	**15 48 36.3**	**+0.2**
AKCD				S	**Sg**	**15 48 39.9**	**+0.3**
AKCD	**Akcadag**	**0.27**	**271**	*iP*	**Pg**	**15 48 36.3**	**+0.2**
AKCD				*i* S	**Sg**	**15 48 39.9**	**+0.3**
ELZG	**Elazig**	**0.60**	**70**	P	**Pn**	**15 48 46.0**	**-0.8**
ELZG				S	**Sn**	**15 48 57.2**	**-0.1**
ELZG	**Elazig**	**0.60**	**70**	*iP*	**Pn**	**15 48 46.0**	**-0.8**
ELZG				*i* S	**Sn**	**15 48 57.2**	**-0.1**
DARE	**Darende-Malaty**	**0.68**	**295**	*ePG*	**Pg**	**15 48 43.5**	**-0.4**
DARE				*eSG*	**Sg**	**15 48 52.5**	**-0.2**
DARE	**Darende-Malaty**	**0.68**	**295**	*ePg*	**Pg**	**15 48 43.5**	**-0.4**
DARE				*eSg*	**Sg**	**15 48 52.5**	**-0.2**
SVRC	**Sivrice-ELAZID**	**0.82**	**84**	*ePG*	**Pn**	**15 48 49.6**	**-0.2**
SVRC	**Sivrice-ELAZID**	**0.82**	**84**	*ePg*	**Pn**	**15 48 49.6**	**-0.2**
URFA	**Urfa**	**0.95**	**153**	*ePG*	**Pb**	**15 48 49.7**	**-0.6**
URFA	**Urfa**	**0.95**	**153**	*ePg*	**Pb**	**15 48 49.7**	**-0.6**
KEMA	**Kemaliye**	**0.99**	**10**	P	**Pg**	**15 48 49.9**	**+0.1**
KEMA	**Kemaliye**	**0.99**	**10**	*iP*	**Pg**	**15 48 49.9**	**+0.1**
KEMA				*i* S	**Sn**	**15 49 06.2**	**-0.7**
GZT	**Gaziantep**	**1.09**	**211**	*iP*	**Pn**	**15 48 54.2**	**+0.7**
GZT				*i* S	**Sn**	**15 49 11.0**	**+1.6**
CUKAN	**kangal_SIVAS**	**1.20**	**329**	*iP*	**Pn**	**15 48 55.1**	**0.0**
CUKAN				*i* S	**Sn**	**15 49 12.3**	**+0.2**
KMRS	**Kahramanmaras**	**1.34**	**235**	*ePN*	**Pg**	**15 48 54.8**	**-1.7**
KMRS	**Kahramanmaras**	**1.34**	**235**	*ePn*	**Pg**	**15 48 54.8**	**-1.7**
GAZ	**Gaziantep**	**1.40**	**217**	*ePN*	**Pn**	**15 48 55.6**	**-2.1**
GAZ	**Gaziantep**	**1.40**	**217**	*ePn*	**Pn**	**15 48 55.6**	**-2.1**
SURC	**SANLIURFA_SURC**	**1.44**	**169**	*iP*	**Pb**	**15 49 00.9**	**+2.4**
SURC				*i* S	**Sn**	**15 49 21.1**	**+3.3**
ANDN	**Andirin**	**1.68**	**246**	*iP*	**Pb**	**15 49 02.9**	**+0.2**
SVSK	**Karacayir**	**1.90**	**329**	*ePN*	**Pn**	**15 49 04.6**	**+0.1**
SVSK	**Karacayir**	**1.90**	**329**	*ePn*	**Pn**	**15 49 04.6**	**+0.1**

*ISCJB **04** 15:53:33.0±1.2, 1°.7N±0°.1×127°.5E±0°.1, h128km, mb3.9/5, Error ellipse: s-maj=20.1km s-min=13.7km az=150.5*
*IDC **04** 15:53:36.3±7.1, 1°.66N×127°.39E, h142km±62km, mb3.6/5, mb1 3.8/7, mb1mx3.3/42, mbtmp4.1/7, MS3.3/1, Ms1 3.3/1, ms1mx2.4/59, Error ellipse: s-maj=57.1km s-min=17.3km az=59.0*
ISC 04 15:53:34.8±1.2, 1°.7N±0°.1×127°.5E±0°.1, h128km, n8, σ0§76/10, mb4.0/5, Halmahera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAPI	**Kappang**	**10.20**	**229**	P	**Pn**	**15 55 59.1**	**+1.2**
	7.5nm,0.3s,baz=21,slow=8.5,SNR=12						

ISCJB ***04*** *16:13:25.8±0.5,20˚.35S±0˚.03×178˚.51W±0˚.02, h557km±6km, mb5.1/316, Error ellipse: s-maj=4.3km s-min=3.0km az=151.9*

MOS ***04*** *16:13:26.1±0.8,20˚.24S×178˚.54W, h558km, mb5.2/50, Error ellipse: s-maj=8.7km s-min=7.2km az=71.7*

BJI ***04*** *16:13:27.8,20˚.05S×178˚.34W, h580km, mb5.1/60, mB5.3/47*

NEIC ***04*** *16:13:28.0±0.0,20˚.37S×178˚.66W, h571km, Moment Tensor Solution. s9 Moment tensor: Scale 10^{17}Nm; M_{rr}-1.10; $M_{\theta\theta}$1.00; $M_{\phi\phi}$0.10; $M_{r\theta}$-1.70; $M_{\theta\phi}$-1.10; $M_{\phi r}$-0.80; Best double couple: $M_0$2.00000×10^{17} NP1:ϕ_s84.00000°, δ74.00000°,λ-122.00000°. NP2:ϕ_s332.00000°, δ35.00000°,λ-27.00000°. Principal axes: T 2.1000, Plg22.0000°, Azm199.0000°; N 0.5000, Plg31.0000°, Azm94.0000°; P -2.6000, Plg49.0000°, Azm318.0000°;*

GCMT ***04*** *16:13:28.6±0.2,20˚.25S×178˚.40W, h597km±1km, MW5.6/97, Moment Tensor Solution. s97,c147; s23,c23; Duration: 1s5 Moment tensor: Scale 10^{17}Nm; M_{rr}-0.94±.04; $M_{\theta\theta}$1.07±.06; $M_{\phi\phi}$-0.12±.06; $M_{r\theta}$-2.13±.05; $M_{\theta\phi}$-1.68±.05; $M_{\phi r}$-0.97±.06; Best double couple: $M_0$3.02100×10^{17} NP1:ϕ_s84.00000°, δ78.00000°, λ-129.00000°. NP2:ϕ_s340.00000°, δ40.00000°, λ-19.00000°. Principal axes: T 2.7710, Plg23.0000°, Azm203.0000°; N 0.5060, Plg38.0000°, Azm94.0000°; P -3.2720, Plg44.0000°, Azm317.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to mantle waves, cutoff=125s.*

NEIC ***04*** *16:13:28.6±0.1,20˚.40S×178˚.55W, mb5.2/238, MW5.6, MW5.5 Error ellipse: s-maj=4.2km s-min=2.7km az=139.0, Moment Tensor Solution. s16 Moment tensor: Scale 10^{17}Nm; M_{rr}-1.98; $M_{\theta\theta}$1.73; $M_{\phi\phi}$0.25; $M_{r\theta}$-2.43; $M_{\theta\phi}$-1.71; $M_{\phi r}$-0.71; Best double couple: $M_0$3.60000×10^{17} NP1: ϕ_s92.00000°, δ70.00000°,λ-121.00000°. NP2: ϕ_s332.00000°, δ36.00000°,λ-35.00000°. Principal axes: T 3.4500, Plg20.0000°, Azm204.0000°; N 0.2600, Plg29.0000°, Azm103.0000°; P -3.7100, Plg54.0000°, Azm323.0000°;*

IDC ***04*** *16:13:28.1±0.6,20˚.35S×178˚.48W, h573km±5km, mb4.6/40, mb1 4.6/44, mb1mx4.6/49, mbtmp5.5/44 Error ellipse: s-maj=8.5km s-min=7.4km az=132.0*

ISC 04 16:13:27.8±0.3,20˚.32S±0˚.03×178˚.44W±0˚.04, h577km±3km, h577km:pP-P, n1353, σ1s24/1567, mb5.2/316, 74C-122D, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSVF	**Nonsavu**	**4.20**	**307**	*eP*	**P**	**16 14 55.9**	**+2.7**
MSVF	**Nonsavu**	**4.20**	**307**	*eP*	**P**	**16 14 55.9**	**+2.7**
NIUE	**Niue**	**8.12**	**83**	P	**P**	**16 15 27.3**	**-0.3**
	baz=8.0,SNR=19						
RAO	**Raoul Island**	**8.91**	**177**	P	**P**	**16 15 33.7**	**-1.4**
	160nm,0.3s,baz=41,slow=23,SNR=4.8						
RAO				S	**S**	**16 17 14.7**	**-5.0**
	203nm,0.3s,baz=93,slow=22,SNR=9.9						
RAO	**Raoul Island**	**8.91**	**177**	*eP*	**P**	**16 15 33.8**	**-1.3**
RAO				*eS*	**S**	**16 17 17.4**	**-2.2**
AFI	**Afiamalu**	**9.01**	**46**	P	**P**	**16 15 35.2**	**-1.3**
	65nm,0.3s,baz=240,slow=1.9,SNR=219						
AFI				S	**S**	**16 17 16.2**	**-5.8**
	32nm,0.3s,baz=24,slow=20,SNR=8.1						
AFI	**Afiamalu**	**9.01**	**46**	*eP*	**P**	**16 15 34.6**	**-1.9**
AFI	**Afiamalu**	**9.01**	**46**	*eP*	**P**	**16 15 34.6**	**-1.9**
AFI				S	**S**	**16 17 16.2**	**-5.8**
DZM	**Mont Dzumac**	**14.21**	**260**	P	**P**	**16 16 28.2**	**-1.0**
	2.8nm,0.3s,baz=348,slow=16,SNR=30						
DZM				S	**S**	**16 18 56.5**	**-1.4**
	0.1nm,0.3s,baz=122,slow=13,SNR=2.4						
NFK	**Norfolk Island**	**15.11**	**232**	P	**P**	**16 16 39.6**	**+1.9**
	baz=15,SNR=7.5						
OUZ	**Omahuta**	**16.42**	**204**	*eP*	**P**	**16 16 52.1**	**+2.1**
	876nm,0.8s						
OUZ	**Omahuta**	**16.42**	**204**	PN	**P**	**16 16 52.3**	**+2.4**
WCZ	**Waipu Caves**	**16.80**	**201**	PN	**P**	**16 16 56.0**	**+2.6**
KUZ	**Kuaotunu**	**17.14**	**196**	PN	**P**	**16 16 57.9**	**+1.5**
ABAZ	**Army Bay**	**17.26**	**199**	PN	**P**	**16 16 59.8**	**+2.3**
WIAZ	**Waiheke Island**	**17.35**	**198**	PN	**P**	**16 17 00.2**	**+1.9**
MXZ	**Matakaoa Point**	**17.41**	**189**	*eP*	**P**	**16 16 57.7**	**-1.2**
	190nm,0.8s						
RVAZ	**Riverhead Bore**	**17.49**	**199**	PN	**P**	**16 17 01.4**	**+1.8**
MYRZ	**Mayor Island**	**17.52**	**194**	PN	**P**	**16 17 01.8**	**+1.9**
ETAZ	**East Tamaki Re**	**17.56**	**198**	PN	**P**	**16 17 02.2**	**+2.0**
MKAZ	**Moumakai**	**17.63**	**197**	PN	**P**	**16 17 02.7**	**+1.8**
WTAZ	**Waiatarua**	**17.64**	**199**	PN	**P**	**16 17 03.0**	**+2.0**
WMGZ	**Waiomatatini S**	**17.65**	**188**	PN	**P**	**16 17 00.9**	**-0.2**
WMGZ				SN	**S**	**16 19 52.1**	**-2.4**
HAZ	**Te Kaha**	**17.68**	**190**	PN	**P**	**16 16 59.4**	**-1.9**
HAZ				SN	**S**	**16 19 49.4**	**-5.7**
KBAZ	**Karaka Road Bo**	**17.70**	**198**	PN	**P**	**16 17 03.5**	**+2.0**
AWAZ	**Awhitu Peninsu**	**17.74**	**198**	PN	**P**	**16 17 03.6**	**+1.7**
PKGZ	**Pakihiroa**	**17.77**	**189**	PN	**P**	**16 17 01.2**	**-1.0**
PUZ	**Puketiti**	**17.92**	**188**	PN	**P**	**16 17 02.4**	**-1.2**
TGRZ	**Tauranga**	**17.95**	**194**	PN	**P**	**16 17 04.8**	**+1.0**
TWGZ	**Tauwhareparae**	**18.06**	**189**	PN	**P**	**16 17 03.8**	**-1.1**
TOZ	**Tahuroa Road**	**18.13**	**196**	PN	**P**	**16 17 06.9**	**+1.4**
KMRZ	**Kaimai**	**18.13**	**194**	PN	**P**	**16 17 06.6**	**+1.0**
KARZ	**Kaharoa**	**18.23**	**194**	PN	**P**	**16 17 06.3**	**-0.1**
OMRZ	**Omania**	**18.29**	**193**	PN	**P**	**16 17 06.9**	**-0.1**
MWZ	**Matawai**	**18.29**	**190**	PN	**P**	**16 17 04.6**	**-2.4**
URZ	**Urewera**	**18.29**	**191**	P	**P**	**16 17 05.2**	**-1.7**
	37nm,0.3s,baz=285,slow=2.6,SNR=158						
URZ				S	**S**	**16 19 56.9**	**-8.0**
	1.3nm,0.3s,baz=223,slow=22,SNR=5.7						
URZ				ScP	**ScP**	**16 23 48.4**	**-1.3**
	1.5nm,0.3s,baz=155,slow=3.8,SNR=5.9						
URZ	**Urewera**	**18.29**	**191**	*eP*	**P**	**16 17 04.2**	**-2.7**
	340nm,0.8s						
URZ				*e*S	**S**	**16 20 01.4**	**-3.5**
URZ				ScP	**ScP**	**16 23 48.4**	**-1.3**
URZ	**Urewera**	**18.29**	**191**	PN	**P**	**16 17 04.1**	**-2.8**
CNGZ	**Carnagh Statio**	**18.33**	**188**	PN	**P**	**16 17 06.9**	**-0.4**
TKGZ	**Te Karaka**	**18.34**	**189**	PN	**P**	**16 17 05.6**	**-1.7**
UTU	**Utuhina**	**18.39**	**194**	PN	**P**	**16 17 08.1**	**+0.2**
RRRZ	**Republican Roa**	**18.48**	**193**	PN	**P**	**16 17 07.4**	**-1.3**
HRRZ	**Handcock Road**	**18.58**	**193**	PN	**P**	**16 17 08.9**	**-0.7**
RIGZ	**Rimuhau**	**18.62**	**189**	PN	**P**	**16 17 08.1**	**-1.8**
KNTN	**Kanton**	**18.63**	**21**	*eP*	**P**	**16 17 09.8**	**-0.6**
	373nm,0.8s						
PRRZ	**Plateau Road**	**18.66**	**193**	PN	**P**	**16 17 09.6**	**-0.7**
WHTZ	**Whakaora**	**18.91**	**194**	PN	**P**	**16 17 12.0**	**-0.6**
RAHZ	**Arahi**	**18.93**	**191**	*e*PN	**P**	**16 17 11.7**	**-1.1**
KNZ	**Kokohu**	**18.94**	**189**	PN	**P**	**16 17 12.1**	**-0.7**
MRHZ	**Matea Rd**	**18.98**	**192**	PN	**P**	**16 17 11.4**	**-1.9**
HIZ	**Hauiti**	**19.04**	**196**	*eP*	**P**	**16 17 15.5**	**+1.8**
	550nm,1.2s						
HIZ	**Hauiti**	**19.04**	**196**	PN	**P**	**16 17 15.5**	**+1.8**
WHHZ	**Waihua**	**19.06**	**190**	PN	**P**	**16 17 14.1**	**+0.2**
RATZ	**Rangitukua**	**19.15**	**194**	PN	**P**	**16 17 14.4**	**-0.4**
BKZ	**Black Stump Fm**	**19.28**	**192**	*eP*	**P**	**16 17 13.5**	**-2.5**
	98nm,0.7s						
BKZ				*e*ScP	**ScP**	**16 23 51.8**	**-0.3**
BKZ	**Black Stump Fm**	**19.28**	**192**	PN	**P**	**16 17 13.3**	**-2.8**
ARHZ	**Aropaoanui**	**19.29**	**191**	PN	**P**	**16 17 15.2**	**-0.8**
MCHZ	**McNeill Hill**	**19.52**	**191**	PN	**P**	**16 17 16.8**	**-1.3**
KWHZ	**Kaweka Forest**	**19.55**	**192**	PN	**P**	**16 17 17.0**	**-1.4**
WNVZ	**Wahianoa**	**19.63**	**194**	PN	**P**	**16 17 16.8**	**-2.5**
BHHZ	**Black Hill Sta**	**19.68**	**193**	*e*PN	**P**	**16 17 17.3**	**-2.3**
KRHZ	**Kereru**	**19.77**	**192**	PN	**P**	**16 17 18.6**	**-1.7**
KAHZ	**Kahuranaki**	**19.82**	**191**	PN	**P**	**16 17 20.1**	**-0.8**
PXZ	**Pawanui**	**20.05**	**191**	PN	**P**	**16 17 21.3**	**-1.6**
TSZ	**Takapari Road**	**20.25**	**192**	PN	**P**	**16 17 23.3**	**-1.4**
ANWZ	**Angora Road**	**20.54**	**191**	PN	**P**	**16 17 26.0**	**-1.3**
BFZ	**Birch Farm**	**20.80**	**191**	*eP*	**P**	**16 17 28.1**	**-1.5**
	126nm,0.5s						
BFZ				*e*S	**S**	**16 20 46.9**	**+2.0**
BFZ	**Birch Farm**	**20.80**	**191**	PN	**P**	**16 17 27.9**	**-1.7**
MRZ	**Mangatainoka R**	**20.91**	**193**	PN	**P**	**16 17 28.6**	**-2.0**
MRZ				SN	**S**	**16 20 43.7**	**-3.0**
OGWZ	**Otaki Gorge**	**21.15**	**194**	PN	**P**	**16 17 30.8**	**-1.9**
TMWZ	**Te Maipa**	**21.28**	**192**	PN	**P**	**16 17 32.7**	**-1.3**
DUWZ	**D'Urville Isla**	**21.43**	**196**	PN	**P**	**16 17 33.3**	**-2.1**
CAW	**Cannon Point**	**21.45**	**194**	PN	**P**	**16 17 33.8**	**-1.6**
SNZO	**South Karori**	**21.72**	**194**	*eP*	**P**	**16 17 36.4**	**-1.4**
	300nm,0.6s						
TCW	**Tory Channel**	**21.73**	**195**	PN	**P**	**16 17 36.9**	**-1.0**
BHW	**Baring Head**	**21.78**	**194**	PN	**P**	**16 17 37.3**	**-1.1**
QRZ	**Quartz Range**	**21.84**	**199**	PN	**P**	**16 17 39.2**	**+0.2**
PLWZ	**Palliser**	**21.85**	**193**	PN	**P**	**16 17 37.6**	**-1.5**
NNZ	**Nelson**	**21.96**	**197**	PN	**P**	**16 17 39.2**	**-0.8**
TUWZ	**Tuamarina**	**22.02**	**195**	PN	**P**	**16 17 39.0**	**-1.5**
THZ	**Tophouse**	**22.60**	**197**	*eP*	**P**	**16 17 44.6**	**-1.2**
	126nm,0.7s						
THZ	**Tophouse**	**22.60**	**197**	PN	**P**	**16 17 44.7**	**-1.2**
KHZ	**Kahutara**	**23.05**	**195**	*eP*	**P**	**16 17 48.1**	**-1.6**
	182nm,0.9s						
KHZ				*e*ScP	**ScP**	**16 24 01.4**	**0.0**
KHZ	**Kahutara**	**23.05**	**195**	PN	**P**	**16 17 48.4**	**-1.2**
LHI	**Lord Howe Isla**	**23.06**	**237**	P	**P**	**16 17 52.2**	**+2.2**
	baz=23,SNR=5.8						
LHI	**Lord Howe Isla**	**23.06**	**237**	*eP*	**P**	**16 17 51.5**	**+1.6**
	269nm,1.3s						
TARA	**Tarawa**	**23.14**	**338**	*eP*	**P**	**16 17 51.5**	**+0.6**
	876nm,1.0s						
HNR	**Honiara**	**23.49**	**294**	P	**P**	**16 17 52.4**	**-1.6**
	78nm,1.0s,baz=139,slow=9.3,SNR=3.1						
HNR	**Honiara**	**23.49**	**294**	P	**P**	**16 17 47.0**	**-7.0**
LTZ	**Lake Taylor**	**23.72**	**197**	*eP*	**P**	**16 17 54.1**	**-1.6**
	114nm,0.6s						
LTZ	**Lake Taylor**	**23.72**	**197**	PN	**P**	**16 17 54.2**	**-1.6**
INZ	**Inchbonnie**	**23.91**	**199**	PN	**P**	**16 17 56.3**	**-1.0**
OXZ	**Oxford**	**24.29**	**197**	*eP*	**P**	**16 17 59.0**	**-1.7**
	189nm,0.7s						
OXZ				*e*ScP	**ScP**	**16 24 04.4**	**-0.4**
OXZ	**Oxford**	**24.29**	**197**	PN	**P**	**16 17 59.1**	**-1.6**
RPZ	**Rata Peaks**	**24.93**	**198**	P	**P**	**16 18 04.9**	**-1.4**
	45nm,0.6s,baz=21,slow=1.5,SNR=35						
RPZ				S	**S**	**16 21 47.8**	**-2.0**
	16nm,0.8s,baz=210,slow=18,SNR=3.0						
RPZ				ScP	**ScP**	**16 24 05.8**	**-0.8**
	10nm,0.6s,baz=264,slow=3.9,SNR=5.0						
RPZ	**Rata Peaks**	**24.93**	**198**	*eP*	**P**	**16 18 05.5**	**-0.8**
	178nm,1.5s						
RPZ				S	**S**	**16 21 47.9**	**-2.0**
RPZ				ScP	**ScP**	**16 24 05.8**	**-0.8**
FOZ	**Fox Glacier**	**25.15**	**200**	*eP*	**P**	**16 18 06.4**	**-1.8**
	148nm,0.9s						
FOZ	**Fox Glacier**	**25.15**	**200**	PN	**P**	**16 18 07.4**	**-0.8**
LBZ	**Lake Benmore**	**25.80**	**199**	*eP*	**P**	**16 18 11.2**	**-2.8**
	99nm,1.3s						
LBZ	**Lake Benmore**	**25.80**	**199**	PN	**P**	**16 18 12.9**	**-1.1**
JCZ	**Jackson Bay**	**25.97**	**201**	PN	**P**	**16 18 15.6**	**0.0**
ODZ	**Otahua Downs**	**26.26**	**198**	*eP*	**P**	**16 18 17.0**	**-1.1**
	27nm,0.8s						
WKZ	**Wanaka**	**26.56**	**200**	*eP*	**P**	**16 18 19.4**	**-1.3**
	57nm,0.7s						
WKZ				*e*ScP	**ScP**	**16 24 12.7**	**+1.3**
WKZ	**Wanaka**	**26.56**	**200**	PN	**P**	**16 18 19.5**	**-1.3**
MLZ	**Mavora Lakes**	**27.34**	**201**	*eP*	**P**	**16 18 26.8**	**-0.8**
	168nm,0.7s						
MLZ				*e*ScP	**ScP**	**16 24 15.3**	**+1.5**
MLZ	**Mavora Lakes**	**27.34**	**201**	PN	**P**	**16 18 27.4**	**-0.1**
PAE	**Paea**	**27.40**	**89**	*eP*	**P**	**16 18 28.9**	**+0.5**
	19nm,1.0s						
TVO	**Taravao**	**27.69**	**90**	*eP*	**P**	**16 18 31.4**	**+0.4**
	12nm,0.6s						
DCZ	**Deep Cove**	**27.75**	**202**	*eP*	**P**	**16 18 30.8**	**-0.3**
	246nm,0.9s						
DCZ				*e*pP	**pP**	**16 20 00.0**	**-3.2**
DCZ	**Deep Cove**	**27.75**	**202**	PN	**P**	**16 18 31.2**	**+0.2**
WHZ	**Wether Hill Ro**	**27.86**	**201**	*eP*	**P**	**16 18 31.8**	**-0.2**
	551nm,0.8s						
WHZ				*e*pP	**pP**	**16 20 00.9**	**-3.3**
WHZ	**Wether Hill Ro**	**27.86**	**201**	PN	**P**	**16 18 31.8**	**-0.2**
EIDS	**Eidsvold**	**28.50**	**254**	P	**P**	**16 18 38.9**	**+1.0**
	baz=29,SNR=16						
EIDS	**Eidsvold**	**28.50**	**254**	*eP*	**P**	**16 18 38.7**	**+0.8**
	60nm,1.0s						
ARMA	**Armidale**	**28.77**	**244**	P	**P**	**16 18 42.4**	**+2.0**
	baz=29,SNR=21						
ARMA	**Armidale**	**28.77**	**244**	*eP*	**P**	**16 18 41.7**	**+1.3**
	172nm,1.5s						
PMOR	**Pomariorio Ree**	**29.56**	**85**	⇑*iP*	**P**	**16 18 47.5**	**+0.3**
	162nm,1.0s						
VAH	**Vaihoa**	**29.75**	**85**	*eP*	**P**	**16 18 48.9**	**+0.1**
	125nm,0.9s						
MGCD	**Mangrove Creek**	**29.95**	**238**	P	**P**	**16 18 52.1**	**+1.8**
	baz=30,SNR=8.5						
XMAS	**Kiritimati**	**30.30**	**45**	*eP*	**P**	**16 18 53.9**	**+0.4**
	262nm,0.8s						
RMQ	**Roma**	**30.66**	**252**	P	**P**	**16 18 58.3**	**+1.7**
	baz=31,SNR=36						
CNB	**Canberra Magne**	**31.99**	**235**	P	**P**	**16 19 09.2**	**+1.4**
	baz=32,SNR=21						
KWAJ	**Kwajalein Atol**	**32.03**	**333**	*eP*	**P**	**16 19 09.2**	**+0.9**
KWAJ				pmax	pmax		
	comp=Z,470nm,1.0s						
KWAJ	**Kwajalein Atol**	**32.03**	**333**	*eP*	**P**	**16 19 09.2**	**+0.9**
	comp=Z,466nm,1.0s						
CAN	**Canberra**	**32.27**	**236**	*eP*	**P**	**16 19 10.7**	**+0.5**
CAN				pmax	pmax		
	comp=Z,90nm,1.2s						
CAN	**Canberra**	**32.27**	**236**	*eP*	**P**	**16 19 10.7**	**+0.5**
	comp=Z,90nm,1.2s						
YNG	**Young**	**32.43**	**238**	P	**P**	**16 19 12.9**	**+1.4**
	baz=33,SNR=5.1						
RABL	**Rabaul**	**32.80**	**295**	*eP*	**P**	**16 19 14.1**	**-0.8**
	comp=Z,94nm,0.5s						
RABL				*e*PcP	**PcP**	**16 21 43.3**	**+0.8**
RABL				*e*ScP	**ScP**	**16 24 33.5**	**+1.1**
CTA	**Charters Tower**	**33.09**	**264**	P	**P**	**16 19 17.9**	**+0.6**
	comp=Z,145nm,0.6s,baz=91,slow=11,SNR=206						
CTA				PcP	**PcP**	**16 21 42.7**	**-0.6**
	comp=Z,11nm,0.8s,baz=136,slow=3.9,SNR=3.1						
CTA				S	**S**	**16 23 54.8**	**-1.8**
	comp=Z,5.6nm,1.0s,baz=340,slow=22,SNR=9.5						
CTAO	**Charters Tower**	**33.09**	**264**	*eP*	**P**	**16 19 18.0**	**+0.7**
CTAO				pmax	pmax		
	comp=Z,870nm,0.7s						
CTAO	**Charters Tower**	**33.09**	**264**	*eP*	**P**	**16 19 18.0**	**+0.7**
	comp=Z,868nm,0.7s						
CMSA	**Cobar Meteorol**	**33.99**	**243**	P	**P**	**16 19 25.5**	**+0.9**
	baz=34,SNR=66						
QLP	**Quilpie**	**34.72**	**252**	P	**P**	**16 19 31.6**	**+0.8**
	baz=35,SNR=90						
PMG	**Port Moresby**	**34.90**	**283**	P	**P**	**16 19 33.0**	**+0.6**
	comp=Z,282nm,0.8s,baz=78,slow=4.8,SNR=56						
PMG	**Port Moresby**	**34.90**	**283**	*d iP*	**P**	**16 19 33.2**	**+0.8**
PMG	**Port Moresby**	**34.90**	**283**	*eP*	**P**	**16 19 32.5**	**+0.1**
	comp=Z,298nm,0.8s						
MTSU	**Mount Surprise**	**35.19**	**267**	P	**P**	**16 19 35.7**	**+0.9**
	baz=35,SNR=170						
PATS	**Pohnpei**	**35.37**	**317**	P	**P**	**16 19 38.2**	**+1.9**
	baz=36,SNR=7.1						
PATS	**Pohnpei**	**35.37**	**317**	*eP*	**P**	**16 19 35.5**	**-0.8**
	comp=Z,304nm,1.1s						
TOO	**Toolangi**	**35.67**	**233**	P	**P**	**16 19 39.6**	**+1.1**
	baz=36,SNR=17						
MOO	**Moorlands**	**36.34**	**225**	P	**P**	**16 19 45.2**	**+1.3**
	baz=36,SNR=3.1						
COEN	**Coen**	**37.16**	**274**	P	**P**	**16 19 52.1**	**+1.1**
	baz=37,SNR=86						
COEN	**Coen**	**37.16**	**274**	*eP*	**P**	**16 19 51.8**	**+0.7**
	comp=Z,170nm,0.8s						
STKA	**Stephens Creek**	**37.49**	**244**	P	**P**	**16 19 54.2**	**+0.6**
	comp=Z,20nm,0.4s,baz=92,slow=10.0,SNR=90						
STKA				PcP	**PcP**	**16 21 57.4**	**+1.0**
	comp=Z,13nm,0.8s,baz=48,slow=4.5,SNR=4.1						
STKA				ScP	**ScP**	**16 24 49.6**	**+0.2**
	comp=Z,3.0nm,0.7s,baz=206,slow=3.0,SNR=4.1						
STKA				S	**S**	**16 25 00.8**	**-1.3**
	comp=Z,3.1nm,0.7s,baz=326,slow=19,SNR=3.9						
STKA	**Stephens Creek**	**37.49**	**244**	P	**P**	**16 19 54.7**	**+1.1**
	baz=38,SNR=90						
STKA	**Stephens Creek**	**37.49**	**244**	*eP*	**P**	**16 19 54.6**	**+1.0**
	comp=Z,30nm,1.3s						
STKA				PcP	**PcP**	**16 21 57.4**	**+1.0**
STKA				ScP	**ScP**	**16 24 49.6**	**+0.2**
STKA				S	**S**	**16 25 00.8**	**-1.3**
MANU	**Manus Island**	**38.00**	**294**	*eP*	**P**	**16 19 59.0**	**+1.1**
	comp=Z,293nm,0.9s						
ARPS	**Mount Arapiles**	**38.24**	**236**	P	**P**	**16 20 00.5**	**+0.9**
	baz=38,SNR=15						
HTT	**Hallett**	**39.94**	**242**	P	**P**	**16 20 14.2**	**+0.8**
	baz=40,SNR=38						
BBOO	**Buckleboo**	**42.26**	**243**	P	**P**	**16 20 32.1**	**+0.5**
	baz=42,SNR=149						
BBOO	**Buckleboo**	**42.26**	**243**	*eP*	**P**	**16 20 31.8**	**+0.2**
	comp=Z,362nm,1.8s						
JAY	**Jayapura**	**43.59**	**289**	P	**P**	**16 20 43.3**	**+1.0**
	comp=Z,51nm,0.6s,baz=86,slow=23,SNR=219						
JAY				S	**S**	**16 26 30.4**	**-0.4**
	comp=Z,0.6nm,0.8s,baz=273,slow=24,SNR=8.8						
JAY	**Jayapura**	**43.59**	**289**	P	**P**	**16 20 42.5**	**+0.2**
	comp=Z,624nm,0.8s,comp=Z,6μm						
GENI	**Genyem**	**44.03**	**288**	P	**P**	**16 20 47.8**	**+2.1**
	comp=Z,601nm,0.8s,comp=Z,6μm						
AS01	**Alice Springs**	**44.11**	**257**	*eP*	**P**	**16 20 46.4**	**+0.2**
AS01				*e*PcP	**PcP**	**16 22 18.7**	**+0.2**
AS31	**Alice Springs**	**44.16**	**257**	*eP*	**P**	**16 20 46.9**	**+0.4**
	comp=Z,44nm,1.0s						
AS31				*e*PcP	**PcP**	**16 22 18.7**	**+0.1**
ASAR	**Alice Springs**	**44.16**	**257**	P	**P**	**16 20 47.0**	**+0.5**
	comp=Z,120nm,0.9s,baz=93,slow=7.7,SNR=658						
ASAR				PcP	**PcP**	**16 22 19.2**	**+0.5**
	comp=Z,25nm,0.8s,baz=104,slow=3.6,SNR=14						
ASAR				S	**S**	**16 26 36.0**	**-2.5**
	comp=Z,12nm,0.8s,baz=93,slow=16,SNR=21						
ASAR				PKiKP	**PKiKP**	**16 29 15.6**	**-1.6**
	comp=Z,0.5nm,0.5s,baz=93,slow=1.5,SNR=4.5						
ASAR				ScS	**ScS**	**16 29 41.5**	**+0.1**
	comp=Z,3.8nm,0.8s,baz=99,slow=7.2,SNR=12						
WB2	**Warramunga Arr**	**44.20**	**262**	*eP*	**P**	**16 20 46.6**	**-0.3**
	comp=Z,147nm,1.0s						
WRAB	**Tennant Creek**	**44.21**	**262**	*eP*	**P**	**16 20 46.7**	**-0.2**
WRAB				pmax	pmax		
	comp=Z,100nm,0.9s						
WRAB	**Tennant Creek**	**44.21**	**262**	*eP*	**P**	**16 20 46.7**	**-0.2**
	comp=Z,101nm,0.8s						
WRAB				*e*PcP	**PcP**	**16 22 19.2**	**+0.4**
WRA	**Warramunga Arr**	**44.21**	**262**	P	**P**	**16 20 46.9**	**-0.1**
	comp=Z,87nm,0.8s,baz=97,slow=8.6,SNR=346						
WRA				PcP	**PcP**	**16 22 19.2**	**+0.4**
	comp=Z,20nm,1.0s,baz=93,slow=4.2,SNR=7.7						
WRA				S	**S**	**16 26 34.3**	**-5.1**
	comp=Z,8.5nm,0.9s,baz=98,slow=13,SNR=9.9						
WRA				PKiKP	**PKiKP**	**16 29 16.2**	**-1.1**
	comp=Z,1.3nm,0.9s,baz=83,slow=0.7,SNR=5.6						
WRA				ScS	**ScS**	**16 29 42.5**	**+0.7**
	comp=Z,2.8nm,0.7s,baz=105,slow=5.4,SNR=9.6						
HPAH	**Hawaii Prepara**	**45.87**	**30**	*eP*	**P**	**16 21 00.5**	**+0.9**
	comp=Z,108nm,0.7s						
KDU	**Kakadu**	**47.53**	**271**	P	**P**	**16 21 12.6**	**+0.4**
	baz=48,SNR=26						
MTN	**Manton Dam**	**48.75**	**271**	P	**P**	**16 21 21.1**	**-0.1**
	baz=49,SNR=83						
MTN	**Manton Dam**	**48.75**	**271**	*eP*	**P**	**16 21 21.1**	**-0.1**
	comp=Z,196nm,0.8s						
MTN				*e*PcP	**PcP**	**16 22 35.3**	**+0.1**
WRKA	**Warakurna**	**49.12**	**254**	P	**P**	**16 21 24.2**	**+0.3**
	baz=49,SNR=188						
GUMO	**Guam**	**49.37**	**310**	P	**P**	**16 21 26.5**	**+0.8**
	comp=Z,270nm,0.8s,baz=162,slow=6.8,SNR=11						
GUMO	**Guam**	**49.37**	**310**	*eP*	**P**	**16 21 26.3**	**+0.6**
GUMO				pmax	pmax		
	comp=Z,310nm,0.9s						
GUMO	**Guam**	**49.37**	**310**	*eP*	**P**	**16 21 26.3**	**+0.6**
	comp=Z,308nm,0.8s						
FAKI	**Fak Fak**	**51.05**	**283**	P	**P**	**16 21 38.3**	**+0.2**
	comp=Z,123nm,1.0s,comp=Z,2μm						
FAKI	**Fak Fak**	**51.05**	**283**	*eP*	**P**	**16 21 37.6**	**-0.6**
	comp=Z,256nm,1.4s						
FITZ	**Fitzroy Crossi**	**52.64**	**262**	P	**P**	**16 21 49.9**	**+0.5**
	comp=Z,18nm,0.6s,baz=59,slow=6.9,SNR=62						
FITZ				S	**S**	**16 28 34.1**	**-0.5**
	comp=Z,5.1nm,1.1s,baz=304,slow=20,SNR=6.9						
FITZ	**Fitzroy Crossi**	**52.64**	**262**	*eP*	**P**	**16 21 49.8**	**+0.3**
	comp=Z,109nm,1.7s						
FITZ				S	**S**	**16 28 34.1**	**-0.5**
SWI	**Sorong**	**52.80**	**285**	P	**P**	**16 21 50.8**	**+0.2**
	comp=Z,711nm,0.8s,comp=Z,5μm						
PALU	**Palau**	**53.84**	**296**	P	**P**	**16 21 58.5**

comp=Z,39nm,0.9s,baz=98,slow=5.6,SNR=24
JNU Nakatsue 71.86 317 *e*P **P 16 23 53.3 0.0**
comp=Z,87nm,1.0s
KUR Kuril'sk 72.09 336 *i* P **P 16 23 55.3 +1.0**
CISI Cisompet, Garu 72.21 268 *e*P **P 16 23 55.1 -0.7**
comp=Z,242nm,1.6s
YOJ Yonaguni jima 72.29 305 *e*P **P 16 23 56.1 +0.2**
YOJ Yonaguni jima 72.29 305 *e*P **P 16 23 56.1 +0.2**
comp=Z,98nm,0.8s
LEM Lembang 72.63 269 P P 16 24 04.4 +6.1
comp=Z,112nm,0.8s,baz=72,slow=1.6,SNR=27
TWG Pinlang 72.93 303 *e*P **P 16 23 58.1 -1.6**
comp=Z,135nm,0.7s
KSM Kuching 72.98 278 *e*P **P 16 24 00.8 +0.6**
comp=Z,58nm,0.8s
YULB Yu-li 73.05 303 *e*P **P 16 23 58.8 -1.5**
comp=Z,18nm,0.6s
NACB Ninganchiao 73.23 304 *e*P **P 16 24 00.6 -0.7**
comp=Z,211nm,1.5s
ASAJ Asahikawa 73.37 332 P **P 16 24 03.6 +2.0**
comp=Z,104nm,0.8s,baz=210,slow=6.7,SNR=122
ASAJ Asahikawa 73.37 332 *e*P **P 16 24 03.3 +1.7**
comp=Z,148nm,0.9s
NIKH Nikolski High 73.46 6 *e*P **P 16 24 02.0 +0.1**
comp=Z,278nm,0.9s
SSLB Suanglung 73.53 304 *e*P **P 16 24 02.1 -0.9**
comp=Z,32nm,0.5s
TPUB Ta-pu 73.53 303 *e*P **P 16 24 02.2 -0.9**
comp=Z,112nm,0.8s
YHNB Yeheng 73.66 305 *e*P **P 16 24 03.6 -0.3**
comp=Z,69nm,1.0s
TATO Taipei 73.74 305 *e*P **P 16 24 03.4 -0.8**
comp=Z,743nm,2.0s
SKR Severo-Kuril's 74.17 343 *e*P **P 16 24 01.2 -4.8**
SKR pmax pmax
comp=N,50nm,0.5s
SKR pmax pmax
comp=E,50nm,0.5s
SKR pmax pmax
comp=Z,60nm,0.5s
CGJI Cibinong 74.50 269 P **P 16 24 08.6 -0.2**
UNV Unalaska Valle 74.57 7 *e*P **P 16 24 07.7 -0.5**
comp=Z,97nm,0.9s
AKUT Akutan 74.95 8 *e*P **P 16 24 09.7 -0.6**
comp=Z,62nm,0.8s
YSS Yuzh-Sakhalins 75.55 334⇓*i*P **P 16 24 15.1 +1.3**
YSS pmax pmax
comp=Z,120nm,0.9s
YSS Yuzh-Sakhalins 75.55 334 *e*P **P 16 24 15.0 +1.3**
comp=Z,133nm,0.9s
PET Petropavlovsk 75.69 346 *de*P **P 16 24 13.6 -0.8**
PET *e**PP **pP 16 26 15.7 +1.1**
PET *e**SP **PP 16 27 15.8 +0.5**
PET *e*S **S 16 33 05.8 -3.7**
PET *e*SS **SS 16 38 15.2 -3.1**
PET pmax pmax
comp=Z,51nm,0.8s
PET pmax pmax
comp=Z,300nm,13.0s
PET MLR MLR
comp=Z,100nm,15.0s
PET Petropavlovsk 75.69 346 *e*P **P 16 24 14.3 -0.1**
comp=Z,31nm,0.7s
QZH Quanzhou 75.97 304⇓*i*P **P 16 24 13.0 -3.6**
QZH S **S 16 33 11.0 -2.7**
QZH pmax pmax
comp=Z,170nm,1.0s
FALS False Pass 75.97 9 *e*P **P 16 24 15.4 -0.5**
comp=Z,102nm,1.1s
PEA0 Petropavlovsk- 75.99 345 *e*P **P 16 24 16.4 +0.3**
PEA0B Petropavlovsk- 75.99 345 *e*P **P 16 24 16.2 +0.1**
comp=Z,116nm,0.9s
PETK Petropavlovsk- 75.99 345 P **P 16 24 16.4 +0.2**
comp=Z,75nm,0.8s,baz=125,slow=8.3,SNR=111
PETK PKiKP **PKiKP 16 29 55.2 -0.5**
comp=Z,2.6nm,0.7s,baz=84,slow=3.9,SNR=4.1
KSRS Korea Array 76.48 319 P **P 16 24 20.4 +1.2**
comp=Z,17nm,0.7s,baz=130,slow=5.9,SNR=83
KSRS Korea Array 76.48 319 P **P 16 24 20.4 +1.2**
KSRS pmax pmax
comp=Z,16nm,0.8s
KS15 Wonju Array Si 76.49 319 *e*P **P 16 24 20.4 +1.2**
KSAR Wonju Array Be 76.49 319 P **P 16 24 20.4 +1.1**
KSAR Wonju Array Be 76.49 319 P **P 16 24 20.4 +1.1**
KS01 Wonju Array Si 76.51 319 *e*P **P 16 24 20.0 +0.6**
SDPT Sand Point 76.91 10 *e*P **P 16 24 20.8 -0.3**
comp=Z,170nm,0.8s
INCN Inchon 77.30 318 *e*P **P 16 24 24.6 +0.9**
comp=Z,136nm,1.5s
SNCC San Nicolas Is 77.43 47 P **P 16 24 25.6 +1.1**
baz=235
SCZ2 Santa Cruz Isl 77.78 47 P **P 16 24 27.7 +1.4**
baz=235
VLA Vladivostok 77.90 325*d i*P **P 16 24 27.9 +1.2**
VLA pmax pmax
comp=Z,43nm,1.0s
MSHR Mys Shultsa 77.93 324*d i*P **P 16 24 28.1 +1.2**
SCI2 San Clemente I 77.96 48 P **P 16 24 28.9 +1.6**
baz=236
PKM Mcpherson Peak 78.17 46 P **P 16 24 30.3 +1.7**
baz=235
CHGN Chignik 78.18 11 *e*P **P 16 24 27.7 -0.1**
SAO San Andreas Ge 78.18 43 *e*P **P 16 24 29.2 +0.8**
SAO San Andreas Ge 78.18 43 *e*P **P 16 24 29.2 +0.8**
comp=Z,38nm,0.9s
CIS Catalina Islan 78.28 48 P **P 16 24 30.5 +1.4**
baz=236
SMMC Simmler 78.29 45 P **P 16 24 30.8 +1.8**
baz=235
HOPS Hopland Field 78.50 41 *e*P **P 16 24 31.6 +1.5**
comp=Z,49nm,1.0s
FMP Fort Macarthur 78.54 48 P **P 16 24 32.4 +2.0**
baz=236
USRK Ussuriysk Ar. 78.58 326 P **P 16 24 32.0 +1.6**
comp=Z,46nm,0.8s,baz=120,slow=3.3,SNR=121
TYV Tymovskoe 78.71 336 *e*P **P 16 24 29.2 -1.6**
TYV pmax pmax
comp=Z,53nm,0.8s
OSI Osito Audit: C 78.75 47 P **P 16 24 33.0 +1.4**
baz=236
DECC Green Verdugo 78.81 47 P **P 16 24 32.9 +1.1**
baz=236
KMRM Mail Ridge 78.88 40 *e*P **P 16 24 34.5 +2.3**
comp=Z,120nm,0.9s
109C Camp Elliot, M 78.92 49 P **P 16 24 34.0 +1.5**
baz=237
ARVC Arvin 78.96 46 P **P 16 24 33.9 +1.3**
baz=236
MWC Mount Wilson 78.99 47 *e*P **P 16 24 34.3 +1.3**
MWC Mount Wilson 78.99 47 *e*P **P 16 24 34.3 +1.3**
comp=Z,18nm,0.8s
MYKOM Kota Tinggi 79.11 276 *e*P **P 16 24 34.7 +0.9**
comp=Z,44nm,0.8s
BAR Barrett 79.11 49 *e*P **P 16 24 34.7 +1.2**
comp=Z,6.9nm,0.8s
VES Vestal, Richgr 79.20 45 P **P 16 24 35.0 +1.2**
baz=235
MURC Murrieta 79.24 48 P **P 16 24 35.4 +1.3**
baz=237
BFSC Mount Baldy Ra 79.27 47 P **P 16 24 35.8 +1.4**
baz=236
GZH Guangzhou 79.27 300 P **P 16 24 35.3 +0.8**
GZH S **S 16 33 51.8 +3.4**
GZH pmax pmax
comp=Z,480nm,4.2s
RCTC Rector, Farmer 79.36 45 P **P 16 24 36.2 +1.6**
baz=235
EDW2 Edwards Air Fo 79.39 47 P **P 16 24 36.4 +1.4**
baz=236,SNR=14
MONP2 Monument Peak 79.40 49 P **P 16 24 37.1 +1.9**
baz=237,SNR=10
NJ2 Nanjing 79.44 310 *e*P **P 16 24 36.1 +0.9**
NJ2 pmax pmax
comp=Z,54nm,0.5s
ISA Isabella, Lake 79.51 46 P **P 16 24 37.0 +1.4**
baz=236,SNR=5.1
ISA Isabella, Lake 79.51 46 *e*P **P 16 24 37.0 +1.4**
ISA Isabella, Lake 79.51 46 *e*P **P 16 24 37.0 +1.4**
comp=Z,40nm,1.3s
CMB Columbia Colle 79.61 43 *e*P **P 16 24 37.2 +1.2**
CMB Columbia Colle 79.61 43 *e*P **P 16 24 37.2 +1.2**
comp=Z,24nm,0.9s
SRIG Santa Rosalia 79.67 56 *e*P **P 16 24 37.7 +1.3**
comp=Z,30nm,1.2s
PFO Pinyon Flats O 79.76 48 P **P 16 24 38.7 +1.6**
comp=Z,6.6nm,0.8s,baz=236,slow=4.1,SNR=8.3
PFO Pinyon Flats O 79.76 48 P **P 16 24 38.4 +1.4**
baz=237,SNR=5.8
PFO Pinyon Flats O 79.76 48 *e*P **P 16 24 38.5 +1.5**
PFO Pinyon Flats O 79.76 48 *e*P **P 16 24 38.5 +1.5**
comp=Z,23nm,1.3s
SLBS Sierra La Lagu 79.78 60 *e*P **P 16 24 38.4 +1.2**
comp=Z,9.5nm,0.8s
AFDM Forest Hills D 79.78 42 *e*P **P 16 24 37.8 +0.9**
comp=Z,24nm,0.9s
WDC Whiskeytown Da 79.80 40 *e*P **P 16 24 38.4 +1.5**
WDC Whiskeytown Da 79.80 40 *e*P **P 16 24 38.4 +1.5**
comp=Z,37nm,1.0s
ORV Oroville 79.81 41 *e*P **P 16 24 38.2 +1.2**
ORV Oroville 79.81 41 *e*P **P 16 24 38.2 +1.2**
comp=Z,24nm,0.9s
SWSC Sam W. Stewart 79.87 49 P **P 16 24 39.1 +1.6**
baz=238
LRMC Laurel Mtn Rad 79.94 46 P **P 16 24 39.5 +1.6**
baz=236
N02D Trinity Center 79.94 39 P **P 16 24 40.0 +2.3**
baz=232,SNR=12
OHAK Old Harbor 80.07 14 *e*P **P 16 24 38.1 +0.3**
comp=Z,44nm,0.8s
O03D Paynes Creek 80.08 40 P **P 16 24 39.6 +1.1**
baz=233,SNR=9.4
RRX Edison Barstow 80.08 47 P **P 16 24 40.2 +1.7**
baz=237
HABR Khabarovsk 80.08 331 *ce*P **P 16 24 37.5 -0.6**
HABR *e* 16 24 42.4
HABR *e**PP **pP 16 26 39.8 -0.3**
HABR *e* 16 27 50.4
HABR *e*PPP PPP 16 29 45.0
HABR *e*S **S 16 33 55.7 0.0**
HABR *e* 16 34 10.0
HABR *e*SS **SS 16 39 24.3 +0.6**
HABR *e*SSS SSS 16 42 57.3
HABR pmax pmax
comp=N,24nm,1.1s
HABR pmax pmax
comp=Z,156nm,1.2s
HABR pmax pmax
comp=E,20nm,1.1s
HABR MLR MLR
comp=Z,90nm,16.0s
M02C Callahan 80.11 39 P **P 16 24 40.7 +2.1**
baz=232,SNR=13
MDJ Mudanjiang 80.13 325 P **P 16 24 39.7 +1.2**
MDJ pP pP 16 26 41.9 +1.4
MDJ sP sP 16 27 41.1 +2.0
MDJ S **S 16 33 58.7 +2.3**
MDJ sS sS 16 37 37.7 +3.9
MDJ SS **SS 16 39 25.5 +0.9**
MDJ pmax pmax
comp=Z,66nm,0.9s
MDJ pmax pmax
comp=Z,280nm,5.2s
MDJ Mudanjiang 80.13 325 *e*P **P 16 24 39.7 +1.2**
comp=Z,65nm,0.9s
L02D Cave Junction, 80.15 38 P **P 16 24 40.9 +2.2**
baz=231
BELC Belle Mtn. Jos 80.30 48 P **P 16 24 41.3 +1.5**
baz=238,SNR=5.1
MLAC Mammoth, Mammo 80.38 44 P **P 16 24 41.4 +1.1**
baz=235
MPMC Manual Prospec 80.39 46 P **P 16 24 41.7 +1.4**
baz=236,SNR=19
QIZ Qiongzhong 80.41 294 P **P 16 24 41.2 +0.7**
QIZ S **S 16 34 02.6 +2.4**
YBH Yreka Blue Hor 80.41 39 P **P 16 24 42.2 +2.0**
comp=Z,33nm,0.8s,baz=221,slow=1.4,SNR=65
YBH Yreka Blue Hor 80.41 39 *e*P **P 16 24 42.2 +2.0**
comp=Z,41nm,0.9s
GSC Goldstone, Bar 80.44 47 P **P 16 24 41.9 +1.5**
baz=237,SNR=7.7
GSC Goldstone, Bar 80.44 47 *e*P **P 16 24 42.0 +1.5**
GSC Goldstone, Bar 80.44 47 *e*P **P 16 24 41.8 +1.3**
comp=Z,43nm,1.4s
DAC Darwin (Calif) 80.44 46 *e*P **P 16 24 41.8 +1.2**
DAC pmax pmax
comp=Z,10.0nm,0.9s
DAC Darwin (Calif) 80.44 46 *e*P **P 16 24 41.8 +1.2**
comp=Z,9.9nm,0.9s
TIN Tinemaha, Big 80.45 45 P **P 16 24 42.2 +1.6**
baz=236
BC3 Big Chuckawall 80.50 49 P **P 16 24 42.4 +1.6**
baz=238,SNR=11
HEC Hector,Ludlow 80.51 47 P **P 16 24 41.8 +1.0**
baz=237,SNR=15
GLA Glamis 80.62 50 P **P 16 24 43.2 +1.8**
baz=238,SNR=9.4
GLA Glamis 80.62 50 *e*P **P 16 24 43.7 +2.3**
GLA Glamis 80.62 50 *e*P **P 16 24 43.4 +2.0**
comp=Z,41nm,1.0s
KDAK Kodiak Island 80.74 14 P P 16 24 57.0 +16
comp=Z,38nm,0.8s,baz=210,slow=3.1,SNR=23
KDAK Kodiak Island 80.74 14 *i* P **P 16 24 41.8 +0.5**
KDAK Kodiak Island 80.74 14 *e*P **P 16 24 42.0 +0.7**
comp=Z,56nm,0.8s
HUMO Hull Mountain 80.81 38 *e*P **P 16 24 44.1 +2.0**
comp=Z,49nm,1.1s
GMRC Granite Mounta 80.95 48 P **P 16 24 44.3 +1.1**
baz=238,SNR=13
M04C Macdoel 80.95 39 P **P 16 24 44.6 +1.6**
baz=232,SNR=12
IRM Iron Mountain 80.98 49 P **P 16 24 44.8 +1.6**
baz=238,SNR=18
GRAC Grapevine Rang 80.99 45 P **P 16 24 44.9 +1.7**
baz=236,SNR=9.9
FURC Furnace Creek, 81.04 46 P **P 16 24 44.6 +1.3**
baz=237,SNR=6.1
TUQ Turquoise Moun 81.12 47 P **P 16 24 45.3 +1.3**
baz=237
SHOC Shoshone, Teco 81.13 47 P **P 16 24 45.5 +1.6**
baz=237
NV01 Mina Array Sit 81.18 44 *e*P **P 16 24 45.3 +0.9**
NV01 *e*PKKPbc **PKKPbc 16 43 16.9 +0.3**
NVAR Mina Array Bea 81.18 44 P **P 16 24 46.2 +1.8**
comp=Z,18nm,0.8s,baz=227,slow=7.2,SNR=74
NVAR pP **pP 16 26 47.9 +1.1**
comp=Z,2.0nm,1.0s,baz=219,slow=7.0,SNR=2.3
NVAR PKKPbc **PKKPbc 16 43 16.9 +0.3**
comp=Z,0.7nm,0.7s,baz=91,slow=3.6,SNR=6.0
Y12C Blythe 81.20 49 P **P 16 24 46.2 +1.9**
baz=238,SNR=5.6
Y12C Blythe 81.20 49 *e*P **P 16 24 45.9 +1.6**
comp=Z,19nm,0.9s
113A Mohawk Valley, 81.24 50 *e*P **P 16 24 46.2 +1.7**
comp=Z,33nm,1.2s
I03D Drain, OR 81.26 37 P **P 16 24 46.0 +1.6**
baz=231,SNR=6.3
NKL Nikolayevsk 81.27 336 *i* P **P 16 24 44.5 +0.4**
NKL *e* 16 27 45.0
NKL pmax pmax
comp=N,20nm,0.8s
NKL pmax pmax
comp=E,11nm,0.8s
NKL pmax pmax
comp=Z,80nm,0.8s
NKL pmax pmax
comp=Z,500nm,4.0s
NKL MLR MLR
comp=Z,300nm,14.0s
NV11 Mina Array Sit 81.28 44 *e*P **P 16 24 45.9 +1.1**
comp=Z,46nm,1.1s
DL2 Dalian 81.31 317 P **P 16 24 45.6 +0.9**
DL2 pmax pmax
comp=Z,87nm,1.1s
HSIG 81.49 55 *e*P **P 16 24 47.3 +1.4**
LDFC Landfair 81.49 48 *e*P **P 16 24 48.0 +2.1**
comp=Z,97nm,1.1s
K04D Chiloquin, OR 81.52 39 P **P 16 24 48.2 +2.4**
baz=232
214A Organ Pipe Nat 81.53 52 P **P 16 24 48.0 +1.9**
baz=240,SNR=11
214A Organ Pipe Nat 81.53 52 *e*P **P 16 24 47.5 +1.4**
comp=Z,173nm,1.5s
MAW Mawson 81.59 200 P **P 16 24 46.3 +0.6**
comp=Z,8.5nm,0.8s,baz=136,slow=7.0,SNR=13
MAW Mawson 81.59 200 P **P 16 24 46.7 +1.0**
baz=82,SNR=8.9
MAW Mawson 81.59 200 *e*P **P 16 24 46.2 +0.5**
comp=Z,10nm,1.6s
MAW *e*pP **pP 16 26 54.6 +6.4**
MPOR Mary's Peak 81.66 36 P **P 16 24 48.5 +1.9**
TPNV Topopah Spring 81.71 46 P **P 16 24 48.6 +1.5**
baz=237,SNR=28
TPNV Topopah Spring 81.71 46 *e*P **P 16 24 48.1 +1.0**
TPNV pmax pmax
comp=Z,30nm,0.9s
TPNV Topopah Spring 81.71 46 *e*P **P 16 24 48.1 +1.0**
comp=Z,30nm,0.9s
PDMCI Parker Dam,Lak 81.76 49 P **P 16 24 49.0 +1.9**
baz=239,SNR=9.6
I04A Tendick Farm, 81.86 37 P **P 16 24 48.7 +1.2**
baz=232,SNR=11
CN2 Changchun 81.90 323 *e*P **P 16 24 48.0 +0.4**
CN2 *e*S **S 16 34 14.0 -0.3**
CN2 pmax pmax
comp=Z,50nm,1.1s
CN2 pmax pmax
comp=Z,200nm,4.0s
MOD Modoc Plateau 81.94 40 *e*P **P 16 24 49.0 +0.9**
comp=Z,48nm,0.9s
WHN Wuhan 82.00 307⇓P **P 16 24 49.7 +1.3**
WHN S **S 16 34 13.3 -2.5**
WHN pmax pmax
comp=Z,630nm,4.6s
K05A Summer Lake 82.08 39 *e*P **P 16 24 50.1 +1.3**
comp=Z,79nm,0.8s
KLR Kul'dur 82.16 330 P **P 16 24 50.0 +1.2**
comp=Z,20nm,0.8s,baz=114,slow=3.6,SNR=68
J05D Fort Rock, OR 82.22 38 P **P 16 24 51.3 +1.8**
baz=233,SNR=59
G03D McMinnville, O 82.26 36 P **P 16 24 51.2 +1.8**
baz=231
W13A Hualapai Mount 82.36 48 *e*P **P 16 24 51.7 +1.2**
comp=Z,18nm,1.0s
Y14A Wickenburg 82.39 50 *e*P **P 16 24 51.7 +1.3**
comp=Z,130nm,1.3s
H04A Detroit Lake 82.53 37 *e*P **P 16 24 51.8 +0.9**
comp=Z,88nm,1.4s
F03A Seaside 82.55 35 *e*P **P 16 24 52.3 +1.4**
comp=Z,43nm,0.8s
HOM Homer 82.65 13 *e*P **P 16 24 51.9 +0.8**
comp=Z,282nm,0.8s
IPM Ipoh 82.70 277 *e*P **P 16 24 52.9 +0.5**
comp=Z,73nm,0.8s
I05D Terrebonne, OR 82.80 37 P **P 16 24 53.6 +1.3**
baz=232,SNR=9.9
TIA Tai'an 82.85 313⇓P **P 16 24 53.4 +0.8**
TIA pmax pmax
comp=Z,50nm,0.8s
R11A Troy Canyon, C 82.91 45 P **P 16 24 53.9 +0.7**
baz=237,SNR=15
R11A Troy Canyon, C 82.91 45 *e*P **P 16 24 53.8 +0.7**
comp=Z,10nm,1.1s
E03A Lebam 82.94 35 *e*P **P 16 24 54.1 +1.4**
comp=Z,75nm,0.9s
F04D Rainier, OR 82.95 35 P **P 16 24 54.7 +1.9**
baz=231
F04A Amboy 83.17 36 *e*P **P 16 24 55.1 +1.1**
comp=Z,210nm,1.8s
TUC Tucson 83.19 52 P **P 16 24 56.7 +2.2**
baz=241
TUC Tucson 83.19 52 *e*P **P 16 24 56.3 +1.8**
TUC pmax pmax
comp=Z,32nm,0.7s
TUC Tucson 83.19 52 *e*P **P 16 24 56.3 +1.8**
comp=Z,32nm,0.7s
SVW2 Sparrevohn 83.20 11 *e*P **P 16 24 53.6 -0.1**
comp=Z,26nm,0.9s
WVOR Wild Horse Val 83.26 40 *e*P **P 16 24 56.0 +1.3**
WVOR pmax pmax
comp=Z,46nm,1.1s
WVOR Wild Horse Val 83.26 40 *e*P **P 16 24 56.0 +1.3**
comp=Z,46nm,1.1s
NLWA Neilton Lookou 83.32 34 *e*P **P 16 24 56.6 +1.9**
comp=Z,41nm,0.9s
KULM Kulim 83.33 278 *e*P **P 16 24 56.3 +0.7**
comp=Z,42nm,0.8s
G05D Wamic, OR 83.36 37 P **P 16 24 56.2 +1.3**
baz=232,SNR=5.3
OOW Octopus West 83.37 33 P **P 16 24 57.1 +2.1**
CROR Criterion Ridg 83.39 37 P **P 16 24 56.5 +1.3**
VALT Mount Saint He 83.47 36 P **P 16 24 57.6 +1.9**
MA2 Magadan 83.50 345 *e*P **P 16 24 55.1 -0.2**
MA2 pmax pmax
comp=Z,221nm,0.9s
MA2 Magadan 83.50 345 *e*P **P 16 24 55.1 -0.2**
comp=Z,221nm,0.9s
SEW Seward 83.54 14 *e*P **P 16 24 55.5 +0.1**
comp=Z,54nm,0.8s
TDL Tradedollar La 83.55 35 P **P 16 24 57.6 +1.6**
G06A Carlson Farm, 83.74 37 *e*P **P 16 24 58.0 +1.1**
comp=Z,31nm,1.1s
X16A Lo Mia Camp, P 83.75 50 *e*P **P 16 24 59.0 +1.6**
comp=Z,24nm,1.0s
VTHM Trough 83.75 37 P **P 16 24 58.2 +1.2**
LCMT Little Creek M 83.79 47 *e*P **P 16 24 58.8 +1.3**
comp=Z,19nm,1.1s
319A Douglas 83.87 54 *e*P **P 16 25 00.1 +2.1**
comp=Z,572nm,0.8s
SPU Mount Spurr 83.95 13 *e*P **P 16 24 56.6 -0.9**
GAMB Gambell 83.98 3 *e*P **P 16 24 58.0 +0.6**
comp=Z,59nm,0.9s
LON Longmire 84.01 35 *e*P **P 16 24 58.8 +0.6**
LON pmax pmax
comp=Z,76nm,2.0s
LON Longmire 84.01 35 *e*P **P 16 24 58.8 +0.6**
comp=Z,76nm,2.0s
LON *e*PKKPbc **PKKPbc 16 43 09.0 -1.2**
SKLT Songkhla 84.04 280 P **P 16 25 00.7 +1.7**
comp=Z,96nm,0.8s
PSI Prapat 84.06 275 *e*P **P 16 24 58.4 -0.9**
PSI pmax pmax
comp=Z,40nm,0.9s
PSI Prapat 84.06 275 *e*P **P 16 24 58.4 -0.9**
comp=Z,40nm,0.9s
KNB Kanab 84.08 47 *e*P **P 16 25 00.7 +1.8**
KNB Kanab 84.08 47 *e*P **P 16 25 00.7 +1.8**
comp=Z,78nm,1.8s
U15A North Rim 84.15 48 *e*P **P 16 25 01.1 +1.7**
comp=Z,30nm,0.9s
PSUT Pine Spring 84.16 45 *e*P **P 16 25 00.2 +0.9**
comp=Z,11nm,0.9s
PANO Nakornpanom 84.17 291 P **P 16 25 00.6 +1.1**
comp=Z,69nm,0.9s
BLN Blyn Mountain 84.18 34 P **P 16 25 00.7 +1.7**
D05A Enumclaw 84.19 35 *e*P **P 16 25 00.1 +1.2**
comp=Z,95nm,1.2s
PGC Sidney 84.34 33 *e*P **P 16 25 01.0 +1.4**
comp=Z,41nm,0.9s
WUAZ Wupatki 84.34 49 P **P 16 25 01.4 +1.2**
baz=240
WUAZ Wupatki 84.34 49 *e*P **P 16 25 01.4 +1.2**
comp=Z,23nm,1.1s
RC01 Rabbit Creek A 84.36 14 *e*P **P 16 24 59.7 +0.2**
comp=Z,89nm,1.0s
ELK Elko 84.43 43 *e*P **P 16 25 01.3 +0.7**
ELK pmax pmax
comp=Z,9.0nm,0.9s
ELK Elko 84.43 43 *e*P **P 16 25 01.3 +0.7**
comp=Z,8.7nm,0.9s
CHBT CHBT 84.52 286 P **P 16 25 02.9 +1.6**
comp=Z,46nm,2.0s,comp=Z,3μm
A04D Lummi Island 84.76 33 P **P 16 25 03.1 +1.4**
baz=231,SNR=8.4
B05A Bryant 84.80 34 P **P 16 25 03.3 +1.4**
baz=232,SNR=13
GSI Gunungsitoli 84.80 273 *e*P **P 16 25 04.0 +1.2**
comp=Z,83nm,0.7s
TT01 Tatalina 84.82 10 *e*P **P 16 25 02.3 +0.6**
EYAK Cordova Ski Ar 84.82 16 *e*P **P 16 25 02.1 +0.4**
comp=Z,49nm,1.0s
TTA Tatalina 84.84 10 *e*P **P 16 25 02.1 +0.2**
TTA pmax pmax
comp=Z,60nm,1.1s
TTA Tatalina 84.84 10 *e*P **P 16 25 02.1 +0.2**
comp=Z,60nm,1.1s
X18A Snowflake 84.88 50 *e*P **P 16 25 04.0 +1.1**
comp=Z,39nm,0.6s
LTY Liberty 84.94 35 *e*P **P 16 25 03.7 +1.0**
comp=Z,29nm,1.1s
PMR Palmer 84.94 14 *e*P **P 16 25 02.1 -0.1**
PMR pmax pmax
comp=Z,173nm,1.5s
PMR Palmer 84.94 14 *e*P **P 16 25 02.1 -0.1**
comp=Z,173nm,1.5s
E07A Sunnyside 84.97 36 *e*P **P 16 25 04.3 +1.5**
comp=Z,51nm,1.1s
MTPU Mount Pierson 85.04 47 *e*P **P 16 25 05.7 +1.9**
comp=Z,15nm,0.9s
HAWA Hanford 85.05 37 *e*P **P 16 25 04.8 +1.6**
comp=Z,50nm,1.0s
TRTT Trang 85.14 280 P **P 16 25 06.1 +1.8**

comp=Z,88nm,1.3s,comp=Z,1μm
C06D Leavenworth 85.22 35 P **P 16 25 05.0 +1.0**
baz=233
MSU Marysvale 85.28 46 *e*P **P 16 25 06.6 +1.8**
MSU Marysvale 85.28 46 *e*P **P 16 25 06.6 +1.8**
SML Sawmill 85.31 14 *e*P **P 16 25 03.3 -0.8**
SML pmax pmax
comp=Z,36nm,0.9s
SML Sawmill 85.31 14 *e*P **P 16 25 03.3 -0.8**
comp=Z,36nm,0.9s
W18A Petrified Fore 85.31 50 P **P 16 25 06.3 +1.3**
baz=241
DIV Divide 85.32 15 *e*P **P 16 25 04.2 0.0**
comp=Z,98nm,1.0s
BMO Blue Mountains 85.43 39 *e*P **P 16 25 06.2 +1.0**
comp=Z,25nm,0.9s
KHON Khomkaen 85.44 289 P **P 16 25 07.4 +1.7**
comp=Z,33nm,0.8s
BJT Baijiatuau 85.47 316 *e*P **P 16 25 05.9 +0.6**
BJT pmax pmax
comp=Z,44nm,0.9s
BJT Baijiatuau 85.47 316 *e*P **P 16 25 05.9 +0.6**
comp=Z,44nm,0.9s
BJI Beijing 85.47 316 P **P 16 25 06.3 +1.0**
BJI pmax pmax
comp=Z,54nm,0.8s
BJI pmax pmax
comp=Z,490nm,4.4s
BMRM Bremner River 85.47 16 *e*P **P 16 25 05.1 +0.2**
comp=Z,62nm,0.8s
PPLA Purkeypile 85.49 12 *e*P **P 16 25 03.5 -1.6**
comp=Z,30nm,1.3s
ZAIG Zacatecas 85.49 64 *e*P **P 16 25 07.2 +1.0**
comp=Z,9.3nm,1.0s
MFID Camas Ranch 85.52 40 *e*P **P 16 25 06.8 +1.1**
comp=Z,28nm,1.0s
121A Cookes Peak, D 85.54 53 P **P 16 25 08.2 +2.1**
baz=242
121A Cookes Peak, D 85.54 53 *e*P **P 16 25 07.7 +1.6**
comp=Z,15nm,0.9s
SCM Sheep Creek Mo 85.56 14 *e*P **P 16 25 05.8 +0.4**
SCM pmax pmax
comp=Z,126nm,0.8s
SCM Sheep Creek Mo 85.56 14 *e*P **P 16 25 05.8 +0.4**
comp=Z,126nm,0.8s
ENH Enshi 85.59 304 *e*P **P 16 25 07.0 +0.8**
comp=Z,90nm,0.9s
KLU Klutina 85.60 15 *e*P **P 16 25 05.2 -0.4**
comp=Z,37nm,0.9s
DUG Dugway, Tooele 85.71 44 P **P 16 25 07.5 +0.7**
baz=239
DUG Dugway, Tooele 85.71 44 *e*P **P 16 25 08.0 +1.3**
DUG Dugway, Tooele 85.71 44 *e*P **P 16 25 08.0 +1.3**
comp=Z,5.8nm,1.0s
WRAK Wrangell Islan 85.72 24 *e*P **P 16 25 07.5 +1.4**
comp=Z,44nm,0.9s
KRAB Krabi 85.73 280 P P 16 25 01.8 -5.4
D08A Wollman Farm, 85.78 36 *e*P **P 16 25 08.0 +1.3**
comp=Z,40nm,1.0s
E09A Wood Farm, Sta 85.90 37 *e*P **P 16 25 08.2 +0.9**
comp=Z,51nm,1.1s
PATY Pattaya 85.91 285 P **P 16 25 10.4 +2.4**
comp=Z,26nm,0.8s,comp=Z,820nm
CAST Castle Rocks 85.98 12 *e*P **P 16 25 05.9 -1.4**
comp=Z,56nm,0.8s
TNA Tin City 85.99 4 *e*P **P 16 25 07.3 +0.2**
comp=Z,24nm,0.8s
TNA *e*pP **pP 16 27 14.2 +2.8**
CHAI Chaiyaphum 86.02 288 P **P 16 25 09.4 +0.9**
comp=Z,13nm,0.7s,comp=Z,132nm
NAYO Nakonayok 86.02 287 P **P 16 25 10.3 +1.8**
comp=Z,30nm,1.3s
NLU North Lily Min 86.08 45 *e*P **P 16 25 09.7 +1.2**
comp=Z,24nm,1.9s
SEY Seymchan 86.11 347 P **P 16 25 08.3 +0.5**
comp=Z,67nm,0.7s,baz=156,slow=4.6,SNR=260
F10A Beach Ranch, E 86.11 38 P **P 16 25 09.2 +0.8**
BALM Baldy 86.12 17 *e*P **P 16 25 08.7 +0.6**
BALM Baldy 86.12 17 *e*P **P 16 25 08.7 +0.6**
comp=Z,51nm,0.9s
Q16A Castle Valley 86.16 46 *e*P **P 16 25 10.6 +1.6**
comp=Z,16nm,1.1s
GYA Guiyang 86.20 300 P **P 16 25 10.2 +0.9**
GYA pP pP 16 27 16.8 +3.2
GYA sP sP 16 28 14.0 +2.3
GYA PP **PP 16 28 44.4 +3.2**
GYA SKS **SKSac 16 34 40.2 -1.0**
GYA S **S 16 34 56.6 -0.4**
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,120nm,5.8s
B08A Colville Reser 86.32 35 *e*P **P 16 25 09.7 +0.4**
comp=Z,31nm,0.8s
B08A *e*pP **pP 16 27 16.0 +2.3**
TMUT Trail Mountain 86.33 46 *e*P **P 16 25 11.4 +1.6**
comp=Z,17nm,0.9s
KTH Kantishna Hill 86.33 12 *e*P **P 16 25 07.8 -1.1**
comp=Z,54nm,0.9s
TRF Thorofare Moun 86.36 12 *e*P **P 16 25 08.6 -0.7**
comp=Z,90nm,0.8s
SURT Suratani 86.36 281 P **P 16 25 12.1 +1.9**
comp=Z,29nm,1.1s,comp=Z,442nm
HLID Hailey 86.46 41 P **P 16 25 11.7 +1.4**
baz=238
HLID Hailey 86.46 41 *e*P **P 16 25 11.8 +1.6**
comp=Z,30nm,0.9s
HVU Hansel Valley 86.56 43 *e*P **P 16 25 11.7 +1.0**
HVU pmax pmax
comp=Z,26nm,1.5s
HVU Hansel Valley 86.56 43 *e*P **P 16 25 11.7 +1.0**
comp=Z,26nm,1.5s
C09A Chrisman Ranch 86.57 36 *e*P **P 16 25 11.4 +1.0**
comp=Z,159nm,1.8s
RND Reindeer 86.61 13 *e*P **P 16 25 10.4 +0.1**
RND Reindeer 86.61 13 *e*P **P 16 25 10.4 +0.1**
comp=Z,149nm,0.8s
SRU San Rafael Swe 86.70 46 *e*P **P 16 25 12.6 +1.1**
SRU pmax pmax
comp=Z,21nm,0.9s
SRU San Rafael Swe 86.70 46 *e*P **P 16 25 12.6 +1.1**
comp=Z,21nm,0.9s
SRU *e*pP pP 16 27 23.9 +7.9
P17A Butcher Ranch, 86.73 46 *e*P **P 16 25 12.8 +1.3**
comp=Z,75nm,2.0s
SYO Syowa Base 86.81 193 ‖ *e*P **P 16 25 09.5 -1.7**
SYO Syowa Base 86.81 193 ‖ *e*pP pP 16 27 17.6 +1.9
BPAW Bear Paw Mtn. 86.81 12 *e*P **P 16 25 09.8 -1.4**
comp=Z,126nm,2.0s
JLU Jordanelle 86.82 45 *e*P **P 16 25 12.9 +0.9**
comp=Z,43nm,1.9s
TIY Taiyuan 86.85 312 *e*P **P 16 25 13.2 +1.2**
TIY SKS **SKSac 16 34 44.3 -0.2**
TIY S **ScS 16 35 09.6 +2.1**
TIY pmax pmax
comp=Z,230nm,7.4s
LAZ Ladron 86.87 52 *e*P **P 16 25 13.9 +1.5**
MCK McKinley 86.89 13 *e*P **P 16 25 11.2 -0.3**
MCK pmax pmax
comp=Z,81nm,1.0s
MCK McKinley 86.89 13 *e*P **P 16 25 11.2 -0.3**
comp=Z,81nm,1.0s
SKAG Skagway 86.96 20 *e*P **P 16 25 13.4 +1.5**
comp=Z,164nm,1.8s
PAX Paxson 86.98 14 *e*P **P 16 25 11.8 -0.3**
PAX pmax pmax
comp=Z,144nm,2.0s
PAX Paxson 86.98 14 *e*P **P 16 25 11.8 -0.3**
comp=Z,144nm,2.0s
MNTX Cornudas Mount 86.98 55 P **P 16 25 14.5 +1.7**
baz=244
PHET Kaeng Krachan 87.03 285 P **P 16 25 15.5 +2.2**
comp=Z,35nm,0.9s,comp=Z,251nm
TCUT Toone Canyon 87.10 44 *e*P **P 16 25 14.8 +1.4**
comp=Z,174nm,1.8s
BNM Barren Site 87.13 52 *e*P **P 16 25 15.0 +1.3**
P18A Preston Nutter 87.14 46 *e*P **P 16 25 15.0 +1.3**
comp=Z,36nm,1.6s
BWN Browne 87.17 12 *e*P **P 16 25 12.7 -0.1**
comp=Z,120nm,1.0s
BWN *e*PKKPbc **PKKPbc 16 43 08.8 +5.5**
PV05 Paradox Valley 87.18 48 *e*P **P 16 25 15.3 +1.5**
MVCO Mesa Verde 87.19 49 P **P 16 25 14.5 +0.7**
baz=242
LPM Los Pinos Moun 87.20 52 *e*P **P 16 25 15.1 +1.2**
HWUT Hardware Ranch 87.25 44 *e*P **P 16 25 14.6 +0.6**
comp=Z,40nm,1.9s

LOEI Loei 87.26 290 P **P 16 25 13.9 -0.4**
comp=Z,89nm,1.1s
TX31 Lajitas Ar. Si 87.31 58 *e*P **P 16 25 15.7 +1.3**
TX31 *e*PKKPbc **PKKPbc 16 43 02.1 +0.6**
TXAR Lajitas Array 87.31 58 P **P 16 25 16.2 +1.8**
comp=Z,16nm,0.8s,baz=219,slow=5.8,SNR=77
TXAR PKKPbc **PKKPbc 16 43 01.2 -0.4**
comp=Z,2.1nm,1.1s,baz=97,slow=3.6,SNR=6.6
PV09 Paradox Valley 87.35 47 *e*P **P 16 25 15.9 +1.3**
PV10 Paradox Valley 87.36 47 *e*P **P 16 25 15.5 +0.9**
MENT Mentasta 87.37 15 *e*P **P 16 25 14.6 +0.8**
comp=Z,26nm,0.7s
NEW Newport 87.47 36 P **P 16 25 15.2 +0.5**
baz=236,SNR=7.6
NEW Newport 87.47 36 *e*P **P 16 25 15.8 +1.1**
NEW Newport 87.47 36 *e*P **P 16 25 15.8 +1.1**
comp=Z,14nm,0.9s
PV01 Paradox Valley 87.57 48 *e*P **P 16 25 16.4 +0.8**
ANMO Albuquerque 87.62 51 P **P 16 25 16.9 +0.9**
baz=243
ANMO Albuquerque 87.62 51 *d i*P **P 16 25 16.7 +0.8**
ANMO pmax pmax
comp=Z,25nm,1.3s
ANMO Albuquerque 87.62 51 *e*P **P 16 25 16.8 +0.9**
comp=Z,116nm,1.3s
XAN Xi'an 87.69 308 P **P 16 25 17.2 +1.1**
XAN pP pP 16 27 23.1 +2.1
XAN pmax pmax
comp=Z,72nm,0.9s
XAN pmax pmax
comp=Z,200nm,5.0s
MLY Manley 87.70 11 *e*P **P 16 25 14.7 -0.6**
comp=Z,39nm,0.8s
WRH Wood River Hil 87.72 13 *e*P **P 16 25 15.2 -0.2**
comp=Z,113nm,0.9s
WRH *e*pP **pP 16 27 22.1 +1.8**
DOT Dot Lake 87.89 15 *e*P **P 16 25 16.4 +0.1**
comp=Z,114nm,0.9s
DOT *e*pP **pP 16 27 23.1 +1.8**
HDA Harding Lake 87.90 13 *e*P **P 16 25 15.8 -0.4**
comp=Z,82nm,0.8s
CCB Clear Creek Bu 87.93 13 *e*P **P 16 25 15.8 -0.5**
comp=Z,96nm,0.8s
CCB *e*pP **pP 16 27 22.8 +1.4**
UTTA Uttaradit 87.98 290 P **P 16 25 19.4 +1.8**
comp=Z,9.3nm,1.2s,comp=Z,102nm
SRDT SRDT 88.01 286 P **P 16 25 19.8 +2.0**
comp=Z,151nm,1.2s
DLBC Dease Lake 88.05 23 P **P 16 25 18.3 +1.2**
comp=Z,17nm,0.8s,baz=220,slow=6.9,SNR=24
DLBC Dease Lake 88.05 23 *e*P **P 16 25 18.2 +1.1**
comp=Z,25nm,0.9s
MCMT McKenzie Canyo 88.08 40 *e*P **P 16 25 19.4 +1.5**
MCMT *e*PP **PP 16 28 54.1 -1.8**
MDM Murphy Dome 88.12 12 *e*P **P 16 25 16.7 -0.6**
comp=Z,91nm,0.8s
MDM *e*pP **pP 16 27 23.8 +1.4**
COLA College 88.12 13 *d i*P **P 16 25 16.7 -0.5**
COLA pmax pmax
comp=Z,121nm,0.8s
COLA College 88.12 13 *e*P **P 16 25 16.9 -0.2**
comp=Z,122nm,0.8s
AHID Auburn Hatcher 88.12 43 *e*P **P 16 25 19.3 +1.2**
comp=Z,22nm,0.9s
SNAA Sanae 88.20 179 P **P 16 25 17.4 -0.4**
SNAA Sanae 88.20 179 *e*P **P 16 25 17.0 -0.8**
SNAA *e**PP **pP 16 27 23.2 +0.4**
SNAA Sanae 88.20 179 *e*P **P 16 25 17.0 -0.8**
SNAA *e*pP **pP 16 27 23.2 +0.4**
IL1 Eielson Array 88.23 13 *e*P **P 16 25 17.1 -0.6**
IL1 *e*pP **pP 16 27 24.0 +1.1**
ILAR Eielson Array 88.23 13 P **P 16 25 17.2 -0.5**
comp=Z,31nm,0.8s,baz=226,slow=5.3,SNR=92
ILAR pP **pP 16 27 23.6 +0.8**
comp=Z,6.0nm,1.1s,baz=223,slow=5.2,SNR=5.5
ILAR PKiKP **PKiKP 16 30 14.2 -0.6**
comp=Z,0.6nm,0.5s,baz=281,slow=2.9,SNR=4.8
ILAR Eielson Array 88.23 13 P **P 16 25 17.3 -0.5**
ILAR *PP **pP 16 27 23.7 +0.8**
ILAR pmax pmax
comp=Z,30nm,0.8s
ILAR pmax pmax
comp=Z,6.0nm,1.1s
ILB Eielson Array 88.23 13 *e*P **P 16 25 17.2 -0.5**
ILB *e*pP **pP 16 27 23.8 +0.9**
NANT Nan 88.24 291 P **P 16 25 20.0 +1.1**
comp=Z,12nm,1.1s,comp=Z,260nm
HIA Hailar 88.31 325 *e*P **P 16 25 18.9 +0.4**
HIA pmax pmax
comp=Z,26nm,0.7s
HIA Hailar 88.31 325 *e*P **P 16 25 18.9 +0.4**
comp=Z,26nm,0.7s
VNA3 Neumayer Olymp 88.35 176 P **P 16 25 18.4 0.0**
VNA3 Neumayer Olymp 88.35 176 P **PKKPdf 16 42 55.8 +3.7**
MSO Missoula 88.48 38 P **P 16 25 19.7 +0.2**
baz=238,SNR=7.1
MSO Missoula 88.48 38 *e*P **P 16 25 19.3 -0.2**
comp=Z,24nm,1.4s
DLMT Dillon 88.51 40 *e*P **P 16 25 21.0 +1.3**
comp=Z,45nm,1.3s
BSMT Bassoo Peak 88.55 37 *e*P **P 16 25 20.4 +0.5**
REDW Red Top Meadow 88.58 42 *e*P **P 16 25 21.3 +1.1**
comp=Z,56nm,1.1s
FXWY Fox Creek 88.61 42 *e*P **P 16 25 21.4 +1.1**
comp=Z,18nm,1.0s
S22A 4UR Ranch, Cre 88.61 49 P **P 16 25 21.9 +1.3**
baz=243,SNR=16
S22A 4UR Ranch, Cre 88.61 49 *e*P **P 16 25 21.9 +1.3**
comp=Z,22nm,1.3s
KHLT Khaolaem Dam 88.65 286 P **P 16 25 23.1 +2.3**
comp=Z,17nm,1.2s
SNOW Snow King Moun 88.69 42 *e*P **P 16 25 22.3 +1.5**
comp=Z,48nm,1.0s
SUKH Sukhothai 88.70 289 P **P 16 25 22.7 +1.7**
comp=Z,20nm,0.9s,comp=Z,172nm
O20A White River Ci 88.73 46 P **P 16 25 21.9 +0.9**
baz=242
O20A White River Ci 88.73 46 *e*P **P 16 25 21.6 +0.7**
comp=Z,28nm,1.1s
JTMT Jette 88.78 37 *e*P **P 16 25 21.2 +0.3**
VNA2 Neumayer--Watz 88.78 177 P **P 16 25 20.8 +0.3**
baz=197,slow=3.5
VNA2 Neumayer--Watz 88.78 177 P **PKKPdf 16 42 55.1 +3.7**
baz=357,slow=5.7
IMW Indian Meadow 88.79 42 *e*P **P 16 25 22.5 +1.2**
comp=Z,39nm,0.9s
IMW *e*PP **PP 16 29 00.3 -1.1**
SWMT Swartz Lake 88.81 38 *e*P **P 16 25 21.0 -0.1**
BILL Bilibino 88.81 354 *d i*P **P 16 25 20.6 +0.2**
BILL *e* 16 28 59.2
BILL pmax pmax
comp=Z,22nm,0.9s
BILL Bilibino 88.81 354 *e*P **P 16 25 20.2 -0.2**
comp=Z,20nm,0.9s
LRM Limekiln Ridge 88.84 40 *e*P **P 16 25 22.5 +1.1**
LRM *e*PP **PP 16 29 00.4 -1.3**
MOOW Moose Ponds 88.84 42 *e*P **P 16 25 22.5 +1.1**
comp=Z,58nm,1.8s
MOOW *e*PP **PP 16 29 00.2 -1.6**
LOHW Long Hollow 88.86 42 *e*P **P 16 25 22.4 +0.9**
comp=Z,63nm,1.6s
LOHW *e*PP **PP 16 29 00.0 -2.0**
NVL N'lazarevskaya 88.87 183 *e*P **P 16 25 21.4 +0.6**
KMI Kunming 88.90 297 P **P 16 25 23.3 +1.2**
KMI pmax pmax
comp=Z,50nm,0.9s
KMI pmax pmax
comp=Z,240nm,5.6s
HHC Hu-ho-hao-te 88.93 315 *e*P **P 16 25 22.6 +0.9**
HHC SKS **SKSac 16 34 52.8 -3.9**
HHC S **S 16 35 22.5 +0.8**
HHC pmax pmax
comp=Z,56nm,1.0s
HHC pmax pmax
comp=Z,470nm,7.0s
CHMT Chamberlain Mo 88.93 38 *e*P **P 16 25 22.3 +0.6**
QLMT Earthquake Lak 88.95 41 *e*P **P 16 25 23.7 +1.8**
YBMT Yellow Bay 88.99 37 *e*P **P 16 25 22.0 +0.1**
VNA1 Neumayer--Stat 89.01 177 P **P 16 25 21.8 +0.3**
VNA1 Neumayer--Stat 89.01 177 P pP 16 27 28.5 +1.8
FLWY Flagg Ranch 89.03 42 *e*P **P 16 25 23.8 +1.5**
comp=Z,40nm,0.9s
FLWY *e*PP **PP 16 29 01.9 -1.4**
CRAI Chiangrai 89.06 292 P **P 16 25 23.8 +1.1**
comp=Z,677nm,1.2s,comp=Z,97μm

LAMP Lampang 89.08 290 P **P 16 25 24.5 +1.7**
comp=Z,36nm,0.8s,comp=Z,274nm
BW06 Boulder Array 89.11 43 P **P 16 25 23.3 +0.6**
baz=241,SNR=33
BW06 Boulder Array 89.11 43 *e*P **P 16 25 23.3 +0.6**
comp=Z,20nm,0.8s
BW06 *e*PKKPdf **PKKPbc 16 42 56.8 -1.2**
PD31 Pinedale Array 89.12 43 *e*P **P 16 25 23.2 +0.5**
PDAR Pinedale Array 89.12 43 P **P 16 25 23.4 +0.6**
comp=Z,13nm,0.7s,baz=207,slow=3.0,SNR=104
PDAR pP **pP 16 27 28.3 +0.2**
comp=Z,0.4nm,0.7s,baz=240,slow=7.2,SNR=2.1
PDAR PKKP **PKKPdf 16 42 54.3 +1.1**
comp=Z,0.9nm,0.7s,baz=73,slow=5.1,SNR=6.0
YFT Old Faithful 89.13 41 *e*P **P 16 25 25.4 +2.7**
comp=Z,26nm,0.9s
YMR Madison River 89.16 41 *e*P **P 16 25 24.7 +1.8**
comp=Z,26nm,0.9s
SMCO Snowmass 89.16 47 *e*P **P 16 25 24.1 +0.8**
comp=Z,29nm,1.4s
BOZ Bozeman (W) 89.24 40 P **P 16 25 24.2 +1.1**
baz=240,SNR=23
BOZ Bozeman (W) 89.24 40 *e*P **P 16 25 24.0 +0.9**
BOZ pmax pmax
comp=Z,57nm,1.5s
BOZ Bozeman (W) 89.24 40 *e*P **P 16 25 24.0 +0.9**
comp=Z,56nm,1.5s
H17A Grant Village 89.27 42 P **P 16 25 25.7 +2.3**
baz=240,SNR=12
H17A Grant Village 89.27 42 *e*P **P 16 25 25.8 +2.4**
comp=Z,24nm,0.9s
DAWY Dawson 89.40 16 *e*P **P 16 25 23.7 +0.4**
LKWY Lake 89.46 42 *e*P **P 16 25 26.8 +2.5**
LKWY pmax pmax
comp=Z,5.0nm,0.4s
LKWY Lake 89.46 42 *e*P **P 16 25 26.8 +2.5**
comp=Z,4.9nm,0.4s
EGAK Eagle 89.54 15 *e*P **P 16 25 24.2 +0.4**
comp=Z,64nm,0.9s
SDCO Great Sand Dun 89.55 49 P **P 16 25 25.6 +0.7**
baz=244,SNR=13
SDCO Great Sand Dun 89.55 49 *e*P **P 16 25 25.7 +0.7**
comp=Z,19nm,1.3s
CM01 Chiang Mai Arr 89.64 290 *e*P **P 16 25 26.8 +1.5**
CM01 *e*PKKPdf **PKKPbc 16 42 56.3 +0.9**
CMAR Chiang Mai Arr 89.66 290 P **P 16 25 27.2 +1.7**
comp=Z,32nm,0.8s,baz=90,slow=3.3,SNR=5.8
CMAR PP **PP 16 29 08.7 +0.2**
comp=Z,4.1nm,1.0s,baz=128,slow=6.5,SNR=6.9
CMAR PKiKP **PKiKP 16 30 18.9 +0.4**
comp=Z,0.9nm,0.7s,baz=234,slow=0.3,SNR=4.9
CMAR PKKPbc **PKKPbc 16 42 56.1 +0.8**
comp=Z,1.4nm,0.7s,baz=290,slow=4.1,SNR=9.3
WALA Waterton Lakes 89.69 36 *e*P **P 16 25 25.5 +0.5**
comp=Z,20nm,0.9s
PLCA Paso Flores 89.70 134 P **P 16 25 26.6 +1.2**
comp=Z,5.1nm,0.8s,baz=205,slow=7.1,SNR=8.0
PLCA PKKPbc **PKKPbc 16 42 54.4 -1.6**
comp=Z,2.6nm,0.8s,baz=81,slow=3.9,SNR=3.8
COLD Coldfoot 89.78 11 *e*P **P 16 25 25.4 +0.5**
comp=Z,41nm,0.9s
CMMT Chiang Mai 89.79 290 P **P 16 25 27.2 +1.1**
comp=Z,80nm,1.0s,comp=Z,819nm
CHTO Chiang Mai 89.79 290 P **P 16 25 27.3 +1.2**
comp=Z,352nm,1.0s,comp=Z,3μm
CHTO Chiang Mai 89.79 290 *e*P **P 16 25 27.2 +1.2**
CHTO pmax pmax
comp=Z,51nm,0.7s
CHTO Chiang Mai 89.79 290 *e*P **P 16 25 27.2 +1.2**
comp=Z,51nm,0.7s
832A Faith Ranch, C 89.84 60 P **P 16 25 27.0 +0.9**
baz=247
MSTX Muleshoe 89.94 54 P **P 16 25 27.2 +0.6**
baz=245
MSTX Muleshoe 89.94 54 *e*P **P 16 25 27.3 +0.6**
comp=Z,157nm,0.6s
CMIG Matias Romero 90.01 72 P **P 16 25 27.7 +0.6**
comp=Z,3.4nm,0.9s,baz=246,slow=5.0,SNR=4.1
T25A Trinidad 90.07 50 P **P 16 25 27.7 +0.5**
baz=244,SNR=8.1
T25A Trinidad 90.07 50 *e*P **P 16 25 28.1 +0.8**
comp=Z,101nm,1.3s
CMAI Chiengmai2 90.11 291 P **P 16 25 28.9 +1.2**
comp=Z,55nm,0.9s,comp=Z,3μm
FYU Fort Yukon 90.13 13 *e*P **P 16 25 26.1 -0.4**
comp=Z,12nm,0.9s
933A Laredo 90.15 61 P **P 16 25 28.4 +0.9**
baz=247
833A Chaparral WMA, 90.33 60 P **P 16 25 29.1 +0.8**
baz=247
Q24A Divide 90.33 48 P **P 16 25 29.7 +1.2**
baz=244
Q24A Divide 90.33 48 *e*P **P 16 25 29.4 +0.9**
comp=Z,26nm,0.8s
CD2 Chengdu 90.34 303 P **P 16 25 29.3 +0.9**
CD2 pP pP 16 27 33.8 -0.2
CD2 sP sP 16 28 31.2 -0.4
CD2 PP **PP 16 29 14.2 +0.6**
CD2 SKS **SKSac 16 35 05.6 +0.5**
CD2 S **ScS 16 35 36.1 -0.7**
CD2 sS sS 16 39 19.6 +0.5
CD2 SS **SS 16 41 55.9 +2.6**
CD2 pmax pmax
comp=Z,20nm,0.9s
CD2 pmax pmax
comp=Z,170nm,6.9s
ISCO Idaho Springs 90.38 47 P **P 16 25 29.8 +1.1**
baz=244
RLMT Red Lodge 90.43 41 P **P 16 25 30.0 +1.3**
baz=241,SNR=7.3
RLMT Red Lodge 90.43 41 *e*P **P 16 25 29.2 +0.5**
comp=Z,23nm,1.4s
MHMT Maesarieng 90.46 289 P **P 16 25 31.3 +2.2**
comp=Z,14nm,1.2s,comp=Z,222nm
733A Divot King Ran 90.56 60 P **P 16 25 30.3 +0.9**
baz=247
N23A Red Feather La 90.64 46 P **P 16 25 30.5 +0.7**
baz=243,SNR=18
N23A Red Feather La 90.64 46 *e*P **P 16 25 31.1 +1.2**
comp=Z,23nm,0.9s
934A Benavides 90.77 61 P **P 16 25 30.7 +0.3**
baz=247
JCT Junction City 90.84 58 P **P 16 25 31.1 +0.4**
baz=247
JCT Junction City 90.84 58 *e*P **P 16 25 31.7 +1.0**
JCT Junction City 90.84 58 *e*P **P 16 25 31.7 +1.0**
comp=Z,614nm,1.1s
633A Saathoff Ranch 90.94 59 P **P 16 25 32.2 +1.0**
baz=247
K22A Casper 91.04 45 P **P 16 25 32.1 +0.6**
baz=243,SNR=6.8
K22A Casper 91.04 45 *e*P **P 16 25 32.2 +0.6**
comp=Z,21nm,1.0s
533A Kerrville 91.29 58 P **P 16 25 33.4 +0.6**
baz=247
433A Art 91.51 58 P **P 16 25 34.1 +0.3**
baz=247
EGMT Eagleton 91.54 39 P **P 16 25 34.9 +1.3**
baz=241
EGMT Eagleton 91.54 39 *e*P **P 16 25 34.9 +1.3**
comp=Z,13nm,0.8s
835A Beeville 91.59 61 P **P 16 25 34.9 +0.7**
baz=248
534A Blanco 91.72 59 P **P 16 25 35.8 +1.0**
baz=248
YAK Yakutsk 91.79 338 P **P 16 25 33.9 -0.3**
comp=Z,62nm,0.7s,baz=319,slow=0.6,SNR=83
YAK PKPPKP **P'P'df 16 50 58.0 +0.6**
comp=Z,1.5nm,0.3s,baz=176,slow=2.7,SNR=5.8
YAK Yakutsk 91.79 338 *d i*P **P 16 25 33.7 -0.6**
YAK *e**PP **pP 16 27 34.5 -5.5**
YAK *e*PPP PPP 16 31 26.9
YAK *e*S **SKSac 16 35 08.7 -2.9**
YAK *e* 16 35 44.9
YAK *e*SSS SSS 16 45 58.2
YAK pmax pmax
comp=Z,52nm,0.9s
YAK pmax pmax
comp=N,11nm,1.3s
YAK pmax pmax
comp=E,15nm,1.1s
YAK pmax pmax
comp=Z,133nm,5.3s
YAK pmax pmax
comp=N,106nm,5.3s
YAK pmax pmax
comp=E,70nm,7.0s

YAK smax smax
comp=N,129nm,2.4s
YAK smax smax
comp=E,92nm,3.5s
YAK Yakutsk 91.79 338 *eP* **P 16 25 33.6 -0.6**
comp=E,75nm,0.7s
YAK P'P' 16 50 58.0
ABTX Abilene, Hawle 91.80 56 P **P 16 25 35.9 +0.8**
baz=247
ABTX Abilene, Hawle 91.80 56 *eP* **P 16 25 35.9 +0.8**
comp=E,144nm,0.9s
333A Richland Sprin 91.81 57 P **P 16 25 35.7 +0.5**
baz=247
635A Leesville 92.05 60 P **P 16 25 37.6 +1.4**
baz=248
KSCO Kaye Shedlock' 92.13 49 P **P 16 25 37.2 +0.6**
baz=246
233A Rising Star 92.14 57 P **P 16 25 37.5 +0.8**
baz=247
434A Burnet 92.19 58 P **P 16 25 37.4 +0.5**
baz=248
LZH Lanzhou 92.33 308 ⇓P **P 16 25 38.9 +1.3**
LZH pP pP 16 27 46.1 +2.7
LZH sP sP 16 28 45.0 +4.1
LZH PP **PP 16 29 31.0 +2.0**
LZH SKS **SKSac 16 35 16.0 -0.2**
LZH S **S 16 35 51.4 -0.8**
LZH sS sS 16 39 38.0 +0.1
LZH SS **SS 16 42 24.1 +2.6**
LZH pmax pmax
comp=E,41nm,1.0s
LZH pmax pmax
comp=E,190nm,5.8s
133A Hamilton Ranch 92.36 56 P **P 16 25 38.5 +0.8**
baz=247
334A Lometa 92.41 58 P **P 16 25 38.7 +0.8**
baz=248
Z33A Whitaker Ranch 92.73 56 P **P 16 25 40.6 +1.2**
baz=248
134A White-Moore Ra 93.00 56 P **P 16 25 41.2 +0.7**
baz=248
W32A Sentinel 93.07 54 P **P 16 25 41.4 +0.5**
baz=247
Y33A Hilltop Ranch, 93.11 55 P **P 16 25 41.1 0.0**
baz=248
RSSD Black Hills 93.31 44 P **P 16 25 42.5 +0.5**
baz=245
RSSD Black Hills 93.31 44 *eP* **P 16 25 40.8 -1.2**
RSSD pmax pmax
comp=Z,8.0nm,0.9s
RSSD Black Hills 93.31 44 *eP* **P 16 25 40.8 -1.2**
comp=Z,7.6nm,0.9s
Z34A Collier Ranch, 93.42 56 P **P 16 25 43.4 +0.9**
baz=248
V32A Arapaho 93.45 53 P **P 16 25 43.7 +1.1**
baz=247
I25A Rochford 93.47 44 P **P 16 25 43.1 +0.4**
baz=245
J26A Sides Ranch, S 93.61 45 P **P 16 25 44.1 +0.9**
baz=245
U32A Winter Ranch, 93.73 53 P **P 16 25 44.5 +0.7**
baz=248
H25A Fruitdale 93.81 44 P **P 16 25 44.9 +0.8**
baz=245
X34A Smith Ranch, M 93.95 55 P **P 16 25 45.6 +0.7**
baz=248
INK Inuvik 94.21 15 P **P 16 25 45.0 -0.1**
comp=Z,11nm,0.8s,baz=223,slow=3.8,SNR=49
INK Inuvik 94.21 15 *eP* **P 16 25 44.4 -0.7**
comp=Z,22nm,1.0s
S32A Newby Ranch, P 94.28 51 P **P 16 25 47.9 +1.5**
baz=248
J27A Elkhorn Farm, 94.29 45 P **P 16 25 48.0 +1.7**
baz=246
X35A Drake 94.53 55 P **P 16 25 48.3 +0.8**
baz=248
Z36A Blue Ridge 94.54 56 P **P 16 25 48.7 +1.2**
baz=249
T33A Patterson Ranc 94.56 52 P **P 16 25 48.4 +0.8**
baz=248
ULN Ulaanbaatar 94.95 319 *d iP* **P 16 25 49.0 -0.3**
ULN pmax pmax
comp=Z,9.0nm,0.8s
ULN Ulaanbaatar 94.95 319 *eP* **P 16 25 48.9 -0.3**
comp=Z,7.5nm,0.7s
Q32A Meitler Ranch, 95.04 50 P **P 16 25 51.3 +1.6**
baz=248
V35A Meyer Ranch, C 95.13 54 P **P 16 25 51.1 +1.0**
baz=249
I28A Midland 95.15 45 P **P 16 25 51.0 +0.9**
baz=247
G27A Dupree 95.20 43 P **P 16 25 51.0 +0.7**
baz=246
F27A Lemmon 95.34 43 P **P 16 25 51.8 +0.9**
baz=246
D26A Manning 95.54 42 P **P 16 25 52.8 +1.0**
baz=246
Q33A Connelly Farm, 95.57 51 P **P 16 25 53.1 +1.0**
baz=248
M31A Lambtecht Ranc 95.62 48 P **P 16 25 53.4 +1.1**
baz=248
O32A Brockman Farm, 95.71 49 P **P 16 25 53.8 +1.1**
baz=248
BOD Bodaibo 95.73 330 *eP* P 16 25 46.7 -5.6
BOD pmax pmax
comp=Z,4.0nm,1.6s
YKA Yellowknife Ar 96.52 25 P **P 16 25 55.8 +0.1**
comp=Z,3.0nm,0.7s,baz=243,slow=4.5,SNR=66
YKA PKiKP **PKiKP 16 30 28.6 -0.5**
comp=Z,0.4nm,0.6s,baz=271,slow=1.5,SNR=6.3
YKA PKKPbc **PKKPbc 16 42 36.1 -3.2**
comp=Z,0.2nm,0.4s,baz=46,slow=2.7,SNR=5.9
YKB5 Yellowknife Ar 96.52 25 *eP* **P 16 25 55.2 -0.5**
YKB5 *ep*P **pP 16 28 02.4 +0.4**
GTA Gaotai 96.54 309 P **P 16 25 57.2 +0.6**
GTA pP pP 16 28 04.0 +1.3
GTA sP sP 16 29 03.4 +3.2
GTA SKS **SKSac 16 35 38.0 -0.2**
GTA S **S 16 36 27.9 -0.3**
GTA pmax pmax
comp=Z,7.0nm,1.4s
GTA pmax pmax
comp=Z,120nm,4.4s
YKW3 Yellowknife Ar 96.55 25 *eP* **P 16 25 55.6 -0.3**
comp=Z,5.0nm,0.9s
R38A Fenwick Farm, 98.17 52 Pdiff **P 16 26 04.3 +0.5**
baz=251
T39A Clever 98.18 54 Pdiff **P 16 26 04.6 +0.7**
baz=251
ZAK Zakamensk 98.23 321 *eP* Pdif 16 26 02.9 -0.9
ZAK pmax pmax
comp=Z,3.0nm,1.2s
A29A Manning Farm, 98.25 41 Pdiff **P 16 26 04.8 +0.9**
baz=249
U40A Yellville 98.36 54 Pdiff **P 16 26 05.6 +0.9**
baz=251
TIXI Tiksi 98.47 345 P Pdif 16 26 03.6 -0.6
comp=Z,4.8nm,1.0s,baz=127,slow=5.0,SNR=13
TIXI PP **PP 16 30 10.3 -4.3**
comp=Z,4.4nm,1.2s,baz=126,slow=6.9,SNR=5.3
TIXI PKiKP **PKiKP 16 30 32.1 -0.2**
comp=Z,1.6nm,0.6s,baz=92,slow=2.7,SNR=7.8
TIXI Tiksi 98.47 345 *d iP* Pdif 16 26 03.3 -0.9
TIXI pmax pmax
comp=Z,10.0nm,1.3s
TIXI Tiksi 98.47 345 *e*Pdif Pdif 16 26 03.5 -0.7
comp=Z,11nm,1.3s
TIXI *e*PP **PP 16 30 10.0 -4.6**
TIXI PKiKP **PKiKP 16 30 32.1 -0.2**
R39A Chumby, Stover 98.86 53 Pdiff **P 16 26 08.4 +1.6**
baz=251
546A Slidell 98.91 61 Pdiff **P 16 26 08.9 +1.7**
baz=252
S40A Lebanon 99.03 53 Pdiff **Pdif 16 26 08.3 +0.7**
baz=251
F36A Milaca 100.89 45 Pdiff **Pdif 16 26 16.6 +1.0**
baz=252
I38A Scanlan Farm, 101.14 47 Pdiff **Pdif 16 26 17.5 +0.7**
baz=253
D37A Cotton 102.00 44 Pdiff **Pdif 16 26 21.5 +1.0**
baz=253
LPAZ La Paz 102.51 113 P **Pdif 16 26 25.8 +1.4**
comp=Z,1.6nm,1.0s,baz=256,slow=8.3,SNR=3.9
LPAZ PKKPbc **PKKPbc 16 42 21.4 -0.6**
comp=Z,1.2nm,0.7s,baz=64,slow=1.0,SNR=6.3
C39A Grand Marais 103.67 44 Pdiff **Pdif 16 26 28.6 +0.6**
baz=255

GUN Gumba 104.06 295 *eP* **PKiKP 16 30 43.5 -0.7**
PKIN Phulchoki 104.38 294 *eP* **PKiKP 16 30 43.8 -0.9**
comp=Z,10nm,0.6s
KKN Kakani 104.54 295 *eP* **PKiKP 16 30 44.2 -0.7**
comp=Z,8.9nm,0.6s
DMN Daman 104.64 294 *eP* **PKiKP 16 30 44.5 -0.7**
comp=Z,7.6nm,0.6s
GKN Gorkha 105.14 295 *eP* **PKiKP 16 30 44.8 -1.2**
KOLN Koldanda 105.97 294 *eP* **PKiKP 16 30 46.5 -1.1**
comp=Z,9.4nm,0.6s
PYUN Piuthan 106.58 294 *eP* **PKiKP 16 30 47.8 -0.9**
KMSC Kings Mountain 107.04 58 PKiKP **PKiKP 16 30 48.3 -0.8**
baz=257
RES Resolute Bay 107.74 16 PKiKP **PKiKP 16 30 47.8 -1.4**
comp=Z,2.4nm,0.8s,baz=284,slow=2.1,SNR=6.9
RES Resolute Bay 107.74 16 *e*PKiKP **PKiKP 16 30 48.1 -1.1**
N54A Moraine State 109.26 53 PKiKP **PKiKP 16 30 52.9 -0.2**
baz=260
M54A Oil Creek Stat 109.60 52 PKiKP **PKiKP 16 30 53.4 -0.3**
baz=260
ZALV Zalesovo Beam 110.09 321 PKiKP **PKiKP 16 30 53.4 -0.8**
comp=Z,8.6nm,0.6s,baz=172,slow=1.1,SNR=40
ZALV SKP **SKPdf 16 33 35.4 +0.1**
comp=Z,2.7nm,0.6s,baz=145,slow=1.1,SNR=6.7
O56A Blue Knob Stat 110.21 53 PKiKP **PKiKP 16 30 54.8 -0.2**
baz=260
NRIK Noril'sk 110.24 338 PKiKP **PKiKP 16 30 52.9 -1.2**
comp=Z,1.8nm,0.4s,baz=80,slow=4.2,SNR=5.8
NRIK PP **PP 16 31 37.6 -2.8**
comp=Z,2.9nm,1.0s,baz=104,slow=7.5,SNR=7.7
MK01 Makanchi Array 110.76 313 *e*Pdif **Pdif 16 26 59.9 +0.3**
MK01 *e*PKiKP **PKiKP 16 30 54.6 -1.2**
MK01 *e*PKKPbc **PKKPbc 16 41 55.8 -0.9**
MK31 Makanchi Array 110.77 314 *i* PKiKP **PKiKP 16 30 54.6 -1.2**
MK31 pmax pmax
comp=Z,4.0nm,0.5s
MKAR Makanchi Array 110.77 314 Pdiff **Pdif 16 27 01.1 +1.5**
comp=Z,1.4nm,0.7s,baz=90,slow=4.3,SNR=11
MKAR PKiKP **PKiKP 16 30 55.1 -0.7**
comp=Z,6.8nm,0.6s,baz=67,slow=1.5,SNR=66
MKAR PKKPbc **PKKPbc 16 41 56.3 -0.4**
comp=Z,1.3nm,0.8s,baz=278,slow=3.6,SNR=8.8
MKAR PKKPab **PKKPab 16 42 06.7 -0.7**
comp=Z,0.3nm,0.4s,baz=186,slow=20,SNR=4.4
NVS Novosibirsk 111.11 322 *e*PKiKP PKiKP 16 30 42.5 -14
NVS *e* 16 36 42.5
PDGK Podgornoye 112.29 310 PKiKP **PKiKP 16 30 57.7 -1.0**
PDGK pmax pmax
comp=Z,5.0nm,0.8s
KURK Kurchatov 113.58 317 *i* PKiKP **PKiKP 16 31 00.0 -1.0**
KURK 16 32 00.1
KURK pmax pmax
comp=Z,11nm,0.7s
KURK pmax pmax
comp=Z,5.0nm,0.9s
KURK pmax pmax
comp=N,2.0nm,0.7s
KURK Kurchatov 113.58 317 *e*PKiKP **PKiKP 16 30 59.9 -1.0**
KURK *e*PP **PP 16 32 01.6 -2.8**
KURK SKP 16 33 42.3
KURBB Kurchatov Arra 113.63 317 PKiKP **PKiKP 16 30 60.0 -1.1**
comp=N,11nm,0.7s,baz=93,slow=1.8,SNR=142
KURBB PP **PP 16 32 00.1 -4.7**
comp=N,4.6nm,0.9s,baz=95,slow=5.7,SNR=9.1
KURBB SKP 16 33 42.3
comp=N,2.0nm,0.7s,baz=91,slow=1.9,SNR=6.9
KSH Kashi 114.44 305 PKP PKPdf 16 31 03.8 +0.6
KSH PKS **PKSdf 16 34 39.7 -0.2**
KSH SKS **SKSdf 16 37 20.1 -1.0**
KSH SKKS **SKKSac 16 38 14.3 +2.0**
KSH AMB AMB
comp=N,95nm,4.1s
TKM2 Tokmak 2 115.08 309 PKIKP **PKPdf 16 31 03.4 -1.0**
TKM2 pmax pmax
comp=Z,9.0nm,0.8s
TKM2 Tokmak 2 115.08 309 *e*PKPdf **PKPdf 16 31 03.3 -1.0**
FRU Bishkek 115.79 309 *i* PKIKP **PKPdf 16 31 05.0 -0.5**
FRU *i* 16 32 18.0
AAK Ala-Archa 115.86 308 PKP **PKPdf 16 31 05.3 -0.5**
comp=Z,4.0nm,0.6s,baz=124,slow=2.6,SNR=16
AAK PP **PP 16 32 17.0 -3.7**
comp=Z,0.9nm,0.4s,baz=101,slow=7.0,SNR=5.1
AAK PKKPab **PKKPab 16 41 46.2 +1.1**
comp=Z,0.6nm,0.3s,baz=215,slow=6.1,SNR=4.6
AAK Ala-Archa 115.86 308 *d iP*KIKP **PKPdf 16 31 05.1 -0.7**
AAK Ala-Archa 115.86 308 *e*PKPdf **PKPdf 16 31 05.2 -0.7**
AAK *e*PP **PP 16 32 18.2 -2.5**
AAK *e*PP PP 16 32 18.4 -2.3
AAK PKKPab **PKKPab 16 41 46.2 +1.1**
PTGA Pitinga 116.30 101 PKKPbc PKKPbc 16 41 38.4 +0.8
comp=Z,1.2nm,0.3s,baz=82,slow=3.8,SNR=5.3
SFK Sufi-Kurgan 116.39 305 PKIKP **PKPdf 16 31 06.4 -0.6**
SFK pmax pmax
comp=Z,28nm,1.1s
EKS2 Erkin-Say 116.39 308 *e*PKIKP **PKPdf 16 31 06.3 -0.5**
EKS2 Erkin-Say 116.39 308 *e*PKPdf **PKPdf 16 31 06.2 -0.5**
MNAS Manas 117.32 308 PKIKP **PKPdf 16 31 07.9 -0.7**
MNAS pmax pmax
comp=Z,18nm,0.6s
KULLO Kullorsuaq 117.57 15 *i* P **PKPdf 16 31 07.1 -0.8**
KULLO Kullorsuaq 117.57 15 *i* PKIKP **PKPdf 16 31 07.1 -0.8**
VOSK Vostochnaya 118.34 320 PKIKP **PKPdf 16 31 08.9 -1.2**
VOSK pmax pmax
comp=Z,26nm,0.7s
BVA0 Borovoye Array 118.67 320 PKIKP **PKPdf 16 31 09.9 -0.8**
BVA0 pmax pmax
comp=Z,32nm,0.9s
BVAR Borovoye Array 118.67 320 PKP **PKPdf 16 31 10.1 -0.6**
comp=Z,24nm,0.5s,baz=94,slow=1.8,SNR=126
BVAR SKP **SKPdf 16 33 52.6 +0.7**
comp=Z,2.6nm,0.7s,baz=90,slow=1.5,SNR=4.1
BRVK Borovoye 118.74 320 *d iP*KIKP **PKPdf 16 31 09.6 -1.2**
BRVK pmax pmax
comp=Z,35nm,1.0s
BRVK Borovoye 118.74 320 *e*PKPdf **PKPdf 16 31 10.0 -0.8**
KK31 Karatay Array 118.81 309 *i* PKIKP **PKPdf 16 31 10.3 -1.0**
KK31 pmax pmax
comp=Z,8.0nm,0.6s
KKAR Karatay Array 118.81 309 *e*PKIKP **PKPdf 16 31 10.5 -0.8**
KKAR Karatay Array 118.81 309 *e*PKPdf **PKPdf 16 31 10.5 -0.8**
KBL Kabul 119.44 299 *e*PKIKP **PKPdf 16 31 12.8 -0.2**
KBL Kabul 119.44 299 *e*PKPdf **PKPdf 16 31 12.8 -0.2**
DZET Dzherino 119.92 304 PKIKP **PKPdf 16 31 13.2 -0.5**
DZET pmax pmax
comp=Z,27nm,0.5s
LMN Caledonia Moun 120.66 48 *e*PKPdf **PKPdf 16 31 14.4 -0.3**
SPA0 Spitsbergen Ar 121.66 356 *e*PKPdf **PKPdf 16 31 15.5 -0.3**
SPA0 IAmb IAmb 16 31 16.2
comp=Z,51nm,1.0s
SPA0 Spitsbergen Ar 121.66 356 *e*PKPdf **PKPdf 16 31 15.3 -0.5**
SPITS Spitsbergen Ar 121.66 356 PKP **PKPdf 16 31 15.7 -0.2**
comp=Z,27nm,0.8s,baz=80,slow=6.0,SNR=24
ILULI Ilulissat 121.71 19 *i P* **PKPdf 16 31 15.2 -0.8**
ILULI Ilulissat 121.71 19 *i* PKIKP **PKPdf 16 31 15.2 -0.8**
DAG Danmarks Havn 122.60 5 *i P* **PKPdf 16 31 16.2 -1.4**
comp=Z,8.3nm,0.7s
DAG Danmarks Havn 122.60 5 *i* PKIKP **PKPdf 16 31 16.2 -1.4**
DAG pmax pmax
comp=Z,6.0nm,0.7s
SFJD Kangerlussuaq 122.93 22 *i P* **PKPdf 16 31 17.7 -0.7**
SFJD Kangerlussuaq 122.93 22 *i* PKIKP **PKPdf 16 31 17.7 -0.7**
SUMG Summit 123.07 13 *i P* **PKPdf 16 31 19.3 +0.2**
SUMG Summit 123.07 13 *i* PKIKP **PKPdf 16 31 19.3 +0.2**
SUMG Summit 123.07 13 *e*PKPdf **PKPdf 16 31 18.5 -0.7**
SVE Sverdlovsk 123.61 326 *e*PKIKP **PKPdf 16 31 19.6 -0.4**
SVE pmax pmax
comp=Z,46nm,1.0s
SOKR Solikamsk 124.71 329 *c iP*KIKP **PKPdf 16 31 20.6 -1.4**
SOKR pmax pmax
comp=Z,77nm,0.9s
ARU Arti 124.82 325 PKP **PKPdf 16 31 22.4 0.0**
comp=Z,23nm,0.4s,baz=91,slow=1.2,SNR=51
ARU PP **PP 16 33 15.5 -4.6**
comp=Z,2.6nm,0.6s,baz=73,slow=6.0,SNR=7.6
ARU Arti 124.82 325 *i* PKIKP **PKPdf 16 31 21.5 -0.8**
ARU 16 33 15.8
ARU 16 37 38.1
ARU Arti 124.82 325 *e*PKPdf **PKPdf 16 31 21.6 -0.8**
ARU *e*PP **PP 16 33 15.6 -4.6**
AB31 Akbulak array 125.67 317 *i* PKIKP **PKPdf 16 31 23.6 -0.6**
AB31 pmax pmax
comp=Z,9.0nm,0.8s
ABKAR Akbulak array 125.67 317 *e*PKPdf **PKPdf 16 31 23.6 -0.6**
BOSA Boshof 126.24 206 PKP **PKPdf 16 31 26.8 +0.5**
comp=Z,9.2nm,1.0s,baz=160,slow=2.9,SNR=9.0

BOSA PKKPbc **PKKPbc 16 41 01.0 -1.1**
comp=Z,2.5nm,0.7s,baz=343,slow=4.1,SNR=3.6
BOSA Boshof 126.24 206 *e*PKIKP **PKPdf 16 31 25.3 -0.9**
BOSA Boshof 126.24 206 *e*PKPdf **PKPdf 16 31 25.3 -0.9**
BOSA PKKPbc **PKKPbc 16 41 01.0 -1.1**
AKTO Aktyubinsk 126.66 318 PKP **PKPdf 16 31 26.1 0.0**
comp=Z,19nm,0.8s,baz=78,slow=2.7,SNR=81
AKTO Aktyubinsk 126.66 318 PKIKP **PKPdf 16 31 25.7 -0.4**
AKTO pmax pmax
comp=Z,29nm,0.9s
NRS Narsarsuaq 127.76 27 *i* P **PKPdf 16 31 27.1 -0.7**
NRS Narsarsuaq 127.76 27 *i* PKIKP **PKPdf 16 31 27.1 -0.7**
SCO Scoresbysund 127.91 10 *i P* **PKPdf 16 31 28.0 +0.1**
SCO Scoresbysund 127.91 10 *i* PKIKP **PKPdf 16 31 28.0 +0.1**
HAMF Hammerfest 127.98 351 *e*PKPdf **PKPdf 16 31 27.9 -0.1**
LVZ Lovozero 128.10 345 *d iP*KIKP **PKPdf 16 31 28.6 +0.2**
LVZ Lovozero 128.10 345 *e*PKPdf **PKPdf 16 31 28.4 0.0**
KEV Kevo 128.21 349 *e*PKIKP **PKPdf 16 31 28.8 +0.3**
KEV Kevo 128.21 349 *e*PKPdf **PKPdf 16 31 28.8 +0.3**
GEYT Alibeck 128.34 303 PKP **PKPdf 16 31 29.9 +0.2**
comp=Z,17nm,0.7s,baz=230,slow=1.2,SNR=38
GEYT PP **PP 16 33 40.4 -3.4**
comp=Z,5.0nm,1.0s,baz=66,slow=7.2,SNR=8.8
GEYT SKPbc SKPbc 16 33 55.9
comp=Z,3.6nm,0.7s,baz=101,slow=3.0,SNR=5.3
ARA0 ARCESS Array S 128.67 349 *e*PKPdf **PKPdf 16 31 28.9 -0.5**
ARCES ARCESS Array B 128.67 349 PKP **PKPdf 16 31 29.2 -0.2**
comp=Z,16nm,0.6s,baz=53,slow=1.3,SNR=58
ARCES SKPbc SKPbc 16 33 57.0
comp=Z,6.3nm,0.9s,baz=46,slow=3.5,SNR=5.1
ARCES SKP **SKPdf 16 34 11.1 +0.7**
comp=Z,3.2nm,0.7s,baz=46,slow=2.6,SNR=3.7
ARE0 ARCESS Array S 128.67 349 *e*PKPdf **PKPdf 16 31 29.3 -0.1**
ARE0 IAmb IAmb 16 31 30.1
comp=Z,20nm,0.6s
ARE0 ARCESS Array S 128.67 349 *e*PKPdf **PKPdf 16 31 29.1 -0.3**
KTK1 Kautokeino 129.51 350 *e*PKPdf **PKPdf 16 31 31.1 +0.1**
KTK1 IAmb IAmb 16 31 31.3
comp=Z,12nm,0.8s
TRO Tromso 129.56 352 *e*PKPdf **PKPdf 16 31 30.5 -0.5**
UOSS Minazif 129.62 286 *e*PKPdf **PKPdf 16 31 31.8 -0.8**
UOSS *e*SKPbc SKPbc 16 34 01.0 -0.4
HATD Hatta, Dubai 129.68 286 *i* PKPdf **PKPdf 16 31 32.8 +0.2**
SNR=7.9
ASHO Ashiyiah 129.73 286 *i* PKPdf **PKPdf 16 31 33.0 +0.2**
SNR=7.0
KLMR Klimovskoe 131.55 336 *e*PKIKP **PKPdf 16 31 33.5 -1.5**
KLMR *e* 16 34 04.1
KLMR *e*PPP PPP 16 36 56.7
KLMR pmax pmax
comp=Z,19nm,0.9s
STEI Steigen 131.62 353 *e*PKPdf **PKPdf 16 31 35.1 +0.1**
STEI IAmb IAmb 16 31 35.8
comp=Z,17nm,0.9s
RCBR Riachuelo 134.94 121 SKPbc **SKPbc 16 34 19.0 -0.9**
comp=Z,8.5nm,0.7s,baz=233,slow=3.8,SNR=6.3
FIA1 FINESS Array S 135.48 343 *e*PKPdf **PKPdf 16 31 41.6 -0.8**
FIA1 *e*PKPdf **PKiKP 16 31 41.8 -2.3**
FIA1 *e*SKPbc **SKPbc 16 34 20.1 +0.1**
FINES FINESS Array B 135.48 343 PKhKP PKPpre 16 31 29.4
comp=Z,1.3nm,0.3s,baz=8.5,slow=2.8,SNR=8.8
FINES PKP **PKPdf 16 31 42.2 -0.2**
comp=Z,16nm,0.8s,baz=50,slow=2.2,SNR=19
FINES SKPbc **SKPbc 16 34 20.7 +0.7**
comp=Z,9.0nm,0.7s,baz=48,slow=2.8,SNR=12
FINES SKP **SKPdf 16 34 24.9 +1.7**
comp=Z,2.7nm,0.6s,baz=45,slow=2.8,SNR=4.0
LSZ Lusaka 136.00 219 *e*PKIKP **PKPdf 16 31 45.1 +0.2**
LSZ Lusaka 136.00 219 *e*PKPdf **PKPdf 16 31 45.1 +0.2**
LSZ *e*SKPbc **SKPbc 16 34 24.1 +0.8**
VRH Novokhopyorsk 136.02 324 *e*PKIKP **PKPdf 16 31 42.8 -0.9**
VRH pmax pmax
comp=Z,50nm,1.0s
OBN Obninsk 136.40 331 *d iP*KIKP **PKPdf 16 31 43.6 -0.6**
OBN pmax pmax
comp=Z,23nm,1.0s
OBN Obninsk 136.40 331 *e*PKPdf **PKPdf 16 31 43.8 -0.5**
OBN *e*SKPbc **SKPbc 16 34 23.2 +0.3**
LPSR Galich'ya Gora 136.76 327 *e*PKIKP **PKPdf 16 31 45.0 0.0**
LPSR pmax pmax
comp=Z,40nm,1.3s
VSR Storozhevoye 137.39 325 *e*PKIKP **PKPdf 16 31 45.2 -1.0**
VSR pmax pmax
comp=Z,20nm,1.0s
TSUM Tsumeb 137.70 203 *e*SKPbc **SKPbc 16 34 28.4 +0.3**
VSU Vasula 137.74 341 *c iP*KIKP **PKPdf 16 31 48.3 +1.7**
GUDG Gudauri 137.80 311 P **PKPdf 16 31 48.2 +0.6**
TBLG Delisi 137.83 310 P **PKPdf 16 31 47.7 +0.3**
TBLG Delisi 137.83 310 PKIKP **PKPdf 16 31 47.7 +0.3**
NCK Nalchik 138.07 313 ⇓*i*PKIKP **PKPdf 16 31 48.6 +0.8**
ZEI Tsey 138.10 312 *i* PKIKP **PKPdf 16 31 47.1 -1.0**
ZEI pmax pmax
comp=Z,24nm,0.8s
GNI Garni 138.27 308 SKPbc **SKPbc 16 34 30.0 +0.9**
comp=Z,2.7nm,0.5s,baz=150,slow=3.4,SNR=5.7
GNI Garni 138.27 308 *e*PKIKP **PKPdf 16 31 48.8 +0.4**
GNI Garni 138.27 308 *e*PKPdf **PKPdf 16 31 48.8 +0.4**
GNI *e*SKPbc **SKPbc 16 34 30.0 +0.9**
KBZ Khabaz 138.47 314 PKhKP PKPpre 16 31 39.6
comp=Z,2.6nm,0.8s,baz=280,slow=1.3,SNR=5.0
KBZ SKPbc **SKPbc 16 34 29.4 +0.2**
comp=Z,2.7nm,0.8s,baz=109,slow=7.3,SNR=5.2
ONI Oni 138.47 312 P **PKPdf 16 31 48.9 +0.3**
ONI Oni 138.47 312 PKIKP **PKPdf 16 31 48.9 +0.3**
KVAR Kislovodsk Arr 138.53 314 SKPbc **SKPbc 16 34 31.2 +1.6**
comp=Z,4.6nm,0.7s,baz=156,slow=5.1,SNR=5.1
KIV Kislovodsk 138.53 314 *e*PKIKP **PKPdf 16 31 48.5 -0.2**
KIV Kislovodsk 138.53 314 *e*PKPdf **PKPdf 16 31 48.5 -0.2**
NC204 NORSAR Array S 138.57 353 *e*PKPpre PKPpre 16 31 38.3
NC405 NORSAR Array S 138.62 353 *e*PKPpre PKPpre 16 31 38.8
NC405 *e*SKPbc **SKPbc 16 34 30.1 +0.9**
FOO Floro 138.69 357 *e* PKPpre 16 31 40.8
FOO *e*PKPdf **PKPdf 16 31 48.5 +0.3**
NB201 NORSAR Array S 138.73 353 *e*PKPpre PKPpre 16 31 38.6
NB201 *e*SKPbc **SKPbc 16 34 30.3 +0.8**
NB2 NORSAR Subarra 138.75 353 PKP PKPpre 16 31 39.0
comp=Z,2.6nm,0.5s,baz=16,slow=3.2
NB2 NORSAR Subarra 138.75 353 PKP PKPpre 16 31 39.0
baz=16,slow=3.2
NOA NORSAR Array B 138.75 353 PKhKP PKPpre 16 31 39.1
comp=Z,12nm,0.7s,baz=19,slow=2.4,SNR=49
NOA PKP **PKiKP 16 31 49.9 -0.9**
comp=Z,1.5nm,0.6s,baz=24,slow=17,SNR=3.5
NOA SKPbc **SKPbc 16 34 29.9 +0.3**
comp=Z,6.4nm,0.8s,baz=14,slow=4.4,SNR=13
NOA SKKPbc **SKKPbc 16 43 12.9 -1.0**
comp=Z,1.8nm,0.8s,baz=189,slow=4.4,SNR=3.4
NEY Neytrino 138.76 313 ⇑*e*PKIKP **PKPdf 16 31 48.3 -1.0**
NBO02 NORSAR Array S 138.78 353 *e*PKPpre PKPpre 16 31 38.8
NBO02 *e*SKPbc **SKPbc 16 34 30.0 +0.4**
BGD Bogdanovka 138.79 310 P **PKPdf 16 31 53.0 +3.6**
NBO00 NORSAR Array S 138.81 353 *e*PKPpre PKPpre 16 31 39.4
NBO00 *e*PKPdf **PKPdf 16 31 49.2 +0.6**
NBO00 *e*SKPbc **SKPbc 16 34 29.8 +0.1**
AKH Akhalkalaki 138.82 310 ⇑*i P* PKPpre 16 31 43.5
NAO01 NORSAR Array S 138.98 353 *e*PKPpre PKPpre 16 31 39.5
NAO01 *e*SKPbc **SKPbc 16 34 30.8 +0.7**
NC602 NORSAR Array S 139.01 353 *e*PKPpre PKPpre 16 31 40.6
KMBO Kilima Mbogo 139.05 243 PKhKP PKPpre 16 31 43.7
comp=Z,3.4nm,0.8s,baz=311,slow=1.4,SNR=9.1
KMBO SKPbc **SKPbc 16 34 32.3 +0.1**
comp=Z,3.9nm,1.1s,baz=8.2,slow=3.7,SNR=5.8
KMBO Kilima Mbogo 139.05 243 PKPpre PKPpre 16 31 43.7
KMBO *e*SKPbc **SKPbc 16 34 33.3 +1.1**
SUE Sulen 139.24 358 *e*PKPdf PKPpre 16 31 41.6
SUE IAmb IAmb 16 31 43.7
comp=Z,18nm,0.8s
CHVG Ch'k'valeri 139.38 313 P PKPpre 16 31 47.9
ODD1 Odda 140.28 356 *e* PKPpre 16 31 45.1
ODD1 *e*PKPdf **PKPdf 16 31 52.0 +0.7**
KONO Kongsberg 140.29 354 *e*PKHKP PKPpre 16 31 44.2
KONO Kongsberg 140.29 354 *e*PKPpre PKPpre 16 31 44.2
KONO *e*SKPbc **SKPbc 16 34 33.6 0.0**
BLS5 Blasjo 140.78 356 *e*PKPdf PKPpre 16 31 47.0
BLS5 IAmb IAmb 16 31 55.6
comp=Z,20nm,1.1s
KMY Karmoy 141.06 357 *e*PKPdf PKPpre 16 31 47.9
KMY IAmb IAmb 16 31 49.1
comp=Z,34nm,0.9s
ANN Anapa 141.61 318 *i* PKHKP PKPpre 16 31 49.2
ANN *e* 16 38 09.8
ANN pmax pmax
comp=Z,27nm,1.0s
HOMB Homborsund 141.76 354 *e*PKPdf PKPpre 16 31 49.9

HOMB IAmb IAmb 16 31 51.6
comp=Z,72nm,0.8s
SNART Snartemo 141.80 355 ePKPdf PKPpre 16 31 49.8
SNART IAmb IAmb 16 31 51.9
comp=Z,18nm,1.0s
MARD Mardin 142.00 305⇓iP PKPpre 16 31 51.2
KELT Kelkit 142.27 310⇓iP **PKPdf 16 31 52.8 -2.9**
DIYA Diyarbakir 142.34 306⇓iP **PKPdf 16 31 52.8 -3.0**
TNCL Tunceli-Merkez 142.41 308⇓iP **PKPdf 16 31 53.3 -2.6**
FURI Furi 142.42 258 ePKPdf **PKPdf 16 31 57.3 +0.5**
SUW Suwalki 142.52 339 ePKP PKPpre 16 31 52.2
SUW Suwalki 142.52 339 ePKHKP PKPpre 16 31 52.2
AKASG Malin Array Be 142.66 331 PKhKP PKPpre 16 31 52.3
comp=Z,108nm,0.7s,baz=43,slow=4.5,SNR=439
AKASG SKPbc **SKPbc 16 34 40.4 +0.5**
comp=Z,4.4nm,0.6s,baz=40,slow=3.2,SNR=13
AKBB Malin Array Si 142.66 331 ePKHKP PKPpre 16 31 52.3
AKBB Malin Array Si 142.66 331 ePKPpre PKPpre 16 31 52.3
AKBB eSKPbc **SKPbc 16 34 40.4 +0.6**
KIEV Kiev 142.67 331 *d*iPKIKP **PKPdf 16 31 55.1 -0.6**
KIEV Kiev 142.67 331 ePKPpre PKPpre 16 31 52.1
KIEV eSKPbc **SKPbc 16 34 39.9 +0.1**
AK11 Malin Array Si 142.70 331 ePKPpre PKPpre 16 31 52.2
AK11 eSKPbc **SKPbc 16 34 39.8 -0.1**
SFNV Sufian 142.75 304 eP **PKPdf 16 31 53.5 -3.0**
REFA Refahiye_ERZ¨ 142.88 309⇓iP **PKPdf 16 31 54.5 -2.2**
ELZG Elazig 143.02 308⇓iP **PKPdf 16 31 56.3 -0.8**
KEMA Kemaliye 143.12 309⇓iP PKPbc 16 31 56.0 +0.5
SHEL Horse Pasture 143.24 168 *i* PKIKP **PKPdf 16 31 58.7 +0.8**
SHEL Horse Pasture 143.24 168 ePKPdf **PKPdf 16 31 58.3 +0.4**
DRUM Mains of Drumt 143.33 4 eP PKPab 16 31 53.6 -1.5
CUZAR Zara_SIVAS 143.43 310⇓iP **PKPdf 16 31 57.2 -0.5**
MUD Monsted U'grnd 143.47 353⇓iP PKPbc 16 31 55.7 0.0
comp=Z,240nm,0.9s
MUD Monsted U'grnd 143.47 353⇓iPKIKP PKPbc 16 31 55.7 0.0
MUD pmax pmax
comp=Z,240nm,0.9s
SIM Simferopol' 143.59 320 *d*iPKIKP PKPbc 16 31 57.0 +0.5
SIM pmax pmax
comp=Z,230nm,0.7s
COP Copenhagen 143.75 350⇓iP PKPbc 16 31 56.5 -0.1
comp=Z,118nm,0.9s
COP Copenhagen 143.75 350⇓iPKIKP PKPbc 16 31 56.5 -0.1
COP pmax pmax
comp=Z,120nm,0.9s
SURC SANLIURFA_SURC 143.79 305⇓iP PKPab 16 31 57.8 +0.2
BSD Bornholm Skovb 143.82 347⇓iP PKPbc 16 31 56.6 -0.3
comp=Z,274nm,0.8s
BSD Bornholm Skovb 143.82 347⇓iPKIKP PKPbc 16 31 56.6 -0.3
BSD pmax pmax
comp=Z,270nm,0.8s
ERBA Erbaa 143.84 312⇓iP **PKPdf 16 31 58.0 -0.2**
CUKAN kangal_SIVAS 143.85 310⇓iP **PKPdf 16 31 58.5 0.0**
AKCD Akcadag 143.87 308⇓iP **PKPdf 16 31 58.7 +0.2**
SCER sogukcermik 143.90 311⇓iP **PKPdf 16 31 59.0 +0.5**
SAMS Samsun-Alacam 143.96 313⇓iP **PKPdf 16 31 58.4 +0.1**
TOKA Tokat 144.18 312⇓iP **PKPab 16 31 58.9 0.0**
CUGUR Gurin_S¨VAS 144.21 309⇓iP **PKPab 16 31 59.9 +0.7**
CUALT Altinyayla-SIV 144.38 310⇓iP **PKPab 16 32 00.6 +0.7**
HAVZ Havza 144.40 313⇓iP **PKPab 16 31 59.8 0.0**
GZT Gaziantep 144.44 306⇓iP **PKPab 16 32 00.1 -0.1**
CUSAR Sarkisla-SIVAS 144.70 310⇓iP **PKPab 16 32 00.9 -0.2**
BOYT Boyabat 144.80 314 *i* P PKPbc 16 32 00.7 +0.3
SORM Soroca 144.83 328⇑iP **PKPdf 16 31 59.1 -0.5**
SORM Soroca 144.83 328 ⇑PKIKP **PKPdf 16 31 59.1 -0.5**
EKA Eskdalemuir Ar 144.86 5 SKKPbc SKKPbc 16 42 46.2 -3.0
comp=Z,16nm,0.8s,baz=155,slow=3.5,SNR=3.7
ESK Eskdalemuir 144.87 5 *i* PKIKP PKPbc 16 32 00.1 0.0
ESK Eskdalemuir 144.87 5 ePKPdf **PKPdf 16 31 59.7 +0.2**
KUZU Kuzuini 145.00 306⇓iP PKPbc 16 32 01.7 +0.5
BEL Belsk 145.14 339 ePKP **PKPbc 16 32 01.5 +0.5**
BEL Belsk 145.14 339 ePKIKP **PKPbc 16 32 01.5 +0.5**
KAMA Osmaniye 145.18 306⇓iP **PKPbc 16 32 01.9 +0.1**
COAL Corum-Alaca 145.25 312⇓iP **PKPbc 16 32 02.4 +0.5**
ANDN Andirin 145.29 307⇓iP **PKPbc 16 32 02.5 +0.4**
DRWC Darouich 145.36 306 eP **PKPdf 16 32 01.6 +0.6**
KIS Kishinev 145.36 327⇓iP **PKPdf 16 32 01.0 +0.5**
comp=Z,400nm,1.5s
KIS Kishinev 145.36 327⇓iPKIKP **PKPdf 16 32 01.0 +0.5**
KIS pmax pmax
comp=Z,400nm,1.5s
RABH Abou Rabah 145.56 302 eP **PKPbc 16 32 03.3 +0.4**
ROOS tl_alroos 145.56 301 eP **PKPbc 16 32 02.3 -0.6**
LVV L¨vov 145.56 334 *c* iPKIKP **PKPbc 16 32 01.8 -0.5**
KESW Keswick, Cumbr 145.60 5 eP **PKPbc 16 32 02.0 -0.3**
BTCH Batrach 145.70 305 eP **PKPbc 16 32 02.6 -0.6**
ILGA Ilgaz 145.76 314⇓iP **PKPbc 16 32 04.0 +0.5**
ZALF Zalf 145.81 299 eP **PKPdf 16 31 60.0 -1.9**
WRDH Warideh 145.89 304 eP **PKPbc 16 32 03.6 -0.2**
WIM Isle of Man 145.90 7 eP **PKPbc 16 32 03.0 -0.1**
CDAG Cicekdag 145.94 312⇓iP **PKPbc 16 32 03.6 -0.2**
YAYL Yayladag 145.97 305⇓iP **PKPbc 16 32 03.6 -0.5**
LEOM Leova 146.00 326⇑iP **PKPbc 16 32 04.4 +0.8**
LEOM Leova 146.00 326 ⇑PKP2 **PKPbc 16 32 04.4 +0.8**
SLNF Slenfeh 146.01 304 eP **PKPbc 16 31 59.0 -3.3**
BIDA Albida 146.10 303 eP **PKPdf 16 32 03.3 +1.0**
ARNB Al Arnab 146.13 305 eP **PKPbc 16 32 04.6 +0.1**
HAWK Haweek 146.17 302 eP **PKPbc 16 32 04.5 -0.2**
FKH Fakeheh 146.24 302 eP **PKPbc 16 32 05.5 +0.6**
KWP Kalwaria Pacla 146.24 335 ePKP **PKPbc 16 32 04.6 +0.3**
KWP Kalwaria Pacla 146.24 335⇑iP **PKPbc 16 32 05.1 +0.8**
KWP Kalwaria Pacla 146.24 335 ⇑PKP2 **PKPbc 16 32 05.1 +0.8**
SALA Sala 146.35 299 eP **PKPbc 16 32 04.8 -0.5**
PRAR RASCA 146.40 329⇑iP **PKPbc 16 32 04.3 -0.5**
BR131 Keskin Array S 146.41 312 ePKPdf **PKPdf 16 32 01.7 -1.1**
BR131 ePKPbc **PKPbc 16 32 05.0 -0.3**
BRTR Keskin Array B 146.41 312 PKP **PKPdf 16 32 01.4 -1.4**
comp=Z,37nm,0.8s,baz=132,slow=2.1,SNR=56
BRTR PKPbc **PKPbc 16 32 04.9 -0.3**
comp=Z,37nm,0.7s,baz=124,slow=2.4,SNR=86
BTIN Bart¨–n 146.46 316⇓iP **PKPbc 16 32 04.4 -0.7**
TLCR 146.52 324⇑iP **PKPbc 16 32 04.5 -0.6**
TLCR 146.52 324 ⇑PKIKP **PKPbc 16 32 04.5 -0.6**
QASN Qassioun 146.53 300 eP PKPpre 16 31 56.5
DSB Dublin 146.57 9 ePKPbc **PKPbc 16 32 05.0 0.0**
HWQ Hawqa 146.60 302 eP **PKPbc 16 32 06.0 +0.1**
DED Mersin 146.66 307⇓iP **PKPbc 16 32 05.5 -0.3**
BUR08 Bucovina Ar. S 146.69 330 ePKPdf **PKPdf 16 32 03.1 +0.2**
BUR08 ePKPbc **PKPbc 16 32 06.5 +0.9**
BURAR Bucovina Array 146.70 330⇓iP **PKPbc 16 32 06.3 +0.6**
BURAR Bucovina Array 146.70 330 ⇓PKP2 **PKPbc 16 32 06.3 +0.6**
WLF1 Llynfaes 146.77 7 eP **PKPbc 16 32 05.2 -0.3**
AKSY AKSARAY - Alti 146.78 310⇓iP **PKPbc 16 32 06.0 -0.1**
TESR Tescani 146.79 328⇑iP **PKPbc 16 32 05.9 +0.1**
YRC Rhoscolyn 146.79 7 eP **PKPbc 16 32 05.0 -0.5**
BRBR Barbar 146.82 300 eP PKPpre 16 31 57.5
OJC Ojcow 146.84 338 ePKPdf **PKPbc 16 32 06.0 +0.1**
OJC Ojcow 146.84 338⇓ePKP2 **PKPbc 16 32 06.0 +0.1**
OJC Ojcow 146.84 338 ePKPdf **PKPdf 16 32 02.7 -0.3**
OJC ePKPbc **PKPbc 16 32 05.8 0.0**
RCY Rachaya 146.89 300 eP **PKPbc 16 32 07.1 +0.4**
ANTO Ankara 146.93 313 ePKIKP **PKPdf 16 32 02.7 -0.9**
ANTO *e* 16 32 06.8
ANTO Ankara 146.93 313 ePKPdf **PKPdf 16 32 02.6 -0.9**
ANTO ePKPbc **PKPbc 16 32 06.8 +0.3**
BHL Bhannes 146.94 301 eP **PKPbc 16 32 07.1 +0.3**
BR231 Keskin MP Arra 146.96 313 ePKPdf **PKPdf 16 32 02.6 -1.1**
BR231 ePKPbc **PKPbc 16 32 05.8 -0.9**
BR231 ePKPbc **PKiKP 16 32 06.9 -1.6**
KOLS Kolonicke sedl 146.97 335 ePKIKP **PKPdf 16 32 03.8 +0.6**
KOLS *e* 16 32 10.5
KOLS Kolonicke sedl 146.97 335 *e* **PKPdf 16 32 03.8 +0.6**
KOLS Kolonicke sedl 146.97 335 ePKP **PKPbc 16 32 06.9 +0.6**
KOLS *e* 16 32 10.5
KOLS *e* 16 54 51.4
BCAM Yenicaga 146.98 315⇓iP **PKPbc 16 32 06.1 -0.6**
STHS Stebnicka Huta 146.98 336 ePKP2 **PKPbc 16 32 07.3 +1.0**
STHS Stebnicka Huta 146.98 336 ePKP **PKPbc 16 32 07.3 +1.0**
STHS *e* 16 32 10.7
TCHB Talchebab 146.98 299 eP **PKPdf 16 32 03.1 -0.7**
KERG Konya-Eregli 147.00 308⇓iP **PKPbc 16 32 05.9 -1.0**
PETR Petresti 147.02 326⇑iP **PKPbc 16 32 07.8 +1.4**
DQRL Deir Qamar 147.06 301 eP **PKPbc 16 32 07.6 +0.6**
ODBI Odobesti 147.09 326⇓iP **PKPbc 16 32 07.6 +1.0**
KKUL Konya-Kulu 147.15 312⇓iP **PKPbc 16 32 07.7 +0.5**
VRI Vrincioaia 147.19 327⇑iP **PKPbc 16 32 06.7 -0.2**
VRI Vrincioaia 147.19 327 ⇑PKP2 **PKPbc 16 32 06.7 -0.2**
TIRR Tirgusor 147.20 323⇑iP **PKPbc 16 32 07.0 +0.1**
TIRR Tirgusor 147.20 323 ⇑PKP2 **PKPbc 16 32 07.0 +0.1**
TIRR Tirgusor 147.20 323 ePKPbc **PKPbc 16 32 06.6 -0.4**
UZH Uzhgorod 147.20 334 ePKIKP **PKPdf 16 32 02.8 -0.8**
UZH *e* 16 32 10.8
PLOR Plostina 147.24 327⇓iP **PKPbc 16 32 07.1 0.0**
PLOR Plostina 147.24 327 ⇓PKP2 **PKPbc 16 32 07.1 0.0**
FOEL Foel Wylfa 147.28 5 eP **PKPbc 16 32 06.8 -0.1**
EFOR EFORIÉ 147.31 323⇑iP **PKPbc 16 32 08.3 +1.1**
CRVS Cervenica-Dubn 147.32 335 ePKIKP **PKPdf 16 32 04.0 +0.2**
CRVS *e* 16 32 11.8
CRVS Cervenica-Dubn 147.32 335 *e* **PKPdf 16 32 04.0 +0.2**
CRVS Cervenica-Dubn 147.32 335 ePKP **PKPbc 16 32 07.8 +0.6**
CRVS *e* 16 32 11.8
CRVS *e* 16 54 46.5
KIZK Mersin 147.32 306⇓iP **PKPbc 16 32 07.5 -0.1**
HARR Harsova 147.32 324⇑iP **PKPbc 16 32 08.2 +1.0**
HARR Harsova 147.32 324 ⇑PKP2 **PKPbc 16 32 08.2 +1.0**
NIE Niedzica 147.33 337 ePKPdf **PKPbc 16 32 07.9 +0.7**
NIE Niedzica 147.33 337⇓ePKP2 **PKPbc 16 32 07.9 +0.7**
GRER 147.39 326⇑iP **PKPbc 16 32 08.4 +1.0**
KSP Ksiaz 147.40 343 ePKPdf **PKPbc 16 32 08.0 +0.7**
KSP Ksiaz 147.40 343⇓ePKP2 **PKPbc 16 32 08.0 +0.7**
BMR Baia Mare 147.44 332⇓iP **PKPbc 16 32 08.0 +0.5**
BMR Baia Mare 147.44 332 ⇓PKP2 **PKPbc 16 32 08.0 +0.5**
CVDA Cernavoda 147.49 323⇑iP **PKPbc 16 32 08.6 +0.9**
ARCR ARCALIA 147.49 330⇓iP **PKPbc 16 32 08.2 +0.6**
MANR Mangalia 147.49 322⇑iP **PKPbc 16 32 08.8 +1.1**
TRPA Tarpa 147.49 333⇓eP **PKPbc 16 32 07.8 +0.2**
CWF Charnwood Fore 147.56 3 ePKPbc **PKPbc 16 32 07.6 0.0**
PGOR Pogoanele 147.69 325⇑iP **PKPbc 16 32 08.4 +0.2**
OKC Ostrava-Krasne 147.72 340 ePKPDF **PKPdf 16 32 04.7 +0.3**
OKC ⇑*i*PKP **PKPbc 16 32 08.6 +0.5**
OKC ePKPAB **PKPab 16 32 13.1 +0.5**
OKC *es*PKP 16 35 17.9
OKC Ostrava-Krasne 147.72 340 ePKIKP **PKPdf 16 32 04.7 +0.3**
OKC *e* 16 32 13.1
OKC *e* 16 35 17.9
SAHE Sakarya_HENDEK 147.76 316⇓iP **PKPbc 16 32 08.2 -0.4**
UPC Upice 147.78 343 ePKPDF **PKPdf 16 32 05.2 +0.7**
UPC ⇑*i*PKP **PKPbc 16 32 08.9 +0.6**
UPC *es*PKP 16 35 20.8
UPC Upice 147.78 343 ePKIKP **PKPdf 16 32 05.2 +0.7**
UPC *e* 16 35 20.8
ISR Istrita 147.79 326⇑iP **PKPbc 16 32 09.4 +0.9**
ISR Istrita 147.79 326 ⇑PKP2 **PKPbc 16 32 09.4 +0.9**
CLL Collm 147.79 346 ePKPdf **PKPdf 16 32 04.0 -0.5**
CLL ⇓*i*PKPbc **PKPbc 16 32 08.6 +0.3**
comp=Z,204nm,0.8s
CLL *i* PKPab **PKPab 16 32 12.9 +0.1**
comp=Z,75nm,0.8s
CLL *ep*PKPab **pPKPab 16 34 25.0 +3.7**
CLL *e* 16 34 37.0
CLL *e*SKPdf **SKPdf 16 34 45.0 +0.8**
CLL *e*SKPbc **SKiKP 16 34 52.0 +0.5**
CLL Collm 147.79 346⇓ePKHKP PKPpre 16 32 04.0
CLL *i* 16 32 12.9
CLL pmax pmax
comp=Z,204nm,0.8s
CLL Collm 147.79 346 ePKPdf **PKPdf 16 32 03.8 -0.7**
CLL ePKPbc **PKPbc 16 32 08.5 +0.3**
DOPR Dopca 147.80 328⇓iP **PKPbc 16 32 08.1 -0.4**
BTAS Taskesti 147.81 315⇓iP **PKPbc 16 32 08.5 -0.2**
DPC Dobruska-Polom 147.83 342 ePKPDF **PKPdf 16 32 04.5 -0.1**
DPC ⇑*i*PKP **PKiKP 16 32 09.2 -0.6**
DPC ePKPAB **PKPab 16 32 14.3 +1.2**
DPC *ex* x 16 34 31.8
DPC *es*PKP 16 35 20.8
DPC Dobruska-Polom 147.83 342 ePKIKP **PKPdf 16 32 04.5 -0.1**
DPC *e* 16 32 14.3
MLR Muntele Rosu 147.85 327⇑iP **PKPdf 16 32 04.1 -0.8**
MLR Muntele Rosu 147.85 327 ⇑PKHKP **PKPdf 16 32 04.1 -0.8**
MLR Muntele Rosu 147.85 327 ePKPdf **PKPdf 16 32 03.9 -1.0**
MLR ePKPbc **PKPbc 16 32 08.6 -0.2**
MLR *e*SKPbc **SKPbc 16 34 52.0 0.0**
LANS Liptovska Anna 147.86 338 ePKP2 **PKPbc 16 32 10.0 +1.4**
LANS Liptovska Anna 147.86 338 ePKP **PKPbc 16 32 10.0 +1.4**
LANS *e* 16 32 14.6
LANS *e* 16 54 30.8
PHNC Paralimni 147.90 304 P **PKPbc 16 32 10.0 +0.9**
KRLC Kraliky 147.94 341⇑iPKP **PKPbc 16 32 09.3 +0.5**
KRLC ePKPAB **PKPab 16 32 14.5 +1.0**
KRLC Kraliky 147.94 341 *i* PKP2 **PKPbc 16 32 09.3 +0.5**
LPW Lampeter 147.96 7 eP **PKPbc 16 32 08.2 -0.4**
MORC Moravsky Berou 147.97 340⇑iP **PKPbc 16 32 08.8 0.0**
MORC Moravsky Berou 147.97 340 ⇑PKP2 **PKPbc 16 32 08.8 0.0**
MORC Moravsky Berou 147.97 340 ePKPdf **PKPdf 16 32 04.9 0.0**
MORC ePKPbc **PKPbc 16 32 08.6 -0.2**
BRG Berggiesshubel 147.98 345 ePKP **PKPdf 16 32 05.3 +0.5**
comp=Z,31nm,1.5s
BRG *i* 16 32 09.1
comp=Z,99nm,0.8s
BRG *i* 16 32 14.1
comp=Z,87nm,0.8s
BRG *ep*PKP pPKP 16 33 21.6
comp=Z,6.2nm,0.8s
BRG Berggiesshubel 147.98 345 ePKHKP PKPpre 16 32 05.3
BRG *i* 16 32 14.1
BRG pmax pmax
comp=Z,31nm,1.5s
KDHN Kadinhani 148.00 311⇓iP **PKPbc 16 32 08.9 -0.5**
KECS Kecovo 148.03 336 ePKP2 **PKPbc 16 32 10.3 +1.3**
KECS *e* 16 54 43.0
KECS pmax pmax
comp=N,8.0nm,0.8s
KECS Kecovo 148.03 336 ePKP **PKPbc 16 32 10.3 +1.3**
KECS *e* 16 32 14.7
KECS *e* 16 54 43.0
KAND Kocaeli-Kandir 148.06 317⇓iP **PKPbc 16 32 09.0 -0.3**
SECR 148.09 326⇑iP **PKPbc 16 32 09.8 +0.5**
CJR Cluj-Napoca 148.11 331⇓iP **PKPbc 16 32 09.8 +0.5**
CJR Cluj-Napoca 148.11 331 ⇓PKP2 **PKPbc 16 32 09.8 +0.5**
PVCC Panska Ves 148.14 344 ePKPDF **PKPdf 16 32 05.7 +0.6**
PVCC ⇑*i*PKP **PKiKP 16 32 09.8 -0.6**
PVCC Panska Ves 148.14 344 ePKHKP **PKPdf 16 32 05.7 +0.6**
WTSB Winterswijk 148.15 354 ePKPdf **PKPdf 16 32 05.4 +0.4**
WTSB ePKPbc **PKPbc 16 32 09.2 +0.1**
comp=N,192nm,0.6s
MDB Medias 148.16 329⇓iP **PKPbc 16 32 10.6 +1.2**
MDB Medias 148.16 329 ⇓PKP2 **PKPbc 16 32 10.6 +1.2**
ERMK Ermenek 148.18 307⇓iP **PKPbc 16 32 09.9 -0.1**
PLAR PLOIESTI 148.20 326⇑iP **PKPbc 16 32 09.4 -0.1**
SULR 148.24 326⇓iP **PKPbc 16 32 10.0 +0.4**
SSW Stow on the Wo 148.30 4 eP **PKPbc 16 32 09.2 -0.3**
VOIR 148.34 328⇑iP **PKPdf 16 32 07.2 +1.5**
VOIR 148.34 328 ⇑PKHKP **PKPdf 16 32 07.2 +1.5**
MONM Monmouth 148.36 5 eP **PKPbc 16 32 09.4 -0.2**
ROSA Rosais 148.44 48 ePKPbc **PKPbc 16 32 11.1 +0.7**
DRGR 148.45 332⇑iP **PKPbc 16 32 10.8 +0.6**
DRGR 148.45 332 ⇑PKP2 **PKPbc 16 32 10.8 +0.6**
CSS Mathiatis 148.46 304 P **PKPbc 16 32 10.1 -0.4**
CSS Mathiatis 148.46 304 ePKPbc **PKPbc 16 32 09.8 -0.7**
STRD Stroud 148.47 4 eP **PKPbc 16 32 09.3 -0.7**
MAMC Mammari 148.47 305 P **PKPbc 16 32 11.6 +1.1**
PRD Provadia 148.55 322 *i* P **PKPbc 16 32 11.1 +0.7**
ARR Arges 148.59 328⇑iP **PKPbc 16 32 11.5 +0.9**
SKP1 Kophill 148.60 3 eP **PKPbc 16 32 09.6 -0.7**
VYHS Vyhne 148.64 338 ePKP2 **PKPbc 16 32 11.3 +0.8**
VYHS Vyhne 148.64 338 ePKP **PKPbc 16 32 11.3 +0.8**
VYHS *e* 16 32 17.3
PRU Pruhonice 148.65 344 ePKPDF **PKPdf 16 32 05.9 0.0**
PRU ⇑*i*PKP **PKPbc 16 32 10.8 +0.4**
PRU ePKPAB **PKPab 16 32 17.1 +0.7**
PRU Pruhonice 148.65 344 ePKIKP **PKPdf 16 32 05.9 0.0**
PRU *e* 16 32 17.1
GOPC GO Pecny, Ondr 148.65 343 ePKPDF **PKPdf 16 32 06.8 +0.9**
GOPC ⇑*i*PKP **PKPbc 16 32 10.9 +0.4**
GOPC ePKPAB **PKPab 16 32 17.3 +0.9**
GOPC GO Pecny, Ondr 148.65 343 ePKHKP **PKPdf 16 32 06.8 +0.9**
GOPC *e* 16 32 17.3
VRAC Vranov 148.68 341⇑iP **PKPbc 16 32 10.8 +0.2**
VRAC Vranov 148.68 341 ⇑PKHKP **PKPbc 16 32 10.8 +0.2**
PSZ Piszkesteto 148.72 336⇓iP **PKPbc 16 32 10.5 -0.3**
PSZ Piszkesteto 148.72 336⇓eP **PKPbc 16 32 11.0 +0.2**
PSZ Piszkesteto 148.72 336 ⇓PKHKP **PKPbc 16 32 10.5 -0.3**
PSZ Piszkesteto 148.72 336 ePKPdf **PKPdf 16 32 05.6 -0.6**
PSZ ePKPbc **PKPbc 16 32 10.9 +0.2**
AUBOZ BOZOYUK 148.78 315⇓iP **PKPbc 16 32 11.0 -0.2**
GAZI Gazipasa 148.78 307⇓iP **PKPbc 16 32 09.8 -1.4**
GOLR 148.80 327⇑iP **PKPbc 16 32 12.1 +1.1**
ISK Istanbul-Kandi 148.80 318 P **PKPab 16 32 25.0 +7.7**
SZAC Souni 148.87 304 P **PKPbc 16 32 12.5 +1.0**
BUY Buyukada 148.88 317⇓iP **PKPbc 16 32 11.1 -0.1**
NKC Novy Kostel 148.92 346 ePKPDF **PKPdf 16 32 06.5 +0.1**
NKC ⇑*i*PKP **PKiKP 16 32 11.8 -0.3**
NKC ePKPAB **PKPab 16 32 18.0 +0.5**
NKC Novy Kostel 148.92 346 ePKIKP **PKPdf 16 32 06.5 +0.1**
NKC *e* 16 32 18.0
ALFC Alefka 148.96 305 P **PKPbc 16 32 12.3 +0.6**
LOT Lotru 148.96 329⇑iP **PKPbc 16 32 11.4 -0.1**
WOL Wolverton 148.99 3 eP **PKPbc 16 32 10.8 -0.4**
HUMR Humele 149.01 326⇑iP **PKPbc 16 32 11.5 0.0**
DEV Deva 149.05 330⇓iP **PKPbc 16 32 11.1 -0.5**
DEV Deva 149.05 330 ⇓PKHKP **PKPbc 16 32 11.1 -0.5**
SMOL Smolenice 149.10 339 ePKP2 **PKPbc 16 32 12.7 +1.1**
SMOL Smolenice 149.10 339 ePKP **PKPbc 16 32 12.7 +1.1**
SMOL *e* 16 32 18.9
IGD Bursa 149.14 316⇓iP **PKPbc 16 32 10.6 -1.3**
BAGO Egridir - ISPA 149.17 311⇓iP **PKPbc 16 32 11.8 -0.4**
AKMC Akamas 149.21 305 P **PKPbc 16 32 12.4 +0.1**
ELSH Elham, Standar 149.23 1 eP **PKPbc 16 32 12.1 +0.3**
ULDT Uludag 149.25 316⇓iP **PKPbc 16 32 12.2 -0.2**
SIRR Siria 149.32 332⇑iP **PKPbc 16 32 13.0 +0.8**
ZIMR 149.39 325⇑iP **PKPbc 16 32 12.4 0.0**
ZIMR 149.39 325 ⇑PKHKP **PKPbc 16 32 12.4 0.0**
BEBN Eben Emael 149.41 355 PKPbc **PKPbc 16 32 12.4 +0.2**
BEBN Eben Emael 149.41 355 PKPab **PKPab 16 32 19.1 -0.3**
HGN Heimansgroeve 149.42 355 ePKPdf **PKPdf 16 32 07.5 +0.4**
HGN ePKPbc **PKPbc 16 32 12.3 +0.1**
comp=N,96nm,1.0s
HGN ePKPab **PKPab 16 32 19.3 -0.2**
ISP Isparta 149.44 311⇑iP **PKPbc 16 32 12.6 -0.3**
ISP Isparta 149.44 311 P **PKPbc 16 32 11.6 -1.3**
ISP Isparta 149.44 311 ePKHKP **PKPbc 16 32 12.6 -0.3**
ISP Isparta 149.44 311 ePKPbc **PKPbc 16 32 11.9 -1.0**
JMB Yambol 149.48 322 *i* P **PKPbc 16 32 12.8 +0.1**
HMNX Herstmonceux 149.50 2 eP **PKPbc 16 32 12.8 +0.4**
GDZ Gediz 149.56 314⇓iP **PKPbc 16 32 12.7 -0.5**
MEM Membach 149.57 354 PKPbc **PKPbc 16 32 13.0 +0.4**
DYA Yadsworthy 149.63 7 ePKPbc **PKPbc 16 32 12.6 -0.2**
KHC Kasperske Hory 149.68 344 ePKPDF **PKPdf 16 32 07.5 -0.1**
KHC ⇑*i*PKP **PKiKP 16 32 13.5 -0.2**
KHC ePKPAB **PKPab 16 32 21.7 +1.0**
KHC *ep*PKP pPKPdf 16 34 33.5 +11
KHC Kasperske Hory 149.68 344 ePKIKP **PKPdf 16 32 07.5 -0.1**
KHC *e* 16 32 21.7
KHC Kasperske Hory 149.68 344 ePKPdf **PKPdf 16 32 07.3 -0.4**
KHC ePKPbc **PKPbc 16 32 13.2 +0.2**
KHC ePKPab **PKPab 16 32 21.6 +0.8**
GRFO Grafenberg 149.70 348 ePKIKP **PKPdf 16 32 07.6 0.0**
GRFO Grafenberg 149.70 348 ePKPdf **PKPdf 16 32 07.6 0.0**
GRFO ePKPbc **PKiKP 16 32 13.4 -0.3**
EDRB Edirne 149.77 321 P **PKPbc 16 32 13.5 +0.1**
EDRB Edirne 149.77 321 P **PKPbc 16 32 13.5 +0.1**
SNF Seneffe 149.80 357 PKPbc **PKPbc 16 32 13.8 +0.6**
SNF PKPab **PKPab 16 32 21.4 +0.4**
SRE Strehaia 149.81 328⇑iP **PKPbc 16 32 14.3 +0.9**
SRE Strehaia 149.81 328 ⇑PKHKP **PKPbc 16 32 14.3 +0.9**
BCLA Clavier 149.82 355 PKPbc **PKPbc 16 32 13.3 +0.1**
BCLA PKPab **PKPab 16 32 21.3 +0.2**
MENF Mencas 149.82 359 PKP **PKPdf 16 32 08.3 +0.6**
BZS Buzias 149.84 331⇓iP **PKPbc 16 32 13.4 0.0**
BZS Buzias 149.84 331 ⇓PKHKP **PKPbc 16 32 13.4 0.0**
KHAL Karahalli 149.90 313⇓iP **PKPbc 16 32 13.9 -0.1**
GEC2 GERESS Array S 149.91 344 ePKIKP **PKPdf 16 32 07.6 -0.5**
GEC2 *e* 16 32 21.9
GEC2 GERESS Array S 149.91 344 ePKPdf **PKPdf 16 32 07.6 -0.5**
GEC2 ePKPbc **PKPbc 16 32 13.8 +0.1**
GEC2 ePKPab **PKPab 16 32 21.9 +0.1**
GERES GERESS Array B 149.91 344 PKP **PKPdf 16 32 08.1 0.0**
comp=N,3.6nm,0.9s,baz=70,slow=1.6,SNR=28
GERES PKPbc **PKPbc 16 32 13.9 +0.3**
comp=N,36nm,0.8s,baz=42,slow=2.2,SNR=122
GERES PKPab **PKPab 16 32 22.2 +0.4**
comp=N,11nm,0.8s,baz=20,slow=4.4,SNR=11
KORT Korkueli 149.92 310⇓iP **PKPbc 16 32 13.6 -0.5**
GEA0 GERESS Array S 149.92 344 ePKPdf **PKPdf 16 32 07.3 -0.8**
GEA0 ePKPbc **PKPbc 16 32 13.3 -0.3**
GEA0 ePKPab **PKPab 16 32 21.9 +0.1**
DURS Dursunbey 149.97 316⇓iP **PKPbc 16 32 13.7 -0.3**
SOP Sopron 150.12 339⇓eP **PKPbc 16 32 14.4 +0.4**
CONA Conrad Observa 150.12 341 *i* PKPdf **PKPdf 16 32 08.4 0.0**
comp=N,9.4nm,1.0s
CONA *i* PKiKP **PKiKP 16 32 14.7 0.0**
comp=N,68nm,0.7s
CONA *i* PKPab **PKPab 16 32 24.0 +1.3**
comp=N,27nm,0.8s
DOU Dourbes 150.19 356 PKPbc **PKPbc 16 32 14.5 +0.4**
BANR Banloc 150.24 332⇑iP **PKPbc 16 32 15.5 +1.2**
GOLH Golhisar 150.38 311⇓iP **PKPbc 16 32 14.5 -0.6**
KULA Kula-Manisa 150.40 314 P **PKPbc 16 32 15.0 -0.1**
KULA Kula-Manisa 150.40 314 P **PKPbc 16 32 15.0 -0.1**
KESN Edirne-Kesan 150.42 319⇓iP **PKPbc 16 32 14.8 -0.6**
MDVR Moldovita 150.43 330⇑iP **PKPbc 16 32 14.9 0.0**
MPEP Malo Peshtene 150.46 326 *i* P **PKPbc 16 32 15.3 +0.3**
WLF Walferdange 150.49 354 ePKIKP **PKPdf 16 32 08.8 0.0**
WLF *e* 16 32 24.2
WLF Walferdange 150.49 354 ePKPdf **PKPdf 16 32 08.8 0.0**
WLF ePKPbc **PKiKP 16 32 15.6 +0.4**
WLF ePKPab **PKPab 16 32 24.2 +0.2**
DNZL Cakiroluk 150.53 312⇓iP **PKPbc 16 32 15.8 +0.2**
KDZ Kurdzhali 150.67 322 *i* P **PKPbc 16 32 15.3 -0.2**
MOA Molln 150.67 342 *i* PKPdf **PKPdf 16 32 09.0 -0.2**
comp=N,5.7nm,0.9s
MOA *i* PKPbc **PKPbc 16 32 15.4 0.0**
comp=N,21nm,0.6s,SNR=7.9
MOA *i* PKPab **PKPab 16 32 26.0 +1.1**
comp=N,57nm,1.6s
ALN Alexandroupoli 150.76 320 P **PKPbc 16 32 15.0 -0.7**
AKHS Akhisar 150.78 315⇓iP **PKPbc 16 32 15.6 -0.3**
PGB Panagyurishte 150.79 324 *i* P **PKPbc 16 32 15.8 0.0**
AKAS Kas 150.79 309⇓iP **PKPbc 16 32 15.4 -0.7**
ENEZ Enez 150.79 320 P **PKPbc 16 32 15.2 -0.6**
ARSA Arzberg 150.83 340 *i* PKPbc **PKPbc 16 32 15.6 -0.1**
comp=N,12nm,0.9s,SNR=5.6
KSL Kastellorizon 150.84 309 P **PKPbc 16 32 14.8 -1.2**
KSL Kastellorizon 150.84 309 ePKPbc **PKPbc 16 32 14.8 -1.2**
STU Stuttgart 150.96 350 ePKIKP **PKPdf 16 32 09.5 0.0**
STU Stuttgart 150.96 350 ePKPdf **PKPdf 16 32 09.5 0.0**
STU ePKPbc **PKiKP 16 32 16.6 +0.3**
LANF Langenberg 150.97 352 PKP **PKPdf 16 32 10.2 +0.6**
**FETY Fethiye

KKB	Krupnik	151.84 324	*i* P	PKPbc	16 32 18.0	-0.2
URLA	Izmir	151.86 315	‖ *i* P	PKPbc	16 32 17.8	-0.5
SIGR	SIGRI	151.87 317	P	PKPbc	16 32 17.0	-1.3
SIGR	SIGRI	151.87 317	*e*PKPbc	PKPbc	16 32 17.0	-1.3
RETA	Reutte	151.88 347	*i* PKPdf	PKPdf	16 32 10.9	-0.2
	comp=N,7.4nm,1.0s					
RETA			*i* PKPbc	PKPbc	16 32 18.1	-0.1
	comp=N,20nm,0.6s					
RETA			*i* PKPab	PKPab	16 32 30.5	+0.5
	comp=N,43nm,1.2s					
LIA	Limnos Island	151.89 319	P	PKPbc	16 32 17.0	-1.3
LIA	Limnos Island	151.89 319	P	PKPbc	16 32 17.0	-1.3
WTTA	Wattenberg	151.90 345	*i* PKPdf	PKPdf	16 32 11.3	0.0
	comp=N,10nm,0.9s					
WTTA			*i* PKiKP	PKiKP	16 32 18.7	+0.2
	comp=N,40nm,0.5s					
WTTA			*i* PKPab	PKPab	16 32 31.2	+0.9
	comp=N,34nm,0.7s					
THEF	They Montfort	151.93 354	PKP	PKPdf	16 32 10.6	-0.4
MOTA	Moosalm	151.94 346	*i* PKPdf	PKPdf	16 32 11.0	-0.3
	comp=N,10nm,0.7s,SNR=6.8					
MOTA			*i* PKiKP	PKPbc	16 32 18.4	0.0
	comp=N,28nm,0.6s					
MOTA			*i* PKPab	PKPab	16 32 30.9	+0.4
	comp=N,46nm,0.9s					
MYKA	Terra Mystica	151.96 342	*i* PKPdf	PKPdf	16 32 10.4	-0.8
	comp=N,5.7nm,0.9s					
MYKA			*i* PKPbc	PKPbc	16 32 17.6	-0.7
	comp=N,29nm,0.6s,SNR=8.4					
MYKA			*i* PKPab	PKPab	16 32 30.3	-0.1
	comp=N,23nm,0.8s					
ZEY	˜zmir	151.99 315	‖ *i* P	PKPbc	16 32 18.0	-0.5
SQTA	Sankt Quirin	152.04 346	*i* PKiKP	PKiKP	16 32 18.8	+0.1
SMG	Samos	152.05 314	P	PKPbc	16 32 18.0	-0.7
SMG	Samos	152.05 314	P	PKPbc	16 32 18.0	-0.7
BODT	Bodrum	152.05 312	P	PKPbc	16 32 18.0	-0.8
BODT	Bodrum	152.05 312	*e*PKPbc	PKPbc	16 32 18.0	-0.8
ABTA	Abfaltersbach	152.16 344	*i* PKPdf	PKPdf	16 32 11.1	-0.4
	comp=N,22nm,0.8s,SNR=8.6					
ABTA			*i* PKPbc	PKPbc	16 32 18.4	-0.4
	comp=N,62nm,0.6s					
ABTA			*i* PKPab	PKPab	16 32 31.8	+0.5
	comp=N,38nm,0.8s					
MOF	Molkenrain	152.16 352	PKP	PKPdf	16 32 11.6	+0.1
CHOS	Chios island	152.21 316	P	PKPbc	16 32 18.6	-0.5
CHOS	Chios island	152.21 316	P	PKPbc	16 32 18.6	-0.5
DAVA	Damuels	152.26 348	*i* PKPdf	PKPdf	16 32 11.8	+0.1
	comp=N,9.5nm,1.0s					
DAVA			*i* PKPbc	PKPbc	16 32 19.0	-0.1
	comp=N,41nm,1.1s					
DAVA			*i* PKPab	PKPab	16 32 32.3	+0.5
	comp=N,22nm,0.8s					
VISS	Visnje	152.33 340	*i* PKPdf	PKPdf	16 32 11.1	-0.6
VISS			*i* PKPbc	PKPbc	16 32 18.6	-0.5
VISS			*i* PKPab	PKPab	16 32 31.8	-0.2
FETA	Feichten	152.33 346	*i* PKPdf	PKPdf	16 32 11.6	-0.3
	comp=N,22nm,0.8s,SNR=12					
FETA			*i* PKPbc	PKPbc	16 32 19.1	-0.2
	comp=N,31nm,0.7s					
FETA			*i* PKPab	PKPab	16 32 32.8	+0.7
	comp=N,32nm,1.0s					
OUR	Ouranopolis	152.34 321	P	PKPbc	16 32 18.1	-1.1
OUR	Ouranopolis	152.34 321	*e*PKiKP	PKPbc	16 32 18.1	-1.1
OUR	Ouranopolis	152.34 321	*e*PKPbc	PKPbc	16 32 18.1	-1.1
BLY	Banja Luka	152.40 336	‖ *i* P	PKPbc	16 32 19.8	+0.5
KNT	Kendrikon	152.42 324	P	PKPbc	16 32 18.2	-1.2
KNT	Kendrikon	152.42 324	PKiKP	PKPbc	16 32 18.2	-1.2
KNT	Kendrikon	152.42 324	P	PKPbc	16 32 18.2	-1.2
BOJS	Bojanci	152.46 339	*i* PKPdf	PKPdf	16 32 11.8	-0.1
BOJS			*i* PKPbc	PKiKP	16 32 19.6	+0.1
BOJS			*i* PKPab	PKPab	16 32 32.9	+0.4
VAY	Valandovo	152.50 324	P	PKPbc	16 32 18.4	-1.2
VAY	Valandovo	152.50 324	*i* P	PKPbc	16 32 19.1	-0.5
VAY	Valandovo	152.50 324	*e*PKiKP	PKPbc	16 32 18.4	-1.2
VAY	Valandovo	152.50 324	*e*PKPbc	PKPbc	16 32 18.4	-1.2
PLG	Polygyros	152.63 322	P	PKPbc	16 32 18.5	-1.5
PLG	Polygyros	152.63 322	PKiKP	PKPbc	16 32 18.5	-1.5
PLG	Polygyros	152.63 322	P	PKPbc	16 32 18.5	-1.5
SKO	Skopje	152.64 327	P	PKPbc	16 32 19.7	-0.2
SKO	Skopje	152.64 327	*i* P	PKPbc	16 32 20.0	+0.2
SKO	Skopje	152.64 327	*e*PKiKP	PKPbc	16 32 19.7	-0.2
SKO	Skopje	152.64 327	*e*PKPbc	PKPbc	16 32 19.7	-0.2
HORT	Hortiatis	152.68 322	P	PKPbc	16 32 18.5	-1.6
HORT	Hortiatis	152.68 322	P	PKPbc	16 32 18.5	-1.6
LOMF	Lomont	152.70 352	PKP	PKPdf	16 32 13.0	+0.7
PAIG	Paliouri	152.78 321	P	PKPbc	16 32 18.4	-1.8
PAIG	Paliouri	152.78 321	*e*PKiKP	PKPbc	16 32 18.4	-1.8
PAIG	Paliouri	152.78 321	*e*PKPbc	PKPbc	16 32 18.4	-1.8
FUORN	Ofenpass-Fuorn	152.82 347	*e*PKPdf	PKPdf	16 32 12.3	-0.4
FUORN			*e*PKPbc	PKPbc	16 32 20.1	-0.4
FUORN			*e*PKPab	PKPab	16 32 34.9	+0.6
KARP	Karpathos	152.87 309	*e*PKPbc	PKPbc	16 32 20.5	-0.2
KARP			*e*PKPab	PKPab	16 32 34.8	+0.1
AOS	Alonnisos	153.13 319	P	PKPbc	16 32 19.4	-1.6
AOS	Alonnisos	153.13 319	*e*PKPbc	PKPbc	16 32 19.4	-1.6
TUE	Stuetta	153.14 348	*e*PKPdf	PKPdf	16 32 12.8	-0.3
TUE			*e*PKPbc	PKiKP	16 32 21.3	+0.1
TUE			*e*PKPab	PKPab	16 32 36.0	+0.3
LIT	Litokhoron	153.36 322	P	PKPbc	16 32 20.3	-1.2
LIT	Litokhoron	153.36 322	*e*PKiKP	PKPbc	16 32 20.3	-1.2
LIT	Litokhoron	153.36 322	*e*PKPbc	PKPbc	16 32 20.3	-1.2
BIA	Bitola	153.38 325	*i* P	PKPbc	16 32 21.2	-0.4
PDG	Podgorica	153.38 330	‖ *i* P	PKPbc	16 32 20.8	-0.7
PDG	Podgorica	153.38 330	P	PKPbc	16 32 20.7	-0.7
TTG	Podgorica	153.38 330	PKiKP	PKPbc	16 32 20.7	-0.7
TTG	Podgorica	153.38 330	P	PKPbc	16 32 20.7	-0.7
SKIA	Skiathos	153.39 320	P	PKPbc	16 32 20.1	-1.5
XOR	Xorichti	153.43 320	P	PKPbc	16 32 20.5	-1.2
XOR	Xorichti	153.43 320	P	PKPbc	16 32 20.5	-1.2
FNA	Florina	153.52 325	P	PKPbc	16 32 21.1	-0.8
FNA	Florina	153.52 325	PKiKP	PKPbc	16 32 21.1	-0.8
FNA	Florina	153.52 325	P	PKPbc	16 32 21.1	-0.8
OHR	Ohrid	153.59 326	*i* P	PKPdf	16 32 13.3	-0.4
SENIN	Lac Senin/Sane	153.60 351	*e*PKPbc	PKPbc	16 32 22.4	+0.3
SENIN			*e*PKPab	PKPab	16 32 37.8	+0.2
PTL	Penteli	153.81 317	P	PKPbc	16 32 21.3	-1.3
PTL	Penteli	153.81 317	*e*PKPbc	PKPbc	16 32 21.3	-1.3
LKR	Lokris	153.99 319	P	PKPbc	16 32 21.8	-1.1
LKR	Lokris	153.99 319	P	PKPbc	16 32 21.8	-1.1
AGG	Agios Georgios	154.16 321	P	PKPbc	16 32 21.9	-1.4
AGG	Agios Georgios	154.16 321	*e*PKiKP	PKPbc	16 32 22.3	-1.0
AGG			*e*		16 32 39.1	
AGG	Agios Georgios	154.16 321	*e*PKPbc	PKPbc	16 32 22.3	-1.0
AGG			*e*PKPab	PKPab	16 32 39.1	-1.0
LAST	Lasithi	154.27 310	‖ *i* P	PKPbc	16 32 22.4	-1.3
LAST	Lasithi	154.27 310	*e*PKPbc	PKPbc	16 32 23.3	-0.4
LAST			*e*PKPab	PKPab	16 32 41.2	+0.4
MEV	Metsovon	154.29 323	P	PKPbc	16 32 24.1	+0.4
MEV	Metsovon	154.29 323	*e*PKPbc	PKPbc	16 32 24.1	+0.4
AGO	Saint Agoulin	154.30 357	PKP	PKPdf	16 32 14.5	0.0
PLDF	La Plantade	154.36 357	PKP	PKPdf	16 32 14.9	+0.2
DID	Didima	154.54 317	P	PKPbc	16 32 22.5	-1.6
PYM	Petit Puy Mans	154.61 358	PKP	PKPdf	16 32 13.8	-1.2
ANX	Ano Chora	154.68 320	P	PKPbc	16 32 24.6	+0.1
SSB	Saint Sauveur	154.99 355	*e*PKiKP	PKPdf	16 32 15.7	+0.2
SSB			*e*		16 32 25.3	
SSB			*e*		16 32 43.4	
SSB	Saint Sauveur	154.99 355	*e*PKPdf	PKPdf	16 32 15.7	+0.2
SSB			*e*PKPdif	PKPbc	16 32 25.3	+0.5
SSB			*e*PKPab	PKPab	16 32 43.4	0.0
LBL	Lubilhac	155.12 357	PKP	PKPdf	16 32 16.3	+0.6
PDO	Prodromos	155.12 321	P	PKPdf	16 32 24.7	+8.9
MATE	Matera	155.96 331	‖ *i* P	PKPab	16 32 47.9	+0.2
TIP	Timpagrande	157.09 328	‖ *i* P	PKPdf	16 32 17.1	-1.3
TIP	Timpagrande	157.09 328	*e*PKPdf	PKPdf	16 32 17.7	-0.7
TIP			*e*PKPab	PKPab	16 32 52.9	+0.2
PBRG	Braganca	157.46 16	*e*PKPdf	PKPdf	16 32 19.0	+0.2
PBRG	Braganca	157.46 16	*e*PKPab	PKPab	16 32 54.6	+0.4
POLO	Lamas de Olo	157.56 19	*e*PKPdf	PKPdf	16 32 19.6	+0.6
POLO	Lamas de Olo	157.56 19	*e*PKPab	PKPab	16 32 55.1	+0.4
MVO	Moncorvo	157.97 17	*e*PKPdf	PKPdf	16 32 19.5	0.0
MVO	Moncorvo	157.97 17	*e*PKPab	PKPab	16 32 56.9	+0.4
PVIS	Viseu	158.13 20	*e*PKPdf	PKPdf	16 32 20.3	+0.7
PVIS	Viseu	158.13 20	*e*PKPab	PKPab	16 32 57.8	+0.7
MTE	Manteigas	158.52 19	*e*PKPdf	PKPdf	16 32 20.7	+0.6
MTE	Manteigas	158.52 19	*e*PKPab	PKPab	16 32 58.5	-0.4
MTE	Manteigas	158.52 19	*e*PKPdf	PKPdf	16 32 20.4	+0.2
PTOM	Tomar	158.94 22	*e*PKPab	PKPab	16 33 01.1	+0.5
PCBR	Castelo Branco	159.06 20	*e*PKPdf	PKPdf	16 32 21.5	+0.8
PCBR	Castelo Branco	159.06 20	*e*PKPab	PKPab	16 33 01.6	+0.5
PMAFR	Mafra	159.21 24	*e*PKPab	PKPab	16 33 02.3	+0.5
PMRV	Marv??o	159.46 20	*e*PKPdf	PKPdf	16 32 21.5	+0.3
PMRV	Marv??o	159.46 20	*e*PKPab	PKPab	16 33 03.3	+0.4
PMTG	Montargil	159.50 22	*e*PKPdf	PKPdf	16 32 21.4	+0.2
PMTG	Montargil	159.50 22	*e*PKPab	PKPab	16 33 03.1	0.0
PESTR	Estremoz	159.90 21	*e*PKPdf	PKPdf	16 32 21.8	+0.1
PESTR	Estremoz	159.90 21	*e*PKPab	PKPab	16 33 05.4	+0.5
EVO	Evora	160.05 22	*e*PKPdf	PKPdf	16 32 21.8	0.0
EVO	Evora	160.05 22	*e*PKPab	PKPab	16 33 05.9	+0.4
ES19	SONSECA Array	160.12 12	*e*PKPdf	PKPdf	16 32 21.6	-0.3
ES19			*e*PKPab	PKPab	16 33 05.8	-0.1
ESDC	Sonseca Array	160.13 13	PKP	PKPdf	16 32 22.1	+0.1
	comp=N,0.8nm,0.5s,baz=347,slow=3.2,SNR=13					
ESDC			PKPab	PKPab	16 33 06.2	+0.3
	comp=N,7.8nm,0.8s,baz=346,slow=4.1,SNR=31					
ESLA	Sonseca Array	160.13 13	*e*PKPdf	PKPdf	16 32 22.2	+0.2
ESLA			*e*PKPab	PKPab	16 33 05.7	-0.2
PAB	San Pablo	160.18 14	*e*PKIKP	PKPdf	16 32 22.4	+0.3
PAB			*e*		16 33 06.0	
PAB	San Pablo	160.18 14	*e*PKPdf	PKPdf	16 32 22.4	+0.3
PAB			*e*PKPab	PKPab	16 33 06.0	-0.1
PNCL	Nicolau / Gran	160.23 24	*e*PKPdf	PKPdf	16 32 22.9	+0.9
PNCL	Nicolau / Gran	160.23 24	*e*PKPab	PKPab	16 33 06.7	+0.4
PBEJ	Beja	160.55 23	*e*PKPdf	PKPdf	16 32 23.5	+1.1
PBEJ	Beja	160.55 23	*e*PKPab	PKPab	16 33 08.3	+0.6
MESJ	Messejana	160.59 24	*e*P	PKPdf	16 32 23.1	+0.8
MESJ	Messejana	160.59 24	*e*PKPdf	PKPdf	16 32 23.2	+0.8
MESJ	Messejana	160.59 24	*e*PKPab	PKPab	16 33 08.2	+0.3
PTEO	Sao Teotonio	160.64 25	*e*PKPdf	PKPdf	16 32 24.0	+1.5
PTEO	Sao Teotonio	160.64 25	*e*PKPab	PKPab	16 33 08.6	+0.5
PBAR	Barrancos	160.71 21	*e*PKPdf	PKPdf	16 32 23.4	+0.9
PBAR	Barrancos	160.71 21	*e*PKPab	PKPab	16 33 07.6	-0.8
PCVE	Castro Verde	160.84 24	*e*PKPdf	PKPdf	16 32 23.6	+0.9
PCVE	Castro Verde	160.84 24	*e*PKPab	PKPab	16 33 09.5	+0.5
MORF	Marmelete	160.88 26	*e*P	PKPdf	16 32 23.6	+0.8
MORF	Marmelete	160.88 26	*e*PKPdf	PKPdf	16 32 24.0	+1.2
MORF	Marmelete	160.88 26	*e*PKPab	PKPab	16 33 09.5	+0.2
PVAQ	Vaqueiros	161.16 23	*e*PKPdf	PKPdf	16 32 23.9	+0.9
PVAQ	Vaqueiros	161.16 23	*e*PKPab	PKPab	16 33 11.1	+0.7
PBDV	Barranco-do-Ve	161.22 24	*e*PKPdf	PKPdf	16 32 22.9	-0.3
PBDV	Barranco-do-Ve	161.22 24	*e*PKPdf	PKPdf	16 32 24.0	+0.8
PBDV	Barranco-do-Ve	161.22 24	*e*PKPab	PKPab	16 33 11.5	+0.8
KEST	Kesra	163.19 338	PKP	PKPdf	16 32 24.6	-0.6
	comp=N,4.2nm,0.9s,baz=351,slow=6.4,SNR=4.0					
KEST			PKPab	PKPab	16 33 20.0	+0.5
	comp=N,15nm,0.8s,baz=300,slow=0.3,SNR=13					
KEST	Kesra	163.19 338	PKP	PKPdf	16 32 24.6	-0.6
KEST			*e*PKPab	PKPab	16 33 19.5	0.0
LIC	Lamto	164.60 155	*e*PKIKP	PKPdf	16 32 26.1	-0.9
	comp=N,34nm,1.0s					
LIC	Lamto	164.60 155	*e*PKP2	PKPab	16 33 27.7	+1.7
	comp=N,46nm,1.6s					
KIC	Kosan Boka	164.84 155	*e*PKIKP	PKPdf	16 32 25.8	-1.4
	comp=N,51nm,1.0s					
KIC	Kosan Boka	164.84 155	*e*PKP2	PKPab	16 33 28.7	+1.6
	comp=N,46nm,1.0s					
TIC	Toumodi	164.98 154	*e*PKIKP	PKPdf	16 32 25.6	-1.8
TIC	Toumodi	164.98 154	*e*PKP2	PKPab	16 33 29.1	+1.3
DBIC	Dimbokro	165.07 154	PKP	PKPdf	16 32 26.2	-1.2
	comp=N,16nm,0.9s,baz=175,slow=1.5,SNR=13					
DBIC			PKPab	PKPab	16 33 29.3	+1.2
	comp=N,9.8nm,0.8s,baz=175,slow=4.9,SNR=11					
MDT	Midelt	166.39 23	PKP	PKPdf	16 32 29.1	+1.1
	comp=N,9.6nm,0.9s,baz=20,slow=1.8,SNR=16					
MDT			PKPab	PKPab	16 33 35.0	+1.3
	comp=N,6.1nm,0.8s,baz=342,slow=5.1,SNR=7.5					
MDT			PP	PP	16 37 22.4	+0.4
	comp=N,2.1nm,1.0s,baz=317,slow=5.8,SNR=4.1					
TORD	Torodi Ar. Bea	172.87 181	PKP	PKPdf	16 32 31.3	-0.9
	comp=N,9.0nm,0.9s,baz=339,slow=0.2,SNR=38					
TORD			PKPab	PKPab	16 34 03.0	+0.5
	baz=171,slow=3.6					
TAM	Tamanrasset	175.56 304	*e*PKIKP	PKPdf	16 32 33.5	+0.5
TAM	Tamanrasset	175.56 304	*e*PKPdf	PKPdf	16 32 33.5	+0.5

NIED ***04*** *16:14:00, 37.°20N×142.°50E, h11km, Mw3.4 Best double couple: M0 1.57000×10^14 NP1:*ϕ_s*146.00000°,* δ*33.00000°,* λ*-107.00000°. NP2:*ϕ_s*346.00000°,* δ*59.00000°,* λ*-79.00000°.*

JMA 04 16:14:48.8±0.3, 37.°25N×142.°47E, h8km±3km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	1.28 276		P	Pn	16 15 12.2	-0.8
ONAJ	Iwakimizuishiy	1.34 264		P	Pn	16 15 13.4	-0.5
JMM	Marumori	1.47 295		P	Pn	16 15 15.5	-0.1
JMM				S	Sn	16 15 35.0	0.0
JIO	Ouri	1.49 324		P	Pn	16 15 16.1	+0.2
JIO				S	Sn	16 15 35.3	-0.3
JFT	Otama	1.72 280		P	Pn	16 15 19.3	+0.2
JFT				*e*S	Sn	16 15 41.8	+0.6
JOU	Okura	1.81 308		P	Pn	16 15 21.1	+0.8
JOU				S	Sn	16 15 44.0	+0.5
JMK	Ichinoseki	1.96 330		P	Pn	16 15 23.2	+0.8
JMK				*e*S	Sb	16 15 48.5	-0.9
JFY	Yanaizu	2.21 275		P	Pn	16 15 27.2	+1.4
JFY				*e*S	Sn	16 15 54.3	+1.0
JYK	Kaneyama	2.35 316		P	Pn	16 15 28.9	+1.1
JYK				*e*S	Sn	16 15 57.7	+0.8
JOM	Ohasama	2.41 338		P	Pn	16 15 30.1	+1.6
JOM				*e*S	Sn	16 15 59.5	+1.4
JAG	Ashikaga	2.56 252		P	Pn	16 15 31.5	+1.0

ISCJB ***04*** *16:26:25.4±0.5, 30.°77N±0.°04×105.°81W±0.°04, h10km, Error ellipse: s-maj=6.4km s-min=4.5km az=7.6*
NEIC ***04*** *16:26:27.0±0.6, 30.°71N×105.°79W, h10km, ML3.8, MW3.7, Error ellipse: s-maj=8.1km s-min=6.0km az=177.0, Moment Tensor Solution. s23 Moment tensor: Scale 10^14Nm; Mrr-3.39; Mθθ0.00; Mφφ3.39; Mrθ-0.71; Mφθ-1.24; Mφr-1.96; Best double couple: M0 4.20000×10^14 NP1:*ϕ_s*144.00000°,* δ*36.00000°,* λ*-121.00000°. NP2:*ϕ_s*0.00000°,* δ*60.00000°,* λ*-70.00000°. Principal axes: T 4.1700, Plg13.0000°, Azm76.0000°; N 0.0000, Plg17.0000°, Azm170.0000°; P -4.1700, Plg68.0000°, Azm311.0000°;*
MEX ***04*** *16:26:28.1±0.8, 30.°74N×105.°65W, h10km, MD4.3*

ISC 04 16:26:26.0±1.0, 30.°71N±0.°05×105.°85W±0.°04, h10km, n34, σ1°53/45, Texas-Mexico border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CGIG		1.87 260		*e*P	Pb	16 27 00.1	-0.3
CGIG				*e*S	Sn	16 27 23.3	+1.3
CGIG		1.87 260		*e*P	Pb	16 27 00.1	-0.3
CGIG				*e*S	Sn	16 27 23.3	+1.3
GDL2	Guadalupe Moun	1.95 40		*e*Pn	Pn	16 26 59.4	0.0
CLNB	Carlsbad	2.29 47		*e*Pn	Pn	16 27 04.2	+0.2
TX31	Lajitas Ar. Si	2.33 125		*e*Pn	Pn	16 27 04.3	-0.3
121A	Cookes Peak, D	2.46 318		*e*P	Pn	16 27 06.8	+0.5
121A				*e*S	Sn	16 27 36.5	0.0
121A	Cookes Peak, D	2.46 318		*e*Pn	Pn	16 27 06.7	+0.4
121A				*e*Sg	Sg	16 27 44.3	-0.7
319A	Douglas	3.02 284		*e*P	Pn	16 27 15.4	+1.4
319A				*e*S	Sn	16 27 53.6	+3.3
319A	Douglas	3.02 284		*e*Pn	Pn	16 27 15.0	+1.0
BNM	Barren Site	3.49 349		*e*Pn	Pn	16 27 20.8	+0.2
LPM	Los Pinos Moun	3.65 350		*e*Pn	Pn	16 27 22.6	-0.2
HPIG		3.76 178		*e*Pn	Pn	16 27 25.2	+0.9
LAZ	Ladron	3.84 344		*e*Pn	Pn	16 27 23.8	-1.6
MSTX	Muleshoe	4.16 38		*e*Pn	Pn	16 27 29.9	+0.1
ANMO	Albuquerque	4.25 353		*i* P	Pn	16 27 30.2	-0.9
ANMO				*e*S	Sn	16 28 24.3	+3.4
ANMO	Albuquerque	4.25 353		*e*Pn	Pn	16 27 32.5	+1.4
TUC	Tucson	4.51 292		*e*Pn	Pn	16 27 35.2	+0.8
HSIG		4.74 250		*e*Pg	Pg	16 27 55.3	-1.6
HSIG				*e*Sg	Sg	16 28 57.7	-0.6
X18A	Snowflake	5.15 319		*e*Pn	Pn	16 27 43.8	+0.5
JCT	Junction City	5.22 91		*e*Pn	Pn	16 27 44.0	-0.1
AMTX	Amarillo	5.44 39		Pn	Pn	16 27 50.9	+3.6
W18A	Petrified Fore	5.48 324		*e*Pn	Pn	16 27 49.8	+1.9
W18A				*e*Lg	Lg	16 29 36.8	
ABTX	Abilene, Hawle	5.62 69		*e*Pn	Pn	16 27 48.6	-1.1
ABTX				*e*Pg	Pb	16 28 04.7	+0.4
X16A	Lo Mia Camp, P	6.00 310		*e*Pn	Pn	16 27 55.7	+0.6
214A	Organ Pipe Nat	6.09 284		*e*P	Pn	16 27 57.8	+1.7
214A				*e*S	Sn	16 29 05.0	-0.8
214A	Organ Pipe Nat	6.09 284		*e*Pn	Pn	16 27 58.0	+1.8
WUAZ	Wupatki	6.67 317		*e*Pn	Pn	16 28 01.3	-3.0
WUAZ				*e*Pg	Pb	16 28 20.1	-2.0
MVCO	Mesa Verde	6.85 342		*e*Pn	Pn	16 28 06.0	-0.8
Y14A	Wickenburg	6.86 300		*e*Pn	Pn	16 28 08.0	+1.2
SDCO	Great Sand Dun	7.02 2		*e*Pn	Pn	16 28 12.4	+3.2
113A	Mohawk Valley,	7.05 289		*e*Pn	Pn	16 28 11.2	+1.9
113A				*e*Sg	Sg	16 30 12.8	+0.4
WMOK	Wichita Mounta	7.18 54		*e*Pn	Pn	16 28 10.0	-1.1
GLA	Glamis	7.99 289		*e*Pn	Pn	16 28 23.8	+1.6
GLA				*e*Lg	Lg	16 30 44.0	
PV04	Paradox Valley	8.07 343		*e*Pn	Pn	16 28 24.4	+0.9

IDC ***04*** *16:28:59.5±0.8, 37.°89N×142.°06E, h0km, mb3.6/11, mb1 3.8/16, mb1mx3.6/62, mbtmp3.7/16, ML3.8/4, MS3.2/5, Ms1 3.2/5, ms1mx2.8/58, Error ellipse: s-maj=19.5km s-min=15.0km az=112.0*
NIED ***04*** *16:29:00, 37.°80N×141.°90E, h32km, Mw3.9 Best double couple: M0 9.41000×10^14 NP1:*ϕ_s*278.00000°,* δ*67.00000°,* λ*179.00000°. NP2:*ϕ_s*9.00000°,* δ*89.00000°,* λ*23.00000°.*
ISCJB ***04*** *16:29:01.7±0.9, 37.°82N±0.°03×141.°93E±0.°05, h26km±5km, mb4.2/21, MS3.8/4, Error ellipse: s-maj=6.8km s-min=4.1km az=17.9*
JMA ***04*** *16:29:03.6±0.1, 37.°84N×141.°81E, h31km±2km, M4.2*
JMA Felt II J1.
NEIC ***04*** *16:29:05.3±0.8, 37.°83N×141.°94E, h46km±7km, mb4.5/4, Error ellipse: s-maj=11.3km s-min=6.7km az=123.0*
NEIC Recorded [2 JMA] in Fukushima.

ISC 04 16:29:01.0±1.7, 37.°85N±0.°04×141.°93E±0.°06, h11km±9km, n53, σ1°74/67, mb4.2/21, MS3.6/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.75 323		P	Pg	16 29 17.2	+1.6
JIO				S	Sg	16 29 26.1	+0.6
JMM	Marumori	0.90 271		P	Pg	16 29 18.7	+0.4
JMM				S	Sg	16 29 28.9	-1.1
JFK	Kawauchi	0.97 240		P	Pg	16 29 19.6	-0.1
JFK				S	Sg	16 29 31.0	-1.2
JOU	Okura	1.12 298		P	Pg	16 29 22.8	+0.2
JOU				S	Sg	16 29 35.9	-1.2
ONAJ	Iwakimizuishiy	1.17 230		P	Pb	16 29 22.6	-0.7
ONAJ				S	Sg	16 29 36.5	-2.2
JMK	Ichinoseki	1.23 333		P	Pn	16 29 24.6	+0.4
OFUJ	Ofunato	1.24 351		P	Pn	16 29 24.6	+0.2
JFT	Otama	1.30 256		P	Pn	16 29 25.5	+0.3
JFT				S	Sb	16 29 40.6	-1.7
JYS	Shirataka	1.51 285		P	Pn	16 29 28.7	+0.6
JYS				S	Sn	16 29 46.6	-1.2
JYK	Kaneyama	1.63 311		P	Pn	16 29 30.0	+0.4
JYK				S	Sn	16 29 50.7	+0.1
JOM	Ohasama	1.69 343		P	Pn	16 29 31.6	+1.1
JOM				*e*S	Sn	16 29 51.9	-0.3
JFY	Yanaizu	1.82 256		P	Pn	16 29 32.8	+0.5
JFY				*e*S	Sn	16 29 54.3	-1.1
MJAR	Matsushiro Arr	3.24 247		Pn	Pn	16 29 53.4	+1.5
	16nm,0.3s,baz=53,slow=11,SNR=336						
MJAR				Sn	Sn	16 30 35.0	+4.4
	13nm,0.3s,baz=42,slow=22,SNR=5.2						
MJAR				LR	LR	16 31 14.6	
	comp=Z,106nm,20.4s,baz=50,slow=40						
MAJO	Matsushiro	3.25 247		*e*Pn	Pn	16 29 53.4	+1.4
MAT	Matsushiro	3.25 247		P	Pn	16 29 53.5	+1.6
MAT				S	Sn	16 30

X201 Greenbrier Sit 91.52 42 *eP* P 16 42 05.9 -1.9
comp=Z,180nm,1.0s

NIED ***04*** *16:45:00,36.°30N×142.°50E,h8km,Mw4.0 Best double couple: M01.14000×10^15 NP1:φ221.00000°,δ38.00000°, λ119.00000°. NP2:φ6.00000°,δ57.00000°,λ69.00000°.*
IDC ***04*** *16:45:04.2±0.7,36.°7N×142.°62E,h0km,mb3.8/12, mb1 4.0/19,mb1mx3.8/69,mbtmp3.9/19,ML3.7/6,MS2.7/2, Ms1 2.7/2,ms1mx2.4/58,Error ellipse: s-maj=17.1km s-min=15.3km az=117.0*
JMA ***04*** *16:45:07.2±0.1,36.°2N×142.°52E,h56km,M3.8*
NEIC ***04*** *16:45:09.1±0.6,36.°1N×142.°58E,h35km,mb4.3/6,Error ellipse: s-maj=11.3km s-min=8.9km az=114.0*
ISC 04 16:45:04.6±2.8,36.°20N±0.°05×142.°53E±0.°06,h2km±17km, n50,σ1°29/59,mb4.1/18,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.44**	**250**	P	**Pn**	**16 45 32.0**	**+0.3**
CHOJ				S	**Sg**	**16 45 50.2**	**-0.7**
JHO	**Hitachi**	**1.63**	**285**	P	**Pn**	**16 45 33.8**	**-0.6**
JHO				S	**Sn**	**16 45 52.8**	**-3.1**
ONAJ	**Iwakimizuishiy**	**1.66**	**304**	P	**Pn**	**16 45 34.0**	**-0.8**
JFK	**Kawauchi**	**1.77**	**312**	P	**Pn**	**16 45 35.2**	**-1.0**
JFK				*e*S	**Sn**	**16 45 56.1**	**-3.2**
BSO1	**Boso 1**	**1.99**	**220**	P	**Pn**	**16 45 39.8**	**+1.0**
BSO1				*e*S	**Sn**	**16 46 04.0**	**0.0**
JFT	**Otama**	**2.19**	**308**	P	**Pn**	**16 45 42.4**	**+0.3**
JFT				S	**Sn**	**16 46 08.8**	**-1.1**
JAG	**Ashikaga**	**2.49**	**276**	P	**Pn**	**16 45 46.0**	**-0.2**
JAG				S	**Sn**	**16 46 14.6**	**-2.6**
JMK	**Ichinoseki**	**2.94**	**340**	P	**Pn**	**16 45 52.0**	**-0.3**
JRY	**Ryogami san**	**2.94**	**268**	P	**Pn**	**16 45 52.4**	**0.0**
JRY				S	**Sn**	**16 46 26.3**	**-2.0**
JOD2	**Odawara 2**	**2.95**	**253**	P	**Pn**	**16 45 52.9**	**+0.4**
JYK	**Kaneyama**	**3.21**	**328**	P	**Pn**	**16 45 55.8**	**-0.3**
JYN	**Shimob**	**3.31**	**259**	P	**Pn**	**16 45 58.5**	**+1.0**
MJAR	**Matsushiro Arr**	**3.50**	**277**	Pn	**Pn**	**16 46 00.7**	**+0.6**
	6.9nm,0.3s,baz=90,slow=16,SNR=140						
MJAR				Sn	**Sn**	**16 46 44.2**	**+2.1**
	4.9nm,0.3s,baz=79,slow=17,SNR=6.8						
MAJO	**Matsushiro**	**3.50**	**277**	*e*Pn	**Pn**	**16 46 01.2**	**+1.1**
MAT	**Matsushiro**	**3.50**	**277**	P	**Pn**	**16 46 01.1**	**+1.0**
MAT				S	**Sn**	**16 46 43.8**	**+1.7**
MAT	**Matsushiro**	**3.50**	**277**	P	**Pn**	**16 46 01.3**	**+1.2**
MAT				*e*S	**Sn**	**16 46 41.4**	**-0.7**
JHJ2	**Mitsune**	**3.80**	**217**	*e*Pn	**Pn**	**16 46 03.6**	**-0.6**
JHJ	**Hachijo jima 2**	**3.81**	**217**	Pn	**Pn**	**16 46 04.2**	**-0.1**
	18nm,0.3s,baz=305,slow=23,SNR=11						
JHJ				Sn	**Sn**	**16 46 46.1**	**-3.6**
	75nm,0.3s,baz=246,slow=20,SNR=12						
ERM	**Erimo**	**5.83**	**5**	*e*Pn	**Pn**	**16 46 30.1**	**-2.0**
ASAJ	**Asahikawa**	**7.91**	**0**	Pn	**Pn**	**16 46 59.7**	**-0.9**
	1.0nm,0.3s,baz=209,slow=17,SNR=15						
ASAJ				Sn	Sn	16 48 23.2	-7.5
	0.6nm,0.3s,baz=331,slow=19,SNR=3.2						
CBIJ	**Chichi jima**	**9.08**	**182**	Pn	**Pn**	**16 47 15.8**	**-0.9**
CBIJ				Sn	Sn	16 48 49.0	-10
JCJ	**Chichijima**	**9.08**	**182**	Pn	**Pn**	**16 47 15.6**	**-1.0**
	3.2nm,0.3s,baz=119,slow=19,SNR=4.3						
JCJ				Sn	Sn	16 48 49.0	-10
	baz=7.2,slow=18						
JNU	**Nakatsue**	**10.07**	**256**	Pn	**Pn**	**16 47 30.4**	**0.0**
	0.5nm,0.3s,baz=291,slow=5.2,SNR=4.9						
USRK	**Ussuriysk Ar.**	**11.34**	**318**	Pn	**Pn**	**16 47 48.8**	**+1.1**
	0.3nm,0.3s,baz=127,slow=14,SNR=5.7						
KSRS	**Korea Array**	**11.77**	**280**	Pn	Pn	16 47 56.9	+3.4
	0.1nm,0.3s,baz=96,slow=13,SNR=6.5						
KSRS				LR	LR	16 52 36.9	
	comp=Z,28nm,21.5s,baz=135,slow=38						
KSAR	**Wonju Array Be**	**11.80**	**280**	Pn	**Pn**	**16 47 56.9**	**+3.0**
KLR	**Kul'dur**	**15.22**	**332**	Pn	**Pn**	**16 48 38.6**	**-1.9**
	0.1nm,0.3s,baz=139,slow=11,SNR=3.2						
SEY	**Seymchan**	**27.45**	**10**	P	**P**	**16 50 52.1**	**+0.5**
	0.8nm,0.7s,baz=217,slow=20,SNR=2.4						
ENH	**Enshi**	**28.17**	**267**	*e*P	**P**	**16 50 58.8**	**+0.3**
	5.0nm,0.6s						
ULN	**Ulaanbaatar**	**28.57**	**305**	*e*P	**P**	**16 51 03.7**	**+1.8**
	4.5nm,1.0s						
ZAA0	**Zalesovo Array**	**43.14**	**313**	*e*P	**P**	**16 53 06.5**	**+0.3**
ZALV	**Zalesovo Beam**	**43.14**	**313**	P	**P**	**16 53 06.8**	**+0.6**
	1.6nm,0.5s,baz=98,slow=7.1,SNR=7.2						
MK01	**Makanchi Array**	**45.32**	**303**	*e*P	**P**	**16 53 24.1**	**+0.2**
MK31	**Makanchi Array**	**45.32**	**303**	*e*P	**P**	**16 53 24.4**	**+0.5**
MKAR	**Makanchi Array**	**45.32**	**303**	P	**P**	**16 53 24.5**	**+0.5**
	2.4nm,0.6s,baz=86,slow=10,SNR=25						
MAKZ	**Makanchi**	**45.53**	**303**	*e*P	**P**	**16 53 25.5**	**-0.1**
	4.2nm,1.0s						
KURK	**Kurchatov**	**47.15**	**309**	P	**P**	**16 53 38.5**	**+0.3**
KURBB	**Kurchatov Arra**	**47.22**	**309**	P	**P**	**16 53 38.5**	**-0.3**
	1.2nm,0.5s,baz=85,slow=7.9,SNR=16						
ILAR	**Eielson Array**	**49.73**	**32**	P	**P**	**16 53 58.1**	**+0.3**
	0.3nm,0.6s,baz=258,slow=7.1,SNR=5.3						
TKM2	**Tokmak 2**	**50.82**	**299**	*e*P	**P**	**16 54 07.8**	**+1.1**
	7.8nm,1.1s						
LEM	**Lembang**	**53.90**	**225**	LR	LR	17 15 03.0	
	comp=Z,11nm,19.4s,baz=168,slow=33						
KKAR	**Karatay Array**	**54.32**	**301**	P	**P**	**16 54 33.1**	**+0.6**
	0.7nm,0.5s						
WRA	**Warramunga Arr**	**56.37**	**189**	P	**P**	**16 54 46.6**	**-0.7**
	2.0nm,0.9s,baz=12,slow=7.4,SNR=8.5						
ABKAR	**Akbulak array**	**59.16**	**311**	*e*P	**P**	**16 55 06.3**	**-0.4**
	2.0nm,0.5s						
AKTO	**Aktyubinsk**	**59.90**	**313**	P	**P**	**16 55 12.4**	**+0.6**
	0.5nm,0.5s,baz=86,slow=10,SNR=3.4						
ASAR	**Alice Springs**	**60.09**	**189**	P	**P**	**16 55 13.6**	**+0.2**
	0.9nm,0.9s,baz=11,slow=6.0,SNR=6.1						
YKA	**Yellowknife Ar**	**64.08**	**30**	P	**P**	**16 55 38.3**	**-1.4**
	0.1nm,0.5s,baz=302,slow=6.6,SNR=3.2						
KBZ	**Khabaz**	**72.12**	**311**	P	**P**	**16 56 31.1**	**+0.6**
	1.3nm,0.8s,baz=49,slow=2.4,SNR=3.8						
NVAR	**Mina Array Bea**	**74.77**	**53**	P	**P**	**16 56 47.2**	**+0.7**
	0.9nm,0.7s,baz=269,slow=5.2,SNR=5.3						
TXAR	**Lajitas Array**	**89.92**	**53**	P	**P**	**16 58 05.2**	**-0.5**
	0.1nm,0.3s,baz=289,slow=2.8,SNR=2.5						

IDC ***04*** *16:52:24.1±2.0,2.°70N×123.°36E,h0km,mb3.4/3, mb1 3.6/3,mb1mx3.3/43,mbtmp3.4/3,Error ellipse: s-maj=278.4km s-min=26.2km az=63.0*
DJA ***04*** *16:52:36.5±1.5,1.°N±4.×12.°1E±.°,h35km±18km,M4.5/6, mb5.6/1,MLv4.0/6*
ISC 04 16:52:30.6±1.5,1.°9N±0.°2×121.°8E±0.°4,h35km,n7,σ1°63/7, mb3.2/3,Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MRSI	**Marisa**	**1.45**	**174**	P	**Pn**	**16 52 55.4**	**+0.9**
MRSI				S	**Sn**	**16 53 11.2**	**-1.1**
LUWI	**Luwuk**	**3.11**	**162**	P	**Pn**	**16 53 18.8**	**+1.5**
LUWI				S	**Sn**	**16 53 53.2**	**-0.1**
TTSI	**Tana Toraja**	**5.32**	**202**	P	Pn	16 53 40.4	-7.3
BKB	**Balikpapan**	**5.83**	**237**	P	Pn	16 53 45.6	-9.1
WRA	**Warramunga Arr**	**24.98**	**151**	P	**P**	**16 57 48.8**	**-2.5**
	0.5nm,0.7s,baz=336,slow=9.6,SNR=6.4						
ASAR	**Alice Springs**	**28.04**	**156**	P	**P**	**16 58 18.8**	**-0.1**
	0.3nm,0.8s,baz=345,slow=16,SNR=4.4						
MKAR	**Makanchi Array**	**56.34**	**328**	P	**P**	**17 02 08.3**	**0.0**
	0.1nm,0.3s,baz=128,slow=8.9,SNR=6.0						

ISCJB ***04*** *16:53:35.6±0.3,51.°54N±0.°02×16.°09E±0.°02,h0km, mb3.2/1,Error ellipse: s-maj=2.3km s-min=2.2km az=17.0*
CSEM ***04*** *16:53:39.2±0.2,51.°49N×16.°14E,h2km,ML3.8/14,Error ellipse: s-maj=3.3km s-min=2.7km az=16.0*
LDG ***04*** *16:53:39.1±0.1,51.°50N×16.°08E,h1km,Ml3.5/20,Error ellipse: s-maj=3.0km s-min=1.8km az=2.0,Suspected Mining induced.*
IDC ***04*** *16:53:39.6±0.7,51.°54N×15.°98E,h0km,mb3.5/1, mb1 3.5/9,mb1mx3.3/48,mbtmp3.4/9,ML3.5/8,Error ellipse: s-maj=12.7km s-min=6.3km az=107.0*
PRU ***04*** *16:53:40.8,51.°44N×16.°09E,h0km*
BGR ***04*** *16:53:40.9±0.5,51.°47N×16.°11E,h1km,ML3.4/12,Error ellipse: s-maj=6.7km s-min=3.3km az=18.0*
WAR ***04*** *16:53:40.4,51.°48N×16.°11E,h1km,Mw3.1*
ISC 04 16:53:37.3±0.6,51.°57N±0.°03×16.°13E±0.°02,h0km,n133, σ2°21/224,3C-10D,Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.74**	**172**	*i* Pg	**Pb**	**16 53 52.6**	**-0.4**
KSP				*i* Sg	**Sg**	**16 54 01.3**	**+0.4**
KSP				*e*		16 54 04.5	
KSP	**Ksiaz**	**0.74**	**172**	Pg	**Pb**	**16 53 52.6**	**-0.4**
KSP				*i* Sg	**Sg**	**16 54 01.3**	**+0.4**
KSP	**Ksiaz**	**0.74**	**172**	*e*Pg	**Pb**	**16 53 52.6**	**-0.4**
KSP				*e*Sg	**Sg**	**16 54 02.0**	**+1.1**
KSP	**Ksiaz**	**0.74**	**172**	*i* Pgd	**Pb**	**16 53 52.6**	**-0.4**
KSP				*i* Sg	**Sg**	**16 54 01.3**	**+0.4**
KSP				*e*		16 54 04.5	
UPC	**Upice**	**1.07**	**184**	⇓*i*PG	**Pb**	**16 53 58.6**	**0.0**
UPC				*e*SG	**Sg**	**16 54 11.6**	**+0.1**
	comp=Z,306nm,0.3s						
UPC	**Upice**	**1.07**	**184**	Pg	**Pb**	**16 53 58.6**	**0.0**
UPC				Sg	**Sg**	**16 54 11.6**	**+0.1**
	306nm,0.3s						
DPC	**Dobruska-Polom**	**1.23**	**174**	⇓*i*PG	**Pb**	**16 54 01.4**	**0.0**
DPC				*e*SG	**Sg**	**16 54 15.9**	**-0.8**
	comp=Z,135nm,0.4s						
DPC	**Dobruska-Polom**	**1.23**	**174**	Pg	**Pb**	**16 54 01.3**	**0.0**
DPC				Sg	**Sg**	**16 54 15.9**	**-0.8**
	135nm,0.4s						
DPC	**Dobruska-Polom**	**1.23**	**174**	*e*Pg	**Pb**	**16 54 01.3**	**0.0**
PVCC	**Panska Ves**	**1.43**	**224**	⇓*e*PG	**Pb**	**16 54 05.7**	**+0.8**
PVCC				*e*SG	**Sn**	**16 54 24.6**	**+0.5**
	comp=Z,583nm,0.3s						
PVCC	**Panska Ves**	**1.43**	**224**	Pg	**Pb**	**16 54 05.7**	**+0.8**
PVCC				Sg	**Sn**	**16 54 24.6**	**+0.5**
	583nm,0.3s						
BRG	**Berggiesshubel**	**1.54**	**244**	PN	**Pg**	**16 54 06.9**	**+0.1**
BRG				PG	**Pb**	**16 54 08.8**	**+2.1**
BRG				SG	**Sg**	**16 54 28.5**	**+1.8**
	281nm,0.3s						
BRG	**Berggiesshubel**	**1.54**	**244**	Pn	**Pg**	**16 54 06.9**	**+0.1**
BRG				Sg	**Sg**	**16 54 28.6**	**+1.8**
BRG	**Berggiesshubel**	**1.54**	**244**	*e*Pn	**Pg**	**16 54 06.9**	**+0.1**
BRG				*e*Sg	**Sg**	**16 54 28.6**	**+1.9**
KRLC	**Kraliky**	**1.55**	**164**	⇓*e*PG	**Pb**	**16 54 06.9**	**0.0**
KRLC				*e*SG	**Sn**	**16 54 27.1**	**0.0**
KRLC	**Kraliky**	**1.55**	**164**	Pg	**Pb**	**16 54 06.9**	**0.0**
KRLC				Sg	**Sn**	**16 54 27.1**	**0.0**
FBE	**Freiberg**	**1.86**	**251**	Pn	**Pg**	**16 54 13.0**	**+0.1**
FBE				Sg	**Sg**	**16 54 38.4**	**+1.4**
FBE	**Freiberg**	**1.86**	**251**	*e*Pn	**Pg**	**16 54 13.0**	**+0.1**
FBE				*e*Sg	**Sg**	**16 54 38.4**	**+1.4**
GOPC	**GO Pecny, Ondr**	**1.86**	**208**	⇓*e*PN	**Pn**	**16 54 11.1**	**+0.6**
GOPC				*e*PG	**Pg**	**16 54 12.8**	**-0.2**
GOPC				*e*SG	**Sb**	**16 54 36.3**	**+0.2**
	comp=Z,60nm,0.3s						
GOPC	**GO Pecny, Ondr**	**1.86**	**208**	Pn	**Pn**	**16 54 11.1**	**+0.6**
PRU	**Pruhonice**	**1.88**	**213**	⇓*e*PN	**Pn**	**16 54 11.2**	**+0.6**
PRU				*e*PG	**Pg**	**16 54 13.0**	**-0.2**
PRU				*e*SG	**Sn**	**16 54 35.7**	**+0.7**
	comp=Z,83nm,0.3s						
PRU	**Pruhonice**	**1.88**	**213**	Pn	**Pn**	**16 54 11.2**	**+0.6**
CLL	**Collm**	**1.97**	**264**	*e*Pn	**Pn**	**16 54 13.0**	**+1.1**
CLL				*e*Pg	**Pg**	**16 54 16.0**	**+0.9**
CLL				*i*		16 54 19.3	
CLL				*e*		16 54 31.0	
CLL				*e*Sg	**Sg**	**16 54 42.0**	**+1.4**
	comp=Z,94nm,0.5s						
CLL	**Collm**	**1.97**	**264**	Pn	**Pn**	**16 54 13.1**	**+1.1**
CLL	**Collm**	**1.97**	**264**	*e*Pn	**Pb**	**16 54 13.1**	**-0.9**
RAC	**Raciborz**	**1.98**	**138**	*e*Pg	**Pg**	**16 54 16.0**	**+0.7**
RAC				*e*Sg	**Sg**	**16 54 41.7**	**+0.7**
MORC	**Moravsky Berou**	**2.01**	**153**	⇑*i*P	**Pn**	**16 54 13.5**	**+1.0**
MORC	**Moravsky Berou**	**2.01**	**153**	S	**Sn**	**16 54 35.2**	**-3.1**
MORC	**Moravsky Berou**	**2.01**	**153**	Pn	**Pn**	**16 54 13.2**	**+0.7**
MORC				*e*Sg	**Sn**	**16 54 38.0**	**-0.3**
MORC	**Moravsky Berou**	**2.01**	**153**	*e*Pn	**Pn**	**16 54 13.2**	**+0.7**
OKC	**Ostrava-Krasne**	**2.16**	**143**	⇓*e*PG	**Pg**	**16 54 18.8**	**+0.2**
OKC				*e*SG	**Sb**	**16 54 45.1**	**+0.6**
OKC	**Ostrava-Krasne**	**2.16**	**143**	Pg	**Pg**	**16 54 18.8**	**+0.2**
OKC				Sg	**Sb**	**16 54 45.1**	**+0.6**
VRAC	**Vranov**	**2.29**	**172**	Pn	**Pb**	**16 54 17.9**	**-1.4**
	comp=Z,4.1nm,0.3s,baz=345,slow=14,SNR=20						
VRAC				Sn	**Sn**	**16 54 46.5**	**+1.5**
	comp=Z,5.4nm,0.3s,baz=100,slow=23,SNR=5.0						
VRAC	**Vranov**	**2.29**	**172**	⇑*i*P	**Pb**	**16 54 18.5**	**-0.9**
VRAC	**Vranov**	**2.29**	**172**	S	**Sb**	**16 54 48.7**	**+0.5**
VRAC	**Vranov**	**2.29**	**172**	*e*Pn	**Pb**	**16 54 18.1**	**-1.3**
VRAC				*e*Sg	**Sb**	**16 54 48.5**	**+0.3**
TANN	**Tannenbergstha**	**2.59**	**245**	Pn	**Pn**	**16 54 22.3**	**+1.8**
TANN				Sg	**Sg**	**16 55 00.2**	**-0.2**
TANN	**Tannenbergstha**	**2.59**	**245**	*e*Pn	**Pn**	**16 54 22.3**	**+1.8**
TANN				*e*Sg	**Sg**	**16 55 00.2**	**-0.2**
WERD	**Werda**	**2.66**	**247**	Pn	**Pn**	**16 54 23.1**	**+1.7**
WERD	**Werda**	**2.66**	**247**	*e*Pn	**Pn**	**16 54 23.1**	**+1.7**
NKC	**Novy Kostel**	**2.69**	**242**	⇓*e*PN	**Pn**	**16 54 23.4**	**+1.6**
NKC				*e*PG	**Pg**	**16 54 29.5**	**+0.8**
NKC				*e*SG	**Sg**	**16 55 04.8**	**+1.3**
	comp=Z,141nm,0.3s						
NKC	**Novy Kostel**	**2.69**	**242**	Pn	**Pn**	**16 54 23.4**	**+1.6**
OJC	**Ojcow**	**2.69**	**119**	*e*Pn	**Pn**	**16 54 21.8**	**0.0**
OJC				*e*Pg	**Pg**	**16 54 30.3**	**+1.5**
OJC				*e*Sg	**Sg**	**16 55 05.9**	**+2.2**
OJC	**Ojcow**	**2.69**	**119**	*e*Pn	**Pn**	**16 54 21.8**	**0.0**
OJC	**Ojcow**	**2.69**	**119**	*e*Pn	**Pn**	**16 54 21.8**	**0.0**
OJC				*e*Pg	**Pg**	**16 54 30.3**	**+1.5**
OJC				*e*Sg	**Sg**	**16 55 05.9**	**+2.2**
KHC	**Kasperske Hory**	**2.94**	**215**	⇓*e*PN	**Pn**	**16 54 26.0**	**+0.8**
KHC				*e*PG	**Pg**	**16 54 32.4**	**-1.2**
KHC				*e*SN	**Sn**	**16 55 00.8**	**-0.4**
KHC				*e*SG	**Sg**	**16 55 10.8**	**-0.8**
	comp=Z,62nm,0.6s						
KHC	**Kasperske Hory**	**2.94**	**215**	Pn	**Pn**	**16 54 26.0**	**+0.8**
MOX	**Moxa**	**2.99**	**254**	Pn	**Pn**	**16 54 27.6**	**+1.7**
MOX				Sg	**Sg**	**16 55 15.4**	**+2.1**
MOX	**Moxa**	**2.99**	**254**	*e*Pn	**Pn**	**16 54 27.6**	**+1.7**
MOX				*e*Sg	**Sg**	**16 55 15.4**	**+2.1**
MANZ	**Manzenberg**	**3.00**	**240**	Pn	**Pn**	**16 54 27.8**	**+1.7**
MANZ	**Manzenberg**	**3.00**	**240**	*e*Pn	**Pn**	**16 54 27.8**	**+1.7**
ROTZ	**Rotzenmuhle**	**3.08**	**236**	Pn	**Pn**	**16 54 28.9**	**+1.8**
ROTZ				Sg	**Sg**	**16 55 16.0**	**-0.1**
ROTZ	**Rotzenmuhle**	**3.08**	**236**	*e*Pn	**Pn**	**16 54 28.9**	**+1.8**
ROTZ				*e*Sg	**Sg**	**16 55 16.1**	**-0.1**
GERES	**GERESS Array B**	**3.14**	**211**	Pn	**Pn**	**16 54 29.3**	**+1.2**
	comp=Z,3.7nm,0.3s,baz=28,slow=12,SNR=68						
GERES				Pg	**Pg**	**16 54 36.1**	**-1.4**
	comp=Z,11nm,0.3s,baz=26,slow=17,SNR=47						
GERES				Sn	**Sn**	**16 55 06.7**	**+0.4**
	comp=Z,6.7nm,0.3s,baz=27,slow=22,SNR=5.5						
GERES				Lg	Lg	16 55 16.9	
	comp=Z,14nm,0.3s,baz=32,slow=28,SNR=7.3						
SMOL	**Smolenice**	**3.17**	**164**	*e*Pg	**Pg**	**16 54 40.1**	**+2.0**
SMOL				*e*Sg	**Sb**	**16 55 15.8**	**+2.1**
SMOL	**Smolenice**	**3.17**	**164**	*e*PG	**Pg**	**16 54 40.1**	**+2.0**
SMOL				*e*SG	**Sb**	**16 55 15.8**	**+2.1**
WET	**Wettzell**	**3.20**	**222**	Pn	**Pn**	**16 54 29.9**	**+1.1**
WET	**Wettzell**	**3.20**	**222**	*e*Pn	**Pn**	**16 54 29.9**	**+1.1**
LANS	**Liptovska Anna**	**3.23**	**137**	*e*Pg	**Pg**	**16 54 38.8**	**-0.4**
LANS				*e*Sg	**Sg**	**16 55 19.4**	**-1.7**
LANS	**Liptovska Anna**	**3.23**	**137**	*e*PG	**Pg**	**16 54 38.8**	**-0.4**
LANS				*e*SG	**Sg**	**16 55 19.4**	**-1.7**
NIE	**Niedzica**	**3.43**	**127**	*e*P	**Pg**	**16 54 43.6**	**+0.8**
NIE				*e*S	**Sg**	**16 55 30.0**	**+2.7**
NIE	**Niedzica**	**3.43**	**127**	*e*P	**Pg**	**16 54 43.7**	**+0.8**
NIE				*e*S	**Sg**	**16 55 30.0**	**+2.7**
VYHS	**Vyhne**	**3.54**	**149**	*e*Pg	**Pg**	**16 54 45.1**	**0.0**
VYHS				*e*Sg	**Sg**	**16 55 29.8**	**-1.2**
VYHS	**Vyhne**	**3.54**	**149**	*e*PG	**Pg**	**16 54 45.1**	**0.0**
VYHS				*e*SG	**Sg**	**16 55 29.8**	**-1.2**
VYHS				*e*LG	Lg	16 55 40.5	
CLZ	**Clausthal**	**3.59**	**277**	Pn	**Pn**	**16 54 36.9**	**+2.7**
CLZ	**Clausthal**	**3.59**	**277**	*e*Pn	**Pn**	**16 54 36.9**	**+2.7**
BSD	**Bornholm Skovb**	**3.62**	**349**	*i* P	**Pn**	**16 54 36.7**	**+2.2**
BSD				*e*S	**Sn**	**16 55 17.0**	**-1.0**
BSD	**Bornholm Skovb**	**3.62**	**349**	*i* P	**Pn**	**16 54 36.8**	**+2.2**
	SNR=49						
GRA1	**Grafenberg Arr**	**3.65**	**241**	Pn	**Pn**	**16 54 36.8**	**+1.9**
GRF	**Grafenberg Arr**	**3.65**	**241**	*e*Pn	**Pn**	**16 54 36.8**	**+1.9**
CONA	**Conrad Observa**	**3.65**	**183**	*i* Pn	**Pn**	**16 54 36.4**	**+1.3**
	comp=Z,4.9nm,0.4s						
CONA				*i* Pg	**Pg**	**16 54 46.9**	**-0.3**
	comp=Z,13nm,0.4s						
CONA				*i* Sn	**Sn**	**16 55 10.3**	**-8.5**
	comp=Z,11nm,0.3s						
CONA				*i* Sg	**Sg**	**16 55 33.3**	**-1.2**
	comp=Z,49nm,0.5s						
CONA	**Conrad Observa**	**3.65**	**183**	Pn	**Pn**	**16 54 36.4**	**+1.3**
	comp=Z,4.9nm,0.4s						
STHS	**Stebnicka Huta**	**3.91**	**121**	*e*Pg	**Pg**	**16 54 53.9**	**+1.6**
STHS	**Stebnicka Huta**	**3.91**	**121**	*e*PG	**Pg**	**16 54 53.9**	**+1.6**
STHS				*e*LG	Lg	16 55 58.2	
MOA	**Molln**	**3.92**	**199**	*i* Pn	**Pn**	**16 54 40.4**	**+1.7**
	comp=Z,4.2nm,0.3s						
MOA				*i* Sg	**Sg**	**16 55 42.2**	**-0.8**
	comp=Z,48nm,0.5s						
MOA	**Molln**	**3.92**	**199**	Pn	**Pn**	**16 54 40.4**	**+1.7**
	comp=Z,4.2nm,0.3s						
MOA				Sg	**Sg**	**16 55 42.2**	**-0.8**
	comp=Z,48nm,0.5s						
KECS	**Kecovo**	**4.18**	**136**	*e*Pg	**Pg**	**16 54 56.5**	**-0.8**
KECS				*e*Sg	**Sg**	**16 55 51.2**	**-0.2**
KECS	**Kecovo**	**4.18**	**136**	*e*PG	**Pg**	**16 54 56.5**	**-0.8**
KECS				*e*SG	**Sg**	**16 55 51.2**	**-0.2**
KECS				*e*LG	Lg	16 56 00.2	
ARSA	**Arzberg**	**4.34**	**185**	*i* Pn	**Pn**	**16 54 47.9**	**+3.3**
	comp=Z,4.3nm,0.4s						
ARSA				*i* Sg	**Sb**	**16 55 51.6**	**+4.3**
	comp=Z,30nm,0.6s						
ARSA	**Arzberg**	**4.34**	**185**	Pn	**Pn**	**16 54 47.9**	**+3.3**
	comp=Z,4.3nm,0.4s						
ARSA				Sg	**Sb**	**16 55 51.6**	**+4.3**
	comp=Z,30nm,0.6s						
CRVS	**Cervenica-Dubn**	**4.34**	**126**	*e*Pg	**Pg**	**16 55 01.1**	**+0.6**
CRVS				*e*Sg	**Sg**	**16 55 54.2**	**-2.5**
CRVS	**Cervenica-Dubn**	**4.34**	**126**	*e*PG	**Pg**	**16 55 01.1**	**+0.6**
CRVS				*e*SG	**Sg**	**16 55 54.1**	**-2.6**
LUNU	**Lund**	**4.37**	**340**	*i* P	**Pn**	**16 54 46.1**	**+1.2**
	SNR=49						
LUNU				*i* S	**Sn**	**16 55 37.7**	**+1.3**
	SNR=49						
PSZ	**Piszkesteto**	**4.40**	**145**	⇓*i*P	**Pn**	**16 54 46.9**	**+1.6**
KOLS	**Kolonicke sedl**	**4.75**	**121**	*e*Pg	**Pg**	**16 55 10.5**	**+2.3**
KOLS	**Kolonicke sedl**	**4.75**	**121**	*e*PG	**Pg**	**16 55 10.5**	**+2.3**
KOLS				*e*LG	Lg	16 56 30.3	
KBA	**Koelnbreinsper**	**4.85**	**203**	*i* Pn	**Pn**	**16 54 53.3**	**+1.7**
	comp=Z,5.3nm,0.4s						
KBA				*i* Sg	**Sb**	**16 56 04.6**	**+2.4**
	comp=Z,25nm,0.5s						
KBA	**Koelnbreinsper**	**4.85**	**203**	Pn	**Pn**	**16 54 53.3**	**+1.7**
	comp=Z,5.3nm,0.4s						
SOKA	**Soboth**	**4.95**	**189**	*e*Pn	**Pn**	**16 54 55.2**	**+2.3**
	comp=Z,1.3nm,0.2s						
SOKA	**Soboth**	**4.95**	**189**	Pn	**Pn**	**16 54 55.2**	**+2.3**
	comp=Z,1.3nm,0.2s						
OBKA	**Obir**	**5.17**	**192**	*i* Pn	**Pg**	**16 55 18.3**	**+2.0**
	comp=Z,5.7nm,0.4s						
OBKA				*i* Sg	**Sg**	**16 56 23.1**	**-0.2**
	comp=Z,15nm,0.5s						
MYKA	**Terra Mystica**	**5.21**	**199**	*i* Sg	**Sg**	**16 56 25.1**	**+0.6**
	comp=Z,25nm,0.9s						
MYKA	**Terra Mystica**	**5.21**	**199**	Sg	**Sg**	**16 56 25.1**	**+0.6**
	comp=Z,25nm,0.9s						
WTTA	**Wattenberg**	**5.21**	**216**	*i* Pn	**Pn**	**16 54 59.2**	**+2.6**
	comp=Z,4.2nm,0.5s						
WTTA				*i* Sn	**Sn**	**16 56 00.8**	**+3.3**
	comp=Z,3.6nm,0.4s						
WTTA	**Wattenberg**	**5.21**	**216**	Pn	**Pn**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FINES				Sn	Sn	16 58 18.1	-8.6
	comp=Z,0.2nm,0.3s,baz=211,slow=21,SNR=3.1						
EKA	Eskdalemuir Ar	12.09	296	Pn	Pn	16 56 30.0	-0.6
	baz=97,slow=14,SNR=4.8						
ARCES	ARCESS Array B	18.56	10	Pn	P	16 57 53.7	-1.6
	comp=Z,0.4nm,0.3s,baz=198,slow=12,SNR=16						
TORD	Torodi Ar. Bea	40.06	202	P	P	17 01 16.0	+1.8
	comp=Z,0.4nm,0.6s,baz=3.3,slow=7.9,SNR=3.0						

*ISCJB **04** 17:04:18.1±0.4,24°.21N±0°.02×122°.20E±0°.01,h6km±3km, Error ellipse: s-maj=2.7km s-min=2.1km az=165.6*
*TAP **04** 17:04:18.6,24°.27N×122°.13E,h7km,ML3.6,D*
*JMA **04** 17:04:18.9±0.1,24°.16N×122°.11E,h44km±3km,M3.1*

ISC 04 17:04:17.1±1.1,24°.16N±0°.02×122°.20E±0°.02,h3km±10km, n70,σ0s72/117,3D,Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ENA	Nanau	0.50	302	*i* P	Pg	17 04 27.2	+0.6
	baz=293						
ENA				S	Sg	17 04 33.5	+0.4
	baz=293						
TWC	Suao	0.55	324	*i* P	Pg	17 04 27.8	+0.2
	baz=323						
TWC				*i* S	Sg	17 04 34.1	-0.7
	baz=323						
TWD	Chiawan	0.56	262	*i* P	Pb	17 04 30.0	+0.4
	baz=248						
TWD				S	Sb	17 04 38.3	+0.3
	baz=248						
HWA	Hwalien	0.58	251	*e*P	Pb	17 04 30.8	+0.9
	baz=237						
HWA				*e*S	Sn	17 04 43.2	+1.0
	baz=237						
ESF	Shoufeng Towns	0.70	246	*e*P	Pn	17 04 34.5	+0.6
	baz=234						
ESF				*e*S	Sn	17 04 44.4	-0.9
	baz=234						
EGS		0.72	340	*i* P	Pg	17 04 31.3	+0.3
	baz=343						
EGS				S	Sg	17 04 39.8	-0.5
	baz=343						
ILA	Ilan	0.73	325	*i* P	Pg	17 04 31.6	+0.5
	baz=325						
ILA				S	Sg	17 04 40.8	+0.2
	baz=325						
JYNG	Yonagunijimaku	0.73	67	P	Pn	17 04 34.1	-0.3
JYNG				S	Sn	17 04 44.8	-1.4
TWE	Neicheng	0.74	319	*i* P	Pg	17 04 31.3	0.0
	baz=317						
TWE				*e*S	Sg	17 04 41.0	+0.1
	baz=317						
ENTT	Nioudou	0.75	309	*i* P	Pg	17 04 31.8	+0.3
	baz=305						
ENTT				*e*S	Sg	17 04 41.4	+0.2
	baz=305						
ESL	Shilin	0.79	244	*e*P	Pb	17 04 33.3	-0.2
	baz=233						
YOJ	Yonaguni jima	0.79	68	P	Pn	17 04 34.9	-0.3
YOJ				*e*S	Sn	17 04 46.7	-0.9
NNS	Nan Shan	0.81	290	⇓*i*P	Pb	17 04 33.3	-0.6
	baz=283						
NNS				*e*S	Sb	17 04 44.5	-0.7
	baz=283						
WHF	Hehuan Shan	0.86	269	P	Pb	17 04 34.6	-0.3
	baz=260						
TWB1	Santiao Chiao	0.86	347	*i* P	Pg	17 04 33.9	+0.2
	baz=350						
TWB1				S	Sg	17 04 45.4	+0.5
	baz=350						
NSK	Sanguang	0.92	304	⇓*i*P	Pg	17 04 34.6	-0.3
	baz=299						
NSK				S	Sg	17 04 46.8	0.0
	baz=299						
TWT	Tachien	0.94	276	*i* P	Pb	17 04 36.5	+0.3
	baz=268						
TWT				*e*S	Sb	17 04 49.1	-0.1
	baz=268						
NWF	Wu-fen Shan	0.98	337	*i* P	Pg	17 04 36.3	+0.4
	baz=338						
NWF				*i* S	Sg	17 04 48.7	0.0
	baz=338						
EHY	Hungye	1.04	231	*e*P	Pb	17 04 37.7	-0.1
	baz=223						
EHY				*e*S	Sb	17 04 51.2	-0.6
	baz=223						
TAP1	Taipei	1.07	325	P	Pb	17 04 38.2	0.0
	baz=323						
TAP1				*e*S	Sg	17 04 50.9	-0.6
	baz=323						
TAP	Taipei	1.08	324	*e*P	Pg	17 04 38.1	+0.3
	baz=323						
TAP				*e*S	Sg	17 04 51.6	-0.2
	baz=323						
TWF1	Yuli	1.16	226	*e*P	Pg	17 04 39.4	0.0
	baz=219						
TWS1	Kuangyinshan	1.18	323	*i* P	Pg	17 04 39.5	-0.1
	baz=322						
TWS1				*e*S	Sg	17 04 55.3	+0.4
	baz=322						
NSTT	Nanjuang	1.19	293	⇓*i*P	Pg	17 04 39.7	-0.3
	baz=289						
NSTT				*e*S	Sn	17 04 57.2	-0.3
	baz=289						
NCU	National Centr	1.22	311	*e*P	Pg	17 04 40.2	-0.4
	baz=309						
NCU				*e*S	Sg	17 04 56.8	+0.3
	baz=309						
SMLT	Sun Moon Lake	1.22	257	*e*P	Pg	17 04 40.6	0.0
	baz=250						
SMLT				*e*S	Sg	17 04 56.1	-0.4
	baz=250						
TWY	Chenhua	1.23	334	*e*P	Pb	17 04 41.0	-0.1
	baz=334						
TWY				*e*S	Sb	17 04 57.3	-0.2
	baz=334						
TYC	Yuchr	1.26	258	*e*P	Pg	17 04 41.0	-0.3
	baz=252						
TYC				*e*S	Sn	17 05 00.6	+1.5
	baz=252						
HSN	Hsinchu	1.29	300	*e*S	Sb	17 04 59.0	-0.1
	baz=298						
CHKT	Chengkung	1.31	216	*e*P	Pg	17 04 41.0	-1.2
	baz=210						
TWQ1	Liyutan	1.32	278	P	Pb	17 04 42.5	-0.1
	baz=273						
TWQ1				*e*S	Sb	17 04 59.7	-0.2
	baz=273						
YUS	Yu-Shan	1.33	240	*e*P	Pb	17 04 42.8	-0.2
	baz=233						
YUS				*e*S	Sg	17 04 59.4	-0.5
	baz=233						
NSY	Sanyi	1.34	281	*e*P	Pb	17 04 43.1	+0.1
	baz=276						
NSY				*e*S	Sn	17 05 01.4	+0.2
	baz=276						
TCU	Taichung	1.40	270	P	Pb	17 04 43.7	-0.2
	baz=264						
TCU				*e*S	Sn	17 05 02.2	-0.3
	baz=264						
IRIF	Iriomote-Funau	1.40	83	P	Pg	17 04 44.1	+0.1
IRIF				*e*S	Sn	17 05 03.5	+0.8
WNT	Mingjian	1.42	259	P	Pg	17 04 44.5	+0.1
	baz=253						
WNT				*e*S	Sn	17 05 03.3	+0.3
	baz=253						
ALS	Alishan	1.44	243	*e*P	Pb	17 04 44.5	-0.2
	baz=237						
ALS				*e*S	Sn	17 05 06.2	+2.3
	baz=237						
ELDTW	Lidau	1.46	228	*e*P	Pn	17 04 43.8	-0.7
	baz=223						
PCYT	Pengchaiyu	1.46	355	*e*P	Pn	17 04 43.4	-1.1
	baz=358						
HATJ	Hateruma jima	1.47	94	P	Pg	17 04 46.7	+1.4
CHN5	Tsauling	1.51	248	*e*P	Pb	17 04 45.5	-0.3
	baz=243						
CHN5				*e*S	Sg	17 05 07.8	+2.2
	baz=243						
WGK	Gukeng	1.57	253	P	Pb	17 04 46.8	-0.1
	baz=247						
JKRS	Kuro-shima	1.65	87	P	Pb	17 04 48.1	-0.1
JKRS				*e*S	Sg	17 05 10.4	+0.2
STYT	Tauyuan	1.66	233	P	Pb	17 04 48.1	-0.3
	baz=228						
STYT				*i* S	Sg	17 05 11.4	+1.0
	baz=228						
CHN4	Tsaushan	1.68	242	P	Pb	17 04 48.8	0.0
	baz=236						
CHN4				S	Sg	17 05 11.1	-0.1
	baz=236						
TWG	Pinlang	1.69	218	*e*P	Pn	17 04 47.1	-0.5
	baz=213						
TWG				*e*S	Sn	17 05 08.7	-1.1
	baz=213						
CHN2	Minshiung	1.70	249	*e*S	Sg	17 05 12.1	+0.2
	baz=244						
TTN	Taitung	1.71	215	*e*S	Sg	17 05 11.5	-0.5
	baz=210						
WTP	Ta-pu	1.72	238	P	Pb	17 04 49.4	0.0
	baz=233						
WTP				*e*S	Sb	17 05 11.3	-0.1
	baz=233						
CHY	Chiayi	1.76	248	*e*P	Pn	17 04 47.1	-1.4
	baz=243						
CHY				*e*S	Sg	17 05 14.0	+0.3
	baz=243						
JIJ	Ishigaki jima	1.78	83	P	Pb	17 04 49.6	-0.8
JIJ				*e*S	Sn	17 05 12.0	0.0
WTCT	Ta-ch'eng	1.78	261	*e*S	Sb	17 05 12.8	-0.4
	baz=256						
TWK	Hsinying	1.81	241	*e*S	Sb	17 05 14.3	+0.3
	baz=236						
CHN1	Nanshi	1.82	238	P	Pb	17 04 50.8	-0.3
	baz=233						
CHN1				S	Sb	17 05 14.2	-0.1
	baz=233						
SGST	Jiashian	1.83	234	*e*S	Sg	17 05 15.4	-0.7
	baz=229						
WSF	Szhu	1.89	254	*e*P	Pn	17 04 50.9	+0.6
	baz=249						
WSF				*e*S	Sb	17 05 15.8	-0.5
	baz=249						
ECL	Taimali	1.94	217	*e*P	Pb	17 04 52.2	-0.8
	baz=212						
JISG	Ishigakijimahi	1.97	77	P	Pn	17 04 51.5	+0.1
JISG				*e*S	Sn	17 05 17.0	+0.4
CHN8	Yiju	2.00	246	*e*S	Sb	17 05 18.2	-1.2
	baz=242						
CHN3	Shinhua	2.00	238	*e*S	Sg	17 05 21.5	0.0
	baz=233						
SSD	Sandimen	2.02	226	*e*P	Pb	17 04 53.4	-1.1
	baz=221						
SSD				*e*S	Sb	17 05 19.8	-0.2
	baz=221						
TWM1	Shoushan	2.11	231	*e*P	Pb	17 04 56.0	0.0
	baz=227						
EAST	Anshuo	2.17	215	*e*P	Pn	17 04 54.8	+0.6
	baz=211						
LAY	Lan-yu	2.20	196	*e*P	Pn	17 04 54.1	-0.5
	baz=193						
SCZT	Fangliau	2.30	220	*e*P	Pb	17 04 58.5	-0.8
	baz=216						
SCZT				*e*S	Sb	17 05 28.4	+0.2
	baz=216						
JTJ	Tarama	2.33	78	P	Pn	17 04 56.2	-0.1
JTJ				*e*S	Sn	17 05 25.9	+0.4
TWP	Hsiaoliuchiu	2.48	223	*e*S	Sb	17 05 34.4	+1.1
	baz=220						
HEN	Hengchun	2.54	212	*e*S	Sn	17 05 32.4	+1.7
	baz=209						
TWK1	Hengchun	2.56	210	*e*P	Pn	17 05 01.3	+1.8
	baz=207						
TWK1				*e*S	Sb	17 05 33.6	-2.0
	baz=207						
JIRB	Irabujima	2.79	76	P	Pn	17 05 04.6	+2.0

*IDC **04** 17:16:49.4±0.7,38°.35N×144°.66E,h0km,mb3.8/16, mb1 4.0/20,mb1mx3.9/63,mbtmp3.9/20,ML3.4/4,MS2.8/2, Ms1 2.8/2,ms1mx2.4/67,Error ellipse: s-maj=19.1km s-min=14.1km az=128.0*
*ISCJB **04** 17:16:52.6±0.4,38°.52N±0°.04×144°.49E±0°.04,h29km, mb3.8/19,MS4.5/1,Error ellipse: s-maj=5.7km s-min=4.0km az=149.3*
*NEIC **04** 17:16:52.2±3.9,38°.44N×144°.64E,h16km±24km,mb4.4/3, Error ellipse: s-maj=12.4km s-min=7.1km az=126.0*
*JMA **04** 17:16:53.4±0.3,38°.47N×144°.45E,h43km,M4.1*

ISC 04 17:16:54.4±0.6,38°.50N±0°.05×144°.52E±0°.07,h29km,n51, σ1s29/62,mb3.7/19,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	2.30	285	P	Pn	17 17 29.6	-0.7
JIO	Ouri	2.48	270	P	Pn	17 17 32.0	-0.8
JIO				*e*S	Sn	17 18 00.2	-2.0
JTH	Tanohata	2.51	306	P	Pn	17 17 32.3	-0.9
JTH				S	Sn	17 18 01.6	-1.2
JMK	Ichinoseki	2.62	281	P	Pn	17 17 34.3	-0.3
JOM	Ohasama	2.69	292	P	Pn	17 17 35.3	-0.4
JOM				*e*S	Sn	17 18 06.7	-0.6
JANG	Nango	2.98	310	P	Pn	17 17 38.3	-1.4
JMM	Marumori	3.00	259	P	Pn	17 17 38.9	-1.0
JMM				*e*S	Sn	17 18 12.8	-2.1
JOU	Okura	3.03	269	P	Pn	17 17 40.3	0.0
JFK	Kawauchi	3.09	250	P	Pn	17 17 39.7	-1.6
JRG	Rokugo	3.15	288	P	Pn	17 17 42.7	+0.6
JYK	Kaneyama	3.28	279	P	Pn	17 17 43.9	+0.1
JFT	Otama	3.44	255	P	Pn	17 17 46.0	-0.1
JFT				S	Sn	17 18 25.3	-0.6
JTM	Tenmabayashi	3.50	312	P	Pn	17 17 45.9	-0.9
JTM				*e*S	Sn	17 18 25.7	-1.6
ERM	Erimo	3.66	344	*e*Pn	Pn	17 17 48.3	-0.6
JOT	Ohata	3.92	318	P	Pn	17 17 53.3	+0.7
JOT				*e*S	Sn	17 18 34.5	-3.1
JCH	Churui	4.20	348	P	Pn	17 17 54.2	-2.2
JKB	Kayabe	4.30	323	P	Pn	17 17 58.2	+0.4
JRY	Ryogami san	5.12	243	P	Pn	17 18 07.8	-1.3
JRY				S	Sn	17 19 03.7	-3.6
MJAR	Matsushiro Arr	5.38	251	Pn	Pn	17 18 13.0	+0.3
	4.0nm,0.3s,baz=63,slow=9.8,SNR=114						
MJAR				Sn	Sn	17 19 15.2	+1.5
	0.8nm,0.3s,baz=68,slow=15,SNR=3.1						
MJAR				LR	LR	17 20 25.0	
	comp=Z,99nm,19.0s,baz=55,slow=40						
MAJO	Matsushiro	5.38	251	*e*Pn	Pn	17 18 13.1	+0.4
	46nm,0.6s						
MAT	Matsushiro	5.38	251	P	Pn	17 18 13.3	+0.6
MAT				S	Sn	17 19 15.2	+1.5
ASAJ	Asahikawa	5.79	346	Pn	Pn	17 18 16.5	-1.8
	1.6nm,0.3s,baz=214,slow=12,SNR=14						
ASAJ				Sn	Sn	17 19 23.5	-0.2
	0.4nm,0.3s,baz=32,slow=19,SNR=2.8						
ASAJ	Asahikawa	5.79	346	*e*Pn	Pn	17 18 16.5	-1.8
	4.7nm,0.8s						
ASAJ				Sn	Sn	17 19 23.5	-0.2
JHJ	Hachijo jima 2	6.61	217	Pn	Pn	17 18 25.6	-3.9
	14nm,0.3s,baz=269,slow=22,SNR=9.0						
JHJ				Sn	Sn	17 19 35.3	-8.5
	baz=54,slow=19,SNR=2.3						
USRK	Ussuriysk Ar.	11.00	305	Pn	Pn	17 19 30.0	+0.4
	0.4nm,0.3s,baz=98,slow=15,SNR=7.3						
MDJ	Mudanjiang	12.73	303	P	Pn	17 19 55.7	+2.4
PETK	Petropavlovsk-	17.21	28	P	P	17 20 54.2	+0.3
	0.2nm,0.3s,baz=196,slow=10,SNR=7.3						
PETK				LR	LR	17 27 38.1	
	comp=Z,35nm,21.2s,baz=137,slow=38						
MA2	Magadan	21.46	9	*e*P	P	17 21 39.1	-1.1
	14nm,0.8s						
SEY	Seymchan	24.92	9	P	P	17 22 16.0	+1.4
	6.3nm,0.7s,baz=190,slow=7.5,SNR=28						
YAK	Yakutsk	25.26	344	P	P	17 22 18.1	+0.4
	12nm,0.5s,baz=151,slow=1.5,SNR=8.6						
YAK	Yakutsk	25.26	344	*e*P	P	17 22 18.1	+0.4
	16nm,0.8s						
BILL	Bilibino	31.94	15	*e*P	P	17 23 16.9	-0.3
	2.0nm,0.8s						
ZALV	Zalesovo Beam	42.77	311	P	P	17 24 49.8	+0.8
	0.5nm,0.4s,baz=74,slow=5.1,SNR=2.9						
CMAR	Chiang Mai Arr	44.24	256	P	P	17 25 02.6	+1.3
	0.2nm,0.3s,baz=40,slow=7.1,SNR=4.2						
MKAR	Makanchi Array	45.44	301	P	P	17 25 11.1	+0.6
	0.2nm,0.3s,baz=88,slow=9.8,SNR=4.8						
ILAR	Eielson Array	46.93	33	P	P	17 25 21.5	-0.4
	0.6nm,0.8s,baz=264,slow=6.9,SNR=6.1						
KURK	Kurchatov	46.98	307	*e*P	P	17 25 23.2	+0.7
BVAR	Borovoye Array	51.41	312	P	P	17 25 57.3	+0.9
	0.4nm,0.5s,baz=76,slow=8.2,SNR=4.1						
BRVK	Borovoye	51.46	312	*e*P	P	17 25 57.0	+0.2
INK	Inuvik	51.95	28	P	P	17 26 00.3	+0.2
	0.7nm,0.6s,baz=267,slow=5.1,SNR=4.4						
WRAB	Tennant Creek	58.91	191	*e*P	P	17 26 49.9	-0.8
WRA	Warramunga Arr	58.92	191	P	P	17 26 48.9	-1.9
	1.3nm,0.7s,baz=13,slow=7.2,SNR=10						
YKA	Yellowknife Ar	61.29	31	P	P	17 27 06.2	-0.4
	0.5nm,0.7s,baz=302,slow=6.5,SNR=7.3						
ASAR	Alice Springs	62.64	191	P	P	17 27 15.1	-1.0
	0.8nm,0.9s,baz=12,slow=8.0,SNR=6.1						
FINES	FINESS Array B	68.64	333	P	P	17 27 54.8	+0.4
	1.3nm,0.6s,baz=42,slow=8.8,SNR=7.1						
NVAR	Mina Array Bea	72.14	55	P	P	17 28 16.9	+0.4
	0.5nm,0.6s,baz=282,slow=6.2,SNR=3.8						
NOA	NORSAR Array B	73.75	338	P	P	17 28 25.5	+0.1
	0.3nm,0.6s,baz=44,slow=9.2,SNR=2.3						
AKASG	Malin Array Be	74.61	323	P	P	17 28 31.3	+0.8
	0.3nm,0.3s,baz=44,slow=5.4,SNR=3.4						
PDAR	Pinedale Array	74.88	47	P	P	17 28 32.0	-0.5
	0.5nm,0.7s,baz=349,slow=2.3,SNR=4.3						
TXAR	Lajitas Array	87.27	54	P	P	17 29 38.3	-0.2
	0.2nm,0.5s,baz=318,slow=5.0,SNR=3.4						
VAE	Valguarnera	91.51	323	LR	LR	18 16 47.3	
	comp=Z,142nm,18.0s,baz=37,slow=39						

MAN 04 17:19:58,16°.46N×120°.91E,h54km,mb4.3,ML3.2,MS3.0, 1C-1D,Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BCPH	Baguio City Da	0.32	257	⇑*i*P	Pn	17 20 10.3	+2.4
BCPH				*e*S	Sn	17 20 17.1	+2.1
PCPH	Palayan	0.91	168	⇓*e*P	Pn	17 20 17.0	+2.4
PCPH				*e*S	Sn	17 20 31.8	+5.0
BOLP	Bolinao	0.95	266	*e*P	Pn	17 20 18.5	+3.3
BOLP				*e*S	Sn	17 20 34.1	+6.2
BALP	Baler	0.96	138	*e*P	Pn	17 20 16.4	+1.1
BALP				*e*S	Sn	17 20 29.7	+1.6
CAUP	Cauayan	1.00	61	*e*P	Pn	17 20 16.4	+0.6
CAUP				*e*S	Sn	17 20 31.6	+2.5
SCZP	Santa Cruz	1.17	235	*e*P	Pn	17 20 19.5	+1.4
ABRA	Dolores	1.20	351	*e*P	Pn	17 20 19.5	+1.0
APYP	Conner	1.44	13	*e*P	Pn	17 20 26.1	+4.4

*ISCJB **04** 17:23:25.2±0.4,37°.09N±0°.04×142°.60E±0°.05,h9km, mb4.1/19,Error ellipse: s-maj=5.6km s-min=5.2km az=37.4*
*IDC **04** 17:23:25.8±0.8,37°.08N×142°.71E,h0km,mb4.1/15, mb1 4.1/22,mb1mx3.9/68,mbtmp4.1/22,ML3.6/5,MS3.1/4, Ms1 3.1/4,ms1mx2.8/60,Error ellipse: s-maj=19.5km s-min=13.9km az=91.0*
*JMA **04** 17:23:26.0±0.3,37°.09N×142°.51E,h12km±4km,M4.2*
*NEIC **04** 17:23:28.3±2.7,37°.06N×142°.66E,h17km±17km,mb4.5/4, Error ellipse: s-maj=9.8km s-min=6.0km az=98.0*

ISC 04 17:23:27.4±0.6,37°.08N±0°.05×142°.36E±0°.05,h9km,n43, σ1s11/45,mb4.1/19,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	1.22	284	P	Pg	17 23 50.1	-0.7
ONAJ	Iwakimizuishiy	1.25	272	P	Pn	17 23 50.2	-0.9
ONAJ				*e*S	Sn	17 24 09.0	+1.0
JMM	Marumori	1.47	303	P	Pn	17 23 53.7	-0.4
JMM				*e*S	Sg	17 24 14.7	-0.1
JHO	Hitachi	1.51	253	P	Pb	17 23 54.7	-0.9
JHO				*e*S	Sg	17 24 15.6	-0.3
JIO	Ouri	1.59	330	P	Pn	17 23 55.1	-0.6
JFT	Otama	1.67	286	P	Pb	17 23 57.6	-0.7
JFT				*e*S	Sg	17 24 20.8	-0.3
JOU	Okura	1.86	314	P	Pn	17 23 59.4	0.0
MJAR	Matsushiro Arr	3.37	262	Pn	Pn	17 24 23.1	+2.8
	7.2nm,0.3s,baz=92,slow=15,SNR=98						
MJAR				Sn	Sb	17 25 08.4	-0.1
	5.8nm,0.3s,baz=94,slow=16,SNR=5.9						
MAJO	Matsushiro	3.38	262	*e*Pn	Pb	17 24 23.4	-4.0
MAT	Matsushiro	3.38	262	P	Pb	17 24 23.6	-3.8
MAT				S	Sb	17 25 07.7	-0.8
JHJ2	Mitsune	4.47	209	*e*Pn	Pn	17 24 36.5	+1.1
JHJ	Hachijo jima 2	4.48	209	Pn	Pn	17 24 37.0	+1.5
	14nm,0.3s,baz=340,slow=20,SNR=18						
JHJ				Sn	Sn	17 25 25.8	-1.9
	25nm,0.3s,baz=198,slow=20,SNR=3.2						
ASAJ	Asahikawa	7.03	1	Pn	Pn	17 25 10.4	-0.1
	1.8nm,0.3s,baz=211,slow=15,SNR=22						
ASAJ				Sn	Sn	17 26 29.6	-1.0
	1.0nm,0.3s,baz=37,slow=20,SNR=2.5						
ASAJ				LR	LR	17 28 10.7	
	comp=Z,100nm,21.8s,baz=180,slow=40						
YSS	Yuzh-Sakhalins	9.87	2	*e*Pn	Pn	17 25 49.6	+0.2
	13nm,0.6s						
CBIJ	Chichi jima	9.95	181	Pn	Pn	17 25 49.4	-1.2
CBIJ				Sn	Sn	17 27 34.5	-8.0
JCJ	Chichijima	9.96	181	Pn	Pn	17 25 49.4	-1.2
	baz=288,slow=20						
JCJ				Sn	Sn	17 27 34.5	-8.0
	4.0nm,0.3s,baz=252,slow=20,SNR=3.0						
JNU	Nakatsue	10.20	251	Pn	Pn	17 25 57.7	+3.7
	0.3nm,0.3s,baz=138,slow=5.7,SNR=5.9						
USRK	Ussuriysk Ar.	10.61	315	Pn	Pn	17 26 01.8	+2.3
	0.2nm,0.3s,baz=128,slow=15,SNR=3.3						
USRK				LR	LR	17 29 41.6	
	comp=Z,101nm,20.8s,baz=85,slow=35						
KSRS	Korea Array	11.51	276	Pn	Pn	17 26 17.2	+5.3
	0.2nm,0.3s,baz=88,slow=14,SNR=7.5						
KSRS				LR	LR	17 30 30.5	
	comp=Z,109nm,19.4s,baz=65,slow=36						
KSAR	Wonju Array Be	11.54	276	Pn	Pn	17 26 17.2	+4.9
KLR	Kul'dur	14.38	331	Pn	Pn	17 26 48.1	-2.9
	0.1nm,0.3s,baz=142,slow=12,SNR=3.8						
KLR				LR	LR	17 32 20.7	
	comp=Z,114nm,18.7s,baz=110,slow=37						
YAK	Yakutsk	26.20	346	P	P	17 29 02.7	+0.7
	9.3nm,0.4s,baz=188,slow=1.6,SNR=6.4						
SEY	Seymchan	26.61	10	P	P	17 29 07.1	+1.3
	2.4nm,0.5s,baz=193,slow=7.6,SNR=9.4						
ENH	Enshi	28.09	266	*e*P	P	17 29 20.1	+0.7
	11nm,0.8s						
ZALV	Zalesovo Beam	42.44	312	P	P	17 31 23.7	+1.4
	2.1nm,0.6s,baz=96,slow=6.0,SNR=10						
MKAR	Makanchi Array	44.74	302	P	P	17 31 42.1	+1.2
	0.9nm,0.6s,baz=83,slow=10,SNR=12						
KURK	Kurchatov	46.50	308	*e*P	P	17 31 55.5	+0.8
	22nm,0.8s						
KURBB	Kurchatov Arra	46.57	308	P	P	17 31 56.1	+0.8
	3.8nm,0.5s,baz=82,slow=8.2,SNR=32						
TKM2	Tokmak 2	50.27	299	*e*P	P	17 32 25.0	+0.7
	1.9nm,0.5s						
BVAR	Borovoye Array	51.10	312	P	P	17 32 31.2	+1.1
	0.6nm,0.6s,baz=96,slow=12,SNR=6.2						
BRVK	Borovoye	51.16	312	*e*P	P	17 32 30.3	-0.3
ARU	Arti	56.83	319	P	P	17 33 13.0	+1.1
	1.6nm,0.5s,baz=106,slow=5.3,SNR=4.8						
WRAB	Tennant Creek	57.20	189	*e*P	P	17 33 15.4	+0.5
WRA	Warramunga Arr	57.22	189	P	P	17 33 15.2	+0.3
	0.7nm,0.5s,baz=7.2,slow=7.0,SNR=17						
ABKAR	Akbulak array	58.49	310	*e*P	P	17 33 24.0	+0.4
	0.7nm,0.6s						

MLZ	**Mavora Lakes**	**0.61**	**118**	⇑PN	Pn	17 27 57.6	-0.3
MLZ				SN	Sn	17 28 07.5	-0.1
MLZ				AML	AML	17 28 07.9	
WHZ	**Wether Hill Ro**	**0.91**	**153**	⇑PN	Pn	17 28 01.2	-0.4
WHZ				SN	Sn	17 28 13.6	-0.5
WHZ				AML	AML	17 28 14.7	
PYZ	**Puysegur Point**	**1.18**	**203**	⇑PN	Pn	17 28 05.0	0.0
WKZ	**Wanaka**	**1.21**	**78**	PN	Pn	17 28 05.5	+0.1
WKZ				AML	AML	17 28 22.6	
WKZ				AML	AML	17 28 23.2	
WKZ				AML	AML	17 28 23.3	
WKZ				AML	AML	17 28 24.0	
EAZ	**Earnscleugh**	**1.39**	**97**	PN	Pn	17 28 07.9	+0.1
EAZ				AML	AML	17 28 25.0	
EAZ				AML	AML	17 28 26.0	
JCZ	**Jackson Bay**	**1.44**	**46**	⇑PN	Pn	17 28 08.0	-0.5
JCZ				AML	AML	17 28 30.7	
JCZ				AML	AML	17 28 31.1	
APZ	**The Paps**	**1.81**	**166**	PN	Pn	17 28 13.3	-0.1
APZ				AML	AML	17 28 36.4	
APZ				AML	AML	17 28 38.9	
TUZ	**Tuapeka**	**1.82**	**119**	PN	Pn	17 28 13.1	-0.4
TUZ				AML	AML	17 28 34.8	
TUZ				AML	AML	17 28 42.0	
SYZ	**Scrubby Hill**	**1.92**	**140**	PN	Pn	17 28 14.4	-0.4
SYZ				AML	AML	17 28 38.1	
SYZ				AML	AML	17 28 38.2	
LBZ	**Lake Benmore**	**2.13**	**72**	⇓PN	Pn	17 28 16.9	-0.9
LBZ				AML	AML	17 28 49.7	
LBZ				AML	AML	17 28 50.4	
ODZ	**Otahua Downs**	**2.33**	**90**	⇑PN	Pn	17 28 19.7	-0.8
ODZ				AML	AML	17 28 46.8	
ODZ				AML	AML	17 28 46.8	
FOZ	**Fox Glacier**	**2.35**	**50**	PN	Pn	17 28 19.6	-1.1
FOZ				AML	AML	17 28 55.1	
FOZ				AML	AML	17 28 59.2	
HHSZ	**Highcliff Hill**	**2.42**	**111**	PN	Pn	17 28 21.5	-0.2
RPZ	**Rata Peaks**	**2.98**	**64**	⇓PN	Pn	17 28 27.7	-1.8
RPZ				AML	AML	17 29 08.6	
RPZ				AML	AML	17 29 09.0	
WVZ	**Waitaha Valley**	**3.16**	**52**	PN	Pn	17 28 30.6	-1.2
INZ	**Inchbonnie**	**3.78**	**53**	PN	Pn	17 28 39.2	-1.1
OXZ	**Oxford**	**3.80**	**64**	PN	Pn	17 28 37.6	-3.0
MQZ	**McQueen's Vall**	**4.04**	**72**	⇓PN	Pn	17 28 41.4	-2.4
CRLZ	**Canterbury Las**	**4.07**	**70**	PN	Pn	17 28 41.9	-2.3
LTZ	**Lake Taylor**	**4.23**	**59**	PN	Pn	17 28 44.2	-2.4
DSZ	**Denniston Nort**	**4.65**	**46**	PN	Pn	17 28 52.3	0.0
DSZ				AML	AML	17 29 45.8	
DSZ				AML	AML	17 29 47.4	
DSZ				AML	AML	17 29 58.0	
DSZ				AML	AML	17 30 00.8	
THZ	**Tophouse**	**5.23**	**53**	PN	Pn	17 28 57.7	-2.5
THZ				AML	AML	17 30 04.6	
QRZ	**Quartz Range**	**5.70**	**44**	PN	Pn	17 29 05.5	-1.1
QRZ				AML	AML	17 30 28.2	
QRZ				AML	AML	17 30 28.2	
QRZ				AML	AML	17 30 39.7	

IDC 04 17:35:21.9±1.8, 52°.05N×30°.33W, h0km, mb3.4/4, mb1 3.6/5, mb1mx3.3/58, mbtmp3.5/5, ML4.2/1, MS2.9/1, Ms1 3.0/1, ms1mx2.6/44, Error ellipse: s-maj=45.6km s-min=31.1km az=48.0, Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EKA	**Eskdalemuir Ar**	**16.38**	**68**	Pn	P	17 39 14.5	-1.5
	baz=267,slow=10,SNR=8.3						
NOA	**NORSAR Array B**	**24.21**	**52**	LR	LR	17 49 23.3	
	comp=Z,28nm,18.6s,baz=260,slow=35						
YKA	**Yellowknife Ar**	**43.51**	**318**	P	P	17 43 26.8	+0.2
	0.3nm,0.8s,baz=59,slow=8.3,SNR=3.7						
TORD	**Torodi Ar. Bea**	**46.55**	**135**	P	P	17 43 51.1	-0.1
	0.7nm,1.0s,baz=328,slow=6.8,SNR=3.0						
BVAR	**Borovoye Array**	**56.12**	**46**	P	P	17 45 02.7	0.0
	0.4nm,0.5s,baz=316,slow=6.0,SNR=5.0						
MKAR	**Makanchi Array**	**65.90**	**44**	P	P	17 46 08.9	-0.4
	0.1nm,0.3s,baz=319,slow=6.0,SNR=3.2						

*NIED **04** 17:36:00, 38°.20N×142°.20E, h32km, Mw3.7 Best double couple: M₀3.35000×10¹⁴ NP1:φs260.00000°, δ33.00000°, λ-51.00000°. NP2:φs36.00000°, δ65.00000°, λ-112.00000°.*
*JMA **04** 17:36:16.6±0.2, 38°.24N×142°.22E, h38km±2km, M4.2*
JMA Felt I J1.
*IDC **04** 17:36:17.5±2.7, 38°.16N×142°.42E, h42km±23km, mb3.6/7, mb1 3.6/11, mb1mx3.4/68, mbtmp3.8/11, ML3.0/4, MS2.8/1, Ms1 2.8/1, ms1mx2.4/47, Error ellipse: s-maj=35.6km s-min=26.1km az=123.0*

ISC 04 17:36:13.7±2.1, 38°.21N±0°.05×142°.37E±0°.07, h15km±11km, n22, σ1s74/31, mb3.8/7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.84**	**287**	P	**Pg**	**17 36 30.5**	**+0.5**
JIO				S	**Sg**	**17 36 39.7**	**-1.4**
OFUJ	**Ofunato**	**1.03**	**328**	P	**Pb**	**17 36 33.6**	**+0.4**
OFUJ				S	**Sb**	**17 36 45.5**	**-1.0**
JMK	**Ichinoseki**	**1.17**	**310**	P	**Pn**	**17 36 35.5**	**0.0**
JMK				S	**Sb**	**17 36 48.9**	**-1.6**
JMM	**Marumori**	**1.29**	**255**	P	**Pn**	**17 36 36.7**	**-0.5**
JMM				S	**Sb**	**17 36 51.1**	**-3.0**
JOU	**Okura**	**1.35**	**277**	P	**Pn**	**17 36 38.3**	**+0.3**
JOU				S	**Sn**	**17 36 53.9**	**-1.8**
JFK	**Kawauchi**	**1.45**	**235**	P	**Pn**	**17 36 38.9**	**-0.6**
JOM	**Ohasama**	**1.52**	**327**	P	**Pn**	**17 36 41.0**	**+0.7**
JOM				*e*S	**Sn**	**17 36 59.0**	**-0.8**
JYK	**Kaneyama**	**1.73**	**295**	P	**Pn**	**17 36 43.7**	**+0.5**
JFT	**Otama**	**1.75**	**247**	P	**Pn**	**17 36 44.0**	**+0.5**
JFT				S	**Sn**	**17 37 04.3**	**-1.3**
MJAR	**Matsushiro Arr**	**3.71**	**245**	P	**Pn**	**17 37 12.2**	**+1.8**
	1.6nm,0.3s,baz=60,slow=10,SNR=34						
MJAR				S	**Sn**	**17 37 58.6**	**+4.7**
	1.4nm,0.3s,baz=67,slow=9.6,SNR=4.3						
MJAR				LR	LR	17 38 48.9	
	comp=Z,113nm,18.5s,baz=80,slow=41						
MAT	**Matsushiro**	**3.71**	**245**	P	Pn	17 37 13.9	+3.4
MAT				S	**Sn**	**17 37 54.8**	**+0.9**
JHJ	**Hachijo jima 2**	**5.50**	**203**	P	**Pn**	**17 37 36.3**	**+1.3**
	5.8nm,0.3s,baz=56,slow=15,SNR=8.9						
JHJ				S	**Sn**	**17 38 34.0**	**-4.0**
	22nm,0.3s,baz=75,slow=20,SNR=6.9						
ASAJ	**Asahikawa**	**5.90**	**2**	P	**Pn**	**17 37 42.6**	**+2.1**
	0.4nm,0.3s,baz=202,slow=13,SNR=11						
ASAJ				S	**Sn**	**17 38 45.1**	**-2.8**
	0.5nm,0.3s,baz=261,slow=19,SNR=2.3						
USRK	**Ussuriysk Ar.**	**9.85**	**311**	P	Pn	17 38 37.9	+3.2
	0.2nm,0.3s,baz=131,slow=14,SNR=3.1						
ZALV	**Zalesovo Beam**	**41.70**	**311**	P	**P**	**17 44 01.6**	**+0.1**
	0.6nm,0.3s,baz=90,slow=6.3,SNR=4.2						
MKAR	**Makanchi Array**	**44.15**	**301**	P	**P**	**17 44 21.7**	**+0.1**
	0.5nm,0.4s,baz=84,slow=9.7,SNR=6.9						
KURBB	**Kurchatov Arra**	**45.89**	**307**	P	**P**	**17 44 35.9**	**+0.6**
	3.3nm,0.6s,baz=82,slow=8.1,SNR=25						
AKTO	**Aktyubinsk**	**58.46**	**312**	P	**P**	**17 46 09.4**	**+0.6**
	0.5nm,0.4s,baz=54,slow=8.7,SNR=3.7						
YKA	**Yellowknife Ar**	**62.41**	**31**	P	**P**	**17 46 35.5**	**0.0**
	0.2nm,0.6s,baz=307,slow=7.0,SNR=4.3						
FINES	**FINESS Array B**	**68.13**	**332**	P	**P**	**17 47 13.1**	**+0.5**
	1.5nm,0.7s,baz=53,slow=7.4,SNR=5.2						
NB2	**NORSAR Subarra**	**73.39**	**338**	P	**P**	**17 47 45.9**	**+1.1**
	comp=Z,1.0nm,0.7s,baz=40,slow=6.2						
NOA	**NORSAR Array B**	**73.39**	**338**	P	**P**	**17 47 45.9**	**+1.1**
	comp=Z,0.2nm,0.5s,baz=39,slow=8.0,SNR=3.1						

*BJI **04** 17:38:30.7, 5°.60S×101°.83E, h30km, mb5.5/82, mB5.5/78, Ms5.7/90, Ms7 5.5/80*
*IDC **04** 17:38:33.0±0.4, 4°.92S×101°.85E, h0km, mb5.1/50, mb1 5.0/51, mb1mx5.0/61, mbtmp5.0/51, ML4.5/1, MS5.1/36, Ms1 5.1/36, ms1mx4.9/53, Error ellipse: s-maj=12.8km s-min=8.4km az=45.0*
*DJA **04** 17:38:35.6±0.6, 5°.S±2°.×10°.2E±°, h15km±5km, M5.5/83, mb5.5/83, mB5.9/70, MLv5.9/36, Mw(mB)5.5/70, Mwp5.8/13*
*ISCJB **04** 17:38:35.9±0.6, 4°.92S±0°.02×101°.79E±0°.02, h29km±3km, mb5.3/198, MS5.2/211, Error ellipse: s-maj=4.2km s-min=2.6km az=41.9*
*NEIC **04** 17:38:37.6±0.2, 4°.89S×101°.85E, h26km, mb5.4/74, ME5.3, MS5.3/133, MW5.4, MW5.6, Error ellipse: s-maj=5.5km s-min=3.7km az=224.0, Moment Tensor Solution. s46 Moment tensor: Scale 10¹⁷Nm; Mrr1.48; Mθθ0.08; Mφφ-1.55; Mrθ0.33; Mrφ0.38; Mθφ-0.45; Best double couple: M₀1.70000×10¹⁷ NP1:φs159.00000°, δ55.00000°, λ80.00000°. NP2:φs357.00000°, δ37.00000°, λ104.00000°. Principal axes: T 1.5900, Plg77.0000°, Azm33.0000°; N 0.1300, Plg9.0000°, Azm165.0000°; P -1.7200, Plg9.0000°, Azm257.0000°; Broadband fault plane solution: P waves. NP1:φs310.00000°, δ15.00000°, λ90.00000°. NP2: φs130.00000°, δ75.00000°, λ90.00000°. Principal axes: T Plg60.0000°, Azm40.0000°; N Plg0.0000°, Azm0.0000°; P Plg30.0000°, Azm220.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from BB mechanism.*
*GCMT **04** 17:38:37.6±0.1, 5°.22S×101°.64E, h24km, MW5.5/105, Moment Tensor Solution. s105,c185; s98,c158; Duration: 1s4 Moment tensor: Scale 10¹⁷Nm; Mrr1.22±.03; Mθθ-0.75±.02; Mφφ-0.47±.02; Mrθ1.18±.03; Mθφ0.63±.01; Mφr-1.04±.03; Best double couple: M₀2.00300×10¹⁷ NP1:φs131.00000°, δ71.00000°, λ91.00000°. NP2:φs307.00000°, δ19.00000°, λ86.00000°. Principal axes: T 1.9840, Plg64.0000°, Azm43.0000°; N 0.0360, Plg1.0000°, Azm310.0000°; P -2.0230, Plg26.0000°, Azm220.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **04** 17:38:37.0±0.4, 4°.95S×101°.60E, h27km, Moment Tensor Solution. s13 Moment tensor: Scale 10¹⁷Nm; Mrr1.00; Mθθ-0.60; Mφφ-0.50; Mrθ2.10; Mθφ0.80; Mφr-1.30; Best double couple: M₀3.00000×10¹⁷ NP1:φs121.00000°, δ77.00000°, λ83.00000°. NP2:φs329.00000°, δ14.00000°, λ116.00000°. Principal axes: T 2.6000, Plg57.0000°, Azm23.0000°; N 0.2000, Plg6.0000°, Azm123.0000°; P -2.8000, Plg32.0000°, Azm217.0000°;*
*MOS **04** 17:38:37.1±1.0, 4°.77S×101°.94E, h33km, mb5.5/72, MS5.1/58 Error ellipse: s-maj=8.0km s-min=4.3km az=110.7*
*KLM **04** 17:38:38.5, 4°.87S×101°.57E, h45km, mb5.6, ML5.8, MS6.4*

ISC 04 17:38:37.8±0.4, 4°.95S±0°.03×101°.78E±0°.03, h33km±1km, h33km:pP-P, n1074, σ1s51/1071, mb5.4/211, MS5.3/213, 76C-9D, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MNAI	**Manna**	**1.31**	**63**	P	**Pn**	**17 39 00.9**	**+1.0**
MNAI				S	**Sb**	**17 39 24.5**	**+5.9**
MNAI	**Manna**	**1.31**	**63**	*e*Pn	**Pn**	**17 39 00.0**	**+0.1**
MASI	**Maura Aman, Be**	**1.86**	**14**	P	**Pn**	**17 39 08.1**	**+0.6**
MASI				S	**Sb**	**17 39 36.5**	**+2.4**
LHSI	**Lahat**	**2.07**	**57**	P	**Pn**	**17 39 12.1**	**+1.8**
LHSI				S	**Sb**	**17 39 42.9**	**+2.7**
LWLI	**Liwa**	**2.27**	**92**	P	**Pn**	**17 39 13.7**	**+0.5**
LWLI				S	**Sb**	**17 39 46.6**	**+0.5**
KASI	**Kota Agung**	**2.77**	**102**	P	**Pn**	**17 39 20.5**	**+0.6**
PPSI	**Pulau Pagai**	**2.80**	**321**	P	**Pn**	**17 39 22.7**	**+2.3**
PPSI				S	**Sn**	**17 39 55.4**	**+2.4**
KLI	**Kotabumi**	**3.07**	**88**	P	**Pn**	**17 39 26.3**	**+2.2**
BLSI	**Bandar Lampung**	**3.48**	**97**	P	**Pn**	**17 39 31.5**	**+1.8**
PMBI	**Palembang**	**3.60**	**56**	P	**Pn**	**17 39 33.1**	**+1.7**
SDSI	**Sungai Dareh**	**4.01**	**355**	P	**Pn**	**17 39 37.1**	**+0.1**
PDSI	**Padang**	**4.22**	**342**	P	**Pn**	**17 39 39.1**	**-0.9**
CGJI	**Cibinong**	**4.23**	**113**	P	**Pn**	**17 39 39.5**	**-0.6**
SBJI	**Serang**	**4.49**	**105**	P	**Pn**	**17 39 44.8**	**+1.2**
RGRI	**Rengat**	**4.61**	**7**	P	**Pn**	**17 39 44.5**	**-0.8**
TNG	**Tangerang**	**5.00**	**104**	P	**Pn**	**17 39 52.9**	**+2.3**
	2μm,0.9s,36μm9.7nm						
PPBI	**Pangkal Pinang**	**5.16**	**58**	P	**Pn**	**17 39 54.4**	**+1.6**
	375nm,0.9s,8μm62μm7.4nm						
SKJI	**Sukabumi**	**5.17**	**113**	P	**Pn**	**17 39 52.4**	**-0.6**
	1μm,0.8s,17μm7.3nm						
DSRI	**Dabo**	**5.25**	**32**	P	**Pn**	**17 39 58.1**	**+4.0**
	1μm,0.9s,40μm337μm15nm						
BKNI	**Bangkinang**	**5.30**	**352**	P	**Pn**	**17 39 53.7**	**-1.0**
	1μm,1.2s,24μm37μm19nm						
BKNI	**Bangkinang**	**5.30**	**352**	*e*Pn	**Pn**	**17 39 54.7**	**0.0**
CNJI	**Cibinong**	**5.81**	**114**	P	**Pn**	**17 40 00.0**	**-1.8**
	747nm,0.6s,14μm19μm5.2nm						
PBSI	**Pulau Batu**	**5.99**	**324**	P	**Pn**	**17 40 04.6**	**+0.4**
	732nm,1.2s,15μm8.3nm						
LEM	**Lembang**	**6.10**	**108**	Pn	Pn	17 40 13.1	+7.1
	42nm,0.3s,baz=261,slow=6.8,SNR=54						
LEM				Sn	Sn	17 41 23.7	+8.9
	baz=189,slow=20,SNR=1.3						
LEM				LR	LR	17 42 58.1	
	comp=Z,18μm,20.8s,baz=254,slow=44						
LEM	**Lembang**	**6.10**	**108**	P	Pn	17 40 13.1	+7.2
MNSI	**Mandailing Nat**	**6.12**	**339**	P	**Pn**	**17 40 05.3**	**-0.7**
	492nm,1.0s,8μm3.6nm						
TPRI	**Tanjung Pinang**	**6.45**	**25**	P	**Pn**	**17 40 13.3**	**+2.8**
	909nm,1.1s,10μm30μm3.7nm						
CISI	**Cisompet, Garu**	**6.54**	**114**	P	**Pn**	**17 40 11.0**	**-0.8**
	1μm,0.7s,15μm4.8nm						
CISI	**Cisompet, Garu**	**6.54**	**114**	*e*Pn	**Pn**	**17 40 10.2**	**-1.6**
JCJI	**Jatiwangi**	**6.64**	**104**	P	**Pn**	**17 40 17.0**	**+3.8**
	629nm,1.4s,12μm4.5nm						
XMIS	**Christmas Isla**	**6.70**	**145**	*e*Pn	Pn	17 40 07.5	-6.6
MYKOM	**Kota Tinggi**	**7.01**	**17**	⇑P	**Pn**	**17 40 18.4**	**+0.1**
MYKOM	**Kota Tinggi**	**7.01**	**17**	*e*Pn	**Pn**	**17 40 19.8**	**+1.5**
CMJI	**Cimerak**	**7.20**	**113**	P	**Pn**	**17 40 20.9**	**0.0**
	639nm,0.8s,10μm2.7nm						
GSI	**Gunungsitoli**	**7.50**	**326**	P	**Pn**	**17 40 24.3**	**-0.7**
	217nm,0.8s,6μm2.8nm						
GSI	**Gunungsitoli**	**7.50**	**326**	*e*Pn	**Pn**	**17 40 23.9**	**-1.2**
FRIM	**Kepong**	**8.14**	**359**	⇑P	**Pn**	**17 40 33.5**	**-0.3**
PSI	**Prapat**	**8.21**	**340**	*e*P	**Pn**	**17 40 32.3**	**-2.6**
PSI	**Prapat**	**8.21**	**340**	*e*Pn	**Pn**	**17 40 32.3**	**-2.6**
COCO	**West Island**	**8.69**	**214**	*i* P	**Pn**	**17 40 38.3**	**-3.1**
SMRI	**Semarang**	**8.87**	**104**	P	**Pn**	**17 40 46.2**	**+2.4**
	397nm,0.9s,6μm						
SMRI	**Semarang**	**8.87**	**104**	*e*Pn	**Pn**	**17 40 45.0**	**+1.2**
TSI	**Tuntungan**	**8.99**	**339**	P	**Pn**	**17 40 46.8**	**+1.3**
	146nm,0.8s,5μm						
UGM	**Wanagama**	**9.18**	**109**	P	**Pn**	**17 40 49.5**	**+1.5**
	774nm,0.8s						
UGM	**Wanagama**	**9.18**	**109**	*e*Pn	**Pn**	**17 40 47.4**	**-0.6**
KCSI	**Kotacane, Aceh**	**9.32**	**335**	P	**Pn**	**17 40 48.5**	**-1.5**
	99nm,1.0s,2μm						
IPM	**Ipoh**	**9.40**	**355**	*e*Pn	**Pn**	**17 40 51.9**	**+0.8**
WOJI	**Wonogiri, Jawa**	**9.53**	**108**	P	**Pn**	**17 40 53.5**	**+0.6**
	222nm,1.1s,4μm						
PCJI	**Pacitan**	**9.88**	**110**	P	**Pn**	**17 40 57.5**	**-0.1**
	368nm,0.8s,6μm						
NGJI	**Ngawi**	**9.92**	**104**	P	Pn	17 41 06.7	+5.7
	270nm,1.1s,4μm						
PBKI	**Pangkalan Bun**	**10.12**	**78**	P	Pn	17 41 06.7	+5.7
	324nm,1.1s						
KULM	**Kulim**	**10.24**	**354**	⇑P	**Pn**	**17 41 02.3**	**-0.3**
KULM	**Kulim**	**10.24**	**354**	*e*Pn	**Pn**	**17 41 01.0**	**-1.6**
KTGM	**Kuala Trenggan**	**10.30**	**8**	⇑P	**Pn**	**17 41 04.3**	**+0.8**
PWJI	**Pagerwojo**	**10.42**	**108**	P	**Pn**	**17 41 04.5**	**-0.6**
	285nm,0.7s,3μm						
MLSI	**Meulaboh, Aceh**	**10.62**	**330**	P	**Pn**	**17 41 07.0**	**-0.8**
	1μm,1.0s,9μm						
KSM	**Kuching**	**10.65**	**53**	*e*Pn	**Pn**	**17 41 10.5**	**+2.2**
STKI	**Sintang**	**10.90**	**63**	P	**Pn**	**17 41 15.7**	**+4.1**
	149nm,1.2s,11μm						
LHMI	**Lhok Sumawe**	**11.21**	**334**	*e*Pn	**Pn**	**17 41 14.4**	**-1.4**
	222nm,0.9s						
GMJI	**Gumukmas**	**12.05**	**106**	P	**Pn**	**17 41 31.0**	**+3.6**
	140nm,0.9s,2μm						
SKLT	**Songkhla**	**12.10**	**355**	P	**Pn**	**17 41 26.8**	**-1.3**
	79nm,0.8s,2μm						
ABJI	**Asem Bagus**	**12.70**	**103**	P	**Pn**	**17 41 37.2**	**+0.9**
	545nm,1.2s,6μm						
SBUM	**Sibu**	**12.77**	**55**	*e*Pn	**Pn**	**17 41 41.4**	**+4.2**
JAGI	**Jajag, Banyuwa**	**12.78**	**107**	P	**Pn**	**17 41 38.6**	**+1.2**
	406nm,0.9s,4μm						
JAGI	**Jajag, Banyuwa**	**12.78**	**107**	*e*Pn	**Pn**	**17 41 36.5**	**-0.9**
TRTT	**Trang**	**12.87**	**351**	P	**Pn**	**17 41 36.8**	**-1.9**
	80nm,1.4s,2μm						
BBKI	**Banjar Baru**	**13.11**	**84**	P	**Pn**	**17 41 44.1**	**+2.1**
	144nm,1.1s,4μm						
MTKI	**Muara Teweh, K**	**13.69**	**73**	P	**P**	**17 42 00.2**	**+2.0**
SRBI	**Singaraja**	**13.71**	**104**	P	**P**	**17 42 02.9**	**+4.6**
DNP	**Denpasar**	**13.84**	**106**	P	**P**	**17 41 56.2**	**-3.6**
	693nm,1.0s,8μm						
BTM	**Bintulu**	**13.90**	**55**	⇑P	**Pn**	**17 41 55.5**	**+2.8**
SURT	**Suratani**	**14.13**	**348**	P	**P**	**17 42 06.5**	**+3.5**
CMBY	**CAMPBELL BAY**	**14.23**	**327**	*e*P	**Pn**	**17 41 56.8**	**-0.5**
CMBY				IAmb	IAmb	17 42 05.5	
	comp=Z,65nm,0.5s						
TWSI	**Taliwang, Sumb**	**15.46**	**105**	P	**P**	**17 42 15.9**	**-1.9**
	comp=Z,145nm,0.8s,comp=Z,1μm						
BKB	**Balikpapan**	**15.54**	**77**	P	**P**	**17 42 21.8**	**+3.2**
PLAI	**Plampang**	**16.34**	**104**	P	**Pn**	**17 42 24.2**	**-0.8**
	comp=Z,186nm,0.9s,comp=Z,3μm						
CHBT	**CHBT**	**17.60**	**2**	P	**Pn**	**17 42 40.8**	**+0.1**
	comp=Z,250nm,1.0s,comp=Z,4μm						
PATY	**Pattaya**	**17.78**	**357**	P	**P**	**17 42 44.2**	**+0.7**
	comp=Z,18nm,0.9s						
PHET	**Kaeng Krachan**	**17.88**	**353**	P	**P**	**17 42 47.8**	**+3.3**
	comp=Z,16nm,0.8s,comp=Z,147nm						
KAPI	**Kappang**	**17.91**	**91**	P	**Pn**	**17 42 42.5**	**-2.1**
	comp=Z,1.6nm,0.3s,baz=283,slow=12,SNR=9.0						
KAPI	**Kappang**	**17.91**	**91**	*e*Pn	**Pn**	**17 42 43.3**	**-1.3**
	comp=Z,166nm,1.1s						
SPSI	**Sidrap Palu**	**17.96**	**88**	P	**Pn**	**17 42 44.8**	**-0.5**
	comp=Z,143nm,1.3s,comp=Z,3μm						
KKM	**Kota Kinabalu**	**18.09**	**53**	*e*Pn	**P**	**17 42 47.6**	**+0.6**
	comp=Z,171nm,1.0s						
TTSI	**Tana Toraja**	**18.10**	**85**	P	**P**	**17 42 48.3**	**+1.3**
	comp=Z,186nm,1.8s,comp=Z,4μm						
TSM	**Tawau**	**18.52**	**61**	⇑P	**Pn**	**17 42 52.9**	**+0.9**
SDKM	**Sandakan**	**18.65**	**56**	⇑P	**Pn**	**17 42 54.1**	**+0.4**
PBA	**Port Blair**	**18.79**	**331**	*e*P	Pn	17 42 55.1	-0.2
KDM	**Kudat**	**19.10**	**52**	⇑P	**Pn**	**17 42 59.3**	**+0.3**
NAYO	**Nakonayok**	**19.15**	**359**	P	**P**	**17 42 57.6**	**-0.9**
	comp=Z,48nm,1.7s						
BASI	**Baing, Sumba**	**19.35**	**107**	P	**Pn**	**17 43 03.5**	**+1.4**
	comp=Z,952nm,1.2s,comp=Z,12μm						
SRDT	**SRDT**	**19.36**	**352**	P	**Pn**	**17 43 04.7**	**+2.6**
	comp=Z,91nm,1.0s,comp=Z,4μm						
MYLDM	**Lahad Datu**	**19.50**	**59**	⇑P	**Pn**	**17 43 03.7**	**-0.2**
MYLDM	**Lahad Datu**	**19.50**	**59**	*e*P	**Pn**	**17 43 04.3**	**+0.4**
	comp=Z,358nm,1.1s						
KHLT	**Khaolaem Dam**	**19.88**	**351**	P	**Pn**	**17 43 08.3**	**0.0**
	comp=Z,17nm,1.6s						
DGPR	**DIGLIPUR**	**20.04**	**334**	*e*P	Pn	17 43 10.0	-0.2
DGPR				IAmb	IAmb	17 43 10.9	
	comp=Z,54nm,0.7s						
MMRI	**Maumere**	**20.64**	**101**	P	**P**	**17 43 15.3**	**+0.4**
	comp=Z,242nm,0.9s,comp=Z,3μm						
MMRI	**Maumere**	**20.64**	**101**	*e*P	**P**	**17 43 12.2**	**-2.7**
	comp=Z,300nm,1.1s						
MMRI				*e*S	Sn	17 47 11.7	+2.2
MMRI				*e*PcP	**PcP**	**17 47 28.6**	**+3.7**
MMRI				LR	LR		
	comp=Z,7μm,20.0s						
CHAI	**Chaiyaphum**	**20.72**	**1**	P	**P**	**17 43 15.4**	**-0.3**
	comp=Z,35nm,1.1s,comp=Z,360nm						
MRSI	**Marisa**	**20.85**	**76**	P	**P**	**17 43 18.2**	**+1.0**
	comp=Z,508nm,1.1s,comp=Z,8μm						
KHON	**Khomkaen**	**21.18**	**3**	P	**P**	**17 43 20.5**	**-0.1**
	comp=Z,128nm,1.0s,comp=Z,1μm						
LUWI	**Luwuk**	**21.32**	**80**	P	**P**	**17 43 23.8**	**+1.6**
	comp=Z,507nm,1.1s,comp=Z,6μmcomp=Z,10μm						
LUWI	**Luwuk**	**21.32**	**80**	*e*P	**P**	**17 43 22.1**	**-0.1**
	comp=Z,786nm,1.2s						
LUWI				LR	LR		
	comp=Z,7μm,19.0s						
SKNT	**Sakolnakorn**	**21.90**	**6**	P	**P**	**17 43 27.5**	**-0.8**
	comp=Z,112nm,2.0s,comp=Z,2μm						
PANO	**Nakornpanom**	**22.14**	**7**	P	**P**	**17 43 30.2**	**-0.7**
	comp=Z,255nm,1.2s						
BATI	**Baumata**	**22.31**	**105**	P	**P**	**17 43 32.3**	**-0.6**
	comp=Z,106nm,0.4s						
BATI	**Baumata**	**22.31**	**105**	P	**P**	**17 43 34.8**	**+2.0**
	comp=Z,175nm,0.8s,comp=Z,13μm						
LOEI	**Loei**	**22.33**	**359**	P	**P**	**17 43 31.6**	**-1.3**
	comp=Z,106nm,1.0s,comp=Z,13μm						
SUKH	**Sukhothai**	**22.39**	**355**	P	**P**	**17 43 33.1**	**-0.5**
	comp=Z,38nm,1.1s,comp=Z,314nm						
UTTA	**Uttaradit**	**22.59**	**357**	P	**P**	**17 43 35.1**	**-0.6**
	comp=Z,32nm,0.9s,comp=Z,218nm						
SOEI	**Soe**	**22.80**	**103**	P	**P**	**17 43 37.5**	**-0.7**
	comp=Z,98nm,0.9s,comp=Z,4μm						
SOEI	**Soe**	**22.80**	**103**	*e*P	**P**	**17 43 36.0**	**-2.2**
	comp=Z,354nm,0.9s						
SOEI				LR	LR		
	comp=Z,5μm,19.0s						
NONG	**Nongkai**	**22.91**	**3**	P	**P**	**17 43 37.4**	**-1.7**
	comp=Z,206nm,1.0s						
MHMT	**Maesarieng**	**23.29**	**351**	P	**P**	**17 43

H08S3	**Diego Garcia H**	**29.23 263**	T	T	18 15 04.8
	baz=86,slow=75,SNR=1004				
H08S1	**Diego Carcia H**	**29.24 263**	T	T	18 15 04.2
	baz=86,slow=75,SNR=703				
DGAR	**Diego Garcia**	**29.25 264**	PFAKE		17 44 50.0 +13
DGAR			LR	LR	
	comp=Z,4μm,22.0s				
CAUP	**Cauayan**	**29.43 42**	*e*P	**P**	**17 44 36.3 -2.3**
SAUI	**Saumlaki**	**29.48 97**	PFAKE		17 44 50.0 +11
SAUI			LR	LR	
	comp=Z,7μm,22.0s				
BWNR	**Bhubaneshwar**	**29.59 328**	*e*P	**P**	**17 44 40.1 0.0**
BWNR			IAmb	IAmb	17 44 43.4
	comp=Z,40nm,0.9s				
HKC	**Hong Kong Obse**	**29.68 24**	*i* P	**P**	**17 44 43.0 +2.2**
APYP	**Conner**	**29.72 40**	*e*P	**P**	**17 44 41.6 +0.4**
SWI	**Sorong**	**29.72 83**	P	**P**	**17 44 39.4 -1.9**
	comp=Z,46nm,1.1s,comp=Z,854nm				
KMI	**Kunming**	**29.91 2**	P	**P**	**17 44 44.5 +1.4**
KMI			pP	sP	17 44 54.9 -1.7
KMI			sP	pP	17 44 58.3 +5.7
KMI			PP	**PP**	**17 45 47.2 -3.9**
KMI			S	**S**	**17 49 39.2 +0.5**
KMI			sS	sS	17 49 56.7 +2.4
KMI			SS	**ScP**	**17 51 21.4 -4.1**
KMI			pmax	pmax	
	comp=Z,43nm,1.1s				
KMI			pmax	pmax	
	comp=Z,500nm,7.7s				
KMI			LR	LR	
	comp=Z,8μm,14.7s				
KMI			LR	LR	
	comp=Z,12μm,16.5s				
KMI			LR	LR	
	comp=Z,8μm,15.7s				
MTN	**Manton Dam**	**30.02 107**	P	**P**	**17 44 43.0 -1.0**
	baz=30,SNR=15				
MTN	**Manton Dam**	**30.02 107**	*e*P	**P**	**17 44 42.5 -1.4**
	comp=Z,44nm,0.6s				
GZH	**Guangzhou**	**30.07 22**	P	P	17 44 49.1 +4.8
GZH			S	**S**	**17 49 49.0 +8.2**
GZH			pmax	pmax	
	comp=Z,760nm,5.8s				
GZH			LR	LR	
	comp=Z,8μm,19.8s				
GZH			LR	LR	
	comp=Z,5μm,19.8s				
FAKI	**Fak Fak**	**30.46 87**	P	**P**	**17 44 47.4 -0.6**
	comp=Z,50nm,2.0s,comp=Z,982nm				
FAKI	**Fak Fak**	**30.46 87**	*e*P	**P**	**17 44 45.7 -2.3**
	comp=Z,44nm,1.0s				
KDU	**Kakadu**	**31.26 106**	P	**P**	**17 44 53.6 -1.3**
	baz=31,SNR=6.7				
NWAO	**Narrogin (SRO)**	**31.35 154**	P	**P**	**17 44 55.3 -0.2**
	comp=Z,10nm,0.7s,baz=187,slow=8.3,SNR=9.4				
NWAO			LR	LR	17 55 45.6
	comp=Z,5μm,21.3s,baz=204,slow=33				
NWAO	**Narrogin (SRO)**	**31.35 154**	P	**P**	**17 44 56.0 +0.5**
	baz=32,SNR=6.0				
NWAO	**Narrogin (SRO)**	**31.35 154**	P	**P**	**17 44 55.3 -0.2**
NWAO			pmax	pmax	
	comp=Z,7.0nm,0.6s				
NWAO			MLR	MLR	
	comp=Z,5μm,21.3s				
GYA	**Guiyang**	**31.58 8⇑**	*i*P	**P**	**17 44 57.7 0.0**
GYA			pP	pP	17 45 08.9 +1.7
GYA			PcP	**PcP**	**17 47 52.0 +2.1**
GYA			S	**S**	**17 50 08.9 +4.3**
GYA			sS	sS	17 50 21.2 +0.9
GYA			SS	**SnSn**	**17 52 00.5 +8.6**
GYA			pmax	pmax	
	comp=Z,30nm,0.8s				
GYA			pmax	pmax	
	comp=Z,180nm,5.4s				
GYA			LR	LR	
	comp=Z,3μm,17.4s				
GYA			LR	LR	
	comp=Z,3μm,17.8s				
GYA			LR	LR	
	comp=Z,3μm,17.6s				
SHL	**Shillong**	**31.82 343**	*e*P	**P**	**17 45 00.1 +0.2**
SHL			IAmb	IAmb	17 45 01.7
	comp=Z,168nm,1.6s				
H01W3	**Cape Leeuwin H**	**31.90 161**	T	T	18 18 28.6
	baz=335				
H01W2	**Cape Leeuwin H**	**31.92 161**	T	T	18 18 29.6
	baz=335,slow=74				
H01W1	**Cape Leeuwin H**	**31.92 161**	T	T	18 18 29.2
	baz=335,slow=74				
HYB	**Hyderabad**	**31.94 315**	*i* P	**P**	**17 45 02.0 +1.1**
WRKA	**Warakurna**	**32.35 131**	P	**P**	**17 45 04.9 +0.4**
	baz=32,SNR=9.5				
KMBL	**Kambalda**	**32.36 147**	P	**P**	**17 45 04.8 +0.4**
	baz=32,SNR=13				
BOK	**Bokaro**	**32.51 332**	*e*P	**P**	**17 45 06.9 +1.1**
BOK			IAmb	IAmb	17 45 08.5
	comp=Z,126nm,1.1s				
TWG	**Pinlang**	**33.43 34**	*e*P	**P**	**17 45 14.8 +0.9**
	comp=Z,181nm,0.9s				
TPUB	**Ta-pu**	**33.58 32**	*e*P	**P**	**17 45 16.5 +1.3**
	comp=Z,89nm,1.2s				
QZH	**Quanzhou**	**33.92 28⇓**	*i*P	P	17 45 11.5 -6.6
QZH			PP	**PP**	**17 46 35.1 -0.2**
QZH			S	**S**	**17 50 37.1 -3.7**
QZH			pmax	pmax	
	comp=Z,980nm,4.5s				
QZH			LR	LR	
	comp=N,8μm,22.2s				
QZH			LR	LR	
	comp=E,10μm,14.4s				
QZH			LR	LR	
	comp=Z,11μm,17.6s				
YULB	**Yu-li**	**34.01 33**	*e*P	**P**	**17 45 19.6 +0.7**
	comp=Z,46nm,1.1s				
SSLB	**Suanglung**	**34.15 32**	*e*P	**P**	**17 45 19.9 -0.2**
	comp=Z,136nm,1.8s				
NACB	**Ninganchiao**	**34.80 33**	*e*P	**P**	**17 45 26.2 +0.5**
	comp=Z,42nm,1.0s				
WRA	**Warramunga Arr**	**35.01 118**	P	**P**	**17 45 27.4 -0.3**
	comp=Z,14nm,0.5s,baz=290,slow=8.9,SNR=72				
WRA			S	**S**	**17 50 55.4 -2.5**
	comp=Z,1.3nm,0.8s,baz=286,slow=27,SNR=3.9				
WRA			LR	LR	18 02 26.5
	comp=Z,1μm,19.1s,baz=295,slow=41				
WRAB	**Tennant Creek**	**35.02 118***c*	*i*P	**P**	**17 45 27.4 -0.3**
WRAB			pmax	pmax	
	comp=Z,79nm,0.8s				
WRAB			MLR	MLR	
	comp=Z,5μm,18.0s				
WRAB	**Tennant Creek**	**35.02 118**	*e*P	**P**	**17 45 27.6 -0.1**
	comp=Z,35nm,0.6s				
WRAB			LR	LR	
	comp=Z,3μm,21.0s				
WB2	**Warramunga Arr**	**35.02 118**	*e*P	**P**	**17 45 27.5 -0.2**
	comp=Z,38nm,0.7s				
YHNB	**Yeheng**	**35.08 32**	*e*P	**P**	**17 45 28.9 +0.7**
	comp=Z,67nm,1.1s				
YHNB			LR	LR	
	comp=Z,3μm,21.0s				
TATO	**Taipei**	**35.39 32**	PFAKE		17 45 40.0 +9.2
TATO			LR	LR	
	comp=Z,1μm,20.0s				
CD2	**Chengdu**	**35.71 3⇑**	*i*P	**P**	**17 45 33.2 -0.3**
CD2			sP	pP	17 45 45.0 +1.9
CD2			S	**S**	**17 51 09.0 +0.6**
CD2			sS	sS	17 51 24.3 +0.2
CD2			pmax	pmax	
	comp=Z,100nm,1.1s				
CD2			pmax	pmax	
	comp=Z,580nm,5.6s				
CD2			LR	LR	
	comp=Z,14μm,17.3s				
CD2			LR	LR	
	comp=Z,12μm,15.5s				
ENH	**Enshi**	**35.80 11**	*e*P	**P**	**17 45 33.5 -0.7**
	comp=Z,52nm,0.8s				
ENH			LR	LR	
	comp=Z,7μm,20.0s				
LSA	**Lhasa**	**35.93 344**	*e*P	**P**	**17 45 36.6 +0.7**
LSA			pmax	pmax	
	comp=Z,99nm,1.1s				
LSA			MLR	MLR	
	comp=Z,2μm,21.0s				
LSA	**Lhasa**	**35.93 344**	*e*P	**P**	**17 45 36.6 +0.7**
	comp=Z,99nm,1.1s				
LSA			LR	LR	
	comp=Z,2μm,21.0s				
PKIN	**Phulchoki**	**36.00 335**	*e*P	**P**	**17 45 37.3 +1.0**
POO	**Poona**	**36.09 311**	*e*P	**P**	**17 45 37.2 +0.3**
GUN	**Gumba**	**36.09 336**	*e*P	**P**	**17 45 38.7 +1.5**
	comp=Z,323nm,0.7s				
ASAR	**Alice Springs**	**36.11 124**	P	**P**	**17 45 37.4 +0.2**
	comp=Z,28nm,0.7s,baz=297,slow=7.8,SNR=201				
ASAR			S	**S**	**17 51 13.1 -1.8**
	comp=Z,6.1nm,1.1s,baz=294,slow=15,SNR=8.7				
ASAR			LR	LR	18 02 12.2
	comp=Z,3μm,21.5s,baz=299,slow=39				
AS31	**Alice Springs**	**36.11 124**	*e*P	**P**	**17 45 37.4 +0.2**
	comp=Z,19nm,0.6s				
AS01	**Alice Springs**	**36.15 124**	*e*P	**P**	**17 45 37.1 -0.3**
DMN	**Daman**	**36.15 334**	*e*P	**P**	**17 45 38.9 +1.3**
	comp=Z,251nm,1.2s				
KKN	**Kakani**	**36.24 335**	*e*P	**P**	**17 45 39.5 +1.2**
	comp=Z,126nm,0.8s				
GKN	**Gorkha**	**36.70 334**	*e*P	**P**	**17 45 43.5 +1.3**
	comp=Z,270nm,1.0s				
BHPL	**Bhopal**	**36.75 321**	*e*P	**P**	**17 45 43.0 +0.5**
BHPL			IAmb	IAmb	17 45 45.3
	comp=Z,9.4nm,0.6s				
KOLN	**Koldanda**	**36.96 333**	*e*P	**P**	**17 45 46.0 +1.6**
	comp=Z,184nm,0.8s				
WHN	**Wuhan**	**37.29 18⇑**	*i*P	**P**	**17 45 47.5 +0.6**
WHN			sP	**sP**	**17 46 01.2 +0.7**
WHN			PP	**PnPn**	**17 47 17.0 +3.8**
WHN			pmax	pmax	
	comp=Z,180nm,1.4s				
WHN			LR	LR	
	comp=Z,14μm,15.5s				
WHN			LR	LR	
	comp=Z,7μm,12.2s				
WHN			LR	LR	
	comp=Z,21μm,16.4s				
PYUN	**Piuthan**	**37.52 332**	*e*P	**P**	**17 45 50.6 +1.4**
	comp=Z,270nm,0.9s				
GENI	**Genyem**	**38.38 88**	P	**P**	**17 45 54.4 -2.0**
	comp=Z,79nm,1.5s				
JAY	**Jayapura**	**38.92 88**	P	**P**	**17 45 58.4 -2.6**
	comp=Z,4.5nm,0.8s,baz=83,slow=23,SNR=15				
JAY			LR	LR	18 03 43.0
	comp=Z,30nm,21.5s,baz=348,slow=39				
JAY	**Jayapura**	**38.92 88**	P	**P**	**17 46 00.7 -0.3**
	comp=Z,50nm,0.8s				
XAN	**Xi'an**	**39.37 9**	P	**P**	**17 46 04.1 -0.3**
XAN			pP	pP	17 46 11.1 -3.0
XAN			sP	sP	17 46 14.3 -3.7
XAN			PP	**PP**	**17 47 36.1 +0.9**
XAN			S	**S**	**17 51 59.1 -4.7**
XAN			pmax	pmax	
	comp=Z,89nm,1.1s				
XAN			pmax	pmax	
	comp=Z,440nm,8.0s				
XAN			LR	LR	
	comp=Z,6μm,14.2s				
XAN			LR	LR	
	comp=Z,6μm,16.4s				
XAN			LR	LR	
	comp=Z,8μm,14.2s				
QIS	**Mount Isa**	**39.88 116**	P	**P**	**17 46 09.0 +0.1**
	baz=40,SNR=13				
NJ2	**Nanjing**	**40.23 23**	*e*P	**P**	**17 46 12.9 +1.3**
NJ2			PP	**PP**	**17 47 45.9 +1.3**
NJ2			S	**S**	**17 52 18.2 +1.5**
NJ2			pmax	pmax	
	comp=Z,24nm,0.6s				
NJ2			pmax	pmax	
	comp=Z,550nm,10.5s				
NJ2			LR	LR	
	comp=Z,6μm,26.0s				
NJ2			LR	LR	
	comp=Z,4μm,13.0s				
NJ2			LR	LR	
	comp=Z,7μm,16.3s				
SSE	**Sheshan**	**40.36 26**	P	**P**	**17 46 13.4 +0.8**
SSE			PP	**PnPn**	**17 47 48.2 -1.7**
SSE			S	**S**	**17 52 24.2 +5.6**
SSE			sS	**sS**	**17 52 40.0 +5.5**
SSE			pmax	pmax	
	comp=Z,52nm,1.0s				
SSE			pmax	pmax	
	comp=Z,380nm,7.0s				
SSE			LR	LR	
	comp=Z,3μm,18.2s				
SSE			LR	LR	
	comp=Z,3μm,18.2s				
SSE			LR	LR	
	comp=Z,4μm,19.0s				
JOW	**Kunigami**	**40.69 38**	P	**P**	**17 46 15.2 -0.3**
	comp=Z,12nm,0.4s,baz=185,slow=5.5,SNR=18				
JOW	**Kunigami**	**40.69 38**	*e*P	**P**	**17 46 15.3 -0.2**
	comp=Z,41nm,1.0s				
LZH	**Lanzhou**	**40.87 3⇑**	P	**P**	**17 46 17.8 +0.8**
LZH			pP	pP	17 46 25.9 -0.8
LZH			sP	sP	17 46 29.3 -1.3
LZH			PP	**PnPn**	**17 47 56.1 +0.1**
LZH			S	**S**	**17 52 28.0 +1.5**
LZH			SS	**SS**	**17 55 27.0 -1.8**
LZH			pmax	pmax	
	comp=Z,110nm,1.0s				
LZH			pmax	pmax	
	comp=Z,690nm,5.8s				
LZH			LR	LR	
	comp=Z,11μm,15.0s				
LZH			LR	LR	
	comp=Z,9μm,15.4s				
LZH			LR	LR	
	comp=Z,12μm,16.2s				
COEN	**Coen**	**41.74 105**	P	**P**	**17 46 23.5 -0.9**
	baz=42,SNR=4.4				
COEN	**Coen**	**41.74 105**	*e*P	**P**	**17 46 23.6 -0.8**
	comp=Z,104nm,1.5s				
DDI	**Dehra Dun**	**41.79 329**	*e*P	**P**	**17 46 25.0 +0.5**
DDI			IAmb	IAmb	17 46 27.3
	comp=Z,193nm,1.1s				
BBOO	**Buckleboo**	**42.31 135**	P	**P**	**17 46 28.8 +0.1**
	baz=42,SNR=24				
BBOO	**Buckleboo**	**42.31 135**	*e*P	**P**	**17 46 28.9 +0.1**
	comp=Z,18nm,0.8s				
SMLA	**Simla**	**42.89 328**	*e*P	**P**	**17 46 34.1 +0.7**
SMLA			IAmb	IAmb	17 46 35.9
	comp=Z,88nm,0.5s				
TIA	**Tai'an**	**43.40 18⇑**	P	**P**	**17 46 36.8 -0.7**
TIA			PP	**PcP**	**17 48 23.9 -1.7**
TIA			S	**S**	**17 53 04.9 +1.4**
TIA			ScS	**ScS**	**17 56 34.8 -0.3**
TIA			pmax	pmax	
	comp=Z,40nm,1.0s				
TIA			pmax	pmax	
	comp=Z,550nm,8.0s				
TIA			LR	LR	
	comp=Z,6μm,23.0s				
TIA			LR	LR	
	comp=Z,4μm,19.0s				
TIA			LR	LR	
	comp=Z,7μm,20.0s				
MTSU	**Mount Surprise**	**43.56 111**	P	**P**	**17 46 39.8 +0.6**
	baz=44,SNR=46				
TIY	**Taiyuan**	**43.59 12**	*e*P	**P**	**17 46 39.8 +0.7**
TIY			pP	**sP**	**17 46 53.4 +0.7**
TIY			PP	**PcP**	**17 48 26.2 -0.1**
TIY			S	**S**	**17 53 06.2 -0.2**
TIY			pmax	pmax	
	comp=Z,54nm,0.5s				
TIY			pmax	pmax	
	comp=Z,520nm,9.0s				
TIY			LR	LR	
	comp=Z,5μm,15.6s				
TIY			LR	LR	
	comp=Z,4μm,13.0s				
TIY			LR	LR	
	comp=Z,5μm,14.9s				
GTA	**Gaotai**	**44.18 358**	⇑P	**P**	**17 46 44.4 +0.6**
GTA			pP	pP	17 46 53.3 -0.3
GTA			sP	sP	17 46 56.2 -1.3
GTA			PcP	**PcP**	**17 48 29.8 +1.5**
GTA			ScP	**ScP**	**17 52 19.1 +1.1**
GTA			PcS	**PcS**	**17 52 20.9 -0.7**
GTA			S	**S**	**17 53 16.8 +1.8**
GTA			sS	sS	17 53 30.0 -1.1
GTA			SS	**SS**	**17 56 28.0 -5.8**
GTA			ScS	**ScS**	**17 56 40.3 +0.1**
GTA			pmax	pmax	
	comp=Z,50nm,1.0s				
GTA			pmax	pmax	
	comp=Z,790nm,5.1s				
GTA			LR	LR	
	comp=Z,7μm,18.5s				
GTA			LR	LR	
	comp=Z,4μm,18.5s				
GTA			LR	LR	
	comp=Z,9μm,19.5s				
DHRM	**DHARAMSHALA**	**44.23 328**	*e*P	**P**	**17 46 44.6 +0.1**
DHRM			IAmb	IAmb	17 46 54.0
	comp=Z,181nm,1.3s				
HTT	**Hallett**	**44.67 134**	P	**P**	**17 46 48.5 +0.7**
	baz=45,SNR=7.2				
PMG	**Port Moresby**	**45.22 98**	LR	LR	18 08 46.5
	comp=Z,2μm,21.9s,baz=258,slow=40				
PMG	**Port Moresby**	**45.22 98***c*	*i*P	**P**	**17 46 51.5 -0.9**
PMG			pmax	pmax	
	comp=Z,928nm,1.7s				
PMG			MLR	MLR	
	comp=Z,8μm,22.0s				
PMG	**Port Moresby**	**45.22 98**	*e*P	**P**	**17 46 51.3 -1.1**
	comp=Z,135nm,1.0s				
MANU	**Manus Island**	**45.59 88**	*e*P	**P**	**17 46 54.5 -0.8**
	comp=Z,73nm,1.0s				
CTA	**Charters Tower**	**45.78 113**	LR	LR	18 07 31.1
	comp=Z,2μm,21.2s,baz=279,slow=38				
CTAO	**Charters Tower**	**45.78 113**	*e*P	**P**	**17 46 57.0 +0.3**
CTAO			pmax	pmax	
	comp=Z,410nm,1.0s				
CTAO	**Charters Tower**	**45.78 113**	*e*P	**P**	**17 46 57.0 +0.3**
	comp=Z,412nm,1.0s				
CTAO			LR	LR	
	comp=Z,3μm,20.0s				
QLP	**Quilpie**	**45.86 123**	P	**P**	**17 46 58.4 +1.1**
	baz=46,SNR=21				
STKA	**Stephens Creek**	**45.88 131**	P	**P**	**17 46 58.0 +0.6**
	comp=Z,12nm,0.5s,baz=302,slow=9.1,SNR=52				
STKA			LR	LR	18 05 59.7
	comp=Z,3μm,21.7s,baz=297,slow=36				
STKA	**Stephens Creek**	**45.88 131**	P	**P**	**17 46 57.3 -0.1**
	baz=46,SNR=49				
STKA	**Stephens Creek**	**45.88 131**	*e*P	**P**	**17 46 58.0 +0.6**
STKA			pmax	pmax	
	comp=Z,9.0nm,0.8s				
STKA	**Stephens Creek**	**45.88 131**	*e*P	**P**	**17 46 58.0 +0.6**
	comp=Z,8.6nm,0.8s				
BTO	**Baotou**	**45.96 9**	*e*P	**P**	**17 46 57.9 -0.1**
BTO			pmax	pmax	
	comp=Z,19nm,1.6s				
HHC	**Hu-ho-hao-te**	**46.46 10**	*e*P	**P**	**17 47 03.0 +1.2**
HHC			PP	**PP**	**17 48 49.9 -1.6**
HHC			S	**S**	**17 53 45.7 -2.1**
HHC			sS	sS	17 54 08.4 +4.5
HHC			SS	**SS**	**17 57 09.7 -4.5**
HHC			pmax	pmax	
	comp=Z,110nm,1.2s				
HHC			pmax	pmax	
	comp=Z,870nm,6.1s				
HHC			LR	LR	
	comp=Z,7μm,15.7s				
HHC			LR	LR	
	comp=Z,2μm,15.5s				
HHC			LR	LR	
	comp=Z,6μm,14.8s				
GUMO	**Guam**	**46.57 66**	PFAKE		17 47 10.0 +7.0
GUMO			LR	LR	
	comp=Z,1μm,22.0s				
BJT	**Baijiatuau**	**46.67 15**	*e*P	**P**	**17 47 04.0 +0.6**
BJT			pmax	pmax	
	comp=Z,67nm,0.8s				
BJT			MLR	MLR	
	comp=Z,6μm,20.0s				
BJT	**Baijiatuau**	**46.67 15**	*e*P	**P**	**17 47 04.0 +0.6**
	comp=Z,67nm,0.8s				
BJT			LR	LR	
	comp=Z,6μm,20.0s				
BJI	**Beijing**	**46.69 15**	P	**P**	**17 47 04.2 +0.7**
BJI			S	**S**	**17 53 56.1 +5.1**
BJI			pmax	pmax	
	comp=Z,100nm,0.8s				
BJI			pmax	pmax	
	comp=Z,950nm,4.4s				
BJI			LR	LR	
	comp=Z,8μm,18.7s				
JNU	**Nakatsue**	**46.85 34**	P	**P**	**17 47 04.4 -0.6**
	comp=Z,36nm,0.9s,baz=197,slow=2.9,SNR=16				
JNU			LR	LR	18 08 48.4
	comp=Z,1μm,18.3s,baz=242,slow=39				
JNU	**Nakatsue**	**46.85 34**	*e*P	**P**	**17 47 04.7 -0.3**
	comp=Z,86nm,1.1s				
DL2	**Dalian**	**47.35 21⇑**	*i*P	**P**	**17 47 07.5 -1.2**
DL2			PP	**PP**	**17 49 01.9 +1.6**
DL2			S	**S**	**17 53 59.2 -1.2**
DL2			pmax	pmax	
	comp=Z,24nm,0.8s				
DL2			pmax	pmax	
	comp=Z,580nm,5.1s				
DL2			LR	LR	
	comp=Z,4μm,18.1s				
DL2			LR	LR	
	comp=Z,4μm,17.6s				
DL2			LR	LR	
	comp=Z,5μm,17.2s				
RER	**Riviere de l'E**	**47.44 246**	PFAKE		17 47 20.0 +10
RER			LR	LR	
	comp=Z,3μm,19.0s				
INCN	**Inchon**	**48.15 27**	PFAKE		17 47 30.0 +15
INCN			LR	LR	
	comp=Z,1μm,20.0s				
ARPS	**Mount Arapiles**	**48.44 136**	P	**P**	**17 47 17.0 -0.2**
	baz=49,SNR=7.6				
KS15	**Wonju Array Si**	**48.69 28**	*e*P	**P**	**17 47 19.7 +0.6**
KSAR	**Wonju Array Be**	**48.69 28**	P	**P**	**17 47 19.3 +0.2**
KSAR	**Wonju Array Be**	**48.69 28**	P	**P**	**17 47 19.3 +0.2**
KSRS	**Korea Array**	**48.72 28**	P	**P**	**17 47 19.3 0.0**
	comp=Z,27nm,0.8s,baz=219,slow=7.5,SNR=93				
KS01	**Wonju Array Si**	**48.72 28**	*e*P	**P**	**17 47 19.1 -0.2**
CMSA	**Cobar Meteorol**	**48.89 128**	P	**P**	**17 47 21.7 +0.9**
	baz=49,SNR=13				
RMQ	**Roma**	**49.67 121**	P	**P**	**17 47 27.0 +0.2**
	baz=50,SNR=6.1				
KBL	**Kabul**	**49.95 324**	*e*P	**P**	**17 47 29.5 +0.4**
KBL			pmax	pmax	
	comp=Z,30nm,1.0s				
KBL	**Kabul**	**49.95 324**	*e*P	**P**	**17 47 29.5 +0.4**
	comp=Z,30nm,0.9s				
WMQ	**Urumqi**	**50.19 347⇑**	*i*P	**P**	**17 47 31.8 +1.3**
WMQ			pP	pP	17 47 40.0 -0.4
WMQ			sP	sP	17 47 43.1 -1.2
WMQ			PcP	**PcP**	**17 48 46.3 -3.2**
WMQ			ScP	**ScP**	**17 52 43.6 +0.5**
WMQ			S	**S**	**17 54 41.0 +0.6**
WMQ			sS	sS	17 54 55.6 -1.0
WMQ			ScS	**ScS**	**17 57 19.8 +0.4**
WMQ			SS	**SS**	**17 58 16.0 +1.7**
WMQ			pmax	pmax	
	comp=Z,55nm,0.8s				
WMQ			pmax	pmax	
	comp=Z,450nm,4.6s				
RABL	**Rabaul**	**50.22 91**	*es*P	sP	17 47 45.1 0.0
KSH	**Kashi**	**50.25 334**	P	**P**	**17 47 30.4 -0.7**
KSH			*e*pP	pP	17 47 38.0 -3.0
KSH			*e*PcP	**PcP**	**17 48 51.1 +1.2**
KSH			*e*ScP	**ScP**	**17 52 43.7 +0.2**
KSH			PcS	**PcS**	**17 52 46.6 -0.5**
KSH			S	**S**	**17 54 37.7 -3.8**
KSH			ScS	**ScS**	**17 57 18.2 -1.9**
KSH			pmax	pmax	
	comp=Z,36nm,0.8s				
KSH			pmax	pmax	
	comp=Z,520nm,4.3s				
KSH			LR	LR	
	comp=Z,1μm,18.7s				
KSH			LR	LR	
	comp=Z,1μm,17.8s				
KSH			LR	LR	
	comp=Z,2μm,21.7s				
CBIJ	**Chichi jima**	**50.40 49**	P	**P**	**17 47 29.1 -3.2**
JCJ	**Chichijima**	**50.40 49**	P	**P**	**17 47 29.1 -3.2**
	comp=Z,68nm,0.5s,baz=287,slow=19,SNR=9.0				
JCJ			LR	LR	18 09 05.3
	comp=Z,858nm,20.8s,baz=270,slow=36				
SNY	**Shenyang**	**50.63 21**	⇑P	**P**	**17 47 33.1 -0.7**
SNY			pP	**pP**	**17 47 44.0 +0.4**
SNY			PP	**PP**	**17 49 30.4 +0.4**
SNY			S	**S**	**17 54 43.7 -2.7**

SNY				sS	**sS**	**17 54 59.7**	**-2.9**
SNY				pmax	pmax		
	comp=Z,500nm,6.6s						
SNY				LR	LR		
	comp=Z,1μm,14.9s						
SNY				LR	LR		
	comp=Z,5μm,16.9s						
SNY				LR	LR		
	comp=Z,6μm,15.7s						
EIDS	**Eidsvold**	**51.37**	**119**	P	**P**	**17 47 39.8**	**0.0**
	baz=52,SNR=3.3						
EIDS	**Eidsvold**	**51.37**	**119**	*e*P	**P**	**17 47 39.1**	**-0.7**
	comp=Z,20nm,0.9s						
SFK	**Sufi-Kurgan**	**51.76**	**332**	P	**P**	**17 47 43.5**	**+0.9**
SFK				pmax	pmax		
	comp=Z,115nm,1.3s						
SHLS	**Shalkode**	**51.83**	**340**	*i* P	**P**	**17 47 41.6**	**-1.5**
	comp=Z,528nm,1.4s						
SHLS				*i* PP	**PP**	**17 49 39.3**	**-1.9**
SHLS				*e*S	**S**	**17 55 02.4**	**-1.0**
SHLS				LR	LR	18 10 03.6	
	comp=Z,183nm,16.5s						
INU	**Inuyama**	**51.99**	**37**	*e*P	**P**	**17 47 42.5**	**-1.7**
	comp=Z,38nm,0.9s						
PDGK	**Podgornoye**	**52.12**	**339**	P	**P**	**17 47 45.9**	**+1.0**
PDGK				pmax	pmax		
	comp=Z,84nm,1.1s						
SATY	**Saty**	**52.27**	**338**	*i* P	**P**	**17 47 44.8**	**-1.5**
	comp=Z,700nm,1.6s						
SATY				*i* S	**S**	**17 55 08.0**	**-1.3**
SATY				LR	LR	18 10 42.1	
	comp=Z,645nm,19.4s						
KPKS	**Kokpek**	**52.52**	**339**	*i* P	**P**	**17 47 46.4**	**-1.6**
	comp=Z,649nm,1.5s						
KPKS				*i* S	**S**	**17 55 11.0**	**-1.7**
KPKS				LR	LR	18 11 06.2	
	comp=Z,548nm,19.3s						
SONM	**Songino Array**	**52.72**	**4**	P	**P**	**17 47 50.9**	**+1.4**
	comp=Z,72nm,0.8s,baz=180,slow=8.8,SNR=51						
SONM				S	**S**	**17 55 16.3**	**+1.0**
	comp=Z,3.8nm,0.4s,baz=282,slow=41,SNR=2.8						
SONA1	**Songino Array**	**52.73**	**4**	*e*P	**P**	**17 47 50.4**	**+0.8**
ULN	**Ulaanbaatar**	**52.80**	**4***c*	*i* P	**P**	**17 47 51.0**	**+0.9**
ULN				pmax	pmax		
	comp=Z,108nm,1.2s						
ULN				MLR	MLR		
	comp=Z,3μm,17.0s						
ULN	**Ulaanbaatar**	**52.80**	**4**	*e*P	**P**	**17 47 51.2**	**+1.1**
	comp=Z,75nm,1.0s						
ULN				LR	LR		
	comp=Z,3μm,20.0s						
MDOK	**Medeo**	**52.87**	**337**	*i* P	**P**	**17 47 49.8**	**-0.9**
	comp=Z,234nm,1.6s						
MDOK				*i* PP	**PP**	**17 49 47.9**	**-2.6**
MDOK				*i* S	**S**	**17 55 17.0**	**-0.5**
MDOK				LR	LR	18 10 19.2	
	comp=Z,444nm,18.7s						
CAN	**Canberra**	**52.94**	**131**	PFAKE		17 48 00.0	+8.7
CAN				LR	LR		
	comp=Z,4μm,22.0s						
AAA	**Alma-Ata**	**53.00**	**337**	*e*P	**P**	**17 47 52.4**	**+0.9**
AAA				*e*S	**S**	**17 55 21.6**	**+2.5**
AAA				pmax	pmax		
	comp=Z,900nm,3.7s						
AAA				smax	smax		
	comp=E,2μm,7.8s						
AAA				MLR	MLR		
	comp=Z,1μm,23.0s						
CN2	**Changchun**	**53.02**	**21**	*e*P	**P**	**17 47 51.2**	**-0.4**
CN2				*e*sP	pP	17 48 02.0	+0.5
CN2				*e*S	**S**	**17 55 19.0**	**-0.3**
CN2				SS	**SS**	**17 58 58.0**	**-1.0**
CN2				pmax	pmax		
	comp=Z,20nm,0.7s						
CN2				pmax	pmax		
	comp=Z,200nm,7.0s						
CN2				LR	LR		
	comp=Z,5μm,22.0s						
CN2				LR	LR		
	comp=Z,2μm,22.0s						
CN2				LR	LR		
	comp=Z,2μm,18.0s						
TKM2	**Tokmak 2**	**53.23**	**336**	P	**P**	**17 47 54.0**	**+0.5**
TKM2				pmax	pmax		
	comp=Z,60nm,1.0s						
TKM2	**Tokmak 2**	**53.23**	**336**	*e*P	**P**	**17 47 54.0**	**+0.5**
TKM2				LR	LR		
	comp=Z,2μm,20.0s						
ARMA	**Armidale**	**53.27**	**125**	*e*P	**P**	**17 47 55.6**	**+1.7**
	comp=Z,36nm,1.3s						
AAK	**Ala-Archa**	**53.45**	**335**	P	**P**	**17 47 56.0**	**+1.0**
	comp=Z,10.0nm,0.8s,baz=147,slow=6.0,SNR=29						
AAK				LR	LR	18 13 28.1	
	comp=Z,2μm,21.4s,baz=140,slow=39						
AAK	**Ala-Archa**	**53.45**	**335***c*	*i* P	**P**	**17 47 55.9**	**+0.9**
AAK				pmax	pmax		
	comp=Z,128nm,2.3s						
AAK				MLR	MLR		
	comp=Z,3μm,21.0s						
AAK	**Ala-Archa**	**53.45**	**335**	*e*P	**P**	**17 47 55.5**	**+0.5**
	comp=Z,69nm,1.3s						
MAJO	**Matsushiro**	**53.51**	**37***c*	*i* P	**P**	**17 47 53.7**	**-1.7**
MAJO				pmax	pmax		
	comp=Z,345nm,1.0s						
MAJO				MLR	MLR		
	comp=Z,6μm,16.0s						
MAJO	**Matsushiro**	**53.51**	**37**	*e*P	**P**	**17 47 53.9**	**-1.5**
	comp=Z,236nm,1.8s						
MAJO				LR	LR		
	comp=Z,960nm,21.0s						
MAT	**Matsushiro**	**53.51**	**37**	P	**P**	**17 47 53.8**	**-1.6**
MAT				S	**S**	**17 55 27.0**	**+0.8**
MJAR	**Matsushiro Arr**	**53.51**	**37**	P	**P**	**17 47 53.9**	**-1.5**
	comp=Z,36nm,0.8s,baz=218,slow=7.1,SNR=93						
MJB9	**Matsu-Tunnel**	**53.51**	**36**	*e*P	**P**	**17 47 53.9**	**-1.5**
	comp=Z,60nm,1.8s						
FRU	**Bishkek**	**53.56**	**335**⇑	*i* P	**P**	**17 47 56.0**	**+0.3**
FRU				*e*S	**S**	**17 55 27.0**	**+0.3**
FRU				pmax	pmax		
	comp=Z,140nm,1.8s						
FAQ	**Al Faqa, Dubai**	**53.74**	**306**	*i* P	**P**	**17 47 58.5**	**+1.3**
	SNR=5.9						
KUU	**Kurty**	**53.76**	**337**	*i* P	**P**	**17 47 54.9**	**-2.2**
	comp=Z,709nm,1.0s						
KUU				*e*PP	**PP**	**17 49 56.3**	**-2.1**
KUU				*e*S	**S**	**17 55 27.1**	**-2.3**
KUU				LR	LR	18 11 12.1	
	comp=Z,530nm,16.9s						
EKS2	**Erkin-Say**	**53.77**	**335**	*e*P	**P**	**17 47 58.4**	**+1.1**
EKS2				pmax	pmax		
	comp=Z,58nm,0.9s						
EKS2	**Erkin-Say**	**53.77**	**335**	PFAKE		17 48 10.0	+13
EKS2				LR	LR		
	comp=Z,1μm,20.0s						
MNAS	**Manas**	**54.19**	**334**	P	**P**	**17 48 00.8**	**+0.4**
MNAS				pmax	pmax		
	comp=Z,71nm,0.9s						
MSHR	**Mys Shultsa**	**54.31**	**26***c*	*i* P	**P**	**17 48 01.2**	**+0.1**
MK01	**Makanchi Array**	**54.31**	**344**	*e*P	**P**	**17 48 01.3**	**+0.2**
MK31	**Makanchi Array**	**54.34**	**344**	*i* P	**P**	**17 48 01.3**	**0.0**
MK31				pmax	pmax		
	comp=Z,69nm,1.0s						
MK31	**Makanchi Array**	**54.34**	**344**	*e*P	**P**	**17 48 01.5**	**+0.2**
MKAR	**Makanchi Array**	**54.34**	**344**	P	**P**	**17 48 01.6**	**+0.3**
	comp=Z,50nm,0.7s,baz=149,slow=7.6,SNR=168						
MKAR				S	**S**	**17 55 37.0**	**-0.1**
	comp=Z,0.7nm,0.9s,baz=165,slow=7.0,SNR=2.3						
MKAR				LR	LR	18 16 30.8	
	comp=Z,803nm,19.4s,baz=152,slow=42						
ZSN	**Zaisan**	**54.38**	**346**	*i* P	**P**	**17 47 59.8**	**-1.8**
	comp=Z,853nm,0.9s						
ZSN				*i* S	**S**	**17 55 36.1**	**-1.6**
ZSN				LRM	MLR	18 13 43.0	
	comp=Z,453nm,17.7s						
MAKZ	**Makanchi**	**54.44**	**343**	*e*P	**P**	**17 48 02.1**	**+0.1**
MAKZ				pmax	pmax		
	comp=Z,38nm,1.0s						
MAKZ	**Makanchi**	**54.44**	**343**	*e*P	**P**	**17 48 02.1**	**+0.1**
	comp=Z,38nm,1.0s						
IUG	**Iuzhnay**	**55.06**	**331**	*i* P	**P**	**17 48 05.3**	**-1.3**
	comp=Z,659nm,1.2s						
IUG				*e*S	**S**	**17 55 45.8**	**-1.3**
IUG				LR	LR	18 11 34.0	
	comp=Z,571nm,19.8s						
VLA	**Vladivostok**	**55.06**	**27***c*	*i* P	**P**	**17 48 06.8**	**+0.3**
VLA				pmax	pmax		
	comp=Z,151nm,1.5s						
VLA				MLR	MLR		
	comp=Z,1μm,18.0s						
ZAK	**Zakamensk**	**55.13**	**1**	*e*P	**P**	**17 48 06.5**	**-0.5**
ZAK				pmax	pmax		
	comp=Z,27nm,1.6s						
TAU	**Tasmania Unive**	**55.19**	**140**	PFAKE		17 48 20.0	+12
TAU				LR	LR		
	comp=Z,2μm,19.0s						
MDJ	**Mudanjiang**	**55.30**	**24**	P	**P**	**17 48 08.1**	**-0.1**
MDJ				pP	pP	17 48 14.3	-3.9
MDJ				sP	sP	17 48 17.1	-4.9
MDJ				PcP	**PcP**	**17 49 09.3**	**+0.7**
MDJ				PP	**PP**	**17 50 15.5**	**+3.3**
MDJ				ScP	**ScP**	**17 53 05.5**	**+0.3**
MDJ				PcS	**PcS**	**17 53 08.9**	**+0.4**
MDJ				S	**S**	**17 55 48.7**	**-1.3**
MDJ				ScS	**ScS**	**17 57 55.8**	**+0.8**
MDJ				SS	**SS**	**17 59 37.1**	**+2.2**
MDJ				pmax	pmax		
	comp=Z,55nm,0.8s						
MDJ				pmax	pmax		
	comp=Z,410nm,6.7s						
MDJ				LR	LR		
	comp=Z,750nm,15.9s						
MDJ				LR	LR		
	comp=Z,1μm,19.9s						
MDJ				LR	LR		
	comp=Z,2μm,19.9s						
MDJ	**Mudanjiang**	**55.30**	**24**	*e*P	**P**	**17 48 07.9**	**-0.3**
	comp=Z,46nm,0.8s						
MDJ				LR	LR		
	comp=Z,3μm,19.0s						
KK31	**Karatay Array**	**55.57**	**333**	*i* P	**P**	**17 48 09.5**	**-0.8**
KK31				pmax	pmax		
	comp=Z,12nm,0.8s						
KKAR	**Karatay Array**	**55.57**	**333**	*e*P	**P**	**17 48 10.1**	**-0.2**
KKAR	**Karatay Array**	**55.57**	**333**	*e*P	**P**	**17 48 10.1**	**-0.2**
USRK	**Ussuriysk Ar.**	**55.97**	**26**	P	**P**	**17 48 13.2**	**+0.2**
	comp=Z,139nm,0.7s,baz=219,slow=6.1,SNR=329						
USRK				LR	LR	18 14 55.2	
	comp=Z,3μm,18.2s,baz=214,slow=39						
HIA	**Hailar**	**56.22**	**14**	*e*P	**P**	**17 48 14.4**	**-0.3**
HIA				pmax	pmax		
	comp=Z,38nm,0.8s						
HIA				MLR	MLR		
	comp=Z,6μm,19.0s						
HIA	**Hailar**	**56.22**	**14**	*e*P	**P**	**17 48 14.4**	**-0.3**
	comp=Z,38nm,0.8s						
HIA				LR	LR		
	comp=Z,6μm,19.0s						
MOY	**Mondy**	**56.40**	**359**	*e*P	**P**	**17 48 16.7**	**+0.6**
MOY				pmax	pmax		
	comp=Z,114nm,2.7s						
TLY	**Talaya**	**56.44**	**1**	LR	LR	18 15 38.5	
	comp=Z,3μm,18.6s,baz=178,slow=40						
TLY	**Talaya**	**56.44**	**1***c*	*i* P	**P**	**17 48 17.4**	**+1.1**
TLY				*e*S	**S**	**17 56 08.2**	**+3.2**
TLY				*e*		17 58 04.4	
TLY				pmax	pmax		
	comp=Z,90nm,1.6s						
TLY				MLR	MLR		
	comp=Z,3μm,16.0s						
TLY	**Talaya**	**56.44**	**1**	*e*P	**P**	**17 48 17.8**	**+1.5**
	comp=Z,275nm,2.0s						
IRK	**Irkutsk**	**57.02**	**2**	*e*P	P	17 48 30.3	+10
IRK				*e*		17 56 16.6	
IRK				pmax	pmax		
	comp=Z,145nm,2.9s						
CIT	**Chita**	**57.64**	**9**	*e*P	**P**	**17 48 25.9**	**+1.1**
CIT				*e*		17 48 32.6	
CIT				*e*		17 48 38.1	
CIT				*e*		17 49 12.6	
CIT				*e*		17 50 31.7	
CIT				*e*S	**S**	**17 56 24.6**	**+3.7**
CIT				pmax	pmax		
	comp=Z,144nm,1.5s						
HNR	**Honiara**	**57.83**	**98**	P	**P**	**17 48 26.4**	**-0.5**
	comp=Z,91nm,0.7s,baz=166,slow=8.4,SNR=9.0						
HNR	**Honiara**	**57.83**	**98**	P	**P**	**17 48 25.0**	**-1.8**
HNR	**Honiara**	**57.83**	**98**	*e*P	**P**	**17 48 26.3**	**-0.5**
HNR				pmax	pmax		
	comp=Z,99nm,0.8s						
HNR	**Honiara**	**57.83**	**98**	*e*P	**P**	**17 48 26.3**	**-0.5**
	comp=Z,99nm,0.8s						
HNR				LR	LR		
	comp=Z,995nm,20.0s						
SEM	**Semipalatinsk**	**58.19**	**344**	*e*P	**P**	**17 48 27.3**	**-1.3**
	comp=Z,343nm,0.8s						
SEM				*e*S	**S**	**17 56 26.3**	**-1.7**
SEM				LR	LR	18 13 56.2	
	comp=Z,354nm,18.5s						
GEYT	**Alibeck**	**58.84**	**320**	P	**P**	**17 48 34.0**	**+0.5**
	comp=Z,12nm,0.8s,baz=146,slow=8.2,SNR=39						
GEYT				LR	LR	18 16 44.0	
	comp=Z,2μm,20.8s,baz=130,slow=39						
KURBB	**Kurchatov Arra**	**58.87**	**343**	P	**P**	**17 48 33.5**	**+0.1**
	comp=Z,17nm,0.9s,baz=158,slow=6.8,SNR=131						
KURBB				S	**S**	**17 56 34.8**	**-2.0**
	comp=Z,1.1nm,1.1s,baz=149,slow=13,SNR=4.4						
OTUK	**Ortayu**	**58.92**	**337**	P	**P**	**17 48 33.9**	**+0.1**
OTUK				pmax	pmax		
	comp=Z,48nm,1.0s						
KURK	**Kurchatov**	**58.93**	**343**	P	**P**	**17 48 33.7**	**0.0**
KURK				pmax	pmax		
	comp=Z,144nm,1.2s						
KURK	**Kurchatov**	**58.93**	**343**	PFAKE		17 48 50.0	+16
KURK				LR	LR		
	comp=Z,4μm,20.0s						
KLR	**Kul'dur**	**59.93**	**22**	P	**P**	**17 48 40.7**	**-0.1**
	comp=Z,42nm,0.9s,baz=232,slow=5.9,SNR=164						
KLR				LR	LR	18 17 08.0	
	comp=Z,3μm,18.4s,baz=224,slow=39						
ERM	**Erimo**	**60.01**	**35***c*	*i* P	**P**	**17 48 41.1**	**-0.2**
ERM				pmax	pmax		
	comp=Z,81nm,1.7s						
ERM				MLR	MLR		
	comp=Z,679nm,16.0s						
ERM	**Erimo**	**60.01**	**35**	*e*P	**P**	**17 48 41.1**	**-0.2**
	comp=Z,50nm,0.9s						
ERM				LR	LR		
	comp=Z,1μm,21.0s						
DAMY	**Dhamar**	**60.10**	**290**	*e*P	**P**	**17 48 45.5**	**+2.7**
	comp=Z,33nm,1.0s						
ZALV	**Zalesovo Beam**	**60.39**	**349**	P	**P**	**17 48 43.9**	**+0.1**
	comp=Z,71nm,0.8s,baz=176,slow=4.8,SNR=282						
ZALV				S	**S**	**17 56 51.7**	**-4.6**
	comp=Z,0.4nm,0.4s,baz=134,slow=8.3,SNR=3.0						
ZALV				LR	LR	18 18 26.2	
	comp=Z,2μm,19.8s,baz=154,slow=40						
HABR	**Khabarovsk**	**60.64**	**25***de*	P	**P**	**17 48 42.8**	**-2.8**
HABR				*e**PP	**pP**	**17 48 52.9**	**-2.7**
HABR				*e**SP	**sP**	**17 48 57.1**	**-2.4**
HABR				*e*		17 49 27.0	
HABR				*e*		17 50 56.2	
HABR				*e*S	**S**	**17 56 56.4**	**-3.3**
HABR				*e**SS	**sS**	**17 57 13.5**	**-2.8**
HABR				*e*		17 58 30.8	
HABR				*e*SS	**SS**	**18 00 56.0**	**-2.8**
HABR				pmax	pmax		
	comp=N,17nm,1.5s						
HABR				pmax	pmax		
	comp=E,43nm,1.5s						
HABR				pmax	pmax		
	comp=Z,107nm,1.5s						
HABR				MLR	MLR		
	comp=Z,2μm,19.0s						
ASAJ	**Asahikawa**	**61.08**	**33**	P	**P**	**17 48 48.5**	**-0.2**
	comp=Z,20nm,0.6s,baz=235,slow=8.2,SNR=68						
ASAJ	**Asahikawa**	**61.08**	**33**	*e*P	**P**	**17 48 48.0**	**-0.7**
	comp=Z,19nm,0.8s						
KRAR	**Krasnoyarsk**	**61.20**	**354***c*	*i* P	**P**	**17 48 49.4**	**+0.2**
KRAR				pmax	pmax		
	comp=Z,94nm,1.0s						
KRAR				MLR	MLR		
	comp=Z,2μm,18.0s						
CASY	**Casey**	**61.52**	**176**	PFAKE		17 49 00.0	+8.7
CASY				LR	LR		
	comp=Z,433nm,20.0s						
NVS	**Novosibirsk**	**61.55**	**348**⇑	*i* P	**P**	**17 48 51.2**	**-0.4**
NVS				*e*S	**S**	**17 57 09.4**	**-1.6**
NVS				pmax	pmax		
	comp=Z,52nm,1.7s						
NVS				pmax	pmax		
	comp=N,56nm,1.6s						
NVS				pmax	pmax		
	comp=E,36nm,1.5s						
NVS				smax	smax		
	comp=E,120nm,2.6s						
YUK	**Yuzh-Kuril'sk**	**62.82**	**34**	*i* P	**P**	**17 49 00.2**	**-0.1**
YSS	**Yuzh-Sakhalins**	**63.08**	**30**α	*i* P	**P**	**17 49 02.0**	**0.0**
YSS				*e*		17 49 44.0	
YSS				*e*		17 51 16.0	
YSS				*e*S	**S**	**17 57 34.0**	**+3.4**
YSS				pmax	pmax		
	comp=Z,100nm,1.1s						
YSS				pmax	pmax		
	comp=Z,400nm,6.0s						
YSS	**Yuzh-Sakhalins**	**63.08**	**30**	*e*P	**P**	**17 49 02.0**	**0.0**
	comp=Z,588nm,1.9s						
YSS				LR	LR		
	comp=Z,353nm,19.0s						
VOSK	**Vostochnaya**	**63.10**	**340**	P	**P**	**17 49 01.5**	**-0.6**
VOSK				pmax	pmax		
	comp=Z,33nm,1.1s						
BOD	**Bodaibo**	**63.34**	**7**⇓	*i* P	**P**	**17 49 03.3**	**-0.2**
BOD				pmax	pmax		
	comp=Z,44nm,1.5s						
BVAR	**Borovoye Array**	**63.55**	**339**	P	**P**	**17 49 04.8**	**-0.2**
	comp=Z,24nm,0.8s,baz=140,slow=7.8,SNR=88						
BVAR				LR	LR	18 19 58.2	
	comp=Z,763nm,20.2s,baz=156,slow=39						
BRVK	**Borovoye**	**63.62**	**339***c*	*i* P	**P**	**17 49 05.1**	**-0.4**
BRVK				pmax	pmax		
	comp=Z,27nm,0.8s						
BRVK				MLR	MLR		
	comp=Z,1μm,17.0s						
BRVK	**Borovoye**	**63.62**	**339**	*e*P	**P**	**17 49 05.3**	**-0.1**
	comp=Z,36nm,1.0s						
BRVK				LR	LR		
	comp=Z,1μm,20.0s						
KMBO	**Kilima Mbogo**	**64.52**	**271**	LR	LR	18 13 17.6	
	comp=Z,891nm,20.9s,baz=96,slow=32						
KMBO	**Kilima Mbogo**	**64.52**	**271**	*e*P	P	17 49 21.6	+9.1
KMBO	**Kilima Mbogo**	**64.52**	**271**	*e*pP	pP	17 49 21.6	-1.0
KUR	**Kuril'sk**	**64.69**	**34**	*e*P	**P**	**17 49 11.6**	**-1.0**
KUR				*e*S	S	17 58 07.6	+17
KUR				pmax	pmax		
	comp=Z,87nm,1.3s						
KUR				MLR	MLR		
	comp=N,632nm,20.0s						
KUR				MLR	MLR		
	comp=E,828nm,20.0s						
KUR				MLR	MLR		
	comp=Z,944nm,20.0s						
DZM	**Mont Dzumac**	**64.69**	**112**	P	**P**	**17 49 12.7**	**-0.6**
	comp=Z,16nm,1.0s,baz=236,slow=14,SNR=6.5						
DZM				LR	LR	18 19 28.7	
	comp=Z,1μm,19.9s,baz=271,slow=38						
AB31	**Akbulak array**	**65.06**	**331**	P	**P**	**17 49 14.8**	**-0.2**
AB31				pmax	pmax		
	comp=Z,56nm,0.8s						
ABKAR	**Akbulak array**	**65.06**	**331**	*e*P	**P**	**17 49 15.2**	**+0.2**
TYV	**Tymovskoe**	**65.73**	**27**	*e*P	**P**	**17 49 21.0**	**+1.7**
TYV				*e*		17 58 40.0	
TYV				pmax	pmax		
	comp=Z,100nm,1.6s						
TYV				MLR	MLR		
	comp=Z,2μm,16.0s						
TYV				MLR	MLR		
	comp=E,4μm,16.0s						
NKL	**Nikolayevsk**	**66.52**	**24**	*i* P	**P**	**17 49 24.0**	**-0.2**
NKL				*e*		17 49 42.0	
NKL				*e*		17 58 18.0	
NKL				pmax	pmax		
	comp=N,45nm,1.5s						
NKL				pmax	pmax		
	comp=Z,120nm,1.5s						
NKL				pmax	pmax		
	comp=Z,800nm,8.0s						
NKL				MLR	MLR		
	comp=N,2μm,16.0s						
NKL				MLR	MLR		
	comp=E,2μm,16.0s						
NKL				MLR	MLR		
	comp=Z,4μm,16.0s						
AKTO	**Aktyubinsk**	**66.78**	**331**	P	**P**	**17 49 25.9**	**-0.1**
	comp=Z,16nm,1.0s,baz=130,slow=7.0,SNR=40						
MAW	**Mawson**	**67.89**	**195**	P	**P**	**17 49 33.7**	**+0.9**
	comp=Z,12nm,0.9s,baz=21,slow=7.1,SNR=12						
MAW				LR	LR	18 14 10.9	
	comp=Z,3μm,19.4s,baz=42,slow=32						
MAW	**Mawson**	**67.89**	**195**	P	**P**	**17 49 34.0**	**+1.2**
	baz=68,SNR=9.0						
MAW	**Mawson**	**67.89**	**195**	*e*P	**P**	**17 49 33.9**	**+1.2**
MAW				pmax	pmax		
	comp=Z,7.0nm,1.0s						
MAW	**Mawson**	**67.89**	**195**	*e*P	**P**	**17 49 33.9**	**+1.1**
	comp=Z,7.1nm,1.0s						
GNI	**Garni**	**68.87**	**316**	P	**P**	**17 49 39.8**	**+0.2**
	comp=Z,4.6nm,0.5s,baz=70,slow=0.6,SNR=8.3						
GNI				LR	LR	18 20 39.8	
	comp=Z,607nm,20.9s,baz=126,slow=37						
GNI	**Garni**	**68.87**	**316**	P	**P**	**17 49 40.5**	**+0.8**
GNI	**Garni**	**68.87**	**316**	*e*P	**P**	**17 49 40.1**	**+0.4**
DGRG	**David-gareji**	**69.03**	**318**	P	**P**	**17 49 42.4**	**+1.9**
DGRG	**David-gareji**	**69.03**	**318**	P	**P**	**17 49 42.4**	**+1.9**
TBLG	**Delisi**	**69.58**	**318**	P	**P**	**17 49 44.9**	**+1.1**
TBLG	**Delisi**	**69.58**	**318**	P	**P**	**17 49 44.9**	**+1.1**
SVE	**Sverdlovsk**	**70.07**	**337***d*	*i* P	**P**	**17 49 47.1**	**+0.6**
SVE				*e*S	**S**	**17 58 54.4**	**-0.6**
SVE				*e*SSS	SSS	18 06 26.0	
SVE				pmax	pmax		
	comp=Z,77nm,1.0s						
SVE				MLR	MLR		
	comp=Z,2μm,22.0s						
GUDG	**Gudauri**	**70.09**	**319**	P	**P**	**17 49 49.8**	**+2.6**
YAK	**Yakutsk**	**70.16**	**14**	P	**P**	**17 49 46.0**	**-0.9**
	comp=Z,107nm,0.7s,baz=150,slow=0.9,SNR=69						
YAK				S	**S**	**17 58 51.2**	**-4.5**
	comp=Z,1.3nm,0.3s,baz=118,slow=23,SNR=9.0						
YAK				LR	LR	18 24 42.6	
	comp=Z,2μm,18.5s,baz=229,slow=40						
YAK	**Yakutsk**	**70.16**	**14***c*	*i* P	**P**	**17 49 45.9**	**-0.9**
YAK				*e**PP	**sP**	**17 49 59.0**	**-1.9**
YAK				*e*		17 50 10.9	
YAK				*e*S	**S**	**17 58 52.3**	**-3.4**
YAK				*e*		17 59 41.4	
YAK				pmax	pmax		
	comp=Z,75nm,0.8s						
YAK				pmax	pmax		
	comp=N,18nm,1.0s						
YAK				pmax	pmax		
	comp=E,18nm,1.3s						
YAK				pmax	pmax		
	comp=Z,112nm,4.8s						
YAK				pmax	pmax		
	comp=N,43nm,2.6s						
YAK				pmax	pmax		
	comp=E,65nm,3.8s						
YAK				smax	smax		
	comp=N,70nm,2.1s						
YAK				smax	smax		
	comp=E,44nm,1.6s						
YAK				MLR	MLR		
	comp=Z,3μm,16.0s						
YAK				MLR	MLR		
	comp=N,1μm,15.0s						
YAK				MLR	MLR		
	comp=E,1μm,15.0s						
YAK	**Yakutsk**	**70.16**	**14**	*e*P	**P**	**17 49 46.0**	**-0.9**
	comp=E,134nm,0.8s						
YAK				S	**S**	**17 58 51.2**	**-4.5**
ARU	**Arti**	**70.61**	**336**	P	**P**	**17 49 50.0**	**+0.2**
	comp=E,26nm,0.8s,baz=124,slow=3.3,SNR=45						
ARU	**Arti**	**70.61**	**336***c*	*i* P	**P**	**17 49 49.9**	**+0.2**
ARU						17 50 08.9	
ARU						17 52 25.0	
ARU				PPP	PPP	17 54 09.8	
ARU				S	**S**	**17 59 02.7**	**+1.5**
ARU						17 59 48.3	
ARU				SS	**SS**	**18 03 28.4**	**-5.0**
ARU				pmax	pmax		
	comp=Z,87nm,1.7s						
ARU				MLR	MLR		
	comp=Z,2μm,24.0s						
ARU	**Arti**	**70.61**	**336**	*e*P	**P**	**17 49 50.0**	**+0.2**
	comp=Z,35nm,0.8s						
ARU				LR	LR		
	comp=Z,2μm,22.0s						
ZEI	**Tsey**	**70.61**	**319**	*e*P	**P**	**17 49 50.4**	**0.0**
ZEI				*e*S	**S**	**17 59 04.1**	**+1.8

ZEI pmax pmax
comp=Z,54nm,0.9s
SFNV Sufian 70.69 311 *e*P **P** **17 49 50.0 -0.8**
ONI Oni 70.82 318 P **P** **17 49 52.9 +1.4**
ONI Oni 70.82 318 P **P** **17 49 52.9 +1.4**
NCK Nalchik 71.13 319⇓*i*P **P** **17 49 54.6 +1.3**
NCK pmax pmax
comp=Z,13nm,0.5s
NCK MLR MLR
comp=Z,712nm,19.0s
TARA Tarawa 71.35 87 PFAKE 17 50 10.0 +15
TARA LR LR
comp=Z,77nm,20.0s
NEY Neytrino 71.59 319⇑*e*P **P** **17 49 57.5 +1.2**
NEY pmax pmax
comp=Z,3.0nm,0.8s
ZALF Zalf 71.63 307 *e*P **P** **17 49 55.8 -0.7**
RPZ Rata Peaks 71.66 134 P **P** **17 49 56.9 +0.4**
comp=Z,5.9nm,0.5s,baz=295,slow=5.1,SNR=3.2
RPZ LR LR 18 20 51.3
comp=Z,2μm,20.9s,baz=278,slow=35
KBZ Khabaz 71.69 319 P **P** **17 49 57.2 +0.7**
comp=Z,12nm,0.8s,baz=123,slow=6.0,SNR=40
KBZ S **S** **17 59 13.9 -0.2**
comp=Z,0.5nm,0.6s,baz=287,slow=19,SNR=4.0
ASF Jabal al Asfar 71.75 306 P **P** **17 49 58.6 +1.2**
comp=Z,7.9nm,0.9s,baz=69,slow=2.3,SNR=14
CHVG Ch'k'valeri 71.79 318 P P 17 50 08.0 +11
KVAR Kislovodsk Arr 71.92 319 P **P** **17 49 58.4 +0.2**
comp=Z,12nm,0.8s,baz=305,slow=3.0,SNR=13
KIV Kislovodsk 71.92 319 P **P** **17 49 58.7 +0.6**
KIV Kislovodsk 71.92 319 *e*P **P** **17 49 58.2 +0.1**
KIV *e*S **S** **17 59 17.5 +0.3**
KIV pmax pmax
comp=Z,15nm,1.0s
KIV MLR MLR
comp=Z,792nm,17.0s
KIV Kislovodsk 71.92 319 *e*P **P** **17 49 58.8 +0.6**
comp=Z,36nm,0.9s
KIV LR LR
comp=Z,916nm,20.0s
SALA Sala 72.05 307 *e*P **P** **17 49 58.8 -0.5**
ROOS tl_aroos 72.07 308 *e*P **P** **17 49 58.2 -1.0**
GOF Gofitskoye 72.18 320⇑*e*P **P** **17 50 00.4 +0.9**
GOF pmax pmax
comp=Z,31nm,1.3s
SKR Severo-Kuril's 72.34 33 *e*P **P** **17 50 00.1 -0.2**
TCHB Talchebab 72.64 306 *e*P **P** **17 50 01.7 -1.0**
LSZ Lusaka 72.89 256 *e*P **P** **17 50 04.8 +0.2**
LSZ pmax pmax
comp=Z,15nm,1.1s
LSZ MLR MLR
comp=Z,1μm,21.0s
LSZ Lusaka 72.89 256 *e*P **P** **17 50 04.8 +0.2**
comp=Z,15nm,1.1s
LSZ LR LR
comp=Z,1μm,21.0s
MMAI Mount Meron Ar 73.20 306 P **P** **17 50 07.5 +1.5**
comp=Z,3.8nm,0.7s,baz=94,slow=5.9,SNR=9.5
SOKR Solikamsk 73.47 338*c i*P **P** **17 50 06.3 -0.5**
SOKR S **S** **17 59 31.9 -2.0**
SOKR pmax pmax
comp=Z,48nm,0.9s
SOKR MLR MLR
comp=Z,3μm,24.0s
ARNB Al Arnab 73.64 309 *e*P **P** **17 50 13.2 +4.7**
SOC Sochi 73.72 318 *e*P **P** **17 50 08.1 -0.6**
SOC *e* 17 52 49.1
SOC *e*S **SKiKP** **17 59 33.9 -2.3**
SOC *e*SS **SS** **18 04 20.7 -1.0**
SOC pmax pmax
comp=Z,25nm,0.8s
SOC MLR MLR
comp=Z,722nm,22.0s
SNZO South Karori 73.93 131 PFAKE 17 50 20.0 +10
SNZO LR LR
comp=Z,3μm,22.0s
PEA0 Petropavlovsk- 74.45 31 *e*P **P** **17 50 12.2 -0.5**
PEA0B Petropavlovsk- 74.45 31 *e*P **P** **17 50 12.7 0.0**
comp=Z,118nm,1.8s
PETK Petropavlovsk- 74.45 31 P **P** **17 50 12.2 -0.5**
comp=Z,18nm,0.8s,baz=203,slow=3.4,SNR=26
PETK Petropavlovsk- 74.45 31 P **P** **17 50 12.2 -0.5**
PETK pmax pmax
comp=Z,17nm,0.8s
NRIK Noril'sk 74.78 355 P **P** **17 50 14.2 -0.1**
comp=Z,25nm,0.7s,baz=161,slow=4.5,SNR=44
NRIK S **S** **17 59 45.0 -3.3**
comp=Z,2.0nm,0.3s,baz=314,slow=20,SNR=5.3
NRIK LR LR 18 27 18.0
comp=Z,2μm,18.1s,baz=164,slow=39
PET Petropavlovsk 74.90 32α*i*P **P** **17 50 14.8 -0.5**
PET *e* 17 53 04.6
PET *e*S **S** **17 59 47.0 -3.3**
PET *e*PS **PnS** **18 00 22.0 -6.3**
PET pmax pmax
comp=Z,80nm,0.9s
PET pmax pmax
comp=Z,400nm,3.5s
PET pmax pmax
comp=Z,400nm,19.8s
PET pmax pmax
comp=Z,300nm,13.7s
PET MLR MLR
comp=Z,700nm,19.0s
PET MLR MLR
comp=Z,700nm,19.0s
PET Petropavlovsk 74.90 32 *e*P **P** **17 50 14.9 -0.4**
comp=Z,58nm,0.9s
PET LR LR
comp=Z,853nm,20.0s
MA2 Magadan 75.00 23 *e*P **P** **17 50 15.5 -0.2**
MA2 pmax pmax
comp=Z,350nm,1.1s
MA2 MLR MLR
comp=Z,2μm,21.0s
MA2 Magadan 75.00 23 *e*P **P** **17 50 15.5 -0.2**
comp=Z,350nm,1.1s
MA2 LR LR
comp=Z,2μm,21.0s
BKZ Black Stump Fm 75.04 129 *e*P **P** **17 50 17.1 +0.5**
comp=Z,42nm,0.7s
LBTB Lobatse 75.40 246 *e*P **P** **17 50 19.9 +0.9**
LBTB pmax pmax
comp=Z,12nm,1.1s
LBTB Lobatse 75.40 246 *e*P **P** **17 50 19.9 +0.9**
comp=Z,12nm,1.1s
CSS Mathiatis 75.42 308 *e*P **P** **17 50 19.9 +1.2**
comp=Z,8.8nm,1.0s
CSS LR LR
comp=Z,358nm,19.0s
URZ Urewera 75.44 128 LR LR 18 21 53.8
comp=Z,673nm,21.5s,baz=296,slow=34
MSVF Nonsavu 75.45 107 *e*P **P** **17 50 19.7 +0.4**
MSVF pmax pmax
comp=Z,31nm,1.2s
MSVF Nonsavu 75.45 107 *e*P **P** **17 50 19.7 +0.4**
comp=Z,31nm,1.2s
MSVF LR LR
comp=Z,2μm,20.0s
SYO Syowa Base 75.67 199⇓*e*X **P** **17 50 17.0 -2.5**
SYO Syowa Base 75.67 199⇓*i*X pP 17 50 27.2 -2.6
ANN Anapa 75.71 319 *e*P **P** **17 50 17.9 -2.2**
ANN *e**PP **pP** **17 50 26.8 -3.6**
ANN *e* 17 50 32.0
ANN *e* 17 53 07.0
ANN *e*S **S** **17 59 56.3 -3.2**
ANN pmax pmax
comp=Z,8.0nm,1.0s
VRH Novokhopyorsk 75.75 326 *e*P **P** **17 50 20.2 0.0**
VRH *e*S **S** **17 59 56.1 -3.6**
VRH pmax pmax
comp=Z,40nm,0.8s
VRH smax smax
comp=N,250nm,2.0s
VRH MLR MLR
comp=Z,1μm,25.0s
BOSA Boshof 75.81 242 P **P** **17 50 21.7 +0.3**
comp=Z,3.4nm,0.8s,baz=61,slow=4.9,SNR=6.9
BOSA LR LR 18 18 20.3
comp=Z,2μm,19.5s,baz=86,slow=32
BR131 Keskin Array S 76.61 313 *e*P **P** **17 50 25.4 -0.3**
BRTR Keskin Array B 76.61 313 P **P** **17 50 25.2 -0.4**
comp=Z,5.9nm,0.8s,baz=132,slow=7.5,SNR=25
BRTR LR LR 18 26 07.9
comp=Z,758nm,19.7s,baz=110,slow=37

FUNA Funafuti 76.86 98 PFAKE 17 50 40.0 +13
FUNA LR LR
comp=Z,9μm,20.0s
VSR Storozhevoye 77.20 325 *e*P **P** **17 50 28.1 -0.4**
VSR *e*S **S** **18 00 12.3 -3.4**
VSR pmax pmax
comp=Z,20nm,0.7s
VSR smax smax
comp=N,290nm,3.5s
BR231 Keskin MP Arra 77.28 313 *e*P **P** **17 50 26.0 -3.4**
SEY Seymchan 77.70 21 P **P** **17 50 31.5 +0.4**
comp=N,13nm,0.8s,baz=226,slow=6.1,SNR=38
SEY Seymchan 77.70 21⇑*i*P **P** **17 50 31.2 +0.2**
LPSR Galich'ya Gora 77.92 326 *e*P **P** **17 50 33.0 +0.6**
LPSR *e*S **S** **18 00 21.6 -1.8**
LPSR pmax pmax
comp=Z,10.0nm,0.6s
LPSR smax smax
comp=N,390nm,3.5s
LPSR MLR MLR
comp=Z,580nm,24.0s
SIM Simferopol' 77.96 318 *e*P **P** **17 50 33.4 +0.5**
SIM *e* 17 53 27.0
SIM *e*S **S** **18 00 23.0 -1.3**
SIM *e*SS **SS** **18 05 28.0 +2.1**
SIM *e*SSS SSS 18 08 44.0
SIM pmax pmax
comp=Z,17nm,0.8s
ISP Isparta 78.39 310 PFAKE 17 50 50.0 +14
ISP LR LR
comp=Z,864nm,21.0s
TIXI Tiksi 78.49 8*c i*P **P** **17 50 33.8 -1.4**
TIXI pmax pmax
comp=Z,46nm,1.3s
TIXI Tiksi 78.49 8 *e*P **P** **17 50 34.1 -1.0**
comp=Z,55nm,1.2s
TIXI LR LR
comp=Z,5μm,19.0s
VNDA Vanda 78.94 169 P **P** **17 50 37.3 -0.4**
comp=Z,1.3nm,0.6s,baz=287,slow=7.0,SNR=8.8
VNDA LR LR 18 23 18.4
comp=Z,689nm,18.3s,baz=313,slow=34
VNDA Vanda 78.94 169 *e*P **P** **17 50 37.5 -0.3**
comp=Z,12nm,1.1s
SUR Sutherland 79.74 238 PFAKE 17 51 00.0 +17
SUR LR LR
comp=Z,2μm,19.0s
MOS Moscow 79.92 329 *e*P **P** **17 50 42.0 -1.4**
MOS *e* 17 50 54.7
MOS *e*S **S** **18 00 41.5 -3.2**
MOS *e* 18 00 57.7
MOS pmax pmax
comp=Z,69nm,1.5s
MOS pmax pmax
comp=Z,200nm,2.0s
MOS smax smax
comp=E,600nm,4.4s
MOS smax smax
comp=N,700nm,3.9s
SBA Scott Base 80.03 169 *e*P **P** **17 50 45.4 +1.8**
SBA pmax pmax
comp=Z,15nm,0.9s
SBA Scott Base 80.03 169 *e*P **P** **17 50 45.4 +1.8**
comp=Z,15nm,0.9s
SBA LR LR
comp=Z,1μm,20.0s
OBN Obninsk 80.22 328 P **P** **17 50 44.6 -0.4**
comp=Z,20nm,0.5s,baz=89,slow=2.7,SNR=14
OBN Obninsk 80.22 328*c i*P **P** **17 50 45.5 +0.5**
OBN *e* 17 53 43.6
OBN *e*S **S** **18 00 49.0 +1.2**
OBN *e*SS **SS** **18 05 54.1 -5.2**
OBN pmax pmax
comp=Z,88nm,1.7s
OBN MLR MLR
comp=Z,1μm,22.0s
OBN Obninsk 80.22 328 P **P** **17 50 44.6 -0.4**
OBN LR LR
comp=Z,911nm,20.0s
KARP Karpathos 80.45 307 *e*P **P** **17 50 47.2 +0.5**
comp=Z,27nm,0.8s
KLMR Klimovskoe 81.24 334 *e*P **P** **17 50 49.7 -0.6**
KLMR *e* 17 53 56.2
KLMR pmax pmax
comp=Z,60nm,1.4s
TIRR Tirgusor 81.70 316⇑*i*P **P** **17 50 53.4 +0.3**
TIRR Tirgusor 81.70 316⇑P **P** **17 50 53.4 +0.3**
LAST Lasithi 81.71 306⇑*i*P **P** **17 50 55.1 +1.6**
SANT Santorini 81.98 308 PFAKE 17 51 10.0 +15
SANT LR LR
comp=Z,475nm,19.0s
PRD Provadia 82.08 315 *i* P **P** **17 50 55.0 -0.2**
IDI Anoyia 82.21 306⇓*i*P P 17 51 05.2 +9.1
IDI Anoyia 82.21 306 *e*P **P** **17 50 56.8 +0.7**
JMB Yambol 82.49 314 *i* P **P** **17 50 58.1 +0.8**
SORM Soroca 82.72 320⇑*i*P **P** **17 50 58.8 +0.4**
SORM Soroca 82.72 320⇑P **P** **17 50 58.8 +0.4**
AKASG Malin Array Be 82.89 322 P **P** **17 50 59.0 -0.2**
comp=Z,3.3nm,0.7s,baz=85,slow=5.1,SNR=29
AKASG LR LR 18 31 35.7
comp=Z,577nm,21.6s,baz=85,slow=38
AKASG Malin Array Be 82.89 322 P **P** **17 50 59.0 -0.2**
AKASG pmax pmax
comp=Z,3.0nm,0.7s
AKASG MLR MLR
comp=Z,577nm,21.6s
AKBB Malin Array Si 82.89 322 *e*P **P** **17 50 55.8 -3.4**
AKBB *e**PP **sP** **17 51 14.2 +0.8**
AKBB Malin Array Si 82.89 322 *e*P **P** **17 50 55.8 -3.4**
AKBB *e*pP **sP** **17 51 14.2 +0.8**
KIEV Kiev 82.90 322*c i*P **P** **17 50 58.9 -0.3**
KIEV pmax pmax
comp=Z,11nm,0.9s
KIEV MLR MLR
comp=Z,805nm,22.0s
KIEV Kiev 82.90 322 *e*P **P** **17 50 59.0 -0.2**
comp=Z,9.5nm,0.9s
KIEV LR LR
comp=Z,836nm,22.0s
TSUM Tsumeb 82.92 251 *e*P **P** **17 51 05.0 +4.8**
comp=Z,18nm,1.3s
TSUM LR LR
comp=Z,1μm,19.0s
AK11 Malin Array Si 82.92 322 *e*P **P** **17 50 59.4 0.0**
KDZ Kurdzhali 83.15 313 *i* P **P** **17 51 00.9 +0.1**
VRI Vrincioaia 83.21 317⇑*i*P **P** **17 51 02.5 +1.5**
VRI Vrincioaia 83.21 317⇑P **P** **17 51 02.5 +1.5**
TMCR Tamitsa 83.34 337 *e*P **P** **17 51 02.0 +0.8**
TMCR pmax pmax
comp=Z,56nm,0.4s
TESR Tescani 83.42 318⇑*i*P **P** **17 51 03.0 +0.9**
MLR Muntele Rosu 83.65 317 *i* P **P** **17 51 04.4 +0.9**
comp=Z,4.6nm,1.0s,baz=59,slow=2.7,SNR=21
MLR Muntele Rosu 83.65 317⇑*i*P **P** **17 51 04.3 +0.9**
MLR Muntele Rosu 83.65 317 *e*P **P** **17 51 04.3 +0.9**
MLR pmax pmax
comp=Z,51nm,1.0s
MLR Muntele Rosu 83.65 317 *e*P **P** **17 51 04.3 +0.9**
comp=Z,51nm,1.0s
RZN Rozhen 83.67 313 *i* P **P** **17 51 03.8 +0.1**
DOPC Dopca 84.14 317⇑*i*P **P** **17 51 09.2 +3.4**
PGB Panagyurishte 84.25 313 *i* P **P** **17 51 05.5 -1.0**
VOIR 84.25 316⇑*i*P **P** **17 51 06.2 -0.3**
VOIR 84.25 316⇑P **P** **17 51 06.2 -0.3**
MMB Musomiste 84.37 312 *i* P **P** **17 51 06.1 -1.0**
BURAR Bucovina Array 84.63 319⇑*i*P **P** **17 51 09.9 +1.5**
BURAR Bucovina Array 84.63 319⇑P **P** **17 51 09.9 +1.5**
BUR08 Bucovina Ar. S 84.65 319 *e*P **P** **17 51 10.1 +1.6**
MPEP Malo Peshtene 84.72 314 *i* P **P** **17 51 09.1 +0.3**
MICGM Minsk 84.75 326 *e*P **P** **17 51 10.0 +1.4**
MICGM *e*LR LR 18 32 14.0
MNK Minsk 84.75 326 *e*P **P** **17 51 10.0 +1.4**
QSPA South Pole Qui 85.03 180 *e*P **P** **17 51 09.1 -0.9**
QSPA LR LR
comp=Z,1μm,21.0s
VAY Valandovo 85.17 312 *i* P P 17 51 22.2 +11
BILL Bilibino 85.30 20⇑*i*P **P** **17 51 10.8 -0.3**
BILL *e* 17 51 21.8
BILL *e* 17 54 31.3
BILL *e*PPP PPP 17 56 21.2
BILL *e*S **S** **18 01 33.0 -6.2**
BILL pmax pmax
comp=Z,50nm,2.5s
BILL Bilibino 85.30 20 *e*P **P** **17 51 10.6 -0.5**

comp=Z,66nm,1.8s
BILL LR LR
comp=Z,1μm,19.0s
NVL N'lazarevskaya 85.34 199 *e*P **P** **17 51 14.8 +3.5**
NVL *e*S **S** **18 01 36.9 -2.6**
AFI Afiamalu 85.39 104 P **P** **17 51 13.5 +0.7**
comp=Z,24nm,0.9s,baz=112,slow=15,SNR=4.5
NACGM Naroch 85.47 326 *e* **P** **17 51 13.0 +0.8**
NACGM *e*LR LR 18 31 54.0
IDID Didziasalis 85.60 326 *e*P **P** **17 51 12.0 -0.9**
IDID IAmb IAmb 17 51 14.6
comp=Z,9.0nm,0.8s
LVV L'vov 85.89 321*c i*P **P** **17 51 14.2 -0.3**
IZAR Zarasai 85.99 327 *e*P **P** **17 51 13.9 -0.9**
IZAR IAmb IAmb 17 51 16.2
comp=Z,9.7nm,0.7s
ISAL Salakas 86.01 327 *e*P **P** **17 51 14.1 -0.8**
ISAL IAmb IAmb 17 51 16.6
comp=Z,7.7nm,0.8s
DRGR 86.13 317⇑*i*P **P** **17 51 15.3 -0.5**
DRGR 86.13 317⇑P **P** **17 51 15.3 -0.5**
LVZ Lovozero 86.15 340⇓*e*P **P** **17 51 16.2 +0.8**
LVZ pmax pmax
comp=Z,24nm,1.2s
LVZ MLR MLR
comp=Z,2μm,22.0s
LVZ Lovozero 86.15 340 PFAKE 17 51 30.0 +15
LVZ LR LR
comp=Z,2μm,22.0s
VSU Vasula 86.43 329*ce*P **P** **17 51 18.0 +1.1**
VSU pmax pmax
comp=Z,242nm,2.5s
APA Apatity 86.46 339⇑*i*P **P** **17 51 15.0 -1.9**
APA MLR MLR
comp=Z,2μm,21.0s
TRPA Tarpa 86.50 319⇑*e*SKKPdf **P** **17 51 18.6 +1.1**
BZS Buzias 86.65 316⇑*i*P **P** **17 51 17.0 -1.3**
BZS Buzias 86.65 316 ⇑P **P** **17 51 17.1 -1.3**
KWP Kalwaria Pacla 86.69 320 *e*P **P** **17 51 19.4 +0.9**
KWP Kalwaria Pacla 86.69 320 *e*P **P** **17 51 19.4 +0.9**
SIRR Siria 86.74 317⇑*i*P **P** **17 51 16.2 -2.6**
UZH Uzhgorod 86.76 319 *e*P **P** **17 51 19.0 +0.2**
UZH *e* 17 54 44.0
UZH *e*S **S** **18 01 51.0 -3.2**
KOLS Kolonicke sedl 86.83 320 *e*P **P** **17 51 20.6 +1.4**
KOLS *e* 17 51 37.9
KOLS *e*S **S** **18 01 56.5 +1.6**
KOLS pmax pmax
comp=Z,27nm,1.1s
KOLS Kolonicke sedl 86.83 320 *e*P **P** **17 51 20.6 +1.4**
KOLS *e* 17 51 37.9
TIR Tirane 87.19 312 PFAKE 17 51 30.0 +9.0
TIR LR LR
comp=Z,1μm,20.0s
SUW Suwalki 87.31 325 *e*P **P** **17 51 21.8 +0.5**
SUW Suwalki 87.31 325 *e*P **P** **17 51 21.8 +0.5**
CRVS Cervenica-Dubn 87.36 319 *e*P **P** **17 51 22.7 +1.0**
CRVS Cervenica-Dubn 87.36 319 *e*P **P** **17 51 22.7 +1.0**
CRVS *e* 17 51 44.5
FIA1 FINESS Array S 87.53 332 *e*P **P** **17 51 23.0 +0.8**
FINES FINESS Array B 87.53 332 P **P** **17 51 23.0 +0.8**
comp=Z,8.6nm,0.8s,baz=101,slow=8.0,SNR=29
FINES LR LR 18 34 59.2
comp=Z,540nm,19.9s,baz=120,slow=39
FINES FINESS Array B 87.53 332 P **P** **17 51 23.0 +0.8**
FINES pmax pmax
comp=Z,9.0nm,0.8s
FINES MLR MLR
comp=Z,541nm,19.9s
STHS Stebnicka Huta 87.59 320 *e*P **P** **17 51 24.3 +1.5**
STHS pmax pmax
comp=Z,7.0nm,0.9s
STHS Stebnicka Huta 87.59 320 *e*P **P** **17 51 24.3 +1.5**
KECS Kecovo 87.92 319 *e*P **P** **17 51 25.3 +0.9**
KECS *e* 17 51 40.3
KECS pmax pmax
comp=Z,5.0nm,1.2s
KECS Kecovo 87.92 319 *e*P **P** **17 51 25.3 +0.9**
KECS *e* 17 51 40.2
NIE Niedzica 88.20 320 *e*P **P** **17 51 27.1 +1.4**
NIE Niedzica 88.20 320 *e*P **P** **17 51 27.1 +1.4**
PSZ Piszkesteto 88.21 318 PFAKE 17 51 40.0 +14
PSZ LR LR
comp=Z,646nm,20.0s
BEL Belsk 88.31 322 *e*P **P** **17 51 27.2 +1.1**
BEL Belsk 88.31 322 *e*P **P** **17 51 27.2 +1.1**
OJC Ojcow 88.65 320 *e*P **P** **17 51 28.7 +0.9**
OJC Ojcow 88.65 320 *e*P **P** **17 51 28.3 +0.5**
OJC pmax pmax
comp=Z,39nm,1.5s
OJC Ojcow 88.65 320 *e*P **P** **17 51 28.3 +0.5**
comp=Z,39nm,1.5s
BUD Budapest 88.73 318⇑*e*P **P** **17 51 29.2 +1.0**
VYHS Vyhne 89.00 319 *e*P **P** **17 51 30.3 +0.8**
VYHS pmax pmax
comp=Z,28nm,2.2s
VYHS Vyhne 89.00 319 *e*P **P** **17 51 30.3 +0.8**
VYHS Vyhne 89.00 319 *e*S **S** **18 02 13.8 -1.8**
CSKK Cs˙‡kako 89.22 318⇑*e*SKKPbc **P** **17 51 28.7 -1.8**
TIP Timpagrande 89.24 309⇑*i*P **P** **17 51 30.3 -0.6**
TIP Timpagrande 89.24 309 PFAKE 17 51 40.0 +9.1
TIP LR LR
comp=Z,407nm,22.0s
KEV Kevo 89.39 340 PFAKE 17 51 40.0 +9.2
KEV LR LR
comp=Z,1μm,21.0s
BLY Banja Luka 89.61 315⇑*i*P **P** **17 51 33.5 +1.1**
OKC Ostrava-Krasne 89.64 320 *e*P **P** **17 51 33.3 +0.8**
OKC *e*pP **pP** **17 51 42.5 -0.4**
OKC *e*S **S** **18 02 18.0 -3.5**
OKC AMS AMS 18 40 10.0
comp=Z,700nm,17.4s
OKC Ostrava-Krasne 89.64 320 *e*P **P** **17 51 33.3 +0.8**
OKC *e* 17 51 42.5
OKC *e* 18 02 18.0
CEL Celeste 89.80 308 PFAKE 17 51 50.0 +16
CEL LR LR
comp=Z,358nm,20.0s
ARA0 ARCESS Array S 89.84 340 *e*P **P** **17 51 33.8 +0.8**
ARCES ARCESS Array B 89.84 340 P **P** **17 51 33.7 +0.8**
comp=Z,8.5nm,0.8s,baz=90,slow=4.9,SNR=24
ARCES LR LR 18 36 02.1
comp=Z,1μm,21.9s,baz=106,slow=38
SNAA Sanae 89.89 198 P **P** **17 51 34.8 +1.5**
SNAA Sanae 89.89 198 *e*P **P** **17 51 34.7 +1.4**
SNAA Sanae 89.89 198 *e*P **P** **17 51 34.7 +1.4**
comp=Z,1μm,1.0s
MORC Moravsky Berou 90.02 320⇑*i*P **P** **17 51 35.6 +1.3**
MORC Moravsky Berou 90.02 320 *e*P **P** **17 51 35.6 +1.3**
MORC pmax pmax
comp=Z,56nm,1.0s
MORC Moravsky Berou 90.02 320 *e*P **P** **17 51 35.6 +1.3**
comp=Z,56nm,1.0s
CUC Castrocucco 90.06 310 PFAKE 17 51 50.0 +15
CUC LR LR
comp=Z,507nm,22.0s
KRLC Kraliky 90.55 320 *e*P **P** **17 51 38.1 +1.3**
KRLC *e*pP **pP** **17 51 46.7 -0.5**
KRLC Kraliky 90.55 320 *e*P **P** **17 51 38.1 +1.3**
KRLC *e* 17 51 46.7
VRAC Vranov 90.58 319 P **P** **17 51 37.9 +1.0**
comp=Z,1.5nm,0.5s,baz=107,slow=7.6,SNR=4.4
WDD Wied Dalam 90.64 306 PFAKE 17 51 50.0 +13
WDD LR LR
comp=Z,657nm,19.0s
DPC Dobruska-Polom 90.88 320 *e*P **P** **17 51 39.6 +1.3**
DPC *e*pP **pP** **17 51 48.3 -0.5**
DPC *e*x x 17 51 57.0
DPC *e*S **S** **18 02 32.9 -0.1**
DPC AMS AMS 18 41 10.0
comp=Z,900nm,20.1s
DPC Dobruska-Polom 90.88 320 *e*P **P** **17 51 39.6 +1.3**
DPC *e* 17 51 48.3
DPC *e* 17 51 57.0
DPC *e* 18 02 32.9
CONA Conrad Observa 90.90 318 *e*P **P** **17 51 39.4 +0.9**
comp=Z,8.9nm,2.0s
KSP Ksiaz 90.95 321 *e*P **P** **17 51 40.0 +1.4**
KSP Ksiaz 90.95 321 *e*P **P** **17 51 40.0 +1.4**
ARSA Arzberg 91.06 317 *i* PcP **P** **17 51 40.6 +1.4**
comp=Z,11nm,1.1s
BOJS Bojanci 91.06 315 *i* P **P** **17 51 40.0 +0.8**
UPC Upice 91.09 320 *e*P **P** **17 51 40.8 +1.6**

UPC eS S 18 02 36.1 +1.2
UPC AMS AMS 18 41 30.0
comp=Z,800nm,20.4s
UPC Upice 91.09 320 eP P 17 51 40.8 +1.6
UPC e 18 02 36.1
UPC MLR MLR
comp=Z,800nm,20.4s
PERS Pernice 91.27 317 i P P 17 51 40.7 +0.5
VISS Visnje 91.38 316 i P P 17 51 40.7 0.0
VNA2 Neumayer--Watz 91.52 198 P P 17 51 42.4 +1.6
baz=87,slow=4.7
GOPC GO Pecny, Ondr 91.81 320 eP P 17 51 43.5 +0.9
GOPC eS S 18 02 41.4 -0.1
GOPC AMS AMS 18 41 50.0
comp=Z,800nm,18.6s
GOPC GO Pecny, Ondr 91.81 320 eP P 17 51 43.5 +0.9
GOPC e 18 02 41.4
GOPC MLR MLR
comp=Z,800nm,18.6s
CLTB Caltabellotta 91.85 307 PFAKE 17 52 00.0 +17
CLTB LR LR
comp=Z,288nm,21.0s
VNA1 Neumayer--Stat 91.89 198 P P 17 51 44.4 +1.9
JAVS Javornik 91.93 316 i P P 17 51 41.0 -2.3
PRU Pruhonice 91.98 320 eP P 17 51 44.6 +1.3
PRU eS S 18 02 41.5 -1.4
PRU AMS AMS 18 41 50.0
comp=Z,800nm,20.0s
PRU Pruhonice 91.98 320 eP P 17 51 44.6 +1.3
PRU e 18 02 41.5
PRU MLR MLR
comp=Z,800nm,20.0s
PVCC Panska Ves 92.01 320 AMS AMS 18 40 10.0
comp=Z,600nm,19.0s
AQU L'Aquila 92.10 312 PFAKE 17 52 00.0 +16
AQU LR LR
comp=Z,683nm,21.0s
VNA3 Neumayer Olymp 92.10 198 P P 17 51 41.5 -2.0
GEA0 GERESS Array S 92.42 319 eP P 17 51 45.6 +0.1
GEC2 GERESS Array S 92.42 319 eP P 17 51 46.5 +1.0
GEC2 pmax pmax
comp=Z,12nm,1.1s
GEC2 GERESS Array S 92.42 319 eP P 17 51 46.5 +1.0
comp=Z,12nm,1.1s
GERES GERESS Array B 92.42 319 P P 17 51 46.1 +0.6
comp=Z,2.6nm,0.9s,baz=99,slow=4.5,SNR=20
BRG Berggiesshubel 92.44 321 eP P 17 51 46.6 +1.2
comp=Z,7.8nm,0.9s
BRG Berggiesshubel 92.44 321 S S 18 02 49.0 +2.1
comp=N,521nm,18.3s
comp=E,422nm,13.6s
comp=Z,622nm,17.7s
BRG Berggiesshubel 92.44 321 eP P 17 51 46.6 +1.2
BRG S S 18 02 49.0 +2.1
BRG pmax pmax
comp=Z,8.0nm,0.9s
BRG MLR MLR
comp=N,521nm,18.3s
BRG MLR MLR
comp=E,422nm,13.6s
BRG MLR MLR
comp=Z,622nm,17.7s
KHC Kasperske Hory 92.53 319 eP P 17 51 46.5 +0.6
KHC ex x 17 52 01.6
KHC eS S 18 02 46.2 -1.7
KHC AMS AMS 18 43 00.0
comp=Z,800nm,18.4s
KHC Kasperske Hory 92.53 319 eP P 17 51 46.5 +0.6
KHC e 17 52 01.6
KHC e 18 02 46.2
KHC MLR MLR
comp=Z,800nm,18.4s
GAMB Gambell 92.87 26 eP P 17 51 47.6 +0.5
comp=Z,13nm,1.1s
CLL Collm 93.06 321 e(P) P 17 51 51.0 +2.7
CLL e 17 52 10.0
CLL ePP PP 17 55 42.0 +10
CLL ePPPP 17 59 12.0
CLL eS S 18 02 52.0 -0.5
comp=N,500nm,32.7s
CLL eS S 18 02 52.0 -0.5
comp=E,100nm,21.3s
CLL ePS PS 18 04 10.0 +1.1
CLL ePPS PPS 18 05 29.0
CLL e 18 06 30.0
CLL eSS SS 18 09 06.0 -1.5
CLL eSSS SSS 18 12 48.0
CLL eSSSS 18 16 00.0
CLL Lm MLR 18 43 00.0
comp=N,400nm,21.2s
CLL Lm MLR 18 43 00.0
comp=E,500nm,19.7s
CLL Lm MLR 18 43 00.0
comp=Z,900nm,19.8s
CLL Collm 93.06 321 eP P 17 51 51.0 +2.7
CLL e 17 52 10.0
CLL eS S 18 02 52.0 -0.5
CLL MLR MLR
comp=Z,900nm,19.8s
NKC Novy Kostel 93.34 320 AMS AMS 18 41 10.0
comp=Z,700nm,16.0s
SPITS Spitsbergen Ar 93.87 348 P P 17 51 51.4 -0.1
comp=Z,2.1nm,0.5s,baz=106,slow=8.9,SNR=11
MOTA Moosalm 94.06 317 i PcP P 17 51 55.7 +2.5
comp=Z,6.2nm,0.9s
VLC Villacollemand 94.41 314 PFAKE 17 52 10.0 +15
VLC LR LR
comp=Z,378nm,22.0s
NB2 NORSAR Subarra 94.57 331 P P 17 51 55.0 -0.1
comp=Z,6.4nm,1.1s,baz=92,slow=4.4
NB2 NORSAR Subarra 94.57 331 P P 17 51 55.0 -0.1
baz=92,slow=4.4
NOA NORSAR Array B 94.57 331 P P 17 51 55.1 +0.1
comp=Z,1.4nm,0.8s,baz=92,slow=4.7,SNR=4.8
NOA LR LR 18 39 10.4
comp=Z,764nm,21.3s,baz=95,slow=38
NBO02 NORSAR Array S 94.75 331 epP pP 17 52 06.1 -0.2
KBS Kingsbay 94.80 349 PFAKE 17 52 10.0 +14
KBS LR LR
comp=Z,1μm,19.0s
KEST Kesra 94.83 305 LR LR 18 34 51.7
comp=Z,354nm,21.7s,baz=51,slow=36
VSL Villasalto 94.97 309 PFAKE 17 52 10.0 +13
VSL LR LR
comp=Z,266nm,19.0s
TUE Stuetta 95.23 316 PFAKE 17 52 10.0 +11
TUE LR LR
comp=Z,488nm,19.0s
KONO Kongsberg 95.34 329 PFAKE 17 52 10.0 +11
KONO LR LR
comp=Z,558nm,19.0s
BFO Black Forest 95.96 318 PFAKE 17 52 10.0 +8.3
BFO LR LR
comp=Z,661nm,20.0s
RAR Rarotonga 96.07 112 LR LR 18 33 27.3
comp=Z,145nm,21.9s,baz=262,slow=34
BNI Bardonecchia 97.08 315 PFAKE 17 52 20.0 +13
BNI LR LR
comp=Z,917nm,22.0s
WLF Walferdange 97.39 319 PFAKE 17 52 20.0 +12
WLF LR LR
comp=Z,657nm,19.0s
TAM Tamanrasset 97.65 292 PFAKE 17 52 20.0 +10
TAM LR LR
comp=Z,527nm,19.0s
SSB Saint Sauveur 98.59 315 PFAKE 17 52 30.0 +16
SSB LR LR
comp=Z,457nm,21.0s
KDAK Kodiak Island 102.49 32 PFAKE 17 52 40.0 +9.4
KDAK LR LR
comp=Z,1μm,21.0s
ESK Eskdalemuir 102.57 326 PFAKE 17 52 40.0 +8.9
ESK LR LR
comp=Z,680nm,21.0s
COLA College 103.04 24 PFAKE 17 52 40.0 +7.1
COLA LR LR
comp=Z,745nm,20.0s
SHEL Horse Pasture 105.37 252 PFAKE 17 57 10.0
SHEL LR LR
comp=Z,288nm,20.0s
PAB San Pablo 105.57 310 PFAKE 17 57 10.0
PAB LR LR
comp=Z,414nm,20.0s
EGAK Eagle 105.77 23 PFAKE 17 57 10.0
EGAK LR LR
comp=Z,789nm,20.0s
PPT2 Papeete2 106.15 110 eSdif Sdif 18 04 43.7 -1.3
comp=Z,550nm,24.5s
PPT2 Papeete2 106.15 110 ePS PS 18 06 27.4 -3.4
comp=Z,225nm,26.8s
PPT2 eSS SS 18 12 12.1 +0.1
comp=Z,195nm,23.2s
PPT2 Papeete2 106.15 110 eLR LR 18 27 57.5
comp=Z,1μm,23.5s
INK Inuvik 106.89 19 Pdiff **Pdif** 17 52 48.5 -1.5
comp=Z,1.1nm,0.8s,baz=334,slow=2.9,SNR=5.6
INK PKiKP **PKiKP** 17 56 59.2 -0.4
comp=Z,2.1nm,0.9s,baz=295,slow=0.4,SNR=5.5
MTE Manteigas 107.89 311 PFAKE 17 57 10.0
MTE LR LR
comp=Z,475nm,20.0s
BORG Borgarnes 108.11 338 PFAKE 17 57 10.0
BORG LR LR
comp=Z,816nm,19.0s
HOPE Hope Point 111.50 205 PFAKE 17 57 20.0
HOPE LR LR
comp=Z,759nm,19.0s
WRAK Wrangell Islan 113.31 29 PFAKE 17 57 20.0
WRAK LR LR
comp=Z,901nm,20.0s
ASCN Ascension 115.02 259 PFAKE 17 57 30.0 +13
ASCN LR LR
comp=Z,1μm,22.0s
SFJD Kangerlussuaq 115.21 348 PFAKE 17 57 30.0 +15
SFJD LR LR
comp=Z,956nm,22.0s
YKA Yellowknife Ar 116.64 18 PKP **PKPdf** 17 57 16.6 -1.7
comp=Z,1.1nm,0.8s,baz=304,slow=2.0,SNR=16
YKA PKKPab **PKKPab** 18 07 51.2 +1.0
comp=Z,0.3nm,0.8s,baz=135,slow=4.1,SNR=3.7
YKA PKKP **PKKPdf** 18 08 15.3 +1.1
comp=Z,0.8nm,1.0s,baz=138,slow=4.0,SNR=5.4
TAOE Nuku Hiva Isla 116.76 102 ePP PP 17 58 29.1 +0.6
comp=Z,125nm,28.6s
TAOE Nuku Hiva Isla 116.76 102 ePS PS 18 08 18.7 +6.3
comp=Z,169nm,26.0s
TAOE Nuku Hiva Isla 116.76 102 eLR LR 18 32 49.1
comp=Z,840nm,23.2s
RKT Rikitea 118.00 119 eSS SS 18 14 56.3 +7.3
comp=Z,530nm,27.2s
RKT Rikitea 118.00 119 eLR LR 18 33 25.6
comp=Z,1μm,22.2s
NLWA Neilton Lookou 122.42 35 PFAKE 17 57 40.0 +10
NLWA LR LR
comp=Z,546nm,22.0s
B05A Bryant 122.94 33 P **PKPdf** 17 57 32.1 +1.2
baz=305
LON Longmire 123.95 35 ePKIKP **PKPdf** 17 57 34.0 +1.0
LON Longmire 123.95 35 ePKPdf **PKPdf** 17 57 34.0 +1.0
LTY Liberty 124.30 34 ePKPdf **PKPdf** 17 57 34.4 +0.7
B08A Colville Reser 124.37 32 ePKPdf **PKPdf** 17 57 34.4 +0.7
I03D Drain, OR 124.67 39 P **PKPdf** 17 57 35.7 +1.3
baz=301
H04A Detroit Lake 124.87 37 ePKPdf **PKPdf** 17 57 35.8 +1.0
FCC Fort Churchill 124.94 10 ePKIKP **PKPdf** 17 57 33.2 -1.2
FCC Fort Churchill 124.94 10 ePKPdf **PKPdf** 17 57 33.2 -1.2
I04A Tendick Farm, 125.20 38 P **PKPdf** 17 57 36.3 +0.8
baz=302
D08A Wollman Farm, 125.38 33 ePKPdf **PKPdf** 17 57 37.0 +1.3
HAWA Hanford 125.44 34 ePKPdf **PKPdf** 17 57 37.5 +1.7
HAWA LR LR
comp=Z,465nm,20.0s
HUMO Hull Mountain 125.48 40 ePKPdf **PKPdf** 17 57 37.4 +1.4
NEW Newport 125.58 31 PFAKE 17 57 50.0 +14
NEW LR LR
comp=Z,723nm,20.0s
M02C Callahan 126.16 41 P **PKPdf** 17 57 38.2 +0.8
baz=300
J05D Fort Rock, OR 126.20 38 P **PKPdf** 17 57 38.2 +0.6
baz=303
N02D Trinity Center 126.46 41 P **PKPdf** 17 57 38.6 +0.6
baz=300
M04C Macdoel 126.61 40 P **PKPdf** 17 57 38.7 +0.4
baz=301
K05A Summer Lake 126.71 39 ePKPdf **PKPdf** 17 57 40.5 +1.9
BSMT Bassoo Peak 127.04 30 ePKPdf **PKPdf** 17 57 39.8 +0.7
BMO Blue Mountains 127.62 34 PFAKE 17 57 50.0 +10
BMO LR LR
comp=Z,557nm,21.0s
SWMT Swartz Lake 127.67 30 ePKPdf **PKPdf** 17 57 40.7 +0.6
MSO Missoula 128.15 31 P **PKPdf** 17 57 41.4 +0.2
baz=312
MSO Missoula 128.15 31 ePKPdf **PKPdf** 17 57 41.8 +0.7
WVOR Wild Horse Val 128.26 38 ePKIKP **PKPdf** 17 57 43.3 +1.9
WVOR Wild Horse Val 128.26 38 ePKPdf **PKPdf** 17 57 43.3 +1.9
WVOR LR LR
comp=Z,627nm,21.0s
CHMT Chamberlain Mo 128.44 30 ePKPdf **PKPdf** 17 57 42.4 +0.6
AFDM Forest Hills D 128.62 43 ePKPdf **PKPdf** 17 57 43.8 +1.6
EGMT Eagleton 129.32 27 P **PKPdf** 17 57 43.7 +0.4
baz=318
EGMT Eagleton 129.32 27 ePKPdf **PKPdf** 17 57 43.9 +0.7
EGMT LR LR
comp=Z,597nm,20.0s
MFID Camas Ranch 129.34 35 ePKPdf **PKPdf** 17 57 45.1 +1.6
SCHQ Schefferville 129.42 351 PKP **PKPdf** 17 57 43.0 -0.1
comp=Z,5.1nm,0.9s,baz=22,slow=5.4,SNR=3.8
WAKR Walker 129.88 42 ePKPdf **PKPdf** 17 57 47.0 +2.2
HLID Hailey 130.05 34 P **PKPdf** 17 57 45.2 +0.3
baz=310
HLID Hailey 130.05 34 ePKPdf **PKPdf** 17 57 47.5 +2.6
HLID LR LR
comp=Z,713nm,20.0s
MCMT McKenzie Canyo 130.07 32 ePKPdf **PKPdf** 17 57 46.6 +1.6
BOZ Bozeman (W) 130.13 30 P **PKPdf** 17 57 45.9 +0.9
baz=314
BOZ Bozeman (W) 130.13 30 ePKIKP **PKPdf** 17 57 45.9 +0.9
BOZ MLR MLR
comp=Z,678nm,20.0s
BOZ Bozeman (W) 130.13 30 ePKPdf **PKPdf** 17 57 45.9 +0.9
BOZ LR LR
comp=Z,678nm,20.0s
NVAR Mina Array Bea 130.68 42 PKhKP PKPpre 17 57 42.6
comp=Z,0.1nm,0.3s,baz=335,slow=4.0,SNR=3.3
NVAR PKP **PKiKP** 17 57 47.1 0.0
comp=Z,1.6nm,0.6s,baz=252,slow=3.1,SNR=11
NVAR SKPbc **SKPab** 18 01 09.8 +1.8
comp=Z,3.2nm,0.8s,baz=272,slow=4.0,SNR=8.8
QLMT Earthquake Lak 130.80 31 ePKPdf **PKPdf** 17 57 49.2 +2.9
ELK Elko 131.31 38 ePKIKP **PKPdf** 17 57 49.2 +1.7
ELK Elko 131.31 38 ePKPdf **PKPdf** 17 57 49.2 +1.7
A25A Svangstu Ranch 131.33 22 P **PKPdf** 17 57 48.8 +1.8
baz=326
PKM Mcpherson Peak 131.41 47 P **PKPdf** 17 57 48.5 +0.8
baz=298
LKWY Lake 131.51 31 ePKIKP **PKPdf** 17 57 50.2 +2.4
LKWY MLR MLR
comp=Z,820nm,19.0s
LKWY Lake 131.51 31 ePKPdf **PKPdf** 17 57 50.2 +2.4
LKWY LR LR
comp=Z,820nm,19.0s
H17A Grant Village 131.54 31 ePKPdf **PKPdf** 17 57 50.4 +2.5
RLMT Red Lodge 131.68 29 P **PKPdf** 17 57 49.1 +1.1
baz=317
RLMT Red Lodge 131.68 29 ePKPdf **PKPdf** 17 57 50.2 +2.2
RLMT LR LR
comp=Z,734nm,20.0s
FXWY Fox Creek 131.84 32 ePKPdf **PKPdf** 17 57 49.8 +1.4
B25A Knox Farm, Ray 131.87 22 P **PKPdf** 17 57 48.5 +0.5
baz=326
MOOW Moose Ponds 131.91 32 ePKPdf **PKPdf** 17 57 50.8 +2.3
GRAC Grapevine Rang 132.07 43 P **PKPdf** 17 57 49.8 +1.0
baz=302
LOHW Long Hollow 132.07 32 ePKPdf **PKPdf** 17 57 50.1 +1.3
HVU Hansel Valley 132.12 35 ePKIKP **PKPdf** 17 57 51.4 +2.6
HVU Hansel Valley 132.12 35 ePKPdf **PKPdf** 17 57 51.4 +2.6
DAC Darwin (Calif) 132.29 44 ePKIKP **PKPdf** 17 57 51.3 +1.9
DAC Darwin (Calif) 132.29 44 ePKPdf **PKPdf** 17 57 51.3 +1.9
AHID Auburn Hatcher 132.39 33 PFAKE 17 58 00.0 +11
AHID LR LR
comp=Z,735nm,21.0s
ULM Lac du Bonnet 132.47 15 PKP **PKPdf** 17 57 48.6 -0.4
comp=Z,9.0nm,0.8s,baz=342,slow=3.5,SNR=7.2
ULM Lac du Bonnet 132.47 15 ePKPdf **PKPdf** 17 57 49.7 +0.7
MPMC Manual Prospec 132.48 44 P **PKPdf** 17 57 50.2 +0.5
baz=301
R11A Troy Canyon, C 132.50 40 P **PKPdf** 17 57 50.2 +0.5
baz=305
R11A Troy Canyon, C 132.50 40 ePKPdf **PKPdf** 17 57 50.9 +1.1
C26A Wahner Farm, P 132.63 22 P **PKPdf** 17 57 49.7 +0.3
baz=327
A29A Manning Farm, 132.68 19 P **PKPdf** 17 57 49.6 +0.1
baz=331
EDW2 Edwards Air Fo 132.72 46 P **PKPdf** 17 57 50.2 +0.2
baz=300
D25A Fairfield 132.73 23 P **PKPdf** 17 57 50.2 +0.5
baz=325
TPNV Topopah Spring 132.85 42 P **PKPdf** 17 57 50.7 +0.3
baz=303
TPNV Topopah Spring 132.85 42 ePKIKP **PKPdf** 17 57 51.6 +1.2
TPNV Topopah Spring 132.85 42 ePKPdf **PKPdf** 17 57 51.5 +1.2
HWUT Hardware Ranch 132.92 34 ePKPdf **PKPdf** 17 57 51.5 +1.1
HWUT LR LR
comp=Z,682nm,22.0s
B29A Wagenman Farm,133.04 19 P **PKPdf** 17 57 50.2 0.0
baz=331
DUG Dugway, Tooele 133.11 37 P **PKPdf** 17 57 51.9 +1.2
baz=309
DUG Dugway, Tooele 133.11 37 ePKIKP **PKPdf** 17 57 53.8 +3.0
DUG Dugway, Tooele 133.11 37 ePKPdf **PKPdf** 17 57 53.8 +3.0
DUG LR LR
comp=Z,591nm,19.0s
BW06 Boulder Array 133.21 32 P **PKPdf** 17 57 50.7 -0.3
baz=315
BW06 Boulder Array 133.21 32 ePKPdf **PKPdf** 17 57 50.6 -0.3
BW06 ePKPdf **PKiKP** 17 57 51.7 -0.5
BW06 LR LR
comp=Z,538nm,21.0s
PD31 Pinedale Array 133.21 32 ePKPdf **PKPdf** 17 57 51.6 +0.6
PDAR Pinedale Array 133.21 32 PKP **PKPdf** 17 57 49.5 -1.5
comp=Z,0.9nm,0.8s,baz=186,slow=1.3,SNR=7.4
PDAR PP **PP** 18 00 16.0 -1.2
comp=Z,1.3nm,1.0s,baz=267,slow=2.5,SNR=4.2
PDAR SKPbc **SKPab** 18 01 20.8 +2.2
comp=Z,1.5nm,0.8s,baz=341,slow=1.1,SNR=4.5
SCI2 San Clemente I 133.23 48 P **PKPdf** 17 57 51.0 0.0
baz=298
GSC Goldstone, Bar 133.34 45 ePKIKP **PKPdf** 17 57 53.4 +2.1
GSC Goldstone, Bar 133.34 45 ePKPdf **PKPdf** 17 57 53.4 +2.1
B30A Myrvik Farm, E 133.38 18 P **PKPdf** 17 57 50.1 -0.7
baz=332
D27A Center 133.45 22 P **PKPdf** 17 57 51.3 +0.2
baz=327
PSUT Pine Spring 133.50 39 ePKPdf **PKPdf** 17 57 53.3 +1.7
E26A Carlson Angus 133.62 23 P **PKPdf** 17 57 51.4 0.0
baz=326
F25A Bowman 133.67 24 P **PKPdf** 17 57 51.2 -0.3
baz=324
NLU North Lily Min 133.70 36 ePKPdf **PKPdf** 17 57 55.0 +3.0
D28A Regan 133.72 21 P **PKPdf** 17 57 51.9 +0.3
baz=328
A33A Warroad 133.80 16 P **PKPdf** 17 57 52.0 +0.4
baz=336
HEC Hector,Ludlow 133.92 45 P **PKPdf** 17 57 53.1 +0.7
baz=302
F26A Lodgepole 134.05 24 P **PKPdf** 17 57 53.1 +0.9
baz=325
C31A Landman Farms, 134.15 18 P **PKPdf** 17 57 52.9 +0.6
baz=332
AGMN Agassiz Nation 134.26 16 PFAKE 17 58 00.0 +7.5
AGMN LR LR
comp=Z,1μm,21.0s
G25A Newell 134.28 25 P **PKPdf** 17 57 52.2 -0.5
baz=324
GMRC Granite Mounta 134.42 44 P **PKPdf** 17 57 54.6 +1.3
baz=302
D30A Buchanan 134.42 20 P **PKPdf** 17 57 53.7 +0.8
baz=331
PFO Pinyon Flats O 134.45 46 PKP **PKPdf** 17 57 55.0 +1.5
comp=Z,5.0nm,0.8s,baz=249,slow=6.5,SNR=5.6
PFO Pinyon Flats O 134.45 46 PKIKP **PKPdf** 17 57 55.0 +1.5
PFO pmax pmax
comp=Z,5.0nm,0.8s
PFO Pinyon Flats O 134.45 46 ePKPdf **PKPdf** 17 57 55.4 +2.0
PFO LR LR
comp=Z,589nm,20.0s
G26A Maurine 134.53 24 P **PKPdf** 17 57 54.3 +1.1
baz=325
MSU Marysvale 134.55 38 ePKIKP **PKPdf** 17 57 57.0 +3.4
MSU Marysvale 134.55 38 ePKPdf **PKPdf** 17 57 57.0 +3.4
G27A Dupree 134.73 24 P **PKPdf** 17 57 53.4 -0.1
baz=326
K22A Casper 134.84 30 P **PKPdf** 17 57 53.1 -0.8
baz=318
K22A Casper 134.84 30 ePKPdf **PKPdf** 17 57 54.5 +0.5
MONP2 Monument Peak 134.84 47 P **PKPdf** 17 57 54.2 -0.1
baz=300
RSSD Black Hills 134.87 26 P **PKPdf** 17 57 53.5 -0.5
baz=322
RSSD Black Hills 134.87 26 ePKIKP **PKPdf** 17 57 54.5 +0.5
RSSD Black Hills 134.87 26 ePKPdf **PKPdf** 17 57 54.5 +0.5
E30A Jud 134.90 20 P **PKPdf** 17 57 53.8 +0.1
baz=330
KNB Kanab 135.06 40 ePKIKP **PKPdf** 17 57 57.0 +2.4
KNB Kanab 135.06 40 ePKPdf **PKPdf** 17 57 57.0 +2.4
BC3 Big Chuckawall 135.15 46 P **PKPdf** 17 57 55.2 +0.5
baz=301
G28A Parade 135.38 23 P **PKPdf** 17 57 54.8 +0.1
baz=327
W13A Hualapai Mount 135.47 43 ePKPdf **PKPdf** 17 57 57.7 +2.3
J25A Sunshine Ranch 135.55 27 P **PKPdf** 17 57 55.2 0.0
baz=322
H28A Mission Ridge 135.68 23 P **PKPdf** 17 57 54.8 -0.5
baz=326
EYMN Ely 135.68 13 ePKPdf **PKPdf** 17 57 56.8 +1.6
EYMN LR LR
comp=Z,759nm,20.0s
F31A Hecla 135.68 20 P **PKPdf** 17 57 54.9 -0.3
baz=331
I27A Quinn 135.76 25 P **PKPdf** 17 57 55.2 -0.3
baz=325
O20A White River Ci 135.76 33 P **PKPdf** 17 57 55.2 -0.7
baz=314
O20A White River Ci 135.76 33 ePKPdf **PKPdf** 17 57 58.8 +3.0
C38A Sawbill Land. 135.94 13 P **PKPdf** 17 57 55.6 0.0
baz=341
RCBR Riachuelo 136.41 256 PFAKE 17 58 10.0 +12
RCBR LR LR
comp=Z,1μm,20.0s
N23A Red Feather La 136.43 31 P **PKPdf** 17 57 55.9 -1.2
baz=318
E36A McGregor 136.59 15 P **PKPdf** 17 57 56.2 -0.7
baz=338
WUAZ Wupatki 136.90 41 P **PKPdf** 17 57 57.0 -1.0
baz=307
WUAZ Wupatki 136.90 41 ePKPdf **PKPdf** 17 58 00.3 +2.3
WUAZ LR LR
comp=Z,572nm,20.0s
F36A Milaca 137.13 16 P **PKPdf** 17 57 57.5 -0.4
baz=337
ISCO Idaho Springs 137.41 32 P **PKPdf** 17 57 59.0 0.0
baz=317
ISCO Idaho Springs 137.41 32 PFAKE 17 58 10.0 +11
ISCO LR LR
comp=Z,673nm,20.0s
MVCO Mesa Verde 137.61 37 P **PKPdf** 17 57 59.4 +0.1
baz=312
MVCO Mesa Verde 137.61 37 PFAKE 17 58 10.0 +11
MVCO LR LR
comp=Z,648nm,20.0s
G36A St. Michael 137.65 16 P **PKPdf** 17 57 59.2 +0.4
baz=337
COWI Conover 137.93 11 ePKPdf **PKPdf** 17 58 00.1 +0.8
COWI LR LR
comp=Z,1μm,20.0s
214A Organ Pipe Nat 137.94 46 P **PKPdf** 17 57 59.6 -0.2
baz=302
ECSD EROS Data Cent 138.11 20 ePKPdf **PKPdf** 17 58 00.1 +0.4
ECSD LR LR
comp=Z,1μm,20.0s
W18A Petrified Fore 138.20 40 P **PKPdf** 17 58 00.7 +0.3
baz=309
W18A Petrified Fore 138.20 40 ePKPdf **PKPdf** 17 58 01.5 +1.1
H36A Jessenland, He 138.20 17 P **PKPdf** 17 57 59.5 -0.4
baz=336
S22A 4UR Ranch, Cre 138.22 35 P **PKPdf** 17 58 00.6 0.0
baz=314
S22A 4UR Ranch, Cre 138.22 35 ePKPdf **PKPdf** 17 58 03.1 +2.6
OGNE Ogallala 138.29 27 PFAKE 17 58 10.0 +10
OGNE LR LR
comp=Z,865nm,20.0s
K31A O'Neill 138.29 23 P **PKPdf** 17 57 59.5 -0.7
baz=328
K32A Verdigre 138.56 22 P **PKPdf** 17 58 00.3 -0.4
baz=329
SPB Sao Paulo 138.68 225 PFAKE 17 58 10.0 +8.6
SPB LR LR

comp=Z,913nm,19.0s
TRQ Mont Tremblant 138.77 356 *e*PKPpre PKPpre 17 57 52.1
SDCO Great Sand Dun 138.96 34 P **PKPdf 17 58 02.1 +0.2**
baz=316
SDCO Great Sand Dun 138.96 34 PFAKE 17 58 10.0 +8.1
SDCO LR LR
comp=Z,802nm,21.0s
PKME Peaks-Kenny Pk 139.10 350 PFAKE 17 58 10.0 +8.5
PKME LR LR
comp=Z,1µm,19.0s
I38A Scanlan Farm, 139.14 16 P **PKPdf 17 58 02.2 +0.5**
baz=338
TUC Tucson 139.17 44 P **PKPdf 17 58 02.7 +0.6**
baz=305
TUC Tucson 139.17 44 *e*PKIKP **PKPdf 17 58 06.0 +3.8**
TUC Tucson 139.17 44 *e*PKPdf **PKPdf 17 58 06.0 +3.8**
TUC LR LR
comp=Z,436nm,20.0s
J37A Redenius Farm, 139.47 17 P **PKPdf 17 58 03.0 +0.8**
baz=336
T25A Trinidad 140.00 33 *e*PKPdf **PKPdf 17 58 05.2 +1.5**
K38A Parkersburg 140.30 17 P **PKPdf 17 58 04.0 +0.2**
baz=337
ANMO Albuquerque 140.35 38 P **PKPdf 17 58 04.2 -0.2**
baz=312
ANMO Albuquerque 140.35 38 *e*PKIKP **PKPdf 17 58 01.2 -3.2**
ANMO Albuquerque 140.35 38 *e*PKPdf **PKPdf 17 58 01.2 -3.2**
ANMO LR LR
comp=Z,768nm,21.0s
LONY Lake Ozonia 140.36 356 PFAKE 17 58 20.0 +16
LONY LR LR
comp=Z,995nm,19.0s
JFWS Jewell Farm 140.72 14 PFAKE 17 58 20.0 +15
JFWS LR LR
comp=Z,1µm,20.0s
SCIA State Center 140.85 18 PFAKE 17 58 20.0 +15
SCIA LR LR
comp=Z,1µm,22.0s
CBKS Cedar Bluff 141.05 27 PFAKE 17 58 20.0 +15
CBKS LR LR
comp=Z,770nm,20.0s
121A Cookes Peak, D 141.07 42 P **PKPdf 17 58 05.7 0.0**
baz=309
121A Cookes Peak, D 141.07 42 *e*PKPdf **PKPdf 17 58 05.3 -0.4**
KSU1 Kansas State U 142.14 24 PKPdf **PKPdf 17 58 06.8 -0.4**
KSU1 LR LR
comp=Z,935nm,20.0s
AAM Ann Arbor 142.50 7 PFAKE 17 58 20.0 +12
AAM LR LR
comp=Z,980nm,19.0s
CPUP Villa Florida 142.89 212 PKP **PKPdf 17 58 10.0 +1.1**
comp=Z,0.6nm,0.4s,baz=180,slow=5.8,SNR=2.4
CPUP Villa Florida 142.89 212 PKP **PKPdf 17 58 10.0 +1.1**
CPUP *e*pPKPdf **PKiKP 17 58 15.8 +3.7**
HDIL Hopedale 143.18 14 PFAKE 17 58 20.0 +11
HDIL LR LR
comp=Z,820nm,20.0s
MSTX Muleshoe 143.21 35 *e*PKPdf **PKPdf 17 58 11.3 +1.9**
R36A Gordon, Harris 143.25 23 P PKPab 17 58 04.7 -0.3
baz=330
U32A Winter Ranch, 143.36 29 P PKPab 17 58 05.3 -0.2
baz=324
P40A Paris 143.38 18 P PKPab 17 58 05.4 0.0
baz=336
Q38A Cooks Store, C 143.38 20 P PKPab 17 58 05.3 -0.2
baz=334,SNR=5.6
S35A Otter Creek Ra 143.47 24 P PKPab 17 58 05.7 -0.2
baz=329
R37A Teagarden Farm 143.52 22 P PKPab 17 58 05.8 -0.2
baz=331
Q39A Willow Grove F 143.52 19 P PKPab 17 58 05.8 -0.2
baz=335,SNR=7.3
M54A Oil Creek Stat 143.58 2 P PKPab 17 58 05.8 -0.3
baz=358
T34A McClaskey Farm 143.66 26 P PKPbc 17 58 07.0 -0.4
baz=327
S36A Lake Cedric, C 143.73 24 P PKPbc 17 58 07.2 -0.4
baz=330
U33A Lingo Farm, Me 143.73 28 P PKPbc 17 58 07.3 -0.3
baz=325
SFIN Lafayette 143.84 12 P PKPab 17 58 07.5 +0.3
baz=345
SFIN Lafayette 143.84 12 *e*PKPpre PKPbc 17 58 08.2 +0.5
Q40A Laux Farm, Aux 143.86 18 P PKPab 17 58 07.4 +0.1
baz=336,SNR=7.3
V32A Arapaho 143.87 29 P PKPbc 17 58 08.0 -0.1
baz=323
R38A Fenwick Farm, 143.97 21 P PKPab 17 58 07.3 -0.4
baz=333,SNR=7.5
U34A Anderson Ranch 143.99 27 P PKPbc 17 58 08.3 -0.1
baz=326
U34A Anderson Ranch 143.99 27 *e*PKPdf PKPbc 17 58 09.1 +0.6
S37A Fort Scott 144.00 23 P PKPab 17 58 07.7 -0.2
baz=331
T35A Sooner Cattle 144.04 25 P **PKPab 17 58 08.3 +0.2**
baz=328,SNR=8.1
N54A Moraine State 144.11 2 P **PKPab 17 58 08.4 +0.2**
baz=357
N59A State Game Lan 144.13 357 P PKPbc 17 58 08.6 -0.1
baz=4.0
V33A Lossen Ranch, 144.15 28 P PKPbc 17 58 08.9 0.0
baz=324
R39A Chumby, Stover 144.16 20 P **PKPab 17 58 08.2 -0.2**
baz=334,SNR=26
T36A Boggs Farm, Ca 144.19 24 P PKPbc 17 58 08.8 -0.2
baz=329,SNR=8.3
SLBS Sierra La Lagu 144.21 56 *e*PKPdf **PKPdf 17 58 11.1 -0.3**
W32A Sentinel 144.24 30 P **PKPab 17 58 09.0 +0.1**
baz=322,SNR=7.3
U35A Pawnee 144.41 26 P PKPbc 17 58 09.8 +0.1
baz=327,SNR=6.2
R40A Maddies Statio 144.44 19 P **PKPab 17 58 09.2 -0.3**
baz=335,SNR=34
S38A Stockton 144.46 22 P **PKPab 17 58 09.2 -0.4**
baz=332
SSPA Standing Stone 144.47 360 *e*PKPdf **PKPab 17 58 08.4 -1.1**
V34A Guthrie 144.50 28 P PKPbc 17 58 10.0 -0.1
baz=326,SNR=12
V34A Guthrie 144.50 28 *e*PKPdf PKPbc 17 58 10.3 +0.3
T37A Cheneyville 18 144.52 23 P **PKPab 17 58 09.6 -0.2**
baz=330,SNR=13
W33A Caddo, Fort Co 144.60 29 P PKPbc 17 58 10.9 +0.5
baz=324,SNR=12
ACSO Alum Creek Sta 144.62 6 *e*PKPdf PKPbc 17 58 10.5 +0.3
ACSO LR LR
comp=Z,1µm,19.0s
S39A Bolivar 144.62 21 P **PKPab 17 58 09.6 -0.5**
baz=333,SNR=8.2
X32A Elmer 144.77 31 P **PKPab 17 58 10.7 -0.1**
baz=322,SNR=6.9
WMOK Wichita Mounta 144.78 30 *e*PKIKP PKPbc 17 58 11.3 +0.3
WMOK Wichita Mounta 144.78 30 *e*PKPdf PKPbc 17 58 11.3 +0.3
WMOK LR LR
comp=Z,956nm,20.0s
U36A Oologah 144.82 25 P **PKPab 17 58 10.8 -0.1**
baz=329,SNR=6.1
T38A Diamond 144.84 23 P **PKPab 17 58 10.5 -0.5**
baz=331,SNR=17
O56A Blue Knob Stat 144.84 0 P **PKPab 17 58 10.7 -0.2**
baz=359,SNR=7.3
V35A Meyer Ranch, C 144.87 27 P **PKPab 17 58 11.1 0.0**
baz=326,SNR=12
W34A Bridge Creek, 144.87 28 P **PKPab 17 58 11.2 0.0**
baz=325,SNR=9.7
W34A Bridge Creek, 144.87 28 *e*PKPdf PKPbc 17 58 11.4 +0.1
S40A Lebanon 144.99 20 P **PKPab 17 58 11.1 -0.4**
baz=335,SNR=17
U37A Salina 145.06 24 P **PKPbc 17 58 11.6 -0.2**
baz=330,SNR=22
X33A Lawton 145.07 30 P **PKPbc 17 58 11.6 -0.4**
baz=323
BLO Bloomington 145.12 11 *e*PKIKP **PKPdf 17 58 12.4 0.0**
BLO Bloomington 145.12 11 *e*PKPbc **PKPdf 17 58 12.4 0.0**
T39A Clever 145.19 22 P **PKPbc 17 58 11.9 -0.3**
baz=333,SNR=26
OLIL Olney 145.20 14 *e*PKPbc **PKPdf 17 58 12.9 +0.3**
TUL1 Leonard 145.20 25 P **PKPab 17 58 12.5 +0.1**
baz=328,SNR=9.0
TUL1 Leonard 145.20 25 *e*PKPbc **PKPab 17 58 12.4 +0.1**
V36A Jenks 145.24 26 P **PKPab 17 58 12.6 +0.1**
baz=328,SNR=13
U38A Gravette 145.32 23 P **PKPbc 17 58 12.4 -0.3**
baz=331,SNR=24
X34A Smith Ranch, M 145.35 29 P **PKPdf 17 58 13.1 +0.1**
baz=324,SNR=9.6
W35A Tecumseh 145.36 27 P **PKPdf 17 58 13.1 +0.1**
baz=326,SNR=19

T40A Mansfield 145.38 20 P **PKPbc 17 58 12.4 -0.4**
baz=334,SNR=19
Y33A Hilltop Ranch, 145.43 31 P **PKPbc 17 58 12.9 -0.2**
baz=322
LCO Las Campanas 145.47 192 *e*pPKPdf **pPKPdf 17 58 22.7 -1.8**
LCO LR LR
comp=Z,898nm,19.0s
V37A Hulbert 145.50 25 P **PKPdf 17 58 13.1 -0.1**
baz=329,SNR=8.2
HHAR Hobbs 145.64 23 *e*PKPdf **PKPdf 17 58 13.5 +0.1**
W36A Wetumka 145.66 27 P **PKPbc 17 58 13.7 -0.1**
baz=327,SNR=9.6
SDMD Soldier's Deli 145.68 358 *e*PKPdf **PKPab 17 58 14.1 +0.1**
U39A Green Forest 145.72 22 P **PKPdf 17 58 13.4 -0.2**
baz=332,SNR=24
V38A Canehill 145.82 24 P **PKPdf 17 58 13.6 -0.2**
baz=330,SNR=11
TX31 Lajitas Ar. Si 145.83 42 *e*PKPdf **PKPbc 17 58 14.6 0.0**
TX31 *e*PKPdf **PKPab 17 58 15.3 +0.3**
TXAR Lajitas Array 145.83 42 PKPbc **PKPab 17 58 15.6 +0.6**
comp=Z,34nm,0.8s,baz=291,slow=1.7,SNR=264
SIUC Southern Illin 145.88 16 *e*PKPdf **PKPab 17 58 15.0 +0.2**
HPIG 145.90 47 *e*PKPdf **PKPab 17 58 15.9 +0.4**
Y34A Reagan Ranch, 145.91 30 P **PKPdf 17 58 14.2 +0.3**
baz=324,SNR=22
Z33A Whitaker Ranch 145.93 32 P **PKPbc 17 58 14.8 +0.1**
baz=322
X35A Drake 145.93 28 P **PKPdf 17 58 14.1 +0.2**
baz=325,SNR=14
ABTX Abilene, Hawle 145.97 33 P **PKPbc 17 58 15.0 +0.1**
baz=320,SNR=15
U40A Yellville 145.98 21 P **PKPbc 17 58 14.4 -0.3**
baz=333,SNR=24
W37B Quinton 146.01 26 P **PKPbc 17 58 14.9 0.0**
baz=328,SNR=6.4
USIN University of 146.03 13 *e*PKPdf **PKPab 17 58 15.4 0.0**
WCI Wyandotte Cave 146.07 11 *e*PKP2 **PKPbc 17 58 14.6 -0.4**
WCI Wyandotte Cave 146.07 11 *e*PKPdf **PKPbc 17 58 14.6 -0.4**
X36A Centrahoma 146.08 27 P **PKPbc 17 58 15.1 +0.1**
baz=326,SNR=11
V39A Pettigrew 146.14 23 P **PKPbc 17 58 15.0 -0.3**
baz=332,SNR=16
Z34A Collier Ranch, 146.30 31 P **PKPbc 17 58 15.5 -0.3**
baz=323
Y35A Marietta 146.30 29 P **PKPbc 17 58 15.4 -0.4**
baz=325
133A Hamilton Ranch 146.37 33 P **PKPab 17 58 16.8 -0.1**
baz=321,SNR=19
W38A Poteau 146.46 25 P **PKPbc 17 58 16.0 -0.1**
baz=330
V40A Witts Springs 146.48 22 P **PKPbc 17 58 16.1 -0.1**
baz=333
X37A Clayton 146.50 26 P **PKPbc 17 58 16.3 0.0**
baz=328,SNR=5.5
W39A Magazine 146.65 24 P **PKPbc 17 58 16.8 +0.1**
baz=331,SNR=5.4
Z35A Perchaven, San 146.66 30 P **PKPbc 17 58 16.8 -0.1**
baz=324
X38A Whitesboro 146.67 25 P **PKPbc 17 58 16.9 0.0**
baz=329
PARMO Parma 146.71 17 *e*PKPdf **PKPab 17 58 17.7 -0.3**
233A Rising Star 146.83 33 P **PKPab 17 58 18.3 -0.4**
baz=320,SNR=30
134A White-Moore Ra 146.84 32 P **PKPbc 17 58 17.7 +0.3**
baz=322
CBN Corbin Frederi 146.89 359 PFAKE 17 58 30.0 +11
CBN LR LR
comp=Z,1µm,20.0s
Y37A Hugo 146.90 27 P **PKPbc 17 58 17.2 -0.2**
baz=327
W40A Ferguson Farm, 146.93 23 P **PKPbc 17 58 17.5 0.0**
baz=332
X201 Greenbrier Sit 147.10 22 *e*PKPdf **PKPbc 17 58 18.4 +0.3**
X39A Fountain Ranch 147.11 25 P **PKPbc 17 58 18.4 +0.3**
baz=330
Z36A Blue Ridge 147.11 29 P **PKPbc 17 58 18.2 +0.1**
baz=325
WHAR Wooly Hollow 147.13 21 *e*PKPdf **PKPbc 17 58 18.8 +0.6**
X301 Greenbrier Sit 147.14 22 *e*PKPdf **PKPbc 17 58 18.5 +0.4**
135A Vickery Place, 147.20 31 P **PKPbc 17 58 18.5 +0.1**
baz=323
W41A Tony Mavity, V 147.25 22 P **PKPbc 17 58 18.1 -0.3**
baz=334
W41B Gary Mavity, V 147.25 22 P **PKPbc 17 58 18.2 -0.2**
baz=334
234A Clairette 147.26 32 P **PKPbc 17 58 19.1 +0.5**
baz=321,SNR=8.3
GNAR Gosnell 147.28 18 *e*PKPbc **PKPab 17 58 19.6 -0.7**
MIAR Mount Ida 147.30 24 P **PKPbc 17 58 18.9 +0.3**
baz=331
333A Richland Sprin 147.31 34 P **PKPbc 17 58 19.3 +0.5**
baz=319,SNR=39
Y38A Idabel 147.34 26 P **PKPbc 17 58 18.6 -0.1**
baz=328
JCT Junction City 147.47 36 P **PKPbc 17 58 19.6 +0.3**
baz=317,SNR=31
JCT Junction City 147.47 36 *e*PKP2 **PKPbc 17 58 18.1 -1.2**
JCT Junction City 147.47 36 *e*PKPdf **PKPbc 17 58 18.1 -1.2**
URVA University of 147.53 359 *e*PKPbc **PKPbc 17 58 19.9 +0.8**
Z37A Pogue Cattle C 147.55 28 P **PKPbc 17 58 19.7 +0.3**
baz=326
UALR University of 147.57 22 *e*PKPbc **PKPbc 17 58 19.9 +0.6**
Y39A Lockesburg 147.61 25 P **PKPbc 17 58 19.5 +0.1**
baz=330
WHTX Lake Whitney, 147.62 32 P **PKPbc 17 58 20.1 +0.5**
baz=322,SNR=5.6
WHTX Lake Whitney, 147.62 32 *e*PKPbc **PKPbc 17 58 20.6 +1.1**
X40A Basin Creek Fa 147.64 23 P **PKPbc 17 58 19.7 +0.2**
baz=332
136A Ennis 147.71 30 P **PKPbc 17 58 20.0 +0.2**
baz=324
334A Lometa 147.72 33 P **PKPbc 17 58 20.2 +0.4**
baz=320,SNR=9.4
WVT Waverly 147.74 15 *e*PKP2 **PKPdf 17 58 18.0 +1.0**
WVT Waverly 147.74 15 *e*PKPdf **PKPdf 17 58 18.0 +1.0**
Z38A Mt. Pleasant 147.80 27 P **PKPbc 17 58 20.4 +0.4**
baz=327
BLA Blacksburg 147.83 3 PFAKE 17 58 30.0 +7.6
BLA LR LR
comp=Z,997nm,20.0s
Y40A Okolona 147.88 24 P **PKPbc 17 58 20.5 +0.3**
baz=331
137A Heron Place, G 147.99 29 P **PKPbc 17 58 21.2 +0.7**
baz=326
236A Katherine and 148.09 30 P **PKPbc 17 58 21.2 +0.4**
baz=324
434A Burnet 148.10 34 P **PKPbc 17 58 21.2 +0.3**
baz=320,SNR=6.9
Z39A Irene McRaven, 148.17 26 P **PKPbc 17 58 21.6 +0.6**
baz=329
TZTN Tazewell 148.18 8 *e*PKPdf **PKPdf 17 58 13.7 -4.0**
335A Moody 148.20 32 P **PKPbc 17 58 21.6 +0.5**
baz=322,SNR=9.0
533A Kerrville 148.22 36 P **PKPbc 17 58 21.7 +0.4**
baz=318,SNR=10
WLAR White Oak Lake 148.23 24 *e*PKPbc **PKPbc 17 58 22.4 +1.3**
138A Matatall Enter 148.25 28 P **PKPbc 17 58 22.3 +1.1**
baz=327
336A Riesel 148.42 31 P **PKPbc 17 58 22.5 +0.8**
baz=323,SNR=11
237A Washetta, Mont 148.45 29 P **PKPbc 17 58 22.5 +0.8**
baz=325
Z40A Long Farm, Mag 148.49 25 P **PKPbc 17 58 22.6 +0.8**
baz=330
435B Jarrell 148.50 33 P **PKPbc 17 58 22.6 +0.7**
baz=321
139A Bunkhouse Ranc 148.55 27 P **PKPbc 17 58 22.8 +0.8**
baz=328
534A Blanco 148.57 35 P **PKPbc 17 58 22.4 +0.2**
baz=319,SNR=8.8
633A Saathoff Ranch 148.59 37 P **PKPbc 17 58 22.9 +0.7**
baz=317,SNR=6.9
Y42A Garnett, Star 148.62 22 P **PKPbc 17 58 22.9 +0.8**
baz=333
Z41A Richland Creek 148.73 24 P **PKPbc 17 58 23.0 +0.6**
baz=331
238A Jacksonville 148.78 28 P **PKPbc 17 58 23.4 +0.8**
baz=326
OXF Oxford 148.81 18 *e*PKIKP **PKPdf 17 58 19.9 +1.1**
OXF Oxford 148.81 18 *e*PKPdf **PKPdf 17 58 19.9 +1.1**
Y43A Makayla and Ka 148.86 21 P **PKPbc 17 58 23.6 +0.8**
baz=335
832A Faith Ranch, C 148.93 39 P **PKPbc 17 58 24.0 +0.8**
baz=314
436A Wall Ranch, Ga 148.93 32 P **PKPbc 17 58 24.1 +1.1**
baz=322
140A Cam and Jess, 148.94 26 P **PKPbc 17 58 23.9 +0.9**

baz=329
337A Centerville 148.97 30 P **PKPbc 17 58 24.2 +1.1**
baz=324,SNR=5.3
TKL Tuckaleechee C 149.02 9 *e*PKP2 **PKPbc 17 58 23.4 +0.2**
TKL Tuckaleechee C 149.02 9 *e*PKPbc **PKPbc 17 58 23.4 +0.2**
733A Divot King Ran 149.05 38 P **PKPbc 17 58 24.4 +1.0**
baz=316
SWET Sewanee 149.05 12 *e*PKPdf **PKPbc 17 58 22.5 -0.8**
Z42A Norrel Spur, H 149.06 23 P **PKPbc 17 58 23.8 +0.5**
baz=333
Y44A Strider, Charl 149.06 20 P **PKPbc 17 58 24.1 +0.9**
baz=336
239A Gary 149.07 28 P **PKPbc 17 58 23.9 +0.6**
baz=327,SNR=5.2
535A Dale 149.09 34 P **PKPbc 17 58 24.4 +0.9**
baz=320
CPCT Cooper Cave 149.10 10 *e*PKPbc **PKPbc 17 58 23.8 +0.5**
634A China Grove, S 149.13 36 P **PKPbc 17 58 24.3 +0.8**
baz=318
NATX Nacogdoches 149.20 28 P **PKPbc 17 58 24.4 +0.8**
baz=327
NATX Nacogdoches 149.20 28 *e*PKPbc **PKPbc 17 58 24.8 +1.1**
NATX LR LR
comp=Z,1µm,21.0s
338A Crockett 149.22 29 P **PKPbc 17 58 24.3 +0.6**
baz=325
437A Phantom Ranch, 149.23 31 P **PKPbc 17 58 24.7 +0.9**
baz=323
141A Papa Simpson, 149.26 25 P **PKPbc 17 58 24.4 +0.6**
baz=330
833A Chaparral WMA, 149.27 39 P **PKPbc 17 58 24.7 +0.7**
baz=315
536A Bastrop 149.33 33 P **PKPbc 17 58 24.7 +0.7**
baz=321
Y45A Yeager Farm, C 149.37 19 P **PKPbc 17 58 24.6 +0.6**
baz=337
240A Hunter Patters 149.37 27 P **PKPbc 17 58 24.6 +0.5**
baz=328
Z43A Armstrong Fami 149.38 22 P **PKPbc 17 58 24.7 +0.6**
baz=334
734A La Parita Cree 149.40 37 P **PKPbc 17 58 24.9 +0.6**
baz=317
635A Leesville 149.46 35 P **PKPbc 17 58 25.4 +1.0**
baz=319,SNR=11
Y46A Houston 149.56 18 P **PKPbc 17 58 24.4 -0.1**
baz=339,SNR=7.4
339A Huntington 149.60 28 P **PKPbc 17 58 25.2 +0.5**
baz=326
Z44A Pea Ridge, Bel 149.61 20 P **PKPbc 17 58 25.0 +0.4**
baz=335,SNR=8.2
438A Sam Houston St 149.63 30 P **PKPbc 17 58 25.9 +1.1**
baz=324
142A Monroe 149.70 23 P **PKPbc 17 58 25.4 +0.6**
baz=332
537A Green Hill Far 149.73 32 P **PKPbc 17 58 26.4 +1.3**
baz=322
241A Mo Tay, Goldon 149.75 25 P **PKPbc 17 58 25.7 +0.7**
baz=330
143A Socs Landing, 149.77 22 P **PKPbc 17 58 25.6 +0.6**
baz=333,SNR=6.8
Z45A Winona 149.78 19 P **PKPbc 17 58 25.6 +0.6**
baz=337
636A Smothers Creek 149.79 34 P **PKPbc 17 58 27.1 +1.8**
baz=320,SNR=16
KMSC Kings Mountain 149.82 5 P **PKPbc 17 58 25.2 0.0**
baz=354
KMSC Kings Mountain 149.82 5 *e*PKPbc **PKPbc 17 58 25.4 +0.3**
735A Kenedy 149.84 36 P **PKPbc 17 58 26.6 +1.2**
baz=318
Y47A UCPARC, Winfie 149.84 16 P **PKPbc 17 58 25.0 -0.2**
baz=341,SNR=6.5
933A Laredo 149.84 39 P **PKPbc 17 58 26.9 +1.5**
baz=315
340A Bronson 149.84 27 P **PKPbc 17 58 25.8 +0.6**
baz=328
834A Tilden 149.93 38 P **PKPbc 17 58 26.8 +1.2**
baz=316
BBSR BB Station 149.93 337 PFAKE 17 58 30.0 -1.0
BBSR LR LR
comp=Z,693nm,20.0s
439A Center Grove, 149.95 29 P **PKPbc 17 58 26.3 +0.8**
baz=326
242A Grayson 150.04 24 P **PKPbc 17 58 26.4 +0.6**
baz=331
538A Harpers Horsep 150.05 31 P **PKPbc 17 58 27.7 +1.9**
baz=324
HKT Hockley 150.09 32 *e*PKHKP **PKPdf 17 58 22.9 +2.1**
HKT Hockley 150.09 32 *e*PKPdf **PKPdf 17 58 22.9 +2.1**
Z46A Louisville 150.18 18 P **PKPbc 17 58 26.7 +0.6**
baz=338
736A Circle Diamond 150.19 35 P **PKPbc 17 58 27.9 +1.7**
baz=320
144A Alexander Plac 150.20 21 P **PKPbc 17 58 26.5 +0.4**
baz=335
637A Eagle Lake 150.22 33 P **PKPbc 17 58 27.7 +1.5**
baz=322,SNR=7.5
341A Kurthwood 150.24 26 P **PKPbc 17 58 27.0 +0.7**
baz=329
835A Beeville 150.24 37 P **PKPbc 17 58 28.0 +1.7**
baz=318
934A Benavides 150.32 38 P **PKPbc 17 58 28.4 +1.8**
baz=316
440A Kirbyville 150.37 28 P **PKPbc 17 58 27.9 +1.4**
baz=327
145A Houston Renfro 150.40 20 P **PKPbc 17 58 27.2 +0.6**
baz=336
Z48A Northport 150.41 16 P **PKPbc 17 58 26.2 -0.4**
baz=341,SNR=5.1
Z47A Carrollton 150.44 17 P **PKPbc 17 58 26.8 +0.1**
baz=340,SNR=8.3
243A Waterproof 150.47 23 P **PKPbc 17 58 27.4 +0.6**
baz=332
VBMS Vicksburg 150.53 22 P **PKPbc 17 58 27.5 +0.6**
baz=334
ZAIG Zacatecas 150.56 51 *e*PKPbc **PKPbc 17 58 29.3 +1.7**
342A Flagon Creek P 150.57 25 P **PKPbc 17 58 27.9 +0.9**
baz=330
244A Avery, Jackson 150.63 22 P **PKPbc 17 58 27.7 +0.6**
baz=334,SNR=13
737A Port Lavaca 150.69 34 P **PKPbc 17 58 28.0 +0.7**
baz=321
KVTX Kingsville 150.75 38 PFAKE 17 58 30.0 +2.5
KVTX LR LR
comp=Z,980nm,19.0s
540A Vidor 150.81 29 P **PKPbc 17 58 26.7 -1.0**
baz=326
147A Livingston 150.87 18 P **PKPbc 17 58 28.0 +0.4**
baz=339
LRAL Lakeview Retre 150.89 15 *e*PKPbc **PKPbc 17 58 27.5 -0.2**
245A Little AP, Sta 150.93 21 P **PKPbc 17 58 28.3 +0.4**
baz=336
343A Vidalia 150.94 24 P **PKPbc 17 58 28.5 +0.6**
baz=332
738A Farr-Stevens R 151.06 33 P **PKPbc 17 58 28.8 +0.5**
baz=322
LVC Limon Verde 151.13 198 *e*PKPdf **PKPdf 17 58 25.7 +2.5**
LVC LR LR
comp=Z,990nm,19.0s
344A Westbrook Farm 151.14 23 P **PKPbc 17 58 29.5 +1.1**
baz=334,SNR=5.2
246A Jackson Lee, B 151.21 19 P **PKPbc 17 58 28.6 +0.1**
baz=337
GOGA Godfrey 151.27 9 PFAKE 17 58 30.0 +1.4
GOGA LR LR
comp=Z,1µm,19.0s
247A Quitman 151.34 19 P **PKPbc 17 58 29.9 +1.1**
baz=338
035Z Hargill 151.41 39 P **PKPbc 17 58 30.3 +1.2**
baz=315
345A Thompson Farm, 151.53 22 P **PKPbc 17 58 29.8 +0.5**
baz=335
542A Morse 151.54 27 P **PKPbc 17 58 29.0 -0.3**
baz=329
248A Dixon Mills 151.57 17 P **PKPbc 17 58 30.0 +0.6**
baz=340
NHSC New Hope 151.93 3 PFAKE 17 58 40.0 +0.8
NHSC LR LR
comp=Z,1µm,21.0s
445A Amite 151.94 23 P **PKPbc 17 58 30.6 +0.4**
baz=334
347A Saraland 151.96 19 P **PKPbc 17 58 31.1 +0.9**
baz=338
348A Jackson 152.15 18 P **PKPbc 17 58 31.6 +0.9**
baz=339
546A Slidell 152.62 22 P **PKPbc 17 58 31.1 -0.7**
baz=334
LPAZ La Paz 156.65 205 PKPbc PKPdf 17 58 40.9 +9.4
comp=Z,1.4nm,0.9s,baz=7.4,slow=0.9,SNR=4.9

ANWB	**Willy Bob**	**159.54**	**309**	PFAKE		17 58 50.0	+16
ANWB				LR	LR		
comp=Z,539nm,20.0s							
SAML	**Samuel**	**159.61**	**227**	PFAKE		17 58 50.0	+16
SAML				LR	LR		
comp=Z,1μm,20.0s							
BBGH	**Gun Hill**	**159.87**	**295**	PFAKE		17 58 50.0	+15
BBGH				LR	LR		
comp=Z,1μm,22.0s							
FDF	**Fort de France**	**160.59**	**301**	PFAKE		17 58 50.0	+15
FDF				LR	LR		
comp=Z,409nm,20.0s							
TEIG	**Tepich**	**161.94**	**32**	PFAKE		17 58 50.0	+13
TEIG				LR	LR		
comp=Z,448nm,20.0s							
GRGR	**Grenville**	**162.14**	**295**	PFAKE		17 58 50.0	+13
GRGR				LR	LR		
comp=Z,636nm,20.0s							
GRTK	**Grand Turk**	**162.16**	**338**	PFAKE		17 58 50.0	+13
GRTK				LR	LR		
comp=Z,1μm,20.0s							
SJG	**San Juan**	**162.38**	**319**	PFAKE		17 58 50.0	+13
SJG				LR	LR		
comp=Z,784nm,22.0s							
NNA	**Nana**	**163.11**	**185**	PFAKE		17 58 50.0	+12
NNA				LR	LR		
comp=Z,469nm,22.0s							
SDDR	**Presa de Saban**	**164.50**	**335**	*e*PKPab	**PKPab**	**17 59 34.9**	**+1.1**
SDDR				LR	LR		
comp=Z,804nm,20.0s							
GTBY	**Guantanamo Bay**	**164.81**	**349**	PFAKE		17 58 50.0	+11
GTBY				LR	LR		
comp=Z,842nm,21.0s							
PAYG	**Puerto Ayora**	**166.72**	**115**	PFAKE		17 58 50.0	+8.8
PAYG				LR	LR		
comp=Z,777nm,21.0s							
MTDJ	**Mount Denham**	**166.79**	**357**	PFAKE		17 58 50.0	+8.8
MTDJ				LR	LR		
comp=Z,1μm,20.0s							
JTS	**JuntasAbangare**	**171.48**	**51**	PFAKE		17 59 00.0	+16
JTS				LR	LR		
comp=Z,667nm,21.0s							
SDV	**Santo Domingo**	**171.51**	**298**	PFAKE		17 59 00.0	+16
SDV				LR	LR		
comp=Z,826nm,21.0s							
OTAV	**Otavalo**	**175.31**	**177**	PFAKE		17 59 00.0	+14
OTAV				LR	LR		
comp=Z,535nm,20.0s							
BCIP	**Isla Barro Col**	**175.52**	**21**	PFAKE		17 59 00.0	+14
BCIP				LR	LR		
comp=Z,726nm,20.0s							

*IDC **04** 17:45:41.3±25.0, 21°.50S×178°.19W, h470km±227km, mb3.2/5, mb1 3.4/5, mb1mx3.0/39, mbtmp4.1/5, Error ellipse: s-maj=173.1km s-min=47.1km az=107.0*

ISC 04 17:45:35.6±2.1, 21°.4S±0°.5×178°.0W±0°.3, h412km, n11, σ0.86/10, mb3.5/5, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**33.40**	**266**	P	**P**	**17 51 38.8**	**+0.7**
1.0nm,0.3s,baz=85,slow=12,SNR=3.9							
ASAR	**Alice Springs**	**44.30**	**258**	P	**P**	**17 53 07.0**	**-0.2**
1.0nm,0.5s,baz=92,slow=8.0,SNR=7.3							
WRA	**Warramunga Arr**	**44.47**	**263**	P	**P**	**17 53 07.7**	**-0.9**
0.7nm,0.3s,baz=97,slow=7.8,SNR=29							
FITZ	**Fitzroy Crossi**	**52.90**	**263**	P	**P**	**17 54 11.7**	**-0.1**
3.3nm,1.0s,baz=102,slow=9.3,SNR=6.3							
MJAR	**Matsushiro Arr**	**70.94**	**324**	P	**P**	**17 56 09.9**	**+0.1**
0.6nm,0.4s,baz=151,slow=5.7,SNR=4.7							
BVAR	**Borovoye Array**	**119.77**	**320**	PKP	**PKPdf**	**18 03 36.4**	**-1.0**
0.5nm,0.3s,baz=90,slow=3.5,SNR=4.1							
ARCES	**ARCESS Array B**	**129.81**	**349**	PKP	**PKPdf**	**18 03 56.0**	**-0.2**
2.2nm,0.8s,baz=15,slow=3.7,SNR=2.5							
AKASG	**Malin Array Be**	**143.80**	**330**	PKP	PKPab	18 04 19.9	-1.0
0.6nm,0.5s,baz=44,slow=4.0,SNR=14							
BRTR	**Keskin Array B**	**147.44**	**311**	PKPbc	**PKPdf**	**18 04 30.8**	**+1.6**
0.6nm,0.6s,baz=148,slow=3.7,SNR=4.1							
MMAI	**Mount Meron Ar**	**148.25**	**298**	PKPbc	**PKPbc**	**18 04 34.0**	**-0.5**
0.8nm,0.5s,baz=75,slow=6.1,SNR=3.1							
GERES	**GERESS Array B**	**151.07**	**344**	PKPbc	**PKPbc**	**18 04 40.9**	**+0.1**
0.4nm,0.4s,baz=23,slow=3.2,SNR=4.0							

IDC 04 17:48:05.1±445.0, 61°.46N×41°.03E, h0km, Error ellipse: s-maj=199.0km s-min=130.4km az=173.0, Baltic States-Belarus-Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I43RU	**DUBNA INFRASON**	**5.14**	**204**	*i*		18 21 20.0	
baz=20,slow=316,SNR=3.8							
I31KZ	**AKTYUBINSK INF**	**14.55**	**132**	*i*		19 16 50.5	
baz=325,slow=329,SNR=1.5							
I46RU	**ZALESOVO INFRA**	**24.16**	**88**	*i*		20 15 50.0	
baz=305,slow=331,SNR=2.5							

*ISCJB **04** 17:55:20.6±0.3, 6°.41S±0°.04×130°.61E±0°.04, h90km, mb4.5/41, Error ellipse: s-maj=6.3km s-min=4.8km az=157.9*

*DJA **04** 17:55:20.6±0.3, 6°.5±2°.×13°.1E±°., h115km±4km, M5.5/11, mB5.7/1, mb4.7/11, MLv5.8/1, Mw(mB)5.2/1*

*NEIC **04** 17:55:22.7±0.6, 6°.34S×130°.53E, h88km±6km, mb4.6/14, Error ellipse: s-maj=6.2km s-min=5.9km az=57.0*

*IDC **04** 17:55:23.1±2.2, 6°.33S×130°.51E, h89km±19km, mb4.1/19, mb1 4.0/22, mb1mx3.9/45, mbtmp4.4/22, Error ellipse: s-maj=17.1km s-min=11.0km az=78.0*

ISC 04 17:55:22.7±0.4, 6°.45S±0°.05×130°.54E±0°.07, h90km, n93, σ1.25/84, mb4.5/41, 1C, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SAUI	**Saumlaki**	**1.70**	**154**	P	Pn	17 55 49.5	-1.5
SAUI				S	**Sn**	**17 56 10.3**	**-2.2**
BNDI	**Bandanaira**	**2.02**	**342**	P	**Pn**	**17 55 53.6**	**-1.6**
BNDI				S	**Sn**	**17 56 23.7**	**+3.8**
MSAI	**Masohi**	**3.48**	**332**	P	**Pn**	**17 56 15.6**	**+0.9**
FAKI	**Fak Fak**	**3.90**	**26**	P	Pn	17 56 17.5	-3.0
FAKI	**Fak Fak**	**3.90**	**26**	*e*Pn	Pn	17 56 17.1	-3.4
SWI	**Sorong**	**5.60**	**7**	P	Pn	17 56 41.2	-2.4
SANI	**Sanana**	**6.30**	**314**	P	**Pn**	**17 56 54.8**	**+1.7**
LBMI	**Labuha**	**6.52**	**332**	P	**Pn**	**17 56 56.6**	**+0.5**
SOEI	**Soe**	**7.02**	**242**	*e*Pn	**Pn**	**17 57 04.8**	**+1.7**
189nm,0.8s							
BATI	**Baumata**	**7.76**	**241**	P	**Pn**	**17 57 14.3**	**+1.3**
baz=90,slow=20							
MMRI	**Maumere**	**8.51**	**255**	P	**Pn**	**17 57 25.5**	**+2.3**
BSSI	**Bau Bau, Buton**	**9.99**	**271**	P	**Pn**	**17 57 46.1**	**+2.7**
KAPI	**Kappang**	**10.83**	**277**	P	**Pn**	**17 57 55.9**	**+1.1**
0.1nm,0.3s,baz=87,slow=19,SNR=2.9							
JAY	**Jayapura**	**10.86**	**69**	P	**Pn**	**17 57 55.6**	**+0.2**
0.3nm,0.3s,baz=266,slow=23,SNR=11							
JAY				S	Sn	17 59 48.6	-6.5
0.0nm,0.3s,baz=90,slow=20,SNR=2.8							
FITZ	**Fitzroy Crossi**	**12.52**	**202**	P	Pn	17 58 12.6	-5.1
17nm,0.3s,baz=23,slow=11,SNR=189							
FITZ				S	Sn	18 00 22.0	-13
6.6nm,0.3s,baz=304,slow=11,SNR=5.8							
FITZ	**Fitzroy Crossi**	**12.52**	**202**	*e*Pn	Pn	17 58 12.3	-5.4
42nm,0.4s							
FITZ				S	Sn	18 00 22.0	-13
PLAI	**Plampang**	**12.87**	**259**	P	**Pn**	**17 58 21.0**	**-1.3**
WRAB	**Tennant Creek**	**13.90**	**165**	*e*Pn	Pn	17 58 30.1	-5.8
52nm,0.5s							
WRA	**Warramunga Arr**	**13.91**	**165**	P	Pn	17 58 30.4	-5.5
12nm,0.3s,baz=348,slow=13,SNR=241							
WRA				S	Sn	18 00 54.8	-14
9.2nm,0.3s,baz=329,slow=24,SNR=9.1							
COEN	**Coen**	**14.49**	**122**	*e*Pn	Pn	17 58 38.7	-4.9
16nm,0.5s							
JAGI	**Jajag, Banyuwa**	**16.37**	**262**	P	**Pn**	**17 59 05.5**	**-1.7**
33nm,0.6s							
JAGI	**Jajag, Banyuwa**	**16.37**	**262**	*e*Pn	**Pn**	**17 59 05.8**	**-1.4**
24nm,0.4s							
GMJI	**Gumukmas**	**17.05**	**263**	P	**Pn**	**17 59 13.5**	**-2.1**
21nm,1.1s							
ASAR	**Alice Springs**	**17.42**	**170**	P	P	17 59 17.0	-3.0
7.0nm,0.3s,baz=19,slow=12,SNR=320							
ASAR				S	Sn	18 02 21.6	-12
3.1nm,0.3s,baz=357,slow=28,SNR=7.9							
MBWA	**Marble Bar**	**17.98**	**215**	*e*P	P	17 59 20.3	-5.9
KKM	**Kota Kinabalu**	**18.93**	**311**	*e*P	**P**	**17 59 36.5**	**-0.4**
8.7nm,0.5s							
PCJI	**Pacitan**	**19.28**	**264**	P	**P**	**17 59 37.8**	**-2.7**
39nm,2.0s							
CTA	**Charters Tower**	**20.41**	**133**	P	**P**	**17 59 54.1**	**+1.4**
5.0nm,0.8s,baz=306,slow=12,SNR=7.4							
CTAO	**Charters Tower**	**20.41**	**133**	*e*P	**P**	**17 59 54.4**	**+1.7**
KSM	**Kuching**	**21.68**	**291**	*e*P	**P**	**18 00 06.1**	**-0.2**
CISI	**Cisompet, Garu**	**22.58**	**266**	*e*P	**P**	**18 00 14.1**	**-1.9**
70nm,0.8s							
LEM	**Lembang**	**22.77**	**268**	P	**P**	**18 00 22.4**	**+4.3**
27nm,0.7s,baz=17,slow=24,SNR=8.2							
CNJI	**Cibinong**	**23.25**	**267**	P	**P**	**18 00 21.1**	**-1.5**
BBOO	**Buckleboo**	**26.72**	**170**	*e*P	**P**	**18 00 53.7**	**-0.1**
15nm,0.7s							
STKA	**Stephens Creek**	**27.32**	**159**	P	**P**	**18 00 59.9**	**+0.8**
1.3nm,0.4s,baz=334,slow=8.9,SNR=8.9							
NWAO	**Narrogin (SRO)**	**29.10**	**203**	P	**P**	**18 01 15.5**	**+0.5**
6.7nm,0.7s,baz=263,slow=8.8,SNR=9.5							
NWAO	**Narrogin (SRO)**	**29.10**	**203**	*e*P	**P**	**18 01 15.2**	**+0.2**
SKNT	**Sakolnakorn**	**35.09**	**312**	P	**P**	**18 02 07.0**	**-0.5**
38nm,0.6s							
KHON	**Khomkaen**	**35.57**	**310**	P	**P**	**18 02 12.6**	**+1.0**
8.1nm,0.7s							
CHAI	**Chaiyaphum**	**35.95**	**308**	P	**P**	**18 02 15.1**	**+0.2**
4.0nm,0.9s							
NONG	**Nongkai**	**36.39**	**312**	P	**P**	**18 02 18.3**	**-0.4**
68nm,0.7s							
LOEI	**Loei**	**37.46**	**310**	P	P	18 02 24.9	-2.8
6.4nm,1.1s							
UTTA	**Uttaradit**	**38.14**	**310**	P	**P**	**18 02 33.4**	**-0.1**
3.9nm,1.0s,46nm							
LAMP	**Lampang**	**39.31**	**310**	P	**P**	**18 02 43.6**	**+0.4**
4.5nm,0.8s							
CRAI	**Chiangrai**	**39.78**	**312**	P	**P**	**18 02 47.7**	**+0.5**
847nm,1.5s							
CMAR	**Chiang Mai Arr**	**39.80**	**309**	P	**P**	**18 02 47.0**	**-0.3**
3.1nm,0.7s,baz=135,slow=7.1,SNR=31							
CMAR				PcP	**PcP**	**18 04 53.0**	**+1.0**
0.8nm,0.7s,baz=174,slow=2.7,SNR=5.3							
CMMT	**Chiang Mai**	**40.00**	**309**	P	**P**	**18 02 48.8**	**-0.2**
20nm,1.2s							
CHTO	**Chiang Mai**	**40.00**	**309**	P	**P**	**18 02 48.8**	**-0.2**
202nm,0.9s							
CHTO	**Chiang Mai**	**40.00**	**309**	*e*P	**P**	**18 02 48.6**	**-0.4**
19nm,1.3s							
CMAI	**Chiengmai2**	**40.59**	**311**	P	**P**	**18 02 53.3**	**-0.7**
40nm,1.1s,3μm							
ENH	**Enshi**	**41.73**	**332**	*e*P	**P**	**18 03 02.5**	**-0.5**
MJAR	**Matsushiro Arr**	**43.37**	**9**	P	**P**	**18 03 14.6**	**-1.7**
1.5nm,0.7s,baz=188,slow=9.5,SNR=10							
USRK	**Ussuriysk Ar.**	**50.44**	**1**	P	**P**	**18 04 10.4**	**-0.7**
1.4nm,0.6s,baz=140,slow=6.9,SNR=4.3							
ASAJ	**Asahikawa**	**51.50**	**11**	P	**P**	**18 04 19.3**	**+0.2**
2.6nm,0.7s,baz=265,slow=9.2,SNR=5.0							
LSA	**Lhasa**	**52.18**	**316**	*e*P	**P**	**18 04 25.2**	**+0.2**
4.7nm,0.4s							
GTA	**Gaotai**	**53.76**	**331**	*e*P	**P**	**18 04 35.9**	**-0.1**
GTA				pP	pP	18 04 43.1	-15
GTA				sP	sP	18 04 46.0	-22
GTA				pmax	pmax		
comp=Z,4.0nm,0.9s							
GUN	**Gumba**	**55.00**	**311**	*e*P	**P**	**18 04 44.9**	**-0.6**
comp=Z,56nm,0.7s							
PKIN	**Phulchoki**	**55.19**	**310**	*e*P	**P**	**18 04 45.7**	**-1.1**
comp=Z,13nm,0.6s							
KKN	**Kakani**	**55.39**	**310**	*e*P	**P**	**18 04 47.5**	**-0.7**
comp=Z,21nm,0.6s							
DMN	**Daman**	**55.43**	**310**	*e*P	**P**	**18 04 47.9**	**-0.6**
GKN	**Gorkha**	**55.99**	**310**	*e*P	**P**	**18 04 51.7**	**-0.7**
comp=Z,26nm,0.3s							
KOLN	**Koldanda**	**56.67**	**309**	*e*P	**P**	**18 04 56.8**	**-0.5**
comp=Z,30nm,0.7s							
PYUN	**Piuthan**	**57.30**	**309**	*e*P	**P**	**18 05 01.3**	**-0.4**
comp=Z,71nm,0.8s							
ULN	**Ulaanbaatar**	**57.92**	**342**	*e*P	**P**	**18 05 05.6**	**0.0**
comp=Z,6.0nm,0.8s							
PETK	**Petropavlovsk-**	**63.64**	**18**	P	**P**	**18 05 44.6**	**+0.4**
comp=Z,2.2nm,0.6s,baz=156,slow=2.8,SNR=5.8							
MKAR	**Makanchi Array**	**68.07**	**326**	P	**P**	**18 06 12.9**	**+0.2**
comp=Z,5.6nm,0.4s,baz=113,slow=8.4,SNR=134							
YAK	**Yakutsk**	**68.29**	**360**	P	**P**	**18 06 13.4**	**-0.3**
comp=Z,6.7nm,0.5s,baz=204,slow=0.4,SNR=7.4							
TKM2	**Tokmak 2**	**69.91**	**320**	*e*P	**P**	**18 06 25.0**	**+0.5**
comp=Z,2.5nm,0.6s							
AAK	**Ala-Archa**	**70.47**	**319**	P	**P**	**18 06 27.7**	**-0.1**
comp=Z,1.8nm,0.4s,baz=117,slow=5.0,SNR=7.2							
AAK	**Ala-Archa**	**70.47**	**319**	*e*P	**P**	**18 06 28.2**	**+0.3**
comp=Z,3.2nm,0.8s							
EKS2	**Erkin-Say**	**70.95**	**319**	*e*P	**P**	**18 06 31.0**	**+0.3**
comp=Z,3.7nm,0.8s							
ZALV	**Zalesovo Beam**	**71.33**	**333**	P	**P**	**18 06 31.7**	**-0.9**
comp=Z,3.7nm,0.5s,baz=127,slow=5.1,SNR=13							
KURBB	**Kurchatov Arra**	**72.33**	**328**	P	**P**	**18 06 38.4**	**-0.2**
comp=Z,3.7nm,0.6s,baz=128,slow=4.9,SNR=50							
KURK	**Kurchatov**	**72.33**	**328**	P	**P**	**18 06 38.4**	**-0.2**
VNDA	**Vanda**	**72.92**	**173**	P	**P**	**18 06 42.7**	**+1.0**
comp=Z,2.1nm,0.8s,baz=315,slow=6.7,SNR=12							
SBA	**Scott Base**	**73.80**	**173**	*e*P	**P**	**18 06 48.6**	**+1.7**
comp=Z,14nm,0.8s							
MAW	**Mawson**	**75.65**	**201**	P	**P**	**18 06 59.2**	**+1.5**
comp=Z,5.6nm,0.5s,baz=65,slow=4.1,SNR=17							
BVAR	**Borovoye Array**	**77.89**	**328**	P	**P**	**18 07 10.2**	**-0.4**
comp=Z,1.7nm,0.4s,baz=116,slow=8.7,SNR=16							
TIXI	**Tiksi**	**77.95**	**359**	*e*P	**P**	**18 07 09.4**	**-1.1**
comp=Z,2.4nm,0.6s							
GEYT	**Alibeck**	**80.27**	**310**	P	**P**	**18 07 23.5**	**-0.5**
comp=Z,1.0nm,0.6s,baz=183,slow=9.8,SNR=3.9							
ABKAR	**Abkulak array**	**82.42**	**321**	*e*P	**P**	**18 07 34.1**	**-0.9**
comp=Z,2.4nm,0.7s							
QSPA	**South Pole Qui**	**83.52**	**180**	*e*P	**P**	**18 07 40.4**	**-0.1**
comp=Z,34nm,1.3s							
AKTO	**Aktyubinsk**	**83.97**	**322**	P	**P**	**18 07 42.6**	**-0.3**
comp=Z,2.1nm,0.6s,baz=108,slow=8.3,SNR=12							
SYO	**Syowa Base**	**84.36**	**201**	*e*P	**P**	**18 07 44.3**	**-0.3**
ARU	**Arti**	**85.53**	**328**	P	**P**	**18 07 49.8**	**-0.8**
comp=Z,2.6nm,0.5s,baz=127,slow=2.8,SNR=6.5							
ARCES	**ARCESS Array B**	**101.25**	**340**	P	**Pdif**	**18 09 01.5**	**-1.5**
comp=Z,1.6nm,0.8s,baz=65,slow=5.5,SNR=4.7							
YKA	**Yellowknife Ar**	**107.03**	**26**	PKiKP	**PKiKP**	**18 13 37.5**	**-0.3**
comp=Z,0.2nm,0.6s,baz=295,slow=1.7,SNR=6.9							
GERES	**GERESS Array B**	**112.34**	**320**	PKiKP	**PKiKP**	**18 13 47.1**	**-1.3**
comp=Z,0.6nm,0.6s,baz=355,slow=1.5,SNR=5.7							
TXAR	**Lajitas Array**	**124.19**	**59**	PKP	**PKPdf**	**18 14 12.3**	**+0.6**
comp=Z,0.4nm,0.7s,baz=15,slow=5.3,SNR=3.8							
TORD	**Toro di Ar. Bea**	**129.22**	**282**	PKP	**PKPdf**	**18 14 21.4**	**-0.1**
comp=Z,1.5nm,0.5s,baz=95,slow=1.9,SNR=11							
DBIC	**Dimbokro**	**135.70**	**273**	PKP	**PKPdf**	**18 14 35.0**	**+1.2**
comp=Z,1.5nm,0.4s,baz=24,slow=2.6,SNR=6.1							
CPUP	**Villa Florida**	**146.53**	**167**	PKPbc	**PKPdf**	**18 14 55.2**	**+2.3**
comp=Z,2.7nm,0.8s,baz=223,slow=4.3,SNR=5.3							
LPAZ	**La Paz**	**150.81**	**141**	PKPbc	**PKPbc**	**18 15 08.0**	**+1.4**
comp=Z,4.6nm,0.4s,baz=13,slow=2.1,SNR=29							

DJA 04 18:09:02.4±1.1, 2°.N±4°.×97°.E±°., h10km, M3.5/4, MLv3.5/4, Off west coast of northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GSI	**Gunungsitoli**	**1.01**	**103**	P	Pg	18 09 20.1	-1.8
GSI				S	Sg	18 09 35.0	-0.1
KCSI	**Kotacane, Aceh**	**2.29**	**31**	P	Pn	18 09 40.4	0.0
KCSI				S	Sn	18 10 09.6	+0.9
PBSI	**Pulau Batu**	**2.32**	**133**	P	Pn	18 09 40.6	0.0
MNSI	**Mandailing Nat**	**3.08**	**104**	P	Pn	18 09 51.1	0.0

JMA 04 18:12:25.9±0.2, 38°.57N×143°.79E, h43km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**1.73**	**288**	P	Pn	18 12 54.5	+1.0
JIO	**Ouri**	**1.92**	**267**	P	Pn	18 12 57.0	+1.0
JIO				*e*S	Sn	18 13 19.6	+0.6
JTH	**Tanohata**	**2.03**	**313**	P	Pn	18 12 58.6	+1.1
JMK	**Ichinoseki**	**2.04**	**282**	P	Pn	18 12 59.2	+1.4
JOM	**Ohasama**	**2.14**	**296**	P	Pn	18 13 00.3	+1.1
JOM				S	Sn	18 13 26.6	+2.1
JOU	**Okura**	**2.46**	**266**	P	Pn	18 13 04.8	+1.2
JMM	**Marumori**	**2.46**	**254**	P	Pn	18 13 04.0	+0.5
JANG	**Nango**	**2.52**	**316**	P	Pn	18 13 05.3	+1.0
JRG	**Rokugo**	**2.59**	**290**	P	Pn	18 13 07.4	+2.1
JFK	**Kawauchi**	**2.60**	**243**	P	Pn	18 13 06.2	+0.8
JFK				S	Sn	18 13 35.8	0.0
JFT	**Otama**	**2.92**	**250**	P	Pn	18 13 12.0	+2.1
JTM	**Tenmabayashi**	**3.05**	**317**	S	Sn	18 13 48.2	+1.3
JNBK	**Urakawa-nobuka**	**3.79**	**348**	P	Pn	18 13 23.3	+1.6
JNBK				S	Sn	18 14 05.1	+0.1
JKB	**Kayabe**	**3.93**	**328**	P	Pn	18 13 25.7	+2.1
JKB				S	Sn	18 14 08.4	-0.1
JCH	**Churui**	**4.05**	**356**	P	Pn	18 13 25.2	-0.2
JCH				*e*S	Sn	18 14 09.7	-1.8

WEL 04 18:12:41.5±0.3, 37°.79S×178°.45E, h12km, ML3.7/4, 1C-7D, Error ellipse: s-maj=2.8km s-min=1.0km az=90.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MXZ	**Matakaoa Point**	**0.25**	**334**	⇓P*	Pg	18 12 46.9	+0.1
MXZ				S*	Sb	18 12 51.5	-0.9
MXZ				AML	AML	18 12 52.9	
PKGZ	**Pakihiroa**	**0.31**	**252**	⇓P*	Pg	18 12 47.1	-0.8
PKGZ				S*	Sg	18 12 52.1	0.0
PUZ	**Puketiti**	**0.32**	**208**	⇑P*	Pg	18 12 47.8	-0.3
PUZ				S*	Sg	18 12 52.8	+0.4
PUZ				AML	AML	18 12 53.5	
HAZ	**Te Kaha**	**0.53**	**274**	P*	Pg	18 12 51.3	-0.6
HAZ				S*	Sg	18 12 58.9	0.0
TWGZ	**Tauwhareparae**	**0.53**	**224**	P*	Pg	18 12 52.3	+0.3
CNGZ	**Carnagh Statio**	**0.72**	**195**	⇓P*	Pb	18 12 56.3	+0.4
TKGZ	**Te Karaka**	**0.80**	**216**	⇓P*	Pb	18 12 57.4	0.0
MWZ	**Matawai**	**0.91**	**233**	⇓P*	Pg	18 12 58.6	-0.4
MWZ				AML	AML	18 13 14.6	
MWZ				AML	AML	18 13 14.9	
RIGZ	**Rimuhau**	**1.06**	**210**	⇓P*	Pb	18 13 00.8	-1.0
RAGZ	**Rawiri**	**1.07**	**229**	P*	Pb	18 13 01.5	-0.7
URZ	**Urewera**	**1.15**	**246**	P*	Pb	18 13 02.8	-0.6
URZ				AML	AML	18 13 22.4	
URZ				AML	AML	18 13 22.6	
PRGZ	**Paritu Road**	**1.21**	**201**	P*	Pn	18 13 02.6	-1.7
SNGZ	**Shannon Statio**	**1.32**	**221**	PN	Pn	18 13 04.4	-1.4
MUGZ	**Murupara**	**1.49**	**242**	PN	Pn	18 13 07.4	-0.7
OPRZ	**Ohinepanea**	**1.50**	**267**	PN	Pn	18 13 07.4	-0.8
ARHZ	**Aropaoanui**	**1.86**	**217**	PN	Pn	18 13 11.8	-1.4
BKZ	**Black Stump Fm**	**2.06**	**228**	PN	Pn	18 13 14.8	-1.2
KAHZ	**Kahuranaki**	**2.35**	**211**	PN	Pn	18 13 17.0	-2.9
KUZ	**Kuaotunu**	**2.41**	**295**	PN	Pn	18 13 19.9	-0.9
BHHZ	**Black Hill Sta**	**2.52**	**227**	PN	Pn	18 13 20.6	-1.8
PXZ	**Pawanui**	**2.56**	**208**	PN	Pn	18 13 19.1	-3.7
KRVZ	**Karewarewa**	**2.56**	**239**	⇓PN	Pn	18 13 22.2	-0.7
WNVZ	**Wahianoa**	**2.71**	**235**	PN	Pn	18 13 23.2	-1.8
TSZ	**Takapari Road**	**2.98**	**220**	PN	Pn	18 13 25.2	-3.4
MRZ	**Mangatainoka R**	**3.63**	**217**	PN	Pn	18 13 33.6	-4.0

*IDC **04** 18:19:31.9±1.1, 36°.99N×143°.60E, h0km, mb3.7/5, mb1 3.8/9, mb1mx3.6/47, mbtmp3.7/9, ML3.4/4, Error ellipse: s-maj=28.9km s-min=19.4km az=98.0*

*ISCJB **04** 18:19:34.2±0.8, 37°.09N±0°.06×143°.36E±0°.07, h33km, mb3.7/5, Error ellipse: s-maj=8.7km s-min=7.5km az=25.9*

*JMA **04** 18:19:35.0±0.2, 37°.10N×143°.26E, h40km, M3.3*

ISC 04 18:19:35.8±1.1, 37°.07N±0°.06×143°.39E±0°.08, h35km, n17, σ2.14/20, mb3.9/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**2.03**	**279**	*e*S	**Sn**	**18 20 29.5**	**-2.3**
ONAJ	**Iwakimizuishiy**	**2.08**	**272**	*e*S	**Sn**	**18 20 30.7**	**-2.1**
JIO	**Ouri**	**2.13**	**311**	P	**Pn**	**18 20 07.9**	**-1.0**
JIO				*e*S	**Sn**	**18 20 31.9**	**-2.2**
JOU	**Okura**	**2.52**	**302**	P	**Pn**	**18 20 13.9**	**-0.4**
JOU				*e*S	**Sn**	**18 20 42.5**	**-1.3**
JYK	**Kaneyama**	**3.03**	**309**	P	**Pn**	**18 20 20.9**	**-0.3**
JRY	**Ryogami san**	**3.77**	**255**	P	**Pn**	**18 20 31.2**	**-0.2**
JOD2	**Odawara 2**	**3.92**	**244**	P	**Pn**	**18 20 33.0**	**-0.5**
MJAR	**Matsushiro Arr**	**4.19**	**264**	Pn	**Pn**	**18 20 37.5**	**+0.2**
2.2nm,0.3s,baz=76,slow=13,SNR=36							
MAT	**Matsushiro**	**4.20**	**264**	P	**Pn**	**18 20 38.2**	**+0.9**
MAT				S	**Sn**	**18 21 27.9**	**+2.8**
JHJ	**Hachijo jima 2**	**4.93**	**218**	Pn	**Pn**	**18 20 46.4**	**-0.9**
2.0nm,0.3s,baz=49,slow=20,SNR=3.5							
JHJ				Sn	**Sn**	**18 21 37.2**	**-5.9**
4.0nm,0.3s,baz=44,slow=23,SNR=2.6							
**

MKAR	Makanchi Array	71.38	10	P	P	18 41 36.0	+0.4
	0.7nm,0.8s,baz=193,slow=8.1,SNR=6.6							
ZALV	Zalesovo Beam	78.72	9	P	P	18 42 17.2	-0.5
	0.6nm,0.6s,baz=203,slow=6.3,SNR=3.7							

IDC 04 18:30:14.8±55.0, 22°21S×176°59W, h0km, mb4.2/3, mb1 4.4/3, mb1mx3.7/28, mbtmp4.2/3, Error ellipse: s-maj=1013.0km s-min=165.2km az=86.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	Stephens Creek	38.27	246	P	P	18 37 37.4	+0.3
	1.1nm,0.5s,baz=70,slow=12,SNR=4.6						
ASAR	Alice Springs	45.43	258	P	P	18 38 35.5	-0.3
	1.4nm,0.4s,baz=95,slow=7.4,SNR=73						
WRA	Warramunga Arr	45.69	263	P	P	18 38 37.6	-0.2
	1.5nm,0.3s,baz=103,slow=8.4,SNR=137						

*ISCJB **04** 18:39:18.9±0.4, 38°.87N±0°.03×27°.94E±0°.03, h5km±5km, Error ellipse: s-maj=5.0km s-min=3.9km az=157.8*
*CSEM **04** 18:39:18.8±0.1, 38°.88N×27°.96E, h2km, MD2.8, Error ellipse: s-maj=2.8km s-min=2.2km az=157.0*
*ISK **04** 18:39:18.2, 38°.89N×27°.96E, h3km, MD2.8*
*DDA **04** 18:39:18.3, 38°.94N×27°.94E, h7km, Md2.5*
ISC 04 18:39:18.6±0.8, 38°.91N±0°.03×27°.93E±0°.02, h9km±6km, n42, σ0s56/63, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKHS	Akhisar	0.10	252	P	Pg	18 39 20.9	-0.2
AKHS				S	Sg	18 39 23.1	+0.3
AKHS	Akhisar	0.10	252	*i* P	Pg	18 39 20.9	-0.2
AKHS				*i* S	Sg	18 39 23.1	+0.3
AKS	Akhisar	0.10	252	*e*PG	Pg	18 39 21.0	-0.1
AKS	Akhisar	0.10	252	*e*Pg	Pg	18 39 21.0	-0.1
DEMI	Demirci	0.63	77	P	Pg	18 39 30.6	-0.2
DEMI				S	Sg	18 39 39.7	+0.7
DEMI	Demirci	0.63	77	*i* P	Pg	18 39 30.6	-0.2
DEMI				*i* S	Sg	18 39 39.7	+0.7
DEMI	Demirci	0.63	77	*i* P	Pg	18 39 30.7	0.0
DEMI				*i* S	Sg	18 39 39.5	+0.5
KULA	Kula-Manisa	0.69	124	*e*PG	Pg	18 39 32.1	+0.1
KULA				*e*SG	Sg	18 39 41.4	+0.3
KULA	Kula-Manisa	0.69	124	*e*Pg	Pg	18 39 32.1	+0.1
KULA				*e*Sg	Sg	18 39 41.4	+0.3
IZM	Izmir	0.73	226	*e*PG	Pg	18 39 32.5	-0.2
IZM				*e*SG	Sb	18 39 44.7	+1.1
IZM	Izmir	0.73	226	*e*Pg	Pg	18 39 32.5	-0.2
IZM				*e*Sg	Sb	18 39 44.7	+1.1
BALB	Balikesir	0.73	357	*e*PG	Pb	18 39 33.7	+0.2
BALB	Balikesir	0.73	357	*e*Pg	Pb	18 39 33.7	+0.2
DURS	Dursunbey	0.81	31	P	Pb	18 39 34.8	-0.1
DURS				S	Sn	18 39 48.7	+0.3
DURS	Dursunbey	0.81	31	*i* P	Pb	18 39 34.8	-0.1
DURS				*i* S	Sn	18 39 48.7	+0.3
DURS	Dursunbey	0.81	31	*i* P	Pb	18 39 35.1	+0.2
DURS				*i* S	Sn	18 39 48.1	-0.3
DKL	Dikili	0.81	282	*e*PG	Pb	18 39 34.9	+0.1
DKL	Dikili	0.81	282	*e*Pg	Pb	18 39 34.9	+0.1
BLCB	Balcova	0.87	233	*e*PG	Pb	18 39 35.7	-0.1
BLCB	Balcova	0.87	233	*e*Pg	Pb	18 39 35.7	-0.1
AYDB	Zeytinkoy-Aydi	0.96	182	*e*PG	Pg	18 39 37.1	0.0
AYDB	Zeytinkoy-Aydi	0.96	182	*e*Pg	Pg	18 39 37.1	0.0
GDZ	Gediz	1.22	81	P	Pn	18 39 41.4	-0.6
GDZ				S	Sn	18 39 59.2	+0.5
GDZ	Gediz	1.22	81	*i* P	Pn	18 39 41.4	-0.6
GDZ				*i* S	Sn	18 39 59.2	+0.5
GDZ	Gediz	1.22	81	*i* P	Pn	18 39 41.3	-0.6
GDZ				*i* S	Sn	18 39 59.1	+0.5
AYDN	Tasoluk	1.25	182	P	Pn	18 39 42.0	-0.2
AYDN				S	Sb	18 39 56.5	-1.9
AYDN	Tasoluk	1.25	182	*i* P	Pn	18 39 42.0	-0.2
AYDN				*i* S	Sb	18 39 56.5	-1.9
AYDN	Tasoluk	1.25	182	*i* P	Pn	18 39 42.0	-0.2
AYDN				*i* S	Sn	18 40 00.8	+1.7
TVSB	Tavsanli	1.31	65	*e*PN	Pg	18 39 44.0	+0.3
TVSB	Tavsanli	1.31	65	*e*Pn	Pg	18 39 44.0	+0.3
KHAL	Karahalli	1.34	113	P	Pn	18 39 43.6	+0.1
KHAL				S	Sb	18 40 00.4	-0.7
KHAL	Karahalli	1.34	113	*i* P	Pn	18 39 43.6	+0.1
KHAL				*i* S	Sb	18 40 00.4	-0.7
KHAL	Karahalli	1.34	113	*i* P	Pg	18 39 44.6	+0.4
KHAL				*i* S	Sn	18 40 01.5	+0.1
KCTX	Karacabey (Bur	1.40	14	*e*PN	Pb	18 39 45.1	+0.3
KCTX	Karacabey (Bur	1.40	14	*e*Pn	Pb	18 39 45.1	+0.3
CHOS	Chios island	1.56	251	*e*PN	Pb	18 39 47.5	-0.1
CHOS	Chios island	1.56	251	*e*Pn	Pb	18 39 47.5	-0.1
ARMT	Armutlu	1.80	23	*e*PN	Pb	18 39 51.5	-0.3
ARMT	Armutlu	1.80	23	*e*Pn	Pb	18 39 51.5	-0.3
GELI	Tayfur-Gelibol	1.86	323	*e*PN	Pb	18 39 52.8	0.0
GELI	Tayfur-Gelibol	1.86	323	*e*Pn	Pb	18 39 52.8	0.0
HUMR	Humele	6.03	340	S	Sn	18 41 56.4	-0.6

*ISK **04** 18:46:11.1, 36°.93N×29°.35E, h5km, MD3.3*
*DDA **04** 18:46:12.2, 36°.93N×29°.37E, h20km, Ml3.4*
*ATH **04** 18:46:12.7, 36°.97N×29°.22E, h11km±4km, ML2.5/1, Error ellipse: s-maj=5.7km s-min=1.9km az=211.0*
*CSEM **04** 18:46:12.4±0.1, 36°.93N×29°.37E, h2km, MD3.3, Error ellipse: s-maj=2.3km s-min=1.7km az=158.0*
*THE **04** 18:46:12.4, 36°.84N×29°.45E, h2km±2km, ML3.2/3, Error ellipse: s-maj=3.6km s-min=1.2km az=137.0*
ISC 04 18:46:12.7±1.1, 36°.93N±0°.02×29°.35E±0°.02, h3km±9km, n111, σ0s84/149, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GLHS	Glhisar (BURDU	0.25	27	*e*PG	Pg	18 46 17.4	-0.2
GLHS	Glhisar (BURDU	0.25	27	*e*Pg	Pg	18 46 17.4	-0.2
GOLH	Golhisar	0.35	29	P	Pg	18 46 19.4	-0.1
GOLH	Golhisar	0.35	29	*i* P	Pg	18 46 19.4	-0.1
FETY	Fethiye	0.36	216	*e*PG	Pg	18 46 19.1	-0.7
FETY	Fethiye	0.36	216	P	Pg	18 46 19.0	-0.7
FETY				S	Sg	18 46 24.9	+0.4
FETY	Fethiye	0.36	216	*e*Pg	Pg	18 46 19.1	-0.7
FETY				S	Sg	18 46 24.9	+0.4
ELL	Elmali	0.48	112	*e*PG	Pg	18 46 21.7	-0.3
ELL				*e*SG	Sg	18 46 29.5	+1.2
ELL	Elmali	0.48	112	*e*Pg	Pg	18 46 21.7	-0.3
ELL				*e*Sg	Sg	18 46 29.5	+1.2
DALY	Dalyan (Mu¨la	0.57	259	*e*PG	Pg	18 46 22.7	-1.0
DALY				*e*SG	Sg	18 46 31.9	+0.8
DALY	Dalyan (Mu¨la	0.57	259	*e*Pg	Pg	18 46 22.7	-1.0
DALY				*e*Sg	Sg	18 46 31.9	+0.8
TURN	Turunc	0.60	265	*i* P	Pn	18 46 28.5	+0.3
TURN				*i* S	Sn	18 46 43.7	+5.3
AKAS	Kas	0.72	164	P	Pg	18 46 26.6	0.0
AKAS	Kas	0.72	164	*i* P	Pg	18 46 26.6	0.0
AKAS				*i* S	Sn	18 46 40.9	-0.8
DNZL	Cakiroluk	0.80	342	P	Pb	18 46 28.6	-0.7
DNZL				S	Sn	18 46 42.3	-1.2
DNZL	Cakiroluk	0.80	342	*i* P	Pb	18 46 28.6	-0.7
DNZL				*i* S	Sn	18 46 42.3	-1.2
KSL	Kastellorizon	0.80	166	P	Pg	18 46 28.0	0.0
KSL				S	Sn	18 46 42.7	-0.5
KSL				AML	AML	18 46 47.6	
	comp=N,585μm,0.5s						
KSL				AML	AML	18 46 48.5	
	comp=E,656μm,0.7s						
KORT	Korkueli	0.80	85	P	Pg	18 46 27.2	-0.9
KORT	Korkueli	0.80	85	*i* P	Pg	18 46 27.2	-0.9
KORT				*i* S	Sn	18 46 44.3	+0.8
DENT	Denizli	0.86	343	*e*PG	Pg	18 46 29.2	0.0
DENT	Denizli	0.86	343	*e*Pg	Pg	18 46 29.2	0.0
YER	Yerkesik	0.88	284	*e*PG	Pg	18 46 29.2	-0.4
YER	Yerkesik	0.88	284	*e*Pg	Pg	18 46 29.2	-0.4
ANTB	Antalya	1.04	91	*e*PG	Pg	18 46 32.0	-0.7
ANTB	Antalya	1.04	91	*e*Pg	Pg	18 46 32.0	-0.7
BCK	Bucak	1.12	61	*e*PN	Pg	18 46 33.6	-0.6
BCK	Bucak	1.12	61	*e*Pn	Pg	18 46 33.6	-0.6
ARG	Arkhangelos	1.22	235	P	Pg	18 46 34.6	-1.4
ARG				S	Sb	18 46 52.9	+0.4
ARG	Arkhangelos	1.22	235	P	Pg	18 46 34.6	-1.4
ARG				S	Sb	18 46 52.9	+0.4
ISP	Isparta	1.29	46	*e*PN	Pg	18 46 36.7	-0.7
ISP	Isparta	1.29	46	P	Pg	18 46 35.8	-1.6
ISP				S	Sb	18 46 54.5	-0.2
ISP	Isparta	1.29	46	P	Pg	18 46 35.8	-1.6
ISP	Isparta	1.29	46	*e*Pn	Pg	18 46 36.7	-0.7
ISP				S	Sb	18 46 54.5	-0.2
AYDN	Tasoluk	1.38	302	P	Pn	18 46 38.9	-0.1
AYDN				S	Sn	18 46 57.8	0.0
AYDN	Tasoluk	1.38	302	*i* P	Pn	18 46 38.9	-0.1
AYDN				*i* S	Sn	18 46 57.8	0.0
KHL	Karahalli	1.40	6	*e*PN	Pg	18 46 38.7	-0.8
KHL	Karahalli	1.40	6	*e*Pn	Pg	18 46 38.7	-0.8
SUTC	Sutluce-Ispart	1.42	67	*e*PN	Pg	18 46 39.2	-0.8
SUTC	Sutluce-Ispart	1.42	67	*e*Pn	Pg	18 46 39.2	-0.8
KHAL	Karahalli	1.44	4	P	Pg	18 46 39.7	-0.7
KHAL				S	Sn	18 47 00.2	+0.9
KHAL	Karahalli	1.44	4	*i* P	Pg	18 46 39.7	-0.7
KHAL				*i* S	Sn	18 47 00.2	+0.9
BDRM	Kayabasi	1.53	276	P	Pn	18 46 41.3	+0.3
BDRM				S	Sg	18 47 02.8	+0.8
BDRM	Kayabasi	1.53	276	*i* P	Pn	18 46 41.3	+0.3
BDRM				*i* S	Sg	18 47 02.9	+0.8
AYDB	Zeytinkoy-Aydi	1.54	312	*e*PN	Pn	18 46 40.9	-0.3
AYDB	Zeytinkoy-Aydi	1.54	312	*e*Pn	Pn	18 46 40.9	-0.3
BAGO	Egridir - ISPA	1.56	47	*i* P	Pb	18 46 41.5	-0.7
BAGO				*i* S	Sb	18 47 05.2	+2.8
BODT	Bodrum	1.64	275	*e*PN	Pn	18 46 42.2	-0.3
BODT	Bodrum	1.64	275	P	Pn	18 46 42.6	+0.2
BODT				S	Sb	18 47 05.0	+0.3
BODT	Bodrum	1.64	275	*e*Pn	Pn	18 46 42.2	-0.3
BODT	Bodrum	1.64	275	P	Pn	18 46 42.6	+0.2
BODT				S	Sb	18 47 05.0	+0.3
KULA	Kula-Manisa	1.67	341	*e*PN	Pn	18 46 42.4	-0.6
KULA	Kula-Manisa	1.67	341	P	Pn	18 46 42.6	-0.4
KULA				S	Sb	18 47 05.5	-0.2
KULA	Kula-Manisa	1.67	341	P	Pn	18 46 42.6	-0.4
KULA				S	Sb	18 47 05.5	-0.2
NIS1	Nisyros Isl.	1.78	260	*e*PN	Pn	18 46 44.3	0.0
NIS1	Nisyros Isl.	1.78	260	P	Pn	18 46 44.4	0.0
NIS1				S	Sn	18 47 07.8	+0.4
NIS1	Nisyros Isl.	1.78	260	*e*Pn	Pn	18 46 44.3	0.0
NIS1				S	Sn	18 47 07.8	+0.4
NIS1	Nisyros Isl.	1.78	260	P	Pb	18 46 46.1	+0.2
GCAM	G?zelcaml?	1.86	295	P	Pn	18 46 45.2	-0.2
GCAM				S	Sn	18 47 08.8	-0.5
GCAM	G?zelcaml?	1.86	295	*i* P	Pn	18 46 45.2	-0.2
GCAM				*i* S	Sn	18 47 08.8	-0.5
SMG	Samos	2.15	292	P	Pn	18 46 48.9	-0.5
SMG				S	Sn	18 47 16.7	+0.1
SMG	Samos	2.15	292	P	Pn	18 46 48.9	-0.5
SMG				S	Sn	18 47 16.7	+0.1
SMG	Samos	2.15	292	P	Pn	18 46 48.9	-0.5
GDZ	Gediz	2.16	3	P	Pn	18 46 49.6	-0.1
GDZ	Gediz	2.16	3	*i* P	Pn	18 46 49.6	-0.1
GDZ				*i* S	Sg	18 47 24.8	+2.7
IZM	Izmir	2.21	312	*e*PN	Pn	18 46 50.1	-0.2
IZM	Izmir	2.21	312	*e*Pn	Pn	18 46 50.1	-0.2
KARP	Karpathos	2.25	233	*e*PN	Pn	18 46 51.0	+0.2
KARP	Karpathos	2.25	233	*e*Pn	Pn	18 46 51.0	+0.2
KARP	Karpathos	2.25	233	P	Pn	18 46 51.3	+0.5
KARP	Karpathos	2.25	233	P	Pn	18 46 51.3	+0.5
DGB	¯zmir	2.26	300	*i* P	Pn	18 46 50.3	-0.6
DGB				*i* S	Sn	18 47 18.1	-1.2
AKS	Akhisar	2.29	328	*e*PN	Pn	18 46 51.2	-0.3
AKS	Akhisar	2.29	328	*e*Pn	Pn	18 46 51.2	-0.3
BLCB	Balcova	2.34	309	*e*PN	Pn	18 46 51.4	-0.6
BLCB	Balcova	2.34	309	*e*Pn	Pn	18 46 51.4	-0.6
GAZI	Gazipasa	2.48	105	P	Pn	18 46 55.2	+1.2
GAZI				S	Sb	18 47 28.2	-0.7
GAZI	Gazipasa	2.48	105	*i* P	Pn	18 46 55.2	+1.2
GAZI				*i* S	Sb	18 47 28.2	-0.7
TVSB	Tavsanli	2.52	2	*e*PN	Pn	18 46 54.6	0.0
TVSB	Tavsanli	2.52	2	*e*Pn	Pn	18 46 54.6	0.0
KONT	Konya--Tatoy	2.60	66	*e*PN	Pn	18 46 55.5	-0.1
KONT	Konya--Tatoy	2.60	66	*e*Pn	Pn	18 46 55.5	-0.1
LADK	Ladik-KONYA	2.71	61	*e*PN	Pn	18 46 57.3	+0.1
LADK	Ladik-KONYA	2.71	61	*e*Pn	Pn	18 46 57.3	+0.1
KIZT	Kizilcal	2.79	45	*e*PN	Pn	18 46 58.5	+0.1
KIZT	Kizilcal	2.79	45	*e*Pn	Pn	18 46 58.5	+0.1
ERMK	Ermenek	2.87	95	P	Pb	18 47 03.0	-1.7
ERMK	Ermenek	2.87	95	*i* P	Pb	18 47 03.0	-1.7
ERMK				*i* S	Sb	18 47 41.5	+1.1
DKL	Dikili	2.88	319	*e*PN	Pn	18 46 59.9	+0.4
DKL	Dikili	2.88	319	*e*Pn	Pn	18 46 59.9	+0.4
BALB	Balikesir	2.94	337	*e*PN	Pn	18 47 00.8	+0.5
BALB	Balikesir	2.94	337	*e*Pn	Pn	18 47 00.8	+0.5
CHOS	Chios island	2.99	300	*e*PN	Pn	18 47 01.8	+0.7
CHOS	Chios island	2.99	300	P	Pn	18 47 01.2	+0.1
CHOS	Chios island	2.99	300	*e*Pn	Pn	18 47 01.8	+0.7
CHOS	Chios island	2.99	300	P	Pn	18 47 01.2	+0.1
SVRH	Sivrihisar-ESK	3.04	34	*e*PN	Pn	18 47 01.8	0.0
SVRH	Sivrihisar-ESK	3.04	34	*e*Pn	Pn	18 47 01.8	0.0
APE	Apeiranthos	3.06	274	P	Pn	18 47 01.3	-0.7
APE	Apeiranthos	3.06	274	P	Pn	18 47 01.3	-0.7
ZKR	Zakros	3.12	235	P	Pn	18 47 03.5	+0.7
ZKR	Zakros	3.12	235	P	Pn	18 47 03.5	+0.7
CAVI	Cavuskoy	3.29	7	*e*PN	Pn	18 47 05.7	+0.6
CAVI	Cavuskoy	3.29	7	*e*Pn	Pn	18 47 05.7	+0.6
NPS	Neapolis	3.46	242	P	Pn	18 47 07.5	+0.1
NPS	Neapolis	3.46	242	P	Pn	18 47 07.5	+0.1
LAST	Lasithi	3.60	242	P	Pn	18 47 09.7	+0.2
LAST	Lasithi	3.60	242	P	Pn	18 47 09.7	+0.2
IDI	Anoyia	3.97	247	P	Pn	18 47 13.9	-0.6
IDI	Anoyia	3.97	247	P	Pn	18 47 13.9	-0.6
SMTH	Samothraki Isl	4.63	321	P	Pn	18 47 23.7	+0.2
SMTH	Samothraki Isl	4.63	321	P	Pn	18 47 23.7	+0.2

*IDC **04** 18:47:40.9±0.7, 31°.56N×142°.24E, h0km, mb3.7/8, mb1 3.9/12, mb1mx3.7/40, mbtmp3.7/12, ML3.6/4, MS3.7/2, Ms1 3.8/2, ms1mx2.7/34, Error ellipse: s-maj=25.3km s-min=17.2km az=83.0*
*ISCJB **04** 18:47:43.1±0.6, 31°.53N±0°.08×142°.1E±0°.1, h29km, mb3.7/8, MS4.5/1, Error ellipse: s-maj=15.9km s-min=8.4km az=145.3*
ISC 04 18:47:44.4±0.7, 31°.47N±0°.07×142°.1E±0°.1, h29km, n15, σ1s79/16, mb3.6/8, Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHJ	Hachijo jima 2	2.55	311	Pn	Pn	18 48 23.9	+0.1
	16nm,0.3s,baz=86,slow=22,SNR=18						
JHJ				Sn	Sn	18 48 53.6	-0.3
	35nm,0.3s,baz=250,slow=20,SNR=7.3						
JCJ	Chichijima	4.36	179	Pn	Pn	18 48 49.3	+0.6
	9.8nm,0.3s,baz=9.4,slow=18,SNR=32						
JCJ				Sn	Sn	18 49 35.1	-3.5
	baz=294,slow=20						
MJAR	Matsushiro Arr	6.00	329	Pn	Pn	18 49 08.9	-2.3
	1.3nm,0.3s,baz=157,slow=11,SNR=14						
MJAR				Sn	Sn	18 50 15.6	-3.3
	0.2nm,0.3s,baz=144,slow=15,SNR=3.1						
ASAJ	Asahikawa	12.63	2	Pn	Pn	18 50 37.9	-4.1
	0.3nm,0.3s,baz=184,slow=14,SNR=4.8						
ASAJ				Sn	Sn	18 52 50.0	-12
	0.1nm,0.3s,baz=217,slow=20,SNR=3.1						
JOW	Kunigami	12.93	253	LR	LR	18 54 53.2	
	comp=Z,66nm,18.8s,baz=38,slow=33						
KLR	Kul¨dur	19.38	339	P	Pn	18 52 09.2	+0.3
	0.1nm,0.3s,baz=140,slow=3.6,SNR=4.0						
MKAR	Makanchi Array	47.72	307	P	P	18 56 20.3	+1.8
	0.5nm,0.7s,baz=87,slow=12,SNR=7.0						
WRA	Warramunga Arr	51.66	189	P	P	18 56 50.0	+1.4
	0.6nm,0.3s,baz=6.7,slow=7.7,SNR=14						
ILAR	Eielson Array	53.95	30	P	P	18 57 03.8	-1.3
	0.6nm,0.9s,baz=253,slow=6.3,SNR=4.9						
ASAR	Alice Springs	55.38	189	P	P	18 57 17.3	+1.3
	0.2nm,0.5s,baz=1.5,slow=5.3,SNR=10						
NVAR	Mina Array Bea	77.90	52	P	P	18 59 40.5	+0.6
	0.3nm,0.5s,baz=301,slow=6.0,SNR=3.3						
NOA	NORSAR Array B	79.53	338	P	P	18 59 48.4	+0.2
	0.7nm,0.7s,baz=42,slow=5.2,SNR=3.5						
PDAR	Pinedale Array	81.18	45	P	P	18 59 57.3	-0.4
	0.3nm,0.6s,baz=316,slow=2.5,SNR=3.4						
PDAR				LR	LR	19 32 53.7	
	comp=Z,195nm,19.5s,baz=90,slow=34						
TXAR	Lajitas Array	93.04	53	P	P	19 00 56.6	+0.9
	0.4nm,0.6s,baz=299,slow=2.1,SNR=6.5						
LPAZ	La Paz	148.63	68	PKPbc	PKPbc	19 07 31.7	+1.7
	0.7nm,0.5s,baz=305,slow=1.8,SNR=3.6						

*IDC **04** 19:04:13.8±1.6, 4°.37N×95°.13E, h0km, mb3.6/4, mb1 3.7/5, mb1mx3.4/39, mbtmp3.5/5, ML3.5/1, Error ellipse: s-maj=73.7km s-min=21.9km az=52.0*
*ISCJB **04** 19:04:19.1±0.9, 5°.04N±0°.06×95°.86E±0°.07, h35km, mb3.6/4, Error ellipse: s-maj=10.8km s-min=7.4km az=146.6*
*DJA **04** 19:04:21.8±0.9, 5°N±3°×9°6E±°, h14km±5km, M4.0/6, mB4.6/1, mb4.0/2, MLv4.0/6, Mw(mB)3.8/1*
ISC 04 19:04:21.0±1.0, 5°.03N±0°.06×95°.89E±0°.09, h35km, n14, σ1s49/16, mb3.7/4, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MLSI	Meulaboh, Aceh	0.91	146	P	Pn	19 04 35.1	-2.2
MLSI				S	Sn	19 04 46.4	-2.9
LHMI	Lhok Sumawe	1.07	79	P	Pn	19 04 39.0	-0.5
LHMI				S	Sn	19 04 51.9	-1.3
KCSI	Kotacane, Aceh	2.40	128	P	Pn	19 04 58.5	+0.7
KCSI				S	Sn	19 05 26.3	+0.3
TSI	Tuntungan	3.07	120	P	Pn	19 05 07.7	+0.7
TSI				S	Sn	19 05 42.9	+0.4
GSI	Gunungsitoli	4.06	155	P	Pn	19 05 21.9	+1.2
GSI				S	Sn	19 06 08.9	+1.8
MNSI	Mandailing Nat	5.59	139	P	Pn	19 05 42.8	+1.1
CMAR	Chiang Mai Arr	13.68	12	Pn	P	19 07 42.4	+1.6
	0.1nm,0.3s,baz=202,slow=12,SNR=3.8						
H08S2	Diego Garcia H	26.52	242	T	T	19 36 58.5	
	baz=61,slow=75,SNR=10						
H08S3	Diego Garcia H	26.52	242	T	T	19 36 58.3	
	baz=61,slow=75,SNR=9.4						
H08S1	Diego Garcia H	26.54	242	T	T	19 37 11.1	
	baz=61,slow=75,SNR=9.6						
MKAR	Makanchi Array	43.24	346	P	P	19 12 19.7	+0.8
	0.1nm,0.5s,baz=169,slow=9.0,SNR=4.1						
WRA	Warramunga Arr	45.21	124	P	P	19 12 34.5	-0.6
	0.4nm,0.6s,baz=304,slow=9.2,SNR=7.5						
ASAR	Alice Springs	46.77	129	P	P	19 12 47.2	-0.2
	1.7nm,0.5s,baz=301,slow=7.7,SNR=63						
GEYT	Alibeck	47.47	319	P	P	19 12 50.9	-1.8
	0.8nm,0.7s,baz=91,slow=7.2,SNR=3.3						

*NIED **04** 19:13:00, 36°.60N×141°.20E, h44km, Mw3.8 Best double couple: M0=5.57000×10^14 NP1:φ=131.00000°, δ=9.00000°, λ=51.00000°. NP2:φ=350.00000°, δ=83.00000°, λ=96.00000°.*
*ISCJB **04** 19:13:47.1±1.0, 36°.59N±0°.04×141°.36E±0°.09, h42km±9km, mb3.6/6, MS2.8/1, Error ellipse: s-maj=12.5km s-min=6.1km az=11.2*
*JMA **04** 19:13:48.4±0.1, 36°.58N×141°.22E, h46km±2km, M3.7*
JMA Felt I J1.
*IDC **04** 19:13:49.1±2.7, 36°.57N×141°.43E, h49km±21km, mb3.5/6, mb1 3.7/9, mb1mx3.4/34, mbtmp3.8/9, ML3.7/3, MS2.8/4, Ms1 2.8/4, ms1mx2.6/44, Error ellipse: s-maj=39.3km s-min=13.6km az=87.0*
ISC 04 19:13:47.0±2.0, 36°.58N±0°.05×141°.36E±0°.10, h27km±12km, n26, σ1s05/24, mb3.7/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	Hitachi	0.64	273	P	Pb	19 13 59.5	0.0
JHO				S	Sb	19 14 07.8	-0.2
ONAJ	Iwakimizuishiy	0.68	319	P	Pb	19 14 00.6	+0.2
ONAJ				S	Sb	19 14 09.1	-0.4
JFK	Kawauchi	0.87	334	P	Pn	19 14 03.5	0.0
JFK				S	Sb	19 14 14.0	-0.8
JYT	Yasato	1.00	250	P	Pn	19 14 04.6	-0.7
JYT				*e*S	Sn	19 14 16.7	-1.8
JFT	Otama	1.24	319	P	Pn	19 14 09.5	+0.9
JFT				S	Sn	19 14 24.5	+0.1
JMM	Marumori	1.36	341	P	Pn	19 14 10.9	+0.8
JMM				S	Sn	19 14 27.1	-0.2
MJAR	Matsushiro Arr	2.54	270	P	Pn	19 14 27.1	+0.7
	24nm,0.3s,baz=81,slow=10,SNR=651						
MJAR				LR	LR	19 15 53.8	
	comp=Z,78nm,21.2s,baz=155,slow=49						
MAT	Matsushiro	2.54	270	P	Pn	19 14 27.2	+0.8
MAT				S	Sn	19 14 58.1	+1.7
JHJ	Hachijo jima 2	3.69	201	P	Pn	19 14 43.9	+1.6
	17nm,0.3s,baz=340,slow=22,SNR=20						
JHJ				S	Sn	19 15 26.9	+2.0
	46nm,0.3s,baz=304,slow=23,SNR=9.4						
ASAJ	Asahikawa	7.58	7	P	Pn	19 15 37.3	+1.6
	0.9nm,0.3s,baz=198,slow=15,SNR=12						
JNU	Nakatsue	9.28	251	LR	L

0.3nm,0.6s,baz=80,slow=10.0,SNR=3.8
WRA Warramunga Arr 58.51 191 P **P** **19 25 35.0 -0.7**
0.6nm,0.6s,baz=8.2,slow=6.9,SNR=7.0
ASAR Alice Springs 62.23 191 P **P** **19 26 00.7 -0.4**
0.3nm,0.8s,baz=8.9,slow=6.6,SNR=3.5

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*ISCJB **04** 19:22:15.2±1.0, 44°.56N±0°.05×144°.77E±0°.05, h21km±10km, Error ellipse: s-maj=9.2km s-min=5.8km az=7.7*
*JMA **04** 19:22:15.8±0.1, 44°.52N×144°.78E, h18km±1km, M2.8*
*SKHL **04** 19:22:16.3±0.7, 44°.50N×144°.70E, h33km±4km, mb4.3/2*
ISC 04 19:22:14.4±1.9, 44°.54N±0°.06×144°.76E±0°.04, h11km±13km, n9, σ0§39/17, 1C, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JRA	**Rausu**	**0.65**	**156**	P	**Pb**	**19 22 27.8**	**0.0**
JRA				*e*S	**Sb**	**19 22 36.4**	**-0.5**
JTKR	**Abashiri--Toko**	**0.83**	**228**	P	**Pb**	**19 22 31.1**	**+0.2**
JTKR				*e*S	**Sb**	**19 22 42.1**	**0.0**
YUK	**Yuzh-Kuril'sk**	**0.94**	**122**	⇑*i*P	**Pb**	**19 22 32.9**	**+0.2**
YUK				AMB	AMB	19 22 33.5	
	40nm,0.2s						
YUK				AMB	AMB	19 22 33.5	
	120nm,0.2s						
YUK				AMB	AMB	19 22 33.5	
	240nm,0.2s						
YUK				*i* S	**Sb**	**19 22 45.5**	**+0.4**
YUK				A	A	19 22 46.5	
	440nm,0.4s						
YUK				A	A	19 22 46.5	
	1μm,0.4s						
JNK	**Nakash**	**0.95**	**182**	P	**Pg**	**19 22 32.7**	**0.0**
JNK				*e*S	**Sg**	**19 22 44.8**	**-0.3**
JMP	**Maruseppu**	**1.14**	**243**	P	**Pn**	**19 22 36.6**	**+0.3**
JMP				*e*S	**Sn**	**19 22 52.1**	**+0.2**
NEM2	**Nemuro 2**	**1.37**	**148**	P	**Pn**	**19 22 39.4**	**-0.1**
NEM2				*e*S	**Sb**	**19 22 57.4**	**-0.1**
SHO	**Shikotan**	**1.63**	**113**	*e*P	**Pn**	**19 22 43.3**	**+0.2**
SHO				AMB	AMB	19 22 43.4	
	40nm,0.2s						
SHO				*i* S	**Sn**	**19 23 04.0**	**0.0**
SHO				A	A	19 23 06.0	
	110nm,0.3s						
SHO				A	A	19 23 06.0	
	146nm,0.3s						
KUR	**Kuril'sk**	**2.32**	**71**	*e*P	**Pn**	**19 22 53.1**	**+0.6**
KUR				*e*S	**Sn**	**19 23 20.1**	**-0.8**
KUR				A	A	19 23 24.5	
	60nm,0.2s						
KUR				A	A	19 23 24.5	
	70nm,0.2s						
YSS	**Yuzh-Sakhalins**	**2.80**	**331**	*e*P	**Pn**	**19 22 58.8**	**-0.3**

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*IDC **04** 19:26:34.0±4.7, 34°.23N×141°.71E, h0km, mb3.4/3, mb1 3.4/4, mb1mx3.2/47, mbtmp3.3/4, ML3.1/1, Error ellipse: s-maj=172.3km s-min=25.2km az=61.0*
*JMA **04** 19:26:43.4±0.4, 36°.16N×142°.03E, h54km, M3.1*
ISC 04 19:26:46.6±1.9, 36°.20N±0°.07×141°.8E±0°.1, h29km, n13, σ1§13/15, mb3.4/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.92**	**238**	P	**Pn**	**19 27 02.1**	**-1.4**
CHOJ				S	**Sb**	**19 27 16.8**	**+1.0**
JHO	**Hitachi**	**1.08**	**293**	P	**Pn**	**19 27 04.7**	**-1.1**
ONAJ	**Iwakimizuishiy**	**1.21**	**318**	P	**Pn**	**19 27 06.6**	**-1.1**
BSO1	**Boso 1**	**1.69**	**204**	S	**Sn**	**19 27 34.0**	**0.0**
JFT	**Otama**	**1.77**	**318**	P	**Pn**	**19 27 15.7**	**+0.4**
JMM	**Marumori**	**1.85**	**334**	P	**Pn**	**19 27 15.8**	**-0.6**
JAG	**Ashikaga**	**1.92**	**277**	P	**Pn**	**19 27 16.8**	**-0.5**
JKT	**Katashina**	**2.14**	**286**	P	**Pn**	**19 27 20.4**	**0.0**
MJAR	**Matsushiro Arr**	**2.93**	**278**	Pn	**Pn**	**19 27 32.0**	**+0.8**
	1.7nm,0.3s,baz=112,slow=9.0,SNR=44						
MJAR				Sn	**Sb**	**19 28 14.7**	**+1.3**
	1.1nm,0.3s,baz=140,slow=11,SNR=4.5						
MAT	**Matsushiro**	**2.93**	**278**	P	**Pn**	**19 27 31.8**	**+0.6**
MAT				S	**Sb**	**19 28 11.0**	**-2.5**
MKAR	**Makanchi Array**	**44.84**	**303**	P	**P**	**19 34 58.5**	**+0.5**
	0.2nm,0.5s,baz=79,slow=7.6,SNR=1.9						
KURBB	**Kurchatov Arra**	**46.77**	**309**	P	**P**	**19 35 13.5**	**+0.3**
	0.3nm,0.2s,baz=84,slow=8.5,SNR=4.0						
ASAR	**Alice Springs**	**60.01**	**188**	P	P	19 36 28.7	-22
	0.3nm,0.9s,baz=16,slow=14,SNR=3.5						

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*ISCJB **04** 19:27:52.1±0.5, 34°.45N±0°.06×100°.66E±0°.05, h10km, mb3.7/19, Error ellipse: s-maj=8.0km s-min=6.3km az=164.7*
*IDC **04** 19:27:52.0±0.7, 34°.35N×100°.59E, h0km, mb3.7/19, mb1 3.9/21, mb1mx3.8/50, mbtmp3.7/21, ML3.4/2, Error ellipse: s-maj=22.8km s-min=14.4km az=42.0*
*BJI **04** 19:27:54.8, 34°.34N×100°.50E, h10km, ML3.6/18, Ms3.7/5, Ms7 3.7/3*
ISC 04 19:27:53.2±0.6, 34°.30N±0°.06×100°.65E±0°.05, h10km, n25, σ1§55/32, mb3.8/19, Qinghai

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LZH	**Lanzhou**	**3.16**	**55**	*e*Pn	**Pb**	**19 28 48.0**	**-1.6**
LZH				Pg	**Pg**	**19 28 52.2**	**-1.6**
LZH				Sn	**Sb**	**19 29 28.7**	**+0.4**
LZH				Sg	**Sg**	**19 29 35.0**	**+0.2**
LZH				smax	smax		
	comp=N,390nm,1.0s						
LZH				smax	smax		
	comp=E,410nm,1.0s						
LZH				LR	LR		
	comp=N,770nm,4.9s						
LZH				LR	LR		
	comp=E,950nm,6.0s						
LZH				LR	LR		
	comp=Z,950nm,6.5s						
GTA	**Gaotai**	**5.14**	**353**	Pn	Pb	19 29 16.1	-7.2
GTA				Pg	**Pg**	**19 29 29.5**	**-2.1**
GTA				Sn	**Sn**	**19 30 14.2**	**+4.4**
GTA				Sg	**Sg**	**19 30 36.5**	**-1.8**
GTA				smax	smax		
	comp=N,41nm,0.9s						
GTA				smax	smax		
	comp=E,65nm,0.8s						
GTA				LR	LR		
	comp=N,350nm,8.1s						
GTA				LR	LR		
	comp=E,470nm,10.9s						
GTA				LR	LR		
	comp=Z,330nm,7.6s						
XAN	**Xi'an**	**6.86**	**90**	Pn	**Pn**	**19 29 36.5**	**+2.6**
XAN				Pg	**Pg**	**19 30 00.8**	**-3.7**
XAN				Sn	Sn	19 31 03.0	+11
XAN				Sg	**Sg**	**19 31 34.5**	**+1.1**
XAN				smax	smax		
	comp=N,18nm,1.3s						
XAN				smax	smax		
	comp=E,16nm,1.5s						
WMQ	**Urumqi**	**13.83**	**317**	*e*P	**Pn**	**19 31 10.5**	**+1.3**
CMAR	**Chiang Mai Arr**	**15.86**	**186**	Pn	**P**	**19 31 39.0**	**-1.3**
	0.0nm,0.3s,baz=360,slow=11,SNR=5.9						
MKAR	**Makanchi Array**	**18.66**	**317**	P	**Pn**	**19 32 11.5**	**0.0**
	0.1nm,0.3s,baz=126,slow=14,SNR=18						
AAK	**Ala-Archa**	**22.04**	**300**	P	**P**	**19 32 48.6**	**+0.6**
	1.3nm,0.6s,baz=69,slow=2.6,SNR=5.6						
KSRS	**Korea Array**	**22.29**	**74**	P	**P**	**19 32 52.9**	**+2.3**
	1.8nm,0.8s,baz=269,slow=9.0,SNR=4.6						
ZALV	**Zalesovo Beam**	**22.59**	**335**	P	**P**	**19 32 53.8**	**+0.2**
	2.6nm,0.6s,baz=142,slow=11,SNR=14						
KURBB	**Kurchatov Arra**	**22.93**	**322**	P	**P**	**19 32 56.8**	**-0.5**
	1.6nm,0.7s,baz=127,slow=10,SNR=24						
BVAR	**Borovoye Array**	**28.48**	**320**	P	**P**	**19 33 48.4**	**+0.1**
	0.2nm,0.5s,baz=115,slow=6.7,SNR=3.5						
GEYT	**Alibeck**	**34.33**	**289**	P	**P**	**19 34 41.3**	**+1.2**
	1.6nm,0.8s,baz=91,slow=9.6,SNR=4.3						
NRIK	**Noril'sk**	**35.84**	**352**	P	**P**	**19 34 53.2**	**+0.6**
	2.6nm,0.5s,baz=153,slow=2.5,SNR=3.9						
BRTR	**Keskin Array B**	**52.67**	**297**	P	**P**	**19 37 07.9**	**+0.1**
	0.7nm,0.7s,baz=96,slow=7.6,SNR=5.0						
AKASG	**Malin Array Be**	**53.09**	**311**	P	**P**	**19 37 09.2**	**-1.3**
	0.5nm,0.4s,baz=66,slow=7.6,SNR=4.0						
FINES	**FINESS Array B**	**53.29**	**325**	P	**P**	**19 37 11.4**	**-0.4**
	0.7nm,0.6s,baz=116,slow=4.4,SNR=4.9						
NOA	**NORSAR Array B**	**60.40**	**326**	P	**P**	**19 38 01.6**	**-0.8**
	0.6nm,0.7s,baz=78,slow=6.4,SNR=3.3						
WRA	**Warramunga Arr**	**62.76**	**144**	P	**P**	**19 38 19.2**	**+0.5**
	0.9nm,0.8s,baz=342,slow=7.2,SNR=5.4						
GERES	**GERESS Array B**	**63.24**	**312**	P	**P**	**19 38 21.8**	**0.0**
	0.1nm,0.2s,baz=146,slow=39,SNR=3.5						
ASAR	**Alice Springs**	**65.74**	**147**	P	**P**	**19 38 39.2**	**+0.9**
	0.8nm,0.6s,baz=330,slow=6.2,SNR=11						
ILAR	**Eielson Array**	**68.20**	**25**	P	**P**	**19 38 53.1**	**-0.3**
	0.7nm,0.8s,baz=294,slow=6.1,SNR=8.6						
INK	**Inuvik**	**70.09**	**19**	P	**P**	**19 39 05.3**	**+0.3**
	1.2nm,0.8s,baz=350,slow=6.5,SNR=4.6						
ESDC	**Sonseca Array**	**78.72**	**310**	P	**P**	**19 39 55.7**	**-0.2**
	0.3nm,0.6s,baz=59,slow=5.1,SNR=3.2						
YKA	**Yellowknife Ar**	**79.46**	**16**	P	**P**	**19 39 59.5**	**+0.1**
	0.3nm,0.7s,baz=326,slow=5.0,SNR=6.3						
TORD	**Torodi Ar. Bea**	**89.93**	**286**	P	**P**	**19 40 52.7**	**-0.4**
	0.7nm,1.0s,baz=180,slow=0.7,SNR=2.6						

IDC 04 19:32:06.9±2.9, 5°.34S×147°.21E, h142km±28km, mb3.4/2, mb1 3.5/5, mb1mx3.0/36, mbtmp3.8/5, Error ellipse: s-maj=68.7km s-min=24.1km az=95.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**4.04**	**181**	P	Pn	19 33 09.2	+1.7
	8.4nm,0.3s,baz=40,slow=11,SNR=148						
PMG				S	Sn	19 33 54.4	-0.2
	8.5nm,0.3s,baz=230,slow=10,SNR=7.8						
CTA	**Charters Tower**	**14.69**	**184**	P	Pn	19 35 28.0	+0.1
	0.1nm,0.3s,baz=53,slow=20,SNR=1.6						
WRA	**Warramunga Arr**	**19.17**	**220**	P	P	19 36 19.5	-0.1
	0.3nm,0.3s,baz=37,slow=9.7,SNR=32						
ASAR	**Alice Springs**	**22.28**	**214**	P	P	19 36 52.8	+0.2
	1.5nm,0.7s,baz=48,slow=7.6,SNR=19						
ASAR				S	S	19 40 48.9	+1.2
	1.2nm,1.1s,baz=35,slow=22,SNR=4.3						
FITZ	**Fitzroy Crossi**	**24.59**	**237**	P	P	19 37 14.0	-0.1
	4.0nm,1.1s,baz=44,slow=7.5,SNR=15						
TORD	**Torodi Ar. Bea**	**145.12**	**285**	PKPbc	PKPbc	19 51 26.9	-1.5
	0.2nm,0.4s,baz=85,slow=4.7,SNR=2.5						

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*IDC **04** 19:34:54.8±1.0, 32°.82S×179°.86W, h0km, mb4.1/6, mb1 4.4/7, mb1mx4.1/28, mbtmp4.2/7, ML4.2/1, MS3.6/4, Ms1 3.6/4, ms1mx3.1/28, Error ellipse: s-maj=27.0km s-min=23.4km az=121.0*
*ISCJB **04** 19:34:58.3±0.7, 32°.87S±0°.06×180°.0E±0°.1, h33km, mb4.3/9, MS3.3/3, Error ellipse: s-maj=13.8km s-min=8.2km az=7.4*
*NEIC **04** 19:34:59.4±3.7, 32°.81S×179°.98W, h31km±25km, mb4.5/5, Error ellipse: s-maj=17.5km s-min=11.7km az=97.0*
ISC 04 19:35:00.1±0.8, 32°.81S±0°.08×180°.0W±0°.1, h35km, n29, σ1§18/28, mb4.4/9, MS3.3/3, 1C, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HAZ	**Te Kaha**	**5.27**	**200**	PN	**Pn**	**19 36 16.1**	**-0.2**
PUZ	**Puketiti**	**5.45**	**195**	PN	**Pn**	**19 36 16.4**	**-2.4**
WCZ	**Waipu Caves**	**5.65**	**235**	PN	**Pn**	**19 36 20.8**	**-0.8**
CNGZ	**Carnagh Statio**	**5.86**	**194**	PN	**Pn**	**19 36 22.1**	**-2.3**
OUZ	**Omahuta**	**5.87**	**244**	*e*P	**Pn**	**19 36 22.6**	**-1.9**
	19nm,0.6s						
OUZ	**Omahuta**	**5.87**	**244**	PN	**Pn**	**19 36 23.3**	**-1.2**
URZ	**Urewera**	**5.94**	**203**	Pn	**Pn**	**19 36 25.3**	**-0.2**
	6.0nm,0.3s,baz=251,slow=3.2,SNR=22						
URZ				Sn	**Sn**	**19 37 33.7**	**+1.3**
	2.2nm,0.3s,baz=124,slow=17,SNR=1.9						
URZ	**Urewera**	**5.94**	**203**	Pn	**Pn**	**19 36 25.3**	**-0.2**
	22nm,0.6s						
URZ				Sn	**Sn**	**19 37 33.7**	**+1.3**
URZ	**Urewera**	**5.94**	**203**	PN	**Pn**	**19 36 24.6**	**-0.9**
MSVF	**Nonsavu**	**15.12**	**353**	P	**Pn**	**19 38 30.9**	**-0.3**
	12nm,0.8s						
DZM	**Mont Dzumac**	**16.11**	**308**	LR	LR	19 43 39.2	
	comp=Z,428nm,19.2s,baz=127,slow=32						
RAR	**Rarotonga**	**21.33**	**62**	LR	LR	19 48 34.4	
	comp=Z,121nm,18.4s,baz=38,slow=38						
HNR	**Honiara**	**29.76**	**317**	LR	LR	19 51 08.0	
	comp=Z,85nm,19.6s,baz=202,slow=33						
STKA	**Stephens Creek**	**32.38**	**261**	P	**P**	**19 41 26.4**	**-0.1**
	2.0nm,0.9s,baz=68,slow=9.1,SNR=3.5						
ASAR	**Alice Springs**	**41.39**	**271**	P	**P**	**19 42 43.4**	**+0.2**
	6.2nm,0.9s,baz=108,slow=7.7,SNR=36						
ASAR				LR	LR	20 00 18.3	
	comp=Z,39nm,18.3s,baz=123,slow=37						
WRAB	**Tennant Creek**	**42.59**	**276**	*e*P	**P**	**19 42 52.8**	**-0.2**
	8.4nm,0.9s						
WRA	**Warramunga Arr**	**42.60**	**276**	P	**P**	**19 42 53.0**	**0.0**
	6.8nm,0.8s,baz=115,slow=7.8,SNR=46						
VNDA	**Vanda**	**45.54**	**185**	P	**P**	**19 43 16.3**	**+0.5**
	0.5nm,0.6s,baz=4.1,slow=6.4,SNR=3.3						
FITZ	**Fitzroy Crossi**	**50.75**	**273**	P	**P**	**19 43 58.5**	**+1.7**
	2.7nm,0.5s,baz=126,slow=3.3,SNR=12						
FITZ	**Fitzroy Crossi**	**50.75**	**273**	*e*P	**P**	**19 43 57.5**	**+0.7**
	3.7nm,0.8s						
MBWA	**Marble Bar**	**54.35**	**266**	P	**P**	**19 44 23.5**	**0.0**
	5.3nm,0.8s						
QSPA	**South Pole Qui**	**57.31**	**180**	*e*P	**P**	**19 44 44.9**	**+0.7**
	38nm,0.8s						
SYO	**Syowa Base**	**74.39**	**194**	⇑*e*pP	pP	19 46 41.2	-3.5
VNA3	**Neumayer Olymp**	**76.01**	**177**	P	**P**	**19 46 42.5**	**-0.8**
VNA2	**Neumayer--Watz**	**76.42**	**177**	P	**P**	**19 46 45.1**	**-0.4**
	baz=175,slow=5.1						
NVAR	**Mina Array Bea**	**91.13**	**44**	P	**P**	**19 48 02.5**	**+1.1**
	0.4nm,0.8s,baz=224,slow=7.6,SNR=2.8						
FINES	**FINESS Array B**	**146.77**	**337**	PKPbc	**PKPdf**	**19 54 36.2**	**+0.5**
	1.0nm,0.6s,baz=56,slow=4.8,SNR=7.8						
NOA	**NORSAR Array B**	**150.83**	**349**	PKPbc	**PKPbc**	**19 54 46.6**	**-1.5**
	0.7nm,0.8s,baz=136,slow=1.9,SNR=3.5						
NOA				PKPab	**PKPab**	**19 54 56.7**	**+1.3**
	0.6nm,0.7s,baz=15,slow=4.1,SNR=3.8						
TORD	**Torodi Ar. Bea**	**160.37**	**185**	PKPab	**PKPab**	**19 55 35.4**	**-1.8**
	0.5nm,0.6s,baz=186,slow=3.8,SNR=3.4						

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*IDC **04** 19:46:31.4±2.0, 43°.59N×12°.92E, h0km, mb3.4/2, mb1 3.7/4, mb1mx3.3/38, mbtmp3.5/4, ML3.6/2, MS3.4/1, Ms1 3.4/1, ms1mx2.3/42, Error ellipse: s-maj=69.1km s-min=21.1km az=102.0*
*GEN **04** 19:46:35.6, 43°.65N×12°.70E, h4km, ML2.9*
*ISCJB **04** 19:46:37.0±0.2, 43°.79N±0°.01×12°.64E±0°.02, h68km±3km, mb3.2/2, Error ellipse: s-maj=2.4km s-min=2.2km az=20.4*
*LDG **04** 19:46:37.5±0.1, 43°.79N×12°.78E, h30km, Ml3.2/26, Error ellipse: s-maj=2.0km s-min=1.5km az=146.0*
*ROM **04** 19:46:38.7±0.1, 43°.77N×12°.66E, h37km, Ml3.3/54, Error ellipse: s-maj=1.6km s-min=1.3km az=55.0*
*CSEM **04** 19:46:38.5±0.1, 43°.81N×12°.63E, h35km, ML3.6/29, Error ellipse: s-maj=2.2km s-min=1.9km az=69.0*
*BEO **04** 19:46:39.9, 43°.98N×12°.91E, h28km, M3.4/3*
*PRU **04** 19:46:46.3, 44°.55N×12°.90E, h0km*
*STR **04** 19:46:48.9±0.5, 44°.45N×11°.65E, h10km, Ml3.4, Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*
ISC 04 19:46:37.8±0.9, 43°.80N±0°.02×12°.66E±0°.02, h45km±4km, n302, σ1§65/412, 15C-8D, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FSSB	**Fossombrone**	**0.14**	**141**	⇑*i*Pg	**Pn**	**19 46 45.4**	**+0.2**
FSSB				Sg	**Sn**	**19 46 51.1**	**+0.7**
	9μm,0.3s						
FSSB	**Fossombrone**	**0.14**	**141**	⇑*i*Pg	**Pn**	**19 46 45.4**	**+0.2**
FSSB				Sg	**Sn**	**19 46 51.1**	**+0.7**
	9μm,0.3s						
PESA	**Pesaro**	**0.19**	**42**	Pg	**Pn**	**19 46 46.6**	**+1.1**
	10μm,0.2s						
PESA	**Pesaro**	**0.19**	**42**	Pg	**Pn**	**19 46 46.6**	**+1.1**
	10μm,0.2s						
RSM	**Repubblica di**	**0.20**	**311**	Pg	**Pn**	**19 46 46.7**	**+1.0**
	1μm,0.6s						
RSM	**Repubblica di**	**0.20**	**311**	Pg	**Pn**	**19 46 46.7**	**+1.0**
	1μm,0.6s						
PIEI	**Pieia**	**0.28**	**199**	⇑*i*Pg	**Pn**	**19 46 45.9**	**-0.4**
PIEI				Sg	**Sn**	**19 46 52.0**	**-0.3**
	5μm,0.3s						
PIEI	**Pieia**	**0.28**	**199**	⇑*i*Pg	**Pn**	**19 46 45.9**	**-0.4**
PIEI				Sg	**Sn**	**19 46 52.0**	**-0.3**
	5μm,0.3s						
FRON	**Frontone**	**0.28**	**170**	⇑*i*Pg	**Pn**	**19 46 46.3**	**0.0**
FRON				Sg	**Sn**	**19 46 52.4**	**+0.1**
FRON	**Frontone**	**0.28**	**170**	⇑*i*Pg	**Pn**	**19 46 46.3**	**0.0**
FRON				Sg	**Sn**	**19 46 52.4**	**+0.1**
PARC	**Parchiule**	**0.34**	**244**	⇑*i*Pg	**Pn**	**19 46 47.0**	**+0.1**
PARC				Sg	**Sn**	**19 46 54.1**	**+0.8**
	1μm,0.3s						
PARC	**Parchiule**	**0.34**	**244**	⇑*i*Pg	**Pn**	**19 46 47.0**	**+0.1**
PARC				Sg	**Sn**	**19 46 54.1**	**+0.8**
	1μm,0.3s						
ATPC	**Poggio Castell**	**0.35**	**205**	⇑*i*Pg	**Pn**	**19 46 46.9**	**-0.1**
ATPC				Sg	**Sn**	**19 46 53.9**	**+0.4**
	4μm,0.6s						
ATPC	**Poggio Castell**	**0.35**	**205**	⇑*i*Pg	**Pn**	**19 46 46.9**	**-0.1**
ATPC				Sg	**Sn**	**19 46 53.9**	**+0.4**
	4μm,0.6s						
ARVD	**Arcevia**	**0.36**	**146**	⇑*i*Pg	**Pn**	**19 46 47.3**	**+0.2**
ARVD				Sg	**Sn**	**19 46 54.2**	**+0.5**
ARVD	**Arcevia**	**0.36**	**146**	⇑*i*Pg	**Pn**	**19 46 47.3**	**+0.2**
ARVD				Sg	**Sn**	**19 46 54.2**	**+0.5**
BLLA	**Bellaria**	**0.37**	**338**	Pg	**Pn**	**19 46 49.3**	**+2.1**
	3μm,0.4s						
BLLA	**Bellaria**	**0.37**	**338**	Pg	**Pn**	**19 46 49.3**	**+2.1**
	3μm,0.4s						
SSFR	**Montelago di S**	**0.37**	**166**	Pg	**Pn**	**19 46 47.2**	**-0.1**
SSFR				Sg	**Sn**	**19 46 54.2**	**+0.2**
	11μm,0.3s						
SSFR	**Montelago di S**	**0.37**	**166**	Pg	**Pn**	**19 46 47.2**	**-0.1**
SSFR				Sg	**Sn**	**19 46 54.2**	**+0.2**
	11μm,0.3s						
BADI	**Badiali**	**0.42**	**227**	⇑*i*Pg	**Pn**	**19 46 47.9**	**+0.2**
BADI				Sg	**Sn**	**19 46 55.8**	**+1.0**
	5μm,0.5s						
BADI	**Badiali**	**0.42**	**227**	⇑*i*Pg	**Pn**	**19 46 47.9**	**+0.2**
BADI				Sg	**Sn**	**19 46 55.8**	**+1.0**
	5μm,0.5s						
SENI	**Senigallia**	**0.43**	**102**	Pg	**Pn**	**19 46 49.5**	**+1.7**
	1μm,0.5s						
SENI	**Senigallia**	**0.43**	**102**	Pg	**Pn**	**19 46 49.5**	**+1.7**
	1μm,0.5s						
ATVO	**AVT- Monte Val**	**0.45**	**204**	Pg	**Pn**	**19 46 48.5**	**+0.3**
ATVO				Sg	**Sn**	**19 46 56.2**	**+0.6**
	4μm,0.6s						
ATVO	**AVT- Monte Val**	**0.45**	**204**	Pg	**Pn**	**19 46 48.5**	**+0.3**
ATVO				Sg	**Sn**	**19 46 56.2**	**+0.6**
	4μm,0.6s						
MURB	**Monte Urbino**	**0.54**	**190**	Pg	**Pn**	**19 46 49.9**	**+0.5**
MURB				Sg	**Sn**	**19 46 58.7**	**+1.1**
	5μm,0.3s						
MURB	**Monte Urbino**	**0.54**	**190**	Pg	**Pn**	**19 46 49.9**	**+0.5**
MURB				Sg	**Sn**	**19 46 58.7**	**+1.1**
	5μm,0.3s						
CRE	**Caprese Michel**	**0.54**	**251**	Pg	**Pn**	**19 46 50.7**	**+1.3**
CRE				Sg	**Sn**	**19 47 00.3**	**+2.6**
	1μm,0.4s						
CRE	**Caprese Michel**	**0.54**	**251**	Pg	**Pn**	**19 46 50.7**	**+1.3**
CING	**Cingoli**	**0.57**	**137**	Pg	**Pn**	**19 46 50.5**	**+0.8**
CING				Sg	**Sn**	**19 46 59.6**	**+1.4**
	2μm,0.2s						
CING	**Cingoli**	**0.57**	**137**	Pg	**Pn**	**19 46 50.5**	**+0.8**
CING				Sg	**Sn**	**19 46 59.6**	**+1.4**
	2μm,0.2s						
SNTG	**Esanatoglia**	**0.58**	**159**	Pg	**Pn**	**19 46 50.0**	**+0.2**
SNTG				Sg	**Sn**	**19 46 59.3**	**+0.9**
	3μm,0.3s						
SNTG	**Esanatoglia**	**0.58**	**159**	Pg	**Pn**	**19 46 50.0**	**+0.2**
SNTG				Sg	**Sn**	**19 46 59.3**	**+0.9**
	3μm,0.3s						
SFI	**Santa Sofia**	**0.60**	**281**	Pg	**Pn**	**19 46 51.4**	**+1.4**
SFI				Sg	**Sn**	**19 47 01.7**	**+2.9**
	429nm,0.5s						
SFI	**Santa Sofia**	**0.60**	**281**	Pg	**Pn**	**19 46 51.4**	**+1.4**
ASQU	**Asqua**	**0.63**	**270**	Pg	**Pn**	**19 46 52.0**	**+1.5**
ASQU				Sg	**Sn**	**19 47 02.4**	**+2.8**
	686nm,0.5s						
ASQU	**Asqua**	**0.63**	**270**	Pg	**Pn**	**19 46 52.0**	**+1.5**
ATTE	**AVT- Monte Tez**	**0.64**	**201**	Pg	**Pn**	**19 46 51.4**	**+0.8**
ATTE				Sg	**Sn**	**19 47 01.6**	**+1.8**
	2μm,0.3s						
ATTE	**AVT- Monte Tez**	**0.64**	**201**	Pg	**Pn**	**19 46 51.4**	**+0.8**
ATTE				Sg	**Sn**	**19 47 01.6**	**+1.8**
	2μm,0.3s						
CAFI	**Castiglion Fio**	**0.69**	**227**	⇓*i*Pg	**Pn**	**19 46 51.8**	**+0.6**
CAFI				Sg	**Sn**	**19 47 01.9**	**+1.0**
	1μm,0.8s						
CAFI	**Castiglion Fio**	**0.69**	**227**	⇓*i*Pg	**Pn**	**19 46 51.8**	**+0.6**
CAFI				Sg	**Sn**	**19 47 01.9**	**+1.0**
	1μm,0.8s						
AOI	**Ancona**	**0.73**	**110**	Pg	**Pn**	**19 46 52.9**	**+1.2**
	565nm,0.3s						
AOI	**Ancona**	**0.73**	**110**	Pg	**Pn**	**19 46 52.9**	**+1.2**
	565nm,0.3s						
CESI	**CESI - Serrava**	**0.81**	**167**	Pg	**Pn**	**19 46 53.5**	**+0.6**
CESI				Sg	**Sn**	**19 47 05.8**	**+1.9**
	406nm,0.5s						
CESI	**CESI - Serrava**	**0.81**	**167**	Pg	**Pn**	**19 46 53.5**	**+0.6**
CESI				Sg	**Sn**	**19 47 05.8**	**+1.9**
	406nm,0.5s						
FDMO	**Fiordimonte**	**0.82**	**158**	Pg	**Pn**	**19 46 53.7**	**+0.7**
	1μm,0.2s						
FDMO	**Fiordimonte**	**0.82**	**158**	Pg	**Pn**	**19 46 53.7**	**+0.7**
	1μm,0.2s						
VMG	**Vicchio**	**0.82**	**282**	Pg	**Pn**	**19 46 55.5**	**+2.5**
	241nm,0.3s						
VMG	**Vicchio**	**0.82**	**282**	Pg	**Pn**	**19 46 55.5**	**+2.5**
	241nm,0.3s						
MGAB	**Montegabbione**	**0.97**	**205**	Pg	**Pn**	**19 46 56.0**	**+1.0**
	1μm,0.3s						
MGAB	**Montegabbione**

548nm,0.5s
POPM Popiglio 1.40 281 P Pn 19 47 01.4 +0.6
POPM S Sn 19 47 19.2 +1.1
TRIF Trifonti 1.45 243 Pg Pn 19 47 02.0 +0.4
129nm,0.6s
TRIF Trifonti 1.45 243 Pg Pn 19 47 02.0 +0.4
129nm,0.6s
BDI Bagni Di Lucca 1.51 281 Pg Pn 19 47 03.8 +1.3
BDI Bagni Di Lucca 1.51 281 Pg Pn 19 47 03.8 +1.3
T0104 Madonna delle 1.52 161 Pg Pn 19 47 04.7 +2.2
SASS Sassa 1.53 250 Pg Pn 19 47 03.6 +1.0
105nm,1.4s
SASS Sassa 1.53 250 Pg Pn 19 47 03.6 +1.0
105nm,1.4s
AQU L'Aquila 1.54 159 Pg Pn 19 47 05.3 +2.5
290nm,0.4s
AQU L'Aquila 1.54 159⇑ iPn Pn 19 47 05.1 +2.3
AQU L'Aquila 1.54 159 Pg Pn 19 47 05.3 +2.5
290nm,0.4s
FIAM Fiamignano 1.56 167 Pg Pn 19 47 04.7 +1.5
225nm,0.6s
FIAM Fiamignano 1.56 167 Pg Pn 19 47 04.7 +1.5
225nm,0.6s
MAIM Mastiano 1.57 275 Pg Pn 19 47 04.6 +1.4
62nm,0.6s
MAIM Mastiano 1.57 275 P Pn 19 47 03.6 +0.4
MAIM Mastiano 1.57 275 Pg Pn 19 47 04.6 +1.4
62nm,0.6s
MAIM S Sn 19 47 22.7 +0.4
VCEL Villa Celiera 1.65 148 Pg Pn 19 47 05.5 +1.2
260nm,0.4s
VCEL Villa Celiera 1.65 148 Pg Pn 19 47 05.5 +1.2
260nm,0.4s
CASP Castiglione de 1.65 233 Pg Pn 19 47 04.3 0.0
131nm,0.3s
CASP Castiglione de 1.65 233 Pg Pn 19 47 04.3 0.0
131nm,0.3s
FAGN Fagnano 1.67 156 Pg Pn 19 47 06.5 +1.9
498nm,0.4s
FAGN Fagnano 1.67 156 Pg Pn 19 47 06.5 +1.9
498nm,0.4s
SARO Sassorosso 1.68 284 P Pn 19 47 05.4 +0.7
SARO S Sn 19 47 25.9 +0.9
TEOL Teolo 1.71 336 Pg Pn 19 47 05.8 +0.6
TEOL Teolo 1.71 336 Pg Pn 19 47 05.8 +0.6
NVLJ Novalja 1.77 64 ePn Pn 19 47 06.8 +1.0
NVLJ Sn Sn 19 47 27.6 +0.5
NVLJ Novalja 1.77 64 ePn Pn 19 47 06.8 +1.0
NVLJ Sn Sn 19 47 27.5 +0.5
MAON Monte Argentar 1.77 220 Pg Pn 19 47 05.8 -0.1
MAON Monte Argentar 1.77 220 Pg Pn 19 47 05.8 -0.1
MTCE Montecelio 1.77 178 Pg Pn 19 47 07.0 +1.0
134nm,0.9s
MTCE Montecelio 1.77 178 Pg Pn 19 47 07.0 +1.0
134nm,0.9s
TOLF Tolfa 1.80 196 Pg Pn 19 47 06.8 +0.5
70nm,0.7s
TOLF Tolfa 1.80 196 Pg Pn 19 47 06.8 +0.5
70nm,0.7s
CERT Cerreto 1.86 173 Pg Pn 19 47 08.2 +1.0
169nm,0.9s
CERT Cerreto 1.86 173 Pg Pn 19 47 08.2 +1.0
169nm,0.9s
GRAM Graiana 1.99 291 P Pn 19 47 10.2 +1.2
GRAM S Sn 19 47 33.4 +0.6
SKDS Skadanscina 2.00 28 i Pn Pn 19 47 09.4 +0.3
SKDS i Sn Sn 19 47 32.9 0.0
SKDS Skadanscina 2.00 28 i Pn Pn 19 47 09.4 +0.3
SKDS i Sn Sn 19 47 32.9 0.0
VVLD Villa Vallelon 2.05 159 Pg Pn 19 47 12.5 +2.6
93nm,0.8s
VVLD Villa Vallelon 2.05 159 Pg Pn 19 47 12.5 +2.6
93nm,0.8s
GUAR Guarcino 2.06 166 Pg Pn 19 47 11.8 +1.9
105nm,0.5s
GUAR Guarcino 2.06 166 Pg Pn 19 47 11.8 +1.9
105nm,0.5s
CODM Codolo 2.11 287 P Pn 19 47 11.7 +1.1
CODM S Sn 19 47 36.1 +0.5
ROVR Rover¯¤ Verone 2.17 329 Pg Pn 19 47 12.3 +0.8
134nm,0.4s
ROVR Rover¯¤ Verone 2.17 329 Pg Pn 19 47 12.3 +0.8
134nm,0.4s
CGRP Cima Grappa 2.17 344 Pg Pn 19 47 12.3 +0.7
CGRP Cima Grappa 2.17 344 Pg Pn 19 47 12.3 +0.7
POFI Posta Fibreno 2.22 159 Pg Pn 19 47 14.3 +2.2
POFI Posta Fibreno 2.22 159 Pg Pn 19 47 14.3 +2.2
POLC Polcenigo 2.23 357 Pg Pn 19 47 13.4 +1.2
POLC Polcenigo 2.23 357 Pg Pn 19 47 13.4 +1.2
GIUL Giuliano Di Ro 2.28 169 Pg Pn 19 47 14.3 +1.4
47nm,0.7s
GIUL Giuliano Di Ro 2.28 169 Pg Pn 19 47 14.3 +1.4
47nm,0.7s
SABO M.te Sabotino 2.28 17 Pg Pn 19 47 13.7 +0.7
SABO M.te Sabotino 2.28 17 Pg Pn 19 47 13.7 +0.7
CEY Cerknica 2.31 32 i Pn Pn 19 47 14.1 +0.7
CEY eSn Sn 19 47 41.8 +1.2
comp=Z,85nm,0.2s
CEY Cerknica 2.31 32⇓ iPn Pn 19 47 13.9 +0.5
CEY eSn Sn 19 47 41.8 +1.2
comp=Z,85nm,0.2s
JAVS Javornik 2.32 25 i Pn Pn 19 47 14.1 +0.5
JAVS i Sn Sn 19 47 40.9 0.0
comp=Z,54nm,0.1s
JAVS Javornik 2.32 25 i Pn Pn 19 47 14.1 +0.5
JAVS i Sn Sn 19 47 40.9 0.0
comp=Z,54nm,0.1s
SC2M Scurtabo 2.33 286 Pg Pn 19 47 15.7 +2.0
SC2M Scurtabo 2.33 286 Pg Pn 19 47 15.7 +2.0
UDBI Udbina 2.35 71 ePn Pn 19 47 15.3 +1.4
UDBI Sn Sn 19 47 42.5 +0.9
UDBI Udbina 2.35 71 ePn Pn 19 47 15.3 +1.4
UDBI Sn Sn 19 47 42.5 +0.9
SALO Salr 2.37 321 Pg Pn 19 47 15.5 +1.3
SALO Salr 2.37 321 Pg Pn 19 47 15.5 +1.3
MAGA Magasa 2.45 325 Pg Pn 19 47 16.0 +0.7
MAGA Magasa 2.45 325 Pg Pn 19 47 16.0 +0.7
MIDA Miranda 2.45 151 Pg Pn 19 47 15.7 +0.3
MIDA Miranda 2.45 151 Pg Pn 19 47 15.7 +0.3
STAL STALIGIAL 2.46 1 Pg Pn 19 47 16.1 +0.6
STAL STALIGIAL 2.46 1 Pg Pn 19 47 16.1 +0.6
VINO Villanova 2.50 10 Pg Pn 19 47 16.7 +0.8
VINO Villanova 2.50 10 Pg Pn 19 47 16.7 +0.8
AGOR Agordo 2.52 350 Pg Pn 19 47 17.2 +0.9
LJU Ljubljana 2.61 30⇓ iPn Pn 19 47 18.5 +1.1
PTCC Patocco-Chiusa 2.65 10 Pg Pn 19 47 18.7 +0.6
PTCC Patocco-Chiusa 2.65 10 Pg Pn 19 47 18.7 +0.6
MABI Malga Bissina 2.72 327 Pg Pn 19 47 20.2 +1.0
MABI Malga Bissina 2.72 327 Pg Pn 19 47 20.2 +1.0
FVI Forni Avoltri 2.80 2 Pg Pn 19 47 21.7 +1.6
FVI Forni Avoltri 2.80 2 Pg Pn 19 47 21.7 +1.6
ACOM Acomizza, Ital 2.82 12 Pg Pn 19 47 22.0 +1.6
ACOM Acomizza, Ital 2.82 12 Pg Pn 19 47 22.0 +1.6
CRES Cresnjev 2.84 43⇓ iPn Pn 19 47 21.8 +1.2
APPI Appiano 2.87 340 Pg Pn 19 47 22.4 +1.4
APPI Appiano 2.87 340 Pg Pn 19 47 22.4 +1.4
MDI Monti di Nese 2.88 314 Pg Pn 19 47 22.3 +1.0
MDI Monti di Nese 2.88 314 Pg Pn 19 47 22.3 +1.0
MYKA Terra Mystica 2.92 13 i Pn Pn 19 47 23.2 +1.5
comp=Z,4.3nm,0.4s
MYKA i Sn Sn 19 47 57.8 +2.3
comp=Z,30nm,0.4s
MYKA Terra Mystica 2.92 13 Pn Pn 19 47 23.2 +1.5
comp=Z,4.3nm,0.4s
MYKA Sn Sn 19 47 57.8 +2.3
comp=Z,30nm,0.4s
ABTA Abfaltersbach 2.95 358 ePn Pn 19 47 24.2 +2.0
comp=Z,31nm,0.5s,SNR=18
ABTA i Sn Sn 19 47 59.7 +3.3
comp=Z,41nm,0.4s
ABTA Abfaltersbach 2.95 358 Pn Pn 19 47 24.2 +2.0
comp=Z,31nm,0.5s,SNR=18
ABTA Sn Sn 19 47 59.7 +3.3
comp=Z,41nm,0.4s
PGF Pioggiola 2.95 246 ePn Pn 19 47 22.9 +0.6
PGF eSn Sn 19 47 55.8 -0.7
PGF Pioggiola 2.95 246 ePn Pn 19 47 22.9 +0.6
PGF eSn Sn 19 47 55.8 -0.7
OBKA Obir 3.02 26 i Pn Pn 19 47 24.3 +1.1
comp=Z,3.6nm,0.4s
OBKA Obir 3.02 26 Pn Pn 19 47 24.3 +1.1
comp=Z,3.6nm,0.4s
FUORN Ofenpass-Fuorn 3.29 330 Pg Pn 19 47 29.4 +2.4
FUORN Ofenpass-Fuorn 3.29 330 Pg Pn 19 47 29.4 +2.4

KBA Koelnbreinsper 3.32 8 i Pn Pn 19 47 29.2 +1.9
comp=Z,14nm,0.5s,SNR=14
KBA i Sn Sn 19 48 07.0 +1.5
comp=Z,35nm,0.4s
KBA Koelnbreinsper 3.32 8 Pn Pn 19 47 29.2 +1.9
comp=Z,14nm,0.5s,SNR=14
KBA Sn Sn 19 48 07.0 +1.5
comp=Z,35nm,0.4s
FETA Feichten 3.50 338 i Pn Pn 19 47 32.5 +2.7
comp=Z,11nm,0.4s,SNR=8.6
FETA Feichten 3.50 338 Pn Pn 19 47 32.5 +2.7
comp=Z,11nm,0.4s,SNR=8.6
WTTA Wattenberg 3.54 349 i Pn Pn 19 47 33.9 +3.5
comp=Z,5.4nm,0.4s
WTTA i Sn Sn 19 48 14.3 +3.2
comp=Z,26nm,0.4s
WTTA Wattenberg 3.54 349 Pn Pn 19 47 33.9 +3.5
comp=Z,5.4nm,0.4s
WTTA Sn Sn 19 48 14.3 +3.2
comp=Z,26nm,0.4s
DAVOX Davos/Dischmat 3.57 328 Pn Pn 19 47 32.6 +1.8
comp=Z,3.4nm,0.3s,baz=158,slow=20,SNR=35
DAVOX Sn Sn 19 48 13.5 +1.7
comp=Z,4.5nm,0.3s,baz=302,slow=20,SNR=8.9
MOTA Moosalm 3.71 343 i Pn Pn 19 47 35.3 +2.6
comp=Z,8.6nm,0.5s,SNR=10
MOTA Moosalm 3.71 343 Pn Pn 19 47 35.3 +2.6
comp=Z,8.6nm,0.5s,SNR=10
SBF Sospel 3.78 273 ePn Pn 19 47 33.4 -0.2
SBF eSn Sn 19 48 15.4 -1.4
comp=Z,23nm,0.6s
SBF Sospel 3.78 273 ePn Pn 19 47 33.4 -0.2
SBF eSn Sn 19 48 15.4 -1.4
comp=Z,12nm,0.6s
STON Ston 3.79 102 ePn Pn 19 47 34.5 +0.8
STON Sn Sn 19 48 15.6 -1.2
STON Ston 3.79 102 ePn Pn 19 47 34.4 +0.8
STON eSn Sn 19 48 15.7 -1.2
STON Ston 3.79 102 ePn Pn 19 47 34.4 +0.8
STON eSn Sn 19 48 15.7 -1.2
RETA Reutte 3.92 341 i Pn Pn 19 47 38.3 +2.8
comp=Z,4.2nm,0.4s,SNR=5.3
RETA i Sn Sn 19 48 22.8 +2.5
comp=Z,17nm,0.5s
RETA Reutte 3.92 341 Pn Pn 19 47 38.3 +2.8
comp=Z,4.2nm,0.4s,SNR=5.3
RETA Sn Sn 19 48 22.8 +2.5
comp=Z,17nm,0.5s
ARSA Arzberg 4.00 29 i Pn Pn 19 47 37.1 +0.6
comp=Z,3.7nm,0.4s
ARSA i Sn Sn 19 48 21.5 -0.5
comp=Z,9.0nm,0.5s
ARSA Arzberg 4.00 29 Pn Pn 19 47 37.1 +0.6
comp=Z,3.7nm,0.4s
ARSA Sn Sn 19 48 21.5 -0.5
comp=Z,9.0nm,0.5s
DAVA Damuels 4.00 332 i Pn Pn 19 47 40.1 +3.5
comp=Z,15nm,0.5s,SNR=12
DAVA i Sn Sn 19 48 24.9 +2.6
comp=Z,14nm,0.4s
DAVA Damuels 4.00 332 Pn Pn 19 47 40.1 +3.5
comp=Z,15nm,0.5s,SNR=12
DAVA Sn Sn 19 48 24.9 +2.6
comp=Z,14nm,0.4s
MOA Molln 4.21 15 i Pn Pn 19 47 41.0 +1.7
comp=Z,9.6nm,0.4s,SNR=13
MOA Molln 4.21 15 Pn Pn 19 47 41.0 +1.7
comp=Z,9.6nm,0.4s,SNR=13
MBDF Montbardon 4.33 284 ePn Pn 19 47 41.5 +0.3
MBDF eSn Sn 19 48 28.5 -2.0
comp=Z,3.7nm,0.4s
MBDF Montbardon 4.33 284 ePn Pn 19 47 41.5 +0.3
MBDF eSn Sn 19 48 28.5 -2.0
comp=Z,1.9nm,0.4s
FRF La Foret Royal 4.37 269 ePn Pn 19 47 41.6 0.0
FRF eSn Sn 19 48 29.5 -1.7
comp=Z,6.3nm,0.4s
FRF La Foret Royal 4.37 269 ePn Pn 19 47 41.6 0.0
FRF eSn Sn 19 48 29.5 -1.7
comp=Z,3.2nm,0.4s
LMR La Mourre 4.49 266 ePn Pn 19 47 43.2 -0.1
LMR eSn Sn 19 48 32.3 -1.9
comp=Z,3.1nm,0.3s
LMR La Mourre 4.49 266 ePn Pn 19 47 43.2 -0.1
LMR eSn Sn 19 48 32.3 -1.9
comp=Z,1.5nm,0.3s
LPG La Plagne 4.55 294 ePn Pn 19 47 44.7 +0.4
LPG eSn Sn 19 48 33.8 -2.1
comp=Z,5.1nm,0.4s
LPG La Plagne 4.55 294 ePn Pn 19 47 44.7 +0.4
LPG eSn Sn 19 48 33.8 -2.1
comp=Z,2.5nm,0.4s
LPL La Plagne 4.56 294 ePn Pn 19 47 44.3 -0.2
LPL eSn Sn 19 48 34.3 -2.0
comp=Z,7.7nm,0.4s
LPL La Plagne 4.56 294 ePn Pn 19 47 44.3 -0.2
LPL eSn Sn 19 48 34.3 -2.0
comp=Z,3.8nm,0.4s
CONA Conrad Observa 4.70 27 i Pn Pn 19 47 47.1 +0.9
comp=Z,2.5nm,0.4s
CONA i Sn Sn 19 48 38.9 -0.5
comp=Z,5.7nm,0.3s
CONA Conrad Observa 4.70 27 Pn Pn 19 47 47.1 +0.9
comp=Z,2.5nm,0.4s
CONA Sn Sn 19 48 38.9 -0.5
comp=Z,5.7nm,0.3s
BBLS Lazići 4.88 87 ePn Pn 19 47 50.4 +1.7
BBLS eSn Sn 19 48 40.4 -3.5
ORIF Oris-en-Rattie 4.99 285 ePn Pn 19 47 50.1 -0.1
ORIF eSn Sn 19 48 44.3 -2.3
comp=Z,13nm,0.7s
ORIF Oris-en-Rattie 4.99 285 ePn Pn 19 47 50.1 -0.1
ORIF eSn Sn 19 48 44.3 -2.3
comp=Z,6.3nm,0.7s
TEKS Tekeris 5.00 79 ePn Pn 19 47 50.0 -0.2
TEKS Tekeris 5.00 79 ePn Pn 19 47 50.0 -0.2
PDG Podgorica 5.02 104 eSn Sn 19 48 45.9 -1.2
PDG Podgorica 5.02 104 eSn Sn 19 48 45.9 -1.2
DRME Dracevica, Mon 5.05 106 ePn Pn 19 47 51.8 +0.9
GERES GERESS Array B 5.10 8 Pn Pn 19 47 52.2 +0.5
comp=Z,1.6nm,0.3s,baz=184,slow=14,SNR=38
GERES Sn Sn 19 48 48.8 -0.6
comp=Z,7.4nm,0.3s,baz=182,slow=24,SNR=19
SMRF Simiane la Rot 5.12 274 ePn Pn 19 47 52.1 +0.1
SMRF Simiane la Rot 5.12 274 ePn Pn 19 47 52.1 +0.1
BBS Basel-Blauen 5.15 317 P Pn 19 47 52.6 +0.3
BBS S Sn 19 48 45.7 -4.7
FELD Feldberg im Sc 5.22 323 P Pn 19 47 53.3 0.0
DIVS Divibare 5.30 84 ePn Pn 19 47 53.6 -0.9
DIVS Divibare 5.30 84 ePn Pn 19 47 53.6 -0.9
KHC Kasperske Hory 5.37 6 ePN Pn 19 47 55.8 +0.4
KHC eSN Sn 19 48 53.6 -2.3
KHC Kasperske Hory 5.37 6 Pn Pn 19 47 55.8 +0.4
KHC Sn Sn 19 48 53.6 -2.3
LOMF Lomont 5.42 313 P Pn 19 47 56.9 +0.8
LOMF S Sn 19 48 51.8 -5.4
LOMF Lomont 5.42 313 P Pn 19 47 56.9 +0.8
CABF La Chapelle 5.43 303 ePn Pn 19 47 56.8 +0.6
CABF eSn Sn 19 48 54.5 -2.9
comp=Z,9.1nm,0.5s
CABF La Chapelle 5.43 303 ePn Pn 19 47 56.8 +0.6
IVAS Ivanjica 5.44 90 ePn Pn 19 47 56.7 +0.4
IVAS Ivanjica 5.44 90 ePn Pn 19 47 56.7 +0.4
MOF Molkenrain 5.60 318 P Pn 19 47 58.9 +0.4
MOF S Sn 19 48 57.3 -4.3
MOF Molkenrain 5.60 318 P Pn 19 47 58.9 +0.4
HINF Hinteralfeld 5.71 317 ePn Pn 19 48 00.0 0.0
HINF eSn Sn 19 49 01.0 -3.3
comp=Z,22nm,0.3s
HINF Hinteralfeld 5.71 317 ePn Pn 19 48 00.0 0.0
VIVF Saint-Julien-l 5.83 283 ePn Pn 19 48 01.5 -0.1
VIVF eSn Sn 19 49 04.1 -3.0
comp=Z,3.1nm,0.6s
VIVF Saint-Julien-l 5.83 283 ePn Pn 19 48 01.5 -0.1
ECH Echery 5.85 321 P Pn 19 48 02.2 +0.3
ECH S Sn 19 49 03.1 -4.5
ECH Echery 5.85 321 P Pn 19 48 02.2 +0.3
WLS Welschbruch 5.91 323 P Pn 19 48 03.3 +0.6
WLS S Sn 19 49 05.7 -3.4
WLS Welschbruch 5.91 323 P Pn 19 48 03.3 +0.6
CDF Champ du Feu 5.94 323 ePn Pn 19 48 02.9 -0.3
CDF eSn Sn 19 49 06.4 -3.6
comp=Z,16nm,0.4s
CDF Champ du Feu 5.94 323 ePn Pn 19 48 02.9 -0.3
HAU Haudompre 6.09 316 ePn Pn 19 48 05.5 +0.3

HAU eSn Sn 19 49 09.9 -3.7
comp=Z,77nm,0.5s
HAU Haudompre 6.09 316 ePn Pn 19 48 05.5 +0.3
SELS Selova 6.18 92 ePn Pn 19 48 05.9 -0.5
SELS Selova 6.18 92 ePn Pn 19 48 05.9 -0.5
GOPC GO Pecny, Ondr 6.29 13 eSN Sn 19 49 15.5 -2.9
GOPC ex x 19 49 31.0
PRU Pruhonice 6.33 11 ePN Pn 19 48 09.0 +0.6
PRU eSN Sn 19 49 15.7 -3.6
PRU ex x 19 49 28.6
PRU Pruhonice 6.33 11 Pn Pn 19 48 09.0 +0.6
VYHS Vyhne 6.36 40 ePn Pn 19 48 08.6 -0.3
VYHS Vyhne 6.36 40 ePN Pn 19 48 08.6 -0.3
VYHS eSN Sn 19 49 14.8 -5.4
LASF Ste Croix 6.36 276 ePn Pn 19 48 08.8 -0.1
LASF Ste Croix 6.36 276 ePn Pn 19 48 08.8 -0.1
THEF They Montfort 6.42 316 P Pn 19 48 09.7 0.0
THEF S Sn 19 49 16.5 -5.1
THEF They Montfort 6.42 316 P Pn 19 48 09.7 0.0
NKC Novy Kostel 6.44 359 eSN Sn 19 49 18.8 -3.3
PAGF Fort de Pagny 6.77 317 ePn Pn 19 48 14.0 -0.5
PAGF eSn Sn 19 49 26.0 -4.2
comp=Z,3.2nm,0.5s,baz=138
PAGF Fort de Pagny 6.77 317 ePn Pn 19 48 14.0 -0.5
SMF Signal de Mont 6.85 298 ePn Pn 19 48 15.2 -0.4
SMF eSn Sn 19 49 28.5 -3.7
comp=Z,8.7nm,0.5s
SMF Signal de Mont 6.85 298 ePn Pn 19 48 15.2 -0.4
KRLC Kraliky 6.88 23 ePN Pn 19 48 16.4 +0.3
KRLC Kraliky 6.88 23 Pn Pn 19 48 16.4 +0.3
SFTF Sexfontaines 6.90 312 ePn Pn 19 48 15.7 -0.5
baz=134
SFTF eSn Sn 19 49 29.4 -4.0
comp=Z,6.3nm,0.4s
SFTF Sexfontaines 6.90 312 ePn Pn 19 48 15.7 -0.5
DPC Dobruska-Polom 7.01 20 ePN Pn 19 48 17.3 -0.6
DPC eSN Sn 19 49 31.7 -4.6
DPC ex x 19 49 45.0
DPC Dobruska-Polom 7.01 20 Pn Pn 19 48 17.3 -0.6
SGD Sagiada 7.04 124 P Pn 19 48 18.4 +0.2
MEZF Maizieres J'vi 7.07 314 ePn Pn 19 48 17.9 -0.7
baz=132
MEZF eSn Sn 19 49 33.4 -4.2
comp=Z,12nm,0.6s
MEZF Maizieres J'vi 7.07 314 ePn Pn 19 48 17.9 -0.7
LOR Lormes 7.09 302 ePn Pn 19 48 18.2 -0.7
baz=128
LOR eSn Sn 19 49 34.1 -4.0
comp=Z,4.4nm,0.3s,baz=120
LOR Lormes 7.09 302 ePn Pn 19 48 18.2 -0.7
LANS Liptovska Anna 7.12 39 eSn Sn 19 49 38.4 -0.5
LANS Liptovska Anna 7.12 39 eSN Sn 19 49 38.4 -0.5
BRG Berggiesshubel 7.13 7 e(SN) Sn 19 49 34.9 -4.2
BRG SG 19 49 47.7
comp=Z,5.5nm,0.8s
IGT Igoumenitsa 7.15 124 P Pn 19 48 20.9 +1.1
AVF Avril sur Loir 7.21 298 ePn Pn 19 48 20.1 -0.5
AVF eSn Sn 19 49 37.1 -4.0
comp=Z,1.7nm,0.4s
AVF Avril sur Loir 7.21 298 ePn Pn 19 48 20.1 -0.5
SSF Saint Saulge 7.22 300 ePn Pn 19 48 20.0 -0.6
SSF eSn Sn 19 49 37.1 -4.2
comp=Z,2.4nm,0.5s
SSF Saint Saulge 7.22 300 ePn Pn 19 48 20.0 -0.6
BGF Bois d'Agland 7.46 295 ePn Pn 19 48 23.5 -0.5
BGF eSn Sn 19 49 43.1 -4.2
comp=Z,3.5nm,0.3s
BGF Bois d'Agland 7.46 295 ePn Pn 19 48 23.5 -0.5
MTLF Montolieu 7.60 270 ePn Pn 19 48 25.5 -0.4
MTLF Montolieu 7.60 270 ePn Pn 19 48 25.5 -0.4
TCF Toulx Ste Croi 7.81 292 ePn Pn 19 48 28.2 -0.6
TCF Toulx Ste Croi 7.81 292 ePn Pn 19 48 28.2 -0.6
LKD2 Lefkada island 7.83 127 P Pn 19 48 28.4 -0.7
HYF Humbligny 7.84 300 ePn Pn 19 48 28.6 -0.6
HYF eSn Sn 19 49 52.2 -4.4
HYF Humbligny 7.84 300 ePn Pn 19 48 28.6 -0.6
DSL Palaion Diasel 7.86 123 P Pn 19 48 29.1 -0.4
PDO Prodromos 8.26 126 P Pn 19 48 35.2 +0.3
KEST Kesra 8.45 199 Pn Pn 19 48 41.2 +3.6
comp=Z,0.3nm,0.3s,baz=309,slow=6.0,SNR=5.7
JMIC Jan Mayen 29.20 346 LR LR 20 04 52.8
comp=Z,63nm,19.2s,baz=256,slow=37
TORD Torodi Ar. Bea 31.96 200 P P 19 52 58.6 -0.9
comp=Z,0.4nm,0.7s,baz=8.9,slow=9.0,SNR=3.3
YKA Yellowknife Ar 65.97 336 P P 19 57 19.5 +0.7
comp=Z,0.2nm,0.6s,baz=40,slow=5.9,SNR=4.9

CASC 04 19:55:52.6±2.1, 12°.95N×87°.73W, h147km±16km, MD3.6, ML3.1, 1C-1D, Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CSGN	Cosiguina Volc	0.17	80	eP	Pn	19 56 13.2	+0.7
CNCH	Conchagua	0.34	343	eP	Pn	19 56 13.7	+0.6
LCY	Lacayo	0.72	311	eP	Pn	19 56 15.8	+0.8
PACA	Pacayal	0.77	312	eP	Pn	19 56 16.2	+0.7
TECA	Tecapa	0.93	306	eP	Pn	19 56 17.0	+0.3
CAHU	Cacacuatique	0.94	330	eP	Pn	19 56 16.9	+0.1
TGUH	Tegucigalpa,Un	1.19	22	eP	Pn	19 56 18.2	-0.6
TGUH				eP	Pn	19 56 18.5	-0.3
COPN	Copaltepe	1.35	124	eP	Pn	19 56 21.6	+1.1
COPN				eP	Pn	19 56 21.6	+1.2
COPN				eS	Sn	19 56 42.9	+1.2
COPN				AML	AML	19 56 50.0	
comp=Z,178nm,0.5s							
LFRS	El Faro	1.46	298	eP	Pn	19 56 21.6	-0.1
LFRS				eS	Sn	19 56 44.0	+0.3
LBRS	Las Brisas	1.50	302	eP	Pn	19 56 22.2	+0.2
IXG	Ixpaco	2.91	295	eP	Pn	19 56 39.2	+0.2
IXG				eS	Sn	19 57 15.0	+0.3
JCR	Jicaral	4.01	140⇓	eP	Pn	19 56 54.4	+1.4
JCR				eS	Sn	19 57 40.8	+0.9
CGA2	Cerro Gallo 2	4.33	132	eP	Pn	19 56 59.5	+2.2
CGA2				eS	Sn	19 57 48.3	+0.8
URSC	Urasca	4.96	128	eP	Pn	19 57 07.7	+2.0
URSC				eS	Sn	19 58 05.6	+3.0
BUS	Buena Vista	5.15	130⇑	eP	Pn	19 57 10.3	+1.8
BUS				eS	Sn	19 58 08.5	+0.9

*ISK **04** 19:56:11.8, 36°.38N×28°.69E, h5km, MD2.8*
*CSEM **04** 19:56:12.1±0.5, 36°.30N×28°.70E, h2km, MD2.8, Error ellipse: s-maj=9.8km s-min=4.3km az=3.0*
*DDA **04** 19:56:25.2, 36°.92N×28°.13E, h7km, Md2.5*

ISC 04 19:56:13.1±1.9, 36°.35N±0°.09×28°.71E±0°.04, h11km±13km, n19, σ0°69/26, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FETY	Fethiye	0.41	46	ePG	Pg	19 56 21.0	-0.4
FETY	Fethiye	0.41	46	ePg	Pg	19 56 21.0	-0.4
DALY	Dalyan (Mu¯la	0.47	354	ePG	Pg	19 56 21.6	-0.8
DALY				eSG	Sg	19 56 28.8	+0.2
DALY	Dalyan (Mu¯la	0.47	354	ePg	Pg	19 56 21.6	-0.8
DALY				eSg	Sg	19 56 28.8	+0.2
TURN	Turunc	0.53	351	i P	Pg	19 56 23.7	+0.2
TURN				i S	Sb	19 56 32.0	-0.1
YER	Yerkesik	0.86	336	ePG	Pb	19 56 28.8	-1.3
YER	Yerkesik	0.86	336	ePg	Pb	19 56 28.8	-1.3
GLHS	Gihisar (BURDU	1.02	38	ePG	Pb	19 56 32.8	-0.1
GLHS	Gihisar (BURDU	1.02	38	ePg	Pb	19 56 32.8	-0.1
ELL	Elmali	1.04	67	ePG	Pb	19 56 33.1	-0.2
ELL	Elmali	1.04	67	ePg	Pb	19 56 33.1	-0.2
BDRM	Kayabasi	1.25	305	P	Pn	19 56 36.2	-0.3
BDRM				S	Sg	19 56 54.1	+0.8
BDRM	Kayabasi	1.25	305	i P	Pn	19 56 36.2	-0.3
BDRM				i S	Sg	19 56 54.1	+0.8
BODT	Bodrum	1.33	303	ePN	Pb	19 56 38.0	-0.1
BODT	Bodrum	1.33	303	ePn	Pb	19 56 38.0	-0.1
AYDN	Tasoluk	1.47	333	P	Pb	19 56 40.4	-0.1
AYDN				S	Sg	19 57 01.8	+1.3
AYDN	Tasoluk	1.47	333	i P	Pb	19 56 40.4	-0.1
AYDN				i S	Sg	19 57 01.8	+1.3
AYDB	Zeytinkoy-Aydi	1.73	338	ePN	Pn	19 56 43.7	+0.5
AYDB	Zeytinkoy-Aydi	1.73	338	ePn	Pn	19 56 43.7	+0.5

GUC 04 20:03:18.4±0.5, 23°.71S×67°.29W, h248km±17km, ML3.6, 6C-1D, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB06	**IPOC Station P**	**2.33**	**295**	⇑*i*P	Pn	20 04 05.8	+1.8
PB06				*e*S	S	20 04 41.9	+1.9
PB06				IAML		20 04 43.5	
	comp=N,84nm,0.1s						
PB09	**IPOC Station P**	**2.62**	**316**	⇑*i*P	Pn	20 04 09.2	+2.1
PB09				*i* S	S	20 04 47.7	+2.3
PB04	**IPOC Station P**	**2.97**	**297**	⇑*i*P	Pn	20 04 13.1	+2.4
PB04				*i* S	S	20 04 54.1	+2.1
PB14	**IPOC Station P**	**2.99**	**252**	⇑*i*P	Pn	20 04 11.8	+0.9
PB14				*i* S	S	20 04 53.4	+0.9
PB10	**IPOC Station P**	**3.00**	**273**	⇑*i*P	Pn	20 04 12.9	+2.1
PB10				*i* S	S	20 04 54.8	+2.6
PB07	**IPOC Station P**	**3.11**	**309**	⇑*i*P	Pn	20 04 14.2	+2.0
PB07				IAML		20 04 57.8	
	comp=N,53nm,0.3s						
PB01	**IPOC Station P**	**3.35**	**322**	⇓*i*P	Pn	20 04 16.6	+1.8
PB01				*i* S	S	20 05 01.3	+1.9
PB01				IAML		20 05 03.1	
	comp=N,40nm,0.3s						
PATCX	**Punta Patache**	**3.92**	**317**	*e*P	Pn	20 04 22.8	+1.5
PATCX				*e*S	S	20 05 13.3	+2.1

IDC 04 20:15:31.0±1.7, 4°29N×96°37E, h0km, mb3.6/5, mb1 3.7/5, mb1mx3.4/51, mbtmp3.6/5, Error ellipse: s-maj=77.1km s-min=25.9km az=51.0, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08S2	**Diego Garcia H**	**26.61**	**244**	T	T	20 46 57.3	
	baz=67,slow=75,SNR=134						
H08S3	**Diego Garcia H**	**26.61**	**244**	T	T	20 46 53.9	
	baz=67,slow=75,SNR=106						
H08S1	**Diego Carcia H**	**26.63**	**244**	T	T	20 46 54.2	
	baz=67,slow=75,SNR=90						
H01W3	**Cape Leeuwin H**	**42.40**	**158**	T	T	21 06 26.1	
	baz=333,slow=76,SNR=52						
H01W2	**Cape Leeuwin H**	**42.42**	**158**	T	T	21 06 27.5	
	baz=333,slow=76,SNR=78						
H01W1	**Cape Leeuwin H**	**42.42**	**158**	T	T	21 06 28.2	
	baz=333,slow=76,SNR=58						
MKAR	**Makanchi Array**	**44.06**	**346**	P	P	20 23 41.0	+0.3
	1.3nm,0.7s,baz=161,slow=8.4,SNR=12						
WRA	**Warramunga Arr**	**44.41**	**124**	P	P	20 23 43.8	-0.1
	0.5nm,0.9s,baz=300,slow=9.2,SNR=4.0						
KURBB	**Kurchatov Arra**	**48.55**	**345**	P	P	20 24 15.4	-0.5
	0.3nm,0.5s,baz=160,slow=7.2,SNR=4.6						
ZALV	**Zalesovo Beam**	**50.40**	**351**	P	P	20 24 29.4	-0.6
	0.6nm,0.4s,baz=182,slow=7.4,SNR=5.7						
BRTR	**Keskin Array B**	**66.44**	**312**	P	P	20 26 22.7	+0.1
	0.2nm,0.4s,baz=101,slow=1.5,SNR=2.9						

*SFS **04** 20:20:54.0, 35°29N×4°04W, h0km, ML2.6*
*IDC **04** 20:20:54.6±1.2, 35°30N×4°32W, h0km, mb3.3/3, mb1 3.4/5, mb1mx3.2/57, mbtmp3.2/5, ML3.4/2, Error ellipse: s-maj=42.1km s-min=15.2km az=91.0*
*IGIL **04** 20:20:54.7, 35°29N×4°05W, h0km, ML2.4*
*MDD **04** 20:20:54.8±0.3, 35°34N×4°03W, h0km, mbLg2.5/24, Error ellipse: s-maj=3.7km s-min=3.0km az=18.0, PRXIMO*
*CSEM **04** 20:20:55.4±0.1, 35°37N×4°14W, h10km, ML2.5, Error ellipse: s-maj=3.3km s-min=2.7km az=100.0*
*CNRM **04** 20:20:57.2, 35°54N×4°26W, h30km, MD3.5*
*INMG **04** 20:20:57.2±1.1, 35°41N×4°18W, h4km±4km, ML2.6, Error ellipse: s-maj=2.6km s-min=2.5km az=152.0*

ISC 04 20:20:54.4±1.2, 35°39N±0°03×4°05W±0°02, h4km±9km, n152, σ1°71/281, mb3.4/3, 4C, Strait of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EMEL	**Melilla**	**0.90**	**96**	⇑P	**Pg**	**20 21 10.5**	**-1.2**
	170nm,0.1s,SNR=18						
EMEL				S	**Sg**	**20 21 22.0**	**-1.4**
	879nm,0.1s,SNR=11						
MELI	**Melilla**	**0.92**	**96**	P	**Pg**	**20 21 10.5**	**-1.5**
MELI				S	**Sg**	**20 21 22.8**	**-1.2**
MELI	**Melilla**	**0.92**	**96**	*i* P	**Pg**	**20 21 10.5**	**-1.5**
MELI				*e*S	**Sg**	**20 21 22.8**	**-1.2**
EALB	**Alboran**	**0.99**	**56**	P	**Pg**	**20 21 12.6**	**-0.8**
	198nm,0.2s,SNR=155						
EALB				S	**Sg**	**20 21 26.3**	**0.0**
	188nm,0.2s,SNR=12						
ECEU	**Ceuta**	**1.19**	**295**	P	**Pn**	**20 21 16.2**	**-1.6**
	22nm,0.1s,SNR=45						
ECEU				S	**Sb**	**20 21 31.7**	**-1.5**
	28nm,0.1s,SNR=5.9						
ECEU	**Ceuta**	**1.19**	**295**	P	**Pn**	**20 21 16.2**	**-1.6**
	22nm,0.1s,SNR=45						
ECEU				S	**Sb**	**20 21 31.7**	**-1.5**
	28nm,0.1s,SNR=5.9						
EMIJ	**Mijas**	**1.31**	**334**	P	**Pn**	**20 21 18.2**	**-1.2**
	4.0nm,0.2s,SNR=27						
EMIJ				S	**Sb**	**20 21 37.2**	**+0.6**
	46nm,0.3s,SNR=15						
EMIJ	**Mijas**	**1.31**	**334**	P	**Pn**	**20 21 18.2**	**-1.2**
	4.0nm,0.2s,SNR=27						
EMIJ				S	**Sb**	**20 21 37.2**	**+0.6**
	46nm,0.3s,SNR=15						
TZK	**Tazeka**	**1.31**	**185**	P	**Pg**	**20 21 23.0**	**+3.6**
TZK				S	**Sn**	**20 21 36.0**	**-1.6**
TZK	**Tazeka**	**1.31**	**185**	*i* P	**Pg**	**20 21 23.0**	**+3.6**
TZK				S	**Sn**	**20 21 36.0**	**-1.6**
EJIF	**Jimena Fronter**	**1.56**	**313**	P	**Pn**	**20 21 22.1**	**-0.8**
	4.4nm,0.2s,SNR=7.9						
EJIF				S	**Sn**	**20 21 42.6**	**-1.0**
	11nm,0.2s,SNR=7.9						
EJIF	**Jimena Fronter**	**1.56**	**313**	P	**Pn**	**20 21 22.1**	**-0.8**
	4.4nm,0.2s,SNR=7.9						
EJIF				S	**Sn**	**20 21 42.6**	**-1.0**
	11nm,0.2s,SNR=7.9						
EGOR	**Sierra Gorda,**	**1.71**	**359**	P	**Pn**	**20 21 25.3**	**+0.2**
	1.8nm,0.2s,SNR=7.9						
EGOR				S	**Sn**	**20 21 48.4**	**+0.8**
	7.9nm,0.2s,SNR=7.9						
EGOR	**Sierra Gorda,**	**1.71**	**359**	P	**Pn**	**20 21 25.3**	**+0.2**
	1.8nm,0.2s,SNR=7.9						
EGOR				S	**Sn**	**20 21 48.4**	**+0.8**
	7.9nm,0.2s,SNR=7.9						
EBER	**Berja**	**1.77**	**32**	P	**Pn**	**20 21 23.9**	**-2.1**
	7.7nm,0.3s,SNR=32						
EBER				S	**Sn**	**20 21 49.7**	**+0.6**
	12nm,0.2s						
SELV	**Sierra Elvira**	**1.86**	**8**	P	**Pb**	**20 21 28.7**	**-0.3**
	3.1nm,0.2s,SNR=7.9						
SELV				S	**Sg**	**20 21 55.4**	**+1.2**
	4.6nm,0.2s,SNR=7.9						
SELV	**Sierra Elvira**	**1.86**	**8**	P	**Pb**	**20 21 28.7**	**-0.3**
	3.1nm,0.2s,SNR=7.9						
EQUE	**Quentar**	**1.88**	**15**	P	**Pn**	**20 21 27.9**	**+0.6**
	2.9nm,0.2s,SNR=8.7						
EQUE				S	**Sb**	**20 21 53.8**	**+0.7**
	3.4nm,0.1s,SNR=6.0						
EQUE	**Quentar**	**1.88**	**15**	P	**Pn**	**20 21 27.9**	**+0.6**
	2.9nm,0.2s,SNR=8.7						
EQUE				S	**Sb**	**20 21 53.8**	**+0.7**
	3.4nm,0.1s,SNR=6.0						
ECOG	**Cogollos-Vega**	**1.92**	**12**	P	**Pn**	**20 21 28.5**	**+0.5**
	2.9nm,0.2s,SNR=12						
ECOG				S	**Sb**	**20 21 54.7**	**+0.3**
	6.3nm,0.2s,SNR=7.3						
ECOG	**Cogollos-Vega**	**1.92**	**12**	P	**Pn**	**20 21 28.5**	**+0.5**
	2.9nm,0.2s,SNR=12						
ECOG				S	**Sb**	**20 21 54.7**	**+0.3**
	6.3nm,0.2s,SNR=7.3						
ESPR	**Espera**	**2.07**	**316**	P	**Pn**	**20 21 31.0**	**+1.1**
	3.1nm,0.2s,SNR=20						
ESPR				S	**Sn**	**20 21 57.5**	**+1.3**
	7.8nm,0.2s,SNR=4.5						
ESPR	**Espera**	**2.07**	**316**	P	**Pn**	**20 21 31.0**	**+1.1**
	3.1nm,0.2s,SNR=20						
ENIJ	**Nijar**	**2.17**	**43**	P	**Pn**	**20 21 30.5**	**-0.8**
	2.4nm,0.2s,SNR=7.9						
ENIJ				S	**Sn**	**20 21 55.2**	**-3.4**
	64nm,0.3s,SNR=7.9						
ENIJ	**Nijar**	**2.17**	**43**	P	**Pn**	**20 21 30.5**	**-0.8**
	2.4nm,0.2s,SNR=7.9						
MIF	**Mishlifen**	**2.21**	**206**	P	**Pn**	**20 21 31.0**	**-1.0**
MIF				S	**Sn**	**20 21 56.0**	**-3.8**
MIF	**Mishlifen**	**2.21**	**206**	P	**Pn**	**20 21 31.0**	**-1.0**
MIF				S	**Sn**	**20 21 56.0**	**-3.8**
GORA	**Gorafe**	**2.24**	**21**	P	**Pn**	**20 21 32.7**	**+0.4**
	8.2nm,0.3s,SNR=7.9						
GORA				S	**Sn**	**20 22 01.3**	**+1.0**
	11nm,0.2s,SNR=7.9						
GORA	**Gorafe**	**2.24**	**21**	P	**Pn**	**20 21 32.7**	**+0.4**
	8.2nm,0.3s,SNR=7.9						
GORA				S	**Sn**	**20 22 01.3**	**+1.0**
	11nm,0.2s,SNR=7.9						
CZD	**Col de Zad**	**2.49**	**199**	P	**Pn**	**20 21 36.0**	**0.0**
CZD				S	**Sn**	**20 22 06.0**	**-1.0**
CZD	**Col de Zad**	**2.49**	**199**	P	**Pn**	**20 21 36.0**	**0.0**
CZD				S	**Sn**	**20 22 06.0**	**-1.0**
EQES	**Quesada**	**2.53**	**18**	P	**Pn**	**20 21 37.9**	**+1.5**
	3.2nm,0.2s,SNR=40						
EQES				S	**Sn**	**20 22 08.5**	**+0.8**
	6.3nm,0.2s,SNR=5.6						
EQES	**Quesada**	**2.53**	**18**	P	**Pn**	**20 21 37.9**	**+1.5**
	3.2nm,0.2s,SNR=40						
EQES				S	**Sn**	**20 22 08.5**	**+0.8**
	6.3nm,0.2s,SNR=5.6						
MDT	**Midelt**	**2.61**	**190**	Pn	**Pn**	**20 21 36.8**	**-0.7**
	4.7nm,0.3s,baz=8.7,slow=13,SNR=185						
MDT				Pg	**Pg**	**20 21 43.1**	**-1.4**
	7.6nm,0.3s,baz=1.0,slow=13,SNR=31						
MDT				Sn	**Sn**	**20 22 08.8**	**-0.9**
	12nm,0.3s,baz=304,slow=22,SNR=13						
MDT				Lg	Lg	20 22 19.3	
	7.4nm,0.3s,baz=274,slow=24,SNR=5.6						
EADA	**Adamuz**	**2.80**	**352**	P	**Pn**	**20 21 41.5**	**+1.5**
	1.1nm,0.2s,SNR=15						
EADA				S	**Sn**	**20 22 14.9**	**+0.7**
	3.2nm,0.2s						
EADA	**Adamuz**	**2.80**	**352**	P	**Pn**	**20 21 41.5**	**+1.5**
	1.1nm,0.2s,SNR=15						
EADA				S	**Sn**	**20 22 14.9**	**+0.7**
	3.2nm,0.2s						
ECAB	**El Cabril**	**2.89**	**338**	P	**Pn**	**20 21 42.0**	**+0.8**
	1.7nm,0.2s,SNR=15						
ECAB				S	**Sn**	**20 22 16.1**	**-0.4**
	2.1nm,0.2s,SNR=5.7						
ECAB	**El Cabril**	**2.89**	**338**	P	**Pn**	**20 21 42.0**	**+0.8**
	1.7nm,0.2s,SNR=15						
ECAB				S	**Sn**	**20 22 16.1**	**-0.4**
	2.1nm,0.2s,SNR=5.7						
SESP	**Santiago Espad**	**2.98**	**24**	P	**Pn**	**20 21 44.0**	**+1.4**
	3.3nm,0.2s,SNR=7.9						
SESP				S	**Sn**	**20 22 18.1**	**-0.7**
	4.2nm,0.2s,SNR=7.9						
SESP	**Santiago Espad**	**2.98**	**24**	P	**Pn**	**20 21 44.0**	**+1.4**
	3.3nm,0.2s,SNR=7.9						
SESP				S	**Sn**	**20 22 18.1**	**-0.7**
	4.2nm,0.2s,SNR=7.9						
EMIN	**Mina Concepcio**	**3.17**	**319**	P	**Pn**	**20 21 45.3**	**+0.3**
	1.3nm,0.1s,SNR=35						
EMIN				S	**Sn**	**20 22 22.0**	**-1.3**
	1.8nm,0.1s						
EMIN	**Mina Concepcio**	**3.17**	**319**	P	**Pn**	**20 21 45.3**	**+0.3**
	1.3nm,0.1s,SNR=35						
EMIN				S	**Sn**	**20 22 22.0**	**-1.3**
	1.8nm,0.1s						
KIB	**El Ksiba**	**3.26**	**211**	P	**Pn**	**20 21 45.0**	**-1.3**
KIB				S	**Sn**	**20 22 23.0**	**-2.6**
KIB	**El Ksiba**	**3.26**	**211**	P	**Pn**	**20 21 45.0**	**-1.3**
KIB				S	**Sn**	**20 22 23.0**	**-2.6**
EMUR	**La Murta**	**3.33**	**42**	P	**Pn**	**20 21 47.9**	**+0.6**
	1.4nm,0.3s,SNR=7.9						
EMUR				S	**Sn**	**20 22 24.1**	**-3.2**
	3.8nm,0.2s,SNR=7.9						
EMUR	**La Murta**	**3.33**	**42**	P	**Pn**	**20 21 47.9**	**+0.6**
	1.4nm,0.3s,SNR=7.9						
ZFT	**Errachidia**	**3.36**	**184**	P	**Pn**	**20 21 48.0**	**+0.2**
ZFT				S	**Sn**	**20 22 26.0**	**-2.3**
ZFT	**Errachidia**	**3.36**	**184**	P	**Pn**	**20 21 48.0**	**+0.2**
ZFT				S	**Sn**	**20 22 26.0**	**-2.3**
EGRO	**El Granado**	**3.49**	**309**	P	**Pn**	**20 21 49.6**	**+0.1**
	3.2nm,0.1s,SNR=23						
EGRO				S	**Sn**	**20 22 28.8**	**-2.4**
	1.8nm,0.1s						
EGRO	**El Granado**	**3.49**	**309**	P	**Pn**	**20 21 49.6**	**+0.1**
	3.2nm,0.1s,SNR=23						
EGRO				S	**Sn**	**20 22 28.8**	**-2.4**
	1.8nm,0.1s						
PVAQ	**Vaqueiros**	**3.57**	**305**	*e*Pn	**Pn**	**20 21 50.2**	**-0.3**
PVAQ				*e*Sn	**Sn**	**20 22 30.6**	**-2.6**
PVAQ				A	A	20 22 34.7	
	22nm,0.5s						
PVAQ	**Vaqueiros**	**3.57**	**305**	P	**Pn**	**20 21 50.2**	**-0.3**
PVAQ				S	**Sn**	**20 22 30.6**	**-2.6**
	22nm,0.5s						
PVAQ	**Vaqueiros**	**3.57**	**305**	P	**Pn**	**20 21 50.2**	**-0.3**
PVAQ				S	**Sn**	**20 22 30.6**	**-2.6**
	22nm,0.5s						
PBDV	**Barranco-do-Ve**	**3.63**	**302**	*e*Pn	**Pn**	**20 21 51.2**	**-0.2**
PBDV				*e*Sn	**Sn**	**20 22 33.5**	**-1.3**
PBDV				A	A	20 22 35.8	
	10nm,0.2s						
PBDV	**Barranco-do-Ve**	**3.63**	**302**	P	**Pn**	**20 21 51.2**	**-0.2**
PBDV				S	**Sn**	**20 22 33.5**	**-1.3**
	10nm,0.2s						
PBDV	**Barranco-do-Ve**	**3.63**	**302**	P	**Pn**	**20 21 51.2**	**-0.2**
PBDV				S	**Sn**	**20 22 33.5**	**-1.3**
	10nm,0.2s						
PBAR	**Barrancos**	**3.67**	**320**	*e*Pn	**Pn**	**20 21 52.0**	**+0.1**
PBAR				*e*Sn	**Sn**	**20 22 33.7**	**-1.8**
PBAR				A	A	20 22 39.1	
	13nm,0.8s						
PBAR	**Barrancos**	**3.67**	**320**	P	**Pn**	**20 21 52.0**	**+0.1**
PBAR				S	**Sn**	**20 22 33.7**	**-1.8**
	13nm,0.8s						
PBAR	**Barrancos**	**3.67**	**320**	P	**Pn**	**20 21 52.0**	**+0.1**
PBAR				S	**Sn**	**20 22 33.7**	**-1.8**
	13nm,0.8s						
ETOB	**Tobarra**	**3.81**	**31**	P	**Pn**	**20 21 55.1**	**+1.1**
	5.2nm,0.2s,SNR=56						
ETOB				S	**Sn**	**20 22 39.0**	**-0.3**
	3.0nm,0.3s						
ETOB	**Tobarra**	**3.81**	**31**	P	**Pn**	**20 21 55.1**	**+1.1**
	5.2nm,0.2s,SNR=56						
ETOB				S	**Sn**	**20 22 39.0**	**-0.3**
	3.0nm,0.3s						
TZC	**Tazercounte**	**3.82**	**213**	P	**Pn**	**20 21 53.0**	**-1.2**
TZC				S	**Sn**	**20 22 37.0**	**-2.6**
TZC	**Tazercounte**	**3.82**	**213**	P	**Pn**	**20 21 53.0**	**-1.2**
TZC				S	**Sn**	**20 22 37.0**	**-2.6**
OKGL	**Djebel Kef Gue**	**3.88**	**79**	P	**Pn**	**20 21 55.0**	**+0.2**
	4.0nm,0.1s,SNR=7.9						
OKGL				S	**Sn**	**20 22 36.6**	**-4.1**
	15nm,0.2s,SNR=7.9						
OKGL	**Djebel Kef Gue**	**3.88**	**79**	P	**Pn**	**20 21 55.0**	**+0.2**
	4.0nm,0.1s,SNR=7.9						
PBEJ	**Beja**	**4.04**	**312**	*e*Pn	**Pn**	**20 21 57.6**	**+0.7**
PBEJ				*e*Sn	**Sn**	**20 22 42.6**	**-2.0**
PBEJ	**Beja**	**4.04**	**312**	P	**Pn**	**20 21 57.6**	**+0.7**
PBEJ				S	**Sn**	**20 22 42.6**	**-2.0**
PBEJ	**Beja**	**4.04**	**312**	P	**Pn**	**20 21 57.6**	**+0.7**
PBEJ				S	**Sn**	**20 22 42.6**	**-2.0**
EBAD	**Badajoz**	**4.11**	**326**	P	**Pn**	**20 21 58.4**	**+0.5**
	3.4nm,0.2s,SNR=22						
EBAD				S	**Sn**	**20 22 44.6**	**-1.7**
	6.5nm,0.2s						
EBAD	**Badajoz**	**4.11**	**326**	P	**Pn**	**20 21 58.4**	**+0.5**
	3.4nm,0.2s,SNR=22						
EBAD				S	**Sn**	**20 22 44.6**	**-1.7**
	6.5nm,0.2s						
MESJ	**Messejana**	**4.15**	**307**	*e*P	**Pn**	**20 21 58.1**	**-0.3**
MESJ				*e*S	**Sn**	**20 22 44.8**	**-2.6**
MESJ				AML	AML	20 22 47.4	
	comp=E,8.2nm,0.2s						
MESJ	**Messejana**	**4.15**	**307**	*e*Pn	**Pn**	**20 21 58.8**	**+0.4**
MESJ				*e*Sn	**Sn**	**20 22 45.6**	**-1.7**
MESJ				A	A	20 22 50.2	
	comp=E,9.9nm,0.3s						
MESJ	**Messejana**	**4.15**	**307**	P	**Pn**	**20 21 58.8**	**+0.4**
MESJ				S	**Sn**	**20 22 45.6**	**-1.7**
	comp=E,9.9nm,0.3s						
MESJ	**Messejana**	**4.15**	**307**	P	**Pn**	**20 21 58.8**	**+0.4**
MESJ				S	**Sn**	**20 22 45.6**	**-1.7**
	comp=E,9.9nm,0.3s						
MORF	**Marmelete**	**4.17**	**299**	*e*P	**Pn**	**20 21 58.5**	**-0.4**
MORF	**Marmelete**	**4.17**	**299**	⇑*e*Pn	**Pn**	**20 21 59.3**	**+0.4**
MORF				*e*Sn	**Sn**	**20 22 46.3**	**-1.8**
MORF				A	A	20 22 50.5	
	comp=E,9.2nm,0.3s						
MORF	**Marmelete**	**4.17**	**299**	P	**Pn**	**20 21 59.3**	**+0.4**
MORF				S	**Sn**	**20 22 46.3**	**-1.8**
	comp=E,9.2nm,0.3s						
MORF	**Marmelete**	**4.17**	**299**	P	**Pn**	**20 21 59.3**	**+0.4**
MORF				S	**Sn**	**20 22 46.3**	**-1.8**
	comp=E,9.2nm,0.3s						
PFVI	**Vila Bisbo**	**4.23**	**296**	*e*Pn	**Pn**	**20 22 00.2**	**+0.6**
PFVI				*e*Sn	**Sn**	**20 22 46.8**	**-2.6**
PFVI				A	A	20 22 59.5	
	comp=E,10nm,0.5s						
PFVI	**Vila Bisbo**	**4.23**	**296**	P	**Pn**	**20 21 59.8**	**+0.2**
	comp=E,2.2nm,0.2s,SNR=7.9						
PFVI				S	**Sn**	**20 22 47.0**	**-2.4**
	comp=E,7.1nm,0.2s,SNR=7.9						
PFVI	**Vila Bisbo**	**4.23**	**296**	P	**Pn**	**20 21 59.8**	**+0.2**
	comp=E,2.2nm,0.2s,SNR=7.9						
PFVI	**Vila Bisbo**	**4.23**	**296**	*e*Pn	**Pn**	**20 22 00.2**	**+0.6**
PFVI				S	**Sn**	**20 22 47.0**	**-2.4**
	comp=E,7.1nm,0.2s,SNR=7.9						
ESDC	**Sonseca Array**	**4.27**	**1**	Pn	**Pn**	**20 22 01.7**	**+1.4**
	comp=E,1.3nm,0.3s,baz=181,slow=12,SNR=12						
ESDC				Sn	**Sn**	**20 22 52.8**	**+2.2**
	comp=E,1.1nm,0.3s,baz=183,slow=18,SNR=5.4						
ESDC				Lg	Lg	20 23 14.1	
	comp=E,1.7nm,0.3s,baz=167,slow=27,SNR=6.3						
ESDC	**Sonseca Array**	**4.27**	**1**	P	**Pn**	**20 22 01.4**	**+1.1**
	comp=E,0.6nm,0.3s,baz=187,slow=12,SNR=11						
ESDC				S	**Sn**	**20 22 50.2**	**-0.4**
	comp=E,0.4nm,0.3s,baz=184,slow=23,SNR=3.5						
ESDC	**Sonseca Array**	**4.27**	**1**	P	**Pn**	**20 22 01.4**	**+1.1**
	comp=E,0.6nm,0.3s,SNR=11						
ESDC				S	**Sn**	**20 22 50.2**	**-0.4**
	comp=E,0.4nm,0.3s,SNR=3.5						
PTEO	**Sao Teotonio**	**4.33**	**301**	*e*Pn	**Pn**	**20 22 01.5**	**+0.5**
PTEO				*e*Sn	**Sn**	**20 22 50.1**	**-1.8**
PTEO				A	A	20 22 56.7	
	comp=E,9.7nm,0.8s						
PTEO	**Sao Teotonio**	**4.33**	**301**	P	**Pn**	**20 22 01.5**	**+0.5**
PTEO				S	**Sn**	**20 22 50.1**	**-1.8**
	comp=E,4.8nm,0.8s						
PTEO	**Sao Teotonio**	**4.33**	**301**	P	**Pn**	**20 22 01.5**	**+0.5**
PTEO				S	**Sn**	**20 22 50.1**	**-1.8**
	comp=E,4.8nm,0.8s						
EVO	**Evora**	**4.46**	**316**	*e*Pn	**Pn**	**20 22 03.7**	**+1.0**
EVO				*e*Sn	**Sn**	**20 22 52.7**	**-2.3**
EVO	**Evora**	**4.46**	**316**	P	**Pn**	**20 22 03.7**	**+1.0**
EVO				S	**Sn**	**20 22 52.7**	**-2.3**
EVO	**Evora**	**4.46**	**316**	P	**Pn**	**20 22 03.7**	**+1.0**
EVO				S	**Sn**	**20 22 52.7**	**-2.3**
PESTR	**Estremoz**	**4.47**	**322**	*e*Pn	**Pn**	**20 22 03.9**	**+0.9**
PESTR				*e*Sn	**Sn**	**20 22 53.4**	**-2.0**
PESTR				A	A	20 22 56.9	
	comp=E,5.5nm,0.4s						
PESTR	**Estremoz**	**4.47**	**322**	*e*Pn	**Pn**	**20 22 03.9**	**+0.9**
PESTR				*e*Sn	**Sn**	**20 22 53.4**	**-2.0**
	comp=E,5.5nm,0.4s						
PNCL	**Nicolau / Gran**	**4.50**	**308**	*e*Pn	**Pn**	**20 22 03.5**	**+0.2**
PNCL				*e*Sn	**Sn**	**20 22 54.1**	**-2.0**
PNCL				A	A	20 23 01.1	
	comp=E,7.4nm,1.2s						
PNCL	**Nicolau / Gran**	**4.50**	**308**	*e*Pn	**Pn**	**20 22 03.5**	**+0.2**
PNCL				*e*Sn	**Sn**	**20 22 54.1**	**-2.0**
	comp=E,7.4nm,1.2s						
PMRV	**Marv??o**	**4.82**	**328**	*e*Pn	**Pn**	**20 22 08.7**	**+0.9**
PMRV				*e*Sn	**Sn**	**20 23 01.8**	**-2.3**
PMRV				A	A	20 23 09.1	
	comp=E,4.7nm,0.6s						
PMRV	**Marv??o**	**4.82**	**328**	P	**Pn**	**20 22 08.7**	**+0.9**
PMRV				S	**Sn**	**20 23 01.8**	**-2.3**
	comp=E,4.7nm,0.6s						
PMRV	**Marv??o**	**4.82**	**328**	P	**Pn**	**20 22 08.7**	**+0.9**
PMRV				S	**Sn**	**20 23 01.8**	**-2.3**
	comp=E,4.7nm,0.6s						
EPLA	**Plasencia**	**4.93**	**342**	P	**Pn**	**20 22 09.3**	**0.0**
	comp=E,0.7nm,0.2s,SNR=7.1						
EPLA				S	**Sn**	**20 23 04.5**	**-2.3**
	comp=E,0.7nm,0.1s						
EPLA	**Plasencia**	**4.93**	**342**	P	**Pn**	**20 22 09.3**	**0.0**
	comp=E,0.7nm,0.2s,SNR=7.1						
EPLA				S	**Sn**	**20 23 04.5**	**-2.3**
	comp=E,0.7nm,0.1s						
PMTG	**Montargil**	**4.95**	**319**	*e*Pn	**Pn**	**20 22 10.3**	**+0.8**
PMTG				*e*Sn	**Sn**	**20 23 04.3**	**-2.9**
PMTG				A	A	20 23 09.1	
	comp=E,4.5nm,0.3s						
PMTG	**Montargil**	**4.95**	**319**	*e*Pn	**Pn**	**20 22 10.3**	**+0.8**
PMTG				*e*Sn	**Sn**	**20 23 04.3**	**-2.9**
	comp=E,4.5nm,0.3s						
PCBR	**Castelo Branco**	**5.20**	**330**	*e*Pn	**Pn**	**20 22 14.2**	**+1.2**
PCBR				*e*Sn	**Sn**	**20 23 11.5**	**-1.9**
PCBR	**Castelo Branco**	**5.20**	**330**	P	**Pn**	**20 22 14.2**	**+1.2**
PCBR				S	**Sn**	**20 23 11.5**	**-1.9**
PCBR	**Castelo Branco**	**5.20**	**330**	P	**Pn**	**20 22 14.2**	**+1.2**
PCBR				S	**Sn**	**20 23 11.5**	**-1.9**
GUD	**Guadarrama**	**5.24**	**359**	P	**Pn**	**20 22 14.6**	**+1.0**
	comp=E,0.5nm,0.2s,SNR=7.9						
GUD				S	**Sn**	**20 23 14.3**	**-0.3**
	comp=E,0.1nm,0.1s,SNR=7.9						
GUD	**Guadarrama**	**5.24**	**359**	P	**Pn**	**20 22 14.6**	**+1.0**
	comp=E,0.5nm,0.2s,SNR=7.9						
GUD				S	**Sn**	**20 23 14.3**	**

ECAL			S	Sn	20 23 52.6	-1.9
	comp=E,0.2nm,0.1s,SNR=7.9					
ETOS	**Mallorca**	**6.99 49**	P	**Pn**	20 22 36.3	-1.2
	comp=E,0.9nm,0.4s,SNR=7.9					
ETOS			S	Sn	20 23 52.9	-4.4
	comp=E,0.3nm,0.2s,SNR=7.9					
ELOB	**Lobios**	**7.18 335**	P	**Pn**	20 22 40.9	+0.6
	comp=E,0.3nm,0.3s,SNR=7.9					
ELOB			S	Sn	20 23 57.9	-4.4
	comp=E,0.3nm,0.1s,SNR=7.9					
ELOB	**Lobios**	**7.18 335**	P	**Pn**	20 22 40.9	+0.6
	comp=E,0.3nm,0.3s,SNR=7.9					
ELAN	**Lanestosa**	**7.84 3**	P	**Pn**	20 22 50.6	+1.4
	comp=E,0.3nm,0.2s,SNR=7.9					
ELAN	**Lanestosa**	**7.84 3**	P	**Pn**	20 22 50.6	+1.4
	comp=E,0.3nm,0.2s,SNR=7.9					
EARI	**Arriondas**	**7.95 354**	P	**Pn**	20 22 51.8	+1.1
	comp=E,0.2nm,0.3s,SNR=7.9					
EARI			S	Sn	20 24 15.6	-5.5
	comp=E,0.5nm,0.4s,SNR=7.9					
EARI	**Arriondas**	**7.95 354**	P	**Pn**	20 22 51.8	+1.1
	comp=E,0.2nm,0.3s,SNR=7.9					
CSOR	**Sort**	**8.06 29**	P	**Pn**	20 22 53.6	+1.3
	comp=E,0.4nm,0.3s,SNR=7.9					
CSOR	**Sort**	**8.06 29**	P	**Pn**	20 22 53.6	+1.3
	comp=E,0.4nm,0.3s,SNR=7.9					
EALK	**Alkurruntz**	**8.06 13**	P	**Pn**	20 22 54.0	+1.7
	comp=E,2.3nm,0.3s,SNR=7.0					
EALK			S	Sn	20 24 18.5	-5.4
	comp=E,0.7nm,0.4s,SNR=7.9					
EALK	**Alkurruntz**	**8.06 13**	P	**Pn**	20 22 54.0	+1.7
	comp=E,2.3nm,0.3s,SNR=7.0					
EPON	**Pontenova**	**8.28 344**	P	**Pn**	20 22 56.8	+1.6
	comp=E,0.4nm,0.2s,SNR=7.9					
EPON			S	Sn	20 24 23.4	-5.7
	comp=E,0.3nm,0.2s,SNR=7.9					
EPON	**Pontenova**	**8.28 344**	P	**Pn**	20 22 56.8	+1.6
	comp=E,0.4nm,0.2s,SNR=7.9					
TORD	**Torodi Ar. Bea**	**22.75 165**	P	**P**	20 25 57.6	0.0
	comp=E,1.4nm,1.0s,baz=341,slow=10,SNR=8.0					
KURBB	**Kurchatov Arra**	**59.23 47**	P	**P**	20 30 59.5	+2.9
	comp=E,0.2nm,0.3s,baz=293,slow=8.0,SNR=2.9					
YKA	**Yellowknife Ar**	**67.82 332**	P	**P**	20 31 54.0	+0.8
	comp=E,0.1nm,0.4s,baz=60,slow=6.5,SNR=2.7					

ISCJB ***04*** *20:26:46.5±0.4, 4°.18S±0°.05×122°.86E±0°.05, h10km, mb4.1/9, MS3.9/7, Error ellipse: s-maj=7.2km s-min=6.8km az=9.8*
IDC ***04*** *20:26:46.4±0.9, 4°.12S×122°.87E, h0km, mb4.0/7, mb1 4.2/10, mb1mx3.8/45, mbtmp4.0/10, ML3.8/3, MS3.5/9, Ms1 3.5/9, ms1mx3.2/47, Error ellipse: s-maj=28.6km s-min=16.3km az=59.0*
NEIC ***04*** *20:26:47.4±4.1, 4°.14S×122°.79E, h6km±28km, mb4.0/3, Error ellipse: s-maj=12.5km s-min=8.2km az=63.0*
DJA ***04*** *20:26:50.3±0.5, 4°.5S±6°×12°.3E±°, h10km, M4.4/2, MLv4.4/2*
ISC 04 20:26:48.0±0.6, 4°.21S±0°.05×122°.82E±0°.06, h10km, n31, σ1♀43/27, mb4.1/9, MS3.8/7, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSSI	**Bau Bau, Buton**	**3.01**	**230**	P	**Pb**	20 27 38.8	-2.9
SPSI	**Sidrap Palu**	**3.05**	**274**	P	**Pn**	20 27 36.9	+0.6
LUWI	**Luwuk**	**3.15**	**359**	P	**Pn**	20 27 36.5	-1.2
LUWI	**Luwuk**	**3.15**	**359**	*e*Pn	**Pn**	20 27 36.0	-1.7
KAPI	**Kappang**	**3.16**	**255**	Pn	**Pn**	20 27 38.1	+0.3
	28nm,0.3s,baz=115,slow=5.7,SNR=151						
KAPI				Sn	**Sn**	20 28 17.1	+1.5
	23nm,0.3s,baz=56,slow=21,SNR=9.5						
KAPI				LR	LR	20 28 36.6	
	comp=Z,244nm,18.6s,baz=90,slow=34						
KAPI	**Kappang**	**3.16**	**255**	*e*Pn	**Pn**	20 27 37.5	-0.3
KAPI				Sn	**Sn**	20 28 17.1	+1.5
SANI	**Sanana**	**3.83**	**56**	P	**Pn**	20 27 48.6	+1.6
MMRI	**Maumere**	**4.44**	**187**	P	**Pb**	20 28 06.2	+0.1
MMRI	**Maumere**	**4.44**	**187**	*e*Pn	Pn	20 27 50.7	-4.7
MRSI	**Marisa**	**4.74**	**349**	P	**Pn**	20 27 59.7	+0.2
SOEI	**Soe**	**5.70**	**165**	P	**Pg**	20 28 34.9	-2.3
SOEI	**Soe**	**5.70**	**165**	P	**Pn**	20 28 14.7	+1.8
	40nm,0.8s						
LBMI	**Labuha**	**5.87**	**53**	P	**Pn**	20 28 17.8	+2.6
FAKI	**Fak Fak**	**9.50**	**83**	*e*P	**Pn**	20 29 05.7	+0.6
	8.7nm,0.5s						
FITZ	**Fitzroy Crossi**	**14.08**	**169**	Pn	**Pn**	20 30 07.5	-0.2
	0.2nm,0.3s,baz=20,slow=8.3,SNR=5.0						
FITZ				LR	LR	20 35 17.0	
	comp=Z,86nm,19.3s,baz=346,slow=36						
LEM	**Lembang**	**15.35**	**260**	LR	LR	20 36 52.8	
	comp=Z,154nm,21.0s,baz=124,slow=39						
WRAB	**Tennant Creek**	**19.25**	**145**	*e*P	**P**	20 31 13.1	+0.3
	5.8nm,0.9s						
WRA	**Warramunga Arr**	**19.25**	**145**	P	**P**	20 31 13.5	+0.6
	0.3nm,0.3s,baz=316,slow=14,SNR=20						
ASAR	**Alice Springs**	**22.11**	**152**	P	**P**	20 31 45.2	+1.4
	8.5nm,0.8s,baz=346,slow=17,SNR=29						
ASAR				LR	LR	20 39 43.6	
	comp=Z,75nm,21.3s,baz=97,slow=35						
CMAR	**Chiang Mai Arr**	**32.57**	**314**	P	**P**	20 33 19.8	0.0
	0.8nm,0.3s,baz=140,slow=7.9,SNR=7.6						
CMAR				LR	LR	20 48 09.5	
	comp=Z,3μm,20.4s,baz=313,slow=39						
STKA	**Stephens Creek**	**32.69**	**150**	P	**P**	20 33 19.9	-0.8
	1.5nm,0.7s,baz=324,slow=10.0,SNR=5.2						
STKA				LR	LR	20 47 16.7	
	comp=Z,60nm,18.7s,baz=205,slow=38						
DZM	**Mont Dzumac**	**45.83**	**117**	LR	LR	20 56 30.3	
	comp=Z,62nm,18.6s,baz=108,slow=39						
USRK	**Ussuriysk Ar.**	**48.89**	**9**	P	**P**	20 35 33.4	-0.6
	1.9nm,0.7s,baz=136,slow=44,SNR=5.1						
MKAR	**Makanchi Array**	**62.10**	**330**	P	**P**	20 37 08.3	-0.9
	0.8nm,0.8s,baz=131,slow=7.7,SNR=6.0						
AFI	**Afiamalu**	**65.14**	**103**	LR	LR	21 07 07.8	
	comp=Z,56nm,18.3s,baz=27,slow=37						
ZALV	**Zalesovo Beam**	**66.06**	**337**	P	**P**	20 37 33.0	-1.9
	1.3nm,0.9s,baz=178,slow=3.7,SNR=4.8						
KURK	**Kurchatov**	**66.53**	**331**	*e*P	**P**	20 37 38.5	+0.5
	8.1nm,1.2s						
GEYT	**Alibeck**	**73.00**	**312**	P	**P**	20 38 20.2	+1.9
	1.7nm,0.8s,baz=252,slow=0.9,SNR=4.6						
ABKAR	**Akbulak array**	**75.94**	**323**	*e*P	**P**	20 38 35.8	+0.7
	0.6nm,0.6s						
VNDA	**Vanda**	**76.13**	**172**	LR	LR	21 13 15.1	
	comp=Z,125nm,18.2s,baz=146,slow=37						
BRTR	**Keskin Array B**	**92.03**	**310**	LR	LR	21 27 04.7	
	comp=Z,61nm,21.6s,baz=104,slow=39						

IDC ***04*** *20:29:21.9±9.2, 32°.07S×179°.21W, h100km±87km, mb3.5/2, mb1 3.7/3, mb1mx3.3/36, mbtmp3.9/3, ML3.8/1, Error ellipse: s-maj=73.8km s-min=51.6km az=173.0*
ISC 04 20:29:24.8±2.1, 32°.1S±0°.1×180°.0W±0°.3, h100km, n29, σ2♀18/33, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WMGZ	**Waiomatatini S**	**5.86**	**193**	PN	**Pn**	20 30 49.7	+0.5
WMGZ				SN	**Sn**	20 31 55.3	+0.3
HAZ	**Te Kaha**	**5.95**	**198**	PN	**Pn**	20 30 51.1	+0.8
PKGZ	**Pakihiroa**	**6.00**	**195**	PN	**Pn**	20 30 52.0	+0.9
PUZ	**Puketiti**	**6.14**	**193**	PN	**Pn**	20 30 53.4	+0.5
PUZ				SN	**Sn**	20 32 02.9	+1.2
TWGZ	**Tauwhareparae**	**6.30**	**195**	PN	**Pn**	20 30 56.5	+1.4
MWZ	**Matawai**	**6.56**	**198**	PN	**Pn**	20 30 59.8	+1.2
TKGZ	**Te Karaka**	**6.58**	**195**	PN	**Pn**	20 30 59.7	+0.8
TKGZ				SN	**Sn**	20 32 14.3	+1.9
URZ	**Urewera**	**6.60**	**201**	P	**Pn**	20 31 00.2	+1.0
	1.8nm,0.3s,baz=288,slow=3.5,SNR=27						
URZ				S	**Sn**	20 32 16.8	+3.9
	2.6nm,0.3s,baz=181,slow=20,SNR=9.3						
RAGZ	**Rawiri**	**6.74**	**198**	PN	**Pn**	20 31 02.0	+0.8
RIGZ	**Rimuhau**	**6.85**	**195**	PN	**Pn**	20 31 02.0	-0.7
MUGZ	**Murupara**	**6.91**	**202**	PN	**Pn**	20 31 04.2	+0.8
PRGZ	**Paritu Road**	**7.04**	**194**	PN	**Pn**	20 31 05.7	+0.5
KNZ	**Kokohu**	**7.17**	**195**	PN	**Pn**	20 31 06.4	-0.6
MHGZ	**Mahia Peninsul**	**7.25**	**193**	PN	**Pn**	20 31 08.5	+0.5
NMHZ	**Naumai**	**7.47**	**200**	PN	**Pn**	20 31 11.1	+0.1
ARHZ	**Aropaoanui**	**7.57**	**198**	PN	**Pn**	20 31 11.8	-0.6
KWHZ	**Kawekа Forest**	**7.88**	**201**	PN	**Pn**	20 31 15.7	-1.0
WNVZ	**Wahianoa**	**8.07**	**205**	PN	**Pn**	20 31 20.1	+0.7
KAHZ	**Kahuranaki**	**8.10**	**198**	PN	**Pn**	20 31 16.6	-3.0
PXZ	**Pawanui**	**8.33**	**197**	PN	**Pn**	20 31 19.1	-3.6
PNHZ	**Pukenui**	**8.40**	**201**	PN	**Pn**	20 31 21.1	-2.6
MRZ	**Mangatainoka R**	**9.27**	**202**	PN	**Pn**	20 31 32.1	-3.4
MRZ				SN	**Sn**	20 33 14.7	-3.3
HOWZ	**Holdsworth Sta**	**9.51**	**201**	PN	Pn	20 31 34.2	-4.6
MTW	**Mount Morrison**	**9.75**	**201**	PN	**Pn**	20 31 37.7	-4.3
TCW	**Tory Channel**	**10.21**	**205**	PN	**Pn**	20 31 44.3	-3.9
TUWZ	**Tuamarina**	**10.52**	**206**	PN	**Pn**	20 31 48.7	-3.7
ASAR	**Alice Springs**	**41.39**	**270**	P	**P**	20 37 03.5	+2.0
	0.6nm,0.5s,baz=107,slow=7.5,SNR=14						
WRA	**Warramunga Arr**	**42.54**	**275**	P	**P**	20 37 12.6	+1.8
	0.5nm,0.3s,baz=112,slow=8.1,SNR=21						
FINES	**FINESS Array B**	**146.12**	**338**	PKPbc	**PKPdf**	20 48 49.3	-2.1
	1.0nm,0.6s,baz=50,slow=3.0,SNR=11						

CRAAG 04 20:34:43.0, 35°.15N×4°.44E, Ml3.6, Northern Algeria

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ATAF	**Djebel Tarf**	**0.73**	**350**	P	Pg	20 34 56.7	-0.3
ADJB	**Djebel Djouab**	**1.29**	**321**	P	Pg	20 35 07.1	-0.7
SET	**Setif**	**1.30**	**37**	P	Pn	20 35 09.0	+0.4

IDC 04 20:36:53.0±1.7, 1°.84N×124°.68E, h0km, mb3.4/4, mb1 3.6/4, mb1mx3.3/42, mbtmp3.4/4, Error ellipse: s-maj=190.8km s-min=23.3km az=63.0, Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**23.63**	**157**	P	P	20 42 05.8	-0.3
	0.7nm,0.7s,baz=334,slow=11,SNR=10.0						
ASAR	**Alice Springs**	**26.89**	**161**	P	P	20 42 37.7	+1.8
	0.1nm,0.4s,baz=347,slow=12,SNR=3.5						
STKA	**Stephens Creek**	**37.17**	**156**	P	P	20 44 04.1	-1.9
	1.4nm,0.8s,baz=338,slow=14,SNR=2.9						
MKAR	**Makanchi Array**	**57.97**	**327**	P	P	20 46 47.3	-0.2
	0.1nm,0.3s,baz=111,slow=8.2,SNR=3.1						

DJA 04 20:42:16.2±1.9, 10°S±7°×11°8E±1°4, h20km±41km, M3.5/4, MLv3.5/4, South of Sumbawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLAI	**Plampang**	**1.46**	**5**	P	Pn	20 42 40.6	-0.8
PLAI				S	Sn	20 42 59.9	-0.1
TWSI	**Taliwang, Sumb**	**1.72**	**333**	P	Pn	20 42 44.9	-0.2
TWSI				S	Sb	20 43 07.5	-0.9
JAGI	**Jajag, Banyuwa**	**3.91**	**297**	P	Pn	20 43 15.5	+0.4
JAGI				S	Sn	20 44 02.3	+1.9
GMJI	**Gumukmas**	**4.62**	**295**	P	Pn	20 43 25.1	+0.2

ISCJB ***04*** *20:43:29.5±1.4, 39°.19N±0°.04×142°.37E±0°.10, h25km±7km, mb3.4/3, Error ellipse: s-maj=12.7km s-min=6.4km az=13.0*
JMA ***04*** *20:43:29.7±0.1, 39°.21N×142°.38E, h33km±1km, M3.3*
IDC ***04*** *20:43:38.1±4.7, 39°.57N×141°.39E, h36km±38km, mb3.1/3, mb1 3.2/5, mb1mx3.0/58, mbtmp3.2/5, ML2.8/2, Error ellipse: s-maj=48.7km s-min=21.7km az=96.0*
ISC 04 20:43:30.2±2.1, 39°.21N±0°.04×142°.30E±0°.10, h16km±10km, n16, σ1♀49/20, mb3.6/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.51**	**255**	P	**Pg**	20 43 41.0	+0.7
OFUJ				S	**Sg**	20 43 48.9	+1.7
MIYJ	**Miyakonagasawa**	**0.52**	**314**	P	**Pg**	20 43 40.8	+0.2
MIYJ				S	**Sg**	20 43 48.5	+0.9
JOM	**Ohasama**	**0.83**	**289**	P	**Pg**	20 43 45.9	-0.4
JOM				S	**Sg**	20 43 57.7	+0.5
JMK	**Ichinoseki**	**0.88**	**253**	P	**Pg**	20 43 46.7	-0.6
JMK				S	**Sg**	20 43 59.2	+0.3
JIO	**Ouri**	**1.06**	**225**	P	**Pb**	20 43 48.4	-1.7
JIO				S	**Sg**	20 44 02.1	-2.5
JKZ	**Kuzumaki**	**1.08**	**316**	P	**Pb**	20 43 49.6	-0.9
JKZ				S	**Sg**	20 44 03.9	-1.3
JRG	**Rokugo**	**1.31**	**279**	S	**Sb**	20 44 12.0	+1.1
JANG	**Nango**	**1.31**	**333**	P	**Pn**	20 43 52.5	-1.3
JANG				S	**Sb**	20 44 09.7	-1.2
MJAR	**Matsushiro Arr**	**4.19**	**232**	Pn	**Pn**	20 44 35.6	+2.2
	0.6nm,0.3s,baz=39,slow=12,SNR=14						
MJAR				Sn	**Sn**	20 45 22.4	+0.3
	baz=338,slow=30,SNR=2.1						
ASAJ	**Asahikawa**	**4.91**	**2**	Pn	**Pn**	20 44 45.8	+2.6
	0.4nm,0.3s,baz=224,slow=6.2,SNR=5.7						
H11N2	**WAKE ISLAND Hy**	**28.75**	**125**	T	T	21 19 45.2	
	SNR=5.2						
H11N1	**WAKE ISLAND Hy**	**28.76**	**125**	T	T	21 19 51.3	
	SNR=5.7						
H11N3	**WAKE ISLAND Hy**	**28.77**	**125**	T	T	21 19 50.9	
	SNR=8.4						
KURBB	**Kurchatov Arra**	**45.25**	**306**	P	**P**	20 51 45.1	-1.3
	0.1nm,0.4s,baz=80,slow=8.8,SNR=3.2						
WRA	**Warramunga Arr**	**59.31**	**189**	P	P	20 53 38.1	+6.9
	0.3nm,0.6s,baz=7.2,slow=7.1,SNR=2.9						
FINES	**FINESS Array B**	**67.22**	**332**	P	**P**	20 54 24.3	+1.2
	0.2nm,0.3s,baz=52,slow=11,SNR=2.3						

DHMR ***04*** *20:45:25.8±1.9, 12°.02N×43°.93E, h9km±13km, ML4.2*
ARO ***04*** *20:45:29.9, 12°N±3°×4°4E±°, h5km±5km, ML3.6*
ISC 04 20:45:26.4±1.7, 12°.06N±0°.06×43°.89E±0°.06, h10km±14km, n13, σ1♀08/20, 2C-1D, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OBO	**Obock**	**0.59**	**263**	*e*P	**Pb**	20 45 39.2	+0.3
MCAD	**Moucha**	**0.74**	**244**	*e*P	**Pb**	20 45 41.9	+0.4
ATA	**Atar**	**0.91**	**228**	*e*P	**Pn**	20 45 44.6	-0.6
TDD	**Tadjoura Ara**	**1.00**	**255**	*e*P	**Pb**	20 45 45.8	0.0
ATD	**Arta Tunnel**	**1.15**	**243**	*e*P	**Pn**	20 45 48.6	-0.1
ATD				*e*S	**Sg**	20 46 03.5	-0.1
TRBA	**At Turbah**	**1.18**	**11**	↑*i*P	**Pg**	20 45 49.3	+0.1
TRBA				*i* S	**Sg**	20 46 05.1	+0.5
ADEN	**Aden**	**1.28**	**56**	↑*i*P	**Pb**	20 45 50.1	-0.5
ADEN				*i* S	**Sn**	20 46 07.4	-0.3
ADEN				AML	AML	20 46 14.9	
	comp=N,6μm,0.3s						
SGH	**Sud-Ghoubbet**	**1.38**	**243**	*e*P	**Pb**	20 45 52.3	-0.1
GBR	**Grand-Bara**	**1.67**	**237**	*e*P	**Pn**	20 45 55.9	0.0
UDYN	**Al 'Udayn**	**1.90**	**2**	↓↓*i*P	**Pn**	20 45 59.8	+0.7
UDYN				*i* S	**Sg**	20 46 27.0	-0.4
BDHA	**Al Bayda'**	**2.50**	**40**	*i* P	**Pn**	20 46 08.9	+1.3
BDHA				*i* S	**Sb**	20 46 42.8	+0.1
DHBB	**Dhamar BB**	**2.54**	**11**	*i* P	**Pb**	20 46 10.3	-2.1
DHBB				*i* S	**Sb**	20 46 45.8	+1.9
HAJJ	**Hajjah**	**3.63**	**356**	*i* P	**Pn**	20 46 24.3	+1.4
HAJJ				*i* S	**Sb**	20 47 12.8	-2.2
HAJJ				AML	AML	20 47 25.1	
	comp=Z,870nm,0.7s						

NIED ***04*** *20:53:00, 37°.10N×141°.40E, h35km, Mw3.6 Best double couple: M0=2.72000×10^14 NP1:φ=176.00000°, δ=30.00000°, λ=135.00000°. NP2:φ=306.00000°, δ=69.00000°, λ=68.00000°.*
JMA 04 20:53:12.1±0.1, 37°.11N×141°.37E, h45km±1km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.46**	**269**	P	Pn	20 53 22.7	+0.1
ONAJ				*i* S	Sn	20 53 29.9	-0.1
JFK	**Kawauchi**	**0.47**	**303**	P	Pn	20 53 22.6	-0.2
JFK				S	Sn	20 53 30.0	-0.3
JHO	**Hitachi**	**0.81**	**232**	P	Pn	20 53 26.9	-0.3
JHO				S	Sn	20 53 37.6	-0.5
JMM	**Marumori**	**0.88**	**329**	P	Pn	20 53 28.0	-0.1
JMM				S	Sn	20 53 39.1	-0.7
JFT	**Otama**	**0.92**	**297**	P	Pn	20 53 29.3	+0.7
JFT				S	Sn	20 53 41.3	+0.6
JIO	**Ouri**	**1.34**	**359**	P	Pn	20 53 34.3	-0.1
JFY	**Yanaizu**	**1.36**	**283**	P	Pn	20 53 35.5	+0.8
JFY				S	Sn	20 53 53.0	+1.4
MAT	**Matsushiro**	**2.60**	**258**	P	Pn	20 53 53.8	+2.1
MAT				S	Sn	20 54 25.6	+3.6

NEIC ***04*** *20:54:15.6, 43°.53S×172°.70E, h7km, ML4.1(WEL), After WEL.*
WEL 04 20:54:15.6±0.1, 43°.53S×172°.71E, h7km, ML4.1/25, 6C-4D, Error ellipse: s-maj=0.6km s-min=0.4km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRLZ	**Canterbury Las**	**0.08**	**232**	↑PG	Pg	20 54 17.5	-0.1
CRLZ				SG	Sg	20 54 19.0	0.0
CRLZ				AML	AML	20 54 19.2	
CRLZ				AML	AML	20 54 19.2	
CRLZ				AML	AML	20 54 19.2	
CRLZ	**Canterbury Las**	**0.08**	**232**	↑Pg	Pg	20 54 17.5	-0.1
MQZ	**McQueen's Vall**	**0.18**	**192**	↑PG	Pg	20 54 19.3	0.0
MQZ				SG	Sg	20 54 22.1	+0.2
MQZ				AML	AML	20 54 22.8	
MQZ	**McQueen's Vall**	**0.18**	**192**	↑Pg	Pg	20 54 19.3	0.0
OXZ	**Oxford**	**0.53**	**292**	↓P*	Pg	20 54 25.8	0.0
OXZ				SG	Sb	20 54 34.0	-0.9
OXZ	**Oxford**	**0.53**	**292**	↓P*	Pg	20 54 25.8	0.0
LTZ	**Lake Taylor**	**0.81**	**337**	↓P*	Pb	20 54 31.6	-0.4
LTZ				AML	AML	20 54 44.4	
LTZ				AML	AML	20 54 44.4	
LTZ	**Lake Taylor**	**0.81**	**337**	↓P*	Pb	20 54 31.6	-0.4
RPZ	**Rata Peaks**	**1.22**	**261**	P*	Pb	20 54 37.6	-1.3
RPZ				AML	AML	20 55 00.1	
RPZ				AML	AML	20 55 02.5	
RPZ	**Rata Peaks**	**1.22**	**261**	P*	Pb	20 54 37.6	-1.3
INZ	**Inchbonnie**	**1.22**	**310**	P*	Pb	20 54 37.9	-1.1
KHZ	**Kahutara**	**1.27**	**29**	P*	Pn	20 54 38.3	-1.3
KHZ	**Kahutara**	**1.27**	**29**	P*	Pn	20 54 38.3	-1.3
WVZ	**Waitaha Valley**	**1.51**	**287**	PN	Pn	20 54 42.7	-0.2
WVZ				AML	AML	20 55 13.2	
WVZ				AML	AML	20 55 14.5	
WVZ	**Waitaha Valley**	**1.51**	**287**	Pn	Pn	20 54 42.7	-0.2
THZ	**Tophouse**	**1.77**	**5**	PN	Pn	20 54 45.4	-1.2
THZ				AML	AML	20 55 12.7	
THZ				AML	AML	20 55 19.5	
THZ	**Tophouse**	**1.77**	**5**	Pn	Pn	20 54 45.4	-1.2
DSZ	**Denniston Nort**	**1.90**	**339**	PN	Pn	20 54 47.7	-0.7
DSZ				AML	AML	20 55 21.1	
DSZ				AML	AML	20 55 22.5	
DSZ				AML	AML	20 55 23.3	
DSZ				AML	AML	20 55 23.4	
DSZ	**Denniston Nort**	**1.90**	**339**	Pn	Pn	20 54 47.8	-0.7
BSWZ	**Blackbirch Sta**	**2.00**	**26**	PN	Pn	20 54 48.7	-1.1
BSWZ				AML	AML	20 55 03.8	
BSWZ				AML	AML	20 55 43.6	
BSWZ	**Blackbirch Sta**	**2.00**	**26**	Pn	Pn	20 54 48.7	-1.1
LBZ	**Lake Benmore**	**2.02**	**244**	↑PN	Pn	20 54 49.1	-0.9
LBZ				AML	AML	20 55 27.0	
LBZ				AML	AML	20 55 27.0	
LBZ				AML	AML	20 55 28.5	
LBZ				AML	AML	20 55 28.5	
LBZ	**Lake Benmore**	**2.02**	**244**	Pn	Pn	20 54 49.1	-0.9
FOZ	**Fox Glacier**	**2.10**	**269**	PN	Pn	20 54 51.5	+0.3
FOZ				AML	AML	20 55 33.0	
FOZ				AML	AML	20 55 33.0	
FOZ				AML	AML	20 55 34.8	
FOZ				AML	AML	20 55 34.8	
FOZ	**Fox Glacier**	**2.10**	**269**	Pn	Pn	20 54 51.5	+0.3
ODZ	**Otahua Downs**	**2.12**	**224**	↑PN	Pn	20 54 49.9	-1.5
ODZ				AML	AML	20 55 23.3	
ODZ				AML	AML	20 55 23.3	
ODZ				AML	AML	20 55 33.4	
ODZ				AML	AML	20 55 33.4	
ODZ	**Otahua Downs**	**2.12**	**224**	Pn	Pn	20 54 50.0	-1.5
TUWZ	**Tuamarina**	**2.29**	**24**	PN	Pn	20 54 52.5	-1.2
TUWZ				AML	AML	20 55 54.4	
TUWZ				AML	AML	20 55 54.5	
TUWZ	**Tuamarina**	**2.29**	**24**	Pn	Pn	20 54 52.5	-1.2
NNZ	**Nelson**	**2.36**	**12**	AML	AML	20 55 42.1	
NNZ				AML	AML	20 55 46.5	
TCW	**Tory Channel**	**2.59**	**27**	PN	Pn	20 54 56.6	-1.2
TCW				AML	AML	20 55 48.5	
TCW	**Tory Channel**	**2.59**	**27**	Pn	Pn	20 54 56.6	-1.2
QRZ	**Quartz Range**	**2.70**	**357**	PN	Pn	20 54 58.7	-0.7
QRZ				AML	AML	20 55 48.6	
QRZ				AML	AML	20 55 48.6	
QRZ				AML	AML	20 55 50.6	
QRZ				AML	AML	20 55 50.6	
QRZ	**Quartz Range**	**2.70**	**357**	Pn	Pn	20 54 58.7	-0.7
PLWZ	**Palliser**	**2.71**	**45**	PN	Pn	20 54 57.7	-1.8
PLWZ	**Palliser**	**2.71**	**45**	Pn	Pn	20 54 57.8	-1.8
HHSZ	**Highcliff Hill**	**2.80**	**212**	PN	Pn	20 54 59.2	-1.5
HHSZ	**Highcliff Hill**	**2.80**	**212**	Pn	Pn	20 54 59.2	-1.5
DUWZ	**D'Urville Isla**	**2.87**	**19**	PN	Pn	20 55 01.8	+0.1
DUWZ				AML	AML	20 56 01.5	
DUWZ				AML	AML	20 56 15.8	
DUWZ	**D'Urville Isla**	**2.87**	**19**	Pn	Pn	20 55 01.8	+0.1
JCZ	**Jackson Bay**	**2.89**	**258**	PN	Pn	20 55 01.2	-0.9
JCZ				AML	AML	20 55 58.8	
JCZ			

comp=E,11μm,0.4s
SMLA Simla 2.94 289 *e*P Pn 20 58 05.6 +1.9
SMLA *e*S **Sn 20 58 40.1 +1.8**
SMLA IAML 20 58 51.9
comp=N,5μm,0.6s
SMLA IAML 20 58 52.4
comp=E,4μm,0.2s
PYUN Piuthan 3.08 132 *e*Pn Pn 20 58 07.7 +1.9
PYUN Piuthan 3.08 132 *e*Pn Pn 20 58 07.8 +1.9
PYUN *e*Sn **Sn 20 58 44.8 +2.6**
comp=E,2μm,0.6s
KKR Kurukshetra 3.12 266 *e*P Pn 20 58 08.0 +1.7
BHGR Bahadurgarh 3.39 244 *e*P Pn 20 58 12.7 +2.8
RTK Rohtak 3.68 252 *e*P Pn 20 58 14.9 +1.1
KOLN Koldanda 3.71 130 *e*Pn Pn 20 58 17.0 +2.6
JWA Jwalamukhi 3.87 296 *e*x Pn 20 58 19.0 +2.6
JWA *e*x Pg 20 58 28.0
KUDL Kundal 4.00 240 *e*P Pn 20 58 18.6 +0.3
KUDL *e*S **Sn 20 59 05.0 +0.4**
DHRM DHARAMSHALA 4.07 301 *e*P Pn 20 58 20.5 +1.1
DHRM *e*S **Sn 20 59 05.9 -0.5**
DHRM IAML 20 59 28.2
comp=N,2μm,1.0s
DHRM IAML 20 59 34.5
comp=E,2μm,1.0s
PONG Pong 4.20 295 *e*P Pn 20 58 22.0 +1.0
PONG *e*S **Sn 20 59 11.0 +1.6**
GKN Gorkha 4.30 120 *e*Pn Pn 20 58 24.2 +1.6
KHET Khetri 4.56 243 *e*P Pn 20 58 26.4 +0.4
KHET *e*S **Sn 20 59 17.9 -0.4**
DMN Daman 4.86 121 *e*Pn Pn 20 58 32.2 +1.8
KKN Kakani 4.90 118 *e*Pn Pn 20 58 32.0 +1.2
KKN *e*Sn **Sn 20 59 28.5 +1.6**
comp=E,548nm,0.4s
PKIN Phulchoki 5.10 120 *e*Pn Pn 20 58 35.5 +1.9
PKIN *e*Sn **Sn 20 59 33.3 +1.4**
comp=E,352nm,0.3s
GUN Gumba 5.31 114 *e*Pn Pn 20 58 37.5 +1.0
GUN *e*Sn **Sn 20 59 38.1 +0.9**
comp=E,727nm,0.5s
SARP Sargodha 6.86 286 P Pn 20 58 56.8 -0.7
CHCP Chirah Chowk 6.98 301 P Pn 20 58 59.6 +0.4
BHPL Bhopal 7.44 202 *e*P Pn 20 59 05.3 -0.3
BHPL *e*S **Sn 21 00 26.6 -2.8**
BHPL IAML 21 01 19.4
comp=N,620nm,1.3s
BHPL IAML 21 01 19.7
comp=E,671nm,1.2s
THW Thamme Wali 7.84 291 P Pn 20 59 09.9 -1.1
THW S **Sn 21 00 36.0 -3.0**
BOK Bokaro 8.04 141 *e*P Pn 20 59 13.7 -0.2
BOK *e*S **Sn 21 00 39.7 -4.4**
CEP Cherat 8.07 299 P Pn 20 59 13.3 -1.0
LSA Lhasa 9.33 90 P Pn 20 59 33.8 +1.9
LSA S **Sn 21 01 15.3 -1.0**
LSA smax smax
comp=E,47nm,0.9s
LSA smax smax
comp=E,89nm,1.0s
LSA Lhasa 9.33 90 *e*P Pn 20 59 33.4 +1.5
LSA *e* 21 01 14.9
LSA pmax pmax
comp=Z,46nm,0.7s
LSA Lhasa 9.33 90 *e*Pn Pn 20 59 33.4 +1.5
comp=Z,46nm,0.7s
LSA *e*Sn **Sn 21 01 14.9 -1.4**
KBL Kabul 10.54 297 P Pn 20 59 46.8 -1.4
SHL Shillong 11.15 112 *e*P Pn 20 59 56.5 -0.1
SHL *e*S **Sn 21 01 52.5 -8.2**
SFK Sufi-Kurgan 11.29 332 ⇑Pn Pn 20 59 57.7 -0.8
comp=Z,10nm,0.4s
SFK ⇑Sn **Sn 21 01 59.4 -4.6**
comp=Z,174nm,1.0s
SFK Sufi-Kurgan 11.29 332 *i* P Pn 20 59 57.7 -0.8
SFK pmax pmax
comp=Z,11nm,0.4s
RPR Rampur 11.35 185 *e*Pn Pn 20 59 57.5 -1.7
RPR IAmb IAmb 21 00 05.2
comp=Z,46nm,0.7s
RPR Sn **Sn 21 02 00.1 -5.3**
RPR IVMs_BB IVMs_BB 21 07 08.3
comp=Z,2μm,4.8s
SRSP Sriramsagar 11.39 190 *e*Pn Pn 20 59 56.9 -2.9
SRSP IAmb IAmb 21 00 07.0
comp=Z,70nm,1.0s
SRSP *e*Sg **Sn 21 02 01.4 -5.0**
SRSP IVMs_BB IVMs_BB 21 04 35.8
comp=Z,2μm,11.4s
CHLP Challavanipeta 12.12 163 *e*Pn Pn 21 00 08.9 -0.8
CHLP IAmb IAmb 21 00 19.9
comp=Z,121nm,1.6s
CHLP Sn **Sn 21 02 18.1 -6.1**
CHLP IVMs_BB IVMs_BB 21 05 45.0
comp=Z,2μm,7.1s
KLRI Killari 12.58 197 *e*Pn Pn 21 00 12.2 -3.9
KLRI IAmb IAmb 21 00 15.0
comp=Z,112nm,0.9s
KLRI Sn Sn 21 02 25.8 -10
KLRI IVMs_BB IVMs_BB 21 06 58.9
comp=Z,2μm,6.0s
VIS Vishakhapatnam 12.72 167 *e*P Pn 21 00 16.3 -1.6
DZET Dzherino 12.82 315 ⇑Pn Pn 21 00 14.9 -4.4
comp=Z,54nm,0.4s
DZET Sn Sn 21 02 28.6 -13
DZET Dzherino 12.82 315 *i* P Pn 21 00 14.9 -4.4
DZET pmax pmax
comp=Z,54nm,0.4s
HYBB Hyderabad (bro 12.85 188 *e*Pn Pn 21 00 17.2 -2.5
HYBB IAmb IAmb 21 00 18.1
comp=Z,55nm,0.5s
HYBB Sn Sn 21 02 32.8 -9.4
HYBB IVMs_BB IVMs_BB 21 05 31.6
comp=Z,2μm,7.7s
HYB Hyderabad 12.86 188 *i* P Pn 21 00 17.0 -2.8
comp=Z,69nm,0.8s
HYB *e* 21 00 29.0
HYB *e*S **Sn 21 02 46.0 +3.8**
HYB Hyderabad 12.86 188 *e*S Sn 21 02 32.6 -10
PVM Polavaram 12.96 175 *e*Pn Pn 21 00 18.1 -3.1
PVM IAmb IAmb 21 00 48.5
comp=Z,32nm,0.8s
PVM Sn Sn 21 02 34.9 -10
PVM IVMs_BB IVMs_BB 21 06 15.9
comp=Z,2μm,7.2s
POO Poona 13.08 209 ⇑*i*P Pn 21 00 18.0 -4.8
comp=Z,3.0nm,1.0s
POO *e*PP **PnPn 21 00 28.0 -2.8**
POO *e*PPP PPP 21 00 35.0
POO *e*LQ LQ 21 02 29.0
POO *i* S Sn 21 02 38.0 -10
POO *i* SS **SnSn 21 02 52.0 -8.1**
POO *i* SSS SSS 21 03 04.0
POO *i* LR LR 21 03 10.0
POO *e*PCP **PcP 21 05 59.5 +4.8**
POO Poona 13.08 209 *e*P Pn 21 00 20.9 -1.9
PDGK Podgornoye 13.11 357 ⇓Pn Pn 21 00 20.7 -2.3
comp=Z,18nm,0.7s
PDGK ⇓Sn **Sn 21 02 43.0 -5.0**
comp=Z,57nm,0.8s
PDGK Podgornoye 13.11 357 *i* P Pn 21 00 19.2 -3.8
PDGK pmax pmax
comp=Z,19nm,0.6s
TKM2 Tokmak 2 13.25 344 ⇑Pn Pn 21 00 24.9 -0.4
comp=Z,13nm,0.8s
TKM2 ⇑Sn Sn 21 02 38.3 -14
comp=Z,19nm,1.0s
TKM2 Tokmak 2 13.25 344 *i* P Pn 21 00 24.8 -0.4
TKM2 pmax pmax
comp=Z,13nm,0.8s
TKM2 Tokmak 2 13.25 344 *e*P Pn 21 00 23.5 -1.8
KNDC Almaty 13.27 349 ⇑P Pn 21 00 24.7 -0.6
AAK Ala-Archa 13.28 341 Pn Pn 21 00 23.6 -2.0
comp=Z,2.3nm,0.3s,baz=177,slow=9.6,SNR=26
AAK Sn **Sn 21 02 48.2 -4.3**
comp=Z,0.7nm,0.3s,baz=17,slow=14,SNR=4.3
AAK Ala-Archa 13.28 341 ⇑Pn Pn 21 00 23.9 -1.6
comp=Z,52nm,1.1s
AAK Sn **Sn 21 02 44.5 -7.9**
comp=Z,35nm,1.0s
AAK Ala-Archa 13.28 341*d i*P Pn 21 00 24.7 -0.8
FRU Bishkek 13.42 341 *e*P Pn 21 00 27.0 -0.4
FRU *e*S **Sn 21 02 55.0 -0.9**
FRU pmax pmax
comp=Z,70nm,1.6s
FRU pmax pmax
comp=N,140nm,2.0s
NJS Nagarjunasagar 13.64 185 *e*Pn Pn 21 00 27.6 -2.9
NJS IAmb IAmb 21 00 31.2
comp=Z,93nm,0.4s
NJS Sn **Sn 21 02 52.7 -8.6**
NJS IVMs_BB IVMs_BB 21 05 56.7
comp=Z,2μm,11.0s
MNAS Manas 13.80 335 ⇓Pn Pn 21 00 28.8 -3.8
comp=Z,8.8nm,0.5s
MNAS ⇓Sn **Sn 21 02 57.0 -8.2**
comp=Z,21nm,0.7s
MNAS Manas 13.80 335 *i* P Pn 21 00 28.8 -3.8
MNAS pmax pmax
comp=Z,9.0nm,0.5s
SRLM Srisailam 14.12 186 *e*Pn Pn 21 00 33.7 -3.4
SRLM IAmb IAmb 21 00 46.1
comp=Z,73nm,0.8s
SRLM Sn Sn 21 03 03.4 -10
SRLM IVMs_BB IVMs_BB 21 06 12.0
comp=Z,2μm,10.6s
ADKI Addanki 14.31 182 *e*Pn Pn 21 00 36.7 -2.9
ADKI IAmb IAmb 21 00 45.3
comp=Z,26nm,0.7s
ADKI Sn **Sn 21 03 10.0 -7.7**
ADKI IVMs_BB IVMs_BB 21 07 43.4
comp=Z,2μm,5.9s
RCLA Racherla 14.75 186 *e*Pn Pn 21 00 41.4 -4.3
RCLA IAmb IAmb 21 00 56.7
comp=Z,20nm,0.8s
RCLA Sn Sn 21 03 18.4 -10
RCLA IVMs_BB IVMs_BB 21 06 38.7
comp=Z,2μm,9.4s
WMQ Urumqi 14.76 21 P Pn 21 00 45.3 -0.4
WMQ pP P 21 00 52.7 +1.1
WMQ sP 21 00 57.7
WMQ S **Sn 21 03 24.0 -4.6**
WMQ sS S 21 03 36.4 -10
WMQ SS **SnSn 21 03 41.4 0.0**
WMQ pmax pmax
comp=Z,180nm,3.6s
WMQ LR LR
comp=Z,360nm,5.6s
WMQ LR LR
comp=Z,2μm,6.7s
WMQ LR LR
comp=Z,830nm,11.8s
GOA Goa 15.86 204 *e*P Pn 21 00 58.5 -1.7
GOA *e*S Sn 21 03 41.8 -14
SKHT Srikalahasti 16.41 182 *e*Pn Pn 21 01 07.3 +0.1
SKHT IAmb IAmb 21 01 11.8
comp=Z,25nm,1.0s
SKHT Sn **Sn 21 03 59.8 -9.0**
SKHT IVMs_BB IVMs_BB 21 08 03.5
comp=Z,1μm,9.7s
MK31 Makanchi Array 16.62 5 ⇑P P 21 01 11.4 -0.7
comp=Z,20nm,0.6s,baz=187,slow=12,SNR=16
MK31 ⇓S **Sn 21 04 05.6 -7.9**
comp=Z,19nm,1.1s,baz=186,slow=23,SNR=3.5
MK31 Makanchi Array 16.62 5 *i* P P 21 01 11.4 -0.7
MK31 pmax pmax
comp=Z,20nm,0.6s
MKAR Makanchi Array 16.62 5 Pn Pn 21 01 06.8 -2.9
comp=Z,0.5nm,0.3s,baz=196,slow=13,SNR=37
MKAR Sn **Sn 21 04 07.9 -5.7**
comp=Z,0.3nm,0.3s,baz=168,slow=23,SNR=7.8
MKAR LR LR 21 08 22.7
comp=Z,884nm,18.2s,baz=188,slow=40
GTA Gaotai 18.35 55 *e*P Pn 21 01 31.2 -0.3
GTA pP sP 21 01 39.2 -1.6
GTA sP pP 21 01 43.8 +6.0
GTA S **Sn 21 04 50.7 -5.1**
GTA sS S 21 05 03.4 +3.4
GTA pmax pmax
comp=Z,100nm,4.3s
GTA LR LR
comp=Z,2μm,13.3s
GTA LR LR
comp=Z,750nm,18.5s
OTUK Ortayu 19.04 343 ⇓P P 21 01 36.7 -2.1
comp=Z,14nm,0.9s
OTUK Ortayu 19.04 343 *i* P P 21 01 36.7 -2.1
OTUK pmax pmax
comp=Z,19nm,1.1s
CMAI Chiengmai2 19.71 117 P Pn 21 01 47.7 -0.3
comp=Z,58nm,0.7s,comp=Z,7μm
MHMT Maesarieng 19.94 123 P Pn 21 01 51.6 +1.0
comp=Z,16nm,0.8s,comp=Z,207nm
GEYT Alibeck 19.98 299 P P 21 01 49.2 +0.1
comp=Z,0.6nm,0.3s,baz=113,slow=11,SNR=36
GEYT S **S 21 05 29.3 -3.5**
comp=Z,0.1nm,0.3s,baz=317,slow=55,SNR=2.5
GEYT LR LR 21 10 43.4
comp=Z,884nm,18.8s,baz=115,slow=40
CHTO Chiang Mai 20.29 120 P Pn 21 01 54.5 -0.2
comp=Z,92nm,0.9s
CHTO Chiang Mai 20.29 120 *e*P P 21 01 53.0 +0.3
CHTO pmax pmax
comp=Z,14nm,0.8s
CHTO Chiang Mai 20.29 120 *e*P P 21 01 53.0 +0.3
comp=Z,14nm,0.8s
CHTO Sn Sn 21 05 46.7 +3.9
CMMT Chiang Mai 20.30 120 P Pn 21 01 54.4 -0.4
comp=Z,21nm,0.8s
KMI Kunming 20.40 99 P Pn 21 01 55.6 -0.6
KMI S **S 21 05 36.0 -5.8**
KMI pmax pmax
comp=Z,27nm,1.1s
KMI pmax pmax
comp=Z,160nm,5.5s
KMI LR LR
comp=Z,520nm,18.2s
KMI LR LR
comp=Z,470nm,18.2s
KURBB Kurchatov Arra 20.43 357 P P 21 01 52.9 -1.0
comp=Z,27nm,0.8s,baz=144,slow=7.1,SNR=91
KURBB S **S 21 05 42.6 +1.0**
comp=Z,1.6nm,1.0s,baz=185,slow=21,SNR=5.3
LZH Lanzhou 20.45 67 *e*P Pn 21 01 56.2 -0.4
LZH pP sP 21 02 05.8 +2.0
LZH sP pP 21 02 10.2 +9.4
LZH PP **PnPn 21 02 16.3 +4.5**
LZH *e*S **S 21 05 35.0 -7.5**
LZH sS Sn 21 05 48.0 +1.4
LZH SS **SnSn 21 06 07.2 +6.0**
LZH pmax pmax
comp=Z,54nm,1.3s
LZH pmax pmax
comp=Z,170nm,4.1s
LZH LR LR
comp=Z,3μm,12.5s
LZH LR LR
comp=Z,730nm,12.7s
LZH LR LR
comp=Z,2μm,13.2s
CMAR Chiang Mai Arr 20.51 121 P P 21 01 55.8 +0.8
comp=Z,10nm,0.8s,baz=308,slow=10.0,SNR=63
KURK Kurchatov 20.52 357 ⇓P P 21 01 53.0 -1.8
comp=Z,141nm,0.9s
KURK Kurchatov 20.52 357 P P 21 01 52.9 -2.0
KURK S **S 21 05 42.6 -0.7**
KURK pmax pmax
comp=Z,14nm,0.6s
KURK smax smax
comp=N,2.0nm,1.0s
KURK Kurchatov 20.52 357 P P 21 01 52.9 -2.0
KURK *e*P Pn 21 01 53.0 -4.1
KURK S **S 21 05 42.6 -0.7**
CRAI Chiangrai 20.59 114 P Pn 21 01 58.5 +0.4
comp=N,128nm,1.1s,comp=N,49μm
WSAR Wadi Sarin 20.64 256 P Pn 21 01 58.8 0.0
comp=N,6.9nm,0.7s,baz=111,slow=5.7,SNR=6.6
WSAR LR LR 21 11 42.7
comp=N,297nm,19.5s,baz=95,slow=42
LAMP Lampang 20.99 119 P P 21 02 04.2 +4.0
comp=N,13nm,1.1s,comp=N,107nm
SUKH Sukhothai 21.63 122 P P 21 02 08.4 +1.4
comp=N,6.0nm,1.0s,comp=N,46nm
NANT Nan 21.64 117 P P 21 02 08.7 +1.5
comp=N,8.0nm,1.0s,comp=N,76nm
BANOM Banah 21.69 265 P P 21 02 11.4 +3.7
UTTA Uttaradit 22.15 120 P P 21 02 15.2 +2.5
comp=N,14nm,1.4s,comp=N,122nm
HATD Hatta, Dubai 22.18 262 P P 21 02 17.0 +4.1
ASHO Ashiyiah 22.29 262 *i* P P 21 02 18.8 +4.6
SNR=5.2
FAQ Al Faqa, Dubai 22.67 262 P P 21 02 21.4 +3.3
LOEI Loei 22.83 119 P P 21 02 23.8 +3.8
comp=N,34nm,0.9s,comp=N,4μm
SRDT SRDT 23.37 128 P P 21 02 28.2 +2.8
comp=N,147nm,1.0s
VOSK Vostochnaya 23.53 346 ⇓P P 21 02 25.5 -1.2
comp=N,17nm,0.8s
VOSK Vostochnaya 23.53 346 *i* P P 21 02 25.5 -1.2
VOSK pmax pmax
comp=Z,17nm,0.8s
ZALV Zalesovo Beam 23.93 6 P P 21 02 29.8 -0.6
comp=Z,8.8nm,0.5s,baz=200,slow=9.0,SNR=32
ZALV LR LR 21 13 05.8
comp=Z,612nm,20.7s,baz=217,slow=40
ZALV Zalesovo Beam 23.93 6 *i* P P 21 02 29.7 -0.8
ZALV pmax pmax
comp=Z,9.0nm,0.5s
BVA0 Borovoye Array 23.94 345 P P 21 02 29.5 -1.1
comp=Z,17nm,1.1s,baz=160,slow=9.6,SNR=48
BVAR Borovoye Array 23.94 345 P P 21 02 30.3 -0.3
comp=Z,6.0nm,0.6s,baz=156,slow=11,SNR=26
NONG Nongkai 23.96 115 P P 21 02 36.2 +5.1
comp=Z,63nm,0.7s
BRVK Borovoye 24.00 345*c i*P P 21 02 31.5 +0.4
BRVK pmax pmax
comp=Z,23nm,1.2s
BRVK Borovoye 24.00 345 *e*P P 21 02 30.8 -0.4
comp=Z,14nm,0.9s
CHAI Chaiyaphum 24.37 121 P P 21 02 36.4 +1.5
comp=Z,8.3nm,1.3s,comp=Z,81nm
XAN Xi'an 24.41 74 P P 21 02 34.8 -0.4
XAN pP pP 21 02 40.2 -1.8
XAN sP sP 21 02 43.6 -1.3
XAN PP **PnPn 21 03 07.1 +1.2**
XAN S **S 21 06 48.4 -5.3**
XAN sS sS 21 06 57.0 -8.0
XAN SS **SnSn 21 07 38.9 +0.9**
XAN pmax pmax
comp=Z,25nm,1.3s
XAN pmax pmax
comp=Z,36nm,2.6s
XAN LR LR
comp=Z,580nm,15.0s
XAN LR LR
comp=Z,610nm,11.7s
XAN LR LR
comp=Z,560nm,11.7s
AB31 Akbulak array 24.55 327 ⇓P P 21 02 36.7 +0.5
comp=Z,7.4nm,0.6s
AB31 Akbulak array 24.55 327 *i* P P 21 02 36.7 +0.5
AB31 pmax pmax
comp=Z,10.0nm,0.7s
ABKAR Akbulak array 24.55 327 *e*P P 21 02 35.9 -0.3
comp=Z,11nm,0.6s
NVS Novosibirsk 24.69 4 *e*P P 21 02 36.3 -1.1
NVS *e*S **S 21 06 56.1 -1.7**
NVS pmax pmax
comp=Z,19nm,1.7s
NVS smax smax
comp=N,25nm,2.0s
KHON Khonkaen 24.73 119 P P 21 02 43.9 +5.8
comp=N,14nm,0.9s,comp=N,635nm
NAYO Nakonayok 24.93 125 P P 21 02 42.7 +2.8
comp=N,9.4nm,1.3s,comp=N,4μm
ENH Enshi 25.09 82 *e*P P 21 02 41.5 +0.1
comp=N,9.1nm,0.6s
PANO Nakornpanom 25.63 115 P P 21 02 47.6 +1.3
comp=N,17nm,0.7s
BTO Baotou 26.15 59 *e*P P 21 02 50.9 -0.1
AKTO Aktyubinsk 26.27 327 P P 21 02 51.6 -0.2
comp=N,4.0nm,0.5s,baz=118,slow=12,SNR=20
AKTO Aktyubinsk 26.27 327 ⇑P P 21 02 51.7 -0.2
comp=N,18nm,0.9s
AKTO Aktyubinsk 26.27 327 P P 21 02 51.6 -0.2
AKTO pmax pmax
comp=Z,5.0nm,0.6s
MOY Mondy 26.30 30 *e*P P 21 02 58.0 +5.8
ZAK Zakamensk 26.45 34 *e*P P 21 02 53.2 -0.4
ZAK pmax pmax
comp=Z,5.0nm,1.5s
SONM Songino Array 26.58 41 P P 21 02 56.3 +1.4
comp=Z,2.3nm,0.6s,baz=54,slow=50,SNR=3.9
SONM LR LR 21 14 22.8
comp=Z,562nm,20.4s,baz=242,slow=39
ULN Ulaanbaatar 26.98 42⇑*i*P P 21 02 59.4 +1.0
ULN pmax pmax
comp=Z,10.0nm,1.7s
ULN Ulaanbaatar 26.98 42 *e*P P 21 02 58.9 +0.5
comp=Z,6.5nm,0.9s
TLY Talaya 27.49 32 LR LR 21 13 58.0
comp=Z,281nm,18.5s,baz=224,slow=36
WHN Wuhan 29.22 81 ⇑P P 21 03 21.2 +2.8
WHN LR LR
comp=Z,2μm,11.6s
WHN LR LR
comp=Z,880nm,12.1s
WHN LR LR
comp=Z,920nm,13.8s
ARU Arti 30.38 336 P P 21 03 28.6 +0.2
comp=Z,3.5nm,0.7s,baz=102,slow=4.8,SNR=8.0
ARU LR LR 21 16 06.8
comp=Z,404nm,18.2s,baz=134,slow=37
ARU Arti 30.38 336*d i*P P 21 03 28.4 0.0
ARU 21 04 24.9
ARU 21 06 27.3
ARU S **S 21 08 30.2 +2.7**
ARU SS **ScP 21 10 06.8 -2.0**
ARU pmax pmax
comp=Z,6.0nm,0.8s
ARU MLR MLR
comp=Z,211nm,9.0s
GNI Garni 30.62 299 LR LR 21 19 14.6
comp=Z,240nm,18.3s,baz=86,slow=43
GNI Garni 30.62 299 P P 21 03 33.4 +2.5
GNI Garni 30.62 299 *e*P P 21 03 32.7 +1.8
GNI pmax pmax
comp=Z,57nm,0.8s
GNI Garni 30.62 299 *e*P P 21 03 32.7 +1.8
comp=Z,57nm,0.8s
TBLG Delisi 30.87 302 P P 21 03 35.0 +2.1
TBLG Delisi 30.87 302 P P 21 03 35.0 +2.1
TIA Tai'an 31.16 69 *e*P P 21 03 37.6 +2.1
TIA pmax pmax
comp=Z,10.0nm,1.0s
GUDG Gudauri 31.19 303 P P 21 03 40.5 +4.4
BGD Bogdanovka 31.64 301 P P 21 03 45.2 +5.2
ZEI Tsey 31.67 303 *e*P P 21 03 39.1 -1.1
ZEI pmax pmax
comp=Z,26nm,0.8s
ONI Oni 31.96 303 P P 21 03 48.2 +5.6
ONI Oni 31.96 303 P P 21 03 48.2 +5.6
NCK Nalchik 32.04 305⇑*i*P P 21 03 44.0 +0.8
NCK pmax pmax
comp=Z,5.0nm,0.4s
KBZ Khabaz 32.58 305 P P 21 03 48.1 +0.3
comp=Z,7.0nm,0.8s,baz=124,slow=7.1,SNR=16
NEY Neytrino 32.61 304⇑*e*P P 21 03 51.3 +2.9
NEY pmax pmax
comp=Z,1.0nm,0.8s
KVAR Kislovodsk Arr 32.77 305 LR LR 21 19 57.9
comp=Z,265nm,18.4s,slow=42
KIV Kislovodsk 32.78 305 P P 21 03 49.9 +0.1
KIV Kislovodsk 32.78 305 *e*P P 21 03 52.2 +2.4
KIV *e*S **S 21 09 09.6 +4.2**
KIV pmax pmax
comp=Z,11nm,1.0s
KIV MLR MLR
comp=Z,318nm,15.0s
KIV Kislovodsk 32.78 305 *e*P P 21 03 50.0 +0.2
comp=Z,8.1nm,0.8s
GSI Gunungsitoli 33.05 147 P P 21 03 53.5 +1.2
VRH Novokhopyorsk 35.48 317 *e*P P 21 04 12.9 -0.1
VRH *e* 21 05 35.0
VRH pmax pmax
comp=Z,10.0nm,0.8s
VRH MLR MLR
comp=Z,230nm,16.0s
BOD Bodaibo 36.01 30 *e*P P 21 04 16.4 -1.1
BOD pmax pmax
comp=Z,3.0nm,1.5s
PDSI Padang 36.38 145 P P 21 04 29.9 +8.9
ANN Anapa 36.63 306 *e*P P 21 04 21.4 -1.5
ANN *e*S **S 21 10 04.3 -0.3**
ANN pmax pmax
comp=Z,14nm,0.9s
ANN MLR MLR

comp=N,414nm,19.0s
ANN MLR MLR
comp=Z,413nm,19.0s
ANN MLR MLR
comp=E,449nm,19.0s
TWG Pinlang 36.97 92 *eP* **P 21 04 27.3 +1.2**
VSR Storozhevoye 37.00 316 *eP* **P 21 04 25.2 -0.8**
VSR pmax pmax
comp=Z,10.0nm,0.9s
VSR MLR MLR
comp=Z,600nm,21.0s
LPSR Galich'ya Gora 37.60 319 *eP* **P 21 04 31.5 +0.5**
LPSR pmax pmax
comp=Z,10.0nm,0.8s
LPSR MLR MLR
comp=Z,640nm,25.0s
MMAI Mount Meron Ar 38.22 286 LR LR 21 22 32.0
comp=Z,218nm,21.3s,baz=85,slow=40
BRTR Keskin Array B 39.11 297 P **P 21 04 44.5 +0.4**
comp=Z,2.5nm,0.8s,baz=104,slow=9.8,SNR=13
NRIK Noril'sk 39.38 4 P **P 21 04 46.1 +0.4**
comp=Z,11nm,0.8s,baz=170,slow=5.5,SNR=6.5
NRIK LR LR 21 22 56.1
comp=Z,422nm,18.2s,baz=232,slow=39
MOS Moscow 39.45 323 *eP* P 21 04 59.4 +13
MOS *e* 21 06 24.1
ATD Arta Tunnel 39.48 250 LR LR 21 22 03.2
comp=Z,77nm,18.3s,baz=52,slow=38
KSAR Wonju Array Be 39.75 67 P **P 21 04 49.6 +0.3**
KSAR Wonju Array Be 39.75 67 P **P 21 04 49.6 +0.3**
KSRS Korea Array 39.78 67 P **P 21 04 49.6 +0.1**
comp=Z,4.6nm,0.7s,baz=274,slow=8.7,SNR=14
OBN Obninsk 39.78 322 LR LR 21 22 52.8
comp=Z,405nm,20.7s,baz=94,slow=39
OBN Obninsk 39.78 322 *eP* **P 21 04 49.8 +0.5**
OBN *e*PPP PPP 21 06 44.2
OBN pmax pmax
comp=Z,17nm,1.0s
OBN MLR MLR
comp=Z,334nm,17.0s
KLMR Klimovskoe 40.80 331 *eP* **P 21 04 56.0 -1.7**
KLMR *e* 21 06 56.3
KLMR pmax pmax
comp=Z,14nm,1.4s
STKI Sintang 42.09 130 P **P 21 05 11.7 +2.9**
comp=Z,17nm,0.6s
USRK Ussuriysk Ar. 42.71 56 P **P 21 05 15.2 +1.7**
comp=Z,4.1nm,0.9s,baz=151,slow=39,SNR=5.6
USRK LR LR 21 23 51.7
comp=Z,257nm,18.0s,baz=263,slow=37
MILM Milestii Mici 42.85 308⇑ *iP* **P 21 05 14.6 0.0**
KLR Kul'dur 42.89 49 P **P 21 05 14.3 -0.6**
comp=Z,2.4nm,0.5s,baz=249,slow=4.5,SNR=6.3
AKASG Malin Array Be 42.99 313 P **P 21 05 15.5 -0.2**
comp=Z,1.0nm,0.4s,baz=79,slow=6.8,SNR=20
KIEV Kiev 43.00 313⇓ *eP* **P 21 05 15.6 -0.2**
KIEV pmax pmax
comp=Z,9.0nm,1.0s
KIEV Kiev 43.00 313 *eP* **P 21 05 14.9 -0.9**
comp=Z,6.8nm,0.7s
CFR Carcaliu 43.23 305⇑ *iP* **P 21 05 18.5 +0.8**
SORM Soroca 43.26 310⇑ *iP* **P 21 05 18.0 +0.1**
VRI Vrincioaia 44.24 306⇑ *iP* **P 21 05 26.6 +0.7**
PLOR Plostina 44.30 306⇓ *iP* **P 21 05 27.3 +0.9**
TESR Tescani 44.32 307⇑ *iP* **P 21 05 26.8 +0.3**
GIRR Girov 44.43 308⇓ *iP* **P 21 05 28.2 +0.8**
SULR 44.56 304⇑ *iP* **P 21 05 29.4 +1.0**
MLR Muntele Rosu 44.78 306⇑ *iP* **P 21 05 31.4 +1.0**
YAK Yakutsk 44.94 30 P **P 21 05 31.6 +0.5**
comp=Z,11nm,0.6s,baz=345,slow=0.0,SNR=5.1
YAK Yakutsk 44.94 30 *eP* **P 21 05 30.3 -0.8**
YAK pmax pmax
comp=Z,11nm,0.9s
DOPR Dopca 45.18 306⇑ *iP* **P 21 05 34.8 +1.4**
BURAR Bucovina Array 45.33 309⇓ *iP* **P 21 05 35.5 +0.8**
VOIR 45.41 306⇓ *iP* **P 21 05 36.0 +0.7**
ARR Arges 45.71 305⇑ *iP* **P 21 05 37.6 0.0**
VSU Vasula 45.94 324 P **P 21 05 41.0 +1.9**
VSU pmax pmax
comp=Z,55nm,2.5s
LAST Lasithi 46.01 291⇓ *iP* **P 21 05 40.8 +0.6**
LVZ Lovozero 46.21 338⇑ *eP* **P 21 05 42.9 +1.7**
LVZ pmax pmax
comp=Z,7.0nm,0.7s
LVZ Lovozero 46.21 338 *eP* **P 21 05 42.2 +1.0**
comp=Z,10nm,0.9s
LOT Lotru 46.32 306⇑ *iP* **P 21 05 42.5 0.0**
CJR Cluj-Napoca 46.42 307⇑ *iP* **P 21 05 44.7 +1.5**
BMR Baia Mare 46.50 309⇑ *iP* **P 21 05 41.5 -2.2**
DEV Deva 46.91 306⇓ *iP* **P 21 05 48.2 +1.2**
BBKI Banjar Baru 46.95 129 P **P 21 05 49.5 +1.9**
comp=Z,21nm,0.9s
FINES FINESS Array B 47.03 328 P **P 21 05 48.4 +0.7**
comp=Z,5.6nm,0.5s,baz=113,slow=8.5,SNR=22
DRGR 47.03 307⇑ *iP* **P 21 05 49.0 +1.0**
KWP Kalwaria Pacla 47.07 311 *eP* **P 21 05 49.6 +1.4**
KWP Kalwaria Pacla 47.07 311⇓ *iP* **P 21 05 49.0 +0.8**
KWP Kalwaria Pacla 47.07 311 *eP* **P 21 05 49.6 +1.4**
UZH Uzhgorod 47.32 310 *eP* **P 21 05 49.2 -0.9**
UZH *e* 21 05 54.6
UZH *e* 21 06 03.9
KOLS Kolonicke sedl 47.33 310 *eP* **P 21 05 50.0 -0.3**
KOLS pmax pmax
comp=Z,3.0nm,0.9s
KOLS Kolonicke sedl 47.33 310 *eP* **P 21 05 50.0 -0.3**
SIRR Siria 47.77 307⇓ *iP* **P 21 05 55.1 +1.4**
MDVR Moldovita 47.80 305⇑ *iP* **P 21 05 55.2 +1.2**
BZS Buzias 47.82 306⇑ *iP* **P 21 05 55.1 +1.0**
CRVS Cervenica-Dubn 47.87 310 *eP* **P 21 05 55.9 +1.5**
CRVS Cervenica-Dubn 47.87 310 *eP* **P 21 05 55.9 +1.5**
STHS Stebnicka Huta 48.02 311 *eP* **P 21 05 56.0 +0.4**
STHS *e* 21 06 01.4
STHS pmax pmax
comp=Z,5.0nm,0.8s
STHS Stebnicka Huta 48.02 311 *eP* **P 21 05 56.0 +0.4**
STHS *e* 21 06 01.4
MJAR Matsushiro Arr 48.06 66 P **P 21 05 58.7 +2.6**
comp=Z,0.9nm,0.4s,baz=84,slow=27,SNR=7.8
MJAR LR LR 21 27 18.0
comp=Z,126nm,19.7s,baz=255,slow=38
BANR Banloc 48.17 306⇑ *iP* P 21 05 51.9 -4.9
NIE Niedzica 48.63 311 *eP* **P 21 06 01.6 +1.3**
NIE Niedzica 48.63 311 *eP* **P 21 06 01.6 +1.3**
PSZ Piszkesteto 48.92 309⇓ *iP* **P 21 06 03.6 +0.9**
PSZ Piszkesteto 48.92 309 *eP* **P 21 06 03.1 +0.4**
PSZ pmax pmax
comp=Z,7.0nm,0.8s
PSZ Piszkesteto 48.92 309 *eP* **P 21 06 03.1 +0.4**
comp=Z,6.6nm,0.8s
TIXI Tiksi 48.94 18⇑ *iP* **P 21 06 02.0 -0.3**
TIXI pmax pmax
comp=Z,17nm,2.5s
TIXI MLR MLR
comp=Z,470nm,17.0s
TIXI Tiksi 48.94 18 *eP* **P 21 06 01.4 -0.9**
comp=Z,7.0nm,0.6s
LANS Liptovska Anna 49.18 311 *eP* **P 21 06 04.3 -0.3**
LANS Liptovska Anna 49.18 311 *eP* **P 21 06 04.3 -0.3**
KEV Kevo 49.53 338 *eP* **P 21 06 06.7 -0.1**
KEV Kevo 49.53 338 *eP* **P 21 06 06.7 -0.1**
VYHS Vyhne 49.61 310 *eP* **P 21 06 08.5 +0.7**
VYHS pmax pmax
comp=Z,3.0nm,1.0s
VYHS Vyhne 49.61 310 *eP* **P 21 06 08.5 +0.7**
ARCES ARCESS Array B 49.93 338 P **P 21 06 10.4 +0.5**
comp=Z,8.5nm,0.6s,baz=101,slow=6.8,SNR=26
ARCES LR LR 21 27 48.3
comp=Z,214nm,20.6s,baz=112,slow=37
OKC Ostrava-Krasne 50.03 312 *eP* **P 21 06 12.5 +1.6**
OKC Ostrava-Krasne 50.03 312 *eP* **P 21 06 12.5 +1.6**
YSS Yuzh-Sakhalins 50.20 52 *iP* **P 21 06 16.0 +3.7**
YSS pmax pmax
comp=Z,11nm,1.1s
ASAJ Asahikawa 50.33 56 Pn **P 21 06 13.5 +0.1**
comp=Z,0.2nm,0.3s,baz=182,slow=29,SNR=3.0
MORC Moravsky Berou 50.42 312⇑ *iP* **P 21 06 15.2 +1.2**
KRLC Kraliky 50.90 312 *eP* **P 21 06 18.3 +0.7**
KRLC Kraliky 50.90 312 *eP* **P 21 06 18.3 +0.7**
VRAC Vranov 51.06 311⇑ *iP* **P 21 06 19.9 +1.1**
DPC Dobruska-Polom 51.19 312 *eP* **P 21 06 20.8 +1.0**
DPC *e*pP **pP 21 06 25.6 -1.3**
DPC AMS AMS 21 31 30.0
comp=Z,200nm,15.1s
DPC Dobruska-Polom 51.19 312 *eP* **P 21 06 20.8 +1.0**
DPC *e* 21 06 25.6
DPC MLR MLR
comp=Z,200nm,15.1s
KSP Ksiaz 51.19 313 *eP* **P 21 06 20.8 +1.1**
KSP Ksiaz 51.19 313 *eP* **P 21 06 20.8 +1.1**
UPC Upice 51.38 313 *eP* **P 21 06 22.5 +1.4**
UPC AMS AMS 21 31 00.0
comp=Z,300nm,16.2s
UPC Upice 51.38 313 *eP* **P 21 06 22.5 +1.4**
UPC MLR MLR
comp=Z,300nm,16.2s
KMBO Kilima Mbogo 51.58 241 P **P 21 06 25.2 +1.9**
comp=Z,4.0nm,0.8s,baz=42,slow=12,SNR=9.7
KMBO LR LR 21 27 31.2
comp=Z,79nm,20.3s,baz=92,slow=35
CONA Conrad Observa 51.63 309 *iP* **P 21 06 24.1 +0.9**
comp=Z,10nm,1.0s,SNR=9.0
ARSA Arzberg 51.92 308 *iP* **P 21 06 26.1 +0.9**
comp=Z,7.7nm,1.2s
GOPC GO Pecny, Ondr 52.20 312 *eP* **P 21 06 28.6 +1.3**
GOPC AMS AMS 21 32 10.0
comp=Z,100nm,14.4s
GOPC GO Pecny, Ondr 52.20 312 *eP* **P 21 06 28.6 +1.3**
GOPC MLR MLR
comp=Z,100nm,14.4s
PVCC Panska Ves 52.30 313 AMS AMS 21 32 20.0
comp=Z,200nm,15.6s
SOKA Soboth 52.31 308 *iP* **P 21 06 29.3 +1.0**
comp=Z,12nm,0.9s,SNR=6.4
PRU Pruhonice 52.35 312 *eP* **P 21 06 29.5 +1.1**
PRU *e*pP **pP 21 06 34.6 -1.0**
PRU AMS AMS 21 30 50.0
comp=Z,200nm,17.8s
PRU Pruhonice 52.35 312 *eP* **P 21 06 29.5 +1.1**
PRU *e* 21 06 34.6
PRU MLR MLR
comp=Z,200nm,17.8s
BRG Berggiesshubel 52.67 313 *eP* **P 21 06 31.2 +0.4**
comp=Z,11nm,0.9s
comp=N,127nm,12.0s
comp=E,184nm,23.2s
comp=Z,252nm,12.1s
BRG Berggiesshubel 52.67 313 *eP* **P 21 06 31.2 +0.4**
BRG pmax pmax
comp=Z,11nm,1.0s
BRG MLR MLR
comp=N,127nm,12.0s
BRG MLR MLR
comp=E,184nm,23.2s
BRG MLR MLR
comp=Z,252nm,12.1s
MOA Molln 52.71 309 *iP* **P 21 06 31.7 +0.6**
comp=Z,9.2nm,1.0s
GERES GERESS Array B 52.99 311 P **P 21 06 33.2 0.0**
comp=Z,1.9nm,0.6s,baz=92,slow=6.7,SNR=11
GERES LR LR 21 32 46.3
comp=Z,140nm,18.1s,baz=70,slow=40
KHC Kasperske Hory 53.04 311 *eP* **P 21 06 34.2 +0.6**
KHC *e*pP **pP 21 06 39.1 -1.7**
KHC AMS AMS 21 32 50.0
comp=Z,200nm,16.5s
KHC Kasperske Hory 53.04 311 *eP* **P 21 06 34.2 +0.6**
KHC *e* 21 06 39.1
KHC MLR MLR
comp=Z,200nm,16.5s
KHC Kasperske Hory 53.04 311 *eP* **P 21 06 34.1 +0.6**
comp=Z,1.8nm,0.9s
CLL Collm 53.24 314 *eP* **P 21 06 35.0 +0.1**
comp=Z,6.0nm,1.3s
CLL *i* 21 06 39.4
CLL *i* 21 06 41.5
CLL *e*S **S 21 14 10.0 +5.4**
CLL *e*SS **SKiKP 21 17 54.0 +3.2**
CLL Lm MLR 21 32 00.0
comp=N,100nm,19.4s
CLL Lm MLR 21 32 00.0
comp=E,200nm,18.2s
CLL Lm MLR 21 32 00.0
comp=Z,300nm,18.8s
CLL Collm 53.24 314 *eP* **P 21 06 35.0 +0.1**
CLL *i* 21 06 39.4
CLL *e*S **S 21 14 10.0 +5.4**
CLL pmax pmax
comp=Z,6.0nm,1.3s
CLL MLR MLR
comp=Z,300nm,18.8s
KBA Koelnbreinsper 53.41 308 *i*pP pP 21 06 39.6 -4.1
comp=Z,4.0nm,0.6s
NKC Novy Kostel 53.67 312 *eP* **P 21 06 39.1 +0.9**
NKC AMS AMS 21 33 10.0
comp=Z,200nm,17.5s
NKC Novy Kostel 53.67 312 *eP* **P 21 06 39.1 +0.9**
NKC MLR MLR
comp=Z,200nm,17.5s
NB2 NORSAR Subarra 54.05 326 P **P 21 06 39.8 -1.0**
comp=Z,6.3nm,0.8s,baz=92,slow=7.4
NOA NORSAR Array B 54.05 326 P **P 21 06 40.5 -0.3**
comp=Z,4.4nm,0.8s,baz=92,slow=7.4,SNR=19
NOA LR LR 21 31 00.3
comp=Z,366nm,20.0s,baz=105,slow=38
GRFO Grafenberg 54.52 312 *eP* **P 21 06 45.5 +1.2**
GRFO pmax pmax
comp=Z,41nm,1.8s
GRFO Grafenberg 54.52 312 *eP* **P 21 06 45.5 +1.2**
comp=Z,41nm,1.8s
MA2 Magadan 54.61 36 *eP* **P 21 06 46.1 +1.3**
MOTA Moosalm 54.89 309 *iP* **P 21 06 46.9 -0.4**
comp=Z,16nm,0.8s
RETA Reutte 55.10 309 *iP* **P 21 06 48.8 +0.1**
comp=Z,6.3nm,0.7s
FETA Feichten 55.19 309 *iP* **P 21 06 49.3 -0.1**
comp=Z,13nm,1.2s
SEY Seymchan 55.40 32 P **P 21 06 51.6 +1.2**
comp=Z,3.3nm,0.6s,baz=300,slow=4.5,SNR=8.2
SEY Seymchan 55.40 32⇑ *eP* **P 21 06 50.9 +0.5**
DAVA Damuels 55.73 309 *iP* **P 21 06 53.2 -0.1**
comp=Z,16nm,0.7s,SNR=12
KEST Kesra 58.69 296 P **P 21 07 15.7 +1.4**
comp=Z,7.9nm,0.8s,baz=6.8,slow=4.7,SNR=7.1
KEST LR LR 21 39 09.0
comp=Z,76nm,18.7s,baz=296,slow=43
PETK Petropavlovsk- 59.04 43 P **P 21 07 17.5 +1.1**
comp=Z,1.4nm,0.6s,baz=265,slow=1.8,SNR=4.2
PETK LR LR 21 34 27.6
comp=Z,223nm,19.2s,baz=274,slow=38
SSB Saint Sauveur 59.75 308 *eP* **P 21 07 20.9 -0.6**
SSB pmax pmax
comp=Z,7.0nm,0.8s
SSB Saint Sauveur 59.75 308 *eP* **P 21 07 20.9 -0.6**
comp=Z,6.7nm,0.8s
BILL Bilibino 60.82 25⇑ *iP* **P 21 07 29.1 +0.8**
BILL *e* 21 07 41.0
BILL *e* 21 08 11.0
BILL *e* 21 09 40.0
BILL pmax pmax
comp=Z,10.0nm,2.5s
BILL MLR MLR
comp=Z,151nm,17.0s
BILL Bilibino 60.82 25 *eP* **P 21 07 29.0 +0.6**
comp=Z,2.0nm,0.6s
TAM Tamanrasset 66.35 283 *eP* **P 21 08 06.2 +0.4**
TAM pmax pmax
comp=Z,2.0nm,0.9s
TAM Tamanrasset 66.35 283 *eP* **P 21 08 06.2 +0.4**
comp=Z,2.0nm,0.9s
ESDC Sonseca Array 67.43 304 P **P 21 08 12.6 +0.3**
comp=Z,2.4nm,0.7s,baz=60,slow=7.0,SNR=13
LSZ Lusaka 67.63 236 *eP* **P 21 08 13.7 -0.1**
LSZ pmax pmax
comp=Z,4.0nm,0.8s
LSZ Lusaka 67.63 236 *eP* **P 21 08 13.7 -0.1**
comp=Z,3.7nm,0.8s
WRA Warramunga Arr 71.96 127 P **P 21 08 40.2 0.0**
comp=Z,7.4nm,0.9s,baz=319,slow=6.2,SNR=8.5
WRA Warramunga Arr 71.96 127 *iP* **P 21 08 41.0 +0.7**
WRA pmax pmax
comp=Z,7.0nm,0.9s
WRAB Tennant Creek 71.96 127⇑ *iP* **P 21 08 40.5 +0.2**
WRAB pmax pmax
comp=Z,27nm,1.0s
WRAB Tennant Creek 71.96 127 *eP* **P 21 08 40.5 +0.2**
comp=Z,7.9nm,0.8s
ASAR Alice Springs 74.20 130 P **P 21 08 53.5 0.0**
comp=Z,2.4nm,0.7s,baz=313,slow=6.1,SNR=15
COLD Coldfoot 75.67 18 *eP* **P 21 09 01.1 -0.3**
comp=Z,3.3nm,1.0s
PPLA Purkeypile 78.21 22 *eP* **P 21 09 15.5 -0.4**
ILAR Eielson Array 78.41 19 P **P 21 09 15.4 -1.4**
comp=Z,0.7nm,0.8s,baz=324,slow=3.8,SNR=6.1
ILAR LR LR 21 47 16.3
comp=Z,102nm,19.4s,baz=339,slow=38
INK Inuvik 78.59 12 P **P 21 09 17.4 -0.3**
comp=Z,1.2nm,0.6s,baz=316,slow=12,SNR=4.1
BOSA Boshof 78.68 227 P **P 21 09 19.6 +0.6**
comp=Z,5.5nm,0.7s,baz=26,slow=4.7,SNR=8.2
BOSA LR LR 21 43 28.2
comp=Z,82nm,18.6s,baz=122,slow=35
CTA Charters Tower 80.68 120 P **P 21 09 30.3 +0.5**
comp=Z,4.0nm,0.9s,baz=341,slow=10,SNR=3.4
CTAO Charters Tower 80.68 120 *eP* **P 21 09 30.8 +1.0**
CTAO Charters Tower 80.68 120 *eP* **P 21 09 30.8 +1.0**
DBIC Dimbokro 82.61 273 P **P 21 09 41.5 +1.3**
comp=Z,7.6nm,0.9s,baz=16,slow=6.4,SNR=4.6
DBIC LR LR 21 50 28.3
comp=Z,135nm,18.1s,baz=44,slow=39
STKA Stephens Creek 84.73 132 P **P 21 09 50.0 -0.6**
comp=Z,2.0nm,0.5s,baz=334,slow=4.8,SNR=10.0
STKA LR LR 21 53 45.0
comp=Z,35nm,19.0s,baz=265,slow=40
STKA Stephens Creek 84.73 132 P **P 21 09 50.0 -0.6**
STKA pmax pmax
comp=Z,2.0nm,0.5s
STKA MLR MLR
comp=Z,35nm,19.0s
YKA Yellowknife Ar 86.83 7 P **P 21 09 59.5 -1.1**
comp=Z,0.7nm,0.9s,baz=338,slow=4.6,SNR=12
SCHQ Schefferville 90.73 342 LR LR 21 52 15.0
comp=Z,68nm,19.6s,baz=50,slow=36
BBB Bella Bella 94.22 17 LR LR 21 57 19.7
comp=Z,53nm,18.1s,baz=327,slow=38
SHEL Horse Pasture 94.65 254 *iP* **P 21 10 39.7 +1.7**
MAW Mawson 98.41 187 LR LR 21 47 59.9
comp=Z,116nm,20.0s,baz=242,slow=31
ULM Lac du Bonnet 99.82 358 LR LR 22 00 25.1
comp=Z,94nm,18.7s,baz=354,slow=38
TXAR Lajitas Array 120.65 4 PKP **PKPdf 21 16 08.3 -0.6**
comp=Z,0.1nm,0.3s,baz=321,slow=0.8,SNR=2.7
LPAZ La Paz 148.07 289 PKPbc **PKPbc 21 17 02.8 -0.7**
comp=Z,1.4nm,0.3s,baz=47,slow=20,SNR=6.8

NIED ***04*** *21:04:00,38.°10N×143.°10E,h8km,Mw3.6 Best double couple: M0=2.42000×10^14 NP1:φs=341.00000°,δ=35.00000°, λ=-127.00000°. NP2:φs=203.00000°,δ=63.00000°, λ=-67.00000°.*
IDC ***04*** *21:04:46.8±1.4,38.°81N×145.°39E,h0km,mb3.6/4, mb1 3.7/6,mb1mx3.3/64,mbtmp3.5/6,ML2.5/2,Error ellipse: s-maj=34.5km s-min=26.8km az=77.0*
JMA ***04*** *21:04:55.7±0.3,38.°12N×143.°08E,h20km±5km,M3.6*
ISCJB ***04*** *21:04:56.2±2.2,38.°07N±0.°07×143.°03E±0.°09, h18km±15km,mb3.7/3,Error ellipse: s-maj=13.5km s-min=9.7km az=36.3*
ISC 04 21:04:55.5±2.9,38.°10N±0.°07×143.°0E±0.°1,h2km±14km, n16,σ0=85/20,mb3.9/3,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.31**	**286**	P	**Pg**	**21 05 20.3**	**-0.3**
JIO				*e*S	**Sg**	**21 05 37.5**	**0.0**
OFUJ	**Ofunato**	**1.40**	**315**	P	**Pn**	**21 05 21.3**	**-0.8**
JMK	**Ichinoseki**	**1.60**	**303**	P	**Pn**	**21 05 24.4**	**-0.4**
JMM	**Marumori**	**1.72**	**263**	P	**Pn**	**21 05 26.4**	**-0.1**
JMM				*e*S	**Sn**	**21 05 48.6**	**-0.4**
JFK	**Kawauchi**	**1.80**	**247**	P	**Pn**	**21 05 27.5**	**-0.1**
JFK				*e*S	**Sn**	**21 05 50.2**	**-0.9**
JOU	**Okura**	**1.82**	**279**	P	**Pn**	**21 05 28.4**	**+0.5**
JOM	**Ohasama**	**1.88**	**317**	P	**Pn**	**21 05 28.7**	**0.0**
JOM				*e*S	**Sn**	**21 05 52.6**	**-0.5**
JFT	**Otama**	**2.15**	**255**	P	**Pn**	**21 05 33.8**	**+1.4**
JFT				*e*S	**Sn**	**21 06 00.0**	**+0.4**
JYK	**Kaneyama**	**2.19**	**293**	P	**Pn**	**21 05 33.5**	**+0.6**
JRG	**Rokugo**	**2.22**	**306**	P	**Pn**	**21 05 34.5**	**+1.1**
JANG	**Nango**	**2.52**	**334**	P	**Pn**	**21 05 38.8**	**+1.2**
MAT	**Matsushiro**	**4.09**	**249**	P	**Pn**	**21 06 00.0**	**+0.9**
USRK	**Ussuriysk Ar.**	**10.26**	**310**	Pn	Pn	21 07 31.3	+7.6
	0.1nm,0.3s,baz=116,slow=14,SNR=4.3						
MKAR	**Makanchi Array**	**44.59**	**301**	P	**P**	**21 13 10.5**	**+1.5**
	0.1nm,0.2s,baz=91,slow=5.5,SNR=2.5						
KURBB	**Kurchatov Arra**	**46.31**	**307**	P	**P**	**21 13 22.4**	**-0.2**
	0.7nm,0.6s,baz=82,slow=8.4,SNR=9.5						
WRA	**Warramunga Arr**	**58.30**	**190**	P	**P**	**21 14 50.9**	**-1.0**
	1.7nm,1.1s,baz=7.9,slow=7.0,SNR=6.6						

ISCJB ***04*** *21:06:26.9±0.6,35.°68N±0.°06×141.°66E±0.°06,h25km, mb3.7/12,Error ellipse: s-maj=8.8km s-min=7.0km az=174.9*
JMA ***04*** *21:06:29.5±0.4,35.°70N×141.°51E,h43km±3km,M3.3*
IDC ***04*** *21:06:29.9±4.9,35.°63N×141.°58E,h32km±36km,mb3.5/12, mb1 3.7/17,mb1mx3.5/64,mbtmp3.7/17,ML3.6/4,MS3.0/2, Ms1 3.0/2,ms1mx2.6/35,Error ellipse: s-maj=21.5km s-min=17.0km az=74.0*
ISC 04 21:06:28.5±0.7,35.°64N±0.°05×141.°56E±0.°06,h25km,n29, σ1=08/26,mb3.7/12,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.57**	**277**	P	**Pn**	**21 06 40.7**	**-0.4**
CHOJ				*e*S	**Sn**	**21 06 48.1**	**-1.6**
BSO4	**Boso 4**	**1.19**	**237**	P	**Pb**	**21 06 50.0**	**-0.3**
BSO3	**Boso 3**	**1.20**	**226**	P	**Pb**	**21 06 49.7**	**-0.6**
JHO	**Hitachi**	**1.26**	**321**	P	**Pb**	**21 06 49.8**	**-1.8**
MJAR	**Matsushiro Arr**	**2.86**	**289**	Pn	**Pn**	**21 07 14.0**	**+1.5**
	9.0nm,0.3s,baz=94,slow=8.1,SNR=30						
MJAR				Sn	**Sn**	**21 07 47.2**	**+1.1**
	2.9nm,0.3s,baz=58,slow=24,SNR=6.5						
MJAR				LR	LR	21 08 29.2	
	comp=Z,192nm,18.4s,baz=115,slow=42						
MAT	**Matsushiro**	**2.86**	**289**	P	**Pn**	**21 07 14.1**	**+1.5**
MAT				S	**Sb**	**21 07 53.2**	**-0.2**
JHJ	**Hachijo jima 2**	**2.91**	**211**	Pn	**Pn**	**21 07 13.7**	**+0.4**
	26nm,0.3s,baz=341,slow=19,SNR=8.9						
JHJ				Sn	**Sn**	**21 07 44.8**	**-2.6**
	65nm,0.3s,baz=66,slow=23,SNR=6.2						
ASAJ	**Asahikawa**	**8.51**	**5**	Pn	**Pn**	**21 08 29.2**	**-0.8**
	1.1nm,0.3s,baz=201,slow=13,SNR=7.9						
KSRS	**Korea Array**	**11.12**	**283**	Pn	**Pn**	**21 09 07.1**	**+1.3**
	0.2nm,0.3s,baz=122,slow=39,SNR=5.5						
USRK	**Ussuriysk Ar.**	**11.27**	**322**	Pn	Pn	21 09 09.5	+1.6
	0.1nm,0.3s,baz=142,slow=13,SNR=3.1						
USRK				LR	LR	21 13 21.5	
	comp=Z,76nm,18.3s,baz=123,slow=36						
H11N2	**WAKE ISLAND Hy 27.36 119**			T	T	21 41 20.1	
	SNR=18						
H11N1	**WAKE ISLAND Hy 27.36 119**			T	T	21 41 21.3	
	SNR=31						
H11N3	**WAKE ISLAND Hy 27.38 119**			T	T	21 41 16.0	
	SNR=39						
H11S1	**WAKE ISLAND Hy 28.03 121**			T	T	21 41 55.7	
	SNR=22						
H11S3	**WAKE ISLAND Hy 28.03 121**			T	T	21 41 54.2	
	SNR=8.9						
H11S2	**WAKE ISLAND Hy 28.04 121**			T	T	21 42 10.1	
	SNR=23						
ZALV	**Zalesovo Beam**	**42.95**	**313**	P	**P**	**21 14 25.5**	**+0.4**
	0.7nm,0.3s,baz=94,slow=8.1,SNR=5.2						
MKAR	**Makanchi Array**	**44.97**	**303**	P	**P**	**21 14 42.6**	**+1.1**
	1.4nm,0.6s,baz=87,slow=9.3,SNR=16						
KURBB	**Kurchatov Arra**	**46.96**	**309**	P	**P**	**21 14 57.0**	**-0.2**
	2.2nm,0.4s,baz=78,slow=7.1,SNR=19						
BVAR	**Borovoye Array**	**51.60**	**313**	P	**P**	**21 15 32.9**	**+0.3**
	0.5nm,0.4s,baz=76,slow=7.8,SNR=5.4						
WRA	**Warramunga Arr**	**55.70**	**188**	P	**P**	**21 16 02.1**	**-0.8**
	0.6nm,0.6s,baz=4.7,slow=7.6,SNR=5.2						
ASAR	**Alice Springs**	**59.42**	**188**	P	**P**	**21 16 29.8**	**+0.7**
	0.4nm,0.8s,baz=12,slow=14,SNR=4.8						
YKA	**Yellowknife Ar**	**64.96**	**30**	P	**P**	**21 17 05.8**	**+0.1**
	0.2nm,0.7s,baz=298,slow=6.3,SNR=4.4						
FINES	**FINESS Array B**	**70.10**	**333**	P	**P**	**21 17 38.5**	**+0.2**
	1.9nm,1.1s,baz=42,slow=24,SNR=2.7						
AKASG	**Malin Array Be**	**75.47**	**323**	P	**P**	**21 18 10.5**	**+0.2**
	0.2nm,0.3s,baz=46,slow=6.0,SNR=3.8						
NOA	**NORSAR Array B**	**75.52**	**337**	P	**P**	**21 18 10.5**	**+0.1**
	0.5nm,0.7s,baz=243,slow=22,SNR=2.5						
NVAR	**Mina Array Bea**	**75.73**	**53**	P	**P**	**21 18 13.1**	**+0.8**
	0.3nm,0.6s,baz=247,slow=18,SNR=2.9						
TXAR	**Lajitas Array**	**90.88**	**52**	P	**P**	**21 19 30.5**	**+0.2**
	0.2nm,0.5s,baz=302,slow=7.2,SNR=2.1						
LPAZ	**La Paz**	**147.28**	**62**	PKPbc	**PKPab**	**21 26 11.2**	**-1.6**

0.7nm,0.5s,baz=298,slow=4.0,SNR=3.4

*IDC **04** 21:08:08.9±3.0, 38.°16N×71.°66E, h0km, mb3.6/4, mb1 3.6/8, mb1mx3.4/60, mbtmp3.5/8, ML2.8/4, Error ellipse: s-maj=58.6km s-min=19.4km az=143.0*
*SOME **04** 21:08:18.5, 39.°08N×71.°40E, h20km*
ISC 04 21:08:17.7±1.5, 39.°04N±0.°09×71.°36E±0.°06, h10km, n15, σ2§20/22, mb3.5/4, Tajikistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IUG	**Iuzhnay**	**3.26**	**342**	*eP*	**Pb**	**21 09 15.6**	**-0.1**
	13nm,0.2s						
IUG				*eS*	**Sb**	**21 09 56.8**	**+1.3**
	21nm,0.4s						
BRLS	**Borolday**	**3.95**	**342**	*eP*	**Pb**	**21 09 29.4**	**+2.1**
	1.1nm,0.2s						
BRLS				*eS*	**Sg**	**21 10 21.5**	**-2.9**
	1.1nm,0.3s						
MRKS	**Merke**	**3.96**	**20**	*eP*	**Pb**	**21 09 26.7**	**-0.9**
	67nm,0.6s						
MRKS				*eS*	**Sb**	**21 10 16.1**	**+0.5**
	14nm,0.5s						
AAK	**Ala-Archa**	**4.30**	**33**	Pn	Pb	21 09 28.6	-4.9
	0.9nm,0.3s,baz=196,slow=6.3,SNR=6.7						
AAK				Pg	**Pg**	**21 09 38.6**	**-1.4**
	1.2nm,0.3s,baz=183,slow=6.6,SNR=8.2						
AAK				Sn	**Sb**	**21 10 28.5**	**+3.0**
	0.4nm,0.3s,baz=306,slow=20,SNR=3.4						
DGS	**Degeres**	**5.36**	**37**	*eP*	**Pg**	**21 09 57.6**	**-2.6**
DGS				*eS*	**Sg**	**21 11 09.4**	**-0.2**
TNSS	**Tian-Shan**	**5.81**	**45**	*eP*	**Pg**	**21 10 08.2**	**-0.8**
	2.4nm,0.7s						
TNSS				*eS*	**Sg**	**21 11 28.0**	**+3.7**
	7.5nm,0.5s						
CHKK	**Chushkaly**	**6.42**	**39**	*eP*	**Pg**	**21 10 16.4**	**-4.2**
	2.6nm,0.9s						
CHKK				*eS*	**Sg**	**21 11 41.3**	**-2.3**
	7.8nm,0.8s						
MKAR	**Makanchi Array**	**11.14**	**42**	Pn	**Pn**	**21 10 58.1**	**+1.2**
	0.1nm,0.3s,baz=219,slow=12,SNR=7.6						
KURBB	**Kurchatov Arra**	**12.64**	**21**	Pn	**Pn**	**21 11 19.6**	**+2.3**
	0.0nm,0.3s,baz=215,slow=12,SNR=2.8						
AKTO	**Aktyubinsk**	**14.79**	**325**	Pn	**P**	**21 11 55.4**	**+2.6**
	0.2nm,0.3s,baz=120,slow=12,SNR=5.9						
ZALV	**Zalesovo Beam**	**17.51**	**27**	P	**Pn**	**21 12 22.4**	**+0.7**
	0.2nm,0.3s,baz=232,slow=13,SNR=2.9						
FINES	**FINESS Array B**	**35.56**	**324**	P	**P**	**21 15 15.2**	**+0.4**
	2.2nm,1.1s,baz=112,slow=9.1,SNR=4.0						
ARCES	**ARCESS Array B**	**38.92**	**336**	P	**P**	**21 15 43.5**	**+0.3**
	1.7nm,0.9s,baz=108,slow=8.7,SNR=7.0						
NOA	**NORSAR Array B**	**42.55**	**321**	P	**P**	**21 16 12.2**	**-1.0**
	0.5nm,0.8s,baz=104,slow=6.4,SNR=3.0						
YKA	**Yellowknife Ar**	**78.70**	**3**	P	**P**	**21 20 17.3**	**-2.4**
	0.1nm,0.6s,baz=343,slow=6.9,SNR=2.5						

IDC 04 21:12:54.0±2.5, 4.°86S×101.°79E, h0km, mb3.8/7, mb1 3.8/7, mb1mx3.6/45, mbtmp3.8/7, Error ellipse: s-maj=83.7km s-min=21.5km az=57.0, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**23.34**	**353**	P	P	21 18 05.5	+1.4
	0.4nm,0.5s,baz=183,slow=8.3,SNR=5.4						
H08S2	**Diego Garcia H**	**29.25**	**263**	T	T	21 49 21.7	
	baz=86,slow=75,SNR=62						
H08S3	**Diego Garcia H**	**29.25**	**263**	T	T	21 49 22.3	
	baz=86,slow=75,SNR=59						
H08S1	**Diego Carcia H**	**29.27**	**263**	T	T	21 49 23.1	
	baz=86,slow=75,SNR=38						
WRA	**Warramunga Arr**	**35.04**	**118**	P	P	21 19 48.1	-0.8
	0.4nm,0.7s,baz=283,slow=7.9,SNR=4.8						
ASAR	**Alice Springs**	**36.16**	**124**	P	P	21 19 58.9	+0.5
	0.3nm,0.7s,baz=299,slow=8.7,SNR=5.1						
MKAR	**Makanchi Array**	**54.25**	**344**	P	P	21 22 20.9	-0.8
	1.0nm,0.7s,baz=134,slow=8.7,SNR=5.8						
USRK	**Ussuriysk Ar.**	**55.88**	**26**	P	P	21 22 33.4	-0.1
	3.7nm,0.7s,baz=219,slow=6.5,SNR=12						
KLR	**Kul'dur**	**59.84**	**22**	P	P	21 23 00.7	-0.6
	0.4nm,0.3s,baz=242,slow=2.2,SNR=4.3						
ZALV	**Zalesovo Beam**	**60.30**	**349**	P	P	21 23 03.9	-0.3
	1.5nm,0.5s,baz=174,slow=6.1,SNR=8.9						
TXAR	**Lajitas Array**	**145.76**	**42**	PKPbc	PKPbc	21 32 35.8	0.0
	0.6nm,0.7s,baz=247,slow=0.4,SNR=9.5						

*NIED **04** 21:13:00, 38.°20N×141.°70E, h53km, Mw3.8 Best double couple: M0 6.05000×10^14 NP1:φs188.00000°, δ17.00000°, λ75.00000°. NP2:φs24.00000°, δ73.00000°, λ95.00000°.*
*ISCJB **04** 21:13:43.7±0.7, 38.°16N±0.°04×141.°77E±0.°08, h55km±5km, mb3.9/12, Error ellipse: s-maj=11.5km s-min=4.6km az=23.1*
*JMA **04** 21:13:45.0±0.1, 38.°18N×141.°68E, h51km±1km, M3.9*
JMA Felt I J1.
*IDC **04** 21:13:46.9±0.7, 38.°17N×141.°76E, h68km±5km, mb3.6/12, mb1 3.7/17, mb1mx3.5/52, mbtmp3.9/17, MS3.2/1, Ms1 3.2/1, ms1mx2.4/42, Error ellipse: s-maj=17.7km s-min=11.5km az=96.0*
ISC 04 21:13:44.3±0.7, 38.°17N±0.°04×141.°80E±0.°07, h45km±4km, n37, σ1§46/51, mb3.9/12, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.45**	**309**	P	**Pn**	**21 13 55.1**	**+0.4**
JIO				S	**Sn**	**21 14 01.8**	**-0.2**
JMM	**Marumori**	**0.85**	**249**	P	**Pn**	**21 13 59.4**	**-0.5**
JMM				S	**Sn**	**21 14 09.7**	**-1.5**
JMK	**Ichinoseki**	**0.90**	**330**	P	**Pn**	**21 14 01.0**	**+0.4**
JMK				S	**Sn**	**21 14 12.1**	**-0.4**
JOU	**Okura**	**0.91**	**283**	P	**Pn**	**21 14 00.6**	**-0.2**
JOU				S	**Sn**	**21 14 11.9**	**-0.9**
OFUJ	**Ofunato**	**0.91**	**354**	P	**Pn**	**21 14 01.2**	**+0.4**
OFUJ				S	**Sn**	**21 14 12.6**	**-0.2**
JFK	**Kawauchi**	**1.09**	**223**	P	**Pn**	**21 14 03.1**	**0.0**
JFK				S	**Sn**	**21 14 16.1**	**-0.9**
JFT	**Otama**	**1.33**	**241**	P	**Pn**	**21 14 06.6**	**+0.2**
JFT				S	**Sn**	**21 14 22.5**	**-0.4**
JYK	**Kaneyama**	**1.35**	**304**	P	**Pn**	**21 14 06.9**	**+0.2**
JOM	**Ohasama**	**1.36**	**343**	P	**Pn**	**21 14 07.4**	**+0.6**
JOM				S	**Sn**	**21 14 24.4**	**+0.7**
JYS	**Shiratake**	**1.37**	**273**	P	**Pn**	**21 14 06.9**	**0.0**
JYS				S	**Sn**	**21 14 23.9**	**+0.1**
JRG	**Rokugo**	**1.52**	**324**	P	**Pn**	**21 14 09.6**	**+0.5**
MAT	**Matsushiro**	**3.29**	**242**	P	**Pn**	**21 14 34.6**	**+1.3**
MAT				S	**Sn**	**21 15 13.1**	**+1.9**
MJAR	**Matsushiro Arr**	**3.29**	**241**	P	**Pn**	**21 14 34.5**	**+1.1**
	3.7nm,0.3s,baz=40,slow=14,SNR=21						
MJAR				S	**Sn**	**21 15 17.4**	**+6.2**
	3.0nm,0.3s,baz=246,slow=22,SNR=4.5						
JHJ	**Hachijo jima 2**	**5.30**	**199**	P	**Pn**	**21 15 02.0**	**+1.1**
	8.7nm,0.3s,baz=334,slow=23,SNR=8.3						
JHJ				S	**Sn**	**21 15 58.6**	**-2.1**
	21nm,0.3s,baz=253,slow=21,SNR=5.3						
ASAJ	**Asahikawa**	**5.97**	**6**	P	**Pn**	**21 15 11.2**	**+1.1**
	1.4nm,0.3s,baz=201,slow=14,SNR=12						
ASAJ				S	**Sn**	**21 16 20.1**	**+3.0**
	0.8nm,0.3s,baz=291,slow=30,SNR=3.1						
USRK	**Ussuriysk Ar.**	**9.53**	**312**	P	**Pn**	**21 15 59.5**	**+0.6**
	0.4nm,0.3s,baz=130,slow=13,SNR=15						
KSRS	**Korea Array**	**11.00**	**271**	P	**Pn**	**21 16 23.0**	**+4.0**
	0.2nm,0.3s,baz=77,slow=14,SNR=3.6						
KLR	**Kul'dur**	**13.22**	**330**	P	**P**	**21 16 54.3**	**-3.8**
	0.1nm,0.3s,baz=210,slow=12,SNR=2.6						
KLR				LR	LR	21 21 33.1	
	comp=Z,93nm,19.7s,baz=261,slow=35						
H11N2	**WAKE ISLAND Hy**	**28.49**	**123**	T	T	21 49 57.8	
	SNR=88						
H11N1	**WAKE ISLAND Hy**	**28.50**	**123**	T	T	21 49 51.2	
	SNR=88						
H11N3	**WAKE ISLAND Hy**	**28.51**	**123**	T	T	21 49 52.8	
	SNR=88						
H11S1	**WAKE ISLAND Hy**	**29.24**	**125**	T	T	21 50 48.0	
	SNR=160						
H11S3	**WAKE ISLAND Hy**	**29.24**	**125**	T	T	21 50 48.3	
	SNR=211						
H11S2	**WAKE ISLAND Hy**	**29.26**	**125**	T	T	21 50 49.8	
	SNR=154						
ZALV	**Zalesovo Beam**	**41.38**	**311**	P	**P**	**21 21 25.3**	**-0.5**
	2.3nm,0.4s,baz=82,slow=7.4,SNR=11						
ZALV				pP	**sP**	**21 21 43.2**	**-0.2**
	1.8nm,0.6s,baz=82,slow=7.8,SNR=6.2						
MKAR	**Makanchi Array**	**43.78**	**301**	P	**P**	**21 21 45.4**	**-0.1**
	1.2nm,0.6s,baz=86,slow=9.6,SNR=12						
MKAR				pP	**sP**	**21 22 03.1**	**+0.1**
	2.3nm,0.7s,baz=86,slow=9.9,SNR=8.5						
ILAR	**Eielson Array**	**48.37**	**33**	P	**P**	**21 22 21.6**	**+0.3**
	0.3nm,0.5s,baz=278,slow=6.1,SNR=4.2						
ARU	**Arti**	**55.72**	**318**	P	**P**	**21 23 15.5**	**-0.4**
	1.7nm,0.4s,baz=79,slow=4.8,SNR=5.7						
WRA	**Warramunga Arr**	**58.23**	**188**	P	**P**	**21 23 33.8**	**-0.3**
	0.9nm,0.5s,baz=5.6,slow=7.0,SNR=25						
ASAR	**Alice Springs**	**61.95**	**188**	P	**P**	**21 23 59.6**	**+0.1**
	0.6nm,0.6s,baz=0.2,slow=5.0,SNR=7.3						
ASAR				pP	**sP**	**21 24 17.5**	**0.0**
	0.2nm,0.7s,baz=15,slow=13,SNR=1.8						
YKA	**Yellowknife Ar**	**62.67**	**31**	P	**P**	**21 24 04.1**	**+0.2**
	0.1nm,0.6s,baz=129,slow=45,SNR=3.6						
ARCES	**ARCESS Array B**	**63.04**	**339**	P	**P**	**21 24 06.7**	**+0.4**
	1.8nm,0.9s,baz=39,slow=7.8,SNR=5.1						
ARCES				pP	**sP**	**21 24 23.8**	**-0.5**
	1.8nm,0.8s,baz=39,slow=35,SNR=2.1						
FINES	**FINESS Array B**	**67.95**	**332**	P	**P**	**21 24 37.8**	**-0.4**
	2.2nm,0.8s,baz=64,slow=4.9,SNR=5.9						
FINES				pP	**sP**	**21 24 55.9**	**-0.3**
	1.0nm,0.8s,baz=52,slow=9.9,SNR=1.6						
KBZ	**Khabaz**	**70.40**	**311**	P	**P**	**21 24 53.6**	**+0.1**
	0.5nm,0.4s,baz=226,slow=2.3,SNR=2.6						
NB2	**NORSAR Subarra**	**73.26**	**337**	P	**P**	**21 25 10.1**	**-0.4**
	comp=Z,0.6nm,0.5s,baz=38,slow=5.9						
NOA	**NORSAR Array B**	**73.26**	**337**	P	**P**	**21 25 10.4**	**-0.1**
	comp=Z,0.5nm,0.5s,baz=52,slow=7.1,SNR=6.8						
NOA				pP	**sP**	**21 25 29.2**	**+0.5**
	comp=Z,0.3nm,0.6s,baz=55,slow=4.6,SNR=1.7						
TXAR	**Lajitas Array**	**89.19**	**53**	P	**P**	**21 26 35.9**	**+0.3**
	comp=Z,0.2nm,0.5s,baz=292,slow=4.4,SNR=2.9						
TXAR				pP	**sP**	**21 26 53.9**	**0.0**
	comp=Z,0.1nm,0.6s,baz=77,slow=28,SNR=1.9						

MEX 04 21:14:41.6±1.0, 17.°83N×102.°49W, h16km±12km, MD3.7, Near coast of Michoacan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MMIG	**Aquila**	**0.93**	**299**	*iP*	Pb	21 14 55.9	-3.5
MMIG				*eS*	Sb	21 15 06.8	-4.7
ZIIG	**Zihuatanejo**	**1.00**	**103**	*eP*	Pb	21 14 58.2	-2.5
ZIIG				*eS*	Sb	21 15 09.4	-4.2
R15V		**1.94**	**313**	*eP*	Pn	21 15 10.3	-3.7
R15V				*eS*	Sn	21 15 34.0	-4.1
EZ5V		**1.95**	**327**	*eP*	Pn	21 15 11.7	-2.6
EZ5V				*eS*	Sn	21 15 34.2	-4.3

*SOME **04** 21:34:11.1, 39.°12N×71.°33E, h5km*
*IDC **04** 21:34:17.6±15.0, 38.°70N×72.°06E, h107km±93km, mb3.1/3, mb1 3.1/7, mb1mx2.9/50, mbtmp3.5/7, ML3.1/4, Error ellipse: s-maj=169.1km s-min=53.7km az=180.0*
ISC 04 21:34:12.9±1.6, 39.°2N±0.°1×71.°40E±0.°06, h10km, n14, σ1§93/21, mb3.5/3, Tajikistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IUG	**Iuzhnay**	**3.11**	**341**	*eP*	**Pb**	**21 35 09.5**	**+1.1**
	9.1nm,0.3s						
IUG				*eS*	**Sg**	**21 35 52.1**	**-0.6**
	13nm,0.4s						
MRKS	**Merke**	**3.79**	**21**	*eP*	**Pb**	**21 35 19.2**	**-0.7**
	11nm,0.5s						
MRKS				*eS*	**Sb**	**21 36 09.5**	**+3.6**
	10nm,0.5s						
BRLS	**Borolday**	**3.80**	**341**	*eP*	**Pb**	**21 35 21.5**	**+1.4**
	1.0nm,0.2s						
BRLS				*eS*	**Sg**	**21 36 12.4**	**-2.5**
KST	**Kastek**	**5.15**	**41**	*eP*	**Pg**	**21 35 48.9**	**-2.5**
	13nm,0.6s						
KST				*eS*	**Sg**	**21 36 59.1**	**+1.0**
	26nm,0.8s						
DGS	**Degeres**	**5.20**	**38**	*eP*	**Pg**	**21 35 49.4**	**-3.1**
	2.8nm,0.6s						
DGS				*eS*	**Sg**	**21 36 60.0**	**+0.1**
	3.7nm,0.6s						
TNSS	**Tian-Shan**	**5.67**	**46**	*eP*	**Pg**	**21 35 58.6**	**-2.9**
	1.7nm,0.7s						
TNSS				*eS*	**Sg**	**21 37 15.9**	**+1.0**
	7.2nm,0.7s						
CHKK	**Chushkaly**	**6.26**	**40**	*eP*	**Pg**	**21 36 09.9**	**-2.9**
	1.1nm,0.5s						
CHKK				*eS*	**Sg**	**21 37 34.8**	**+0.8**
	4.5nm,0.8s						
MKAR	**Makanchi Array**	**10.99**	**43**	P	**Pn**	**21 36 51.9**	**+1.7**
	0.1nm,0.3s,baz=224,slow=14,SNR=12						
BVAR	**Borovoye Array**	**13.83**	**357**	P	**P**	**21 37 36.4**	**-0.9**
	0.1nm,0.3s,baz=162,slow=8.9,SNR=4.9						
AKTO	**Aktyubinsk**	**14.67**	**324**	P	**P**	**21 37 48.5**	**+1.7**
	0.2nm,0.3s,baz=119,slow=16,SNR=3.9						
ZALV	**Zalesovo Beam**	**17.34**	**27**	P	**P**	**21 38 15.3**	**-1.0**
	0.1nm,0.3s,baz=232,slow=11,SNR=2.5						
FINES	**FINESS Array B**	**35.45**	**324**	P	**P**	**21 41 08.7**	**-0.3**
	0.4nm,0.6s,baz=100,slow=9.4,SNR=2.7						
ARCES	**ARCESS Array B**	**38.78**	**336**	P	**P**	**21 41 37.1**	**-0.1**
	1.3nm,0.8s,baz=102,slow=7.6,SNR=5.9						
NOA	**NORSAR Array B**	**42.44**	**321**	P	**P**	**21 42 07.2**	**-0.4**
	0.2nm,0.5s,baz=87,slow=8.5,SNR=2.4						

*NIED **04** 21:39:00, 37.°20N×142.°40E, h14km, Mw4.0 Best double couple: M0 1.28000×10^15 NP1:φs357.00000°, δ33.00000°, λ-138.00000°. NP2:φs230.00000°, δ69.00000°, λ-64.00000°.*
*JMA **04** 21:39:03.6±0.2, 37.°10N×142.°47E, h0km, M4.3*
JMA Felt I J1.
*ISCJB **04** 21:39:05.4±0.3, 37.°10N±0.°03×142.°49E±0.°03, h10km, mb4.2/35, MS3.3/10, Error ellipse: s-maj=4.6km s-min=3.9km az=162.1*
*IDC **04** 21:39:05.6±0.6, 37.°03N×142.°34E, h0km, mb4.0/23, mb1 4.1/30, mb1mx4.0/57, mbtmp4.0/30, ML4.0/6, MS3.2/15, Ms1 3.3/15, ms1mx3.0/55, Error ellipse: s-maj=15.8km s-min=12.5km az=92.0*
*NEIC **04** 21:39:09.2±2.1, 37.°08N×142.°41E, h24km±15km, mb4.6/14, Error ellipse: s-maj=8.5km s-min=6.9km az=106.0*
NEIC Recorded [1 JMA] in Fukushima.
ISC 04 21:39:07.3±0.5, 37.°08N±0.°04×142.°28E±0.°05, h10km, n95, σ1§36/85, mb4.2/35, MS3.3/10, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.16**	**285**	P	**Pn**	**21 39 28.5**	**-1.2**
JFK				*eS*	**Sn**	**21 39 47.1**	**+1.5**
ONAJ	**Iwakimizuishiy**	**1.19**	**272**	P	**Pn**	**21 39 28.9**	**-1.1**
ONAJ				S	**Sn**	**21 39 47.9**	**+1.6**
JMM	**Marumori**	**1.42**	**304**	P	**Pn**	**21 39 32.0**	**-1.2**
JMM				*eS*	**Sg**	**21 39 52.9**	**-0.2**
JIO	**Ouri**	**1.56**	**332**	P	**Pn**	**21 39 33.4**	**-1.7**
JIO				S	**Sb**	**21 39 55.1**	**-1.0**
JFT	**Otama**	**1.61**	**286**	P	**Pb**	**21 39 36.0**	**-1.2**
JOU	**Okura**	**1.82**	**315**	P	**Pb**	**21 39 39.0**	**-1.7**
JMK	**Ichinoseki**	**2.05**	**336**	P	**Pn**	**21 39 41.0**	**-0.8**
JFY	**Yanaizu**	**2.08**	**280**	P	**Pb**	**21 39 43.7**	**-1.5**
JFY				S	**Sb**	**21 40 12.6**	**+1.4**
JYS	**Shiratake**	**2.10**	**304**	P	**Pb**	**21 39 43.4**	**-2.0**
JYK	**Kaneyama**	**2.38**	**321**	P	**Pn**	**21 39 46.1**	**-0.3**
MJAR	**Matsushiro Arr**	**3.31**	**262**	Pn	**Pn**	**21 40 00.9**	**+1.7**
	12nm,0.3s,baz=85,slow=15,SNR=112						
MJAR				Sn	**Sb**	**21 40 44.2**	**-2.3**
	13nm,0.3s,baz=137,slow=55,SNR=4.7						
MAJO	**Matsushiro**	**3.31**	**262**	*e*Pn	**Pn**	**21 40 01.7**	**+2.5**
MAT	**Matsushiro**	**3.31**	**262**	P	**Pn**	**21 40 01.4**	**+2.1**
MAT				S	**Sb**	**21 40 45.6**	**-1.0**
MJB9	**Matsu-Tunnel**	**3.32**	**262**	*e*Pn	**Pb**	**21 40 02.9**	**-3.4**
JHJ2	**Mitsune**	**4.45**	**208**	*e*Pn	**Pn**	**21 40 16.0**	**+1.3**
JHJ	**Hachijo jima 2**	**4.45**	**208**	Pn	**Pn**	**21 40 14.9**	**0.0**
	33nm,0.3s,baz=325,slow=20,SNR=14						
JHJ				Sn	**Sn**	**21 41 11.1**	**+4.4**
	34nm,0.3s,baz=71,slow=22,SNR=5.6						
JHJ				LR	LR	21 41 37.5	
	comp=Z,42nm,18.9s,baz=58,slow=34						
INU	**Inuyama**	**4.59**	**250**	*e*Pn	**Pn**	**21 40 20.0**	**+3.2**
INU				*e*ScS	ScS	21 54 32.3	-10
ERM	**Erimo**	**4.98**	**8**	*e*Pn	**Pn**	**21 40 21.4**	**-0.6**
ASAJ	**Asahikawa**	**7.03**	**2**	Pn	**Pn**	**21 40 49.9**	**-0.5**
	2.6nm,0.3s,baz=225,slow=8.2,SNR=24						
ASAJ				Sn	**Sn**	**21 42 13.5**	**+3.2**
	1.8nm,0.3s,baz=130,slow=16,SNR=4.0						
ASAJ				LR	LR	21 43 51.4	
	comp=Z,144nm,22.0s,baz=158,slow=40						
CBIJ	**Chichi jima**	**9.95**	**181**	*e*Pn	**Pn**	**21 41 28.0**	**-2.4**
JCJ	**Chichijima**	**9.95**	**181**	Pn	**Pn**	**21 41 28.0**	**-2.4**
	4.2nm,0.3s,baz=276,slow=21,SNR=4.7						
JNU	**Nakatsue**	**10.14**	**250**	Pn	**Pn**	**21 41 34.0**	**+1.0**
	0.9nm,0.3s,baz=247,slow=7.0,SNR=5.2						
USRK	**Ussuriysk Ar.**	**10.57**	**315**	Pn	**Pn**	**21 41 40.8**	**+2.0**
	0.4nm,0.3s,baz=132,slow=13,SNR=27						
USRK				LR	LR	21 45 27.7	
	comp=Z,104nm,21.3s,baz=107,slow=36						
KSRS	**Korea Array**	**11.45**	**276**	Pn	Pn	21 41 55.6	+4.8
	0.3nm,0.3s,baz=90,slow=14,SNR=16						
KSRS				LR	LR	21 46 11.5	
	comp=Z,136nm,18.5s,baz=88,slow=37						
KS15	**Wonju Array Si**	**11.48**	**276**	*e*Pn	Pn	21 41 55.6	+4.3
KS15				*e*Sn	Sn	21 43 41.9	-18
KSAR	**Wonju Array Be**	**11.48**	**276**	Pn	Pn	21 41 55.6	+4.3
KLR	**Kul'dur**	**14.36**	**331**	Pn	**Pn**	**21 42 29.3**	**-1.2**
	0.2nm,0.3s,baz=170,slow=11,SNR=4.1						
KLR				LR	LR	21 48 08.1	
	comp=Z,155nm,18.4s,baz=139,slow=38						
YAK	**Yakutsk**	**26.18**	**347**	LR	LR	21 56 34.6	
	comp=Z,57nm,18.9s,baz=256,slow=40						
SEY	**Seymchan**	**26.62**	**10**	P	**P**	**21 44 46.6**	**+1.0**
	1.7nm,0.4s,baz=200,slow=12,SNR=6.2						
H11N2	**WAKE ISLAND Hy**	**27.58**	**122**	T	T	22 13 47.3	
	baz=317,SNR=98						
H11N1	**WAKE ISLAND Hy**	**27.59**	**122**	T	T	22 13 54.1	
	baz=317,SNR=88						
H11N3	**WAKE ISLAND Hy**	**27.59**	**122**	T	T	22 13 48.8	
	baz=317,SNR=100						
ENH	**Enshi**	**28.03**	**266**	*e*P	**P**	**21 45 00.3**	**+1.6**
	30nm,1.8s						
H11S1	**WAKE ISLAND Hy**	**28.30**	**124**	T	T	22 14 45.9	
	baz=319,SNR=125						
H11S3	**WAKE ISLAND Hy**	**28.30**	**124**	T	T	22 14 42.1	
	baz=319,SNR=113						
H11S2	**WAKE ISLAND Hy**	**28.32**	**124**	T	T	22 14 49.3	
	baz=319,SNR=83						
SONA0	**Songino Array**	**28.34**	**304**	*e*P	**P**	**21 45 00.4**	**-1.0**
	6.3nm,0.9s						
SONM	**Songino Array**	**28.34**	**304**	P	**P**	**21 45 00.4**	**-1.0**
	3.0nm,0.7s,baz=124,slow=13,SNR=3.0						
TLY	**Talaya**	**30.83**	**311**	LR	LR	21 57 35.8	
	comp=Z,49nm,19.8s,baz=102,slow=36						
ZAA0	**Zalesovo Array**	**42.40**	**312**	*e*P	**P**	**21 47 01.9**	**+0.2**
ZAA1	**Zalesovo Array**	**42.40**	**312**	*e*P	**P**	**21 47 02.0**	**+0.3**
ZALV	**Zalesovo Beam**	**42.40**	**312**	P	**P**	**21 47 02.0**	**+0.3**
	1.9nm,0.5s,baz=96,slow=7.6,SNR=8.8						
ZALV				LR	LR	22 04 56.3	
	comp=Z,26nm,19.7s,baz=77,slow=36						
NRIK	**Noril'sk**	**43.52**	**335**	LR	LR	22 06 23.6	
	comp=Z,54nm,18.0s,baz=88,slow=38						
MK01	**Makanchi Array**	**44.68**	**302**	*e*P	**P**	**21 47 18.5**	**-1.8**
MK31	**Makanchi Array**	**44.68**	**302**	*e*P	**P**	**21 47 18.6**	**-1.7**
MK32	**Makanchi Array**	**44.68**	**302**	*e*P	**P**	**21 47 18.9**	**-1.4**
MKAR	**Makanchi Array**	**44.68**	**302**	P	**P**	**21 47 18.9**	**-1.4**
	1.5nm,0.7s,baz=190,slow=12,SNR=16						
MKAR				LR	LR	22 06 47.5	
	comp=Z,27nm,18.9s,baz=24,slow=37						
MKAR	**Makanchi Array**	**44.68**	**302**	*e*P	**P**	**21 47 18.6**	**-1.7**
MAKZ	**Makanchi**	**44.89**	**302**	*e*P	**P**	**21 47 22.0**	**+0.1**
	5.2nm,0.8s						
KURK	**Kurchatov**	**46.45**	**308**	*e*P	**P**	**21 47 34.0**	**-0.2**
	8.2nm,0.7s						
KURBB	**Kurchatov Arra**	**46.52**	**308**	P	**P**	**21 47 34.8**	**+0.1**
	6.2nm,0.6s,baz=82,slow=8.1,SNR=37						
ILAR	**Eielson Array**	**49.08**	**32**	P	**P**	**21 47 54.3**	**-0.1**
	1.0nm,0.7s,baz=260,slow=6.6,SNR=8.6						
ILB	**Eielson Array**	**49.08**	**32**	*e*P	**P**	**21 47 54.3**	**-0.1**
IL1	**Eielson Array**	**49.08**	**32**	*e*P	P	21 47 58.8	+4.4
TKM2	**Tokmak 2**	**50.22**	**299**	*e*P	P	21 48 09.0	+5.3
	4.2nm,0.6s						
VOSK	**Vostochnaya**	**50.77**	**312**	*e*P	**P**	**21 48 08.3**	**+0.9**
	4.0nm,0.9s						
BVAR	**Borovoye Array**	**51.06**	**312**	P	**P**	**21 48 11.7**	**+2.1**
	0.7nm,0.5s,baz=69,slow=8.7,SNR=5.3						
AAK	**Ala-Archa**	**51.08**	**299**	LR	LR	22 11 03.1	
	comp=Z,38nm,18.3s,baz=217,slow=38						
INK	**Inuvik**	**54.03**	**27**	P	**P**	**21 48 31.4**	**+0.1**
	0.9nm,0.6s,baz=277,slow=6.9,SNR=5.2						
INK	**Inuvik**	**54.03**	**27**	*e*P	**P**	**21 48 31.4**	**+0.1**
	1.9nm,0.6s						
ARU	**Arti**	**56.79**	**319**	LR	LR	22 14 45.1	
	comp=Z,49nm,18.9s,baz=78,slow=38						
ARU	**Arti**	**56.79**	**319**	*e*P	**P**	**21 48 51.1**	**-0.2**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PGP	**Puerto Galera**	**1.24**	**105**	⇓*eP*	Pn	21 46 05.5	+0.7
PGP				*i* S	Sn	21 46 22.4	+1.3
BUSP	**Coron**	**1.88**	**166**	*eP*	Pn	21 46 14.1	+0.9
BUSP				*eS*	Sn	21 46 37.1	+1.0
SJMP	**San Jose**	**1.93**	**135**	*eP*	Pn	21 46 14.8	+1.1
SJMP				*eS*	Sn	21 46 38.7	+1.5
ENPP	**El Nido**	**2.63**	**186**	*eP*	Pn	21 46 24.9	+1.6
ENPP				*eS*	Sn	21 46 55.1	+1.0
CUYO	**Cuyo Island**	**3.22**	**157**	*eP*	Pn	21 46 32.4	+1.0

NIED ***04*** *21:53:00, 37.°70N×141.°60E, h71km, Mw3.9 Best double couple: M0:6.75000×10^14 NP1:φ=208.00000°, δ=33.00000°, λ=71.00000°. NP2:φ=51.00000°, δ=59.00000°, λ=102.00000°.*
ISCJB ***04*** *21:53:23.1±0.8, 37.°71N±0.°04×141.°68E±0.°09, h61km±6km, mb3.7/10, Error ellipse: s-maj=12.4km s-min=5.6km az=19.3*
JMA ***04*** *21:53:24.4, 37.°72N×141.°60E, h56km±1km, M4.0*
JMA Felt I J1.
IDC ***04*** *21:53:25.1±0.8, 37.°70N×141.°57E, h62km±7km, mb3.4/10, mb1 3.6/15, mb1mx3.4/53, mbtmp3.7/15, MS2.5/2, Ms1 2.5/2, ms1mx2.1/34, Error ellipse: s-maj=19.3km s-min=13.6km az=112.0*
ISC 04 21:53:24.6±0.8, 37.°71N±0.°04×141.°66E±0.°08, h57km±7km, n32, σ0=99/37, mb3.6/10, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JMM	**Marumori**	**0.70**	**283**	P	**Pn**	**21 53 37.9**	**-0.8**
JMM				S	**Sn**	**21 53 47.8**	**-1.2**
JFK	**Kawauchi**	**0.71**	**242**	P	**Pn**	**21 53 38.1**	**-0.7**
JFK				S	**Sn**	**21 53 47.9**	**-1.3**
JIO	**Ouri**	**0.79**	**342**	P	**Pn**	**21 53 39.4**	**-0.3**
JIO				S	**Sn**	**21 53 49.6**	**-1.2**
ONAJ	**Iwakimizuishiy**	**0.91**	**229**	P	**Pn**	**21 53 40.8**	**-0.6**
ONAJ				S	**Sn**	**21 53 52.5**	**-1.3**
JOU	**Okura**	**1.02**	**310**	P	**Pn**	**21 53 42.1**	**-0.7**
JOU				S	**Sn**	**21 53 55.8**	**-0.5**
JFT	**Otama**	**1.06**	**260**	P	**Pn**	**21 53 43.3**	**-0.1**
JFT				S	**Sn**	**21 53 57.1**	**-0.2**
JMK	**Ichinoseki**	**1.29**	**345**	P	**Pn**	**21 53 46.2**	**-0.1**
JMK				S	**Sn**	**21 54 02.1**	**-0.5**
JYS	**Shiratake**	**1.36**	**293**	P	**Pn**	**21 53 46.8**	**-0.5**
MJAR	**Matsushiro Arr**	**2.99**	**248**	P	**Pn**	**21 54 10.5**	**+0.9**
	1.8nm,0.3s,baz=50,slow=11,SNR=35						
MJAR				LR	LR	21 55 40.5	
	comp=Z,35nm,18.5s,baz=75,slow=47						
MAT	**Matsushiro**	**2.99**	**248**	P	**Pn**	**21 54 10.5**	**+1.0**
MAT				S	**Sn**	**21 54 46.3**	**+2.1**
JHJ	**Hachijo jima 2**	**4.83**	**199**	P	**Pn**	**21 54 35.1**	**+0.5**
	5.8nm,0.3s,baz=130,slow=23,SNR=6.5						
JHJ				S	**Sn**	**21 55 26.9**	**-2.4**
	20nm,0.3s,baz=74,slow=22,SNR=7.5						
ASAJ	**Asahikawa**	**6.44**	**6**	P	**Pn**	**21 54 55.2**	**-1.6**
	1.1nm,0.3s,baz=225,slow=11,SNR=12						
USRK	**Ussuriysk Ar.**	**9.77**	**315**	P	**Pn**	**21 55 43.0**	**+0.8**
	0.4nm,0.3s,baz=122,slow=14,SNR=4.6						
KSRS	**Korea Array**	**10.90**	**273**	P	**Pn**	**21 55 57.9**	**+0.1**
	0.1nm,0.3s,baz=79,slow=14,SNR=4.4						
KLR	**Kul'dur**	**13.56**	**331**	LR	LR	22 01 22.4	
	comp=Z,49nm,18.1s,baz=350,slow=35						
PETK	**Petropavlovsk-**	**19.01**	**31**	P	**Pn**	**21 57 42.4**	**-0.3**
	0.3nm,0.3s,baz=55,slow=13,SNR=4.4						
SEY	**Seymchan**	**26.09**	**11**	P	**P**	**21 58 53.6**	**+1.1**
	1.2nm,0.2s,baz=180,slow=9.8,SNR=5.2						
H11N2	**WAKE ISLAND Hy**	**28.33**	**122**	T	T	22 29 34.7	
	SNR=12						
H11N1	**WAKE ISLAND Hy**	**28.34**	**122**	T	T	22 29 36.4	
	SNR=22						
H11N3	**WAKE ISLAND Hy**	**28.35**	**122**	T	T	22 29 37.2	
	SNR=14						
H11S1	**WAKE ISLAND Hy**	**29.07**	**124**	T	T	22 30 31.3	
	SNR=17						
H11S3	**WAKE ISLAND Hy**	**29.07**	**124**	T	T	22 30 28.4	
	SNR=19						
H11S2	**WAKE ISLAND Hy**	**29.09**	**124**	T	T	22 30 30.6	
	SNR=14						
MKAR	**Makanchi Array**	**43.93**	**302**	P	**P**	**22 01 24.6**	**-1.1**
	0.2nm,0.2s,baz=84,slow=12,SNR=4.0						
KURBB	**Kurchatov Arra**	**45.74**	**308**	P	**P**	**22 01 39.5**	**-0.5**
	1.3nm,0.5s,baz=82,slow=7.9,SNR=17						
ILAR	**Eielson Array**	**48.82**	**33**	P	**P**	**22 02 04.0**	**+0.2**
	0.2nm,0.6s,baz=264,slow=7.9,SNR=4.2						
INK	**Inuvik**	**53.70**	**27**	P	**P**	**22 02 41.4**	**+1.2**
	0.5nm,0.4s,baz=305,slow=7.4,SNR=6.5						
WRA	**Warramunga Arr**	**57.75**	**188**	P	**P**	**22 03 09.4**	**-0.3**
	1.1nm,1.0s,baz=5.6,slow=7.3,SNR=5.7						
WRA				pP	**pP**	**22 03 26.4**	**+1.3**
	0.6nm,0.5s,baz=6.9,slow=7.4,SNR=2.8						
ASAR	**Alice Springs**	**61.48**	**188**	P	**P**	**22 03 35.3**	**0.0**
	0.2nm,0.6s,baz=252,slow=29,SNR=2.7						
ASAR				pP	**pP**	**22 03 51.3**	**+0.5**
	0.5nm,0.8s,baz=3.7,slow=7.8,SNR=4.1						
YKA	**Yellowknife Ar**	**63.13**	**30**	P	**P**	**22 03 45.4**	**-0.5**
	0.3nm,0.7s,baz=304,slow=6.8,SNR=6.4						
YKA				pP	**pP**	**22 04 02.3**	**+0.9**
	0.0nm,0.4s,baz=132,slow=49,SNR=2.1						
AKASG	**Malin Array Be**	**73.88**	**322**	P	**P**	**22 04 52.3**	**-0.9**
	0.5nm,0.5s,baz=50,slow=6.1,SNR=3.7						
TXAR	**Lajitas Array**	**89.56**	**53**	P	**P**	**22 06 16.5**	**+0.4**
	0.2nm,0.7s,baz=343,slow=2.8,SNR=3.3						

IDC ***04*** *22:02:33.6±7.2, 40.°00N×78.°31E, h39km±42km, mb3.3/2, mb1 3.2/6, mb1mx3.0/55, mbtmp3.2/6, ML3.0/5, Error ellipse: s-maj=68.2km s-min=27.7km az=168.0*
SOME ***04*** *22:02:34.5, 40.°63N×77.°80E, h0km*
ISC 04 22:02:33.4±1.3, 40.°55N±0.°07×77.°77E±0.°04, h10km, n29, σ0=11/53, 2C-3D, Kyrgyzstan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SATY	**Saty**	**2.55**	**11**	*eP*	**Pg**	**22 03 21.9**	**-0.4**
	82nm,0.5s						
SATY				⇓*i* S	**Sg**	**22 03 56.2**	**+0.9**
	91nm,0.8s						
TNSS	**Tian-Shan**	**2.56**	**346**	*eP*	**Pg**	**22 03 22.0**	**-0.5**
	62nm,0.8s						
TNSS				*eS*	**Sg**	**22 03 55.8**	**0.0**
	231nm,0.8s						
ZHN	**Zhinishke**	**2.66**	**11**	*eP*	**Pb**	**22 03 21.3**	**+0.1**
	12nm,0.3s						
ZHN				*eS*	**Sg**	**22 03 55.2**	**-3.6**
	86nm,0.6s						
MDOK	**Medeo**	**2.67**	**349**	*eP*	**Pg**	**22 03 23.7**	**-0.7**
	46nm,0.4s						
MDOK				*eS*	**Sg**	**22 03 59.3**	**+0.3**
	134nm,0.6s						
KOTS	**Kotyrbulak**	**2.73**	**350**	*eP*	**Pg**	**22 03 25.0**	**-0.6**
	51nm,0.6s						
KOTS				*eS*	**Sg**	**22 04 01.8**	**+0.8**
	142nm,0.8s						
MTBS	**Maitube**	**2.77**	**339**	*eP*	**Pg**	**22 03 25.1**	**-1.3**
	10nm,0.3s						
MTBS				⇓*i* S	**Sg**	**22 04 01.8**	**-0.4**
	97nm,0.7s						
AAA	**Alma-Ata**	**2.79**	**348**	*eP*	**Pg**	**22 03 25.2**	**-1.5**
	59nm,0.6s						
AAA				*eS*	**Sg**	**22 04 01.6**	**-1.3**
	228nm,0.9s						
KST	**Kastek**	**2.83**	**332**	⇑*i* P	**Pg**	**22 03 26.9**	**-0.8**
	17nm,0.7s						
KST				⇑*i* S	**Sg**	**22 04 04.4**	**0.0**
	442nm,0.5s						
KURS	**Kuram**	**2.95**	**6**	*eP*	**Pb**	**22 03 27.5**	**+1.5**
KURS				*eS*	**Sg**	**22 04 05.7**	**-2.4**
KPKS	**Kokpek**	**2.99**	**13**	*eP*	**Pg**	**22 03 29.4**	**-1.3**
	74nm,0.3s						
KPKS				*eS*	**Sg**	**22 04 08.7**	**-0.7**
	44nm,1.1s						
SHLS	**Shalkode**	**3.04**	**31**	*eP*	**Pg**	**22 03 30.1**	**-1.6**
	25nm,0.6s						
SHLS				*eS*	**Sg**	**22 04 10.6**	**-0.5**
	74nm,0.6s						
DGS	**Degeres**	**3.08**	**332**	*eP*	**Pg**	**22 03 31.1**	**-1.2**
	36nm,0.5s						
DGS				*eS*	**Sg**	**22 04 11.6**	**-0.5**
	77nm,0.6s						
AAK	**Ala-Archa**	**3.22**	**311**	Pn	**Pb**	**22 03 33.0**	**+2.3**
	7.4nm,0.3s,baz=125,slow=11,SNR=87						
AAK				Sn	**Sg**	**22 04 16.5**	**-0.2**
	4.3nm,0.3s,baz=274,slow=16,SNR=16						
CHKK	**Chushkaly**	**3.37**	**350**	*eP*	**Pg**	**22 03 35.7**	**-2.2**
	20nm,0.6s						
CHKK				*eS*	**Sg**	**22 04 20.0**	**-1.4**
	120nm,0.5s						
KTMS	**Ketmen**	**3.47**	**33**	*eP*	**Pb**	**22 03 37.0**	**+2.0**
	7.7nm,0.4s						
KTMS				*eS*	**Sg**	**22 04 22.4**	**-2.5**
	56nm,0.9s						
KUU	**Kurty**	**3.50**	**343**	*eP*	**Pg**	**22 03 38.0**	**-2.4**
	27nm,0.7s						
KUU				⇓*i* S	**Sg**	**22 04 23.8**	**-2.1**
	81nm,0.9s						
MNBS	**Baschi**	**3.56**	**7**	*eP*	**Pb**	**22 03 37.5**	**+1.1**
	11nm,0.6s						
MNBS				*eS*	**Sg**	**22 04 24.0**	**-3.5**
	149nm,0.6s						
ARXS	**Arharly**	**3.66**	**1**	*eP*	**Pg**	**22 03 41.3**	**-2.2**
ARXS				*eS*	**Sg**	**22 04 29.5**	**-1.4**
	152nm,0.6s						
MRKS	**Merke**	**4.05**	**304**	*eP*	**Pg**	**22 03 49.0**	**-1.9**
	16nm,0.5s						
MRKS				*eS*	**Sg**	**22 04 42.3**	**-1.1**
	16nm,0.6s						
DJR	**Jarkent**	**4.06**	**21**	*eP*	**Pg**	**22 03 48.8**	**-2.4**
	14nm,0.3s						
DJR				*eS*	**Sg**	**22 04 42.2**	**-1.6**
	25nm,0.5s						
TDK	**Taldyqorghan**	**4.48**	**6**	*eP*	**Pg**	**22 03 55.9**	**-3.2**
	11nm,0.8s						
TDK				*eS*	**Sg**	**22 04 55.0**	**-2.0**
	37nm,1.1s						
KAPS	**Kapalarasan**	**4.87**	**13**	*eP*	**Pg**	**22 04 03.3**	**-3.4**
	4.1nm,0.6s						
KAPS				*eS*	**Sg**	**22 05 06.8**	**-2.9**
	19nm,0.9s						
IUG	**Iuzhnay**	**6.04**	**288**	*eP*	**Pg**	**22 04 25.8**	**-3.2**
	8.5nm,0.8s						
IUG				*eS*	**Sg**	**22 05 45.6**	**-1.6**
	23nm,1.1s						
MKAR	**Makanchi Array**	**7.05**	**26**	Pn	**Pn**	**22 04 20.4**	**+3.9**
	0.1nm,0.3s,baz=202,slow=15,SNR=3.6						
MKAR				Sn	**Sn**	**22 05 41.3**	**+4.6**
	0.2nm,0.3s,baz=199,slow=21,SNR=5.9						
MKAR				Lg	Lg	22 06 22.1	
	0.1nm,0.3s,baz=206,slow=30,SNR=5.5						
KURBB	**Kurchatov Arra**	**10.09**	**3**	Pn	**Pn**	**22 05 01.1**	**+2.9**
	0.0nm,0.3s,baz=194,slow=12,SNR=4.0						
KURBB				Lg	Lg	22 07 55.9	
	0.0nm,0.3s,baz=182,slow=27,SNR=5.9						
BVAR	**Borovoye Array**	**13.45**	**341**	Pn	**P**	**22 05 49.3**	**-4.3**
	0.3nm,0.3s,baz=261,slow=39,SNR=2.9						
BVAR				Lg	Lg	22 09 48.0	
	0.1nm,0.3s,baz=142,slow=24,SNR=6.4						
ZALV	**Zalesovo Beam**	**14.22**	**17**	Pn	**Pn**	**22 05 56.8**	**+2.1**
	0.1nm,0.3s,baz=221,slow=7.7,SNR=2.4						
FINES	**FINESS Array B**	**37.35**	**322**	P	**P**	**22 09 47.7**	**+2.0**
	0.9nm,0.8s,baz=88,slow=8.5,SNR=3.3						
YKA	**Yellowknife Ar**	**76.82**	**6**	P	**P**	**22 14 23.7**	**-1.2**
	0.2nm,0.6s,baz=350,slow=5.2,SNR=4.6						

NEIC ***04*** *22:14:01.0, 38.°30S×178.°10E, h19km, ML4.0(WEL), After WEL.*
WEL 04 22:14:00.9±0.1, 38.°30S×178.°13E, h20km±1km, ML3.9/13, 7C-11D, Error ellipse: s-maj=1.8km s-min=0.8km az=90.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWGZ	**Tauwhareparae**	**0.17**	**317**	⇑P*	Pb	22 14 05.0	-1.7
TWGZ				S*	Sb	22 14 09.1	-1.6
TWGZ	**Tauwhareparae**	**0.17**	**317**	P*	Pb	22 14 05.0	-1.7
CNGZ	**Carnagh Statio**	**0.19**	**162**	⇓P*	Pb	22 14 05.9	-0.8
CNGZ	**Carnagh Statio**	**0.19**	**162**	P*	Pb	22 14 05.9	-0.7
PUZ	**Puketiti**	**0.25**	**23**	⇑P*	Pb	22 14 06.6	-0.5
PUZ				S*	Sb	22 14 11.2	-0.1
PUZ				AML	AML	22 14 13.1	
PUZ	**Puketiti**	**0.25**	**23**	P*	Pb	22 14 06.6	-0.5
PUZ				S*	Sb	22 14 11.2	-0.1
TKGZ	**Te Karaka**	**0.26**	**239**	P*	Pb	22 14 06.2	-0.9
TKGZ				S*	Sb	22 14 11.3	-0.1
TKGZ	**Te Karaka**	**0.26**	**239**	P*	Pb	22 14 06.2	-0.9
TKGZ				S*	Sb	22 14 11.3	-0.1
PKGZ	**Pakihiroa**	**0.42**	**354**	⇑P*	Pb	22 14 09.5	-0.1
MWZ	**Matawai**	**0.48**	**266**	⇓P*	Pb	22 14 09.7	-0.9
MWZ				AML	AML	22 14 17.1	
MWZ				AML	AML	22 14 17.1	
MWZ	**Matawai**	**0.48**	**266**	⇓P*	Pb	22 14 09.7	-0.9
RIGZ	**Rimuhau**	**0.50**	**216**	⇓P*	Pb	22 14 11.3	+0.3
WMGZ	**Waiomatatini S**	**0.53**	**25**	⇓P*	Pb	22 14 12.1	+0.5
WMGZ	**Waiomatatini S**	**0.53**	**25**	P*	Pb	22 14 12.2	+0.5
RAGZ	**Rawiri**	**0.59**	**251**	⇓P*	Pb	22 14 12.2	-0.6
RAGZ	**Rawiri**	**0.59**	**251**	P*	Pb	22 14 12.2	-0.6
HAZ	**Te Kaha**	**0.61**	**333**	⇓P*	Pb	22 14 12.2	-0.8
HAZ				S*	Sb	22 14 21.3	+0.1
MXZ	**Matakaoa Point**	**0.75**	**11**	P*	Pn	22 14 15.9	-0.5
MXZ				AML	AML	22 14 30.2	
MXZ				AML	AML	22 14 30.2	
MXZ				AML	AML	22 14 30.4	
MXZ				AML	AML	22 14 30.5	
MXZ	**Matakaoa Point**	**0.75**	**11**	P*	Pn	22 14 15.9	-0.5
KNZ	**Kokohu**	**0.80**	**206**	P*	Pb	22 14 15.7	-0.4
KNZ				AML	AML	22 14 38.9	
KNZ				AML	AML	22 14 45.5	
KNZ	**Kokohu**	**0.80**	**206**	P*	Pb	22 14 15.7	-0.4
URZ	**Urewera**	**0.81**	**273**	⇓P*	Pb	22 14 15.5	-0.7
URZ				AML	AML	22 14 26.9	
URZ				AML	AML	22 14 27.0	
URZ	**Urewera**	**0.81**	**273**	P*	Pb	22 14 15.2	-1.1
MHGZ	**Mahia Peninsul**	**0.87**	**192**	P*	Pb	22 14 16.7	-0.5
MHGZ	**Mahia Peninsul**	**0.87**	**192**	P*	Pb	22 14 16.7	-0.5
RAHZ	**Arahi**	**1.02**	**233**	PN	Pb	22 14 19.0	-0.9
RAHZ	**Arahi**	**1.02**	**233**	P*	Pb	22 14 19.2	-0.7
WHHZ	**Waihua**	**1.04**	**222**	PN	Pb	22 14 19.4	-0.9
WIZ	**White Island**	**1.08**	**316**	⇑PN	Pn	22 14 20.5	-0.3
WIZ	**White Island**	**1.08**	**316**	Pn	Pn	22 14 20.5	-0.3
MUGZ	**Murupara**	**1.08**	**260**	⇓PN	Pn	22 14 20.6	-0.3
EDRZ	**Edgecumbe**	**1.11**	**280**	⇑PN	Pb	22 14 21.7	+0.2
EDRZ				AML	AML	22 14 40.4	
EDRZ				AML	AML	22 14 44.7	
EDRZ	**Edgecumbe**	**1.11**	**280**	Pn	Pb	22 14 21.7	+0.2
MARZ	**Manawahe**	**1.19**	**285**	Pn	Pn	22 14 22.1	-0.4
RRRZ	**Republican Roa**	**1.27**	**268**	PN	Pb	22 14 24.1	-0.1
RRRZ	**Republican Roa**	**1.27**	**268**	Pn	Pb	22 14 24.4	+0.2
TARZ	**Mount Tarawera**	**1.28**	**273**	PN	Pn	22 14 23.5	-0.3
NMHZ	**Naumai**	**1.30**	**232**	⇑PN	Pn	22 14 23.3	-0.8
NMHZ	**Naumai**	**1.30**	**232**	Pn	Pn	22 14 23.3	-0.8
ARHZ	**Aropaoanui**	**1.31**	**222**	PN	Pn	22 14 23.4	-0.6
ARHZ	**Aropaoanui**	**1.31**	**222**	Pn	Pn	22 14 23.4	-0.6
MKRZ	**Makatiti**	**1.32**	**277**	PN	Pb	22 14 25.2	+0.2
MKRZ				AML	AML	22 14 32.6	
MKRZ				AML	AML	22 14 33.9	
OPRZ	**Ohinepanea**	**1.33**	**290**	PN	Pn	22 14 23.5	-0.8
OPRZ	**Ohinepanea**	**1.33**	**290**	Pn	Pn	22 14 23.5	-0.8
ALRZ	**Allen Road**	**1.43**	**259**	PN	Pn	22 14 25.5	-0.2
ALRZ	**Allen Road**	**1.43**	**259**	Pn	Pn	22 14 25.5	-0.2
MRHZ	**Matea Rd**	**1.45**	**248**	PN	Pn	22 14 25.5	-0.4
HRRZ	**Handcock Road**	**1.46**	**266**	⇓PN	Pb	22 14 27.9	+0.6
HRRZ	**Handcock Road**	**1.46**	**266**	Pn	Pb	22 14 27.9	+0.6
BKZ	**Black Stump Fm**	**1.54**	**236**	⇓PN	Pn	22 14 26.5	-0.9
BKZ				AML	AML	22 14 58.7	
BKZ				AML	AML	22 14 59.2	
BKZ	**Black Stump Fm**	**1.54**	**236**	Pn	Pn	22 14 26.4	-0.9
CKHZ	**Cape Kidnapper**	**1.58**	**211**	PN	Pn	22 14 26.1	-1.7
CKHZ	**Cape Kidnapper**	**1.58**	**211**	Pn	Pn	22 14 26.1	-1.7
MCHZ	**McNeill Hill**	**1.60**	**224**	⇑PN	Pn	22 14 27.1	-0.9
MCHZ	**McNeill Hill**	**1.60**	**224**	Pn	Pn	22 14 27.1	-0.9
KWHZ	**Kaweka Forest**	**1.74**	**229**	PN	Pn	22 14 28.7	-1.3
KAHZ	**Kahuranaki**	**1.78**	**213**	PN	Pn	22 14 28.8	-1.8
KAHZ	**Kahuranaki**	**1.78**	**213**	Pn	Pn	22 14 28.8	-1.8
KRHZ	**Kereru**	**1.92**	**225**	PN	Pn	22 14 30.7	-1.7
PXZ	**Pawanui**	**1.99**	**209**	PN	Pn	22 14 30.9	-2.4
PXZ				AML	AML	22 15 24.6	
PXZ				AML	AML	22 15 27.1	
PXZ	**Pawanui**	**1.99**	**209**	Pn	Pn	22 14 30.9	-2.4
BHHZ	**Black Hill Sta**	**2.00**	**233**	PN	Pn	22 14 32.3	-1.3
BHHZ	**Black Hill Sta**	**2.00**	**233**	Pn	Pn	22 14 32.3	-1.3
KRVZ	**Karewarewa**	**2.10**	**247**	PN	Pn	22 14 34.4	-0.6
KRVZ				AML	AML	22 15 16.8	
KRVZ				AML	AML	22 15 20.8	
KRVZ	**Karewarewa**	**2.10**	**247**	Pn	Pn	22 14 34.4	-0.6
TOZ	**Tahuroa Road**	**2.15**	**285**	AML	AML	22 14 44.9	
NGZ	**Ngauruhoe**	**2.16**	**245**	PN	Pn	22 14 35.6	-0.3
NGZ				AML	AML	22 15 28.7	
NGZ				AML	AML	22 15 32.1	
NGZ	**Ngauruhoe**	**2.16**	**245**	Pn	Pn	22 14 35.6	-0.3
PNHZ	**Pukenui**	**2.20**	**222**	PN	Pn	22 14 34.1	-2.3
PNHZ	**Pukenui**	**2.20**	**222**	Pn	Pn	22 14 34.1	-2.3
WNVZ	**Wahianoa**	**2.23**	**242**	PN	Pn	22 14 36.3	-0.5
WNVZ	**Wahianoa**	**2.23**	**242**	Pn	Pn	22 14 36.3	-0.5
TSZ	**Takapari Road**	**2.43**	**223**	AML	AML	22 15 38.5	
ANWZ	**Angora Road**	**2.51**	**210**	PN	Pn	22 14 38.4	-2.1
MKAZ	**Moumakai**	**2.64**	**296**	PN	Pn	22 14 41.8	-0.5
POWZ	**Post Office Ro**	**2.78**	**221**	PN	Pn	22 14 41.6	-2.6
POWZ	**Post Office Ro**	**2.78**	**221**	Pn	Pn	22 14 41.6	-2.6
BFZ	**Birch Farm**	**2.79**	**211**	PN	Pn	22 14 41.1	-3.3
BFZ	**Birch Farm**	**2.79**	**211**	Pn	Pn	22 14 41.1	-3.3
WAZ	**Wanganui**	**2.85**	**238**	PN	Pn	22 14 44.9	-0.3
MRZ	**Mangatainoka R**	**3.07**	**219**	PN	Pn	22 14 44.7	-3.5
MRZ	**Mangatainoka R**	**3.07**	**219**	Pn	Pn	22 14 44.8	-3.5
HOWZ	**Holdsworth Sta**	**3.29**	**217**	PN	Pn	22 14 47.9	-3.4
HOWZ	**Holdsworth Sta**	**3.29**	**217**	Pn	Pn	22 14 47.9	-3.4
MTW	**Mount Morrison**	**3.50**	**215**	PN	Pn	22 14 50.3	-3.8
MTW	**Mount Morrison**	**3.50**	**215**	Pn	Pn	22 14 50.3	-3.8
DUWZ	**D'Urville Isla**	**4.10**	**231**	PN	Pn	22 14 59.5	-2.9
DUWZ	**D'Urville Isla**	**4.10**	**231**	Pn	Pn	22 14 59.5	-2.9

ISCJB ***04*** *22:22:00.5±0.5, 39.°40N±0.°05×140.°8E±0.°1, h145km±4km, mb3.3/5, Error ellipse: s-maj=15.9km s-min=6.5km az=17.4*
IDC ***04*** *22:22:01.6±2.1, 39.°64N×140.°58E, h127km±21km, mb3.1/5, mb1 3.2/7, mb1mx3.0/38, mbtmp3.4/7, Error ellipse: s-maj=27.0km s-min=17.5km az=113.0*
JMA ***04*** *22:22:01.6±0.1, 39.°39N×140.°71E, h141km±1km, M3.1*
ISC 04 22:22:01.9±0.8, 39.°41N±0.°05×140.°73E±0.°10, h140km±6km, n24, σ0=88/26, mb3.4/5, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JRG	**Rokugo**	**0.07**	**257**	P	**Pn**	**22 22 20.7**	**0.0**
JRG				*eS*	**Sn**	**22 22 35.5**	**+0.5**
JOM	**Ohasama**	**0.44**	**82**	P	**Pn**	**22 22 21.6**	**-0.2**
JOM				*eS*	**Sn**	**22 22 37.0**	**+0.2**
JYK	**Kaneyama**	**0.57**	**210**	P	**Pn**	**22 22 22.1**	**-0.4**
JYK				*eS*	**Sn**	**22 22 38.0**	**-0.1**
JMK	**Ichinoseki**	**0.60**	**140**	P	**Pn**	**22 22 22.0**	**-0.6**
JMK				*eS*	**Sn**	**22 22 37.7**	**-0.6**
JAH	**Hinai**	**0.78**	**355**	P	**Pn**	**22 22 24.1**	**+0.2**
JAH				*eS*	**Sn**	**22 22 40.9**	**+0.3**
JOU	**Okura**	**1.05**	**183**	P	**Pn**	**22 22 25.8**	**-0.4**
JANG	**Nango**	**1.13**	**32**	P	**Pn**	**22 22 26.9**	**0.0**
JANG				*eS*	**Sn**	**22 22 45.5**	**-0.6**
JAW	**Awa shima**	**1.50**	**231**	P	**Pn**	**22 22 30.1**	**-0.6**
JFT	**Otama**	**1.92**	**189**	P	**Pn**	**22 22 34.8**	**-0.7**
JFT				*eS*	**Sn**	**22 22 00.3**	**-0.8**
JNS	**Sasagawa**	**1.94**	**215**	P	**Pn**	**22 22 35.1**	**-0.6**
JOT	**Ohata**	**1.98**	**7**	P	**Pn**	**22 22 36.2**	**+0.1**
JOT				*eS*	**Sn**	**22 23 02.8**	**+0.3**
MJAR	**Matsushiro Arr**	**3.49**	**216**	P	**Pn**	**22 22 54.9**	**-0.3**
	0.5nm,0.3s,baz=24,slow=14,SNR=13						
ASAJ	**Asahikawa**	**4.90**	**16**	P	**Pn**	**22 23 12.4**	**-1.4**
	0.6nm,0.3s,baz=216,slow=15,SNR=6.9						
H11N2	**WAKE ISLAND Hy**	**29.87**	**123**	T	T	22 58 56.2	
	SNR=15						
H11N1	**WAKE ISLAND Hy**	**29.88**	**124**	T	T	22 58 46.3	
	SNR=16						
H11N3	**WAKE ISLAND Hy**	**29.89**	**123**	T	T	22 58 47.0	
	SNR=18						
H11S1	**WAKE ISLAND Hy**	**30.64**	**125**	T	T	22 59 39.7	
	SNR=7.6						
H11S3	**WAKE ISLAND Hy**	**30.64**	**125**	T	T	22 59 38.9	
	SNR=8.3						
H11S2	**WAKE ISLAND Hy**	**30.66**	**125**	T	T	22 59 40.4	
	SNR=6.6						
ZALV	**Zalesovo Beam**	**39.94**	**310**	P	**P**	**22 29 21.2**	**-0.9**
	0.9nm,0.4s,baz=96,slow=6.6,SNR=4.2						
MKAR	**Makanchi Array**	**42.43**	**300**	P	**P**	**22 29 41.8**	**-0.9**
	0.7nm,0.6s,baz=

2.3nm,0.8s
ASAJ Asahikawa 41.07 18 P **P 22 42 30.4 -0.6**
1.7nm,0.6s,baz=223,slow=11,SNR=5.6
ASAJ Asahikawa 41.07 18 *eP* **P 22 42 30.4 -0.6**
41nm,1.9s
KLR Kul'dur 43.78 5 P **P 22 42 52.3 -0.6**
1.3nm,0.6s,baz=228,slow=6.9,SNR=5.6
PETK Petropavlovsk- 54.02 23 P **P 22 44 11.2 +0.2**
1.5nm,0.5s,baz=180,slow=4.3,SNR=4.2
PEA1 Petropavlovsk- 54.02 23 *eP* **P 22 44 11.2 +0.2**
MK31 Makanchi Array 55.63 325 *eP* **P 22 44 21.8 -1.0**
MK32 Makanchi Array 55.63 325 *eP* **P 22 44 21.6 -1.2**
MKAR Makanchi Array 55.63 325 P **P 22 44 21.6 -1.2**
0.8nm,0.4s,baz=111,slow=7.7,SNR=16
MKAR LR LR 23 07 48.8
comp=Z,28nm,19.1s,baz=2.5,slow=36
MKAR Makanchi Array 55.63 325 *eP* **P 22 44 21.8 -1.0**
SEY Seymchan 60.42 14 P **P 22 44 57.6 +1.8**
1.7nm,0.2s,baz=232,slow=2.9,SNR=6.3
CAST Castle Rocks 81.43 27 *eP* **P 22 47 03.6 +0.7**
6.9nm,0.6s
BPAW Bear Paw Mtn. 81.96 26 *eP* **P 22 47 06.3 +0.6**
9.5nm,1.0s
MLY Manley 82.13 25 *eP* **P 22 47 07.5 +0.9**
4.7nm,0.9s
TRF Thorofare Moun 82.23 27 *eP* **P 22 47 07.8 +0.4**
5.5nm,0.9s
COLD Coldfoot 82.49 23 *eP* **P 22 47 10.1 +1.7**
1.9nm,0.8s
MCK McKinley 82.85 27 *eP* **P 22 47 10.4 +0.1**
6.5nm,0.8s
SML Sawmill 83.08 28 *eP* **P 22 47 12.2 +0.6**
8.0nm,0.8s
ILAR Eielson Array 83.77 26 P **P 22 47 14.6 -0.4**
1.0nm,0.6s,baz=246,slow=5.1,SNR=11
ILB Eielson Array 83.77 26 *eP* **P 22 47 14.6 -0.4**
ARA0 ARCESS Array S 88.48 340 *eP* **P 22 47 36.1 -1.9**
ARCES ARCESS Array B 88.48 340 P **P 22 47 36.1 -1.9**
1.0nm,0.7s,baz=71,slow=5.3,SNR=5.4
INK Inuvik 88.73 21 P **P 22 47 38.4 -0.8**
0.3nm,0.6s,baz=292,slow=3.7,SNR=4.0
INK Inuvik 88.73 21 *eP* **P 22 47 38.4 -0.8**
15nm,1.9s
FIA0 FINESS Array S 89.87 332 *eP* **P 22 47 43.0 -1.6**
FINES FINESS Array B 89.87 332 P **P 22 47 43.0 -1.6**
0.7nm,0.5s,baz=50,slow=6.7,SNR=10.0
SYO Syowa Base 93.87 201[1] *epP* pP 22 48 30.0 -0.9
YKA Yellowknife Ar 98.13 24 P **P 22 48 21.8 -0.7**
0.2nm,0.8s,baz=292,slow=4.2,SNR=5.0
YKB5 Yellowknife Ar 98.13 24 *eP* **P 22 48 21.8 -0.7**

CSEM ***04*** *22:38:42.8±0.3, 33°.77N×35°.72E, h8km, ML2.8, Error ellipse: s-maj=10.2km s-min=4.8km az=86.0*
NSSC ***04*** *22:38:42.2±0.9, 33°.73N×35°.58E, h11km±4km, MD1.0, ML1.0*
GRAL ***04*** *22:38:42.9±0.3, 33°.80N×35°.80E, h13km±3km, MD2.8*
ISCJB ***04*** *22:38:43.3±0.9, 33°.73N±0°.03×35°.64E±0°.09, h19km±7km, Error ellipse: s-maj=12.2km s-min=5.0km az=167.4*
ISC 04 22:38:43.0±0.9,**33°.77N**±0°.02×**35°.71E**±0°.04,**h17**km±6**km**, **n19**,σ0**s74**/33,**Jordan-Syria region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DQRL	**Deir Qamar**	**0.14**	**242**	*eP*	**Pb**	**22 38 47.3**	**+0.1**
DQRL				*eS*	**Sg**	**22 38 50.6**	**+1.0**
DQRL	**Deir Qamar**	**0.14**	**242**	*eP*	**Pb**	**22 38 47.3**	**+0.1**
DQRL				*eS*	**Sg**	**22 38 50.6**	**+1.0**
BHL	**Bhannes**	**0.14**	**340**	*eP*	**Pg**	**22 38 46.5**	**-0.6**
BHL	**Bhannes**	**0.14**	**340**	*eP*	**Pg**	**22 38 46.5**	**-0.6**
BEYL	**Beirut**	**0.21**	**299**	*eP*	**Pb**	**22 38 48.1**	**-0.2**
RCY	**Rachaya**	**0.29**	**160**	*eP*	**Pg**	**22 38 48.8**	**-0.6**
RCY				*eS*	**Sg**	**22 38 53.1**	**-0.6**
RCY	**Rachaya**	**0.29**	**160**	*eP*	**Pg**	**22 38 48.8**	**-0.6**
RCY				*eS*	**Sg**	**22 38 53.1**	**-0.6**
BRBR	**Barbar**	**0.41**	**151**	*eP*	**Pg**	**22 38 51.1**	**-0.3**
BRBR				*eS*	**Sb**	**22 38 57.7**	**-0.2**
BRBR				AML	AML	22 39 00.8	
	comp=N,26nm,0.3s						
BRBR				AML	AML	22 39 00.9	
	comp=E,9.4nm,0.3s						
BRBR	**Barbar**	**0.41**	**151**	*eP*	**Pg**	**22 38 51.1**	**-0.3**
BRBR				*eS*	**Sb**	**22 38 57.7**	**-0.2**
	comp=E,9.0nm,0.3s						
HWQ	**Hawqa**	**0.54**	**21**	*eP*	**Pg**	**22 38 52.0**	**-1.8**
HWQ	**Hawqa**	**0.54**	**21**	*eP*	**Pg**	**22 38 52.0**	**-1.8**
HAWK	**Haweek**	**0.94**	**37**	*eP*	**Pb**	**22 39 01.3**	**+0.3**
HAWK				*eS*	**Sn**	**22 39 15.1**	**+0.3**
HAWK				AML	AML	22 39 18.1	
	comp=N,3.8nm,0.7s						
HAWK				AML	AML	22 39 26.3	
	comp=E,5.6nm,0.4s						
HAWK	**Haweek**	**0.94**	**37**	*eP*	**Pb**	**22 39 01.3**	**+0.3**
HAWK				*eS*	**Sn**	**22 39 15.1**	**+0.3**
	comp=E,6.0nm,0.4s						
BIDA	**Albida**	**1.34**	**22**	*eP*	**Pb**	**22 39 08.1**	**+0.4**
BIDA				*eS*	**Sg**	**22 39 27.4**	**+1.2**
BIDA				AML	AML	22 39 29.9	
	comp=N,11nm,0.4s						
BIDA				AML	AML	22 39 31.4	
	comp=E,7.3nm,0.7s						
BIDA	**Albida**	**1.34**	**22**	*eP*	**Pb**	**22 39 08.1**	**+0.4**
BIDA				*eS*	**Sg**	**22 39 27.4**	**+1.2**
	comp=E,7.0nm,0.7s						
SALA	**Sala**	**1.36**	**141**	*eP*	**Pn**	**22 39 07.2**	**-0.2**
SALA				*eS*	**Sb**	**22 39 25.5**	**+0.2**
SALA				AML	AML	22 39 30.3	
	comp=E,0.5nm,0.3s						
SALA				AML	AML	22 39 32.3	
	comp=N,3.7nm,0.6s						
SALA	**Sala**	**1.36**	**141**	*eP*	**Pn**	**22 39 07.2**	**-0.2**
SALA				*eS*	**Sb**	**22 39 25.5**	**+0.2**
	comp=N,4.0nm,0.6s						
ZALF	**Zalf**	**1.60**	**122**	*eP*	**Pb**	**22 39 12.1**	**0.0**
ZALF				*eS*	**Sb**	**22 39 32.9**	**+0.9**
ZALF				AML	AML	22 39 39.0	
	comp=E,3.6nm,0.4s						
ZALF				AML	AML	22 39 40.5	
	comp=N,2.5nm,0.6s						
ZALF	**Zalf**	**1.60**	**122**	*eP*	**Pb**	**22 39 12.1**	**0.0**
ZALF				*eS*	**Sb**	**22 39 32.9**	**+0.9**
	comp=N,3.0nm,0.6s						

ISCJB ***04*** *22:39:00.1±0.5, 27°.67S±0°.04×178°.91W±0°.05, h356km±6km, mb4.5/69, Error ellipse: s-maj=8.2km s-min=6.0km az=38.8*
IDC ***04*** *22:39:00.7±0.5, 27°.49S×178°.82W, h349km±5km, mb3.9/21, mb1 4.1/22, mb1mx4.0/38, mbtmp4.6/22, Error ellipse: s-maj=14.0km s-min=12.3km az=170.0*
NEIC ***04*** *22:39:00.9±0.6, 27°.44S×178°.87W, h350km±6km, mb4.7/47, Error ellipse: s-maj=8.9km s-min=6.0km az=156.0*
ISC 04 22:39:00.2±0.5,**27°.67S**±0°.05×**178°.78W**±0°.08,
h349km±4km,**h349**km:**pP-P**,**n176**,σ1**s36**/201,**mb4.6**/69,
Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.74**	**155**	P	**Pn**	**22 39 51.8**	**+2.2**
	1μm,0.3s,baz=121,slow=3.1,SNR=78						
RAO				S	**S**	**22 40 31.9**	**+2.6**
	659nm,0.3s,baz=39,slow=22,SNR=6.0						
OUZ	**Omahuta**	**9.95**	**219**	*ePn*	**P**	**22 41 22.4**	**+3.4**
MXZ	**Matakaoa Point**	**10.16**	**193**	*ePn*	**P**	**22 41 21.4**	**+0.1**
MXZ				*eS*	**S**	**22 43 11.7**	**-2.8**
MXZ	**Matakaoa Point**	**10.16**	**193**	PN	**P**	**22 41 21.6**	**+0.3**
MXZ				SN	**S**	**22 43 11.4**	**-3.2**
MSVF	**Nonsavu**	**10.32**	**343**	*ePn*	**Pn**	**22 41 19.6**	**-2.6**
MSVF				*eS*	S	22 43 07.2	-11
WMGZ	**Waiomatatini S**	**10.39**	**192**	PN	**P**	**22 41 24.8**	**+0.9**
WMGZ				SN	**S**	**22 43 17.1**	**-2.5**
HAZ	**Te Kaha**	**10.46**	**195**	PN	**Pn**	**22 41 23.4**	**0.0**
HAZ				SN	**S**	**22 43 18.1**	**-3.1**
PKGZ	**Pakihiroa**	**10.52**	**194**	PN	**P**	**22 41 26.1**	**+0.7**
PUZ	**Puketiti**	**10.66**	**193**	PN	**Pn**	**22 41 22.6**	**-3.4**
PUZ				SN	**S**	**22 43 20.3**	**-5.4**
TWGZ	**Tauwhareparae**	**10.82**	**194**	PN	**P**	**22 41 30.8**	**+2.1**
TWGZ				SN	**S**	**22 43 26.1**	**-3.1**
CNGZ	**Carnagh Statio**	**11.07**	**192**	PN	**P**	**22 41 34.2**	**+2.8**
MWZ	**Matawai**	**11.07**	**195**	PN	**Pn**	**22 41 27.2**	**-3.6**
URZ	**Urewera**	**11.11**	**197**	P	**P**	**22 41 32.0**	**+0.2**
	7.1nm,0.3s,baz=66,slow=3.1,SNR=20						
URZ				S	**S**	**22 43 32.3**	**-3.1**
	25nm,0.3s,baz=172,slow=20,SNR=16						
URZ	**Urewera**	**11.11**	**197**	*ePn*	**P**	**22 41 32.6**	**+0.9**
URZ				*eS*	**S**	**22 43 32.3**	**-3.1**
URZ	**Urewera**	**11.11**	**197**	PN	**Pn**	**22 41 29.0**	**-2.2**
URZ				SN	**S**	**22 43 31.6**	**-3.8**
RAGZ	**Rawiri**	**11.25**	**195**	PN	**P**	**22 41 33.7**	**+0.2**
RAHZ	**Arahi**	**11.73**	**196**	PN	**P**	**22 41 39.7**	**+1.0**
MHGZ	**Mahia Peninsul**	**11.78**	**193**	PN	**P**	**22 41 41.1**	**+1.9**
MRHZ	**Matea Rd**	**11.83**	**199**	PN	**P**	**22 41 40.1**	**+0.2**
WHHZ	**Waihua**	**11.85**	**195**	PN	**P**	**22 41 41.0**	**+1.0**
NMHZ	**Naumai**	**11.97**	**197**	PN	**P**	**22 41 41.5**	**0.0**
ARHZ	**Aropaoanui**	**12.08**	**196**	PN	**P**	**22 41 42.2**	**-0.4**
BKZ	**Black Stump Fm**	**12.12**	**198**	*eP*	**Pn**	**22 41 47.2**	**+3.9**
BKZ	**Black Stump Fm**	**12.12**	**198**	PN	**P**	**22 41 42.2**	**-0.9**
MCHZ	**McNeill Hill**	**12.33**	**197**	PN	**P**	**22 41 45.0**	**-0.3**
KWHZ	**Kaweka Forest**	**12.38**	**198**	PN	**Pn**	**22 41 46.4**	**+0.1**
CKHZ	**Cape Kidnapper**	**12.44**	**195**	PN	**Pn**	**22 41 47.6**	**+0.6**
WNVZ	**Wahianoa**	**12.53**	**201**	PN	**P**	**22 41 47.2**	**-0.5**
BHHZ	**Black Hill Sta**	**12.54**	**199**	PN	**P**	**22 41 46.4**	**-1.4**
PXZ	**Pawanui**	**12.84**	**195**	PN	**P**	**22 41 50.4**	**-0.6**
DZM	**Mont Dzumac**	**14.53**	**289**	P	**Pn**	**22 42 11.8**	**0.0**
	3.4nm,0.3s,baz=167,slow=22,SNR=24						
AFI	**Afiamalu**	**15.17**	**27**	P	**P**	**22 42 13.1**	**-3.9**
	23nm,0.3s,baz=281,slow=3.7,SNR=9.3						
AFI				S	S	22 44 49.5	-11
	17nm,0.3s,baz=43,slow=22,SNR=9.3						
KHZ	**Kahutara**	**15.99**	**201**	PN	**P**	**22 42 24.8**	**-0.6**
RPZ	**Rata Peaks**	**17.99**	**204**	P	**P**	**22 42 45.4**	**-1.5**
	0.4nm,0.3s,baz=234,slow=3.6,SNR=2.8						
RPZ				S	**S**	**22 45 58.8**	**+3.9**
	1.5nm,0.3s,baz=6.7,slow=22,SNR=9.2						
CTAO	**Charters Tower**	**32.77**	**276**	*eP*	**P**	**22 45 02.7**	**+0.6**
	19nm,0.9s						
STKA	**Stephens Creek**	**34.52**	**253**	P	**P**	**22 45 17.6**	**+0.7**
	1.4nm,0.4s,baz=92,slow=12,SNR=4.8						
STKA	**Stephens Creek**	**34.52**	**253**	*eP*	**P**	**22 45 17.6**	**+0.7**
	2.6nm,1.4s						
PMG	**Port Moresby**	**36.88**	**293**	P	**P**	**22 45 37.5**	**+0.7**
	30nm,0.9s,baz=148,slow=16,SNR=4.4						
AS01	**Alice Springs**	**42.60**	**264**	*eP*	**P**	**22 46 22.9**	**-0.6**
AS31	**Alice Springs**	**42.64**	**264**	*eP*	**P**	**22 46 23.4**	**-0.4**
	3.9nm,1.3s						
AS31				*epP*	**pP**	**22 47 33.5**	**+0.4**
AS31				*eScP*	**ScP**	**22 51 27.1**	**+1.4**
ASAR	**Alice Springs**	**42.64**	**264**	P	**P**	**22 46 23.4**	**-0.4**
	2.5nm,0.6s,baz=110,slow=8.2,SNR=32						
ASAR				pP	**pP**	**22 47 33.5**	**+0.4**
	0.9nm,0.5s,baz=90,slow=7.0,SNR=2.0						
ASAR				ScP	**ScP**	**22 51 27.1**	**+1.4**
	1.7nm,0.9s,baz=128,slow=4.0,SNR=7.5						
WB2	**Warramunga Arr**	**43.36**	**270**	*eP*	**P**	**22 46 28.6**	**-0.9**
	14nm,0.7s						
WR1	**Warramunga Arr**	**43.37**	**270**	*eP*	**P**	**22 46 28.9**	**-0.8**
	15nm,0.6s						
WR1				*epP*	**pP**	**22 47 39.5**	**+0.3**
WR1				*eScP*	**ScP**	**22 51 30.0**	**+1.4**
WRA	**Warramunga Arr**	**43.38**	**270**	P	**P**	**22 46 28.9**	**-0.8**
	12nm,0.7s,baz=106,slow=7.9,SNR=34						
WRA				pP	**pP**	**22 47 39.5**	**+0.2**
	2.4nm,0.9s,baz=106,slow=7.9,SNR=2.3						
WRA				ScP	**ScP**	**22 51 30.0**	**+1.4**
	1.6nm,0.9s,baz=112,slow=3.4,SNR=4.3						
SBA	**Scott Base**	**50.70**	**184**	*eP*	P	22 47 29.9	+5.2
	27nm,1.9s						
JAGI	**Jajag, Banyuwa**	**65.83**	**273**	*eP*	**P**	**22 49 08.3**	**-1.2**
	18nm,0.9s						
JOW	**Kunigami**	**74.33**	**312**	P	**P**	**22 49 59.0**	**-1.4**
	9.7nm,0.8s,baz=221,slow=1.5,SNR=4.5						
JOW	**Kunigami**	**74.33**	**312**	*eP*	**P**	**22 49 59.0**	**-1.4**
	71nm,1.6s						
MAW	**Mawson**	**74.61**	**200**	P	**P**	**22 50 03.5**	**+2.2**
	1.9nm,0.5s,baz=168,slow=2.4,SNR=8.9						
MJAR	**Matsushiro Arr**	**75.62**	**325**	P	**P**	**22 50 06.5**	**-1.0**
	7.4nm,1.1s,baz=162,slow=5.7,SNR=12						
JNU	**Nakatsue**	**77.07**	**318**	P	**P**	**22 50 14.9**	**-0.8**
	8.4nm,0.7s,baz=286,slow=1.4,SNR=5.0						
JNU	**Nakatsue**	**77.07**	**318**	*eP*	**P**	**22 50 14.9**	**-0.8**
	18nm,1.0s						
MYKOM	**Kota Tinggi**	**79.66**	**278**	*eP*	**P**	**22 50 29.5**	**-0.7**
	19nm,0.8s						
ASAJ	**Asahikawa**	**79.72**	**333**	P	**P**	**22 50 30.1**	**+0.4**
	8.5nm,0.8s,baz=227,slow=3.3,SNR=11						
ASAJ	**Asahikawa**	**79.72**	**333**	*eP*	**P**	**22 50 30.1**	**+0.4**
	8.0nm,0.8s						
KSRS	**Korea Array**	**81.84**	**320**	P	**P**	**22 50 41.6**	**+0.6**
	3.7nm,0.8s,baz=142,slow=5.6,SNR=13						
KS15	**Wonju Array Si**	**81.85**	**320**	*eP*	**P**	**22 50 41.6**	**+0.5**
KSAR	**Wonju Array Be**	**81.85**	**320**	P	**P**	**22 50 41.6**	**+0.5**
KS01	**Wonju Array Si**	**81.87**	**320**	*eP*	**P**	**22 50 40.5**	**-0.6**
PETK	**Petropavlovsk-**	**83.01**	**346**	P	**P**	**22 50 46.1**	**-0.5**
	3.7nm,0.9s,baz=105,slow=9.4,SNR=5.0						
PEA1	**Petropavlovsk-**	**83.02**	**346**	*eP*	**P**	**22 50 46.1**	**-0.6**
IPM	**Ipoh**	**83.42**	**279**	*eP*	**P**	**22 50 49.4**	**-0.3**
	15nm,1.1s						
MONP2	**Monument Peak**	**84.46**	**48**	P	**P**	**22 50 55.2**	**+0.5**
	baz=232						
PSI	**Prapat**	**84.48**	**276**	*eP*	**P**	**22 50 53.7**	**-1.5**
	20nm,1.0s						
BFSC	**Mount Baldy Ra**	**84.48**	**47**	P	**P**	**22 50 55.3**	**+0.6**
	baz=231						
USRK	**Ussuriysk Ar.**	**84.52**	**327**	P	**P**	**22 50 54.9**	**+0.5**
	2.8nm,0.8s,baz=122,slow=3.9,SNR=5.9						
EDW2	**Edwards Air Fo**	**84.67**	**46**	P	**P**	**22 50 55.8**	**+0.3**
	baz=231						
ISA	**Isabella, Lake**	**84.86**	**45**	P	**P**	**22 50 57.3**	**+0.8**
	baz=231						
ISA	**Isabella, Lake**	**84.86**	**45**	*eP*	**P**	**22 50 57.2**	**+0.8**
	16nm,1.1s						
PLCA	**Paso Flores**	**84.86**	**134**	P	**P**	**22 50 57.9**	**+1.3**
	3.5nm,1.0s,baz=121,slow=17,SNR=2.9						
PLCA	**Paso Flores**	**84.86**	**134**	*eP*	**P**	**22 50 57.9**	**+1.3**
	44nm,1.8s						
PFO	**Pinyon Flats O**	**84.88**	**48**	P	**P**	**22 50 56.4**	**-0.2**
	2.2nm,0.8s,baz=118,slow=3.2,SNR=3.3						
PFO	**Pinyon Flats O**	**84.88**	**48**	*eP*	**P**	**22 50 56.4**	**-0.2**
	9.9nm,1.4s						
GSI	**Gunungsitoli**	**84.97**	**274**	*eP*	**P**	**22 50 58.3**	**+0.9**
	62nm,0.9s						
CMB	**Columbia Colle**	**85.20**	**42**	*eP*	**P**	**22 50 58.3**	**+0.3**
	6.2nm,0.9s						
LRMC	**Laurel Mtn Rad**	**85.24**	**46**	P	**P**	**22 50 59.0**	**+0.6**
	baz=231						
BELC	**Belle Mtn. Jos**	**85.42**	**48**	P	**P**	**22 50 59.9**	**+0.6**
	baz=232						
BC3	**Big Chuckawall**	**85.57**	**48**	P	**P**	**22 51 00.7**	**+0.6**
	baz=233						
GLA	**Glamis**	**85.62**	**49**	P	**P**	**22 51 01.3**	**+1.1**
	baz=233						
WDC	**Whiskeytown Da**	**85.64**	**39**	*eP*	**P**	**22 51 00.8**	**+0.7**
	13nm,1.0s						
GSC	**Goldstone, Bar**	**85.69**	**46**	P	**P**	**22 51 01.0**	**+0.5**
	baz=232						
GSC	**Goldstone, Bar**	**85.69**	**46**	*eP*	**P**	**22 51 01.2**	**+0.6**
	14nm,1.2s						
HEC	**Hector,Ludlow**	**85.70**	**47**	P	**P**	**22 51 00.9**	**+0.3**
	baz=232						
MPMC	**Manual Prospec**	**85.73**	**45**	P	**P**	**22 51 01.0**	**+0.1**
	baz=231						
N02D	**Trinity Center**	**85.81**	**39**	P	**P**	**22 51 01.4**	**+0.4**
	baz=228						
MDJ	**Mudanjiang**	**86.00**	**326**	P	**P**	**22 51 03.0**	**+1.3**
MDJ				pmax	pmax		
	comp=Z,8.0nm,0.6s						
MDJ				pmax	pmax		
	comp=Z,25nm,3.5s						
IRM	**Iron Mountain**	**86.07**	**48**	P	**P**	**22 51 03.0**	**+0.6**
	baz=233						
WAKR	**Walker**	**86.08**	**43**	*eP*	**P**	**22 51 03.2**	**+0.7**
TUQ	**Turquoise Moun**	**86.34**	**47**	P	**P**	**22 51 04.1**	**+0.4**
	baz=232						
FURC	**Furnace Creek,**	**86.38**	**45**	P	**P**	**22 51 04.3**	**+0.6**
	baz=232						
NV01	**Mina Array Sit**	**86.71**	**43**	*eP*	**P**	**22 51 05.4**	**-0.1**
NV01				*epP*	**pP**	**22 52 27.6**	**+0.8**
NVAR	**Mina Array Bea**	**86.71**	**43**	P	**P**	**22 51 05.4**	**-0.2**
	comp=Z,3.5nm,0.7s,baz=223,slow=8.3,SNR=30						
NVAR				pP	**pP**	**22 52 27.6**	**+0.8**
	comp=Z,0.5nm,0.7s,baz=242,slow=6.1,SNR=3.4						
TPNV	**Topopah Spring**	**87.06**	**45**	P	**P**	**22 51 07.6**	**+0.4**
	baz=232						
TPNV	**Topopah Spring**	**87.06**	**45**	*eP*	**P**	**22 51 07.8**	**+0.6**
	comp=Z,6.9nm,1.1s						
Y14A	**Wickenburg**	**87.37**	**49**	*eP*	**P**	**22 51 09.6**	**+1.0**
	comp=Z,29nm,1.0s						
W13A	**Hualapai Mount**	**87.47**	**48**	*eP*	**P**	**22 51 10.2**	**+0.9**
	comp=Z,7.2nm,1.3s						
MOD	**Modoc Plateau**	**87.78**	**40**	*eP*	**P**	**22 51 10.8**	**+0.3**
	comp=Z,4.6nm,0.8s						
TUC	**Tucson**	**87.95**	**52**	P	**P**	**22 51 12.5**	**+1.1**
	baz=236						
TUC	**Tucson**	**87.95**	**52**	*eP*	**P**	**22 51 12.6**	**+1.1**
	comp=Z,11nm,1.0s						
K05A	**Summer Lake**	**87.99**	**39**	*eP*	**P**	**22 51 11.9**	**+0.5**
	comp=Z,10.0nm,1.0s						
KLR	**Kul'dur**	**88.34**	**330**	P	**P**	**22 51 12.7**	**0.0**
	comp=Z,2.8nm,0.8s,baz=123,slow=4.2,SNR=11						
319A	**Douglas**	**88.49**	**53**	*eP*	**P**	**22 51 15.6**	**+1.6**
	comp=Z,14nm,1.0s						
H04A	**Detroit Lake**	**88.59**	**37**	*eP*	**P**	**22 51 14.2**	**+0.2**
	comp=Z,18nm,1.1s						
X16A	**Lo Mia Camp, P**	**88.70**	**50**	*eP*	**P**	**22 51 16.4**	**+1.4**
	comp=Z,9.5nm,1.1s						
I05D	**Terrebonne, OR**	**88.81**	**37**	P	**P**	**22 51 15.8**	**+0.7**
	baz=228						
LCMT	**Little Creek M**	**89.02**	**47**	*eP*	**P**	**22 51 17.2**	**+0.8**
	comp=Z,5.7nm,1.2s						
WVOR	**Wild Horse Val**	**89.06**	**40**	*eP*	**P**	**22 51 16.4**	**0.0**
	comp=Z,10nm,1.3s						
E03A	**Lebam**	**89.14**	**35**	*eP*	**P**	**22 51 17.6**	**+1.2**
	comp=Z,24nm,0.9s						
TIMB	**Timberline**	**89.28**	**36**	*eP*	**P**	**22 51 15.9**	**-1.5**
KNB	**Kanab**	**89.30**	**47**	*eP*	**P**	**22 51 18.6**	**+0.9**
	comp=Z,11nm,1.2s						
F04A	**Amboy**	**89.31**	**36**	*eP*	**P**	**22 51 18.2**	**+1.0**
	comp=Z,26nm,1.0s						
WUAZ	**Wupatki**	**89.38**	**49**	P	**P**	**22 51 19.0**	**+1.0**
	baz=235						
WUAZ	**Wupatki**	**89.38**	**49**	*eP*	**P**	**22 51 19.1**	**+1.0**
	comp=Z,4.6nm,0.8s						
ENH	**Enshi**	**89.50**	**305**	*eP*	**P**	**22 51 19.4**	**+0.8**
	comp=Z,15nm,1.0s						
PSUT	**Pine Spring**	**89.53**	**45**	*eP*	**P**	**22 51 19.3**	**+0.5**
	comp=Z,3.0nm,1.0s						
GYA	**Guiyang**	**89.60**	**300**	*eP*	**P**	**22 51 20.0**	**+0.7**
GYA				pP	pP	22 52 38.9	-2.2
GYA				sP	sP	22 53 12.6	-4.7
GYA				PP	PP	22 54 13.2	-44
GYA				SKS	**SKSac**	**23 01 15.4**	**-0.5**
GYA	**Guiyang**	**89.60**	**300**	S	**S**	**23 01 39.0**	**-1.2**
GYA	**Guiyang**	**89.60**	**300**	sS	sS	23 03 57.8	-7.4
GYA				pmax	pmax		
	comp=Z,10.0nm,1.0s						
G06A	**Carlson Farm,**	**89.78**	**37**	*eP*	**P**	**22 51 20.1**	**+0.5**
	comp=Z,8.8nm,0.8s						
MTPU	**Mount Pierson**	**90.30**	**46**	*eP*	**P**	**22 51 24.1**	**+1.5**
	comp=Z,6.9nm,0.9s						
D05A	**Enumclaw**	**90.37**	**35**	*eP*	**P**	**22 51 23.9**	**+1.7**
	comp=Z,19nm,0.9s						
B05A	**Bryant**	**91.04**	**34**	P	**P**	**22 51 26.0**	**+0.8**
	baz=228						
MFID	**Camas Ranch**	**91.29**	**40**	*eP*	**P**	**22 51 27.0**	**+0.3**
	comp=Z,6.7nm,0.8s						
MNTX	**Cornudas Mount**	**91.46**	**55**	P	**P**	**22 51 27.8**	**+0.1**
	baz=238						
LTX	**Lajitas**	**91.50**	**58**	*eP*	**P**	**22 51 28.5**	**+0.5**
LTX				*epP*	**pP**	**22 52 50.7**	**+0.8**
TX31	**Lajitas Ar. Si**	**91.50**	**58**	*eP*	**P**	**22 51 28.5**	**+0.5**
TXAR	**Lajitas Array**	**91.50**	**58**	P	**P**	**22 51 28.5**	**+0.5**
	comp=Z,2.1nm,1.0s,baz=217,slow=6.0,SNR=16						
TXAR				pP	**pP**	**22 52 50.7**	**+0.8**
	comp=Z,0.1nm,0.4s,baz=201,slow=43,SNR=1.5						
CM31	**Chiang Mai Arr**	**91.85**	**290**	*eP*	**P**	**22 51 31.4**	**+1.7**
CM31				*epP*	**pP**	**22 52 52.1**	**+0.5**
CMAR	**Chiang Mai Arr**	**91.85**	**290**	P	**P**	**22 51 31.4**	**+1.7**
	comp=Z,0.9nm,0.3s,baz=142,slow=4.1,SNR=8.0						
CMAR				pP	**pP**	**22 52 52.1**	**+0.5**
	comp=Z,0.3nm,0.3s,baz=308,slow=25,SNR=2.5						
KMI	**Kunming**	**91.98**	**297**	P	**P**	**22 51 31.3**	**+0.8**
KMI				pmax	pmax		
	comp=Z,6.0nm,0.9s						
KMI				pmax	pmax		
	comp=Z,71nm,4.5s						
HVU	**Hansel Valley**	**92.11**	**43**	*eP*	**P**	**22 51 30.7**	**+0.1**
	comp=Z,7.1nm,0.9s						
HLID	**Hailey**	**92.19**	**41**	P	**P**	**22 51 31.1**	**+0.1**
	baz=233						
HLID	**Hailey**	**92.19**	**41**	*eP*	**P**	**22 51 31.5**	**+0.5**
	comp=Z,2.7nm,0.8s						
JLU	**Jordanelle**	**92.25**	**45**	*eP*	**P**	**22 51 31.3**	**-0.1**
	comp=Z,12nm,1.4s						
TCUT	**Toone Canyon**	**92.57**	**44**	*eP*	**P**	**22 51 33.4**	**+0.5**
	comp=Z,14nm,1.3s						
SEY	**Seymchan**	**93.18**	**347**	P	**P**	**22 51 33.3**	**-1.4**
	comp=Z,0.8nm,0.2s,baz=150,slow=6.8,SNR=3.6						
TRF	**Thorofare Moun**	**93.58**	**12**	*eP*	**P**	**22 51 35.8**	**-1.0**
	comp=

*ISCJB **04** 22:40:40.5±0.5, 35.°15S±0.°03×72.°75W±0.°08, h33km, mb4.7/8, Error ellipse: s-maj=9.3km s-min=3.8km az=14.0*
*GUC **04** 22:40:41.4±0.7, 35.°19S×72.°48W, h39km±3km, ML4.0*
*NEIC **04** 22:40:41.0, 35.°19S×72.°48W, h39km, mb4.7/3, After GUC.*
NEIC Felt [IV] at Constitucion and Iloca; [III] at Curico, Pencahue, San Javier and Talca; [II] at Linares and Parral.
*IDC **04** 22:40:44.2±3.4, 35.°21S×72.°35W, h51km±30km, mb3.9/4, mb1 4.0/7, mb1mx3.6/31, mbtmp4.1/7, ML4.2/3, Error ellipse: s-maj=47.8km s-min=23.1km az=83.0*

ISC 04 22:40:40.9±1.4, 35.°23S±0.°03×72.°47W±0.°06, h28km±10km, n39, σ2§10/48, mb4.7/8, 2D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TALC	**Talca**	**0.70**	**104**	⇓*i*P	**Pn**	**22 40 55.2**	**+0.2**
TALC				*i* S	**Sn**	**22 41 05.3**	**+0.4**
CHPI	**Pichilemu**	**0.92**	**25**	⇓*i*P	**Pn**	**22 40 57.8**	**-0.1**
CHPI				*i* S	**Sb**	**22 41 09.8**	**-0.2**
COCH	**Cobquecura**	**0.94**	**196**	*e*P	**Pn**	**22 40 59.3**	**+1.1**
COCH				*i* S	**Sn**	**22 41 11.7**	**+0.9**
COCH				IAML		22 41 15.5	
	comp=E,8μm,0.4s						
CCHI	**Chillan**	**1.41**	**167**	*e*P	**Pb**	**22 41 06.5**	**-0.1**
CCHI				*e*S	**Sb**	**22 41 25.3**	**+1.2**
CLCH	**Cerro Calan**	**2.42**	**42**	*e*P	**Pn**	**22 41 20.5**	**+1.8**
CLCH				*e*S	**Sn**	**22 41 50.2**	**+2.7**
CLCH				IAML		22 42 02.9	
	comp=N,1μm,0.5s						
ROC1	**El Roble**	**2.55**	**29**	*e*Pn	**Pn**	**22 41 22.3**	**+1.7**
ROC1				*e*Sn	**Sn**	**22 41 53.3**	**+2.5**
PEL	**Peldehue**	**2.55**	**36**	*e*P	**Pn**	**22 41 21.8**	**+1.3**
PEL				IAML		22 42 10.3	
	comp=E,583nm,0.9s						
ROCH	**El Roble**	**2.55**	**29**	*e*P	**Pn**	**22 41 21.7**	**+1.0**
ROCH				*i* S	**Sn**	**22 41 53.7**	**+2.8**
ROCH				IAML		22 42 24.5	
	comp=N,775nm,0.6s						
CANA	**Caviahue**	**2.89**	**157**	*i* P	**Pb**	**22 41 30.0**	**-1.8**
AAGR	**Agrelo**	**3.69**	**56**	*i* P	**Pb**	**22 41 41.5**	**-4.1**
ARCO	**CERRO ARCO**	**3.78**	**52**	*i* P	**Pn**	**22 41 41.5**	**+4.0**
ARCO				*i* S	**Sb**	**22 42 36.8**	**+4.4**
ARCO				IAML		22 42 50.5	
	comp=Z,36nm,0.5s						
AUSP	**Uspallata**	**3.94**	**41**	*i* P	**Pn**	**22 41 42.6**	**+2.8**
ASAL	**Salagasta**	**4.00**	**50**	*i* P	**Pn**	**22 41 43.7**	**+3.2**
ASAL				*i* S	**Sb**	**22 42 42.1**	**+3.3**
RTLS	**Leoncito**	**4.32**	**39**	*i* P	**Pn**	**22 41 47.4**	**+2.4**
RTCV	**Cerro Valdivia**	**4.69**	**45**	*i* P	**Pn**	**22 41 52.7**	**+2.8**
RTLL	**Cerro Villicun**	**5.12**	**42**	*i* P	**Pn**	**22 41 57.6**	**+1.7**
AMOG	**MOGNA**	**5.42**	**39**	*i* P	**Pn**	**22 42 01.1**	**+1.1**
PLCA	**Paso Flores**	**5.70**	**165**	P	**Pn**	**22 42 06.3**	**+2.5**
	comp=Z,1.8nm,0.3s,baz=3.5,slow=11,SNR=22						
MRA	**San Martin**	**6.28**	**65**	*i* P	Pn	22 42 17.0	+5.2
LCO	**Las Campanas**	**6.37**	**14**	*e*Pn	**Pn**	**22 42 13.0**	**-0.3**
LCO				*e*Sn	**Sn**	**22 43 22.9**	**-2.4**
AGUA	**GUANDACOL**	**6.64**	**32**	*i* P	**Pn**	**22 42 14.5**	**-2.1**
VCA	**Vinchina**	**7.41**	**30**	*i* P	**Pn**	**22 42 26.7**	**-0.7**
VCA				IAML		22 44 22.3	
	comp=Z,17nm,0.4s						
TRQA	**Tornquist**	**8.89**	**112**	*e*Pn	**Pn**	**22 42 48.1**	**+0.6**
TRQA				*e*Sn	**Sn**	**22 44 22.5**	**-4.2**
PB10	**IPOC Station P**	**11.79**	**9**	*e*Pn	**Pn**	**22 43 26.4**	**-0.8**
CHRN	**Cochrane**	**12.01**	**180**	*e*Pn	Pn	22 43 24.2	-6.0
LVC	**Limon Verde**	**12.95**	**15**	P	**Pn**	**22 43 44.9**	**+1.5**
	comp=Z,4.6nm,0.3s,baz=271,slow=15,SNR=2.3						
PB11	**IPOC Station P**	**15.60**	**10**	*e*Pn	**Pn**	**22 44 18.2**	**-0.9**
	comp=Z,15nm,1.3s						
LPAZ	**La Paz**	**19.25**	**13**	P	**Pn**	**22 45 06.2**	**+1.2**
	comp=Z,0.1nm,0.3s,baz=187,slow=4.5,SNR=4.5						
LPAZ	**La Paz**	**19.25**	**13**	*e*P	**P**	**22 45 01.7**	**-2.1**
SIV	**San Ignacio**	**21.70**	**31**	P	**P**	**22 45 29.4**	**-0.4**
	comp=Z,3.4nm,0.7s,baz=221,slow=9.0,SNR=9.5						
SPB	**Sao Paulo**	**24.63**	**69**	*e*P	**P**	**22 45 56.5**	**-2.5**
	comp=Z,121nm,1.9s						
PMSA	**Palmer Station**	**30.02**	**173**	*e*P	**P**	**22 46 46.7**	**-0.2**
	comp=Z,615nm,1.9s						
SNAA	**Sanae**	**50.59**	**157**	*e*P	**P**	**22 49 37.9**	**+1.1**
	comp=Z,16nm,1.7s						
GRTK	**Grand Turk**	**56.44**	**1**	*e*P	**P**	**22 50 19.1**	**-1.0**
	comp=Z,120nm,1.1s						
TXAR	**Lajitas Array**	**70.63**	**331**	P	**P**	**22 51 55.1**	**+1.2**
	comp=Z,0.4nm,0.6s,baz=155,slow=8.2,SNR=5.0						
LTX	**Lajitas**	**70.63**	**331**	*e*P	**P**	**22 51 55.1**	**+1.2**
BOSA	**Boshof**	**79.81**	**118**	P	**P**	**22 52 47.0**	**0.0**
	comp=Z,2.6nm,0.8s,baz=186,slow=0.4,SNR=4.8						
ULM	**Lac du Bonnet**	**87.59**	**345**	P	**P**	**22 53 25.1**	**-0.8**
	comp=Z,1.9nm,0.4s,baz=207,slow=8.7,SNR=2.9						
ZALV	**Zalesovo Beam**	**155.44**	**33**	PKPab	**PKPab**	**23 00 57.6**	**+0.7**
	comp=Z,0.4nm,0.4s,baz=330,slow=8.3,SNR=2.9						

*IDC **04** 22:40:40.0±1.1, 35.°56N×143.°27E, h0km, mb3.4/4, mb1 3.6/6, mb1mx3.4/37, mbtmp3.4/6, ML2.9/2, Error ellipse: s-maj=32.2km s-min=24.8km az=136.0*
*JMA **04** 22:40:44.9±0.3, 35.°87N×142.°78E, h74km, M3.1*
*ISCJB **04** 22:40:45.2±0.9, 35.°78N±0.°06×142.°76E±0.°08, h59km, mb3.5/4, Error ellipse: s-maj=9.9km s-min=8.6km az=137.3*

ISC 04 22:40:46.6±1.1, 35.°70N±0.°06×142.°72E±0.°09, h59km, n11, σ1§79/13, mb3.5/4, Off east of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.51**	**271**	P	**Pn**	**22 41 11.1**	**-0.3**
BSO4	**Boso 4**	**2.07**	**251**	S	**Sn**	**22 41 45.2**	**+1.7**
JFT	**Otama**	**2.64**	**314**	P	**Pn**	**22 41 26.1**	**-0.6**
JFT				*e*S	**Sn**	**22 41 56.4**	**-1.1**
JMM	**Marumori**	**2.65**	**325**	*e*S	**Sn**	**22 41 55.5**	**-2.4**
JAG	**Ashikaga**	**2.74**	**286**	P	**Pn**	**22 41 27.7**	**-0.4**
JAG				S	**Sn**	**22 42 00.0**	**-0.1**
JHJ	**Hachijo jima 2**	**3.54**	**224**	Pn	**Pn**	**22 41 38.5**	**-0.6**
	2.5nm,0.3s,baz=104,slow=22,SNR=1.9						
JHJ				Sn	**Sn**	**22 42 16.0**	**-3.7**
	9.3nm,0.3s,baz=122,slow=22,SNR=2.8						
MJAR	**Matsushiro Arr**	**3.74**	**284**	Pn	**Pn**	**22 41 43.6**	**+1.8**
	0.7nm,0.3s,baz=99,slow=7.7,SNR=13						
MKAR	**Makanchi Array**	**45.72**	**303**	P	P	22 49 07.2	+5.4
	0.8nm,0.7s,baz=105,slow=5.4,SNR=7.2						
WRA	**Warramunga Arr**	**55.91**	**190**	P	**P**	**22 50 19.7**	**+1.2**
	0.3nm,0.5s,baz=5.0,slow=7.0,SNR=2.8						
YKA	**Yellowknife Ar**	**64.43**	**30**	P	**P**	**22 51 17.7**	**+1.4**
	0.1nm,0.7s,baz=293,slow=6.0,SNR=3.5						
TXAR	**Lajitas Array**	**90.09**	**53**	P	**P**	**22 53 39.4**	**-1.1**
	0.2nm,0.8s,baz=282,slow=4.4,SNR=2.1						

*CSEM **04** 22:41:38.2, 39.°36N×21.°09E, h10km, ML1.6/2*

ATH 04 22:41:38.2, 39.°36N×21.°09E, h10km±6km, ML1.6/2, Error ellipse: s-maj=6.7km s-min=0.8km az=248.0, Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DSL	**Palaion Diasel**	**0.23**	**179**	P	Pg	22 41 42.6	-0.3
DSL				S	Sg	22 41 46.5	+0.5
DSL	**Palaion Diasel**	**0.23**	**179**	P	Pg	22 41 42.6	-0.3
DSL				S	Sg	22 41 46.5	+0.5
DSL				AML	AML	22 41 46.6	
	comp=E,809μm,0.2s						
DSL				AML	AML	22 41 48.9	
	comp=N,538μm,0.3s						
DSL	**Palaion Diasel**	**0.23**	**179**	P	Pg	22 41 42.4	-0.4
DSL				AML	AML	22 41 46.6	
	comp=E,809μm,0.2s						
DSL				S	Sg	22 41 46.7	+0.7
DSL				AML	AML	22 41 48.9	
	comp=N,538μm,0.3s						
JAN	**Janina**	**0.35**	**328**	P	Pg	22 41 43.5	-1.7
JAN				S	Sg	22 41 50.5	+0.6
JAN	**Janina**	**0.35**	**328**	S	Sg	22 41 50.5	+0.6
JAN				AML	AML	22 41 53.3	
	comp=E,183μm,0.2s						
JAN	**Janina**	**0.35**	**328**	S	Sg	22 41 50.9	+1.1
JAN				AML	AML	22 41 53.3	
	comp=E,183μm,0.2s						
MEV	**Metsovon**	**0.44**	**14**	P	Pg	22 41 47.1	+0.3
MEV				S	Sg	22 41 53.6	+0.9
MEV	**Metsovon**	**0.44**	**14**	P	Pg	22 41 47.1	+0.3
MEV				S	Sg	22 41 53.6	+0.9
IGT	**Igoumenitsa**	**0.61**	**287**	P	Pg	22 41 49.4	-0.7
IGT				S	Sg	22 41 59.3	-0.3
IGT	**Igoumenitsa**	**0.61**	**287**	P	Pg	22 41 49.4	-0.7
IGT				S	Sg	22 41 59.3	-0.3
IGT	**Igoumenitsa**	**0.61**	**287**	P	Pg	22 41 49.5	-0.6
IGT				S	Sg	22 41 58.9	+0.7
IGT				AML	AML	22 42 00.4	
	comp=E,102μm,0.3s						
IGT				AML	AML	22 42 00.6	
	comp=N,106μm,0.7s						
KPRO	**Kipourio**	**0.63**	**19**	P	Pg	22 41 49.5	-0.9
KPRO				S	Sg	22 41 57.3	-1.4
KPRO	**Kipourio**	**0.63**	**19**	P	Pg	22 41 49.5	-1.0
KPRO				S	Sg	22 41 57.3	-1.4
KPRO	**Kipourio**	**0.63**	**19**	P	Pg	22 41 50.8	+0.4
KPRO				S	Sg	22 41 59.5	+0.7
LKD2	**Lefkada island**	**0.66**	**211**	P	Pg	22 41 51.2	+0.2
LKD2	**Lefkada island**	**0.66**	**211**	P	Pg	22 41 51.2	+0.2
LKD2	**Lefkada island**	**0.66**	**211**	P	Pg	22 41 51.4	+0.4
LKD2				S	Sg	22 42 00.3	+0.6
SGD	**Sagiada**	**0.71**	**291**	P	Pg	22 41 52.2	+0.3
SGD	**Sagiada**	**0.71**	**291**	P	Pg	22 41 52.2	+0.3
SGD	**Sagiada**	**0.71**	**291**	P	Pg	22 41 52.0	+0.1
SGD				S	Sg	22 42 02.2	-0.2
EVR	**Evrytania**	**0.71**	**128**	P	Pg	22 41 51.8	-0.1
EVR				S	Sg	22 42 02.6	+0.1
EVR	**Evrytania**	**0.71**	**128**	P	Pg	22 41 51.8	-0.1
EVR	**Evrytania**	**0.71**	**128**	P	Pg	22 41 51.6	-0.3
EVR				S	Sg	22 42 03.1	+0.6
THL	**Klokotos Trika**	**0.74**	**74**	P	Pn	22 41 53.9	-0.7
PDO	**Prodromos**	**0.76**	**175**	P	Pg	22 41 51.9	-1.0
PDO	**Prodromos**	**0.76**	**175**	P	Pg	22 41 51.9	-1.0
PDO	**Prodromos**	**0.76**	**175**	P	Pg	22 41 52.8	-0.1
PDO				S	Sg	22 42 02.8	-0.1
PVO	**Paravola**	**0.81**	**155**	P	Pg	22 41 53.7	-0.2
PVO	**Paravola**	**0.81**	**155**	P	Pg	22 41 53.7	-0.2
PVO	**Paravola**	**0.81**	**155**	P	Pg	22 41 53.7	-0.2
ANX	**Ano Chora**	**1.00**	**140**	P	Pg	22 41 56.5	-0.9
AGG	**Agios Georgios**	**1.02**	**109**	P	Pg	22 41 57.1	-0.7
AGG	**Agios Georgios**	**1.02**	**109**	P	Pg	22 41 57.1	-0.7
AGG	**Agios Georgios**	**1.02**	**109**	P	Pg	22 41 56.5	-1.3
KEK	**Kerkira**	**1.06**	**290**	P	Pb	22 41 58.7	+0.1
VLS	**Valsamata**	**1.24**	**199**	P	Pn	22 42 00.3	-1.3

*ISCJB **04** 22:56:13.2±0.6, 3.°04S±0.°07×129.°03E±0.°07, h28km, mb3.9/4, MS3.3/4, Error ellipse: s-maj=11.0km s-min=8.6km az=141.7*
*DJA **04** 22:56:13.7±0.4, 3.°S±4.°×12.°9E±.°, h10km, M4.2/4, mb4.3/1, MLv4.1/4*
*IDC **04** 22:56:29.8±11.0, 3.°26S×129.°53E, h196km±125km, mb3.4/4, mb1 3.5/6, mb1mx3.2/33, mbtmp4.0/6, MS3.3/7, Ms1 3.3/7, ms1mx3.0/26, Error ellipse: s-maj=62.5km s-min=30.8km az=109.0*

ISC 04 22:56:14.4±0.8, 3.°03S±0.°07×129.°08E±0.°09, h28km, n18, σ1§40/13, mb4.0/4, MS3.3/4, Seram

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSAI	**Masohi**	**0.35**	**205**	P	**Pb**	**22 56 20.8**	**-1.6**
BNDI	**Bandanaira**	**1.70**	**151**	P	**Pn**	**22 56 43.8**	**+1.6**
LBMI	**Labuha**	**2.85**	**326**	P	**Pn**	**22 56 58.7**	**+0.6**
SWI	**Sorong**	**3.06**	**45**	P	**Pn**	**22 57 02.0**	**+1.0**
FAKI	**Fak Fak**	**3.17**	**88**	P	**Pn**	**22 57 03.5**	**+1.0**
SANI	**Sanana**	**3.24**	**287**	P	**Pn**	**22 57 03.8**	**+0.4**
MRSI	**Marisa**	**7.94**	**296**	P	**Pn**	**22 58 09.6**	**+1.6**
DAV	**Davao City (W)**	**10.62**	**341**	LR	LR	23 04 15.4	
	comp=Z,111nm,18.9s,baz=152,slow=42						
FITZ	**Fitzroy Crossi**	**15.35**	**192**	P	**P**	**22 59 56.2**	**+2.5**
	0.2nm,0.3s,baz=26,slow=12,SNR=5.4						
FITZ				LR	LR	23 05 58.2	
	comp=Z,89nm,20.7s,baz=81,slow=37						
WRA	**Warramunga Arr**	**17.58**	**163**	P	**Pn**	**23 00 18.0**	**+0.5**
	0.5nm,0.3s,baz=342,slow=12,SNR=9.3						
PMG	**Port Moresby**	**19.05**	**110**	LR	LR	23 10 58.7	
	comp=Z,78nm,18.2s,baz=324,slow=47						
ASAR	**Alice Springs**	**21.04**	**168**	P	**P**	**23 00 54.7**	**-1.6**
	6.4nm,0.8s,baz=348,slow=11,SNR=48						
STKA	**Stephens Creek**	**31.02**	**159**	LR	LR	23 16 12.5	
	comp=Z,84nm,18.6s,baz=21,slow=39						
NWAO	**Narrogin (SRO)**	**31.75**	**199**	LR	LR	23 14 31.1	
	comp=Z,48nm,21.8s,baz=191,slow=34						
MJAR	**Matsushiro Arr**	**40.28**	**11**	P	**P**	**23 03 49.0**	**-0.2**
	1.0nm,0.7s,baz=188,slow=9.5,SNR=5.5						
MJAR				LR	LR	23 18 16.2	
	comp=Z,19nm,21.5s,baz=55,slow=32						
MKAR	**Makanchi Array**	**64.43**	**326**	P	**P**	**23 06 47.5**	**-0.7**
	0.9nm,0.7s,baz=120,slow=8.4,SNR=12						
AAK	**Ala-Archa**	**66.94**	**319**	LR	LR	23 39 33.7	
	comp=Z,39nm,19.5s,baz=156,slow=38						
GEYT	**Alibeck**	**76.97**	**310**	P	**P**	**23 08 04.5**	**-0.4**
	0.7nm,0.6s,baz=129,slow=8.2,SNR=3.1						

WEL 04 23:07:57.1±0.4, 37.°05S×176.°67E, h185km±3km, ML4.0/7, 8C-4D, Error ellipse: s-maj=4.8km s-min=4.7km az=0.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HAZ	**Te Kaha**	**1.13**	**129**	PN	Pn	23 08 26.3	+0.1
HAZ				SN	Sn	23 08 48.0	-0.8
URZ	**Urewera**	**1.25**	**164**	⇑PN	Pn	23 08 27.3	+0.1
URZ				SN	Sn	23 08 51.1	+0.3
PKGZ	**Pakihiroa**	**1.40**	**127**	PN	Pn	23 08 28.7	+0.2
MUGZ	**Murupara**	**1.42**	**177**	PN	Pn	23 08 29.0	+0.3
MUGZ				SN	Sn	23 08 53.0	-0.5
MWZ	**Matawai**	**1.45**	**152**	PN	Pn	23 08 28.8	-0.2
MWZ				SN	Sn	23 08 54.3	+0.4
TWGZ	**Tauwhareparae**	**1.53**	**137**	PN	Pn	23 08 30.4	+0.6
RAGZ	**Rawiri**	**1.56**	**158**	PN	Pn	23 08 30.1	0.0
WMGZ	**Waiomatatini S**	**1.59**	**119**	PN	Pn	23 08 30.1	-0.1
PUZ	**Puketiti**	**1.62**	**129**	⇑PN	Pn	23 08 30.2	-0.4
PUZ				AML	AML	23 08 55.5	
PUZ				AML	AML	23 08 55.7	
TKGZ	**Te Karaka**	**1.67**	**146**	⇑PN	Pn	23 08 31.1	0.0
MRHZ	**Matea Rd**	**1.79**	**186**	PN	Pn	23 08 32.4	+0.1
SNGZ	**Shannon Statio**	**1.81**	**163**	PN	Pn	23 08 32.3	-0.2
RIGZ	**Rimuhau**	**1.86**	**153**	PN	Pn	23 08 33.0	0.0
CNGZ	**Carnagh Statio**	**1.88**	**140**	PN	Pn	23 08 33.2	+0.1
RAHZ	**Arahi**	**1.89**	**170**	⇑PN	Pn	23 08 33.3	0.0
NMHZ	**Naumai**	**2.04**	**177**	PN	Pn	23 08 35.0	0.0
WHHZ	**Waihua**	**2.07**	**168**	PN	Pn	23 08 34.9	-0.3
PRGZ	**Paritu Road**	**2.10**	**153**	PN	Pn	23 08 35.0	-0.5
BKZ	**Black Stump Fm**	**2.11**	**184**	PN	Pn	23 08 35.0	-0.7
BKZ				AML	AML	23 09 06.8	
KNZ	**Kokohu**	**2.12**	**158**	⇑PN	Pn	23 08 34.9	-0.8
ARHZ	**Aropaoanui**	**2.22**	**173**	PN	Pn	23 08 36.5	-0.3
TWVZ	**Taurewa**	**2.23**	**205**	PN	Pn	23 08 37.8	+0.6
OTVZ	**Oturere**	**2.25**	**200**	PN	Pn	23 08 37.9	+0.5
NGZ	**Ngauruhoe**	**2.28**	**201**	PN	Pn	23 08 38.5	+0.8
MHGZ	**Mahia Peninsul**	**2.31**	**155**	PN	Pn	23 08 37.0	-0.9
TUVZ	**Tukino**	**2.35**	**200**	PN	Pn	23 08 38.6	+0.1
KWHZ	**Kaweka Forest**	**2.37**	**185**	PN	Pn	23 08 38.1	-0.6
MCHZ	**McNeill Hill**	**2.39**	**179**	PN	Pn	23 08 38.3	-0.4
WNVZ	**Wahianoa**	**2.42**	**200**	⇑PN	Pn	23 08 39.1	-0.1
MOVZ	**Moawhango**	**2.46**	**197**	PN	Pn	23 08 38.8	-0.8
BHHZ	**Black Hill Sta**	**2.48**	**191**	⇑PN	Pn	23 08 38.9	-0.9
MTVZ	**Mangateitei**	**2.51**	**202**	PN	Pn	23 08 40.2	0.0
KRHZ	**Kereru**	**2.60**	**185**	PN	Pn	23 08 40.1	-1.1
CKHZ	**Cape Kidnapper**	**2.62**	**173**	PN	Pn	23 08 40.4	-1.0
KAHZ	**Kahuranaki**	**2.74**	**177**	PN	Pn	23 08 41.7	-1.1
PNHZ	**Pukenui**	**2.88**	**187**	⇓PN	Pn	23 08 42.9	-1.6
PXZ	**Pawanui**	**2.98**	**177**	PN	Pn	23 08 43.7	-1.8
PXZ				AML	AML	23 09 22.7	
WAZ	**Wanganui**	**3.00**	**206**	⇓PN	Pn	23 08 45.5	-0.5
WPHZ	**Waipukurau**	**3.01**	**183**	⇑PN	Pn	23 08 44.6	-1.4
TSZ	**Takapari Road**	**3.05**	**190**	⇓PN	Pn	23 08 45.0	-1.5
PRHZ	**Porangahau**	**3.21**	**180**	PN	Pn	23 08 46.3	-2.1
DVHZ	**Dannevirke**	**3.26**	**187**	⇓PN	Pn	23 08 46.9	-2.2
ANWZ	**Angora Road**	**3.40**	**182**	PN	Pn	23 08 48.7	-2.1
POWZ	**Post Office Ro**	**3.41**	**192**	PN	Pn	23 08 48.8	-2.0
PRWZ	**Pori Road**	**3.54**	**189**	PN	Pn	23 08 50.5	-2.0
BFZ	**Birch Farm**	**3.64**	**185**	PN	Pn	23 08 51.1	-2.6
MRZ	**Mangatainoka R**	**3.70**	**193**	PN	Pn	23 08 51.7	-2.8
TIWZ	**Tintock**	**3.77**	**189**	PN	Pn	23 08 52.9	-2.5
TIWZ				AML	AML	23 09 40.4	
OGWZ	**Otaki Gorge**	**3.94**	**197**	PN	Pn	23 08 54.7	-2.7
HOWZ	**Holdsworth Sta**	**3.94**	**193**	PN	Pn	23 08 54.3	-3.2
KIW	**Kapiti Island**	**4.04**	**199**	PN	Pn	23 08 55.7	-3.1
TMWZ	**Te Maipa**	**4.09**	**188**	PN	Pn	23 08 56.5	-2.9
MTW	**Mount Morrison**	**4.20**	**192**	PN	Pn	23 08 57.1	-3.7
CAW	**Cannon Point**	**4.24**	**197**	PN	Pn	23 08 57.8	-3.4
CAW				AML	AML	23 11 51.6	
CAW				AML	AML	23 12 05.5	
DUWZ	**D'Urville Isla**	**4.31**	**209**	PN	Pn	23 08 59.3	-2.9
TRWZ	**Traveller**	**4.40**	**190**	PN	Pn	23 08 60.0	-3.4
PAWZ	**Paruwai Farm**	**4.43**	**192**	PN	Pn	23 08 59.8	-3.9
MSWZ	**Moikau Station**	**4.49**	**194**	PN	Pn	23 09 00.6	-3.9
MSWZ				AML	AML	23 09 51.9	
TCW	**Tory Channel**	**4.55**	**203**	PN	Pn	23 09 01.7	-3.5
TCW				AML	AML	23 09 55.3	
BHW	**Baring Head**	**4.57**	**197**	PN	Pn	23 09 01.3	-4.1
PLWZ	**Palliser**	**4.64**	**193**	PN	Pn	23 09 02.2	-4.3
TUWZ	**Tuamarina**	**4.85**	**205**	PN	Pn	23 09 05.4	-3.8
THZ	**Tophouse**	**5.53**	**211**	PN	Pn	23 09 15.2	-2.8
KHZ	**Kahutara**	**5.87**	**203**	PN	Pn	23 09 18.1	-4.3
LTZ	**Lake Taylor**	**6.64**	**209**	PN	Pn	23 09 27.0	-5.5
MQZ	**McQueen's Vall**	**7.32**	**203**	PN	Pn	23 09 35.2	-6.0

*ISCJB **04** 23:08:49.8±1.0, 6.°76N±0.°05×73.°09W±0.°07, h153km±8km, Error ellipse: s-maj=12.7km s-min=5.7km az=36.7*
*RSNC **04** 23:08:51.3±0.8, 6.°75N×73.°09W, h146km±5km, ML2.7*
*FUNV **04** 23:08:51.7, 7.°16N×73.°54W, h8km, MW2.4*

ISC 04 23:08:49.4±1.7, 6.°77N±0.°06×73.°06W±0.°07, h156km±10km, n14, σ1§20/25, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BARC	**Barichara**	**0.22**	**216**	*i* P	**Pn**	**23 09 10.9**	**+0.1**
BARC				*i*		23 09 11.1	
	comp=Z,101nm,0.2s						
BARC				*e*S	**Sn**	**23 09 25.9**	**-1.2**
PAMC	**Pamplona, Colo**	**0.67**	**32**	*e*P	**Pn**	**23 09 13.7**	**+0.7**
PAMC				*e*S	**Sn**	**23 09 31.0**	**0.0**
BRRC	**Barranca, Sant**	**0.73**	**297**	*e*P	**Pn**	**23 09 12.8**	**0.0**
BRRC				*i*		23 09 13.2	
	comp=Z,190nm,0.1s						
BRRC				*e*S	**Sn**	**23 09 30.2**	**-0.4**
RUSC	**La Rusia**	**0.87**	**182**	*e*P	**Pn**	**23 09 14.8**	**+0.4**
RUSC				*e*S	**Sn**	**23 09 32.6**	**-0.8**
RUSC				*i*		23 09 34.8	
	comp=Z,49nm,0.4s						
GRMC	**Gramalote, San**	**0.97**	**15**	*e*P	**Pn**	**23 09 16.7**	**+1.9**
GRMC				*e*S	**Sn**	**23 09 36.5**	**+2.2**
GRMC				*i*		23 09 37.4	
	comp=Z,86nm,0.3s						
CBRI	**Barrientos, No**	**0.98**	**15**	*e*P	**Pn**	**23 09 15.5**	**+0.7**
CBRI				*e*S	**Sn**	**23 09 33.9**	**-0.4**
CBRI				*i*		23 09 37.3	
	comp=Z,56nm,0.3s						
CAPV	**Capacho**	**1.31**	**34**	*e*P	**Pn**	**23 09 18.0**	**+0.1**
CAPV				*e*S	**Sn**	**23 09 36.6**	**-3.1**
OCAC	**Ocana**	**1.48**	**350**	*e*P	**Pn**	**23 09 19.6**	**+0.2**
OCAC				*e*S	**Sn**	**23 09 42.6**	**0.0**
OCAC				*i*		23 09 46.1	
	comp=Z,52nm,0.2s						
NORC	**Norcasia**	**2.17**	**236**	*e*P	**Pn**	**23 09 26.6**	**-0.3**
NORC				*e*S	**Sn**	**23 09 55.1**	**-0.7**
HELC	**Santa Helena**	**2.52**	**257**	*e*P	**Pn**	**23 09 33.1**	**+1.6**
HELC				*e*S	**Sn**	**23 10 03.4**	**-0.5**
HELC				*i*		23 10 08.3	
	comp=Z,25nm,0.3s						
VIGV	**El Vigia**	**2.65**	**39**	*e*P	**Pn**	**23 09 34.1**	**+1.4**
VIGV				*e*S	**Sn**	**23 10 06.5**	**+0.1**
PRAC	**Prado**	**3.54**	**211**	*e*P	**Pn**	**23 09 44.6**	**+0.7**
PRAC				*e*S	**Sn**	**23 10 26.2**	**-0.2**
VIRV	**Villa del Rosa**	**3.77**	**10**	*e*P	**Pn**	**23 09 45.2**	**-1.6**
VIRV				*e*S	Sn	23 10 25.3	-6.2
BAUV	**El Baul**	**5.42**	**66**	*e*P	Pn	23 10 15.4	+6.9

*IDC **04** 23:17:12.3±1.1, 23.°70S×176.°01W, h0km, mb4.1/6, mb1 4.3/6, mb1mx3.9/29, mbtmp4.1/6, MS3.4/8, Ms1 3.4/8, ms

10nm,0.2s
MNBS Baschi 4.55 282 *e*P **Pb 23 20 19.3 +2.2**
1.6nm,0.5s
MNBS *e*S **Sg 23 21 18.8 -4.3**
14nm,0.6s
KURS Kuram 4.67 275 *e*P **Pg 23 20 25.5 -1.1**
4.2nm,0.8s
KURS *e*S **Sg 23 21 29.3 +2.1**
3.6nm,0.8s
ARXS Arharly 4.98 283 *e*P **Pb 23 20 28.6 +4.2**
3.1nm,0.4s
ARXS *e*S **Sg 23 21 34.6 -2.2**
CHKK Chushkaly 5.53 279 *e*P **Pg 23 20 39.8 -3.3**
2.3nm,0.6s
CHKK *e*S **Sg 23 21 53.2 -1.5**
8.0nm,0.5s
TNSS Tian-Shan 5.59 270 *e*P **Pg 23 20 42.6 -1.6**
2.0nm,0.7s
TNSS *e*S **Sg 23 21 58.8 +2.2**
8.1nm,0.8s
KST Kastek 6.30 271 *e*P **Pg 23 20 55.1 -2.8**
3.3nm,0.2s
KST *e*S **Sg 23 22 19.4 0.0**
34nm,0.6s
KURK Kurchatov 8.46 333 ⇑Lg Lg 23 23 30.9
6.8nm,0.9s

IDC 04 23:19:27.2±1.9,6°.84S×154°.77E,h0km,mb3.7/5, mb1 3.9/5,mb1mx3.5/32,mbtmp3.7/5,Error ellipse: s-maj=93.5km s-min=26.4km az=130.0, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**23.73**	**235**	P	P	23 24 40.6	-0.7
	1.8nm,0.8s,baz=58,slow=9.9,SNR=4.8						
ASAR	**Alice Springs**	**26.11**	**228**	P	P	23 25 03.6	+0.5
	0.5nm,0.6s,baz=66,slow=9.6,SNR=4.4						
MKAR	**Makanchi Array**	**83.14**	**319**	P	P	23 31 55.7	+0.4
	0.5nm,0.5s,baz=98,slow=4.1,SNR=6.6						
ILAR	**Eielson Array**	**83.31**	**22**	P	P	23 31 55.1	-0.6
	0.2nm,0.6s,baz=253,slow=5.5,SNR=3.0						
YKA	**Yellowknife Ar**	**96.30**	**28**	P	P	23 32 57.8	+0.3
	0.2nm,0.6s,baz=264,slow=4.3,SNR=6.3						

IDC 04 23:30:27.1±8.0,18°.51S×176°.61W,h0km,mb3.5/2, mb1 3.8/2,mb1mx3.5/27,mbtmp3.5/2,Error ellipse: s-maj=418.1km s-min=47.0km az=147.0,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**46.20**	**260**	P	P	23 38 54.4	+0.1
	0.4nm,0.3s,baz=99,slow=9.4,SNR=3.3						
ASAR	**Alice Springs**	**46.27**	**255**	P	P	23 38 54.8	0.0
	0.3nm,0.4s,baz=91,slow=8.3,SNR=4.2						
BRTR	**Keskin Array B**	**146.41**	**315**	PKPbc	PKPdf	23 50 07.9	-1.4
	0.3nm,0.5s,baz=101,slow=2.9,SNR=3.8						
GERES	**GERESS Array B**	**148.61**	**347**	PKPbc	PKPbc	23 50 16.6	+0.4
	0.4nm,0.5s,baz=25,slow=3.5,SNR=6.4						

*BEO **05** 00:16:58.0±0.9,40°.77N×24°.08E,h0km,M3.1/8*
*ATH **05** 00:17:04.5,41°.23N×23°.76E,h23km±1km,ML3.2/4,Error ellipse: s-maj=1.7km s-min=1.3km az=336.0*
*THE **05** 00:17:05.7,41°.21N×23°.74E,h7km,ML3.0/13,Error ellipse: s-maj=0.9km s-min=0.4km az=306.0*
*SKO **05** 00:17:05.6,41°.24N×23°.78E,h1km,M2.8,ML2.9*
*CSEM **05** 00:17:05.9±0.1,41°.21N×23°.70E,h8km,ML3.2,Error ellipse: s-maj=2.7km s-min=2.0km az=4.0*
*SOF **05** 00:17:05.0,41°.21N×23°.76E,h2km,MD3.1*
*ISCJB **05** 00:17:05.2±0.4,41°.19N±0°.02×23°.74E±0°.02,h4km±3km, Error ellipse: s-maj=2.7km s-min=2.4km az=2.9*
*ISK **05** 00:17:05.6,41°.19N×23°.66E,h15km,ML3.3*
*DDA **05** 00:17:30.4,40°.46N×26°.04E,h7km,Md3.2*

ISC 05 00:17:05.5±0.8,41°.22N±0°.01×23°.72E±0°.01,h11km±5km, n182,σ1§35/225,10C-4D,Greece-Bulgaria border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SRS	**Serrai**	**0.14**	**223**	P	**Pg**	**00 17 09.2**	**+0.4**
SRS				S	**Sg**	**00 17 11.5**	**+0.4**
SRS	**Serrai**	**0.14**	**223**	P	**Pg**	**00 17 09.2**	**+0.4**
SRS				S	**Sg**	**00 17 11.5**	**+0.4**
SRS	**Serrai**	**0.14**	**223**	P	**Pg**	**00 17 08.7**	**-0.1**
SRS				S	**Sg**	**00 17 10.3**	**-0.8**
SRS				AML	AML	00 17 12.3	
	comp=E,14221μm,0.2s						
SRS				AML	AML	00 17 13.2	
	comp=N,16952μm,0.2s						
NVR	**Nevrokopi**	**0.17**	**40**	P	**Pg**	**00 17 09.5**	**+0.3**
NVR				S	**Sg**	**00 17 11.9**	**0.0**
NVR	**Nevrokopi**	**0.17**	**40**	P	**Pg**	**00 17 09.5**	**+0.3**
NVR				S	**Sg**	**00 17 11.9**	**0.0**
MMB	**Musomiste**	**0.37**	**1**	*i* Pg	**Pg**	**00 17 12.4**	**-0.4**
SOH	**Sokhos**	**0.49**	**215**	P	**Pg**	**00 17 15.1**	**+0.1**
SOH				S	**Sg**	**00 17 22.0**	**+0.6**
SOH	**Sokhos**	**0.49**	**215**	P	**Pg**	**00 17 15.1**	**+0.1**
SOH				S	**Sg**	**00 17 21.3**	**-0.1**
SOH	**Sokhos**	**0.49**	**215**	P	**Pg**	**00 17 15.2**	**+0.3**
SOH				S	**Sg**	**00 17 21.3**	**-0.1**
SOH				AML	AML	00 17 22.7	
	comp=E,3138μm,0.1s						
SOH				AML	AML	00 17 23.5	
	comp=N,3682μm,0.5s						
KNT	**Kendrikon**	**0.62**	**265**	*e*PG	**Pg**	**00 17 18.0**	**+0.5**
KNT	**Kendrikon**	**0.62**	**265**	P	**Pg**	**00 17 17.5**	**0.0**
KNT				S	**Sg**	**00 17 26.5**	**+0.8**
KNT	**Kendrikon**	**0.62**	**265**	P	**Pg**	**00 17 17.7**	**+0.1**
KNT	**Kendrikon**	**0.62**	**265**	*e*Pg	**Pg**	**00 17 18.0**	**+0.5**
KNT				S	**Sg**	**00 17 26.5**	**+0.8**
KNT	**Kendrikon**	**0.62**	**265**	P	**Pg**	**00 17 17.7**	**+0.1**
KAVA	**Kavala**	**0.64**	**110**	P	**Pg**	**00 17 17.2**	**-0.7**
KAVA				S	**Sg**	**00 17 26.1**	**-0.2**
KAVA	**Kavala**	**0.64**	**110**	P	**Pg**	**00 17 17.6**	**-0.3**
KAVA				S	**Sg**	**00 17 26.1**	**-0.2**
KAVA	**Kavala**	**0.64**	**110**	P	**Pg**	**00 17 17.6**	**-0.3**
HORT	**Hortiatis**	**0.78**	**217**	*e*PG	**Pg**	**00 17 20.5**	**0.0**
HORT				*e*SG	**Sg**	**00 17 30.9**	**+0.2**
HORT	**Hortiatis**	**0.78**	**217**	P	**Pg**	**00 17 20.3**	**-0.2**
HORT				S	**Sb**	**00 17 31.6**	**-0.1**
HORT	**Hortiatis**	**0.78**	**217**	P	**Pg**	**00 17 20.5**	**0.0**
HORT				*e*Sg	**Sg**	**00 17 30.9**	**+0.2**
HORT				S	**Sb**	**00 17 31.6**	**-0.1**
HORT	**Hortiatis**	**0.78**	**217**	P	**Pg**	**00 17 20.5**	**0.0**
KKB	**Krupnik**	**0.80**	**324**	*i* Pg	**Pg**	**00 17 20.4**	**-0.6**
THE	**Thessaloniki**	**0.82**	**224**	P	**Pg**	**00 17 21.0**	**-0.2**
THE				S	**Sb**	**00 17 32.8**	**0.0**
THE	**Thessaloniki**	**0.82**	**224**	P	**Pg**	**00 17 21.1**	**-0.2**
THE				S	**Sb**	**00 17 32.8**	**0.0**
THE	**Thessaloniki**	**0.82**	**224**	P	**Pg**	**00 17 21.1**	**-0.2**
PLG	**Polygyros**	**0.87**	**194**	P	**Pg**	**00 17 22.0**	**-0.3**
PLG				S	**Sb**	**00 17 34.8**	**+0.5**
PLG	**Polygyros**	**0.87**	**194**	P	**Pg**	**00 17 22.4**	**+0.1**
PLG				S	**Sb**	**00 17 34.8**	**+0.5**
PLG	**Polygyros**	**0.87**	**194**	P	**Pg**	**00 17 22.4**	**+0.1**
PLG				S	**Sb**	**00 17 35.3**	**+1.0**
PLG				AML	AML	00 17 35.3	
	comp=N,1586μm,0.3s						
PLG				AML	AML	00 17 36.6	
	comp=E,1906μm,0.3s						
VAY	**Valandovo**	**0.87**	**277**	P	**Pg**	**00 17 22.4**	**+0.1**
VAY				S	**Sb**	**00 17 35.1**	**+0.8**
VAY	**Valandovo**	**0.87**	**277**	*i* Pg	**Pb**	**00 17 22.8**	**+0.2**
VAY				*i* Sg	**Sb**	**00 17 35.4**	**+1.1**
VAY				*e*Lg	Lg	00 17 37.0	
	comp=E,234nm,0.2s						
VAY				*e*Lg	Lg	00 17 37.4	
	comp=N,258nm,0.2s						
VAY	**Valandovo**	**0.87**	**277**	*e*Pg	**Pg**	**00 17 22.0**	**-0.3**
VAY				*e*Sg	**Sn**	**00 17 37.3**	**+0.9**
VAY	**Valandovo**	**0.87**	**277**	*e*Pg	**Pg**	**00 17 22.0**	**-0.3**
VAY	**Valandovo**	**0.87**	**277**	P	**Pg**	**00 17 22.4**	**+0.1**
VAY				S	**Sb**	**00 17 35.1**	**+0.8**
VAY				*e*Lg	Lg	00 17 36.9	
	comp=N,234nm,0.2s						
RZN	**Rozhen**	**0.88**	**58**	*i* P	**Pg**	**00 17 22.4**	**-0.1**
OUR	**Ouranopolis**	**0.91**	**167**	*e*PG	**Pg**	**00 17 23.0**	**+0.1**
OUR	**Ouranopolis**	**0.91**	**167**	P	**Pg**	**00 17 22.7**	**-0.2**
OUR				S	**Sg**	**00 17 35.1**	**+0.3**
OUR	**Ouranopolis**	**0.91**	**167**	P	**Pg**	**00 17 23.2**	**+0.2**
OUR				S	**Sg**	**00 17 35.1**	**+0.3**
OUR	**Ouranopolis**	**0.91**	**167**	P	**Pg**	**00 17 23.2**	**+0.2**
OUR				S	**Sg**	**00 17 35.3**	**+0.5**
OUR				AML	AML	00 17 37.2	
	comp=N,10789μm,0.2s						
OUR				AML	AML	00 17 37.2	
	comp=E,5978μm,0.3s						
GRG	**Griva**	**1.03**	**256**	*e*PG	**Pg**	**00 17 24.9**	**-0.4**
GRG				*e*SG	**Sg**	**00 17 38.1**	**-0.6**
GRG	**Griva**	**1.03**	**256**	P	**Pg**	**00 17 24.9**	**-0.4**
GRG				S	**Sb**	**00 17 39.7**	**+0.8**
GRG	**Griva**	**1.03**	**256**	P	**Pg**	**00 17 25.0**	**-0.3**
GRG				*e*Sg	**Sg**	**00 17 38.1**	**-0.6**
GRG				S	**Sb**	**00 17 39.7**	**+0.8**
GRG	**Griva**	**1.03**	**256**	P	**Pg**	**00 17 25.0**	**-0.3**
PAIG	**Paliouri**	**1.29**	**181**	P	**Pn**	**00 17 29.0**	**-0.5**
PAIG				S	**Sb**	**00 17 46.7**	**+0.3**
PAIG	**Paliouri**	**1.29**	**181**	P	**Pn**	**00 17 29.0**	**-0.5**
PAIG				S	**Sb**	**00 17 46.7**	**+0.3**
PAIG	**Paliouri**	**1.29**	**181**	P	**Pn**	**00 17 28.9**	**-0.5**
KDZ	**Kurdzhali**	**1.35**	**71**	P	**Pn**	**00 17 29.3**	**-0.9**
PGB	**Panagyurishte**	**1.37**	**14**	*i* P	**Pn**	**00 17 30.6**	**0.0**
LIT	**Litokhoron**	**1.46**	**220**	P	**Pn**	**00 17 32.4**	**+0.6**
LIT	**Litokhoron**	**1.46**	**220**	P	**Pn**	**00 17 32.4**	**+0.6**
LIT	**Litokhoron**	**1.46**	**220**	P	**Pb**	**00 17 33.0**	**+0.3**
KTI	**Kastanea**	**1.47**	**236**	P	**Pn**	**00 17 32.5**	**+0.5**
KTI	**Kastanea**	**1.47**	**236**	P	**Pn**	**00 17 32.5**	**+0.5**
SMTH	**Samothraki Isl**	**1.56**	**118**	P	**Pn**	**00 17 32.2**	**-1.0**
SMTH				S	**Sn**	**00 17 54.0**	**+0.5**
SMTH	**Samothraki Isl**	**1.56**	**118**	P	**Pn**	**00 17 32.2**	**-1.0**
SMTH				S	**Sn**	**00 17 54.0**	**+0.5**
SMTH	**Samothraki Isl**	**1.56**	**118**	P	**Pn**	**00 17 31.8**	**-1.4**
DIM	**Dimitrovgrad**	**1.59**	**58**	P	**Pg**	**00 17 36.2**	**+0.2**
LIA	**Limnos Island**	**1.73**	**139**	P	**Pn**	**00 17 34.7**	**-0.7**
LIA				S	**Sn**	**00 17 58.0**	**+0.5**
LIA	**Limnos Island**	**1.73**	**139**	P	**Pn**	**00 17 34.7**	**-0.7**
LIA				S	**Sn**	**00 17 58.0**	**+0.5**
KZN	**Kozani**	**1.74**	**239**	P	**Pn**	**00 17 36.3**	**+0.6**
KZN	**Kozani**	**1.74**	**239**	P	**Pn**	**00 17 36.3**	**+0.6**
ALN	**Alexandroupoli**	**1.79**	**100**	*e*PN	**Pn**	**00 17 36.5**	**+0.2**
ALN	**Alexandroupoli**	**1.79**	**100**	P	**Pn**	**00 17 36.0**	**-0.3**
ALN				S	**Sn**	**00 17 59.2**	**+0.2**
ALN	**Alexandroupoli**	**1.79**	**100**	P	**Pn**	**00 17 36.2**	**-0.1**
ALN	**Alexandroupoli**	**1.79**	**100**	*e*Pn	**Pn**	**00 17 36.5**	**+0.2**
ALN				S	**Sn**	**00 17 59.2**	**+0.2**
ALN	**Alexandroupoli**	**1.79**	**100**	P	**Pn**	**00 17 36.2**	**-0.1**
BIA	**Bitola**	**1.82**	**264**	*i* Pn	**Pb**	**00 17 38.2**	**-0.7**
BIA				*i* Sn	**Sb**	**00 18 02.5**	**+0.8**
BIA				*e*Lg	Lg	00 18 04.6	
	comp=N,11nm,0.4s						
BIA				*e*Lg	Lg	00 18 05.0	
	comp=E,18nm,0.3s						
BIA	**Bitola**	**1.82**	**264**	*i* Pn	**Pb**	**00 17 38.1**	**-0.7**
BIA				*i* Sn	**Sb**	**00 18 02.4**	**+0.8**
BIA				*e*Lg	Lg	00 18 04.5	
	comp=E,11nm,0.4s						
FNA	**Florina**	**1.83**	**257**	P	**Pn**	**00 17 37.3**	**+0.5**
FNA	**Florina**	**1.83**	**257**	P	**Pn**	**00 17 37.3**	**+0.5**
FNA	**Florina**	**1.83**	**257**	P	**Pn**	**00 17 37.4**	**+0.5**
XOR	**Xorichti**	**1.90**	**192**	P	**Pn**	**00 17 37.8**	**0.0**
XOR	**Xorichti**	**1.90**	**192**	P	**Pn**	**00 17 37.8**	**0.0**
XOR	**Xorichti**	**1.90**	**192**	P	**Pn**	**00 17 37.5**	**-0.2**
ENEZ	**Enez**	**1.91**	**104**	*e*PN	**Pn**	**00 17 38.7**	**+0.8**
ENEZ	**Enez**	**1.91**	**104**	P	**Pn**	**00 17 37.2**	**-0.7**
ENEZ	**Enez**	**1.91**	**104**	P	**Pn**	**00 17 37.2**	**-0.7**
ENEZ	**Enez**	**1.91**	**104**	*e*Pn	**Pn**	**00 17 38.7**	**+0.8**
AOS	**Alonnisos**	**2.05**	**177**	P	**Pn**	**00 17 39.1**	**-0.8**
AOS	**Alonnisos**	**2.05**	**177**	P	**Pn**	**00 17 39.1**	**-0.8**
AOS	**Alonnisos**	**2.05**	**177**	P	**Pn**	**00 17 38.1**	**-1.8**
THL	**Klokotos Trika**	**2.11**	**219**	P	**Pn**	**00 17 40.5**	**-0.1**
MPEP	**Malo Peshtene**	**2.13**	**0**	P	**Pg**	**00 17 46.0**	**-0.4**
BARS	**Barje**	**2.13**	**319**	*e*Pn	**Pn**	**00 17 41.7**	**+0.6**
BARS				*e*Sn	**Sg**	**00 18 14.6**	**+0.6**
BARS	**Barje**	**2.13**	**319**	*e*Pn	**Pn**	**00 17 41.7**	**+0.6**
ZAPS	**Zavoj**	**2.20**	**339**	*e*Pn	**Pb**	**00 17 44.0**	**-1.4**
GELI	**Tayfur-Gelibol**	**2.25**	**111**	*e*PN	**Pn**	**00 17 43.8**	**+1.2**
GELI	**Tayfur-Gelibol**	**2.25**	**111**	*e*Pn	**Pn**	**00 17 43.8**	**+1.2**
BOZC	**Bozcaada**	**2.25**	**127**	*i* P	**Pn**	**00 17 42.1**	**-0.5**
BOZC				*i* S	**Sb**	**00 18 15.8**	**+1.9**
KESN	**Edirne-Kesan**	**2.27**	**99**	P	**Pn**	**00 17 43.5**	**+0.2**
KESN	**Edirne-Kesan**	**2.27**	**99**	*i* P	**Pn**	**00 17 43.5**	**+0.2**
KESN				*i* S	**Sg**	**00 18 19.7**	**+1.1**
EDRB	**Edirne**	**2.35**	**74**	*e*PN	**Pn**	**00 17 45.6**	**+1.5**
EDRB	**Edirne**	**2.35**	**74**	P	**Pn**	**00 17 44.7**	**+0.6**
EDRB	**Edirne**	**2.35**	**74**	P	**Pn**	**00 17 44.7**	**+0.6**
EDRB	**Edirne**	**2.35**	**74**	*e*Pn	**Pn**	**00 17 45.6**	**+1.5**
SMIA	**Simia**	**2.37**	**190**	P	**Pn**	**00 17 44.5**	**+0.2**
SMIA	**Simia**	**2.37**	**190**	P	**Pn**	**00 17 44.5**	**+0.2**
EZN	**Ezine**	**2.43**	**124**	*e*PN	**Pn**	**00 17 46.1**	**+1.1**
EZN	**Ezine**	**2.43**	**124**	*e*Pn	**Pn**	**00 17 46.1**	**+1.1**
LPK	**Lapseki**	**2.46**	**109**	*e*PN	**Pn**	**00 17 46.7**	**+1.2**
LPK	**Lapseki**	**2.46**	**109**	*e*Pn	**Pn**	**00 17 46.7**	**+1.2**
JMB	**Yambol**	**2.48**	**59**	P	**Pn**	**00 17 46.6**	**+0.9**
SIGR	**SIGRI**	**2.59**	**140**	*e*PN	**Pn**	**00 17 48.1**	**+0.8**
SIGR	**SIGRI**	**2.59**	**140**	*e*Pn	**Pn**	**00 17 48.1**	**+0.8**
RKY	**Sarkoy-Tekirda**	**2.67**	**100**	*e*PN	**Pn**	**00 17 49.8**	**+1.3**
RKY	**Sarkoy-Tekirda**	**2.67**	**100**	*e*Pn	**Pn**	**00 17 49.8**	**+1.3**
SART	**Tekirdag**	**2.67**	**100**	*i* S	**Sg**	**00 18 30.1**	**-1.3**
ZIMR		**2.72**	**26**	⇑*i* P	**Pb**	**00 17 55.9**	**+1.8**
ZIMR		**2.72**	**26**	S	**Sg**	**00 18 36.1**	**+3.2**
SELS	**Selova**	**2.78**	**317**	*e*Pn	**Pn**	**00 17 49.9**	**0.0**
BOVS	**Bovan**	**2.84**	**329**	*e*Pn	**Pn**	**00 17 52.2**	**+1.5**
BOVS				*e*Sn	**Sb**	**00 18 31.8**	**+1.0**
BOVS	**Bovan**	**2.84**	**329**	*e*Pn	**Pn**	**00 17 52.2**	**+1.5**
KRBG	**Karabiga-Canak**	**2.84**	**106**	*e*PN	**Pn**	**00 17 52.0**	**+1.3**
KRBG	**Karabiga-Canak**	**2.84**	**106**	*e*Pn	**Pn**	**00 17 52.0**	**+1.3**
PHSR	**Pinarhisar**	**2.89**	**81**	*e*PN	**Pn**	**00 17 53.3**	**+1.9**
PHSR	**Pinarhisar**	**2.89**	**81**	*e*Pn	**Pn**	**00 17 53.3**	**+1.9**
TKR	**Tekirdag**	**2.89**	**93**	*e*PN	**Pn**	**00 17 53.3**	**+1.8**
TKR	**Tekirdag**	**2.89**	**93**	*e*Pn	**Pn**	**00 17 53.3**	**+1.8**
BOLS	**Boljevac**	**2.92**	**334**	*e*PN	**Pn**	**00 17 51.9**	**+0.1**
BOLS	**Boljevac**	**2.92**	**334**	*e*Pn	**Pn**	**00 17 51.9**	**+0.1**
ANX	**Ano Chora**	**2.97**	**208**	P	**Pn**	**00 17 53.3**	**+0.7**
AYVA	**Ayvalik**	**2.97**	**129**	S	**Sn**	**00 18 26.2**	**-1.9**
AYVA	**Ayvalik**	**2.97**	**129**	*i* S	**Sn**	**00 18 26.2**	**-1.9**
MRMT	**Marmara Adasi**	**3.00**	**101**	*e*PN	**Pn**	**00 17 54.6**	**+1.6**
MRMT	**Marmara Adasi**	**3.00**	**101**	*e*Pn	**Pn**	**00 17 54.6**	**+1.6**
CRLT	**Corlu**	**3.03**	**90**	*e*PN	**Pn**	**00 17 55.1**	**+1.7**
CRLT	**Corlu**	**3.03**	**90**	*e*Pn	**Pn**	**00 17 55.1**	**+1.7**
KNL	**Bal¨–kesir**	**3.04**	**107**	*i* P	**Pn**	**00 17 53.2**	**-0.4**
DKL	**Dikili**	**3.25**	**130**	*e*PN	**Pn**	**00 17 57.8**	**+1.4**
DKL	**Dikili**	**3.25**	**130**	*e*Pn	**Pn**	**00 17 57.8**	**+1.4**
EDC	**Edincik**	**3.27**	**104**	*e*PN	**Pn**	**00 17 58.1**	**+1.5**
EDC	**Edincik**	**3.27**	**104**	*e*Pn	**Pn**	**00 17 58.1**	**+1.5**
BALY	**Balya**	**3.32**	**115**	P	**Pn**	**00 17 59.8**	**+2.4**
BALY	**Balya**	**3.32**	**115**	*i* P	**Pn**	**00 17 59.8**	**+2.4**
CHOS	**Chios island**	**3.35**	**147**	*e*PN	**Pn**	**00 17 59.2**	**+1.3**
CHOS	**Chios island**	**3.35**	**147**	*e*Pn	**Pn**	**00 17 59.2**	**+1.3**
HUMR	**Humele**	**3.43**	**15**	⇑*i* P	**Pb**	**00 18 06.0**	**-0.3**
CTYL	**Yalikoy Yolu**	**3.45**	**84**	*e*PN	**Pn**	**00 18 01.0**	**+1.9**
CTYL	**Yalikoy Yolu**	**3.45**	**84**	*e*Pn	**Pn**	**00 18 01.0**	**+1.9**
GRUS	**Gruza**	**3.47**	**321**	*e*Pn	**Pn**	**00 17 59.9**	**+0.5**
GRUS				*e*Sn	**Sb**	**00 18 46.5**	**-2.5**
GRUS	**Gruza**	**3.47**	**321**	*e*Pn	**Pn**	**00 17 59.9**	**+0.5**
KUBS	**Kucevo**	**3.53**	**335**	*e*Pn	**Pn**	**00 17 59.8**	**-0.4**
KUBS	**Kucevo**	**3.53**	**335**	*e*Pn	**Pn**	**00 17 59.8**	**-0.4**
IVAS	**Ivanjica**	**3.54**	**313**	*e*Pn	**Pn**	**00 18 01.1**	**+0.7**
IVAS	**Ivanjica**	**3.54**	**313**	*e*Pn	**Pn**	**00 18 01.1**	**+0.7**
CTKS	**Kestanelik-??a**	**3.61**	**88**	*e*PN	**Pn**	**00 18 03.4**	**+2.1**
CTKS	**Kestanelik-??a**	**3.61**	**88**	*e*Pn	**Pn**	**00 18 03.4**	**+2.1**
KCTX	**Karacabey (Bur**	**3.65**	**104**	*e*PN	**Pn**	**00 18 03.6**	**+1.7**
KCTX	**Karacabey (Bur**	**3.65**	**104**	*e*Pn	**Pn**	**00 18 03.6**	**+1.7**
ZEY	**¨zmir**	**3.67**	**143**	*i* P	**Pn**	**00 17 58.5**	**-3.7**
BGKT	**Bogazkoy**	**3.81**	**89**	*e*PN	**Pn**	**00 18 06.5**	**+2.4**
BGKT	**Bogazkoy**	**3.81**	**89**	*e*Pn	**Pn**	**00 18 06.5**	**+2.4**
MDVR	**Moldovita**	**3.85**	**338**	⇑*i* P	**Pn**	**00 18 08.6**	**+3.9**
MDVR	**Moldovita**	**3.85**	**338**	S	**Sg**	**00 19 10.4**	**+1.3**
TRUS	**Trudelj**	**3.87**	**322**	*e*PN	**Pn**	**00 18 05.3**	**+0.4**
TRUS	**Trudelj**	**3.87**	**322**	*e*Pn	**Pn**	**00 18 05.3**	**+0.4**
SULR		**3.92**	**27**	⇑*i* P	**Pb**	**00 18 12.3**	**-2.3**
DIVS	**Divibare**	**3.98**	**318**	*i* Pn	**Pn**	**00 18 06.9**	**+0.4**
DIVS				*e*Sn	**Sb**	**00 18 59.9**	**-3.9**
DIVS	**Divibare**	**3.98**	**318**	*i* Pn	**Pn**	**00 18 06.9**	**+0.4**
ISK	**Istanbul-Kandi**	**4.04**	**90**	*e*PN	**Pn**	**00 18 09.7**	**+2.6**
ISK	**Istanbul-Kandi**	**4.04**	**90**	*e*Pn	**Pn**	**00 18 09.7**	**+2.6**
ARR	**Arges**	**4.20**	**9**	⇑*i* P	**Pb**	**00 18 15.6**	**-3.7**
ARR	**Arges**	**4.20**	**9**	S	**Sn**	**00 18 59.7**	**+1.2**
VOIR		**4.32**	**13**	⇓*i* P	**Pb**	**00 18 17.1**	**-4.4**
VOIR		**4.32**	**13**	S	**Sg**	**00 19 27.2**	**+2.9**
DEMI	**Demirci**	**4.41**	**118**	P	**Pn**	**00 18 14.6**	**+2.3**
DEMI	**Demirci**	**4.41**	**118**	*i* P	**Pn**	**00 18 14.6**	**+2.3**
ISR	**Istrita**	**4.41**	**27**	⇑*i* P	Pb	00 18 18.0	-4.9
TEKS	**Tekeris**	**4.53**	**319**	*e*Pn	**Pn**	**00 18 14.4**	**+0.4**
TEKS	**Tekeris**	**4.53**	**319**	*e*Pn	**Pn**	**00 18 14.4**	**+0.4**
MLR	**Muntele Rosu**	**4.57**	**20**	⇓*i* P	**Pb**	**00 18 21.7**	**-3.9**
MLR	**Muntele Rosu**	**4.57**	**20**	S	**Sg**	**00 19 33.3**	**+1.3**
BZS	**Buzias**	**4.65**	**341**	⇑*i* P	**Pn**	**00 18 18.5**	**+2.9**
BZS	**Buzias**	**4.65**	**341**	*e*Pn	**Pn**	**00 18 16.1**	**+0.5**
BZS	**Buzias**	**4.65**	**341**	*e*Pn	**Pn**	**00 18 16.1**	**+0.5**
DOPR	**Dopca**	**4.90**	**14**	⇓*i* P	Pn	00 18 11.5	-7.5
GDZ	**Gediz**	**4.90**	**114**	P	**Pn**	**00 18 14.9**	**-4.3**
GDZ	**Gediz**	**4.90**	**114**	*i* P	**Pn**	**00 18 14.9**	**-4.3**
PLOR	**Plostina**	**5.09**	**24**	⇑*i* P	Pn	00 18 27.5	+5.7
CFR	**Carcaliu**	**5.11**	**38**	⇑*i* P	Pn	00 18 27.9	+6.1
VRI	**Vrincioaia**	**5.13**	**24**	⇓*i* P	Pn	00 18 27.6	+5.4
DRGR		**5.62**	**353**	⇑*i* P	**Pn**	**00 18 33.5**	**+4.6**
DRGR		**5.62**	**353**	S	**Sg**	**00 20 01.4**	**-4.3**

*NNC **05** 00:17:13.0±5.5,43°.40N×85°.70E,h0km,mb3.5,mpv3.1, Error ellipse: s-maj=41.8km s-min=21.1km az=124.0*
*SOME **05** 00:17:19.8,43°.93N×84°.45E,h10km*

ISC 05 00:17:15.4±2.8,43°.72N±0°.10×84°.7E±0°.1,h10km,n18, σ1§88/28,4C-5D,Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KTMS	**Ketmen**	**3.17**	**267**	*e*P	**Pb**	**00 18 12.6**	**+0.7**
	8.6nm,0.5s						
KTMS				*e*S	**Sb**	**00 18 51.6**	**+1.0**
	31nm,0.6s						
MK31	**Makanchi Array**	**3.51**	**332**	⇓Pg	Pg	00 18 29.6	+6.9
	0.5nm,0.4s,baz=150,slow=16,SNR=11						
MK31				⇓Lg	Lg	00 19 23.6	
	4.1nm,0.6s,baz=140,slow=30,SNR=11						
SHLS	**Shalkode**	**3.55**	**263**	*e*P	**Pb**	**00 18 22.3**	**+3.8**
	13nm,0.5s						
SHLS				*e*S	**Sg**	**00 19 07.9**	**-1.6**
	44nm,0.4s						
DJR	**Jarkent**	**3.59**	**281**	*e*P	**Pb**	**00 18 19.9**	**+0.9**
	4.1nm,0.4s						
DJR				*e*S	**Sb**	**00 19 04.0**	**+1.3**
	11nm,0.4s						
MAKZ	**Makanchi**	**3.64**	**329**	⇓Pg	Pg	00 18 30.8	+5.7
	3.3nm,0.9s						
MAKZ				⇑Lg	Lg	00 19 31.4	
	5.4nm,0.6s						
ZSN	**Zaisan**	**3.74**	**357**	*e*P	**Pg**	**00 18 25.1**	**-1.8**
	2.7nm,0.3s						
ZSN				*e*S	**Sg**	**00 19 12.7**	**-2.6**
	6.4nm,0.6s						
PDGK	**Podgornoye**	**3.81**	**266**	⇑Pn	**Pb**	**00 18 23.3**	**+0.6**
	2.9nm,0.4s						
PDGK				⇓Sn	**Sg**	**00 19 17.1**	**-0.7**
	14nm,0.7s						
KAPS	**Kapalarasan**	**4.13**	**294**	*

WRA	**Warramunga Arr**	**57.10**	**190**	P	**P**	**00 43 55.6**	**+0.9**
	0.9nm,0.6s,baz=7.4,slow=7.0,SNR=4.3						
AS31	**Alice Springs**	**60.82**	**190**	*e*P	**P**	**00 44 22.0**	**+1.3**
	2.8nm,1.6s						
ASAR	**Alice Springs**	**60.83**	**190**	P	**P**	**00 44 22.0**	**+1.3**
	0.2nm,0.5s,baz=354,slow=6.7,SNR=3.7						
YKA	**Yellowknife Ar**	**63.13**	**31**	P	**P**	**00 44 35.1**	**-0.6**
	0.2nm,0.7s,baz=303,slow=6.7,SNR=5.3						
YKB5	**Yellowknife Ar**	**63.13**	**31**	*e*P	**P**	**00 44 35.1**	**-0.6**
WSAR	**Wadi Sarin**	**72.60**	**286**	LR	LR	01 21 51.4	
	comp=Z,34nm,18.3s,slow=39						
NVAR	**Mina Array Bea**	**73.73**	**54**	P	**P**	**00 45 43.5**	**+0.8**
	0.3nm,0.6s,baz=309,slow=5.7,SNR=3.4						

MEX 05 00:43:03.5±0.4, 15°.30N×93°.50W, h78km±9km, MD3.9, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		**0.48**	**35**	*e*P	Pn	00 43 15.4	-1.5
PCIG				*e*S	Sn	00 43 25.1	-1.6
CCIG	**Comitan**	**1.64**	**53**	*e*P	Pn	00 43 29.4	-1.3
CCIG				*e*S	Sn	00 43 49.1	-2.2

TRN 05 01:24:22.6, 17°.75N×60°.66W, h3km, MD3.6, 2C-2D, Leeward Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ANWB	**Willy Bob**	**1.07**	**266**	↑*i*P	Pg	01 24 42.1	-1.1
ANWB				*e*S	Sg	01 24 56.0	-1.2
BPA	**Boggy Peak**	**1.34**	**239**	*e*P	Pb	01 24 50.6	+2.3
BPA	**Boggy Peak**	**1.34**	**239**	*e*	Sg	01 24 59.2	-6.5
BPA				*e*S	Sn	01 25 10.2	+3.6
SEG	**Port Louis**	**1.57**	**211**	*e*P	Pg	01 24 53.3	+0.6
SSG	**Sans Toucher**	**1.92**	**211**	*e*P	Pb	01 24 58.8	+0.4
LZG	**Guadaloupe-1**	**1.93**	**214**	↑*i*P	Pg	01 24 59.2	-0.3
MGG	**Marie-Galante**	**1.93**	**199**	*e*P	Pg	01 24 59.3	-0.3
MGG	**Marie-Galante**	**1.93**	**199**	*e*	Sn	01 25 18.1	-3.0
MGG				*e*S	Sg	01 25 25.8	+1.1
CRG	**Carmichael**	**1.94**	**210**	*e*P	Pb	01 24 59.1	+0.4
DOG	**Dongo Capester**	**1.94**	**208**	*e*P	Pg	01 24 59.3	-0.5
ECG	**Echelle**	**1.95**	**209**	*e*P	Pb	01 24 59.2	+0.3
FNG	**Fond-Bernard**	**1.95**	**210**	↓*i*P	Pb	01 24 59.0	+0.2
MLG	**Mont-d'or**	**1.96**	**211**	↓*i*P	Pb	01 24 59.4	+0.4
PHG	**Guadaloupe-2**	**1.97**	**209**	*e*P	Pb	01 24 59.5	+0.4
TBG	**Guadaloupe-3**	**2.11**	**207**	*e*P	Pb	01 25 01.4	-0.1
TBG	**Guadaloupe-3**	**2.11**	**207**	*e*	Sn	01 25 17.4	-8.2
TBG				*e*S	Sg	01 25 30.9	+0.4
BAMF	**Morne Balai**	**2.96**	**189**	*e*P	Pb	01 25 13.4	-2.6
CXM	**Morne La Croix**	**2.97**	**190**	*e*P	Pn	01 25 13.1	+2.4
CXM				*e*S	Sb	01 25 50.1	-2.8
PCM	**Pelee Case Pet**	**2.97**	**190**	*e*P	Pn	01 25 13.1	+2.4
PCM	**Pelee Case Pet**	**2.97**	**190**	*e*P	Pn	01 25 13.1	+2.5
GBMF	**Grand Be**	**2.98**	**189**	*e*P	Pn	01 25 12.9	+2.1
PML	**Morne Lenard**	**3.00**	**190**	*e*P	Pn	01 25 13.4	+2.3
FDF	**Fort de France**	**3.04**	**189**	*e*P	Pn	01 25 13.9	+2.3
FDF				*e*S	Sn	01 25 51.1	+2.5
LPMF	**Morne Lapointe**	**3.17**	**185**	*e*P	Pn	01 25 15.9	+2.5
MVM	**Montagne Vaucl**	**3.19**	**184**	*e*P	Pn	01 25 16.5	+2.9

*ISCJB **05** 01:45:06.5±0.5, 24°.24S±0°.05×67°.05W±0°.05, h181km, Error ellipse: s-maj=8.6km s-min=4.7km az=37.4*
*SJA **05** 01:45:06.0±0.6, 24°.27S×66°.89W, h203km±14km, ML3.2, MW3.2*
*GUC **05** 01:45:09.0±0.5, 23°.90S×67°.61W, h245km±14km, ML4.4*
ISC 05 01:45:06.5±1.3, 24°.24S±0°.06×67°.02W±0°.05, h181km, n14, σ1§17/20, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AZAP	**Zapla**	**1.78**	**90**	*i*P	**Pn**	**01 45 42.4**	**+0.7**
AZAP				IAML		01 46 13.8	
	comp=Z,8.2nm,0.5s						
HJA	**Humahuaca**	**1.80**	**55**	*i*P	**Pn**	**01 45 43.2**	**+1.3**
FSA	**Cafayete**	**2.08**	**153**	*i*P	**Pn**	**01 45 46.0**	**+1.2**
ASTB	**Santa Barbara**	**2.36**	**83**	*i*P	**Pn**	**01 45 48.3**	**+0.4**
ASTB				*i*S	**Sn**	**01 46 19.0**	**-1.0**
ASTB				IAML		01 46 23.3	
	comp=Z,5μm,0.7s						
YJA	**Yavi**	**2.48**	**34**	*i*P	**Pn**	**01 45 51.0**	**+1.5**
PB06	**IPOC Station P**	**2.80**	**303**	*i*P	**Pn**	**01 45 54.4**	**+1.4**
PB06				*i*S	**Sn**	**01 46 29.0**	**-0.1**
PB06				IAML		01 46 31.4	
	comp=E,614nm,0.2s						
ALOL	**LOMAS DE OLMED**	**2.81**	**82**	*i*P	**Pn**	**01 45 52.9**	**-0.1**
AHML	**Horco Molle**	**2.95**	**149**	*i*P	**Pn**	**01 45 55.2**	**+0.6**
PB09	**IPOC Station P**	**3.18**	**320**	*i*P	**Pn**	**01 45 59.1**	**+1.5**
PB09				*i*S	**Sn**	**01 46 37.2**	**-0.3**
PB09				IAML		01 46 39.0	
	comp=E,834nm,0.3s						
PB04	**IPOC Station P**	**3.45**	**303**	*i*P	**Pn**	**01 46 01.9**	**+1.0**
PB04				*i*S	**Sn**	**01 46 41.4**	**-1.9**
PB04				IAML		01 46 44.9	
	comp=N,357nm,0.6s						
PB07	**IPOC Station P**	**3.64**	**313**	*i*P	**Pn**	**01 46 03.9**	**+0.5**
PB07				*i*S	**Sn**	**01 46 45.6**	**-2.1**
PB07				IAML		01 46 47.5	
	comp=N,566nm,0.3s						
PB08	**IPOC Station P**	**4.54**	**334**	*i*P	**Pn**	**01 46 15.5**	**+0.6**
PB08				*i*S	**Sn**	**01 47 07.4**	**-1.1**
PB08				IAML		01 47 08.6	
	comp=E,80nm,0.2s						
VCA	**Vinchina**	**4.60**	**193**	*i*P	**Pn**	**01 46 16.1**	**+0.7**
VCA				IAML		01 47 21.1	
	comp=Z,5.1nm,0.3s						
RTLL	**Cerro Villicun**	**7.17**	**190**	*i*P	**Pn**	**01 46 48.7**	**-0.3**

*IDC **05** 01:49:23.1±1.4, 20°.76S×168°.59E, h0km, mb4.2/8, mb1 4.3/9, mb1mx4.0/38, mbtmp4.2/9, ML4.2/1, MS3.2/5, Ms1 3.2/5, ms1mx2.9/34, Error ellipse: s-maj=56.5km s-min=18.6km az=145.0*
*ISCJB **05** 01:49:26.6±0.7, 20°.75±0°.1×168°.4E±0°.1, h30km, mb4.1/8, MS3.5/4, Error ellipse: s-maj=23.3km s-min=9.7km az=138.1*
ISC 05 01:49:28.1±0.8, 20°.8S±0°.2×168°.5E±0°.2, h30km, n24, σ1§09/22, mb4.1/8, MS3.2/4, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.31**	**235**	Pn	**Pn**	**01 50 03.5**	**-0.6**
	62nm,0.3s,baz=58,slow=14,SNR=407						
DZM				Sn	**Sn**	**01 50 31.1**	**-0.5**
	190nm,0.3s,baz=116,slow=21,SNR=14						
DZM				LR	LR	01 50 52.5	
	comp=Z,401nm,20.1s,baz=80,slow=37						
URZ	**Urewera**	**18.97**	**159**	LR	LR	01 59 14.3	
	comp=Z,86nm,20.4s,baz=112,slow=31						
AFI	**Afiamalu**	**20.02**	**73**	LR	LR	02 00 58.1	
	comp=Z,64nm,19.9s,baz=278,slow=35						
STKA	**Stephens Creek**	**26.45**	**240**	P	**P**	**01 55 03.8**	**+1.2**
	1.6nm,0.7s,baz=90,slow=11,SNR=2.9						
STKA				LR	LR	02 04 58.0	
	comp=Z,56nm,19.1s,baz=20,slow=35						
WRA	**Warramunga Arr**	**31.99**	**265**	P	**P**	**01 55 51.6**	**-0.3**
	0.4nm,0.3s,baz=90,slow=8.7,SNR=14						
ASAR	**Alice Springs**	**32.10**	**258**	P	**P**	**01 55 53.0**	**+0.1**
	1.9nm,0.7s,baz=84,slow=9.0,SNR=18						
ASAR				LR	LR	02 08 22.2	
	comp=Z,59nm,18.4s,baz=106,slow=35						
FITZ	**Fitzroy Crossi**	**40.41**	**266**	P	**P**	**01 57 04.0**	**+0.1**
	2.9nm,0.9s,baz=83,slow=12,SNR=3.0						
JOW	**Kunigami**	**61.28**	**319**	LR	LR	02 25 24.0	
	comp=Z,299nm,18.8s,baz=94,slow=35						
USRK	**Ussuriysk Ar.**	**72.76**	**333**	P	**P**	**02 00 53.8**	**+0.4**
	2.3nm,0.9s,baz=167,slow=4.1,SNR=5.6						
PETK	**Petropavlovsk-**	**74.15**	**353**	P	**P**	**02 01 01.6**	**+0.2**
	6.2nm,0.7s,baz=136,slow=8.8,SNR=9.4						
SNAA	**Sanae**	**87.62**	**183**	P	**P**	**02 02 13.6**	**+0.4**
VNA3	**Neumayer Olymp**	**88.24**	**181**	P	**P**	**02 02 15.8**	**-0.3**
VNA2	**Neumayer--Watz**	**88.52**	**181**	P	**P**	**02 02 17.7**	**+0.3**
	baz=179,slow=5.1						
NVAR	**Mina Array Bea**	**90.33**	**49**	P	**P**	**02 02 26.7**	**0.0**
	2.1nm,0.8s,baz=226,slow=8.1,SNR=18						
ILAR	**Eielson Array**	**91.88**	**18**	P	**P**	**02 02 30.7**	**-2.3**
	0.5nm,0.6s,baz=238,slow=6.2,SNR=6.9						
YKA	**Yellowknife Ar**	**102.33**	**28**	P	**Pdif**	**02 03 20.7**	**+0.4**
	0.2nm,0.5s,baz=255,slow=4.7,SNR=9.5						
ARCES	**ARCESS Array B**	**126.34**	**345**	PKP	**PKPdf**	**02 08 25.9**	**-1.3**
	2.4nm,0.9s,baz=62,slow=2.1,SNR=4.6						
EKA	**Eskdalemuir Ar**	**144.91**	**352**	PKP	**PKPab**	**02 09 00.4**	**-0.7**
	0.4nm,0.4s,baz=352,slow=2.5,SNR=5.5						
NKC	**Novy Kostel**	**145.01**	**333**	*e*P	**PKPab**	**02 09 01.9**	**+0.2**
CONA	**Conrad Observa**	**145.05**	**327**	*e*PKPdf	**PKPdf**	**02 09 03.2**	**+0.7**
	2.5nm,1.0s						
KHC	**Kasperske Hory**	**145.32**	**331**	*e*P	**PKPbc**	**02 09 02.6**	**-0.2**
GERES	**GERESS Array B**	**145.47**	**330**	PKPbc	**PKPab**	**02 09 03.8**	**+0.2**
	1.3nm,0.7s,baz=30,slow=3.7,SNR=16						
MOA	**Molln**	**145.90**	**328**	*i* PKPab	**PKPab**	**02 09 05.4**	**+0.4**
	7.8nm,1.1s						
SOKA	**Soboth**	**146.30**	**326**	*i* PKiKP	**PKiKP**	**02 09 12.4**	**+3.4**
	3.0nm,0.4s						

*ISCJB **05** 01:53:48.0±0.4, 36°.46N±0°.02×35°.90E±0°.03, h7km±3km, Error ellipse: s-maj=3.5km s-min=2.7km az=157.7*
*DDA **05** 01:53:48.0, 36°.48N×35°.88E, h6km, Ml3.2*
*ISK **05** 01:53:47.0, 36°.46N×35°.88E, h10km, MD3.1*
*CSEM **05** 01:53:48.2±0.1, 36°.47N×35°.86E, h10km, MD3.1, Error ellipse: s-maj=3.7km s-min=2.5km az=65.0*
*NSSC **05** 01:53:48.0±1.0, 36°.50N×35°.92E, h7km±3km, MD1.2, ML2.4*
ISC 05 01:53:48.1±0.9, 36°.48N±0°.02×35°.88E±0°.02, h11km±7km, n58, σ0§76/95, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TAHT	**Tahtakopru-Hat**	**0.27**	**112**	*e*PG	**Pg**	**01 53 52.8**	**-0.8**
TAHT				*e*SG	**Sg**	**01 53 57.2**	**0.0**
TAHT	**Tahtakopru-Hat**	**0.27**	**112**	*e*Pg	**Pg**	**01 53 52.8**	**-0.8**
TAHT				*e*Sg	**Sg**	**01 53 57.2**	**0.0**
YURE	**YUREGIR**	**0.40**	**330**	P	**Pg**	**01 53 56.4**	**+0.4**
YURE				S	**Sb**	**01 54 03.0**	**-0.4**
YURE	**YUREGIR**	**0.40**	**330**	*i* P	**Pg**	**01 53 56.4**	**+0.4**
YURE				*i* S	**Sb**	**01 54 03.0**	**-0.4**
YURE				*i* S	**Sg**	**01 54 04.3**	**+2.9**
YAYL	**Yayladag**	**0.48**	**157**	*i* P	**Pg**	**01 53 57.0**	**-0.5**
YAYL				*i* S	**Sg**	**01 54 03.7**	**-0.2**
CEYT	**Ceyhan**	**0.54**	**349**	*e*PG	**Pg**	**01 53 58.5**	**-0.1**
CEYT	**Ceyhan**	**0.54**	**349**	*e*Pg	**Pg**	**01 53 58.6**	**-0.1**
ARNB	**Al Arnab**	**0.62**	**173**	*e*P	**Pb**	**01 54 00.9**	**-0.1**
ARNB				*e*S	**Sg**	**01 54 08.8**	**+0.5**
ARNB				AML	AML	01 54 15.1	
	comp=E,120nm,0.2s						
ARNB				AML	AML	01 54 16.4	
	comp=N,66nm,0.4s						
ARNB	**Al Arnab**	**0.62**	**173**	*e*P	**Pb**	**01 54 00.9**	**-0.1**
ARNB				*e*S	**Sg**	**01 54 08.8**	**+0.5**
	comp=N,66nm,0.4s						
BTCH	**Batrach**	**0.64**	**133**	*e*P	**Pg**	**01 54 00.8**	**+0.2**
BTCH				*e*S	**Sg**	**01 54 09.3**	**+0.3**
BTCH				AML	AML	01 54 13.1	
	comp=E,442nm,0.2s						
BTCH				AML	AML	01 54 14.1	
	comp=N,262nm,0.6s						
DRWC	**Darouich**	**0.65**	**77**	*e*P	**Pg**	**01 54 00.2**	**-0.5**
DRWC				*e*S	**Sg**	**01 54 08.2**	**-1.1**
DRWC				AML	AML	01 54 12.0	
	comp=E,273nm,0.4s						
DRWC				AML	AML	01 54 15.1	
	comp=N,130nm,0.2s						
SLNF	**Slenfeh**	**0.92**	**162**	*e*P	**Pg**	**01 54 05.8**	**-0.1**
SLNF				*e*S	**Sg**	**01 54 18.2**	**+0.3**
SLNF				AML	AML	01 54 23.5	
	comp=N,776nm,0.2s						
SLNF	**Slenfeh**	**0.92**	**162**	*e*P	**Pg**	**01 54 05.8**	**-0.1**
SLNF				*e*S	**Sg**	**01 54 18.2**	**+0.3**
	comp=N,776nm,0.2s						
KAMA	**Osmaniye**	**0.95**	**42**	*i* P	**Pg**	**01 54 06.1**	**-0.3**
KAMA				*i* S	**Sb**	**01 54 19.6**	**+0.4**
DED	**Mersin**	**0.99**	**299**	*i* P	**Pg**	**01 54 05.7**	**-1.5**
DED				*i* S	**Sn**	**01 54 22.1**	**0.0**
KUZU	**Kuzuini**	**1.01**	**73**	*i* P	**Pb**	**01 54 07.8**	**+0.2**
KUZU				*i* S	**Sb**	**01 54 22.1**	**+1.3**
KARA	**Karaisali**	**1.02**	**320**	*e*PG	**Pg**	**01 54 07.0**	**-0.8**
KARA	**Karaisali**	**1.02**	**320**	*e*Pg	**Pg**	**01 54 07.0**	**-0.8**
MERS	**Mersin**	**1.16**	**290**	*e*PN	**Pg**	**01 54 09.4**	**-0.9**
MERS	**Mersin**	**1.16**	**290**	*e*Pn	**Pg**	**01 54 09.5**	**-0.9**
ANDN	**Andirin**	**1.16**	**19**	P	**Pn**	**01 54 10.9**	**+0.5**
ANDN				S	**Sn**	**01 54 26.3**	**0.0**
ANDN	**Andirin**	**1.16**	**19**	*i* P	**Pn**	**01 54 10.9**	**+0.5**
ANDN				*i* S	**Sn**	**01 54 26.3**	**0.0**
HCB	**Kahramanmara¯**	**1.20**	**43**	*i* P	**Pn**	**01 54 11.0**	**+0.2**
HCB				*i* S	**Sb**	**01 54 26.0**	**-0.3**
GAZ	**Gaziantep**	**1.27**	**57**	*e*PN	**Pn**	**01 54 11.6**	**-0.3**
GAZ				*e*SN	**Sb**	**01 54 28.9**	**+0.3**
GAZ	**Gaziantep**	**1.27**	**57**	*e*Pn	**Pn**	**01 54 11.6**	**-0.3**
GAZ				*e*Sn	**Sb**	**01 54 28.9**	**+0.3**
KIZK	**Mersin**	**1.40**	**271**	P	**Pb**	**01 54 13.9**	**-0.3**
KIZK				S	**Sg**	**01 54 35.2**	**+2.0**
KIZK	**Mersin**	**1.40**	**271**	*i* P	**Pb**	**01 54 13.9**	**-0.3**
KIZK				*i* S	**Sg**	**01 54 35.2**	**+2.0**
KFRA	**Kufra**	**1.47**	**149**	*e*P	**Pn**	**01 54 14.9**	**+0.4**
KFRA				*e*S	**Sn**	**01 54 34.1**	**+0.4**
KFRA				AML	AML	01 54 37.4	
	comp=E,112nm,0.3s						
KFRA				AML	AML	01 54 38.2	
	comp=N,593nm,0.2s						
KFRA	**Kufra**	**1.47**	**149**	*e*P	**Pn**	**01 54 14.9**	**+0.4**
KFRA				*e*S	**Sn**	**01 54 34.1**	**+0.4**
	comp=N,593nm,0.2s						
BIDA	**Albida**	**1.50**	**166**	*e*P	**Pn**	**01 54 15.3**	**+0.2**
BIDA				*e*S	**Sn**	**01 54 35.2**	**+0.5**
BIDA				AML	AML	01 54 37.3	
	comp=E,160nm,0.2s						
BIDA				AML	AML	01 54 38.0	
	comp=N,303nm,0.6s						
BIDA	**Albida**	**1.50**	**166**	*e*P	**Pn**	**01 54 15.3**	**+0.2**
BIDA				*e*S	**Sn**	**01 54 35.2**	**+0.5**
	comp=N,303nm,0.6s						
KERG	**Konya-Eregli**	**1.69**	**304**	P	**Pn**	**01 54 16.6**	**-1.1**
KERG				S	**Sg**	**01 54 43.1**	**+0.7**
KERG	**Konya-Eregli**	**1.69**	**304**	*i* P	**Pn**	**01 54 16.6**	**-1.1**
KERG				*i* S	**Sg**	**01 54 43.1**	**+0.7**
IKL	**Isikli**	**1.79**	**263**	*e*PN	**Pn**	**01 54 18.4**	**-0.5**
IKL	**Isikli**	**1.79**	**263**	*e*Pn	**Pn**	**01 54 18.4**	**-0.5**
NIG	**Nigde**	**1.92**	**329**	*e*PN	**Pn**	**01 54 21.1**	**+0.1**
NIG	**Nigde**	**1.92**	**329**	*e*Pn	**Pn**	**01 54 21.1**	**+0.1**
HAWK	**Haweek**	**2.00**	**167**	*e*P	**Pn**	**01 54 22.4**	**+0.5**
HAWK				*e*S	**Sn**	**01 54 47.3**	**+0.4**
HAWK				AML	AML	01 54 50.7	
	comp=E,58nm,0.5s						
HAWK				AML	AML	01 54 52.7	
	comp=N,29nm,0.2s						
HAWK	**Haweek**	**2.00**	**167**	*e*P	**Pn**	**01 54 22.4**	**+0.5**
HAWK				*e*S	**Sn**	**01 54 47.3**	**+0.4**
	comp=N,29nm,0.2s						
LFK	**Lefkose**	**2.25**	**239**	*e*PN	**Pn**	**01 54 25.3**	**0.0**
LFK	**Lefkose**	**2.25**	**239**	*e*Pn	**Pn**	**01 54 25.3**	**0.0**
GULA	**Gulagac**	**2.28**	**325**	*e*PN	**Pn**	**01 54 26.3**	**+0.6**
GULA	**Gulagac**	**2.28**	**325**	*e*Pn	**Pn**	**01 54 26.3**	**+0.6**
BNN	**Bunyan**	**2.37**	**359**	*e*PN	**Pn**	**01 54 28.1**	**+1.0**
BNN	**Bunyan**	**2.37**	**359**	*e*Pn	**Pn**	**01 54 28.1**	**+1.0**
ERMK	**Ermenek**	**2.39**	**275**	P	**Pb**	**01 54 31.2**	**-0.1**
ERMK	**Ermenek**	**2.39**	**275**	*i* P	**Pb**	**01 54 31.2**	**-0.1**
ERMK				*i* S	**Sg**	**01 54 03.6**	**-1.4**
AKCD	**Akcadag**	**2.44**	**41**	P	**Pb**	**01 54 30.9**	**-1.1**
AKCD	**Akcadag**	**2.44**	**41**	*i* P	**Pb**	**01 54 30.9**	**-1.1**
AKCD				*i* S	**Sg**	**01 55 07.3**	**+0.8**
DARE	**Darende-Malaty**	**2.45**	**31**	*e*PN	**Pn**	**01 54 28.3**	**+0.2**
DARE	**Darende-Malaty**	**2.45**	**31**	*e*Pn	**Pn**	**01 54 28.3**	**+0.2**
URFA	**Urfa**	**2.54**	**67**	*e*PN	**Pn**	**01 54 30.3**	**+0.9**
URFA	**Urfa**	**2.54**	**67**	*e*Pn	**Pn**	**01 54 30.3**	**+0.9**
ROOS	**tl_alroos**	**2.58**	**153**	*e*P	**Pn**	**01 54 30.6**	**+0.7**
ROOS				*e*S	**Sn**	**01 55 00.9**	**-0.2**
ROOS				AML	AML	01 55 14.8	
	comp=E,45nm,0.6s						
ROOS				AML	AML	01 55 18.8	
	comp=N,40nm,0.6s						
ROOS	**tl_alroos**	**2.58**	**153**	*e*P	**Pn**	**01 54 30.5**	**+0.7**
ROOS				*e*S	**Sn**	**01 55 00.9**	**-0.2**
	comp=N,41nm,0.6s						
SFNV	**Sufian**	**3.41**	**90**	*e*P	**Pn**	**01 54 41.6**	**+0.3**
SFNV				*e*S	**Sn**	**01 55 20.4**	**-1.4**
SFNV				AML	AML	01 55 43.0	
	comp=Z,13nm,0.4s						
ZALF	**Zalf**	**3.74**	**161**	*e*P	**Pn**	**01 54 46.9**	**+1.0**
ZALF				*e*S	**Sn**	**01 55 28.8**	**-1.1**
ZALF				AML	AML	01 55 47.5	
	comp=N,7.7nm,0.5s						
ZALF				AML	AML	01 55 52.8	
	comp=E,6.4nm,0.7s						
ZALF	**Zalf**	**3.74**	**161**	*e*P	**Pn**	**01 54 46.9**	**+1.0**
ZALF				*e*S	**Sn**	**01 55 28.8**	**-1.1**
	comp=E,6.0nm,0.7s						

*CSEM **05** 01:57:55.0±0.3, 77°.09N×19°.42E, h5km, ML3.6, Error ellipse: s-maj=8.4km s-min=3.7km az=59.0*
*IDC **05** 01:57:55.5±0.9, 77°.09N×19°.51E, h0km, mb3.2/2, mb1 3.5/4, mb1mx3.1/52, mbtmp3.4/4, ML3.3/2, MS2.8/1, Ms1 2.8/1, ms1mx2.1/42, Error ellipse: s-maj=23.6km s-min=7.5km az=69.0*
*KOLA **05** 01:57:57.0, 77°.63N×26°.87E, h0km*
*NAO **05** 01:57:57.0±1.5, 77°.03N×18°.90E, h11km±12km, ML3.6*
*BER **05** 01:57:59.6±4.2, 77°.09N×18°.93E, h19km±22km, MD3.1, ML3.2, ML3.6(NAO)*
ISC 05 01:57:54.5±1.6, 77°.07N±0°.04×19°.57E±0°.06, h5km±11km, n41, σ1§31/49, Svalbard region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HSP	**Hornsund**	**0.91**	**268**	Pg	**Pg**	**01 58 12.1**	**+0.2**
HSP				Lg	Lg	01 58 21.8	
HSPB	**Hornsund (broa**	**0.91**	**268**	*e*P	**Pg**	**01 58 12.2**	**+0.2**
HSPB				*e*S	**Sg**	**01 58 21.8**	**-2.0**
HSPB				IAML		01 58 25.7	
	comp=Z,458nm,0.2s						
HSPB	**Hornsund (broa**	**0.91**	**268**	Pg	**Pg**	**01 58 12.1**	**+0.2**
HSPB	**Hornsund (broa**	**0.91**	**268**	*e*Pb	**Pb**	**01 58 13.7**	**+0.9**
HSPB				*e*Sg	**Sg**	**01 58 21.8**	**-2.0**
HSPB				*e*Sn	**Sb**	**01 58 24.6**	**-0.6**
SPA0	**Spitsbergen Ar**	**1.31**	**330**	Pn	**Pn**	**01 58 20.3**	**+0.9**
	baz=150,slow=22						
SPA0				Lg	Lg	01 58 38.0	
	baz=138,slow=22						
SPA0	**Spitsbergen Ar**	**1.31**	**330**	Pn	**Pn**	**01 58 20.3**	**+0.9**
	baz=150,slow=22						
SPA0				Lg	Lg	01 58 38.0	
	baz=138,slow=22						
SPA0	**Spitsbergen Ar**	**1.31**	**330**	Pn	**Pn**	**01 58 20.3**	**+0.9**
	SNR=999						
SPA0				Lg	Lg	01 58 38.0	
SPITS	**Spitsbergen Ar**	**1.31**	**330**	Pn	**Pn**	**01 58 20.0**	**+0.6**
	baz=143,slow=19,SNR=6614						
SPITS				Sn	**Sn**	**01 58 37.6**	**+0.3**
	baz=148,slow=32,SNR=17						
BRBA	**Barentsburg A**	**1.53**	**313**	Pn	**Pn**	**01 58 22.7**	**+0.3**
BRBA	**Barentsburg A**	**1.53**	**313**	Pg	**Pg**	**01 58 24.1**	**+0.4**
BRBA				Lg	Lg	01 58 41.5	
KBS	**Kingsbay**	**2.45**	**323**	Pn	**Pn**	**01 58 35.0**	**-0.1**
KBS				Pg	**Pg**	**01 58 40.6**	**-0.8**
KBS				Lg	Lg	01 59 10.2	
KBS	**Kingsbay**	**2.45**	**323**	*e*P	**Pn**	**01 58 34.8**	**-0.3**
KBS				*e*Pg	**Pg**	**01 58 40.9**	**-0.5**
KBS				*e*Sg	**Sb**	**01 59 10.7**	**+1.3**
KBS				IAML		01 59 21.0	
	comp=Z,631nm,0.5s						
KBS	**Kingsbay**	**2.45**	**323**	Pn	**Pn**	**01 58 35.0**	**-0.1**
KBS	**Kingsbay**	**2.45**	**323**	*e*Pg	**Pg**	**01 58 40.9**	**-0.5**
	SNR=92						
KBS				Lg	Lg	01 59 10.2	
BJO	**Bjornoya**	**2.58**	**182**	*e*Pg	**Pg**	**01 58 44.4**	**+0.5**
BJO				*e*Sg	**Sg**	**01 59 17.4**	**+0.1**
BJO				IAML		01 59 29.4	
	comp=Z,351nm,0.6s						
BJO	**Bjornoya**	**2.58**	**182**	*e*Pg	**Pg**	**01 58 44.4**	**+0.5**
	SNR=91						
BJO				Lg	Lg	01 59 17.1	
BJO1	**Bjornoya**	**2.59**	**183**	Pg	**Pg**	**01 58 44.5**	**+0.5**
BJO1				Lg	Lg	01 59 17.1	
HAMF	**Hammerfest**	**6.56**	**168**	*e*P	**Pn**	**01 59 33.4**	**+1.9**
HAMF				*e*S	Sn	02 00 40.9	-5.7
HAMF				IAML		02 00 50.7	
	comp=Z,22nm,0.4s						
HAMF	**Hammerfest**	**6.56**	**168**	*e*P	**Pn**	**01 59 33.4**	**+1.9**
	SNR=51						
TRO	**Tromso**	**7.48**	**182**	*e*P	**Pn**	**01 59 44.5**	**+0.5**
TRO	**Tromso**	**7.48**	**182**	*e*P	**Pn**	**01 59 44.5**	**+0.5**
	SNR=51						
ARA0	**ARCESS Array S**	**7.76**	**164**	Pn	**Pn**	**01 59 48.8**	**+0.9**
	baz=353,slow=12						
ARA0				Sn	**Sn**	**02 01 13.0**	**-3.1**
	baz=358,slow=22						
ARA0	**ARCESS Array S**	**7.76**	**164**	Pn	**Pn**	**01 59 48.8**	**+0.9**
	baz=353,slow=12						
ARA0				Sn	**Sn**	**02 01 13.0**	**-3.1**
	baz=358,

MAJO	**Matsushiro**	**3.34**	**264**	*e*Pn	**Pn**	**02 10 15.6**	**+1.7**
MAJO				*e*S	**Sb**	**02 11 00.1**	**-1.6**
MAT	**Matsushiro**	**3.34**	**264**	P	**Pn**	**02 10 15.4**	**+1.5**
MAT				*e*S	**Sn**	**02 10 54.3**	**+0.7**
JHJ	**Hachijo jima 2**	**4.38**	**209**	Pn	**Pn**	**02 10 29.8**	**+1.6**
	22nm,0.3s,baz=337,slow=20,SNR=16						
JHJ				Sn	**Sn**	**02 11 18.3**	**-1.0**
	51nm,0.3s,baz=90,slow=20,SNR=8.6						
ERM	**Erimo**	**5.07**	**7**	*e*Pn	**Pn**	**02 10 35.1**	**-2.4**
	14nm,0.4s						
ERM				*e*S	**Sn**	**02 11 34.7**	**-1.3**
ASAJ	**Asahikawa**	**7.13**	**2**	Pn	**Pn**	**02 11 05.6**	**-0.2**
	2.1nm,0.3s,baz=188,slow=9.1,SNR=9.4						
ASAJ				Sn	**Sn**	**02 12 23.5**	**-3.3**
	0.8nm,0.3s,baz=315,slow=20,SNR=3.3						
ASAJ	**Asahikawa**	**7.13**	**2**	*e*Pn	**Pn**	**02 11 05.6**	**-0.2**
	2.7nm,0.5s						
ASAJ				*e*S	**Sn**	**02 12 25.2**	**-1.6**
CBIJ	**Chichi jima**	**9.86**	**181**	*e*Pn	**Pn**	**02 11 41.4**	**-1.9**
CBIJ				*e*S	**Sn**	**02 13 28.8**	**-5.2**
JCJ	**Chichijima**	**9.86**	**181**	Pn	**Pn**	**02 11 44.2**	**+0.9**
	2.5nm,0.3s,baz=271,slow=23,SNR=5.4						
JCJ				Sn	Sn	02 13 26.5	-7.5
	2.6nm,0.3s,baz=287,slow=19,SNR=3.7						
JNU	**Nakatsue**	**10.15**	**251**	Pn	**Pn**	**02 11 50.1**	**+2.8**
	0.7nm,0.3s,baz=240,slow=8.7,SNR=5.3						
USRK	**Ussuriysk Ar.**	**10.66**	**316**	Pn	Pn	02 11 59.7	+5.4
	0.4nm,0.3s,baz=127,slow=15,SNR=5.3						
USRK				Sn	Sn	02 13 40.6	-13
	0.3nm,0.3s,baz=114,slow=14,SNR=4.5						
KSRS	**Korea Array**	**11.50**	**277**	Pn	**Pn**	**02 12 09.9**	**+4.1**
	baz=90,slow=13,SNR=8.0						
KSRS				LR	LR	02 16 21.3	
	comp=Z,117nm,19.0s,baz=66,slow=36						
KSAR	**Wonju Array Be**	**11.53**	**277**	Pn	**Pn**	**02 12 09.9**	**+3.7**
KLR	**Kul'dur**	**14.46**	**331**	LR	LR	02 18 14.5	
	comp=Z,80nm,19.1s,baz=150,slow=37						
ZALV	**Zalesovo Beam**	**42.49**	**312**	P	**P**	**02 17 17.1**	**+0.4**
	0.5nm,0.3s,baz=100,slow=7.7,SNR=5.7						
MKAR	**Makanchi Array**	**44.77**	**302**	P	**P**	**02 17 35.5**	**+0.4**
	0.7nm,0.6s,baz=86,slow=9.5,SNR=7.3						
KURK	**Kurchatov**	**46.54**	**308**	*e*P	**P**	**02 17 48.8**	**-0.2**
	14nm,0.8s						
ILAR	**Eielson Array**	**49.14**	**32**	P	**P**	**02 18 10.8**	**+1.7**
	0.4nm,0.9s,baz=282,slow=5.4,SNR=4.1						
WRA	**Warramunga Arr**	**57.12**	**189**	P	**P**	**02 19 09.7**	**+1.5**
	0.6nm,0.5s,baz=8.9,slow=7.1,SNR=5.8						
ABKAR	**Akbulak array**	**58.53**	**310**	*e*P	**P**	**02 19 17.9**	**-0.1**
	0.8nm,0.5s						
ASAR	**Alice Springs**	**60.84**	**189**	P	**P**	**02 19 35.7**	**+1.6**
	0.3nm,0.5s,baz=13,slow=8.6,SNR=4.1						
YKA	**Yellowknife Ar**	**63.48**	**30**	P	**P**	**02 19 52.9**	**+1.6**
	0.1nm,0.8s,baz=297,slow=5.3,SNR=3.0						
FINES	**FINESS Array B**	**69.20**	**333**	P	**P**	**02 20 28.6**	**+0.6**
	1.5nm,0.8s,baz=51,slow=10.0,SNR=5.8						
NOA	**NORSAR Array B**	**74.52**	**338**	P	**P**	**02 20 59.7**	**-0.3**
	0.6nm,0.8s,baz=44,slow=5.5,SNR=2.6						
AKASG	**Malin Array Be**	**74.79**	**323**	P	**P**	**02 21 02.0**	**+0.4**
	0.3nm,0.3s,baz=50,slow=5.2,SNR=3.6						

IDC 05 02:09:41.2±2.6, 40°.52S×72°.16W, h0km, mb3.8/4, mb1 4.1/5, mb1mx3.8/23, mbtmp4.0/5, ML5.2/1, Error ellipse: s-maj=56.4km s-min=21.1km az=33.0, Central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLCA	**Paso Flores**	**1.24**	**100**	Pn	Pn	02 10 06.8	+1.0
	84nm,0.3s,baz=310,slow=12,SNR=655						
PLCA				Sn	Sn	02 10 23.4	+0.1
	83nm,0.3s,baz=203,slow=17,SNR=6.6						
PLCA				LR	LR	02 10 26.5	
	comp=Z,219nm,18.6s,baz=56,slow=37						
LVC	**Limon Verde**	**18.07**	**10**	P	P	02 13 55.8	+1.3
	8.0nm,0.3s,baz=197,slow=9.2,SNR=5.3						
LPAZ	**La Paz**	**24.40**	**9**	P	P	02 15 01.9	0.0
	2.5nm,0.9s,baz=197,slow=11,SNR=6.8						
SIV	**San Ignacio**	**26.27**	**25**	P	P	02 15 17.3	-0.9
	1.9nm,0.7s,baz=206,slow=9.1,SNR=5.6						
TXAR	**Lajitas Array**	**75.40**	**332**	P	P	02 21 27.1	+0.4
	0.4nm,0.9s,baz=152,slow=8.2,SNR=3.9						
TORD	**Torodi Ar. Bea**	**86.54**	**70**	P	P	02 22 25.7	-0.7
	0.6nm,1.0s,baz=234,slow=6.2,SNR=2.4						

NIED ***05*** *02:10:00, 37°.50N×144°.00E, h5km, Mw3.8 Best double couple: M₀6.26000×10¹⁴ NP1:ϕs45.00000°, δ20.00000°, λ-70.00000°. NP2:ϕs204.00000°, δ71.00000°, λ-97.00000°.*

JMA 05 02:10:58.6±0.3, 37°.48N×144°.01E, h36km, M4.1, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.32**	**296**	P	Pn	02 11 35.7	+1.5
JIO				S	Sn	02 12 03.9	+2.5
OFUJ	**Ofunato**	**2.44**	**312**	P	Pn	02 11 37.2	+1.4
JFK	**Kawauchi**	**2.50**	**268**	P	Pn	02 11 38.1	+1.4
JFK				S	Sn	02 12 07.3	+1.3
JMK	**Ichinoseki**	**2.64**	**305**	P	Pn	02 11 40.7	+2.0
JMK				*e*S	Sn	02 12 11.7	+2.2
JOM	**Ohasama**	**2.92**	**314**	S	Sn	02 12 18.3	+2.1
JFT	**Otama**	**2.92**	**272**	P	Pn	02 11 45.2	+2.7
JFT				*e*S	Sn	02 12 18.8	+2.4
JYK	**Kaneyama**	**3.21**	**298**	P	Pn	02 11 49.0	+2.5
JYK				*e*S	Sn	02 12 26.4	+2.8
JANG	**Nango**	**3.48**	**327**	S	Sn	02 12 30.6	+0.4
JRY	**Ryogami san**	**4.35**	**252**	P	Pn	02 12 03.7	+1.5
JRY				S	Sn	02 12 51.3	-0.4
JOT	**Ohata**	**4.52**	**330**	S	Sn	02 12 55.9	+0.2
JOD2	**Odawara 2**	**4.55**	**242**	S	Sn	02 12 55.3	-1.1
MAT	**Matsushiro**	**4.74**	**260**	P	Pn	02 12 09.9	+2.4
MAT				S	Sn	02 13 04.4	+3.2

ISCJB ***05*** *02:13:44.6±0.4, 6°.56N±0°.06×60°.32E±0°.07, h10km, mb4.2/31, MS4.0/25, Error ellipse: s-maj=9.5km s-min=8.6km az=169.7*

IDC ***05*** *02:13:44.4±0.7, 6°.50N×60°.34E, h0km, mb4.0/17, mb1 4.1/17, mb1mx3.9/43, mbtmp4.0/17, MS3.9/23, Ms1 3.9/23, ms1mx3.8/48, Error ellipse: s-maj=18.7km s-min=16.9km az=171.0*

NEIC ***05*** *02:13:46.3±0.5, 6°.51N×60°.38E, h10km, mb4.5/8, Error ellipse: s-maj=11.3km s-min=10.2km az=166.0*

ISC 05 02:13:46.3±0.6, 6°.58N±0°.09×60°.38E±0°.09, h10km, n70, σ1§76/56, mb4.3/31, MS4.0/25, 1D, Carlsberg Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08N2	**Diego Garcia H**	**16.64**	**140**	T	T	02 34 47.0	
	baz=320,slow=76,SNR=79						
H08N3	**Diego Garcia H**	**16.65**	**140**	T	T	02 34 50.2	
	baz=320,slow=76,SNR=112						
WSAR	**Wadi Sarin**	**16.65**	**354**	LR	LR	02 22 50.9	
	comp=Z,296nm,18.6s,baz=200,slow=33						
H08N1	**Diego Carcia H**	**16.66**	**140**	T	T	02 34 46.8	
	baz=320,slow=76,SNR=79						
ATD	**Arta Tunnel**	**17.99**	**287**	P	**P**	**02 18 00.3**	**+3.0**
	0.8nm,0.3s,baz=218,slow=20,SNR=3.5						
ATD				LR	LR	02 24 09.0	
	comp=Z,139nm,19.0s,baz=103,slow=35						
ASHO	**Ashiyiah**	**18.47**	**348**	*i* P	**P**	**02 18 02.9**	**+0.3**
	SNR=15						
HATD	**Hatta, Dubai**	**18.59**	**348**	*i* P	**Pn**	**02 18 05.0**	**+0.9**
	SNR=10						
FAQ	**Al Faqa, Dubai**	**18.64**	**346**	P	**Pn**	**02 18 05.3**	**+0.7**
UOSS	**Minazif**	**18.70**	**348**	*e*P	**P**	**02 18 04.4**	**-0.5**
	2.9nm,1.2s						
NAZ	**Nazwa, Dubai**	**18.85**	**347**	*i* P	**Pn**	**02 18 07.9**	**+0.7**
	SNR=6.2						
BANOM	**Banah**	**19.63**	**349**	P	**Pn**	**02 18 16.3**	**-0.2**
KMBO	**Kilima Mbogo**	**24.32**	**252**	P	**P**	**02 19 04.4**	**-0.4**
	4.4nm,0.8s,baz=51,slow=12,SNR=9.4						
KMBO				LR	LR	02 27 46.6	
	comp=Z,361nm,20.6s,baz=94,slow=35						
KMBO	**Kilima Mbogo**	**24.32**	**252**	*e*P	**P**	**02 19 04.3**	**-0.5**
	13nm,1.1s						
OPO	**Ambohidratompo**	**28.17**	**207**	LR	LR	02 28 30.7	
	comp=Z,378nm,19.5s,baz=4.0,slow=32						
GEYT	**Alibeck**	**31.27**	**357**	LR	LR	02 33 25.7	
	comp=Z,139nm,19.9s,baz=195,slow=38						
KSH	**Kashi**	**35.67**	**21**	*e*P	**P**	**02 20 42.2**	**-2.8**
KSH				*e*pP	pP	02 20 46.2	-1.9
KSH				*e*sP	sP	02 20 48.7	-0.6
KSH				*e*PP	**PnPn**	**02 22 00.8**	**-3.8**
KSH				*e*PcP	**PcP**	**02 23 13.4**	**0.0**
KSH				S	**S**	**02 26 14.8**	**-6.9**
KSH				pmax	pmax		
	comp=Z,130nm,4.6s						
KSH				LR	LR		
	comp=N,90nm,6.2s						
KSH				LR	LR		
	comp=E,100nm,5.1s						
KSH				LR	LR		
	comp=Z,310nm,16.2s						
GNI	**Garni**	**36.25**	**340**	P	**P**	**02 20 51.4**	**+1.4**
	comp=Z,1.4nm,0.3s,baz=276,slow=4.6,SNR=4.8						
GNI	**Garni**	**36.25**	**340**	*e*P	**P**	**02 20 50.5**	**+0.5**
	comp=Z,31nm,1.6s						
KKAR	**Karatay Array**	**37.46**	**12**	*e*P	**P**	**02 21 01.3**	**+1.2**
	comp=Z,0.2nm,0.3s						
EKS2	**Erkin-Say**	**37.84**	**16**	*e*P	**P**	**02 21 05.4**	**+2.0**
	comp=Z,15nm,1.0s						
AAK	**Ala-Archa**	**38.02**	**17**	P	**P**	**02 21 06.5**	**+1.5**
	comp=Z,1.5nm,0.6s,baz=198,slow=9.4,SNR=5.7						
AAK	**Ala-Archa**	**38.02**	**17**	*e*P	**P**	**02 21 06.4**	**+1.5**
	comp=Z,21nm,1.7s						
CMAR	**Chiang Mai Arr**	**39.36**	**69**	P	**P**	**02 21 16.8**	**+0.4**
	comp=Z,1.2nm,0.4s,baz=258,slow=8.1,SNR=7.0						
KBZ	**Khabaz**	**40.06**	**340**	P	**P**	**02 21 22.9**	**+1.1**
	comp=Z,2.3nm,1.0s,baz=180,slow=5.1,SNR=3.6						
KBZ				LR	LR	02 39 08.2	
	comp=Z,84nm,19.2s,baz=148,slow=38						
BRTR	**Keskin Array B**	**40.82**	**328**	P	**P**	**02 21 28.4**	**0.0**
	comp=Z,0.6nm,0.7s,baz=126,slow=8.0,SNR=5.5						
BRTR				LR	LR	02 39 02.1	
	comp=Z,86nm,19.5s,baz=116,slow=37						
MATP	**Matopo**	**41.26**	**229**	P	**P**	**02 21 31.1**	**-1.0**
	comp=Z,4.7nm,1.2s,baz=56,slow=7.3,SNR=3.8						
WMQ	**Urumqi**	**44.16**	**28**	*e*P	**P**	**02 21 56.9**	**+1.5**
WMQ				S	**S**	**02 28 34.7**	**+6.2**
WMQ				pmax	pmax		
	comp=Z,3.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,28nm,6.6s						
WMQ				LR	LR		
	comp=N,78nm,22.4s						
WMQ				LR	LR		
	comp=E,67nm,19.8s						
WMQ				LR	LR		
	comp=Z,71nm,23.6s						
MAKZ	**Makanchi**	**44.17**	**21**	*e*P	**P**	**02 21 56.4**	**+1.0**
	comp=Z,9.2nm,1.4s						
MK01	**Makanchi Array**	**44.26**	**22**	*e*P	**P**	**02 21 56.4**	**+0.2**
MKAR	**Makanchi Array**	**44.28**	**22**	P	**P**	**02 21 56.5**	**+0.3**
	comp=Z,0.9nm,0.9s,baz=213,slow=8.1,SNR=7.0						
MKAR				LR	LR	02 41 57.3	
	comp=Z,91nm,19.7s,baz=210,slow=38						
KURK	**Kurchatov**	**46.55**	**16**	*e*P	**P**	**02 22 14.7**	**+0.6**
	comp=Z,5.7nm,1.1s						
VOSK	**Vostochnaya**	**46.82**	**9**	*e*P	**P**	**02 22 16.8**	**+0.5**
	comp=Z,7.0nm,1.4s						
BVAR	**Borovoye Array**	**47.02**	**8**	P	**P**	**02 22 18.0**	**+0.2**
	comp=Z,0.3nm,0.4s,baz=266,slow=36,SNR=2.9						
CD2	**Chengdu**	**47.25**	**54**	P	**P**	**02 22 20.2**	**+0.1**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
GTA	**Gaotai**	**48.21**	**41**	*e*P	**P**	**02 22 28.4**	**+0.9**
GTA				pP	sP	02 22 33.3	+1.4
GTA				sP	pP	02 22 36.7	+6.1
GTA				S	**S**	**02 29 28.6**	**+1.6**
GTA				sS	sS	02 29 37.0	+4.8
GTA	**Gaotai**	**48.21**	**41**	SS	SS	02 32 54.8	-1.6
GTA				pmax	pmax		
	comp=Z,4.0nm,0.8s						
GTA				pmax	pmax		
	comp=Z,53nm,5.3s						
GTA				LR	LR		
	comp=N,200nm,19.0s						
GTA				LR	LR		
	comp=E,150nm,19.2s						
GTA				LR	LR		
	comp=Z,180nm,15.7s						
BOSA	**Boshof**	**48.68**	**222**	LR	LR	02 41 33.5	
	comp=Z,271nm,19.3s,baz=38,slow=34						
LZH	**Lanzhou**	**49.40**	**47**	*e*P	**P**	**02 22 37.0**	**+0.3**
LZH				pP	pP	02 22 40.2	+0.3
LZH				sP	sP	02 22 41.7	+0.6
LZH				*e*PP	**PP**	**02 24 32.1**	**+1.3**
LZH				pmax	pmax		
	comp=Z,21nm,1.0s						
LZH				pmax	pmax		
	comp=Z,57nm,6.2s						
LZH				LR	LR		
	comp=N,280nm,13.8s						
LZH				LR	LR		
	comp=E,290nm,14.2s						
LZH				LR	LR		
	comp=Z,320nm,17.6s						
AKASG	**Malin Array Be**	**51.06**	**335**	P	**P**	**02 22 47.5**	**-1.3**
	comp=Z,0.2nm,0.3s,baz=153,slow=6.8,SNR=5.8						
AKASG				LR	LR	02 46 38.3	
	comp=Z,84nm,21.1s,baz=205,slow=39						
ZALV	**Zalesovo Beam**	**51.21**	**18**	P	**P**	**02 22 49.8**	**-0.1**
	comp=Z,2.3nm,0.8s,baz=235,slow=6.7,SNR=9.4						
ZALV				LR	LR	02 44 41.7	
	comp=Z,121nm,20.4s,baz=239,slow=36						
KOLS	**Kolonicke sedl**	**53.05**	**329**	*e*P	**P**	**02 23 03.6**	**-0.1**
CRVS	**Cervenica-Dubn**	**53.44**	**329**	*e*P	**P**	**02 23 06.0**	**-0.6**
VYHS	**Vyhne**	**54.57**	**327**	*e*P	**P**	**02 23 13.1**	**-1.8**
SONM	**Songino Array**	**56.71**	**35**	P	**P**	**02 23 30.1**	**-0.3**
	comp=Z,1.3nm,0.4s,baz=226,slow=5.8,SNR=2.8						
HHC	**Hu-ho-hao-te**	**56.87**	**45**	*e*P	**P**	**02 23 33.4**	**+1.8**
HHC				pmax	pmax		
	comp=Z,20nm,1.1s						
HHC				pmax	pmax		
	comp=Z,86nm,6.0s						
GERES	**GERESS Array B**	**57.60**	**325**	LR	LR	02 50 29.9	
	comp=Z,46nm,18.6s,baz=103,slow=38						
TORD	**Torodi Ar. Bea**	**58.08**	**281**	P	**P**	**02 23 40.8**	**+0.4**
	comp=Z,0.6nm,0.9s,baz=107,slow=8.0,SNR=4.3						
TORD				LR	LR	02 48 54.5	
	comp=Z,105nm,19.2s,baz=190,slow=36						
BJI	**Beijing**	**59.89**	**47**	P	**P**	**02 23 53.2**	**+0.6**
BJI				pmax	pmax		
	comp=Z,6.0nm,0.9s						
BJI				pmax	pmax		
	comp=Z,150nm,4.0s						
NJ2	**Nanjing**	**59.92**	**57**	*e*P	**P**	**02 23 50.9**	**-2.0**
NJ2				pmax	pmax		
	comp=Z,16nm,0.5s						
FINES	**FINESS Array B**	**60.38**	**342**	P	**P**	**02 23 54.8**	**-0.7**
	comp=Z,1.3nm,0.9s,baz=216,slow=15,SNR=2.6						
DBIC	**Dimbokro**	**64.75**	**274**	LR	LR	02 53 08.1	
	comp=Z,125nm,18.3s,baz=103,slow=36						
NRIK	**Noril'sk**	**65.16**	**10**	LR	LR	02 55 28.9	
	comp=Z,164nm,21.9s,baz=234,slow=38						
NOA	**NORSAR Array B**	**65.44**	**336**	LR	LR	02 56 38.2	
	comp=Z,30nm,18.4s,baz=350,slow=39						
ES19	**SONSECA Array**	**66.10**	**311**	*e*P	**P**	**02 24 33.7**	**-0.3**
ESDC	**Sonseca Array**	**66.14**	**310**	P	**P**	**02 24 32.4**	**-1.9**
	comp=Z,1.1nm,1.0s,baz=95,slow=8.9,SNR=6.0						
ARCES	**ARCESS Array B**	**66.84**	**347**	LR	LR	02 55 54.1	
	comp=Z,106nm,21.6s,baz=126,slow=38						
CN2	**Changchun**	**67.56**	**45**	*e*P	**P**	**02 24 42.0**	**-1.2**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.7s						
FITZ	**Fitzroy Crossi**	**68.88**	**112**	LR	LR	02 50 33.7	
	comp=Z,53nm,18.9s,baz=273,slow=32						
KLR	**Kul'dur**	**72.91**	**41**	LR	LR	02 58 41.7	
	comp=Z,337nm,18.8s,baz=306,slow=37						
MAW	**Mawson**	**74.03**	**179**	LR	LR	02 51 45.4	
	comp=Z,134nm,18.2s,baz=238,slow=31						
YAK	**Yakutsk**	**74.58**	**27**	LR	LR	02 58 44.7	
	comp=Z,226nm,21.9s,baz=3.0,slow=36						
SYO	**Syowa Base**	**76.79**	**188**	‖*e*X	P	02 25 32.0	-5.8
TIXI	**Tiksi**	**77.09**	**18**	LR	LR	03 03 23.6	
	comp=Z,211nm,19.2s,baz=256,slow=39						
WRA	**Warramunga Arr**	**77.31**	**112**	P	**P**	**02 25 41.8**	**0.0**
	comp=Z,3.4nm,1.1s,baz=293,slow=5.1,SNR=6.4						
WRAB	**Tennant Creek**	**77.32**	**112**	*e*P	**P**	**02 25 42.2**	**+0.3**
	comp=Z,1.7nm,0.7s						
ASAR	**Alice Springs**	**77.71**	**116**	P	**P**	**02 25 43.4**	**-0.6**
	comp=Z,2.7nm,0.9s,baz=287,slow=5.1,SNR=14						
AS01	**Alice Springs**	**77.75**	**116**	*e*P	**P**	**02 25 43.9**	**-0.3**
VNA2	**Neumayer--Watz**	**89.08**	**198**	P	**P**	**02 26 42.4**	**+1.0**
	baz=28,slow=5.6						
VNA3	**Neumayer Olymp**	**89.89**	**198**	P	**P**	**02 26 45.7**	**+0.4**
VNDA	**Vanda**	**98.86**	**168**	LR	LR	03 07 31.1	
	comp=Z,101nm,18.6s,baz=194,slow=33						

IDC 05 02:33:44.5±2.0, 5°.37S×151°.29E, h0km, mb3.9/4, mb1 4.1/5, mb1mx3.6/43, mbtmp3.9/5, ML1.8/1, MS3.5/2, Ms1 3.5/2, ms1mx2.9/32, Error ellipse: s-maj=118.5km s-min=25.4km az=128.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**5.74**	**225**	Pn	Pn	02 35 12.2	+1.3
	1.7nm,0.3s,baz=282,slow=19,SNR=2.8						
PMG				Sn	Sn	02 36 25.2	+7.6
	2.2nm,0.3s,baz=308,slow=9.3,SNR=3.3						
WRA	**Warramunga Arr**	**21.95**	**227**	P	P	02 38 40.5	+0.5
	2.3nm,0.8s,baz=52,slow=9.8,SNR=12						
DZM	**Mont Dzumac**	**22.15**	**140**	LR	LR	02 46 22.8	
	comp=Z,44nm,18.8s,baz=232,slow=34						
ASAR	**Alice Springs**	**24.73**	**221**	P	P	02 39 07.4	-0.4
	3.5nm,0.8s,baz=54,slow=9.1,SNR=33						
FITZ	**Fitzroy Crossi**	**28.07**	**241**	P	P	02 39 38.5	+0.5
	2.7nm,0.6s,baz=42,slow=6.7,SNR=5.5						
MKAR	**Makanchi Array**	**79.77**	**319**	LR	LR	03 21 59.5	
	comp=Z,60nm,19.6s,baz=48,slow=36						
ILAR	**Eielson Array**	**83.25**	**22**	P	P	02 46 13.6	+1.0
	0.3nm,0.6s,baz=252,slow=5.3,SNR=5.3						
TORD	**Torodi Ar. Bea**	**149.04**	**287**	PKPbc	PKPbc	02 53 33.8	-2.0
	1.2nm,0.7s,baz=81,slow=2.3,SNR=11						

BJI ***05*** *02:44:49.7, 52°.79N×174°.82W, h206km, mb5.0/67, mB4.8/43*

MOS ***05*** *02:44:50.7±1.0, 52°.88N×174°.77W, h201km, mb5.2/87, MS4.1/6, Error ellipse: s-maj=6.5km s-min=5.5km az=86.8*

IDC ***05*** *02:44:51.8±0.4, 52°.83N×174°.79W, h200km±2km, mb4.6/47, mb1 4.7/48, mb1mx4.7/54, mbtmp5.2/48, MS3.7/7, Ms1 3.7/7, ms1mx3.3/51, Error ellipse: s-maj=8.1km s-min=4.9km az=169.0*

ISCJB ***05*** *02:44:51.5±0.2, 52°.79N±0°.02×174°.72W±0°.02, h212km±1km, mb5.2/408, Error ellipse: s-maj=3.4km s-min=1.6km az=175.4*

GCMT ***05*** *02:44:53.1±0.1, 52°.69N×174°.72W, h200km, MW5.4/125, Moment Tensor Solution. s106,c184; s125,c235; Duration: 1§2 Moment tensor: Scale 10¹⁷Nm; Mrr-0.51±.02; Mθθ-0.68±.02; Mϕϕ1.19±.02; Mrθ0.78±.02; Mϕθ-0.16±.02; Mϕr-0.84±.02; Best double couple: M₀1.54700×10¹⁷ NP1:ϕs321.00000°, δ78.00000°, λ-125.00000°. NP2:ϕs214.00000°, δ37.00000°, λ-20.00000°. Principal axes: T 1.6290, Plg25.0000°, Azm77.0000°; N -0.1660, Plg34.0000°, Azm329.0000°; P -1.4660, Plg46.0000°, Azm195.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

NEIC ***05*** *02:44:53.1, 52°.54N×174°.69W, h206km, mb5.4/290, After AEIC.*

ISC 05 02:44:52.1±0.2, 52°.78N±0°.03×174°.77W±0°.02, h205km±1km, h204km: pP-P, n1457, σ1§46/1791, mb5.3/409, 57C-69D, Andreanof Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KOKL	**Mount Kliuchef**	**0.58**	**143**	*e*Pn	**Pn**	**02 45 20.1**	**-0.1**
KOFP	**Korovin Flat P**	**0.65**	**141**	P	**Pn**	**02 45 20.1**	**-0.4**
GSTR	**Great Sitkin T**	**1.05**	**229**	*e*Pn	**Pn**	**02 45 22.7**	**-0.1**
GSTR				*e*Sn	**S**	**02 45 46.0**	**-0.4**
GSTD	**Great Sitkin T**	**1.11**	**230**	*e*Pn	**Pn**	**02 45 22.6**	**-0.7**
GSCK	**Great Sitkin C**	**1.15**	**228**	*e*Pn	**Pn**	**02 45 22.9**	**-0.6**
KICM	**Kanaga Island**	**1.72**	**241**	*e*Pn	**Pn**	**02 45 28.0**	**-0.2**
KIKV	**Kanaga Island**	**1.73**	**239**	*e*Pn	**Pn**	**02 45 28.0**	**-0.4**
TAFP	**Tanaga Falls P**	**2.16**	**247**	*e*Pn	**Pn**	**02 45 32.6**	**-0.1**
GAEA	**Gareloi East**	**2.64**	**249**	*e*Pn	**Pn**	**02 45 38.1**	**+0.2**
GALAA	**Gareloi Lava P**	**2.67**	**249**	*e*Pn	**Pn**	**02 45 38.5**	**+0.4**
NIKH	**Nikolski High**	**3.59**	**85**	*e*Pn	**Pn**	**02 45 47.9**	**-1.0**
NIKH				*e*Sn	S	02 46 21.9	-11
OKAK	**Okmok**	**3.94**	**76**	*e*Pn	**Pn**	**02 45 53.3**	**+0.1**
OKTU	**Okmok Mt. Tuli**	**4.10**	**79**	P	**Pn**	**02 45 55.6**	**+0.3**
OKER	**Okmok East Rim**	**4.10**	**78**	P	**Pn**	**02 45 56.2**	**+0.9**
MSOM	**Makushin Julie**	**4.80**	**74**	*e*P	**Pn**	**02 46 04.1**	**+0.1**
MSOM	**Makushin Julie**	**4.80**	**74**	*e*Pn	**Pn**	**02 46 04.1**	**+0.1**
MGOD	**Makushin Gods**	**4.84**	**75**	*e*Pn	**Pn**	**02 46 04.7**	**+0.1**
MGOD				*e*Sn	**S**	**02 47 01.1**	**-0.2**
MSW	**Makushin Switc**	**4.92**	**74**	P	**Pn**	**02 46 05.8**	**+0.4**
MSW				S	**S**	**02 47 03.8**	**+0.8**
UNV	**Unalaska Valle**	**5.07**	**75**	*e*Pn	**Pn**	**02 46 07.0**	**-0.3**
UNV				*e*Sn	S	02 46 56.9	-10
AKRB	**Akutan Reef Bi**	**5.37**	**72**	P	**Pn**	**02 46 11.6**	**+0.3**
AKGG	**Akutan Green G**	**5.43**	**71**	P	**Pn**	**02 46 12.6**	**+0.7**
AKGG				S	**S**	**02 47 14.8**	**+0.1**
AKUT	**Akutan**	**5.54**	**72**	*e*Pn	**Pn**	**02 46 13.9**	**+0.5**
AKUT				*e*Sn	S	02 47 04.1	-13
WESP	**Westdahl Peak**	**6.22**	**70**	P	**Pn**	**02 46 22.8**	**+0.7**
WESP				S	**S**	**02 47 33.2**	**-0.1**
WEBT	**Westdahl Beart**	**6.22**	**69**	P	**Pn**	**02 46 22.8**	**+0.7**
WESN	**West

comp=Z,300nm,1.2s
PMR Palmer 16.35 47 *e*P **P 02 48 28.2 -1.0**
comp=Z,301nm,1.2s
KTH Kantishna Hill 16.45 40 *e*P **Pn 02 48 32.4 +1.1**
comp=Z,8µm,1.9s
KTH *e*S **S 02 51 35.3 +3.5**
PEA0 Petropavlovsk- 16.56 282 *e*P **Pn 02 48 34.1 +1.5**
PEA0B Petropavlovsk- 16.56 282 *e*P **Pn 02 48 33.5 +0.8**
comp=Z,259nm,1.4s
PEA0B *e*S **S 02 51 33.3 -0.9**
PETK Petropavlovsk- 16.56 282 P **Pn 02 48 34.0 +1.4**
comp=Z,3.1nm,0.3s,baz=88,slow=16,SNR=51
PETK S **S 02 51 34.0 -0.2**
comp=Z,0.4nm,0.3s,baz=47,slow=22,SNR=2.6
PETK PcP **PcP 02 53 09.9 +0.4**
comp=Z,1.8nm,0.3s,baz=73,slow=2.3,SNR=8.7
PETK ScP **ScP 02 56 22.7 -1.6**
comp=Z,0.7nm,0.3s,baz=101,slow=6.5,SNR=26
TRF Thorofare Moun 16.65 41 *e*P **Pn 02 48 33.8 0.0**
comp=Z,1µm,1.4s
BPAW Bear Paw Mtn. 16.71 38 *e*P **Pn 02 48 35.2 +1.0**
comp=Z,628nm,0.5s
BPAW *e*S **S 02 51 40.1 +3.2**
SML Sawmill 16.79 47 *e*P **P 02 48 32.3 -1.7**
SML pmax pmax
comp=Z,610nm,1.2s
SML Sawmill 16.79 47 *e*P **P 02 48 32.3 -1.7**
comp=Z,606nm,1.2s
MID Middleton Isla 17.10 56 *e*P **P 02 48 37.1 -0.2**
MID pmax pmax
comp=Z,3µm,1.5s
MID Middleton Isla 17.10 56 *e*P **P 02 48 37.1 -0.2**
comp=Z,3µm,1.5s
RND Reindeer 17.20 42 *e*P **P 02 48 38.8 +0.3**
RND pmax pmax
comp=Z,1µm,0.6s
RND Reindeer 17.20 42 *e*P **P 02 48 38.8 +0.3**
comp=Z,1µm,0.6s
SCM Sheep Creek Mo 17.24 48 *e*P **P 02 48 38.2 -0.8**
SCM pmax pmax
comp=Z,520nm,1.0s
SCM Sheep Creek Mo 17.24 48 *e*P **P 02 48 38.2 -0.8**
comp=Z,521nm,1.0s
MLY Manley 17.30 36 *e*P **Pn 02 48 41.9 +0.7**
comp=Z,1µm,1.3s
MCK McKinley 17.32 41 *e*P **P 02 48 40.0 +0.3**
MCK pmax pmax
comp=Z,630nm,0.6s
MCK McKinley 17.32 41 *e*P **P 02 48 40.0 +0.3**
comp=Z,631nm,0.6s
BWN Browne 17.32 39 *e*P **Pn 02 48 41.4 0.0**
comp=Z,2µm,1.3s
EYAK Cordova Ski Ar 17.62 52 *e*P **P 02 48 42.1 -0.9**
comp=Z,757nm,1.2s
EYAK *e*S **S 02 51 53.9 -1.0**
DIV Divide 17.75 51 *e*P **P 02 48 43.6 -0.9**
comp=Z,827nm,1.1s
KLU Klutina 17.78 49 *e*P **P 02 48 44.9 +0.1**
comp=Z,723nm,1.0s
BILL Bilibino 17.80 336*d i*P **Pn 02 48 47.2 +0.2**
BILL pmax pmax
comp=Z,71nm,1.0s
BILL Bilibino 17.80 336 *e*P **P 02 48 45.5 +0.6**
comp=Z,50nm,0.6s
WRH Wood River Hil 17.99 39 *e*P **P 02 48 47.2 +0.2**
comp=Z,201nm,0.6s
RAGM Ragged Mountai 18.10 53 *e*P **P 02 48 48.2 -0.2**
comp=Z,636nm,1.2s
SKR Severo-Kuril's 18.10 275 *e*P **P 02 48 44.0 -4.4**
SKR *e*S **S 02 52 10.0 +5.2**
SKR pmax pmax
comp=E,60nm,0.5s
SKR pmax pmax
comp=Z,80nm,0.5s
SKR MLR MLR
comp=Z,2µm,16.0s
MDM Murphy Dome 18.17 38 *e*P **P 02 48 49.4 +0.3**
comp=Z,336nm,0.5s
MDM *e*S **S 02 52 04.4 -1.6**
CCB Clear Creek Bu 18.18 39 *e*P **P 02 48 49.1 +0.1**
comp=Z,239nm,0.5s
CCB *e*S **S 02 52 11.6 +5.5**
BMRM Bremner River 18.26 51 *e*P **P 02 48 49.6 -0.5**
comp=Z,664nm,0.8s
COLA College 18.27 38*c i*P **P 02 48 49.7 -0.3**
COLA College 18.27 38 *e*P **P 02 48 50.2 +0.2**
comp=Z,239nm,0.5s
HDA Harding Lake 18.40 40 *e*P **P 02 48 51.1 -0.4**
comp=Z,500nm,0.5s
PAX Paxson 18.44 45 *e*P **P 02 48 53.1 +1.1**
PAX *e*S **S 02 52 12.1 +0.6**
PAX pmax pmax
comp=Z,829nm,1.2s
PAX Paxson 18.44 45 *e*P **P 02 48 53.1 +1.1**
comp=Z,829nm,1.2s
PAX *e*S **S 02 52 12.1 +0.6**
ILAR Eielson Array 18.59 39 P **P 02 48 52.2 -1.3**
comp=Z,12nm,0.3s,baz=240,slow=10,SNR=425
ILAR S **S 02 52 15.5 +1.3**
comp=Z,1.6nm,0.3s,baz=232,slow=16,SNR=7.1
ILAR ScP **ScP 02 56 26.9 -1.5**
comp=Z,1.4nm,0.3s,baz=277,slow=3.5,SNR=20
ILAR P3KPbc 03 23 23.0
comp=Z,0.1nm,0.3s,baz=40,slow=4.2,SNR=17
ILB Eielson Array 18.59 39 *e*P **P 02 48 52.2 -1.3**
IL1 Eielson Array 18.59 39 *e*P **P 02 48 50.8 -2.7**
COLD Coldfoot 18.78 30 *e*P **Pn 02 48 57.7 -0.8**
comp=Z,271nm,0.8s
MENT Mentasta 19.19 46 *e*P **P 02 49 00.5 +0.5**
comp=Z,214nm,0.9s
DOT Dot Lake 19.27 44 *e*P **P 02 49 00.7 -0.2**
comp=Z,2µm,1.1s
BALM Baldy 19.35 52 *e*P **P 02 49 00.8 -1.1**
BALM pmax pmax
comp=Z,360nm,1.5s
BALM Baldy 19.35 52 *e*P **P 02 49 02.2 +0.3**
comp=Z,365nm,1.5s
FYU Fort Yukon 20.04 35 *e*P **P 02 49 09.5 +0.4**
comp=Z,1µm,1.5s
MA2 Magadan 20.17 303 *i*P **P 02 49 12.4 +1.9**
EGAK Eagle 20.85 42 *e*P **P 02 49 17.9 +0.2**
comp=Z,2µm,1.8s
DAWY Dawson 21.37 44 *e*P **P 02 49 23.4 +0.2**
comp=Z,393nm,1.1s
SKAG Skagway 22.70 57 *e*P **P 02 49 35.3 -0.5**
comp=Z,138nm,1.0s
WRAK Wrangell Islan 24.55 64 *e*P **P 02 49 54.8 +2.2**
comp=Z,83nm,0.8s
INK Inuvik 24.87 36 P **P 02 49 55.9 +0.5**
comp=Z,28nm,0.3s,baz=237,slow=7.2,SNR=299
INK pP **pP 02 50 34.9 -0.5**
comp=Z,21nm,0.8s,baz=251,slow=11,SNR=2.1
INK S **S 02 54 00.6 -2.0**
comp=Z,4.9nm,0.9s,baz=280,slow=19,SNR=2.9
INK ScP **ScP 02 56 42.8 -1.4**
comp=Z,19nm,0.8s,baz=284,slow=2.0,SNR=16
INK P3KPbc 03 22 54.8
comp=Z,2.4nm,0.7s,baz=11,slow=5.2,SNR=18
INK Inuvik 24.87 36 *e*P **P 02 49 56.0 +0.5**
comp=Z,238nm,1.4s
INK pP **pP 02 50 34.9 -0.5**
INK S **S 02 54 00.6 -2.0**
INK ScP **ScP 02 56 42.8 -1.4**
DLBC Dease Lake 25.50 59 P **P 02 50 02.6 +1.3**
comp=Z,6.2nm,0.4s,baz=249,slow=7.7,SNR=33
DLBC pP **pP 02 50 40.1 -1.9**
comp=Z,21nm,0.4s,baz=273,slow=8.1,SNR=9.1
DLBC ScP **ScP 02 56 45.5 -0.7**
comp=Z,12nm,0.8s,baz=279,slow=4.4,SNR=12
DLBC Dease Lake 25.50 59 *e*P **P 02 50 02.4 +1.1**
comp=Z,102nm,1.3s
DLBC pP **pP 02 50 40.1 -1.9**
DLBC ScP **ScP 02 56 45.5 -0.7**
NKL Nikolayevsk 26.51 289 *e*P **P 02 50 10.0 -0.3**
NKL pmax pmax
comp=Z,26nm,1.0s
YSS Yuzh-Sakhalins 27.67 275⇑ *e*P **P 02 50 21.2 +0.5**
YSS *e* 02 51 06.0
YSS *e*S **S 02 54 50.0 +2.9**
YSS *e* 02 55 57.0
YSS *e* 02 56 19.0
YSS pmax pmax
comp=Z,30nm,0.8s
YSS Yuzh-Sakhalins 27.67 275 *e*P **P 02 50 21.4 +0.7**
comp=Z,248nm,1.9s
YSS *e*PcP **PcP 02 53 29.0 -3.0**

BBB Bella Bella 28.03 72 P **P 02 50 25.0 +1.2**
comp=Z,65nm,1.2s,baz=332,slow=6.4,SNR=4.5
ASAJ Asahikawa 29.20 270 P **P 02 50 34.3 +0.1**
comp=Z,23nm,0.8s,baz=50,slow=6.2,SNR=29
ASAJ pP **pP 02 51 14.9 -0.8**
comp=Z,52nm,1.1s,baz=74,slow=7.5,SNR=2.9
ASAJ PcP **PcP 02 53 36.1 +0.2**
comp=Z,19nm,0.9s,baz=291,slow=4.9,SNR=3.5
ASAJ ScP **ScP 02 56 56.2 -1.5**
comp=Z,19nm,0.7s,baz=323,slow=1.9,SNR=21
ASAJ Asahikawa 29.20 270 P **P 02 50 34.3 +0.1**
ASAJ *PP **pP 02 51 15.0 -0.8**
ASAJ 02 53 36.1
ASAJ 02 56 56.2
ASAJ pmax pmax
comp=Z,23nm,0.8s
ASAJ pmax pmax
comp=Z,20nm,0.9s
ASAJ pmax pmax
comp=Z,19nm,0.9s
ASAJ pmax pmax
comp=N,19nm,0.7s
ASAJ Asahikawa 29.20 270 *e*P **P 02 50 34.4 +0.1**
comp=N,159nm,1.5s
ASAJ pP **pP 02 51 14.9 -0.8**
ASAJ *e*PcP **PcP 02 53 33.5 -2.4**
ASAJ *e*ScP **ScP 02 56 55.0 -2.6**
ERM Erimo 30.04 266*d i*P **P 02 50 42.4 +0.8**
ERM pmax pmax
comp=Z,36nm,0.7s
ERM Erimo 30.04 266 *e*P **P 02 50 42.4 +0.8**
comp=Z,38nm,0.6s
ERM *e*PcP **PcP 02 53 39.5 +1.4**
ERM *e*ScP **ScP 02 56 59.8 -0.5**
YAK Yakutsk 30.39 310 P **P 02 50 44.7 +0.2**
comp=Z,21nm,0.4s,baz=310,slow=1.6,SNR=6.3
YAK PcP **PcP 02 53 38.2 -0.4**
comp=Z,18nm,0.4s,baz=234,slow=1.8,SNR=4.3
YAK Yakutsk 30.39 310 *e*P **P 02 50 42.2 -2.3**
YAK *e* 02 53 38.0
YAK *e*S **S 02 55 24.5 -4.9**
YAK *e*SS **SS 02 57 32.8 -14**
YAK *e* 03 00 53.7
YAK pmax pmax
comp=Z,23nm,0.8s
YAK pmax pmax
comp=E,19nm,1.3s
YAK pmax pmax
comp=N,3.0nm,0.9s
YAK pmax pmax
comp=N,7.0nm,0.5s
YAK pmax pmax
comp=Z,61nm,0.9s
YAK pmax pmax
comp=E,22nm,0.9s
YAK smax smax
comp=E,16nm,0.5s
YAK smax smax
comp=N,16nm,0.4s
YAK Yakutsk 30.39 310 *e*P **P 02 50 44.0 -0.5**
comp=N,45nm,0.7s
YAK *e*PcP **PcP 02 53 36.2 -2.4**
TIXI Tiksi 30.68 329 P **P 02 50 47.3 +0.4**
comp=N,5.5nm,0.4s,baz=101,slow=10,SNR=18
TIXI pP **pP 02 51 27.7 -0.9**
comp=N,2.8nm,0.5s,baz=92,slow=7.1,SNR=1.8
TIXI PcP **PcP 02 53 38.8 -0.5**
comp=N,6.1nm,0.6s,baz=82,slow=2.8,SNR=4.8
TIXI ScP **ScP 02 57 00.5 -1.5**
comp=N,17nm,0.8s,baz=81,slow=4.2,SNR=8.9
TIXI Tiksi 30.68 329*de*P **P 02 50 47.7 +0.9**
TIXI pmax pmax
comp=Z,14nm,1.0s
TIXI Tiksi 30.68 329 *e*P **P 02 50 47.8 +0.9**
comp=Z,45nm,1.4s
TIXI pP **pP 02 51 27.7 -0.9**
TIXI *e*PcP **PcP 02 53 36.0 -3.2**
TIXI *e*ScP **ScP 02 56 56.3 -5.7**
HABR Khabarovsk 31.59 283 *e*P **P 02 50 54.6 -0.6**
HABR *e**PP **pP 02 51 37.3 +0.3**
HABR *e* 02 52 07.7
HABR *e* 02 53 41.0
HABR *e*S **S 02 55 48.2 -0.2**
HABR *e**SS **ScP 02 57 04.7 -0.7**
HABR *e* 03 01 01.3
HABR pmax pmax
comp=Z,19nm,0.7s
HABR pmax pmax
comp=Z,24nm,0.7s
HABR pmax pmax
comp=Z,34nm,0.9s
HABR pmax pmax
comp=Z,29nm,0.9s
HABR MLR MLR
comp=Z,179nm,16.0s
PGC Sidney 32.18 76 *e*P **P 02 51 01.8 +1.5**
comp=Z,388nm,2.0s
PGC *e*PP **PnPn 02 52 15.9 +0.8**
PGC *e*PcP **PcP 02 53 45.1 +1.4**
YKW3 Yellowknife Ar 32.43 49 *e*P **P 02 51 02.2 -0.1**
comp=Z,66nm,0.6s
YKW3 *e*PP **PnPn 02 52 15.6 -2.3**
YKW3 *e*ScP **ScP 02 57 05.3 -2.7**
YKA Yellowknife Ar 32.45 49 P **P 02 51 02.1 -0.3**
comp=Z,42nm,0.5s,baz=283,slow=8.5,SNR=404
YKA PP **PnPn 02 52 19.0 +0.9**
comp=Z,3.2nm,0.7s,baz=275,slow=10,SNR=3.6
YKA PcP **PcP 02 53 44.9 +0.7**
comp=Z,6.5nm,0.7s,baz=286,slow=2.9,SNR=7.7
YKA ScP **ScP 02 57 06.5 -1.6**
comp=Z,7.6nm,0.7s,baz=289,slow=3.5,SNR=21
YKA PKiKP **PKiKP 03 01 07.7 -2.8**
comp=Z,0.6nm,0.9s,baz=270,slow=0.6,SNR=4.4
YKA P3KPbc 03 22 21.9
comp=Z,1.6nm,0.6s,baz=96,slow=5.2,SNR=46
YKA P3KP 03 23 50.6
comp=Z,0.3nm,0.7s,baz=161,slow=2.2,SNR=4.6
YKB5 Yellowknife Ar 32.45 49 *e*P **P 02 51 00.8 -1.7**
YKB5 *e*PP **PP 02 52 24.8 +4.9**
YKB5 *e*PcP **PcP 02 53 43.9 -0.3**
YKB5 *e*ScP **ScP 02 57 06.7 -1.4**
NLWA Neilton Lookou 32.52 79 *e*P **P 02 51 05.6 +2.2**
comp=Z,264nm,1.4s
A04D Lummi Island 32.59 76 P **P 02 51 05.7 +1.9**
baz=297
BLN Blyn Mountain 32.76 77 *e*P **P 02 51 07.4 +1.9**
E03A Lebam 33.12 80 *e*P **P 02 51 10.7 +2.2**
comp=Z,449nm,1.5s
E03A *e*ScP **ScP 02 57 09.9 -0.8**
B05A Bryant 33.16 76 P **P 02 51 10.6 +1.8**
baz=298
B05A S **S 02 56 14.4 +1.8**
baz=298
KLR Kul'dur 33.19 286 P **P 02 51 08.3 -0.8**
comp=Z,8.5nm,0.6s,baz=58,slow=9.6,SNR=46
KLR pP **pP 02 51 50.3 -0.8**
comp=Z,9.2nm,1.0s,baz=67,slow=9.4,SNR=3.0
KLR ScP **ScP 02 57 08.9 -2.0**
comp=Z,6.5nm,0.9s,baz=27,slow=5.2,SNR=8.2
JCW Jim Creek 33.29 76 *e*P **P 02 51 11.7 +1.6**
B06A Marblemount 33.40 75 *e*P **P 02 51 12.1 +1.2**
comp=Z,294nm,1.5s
B06A *e*ScP **ScP 02 57 10.4 -1.3**
F03A Seaside 33.44 81 *e*P **P 02 51 13.6 +2.3**
comp=Z,612nm,1.8s
F04D Rainier, OR 33.69 80 P **P 02 51 15.4 +2.0**
baz=300
G03D McMinnville, O 33.99 82 P **P 02 51 18.0 +2.0**
baz=301
C06D Leavenworth 34.03 76 P **P 02 51 17.7 +1.3**
baz=298
F04A Amboy 34.12 80 *e*P **P 02 51 18.8 +1.7**
comp=Z,169nm,0.5s
F04A *e*PP **PP 02 52 38.2 -0.4**
F04A *e*ScP **ScP 02 57 14.6 +0.3**
COR Corvallis 34.30 83 *e*P **P 02 51 21.0 +2.4**
COR pmax pmax
comp=Z,110nm,0.8s
COR Corvallis 34.30 83 *e*P **P 02 51 21.0 +2.4**
comp=Z,107nm,0.8s
LTY Liberty 34.49 77 *e*P **P 02 51 21.5 +1.1**
comp=Z,88nm,0.5s
LTY *e*S **S 02 56 34.6 +1.3**
ASR Mount Adams--S 34.50 79 *e*P **P 02 51 22.1 +1.5**
TBM Table Mountain 34.58 77 *e*P **P 02 51 22.5 +1.3**
B08A Colville Reser 34.74 75 *e*P **P 02 51 23.6 +1.1**

comp=Z,210nm,1.1s
B08A *e*ScP **ScP 02 57 16.1 -0.5**
I03D Drain, OR 34.75 84 P **P 02 51 24.8 +2.3**
baz=303
H04A Detroit Lake 34.91 82 *e*P **P 02 51 25.8 +1.8**
comp=Z,521nm,1.4s
G05D Wamic, OR 35.14 80 P **P 02 51 27.7 +1.8**
baz=302
I04A Tendick Farm, 35.27 83 P **P 02 51 28.9 +1.9**
baz=303
E07A Sunnyside 35.33 78 *e*P **P 02 51 28.9 +1.4**
comp=Z,409nm,1.5s
E07A *e*PP **PnPn 02 52 56.2 +2.8**
E07A *e*ScP **ScP 02 57 18.5 -0.2**
L02D Cave Junction, 35.47 86 P **P 02 51 31.1 +2.4**
baz=305
G06A Carlson Farm, 35.55 80 *e*P **P 02 51 30.8 +1.4**
comp=Z,118nm,1.4s
G06A *e*ScP **ScP 02 57 20.4 +0.8**
USRK Ussuriysk Ar. 35.58 278 P **P 02 51 28.3 -1.3**
comp=Z,3.5nm,0.5s,baz=57,slow=9.8,SNR=13
USRK PcP **PcP 02 53 53.7 +0.2**
comp=Z,40nm,0.7s,baz=51,slow=2.6,SNR=32
USRK ScP **ScP 02 57 17.9 -1.7**
comp=Z,5.2nm,0.6s,baz=27,slow=3.5,SNR=11
HAWA Hanford 35.60 78 *e*P **P 02 51 31.3 +1.5**
comp=Z,204nm,0.6s
HUMO Hull Mountain 35.60 85 *e*P **P 02 51 32.1 +2.2**
comp=Z,137nm,1.4s
HUMO *e*PP **PP 02 52 54.8 -0.3**
HUMO *e*ScP **ScP 02 57 19.6 -0.2**
I05D Terrebonne, OR 35.61 82 P **P 02 51 31.7 +1.7**
baz=303
D08A Wollman Farm, 35.62 76 *e*P **P 02 51 30.9 +0.9**
comp=Z,424nm,1.5s
C09A Chrisman Ranch 35.63 75 *e*P **P 02 51 31.0 +0.9**
comp=Z,295nm,1.4s
C09A *e*ScP **ScP 02 57 19.1 -0.6**
HPAH Hawaii Prepara 35.88 148 *e*P **P 02 51 34.6 +2.1**
comp=Z,235nm,0.9s
JCC Jacoby Creek, 36.00 89 *e*P **P 02 51 36.1 +2.9**
comp=Z,211nm,1.3s
NEW Newport 36.08 73 *e*P **P 02 51 34.4 +0.5**
NEW pmax pmax
comp=Z,160nm,1.1s
NEW Newport 36.08 73 *e*P **P 02 51 34.4 +0.5**
comp=Z,161nm,1.1s
KHMM Horse Mountain 36.15 88 *e*P **P 02 51 37.4 +2.7**
comp=Z,555nm,1.6s
POHA Pohakuloa 36.19 148 *e*P **P 02 51 37.1 +1.8**
comp=Z,169nm,0.9s
VLA Vladivostok 36.24 276⇓ *i*P **P 02 51 35.8 +0.6**
VLA pmax pmax
comp=Z,21nm,0.6s
J05D Fort Rock, OR 36.26 83 P **P 02 51 37.9 +2.3**
baz=304
YBH Yreka Blue Hor 36.26 86 P **P 02 51 38.1 +2.6**
comp=Z,87nm,0.9s,baz=323,slow=4.9,SNR=104
YBH PP **PnPn 02 53 04.9 +0.2**
comp=Z,17nm,1.1s,baz=334,slow=8.5,SNR=6.5
YBH Yreka Blue Hor 36.26 86 *e*P **P 02 51 38.0 +2.5**
YBH pmax pmax
comp=Z,140nm,1.1s
YBH Yreka Blue Hor 36.26 86 *e*P **P 02 51 38.0 +2.5**
comp=Z,138nm,1.1s
YBH *e*PP **PnPn 02 53 04.2 -0.5**
YBH *e*ScP **ScP 02 57 21.9 -0.4**
K04D Chiloquin, OR 36.32 84 P **P 02 51 38.3 +2.2**
baz=305
E09A Wood Farm, Sta 36.36 77 *e*P **P 02 51 37.1 +0.9**
comp=Z,271nm,1.3s
M02C Callahan 36.37 87 P **P 02 51 39.1 +2.6**
baz=306
MJAR Matsushiro Arr 36.45 263 P **P 02 51 37.6 +0.5**
comp=Z,42nm,0.8s,baz=51,slow=7.6,SNR=68
MJAR pP **pP 02 52 18.6 -1.1**
comp=Z,2.9nm,0.6s,baz=46,slow=8.7,SNR=1.1
MJAR PcP **PcP 02 53 56.3 0.0**
comp=Z,27nm,0.7s,baz=62,slow=2.1,SNR=28
MJAR ScP **ScP 02 57 21.5 -1.4**
comp=Z,7.6nm,0.8s,baz=60,slow=3.5,SNR=14
MAJO Matsushiro 36.45 263*d i*P **P 02 51 37.6 +0.5**
MAJO pmax pmax
comp=Z,844nm,1.0s
MAJO Matsushiro 36.45 263 *e*P **P 02 51 38.1 +1.0**
comp=Z,100nm,0.8s
MAJO *e*PcP **PcP 02 53 56.0 -0.3**
MAJO *e*ScP **ScP 02 57 21.4 -1.5**
MAT Matsushiro 36.45 263 P **P 02 51 37.3 +0.2**
MJB9 Matsu-Tunnel 36.45 263 *e*P **P 02 51 38.1 +1.0**
comp=Z,26nm,0.8s
MJB9 *e*PcP **PcP 02 53 56.7 +0.4**
MJB9 *e*ScP **ScP 02 57 21.4 -1.5**
KMRM Mail Ridge 36.55 89 *e*P **P 02 51 40.9 +2.8**
comp=Z,117nm,0.8s
LHEM Herd Peak 36.62 86 *e*P **P 02 51 40.8 +2.1**
N02D Trinity Center 36.71 87 P **P 02 51 41.8 +2.5**
baz=306
M04C Macdoel 36.76 86 P **P 02 51 42.1 +2.3**
baz=306
K05A Summer Lake 36.78 84 *e*P **P 02 51 42.1 +2.0**
comp=Z,362nm,1.4s
MSHR Mys Shultsa 36.99 276⇑ *i*P **P 02 51 42.1 +0.6**
WDC Whiskeytown Da 37.05 88 *e*P **P 02 51 44.2 +2.1**
WDC pmax pmax
comp=Z,250nm,1.6s
WDC Whiskeytown Da 37.05 88 *e*P **P 02 51 44.2 +2.1**
comp=Z,251nm,1.6s
F10A Beach Ranch, E 37.19 77 *e*P **P 02 51 44.1 +0.8**
comp=Z,65nm,0.6s
RES Resolute Bay 37.42 26 P **P 02 51 45.1 +0.4**
comp=Z,3.6nm,0.7s,baz=270,slow=8.1,SNR=20
RES pP **pP 02 52 26.5 -1.0**
comp=Z,3.9nm,1.1s,baz=266,slow=11,SNR=2.0
RES Resolute Bay 37.42 26 *e*P **P 02 51 45.2 +0.5**
comp=Z,15nm,1.0s
RES pP **pP 02 52 26.5 -1.0**
WALA Waterton Lakes 37.54 71 *e*P **P 02 51 46.5 +0.2**
comp=Z,122nm,1.4s
MOD Modoc Plateau 37.62 84 *e*P **P 02 51 48.8 +1.7**
comp=Z,85nm,0.7s
BSMT Bassoo Peak 37.64 73 *e*P **P 02 51 47.9 +0.7**
BSMT *e*PcP **PcP 02 54 01.0 +1.0**
O03D Paynes Creek 37.67 88 P **P 02 51 48.9 +1.5**
baz=307
HOPS Hopland Field 37.70 90 *e*P **P 02 51 49.5 +1.9**
comp=Z,263nm,1.3s
BLMT Blacktail Moun 37.80 72 *e*P **P 02 51 49.1 +0.5**
JHJ2 Mitsune 37.84 257 *e*P **P 02 51 49.4 +0.7**
comp=Z,184nm,0.6s
JHJ Hachijo jima 2 37.85 257 P **P 02 51 49.8 +0.9**
comp=Z,164nm,0.7s,baz=24,slow=2.0,SNR=9.6
INU Inuyama 37.96 262 *e*P **P 02 51 49.6 -0.2**
comp=Z,39nm,1.0s
INU *e*PcP **PcP 02 54 01.1 +0.1**
JTMT Jette 37.99 73 *e*P **P 02 51 50.5 +0.5**
JTMT *e*PP **PnPn 02 53 25.8 +0.7**
YBMT Yellow Bay 38.08 72 *e*P **P 02 51 51.2 +0.3**
SWMT Swartz Lake 38.27 73 *e*P **P 02 51 52.6 +0.2**
SWMT *e*PP **PnPn 02 53 30.1 +1.7**
ORV Oroville 38.31 88 *e*P **P 02 51 53.9 +1.3**
ORV *e*S **S 02 57 29.6 -1.6**
ORV pmax pmax
comp=Z,53nm,0.7s
ORV Oroville 38.31 88 *e*P **P 02 51 53.9 +1.3**
comp=Z,53nm,0.6s
WVOR Wild Horse Val 38.31 83 *e*P **P 02 51 54.3 +1.5**
WVOR *e*S **S 02 57 30.1 -1.3**
WVOR pmax pmax
comp=Z,180nm,1.3s
WVOR Wild Horse Val 38.31 83 *e*P **P 02 51 54.3 +1.5**
comp=Z,184nm,1.3s
MCCM Marconi Confer 38.35 91 *e*P **P 02 51 54.3 +1.3**
comp=Z,116nm,1.2s
MSO Missoula 38.66 74 P **P 02 51 55.9 +0.2**
baz=302
MSO Missoula 38.66 74 *e*P **P 02 51 55.9 +0.2**
comp=Z,182nm,1.4s
AFDM Forest Hills D 39.00 89 *e*P **P 02 51 60.0 +1.5**
comp=Z,105nm,1.3s
CHMT Chamberlain Mo 39.02 73 *e*P **P 02 51 58.5 -0.3**
BOD Bodaibo 39.13 307⇑ *i*P **P 02 51 58.6 -0.6**
BOD pmax pmax
comp=Z,14nm,1.3s
MFID Camas Ranch 39.43 79 *e*P **P 02 52 02.8 +0.7**
comp=Z,185nm,1.5s

CN2	Changchun	39.71	282	eP	P	02 52 03.0	-1.2
CN2				eP	pP	02 52 46.6	-0.8
CN2				eS	sP	02 53 09.9	-0.8
CN2				pmax	pmax		
	comp=Z,10.0nm,1.0s						
CN2				pmax	pmax		
	comp=Z,200nm,4.0s						
CMB	Columbia Colle	39.94	89	eP	P	02 52 07.8	+1.6
CMB				pmax	pmax		
	comp=Z,61nm,1.0s						
CMB	Columbia Colle	39.94	89	eP	P	02 52 07.8	+1.6
	comp=Z,61nm,0.9s						
CMB				ePP	PP	02 53 43.3	+1.0
CMB				eScP	ScP	02 57 35.8	-0.5
HRY	Holter Researc	39.95	73	eP	P	02 52 06.6	+0.3
HIA	Hailar	40.07	292	eP	P	02 52 07.4	+0.3
HIA				e		02 54 06.1	
HIA				pmax	pmax		
	comp=Z,112nm,1.5s						
HIA	Hailar	40.07	292	eP	P	02 52 07.3	+0.3
	comp=Z,112nm,1.5s						
HIA				ePcP	PcP	02 54 06.1	-1.4
HIA				eScP	ScP	02 57 34.0	-2.6
LRM	Limekiln Ridge	40.08	74	eP	P	02 52 07.4	-0.1
LRM				ePP	PP	02 53 45.7	+1.8
LRM				eScP	ScP	02 57 36.9	-0.1
SAO	San Andreas Ge	40.11	92	eP	P	02 52 09.0	+1.4
SAO				pmax	pmax		
	comp=Z,310nm,1.9s						
SAO	San Andreas Ge	40.11	92	eP	P	02 52 09.0	+1.4
	comp=Z,306nm,1.9s						
HLID	Hailey	40.19	78	P	P	02 52 09.3	+1.0
	baz=305						
HLID	Hailey	40.19	78	eP	P	02 52 09.2	+0.8
	comp=Z,168nm,1.2s						
WAKR	Walker	40.22	88	eP	P	02 52 10.6	+1.9
DLMT	Dillon	40.24	75	eP	P	02 52 08.8	0.0
	comp=Z,22nm,0.8s						
DLMT				ePP	PP	02 53 45.8	+0.2
DLMT				eScP	ScP	02 57 36.3	-1.2
MCMT	McKenzie Canyo	40.40	76	eP	P	02 52 10.2	+0.1
EGMT	Eagleton	40.44	70	P	P	02 52 10.0	-0.3
	baz=302						
EGMT	Eagleton	40.44	70	eP	P	02 52 09.8	-0.5
	comp=Z,28nm,0.6s						
BOZ	Bozeman (W)	40.65	74	P	P	02 52 12.5	+0.4
	baz=303						
CBIJ	Chichi jima	40.92	248	eP	P	02 52 14.9	+0.6
	comp=Z,237nm,0.9s						
NV01	Mina Array Sit	40.95	87	eP	P	02 52 14.6	-0.1
NV01				ePcP	PcP	02 54 12.3	+1.5
NV01				eScP	ScP	02 57 40.9	+0.4
NVAR	Mina Array Bea	40.95	87	P	P	02 52 16.0	+1.3
	comp=Z,45nm,0.7s,baz=300,slow=7.4,SNR=373						
NVAR				pP	pP	02 52 57.9	-0.2
	comp=Z,1.6nm,0.5s,baz=45,slow=40,SNR=0.8						
NVAR				PcP	PcP	02 54 12.7	+1.9
	comp=Z,9.9nm,0.8s,baz=284,slow=3.3,SNR=6.0						
NVAR				ScP	ScP	02 57 40.8	+0.3
	comp=Z,48nm,1.0s,baz=286,slow=4.0,SNR=54						
NVAR				PKiKP	PKiKP	03 01 18.3	-0.1
	comp=Z,0.8nm,0.8s,baz=333,slow=1.4,SNR=3.7						
NV11	Mina Array Sit	41.04	87	eP	P	02 52 16.9	+1.5
	comp=Z,39nm,0.8s						
NV11				ePP	PP	02 53 54.9	+0.6
NV11				eScP	ScP	02 57 40.3	-0.5
MLAC	Mammoth, Mammo	41.14	89	P	P	02 52 18.5	+2.3
	baz=310						
QLMT	Earthquake Lak	41.23	75	eP	P	02 52 17.2	+0.3
ELK	Elko	41.36	82	eP	P	02 52 19.4	+1.3
ELK				pmax	pmax		
	comp=Z,41nm,0.8s						
ELK	Elko	41.36	82	eP	P	02 52 19.4	+1.3
	comp=Z,41nm,0.8s						
ELK				ePP	PP	02 53 58.8	+1.0
ELK				eScP	ScP	02 57 42.3	+0.1
YHB	Horse Butte	41.41	75	eP	P	02 52 18.9	+0.5
YMC	Maple Creek	41.52	75	eP	P	02 52 19.8	+0.6
YHH	Holmes Hill	41.59	74	eP	P	02 52 20.3	+0.4
YMR	Madison River	41.59	75	eP	P	02 52 20.4	+0.6
	comp=Z,126nm,1.0s						
YPM	Purple Mountai	41.65	75	eP	P	02 52 20.9	+0.5
GCMT	Greycliff	41.71	73	eP	P	02 52 21.1	+0.4
MCID	Moose Creek	41.74	75	eP	P	02 52 21.9	+0.9
RCTC	Rector, Farmer	41.75	90	P	P	02 52 21.9	+0.9
	baz=311						
YFT	Old Faithful	41.79	75	eP	P	02 52 23.1	+1.6
	comp=Z,76nm,0.8s						
TIN	Tinemaha, Big	41.88	89	P	P	02 52 24.3	+2.2
	baz=310						
YLT	Little Thumb C	41.95	75	eP	P	02 52 24.9	+2.1
SMMC	Simmler	41.95	92	P	P	02 52 24.5	+1.8
	baz=312						
H17A	Grant Village	41.98	75	P	P	02 52 24.9	+1.9
	baz=305						
H17A	Grant Village	41.98	75	eP	P	02 52 24.9	+1.9
	comp=Z,362nm,1.4s						
LKWY	Lake	41.98	74	eP	P	02 52 24.6	+1.6
LKWY				pmax	pmax		
	comp=Z,100nm,1.0s						
LKWY	Lake	41.98	74	eP	P	02 52 24.6	+1.6
	comp=Z,101nm,1.0s						
IMW	Indian Meadow	42.05	76	eP	P	02 52 24.5	+0.9
	comp=Z,77nm,1.0s						
FLWY	Flagg Ranch	42.08	75	eP	P	02 52 24.9	+1.1
	comp=Z,92nm,0.8s						
KSRS	Korea Array	42.09	272	P	P	02 52 23.8	+0.2
	comp=Z,16nm,0.9s,baz=56,slow=7.5,SNR=24						
KSRS				pP	pP	02 53 06.3	-0.9
	comp=Z,4.5nm,0.8s,baz=51,slow=8.6,SNR=2.2						
KSRS				PP	PP	02 54 03.4	-1.9
	comp=Z,3.7nm,0.8s,baz=70,slow=8.4,SNR=5.7						
KSRS				PcP	PcP	02 54 14.4	+0.3
	comp=Z,13nm,0.5s,baz=73,slow=3.6,SNR=22						
KSRS				ScP	ScP	02 57 43.7	-1.0
	comp=Z,5.2nm,0.7s,baz=53,slow=4.3,SNR=8.9						
KSRS				S	S	02 58 32.3	+5.1
	comp=Z,0.8nm,0.3s,baz=27,slow=20,SNR=4.7						
KS01	Wonju Array Si	42.09	272	eP	P	02 52 22.3	-1.4
KS15	Wonju Array Si	42.12	272	eP	P	02 52 25.3	+1.4
KSAR	Wonju Array Be	42.12	272	P	P	02 52 23.8	-0.1
KSAR				*PP	pP	02 53 06.3	-1.2
KSAR						02 54 03.4	
KSAR						02 54 14.5	
KSAR				S	S	02 58 32.3	+4.6
KSAR	Wonju Array Be	42.12	272	P	P	02 52 23.8	-0.1
KSAR				pP	pP	02 53 06.3	-1.2
KSAR				PP	PP	02 54 03.4	-2.3
KSAR				PcP	PcP	02 54 14.4	+0.1
KSAR				ScP	ScP	02 57 43.7	-1.2
KSAR				S	S	02 58 32.3	+4.6
NPI	North Pocatell	42.15	79	eP	P	02 52 25.4	+1.1
YTP	The Promontory	42.15	75	eP	P	02 52 25.4	+1.0
FXWY	Fox Creek	42.15	76	eP	P	02 52 25.0	+0.6
	comp=Z,45nm,1.4s						
VES	Vestal, Richgr	42.16	91	P	P	02 52 25.4	+1.2
	baz=311						
HVU	Hansel Valley	42.21	79	eP	P	02 52 25.9	+1.1
HVU				pmax	pmax		
	comp=Z,100nm,0.6s						
HVU	Hansel Valley	42.21	79	eP	P	02 52 25.9	+1.1
	comp=Z,104nm,0.6s						
MOOW	Moose Ponds	42.25	76	eP	P	02 52 25.8	+0.6
	comp=Z,70nm,1.4s						
RLMT	Red Lodge	42.32	73	P	P	02 52 26.3	+0.6
	baz=305						
PKM	Mcpherson Peak	42.35	92	P	P	02 52 27.8	+1.8
	baz=312						
CWC	Cottonwood Cre	42.37	89	P	P	02 52 27.6	+1.4
	baz=311						
SNOW	Snow King Moun	42.41	76	eP	P	02 52 27.5	+1.0
	comp=Z,34nm,0.9s						
LOHW	Long Hollow	42.41	76	eP	P	02 52 27.1	+0.7
	comp=Z,107nm,1.5s						
REDW	Red Top Meadow	42.41	76	eP	P	02 52 27.4	+0.8
	comp=Z,72nm,1.3s						
GRAC	Grapevine Rang	42.44	88	P	P	02 52 28.4	+1.9
	baz=310						
MTUT	Morton Thiokol	42.45	79	eP	P	02 52 27.8	+1.1
BGU	Big Grassy Mou	42.58	81	eP	P	02 52 28.8	+1.0
	comp=Z,258nm,1.8s						
BEI	Bear River Ran	42.60	78	eP	P	02 52 26.2	-1.8
AHID	Auburn Hatcher	42.62	77	eP	P	02 52 28.8	+0.7
	comp=Z,207nm,1.5s						
ISA	Isabella, Lake	42.64	91	P	P	02 52 29.1	+0.8
	baz=312						
ISA	Isabella, Lake	42.64	91	eP	P	02 52 29.1	+0.8
ISA				pmax	pmax		
	comp=Z,110nm,1.3s						
ISA	Isabella, Lake	42.64	91	eP	P	02 52 29.1	+0.8
	comp=Z,107nm,1.3s						
R11A	Troy Canyon, C	42.65	85	P	P	02 52 29.6	+1.2
	baz=309						
R11A	Troy Canyon, C	42.65	85	eP	P	02 52 29.4	+1.0
	comp=Z,176nm,1.4s						
SPUT	South Promonto	42.69	80	eP	P	02 52 29.8	+1.1
	comp=Z,75nm,1.2s						
SBC	Santa Barbara	42.71	93	P	P	02 52 30.3	+1.6
	baz=313						
DAC	Darwin (Calif)	42.77	89	eP	P	02 52 30.7	+1.2
DAC				pmax	pmax		
	comp=Z,110nm,1.4s						
DAC	Darwin (Calif)	42.77	89	eP	P	02 52 30.6	+1.2
	comp=Z,112nm,1.4s						
ARVC	Arvin	42.79	91	P	P	02 52 30.1	+0.8
	baz=312						
HDU	Hyde Park	42.80	79	eP	P	02 52 28.0	-1.6
INCN	Inchon	42.85	273	eP	P	02 52 30.9	+1.0
	comp=Z,110nm,1.6s						
GZU	Grizzly Peak	42.91	79	eP	P	02 52 28.3	-2.2
SNUT	Stansbury Nort	42.92	80	eP	P	02 52 27.4	-3.1
MPMC	Manual Prospec	42.98	89	P	P	02 52 32.4	+1.3
	baz=311						
NAIU	Northern Antel	43.01	80	eP	P	02 52 28.9	-2.3
BMUT	Black Mountain	43.02	78	eP	P	02 52 32.4	+0.9
HWUT	Hardware Ranch	43.04	79	eP	P	02 52 32.3	+0.8
	comp=Z,45nm,0.7s						
SCZ2	Santa Cruz Isl	43.06	93	P	P	02 52 32.9	+1.3
	baz=313						
FURC	Furnace Creek,	43.09	88	P	P	02 52 33.4	+1.7
	baz=311						
FSU	Fish Springs	43.11	82	eP	P	02 52 31.1	-0.9
RSUT	Red Spur Mount	43.11	79	eP	P	02 52 32.2	0.0
TPNV	Topopah Spring	43.15	87	P	P	02 52 33.8	+1.4
	baz=310						
TPNV	Topopah Spring	43.15	87	eP	P	02 52 33.7	+1.3
TPNV				pmax	pmax		
	comp=Z,110nm,0.7s						
TPNV	Topopah Spring	43.15	87	eP	P	02 52 33.7	+1.3
	comp=Z,109nm,0.7s						
DUG	Dugway, Tooele	43.16	81	P	P	02 52 33.6	+1.2
	baz=308						
DUG	Dugway, Tooele	43.16	81	eP	P	02 52 30.9	-1.5
DUG	Dugway, Tooele	43.16	81	eP	P	02 52 33.5	+1.1
	comp=Z,347nm,1.4s						
MCU	Monte Cristo P	43.16	79	eP	P	02 52 32.5	-0.1
FCC	Fort Churchill	43.18	49	eP	P	02 52 31.6	-0.5
FCC				pmax	pmax		
	comp=Z,35nm,0.8s						
FCC	Fort Churchill	43.18	49	eP	P	02 52 31.6	-0.5
	comp=Z,36nm,0.8s						
FCC				eScP	ScP	02 57 46.4	-2.3
JNU	Nakatsue	43.19	265	P	P	02 52 33.1	+0.5
	comp=Z,74nm,0.9s,baz=58,slow=7.9,SNR=30						
JNU				pP	pP	02 53 14.3	-2.1
	comp=Z,14nm,0.7s,baz=315,slow=3.4,SNR=1.6						
JNU				PcP	PP	02 54 17.4	+0.2
	comp=Z,26nm,0.7s,baz=26,slow=5.1,SNR=8.2						
JNU	Nakatsue	43.19	265	eP	P	02 52 33.8	+1.2
	comp=Z,105nm,1.0s						
JNU				pP	pP	02 53 14.3	-2.1
JNU				PcP	PP	02 54 17.4	+0.2
OSI	Osito Audit: C	43.20	92	P	P	02 52 34.2	+1.5
	baz=312						
OSI	Osito Audit: C	43.20	92	eP	P	02 52 34.3	+1.7
	comp=Z,75nm,0.8s						
LRMC	Laurel Mtn Rad	43.25	90	P	P	02 52 34.1	+1.0
	baz=312						
BLG	Laguna Peak, P	43.33	93	P	P	02 52 34.8	+1.1
	baz=313						
CWU	Camp Williams	43.43	80	eP	P	02 52 34.6	-0.1
TCUT	Toone Canyon	43.43	79	eP	P	02 52 35.7	+1.0
	comp=Z,102nm,0.8s						
EDW2	Edwards Air Fo	43.46	91	P	P	02 52 35.9	+1.1
	baz=312						
BW06	Boulder Array	43.53	76	P	P	02 52 35.9	+0.4
	baz=307						
BW06	Boulder Array	43.53	76	eP	P	02 52 35.9	+0.4
PD31	Pinedale Array	43.53	76	eP	P	02 52 35.9	+0.4
PDAR	Pinedale Array	43.53	76	P	P	02 52 35.9	+0.4
	comp=Z,121nm,0.6s,baz=301,slow=3.4,SNR=1292						
PDAR				pP	pP	02 53 19.1	-0.3
	comp=Z,12nm,0.8s,baz=282,slow=4.2,SNR=1.4						
PDAR				ScP	ScP	02 57 50.0	-0.8
	comp=Z,3.7nm,0.8s,baz=209,slow=0.8,SNR=8.0						
GMU	Granite Mounta	43.55	80	eP	P	02 52 36.5	+0.9
PSUT	Pine Spring	43.58	84	eP	P	02 52 36.9	+1.0
	comp=Z,59nm,0.7s						
PSUT				eScP	ScP	02 57 51.7	+0.6
PSUT				eS	S	02 58 50.5	+1.1
SNCC	San Nicolas Is	43.64	94	P	P	02 52 37.5	+1.4
	baz=314						
A25A	Svangstu Ranch	43.67	65	P	P	02 52 35.8	-0.4
	baz=303						
DECC	Green Verdugo	43.68	92	P	P	02 52 37.8	+1.3
	baz=313						
JLU	Jordanelle	43.73	80	eP	P	02 52 37.9	+0.8
	comp=Z,399nm,2.0s						
KLJ	Keetly	43.73	80	eP	P	02 52 39.3	+2.2
HLJ	Hailstone	43.75	80	eP	P	02 52 39.5	+2.3
NLU	North Lily Min	43.75	81	eP	P	02 52 38.2	+1.0
	comp=Z,51nm,0.7s						
HTU	Hoyt Peak	43.82	80	eP	P	02 52 40.6	+2.8
PASC	Pasadena Art C	43.82	92	eP	P	02 52 38.7	+1.1
	comp=Z,248nm,1.6s						
WMUT	West Mountain	43.82	81	eP	P	02 52 40.1	+2.3
SHOC	Shoshone, Teco	43.82	89	P	P	02 52 39.0	+1.4
	baz=311						
MWC	Mount Wilson	43.86	92	eP	P	02 52 39.3	+1.2
MWC				pmax	pmax		
	comp=Z,340nm,1.5s						
MWC	Mount Wilson	43.86	92	eP	P	02 52 39.3	+1.2
	comp=Z,336nm,1.5s						
GSC	Goldstone, Bar	43.90	90	P	P	02 52 39.7	+1.4
	baz=312						
GSC	Goldstone, Bar	43.90	90	eP	P	02 52 32.7	-5.6
GSC				pmax	pmax		
	comp=Z,340nm,1.5s						
DAU	Daniels Canyon	43.96	80	eP	P	02 52 42.3	+3.3
DAU	Daniels Canyon	43.96	80	eP	P	02 52 42.3	+3.3
MPU	Maple Canyon	43.98	81	eP	P	02 52 40.0	+1.0
	comp=Z,46nm,0.6s						
MPU				eScP	ScP	02 57 52.3	-0.4
MPU				eS	S	02 58 57.5	+2.4
B25A	Knox Farm, Ray	44.02	66	P	P	02 52 38.5	-0.5
	baz=304						
FLU	Fool Peak	44.06	82	eP	P	02 52 43.8	+4.2
RRX	Edison Barstow	44.07	90	P	P	02 52 40.9	+1.3
	baz=312						
FMP	Fort Macarthur	44.07	92	P	P	02 52 40.4	+0.9
	baz=313						
BFSC	Mount Baldy Ra	44.10	91	P	P	02 52 41.1	+1.2
	baz=313						
LEVU	Levan	44.19	81	eP	P	02 52 45.4	+4.7
CIS	Catalina Islan	44.21	93	P	P	02 52 41.6	+0.9
	baz=313						
C25A	Freed Ranch, W	44.28	67	P	P	02 52 40.8	-0.3
	baz=304						
A26A	Wade Farm, Ken	44.29	64	P	P	02 52 40.4	-0.7
	baz=304						
TUQ	Turquoise Moun	44.34	89	P	P	02 52 43.0	+1.1
	baz=312						
WCU	Willow Creek	44.37	82	eP	P	02 52 43.6	+1.4
SCI2	San Clemente I	44.42	93	P	P	02 52 43.5	+1.2
	baz=314						
NRIK	Noril'sk	44.45	330	P	P	02 52 43.2	+1.2
	comp=Z,40nm,1.0s,baz=74,slow=9.7,SNR=40						
NRIK				pP	pP	02 53 24.9	-1.2
	comp=Z,34nm,1.3s,baz=73,slow=4.3,SNR=2.1						
B26A	Jensen Ranch,	44.47	65	P	P	02 52 42.2	-0.4
	baz=304						
HEC	Hector,Ludlow	44.50	90	P	P	02 52 44.2	+1.2
	baz=312						
BBRC	Big Bear Solar	44.53	91	P	P	02 52 44.7	+1.3
	baz=313						
D25A	Fairfield	44.56	67	P	P	02 52 43.1	-0.2
	baz=305						
MSU	Marysvale	44.60	83	eP	P	02 52 45.5	+1.5
MSU	Marysvale	44.60	83	eP	P	02 52 45.5	+1.5
TMUT	Trail Mountain	44.69	81	eP	P	02 52 45.9	+1.1
	comp=Z,112nm,0.7s						
A27A	Ledoux Ranch,	44.69	64	P	P	02 52 43.5	-0.8
	baz=304						
ARGU	Argyle Ridge	44.75	80	eP	P	02 52 46.6	+1.3
MURC	Murrieta	44.81	92	P	P	02 52 46.5	+1.0
	baz=313						
P17A	Butcher Ranch,	44.86	81	eP	P	02 52 47.0	+1.0
	comp=Z,65nm,0.9s						
P17A				eScP	ScP	02 57 56.0	-0.2
C26A	Wahner Farm, P	44.86	66	P	P	02 52 45.2	-0.5
	baz=304						
E25A	Miller Ranch,	44.89	68	P	P	02 52 46.0	0.0
	baz=305						
MTPU	Mount Pierson	44.90	83	eP	P	02 52 48.1	+1.6
	comp=Z,204nm,1.7s						
LCMT	Little Creek M	44.93	85	eP	P	02 52 48.0	+1.5
	comp=Z,173nm,1.5s						
GMRC	Granite Mounta	44.94	89	P	P	02 52 47.8	+1.2
	baz=312						
Q16A	Castle Valley	44.95	82	eP	P	02 52 47.9	+1.2
	comp=Z,489nm,1.9s						
B27A	Peters Farms,	44.99	65	P	P	02 52 46.2	-0.5
	baz=304						
P18A	Preston Nutter	45.05	80	eP	P	02 52 48.6	+1.0
	comp=Z,66nm,0.8s						
LDFC	Landfair	45.08	89	eP	P	02 52 48.7	+1.0
	comp=Z,364nm,1.5s						
D26A	Manning	45.12	67	P	P	02 52 47.2	-0.6
	baz=305						
KNB	Kanab	45.18	85	eP	P	02 52 50.1	+1.6
KNB				pmax	pmax		
	comp=Z,420nm,1.9s						
KNB	Kanab	45.18	85	eP	P	02 52 50.1	+1.6
	comp=Z,421nm,1.9s						
F25A	Bowman	45.19	69	P	P	02 52 48.3	-0.1
	baz=306						
PKCU	Pink Cliffs	45.21	84	eP	P	02 52 50.7	+1.7
	comp=Z,38nm,0.7s						
SRU	San Rafael Swe	45.22	81	eP	P	02 52 49.7	+0.9
SRU				pmax	pmax		
	comp=Z,110nm,0.6s						
SRU	San Rafael Swe	45.22	81	eP	P	02 52 49.7	+0.9
	comp=Z,110nm,0.6s						
A28A	Rude Farm, Bot	45.25	64	P	P	02 52 48.1	-0.6
	baz=304						
C27A	Sayler Ranch,	45.25	66	P	P	02 52 48.3	-0.4
	baz=305						
PFO	Pinyon Flats O	45.25	91	P	P	02 52 49.9	+0.9
	comp=Z,18nm,0.7s,baz=307,slow=4.9,SNR=30						
PFO				ScP	ScP	02 57 58.3	+0.4
	comp=Z,52nm,1.0s,baz=328,slow=6.0,SNR=37						
PFO	Pinyon Flats O	45.25	91	P	P	02 52 49.9	+0.9
	baz=313						
PFO	Pinyon Flats O	45.25	91	eP	P	02 52 49.9	+0.9
	comp=Z,25nm,0.8s						
PFO				ScP	ScP	02 57 58.3	+0.4
BELC	Belle Mtn. Jos	45.27	90	P	P	02 52 49.9	+0.7
	baz=313						
MMU	Miners Mountai	45.34	82	eP	P	02 52 51.2	+1.4
109C	Camp Elliot, M	45.36	92	P	P	02 52 51.0	+1.3
	baz=314						
K22A	Casper	45.38	74	P	P	02 52 49.7	-0.3
	baz=307						
K22A	Casper	45.38	74	eP	P	02 52 49.7	-0.3
	comp=Z,65nm,0.7s						
E26A	Carlson Angus	45.44	68	P	P	02 52 49.7	-0.5
	baz=305						
B28A	Dugan Ranch, T	45.46	64	P	P	02 52 49.6	-0.7
	baz=305						
D27A	Center	45.59	66	P	P	02 52 51.0	-0.4
	baz=305						
G25A	Newell	45.65	70	P	P	02 52 51.3	-0.6
	baz=306						
IRM	Iron Mountain	45.68	89	P	P	02 52 53.3	+1.0
	baz=313						
F26A	Lodgepole	45.68	68	P	P	02 52 51.8	-0.4
	baz=306						
BAR	Barrett	45.76	92	eP	P	02 52 54.2	+1.2
	comp=Z,30nm,0.8s						
BAR				ePcP	PcP	02 54 27.4	+0.5
BAR				eScP	ScP	02 57 59.9	0.0
MONP2	Monument Peak	45.77	92	P	P	02 52 54.3	+1.1
	baz=314						
A29A	Manning Farm,	45.80	63	P	P	02 52 52.0	-1.0
	baz=305						
W13A	Hualapai Mount	45.81	88	eP	P	02 52 54.4	+0.9
	comp=Z,43nm,0.7s						
BC3	Big Chuckawall	45.83	90	P	P	02 52 54.2	+0.6
	baz=313						
C28A	Hausauer Farms	45.87	65	P	P	02 52 53.1	-0.4
	baz=305						
H25A	Fruitdale	45.88	70	P	P	02 52 53.3	-0.5
	baz=307						
U15A	North Rim	45.89	85	eP	P	02 52 55.7	+1.5
	comp=Z,120nm,0.6s						
O20A	White River Ci	45.93	78	P	P	02 52 54.8	+0.4
	baz=309						
O20A	White River Ci	45.93	78	eP	P	02 52 54.8	+0.4
	comp=Z,210nm,0.6s						
RSSD	Black Hills	45.93	71	P	P	02 52 53.8	-0.6
	baz=307						
RSSD	Black Hills	45.93	71	eP	P	02 52 53.8	-0.6
RSSD				pmax	pmax		
	comp=Z,85nm,1.4s						
RSSD	Black Hills	45.93	71	eP	P	02 52 53.8	-0.6
	comp=Z,85nm,1.4s						
RSSD				ePcP	PcP	02 54 28.0	+0.4
RSSD				eScP	ScP	02 57 58.6	-2.1
E27A	Carson	45.96	67	P	P	02 52 53.7	-0.7
	baz=306						
B29A	Wagenman Farm,	46.00	64	P	P	02 52 53.6	-1.0
	baz=305						
F27A	Lemmon	46.03	68	P	P	02 52 54.4	-0.5
	baz=306						
G26A	Maurine	46.05	69	P	P	02 52 54.7	-0.4
	baz=306						
D28A	Regan	46.07	66	P	P	02 52 54.7	-0.4
	baz=306						
SWSC	Sam W. Stewart	46.11	91	P	P	02 52 56.3	+0.7
	baz=314						
I25A	Rochford	46.17	71	P	P	02 52 55.4	-0.8
	baz=307						
PDMCI	Parker Dam,Lak	46.19	89	P	P	02 52 57.2	+1.0
	baz=313						
A30A	Hoffart Farm,	46.29	62	P	P	02 52 55.6	-1.2
	baz=305						
Y12C	Blythe	46.33	89	P	P	02 52 58.4	+1.0
	baz=313						
Y12C	Blythe	46.33	89	eP	P	02 52 58.3	+1.0
	comp=Z,67nm,0.8s						
H26A	Fairpoint	46.36	70	P	P	02 52 56.7	-0.8
	baz=307						
E28A	Huff	46.36	66	P	P	02 52 56.8	-0.6
	baz=306						
G27A	Dupree	46.38	68	P	P	02 52 57.0	-0.6
	baz=306						
PV09	Paradox Valley	46.44	81	eP	P	02 52 59.0	+0.5
J25A	Sunshine Ranch	46.51	72	P	P	02 52 57.8	-1.0
	baz=307						
B30A	Myrvik Farm, E	46.56	63	P	P	02 52 58.0	-0.9
	baz=305						
PV10	Paradox Valley	46.58	81	eP	P	02 53 00.2	+0.7
GLA	Glamis	46.63	90	P	P	02 53 00.8	+1.1
	baz=314						
GLA	Glamis

ULM				ScP	ScP	02 58 02.8	-1.3
	comp=Z,14nm,0.7s,baz=309,slow=4.7,SNR=14						
ULM	Lac du Bonnet	46.83	60	eP	P	02 52 59.8	-1.2
	comp=Z,135nm,2.0s						
ULM				pP	pP	02 53 45.2	-0.2
ULM				ScP	ScP	02 58 02.8	-1.3
PHWY	Pilot Hill	46.84	75	eP	P	02 53 01.1	-0.4
	comp=Z,27nm,0.6s						
A31A	Linda, St. Vin	46.90	62	P	P	02 53 00.3	-1.2
	baz=305						
C30A	Mose, Pekin	46.92	64	P	P	02 53 00.3	-1.4
	baz=306						
B31A	Greenbush Farm	46.94	63	P	P	02 53 00.8	-1.1
	baz=306						
E29A	Napoleon	46.95	66	P	P	02 53 00.9	-1.1
	baz=306						
J26A	Sides Ranch, S	46.98	71	P	P	02 53 01.6	-0.7
	baz=308						
PV01	Paradox Valley	47.01	81	eP	P	02 53 03.3	+0.5
WUAZ	Wupatki	47.05	85	P	P	02 53 04.5	+1.4
	baz=312						
WUAZ	Wupatki	47.05	85	eP	P	02 53 04.3	+1.2
	comp=Z,238nm,1.4s						
WUAZ				ePcP	PcP	02 54 33.5	+1.9
WUAZ				eScP	ScP	02 58 05.3	-0.1
I27A	Quinn	47.10	70	P	P	02 53 02.9	-0.3
	baz=307						
D30A	Buchanan	47.12	65	P	P	02 53 02.2	-1.0
	baz=306						
Y14A	Wickenburg	47.13	88	eP	P	02 53 04.5	+0.9
	comp=Z,196nm,1.1s						
G28A	Parade	47.13	68	P	P	02 53 02.9	-0.6
	baz=307						
C31A	Landman Farms,	47.27	63	P	P	02 53 03.0	-1.4
	baz=306						
A32A	Rocking H Ranc	47.27	62	P	P	02 53 03.2	-1.2
	baz=306						
F29A	Eureka	47.29	67	P	P	02 53 03.4	-1.2
	baz=307						
SMCO	Snowmass	47.29	78	eP	P	02 53 05.2	+0.1
	comp=Z,27nm,0.5s						
H28A	Mission Ridge	47.32	69	P	P	02 53 04.4	-0.5
	baz=307						
TLY	Talaya	47.39	303	P	P	02 53 05.9	+0.6
	comp=Z,7.6nm,0.7s,baz=27,slow=6.7,SNR=4.6						
TLY	Talaya	47.39	303	eP	P	02 53 06.2	+0.9
TLY				eS	S	02 59 47.5	+4.3
TLY				e		03 01 03.5	
TLY				e		03 02 42.2	
TLY				pmax	pmax		
	comp=Z,19nm,1.2s						
TLY				MLR	MLR		
	comp=Z,134nm,14.0s						
E30A	Jud	47.40	66	P	P	02 53 03.8	-1.6
	baz=307						
113A	Mohawk Valley,	47.47	90	eP	P	02 53 06.7	+0.6
	comp=Z,95nm,1.6s						
BJI	Beijing	47.49	283	P	P	02 53 06.4	+0.2
BJI				pP	pP	02 53 47.5	-3.3
BJI				PcP	PcP	02 54 32.6	-0.2
BJI				PP	PP	02 54 59.0	-0.2
BJI				S	S	02 59 44.8	+0.1
BJI				pmax	pmax		
	comp=Z,13nm,1.4s						
BJI				pmax	pmax		
	comp=Z,190nm,5.0s						
B32A	Ashes, Strandq	47.56	62	P	P	02 53 05.3	-1.3
	baz=306						
G29A	Hoven	47.62	68	P	P	02 53 06.1	-1.1
	baz=307						
J27A	Elkhorn Farm,	47.63	71	P	P	02 53 07.1	-0.3
	baz=308						
I28A	Midland	47.65	70	P	P	02 53 07.1	-0.3
	baz=308						
MVCO	Mesa Verde	47.66	81	P	P	02 53 08.3	+0.4
	baz=311						
ISCO	Idaho Springs	47.70	77	P	P	02 53 08.6	+0.4
	baz=310						
ISCO	Idaho Springs	47.70	77	eP	P	02 53 08.7	+0.4
ISCO				pmax	pmax		
	comp=Z,40nm,0.8s						
ISCO	Idaho Springs	47.70	77	eP	P	02 53 08.7	+0.4
	comp=Z,40nm,0.8s						
D31A	Mcclaflin, Tow	47.72	64	P	P	02 53 06.6	-1.3
	baz=307						
F30A	Leola	47.73	66	P	P	02 53 06.8	-1.2
	baz=307						
X16A	Lo Mia Camp, P	47.75	86	eP	P	02 53 10.0	+1.5
	comp=Z,47nm,0.8s						
H29A	Onida	47.80	68	P	P	02 53 07.9	-0.7
	baz=308						
ULN	Ulaanbaatar	47.85	297	d iP	P	02 53 09.3	+0.3
ULN				pmax	pmax		
	comp=Z,33nm,1.0s						
A33A	Warroad	47.85	61	P	P	02 53 07.6	-1.2
	baz=306						
C32A	Crookston	47.90	63	P	P	02 53 07.9	-1.4
	baz=306						
E31A	Nome	47.92	65	P	P	02 53 08.1	-1.4
	baz=307						
J28A	Allard Ranch,	47.97	70	P	P	02 53 09.8	-0.1
	baz=308						
AGMN	Agassiz Nation	47.98	62	P	P	02 53 08.5	-1.4
	baz=306						
AGMN	Agassiz Nation	47.98	62	eP	P	02 53 08.4	-1.5
	comp=Z,82nm,1.4s						
D32A	Dogwood Acres,	48.05	64	P	P	02 53 08.8	-1.6
	baz=307						
G30A	Faulkton	48.10	67	P	P	02 53 09.7	-1.1
	baz=308						
I29A	Vivian Onida	48.13	69	P	P	02 53 10.4	-0.7
	baz=308						
B33A	Robert and Kas	48.14	62	P	P	02 53 09.8	-1.3
	baz=306						
F31A	Hecla	48.15	66	P	P	02 53 09.6	-1.6
	baz=307						
SONA1	Songino Array	48.21	298	eP	P	02 53 12.3	+0.6
SONA1				ePcP	PcP	02 54 36.4	+0.8
SONA1				eScP	ScP	02 58 07.6	-2.6
SONM	Songino Array	48.22	298	P	P	02 53 12.3	+0.4
	comp=Z,12nm,0.6s,baz=49,slow=8.5,SNR=18						
SONM				PcP	PcP	02 54 35.2	-0.4
	comp=Z,8.9nm,0.7s,baz=80,slow=3.1,SNR=5.5						
SONM				ScP	ScP	02 58 08.3	-1.9
	comp=Z,14nm,0.9s,baz=50,slow=3.5,SNR=11						
W18A	Petrified Fore	48.31	84	P	P	02 53 13.9	+1.1
	baz=312						
W18A	Petrified Fore	48.31	84	eP	P	02 53 14.1	+1.3
	comp=Z,328nm,1.5s						
S22A	4UR Ranch, Cre	48.31	80	P	P	02 53 13.9	+1.0
	baz=311						
S22A	4UR Ranch, Cre	48.31	80	eP	P	02 53 14.1	+1.2
	comp=Z,102nm,1.3s						
ZAK	Zakamensk	48.34	302	eP	P	02 53 12.4	-0.3
ZAK				pmax	pmax		
	comp=Z,15nm,1.4s						
ZAK				pmax	pmax		
	comp=Z,6.0nm,1.1s						
C33A	Trail	48.35	62	P	P	02 53 10.9	-1.8
	baz=307						
E32A	Braaten, Kindr	48.35	64	P	P	02 53 11.1	-1.6
	baz=307						
KBS	Kingsbay	48.49	358	eP	P	02 53 14.0	+0.7
KBS				epP	pP	02 53 58.6	+0.5
KBS	Kingsbay	48.49	358	eP	P	02 53 15.7	+2.4
KBS				pmax	pmax		
	comp=Z,190nm,1.6s						
KBS	Kingsbay	48.49	358	eP	P	02 53 15.7	+2.4
	comp=Z,193nm,1.6s						
J29A	Okreek	48.50	70	P	P	02 53 13.5	-0.4
	baz=308						
B34A	Aery, Baudette	48.51	61	P	P	02 53 12.5	-1.4
	baz=307						
Q24A	Divide	48.51	77	P	P	02 53 14.9	+0.5
	baz=310						
Q24A	Divide	48.51	77	eP	P	02 53 15.1	+0.6
	comp=Z,34nm,0.6s						
G31A	Conde	48.56	66	P	P	02 53 12.8	-1.5
	baz=308						
X18A	Snowflake	48.58	85	eP	P	02 53 16.2	+1.4
	comp=Z,216nm,1.5s						
X18A				eScP	ScP	02 58 11.8	-0.1
214A	Organ Pipe Nat	48.61	90	P	P	02 53 15.9	+1.0
	baz=314						
SUSD	Miller	48.63	68	P	P	02 53 13.8	-1.0
	baz=308						
D33A	AnnSam, Waubun	48.69	63	P	P	02 53 13.8	-1.4
	baz=307						
I30A	Oacoma	48.69	69	P	P	02 53 14.6	-0.8
	baz=308						
MOY	Mondy	48.74	304	eP	P	02 53 16.2	+0.5
MOY				pmax	pmax		
	comp=Z,43nm,3.2s						
F32A	Veblen	48.76	65	P	P	02 53 14.1	-1.8
	baz=308						
H31A	Wolsey	48.87	67	P	P	02 53 15.6	-1.1
	baz=308						
C34A	RKJ Ranch, Bem	48.88	62	P	P	02 53 15.2	-1.6
	baz=307						
G32A	Webster	48.94	66	P	P	02 53 15.8	-1.4
	baz=308						
E33A	Westby DABS, E	48.99	64	P	P	02 53 16.3	-1.3
	baz=308						
J30A	Dallas	49.02	69	P	P	02 53 17.3	-0.5
	baz=309						
OGNE	Ogallala	49.07	73	P	P	02 53 18.5	+0.2
	baz=310						
OGNE	Ogallala	49.07	73	eP	P	02 53 18.8	+0.4
	comp=Z,515nm,1.8s						
D34A	Park Rapids	49.07	63	P	P	02 53 16.9	-1.3
	baz=308						
B35A	Bob, Littlefor	49.08	61	P	P	02 53 17.1	-1.1
	baz=307						
SDCO	Great Sand Dun	49.10	79	P	P	02 53 19.8	+0.9
	baz=311						
I31A	Royce, Wessing	49.12	68	P	P	02 53 17.2	-1.4
	baz=308						
SPA0	Spitsbergen Ar	49.12	357	eP	P	02 53 19.5	+1.4
SPITS	Spitsbergen Ar	49.12	357	P	P	02 53 19.2	+1.1
	comp=Z,7.8nm,0.4s,baz=43,slow=6.5,SNR=426						
SPITS				pP	pP	02 54 00.3	-2.8
	comp=Z,3.5nm,0.5s,baz=39,slow=9.4,SNR=1.6						
F33A	5 Mile Ranch,	49.24	65	P	P	02 53 18.0	-1.5
	baz=308						
JOW	Kunigami	49.26	261	P	P	02 53 19.7	-0.2
	comp=Z,61nm,0.9s,baz=14,slow=5.5,SNR=15						
JOW				PcP	PcP	02 54 40.0	+0.5
	comp=Z,36nm,0.6s,baz=24,slow=2.9,SNR=11						
JOW	Kunigami	49.26	261	eP	P	02 53 19.2	-0.7
	comp=Z,103nm,1.1s						
JOW				PcP	PcP	02 54 40.0	+0.5
C35A	Jirik Farms, M	49.35	62	P	P	02 53 18.7	-1.6
	baz=308						
K30A	Basset	49.36	70	P	P	02 53 20.4	-0.1
	baz=309						
TIA	Tai'an	49.43	279	||P	P	02 53 20.7	-0.3
TIA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
E34A	Wadena	49.44	63	P	P	02 53 19.5	-1.4
	baz=308						
H32A	Carlson Farm,	49.44	67	P	P	02 53 19.7	-1.3
	baz=308						
J31A	Geddes	49.47	69	P	P	02 53 20.5	-0.8
	baz=309						
G33A	Ortonville	49.56	65	P	P	02 53 20.1	-1.8
	baz=308						
TUC	Tucson	49.60	88	P	P	02 53 23.5	+1.1
	baz=314						
TUC	Tucson	49.60	88	eP	P	02 53 23.5	+1.1
TUC				pmax	pmax		
	comp=Z,200nm,1.6s						
TUC	Tucson	49.60	88	eP	P	02 53 23.5	+1.1
	comp=Z,199nm,1.6s						
TUC				ePP	PP	02 55 20.6	+2.0
TUC				eScP	ScP	02 58 15.7	-0.5
HHC	Hu-ho-hao-te	49.67	287	eP	P	02 53 23.4	+0.5
HHC				pP	pP	02 54 13.1	+5.2
HHC				S	S	03 00 14.7	-0.8
HHC				sS	sS	03 01 34.2	-0.2
HHC				pmax	pmax		
	comp=Z,37nm,1.0s						
D35A	Remer	49.69	62	P	P	02 53 21.3	-1.6
	baz=308						
H33A	Prehn Over Nor	49.71	66	P	P	02 53 21.7	-1.4
	baz=309						
I32A	Karley and Nic	49.72	67	P	P	02 53 21.3	-1.9
	baz=309						
E35A	Pequot Lakes	49.83	63	P	P	02 53 22.8	-1.1
	baz=308						
F34A	Alexandria	49.84	64	P	P	02 53 22.7	-1.3
	baz=308						
K31A	O'Neill	49.88	69	P	P	02 53 23.7	-0.7
	baz=309						
C36A	Pine Crest Far	49.92	61	P	P	02 53 23.1	-1.5
	baz=308						
J32A	Parkston	49.92	68	P	P	02 53 23.2	-1.5
	baz=309						
KSCO	Kaye Shedlock'	49.97	76	P	P	02 53 26.0	+0.8
	baz=311						
KSCO	Kaye Shedlock'	49.97	76	eP	P	02 53 26.1	+0.9
	comp=Z,307nm,1.3s						
G34A	Benson	49.97	65	P	P	02 53 23.5	-1.5
	baz=309						
I33A	Coleman	50.08	67	P	P	02 53 23.9	-1.9
	baz=309						
D36A	Goodland	50.11	62	P	P	02 53 24.5	-1.5
	baz=308						
L31A	Butterfield Fa	50.12	70	P	P	02 53 25.9	-0.3
	baz=310						
T25A	Trinidad	50.15	79	P	P	02 53 27.7	+1.0
	baz=312						
T25A	Trinidad	50.15	79	eP	P	02 53 27.6	+1.0
	comp=Z,223nm,1.0s						
F35A	Swanville	50.17	64	P	P	02 53 25.2	-1.3
	baz=309						
H34A	Spellman Lake,	50.26	66	P	P	02 53 25.7	-1.5
	baz=309						
C37A	Embarrass	50.28	60	P	P	02 53 25.8	-1.5
	baz=308						
K32A	Verdigre	50.30	69	P	P	02 53 26.3	-1.3
	baz=310						
LAZ	Ladron	50.36	83	eP	P	02 53 29.7	+1.4
ANMO	Albuquerque	50.40	82	P	P	02 53 29.3	+0.7
	comp=Z,17nm,1.0s,baz=317,slow=8.3,SNR=43						
ANMO				pP	pP	02 54 13.9	+0.1
	comp=Z,5.0nm,0.8s,baz=327,slow=8.1,SNR=1.6						
ANMO				PcP	PcP	02 54 45.8	+2.0
	comp=Z,13nm,0.8s,baz=264,slow=2.5,SNR=9.1						
ANMO				ScP	ScP	02 58 20.7	+0.9
	comp=Z,12nm,1.0s,baz=281,slow=4.2,SNR=16						
ANMO	Albuquerque	50.40	82	P	P	02 53 29.3	+0.7
	baz=313						
ANMO	Albuquerque	50.40	82	ceP	P	02 53 29.2	+0.7
ANMO				pmax	pmax		
	comp=Z,60nm,1.5s						
ANMO	Albuquerque	50.40	82	eP	P	02 53 29.3	+0.7
	comp=Z,82nm,1.5s						
ANMO				pP	pP	02 54 13.9	+0.1
ANMO				PcP	PcP	02 54 45.8	+2.0
ANMO				eScP	ScP	02 58 19.1	-0.7
J33A	Davis	50.45	68	P	P	02 53 27.1	-1.6
	baz=309						
E36A	McGregor	50.47	62	P	P	02 53 27.4	-1.3
	baz=309						
D37A	Cotton	50.51	61	P	P	02 53 27.3	-1.7
	baz=308						
EYMN	Ely	50.51	60	eP	P	02 53 27.8	-1.3
	comp=Z,77nm,1.8s						
GUMO	Guam	50.55	235	P	P	02 53 27.7	-1.9
	comp=Z,102nm,0.5s,baz=191,slow=7.7,SNR=6.3						
GUMO	Guam	50.55	235	eP	P	02 53 28.2	-1.4
	comp=Z,196nm,0.8s						
M31A	Lambtecht Ranc	50.58	71	P	P	02 53 28.8	-0.8
	baz=310						
I34A	Hadley	50.61	66	P	P	02 53 28.1	-1.7
	baz=309						
G35A	Watkins	50.62	64	P	P	02 53 28.3	-1.5
	baz=309						
L32A	Elgin	50.70	70	P	P	02 53 29.7	-0.9
	baz=310						
Y22D	IRIS PASSCAL I	50.72	83	P	P	02 53 32.6	+1.7
	baz=313						
Y22D	IRIS PASSCAL I	50.72	83	eP	P	02 53 28.3	-2.6
	comp=Z,81nm,0.8s						
BTO	Baotou	50.72	288	eP	P	02 53 31.2	+0.4
BTO				pmax	pmax		
	comp=Z,23nm,0.4s						
LPM	Los Pinos Moun	50.73	83	eP	P	02 53 32.1	+1.1
LPM				ePP	PP	02 55 20.1	-8.9
F36A	Milaca	50.74	63	P	P	02 53 29.3	-1.4
	baz=309						
H35A	Sunnyside Ranc	50.76	65	P	P	02 53 27.6	-3.3
	baz=309						
C38A	Sawbill Land.	50.77	60	P	P	02 53 29.5	-1.5
	baz=309						
BNM	Barren Site	50.84	83	eP	P	02 53 33.0	+1.1
K33A	Hardington	50.89	68	P	P	02 53 30.9	-1.0
	baz=310						
E37A	Wrenshall	50.90	62	P	P	02 53 30.4	-1.5
	baz=309						
N31A	Bailey Ranch,	50.93	71	P	P	02 53 31.9	-0.3
	baz=310						
BGNE	Belgrade	51.01	70	P	P	02 53 32.2	-0.6
	baz=310						
BGNE	Belgrade	51.01	70	eP	P	02 53 32.2	-0.6
	comp=Z,177nm,1.2s						
G36A	St. Michael	51.01	64	P	P	02 53 32.0	-0.7
	baz=309						
J34A	George	51.04	67	P	P	02 53 31.6	-1.4
	baz=310						
O31A	Woolen Ranch,	51.15	72	P	P	02 53 33.5	-0.4
	baz=311						
319A	Douglas	51.16	88	eP	P	02 53 35.2	+1.0
	comp=Z,107nm,1.4s						
319A				eScP	ScP	02 58 23.5	+0.5
I35A	Creekview Farm	51.21	66	P	P	02 53 33.0	-1.3
	baz=310						
NJ2	Nanjing	51.23	274	eP	P	02 53 37.0	+2.5
NJ2				pmax	pmax		
	comp=Z,34nm,0.5s						
121A	Cookes Peak, D	51.26	85	P	P	02 53 36.1	+1.1
	baz=314						
SUMG	Summit	51.30	15	i P	pP	02 54 23.4	+3.1
	comp=Z,62nm,1.3s						
SUMG	Summit	51.30	15	eP	P	02 53 35.9	+0.9
SUMG				e*PP	pP	02 54 20.1	-0.2
SUMG	Summit	51.30	15	eP	P	02 53 35.9	+0.9
	comp=Z,45nm,1.1s						
C39A	Grand Marais	51.31	59	P	P	02 53 33.4	-1.5
	baz=309						
H36A	Jessenland, He	51.33	65	P	P	02 53 34.5	-0.7
	baz=310						
K34A	Le Mars	51.35	68	P	P	02 53 34.2	-1.1
	baz=310						
N32A	Stulken Farm,	51.35	71	P	P	02 53 34.1	-1.3
	baz=311						
J35A	Milford	51.41	67	P	P	02 53 33.8	-1.9
	baz=310						
M33A	Taylor Creek F	51.45	70	P	P	02 53 34.8	-1.3
	baz=310						
SPMN	Marine on St.	51.53	63	P	P	02 53 35.4	-1.2
	baz=310						
SPMN	Marine on St.	51.53	63	eP	P	02 53 35.8	-0.8
	comp=Z,52nm,1.5s						
I36A	Fitzsimmons Fa	51.65	65	P	P	02 53 36.0	-1.5
	baz=310						
L34A	Svendsen Farm,	51.66	69	P	P	02 53 36.1	-1.5
	baz=310						
O32A	Brockman Farm,	51.69	71	P	P	02 53 36.7	-1.1
	baz=311						
CBKS	Cedar Bluff	51.80	74	P	P	02 53 38.4	-0.3
	baz=312						
K35A	Storm Lake	51.81	67	P	P	02 53 37.2	-1.5
	baz=310						
HSIG		51.82	91	eP	P	02 53 39.7	+0.7
	comp=Z,120nm,1.6s						
HSIG				eScP	ScP	02 58 25.2	-0.6
M34A	Aspy Farms, Fr	51.84	69	P	P	02 53 38.3	-0.7
	baz=311						
N33A	J Bar K, Exete	51.85	71	P	P	02 53 37.9	-1.1
	baz=311						
H37A	Dierke Farm, C	51.88	64	P	P	02 53 38.3	-0.9
	baz=310						
J36A	Seneca 1, Swea	51.91	66	P	P	02 53 37.8	-1.6
	baz=310						
P32A	Huiting Farm,	51.92	72	P	P	02 53 38.8	-0.8
	baz=311						
I37A	Lemond, Waseca	51.99	65	P	P	02 53 38.8	-1.2
	baz=310						
L35A	Bielow Farm, R	52.03	68	P	P	02 53 38.6	-1.8
	baz=311						
O33A	Hebron	52.21	71	P	P	02 53 40.7	-1.0
	baz=311						
TARA	Tarawa	52.27	196	eP	P	02 53 43.5	+1.2
	comp=Z,186nm,0.6s						
K36A	Gilmore City	52.30	67	P	P	02 53 41.0	-1.3
	baz=311						
N34A	Lincoln	52.32	70	P	P	02 53 41.3	-1.3
	baz=311						
J37A	Redenius Farm,	52.36	66	P	P	02 53 41.6	-1.2
	baz=310						
Q32A	Meitler Ranch,	52.36	73	P	P	02 53 42.4	-0.5
	baz=312						
M35A	Neola	52.37	69	P	P	02 53 42.0	-0.8
	baz=311						
L36A	Harm Buss Farm	52.53	67	P	P	02 53 42.6	-1.5
	baz=311						
I38A	Scanlan Farm,	52.56	64	P	P	02 53 43.3	-0.9
	baz=310						
P33A	Williams Farm,	52.57	72	P	P	02 53 43.7	-0.6
	baz=312						
O34A	Beatrice	52.65	71	P	P	02 53 43.8	-1.1
	baz=311						
R32A	Long Quarter,	52.66	74	P	P	02 53 44.6	-0.5
	baz=312						
K37A	Belmond	52.67	66	P	P	02 53 43.4	-1.6
	baz=311						
Q33A	Connelly Farm,	52.78	72	P	P	02 53 45.4	-0.5
	baz=312						
N35A	Tabor	52.80	69	P	P	02 53 45.5	-0.5
	baz=311						
M36A	Felix, Anita	52.88	68	P	P	02 53 45.6	-1.0
	baz=311						
COWI	Conover	52.93	60	eP	P	02 53 45.5	-1.5
	comp=Z,20nm,1.3s						
J38A	Wedel Dairy, R	52.95	65	P	P	02 53 45.9	-1.2
	baz=311						
P34A	Walnut Farm, R	52.99	71	P	P	02 53 46.4	-1.1
	baz=312						
S32A	Newby Ranch, P	53.01	74	P	P	02 53 47.0	-0.6
	baz=312						
L37A	Phoenix Point,	53.03	67	P	P	02 53 46.5	-1.2
	baz=311						
O35A	Humboldt	53.04	70	P	P	02 53 46.4	-1.4
	baz=312						
R33A	Olander Ranch,	53.16	73	P	P	02 53 48.0	-0.6
	baz=312						
N36A	Muff Farm, Cla	53.21	69	P	P	02 53 48.4	-0.7
	baz=312						
K38A	Parkersburg	53.23	66	P	P	02 53 48.1	-1.0
	baz=311						
MSTX	Muleshoe	53.28	80	P	P	02 53 50.0	+0.2
	baz=314						
MSTX	Muleshoe	53.28	80	eP	P	02 53 50.0	+0.2
	comp=Z,457nm,1.8s						
MNTX	Cornudas Mount	53.30	84	P	P	02 53 50.8	+1.0
	baz=315						
AMTX	Amarillo	53.30	79	P	P	02 53 50.2	+0.3
	baz=313						
M37A	Trindle Farm,	53.33	68	P	P	02 53 49.2	-0.7
	baz=311						
Q34A	Chapman	53.35	72	P	P	02 53 49.3	-0.8
	baz=312						
T32A	Huddler Ranch,	53.37	75	P	P	02 53 49.6	-0.6
	baz=313						
SFJD	Kangerlussuaq	53.38	24	P	P	02 53 49.7	-0.1
	comp=Z,12nm,0.6s,baz=326,slow=6.7						
SFJD	Kangerlussuaq	53.38	24	eP	P	02 53 50.0	+0.2
	comp=Z,57nm,1.4s						
L38A	Oak Wood Farm,	53.46	66	P	P	02 53 49.8	-1.0
	baz=311						
P35A	Duane Minner,	53.47	71	P	P	02 53 50.0	-1.0
	baz=312						
R34A	Isabella, Hill	53.59	73	P	P	02 53 51.0	-0.8
	baz=312						
S33A	Kaszmaul Farm,	53.63	74	P	P	02 53 51.4	-0.8
	baz=313						
O36A	Bolckow	53.67	70	P	P	02 53 51.2	-1.1
	baz=312						
N37A	Lee Faris, Mou	53.68	68	P	P	02 53 51.7	-0.7
	baz=312						
M38A	Pleasantville	53.81	67	P	P	02 53 52.1	-1.2
	baz=312						
T33A	Patterson Ranc	53.83	74	P	P	02 53 52.5	-1.1
	baz=313						
U32A	Winter Ranch,	53.87	76	P	P	02 53 53.6	-0.3
	baz=313						
P36A	Good Intent, A	53.87	70	P	P	02 53 52.7	-1.1
	baz=312						
Q35A	Mercer Eighty,	53.91	71	P	P	02 53 52.7	-1.4
	baz=312						
S34A	Willow Spring	54.07	73	P	P	02 53 54.3	-1.0

baz=313
O37A Wolven Farm, M 54.11 69 P **P** 02 53 54.5 -1.0
baz=312
Q36A Arnold C. Orve 54.17 71 P **P** 02 53 54.7 -1.3
baz=312
R35A Emporia Munici 54.18 72 P **P** 02 53 55.2 -0.9
baz=313
N38A Joes South For 54.20 68 P **P** 02 53 55.1 -1.1
baz=312
V32A Arapaho 54.29 76 P **P** 02 53 57.0 0.0
baz=313
U33A Lingo Farm, Me 54.35 75 P **P** 02 53 56.7 -0.7
baz=313
P37A Lathrop 54.38 70 P **P** 02 53 56.3 -1.2
baz=312
JFWS Jewell Farm 54.44 64 *e*P **P** 02 53 56.3 -1.6
JFWS pmax pmax
comp=Z,15nm,0.7s
JFWS Jewell Farm 54.44 64 *e*P **P** 02 53 56.3 -1.6
comp=Z,14nm,0.7s
T34A McClaskey Farm 54.49 74 P **P** 02 53 57.7 -0.6
baz=313
O38A Galt 54.52 69 P **P** 02 53 57.3 -1.1
baz=312
S35A Otter Creek Ra 54.55 73 P **P** 02 53 57.8 -0.9
baz=313
N39A Derby Farms, D 54.56 67 P **P** 02 53 57.5 -1.3
baz=312
R36A Gordon, Harris 54.58 71 P **P** 02 53 58.0 -1.0
baz=313
W32A Sentinel 54.59 77 P **P** 02 53 59.5 +0.4
baz=314
V33A Lossen Ranch, 54.67 76 P **P** 02 53 59.2 -0.4
baz=313
U34A Anderson Ranch 54.69 75 P **P** 02 53 59.4 -0.3
baz=313
U34A Anderson Ranch 54.69 75 *e*P **P** 02 53 59.4 -0.3
comp=Z,161nm,0.8s
Q37A Longview Farm, 54.81 70 P **P** 02 53 58.8 -1.8
baz=313
P38A Dawn 54.82 69 P **P** 02 53 59.4 -1.3
baz=313
ZAA0 Zalesovo Array 54.84 315 *e*P **P** 02 54 00.8 +0.2
ZALV Zalesovo Beam 54.84 315 P **P** 02 54 00.1 -0.4
comp=Z,3.1nm,0.8s,baz=64,slow=6.8,SNR=6.7
ZALV PcP **PcP** 02 54 59.7 -0.3
comp=Z,6.8nm,0.7s,baz=17,slow=3.8,SNR=8.5
NVS Novosibirsk 54.90 316 *e*P **P** 02 54 00.3 -0.7
NVS *e* 02 54 50.7
S36A Lake Cedric, C 54.94 72 P **P** 02 54 00.4 -1.2
baz=313
O39A Kirksville 54.95 68 P **P** 02 54 00.3 -1.3
baz=312
T35A Sooner Cattle 54.96 73 P **P** 02 54 00.6 -1.0
baz=313
R37A Teagarden Farm 54.97 71 P **P** 02 54 00.1 -1.6
baz=313
WHN Wuhan 55.02 276 P **P** 02 54 01.7 -0.4
W33A Caddo, Fort Co 55.03 76 P **P** 02 54 02.7 +0.5
baz=314
V34A Guthrie 55.11 75 P **P** 02 54 02.5 -0.4
baz=314
V34A Guthrie 55.11 75 *e*P **P** 02 54 02.4 -0.4
comp=Z,91nm,0.8s
WMOK Wichita Mounta 55.13 77 *e*P **P** 02 54 00.7 -2.3
WMOK pmax pmax
comp=Z,44nm,0.8s
WMOK Wichita Mounta 55.13 77 *e*P **P** 02 54 00.7 -2.3
comp=Z,44nm,0.8s
U35A Pawnee 55.20 74 P **P** 02 54 02.7 -0.7
baz=314
Q38A Cooks Store, C 55.23 70 P **P** 02 54 01.9 -1.7
baz=313
T36A Boggs Farm, Ca 55.23 73 P **P** 02 54 02.5 -1.1
baz=313
S37A Fort Scott 55.35 72 P **P** 02 54 03.1 -1.4
baz=313
W34A Bridge Creek, 55.38 76 P **P** 02 54 04.8 +0.1
baz=314
W34A Bridge Creek, 55.38 76 *e*P **P** 02 54 04.9 +0.1
comp=Z,59nm,0.8s
KNTN Kanton 55.41 176 *e*P **P** 02 54 05.9 +0.8
comp=Z,112nm,0.6s
O40A La Belle 55.42 68 P **P** 02 54 03.6 -1.3
baz=313
X33A Lawton 55.43 77 P **P** 02 54 05.2 +0.1
baz=314
Q39A Willow Grove F 55.53 69 P **P** 02 54 04.3 -1.4
baz=313
V35A Meyer Ranch, C 55.56 75 P **P** 02 54 05.5 -0.5
baz=314
R38A Fenwick Farm, 55.59 71 P **P** 02 54 03.9 -2.2
baz=313
P40A Paris 55.73 68 P **P** 02 54 05.8 -1.3
baz=313
Y33A Hilltop Ranch, 55.73 77 P **P** 02 54 07.2 0.0
baz=314
T37A Cheneyville 18 55.74 72 P **P** 02 54 06.1 -1.2
baz=314
U36A Oologah 55.77 73 P **P** 02 54 06.6 -0.9
baz=314
X34A Smith Ranch, M 55.78 76 P **P** 02 54 08.1 +0.5
baz=314
XAN Xi'an 55.81 283 P **P** 02 54 07.3 -0.5
XAN pP pP 02 54 55.5 +1.6
XAN sP sP 02 55 17.5 +1.1
XAN pmax pmax
comp=Z,11nm,1.1s
XAN pmax pmax
comp=Z,94nm,8.7s
XAN LR LR
comp=Z,110nm,16.8s
XAN LR LR
comp=Z,130nm,14.0s
XAN LR LR
comp=Z,180nm,17.7s
SSLB Suanglung 55.94 265 *e*P **P** 02 54 08.6 -0.2
comp=Z,56nm,0.8s
W35A Tecumseh 55.96 75 P **P** 02 54 08.9 0.0
baz=314
S38A Stockton 55.97 71 P **P** 02 54 07.0 -1.9
baz=314
R39A Chumby, Stover 56.00 70 P **P** 02 54 06.8 -2.3
baz=313
TX31 Lajitas Ar. Si 56.01 85 *e*P **P** 02 54 09.8 +0.4
TX31 *e*ScP **ScP** 02 58 44.5 +0.3
TXAR Lajitas Array 56.02 85 P **P** 02 54 09.8 +0.4
comp=Z,26nm,0.7s,baz=299,slow=4.6,SNR=391
TXAR pP **pP** 02 54 54.4 -1.2
comp=Z,14nm,0.9s,baz=308,slow=4.5,SNR=3.6
TXAR PcP **PcP** 02 55 06.4 +1.2
comp=Z,8.0nm,0.5s,baz=275,slow=1.4,SNR=7.0
TXAR ScP **ScP** 02 58 44.5 +0.3
comp=Z,17nm,0.7s,baz=290,slow=3.1,SNR=30
YULB Yu-li 56.03 264 *e*P **P** 02 54 09.8 +0.4
comp=Z,74nm,1.5s
V36A Jenks 56.07 74 P **P** 02 54 09.1 -0.5
baz=314
TUL1 Leonard 56.07 74 P **P** 02 54 09.1 -0.5
baz=314
TUL1 Leonard 56.07 74 *e*P **P** 02 54 09.0 -0.5
comp=Z,53nm,0.8s
Q40A Laux Farm, Aux 56.08 69 P **P** 02 54 08.3 -1.3
baz=313
ABTX Abilene, Hawle 56.09 79 P **P** 02 54 10.3 +0.5
baz=315
ABTX Abilene, Hawle 56.09 79 *e*P **P** 02 54 10.3 +0.5
comp=Z,217nm,1.3s
U37A Salina 56.12 73 P **P** 02 54 09.1 -0.9
baz=314
Z33A Whitaker Ranch 56.15 78 P **P** 02 54 10.2 0.0
baz=315
T38A Diamond 56.16 72 P **P** 02 54 08.9 -1.4
baz=314
S39A Bolivar 56.27 71 P **P** 02 54 08.6 -2.4
baz=314
Y34A Reagan Ranch, 56.28 77 P **P** 02 54 11.5 +0.4
baz=314
SLBS Sierra La Lagu 56.34 95 *e*P **P** 02 54 12.6 +0.8
comp=Z,32nm,0.8s
W36A Wetumka 56.35 75 P **P** 02 54 11.5 -0.1
baz=314
X35A Drake 56.43 76 P **P** 02 54 12.1 -0.1
baz=314
R40A Maddies Statio 56.45 69 P **P** 02 54 10.3 -1.9
baz=314
V37A Hulbert 56.47 73 P **P** 02 54 11.5 -0.9
baz=314

TPUB Ta-pu 56.50 265 *e*P **P** 02 54 14.1 +1.3
comp=Z,42nm,0.9s
QZH Quanzhou 56.51 268 ⇓*i*P **P** 02 54 08.2 -4.6
QZH S **S** 03 01 47.0 -0.8
QZH pmax pmax
comp=Z,100nm,0.8s
U38A Gravette 56.52 72 P **P** 02 54 11.5 -1.3
baz=314
133A Hamilton Ranch 56.54 79 P **P** 02 54 13.4 +0.4
baz=315
HPIG 56.54 89 *e*P **P** 02 54 13.1 -0.2
comp=Z,56nm,1.3s
HPIG *e*PP **PP** 02 56 24.2 +3.0
HPIG *e*ScP **ScP** 02 58 46.3 -0.4
HDIL Hopedale 56.56 66 P **P** 02 54 11.7 -1.3
baz=313
HDIL Hopedale 56.56 66 *e*P **P** 02 54 11.8 -1.2
comp=Z,38nm,0.9s
Z34A Collier Ranch, 56.60 77 P **P** 02 54 13.4 +0.1
baz=315
X36A Centrahoma 56.68 75 P **P** 02 54 14.1 +0.2
baz=314
T39A Clever 56.70 71 P **P** 02 54 12.2 -1.8
baz=314
Y35A Marietta 56.74 76 P **P** 02 54 14.8 +0.5
baz=315
KEV Kevo 56.74 351 *e*P **P** 02 54 14.3 +0.5
KEV pmax pmax
comp=Z,30nm,0.9s
KEV Kevo 56.74 351 *e*P **P** 02 54 14.3 +0.5
comp=Z,30nm,0.8s
S40A Lebanon 56.80 70 P **P** 02 54 12.5 -2.2
baz=314
W37B Quinton 56.82 74 P **P** 02 54 14.8 0.0
baz=314
HHAR Hobbs 56.89 72 *e*P **P** 02 54 14.0 -1.4
comp=Z,28nm,0.6s
V38A Canehill 56.91 73 P **P** 02 54 14.6 -1.0
baz=314
233A Rising Star 56.97 79 P **P** 02 54 16.3 +0.3
baz=315
Z35A Perchaven, San 57.02 77 P **P** 02 54 16.1 -0.2
baz=315
134A White-Moore Ra 57.06 78 P **P** 02 54 17.1 +0.4
baz=315
U39A Green Forest 57.08 72 P **P** 02 54 15.2 -1.6
baz=314
ARA0 ARCESS Array S 57.09 352 *e*P **P** 02 54 16.4 +0.1
ARCES ARCESS Array B 57.09 352 P **P** 02 54 16.8 +0.5
comp=Z,16nm,0.8s,baz=28,slow=7.4,SNR=113
ARCES pP **pP** 02 55 00.4 -2.2
comp=Z,6.3nm,0.7s,baz=24,slow=7.0,SNR=3.5
ARCES PcP **PcP** 02 55 07.8 -0.8
comp=Z,12nm,0.7s,baz=17,slow=6.6,SNR=10
ARCES ScP **ScP** 02 58 46.8 -1.4
comp=Z,7.5nm,0.8s,baz=0.0,slow=4.5,SNR=8.6
ARCES LR LR 03 24 02.2
comp=Z,25nm,18.4s,baz=13,slow=41
ARCES PKPPKP **P'P'df** 03 24 08.4 +2.4
comp=Z,3.9nm,0.8s,baz=200,slow=2.4,SNR=4.7
ARE0 ARCESS Array S 57.09 352 *e*P **P** 02 54 17.0 +0.7
ARE0 *e*pP **pP** 02 55 02.5 0.0
ARE0 IAmb IAmb 02 55 08.8
comp=Z,144nm,1.6s
T40A Mansfield 57.10 71 P **P** 02 54 14.9 -1.9
baz=314
Y36A Durant 57.19 76 P **P** 02 54 17.7 +0.2
baz=315
X37A Clayton 57.24 75 P **P** 02 54 17.9 +0.1
baz=315
GTA Gaotai 57.32 293 P **P** 02 54 18.5 0.0
GTA pP pP 02 55 05.2 +0.4
GTA PcP **PcP** 02 55 11.5 +1.3
GTA sP sP 02 55 27.3 0.0
GTA ScP **ScP** 02 58 47.6 -2.3
GTA S **S** 03 01 57.3 -1.1
GTA sS sS 03 03 18.6 -0.8
GTA SS **SS** 03 05 52.2 +1.7
GTA pmax pmax
comp=Z,36nm,0.8s
GTA pmax pmax
comp=Z,130nm,4.9s
GTA LR LR
comp=Z,320nm,19.5s
GTA LR LR
comp=Z,360nm,20.9s
GTA LR LR
comp=Z,220nm,20.4s
SCHQ Schefferville 57.33 41 P **P** 02 54 17.0 -1.2
comp=Z,12nm,0.8s,baz=308,slow=7.6,SNR=19
SCHQ pP **pP** 02 55 02.1 -2.4
comp=Z,24nm,1.1s,baz=318,slow=7.1,SNR=5.9
SCHQ PcP **PcP** 02 55 08.6 -1.2
comp=Z,43nm,0.9s,baz=322,slow=8.0,SNR=17
SCHQ Schefferville 57.33 41 *e*P **P** 02 54 17.8 -0.4
comp=Z,89nm,1.1s
SCHQ pP **pP** 02 55 02.1 -2.4
SCHQ PcP **PcP** 02 55 08.6 -1.2
LZH Lanzhou 57.35 288 ⇑P **P** 02 54 19.6 +0.8
LZH pP pP 02 55 07.0 +1.9
LZH sP sP 02 55 29.1 +1.5
LZH PP **PP** 02 56 32.2 +4.1
LZH S **S** 03 01 59.7 +0.8
LZH sS sS 03 03 21.5 +1.6
LZH SS **SS** 03 05 55.0 +3.9
LZH pmax pmax
comp=Z,110nm,1.5s
LZH pmax pmax
comp=Z,400nm,6.0s
LZH LR LR
comp=Z,440nm,13.5s
LZH LR LR
comp=Z,360nm,14.0s
LZH LR LR
comp=Z,540nm,15.2s
V39A Pettigrew 57.37 72 P **P** 02 54 17.5 -1.3
baz=314
W38A Poteau 57.40 74 P **P** 02 54 18.8 -0.1
baz=315
333A Richland Sprin 57.41 80 P **P** 02 54 19.1 0.0
baz=316
234A Clairette 57.43 79 P **P** 02 54 19.6 +0.4
baz=315
U40A Yellville 57.46 71 P **P** 02 54 17.8 -1.6
baz=314
135A Vickery Place, 57.47 78 P **P** 02 54 20.0 +0.5
baz=315
X38A Whitesboro 57.50 74 P **P** 02 54 19.7 0.0
baz=315
Y37A Hugo 57.52 75 P **P** 02 54 19.8 0.0
baz=315
JCT Junction City 57.52 81 P **P** 02 54 19.7 -0.3
baz=316
JCT Junction City 57.52 81 *e*P **P** 02 54 19.6 -0.3
JCT pmax pmax
comp=Z,75nm,0.6s
JCT Junction City 57.52 81 *e*P **P** 02 54 19.6 -0.3
comp=Z,75nm,0.6s
Z36A Blue Ridge 57.54 76 P **P** 02 54 19.9 -0.1
baz=315
LVZ Lovozero 57.65 347 ⇓*i*P **P** 02 54 19.6 -0.6
LVZ pmax pmax
comp=Z,57nm,1.0s
LVZ Lovozero 57.65 347 *e*P **P** 02 54 20.6 +0.4
comp=Z,50nm,0.9s
W39A Magazine 57.74 73 P **P** 02 54 20.6 -0.7
baz=315
433A Art 57.75 80 P **P** 02 54 21.2 -0.3
baz=316
KTK1 Kautokeino 57.80 352 *e*P **P** 02 54 21.9 +0.7
KTK1 *e*pP **pP** 02 55 07.7 +0.2
WHTX Lake Whitney, 57.85 78 P **P** 02 54 22.6 +0.5
baz=315
WHTX Lake Whitney, 57.85 78 *e*P **P** 02 54 22.5 +0.5
comp=Z,122nm,0.6s
334A Lometa 57.85 79 P **P** 02 54 22.7 +0.6
baz=316
V40A Witts Springs 57.87 72 P **P** 02 54 20.9 -1.3
baz=315
SFIN Lafayette 57.89 64 P **P** 02 54 21.4 -0.9
baz=314
SFIN Lafayette 57.89 64 *e*P **P** 02 54 21.5 -0.9
comp=Z,29nm,0.8s
KIF Kilpisjarvi 57.98 353 *e*P **P** 02 54 22.6 +0.1
KIF *e*pP **pP** 02 55 07.3 -1.5
X39A Fountain Ranch 58.03 74 P **P** 02 54 23.3 -0.1
baz=315

136A Ennis 58.05 77 P **P** 02 54 23.6 +0.1
baz=315
Z37A Pogue Cattle C 58.07 76 P **P** 02 54 23.5 -0.1
baz=315
Y38A Idabel 58.08 75 P **P** 02 54 23.2 -0.5
baz=315
APA Apatity 58.12 348 ⇑*i*P **P** 02 54 25.0 +1.6
APA *i* *PP **PcP** 02 55 12.0 -0.6
APA MLR MLR
comp=Z,300nm,16.0s
ENH Enshi 58.14 279 *e*P **P** 02 54 23.8 -0.4
comp=Z,18nm,0.7s
W40A Ferguson Farm, 58.16 73 P **P** 02 54 23.6 -0.6
baz=315
434A Burnet 58.20 80 P **P** 02 54 24.9 +0.3
baz=316
533A Kerrville 58.28 81 P **P** 02 54 24.9 -0.3
baz=316
MIAR Mount Ida 58.32 73 P **P** 02 54 25.1 -0.2
baz=315
HEF Hetta 58.35 352 *e*P **P** 02 54 24.6 -0.4
HEF *e*pP **pP** 02 55 11.2 -0.3
335A Moody 58.37 79 P **P** 02 54 26.1 +0.3
baz=316
236A Katherine and 58.39 78 P **P** 02 54 26.3 +0.5
baz=316
Z38A Mt. Pleasant 58.41 75 P **P** 02 54 25.9 -0.1
baz=315
137A Heron Place, G 58.42 77 P **P** 02 54 26.1 +0.1
baz=315
Y39A Lockesburg 58.45 74 P **P** 02 54 25.8 -0.4
baz=315
OLIL Olney 58.49 66 *e*P **P** 02 54 25.6 -0.9
comp=Z,53nm,1.0s
X201 Greenbrier Sit 58.49 72 *e*P **P** 02 54 25.3 -1.3
comp=Z,141nm,1.8s
X301 Greenbrier Sit 58.51 72 *e*P **P** 02 54 25.4 -1.3
comp=Z,39nm,0.8s
WHAR Wooly Hollow 58.54 72 *e*P **P** 02 54 25.5 -1.4
comp=Z,24nm,0.7s
PBMO Poplar Bluff 58.55 69 *e*P **P** 02 54 25.4 -1.5
comp=Z,130nm,1.6s
PBMO *e*ScP **ScP** 02 58 54.4 -0.7
SIUC Southern Illin 58.58 68 *e*P **P** 02 54 26.2 -0.9
comp=Z,81nm,1.5s
435B Jarrell 58.63 79 P **P** 02 54 28.0 +0.5
baz=316
633A Saatoff Ranch 58.63 82 P **P** 02 54 27.2 -0.4
baz=316
336A Riesel 58.64 78 P **P** 02 54 27.9 +0.3
baz=316
534A Blanco 58.64 81 P **P** 02 54 27.5 -0.1
baz=316
W41B Gary Mavity, V 58.64 72 P **P** 02 54 26.5 -1.0
baz=315
138A Matatall Enter 58.77 76 P **P** 02 54 28.9 +0.5
baz=316
X40A Basin Creek Fa 58.79 73 P **P** 02 54 27.8 -0.8
baz=315
237A Washetta, Mont 58.82 77 P **P** 02 54 28.9 +0.1
baz=316
Y40A Okolona 58.87 74 P **P** 02 54 28.6 -0.5
baz=315
UALR University of 58.87 72 *e*P **P** 02 54 28.4 -0.8
comp=Z,19nm,0.6s
Z39A Irene McRaven, 58.89 75 P **P** 02 54 29.2 -0.1
baz=315
SADO Sadowa 58.99 56 LR LR 03 20 09.2
comp=Z,103nm,18.5s,baz=344,slow=36
SADO Sadowa 58.99 56 *e*P **P** 02 54 29.1 -0.7
comp=Z,15nm,0.8s
832A Faith Ranch, C 59.00 83 P **P** 02 54 30.5 +0.3
baz=317
BLO Bloomington 59.05 65 *e*P **P** 02 54 29.6 -0.7
BLO pmax pmax
comp=Z,91nm,1.6s
BLO Bloomington 59.05 65 *e*P **P** 02 54 29.6 -0.7
comp=Z,91nm,1.6s
733A Divot King Ran 59.10 82 P **P** 02 54 31.1 +0.3
baz=317
436A Wall Ranch, Ga 59.11 79 P **P** 02 54 31.7 +0.8
baz=316
139A Bunkhouse Ranc 59.17 76 P **P** 02 54 31.3 +0.1
baz=316
535A Dale 59.18 80 P **P** 02 54 31.8 +0.5
baz=316
634A China Grove, S 59.18 81 P **P** 02 54 31.5 +0.1
baz=316
WLAR White Oak Lake 59.20 74 *e*P **P** 02 54 31.4 +0.1
comp=Z,114nm,0.6s
238A Jacksonville 59.22 77 P **P** 02 54 32.1 +0.5
baz=316
337A Centerville 59.26 78 P **P** 02 54 32.4 +0.5
baz=316
USIN University of 59.27 67 *e*P **P** 02 54 31.0 -0.8
comp=Z,176nm,1.4s
833A Chaparral WMA, 59.33 83 P **P** 02 54 32.8 +0.5
baz=317
Z40A Long Farm, Mag 59.34 74 P **P** 02 54 32.5 +0.2
baz=316
734A La Parita Cree 59.45 82 P **P** 02 54 33.9 +0.8
baz=317
536A Bastrop 59.45 80 P **P** 02 54 33.8 +0.6
baz=316
437A Phantom Ranch, 59.46 78 P **P** 02 54 34.1 +0.9
baz=316
635A Leesville 59.53 81 P **P** 02 54 34.4 +0.7
baz=316
338A Crockett 59.57 77 P **P** 02 54 34.3 +0.4
baz=316
239A Gary 59.59 76 P **P** 02 54 34.2 +0.1
baz=316
NATX Nacogdoches 59.67 76 P **P** 02 54 35.0 +0.3
baz=316
140A Cam and Jess, 59.68 75 P **P** 02 54 34.9 +0.3
baz=316
Z41A Richland Creek 59.69 74 P **P** 02 54 34.5 -0.2
baz=316
KURK Kurchatov 59.81 315 P **P** 02 54 36.3 +1.0
KURK *PP **PcP** 02 55 19.6 -0.1
KURK pmax pmax
comp=Z,28nm,0.8s
KURK pmax pmax
comp=Z,8.0nm,0.9s
KURK pmax pmax
comp=N,4.0nm,1.0s
KURK Kurchatov 59.81 315 P **P** 02 54 36.2 +1.0
KURK pP **PcP** 02 55 19.6 -0.1
KURK ScP **ScP** 02 59 00.7 +0.2
CCAR Cane Creek 59.81 73 *e*P **P** 02 54 36.1 +0.5
comp=N,433nm,1.8s
WCI Wyandotte Cave 59.85 66 *e*P **P** 02 54 34.8 -1.0
WCI *e*PP **PcP** 02 55 20.9 +0.8
WCI pmax pmax
comp=Z,35nm,1.2s
WCI Wyandotte Cave 59.85 66 *e*P **P** 02 54 34.8 -1.0
comp=Z,35nm,1.2s
Y42A Garnett, Star 59.86 73 P **P** 02 54 35.8 -0.1
baz=316
636A Smothers Creek 59.89 80 P **P** 02 54 37.4 +1.2
baz=316
735A Kenedy 59.89 81 P **P** 02 54 37.4 +1.2
baz=317
537A Green Hill Far 59.90 79 P **P** 02 54 37.4 +1.2
baz=316
438A Sam Houston St 59.91 78 P **P** 02 54 37.5 +1.2
baz=316
933A Laredo 59.91 83 P **P** 02 54 37.3 +0.9
baz=317
KURBB Kurchatov Arra 59.92 315 P **P** 02 54 36.2 +0.2
comp=Z,28nm,0.8s,baz=41,slow=7.0,SNR=206
KURBB pP **PcP** 02 55 19.6 -0.5
comp=Z,8.0nm,0.9s,baz=49,slow=6.4,SNR=2.6
KURBB ScP **ScP** 02 59 00.6 -0.3
comp=Z,4.1nm,1.0s,baz=49,slow=4.4,SNR=4.8
834A Tilden 59.98 82 P **P** 02 54 37.9 +1.1
baz=317
240A Hunter Patters 60.00 76 P **P** 02 54 36.9 +0.1
baz=316
339A Huntington 60.04 77 P **P** 02 54 37.4 +0.2
baz=316
141A Papa Simpson, 60.09 75 P **P** 02 54 37.6 +0.1
baz=316
Z42A Norrel Spur, H 60.17 73 P **P** 02 54 37.9 -0.1
baz=316
ACSO Alum Creek Sta 60.23 62 *e*P **P** 02 54 37.8 -0.5
comp=Z,47nm,1.5s
736A Circle Diamond 60.26 80 P **P** 02 54 40.2 +1.5

baz=317
HKT Hockley 60.28 79 *e*P **P 02 54 39.4 +0.7**
HKT pmax pmax
comp=Z,250nm,1.8s
HKT Hockley 60.28 79 *e*P **P 02 54 39.4 +0.7**
comp=Z,245nm,1.8s
538A Harpers Horsep 60.29 78 P **P 02 54 40.2 +1.4**
baz=316
835A Beeville 60.29 82 P **P 02 54 40.7 +1.8**
baz=317
439A Center Grove, 60.30 77 P **P 02 54 39.6 +0.6**
baz=316
Y43A Makayla and Ka 60.30 72 P **P 02 54 38.5 -0.4**
baz=316
637A Eagle Lake 60.35 80 P **P 02 54 40.6 +1.3**
baz=317
340A Bronson 60.37 76 P **P 02 54 39.8 +0.4**
baz=316
934A Benavides 60.38 83 P **P 02 54 41.0 +1.5**
baz=317
WVT Waverly 60.49 68 *e*P **P 02 54 39.5 -0.6**
WVT pmax pmax
comp=Z,13nm,0.7s
WVT Waverly 60.49 68 *e*P **P 02 54 39.5 -0.6**
comp=Z,13nm,0.6s
241A Mo Tay, Goldon 60.50 75 P **P 02 54 40.8 +0.5**
baz=316
Z43A Armstrong Fami 60.63 73 P **P 02 54 40.8 -0.3**
baz=316
WMQ Urumqi 60.63 305⇓*i*P **P 02 54 41.6 +0.5**
WMQ PcP **PcP 02 55 23.7 +0.5**
WMQ pP pP 02 55 30.0 +2.1
WMQ sP sP 02 55 52.6 +2.3
WMQ ScP **ScP 02 59 04.1 -0.3**
WMQ S **S 03 02 41.2 +0.5**
WMQ ScS SKKSac 03 04 09.6 -1.5
WMQ pmax pmax
comp=Z,15nm,0.6s
WMQ pmax pmax
comp=Z,100nm,4.8s
WMQ LR LR
comp=Z,160nm,16.8s
WMQ LR LR
comp=Z,79nm,23.6s
WMQ LR LR
comp=Z,42nm,22.0s
TMCR Tamitsa 60.63 344 *e*P **P 02 54 40.9 +0.3**
TMCR pmax pmax
comp=Z,47nm,1.2s
034A Hebbronville 60.67 83 P **P 02 54 42.8 +1.3**
baz=317
Y44A Strider, Charl 60.68 72 P **P 02 54 41.0 -0.4**
baz=316
ALLY Alegheny Colle 60.71 59 *e*P **P 02 54 41.6 +0.1**
comp=Z,48nm,0.8s
737A Port Lavaca 60.78 80 P **P 02 54 43.9 +1.7**
baz=317
440A Kirbyville 60.81 77 P **P 02 54 43.0 +0.6**
baz=316
539A Cross D Ranch, 60.82 78 P **P 02 54 43.7 +1.2**
baz=317
341A Kurthwood 60.86 76 P **P 02 54 43.0 +0.3**
baz=316
638A Rosharon 60.89 79 P **P 02 54 44.6 +1.7**
baz=317
143A Socs Landing, 60.90 73 P **P 02 54 42.9 0.0**
baz=316
242A Grayson 60.92 74 P **P 02 54 43.1 0.0**
baz=316
Z44A Pea Ridge, Bel 61.05 72 P **P 02 54 43.6 -0.3**
baz=316
M54A Oil Creek Stat 61.06 59 P **P 02 54 43.3 -0.6**
baz=316
MK31 Makanchi Array 61.07 310 P **P 02 54 43.6 -0.3**
MK31 pmax pmax
comp=Z,18nm,1.0s
MK31 Makanchi Array 61.07 310 *e*P **P 02 54 43.6 -0.3**
MKAR Makanchi Array 61.07 310 P **P 02 54 43.5 -0.5**
comp=Z,13nm,0.8s,baz=55,slow=6.5,SNR=96
MKAR pP **pP 02 55 29.5 -1.4**
comp=Z,5.1nm,0.8s,baz=54,slow=7.3,SNR=2.4
MKAR PKPPKP **P'P'df 03 23 55.8 -4.0**
comp=Z,0.8nm,0.8s,baz=230,slow=3.0,SNR=5.8
MK01 Makanchi Array 61.08 310 *e*P **P 02 54 43.0 -1.0**
CD2 Chengdu 61.09 284 P **P 02 54 44.0 -0.3**
CD2 pP pP 02 55 31.1 -0.1
CD2 sP sP 02 55 54.0 +0.5
CD2 PP **PP 02 57 00.7 -0.4**
CD2 S **S 03 02 45.8 -1.0**
CD2 sS sS 03 04 09.0 +0.3
CD2 SS **SS 03 06 49.0 -0.7**
CD2 pmax pmax
comp=Z,50nm,0.9s
CD2 pmax pmax
comp=Z,110nm,8.8s
035A Encino 61.12 83 P **P 02 54 45.8 +1.3**
baz=317
Y45A Yeager Farm, C 61.14 71 P **P 02 54 44.2 -0.3**
baz=316
540A Vidor 61.19 77 P **P 02 54 45.5 +0.6**
baz=317
MAKZ Makanchi 61.20 310 *e*P **P 02 54 44.4 -0.4**
MAKZ pmax pmax
comp=Z,18nm,1.1s
MAKZ Makanchi 61.20 310 *e*P **P 02 54 44.4 -0.4**
comp=Z,18nm,1.1s
936A North Padre Is 61.24 82 P **P 02 54 44.8 -0.4**
baz=317
441A DeRidder 61.27 76 P **P 02 54 46.4 +1.0**
baz=317
N54A Moraine State 61.28 59 P **P 02 54 44.9 -0.5**
baz=316
342A Flagon Creek P 61.32 75 P **P 02 54 46.1 +0.4**
baz=316
BVA0 Borovoye Array 61.38 321 P **P 02 54 46.7 +0.8**
BVA0 pmax pmax
comp=Z,41nm,0.6s
BVAR Borovoye Array 61.38 321 P **P 02 54 46.8 +0.9**
comp=Z,36nm,0.5s,baz=50,slow=7.1,SNR=228
BVAR PcP **PcP 02 55 25.6 -0.4**
comp=Z,10nm,0.5s,baz=46,slow=2.4,SNR=6.1
BVAR pP **pP 02 55 31.0 -1.8**
comp=Z,32nm,0.7s,baz=54,slow=7.3,SNR=2.1
VOSK Vostochnaya 61.39 321 P **P 02 54 46.4 +0.5**
VOSK pmax pmax
comp=Z,30nm,1.0s
VOSK Vostochnaya 61.39 321 *e*P **P 02 54 46.5 +0.5**
comp=Z,54nm,1.0s
BRVK Borovoye 61.40 321*d i*P **P 02 54 46.7 +0.7**
BRVK pmax pmax
comp=Z,63nm,1.2s
BRVK Borovoye 61.40 321 *e*P **P 02 54 46.9 +0.9**
comp=Z,80nm,1.1s
Z45A Winona 61.41 72 P **P 02 54 45.9 -0.5**
baz=316
243A Waterproof 61.45 74 P **P 02 54 46.9 +0.3**
baz=316
035Z Hargill 61.49 83 P **P 02 54 48.0 +1.0**
baz=318
ZAIG Zacatecas 61.51 89 *e*P **P 02 54 48.0 +0.6**
comp=Z,117nm,1.8s
Y46A Houston 61.52 71 P **P 02 54 46.5 -0.5**
baz=316
144A Alexander Plac 61.52 73 P **P 02 54 47.1 0.0**
baz=316
SVE Sverdlovsk 61.71 329⇑*e*P **P 02 54 49.1 +1.1**
SVE pmax pmax
comp=Z,60nm,1.2s
442A Mamou 61.74 76 P **P 02 54 49.7 +1.1**
baz=317
VBMS Vicksburg 61.77 73 P **P 02 54 48.8 0.0**
baz=316
343A Vidalia 61.80 75 P **P 02 54 49.1 +0.1**
baz=317
145A Houston Renfro 61.83 72 P **P 02 54 48.8 -0.3**
baz=316
Z46A Louisville 61.97 71 P **P 02 54 49.6 -0.5**
baz=316
Y47A UCPARC, Winfie 62.08 70 P **P 02 54 50.0 -0.9**
baz=316
443A Delano Plantat 62.09 75 P **P 02 54 51.9 +1.1**
baz=317
542A Morse 62.10 76 P **P 02 54 52.5 +1.6**
baz=317
344A Westbrook Farm 62.20 74 P **P 02 54 52.1 +0.5**
baz=317
SWET Sewanee 62.22 68 *e*P **P 02 54 50.6 -1.1**
comp=Z,18nm,1.6s
245A Little AP, Sta 62.26 73 P **P 02 54 51.7 -0.3**
baz=317
146A Union 62.31 72 P **P 02 54 52.3 -0.1**
baz=317
Z47A Carrollton 62.47 71 P **P 02 54 52.6 -0.8**
baz=317
O56A Blue Knob Stat 62.53 59 P **P 02 54 53.5 -0.3**
baz=317
543A St. Martinvill 62.54 76 P **P 02 54 54.8 +0.9**
baz=317
TZTN Tazewell 62.58 65 *e*P **P 02 54 53.8 -0.3**
comp=Z,54nm,1.4s
SSPA Standing Stone 62.61 58 *e*P **P 02 54 53.9 -0.4**
comp=Z,20nm,0.8s
GYA Guiyang 62.62 278⇓*i*P **P 02 54 54.2 -0.4**
GYA pP pP 02 55 43.4 +1.6
GYA sP sP 02 56 07.0 +3.0
GYA PP **PP 02 57 18.2 +3.5**
GYA ScP **ScP 02 59 13.6 +0.1**
GYA PcS **PcS 02 59 35.0 -0.4**
GYA S **S 03 03 04.8 -1.4**
GYA SKS **ScS 03 04 23.4 -3.4**
GYA sS sS 03 04 29.7 +1.3
GYA pmax pmax
comp=Z,30nm,1.0s
GYA pmax pmax
comp=Z,140nm,6.0s
Z48A Northport 62.63 70 P **P 02 54 53.5 -0.9**
baz=317
ARU Arti 62.68 330*d i*P **P 02 54 54.7 +0.3**
ARU 02 55 29.7
ARU *e**PP **pP 02 55 42.1 +0.6**
ARU *SP **sP 02 56 05.2 +1.4**
ARU 02 57 18.8
ARU S **S 03 03 07.2 +1.4**
ARU 03 04 22.2
ARU pmax pmax
comp=Z,50nm,1.2s
ARU Arti 62.68 330 *e*P **P 02 54 54.8 +0.3**
comp=Z,53nm,1.1s
345A Thompson Farm, 62.71 74 P **P 02 54 55.3 +0.2**
baz=317
246A Jackson Lee, B 62.72 72 P **P 02 54 55.0 -0.1**
baz=317
444A Pine Grove 62.73 75 P **P 02 54 55.7 +0.5**
baz=317
147A Livingston 62.73 71 P **P 02 54 54.8 -0.4**
baz=317
CPCT Cooper Cave 62.83 67 *e*P **P 02 54 55.2 -0.6**
comp=Z,32nm,1.5s
445A Amite 62.95 74 P **P 02 54 57.0 +0.3**
baz=317
346A Big Creek Wild 62.98 73 P **P 02 54 56.7 -0.1**
baz=317
247A Quitman 62.99 72 P **P 02 54 56.8 -0.1**
baz=317
TKL Tuckaleechee C 63.10 66 P **P 02 54 56.7 -0.8**
comp=Z,18nm,1.0s,baz=294,slow=1.8,SNR=11
TKL PcP **PcP 02 55 33.6 +0.3**
comp=Z,16nm,0.6s,baz=174,slow=2.4,SNR=10.0
TKL LR LR 03 22 26.7
comp=Z,128nm,20.5s,baz=338,slow=36
TKL Tuckaleechee C 63.10 66 *e*P **P 02 54 56.9 -0.7**
comp=Z,31nm,1.1s
TKL PcP **PcP 02 55 33.6 +0.3**
MANU Manus Island 63.19 223 *e*P **P 02 54 58.3 0.0**
comp=Z,82nm,0.8s
RABL Rabaul 63.26 218 *e*P **P 02 54 58.7 -0.1**
comp=Z,146nm,0.6s
KLMR Klimovskoe 63.45 342 *e*P **P 02 54 57.4 -2.0**
KLMR *e**SP **sP 02 56 09.5 +0.6**
KLMR *e* 02 57 18.6
KLMR pmax pmax
comp=Z,44nm,1.4s
248A Dixon Mills 63.46 71 P **P 02 54 59.8 -0.2**
baz=317
446A Poplarville 63.48 73 P **P 02 55 00.1 +0.1**
baz=317
N59A State Game Lan 63.49 57 P **P 02 54 59.6 -0.5**
baz=318
347A Saraland 63.51 72 P **P 02 55 00.5 +0.2**
baz=317
BLA Blacksburg 63.79 63 *e*P **P 02 55 02.3 +0.2**
BLA pmax pmax
comp=Z,72nm,1.4s
BLA Blacksburg 63.79 63 *e*P **P 02 55 02.2 +0.2**
comp=Z,72nm,1.4s
348A Jackson 63.87 72 P **P 02 55 02.7 0.0**
baz=317
447A Lucedale 63.89 73 P **P 02 55 03.0 +0.2**
baz=317
LUPA Lehigh Univers 63.93 57 *e*P **P 02 55 02.7 -0.2**
comp=Z,224nm,2.0s
TBLU Trondheim 64.24 357 *e*P **P 02 55 04.3 -0.2**
TBLU *e*pP **pP 02 55 49.0 -2.9**
TBLU *e*PP **PP 02 57 26.7 -1.0**
448A Bay Minette 64.25 72 P **P 02 55 05.2 +0.1**
baz=318
RCP Roxas 64.33 255⇓*e*P **P 02 55 06.5 +0.7**
OTUK Ortayu 64.35 317 P **P 02 55 06.1 +0.6**
OTUK pmax pmax
comp=Z,25nm,0.9s
BRAL Brewton 64.54 72 *e*P **P 02 55 07.0 0.0**
comp=Z,54nm,0.6s
KMSC Kings Mountain 64.83 65 P **P 02 55 08.5 -0.3**
baz=318
KMSC Kings Mountain 64.83 65 *e*P **P 02 55 08.4 -0.4**
comp=Z,35nm,0.8s
FIA1 FINESS Array S 64.92 349 *e*P **P 02 55 09.0 +0.1**
FINES FINESS Array B 64.92 349 P **P 02 55 08.8 -0.1**
comp=Z,9.8nm,0.5s,baz=10,slow=6.9,SNR=55
FINES PcP **PcP 02 55 39.8 -0.5**
comp=Z,5.8nm,0.6s,baz=42,slow=4.3,SNR=5.0
FINES pP **pP 02 55 54.6 -1.7**
comp=Z,8.5nm,0.8s,baz=35,slow=3.4,SNR=2.6
FINES PKPPKP P'P'df 03 23 35.6 -18
comp=Z,1.8nm,0.7s,baz=148,slow=3.1,SNR=5.9
FINES FINESS Array B 64.92 349*ce*P **P 02 55 09.1 +0.2**
FINES pmax pmax
comp=Z,10.0nm,0.4s
PDGK Podgornoye 64.98 309 P **P 02 55 10.2 +0.6**
PDGK pmax pmax
comp=Z,55nm,1.1s
AKN Aaknes 65.37 359 *e*P **P 02 55 13.6 +1.7**
AKN *e*pP **pP 02 55 57.1 -2.3**
BUKP Musuan 65.95 250 *e*P **P 02 55 16.8 +0.5**
KMI Kunming 65.96 280 P **P 02 55 16.5 0.0**
KMI pmax pmax
comp=Z,33nm,1.0s
KMI pmax pmax
comp=Z,150nm,4.9s
MATI Mati 66.03 249 *e*P **P 02 55 15.2 -1.5**
NC204 NORSAR Array S 66.20 357 *e*P **P 02 55 18.6 +1.4**
NC303 NORSAR Array S 66.23 357 *e*P **P 02 55 18.2 +0.9**
QIZ Qiongzhong 66.27 270 P **P 02 55 19.1 +0.9**
QIZ S **S 03 03 56.3 +5.5**
QIZ sS **sS 03 05 17.3 +3.3**
QIZ pmax pmax
comp=Z,11nm,1.1s
DAV Davao City (W) 66.32 249 P **P 02 55 19.6 +1.0**
comp=Z,163nm,0.4s,baz=68,slow=5.2,SNR=4.3
TIGA Tifton 66.32 69 P **P 02 55 17.9 -0.5**
baz=318
NC405 NORSAR Array S 66.33 357 *e*P **P 02 55 18.9 +0.9**
NB201 NORSAR Array S 66.41 357 *e*P **P 02 55 19.6 +1.1**
NB2 NORSAR Subarra 66.42 357 P **P 02 55 18.9 +0.3**
comp=Z,9.6nm,0.7s,baz=5.5,slow=6.9
NB2 NORSAR Subarra 66.42 357 P **P 02 55 18.9 +0.3**
baz=5.5,slow=6.9
NOA NORSAR Array B 66.42 357 P **P 02 55 19.3 +0.7**
comp=Z,3.4nm,0.4s,baz=3.7,slow=7.2,SNR=62
NOA pP **pP 02 56 04.1 -2.2**
comp=Z,7.4nm,0.9s,baz=4.6,slow=6.4,SNR=4.3
NOA PKP2bc 03 23 43.7
comp=Z,2.8nm,0.9s,baz=157,slow=3.4,SNR=4.7
NBO02 NORSAR Array S 66.43 357 *e*P **P 02 55 18.8 +0.1**
AFI Afiamalu 66.47 177 *e*P **P 02 55 19.4 0.0**
AFI Afiamalu 66.47 177 *e*P **P 02 55 19.4 0.0**
comp=Z,49nm,0.8s
JAY Jayapura 66.55 230 P **P 02 55 20.6 +0.6**
comp=Z,4.2nm,0.8s,baz=84,slow=22,SNR=18
JAY Jayapura 66.55 230 P **P 02 55 20.6 +0.6**
comp=Z,57nm,0.9s,comp=Z,596nm
NC602 NORSAR Array S 66.72 357 *e*P **P 02 55 20.6 +0.2**
GENI Genyem 66.87 230 P **P 02 55 23.1 +1.1**
comp=Z,268nm,0.8s
PAGZ Pagadian 66.94 252 *e*P **P 02 55 21.8 -0.7**
TKM2 Tokmak 2 67.10 311 P **P 02 55 23.9 +0.5**
TKM2 pmax pmax
comp=Z,30nm,1.0s
TKM2 Tokmak 2 67.10 311 *e*P **P 02 55 24.2 +0.8**
comp=Z,32nm,1.0s
RGRS Roger Stewart 67.12 66 *e*P **P 02 55 23.9 +0.6**
comp=Z,2μm,0.4s
IPIL Ipil 67.46 252 *e*P **P 02 55 25.4 -0.4**
FRU Bishkek 67.62 312 *e*P **P 02 55 26.5 +0.1**
FRU *e* 02 56 11.5
FRU pmax pmax
comp=Z,70nm,1.4s
ODD1 Odda 67.65 359 *e*P **P 02 55 26.6 +0.3**
ODD1 *e*pP **pP 02 56 13.3 -0.8**
VSU Vasula 67.74 348*d i*P **P 02 55 27.3 +0.5**
VSU pmax pmax
comp=Z,163nm,0.6s
AAK Ala-Archa 67.83 312 P **P 02 55 28.8 +0.9**
comp=Z,50nm,0.8s,baz=106,slow=3.1,SNR=119
AAK Ala-Archa 67.83 312*d i*P **P 02 55 28.7 +0.8**
AAK pmax pmax
comp=Z,136nm,0.8s
AAK Ala-Archa 67.83 312 *e*P **P 02 55 28.9 +0.9**
comp=Z,53nm,0.8s
KONO Kongsberg 67.86 358 *e*P **P 02 55 28.9 +1.3**
KONO *e**PP **pP 02 56 14.2 -1.3**
KONO Kongsberg 67.86 358 *e*P **P 02 55 28.9 +1.3**
comp=Z,74nm,1.2s
KONO *e*PP **PP 02 57 52.6 -6.6**
TLIG Tlapa 67.89 90 *e*P **P 02 55 29.0 +0.4**
comp=Z,69nm,1.6s
EKS2 Erkin-Say 68.13 312 *e*P **P 02 55 30.8 +1.0**
EKS2 Erkin-Say 68.13 312 *e*P **P 02 55 30.8 +1.0**
comp=Z,59nm,0.8s
AB31 Akbulak array 68.27 325 *i* P **P 02 55 30.8 +0.5**
AB31 pmax pmax
comp=Z,22nm,0.6s
ABKAR Akbulak array 68.27 325 *e*P **P 02 55 30.9 +0.5**
MOS Moscow 68.59 341 *e*P **P 02 55 31.9 -0.3**
MOS *e* 02 56 22.7
MOS pmax pmax
comp=Z,67nm,0.6s
MNAS Manas 68.84 313 P **P 02 55 35.0 +0.8**
MNAS pmax pmax
comp=Z,27nm,0.6s
KK31 Karatay Array 69.22 315 *i* P **P 02 55 36.3 0.0**
KK31 pmax pmax
comp=Z,19nm,0.7s
KKAR Karatay Array 69.22 315 *e*P **P 02 55 36.6 +0.3**
KKAR Karatay Array 69.22 315 *e*P **P 02 55 36.6 +0.3**
LSA Lhasa 69.27 292 *e*P **P 02 55 38.9 +1.5**
LSA pmax pmax
comp=Z,48nm,0.8s
LSA Lhasa 69.27 292 *e*P **P 02 55 38.9 +1.5**
comp=Z,48nm,0.8s
OBN Obninsk 69.38 341*d i*P **P 02 55 36.9 -0.1**
OBN *i* 02 55 58.8
OBN *i* 02 56 22.4
OBN *i* S **S 03 04 27.7 +1.1**
OBN *e*SS **SS 03 08 56.9 +0.3**
OBN pmax pmax
comp=Z,46nm,1.0s
OBN Obninsk 69.38 341 *e*P **P 02 55 37.3 +0.3**
comp=Z,46nm,1.0s
KSH Kashi 69.61 309 P **P 02 55 43.1 +4.2**
KSH *e*pP pP 02 56 31.6 +4.6
KSH *e*sP sP 02 56 54.0 +5.0
KSH *e*PP **PP 02 58 22.3 +7.3**
KSH S **S 03 04 33.4 +3.3**
KSH ScS **ScS 03 05 21.5 +0.9**
KSH SS **SS 03 09 11.1 +10**
KSH pmax pmax
comp=Z,71nm,0.9s
KSH LR LR
comp=Z,89nm,11.0s
KSH LR LR
comp=Z,180nm,7.1s
KSH LR LR
comp=Z,160nm,7.9s
SWI Sorong 69.80 240 P **P 02 55 40.2 0.0**
comp=Z,304nm,0.8s,comp=Z,5μm
PMG Port Moresby 69.95 220*d i*P **P 02 55 41.1 +0.1**
PMG Port Moresby 69.95 220 *e*P **P 02 55 41.4 +0.4**
comp=Z,83nm,0.8s
SFK Sufi-Kurgan 70.36 311 P **P 02 55 43.8 +0.2**
SFK pmax pmax
comp=Z,37nm,1.2s
MSVF Nonsavu 70.50 187 *e*P **P 02 55 44.6 +0.3**
MSVF Nonsavu 70.50 187 *e*P **P 02 55 44.6 +0.3**
comp=Z,71nm,1.1s
PANO Nakornpanom 70.89 273 P **P 02 55 46.9 +0.1**
comp=Z,41nm,1.0s,comp=Z,2μm
FAKI Fak Fak 71.03 237 P **P 02 55 47.9 +0.3**
comp=Z,210nm,0.9s,comp=Z,2μm
FAKI Fak Fak 71.03 237 *e*P **P 02 55 48.0 +0.4**
comp=Z,151nm,0.9s
NONG Nongkai 71.07 275 P **P 02 55 47.8 -0.1**
comp=Z,42nm,0.9s
NACGM Naroch 71.20 347 *e* **P 02 55 47.0 -1.1**
LPSR Galich'ya Gora 71.26 339 *e*P **P 02 55 48.7 +0.2**
LPSR pmax pmax
comp=Z,40nm,0.9s
PMOR Pomariorio Ree 71.38 153 *e*P **P 02 55 50.6 +1.0**
comp=Z,189nm,0.9s
SKNT Sakolnakorn 71.40 274 P **P 02 55 49.6 -0.3**
comp=Z,102nm,0.9s
LBMI Labuha 71.61 243 P **P 02 55 51.5 +0.4**
comp=Z,94nm,0.8s,comp=Z,1μm
VAH Vaihoa 71.68 152 *e*P **P 02 55 52.3 +1.0**
comp=Z,224nm,0.9s
VRH Novokhopyorsk 71.92 337 *e*P **P 02 55 52.6 +0.2**
VRH pmax pmax
comp=Z,50nm,0.6s
MYLDM Lahad Datu 71.93 254 *e*P **P 02 55 54.9 +1.9**
comp=Z,136nm,0.9s
SHL Shillong 72.01 289 *e*P **P 02 55 52.0 -1.6**
TEIG Tepich 72.06 80 *e*P **P 02 55 54.4 +0.6**
VSR Storozhevoye 72.50 338 *e*P **P 02 55 56.4 +0.5**
VSR pmax pmax
comp=Z,120nm,0.6s
SUW Suwalki 72.53 349 *e*P **P 02 55 55.5 -0.5**
SUW *e*pP **pP 02 56 48.2 +3.8**
SUW *e*S **S 03 05 00.7 -2.1**
SUW LMZ LR 03 27 29.6
comp=Z,100nm,24.1s
SUW Suwalki 72.53 349 *e*P **P 02 55 55.5 -0.5**
SUW *e**PP **pP 02 56 48.2 +3.8**
SUW *e*S **S 03 05 00.7 -2.1**
KKM Kota Kinabalu 72.58 257 *e*P **P 02 55 57.4 +0.4**
comp=Z,136nm,1.2s
KHON Khomkaen 72.59 274 P **P 02 55 57.1 +0.2**
comp=Z,60nm,0.9s
LOEI Loei 72.64 276 P **P 02 55 54.9 -2.3**
comp=Z,34nm,1.0s
CCIG Comitan 72.77 86 *e*P **P 02 55 59.7 +1.5**
comp=Z,122nm,2.0s
LAMP Lampang 72.84 278 P **P 02 55 58.9 +0.5**
comp=Z,9.5nm,0.9s,comp=Z,218nm
UTTA Uttaradit 72.88 277 P **P 02 55 58.5 -0.1**
comp=Z,28nm,0.8s,comp=Z,274nm
CMMT Chiang Mai 73.03 279 P **P 02 55 59.2 -0.3**
comp=Z,20nm,1.3s,comp=Z,395nm
CHTO Chiang Mai 73.03 279 P **P 02 55 59.2 -0.3**
comp=Z,123nm,1.1s,comp=Z,2μm
CHTO Chiang Mai 73.03 279 *e*P **P 02 55 59.5 0.0**
CHTO Chiang Mai 73.03 279 *e*P **P 02 55 59.5 0.0**
comp=Z,14nm,0.6s
MSAI Masohi 73.12 240 P **P 02 56 02.0 +2.0**
comp=Z,36nm,0.7s
CM31 Chiang Mai Arr 73.30 279 *e*P **P 02 56 01.6 +0.5**
CMAR Chiang Mai Arr 73.30 279 P **P 02 56 01.4 +0.3**
comp=Z,22nm,0.8s,baz=26,slow=6.5,SNR=25
CM01 Chiang Mai Arr 73.32 279 *e*P **P 02 56 00.9 -0.3**
CHAI Chaiyaphum 73.44 275 P **P 02 56 01.7 -0.2**
comp=Z,15nm,1.0s,comp=Z,274nm
DZET Dzherino 73.46 313 P **P 02 56 02.3 +0.4**
DZET pmax pmax
comp=Z,54nm,0.5s
PBKT Sadao Pong 73.54 276 P **P 02 56 02.3 -0.1**
comp=Z,44nm,1.0s
GUN Gumba 73.59 294 *e*Pn **P 02 56 03.4 +0.3**
comp=Z,76nm,0.4s
SANI Sanana 73.61 244 P **P 02 56 04.4 +1.5**

comp=Z,252nm,0.8s,comp=Z,3µm
SUKH Sukhothai 73.64 277 P **P** **02 56 03.2 +0.2**
comp=Z,9.0nm,1.0s,comp=Z,101nm
MRSI Marisa 73.77 248 P **P** **02 56 04.1 +0.3**
comp=Z,267nm,1.0s
KKN Kakani 74.01 295 *e*Pn **P** **02 56 05.7 +0.3**
comp=Z,39nm,0.5s
PKIN Phulchoki 74.11 295 *e*Pn **P** **02 56 05.8 -0.3**
comp=Z,41nm,0.7s
MHMT Maesarieng 74.13 279 P **P** **02 56 06.5 +0.6**
comp=Z,42nm,1.1s,comp=Z,518nm
GKN Gorkha 74.20 295 *e*Pn **P** **02 56 06.4 0.0**
comp=Z,126nm,0.7s
DMN Daman 74.25 295 *e*Pn **P** **02 56 07.1 +0.3**
comp=Z,38nm,0.5s
LUWI Luwuk 74.55 247 P **P** **02 56 07.7 -0.6**
comp=Z,790nm,0.7s,comp=Z,6µm
LUWI Luwuk 74.55 247 *e*P **P** **02 56 07.0 -1.3**
comp=Z,567nm,0.7s
AKASG Malin Array Be 74.92 344 P **P** **02 56 09.5 -0.4**
comp=Z,26nm,0.4s,baz=18,slow=6.1,SNR=40
AKASG LR LR 03 33 48.6
comp=Z,45nm,19.7s,baz=295,slow=39
AKASG Malin Array Be 74.92 344 P **P** **02 56 09.5 -0.4**
AKASG pmax pmax
comp=Z,28nm,0.4s
AKASG MLR MLR
comp=Z,45nm,19.7s
AKBB Malin Array Si 74.92 344 *e*P **P** **02 56 09.6 -0.3**
AKBB Malin Array Si 74.92 344 *e*P **P** **02 56 09.6 -0.3**
comp=Z,51nm,0.4s
KIEV Kiev 74.93 344 *d i*P **P** **02 56 09.4 -0.5**
KIEV pmax pmax
comp=Z,25nm,0.5s
KIEV Kiev 74.93 344 *e*P **P** **02 56 09.5 -0.5**
comp=Z,53nm,0.4s
BEL Belsk 74.94 350 *e*P **P** **02 56 10.7 +0.7**
BEL *ep*P **pP** **02 57 03.7 +4.9**
BEL LMZ LR 03 22 55.7
comp=Z,300nm,26.7s
BEL Belsk 74.94 350 *e*P **P** **02 56 10.7 +0.7**
BEL *e**PP **pP** **02 57 03.7 +4.9**
AK11 Malin Array Si 74.95 344 *e*P **P** **02 56 09.5 -0.6**
KOLN Koldanda 74.95 296 *e*Pn **P** **02 56 10.7 -0.1**
comp=Z,60nm,0.7s
PYUN Piuthan 75.02 297 *e*Pn **P** **02 56 11.2 0.0**
comp=Z,92nm,0.5s
WTSB Winterswijk 75.61 359 *e*P **P** **02 56 13.3 -0.5**
comp=Z,26nm,1.1s
WTSB *ep*P **pP** **02 57 07.5 +4.8**
CHBT CHBT 75.67 272 P **P** **02 56 15.1 +0.4**
comp=Z,69nm,1.1s
COEN Coen 75.67 222 *e*P **P** **02 56 14.6 0.0**
comp=Z,110nm,1.4s
SAUI Saumlaki 75.84 236 P **P** **02 56 16.6 +1.0**
comp=Z,866nm,1.0s
CLL Collm 76.08 355 ⇓*i*P **P** **02 56 16.9 +0.4**
comp=Z,35nm,1.3s
CLL *e* 02 57 03.0
CLL *i* pP **pP** **02 57 09.4 +4.0**
comp=Z,61nm,1.4s
CLL *es*P **sP** **02 57 29.0 +1.7**
CLL *e*S **S** **03 05 42.0 -0.4**
CLL *e*SP **SPn** **03 06 19.0 +0.2**
CLL *e*PS **PnS** **03 06 45.0 -3.7**
CLL *es*S **sS** **03 07 06.0 -1.7**
CLL *e*SS **SS** **03 10 42.0 +3.5**
CLL *es*SS 03 11 57.0
CLL *e*SSSS 03 16 12.0
CLL LmV 03 31 00.0
comp=Z,100nm,21.9s
CLL Collm 76.08 355 ⇓*i*P **P** **02 56 16.9 +0.4**
CLL *i **PP **pP** **02 57 09.4 +4.0**
CLL *e*S **S** **03 05 42.0 -0.4**
CLL pmax pmax
comp=Z,35nm,1.3s
CLL Collm 76.08 355 *e*P **P** **02 56 16.1 -0.3**
comp=Z,55nm,1.2s
KSP Ksiaz 76.33 353 *e*P **P** **02 56 18.3 +0.4**
KSP *ep*P **pP** **02 57 11.4 +4.5**
KSP *e*S **S** **03 05 46.2 +1.0**
KSP LMZ LR 03 23 49.1
KSP Ksiaz 76.33 353 *e*P **P** **02 56 18.3 +0.4**
KSP *e**PP **pP** **02 57 11.4 +4.5**
KSP *e*S **S** **03 05 46.2 +1.0**
KHLT Khaolaem Dam 76.35 276 P **P** **02 56 19.2 +0.6**
comp=Z,16nm,1.2s
SRDT SRDT 76.38 276 P **P** **02 56 18.8 +0.1**
comp=Z,178nm,0.9s
PATY Pattaya 76.43 273 P **P** **02 56 19.6 +0.6**
comp=Z,36nm,0.8s
BRG Berggiesshubel 76.45 354 *i* P **P** **02 56 18.9 +0.3**
comp=Z,40nm,1.3s
BRG pP **pP** **02 57 07.0 -0.6**
BRG S **S** **03 05 48.0 +1.5**
BRG *e* 03 17 30.5
comp=Z,5.6nm,1.1s
BRG *e*PKPPKP P'P'df 03 23 21.8 -12
comp=Z,3.5nm,1.1s
BRG Berggiesshubel 76.45 354 *i* P **P** **02 56 18.9 +0.3**
BRG *PP **pP** **02 57 07.0 -0.6**
BRG S **S** **03 05 48.0 +1.5**
BRG pmax pmax
comp=Z,40nm,1.3s
LVV L'vov 76.54 348 *e*P **P** **02 56 18.8 -0.3**
LVV *e* 02 57 07.0
OJC Ojcow 76.63 350 *e*P **P** **02 56 19.9 +0.3**
OJC *ep*P **pP** **02 57 13.1 +4.4**
OJC LMZ LR 03 29 58.0
OJC Ojcow 76.63 350 *e*P **P** **02 56 19.9 +0.3**
OJC *e**PP **pP** **02 57 13.1 +4.4**
OJC Ojcow 76.63 350 *e*P **P** **02 56 19.9 +0.3**
comp=Z,58nm,1.3s
UPC Upice 76.68 353 ⇓*e*P **P** **02 56 20.5 +0.6**
UPC *ex* x 02 56 27.2
UPC *ex* x 02 57 05.8
UPC *ep*P **pP** **02 57 13.8 +4.9**
UPC Upice 76.68 353 *e*P **P** **02 56 20.5 +0.6**
UPC *e* 02 56 27.2
UPC *e* 02 57 13.8
PVCC Panska Ves 76.76 354 ⇓*ep*P pP 02 57 14.7 +5.3
BEBN Eben Emael 76.79 360 P **P** **02 56 21.4 +0.9**
BEBN AP **pP** **02 57 09.4 -0.1**
DPC Dobruska-Polom 76.81 353 ⇓*i*P **P** **02 56 21.6 +0.9**
DPC *ex* x 02 57 06.2
DPC *ep*P **pP** **02 57 14.7 +5.0**
DPC *e*PP **PP** **02 59 16.0 +0.5**
DPC *e*S **S** **03 05 50.7 +0.1**
DPC Dobruska-Polom 76.81 353 ⇓*i*P **P** **02 56 21.6 +0.9**
DPC *e* 02 57 14.7
DPC *e* 02 59 16.0
DPC *e*S **S** **03 05 50.7 +0.1**
HGN Heimansgroeve 76.82 360 *e*P **P** **02 56 20.9 +0.3**
comp=Z,16nm,0.8s
HGN *ep*P **pP** **02 57 14.4 +4.7**
KBL Kabul 76.88 310 *e*P **P** **02 56 20.9 -0.7**
KBL Kabul 76.88 310 *e*P **P** **02 56 20.9 -0.7**
comp=Z,47nm,0.7s
KWP Kalwaria Pacla 76.89 348 *e*P **P** **02 56 21.7 +0.6**
KWP *ep*P **pP** **02 57 14.9 +4.8**
KWP LMZ LR 03 30 08.5
KWP Kalwaria Pacla 76.89 348 ⇓*i*P **P** **02 56 21.9 +0.8**
KWP Kalwaria Pacla 76.89 348 ⇓P **P** **02 56 21.9 +0.8**
MEM Membach 76.98 359 P **P** **02 56 22.8 +1.2**
comp=Z,19nm,1.3s
MEM AP **pP** **02 57 10.3 -0.3**
KRLC Kraliky 77.05 352 ⇓*e*P **P** **02 56 22.7 +0.6**
KRLC *ex* x 02 57 07.6
KRLC *ep*P **pP** **02 57 15.9 +4.8**
KRLC Kraliky 77.05 352 *e*P **P** **02 56 22.7 +0.6**
KRLC *e* 02 57 15.9
SNF Seneffe 77.08 1 P **P** **02 56 23.6 +1.5**
SNF AP **pP** **02 57 16.3 +5.2**
OKC Ostrava-Krasne 77.17 351 ⇓*e*P **P** **02 56 23.2 +0.6**
OKC *ex* x 02 57 09.6
OKC *ep*P **pP** **02 57 16.5 +4.8**
OKC *e*S **S** **03 05 51.5 -2.8**
OKC Ostrava-Krasne 77.17 351 *e*P **P** **02 56 23.2 +0.6**
OKC *e* 02 57 16.5
OKC *e*S **S** **03 05 51.5 -2.8**
BCLA Clavier 77.17 360 P **P** **02 56 23.6 +0.9**
comp=Z,12nm,1.3s
BCLA AP **pP** **02 57 11.2 -0.5**
NKC Novy Kostel 77.18 355 ⇓*i*P **P** **02 56 23.6 +0.9**

NKC *ex* x 02 57 08.9
NKC *ep*P **pP** **02 57 17.2 +5.4**
NKC Novy Kostel 77.18 355 ⇓*i*P **P** **02 56 23.6 +0.9**
NKC *e* 02 57 17.2
PHET Kaeng Krachan 77.19 274 P **P** **02 56 23.6 +0.4**
comp=Z,29nm,0.8s,comp=Z,251nm
STHS Stebnicka Huta 77.27 349 *e*P **P** **02 56 24.6 +1.3**
STHS *e* 02 57 17.3
STHS Stebnicka Huta 77.27 349 *e*P **P** **02 56 24.6 +1.3**
STHS *e* 02 57 12.1
STHS *e* 02 57 17.2
STHS *e* 03 17 21.4
GOF Gofitskoye 77.27 334 ⇑*e*P **P** **02 56 24.2 +0.9**
GOF pmax pmax
comp=Z,122nm,0.9s
MORC Moravsky Berou 77.28 352 ⇑*i*P **P** **02 56 23.9 +0.5**
MORC Moravsky Berou 77.28 352 ⇑P **P** **02 56 23.9 +0.5**
MORC Moravsky Berou 77.28 352 *e*P **P** **02 56 24.1 +0.8**
comp=Z,157nm,1.2s
MORC *e*PP **PP** **02 59 13.3 -6.1**
PRU Pruhonice 77.30 354 ⇓*e*P **P** **02 56 24.0 +0.6**
PRU *ex* x 02 57 10.3
PRU *ep*P **pP** **02 57 17.6 +5.2**
PRU *e*S **S** **03 05 56.4 +0.7**
PRU Pruhonice 77.30 354 *e*P **P** **02 56 24.0 +0.6**
PRU *e* 02 57 17.6
PRU *e*S **S** **03 05 56.4 +0.7**
GOPC GO Pecny, Ondr 77.36 354 ⇓*e*P **P** **02 56 24.3 +0.6**
GOPC *ex* x 02 57 08.7
GOPC *ep*P **pP** **02 57 17.7 +4.9**
GOPC *e*S **S** **03 05 57.5 +1.1**
GOPC GO Pecny, Ondr 77.36 354 *e*P **P** **02 56 24.3 +0.6**
GOPC *e* 02 57 17.7
GOPC *e*S **S** **03 05 57.5 +1.1**
NIE Niedzica 77.37 350 *e*P **P** **02 56 24.4 +0.5**
NIE *ep*P **pP** **02 57 17.3 +4.4**
NIE LMZ LR 03 29 54.9
NIE Niedzica 77.37 350 *e*P **P** **02 56 24.4 +0.5**
NIE *e**PP **pP** **02 57 17.3 +4.4**
TGUH Tegucigalpa,Un 77.44 83 *e*P **P** **02 56 26.5 +1.9**
comp=Z,62nm,0.7s
DOU Dourbes 77.49 0 P **P** **02 56 25.5 +1.1**
comp=Z,12nm,1.4s
DOU AP **pP** **02 57 12.7 -0.8**
SORM Soroca 77.55 344 ⇑*i*P **P** **02 56 24.8 +0.1**
SORM Soroca 77.55 344 ⇑P **P** **02 56 24.8 +0.1**
KOLS Kolonicke sedl 77.63 349 *e*P **P** **02 56 25.9 +0.7**
KOLS *e* 02 57 18.3
KOLS Kolonicke sedl 77.63 349 *e*P **P** **02 56 25.9 +0.7**
KOLS *e* 02 57 18.3
LANS Liptovska Anna 77.72 350 *e*P **P** **02 56 26.8 +1.0**
LANS *e* 02 57 20.3
LANS Liptovska Anna 77.72 350 *e*P **P** **02 56 26.8 +1.0**
LANS *e* 02 57 12.3
LANS *e* 02 57 20.3
CRVS Cervenica-Dubn 77.75 349 *e*P **P** **02 56 26.2 +0.3**
CRVS *e* 02 57 19.5
CRVS Cervenica-Dubn 77.75 349 *e*P **P** **02 56 26.2 +0.3**
CRVS *e* 02 57 19.5
CRVS *e* 03 17 22.0
GRFO Grafenberg 77.77 356 *e*P **P** **02 56 27.3 +1.3**
GRFO *e**PP **pP** **02 57 16.1 +1.0**
GRFO Grafenberg 77.77 356 *e*P **P** **02 56 27.3 +1.3**
comp=Z,97nm,1.2s
SBUM Sibu 77.82 258 ⇑P **P** **02 56 27.4 +0.7**
SBUM Sibu 77.82 258 *e*P **P** **02 56 26.6 -0.1**
comp=Z,29nm,0.6s
VRAC Vranov 77.83 352 ⇓*i*P **P** **02 56 27.2 +0.9**
VRAC Vranov 77.83 352 ⇓P **P** **02 56 27.2 +0.9**
TTSI Tana Toraja 77.85 248 P **P** **02 56 27.0 +0.1**
comp=Z,185nm,1.0s,comp=Z,2µm
UZH Uzhgorod 77.92 349 *e*P **P** **02 56 26.7 -0.1**
UZH *e* 02 56 43.1
UZH *e* 02 57 15.3
UZH *e* 02 57 46.9
WLF Walferdange 77.92 359 P **P** **02 56 28.3 +1.5**
WLF AP **pP** **02 57 21.2 +5.3**
WLF Walferdange 77.92 359 *e*P **P** **02 56 28.0 +1.2**
WLF *e**PP **pP** **02 57 21.3 +5.3**
WLF Walferdange 77.92 359 *e*P **P** **02 56 28.0 +1.2**
comp=Z,21nm,1.0s
TREC Trest 77.92 353 ⇓*e*P **P** **02 56 27.4 +0.5**
TREC *ex* x 02 57 12.6
TREC *ep*P **pP** **02 57 20.7 +4.7**
TREC Trest 77.92 353 *e*P **P** **02 56 27.4 +0.5**
TREC *e* 02 57 20.7
KHC Kasperske Hory 78.21 354 ⇓*e*P **P** **02 56 29.4 +0.9**
KHC *ex* x 02 57 13.8
KHC *ep*P **pP** **02 57 22.9 +5.2**
KHC Kasperske Hory 78.21 354 *e*P **P** **02 56 29.4 +0.9**
KHC *e* 02 57 22.9
KHC Kasperske Hory 78.21 354 *e*P **P** **02 56 28.9 +0.4**
comp=Z,33nm,1.2s
KECS Kecovo 78.28 350 *e*P **P** **02 56 29.5 +0.7**
KECS *e* 02 57 22.5
KECS Kecovo 78.28 350 *e*P **P** **02 56 29.5 +0.7**
KECS *e* 02 57 22.5
TRPA Tarpa 78.39 348 ⇑*e*PcP pP 02 57 23.1 +4.5
KIV Kislovodsk 78.39 333 *i* P **P** **02 56 30.2 +0.6**
SNR=9.3
KIV Kislovodsk 78.39 333 *e*P **P** **02 56 29.8 +0.2**
KIV *e**PP **pP** **02 57 19.1 +0.3**
KIV *e*S **S** **03 06 08.3 +0.5**
KIV pmax pmax
comp=Z,36nm,0.9s
KIV Kislovodsk 78.39 333 *e*P **P** **02 56 30.0 +0.3**
comp=Z,33nm,0.9s
KIV *e*PP **PP** **02 59 30.4 +1.4**
VYHS Vyhne 78.44 351 *e*P **P** **02 56 30.2 +0.5**
VYHS *e* 02 57 24.0
VYHS Vyhne 78.44 351 *e*P **P** **02 56 30.2 +0.5**
VYHS *e* 02 57 14.7
VYHS *e* 02 57 24.0
VYHS *e* 03 17 30.6
GEC2 GERESS Array S 78.49 354 *e*P **P** **02 56 30.5 +0.4**
GEC2 GERESS Array S 78.49 354 *e*P **P** **02 56 30.5 +0.4**
comp=Z,48nm,1.2s
GERES GERESS Array B 78.49 354 P **P** **02 56 30.1 +0.1**
comp=Z,8.8nm,0.9s,baz=20,slow=4.3,SNR=55
GERES pP **pP** **02 57 17.1 -2.1**
comp=Z,6.4nm,1.1s,baz=19,slow=6.2,SNR=3.5
GERES PKPPKP P'P'df 03 23 21.1 -9.0
comp=Z,0.5nm,0.6s,baz=173,slow=1.6,SNR=5.2
GERES GERESS Array B 78.49 354 P **P** **02 56 30.2 +0.1**
GERES pmax pmax
comp=Z,9.0nm,0.9s
GERES pmax pmax
comp=Z,7.0nm,1.1s
GEA0 GERESS Array S 78.50 354 *e*P **P** **02 56 30.4 +0.3**
BUR08 Bucovina Ar. S 78.51 346 *e*P **P** **02 56 30.6 +0.4**
BURAR Bucovina Array 78.53 346 ⇑*i*P **P** **02 56 30.6 +0.2**
BURAR Bucovina Array 78.53 346 ⇑P **P** **02 56 30.6 +0.2**
KBZ Khabaz 78.54 333 P **P** **02 56 31.2 +0.9**
comp=Z,17nm,0.8s,baz=106,slow=1.7,SNR=45
KBZ pP **pP** **02 57 16.1 -3.4**
comp=Z,3.5nm,0.8s,baz=315,slow=4.3,SNR=1.4
KBZ LR LR 03 36 11.5
comp=Z,80nm,20.3s,baz=13,slow=39
NCK Nalchik 78.56 333 ⇓*e*P **P** **02 56 31.6 +1.1**
NCK pmax pmax
comp=Z,59nm,0.8s
LANF Langenberg 78.59 358 ⇓*e*P pP 02 57 25.3 +5.6
IAS Iasi 78.59 345 ⇑*i*P **P** **02 56 31.3 +0.8**
IAS Iasi 78.59 345 ⇑P **P** **02 56 31.3 +0.8**
GEYT Alibeck 78.67 320 P **P** **02 56 31.6 +0.4**
comp=Z,25nm,0.8s,baz=343,slow=4.6,SNR=56
GEYT pP **pP** **02 57 18.5 -2.0**
comp=Z,4.6nm,0.9s,baz=15,slow=6.0,SNR=1.6
GEYT PP **PP** **02 59 31.4 0.0**
comp=Z,5.7nm,0.9s,baz=347,slow=6.1,SNR=4.1
PSZ Piszkesteto 78.90 350 ⇓*i*P **P** **02 56 33.2 +0.9**
PSZ Piszkesteto 78.90 350 ⇓*e*PcP pP 02 57 26.5 +5.0
PSZ Piszkesteto 78.90 350 ⇓P **P** **02 56 33.2 +0.9**
PSZ Piszkesteto 78.90 350 *e*P **P** **02 56 33.4 +1.1**
comp=Z,55nm,1.4s
ANN Anapa 78.93 337 *d i*P **P** **02 56 32.1 -0.3**
ANN *e**PP **pP** **02 57 26.0 +4.3**
ANN *e*S **S** **03 06 13.2 0.0**
ANN pmax pmax
comp=Z,19nm,0.6s
MTKI Muara Teweh, K 78.97 254 P **P** **02 56 36.2 +3.2**
NEY Neytrino 79.03 333 ⇑*e*P **P** **02 56 34.7 +1.4**

NEY pmax pmax
comp=Z,6.0nm,1.9s
ZEI Tsey 79.13 332 *e*P **P** **02 56 33.2 -0.6**
ZEI *e* 02 57 27.4
ZEI pmax pmax
comp=Z,52nm,0.6s
ARCR ARCALIA 79.17 347 ⇓*i*P **P** **02 56 34.9 +1.2**
LEOM Leova 79.18 344 ⇑*i*P **P** **02 56 34.3 +0.6**
LEOM Leova 79.18 344 ⇑P **P** **02 56 34.3 +0.6**
BFO Black Forest 79.23 358 *ce*P **P** **02 56 34.8 +0.8**
BFO Black Forest 79.23 358 *e*P **P** **02 56 34.4 +0.4**
comp=Z,52nm,1.3s
CONA Conrad Observa 79.26 353 *i* P **P** **02 56 35.2 +1.0**
SNR=10
GUDG Gudauri 79.26 332 P **P** **02 56 36.1 +1.5**
ECH Echery 79.36 359 *e*P pP 02 57 29.2 +5.2
THEF They Montfort 79.36 359 ⇓*e*P pP 02 57 29.6 +5.6
TESR Tescani 79.40 345 ⇑*i*P **P** **02 56 34.3 -0.6**
BUD Budapest 79.42 351 ⇑*e*PcP pP 02 57 28.6 +4.3
ONI Oni 79.44 332 P **P** **02 56 35.3 0.0**
ONI Oni 79.44 332 P **P** **02 56 35.3 0.0**
SOP Sopron 79.44 352 ⇑*e*PcP pP 02 57 29.6 +5.1
KAPI Kappang 79.51 247 P **P** **02 56 36.7 +0.8**
comp=Z,63nm,0.7s,baz=48,slow=1.9,SNR=48
KAPI Kappang 79.51 247 *e*P **P** **02 56 36.5 +0.6**
comp=Z,63nm,0.6s
SOC Sochi 79.52 335 *e*P **P** **02 56 35.1 -0.5**
SOC *e**PP **pP** **02 57 25.6 +0.7**
SOC *e*S **S** **03 06 17.0 -2.5**
SOC *e**SS sS 03 07 36.4 -9.2
SOC *e*SS **SS** **03 11 29.6 -0.9**
SOC *e*SSS SSS 03 14 59.7
SOC pmax pmax
comp=Z,28nm,0.7s
SIM Simferopol' **79.53 340** *d i*P **P** **02 56 36.5 +0.8**
SIM *i **PP **pP** **02 57 30.0 +5.0**
SIM *i* S **S** **03 06 21.6 +2.0**
SIM pmax pmax
comp=Z,20nm,0.9s
CJR Cluj-Napoca 79.64 347 ⇓*i*P **P** **02 56 37.4 +1.1**
CJR Cluj-Napoca 79.64 347 ⇓P **P** **02 56 37.4 +1.1**
DRGR 79.68 348 ⇑*i*P **P** **02 56 36.3 -0.2**
DRGR 79.68 348 ⇑P **P** **02 56 36.3 -0.2**
MOF Molkenrain 79.73 359 ⇓*e*P pP 02 57 31.6 +5.5
KSM Kuching 79.73 259 *e*P **P** **02 56 37.3 +0.1**
comp=Z,82nm,0.8s
KSM *e*PP **PP** **02 59 37.1 -4.1**
TBLG Delisi 79.86 331 P **P** **02 56 38.3 +0.7**
TBLG Delisi 79.86 331 P **P** **02 56 38.3 +0.7**
DGRG David-gareji 79.93 331 P **P** **02 56 38.8 +0.9**
DGRG David-gareji 79.93 331 P **P** **02 56 38.8 +0.9**
ARSA Arzberg 79.95 353 *i* P **P** **02 56 39.1 +1.2**
SNR=5.6
MTDJ Mount Denham 79.96 73 *e*P **P** **02 56 39.4 +0.9**
comp=Z,213nm,1.8s
VRI Vrincioaia 80.01 345 ⇑*i*P **P** **02 56 39.2 +0.9**
VRI Vrincioaia 80.01 345 ⇑P **P** **02 56 39.2 +0.9**
BSSI Bau Bau, Buton 80.02 246 P **P** **02 56 38.5 -0.2**
comp=Z,170nm,0.7s,comp=Z,3µm
PLOR Plostina 80.04 345 ⇑*i*P **P** **02 56 38.7 +0.3**
PLOR Plostina 80.04 345 ⇑P **P** **02 56 38.7 +0.3**
ODBI Odobesti 80.06 345 ⇑*i*P **P** **02 56 39.9 +1.4**
CTAO Charters Tower 80.06 217 *e*P **P** **02 56 39.1 +0.4**
CTAO Charters Tower 80.06 217 *e*P **P** **02 56 39.1 +0.4**
comp=Z,844nm,1.0s
MTN Manton Dam 80.10 233 *e*P **P** **02 56 39.3 +0.3**
comp=Z,250nm,0.6s
DOPR Dopca 80.12 346 ⇑*i*P **P** **02 56 41.0 +2.2**
MOTA Moosalm 80.12 356 *i* P **P** **02 56 39.9 +0.9**
SNR=9.0
STKI Sintang 80.17 257 P **P** **02 56 39.7 +0.2**
comp=Z,107nm,0.8s
LOMF Lomont 80.23 359 ⇓*e*P pP 02 57 34.4 +5.5
KBA Koelnbreinsper 80.27 354 *i* P **P** **02 56 41.1 +1.2**
SNR=17
KBA *i* pP **pP** **02 57 25.6 -3.7**
SNR=11
SIRR Siria 80.33 349 ⇑*i*P **P** **02 56 40.7 +0.8**
TLCR 80.33 343 ⇑*i*P **P** **02 56 41.0 +1.1**
TLCR 80.33 343 ⇑P **P** **02 56 41.0 +1.1**
GRER 80.45 345 ⇑*i*P **P** **02 56 42.6 +2.0**
CFR Carcaliu 80.45 344 ⇓*i*P **P** **02 56 41.4 +0.8**
CFR Carcaliu 80.45 344 ⇓P **P** **02 56 41.4 +0.8**
FETA Feichten 80.46 356 *i* P **P** **02 56 41.7 +0.9**
SNR=9.2
MLR Muntele Rosu 80.50 345 ⇑*i*P **P** **02 56 42.5 +1.5**
MLR Muntele Rosu 80.50 345 ⇑P **P** **02 56 42.5 +1.5**
MLR Muntele Rosu 80.50 345 *e*P **P** **02 56 41.8 +0.8**
comp=Z,23nm,0.9s
SOKA Soboth 80.56 353 *i* P **P** **02 56 42.3 +1.0**
SNR=9.5
BGD Bogdanovka 80.62 332 P **P** **02 56 43.2 +1.4**
BEHE Becsehely 80.63 352 ⇑*e*PcP pP 02 57 35.3 +4.3
ABTA Abfaltersbach 80.65 355 *i* P **P** **02 56 42.3 +0.5**
SNR=9.2
VOIR 80.69 346 ⇓*i*P **P** **02 56 42.9 +0.9**
VOIR 80.69 346 ⇓P **P** **02 56 42.9 +0.9**
ISR Istrita 80.77 345 ⇓*i*P **P** **02 56 43.1 +0.7**
ISR Istrita 80.77 345 ⇓P **P** **02 56 43.1 +0.7**
SURT Suratani 80.78 273 P **P** **02 56 43.2 +0.4**
comp=Z,58nm,0.9s,comp=Z,552nm
ARR Arges 80.82 346 ⇓*i*P **P** **02 56 43.5 +0.9**
FUORN Ofenpass-Fuorn 80.88 356 *e*P **P** **02 56 44.2 +1.1**
comp=Z,112nm,1.5s
MTUR Matau 80.89 346 ⇑*i*P **P** **02 56 44.3 +1.3**
MTUR Matau 80.89 346 ⇑P **P** **02 56 44.3 +1.3**
SECR 80.93 345 ⇓*i*P **P** **02 56 44.1 +1.0**
HARR Harsova 80.96 344 ⇓*i*P **P** **02 56 44.3 +1.0**
HARR Harsova 80.96 344 ⇓P **P** **02 56 44.3 +1.0**
BZS Buzias 80.97 348 ⇑*i*P **P** **02 56 43.2 -0.1**
BZS Buzias 80.97 348 ⇑P **P** **02 56 43.2 -0.1**
SOEI Soe 80.98 241 P **P** **02 56 43.8 0.0**
comp=Z,156nm,0.9s,comp=Z,2µm
SOEI Soe 80.98 241 *e*P **P** **02 56 43.6 -0.2**
comp=Z,115nm,0.8s
KTGM Kuala Trenggan 81.00 267 ⇑P **P** **02 56 44.7 +0.7**
BBKI Banjar Baru 81.04 252 P **P** **02 56 44.9 +0.8**
TUE Stuetta 81.06 357 *e*P **P** **02 56 44.2 +0.2**
comp=Z,68nm,1.3s
TIRR Tirgusor 81.10 343 ⇑*i*P **P** **02 56 44.7 +0.7**
TIRR Tirgusor 81.10 343 ⇑P **P** **02 56 44.7 +0.7**
TIRR Tirgusor 81.10 343 *e*P **P** **02 56 44.0 0.0**
comp=Z,44nm,0.6s
TRTT Trang 81.12 271 P **P** **02 56 44.9 +0.3**
comp=Z,154nm,0.9s,comp=Z,1µm
MMRI Maumere 81.13 243 P **P** **02 56 44.0 -0.5**
comp=Z,128nm,0.9s
MMRI Maumere 81.13 243 *e*P **P** **02 56 43.5 -1.0**
comp=Z,107nm,0.9s
GNI Garni 81.31 330 *d i*P **P** **02 56 46.7 +1.2**
GNI pmax pmax
comp=Z,49nm,1.3s
EDFI Ende, Flores 81.52 243 P **P** **02 56 45.6 -1.1**
comp=Z,119nm,0.7s,comp=Z,9µm
AGO Saint Agoulin 81.53 1 *e*P pP 02 57 40.8 +5.0
HUMR Humele 81.59 346 ⇓*i*P **P** **02 56 46.5 -0.1**
PLDF La Plantade 81.61 1 *e*P pP 02 57 42.1 +5.7
BATI Baumata 81.67 241 P **P** **02 56 48.6 +1.2**
comp=Z,42nm,0.7s
MANR Mangalia 81.70 343 ⇑*i*P **P** **02 56 48.5 +1.4**
MDVR Moldovita 81.78 348 ⇑*i*P **P** **02 56 48.1 +0.4**
PYM Petit Puy Mans 81.82 2 *e*P pP 02 57 42.4 +4.9
PSN Preselentsi 81.90 343 *i* P **P** **02 56 49.4 +1.2**
PKDT Phuket 81.90 272 P **P** **02 56 49.4 +0.8**
comp=Z,90nm,1.0s,comp=Z,4µm
BLY Banja Luka 82.30 351 ⇑*i*P **P** **02 56 50.5 +0.2**
SSB Saint Sauveur 82.31 0 *e*P **P** **02 56 51.6 +1.2**
SSB Saint Sauveur 82.31 0 *e*P **P** **02 56 51.6 +1.2**
comp=Z,60nm,1.2s
LBL Lubilhac 82.35 1 *e*P pP 02 57 45.2 +4.9
ZIMR 82.38 345 ⇑*i*P **P** **02 56 51.3 +0.6**
ZIMR 82.38 345 ⇑P **P** **02 56 51.3 +0.6**
PRD Provadia 82.50 344 *i* P **P** **02 56 52.4 +1.1**
KULM Kulim 82.54 269 *e*P **P** **02 56 52.5 +0.5**
comp=Z,73nm,0.8s
UDBI Udbina 82.64 352 P **P** **02 56 52.0 -0.2**
PVL Pavlikeni 82.82 345 *i* P **P** **02 56 53.7 +0.7**
MPEP Malo Peshtene 82.92 347 *i* P **P** **02 56 53.4 -0.1**
IPM Ipoh 82.95 268 *e*P **P** **02 56 53.2 -0.8**
comp=Z,88nm,0.7s
EIDS Eidsvold 83.33 211 *e*P **P** **02 56 56.4 +0.8**
comp=Z,39nm,0.8s
BASI Baing, Sumba 83.34 244 P **P** **02 56 55.2 -0.8**
comp=Z,612nm,0.7s,comp=Z,7µm

JMB	Yambol	83.35	344	*i* P	P	02 56 56.3	+0.6
MYKOM	Kota Tinggi	83.36	264	*e*P	P	02 56 56.1	-0.1
comp=Z,44nm,0.8s							
PGB	Panagyurishte	83.64	346	*i* P	P	02 56 57.7	+0.4
MVIF	Mont Vial	83.68	359	*e*P	pP	02 57 52.2	+4.8
LUCF	Luceram	83.68	358	*e*P	pP	02 57 52.7	+5.4
PLAI	Plampang	83.74	247	P	P	02 56 56.1	-1.9
comp=Z,110nm,1.5s,comp=Z,1μm							
CALN	Calern	83.83	359	*e*P	pP	02 57 52.9	+4.7
REVF	Revere	83.84	358	*e*P	pP	02 57 52.9	+4.8
PLD	Plovdiv	84.00	346	*i* P	P	02 56 59.4	+0.4
STON	Ston	84.11	351	P	P	02 56 59.0	-0.6
TWSI	Taliwang, Sumb	84.17	247	P	P	02 56 58.0	-2.2
comp=Z,56nm,0.6s							
KDZ	Kurdzhali	84.33	345	*i* P	P	02 57 01.4	+0.7
PDG	Podgorica	84.39	350	⇓*i*P	P	02 57 00.8	-0.2
KKB	Krupnik	84.47	347	*i* P	P	02 57 02.4	+1.0
SRBI	Singaraja	84.58	249	P	P	02 57 00.7	-1.5
comp=Z,99nm,0.8s,comp=Z,1μm							
SKO	Skopje	84.58	348	*i* P	P	02 57 03.2	+1.2
BR131	Keskin Array S	84.63	338	*e*P	P	02 57 02.9	+0.5
BRTR	Keskin Array B	84.63	338	P	P	02 57 02.6	+0.2
comp=Z,10.0nm,0.9s,baz=43,slow=2.6,SNR=53							
BRTR				pP	pP	02 57 51.2	-1.1
comp=Z,4.5nm,0.9s,baz=52,slow=3.0,SNR=3.6							
BRTR				PP	PP	03 00 22.1	+1.9
comp=Z,1.7nm,0.9s,baz=20,slow=6.2,SNR=4.0							
BRTR				PKKPbc	PKKPbc	03 15 09.6	+1.0
comp=Z,2.0nm,0.7s,baz=181,slow=5.1,SNR=16							
BRTR				PKPPKP	P'P'df	03 23 03.4	-16
comp=Z,1.1nm,0.8s,baz=174,slow=4.5,SNR=4.9							
BRTR				LR	LR	03 41 13.7	
comp=Z,40nm,18.5s,baz=44,slow=40							
MMB	Musomiste	84.65	346	*i* P	P	02 57 02.9	+0.5
ANTO	Ankara	84.67	339	*e*P	P	02 57 03.8	+1.2
ANTO				*e*		02 57 58.4	
ANTO	Ankara	84.67	339	*e*P	P	02 57 03.8	+1.2
comp=Z,77nm,1.3s							
BR231	Keskin MP Arra	84.70	339	*e*P	P	02 57 02.9	+0.2
WRAB	Tennant Creek	84.76	227	*d i*P	P	02 57 02.8	-0.2
WRAB				pmax	pmax		
comp=Z,248nm,1.3s							
WRAB	Tennant Creek	84.76	227	*e*P	P	02 57 02.8	-0.2
comp=Z,108nm,1.2s							
WB2	Warramunga Arr	84.77	227	*e*P	P	02 57 02.7	-0.3
comp=Z,131nm,1.3s							
WRA	Warramunga Arr	84.77	227	P	P	02 57 02.5	-0.6
comp=Z,51nm,0.6s,baz=35,slow=5.9,SNR=21							
LHMI	Lhok Sumawe	84.84	272	P	P	02 57 04.7	+1.1
comp=Z,332nm,1.0s,comp=Z,3μm							
LHMI	Lhok Sumawe	84.84	272	*e*P	P	02 57 04.7	+1.1
comp=Z,211nm,0.7s							
NVR	Nevrokopi	84.86	346	P	P	02 57 04.2	+0.8
ABJI	Asem Bagus	84.90	250	P	P	02 57 03.1	-0.7
comp=Z,76nm,1.2s							
ALN	Alexandroupoli	84.97	344	P	P	02 57 03.9	0.0
VAY	Valandovo	85.08	347	⇑*i*P	P	02 57 05.7	+1.3
KAVA	Kavala	85.11	345	P	P	02 57 04.8	+0.2
PPBI	Pangkal Pinang	85.12	260	P	P	02 57 05.2	+0.2
comp=Z,74nm,1.1s							
SRS	Serrai	85.13	346	P	P	02 57 04.8	+0.1
PCAB	Cabril	85.19	10	*e*P	P	02 57 05.4	+0.4
PCAB				*e*pP	pP	02 57 55.1	+0.1
KNT	Kendrikon	85.19	347	P	P	02 57 05.9	+0.9
PBRG	Braganca	85.22	9	*e*P	P	02 57 05.6	+0.4
PBRG				*e*pP	pP	02 57 55.0	-0.2
TIR	Tirane	85.39	349	⇓*i*P	P	02 57 06.4	+0.5
TIR	Tirane	85.39	349	⇓P	P	02 57 06.5	+0.5
GRG	Griva	85.46	347	P	P	02 57 06.7	+0.3
OHR	Ohrid	85.51	348	*i* P	P	02 57 07.2	+0.5
BIA	Bitola	85.54	348	*i* P	P	02 57 06.9	+0.1
POLO	Lamas de Olo	85.54	10	*e*P	P	02 57 07.3	+0.4
PSI	Prapat	85.55	269	*e*P	P	02 57 07.3	0.0
PSI				pmax	pmax		
comp=Z,158nm,0.7s							
PSI	Prapat	85.55	269	*e*P	P	02 57 07.2	0.0
comp=Z,158nm,0.7s							
PVRL	Vila Real	85.65	10	*e*P	P	02 57 06.8	-0.5
comp=Z,38nm,1.7s							
PVRL				*e*pP	pP	02 57 57.4	0.0
KCSI	Kotacane, Aceh	85.68	270	P	P	02 57 06.0	-1.8
comp=Z,38nm,1.0s							
PTO	Porto	85.69	10	*e*P	P	02 57 07.6	+0.2
GMJI	Gumukmas	85.74	251	P	P	02 57 05.5	-2.5
comp=Z,35nm,1.3s							
MVO	Moncorvo	85.83	9	*e*P	P	02 57 08.2	0.0
comp=Z,22nm,1.5s							
MVO				*e*pP	pP	02 57 58.3	0.0
OUR	Ouranopolis	85.84	346	P	P	02 57 08.2	0.0
MLSI	Meulaboh, Aceh	85.92	272	P	P	02 57 07.5	-1.5
comp=Z,90nm,0.8s							
HYB	Hyderabad	85.99	294	*i* P	P	02 57 09.0	-0.3
PVIS	Viseu	86.18	10	*e*P	P	02 57 10.1	+0.1
BKNI	Bangkinang	86.22	266	P	P	02 57 10.9	+0.5
comp=Z,188nm,1.1s							
SMRI	Semarang	86.49	254	P	P	02 57 10.4	-1.3
comp=Z,125nm,0.7s							
SJG	San Juan	86.50	65	*e*P	P	02 57 12.0	+0.2
SJG	San Juan	86.50	65	*e*P	P	02 57 12.0	+0.2
comp=Z,23nm,1.2s							
MTE	Manteigas	86.53	10	*e*P	P	02 57 11.8	+0.1
MNSI	Mandailing Nat	86.73	267	P	P	02 57 11.8	-1.1
comp=Z,113nm,0.7s,comp=Z,4μm							
THL	Klokotos Trika	86.88	347	P	P	02 57 13.7	+0.4
SDSI	Sungai Dareh	86.98	265	P	P	02 57 14.2	+0.1
comp=Z,126nm,0.9s,comp=Z,25μm							
IGT	Igoumenitsa	87.13	348	P	P	02 57 14.7	+0.2
PTOM	Tomar	87.21	11	*e*P	P	02 57 14.9	0.0
FITZ	Fitzroy Crossi	87.30	235	P	P	02 57 15.7	+0.3
comp=Z,75nm,0.7s,baz=43,slow=4.1,SNR=114							
FITZ	Fitzroy Crossi	87.30	235	*e*P	P	02 57 15.7	+0.3
comp=Z,79nm,0.7s							
AGG	Agios Georgios	87.37	347	*e*P	P	02 57 14.8	-0.9
AGG	Agios Georgios	87.37	347	*e*P	P	02 57 14.8	-0.9
comp=Z,125nm,1.4s							
DSL	Palaion Diasel	87.42	348	P	P	02 57 16.2	+0.3
EVR	Evrytania	87.54	347	P	P	02 57 16.8	+0.2
PDSI	Padang	87.55	265	P	P	02 57 15.7	-1.1
comp=Z,34nm,0.9s,comp=Z,10μm							
GSI	Gunungsitoli	87.55	269	P	P	02 57 17.4	+0.6
comp=Z,251nm,0.9s							
GSI	Gunungsitoli	87.55	269	*e*P	P	02 57 16.6	-0.2
comp=Z,147nm,0.7s							
ES19	SONSECA Array	87.55	7	*e*P	P	02 57 16.3	-0.3
ESDC	Sonseca Array	87.57	7	P	P	02 57 16.3	-0.4
comp=Z,0.9nm,0.4s,baz=342,slow=4.2,SNR=16							
ESDC				pP	pP	02 58 05.3	-1.6
comp=Z,0.6nm,0.5s,baz=338,slow=4.6,SNR=3.1							
ESDC				PKKPbc	PKKPbc	03 15 02.3	+0.7
comp=Z,0.8nm,0.5s,baz=197,slow=1.6,SNR=12							
ESDC				SKKPbc	SKKPbc	03 18 19.1	+4.2
comp=Z,1.5nm,0.7s,baz=199,slow=1.7,SNR=18							
ESDC				PKPPKP	P'P'df	03 23 05.2	-8.3
comp=Z,0.3nm,0.6s,baz=177,slow=2.6,SNR=4.2							
POO	Poona	87.66	298	⇓*i*P	P	02 57 14.0	-3.4
comp=Z,11nm,1.0s							
PMAFR	Mafra	87.77	11	*e*P	P	02 57 17.5	0.0
PMTG	Montargil	87.78	10	*e*P	P	02 57 17.5	-0.1
ARMA	Armidale	87.89	209	*e*P	P	02 57 19.9	+1.8
comp=Z,135nm,0.8s							
PDO	Prodromos	87.94	348	P	P	02 57 18.5	+0.2
LHSI	Lahat	88.01	261	P	P	02 57 18.1	-0.8
comp=Z,72nm,1.1s							
PESTR	Estremoz	88.04	10	*e*pP	pP	02 58 06.8	-2.4
AS01	Alice Springs	88.21	226	*e*P	P	02 57 20.1	+0.4
OUZ	Omahuta	88.22	190	*e*P	P	02 57 21.0	+1.7
comp=Z,42nm,0.9s							
AS31	Alice Springs	88.23	226	*e*P	P	02 57 20.3	+0.5
comp=Z,47nm,0.7s							
ASAR	Alice Springs	88.23	226	P	P	02 57 20.2	+0.5
comp=Z,147nm,0.7s,baz=25,slow=4.9,SNR=868							
ASAR	Alice Springs	88.23	226	P	P	02 57 20.3	+0.5
ASAR				pmax	pmax		
comp=Z,148nm,0.7s							
MASI	Maura Aman, Be	88.24	263	P	P	02 57 19.9	-0.2
comp=Z,258nm,1.0s,comp=Z,7μm							
KLV	Kalavryta, Ach	88.36	347	P	P	02 57 19.9	-0.5
LWLI	Liwa	88.64	260	P	P	02 57 23.0	+1.0
comp=Z,100nm,0.7s,comp=Z,13μm							
PBAR	Barrancos	88.79	10	*e*P	P	02 57 22.5	+0.2
PBAR				*e*pP	pP	02 58 13.2	+0.5
PBEJ	Beja	88.85	10	*e*pP	pP	02 58 12.5	-0.5
LAST	Lasithi	90.66	344	⇓*i*P	P	02 57 30.3	-0.9
LAST	Lasithi	90.66	344	*e*P	P	02 57 30.2	-1.0
comp=Z,50nm,1.0s							
UOSS	Minazif	90.80	315	*e*P	P	02 57 30.2	-1.7
comp=Z,0.6nm,0.6s							
URZ	Urewera	90.95	186	*e*P	P	02 57 30.5	-1.5
comp=Z,27nm,0.8s							
NAZ	Nazwa, Dubai	91.00	316	*i* P	P	02 57 31.7	-1.2
SNR=5.8							
HIZ	Hauiti	91.37	188	*e*P	P	02 57 35.3	+1.3
comp=Z,94nm,0.9s							
HIZ				*e*PP	PP	03 01 08.9	-6.2
BKZ	Black Stump Fm	91.89	187	*e*P	P	02 57 35.2	-1.2
comp=Z,20nm,0.7s							
STKA	Stephens Creek	92.49	216	P	P	02 57 39.8	+0.5
comp=Z,33nm,0.6s,baz=359,slow=5.9,SNR=93							
STKA	Stephens Creek	92.49	216	*e*P	P	02 57 39.9	+0.6
STKA	Stephens Creek	92.49	216	*e*P	P	02 57 39.9	+0.6
comp=Z,7.7nm,0.6s							
OTAV	Otavalo	93.64	85	*e*P	P	02 57 47.0	+1.3
comp=Z,5.4nm,1.0s							
LPAZ	La Paz	112.86	87	PKiKP	PKiKP	03 03 05.8	+0.7
comp=Z,1.8nm,0.8s,baz=32,slow=7.0,SNR=7.0							
TORD	Torodi Ar. Bea	114.27	4	PKP	PKPdf	03 03 05.7	-1.5
comp=Z,1.5nm,0.5s,baz=344,slow=2.3,SNR=36							
TORD				PP	PP	03 04 09.0	+4.4
comp=Z,1.1nm,0.8s,baz=330,slow=5.0,SNR=5.1							
TORD				SKP		03 06 20.7	
comp=Z,2.3nm,0.7s,baz=0.3,slow=1.9,SNR=9.8							
TORD				PKKPbc	PKKPbc	03 13 45.7	+0.3
comp=Z,6.7nm,0.7s,baz=167,slow=2.9,SNR=26							
TORD				SKKPbc	SKKPbc	03 17 09.9	+3.3
comp=Z,0.8nm,0.7s,baz=33,slow=0.2,SNR=6.7							
DBIC	Dimbokro	120.16	12	PKP	PKPdf	03 03 17.6	-1.0
comp=Z,3.9nm,0.8s,baz=4.6,slow=4.9,SNR=11							
DBIC				SKP		03 06 32.1	
comp=Z,7.2nm,1.0s,baz=332,slow=4.2,SNR=5.3							
DBIC				PKKPbc	PKKPbc	03 13 26.2	+1.5
comp=Z,7.2nm,0.7s,baz=167,slow=3.7,SNR=15							
DBIC	Dimbokro	120.16	12	PKIKP	PKPdf	03 03 17.6	-1.0
DBIC				pmax	pmax		
comp=N,7.0nm,1.0s							
DBIC				pmax	pmax		
comp=Z,7.0nm,0.7s							
TIC	Toumodi	120.16	12	*e*PKP1	SKPdf	03 06 32.3	-1.9
TIC	Toumodi	120.16	12	*e*PKP1	PKKPbc	03 13 25.0	+0.3
KIC	Kosan Boka	120.47	12	*e*PKP1	SKPdf	03 06 32.9	-1.9
comp=Z,72nm,1.8s							
KIC	Kosan Boka	120.47	12	*e*PKP1	PKKPbc	03 13 25.2	+1.7
comp=Z,18nm,0.7s							
LIC	Lamto	120.57	12	*e*PKP1	SKPdf	03 06 33.3	-1.7
comp=Z,26nm,1.1s							
LIC	Lamto	120.57	12	*e*PKP1	PKKPbc	03 13 24.2	+1.1
comp=Z,23nm,0.9s							
KMBO	Kilima Mbogo	122.03	321	PKP	PKPdf	03 03 22.9	+0.4
comp=Z,5.4nm,0.8s,baz=337,slow=2.8,SNR=13							
CPUP	Villa Florida	126.99	86	PKP	PKPdf	03 03 30.7	-0.5
comp=Z,9.3nm,0.8s,baz=339,slow=1.9,SNR=27							
CPUP				SKPbc	SKPbc	03 06 26.6	
comp=Z,2.1nm,0.7s,baz=298,slow=4.8,SNR=5.1							
PLCA	Paso Flores	129.03	109	PKP	PKPdf	03 03 35.5	+0.7
comp=Z,32nm,0.8s,baz=295,slow=2.7,SNR=33							
PLCA				SKPbc	SKPbc	03 06 35.9	-0.1
comp=Z,56nm,0.7s,baz=327,slow=4.5,SNR=85							
VNDA	Vanda	130.85	187	PKP	PKPdf	03 03 37.5	+0.5
comp=Z,1.4nm,0.6s,baz=20,slow=2.2,SNR=6.9							
VNDA				SKPbc	SKPab	03 06 41.9	-0.1
comp=Z,19nm,0.7s,baz=327,slow=5.1,SNR=42							
VNDA	Vanda	130.85	187	*e*PKIKP	PKPdf	03 03 37.2	+0.2
VNDA	Vanda	130.85	187	*e*PKPdf	PKPdf	03 03 37.2	+0.2
VNDA				SKPbc	SKPab	03 06 41.9	-0.1
USHA	Ushuaia	138.31	123	SKPbc	SKPbc	03 07 05.7	-0.4
comp=Z,73nm,0.8s,baz=142,slow=5.0,SNR=3.9							
LSZ	Lusaka	138.40	325	PKhKP	PKPpre	03 03 50.3	
comp=Z,3.6nm,0.8s,baz=41,slow=3.4,SNR=6.9							
LSZ				SKPbc	SKPbc	03 07 06.3	-1.6
comp=Z,2.2nm,0.7s,baz=360,slow=5.5,SNR=4.8							
LSZ				SKKPbc	SKKPbc	03 15 51.0	+4.9
comp=Z,3.0nm,1.1s,baz=180,slow=6.1,SNR=3.9							
QSPA	South Pole Qui	142.54	180	*e*PKPpre	PKPpre	03 03 55.0	
MATP	Matopo	143.03	322	PKhKP	PKPpre	03 03 57.9	
comp=Z,14nm,0.9s,baz=6.0,slow=3.1,SNR=25							
MATP				SKPbc	SKPbc	03 07 17.9	-1.9
comp=Z,5.4nm,0.7s,baz=342,slow=3.3,SNR=6.2							
MATP				SKKPbc	SKKPab	03 15 30.2	-1.5
comp=Z,3.8nm,0.7s,baz=199,slow=5.7,SNR=8.7							
PMSA	Palmer Station	144.08	137	PKP	PKPbc	03 04 00.2	0.0
TSUM	Tsumeb	145.13	339	PKPbc	PKPbc	03 04 04.6	-0.4
comp=Z,27nm,0.9s,baz=11,slow=4.8,SNR=40							
TSUM				SKPbc	SKPbc	03 07 23.6	-1.2
comp=Z,16nm,0.9s,baz=7.2,slow=4.0,SNR=9.9							
TSUM	Tsumeb	145.13	339	*e*PKPbc	PKPdf	03 04 05.1	0.0
TSUM				SKPbc	SKPbc	03 07 23.6	-1.2
LBTB	Lobatse	148.29	323	PKPbc	PKPbc	03 04 13.4	-0.4
comp=Z,36nm,0.7s,baz=26,slow=2.2,SNR=6.8							
LBTB	Lobatse	148.29	323	*e*PKIKP	PKPdf	03 04 09.7	-0.4
LBTB				*e*		03 04 13.6	
LBTB	Lobatse	148.29	323	*e*PKPdf	PKPdf	03 04 09.7	-0.4
LBTB				*e*PKPbc	PKPbc	03 04 13.6	-0.2
MAW	Mawson	149.13	219	PKPbc	PKPbc	03 04 15.0	+0.6
comp=Z,98nm,0.8s,baz=93,slow=0.5,SNR=102							
MAW	Mawson	149.13	219	*e*PKIKP	PKPdf	03 04 09.7	-0.3
MAW	Mawson	149.13	219	*e*PKPdf	PKPdf	03 04 09.7	-0.3
MAW				*e*PKPbc	PKPbc	03 04 14.3	-0.1
BOSA	Boshof	151.67	321	PKPbc	PKPbc	03 04 21.3	-0.6
comp=Z,27nm,0.7s,baz=30,slow=2.1,SNR=39							
BOSA	Boshof	151.67	321	*e*PKIKP	PKPbc	03 04 20.2	-1.7
BOSA				*e*		03 04 30.9	
BOSA	Boshof	151.67	321	*e*PKPbc	PKPbc	03 04 20.1	-1.7
BOSA				*e*PKPab	PKPab	03 04 30.9	-0.5
SYO	Syowa Base	157.18	212	⇓*e*X	PKPdf	03 04 19.4	-2.1
SYO	Syowa Base	157.18	212	⇓*i*X	PKPab	03 04 52.0	-1.6
VNA3	Neumayer Olymp	160.32	166	P	PKPdf	03 04 22.9	-2.3
SNAA	Sanae	160.71	172	P	PKPdf	03 04 24.7	-1.0
SNAA	Sanae	160.71	172	*e*PKIKP	PKPdf	03 04 24.4	-1.3
SNAA				*e*		03 05 09.1	
SNAA	Sanae	160.71	172	*e*PKPdf	PKPdf	03 04 24.4	-1.3
SNAA				*e*PKPab	PKPab	03 05 09.1	0.0
VNA2	Neumayer--Watz	160.93	167	P	PKPdf	03 04 24.7	-1.2
baz=270,slow=0.5							
VNA1	Neumayer--Stat	161.06	166	P	PKPdf	03 04 24.4	-1.6
NVL	N'lazarevskaya	161.71	187	*e*PKP2	PKPab	03 05 12.4	-0.9

NEIC 05 02:48:20.6,52°.49N×174°.66W,h197km,MG3.6(AEIC),
After AEIC., Andreanof Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KOWE	Korovin West	0.28	116	P	Pn	02 48 46.1	-0.6
KOKL	Mount Kliuchef	0.33	121	P	Pn	02 48 46.5	-0.4
GSTR	Great Sitkin T	0.95	246	P	Pn	02 48 49.4	-0.3
GSTR				S	Sn	02 49 11.8	-0.4
GSMY	Great Sitkin M	0.97	243	P	Pn	02 48 48.8	-1.1
GSCK	Great Sitkin C	1.04	243	P	Pn	02 48 49.5	-0.9
ETKA	Kagalaska Isla	1.25	240	P	Pn	02 48 51.0	-0.8
ETKA				S	Sn	02 49 15.3	-0.7
ADAG	Mount Adagdak	1.30	248	P	Pn	02 48 51.9	-0.4
KIRH	Kanaga Island	1.61	249	P	Pn	02 48 54.3	-0.7
KIRH				S	Sn	02 49 21.1	-0.6
KINC	Kanaga Island	1.62	251	P	Pn	02 48 54.3	-0.8
KICM	Kanaga Island	1.66	251	P	Pn	02 48 54.7	-0.8
TAPA	Tanaga Point A	2.06	252	P	Pn	02 48 58.7	-0.8
TAFP	Tanaga Falls P	2.13	255	P	Pn	02 48 59.3	-0.9
TAFP				S	Sn	02 49 30.0	-1.1
GALAA	Gareloi Lava P	2.64	256	P	Pn	02 49 06.6	+0.7
GALAA				S	Sn	02 49 39.7	-1.4
UNV	Unalaska Valle	5.09	71	Pn	Pn	02 49 35.7	-0.2
UNV				S	Sn	02 50 39.0	+3.6

IDC ***05*** *03:04:58.0±0.5,37°.32N×143°.72E,h0km,mb4.2/24, mb1 4.5/28,mb1mx4.3/48,mbtmp4.3/28,ML4.1/4,MS3.5/4, Ms1 3.5/4,ms1mx2.9/37,Error ellipse: s-maj=14.5km s-min=13.7km az=114.0*
NEIC ***05*** *03:05:00.3±0.3,37°.37N×143°.67E,h10km,mb4.7/33,Error ellipse: s-maj=7.6km s-min=5.3km az=144.0*
ISCJB ***05*** *03:05:00.4±1.2,37°.57N±0°.04×143°.51E±0°.03,h13km±7km, mb4.5/78,MS4.0/4,Error ellipse: s-maj=7.1km s-min=3.8km az=166.6*
NIED ***05*** *03:05:00,37°.50N×143°.50E,h8km,Mw4.3 Best double couple: M0:3.41000×10^15 NP1:φs=344.00000°,δ=28.00000°, λ=-128.00000°. NP2:φs=206.00000°,δ=68.00000°, λ=-72.00000°.*
JMA ***05*** *03:05:01.8±0.3,37°.50N×143°.50E,h41km,M4.3*
MOS ***05*** *03:05:02.6±1.9,37°.49N×143°.55E,h33km,mb4.7/37,Error ellipse: s-maj=9.1km s-min=5.6km az=113.5*

ISC 05 03:05:03.3±1.9,37°.59N±0°.06×143°.61E±0°.05,h24km±12km, n188,σ1=69/185,mb4.6/82,MS4.0/5,6C-4D,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	1.99	296	P	Pn	03 05 33.7	-1.7
JIO				*e*S	Sn	03 05 56.7	-2.8
JFK	Kawauchi	2.19	265	P	Pn	03 05 35.7	-2.5
JFK				*e*S	Sn	03 06 00.6	-4.0
JMK	Ichinoseki	2.32	307	P	Pn	03 05 38.5	-1.5
JMK				S	Sn	03 06 06.1	-1.7
JFT	Otama	2.61	269	P	Pn	03 05 42.4	-1.5
JFT				S	Sn	03 06 12.6	-2.2
JOM	Ohasama	2.62	317	P	Pn	03 05 42.9	-1.2
JOM				S	Sn	03 06 13.7	-1.4
JYK	Kaneyama	2.88	298	P	Pn	03 05 46.7	-1.0
ERM	Erimo	4.43	356	*c i*P	Pn	03 06 07.3	-1.7
ERM				pmax	pmax		
comp=Z,48nm,0.7s							
ERM	Erimo	4.43	356	*e*Pn	Pn	03 06 07.3	-1.7
ERM				*e*S	Sn	03 06 56.0	-3.8
MJAR	Matsushiro Arr	4.45	258	Pn	Pn	03 06 07.8	-1.4
comp=Z,32nm,0.3s,baz=90,slow=15,SNR=84							
MJAR				Sn	Sn	03 06 56.7	-3.6
comp=Z,17nm,0.3s,baz=83,slow=7.8,SNR=11							
MAJO	Matsushiro	4.45	258	*c i*P	Pn	03 06 08.8	-0.5
MAJO	Matsushiro	4.45	258	*e*Pn	Pn	03 06 08.2	-1.0
MAJO				*e*S	Sn	03 06 59.8	-0.5
MAT	Matsushiro	4.45	258	P	Pn	03 06 07.9	-1.4
MAT				S	Sn	03 06 58.2	-2.1
MJB9	Matsu-Tunnel	4.45	258	*e*Pn	Pn	03 06 08.3	-1.0
MJB9				*e*Sn	Sn	03 06 59.0	-1.3
JHJ2	Mitsune	5.44	216	*e*Pn	Pn	03 06 17.8	-5.1
JHJ2				*e*S	Sn	03 07 15.4	-9.3
JHJ	Hachijo jima 2	5.45	216	Pn	Pn	03 06 17.9	-5.1
comp=Z,82nm,0.3s,baz=175,slow=24,SNR=21							
JHJ				Sn	Sn	03 07 16.0	-8.9
comp=Z,51nm,0.3s,baz=270,slow=20,SNR=4.2							
INU	Inuyama	5.77	249	*e*Pn	Pn	03 06 26.3	-1.1
ASAJ	Asahikawa	6.56	354	Pn	Pn	03 06 37.2	-1.0
comp=Z,16nm,0.3s,baz=205,slow=12,SNR=98							
ASAJ				Sn	Sn	03 07 48.1	-4.2
comp=Z,5.9nm,0.3s,baz=264,slow=32,SNR=7.1							
ASAJ	Asahikawa	6.56	354	*e*Pn	Pn	03 06 36.9	-1.3
ASAJ				*e*S	Sn	03 07 49.2	-3.1
SHO	Shikotan	6.73	20	*i* P	Pn	03 06 37.3	-3.2
YSS	Yuzh-Sakhalins	9.38	356	*e*P	Pn	03 07 17.2	+0.4
YSS				*e*S	Sn	03 08 59.9	-1.6
YSS				pmax	pmax		
comp=Z,30nm,0.6s							
YSS				MLR	MLR		
comp=Z,300nm,12.0s							
YSS	Yuzh-Sakhalins	9.38	356	*e*Pn	Pn	03 07 16.7	-0.1
VLA	Vladivostok	10.51	305	⇑*i*P	Pn	03 07 33.2	+0.8
VLA				*e*S	Sn	03 09 30.5	+1.2
VLA				pmax	pmax		
comp=Z,33nm,0.9s							
CBIJ	Chichi jima	10.53	187	*e*Pn	Pn	03 07 23.4	-9.4
CBIJ				*e*S	Sn	03 09 13.9	-16
JCJ	Chichijima	10.53	187	Pn	Pn	03 07 23.6	-9.1
comp=Z,16nm,0.3s,baz=88,slow=16,SNR=24							
MSHR	Mys Shultsa	10.76	301	⇑*i*P	Pn	03 07 36.2	+0.4
USRK	Ussuriysk Ar.	10.99	311	Pn	Pn	03 07 39.3	+0.3
comp=Z,1.6nm,0.3s,baz=117,slow=14,SNR=37							
KSRS	Korea Array	12.46	274	Pn	Pn	03 08 00.2	+1.2
comp=Z,0.5nm,0.3s,baz=90,slow=14,SNR=30							
KSRS				LR	LR	03 12 37.7	
comp=Z,176nm,18.1s,baz=90,slow=36							
KSAR	Wonju Array Be	12.49	274	P	Pn	03 08 00.3	+0.7
KSAR	Wonju Array Be	12.49	274	Pn	Pn

BILL	Bilibino	33.01	15	eP	P		03 11 37.5	+1.4
BILL				pmax	pmax			
comp=Z,8.0nm,1.7s								
BILL	Bilibino	33.01	15	eP	P		03 11 37.0	+0.8
comp=Z,5.8nm,1.2s								
GYA	Guiyang	33.04	261	eP	P		03 11 37.8	+0.8
GYA				pmax	pmax			
comp=Z,10.0nm,0.8s								
CD2	Chengdu	33.42	271	P	P		03 11 38.3	-1.9
CD2				pmax	pmax			
comp=Z,2.0nm,0.6s								
GTA	Gaotai	34.08	287	P	P		03 11 47.5	+1.6
GTA				pP	pP		03 11 51.6	-1.6
GTA				sP	sP		03 11 54.4	-1.8
GTA				pmax	pmax			
comp=Z,9.0nm,1.1s								
KMI	Kunming	36.78	262	P	P		03 12 10.1	+0.7
KMI				pmax	pmax			
comp=Z,28nm,0.6s								
KMI				pmax	pmax			
comp=Z,120nm,7.0s								
TNA	Tin City	39.51	29	eP	P		03 12 33.2	+1.6
comp=Z,4.1nm,0.9s								
WMQ	Urumqi	42.16	297	P	P		03 12 55.0	+1.2
WMQ				pP	pP		03 12 58.6	-2.6
WMQ				sP	sP		03 13 02.2	-2.0
WMQ				S	S		03 19 09.2	-3.1
WMQ				ScS	ScS		03 22 52.4	-2.1
WMQ				pmax	pmax			
comp=Z,4.0nm,0.8s								
WMQ				pmax	pmax			
comp=Z,5.0nm,4.2s								
ZAA0	Zalesovo Array	42.84	312	eP	P		03 12 59.1	0.0
ZALV	Zalesovo Beam	42.84	312	P	P		03 12 59.3	+0.1
comp=Z,2.5nm,0.5s,baz=91,slow=7.6,SNR=10								
NRIK	Noril'sk	43.51	335	LR	LR		03 32 44.0	
comp=Z,97nm,19.8s,baz=106,slow=38								
NVS	Novosibirsk	43.73	313	eP	P		03 13 05.6	-0.7
SVW2	Sparrevohn	44.01	38	eP	P		03 13 09.6	+1.1
comp=Z,8.2nm,0.9s								
MK01	Makanchi Array	45.31	302	eP	P		03 13 18.7	-0.4
MK31	Makanchi Array	45.31	302	eP	P		03 13 19.3	+0.1
MK31	Makanchi Array	45.31	302	eP	P		03 13 19.2	+0.1
MKAR	Makanchi Array	45.31	302	P	P		03 13 19.2	0.0
comp=Z,2.3nm,0.8s,baz=87,slow=9.0,SNR=19								
MAKZ	Makanchi	45.52	302	eP	P		03 13 21.0	+0.2
MAKZ				pmax	pmax			
comp=Z,7.0nm,0.9s								
MAKZ	Makanchi	45.52	302	eP	P		03 13 21.0	+0.2
comp=Z,6.6nm,0.9s								
SPU	Mount Spurr	45.73	38	eP	P		03 13 24.9	+2.7
CAST	Castle Rocks	45.78	34	eP	P		03 13 24.0	+1.4
comp=Z,4.3nm,0.9s								
BPAW	Bear Paw Mtn.	46.30	34	eP	P		03 13 26.9	+0.2
comp=Z,0.2nm,0.7s								
KTH	Kantishna Hill	46.30	34	eP	P		03 13 27.5	+0.7
comp=Z,14nm,1.2s								
MLY	Manley	46.45	32	eP	P		03 13 29.1	+1.2
comp=Z,6.6nm,1.0s								
BWN	Browne	46.96	33	eP	P		03 13 37.2	+5.4
comp=Z,23nm,1.1s								
KURK	Kurchatov	46.97	308	eP	P		03 13 31.6	-0.5
KURK				pmax	pmax			
comp=Z,25nm,0.8s								
KURK	Kurchatov	46.97	308	eP	P		03 13 31.6	-0.5
comp=Z,25nm,0.8s								
KURBB	Kurchatov Arra	47.04	308	P	P		03 13 32.2	-0.4
comp=Z,11nm,0.8s,baz=83,slow=8.0,SNR=122								
RND	Reindeer	47.23	35	eP	P		03 13 34.4	+0.4
RND				pmax	pmax			
comp=Z,16nm,1.4s								
RND	Reindeer	47.23	35	eP	P		03 13 34.4	+0.4
comp=Z,16nm,1.4s								
MDM	Murphy Dome	47.51	32	eP	P		03 13 37.2	+1.1
comp=Z,9.4nm,0.8s								
COLA	College	47.67	33	P	P		03 13 41.2	+3.9
COLA				pmax	pmax			
comp=Z,8.0nm,1.5s								
COLA	College	47.67	33	eP	P		03 13 36.6	-0.7
comp=Z,2.0nm,0.6s								
IL1	Eielson Array	48.08	33	eP	P		03 13 39.8	-0.7
ILAR	Eielson Array	48.08	33	P	P		03 13 40.5	-0.1
comp=Z,2.9nm,0.7s,baz=264,slow=6.6,SNR=52								
ILB	Eielson Array	48.08	33	eP	P		03 13 40.4	-0.1
KKN	Kakani	49.37	276	eP	P		03 13 52.0	+0.8
comp=Z,20nm,0.6s								
PKIN	Phulchoki	49.37	276	eP	P		03 13 48.7	-2.6
comp=Z,6.0nm,0.5s								
MENT	Mentasta	49.58	35	eP	P		03 13 54.9	+2.9
comp=Z,34nm,0.2s								
GKN	Gorkha	49.78	277	eP	P		03 13 58.0	+3.7
comp=Z,19nm,0.7s								
KOLN	Koldanda	50.70	277	eP	P		03 14 03.6	+2.3
comp=Z,7.7nm,0.5s								
TKM2	Tokmak 2	50.91	299	eP	P		03 14 02.9	+0.2
TKM2				pmax	pmax			
comp=Z,20nm,1.2s								
TKM2	Tokmak 2	50.91	299	eP	P		03 14 02.9	+0.2
comp=Z,20nm,1.2s								
PYUN	Piuthan	51.03	278	eP	P		03 14 10.6	+6.8
comp=Z,35nm,0.9s								
VOSK	Vostochnaya	51.22	312	eP	P		03 14 04.5	-0.1
VOSK				pmax	pmax			
comp=Z,8.0nm,0.8s								
VOSK	Vostochnaya	51.22	312	eP	P		03 14 04.5	-0.1
comp=Z,7.7nm,0.8s								
BRVK	Borovoye	51.55	312	ceP	P		03 14 06.9	-0.1
BRVK				pmax	pmax			
comp=Z,4.0nm,0.8s								
BRVK	Borovoye	51.55	312	eP	P		03 14 06.6	-0.4
comp=Z,4.9nm,0.8s								
AAK	Ala-Archa	51.77	299	eP	P		03 14 10.3	+1.2
AAK				pmax	pmax			
comp=Z,5.0nm,0.9s								
AAK	Ala-Archa	51.77	299	eP	P		03 14 10.1	+1.0
comp=Z,3.3nm,0.8s								
INK	Inuvik	53.09	27	P	P		03 14 18.4	+0.2
comp=Z,1.0nm,0.6s,baz=311,slow=7.4,SNR=9.2								
INK	Inuvik	53.09	27	eP	P		03 14 18.8	+0.6
INK	Inuvik	53.09	27	eP	P		03 14 18.8	+0.6
KKAR	Karatay Array	54.36	300	eP	P		03 14 27.4	-0.6
KKAR				pmax	pmax			
comp=Z,1.0nm,0.5s								
KKAR	Karatay Array	54.36	300	eP	P		03 14 27.4	-0.6
comp=Z,0.5nm,0.5s								
DLBC	Dease Lake	57.10	39	P	P		03 14 48.0	+0.5
comp=Z,2.5nm,0.9s,baz=297,slow=2.3,SNR=3.6								
ARU	Arti	57.10	319	d iP	P		03 14 47.2	-0.2
ARU				S	S		03 22 41.9	+1.2
ARU				SS	SS		03 26 28.0	-1.1
ARU				pmax	pmax			
comp=Z,17nm,1.7s								
ARU	Arti	57.10	319	eP	P		03 14 46.6	-0.7
comp=Z,8.3nm,0.9s								
WRAB	Tennant Creek	57.88	190	eP	P		03 14 49.9	-3.3
WRAB				pmax	pmax			
comp=Z,14nm,0.8s								
WRAB	Tennant Creek	57.88	190	eP	P		03 14 49.9	-3.3
comp=Z,14nm,0.8s								
WB2	Warramunga Arr	57.89	190	eP	P		03 14 50.2	-3.0
comp=Z,19nm,0.8s								
WRA	Warramunga Arr	57.89	190	P	P		03 14 49.6	-3.6
comp=Z,14nm,0.7s,baz=11,slow=7.4,SNR=49								
ABKAR	Akbulak array	58.92	311	eP	P		03 15 00.2	0.0
comp=Z,0.3nm,0.2s								
AS01	Alice Springs	61.60	190	eP	P		03 15 15.9	-2.9
AS31	Alice Springs	61.61	190	eP	P		03 15 16.0	-2.8
comp=Z,2.2nm,0.8s								
ASAR	Alice Springs	61.61	190	P	P		03 15 16.2	-2.7
comp=Z,7.3nm,0.8s,baz=11,slow=6.4,SNR=55								
RES	Resolute Bay	61.62	15	eP	P		03 15 17.9	-0.4
RES				pmax	pmax			
comp=Z,4.0nm,0.9s								
RES	Resolute Bay	61.62	15	eP	P		03 15 17.9	-0.4
comp=Z,4.0nm,0.9s								
YKA	Yellowknife Ar	62.44	31	P	P		03 15 23.3	-0.6
comp=Z,0.7nm,0.7s,baz=305,slow=6.9,SNR=18								
TMCR	Tamitsa	63.09	332	eP	P		03 15 40.7	+12
TMCR				pmax	pmax			
comp=Z,41nm,1.3s								
ARCES	ARCESS Array B	64.09	340	P	P		03 15 35.8	+1.0
comp=Z,2.4nm,1.0s,baz=30,slow=7.4,SNR=3.7								
KLMR	Klimovskoe	64.22	328	eP	P		03 15 36.7	+0.9
KLMR				pmax	pmax			
comp=Z,15nm,1.5s								
GEYT	Alibeck	65.09	300	P	P		03 15 40.4	-1.5
comp=Z,1.6nm,0.5s,baz=309,slow=5.4,SNR=3.5								
VRH	Novokhopyorsk	68.33	319	eP	P		03 16 13.5	+11
VRH				pmax	pmax			
comp=Z,10.0nm,1.1s								
OBN	Obninsk	68.69	324	eP	P		03 16 05.3	+0.9
OBN				pmax	pmax			
comp=Z,9.0nm,1.5s								
FINES	FINESS Array B	69.13	333	P	P		03 16 08.0	+0.9
comp=Z,2.7nm,0.7s,baz=47,slow=8.4,SNR=11								
FINES	FINESS Array B	69.13	333	i P	P		03 16 08.0	+0.9
FINES				pmax	pmax			
comp=Z,3.0nm,0.7s								
STKA	Stephens Creek	69.14	182	P	P		03 16 03.8	-3.5
comp=Z,4.7nm,0.6s,baz=351,slow=6.8,SNR=15								
STKA	Stephens Creek	69.14	182	eP	P		03 16 05.2	-2.2
VSR	Storozhevoye	69.66	319	eP	P		03 16 21.6	+11
VSR				pmax	pmax			
comp=Z,10.0nm,1.0s								
SUMG	Summit	70.12	1	P	P		03 16 14.2	+0.7
SUMG				pmax	pmax			
comp=Z,6.0nm,0.8s								
SUMG	Summit	70.12	1	P	P		03 16 14.2	+0.7
comp=Z,5.8nm,0.8s								
ZEI	Tsey	71.79	310	eP	P		03 16 23.0	-1.0
ZEI				pmax	pmax			
comp=Z,14nm,0.9s								
KIV	Kislovodsk	71.86	312	eP	P		03 16 27.4	+3.2
KIV				pmax	pmax			
comp=Z,30nm,1.0s								
KIV	Kislovodsk	71.86	312	eP	P		03 16 26.4	+2.2
comp=Z,42nm,1.1s								
KBZ	Khabaz	71.86	311	P	P		03 16 24.9	+0.8
comp=Z,3.4nm,0.9s,baz=45,slow=3.8,SNR=7.7								
ONI	Oni	72.18	310	P	P		03 16 39.6	+13
GNI	Garni	72.77	308	P	P		03 16 32.8	+3.0
GNI				pmax	pmax			
comp=Z,31nm,1.7s								
BOZ	Bozeman (W)	73.08	45	eP	P		03 16 31.5	-0.1
BOZ				pmax	pmax			
comp=Z,3.0nm,1.1s								
BOZ	Bozeman (W)	73.08	45	eP	P		03 16 31.5	-0.1
comp=Z,2.9nm,1.1s								
NVAR	Mina Array Bea	73.25	54	P	P		03 16 31.6	-1.1
comp=Z,0.5nm,0.6s,baz=286,slow=6.2,SNR=5.2								
NB2	NORSAR Subarra	74.34	338	P	P		03 16 39.3	+0.8
comp=Z,0.9nm,0.7s,baz=39,slow=5.9								
NOA	NORSAR Array B	74.34	338	P	P		03 16 37.7	-0.8
comp=Z,1.1nm,0.7s,baz=38,slow=5.7,SNR=8.0								
H17A	Grant Village	74.43	46	eP	P		03 16 41.7	+2.0
comp=Z,4.5nm,0.8s								
IMW	Indian Meadow	74.53	46	eP	P		03 16 40.9	+0.7
comp=Z,1.8nm,0.9s								
AKASG	Malin Array Be	74.92	323	P	P		03 16 41.8	-0.2
comp=Z,0.8nm,0.5s,baz=43,slow=5.5,SNR=7.3								
AKASG	Malin Array Be	74.92	323	i P	P		03 16 43.5	+1.5
AKASG				pmax	pmax			
comp=Z,1.0nm,0.4s								
FRB	Frobisher Bay	75.82	14	P	P		03 16 46.0	-0.8
comp=Z,4.1nm,0.9s,baz=335,slow=3.9,SNR=6.3								
BW06	Boulder Array	76.02	47	eP	P		03 16 47.9	-0.9
PDAR	Pinedale Array	76.02	47	P	P		03 16 48.4	-0.4
comp=Z,0.7nm,0.7s,baz=232,slow=1.7,SNR=6.2								
PV10	Paradox Valley	79.08	50	eP	P		03 17 06.8	+0.8
BRTR	Keskin Array B	79.78	313	P	P		03 17 11.1	+1.5
comp=Z,0.3nm,0.5s,baz=340,slow=6.8,SNR=3.6								
BRTR	Keskin Array B	79.78	313	i P	P		03 17 13.3	+3.7
BR231	Keskin MP Arra	80.21	313	eP	P		03 17 14.0	+2.1
LANS	Liptovska Anna	80.48	327	eP	P		03 17 16.5	+3.4
LANS				e			03 17 27.0	
LANS	Liptovska Anna	80.48	327	eP	P		03 17 16.5	+3.4
LANS				e			03 17 27.0	
MORC	Moravsky Berou	80.83	328	eP	P		03 17 17.8	+2.8
MORC				pmax	pmax			
comp=Z,38nm,1.2s								
MORC	Moravsky Berou	80.83	328	eP	P		03 17 17.8	+2.8
comp=Z,38nm,1.2s								
DPC	Dobruska-Polom	80.90	329	eP	P		03 17 17.9	+2.6
DPC				ex	x		03 17 28.4	
DPC	Dobruska-Polom	80.90	329	eP	P		03 17 17.9	+2.6
DPC				e			03 17 28.4	
KRLC	Kraliky	80.92	329	eP	P		03 17 17.9	+2.4
KRLC	Kraliky	80.92	329	eP	P		03 17 17.9	+2.4
CLL	Collm	81.47	331	||i P	P		03 17 20.0	+1.8
comp=Z,10.0nm,1.3s								
CLL				i			03 17 30.4	
comp=Z,12nm,1.0s								
CLL				i			03 17 41.4	
CLL				Lm	MLR		04 46 00.0	
comp=Z,100nm,21.0s								
CLL	Collm	81.47	331	||i P	P		03 17 20.0	+1.8
CLL				i			03 17 30.4	
CLL				pmax	pmax			
comp=Z,10.0nm,1.3s								
CLL	Collm	81.47	331	eP	P		03 17 20.1	+1.8
comp=Z,10nm,0.9s								
CONA	Conrad Observa	82.97	328	i sP	P		03 17 29.7	+3.5
comp=Z,8.4nm,1.8s								
KHC	Kasperske Hory	82.97	330	eP	P		03 17 28.1	+1.9
KHC				ex	x		03 17 38.6	
KHC				ex	x		03 17 49.8	
KHC	Kasperske Hory	82.97	330	eP	P		03 17 28.1	+1.9
KHC				e			03 17 38.6	
KHC	Kasperske Hory	82.97	330	eP	P		03 17 27.4	+1.1
comp=Z,2.6nm,0.9s								
GERES	GERESS Array B	83.15	329	P	P		03 17 27.0	-0.2
comp=Z,0.7nm,0.6s,baz=72,slow=4.3,SNR=6.1								
GERES	GERESS Array B	83.15	329	P	P		03 17 27.0	-0.2
GERES				pmax	pmax			
comp=Z,1.0nm,0.6s								
GEA0	GERESS Array S	83.15	329	eP	P		03 17 28.9	+1.6
MOTA	Moosalm	85.39	330	i pP	P		03 17 40.5	+1.8
comp=Z,4.8nm,1.1s								
RETA	Reutte	85.41	330	i P	P		03 17 38.9	+0.2
comp=Z,9.7nm,1.7s								
BFO	Black Forest	85.66	332	i P	P		03 17 42.5	+2.6
BFO	Black Forest	85.66	332	eP	P		03 17 41.4	+1.5
DAVA	Damuels	85.92	330	i pP	P		03 17 43.5	+2.1
comp=Z,5.6nm,1.0s								
FUORN	Ofenpass-Fuorn	86.32	330	eP	P		03 17 45.8	+2.3
TXAR	Lajitas Array	88.39	54	P	P		03 17 52.8	-0.7
comp=Z,0.5nm,0.7s,baz=290,slow=3.3,SNR=7.8								
SNAA	Sanae	141.78	196	PKP	PKPpre		03 24 22.4	
VNA2	Neumayer--Watz	143.33	195	PKP	PKPab		03 24 29.2	-1.2
baz=128,slow=2.4								
VNA3	Neumayer Olymp	143.54	194	PKP	PKPab		03 24 29.7	-1.5
VNA1	Neumayer--Stat	143.73	195	PKP	PKPab		03 24 28.6	-3.3
LPAZ	La Paz	144.89	61	PKP	PKPab		03 24 38.0	-0.6
comp=Z,1.5nm,0.6s,baz=33,slow=3.0,SNR=7.3								
SIV	San Ignacio	149.37	52	PKPbc	PKPbc		03 24 49.1	-1.5
comp=Z,1.8nm,0.6s,baz=357,slow=2.1,SNR=5.4								

*IDC **05** 03:09:45.7±1.7, 52°.75N×176°.31W, h0km, mb3.9/3, mb1 3.9/4, mb1mx3.4/55, mbtmp3.7/4, ML3.8/1, MS3.5/2, Ms1 3.5/2, ms1mx2.7/60, Error ellipse: s-maj=96.4km s-min=28.8km az=118.0*
*ISCJB **05** 03:10:06.8±0.5, 52°.7N±0°.2×174°.7W±0°.1, h205km±6km, mb3.5/3, Error ellipse: s-maj=29.9km s-min=5.9km az=162.1*
*NEIC **05** 03:10:09.0, 52°.40N×174°.65W, h202km, mb3.8/1, After AEIC.*
ISC 05 03:10:07.5±0.9, 52°.6N±0°.2×174°.67W±0°.08, h204km±8km, n29, σ0°68/33, mb3.6/3, Andreanof Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KOWE	Korovin West	0.35	132	P	Pn	03 10 34.8	+0.1
KOKL	Mount Kliuchef	0.40	134	P	Pn	03 10 35.2	+0.4
KOKL				S	S	03 10 55.8	-0.3
KOFP	Korovin Flat P	0.48	133	P	Pn	03 10 35.2	+0.2
KOFP				S	S	03 10 57.0	+0.5
GSMY	Great Sitkin M	1.02	237	P	Pn	03 10 37.5	-0.2
GSTD	Great Sitkin T	1.05	240	P	Pn	03 10 37.9	-0.3
GSTD				S	S	03 11 00.5	-1.2
GSCK	Great Sitkin C	1.09	238	P	Pn	03 10 38.5	+0.2
GSCK				S	S	03 11 01.0	-0.9
ETKA	Kagalaska Isla	1.30	236	P	Pn	03 10 39.8	-0.1
ADAG	Mount Adagdak	1.34	243	P	Pn	03 10 40.4	+0.2
KIRH	Kanaga Island	1.65	246	P	Pn	03 10 43.0	+0.1
KINC	Kanaga Island	1.65	247	P	Pn	03 10 42.8	0.0
KICM	Kanaga Island	1.69	247	P	Pn	03 10 43.5	+0.3
KICM				S	S	03 11 10.9	+0.3
KIKV	Kanaga Island	1.70	246	P	Pn	03 10 43.5	+0.2
TAPA	Tanaga Point A	2.09	249	P	Pn	03 10 47.5	+0.3
TAFP	Tanaga Falls P	2.15	252	P	Pn	03 10 48.0	+0.1
TAFP				S	S	03 11 18.2	-0.6
TANO	Tanaga North	2.23	253	P	Pn	03 10 48.8	+0.2
GALAA	Gareloi Lava P	2.66	253	P	Pn	03 10 53.8	+0.4
NIKH	Nikolski High	3.55	82	P	Pn	03 11 03.6	-0.3
OKRE	Okmok R'deer P	4.03	74	P	Pn	03 11 10.6	+0.8
MSOM	Makushin Julie	4.80	72	P	Pn	03 11 19.5	+0.2
UNV	Unalaska Valle	5.07	72	ePn	Pn	03 11 22.4	-0.3
UNV				eS	S	03 12 19.9	-1.8
AKRB	Akutan Reef Bi	5.38	70	P	Pn	03 11 26.9	+0.2
KDAK	Kodiak Island	13.61	59	Pn	P	03 13 24.2	+10
1.0nm,0.3s,baz=288,slow=3.7,SNR=29							
RC01	Rabbit Creek A	15.98	48	eP	Pn	03 13 42.5	+1.5
1.3nm,0.3s							
ILAR	Eielson Array	18.69	39	P	P	03 14 11.2	+1.0
0.1nm,0.3s,baz=228,slow=11,SNR=6.2							
JNU	Nakatsue	43.23	265	LR	LR	03 37 34.9	
comp=Z,89nm,18.6s,baz=94,slow=40							
SPITS	Spitsbergen Ar	49.31	357	P	P	03 18 33.9	-1.3
2.5nm,1.0s,baz=46,slow=6.2,SNR=7.4							
RAR	Rarotonga	74.64	166	LR	LR	03 52 47.5	
comp=Z,22nm,19.1s,baz=66,slow=34							
WRA	Warramunga Arr	84.69	227	P	P	03 22 17.7	-0.5
0.6nm,1.0s,baz=33,slow=5.9,SNR=3.4							
ASAR	Alice Springs	88.14	226	P	P	03 22 35.6	+0.7
0.6nm,0.7s,baz=27,slow=4.5,SNR=5.4							

*ISCJB **05** 03:22:13.1±1.3, 18°.9N±0°.1×68°.51W±0°.08, h19km±9km, mb3.4/4, MS3.5/1, Error ellipse: s-maj=24.4km s-min=7.7km az=28.0*
*RSPR **05** 03:22:14.7, 18°.88N×68°.63W, h25km±19km, MD3.9/9*
*IDC **05** 03:22:14.7±1.7, 19°.24N×68°.06W, h0km, mb3.3/4, mb1 3.7/5, mb1mx3.4/35, mbtmp3.4/5, ML4.0/1, MS3.5/3, Ms1 3.5/3, ms1mx2.8/29, Error ellipse: s-maj=58.2km s-min=20.2km az=29.0*
ISC 05 03:22:12.6±2.9, 18°.8N±0°.2×68°.5W±0°.1, h5km±16km, n32, σ0°54/34, mb3.5/4, 12C-4D, Mona Passage

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IDE	Isla Desecheo	1.03	111	||eP	Pb	03 22 33.2	+0.2
AGPR	Aguadilla, PR	1.34	102	||eP	Pn	03 22 37.9	-0.1
AGPR	Aguadilla, PR	1.34	102	eS	Sg	03 22 55.4	-0.2
LSP	Las Mesas	1.45	113	||eP	Pn	03 22 39.3	-0.3
LSP	Las Mesas	1.45	113	eS	Sb	03 22 59.1	+0.1
CRPR	Cabo Rojo, PR	1.51	119	||eP	Pn	03 22 40.2	-0.1
CRPR	Cabo Rojo, PR	1.51	119	eS	Sg	03 23 00.8	-0.3
LRS	Lares	1.63	106	||eP	Pn	03 22 41.9	-0.1
LRS				eS	Sn	03 23 03.4	0.0
AOPR	Arecibo Observ	1.70	104	||eP	Pn	03 22 42.5	-0.4
AOPR	Arecibo Observ	1.70	104	||eP	Pn	03 22 42.8	-0.1
AOPR				eS	Sn	03 23 04.9	-0.2
GBPR	Guanica, Bosqu	1.71	117	||eP	Pn	03 22 43.5	+0.4
GBPR	Guanica, Bosqu	1.71	117	eS	Sn	03 23 05.6	+0.1
OBIP	Obispado Ponce	1.92	111	||eP	Pn	03 22 46.3	+0.2
OBIP	Obispado Ponce	1.92	111	eS	Sn	03 23 11.1	+0.4
CELP	Cerrillos	1.94	110	||eP	Pn	03 22 46.6	+0.4
CELP				eS	Sn	03 23 11.5	+0.5
SJG	San Juan	2.31	106	||eP	Pn	03 22 52.0	+0.6
SJG				eS	Sn	03 23 20.4	+0.1
SJG	San Juan	2.31	106	Pn	Pn	03 22 52.6	+1.3
45nm,0.3s,baz=315,slow=12,SNR=108							
SJG				Sn	Sn	03 23 20.6	+0.4
181nm,0.3s,baz=78,slow=22,SNR=36							
CBYP	Canovanas	2.54	100	||eP	Pn	03 22 55.1	+0.5
CBYP	Canovanas	2.54	100	eS	Sn	03 23 26.4	+0.3
HUMP	Col San Antoni	2.58	103	||eP	Pn	03 22 55.3	+0.2
HUMP	Col San Antoni	2.58	103	||eP	Pn	03 22 55.9	+0.8
HUMP				eS	Sn	03 23 27.5	+0.6
MTP	Monte Pirata	2.87	103	||eP	Pn	03 22 59.7	+0.7
MTP	Monte Pirata	2.87	103	eS	Sn	03 23 34.5	+0.6
STVI	Saint Thomas	3.38	96	eS	Sn	03 23 46.4	-0.2
STVI	Saint Thomas	3.38	96	||eP	Pn	03 23 06.5	+0.4
SDV	Santo Domingo	10.03	192	LR	LR	03 29 27.5	
comp=Z,638nm,20.7s,baz=268,slow=41							
ROSC	El Rosal	14.96	203	LR	LR	03 31 34.0	
comp=Z,107nm,18.6s,baz=76,slow=36							
TXAR	Lajitas Array	33.69	295	P	P	03 28 59.4	+4.4
0.3nm,0.7s,baz=108,slow=8.3,SNR=5.2							
YKA	Yellowknife Ar	53.98	336	P	P	03 31 38.2	+0.9
0.2nm,0.3s,baz=108,slow=6.7,SNR=5.6							
MDT	Midelt	58.42	63	LR	LR	03 53 35.7	
comp=Z,32nm,19.5s,baz=14,slow=32							
ESDC	Sonseca Array	58.82	55	P	P	03 32 11.8	-0.5
0.2nm,0.5s,baz=276,slow=5.5,SNR=3.4							
TORD	Torodi Ar. Bea	67.35	83	P	P	03 33 08.0	-1.3
0.6nm,1.1s,baz=288,slow=6.5,SNR=3.9							

*ISCJB **05** 03:32:27.4±0.8, 37°.49N±0°.03×27°.48E±0°.05, h9km±13km, Error ellipse: s-maj=6.2km s-min=5.2km az=177.9*
*CSEM **05** 03:32:27.4±0.1, 37°.49N×27°.46E, h10km, MD2.5, Error ellipse: s-maj=2.5km s-min=1.7km az=109.0*
*ISK **05** 03:32:27.3, 37°.47N×27°.50E, h6km, MD2.5*
*DDA **05** 03:32:27.3, 37°.49N×27°.48E, h7km, Md2.5*
ISC 05 03:32:26.9±1.1, 37°.49N±0°.03×27°.45E±0°.04, h18km±4km, n13, σ0°17/23, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GCAM	G?zel

178nm,0.4s
RNI2 Rionero Sannit 0.33 98 Pg Pb 03 34 11.0 -0.5
236nm,0.2s
RNI2 Rionero Sannit 0.33 98 Pg Pb 03 34 11.0 -0.5
236nm,0.2s
GIUL Giuliano Di Ro 0.40 241 Pg Pg 03 34 11.9 +0.3
GIUL Sg Sb 03 34 18.5 -0.3
101nm,0.2s
GIUL Giuliano Di Ro 0.40 241 Pg Pg 03 34 11.9 +0.3
GIUL Sg Sb 03 34 18.5 -0.3
101nm,0.2s
MIDA Miranda 0.41 105 Pg Pg 03 34 12.1 +0.1
MIDA Sg Sg 03 34 18.4 +0.9
94nm,0.3s
MIDA Miranda 0.41 105 Pg Pg 03 34 12.1 +0.1
MIDA Sg Sg 03 34 18.4 +0.9
94nm,0.3s
VAGA Valle Agricola 0.51 131 Pg Pg 03 34 13.8 +0.1
VAGA Valle Agricola 0.51 131 Pg Pg 03 34 13.8 +0.1
FAGN Fagnano 0.52 349 Pg Pg 03 34 13.8 -0.2
132nm,0.5s
FAGN Fagnano 0.52 349 Pg Pg 03 34 13.8 -0.2
132nm,0.5s
CERT Cerreto 0.58 290 Pg Pg 03 34 14.7 -0.4
CERT Sg Sb 03 34 23.6 -0.6
87nm,0.3s
CERT Cerreto 0.58 290 Pg Pg 03 34 14.7 -0.4
CERT Sg Sb 03 34 23.6 -0.6
87nm,0.3s
VCEL Villa Celiera 0.65 8 Pg Pg 03 34 16.2 -0.2
VCEL Sg Sb 03 34 26.2 +0.1
247nm,1.3s
VCEL Villa Celiera 0.65 8 Pg Pg 03 34 16.2 -0.2
VCEL Sg Sb 03 34 26.2 +0.1
247nm,1.3s

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*CSEM **05** 03:34:53.6, 41.76N×13.73E, h11km, MD1.4/3*
ROM 05 03:34:53.6±0.1, 41.76N×13.73E, h11km±1km, Md1.4/3, Error ellipse: s-maj=1.9km s-min=1.8km az=76.0, Southern Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
POFI	**Posta Fibreno**	**0.04 199**		Pg	Pg	03 34 56.1	+0.3
POFI				Sg	Sg	03 34 57.8	+0.4
POFI	**Posta Fibreno**	**0.04 199**		Pg	Pg	03 34 56.1	+0.3
POFI				Sg	Sg	03 34 57.8	+0.4
VVLD	**Villa Vallelon**	**0.14 324**		Pg	Pg	03 34 57.3	+0.3
VVLD				Sg	Sg	03 35 00.1	+0.7
VVLD	**Villa Vallelon**	**0.14 324**		Pg	Pg	03 34 57.3	+0.3
VVLD				Sg	Sg	03 35 00.1	+0.7
CERA	**Filignano**	**0.27 127**		Pg	Pg	03 34 59.5	+0.4
CERA				Sg	Sg	03 35 03.7	+0.9
CERA	**Filignano**	**0.27 127**		Pg	Pg	03 34 59.5	+0.4
CERA				Sg	Sg	03 35 03.7	+0.9
INTR	**Introdacqua**	**0.28 27**		Pg	Pg	03 34 59.7	+0.2
INTR				Sg	Sb	03 35 04.6	-1.0
INTR	**Introdacqua**	**0.28 27**		Pg	Pg	03 34 59.7	+0.2
INTR				Sg	Sb	03 35 04.6	-1.0
GUAR	**Guarcino**	**0.32 277**		Pg	Pb	03 35 01.0	-0.3
GUAR	**Guarcino**	**0.32 277**		Pg	Pb	03 35 01.0	-0.3
RNI2	**Rionero Sannit**	**0.32 100**		Pg	Pb	03 35 01.3	-0.1
RNI2	**Rionero Sannit**	**0.32 100**		Pg	Pb	03 35 01.3	-0.1
GIUL	**Giuliano Di Ro**	**0.41 241**		Pg	Pg	03 35 01.6	-0.1
GIUL				Sg	Sb	03 35 08.2	-0.9
GIUL	**Giuliano Di Ro**	**0.41 241**		Pg	Pg	03 35 01.6	-0.1
GIUL				Sg	Sb	03 35 08.2	-0.9

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*ISCJB **05** 03:35:11.4±0.7, 52.1N±0.1×30.4W±0.1, h10km, mb3.5/12, MS3.2/7, Error ellipse: s-maj=20.7km s-min=11.0km az=7.1*
*IDC **05** 03:35:11.8±0.9, 52.08N×30.33W, h0km, mb3.5/12, mb1 3.7/13, mb1mx3.6/50, mbtmp3.5/13, ML4.4/1, MS3.3/8, Ms1 3.3/8, ms1mx3.1/38, Error ellipse: s-maj=26.9km s-min=15.1km az=10.0*
ISC 05 03:35:13.2±0.8, 52.1N±0.2×30.34W±0.10, h10km, n20, σ0.60/14, mb3.6/12, MS3.2/7, Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EKA	**Eskdalemuir Ar**	**16.37**	**68**	Pn	**Pn**	**03 39 02.6**	**-0.3**
	baz=269,slow=9.6,SNR=12						
SFJD	**Kangerlussuaq**	**18.01**	**334**	LR	LR	03 44 52.4	
	comp=Z,89nm,19.8s,baz=164,slow=32						
JMIC	**Jan Mayen**	**21.39**	**20**	LR	LR	03 45 59.9	
	comp=Z,67nm,20.4s,baz=250,slow=30						
SCHQ	**Schefferville**	**21.75**	**292**	P	**P**	**03 40 03.9**	**-0.8**
	2.5nm,0.6s,baz=101,slow=11,SNR=10						
ESDC	**Sonseca Array**	**22.01**	**114**	P	**P**	**03 40 07.3**	**-0.3**
	0.4nm,0.6s,baz=316,slow=11,SNR=5.3						
FRB	**Frobisher Bay**	**23.02**	**315**	LR	LR	03 47 06.9	
	comp=Z,43nm,19.4s,baz=27,slow=31						
NOA	**NORSAR Array B**	**24.20**	**52**	P	**P**	**03 40 29.4**	**-0.2**
	0.6nm,0.8s,baz=288,slow=11,SNR=2.4						
GERES	**GERESS Array B**	**27.90**	**79**	LR	LR	03 50 18.2	
	comp=Z,69nm,20.6s,baz=0.0,slow=32						
VRAC	**Vranov**	**29.46**	**76**	LR	LR	03 52 51.6	
	comp=Z,54nm,18.4s,baz=16,slow=36						
ARCES	**ARCESS Array B**	**30.86**	**35**	P	**P**	**03 41 29.8**	**+0.6**
	1.5nm,0.9s,baz=264,slow=8.0,SNR=3.3						
ARCES				LR	LR	03 50 17.0	
	comp=Z,45nm,20.8s,baz=163,slow=29						
FINES	**FINESS Array B**	**31.34**	**50**	P	**P**	**03 41 32.6**	**-0.8**
	0.9nm,0.7s,baz=264,slow=12,SNR=4.9						
AKASG	**Malin Array Be**	**36.29**	**68**	LR	LR	03 57 15.1	
	comp=Z,50nm,18.4s,baz=290,slow=36						
YKA	**Yellowknife Ar**	**43.49**	**318**	P	**P**	**03 43 15.4**	**-0.8**
	0.4nm,0.8s,baz=60,slow=8.9,SNR=6.2						
YKA				PcP	**PcP**	**03 45 03.7**	**-0.2**
	0.2nm,0.7s,baz=58,slow=3.8,SNR=3.7						
BRTR	**Keskin Array B**	**44.79**	**80**	P	**P**	**03 43 27.7**	**+0.6**
	0.9nm,0.9s,baz=305,slow=7.2,SNR=3.0						
TORD	**Torodi Ar. Bea**	**46.56**	**135**	P	**P**	**03 43 41.1**	**0.0**
	0.6nm,0.7s,baz=336,slow=7.3,SNR=10.0						
PDAR	**Pinedale Array**	**51.88**	**293**	P	**P**	**03 44 22.2**	**+0.4**
	0.3nm,0.5s,baz=53,slow=5.6,SNR=5.6						
DLBC	**Dease Lake**	**52.08**	**319**	LR	LR	04 05 05.0	
	comp=Z,70nm,18.0s,baz=124,slow=34						
ILAR	**Eielson Array**	**53.66**	**332**	P	**P**	**03 44 35.4**	**+1.0**
	0.2nm,0.6s,baz=46,slow=6.4,SNR=2.9						
TXAR	**Lajitas Array**	**57.45**	**277**	P	**P**	**03 45 02.5**	**+0.2**
	0.3nm,0.8s,baz=76,slow=10,SNR=5.1						
MKAR	**Makanchi Array**	**65.89**	**44**	P	**P**	**03 45 58.8**	**-0.1**
	0.4nm,0.5s,baz=347,slow=5.4,SNR=6.1						

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*IDC **05** 03:38:19.4±1.6, 14.00N×144.67E, h110km±7km, mb3.5/6, mb1 3.7/6, mb1mx3.3/42, mbtmp3.9/6, MS4.2/1, Ms1 4.2/1, ms1mx2.8/28, Error ellipse: s-maj=50.2km s-min=21.5km az=109.0*
*ISCJB **05** 03:38:21.4±1.3, 14.0N±0.2×144.6E±0.4, h144km, mb3.7/6, Error ellipse: s-maj=57.3km s-min=20.7km az=19.3*
ISC 05 03:38:22.6±1.5, 14.0N±0.2×144.6E±0.4, h144km, n8, σ0.59/6, mb3.7/6, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**0.49**	**145**	P	Pn	03 38 37.7	-5.5
	434nm,0.3s,baz=32,slow=1.3,SNR=82						
GUMO				S	Sn	03 38 50.1	-8.8
	267nm,0.3s,baz=355,slow=20,SNR=55						
WRA	**Warramunga Arr**	**35.20**	**197**	P	**P**	**03 45 03.7**	**+0.6**
	2.2nm,0.5s,baz=17,slow=9.2,SNR=14						
ASAR	**Alice Springs**	**38.86**	**196**	P	**P**	**03 45 34.3**	**+0.3**
	0.7nm,0.5s,baz=19,slow=12,SNR=12						
DZM	**Mont Dzumac**	**41.77**	**149**	P	**P**	**03 45 58.3**	**+0.2**
	9.4nm,0.6s,baz=290,slow=5.0,SNR=7.6						
LEM	**Lembang**	**42.11**	**243**	LR	LR	04 03 03.5	
	comp=Z,274nm,20.0s,baz=24,slow=35						
STKA	**Stephens Creek**	**45.70**	**184**	P	**P**	**03 46 28.4**	**-0.8**
	0.9nm,0.5s,baz=34,slow=7.3,SNR=4.0						
YKA	**Yellowknife Ar**	**82.63**	**27**	P	**P**	**03 50 29.5**	**0.0**
	0.1nm,0.5s,baz=283,slow=5.1,SNR=4.4						
NVAR	**Mina Array Bea**	**86.89**	**51**	P	**P**	**03 50 51.8**	**0.0**
	0.3nm,0.5s,baz=264,slow=5.6,SNR=3.7						

JMA 05 03:45:09.2±0.2, 38.13N×144.03E, h42km, M3.7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.08 298**		P	Pn	03 45 42.7	+1.1
OFUJ				*e*S	Sn	03 46 07.9	+1.7
JIO	**Ouri**	**2.13 280**		P	Pn	03 45 43.4	+1.1
JIO				S	Sn	03 46 08.2	+0.6
JMK	**Ichinoseki**	**2.35 291**		P	Pn	03 45 46.6	+1.3
JOM	**Ohasama**	**2.52 303**		S	Sn	03 46 19.4	+2.2
JMM	**Marumori**	**2.57 265**		P	Pn	03 45 49.0	+0.7
JMM				S	Sn	03 46 18.6	+0.3
JOU	**Okura**	**2.66 276**		S	Sn	03 46 22.2	+1.6
JRG	**Rokugo**	**2.94 297**		P	Pn	03 45 55.7	+2.3
JRG				S	Sn	03 46 30.9	+3.4
JYK	**Kaneyama**	**2.98 286**		P	Pn	03 45 56.1	+2.1
JFT	**Otama**	**2.99 259**		P	Pn	03 45 55.6	+1.5
JFT				S	Sn	03 46 30.4	+1.7
MAT	**Matsushiro**	**4.90 253**		P	Pn	03 46 22.3	+1.9
MAT				*e*S	Sn	03 47 16.3	+0.4

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*IDC **05** 03:46:26.5±0.5, 9.42N×125.91E, h0km, mb4.1/20, mb1 4.2/22, mb1mx4.1/46, mbtmp4.1/22, ML4.4/2, MS4.0/26, Ms1 4.0/26, ms1mx3.8/40, Error ellipse: s-maj=26.0km s-min=11.6km az=86.0*
*MAN **05** 03:46:29, 9.26N×125.47E, h4km, mb5.4, ML4.3, MS4.6*
MAN INTENSITY IV - MAINIT SURIGAO DEL NORTE; BARANGAY LA UNION CABADBARAN AGUSAN DEL NORTE; BUTUAN CITY; INTENSITY III - SURIGAO CITY; GIGAQUIT PLACER MALIMONO SURIGAO DEL NORTE; INTENSITY I - GENERAL LUNA SIARGAO.
*ISCJB **05** 03:46:32.5±0.5, 9.22N±0.03×125.51E±0.04, h50km±5km, mb4.4/64, MS4.1/29, Error ellipse: s-maj=7.4km s-min=4.3km az=153.6*
*MOS **05** 03:46:34.5±1.9, 9.27N×125.41E, h66km, mb4.9/20, Error ellipse: s-maj=16.4km s-min=7.5km az=111.2*
*GCMT **05** 03:46:38.0±0.2, 9.30N×125.56E, h24km±1km, MW5.0/91, Moment Tensor Solution. s37,c49; s91,c139; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}0.05±.14; $M_{\theta\theta}$1.00±.09; $M_{\phi\phi}$-1.05±.12; $M_{r\theta}$-1.40±.17; $M_{\theta\phi}$-3.55±.08; $M_{\phi r}$-1.07±.17; Best double couple: M_0=4.05600×10^{16} NP1:ϕ_s83.00000°, δ81.00000°, λ-159.00000°. NP2: ϕ_s350.00000°, δ69.00000°, λ-9.00000°. Principal axes: T 3.7390, Plg8.0000°, Azm215.0000°; N 0.6390, Plg67.0000°, Azm105.0000°; P -4.3740, Plg21.0000°, Azm308.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **05** 03:46:38.0±1.0, 9.16N×125.61E, h92km±10km, mb4.5/28 Error ellipse: s-maj=10.3km s-min=6.4km az=79.0*
NEIC Felt [IV PIVS] at Butuan, Cabadbaran, La Union and Mainit; [III PIVS] at Gigaquit, Malimono, Placer and Surigao; [I PIVS] at General Luna.
*DJA **05** 03:46:40.9±2.0, 9.7N±14.4×12.6E±.7, h43km±23km, M4.9/10, mb4.6/10, mB5.3/6, MLv5.2/2, Mw(mB)4.8/6*
ISC 05 03:46:34.8±0.7, 9.26N±0.03×125.51E±0.05, h53km±6km, n151, σ2.48/145, mb4.4/64, MS4.1/30, 12C-9D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SCPH	**Surigao**	**0.52 357**		↓*i*P	Pn	03 46 40.2	-6.3
SCPH				*i* S	**Sn**	**03 46 48.5**	**-6.6**
CGP	**Cagayan de Oro**	**1.14 226**		↑*i*P	**Pn**	**03 46 50.9**	**-3.5**
CGP				*i* S	**Sn**	**03 47 07.5**	**-1.5**
BIPH	**Bislig**	**1.35 142**		↓*e*P	**Pn**	**03 46 55.1**	**-2.3**
BIPH				*e*S	**Sn**	**03 47 11.9**	**-2.4**
BUKP	**Musuan**	**1.44 198**		*e*P	**Pn**	**03 46 56.6**	**-2.0**
BUKP				*e*S	Sn	03 47 06.3	-10
LLP	**Lapu-Lapu**	**1.85 305**		↓*e*P	**Pn**	**03 47 01.3**	**-2.9**
LLP				*e*S	**Sn**	**03 47 23.1**	**-3.4**
PLP	**Palo**	**1.97 345**		↓*e*P	**Pn**	**03 47 04.5**	**-1.3**
PLP				*e*S	**Sn**	**03 47 31.8**	**+2.5**
DAV	**Davao City (W)**	**2.17 178**		Pn	**Pn**	**03 47 08.6**	**0.0**
	160nm,0.3s,baz=13,slow=3.4,SNR=22						
DAV				LR	LR	03 47 37.5	
	comp=Z,1μm,20.4s,baz=326,slow=30						
DAV	**Davao City (W)**	**2.17 178**		*e*Pn	**Pn**	**03 47 10.8**	**+2.2**
KCP	**Kidapawan**	**2.27 191**		↑*e*P	**Pn**	**03 47 07.9**	**-2.1**
KCP				*i* S	**Sn**	**03 47 40.8**	**+3.9**
CTBH	**Cotabato--PC H**	**2.38 212**		↑*e*P	**Pn**	**03 47 09.3**	**-2.0**
CTBH				*i* S	**Sn**	**03 47 43.4**	**+4.0**
MATI	**Mati**	**2.41 162**		*e*P	**Pn**	**03 47 10.4**	**-1.4**
MATI				*e*S	Sn	03 47 26.3	-14
PAGZ	**Pagadian**	**2.53 237**		*e*P	**Pn**	**03 47 12.4**	**-1.0**
IPIL	**Ipil**	**3.25 244**		*e*P	**Pn**	**03 47 20.8**	**-2.6**
RCP	**Roxas**	**3.56 310**		↓*e*P	**Pn**	**03 47 25.9**	**-1.7**
JAP	**San Jose, Anti**	**3.81 293**		↑*e*P	**Pn**	**03 47 30.1**	**-0.9**
JAP				*e*S	Sn	03 48 26.7	+12
GQP	**Guinayangan**	**5.51 327**		↑*e*P	Pn	03 47 44.6	-10
LQP	**Lukban**	**6.20 321**		↓*e*P	**Pn**	**03 48 05.1**	**+1.1**
MYLDM	**Lahad Datu**	**8.05 240**		*e*Pn	Pn	03 48 33.8	+4.7
MRSI	**Marisa**	**9.42 202**		P	Pn	03 48 52.5	+4.6
	41nm,1.0s						
KKM	**Kota Kinabalu**	**9.75 252**		*e*Pn	Pn	03 48 59.3	+6.7
KKM				*e*S	Sn	03 50 49.5	+8.8
SANI	**Sanana**	**11.24 178**		P	**Pn**	**03 49 09.7**	**-3.1**
SWI	**Sorong**	**11.57 150**		P	**Pn**	**03 49 17.8**	**+0.5**
	50nm,1.3s						
TTSI	**Tana Toraja**	**13.47 205**		P	**P**	**03 49 48.4**	**-2.7**
	43nm,1.3s						
FAKI	**Fak Fak**	**13.83 151**		P	**Pn**	**03 49 49.2**	**+0.9**
	37nm,1.3s,9μm						
FAKI	**Fak Fak**	**13.83 151**		*e*Pn	**Pn**	**03 49 45.8**	**-2.5**
TPUB	**Ta-pu**	**14.73 342**		*e*Pn	**P**	**03 50 03.6**	**-1.4**
SBUM	**Sibu**	**14.85 244**		*e*Pn	**Pn**	**03 50 02.7**	**+1.0**
SSLB	**Suanglung**	**15.09 344**		*e*Pn	**P**	**03 50 07.5**	**-1.6**
	20nm,0.9s						
KAPI	**Kappang**	**15.29 202**		Pn	**Pn**	**03 50 08.5**	**+1.0**
	0.8nm,0.3s,baz=87,slow=6.3,SNR=8.2						
KAPI				LR	LR	03 57 12.0	
	comp=Z,909nm,19.9s,baz=45,slow=41						
KAPI	**Kappang**	**15.29 202**		*e*Pn	**Pn**	**03 50 08.4**	**+1.0**
	34nm,1.3s						
BBKI	**Banjar Baru**	**16.52 221**		P	**P**	**03 50 29.2**	**+4.3**
	39nm,1.6s,7μm						
QZH	**Quanzhou**	**16.94 338**		*e*P	**P**	**03 50 30.0**	**+0.5**
QZH				S	**Sn**	**03 53 33.0**	**-2.6**
QZH				LR	LR		
	comp=N,1μm,14.3s						
QZH				LR	LR		
	comp=E,1μm,15.6s						
QZH				LR	LR		
	comp=Z,2μm,22.8s						
KSM	**Kuching**	**16.99 244**		*e*Pn	**P**	**03 50 29.1**	**-1.0**
	comp=Z,37nm,1.4s						
JOW	**Kunigami**	**17.68 8**		*e*Pn	**P**	**03 50 40.0**	**+2.3**
	comp=Z,102nm,1.4s						
GZH	**Guangzhou**	**18.03 321**		P	**P**	**03 50 43.9**	**+2.4**
GZH				S	**S**	**03 54 14.3**	**+8.7**
GZH				pmax	pmax		
	comp=Z,370nm,5.1s						
GZH				LR	LR		
	comp=N,2μm,16.6s						
GZH				LR	LR		
	comp=E,2μm,16.3s						
BATI	**Baumata**	**19.42 185**		LR	LR	03 58 58.0	
	comp=E,312nm,20.6s,baz=230,slow=38						
GUMO	**Guam**	**19.45 75**		LR	LR	03 57 44.6	
	comp=E,178nm,20.1s,baz=241,slow=36						
MTN	**Manton Dam**	**22.65 166**		*e*P	**P**	**03 51 31.2**	**-0.5**
	comp=E,48nm,1.2s						
NONG	**Nongkai**	**23.41 294**		P	P	03 51 48.6	+9.3
	comp=E,33nm,0.9s						
NJ2	**Nanjing**	**23.51 346**		*e*P	**P**	**03 51 43.5**	**+3.4**
NJ2				pmax	pmax		
	comp=Z,18nm,0.5s						
WHN	**Wuhan**	**23.60 335**		P	**P**	**03 51 45.6**	**+4.6**
WHN				S	**S**	**03 55 55.6**	**+4.0**
WHN				LR	LR		
	comp=N,1μm,14.2s						
WHN				LR	LR		
	comp=E,900nm,15.7s						
WHN				LR	LR		
	comp=Z,2μm,16.0s						
JCJ	**Chichijima**	**23.73 39**		LR	LR	03 58 54.5	
	comp=Z,214nm,20.2s,baz=202,slow=32						
SUKH	**Sukhothai**	**26.45 291**		P	P	03 52 16.2	+9.2
	comp=Z,2.7nm,1.1s						
KMI	**Kunming**	**26.80 309**		P	**P**	**03 52 11.9**	**+1.5**
KMI				pmax	pmax		
	comp=Z,22nm,0.5s						
KMI				pmax	pmax		
	comp=Z,59nm,4.0s						
FITZ	**Fitzroy Crossi**	**27.18 180**		P	**P**	**03 52 11.8**	**-1.7**
	comp=Z,5.6nm,1.0s,baz=100,slow=18,SNR=3.8						
FITZ				LR	LR	04 04 59.3	
	comp=Z,135nm,20.0s,baz=12,slow=41						
CMAR	**Chiang Mai Arr**	**27.34 292**		P	**P**	**03 52 16.1**	**+1.1**
	comp=Z,1.3nm,0.3s,baz=127,slow=14,SNR=5.4						
CMMT	**Chiang Mai**	**27.43 293**		P	P	03 52 25.5	+10
CHTO	**Chiang Mai**	**27.43 293**		P	P	03 52 25.6	+10
	comp=Z,28nm,1.1s						
KSAR	**Wonju Array Be**	**28.14 4**		P	**P**	**03 52 19.5**	**-2.5**
KSAR	**Wonju Array Be**	**28.14 4**		P	**P**	**03 52 19.5**	**-2.5**
KSRS	**Korea Array**	**28.16 4**		P	**P**	**03 52 19.5**	**-2.6**
	comp=Z,0.8nm,0.5s,baz=172,slow=11,SNR=5.4						
KSRS				LR	LR	04 03 28.2	
	comp=Z,360nm,21.8s,baz=196,slow=36						
PMG	**Port Moresby**	**28.43 130**		*ce*P	**P**	**03 52 28.1**	**+3.4**
XAN	**Xi'an**	**29.00 331**		P	P	03 52 39.4	+10
XAN				pmax	pmax		
	comp=Z,4.0nm,0.6s						
XAN				pmax	pmax		
	comp=Z,31nm,4.6s						
MAJO	**Matsushiro**	**29.51 21**		↓*e*P	**P**	**03 52 35.7**	**+1.5**
MAJO				pmax	pmax		
	comp=Z,68nm,1.3s						
MAJO	**Matsushiro**	**29.51 21**		*e*P	**P**	**03 52 36.0**	**+1.9**
	comp=Z,10nm,1.1s						
MJAR	**Matsushiro Arr**	**29.51 21**		P	P	03 52 28.8	-5.4
	comp=Z,1.9nm,1.0s,baz=202,slow=9.2,SNR=5.5						
MJAR				LR	LR	04 02 45.9	
	comp=Z,379nm,20.9s,baz=210,slow=34						
MJB9	**Matsu-Tunnel**	**29.51 21**		*e*P	**P**	**03 52 35.7**	**+1.5**
	comp=Z,2.6nm,1.1s						
CD2	**Chengdu**	**29.58 320**		P	**P**	**03 52 34.1**	**-0.8**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
WRAB	**Tennant Creek**	**30.28 163**		↑*e*P	**P**	**03 52 43.2**	**+2.1**
WRAB	**Tennant Creek**	**30.28 163**		*e*P	**P**	**03 52 38.5**	**-2.6**
	comp=Z,3.3nm,1.0s						
WRA	**Warramunga Arr**	**30.29 163**		P	**P**	**03 52 39.8**	**-1.4**
	comp=Z,1.1nm,0.6s,baz=345,slow=9.3,SNR=5.7						
WRA				LR	LR	04 07 10.9	
	comp=Z,198nm,19.8s,baz=0.0,slow=41						
BJI	**Beijing**	**31.77 346**		P	**P**	**03 52 57.1**	**+3.1**
BJI				S	S	03 58 13.9	+14
BJI				pmax	pmax		
	comp=Z,13nm,1.6s						
BJI				pmax	pmax		
	comp=Z,140nm,4.2s						
BJI				LR	LR		
	comp=N,210nm,18.8s						
BJI				LR	LR		
	comp=E,440nm,24.2s						
LZH	**Lanzhou**	**33.20 327**		*e*P	P	03 52 57.5	-9.3
LZH				pP	pP	03 53 18.2	-2.2
LZH				sP	sP	03 53 29.0	+2.3
LZH				*e*PP	**PnPn**	**03 54 10.7**	**-7.6**
LZH				pmax	pmax		
	comp=Z,23nm,1.3s						
LZH				pmax	pmax		
	comp=Z,64nm,5.0s						
LZH				LR	LR		
	comp=N,250nm,13.3s						
LZH				LR	LR		
	comp=E,280nm,12.9s						
LZH				LR	LR		
	comp=Z,330nm,17.3s						
ASAR	**Alice Springs**	**33.73 166**		P	**P**	**03 53 10.0**	**-1.4**
	comp=Z,1.5nm,0.7s,baz=348,slow=7.2,SNR=14						
ASAR				LR	LR	04 09 03.9	
	comp=Z,87nm,18.1s,baz=342,slow=40						
AS01	**Alice Springs**	**33.74 166**		*e*P	**P**	**03 53 10.4**	**-1.1**
HHC	**Hu-ho-hao-te**	**33.81 341**		*e*P	**P**	**03 53 14.0**	**+2.0**
HHC				pmax	pmax		
	comp=Z,21nm,0.8s						
HHC				pmax	pmax		
	comp=Z,67nm,4.4s						
USRK	**Ussuriysk Ar.**	**35.27 8**		P	**P**	**03 53 21.9**	**-2.5**
	comp=Z,2.6nm,0.7s,baz=184,slow=7.5,SNR=7.5						
USRK				LR	LR	04 06 28.7	
	comp=Z,286nm,22.0s,baz=181,slow=34						
MDJ	**Mudanjiang**	**35.41 5**		P	**P**	**03 53 28.5**	**+2.9**
MDJ				pmax	pmax		
	comp=Z,12nm,1.1s						
MDJ				pmax	pmax		
	comp=Z,83nm,6.7s						
ASAJ	**Asahikawa**	**37.77 20**		*e*P	**P**	**03 53 46.6**	**+0.9**
	comp=Z,26nm,1.4s						
GTA	**Gaotai**	**37.80 327**		*e*P	**P**	**03 53 49.9**	**+3.7**
GTA				pP	sP	03 54 09.9	+3.7
GTA				sP	pP	03 54 20.6	+21
GTA				PP	PnPn	03 55 25.7	+11
GTA				S	**S**	**03 59 36.3**	**+2.7**
GTA				sS	ScP	04 00 15.1	+30
GTA				SS	**SS**	**04 02 20.5**	**-0.5**
GTA				pmax	pmax		
	comp=Z,3.0nm,1.1s						
GTA				pmax	pmax		
	comp=Z,58nm,5.2s						
GTA				LR	LR		
	comp=N,620nm,22.3s						
GTA				LR	LR		
	comp=E,390nm,20.9s						
GTA				LR	LR		
	comp=Z,630nm,19.5s						
KLR	**Kul'dur**	**40.19 6**		*e*P	**P**	**03 54 09.1**	**+3.2**
SONM	**Songino Array**	**41.71 341**		LR	LR	04 14 25.7	
	comp=Z,284nm,18.8s,baz=157,slow=40						
BBOO	**Buckleboo**	**43.02 167**		*e*P	**P**	**03 54 28.1**	**-1.1**
	comp=Z,12nm,0.6s						
STKA	**Stephens Creek**	**43.70 160**		P	**P**	**03 54 33.4**	**-1.3**
	comp=Z,1.6nm,0.6s,baz=6.7,slow=17,SNR=4.0						
STKA				LR	LR	04 17 13.2	
	comp=Z,78nm,18.2s,baz=355,slow=42						
TLY	**Talaya**	**45.94 341**		*e*P	**P**	**03 54 54.0**	**+1.6**
TLY				pmax	pmax		
	comp=Z,2.0nm,0.7s						
WMQ	**Urumqi**	**47.57 323**		*e*P	**P**	**03 55 05.2**	**-0.1**
WMQ				S	**S**	**04 01 56.3**	**-0.5**
WMQ				sS	sS	04 02 34.6	+14
WMQ				ScS	**ScS**	**04 04 50.3**	**-4.2**
WMQ				pmax	pmax		
	comp=Z,3.0nm,0.8s						
WMQ				pmax	pmax		
	comp=Z,34nm,4.0s						
WMQ				LR	LR		
	comp=N,410nm,22.0s						
WMQ				LR	LR		
	comp=E,190nm,18.6s						
WMQ				LR	LR		
	comp=Z,200nm,22.0s						
BOD	**Bodaibo**	**49.26 352**		*e*P	**P**	**03 55 17.3**	**-0.6**
BOD				pmax	pmax		
	comp=Z,5.0nm,1.6s						
PETK	**Petropavlovsk-**	**50.86 24**		P	**P**	**03 55 27.2**	**-3.0**
	comp=Z,3.4nm,0.7s,baz=197,slow=1.5,SNR=4.3						
PETK				LR	LR	04

KSH LR LR
comp=E,320nm,15.9s
KSH LR LR
comp=Z,400nm,22.6s
TKM2 Tokmak 2 54.88 317 *e*P **P 03 56 00.7 +0.4**
TKM2 pmax pmax
comp=Z,3.0nm,0.8s
TKM2 Tokmak 2 54.88 317 *e*P **P 03 56 00.7 +0.4**
comp=Z,3.4nm,0.8s
AAK Ala-Archa 55.52 316⇑ *e*P **P 03 56 05.5 +0.6**
AAK pmax pmax
comp=Z,22nm,2.0s
EKS2 Erkin-Say 56.02 316 *e*P **P 03 56 08.9 +0.5**
EKS2 pmax pmax
comp=Z,6.0nm,0.9s
EKS2 Erkin-Say 56.02 316 *e*P **P 03 56 08.9 +0.5**
comp=Z,6.3nm,0.9s
KURK Kurchatov 56.48 326 *e*P **P 03 56 10.2 -1.2**
KURK pmax pmax
comp=Z,36nm,1.7s
KURK Kurchatov 56.48 326 *e*P **P 03 56 10.2 -1.2**
comp=Z,36nm,1.7s
MSVF Nonsavu 58.41 117 *e*P P 03 56 30.5 +5.0
KKAR Karatay Array 58.43 315 *e*P **P 03 56 25.1 -0.2**
KKAR Karatay Array 58.43 315 *e*P **P 03 56 25.1 -0.2**
VOSK Vostochnaya 61.63 326 *e*P **P 03 56 45.6 -1.3**
VOSK pmax pmax
comp=Z,13nm,1.8s
VOSK Vostochnaya 61.63 326 *e*P **P 03 56 45.6 -1.3**
comp=Z,13nm,1.8s
BRVK Borovoye 62.15 326⇓ *e*P **P 03 56 49.5 -0.9**
BRVK pmax pmax
comp=Z,6.0nm,1.0s
BRVK Borovoye 62.15 326 *e*P **P 03 56 49.9 -0.5**
comp=Z,5.7nm,0.9s
TIXI Tiksi 62.37 1 P **P 03 56 49.4 -2.2**
comp=Z,3.6nm,0.8s,baz=156,slow=7.2,SNR=11
TIXI Tiksi 62.37 1⇑ *e*P **P 03 56 53.2 +1.6**
TIXI pmax pmax
comp=Z,13nm,1.1s
TIXI Tiksi 62.37 1 *e*P **P 03 56 50.0 -1.6**
comp=Z,10nm,1.0s
BILL Bilibino 64.58 16 *e*P **P 03 57 09.0 +2.8**
BILL pmax pmax
comp=Z,13nm,1.9s
BILL Bilibino 64.58 16 *e*P **P 03 57 05.9 -0.3**
comp=Z,5.5nm,1.0s
NRIK Noril'sk 64.81 346 LR LR 04 28 10.6
comp=Z,335nm,19.0s,baz=124,slow=39
GEYT Alibeck 66.56 307 LR LR 04 30 19.3
comp=Z,191nm,20.3s,baz=60,slow=39
ABKAR Akbulak array 67.16 320 *e*P **P 03 57 22.6 -0.6**
comp=Z,0.7nm,0.6s
ARU Arti 69.66 327 *d i*P **P 03 57 36.6 -2.1**
ARU 04 00 08.1
ARU S **S 04 06 40.4 -2.8**
ARU pmax pmax
comp=Z,3.0nm,0.7s
ZEI Tsey 77.63 312 *e*P **P 03 58 30.2 +4.2**
ZEI pmax pmax
comp=Z,16nm,0.8s
CAST Castle Rocks 78.38 27 *e*P **P 03 58 29.8 +0.3**
comp=Z,4.8nm,0.9s
NEY Neytrino 78.49 312⇑ *e*P **P 03 58 30.4 -0.3**
NEY pmax pmax
comp=Z,3.0nm,1.5s
KIV Kislovodsk 78.49 313 *e*P **P 03 58 31.5 +0.9**
KIV pmax pmax
comp=Z,7.0nm,1.1s
KIV MLR MLR
comp=Z,164nm,18.0s
BPAW Bear Paw Mtn. 78.89 26 *e*P **P 03 58 31.7 -0.6**
comp=Z,1.2nm,0.9s
MLY Manley 79.03 25 *e*P **P 03 58 33.1 0.0**
comp=Z,5.0nm,0.9s
MCK McKinley 79.80 27 *e*P **P 03 58 35.8 -1.4**
MCK pmax pmax
comp=Z,17nm,1.4s
MCK McKinley 79.80 27 *e*P **P 03 58 35.8 -1.4**
comp=Z,17nm,1.4s
KLMR Klimovskoe 80.03 330 *e*P **P 03 58 35.4 -3.1**
KLMR pmax pmax
comp=Z,4.0nm,0.7s
CCB Clear Creek Bu 80.28 26 *e*P **P 03 58 39.7 0.0**
comp=Z,10nm,1.6s
ILAR Eielson Array 80.67 26 P **P 03 58 38.6 -3.3**
comp=Z,0.7nm,0.7s,baz=239,slow=5.8,SNR=7.3
ILAR LR LR 04 33 15.3
comp=Z,63nm,21.6s,baz=294,slow=35
OBN Obninsk 81.88 325 *c e*P **P 03 58 52.8 +4.4**
OBN *e* 03 59 09.4
OBN pmax pmax
comp=Z,5.0nm,1.1s
OBN MLR MLR
comp=Z,263nm,19.0s
MENT Mentasta 82.18 27 *e*P **P 03 58 50.8 +0.8**
comp=Z,38nm,0.2s
DAWY Dawson 83.98 26 *e*P **P 03 58 59.1 -0.1**
comp=Z,8.5nm,1.1s
ARCES ARCESS Array B 84.88 340 P **P 03 59 02.3 -1.3**
comp=Z,2.2nm,0.8s,baz=84,slow=6.2,SNR=5.9
ARCES LR LR 04 38 25.0
comp=Z,114nm,21.8s,baz=86,slow=37
INK Inuvik 85.50 21 P **P 03 59 03.9 -2.8**
comp=Z,2.6nm,1.0s,baz=272,slow=6.8,SNR=8.2
INK Inuvik 85.50 21 *e*P **P 03 59 06.1 -0.6**
INK pmax pmax
comp=Z,6.0nm,1.0s
INK Inuvik 85.50 21 *e*P **P 03 59 06.1 -0.6**
comp=Z,5.7nm,1.0s
BRTR Keskin Array B 85.59 309 P **P 03 59 08.3 +0.3**
comp=Z,0.4nm,0.7s,baz=64,slow=5.0,SNR=3.0
BRTR LR LR 04 43 42.7
comp=Z,49nm,19.2s,baz=70,slow=40
BR231 Keskin MP Arra 86.23 310 *e*P **P 03 59 08.3 -2.8**
FINES FINESS Array B 86.42 332 P **P 03 59 09.8 -1.6**
comp=Z,0.8nm,0.7s,baz=67,slow=6.4,SNR=5.3
FINES LR LR 04 42 38.2
comp=Z,179nm,18.9s,baz=80,slow=39
FINES FINESS Array B 86.42 332 *c e*P **P 03 59 12.0 +0.6**
FINES pmax pmax
comp=Z,1.0nm,0.5s
PPT Papeete 87.96 108 LR LR 04 38 14.4
comp=Z,31nm,18.2s,baz=313,slow=36
PPT2 Papeete2 87.96 108 *e*LR LR 04 26 55.0
comp=Z,221nm,36.0s
KMBO Kilima Mbogo 88.46 269 LR LR 04 40 42.6
comp=Z,50nm,18.0s,baz=210,slow=37
MAW Mawson 88.50 200 LR LR 04 37 15.0
comp=Z,88nm,19.5s,baz=242,slow=34
VNDA Vanda 89.03 173 P **P 03 59 24.2 +0.7**
comp=Z,0.6nm,0.7s,baz=315,slow=8.6,SNR=3.9
VNDA LR LR 04 39 10.4
comp=Z,66nm,19.8s,baz=324,slow=36
VNDA Vanda 89.03 173 *e*P **P 03 59 23.4 -0.1**
VNDA pmax pmax
comp=Z,4.0nm,1.0s
VNDA Vanda 89.03 173 *e*P **P 03 59 23.4 -0.1**
comp=Z,4.1nm,1.0s
RES Resolute Bay 92.62 10 P **P 03 59 40.0 -0.3**
comp=Z,1.0nm,0.7s,baz=322,slow=7.0,SNR=4.4
RES Resolute Bay 92.62 10 *e*P **P 03 59 40.3 0.0**
RES pmax pmax
comp=Z,1.0nm,0.9s
RES Resolute Bay 92.62 10 *e*P **P 03 59 40.3 0.0**
comp=Z,1.3nm,0.9s
NB2 NORSAR Subarra 93.33 334 P **P 03 59 43.9 0.0**
comp=Z,1.9nm,1.0s,baz=64,slow=4.6
NOA NORSAR Array B 93.33 334 P **P 03 59 43.7 -0.2**
comp=Z,0.5nm,0.9s,baz=65,slow=4.6,SNR=2.7
YKA Yellowknife Ar 94.98 24 P **P 03 59 49.6 -1.8**
comp=Z,1.0nm,0.8s,baz=300,slow=4.5,SNR=14
TAOE Nuku Hiva Isla 95.64 98 *e*LR LR 04 30 37.0
comp=Z,88nm,25.2s
GERES GERESS Array B 97.03 322 LR LR 04 45 57.5
comp=Z,183nm,21.1s,baz=73,slow=37
TORD Torodi Ar. Bea 119.94 291 PKP **PKPdf 04 05 18.9 -1.6**
comp=Z,0.6nm,0.9s,baz=72,slow=2.2,SNR=6.7
PLCA Paso Flores 145.56 158 PKPbc **PKPab 04 06 08.2 +0.2**
comp=Z,3.1nm,0.9s,baz=294,slow=10.0,SNR=2.1

IDC 05 03:48:27.6±3.6, 18°.50S×71°.19W, h81km±27km, mb3.7/3, mb1 3.8/6, mb1mx3.5/29, mbtmp4.1/6, MS2.7/1, Ms1 2.8/1, ms1mx2.5/23, Error ellipse: s-maj=43.1km s-min=20.0km az=90.0, Off coast of northern Chile

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s ISC Res
LPAZ La Paz 3.65 53 P Pn 03 49 23.4 +1.0
2.3nm,0.3s,baz=240,slow=10,SNR=37
LPAZ LR LR 03 51 17.2
comp=Z,112nm,20.1s,baz=300,slow=46
LVC Limon Verde 4.62 153 P Pn 03 49 33.9 -1.3
213nm,0.3s,baz=346,slow=9.5,SNR=51
LVC S Sn 03 50 28.8 +1.0
134nm,0.3s,baz=104,slow=23,SNR=6.7
SIV San Ignacio 9.98 77 P Pn 03 50 47.5 -0.7
1.8nm,0.3s,baz=281,slow=9.8,SNR=17
PTGA Pitinga 20.81 33 P P 03 52 59.3 -3.3
2.3nm,0.2s,baz=209,slow=23,SNR=9.0
DBIC Dimbokro 70.00 76 P P 03 59 31.1 0.0
3.6nm,1.1s,baz=220,slow=4.6,SNR=4.6
TORD Torodi Ar. Bea 78.41 72 P P 04 00 20.1 0.0
0.8nm,0.6s,baz=251,slow=5.3,SNR=14
YKA Yellowknife Ar 87.67 341 P P 04 01 06.7 0.0
0.7nm,0.7s,baz=135,slow=4.9,SNR=15
MKAR Makanchi Array 144.34 32 PKP PKPdf 04 07 54.4 -0.1
0.3nm,0.4s,baz=334,slow=3.3,SNR=3.8

IDC 05 03:49:50.3±2.6, 5°.81S×130°.08E, h146km±38km, mb3.1/1, mb1 3.9/5, mb1mx3.4/36, mbtmp4.2/5, Error ellipse: s-maj=76.1km s-min=16.2km az=89.0, Banda Sea

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s ISC Res
SIJI Sorong 5.05 14 P Pn 03 51 05.8 +1.4
30nm,0.3s,baz=176,slow=19,SNR=2.5
SIJI S Sn 03 52 01.9 -0.3
18nm,0.3s,baz=270,slow=20,SNR=4.7
FITZ Fitzroy Crossi 12.96 199 P Pn 03 52 47.7 -1.4
0.5nm,0.3s,baz=24,slow=9.4,SNR=9.5
FITZ S Sn 03 55 04.6 -7.9
0.8nm,0.3s,baz=287,slow=23,SNR=7.5
WRA Warramunga Arr 14.64 164 P P 03 53 11.9 -1.0
0.7nm,0.3s,baz=351,slow=12,SNR=6.3
WRA S Sn 03 55 41.2 -12
0.5nm,0.3s,baz=337,slow=22,SNR=7.7
ASAR Alice Springs 18.13 169 P P 03 53 51.1 -0.2
2.1nm,0.3s,baz=350,slow=11,SNR=26
MKAR Makanchi Array 67.28 327 P P 04 00 29.3 0.0
0.3nm,0.6s,baz=136,slow=7.2,SNR=3.7

*IDC **05** 03:54:55.9±1.2, 37°.03N×141°.25E, h0km, mb3.5/4, mb1 3.7/7, mb1mx3.4/38, mbtmp3.6/7, ML3.6/3, Error ellipse: s-maj=29.7km s-min=19.8km az=119.0*
*ISCJB **05** 03:54:59.4±0.9, 36°.86N±0°.04×141°.33E±0°.08, h46km±8km, mb3.6/4, Error ellipse: s-maj=11.0km s-min=6.0km az=12.8*
*NIED **05** 03:55:00, 36°.90N×141°.20E, h47km, Mw3.6 Best double couple: Mo3.20000×10^14 NP1:φ=281.00000°, δ11.00000°, λ143.00000°. NP2:φ=48.00000°, δ83.00000°, λ81.00000°.*
*JMA **05** 03:55:01.3±0.1, 36°.87N×141°.16E, h48km±1km, M3.7*
JMA Felt I J1.
ISC 05 03:54:59.7±1.6, 36°.88N±0°.04×141°.33E±0°.09, h30km±10km, n16, σ0°.93/26, mb3.6/4, Near east coast of eastern Honshu

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s ISC Res
ONAJ Iwakimizuishiy 0.48 298 P **Pn 03 55 10.6 0.0**
ONAJ S **Sb 03 55 17.2 +0.4**
JFK Kawauchi 0.61 323 P **Pn 03 55 12.6 +0.3**
JFK S **Sb 03 55 20.6 +0.3**
JHO Hitachi 0.67 247 P **Pb 03 55 12.7 -0.2**
JHO S **Sb 03 55 20.7 -1.2**
JFT Otama 1.02 309 P **Pb 03 55 18.8 0.0**
JFT S **Sn 03 55 31.3 0.0**
JMM Marumori 1.07 337 P **Pb 03 55 19.2 -0.5**
JMM S **Sn 03 55 32.4 -0.2**
JYT Yasato 1.12 235 P **Pn 03 55 19.2 -0.2**
JYT S **Sn 03 55 32.7 -1.1**
JFY Yanaizu 1.40 293 P **Pn 03 55 23.5 +0.2**
JFY S **Sn 03 55 41.0 +0.2**
MJAR Matsushiro Arr 2.53 263 Pn **Pn 03 55 39.1 +0.4**
8.1nm,0.3s,baz=85,slow=15,SNR=61
MJAR Sn **Sn 03 56 09.1 +0.4**
11nm,0.3s,baz=85,slow=30,SNR=11
MAT Matsushiro 2.54 263 P **Pn 03 55 39.7 +0.9**
MAT *e*S **Sn 03 56 08.1 -0.6**
JHJ Hachijo jima 2 3.96 199 Pn **Pn 03 55 59.5 +1.1**
19nm,0.3s,baz=121,slow=22,SNR=7.3
JHJ Sn **Sn 03 56 43.4 -0.5**
18nm,0.3s,baz=229,slow=20,SNR=4.1
ASAJ Asahikawa 7.29 7 Pn **Pn 03 56 43.6 -0.5**
1.1nm,0.3s,baz=217,slow=15,SNR=11
USRK Ussuriysk Ar. 10.20 319 Pn **Pn 03 57 26.2 +2.3**
0.3nm,0.3s,baz=130,slow=14,SNR=5.3
TIXI Tiksi 35.44 353 P **P 04 01 52.1 -0.6**
0.5nm,0.3s,baz=126,slow=1.9,SNR=4.8
MKAR Makanchi Array 44.15 302 P **P 04 03 03.6 -1.8**
0.2nm,0.4s,baz=84,slow=10.0,SNR=3.8
ILAR Eielson Array 49.66 32 P **P 04 03 48.0 -0.2**
0.3nm,0.8s,baz=258,slow=4.5,SNR=3.3
WRA Warramunga Arr 56.90 188 P **P 04 04 43.7 +1.8**
0.4nm,0.3s,baz=3.2,slow=7.3,SNR=5.0

IDC 05 03:55:22.2±2.9, 19°.44S×71°.70W, h0km, mb3.8/2, mb1 3.9/3, mb1mx3.5/21, mbtmp3.8/3, ML3.2/2, Error ellipse: s-maj=92.2km s-min=41.7km az=177.0, Off coast of northern Chile

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s ISC Res
LPAZ La Paz 4.62 48 Pn Pn 03 56 34.0 +0.1
0.2nm,0.3s,baz=250,slow=9.4,SNR=7.6
SIV San Ignacio 10.69 73 Pn Pn 03 57 56.8 0.0
0.8nm,0.3s,baz=221,slow=14,SNR=8.1
TORD Torodi Ar. Bea 79.17 72 P P 04 07 29.6 0.0
0.8nm,0.9s,baz=233,slow=4.8,SNR=5.0
YKA Yellowknife Ar 88.40 342 P P 04 08 15.6 0.0
0.3nm,0.6s,baz=136,slow=4.9,SNR=9.6

JMA 05 04:03:08.2±0.1, 37°.82N×141°.84E, h29km±3km, M4.0, Near east coast of eastern Honshu

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s ISC Res
JIO Ouri 0.74 329 P Pb 04 03 22.1 -0.5
JIO S Sb 04 03 31.2 -1.2
JMM Marumori 0.83 273 P Pn 04 03 23.8 -0.1
JMM S Sb 04 03 34.3 -0.6
JFK Kawauchi 0.89 240 P Pn 04 03 24.6 -0.2
JFK S Sb 04 03 36.1 -0.6
JOU Okura 1.08 301 P Pn 04 03 27.7 +0.4
JOU S Sn 04 03 41.1 -0.2
ONAJ Iwakimizuishiy 1.10 229 P Pn 04 03 27.5 -0.1
ONAJ S Sn 04 03 41.3 -0.5
JFT Otama 1.23 256 P Pb 04 03 30.5 -0.3
JFT S Sb 04 03 46.3 0.0
JHO Hitachi 1.58 220 P Pn 04 03 34.1 -0.1
MAT Matsushiro 3.17 247 P Pn 04 03 58.0 +1.9
MAT *e*S Sb 04 04 38.2 -3.8

*ISCJB **05** 04:12:49.3±2.0, 37°.31N±0°.05×142°.59E±0°.05, h3km±13km, mb3.5/6, Error ellipse: s-maj=8.8km s-min=7.3km az=175.5*
*JMA **05** 04:12:49.6±0.3, 37°.31N×142°.53E, h0km, M4.0*
*IDC **05** 04:12:50.8±1.0, 37°.30N×142°.55E, h0km, mb3.4/6, mb1 3.6/9, mb1mx3.5/33, mbtmp3.5/9, ML3.2/3, Error ellipse: s-maj=29.2km s-min=20.0km az=121.0*
ISC 05 04:12:51.9±3.3, 37°.36N±0°.07×142°.49E±0°.08, h6km±19km, n17, σ1°.01/23, mb3.5/6, Off east coast of Honshu

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s ISC Res
JFK Kawauchi 1.28 271 P **Pn 04 13 14.5 -1.9**
JFK *e*S **Sg 04 13 33.5 +0.3**
ONAJ Iwakimizuishiy 1.37 260 P **Pn 04 13 16.1 -1.5**
JIO Ouri 1.41 321 P **Pn 04 13 17.1 -1.0**
JIO S **Sb 04 13 36.9 0.0**
JMM Marumori 1.44 291 P **Pn 04 13 17.0 -1.4**
JMM *e*S **Sg 04 13 38.5 +0.5**
JHO Hitachi 1.71 245 *e*S **Sn 04 13 43.6 -0.7**
JFT Otama 1.72 276 P **Pn 04 13 21.8 -0.5**
JFT S **Sb 04 13 45.0 -0.7**
JOU Okura 1.75 305 P **Pn 04 13 22.6 -0.2**
JOU S **Sb 04 13 46.4 -0.4**
MJAR Matsushiro Arr 3.52 258 Pn **Pn 04 13 48.2 +1.1**
1.7nm,0.3s,baz=92,slow=16,SNR=9.7
MAT Matsushiro 3.52 258 P **Pn 04 13 48.6 +1.5**
MAT *e*S **Sn 04 14 30.9 +1.8**
JHJ Hachijo jima 2 4.78 208 Pn **Pn 04 14 03.6 -0.7**
5.5nm,0.3s,baz=294,slow=20,SNR=4.0
ASAJ Asahikawa 6.75 1 Pn **Pn 04 14 31.3 -0.1**
0.5nm,0.3s,baz=214,slow=17,SNR=3.1
ZALV Zalesovo Beam 42.33 312 P **P 04 20 46.0 -0.3**
1.1nm,0.3s,baz=112,slow=7.2,SNR=3.7
MKAR Makanchi Array 44.67 302 P **P 04 21 06.0 +0.7**
0.3nm,0.5s,baz=88,slow=10,SNR=5.4
ILAR Eielson Array 48.76 33 P **P 04 21 37.0 -0.1**
0.2nm,0.5s,baz=262,slow=6.3,SNR=3.7
WRA Warramunga Arr 57.51 189 P **P 04 22 41.0 -1.0**
0.7nm,0.7s,baz=5.6,slow=7.2,SNR=4.1
YKA Yellowknife Ar 63.09 30 P **P 04 23 20.2 +0.5**
0.1nm,0.6s,baz=303,slow=6.6,SNR=3.4
TXAR Lajitas Array 89.24 53 P **P 04 25 49.6 +0.6**
0.1nm,0.5s,baz=302,slow=4.2,SNR=3.6

IDC 05 04:17:15.5±27.0, 17°.20S×70°.51W, h169km±114km, mb2.9/2, mb1 3.0/3, mb1mx2.9/20, mbtmp3.2/3, Error ellipse: s-maj=557.6km s-min=52.9km az=24.0, Near coast of Peru

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s ISC Res
LPAZ La Paz 2.45 69 P Pn 04 17 57.7 0.0
0.6nm,0.3s,baz=240,slow=10.0,SNR=20
TORD Torodi Ar. Bea 77.40 72 P P 04 28 52.5 +0.1
0.4nm,0.8s,baz=239,slow=6.4,SNR=3.6
YKA Yellowknife Ar 86.65 341 P P 04 29 39.5 0.0
0.1nm,0.6s,baz=137,slow=5.0,SNR=4.6

*NIED **05** 04:28:00, 35°.90N×140°.80E, h41km, Mw4.1 Best double couple: Mo1.49000×10^15 NP1:φ=247.00000°, δ17.00000°, λ144.00000°. NP2:φ=11.00000°, δ80.00000°, λ76.00000°.*
*ISCJB **05** 04:28:52.8±0.7, 35°.89N±0°.04×141°.0E±0°.1, h51km±5km, mb3.8/12, MS3.6/2, Error ellipse: s-maj=15.0km s-min=6.9km az=174.2*
*JMA **05** 04:28:54.9±0.1, 35°.90N×140°.82E, h39km±1km, M3.6*
JMA Felt I J1.
*IDC **05** 04:28:54.8±0.7, 35°.86N×140°.92E, h51km±6km, mb3.6/12, mb1 3.7/16, mb1mx3.6/34, mbtmp3.9/16, MS3.0/7, Ms1 3.0/7, ms1mx2.7/51, Error ellipse: s-maj=17.9km s-min=8.6km az=102.0*
ISC 05 04:28:54.4±0.7, 35°.88N±0°.05×140°.93E±0°.09, h46km±6km, n25, σ0°.98/30, mb3.9/12, 1C, Near east coast of eastern Honshu

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s ISC Res
CHOJ Chosi 0.18 199 ⇑P **Pn 04 29 01.8 -0.4**
CHOJ S **Sn 04 29 07.4 -0.3**
JYT Yasato 0.69 300 P **Pn 04 29 06.9 -1.0**
JYT S **Sn 04 29 15.6 -2.1**
JHO Hitachi 0.79 338 P **Pn 04 29 08.6 -0.6**
JHO S **Sn 04 29 18.7 -1.3**
MJAR Matsushiro Arr 2.30 288 P **Pn 04 29 30.3 +0.4**
25nm,0.3s,baz=98,slow=8.7,SNR=66
MJAR LR LR 04 30 30.7
comp=Z,326nm,19.9s,baz=115,slow=42
JHJ Hachijo jima 2 2.91 199 P **Pn 04 29 38.6 +0.4**
30nm,0.3s,baz=128,slow=23,SNR=12
JHJ S **Sn 04 30 12.4 +0.5**
85nm,0.3s,baz=84,slow=24,SNR=9.4
JHJ LR LR 04 30 31.4
comp=Z,51nm,19.2s,baz=46,slow=33
ASAJ Asahikawa 8.33 8 P **Pn 04 30 52.4 -0.1**
2.2nm,0.3s,baz=219,slow=14,SNR=7.4
JCJ Chichijima 8.82 173 P **Pn 04 30 56.6 -2.7**
9.3nm,0.3s,baz=356,slow=20,SNR=14
JCJ S Sn 04 32 28.8 -8.6
8.3nm,0.3s,baz=282,slow=22,SNR=5.5
KSRS Korea Array 10.57 282 LR LR 04 35 20.3
comp=Z,127nm,20.6s,baz=97,slow=36
USRK Ussuriysk Ar. 10.77 323 P **Pn 04 31 26.6 +0.7**
0.3nm,0.3s,baz=144,slow=13,SNR=4.6
JOW Kunigami 14.07 234 LR LR 04 37 31.8
comp=Z,28nm,19.2s,baz=349,slow=37
KLR Kul'dur 14.94 336 LR LR 04 37 29.2
comp=Z,58nm,19.5s,baz=132,slow=34
SONM Songino Array 28.13 306 P **P 04 34 41.8 -0.3**
1.5nm,0.5s,baz=101,slow=7.5,SNR=2.8
ZALV Zalesovo Beam 42.41 313 P **P 04 36 44.8 +0.5**
1.4nm,0.5s,baz=107,slow=8.3,SNR=4.7
ZALV pP **pP 04 36 57.7 +0.9**
3.0nm,0.9s,baz=87,slow=10,SNR=2.4
MKAR Makanchi Array 44.41 303 P **P 04 37 01.1 +0.6**
3.5nm,0.6s,baz=88,slow=9.9,SNR=38
MKAR LR LR 04 56 24.5
comp=Z,43nm,18.3s,baz=38,slow=37
ILAR Eielson Array 50.68 32 P **P 04 37 49.5 +0.7**
0.4nm,0.7s,baz=265,slow=5.4,SNR=6.3
ILAR pP **pP 04 38 03.1 +1.5**
0.9nm,0.8s,baz=267,slow=5.8,SNR=6.6
INK Inuvik 55.59 27 P **P 04 38 24.5 -0.4**
0.4nm,0.6s,baz=330,slow=9.2,SNR=4.9
WRA Warramunga Arr 55.87 188 P **P 04 38 26.7 -0.7**
0.8nm,0.3s,baz=7.4,slow=7.4,SNR=8.5
ASAR Alice Springs 59.59 187 P **P 04 38 53.1 -0.4**
0.5nm,0.7s,baz=16,slow=9.3,SNR=5.9
ARCES ARCESS Array B 64.94 339 P **P 04 39 28.7 -0.1**
1.2nm,0.7s,baz=45,slow=7.0,SNR=5.1
YKA Yellowknife Ar 65.00 30 P **P 04 39 28.5 -0.7**
0.1nm,0.5s,baz=303,slow=6.8,SNR=3.7
YKA pP **pP 04 39 43.2 +0.8**
0.2nm,0.7s,baz=304,slow=6.6,SNR=4.5
FINES FINESS Array B 69.66 332 P **P 04 39 57.9 -0.8**
1.9nm,0.9s,baz=1.3,slow=8.2,SNR=5.0
AKASG Malin Array Be 74.97 322 P **P 04 40 30.3 -0.3**
0.3nm,0.3s,baz=47,slow=6.2,SNR=5.1
AKASG LR LR 05 16 16.9
comp=Z,40nm,18.4s,baz=245,slow=38
NB2 NORSAR Subarra 75.10 337 P **P 04 40 31.4 +0.2**
comp=Z,1.2nm,0.8s,baz=41,slow=5.9
NOA NORSAR Array B 75.10 337 P **P 04 40 30.3 -0.9**
comp=Z,0.6nm,0.5s,baz=40,slow=5.7,SNR=3.1
NOA pP **PcP 04 40 45.5 +0.9**
comp=Z,0.7nm,0.7s,baz=40,slow=5.7,SNR=3.4
LPAZ La Paz 147.60 61 PKPbc **PKPbc 04 48 35.8 +0.9**
comp=Z,0.6nm,0.6s,baz=222,slow=8.9,SNR=4.1

IDC 05 04:33:17.9±3.9, 34°.90N×142°.83E, h0km, mb3.6/2, mb1 3.7/4, mb1mx3.4/36, mbtmp3.6/4, ML3.5/2, MS3.4/2, Ms1 3.4/2, ms1mx2.3/48, Error ellipse: s-maj=78.1km s-min=36.9km az=41.0, Off east coast of Honshu

Code Station Name Δ° AZ° Phase ID Op ISC Time h m s ISC Res
JHJ Hachijo jima 2 3.09 236 Pn Pn 04 34 07.7 -0.3
21nm,0.3s,baz=53,slow=21,SNR=6.3
JHJ Sn Sn 04 34 41.0 -4.6
27nm,0.3s,baz=44,slow=23,SNR=4.6
MJAR Matsushiro Arr 4.10 295 Pn Pn 04 34 21.6 -0.3
1.8nm,0.3s,baz=109,slow=8.0,SNR=8.8
SIJI Sorong 37.19 199 LR LR 04 56 01.2
comp=Z,61nm,18.6s,slow=37
WRA Warramunga Arr 55.13 190 P P 04 42 51.8 -0.3
0.7nm,0.7s,baz=7.1,slow=7.3,SNR=6.1
ASAR Alice Springs 58.86 190 P P 04 43 18.6 +0.2
0.2nm,0.3s,baz=12,slow=10,SNR=4.1
AFI Afiamalu 64.88 130 LR LR 05 09 19.0
comp=Z,19nm,19.4s,baz=30,slow=33

*ISCJB **05** 04:34:22.6±0.4, 32°.35N±0°.03×115°.35W±0°.03, h12km±4km, Error ellipse: s-maj=5.1km s-min=3.7km az=37.6*
*ECX **05** 04:34:23.8±0.5, 32°.34N×115°.33W, h5km, MD2.9, ML3.1*
*MEX **05** 04:34:23.7±0.9, 32°.48N×115°.18W, h15km±3km, MD3.9*
*NEIC **05** 04:34:23.8, 32°.34N×115°.33W, h5km, ML2.9(PAS), ML3.1(ECX), After ECX.*
ISC 05 04:34:22.1±0.8, 32°.36N±0°.03×115°.30W±0°.03, h18km±3km, n37, σ1°.26/55, 3C-3D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CPBX	**Cerro Prieto**	**0.05**	**356**	*e*P	**Pg**	**04 34 25.3**	**-0.1**
CPBX				*i* S	**Sg**	**04 34 26.8**	**-0.8**
CPBX				*e*S	**Sb**	**04 34 27.2**	**-0.3**
CPBX	**Cerro Prieto**	**0.05**	**356**	*e*P	**Pg**	**04 34 25.2**	**-0.1**
CPBX				*i* P	**Pg**	**04 34 25.3**	**-0.1**
CPBX				*e*S	**Sg**	**04 34 27.5**	**-0.1**
CPBX				⇓*e*		04 34 28.9	
CPBX				AML	AML	04 34 28.9	
	comp=N,47μm,0.4s						
MBIG	**Mexicali**	**0.10**	**63**	*e*P	**Pg**	**04 34 26.4**	**+0.8**
MBIG				*i* S	**Sg**	**04 34 28.4**	**+0.4**
MBIG	**Mexicali**	**0.10**	**63**	*e*P	**Pg**	**04 34 26.4**	**+0.8**
DREC	**Desert Rsrch C**	**0.46**	**344**	*e*P	**Pb**	**04 34 32.6**	**+0.9**
EMSC	**East Mesa**	**0.46**	**35**	⇑*i*P	**Pn**	**04 34 32.9**	**-0.9**
SGL	**Mount Signal**	**0.46**	**308**	⇓*i*P	**Pg**	**04 34 31.7**	**+0.3**
ERPC	**Ernies Place**	**0.49**	**321**	*e*P	**Pg**	**04 34 32.7**	**+0.8**
COA	**Coachella**	**0.52**	**17**	⇑*i*P	**Pn**	**04 34 33.6**	**-1.0**
WESC	**Westside Schoo**	**0.54**	**317**	*e*P	**Pg**	**04 34 33.5**	**+0.7**
YUH	**Yuha Desert**	**0.60**	**298**	⇓*i*P	**Pg**	**04 34 33.9**	**-0.1**
RMX	**La Rumorosa**	**0.70**	**290**	*e*P	**Pg**	**04 34 35.7**	**-0.2**
RMX				AML	AML	04 34 44.7	
	comp=E,919nm,0.1s						
SWSC	**Sam W. Stewart**	**0.72**	**324**	P	**Pg**	**04 34 35.9**	**-0.3**
	baz=147						
GLA	**Glamis**	**0.79**	**30**	P	**Pb**	**04 34 37.5**	**+0.1**
	baz=211						
ECBX	**El Chinero**	**0.91**	**167**	*e*P	**Pb**	**04 34 39.5**	**+0.1**
ECBX				*i* S	**Sb**	**04 34 51.9**	**+0.6**
MONP2	**Monument Peak**	**1.08**	**299**	P	**Pb**	**04 34 42.8**	**+0.3**
	baz=121						
MONP2				S	**Sb**	**04 34 56.5**	**+0.1**
	baz=121						
CBX	**Cerro Bola**	**1.16**	**268**	*e*P	**Pn**	**04 34 43.7**	**+0.1**
CBX				*e*S	**Sb**	**04 34 58.2**	**-0.1**
CBX	**Cerro Bola**	**1.16**	**268**	*e*P	**Pn**	**04 34 43.7**	**+0.1**
CBX				*e*S	**Sb**	**04 34 58.2**	**-0.1**
CBX	**Cerro Bola**	**1.16**	**268**	*e*P	**Pn**	**04 34 43.6**	**+0.1**
CBX				*e*S	**Sb**	**04 34 58.9**	**+0.5**
CBX				AML	AML	04 34 59.9	
	comp=N,503nm,0.4s						
CBX				⇑*e*		04 34 59.9	
TJIG	**Tijuana**	**1.17**	**274**	*e*P	**Pn**	**04 34 43.6**	**0.0**
TJIG				*i* S	**Sb**	**04 34 57.7**	**-0.8**
ZAX	**El Zacaton**	**1.19**	**225**	*e*P	**Pn**	**04 34 43.6**	**-0.3**
BAR	**Barrett**	**1.20**	**286**	*e*P	**Pn**	**04 34 44.4**	**+0.3**
ECNX	**Esteban Cantu**	**1.31**	**238**	*e*P	**Pn**	**04 34 45.7**	**+0.1**
SPIG	**San Pedro Mart**	**1.32**	**186**	*e*P	**Pn**	**04 34 46.2**	**+0.2**
SPIG				*i* S	**Sn**	**04 35 03.5**	**+0.2**
SPIG	**San Pedro Mart**	**1.32**	**186**	*e*P	**Pn**	**04 34 46.2**	**+0.2**
SPIG				*i* S	**Sn**	**04 35 03.5**	**+0.2**
SPIG	**San Pedro Mart**	**1.32**	**186**	*e*P	**Pn**	**04 34 46.2**	**+0.2**
SPX	**San Pedro Mart**	**1.32**	**186**	*e*P	**Pn**	**04 34 46.1**	**+0.2**
SPX				*e*S	**Sn**	**04 35 02.4**	**-0.9**
SPX	**San Pedro Mart**	**1.32**	**186**	*e*P	**Pn**	**04 34 46.2**	**+0.2**
SPX				*e*		04 35 06.3	
SPX				AML	AML	04 35 06.3	
	comp=N,187nm,0.3s						
PBX	**Punta Banda**	**1.36**	**243**	*e*P	**Pn**	**04 34 46.4**	**+0.2**
PFO	**Pinyon Flats O**	**1.58**	**322**	P	**Pn**	**04 34 48.6**	**-0.8**
	baz=143						
PFO	**Pinyon Flats O**	**1.58**	**322**	*e*Pn	**Pn**	**04 34 48.0**	**-1.4**
PFO				*e*S	**Sn**	**04 35 06.7**	**-2.8**
109C	**Camp Elliot, M**	**1.61**	**289**	P	**Pn**	**04 34 51.3**	**+1.6**
	baz=110						
109C				S	**Sn**	**04 35 11.4**	**+1.4**
	baz=110						
MURC	**Murrieta**	**2.02**	**308**	Sg	**Sb**	**04 35 25.3**	**+2.3**
	baz=128						
214A	**Organ Pipe Nat**	**2.15**	**100**	P	**Pn**	**04 34 56.8**	**-0.3**
	baz=281						
214A				Sb	**Sg**	**04 35 30.6**	**-0.7**
	baz=281						
214A	**Organ Pipe Nat**	**2.15**	**100**	*e*Pn	**Pn**	**04 34 56.8**	**-0.3**
TUC	**Tucson**	**3.82**	**90**	Pn	**Pn**	**04 35 23.3**	**+3.2**
TUC				*e*S	**Sg**	**04 36 19.4**	**-5.5**
WUAZ	**Wupatki**	**4.53**	**45**	*e*Pn	**Pn**	**04 35 33.4**	**+3.4**

*IDC **05** 04:35:59.1±0.7, 34°.83N×142°.91E, h0km, mb4.0/10, mb1 4.2/13, mb1mx4.0/41, mbtmp4.0/13, ML4.3/2, MS3.3/7, Ms1 3.3/7, ms1mx2.8/46, Error ellipse: s-maj=21.5km s-min=15.8km az=115.0*

*ISCJB **05** 04:36:00.1±1.5, 34°.92N±0°.05×142°.85E±0°.04, h19km±11km, mb4.0/14, MS3.7/4, Error ellipse: s-maj=7.7km s-min=5.3km az=177.6*

*NEIC **05** 04:36:00.5±0.5, 34°.92N×142°.88E, h10km, mb4.1/3, Error ellipse: s-maj=10.9km s-min=9.0km az=119.0*

*NIED **05** 04:36:00, 34°.90N×142°.90E, h5km, Mw4.0 Best double couple: M0:1.2000×10^15 NP1:ϕs=17.00000°, δ=22.00000°, λ=-89.00000°. NP2:ϕs=196.00000°, δ=68.00000°, λ=-90.00000°.*

*JMA **05** 04:36:01.4±0.3, 34°.90N×142°.87E, h42km, M4.2*

ISC 05 04:35:57.4±3.1, 34°.80N±0°.05×142°.97E±0°.06, h1km±19km, n49, σ2s=63/62, mb4.1/14, MS3.7/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**1.65**	**265**	P	**Pb**	**04 36 27.3**	**-1.0**
BSO1				S	**Sn**	**04 36 46.7**	**-1.9**
BSO2	**Boso 2**	**1.82**	**269**	S	**Sn**	**04 36 52.4**	**-1.0**
CHOJ	**Chosi**	**1.95**	**298**	P	**Pn**	**04 36 31.8**	**+0.1**
CHOJ				*e*S	**Sn**	**04 36 53.6**	**-3.2**
BSO3	**Boso 3**	**2.02**	**271**	P	**Pb**	**04 36 33.3**	**-1.6**
BSO3				S	**Sn**	**04 36 57.3**	**-1.0**
BSO4	**Boso 4**	**2.17**	**276**	P	**Pb**	**04 36 35.8**	**-1.7**
BSO4				*e*S	**Sn**	**04 36 59.5**	**-2.7**
KTR	**Katsuura**	**2.21**	**280**	P	**Pb**	**04 36 36.6**	**-1.6**
JCN	**Nagara**	**2.35**	**286**	P	**Pb**	**04 36 38.4**	**-2.2**
JCN				*e*S	**Sn**	**04 37 05.8**	**-1.0**
JHJ2	**Mitsune**	**3.12**	**238**	P	**Pn**	**04 36 48.2**	**+0.5**
JHJ2	**Mitsune**	**3.12**	**238**	*e*Pn	**Pn**	**04 36 48.2**	**+0.5**
JHJ2				*e*S	**Sn**	**04 37 21.7**	**-3.9**
JHJ	**Hachijo jima 2**	**3.13**	**239**	Pn	**Pn**	**04 36 48.5**	**+0.5**
	164nm,0.3s,baz=339,slow=21,SNR=42						
JHJ				Sn	**Sn**	**04 37 21.7**	**-4.4**
	215nm,0.3s,baz=46,slow=23,SNR=14						
JOD2	**Odawara 2**	**3.22**	**279**	P	**Pn**	**04 36 48.6**	**-0.6**
JOD2				S	**Sn**	**04 37 24.1**	**-4.1**
JAG	**Ashikaga**	**3.29**	**301**	P	**Pn**	**04 36 50.2**	**0.0**
JFT	**Otama**	**3.45**	**323**	P	**Pn**	**04 36 52.4**	**+0.1**
JFT				S	**Sn**	**04 37 29.2**	**-4.7**
JRY	**Ryogami san**	**3.54**	**291**	P	**Pn**	**04 36 53.9**	**+0.3**
JRY				*e*S	**Sn**	**04 37 33.4**	**-2.7**
JYN	**Shimob**	**3.69**	**282**	P	**Pn**	**04 36 55.5**	**-0.3**
JYN				*e*S	**Sn**	**04 37 36.3**	**-3.7**
MJAR	**Matsushiro Arr**	**4.25**	**296**	Pn	**Pn**	**04 37 03.8**	**+0.4**
	9.1nm,0.3s,baz=91,slow=12,SNR=64						
MJAR				LR	LR	04 39 11.8	
	comp=Z,195nm,19.4s,baz=165,slow=46						
MAJO	**Matsushiro**	**4.25**	**296**	*e*Pn	**Pn**	**04 37 04.0**	**+0.7**
MAJO				*e*S	**Sn**	**04 37 50.9**	**-2.7**
MAT	**Matsushiro**	**4.25**	**296**	P	**Pn**	**04 37 03.3**	**-0.1**
MAT				*e*S	**Sn**	**04 37 49.6**	**-4.1**
MAT	**Matsushiro**	**4.25**	**296**	P	**Pn**	**04 37 03.9**	**+0.5**
MAT				*e*S	**Sn**	**04 37 51.8**	**-1.9**
JMK	**Ichinoseki**	**4.38**	**342**	P	**Pn**	**04 37 04.5**	**-0.5**
JYK	**Kaneyama**	**4.61**	**334**	P	**Pn**	**04 37 07.7**	**-0.6**
JOM	**Ohasama**	**4.85**	**344**	P	**Pn**	**04 37 11.5**	**-0.1**
JSD	**Sado**	**4.99**	**312**	P	**Pn**	**04 37 13.6**	**+0.2**
ERM	**Erimo**	**7.21**	**1**	*e*Pn	**Pn**	**04 37 42.8**	**-1.1**
ERM				*e*S	**Sn**	**04 38 59.4**	**-7.0**
CBIJ	**Chichi jima**	**7.71**	**185**	*e*Pn	**Pn**	**04 37 48.1**	**-2.7**
CBIJ				*e*S	**Sn**	**04 39 12.1**	**-6.8**
JCJ	**Chichijima**	**7.71**	**185**	Pn	**Pn**	**04 37 51.4**	**+0.5**
	baz=270,slow=20						
JCJ				Sn	**Sn**	**04 39 12.6**	**-6.3**
	28nm,0.3s,baz=292,slow=21,SNR=10						
ASAJ	**Asahikawa**	**9.31**	**358**	Pn	**Pn**	**04 38 11.3**	**-1.5**
	2.2nm,0.3s,baz=240,slow=13,SNR=12						
ASAJ				Sn	**Sn**	**04 39 51.2**	**-6.9**
	0.8nm,0.3s,baz=17,slow=30,SNR=5.6						
ASAJ				LR	LR	04 42 19.3	
	comp=Z,62nm,18.8s,baz=96,slow=41						
ASAJ	**Asahikawa**	**9.31**	**358**	*e*Pn	**Pn**	**04 38 11.2**	**-1.5**
	6.3nm,0.8s						
ASAJ				*e*S	Sn	04 39 47.4	-11
KSRS	**Korea Array**	**12.45**	**287**	LR	LR	04 43 53.9	
	comp=Z,61nm,20.9s,baz=94,slow=38						
ZALV	**Zalesovo Beam**	**44.36**	**314**	P	**P**	**04 44 10.6**	**+1.5**
	0.8nm,0.5s,baz=115,slow=6.5,SNR=2.5						
MKAR	**Makanchi Array**	**46.40**	**304**	P	**P**	**04 44 26.9**	**+1.5**
	1.2nm,0.7s,baz=92,slow=8.7,SNR=11						
BATI	**Baumata**	**48.36**	**206**	LR	LR	05 04 00.6	
	comp=Z,95nm,20.8s,baz=352,slow=35						
ILAR	**Eielson Array**	**50.72**	**31**	P	**P**	**04 44 58.4**	**-0.1**
	1.0nm,1.0s,baz=257,slow=6.0,SNR=7.0						
TKM2	**Tokmak 2**	**51.83**	**300**	P	**P**	**04 45 09.1**	**+1.7**
	1.5nm,0.9s						
WRAB	**Tennant Creek**	**55.04**	**190**	*e*P	**P**	**04 45 32.7**	**+1.9**
	10nm,0.9s						
WRA	**Warramunga Arr**	**55.05**	**190**	P	**P**	**04 45 32.6**	**+1.7**
	8.0nm,0.8s,baz=7.9,slow=7.5,SNR=40						
INK	**Inuvik**	**55.81**	**27**	P	**P**	**04 45 37.6**	**+1.8**
	1.1nm,0.6s,baz=287,slow=7.6,SNR=6.4						
ASAR	**Alice Springs**	**58.78**	**190**	P	**P**	**04 45 59.5**	**+2.2**
	3.0nm,0.8s,baz=16,slow=8.6,SNR=29						
ABKAR	**Akbulak array**	**60.35**	**312**	*e*P	**P**	**04 46 08.8**	**+0.8**
	1.0nm,0.6s						
DZM	**Mont Dzumac**	**60.80**	**155**	LR	LR	05 08 05.0	
	comp=Z,56nm,21.2s,baz=51,slow=32						
RES	**Resolute Bay**	**64.44**	**14**	*e*P	**P**	**04 46 36.2**	**+1.3**
	3.9nm,1.3s						
YKA	**Yellowknife Ar**	**65.10**	**30**	P	**P**	**04 46 40.8**	**+1.4**
	0.5nm,0.8s,baz=298,slow=6.5,SNR=10						
RAO	**Raoul Island**	**73.63**	**145**	LR	LR	05 16 28.2	
	comp=Z,69nm,19.3s,baz=339,slow=33						
NVAR	**Mina Array Bea**	**75.31**	**53**	P	**P**	**04 47 45.8**	**+3.1**
	1.9nm,0.7s,baz=288,slow=6.0,SNR=18						
NB2	**NORSAR Subarra**	**76.73**	**338**	P	**P**	**04 47 51.4**	**+1.2**
	comp=Z,0.4nm,0.6s,baz=40,slow=5.6						
NOA	**NORSAR Array B**	**76.73**	**338**	P	**P**	**04 47 51.7**	**+1.5**
	comp=Z,0.8nm,0.8s,baz=39,slow=5.6,SNR=4.7						
PDAR	**Pinedale Array**	**78.32**	**46**	P	**P**	**04 48 01.7**	**+2.0**
	comp=Z,0.3nm,0.7s,baz=20,slow=2.9,SNR=2.1						
TXAR	**Lajitas Array**	**90.46**	**53**	LR	LR	05 23 35.8	
	comp=Z,17nm,21.7s,baz=0.0,slow=32						
LPAZ	**La Paz**	**146.62**	**64**	PKPbc	**PKPab**	**04 55 43.3**	**+0.1**
	comp=Z,0.9nm,0.7s,baz=305,slow=6.2,SNR=6.4						

MEX 05 04:48:33.2±0.3, 16°.20N×98°.09W, h3km±3km, MD3.9, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PNIG	**Pinotepa**	**0.19**	**350**	*e*P	Pg	04 48 36.9	-0.1
PNIG				*e*S	Sg	04 48 39.5	-0.1
TLIG	**Tlapa**	**1.43**	**342**	*e*P	Pn	04 48 56.7	-3.5
TLIG				*i* S	Sg	04 49 14.6	-4.6
VHO	**Vista Hermosa**	**1.56**	**56**	*e*P	Pn	04 48 58.5	-3.7
VHO				*e*S	Sn	04 49 18.3	-4.7
HUIG	**Huatulco**	**1.96**	**102**	*e*P	Pn	04 49 03.5	-3.8
HUIG				*i* S	Sn	04 49 27.4	-5.0
CAIG	**El Cayaco**	**2.25**	**292**	*e*P	Pn	04 49 07.9	-3.4
CAIG				*e*S	Sn	04 49 34.9	-4.8

*ISCJB **05** 05:02:00.6±0.9, 15°.8S±0°.4×176°.1W±0°.2, h360km, mb3.8/8, Error ellipse: s-maj=57.7km s-min=12.4km az=150.8*

*IDC **05** 05:02:01.0±1.8, 15°.73S×176°.10W, h350km±21km, mb3.3/7, mb1 3.7/9, mb1mx3.3/43, mbtmp4.1/9, Error ellipse: s-maj=69.4km s-min=12.9km az=148.0*

ISC 05 05:02:01.7±1.0, 15°.9S±0°.4×176°.0W±0°.3, h360km, n16, σ0s=85/15, mb3.7/8, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**4.54**	**65**	P	**Pn**	**05 03 15.9**	**-1.0**
	16nm,0.3s,baz=10.0,slow=0.7,SNR=36						
DZM	**Mont Dzumac**	**17.69**	**247**	P	**P**	**05 05 44.4**	**-0.6**
	0.3nm,0.3s,baz=66,slow=20,SNR=7.2						
STKA	**Stephens Creek**	**41.62**	**240**	P	**P**	**05 09 15.8**	**-0.3**
	2.4nm,0.3s,baz=66,slow=7.9,SNR=9.2						
WRA	**Warramunga Arr**	**47.28**	**257**	P	**P**	**05 10 00.2**	**-0.4**
	4.1nm,0.4s,baz=98,slow=6.0,SNR=51						
ASAR	**Alice Springs**	**47.57**	**252**	P	**P**	**05 10 03.4**	**+0.6**
	78nm,0.6s,baz=86,slow=8.0,SNR=678						
TXAR	**Lajitas Array**	**82.97**	**57**	P	**P**	**05 13 49.2**	**+1.5**
	0.4nm,0.7s,baz=217,slow=5.6,SNR=4.2						
ILAR	**Eielson Array**	**83.42**	**12**	P	**P**	**05 13 48.6**	**-0.4**
	1.8nm,0.6s,baz=219,slow=5.7,SNR=25						
PDAR	**Pinedale Array**	**84.31**	**43**	P	**P**	**05 13 54.1**	**-0.2**
	0.5nm,0.8s,baz=218,slow=1.7,SNR=4.7						
INK	**Inuvik**	**89.35**	**15**	P	**P**	**05 14 16.9**	**-0.5**
	0.4nm,0.6s,baz=248,slow=4.9,SNR=5.9						
YKA	**Yellowknife Ar**	**91.55**	**24**	P	**P**	**05 14 27.6**	**-0.1**
	0.1nm,0.5s,baz=234,slow=4.6,SNR=5.6						
MKAR	**Makanchi Array**	**109.37**	**315**	PKiKP	**PKiKP**	**05 19 49.1**	**-0.5**
	0.4nm,0.7s,baz=39,slow=2.9,SNR=3.6						
ARCES	**ARCESS Array B**	**124.71**	**351**	PKP	**PKPdf**	**05 20 17.6**	**-0.7**
	3.5nm,0.8s,baz=11,slow=1.2,SNR=8.3						
KMBO	**Kilima Mbogo**	**143.05**	**246**	PKP	PKPbc	05 20 53.1	+0.8
	1.0nm,0.4s,baz=224,slow=23,SNR=4.6						
BRTR	**Keskin Array B**	**144.89**	**318**	PKP	**PKPdf**	**05 20 57.2**	**+0.4**
	3.8nm,0.7s,baz=120,slow=2.2,SNR=20						
GERES	**GERESS Array B**	**146.17**	**348**	PKPbc	**PKPdf**	**05 21 00.1**	**+1.5**
	0.3nm,0.4s,baz=24,slow=3.6,SNR=5.8						
CONA	**Conrad Observa**	**146.57**	**345**	*i* PKPab	**PKPbc**	**05 21 02.4**	**+1.0**
	2.0nm,0.6s						

*NIED **05** 05:06:00, 35°.70N×140°.70E, h50km, Mw4.3 Best double couple: M0:3.08000×10^15 NP1:ϕs=101.00000°, δ=25.00000°, λ=11.00000°. NP2:ϕs=1.00000°, δ=85.00000°, λ=114.00000°.*

*IDC **05** 05:06:41.8±0.8, 35°.66N×140°.74E, h39km±6km, mb3.8/17, mb1 4.0/23, mb1mx3.9/40, mbtmp4.1/23, ML3.6/4, MS3.2/6, Ms1 3.2/6, ms1mx2.8/35, Error ellipse: s-maj=16.4km s-min=13.7km az=85.0*

*JMA **05** 05:06:41.9±0.1, 35°.69N×140°.75E, h45km±1km, M3.7*

JMA Felt II J1.

*NEIC **05** 05:06:41.4±0.8, 35°.64N×140°.83E, h37km±7km, mb4.6/7, Error ellipse: s-maj=8.6km s-min=7.9km az=119.0*

NEIC Recorded [2 JMA] in Chiba.

*ISCJB **05** 05:06:41.6±0.4, 35°.68N±0°.03×140°.76E±0°.05, h52km±3km, mb4.2/40, MS3.3/5, Error ellipse: s-maj=6.6km s-min=5.0km az=177.6*

*MOS **05** 05:06:42.9±1.3, 36°.21N×140°.70E, h33km, mb4.3/23, Error ellipse: s-maj=10.1km s-min=7.3km az=114.0*

ISC 05 05:06:42.5±0.5, 35°.68N±0°.04×140°.77E±0°.05, h43km±4km, n98, σ1s=21/107, mb4.2/40, MS3.6/5, 8C-9D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.08**	**73**	⇓P	**Pn**	**05 06 49.0**	**-0.3**
CHOJ				S	**Sn**	**05 06 54.4**	**+0.2**
JCN	**Nagara**	**0.53**	**241**	⇓P	**Pn**	**05 06 53.8**	**+0.1**
JCN				S	**Sn**	**05 07 02.9**	**+1.3**
KTR	**Katsuura**	**0.65**	**215**	⇓P	**Pn**	**05 06 54.8**	**-0.4**
KTR				*e*S	**Sn**	**05 07 04.5**	**+0.1**
JYT	**Yasato**	**0.72**	**320**	⇑P	**Pn**	**05 06 55.5**	**-0.7**
JYT				S	**Sn**	**05 07 05.5**	**-0.6**
BSO4	**Boso 4**	**0.77**	**207**	⇓P	**Pn**	**05 06 56.6**	**-0.2**
BSO3	**Boso 3**	**0.90**	**193**	P	**Pn**	**05 06 58.3**	**-0.1**
JHO	**Hitachi**	**0.94**	**350**	⇑P	**Pn**	**05 06 59.0**	**-0.3**
BSO1	**Boso 1**	**1.04**	**170**	P	**Pn**	**05 06 59.9**	**-0.2**
MJAR	**Matsushiro Arr**	**2.24**	**293**	Pn	**Pn**	**05 07 17.4**	**+0.3**
	19nm,0.3s,baz=97,slow=12,SNR=388						
MJAR				LR	LR	05 08 22.5	
	comp=Z,400nm,20.3s,baz=115,slow=46						
MAJO	**Matsushiro**	**2.24**	**293**	*c i*P	**Pn**	**05 07 17.9**	**+0.8**
MAJO	**Matsushiro**	**2.24**	**293**	*e*Pn	**Pn**	**05 07 18.1**	**+0.9**
MAT	**Matsushiro**	**2.24**	**293**	P	**Pn**	**05 07 17.5**	**+0.4**
MAT				*e*S	**Sn**	**05 07 44.6**	**+1.0**
MJB9	**Matsu-Tunnel**	**2.25**	**293**	*e*Pn	**Pn**	**05 07 18.1**	**+0.9**
JHJ2	**Mitsune**	**2.68**	**197**	*e*Pn	**Pn**	**05 07 23.4**	**+0.3**
JHJ2				*e*Sn	**Sn**	**05 07 55.7**	**+1.4**
JHJ	**Hachijo jima 2**	**2.68**	**198**	Pn	**Pn**	**05 07 23.2**	**+0.1**
	71nm,0.3s,baz=303,slow=20,SNR=28						
JHJ				Sn	**Sn**	**05 07 54.2**	**-0.1**
	81nm,0.3s,baz=14,slow=21,SNR=8.0						
INU	**Inuyama**	**3.08**	**265**	*e*Pn	**Pn**	**05 07 29.0**	**+0.4**
ERM	**Erimo**	**6.59**	**16**	⇓*e*P	**Pn**	**05 08 14.1**	**-2.7**
ERM	**Erimo**	**6.59**	**16**	*e*Pn	**Pn**	**05 08 14.5**	**-2.3**
ASAJ	**Asahikawa**	**8.54**	**9**	Pn	**Pn**	**05 08 41.7**	**-1.8**
	0.4nm,0.3s,baz=206,slow=13,SNR=8.3						
ASAJ	**Asahikawa**	**8.54**	**9**	*e*Pn	**Pn**	**05 08 40.6**	**-2.9**
JNU	**Nakatsue**	**8.56**	**255**	LR	LR	05 12 35.5	
	comp=Z,486nm,18.1s,baz=118,slow=41						
CBIJ	**Chichi jima**	**8.64**	**172**	*e*Pn	Pn	05 08 40.6	-4.4
CBIJ				Sn	Sn	05 10 12.3	-8.9
JCJ	**Chichijima**	**8.64**	**172**	Pn	**Pn**	**05 08 42.0**	**-2.9**
	10nm,0.3s,baz=289,slow=21,SNR=5.7						
JCJ				Sn	Sn	05 10 12.3	-8.9
	2.7nm,0.3s,baz=285,slow=20,SNR=3.1						
VLA	**Vladivostok**	**10.12**	**320**	⇓*e*P	**Pn**	**05 09 08.1**	**+3.1**
VLA				pmax	pmax		
	comp=Z,23nm,0.7s						
KSRS	**Korea Array**	**10.48**	**283**	Pn	**Pn**	**05 09 11.2**	**+1.1**
	comp=Z,0.6nm,0.3s,baz=100,slow=15,SNR=14						
KSRS				LR	LR	05 13 20.3	
	comp=Z,134nm,20.6s,baz=91,slow=38						
KSAR	**Wonju Array Be**	**10.51**	**283**	P	**Pn**	**05 09 11.2**	**+0.7**
KSAR	**Wonju Array Be**	**10.51**	**283**	Pn	**Pn**	**05 09 11.2**	**+0.7**
USRK	**Ussuriysk Ar.**	**10.85**	**324**	Pn	**Pn**	**05 09 16.2**	**+1.1**
	comp=Z,0.1nm,0.3s,baz=121,slow=14,SNR=6.1						
KUR	**Kuril'sk**	**10.96**	**27**	*e*P	Pn	05 09 12.4	-4.2
YSS	**Yuzh-Sakhalins**	**11.36**	**7**	*e*P	Pn	05 09 14.8	-7.3
YSS				pmax	pmax		
	comp=Z,21nm,1.7s						
KLR	**Kul'dur**	**15.07**	**337**	LR	LR	05 15 46.7	
	comp=Z,57nm,19.3s,baz=136,slow=36						
NJ2	**Nanjing**	**18.55**	**265**	*e*P	**P**	**05 10 55.5**	**0.0**
NJ2				pmax	pmax		
	comp=Z,36nm,0.5s						
BJI	**Beijing**	**19.88**	**290**	P	**P**	**05 11 09.1**	**-0.9**
BJI				pmax	pmax		
	comp=Z,6.0nm,1.4s						
PETK	**Petropavlovsk-**	**21.12**	**29**	P	**P**	**05 11 22.9**	**-0.5**
	comp=Z,5.4nm,0.9s,baz=190,slow=4.5,SNR=4.4						
PETK				LR	LR	05 20 29.5	
	comp=Z,23nm,19.8s,baz=254,slow=39						
HHC	**Hu-ho-hao-te**	**23.44**	**292**	*e*P	**P**	**05 11 47.2**	**-0.8**
HHC				S	**S**	**05 15 55.5**	**-2.8**
HHC				pmax	pmax		
	comp=Z,14nm,0.9s						
HHC				pmax	pmax		
	comp=Z,87nm,5.3s						
HHC				LR	LR		
	comp=N,140nm,13.8s						
HHC				LR	LR		
	comp=E,200nm,12.3s						
HHC				LR	LR		
	comp=Z,65nm,12.7s						
XAN	**Xi'an**	**26.12**	**276**	P	**P**	**05 12 10.9**	**-1.6**
XAN				pmax	pmax		
	comp=Z,10.0nm,0.6s						
XAN				pmax	pmax		
	comp=Z,17nm,4.0s						
ENH	**Enshi**	**26.72**	**267**	*e*P	**P**	**05 12 16.2**	**-1.6**
	comp=Z,17nm,0.7s						
YAK	**Yakutsk**	**27.28**	**349**	*e*P	**P**	**05 12 23.3**	**+0.8**
YAK				pmax	pmax		
	comp=Z,10.0nm,0.5s						
ULN	**Ulaanbaatar**	**27.71**	**307**	⇓*i*P	**P**	**05 12 27.8**	**+1.1**
ULN				pmax	pmax		
	comp=Z,7.0nm,2.5s						
SONM	**Songino Array**	**28.13**	**306**	P	**P**	**05 12 30.8**	**+0.3**
	comp=Z,2.3nm,0.7s,baz=106,slow=11,SNR=4.6						
BOD	**Bodaibo**	**28.41**	**330**	*e*P	**P**	**05 12 31.3**	**-1.4**
BOD				pmax	pmax		
	comp=Z,2.0nm,1.4s						
LZH	**Lanzhou**	**29.80**	**282**	*e*P	**P**	**05 12 43.6**	**-1.9**
LZH				pP	pP	05 12 58.2	+1.2
LZH				sP	sP	05 13 05.3	+3.1
LZH				*e*PP	**PnPn**	**05 13 41.5**	**-0.9**
LZH				pmax	pmax		
	comp=Z,21nm,1.1s						
LZH				pmax	pmax		
	comp=Z,62nm,5.2s						
LZH				LR	LR		
	comp=N,360nm,13.4s						
LZH				LR	LR		
	comp=E,380nm,13.1s						
LZH				LR	LR		
	comp=Z,400nm,17.0s						
CD2	**Chengdu**	**31.17**	**272**	P	**P**	**05 12 55.9**	**-1.6**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
GTA	**Gaotai**	**32.48**	**289**	*e*P	**P**	**05 13 09.6**	**+0.6**
GTA				pP	pP	05 13 13.1	-7.5
GTA				sP	sP	05 13 15.7	-10
GTA				pmax	pmax		

comp=Z,2.7nm,0.8s,baz=50,slow=9.8,SNR=4.5
OBN Obninsk 68.87 323 ↓*i* P **P 05 17 42.1 -0.2**
OBN pmax pmax
comp=Z,4.0nm,0.6s
FINES FINESS Array B 69.77 332 P **P 05 17 47.2 -0.6**
comp=Z,0.7nm,0.6s,baz=98,slow=9.8,SNR=4.5
FINES FINESS Array B 69.77 332 *i* P **P 05 17 48.7 +0.9**
FINES pmax pmax
comp=Z,1.0nm,0.6s
KBZ Khabaz 71.39 311 P **P 05 17 57.2 -0.7**
comp=Z,2.9nm,0.9s,baz=71,slow=4.4,SNR=5.7
KBZ pP **pP 05 18 10.5 -0.1**
comp=Z,3.1nm,0.9s,baz=32,slow=9.7,SNR=4.1
KIV Kislovodsk 71.40 311 *e*P **P 05 17 59.3 +1.1**
KIV pmax pmax
comp=Z,9.0nm,0.9s
AKASG Malin Array Be 75.05 322 P **P 05 18 18.1 -1.3**
comp=Z,0.7nm,0.4s,baz=45,slow=5.4,SNR=6.1
AKASG pP **pP 05 18 29.9 -2.2**
comp=Z,0.3nm,0.3s,baz=47,slow=5.5,SNR=2.3
AKASG LR LR 05 54 16.5
comp=Z,28nm,18.6s,baz=255,slow=38
AKASG Malin Array Be 75.05 322 *i* P **P 05 18 18.1 -1.3**
AKASG pmax pmax
comp=Z,2.0nm,0.8s
KIEV Kiev 75.06 322 P **P 05 18 18.2 -1.3**
NB2 NORSAR Subarra 75.23 337 P **P 05 18 19.8 -0.6**
comp=Z,1.0nm,0.6s,baz=40,slow=5.9
NOA NORSAR Array B 75.23 337 P **P 05 18 19.6 -0.8**
comp=Z,1.5nm,0.7s,baz=40,slow=5.8,SNR=9.4
NOA pP **pP 05 18 32.2 -0.9**
comp=Z,1.5nm,0.8s,baz=40,slow=5.7,SNR=4.9
NOA NORSAR Array B 75.23 337 P **P 05 18 19.6 -0.8**
NOA *PP **pP 05 18 32.2 -0.9**
NOA pmax pmax
comp=Z,2.0nm,0.6s
NOA pmax pmax
comp=Z,2.0nm,0.8s
NVAR Mina Array Bea 76.22 53 P **P 05 18 27.5 +0.8**
comp=Z,0.8nm,0.7s,baz=287,slow=5.0,SNR=7.2
PDAR Pinedale Array 78.99 45 P **P 05 18 42.2 +0.1**
comp=Z,0.5nm,0.6s,baz=252,slow=1.4,SNR=6.5
BRTR Keskin Array B 79.35 311 P **P 05 18 44.3 +0.3**
comp=Z,1.2nm,0.8s,baz=147,slow=2.5,SNR=5.8
BRTR Keskin Array B 79.35 311 *e*P **P 05 18 45.7 +1.7**
BRTR pmax pmax
comp=Z,1.0nm,0.8s
BR231 Keskin MP Arra 79.81 312 *e*P **P 05 18 44.8 -1.7**
ANMO Albuquerque 85.86 49 P **P 05 19 19.3 +1.3**
ANMO pmax pmax
comp=Z,4.0nm,1.7s
TXAR Lajitas Array 91.36 52 P **P 05 19 45.4 +1.2**
comp=Z,0.4nm,0.7s,baz=273,slow=2.2,SNR=6.9
LPAZ La Paz 147.82 61 PKPbc **PKPbc 05 26 23.9 -0.1**
comp=Z,0.7nm,0.6s,baz=335,slow=6.0,SNR=3.6

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*ISCJB **05** 05:20:09.1±0.5,30°.78N×0°.04×105°.79W±0°.03,h10km, Error ellipse: s-maj=5.7km s-min=4.2km az=10.3*
*MEX **05** 05:20:09.7±0.4,30°.65N×105°.56W,h5km,MD4.4*
*NEIC **05** 05:20:10.0±0.5,30°.79N×105°.76W,h10km,ML3.6,Error ellipse: s-maj=6.6km s-min=4.8km az=176.0*
ISC 05 05:20:08.9±0.7,30°.73N±0°.03×105°.59W±0°.03,h10km,n39, σ2§08/47,Texas-Mexico border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDL2	**Guadalupe Moun**	**1.80**	**35**	*e*Pn	**Pb**	**05 20 42.8**	**+0.8**
GDL2				*e*Sn	**Sb**	05 21 07.9	+3.2
CGIG		**2.10**	**261**	*e*P	**Pn**	**05 20 42.6**	**-1.7**
CGIG				*e*S	**Sn**	05 21 08.7	-1.8
CGIG		**2.10**	**261**	*e*P	**Pn**	**05 20 42.6**	**-1.7**
CGIG				*e*S	**Sn**	05 21 08.7	-1.8
CLNB	**Carlsbad**	**2.11**	**43**	*e*Pn	**Pb**	**05 20 47.8**	**+0.5**
TX31	**Lajitas Ar. Si**	**2.17**	**129**	*e*Pn	**Pg**	**05 20 49.9**	**-0.6**
TX31				*e*Sn	**Sg**	05 21 17.2	-1.4
TX31				*e*Sn	**Sb**	05 21 20.2	+4.8
121A	**Cookes Peak, D**	**2.60**	**314**	*e*P	**Pn**	**05 20 50.1**	**-1.1**
121A				*e*S	**Sn**	05 21 22.5	-0.4
121A	**Cookes Peak, D**	**2.60**	**314**	*e*Pn	**Pn**	**05 20 50.0**	**-1.2**
121A				*e*Sg	**Sb**	05 21 28.6	+0.9
319A	**Douglas**	**3.24**	**282**	*e*P	**Pn**	**05 20 58.4**	**-1.5**
319A				*e*S	**Sn**	05 21 37.3	-1.3
319A	**Douglas**	**3.24**	**282**	*e*Pn	**Pn**	**05 20 58.4**	**-1.5**
Y22D	**IRIS PASSCAL I**	**3.52**	**342**	*e*Pg	**Pb**	**05 21 13.4**	**+2.0**
BNM	**Barren Site**	**3.52**	**346**	*e*Pn	**Pn**	**05 21 03.7**	**-0.2**
LPM	**Los Pinos Moun**	**3.68**	**346**	*e*Pn	**Pn**	**05 21 06.2**	**+0.2**
HPIG		**3.78**	**181**	*e*P	**Pn**	**05 21 05.9**	**-1.7**
HPIG				*i* S	**Sn**	05 21 48.6	-3.6
HPIG		**3.78**	**181**	*e*Pn	**Pn**	**05 21 08.4**	**+0.9**
HPIG				*i* S	**Sn**	05 21 48.6	-3.6
LAZ	**Ladron**	**3.89**	**341**	*e*Pn	**Pn**	**05 21 09.4**	**+0.4**
MSTX	**Muleshoe**	**4.01**	**36**	Pn	**Pn**	**05 21 13.1**	**+2.5**
ANMO	**Albuquerque**	**4.27**	**350**	*e*P	**Pn**	**05 21 14.2**	**+0.1**
ANMO				*e*S	**Sn**	05 22 04.8	+0.7
ANMO	**Albuquerque**	**4.27**	**350**	*e*Pn	**Pn**	**05 21 15.3**	**+1.1**
TUC	**Tucson**	**4.71**	**291**	*e*Pn	**Pn**	**05 21 18.7**	**-1.4**
HSIG		**4.96**	**251**	*e*Pn	**Pn**	**05 21 22.9**	**-0.6**
HSIG				*e*Pg	**Pb**	**05 21 39.9**	**+4.0**
HSIG				*e*Sg	**Sb**	**05 22 41.2**	**+5.6**
JCT	**Junction City**	**4.99**	**91**	*e*Pn	**Pn**	**05 21 27.6**	**+3.6**
X18A	**Snowflake**	**5.28**	**317**	*e*Pn	**Pn**	**05 21 28.0**	**-0.1**
AMTX	**Amarillo**	**5.29**	**37**	*e*Pg	**Pg**	**05 21 50.3**	**+0.1**
	83nm,0.5s						
ABTX	**Abilene, Hawle**	**5.41**	**68**	*e*Pn	**Pn**	**05 21 31.8**	**+2.1**
W18A	**Petrified Fore**	**5.59**	**323**	*e*Pg	Pb	05 21 53.5	+6.6
X16A	**Lo Mia Camp, P**	**6.16**	**308**	*e*Pn	**Pn**	**05 21 40.2**	**+0.1**
214A	**Organ Pipe Nat**	**6.30**	**283**	*e*P	**Pn**	**05 21 40.9**	**-1.1**
214A	**Organ Pipe Nat**	**6.30**	**283**	*e*Pn	**Pn**	**05 21 40.7**	**-1.3**
	34nm,0.7s						
214A				*e*Sg	Sb	05 23 24.5	+10
T25A	**Trinidad**	**6.46**	**8**	*e*Pn	Pn	05 21 54.2	+10
WUAZ	**Wupatki**	**6.81**	**316**	*e*Pg	Pn	05 21 59.8	+11
MVCO	**Mesa Verde**	**6.90**	**340**	*e*Pn	**Pn**	**05 21 50.6**	**+0.2**
	8.9nm,0.6s						
MVCO				*e*Sg	**Sg**	**05 23 47.1**	**-3.4**
WMOK	**Wichita Mounta**	**6.99**	**53**	*e*Pn	**Pn**	**05 21 53.3**	**+1.9**
SDCO	**Great Sand Dun**	**7.00**	**1**	*e*Pn	**Pn**	**05 21 50.3**	**-1.5**
	4.5nm,0.6s						
Y14A	**Wickenburg**	**7.05**	**299**	*e*Pn	**Pn**	**05 21 51.6**	**-0.6**
WHTX	**Lake Whitney,**	**7.06**	**78**	*e*Pn	Pn	05 22 00.9	+8.5
S22A	**4UR Ranch, Cre**	**7.07**	**352**	*e*Pg	Pb	05 22 19.7	+7.7
113A	**Mohawk Valley,**	**7.26**	**288**	*e*Pn	**Pn**	**05 21 54.2**	**-0.8**
113A				*e*Sg	Sb	05 23 52.9	+11
PV01	**Paradox Valley**	**7.79**	**342**	*e*Pg	Pg	05 22 34.6	-3.3
V34A	**Guthrie**	**8.45**	**51**	*e*Pn	**Pn**	**05 22 11.8**	**+0.3**
	13nm,0.4s						

IDC 05 05:38:12.4±1.1,3°.03N×128°.69E,h0km,mb3.9/6, mb1 4.1/6,mb1mx3.7/41,mbtmp3.9/6,MS2.9/2,Ms1 2.9/2, ms1mx2.4/48,Error ellipse: s-maj=67.8km s-min=18.6km az=78.0,North of Halmahera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**21.21**	**188**	P	P	05 43 01.2	+1.4
	3.6nm,0.9s,baz=2.6,slow=12,SNR=5.9						
FITZ				LR	LR	05 51 46.6	
	comp=Z,32nm,19.3s,baz=196,slow=38						
WRA	**Warramunga Arr**	**23.49**	**167**	P	P	05 43 23.6	-0.4
	7.0nm,0.8s,baz=347,slow=10,SNR=20						
ASAR	**Alice Springs**	**27.01**	**169**	P	P	05 43 55.5	-0.9
	0.4nm,0.5s,baz=346,slow=7.4,SNR=4.3						
JNU	**Nakatsue**	**30.01**	**4**	LR	LR	05 56 54.4	
	comp=Z,18nm,18.6s,baz=146,slow=37						
STKA	**Stephens Creek**	**36.81**	**162**	P	P	05 45 22.1	-0.1
	1.6nm,0.5s,baz=342,slow=9.6,SNR=5.6						
USRK	**Ussuriysk Ar.**	**41.11**	**4**	P	P	05 45 58.7	+0.7
	1.3nm,0.6s,baz=180,slow=5.3,SNR=4.3						
MKAR	**Makanchi Array**	**59.25**	**325**	P	P	05 48 15.4	-0.3
	0.6nm,0.5s,baz=115,slow=8.8,SNR=6.9						

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*NIED **05** 05:46:00,39°.00N×142°.40E,h44km,Mw3.5 Best double couple: M0=2.27000×10^14 NP1:φs=37.00000°,δ=29.00000°, λ=-80.00000°. NP2:φs=206.00000°,δ=61.00000°, λ=-95.00000°.*
*IDC **05** 05:46:29.9±1.4,38°.90N×142°.69E,h0km,mb3.5/3, mb1 3.7/4,mb1mx3.4/39,mbtmp3.4/4,ML3.0/1,MS2.3/1, Ms1 2.3/1,ms1mx1.9/43,Error ellipse: s-maj=39.7km s-min=28.3km az=117.0*

*ISCJB **05** 05:46:32.7±1.3,39°.01N±0°.04×142°.50E±0°.08,h23km±7km, mb3.5/3,Error ellipse: s-maj=11.1km s-min=5.8km az=14.8*
*JMA **05** 05:46:34.5±0.1,39°.04N×142°.40E,h31km±2km,M3.6*
ISC 05 05:46:30.9±2.1,39°.01N±0°.04×142°.48E±0°.08,h6km±12km, n18,σ0§76/25,mb3.7/3,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.63**	**276**	P	**Pn**	**05 46 46.0**	**-0.4**
MIYJ	**Miyakonagasawa**	**0.76**	**318**	P	**Pn**	**05 46 47.5**	**-0.7**
MIYJ				S	**Sb**	**05 46 56.5**	**-0.6**
JMK	**Ichinoseki**	**0.98**	**267**	P	**Pn**	**05 46 51.3**	**+0.1**
JMK				S	**Sb**	**05 47 03.2**	**-0.3**
JOM	**Ohasama**	**1.03**	**297**	P	**Pn**	**05 46 52.1**	**+0.2**
JOM				S	**Sb**	**05 47 04.7**	**-0.2**
JIO	**Ouri**	**1.04**	**238**	P	**Pn**	**05 46 51.9**	**-0.1**
JKZ	**Kuzumaki**	**1.31**	**318**	P	**Pg**	**05 46 56.8**	**+0.7**
JKZ				S	**Sb**	**05 47 12.8**	**-0.4**
JRG	**Rokugo**	**1.48**	**286**	P	**Pg**	**05 46 59.4**	**+0.1**
JANG	**Nango**	**1.55**	**332**	P	**Pg**	**05 47 00.4**	**-0.2**
JANG				S	**Sn**	**05 47 19.1**	**-0.3**
JOU	**Okura**	**1.56**	**246**	P	**Pg**	**05 47 00.4**	**-0.4**
JOU				S	**Sb**	**05 47 19.6**	**-0.6**
JYK	**Kaneyama**	**1.65**	**267**	P	**Pb**	**05 47 01.9**	**+0.1**
JMM	**Marumori**	**1.75**	**230**	P	**Pb**	**05 47 02.7**	**-0.7**
JMM				S	**Sn**	**05 47 23.4**	**-1.0**
JYS	**Shirataka**	**2.05**	**248**	*e*S	**Sn**	**05 47 32.5**	**+0.7**
JFK	**Kawauchi**	**2.07**	**218**	S	**Sn**	**05 47 31.8**	**-0.6**
JFT	**Otama**	**2.25**	**229**	S	**Sn**	**05 47 36.9**	**+0.1**
MJAR	**Matsushiro Arr**	**4.19**	**235**	Pn	**Pn**	**05 47 37.6**	**+2.3**
	0.8nm,0.3s,baz=45,slow=11,SNR=10						
MJAR				LR	LR	05 49 18.6	
	comp=Z,34nm,20.0s,baz=50,slow=40						
MKAR	**Makanchi Array**	**43.81**	**301**	P	**P**	**05 54 38.5**	**+1.0**
	0.3nm,0.5s,baz=86,slow=9.2,SNR=4.5						
ILAR	**Eielson Array**	**47.38**	**33**	P	**P**	**05 55 05.8**	**+0.3**
	0.4nm,0.6s,baz=264,slow=6.0,SNR=5.4						
WRA	**Warramunga Arr**	**59.14**	**189**	P	**P**	**05 56 31.4**	**-0.9**
	0.7nm,0.6s,baz=6.6,slow=7.2,SNR=8.5						

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*IDC **05** 05:49:51.6±4.5,34°.06S×71°.24W,h0km,mb3.9/1, mb1 3.7/3,mb1mx3.6/21,mbtmp3.6/3,ML3.6/2,Error ellipse: s-maj=160.1km s-min=24.4km az=93.0*
ISC 05 05:49:55.0±2.5,33°.75±0°.2×72°.6W±0°.2,h50km,n16, σ1§08/16,Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ROC1	**El Roble**	**1.53**	**62**	*i* P	**Pn**	**05 50 18.8**	**-1.5**
ROC1				*i* S	**Sn**	**05 50 39.5**	**+0.4**
AUSP	**Uspallata**	**3.10**	**63**	*i* P	**Pn**	**05 50 41.5**	**-0.2**
ARCO	**CERRO ARCO**	**3.21**	**76**	*i* P	**Pn**	**05 50 42.8**	**-0.4**
ARCO				IAML		05 51 39.7	
	comp=Z,101nm,0.5s						
AAGR	**Agrelo**	**3.24**	**80**	*i* P	**Pn**	**05 50 43.4**	**-0.1**
ASAL	**Salagasta**	**3.37**	**72**	*i* P	**Pn**	**05 50 45.0**	**-0.2**
RTLS	**Leoncito**	**3.39**	**57**	*i* P	**Pn**	**05 50 45.6**	**-0.1**
RTCV	**Cerro Valdivia**	**3.90**	**63**	*i* P	**Pn**	**05 50 52.2**	**-0.3**
RTLL	**Cerro Villicun**	**4.23**	**57**	*i* P	**Pn**	**05 50 56.5**	**-0.5**
AMOG	**MOGNA**	**4.45**	**53**	*i* P	**Pn**	**05 50 59.4**	**-0.7**
ACAN	**Cantantal**	**4.79**	**74**	*i* P	**Pn**	**05 51 04.3**	**-0.4**
AVFE	**Valle Fertil**	**5.33**	**57**	*i* P	**Pn**	**05 51 11.6**	**-0.6**
AVFE				IAML		05 52 32.2	
	comp=Z,50nm,0.7s						
AGUA	**GUANDACOL**	**5.49**	**41**	*i* P	**Pn**	**05 51 13.3**	**-1.0**
VCA	**Vinchina**	**6.23**	**39**	*i* P	**Pn**	**05 51 23.2**	**-1.3**
VCA				IAML		05 53 27.2	
	comp=Z,30nm,0.6s						
PLCA	**Paso Flores**	**7.22**	**167**	Pn	Pn	05 51 30.4	-7.6
	comp=Z,0.3nm,0.3s,baz=1.0,slow=13,SNR=4.2						
PLCA				Lg	Lg	05 53 25.0	
	comp=Z,0.2nm,0.3s,baz=39,slow=19,SNR=2.3						
LPAZ	**La Paz**	**17.80**	**14**	P	**P**	**05 54 02.9**	**+2.8**
	comp=Z,0.1nm,0.3s,baz=198,slow=9.9,SNR=6.2						
TORD	**Torodi Ar. Bea**	**84.57**	**70**	P	**P**	**06 02 22.4**	**-1.0**
	comp=Z,0.7nm,0.7s,baz=251,slow=4.0,SNR=7.2						

MAN 05 05:54:30,17°.48N×120°.48E,h27km,mb4.1,ML2.9,MS2.6, 2C-1D,Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ABRA	**Dolores**	**0.28**	**52**	*e*P	Pn	05 54 38.0	-0.3
ABRA				*e*S	Sn	05 54 44.6	+0.8
SIPP	**Brgy, Tapao**	**0.45**	**357**	↑*e*P	Pn	05 54 40.4	-0.2
SIPP				*e*S	Sn	05 54 49.5	+1.7
APYP	**Conner**	**0.82**	**62**	*e*P	Pb	05 54 43.0	-2.7
APYP				*e*S	Sn	05 54 57.7	+0.6
PIP	**Pasuquin**	**0.85**	**9**	↓*i*P	Pn	05 54 47.5	+1.2
PIP				*i* S	Sn	05 55 01.7	+3.8
BCPH	**Baguio City Da**	**1.09**	**175**	↑*i*P	Pb	05 54 50.7	+0.3
BCPH				*i* S	Sn	05 55 03.9	-0.2
BOLP	**Bolinao**	**1.22**	**207**	*e*P	Pn	05 54 51.2	-0.1
BOLP				*e*S	Sn	05 55 07.2	+0.3
CAUP	**Cauayan**	**1.39**	**112**	*e*P	Pb	05 54 55.7	+0.4

IDC 05 05:59:20.3±1.4,15°.60S×175°.25W,h277km±17km, mb3.1/6,mb1 3.5/7,mb1mx3.2/33,mbtmp3.7/7,Error ellipse: s-maj=98.9km s-min=14.2km az=151.0,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**3.75**	**64**	P	Pn	06 00 23.5	+0.8
	6.3nm,0.3s,baz=348,slow=2.6,SNR=8.4						
AFI				S	S	06 01 12.6	0.0
	20nm,0.3s,baz=220,slow=20,SNR=9.8						
WRA	**Warramunga Arr**	**48.06**	**257**	P	P	06 07 32.0	-0.6
	1.7nm,0.8s,baz=95,slow=8.0,SNR=25						
ASAR	**Alice Springs**	**48.35**	**252**	P	P	06 07 35.0	+0.2
	12nm,0.5s,baz=87,slow=7.8,SNR=175						
NVAR	**Mina Array Bea**	**75.68**	**43**	P	P	06 10 35.6	-0.1
	0.9nm,0.7s,baz=223,slow=8.7,SNR=7.3						
TXAR	**Lajitas Array**	**82.21**	**57**	P	P	06 11 11.2	+0.2
	0.3nm,0.6s,baz=208,slow=8.6,SNR=4.1						
ILAR	**Eielson Array**	**83.00**	**12**	P	P	06 11 14.3	+0.2
	0.2nm,0.4s,baz=232,slow=6.0,SNR=7.4						
PDAR	**Pinedale Array**	**83.61**	**42**	P	P	06 11 17.8	-0.3
	0.7nm,0.6s,baz=193,slow=2.5,SNR=8.5						
YKA	**Yellowknife Ar**	**90.99**	**24**	P	P	06 11 52.8	+0.1
	0.1nm,0.6s,baz=230,slow=5.1,SNR=3.3						

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*NIED **05** 06:07:00,37°.50N×143°.50E,h8km,Mw3.6 Best double couple: M0=3.15000×10^14 NP1:φs=338.00000°,δ=26.00000°, λ=-150.00000°. NP2:φs=221.00000°,δ=77.00000°, λ=-67.00000°.*
*IDC **05** 06:07:20.3±1.7,37°.45N×143°.80E,h0km,mb3.7/5, mb1 3.8/10,mb1mx3.6/47,mbtmp3.8/10,ML3.9/4,MS2.3/1, Ms1 2.3/1,ms1mx1.9/42,Error ellipse: s-maj=45.2km s-min=18.9km az=76.0*
*ISCJB **05** 06:07:23.8±0.8,37°.45N±0°.04×143°.57E±0°.06,h33km, mb3.7/5,Error ellipse: s-maj=7.4km s-min=5.1km az=16.8*
*JMA **05** 06:07:24.5±0.2,37°.49N×143°.53E,h46km,M3.5*
ISC 05 06:07:25.1±1.3,37°.47N±0°.05×143°.61E±0°.10,h35km,n23, σ1§28/32,mb3.8/5,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.04**	**299**	P	**Pn**	**06 07 56.7**	**-0.2**
JIO				*e*S	**Sn**	**06 08 20.1**	**-1.0**
JFK	**Kawauchi**	**2.18**	**268**	P	**Pn**	**06 07 58.7**	**-0.2**
JFK				S	**Sn**	**06 08 23.6**	**-1.1**
OFUJ	**Ofunato**	**2.22**	**317**	P	**Pn**	**06 07 58.7**	**-0.7**
OFUJ				S	**Sn**	**06 08 24.2**	**-1.3**
JMK	**Ichinoseki**	**2.39**	**309**	P	**Pn**	**06 08 01.5**	**-0.3**
JFT	**Otama**	**2.60**	**272**	P	**Pn**	**06 08 05.5**	**+0.8**
JFT				S	**Sn**	**06 08 35.4**	**+0.3**
JOM	**Ohasama**	**2.70**	**318**	P	**Pn**	**06 08 05.9**	**-0.1**
JOM				S	**Sn**	**06 08 37.2**	**-0.3**
JYK	**Kaneyama**	**2.94**	**300**	P	**Pn**	**06 08 09.9**	**+0.6**
JANG	**Nango**	**3.33**	**331**	P	**Pn**	**06 08 14.9**	**+0.3**
JAG	**Ashikaga**	**3.49**	**254**	P	**Pn**	**06 08 17.4**	**+0.6**
JAG				S	**Sn**	**06 08 55.6**	**-1.3**
BSO1	**Boso 1**	**3.53**	**218**	S	**Sn**	**06 08 57.9**	**+0.8**
JRY	**Ryogami san**	**4.05**	**250**	P	**Pn**	**06 08 24.7**	**+0.1**
JRY				S	**Sn**	**06 09 09.0**	**-1.8**
JOD2	**Odawara 2**	**4.26**	**240**	P	**Pn**	**06 08 28.1**	**+0.6**
JOD2				*e*S	**Sn**	**06 09 14.5**	**-1.5**
MJAR	**Matsushiro Arr**	**4.42**	**260**	Pn	**Pn**	**06 08 31.5**	**+1.8**
	5.4nm,0.3s,baz=89,slow=15,SNR=33						
MJAR				LR	LR	06 10 27.3	
	comp=Z,39nm,20.3s,baz=120,slow=41						
MAT	**Matsushiro**	**4.42**	**260**	P	**Pn**	**06 08 31.3**	**+1.6**
MAT				S	**Sn**	**06 09 21.1**	**+1.1**
JHJ	**Hachijo jima 2**	**5.35**	**217**	Pn	**Pn**	**06 08 41.5**	**-1.0**
	9.5nm,0.3s,baz=41,slow=20,SNR=5.1						
JHJ				Sn	**Sn**	**06 09 38.9**	**-4.0**
	9.0nm,0.3s,baz=6.0,slow=18,SNR=3.6						
ASAJ	**Asahikawa**	**6.68**	**354**	Pn	**Pn**	**06 09 01.0**	**+0.3**
	3.8nm,0.3s,baz=164,slow=7.1,SNR=18						
USRK	**Ussuriysk Ar.**	**11.07**	**311**	Pn	Pn	06 10 03.3	+2.5
	0.4nm,0.3s,baz=101,slow=15,SNR=4.3						
KLR	**Kul'dur**	**14.56**	**328**	Pn	**Pn**	**06 10 46.9**	**-1.5**
	0.2nm,0.3s,baz=116,slow=10,SNR=9.2						
ZALV	**Zalesovo Beam**	**42.92**	**312**	P	**P**	**06 15 21.7**	**+1.6**
	0.6nm,0.4s,baz=94,slow=8.4,SNR=2.4						
MKAR	**Makanchi Array**	**45.37**	**302**	P	**P**	**06 15 39.8**	**-0.1**
	0.2nm,0.7s,baz=99,slow=7.4,SNR=2.9						
KURBB	**Kurchatov Arra**	**47.11**	**308**	P	**P**	**06 15 55.2**	**+1.7**
	1.2nm,0.7s,baz=83,slow=7.9,SNR=14						
WRA	**Warramunga Arr**	**57.77**	**190**	P	**P**	**06 17 13.1**	**+0.3**
	1.2nm,0.7s,baz=11,slow=7.4,SNR=9.2						
ASAR	**Alice Springs**	**61.49**	**190**	P	**P**	**06 17 39.3**	**+1.0**
	0.6nm,0.8s,baz=6.5,slow=5.5,SNR=5.1						

DJA 05 06:09:53.6±0.6,9°.S±5°×11°.7E±°,h10km,M3.7/5,MLv3.7/5, Sumbawa region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLAI	**Plampang**	**0.64**	**46**	P	Pg	06 10 05.0	-1.1
PLAI				S	Sb	06 10 15.5	-0.5
TWSI	**Taliwang, Sumb**	**0.69**	**322**	P	Pg	06 10 06.3	-0.6
TWSI				S	Sb	06 10 17.2	0.0
SRBI	**Singaraja**	**2.39**	**300**	P	Pb	06 10 37.6	+0.9
JAGI	**Jajag, Banyuwa**	**3.22**	**284**	P	Pn	06 10 44.7	+0.4
BASI	**Baing, Sumba**	**3.35**	**106**	P	Pn	06 10 46.7	+0.6
GMJI	**Gumukmas**	**3.95**	**284**	P	Pn	06 10 53.1	-1.2

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*NIED **05** 06:10:00,37°.50N×143°.50E,h8km,Mw3.5 Best double couple: M0=2.14000×10^14 NP1:φs=4.00000°,δ=22.00000°, λ=62.00000°. NP2:φs=214.00000°,δ=71.00000°,λ=101.00000°.*
*IDC **05** 06:10:02.0±1.2,37°.48N×143°.80E,h0km,mb3.6/4, mb1 3.8/8,mb1mx3.5/43,mbtmp3.7/8,ML3.7/4,MS3.1/1, Ms1 3.1/1,ms1mx2.1/39,Error ellipse: s-maj=33.9km s-min=20.8km az=102.0*
*ISCJB **05** 06:10:06.8±1.3,37°.50N±0°.06×143°.57E±0°.09, h56km±14km,mb3.7/4,MS3.1/1,Error ellipse: s-maj=13.2km s-min=8.9km az=27.4*
*JMA **05** 06:10:07.3±0.2,37°.50N×143°.52E,h45km,M3.5*
ISC 05 06:10:09.3±2.4,37°.51N±0°.07×143°.4E±0°.2,h54km±27km, n17,σ1§24/17,mb3.7/4,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.89**	**300**	P	Pn	06 10 39.2	+0.1
JIO				S	**Sn**	**06 11 02.5**	**+0.8**
JFK	**Kawauchi**	**2.03**	**267**	P	Pn	06 10 41.2	+0.1
JFK				*e*S	**Sn**	**06 11 06.2**	**+0.8**
OFUJ	**Ofunato**	**2.09**	**319**	P	Pn	06 10 41.2	-0.6
JMM	**Marumori**	**2.12**	**280**	P	Pn	06 10 42.4	+0.2
JMM				*e*S	**Sn**	**06 11 08.3**	**+1.0**
ONAJ	**Iwakimizuishiy**	**2.13**	**260**	P	Pn	06 10 42.5	0.0
ONAJ				*e*S	**Sn**	**06 11 08.3**	**+0.5**
JMK	**Ichinoseki**	**2.25**	**310**	P	**Pn**	**06 10 44.4**	**+0.3**
JOU	**Okura**	**2.34**	**292**	P	**Pn**	**06 10 46.1**	**+0.8**
JOM	**Ohasama**	**2.57**	**320**	P	**Pn**	**06 10 48.4**	**-0.1**
JOM				*e*S	**Sn**	**06 11 19.5**	**+0.9**
MJAR	**Matsushiro Arr**	**4.28**	**258**	Pn	**Pn**	**06 11 13.9**	**+2.0**
	2.7nm,0.3s,baz=90,slow=15,SNR=5.8						
MAT	**Matsushiro**	**4.28**	**259**	P	**Pn**	**06 11 13.5**	**+1.6**
MAT				S	**Sn**	**06 12 03.0**	**+2.4**
JHJ	**Hachijo jima 2**	**5.30**	**215**	Pn	**Pn**	**06 11 24.6**	**-1.2**
	5.6nm,0.3s,baz=246,slow=20,SNR=2.6						
JHJ				Sn	Sn	06 12 21.8	-3.7
	7.3nm,0.3s,baz=73,slow=19,SNR=3.1						
ASAJ	**Asahikawa**	**6.63**	**355**	Pn	**Pn**	**06 11 43.4**	**-0.6**
	2.4nm,0.3s,baz=190,slow=8.4,SNR=8.8						
KLR	**Kul'dur**	**14.44**	**328**	Pn	Pn	06 13 28.2	-2.3
	0.1nm,0.3s,baz=124,slow=13,SNR=6.2						
KURBB	**Kurchatov Arra**	**46.97**	**308**	P	**P**	**06 18 35.3**	**+0.7**
	0.5nm,0.5s,baz=86,slow=7.9,SNR=4.1						
ILAR	**Eielson Array**	**48.23**	**33**	P	**P**	**06 18 43.3**	**-0.9**
	0.2nm,0.7s,baz=263,slow=7.8,SNR=2.6						
WRA	**Warramunga Arr**	**57.78**	**190**	P	**P**	**06 19 55.5**	**+0.5**
	1.1nm,0.8s,baz=9.6,slow=7.3,SNR=5.6						
WR

MDT	**Midelt**	39.59	47	P		P	06 22 28.6 +0.3
	1.6nm,0.8s,baz=255,slow=9.1,SNR=4.0						
ATAH	**Atahualpa**	42.88	250	LR		LR	06 38 56.3
	comp=Z,102nm,19.9s,baz=53,slow=34						
NNA	**Nana**	43.34	243	LR		LR	06 41 01.9
	comp=Z,126nm,21.0s,baz=77,slow=36						
ESDC	**Sonseca Array**	43.83	39	LR		LR	06 38 16.4
	comp=Z,107nm,19.4s,baz=220,slow=32						
TAM	**Tamanrasset**	44.37	66	*eP*		P	06 23 08.8 +1.2
	3.6nm,1.2s						
TAM	**Tamanrasset**	44.37	66	*eP*		P	06 23 08.8 +1.2
	3.6nm,1.2s						
KEST	**Kesra**	51.26	50	P		P	06 24 01.6 +0.8
	5.7nm,0.9s,baz=220,slow=4.5,SNR=6.7						
KEST				LR		LR	06 45 38.1
	comp=Z,107nm,19.2s,baz=244,slow=36						
PLCA	**Paso Flores**	57.05	209	LR		LR	06 47 27.8
	comp=Z,81nm,22.0s,baz=180,slow=34						
GERES	**GERESS Array B**	59.37	37	P		P	06 24 57.8 -1.3
	0.2nm,0.3s,baz=242,slow=7.2,SNR=4.0						
GERES				LR		LR	06 46 57.3
	comp=Z,34nm,21.6s,baz=240,slow=32						
SPMN	**Marine on St.**	59.70	318	*eP*		P	06 25 00.9 -0.4
	3.5nm,0.4s						
SPMN	**Marine on St.**	59.70	318	*eP*		P	06 25 00.9 -0.4
	3.5nm,0.4s						
ULM	**Lac du Bonnet**	63.42	323	LR		LR	06 50 07.9
	comp=Z,41nm,19.0s,baz=328,slow=33						
NB2	**NORSAR Subarra**	64.11	24	P		P	06 25 31.0 +0.3
	comp=Z,2.4nm,0.8s,baz=236,slow=6.9						
NB2	**NORSAR Subarra**	64.11	24	P		P	06 25 31.0 +0.3
	comp=Z,2.4nm,0.8s,baz=236,slow=6.6,SNR=6.4						
NOA	**NORSAR Array B**	64.11	24	P		P	06 25 31.3 +0.6
	comp=Z,2.3nm,0.8s,baz=237,slow=6.7,SNR=7.0						
NOA				LR		LR	06 51 36.6
	comp=Z,40nm,18.1s,baz=225,slow=34						
SUMG	**Summit**	64.38	360	*i* P		P	06 25 32.3 -0.4
	comp=Z,5.6nm,0.8s						
SUMG	**Summit**	64.38	360	*eP*		P	06 25 32.3 -0.4
	comp=Z,5.6nm,0.8s						
TXAR	**Lajitas Array**	64.72	299	P		P	06 25 35.5 +0.1
	comp=Z,0.4nm,0.7s,baz=114,slow=7.3,SNR=3.7						
DAG	**Danmarks Havn**	69.40	5	*i* P		P	06 26 04.6 +0.5
	comp=Z,1.9nm,1.1s						
DAG	**Danmarks Havn**	69.40	5	*eP*		P	06 26 04.6 +0.5
	comp=Z,1.9nm,1.1s						
AKASG	**Malin Array Be**	69.48	39	P		P	06 26 03.6 -1.5
	comp=Z,0.4nm,0.3s,baz=259,slow=6.5,SNR=5.5						
AKASG				LR		LR	06 54 02.4
	comp=Z,58nm,21.3s,baz=260,slow=34						
FINES	**FINESS Array B**	70.73	27	P		P	06 26 12.4 -0.1
	comp=Z,1.2nm,0.7s,baz=242,slow=4.1,SNR=4.4						
FINES				LR		LR	06 53 24.8
	comp=Z,57nm,21.0s,baz=203,slow=33						
BRTR	**Keskin Array B**	70.86	51	P		P	06 26 14.4 +0.4
	comp=Z,0.9nm,0.8s,baz=256,slow=5.8,SNR=4.3						
BRTR				LR		LR	06 57 53.3
	comp=Z,17nm,21.8s,baz=256,slow=36						
PDAR	**Pinedale Array**	70.86	312	P		P	06 26 12.8 -1.2
	comp=Z,0.5nm,0.9s,baz=120,slow=6.0,SNR=4.3						
PDAR				LR		LR	06 53 32.9
	comp=Z,89nm,21.7s,baz=120,slow=33						
BOSA	**Boshof**	71.19	124	P		P	06 26 15.8 -0.3
	comp=Z,3.4nm,0.9s,baz=310,slow=14,SNR=3.8						
FLWY	**Flagg Ranch**	71.84	314	*eP*		P	06 26 20.8 +0.9
	comp=Z,24nm,1.6s						
FLWY	**Flagg Ranch**	71.84	314	*eP*		P	06 26 20.8 +0.9
	comp=Z,24nm,1.6s						
HWUT	**Hardware Ranch**	72.23	311	*eP*		P	06 26 22.4 +0.2
	comp=Z,2.2nm,0.8s						
HWUT	**Hardware Ranch**	72.23	311	*eP*		P	06 26 22.4 +0.2
	comp=Z,2.3nm,0.8s						
ARCES	**ARCESS Array B**	73.38	19	P		P	06 26 28.8 +0.5
	comp=Z,1.9nm,0.8s,baz=291,slow=3.4,SNR=3.9						
ARCES				LR		LR	06 54 17.1
	comp=Z,24nm,20.6s,baz=234,slow=32						
YKA	**Yellowknife Ar**	76.56	332	P		P	06 26 45.7 -1.1
	comp=Z,0.6nm,0.8s,baz=97,slow=5.9,SNR=11						
NVAR	**Mina Array Bea**	77.27	308	LR		LR	07 00 18.2
	comp=Z,40nm,18.0s,baz=73,slow=35						
KBZ	**Khabaz**	77.97	47	P		P	06 26 56.3 +1.2
	comp=Z,2.5nm,0.8s,baz=270,slow=5.4,SNR=5.8						
KBZ				LR		LR	07 03 33.9
	comp=Z,8.8nm,18.7s,baz=282,slow=37						
INK	**Inuvik**	84.48	338	P		P	06 27 29.7 +0.5
	comp=Z,1.5nm,0.9s,baz=30,slow=8.1,SNR=6.6						
AKTO	**Aktyubinsk**	87.71	40	P		P	06 27 45.2 -0.3
	comp=Z,1.8nm,0.7s,baz=277,slow=4.1,SNR=6.5						
ABKAR	**Akbulak array**	89.16	40	*eP*		P	06 27 53.1 +0.7
	comp=Z,2.3nm,1.0s						
ABKAR	**Akbulak array**	89.16	40	*eP*		P	06 27 53.1 +0.7
	comp=Z,2.3nm,1.0s						
ILAR	**Eielson Array**	90.52	336	P		P	06 27 58.2 -0.2
	comp=Z,0.3nm,0.8s,baz=52,slow=4.1,SNR=4.1						
ILAR				LR		LR	07 06 13.3
	comp=Z,31nm,19.8s,baz=116,slow=34						
NRIK	**Noril'sk**	94.22	17	LR		LR	07 08 34.3
	comp=Z,28nm,19.9s,baz=110,slow=34						

IDC 05 06:16:02.5±2.9, 53°.40N×87°.24E, h0km, mb1 2.9/2, mb1mx2.8/45, mbtmp2.9/2, ML2.3/2, Error ellipse: s-maj=28.8km s-min=15.3km az=65.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	1.54	292	*i*		06 26 20.0	
	baz=109,slow=333,SNR=3.6						
ZALV	**Zalesovo Beam**	1.54	292	Pg	Pn	06 16 29.9	-1.4
	0.6nm,0.3s,baz=115,slow=15,SNR=8.6						
ZALV				Lg	Lg	06 16 51.6	
	0.6nm,0.3s,baz=113,slow=28,SNR=6.0						
KURBB	**Kurchatov Arra**	6.05	246	Pn	Pn	06 17 34.0	+0.8
	0.0nm,0.3s,baz=63,slow=14,SNR=4.8						
MKAR	**Makanchi Array**	7.33	208	Pn	Pn	06 17 52.1	+1.2
	0.1nm,0.3s,baz=25,slow=13,SNR=8.5						

MEX 05 06:25:27.2±0.7, 15°.30N×93°.68W, h66km±38km, MD3.9, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		0.59	48	*eP*	Pn	06 25 39.0	-1.7
PCIG				*eS*	Sn	06 25 49.2	-1.3
CCIG	**Comitan**	1.77	56	*eP*	Pn	06 25 54.5	-1.4
CCIG				*eS*	Sn	06 26 15.7	-1.9

*ISCJB **05** 06:29:41.8±0.7, 6°.79N±0°.04×73°.03W±0°.04, h157km±6km, Error ellipse: s-maj=8.8km s-min=4.4km az=41.9*
*FUNV **05** 06:29:42.5, 6°.82N×73°.17W, h168km, MW3.0*
*RSNC **05** 06:29:43.9±0.8, 6°.77N×73°.05W, h146km±5km, ML2.7*
ISC 05 06:29:41.7±1.4, 6°.81N±0°.04×73°.04W±0°.05, h160km±8km, n20, σ1°19/38, 1C, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BTLC	**Betulia, Santa**	0.26	296	*eP*	Pn	06 30 03.7	+0.1
BTLC				*eS*	Sn	06 30 19.6	-0.7
BARC	**Barichara**	0.26	214	*i* P	Pn	06 30 03.6	-0.1
BARC				*i*		06 30 04.1	
	comp=Z,90nm,0.4s						
BARC				*eS*	Sn	06 30 18.5	-1.9
PAMC	**Pamplona, Colo**	0.63	32	*i* P	Pn	06 30 06.3	+0.9
PAMC				*eS*	Sn	06 30 23.2	-0.4
BRRC	**Barranca, Sant**	0.73	294	*i* P	Pn	06 30 05.4	-0.1
BRRC				*i*		06 30 05.8	
	comp=Z,126nm,0.3s						
BRRC				*eS*	Sn	06 30 22.5	-1.2
RUSC	**La Rusia**	0.91	183	*eP*	Pn	06 30 07.5	+0.2
RUSC				*eS*	Sn	06 30 26.1	-0.9
RUSC				*i*		06 30 27.0	
	comp=Z,44nm,0.3s						
CBRI	**Barrientos, No**	0.94	15	*eP*	Pn	06 30 08.1	+0.9
CBRI				*eS*	Sn	06 30 26.0	-0.7
CBRI				*i*		06 30 29.7	
	comp=Z,56nm,0.3s						
GRMC	**Gramalote, San**	0.94	14	*eP*	Pn	06 30 09.3	+2.2
GRMC				*eS*	Sn	06 30 28.8	+2.1
GRMC				*i*		06 30 31.8	
	comp=Z,108nm,0.4s						
CAPV	**Capacho**	1.27	34	*eP*	Pn	06 30 11.4	+1.3
CAPV				*eS*	Sn	06 30 32.6	+0.7
OCAC	**Ocana**	1.45	349	*eP*	Pn	06 30 12.1	+0.4
OCAC				*eS*	Sn	06 30 34.3	-0.6
OCAC				*i*		06 30 39.5	
	comp=Z,78nm,0.2s						
NORC	**Norcasia**	2.20	236	*eP*	Pn	06 30 20.1	+0.3
NORC				*eS*	Sn	06 30 48.7	-0.5
HELC	**Santa Helena**	2.55	256	*eP*	Pn	06 30 25.9	+1.7
HELC				*eS*	Sn	06 30 58.0	+0.9
HELC				*i*		06 31 02.9	
	comp=Z,22nm,0.2s						
SOCV	**Socops**	2.61	56	*eP*	Pn	06 30 25.9	+1.2
SOCV				*eS*	Sn	06 30 58.2	+0.1
VIGV	**El Vigia**	2.61	39	*eP*	Pn	06 30 26.1	+1.4
VIGV				*eS*	Sn	06 30 57.4	-0.8
VILC	**Villavicencio,**	2.75	194	*eP*	Pn	06 30 27.0	+0.4
VILC				*eS*	Sn	06 31 00.6	-0.8
VILC				*i*		06 31 11.1	
	comp=Z,13nm,0.4s						
ELOV	**Elorza**	3.53	87	*eP*	Pn	06 30 37.7	+1.5
ELOV				*eS*	Sn	06 31 18.9	+0.3
PRAC	**Prado**	3.58	211	*eP*	Pn	06 30 37.5	+0.6
PRAC				*eS*	Sn	06 31 19.6	-0.2
VIRV	**Villa del Rosa**	3.73	10	*eP*	Pn	06 30 38.7	0.0
VIRV				*eS*	Sn	06 31 20.5	-2.6
CURV	**Curarigua**	4.41	43	*eP*	Pn	06 30 48.4	+0.8
BAUV	**El Baul**	5.39	66	*eP*	Pn	06 31 00.3	-0.1
BAUV				*eS*	Sn	06 31 59.1	-2.8
MONV	**Montecano**	5.94	30	*eP*	Pn	06 31 06.9	-0.9

MEX 05 06:41:44.6±0.6, 14°.71N×92°.88W, h15km±27km, MD3.7, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THIG		0.63	71	*eP*	Pg	06 41 55.5	-1.5
PCIG		1.04	342	*eP*	Pb	06 42 00.7	-3.7
PCIG				*eS*	Sb	06 42 13.9	-4.0
CCIG	**Comitan**	1.72	25	*eP*	Pn	06 42 11.0	-3.2
CCIG				*i* S	Sn	06 42 31.4	-4.7

*NEIC **05** 06:50:21.5±0.6, 11°.76S×166°.48E, h35km, mb4.4/3, Error ellipse: s-maj=19.4km s-min=11.9km az=131.0*
*IDC **05** 06:50:23.7±7.0, 11°.88S×166°.50E, h55km±66km, mb4.0/8, mb1 4.2/9, mb1mx3.8/37, mbtmp4.2/9, ML3.8/1, MS3.3/5, Ms1 3.3/5, ms1mx2.9/34, Error ellipse: s-maj=61.1km s-min=22.5km az=155.0*
*ISCJB **05** 06:50:25.1±0.7, 12°.1S±0°.1×166°.5E±0°.1, h83km, mb4.2/10, Error ellipse: s-maj=20.5km s-min=13.7km az=37.9*
ISC 05 06:50:26.3±0.8, 12°.1S±0°.1×166°.5E±0°.2, h83km, n16, σ1°06/16, mb4.2/10, 1D, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	**Honiara**	6.97	291	LR	LR	06 55 05.7	
	comp=Z,124nm,19.8s,baz=126,slow=41						
DZM	**Mont Dzumac**	9.95	180	P	Pn	06 52 45.8	-0.8
	0.9nm,0.3s,baz=132,slow=16,SNR=18						
DZM				LR	LR	06 56 06.5	
	comp=Z,132nm,21.6s,baz=328,slow=34						
EIDS	**Eidsvold**	19.70	226	*eP*	Pn	06 54 51.3	0.0
	10nm,0.6s						
CTA	**Charters Tower**	21.04	245	P	P	06 55 05.1	+1.5
	4.7nm,0.7s,baz=74,slow=18,SNR=4.3						
COEN	**Coen**	22.83	263	*eP*	P	06 55 20.4	-2.3
	61nm,1.7s						
STKA	**Stephens Creek**	30.25	225	P	P	06 56 30.9	+1.4
	9.9nm,0.6s,baz=41,slow=9.5,SNR=32						
WRAB	**Tennant Creek**	31.86	252	*eP*	P	06 56 43.7	-0.1
	5.7nm,1.1s						
WRA	**Warramunga Arr**	31.87	252	P	P	06 56 43.9	0.0
	3.2nm,0.7s,baz=82,slow=9.3,SNR=18						
ASAR	**Alice Springs**	33.04	245	P	P	06 56 54.0	-0.2
	5.3nm,0.7s,baz=73,slow=9.5,SNR=51						
ASAR				LR	LR	07 08 52.5	
	comp=Z,48nm,21.7s,baz=96,slow=34						
ILAR	**Eielson Array**	84.23	18	P	P	07 02 47.8	-0.5
	1.1nm,0.7s,baz=236,slow=5.2,SNR=12						
ILAR				LR	LR	07 35 01.8	
	comp=Z,21nm,20.2s,baz=116,slow=32						
NVAR	**Mina Array Bea**	86.09	50	P	P	07 03 00.0	+1.5
	0.3nm,0.6s,baz=230,slow=9.0,SNR=2.9						
NVAR				LR	LR	07 33 44.0	
	comp=Z,32nm,20.8s,baz=256,slow=30						
SYO	**Syowa Base**	91.04	197	*eP*	P	07 03 20.6	-0.5
MKAR	**Makanchi Array**	94.78	317	P	P	07 03 39.4	+0.6
	1.6nm,0.7s,baz=93,slow=6.7,SNR=21						
YKA	**Yellowknife Ar**	95.52	27	P	P	07 03 40.8	-0.9
	0.3nm,0.5s,baz=258,slow=4.7,SNR=15						
ARCES	**ARCESS Array B**	117.50	346	PKP	PKPdf	07 09 01.7	-0.3
	0.4nm,0.3s,baz=74,slow=2.2,SNR=16						
TORD	**Torodi Ar. Bea**	165.16	276	PKP	PKPdf	07 10 22.2	+0.2
	0.3nm,0.6s,baz=200,slow=0.8,SNR=2.6						
TORD				PKPab	PKPab	07 11 19.2	-0.3
	0.4nm,0.7s,baz=95,slow=5.4,SNR=2.6						

*NEIC **05** 07:03:02.8, 56°.41N×157°.81W, h80km, MG3.2(AEIC), After AEIC.*
*IDC **05** 07:03:05.7±9.3, 56°.89N×157°.86W, h115km±70km, mb3.1/4, mb1 3.4/6, mb1mx3.0/60, mbtmp3.4/6, Error ellipse: s-maj=71.1km s-min=26.9km az=54.0*
ISC 05 07:03:01.3±0.9, 56°.38N±0°.08×157°.81W±0°.06, h88km±9km, n51, σ0°93/55, mb3.4/4, Alaska Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHGN	**Chignik**	0.34	256	P	Pn	07 03 14.8	+0.1
ANPB	**Aniakchak Plen**	0.49	329	P	Pn	07 03 15.6	-0.2
ANPB				S	Sn	07 03 25.6	-1.1
AZAC	**Aniakchak**	0.56	336	P	Pn	07 03 16.4	-0.1
VNHG	**Veniaminof 1**	0.77	258	P	Pn	07 03 19.4	+1.0
VNHG				S	Sn	07 03 31.9	+0.7
VNNF	**Veniaminof 3**	0.84	264	P	Pn	07 03 20.1	+0.9
VNSS	**Veniaminof 8**	0.93	261	P	Pn	07 03 20.7	+0.5
VNWF	**Veniaminof 8**	1.00	257	P	Pn	07 03 21.7	+0.7
PLK3	**Peulik 3**	1.56	32	P	Pn	07 03 29.6	+2.0
PLK1	**Peulik 1**	1.57	24	P	Pn	07 03 29.4	+1.7
PLK5	**Peulik 5**	1.70	17	P	Pn	07 03 31.4	+2.0
SDPT	**Sand Point**	1.82	236	P	Pn	07 03 31.3	+0.3
SDPT				S	Sn	07 03 53.3	-0.4
ANCK	**Angle Creek**	2.21	34	P	Pn	07 03 36.8	+0.6
KABR	**Katmai Barrier**	2.34	40	P	Pn	07 03 38.1	+0.2
KABU	**Katmai Buttres**	2.34	35	P	Pn	07 03 38.6	+0.6
KABU				S	Sn	07 04 05.5	-0.4
KELA	**Mount Kelaz**	2.35	28	P	Pn	07 03 38.1	+0.1
KVTA	**Katmai Vly 10**	2.42	33	P	Pn	07 03 39.4	+0.5
KAKN	**Katmai Knife C**	2.43	37	P	Pn	07 03 39.5	+0.3
KAKN				S	Sn	07 04 09.1	+0.9
PS4A	**Pavlof South-4**	2.50	247	P	Pn	07 03 40.5	+0.5
PN7A	**Pavlof North-7**	2.54	250	P	Pn	07 03 39.9	-0.7
KAWH	**Katmai**	2.59	38	P	Pn	07 03 41.3	+0.1
OHAK	**Old Harbor**	2.63	69	P	Pn	07 03 41.7	+0.1
OHAK				S	Sn	07 04 11.6	-1.1
KAHC	**Katmai Hardscr**	2.73	33	P	Pn	07 03 43.5	+0.3
DTNA	**Dutton South F**	2.80	246	P	Pn	07 03 44.3	+0.3
DT1	**Dutton Round H**	2.83	245	P	Pn	07 03 44.5	+0.1
BALA	**Baldy Mountain**	3.05	249	P	Pn	07 03 48.0	+0.6
KDAK	**Kodiak Island**	3.18	62	P	Pn	07 04 04.1	+15
	52nm,0.3s,baz=230,slow=7.2,SNR=680						
KDAK				S	Sn	07 04 38.7	+13
	9.4nm,0.3s,baz=142,slow=20,SNR=18						
KDAK	**Kodiak Island**	3.18	62	P	Pn	07 03 49.0	-0.1
KDAK				S	Sn	07 04 24.0	-2.0
FOSS	**Fourpeaked Sta**	3.28	41	P	Pn	07 03 51.0	+0.5
FOPK	**Fourpeaked Vol**	3.34	43	P	Pn	07 03 51.6	+0.4
CDD	**Cape Douglas**	3.40	40	P	Pn	07 03 53.0	+0.9
FALS	**False Pass**	3.52	247	P	Pn	07 03 53.8	0.0
ISLZ	**Isanotski Laza**	3.74	246	P	Pn	07 03 57.2	+0.5
AUL	**Augustine Lava**	3.81	36	P	Pn	07 03 58.5	+0.9
SSLN	**Shishaldin Nor**	3.84	248	P	Pn	07 03 58.6	+0.5
SSLW	**Shishaldin Wes**	3.93	248	P	Pn	07 03 59.3	0.0
WESN	**West Dahl Nort**	4.26	248	P	Pn	07 04 04.1	+0.3
SVW2	**Sparrevohn**	4.87	13	P	Pn	07 04 11.8	-0.2
RDWB	**Redoubt West**	4.88	30	P	Pn	07 04 12.3	+0.1
UNV	**Unalaska Valle**	5.60	247	P	Pn	07 04 21.3	-0.5
MTBL	**Makushin Table**	5.63	248	P	Pn	07 04 21.9	-0.5
SEW	**Seward**	5.78	46	P	Pn	07 04 23.7	-0.6
MSOM	**Makushin Julie**	5.84	248	P	Pn	07 04 25.0	-0.2
TT01	**Tatalina**	6.61	7	P	Pn	07 04 35.0	-0.6
PPLA	**Purkeypile**	7.13	21	*e*Pn	Pn	07 04 45.2	+2.4
	5.7nm,0.4s						
ILAR	**Eielson Array**	9.97	28	P	Pn	07 05 18.5	-2.8
	0.2nm,0.3s,baz=216,slow=13,SNR=17						
ILAR				S	Sn	07 07 04.0	-7.2
	0.2nm,0.3s,baz=221,slow=22,SNR=7.1						
DLBC	**Dease Lake**	15.07	71	P	P	07 06 32.5	+0.2
	0.1nm,0.3s,baz=278,slow=8.1,SNR=5.5						
INK	**Inuvik**	16.27	33	P	Pn	07 06 43.5	-0.6
	0.4nm,0.3s,baz=220,slow=15,SNR=21						
YKA	**Yellowknife Ar**	22.44	56	P	P	07 07 52.6	+0.1
	0.2nm,0.6s,baz=274,slow=9.8,SNR=7.6						
NVAR	**Mina Array Bea**	31.63	108	P	P	07 09 19.3	+3.4
	0.6nm,0.7s,baz=324,slow=7.3,SNR=5.5						
TXAR	**Lajitas Array**	46.41	102	P	P	07 11 21.3	+2.4
	0.3nm,0.6s,baz=291,slow=4.9,SNR=4.6						
ARCES	**ARCESS Array B**	54.36	359	P	P	07 12 16.0	-2.2
	2.1nm,0.9s,baz=12,slow=7.9,SNR=4.7						

*NIED **05** 07:09:00, 37°.70N×141°.80E, h56km, Mw3.7 Best double couple: M0 3.46000×10^14 NP1:φ=329.00000°, δ=16.00000°, λ=47.00000°. NP2:φ=193.00000°, δ=79.00000°, λ=101.00000°.*
*IDC **05** 07:09:07.0±3.0, 37°.12N×143°.30E, h0km, mb3.6/2, mb1 3.8/4, mb1mx3.3/51, mbtmp3.6/4, ML2.5/2, MS2.6/1, Ms1 2.6/1, ms1mx2.1/45, Error ellipse: s-maj=74.8km s-min=30.2km az=58.0*
*JMA **05** 07:09:24.5±0.1, 37°.72N×141°.77E, h44km±2km, M3.7*
ISC 05 07:09:22.5±2.5, 37°.70N±0°.06×141°.9E±0°.1, h26km±13km, n13, σ1°43/19, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	0.87	330	P	Pn	07 09 39.3	+0.2
JIO				S	Sb	07 09 50.1	-0.1
JFK	**Kawauchi**	0.88	248	P	Pb	07 09 39.3	+0.2
JFK				S	Sb	07 09 49.5	-0.9
JMM	**Marumori**	0.89	281	P	Pb	07 09 39.2	-0.1
JMM				S	Sb	07 09 49.9	-0.8
ONAJ	**Iwakimizuishiy**	1.06	236	P	Pb	07 09 42.1	-0.1
ONAJ				S	Sb	07 09 54.9	-0.7
JOU	**Okura**	1.18	305	P	Pn	07 09 43.6	+0.2
JOU				S	Sn	07 09 57.5	-1.1
JFT	**Otama**	1.25	262	P	Pn	07 09 45.0	+0.6
JFT				S	Sn	07 09 59.8	-0.6
JHO	**Hitachi**	1.52	225	P	Pn	07 09 48.3	+0.3
MJAR	**Matsushiro Arr**	3.16	250	Pn	Pn	07 10 11.4	+0.7
	1.6nm,0.3s,baz=83,slow=16,SNR=32						
MJAR				Sn	Sb	07 10 55.1	-1.1
	2.1nm,0.3s,baz=80,slow=30,SNR=5.9						
MAT	**Matsushiro**	3.17	250	P	Pn	07 10 11.7	+1.0
MAT				*eS*	Sn	07 10 49.6	+1.9
USRK	**Ussuriysk Ar.**	9.91	314	Pn	Pn	07 11 47.1	+3.9
	0.1nm,0.3s,baz=127,slow=17,SNR=4.8						
JOW	**Kunigami**	15.80	231	LR	LR	07 18 07.0	
	comp=Z,25nm,21.6s,baz=234,slow=33						
MKAR	**Makanchi Array**	44.09	302	P	P	07 17 26.3	-2.2
	0.3nm,0.6s,baz=80,slow=11,SNR=3.7						
WRA	**Warramunga Arr**	57.77	188	P	P	07 18 57.3	-14
	2.5nm,1.0s,baz=11,slow=8.7,SNR=12						

DJA 05 07:16:50.7±0.7, 7°S±4°×10°5E±°, h21km±5km, M4.1/12, MLv4.1/12, Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CGJI	**Cibinong**	0.58	27	P	Pb	07 17 03.0	+0.7
CGJI				S	Sb	07 17 10.2	-0.1
SBJI	**Serang**	1.23	34	P	Pn	07 17 12.7	0.0
CBJI	**Citeko**	1.58	63	P	Pn	07 17 17.7	+0.2
CBJI				S	Sb	07 17 40.6	+1.8
CNJI	**Cibinong**	1.69	96	P	Pn	07 17 19.8	+0.7
CNJI				S	Sn	07 17 40.0	-0.1
BLSI	**Bandar Lampung**	1.77	354	P	Pn	07 17 20.4	+0.3
KASI	**Kota Agung**	1.85	330	P	Pn	07 17 22.1	+0.8
KASI				S	Sn	07 17 44.8	+0.7
KLI	**Kotabumi**	2.33	346	P	Pn	07 17 27.7	-0.2
KLI				S	Sn	07 17 57.9	+2.0
CISI	**Cisompet, Garu**	2.40	100	P	Pn	07 17 29.7	+0.8
CISI				S	Sn	07 17 58.1	+0.4
LWLI	**Liwa**	2.51	327	P	Pn	07 17 30.8	+0.4
LWLI				S	Sn	07 18 01.6	+1.1
CMJI	**Cimerak**	3.06	102	P	Pn	07 17 39.0	+1.1
MNAI	**Manna**	3.70	318	P	Pn	07 17 45.9	-0.8
UGM	**Wanagama**	5.11	99	P	Pn	07 18 07.4	+1.3
PCJI	**Pacitan**	5.79	101	P	Pn	07 18 16.4	+1.0

*IDC **05** 07:17:14.7±2.1, 17°.16N×85°.27W, h0km, mb3.3/3, mb1 3.8/5, mb1mx3.5/34, mbtmp3.5/5, ML4.0/3, MS2.9/2, Ms1 2.9/2, ms1mx2.4/22, Error ellipse: s-maj=48.6km s-min=31.2km az=75.0*
*ISCJB **05** 07:17:16.9±1.3, 17°.1N±0°.1×85°.5W±0°.2, h28km, mb3.6/2, MS2.9/1, Error ellipse: s-maj=27.2km s-min=10.7km az=154.1*
ISC 05 07:17:18.9±1.4, 17°.1N±0°.1×85°.5W±0°.2, h28km, n7, σ1°29/7, North of Honduras

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TEIG	**Tepich**	4.09	319	Pn	Pn	07 18 19.4	-0.2
	72nm,0.3s,baz=89,slow=24,SNR=1056

KNZ	Kokohu	19.00 192	PN	P	07 21 45.1	-0.7
BKZ	Black Stump Fm	19.39 194	eP	P	07 21 47.3	-2.2
16nm,0.9s						
BKZ			eS	S	07 25 09.2	+10
BKZ	Black Stump Fm	19.39 194	PN	P	07 21 47.1	-2.3
DUWZ	D'Urville Isla	21.60 198	PN	P	07 22 08.0	-1.4
THZ	Tophouse	22.79 199	eP	P	07 22 19.7	-0.4
42nm,1.3s						
KHZ	Kahutara	23.20 197	eP	P	07 22 23.4	-0.3
29nm,0.4s						
KHZ	Kahutara	23.20 197	PN	P	07 22 23.2	-0.5
LTZ	Lake Taylor	23.91 199	eP	P	07 22 25.8	-4.4
25nm,1.1s						
OXZ	Oxford	24.47 199	eP	P	07 22 33.5	-1.6
42nm,1.2s						
OXZ	Oxford	24.47 199	PN	P	07 22 33.3	-1.7
RPZ	Rata Peaks	25.13 200	P	P	07 22 39.5	-1.4
4.4nm,0.6s,baz=52,slow=6.2,SNR=5.0						
EIDS	Eidsvold	29.37 254	eP	P	07 23 17.6	-0.8
17nm,0.6s						
CTAO	Charters Tower	34.02 264	eP	P	07 23 57.7	-0.7
205nm,0.5s						
STKA	Stephens Creek	38.29 244	P	P	07 24 33.4	-0.2
14nm,0.5s,baz=92,slow=10,SNR=50						
STKA	Stephens Creek	38.29 244	eP	P	07 24 33.3	-0.2
7.1nm,1.1s						
MANU	Manus Island	38.90 293	eP	P	07 24 38.5	-0.2
19nm,1.1s						
BBOO	Buckleboo	43.05 243	eP	P	07 25 10.7	-0.9
25nm,0.6s						
JAY	Jayapura	44.52 288	P	P	07 25 22.4	-0.9
2.1nm,0.3s,baz=274,slow=23,SNR=13						
AS01	Alice Springs	45.00 257	eP	P	07 25 26.0	-0.9
AS31	Alice Springs	45.04 257	eP	P	07 25 26.4	-0.9
21nm,0.6s						
ASAR	Alice Springs	45.05 257	P	P	07 25 26.5	-0.8
58nm,0.5s,baz=97,slow=7.5,SNR=830						
ASAR			PcP	PcP	07 26 57.1	-0.6
3.4nm,0.5s,baz=96,slow=4.0,SNR=5.0						
ASAR			S	S	07 31 25.9	-3.4
2.3nm,0.9s,baz=94,slow=16,SNR=12						
WB2	Warramunga Arr	45.12 262	eP	P	07 25 26.5	-1.3
WRAB	Tennant Creek	45.12 262	eP	P	07 25 26.4	-1.5
46nm,0.9s						
WRA	Warramunga Arr	45.13 262	P	P	07 25 26.4	-1.6
30nm,0.7s,baz=96,slow=7.7,SNR=378						
MTN	Manton Dam	49.69 270	eP	P	07 26 01.2	-1.1
47nm,0.6s						
FITZ	Fitzroy Crossi	53.56 262	eP	P	07 26 29.7	-0.5
19nm,0.5s						
SOEI	Soe	57.02 271	eP	P	07 26 55.5	+0.8
113nm,0.7s						
VNDA	Vanda	58.03 185	P	P	07 27 02.2	+1.9
1.4nm,0.6s,baz=352,slow=9.5,SNR=9.3						
VNDA	Vanda	58.03 185	eP	P	07 27 03.1	+2.7
QSPA	South Pole Qui	69.64 180	eP	P	07 28 16.7	+1.8
44nm,0.7s						
KKM	Kota Kinabalu	70.25 285	eP	P	07 28 19.3	-0.2
36nm,1.1s						
MJAR	Matsushiro Arr	70.46 323	P	P	07 28 19.2	-0.9
3.1nm,1.0s,baz=157,slow=6.0,SNR=7.0						
MAT	Matsushiro	70.47 323	P	P	07 28 19.6	-0.5
ASAJ	Asahikawa	73.92 331	P	P	07 28 41.0	+1.0
8.2nm,0.9s,baz=189,slow=4.0,SNR=3.9						
KSM	Kuching	73.92 278	eP	P	07 28 40.9	+0.2
12nm,0.5s						
TPUB	Ta-pu	74.38 303	eP	P	07 28 41.8	-1.3
38nm,1.2s						
PETK	Petropavlovsk-	76.34 345	P	P	07 28 53.7	+0.4
1.5nm,0.6s,baz=114,slow=3.2,SNR=2.6						
KSRS	Korea Array	77.18 318	P	P	07 28 59.0	+0.7
0.7nm,0.4s,baz=126,slow=6.2,SNR=6.6						
USRK	Ussuriysk Ar.	79.20 326	P	P	07 29 10.5	+1.5
3.6nm,0.6s,baz=147,slow=3.2,SNR=10						
NJ2	Nanjing	80.24 309	eP	P	07 29 14.8	+0.1
NVAR	Mina Array Bea	80.61 43	P	P	07 29 19.1	+2.3
0.9nm,0.7s,baz=224,slow=8.7,SNR=8.3						
NVAR			pP	pP	07 31 06.4	+0.8
0.7nm,0.9s,baz=223,slow=9.3,SNR=4.2						
MAW	Mawson	81.81 200	P	P	07 29 22.7	+0.4
2.9nm,0.6s,baz=141,slow=4.2,SNR=17						
CN2	Changchun	82.56 322	eP	P	07 29 25.0	-1.4
IPM	Ipoh	83.64 277	eP	P	07 29 32.8	+0.2
40nm,1.0s						
SKLT	Songkhla	84.98 280	P	P	07 29 40.7	+1.6
26nm,0.9s,703nm						
PANO	Nakornpanom	85.09 290	P	P	07 29 41.1	+1.5
64nm,0.7s						
SKNT	Sakolnakorn	85.58 290	P	P	07 29 42.7	+0.7
22nm,1.1s						
TRTT	Trang	86.08 280	P	P	07 29 46.8	+2.4
26nm,1.1s						
BJI	Beijing	86.21 315	P	P	07 29 41.2	-3.2
ENH	Enshi	86.43 304	eP	P	07 29 46.8	+1.0
10nm,0.8s						
TXAR	Lajitas Array	86.58 57	P	P	07 29 49.1	+2.5
1.7nm,0.7s,baz=216,slow=6.5,SNR=22						
TXAR			pP	pP	07 31 39.3	+2.0
0.8nm,1.0s,baz=215,slow=7.6,SNR=4.9						
TXAR			PKKPbc	PKKPbc	07 47 40.5	+0.8
0.1nm,0.4s,baz=178,slow=1.7,SNR=4.0						
NONG	Nongkai	86.73 291	P	P	07 29 48.6	+1.2
23nm,0.7s,10μm						
SYO	Syowa Base	86.91 193⇓	eP	P	07 29 46.1	-1.2
ANMO	Albuquerque	86.95 51	P	P	07 29 50.2	+1.8
1.2nm,0.6s,baz=249,slow=4.8,SNR=6.1						
GYA	Guiyang	87.07 299	eP	P	07 29 48.0	-1.0
GYA			pP	pP	07 31 39.8	0.0
GYA			sP	sP	07 32 29.0	-1.7
GYA			PP	PP	07 33 23.4	+1.6
GYA			SKS	SKSac	07 39 27.6	-1.1
GYA			S	S	07 39 45.5	-0.8
GYA	Guiyang	87.07 299	sS	sS	07 43 01.2	-2.5
GYA			pmax	pmax		
comp=Z,10.0nm,1.0s						
PHET	Kaeng Krachan	87.96 284	P	P	07 29 55.6	+2.3
comp=Z,9.8nm,0.9s						
SNAA	Sanae	88.07 178	P	P	07 29 53.1	+0.3
PBKT	Sadao Pong	88.10 288	P	P	07 29 55.5	+1.7
comp=Z,12nm,1.1s						
VNA3	Neumayer Olymp	88.18 176	P	P	07 29 53.9	+0.7
XAN	Xi'an	88.51 307	P	P	07 29 56.5	+1.0
PDAR	Pinedale Array	88.55 43	P	P	07 29 56.8	+1.0
comp=Z,1.1nm,0.7s,baz=218,slow=3.3,SNR=8.3						
VNA2	Neumayer--Watz	88.62 177	P	P	07 29 56.3	+0.9
baz=198,slow=3.6						
VNA1	Neumayer--Stat	88.85 176	P	P	07 29 57.4	+1.0
UTTA	Uttaradit	88.90 289	P	P	07 29 59.8	+2.2
comp=Z,2.2nm,1.1s						
NANT	Nan	89.16 290	P	P	07 30 00.1	+1.3
comp=Z,3.8nm,0.9s						
SUKH	Sukhothai	89.62 289	P	P	07 30 02.5	+1.6
comp=Z,4.6nm,0.9s						
HHC	Hu-ho-hao-te	89.68 314	eP	P	07 30 00.7	-0.1
HHC	Hu-ho-hao-te	89.68 314	S	S	07 40 07.8	-1.9
HHC			pmax	pmax		
comp=Z,18nm,1.0s						
HHC			pmax	pmax		
comp=Z,90nm,6.3s						
KMI	Kunming	89.78 297	P	P	07 30 01.4	-0.4
LAMP	Lampang	90.00 290	P	P	07 30 04.5	+1.8
comp=Z,7.8nm,0.8s						
CMMT	Chiang Mai	90.71 290	P	P	07 30 07.1	+1.1
comp=Z,15nm,0.9s						
CHTO	Chiang Mai	90.71 290	eP	P	07 30 07.1	+1.1
comp=Z,8.7nm,0.9s						
CMAI	Chiengmai2	91.03 291	P	P	07 30 09.5	+1.9
CD2	Chengdu	91.19 303	P	P	07 30 07.2	-0.8
LZH	Lanzhou	93.14 307 ⇑	P	P	07 30 16.2	-0.8
LZH			pP	pP	07 31 08.2	-61
LZH			sP	sP	07 32 56.3	-3.0
LZH			PP	PP	07 34 12.0	+2.8
INK	Inuvik	94.07 15	P	P	07 30 20.1	-0.1
comp=Z,0.6nm,0.6s,baz=337,slow=0.9,SNR=3.7						
YKA	Yellowknife Ar	96.23 25	P	P	07 30 30.5	+0.3
comp=Z,0.2nm,0.8s,baz=241,slow=4.5,SNR=3.3						
YKA			PKKPbc	PKKPbc	07 47 13.8	-2.6
comp=Z,0.1nm,0.5s,baz=38,slow=2.5,SNR=6.8						
ZALV	Zalesovo Beam	110.77 321	PKiKP	PKiKP	07 35 30.7	-1.1
comp=Z,0.7nm,0.3s,baz=45,slow=0.6,SNR=3.6						
MKAR	Makanchi Array	111.53 313	PKiKP	PKiKP	07 35 32.7	-0.8
comp=Z,1.0nm,0.6s,baz=216,slow=0.4,SNR=17						
KURBB	Kurchatov Arra	114.35 317	PKP	PKPdf	07 35 37.6	-1.1
comp=Z,1.2nm,0.6s,baz=95,slow=1.8,SNR=20						
KKAR	Karatay Array	119.61 309	ePKPdf	PKPdf	07 35 48.6	-0.6
ARU	Arti	125.44 326	ePKPdf	PKPdf	07 36 00.1	+0.2
ABKAR	Akbulak array	126.39 317	ePKPdf	PKPdf	07 36 01.8	-0.1
BOSA	Boshof	126.54 205	PKP	PKPdf	07 36 03.1	-0.1
comp=Z,1.3nm,0.5s,baz=150,slow=4.8,SNR=4.3						
ARCES	ARCESS Array B	128.94 350	PKP	PKPdf	07 36 06.8	+0.5
comp=Z,1.3nm,0.6s,baz=9.3,slow=1.7,SNR=14						
FINES	FINESS Array B	135.85 344	PKP	PKPdf	07 36 19.4	0.0
comp=Z,0.9nm,0.5s,baz=90,slow=3.8,SNR=4.7						
AKASG	Malin Array Be	143.20 332	PKhKP	PKPpre	07 36 30.2	
comp=Z,4.2nm,0.5s,baz=41,slow=4.1,SNR=14						
KIEV	Kiev	143.22 332	ePKPdf	PKPab	07 36 30.2	-0.5
BRTR	Keskin Array B	147.18 313	PKPbc	PKPbc	07 36 43.2	-0.3
comp=Z,4.1nm,0.7s,baz=131,slow=4.6,SNR=16						
STHS	Stebnicka Huta	147.46 337	ePKP	PKPab	07 36 49.2	+1.8
KOLS	Kolonicke sedl	147.47 336	ePKP	PKPbc	07 36 44.5	+0.7
KOLS			e		07 36 48.6	
CLL	Collm	148.11 348 ⇓	iPKP	PKPbc	07 36 45.7	+0.4
comp=Z,15nm,0.6s						
UPC	Upice	148.15 344⇑	ePKP	PKPbc	07 36 46.3	+0.9
DPC	Dobruska-Polom	148.21 343⇑	ePKP	PKPbc	07 36 46.6	+0.9
DPC			ePKPAB	PKPab	07 36 51.6	+1.1
BRG	Berggiesshubel	148.32 346	i PKP	PKPbc	07 36 46.2	+0.3
comp=Z,7.8nm,0.7s						
PRU	Pruhonice	149.00 345⇑	ePKP	PKPbc	07 36 48.2	+0.7
GOPC	GO Pecny, Ondr	149.01 345⇑	ePKP	PKPbc	07 36 48.4	+0.8
VYHS	Vyhne	149.09 339	ePKP	PKPbc	07 36 48.6	+0.8
VYHS			e		07 36 54.1	
TREC	Trest	149.40 343⇑	ePKP	PKPbc	07 36 49.2	+0.6
KHC	Kasperske Hory	150.03 345⇑	ePKP	PKPbc	07 36 50.8	+0.7
KHC			ePKPAB	PKPab	07 36 58.7	+0.7
KHC	Kasperske Hory	150.03 345	ePKPdf	PKPdf	07 36 44.9	+0.3
KHC			ePKPbc	PKPbc	07 36 50.8	+0.7
KHC			ePKPab	PKPab	07 36 58.6	+0.7
GERES	GERESS Array B	150.27 345	PKP	PKPdf	07 36 44.1	-0.9
comp=Z,0.2nm,0.2s,baz=272,slow=4.8,SNR=3.5						
GERES			PKPbc	PKiKP	07 36 51.0	-0.3
comp=Z,3.1nm,0.8s,baz=40,slow=2.3,SNR=19						
DBIC	Dimbokro	164.55 151	PKP	PKPdf	07 37 03.0	-0.4
comp=Z,3.2nm,0.8s,baz=287,slow=3.5,SNR=3.2						
TORD	Torodi Ar. Bea	172.71 173	PKP	PKPdf	07 37 08.1	-0.4
comp=Z,2.4nm,0.9s,baz=242,slow=0.8,SNR=11						
TORD			PKPab	PKPab	07 38 38.8	+1.3
comp=Z,0.8nm,0.6s,baz=185,slow=4.6,SNR=5.3						

*IDC **05** 07:24:22.4±2.4, 37°.91N×142°.84E, h0km, mb3.5/4, mb1 3.6/5, mb1mx3.3/38, mbtmp3.3/5, ML2.6/1, MS2.5/3, Ms1 2.5/3, ms1mx2.1/32, Error ellipse: s-maj=66.1km s-min=26.6km az=63.0*

*JMA **05** 07:24:35.5±0.2, 37°.35N×141°.82E, h38km±4km, M3.0*

ISC 05 07:24:31.2±1.9, 37°.29N±0°.06×141°.96E±0°.09, h34km±5km, n16, σ1§75/20, mb3.6/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	0.87	276	P	Pb	07 24 49.9	+2.0
JFK				S	Sb	07 24 59.7	+0.4
ONAJ	Iwakimizuishiy	0.95	259	P	Pb	07 24 51.2	+2.0
ONAJ				S	Sb	07 25 02.1	+0.6
JMM	Marumori	1.09	302	P	Pb	07 24 52.8	+1.2
JIO	Ouri	1.26	338	P	Pb	07 24 55.4	+1.0
JIO				S	Sb	07 25 09.5	-0.9
JHO	Hitachi	1.30	239	P	Pb	07 24 56.4	+1.3
JHO				S	Sn	07 25 11.1	+1.8
JFT	Otama	1.31	281	P	Pb	07 24 56.9	+1.6
JFT				S	Sb	07 25 12.1	+0.2
JOU	Okura	1.49	317	P	Pb	07 24 59.0	+0.7
JOU				eS	Sb	07 25 17.2	+0.3
MJAR	Matsushiro Arr	3.10	257	Pn	Pb	07 25 23.8	-1.8
0.4nm,0.3s,baz=80,slow=16,SNR=4.1							
MAT	Matsushiro	3.10	257	P	Pb	07 25 23.7	-1.9
MAT				eS	Sb	07 26 00.1	-2.9
JNU	Nakatsue	9.97	249	LR	LR	07 30 21.7	
comp=Z,13nm,21.0s,baz=303,slow=33							
KSRS	Korea Array	11.18	275	LR	LR	07 31 46.0	
comp=Z,34nm,21.6s,baz=90,slow=37							
KLR	Kul'dur	14.05	331	LR	LR	07 33 51.4	
comp=Z,23nm,18.3s,baz=120,slow=41							
MKAR	Makanchi Array	44.36	302	P	P	07 32 36.5	-1.6
0.2nm,0.7s,baz=74,slow=11,SNR=3.2							
KURBB	Kurchatov Arra	46.19	308	P	P	07 32 49.7	-2.9
0.2nm,0.3s,baz=83,slow=8.0,SNR=3.5							
WRA	Warramunga Arr	57.37	189	P	P	07 34 17.7	+1.5
1.1nm,0.7s,baz=11,slow=7.3,SNR=7.6							
ASAR	Alice Springs	61.10	188	P	P	07 34 42.9	+1.0
0.4nm,0.7s,baz=14,slow=7.6,SNR=4.0							

ISC 05 07:28:05.8±0.9, 45°.03N±0°.03×14°.76E±0°.03, h10km, n19, σ0§99/36, 1C-1D, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NVLJ	Novalja	0.48	170	ePg	Pg	07 28 14.5	-0.5
NVLJ				Sg	Sb	07 28 21.9	-1.3
KNDS	Knezji Dol	0.56	332	i Pg	Pg	07 28 15.9	-0.8
KNDS				i Sg	Sg	07 28 24.1	-0.1
BOJS	Bojanci	0.59	36	i Pg	Pg	07 28 16.2	-1.0
BOJS				i Sg	Sg	07 28 25.0	0.0
SKDS	Skadanscina	0.73	315	i Pg	Pg	07 28 18.0	-2.0
SKDS				i Sg	Sg	07 28 29.0	-0.6
CEY	Cerknica	0.74	342	i Pg	Pg	07 28 18.8	-1.4
CEY				i Sg	Sg	07 28 29.9	0.0
VISS	Visnje	0.77	4	i Pg	Pg	07 28 19.5	-1.2
VISS				i Sg	Sg	07 28 30.6	-0.2
UDBI	Udbina	0.88	125	ePg	Pg	07 28 22.6	-0.1
UDBI				Sg	Sn	07 28 36.5	-0.6
GBAS	Gorenja Brezov	0.93	346	i Pg	Pg	07 28 22.2	-1.5
GBAS				i Sg	Sg	07 28 35.7	-0.1
CRES	Cresnjev	0.94	32	i Pg	Pg	07 28 22.8	-1.0
CRES				i Sg	Sg	07 28 35.9	-0.1
TRI	Trieste	0.97	314	eS	Sg	07 28 38.0	+0.8
JAVS	Javornik	0.99	331	i Pg	Pg	07 28 22.6	-2.2
JAVS				i Sg	Sg	07 28 38.0	+0.3
GCIS	Gornji Cirnik	1.04	36	i Pg	Pg	07 28 25.0	-0.7
GCIS				eSg	Sg	07 28 38.7	-0.5
PDKS	Podkum	1.04	9	i Pg	Pg	07 28 25.0	-0.8
PDKS				eSg	Sg	07 28 40.9	+1.5
SABO	M.te Sabotino	1.25	320	ePg	Pn	07 28 29.5	+0.2
SABO				eSg	Sb	07 28 46.5	+0.9
DRE	Drenchia	1.38	326	ePg	Pn	07 28 31.6	+0.4
DRE				eSg	Sg	07 28 51.8	+1.5
COLI	Coloredo	1.47	319	ePg	Pn	07 28 33.0	+0.7
COLI				eSg	Sb	07 28 53.4	+1.6
VINO	Villanova	1.60	320	ePg	Pn	07 28 34.9	+0.7
LSR	Lussari	1.68	330 ⇓	ePg	Pb	07 28 37.3	+0.4
LSR				eSg	Sg	07 29 01.0	+1.1
ACOM	Acomizza, Ital	1.75	331⇑	ePg	Pb	07 28 38.5	+0.4
ACOM				eSg	Sg	07 29 02.4	+0.5

*GUC **05** 07:41:06.8±0.4, 22°.08S×67°.88W, h201km±7km, ML3.7*

ISC 05 07:41:08.0±3.8, 22°.1S±0°.1×67°.9W±0°.3, h200km, n7, σ0§44/12, Chile-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB09	IPOC Station P	1.30	284	i P	Pn	07 41 40.1	-0.2
PB09				i S	Sn	07 42 05.2	0.0
PB09				IAML		07 42 11.0	
comp=E,364nm,0.1s							
PB01	IPOC Station P	1.83	305	i P	Pn	07 41 44.9	-0.1
PB01				i S	Sn	07 42 13.9	+0.2
PB01				IAML		07 42 15.9	
comp=E,278nm,0.2s							
YJA	Yavi	2.20	92	i P	Pn	07 41 42.3	-6.7
YJA				IAML		07 43 21.1	
comp=Z,3.7nm,0.2s							
PATCX	Punta Patache	2.48	301	i P	Pn	07 41 52.1	+0.4
PATCX				i S	Sn	07 42 26.1	+0.4
PATCX				IAML		07 42 27.9	
comp=E,263nm,0.2s							
HMBC	Humberstone	2.62	314	i P	Pn	07 41 53.2	-0.2
HMBC				i S	Sn	07 42 29.0	+0.2
HMBC				IAML		07 42 32.8	
comp=E,171nm,0.4s							
PSGC	Pisagua	3.27	320	i P	Pn	07 42 00.4	-0.6
PSGC				i S	Sn	07 42 41.5	-0.8
PSGC				IAML		07 42 43.9	
comp=E,57nm,0.6s							
MNMC	Minye Minye	3.38	331	i P	Pn	07 42 02.9	+0.4
MNMC				i S	Sn	07 42 45.4	+0.3
MNMC				IAML		07 42 47.9	
comp=E,152nm,0.7s							

*JMA **05** 08:01:23.8, 24°.10N×122°.12E, h38km±2km, M2.4*

*ISCJB **05** 08:01:24.3±0.4, 24°.18N±0°.03×122°.15E±0°.02, h31km±3km, Error ellipse: s-maj=4.9km s-min=2.7km az=159.6*

*TAP **05** 08:01:24.3, 24°.20N×122°.13E, h25km, ML3.1, D*

ISC 05 08:01:23.5±1.3, 24°.14N±0°.03×122°.16E±0°.03, h21km±4km, n34, σ0§61/59, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ENA	Nanau	0.48	307	P	Pb	08 01 33.8	+0.6
baz=302							
ENA				eS	Sb	08 01 40.6	+0.8
baz=302							
TWD	Chiawan	0.52	263	eP	Pb	08 01 34.7	+0.7
baz=255							
TWD				eS	Sn	08 01 42.5	-1.4
baz=255							
TWC	Suao	0.55	329	P	Pb	08 01 34.5	0.0
baz=328							
TWC				eS	Sb	08 01 41.4	-0.5
baz=328							
EGS		0.73	343	eP	Pn	08 01 38.2	-0.5
baz=345							
EGS				eS	Sb	08 01 47.0	-0.1
baz=345							
TWE	Neicheng	0.73	322	eP	Pb	08 01 37.9	+0.3
baz=321							
TWE				eS	Sb	08 01 47.3	+0.1
baz=321							
ENTT	Nioudou	0.74	313	eP	Pb	08 01 38.0	+0.4
baz=310							
ENTT				eS	Sb	08 01 47.5	+0.2
baz=310							
ESL	Shilin	0.74	244	eP	Pb	08 01 37.7	0.0
baz=238							
ESL				eS	Sn	08 01 48.5	-0.9
baz=238							
NNS	Nan Shan	0.78	293	eP	Pb	08 01 38.8	+0.3
baz=288							
NNS				eS	Sb	08 01 49.1	+0.5
baz=288							
JYNG	Yonagunijimaku	0.78	66	P	Pn	08 01 39.1	-0.2
JYNG				eS	Sn	08 01 50.7	+0.4
WHF	Hehuan Shan	0.82	270	eS	Sb	08 01 49.9	-0.2
baz=265							
YOJ	Yonaguni jima	0.84	67	P	Pn	08 01 40.0	-0.1
YOJ				eS	Sn	08 01 51.7	-0.1
TWB1	Santiao Chiao	0.88	350	eP	Pb	08 01 40.1	+0.1
baz=351							
TWB1				eS	Sb	08 01 50.9	-0.4
baz=351							
NSK	Sanguang	0.91	306	eP	Pb	08 01 40.6	0.0
baz=304							
NSK				eS	Sb	08 01 51.8	-0.4
baz=304							
TWT	Tachien	0.91	277	eP	Pn	08 01 41.2	0.0
baz=272							
TWT				eS	Sb	08 01 52.8	+0.5
baz=272							
NWF	Wu-fen Shan	0.99	340	eP	Pb	08 01 41.2	-0.8
baz=339							
NWF				eS	Sb	08 01 54.8	+0.2
baz=339							
WDT	Danda	1.02	248	eS	Sb	08 01 55.6	0.0
baz=243							
TWF1	Yuli	1.11	225	eP	Pn	08 01 43.3	-0.6
baz=221							
TWF1				eS	Sn	08 01 59.5	+0.8
baz=221							
SMLT	Sun Moon Lake	1.18	258	eP	Pn	08 01 44.7	-0.2
baz=253							
SMLT				eS	Sb	08 01 60.0	-0.2
baz=253							
TYC	Yuchr	1.22	259	eP	Pn	08 01 45.4	+0.1
baz=255							
TYC				eS	Sn	08 02 01.1	0.0
baz=255							
TWQ1	Liyutan	1.28	280	eS	Sn	08 02 02.2	-0.6
baz=276							
YUS	Yu-Shan	1.28	240	eP	Pn	08 01 46.9	+0.2
baz=236							
YUS				eS	Sn	08 02 02.5	-1.0
baz=236							
ALS	Alishan	1.39	243	eS	Sn	08 02 05.6	-0.3
baz=240							
ELDTW	Lidau	1.41	228	eS	Sn	08 02 05.4	-0.8
baz=224							
IRIF	Iriomote-Funau	1.45	82	P	Pn	08 01 48.7	+0.3
IRIF				S	Sb	08 02 07.7	0.0
CHN5	Tsauling	1.46	249	eP	Pb	08 01 50.1	0.0
baz=245							
CHN5				eS	Sb	08 02 08.0	-0.3
baz=245							
CHN4	Tsaushan	1.64	242	eP	Pn	08 01 51.5	+0.3
baz=238							
CHN4				eS	Sn	08 02 12.3	+0.8
baz=238							
TWG	Pinlang	1.65	217	eS	Sn	08 02 11.7	-0.2
baz=214							
WTP	Ta-pu	1.68	238	eS	Sn	08 02 13.0	+0.5
baz=235							
JKRS	Kuro-shima	1.69	86	P	Pn	08 01 52.8	+1.0
CHN1	Nanshi	1.77	238	eS	Sb	08 02 16.4	-0.8
baz=235							
SGST	Jiashian	1.79	234	eP	Pb	08 01 55.0	-0.7
baz=231							
SGST				eS	Sn	08 02 16.3	+1.0
baz=231							
JIJ	Ishigaki jima	1.82	83	P	Pn	08 01 53.9	+0.3
JIJ				S	Sn	08 02 15.3	-0.8
JISG	Ishigakijimahi	2.01	77	P	Pn	08 01 56.6	+0.4
JISG				S	Sn	08 02 20.1	-0.6
EAST	Anshuo	2.13	215	eP	Pn	08 01 59.4	+1.6
baz=212							
EAST				eS	Sb	08 02 25.9	-1.4
baz=212							

*IDC **05** 08:13:36.8±1.0, 1°.47S×134°.86E, h0km, mb3.8/4, mb1 4.1/6, mb1mx3.7/38, mbtmp3.9/6, ML3.9/2, Error ellipse: s-maj=54.5km s-min=20.8km az=88.0*

*ISCJB **05** 08:13:38.7±0.9, 1°.49S±0°.09×134°.60E±0°.06, h29km, mb3.8/4, Error ellipse: s-maj=12.6km s-min=8.1km az=14.8*

*DJA **05** 08:13:40.7±1.5, 1°.S±7°.×13°.4E±°, h15km±3km, M4.5/3, MLv4.5/3*

ISC 05 08:13:41.0±0.9, 1°.50S±0°.09×134°.52E±0°.08, h29km, n12, σ1§40/16, mb3.9/4, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RKPI	Ransiki, Papua	0.34	269	P	Pb

mb1 3.7/8, mb1mx3.4/57, mbtmp3.7/8, ML3.7/1, MS2.6/1, Ms1 2.6/1, ms1mx2.2/29, Error ellipse: s-maj=41.5km s-min=19.2km az=91.0

ISC 05 08:37:45.4±1.0, 16°.6N±0°.1×147°.7E±0°.2, h35km, n9, σ1§24/10, mb3.7/7, Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**4.06**	**223**	P	**Pn**	**08 38 46.4**	**+1.3**
	4.5nm,0.3s,baz=342,slow=19,SNR=2.3						
GUMO				S	**Sn**	**08 39 30.0**	**-1.5**
	16nm,0.3s,baz=105,slow=20,SNR=5.3						
GUMO				LR	LR	08 40 33.5	
	comp=Z,72nm,18.6s,baz=122,slow=41						
MJAR	**Matsushiro Arr**	**21.56**	**339**	P	**P**	**08 42 31.9**	**0.0**
	1.5nm,0.5s,baz=167,slow=10,SNR=6.6						
WRA	**Warramunga Arr**	**38.63**	**200**	P	**P**	**08 45 06.7**	**+1.2**
	0.9nm,0.6s,baz=24,slow=9.4,SNR=11						
ASAR	**Alice Springs**	**42.24**	**199**	P	**P**	**08 45 34.4**	**-1.0**
	0.3nm,0.8s,baz=23,slow=7.3,SNR=3.0						
SONM	**Songino Array**	**45.95**	**322**	P	**P**	**08 46 04.6**	**-0.5**
	0.9nm,0.3s,baz=130,slow=5.8,SNR=3.1						
MKAR	**Makanchi Array**	**61.28**	**315**	P	**P**	**08 47 57.7**	**+0.4**
	0.2nm,0.3s,baz=92,slow=8.5,SNR=3.6						
ILAR	**Eielson Array**	**64.68**	**26**	P	**P**	**08 48 18.8**	**-0.7**
	0.4nm,0.9s,baz=247,slow=7.5,SNR=3.6						
YKA	**Yellowknife Ar**	**78.93**	**28**	P	**P**	**08 49 46.2**	**+1.1**
	0.5nm,0.7s,baz=283,slow=5.6,SNR=13						
LPAZ	**La Paz**	**145.66**	**95**	PKPbc	**PKPdf**	**08 57 20.3**	**-1.5**
	0.6nm,0.5s,baz=213,slow=4.4,SNR=7.9						

CASC 05 08:41:57.7±2.8, 12°.96N×89°.25W, h37km±327km, MD3.9, ML3.7, 2C-1D, Off coast of central America

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LFRS	**El Faro**	**0.69**	**15**	⇑*i*P	Pn	08 42 11.0	-0.1
COLS	**Colinas**	**0.71**	**356**	*i*P	Pn	08 42 11.3	-0.1
COLS				*e*S	Sn	08 42 21.3	+0.2
SNET	**Serv Nac Est T**	**0.73**	**1**	*i*P	Pn	08 42 11.8	+0.2
SNET				*e*S	Sn	08 42 21.7	+0.3
SNET				AML	AML	08 42 22.8	
	comp=Z,3μm,0.3s						
SNVI	**San Vicente**	**0.77**	**31**	*e*P	Pn	08 42 12.2	+0.1
SNVI				*e*S	Sn	08 42 23.4	+0.9
BOQS	**Boqueron**	**0.78**	**358**	*i*P	Pn	08 42 12.4	+0.1
BOQS				*e*S	Sn	08 42 22.6	-0.3
LFU	**La Fuente**	**0.80**	**9**	*i*P	Pn	08 42 12.9	+0.4
LFU				*e*S	Sn	08 42 24.2	+0.9
LBRS	**Las Brisas**	**0.80**	**14**	*i*P	Pn	08 42 12.8	+0.2
TECA	**Tecapa**	**0.90**	**53**	*e*P	Pn	08 42 14.8	+0.8
SBLS	**San Blas**	**0.95**	**337**	*e*P	Pn	08 42 15.0	+0.2
SNJE	**San Jose**	**0.97**	**339**	*e*P	Pn	08 42 15.4	+0.4
MONT	**Ecomontaæa**	**0.98**	**337**	*e*P	Pn	08 42 15.6	+0.4
RTR	**El Retiro**	**1.01**	**338**	*e*P	Pn	08 42 15.9	+0.3
PACA	**Pacayal**	**1.03**	**60**	⇑*i*P	Pn	08 42 16.8	+1.0
LCY	**Lacayo**	**1.04**	**63**	⇓*i*P	Pn	08 42 16.9	+1.1
LCY				*e*S	Sn	08 42 31.1	+1.9
VSM	**San Miguel**	**1.06**	**63**	*i*P	Pn	08 42 17.4	+1.2
RBDL	**Robledal**	**1.23**	**340**	*e*P	Pn	08 42 18.9	+0.4
IXG	**Ixpaco**	**1.69**	**316**	*e*P	Pn	08 42 24.5	-0.3
IXG				*e*S	Sn	08 42 44.6	-0.7
TGUH	**Tegucigalpa,Un**	**2.21**	**60**	*e*P	Pn	08 42 32.4	+0.6
MOMN	**Momotombo**	**2.70**	**101**	*e*P	Pn	08 42 38.8	+0.2
MOMN				*e*S	Sn	08 43 08.2	-1.8
COPN	**Copaltepe**	**2.70**	**106**	*e*P	Pn	08 42 39.5	+0.8
COPN				*e*P	Pn	08 42 40.2	+1.6
COPN				*e*S	Sn	08 43 08.5	-1.6
ESTN	**Estel**	**2.81**	**87**	*e*P	Pn	08 42 41.0	+0.8
TISN	**Laguna Tiscapa**	**3.02**	**105**	*e*P	Pn	08 42 45.1	+2.1
TISN				*e*S	Sn	08 43 16.5	-1.4

NIED ***05*** *08:42:00, 37°.80N×142°.50E, h38km, Mw3.6 Best double couple: M₀2.73000×10¹⁴ NP1:ϕs268.00000°, δ52.00000°, λ21.00000°. NP2:ϕs165.00000°, δ74.00000°, λ141.00000°.*

JMA 05 08:42:49.6±0.2, 37°.76N×142°.45E, h13km±4km, M3.9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.11**	**309**	P	Pb	08 43 10.1	-0.6
JIO				S	Sb	08 43 24.4	-0.6
JFK	**Kawauchi**	**1.31**	**253**	P	Pn	08 43 13.6	-0.1
JFK				S	Sb	08 43 30.9	0.0
JMM	**Marumori**	**1.32**	**275**	P	Pn	08 43 13.7	0.0
JMM				S	Sb	08 43 30.7	-0.3
ONAJ	**Iwakimizuishiy**	**1.47**	**244**	P	Pn	08 43 15.9	+0.1
ONAJ				*e*S	Sn	08 43 35.0	0.0
JOU	**Okura**	**1.53**	**294**	P	Pn	08 43 17.2	+0.5
JFT	**Otama**	**1.69**	**262**	P	Pb	08 43 20.1	-0.5
JFT				S	Sb	08 43 42.2	+0.3
JHO	**Hitachi**	**1.89**	**233**	P	Pn	08 43 21.7	+0.1
MAT	**Matsushiro**	**3.60**	**252**	P	Pn	08 43 47.6	+2.5
MAT				*e*S	Sn	08 44 31.1	+3.6

AZER ***05*** *08:43:32.6±99.0, 42°.41N×43°.18E, h5km±16km, Error ellipse: s-maj=209.6km s-min=9.0km az=296.0*
TIF ***05*** *08:43:35.6, 42°.57N×43°.47E, h15km*
CSEM ***05*** *08:43:36.8±0.1, 42°.55N×43°.42E, h2km, ML3.5, Error ellipse: s-maj=3.4km s-min=2.5km az=111.0*
MOS ***05*** *08:43:36.9±0.8, 42°.57N×43°.46E, h10km, mb4.2/1, Error ellipse: s-maj=0.1km s-min=0.0km az=113.3*
DDA ***05*** *08:43:36.1, 42°.46N×43°.37E, h2km, Ml3.8*

ISC 05 08:43:36.4±0.7, 42°.55N±0°.01×43°.49E±0°.02, h9km±4km, n102, σ1§47/167, 13C-13D, Western Caucasus

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONI	**Oni**	**0.05**	**325**	P	**Pg**	**08 43 38.4**	**0.0**
ONI				S	**Sg**	**08 43 40.0**	**+0.3**
ONI	**Oni**	**0.05**	**325**	PG	**Pg**	**08 43 38.4**	**0.0**
ONI	**Oni**	**0.05**	**325**	P	**Pg**	**08 43 38.4**	**0.0**
ONI				S	**Sg**	**08 43 40.1**	**+0.3**
DIGR	**Digorskoe uzhe**	**0.35**	**11**	⇓*i*PG	**Pb**	**08 43 43.1**	**-1.9**
DIGR				*i*S	**Sb**	**08 43 49.0**	**-1.8**
DIGR	**Digorskoe uzhe**	**0.35**	**11**	*i*Pg	**Pb**	**08 43 43.1**	**-1.9**
DIGR				*i*Sg	**Sb**	**08 43 49.0**	**-1.8**
ZEI	**Tsey**	**0.39**	**52**	⇓*i*PG	**Pb**	**08 43 44.4**	**-1.1**
ZEI				*i*S	**Sb**	**08 43 50.4**	**-1.3**
ZEI	**Tsey**	**0.39**	**52**	*i*Pg	**Pb**	**08 43 44.4**	**-1.1**
ZEI				*i*Sg	**Sb**	**08 43 50.4**	**-1.3**
LACR	**Lac**	**0.66**	**65**	⇓*i*PG	**Pb**	**08 43 49.2**	**-0.9**
LACR				*i*S	**Sb**	**08 43 58.6**	**-0.8**
LACR	**Lac**	**0.66**	**65**	*i*Pg	**Pb**	**08 43 49.2**	**-0.9**
LACR				*i*Sg	**Sb**	**08 43 58.6**	**-0.8**
KORR	**Kora**	**0.68**	**38**	⇑*i*PG	**Pn**	**08 43 50.3**	**-2.0**
KORR				*e*S	**Sn**	**08 44 00.4**	**-2.7**
KORR	**Kora**	**0.68**	**38**	*i*Pg	**Pn**	**08 43 50.3**	**-2.0**
KORR				*e*Sg	**Sn**	**08 44 00.4**	**-2.7**
GUDG	**Gudauri**	**0.74**	**96**	P	**Pn**	**08 43 51.4**	**-1.8**
GUDG				S	**Sb**	**08 44 01.6**	**-0.2**
GUDG	**Gudauri**	**0.74**	**96**	P	**Pn**	**08 43 51.4**	**-1.8**
LSNR	**Lesken**	**0.77**	**19**	*e*PG	**Pn**	**08 43 51.5**	**-2.0**
LSNR				*e*S	**Sn**	**08 44 02.7**	**-2.5**
LSNR	**Lesken**	**0.77**	**19**	*e*Pg	**Pn**	**08 43 51.5**	**-2.0**
LSNR				*e*Sg	**Sn**	**08 44 02.7**	**-2.5**
ARNR	**Ardon**	**0.86**	**43**	*i*PG	**Pn**	**08 43 54.1**	**-0.6**
ARNR				*i*S	**Sn**	**08 44 06.7**	**-0.7**
ARNR				pmax	pmax		
	comp=Z,146nm,0.2s						
ARNR				smax	smax		
	comp=E,287nm,0.2s						
ARNR	**Ardon**	**0.86**	**43**	*i*Pg	**Pn**	**08 43 54.1**	**-0.6**
	comp=E,146nm,0.2s						
ARNR				*i*Sg	**Sn**	**08 44 06.7**	**-0.7**
NEY	**Neytrino**	**0.90**	**321**	*c*iPG	**Pg**	**08 43 52.8**	**-0.9**
NEY	**Neytrino**	**0.90**	**321**	*i*Pg	**Pg**	**08 43 52.8**	**-0.9**
STDR	**Stavd-Durt**	**0.92**	**27**	⇓*i*PG	**Pn**	**08 43 55.7**	**+0.2**
STDR				*e*S	**Sn**	**08 44 09.2**	**+0.3**
STDR	**Stavd-Durt**	**0.92**	**27**	*i*Pg	**Pn**	**08 43 55.7**	**+0.2**
STDR				*e*Sg	**Sn**	**08 44 09.2**	**+0.3**
NCK	**Nalchik**	**0.95**	**5**	*c*iPG	**Pn**	**08 43 55.4**	**-0.5**
NCK	**Nalchik**	**0.95**	**5**	*i*Pg	**Pn**	**08 43 55.4**	**-0.5**
VLKR	**Vladikavkaz**	**1.00**	**60**	*e*Pg	**Pn**	**08 43 57.1**	**+0.4**
VLKR				*e*S	**Sn**	**08 44 11.2**	**+0.2**
VLKR				pmax	pmax		
	comp=Z,153nm,0.3s						
VLKR				smax	smax		
	comp=N,272nm,0.4s						
VLKR	**Vladikavkaz**	**1.00**	**60**	*e*Pg	**Pn**	**08 43 57.1**	**+0.4**
	comp=N,153nm,0.3s						
VLKR				*e*Sg	**Sn**	**08 44 11.2**	**+0.2**
	comp=N,272nm,0.4s						
DUS	**Dusheti**	**1.01**	**117**	P	**Pn**	**08 43 57.9**	**+1.1**
DUS				S	**Sn**	**08 44 12.4**	**+1.2**
DUS	**Dusheti**	**1.01**	**117**	PG	**Pn**	**08 43 57.9**	**+1.1**
DUS				S	**Sn**	**08 44 12.8**	**+1.6**
DUS	**Dusheti**	**1.01**	**117**	P	**Pn**	**08 43 57.9**	**+1.1**
DUS				S	**Sn**	**08 44 12.8**	**+1.6**
BTKR	**Batakoyurt**	**1.13**	**43**	⇓*i*PG	**Pg**	**08 44 00.3**	**+2.2**
BTKR				*e*S	**Sn**	**08 44 16.3**	**+2.3**
BTKR	**Batakoyurt**	**1.13**	**43**	*i*Pg	**Pg**	**08 44 00.3**	**+2.2**
BTKR				*e*Sg	**Sn**	**08 44 16.3**	**+2.3**
KMGR	**Komgaron**	**1.13**	**63**	*e*PG	**Pg**	**08 43 58.4**	**+0.2**
KMGR				*e*S	**Sg**	**08 44 13.9**	**+1.0**
KMGR	**Komgaron**	**1.13**	**63**	*e*Pg	**Pg**	**08 43 58.4**	**+0.2**
KMGR				*e*Sg	**Sg**	**08 44 13.9**	**+1.0**
AKH	**Akhalkalaki**	**1.14**	**180**	P	**Pn**	**08 43 57.5**	**-1.3**
AKH				S	**Sg**	**08 44 13.5**	**+0.4**
AKH	**Akhalkalaki**	**1.14**	**180**	PG	**Pb**	**08 43 57.6**	**-0.8**
AKH				S	**Sg**	**08 44 13.6**	**+0.4**
AKH	**Akhalkalaki**	**1.14**	**180**	P	**Pb**	**08 43 57.6**	**-0.8**
AKH				S	**Sg**	**08 44 13.6**	**+0.4**
EPOS	**Posof**	**1.19**	**209**	P	**Pn**	**08 43 58.0**	**-1.4**
EPOS				S	**Sg**	**08 44 14.7**	**-0.1**
EPOS	**Posof**	**1.19**	**209**	*i*P	**Pn**	**08 43 58.0**	**-1.4**
EPOS				*i*S	**Sg**	**08 44 14.7**	**-0.1**
TBLG	**Delisi**	**1.24**	**131**	P	**Pg**	**08 43 59.8**	**-0.4**
TBLG				S	**Sg**	**08 44 17.4**	**+1.1**
TBLG	**Delisi**	**1.24**	**131**	PG	**Pg**	**08 43 59.8**	**-0.4**
TBLG				S	**Sg**	**08 44 17.4**	**+1.1**
TBLG	**Delisi**	**1.24**	**131**	P	**Pg**	**08 43 59.8**	**-0.4**
TBLG				S	**Sg**	**08 44 17.6**	**+1.3**
SEAG	**Tbilisi Sea**	**1.25**	**128**	P	**Sb**	**08 44 18.4**	**+1.9**
BGD	**Bogdanovka**	**1.29**	**176**	P	**Pb**	**08 44 00.0**	**-0.9**
BGD				S	**Sg**	**08 44 17.6**	**-0.3**
BGD	**Bogdanovka**	**1.29**	**176**	P	**Pb**	**08 44 00.1**	**-0.9**
BGD				S	**Sg**	**08 44 17.6**	**-0.3**
PRTR	**Priterechnaya**	**1.33**	**26**	*e*PG	**Pg**	**08 44 02.3**	**+0.3**
PRTR	**Priterechnaya**	**1.33**	**26**	*e*Pg	**Pg**	**08 44 02.3**	**+0.3**
KZR	**Kazreti**	**1.36**	**149**	P	**Sb**	**08 44 19.7**	**+0.1**
TRKR	**Terskaya**	**1.48**	**37**	*i*PG	**Pg**	**08 44 05.2**	**+0.3**
TRKR				*e*S	**Sg**	**08 44 26.3**	**+2.2**
TRKR				pmax	pmax		
	comp=Z,52nm,0.2s						
TRKR				smax	smax		
	comp=N,191nm,0.3s						
TRKR	**Terskaya**	**1.48**	**37**	*i*Pg	**Pg**	**08 44 05.2**	**+0.3**
	comp=N,52nm,0.2s						
TRKR				*e*Sg	**Sg**	**08 44 26.3**	**+2.2**
	comp=N,191nm,0.3s						
KIV	**Kislovodsk**	**1.52**	**338**	*i*PG	**Pg**	**08 44 04.7**	**-0.9**
KIV	**Kislovodsk**	**1.52**	**338**	*i*Pg	**Pg**	**08 44 04.7**	**-0.9**
DGRG	**David-gareji**	**1.78**	**127**	P	**Pg**	**08 44 10.0**	**-0.6**
DGRG	**David-gareji**	**1.78**	**127**	PN	**Pg**	**08 44 10.0**	**-0.6**
DGRG	**David-gareji**	**1.78**	**127**	P	**Pg**	**08 44 10.0**	**-0.6**
DGRG				S	**Sg**	**08 44 36.2**	**+2.4**
ARTV	**Artvin**	**1.80**	**221**	P	**Pb**	**08 44 08.2**	**-1.4**
ARTV				S	**Sb**	**08 44 31.8**	**-0.5**
ARTV	**Artvin**	**1.80**	**221**	*i*P	**Pb**	**08 44 08.2**	**-1.4**
ARTV				*i*S	**Sb**	**08 44 31.8**	**-0.5**
DBOC	**Borcka**	**1.82**	**229**	P	**Pb**	**08 44 08.1**	**-1.7**
DBOC				S	**Sb**	**08 44 32.2**	**-0.5**
DBOC	**Borcka**	**1.82**	**229**	*i*P	**Pb**	**08 44 08.1**	**-1.7**
DBOC				*i*S	**Sb**	**08 44 32.2**	**-0.5**
GROC	**Groznyy**	**1.82**	**68**	*e*PN	**Pg**	**08 44 10.6**	**-0.6**
GROC				*e*S	**Sg**	**08 44 34.9**	**+0.1**
GROC	**Groznyy**	**1.82**	**68**	*e*Pn	**Pg**	**08 44 10.6**	**-0.6**
GROC				*e*Sg	**Sg**	**08 44 34.9**	**+0.1**
EAK	**Akyaka**	**1.87**	**177**	P	**Pb**	**08 44 09.5**	**-1.3**
EAK				S	**Sg**	**08 44 34.9**	**-1.5**
EAK	**Akyaka**	**1.87**	**177**	*i*P	**Pb**	**08 44 09.5**	**-1.3**
EAK				*i*S	**Sg**	**08 44 34.9**	**-1.5**
DAGI	**Agillar**	**1.89**	**219**	*i*P	**Pb**	**08 44 09.8**	**-1.2**
DAGI				*i*S	**Sb**	**08 44 34.2**	**-0.6**
DBAD	**Bademkaya**	**2.04**	**222**	P	**Pb**	**08 44 11.7**	**-1.9**
DBAD				S	**Sb**	**08 44 38.7**	**-0.4**
DBAD	**Bademkaya**	**2.04**	**222**	*i*P	**Pb**	**08 44 11.7**	**-1.9**
DBAD				*i*S	**Sb**	**08 44 38.6**	**-0.4**
QZX	**Qazax, Azerbai**	**2.05**	**136**	⇓P	**Pb**	**08 44 12.6**	**-1.2**
QZX				⇑S	**Sb**	**08 44 40.1**	**+0.6**
QZX	**Qazax, Azerbai**	**2.05**	**136**	P	**Pb**	**08 44 12.6**	**-1.2**
QZX				S	**Sb**	**08 44 40.1**	**+0.6**
DDEM	**Demirkent**	**2.11**	**219**	P	**Pb**	**08 44 13.6**	**-1.2**
DDEM				S	**Sb**	**08 44 41.6**	**+0.5**
DDEM	**Demirkent**	**2.11**	**219**	*i*P	**Pb**	**08 44 13.6**	**-1.2**
DDEM				*i*S	**Sb**	**08 44 41.6**	**+0.5**
GDB	**GEDABAY**	**2.50**	**136**	⇑P	**Pb**	**08 44 19.3**	**-2.2**
	SNR=3.3						
GDB				⇑S	**Sb**	**08 44 52.5**	**+0.1**
GDB	**GEDABAY**	**2.50**	**136**	P	**Pb**	**08 44 19.3**	**-2.2**
	SNR=3.3						
GDB				S	**Sb**	**08 44 52.5**	**+0.1**
ZKTA	**Zakatala**	**2.50**	**110**	⇓P	**Pb**	**08 44 19.8**	**-1.7**
	SNR=6.3						
ZKTA				⇑S	**Sg**	**08 44 55.5**	**-1.4**
GOF	**Gofitskoye**	**2.53**	**353**	⇑*e*PN	**Pg**	**08 44 26.0**	**+1.2**
GOF				*i*S	**Sg**	**08 44 57.4**	**-0.1**
GOF	**Gofitskoye**	**2.53**	**353**	*i*Sb	**Sg**	**08 44 57.4**	**-0.1**
GNBR	**Gunib**	**2.58**	**92**	*e*PN	**Pb**	**08 44 21.9**	**-0.9**
GNBR	**Gunib**	**2.58**	**92**	*e*Pn	**Pb**	**08 44 21.9**	**-0.9**
GNI	**Garni**	**2.58**	**158**	*e*PN	**Pb**	**08 44 21.8**	**-1.1**
GNI	**Garni**	**2.58**	**158**	*e*Pn	**Pb**	**08 44 21.8**	**-1.1**
GANJ	**Ganja**	**2.85**	**131**	⇓P	**Pn**	**08 44 22.7**	**+0.6**
	SNR=4.5						
GANJ				⇓S	**Sb**	**08 45 01.8**	**-0.7**
GANJ	**Ganja**	**2.85**	**131**	P	**Pn**	**08 44 22.7**	**+0.6**
	SNR=4.5						
GANJ				S	**Sb**	**08 45 01.8**	**-0.7**
SOC	**Sochi**	**2.95**	**292**	*e*PN	**Pb**	**08 44 28.7**	**-0.4**
SOC				*e*		08 45 05.6	
SOC				pmax	pmax		
	comp=Z,10.0nm,0.6s						
SOC				smax	smax		
	comp=N,71nm,0.6s						
SOC				smax	smax		
	comp=E,37nm,0.6s						
SOC	**Sochi**	**2.95**	**292**	*e*Sb	**Sb**	**08 45 05.6**	**+0.4**
	comp=E,71nm,0.6s						
SEKA	**Sheki**	**3.08**	**115**	⇓P	**Pn**	**08 44 26.8**	**+1.5**
	SNR=7.1						
SEKA				⇑S	**Sb**	**08 45 08.3**	**-0.7**
SEKA	**Sheki**	**3.08**	**115**	P	**Pn**	**08 44 26.8**	**+1.5**
	SNR=7.1						
SEKA				S	**Sb**	**08 45 08.3**	**-0.7**
ERZM	**Erzurum**	**3.09**	**212**	*i*P	**Pg**	**08 44 33.7**	**-1.9**
MNGR	**Mingechevir, A**	**3.23**	**122**	⇑P	**Pn**	**08 44 29.5**	**+2.3**
MNGR				⇓S	**Sb**	**08 45 13.8**	**+0.5**
MNGR	**Mingechevir, A**	**3.23**	**122**	P	**Pn**	**08 44 29.5**	**+2.3**
MNGR				S	**Sb**	**08 45 13.8**	**+0.5**
AKT	**Akhty**	**3.34**	**107**	*e*PN	**Pn**	**08 44 30.1**	**+1.3**
AKT	**Akhty**	**3.34**	**107**	*e*Pn	**Pn**	**08 44 30.1**	**+1.3**
QSAR	**Qusar**	**3.70**	**105**	⇑P	**Pb**	**08 44 37.5**	**-4.5**
XNQ	**Khinaliq**	**3.74**	**110**	⇓P	**Pn**	**08 44 35.9**	**+1.4**
XNQ				⇓S	**Sb**	**08 45 22.7**	**-5.4**
XNQ	**Khinaliq**	**3.74**	**110**	P	**Pn**	**08 44 35.9**	**+1.4**
XNQ				S	**Sb**	**08 45 22.7**	**-5.4**
ZRD	**Zardab**	**3.89**	**124**	⇑S	**Sb**	**08 45 30.0**	**-2.2**
ZRD	**Zardab**	**3.89**	**124**	S	**Sb**	**08 45 30.0**	**-2.2**
QUBA	**Quba, Azerbaij**	**3.92**	**106**	⇑P	Pb	08 44 40.2	-5.5
QUBA	**Quba, Azerbaij**	**3.92**	**106**	P	Pb	08 44 40.2	-5.5
ANN	**Anapa**	**4.93**	**299**	*e*PN	**Pn**	**08 44 52.7**	**+2.1**
ANN				*i*S	**Sn**	**08 45 50.6**	**+2.8**
ANN				pmax	pmax		
	comp=Z,7.0nm,0.7s						
ANN	**Anapa**	**4.93**	**299**	*e*Pn	**Pn**	**08 44 52.7**	**+2.1**
	comp=Z,7.0nm,0.7s						
ANN				*i*Sn	**Sn**	**08 45 50.6**	**+2.8**
BRTR	**Keskin Array B**	**7.95**	**252**	*i*P	Pn	08 45 36.5	+4.2
BRTR				pmax	pmax		
	comp=Z,1.0nm,0.5s						
OBN	**Obninsk**	**13.36**	**343**	*e*P	**Pn**	**08 46 48.4**	**+2.4**
OBN				pmax	pmax		
	comp=Z,2.0nm,0.6s						
OBN	**Obninsk**	**13.36**	**343**	*e*P	**Pn**	**08 46 48.4**	**+2.4**
	comp=Z,2.0nm,0.6s						
ARU	**Arti**	**16.94**	**30**	*e*P	**P**	**08 47 35.4**	**0.0**
ARU				pmax	pmax		
	comp=Z,1.0nm,0.9s						
ARU	**Arti**	**16.94**	**30**	*e*P	**P**	**08 47 35.4**	**0.0**
	comp=Z,1.0nm,0.9s						

IDC ***05*** *08:45:19.3±0.3, 0°.13S×124°.27E, h0km, mb4.9/45, mb1 4.9/47, mb1mx4.8/57, mbtmp4.9/47, ML4.3/2, MS3.7/23, Ms1 3.7/23, ms1mx3.5/48, Error ellipse: s-maj=13.6km s-min=8.7km az=73.0*
ISCJB ***05*** *08:45:25.9±0.4, 0°.19S±0°.02×124°.56E±0°.02, h61km±4km, mb5.0/152, Error ellipse: s-maj=4.3km s-min=3.1km az=35.8*
MOS ***05*** *08:45:25.3±1.0, 0°.14S×124°.33E, h58km, mb5.4/39, Error ellipse: s-maj=11.6km s-min=5.9km az=113.4*
KLM ***05*** *08:45:27.1, 0°.12S×124°.68E, h44km, mb5.1, ML5.1, MS5.8*
GCMT ***05*** *08:45:29.0±0.2, 0°.22S×124°.54E, h41km, MWV5.0/68, Moment Tensor Solution. s53,c64; s68,c86; Duration: 0 Moment tensor: Scale 10¹⁶Nm; Mrr3.50±.17; Mθθ-1.94±.12; Mϕϕ-1.56±.14; Mrθ0.29±.10; Mϕθ-2.39±.08; Mϕr1.23±.11; Best double couple: M₀4.04300×10¹⁶ NP1:ϕs35.00000°, δ54.00000°, λ75.00000°. NP2: ϕs240.00000°, δ39.00000°, λ110.00000°. Principal axes: T 3.7970, Plg75.0000°, Azm258.0000°; N 0.4920, Plg12.0000°, Azm44.0000°; P -4.2890, Plg8.0000°, Azm136.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
NEIC ***05*** *08:45:29.0±0.6, 0°.20S×124°.48E, h73km±5km, mb5.1/54 Error ellipse: s-maj=5.3km s-min=3.7km az=67.0*
DJA ***05*** *08:45:29.1±0.4, 0°.5±2°×12°.5E±°, h48km±28km, M5.1/16, mb5.3/14, mB5.4/13, MLv5.4/16, Mw(mB)4.8/13, Mwp4.8/1*

ISC 05 08:45:28.0±0.4, 0°.17S±0°.03×124°.61E±0°.03, h62km±2km, h62km:pP-P, n425, σ1§43/495, mb5.1/152, 23C-6D, Southern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LUWI	**Luwuk**	**2.03**	**245**	P	**Pn**	**08 45 59.7**	**-0.2**
LUWI				S	**Sn**	**08 46 25.7**	**+1.4**
LUWI	**Luwuk**	**2.03**	**245**	*e*Pn	**Pn**	**08 45 59.4**	**-0.5**
LUWI				*e*Sn	**Sn**	**08 46 28.5**	**+4.2**
SANI	**Sanana**	**2.32**	**144**	P	**Pn**	**08 46 03.0**	**-0.9**
MRSI	**Marisa**	**2.75**	**283**	P	**Pn**	**08 46 06.1**	**-3.5**
LBMI	**Labuha**	**2.93**	**99**	P	**Pn**	**08 46 11.6**	**-0.5**
LBMI				S	**Sn**	**08 46 46.4**	**+0.3**
NLAI	**Namlea**	**3.94**	**141**	P	**Pn**	**08 46 24.4**	**-1.5**
NLAI				S	**Sn**	**08 47 07.6**	**-3.3**
SGSI	**Sangihe**	**3.94**	**13**	P	**Pn**	**08 46 30.0**	**+4.0**
MSAI	**Masohi**	**5.35**	**126**	P	**Pn**	**08 46 45.8**	**+0.5**
	502nm,0.8s,4μm2.0nm						
MSAI				S	**Sn**	**08 47 45.8**	**+0.3**
	502nm,0.8s,4μm2.0nm						
TTSI	**Tana Toraja**	**5.58**	**239**	P	**Pn**	**08 46 48.1**	**-0.3**
	785nm,0.8s,6μm2.4nm						
SWI	**Sorong**	**6.68**	**96**	P	**Pn**	**08 47 04.8**	**+1.2**
	146nm,0.8s,1μm0.7nm						
SIJI	**Sorong**	**6.69**	**96**	Pn	**Pn**	**08 47 04.0**	**+0.3**
	16nm,0.3s,baz=176,slow=19,SNR=2.2						
SIJI				Sn	**Sn**	**08 48 20.4**	**+1.8**
	15nm,0.3s,baz=299,slow=19,SNR=2.8						
BNDI	**Bandanaira**	**6.83**	**129**	P	**Pn**	**08 47 04.5**	**-1.1**
	606nm,1.2s,6μm2.5nm						
KAPI	**Kappang**	**6.84**	**225**	Pn	**Pn**	**08 47 05.2**	**-0.4**
	7.1nm,0.3s,baz=60,slow=11,SNR=17						
KAPI				Sn	**Sn**	**08 48 22.2**	**+0.1**
	6.1nm,0.3s,baz=8.4,slow=23,SNR=4.2						
KAPI				LR	LR	08 48 54.6	
	comp=Z,181nm,21.8s,baz=41,slow=32						
KAPI	**Kappang**	**6.84**	**225**	*e*Pn	**Pn**	**08 47 05.5**	**-0.2**
KAPI				Sn	**Sn**	**08 48 22.2**	**+0.1**
KAPI				*e*Sn	Sn	08 48 26.8	+4.7
BSSI	**Bau Bau, Buton**	**7.22**	**215**	P	**Pn**	**08 47 10.2**	**-0.8**
	158nm,1.1s,3μm0.8nm						
DAV	**Davao City (W)**	**7.25**	**8**	Pn	**Pn**	**08 47 14.3**	**+2.9**
	59nm,0.3s,baz=85,slow=0.9,SNR=12						
DAV				Sn	Sn	08 48 42

QIZ pmax pmax
comp=Z,11nm,0.8s
IPM Ipoh 24.01 281 *e*P **P 08 50 36.8 -0.4**
comp=Z,18nm,0.6s
SSLB Suanglung 24.08 352 *e*P **P 08 50 38.3 +0.6**
comp=Z,28nm,0.7s
GUMO Guam 24.28 55 P **P 08 50 40.8 +1.2**
comp=Z,27nm,0.3s,baz=10,0,slow=17,SNR=4.1
KULM Kulim 24.54 283 ⇑P **P 08 50 41.8 -0.2**
KULM Kulim 24.54 283 *e*P **P 08 50 41.5 -0.5**
comp=Z,12nm,0.7s
HKC Hong Kong Obse 24.54 336 P P 08 50 50.0 +8.1
WRKA Warakurna 24.98 172 P **P 08 50 45.8 -0.2**
baz=25,SNR=34
QIS Mount Isa 25.02 145 P **P 08 50 47.2 +0.8**
baz=25,SNR=39
SKLT Songkhla 25.02 287 P **P 08 50 53.2 +6.8**
AS31 Alice Springs 25.04 160 *e*P **P 08 50 47.5 +1.0**
comp=Z,14nm,1.3s
ASAR Alice Springs 25.04 160 P **P 08 50 46.4 -0.2**
comp=Z,9.5nm,0.8s,baz=332,slow=6.9,SNR=75
ASAR PcP **PcP 08 54 20.7 +0.6**
comp=Z,6.3nm,0.7s,baz=348,slow=2.1,SNR=15
ASAR S **S 08 55 08.4 +1.9**
comp=Z,5.2nm,1.0s,baz=349,slow=18,SNR=3.6
ASAR PKiKP **PKiKP 09 02 00.7 -0.9**
comp=Z,0.6nm,0.8s,baz=246,slow=0.9,SNR=6.2
ASAR LR LR 09 02 35.6
comp=Z,155nm,18.1s,baz=304,slow=41
AS01 Alice Springs 25.06 159 *e*P **P 08 50 46.1 -0.6**
AS01 *e*PcP **PcP 08 54 20.6 +0.5**
CHBT CHBT 25.56 301 P **P 08 50 52.2 +1.0**
comp=Z,136nm,1.0s,comp=Z,7μm
QZH Quanzhou 25.63 347 *e*P **P 08 50 52.5 +0.7**
QZH S **S 08 55 14.6 -1.1**
QZH LR LR
comp=Z,820nm,20.5s
TRTT Trang 26.09 288 P **P 08 50 57.2 +1.1**
comp=Z,28nm,1.4s
PANO Nakornpanom 26.16 312 P **P 08 50 56.8 +0.1**
comp=Z,81nm,1.0s
SRAK Srakaew 26.42 303 P **P 08 50 56.4 -2.6**
comp=Z,51nm,0.8s,comp=Z,540nm
SKNT Sakolnakorn 26.52 311 P **P 08 51 00.2 +0.2**
comp=Z,30nm,1.1s
KHON Khomkaen 27.04 308 P **P 08 51 05.0 +0.4**
comp=Z,43nm,0.9s
JOW Kunigami 27.07 7 P **P 08 51 05.4 +0.6**
comp=Z,6.8nm,0.4s,baz=179,slow=10,SNR=4.3
JOW LR LR 09 01 33.2
comp=Z,184nm,21.4s,baz=165,slow=36
SURT Suratani 27.26 290 P **P 08 51 07.5 +0.8**
comp=Z,8.7nm,1.1s
CHAI Chaiyaphum 27.45 307 P **P 08 51 08.2 -0.2**
comp=Z,18nm,0.9s,comp=Z,299nm
NONG Nongkai 27.82 312 P **P 08 51 11.1 -0.5**
comp=Z,38nm,0.9s,comp=Z,23μm
PHET Kaeng Krachan 27.97 299 P **P 08 51 14.2 +1.2**
comp=Z,13nm,1.0s
PBKT Sadao Pong 28.64 307 P **P 08 51 19.3 +0.4**
comp=Z,16nm,1.1s,comp=Z,856nm
LOEI Loei 28.93 309 P **P 08 51 18.5 -3.0**
comp=Z,35nm,0.9s
CTA Charters Tower 29.00 134 P **P 08 51 23.9 +1.9**
comp=Z,1.7nm,0.4s,baz=330,slow=14,SNR=3.1
CTA Charters Tower 29.00 134 P **P 08 51 24.0 +1.9**
CTAO Charters Tower 29.00 134 *e*P **P 08 51 23.1 +1.0**
CTAO pmax pmax
comp=Z,32nm,0.8s
CTAO Charters Tower 29.00 134 *e*P **P 08 51 23.1 +1.0**
comp=Z,32nm,0.8s
SRDT SRDT 29.06 301 P **P 08 51 24.3 +1.7**
comp=Z,72nm,1.1s,comp=Z,7μm
UTTA Uttaradit 29.62 308 P **P 08 51 27.8 +0.2**
comp=Z,12nm,0.9s,comp=Z,102nm
KHLT Khaolaem Dam 29.72 301 P **P 08 51 30.0 +1.5**
comp=Z,14nm,1.2s
NANT Nan 30.11 310 P **P 08 51 32.8 +0.9**
comp=Z,17nm,0.9s,comp=Z,138nm
SUKH Sukhothai 30.20 307 P **P 08 51 33.1 +0.3**
comp=Z,19nm,0.8s,comp=Z,137nm
LAMP Lampang 30.78 308 P **P 08 51 38.5 +0.7**
comp=Z,12nm,0.9s,comp=Z,158nm
KMBL Kambalda 31.14 185 P **P 08 51 39.9 -0.9**
baz=31
CRAI Chiangrai 31.21 312 P **P 08 51 41.8 +0.1**
comp=Z,92nm,1.1s
CM01 Chiang Mai Arr 31.25 308 *e*P **P 08 51 37.8 -4.2**
CM31 Chiang Mai Arr 31.28 308 *e*P **P 08 51 43.6 +1.3**
CMMT Chiang Mai 31.48 308 P **P 08 51 44.1 +0.1**
comp=Z,58nm,1.0s,comp=Z,638nm
CHTO Chiang Mai 31.48 308 P **P 08 51 44.1 +0.1**
comp=Z,261nm,1.0s,comp=Z,2μm
CHTO Chiang Mai 31.48 308 *e*P **P 08 51 44.2 +0.1**
CHTO *e* 08 54 37.2
CHTO pmax pmax
comp=Z,49nm,0.9s
CHTO Chiang Mai 31.48 308 *e*P **P 08 51 44.2 +0.1**
comp=Z,49nm,0.9s
CHTO *e*PcP **PcP 08 54 37.2 +1.2**
GYA Guiyang 31.62 328 P **P 08 51 47.9 +2.6**
GYA pP pP 08 52 02.4 +1.7
GYA sP sP 08 52 10.8 +2.8
GYA PP **PnPn 08 52 53.6 +2.5**
GYA PcP **PcP 08 54 38.0 +1.5**
GYA S **S 08 56 51.9 +1.7**
GYA sS sS 08 57 18.0 +1.7
GYA ScP **ScP 08 58 14.5 0.0**
GYA SS **SnSn 08 58 45.4 +3.7**
GYA ScS **ScS 09 02 12.0 -0.8**
GYA pmax pmax
comp=Z,20nm,0.8s
GYA pmax pmax
comp=Z,120nm,5.0s
GYA LR LR
comp=Z,580nm,17.4s
GYA LR LR
comp=Z,510nm,18.0s
GYA LR LR
comp=Z,550nm,18.2s
CBIJ Chichi jima 31.95 31 P **P 08 51 47.3 -0.7**
JCJ Chichijima 31.95 31 P **P 08 51 47.3 -0.7**
comp=Z,51nm,0.7s,baz=261,slow=21,SNR=6.2
CMAI Chiengmai2 32.04 310 P **P 08 51 49.1 0.0**
comp=Z,38nm,1.0s,comp=Z,3μm
WHN Wuhan 32.06 343 P **P 08 51 53.2 +4.2**
WHN LR LR
comp=Z,700nm,26.3s
NJ2 Nanjing 32.51 351 *e*P **P 08 51 52.8 0.0**
NJ2 pmax pmax
comp=Z,20nm,0.5s
KMI Kunming 32.86 322 P **P 08 51 59.2 +2.9**
KMI pmax pmax
comp=Z,17nm,0.9s
KMI pmax pmax
comp=Z,72nm,6.0s
ENH Enshi 33.52 336 *e*P **P 08 52 03.1 +1.3**
comp=Z,24nm,0.7s
JNU Nakatsue 33.63 10 P **P 08 52 01.8 -0.9**
comp=Z,47nm,1.0s,baz=198,slow=13,SNR=15
JNU LR LR 09 05 15.9
comp=Z,67nm,21.2s,baz=130,slow=36
JNU Nakatsue 33.63 10 *e*P **P 08 52 02.8 +0.1**
comp=Z,63nm,1.0s
BBOO Buckleboo 34.22 163 P **P 08 52 07.7 -0.1**
baz=34,SNR=6.3
BBOO Buckleboo 34.22 163 *e*P **P 08 52 07.6 -0.1**
comp=Z,18nm,1.1s
STKA Stephens Creek 35.39 155 P **P 08 52 18.1 +0.2**
comp=Z,7.9nm,0.6s,baz=328,slow=8.5,SNR=32
STKA LR LR 09 08 34.2
comp=Z,119nm,21.5s,baz=331,slow=39
STKA Stephens Creek 35.39 155 P **P 08 52 18.1 +0.2**
baz=35,SNR=19
STKA Stephens Creek 35.39 155 *e*P **P 08 52 18.4 +0.5**
STKA Stephens Creek 35.39 155 *e*P **P 08 52 18.4 +0.5**
comp=Z,3.3nm,1.0s
HTT Hallett 35.72 159 P **P 08 52 21.4 +0.6**
baz=36,SNR=4.8
JHJ Hachijo jima 2 36.06 22 LR LR 09 04 25.8
comp=Z,117nm,21.3s,baz=20,slow=32
CD2 Chengdu 36.71 329 P **P 08 52 29.0 -0.2**
CD2 pP pP 08 52 44.1 -0.7
CD2 PP **PnPn 08 53 53.9 -0.5**
CD2 S **S 08 58 09.6 +1.1**
CD2 sS sS 08 58 35.9 +1.0
CD2 pmax pmax
comp=Z,30nm,0.9s
CD2 pmax pmax
comp=Z,110nm,5.3s
CD2 LR LR
comp=Z,300nm,15.5s
CD2 LR LR
comp=Z,280nm,23.8s
CMSA Cobar Meteorol 37.04 149 P **P 08 52 33.2 +1.2**
baz=37,SNR=52
XAN Xi'an 37.08 338 P **P 08 52 32.6 +0.3**
XAN pmax pmax
comp=Z,26nm,0.9s
XAN pmax pmax
comp=Z,24nm,5.6s
INU Inuyama 37.18 17 *e*P **P 08 52 33.6 +0.4**
comp=Z,32nm,1.1s
KSAR Wonju Array Be 37.55 4 P **P 08 52 36.9 +0.8**
KSAR 08 54 54.3
KSAR Wonju Array Be 37.55 4 P **P 08 52 36.9 +0.8**
KSAR PcP **PcP 08 54 54.3 +1.2**
KSRS Korea Array 37.56 4 P **P 08 52 36.9 +0.6**
comp=Z,6.0nm,0.9s,baz=180,slow=10,SNR=22
KSRS PcP **PcP 08 54 54.3 +1.1**
comp=Z,5.1nm,0.9s,baz=198,slow=2.9,SNR=11
KSRS LR LR 09 08 21.6
comp=Z,105nm,21.8s,baz=182,slow=37
KS01 Wonju Array Si 37.58 4 *e*P **P 08 52 37.6 +1.2**
MAJO Matsushiro 38.65 18 *c i*P **P 08 52 44.5 -1.0**
MAJO pmax pmax
comp=Z,89nm,0.8s
MAJO Matsushiro 38.65 18 *e*P **P 08 52 45.3 -0.2**
comp=Z,20nm,0.8s
MAJO *e*PcP **PcP 08 54 56.5 -0.2**
MAT Matsushiro 38.65 18 P **P 08 52 44.5 -1.0**
MJAR Matsushiro Arr 38.65 18 P **P 08 52 44.9 -0.6**
comp=Z,15nm,0.7s,baz=192,slow=8.9,SNR=48
MJAR LR LR 09 07 50.7
comp=Z,85nm,21.4s,baz=230,slow=35
MJB9 Matsu-Tunnel 38.65 18 *e*P **P 08 52 45.3 -0.2**
comp=Z,5.2nm,0.8s
MJB9 *e*PcP **PcP 08 54 58.8 +2.1**
SHL Shillong 40.66 311 *e*P **P 08 53 00.0 -2.6**
BJI Beijing 40.75 350 P **P 08 53 03.7 +0.8**
BJI pP **pP 08 53 18.7 +0.1**
BJI PP **PnPn 08 54 40.6 -1.9**
BJI S **S 08 59 10.1 +1.1**
BJI sS **sS 08 59 40.7 +5.0**
BJI pmax pmax
comp=Z,16nm,1.2s
BJI LR LR
comp=Z,190nm,34.7s
BJI LR LR
comp=Z,140nm,19.8s
LZH Lanzhou 40.92 334 *e*P **P 08 53 06.0 +1.5**
LZH pP pP 08 53 21.5 +1.2
LZH sP sP 08 53 28.4 +0.9
LZH PP **PnPn 08 54 43.0 -1.7**
LZH *e*S **S 08 59 14.3 +2.4**
LZH sS sS 08 59 40.1 +1.4
LZH SS **SS 09 02 14.2 -1.6**
LZH pmax pmax
comp=Z,56nm,1.2s
LZH pmax pmax
comp=Z,160nm,5.4s
LZH LR LR
comp=Z,760nm,13.5s
LZH LR LR
comp=Z,690nm,13.7s
LZH LR LR
comp=Z,980nm,17.2s
HHC Hu-ho-hao-te 42.51 345 *e*P **P 08 53 18.0 +0.6**
HHC S **S 08 59 36.6 +1.3**
HHC pmax pmax
comp=Z,22nm,0.8s
HHC pmax pmax
comp=Z,85nm,5.7s
HHC LR LR
comp=Z,140nm,14.6s
HHC LR LR
comp=Z,250nm,14.7s
MSHR Mys Shultsa 42.96 7⇓*e*P **P 08 53 23.3 +2.4**
LSA Lhasa 43.58 316 *e*P **P 08 53 26.7 0.0**
LSA pmax pmax
comp=Z,38nm,0.8s
LSA Lhasa 43.58 316 *e*P **P 08 53 26.7 0.0**
comp=Z,38nm,0.8s
USRK Ussuriysk Ar. 44.66 8 P **P 08 53 35.2 +0.8**
comp=Z,8.9nm,0.4s,baz=190,slow=6.6,SNR=55
MDJ Mudanjiang 44.81 5 P **P 08 53 36.6 +0.9**
MDJ pP pP 08 53 50.3 -1.3
MDJ sP sP 08 53 59.9 +1.1
MDJ pmax pmax
comp=Z,32nm,0.7s
MDJ pmax pmax
comp=Z,44nm,6.7s
MDJ LR LR
comp=Z,89nm,20.3s
MDJ LR LR
comp=Z,120nm,25.7s
MDJ Mudanjiang 44.81 5 *e*P **P 08 53 36.6 +0.9**
comp=Z,24nm,0.7s
GTA Gaotai 45.46 333 P **P 08 53 40.7 -0.4**
GTA PcP **PcP 08 55 19.9 +0.6**
GTA ScP **ScP 08 59 08.0 +1.1**
GTA PcS **PcS 08 59 12.3 -1.1**
GTA S **S 09 00 17.8 -0.5**
GTA SS **ScS 09 03 31.8 -0.3**
GTA pmax pmax
comp=Z,16nm,1.3s
GTA pmax pmax
comp=Z,130nm,4.9s
GTA LR LR
comp=Z,110nm,17.6s
GTA LR LR
comp=Z,100nm,14.7s
DZM Mont Dzumac 46.19 121 P **P 08 53 48.6 +1.5**
comp=Z,5.2nm,0.8s,baz=303,slow=17,SNR=4.7
GUN Gumba 46.45 310 *e*P **P 08 53 48.5 -0.8**
comp=Z,31nm,0.6s
PKIN Phulchoki 46.65 309 *e*P **P 08 53 49.5 -1.4**
comp=Z,9.5nm,0.6s
KKN Kakani 46.85 310 *e*P **P 08 53 51.2 -1.1**
comp=Z,25nm,0.8s
ASAJ Asahikawa 46.92 18 P **P 08 53 53.1 +0.9**
comp=Z,9.0nm,0.5s,baz=242,slow=9.6,SNR=12
ASAJ Asahikawa 46.92 18 *e*P **P 08 53 53.6 +1.3**
GKN Gorkha 47.45 310 *e*P **P 08 53 55.8 -1.1**
comp=Z,30nm,0.8s
KOLN Koldanda 48.14 309 *e*P **P 08 54 01.5 -0.8**
comp=Z,68nm,0.8s
HYB Hyderabad 48.58 294 *i* P **P 08 54 03.5 -2.1**
comp=Z,50nm,1.0s
PYUN Piuthan 48.77 309 *e*P **P 08 54 06.4 -0.8**
comp=Z,72nm,0.7s
HABR Khabarovsk 49.29 9 *e*P **P 08 54 08.9 -1.6**
HABR *e**PP **pP 08 54 24.5 -2.1**
HABR *e**SP **sP 08 54 31.7 -2.0**
HABR *e* 08 55 30.5
HABR *e* 08 56 03.4
HABR *e*PPP PPP 08 56 57.0
HABR *e*S **S 09 01 11.9 -0.2**
HABR *e**SS **sS 09 01 38.7 -0.7**
HABR *e* 09 03 54.7
HABR *e*SS **SS 09 04 45.9 +1.4**
HABR *e*SSS SSS 09 06 08.0
HABR pmax pmax
comp=Z,16nm,1.5s
HABR pmax pmax
comp=Z,18nm,1.1s
HABR pmax pmax
comp=N,24nm,1.1s
HABR MLR MLR
comp=Z,61nm,18.0s
YSS Yuzh-Sakhalins 49.55 16 *e*P **P 08 54 14.1 +1.6**
KLR Kul'dur 49.59 6 P **P 08 54 12.4 -0.4**
comp=Z,6.4nm,0.4s,baz=196,slow=4.0,SNR=28
KLR LR LR 09 16 47.6
comp=Z,31nm,21.6s,baz=213,slow=38
ULN Ulaanbaatar 50.22 345 *de*P **P 08 54 17.0 -0.8**
ULN pmax pmax
comp=Z,21nm,1.0s
ULN Ulaanbaatar 50.22 345 *e*P **P 08 54 17.2 -0.6**
comp=Z,17nm,0.9s
SONM Songino Array 50.37 344 P **P 08 54 16.9 -2.0**
comp=Z,15nm,0.7s,baz=142,slow=7.5,SNR=33
SONM PcP **PcP 08 55 36.6 -0.1**
comp=Z,3.1nm,0.8s,baz=144,slow=5.2,SNR=3.2
SONM LR LR 09 14 37.2
comp=Z,52nm,21.6s,baz=228,slow=35
SONA1 Songino Array 50.38 344 *e*P **P 08 54 17.8 -1.2**
TYV Tymovskoe 53.11 14 *e*P **P 08 54 34.5 -4.6**
TYV pmax pmax
comp=Z,22nm,1.0s
ZAK Zakamensk 53.55 343 *e*P **P 08 54 40.6 -1.9**
ZAK *e* 08 55 47.2
ZAK pmax pmax
comp=Z,7.0nm,1.1s
ZAK pmax pmax
comp=Z,4.0nm,1.1s
TLY Talaya 54.61 344 *e*P **P 08 54 52.1 +2.0**
TLY pmax pmax
comp=Z,20nm,0.9s
TLY MLR MLR
comp=Z,32nm,15.0s
WMQ Urumqi 54.78 328 P **P 08 54 52.0 +0.5**
WMQ pP pP 08 55 06.3 -1.6
WMQ sP sP 08 55 12.3 -2.7
WMQ PcP **PcP 08 55 54.1 +0.8**
WMQ SS **SS 09 06 15.1 +3.2**
WMQ pmax pmax
comp=Z,16nm,0.8s
WMQ pmax pmax
comp=Z,63nm,4.0s
WMQ LR LR
comp=Z,67nm,19.2s
WMQ LR LR
comp=Z,55nm,20.2s
MOY Mondy 55.37 342 *e*P **P 08 54 55.4 -0.2**
BOD Bodaibo 58.43 353 *e*P **P 08 55 16.2 -0.8**
BOD pmax pmax
comp=Z,25nm,0.9s
PDGK Podgornoye 59.14 323 P **P 08 55 19.9 -2.4**
PDGK pmax pmax
comp=Z,38nm,1.0s
KSH Kashi 59.38 318 P **P 08 55 23.9 -0.3**
KSH *e*sP sP 08 55 47.0 -0.8
KSH *e*PP **PP 08 57 36.6 +0.6**
KSH PcS **PcS 09 00 12.3 -1.4**
KSH S **S 09 03 23.9 -4.7**
KSH pmax pmax
comp=Z,25nm,0.8s
KSH LR LR
comp=Z,390nm,11.7s
KSH LR LR
comp=Z,250nm,9.3s
KSH LR LR
comp=Z,120nm,5.7s
MK31 Makanchi Array 59.61 328 *e*P **P 08 55 23.8 -1.7**
MK31 pmax pmax
comp=Z,18nm,0.8s
MKAR Makanchi Array 59.61 328 P **P 08 55 24.0 -1.5**
comp=Z,14nm,0.7s,baz=124,slow=8.0,SNR=75
MKAR PcP **PcP 08 56 11.7 -0.5**
comp=Z,12nm,0.7s,baz=123,slow=5.5,SNR=10
MKAR ScP **ScP 09 00 10.2 +2.4**
comp=Z,0.6nm,0.6s,baz=117,slow=4.3,SNR=5.0
MKAR PKPPKP P'P'df 09 25 03.9 +10
comp=Z,0.5nm,0.8s,baz=339,slow=1.7,SNR=4.6
MKAR P4KPbc 09 32 31.0
comp=Z,0.5nm,0.9s,baz=116,slow=3.4,SNR=3.6
MKAR Makanchi Array 59.61 328 *e*P **P 08 55 24.4 -1.1**
MKAR 08 56 11.7
MKAR Makanchi Array 59.61 328 *e*P **P 08 55 24.4 -1.1**
MKAR PcP **PcP 08 56 11.7 -0.5**
MAKZ Makanchi 59.79 327 *e*P **P 08 55 24.8 -1.9**
MAKZ Makanchi 59.79 327 *e*P **P 08 55 24.8 -1.9**
PETK Petropavlovsk- 59.81 22 P **P 08 55 26.2 -0.5**
comp=Z,12nm,0.8s,baz=187,slow=5.3,SNR=10
RPZ Rata Peaks 59.89 143 P **P 08 55 28.7 +1.3**
comp=Z,16nm,0.8s,baz=278,slow=5.2,SNR=8.8
BKZ Black Stump Fm 61.20 136 *e*P **P 08 55 37.5 +1.0**
URZ Urewera 61.25 135 P **P 08 55 37.0 +0.2**
comp=Z,8.2nm,0.8s,baz=239,slow=8.3,SNR=5.6
TKM2 Tokmak 2 61.33 321 P **P 08 55 35.5 -2.0**
TKM2 pmax pmax
comp=Z,33nm,0.9s
TKM2 Tokmak 2 61.33 321 *e*P **P 08 55 36.5 -1.1**
comp=Z,26nm,0.7s
AAK Ala-Archa 61.88 320 *e*P **P 08 55 39.9 -1.3**
AAK pmax pmax
comp=Z,56nm,0.9s
AAK Ala-Archa 61.88 320 *e*P **P 08 55 40.6 -0.7**
FRU Bishkek 61.91 320 *e*P **P 08 55 38.0 -3.2**
FRU *e* 08 56 04.0
YAK Yakutsk 62.16 3 P **P 08 55 42.4 0.0**
comp=Z,34nm,0.6s,baz=2.0,slow=2.3,SNR=8.3
YAK Yakutsk 62.16 3 *e*P **P 08 55 42.3 -0.1**
YAK *e**PP **sP 08 56 03.9 -2.2**
YAK *e* 08 56 22.1
YAK *e* 08 57 56.9
YAK *e*S **S 09 04 01.6 -1.3**
YAK *e**SS sS 09 04 17.8 -13
YAK pmax pmax
comp=Z,47nm,0.9s
YAK pmax pmax
comp=E,5.0nm,1.0s
YAK pmax pmax
comp=N,21nm,1.3s
YAK pmax pmax
comp=Z,15nm,0.4s
YAK smax smax
comp=E,20nm,1.4s
YAK smax smax
comp=N,75nm,2.2s
YAK Yakutsk 62.16 3 *e*P **P 08 55 42.7 +0.3**
KBL Kabul 62.28 310 *e*P **P 08 55 42.3 -1.8**
KBL Kabul 62.28 310 *e*P **P 08 55 42.3 -1.8**
EKS2 Erkin-Say 62.36 320 *e*P **P 08 55 43.6 -0.8**
EKS2 pmax pmax
comp=Z,20nm,0.6s
EKS2 Erkin-Say 62.36 320 *e*P **P 08 55 43.6 -0.8**
comp=Z,20nm,0.6s
MA2 Magadan 62.98 15 *e*P **P 08 55 49.0 +1.0**
MA2 pmax pmax
comp=Z,115nm,0.7s
MA2 Magadan 62.98 15 *e*P **P 08 55 49.0 +1.0**
comp=Z,114nm,0.7s
MNAS Manas 63.11 319 P **P 08 55 47.1 -2.3**
MNAS pmax pmax
comp=Z,37nm,0.9s
ZALV Zalesovo Beam 63.14 335 P **P 08 55 46.7 -2.4**
comp=Z,5.6nm,0.5s,baz=126,slow=7.3,SNR=17
ZALV LR LR 09 25 54.5
comp=Z,51nm,18.9s,baz=74,slow=39
KURK Kurchatov 63.93 329 *e*P **P 08 55 53.1 -1.3**
KURK pmax pmax
comp=Z,77nm,0.6s
KURK Kurchatov 63.93 329 *e*P **P 08 55 53.1 -1.3**
comp=Z,77nm,0.6s
NVS Novosibirsk 64.43 335 *e*P **P 08 55 54.9 -2.7**
NVS *e* 08 56 23.8
NVS pmax pmax
comp=Z,12nm,0.7s
NVS pmax pmax
comp=N,8.0nm,0.5s
NVS pmax pmax
comp=E,7.0nm,0.6s
KK31 Karatay Array 64.69 319 P **P 08 55 58.1 -1.5**
KK31 pmax pmax
comp=Z,9.0nm,0.8s
KKAR Karatay Array 64.69 319 *e*P **P 08 55 57.3 -2.3**
KKAR pmax pmax
comp=Z,13nm,0.8s
KKAR Karatay Array 64.69 319 *e*P **P 08 55 57.3 -2.3**
comp=Z,13nm,0.8s
OTUK Ortayu 65.99 325 P **P 08 56 05.0 -2.9**
OTUK pmax pmax
comp=Z,24nm,0.9s
SEY Seymchan 66.28 13 P **P 08 56 10.0 +0.5**
comp=Z,11nm,0.9s,baz=235,slow=5.3,SNR=20
SEY Seymchan 66.28 13⇓*e*P **P 08 56 10.9 +1.5**
BVAR Borovoye Array 69.46 328 P **P 08 56 28.0 -1.6**
comp=Z,8.5nm,0.8s,baz=142,slow=7.5,SNR=23
BRVK Borovoye 69.53 328 *de*P **P 08 56 28.7 -1.4**
BRVK pmax pmax
comp=Z,31nm,1.7s
BRVK Borovoye 69.53 328 *e*P **P 08 56 28.4 -1.7**
comp=Z,16nm,0.8s
GEYT Alibeck 71.72 310 P **P 08 56 41.6 -2.1**
comp=Z,9.2nm,1.0s,baz=117,slow=5.2,SNR=10

GEYT LR LR 09 32 06.4
comp=Z,35nm,21.1s,baz=50,slow=39
TIXI Tiksi 71.75 1 *c*eP **P 08 56 42.0 -1.2**
TIXI pmax pmax
comp=Z,24nm,1.7s
TIXI Tiksi 71.75 1 *e*P **P 08 56 42.8 -0.4**
comp=Z,13nm,0.8s
NRIK Noril'sk 73.71 347 P **P 08 56 53.9 -1.0**
comp=Z,16nm,0.7s,baz=131,slow=6.2,SNR=27
NRIK LR LR 09 32 19.3
comp=Z,63nm,21.1s,baz=106,slow=38
BILL Bilibino 73.84 15 *c i*P **P 08 56 55.8 +0.2**
AKTO Aktyubinsk 75.42 323 P **P 08 57 03.6 -1.5**
comp=Z,21nm,0.7s,baz=107,slow=7.0,SNR=25
SVE Sverdlovsk 76.19 329⇑ *i*P **P 08 57 07.9 -1.5**
SVE pmax pmax
comp=Z,28nm,1.0s
ARU Arti 77.11 329 P **P 08 57 12.7 -1.8**
comp=Z,4.4nm,0.2s,baz=99,slow=5.3,SNR=14
ARU Arti 77.11 329*d i*P **P 08 57 12.5 -2.1**
ARU *PP **pP 08 57 30.0 -1.8**
ARU 09 00 07.3
ARU S **S 09 06 57.3 -1.4**
ARU SS **SS 09 11 55.4 -1.8**
ARU pmax pmax
comp=Z,22nm,1.0s
OPO Ambohidratompo 78.03 251 P **P 08 57 19.9 -0.8**
comp=Z,26nm,1.0s,baz=84,slow=5.4,SNR=16
GAMB Gambell 78.80 24 *e*P **P 08 57 24.0 +0.3**
comp=Z,24nm,0.9s
MAW Mawson 79.39 200 P **P 08 57 27.6 +0.6**
comp=Z,7.3nm,1.0s,baz=56,slow=5.9,SNR=7.8
MAW LR LR 09 29 04.6
comp=Z,77nm,21.5s,baz=218,slow=33
VNDA Vanda 79.86 172 P **P 08 57 29.8 +0.4**
comp=Z,5.5nm,0.7s,baz=2.9,slow=3.8,SNR=6.4
TNA Tin City 80.98 23 *e*P **P 08 57 37.3 +1.8**
comp=Z,16nm,1.0s
SDPT Sand Point 81.59 34 *e*P **P 08 57 40.2 +1.2**
comp=Z,101nm,0.9s
GNI Garni 82.36 310 P **P 08 57 43.2 -0.4**
comp=Z,4.6nm,0.5s,baz=77,slow=2.0,SNR=4.7
GNI Garni 82.36 310 *e*P **P 08 57 42.8 -0.8**
GNI pmax pmax
comp=Z,68nm,1.6s
ZEI Tsey 83.29 313 *e*P **P 08 57 46.5 -1.9**
ZEI pmax pmax
comp=Z,59nm,1.5s
KBZ Khabaz 84.12 314 P **P 08 57 50.9 -1.5**
comp=Z,5.7nm,1.0s,baz=80,slow=2.9,SNR=8.3
NEY Neytrino 84.20 313 *e*P **P 08 57 53.4 +0.4**
KIV Kislovodsk 84.29 314 *e*P **P 08 57 51.3 -2.1**
KIV pmax pmax
comp=Z,8.0nm,1.1s
KIV MLR MLR
comp=Z,36nm,18.0s
VRH Novokhopyorsk 85.66 321 *e*P **P 08 57 58.5 -1.4**
VRH pmax pmax
comp=Z,40nm,0.5s
OHAK Old Harbor 85.85 33 *e*P **P 08 58 01.4 +0.7**
comp=Z,59nm,1.0s
KDAK Kodiak Island 86.29 32 P P 08 58 19.6 +17
comp=Z,18nm,0.8s,baz=281,slow=1.5,SNR=15
SOC Sochi 86.41 314 *e*P **P 08 58 00.8 -3.0**
SOC pmax pmax
comp=Z,10.0nm,0.4s
PPLA Purkeypile 87.04 27 *e*P **P 08 58 07.0 +0.4**
comp=Z,3.9nm,0.6s
VSR Storozhevoye 87.27 321 *e*P **P 08 58 05.5 -2.3**
VSR pmax pmax
comp=Z,20nm,1.2s
KMBO Kilima Mbogo 87.36 269 P **P 08 58 08.4 -0.9**
comp=Z,11nm,1.0s,baz=48,slow=5.7,SNR=15
KMBO LR LR 09 35 10.6
comp=Z,93nm,19.7s,baz=89,slow=34
KMBO Kilima Mbogo 87.36 269 *i*P **P 08 58 10.1 +0.7**
KMBO pmax pmax
comp=Z,11nm,1.0s
LPSR Galich'ya Gora 87.50 322 *e*P **P 08 58 08.0 -0.9**
LPSR pmax pmax
comp=Z,60nm,1.5s
BPAW Bear Paw Mtn. 87.69 26 *e*P **P 08 58 10.2 +0.5**
comp=Z,1.4nm,0.8s
KLMR Klimovskoe 87.75 331 *e*P **P 08 58 07.1 -2.8**
KLMR pmax pmax
comp=Z,19nm,0.9s
TRF Thorofare Moun 87.95 27 *e*P **P 08 58 10.7 -0.4**
comp=Z,7.7nm,0.9s
RC01 Rabbit Creek A 88.03 29 *e*P **P 08 58 11.4 +0.2**
comp=Z,16nm,0.8s
SYO Syowa Base 88.05 201⇑ *e*X **P 08 58 08.6 -2.5**
SYO Syowa Base 88.05 201⇑ *e*PcP **PcP 08 58 14.4 +1.5**
SEW Seward 88.11 30 *e*P **P 08 58 12.0 +0.4**
comp=Z,25nm,0.9s
ASF Jabal al Asfar 88.15 302 P **P 08 58 12.4 -0.2**
comp=Z,10nm,0.9s,baz=323,slow=1.3,SNR=12
PMR Palmer 88.36 29 *e*P **P 08 58 12.8 +0.1**
PMR pmax pmax
comp=Z,17nm,1.2s
PMR Palmer 88.36 29 *e*P **P 08 58 12.8 +0.1**
comp=Z,16nm,1.2s
MCK McKinley 88.57 26 *e*P **P 08 58 13.7 -0.1**
MCK pmax pmax
comp=Z,17nm,1.0s
MCK McKinley 88.57 26 *e*P **P 08 58 13.7 -0.1**
comp=Z,17nm,1.0s
TMCR Tamitsa 88.65 334 *e*P **P 08 58 12.0 -2.1**
TMCR pmax pmax
comp=Z,49nm,1.2s
SML Sawmill 88.75 28 *e*P **P 08 58 15.2 +0.5**
SML pmax pmax
comp=Z,8.0nm,1.1s
SML Sawmill 88.75 28 *e*P **P 08 58 15.2 +0.5**
comp=Z,7.9nm,1.1s
OBN Obninsk 89.01 325 P **P 08 58 14.3 -1.7**
comp=Z,16nm,0.4s,baz=16,slow=20,SNR=5.1
OBN Obninsk 89.01 325⇓ *i*P **P 08 58 14.8 -1.1**
OBN *e* 08 58 29.2
OBN pmax pmax
comp=Z,31nm,1.4s
MMAI Mount Meron Ar 89.42 303 P **P 08 58 17.1 -1.5**
comp=Z,5.9nm,0.8s,baz=141,slow=4.3,SNR=7.3
ILAR Eielson Array 89.51 25 P **P 08 58 16.8 -1.3**
comp=Z,2.3nm,0.6s,baz=244,slow=4.8,SNR=31
ILAR LR LR 09 36 48.6
comp=Z,19nm,22.0s,baz=278,slow=34
QSPA South Pole Qui 89.77 180 *e*P **P 08 58 20.4 +0.9**
comp=Z,81nm,1.1s
EIL Elat 89.79 300 P **P 08 58 18.9 -1.3**
comp=Z,2.6nm,0.6s,baz=131,slow=6.6,SNR=3.3
DIV Divide 89.96 29 *e*P **P 08 58 21.5 +1.1**
comp=Z,24nm,1.0s
PAX Paxson 90.11 27 *e*P **P 08 58 21.5 +0.4**
PAX pmax pmax
comp=Z,13nm,1.0s
PAX Paxson 90.11 27 *e*P **P 08 58 21.5 +0.4**
comp=Z,13nm,1.0s
LVZ Lovozero 90.14 338 *c*eP **P 08 58 19.7 -1.4**
LVZ pmax pmax
comp=Z,10.0nm,0.9s
BMRM Bremner River 90.53 29 *e*P **P 08 58 23.9 +0.8**
comp=Z,10nm,0.8s
DOT Dot Lake 90.74 26 *e*P **P 08 58 24.5 +0.5**
comp=Z,23nm,0.9s
BRTR Keskin Array B 90.86 310 P **P 08 58 22.7 -2.5**
comp=Z,2.8nm,0.9s,baz=113,slow=5.6,SNR=11
BRTR LR LR 09 46 58.8
comp=Z,12nm,18.3s,baz=100,slow=41
EGAK Eagle 91.96 25 *e*P **P 08 58 29.9 +0.4**
comp=Z,8.1nm,1.1s
DAWY Dawson 92.78 26 *e*P **P 08 58 34.0 +0.6**
comp=Z,14nm,1.3s
ARCES ARCESS Array B 93.35 340 P **P 08 58 34.2 -1.6**
comp=Z,4.6nm,0.8s,baz=87,slow=6.6,SNR=15
AKASG Malin Array Be 93.55 321 P **P 08 58 35.0 -2.2**
comp=Z,1.1nm,0.4s,baz=75,slow=4.2,SNR=5.4
AKASG LR LR 09 45 34.0
comp=Z,23nm,21.2s,baz=270,slow=39
AKASG Malin Array Be 93.55 321 *i*P **P 08 58 38.5 +1.3**
AKASG pmax pmax
comp=Z,3.0nm,0.7s
KIEV Kiev 93.56 321 *e*P **P 08 58 34.0 -3.2**
KIEV pmax pmax
comp=Z,3.0nm,0.9s
SPITS Spitsbergen Ar 93.86 349 P **P 08 58 37.1 -1.0**
comp=Z,9.0nm,0.8s,baz=93,slow=8.5,SNR=24
FINES FINESS Array B 94.23 332 P **P 08 58 38.0 -2.0**
comp=Z,1.9nm,0.7s,baz=113,slow=6.7,SNR=6.4
VSU Vasula 94.27 329 *c*e**P P 08 58 38.9 -1.4**
VSU pmax pmax
comp=Z,22nm,1.1s
INK Inuvik 94.54 21 P **P 08 58 41.5 +0.2**
comp=Z,9.0nm,1.0s,baz=294,slow=4.1,SNR=37
NACGM Naroch 94.65 325 *e* **P 08 58 41.0 -1.1**
SKAG Skagway 95.26 30 *e*P **P 08 58 46.0 +1.2**
comp=Z,16nm,0.9s
MATP Mapo 95.67 250 P **P 08 58 46.1 -1.6**
comp=Z,3.4nm,0.7s,baz=80,slow=6.4,SNR=7.7
LSZ Lusaka 96.15 255 *e*P **P 08 58 49.0 -1.0**
LSZ pmax pmax
comp=Z,16nm,1.3s
LSZ Lusaka 96.15 255 *e*P **P 08 58 49.0 -1.0**
comp=Z,16nm,1.3s
BOSA Boshof 98.14 241 LR LR 09 43 02.3
comp=Z,41nm,18.3s,baz=157,slow=35
HFS Hagfors 100.44 332 P **Pdif 08 59 05.9 -2.2**
comp=Z,3.2nm,0.9s,baz=111,slow=8.1,SNR=5.0
NB2 NORSAR Subarra101.29 333 P **Pdif 08 59 09.9 -2.0**
comp=Z,3.1nm,0.9s,baz=76,slow=4.6
NB2 NORSAR Subarra101.29 333 P **Pdif 08 59 09.9 -2.0**
baz=76,slow=4.6
NOA NORSAR Array B 101.29 333 P **Pdif 08 59 09.6 -2.4**
comp=Z,1.9nm,0.9s,baz=73,slow=4.6,SNR=6.0
GERES GERESS Array B 103.77 321 PKiKP **PKiKP 09 03 39.4 -1.7**
comp=Z,0.2nm,0.3s,baz=64,slow=2.3,SNR=3.6
YKA Yellowknife Ar 103.90 24 Pdiff **Pdif 08 59 24.2 +0.8**
comp=Z,0.9nm,0.9s,baz=297,slow=4.8,SNR=14
YKA PKiKP **PKiKP 09 03 41.0 +0.3**
comp=Z,0.3nm,0.6s,baz=305,slow=1.7,SNR=12
YKA PKKPbc **PKKPbc 09 15 12.8 -3.2**
comp=Z,0.6nm,0.9s,baz=117,slow=2.9,SNR=7.8
YKA PKKP **PKKPdf 09 15 23.9 -0.5**
comp=Z,0.3nm,0.8s,baz=113,slow=2.7,SNR=5.2
J05D Fort Rock, OR 107.50 44 P **PKiKP 09 03 49.7 +1.5**
baz=287
NVAR Mina Array Bea 111.06 49 PKiKP **PKiKP 09 03 56.4 +1.2**
comp=Z,0.6nm,0.7s,baz=224,slow=5.8,SNR=5.5
NVAR PP **PP 09 04 34.5 +0.2**
comp=Z,0.3nm,0.6s,baz=276,slow=8.1,SNR=3.6
NVAR PKKPab **PKKPab 09 15 02.6 0.0**
comp=Z,0.2nm,0.6s,baz=132,slow=5.2,SNR=3.8
HLID Hailey 112.09 42 P **PKiKP 09 03 58.9 +2.0**
baz=292
REDW Red Top Meadow 114.55 41 *e*PKPdf PKPdf 09 04 03.3 +1.6
SNOW Snow King Moun 114.57 41 *e*PKPdf PKPdf 09 04 03.5 +1.7
PDAR Pinedale Array 115.66 41 PKP **PKPdf 09 04 04.2 +0.3**
comp=Z,0.4nm,0.7s,baz=72,slow=1.9,SNR=4.1
PDAR PKKPab **PKKPab 09 14 41.3 -0.9**
comp=Z,1.3nm,0.8s,baz=104,slow=6.3,SNR=11
O20A White River Ci 117.70 44 P **PKPdf 09 04 08.9 +1.1**
baz=296
O20A White River Ci 117.70 44 *e*PKPdf **PKPdf 09 04 08.9 +1.1**
PV01 Paradox Valley 118.32 46 *e*PKPdf **PKPdf 09 04 10.6 +1.5**
RSSD Black Hills 118.55 38 P **PKPdf 09 04 09.5 +0.2**
baz=302
A29A Manning Farm, 118.55 31 P **PKPdf 09 04 09.3 +0.4**
baz=308
I25A Rochford 118.78 38 P **PKPdf 09 04 09.8 +0.1**
baz=302
G26A Maurine 118.79 36 P **PKPdf 09 04 10.0 +0.4**
baz=303
TUC Tucson 118.84 53 P **PKPdf 09 04 11.2 +1.1**
baz=290
ESDC Sonseca Array 118.89 316 PP PP 09 05 28.5 -0.6
comp=Z,0.3nm,0.3s,baz=31,slow=6.0,SNR=5.1
H26A Fairpoint 119.05 37 P **PKPdf 09 04 10.6 +0.5**
baz=303
J25A Sunshine Ranch 119.07 39 P **PKPdf 09 04 10.2 0.0**
baz=301
G27A Dupree 119.13 36 P **PKPdf 09 04 10.4 +0.2**
baz=304
H27A Howes 119.46 37 P **PKPdf 09 04 11.3 +0.5**
baz=304
C30A Mose, Pekin 119.70 32 P **PKPdf 09 04 11.6 +0.4**
baz=308
S22A 4UR Ranch, Cre 119.73 46 P **PKPdf 09 04 13.3 +1.4**
baz=296
I27A Quinn 119.78 37 P **PKPdf 09 04 12.2 +0.7**
baz=303
G28A Parade 119.90 36 P **PKPdf 09 04 11.9 +0.2**
baz=305
C31A Landman Farms, 120.03 32 P **PKPdf 09 04 12.2 +0.4**
baz=309
I28A Midland 120.35 37 P **PKPdf 09 04 13.2 +0.6**
baz=304
J28A Allard Ranch, 120.63 37 P **PKPdf 09 04 13.7 +0.5**
baz=304
I29A Vivian Onida 120.86 36 P **PKPdf 09 04 13.4 -0.1**
baz=305
121A Cookes Peak, D 121.13 51 P **PKPdf 09 04 16.0 +1.4**
baz=292
B34A Aery, Baudette 121.15 29 P **PKPdf 09 04 14.0 +0.1**
baz=312
ANMO Albuquerque 121.19 48 P **PKPdf 09 04 15.9 +1.2**
baz=295
J29A Okreek 121.19 37 P **PKPdf 09 04 14.4 +0.2**
baz=304
J30A Dallas 121.74 37 P **PKPdf 09 04 15.3 +0.1**
baz=305
D34A Park Rapids 121.81 31 P **PKPdf 09 04 15.3 0.0**
baz=311
TORD Torodi Ar. Bea 122.01 285 PKP **PKPdf 09 04 15.5 -1.0**
comp=Z,3.2nm,0.8s,baz=71,slow=1.9,SNR=17
TORD PKKPbc **PKKPab 09 14 15.7 +1.2**
comp=Z,2.7nm,0.9s,baz=277,slow=3.7,SNR=12
F33A 5 Mile Ranch, 122.03 33 P **PKPdf 09 04 15.4 -0.2**
baz=310
K30A Basset 122.04 37 P **PKPdf 09 04 15.9 0.0**
baz=305
E34A Wadena 122.20 31 P **PKPdf 09 04 16.4 +0.4**
baz=311
D35A Remer 122.39 30 P **PKPdf 09 04 15.8 -0.5**
baz=312
E35A Pequot Lakes 122.56 31 P **PKPdf 09 04 16.6 -0.1**
baz=312
K31A O'Neill 122.58 37 P **PKPdf 09 04 17.0 +0.1**
baz=306
L31A Butterfield Fa 122.79 37 P **PKPdf 09 04 17.8 +0.5**
baz=305
K32A Verdigre 123.03 37 P **PKPdf 09 04 18.0 +0.3**
baz=306
EYMN Ely 123.05 28 P **PKPdf 09 04 17.8 +0.2**
baz=316
H34A Spellman Lake, 123.06 33 P **PKPdf 09 04 18.2 +0.5**
baz=310
ECSD EROS Data Cent 123.17 35 P **PKPdf 09 04 17.9 -0.1**
baz=308
ECSD EROS Data Cent 123.17 35 *e*PKPdf **PKPdf 09 04 18.5 +0.5**
E36A McGregor 123.18 30 P **PKPdf 09 04 18.2 +0.3**
baz=313
MNTX Cornudas Mount 123.33 51 P **PKPdf 09 04 20.1 +1.5**
baz=294
I34A Hadley 123.41 34 P **PKPdf 09 04 18.8 +0.3**
baz=309
F36A Milaca 123.48 31 P **PKPdf 09 04 18.5 +0.1**
baz=312
H35A Sunnyside Ranc 123.56 33 P **PKPdf 09 04 19.2 +0.5**
baz=310
BGNE Belgrade 123.65 38 P **PKPdf 09 04 19.3 +0.3**
baz=306
H36A Jessenland, He 124.13 33 P **PKPdf 09 04 20.8 +1.1**
baz=311
O32A Brockman Farm, 124.23 39 P **PKPdf 09 04 20.6 +0.5**
baz=305
P32A Huiting Farm, 124.39 40 P **PKPdf 09 04 21.0 +0.6**
baz=304
SCHQ Schefferville 124.71 8 PKP **PKPdf 09 04 20.2 -0.3**
comp=Z,4.0nm,0.7s,baz=268,slow=1.1,SNR=9.9
J36A Seneca 1, Swea 124.71 34 P **PKPdf 09 04 21.4 +0.5**
baz=310
Q32A Meitler Ranch, 124.76 40 P **PKPdf 09 04 21.8 +0.6**
baz=304
O33A Hebron 124.77 39 P **PKPdf 09 04 21.5 +0.4**
baz=305
R32A Long Quarter, 124.98 41 P **PKPdf 09 04 22.4 +0.8**
baz=303
P33A Williams Farm, 125.07 40 P **PKPdf 09 04 22.3 +0.6**
baz=305
Q33A Connelly Farm, 125.23 40 P **PKPdf 09 04 22.8 +0.7**
baz=304
I38A Scanlan Farm, 125.34 32 P **PKPdf 09 04 22.4 +0.3**
baz=313
R33A Olander Ranch, 125.52 41 P **PKPdf 09 04 23.2 +0.5**
baz=304
P34A Walnut Farm, R 125.56 39 P **PKPdf 09 04 22.8 +0.1**
baz=306
TXAR Lajitas Array 125.63 53 PKP **PKPdf 09 04 24.4 +1.2**
comp=Z,1.5nm,0.9s,baz=210,slow=1.8,SNR=14
J38A Wedel Dairy, R 125.75 33 P **PKPdf 09 04 23.8 +0.9**
baz=312
Q34A Chapman 125.84 40 P **PKPdf 09 04 24.0 +0.8**
baz=305
KSU1 Kansas State U 125.95 39 P **PKPdf 09 04 24.3 +0.8**
baz=306
KSU1 Kansas State U 125.95 39 *e*PKPdf **PKPdf 09 04 24.2 +0.8**
P35A Duane Minner, 126.07 39 P **PKPdf 09 04 23.9 +0.2**
baz=306
Q35A Mercer Eighty, 126.45 39 P **PKPdf 09 04 24.8 +0.4**
baz=306
S35A Otter Creek Ra 126.95 41 P **PKPdf 09 04 25.9 +0.5**
baz=305
R36A Gordon, Harris 127.11 39 P **PKPdf 09 04 26.2 +0.6**
baz=306
X33A Lawton 127.18 45 P **PKPdf 09 04 27.5 +1.6**
baz=301
S36A Lake Cedric, C 127.40 40 P **PKPdf 09 04 27.1 +0.9**
baz=306
U35A Pawnee 127.42 42 P **PKPdf 09 04 27.6 +1.3**
baz=304
T36A Boggs Farm, Ca 127.60 41 P **PKPdf 09 04 27.3 +0.6**
baz=305
X34A Smith Ranch, M 127.62 45 P **PKPdf 09 04 28.6 +1.8**
baz=302
V35A Meyer Ranch, C 127.68 43 P **PKPdf 09 04 28.0 +1.2**
baz=303
S37A Fort Scott 127.87 40 P **PKPdf 09 04 27.8 +0.7**
baz=307
JCT Junction City 128.18 50 P **PKPdf 09 04 29.1 +1.1**
baz=297
T37A Cheneyville 18 128.19 40 P **PKPdf 09 04 28.4 +0.6**
baz=306
R38A Fenwick Farm, 128.19 39 P **PKPdf 09 04 27.7 0.0**
baz=308
Q39A Willow Grove F 128.24 37 P **PKPdf 09 04 28.3 +0.5**
baz=309
V36A Jenks 128.28 42 P **PKPdf 09 04 29.2 +1.2**
baz=304
X35A Drake 128.32 44 P **PKPdf 09 04 29.8 +1.7**
baz=302
333A Richland Sprin 128.41 49 P **PKPdf 09 04 29.1 +0.7**
baz=299
P40A Paris 128.48 36 P **PKPdf 09 04 28.8 +0.6**
baz=310
S38A Stockton 128.53 39 P **PKPdf 09 04 28.7 +0.3**
baz=308
T38A Diamond 128.64 40 P **PKPdf 09 04 29.3 +0.7**
baz=307
R39A Chumby, Stover 128.66 38 P **PKPdf 09 04 29.0 +0.4**
baz=309
X36A Centrahoma 128.67 44 P **PKPdf 09 04 29.6 +0.9**
baz=303
Q40A Laux Farm, Aux 128.81 37 P **PKPdf 09 04 29.5 +0.6**
baz=310
S39A Bolivar 128.86 39 P **PKPdf 09 04 29.6 +0.5**
baz=308
U38A Gravette 128.93 41 P **PKPdf 09 04 30.1 +0.9**
baz=306
W37B Quinton 128.98 43 P **PKPdf 09 04 30.6 +1.3**
baz=304
832A Faith Ranch, C 129.01 53 P **PKPdf 09 04 31.5 +1.9**
baz=296
Y36A Durant 129.07 45 P **PKPdf 09 04 31.2 +1.7**
baz=303
R40A Maddies Statio 129.14 38 P **PKPdf 09 04 30.0 +0.5**
baz=310
T39A Clever 129.24 39 P **PKPdf 09 04 30.7 +0.9**
baz=308
534A Blanco 129.41 50 P **PKPdf 09 04 31.6 +1.3**
baz=298
833A Chaparral WMA, 129.46 52 P **PKPdf 09 04 32.3 +1.9**
baz=296
U39A Green Forest 129.56 40 P **PKPdf 09 04 30.9 +0.5**
baz=307
T40A Mansfield 129.70 39 P **PKPdf 09 04 31.5 +0.9**
baz=309
U40A Yellville 129.97 40 P **PKPdf 09 04 31.8 +0.6**
baz=308
W39A Magazine 130.06 42 P **PKPdf 09 04 32.2 +0.9**
baz=306
X39A Fountain Ranch 130.23 43 P **PKPdf 09 04 32.9 +1.1**
baz=305
V40A Witts Springs 130.33 40 P **PKPdf 09 04 32.6 +0.7**
baz=307
MIAR Mount Ida 130.57 42 P **PKPdf 09 04 34.6 +2.3**
baz=306
PLCA Paso Flores 137.02 163 PKP **PKPdf 09 04 45.6 +1.2**
comp=Z,5.4nm,0.9s,baz=186,slow=2.0,SNR=5.8
AAGR Agrelo 144.58 160 *i*P **PKPdf 09 04 57.8 -0.4**
ARCO CERRO ARCO 144.77 160 *i*P PKPbc 09 04 58.0 +0.3
ARCO IAmb IAmb 09 04 59.6
comp=Z,46nm,0.9s
ASAL Salagasta 145.03 160 *i*P **PKPdf 09 04 59.6 +0.6**
AUSP Uspallata 145.17 159 *i*P **PKPdf 09 05 00.8 +1.2**
RTLS Leoncito 145.59 159 *i*P **PKPab 09 05 01.5 +0.7**
RTCV Cerro Valdivia 145.80 160 *i*P **PKPab 09 05 01.9 +0.7**
ACAN Cantantal 145.86 162 *i*P **PKPab 09 05 01.5 +0.1**
MRA San Martin 146.15 164 *i*P **PKPab 09 05 02.4 -0.2**
MRA IAmb IAmb 09 05 03.5
comp=Z,21nm,0.9s
RTLL Cerro Villicun 146.31 160 *i*P **PKPbc 09 05 02.0 -0.4**
LCO Las Campanas 147.50 154 *e*PKPdf **PKPdf 09 05 03.6 0.0**
LCO *e*PKPbc **PKPab 09 05 07.4 -0.8**
LCO *e*PKPab **PKiKP 09 05 09.0 +0.7**
AGUA GUANDACOL 147.97 158 *i*P **PKPdf 09 05 05.6 +1.5**
VCA Vinchina 148.75 158 *i*P **PKPdf 09 05 07.0 +1.5**
JTS JuntasAbangare 148.93 70 *e*PKIKP **PKPdf 09 05 06.0 +0.1**
JTS *e* 09 05 10.8
JTS JuntasAbangare 148.93 70 *e*PKPdf **PKPdf 09 05 06.0 +0.1**
JTS *e*PKPbc **PKiKP 09 05 10.8 -0.5**
JTS *e*PKPab **PKPab 09 05 13.8 -0.3**
CYA Choya 149.85 162 *i*P **PKPbc 09 05 12.2 +0.3**
CYA IAmb IAmb 09 05 13.3
comp=Z,21nm,0.9s
CYA IAML 09 05 13.9
comp=Z,3.4nm,0.6s
AHML Horco Molle 151.54 161 *i*P **PKPbc 09 05 16.7 +0.7**
FSA Cafayete 151.95 159 *i*P **PKPbc 09 05 17.5 +0.4**
CPUP Villa Florida 153.59 176 PKP **PKPdf 09 05 12.0 -0.7**
comp=Z,2.7nm,0.9s,baz=143,slow=2.6,SNR=5.1
CPUP PKPbc **PKiKP 09 05 21.6 +1.1**
comp=Z,7.9nm,1.0s,baz=222,slow=2.1,SNR=9.7
CPUP PKPab **PKPab 09 05 32.6 -0.3**
comp=Z,2.5nm,0.8s,baz=162,slow=4.6,SNR=3.4
OTAV Otavalo 156.94 90 *e*PKPdf **PKPdf 09 05 19.5 +1.4**
LPAZ La Paz 159.38 143 PKP **PKPdf 09 05 23.1 +1.9**
comp=Z,2.7nm,0.8s,baz=40,slow=7.2,SNR=9.6
LPAZ PKPab **PKPab 09 06 01.3 +2.5**
comp=Z,5.3nm,0.8s,baz=192,slow=2.5,SNR=9.3
ROSC El Rosal 160.53 76 PKP **PKPdf 09 05 23.8 +1.4**
comp=Z,3.4nm,0.6s,baz=64,slow=18,SNR=3.6
ROSC PKPab **PKPab 09 06 06.6 +2.7**
comp=Z,3.9nm,0.5s,baz=127,slow=5.8,SNR=3.9

NIED ***05*** *08:53:00, 37.40N×142.40E, h5km, Mw4.1 Best double couple: M0 1.53000×10^15 NP1:φ=200.00000°, δ=25.00000°, λ=-83.00000°. NP2:φ=13.00000°, δ=65.00000°, λ=-93.00000°.*
IDC ***05*** *08:53:55.5±0.8, 37.25N×142.57E, h0km, mb3.9/12, mb1 4.1/16, mb1mx3.9/49, mbtmp3.9/16, ML3.4/3, MS3.7/1, Ms1 3.7/1, ms1mx2.6/50, Error ellipse: s-maj=19.9km s-min=16.7km az=99.0*
ISCJB ***05*** *08:53:56.8±0.5, 37.32N±0.04×142.54E±0.06, h21km, mb3.9/15, MS3.7/1, Error ellipse: s-maj=7.4km s-min=6.0km az=179.4*
JMA ***05*** *08:53:57.4±0.4, 37.39N×142.41E, h12km, M3.9*
NEIC ***05*** *08:54:00.6±0.5, 37.28N×142.58E, h35km, mb4.1/3, Error ellipse: s-maj=12.0km s-min=8.4km az=120.0*
ISC 05 08:53:58.8±0.9, 37.33N±0.06×142.42E±0.08, h21km, n38, σ0=96/30, mb3.9/15, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.23**	**272**	P	**Pn**	**08 54 20.3**	**-0.5**
JMM	**Marumori**	**1.40**	**293**	P	**Pn**	**08 54 22.0**	**-1.1**
JIO	**Ouri**	**1.41**	**323**	P	**Pn**	**08 54 21.8**	**-1.3**
JIO				S	**Sn**	**08 54 40.3**	**-0.7**
JFT	**Otama**	**1.67**	**277**	P	**Pn**	**08 54 26.5**	**-0.3**
JOU	**Okura**	**1.73**	**307**	P	**Pn**	**08 54 27.3**	**-0.4**
JOU				*e*S	**Sn**	**08 54 48.8**	**-0.3**
MJAR	**Matsushiro Arr**	**3.46**	**258**	Pn	Pn	08 54 53.8	+2.3

1.3nm,0.3s,baz=83,slow=15,SNR=10
MAJO Matsushiro 3.47 258 *e*Pn **Pn 08 54 52.0 +0.5**
MAT Matsushiro 3.47 258 P **Pn 08 54 53.0 +1.5**
MAT *e*S **Sb 08 55 40.0 -1.1**
ERM Erimo 4.71 7 *e*Pn **Pn 08 55 07.2 -1.4**
ERM *e*Sn Sb 08 56 08.0 -8.9
JHJ2 Mitsune 4.72 208 *e*Pn **Pn 08 55 08.1 -0.6**
JHJ Hachijo jima 2 4.72 208 Pn **Pn 08 55 07.6 -1.2**
8.7nm,0.3s,baz=84,slow=19,SNR=3.8
JHJ Sn **Sn 08 56 00.9 -2.0**
5.7nm,0.3s,baz=107,slow=19,SNR=3.2
ASAJ Asahikawa 6.78 1 Pn **Pn 08 55 36.3 -0.7**
0.7nm,0.3s,baz=218,slow=10,SNR=3.5
ASAJ Sn **Sn 08 56 52.7 -0.8**
0.3nm,0.3s,baz=162,slow=20,SNR=3.3
ASAJ Asahikawa 6.78 1 *e*Pn **Pn 08 55 36.9 -0.1**
ASAJ Sn **Sn 08 56 52.7 -0.8**
USRK Ussuriysk Ar. 10.47 314 Pn Pn 08 56 29.8 +2.3
0.1nm,0.3s,baz=114,slow=13,SNR=5.2
KSRS Korea Array 11.54 275 Pn Pn 08 56 46.9 +4.7
0.1nm,0.3s,baz=90,slow=14,SNR=6.1
KSAR Wonju Array Be 11.57 275 Pn Pn 08 56 46.9 +4.2
SEY Seymchan 26.35 10 P **P 08 59 34.0 +1.0**
1.7nm,0.7s,baz=160,slow=6.9,SNR=3.9
H11N2 WAKE ISLAND Hy 27.62 123 T T 09 28 33.0
baz=315,slow=75,SNR=319
H11N1 WAKE ISLAND Hy 27.63 123 T T 09 28 36.2
baz=315,slow=75,SNR=310
H11N3 WAKE ISLAND Hy 27.64 123 T T 09 28 34.2
baz=315,slow=75,SNR=184
SONM Songino Array 28.29 303 P **P 08 59 52.1 +1.4**
4.0nm,0.9s,baz=96,slow=8.1,SNR=8.0
H11S1 WAKE ISLAND Hy 28.36 125 T T 09 29 28.2
baz=317,slow=76,SNR=173
H11S3 WAKE ISLAND Hy 28.36 125 T T 09 29 28.4
baz=317,slow=76,SNR=208
H11S2 WAKE ISLAND Hy 28.37 125 T T 09 29 27.0
baz=317,slow=76,SNR=151
ZALV Zalesovo Beam 42.31 312 P **P 09 01 51.7 +0.9**
0.6nm,0.3s,baz=100,slow=6.2,SNR=3.7
MKAR Makanchi Array 44.64 302 P **P 09 02 10.8 +1.1**
1.6nm,0.9s,baz=82,slow=8.7,SNR=6.8
MKAR LR LR 09 21 19.8
comp=Z,90nm,19.8s,baz=127,slow=37
KURK Kurchatov 46.38 308 P **P 09 02 24.4 +1.0**
KURBB Kurchatov Arra 46.45 308 P **P 09 02 24.4 +0.5**
2.1nm,0.6s,baz=82,slow=7.7,SNR=3.4
ILAR Eielson Array 48.81 33 P **P 09 02 41.9 -0.2**
0.8nm,1.0s,baz=248,slow=6.4,SNR=3.5
TKM2 Tokmak 2 50.20 298 *e*P P 09 02 55.2 +2.0
1.0nm,0.4s
WRAB Tennant Creek 57.46 189 *e*P **P 09 03 45.9 -0.3**
6.4nm,1.1s
WRA Warramunga Arr 57.47 189 P **P 09 03 45.9 -0.4**
2.8nm,1.0s,baz=7.3,slow=7.8,SNR=9.6
ABKAR Akbulak array 58.36 310 *e*P **P 09 03 52.7 +0.4**
0.2nm,0.3s
ASAR Alice Springs 61.20 189 P **P 09 04 11.0 -1.0**
0.9nm,0.8s,baz=10,slow=5.7,SNR=7.7
KBZ Khabaz 71.32 311 P P 09 05 18.1 +1.4
2.8nm,1.0s,baz=72,slow=3.2,SNR=4.9
NVAR Mina Array Bea 74.17 54 P P 09 05 34.4 +0.3
0.6nm,0.9s,baz=263,slow=6.3,SNR=2.8
NOA NORSAR Array B 74.22 338 P **P 09 05 33.9 +0.1**
0.8nm,0.9s,baz=36,slow=6.0,SNR=2.5
TXAR Lajitas Array 89.30 53 P P 09 06 54.6 +0.8
0.2nm,0.7s,baz=319,slow=2.6,SNR=2.3

*ISCJB **05** 08:56:18.9±0.4, 40°.55N±0°.02×23°.58E±0°.03, h12km±4km, Error ellipse: s-maj=4.4km s-min=3.6km az=153.7*
*CSEM **05** 08:56:18.8±0.1, 40°.55N×23°.59E, h15km, ML2.2, Error ellipse: s-maj=2.0km s-min=1.7km az=61.0*
*ATH **05** 08:56:19.0, 40°.55N×23°.58E, h13km±3km, ML2.2/8, Error ellipse: s-maj=3.8km s-min=0.7km az=223.0*
*THE **05** 08:56:19.2, 40°.55N×23°.58E, h8km±2km, ML2.5/10, Error ellipse: s-maj=2.3km s-min=0.4km az=268.0*
*SKO **05** 08:56:20.1, 40°.57N×23°.61E, h2km, M1.9, ML2.3*
ISC 05 08:56:18.9±0.8, 40°.55N±0°.02×23°.59E±0°.02, h16km±6km, n41, σ0s39/72, 2C, Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLG	**Polygyros**	**0.20**	**213**	P	**Pg**	**08 56 23.9**	**+0.2**
PLG				S	**Sg**	**08 56 27.1**	**+0.1**
PLG	**Polygyros**	**0.20**	**213**	P	**Pg**	**08 56 23.9**	**+0.2**
PLG				S	**Sg**	**08 56 27.1**	**+0.1**
PLG	**Polygyros**	**0.20**	**213**	P	**Pb**	**08 56 24.2**	**0.0**
PLG				S	**Sg**	**08 56 27.0**	**0.0**
PLG				AML	AML	08 56 27.4	
	comp=N,3114μm,0.2s						
PLG				AML	AML	08 56 27.6	
	comp=E,3274μm,0.1s						
SOH	**Sokhos**	**0.33**	**327**	P	**Pg**	**08 56 25.7**	**-0.2**
SOH				S	**Sg**	**08 56 30.3**	**-0.3**
SOH	**Sokhos**	**0.33**	**327**	P	**Pg**	**08 56 25.9**	**+0.1**
SOH				S	**Sg**	**08 56 30.3**	**-0.3**
SOH	**Sokhos**	**0.33**	**327**	P	**Pg**	**08 56 25.9**	**+0.1**
SOH				S	**Sg**	**08 56 30.0**	**-0.6**
SOH				AML	AML	08 56 30.5	
	comp=E,1897μm,0.5s						
SOH				AML	AML	08 56 31.1	
	comp=N,2519μm,0.3s						
OUR	**Ouranopolis**	**0.37**	**125**	P	**Pb**	**08 56 26.8**	**-0.2**
OUR				S	**Sg**	**08 56 31.4**	**-0.1**
OUR	**Ouranopolis**	**0.37**	**125**	P	**Pb**	**08 56 26.8**	**-0.2**
OUR				S	**Sg**	**08 56 31.4**	**-0.1**
OUR	**Ouranopolis**	**0.37**	**125**	P	**Pb**	**08 56 27.2**	**+0.2**
OUR				S	**Sg**	**08 56 31.0**	**-0.6**
OUR				AML	AML	08 56 34.9	
	comp=N,1164μm,0.2s						
OUR				AML	AML	08 56 34.9	
	comp=E,1435μm,0.2s						
HORT	**Hortiatis**	**0.38**	**278**	P	**Pg**	**08 56 26.6**	**-0.1**
HORT				S	**Sg**	**08 56 31.5**	**-0.5**
HORT	**Hortiatis**	**0.38**	**278**	P	**Pg**	**08 56 26.6**	**-0.1**
HORT				S	**Sg**	**08 56 31.5**	**-0.5**
HORT	**Hortiatis**	**0.38**	**278**	P	**Pg**	**08 56 26.6**	**-0.1**
HORT				S	**Sg**	**08 56 31.2**	**-0.8**
HORT				AML	AML	08 56 32.5	
	comp=E,567μm,0.2s						
HORT				AML	AML	08 56 32.6	
	comp=N,524μm,0.1s						
THE	**Thessaloniki**	**0.48**	**281**	P	**Pg**	**08 56 28.7**	**+0.1**
THE				S	**Sg**	**08 56 34.9**	**-0.2**
THE	**Thessaloniki**	**0.48**	**281**	P	**Pg**	**08 56 28.7**	**+0.1**
THE				S	**Sg**	**08 56 34.9**	**-0.2**
THE	**Thessaloniki**	**0.48**	**281**	P	**Pb**	**08 56 28.9**	**-0.1**
SRS	**Serrai**	**0.57**	**0**	P	**Pg**	**08 56 29.9**	**-0.3**
SRS				S	**Sg**	**08 56 38.0**	**+0.1**
SRS	**Serrai**	**0.57**	**0**	P	**Pg**	**08 56 30.0**	**-0.3**
SRS				S	**Sg**	**08 56 38.0**	**+0.1**
SRS	**Serrai**	**0.57**	**0**	P	**Pg**	**08 56 30.0**	**-0.2**
SRS				S	**Sb**	**08 56 38.7**	**+0.3**
SRS				AML	AML	08 56 42.6	
	comp=E,538μm,0.2s						
SRS				AML	AML	08 56 42.7	
	comp=N,589μm,0.2s						
PAIG	**Paliouri**	**0.62**	**174**	P	**Pg**	**08 56 31.0**	**-0.1**
PAIG				S	**Sb**	**08 56 39.6**	**-0.2**
PAIG	**Paliouri**	**0.62**	**174**	P	**Pb**	**08 56 31.2**	**-0.1**
PAIG				S	**Sg**	**08 56 39.1**	**-0.3**
PAIG	**Paliouri**	**0.62**	**174**	P	**Pb**	**08 56 31.2**	**-0.1**
PAIG				S	**Sg**	**08 56 39.1**	**-0.3**
PAIG				AML	AML	08 56 39.6	
	comp=E,863μm,0.2s						
PAIG				AML	AML	08 56 39.9	
	comp=N,388μm,0.2s						
KNT	**Kendrikon**	**0.81**	**320**	P	**Pg**	**08 56 34.1**	**-0.6**
KNT				S	**Sb**	**08 56 45.6**	**+0.3**
KNT	**Kendrikon**	**0.81**	**320**	P	**Pg**	**08 56 34.1**	**-0.6**
KNT				S	**Sg**	**08 56 44.8**	**-0.6**
KNT	**Kendrikon**	**0.81**	**320**	P	**Pg**	**08 56 33.6**	**-1.1**
KNT				S	**Sg**	**08 56 44.8**	**-0.6**
KNT				AML	AML	08 56 48.4	
	comp=E,398μm,0.2s						
KNT				AML	AML	08 56 48.9	
	comp=N,420μm,0.1s						
NVR	**Nevrokopi**	**0.83**	**14**	P	**Pg**	**08 56 34.7**	**-0.4**
NVR				S	**Sb**	**08 56 46.5**	**+0.6**
NVR	**Nevrokopi**	**0.83**	**14**	P	**Pg**	**08 56 34.7**	**-0.4**
NVR				S	**Sb**	**08 56 46.5**	**+0.6**
KAVA	**Kavala**	**0.83**	**57**	P	**Pg**	**08 56 35.1**	**0.0**
KAVA				S	**Sb**	**08 56 46.8**	**+0.9**
KAVA	**Kavala**	**0.83**	**57**	P	**Pg**	**08 56 35.1**	**0.0**
KAVA				S	**Sb**	**08 56 46.4**	**+0.5**
KAVA	**Kavala**	**0.83**	**57**	P	**Pg**	**08 56 35.4**	**+0.2**
LIT	**Litokhoron**	**0.95**	**243**	P	**Pb**	**08 56 37.0**	**0.0**
LIT	**Litokhoron**	**0.95**	**243**	P	**Pb**	**08 56 37.0**	**0.0**
LIT				S	**Sb**	**08 56 49.3**	**0.0**
LIT	**Litokhoron**	**0.95**	**243**	P	**Pg**	**08 56 37.1**	**-0.2**
LIT				S	**Sb**	**08 56 49.3**	**0.0**
LIT				AML	AML	08 56 52.4	
	comp=E,225μm,0.2s						
LIT				AML	AML	08 56 52.5	
	comp=N,136μm,0.2s						
GRG	**Griva**	**0.99**	**295**	P	**Pn**	**08 56 38.3**	**+0.1**
GRG	**Griva**	**0.99**	**295**	P	**Pn**	**08 56 38.3**	**+0.1**
VAY	**Valandovo**	**1.09**	**315**	⇑*i*Pg	**Pg**	**08 56 39.9**	**-0.2**
VAY				*i* Sg	**Sn**	**08 56 55.0**	**+0.7**
VAY				*e*Lg	Lg	08 56 58.0	
	comp=E,36nm,0.5s						
VAY				*e*Lg	Lg	08 56 58.1	
	comp=N,78nm,0.7s						
VAY	**Valandovo**	**1.09**	**315**	⇑*i*Pg	**Pg**	**08 56 39.8**	**-0.2**
VAY				*i* Sg	**Sn**	**08 56 55.0**	**+0.7**
VAY				*e*Lg	Lg	08 56 57.9	
	comp=N,36nm,0.5s						
XOR	**Xorichti**	**1.22**	**195**	P	**Pb**	**08 56 41.8**	**+0.3**
XOR	**Xorichti**	**1.22**	**195**	P	**Pb**	**08 56 41.8**	**+0.3**
XOR	**Xorichti**	**1.22**	**195**	P	**Pg**	**08 56 41.9**	**-0.4**
LIA	**Limnos Island**	**1.38**	**117**	P	**Pn**	**08 56 42.4**	**-1.0**
THL	**Klokotos Trika**	**1.56**	**232**	P	**Pn**	**08 56 46.1**	**+0.3**

*NIED **05** 08:57:00, 39°.20N×142°.40E, h32km, Mw3.7 Best double couple: M0 3.37000×10^14 NP1:φs320.00000°, δ31.00000°, λ-114.00000°. NP2:φs167.00000°, δ62.00000°, λ-77.00000°.*
*ISCJB **05** 08:57:27.9±1.5, 39°.17N±0°.04×142°.44E±0°.10, h28km±8km, mb3.5/4, Error ellipse: s-maj=13.0km s-min=6.3km az=18.1*
*JMA **05** 08:57:28.8±0.1, 39°.20N×142°.40E, h35km±1km, M3.9*
JMA Felt I J1.
*IDC **05** 08:57:33.2±3.1, 39°.16N×142°.36E, h69km±30km, mb3.1/4, mb1 3.4/7, mb1mx3.1/42, mbtmp3.4/7, ML2.9/3, Error ellipse: s-maj=39.7km s-min=16.4km az=111.0*
ISC 05 08:57:30.0±1.6, 39°.17N±0°.05×142°.29E±0°.08, h32km±10km, n15, σ1s90/23, mb3.7/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.49**	**259**	P	**Pb**	**08 57 40.3**	**-0.1**
OFUJ				S	**Sb**	**08 57 48.4**	**+0.9**
MIYJ	**Miyakonagasawa**	**0.54**	**318**	P	**Pb**	**08 57 40.3**	**-1.0**
MIYJ				S	**Sb**	**08 57 48.2**	**-0.7**
JOM	**Ohasama**	**0.83**	**291**	P	**Pn**	**08 57 45.2**	**-0.3**
JOM				S	**Sn**	**08 57 57.2**	**+0.6**
JTH	**Tanohata**	**0.83**	**337**	P	**Pn**	**08 57 44.2**	**-1.4**
JTH				S	**Sb**	**08 57 55.6**	**-1.4**
JMK	**Ichinoseki**	**0.86**	**255**	P	**Pn**	**08 57 45.8**	**-0.1**
JMK				S	**Sn**	**08 57 58.3**	**+0.9**
JIO	**Ouri**	**1.03**	**226**	P	**Pn**	**08 57 47.5**	**-0.7**
JIO				*e*S	**Sn**	**08 58 02.3**	**+0.8**
JKZ	**Kuzumaki**	**1.10**	**318**	P	**Pn**	**08 57 49.1**	**-0.2**
JKZ				S	**Sn**	**08 58 03.7**	**+0.3**
MAT	**Matsushiro**	**4.16**	**232**	P	**Pn**	**08 58 34.8**	**+3.4**
MJAR	**Matsushiro Arr**	**4.16**	**232**	P	**Pn**	**08 58 34.7**	**+3.3**
	1.1nm,0.3s,baz=39,slow=11,SNR=10.0						
ASAJ	**Asahikawa**	**4.95**	**3**	P	**Pn**	**08 58 45.3**	**+3.3**
	1.0nm,0.3s,baz=72,slow=20,SNR=1.5						
ASAJ				S	**Sn**	**08 59 41.2**	**+3.0**
	0.6nm,0.3s,baz=86,slow=19,SNR=1.5						
USRK	**Ussuriysk Ar.**	**9.19**	**306**	P	**Pn**	**08 59 44.1**	**+3.7**
	0.1nm,0.3s,baz=107,slow=16,SNR=2.6						
KURBB	**Kurchatov Arra**	**45.26**	**306**	P	**P**	**09 05 43.9**	**-0.4**
	0.3nm,0.3s,baz=80,slow=8.2,SNR=3.8						
ILAR	**Eielson Array**	**47.33**	**33**	P	**P**	**09 05 59.4**	**-0.9**
	0.5nm,0.6s,baz=266,slow=6.3,SNR=6.2						
WRA	**Warramunga Arr**	**59.27**	**189**	P	**P**	**09 07 27.1**	**-1.4**
	0.5nm,0.5s,baz=6.4,slow=6.9,SNR=6.8						
YKA	**Yellowknife Ar**	**61.62**	**31**	P	**P**	**09 07 43.1**	**-1.0**
	0.1nm,0.7s,baz=304,slow=6.5,SNR=2.0						

CASC 05 08:59:54.6±2.6, 11°.90N×86°.62W, h109km±14km, MD4.3, ML3.0, 1D, Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
COPN	**Copaltepe**	**0.28**	**5**	*e*P	Pn	09 00 10.3	+0.1
CRUN	**El Crucero**	**0.32**	**75**	*e*P	Pn	09 00 10.6	+0.2
XAVN	**Gruta Xavier**	**0.38**	**49**	*e*P	Pn	09 00 10.7	+0.1
TISN	**Laguna Tiscapa**	**0.42**	**55**	*e*P	Pn	09 00 11.1	+0.2
APYN	**Apoyeque**	**0.42**	**38**	*e*P	Pn	09 00 10.8	-0.1
MGAN	**Managua**	**0.44**	**56**	*e*P	Pn	09 00 11.0	+0.1
MGAN				*e*S	Sn	09 00 23.8	+0.6
MGAN				AML	AML	09 00 25.1	
	comp=N,356nm,0.5s						
MOMN	**Momotombo**	**0.51**	**9**	*e*P	Pn	09 00 11.0	-0.4
CNGN	**Cerro Negro**	**0.60**	**352**	*e*P	Pn	09 00 11.8	-0.3
TELN	**Telica**	**0.73**	**343**	*e*P	Pn	09 00 13.2	-0.1
CRIN	**San Cristobal**	**0.90**	**332**	*e*P	Pn	09 00 14.7	-0.1
BOAB	**BOACO BROADBAN**	**.08**	**60**	*e*P	Pn	09 00 15.6	-0.9
ESTN	**Estel**	**1.22**	**11**	*e*P	Pn	09 00 17.4	-0.7
CSGN	**Cosiguina Volc**	**1.41**	**319**	*e*P	Pn	09 00 20.2	-0.2
CSGN				*e*S	Sn	09 00 40.3	+0.5
JCR	**Jicaral**	**2.52**	**144**	*e*P	Pn	09 00 35.7	+1.4
JCR				*e*S	Sn	09 01 02.3	-2.5
CGA2	**Cerro Gallo 2**	**2.83**	**131**	*e*P	Pn	09 00 40.7	+2.3
CGA2				*e*S	Sn	09 01 14.9	+2.8
QCR	**Quepos**	**3.45**	**135**	*e*P	Pn	09 00 47.7	+1.2
QCR				*e*S	Sn	09 01 26.5	-0.2
URSC	**Urasca**	**3.46**	**126**	⇓*e*P	Pn	09 00 47.6	+0.7
URSC				*e*S	Sn	09 01 29.7	+2.4
BUS	**Buena Vista**	**3.65**	**129**	*e*P	Pn	09 00 52.6	+2.9
BUS				*e*S	Sn	09 01 34.2	+1.9

IDC 05 09:06:11.4±2.8, 53°.59N×87°.86E, h0km, mb1 3.3/2, mb1mx3.0/41, mbtmp3.3/2, ML2.9/2, Error ellipse: s-maj=26.6km s-min=17.8km az=83.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**1.84**	**282**	*i*		09 18 09.8	
	baz=97,slow=328,SNR=3.6						
ZALV	**Zalesovo Beam**	**1.84**	**282**	Pn	Pn	09 06 43.5	-0.8
	3.6nm,0.3s,baz=98,slow=14,SNR=42						
ZALV				Sn	Sb	09 07 09.4	0.0
	6.1nm,0.3s,baz=98,slow=29,SNR=18						
KURBB	**Kurchatov Arra**	**6.47**	**246**	Pn	Pn	09 07 48.7	+0.9
	0.2nm,0.3s,baz=62,slow=14,SNR=22						
KURBB				Sn	Sn	09 09 01.1	-1.2
	0.1nm,0.3s,baz=46,slow=32,SNR=2.8						
KURBB				Lg	Lg	09 09 35.2	
	0.1nm,0.3s,baz=63,slow=34,SNR=9.4						
MKAR	**Makanchi Array**	**7.68**	**210**	Pn	Pn	09 08 05.8	+1.3
	0.3nm,0.3s,baz=27,slow=13,SNR=10						
MKAR				Sn	Sn	09 09 32.2	-0.1
	0.2nm,0.3s,baz=33,slow=25,SNR=8.4						
MKAR				Lg	Lg	09 10 12.0	
	0.2nm,0.3s,baz=33,slow=29,SNR=3.9						
BVAR	**Borovoye Array**	**10.47**	**274**	Pn	Pn	09 08 45.1	+2.4
	0.1nm,0.3s,baz=69,slow=12,SNR=2.1						
BVAR				Sn	Sn	09 10 35.7	-5.0
	0.3nm,0.3s,baz=83,slow=25,SNR=5.0						

*NIED **05** 09:20:00, 39°.10N×142°.50E, h32km, Mw4.1 Best double couple: M0 1.41000×10^15 NP1:φs316.00000°, δ30.00000°, λ-135.00000°. NP2:φs186.00000°, δ70.00000°, λ-68.00000°.*
*JMA **05** 09:20:13.5±0.1, 39°.14N×142°.42E, h34km±1km, M4.1*
JMA Felt I J1.
*IDC **05** 09:20:16.7±2.0, 39°.06N×142°.39E, h52km±19km, mb3.7/15, mb1 3.9/21, mb1mx3.7/62, mbtmp3.9/21, ML3.4/5, MS3.3/10, Ms1 3.3/10, ms1mx2.9/63, Error ellipse: s-maj=19.7km s-min=11.4km az=108.0*
ISC 05 09:20:12.6±1.9, 39°.09N±0°.04×142°.42E±0°.07, h15km±10km, n38, σ1s53/37, mb3.9/15, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.58**	**269**	P	**Pn**	**09 20 25.2**	**-1.1**
OFUJ				S	**Sn**	**09 20 33.1**	**-2.5**
MIYJ	**Miyakonagasawa**	**0.67**	**316**	P	**Pg**	**09 20 25.8**	**+0.1**
MIYJ				S	**Sg**	**09 20 34.3**	**-0.3**
JMK	**Ichinoseki**	**0.94**	**262**	P	**Pg**	**09 20 30.7**	**-0.1**
JMK				S	**Sg**	**09 20 43.0**	**-0.2**
JTH	**Tanohata**	**0.95**	**333**	P	**Pb**	**09 20 29.8**	**-0.9**
JOM	**Ohasama**	**0.95**	**294**	P	**Pg**	**09 20 30.8**	**-0.2**
JOM				S	**Sg**	**09 20 43.1**	**-0.4**
JIO	**Ouri**	**1.05**	**233**	P	**Pb**	**09 20 31.8**	**-0.6**
JIO				S	**Sb**	**09 20 44.8**	**-1.2**
JKZ	**Kuzumaki**	**1.23**	**317**	P	**Pn**	**09 20 34.7**	**-0.5**
JKZ				S	**Sb**	**09 20 50.4**	**-0.7**
MJAR	**Matsushiro Arr**	**4.19**	**234**	P	**Pn**	**09 21 18.2**	**+2.2**
	1.9nm,0.3s,baz=38,slow=12,SNR=44						
MJAR				LR	LR	09 23 08.6	
	comp=Z,343nm,18.3s,baz=45,slow=42						
MAT	**Matsushiro**	**4.19**	**234**	P	**Pn**	**09 21 17.3**	**+1.3**
MAT				*e*S	**Sn**	**09 22 08.8**	**+4.1**
ASAJ	**Asahikawa**	**5.02**	**1**	P	**Pn**	**09 21 29.1**	**+1.8**
	2.6nm,0.3s,baz=215,slow=11,SNR=24						
ASAJ				S	**Sn**	**09 22 27.2**	**+2.2**
	2.4nm,0.3s,baz=55,slow=27,SNR=6.6						
ASAJ				LR	LR	09 23 58.1	
	comp=Z,235nm,21.6s,baz=176,slow=44						
JHJ	**Hachijo jima 2**	**6.33**	**200**	P	**Pn**	**09 21 46.6**	**+1.3**
	4.9nm,0.3s,baz=233,slow=20,SNR=3.0						
JHJ				LR	LR	09 24 35.0	
	comp=Z,111nm,18.1s,baz=69,slow=41						
USRK	**Ussuriysk Ar.**	**9.32**	**307**	P	**Pn**	**09 22 29.6**	**+3.3**
	0.2nm,0.3s,baz=112,slow=14,SNR=10						
USRK				LR	LR	09 25 47.8	
	comp=Z,226nm,20.6s,baz=133,slow=36						
JNU	**Nakatsue**	**11.07**	**241**	LR	LR	09 27 27.9	
	comp=Z,174nm,20.3s,baz=82,slow=39						
KSRS	**Korea Array**	**11.51**	**266**	P	**Pn**	**09 22 59.5**	**+3.1**
	0.1nm,0.3s,baz=146,slow=42,SNR=2.9						
KSRS				LR	LR	09 27 02.9	
	comp=Z,108nm,19.2s,baz=90,slow=35						
KLR	**Kul'dur**	**12.69**	**326**	P	**Pn**	**09 23 14.7**	**+2.3**
	0.1nm,0.3s,baz=145,slow=18,SNR=3.0						
KLR				LR	LR	09 28 06.5	
	comp=Z,118nm,18.6s,baz=112,slow=37						
PETK	**Petropavlovsk-**	**17.52**	**32**	LR	LR	09 30 32.3	
	comp=Z,57nm,20.7s,baz=178,slow=35						
SEY	**Seymchan**	**24.62**	**11**	P	**P**	**09 25 32.0**	**0.0**
	3.7nm,0.6s,baz=197,slow=8.2,SNR=17						
SONM	**Songino Array**	**27.36**	**300**	LR	LR	09 37 27.0	
	comp=Z,72nm,19.1s,baz=69,slow=38						
H11N2	**WAKE ISLAND Hy 28.61**	**125**		T	T	09 56 34.1	
	baz=318,slow=75,SNR=110						
H11N1	**WAKE ISLAND Hy 28.61**	**125**		T	T	09 56 35.0	
	baz=318,slow=75,SNR=138						
H11N3	**WAKE ISLAND Hy 28.62**	**125**		T	T	09 56 43.3	
	baz=318,slow=75,SNR=127						
H11S1	**WAKE ISLAND Hy 29.39**	**127**		T	T	09 57 40.9	
	baz=319,slow=76,SNR=30						
H11S3	**WAKE ISLAND Hy 29.39**	**127**		T	T	09 57 38.6	
	baz=319,slow=76,SNR=21						
H11S2	**WAKE ISLAND Hy 29.41**	**127**		T	T	09 57 40.1	
	baz=319,slow=76,SNR=28						
ZALV	**Zalesovo Beam**	**41.15**	**311**	P	**P**	**09 27 55.3**	**-0.6**
	0.8nm,0.4s,baz=294,slow=43,SNR=2.7						
NRIK	**Noril'sk**	**41.75**	**334**	P	**P**	**09 27 59.3**	**-1.3**
	3.3nm,0.4s,baz=82,slow=7.1,SNR=3.3						
NRIK				LR	LR	09 46 19.0	
	comp=Z,64nm,19.9s,baz=222,slow=37						
MKAR	**Makanchi Array**	**43.73**	**300**	P	**P**	**09 28 16.4**	**-0.6**
	1.1nm,0.7s,baz=83,slow=9.9,SNR=11						
ILAR	**Eielson Array**	**47.34**	**33**	P	**P**	**09 28 45.3**	**0.0**
	1.8nm,0.7s,baz=270,slow=6.2,SNR=25						
BVAR	**Borovoye Array**	**49.80**	**311**	P	**P**	**09 29 03.6**	**-0.8**
	0.7nm,0.5s,baz=76,slow=9.3,SNR=4.3						
INK	**Inuvik**	**52.20**	**28**	P	**P**	**09 29 22.6**	**+0.4**
	2.2nm,0.7s,baz=286,slow=6.8,SNR=11						
AKTO	**Aktyubinsk**	**57.90**	**311**	P	**P**	**09 30 04.5**	**+0.8**
	0.7nm,0.4s,baz=85,slow=11,SNR=2.5						
WRA	**Warramunga Arr**	**59.21**	**189**	P	**P**	**09 30 11.6**	**-1.4**
	2.9nm,0.9s,baz=6.4,slow=7.1,SNR=14						
YKA	**Yellowknife Ar**	**61.63**	**31**	P	**P**	**09 30 28.5**	**-0.7**
	0.6nm,0.9s,baz=301,slow=6.8,SNR=10.0						
ASAR	**Alice Springs**	**62.94**	**189**	P	**P**	**09 30 37.3**	**-1.0**
	1.8nm,1.0s,baz=359,slow=6.0,SNR=10.0						
NOA	**NORSAR Array B**	**72.59**	**337**	P	**P**	**09 31 38.4**	**-0.5**
	0.4nm,0.6s,baz=37,slow=6.1,SNR=2.8						
NVAR	**Mina Array Bea**	**73.13**	**54**	P	**P**	**09 31 42.9**	**+0.3**
	1.0nm,0.9s,baz=292,slow=4.8,SNR=6.7						
PDAR	**Pinedale Array**	**75.67**	**46**	P	**P**	**09 31 57.0**	**-0.4**
	0.5nm,0.7s,baz=333,slow=0.7,SNR=5.5						
TXAR	**Lajitas Array**	**88.25**	**53**	P	**P**	**09 33 03.7**	**+0.1**
	0.2nm,0.8s,baz=46,slow=42,SNR=2.8						

WEL 05 09:24:14.1±0.1, 43°.58S×172°.72E, h5km, ML3.5/10, 1C, Error ellipse: s-maj=0.6km s-min=0.4km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRLZ	**Canterbury Las**	**0.07**	**272**	PG	Pg	09 24 15.7	+0.1
CRLZ				SG	Sg	09 24 17.0	+0.2
CRLZ				AML	AML	09 24 17.2	
CRLZ				AML	AML	09 24 17.3	
CRLZ				AML	AML	09 24 17.5	
MQZ	**McQueen's Vall**	**0.14**	**201**	⇑PG	Pg	09 24 17.0	+0.1
MQZ				SG	Sg	09 24 19.1	+0.4
MQZ				AML	AML	09 24 19.5	
OXZ	**Oxford**	**0.56**	**297**	PG	Pg	09 24 24.9	+0.1
LTZ	**Lake Taylor**	**0.86**	**337**	P*	Pg	09 24 31.0	+0.4
LTZ				AML	AML	09 24 43.9	
LTZ				AML	AML	09 24 44.

*CSEM **05** 09:38:46.4±0.6, 44°.30N×14°.71E, h2km, ML3.1/7, Error ellipse: s-maj=15.0km s-min=5.9km az=64.0*
*VIE **05** 09:38:48.9±1.3, 44°.44N×14°.73E, h8km, mb2.1/2, ml2.3/3, Error ellipse: s-maj=9.5km s-min=7.3km az=102.0*
ISC 05 09:38:46.4±1.9, 44°.30N±0°.06×14°.69E±0°.08, h0km±12km, n21, σ0s71/39, Adriatic Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GBRS	**Gornja Briga**	**1.23**	**4**	*i* Pg	**Pg**	**09 39 09.9**	**-0.2**
KNDS	**Knezji Dol**	**1.25**	**350**	*i* Pg	**Pb**	**09 39 10.6**	**-0.3**
KNDS				*e*Sg	**Sn**	**09 39 29.2**	**+0.5**
KNDS	**Knezji Dol**	**1.25**	**350**	*i* Pg	**Pb**	**09 39 10.6**	**-0.3**
KNDS				*e*Sg	**Sn**	**09 39 29.2**	**+0.5**
BOJS	**Bojanci**	**1.27**	**18**	*i* Pg	**Pg**	**09 39 09.7**	**-1.0**
BOJS				*i* Sg	**Sn**	**09 39 28.4**	**-0.7**
	comp=Z,14nm,0.2s						
BOJS	**Bojanci**	**1.27**	**18**	*i* Pg	**Pg**	**09 39 09.7**	**-1.0**
BOJS				*i* Sg	**Sn**	**09 39 28.4**	**-0.7**
	comp=Z,14nm,0.2s						
SKDS	**Skadanscina**	**1.34**	**339**	*i* Pg	**Pb**	**09 39 11.6**	**-0.8**
SKDS				*e*Sg	**Sn**	**09 39 30.1**	**-0.7**
	comp=Z,11nm,0.1s						
SKDS	**Skadanscina**	**1.34**	**339**	*i* Pg	**Pb**	**09 39 11.6**	**-0.8**
SKDS				*e*Sg	**Sn**	**09 39 30.1**	**-0.7**
	comp=Z,11nm,0.1s						
CEY	**Cerknica**	**1.45**	**353**	*i* Pg	**Pg**	**09 39 14.1**	**-0.2**
CEY				*i* Sg	**Sn**	**09 39 34.9**	**+1.2**
	comp=Z,6.0nm,0.1s						
CEY	**Cerknica**	**1.45**	**353**	*i* Pg	**Pg**	**09 39 14.1**	**-0.2**
CEY				*i* Sg	**Sn**	**09 39 34.9**	**+1.2**
	comp=Z,6.0nm,0.1s						
VISS	**Visnje**	**1.51**	**4**	*i* Pg	**Pb**	**09 39 14.6**	**-0.7**
VISS				*i* Sg	**Sg**	**09 39 35.6**	**+0.8**
	comp=Z,16nm,0.2s						
VISS	**Visnje**	**1.51**	**4**	*i* Pg	**Pb**	**09 39 14.6**	**-0.7**
VISS				*i* Sg	**Sg**	**09 39 35.6**	**+0.8**
	comp=Z,16nm,0.2s						
JAVS	**Javornik**	**1.66**	**345**	*i* Pn	**Pn**	**09 39 16.5**	**-0.3**
JAVS				*i* Sn	**Sg**	**09 39 39.9**	**+0.2**
	comp=Z,5.0nm,0.1s						
JAVS	**Javornik**	**1.66**	**345**	*i* Pn	**Pn**	**09 39 16.5**	**-0.3**
JAVS				*i* Sn	**Sg**	**09 39 39.8**	**+0.2**
	comp=Z,5.0nm,0.1s						
OBKA	**Obir**	**2.21**	**357**	*e*Pn	**Pn**	**09 39 24.7**	**+0.3**
OBKA	comp=Z,3.0nm,0.2s			*i* Sg	**Sg**	**09 39 57.9**	**+0.4**
	comp=Z,38nm,0.8s						
OBKA	**Obir**	**2.21**	**357**	Pn	**Pn**	**09 39 24.7**	**+0.3**
OBKA	comp=Z,3.0nm,0.2s			Sg	**Sg**	**09 39 57.9**	**+0.4**
	comp=Z,38nm,0.8s						
SOKA	**Soboth**	**2.39**	**6**	*i* Pg	**Pb**	**09 39 30.5**	**+0.1**
SOKA				*i* Sg	**Sg**	**09 40 04.1**	**+0.8**
SOKA	**Soboth**	**2.39**	**6**	Pg	**Pb**	**09 39 30.5**	**+0.1**
SOKA				Sg	**Sg**	**09 40 04.1**	**+0.8**
MYKA	**Terra Mystica**	**2.44**	**343**	*i* Sg	**Sg**	**09 40 06.0**	**+1.0**
	comp=Z,4.1nm,0.4s						
MYKA	**Terra Mystica**	**2.44**	**343**	Sg	**Sg**	**09 40 06.0**	**+1.0**
	comp=Z,4.1nm,0.4s						
STON	**Ston**	**2.61**	**122**	*e*Pn	**Pn**	**09 39 30.7**	**+0.9**
STON				Sn	**Sn**	**09 40 01.6**	**-0.5**
STON	**Ston**	**2.61**	**122**	*e*Pn	**Pn**	**09 39 30.6**	**+0.9**
STON				Sn	**Sn**	**09 40 01.6**	**-0.5**

IDC 05 09:44:49.6±2.2, 15°.65S×174°.49W, h181km±37km, mb4.0/6, mb1 4.1/7, mb1mx3.5/38, mbtmp4.5/7, MS2.1/1, Ms1 2.1/1, ms1mx2.1/30, Error ellipse: s-maj=39.9km s-min=24.3km az=95.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**3.14**	**57**	P	Pn	09 45 40.5	+0.4
	24nm,0.3s,baz=234,slow=8.7,SNR=8.9						
AFI				S	Sn	09 46 19.7	+0.2
	29nm,0.3s,baz=243,slow=16,SNR=5.1						
AFI				LR	LR	09 46 22.9	
	comp=Z,32nm,20.6s,baz=180,slow=30						
URZ	**Urewera**	**23.71**	**197**	P	P	09 49 45.3	+0.5
	5.4nm,0.4s,baz=356,slow=16,SNR=14						
RPZ	**Rata Peaks**	**30.56**	**201**	P	P	09 50 45.6	-0.5
	8.6nm,0.8s,baz=190,slow=17,SNR=3.7						
STKA	**Stephens Creek**	**43.00**	**240**	P	P	09 52 31.4	+0.1
	1.3nm,0.4s,baz=77,slow=9.0,SNR=5.9						
WRA	**Warramunga Arr**	**48.77**	**257**	P	P	09 53 15.8	-0.7
	1.3nm,0.3s,baz=96,slow=7.8,SNR=103						
ASAR	**Alice Springs**	**49.04**	**252**	P	P	09 53 18.6	+0.1
	20nm,0.6s,baz=86,slow=8.4,SNR=275						
FITZ	**Fitzroy Crossi**	**57.13**	**258**	P	P	09 54 18.0	+0.3
	3.1nm,1.0s,baz=90,slow=2.0,SNR=2.3						
BRTR	**Keskin Array B**	**145.69**	**320**	PKPbc	PKPdf	10 04 06.5	-0.3
	1.1nm,0.7s,baz=90,slow=0.9,SNR=5.5						

*ISCJB **05** 10:01:45.5±0.6, 27°.62N±0°.08×139°.6E±0°.1, h479km, mb3.4/12, Error ellipse: s-maj=15.6km s-min=10.6km az=163.2*
*IDC **05** 10:01:47.1±0.6, 27°.73N×139°.97E, h489km±8km, mb3.2/12, mb1 3.3/15, mb1mx3.0/58, mbtmp4.0/15, Error ellipse: s-maj=19.0km s-min=10.6km az=77.0*
ISC 05 10:01:46.3±0.8, 27°.7N±0°.1×139°.9E±0°.2, h479km, n16, σ1s01/16, mb3.4/12, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCJ	**Chichijima**	**2.16**	**105**	P	P	10 02 53.1	+2.8
	baz=0.3,slow=3.4						
JCJ				S	**S**	**10 03 43.8**	**+1.5**
	baz=287,slow=20						
JHJ	**Hachijo jima 2**	**5.43**	**359**	P	**P**	**10 03 16.9**	**+0.8**
	4.0nm,0.3s,baz=72,slow=20,SNR=2.7						
JHJ				S	**S**	**10 04 30.2**	**+0.8**
	6.1nm,0.3s,baz=73,slow=19,SNR=2.5						
MJAR	**Matsushiro Arr**	**8.95**	**351**	P	**P**	**10 03 53.9**	**+1.7**
	0.4nm,0.3s,baz=209,slow=7.5,SNR=10						
KSRS	**Korea Array**	**13.99**	**317**	P	P	10 04 49.8	+3.7
	0.2nm,0.3s,baz=126,slow=9.2,SNR=5.8						
WRA	**Warramunga Arr**	**47.64**	**187**	P	**P**	**10 09 38.9**	**+0.6**
	2.0nm,0.4s,baz=4.9,slow=7.7,SNR=56						
MKAR	**Makanchi Array**	**48.50**	**309**	P	**P**	**10 09 44.9**	**+0.4**
	1.1nm,0.7s,baz=90,slow=11,SNR=10						
KURBB	**Kurchatov Arra**	**51.15**	**314**	P	**P**	**10 10 04.2**	**+0.3**
	4.0nm,0.7s,baz=92,slow=7.8,SNR=53						
ASAR	**Alice Springs**	**51.36**	**187**	P	**P**	**10 10 06.2**	**+0.3**
	0.8nm,0.5s,baz=16,slow=13,SNR=27						
AAK	**Ala-Archa**	**54.22**	**304**	P	**P**	**10 10 27.0**	**+0.7**
	1.6nm,0.3s,baz=77,slow=11,SNR=3.4						
BVAR	**Borovoye Array**	**56.21**	**317**	P	**P**	**10 10 40.2**	**+0.4**
	3.4nm,0.6s,baz=88,slow=8.9,SNR=17						
ILAR	**Eielson Array**	**58.20**	**29**	P	**P**	**10 10 52.5**	**-0.9**
	0.3nm,0.5s,baz=270,slow=6.3,SNR=4.9						
AKTO	**Aktyubinsk**	**64.16**	**315**	P	**P**	**10 11 31.8**	**-1.1**
	0.8nm,0.6s,baz=45,slow=8.6,SNR=3.2						
YKA	**Yellowknife Ar**	**72.61**	**28**	P	**P**	**10 12 23.7**	**-0.3**
	0.4nm,0.6s,baz=294,slow=5.7,SNR=11						
FINES	**FINESS Array B**	**76.50**	**333**	P	**P**	**10 12 45.5**	**-0.4**
	0.8nm,0.3s,baz=62,slow=4.4,SNR=8.6						
NVAR	**Mina Array Bea**	**81.78**	**51**	P	**P**	**10 13 14.3**	**-0.5**
	0.3nm,0.6s,baz=288,slow=6.1,SNR=3.5						
NOA	**NORSAR Array B**	**82.29**	**337**	P	**P**	**10 13 15.0**	**-1.8**
	0.6nm,0.7s,baz=48,slow=4.9,SNR=2.9						

*ISCJB **05** 10:03:42.5±1.4, 40°.29N±0°.06×142°.53E±0°.09, h29km±8km, mb3.7/4, Error ellipse: s-maj=11.7km s-min=10.0km az=178.5*
*JMA **05** 10:03:43.8±0.1, 40°.27N×142°.46E, h32km±2km, M3.3*
*IDC **05** 10:03:47.3±2.0, 40°.83N×141°.06E, h0km, mb3.7/4, mb1 3.6/6, mb1mx3.4/55, mbtmp3.6/6, ML3.0/2, MS2.2/1, Ms1 2.2/1, ms1mx1.9/45, Error ellipse: s-maj=49.3km s-min=26.4km az=88.0*
ISC 05 10:03:42.9±1.8, 40°.31N±0°.04×142°.47E±0°.09, h31km±13km, n14, σ1s16/20, mb3.7/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**0.59**	**232**	P	**Pn**	**10 03 55.1**	**-0.1**
JTH				S	**Sb**	**10 04 03.3**	**+0.3**
JANG	**Nango**	**0.73**	**276**	P	**Pn**	**10 03 57.5**	**+0.4**
JANG				S	**Sb**	**10 04 07.5**	**+0.6**
MIYJ	**Miyakonagasawa**	**0.88**	**214**	P	**Pn**	**10 03 59.3**	**+0.1**
MIYJ				S	**Sb**	**10 04 10.5**	**-0.7**
JKZ	**Kuzumaki**	**0.93**	**250**	P	**Pn**	**10 04 00.6**	**+0.7**
JKZ				S	**Sb**	**10 04 12.3**	**-0.2**
JTM	**Tenmabayashi**	**1.17**	**295**	P	**Pb**	**10 04 04.4**	**-0.1**
JTM				S	**Sb**	**10 04 19.4**	**+0.1**
JOM	**Ohasama**	**1.23**	**228**	P	**Pb**	**10 04 04.9**	**-0.6**
JAH	**Hinai**	**1.41**	**266**	P	**Pb**	**10 04 08.3**	**-0.2**
JAH				S	**Sb**	**10 04 26.2**	**+0.1**
JOT	**Ohata**	**1.52**	**315**	P	**Pb**	**10 04 09.6**	**-0.9**
ASAJ	**Asahikawa**	**3.81**	**1**	Pn	**Pn**	**10 04 41.8**	**+2.4**
	1.1nm,0.3s,baz=218,slow=9.5,SNR=3.3						
ASAJ				Sn	**Sb**	**10 05 33.5**	**-1.5**
	2.8nm,0.3s,baz=28,slow=24,SNR=7.3						
ASAJ				LR	LR	10 06 28.3	
	comp=Z,39nm,20.8s,baz=186,slow=46						
MJAR	**Matsushiro Arr**	**5.03**	**223**	Pn	**Pn**	**10 04 59.4**	**+3.1**
	0.5nm,0.3s,baz=30,slow=15,SNR=4.3						
MKAR	**Makanchi Array**	**43.16**	**299**	P	**P**	**10 11 39.6**	**-1.0**
	0.4nm,0.5s,baz=67,slow=11,SNR=4.0						
KURBB	**Kurchatov Arra**	**44.70**	**306**	P	**P**	**10 11 52.9**	**0.0**
	1.0nm,0.6s,baz=79,slow=8.6,SNR=4.7						
BVAR	**Borovoye Array**	**49.03**	**310**	P	**P**	**10 12 26.3**	**-0.4**
	0.7nm,0.3s,baz=77,slow=9.5,SNR=3.6						
WRA	**Warramunga Arr**	**60.41**	**189**	P	P	10 14 01.7	+12
	0.4nm,0.8s,baz=4.7,slow=7.3,SNR=1.9						

PRE 05 10:11:42.4±1.9, 28°.81S×20°.36E, h5km, ML4.2, South Africa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CVNA	**Calvinia**	**2.71**	**191**	*e*P	Pn	10 12 26.8	0.0
CVNA				*e*S	Sn	10 12 58.7	-1.4
CVNA				AML	AML	10 13 13.8	
	comp=Z,713nm,0.8s						
SWZ	**Schweizer**	**4.69**	**71**	*e*P	Pn	10 12 53.4	-0.5
SWZ				*e*S	Sn	10 13 47.9	-0.9
SWZ				AML	AML	10 14 10.6	
	comp=Z,322nm,0.7s						
ELIM	**Elim**	**5.79**	**185**	*e*P	Pn	10 13 10.8	+1.7
ELIM				*e*S	Sn	10 14 15.2	-0.7
ELIM				AML	AML	10 14 53.4	
	comp=Z,241nm,0.7s						
PRYS	**Parys**	**6.47**	**75**	*e*P	Pn	10 13 20.1	+1.5
PRYS				*e*S	Sn	10 14 30.0	-2.9
PRYS				AML	AML	10 15 11.6	
	comp=Z,93nm,0.6s						
BUFB	**Buffelsbos**	**6.51**	**146**	*e*P	Pn	10 13 18.3	-0.5
BUFB				*e*S	Sn	10 14 30.6	-2.8
BUFB				AML	AML	10 15 12.2	
	comp=Z,60nm,0.7s						
POGA	**Pongola**	**10.04**	**84**	*e*P	Pn	10 14 10.4	+3.1
POGA				*e*S	Sn	10 15 57.2	-3.2
POGA				AML	AML	10 16 13.7	
	comp=Z,20nm,0.5s						

*IDC **05** 10:11:41.4±0.9, 42°.99N×47°.15E, h0km, mb3.4/6, mb1 3.6/10, mb1mx3.4/50, mbtmp3.5/10, ML3.3/3, Error ellipse: s-maj=14.1km s-min=9.4km az=2.0*
*MOS **05** 10:11:43.7±1.1, 43°.02N×47°.30E, h11km, mb4.1/1, Error ellipse: s-maj=6.2km s-min=5.5km az=59.6*
*CSEM **05** 10:11:44.9±0.2, 43°.03N×47°.23E, h2km, ML3.7/4, Error ellipse: s-maj=5.4km s-min=3.6km az=38.0*
*AZER **05** 10:11:44.4±45.0, 43°.08N×46°.93E, h24km, Error ellipse: s-maj=15.2km s-min=11.0km az=3.0*
ISC 05 10:11:43.5±1.1, 43°.09N±0°.03×47°.26E±0°.02, h4km±8km, n124, σ1s32/204, mb3.5/6, 13C-21D, Eastern Caucasus

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BUJR	**Buynaksk**	**0.29**	**203**	*i* PG	**Pg**	**10 11 48.8**	**-0.3**
BUJR				*e*S	**Sg**	**10 11 52.6**	**-0.2**
BUJR	**Buynaksk**	**0.29**	**203**	*i* Pg	**Pg**	**10 11 48.8**	**-0.3**
BUJR				*e*Sg	**Sg**	**10 11 52.6**	**-0.2**
DBC	**Dubki**	**0.33**	**258**	⇑*i*PG	**Pg**	**10 11 50.0**	**+0.2**
DBC				pmax	pmax		
	comp=Z,350nm,0.1s						
DBC	**Dubki**	**0.33**	**258**	*i* Pg	**Pg**	**10 11 50.0**	**+0.2**
	comp=Z,350nm,0.1s						
KRNR	**Karanay**	**0.37**	**225**	⇑*i*PG	**Pg**	**10 11 49.5**	**-1.2**
KRNR				pmax	pmax		
	comp=Z,1μm,0.2s						
KRNR	**Karanay**	**0.37**	**225**	*i* Pg	**Pg**	**10 11 49.5**	**-1.2**
	comp=Z,1μm,0.2s						
UNCR	**Uncukul**	**0.51**	**223**	*i* PG	**Pg**	**10 11 52.0**	**-1.3**
UNCR				*i* S	**Sg**	**10 11 58.5**	**-1.4**
UNCR				pmax	pmax		
	comp=Z,928nm,0.2s						
UNCR	**Uncukul**	**0.51**	**223**	*i* Pg	**Pg**	**10 11 52.0**	**-1.3**
	comp=Z,928nm,0.2s						
UNCR				*i* Sg	**Sg**	**10 11 58.5**	**-1.4**
XNZR	**Khunzakh**	**0.68**	**217**	*e*PG	**Pg**	**10 11 56.0**	**-0.6**
XNZR				*e*S	**Sg**	**10 12 05.0**	**-0.5**
XNZR				pmax	pmax		
	comp=Z,145nm,0.2s						
XNZR	**Khunzakh**	**0.68**	**217**	*e*Pg	**Pg**	**10 11 56.0**	**-0.6**
	comp=Z,145nm,0.2s						
XNZR				*e*Sg	**Sg**	**10 12 05.0**	**-0.5**
SGKR	**Sergokala**	**0.69**	**155**	⇑*i*PG	**Pg**	**10 11 57.0**	**+0.2**
SGKR				*i* S	**Sb**	**10 12 08.2**	**+0.2**
SGKR				pmax	pmax		
	comp=Z,1μm,0.2s						
SGKR	**Sergokala**	**0.69**	**155**	*i* Pg	**Pg**	**10 11 57.0**	**+0.2**
	comp=Z,1μm,0.2s						
SGKR				*i* Sg	**Sb**	**10 12 08.2**	**+0.2**
GNBR	**Gunib**	**0.73**	**198**	*e*PG	**Pg**	**10 11 56.8**	**-0.8**
GNBR				*e*		10 12 06.8	
GNBR				pmax	pmax		
	comp=Z,700nm,0.7s						
GNBR				smax	smax		
	comp=E,2μm,0.4s						
GNBR				smax	smax		
	comp=E,1μm,0.6s						
GNBR				smax	smax		
	comp=N,1μm,0.3s						
GNBR	**Gunib**	**0.73**	**198**	*e*Pg	**Pg**	**10 11 56.8**	**-0.8**
	comp=N,700nm,0.7s						
GNBR				*e*Sg	**Sg**	**10 12 06.8**	**-0.3**
	comp=N,1μm,0.3s						
URKR	**Urkarakh**	**0.96**	**163**	⇑*i*PG	**Pg**	**10 12 02.0**	**0.0**
URKR				*e*S	**Sn**	**10 12 17.5**	**-0.5**
URKR				pmax	pmax		
	comp=Z,504nm,0.3s						
URKR	**Urkarakh**	**0.96**	**163**	*i* Pg	**Pg**	**10 12 02.0**	**0.0**
	comp=Z,504nm,0.3s						
URKR				*e*Sg	**Sn**	**10 12 17.5**	**-0.5**
KMKR	**Kumukh**	**0.96**	**187**	⇓*i*PG	**Pg**	**10 12 01.5**	**-0.5**
KMKR				*i* S	**Sb**	**10 12 16.0**	**0.0**
KMKR				pmax	pmax		
	comp=Z,552nm,0.3s						
KMKR	**Kumukh**	**0.96**	**187**	*i* Pg	**Pg**	**10 12 01.5**	**-0.5**
	comp=Z,552nm,0.3s						
KMKR				*i* Sg	**Sb**	**10 12 16.0**	**0.0**
GROC	**Groznyy**	**1.08**	**277**	*e*PG	**Pn**	**10 12 05.3**	**-0.1**
GROC				*e*S	**Sb**	**10 12 19.4**	**+0.3**
GROC	**Groznyy**	**1.08**	**277**	*e*Pg	**Pn**	**10 12 05.3**	**-0.1**
GROC				*e*Sg	**Sb**	**10 12 19.4**	**+0.3**
DRN	**Derbent**	**1.32**	**143**	*e*PG	**Pn**	**10 12 07.9**	**-0.7**
DRN				*e*		10 12 27.7	
DRN	**Derbent**	**1.32**	**143**	*e*Pg	**Pn**	**10 12 07.9**	**-0.7**
DRN				*e*Sg	**Sn**	**10 12 27.7**	**+1.1**
ZKTA	**Zakatala**	**1.53**	**198**	⇓Pn	**Pn**	**10 12 11.1**	**-0.5**
	SNR=31						
ZKTA				⇑Sn	**Sg**	**10 12 34.0**	**+1.5**
KSMR	**Kasumkent**	**1.62**	**156**	*i* PG	**Pn**	**10 12 12.7**	**-0.1**
KSMR				*e*S	**Sg**	**10 12 37.0**	**+1.5**
KSMR				pmax	pmax		
	comp=Z,251nm,0.2s						
KSMR	**Kasumkent**	**1.62**	**156**	*i* Pg	**Pn**	**10 12 12.7**	**-0.1**
	comp=Z,251nm,0.2s						
KSMR				*e*Sg	**Sg**	**10 12 37.0**	**+1.5**
AKT	**Akhty**	**1.65**	**168**	⇓*i*PG	**Pn**	**10 12 12.8**	**-0.4**
AKT				*e*		10 12 36.3	
AKT				pmax	pmax		
	comp=Z,248nm,0.4s						
AKT				smax	smax		
	comp=N,656nm,0.5s						
AKT				smax	smax		
	comp=E,884nm,0.4s						
AKT				smax	smax		
	comp=E,771nm,0.3s						
AKT	**Akhty**	**1.65**	**168**	*i* Pg	**Pn**	**10 12 12.8**	**-0.4**
	comp=E,248nm,0.4s						
AKT				*e*Sg	**Sg**	**10 12 36.3**	**0.0**
	comp=E,656nm,0.5s						
QSAR	**Qusar**	**1.74**	**154**	⇑Pn	**Pb**	**10 12 15.8**	**-0.2**
QSAR				⇓Sn	**Sg**	**10 12 41.7**	**+2.4**
KMGR	**Komgaron**	**1.76**	**270**	*e*PN	**Pb**	**10 12 15.9**	**-0.4**
KMGR				*e*S	**Sg**	**10 12 40.6**	**+0.7**
KMGR	**Komgaron**	**1.76**	**270**	*e*Pn	**Pb**	**10 12 15.9**	**-0.4**
KMGR				*e*Sg	**Sg**	**10 12 40.6**	**+0.7**
SEKA	**Sheki**	**1.88**	**181**	Pn	**Pb**	**10 12 18.1**	**-0.3**
	SNR=25						
SEKA				⇓Sn	**Sg**	**10 12 45.8**	**+1.9**
SEKA	**Sheki**	**1.88**	**181**	Pn	**Pb**	**10 12 18.1**	**-0.3**
	SNR=25						
SEKA				Sn	**Sg**	**10 12 45.8**	**+1.9**
VLKR	**Vladikavkaz**	**1.90**	**270**	*e*PN	**Pg**	**10 12 19.7**	**-0.1**
VLKR				*e*S	**Sg**	**10 12 44.1**	**-0.3**
VLKR				pmax	pmax		
	comp=Z,58nm,0.2s						
VLKR				smax	smax		
	comp=E,40nm,0.2s						
VLKR	**Vladikavkaz**	**1.90**	**270**	*e*Pn	**Pg**	**10 12 19.7**	**-0.1**
	comp=E,58nm,0.2s						
VLKR				*e*Sg	**Sg**	**10 12 44.1**	**-0.3**
TRKR	**Terskaya**	**1.95**	**290**	*e*PN	**Pb**	**10 12 19.7**	**+0.1**
TRKR				pmax	pmax		
	comp=Z,48nm,0.1s						
TRKR	**Terskaya**	**1.95**	**290**	*e*Pn	**Pb**	**10 12 19.7**	**+0.1**
	comp=Z,48nm,0.1s						
QUBA	**Quba, Azerbaij**	**1.96**	**152**	⇓Pn	**Pb**	**10 12 19.6**	**-0.1**
	SNR=4.2						
QUBA				⇑Sn	**Sg**	**10 12 50.3**	**+3.9**
QUBA	**Quba, Azerbaij**	**1.96**	**152**	Pn	**Pb**	**10 12 19.6**	**-0.1**
	SNR=4.2						
BTKR	**Batakoyurt**	**2.01**	**279**	*e*PN	**Pg**	**10 12 21.8**	**-0.2**
BTKR				*e*S	**Sg**	**10 12 49.7**	**+1.7**
BTKR	**Batakoyurt**	**2.01**	**279**	*e*Pn	**Pg**	**10 12 21.8**	**-0.2**
BTKR				*e*Sg	**Sg**	**10 12 49.7**	**+1.7**
XNQ	**Khinaliq**	**2.02**	**161**	⇑Pn	**Pn**	**10 12 19.7**	**+1.1**
	SNR=43						
XNQ				⇓Sn	**Sg**	**10 12 50.1**	**+1.6**
XNQ	**Khinaliq**	**2.02**	**161**	Pn	**Pn**	**10 12 19.7**	**+1.1**
	SNR=43						
XNQ				Sn	**Sg**	**10 12 50.1**	**+1.6**
DUS	**Dusheti**	**2.14**	**243**	P	**Pb**	**10 12 22.8**	**0.0**
DUS				S	**Sg**	**10 12 52.5**	**+0.3**
DUS	**Dusheti**	**2.14**	**243**	PN	**Pb**	**10 12 22.8**	**0.0**
DUS				S	**Sg**	**10 12 52.5**	**+0.3**
DUS	**Dusheti**	**2.14**	**243**	Pn	**Pb**	**10 12 22.8**	**0.0**
DUS				Sb	**Sg**	**10 12 52.5**	**+0.3**
GUDG	**Gudauri**	**2.14**	**254**	P	**Pb**	**10 12 21.9**	**-1.0**
GUDG				S	**Sb**	**10 12 51.1**	**+1.1**
DGRG	**David-gareji**	**2.16**	**221**	P	**Pn**	**10 12 21.7**	**+1.5**
DGRG				S	**Sb**	**10 12 51.0**	**+0.8**
DGRG	**David-gareji**	**2.16**	**221**	PN	**Pn**	**10 12 21.7**	**+1.5**
DGRG				S	**Sb**	**10 12 51.0**	**+0.8**
DGRG	**David-gareji**	**2.16**	**221**	Pn	**Pn**	**10 12 21.7**	**+1.5**
DGRG				Sb	**Sb**	**10 12 51.0**	**+0.8**
ARNR	**Ardon**	**2.18**	**273**	*e*PN	**Pn**	**10 12 21.3**	**+0.8**
ARNR				*e*S	**Sb**	**10 12 50.0**	**-0.9**
ARNR				pmax	pmax		
	comp=Z,9.0nm,0.1s						
ARNR				smax	smax		
	comp=N,4.0nm,0.1s						
ARNR	**Ardon**	**2.18**	**273**	*e*Pn	**Pn**	**10 12 21.3**	**+0.8**
	comp=N,9.0nm,0.1s						
ARNR				*e*Sn	**Sb**	**10 12 50.0**	**-0.9**
	comp=N,4.0nm,0.1s						
QBL	**Gabala**	**2.18**	**169**	⇓Pn	**Pb**	**10 12 22.4**	**-1.2**
QBL				⇓Sn	**Sg**	**10 12 54.8**	**+1.2**
QBL	**Gabala**	**2.18**	**169**	Pn	**Pb**	**10 12 22.4**	**-1.2**
LACR	**Lac**	**2.19**	**264**	*e*PN	**Pn**	**10 12 21.9**	**+1.1**
LACR				*e*S	**Sb**	**10 12 51.3**	**0.0**
LACR	**Lac**	**2.19**	**264**	*e*Pn	**Pn**	**10 12 21.9**	**+1.1**
LACR				*e*Sn	**Sb**	**10 12 51.3**	**0.0**
PRTR	**Priterechnaya**	**2.27**	**288**	*e*PN	**Pb**	**10 12 25.4**	**+0.4**
PRTR				*e*S	**Sg**	**10 12 56.5**	**+0.1**
PRTR	**Priterechnaya**	**2.27**	**288**	*e*Pn	**Pb**	**10 12 25.4**	**+0.4**
PRTR				*e*Sn	**Sg**	**10 12 56.5**	**+0.1**
TBLG	**Delisi**	**2.31**	**235**	P	**Pn**	**10 12 23.2**	**+0.9**
TBLG				S	**Sb**	**10 12 54.4**	**-0.2**
TBLG	**Delisi**	**2.31**	**235**	PN	**Pn**	**10 12 23.2**	**+0.9**
TBLG				S	**Sb**	**10 12 54.4**	**-0.2**
TBLG	**Delisi**	**2.31**	**235**	P	**Pn**	**10 12 23.2**	**+0.9**
TBLG				S	**Sb**	**10 12 54.4**	**-0.2**
KORR	**Kora**	**2.34**	**271**	*e*PN	**Pn**	**10 12 24.0**	**+1.3**
KORR				*e*S	**Sb**	**10 12 55.1**	**-0.4**
KORR	**Kora**	**2.34**	**271**	*e*Pn	**Pn**	**10 12 24.0**	**+1.3**
KORR				*e*Sn	**Sb**	**10 12 55.1**	**-0.4**
SIZA	**Siyzn**	**2.35**	**148**	Pn	**Pb**	**10 12 26.6**	**+0.1**
	SNR=7.6						
SIZA				⇓Sn	**Sg**	**10 12 59.2**	**+0.2**
SIZA	**Siyzn**	**2.35**	**148**	Pn	**Pb**	**10 12 26.6**	**+0.1**
	SNR=7.6						
SIZA				Sn	**Sg**	**10 12 59.2**	**+0.2**
STDR	**Stavd-Durt**	**2.35**	**278**	*e*PN	**Pn**	**10 12 24.8**	**+1.9**
STDR				*e*S	**Sb**	**10 12 56.6**	**+0.7**
STDR	**Stavd-Durt**	**2.35**	**278**	*e*Pn	**Pn

baz=135,slow=5.7,SNR=6.1
KVAR Sn **Sn** **10 13 18.0 -1.0**
baz=209,slow=19,SNR=7.7
KVAR Lg Lg 10 13 27.9
baz=3.5,slow=19,SNR=3.7
KIV Kislovodsk 3.44 286 *e*PN **Pn** **10 12 39.6 +1.7**
KIV Kislovodsk 3.44 286 *e*Pn **Pn** **10 12 39.6 +1.7**
GNI Garni 3.49 214 Pn **Pn** **10 12 38.7 0.0**
comp=N,5.0nm,0.3s,baz=164,slow=3.1,SNR=6.2
GNI Lg Lg 10 13 28.3
comp=N,2.5nm,0.3s,baz=210,slow=20,SNR=3.1
GNI Garni 3.49 214 *e*PN **Pn** **10 12 39.5 +0.8**
GNI Garni 3.49 214 *e*Pn **Pn** **10 12 39.5 +0.8**
GLBA Ciilabad 3.94 167 Pn **Pn** **10 12 46.4 +1.8**
SNR=4.3
GLBA ⇓Sn **Sn** **10 13 32.8 +1.6**
GLBA Ciilabad 3.94 167 Pn **Pn** **10 12 46.4 +1.8**
SNR=4.3
GLBA Sn **Sn** **10 13 32.8 +1.6**
LRK Lerik 4.52 169 ⇑Pn **Pn** **10 12 53.5 +0.7**
SNR=7.1
LRK ⇓Sn **Sn** **10 13 47.5 +1.7**
LRK Lerik 4.52 169 Pn **Pn** **10 12 53.5 +0.7**
SNR=7.1
LRK Sn **Sn** **10 13 47.5 +1.7**
LKRN Lenkeran, Azer 4.52 165 ⇑Sn **Sn** **10 13 46.2 +0.5**
LKRN Lenkeran, Azer 4.52 165 Sn **Sn** **10 13 46.2 +0.5**
AKTO Aktyubinsk 10.40 41 Sn Sn 10 16 00.9 -9.4
comp=N,0.3nm,0.3s,baz=103,slow=18,SNR=2.7
AKTO Aktyubinsk 10.40 41 ⇓S **Sn** **10 16 05.7 -4.6**
comp=N,1.9nm,0.6s
AB31 Akbulak array 10.73 51 ⇑P Pn 10 14 09.4 -8.5
comp=N,0.3nm,0.3s,baz=243,slow=12,SNR=29
AB31 ⇓S **Sn** **10 16 15.1 -3.2**
comp=N,0.6nm,0.3s,baz=242,slow=26,SNR=4.3
OBN Obninsk 13.90 334 *e*P **Pn** **10 15 03.4 +2.3**
OBN pmax pmax
comp=Z,14nm,0.3s
OBN Obninsk 13.90 334 *e*P **Pn** **10 15 03.4 +2.3**
comp=Z,14nm,0.3s
BRVK Borovoye 18.25 49 *e*P **P** **10 16 01.0 +3.3**
BRVK pmax pmax
comp=Z,1.0nm,0.8s
BRVK Borovoye 18.25 49 *e*P **P** **10 16 01.0 +3.3**
comp=Z,1.0nm,0.8s
BVAR Borovoye Array 18.30 49 P **Pn** **10 15 57.5 -0.6**
comp=Z,0.2nm,0.3s,baz=240,slow=14,SNR=5.3
KLMR Klimovskoe 18.40 348 *e*P **Pn** **10 15 56.2 -2.9**
KLMR pmax pmax
comp=Z,3.0nm,0.8s
AAK Ala-Archa 19.94 82 *e*P **Pn** **10 16 18.0 -0.1**
AAK pmax pmax
comp=Z,2.0nm,1.0s
AAK Ala-Archa 19.94 82 *e*P **Pn** **10 16 18.0 -0.1**
comp=Z,2.0nm,1.0s
FINES FINESS Array B 22.31 333 P **P** **10 16 41.7 +0.1**
comp=Z,1.0nm,0.5s,baz=139,slow=12,SNR=6.8
KURBB Kurchatov Arra 22.54 60 P **P** **10 16 44.3 0.0**
comp=Z,1.1nm,0.6s,baz=268,slow=11,SNR=15
KURK Kurchatov 22.61 59 P **P** **10 16 44.3 -0.7**
KURK Kurchatov 22.61 59 P **P** **10 16 44.3 -0.7**
MKAR Makanchi Array 24.94 69 P **P** **10 17 08.0 +0.3**
comp=Z,0.4nm,0.6s,baz=273,slow=10,SNR=4.4
MKAR Makanchi Array 24.94 69 *e*P **P** **10 17 11.2 +3.5**
MKAR Makanchi Array 24.94 69 *e*P **P** **10 17 11.2 +3.5**
ARCES ARCESS Array B 28.78 344 P **P** **10 17 41.2 -0.7**
comp=Z,0.6nm,0.8s,baz=139,slow=14,SNR=3.2
ARCES ARCESS Array B 28.78 344 *e*P P 10 17 52.6 +11
ARCES pmax pmax
comp=Z,1.0nm,0.8s
TORD Torodi Ar. Bea 49.20 247 P **P** **10 20 30.0 -2.9**
comp=Z,0.3nm,0.5s,baz=29,slow=8.9,SNR=6.8
YKA Yellowknife Ar 73.76 351 P **P** **10 23 16.7 -1.6**
comp=Z,0.1nm,0.5s,baz=4.9,slow=5.8,SNR=4.1
SNAA Sanae 119.81 196 P **PKPdf** **10 30 37.2 +3.6**
VNA2 Neumayer--Watz 120.23 198 P **PKPdf** **10 30 38.8 +4.4**
baz=58,slow=15

NIED ***05*** *10:20:00,36.°80N×140.°70E,h5km,Mw4.4 Best double couple: M0=4.04000×10^15 NP1:φs=340.00000°,δ19.00000°, λ-128.00000°. NP2:φs=199.00000°,δ75.00000°, λ-78.00000°.*
IDC ***05*** *10:20:46.1±0.5,36.°76N×140.°64E,h0km,mb4.4/36, mb1 4.5/42,mb1mx4.4/58,mbtmp4.4/42,ML3.7/5,MS3.4/5, Ms1 3.4/5,ms1mx2.9/49,Error ellipse: s-maj=12.3km s-min=11.0km az=117.0*
JMA ***05*** *10:20:47.4,36.°85N×140.°58E,h8km±1km,M4.5 Broadband fault plane solution: P waves. NP1: φs=201.00000°,δ65.00000°,λ-72.00000°. NP2: φs=343.00000°,δ31.00000°,λ-124.00000°. Principal axes: T Plg18.0000°, Azm278.0000°; N Plg17.0000°, Azm14.0000°; P Plg65.0000°, Azm143.0000°;*
JMA Felt III J1.
ISCJB ***05*** *10:20:47.0±0.5,36.°84N±0.°02×140.°61E±0.°02,h9km±2km, mb4.5/135,MS3.8/7 Error ellipse: s-maj=3.8km s-min=2.7km az=144.6*
NEIC ***05*** *10:20:50.6±1.2,36.°79N×140.°58E,h25km±8km,mb4.7/88, Error ellipse: s-maj=4.8km s-min=3.3km az=143.0*
NEIC Recorded [3 JMA] in Fukushima and Ibaraki.
MOS ***05*** *10:20:51.0±1.1,37.°00N×140.°54E,h33km,mb4.7/62,Error ellipse: s-maj=7.5km s-min=5.2km az=89.4*
ISC 05 10:20:48.3±0.9,36.°82N±0.°03×140.°67E±0.°04,h11km±5km, n279,σ1$52/298,mb4.6/135,MS3.7/7,15C-5D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.22**	**202**	⇓P	**Pg**	**10 20 52.2**	**-0.7**
JHO				S	**Sg**	**10 20 55.7**	**-0.3**
ONAJ	**Iwakimizuishiy**	**0.30**	**19**	⇑P	**Pg**	**10 20 53.5**	**-0.9**
ONAJ				*e*S	**Sg**	**10 20 58.1**	**-0.4**
JFK	**Kawauchi**	**0.57**	**16**	⇑P	**Pg**	**10 20 58.1**	**-1.3**
JFK				S	**Sg**	**10 21 05.9**	**-1.1**
JSB	**Shiboa**	**0.62**	**284**	⇑P	**Pg**	**10 20 58.7**	**-1.7**
JSB				*e*S	**Sg**	**10 21 06.6**	**-2.0**
JYT	**Yasato**	**0.70**	**213**	⇑P	**Pg**	**10 21 00.5**	**-1.4**
JYT				S	**Sg**	**10 21 10.0**	**-1.1**
JFT	**Otama**	**0.75**	**339**	⇑P	**Pg**	**10 21 00.8**	**-2.0**
JFT				S	**Sg**	**10 21 10.4**	**-2.2**
MJAR	**Matsushiro Arr**	**2.00**	**263**	Pn	**Pn**	**10 21 20.7**	**-1.3**
	304nm,0.3s,baz=86,slow=15,SNR=1728						
MJAR				LR	LR	10 21 44.5	
	comp=Z,257nm,18.6s,baz=85,slow=30						
MJAR				Sn	**Sn**	**10 21 46.6**	**-0.5**
	225nm,0.3s,baz=82,slow=27,SNR=12						
MAJO	**Matsushiro**	**2.00**	**263**	*c i*P	**Pn**	**10 21 20.8**	**-1.3**
MAJO	**Matsushiro**	**2.00**	**263**	*e*Pn	**Pn**	**10 21 21.3**	**-0.7**
MAJO				*e*Sn	**Sn**	**10 21 45.6**	**-1.5**
MAT	**Matsushiro**	**2.00**	**263**	P	**Pn**	**10 21 21.1**	**-1.0**
MAT				S	**Sn**	**10 21 46.4**	**-0.7**
MJB9	**Matsu-Tunnel**	**2.00**	**263**	*e*Pn	**Pn**	**10 21 21.4**	**-0.7**
MJB9				*e*Sn	**Sn**	**10 21 46.5**	**-0.7**
INU	**Inuyama**	**3.30**	**245**	*e*Pn	**Pn**	**10 21 40.3**	**+0.3**
JHJ	**Hachijo jima 2**	**3.76**	**191**	Pn	**Pn**	**10 21 45.7**	**-0.5**
	60nm,0.3s,baz=313,slow=22,SNR=17						
JHJ				Sn	**Sn**	**10 22 28.6**	**-1.8**
	49nm,0.3s,baz=233,slow=20,SNR=3.5						
JHJ2	**Mitsune**	**3.76**	**191**	*e*Pn	**Pn**	**10 21 47.5**	**+1.2**
ERM	**Erimo**	**5.54**	**20**	*e*P	**Pn**	**10 22 11.2**	**+0.6**
ERM				pmax	pmax		
	comp=Z,40nm,0.6s						
ERM	**Erimo**	**5.54**	**20**	*e*Pn	**Pn**	**10 22 12.1**	**+1.5**
ASAJ	**Asahikawa**	**7.44**	**11**	Pn	**Pn**	**10 22 35.9**	**-0.8**
	comp=Z,5.2nm,0.3s,baz=209,slow=9.2,SNR=34						
ASAJ				Sn	**Sn**	**10 24 01.1**	**0.0**
	comp=Z,1.5nm,0.3s,baz=210,slow=11,SNR=5.0						
ASAJ	**Asahikawa**	**7.44**	**11**	*e*Pn	**Pn**	**10 22 38.3**	**+1.6**
ASAJ				Sn	**Sn**	**10 24 01.1**	**0.0**
SHO	**Shikotan**	**8.47**	**32**	*i*P	**Pn**	**10 22 51.0**	**+0.2**
SHO				*i*S	**Sn**	**10 24 17.9**	**-8.4**
JNU	**Nakatsue**	**8.84**	**248**	Pn	**Pn**	**10 22 54.9**	**-1.2**
	comp=Z,0.3nm,0.3s,baz=63,slow=9.0,SNR=3.2						
JNU				LR	LR	10 26 28.2	
	comp=Z,228nm,19.4s,baz=96,slow=39						
JNU	**Nakatsue**	**8.84**	**248**	*e*Pn	**Pn**	**10 22 59.4**	**+3.3**
VLA	**Vladivostok**	**9.22**	**316**	⇓P	**Pn**	**10 23 03.6**	**+2.4**
VLA				S	**Sn**	**10 24 46.7**	**+1.8**
VLA				pmax	pmax		
	comp=Z,15nm,1.5s						
CBIJ	**Chichi jima**	**9.78**	**172**	*e*Pn	**Pn**	**10 23 05.5**	**-3.3**
JCJ	**Chichijima**	**9.78**	**172**	Pn	**Pn**	**10 23 05.1**	**-3.7**
	comp=Z,20nm,0.3s,baz=279,slow=23,SNR=17						
USRK	**Ussuriysk Ar.**	**9.90**	**321**	Pn	**Pn**	**10 23 13.5**	**+3.1**
	comp=Z,0.5nm,0.3s,baz=142,slow=14,SNR=31						
USRK				LR	LR	10 26 42.7	
	comp=Z,218nm,19.1s,baz=132,slow=36						
KUR	**Kuril'sk**	**10.01**	**31**	*e*P	**Pn**	**10 23 12.2**	**+0.3**
KUR				*i*S	**Sn**	**10 24 58.9**	**-5.2**
KUR				pmax	pmax		
	comp=Z,17nm,0.8s						
KUR				pmax	pmax		
	comp=E,15nm,0.6s						
KUR				smax	smax		
	comp=E,21nm,0.9s						
KSRS	**Korea Array**	**10.20**	**277**	Pn	**Pn**	**10 23 14.5**	**-0.1**
	comp=E,0.2nm,0.3s,baz=87,slow=14,SNR=3.0						
KSRS				LR	LR	10 26 54.7	
	comp=E,220nm,21.6s,baz=88,slow=36						
KS01	**Wonju Array Si**	**10.22**	**278**	*e*Pn	**Pn**	**10 23 17.3**	**+2.4**
KS15	**Wonju Array Si**	**10.23**	**277**	*e*Pn	**Pn**	**10 23 19.1**	**+4.0**
KSAR	**Wonju Array Be**	**10.23**	**277**	P	**Pn**	**10 23 14.5**	**-0.5**
KSAR	**Wonju Array Be**	**10.23**	**277**	Pn	**Pn**	**10 23 14.5**	**-0.5**
YSS	**Yuzh-Sakhalins**	**10.25**	**8**	⇑*e*P	**Pn**	**10 23 15.5**	**+0.3**
YSS				*e*S	**Sn**	**10 25 08.1**	**-1.9**
YSS				pmax	pmax		
	comp=Z,30nm,1.1s						
YSS				MLR	MLR		
	comp=N,200nm,16.0s						
YSS				MLR	MLR		
	comp=Z,400nm,16.0s						
YSS				MLR	MLR		
	comp=E,300nm,12.0s						
YSS	**Yuzh-Sakhalins**	**10.25**	**8**	*e*Pn	**Pn**	**10 23 15.4**	**+0.3**
MDJ	**Mudanjiang**	**11.46**	**316**	P	**Pn**	**10 23 34.9**	**+3.2**
MDJ				S	Sn	10 25 53.3	+14
MDJ	**Mudanjiang**	**11.46**	**316**	ScS	ScS	10 36 44.0	+12
MDJ				pmax	pmax		
	comp=Z,11nm,0.9s						
MDJ				pmax	pmax		
	comp=Z,48nm,5.3s						
MDJ				LR	LR		
	comp=N,140nm,14.0s						
MDJ				LR	LR		
	comp=E,280nm,15.3s						
MDJ				LR	LR		
	comp=Z,320nm,16.6s						
KLR	**Kul'dur**	**14.01**	**335**	Pn	**Pn**	**10 24 08.1**	**+1.5**
	comp=Z,0.1nm,0.3s,baz=117,slow=11,SNR=3.6						
TYV	**Tymovskoe**	**14.11**	**5**	*e*P	**Pn**	**10 24 07.0**	**-1.0**
TYV				pmax	pmax		
	comp=Z,24nm,0.8s						
NKL	**Nikolayevsk**	**16.33**	**0**	*e*P	P	10 24 48.2	+7.9
NKL				MLR	MLR		
	comp=Z,300nm,14.0s						
SKR	**Severo-Kuril's**	**17.74**	**34**	*e*P	**P**	**10 24 58.4**	**+2.5**
NJ2	**Nanjing**	**18.61**	**262**	*e*P	**Pn**	**10 25 05.4**	**-0.4**
NJ2				pmax	pmax		
	comp=Z,12nm,0.5s						
BJI	**Beijing**	**19.45**	**287**	P	**P**	**10 25 14.3**	**-0.4**
BJI				S	**Sn**	**10 28 51.5**	**-2.5**
BJI				pmax	pmax		
	comp=Z,8.0nm,2.0s						
BJI				LR	LR		
	comp=N,150nm,13.8s						
BJI				LR	LR		
	comp=E,170nm,13.8s						
PEA0	**Petropavlovsk-**	**20.18**	**31**	*e*P	**P**	**10 25 23.3**	**+0.7**
PEA0B	**Petropavlovsk-**	**20.18**	**31**	*e*P	Pn	10 25 24.9	+0.3
	comp=E,28nm,1.1s						
PETK	**Petropavlovsk-**	**20.18**	**31**	P	**P**	**10 25 23.2**	**+0.6**
	comp=E,12nm,1.0s,baz=232,slow=7.1,SNR=4.4						
HHC	**Hu-ho-hao-te**	**22.98**	**289**	*e*P	**P**	**10 25 54.4**	**+1.4**
HHC				S	**S**	**10 29 58.1**	**-5.2**
HHC				pmax	pmax		
	comp=Z,19nm,1.0s						
HHC				pmax	pmax		
	comp=Z,100nm,4.3s						
HHC				LR	LR		
	comp=N,160nm,11.2s						
HHC				LR	LR		
	comp=E,130nm,12.1s						
HHC				LR	LR		
	comp=Z,120nm,11.5s						
MA2	**Magadan**	**23.69**	**13**	*e*P	**P**	**10 26 01.0**	**+1.2**
MA2				pmax	pmax		
	comp=Z,55nm,0.9s						
MA2	**Magadan**	**23.69**	**13**	*e*P	**P**	**10 26 01.0**	**+1.2**
	comp=Z,55nm,0.9s						
YAK	**Yakutsk**	**26.16**	**348**	P	**P**	**10 26 21.9**	**-0.4**
	comp=Z,13nm,0.4s,baz=150,slow=1.4,SNR=3.3						
ULN	**Ulaanbaatar**	**26.99**	**305**	*ce*P	**P**	**10 26 29.9**	**-0.3**
ULN				pmax	pmax		
	comp=Z,5.0nm,1.2s						
SEY	**Seymchan**	**27.12**	**12**	P	**P**	**10 26 31.8**	**+0.9**
	comp=Z,8.1nm,1.0s,baz=200,slow=7.1,SNR=17						
SEY	**Seymchan**	**27.12**	**12**	*e*P	**P**	**10 26 32.8**	**+1.8**
BOD	**Bodaibo**	**27.40**	**329**	*e*P	**P**	**10 26 32.4**	**-1.1**
BOD				pmax	pmax		
	comp=Z,3.0nm,1.1s						
SONA1	**Songino Array**	**27.41**	**305**	*e*P	**P**	**10 26 33.0**	**-0.9**
SONM	**Songino Array**	**27.42**	**305**	P	**P**	**10 26 33.1**	**-0.9**
	comp=Z,5.9nm,0.8s,baz=107,slow=9.0,SNR=15						
SONM				LR	LR	10 37 56.7	
	comp=Z,95nm,21.2s,baz=244,slow=38						
H11N2	**WAKE ISLAND Hy 28.55**	**119**		T	T	10 56 28.6	
	baz=313,slow=75,SNR=628						
H11N1	**WAKE ISLAND Hy 28.56**	**119**		T	T	10 56 29.3	
	baz=313,slow=75,SNR=777						
H11N3	**WAKE ISLAND Hy 28.57**	**119**		T	T	10 56 30.1	
	baz=313,slow=75,SNR=793						
H11S1	**WAKE ISLAND Hy 29.25**	**122**		T	T	10 57 20.6	
	baz=314,slow=75,SNR=7733						
H11S3	**WAKE ISLAND Hy 29.25**	**122**		T	T	10 57 21.1	
	baz=314,slow=75,SNR=3737						
H11S2	**WAKE ISLAND Hy 29.26**	**122**		T	T	10 57 21.9	
	baz=314,slow=75,SNR=2975						
LZH	**Lanzhou**	**29.52**	**280**	*e*P	**P**	**10 26 53.4**	**+0.5**
LZH				pP	sP	10 27 05.0	+7.4
LZH				sP	pP	10 27 10.2	+14
LZH				*e*PP	**PnPn**	**10 27 50.0**	**+3.0**
LZH				pmax	pmax		
	comp=Z,23nm,1.2s						
LZH				pmax	pmax		
	comp=Z,59nm,5.4s						
LZH				LR	LR		
	comp=N,330nm,13.0s						
LZH				LR	LR		
	comp=E,350nm,13.2s						
LZH				LR	LR		
	comp=Z,390nm,16.5s						
CD2	**Chengdu**	**31.08**	**270**	P	**P**	**10 27 05.9**	**-0.7**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.6s						
KMI	**Kunming**	**34.34**	**261**	P	**P**	**10 27 36.1**	**+0.7**
KMI				pmax	pmax		
	comp=Z,13nm,0.5s						
KMI				pmax	pmax		
	comp=Z,63nm,5.4s						
BILL	**Biiibino**	**34.40**	**17**	*e*P	**P**	**10 27 34.3**	**-0.9**
BILL				pmax	pmax		
	comp=Z,10.0nm,1.5s						
BILL	**Biiibino**	**34.40**	**17**	*e*P	**P**	**10 27 36.8**	**+1.7**
	comp=Z,13nm,1.4s						
TIXI	**Tiksi**	**35.44**	**354**	P	**P**	**10 27 43.5**	**-0.5**
	comp=Z,1.7nm,0.3s,baz=314,slow=2.2,SNR=5.5						
TIXI	**Tiksi**	**35.44**	**354**	*e*P	**P**	**10 27 44.3**	**+0.3**
TIXI				pmax	pmax		
	comp=Z,3.0nm,0.8s						
TIXI	**Tiksi**	**35.44**	**354**	*e*P	**P**	**10 27 43.3**	**-0.7**
	comp=Z,3.1nm,0.8s						
WMQ	**Urumqi**	**40.41**	**297**	*e*P	**P**	**10 28 28.3**	**+1.9**
WMQ				S	**S**	**10 34 41.0**	**+6.4**
WMQ				pmax	pmax		
	comp=Z,4.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,37nm,6.2s						
WMQ				LR	LR		
	comp=N,50nm,20.8s						
WMQ				LR	LR		
	comp=E,46nm,20.8s						
WMQ				LR	LR		
	comp=Z,32nm,27.2s						
CMAR	**Chiang Mai Arr**	**40.87**	**255**	P	**P**	**10 28 30.5**	**+0.1**
	comp=Z,0.7nm,0.4s,baz=54,slow=8.1,SNR=2.8						
TNA	**Tin City**	**41.34**	**29**	*e*P	**P**	**10 28 34.6**	**+1.0**
	comp=Z,12nm,1.1s						
ZALV	**Zalesovo Beam**	**41.62**	**313**	P	**P**	**10 28 35.8**	**-0.4**
	comp=Z,4.1nm,0.5s,baz=93,slow=7.5,SNR=9.0						
ZALV				PcP	**PcP**	**10 30 33.8**	**+0.8**
	comp=Z,2.1nm,0.4s,baz=65,slow=3.1,SNR=2.3						
ZALV				LR	LR	10 45 23.5	
	comp=Z,49nm,19.9s,baz=72,slow=36						
ZALV	**Zalesovo Beam**	**41.62**	**313**	*i*P	**P**	**10 28 37.0**	**+0.8**
ZALV				pmax	pmax		
	comp=Z,4.0nm,0.5s						
NVS	**Novosibirsk**	**42.56**	**314**	*e*P	**P**	**10 28 44.8**	**+1.0**
NRIK	**Noril'sk**	**43.22**	**336**	P	**P**	**10 28 48.8**	**-0.1**
	comp=Z,1.9nm,0.4s,baz=90,slow=4.0,SNR=3.7						
MK01	**Makanchi Array**	**43.73**	**302**	*e*P	**P**	**10 28 53.8**	**+0.3**
MK31	**Makanchi Array**	**43.73**	**302**	*e*P	**P**	**10 28 53.7**	**+0.2**
MK31	**Makanchi Array**	**43.73**	**302**	*e*P	**P**	**10 28 53.6**	**+0.2**
MKAR	**Makanchi Array**	**43.73**	**302**	P	**P**	**10 28 52.0**	**-1.5**
	comp=Z,1.1nm,0.6s,baz=89,slow=10,SNR=11						
MKAR	**Makanchi Array**	**43.73**	**302**	*ce*P	**P**	**10 28 53.9**	**+0.4**
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.6s						
MKAR	**Makanchi Array**	**43.73**	**302**	*e*P	**P**	**10 28 53.6**	**+0.1**
MAKZ	**Makanchi**	**43.94**	**302**	*e*P	**P**	**10 28 56.1**	**+0.9**
MAKZ				pmax	pmax		
	comp=Z,17nm,1.9s						
MAKZ	**Makanchi**	**43.94**	**302**	*e*P	**P**	**10 28 56.1**	**+0.9**
	comp=Z,17nm,1.9s						
KURK	**Kurchatov**	**45.60**	**308**	*e*P	**P**	**10 29 08.0**	**-0.3**
KURK				pmax	pmax		
	comp=Z,11nm,0.9s						
KURK	**Kurchatov**	**45.60**	**308**	*e*P	**P**	**10 29 08.0**	**-0.3**
	comp=Z,11nm,0.9s						
KURBB	**Kurchatov Arra**	**45.67**	**308**	P	**P**	**10 29 06.5**	**-2.3**
	comp=Z,7.4nm,0.8s,baz=84,slow=8.3,SNR=44						
KAPI	**Kappang**	**45.98**	**210**	*e*P	**P**	**10 29 11.3**	**-0.3**
	comp=Z,4.8nm,1.5s						
SVW2	**Sparrevohn**	**46.05**	**37**	*e*P	**P**	**10 29 13.1**	**+1.3**
	comp=Z,8.6nm,0.8s						
KDAK	**Kodiak Island**	**47.66**	**42**	P	P	10 29 39.1	+15
	comp=Z,1.5nm,0.4s,baz=158,slow=2.0,SNR=7.6						
KDAK	**Kodiak Island**	**47.66**	**42**	*ce*P	**P**	**10 29 25.6**	**+1.3**
CAST	**Castle Rocks**	**47.74**	**34**	*e*P	**P**	**10 29 25.3**	**+0.4**
	comp=Z,4.1nm,1.0s						
KTH	**Kantishna Hill**	**48.26**	**34**	*e*P	**P**	**10 29 30.4**	**+1.4**
	comp=Z,12nm,1.0s						
MLY	**Manley**	**48.35**	**32**	*e*P	**P**	**10 29 30.6**	**+0.9**
	comp=Z,7.1nm,1.1s						
TRF	**Thorofare Moun**	**48.55**	**34**	*e*P	**P**	**10 29 33.2**	**+1.9**
	comp=Z,7.4nm,1.0s						
RC01	**Rabbit Creek A**	**48.89**	**37**	*e*P	**P**	**10 29 33.0**	**-0.8**
	comp=Z,6.2nm,0.9s						
MCK	**McKinley**	**49.14**	**34**	*e*P	**P**	**10 29 36.4**	**+0.7**
MCK				pmax	pmax		
	comp=Z,6.0nm,1.0s						
MCK	**McKinley**	**49.14**	**34**	*e*P	**P**	**10 29 36.4**	**+0.7**
	comp=Z,6.0nm,1.0s						
PMR	**Palmer**	**49.15**	**36**	*e*P	**P**	**10 29 35.4**	**-0.3**
PMR				pmax	pmax		
	comp=Z,9.0nm,1.1s						
PMR	**Palmer**	**49.15**	**36**	*e*P	**P**	**10 29 35.4**	**-0.3**
	comp=Z,9.1nm,1.1s						
RND	**Reindeer**	**49.19**	**34**	*e*P	**P**	**10 29 35.9**	**-0.2**
RND				pmax	pmax		
	comp=Z,8.0nm,1.2s						
RND	**Reindeer**	**49.19**	**34**	*e*P	**P**	**10 29 35.9**	**-0.2**
	comp=Z,8.1nm,1.2s						
TKM2	**Tokmak 2**	**49.21**	**298**	*e*P	**P**	**10 29 37.8**	**+1.0**
TKM2				pmax	pmax		
	comp=Z,28nm,1.5s						
TKM2	**Tokmak 2**	**49.21**	**298**	*e*P	**P**	**10 29 37.8**	**+1.0**
	comp=Z,28nm,1.5s						
MDM	**Murphy Dome**	**49.41**	**32**	*e*P	**P**	**10 29 38.9**	**+1.1**
	comp=Z,11nm,1.0s						
WRH	**Wood River Hil**	**49.49**	**33**	*e*P	**P**	**10 29 41.0**	**+2.7**
	comp=Z,15nm,1.3s						
SML	**Sawmill**	**49.52**	**36**	*e*P	**P**	**10 29 39.6**	**+1.0**
SML				pmax	pmax		
	comp=Z,9.0nm,0.9s						
SML	**Sawmill**	**49.52**	**36**	*e*P	**P**	**10 29 39.6**	**+1.0**
	comp=Z,9.0nm,0.9s						
CCB	**Clear Creek Bu**	**49.61**	**32**	*e*PcP	**PcP**	**10 31 02.7**	**+2.2**
KSH	**Kashi**	**49.95**	**294**	P	P	10 29 47.2	+4.8
KSH				*es*P	sP	10 30 06.0	+19
KSH				*e*PP	**PP**	**10 31 43.6**	**+6.5**
KSH				*e*ScP	**ScP**	**10 34 55.9**	**-2.2**
KSH				S	**S**	**10 36 55.7**	**+2.9**
KSH				ScS	**ScS**	**10 39 31.3**	**-2.7**
KSH				pmax	pmax		
	comp=Z,70nm,4.9s						
KSH				LR	LR		
	comp=N,490nm,13.5s						
KSH				LR	LR		
	comp=E,270nm,12.2s						
KSH				LR	LR		
	comp=Z,110nm,5.1s						
IL1	**Eielson Array**	**49.99**	**32**	*e*P	**P**	**10 29 41.7**	**-0.4**
ILAR	**Eielson Array**	**49.99**	**32**	P	**P**	**10 29 41.8**	**-0.4**
	comp=Z,4.9nm,0.9s,baz=268,slow=6.0,SNR=21						
ILB	**Eielson Array**	**49.99**	**32**	*e*P	**P**	**10 29 42.2**	**0.0**
AAK	**Ala-Archa**	**50.07**	**298**	P	**P**	**10 29 42.6**	**-0.7**
	comp=Z,1.7nm,0.5s,baz=79,slow=6.7,SNR=5.3						
AAK	**Ala-Archa**	**50.07**	**298**	*e*P	**P**	**10 29 43.2**	**-0.1**
AAK				pmax	pmax		
	comp=Z,5.0nm,0.7s						
BVAR	**Borovoye Array**	**50.28**	**312**	P	**P**	**10 29 44.5**	**0.0**
	comp=Z,3.9nm,0.8s,baz=78,slow=8.0,SNR=15						
BRVK	**Borovoye**	**50.34**	**312**	*de*P	**P**	**10 29 45.3**	**+0.4**
BRVK				pmax	pmax		
	comp=Z,15nm,2.5s						
BRVK	**Borovoye**	**50.34**	**312**	*e*P	**P**	**10 29 45.0**	**+0.1**
	comp=Z,5.4nm,0.9s						
KLU	**Klutina**	**50.69**	**36**	*e*P	**P**	**10 29 48.4**	**+0.8**
	comp=Z,15nm,1.4s						
PAX	**Paxson**	**50.75**	**35**	*e*PcP	**PcP**	**10 31 06.3**	**+1.3**
DOT	**Dot Lake**	**51.31**	**34**	*e*P	**P**	**10 29 53.6**	**+1.4**
	comp=Z,17nm,1.3s						
MENT	**Mentasta**	**51.55**	**34**	*e*P	**P**	**10 29 55.3**	**+1.4**
	comp=Z,6.7nm,1.0s						
EGAK	**Eagle**	**52.44**	**32**	*e*P	**P**	**10 30 02.4**	**+1.9**
	comp=Z,4.8nm,1.0s						
KKAR	**Karatay Array**	**52.72**	**300**	*e*P	**P**	**10 30 02.6**	**-0.4**
KKAR				pmax	pmax		
	comp=Z,4.0nm,0.9s						
KKAR	**Karatay Array**	**52.72**	**300**	*e*P	**P**	**10 30 02.6**	**-0.4**
	comp=Z,4.0nm,0.9s						
INK	**Inuvik**	**54.85**	**27**	P	**P**	**10 30 17.9**	**-0.2**
	comp=Z,4.6nm,0.9s,baz=298,slow=4.8,SNR=11		

RES	Resolute Bay	62.96	14	eP	P	10 31 15.6	+1.3
	comp=Z,2.6nm,0.7s						
GEYT	Alibeck	63.42	299	P	P	10 31 18.4	+0.4
	comp=Z,1.2nm,0.5s,baz=354,slow=25,SNR=4.1						
KLMR	Klimovskoe	63.62	328	eP	P	10 31 16.5	-2.4
KLMR				pmax	pmax		
	comp=Z,4.0nm,0.6s						
ARCES	ARCESS Array B	63.99	339	P	P	10 31 20.2	-1.1
	comp=Z,2.0nm,0.7s,baz=56,slow=6.7,SNR=13						
YKA	Yellowknife Ar	64.29	30	P	P	10 31 22.3	-0.9
	comp=Z,1.3nm,0.7s,baz=303,slow=6.4,SNR=20						
YKB5	Yellowknife Ar	64.29	30	eP	P	10 31 22.2	-1.0
VRH	Novokhopyorsk	67.34	318	eP	P	10 31 42.5	-0.6
VRH				pmax	pmax		
	comp=Z,10.0nm,1.0s						
E03A	Lebam	67.91	48	eP	P	10 31 45.2	-1.6
	comp=Z,14nm,0.8s						
OBN	Obninsk	67.91	323	⇓eP	P	10 31 47.0	+0.4
OBN				e		10 32 14.5	
OBN				pmax	pmax		
	comp=Z,7.0nm,0.9s						
OBN				MLR	MLR		
	comp=Z,43nm,16.0s						
LPSR	Galich'ya Gora	68.09	320	eP	P	10 31 48.0	+0.2
LPSR				pmax	pmax		
	comp=Z,10.0nm,0.8s						
STKA	Stephens Creek	68.34	179	P	P	10 31 48.9	-0.6
	comp=Z,1.2nm,0.7s,baz=353,slow=4.1,SNR=2.9						
VSR	Storozhevoye	68.70	319	eP	P	10 31 50.9	-0.8
VSR				pmax	pmax		
	comp=Z,5.0nm,0.5s						
FIA1	FINESS Array S	68.73	332	eP	P	10 31 51.7	+0.1
FINES	FINESS Array B	68.73	332	P	P	10 31 51.7	0.0
	comp=Z,4.1nm,0.7s,baz=46,slow=8.2,SNR=19						
FINES	FINESS Array B	68.73	332	ceP	P	10 31 52.2	+0.5
FINES				pmax	pmax		
	comp=Z,4.0nm,0.7s						
HUMO	Hull Mountain	70.32	51	eP	P	10 32 01.7	-0.2
	comp=Z,11nm,0.5s						
G06A	Carlson Farm,	70.33	48	eP	P	10 32 01.1	-0.8
	comp=Z,19nm,1.4s						
KBZ	Khabaz	70.59	310	P	P	10 32 03.6	+0.2
	comp=Z,1.2nm,0.5s,baz=51,slow=7.6,SNR=6.9						
KVAR	Kislovodsk Arr	70.59	311	P	P	10 32 03.6	-0.1
	comp=Z,3.5nm,0.4s,baz=45,slow=14,SNR=2.8						
KIV	Kislovodsk	70.60	311	eP	P	10 32 05.5	+1.8
KIV				pmax	pmax		
	comp=Z,12nm,1.0s						
YBH	Yreka Blue Hor	70.94	52	P	P	10 32 05.6	-0.2
YBH	Yreka Blue Hor	70.94	52	P	P	10 32 05.6	-0.2
K05A	Summer Lake	71.54	50	eP	P	10 32 11.0	+1.5
	comp=Z,14nm,1.2s						
BMO	Blue Mountains	72.51	47	eP	P	10 32 15.6	+0.4
BMO				pmax	pmax		
	comp=Z,5.0nm,1.0s						
BMO	Blue Mountains	72.51	47	eP	P	10 32 15.6	+0.4
	comp=Z,5.5nm,1.0s						
JTMT	Jette	72.56	43	eP	P	10 32 16.2	+0.7
SWMT	Swartz Lake	72.85	43	eP	P	10 32 18.3	+1.1
WVOR	Wild Horse Val	73.09	49	eP	P	10 32 18.7	0.0
WVOR				pmax	pmax		
	comp=Z,3.0nm,1.1s						
WVOR	Wild Horse Val	73.09	49	eP	P	10 32 18.7	0.0
	comp=Z,3.1nm,1.1s						
MSO	Missoula	73.29	44	eP	P	10 32 19.9	+0.1
	comp=Z,6.3nm,1.3s						
NC405	NORSAR Array S	73.94	337	eP	P	10 32 24.1	+0.9
HFS	Hagfors	74.04	335	P	P	10 32 24.2	+0.4
	comp=Z,4.9nm,1.0s,baz=53,slow=10,SNR=6.2						
AKASG	Malin Array Be	74.11	322	P	P	10 32 24.1	-0.2
	comp=Z,1.8nm,0.6s,baz=46,slow=5.8,SNR=6.3						
AKASG	Malin Array Be	74.11	322	i P	P	10 32 24.3	0.0
AKASG				pmax	pmax		
	comp=Z,1.0nm,0.4s						
NC204	NORSAR Array S	74.11	337	eP	P	10 32 24.7	+0.4
NB2	NORSAR Subarra	74.16	337	P	P	10 32 24.8	+0.3
	comp=Z,6.4nm,1.0s,baz=41,slow=5.9						
NOA	NORSAR Array B	74.16	337	P	P	10 32 23.7	-0.8
	comp=Z,3.4nm,0.8s,baz=39,slow=5.8,SNR=12						
MFID	Camas Ranch	74.21	47	eP	P	10 32 25.5	+0.2
	comp=Z,9.5nm,1.6s						
NBO02	NORSAR Array S	74.26	337	eP	P	10 32 25.9	+0.8
FCC	Fort Churchill	74.46	26	eP	P	10 32 26.5	+0.3
FCC				pmax	pmax		
	comp=Z,8.0nm,1.1s						
FCC	Fort Churchill	74.46	26	eP	P	10 32 26.5	+0.3
	comp=Z,8.4nm,1.1s						
CMB	Columbia Colle	74.48	54	eP	P	10 32 27.7	+0.9
CMB				pmax	pmax		
	comp=Z,6.0nm,0.9s						
CMB	Columbia Colle	74.48	54	eP	P	10 32 27.7	+0.9
	comp=Z,5.8nm,0.9s						
LRM	Limekiln Ridge	74.72	44	eP	P	10 32 29.0	+0.6
EGMT	Eagleton	74.82	41	eP	P	10 32 29.0	+0.3
	comp=Z,10nm,1.0s						
DLMT	Dillon	74.91	44	eP	P	10 32 30.0	+0.7
	comp=Z,6.6nm,0.8s						
HLID	Hailey	74.95	47	eP	P	10 32 30.9	+1.2
	comp=Z,1.9nm,0.8s						
BOZ	Bozeman (W)	75.28	44	eP	P	10 32 32.2	+0.7
BOZ				pmax	pmax		
	comp=Z,7.0nm,1.0s						
BOZ	Bozeman (W)	75.28	44	eP	P	10 32 32.2	+0.7
	comp=Z,6.5nm,1.0s						
NV01	Mina Array Sit	75.59	53	eP	P	10 32 33.9	+0.4
NVAR	Mina Array Bea	75.59	53	P	P	10 32 34.4	+0.9
	comp=Z,5.1nm,0.8s,baz=284,slow=5.8,SNR=31						
NV11	Mina Array Sit	75.69	53	eP	P	10 32 34.9	+1.0
YMR	Madison River	76.25	44	eP	P	10 32 38.5	+1.4
	comp=Z,19nm,1.8s						
LKWY	Lake	76.63	44	eP	P	10 32 41.1	+1.8
LKWY				pmax	pmax		
	comp=Z,5.0nm,1.0s						
LKWY	Lake	76.63	44	eP	P	10 32 41.1	+1.8
	comp=Z,4.8nm,1.0s						
H17A	Grant Village	76.64	44	eP	P	10 32 42.0	+2.6
	comp=Z,8.4nm,0.9s						
IMW	Indian Meadow	76.75	45	eP	P	10 32 41.5	+1.4
	comp=Z,4.6nm,1.0s						
FLWY	Flagg Ranch	76.77	45	eP	P	10 32 41.6	+1.6
	comp=Z,9.7nm,1.4s						
MOOW	Moose Ponds	76.95	45	eP	P	10 32 42.4	+1.3
	comp=Z,5.7nm,1.4s						
HVU	Hansel Valley	76.99	47	eP	P	10 32 42.2	+0.9
HVU				pmax	pmax		
	comp=Z,3.0nm,0.8s						
HVU	Hansel Valley	76.99	47	eP	P	10 32 42.2	+0.9
	comp=Z,3.4nm,0.8s						
LOHW	Long Hollow	77.11	45	eP	P	10 32 43.2	+1.2
	comp=Z,3.2nm,1.1s						
SNOW	Snow King Moun	77.12	45	eP	P	10 32 43.3	+1.2
	comp=Z,6.3nm,1.1s						
REDW	Red Top Meadow	77.13	45	eP	P	10 32 43.0	+0.9
	comp=Z,7.3nm,1.1s						
DAC	Darwin (Calif)	77.31	54	eP	P	10 32 43.7	+0.5
DAC				pmax	pmax		
	comp=Z,3.0nm,0.8s						
DAC	Darwin (Calif)	77.31	54	eP	P	10 32 43.7	+0.5
	comp=Z,3.4nm,0.8s						
R11A	Troy Canyon, C	77.36	52	eP	P	10 32 44.1	+0.6
	comp=Z,9.5nm,1.3s						
BGU	Big Grassy Mou	77.36	48	eP	P	10 32 44.4	+1.0
	comp=Z,3.5nm,1.0s						
TPNV	Topopah Spring	77.78	53	eP	P	10 32 46.6	+0.8
TPNV				pmax	pmax		
	comp=Z,8.0nm,0.8s						
TPNV	Topopah Spring	77.78	53	eP	P	10 32 46.6	+0.8
	comp=Z,7.6nm,0.8s						
HWUT	Hardware Ranch	77.81	47	eP	P	10 32 46.8	+0.9
	comp=Z,8.7nm,1.2s						
DUG	Dugway, Tooele	77.94	49	eP	P	10 32 47.7	+1.1
DUG				pmax	pmax		
	comp=Z,18nm,1.4s						
DUG	Dugway, Tooele	77.94	49	eP	P	10 32 47.7	+1.1
	comp=Z,18nm,1.4s						
TCUT	Toone Canyon	78.21	47	eP	P	10 32 49.3	+1.1
	comp=Z,43nm,1.8s						
BW06	Boulder Array	78.24	45	eP	P	10 32 48.0	-0.4
BW06				eP	P	10 32 48.5	+0.1
PD31	Pinedale Array	78.24	45	eP	P	10 32 48.5	+0.2
PDAR	Pinedale Array	78.24	45	P	P	10 32 47.9	-0.5
	comp=Z,1.8nm,0.8s,baz=270,slow=4.4,SNR=15						
PSUT	Pine Spring	78.33	51	eP	P	10 32 49.7	+0.9
	comp=Z,6.9nm,1.0s						
NLU	North Lily Min	78.54	49	eP	P	10 32 50.9	+0.9
	comp=Z,7.5nm,1.3s						
BRTR	Keskin Array B	78.55	311	P	P	10 32 50.1	+0.1
	comp=Z,1.1nm,0.7s,baz=101,slow=6.7,SNR=5.3						
BRTR	Keskin Array B	78.55	311	i P	P	10 32 50.5	+0.5
BRTR				pmax	pmax		
	comp=Z,1.0nm,0.7s						
SHPR	Sheep Range	78.75	53	eP	P	10 32 52.4	+1.3
	comp=Z,5.1nm,0.9s						
STHS	Stebnicka Huta	78.79	325	eP	P	10 32 52.3	+1.3
STHS	Stebnicka Huta	78.79	325	eP	P	10 32 52.3	+1.3
BR231	Keskin MP Arra	79.00	312	eP	P	10 32 51.8	-0.6
MSU	Marysvale	79.38	50	eP	P	10 32 55.8	+1.1
MSU	Marysvale	79.38	50	eP	P	10 32 55.8	+1.1
TMUT	Trail Mountain	79.47	49	eP	P	10 32 56.2	+0.9
	comp=Z,6.8nm,1.3s						
P17A	Butcher Ranch,	79.64	48	eP	P	10 32 57.1	+1.1
	comp=Z,6.9nm,0.7s						
LCMT	Little Creek M	79.65	51	eP	P	10 32 57.3	+1.2
MTPU	Mount Pierson	79.67	50	eP	P	10 32 57.9	+1.5
	comp=Z,6.1nm,0.8s						
Q16A	Castle Valley	79.73	49	eP	P	10 32 57.8	+1.3
	comp=Z,9.6nm,1.4s						
P18A	Preton Nutter	79.84	48	eP	P	10 32 58.6	+1.4
	comp=Z,14nm,1.3s						
KNB	Kanab	79.91	51	eP	P	10 32 58.9	+1.4
KNB				pmax	pmax		
	comp=Z,8.0nm,0.9s						
KNB	Kanab	79.91	51	eP	P	10 32 58.9	+1.4
	comp=Z,7.7nm,0.9s						
SRU	San Rafael Swe	80.00	48	eP	P	10 32 58.7	+0.7
SRU				pmax	pmax		
	comp=Z,9.0nm,0.6s						
SRU	San Rafael Swe	80.00	48	eP	P	10 32 58.7	+0.7
	comp=Z,9.0nm,0.6s						
ULM	Lac du Bonnet	80.01	33	P	P	10 32 57.5	0.0
	comp=Z,2.0nm,0.7s,baz=329,slow=5.9,SNR=2.3						
BAR	Barrett	80.07	57	eP	P	10 32 58.7	+0.4
	comp=Z,26nm,0.2s						
U15A	North Rim	80.61	51	eP	P	10 33 02.7	+1.3
Y12C	Blythe	80.84	55	eP	P	10 33 02.9	+0.5
	comp=Z,8.1nm,0.8s						
CLL	Collm	80.99	330	i P	P	10 33 03.2	+0.4
	comp=Z,7.0nm,0.9s						
CLL	Collm	80.99	330	i P	P	10 33 03.2	+0.4
CLL				pmax	pmax		
	comp=Z,7.0nm,0.9s						
GLA	Glamis	81.08	55	eP	P	10 33 04.2	+0.5
GLA				pmax	pmax		
	comp=Z,7.0nm,0.8s						
GLA	Glamis	81.08	55	eP	P	10 33 04.2	+0.5
	comp=Z,6.9nm,0.8s						
PV09	Paradox Valley	81.23	48	eP	P	10 33 06.0	+1.3
PV10	Paradox Valley	81.36	48	eP	P	10 33 06.5	+1.1
PV04	Paradox Valley	81.43	48	eP	P	10 33 05.8	+0.1
N23A	Red Feather La	81.51	45	eP	P	10 33 07.2	+1.0
	comp=Z,5.4nm,0.9s						
PV05	Paradox Valley	81.52	48	eP	P	10 33 07.2	+1.0
Y14A	Wickenburg	81.72	54	eP	P	10 33 07.8	+0.7
WUAZ	Wupatki	81.76	52	eP	P	10 33 08.5	+1.0
	comp=Z,10.0nm,0.9s						
PV01	Paradox Valley	81.80	48	eP	P	10 33 08.4	+0.7
113A	Mohawk Valley,	81.95	55	eP	P	10 33 08.7	+0.5
SMCO	Snowmass	82.06	47	eP	P	10 33 10.2	+1.0
	comp=Z,3.6nm,0.9s						
X16A	Lo Mia Camp, P	82.42	53	eP	P	10 33 12.0	+1.1
ISCO	Idaho Springs	82.43	45	eP	P	10 33 12.2	+1.2
ISCO				pmax	pmax		
	comp=Z,2.0nm,0.8s						
ISCO	Idaho Springs	82.43	45	eP	P	10 33 12.2	+1.2
	comp=Z,2.2nm,0.8s						
MVCO	Mesa Verde	82.44	49	eP	P	10 33 10.9	-0.1
	comp=Z,7.1nm,0.9s						
GERES	GERESS Array B	82.58	328	P	P	10 33 11.2	-0.2
	comp=Z,0.8nm,0.4s,baz=224,slow=34,SNR=5.9						
S22A	4UR Ranch, Cre	83.09	48	eP	P	10 33 15.7	+1.2
	comp=Z,5.7nm,1.0s						
EYMN	Ely	83.64	32	eP	P	10 33 16.6	-0.2
	comp=Z,17nm,1.6s						
SDCO	Great Sand Dun	83.87	47	eP	P	10 33 18.8	+0.3
	comp=Z,2.0nm,0.9s						
EIL	Elat	84.00	303	P	P	10 33 19.9	+1.1
	comp=Z,2.6nm,0.6s,baz=52,slow=12,SNR=4.1						
TUC	Tucson	84.19	54	eP	P	10 33 20.6	+0.7
TUC				pmax	pmax		
	comp=Z,4.0nm,0.8s						
TUC	Tucson	84.19	54	eP	P	10 33 20.6	+0.7
	comp=Z,4.1nm,0.8s						
ECSD	EROS Data Cent	84.45	38	eP	P	10 33 19.7	-1.3
	comp=Z,7.3nm,1.1s						
T25A	Trinidad	84.92	47	eP	P	10 33 24.3	+0.6
ANMO	Albuquerque	85.18	49	ceP	P	10 33 26.5	+1.4
ANMO				pmax	pmax		
	comp=Z,4.0nm,1.0s						
ANMO	Albuquerque	85.18	49	eP	P	10 33 26.1	+1.0
	comp=Z,3.9nm,0.9s						
BFO	Black Forest	85.20	330	ceP	P	10 33 26.3	+1.6
121A	Cookes Peak, D	85.96	52	eP	P	10 33 29.7	+0.8
	comp=Z,6.9nm,0.9s						
TX31	Lajitas Ar. Si	90.72	52	eP	P	10 33 51.4	-0.2
TX31				eP	P	10 33 51.8	+0.2
TXAR	Lajitas Array	90.72	52	P	P	10 33 51.8	+0.2
	comp=Z,3.2nm,0.6s,baz=299,slow=3.4,SNR=32						
HPIG		91.07	55	eP	P	10 33 54.1	+0.7
TORD	Torodi Ar. Bea	117.06	314	PKP	PKPdf	10 39 33.2	-0.7
	comp=Z,0.5nm,0.9s,baz=43,slow=3.1,SNR=3.2						
LPAZ	La Paz	147.31	59	PKPbc	PKPbc	10 40 32.9	-0.3
	comp=Z,5.4nm,0.6s,baz=256,slow=2.6,SNR=15						

ISCJB ***05*** *10:21:60.0±1.2, 36°.93N±0°.03×141°.62E±0°.07, h20km±7km, mb4.3/33, MS3.6/2, Error ellipse: s-maj=9.4km s-min=5.5km az=13.5*

IDC ***05*** *10:21:59.3±0.6, 36°.94N×141°.50E, h0km, mb4.2/23, mb1 4.3/29, mb1mx4.2/56, mbtmp4.2/29, ML3.9/2, MS3.5/3, Ms1 3.5/3, ms1mx2.8/54, Error ellipse: s-maj=16.5km s-min=14.5km az=106.0*

NIED ***05*** *10:22:00, 37°.00N×141°.50E, h8km, Mw4.2 Best double couple: M0=2.27000×10^15 NP1:φs=214.00000°, δ42.00000°, λ-82.00000°. NP2:φs=23.00000°, δ48.00000°, λ-97.00000°.*

JMA ***05*** *10:22:01.9±0.2, 36°.99N×141°.53E, h40km±2km, M4.4*

NEIC ***05*** *10:22:02.2±2.2, 36°.89N×141°.52E, h20km±14km, mb4.3/1, Error ellipse: s-maj=7.2km s-min=5.8km az=126.0*

ISC 05 10:22:00.8±1.8, 36°.95N±0°.05×141°.55E±0°.07, h10km±10km, n61, σ1.25/56, mb4.3/33, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	Iwakimizuishiy	0.62	284	P	Pb	10 22 13.6	-0.2
ONAJ				eS	Sb	10 22 22.6	0.0
JFK	Kawauchi	0.68	308	P	Pg	10 22 14.1	+0.1
JFK				eS	Sg	10 22 23.0	+0.1
JHO	Hitachi	0.86	247	P	Pg	10 22 17.2	-0.2
JHO				S	Sb	10 22 29.2	-0.2
JMM	Marumori	1.09	327	P	Pb	10 22 20.6	-1.2
JIO	Ouri	1.51	354	P	Pn	10 22 26.5	-1.4
JIO				S	Sn	10 22 44.8	-2.7
MJAR	Matsushiro Arr	2.71	262	Pn	Pn	10 22 45.0	+0.5
	baz=87,slow=15,SNR=1.1						
MJAR				Sn	Sb	10 23 21.7	-1.1
	26nm,0.3s,baz=102,slow=29,SNR=3.5						
MAJO	Matsushiro	2.72	262	ePn	Pn	10 22 44.1	-0.4
JHJ	Hachijo jima 2	4.09	201	Pn	Pn	10 23 04.9	+1.5
	41nm,0.3s,baz=72,slow=20,SNR=2.0						
JHJ				Sn	Sn	10 23 50.4	-1.0
	54nm,0.3s,baz=253,slow=19,SNR=2.2						
ERM	Erimo	5.21	13	Pn	Pn	10 23 19.5	+0.8
ASAJ	Asahikawa	7.20	6	Pn	Pn	10 23 47.5	+1.5
	1.5nm,0.3s,baz=225,slow=10.0,SNR=3.7						
CBIJ	Chichi jima	9.84	177	Pn	Pn	10 24 20.8	-1.6
CBIJ				Sn	Sn	10 26 02.9	-10
JCJ	Chichijima	9.84	177	Pn	Pn	10 24 20.8	-1.6
	baz=278,slow=14						
JCJ				Sn	Sn	10 26 02.9	-10
	baz=288,slow=20						
USRK	Ussuriysk Ar.	10.26	318	Pn	Pn	10 24 30.1	+2.2
	baz=220,slow=26,SNR=1.7						
KSRS	Korea Array	10.88	277	Pn	Pn	10 24 38.0	+1.4
	baz=87,slow=14,SNR=2.2						
KSAR	Wonju Array Be	10.91	277	Pn	Pn	10 24 38.0	+1.0
KLR	Kul'dur	14.19	333	LR	LR	10 30 29.0	
	comp=Z,141nm,18.2s,baz=158,slow=36						
PETK	Petropavlovsk-	19.70	30	P	P	10 26 29.9	-0.2
	baz=198,slow=8.7,SNR=2.0						
SONM	Songino Array	27.92	304	P	P	10 27 50.2	-0.9
	1.3nm,0.5s,baz=96,slow=8.7,SNR=3.5						
H11N2	WAKE ISLAND Hy	28.01	121	T	T	10 57 04.1	
	baz=312						
H11N1	WAKE ISLAND Hy	28.02	121	T	T	10 57 06.5	
	baz=312						
H11N3	WAKE ISLAND Hy	28.03	121	T	T	10 57 12.1	
	baz=312						
H11S1	WAKE ISLAND Hy	28.72	123	T	T	10 58 03.0	
	baz=312						
H11S3	WAKE ISLAND Hy	28.73	123	T	T	10 58 04.5	
	baz=312						
H11S2	WAKE ISLAND Hy	28.74	123	T	T	10 58 03.8	
	baz=312						
NONG	Nongkai	38.59	251	P	P	10 29 25.3	+1.2
	38nm,0.8s,10μm						
SKNT	Sakolnakorn	38.62	249	P	P	10 29 25.4	+1.0
	12nm,1.1s						
LOEI	Loei	40.35	252	P	P	10 29 43.0	+4.2
	5.6nm,1.1s,380nm						
CHAI	Chaiyaphum	40.78	250	P	P	10 29 43.1	+0.7
	6.6nm,0.8s						
PBKT	Sadao Pong	41.14	251	P	P	10 29 49.2	+3.9
	10nm,1.0s,1μm						
SRAK	Srakaew	41.94	248	P	P	10 29 49.8	-2.0
	33nm,0.7s						
ZALV	Zalesovo Beam	42.05	312	P	P	10 29 52.2	-0.2
	3.5nm,0.6s,baz=97,slow=7.6,SNR=5.9						
NRIK	Noril'sk	43.38	335	P	P	10 30 02.1	-0.9
	5.1nm,0.6s,baz=118,slow=7.0,SNR=3.8						
NRIK				LR	LR	10 48 06.4	
	comp=Z,56nm,18.9s,baz=100,slow=36						
MKAR	Makanchi Array	44.25	302	P	P	10 30 09.8	-0.6
	2.1nm,0.8s,baz=88,slow=10.0,SNR=7.2						
PHET	Kaeng Krachan	44.43	249	P	P	10 30 19.6	+7.5
	6.4nm,0.9s						
KURK	Kurchatov	46.07	308	P	P	10 30 24.9	+0.3
KURBB	Kurchatov Arra	46.14	308	P	P	10 30 24.9	-0.3
	4.0nm,0.6s,baz=84,slow=8.3,SNR=5.7						
KDAK	Kodiak Island	47.09	42	P	P	10 30 47.7	+15
	5.7nm,0.8s,baz=264,slow=7.2,SNR=5.3						
KRAB	Krabi	47.85	244	P	P	10 30 46.1	+7.1
	30nm,0.8s,538nm						
ILAR	Eielson Array	49.50	32	P	P	10 30 51.4	+0.3
	3.0nm,0.7s,baz=263,slow=6.0,SNR=10						
BVAR	Borovoye Array	50.71	312	P	P	10 31 00.1	-0.3
	1.1nm,0.5s,baz=81,slow=4.7,SNR=4.8						
INK	Inuvik	54.41	27	P	P	10 31 27.4	-0.2
	2.1nm,0.8s,baz=301,slow=3.7,SNR=4.8						
ARU	Arti	56.49	319	P	P	10 31 42.7	-0.1
	5.2nm,0.2s,baz=281,slow=16,SNR=10						
WRA	Warramunga Arr	57.00	188	P	P	10 31 46.2	-0.5
	1.6nm,0.5s,baz=4.8,slow=7.4,SNR=4.9						
ABKAR	Akbulak array	58.08	310	eP	P	10 31 53.5	-0.6
	1.6nm,0.5s						
AKTO	Aktyubinsk	58.81	312	P	P	10 31 58.6	-0.6
	1.6nm,0.7s,baz=51,slow=13,SNR=2.4						
ASAR	Alice Springs	60.73	188	P	P	10 32 12.3	-0.2
	1.1nm,0.7s,baz=16,slow=6.7,SNR=5.5						
YKA	Yellowknife Ar	63.82	30	P	P	10 32 33.3	+0.5
	0.6nm,0.7s,baz=304,slow=6.9,SNR=4.4						
GEYT	Alibeck	63.97	299	P	P	10 32 34.7	+0.4
	1.4nm,0.4s,baz=228,slow=3.8,SNR=3.6						
ARCES	ARCESS Array B	64.11	339	P	P	10 32 35.3	+0.6
	1.3nm,0.7s,baz=57,slow=8.8,SNR=4.1						
FINES	FINESS Array B	68.94	332	P	P	10 33 05.7	+0.1
	2.2nm,0.8s,baz=89,slow=7.4,SNR=2.9						
HFS	Hagfors	74.21	336	P	P	10 33 37.2	-0.3
	1.4nm,0.6s,baz=69,slow=7.9,SNR=3.7						
NB2	NORSAR Subarra	74.30	337	P	P	10 33 37.9	-0.1
	comp=Z,3.9nm,0.7s,baz=38,slow=6.2						
NOA	NORSAR Array B	74.30	337	P	P	10 33 38.3	+0.2
	comp=Z,4.2nm,0.8s,baz=39,slow=5.8,SNR=8.3						
AKASG	Malin Array Be	74.43	322	P	P	10 33 38.1	-0.7
	comp=Z,1.1nm,0.4s,baz=48,slow=6.1,SNR=4.1						
NVAR	Mina Array Bea	74.95	53	P	P	10 33 44.3	+1.9
	comp=Z,1.0nm,0.8s,baz=291,slow=6.4,SNR=2.1						
PDAR	Pinedale Array	77.64	46	P	P	10 33 57.6	-0.1
	comp=Z,0.4nm,0.6s,baz=274,slow=5.0,SNR=2.2						
EKA	Eskdalemuir Ar	83.24	341	P	P	10 34 27.4	+0.2
	comp=Z,1.5nm,0.7s,baz=32,slow=6.9,SNR=3.4						
PPT	Papeete	84.50	117	LR	LR	11 03 31.0	
	comp=Z,34nm,20.7s,baz=174,slow=30						
TXAR	Lajitas Array	90.08	52	P	P	10 35 02.2	+0.9
	comp=Z,0.7nm,0.7s,baz=302,slow=3.9,SNR=4.6						
TORD	Torodi Ar. Bea	117.47	315	PKP	PKPdf	10 40 46.6	-0.7
	comp=Z,0.3nm,0.6s,baz=48,slow=1.1,SNR=4.2						
LPAZ	La Paz	146.64	60	PKPbc	PKPbc	10 41 43.8	-0.1
	comp=Z,1.6nm,0.8s,baz=18,slow=16,SNR=2.0						

JMA 05 10:26:16.7, 37°.06N×140°.80E, h9km±1km, M2.6, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	Iwakimizuishiy	0.04	358	P	Pg	10 26 18.4	-0.2
ONAJ				S	Sg	10 26 19.8	-0.1
JFK	Kawauchi	0.31	11	P	Pg	10 26 22.9	0.0
JFK				S	Sg	10 26 27.5	+0.4
JHO	Hitachi	0.48	203	P	Pg	10 26 26.0	-0.1
JHO				S	Sg	10 26 32.3	-0.2
JFT	Otama	0.59	321	P	Pg	10 26 28.2	+0.1
JFT				S	Sg	10 26 36.3	+0.5
JMM

0.2nm,0.9s,baz=7.3,slow=6.8,SNR=4.3

*IDC **05** 10:42:14.0±1.0,2°.58N×95°.75E,h0km,mb4.2/16, mb1 4.2/16,mb1mx4.0/48,mbtmp4.2/16,Error ellipse: s-maj=33.6km s-min=15.1km az=50.0*
*ISCJB **05** 10:42:15.5±0.5,2°.43N±0°.05×95°.61E±0°.06,h25km, mb4.2/18,Error ellipse: s-maj=8.9km s-min=5.3km az=147.3*
*NEIC **05** 10:42:18.7±3.6,2°.59N×95°.77E,h31km±24km,mb4.1/3, Error ellipse: s-maj=16.6km s-min=6.1km az=60.0*
*DJA **05** 10:42:18.0±1.1,3°N±4°×9°E±1°0,h10km,M4.4/12, mb4.6/5,mB5.1/3,MLv4.3/12,Mw(mB)4.5/3*
ISC 05 10:42:17.7±0.6,2°.53N±0°.05×95°.66E±0°.08,h25km,n54, σ1§30/47,mb4.2/18,Off west coast of northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MLSI	Meulaboh, Aceh	1.88	23	P	Pn	10 42 47.0	-1.3
MLSI				S	Sb	10 43 15.1	+0.6
GSI	Gunungsitoli	2.27	122	P	Pn	10 42 53.2	-0.5
GSI				S	Sn	10 43 19.1	-1.8
GSI	Gunungsitoli	2.27	122	ePn	Pn	10 42 53.2	-0.5
KCSI	Kotacane, Aceh	2.33	65	P	Pn	10 42 53.7	-0.8
LHMI	Lhok Sumawe	2.98	26	P	Pn	10 43 03.2	-0.2
LHMI	Lhok Sumawe	2.98	26	ePn	Pn	10 43 02.9	-0.5
TSI	Tuntungan	3.06	72	P	Pn	10 43 04.8	+0.3
PBSI	Pulau Batu	3.67	134	P	Pn	10 43 12.8	-0.1
MNSI	Mandailing Nat	4.28	114	P	Pn	10 43 21.8	+0.4
KULM	Kulim	5.69	61	ePn	Pn	10 43 39.6	-1.1
	70nm,0.8s						
IPM	Ipoh	5.70	70	ePn	Pn	10 43 40.1	-0.8
	49nm,0.4s						
PDSI	Padang	5.90	125	P	Pn	10 43 44.6	+1.0
	20nm,0.5s,7μm0.2nm						
TRTT	Trang	6.63	37	P	Pb	10 44 15.2	+2.9
SKLT	Songkhla	6.76	47	P	Pn	10 44 03.3	+7.9
	28nm,0.7s						
SRAK	Srakaew	13.04	29	P	P	10 45 26.4	-5.2
	26nm,0.7s						
PBKT	Sadao Pong	14.90	20	P	P	10 45 50.8	-1.5
	8.9nm,0.8s						
SUKH	Sukhothai	15.37	14	P	P	10 45 56.3	-1.2
	2.9nm,0.7s						
KHON	Khomkaen	15.43	27	P	P	10 46 04.1	+5.9
MHMT	Maesarieng	15.71	8	P	P	10 46 00.0	-1.3
	5.3nm,1.2s						
UTTA	Uttaradit	15.87	17	P	P	10 46 01.8	-1.3
	3.6nm,0.9s						
LOEI	Loei	15.87	20	P	P	10 46 02.5	-0.7
	13nm,0.8s						
CHTO	Chiang Mai	16.50	11	P	Pn	10 46 08.4	+0.7
	26nm,0.9s						
CHTO	Chiang Mai	16.50	11	ePn	Pn	10 46 05.6	-2.1
	3.9nm,0.9s						
CMMT	Chiang Mai	16.50	11	P	Pn	10 46 08.3	+0.6
	5.7nm,1.4s						
PANO	Nakornpanom	16.99	31	P	Pn	10 46 13.6	-0.2
	40nm,1.2s						
NONG	Nongkai	17.10	25	P	P	10 46 15.9	-0.8
	35nm,0.8s						
CRAI	Chiangrai	18.19	14	P	P	10 46 29.4	+0.6
KAPI	Kappang	25.21	107	P	P	10 47 42.0	+0.2
	6.7nm,0.6s,baz=162,slow=20,SNR=3.7						
H08S2	Diego Garcia H	25.22	246	T	T	11 13 53.4	
	baz=67,slow=76,SNR=3607						
H08S3	Diego Garcia H	25.22	246	T	T	11 13 55.6	
	baz=67,slow=76,SNR=2904						
H08S1	Diego Carcia H	25.24	246	T	T	11 13 56.8	
	baz=67,slow=76,SNR=3502						
LSA	Lhasa	27.36	351	eP	P	10 48 01.9	+0.3
H01W3	Cape Leeuwin H	41.06	157	T	T	11 33 35.3	
	baz=332,slow=76,SNR=748						
H01W2	Cape Leeuwin H	41.07	157	T	T	11 33 36.2	
	baz=332,slow=76,SNR=699						
H01W1	Cape Leeuwin H	41.08	157	T	T	11 33 38.3	
	baz=332,slow=76,SNR=682						
WRA	Warramunga Arr	44.04	122	P	P	10 50 23.0	-0.9
	0.8nm,0.5s,baz=298,slow=9.4,SNR=9.6						
ASAR	Alice Springs	45.42	127	P	P	10 50 34.4	-0.5
	0.4nm,0.5s,baz=300,slow=8.0,SNR=15						
MKAR	Makanchi Array	45.60	347	P	P	10 50 36.0	+0.2
	4.3nm,0.4s,baz=156,slow=8.7,SNR=59						
KSAR	Wonju Array Be	45.64	36	P	P	10 50 35.1	-1.1
KSRS	Korea Array	45.67	36	P	P	10 50 35.1	-1.4
	1.3nm,0.7s,baz=221,slow=9.3,SNR=5.0						
SONM	Songino Array	46.08	10	P	P	10 50 39.2	-0.5
	2.9nm,0.7s,baz=190,slow=8.6,SNR=8.7						
KKAR	Karatay Array	46.20	334	eP	P	10 50 41.3	+0.7
	1.3nm,0.5s						
GEYT	Alibeck	49.21	320	P	P	10 51 04.8	+0.6
	3.5nm,0.6s,baz=139,slow=9.5,SNR=7.2						
TLY	Talaya	49.44	7	P	P	10 51 04.8	-0.8
	1.2nm,0.5s,baz=240,slow=16,SNR=3.0						
ZALV	Zalesovo Beam	52.02	352	P	P	10 51 24.8	-0.2
	5.1nm,0.6s,baz=184,slow=6.7,SNR=18						
USRK	Ussuriysk Ar.	52.46	33	P	P	10 51 27.8	-0.7
	1.2nm,0.6s,baz=223,slow=6.6,SNR=4.0						
STKA	Stephens Creek	55.39	132	P	P	10 51 49.9	-0.2
	1.6nm,0.8s,baz=94,slow=13,SNR=3.6						
ABKAR	Akbulak array	55.63	332	eP	P	10 51 51.7	+0.2
	2.4nm,0.7s						
KLR	Kul'dur	55.79	28	P	P	10 51 51.9	-0.7
	2.0nm,0.8s,baz=0.0,slow=18,SNR=8.8						
KBZ	Khabaz	62.06	319	P	P	10 52 36.1	-0.2
	1.1nm,0.7s,baz=122,slow=11,SNR=3.2						
FINES	FINESS Array B	78.12	333	P	P	10 54 14.3	-0.1
	1.9nm,0.7s,baz=142,slow=7.0,SNR=5.8						
ARCES	ARCESS Array B	80.77	340	P	P	10 54 29.0	+0.2
	1.1nm,0.6s,baz=98,slow=5.4,SNR=14						
GERES	GERESS Array B	82.80	319	P	P	10 54 40.9	+0.9
	0.3nm,0.2s,baz=114,slow=8.7,SNR=3.5						
TXAR	Lajitas Array	143.31	29	PKhKP	PKPpre	11 01 39.9	
	0.7nm,1.1s,baz=319,slow=3.6,SNR=4.1						

*NIED **05** 10:45:00,37°.00N×141°.50E,h8km,Mw3.6 Best double couple: M0:2.56000×10^14 NP1:φs=196.00000°,δ41.00000°, λ-109.00000°. NP2:φs=41.00000°,δ52.00000°, λ-74.00000°.*
*IDC **05** 10:45:14.3±1.1,36°.85N×141°.71E,h0km,mb3.5/5, mb1 3.7/6,mb1mx3.4/50,mbtmp3.4/6,ML3.1/1,Error ellipse: s-maj=30.1km s-min=22.6km az=133.0*
*ISCJB **05** 10:45:15.7±1.2,36°.95N±0°.04×141°.64E±0°.07,h21km±8km, mb3.5/5,Error ellipse: s-maj=9.8km s-min=6.1km az=15.2*
*JMA **05** 10:45:17.6±0.2,36°.98N×141°.51E,h41km±2km,M3.5*
ISC 05 10:45:15.2±2.0,36°.99N±0°.04×141°.64E±0°.08,h7km±11km, n15,σ1§14/23,mb3.6/5,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.68	280	P	Pb	10 45 29.3	-0.1
ONAJ				S	Sg	10 45 37.9	+0.8
JFK	Kawauchi	0.71	302	P	Pb	10 45 29.8	-0.2
JFK				S	Sg	10 45 38.2	-0.1
JHO	Hitachi	0.94	246	P	Pg	10 45 32.9	-0.3
JHO				S	Sg	10 45 44.1	-1.2
JMM	Marumori	1.10	323	P	Pg	10 45 36.1	-0.3
JFT	Otama	1.16	297	P	Pg	10 45 37.5	0.0
JIO	Ouri	1.48	351	P	Pn	10 45 42.2	0.0
JIO				S	Sn	10 46 00.1	-1.7
JOU	Okura	1.57	331	P	Pb	10 45 44.4	-0.3
JOU				S	Sn	10 46 03.9	-0.3
MJAR	Matsushiro Arr	2.79	262	Pn	Pn	10 46 00.9	+0.6
	3.1nm,0.3s,baz=88,slow=14,SNR=26						
MJAR				Sn	Sn	10 46 34.2	+0.1
	4.1nm,0.3s,baz=105,slow=13,SNR=5.7						
MAT	Matsushiro	2.79	262	P	Pn	10 46 01.3	+1.0
MAT				eS	Sn	10 46 32.6	-1.6
JHJ	Hachijo jima 2	4.15	202	Pn	Pn	10 46 20.6	+1.7
	7.2nm,0.3s,baz=252,slow=20,SNR=1.4						
JHJ				Sn	Sn	10 47 05.6	-2.2
	10nm,0.3s,baz=72,slow=20,SNR=1.7						
MKAR	Makanchi Array	44.29	302	P	P	10 53 26.7	+1.2
	0.3nm,0.6s,baz=76,slow=6.1,SNR=2.2						
ILAR	Eielson Array	49.44	32	P	P	10 54 05.7	+0.2
	0.6nm,0.6s,baz=278,slow=6.2,SNR=7.4						
INK	Inuvik	54.34	27	P	P	10 54 43.2	+1.2
	0.5nm,0.8s,baz=280,slow=4.1,SNR=3.2						
WRA	Warramunga Arr	57.04	188	P	P	10 55 02.1	+0.3
	0.4nm,0.6s,baz=6.2,slow=7.4,SNR=6.4						
ASAR	Alice Springs	60.77	188	P	P	10 55 25.6	-2.1
	0.3nm,0.7s,baz=8.9,slow=6.6,SNR=2.6						

DDA 05 10:45:59.2,37°.63N×37°.26E,h7km,Md2.6,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HCB	Kahramanmara¯	0.40	225	i P	Pg	10 46 07.2	+0.2
HCB				i S	Sg	10 46 13.5	+1.3
KAMA	Osmaniye	0.65	227	i P	Pg	10 46 11.8	+0.1
KUZU	Kuzuini	0.86	190	i P	Pg	10 46 15.9	+0.1
KUZU				i S	Sb	10 46 28.3	0.0

*ISK **05** 10:52:35.6,37°.09N×29°.24E,h21km,MD2.6*
*ISCJB **05** 10:52:40.9±1.2,36°.40N±0°.05×28°.75E±0°.05,h5km±8km, Error ellipse: s-maj=9.9km s-min=5.8km az=28.1*
*CSEM **05** 10:52:41.2,36°.44N×28°.75E,h7km,MD2.8*
*DDA **05** 10:52:41.2,36°.44N×28°.75E,h7km,Md2.8*
ISC 05 10:52:40.3±1.5,36°.44N±0°.05×28°.72E±0°.03,h1km±12km, n19,σ1§15/30,Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FETY	Fethiye	0.36	56	ePG	Pg	10 52 45.9	-1.3
FETY				eSG	Sg	10 52 52.7	+0.9
FETY	Fethiye	0.36	56	ePg	Pg	10 52 45.9	-1.3
FETY				eSg	Sg	10 52 52.7	+0.9
DALY	Dalyan (Mu¨la	0.39	352	ePG	Pg	10 52 46.7	-1.0
DALY				eSG	Sb	10 52 55.2	-1.2
DALY	Dalyan (Mu¨la	0.39	352	ePg	Pg	10 52 46.7	-1.0
DALY				eSg	Sb	10 52 55.2	-1.2
TURN	Turunc	0.45	348	i P	Pb	10 52 51.6	+0.6
TURN				i S	Sb	10 52 59.6	+1.4
AKAS	Kas	0.74	105	P	Pg	10 52 55.0	+0.4
AKAS				S	Sb	10 53 06.3	-0.5
AKAS	Kas	0.74	105	i P	Pg	10 52 55.0	+0.4
AKAS				i S	Sb	10 53 06.3	-0.5
YER	Yerkesik	0.78	334	ePG	Pg	10 52 51.0	-4.3
YER	Yerkesik	0.78	334	ePg	Pg	10 52 51.0	-4.3
GOLH	Golhisar	1.05	40	P	Pn	10 53 02.1	-0.1
GOLH				S	Sb	10 53 15.1	-0.5
GOLH	Golhisar	1.05	40	i P	Pn	10 53 02.1	-0.1
GOLH				i S	Sb	10 53 15.1	-0.5
BDRM	Kayabasi	1.20	302	P	Pg	10 53 04.1	+0.8
BDRM				S	Sn	10 53 21.9	+0.7
BDRM	Kayabasi	1.20	302	i P	Pg	10 53 04.1	+0.8
BDRM				i S	Sn	10 53 21.9	+0.7
DNZL	Cakiroluk	1.28	12	P	Pn	10 53 05.5	0.0
DNZL	Cakiroluk	1.28	12	i P	Pn	10 53 05.5	0.0
BODT	Bodrum	1.29	299	ePN	Pn	10 53 02.5	-3.0
BODT	Bodrum	1.29	299	ePn	Pn	10 53 02.5	-3.0
AYDN	Tasoluk	1.40	332	P	Pn	10 53 07.3	+0.4
AYDN				S	Sb	10 53 26.0	+0.5
AYDN	Tasoluk	1.40	332	i P	Pn	10 53 07.3	+0.4
AYDN				i S	Sb	10 53 26.0	+0.5

*DDA **05** 10:59:01.8,38°.59N×27°.33E,h7km,Md2.7*
*ISCJB **05** 10:59:02.6±0.8,38°.53N±0°.04×27°.33E±0°.06,h11km,Error ellipse: s-maj=7.8km s-min=5.3km az=35.2*
*CSEM **05** 10:59:02.0±0.4,38°.53N×27°.35E,h10km,ML1.6,Error ellipse: s-maj=9.1km s-min=6.4km az=125.0*
*ATH **05** 10:59:03.4,38°.52N×27°.21E,h27km±5km,ML1.6/3,Error ellipse: s-maj=6.3km s-min=1.6km az=248.0*
ISC 05 10:59:01.9±1.0,38°.52N±0°.04×27°.31E±0°.05,h11km,n12, σ0§35/20,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DGB	¯zmir	0.58	216	i P	Pb	10 59 14.4	+0.4
ZEY	¯zmir	0.70	246	i P	Pg	10 59 15.7	+0.3
SMG	Samos	0.90	205	P	Pg	10 59 19.1	0.0
SMG				S	Sn	10 59 33.5	+0.1
SMG	Samos	0.90	205	P	Pg	10 59 19.1	0.0
SMG				S	Sn	10 59 33.5	+0.1
SMG				AML	AML	10 59 37.7	
	comp=N,112μm,0.3s						
SMG				AML	AML	10 59 38.2	
	comp=E,74μm,0.3s						
CHOS	Chios island	1.00	263	P	Pb	10 59 21.5	+0.3
CHOS				S	Sg	10 59 33.5	-0.6
CHOS	Chios island	1.00	263	P	Pb	10 59 21.5	+0.3
CHOS				S	Sg	10 59 33.5	-0.6
CHOS				AML	AML	10 59 38.7	
	comp=E,56μm,0.8s						
CHOS				AML	AML	10 59 39.4	
	comp=N,41μm,0.4s						
PRK	Paraskevi	1.09	312	P	Pg	10 59 22.9	+0.1
PRK				S	Sn	10 59 38.5	+0.4
PRK	Paraskevi	1.09	312	P	Pg	10 59 22.9	+0.1
PRK				S	Sn	10 59 38.5	+0.4
PRK				AML	AML	10 59 41.3	
	comp=N,82μm,0.3s						
PRK				AML	AML	10 59 42.4	
	comp=E,96μm,0.6s						
SIGR	SIGRI	1.33	302	P	Pg	10 59 27.3	-0.1
SIGR	SIGRI	1.33	302	P	Pg	10 59 27.3	-0.1
DURS	Dursunbey	1.41	40	P	Pn	10 59 27.1	-0.4
DURS				S	Sb	10 59 46.4	+0.2
DURS	Dursunbey	1.41	40	i P	Pn	10 59 27.1	-0.4
DURS				i S	Sb	10 59 46.4	+0.2

*NIED **05** 11:02:00,37°.00N×141°.10E,h50km,Mw3.9 Best double couple: M0:6.95000×10^14 NP1:φs=190.00000°,δ11.00000°, λ74.00000°. NP2:φs=26.00000°,δ79.00000°,λ93.00000°.*
*ISCJB **05** 11:02:09.2±0.7,36°.96N±0°.04×141°.30E±0°.07,h50km±5km, mb3.7/13,Error ellipse: s-maj=10.1km s-min=5.6km az=17.7*
*JMA **05** 11:02:11.7±0.1,36°.96N×141°.07E,h51km±1km,M3.9*
JMA Felt II J1.
*IDC **05** 11:02:14.0±2.0,36°.90N×141°.12E,h77km±20km,mb3.4/13, mb1 3.6/17,mb1mx3.4/64,mbtmp3.7/17,MS2.6/3, Ms1 2.6/3,ms1mx2.4/38,Error ellipse: s-maj=17.5km s-min=11.1km az=71.0*
ISC 05 11:02:10.5±1.1,36°.94N±0°.04×141°.28E±0°.07,h41km±10km, n28,σ1§37/37,mb3.8/13,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.41	293	P	Pn	11 02 20.4	+0.2
ONAJ				S	Sn	11 02 26.4	-0.7
JFK	Kawauchi	0.53	323	P	Pn	11 02 22.0	+0.3
JFK				S	Sn	11 02 29.2	-0.5
JHO	Hitachi	0.66	240	P	Pn	11 02 23.0	-0.4
JHO				S	Sn	11 02 31.0	-1.6
JFT	Otama	0.94	308	P	Pn	11 02 27.6	+0.3
JFT				S	Sn	11 02 38.6	-1.0
JMM	Marumori	1.00	337	P	Pn	11 02 28.2	+0.2
JMM				S	Sn	11 02 40.2	-0.7
JSB	Shiboa	1.09	272	P	Pn	11 02 28.8	-0.4
JSB				S	Sn	11 02 41.4	-1.7
JFY	Yanaizu	1.34	291	P	Pn	11 02 32.1	-0.6
MJAR	Matsushiro Arr	2.50	262	P	Pn	11 02 48.6	0.0
	14nm,0.3s,baz=83,slow=15,SNR=141						
MJAR				S	Sn	11 03 20.1	+2.3
	12nm,0.3s,baz=80,slow=23,SNR=5.5						
MJAR				LR	LR	11 04 02.4	
	comp=Z,105nm,21.5s,baz=205,slow=46						
MAT	Matsushiro	2.50	262	P	Pn	11 02 49.0	+0.4
MAT				eS	Sn	11 03 20.3	+2.4
JHJ	Hachijo jima 2	4.01	198	P	Pn	11 03 10.6	+1.2
	32nm,0.3s,baz=107,slow=23,SNR=9.9						
JHJ				S	Sn	11 03 56.0	+1.0
	45nm,0.3s,baz=69,slow=22,SNR=9.3						
ASAJ	Asahikawa	7.24	8	P	Pn	11 03 53.6	0.0
	1.4nm,0.3s,baz=217,slow=12,SNR=25						
ASAJ				S	Sn	11 05 14.8	+0.3
	0.3nm,0.3s,baz=72,slow=20,SNR=3.3						
JNU	Nakatsue	9.34	249	LR	LR	11 08 00.1	
	comp=Z,38nm,18.9s,baz=128,slow=38						
JCJ	Chichijima	9.85	175	P	Pn	11 04 27.6	-1.9
	4.2nm,0.3s,baz=280,slow=23,SNR=6.5						
USRK	Ussuriysk Ar.	10.12	319	P	Pn	11 04 36.9	+3.8
	0.2nm,0.3s,baz=143,slow=13,SNR=7.5						
USRK				LR	LR	11 08 24.7	
	comp=Z,43nm,18.2s,baz=158,slow=37						
KSRS	Korea Array	10.67	277	P	Pn	11 04 42.6	+2.0
	0.1nm,0.3s,baz=88,slow=14,SNR=3.1						
SONM	Songino Array	27.75	304	P	P	11 07 53.3	-1.9
	0.8nm,0.6s,baz=98,slow=10,SNR=2.8						
TIXI	Tiksi	35.37	353	P	P	11 09 00.4	-1.3
	0.7nm,0.4s,baz=102,slow=4.4						
ZALV	Zalesovo Beam	41.90	312	P	P	11 09 55.3	-1.2
	1.8nm,0.6s,baz=115,slow=6.7,SNR=5.3						
MKAR	Makanchi Array	44.07	302	P	P	11 10 13.3	-1.1
	0.9nm,0.7s,baz=86,slow=11,SNR=8.5						
KURBB	Kurchatov Arra	45.97	308	P	P	11 10 27.7	-1.6
	2.0nm,0.6s,baz=84,slow=7.8,SNR=14						
ILAR	Eielson Array	49.63	32	P	P	11 10 59.0	+1.5
	0.9nm,0.8s,baz=275,slow=6.0,SNR=9.0						
BVAR	Borovoye Array	50.55	312	P	P	11 11 03.5	-1.1
	0.4nm,0.4s,baz=53,slow=7.4,SNR=3.0						
INK	Inuvik	54.52	27	P	P	11 11 33.9	+0.2
	0.8nm,0.6s,baz=305,slow=6.6,SNR=8.2						
WRA	Warramunga Arr	56.95	188	P	P	11 11 51.0	-0.7
	0.5nm,0.5s,baz=3.6,slow=7.2,SNR=17						
ASAR	Alice Springs	60.68	188	P	P	11 12 17.9	+0.4
	0.2nm,0.7s,baz=3.1,slow=8.1,SNR=4.7						
RES	Resolute Bay	62.72	14	P	P	11 12 30.5	-0.1
	0.2nm,0.5s,baz=297,slow=21,SNR=4.3						
YKA	Yellowknife Ar	63.94	30	P	P	11 12 39.7	+0.8
	0.3nm,0.6s,baz=305,slow=6.8,SNR=11						
TXAR	Lajitas Array	90.26	52	P	P	11 15 08.6	+1.4
	0.1nm,0.3s,baz=314,slow=6.4,SNR=2.9						

*IDC **05** 11:09:01.8±0.3,77°.04N×18°.42E,h0km,mb4.1/31, mb1 4.2/35,mb1mx4.1/57,mbtmp4.1/35,ML4.0/4,MS3.4/26, Ms1 3.4/26,ms1mx3.3/49,Error ellipse: s-maj=10.6km s-min=6.4km az=67.0*
*ISCJB **05** 11:09:03.0±0.7,77°.12N±0°.02×18°.7E±0°.1,h14km±4km, mb4.3/96,MS3.7/36,Error ellipse: s-maj=5.0km s-min=3.2km az=157.6*
*MOS **05** 11:09:02.5±1.3,77°.16N×18°.85E,h10km,mb4.6/37,Error ellipse: s-maj=27.5km s-min=5.3km az=93.3*
*NAO **05** 11:09:03.4±1.3,77°.03N×18°.96E,h16km±10km,ML4.7*
*BER **05** 11:09:04.8±4.2,77°.07N×19°.17E,h15km±24km,MD3.0, ML4.3,ML4.7(NAO)*
*CSEM **05** 11:09:04.4±0.1,77°.14N×18°.60E,h15km,mb4.4/65,Error ellipse: s-maj=5.1km s-min=3.0km az=64.0*
*NEIC **05** 11:09:06.0±1.2,77°.11N×18°.57E,h23km±9km,mb4.5/44, Error ellipse: s-maj=5.5km s-min=3.3km az=68.0*
ISC 05 11:09:06.0±0.7,77°.08N±0°.03×18°.45E±0°.04,h23km±5km, n366,σ1§89/384,mb4.4/96,MS3.6/36,8C-1D,Svalbard region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HSP	Hornsund	0.66	265	Pg	Pb	11 09 18.4	-0.3
HSP				Lg	Lg	11 09 28.1	
HSPB	Hornsund (broa	0.66	265	eP	Pb	11 09 18.2	-0.6
HSPB				eS	Sb	11 09 27.6	+0.1
HSPB				IAML		11 09 31.9	
	comp=Z,7μm,0.3s						
HSPB	Hornsund (broa	0.66	265	eP	Pn	11 09 19.7	-0.1
HSPB				e		11 09 31.0	
HSPB	Hornsund (broa	0.66	265	ePg	Pb	11 09 18.4	-0.4
HSPB	Hornsund (broa	0.66	265	ePn	Pn	11 09 19.7	-0.1
HSPB				Lg	Lg	11 09 28.1	
HSPB				eS	Sn	11 09 31.0	+1.5
SPA0	Spitsbergen Ar	1.19	339	Pn	Pn	11 09 26.1	-1.2
	baz=148,slow=18						
SPA0				Pg	Pn	11 09 27.3	+0.1
	baz=148,slow=22						
SPA0				Lg	Lg	11 09 44.3	
	baz=146,slow=28						
SPA0	Spitsbergen Ar	1.19	339	Pn	Pn	11 09 26.1	-1.2
	baz=148,slow=18						
SPA0				Pg	Pn	11 09 27.3	+0.1
	baz=148,slow=22						
SPA0				Lg	Lg	11 09 44.3	
	baz=146,slow=28						
SPA0	Spitsbergen Ar	1.19	339	Pn	Pn	11 09 26.0	-1.2
	SNR=62						
SPA0	Spitsbergen Ar	1.19	339	ePb	Pn	11 09 26.4	-0.8
SPA0	Spitsbergen Ar	1.19	339	Pg	Pn	11 09 27.3	+0.1
	SNR=95						
SPA0				Lg	Lg	11 09 44.3	
	SNR=30						
SPA0	Spitsbergen Ar	1.19	339	ePb	Pn	11 09 26.4	-0.8
SPA0				ePn	Pb	11 09 26.7	-1.1
SPITS	Spitsbergen Ar	1.19	339	Pn	Pn	11 09 26.0	-1.2
	baz=144,slow=20						
SPITS				LR	LR	11 09 26.2	
	comp=Z,816nm,18.6s,baz=50,slow=20						
SPITS				Sn	Sb	11 09 44.1	+1.3
	baz=151,slow=36,SNR=17						
SPITS	Spitsbergen Ar	1.19	339	P	Pn	11 09 26.0	-1.2
SPITS						11 09 44.1	
SPITS	Spitsbergen Ar	1.19	339	P	Pn	11 09 26.0	-1.2
SPITS				S	Sb	11 09 44.1	+1.3
SPITS	Spitsbergen Ar	1.19	339	Pn	Pn	11 09 26.0	-1.2
SPITS				Sn	Sb	11 09 44.1	+1.3
BRBA	Barentsburg A	1.34	319	Pn	Pn	11 09 28.8	-0.4
	SNR=62						
BRBA	Barentsburg A	1.34	319	Pg	Pb	11 09 30.1	-0.3
	SNR=94						
BRBA				Lg	Lg	11 09 49.0	
	SNR=30						
KBS	Kingsbay	2.30	327	Pn	Pn	11 09 41.3	-1.1
KBS				Pg	Pb	11 09 47.1	+0.4
KBS				Lg	Lg	11 10 16.7	
KBS	Kingsbay	2.30	327	eP	Pn	11 09 40.9	-1.5
KBS				ePg	Pb	11 09 46.7	0.0
KBS				eSg	Sb	11 10 17.1	+2.6
KBS				IAML		11 10 27.4	
	comp=Z,6μm,0.5s						
KBS	Kingsbay	2.30	327	eP	Pn	11 09 40.8	-1.5
KBS	Kingsbay	2.30	327	Pn	Pn	11 09 41.3	-1.1
KBS	Kingsbay	2.30	327	eP	Pn	11 09 41.6	-0.8
	SNR=56						
KBS	Kingsbay	2.30	327	ePg	Pb	11 09 46.7	0.0
	SNR=92						
KBS				Lg	Lg	11 10 16.7	
KBS	Kingsbay	2.30	327	ePn	Pn	11 09 40.8	-1.5
BJO	Bjornoya	2.59	176	ePg	Pb	11 09 50.6	-1.1
BJO				eSg	Sb	11 10 23.6	+0.6
BJO				IAML		11 10 28.8	
	comp=Z,3μm,0.4s						
BJO	Bjornoya	2.59	176	ePg	Pb	11 09 50.6	-1.1
	SNR=92						
BJO				Lg	Lg	11 10 25.0	
BJO1	Bjornoya	2.60	177	Pn	Pn	11 09 44.3	-2.1
BJO1				Pg	Pb	11 09

JMIC e 11 11 24.6
LVZ Lovozero 10.37 144 eP Pn 11 11 28.1 -4.9
LVZ Lovozero 10.37 144 ePn **Pn** **11 11 31.1 -1.9**
LVZ Lovozero 10.37 144 ePn **Pn** **11 11 31.1 -1.9**
APA0 Apatity Array 10.44 148 Pn Pn 11 11 28.6 -5.3
baz=338,slow=12
APA0 Apatity Array 10.44 148 Pn Pn 11 11 28.6 -5.3
baz=338,slow=12
APA Apatity 10.52 147⇑ *i*P **Pn** **11 11 30.6 -4.5**
APA pmax pmax
comp=Z,6.0nm,0.8s
APA MLR MLR
comp=Z,1μm,10.0s
STOK Stokkvaagen 10.93 192 eP **Pn** **11 11 42.9 +2.3**
MOR8 Moi Rana 11.03 189 eP **Pn** **11 11 40.0 -2.1**
TMCR Tamitsa 14.37 144 eP Pn 11 12 19.3 -8.2
TMCR pmax pmax
comp=Z,33nm,0.6s
SUMG Summit 14.96 282 *i*P **P** **11 12 44.0 +2.7**
comp=Z,80nm,1.2s
SUMG Summit 14.96 282 eP **Pn** **11 12 36.8 +0.9**
SUMG Summit 14.96 282 ePn **Pn** **11 12 36.8 +0.9**
FIA0 FINESS Array S 15.91 167 Pn **Pn** **11 12 42.1 -5.9**
baz=16,slow=10
FIA0 FINESS Array S 15.91 167 Pn **Pn** **11 12 42.1 -5.9**
baz=16,slow=10
FIA1 FINESS Array S 15.91 167 ePn **Pn** **11 12 48.2 +0.2**
FIA1 FINESS Array S 15.91 167 ePn **Pn** **11 12 41.4 -6.6**
FIA1 ePn **Pn** **11 12 48.2 +0.2**
FIA1 eP pP 11 12 49.3 -8.4
FINES FINESS Array B 15.91 167 Pn **Pn** **11 12 42.1 -5.9**
comp=Z,0.6nm,0.3s,baz=6.5,slow=11,SNR=17
FINES Sn Sn 11 15 27.7 -16
comp=Z,1.4nm,0.3s,baz=360,slow=22,SNR=4.1
FINES LR LR 11 18 06.3
comp=Z,149nm,21.3s,baz=358,slow=34
NC204 NORSAR Array S 16.08 193 ePn **Pn** **11 12 52.0 +1.7**
NC204 NORSAR Array S 16.08 193 ePn **Pn** **11 12 52.0 +1.7**
NC303 NORSAR Array S 16.10 192 ePn **P** **11 12 52.8 -0.9**
NC303 NORSAR Array S 16.10 192 ePn **P** **11 12 52.8 -0.9**
NC405 NORSAR Array S 16.20 192 ePn **P** **11 12 53.6 -1.1**
NC405 NORSAR Array S 16.20 192 ePn **P** **11 12 53.6 -1.1**
NB201 NORSAR Array S 16.28 192 ePn **P** **11 12 56.7 +1.1**
NB2 NORSAR Subarra 16.30 193 P **Pn** **11 12 54.0 +1.0**
comp=Z,13nm,1.0s,baz=6.2,slow=11
NB2 NORSAR Subarra 16.30 193 P **Pn** **11 12 54.0 +1.0**
comp=Z,13nm,1.0s,SNR=3.7
NOA NORSAR Array B 16.30 193 Pn **Pn** **11 12 52.2 -0.8**
comp=Z,0.6nm,0.3s,baz=7.3,slow=12,SNR=9.7
NOA Sn **Sn** **11 15 47.0 -5.8**
comp=Z,0.4nm,0.3s,baz=118,slow=20,SNR=2.7
NOA LR LR 11 18 51.4
comp=Z,88nm,20.9s,baz=0.0,slow=36
NBO02 NORSAR Array S 16.31 193 ePn **P** **11 12 56.1 +0.2**
NBO02 NORSAR Array S 16.31 193 ePn **P** **11 12 56.1 +0.2**
NBO00 NORSAR Array S 16.33 193 ePn **P** **11 12 57.2 +1.0**
NAO01 NORSAR Array S 16.51 193 ePn **P** **11 12 58.5 +0.4**
NAO01 NORSAR Array S 16.51 193 ePn **P** **11 12 58.5 +0.4**
NC602 NORSAR Array S 16.59 192 ePn **P** **11 12 58.3 -0.6**
NC602 NORSAR Array S 16.59 192 ePn **P** **11 12 58.3 -0.6**
HFS Hagfors 17.10 188 P **Pn** **11 13 02.6 -0.5**
baz=5.5,slow=9.3
HFS Hagfors 17.10 188 P **Pn** **11 13 02.8 -0.3**
comp=Z,0.8nm,0.3s,baz=15,slow=12,SNR=17
HFS S Sn 11 16 01.7 -11
comp=Z,0.2nm,0.3s,baz=27,slow=16,SNR=2.0
HFS LR LR 11 19 39.5
comp=Z,28nm,18.1s,baz=5.5,slow=37
HFS Hagfors 17.10 188 P **Pn** **11 13 02.6 -0.5**
baz=5.5,slow=9.3
BORG Borgarnes 17.38 247 LR LR 11 18 08.3
comp=Z,125nm,19.7s,baz=40,slow=32
KLMR Klimovskoe 17.75 145*c* *i*P **Pn** **11 13 04.4 -6.7**
KLMR pmax pmax
comp=Z,21nm,0.8s
VSU Vasula 18.92 166*c* *i*P **Pn** **11 13 27.4 +2.0**
VSU pmax pmax
comp=Z,77nm,0.7s
VSU Vasula 18.92 166 *i*P **Pn** **11 13 27.4 +2.0**
comp=Z,77nm,0.7s
NRIK Noril'sk 20.05 75 P **P** **11 13 35.5 -1.5**
comp=Z,16nm,0.9s,baz=333,slow=7.5,SNR=11
ILULI Ilulissat 20.25 285 *i*P **P** **11 13 40.0 +1.0**
comp=Z,20nm,0.8s
ILULI Ilulissat 20.25 285 *i*P **P** **11 13 40.0 +1.0**
ILULI pmax pmax
comp=Z,20nm,0.8s
ILULI Ilulissat 20.25 285 *i*P **P** **11 13 40.1 +1.0**
SNR=34
SOKR Solikamsk 21.77 122*c* *i*P **P** **11 13 54.6 -0.9**
SOKR pmax pmax
comp=Z,14nm,0.9s
SOKR MLR MLR
comp=Z,261nm,13.0s
SFJD Kangerlussuaq 21.95 281 P **P** **11 13 56.6 -0.8**
comp=Z,13nm,0.9s,baz=23,slow=7.8,SNR=5.6
SFJD LR LR 11 21 48.2
comp=Z,86nm,19.2s,baz=348,slow=35
SFJD Kangerlussuaq 21.95 281 *i*P **P** **11 13 57.9 +0.6**
SFJD Kangerlussuaq 21.95 281 *i*P **P** **11 13 57.9 +0.6**
SFJD Kangerlussuaq 21.95 281 *i*P **P** **11 13 57.9 +0.6**
SFJD Kangerlussuaq 21.95 281 eP **P** **11 13 58.1 +0.8**
comp=Z,16nm,0.9s
BSD Bornholm Skovb 22.10 185 *i*P **P** **11 14 03.4 +4.3**
comp=Z,25nm,0.9s
BSD Bornholm Skovb 22.10 185 *i*P **P** **11 14 03.4 +4.3**
BSD pmax pmax
comp=Z,25nm,0.9s
NACGM Naroch 22.48 167 eP **P** **11 14 02.0 -1.1**
NACGM e*S* **S** **11 18 05.0 -3.2**
NACGM e*LR* LR 11 22 08.0
NACGM Naroch 22.48 167 eP **P** **11 14 02.0 -1.1**
MOS Moscow 22.52 151 eP **P** **11 14 00.2 -3.3**
MOS e*S* **S** **11 18 02.5 -6.4**
MOS pmax pmax
comp=Z,33nm,0.7s
MOS MLR MLR
comp=Z,800nm,12.0s
MICGM Minsk 22.94 166 eP **P** **11 14 11.0 +3.0**
MICGM e*S* Sn 11 18 26.0 -6.6
MICGM e*LR* LR 11 22 58.0
MNK Minsk 22.94 166 eP **P** **11 14 11.0 +3.0**
MNK Minsk 22.94 166 eP **P** **11 14 11.0 +3.0**
OBN Obninsk 23.02 153 P **P** **11 14 07.1 -1.7**
comp=Z,30nm,0.3s,baz=357,slow=14,SNR=7.6
OBN Obninsk 23.02 153 eP **P** **11 14 08.7 -0.1**
OBN *i* 11 14 35.7
OBN *i*S **S** **11 18 19.5 +1.8**
OBN pmax pmax
comp=Z,22nm,1.1s
OBN MLR MLR
comp=Z,239nm,12.0s
OBN Obninsk 23.02 153 eP **P** **11 14 08.7 -0.1**
comp=Z,22nm,1.1s
OBN *i*S **S** **11 18 19.5 +1.8**
EKA Eskdalemuir Ar 23.19 212 P **P** **11 14 10.0 -0.6**
comp=Z,0.6nm,0.5s,baz=7.9,slow=11,SNR=3.1
RES Resolute Bay 23.71 323 P **P** **11 14 15.7 +0.2**
comp=Z,0.5nm,0.7s,baz=22,slow=16,SNR=2.4
NUUK Nuuk 24.58 278 *i*P **P** **11 14 24.7 +1.1**
SNR=28
ARU Arti 25.07 122 P **P** **11 14 28.4 +0.3**
comp=Z,2.5nm,0.3s,baz=286,slow=20,SNR=3.4
ARU Arti 25.07 122*d* *i*P **P** **11 14 31.7 +3.6**
ARU 11 15 08.5
ARU PPP PPP 11 15 15.9
ARU SS 11 19 52.8
ARU SSS SSS 11 20 07.5
ARU pmax pmax
comp=Z,25nm,1.7s
ARU Arti 25.07 122 eP **P** **11 14 29.8 +1.7**
comp=Z,26nm,1.0s
ARU Arti 25.07 122 eP **P** **11 14 29.8 +1.7**
comp=Z,26nm,1.0s
LPSR Galich'ya Gora 25.75 151 eP **P** **11 14 34.6 +0.3**
LPSR pmax pmax
comp=Z,30nm,1.3s
LPSR MLR MLR
comp=Z,350nm,12.0s
LPSR Galich'ya Gora 25.75 151 eP **P** **11 14 34.6 +0.3**
comp=Z,350nm,12.0s
TIXI Tiksi 25.93 43 P **P** **11 14 35.2 -0.6**
comp=Z,4.8nm,0.7s,baz=345,slow=7.4,SNR=11
TIXI Tiksi 25.93 43*ce*P **P** **11 14 35.6 -0.2**
TIXI pmax pmax
comp=Z,10.0nm,1.2s
TIXI Tiksi 25.93 43 eP **P** **11 14 35.6 -0.2**
comp=Z,10.0nm,1.2s
TIXI Tiksi 25.93 43 eP **P** **11 14 35.7 -0.1**
comp=Z,8.0nm,1.0s
CLL Collm 25.96 188 e(P) **P** **11 14 37.0 +0.8**
CLL e 11 14 48.0
CLL e 11 15 00.0
CLL ePPP PPP 11 15 30.0
CLL e*S* **S** **11 19 11.0 +6.1**
CLL Collm 25.96 188 eP **P** **11 14 37.0 +0.8**
CLL e*S* **S** **11 19 11.0 +6.1**
CLL Collm 25.96 188 eP **P** **11 14 37.0 +0.8**
PVCC Panska Ves 26.70 186 AMS AMS 11 26 10.0
comp=Z,200nm,9.5s
AKASG Malin Array Be 26.80 165 P **P** **11 14 41.9 -1.9**
comp=Z,0.4nm,0.3s,baz=349,slow=8.7,SNR=3.4
AKASG LR LR 11 26 02.9
comp=Z,80nm,21.9s,baz=355,slow=38
AKASG Malin Array Be 26.80 165 *i*P **P** **11 14 49.0 +5.2**
AKASG pmax pmax
comp=Z,2.0nm,0.6s
AKBB Malin Array Si 26.80 165 eP **P** **11 14 47.5 +3.6**
AKBB pmax pmax
comp=Z,15nm,0.8s
AKBB Malin Array Si 26.80 165 eP **P** **11 14 47.5 +3.6**
comp=Z,15nm,0.8s
KIEV Kiev 26.81 165 eP **P** **11 14 46.6 +2.7**
KIEV pmax pmax
comp=Z,5.0nm,1.1s
KIEV Kiev 26.81 165 eP **P** **11 14 45.6 +1.7**
comp=Z,16nm,0.9s
KIEV Kiev 26.81 165 eP **P** **11 14 45.6 +1.7**
comp=Z,16nm,0.9s
DPC Dobruska-Polom 26.85 183 eP **P** **11 14 46.2 +1.9**
DPC e*pP* **sP** **11 14 57.9 +3.9**
DPC e*S* **S** **11 19 25.5 +6.4**
DPC AMS AMS 11 26 50.0
comp=Z,100nm,11.8s
DPC Dobruska-Polom 26.85 183 eP **P** **11 14 46.2 +1.9**
DPC e*S* **S** **11 19 25.5 +6.4**
DPC MLR MLR
comp=Z,100nm,11.8s
DPC Dobruska-Polom 26.85 183 eP **P** **11 14 46.2 +1.9**
VSR Storozhevoye 27.14 151 eP **P** **11 14 49.2 +2.4**
VSR pmax pmax
comp=Z,9.0nm,0.6s
VSR MLR MLR
comp=Z,440nm,12.0s
VSR Storozhevoye 27.14 151 eP **P** **11 14 49.2 +2.4**
comp=Z,440nm,12.0s
PRU Pruhonice 27.24 186 e*S* **S** **11 19 32.0 +6.9**
PRU AMS AMS 11 26 30.0
comp=Z,100nm,14.5s
GOPC GO Pecny, Ondr 27.31 185 e*S* **S** **11 19 35.8 +10**
GOPC AMS AMS 11 26 30.0
comp=Z,200nm,7.9s
OKC Ostrava-Krasne 27.35 180 AMS AMS 11 27 00.0
comp=Z,200nm,11.1s
VRH Novokhopyorsk 27.45 147 eP **P** **11 14 51.8 +2.2**
VRH pmax pmax
comp=Z,20nm,0.7s
VRH MLR MLR
comp=Z,500nm,11.0s
VRH Novokhopyorsk 27.45 147 eP **P** **11 14 51.8 +2.2**
comp=Z,500nm,11.0s
LVV L'vov 27.45 172 eP P 11 14 59.0 +9.3
STHS Stebnicka Huta 27.79 176 eP **P** **11 14 53.3 +0.6**
STHS Stebnicka Huta 27.79 176 eP **P** **11 14 53.3 +0.6**
STHS Stebnicka Huta 27.79 176 eP **P** **11 14 53.3 +0.6**
VRAC Vranov 27.89 183 P **P** **11 14 52.8 -0.8**
comp=Z,3.3nm,0.5s,baz=117,slow=2.3,SNR=1.8
VRAC LR LR 11 26 51.6
comp=Z,77nm,18.2s,baz=10.0,slow=38
LANS Liptovska Anna 28.04 179 eP **P** **11 14 55.1 +0.1**
LANS Liptovska Anna 28.04 179 eP **P** **11 14 55.1 +0.1**
LANS Liptovska Anna 28.04 179 eP **P** **11 14 55.1 +0.1**
CRVS Cervenica-Dubn 28.31 176 eP **P** **11 14 57.9 +0.6**
CRVS Cervenica-Dubn 28.31 176 eP **P** **11 14 57.9 +0.6**
CRVS Cervenica-Dubn 28.31 176 eP **P** **11 14 57.9 +0.6**
CRVS *e* 11 24 34.1
GERES GERESS Array B 28.40 187 P **P** **11 14 57.3 -1.0**
comp=Z,0.4nm,0.3s,baz=10,slow=7.0,SNR=3.0
GEA0 GERESS Array S 28.41 187 eP **P** **11 15 00.4 +2.0**
GEA0 GERESS Array S 28.41 187 eP **P** **11 15 00.4 +2.0**
FRB Frobisher Bay 28.61 292 P **P** **11 14 58.9 -0.9**
comp=Z,2.8nm,0.9s,baz=12,slow=16,SNR=3.2
FRB LR LR 11 26 57.9
comp=Z,90nm,18.6s,baz=49,slow=38
VYHS Vyhne 28.69 179 eP **P** **11 15 00.2 -0.6**
VYHS Vyhne 28.69 179 eP **P** **11 15 00.2 -0.6**
VYHS Vyhne 28.69 179 eP **P** **11 15 00.2 -0.6**
BUR08 Bucovina Ar. S 29.66 171 eP **P** **11 15 11.5 +2.0**
BUR08 Bucovina Ar. S 29.66 171 eP **P** **11 15 11.5 +2.0**
BRVK Borovoye 30.60 111*ce*P **P** **11 15 18.2 +0.7**
BRVK pmax pmax
comp=Z,1.0nm,1.0s
BRVK Borovoye 30.60 111 eP **P** **11 15 18.2 +0.7**
comp=Z,1.0nm,1.0s
DAVOX Davos/Dischmat 30.60 192 LR LR 11 28 23.5
comp=Z,76nm,19.1s,baz=259,slow=38
BVAR Bovoye Array 30.65 111 P **P** **11 15 16.7 -1.3**
comp=Z,0.2nm,0.5s,baz=312,slow=11,SNR=2.3
AKTK Aktyubinsk 30.68 127 P **P** **11 15 18.9 +0.6**
comp=Z,1.0nm,0.5s
AKTO Aktyubinsk 30.68 127 P **P** **11 15 18.9 +0.5**
comp=Z,0.5nm,0.5s,baz=348,slow=10,SNR=2.8
MLR Muntele Rosu 31.84 170 LR LR 11 27 54.7
comp=Z,17nm,20.2s,baz=36,slow=36
ZAA0 Zalesovo Array 32.94 95 eP **P** **11 15 41.5 +3.4**
ZALV Zalesovo Beam 32.94 95 P **P** **11 15 38.5 +0.3**
comp=Z,2.7nm,0.3s,baz=332,slow=8.1,SNR=3.7
ZALV PcP **PcP** **11 18 21.1 -0.5**
comp=Z,2.1nm,0.3s,baz=316,slow=6.0,SNR=2.6
ZALV LR LR 11 33 48.0
comp=Z,54nm,19.7s,baz=249,slow=45
BILL Bilibino 33.78 21 eP **P** **11 15 44.8 -0.5**
BILL pmax pmax
comp=Z,12nm,1.7s
BILL Bilibino 33.78 21 eP **P** **11 15 44.9 -0.5**
comp=Z,4.6nm,0.9s
BILL Bilibino 33.78 21 eP **P** **11 15 44.9 -0.5**
comp=Z,4.6nm,0.9s
INK Inuvik 33.83 342 P **P** **11 15 44.2 -1.5**
comp=Z,2.4nm,0.8s,baz=17,slow=6.6,SNR=15
INK Inuvik 33.83 342 eP **P** **11 15 47.0 +1.3**
comp=Z,9.9nm,1.5s
INK Inuvik 33.83 342 eP **P** **11 15 47.0 +1.3**
comp=Z,9.9nm,1.5s
KURK Kurchatov 34.59 104 P **P** **11 15 52.2 -0.2**
KURK 11 18 24.1
KURK pmax pmax
comp=Z,4.0nm,0.8s
KURK pmax pmax
comp=Z,1.0nm,0.7s
KURK Kurchatov 34.59 104 P **P** **11 15 52.2 -0.2**
comp=Z,4.0nm,0.8s
KURK Kurchatov 34.59 104 PcP **PcP** **11 18 24.1 -2.2**
comp=Z,1.0nm,0.7s
KURK Kurchatov 34.59 104 P **P** **11 15 52.1 -0.2**
KURK PcP **PcP** **11 18 24.1 -2.2**
KURBB Kurchatov Arra 34.65 104 P **P** **11 15 52.1 -0.9**
comp=Z,4.5nm,0.8s,baz=341,slow=7.5,SNR=21
KURBB PcP **PcP** **11 18 24.1 -2.4**
comp=Z,1.0nm,0.7s,baz=331,slow=3.3,SNR=4.7
KIV Kislovodsk 34.70 149 eP **P** **11 15 55.3 +1.7**
KIV pmax pmax
comp=Z,6.0nm,0.9s
KIV MLR MLR
comp=Z,51nm,15.0s
KIV Kislovodsk 34.70 149 eP **P** **11 15 55.3 +1.7**
comp=Z,51nm,15.0s
KBZ Khabaz 34.95 148 P **P** **11 15 57.5 +1.9**
comp=Z,2.9nm,0.7s,baz=21,slow=2.9,SNR=8.5
COLD Coldfoot 35.75 352 eP **P** **11 16 02.0 -0.3**
comp=Z,5.7nm,0.7s
COLD Coldfoot 35.75 352 eP **P** **11 16 02.0 -0.3**
comp=Z,5.7nm,0.7s
BOD Bodaibo 35.77 66 eP **P** **11 15 59.9 -2.6**
BOD pmax pmax
comp=Z,6.0nm,1.4s
BOD Bodaibo 35.77 66 eP **P** **11 15 59.9 -2.6**
comp=Z,6.0nm,1.4s
ZEI Tsey 36.00 147 eP **P** **11 16 05.8 +0.9**
ZEI pmax pmax
comp=Z,14nm,1.3s
FYU Fort Yukon 36.23 349 eP **P** **11 16 07.6 +1.2**
comp=Z,7.1nm,1.0s
FYU Fort Yukon 36.23 349 eP **P** **11 16 07.6 +1.2**
comp=Z,7.1nm,1.0s
SCHQ Schefferville 36.35 283 P **P** **11 16 06.8 -0.8**
comp=Z,3.7nm,0.6s,baz=360,slow=13,SNR=3.1
SCHQ LR LR 11 30 38.4
comp=Z,72nm,20.6s,baz=328,slow=36
SEY Seymchan 37.35 33 P **P** **11 16 16.1 +0.2**
comp=Z,1.6nm,0.5s,baz=6.0,slow=6.3,SNR=7.5
SEY Seymchan 37.35 33 eP **P** **11 16 15.4 -0.5**
SEY Seymchan 37.35 33 eP **P** **11 16 15.4 -0.5**
YKA Yellowknife Ar 37.66 326 P **P** **11 16 17.5 -1.0**
comp=Z,0.7nm,0.8s,baz=11,slow=8.5,SNR=20
YKA PcP **PcP** **11 18 34.6 -0.7**
comp=Z,1.1nm,0.7s,baz=7.2,slow=3.0,SNR=17
BR231 Keskin MP Arra 37.85 162 eP **P** **11 16 21.2 +0.7**
BR231 Keskin MP Arra 37.85 162 eP **P** **11 16 21.2 +0.7**
MDM Murphy Dome 37.95 351 eP **P** **11 16 21.6 +0.5**
comp=Z,9.7nm,0.9s
MDM Murphy Dome 37.95 351 eP **P** **11 16 21.6 +0.5**
comp=Z,9.7nm,0.9s
BR131 Keskin Array S 38.03 161 eP **P** **11 16 22.5 +0.4**
BR131 Keskin Array S 38.03 161 eP **P** **11 16 22.5 +0.4**
BRTR Keskin Array B 38.03 161 P **P** **11 16 21.9 -0.1**
comp=Z,2.0nm,0.9s,baz=351,slow=6.6,SNR=6.1
BRTR LR LR 11 34 25.0
comp=Z,42nm,19.2s,baz=288,slow=40
BRTR Keskin Array B 38.03 161 *i*P **P** **11 16 22.0 -0.1**
BRTR pmax pmax
comp=Z,2.0nm,0.9s
BRTR Keskin Array B 38.03 161 *i*P **P** **11 16 22.0 -0.1**
comp=Z,2.0nm,0.9s
IL1 Eielson Array 38.09 350 eP **P** **11 16 21.6 -0.6**
IL1 Eielson Array 38.09 350 eP **P** **11 16 21.6 -0.6**
ILAR Eielson Array 38.09 350 P **P** **11 16 22.3 +0.1**
comp=Z,2.4nm,0.7s,baz=359,slow=6.8,SNR=24
ILAR PcP **PcP** **11 18 35.6 -1.0**
comp=Z,1.3nm,0.6s,baz=335,slow=3.6,SNR=9.7
ILAR Eielson Array 38.09 350 P **P** **11 16 22.3 +0.1**
ILAR 11 18 35.6
ILAR pmax pmax
comp=Z,3.0nm,0.7s
ILAR pmax pmax
comp=Z,1.0nm,0.6s
ILAR Eielson Array 38.09 350 P **P** **11 16 22.3 +0.1**
comp=Z,3.0nm,0.7s
ILB Eielson Array 38.09 350 eP **P** **11 16 22.6 +0.4**
ILB Eielson Array 38.09 350 eP **P** **11 16 22.6 +0.4**
CCB Clear Creek Bu 38.25 350 eP **P** **11 16 24.0 +0.4**
comp=Z,3.2nm,0.9s
CCB Clear Creek Bu 38.25 350 eP **P** **11 16 24.0 +0.4**
comp=Z,3.2nm,0.9s
WRH Wood River Hil 38.44 351 eP **P** **11 16 25.6 +0.5**
comp=Z,6.8nm,0.8s
WRH Wood River Hil 38.44 351 eP **P** **11 16 25.6 +0.5**
comp=Z,6.8nm,0.8s
MOY Mondy 38.69 81 eP **P** **11 16 28.5 +0.9**
MOY pmax pmax
comp=Z,25nm,2.2s
MOY Mondy 38.69 81 eP **P** **11 16 28.5 +0.9**
comp=Z,25nm,2.2s
ESDC Sonseca Array 38.73 208 P **P** **11 16 27.5 -0.3**
comp=Z,0.2nm,0.2s,baz=358,slow=8.5,SNR=5.0
BPAW Bear Paw Mtn. 38.90 353 eP **P** **11 16 29.4 +0.3**
comp=Z,7.4nm,1.0s
BPAW Bear Paw Mtn. 38.90 353 eP **P** **11 16 29.4 +0.3**
comp=Z,7.4nm,1.0s
MAKZ Makanchi 39.01 102 eP **P** **11 16 30.5 +0.3**
MAKZ pmax pmax
comp=Z,3.0nm,0.8s
MAKZ Makanchi 39.01 102 eP **P** **11 16 30.5 +0.3**
comp=Z,3.0nm,0.8s
MAKZ Makanchi 39.01 102 eP **P** **11 16 30.5 +0.3**
comp=Z,2.9nm,0.8s
DOT Dot Lake 39.09 348 eP **P** **11 16 31.2 +0.6**
comp=Z,9.6nm,0.9s
DOT Dot Lake 39.09 348 eP **P** **11 16 31.2 +0.6**
comp=Z,9.6nm,0.9s
MK31 Makanchi Array 39.09 102 eP **P** **11 16 30.3 -0.6**
MK31 Makanchi Array 39.09 102 eP **P** **11 16 30.3 -0.6**
MK31 Makanchi Array 39.09 102 eP **P** **11 16 30.3 -0.6**
MKAR Makanchi Array 39.09 102 P **P** **11 16 30.1 -0.8**
comp=Z,4.0nm,0.7s,baz=342,slow=7.6,SNR=18
MKAR LR LR 11 36 54.9
comp=Z,104nm,18.4s,baz=334,slow=43
MKAR Makanchi Array 39.09 102 eP **P** **11 16 30.3 -0.6**
MKAR Makanchi Array 39.09 102 eP **P** **11 16 30.3 -0.6**
MK01 Makanchi Array 39.12 102 eP **P** **11 16 30.1 -1.0**
MK01 Makanchi Array 39.12 102 eP **P** **11 16 30.1 -1.0**
GAMB Gambell 39.24 7 eP **P** **11 16 32.2 +0.4**
comp=Z,3.9nm,1.0s
GAMB Gambell 39.24 7 eP **P** **11 16 32.1 +0.4**
comp=Z,3.9nm,1.0s
TLY Talaya 39.27 79 eP **P** **11 16 35.6 +3.4**
TLY pmax pmax
comp=Z,7.0nm,1.2s
KTH Kantishna Hill 39.45 353 eP **P** **11 16 33.9 +0.2**
comp=Z,7.2nm,0.9s
KTH Kantishna Hill 39.45 353 eP **P** **11 16 33.9 +0.2**
comp=Z,7.2nm,0.9s
CAST Castle Rocks 39.62 353 eP **P** **11 16 35.3 +0.3**
comp=Z,6.2nm,1.0s
CAST Castle Rocks 39.62 353 eP **P** **11 16 35.3 +0.3**
comp=Z,6.2nm,1.0s
PPLA Purkeypile 40.14 353 eP **P** **11 16 40.0 +0.4**
comp=Z,5.5nm,0.8s
PPLA Purkeypile 40.14 353 eP **P** **11 16 40.0 +0.4**
comp=Z,5.5nm,0.8s
SCM Sheep Creek Mo 41.05 350 eP **P** **11 16 47.5 +0.6**
SCM pmax pmax
comp=Z,66nm,2.0s
SCM Sheep Creek Mo 41.05 350 eP **P** **11 16 47.5 +0.6**
comp=Z,66nm,2.0s
SCM Sheep Creek Mo 41.05 350 eP **P** **11 16 47.5 +0.6**
comp=Z,66nm,2.0s
SML Sawmill 41.11 350 eP **P** **11 16 48.2 +0.8**
SML pmax pmax
comp=Z,8.0nm,0.9s
SML Sawmill 41.11 350 eP **P** **11 16 48.2 +0.8**
comp=Z,8.0nm,0.9s
SML Sawmill 41.11 350 eP **P** **11 16 48.2 +0.8**
comp=Z,7.6nm,0.9s
KEST Kesra 41.64 191 P **P** **11 16 51.6 -0.5**
comp=Z,3.2nm,0.9s,baz=322,slow=3.7,SNR=3.6
RC01 Rabbit Creek A 41.88 351 eP **P** **11 16 54.2 +0.5**
comp=Z,8.1nm,1.2s
RC01 Rabbit Creek A 41.88 351 eP **P** **11 16 54.2 +0.5**
comp=Z,8.1nm,1.2s
GEYT Alibeck 42.83 132 P **P** **11 17 01.7 0.0**
comp=Z,1.9nm,0.5s,baz=345,slow=5.1,SNR=3.1
GEYT LR LR 11 40 13.4
comp=Z,41nm,19.4s,baz=0.0,slow=44
WMQ Urumqi 43.11 98 eP **P** **11 17 06.8 +2.8**
WMQ pmax pmax
comp=Z,3.0nm,0.5s
WMQ pmax pmax
comp=Z,36nm,3.6s
WMQ LR LR
comp=N,54nm,6.6s
WMQ LR LR
comp=E,100nm,20.0s
WMQ LR LR
comp=Z,27nm,21.8s
SONA1 Songino Array 43.49 78 eP **P** **11 17 07.1 +0.1**
SONA1 Songino Array 43.49 78 eP **P** **11 17 07.1 +0.1**
SONM Songino Array 43.49 78 P **P** **11 17 07.6 +0.5**
comp=Z,2.3nm,0.8s,baz=318,slow=6.7,SNR=7.7
SONM LR LR 11 38 15.9
comp=Z,76nm,18.1s,baz=264,slow=40
ULN Ulaanbaatar 43.61 77 eP **P** **11 17 08.7 +0.7**
ULN pmax pmax
comp=Z,11nm,1.7s
ULN Ulaanbaatar 43.61 77 eP **P** **11 17 08.3 +0.3**
comp=Z,7.9nm,1.2s
ULN Ulaanbaatar 43.61 77 eP **P** **11 17 08.3 +0.3**
comp=Z,7.9nm,1.2s
KDAK Kodiak Island 45.28 353*ce*P **P** **11 17 21.7 +0.7**
KDAK Kodiak Island 45.28 353 eP **P** **11 17 21.7 +0.7**
ULM Lac du Bonnet 46.56 306 LR LR 11 36 02.0
comp=Z,67nm,18.9s,baz=3.0,slow=35
PETK Petropavlovsk- 47.58 32 LR LR 11 37 38.0
comp=Z,30nm,21.4s,baz=6.1,slow=36
EYMN Ely 47.96 302 eP **P** **11 17 41.6 -0.5**
comp=Z,4.4nm,0.6s
EYMN Ely 47.96 302 eP **P** **11 17 41.6 -0.5**
comp=Z,4.4nm,0.6s

GTA	Gaotai	50.04	88	eP	P	11 18 02.2	+3.9
GTA				pP	pP	11 18 06.6	+1.1
GTA				sP	sP	11 18 09.2	+1.0
GTA				S	S	11 25 10.6	+2.9
GTA				sS	sS	11 25 17.9	-1.5
GTA	Gaotai	50.04	88	SS	SS	11 28 38.8	-1.4
GTA				pmax	pmax		
comp=Z,5.0nm,1.1s							
GTA				pmax	pmax		
comp=Z,43nm,5.1s							
GTA				LR	LR		
comp=N,100nm,19.5s							
GTA				LR	LR		
comp=E,160nm,17.6s							
GTA				LR	LR		
comp=Z,140nm,14.3s							
WALA	Waterton Lakes	50.64	321	eP	P	11 18 02.5	-0.3
comp=Z,5.1nm,0.8s							
WALA	Waterton Lakes	50.64	321	eP	P	11 18 02.5	-0.3
comp=Z,5.1nm,0.8s							
HHC	Hu-ho-hao-te	51.28	76	eP	P	11 18 08.5	+0.9
HHC				pmax	pmax		
comp=Z,35nm,1.1s							
HHC				pmax	pmax		
comp=Z,92nm,7.0s							
BSMT	Bassoo Peak	51.95	321	eP	P	11 18 12.8	+0.1
BSMT	Bassoo Peak	51.95	321	eP	P	11 18 12.8	+0.1
SWMT	Swartz Lake	52.17	321	eP	P	11 18 14.1	-0.1
SWMT	Swartz Lake	52.17	321	eP	P	11 18 14.1	-0.1
USRK	Ussuriysk Ar.	52.25	57	P	P	11 18 11.7	-3.0
comp=Z,2.1nm,0.8s,baz=327,slow=6.9,SNR=4.6							
CHMT	Chamberlain Mo	52.65	320	eP	P	11 18 17.3	-0.6
CHMT	Chamberlain Mo	52.65	320	eP	P	11 18 17.3	-0.6
MSO	Missoula	52.83	320	eP	P	11 18 19.1	0.0
comp=Z,11nm,1.1s							
MSO	Missoula	52.83	320	eP	P	11 18 19.1	0.0
comp=Z,11nm,1.1s							
ECSD	EROS Data Cent	52.98	305	eP	P	11 18 19.5	-0.6
comp=Z,3.6nm,0.7s							
ECSD	EROS Data Cent	52.98	305	eP	P	11 18 19.6	-0.6
comp=Z,3.6nm,0.7s							
BJI	Beijing	53.05	72	P	P	11 18 20.6	0.0
BJI				S	S	11 25 57.3	+8.5
BJI				pmax	pmax		
comp=Z,7.0nm,1.2s							
BJI				LR	LR		
comp=N,79nm,16.4s							
BJI				LR	LR		
comp=E,290nm,15.6s							
LRM	Limekiln Ridge	53.60	319	eP	P	11 18 24.8	-0.1
LRM	Limekiln Ridge	53.60	319	eP	P	11 18 24.8	-0.1
HAWA	Hanford	54.02	325	eP	P	11 18 27.4	-0.3
comp=E,4.3nm,0.8s							
HAWA	Hanford	54.02	325	eP	P	11 18 27.4	-0.3
comp=E,4.3nm,0.8s							
DLMT	Dillon	54.07	319	eP	P	11 18 27.8	-0.4
comp=E,2.2nm,0.7s							
DLMT	Dillon	54.07	319	eP	P	11 18 27.8	-0.4
comp=E,2.2nm,0.7s							
LZH	Lanzhou	54.13	85	eP	P	11 18 27.5	-1.3
LZH				pP	pP	11 18 30.7	-5.3
LZH				sP	sP	11 18 32.3	-6.4
LZH				ePP	PP	11 20 30.4	+0.3
LZH				pmax	pmax		
comp=Z,19nm,1.2s							
LZH				pmax	pmax		
comp=Z,53nm,6.5s							
LZH				LR	LR		
comp=N,260nm,15.0s							
LZH				LR	LR		
comp=E,230nm,15.5s							
LZH				LR	LR		
comp=Z,310nm,18.2s							
QLMT	Earthquake Lak	54.41	318	eP	P	11 18 31.0	+0.1
QLMT	Earthquake Lak	54.41	318	eP	P	11 18 31.0	+0.1
MCMT	McKenzie Canyo	54.63	319	eP	P	11 18 32.7	+0.3
MCMT	McKenzie Canyo	54.63	319	eP	P	11 18 32.7	+0.3
H17A	Grant Village	54.71	317	eP	P	11 18 34.4	+1.3
comp=Z,4.9nm,0.8s							
H17A	Grant Village	54.71	317	eP	P	11 18 34.4	+1.3
comp=Z,4.9nm,0.8s							
IMW	Indian Meadow	55.25	317	eP	P	11 18 37.5	+0.5
comp=Z,4.3nm,0.8s							
IMW	Indian Meadow	55.25	317	eP	P	11 18 37.5	+0.5
comp=Z,4.3nm,0.8s							
MOOW	Moose Ponds	55.37	317	eP	P	11 18 38.1	+0.3
comp=Z,1.5nm,0.8s							
MOOW	Moose Ponds	55.37	317	eP	P	11 18 38.1	+0.3
comp=Z,1.5nm,0.8s							
K22A	Casper	55.77	313	eP	P	11 18 39.6	-1.0
comp=Z,4.7nm,0.8s							
K22A	Casper	55.77	313	eP	P	11 18 39.6	-1.0
comp=Z,4.7nm,0.8s							
BW06	Boulder Array	56.14	316	eP	P	11 18 42.5	-0.9
BW06	Boulder Array	56.14	316	eP	P	11 18 42.5	-0.9
PDAR	Pinedale Array	56.14	316	P	P	11 18 41.3	-2.1
comp=Z,0.6nm,0.7s,baz=46,slow=6.4,SNR=6.1							
PDAR				LR	LR	11 45 04.5	
comp=Z,32nm,18.1s,baz=33,slow=38							
KSRS	Korea Array	57.97	62	P	P	11 18 54.8	-1.2
comp=Z,1.0nm,0.7s,baz=350,slow=4.9,SNR=3.2							
KSRS				LR	LR	11 48 50.5	
comp=Z,41nm,19.6s,baz=345,slow=41							
KSAR	Wonju Array Be	57.98	62	P	P	11 18 54.8	-1.3
KSAR	Wonju Array Be	57.98	62	P	P	11 18 54.8	-1.3
KSAR	Wonju Array Be	57.98	62	P	P	11 18 54.8	-1.3
TKL	Tuckaleechee C	58.22	291	LR	LR	11 44 31.6	
comp=Z,117nm,18.5s,baz=358,slow=37							
O20A	White River Ci	58.50	314	eP	P	11 19 00.0	0.0
comp=Z,8.1nm,0.9s							
O20A	White River Ci	58.50	314	eP	P	11 19 00.0	0.0
comp=Z,8.2nm,0.9s							
CD2	Chengdu	59.08	87	P	P	11 19 03.0	-0.9
CD2				pmax	pmax		
comp=Z,1.0nm,0.5s							
SMCO	Snowmass	59.23	313	eP	P	11 19 05.3	0.0
comp=Z,9.6nm,1.6s							
SMCO	Snowmass	59.23	313	eP	P	11 19 05.3	0.0
comp=Z,9.6nm,1.6s							
P18A	Preston Nutter	59.31	315	eP	P	11 19 05.9	+0.1
comp=Z,24nm,1.9s							
P18A	Preston Nutter	59.31	315	eP	P	11 19 05.9	+0.1
comp=Z,24nm,1.9s							
TMUT	Trail Mountain	59.79	316	eP	P	11 19 09.6	+0.6
comp=Z,3.8nm,0.7s							
TMUT	Trail Mountain	59.79	316	eP	P	11 19 09.6	+0.6
comp=Z,3.8nm,0.7s							
Q16A	Castle Valley	60.16	316	eP	P	11 19 12.0	+0.6
comp=Z,6.0nm,0.7s							
Q16A	Castle Valley	60.16	316	eP	P	11 19 12.0	+0.6
comp=Z,6.0nm,0.7s							
PV09	Paradox Valley	60.24	314	eP	P	11 19 12.4	+0.2
PV09	Paradox Valley	60.24	314	eP	P	11 19 12.3	+0.2
PV10	Paradox Valley	60.35	314	eP	P	11 19 13.9	+1.1
PV10	Paradox Valley	60.35	314	eP	P	11 19 13.8	+1.1
PV01	Paradox Valley	60.51	314	eP	P	11 19 14.0	+0.1
PV01	Paradox Valley	60.51	314	eP	P	11 19 14.0	+0.1
S22A	4UR Ranch, Cre	60.60	312	eP	P	11 19 14.8	+0.2
comp=Z,12nm,1.8s							
S22A	4UR Ranch, Cre	60.60	312	eP	P	11 19 14.8	+0.2
comp=Z,12nm,1.8s							
MSU	Marysvale	60.71	317	eP	P	11 19 16.1	+0.9
MSU	Marysvale	60.71	317	eP	P	11 19 16.1	+0.9
MSU	Marysvale	60.71	317	eP	P	11 19 16.1	+0.9
MJAR	Matsushiro Arr	60.81	53	P	P	11 19 14.8	-1.0
comp=Z,3.2nm,0.9s,baz=340,slow=7.0,SNR=6.5							
MJAR				LR	LR	11 46 39.9	
comp=Z,45nm,20.1s,baz=130,slow=37							
PSUT	Pine Spring	60.94	318	eP	P	11 19 17.8	+1.0
comp=Z,2.6nm,0.9s							
PSUT	Pine Spring	60.94	318	eP	P	11 19 17.8	+1.0
comp=Z,2.6nm,0.9s							
MTPU	Mount Pierson	61.17	317	eP	P	11 19 19.7	+1.1
comp=Z,16nm,1.9s							
MTPU	Mount Pierson	61.17	317	eP	P	11 19 19.7	+1.1
comp=Z,16nm,1.9s							
NJ2	Nanjing	61.31	72	eP	P	11 19 20.6	+1.5
NJ2				pmax	pmax		
comp=Z,10.0nm,0.5s							
R11A	Troy Canyon, C	61.38	320	eP	P	11 19 19.7	0.0
comp=Z,1.4nm,0.8s							
R11A	Troy Canyon, C	61.38	320	eP	P	11 19 19.7	0.0
comp=Z,1.4nm,0.8s							
NVAR	Mina Array Bea	61.68	322	P	P	11 19 21.1	-0.7
comp=Z,0.7nm,0.9s,baz=5.8,slow=4.1,SNR=5.0							
NVAR				LR	LR	11 48 40.4	
comp=Z,50nm,19.7s,baz=13,slow=39							
LCMT	Little Creek M	62.34	318	eP	P	11 19 27.1	+0.9
comp=Z,2.2nm,0.9s							
LCMT	Little Creek M	62.34	318	eP	P	11 19 27.1	+0.9
comp=Z,2.2nm,0.9s							
JNU	Nakatsue	62.75	61	LR	LR	11 49 15.3	
comp=Z,33nm,18.3s,baz=301,slow=38							
ANMO	Albuquerque	63.27	311	LR	LR	11 47 18.6	
comp=Z,34nm,18.6s,baz=27,slow=36							
ANMO	Albuquerque	63.27	311⇑	eP	P	11 19 32.0	-0.4
ANMO				pmax	pmax		
comp=Z,3.0nm,1.7s							
ANMO	Albuquerque	63.27	311	eP	P	11 19 32.0	-0.4
comp=Z,3.0nm,1.7s							
TORD	Torodi Ar. Bea	64.52	198	P	P	11 19 38.9	-1.7
comp=Z,1.0nm,0.6s,baz=355,slow=6.7,SNR=12							
TUC	Tucson	66.56	314	eP	P	11 19 54.3	+0.5
TUC				pmax	pmax		
comp=Z,5.0nm,1.3s							
TUC	Tucson	66.56	314	eP	P	11 19 54.3	+0.5
comp=Z,5.0nm,1.3s							
TUC	Tucson	66.56	314	eP	P	11 19 54.3	+0.5
comp=Z,4.7nm,1.3s							
TX31	Lajitas Ar. Si	68.26	307	eP	P	11 20 01.9	-2.6
TX31	Lajitas Ar. Si	68.26	307	eP	P	11 20 01.8	-2.8
TX31				eP	P	11 20 01.9	-2.6
CMAR	Chiang Mai Arr	70.01	95	P	P	11 20 14.5	-0.8
comp=Z,3.0nm,1.0s,baz=338,slow=6.9,SNR=3.5							
CMAR				LR	LR	11 56 56.1	
comp=Z,2μm,21.6s,baz=235,slow=41							
DBIC	Dimbokro	71.47	204	P	P	11 20 23.0	-1.3
comp=Z,4.5nm,1.0s,baz=263,slow=5.9,SNR=4.1							
DBIC	Dimbokro	71.47	204	P	P	11 20 23.0	-1.3
DBIC				pmax	pmax		
comp=Z,5.0nm,1.0s							
DBIC	Dimbokro	71.47	204	P	P	11 20 23.0	-1.3
comp=Z,5.0nm,1.0s							
WRA	Warramunga Arr	115.01	69	PKP	PKPdf	11 27 41.9	-2.4
comp=Z,0.4nm,0.8s,baz=338,slow=2.8,SNR=4.9							
WRA	Warramunga Arr	115.01	69	PKIKP	PKPdf	11 27 41.9	-2.4
WRA				pmax	pmax		
comp=Z,1.0nm,1.0s							
ASAR	Alice Springs	118.53	70	PKP	PKPdf	11 27 48.9	-2.1
comp=Z,0.8nm,0.4s,baz=0.2,slow=1.6,SNR=24							
MAW	Mawson	146.97	151	PKPbc	PKPbc	11 28 44.0	-0.4
comp=Z,3.4nm,0.6s,baz=350,slow=3.9,SNR=7.1							
MAW	Mawson	146.97	151	PKP2	PKPbc	11 28 44.0	-0.4
MAW				pmax	pmax		
comp=Z,3.0nm,0.6s							
MAW	Mawson	146.97	151	PKPbc	PKPbc	11 28 44.0	-0.4

SCB ***05*** *11:21:01.3±0.8, 24°.22S×67°.52W, h128km, Ml3.7/2, Error ellipse: s-maj=18.6km s-min=11.2km az=21.0*
SJA ***05*** *11:21:03.7±0.8, 24°.18S×67°.11W, h201km±7km, ML3.2, MW3.5*
IDC ***05*** *11:21:04.3±1.1, 24°.15S×66°.93W, h168km±9km, mb3.8/14, mb1 3.9/18, mb1mx3.8/31, mbtmp4.2/18, MS3.0/1, Ms1 3.0/1, ms1mx2.6/25, Error ellipse: s-maj=16.6km s-min=11.7km az=30.0*
ISCJB ***05*** *11:21:04.7±0.2, 24°.21S±0°.03×67°.21W±0°.03, h181km±1km, mb4.1/49, Error ellipse: s-maj=4.9km s-min=3.5km az=139.3*
NEIC ***05*** *11:21:05.0±0.6, 24°.08S×66°.84W, h166km±5km, mb4.2/37, MD4.2(SJA), Error ellipse: s-maj=10.0km s-min=6.8km az=53.0*
GUC ***05*** *11:21:08.0±0.5, 24°.22S×67°.34W, h136km±45km, ML4.9*
ISC 05 11:21:05.5±0.6, 24°.19S±0°.04×67°.21W±0°.04, h177km±6km, n300, σ1$29/322, mb4.2/49, 7C-2D, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SLA	San Lorenzo	1.65	109	i P	Pn	11 21 38.7	-0.1
SLA				i S	Sn	11 22 04.5	0.0
SLA				IAML		11 22 09.9	
comp=Z,257nm,0.7s							
HJA	Humahuaca	1.92	60	i P	Pn	11 21 42.2	+0.4
HJA				i S	Sn	11 22 10.8	+0.8
AZAP	Zapla	1.96	92	i P	Pn	11 21 42.1	-0.1
AZAP				i S	Sn	11 22 10.5	0.0
LVC	Limon Verde	2.21	315	i P	Pn	11 21 46.4	+1.3
LVC				i S	Sn	11 22 17.3	+1.5
LVC	Limon Verde	2.21	315	P	Pn	11 21 46.7	+1.6
comp=Z,9μm,0.3s,baz=131,slow=7.9,SNR=2217							
LVC				S	Sn	11 22 17.1	+1.3
comp=Z,12μm,0.3s,baz=14,slow=23,SNR=37							
LVC				LR	LR	11 22 46.1	
comp=Z,330nm,19.3s,baz=84,slow=43							
LVC	Limon Verde	2.21	315	ePn	Pn	11 21 46.7	+1.6
LVC				eSn	Sn	11 22 17.7	+2.0
FSA	Cafayete	2.22	150	i P	Pn	11 21 45.4	+0.4
FSA				i S	Sn	11 22 15.4	-0.2
FSA				IAML		11 22 16.0	
comp=Z,50nm,0.7s							
ASTB	Santa Barbara	2.53	85	i P	Pn	11 21 47.8	-0.8
ASTB				i P	Pn	11 21 47.8	-0.8
YJA	Yavi	2.54	38	i P	Pn	11 21 48.6	-0.3
YJA				IAML		11 21 51.2	
comp=Z,67nm,0.3s							
YJA				i S	Sn	11 22 22.2	-0.4
PB06	IPOC Station P	2.62	304⇑	iP	Pn	11 21 51.0	+1.4
PB06				i S	Sn	11 22 22.7	-1.2
PB06				IAML		11 22 26.7	
comp=N,4μm,0.1s							
PB14	IPOC Station P	2.94	261⇑	iP	Pn	11 21 54.1	+0.5
PB14				i S	Sn	11 22 29.7	-1.3
PB14				IAML		11 22 32.0	
comp=E,1μm,0.4s							
ANCH	Antofagasta	2.97	279⇓	iP	Pn	11 21 54.1	+0.6
ANCH				eS	Sn	11 22 29.2	-1.8
PB09	IPOC Station P	3.03	321⇑	iP	Pn	11 21 55.9	+1.4
PB09				eS	Sn	11 22 32.8	+0.1
PB09				IAML		11 22 38.8	
comp=E,6μm,0.5s							
AHML	Horco Molle	3.09	147	i P	Pn	11 21 54.0	-1.1
AHML				IAML		11 21 56.0	
comp=Z,56nm,0.8s							
AHML				i S	Sn	11 22 32.4	-1.6
PB10	IPOC Station P	3.13	282⇑	iP	Pn	11 21 56.6	+1.0
PB10				i S	Sn	11 22 33.3	-1.3
PB10				IAML		11 22 40.3	
comp=E,3μm,0.4s							
PB10	IPOC Station P	3.13	282	ePn	Pn	11 21 56.6	+1.0
MOCB	Mochara	3.26	27⇓	iPn	Pn	11 21 58.7	+1.0
MOCB				eSn	Sn	11 22 39.5	+1.1
comp=E,73nm,0.7s							
PB04	IPOC Station P	3.27	304⇑	iP	Pn	11 21 58.0	+0.5
PB04				i S	Sn	11 22 34.3	-3.7
PB04	IPOC Station P	3.27	304	ePn	Pn	11 21 58.5	+1.0
PB07	IPOC Station P	3.47	314⇑	iP	Pn	11 22 00.8	+0.7
PB07				eS	Sn	11 22 40.6	-1.9
PB01	IPOC Station P	3.77	326⇑	iP	Pn	11 22 03.9	+0.2
PB01				eS	Sn	11 22 47.4	-1.7
PB01	IPOC Station P	3.77	326	ePn	Pn	11 22 03.7	0.0
CYA	Choya	4.42	164	IAML		11 22 31.4	
comp=Z,7.9nm,0.5s							
CYA				eS	Sn	11 23 01.8	-2.2
LCO	Las Campanas	5.73	212	ePn	Pn	11 22 27.2	-1.9
LCO				e		11 22 27.5	
BBOJ	La Paz, Jacaqu	7.23	353	ePn	Pn	11 22 51.0	+1.7
BBOE	La Paz, Chanca	7.37	354	ePn	Pn	11 22 52.2	+1.1
BBOD	La Paz, Gloria	7.62	350	ePn	Pn	11 22 55.3	+0.9
LPAZ	La Paz	7.91	354	P	Pn	11 22 58.9	+0.6
comp=Z,4.4nm,0.3s,baz=164,slow=6.2,SNR=38							
LPAZ				S	Sn	11 24 25.3	-1.9
comp=Z,0.6nm,0.3s,baz=279,slow=13,SNR=4.0							
LPAZ	La Paz	7.91	354	ePn	Pn	11 22 58.4	+0.2
BBOB	La Paz, Bander	8.05	354	ePn	Pn	11 23 00.1	+0.1
BBOB				eSn	Sn	11 24 29.8	-0.8
comp=Z,14nm,0.5s							
ARE	Arequipa	8.67	332	P	Pn	11 23 06.0	-2.0
ARE				eS	Sn	11 24 40.0	-5.0
CPUP	Villa Florida	9.20	105	P	Pn	11 23 08.8	-5.8
comp=Z,0.3nm,0.3s,baz=288,slow=12,SNR=11							
CPUP	Villa Florida	9.20	105	ePn	Pn	11 23 11.4	-3.1
SIV	San Ignacio	9.98	36	P	Pn	11 23 20.3	-4.7
comp=Z,0.5nm,0.3s,baz=240,slow=12,SNR=3.9							
SIV				S	Sn	11 25 02.8	-13
comp=Z,0.3nm,0.3s,baz=218,slow=12,SNR=3.4							
SIV	San Ignacio	9.98	36	eP	Pn	11 23 25.4	+0.4
TRQA	Tornquist	14.53	163	ePn	P	11 24 24.4	-0.2
PLCA	Paso Flores	16.73	189	P	P	11 24 48.6	-0.4
comp=Z,0.3nm,0.3s,baz=28,slow=13,SNR=7.2							
PLCA	Paso Flores	16.73	189	eP	Pn	11 24 52.9	+3.2
comp=Z,12nm,1.0s							
PTGA	Pitinga	24.35	18	P	P	11 26 06.2	-1.1
comp=Z,1.2nm,0.3s,baz=194,slow=11,SNR=4.2							
RCBR	Riachuelo	35.18	64	P	P	11 27 41.4	-1.4
comp=Z,5.3nm,0.6s,baz=226,slow=12,SNR=5.6							
TEIG	Tepich	48.68	333	P	P	11 29 31.1	-0.8
comp=Z,1.7nm,0.5s,baz=269,slow=24,SNR=5.7							
VNA3	Neumayer Olymp	57.04	161	P	P	11 30 31.9	-0.7
VNA2	Neumayer--Watz	57.61	160	P	P	11 30 36.7	+0.2
baz=284,slow=8.6							
SNAA	Sanae	59.24	161	P	P	11 30 47.9	+0.1
147A	Livingston	60.01	340	P	P	11 30 53.7	+0.3
baz=157							
933A	Laredo	60.07	327	P	P	11 30 55.2	+1.1
baz=146							
736A	Circle Diamond	60.14	330	P	P	11 30 55.5	+1.1
baz=148							
KMSC	Kings Mountain	60.50	347	P	P	11 30 56.3	-0.5
baz=165							
833A	Chaparral WMA,	60.72	327	P	P	11 30 59.3	+1.0
baz=146							
Y47A	UCPARC, Winfie	61.01	340	P	P	11 31 00.6	+0.4
baz=158							
Y46A	Houston	61.31	340	P	P	11 31 02.7	+0.5
baz=157							
633A	Saathoff Ranch	61.55	328	P	P	11 31 04.1	+0.1
baz=146							
237A	Washetta, Mont	62.20	333	P	P	11 31 08.6	+0.3
baz=150							
434A	Burnet	62.26	330	P	P	11 31 09.5	+0.8
baz=148							
335A	Moody	62.28	331	P	P	11 31 08.9	+0.1
baz=148							
Z40A	Long Farm, Mag	62.34	335	P	P	11 31 08.9	-0.2
baz=153							
433A	Art	62.59	329	P	P	11 31 11.7	+0.8
baz=147							
137A	Heron Place, G	62.70	333	P	P	11 31 12.0	+0.5
baz=150							
JCT	Junction City	62.70	328	P	P	11 31 12.6	+1.0
baz=146							
JCT	Junction City	62.70	328	eP	P	11 31 12.7	+1.0
comp=Z,5.2nm,0.7s							
WHTX	Lake Whitney,	62.90	331	P	P	11 31 12.9	0.0
baz=149							
333A	Richland Sprin	63.02	330	P	P	11 31 14.0	+0.2
baz=147							
WVT	Waverly	63.08	341	eP	P	11 31 13.3	-0.6
comp=Z,8.3nm,0.9s							
234A	Clairette	63.21	331	P	P	11 31 15.6	+0.6
baz=148,SNR=5.3							
MIAR	Mount Ida	63.55	336	P	P	11 31 17.1	0.0
baz=153							
Z36A	Blue Ridge	63.56	333	P	P	11 31 17.2	0.0
baz=150							
233A	Rising Star	63.57	330	P	P	11 31 18.0	+0.7
baz=147							
W41B	Gary Mavity, V	63.63	337	P	P	11 31 17.9	+0.3
baz=154							
TXAR	Lajitas Array	63.72	325	P	P	11 31 18.7	+0.3
comp=Z,0.9nm,0.7s,baz=152,slow=7.9,SNR=13							
TX31	Lajitas Ar. Si	63.72	325	eP	P	11 31 19.4	+0.9
X39A	Fountain Ranch	63.72	335	P	P	11 31 18.9	+0.7
baz=152,SNR=5.3							
Y37A	Hugo	63.84	334	P	P	11 31 19.2	+0.2
baz=151							
W40A	Ferguson Farm,	63.94	337	P	P	11 31 19.4	-0.2
baz=153							
Z35A	Perchaven, San	63.96	332	P	P	11 31 19.6	-0.2
baz=149							
133A	Hamilton Ranch	64.07	330	P	P	11 31 21.3	+0.7
baz=148							
X38A	Whitesboro	64.14	335	P	P	11 31 21.4	+0.5
baz=152							
W39A	Magazine	64.20	336	P	P	11 31 21.7	+0.3
baz=153							
X37A	Clayton	64.28	334	P	P	11 31 22.3	+0.4
baz=151							
Z34A	Collier Ranch,	64.28	332	P	P	11 31 22.9	+1.0
baz=149							
Y35A	Marietta	64.36	333	P	P	11 31 23.2	+0.8
baz=150							
W38A	Poteau	64.37	335	P	P	11 31 23.2	+0.7
baz=152,SNR=5.3							
V40A	Witts Springs	64.40	337	P	P	11 31 22.9	+0.3
baz=154							
ABTX	Abilene, Hawle	64.42	330	P	P	11 31 23.3	+0.5
baz=147							
Z33A	Whitaker Ranch	64.58	331	P	P	11 31 24.7	+0.8
baz=148							
X36A	Centrahoma	64.65	334	P	P	11 31 24.6	+0.3
baz=150							
Y34A	Reagan Ranch,	64.71	332	P	P	11 31 25.3	+0.6
baz=149							
V39A	Pettigrew	64.72	336	P	P	11 31 25.0	+0.2
baz=153,SNR=5.2							
X35A	Drake	64.76	333	P	P	11 31 25.0	0.0
baz=150,SNR=5.7							
W37B	Quinton	64.78	335	P	P	11 31 25.6	+0.5
baz=151							
U40A	Yellville	64.90	337	P	P	11 31 26.0	+0.1
baz=154							
O56A	Blue Knob Stat	64.99	350	P	P	11 31 25.1	-1.3
baz=168							
V38A	Canehill	65.03	336	P	P	11 31 27.3	+0.6
baz=152							
W36A	Wetumka	65.10	334	P	P	11 31 27.5	+0.3
baz=150							
Y33A	Hilltop Ranch,	65.13	331	P	P	11 31 28.3	+0.9
baz=148							
U39A	Green Forest	65.15	337	P	P	11 31 27.6	+0.1
baz=153							
X34A	Smith Ranch, M	65.29	332	P	P	11 31 29.3	+0.9
baz=149							
W35A	Tecumseh	65.37	334	P	P	11 31 29.0	0.0
baz=150							
T40A	Mansfield	65.50	338	P	P	11 31 30.4	+0.7
baz=154							
U38A	Gravette	65.53	336	P	P	11 31 30.0	+0.1
baz=152							
V36A	Jenks	65.55	335	P	P	11 31 30.5	+0.4
baz=151							
TUL1	Leonard	65.60	335	P	P	11 31 31.1	+0.7
baz=151							
T39A	Clever	65.69	337	P	P	11 31 31.5	+0.6
baz=154							
U37A	Salina	65.78	336	P	P	11 31 32.1	+0.6
baz=152							
V35A	Meyer Ranch, C	65.88	334	P	P	11 31 32.4	+0.2
baz=150							
S40A	Lebanon	65.90	338	P	P	11 31 32.6	+0.3
baz=154							
QSPA	South Pole Qui	66.02	180	eP	P	11 31 33.

S37A	Fort Scott	66.86 336	P	P	11 31 38.8 +0.4
	baz=152				
R38A	Fenwick Farm,	66.91 337	P	P	11 31 38.8 +0.1
	baz=153,SNR=5.7				
U33A	Lingo Farm, Me	66.98 333	P	P	11 31 39.6 +0.5
	baz=149				
MSTX	Muleshoe	66.99 328	P	P	11 31 40.3 +0.9
	baz=144				
MSTX	Muleshoe	66.99 328	eP	P	11 31 40.2 +0.8
	comp=Z,10nm,0.9s				
Q40A	Laux Farm, Aux	67.02 339	P	P	11 31 39.4 +0.1
	baz=155				
S36A	Lake Cedric, C	67.11 336	P	P	11 31 39.5 -0.5
	baz=152				
U32A	Winter Ranch,	67.31 333	P	P	11 31 41.6 +0.4
	baz=148				
S35A	Otter Creek Ra	67.35 335	P	P	11 31 42.1 +0.6
	baz=151				
R37A	Teagarden Farm	67.36 337	P	P	11 31 41.9 +0.4
	baz=152				
Q39A	Willow Grove F	67.37 338	P	P	11 31 41.9 +0.4
	baz=154				
P40A	Paris	67.50 339	P	P	11 31 42.8 +0.5
	baz=155				
Q38A	Cooks Store, C	67.51 338	P	P	11 31 42.7 +0.4
	baz=154				
R36A	Gordon, Harris	67.61 336	P	P	11 31 43.9 +0.8
	baz=152				
T32A	Huddler Ranch,	67.95 333	P	P	11 31 46.4 +1.1
	baz=148				
O40A	La Belle	67.98 340	P	P	11 31 45.2 -0.1
	baz=155				
DBIC	Dimbokro	68.05 72	P	P	11 31 44.1 -2.2
	comp=Z,11nm,0.5s,baz=234,slow=7.9,SNR=3.7				
P38A	Dawn	68.07 338	P	P	11 31 46.4 +0.5
	baz=154				
R34A	Isabella, Hill	68.25 335	P	P	11 31 47.5 +0.4
	baz=150				
Q35A	Mercer Eighty,	68.28 336	P	P	11 31 47.6 +0.3
	baz=151				
319A	Douglas	68.36 322	eP	P	11 31 50.1 +2.1
	comp=Z,6.3nm,0.6s				
S32A	Newby Ranch, P	68.41 333	P	P	11 31 49.1 +1.0
	baz=149				
121A	Cookes Peak, D	68.41 324	P	P	11 31 50.4 +2.0
	baz=140				
O38A	Galt	68.50 339	P	P	11 31 48.8 +0.3
	baz=154				
P36A	Good Intent, A	68.65 337	P	P	11 31 49.4 -0.1
	baz=152				
Q34A	Chapman	68.67 335	P	P	11 31 50.2 +0.5
	baz=151				
P35A	Duane Minner,	68.86 336	P	P	11 31 51.3 +0.4
	baz=152				
N39A	Derby Farms, D	68.87 340	P	P	11 31 50.6 -0.2
	baz=155				
R32A	Long Quarter,	68.93 334	P	P	11 31 52.0 +0.7
	baz=149				
P34A	Walnut Farm, R	69.18 336	P	P	11 31 53.6 +0.8
	baz=151				
ANMO	Albuquerque	69.59 326	P	P	11 31 56.1 +0.4
	comp=Z,3.3nm,0.8s,baz=149,slow=7.3,SNR=12				
ANMO	Albuquerque	69.59 326	P	P	11 31 57.1 +1.5
	baz=142				
ANMO	Albuquerque	69.59 326	eP	P	11 31 57.7 +2.0
	comp=Z,6.1nm,1.0s				
N36A	Muff Farm, Cla	69.63 338	P	P	11 31 56.0 +0.5
	baz=153				
CBKS	Cedar Bluff	69.68 333	P	P	11 31 57.2 +1.3
	baz=148				
O34A	Beatrice	69.68 336	P	P	11 31 56.3 +0.4
	baz=151				
M37A	Trindle Farm,	69.85 339	P	P	11 31 57.4 +0.6
	baz=154				
TUC	Tucson	69.91 322	P	P	11 31 59.4 +2.0
	baz=138				
TUC	Tucson	69.91 322	eP	P	11 31 59.5 +2.0
	comp=Z,5.2nm,1.3s				
O33A	Hebron	69.92 336	P	P	11 31 58.0 +0.7
	baz=150				
JFWS	Jewell Farm	70.06 342	eP	P	11 31 58.2 +0.1
	comp=Z,12nm,0.6s				
N34A	Lincoln	70.19 337	P	P	11 31 59.3 +0.4
	baz=151				
T25A	Trinidad	70.34 329	P	P	11 32 01.2 +1.0
	baz=144				
T25A	Trinidad	70.34 329	eP	P	11 32 01.9 +1.7
	comp=Z,3.7nm,0.8s				
O32A	Brockman Farm,	70.34 335	P	P	11 32 00.6 +0.7
	baz=150				
214A	Organ Pipe Nat	70.82 320	P	P	11 32 04.5 +1.5
	baz=136				
L35A	Bielow Farm, R	70.98 338	P	P	11 32 03.9 +0.2
	baz=152				
X18A	Snowflake	71.10 324	eP	P	11 32 07.2 +2.4
	comp=Z,3.4nm,1.0s				
BGNE	Belgrade	71.29 336	P	P	11 32 05.9 +0.3
	baz=150				
SDCO	Great Sand Dun	71.35 329	P	P	11 32 08.1 +1.8
	baz=143				
SDCO	Great Sand Dun	71.35 329	eP	P	11 32 07.8 +1.4
	comp=Z,2.7nm,0.8s				
I38A	Scanlan Farm,	71.69 341	P	P	11 32 08.3 +0.4
	baz=156				
K33A	Hardington	71.92 337	P	P	11 32 09.8 +0.5
	baz=151				
S22A	4UR Ranch, Cre	71.98 328	P	P	11 32 11.7 +1.5
	baz=142				
S22A	4UR Ranch, Cre	71.98 328	eP	P	11 32 12.0 +1.8
	comp=Z,12nm,1.9s				
I37A	Lemond, Waseca	71.99 340	P	P	11 32 09.6 -0.1
	baz=155				
Q24A	Divide	72.16 330	P	P	11 32 12.2 +1.0
	baz=144				
MVCO	Mesa Verde	72.39 326	P	P	11 32 14.1 +1.6
	baz=141				
MVCO	Mesa Verde	72.39 326	eP	P	11 32 13.9 +1.4
	comp=Z,3.2nm,0.8s				
WUAZ	Wupatki	72.61 323	P	P	11 32 15.7 +1.9
	baz=138				
WUAZ	Wupatki	72.61 323	eP	P	11 32 16.4 +2.6
	comp=Z,4.9nm,0.9s				
H36A	Jessenland, He	72.66 340	P	P	11 32 14.3 +0.6
	baz=154				
GLA	Glamis	72.79 320	P	P	11 32 16.1 +1.4
	baz=135				
ISCO	Idaho Springs	73.05 330	eP	P	11 32 18.3 +1.9
	comp=Z,11nm,1.8s				
H35A	Sunnyside Ranc	73.05 340	P	P	11 32 15.9 0.0
	baz=153				
Y12C	Blythe	73.11 320	P	P	11 32 18.6 +2.1
	baz=135				
SMCO	Snowmass	73.18 329	eP	P	11 32 19.3 +2.0
	comp=Z,3.5nm,0.8s				
G36A	St. Michael	73.20 341	P	P	11 32 17.6 +0.8
	baz=154				
BC3	Big Chuckawall	73.59 320	P	P	11 32 21.2 +1.7
	baz=134				
MONP2	Monument Peak	73.64 318	P	P	11 32 21.3 +1.4
	baz=134				
H33A	Prehn Over Nor	73.66 339	P	P	11 32 20.5 +1.0
	baz=152				
F36A	Milaca	73.70 341	P	P	11 32 20.0 +0.3
	baz=155				
H32A	Carlson Farm,	73.74 338	P	P	11 32 20.3 +0.3
	baz=151				
IRM	Iron Mountain	73.76 320	P	P	11 32 22.3 +1.9
	baz=135				
G34A	Benson	73.80 339	P	P	11 32 20.8 +0.5
	baz=153				
J29A	Okreek	73.83 336	P	P	11 32 21.2 +0.7
	baz=148				
G33A	Ortonville	74.01 339	P	P	11 32 21.5 0.0
	baz=152				
F35A	Swanville	74.02 340	P	P	11 32 21.8 +0.2
	baz=154				
N23A	Red Feather La	74.08 330	P	P	11 32 24.3 +1.9
	baz=143				
N23A	Red Feather La	74.08 330	eP	P	11 32 24.8 +2.4
	comp=Z,4.6nm,0.9s				
BELC	Belle Mtn. Jos	74.15 319	P	P	11 32 24.5 +1.7
	baz=134				
PFO	Pinyon Flats O	74.16 319	P	P	11 32 24.3 +1.5
	baz=134				
PFO	Pinyon Flats O	74.16 319	eP	P	11 32 25.2 +2.4
	comp=Z,5.7nm,1.3s				
J28A	Allard Ranch,	74.19 335	P	P	11 32 23.9 +1.2
	baz=148				
E36A	McGregor	74.22 342	P	P	11 32 23.0 +0.3
	baz=155				
I29A	Vivian Onida	74.35 336	P	P	11 32 23.8 +0.3
	baz=148				
J27A	Elkhorn Farm,	74.35 334	P	P	11 32 25.5 +1.8
	baz=147				
GMRC	Granite Mounta	74.50 320	P	P	11 32 26.9 +2.2
	baz=135				
KNB	Kanab	74.51 324	eP	P	11 32 27.4 +2.6
	comp=Z,11nm,1.0s				
O20A	White River Ci	74.54 329	P	P	11 32 26.5 +1.6
	baz=141				
O20A	White River Ci	74.54 329	eP	P	11 32 27.1 +2.1
	comp=Z,6.0nm,0.8s				
D37A	Cotton	74.57 342	P	P	11 32 24.0 -0.7
	baz=156				
C39A	Grand Marais	74.58 344	P	P	11 32 24.1 -0.6
	baz=158				
C38A	Sawbill Land.	74.78 343	P	P	11 32 25.9 0.0
	baz=157				
SRU	San Rafael Swe	74.87 326	eP	P	11 32 28.8 +1.9
	comp=Z,5.8nm,0.7s				
MTPU	Mount Pierson	74.92 325	eP	P	11 32 29.4 +2.0
	comp=Z,3.0nm,0.8s				
HEC	Hector,Ludlow	74.93 320	P	P	11 32 29.3 +2.1
	baz=134				
C37A	Embarrass	75.03 343	P	P	11 32 27.5 +0.1
	baz=156				
E33A	Westby DABS, E	75.04 340	P	P	11 32 27.9 +0.5
	baz=153				
J25A	Sunshine Ranch	75.19 333	P	P	11 32 30.0 +1.5
	baz=146				
C36A	Pine Crest Far	75.23 342	P	P	11 32 29.1 +0.6
	baz=156				
MSU	Marysvale	75.27 325	eP	P	11 32 31.7 +2.4
C35A	Jirik Farms, M	75.50 342	P	P	11 32 30.5 +0.5
	baz=155				
GSC	Goldstone, Bar	75.53 320	P	P	11 32 32.4 +1.8
	baz=134				
I25A	Rochford	75.68 334	P	P	11 32 32.8 +1.5
	baz=146				
C34A	RKJ Ranch, Bem	75.73 341	P	P	11 32 31.2 -0.1
	baz=154				
RSSD	Black Hills	75.89 334	P	P	11 32 33.6 +1.0
	baz=145				
EDW2	Edwards Air Fo	75.95 319	P	P	11 32 34.5 +1.5
	baz=133				
B35A	Bob, Littlefor	76.03 342	P	P	11 32 33.5 +0.5
	baz=155				
LRMC	Laurel Mtn Rad	76.17 320	P	P	11 32 35.8 +1.5
	baz=133				
PSUT	Pine Spring	76.17 324	eP	P	11 32 36.8 +2.5
	comp=Z,3.7nm,0.7s				
G26A	Maurine	76.30 335	P	P	11 32 35.4 +0.8
	baz=147				
TPNV	Topopah Spring	76.36 322	P	P	11 32 37.9 +2.6
	baz=135				
TPNV	Topopah Spring	76.36 322	eP	P	11 32 38.0 +2.6
	comp=Z,6.7nm,1.1s				
FURC	Furnace Creek,	76.38 321	P	P	11 32 37.4 +2.2
	baz=134				
B34A	Aery, Baudette	76.41 342	P	P	11 32 35.5 +0.4
	baz=154				
MPMC	Manual Prospec	76.46 320	P	P	11 32 36.8 +0.8
	baz=134				
G25A	Newell	76.53 335	P	P	11 32 37.0 +1.1
	baz=146				
F27A	Lemmon	76.56 336	P	P	11 32 37.2 +1.1
	baz=147				
AGMN	Agassiz Nation	76.59 341	P	P	11 32 37.0 +0.8
	baz=153				
AGMN	Agassiz Nation	76.59 341	eP	P	11 32 36.8 +0.6
	comp=Z,6.4nm,1.1s				
DAC	Darwin (Calif)	76.67 320	eP	P	11 32 39.3 +2.2
	comp=Z,5.2nm,1.0s				
E28A	Huff	76.67 337	P	P	11 32 37.8 +1.1
	baz=148				
C31A	Landman Farms,	76.73 339	P	P	11 32 38.2 +1.3
	baz=151				
F26A	Lodgepole	76.79 335	P	P	11 32 39.0 +1.6
	baz=147				
TORD	Torodi Ar. Bea	76.82 69	P	P	11 32 36.9 -1.3
	comp=Z,1.1nm,0.4s,baz=263,slow=6.7,SNR=27				
DUG	Dugway, Tooele	76.85 326	P	P	11 32 40.3 +2.3
	baz=138				
DUG	Dugway, Tooele	76.85 326	eP	P	11 32 39.9 +1.9
	comp=Z,4.7nm,1.1s				
B32A	Ashes, Strandq	76.88 340	P	P	11 32 38.3 +0.5
	baz=152				
C30A	Mose, Pekin	76.89 339	P	P	11 32 38.7 +0.8
	baz=151				
R11A	Troy Canyon, C	76.98 323	P	P	11 32 40.8 +2.0
	baz=135				
R11A	Troy Canyon, C	76.98 323	eP	P	11 32 41.0 +2.2
	comp=Z,6.9nm,1.4s				
A33A	Warroad	77.03 341	P	P	11 32 39.1 +0.5
	baz=153				
PKM	Mcpherson Peak	77.06 318	P	P	11 32 41.1 +1.8
	baz=132				
CWC	Cottonwood Cre	77.07 320	P	P	11 32 41.5 +2.2
	baz=133				
F25A	Bowman	77.15 335	P	P	11 32 40.4 +0.9
	baz=146				
BW06	Boulder Array	77.21 329	P	P	11 32 41.6 +1.5
	baz=141				
PDAR	Pinedale Array	77.21 329	P	P	11 32 39.5 -0.5
	comp=Z,0.7nm,0.6s,baz=135,slow=7.4,SNR=8.3				
VES	Vestal, Richgr	77.25 319	P	P	11 32 42.0 +1.9
	baz=132				
SMMC	Simmler	77.45 318	P	P	11 32 43.0 +1.7
	baz=132				
B30A	Myrvik Farm, E	77.50 339	P	P	11 32 42.0 +0.8
	baz=151				
BGU	Big Grassy Mou	77.50 326	eP	P	11 32 43.4 +1.7
	comp=Z,4.3nm,1.2s				
B29A	Wagenman Farm,	77.84 339	P	P	11 32 44.3 +1.1
	baz=150				
A30A	Hoffart Farm,	77.92 340	P	P	11 32 44.3 +0.8
	baz=151				
D25A	Fairfield	78.12 336	P	P	11 32 46.4 +1.6
	baz=146				
B28A	Dugan Ranch, T	78.17 338	P	P	11 32 46.4 +1.5
	baz=149				
A29A	Manning Farm,	78.20 339	P	P	11 32 46.0 +0.8
	baz=150				
ULM	Lac du Bonnet	78.34 342	P	P	11 32 45.4 -0.5
	comp=Z,5.3nm,0.7s,baz=156,slow=6.7,SNR=5.5				
MOOW	Moose Ponds	78.52 329	eP	P	11 32 48.2 +0.9
	comp=Z,2.0nm,0.8s				
NVAR	Mina Array Bea	78.56 321	P	P	11 32 48.8 +1.2
	comp=Z,1.1nm,0.7s,baz=150,slow=5.4,SNR=11				
IMW	Indian Meadow	78.72 329	eP	P	11 32 50.1 +1.7
	comp=Z,3.7nm,0.9s				
FLWY	Flagg Ranch	78.75 330	eP	P	11 32 50.8 +2.2
	comp=Z,6.5nm,1.0s				
RLMT	Red Lodge	78.91 331	P	P	11 32 50.8 +1.4
	baz=141				
H17A	Grant Village	78.94 330	P	P	11 32 51.6 +2.0
	baz=140				
B25A	Knox Farm, Ray	79.00 336	P	P	11 32 51.7 +2.2
	baz=147				
HLID	Hailey	80.14 327	P	P	11 32 58.1 +2.2
	baz=137				
HLID	Hailey	80.14 327	eP	P	11 32 58.1 +2.2
	comp=Z,6.2nm,0.8s				
MCMT	McKenzie Canyo	80.32 329	eP	P	11 32 59.3 +2.3
DLMT	Dillon	80.60 329	eP	P	11 32 59.4 +1.0
	comp=Z,7.3nm,1.4s				
MFID	Camas Ranch	80.74 326	eP	P	11 33 01.1 +2.0
	comp=Z,2.6nm,0.9s				
BOSA	Boshof	80.82 117	P	P	11 32 58.8 -1.2
	comp=Z,1.6nm,0.8s,baz=257,slow=4.1,SNR=4.3				
MAW	Mawson	81.31 163	P	P	11 33 01.5 -0.2
	comp=Z,5.4nm,1.1s,baz=239,slow=6.9,SNR=4.3				
EGMT	Eagleton	81.39 333	P	P	11 33 03.5 +1.1
	baz=141				
J05D	Fort Rock, OR	83.49 324	P	P	11 33 15.1 +1.7
	baz=132				
L02D	Cave Junction,	84.06 321	P	P	11 33 18.1 +1.8
	baz=130				
I05D	Terrebonne, OR	84.25 324	P	P	11 33 19.1 +1.9
	baz=132				
C09A	Chrisman Ranch	85.06 328	eP	P	11 33 22.6 +1.5
	comp=Z,8.0nm,0.8s				
ESDC	Sonseca Array	86.67 44	P	P	11 33 27.5 -1.8
	comp=Z,0.1nm,0.2s,baz=268,slow=5.6,SNR=2.3				
YKA	Yellowknife Ar	94.23 340	P	P	11 34 04.1 +0.3
	comp=Z,1.7nm,0.7s,baz=131,slow=4.5,SNR=50				
ASAR	Alice Springs	128.21 205	PKP	PKPdf	11 39 50.8 -0.7
	comp=Z,2.0nm,0.7s,baz=137,slow=1.8,SNR=30				
WRA	Warramunga Arr	131.37 207	PKP	PKPdf	11 39 57.1 -0.4
	comp=Z,1.6nm,0.5s,baz=158,slow=1.7,SNR=35				
ZALV	Zalesovo Beam	143.65 28	PKP	PKPbc	11 40 16.9 0.0
	comp=Z,3.1nm,0.6s,baz=309,slow=4.8,SNR=9.5				
MKAR	Makanchi Array	146.79 40	PKPbc	PKPdf	11 40 24.9 +0.3
	comp=Z,3.5nm,0.7s,baz=241,slow=3.8,SNR=34				
ASAJ	Asahikawa	148.58 317	PKPbc	PKPbc	11 40 32.6 +1.1
	comp=Z,3.8nm,0.7s,baz=54,slow=4.6,SNR=4.8				
LEM	Lembang	148.76 170	PKPbc	PKPbc	11 40 32.7 -0.3
	comp=Z,6.2nm,0.4s,baz=79,slow=23,SNR=1.8				
MJAR	Matsushiro Arr	154.93 305	PKPab	PKPab	11 41 03.5 +1.1
	comp=Z,1.5nm,0.7s,baz=77,slow=2.6,SNR=7.1				
LZH	Lanzhou	165.85 31	ePKP	PKPdf	11 40 51.0 +1.4
LZH			pPKP	pPKPdf	11 41 35.0 -1.1
LZH			sPKP		11 41 44.0
LZH			PKP	PKPab	11 41 53.2 +3.1
CD2	Chengdu	169.56 48	PKP	PKPdf	11 40 52.2 0.0

IDC 05 11:24:57.0±2.0, 2°.55N×95°.74E, h0km, mb3.7/7, mb1 3.8/7, mb1mx3.5/40, mbtmp3.7/7, Error ellipse: s-maj=88.0km s-min=21.7km az=54.0, Off west coast of northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08S2	Diego Garcia H	25.31	246	T	T	11 56 33.0	
	baz=67,slow=76,SNR=228						
H08S3	Diego Garcia H	25.31	246	T	T	11 56 37.9	
	baz=67,slow=76,SNR=339						
H08S1	Diego Carcia H	25.32	246	T	T	11 56 35.2	
	baz=67,slow=76,SNR=376						
H01W3	Cape Leeuwin H	41.05	157	T	T	12 16 19.1	
	baz=333,slow=76,SNR=369						
H01W2	Cape Leeuwin H	41.06	157	T	T	12 16 19.9	
	baz=333,slow=76,SNR=318						
H01W1	Cape Leeuwin H	41.06	157	T	T	12 16 20.2	
	baz=333,slow=76,SNR=280						
WRA	Warramunga Arr	43.99	122	P	P	11 33 06.5	0.0
	0.5nm,1.0s,baz=299,slow=9.2,SNR=3.5						
ASAR	Alice Springs	45.37	127	P	P	11 33 17.4	-0.2
	0.2nm,0.5s,baz=303,slow=8.5,SNR=4.6						
MKAR	Makanchi Array	45.60	347	P	P	11 33 19.2	+0.2
	0.9nm,0.4s,baz=157,slow=8.9,SNR=15						
SONM	Songino Array	46.04	10	P	P	11 33 22.4	-0.2
	0.7nm,0.5s,baz=184,slow=8.7,SNR=3.0						
GEYT	Alibeck	49.25	320	P	P	11 33 47.6	0.0
	1.9nm,0.4s,baz=115,slow=8.4,SNR=3.3						
ZALV	Zalesovo Beam	52.01	352	P	P	11 34 08.2	0.0
	0.7nm,0.3s,baz=164,slow=5.8,SNR=3.7						
BVAR	Borovoye Array	54.51	341	P	P	11 34 25.9	-0.7
	0.6nm,0.5s,baz=125,slow=11,SNR=4.3						

*CASC **05** 11:28:47.1±12.0, 13°.00N×88°.05W, h65km±95km, MD4.0, ML3.5*
*IDC **05** 11:28:56.6±9.7, 13°.47N×87°.96W, h147km±58km, mb3.0/5, mb1 3.4/6, mb1mx3.2/35, mbtmp3.5/6, MS3.4/1, Ms1 3.4/1, ms1mx2.5/13, Error ellipse: s-maj=94.3km s-min=63.6km az=5.0*

ISC 05 11:28:42.9±1.5, 12°.61N±0°.06×88°.20W±0°.04, h29km±12km, n36, σ1°.70/44, mb3.5/5, 1D, Off coast of central America

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CSGN	Cosiguina Volc	0.73	60	eP	Pn	11 28 57.6	+0.3
LCY	Lacayo	0.82	354	i P	Pn	11 29 00.0	+1.4
VSM	San Miguel	0.82	355	eP	Pn	11 28 60.0	+1.2
VSM				i P	Pb	11 29 00.2	+1.4
VSM				eS	Sn	11 29 12.8	+2.7
BLLM	Bellamira	0.83	357	eP	Pn	11 29 00.7	+1.9
PACA	Pacayal	0.87	352	||i P	Pn	11 29 00.6	+1.3
CRIN	San Cristobal	1.13	85	eP	Pb	11 29 04.6	+0.7
CRIN				eS	Sn	11 29 19.3	+1.9
SNVI	San Vicente	1.18	328	eP	Pb	11 29 05.4	+0.7
SNVI				eS	Sn	11 29 20.2	+1.4
LFRS	El Faro	1.31	320	i P	Pn	11 29 06.8	+1.3
LFRS				eS	Sn	11 29 21.9	-0.2
TELN	Telica	1.34	90	eP	Pb	11 29 07.2	-0.2
LBRS	Las Brisas	1.39	324	eP	Pb	11 29 08.3	-0.1
LBRS				eS	Sn	11 29 25.0	+1.1
LFU	La Fuente	1.44	322	eP	Pb	11 29 08.9	-0.3
CNGN	Cerro Negro	1.47	94	eP	Pn	11 29 08.7	+1.2
CNGN				eS	Sn	11 29 27.4	+1.5
CNGN				AML	AML	11 29 32.0	
	comp=N,827nm,0.2s						
SNET	Serv Nac Est T	1.47	317	eP	Pb	11 29 09.4	-0.3
SNET				eS	Sn	11 29 26.6	+0.7
SNET				AML	AML	11 29 28.4	
	comp=Z,783nm,0.3s						
COLS	Colinas	1.50	315	eP	Pb	11 29 10.3	+0.1
BOQS	Boqueron	1.54	317	eP	Pb	11 29 10.4	-0.5
BOQS				eS	Sn	11 29 29.4	+1.7
COPN	Copaltepe	1.63	105	eP	Pn	11 29 11.0	+1.3
COPN				eP	Pb	11 29 11.1	-1.2
COPN				eS	Sn	11 29 31.2	+1.5
MOMN	Momotombo	1.63	97	eP	Pn	11 29 10.9	+1.1
TGUH	Tegucigalpa,Un	1.70	32	eP	Pn	11 29 11.5	+0.9
APYN	Apoyeque	1.84	101	eP	Pn	11 29 14.1	+1.5
SBLS	San Blas	1.85	312	eP	Pn	11 29 15.1	+2.1
ESTN	Estel	1.85	74	eP	Pn	11 29 13.9	+1.1
ESTN				eS	Sn	11 29 36.0	+0.6
ESTN				eS	Sb	11 29 36.4	-2.6
MONT	Ecomontaæa	1.88	312	eP	Pb	11 29 15.8	-1.0
BOAB	BOACO BROADBAN	2.48	93	eP	Pn	11 29 22.2	+0.8
JCR	Jicaral	4.08	132	eP	Pn	11 29 47.5	+3.9
QCR	Quepos	5.07	128	eP	Pn	11 30 00.8	+3.8
URSC	Urasca	5.14	122	eP	Pn	11 30 03.8	+5.6
BUS	Buena Vista	5.31	124	eP	Pn	11 30 05.0	+4.3
TEIG	Tepich	7.58	359	P	Pn	11 30 33.0	+1.5
	baz=171,slow=12						
TXAR	Lajitas Array	21.99	322	P	P	11 33 33.5	-1.4
	comp=Z,1.3nm,0.7s,baz=140,slow=10,SNR=16						
NNA	Nana	26.91	155	LR	LR	11 44 27.3	
	comp=Z,67nm,18.6s,baz=136,slow=34						
PDAR	Pinedale Array	35.29	332	P	P	11 35 32.0	-3.6
	comp=Z,0.5nm,0.8s,baz=120,slow=8.9,SNR=4.0						
NVAR	Mina Array Bea	37.10	319	P	P	11 35 49.3	-1.9
	comp=Z,0.3nm,0.6s,baz=152,slow=9.6,SNR=3.9						
YKA	Yellowknife Ar	53.27	345	P	P	11 37 54.1	-4.6
	comp=Z,0.4nm,0.9s,baz=144,slow=7.3,SNR=6.9						
ILAR	Eielson Array	65.58	336	P	P	11 39 19.8	-4.0
	comp=Z,0.3nm,0.8s,baz=113,slow=4.1,SNR=3.0						
WRA	Warramunga Arr	138.61	254	PKP	PKPdf	11 48 06.1	-0.8
	comp=Z,0.2nm,0.5s,baz=95,slow=2.4,SNR=4.5						
ASAR	Alice Springs	138.65	249	PKP	PKPdf	11 48 06.3	-0.6
	comp=Z,0.2nm,0.8s,baz=96,slow=1.9,SNR=3.1						

IDC 05 11:32:01.1±2.0, 2°.77N×126°.70E, h0km, mb3.3/4, mb1 3.5/4, mb1mx3.3/50, mbtmp3.3/4, Error ellipse: s-maj=184.9km s-min=23.6km az=65.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	23.78	162	P	P	11 37 14.6	-1.1
	0.4nm,0.6s,baz=340,slow=10,SNR=7.6						
ASAR	Alice Springs	27.19	165	P	P	11 37 48.4	+1.7
	0.1nm,0.5s,baz=340,slow=10,SNR=3.2						
STKA	Stephens Creek	37.24	159	P	P	11 39 13.7	-1.0
	0.8nm,0.7s,baz=0.0,slow=12,SNR=2.9						
MKAR	Makanchi Array	58.33	326	P	P	11 41 58.0	-0.1
	0.2nm,0.4s,baz=120,slow=8.5,SNR=3.3						

MEX 05 11:35:58.5±0.4, 16°.21N×98°.34W, h3km±3km, MD3.8, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PNIG	Pinotepa	0.27	49	i P	Pg	11 36 03.6	-0.2
PNIG				eS	Sg	11 36 07.3	-0.1
TLIG	Tlapa	1.36	351	eP	Pn	11 36 20.8	-3.7
TLIG				i S	Sg	11 36 38.0	-4.2
VHO	Vista Hermosa	1.76	61	eP	Pn	11 36 26.8	-3.3
VHO				i S	Sn	11 36 48.6	-4.6
CAIG	El Cayaco	2.02	294	i P	Pn	11 36 28.3	-5.2
CAIG				i S	Sn	11 36 54.9	-4.4
MEIG	Mezcala	2.10	325	eP	Pn	11 36 30.8	-3.8
MEIG				i S	Sn	11 36 56.8	-4.4
HUIG	Huatulco	2.19	101	eP	Pn	11 36 32.6	-3.2

HUIG			*i* S	Sn	11 36 58.7	-4.8
ARIG	**Puente Sto Nin**	**2.81 317**	*e*P	Pn	11 36 42.1	-2.2
ARIG			*e*S	Sn	11 37 14.7	-4.1

ISCJB ***05*** *12:11:50.8±1.4,33°.21S±0°.07×70°.9W±0°.1,h77km±7km, Error ellipse: s-maj=15.1km s-min=10.4km az=157.3*
SJA ***05*** *12:11:50.9±0.4,32°.96S×71°.04W,h75km±2km,ML2.7, MW2.9*
GUC ***05*** *12:11:50.8±0.6,33°.21S×70°.96W,h66km±5km,ML2.9*
ISC 05 12:11:50.6±3.3,33°.22S±0°.09×71°.0W±0°.1,h74km±16km, n16,σ0°72/22,5C,Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ROC1	**El Roble**	**0.25**	**359**	*i* P	**Pn**	**12 12 02.9**	**+0.6**
ROC1				*i* S	**Sn**	**12 12 11.3**	**+0.5**
ROCH	**El Roble**	**0.25**	**360⇑**	*i* P	**Pn**	**12 12 02.5**	**+0.3**
ROCH				*e*S	**Sn**	**12 12 11.2**	**+0.4**
ROCH				AML	AML	12 12 11.8	
	comp=N,2μm,0.3s						
PEL	**Peldehue**	**0.28**	**74⇑**	*i* P	**Pn**	**12 12 01.4**	**-0.9**
PEL				*e*S	**Sn**	**12 12 10.3**	**-0.5**
PEL				AML	AML	12 12 10.9	
	comp=E,894nm,0.2s						
RCDM	**Rinconada Maip**	**0.31**	**147**	*e*P	Pn	12 11 43.5	-19
RCDM				*i* S	Sn	12 11 52.3	-19
CLCH	**Cerro Calan**	**0.43**	**114⇑**	*i* P	**Pn**	**12 12 03.1**	**-0.2**
CLCH				*i* S	**Sn**	**12 12 12.4**	**-0.3**
CLCH				AML	AML	12 12 13.4	
	comp=E,899nm,0.3s						
ANTU	**Antumapu**	**0.47**	**138⇑**	*i* P	**Pn**	**12 12 03.7**	**+0.1**
ANTU				*i* S	**Sn**	**12 12 13.0**	**-0.2**
ANTU				AML	AML	12 12 13.6	
	comp=N,1μm,0.2s						
FSR	**Penalolen**	**0.48**	**122⇑**	*i* P	**Pn**	**12 12 03.7**	**0.0**
FSR				*e*S	**Sn**	**12 12 13.4**	**+0.1**
AUSP	**Uspallata**	**1.69**	**54**	*i* P	**Pn**	**12 12 19.4**	**+0.9**
AUSP				*i* S	**Sn**	**12 12 40.1**	**+0.4**
ARCO	**CERRO ARCO**	**1.79**	**78**	IAML		12 12 39.7	
	comp=Z,69nm,0.2s						
ASAL	**Salagasta**	**1.94**	**72**	*i* P	**Pn**	**12 12 23.0**	**+1.4**
RTLS	**Leoncito**	**2.03**	**46**	*i* P	**Pn**	**12 12 23.4**	**+0.4**
RTCV	**Cerro Valdivia**	**2.49**	**58**	*i* P	**Pn**	**12 12 29.9**	**+0.9**
RTLL	**Cerro Villicun**	**2.86**	**49**	*i* P	**Pn**	**12 12 34.2**	**+0.2**
AMOG	**MOGNA**	**3.12**	**44**	*i* P	**Pn**	**12 12 37.5**	**-0.1**
AVFE	**Valle Fertil**	**3.96**	**51**	*i* P	**Pn**	**12 12 49.1**	**+0.1**
AVFE				*i* S	**Sn**	**12 13 32.5**	**-1.7**
AVFE				IAML		12 13 33.6	
	comp=Z,9.0nm,0.3s						
AGUA	**GUANDACOL**	**4.30**	**31**	*i* P	**Pn**	**12 12 53.0**	**-0.8**

ISK ***05*** *12:23:04.4,41°.45N×35°.95E,h20km,MD2.7*
ISCJB ***05*** *12:23:06.5±0.8,41°.43N±0°.04×35°.85E±0°.06,h3km±11km, Error ellipse: s-maj=9.2km s-min=5.2km az=135.4*
CSEM ***05*** *12:23:06.0±0.5,41°.42N×35°.90E,h10km,MD2.4, Error ellipse: s-maj=12.8km s-min=7.1km az=53.0*
DDA ***05*** *12:23:07.5,41°.39N×35°.85E,h7km,Md2.4*
ISC 05 12:23:06.7±1.0,41°.40N±0°.03×35°.86E±0°.04,h15km±10km, n18,σ1°07/28,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SAMS	**Samsun-Alacam**	**0.25**	**98**	P	**Pg**	**12 23 12.2**	**0.0**
SAMS	**Samsun-Alacam**	**0.25**	**98**	*i* P	**Pg**	**12 23 12.2**	**0.0**
SAMS				*i* S	**Sg**	**12 23 17.6**	**+1.7**
HAVZ	**Havza**	**0.34**	**198**	P	**Pg**	**12 23 12.4**	**-1.3**
HAVZ				S	**Sg**	**12 23 19.5**	**+1.0**
HAVZ	**Havza**	**0.34**	**198**	*i* P	**Pg**	**12 23 12.4**	**-1.3**
HAVZ				*i* S	**Sg**	**12 23 19.5**	**+1.0**
KVT	**Kavak**	**0.35**	**155**	*e*PG	**Pg**	**12 23 12.4**	**-1.5**
KVT				*e*SG	**Sg**	**12 23 18.9**	**+0.2**
KVT	**Kavak**	**0.35**	**155**	*e*Pg	**Pg**	**12 23 12.4**	**-1.5**
KVT				*e*Sg	**Sg**	**12 23 18.9**	**+0.2**
DIKM	**Dikmen**	**0.52**	**300**	*e*PG	**Pg**	**12 23 16.0**	**-0.9**
DIKM				*e*SG	**Sb**	**12 23 24.4**	**-0.4**
DIKM	**Dikmen**	**0.52**	**300**	*e*Pg	**Pg**	**12 23 16.0**	**-0.9**
DIKM				*e*Sg	**Sb**	**12 23 24.4**	**-0.4**
BOYT	**Boyabat**	**0.72**	**272**	P	**Pb**	**12 23 21.5**	**+0.6**
BOYT	**Boyabat**	**0.72**	**272**	*i* P	**Pb**	**12 23 21.5**	**+0.6**
BOYT				*i* S	**Sn**	**12 23 34.5**	**+1.4**
SNOP	**Sinop**	**0.79**	**322**	*e*PG	**Pg**	**12 23 21.1**	**-1.0**
SNOP	**Sinop**	**0.79**	**322**	*e*Pg	**Pg**	**12 23 21.1**	**-1.0**
BYBT	**Boyabat**	**0.82**	**275**	*e*PG	**Pg**	**12 23 22.2**	**-0.5**
BYBT	**Boyabat**	**0.82**	**275**	*e*Pg	**Pg**	**12 23 22.2**	**-0.5**
COAL	**Corum-Alaca**	**1.32**	**210**	P	**Pg**	**12 23 32.4**	**+0.3**
COAL				S	**Sg**	**12 23 50.9**	**+1.6**
COAL	**Corum-Alaca**	**1.32**	**210**	*i* P	**Pg**	**12 23 32.4**	**+0.3**
COAL				*i* S	**Sg**	**12 23 50.9**	**+1.6**
CORM	**Corum**	**1.53**	**218**	*e*PN	**Pn**	**12 23 32.5**	**-1.2**
CORM	**Corum**	**1.53**	**218**	*e*Pn	**Pn**	**12 23 32.5**	**-1.2**

IDC 05 12:40:47.1±2.4,54°.28N×86°.08E,h0km,mb1 3.1/2, mb1mx2.9/46,mbtmp3.1/2,ML2.9/2,Error ellipse: s-maj=18.2km s-min=11.2km az=53.0,Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**0.81**	**246**	*i*		12 46 10.0	
	baz=65,slow=328,SNR=1.0						
ZALV	**Zalesovo Beam**	**0.81**	**246**	Pg	Pg	12 41 01.5	-1.2
	1.5nm,0.3s,baz=63,slow=17,SNR=9.1						
ZALV				Lg	Lg	12 41 14.1	
	5.4nm,0.3s,baz=66,slow=28,SNR=14						
ZALV				Rg	Rg	12 41 22.1	
	5.4nm,0.4s,baz=67,slow=36,SNR=10.0						
KURBB	**Kurchatov Arra**	**5.89**	**235**	Pn	Pn	12 42 16.9	+1.3
	0.1nm,0.3s,baz=51,slow=14,SNR=9.7						
KURBB				Lg	Lg	12 43 56.1	
	0.0nm,0.3s,baz=49,slow=30,SNR=2.8						
MKAR	**Makanchi Array**	**7.88**	**199**	Pn	Pn	12 42 43.6	+0.7
	0.3nm,0.3s,baz=21,slow=14,SNR=11						
MKAR				Lg	Lg	12 44 57.5	
	0.0nm,0.3s,baz=23,slow=32,SNR=3.8						

ISK ***05*** *12:44:40.5,40°.24N×29°.13E,h5km,ML2.2*
CSEM ***05*** *12:44:40.9±0.1,40°.24N×29°.14E,h12km,MD2.0,Error ellipse: s-maj=1.8km s-min=1.3km az=1.0*
DDA ***05*** *12:44:43.8,40°.31N×29°.16E,h6km,Md2.4*
ISC 05 12:44:42.4±0.8,40°.30N±0°.02×29°.12E±0°.02,h10km±6km, n42,σ1°69/56,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GEMT	**Gemlik**	**0.15**	**22**	*e*PG	**Pg**	**12 44 45.0**	**-0.7**
GEMT	**Gemlik**	**0.15**	**22**	*e*Pg	**Pg**	**12 44 45.0**	**-0.7**
ULDT	**Uludag**	**0.16**	**175**	P	**Pg**	**12 44 45.3**	**-0.6**
ULDT				S	**Sg**	**12 44 52.8**	**+4.4**
ULDT	**Uludag**	**0.16**	**175**	*i* P	**Pg**	**12 44 45.3**	**-0.6**
ULDT				*i* S	**Sg**	**12 44 52.8**	**+4.4**
MDNY	**Mudanya-Bursa**	**0.19**	**292**	*e*PG	**Pg**	**12 44 45.6**	**-0.8**
MDNY				*e*SG	**Sg**	**12 44 49.3**	**+0.1**
MDNY	**Mudanya-Bursa**	**0.19**	**292**	*e*Pg	**Pg**	**12 44 45.6**	**-0.8**
MDNY				*e*Sg	**Sg**	**12 44 49.3**	**+0.1**
IZI	**Iznik**	**0.28**	**82**	*e*PG	**Pg**	**12 44 46.5**	**-1.5**
IZI				*e*SG	**Sg**	**12 44 50.9**	**-0.8**
IZI	**Iznik**	**0.28**	**82**	*e*Pg	**Pg**	**12 44 46.5**	**-1.5**
IZI				*e*Sg	**Sg**	**12 44 50.9**	**-0.8**
ORLT	**Orhaneli**	**0.30**	**214**	*e*PG	**Pg**	**12 44 46.3**	**-2.2**
ORLT	**Orhaneli**	**0.30**	**214**	*e*Pg	**Pg**	**12 44 46.3**	**-2.2**
ARMT	**Armutlu**	**0.33**	**324**	*e*PG	**Pg**	**12 44 48.5**	**-0.5**
ARMT				*e*SG	**Sg**	**12 44 54.3**	**+0.9**
ARMT	**Armutlu**	**0.33**	**324**	*e*Pg	**Pg**	**12 44 48.5**	**-0.5**
ARMT				*e*Sg	**Sg**	**12 44 54.3**	**+0.9**
ADVT	**Abdulvahap**	**0.49**	**74**	*e*PG	**Pg**	**12 44 50.5**	**-1.4**
ADVT	**Abdulvahap**	**0.49**	**74**	*e*Pg	**Pg**	**12 44 50.6**	**-1.4**
CAVI	**Cavuskoy**	**0.56**	**100**	*e*PG	**Pg**	**12 44 51.5**	**-1.8**
CAVI	**Cavuskoy**	**0.56**	**100**	*e*Pg	**Pg**	**12 44 51.5**	**-1.8**
DURS	**Dursunbey**	**0.85**	**216**	P	**Pn**	**12 45 00.6**	**0.0**
DURS				S	**Sn**	**12 45 14.1**	**+0.9**
DURS	**Dursunbey**	**0.85**	**216**	*i* P	**Pn**	**12 45 00.6**	**0.0**
DURS				*i* S	**Sn**	**12 45 14.1**	**+0.9**
TVSB	**Tavsanli**	**0.89**	**163**	*e*PG	**Pg**	**12 44 57.1**	**-2.4**
TVSB	**Tavsanli**	**0.89**	**163**	*e*Pg	**Pg**	**12 44 57.1**	**-2.4**
GPA	**Golpazari**	**0.91**	**90**	*e*PG	**Pg**	**12 44 58.3**	**-1.7**
GPA	**Golpazari**	**0.91**	**90**	*e*Pg	**Pg**	**12 44 58.3**	**-1.7**
SILT	**Sile**	**0.94**	**25**	*e*PG	**Pb**	**12 45 00.2**	**-0.7**
SILT	**Sile**	**0.94**	**25**	*e*Pg	**Pb**	**12 45 00.2**	**-0.7**
EDC	**Edincik**	**0.96**	**273**	*e*PG	**Pg**	**12 44 59.6**	**-1.2**
EDC	**Edincik**	**0.96**	**273**	*e*Pg	**Pg**	**12 44 59.6**	**-1.2**
CTKS	**Kestanelik-??a**	**1.05**	**334**	*e*PN	**Pg**	**12 45 02.0**	**-0.5**
CTKS	**Kestanelik-??a**	**1.05**	**334**	*e*Pn	**Pg**	**12 45 02.0**	**-0.5**
GULT	**Gulveren**	**1.08**	**82**	*e*PG	**Pg**	**12 45 01.5**	**-1.6**
GULT	**Gulveren**	**1.08**	**82**	*e*Pg	**Pg**	**12 45 01.5**	**-1.6**
BALB	**Balikesir**	**1.16**	**236**	*e*PN	**Pg**	**12 45 02.7**	**-1.9**
BALB	**Balikesir**	**1.16**	**236**	*e*Pn	**Pg**	**12 45 02.7**	**-1.9**
MRMT	**Marmara Adasi**	**1.20**	**285**	*e*PN	**Pg**	**12 45 04.4**	**-1.0**
MRMT	**Marmara Adasi**	**1.20**	**285**	*e*Pn	**Pg**	**12 45 04.4**	**-1.0**
GDZ	**Gediz**	**1.24**	**167**	P	**Pn**	**12 45 08.1**	**+2.2**
GDZ				S	**Sn**	**12 45 24.9**	**+2.1**
GDZ	**Gediz**	**1.24**	**167**	*i* P	**Pn**	**12 45 08.1**	**+2.2**
GDZ				*i* S	**Sn**	**12 45 24.9**	**+2.1**
DEMI	**Demirci**	**1.29**	**194**	P	**Pn**	**12 45 07.2**	**+0.6**
DEMI				S	Sg	12 45 13.6	-10
DEMI	**Demirci**	**1.29**	**194**	*i* P	**Pn**	**12 45 07.2**	**+0.6**
DEMI				*i* S	Sg	12 45 13.7	-10
SAHE	**Sakarya_HENDEK**	**1.43**	**67**	P	**Pg**	**12 45 09.2**	**-0.7**
SAHE				S	**Sg**	**12 45 31.2**	**+2.7**
SAHE	**Sakarya_HENDEK**	**1.43**	**67**	*i* P	**Pg**	**12 45 09.2**	**-0.7**
SAHE				*i* S	**Sg**	**12 45 31.2**	**+2.7**
ESKT	**Eskisehir**	**1.54**	**120**	*i* P	Pg	12 45 15.2	+3.2
ESKT				*i* S	**Sg**	**12 45 34.0**	**+2.0**
SEYT	**Eskypehyr**	**1.54**	**120**	P	Pg	12 45 15.2	+3.2
SEYT				S	**Sg**	**12 45 34.0**	**+2.0**

ISCJB ***05*** *12:50:28.1±0.4,35°.94N±0°.04×138°.37E±0°.06, h200km±2km,mb3.2/9,Error ellipse: s-maj=8.0km s-min=5.8km az=2.3*
JMA ***05*** *12:50:28.9±0.1,35°.90N×138°.41E,h197km±1km,M3.2*
IDC ***05*** *12:50:28.6±0.5,35°.90N×138°.23E,h190km±3km,mb3.1/9, mb1 3.4/12,mb1mx3.2/45,mbtmp3.7/12,Error ellipse: s-maj=21.4km s-min=8.6km az=71.0*
ISC 05 12:50:28.9±0.7,35°.93N±0°.04×138°.39E±0°.06,h195km±5km, n32,σ0°65/43,mb3.3/9,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JNT	**Takato**	**0.21**	**254**	P	**Pn**	**12 50 55.0**	**+0.2**
JNT				S	**Sn**	**12 51 15.0**	**+0.3**
JRY	**Ryogami san**	**0.43**	**79**	P	**Pn**	**12 50 55.8**	**+0.6**
JRY				S	**Sn**	**12 51 16.1**	**+0.6**
JYN	**Shimob**	**0.45**	**163**	P	**Pn**	**12 50 55.5**	**+0.1**
JYN				*e*S	**Sn**	**12 51 16.5**	**+0.7**
MJAR	**Matsushiro Arr**	**0.62**	**347**	P	**Pn**	**12 50 56.2**	**+0.2**
	20nm,0.3s,baz=170,slow=5.6,SNR=331						
MJAR				S	**Sn**	**12 51 16.6**	**-0.5**
	6.4nm,0.3s,baz=196,slow=3.5,SNR=13						
MAT	**Matsushiro**	**0.62**	**347**	P	**Pn**	**12 50 56.2**	**+0.2**
MAT				S	**Sn**	**12 51 16.8**	**-0.3**
MAT	**Matsushiro**	**0.62**	**347**	P	**Pn**	**12 50 56.2**	**+0.2**
MAT				S	**Sn**	**12 51 16.8**	**-0.3**
JOD2	**Odawara 2**	**0.88**	**139**	P	**Pn**	**12 50 57.4**	**0.0**
JOD2				S	**Sn**	**12 51 19.3**	**-0.1**
JAG	**Ashikaga**	**0.99**	**60**	P	**Pn**	**12 50 58.1**	**0.0**
JGM	**Miyama**	**1.37**	**261**	P	**Pn**	**12 51 01.2**	**+0.1**
JGM				S	**Sn**	**12 51 25.5**	**-0.5**
JKG	**Kaga**	**1.70**	**282**	P	**Pn**	**12 51 04.7**	**+0.8**
JSZ	**Suzu**	**1.72**	**332**	P	**Pn**	**12 51 04.8**	**+0.7**
JSZ				S	**Sn**	**12 51 32.4**	**+0.7**
JNS	**Sasagawa**	**2.02**	**21**	P	**Pn**	**12 51 08.0**	**+0.8**
TK02	**Tokai 2**	**2.05**	**195**	P	**Pn**	**12 51 08.1**	**+0.8**
JIE	**Ise**	**2.06**	**222**	P	**Pn**	**12 51 08.1**	**+0.4**
JIE				*e*S	**Sn**	**12 51 38.2**	**+0.3**
JSD	**Sado**	**2.10**	**357**	P	**Pn**	**12 51 08.7**	**+0.6**
JSD				*e*S	**Sn**	**12 51 38.9**	**+0.2**
JFT	**Otama**	**2.23**	**44**	P	**Pn**	**12 51 10.2**	**+0.8**
JFT				*e*S	**Sn**	**12 51 40.8**	**-0.3**
BSO1	**Boso 1**	**2.48**	**120**	P	**Pn**	**12 51 11.5**	**-0.1**
TTO1	**TONANKAI O.B.S**	**2.66**	**210**	P	**Pn**	**12 51 15.1**	**+1.1**
JHJ	**Hachijo jima 2**	**3.04**	**157**	P	**Pn**	**12 51 18.2**	**-0.6**
	51nm,0.3s,baz=81,slow=7.8,SNR=16						
JHJ				S	**Sn**	**12 51 58.2**	**+0.6**
	20nm,0.3s,baz=150,slow=23,SNR=7.4						
ASAJ	**Asahikawa**	**8.79**	**20**	P	Pn	12 52 29.8	-2.5
	2.5nm,0.3s,baz=238,slow=11,SNR=31						
ASAJ				S	Sn	12 54 01.5	-9.3
	0.4nm,0.3s,baz=80,slow=30,SNR=2.2						
JCJ	**Chichijima**	**9.39**	**159**	P	Pn	12 52 34.0	-6.3
	12nm,0.3s,baz=87,slow=23,SNR=12						
JCJ				S	Sn	12 54 11.6	-14
	5.6nm,0.3s,baz=285,slow=22,SNR=4.9						
USRK	**Ussuriysk Ar.**	**9.60**	**331**	P	**Pn**	**12 52 42.9**	**0.0**
	0.2nm,0.3s,baz=152,slow=9.4,SNR=4.0						
KLR	**Kul'dur**	**14.15**	**342**	P	**Pn**	**12 53 38.9**	**-1.9**
	0.5nm,0.3s,baz=143,slow=10,SNR=8.9						
ZALV	**Zalesovo Beam**	**40.87**	**313**	P	**P**	**12 57 51.7**	**+0.1**
	0.5nm,0.3s,baz=98,slow=10,SNR=3.1						
MKAR	**Makanchi Array**	**42.65**	**303**	P	**P**	**12 58 05.0**	**-1.1**
	0.4nm,0.6s,baz=91,slow=9.7,SNR=5.1						
KURBB	**Kurchatov Arra**	**44.76**	**309**	P	**P**	**12 58 22.4**	**-0.4**
	1.1nm,0.7s,baz=85,slow=7.3,SNR=8.7						
ILAR	**Eielson Array**	**51.72**	**32**	P	**P**	**12 59 16.9**	**+1.0**
	0.2nm,0.6s,baz=263,slow=5.3,SNR=3.6						
WRA	**Warramunga Arr**	**55.70**	**185**	P	**P**	**12 59 44.5**	**-0.7**
	0.9nm,0.4s,baz=0.1,slow=7.6,SNR=44						
ASAR	**Alice Springs**	**59.43**	**185**	P	**P**	**13 00 10.8**	**-0.3**
	0.2nm,0.4s,baz=357,slow=5.1,SNR=12						
NVAR	**Mina Array Bea**	**77.59**	**51**	P	**P**	**13 02 04.4**	**+0.6**
	0.3nm,0.5s,baz=282,slow=5.4,SNR=3.3						
PDAR	**Pinedale Array**	**80.16**	**44**	P	**P**	**13 02 18.9**	**+1.2**
	0.2nm,0.4s,baz=342,slow=5.7,SNR=2.8						
TXAR	**Lajitas Array**	**92.71**	**51**	P	**P**	**13 03 19.3**	**+0.1**
	0.2nm,0.5s,baz=310,slow=2.4,SNR=4.8						

IDC ***05*** *12:56:32.6±1.8,31°.37S×176°.86W,h0km,mb3.6/3, mb1 3.9/5,mb1mx3.7/38,mbtmp3.7/5,ML3.7/2,Error ellipse: s-maj=44.3km s-min=30.3km az=133.0*
ISCJB ***05*** *12:56:35.3±1.3,31°.45S±0°.05×177°.1W±0°.2,h33km, mb3.5/3,Error ellipse: s-maj=23.0km s-min=5.4km az=11.6*
ISC 05 12:56:37.2±1.5,31°.38S±0°.07×177°.0W±0°.2,h35km,n11, σ1°39/15,mb3.5/3,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**2.26**	**340**	Pn	**Pn**	**12 57 10.7**	**-1.4**
	51nm,0.3s,baz=126,slow=19,SNR=2.9						
RAO				Sn	**Sn**	**12 57 38.8**	**0.0**
	273nm,0.3s,baz=270,slow=20,SNR=6.1						
HAZ	**Te Kaha**	**7.67**	**213**	PN	**Pn**	**12 58 27.4**	**+0.9**
HAZ				SN	**Sn**	**12 59 53.1**	**+1.0**
PUZ	**Puketiti**	**7.73**	**209**	PN	**Pn**	**12 58 26.3**	**-0.9**
PUZ				SN	**Sn**	**12 59 52.9**	**-0.6**
TWGZ	**Tauwhareparae**	**7.93**	**210**	SN	**Sn**	**12 59 59.1**	**+0.5**
MWZ	**Matawai**	**8.26**	**211**	SN	**Sn**	**13 00 06.5**	**-0.1**
URZ	**Urewera**	**8.39**	**214**	Pn	**Pn**	**12 58 34.9**	**-1.4**
	0.4nm,0.3s,baz=42,slow=16,SNR=5.4						
URZ				Sn	**Sn**	**13 00 09.4**	**-0.4**
	2.5nm,0.3s,baz=174,slow=23,SNR=15						
URZ	**Urewera**	**8.39**	**214**	SN	**Sn**	**13 00 09.3**	**-0.4**
RPZ	**Rata Peaks**	**15.51**	**214**	Pn	**Pn**	**13 00 10.2**	**-3.0**
	1.2nm,0.3s,baz=23,slow=2.9,SNR=7.9						
RPZ				Sn	Sn	13 02 50.9	-13
	0.3nm,0.3s,baz=30,slow=20,SNR=2.6						
ASAR	**Alice Springs**	**43.91**	**268**	P	**P**	**13 04 42.6**	**+1.9**
	0.4nm,0.7s,baz=106,slow=6.9,SNR=7.1						
WRA	**Warramunga Arr**	**44.98**	**273**	P	**P**	**13 04 51.0**	**+1.6**
	0.4nm,0.4s,baz=111,slow=8.1,SNR=9.2						
NVAR	**Mina Array Bea**	**88.39**	**42**	P	**P**	**13 09 26.3**	**+0.5**
	0.1nm,0.3s,baz=202,slow=6.8,SNR=2.6						

IDC 05 13:02:13.8±42.0,23°.38S×177°.42W,h0km,mb4.1/3, mb1 4.3/3,mb1mx3.7/37,mbtmp4.1/3,Error ellipse: s-maj=780.5km s-min=149.6km az=87.0,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**37.11**	**248**	P	P	13 09 25.9	-0.4
	0.5nm,0.4s,baz=102,slow=11,SNR=5.9						
ASAR	**Alice Springs**	**44.46**	**259**	P	P	13 10 26.9	-0.2
	0.6nm,0.3s,baz=94,slow=7.1,SNR=42						
WRA	**Warramunga Arr**	**44.81**	**265**	P	P	13 10 30.0	+0.1
	2.6nm,0.5s,baz=103,slow=8.0,SNR=41						

JMA ***05*** *13:02:51.8±0.1,24°.23N×121°.70E,h63km±1km,M2.6*
TAP ***05*** *13:02:52.8,24°.28N×121°.72E,h57km,ML3.0,C*
ISCJB ***05*** *13:02:53.3±0.3,24°.27N±0°.02×121°.82E±0°.02,h55km±5km, Error ellipse: s-maj=4.2km s-min=2.4km az=142.8*
ISC 05 13:02:53.9±1.2,24°.26N±0°.03×121°.81E±0°.03,h51km±7km, n49,σ1°31/92,2C-2D,Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ENA	**Nanau**	**0.17**	**339**	*i* P	**Pn**	**13 03 01.8**	**-0.4**
	baz=1.0						
ENA				S	**Sn**	**13 03 09.6**	**+1.5**
	baz=1.0						
TWD	**Chiawan**	**0.27**	**227**	P	**Pn**	**13 03 02.2**	**-0.5**
	baz=223						
TWD				S	**Sn**	**13 03 08.8**	**-0.3**
	baz=223						
HWA	**Hwalien**	**0.34**	**213**	*e*P	**Pn**	**13 03 03.6**	**+0.1**
	baz=209						
HWA				*e*S	**Sn**	**13 03 12.7**	**+2.5**
	baz=209						
TWC	**Suao**	**0.35**	**6**	P	**Pn**	**13 03 03.6**	**+0.1**
	baz=16						
TWC				S	**Sn**	**13 03 12.2**	**+1.8**
	baz=16						
NNS	**Nan Shan**	**0.43**	**294**	*e*P	**Pn**	**13 03 03.6**	**-1.0**
	baz=297						
NNS				*e*S	**Sn**	**13 03 11.5**	**-0.7**
	baz=297						
ENTT	**Nioudou**	**0.43**	**330**	P	**Pn**	**13 03 03.8**	**-0.7**
	baz=342						
ENTT				S	**Sn**	**13 03 11.9**	**-0.2**
	baz=342						
TWE	**Neicheng**	**0.47**	**344**	P	**Pn**	**13 03 04.5**	**-0.3**
	baz=349						
TWE				S	**Sn**	**13 03 12.7**	**-0.1**
	baz=349						
WHF	**Hehuan Shan**	**0.51**	**257**	*e*P	**Pn**	**13 03 04.9**	**-0.8**
	baz=253						
WHF				*e*S	**Sn**	**13 03 13.3**	**-0.9**
	baz=253						
ESL	**Shilin**	**0.56**	**218**	P	**Pn**	**13 03 04.5**	**-1.5**
	baz=215						
ESL				S	**Sn**	**13 03 13.1**	**-1.5**
	baz=215						
TWT	**Tachien**	**0.58**	**269**	*e*P	**Pn**	**13 03 06.0**	**-0.3**
	baz=262						
TWT				*e*S	**Sn**	**13 03 14.8**	**-0.4**
	baz=262						
NSK	**Sanguang**	**0.58**	**315**	P	**Pn**	**13 03 05.1**	**-1.2**
	baz=320						
NSK				S	**Sn**	**13 03 13.7**	**-1.4**
	baz=320						
EGS		**0.59**	**11⇓**	*i* P	**Pn**	**13 03 06.8**	**+0.5**
	baz=19						
EGS				S	**Sn**	**13 03 17.5**	**+2.3**
	baz=19						
TWB1	**Santiao Chiao**	**0.76**	**12⇑**	*i* P	**Pn**	**13 03 08.8**	**+0.4**
	baz=28						
TWB1				*i* S	**Sn**	**13 03 20.6**	**+1.6**
	baz=28						
NWF	**Wu-fen Shan**	**0.80**	**358**	*e*P	**Pn**	**13 03 08.7**	**-0.4**
	baz=350						
NWF				*e*S	**Sn**	**13 03 20.5**	**+0.3**
	baz=350						
NSTT	**Nanjuang**	**0.82**	**297**	P	**Pn**	**13 03 08.2**	**-1.0**
	baz=298						
NSTT				S	**Sn**	**13 03 19.8**	**-0.7**
	baz=298						
EHY	**Hungye**	**0.88**	**211**	P	**Pn**	**13 03 08.6**	**-1.4**
	baz=207						
EHY				*e*S	**Sn**	**13 03 19.6**	**-2.2**
	baz=207						
TWS1	**Kuangyinshan**	**0.91**	**337**	*e*P	**Pn**	**13 03 08.0**	**-2.4**
	baz=340						
TWS1				*e*S	**Sn**	**13 03 21.4**	**-1.1**
	baz=340						
SMLT	**Sun Moon Lake**	**0.91**	**246**	P	**Pn**	**13 03 10.9**	**+0.4**
	baz=239						
SMLT				S	**Sn**	**13 03 24.0**	**+1.2**
	baz=239						
TYC	**Yuchr**	**0.94**	**248**	⇓P	**Pn**	**13 03 11.3**	**+0.4**
	baz=243						
TYC				S	**Sn**	**13 03 23.3**	**0.0**
	baz=243						
TWQ1	**Liyutan**	**0.95**	**275**	P	**Pn**	**13 03 09.1**	**-1.8**
	baz=275						
TWQ1				*e*S	**Sn**	**13 03 22.9**	**-0.7**
	baz=275						
TWF1	**Yuli**	**1.02**	**207**	*e*P	**Pn**	**13 03 10.4**	**-1.6**
	baz=210						
TWY	**Chenhua**	**1.02**	**349**	*e*P	**Pn**	**13 03 11.6**	**-0.4**
	baz=342						
TWY				*e*S	**Sn**	**13 03 24.3**	**-

JIJ				eS	Sn	13 03 51.0	-1.3
SCZT	**Fangliau**	**2.18**	**210**	eP	Pn	13 03 29.6	+2.0
	baz=225						
LAY	**Lan-yu**	**2.23**	**186**	eP	Pn	13 03 25.9	-2.5
	baz=179						
LAY				eS	Sn	13 03 52.6	-2.2
	baz=179						
JISG	**Ishigakijimahi**	**2.30**	**81**	P	Pn	13 03 28.8	-0.6
JISG				S	Sn	13 03 56.0	-0.5
JTJ	**Tarama**	**2.66**	**81**	P	Pn	13 03 34.7	+0.4
JTJ				S	Sn	13 04 05.5	+0.1

*ISCJB **05** 13:10:18.9±1.2, 36°.71N±0°.04×141°.25E±0°.06, h9km±6km, mb3.3/6, Error ellipse: s-maj=8.4km s-min=6.7km az=17.9*
*IDC **05** 13:10:18.7±1.2, 36°.89N×141°.24E, h0km, mb3.3/6, mb1 3.5/7, mb1mx3.3/66, mbtmp3.3/7, ML3.2/1, MS2.2/2, Ms1 2.2/2, ms1mx2.0/21, Error ellipse: s-maj=28.1km s-min=23.6km az=56.0*
*JMA **05** 13:10:22.6, 36°.76N×141°.01E, h18km±1km, M3.4*
ISC 05 13:10:20.8±1.9, 36°.73N±0°.05×141°.14E±0°.08, h12km±10km, n15, σ0s92/22, mb3.4/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.46**	**324**	P	Pg	13 10 30.3	+0.4
ONAJ				S	Sg	13 10 36.2	+0.2
JHO	**Hitachi**	**0.47**	**255**	P	Pg	13 10 30.2	+0.1
JHO				eS	Sg	13 10 35.9	-0.5
JFK	**Kawauchi**	**0.67**	**342**	P	Pb	13 10 34.5	0.0
JFK				S	Sb	13 10 43.3	-0.4
JYT	**Yasato**	**0.91**	**237**	P	Pg	13 10 38.2	-0.2
JYT				eS	Sg	13 10 50.2	-0.1
JSB	**Shiboa**	**1.00**	**284**	P	Pb	13 10 40.2	0.0
JSB				eS	Sg	13 10 53.2	-0.1
JFT	**Otama**	**1.01**	**321**	P	Pb	13 10 40.3	0.0
JFT				eS	Sg	13 10 53.1	-0.5
MJAR	**Matsushiro Arr**	**2.36**	**266**	Pn	Pn	13 11 00.5	+1.1
	5.7nm,0.3s,baz=78,slow=17,SNR=44						
MJAR				Sn	Sb	13 11 30.9	-1.6
	13nm,0.3s,baz=88,slow=26,SNR=11						
MJAR				LR	LR	13 12 18.7	
	comp=Z,31nm,18.5s,baz=85,slow=49						
MAT	**Matsushiro**	**2.37**	**266**	P	Pn	13 11 01.2	+1.7
MAT				eS	Sn	13 11 29.7	+1.2
KSRS	**Korea Array**	**10.58**	**278**	LR	LR	13 17 01.1	
	comp=Z,15nm,18.6s,baz=245,slow=38						
SONM	**Songino Array**	**27.77**	**305**	P	P	13 16 07.8	-1.8
	0.3nm,0.4s,baz=118,slow=8.3,SNR=2.5						
MKAR	**Makanchi Array**	**44.09**	**302**	P	P	13 18 29.1	+0.3
	0.1nm,0.4s,baz=88,slow=9.4,SNR=2.6						
KURBB	**Kurchatov Arra**	**46.01**	**308**	P	P	13 18 43.5	-0.4
	0.2nm,0.4s,baz=83,slow=7.4,SNR=3.2						
WRA	**Warramunga Arr**	**56.73**	**188**	P	P	13 20 05.1	+0.6
	0.4nm,0.5s,baz=3.9,slow=7.4,SNR=9.3						
ASAR	**Alice Springs**	**60.46**	**188**	P	P	13 20 31.6	+1.1
	0.2nm,0.7s,baz=19,slow=5.9,SNR=4.4						
YKA	**Yellowknife Ar**	**64.18**	**30**	P	P	13 20 53.8	-1.1
	0.1nm,0.6s,baz=308,slow=6.9,SNR=2.5						

IDC 05 13:23:21.1±9.5, 4°.53S×153°.30E, h157km±64km, mb3.1/3, mb1 3.4/4, mb1mx3.1/41, mbtmp3.7/4, Error ellipse: s-maj=106.7km s-min=40.8km az=103.0, New Ireland region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**7.78**	**231**	P	Pn	13 25 11.7	+0.1
	3.5nm,0.3s,baz=49,slow=4.7,SNR=12						
PMG				S	Sn	13 26 39.5	+0.9
	1.8nm,0.3s,baz=63,slow=2.3,SNR=4.2						
WRA	**Warramunga Arr**	**23.99**	**229**	P	P	13 28 22.1	+0.6
	1.2nm,0.4s,baz=55,slow=10,SNR=27						
ASAR	**Alice Springs**	**26.68**	**223**	P	P	13 28 44.9	-0.9
	0.2nm,0.4s,baz=56,slow=8.6,SNR=8.0						
MKAR	**Makanchi Array**	**80.45**	**319**	P	P	13 35 15.1	-0.4
	0.1nm,0.5s,baz=116,slow=6.6,SNR=2.4						
TORD	**Torodi Ar. Bea**	**150.69**	**289**	PKPbc	PKPbc	13 42 56.2	+0.4
	0.5nm,0.9s,baz=84,slow=5.4,SNR=2.8						

*NIED **05** 13:23:00, 38°.90N×142°.00E, h47km, Mw3.8 Best double couple: M0=5.52000×10^14 NP1:φ=159.00000°, δ30.00000°, λ50.00000°. NP2:φ=23.00000°, δ68.00000°, λ110.00000°.*
*ISCJB **05** 13:23:38.3±0.8, 38°.88N±0°.04×142°.02E±0°.10, h57km±6km, mb3.7/10, MS3.9/1, Error ellipse: s-maj=12.9km s-min=6.2km az=15.2*
*JMA **05** 13:23:39.4±0.1, 38°.88N×141°.99E, h50km±1km, M3.9*
JMA Felt II J1.
*IDC **05** 13:23:40.8±2.3, 38°.89N×142°.00E, h66km±20km, mb3.5/10, mb1 3.6/14, mb1mx3.4/48, mbtmp3.7/14, MS2.5/4, Ms1 2.5/4, ms1mx2.3/30, Error ellipse: s-maj=23.9km s-min=13.9km az=106.0*
ISC 05 13:23:39.4±1.2, 38°.88N±0°.05×142°.01E±0°.09, h49km±9km, n27, σ1s52/32, mb3.7/10, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.33**	**306**	P	Pn	13 23 48.8	+0.1
OFUJ				S	Sn	13 23 55.1	-0.3
JMK	**Ichinoseki**	**0.62**	**276**	P	Pn	13 23 52.0	0.0
JMK				S	Sn	13 24 00.8	-0.4
JIO	**Ouri**	**0.68**	**231**	P	Pn	13 23 52.4	-0.3
JIO				S	Sn	13 24 01.2	-1.2
JOM	**Ohasama**	**0.81**	**317**	P	Pn	13 23 54.6	+0.1
JOM				S	Sn	13 24 05.1	-0.5
JOU	**Okura**	**1.18**	**244**	P	Pn	13 23 59.2	-0.3
JOU				eS	Sn	13 24 13.9	-0.5
JRG	**Rokugo**	**1.19**	**296**	P	Pn	13 23 59.5	-0.1
JRG				eS	Sn	13 24 14.2	-0.4
JYK	**Kaneyama**	**1.29**	**272**	P	Pn	13 24 00.9	-0.1
JMM	**Marumori**	**1.40**	**224**	P	Pn	13 24 01.7	-0.7
JMM				S	Sn	13 24 18.9	-0.8
MAT	**Matsushiro**	**3.82**	**233**	P	Pn	13 24 38.4	+2.8
MAT				eS	Sn	13 25 24.7	+5.4
MJAR	**Matsushiro Arr**	**3.82**	**233**	P	Pn	13 24 37.1	+1.4
	2.5nm,0.3s,baz=37,slow=12,SNR=88						
MJAR				LR	LR	13 26 23.6	
	comp=Z,32nm,18.1s,baz=290,slow=43						
ASAJ	**Asahikawa**	**5.25**	**5**	P	Pn	13 24 56.6	+1.4
	0.9nm,0.3s,baz=210,slow=14,SNR=19						
ASAJ				S	Sn	13 25 54.5	+0.2
	0.9nm,0.3s,baz=107,slow=28,SNR=4.0						
JHJ	**Hachijo jima 2**	**6.03**	**198**	LR	LR	13 27 36.0	
	comp=Z,53nm,19.5s,baz=73,slow=39						
USRK	**Ussuriysk Ar.**	**9.20**	**308**	P	Pn	13 25 51.4	+2.0
	0.3nm,0.3s,baz=120,slow=13,SNR=11						
JNU	**Nakatsue**	**10.69**	**241**	LR	LR	13 31 04.3	
	comp=Z,12nm,19.0s,baz=324,slow=42						
KSRS	**Korea Array**	**11.19**	**267**	P	Pn	13 26 19.1	+2.6
	0.3nm,0.3s,baz=80,slow=14,SNR=3.9						
KLR	**Kul'dur**	**12.69**	**328**	LR	LR	13 31 16.9	
	comp=Z,38nm,19.5s,baz=140,slow=36						
SEY	**Seymchan**	**24.89**	**11**	P	P	13 28 58.0	+0.8
	2.1nm,0.9s,baz=201,slow=11,SNR=5.7						
SONM	**Songino Array**	**27.20**	**301**	P	P	13 29 19.3	+0.9
	0.2nm,0.4s,baz=99,slow=7.4,SNR=3.0						
ZALV	**Zalesovo Beam**	**41.04**	**311**	P	P	13 31 16.1	-1.6
	1.0nm,0.5s,baz=102,slow=6.2,SNR=5.9						
MKAR	**Makanchi Array**	**43.56**	**301**	P	P	13 31 37.9	-0.5
	1.7nm,0.6s,baz=86,slow=9.6,SNR=21						
ILAR	**Eielson Array**	**47.68**	**33**	P	P	13 32 11.3	+0.8
	0.3nm,0.6s,baz=278,slow=6.1,SNR=4.1						
WRA	**Warramunga Arr**	**58.96**	**188**	P	P	13 33 32.5	-1.2
	0.4nm,0.6s,baz=5.1,slow=7.3,SNR=7.9						
ASAR	**Alice Springs**	**62.68**	**188**	P	P	13 33 58.5	-0.5
	0.3nm,0.7s,baz=3.1,slow=4.8,SNR=5.1						
PALK	**Pallekele**	**63.24**	**257**	LR	LR	14 04 58.3	
	comp=Z,71nm,18.5s,baz=68,slow=39						
GEYT	**Alibeck**	**63.36**	**298**	P	P	13 34 02.5	-1.1
	1.0nm,0.3s,baz=64,slow=3.4,SNR=2.2						
FINES	**FINESS Array B**	**67.40**	**332**	P	P	13 34 28.8	-0.4
	1.3nm,0.6s,baz=70,slow=12,SNR=5.8						
AKASG	**Malin Array Be**	**73.13**	**322**	P	P	13 35 03.5	-0.9
	0.4nm,0.4s,baz=56,slow=6.8,SNR=3.4						

*IDC **05** 13:24:02.9±0.5, 16°.70N×98°.76W, h0km, mb4.9/27, mb1 5.0/32, mb1mx5.0/39, mbtmp4.9/32, ML4.5/5, MS5.3/29, Ms1 5.3/29, ms1mx5.2/35, Error ellipse: s-maj=16.7km s-min=10.7km az=54.0*
*BJI **05** 13:24:05.3, 16°.80N×98°.60W, h24km, mB5.6/23, Ms5.7/21, Ms7 5.5/21*
*NEIC **05** 13:24:06.0±0.0, 16°.81N×98°.59W, h20km, Moment Tensor Solution. s8 Moment tensor: Scale 10^17Nm; Mrr 1.40; Mθθ-1.60; Mφφ 0.20; Mrθ-3.30; Mrφ-0.30; Mθφ 2.60; Best double couple: M0=4.00000×10^17 NP1:φ=303.00000°, δ82.00000°, λ102.00000°. NP2:φ=63.00000°, δ14.00000°, λ31.00000°. Principal axes: T 4.8000, Plg50.0000°, Azm226.0000°; N -0.7000, Plg12.0000°, Azm121.0000°; P -4.1000, Plg36.0000°, Azm22.0000°;*
*MOS **05** 13:24:07.3±1.0, 16°.81N×98°.53W, h33km, mb5.5/64, MS5.3/27 Error ellipse: s-maj=8.6km s-min=3.9km az=98.9*
*MEX **05** 13:24:07.6±0.5, 16°.61N×98°.91W, h12km±4km, MD5.5*
*GCMT **05** 13:24:07.8±0.1, 16°.85N×98°.72W, h31km, MW5.7/120, Moment Tensor Solution. s111,c197; s120,c284; Duration: 1s7 Moment tensor: Scale 10^17Nm; Mrr 0.73±.03; Mθθ-1.32±.03; Mφφ 0.59±.03; Mrθ-3.62±.11; Mθφ-0.08±.03; Mrφ 2.44±.09; Best double couple: M0=4.51400×10^17 NP1:φ=303.00000°, δ85.00000°, λ102.00000°. NP2:φ=54.00000°, δ12.00000°, λ22.00000°. Principal axes: T 4.5380, Plg48.0000°, Azm225.0000°; N -0.0480, Plg12.0000°, Azm122.0000°; P -4.4890, Plg39.0000°, Azm22.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*
*NEIC **05** 13:24:07.8±0.2, 16°.78N×98°.62W, h24km, mb5.4/221, ME5.2, MS5.4/141, MW5.5, MW5.7, MD5.5(MEX) Error ellipse: s-maj=4.1km s-min=2.6km az=35.0, Moment Tensor Solution. s42 Moment tensor: Scale 10^17Nm; Mrr 0.14; Mθθ-0.24; Mφφ 0.10; Mrθ-1.77; Mθφ-0.89; Mrφ 1.40; Best double couple: M0=2.40000×10^17 NP1:φ=20.00000°, δ14.00000°, λ-12.00000°. NP2:φ=122.00000°, δ87.00000°, λ-103.00000°. Principal axes: T 2.7400, Plg41.0000°, Azm224.0000°; N -0.8600, Plg13.0000°, Azm122.0000°; P -1.8900, Plg46.0000°, Azm18.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from CMT mechanism.*
NEIC Felt [III] at Mexico and Puebla and [II] at Oaxaca and Toluca. Felt in much of southern Mexico.
*ISCJB **05** 13:24:08.6±0.6, 16°.96N±0°.02×98°.51W±0°.02, h33km±4km, mb5.3/219, MS5.4/196 Error ellipse: s-maj=3.5km s-min=2.4km az=40.4*
ISC 05 13:24:07.6±0.4, 16°.70N±0°.03×98°.80W±0°.02, h32km±2km, h31km:pP-P, n1188, σ1s91/1203, mb5.3/226, MS5.4/202, 2C-11D, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PNIG	**Pinotepa**	**0.72**	**115**	eP	Pn	13 24 20.5	-1.1
PNIG				eS	Sb	13 24 30.9	-0.4
PNIG	**Pinotepa**	**0.72**	**115**	eP	Pn	13 24 20.5	-1.1
PNIG				eS	Sb	13 24 30.9	-0.4
TLIG	**Tlapa**	**0.89**	**15**	eP	Pn	13 24 23.3	-0.7
TLIG				i S	Sb	13 24 36.2	+0.1
TLIG	**Tlapa**	**0.89**	**15**	ePn	Pn	13 24 23.5	-0.5
ACX	**Acapulco**	**1.02**	**280**	i P	Pn	13 24 25.5	-0.3
ACX				i S	Sn	13 24 38.3	-0.8
ACX	**Acapulco**	**1.02**	**280**	i P	Pn	13 24 25.5	-0.3
ACX				i S	Sn	13 24 38.3	-0.8
ACP2	**Acapulco**	**1.05**	**280**	eP	Pn	13 24 23.0	-3.1
ACP2				i S	Sn	13 24 35.3	-4.5
HMTT	**Tlapaneco**	**1.12**	**12**	eP	Pn	13 24 27.2	0.0
HMTT				i S	Sb	13 24 41.8	-0.8
CAIG	**El Cayaco**	**1.44**	**284**	eP	Pn	13 24 28.7	-2.8
CAIG				eS	Sn	13 24 45.4	-4.1
CAIG	**El Cayaco**	**1.44**	**284**	eP	Pn	13 24 28.7	-2.8
CAIG				eS	Sn	13 24 45.4	-4.1
MEIG	**Mezcala**	**1.45**	**327**	eP	Pn	13 24 31.1	-0.5
MEIG				eS	Sn	13 24 48.5	-1.1
MEIG	**Mezcala**	**1.45**	**327**	eP	Pn	13 24 31.1	-0.5
MEIG				eS	Sn	13 24 48.5	-1.1
VHO	**Vista Hermosa**	**2.02**	**79**	eP	Pn	13 24 40.1	+0.6
VHO				eS	Sb	13 25 06.3	-2.1
VHO	**Vista Hermosa**	**2.02**	**79**	eP	Pn	13 24 40.1	+0.6
VHO				eS	Sb	13 25 06.3	-2.1
ARIG	**Puente Sto Nin**	**2.15**	**317**	eP	Pn	13 24 40.9	-0.5
ARIG				eS	Sn	13 25 06.1	-0.9
YAIG	**Yautepec**	**2.16**	**353**	eP	Pn	13 24 41.6	0.0
YAIG				eS	Sn	13 25 07.7	+0.2
YAIG	**Yautepec**	**2.16**	**353**	eP	Pn	13 24 41.6	0.0
YAIG				eS	Sn	13 25 07.7	+0.2
TPIG	**Tehuac#an**	**2.19**	**39**	eP	Pn	13 24 42.2	+0.2
TPIG				i S	Sn	13 25 10.5	+2.3
TPIG	**Tehuac#an**	**2.19**	**39**	eP	Pn	13 24 42.2	+0.2
TPIG				i S	Sn	13 25 10.5	+2.3
MAVM	**Malinalco, Edo**	**2.34**	**344**	eP	Pn	13 24 44.3	+0.2
MAVM				i S	Sn	13 25 12.0	+0.2
PPM	**Popocatepetl**	**2.36**	**4**	eP	Pn	13 24 44.9	+0.3
PPM				eS	Sn	13 25 13.4	+0.7
PPM	**Popocatepetl**	**2.36**	**4**	eP	Pn	13 24 44.9	+0.3
PPM				eS	Sn	13 25 13.4	+0.7
PPM	**Popocatepetl**	**2.36**	**4**	eP	Pn	13 24 44.9	+0.3
PPM				eS	Sn	13 25 13.4	+0.7
MZVM		**2.51**	**351**	eP	Pn	13 24 47.1	+0.9
MZVM				i S	Sn	13 25 16.1	+0.4
UNM	**Universidad Na**	**2.64**	**352**	eP	Pb	13 24 51.7	-2.7
UNM	**Universidad Na**	**2.64**	**352**	eP	Pn	13 24 48.9	+0.7
UNM				i S	Sn	13 25 20.3	+0.9
UNM	**Universidad Na**	**2.64**	**352**	ePn	Pb	13 24 51.6	-2.7
UNM				i S	Sn	13 25 20.3	+0.9
ZIIG	**Zihuatanejo**	**2.70**	**290**	eP	Pn	13 24 46.9	-1.9
ZIIG				eS	Sn	13 25 17.4	-3.0
ZIIG	**Zihuatanejo**	**2.70**	**290**	eP	Pn	13 24 46.9	-1.9
ZIIG				eS	Sn	13 25 17.4	-3.0
HUIG	**Huatulco**	**2.75**	**109**	eP	Pn	13 24 49.4	-0.1
HUIG				i S	Sn	13 25 21.6	0.0
HUIG	**Huatulco**	**2.75**	**109**	eP	Pn	13 24 49.4	-0.1
HUIG				i S	Sn	13 25 21.6	0.0
MOIG	**Morelia**	**3.73**	**323**	eP	Pn	13 25 03.0	-0.2
MOIG				eS	Sn	13 25 46.8	+0.6
MOIG	**Morelia**	**3.73**	**323**	ePn	Pn	13 25 05.0	+1.8
MOIG				eS	Sn	13 25 46.8	+0.6
CMIG	**Matias Romero**	**3.77**	**84**	Pn	Pn	13 25 03.5	-0.1
	24nm,0.3s,baz=247,slow=15,SNR=183						
CMIG				Sn	Sn	13 25 46.4	-0.5
	663nm,0.3s,baz=256,slow=20,SNR=10.0						
CMIG				Lg	Lg	13 26 07.3	
	3μm,0.3s,baz=357,slow=21,SNR=19						
CMIG				LR	LR	13 26 55.6	
	comp=Z,55μm,20.2s,baz=248,slow=46						
MMIG	**Aquila**	**4.61**	**291**	eP	Pn	13 25 13.7	-1.5
MMIG				eS	Sn	13 26 05.9	-1.8
MMIG	**Aquila**	**4.61**	**291**	eP	Pn	13 25 13.7	-1.5
MMIG				eS	Sn	13 26 05.9	-1.8
R15V		**5.51**	**297**	eP	Pn	13 25 27.4	-0.1
R15V				i S	Sn	13 26 29.2	-0.7
CCIG	**Comitan**	**6.41**	**93**	ePn	Pn	13 25 45.8	+5.8
CJM	**Chamela**	**6.55**	**296**	eP	Pn	13 25 42.2	+0.3
CJM				eS	Sn	13 26 54.5	-1.0
CJM	**Chamela**	**6.55**	**296**	eP	Pn	13 25 42.2	+0.3
CJM				eS	Sn	13 26 54.5	-1.0
ZAIG	**Zacatecas**	**7.00**	**330**	ePn	Pn	13 25 51.6	+3.4
035Z	**Hargill**	**9.74**	**4**	P	Pn	13 26 27.1	+1.6
	baz=183						
035A	**Encino**	**10.21**	**4**	P	Pn	13 26 33.6	+1.6
	baz=183						
034A	**Hebbronville**	**10.31**	**1**	P	Pn	13 26 35.3	+1.9
	baz=180						
TEIG	**Tepich**	**10.59**	**69**	Pn	Pn	13 26 36.9	-0.2
	3.8nm,0.3s,baz=90,slow=24,SNR=26						
TEIG				Sn	Sn	13 28 30.1	-4.6
	35nm,0.3s,baz=0.0,slow=20,SNR=5.3						
TEIG				LR	LR	13 31 42.3	
	comp=Z,15μm,20.9s,baz=164,slow=44						
TEIG	**Tepich**	**10.59**	**69**	ePn	Pn	13 26 37.0	-0.1
TEIG				Sn	Sn	13 28 30.1	-4.6
TEIG				eSn	Sn	13 28 30.8	-3.8
934A	**Benavides**	**10.85**	**1**	P	Pn	13 26 42.7	+1.9
	baz=180						
933A	**Laredo**	**10.87**	**358**	P	Pn	13 26 42.9	+1.9
	baz=177,SNR=12						
834A	**Tilden**	**11.37**	**1**	P	Pn	13 26 49.3	+1.4
	baz=180						
TGUH	**Tegucigalpa,Un**	**11.43**	**102**	ePn	Pn	13 26 50.8	+2.1
835A	**Beeville**	**11.57**	**4**	P	Pn	13 26 52.4	+1.9
	baz=184,SNR=10						
832A	**Faith Ranch, C**	**11.58**	**355**	P	Pn	13 26 52.2	+1.5
	baz=174						
833A	**Chaparral WMA,**	**11.58**	**357**	P	Pn	13 26 52.5	+1.7
	baz=176,SNR=26						
H06E1	**SOCORRO T-PHASI**	**11.73**	**282**	Pn	Pn	13 26 52.1	-0.8
H06E1				T	T	13 39 11.7	
	SNR=21						
H06S1	**SOCORRO T**	**11.76**	**282**	Pn	Pn	13 26 54.9	+1.7
	SNR=4.3						
H06S1				T	T	13 39 04.9	
	SNR=14						
H06N1	**SOCORRO T-PHASI**	**11.80**	**282**	Pn	Pn	13 26 53.3	-0.5
	SNR=12						
H06N1				T	T	13 39 23.4	
	SNR=14						
733A	**Divot King Ran**	**11.97**	**358**	P	Pn	13 26 57.6	+1.5
	baz=177,SNR=13						
HPIG		**12.01**	**329**	ePn	Pn	13 26 59.8	+3.0
734A	**La Parita Cree**	**12.09**	**1**	P	Pn	13 26 58.6	+0.8
	baz=180						
735A	**Kenedy**	**12.13**	**4**	P	Pn	13 26 59.3	+1.1
	baz=184,SNR=6.0						
737A	**Port Lavaca**	**12.20**	**10**	P	Pn	13 26 59.2	-0.1
	baz=190						
736A	**Circle Diamond**	**12.30**	**7**	P	Pn	13 27 02.1	+1.6
	baz=187,SNR=6.2						
738A	**Farr-Stevens R**	**12.43**	**13**	P	Pn	13 27 02.6	+0.3
	baz=193						
SLBS	**Sierra La Lagu**	**12.55**	**305**	ePn	Pn	13 27 04.7	+0.5
634A	**China Grove, S**	**12.63**	**2**	P	Pn	13 27 04.8	-0.3
	baz=181						
635A	**Leesville**	**12.66**	**4**	P	Pn	13 27 05.3	-0.3
	baz=184,SNR=5.3						
633A	**Saathoff Ranch**	**12.70**	**359**	P	Pn	13 27 06.0	-0.1
	baz=178,SNR=13						
636A	**Smothers Creek**	**12.82**	**7**	P	Pn	13 27 07.9	+0.2
	baz=187,SNR=11						
637A	**Eagle Lake**	**12.88**	**10**	P	Pn	13 27 08.3	-0.2
	baz=190,SNR=6.4						
638A	**Rosharon**	**13.03**	**13**	P	Pn	13 27 09.3	-1.2
	baz=194						
LPIG	**La Paz**	**13.05**	**306**	Pn	Pn	13 27 11.5	+0.6
	18nm,0.3s,baz=266,slow=3.3,SNR=7.8						
LPIG				LR	LR	13 31 51.6	
	comp=Z,21μm,18.3s,baz=129,slow=36						
534A	**Blanco**	**13.27**	**1**	P	Pn	13 27 13.2	-0.6
	baz=181,SNR=16						
533A	**Kerrville**	**13.31**	**359**	P	Pn	13 27 14.1	-0.3
	baz=178,SNR=11						
535A	**Dale**	**13.31**	**5**	P	Pn	13 27 14.2	-0.3
	baz=184						
TX31	**Lajitas Ar. Si**	**13.35**	**341**	ePn	Pn	13 27 16.6	+1.7
TXAR	**Lajitas Array**	**13.35**	**341**	Pn	Pn	13 27 16.9	+1.9
	0.2nm,0.3s,baz=162,slow=14,SNR=80						
TXAR				Lg	Lg	13 31 06.7	
	0.1nm,0.3s,baz=106,slow=27,SNR=4.8						
TXAR				LR	LR	13 32 54.5	
	comp=Z,20μm,18.7s,baz=0.0,slow=40						
536A	**Bastrop**	**13.41**	**7**	P	Pn	13 27 15.0	-0.7
	baz=186						
HKT	**Hockley**	**13.47**	**11**	eP	Pn	13 27 14.9	-1.5
HKT	**Hockley**	**13.47**	**11**	ePn	Pn	13 27 13.2	-3.2
HKT				eSn	Sn	13 29 43.5	-1.5
537A	**Green Hill Far**	**13.51**	**9**	P	Pn	13 27 16.8	-0.4
	baz=190,SNR=15						
JCT	**Junction City**	**13.75**	**356**	P	Pn	13 27 20.5	+0.1
	baz=175,SNR=23						
JCT	**Junction City**	**13.75**	**356**	eP	Pn	13 27 20.9	+0.5
JCT	**Junction City**	**13.75**	**356**	ePn	Pn	13 27 20.9	+0.5
538A	**Harpers Horsep**	**13.80**	**12**	P	Pn	13 27 19.9	-1.1
	baz=193						
539A	**Cross D Ranch,**	**13.86**	**15**	P	Pn	13 27 20.4	-1.5
	baz=196,SNR=8.1						
433A	**Art**	**13.99**	**359**	P	Pn	13 27 23.1	-0.6
	baz=178,SNR=22						
434A	**Burnet**	**14.06**	**2**	P	Pn	13 27 23.5	-1.1
	baz=181,SNR=13						
435B	**Jarrell**	**14.06**	**4**	P	Pn	13 27 23.9	-0.7
	baz=184						
436A	**Wall Ranch, Ga**	**14.12**	**7**	P	Pn	13 27 24.8	-0.7
	baz=187						
540A	**Vidor**	**14.15**	**17**	P	Pn	13 27 24.0	-1.8
	baz=199						
541A	**Lake Charles**	**14.26**	**20**	P	Pn	13 27 25.1	-2.2
	baz=202						
437A	**Phantom Ranch,**	**14.27**	**9**	P	Pn	13 27 26.4	-1.1
	baz=190,SNR=7.2						
438A	**Sam Houston St**	**14.31**	**12**	P	Pn	13 27 26.9	-1.2
	baz=192						
439A	**Center Grove,**	**14.51**	**14**	P	Pn	13 27 28.8	-1.9
	baz=195,SNR=19						
542A	**Morse**	**14.54**	**22**	P	Pn	13 27 26.8	-4.3
	baz=204						
333A	**Richland Sprin**	**14.56**	**359**	P	Pn	13 27 30.1	-1.4
	baz=179,SNR=12						
335A	**Moody**	**14.57**	**5**	P	Pn	13 27 30.9	-0.7
	baz=185,SNR=24						
335A				S	Sn	13 30 11.0	-1.1
	baz=185						
334A	**Lometa**	**14.58**	**2**	P	Pn	13 27 30.3	-1.4
	baz=181,SNR=29						
440A	**Kirbyville**	**14.66**	**17**	P	Pn	13 27 30.4	-2.4
	baz=198,SNR=12						
336A	**Riesel**	**14.73**	**7**	P	Pn	13 27 32.7	-1.0
	baz=187,SNR=8.4						
645A	**Chauvin**	**14.76**	**29**	P	Pn	13 27 31.7	-2.5
	baz=212						
543A	**St. Martinvill**	**14.76**	**24**	P	Pn	13 27 31.4	-2.8
	baz=206						
337A	**Centerville**	**14.79**	**10**	P	Pn	13 27 33.5	-1.1
	baz=190,SNR=16						
JTS	**JuntasAbangare**	**14.89**	**114**	eP	Pn	13 27 38.5	+2.4
JTS				pmax	pmax		
	comp=Z,181nm,1.0s						
JTS	**JuntasAbangare**	**14.89**	**114**	ePn	Pn	13 27 38.5	+2.4
	comp=Z,181nm,1.0s						
441A	**DeRidder**	**14

baz=213
135A Vickery Place, 15.84 4 P Pn 13 27 46.8 -1.5
baz=184,SNR=18
133A Hamilton Ranch 15.84 360 P Pn 13 27 47.5 -0.8
baz=179,SNR=77
136A Ennis 15.84 7 P Pn 13 27 46.8 -1.4
baz=187
ABTX Abilene, Hawle 15.87 357 P Pn 13 27 47.6 -1.2
baz=176,SNR=69
343A Vidalia 15.93 23 P Pn 13 27 46.4 -2.9
baz=205
240A Hunter Patters 15.94 16 P Pn 13 27 46.5 -3.1
baz=197,SNR=6.6
445A Amite 15.96 27 P Pn 13 27 46.3 -3.5
baz=210
QCR Quepos 15.98 115 *e*P Pn 13 27 50.2 0.0
137A Heron Place, G 16.07 9 P Pn 13 27 49.9 -1.3
baz=190,SNR=12
MNTX Cornudas Mount 16.09 339 P Pn 13 27 51.9 +0.5
baz=156,SNR=67
URSC Urasca 16.13 113 *e*P P 13 27 56.0 +0.7
241A Mo Tay, Goldon 16.16 18 P Pn 13 27 49.2 -3.2
baz=200,SNR=8.0
138A Matatall Enter 16.24 11 P Pn 13 27 51.8 -1.6
baz=192,SNR=8.2
BUS Buena Vista 16.27 114 *e*P Pn 13 27 51.1 -3.3
SRIG Santa Rosalia 16.32 313 *e*Pn Pn 13 27 55.0 +0.5
comp=Z,53nm,1.1s
139A Bunkhouse Ranc 16.40 13 P Pn 13 27 52.7 -2.8
baz=194
344A Westbrook Farm 16.42 25 P Pn 13 27 53.2 -2.5
baz=208,SNR=10
242A Grayson 16.44 20 P Pn 13 27 52.5 -3.5
baz=202
446A Poplarville 16.46 30 P Pn 13 27 52.5 -3.7
baz=213
243A Waterproof 16.51 22 P Pn 13 27 53.9 -2.9
baz=205,SNR=8.5
Z33A Whitaker Ranch 16.52 0 P Pn 13 27 55.9 -1.1
baz=180,SNR=21
140A Cam and Jess, 16.56 16 P Pn 13 27 54.7 -2.7
baz=197,SNR=17
HSIG 16.59 320 *e*Pn P 13 27 59.7 -0.4
comp=Z,122nm,1.2s
345A Thompson Farm, 16.59 27 P Pn 13 27 55.3 -2.5
baz=210
Z35A Perchaven, San 16.62 5 P Pn 13 27 56.7 -1.5
baz=185,SNR=37
Z34A Collier Ranch, 16.62 3 P Pn 13 27 56.9 -1.3
baz=182,SNR=23
Z36A Blue Ridge 16.64 7 P Pn 13 27 57.0 -1.5
baz=187,SNR=28
Z37A Pogue Cattle C 16.68 9 P Pn 13 27 57.7 -1.2
baz=190,SNR=11
447A Lucedale 16.81 32 P Pn 13 27 57.9 -2.7
baz=215
Z38A Mt. Pleasant 16.84 11 P Pn 13 27 59.5 -1.4
baz=192,SNR=7.6
346A Big Creek Wild 16.91 28 P Pn 13 27 59.2 -2.7
baz=212
Z39A Irene McRaven, 16.99 13 P Pn 13 28 00.8 -2.1
baz=195,SNR=18
VBMS Vicksburg 17.18 24 P Pn 13 28 02.1 -3.1
baz=207,SNR=7.6
Z40A Long Farm, Mag 17.19 15 P Pn 13 28 03.0 -2.4
baz=197,SNR=64
Y35A Marietta 17.21 5 P Pn 13 28 04.5 -1.1
baz=185,SNR=29
Y34A Reagan Ranch, 17.21 3 P Pn 13 28 04.0 -1.6
baz=183,SNR=40
Y33A Hilltop Ranch, 17.24 0 P Pn 13 28 04.6 -1.4
baz=180,SNR=9.4
245A Little AP, Sta 17.27 26 P Pn 13 28 03.1 -3.3
baz=209,SNR=7.5
143A Socs Landing, 17.28 21 P Pn 13 28 03.4 -3.1
baz=204,SNR=19
448A Bay Minette 17.33 33 P Pn 13 28 04.4 -2.7
baz=217
Z41A Richland Creek 17.35 17 P Pn 13 28 04.7 -2.7
baz=199,SNR=18
347A Saraland 17.36 31 P Pn 13 28 04.5 -3.0
baz=214
Y37A Hugo 17.44 9 P Pn 13 28 06.9 -1.6
baz=190,SNR=21
319A Douglas 17.45 329 *e*Pn P 13 28 10.6 +0.9
comp=Z,167nm,0.9s
Y38A Idabel 17.54 11 P Pn 13 28 08.0 -1.7
baz=192,SNR=5.2
MSTX Muleshoe 17.56 349 P Pn 13 28 08.9 -1.2
baz=167,SNR=34
MSTX Muleshoe 17.56 349 *e*Pn Pn 13 28 09.2 -0.9
comp=Z,424nm,1.3s
144A Alexander Plac 17.58 24 P Pn 13 28 07.3 -2.9
baz=207
246A Jackson Lee, B 17.59 28 P Pn 13 28 07.8 -2.6
baz=212
Z42A Norrel Spur, H 17.62 19 P Pn 13 28 08.1 -2.7
baz=202,SNR=5.1
WLAR White Oak Lake 17.67 16 *e*Pn Pn 13 28 08.5 -2.8
comp=Z,361nm,1.1s
Y39A Lockesburg 17.68 13 P Pn 13 28 09.4 -2.0
baz=194
348A Jackson 17.69 32 P Pn 13 28 09.3 -2.3
baz=216
X35A Drake 17.70 5 P Pn 13 28 10.2 -1.5
baz=185,SNR=156
121A Cookes Peak, D 17.74 334 P P 13 28 13.8 +0.8
baz=150,SNR=28
121A Cookes Peak, D 17.74 334 *e*Pn P 13 28 13.3 +0.3
comp=Z,190nm,0.8s
145A Houston Renfro 17.75 25 P Pn 13 28 09.7 -2.7
baz=208
X33A Lawton 17.77 1 P Pn 13 28 10.9 -1.6
baz=180,SNR=12
Z43A Armstrong Fami 17.80 21 P Pn 13 28 09.9 -3.0
baz=204
X34A Smith Ranch, M 17.85 3 P Pn 13 28 12.8 -0.7
baz=182,SNR=42
247A Quitman 17.86 29 P Pn 13 28 10.6 -3.1
baz=213
X36A Centrahoma 17.93 7 P Pn 13 28 13.3 -1.2
baz=187,SNR=18
Y40A Okolona 17.94 15 P Pn 13 28 12.3 -2.3
baz=197,SNR=16
BRAL Brewton 17.95 35 *e*Pn Pn 13 28 13.8 -0.9
WMOK Wichita Mounta 17.96 0 *e*P Pn 13 28 12.4 -2.6
WMOK pmax pmax
comp=Z,110nm,0.9s
WMOK Wichita Mounta 17.96 0 *e*Pn Pn 13 28 12.4 -2.6
comp=Z,110nm,0.9s
X37A Clayton 18.08 9 P Pn 13 28 15.4 -0.9
baz=190,SNR=38
Z44A Pea Ridge, Bel 18.15 23 P Pn 13 28 14.7 -2.6
baz=206
146A Union 18.15 27 P Pn 13 28 14.9 -2.4
baz=211
Y42A Garnett, Star 18.19 19 P Pn 13 28 15.6 -2.1
baz=202,SNR=7.2
X39A Fountain Ranch 18.23 12 P Pn 13 28 16.3 -1.8
baz=194,SNR=52
X38A Whitesboro 18.25 11 P P 13 28 17.1 -1.2
baz=192,SNR=58
CCAR Cane Creek 18.27 19 *e*Pn P 13 28 17.7 -0.9
comp=Z,321nm,0.9s
AMTX Amarillo 18.29 352 P P 13 28 18.1 -0.9
baz=171
AMTX Amarillo 18.29 352 *e*P P 13 28 18.3 -0.7
comp=Z,227nm,0.8s
248A Dixon Mills 18.32 31 P P 13 28 16.6 -2.6
baz=215,SNR=6.2
W32A Sentinel 18.35 359 P P 13 28 18.2 -1.3
baz=178,SNR=76
MIAR Mount Ida 18.38 14 P P 13 28 18.3 -1.6
baz=196,SNR=66
W33A Caddo, Fort Co 18.38 1 P P 13 28 19.8 0.0
baz=180,SNR=32
W35A Tecumseh 18.46 5 P P 13 28 20.0 -0.7
baz=185,SNR=42
W34A Bridge Creek, 18.48 3 P P 13 28 20.3 -0.7
baz=183
W34A Bridge Creek, 18.48 3 *e*Pn P 13 28 20.7 -0.3
comp=Z,185nm,1.0s
X40A Basin Creek Fa 18.50 16 P P 13 28 19.3 -1.9
baz=198,SNR=17
W36A Wetumka 18.51 7 P P 13 28 20.7 -0.5
baz=187,SNR=52
Z45A Winona 18.52 25 P P 13 28 19.9 -1.5
baz=208

147A Livingston 18.54 29 P P 13 28 20.0 -1.6
baz=213,SNR=11
Y43A Makayla and Ka 18.54 21 P P 13 28 19.9 -1.7
baz=204
W37B Quinton 18.61 9 P P 13 28 21.9 -0.5
baz=190,SNR=84
Z46A Louisville 18.68 27 P P 13 28 21.6 -1.5
baz=210,SNR=12
W38A Poteau 18.69 11 P P 13 28 22.7 -0.6
baz=192,SNR=21
BNM Barren Site 18.75 339 *e*P Pn 13 28 24.9 +0.1
Y22D IRIS PASSCAL I 18.78 339 P Pn 13 28 26.2 +1.2
baz=155
Y22D IRIS PASSCAL I 18.78 339 *e*P Pn 13 28 28.5 +3.5
comp=Z,179nm,0.9s
Y44A Strider, Charl 18.84 23 P P 13 28 24.1 -0.8
baz=206
LPM Los Pinos Moun 18.89 340 *e*P Pn 13 28 26.9 +0.5
UALR University of 18.91 17 *e*P P 13 28 25.1 -0.5
comp=Z,222nm,1.1s
V32A Arapaho 18.94 359 P P 13 28 26.1 0.0
baz=179,SNR=6.2
TUC Tucson 18.96 327 P Pn 13 28 28.7 +1.6
baz=142
TUC Tucson 18.96 327 *e*P Pn 13 28 29.3 +2.1
TUC pmax pmax
comp=Z,75nm,0.9s
W39A Magazine 18.96 13 P P 13 28 25.5 -0.6
baz=194,SNR=81
Y45A Yeager Farm, C 19.01 24 P P 13 28 26.1 -0.7
baz=208,SNR=7.5
V33A Lossen Ranch, 19.05 1 P P 13 28 26.8 -0.5
baz=181,SNR=18
V35A Meyer Ranch, C 19.07 5 P P 13 28 26.4 -0.9
baz=185,SNR=43
Z47A Carrollton 19.07 29 P P 13 28 26.3 -1.2
baz=213,SNR=25
V34A Gurie 19.09 3 P P 13 28 26.9 -0.8
baz=183,SNR=12
V34A Guthrie 19.09 3 *e*P P 13 28 27.0 -0.6
comp=Z,236nm,0.9s
W40A Ferguson Farm, 19.11 14 P P 13 28 27.3 -0.6
baz=196
LAZ Ladron 19.15 339 *e*P Pn 13 28 30.2 +0.6
V36A Jenks 19.18 7 P P 13 28 28.0 -0.7
baz=188,SNR=58
Y46A Houston 19.31 26 P P 13 28 29.1 -0.9
baz=210,SNR=53
W41B Gary Mavity, V 19.31 16 P P 13 28 29.1 -0.9
baz=199,SNR=15
TUL1 Leonard 19.32 7 P P 13 28 29.2 -0.9
baz=188,SNR=72
TUL1 Leonard 19.32 7 *e*P P 13 28 29.4 -0.8
comp=Z,503nm,0.9s
X301 Greenbrier Sit 19.33 16 *e*P P 13 28 29.6 -0.6
comp=Z,263nm,1.3s
V37A Hulbert 19.38 9 P P 13 28 29.5 -1.3
baz=190,SNR=57
X201 Greenbrier Sit 19.39 16 *e*P P 13 28 30.2 -0.8
comp=Z,567nm,1.7s
WHAR Wooly Hollow 19.41 16 *e*P P 13 28 30.5 -0.6
comp=Z,225nm,1.2s
ANMO Albuquerque 19.42 341 P Pn 13 28 32.7 -0.1
comp=Z,1.7nm,0.3s,baz=154,slow=12,SNR=68
ANMO LR LR 13 36 41.0
comp=Z,39µm,20.2s,baz=160,slow=39
ANMO Albuquerque 19.42 341 P Pn 13 28 32.4 -0.4
baz=157
ANMO Albuquerque 19.42 341 *de*P Pn 13 28 32.6 -0.2
ANMO pmax pmax
comp=Z,35nm,0.8s
ANMO Albuquerque 19.42 341 *e*P Pn 13 28 32.7 -0.1
comp=Z,104nm,1.3s
LRAL Lakeview Retre 19.45 31 *e*P P 13 28 30.2 -1.4
comp=Z,117nm,1.2s
LRAL *e*Sn S 13 32 06.5 -3.1
Z48A Northport 19.46 29 P P 13 28 30.5 -1.2
baz=214,SNR=32
V38A Canehill 19.48 11 P P 13 28 30.8 -1.2
baz=192,SNR=31
U32A Winter Ranch, 19.60 360 P P 13 28 33.1 -0.1
baz=179,SNR=15
V39A Pettigrew 19.61 13 P P 13 28 32.6 -0.8
baz=194,SNR=139
OXF Oxford 19.64 24 *e*P P 13 28 31.4 -2.2
OXF pmax pmax
comp=Z,419nm,1.2s
OXF Oxford 19.64 24 *e*P P 13 28 31.4 -2.2
comp=Z,419nm,1.2s
DWPF Disney Wildern 19.64 52 *e*P Pn 13 28 34.7 -0.5
comp=Z,412nm,1.4s
U33A Lingo Farm, Me 19.66 2 P P 13 28 32.9 -1.1
baz=181,SNR=25
U35A Pawnee 19.68 5 P P 13 28 33.3 -0.8
baz=185,SNR=28
U34A Anderson Ranch 19.69 3 P P 13 28 33.1 -1.1
baz=183,SNR=31
U34A Anderson Ranch 19.69 3 *e*P P 13 28 33.4 -0.8
comp=Z,317nm,1.0s
V40A Witts Springs 19.76 15 P P 13 28 34.4 -0.6
baz=197,SNR=87
Y47A UCPARC, Winfie 19.76 28 P P 13 28 34.0 -1.0
baz=212,SNR=15
U36A Oologah 19.80 7 P P 13 28 34.3 -1.1
baz=188,SNR=23
214A Organ Pipe Nat 19.81 323 P Pn 13 28 37.9 +0.6
baz=136,SNR=36
214A Organ Pipe Nat 19.81 323 *e*P Pn 13 28 37.4 +0.1
comp=Z,178nm,0.9s
U37A Salina 19.90 9 P P 13 28 34.9 -1.6
baz=190,SNR=54
BCIP Isla Barro Col 19.93 110 *e*P Pn 13 28 40.2 +1.4
comp=Z,218nm,1.4s
BCIP Isla Barro Col 19.93 110 *e*P Pn 13 28 40.7 +1.9
HHAR Hobbs 19.98 12 *e*P P 13 28 36.2 -1.2
comp=Z,122nm,1.0s
U38A Gravette 20.05 10 P P 13 28 36.8 -1.3
baz=192,SNR=32
U39A Green Forest 20.16 13 P P 13 28 38.5 -0.9
baz=194,SNR=77
TIGA Tifton 20.17 41 P P 13 28 38.6 -0.9
baz=226,SNR=8.0
TIGA Tifton 20.17 41 *e*P P 13 28 39.1 -0.3
comp=Z,278nm,1.0s
T35A Sooner Cattle 20.24 5 P P 13 28 39.1 -1.1
baz=186,SNR=187
U40A Yellville 20.28 14 P P 13 28 40.1 -0.5
baz=196,SNR=75
T34A McClaskey Farm 20.29 4 P P 13 28 39.7 -1.1
baz=184,SNR=66
T33A Patterson Ranc 20.31 1 P P 13 28 40.2 -0.8
baz=181,SNR=6.4
MTDJ Mount Denham 20.34 83 *e*P P 13 28 37.5 -4.1
MTDJ LR LR
comp=Z,4µm,22.0s
X18A Snowflake 20.37 333 *e*P Pn 13 28 44.2 +0.1
comp=Z,95nm,0.9s
T32A Huddler Ranch, 20.40 360 P P 13 28 41.4 -0.6
baz=179,SNR=42
T36A Boggs Farm, Ca 20.45 7 P P 13 28 41.2 -1.2
baz=188,SNR=49
T37A Cheyville 18 20.63 9 P P 13 28 42.9 -1.5
baz=190,SNR=62
T38A Diamond 20.64 10 P P 13 28 43.1 -1.5
baz=192,SNR=47
W18A Petrified Fore 20.78 334 P Pn 13 28 47.7 -1.1
baz=149,SNR=5.6
W18A Petrified Fore 20.78 334 *e*P Pn 13 28 47.7 -1.2
comp=Z,102nm,1.0s
T39A Clever 20.81 12 P P 13 28 45.1 -1.2
baz=194,SNR=49
S33A Kaszmaul Farm, 20.82 2 P P 13 28 45.5 -1.0
baz=182,SNR=8.0
S32A Newby Ranch, P 20.92 360 P P 13 28 46.7 -0.8
baz=179
113A Mohawk Valley, 20.95 323 *e*P Pn 13 28 50.1 -0.5
comp=Z,54nm,0.9s
T25A Trinidad 20.95 347 P P 13 28 49.3 +1.1
baz=164,SNR=141
T25A Trinidad 20.95 347 *e*P P 13 28 48.9 +0.7
comp=Z,321nm,1.2s
X16A Lo Mia Camp, P 20.97 330 *e*P Pn 13 28 50.4 -0.6
comp=Z,126nm,1.0s
S34A Willow Spring 20.97 4 P P 13 28 46.8 -1.3
baz=184,SNR=41
S35A Otter Creek Ra 21.02 6 P P 13 28 47.2 -1.4
baz=186,SNR=96
T40A Mansfield 21.11 14 P P 13 28 48.5 -1.1

baz=196,SNR=73
S36A Lake Cedric, C 21.13 7 P P 13 28 48.4 -1.4
baz=188,SNR=13
S37A Fort Scott 21.27 9 P P 13 28 49.8 -1.5
baz=190,SNR=20
S38A Stockton 21.29 11 P P 13 28 49.8 -1.7
baz=192,SNR=28
PBMO Poplar Bluff 21.33 19 *e*P P 13 28 50.8 -1.2
comp=Z,138nm,0.8s
Y14A Wickenburg 21.39 326 *e*P P 13 28 54.7 +2.0
comp=Z,498nm,1.1s
S39A Bolivar 21.46 12 P P 13 28 52.1 -1.3
baz=194,SNR=42
UTMT University of 21.46 22 *e*P P 13 28 52.7 -0.6
comp=Z,1µm,1.3s
R33A Olander Ranch, 21.54 2 P P 13 28 53.6 -0.6
baz=182,SNR=18
S40A Lebanon 21.55 14 P P 13 28 53.2 -1.1
baz=196,SNR=107
R34A Isabella, Hill 21.56 3 P P 13 28 53.5 -0.9
baz=184,SNR=115
GOGA Godfrey 21.63 37 *e*P P 13 28 54.2 -1.0
GOGA pmax pmax
comp=Z,180nm,0.8s
GOGA MLR MLR
comp=Z,5µm,20.0s
GOGA Godfrey 21.63 37 *e*P P 13 28 54.2 -1.0
comp=Z,180nm,0.8s
GOGA LR LR
comp=Z,5µm,20.0s
R32A Long Quarter, 21.64 0 P P 13 28 54.1 -1.2
baz=180,SNR=13
R35A Emporia Munici 21.66 6 P P 13 28 54.3 -1.2
baz=186,SNR=32
WVT Waverly 21.67 25 *e*P P 13 28 53.7 -1.9
WVT pmax pmax
comp=Z,94nm,0.9s
WVT Waverly 21.67 25 *e*P P 13 28 53.7 -1.9
comp=Z,94nm,0.8s
SWET Sewanee 21.73 30 *e*P P 13 28 55.3 -1.0
comp=Z,56nm,1.0s
R36A Gordon, Harris 21.74 7 P P 13 28 54.8 -1.5
baz=188,SNR=53
GLA Glamis 21.78 321 P P 13 28 59.0 +2.1
baz=134,SNR=47
GLA Glamis 21.78 321 *e*P P 13 28 58.9 +2.0
GLA pmax pmax
comp=Z,120nm,1.0s
GLA Glamis 21.78 321 *e*P P 13 28 58.9 +2.0
comp=Z,121nm,1.0s
SDCO Great Sand Dun 21.78 346 P P 13 28 57.4 +0.3
baz=162,SNR=66
SDCO Great Sand Dun 21.78 346 *e*P P 13 28 57.2 +0.1
comp=Z,48nm,1.6s
SDCO LR LR
comp=Z,14µm,20.0s
R37A Teagarden Farm 21.81 8 P P 13 28 55.3 -1.8
baz=190
R38A Fenwick Farm, 21.83 10 P P 13 28 55.2 -2.2
baz=192,SNR=32
WUAZ Wupatki 21.84 331 P P 13 28 59.5 +1.9
baz=146,SNR=195
WUAZ Wupatki 21.84 331 *e*P P 13 28 59.9 +2.3
comp=Z,208nm,1.0s
WUAZ LR LR
comp=Z,3µm,22.0s
CBKS Cedar Bluff 22.05 358 P P 13 28 58.6 -1.1
baz=177,SNR=16
CBKS Cedar Bluff 22.05 358 *e*P P 13 28 59.4 -0.3
CBKS pmax pmax
comp=Z,444nm,1.0s
CBKS MLR MLR
comp=Z,7µm,20.0s
CBKS Cedar Bluff 22.05 358 *e*P P 13 28 59.4 -0.3
comp=Z,444nm,1.0s
CBKS LR LR
comp=Z,7µm,20.0s
Y12C Blythe 22.10 323 P P 13 29 02.1 +1.9
baz=136,SNR=15
Y12C Blythe 22.10 323 *e*P P 13 29 02.1 +1.9
comp=Z,79nm,1.0s
R39A Chumby, Stover 22.12 12 P P 13 28 58.8 -1.6
baz=194,SNR=70
S22A 4UR Ranch, Cre 22.13 343 P P 13 29 01.5 +0.7
baz=159,SNR=57
S22A 4UR Ranch, Cre 22.13 343 *e*P P 13 29 01.7 +0.9
comp=Z,72nm,0.9s
MVCO Mesa Verde 22.16 339 P P 13 29 02.0 +0.9
baz=154,SNR=46
MVCO Mesa Verde 22.16 339 *e*P P 13 29 01.8 +0.8
MVCO LR LR
comp=Z,33µm,20.0s
Q34A Chapman 22.20 4 P P 13 28 60.0 -1.3
baz=184,SNR=12
Q35A Mercer Eighty, 22.21 6 P P 13 28 59.8 -1.6
baz=187,SNR=34
Q32A Meitler Ranch, 22.21 1 P P 13 29 00.5 -0.9
baz=180,SNR=38
Q33A Connelly Farm, 22.23 2 P P 13 29 00.4 -1.2
baz=182
R40A Maddies Statio 22.26 14 P P 13 29 00.5 -1.4
baz=196,SNR=94
PDMCI Parker Dam,Lak 22.29 325 P P 13 29 03.6 +1.4
baz=138,SNR=24
SWSC Sam W. Stewart 22.30 320 P P 13 29 04.6 +2.2
baz=132,SNR=31
Q36A Arnold C. Orve 22.37 7 P P 13 29 01.2 -1.9
baz=188,SNR=6.8
KSU1 Kansas State U 22.40 4 *e*P P 13 29 02.2 -1.2
comp=Z,161nm,0.8s
KSU1 LR LR
comp=Z,14µm,20.0s
Q37A Longview Farm, 22.42 9 P P 13 29 01.4 -2.3
baz=190
KSCO Kaye Shedlock' 22.48 352 P P 13 29 03.9 -0.5
baz=170
KSCO Kaye Shedlock' 22.48 352 *e*P P 13 29 04.8 +0.4
comp=Z,202nm,0.9s
SIUC Southern Illin 22.57 20 *e*P P 13 29 02.5 -2.8
comp=Z,206nm,1.0s
BC3 Big Chuckavall 22.57 321 P P 13 29 07.2 +1.8
baz=134,SNR=45
CPCT Cooper Cave 22.60 32 *e*P P 13 29 03.5 -2.2
comp=Z,121nm,1.1s
Q38A Cooks Store, C 22.64 11 P P 13 29 03.8 -2.2
baz=192,SNR=16
MONP2 Monument Peak 22.66 319 P P 13 29 08.2 +1.7
baz=131,SNR=26
P33A Williams Farm, 22.67 2 P P 13 29 05.1 -1.3
baz=182,SNR=13
BAR Barrett 22.68 318 *e*P P 13 29 08.1 +1.7
comp=Z,116nm,1.4s
GTBY Guantanamo Bay 22.71 78 *e*P P 13 29 06.5 -0.4
comp=Z,780nm,1.7s
GTBY LR LR
comp=Z,7µm,21.0s
W13A Hualapai Mount 22.75 327 *e*P P 13 29 09.0 +1.6
comp=Z,45nm,0.9s
IRM Iron Mountain 22.75 323 P P 13 29 08.7 +1.5
baz=135,SNR=58
P34A Walnut Farm, R 22.83 4 P P 13 29 06.6 -1.4
baz=184,SNR=21
Q39A Willow Grove F 22.84 12 P P 13 29 06.2 -1.8
baz=194,SNR=18
P32A Huiting Farm, 22.84 0 P P 13 29 06.9 -1.2
baz=180,SNR=12
Q24A Divide 22.87 347 P P 13 29 08.4 -0.3
baz=164,SNR=15
Q24A Divide 22.87 347 *e*P P 13 29 09.5 +0.8
comp=Z,60nm,1.0s
P35A Duane Minner, 22.87 6 P P 13 29 07.0 -1.5
baz=186,SNR=28
Q40A Laux Farm, Aux 22.98 14 P P 13 29 07.4 -2.1
baz=196,SNR=18
U15A North Rim 23.01 331 *e*P P 13 29 11.9 +1.8
comp=Z,77nm,0.9s
PV01 Paradox Valley 23.02 340 *e*P P 13 29 10.0 -0.1
P36A Good Intent, A 23.05 7 P P 13 29 08.3 -2.0
baz=188,SNR=13
109C Camp Elliot, M 23.09 318 P P 13 29 12.5 +1.8
baz=130
SLM Saint Louis 23.11 17 *e*P P 13 29 10.0 -0.8
SLM pmax pmax
comp=Z,170nm,1.0s
SLM Saint Louis 23.11 17 *e*P P 13 29 10.0 -0.8
comp=Z,166nm,1.0s
P37A Lathrop 23.13 9 P P 13 29 08.7 -2.4
baz=190,SNR=12

BELC	Belle Mtn. Jos	23.14	321	P	P	13 29 13.1 +1.7
	baz=134,SNR=50					
PV05	Paradox Valley	23.14	339	eP	P	13 29 12.4 +0.9
TKL	Tuckaleechee C	23.15	32	P	P	13 29 09.5 -1.8
	comp=Z,167nm,1.2s,baz=203,slow=7.6,SNR=40					
TKL				LR	LR	13 39 09.7
	comp=Z,1µm,21.2s,baz=222,slow=39					
TKL	Tuckaleechee C	23.15	32	eP	P	13 29 10.1 -1.2
	comp=Z,454nm,1.4s					
PFO	Pinyon Flats O	23.16	320	P	P	13 29 12.4 +0.9
	comp=Z,26nm,1.0s,baz=125,slow=10,SNR=23					
PFO				LR	LR	13 38 15.7
	comp=Z,7µm,18.0s,baz=147,slow=37					
PFO	Pinyon Flats O	23.16	320	P	P	13 29 13.8 +2.3
	baz=132,SNR=21					
PFO	Pinyon Flats O	23.16	320	eP	P	13 29 13.3 +1.8
	comp=Z,35nm,0.9s					
P38A	Dawn	23.30	10	P	P	13 29 10.4 -2.3
	baz=192,SNR=26					
RGRS	Roger Stewart	23.30	43	eP	P	13 29 13.0 +0.2
	comp=Z,4µm,1.4s					
O33A	Hebron	23.32	2	P	P	13 29 11.6 -1.3
	baz=182,SNR=8.3					
USIN	University of	23.34	23	eP	P	13 29 12.1 -1.1
	comp=Z,248nm,1.1s					
O31A	Woolen Ranch,	23.37	359	P	P	13 29 12.5 -1.0
	baz=178,SNR=6.9					
PV10	Paradox Valley	23.39	339	eP	P	13 29 13.8 -0.2
LDFC	Landfair	23.39	325	eP	P	13 29 19.5 +5.6
CSU	Charleston Sou	23.43	43	eP	P	13 29 14.0 -0.1
NHSC	New Hope	23.44	42	eP	P	13 29 12.2 -1.9
	comp=Z,1µm,1.3s					
NHSC				LR	LR	
	comp=Z,5µm,20.0s					
O34A	Beatrice	23.47	4	P	P	13 29 13.0 -1.5
	baz=185,SNR=20					
O32A	Brockman Farm,	23.48	1	P	P	13 29 13.4 -1.1
	baz=181					
GMRC	Granite Mounta	23.49	323	P	P	13 29 16.7 +1.9
	baz=135,SNR=51					
P40A	Paris	23.50	13	P	P	13 29 12.5 -2.2
	baz=196,SNR=64					
PV09	Paradox Valley	23.53	339	eP	P	13 29 15.9 +0.6
O36A	Bolckow	23.58	7	P	P	13 29 13.6 -1.9
	baz=189,SNR=9.4					
MURC	Murrieta	23.61	319	P	P	13 29 18.1 +2.2
	baz=131,SNR=14					
O35A	Humboldt	23.62	6	P	P	13 29 14.3 -1.6
	baz=186					
EKU	East Kanab	23.63	332	eP	P	13 29 18.1 +1.8
O37A	Wolven Farm, M	23.73	9	P	P	13 29 14.7 -2.2
	baz=191					
KNB	Kanab	23.73	331	eP	P	13 29 19.0 +1.8
KNB				pmax	pmax	
	comp=Z,190nm,1.2s					
KNB	Kanab	23.73	331	eP	P	13 29 19.0 +1.8
	comp=Z,193nm,1.2s					
ISCO	Idaho Springs	23.77	347	P	P	13 29 17.8 +0.2
	baz=163,SNR=41					
ISCO	Idaho Springs	23.77	347	eP	P	13 29 17.9 +0.2
ISCO				pmax	pmax	
	comp=Z,89nm,1.0s					
ISCO	Idaho Springs	23.77	347	eP	P	13 29 17.9 +0.2
	comp=Z,89nm,1.0s					
ISCO				LR	LR	
	comp=Z,6µm,21.0s					
O38A	Galt	23.79	10	P	P	13 29 15.6 -1.9
	baz=192,SNR=12					
PKCU	Pink Cliffs	23.86	333	eP	P	13 29 21.2 +2.7
	comp=Z,83nm,1.1s					
OLIL	Olney	23.87	21	eP	P	13 29 16.9 -1.4
	comp=Z,140nm,0.8s					
BBRC	Big Bear Solar	23.88	320	P	P	13 29 21.2 +2.5
	baz=132					
MOTC	Monteria, Cord	23.88	106	eP	P	13 29 18.1 -0.5
HEC	Hector,Ludlow	23.92	322	P	P	13 29 21.1 +2.3
	baz=134					
LCMT	Little Creek M	23.93	331	eP	P	13 29 20.5 +1.5
	comp=Z,38nm,0.8s					
TZTN	Tazewell	23.95	31	eP	P	13 29 18.2 -0.8
	comp=Z,793nm,1.8s					
N33A	J Bar K, Exete	23.98	3	P	P	13 29 18.6 -0.7
	baz=183,SNR=6.1					
N32A	Stulken Farm,	23.98	1	P	P	13 29 18.8 -0.6
	baz=181					
N31A	Bailey Ranch,	24.04	360	P	P	13 29 19.3 -0.5
	baz=179					
MMU	Miners Mountai	24.07	335	eP	P	13 29 21.6 +1.2
DBBC	Dabeiba	24.09	111	eP	P	13 29 24.8 +4.2
O39A	Kirksville	24.09	12	P	P	13 29 18.5 -1.8
	baz=194,SNR=20					
SCI2	San Clemente I	24.09	316	P	P	13 29 22.8 +2.5
	baz=127,SNR=5.8					
KMSC	Kings Mountain	24.10	37	P	P	13 29 19.9 -0.5
	baz=224,SNR=26					
KMSC	Kings Mountain	24.10	37	eP	P	13 29 20.0 -0.5
	comp=Z,361nm,1.4s					
WCI	Wyandotte Cave	24.10	25	eP	P	13 29 19.7 -0.7
WCI				pmax	pmax	
	comp=Z,240nm,1.0s					
WCI	Wyandotte Cave	24.10	25	eP	P	13 29 19.7 -0.7
	comp=Z,236nm,1.0s					
O40A	La Belle	24.10	13	P	P	13 29 18.7 -1.7
	baz=196,SNR=42					
TUQ	Turquoise Moun	24.11	324	P	P	13 29 22.9 +2.2
	baz=136,SNR=14					
N34A	Lincoln	24.14	4	P	P	13 29 20.0 -0.7
	baz=185,SNR=7.1					
N36A	Muff Farm, Cla	24.26	7	P	P	13 29 20.3 -1.5
	baz=189					
CIS	Catalina Islan	24.26	317	P	P	13 29 23.9 +1.9
	baz=128,SNR=5.7					
MTPU	Mount Pierson	24.30	334	eP	P	13 29 24.3 +1.6
	comp=Z,235nm,1.3s					
N37A	Lee Faris, Mou	24.30	8	P	P	13 29 20.7 -1.6
	baz=190					
BFSC	Mount Baldy Ra	24.32	319	P	P	13 29 24.6 +2.0
	baz=131,SNR=12					
OGNE	Ogallala	24.32	354	P	P	13 29 22.9 +0.4
	baz=172,SNR=21					
OGNE	Ogallala	24.32	354	PFAKE		13 29 30.0 +7.5
OGNE				LR	LR	
	comp=Z,3µm,20.0s					
RRX	Edison Barstow	24.34	321	P	P	13 29 24.5 +1.8
	baz=133					
FMP	Fort Macarthur	24.38	318	P	P	13 29 25.4 +2.4
	baz=129					
GRGC	Isla de Gorgon	24.42	122	eP	P	13 29 25.9 +2.4
N38A	Joes South For	24.49	10	P	P	13 29 22.9 -1.0
	baz=192,SNR=15					
SHPR	Sheep Range	24.49	327	eP	P	13 29 25.9 +1.8
	comp=Z,50nm,1.1s					
GSC	Goldstone, Bar	24.52	322	P	P	13 29 27.1 +2.7
	baz=134,SNR=22					
GSC	Goldstone, Bar	24.52	322	eP	P	13 29 26.5 +2.1
GSC				pmax	pmax	
	comp=Z,110nm,1.6s					
GSC	Goldstone, Bar	24.52	322	eP	P	13 29 26.5 +2.1
	comp=Z,112nm,1.6s					
MWC	Mount Wilson	24.56	319	eP	P	13 29 26.8 +1.9
MWC				pmax	pmax	
	comp=Z,210nm,1.8s					
MWC	Mount Wilson	24.56	319	eP	P	13 29 26.8 +1.9
	comp=Z,212nm,1.8s					
M31A	Lambtecht Ranc	24.56	360	P	P	13 29 25.3 +0.7
	baz=179,SNR=17					
SRU	San Rafael Swe	24.57	338	eP	P	13 29 25.8 +0.9
SRU				pmax	pmax	
	comp=Z,130nm,1.1s					
SRU	San Rafael Swe	24.57	338	eP	P	13 29 25.8 +0.9
	comp=Z,132nm,1.2s					
PASC	Pasadena Art C	24.60	319	eP	P	13 29 29.2 +4.2
	comp=Z,114nm,1.8s					
BGNE	Belgrade	24.63	1	P	P	13 29 25.1 -0.1
	baz=181,SNR=7.1					
BGNE	Belgrade	24.63	1	eP	P	13 29 25.3 +0.1
	comp=Z,371nm,1.1s					
Q16A	Castle Valley	24.64	336	eP	P	13 29 27.1 +1.5
	comp=Z,81nm,0.8s					
SHOC	Shoshone, Teco	24.64	324	P	P	13 29 27.3 +1.9
	baz=136,SNR=11					
TUMC	Tumaco	24.67	125	eP	P	13 29 29.6 +3.8
MSU	Marysvale	24.70	334	eP	P	13 29 27.8 +1.7
MSU	Marysvale	24.70	334	eP	P	13 29 27.8 +1.7
N39A	Derby Farms, D	24.70	11	P	P	13 29 25.0 -0.9
	baz=194,SNR=60					
O20A	White River Ci	24.75	343	P	P	13 29 27.4 +0.9
	baz=158,SNR=28					
O20A	White River Ci	24.75	343	eP	P	13 29 27.9 +1.3
	comp=Z,289nm,1.4s					
DECC	Green Verdugo	24.75	319	P	P	13 29 28.8 +2.4
	baz=130					
M34A	Aspy Farms, Fr	24.79	4	P	P	13 29 26.5 -0.1
	baz=185,SNR=6.5					
M33A	Taylor Creek F	24.82	3	P	P	13 29 26.6 -0.4
	baz=183					
M35A	Neola	24.83	6	P	P	13 29 26.4 -0.6
	baz=187,SNR=11					
BLO	Bloomington	24.83	23	eP	P	13 29 26.5 -0.5
BLO				pmax	pmax	
	comp=Z,140nm,0.8s					
BLO	Bloomington	24.83	23	eP	P	13 29 26.5 -0.5
	comp=Z,143nm,0.8s					
N23A	Red Feather La	24.89	347	P	P	13 29 28.7 +0.8
	baz=163,SNR=39					
N23A	Red Feather La	24.89	347	eP	P	13 29 28.8 +0.9
	comp=Z,113nm,1.2s					
M36A	Felix, Anita	24.91	7	P	P	13 29 26.9 -0.9
	baz=189					
SNCC	San Nicolas Is	24.91	315	P	P	13 29 29.0 +1.2
	baz=126					
P18A	Preston Nutter	24.93	339	eP	P	13 29 29.5 +1.2
	comp=Z,94nm,0.9s					
EDW2	Edwards Air Fo	24.95	320	P	P	13 29 30.1 +1.8
	baz=131,SNR=19					
M37A	Trindle Farm,	24.95	8	P	P	13 29 27.6 -0.5
	baz=190,SNR=8.1					
P17A	Butcher Ranch,	24.96	338	eP	P	13 29 29.6 +1.2
	comp=Z,78nm,0.9s					
TMUT	Trail Mountain	24.98	337	eP	P	13 29 30.2 +1.4
	comp=Z,76nm,0.9s					
SGU	Sterling	25.05	336	eP	P	13 29 31.2 +1.9
HELC	Santa Helena	25.06	112	eP	P	13 29 34.6 +4.8
M38A	Pleasantville	25.10	10	P	P	13 29 28.4 -1.0
	baz=192,SNR=29					
SNO	Snow College	25.12	336	eP	P	13 29 31.9 +1.8
BLG	Laguna Peak, P	25.13	317	P	P	13 29 32.0 +2.2
	baz=128,SNR=21					
HDIL	Hopedale	25.16	17	P	P	13 29 29.3 -0.7
	baz=201,SNR=20					
HDIL	Hopedale	25.16	17	eP	P	13 29 29.5 -0.5
	comp=Z,254nm,0.9s					
HDIL				LR	LR	
	comp=Z,6µm,20.0s					
LRMC	Laurel Mtn Rad	25.16	322	P	P	13 29 32.2 +2.0
	baz=133,SNR=54					
PHWY	Pilot Hill	25.18	348	eP	P	13 29 31.6 +1.1
	comp=Z,80nm,1.4s					
ARGU	Argyle Ridge	25.20	338	eP	P	13 29 32.3 +1.5
L32A	Elgin	25.23	1	P	P	13 29 30.5 -0.2
	baz=181					
OSI	Osito Audit: C	25.23	319	P	P	13 29 32.8 +2.0
	baz=130					
OSI	Osito Audit: C	25.23	319	eP	P	13 29 33.5 +2.7
	comp=Z,97nm,1.1s					
L34A	Svendsen Farm,	25.27	4	P	P	13 29 30.5 -0.5
	baz=185,SNR=6.8					
FURC	Furnace Creek,	25.38	324	P	P	13 29 34.2 +2.2
	baz=136,SNR=15					
L31A	Butterfield Fa	25.39	360	P	P	13 29 32.6 +0.5
	baz=180,SNR=11					
TPNV	Topopah Spring	25.40	326	P	P	13 29 34.8 +2.4
	baz=138,SNR=62					
TPNV	Topopah Spring	25.40	326	eP	P	13 29 34.5 +2.1
TPNV				pmax	pmax	
	comp=Z,91nm,1.1s					
TPNV	Topopah Spring	25.40	326	eP	P	13 29 34.5 +2.1
	comp=Z,91nm,1.1s					
LEVU	Levan	25.40	336	eP	P	13 29 34.3 +1.8
L33A	Hoskins	25.41	3	P	P	13 29 31.7 -0.6
	baz=183					
SCZ2	Santa Cruz Isl	25.43	317	P	P	13 29 34.5 +2.0
	baz=127					
PSUT	Pine Spring	25.44	332	eP	P	13 29 34.6 +1.8
	comp=Z,47nm,0.9s					
MPMC	Manual Prospec	25.45	323	P	P	13 29 34.9 +2.0
	baz=134,SNR=53					
L35A	Bielow Farm, R	25.48	6	P	P	13 29 32.5 -0.4
	baz=187					
L36A	Harm Buss Farm	25.56	7	P	P	13 29 32.6 -1.1
	baz=189					
SCIA	State Center	25.57	10	eP	P	13 29 33.6 -0.1
	comp=Z,128nm,0.8s					
SCIA				LR	LR	
	comp=Z,10µm,19.0s					
ARVC	Arvin	25.62	320	P	P	13 29 36.7 +2.4
	baz=130,SNR=11					
DAC	Darwin (Calif)	25.66	323	eP	P	13 29 36.5 +1.7
DAC				pmax	pmax	
	comp=Z,47nm,1.0s					
DAC	Darwin (Calif)	25.66	323	eP	P	13 29 36.5 +1.7
	comp=Z,47nm,1.0s					
SFIN	Lafayette	25.69	21	P	P	13 29 34.6 -0.2
	baz=206					
L37A	Phoenix Point,	25.71	9	P	P	13 29 34.1 -0.9
	baz=191					
SBC	Santa Barbara	25.75	317	P	P	13 29 36.2 +0.7
	baz=128					
ISA	Isabella, Lake	25.76	321	P	P	13 29 38.2 +2.6
	baz=132,SNR=8.8					
ISA	Isabella, Lake	25.76	321	eP	P	13 29 37.8 +2.2
ISA				pmax	pmax	
	comp=Z,49nm,1.1s					
ISA	Isabella, Lake	25.76	321	eP	P	13 29 37.8 +2.2
	comp=Z,49nm,1.1s					
K31A	O'Neill	25.84	0	P	P	13 29 36.4 +0.3
	baz=180,SNR=5.8					
L38A	Oak Wood Farm,	25.85	10	P	P	13 29 35.0 -1.2
	baz=192,SNR=15					
K33A	Hardington	25.86	3	P	P	13 29 36.1 -0.3
	baz=184					
OTAV	Otavalo	25.88	127	eP	P	13 29 40.2 +2.9
	comp=Z,34nm,0.9s					
OTAV				LR	LR	
	comp=Z,1µm,21.0s					
OTAV	Otavalo	25.88	127	eP	P	13 29 37.9 +0.5
K32A	Verdigre	25.88	1	P	P	13 29 36.5 0.0
	baz=181,SNR=5.1					
NLU	North Lily Min	25.89	336	eP	P	13 29 38.5 +1.6
	comp=Z,57nm,0.8s					
K30A	Basset	25.90	359	P	P	13 29 37.3 +0.5
	baz=178,SNR=22					
NORC	Norcasia	25.92	113	eP	P	13 29 41.1 +3.9
CMBC	Cumbal	25.93	125	eP	P	13 29 39.9 +2.2
DAU	Daniels Canyon	25.98	338	eP	P	13 29 39.2 +1.4
DAU	Daniels Canyon	25.98	338	eP	P	13 29 39.2 +1.4
TOLC	Tolima	25.99	115	eP	P	13 29 43.6 +5.5
K34A	Le Mars	26.00	5	P	P	13 29 36.8 -0.9
	baz=186					
GRAC	Grapevine Rang	26.04	325	P	P	13 29 40.4 +2.3
	baz=136,SNR=9.3					
PKM	Mcpherson Peak	26.09	318	P	P	13 29 40.9 +2.1
	baz=128,SNR=17					
BLA	Blacksburg	26.10	35	eP	P	13 29 38.5 -0.1
BLA				pmax	pmax	
	comp=Z,190nm,1.1s					
BLA	Blacksburg	26.10	35	PFAKE		13 29 50.0 +11
BLA				LR	LR	
	comp=Z,3µm,19.0s					
K35A	Storm Lake	26.11	6	P	P	13 29 37.5 -1.2
	baz=187					
R11A	Troy Canyon, C	26.12	329	P	P	13 29 41.1 +2.2
	baz=141,SNR=54					
R11A	Troy Canyon, C	26.12	329	eP	P	13 29 40.7 +1.7
	comp=Z,27nm,0.9s					
K36A	Gilmore City	26.12	7	P	P	13 29 37.5 -1.2
	baz=189					
JLU	Jordanelle	26.22	338	eP	P	13 29 41.4 +1.5
	comp=Z,38nm,1.1s					
VES	Vestal, Richgr	26.25	320	P	P	13 29 42.4 +2.4
	baz=131,SNR=8.3					
SDDR	Presa de Saban	26.28	81	eP	P	13 29 42.4 +2.0
	comp=Z,217nm,1.4s					
SDDR				LR	LR	
	comp=Z,6µm,22.0s					
BRRC	Barranca, Sant	26.31	108	eP	P	13 29 47.3 +6.7
K37A	Belmond	26.35	9	P	P	13 29 39.2 -1.6
	baz=191,SNR=14					
VWCC	Virginia Weste	26.37	35	eP	P	13 29 41.3 +0.3
K38A	Parkersburg	26.37	10	P	P	13 29 38.8 -2.1
	baz=193					
DUG	Dugway, Tooele	26.38	335	P	P	13 29 43.0 +1.8
	baz=148,SNR=61					
DUG	Dugway, Tooele	26.38	335	eP	P	13 29 43.1 +1.8
DUG				pmax	pmax	
	comp=Z,41nm,1.0s					
DUG	Dugway, Tooele	26.38	335	eP	P	13 29 43.1 +1.8
	comp=Z,41nm,0.9s					
DUG				LR	LR	
	comp=Z,10µm,19.0s					
SMMC	Simmler	26.48	318	P	P	13 29 44.8 +2.7
	baz=129,SNR=12					
J31A	Geddes	26.50	0	P	P	13 29 41.7 -0.5
	baz=180					
J30A	Dallas	26.54	359	P	P	13 29 42.4 -0.2
	baz=178					
GRTK	Grand Turk	26.56	75	eP	P	13 29 42.0 -0.9
GRTK				LR	LR	
	comp=Z,11µm,20.0s					
TIN	Tinemaha, Big	26.57	323	P	P	13 29 43.8 +0.8
	baz=134					
J33A	Davis	26.58	3	P	P	13 29 41.9 -0.9
	baz=184,SNR=6.2					
J32A	Parkston	26.60	2	P	P	13 29 42.8 -0.2
	baz=182					
J27A	Elkhorn Farm,	26.61	355	P	P	13 29 44.4 +1.2
	baz=173					
J34A	George	26.61	5	P	P	13 29 42.5 -0.6
	baz=186					
J29A	Okreek	26.65	358	P	P	13 29 43.7 +0.2
	baz=176					
RCTC	Rector, Farmer	26.65	321	P	P	13 29 39.6 -3.9
	baz=131,SNR=20					
TCUT	Toone Canyon	26.66	338	eP	P	13 29 45.5 +1.6
	comp=Z,110nm,0.8s					
K22A	Casper	26.69	347	P	P	13 29 44.5 +0.5
	baz=163,SNR=16					
K22A	Casper	26.69	347	eP	P	13 29 44.9 +0.8
	comp=Z,76nm,1.0s					
J28A	Allard Ranch,	26.72	356	P	P	13 29 44.6 +0.5
	baz=174,SNR=11					
ROSC	El Rosal	26.74	113	P	P	13 29 46.2 +1.1
	comp=Z,3.6nm,0.3s,baz=197,slow=19,SNR=2.9					
ROSC	El Rosal	26.74	113	P	P	13 29 46.2 +1.1
ROSC				esP	pP	13 29 54.2 +0.1
ROSC	El Rosal	26.74	113	eP	P	13 29 51.0 +6.0
J35A	Milford	26.75	6	P	P	13 29 43.2 -1.3
	baz=187					
J26A	Sides Ranch, S	26.77	353	P	P	13 29 45.9 +1.2
	baz=170,SNR=19					
PRAC	Prado	26.80	116	eP	P	13 29 47.7 +2.6
J36A	Seneca 1, Swea	26.81	7	P	P	13 29 43.5 -1.4
	baz=189					
J37A	Redenius Farm,	26.90	8	P	P	13 29 44.7 -1.0
	baz=191					
GRMC	Gramalote, San	26.90	106	eP	P	13 29 50.1 +3.9
CBRI	Barrientos, No	26.91	106	eP	P	13 29 54.2 +7.9
J25A	Sunshine Ranch	26.94	352	P	P	13 29 47.1 +0.9
	baz=169,SNR=38					
BARC	Barichara	26.99	109	eP	P	13 29 50.6 +3.5
MCU	Monte Cristo P	27.00	339	eP	P	13 29 48.2 +1.3
ECSD	EROS Data Cent	27.01	3	eP	P	13 29 45.9 -0.8
	comp=Z,106nm,1.0s					
ECSD				LR	LR	
	comp=Z,10µm,20.0s					
J38A	Wedel Dairy, R	27.07	10	P	P	13 29 46.1 -1.2
	baz=193					
BGU	Big Grassy Mou	27.09	336	eP	P	13 29 49.3 +1.6
	comp=Z,55nm,1.2s					
JFWS	Jewell Farm	27.13	14	eP	P	13 29 46.8 -1.0
JFWS				pmax	pmax	
	comp=Z,100nm,0.9s					
JFWS	Jewell Farm	27.13	14	eP	P	13 29 46.8 -1.0
	comp=Z,104nm,0.8s					
JFWS				LR	LR	
	comp=Z,11µm,20.0s					
I30A	Oacoma	27.13	359	P	P	13 29 47.3 -0.6
	baz=178					
PAMC	Pamplona, Colo	27.14	107	eP	P	13 29 50.6 +1.9
HWUT	Hardware Ranch	27.14	339	PFAKE		13 30 00.0 +12
HWUT				LR	LR	
	comp=Z,22µm,20.0s					
ACSO	Alum Creek Sta	27.17	27	eP	P	13 29 47.6 -0.6
	comp=Z,174nm,1.0s					
ACSO				LR	LR	
	comp=Z,2µm,20.0s					
SPUT	South Promonto	27.20	337	eP	P	13 29 50.4 +1.8
	comp=Z,54nm,1.0s					
I31A	Royce, Wessing	27.24	0	P	P	13 29 48.2 -0.6
	baz=180					
I35A	Creekview Farm	27.26	6	P	P	13 29 48.2 -0.8
	baz=188					
I32A	Karley and Nic	27.26	2	P	P	13 29 48.4 -0.6
	baz=182					
I29A	Vivian Onida	27.26	358	P	P	13 29 48.8 -0.3
	baz=176,SNR=6.5					
I28A	Midland	27.29	356	P	P	13 29 49.4 +0.1
	baz=175,SNR=14					
I33A	Coleman	27.31	3	P	P	13 29 48.7 -0.8
	baz=184					
MLAC	Mammoth, Mammo	27.32	324	P	P	13 29 51.7 +1.8
	baz=134					
I34A	Hadley	27.37	5	P	P	13 29 48.7 -1.2
	baz=186					
RUSC	La Rusia	27.37	110	eP	P	13 29 53.5 +2.7
I27A	Quinn	27.42	355	P	P	13 29 50.9 +0.4
	baz=173					
I26A	New Underwood	27.46	354	P	P	13 29 51.9 +1.0
	baz=171					
NV11	Mina Array Sit	27.51	326	eP	P	13 29 53.8 +2.4
	comp=Z,48nm,1.0s					
I36A	Fitzsimmons Fa	27.53	7	P	P	13 29 50.4 -1.0
	baz=190					
I25A	Rochford	27.55	352	P	P	13 29 53.1 +1.3
	baz=169,SNR=26					
BW06	Boulder Array	27.56	343	P	P	13 29 52.9 +1.0
	baz=157,SNR=131					
BW06	Boulder Array	27.56	343	eP	P	13 29 52.6 +0.7
	comp=Z,167nm,1.2s					
BW06				LR	LR	
	comp=Z,21µm,19.0s					
PD31	Pinedale Array	27.56	343	eP	P	13 29 52.7 +0.8
PDAR	Pinedale Array	27.56	343	P	P	13 29 52.6 +0.7
	comp=Z,19nm,0.8s,baz=128,slow=9.6,SNR=136					
PDAR				LR	LR	13 42 07.5
	comp=Z,16µm,19.3s,baz=168,slow=39					
NV01	Mina Array Sit	27.59	326	eP	P	13 29 53.9 +1.7
NVAR	Mina Array Bea	27.59	326	P	P	13 29 54.0 +1.8
	comp=Z,33nm,1.0s,baz=144,slow=6.5,SNR=49					
NVAR				LR	LR	13 41 45.3
	comp=Z,9µm,18.1s,baz=144,slow=39					
I37A	Lemond, Waseca	27.61	8	P	P	13 29 51.5 -0.6
	baz=191					
SUSD	Miller	27.66	360	P	P	13 29 52.2 -0.3
	baz=179					
RSSD	Black Hills	27.69	352	P	P	13 29 54.0 +0.9
	baz=169					
RSSD	Black Hills	27.69	352	eP	P	13 29 53.9 +0.9
RSSD				pmax	pmax	
	comp=Z,72nm,1.3s					
RSSD	Black Hills	27.69	352	eP	P	13 29 53.9 +0.8
	comp=Z,72nm,1.3s					
H31A	Wolsey	27.69	1	P	P	13 29 52.1 -0.7
	baz=180					
HVU	Hansel Valley	27.73	337	eP	P	13 29 54.8 +1.4
HVU				pmax	pmax	
	comp=Z,95nm,0.9s					
HVU	Hansel Valley	27.73	337	eP	P	13 29 54.8 +1.4
	comp=Z,95nm,0.9s					
H32A	Carlson Farm,	27.74	2	P	P	13 29 52.5 -0.8
	baz=182,SNR=14					
I38A	Scanlan Farm,	27.80	10	P	P	13 29 52.0 -1.8
	baz=193,SNR=10					
ELK	Elko	27.86	333	LR	LR	13 41 34.1
	comp=Z,4µm,19.8s,baz=135,slow=38					
ELK	Elko	27.86	333	eP	P	13 29 57.1 +2.4
ELK				pmax	pmax	
	comp=Z,52nm,1.6s					
ELK	Elko	27.86	333	eP	P	13 29 57.0 +2.4
	comp=Z,52nm,1.6s					
H29A	Onida	27.86	358	P	P	13 29 53.9 -0.5
	baz=177					
H33A	Prehn Over Nor	27.95	3	P	P	13 29 54.0 -1.2
	baz=184,SNR=20					
H28A	Mission Ridge	27.95	357	P	P	13 29 54.9 -0.2
	baz=175					
H27A	Howes	27.98	355	P	P	13 29 55.9 +0.4
	baz=173,SNR=9.3					
URVA	University of	27.99	38	eP	P	13 29 55.9 +0.4
H34A	Spellman Lake,	28.00	5	P	P	13 29 54.7 -0.8
	baz=186					

AHID	**Auburn Hatcher**	28.02	340	*e*P		**P**	13 29 56.6 +0.6
	comp=Z,35nm,0.8s						
AHID				LR		LR	
	comp=Z,19µm,19.0s						
H26A	**Fairpoint**	28.03	354	P		**P**	13 29 56.2 +0.3
	baz=172						
H36A	**Jessenland, He**	28.09	7	P		**P**	13 29 55.1 -1.3
	baz=190,SNR=13						
H35A	**Sunnyside Ranc**	28.11	6	P		**P**	13 29 55.2 -1.4
	baz=188,SNR=9.7						
H25A	**Fruitdale**	28.13	353	P		**P**	13 29 58.2 +1.4
	baz=170,SNR=34						
H37A	**Dierke Farm, C**	28.23	9	P		**P**	13 29 56.5 -1.2
	baz=192						
WAKR	**Walker**	28.27	324	*e*P		**P**	13 30 00.8 +2.5
G28A	**Parade**	28.34	357	P		**P**	13 29 58.7 0.0
	baz=175						
G30A	**Faulkton**	28.34	359	P		**P**	13 29 58.0 -0.7
	baz=179						
G29A	**Hoven**	28.42	358	P		**P**	13 29 58.6 -0.8
	baz=177						
G31A	**Conde**	28.44	1	P		**P**	13 29 58.1 -1.4
	baz=181						
G33A	**Ortonville**	28.48	4	P		**P**	13 29 58.7 -1.1
	baz=184,SNR=13						
REDW	**Red Top Meadow**	28.48	341	*e*P		**P**	13 30 01.1 +1.0
	comp=Z,73nm,1.0s						
CMB	**Columbia Colle**	28.49	322	*e*P		**P**	13 30 01.7 +1.7
CMB				pmax		pmax	
	comp=Z,23nm,1.2s						
CMB	**Columbia Colle**	28.49	322	*e*P		**P**	13 30 01.7 +1.7
	comp=Z,23nm,1.3s						
G32A	**Webster**	28.49	2	P		**P**	13 29 59.5 -0.5
	baz=182						
CBN	**Corbin Frederi**	28.51	37	PFAKE			13 30 10.0 +10
CBN				LR		LR	
	comp=Z,3µm,20.0s						
SDV	**Santo Domingo**	28.52	102	P		**P**	13 30 01.3 +0.6
	comp=Z,30nm,0.4s,baz=307,slow=5.1,SNR=2.8						
SDV				LR		LR	13 42 45.2
	comp=Z,4µm,18.6s,baz=290,slow=39						
SDV	**Santo Domingo**	28.52	102	*e*P		P	13 30 09.5 +8.8
SNOW	**Snow King Moun**	28.55	342	*e*P		**P**	13 30 02.1 +1.4
	comp=Z,169nm,1.0s						
G34A	**Benson**	28.58	5	P		**P**	13 29 59.5 -1.2
	baz=186						
AAM	**Ann Arbor**	28.62	24	*e*P		**P**	13 30 01.0 -0.1
AAM				pmax		pmax	
	comp=Z,230nm,1.3s						
AAM	**Ann Arbor**	28.62	24	*e*P		**P**	13 30 01.0 -0.1
	comp=Z,231nm,1.3s						
AAM				LR		LR	
	comp=Z,4µm,19.0s						
LOHW	**Long Hollow**	28.64	342	*e*P		**P**	13 30 02.7 +1.1
	comp=Z,161nm,1.4s						
G35A	**Watkins**	28.66	6	P		**P**	13 29 60.0 -1.5
	baz=188						
G25A	**Newell**	28.67	353	P		**P**	13 30 02.4 +0.8
	baz=170,SNR=13						
G26A	**Maurine**	28.68	354	P		**P**	13 30 02.2 +0.4
	baz=172,SNR=30						
G27A	**Dupree**	28.71	355	P		**P**	13 30 02.0 0.0
	baz=173,SNR=6.2						
G36A	**St. Michael**	28.76	7	P		**P**	13 30 01.2 -1.1
	baz=190						
SPMN	**Marine on St.**	28.88	9	P		**P**	13 30 02.7 -0.7
	baz=192						
SPMN	**Marine on St.**	28.88	9	*e*P		**P**	13 30 02.2 -1.2
	comp=Z,86nm,0.9s						
IMW	**Indian Meadow**	29.00	342	*e*P		**P**	13 30 05.8 +0.9
	comp=Z,43nm,0.8s						
F30A	**Leola**	29.05	360	P		**P**	13 30 04.4 -0.5
	baz=179						
F29A	**Eureka**	29.06	359	P		**P**	13 30 04.6 -0.4
	baz=178						
F31A	**Hecla**	29.08	1	P		**P**	13 30 03.8 -1.3
	baz=181,SNR=6.9						
FLWY	**Flagg Ranch**	29.09	342	*e*P		**P**	13 30 06.8 +1.2
	comp=Z,76nm,1.2s						
F28A	**McLaughlin**	29.11	357	P		**P**	13 30 05.5 0.0
	baz=176						
F32A	**Veblen**	29.12	2	P		**P**	13 30 03.8 -1.7
	baz=183						
F33A	**5 Mile Ranch,**	29.13	4	P		**P**	13 30 04.0 -1.6
	baz=185,SNR=8.7						
N54A	**Moraine State**	29.13	30	P		**P**	13 30 05.3 -0.4
	baz=219,SNR=6.9						
F34A	**Alexandria**	29.16	5	P		**P**	13 30 04.6 -1.3
	baz=187						
F27A	**Lemmon**	29.21	355	P		**P**	13 30 06.3 -0.1
	baz=173,SNR=13						
F26A	**Lodgepole**	29.24	354	P		**P**	13 30 07.1 +0.4
	baz=172,SNR=18						
F35A	**Swanville**	29.29	6	P		**P**	13 30 06.0 -1.0
	baz=188						
O56A	**Blue Knob Stat**	29.32	33	P		**P**	13 30 07.2 -0.2
	baz=222,SNR=16						
H17A	**Grant Village**	29.34	343	P		**P**	13 30 09.6 +1.7
	baz=156,SNR=9.1						
H17A	**Grant Village**	29.34	343	*e*P		**P**	13 30 10.3 +2.4
	comp=Z,135nm,1.8s						
F25A	**Bowman**	29.40	353	P		**P**	13 30 08.9 +0.8
	baz=170,SNR=11						
F36A	**Milaca**	29.41	8	P		**P**	13 30 06.8 -1.3
	baz=190,SNR=11						
AFDM	**Forest Hills D**	29.44	323	*e*P		**P**	13 30 10.5 +2.0
	comp=Z,18nm,1.3s						
LKWY	**Lake**	29.45	343	*e*P		**P**	13 30 11.0 +2.2
LKWY				pmax		pmax	
	comp=Z,54nm,1.0s						
LKWY	**Lake**	29.45	343	*e*P		**P**	13 30 11.0 +2.2
	comp=Z,54nm,1.0s						
LKWY				LR		LR	
	comp=Z,22µm,21.0s						
YFT	**Old Faithful**	29.47	342	*e*P		**P**	13 30 11.9 +2.9
	comp=Z,40nm,0.9s						
ALLY	**Alegheny Colle**	29.59	29	*e*P		**P**	13 30 09.5 -0.3
	comp=Z,89nm,0.9s						
SDMD	**Soldier's Deli**	29.64	36	*e*P		**P**	13 30 10.8 +0.6
SDMD				*es*P		**pP**	13 30 15.8 -3.6
RLMT	**Red Lodge**	29.67	345	P		**P**	13 30 11.5 +0.9
	baz=159,SNR=35						
RLMT	**Red Lodge**	29.67	345	*e*P		**P**	13 30 11.3 +0.6
	comp=Z,103nm,1.0s						
RLMT				LR		LR	
	comp=Z,7µm,19.0s						
YPM	**Purple Mountai**	29.67	342	*e*P		**P**	13 30 12.7 +1.9
M54A	**Oil Creek Stat**	29.71	30	P		**P**	13 30 10.3 -0.5
	baz=219,SNR=15						
YMR	**Madison River**	29.71	342	*e*P		**P**	13 30 13.0 +1.9
E30A	**Jud**	29.71	360	P		**P**	13 30 10.0 -0.8
	baz=179						
E27A	**Carson**	29.73	356	P		**P**	13 30 11.4 +0.4
	baz=174						
E31A	**Nome**	29.78	1	P		**P**	13 30 10.4 -0.9
	baz=181,SNR=7.5						
YHH	**Holmes Hill**	29.78	343	*e*P		**P**	13 30 13.4 +1.6
E29A	**Napoleon**	29.79	359	P		**P**	13 30 11.3 -0.1
	baz=178,SNR=6.2						
E33A	**Westby DABS, E**	29.81	4	P		**P**	13 30 10.1 -1.5
	baz=185						
E28A	**Huff**	29.83	357	P		**P**	13 30 11.6 -0.2
	baz=176						
E26A	**Carlson Angus**	29.84	355	P		**P**	13 30 12.2 +0.2
	baz=173,SNR=7.8						
E32A	**Braaten, Kindr**	29.84	2	P		**P**	13 30 10.8 -1.1
	baz=183						
HLID	**Hailey**	29.88	337	P		**P**	13 30 14.1 +1.6
	baz=148,SNR=81						
HLID	**Hailey**	29.88	337	*e*P		**P**	13 30 13.8 +1.3
	comp=Z,60nm,1.0s						
HLID				LR		LR	
	comp=Z,9µm,20.0s						
E34A	**Wadena**	29.88	5	P		**P**	13 30 11.1 -1.2
	baz=187						
SSPA	**Standing Stone**	29.94	33	*e*P		**P**	13 30 12.9 +0.1
	comp=Z,443nm,2.0s						
E25A	**Miller Ranch,**	29.96	354	P		**P**	13 30 13.2 +0.2
	baz=171,SNR=11						
QLMT	**Earthquake Lak**	29.99	342	*e*P		**P**	13 30 15.5 +2.0
E35A	**Pequot Lakes**	29.99	6	P		**P**	13 30 12.5 -0.7
	baz=188						
ERPA	**Erie**	30.03	29	*e*P		**P**	13 30 13.3 -0.4
	comp=Z,58nm,0.8s						
E36A	**McGregor**	30.09	8	P		**P**	13 30 13.2 -0.9
	baz=190						
ORV	**Oroville**	30.15	324	*e*P		**P**	13 30 17.5 +2.7
ORV				*e**SP		**sP**	13 30 30.3 +2.5
ORV	**Oroville**	30.15	324	*e*P		**P**	13 30 17.5 +2.7
ORV				*es*P		**sP**	13 30 30.3 +2.5
E37A	**Wrenshall**	30.25	9	P		**P**	13 30 14.2 -1.3
	baz=192						
D31A	**Mcclaflin, Tow**	30.27	1	P		**P**	13 30 14.2 -1.5
	baz=182						
D29A	**Pettibone, Tap**	30.28	359	P		**P**	13 30 14.8 -1.0
	baz=178						
MFID	**Camas Ranch**	30.31	335	*e*P		**P**	13 30 18.3 +2.0
	comp=Z,53nm,1.1s						
D30A	**Buchanan**	30.32	0	P		**P**	13 30 15.5 -0.7
	baz=180,SNR=6.8						
D32A	**Dogwood Acres,**	30.38	2	P		**P**	13 30 15.6 -1.1
	baz=183						
D26A	**Manning**	30.39	355	P		**P**	13 30 17.0 +0.2
	baz=173,SNR=12						
GCMT	**Greycliff**	30.39	345	*e*P		**P**	13 30 17.8 +0.8
COWI	**Conover**	30.40	13	*e*P		**P**	13 30 16.1 -0.8
	comp=Z,42nm,0.8s						
COWI				LR		LR	
	comp=Z,10µm,22.0s						
D27A	**Center**	30.41	356	P		**P**	13 30 17.0 +0.1
	baz=174,SNR=6.2						
MCMT	**McKenzie Canyo**	30.43	340	*e*P		**P**	13 30 19.5 +2.0
D28A	**Regan**	30.44	358	P		**P**	13 30 17.4 +0.1
	baz=176						
D34A	**Park Rapids**	30.45	5	P		**P**	13 30 16.0 -1.3
	baz=186,SNR=9.3						
D33A	**AnnSam, Waubun**	30.45	4	P		**P**	13 30 15.7 -1.6
	baz=185,SNR=6.0						
D35A	**Remer**	30.55	6	P		**P**	13 30 16.8 -1.3
	baz=189,SNR=7.5						
D25A	**Fairfield**	30.59	354	P		**P**	13 30 19.3 +0.7
	baz=171,SNR=18						
D36A	**Goodland**	30.75	8	P		**P**	13 30 18.5 -1.4
	baz=190,SNR=8.7						
WVOR	**Wild Horse Val**	30.75	331	*e*P		**P**	13 30 21.7 +1.5
WVOR				pmax		pmax	
	comp=Z,46nm,1.0s						
WVOR	**Wild Horse Val**	30.75	331	*e*P		**P**	13 30 21.7 +1.5
	comp=Z,46nm,1.0s						
WVOR				LR		LR	
	comp=Z,27µm,21.0s						
BOZ	**Bozeman (W)**	30.79	342	P		**P**	13 30 21.4 +0.9
	baz=155,SNR=16						
BOZ	**Bozeman (W)**	30.79	342	*e*P		**P**	13 30 21.7 +1.2
BOZ	**Bozeman (W)**	30.79	342	*e*P		**P**	13 30 21.7 +1.2
BOZ				LR		LR	
	comp=Z,25µm,22.0s						
O03D	**Paynes Creek**	30.83	324	P		**P**	13 30 20.6 -0.3
	baz=133						
D37A	**Cotton**	30.83	9	P		**P**	13 30 19.6 -1.0
	baz=192,SNR=8.4						
DLMT	**Dillon**	30.83	341	*e*P		**P**	13 30 22.7 +1.9
	comp=Z,131nm,0.9s						
C30A	**Mose, Pekin**	30.92	0	P		**P**	13 30 21.0 -0.4
	baz=180						
C28A	**Hausauer Farms**	30.96	358	P		**P**	13 30 21.8 0.0
	baz=177,SNR=5.3						
C27A	**Sayler Ranch,**	31.01	356	P		**P**	13 30 22.0 -0.2
	baz=175						
C31A	**Landman Farms,**	31.02	1	P		**P**	13 30 21.6 -0.7
	baz=182,SNR=13						
C34A	**RKJ Ranch, Bem**	31.03	5	P		**P**	13 30 21.0 -1.4
	baz=187,SNR=6.6						
LCCM	**Lewis and Clar**	31.04	342	P		**P**	13 30 24.3 +1.6
C33A	**Trail**	31.07	4	P		**P**	13 30 20.9 -1.9
	baz=185						
C32A	**Crookston**	31.09	3	P		**P**	13 30 21.4 -1.6
	baz=184						
ATAH	**Atahualpa**	31.12	138	LR		LR	13 40 39.5
	comp=Z,3µm,18.6s,baz=322,slow=32						
C25A	**Freed Ranch, W**	31.14	354	P		**P**	13 30 23.4 0.0
	baz=171						
C26A	**Wahner Farm, P**	31.16	356	P		**P**	13 30 23.8 +0.2
	baz=174,SNR=5.4						
MOD	**Modoc Plateau**	31.17	328	*e*P		**P**	13 30 25.5 +1.6
	comp=Z,29nm,0.9s						
SJG	**San Juan**	31.17	83	P		**P**	13 30 24.4 +0.4
	comp=Z,8.4nm,0.3s,baz=137,slow=1.2,SNR=5.1						
SJG	**San Juan**	31.17	83	*e*P		**P**	13 30 24.1 +0.2
SJG				pmax		pmax	
	comp=Z,98nm,1.4s						
SJG	**San Juan**	31.17	83	*e*P		**P**	13 30 24.1 +0.2
	comp=Z,98nm,1.4s						
SJG				LR		LR	
	comp=Z,5µm,20.0s						
C35A	**Jirik Farms, M**	31.17	6	P		**P**	13 30 22.3 -1.3
	baz=189,SNR=12						
LRM	**Limekiln Ridge**	31.20	341	*e*P		**P**	13 30 25.5 +1.3
N59A	**State Game Lan**	31.27	35	P		**P**	13 30 24.9 +0.3
	baz=226,SNR=5.3						
LUPA	**Lehigh Univers**	31.27	36	*e*P		**P**	13 30 25.4 +0.8
	comp=Z,59nm,1.1s						
C36A	**Pine Crest Far**	31.36	8	P		**P**	13 30 24.2 -1.1
	baz=191,SNR=14						
C37A	**Embarrass**	31.42	9	P		**P**	13 30 24.6 -1.2
	baz=192						
MMNY	**Mt. Morris Dam**	31.48	30	*e*P		**P**	13 30 26.6 +0.2
	comp=Z,256nm,1.3s						
C38A	**Sawbill Land.**	31.55	10	P		**P**	13 30 25.0 -2.0
	baz=194,SNR=7.4						
B33A	**Robert and Kas**	31.60	4	P		**P**	13 30 26.5 -0.9
	baz=186						
AGMN	**Agassiz Nation**	31.60	4	P		**P**	13 30 26.8 -0.6
	baz=185,SNR=63						
AGMN	**Agassiz Nation**	31.60	4	PFAKE			13 30 40.0 +13
AGMN				LR		LR	
	comp=Z,8µm,21.0s						
B31A	**Greenbush Farm**	31.65	1	P		**P**	13 30 27.4 -0.4
	baz=182						
B32A	**Ashes, Strandq**	31.66	3	P		**P**	13 30 27.2 -0.7
	baz=184,SNR=46						
B30A	**Myrvik Farm, E**	31.67	1	P		**P**	13 30 27.7 -0.3
	baz=180,SNR=11						
B27A	**Peters Farms,**	31.68	357	P		**P**	13 30 28.3 +0.2
	baz=175						
B29A	**Wagenman Farm,**	31.68	359	P		**P**	13 30 28.3 +0.1
	baz=179,SNR=22						
B25A	**Knox Farm, Ray**	31.69	354	P		**P**	13 30 28.8 +0.6
	baz=172						
B28A	**Dugan Ranch, T**	31.69	358	P		**P**	13 30 28.6 +0.4
	baz=177,SNR=8.0						
B26A	**Jensen Ranch,**	31.71	356	P		**P**	13 30 28.8 +0.3
	baz=173						
KSPA	**Keystone Colle**	31.72	34	*e*P		P	13 30 34.4 +5.9
	comp=Z,24nm,1.0s						
EYMN	**Ely**	31.73	9	*e*P		**P**	13 30 27.3 -1.3
	comp=Z,32nm,0.9s						
EYMN				LR		LR	
	comp=Z,9µm,20.0s						
BRNJ	**Basking Ridge**	31.79	36	*e*P		**P**	13 30 29.8 +0.7
	comp=Z,56nm,0.9s						
N02D	**Trinity Center**	31.79	324	P		**P**	13 30 30.4 +1.1
	baz=132						
HRY	**Holter Researc**	31.82	343	*e*P		**P**	13 30 31.2 +1.7
C39A	**Grand Marais**	31.84	11	P		**P**	13 30 27.9 -1.6
	baz=196						
B35A	**Bob, Littlefor**	31.85	6	P		**P**	13 30 28.2 -1.3
	baz=189,SNR=9.0						
KMRM	**Mail Ridge**	31.87	322	*es*P		sP	13 30 43.2 +0.3
M04C	**Macdoel**	31.88	326	P		**P**	13 30 31.4 +1.3
	baz=134						
B34A	**Aery, Baudette**	31.88	5	P		**P**	13 30 28.8 -1.1
	baz=187,SNR=16						
ODNJ	**Ogdensburg**	32.03	36	*e*P		**P**	13 30 31.7 +0.4
	comp=Z,48nm,1.3s						
K05A	**Summer Lake**	32.07	329	*e*P		**P**	13 30 32.9 +1.1
	comp=Z,29nm,1.1s						
BMO	**Blue Mountains**	32.09	335	*e*P		**P**	13 30 30.5 -1.5
	comp=Z,24nm,1.0s						
BMO				LR		LR	
	comp=Z,8µm,21.0s						
A29A	**Manning Farm,**	32.14	359	P		**P**	13 30 32.0 -0.1
	baz=179,SNR=31						
A28A	**Rude Farm, Bot**	32.15	358	P		**P**	13 30 32.5 +0.2
	baz=177,SNR=13						
A30A	**Hoffart Farm,**	32.16	1	P		**P**	13 30 32.1 -0.2
	baz=181,SNR=17						
M02C	**Callahan**	32.16	325	P		**P**	13 30 34.3 +1.8
	baz=132						
A31A	**Linda, St. Vin**	32.17	2	P		**P**	13 30 31.6 -0.8
	baz=183						
A32A	**Rocking H Ranc**	32.19	3	P		**P**	13 30 31.7 -0.8
	baz=184,SNR=6.9						
A26A	**Wade Farm, Ken**	32.22	356	P		**P**	13 30 33.1 +0.2
	baz=174						
A27A	**Ledoux Ranch,**	32.23	357	P		**P**	13 30 33.0 +0.1
	baz=175						
A33A	**Warroad**	32.27	4	P		**P**	13 30 32.6 -0.6
	baz=186,SNR=9.6						
KHMM	**Horse Mountain**	32.31	323	*e*P		**P**	13 30 37.3 +3.4
KHMM				*es*P		**pP**	13 30 42.5 -0.6
YBH	**Yreka Blue Hor**	32.31	325	LR		LR	13 45 44.5
	comp=Z,4µm,18.5s,baz=151,slow=40						
A25A	**Svangstu Ranch**	32.34	355	P		**P**	13 30 34.6 +0.6
	baz=172,SNR=5.6						
PAL	**Palisades**	32.37	37	*e*P		**P**	13 30 34.6 +0.3
PAL				pmax		pmax	
	comp=Z,63nm,1.0s						
PAL	**Palisades**	32.37	37	*e*P		**P**	13 30 34.6 +0.3
	comp=Z,63nm,1.0s						
CHMT	**Chamberlain Mo**	32.42	341	*e*P		**P**	13 30 35.7 +0.8
K04D	**Chiloquin, OR**	32.43	328	P		**P**	13 30 36.6 +1.6
	baz=136						
EGMT	**Eagleton**	32.51	346	P		**P**	13 30 36.2 +0.7
	baz=160,SNR=27						
EGMT	**Eagleton**	32.51	346	*e*P		**P**	13 30 36.5 +1.0
	comp=Z,177nm,1.5s						
EGMT				LR		LR	
	comp=Z,4µm,20.0s						
SADO	**Sadowa**	32.51	26	P		**P**	13 30 34.0 -1.4
	comp=Z,34nm,0.8s,baz=239,slow=8.8,SNR=28						
SADO	**Sadowa**	32.51	26	*e*P		**P**	13 30 34.6 -0.8
	comp=Z,69nm,1.1s						
MSO	**Missoula**	32.56	341	P		**P**	13 30 37.1 +1.1
	baz=152,SNR=24						
MSO	**Missoula**	32.56	341	*e*P		**P**	13 30 37.3 +1.3
	comp=Z,44nm,0.8s						
J05D	**Fort Rock, OR**	32.65	329	P		**P**	13 30 37.3 +0.4
	baz=137						
L02D	**Cave Junction,**	33.09	325	P		**P**	13 30 42.8 +2.3
	baz=132						
SWMT	**Swartz Lake**	33.18	341	*e*P		**P**	13 30 42.1 +0.7
I05D	**Terrebonne, OR**	33.48	330	P		**P**	13 30 45.3 +1.3
	baz=138						
JTMT	**Jette**	33.48	341	*e*P		**P**	13 30 45.0 +0.9
YBMT	**Yellow Bay**	33.50	341	*e*P		**P**	13 30 45.1 +0.9
ULM	**Lac du Bonnet**	33.55	3	P		**P**	13 30 43.3 -1.2
	comp=Z,17nm,0.7s,baz=184,slow=8.4,SNR=23						
ULM				LR		LR	13 45 24.1
	comp=Z,7µm,20.3s,baz=181,slow=38						
ULM	**Lac du Bonnet**	33.55	3	*e*P		**P**	13 30 43.2 -1.2
	comp=Z,25nm,0.9s						
I04A	**Tendick Farm,**	33.61	328	P		**P**	13 30 45.8 +0.7
	baz=136						
TRY	**Troy**	33.66	34	*e*P		**P**	13 30 46.2 +0.7
	comp=Z,350nm,2.0s						
BSMT	**Bassoo Peak**	33.73	340	*e*P		**P**	13 30 46.7 +0.4
BLMT	**Blacktail Moun**	33.74	341	*e*P		**P**	13 30 48.0 +1.6
E09A	**Wood Farm, Sta**	33.79	336	*e*P		**P**	13 30 48.1 +1.5
	comp=Z,39nm,1.1s						
G06A	**Carlson Farm,**	33.83	332	*e*P		**P**	13 30 49.6 +2.6
	comp=Z,18nm,1.0s						
I03D	**Drain, OR**	34.01	327	P		**P**	13 30 49.7 +1.1
	baz=134						
ACCN	**Adirondack Com**	34.10	34	*e*P		**P**	13 30 49.7 +0.3
	comp=Z,104nm,1.4s						
H04A	**Detroit Lake**	34.14	330	P		**P**	13 30 50.7 +0.9
G05D	**Wamic, OR**	34.15	331	P		**P**	13 30 50.8 +1.0
	baz=139						
HAWA	**Hanford**	34.26	334	*e*P		**P**	13 30 54.1 +3.4
	comp=Z,45nm,1.5s						
HAWA				LR		LR	
	comp=Z,3µm,19.0s						
LONY	**Lake Ozonia**	34.51	31	*e*P		**P**	13 30 52.9 +0.1
	comp=Z,240nm,2.0s						
LONY				LR		LR	
	comp=Z,3µm,21.0s						
WALA	**Waterton Lakes**	34.54	342	*e*P		**P**	13 30 54.8 +1.5
	comp=Z,68nm,1.2s						
D08A	**Wollman Farm,**	34.55	335	*e*P		**P**	13 30 54.0 +0.8
	comp=Z,21nm,1.0s						
BBSR	**BB Station**	34.55	57	PFAKE			13 31 00.0 +6.7
BBSR				LR		LR	
	comp=Z,7µm,20.0s						
TRW	**Toppenish Ridg**	34.61	333	P		**P**	13 30 56.1 +2.3
COR	**Corvallis**	34.62	329	*e*P		**P**	13 30 56.7 +2.9
COR				pmax		pmax	
	comp=Z,86nm,1.3s						
COR	**Corvallis**	34.62	329	*e*P		**P**	13 30 56.7 +2.9
	comp=Z,86nm,1.3s						
G04A	**Mulino**	34.67	330	P		**P**	13 30 55.4 +1.1
MDV	**Middlebury**	34.78	33	*e*P		**P**	13 30 55.4 +0.2
GULW	**Guler Mountain**	34.79	332	P		**P**	13 30 57.5 +2.1
NEW	**Newport**	34.88	338	*e*P		**P**	13 30 56.9 +0.8
NEW				pmax		pmax	
	comp=Z,16nm,0.9s						
NEW	**Newport**	34.88	338	*e*P		**P**	13 30 56.9 +0.8
	comp=Z,16nm,0.8s						
NEW				LR		LR	
	comp=Z,5µm,19.0s						
C09A	**Chrisman Ranch**	34.91	337	*e*P		**P**	13 30 58.0 +1.7
	comp=Z,48nm,1.1s						
G03D	**McMinnville, O**	35.05	329	P		**P**	13 30 59.2 +1.7
	baz=136						
HNH	**Hanover**	35.06	34	*e*P		**P**	13 30 58.8 +1.2
	comp=Z,274nm,1.9s						
NAC	**Naches**	35.08	333	P		**P**	13 31 00.0 +2.2
FRNY	**Flat Rock**	35.16	32	*e*P		**P**	13 30 58.8 +0.4
	comp=Z,244nm,2.0s						
ANWB	**Willy Bob**	35.34	83	PFAKE			13 31 10.0 +10
ANWB				LR		LR	
	comp=Z,3µm,22.0s						
LTY	**Liberty**	35.42	334	*e*P		**P**	13 31 02.3 +1.5
	comp=Z,148nm,1.6s						
LON	**Longmire**	35.52	332	*e*P		**P**	13 31 03.0 +1.4
LON				pmax		pmax	
	comp=Z,31nm,1.0s						
LON	**Longmire**	35.52	332	*e*P		**P**	13 31 03.0 +1.4
	comp=Z,31nm,1.1s						
ETW	**Entiat**	35.55	335	P		**P**	13 31 03.4 +1.3
F04D	**Rainier, OR**	35.57	331	P		**P**	13 31 03.9 +1.9
	baz=137						
TRQ	**Mont Tremblant**	35.69	29	*e*P		**P**	13 31 03.2 +0.2
F03A	**Seaside**	35.72	330	*e*P		**P**	13 31 06.6 +3.4
	comp=Z,146nm,1.5s						
B08A	**Colville Reser**	35.77	336	*e*P		**P**	13 31 04.0 +0.3
	comp=Z,47nm,0.9s						
NNA	**Nana**	35.83	141	*e*P		**P**	13 31 05.1 +0.5
NNA				pmax		pmax	
	comp=Z,226nm,1.6s						
NNA				MLR		MLR	
	comp=Z,2µm,21.0s						
NNA	**Nana**	35.83	141	*e*P		**P**	13 31 05.1 +0.5
	comp=

PTGA	Pitinga	42.03	111	eP	P	13 31 57.2	+0.7	
	comp=Z,21nm,1.1s							
PTGA				LR	LR			
	comp=Z,38µm,19.0s							
FCC	Fort Churchill	42.14	4	eP	P	13 31 56.8	0.0	
FCC				pmax	pmax			
	comp=Z,33nm,0.9s							
FCC	Fort Churchill	42.14	4	eP	P	13 31 56.8	0.0	
	comp=Z,33nm,0.9s							
SAML	Samuel	43.48	123	eP	P	13 32 06.1	-2.2	
	comp=Z,18nm,0.8s							
SAML				LR	LR			
	comp=Z,957nm,21.0s							
LPAZ	La Paz	44.60	136	P	P	13 32 18.6	+0.7	
	comp=Z,12nm,0.8s,baz=339,slow=8.1,SNR=33							
LPAZ				LR	LR	13 49 02.5		
	comp=Z,2µm,21.6s,baz=297,slow=34							
LPAZ	La Paz	44.60	136	eP	P	13 32 18.6	+0.7	
	comp=Z,21nm,1.0s							
RPN	Rapa Nui	44.75	193	eP	P	13 32 21.0	+2.8	
RPN	Rapa Nui	44.75	193	eP	P	13 32 21.0	+2.8	
	comp=Z,2µm,1.3s							
RPN				LR	LR			
	comp=Z,1µm,22.0s							
SCHQ	Schefferville	45.31	26	P	P	13 32 22.1	-0.2	
	comp=Z,19nm,0.6s,baz=235,slow=6.3,SNR=13							
SCHQ				LR	LR	13 54 05.7		
	comp=Z,2µm,18.4s,baz=230,slow=40							
SCHQ	Schefferville	45.31	26	eP	P	13 32 22.0	-0.4	
	comp=Z,78nm,1.0s							
DRLN	Deer Lake	46.57	37	eP	P	13 32 32.5	+0.2	
	comp=Z,88nm,1.3s							
WRAK	Wrangell Islan	47.05	335	PFAKE		13 32 50.0	+14	
WRAK				LR	LR			
	comp=Z,7µm,19.0s							
YKA	Yellowknife Ar	47.07	350	P	P	13 32 35.7	-0.3	
	comp=Z,34nm,0.9s,baz=157,slow=7.2,SNR=96							
YKB5	Yellowknife Ar	47.07	350	eP	P	13 32 34.5	-1.5	
YKW3	Yellowknife Ar	47.14	350	eP	P	13 32 36.2	-0.4	
PB01	IPOC Station P	47.27	141	eP	P	13 32 38.8	+0.6	
	comp=Z,193nm,1.8s							
DLBC	Dease Lake	47.63	338	eP	P	13 32 43.5	+2.9	
	comp=Z,63nm,1.3s							
PB04	IPOC Station P	47.88	143	eP	P	13 32 44.7	+1.6	
	comp=Z,132nm,1.4s							
TAOE	Nuku Hiva Isla	48.14	241	eS	S	13 39 39.9	-2.5	
	comp=Z,1µm,24.2s							
TAOE				eLR	LR	13 46 12.7		
	comp=Z,9µm,25.4s,baz=57							
TAOE	Nuku Hiva Isla	48.14	241	eT	T	14 23 42.0		
	comp=Z,177nm,0.2s							
LVC	Limon Verde	48.81	142	LR	LR	13 49 26.5		
	comp=Z,4µm,20.3s,baz=324,slow=31							
LVC	Limon Verde	48.81	142	eP	P	13 32 51.9	+1.4	
	comp=Z,72nm,1.1s							
AZAP	Zapla	52.33	140	i P	P	13 33 17.8	+0.8	
LCO	Las Campanas	52.94	149	eP	P	13 33 22.5	+1.1	
	comp=Z,72nm,1.0s							
LCO				LR	LR			
	comp=Z,3µm,22.0s							
RKT	Rikitea	53.08	223	eS	S	13 40 48.8	-1.7	
	comp=Z,876nm,25.8s							
RKT				eLR	LR	13 48 45.7		
	comp=Z,10µm,25.8s,baz=39							
RKT	Rikitea	53.08	223	eT	T	14 30 07.9		
	comp=Z,108nm,0.3s							
FSA	Cafayete	53.20	143	i P	P	13 33 24.2	+1.0	
POHA	Pohakuloa	53.76	282	PFAKE		13 33 40.0	+12	
POHA				LR	LR			
	comp=Z,2µm,20.0s							
BALM	Baldy	54.01	336	eP	P	13 33 32.1	+3.4	
BALM				pmax	pmax			
	comp=Z,50nm,1.2s							
BALM	Baldy	54.01	336	eP	P	13 33 32.1	+3.4	
	comp=Z,50nm,1.3s							
DAWY	Dawson	54.79	340	eP	P	13 33 35.5	+1.3	
	comp=Z,14nm,1.0s							
BMRM	Bremner River	54.88	335	eP	P	13 33 37.7	+2.8	
	comp=Z,124nm,1.6s							
EYAK	Cordova Ski Ar	55.14	334	eP	P	13 33 40.5	+3.8	
	comp=Z,37nm,1.0s							
DIV	Divide	55.45	334	eP	P	13 33 42.0	+2.9	
	comp=Z,36nm,1.1s							
MENT	Mentasta	55.64	337	eP	P	13 33 42.5	+2.1	
	comp=Z,23nm,1.1s							
KLU	Klutina	55.70	335	eP	P	13 33 43.2	+2.3	
	comp=Z,33nm,1.1s							
EGAK	Eagle	55.84	340	eP	P	13 33 41.8	+0.1	
EGAK				LR	LR			
	comp=Z,9µm,19.0s							
RTLS	Leoncito	55.91	150	i P	P	13 33 44.8	+1.7	
RTLL	Cerro Villicun	55.94	149	i P	P	13 33 44.1	+1.2	
INK	Inuvik	56.08	345	P	P	13 33 44.0	+0.6	
	comp=Z,21nm,0.9s,baz=130,slow=6.7,SNR=28							
INK	Inuvik	56.08	345	P	P	13 33 44.0	+0.6	
INK				pmax	pmax			
	comp=Z,21nm,0.9s							
INK	Inuvik	56.08	345	eP	P	13 33 44.0	+0.6	
	comp=Z,78nm,0.9s							
ROC1	El Roble	56.09	152	eP	P	13 33 45.2	+1.0	
	comp=Z,31nm,0.8s							
DOT	Dot Lake	56.18	338	eP	P	13 33 45.8	+1.7	
	comp=Z,86nm,1.1s							
PAX	Paxson	56.32	336	eP	P	13 33 46.7	+1.4	
PAX				pmax	pmax			
	comp=Z,28nm,1.2s							
PAX	Paxson	56.32	336	eP	P	13 33 46.6	+1.4	
	comp=Z,28nm,1.2s							
RTCV	Cerro Valdivia	56.34	149	i P	P	13 33 47.6	+1.9	
SCM	Sheep Creek Mo	56.46	335	eP	P	13 33 49.0	+2.8	
SCM				pmax	pmax			
	comp=Z,48nm,1.2s							
SCM	Sheep Creek Mo	56.46	335	eP	P	13 33 49.0	+2.8	
	comp=Z,48nm,1.3s							
SEW	Seward	56.52	332	eP	P	13 33 48.2	+1.6	
	comp=Z,26nm,1.0s							
SML	Sawmill	56.86	334	eP	P	13 33 50.6	+1.6	
SML				pmax	pmax			
	comp=Z,32nm,1.0s							
SML	Sawmill	56.86	334	eP	P	13 33 50.6	+1.6	
	comp=Z,32nm,1.1s							
KDAK	Kodiak Island	57.01	329	ceP	P	13 33 54.0	+3.9	
KDAK	Kodiak Island	57.01	329	PFAKE		13 34 00.0	+10	
KDAK				LR	LR			
	comp=Z,4µm,22.0s							
PMR	Palmer	57.09	334	eP	P	13 33 50.7	+0.1	
PMR				pmax	pmax			
	comp=Z,20nm,1.0s							
PMR	Palmer	57.09	334	eP	P	13 33 50.7	+0.1	
	comp=Z,20nm,1.0s							
RC01	Rabbit Creek A	57.10	333	eP	P	13 33 50.8	0.0	
	comp=Z,22nm,0.9s							
OHAK	Old Harbor	57.15	328	eP	P	13 33 53.6	+2.5	
	comp=Z,42nm,1.2s							
HDA	Harding Lake	57.66	337	eP	P	13 33 55.9	+1.3	
	comp=Z,33nm,1.1s							
PMOR	Pomariorio Ree	57.79	240	eP	P	13 33 58.4	+2.2	
	comp=Z,170nm,1.3s							
PMOR	Pomariorio Ree	57.79	240	eT	T	14 35 46.7		
	comp=Z,30nm,0.2s							
IL1	Eielson Array	57.83	338	eP	P	13 33 55.9	+0.1	
ILAR	Eielson Array	57.83	338	P	P	13 33 56.5	+0.7	
	comp=Z,9.4nm,0.9s,baz=136,slow=3.9,SNR=65							
ILAR				LR	LR	14 01 04.1		
	comp=Z,9µm,18.4s,baz=133,slow=38							
ILB	Eielson Array	57.83	338	eP	P	13 33 57.0	+1.2	
RND	Reindeer	57.86	336	eP	P	13 33 57.6	+1.4	
RND				pmax	pmax			
	comp=Z,62nm,1.1s							
RND	Reindeer	57.86	336	eP	P	13 33 57.6	+1.4	
	comp=Z,62nm,1.1s							
RES	Resolute Bay	58.03	1	eP	P	13 33 56.7	-0.4	
RES				pmax	pmax			
	comp=Z,110nm,1.7s							
RES	Resolute Bay	58.03	1	eP	P	13 33 56.7	-0.4	
	comp=Z,107nm,1.8s							
MCK	McKinley	58.05	336	eP	P	13 33 58.4	+1.0	
MCK				pmax	pmax			
	comp=Z,57nm,1.2s							
MCK	McKinley	58.05	336	eP	P	13 33 58.4	+1.0	
	comp=Z,57nm,1.3s							
CCB	Clear Creek Bu	58.10	337	eP	P	13 33 58.0	+0.4	
	comp=Z,12nm,0.8s							
WRH	Wood River Hil	58.11	337	eP	P	13 33 59.8	+2.0	
	comp=Z,25nm,1.1s							
SPU	Mount Spurr	58.15	333	eP	P	13 33 59.2	+1.0	
MRA	San Martin	58.21	147	i P	P	13 33 59.3	+0.2	
COLA	College	58.23	338	d iP	P	13 33 59.2	+0.6	
COLA				pmax	pmax			
	comp=Z,18nm,1.2s							
COLA	College	58.23	338	eP	P	13 33 59.8	+1.2	
	comp=Z,28nm,0.9s							
COLA				LR	LR			
	comp=Z,4µm,20.0s							
FYU	Fort Yukon	58.27	340	eP	P	13 34 00.6	+1.8	
	comp=Z,48nm,1.3s							
MDM	Murphy Dome	58.42	338	eP	P	13 34 01.9	+2.0	
	comp=Z,16nm,0.9s							
TRF	Thorofare Moun	58.45	336	eP	P	13 34 01.1	+0.8	
	comp=Z,55nm,0.7s							
BWN	Browne	58.48	337	eP	P	13 34 01.7	+1.3	
	comp=Z,161nm,1.0s							
KTH	Kantishna Hill	58.74	336	eP	P	13 34 03.0	+0.6	
	comp=Z,33nm,1.0s							
CPUP	Villa Florida	58.77	136	P	P	13 34 02.4	-0.5	
	comp=Z,30nm,0.9s,baz=325,slow=7.9,SNR=49							
CPUP				LR	LR	13 58 26.0		
	comp=Z,762nm,19.8s,baz=330,slow=35							
PPLA	Purkeypile	58.96	335	eP	P	13 34 05.2	+1.3	
	comp=Z,42nm,1.1s							
BPAW	Bear Paw Mtn.	59.03	336	eP	P	13 34 04.7	+0.5	
	comp=Z,35nm,1.4s							
SFJD	Kangerlussuaq	59.09	20	i P	P	13 34 04.6	+0.1	
	comp=Z,20nm,0.9s							
SFJD	Kangerlussuaq	59.09	20	i P	P	13 34 04.6	+0.1	
SFJD				pmax	pmax			
	comp=Z,20nm,0.9s							
SFJD	Kangerlussuaq	59.09	20	eP	P	13 34 05.0	+0.5	
	comp=Z,29nm,0.9s							
SFJD				LR	LR			
	comp=Z,3µm,22.0s							
CAST	Castle Rocks	59.15	335	eP	P	13 34 05.3	+0.3	
	comp=Z,32nm,1.0s							
MLY	Manley	59.38	337	eP	P	13 34 07.5	+0.9	
	comp=Z,30nm,0.9s							
SVW2	Sparrevohn	59.69	332	eP	P	13 34 08.9	+0.1	
	comp=Z,25nm,1.0s							
ILULI	Ilulissat	60.20	18⇓	i P	P	13 34 12.0	-0.1	
	comp=Z,2µm,16.0s							
ILULI	Ilulissat	60.20	18⇓	i P	P	13 34 12.0	-0.1	
ILULI				MLR	MLR			
	comp=Z,2µm,16.0s							
COLD	Coldfoot	60.27	339	eP	P	13 34 14.2	+1.5	
	comp=Z,17nm,1.0s							
PPT	Papeete	60.50	238	LR	LR	13 53 48.7		
	comp=Z,2µm,18.3s,baz=58,slow=30							
PPT2	Papeete2	60.51	238	eS	S	13 42 28.2	-0.9	
	comp=Z,2µm,26.5s							
PPT2				eSS	SS	13 46 31.2	+3.4	
	comp=Z,365nm,25.5s							
PPT2				eLQ	LQ	13 49 41.4		
	comp=Z,2µm,27.8s							
PPT2				eLR	LR	13 51 56.3		
	comp=Z,7µm,25.8s,baz=53							
TT01	Tatalina	60.56	334	eP	P	13 34 14.9	+0.1	
TTA	Tatalina	60.57	334	eP	P	13 34 14.9	0.0	
TTA				pmax	pmax			
	comp=Z,19nm,1.0s							
TTA	Tatalina	60.57	334	eP	P	13 34 14.9	0.0	
	comp=Z,19nm,1.0s							
FALS	False Pass	61.93	324	eP	P	13 34 23.8	-0.3	
KULLO	Kullorsuaq	62.16	12⇓	i P	P	13 34 25.4	0.0	
KULLO	Kullorsuaq	62.16	12⇓	i P	P	13 34 25.4	0.0	
PLCA	Paso Flores	62.88	156	P	P	13 34 31.5	+0.8	
	comp=Z,38nm,1.0s,baz=350,slow=8.0,SNR=30							
PLCA				LR	LR	13 56 20.5		
	comp=Z,3µm,18.6s,baz=349,slow=31							
PLCA	Paso Flores	62.88	156	eP	P	13 34 31.9	+1.2	
PLCA				pmax	pmax			
	comp=Z,66nm,1.0s							
PLCA	Paso Flores	62.88	156	eP	P	13 34 31.9	+1.2	
	comp=Z,66nm,1.0s							
SPB	Sao Paulo	64.20	127	PFAKE		13 34 50.0	+10	
SPB				LR	LR			
	comp=Z,2µm,20.0s							
TRQA	Tornquist	64.52	148	eP	P	13 34 42.0	+0.5	
	comp=Z,54nm,1.0s							
TRQA				LR	LR			
	comp=Z,4µm,20.0s							
SUMG	Summit	65.47	17⇓	i P	P	13 34 48.0	+0.3	
	comp=Z,55nm,1.4s							
SUMG	Summit	65.47	17	eP	P	13 34 48.0	+0.3	
SUMG				pmax	pmax			
	comp=Z,34nm,1.0s							
SUMG	Summit	65.47	17	eP	P	13 34 48.0	+0.3	
	comp=Z,34nm,1.0s							
RCBR	Riachuelo	66.08	104	eP	P	13 34 54.1	+1.9	
	comp=Z,45nm,1.0s							
RCBR				LR	LR			
	comp=Z,2µm,20.0s							
TNA	Tin City	66.31	335	eP	P	13 34 54.4	+1.7	
CMLA	Cha da Macela	66.88	56	PFAKE		13 35 10.0	+13	
CMLA				LR	LR			
	comp=Z,5µm,20.0s							
GAMB	Gambell	67.60	333	eP	P	13 35 02.7	+1.8	
BORG	Borgarnes	69.69	27	PFAKE		13 35 30.0	+16	
BORG				LR	LR			
	comp=Z,1µm,19.0s							
SCO	Scoresbysund	69.99	20	i P	P	13 35 15.8	+0.1	
	comp=Z,4µm,18.0s							
SCO	Scoresbysund	69.99	20	i P	P	13 35 15.8	+0.1	
SCO				MLR	MLR			
	comp=Z,4µm,18.0s							
DAG	Danmarks Havn	71.60	14⇓	i P	P	13 35 25.0	-0.4	
	comp=Z,30nm,1.1s							
	comp=Z,5µm,20.0s							
DAG	Danmarks Havn	71.60	14⇓	i P	P	13 35 25.0	-0.4	
DAG				pmax	pmax			
	comp=Z,39nm,1.1s							
DAG				MLR	MLR			
	comp=Z,5µm,20.0s							
BILL	Bilibino	76.49	337	d iP	P	13 35 54.9	+0.8	
BILL				pmax	pmax			
	comp=Z,41nm,1.5s							
BILL				MLR	MLR			
	comp=Z,2µm,18.0s							
BILL	Bilibino	76.49	337	eP	P	13 35 54.2	+0.2	
BILL				LR	LR			
	comp=Z,6µm,22.0s							
KBS	Kingsbay	77.61	11	PFAKE		13 36 10.0	+10	
KBS				LR	LR			
	comp=Z,4µm,22.0s							
AFI	Afiamalu	78.21	252	PFAKE		13 36 20.0	+15	
AFI				LR	LR			
	comp=Z,2µm,19.0s							
HSPB	Hornsund (broa	79.12	12	eP	P	13 36 10.3	+1.7	
PMAFR	Mafra	79.33	53	eS	S	13 46 05.1	-4.1	
PMAFR				eSS	SS	13 51 17.4	+1.2	
PMAFR				eLR	LR	14 01 09.6		
	comp=Z,2µm,22.0s							
LIS	Lisbon	79.49	53	eP	P	13 36 09.5	-1.9	
LIS				AMS	AMS	14 08 06.9		
	comp=Z,3µm,24.4s							
LIS	Lisbon	79.49	53	eP	P	13 36 09.4	-1.9	
ESK	Eskdalemuir	79.58	35	PFAKE		13 36 20.0	+8.5	
ESK				LR	LR			
	comp=Z,1µm,19.0s							
POLO	Lamas de Olo	79.90	50	eP	P	13 36 14.4	+0.7	
POLO				eS	S	13 45 57.8	-17	
POLO				eSS	SS	13 51 15.5	-9.2	
POLO				eLR	LR	14 01 00.5		
	comp=Z,928nm,20.0s							
PFVI	Vila Bisbo	80.10	54	eS	S	13 46 19.6	+2.3	
PFVI				eSS	SS	13 51 39.8	+12	
PFVI				eLR	LR	14 01 18.9		
	comp=Z,4µm,20.0s							
PNCL	Nicolau / Gran	80.10	53	eP	P	13 36 15.2	+0.5	
PNCL				eS	S	13 46 11.3	-6.0	
PNCL				eSS	SS	13 51 28.6	+0.9	
PNCL				eLR	LR	14 01 28.1		
	comp=Z,2µm,20.0s							
PMTG	Montargil	80.11	52	eP	P	13 36 14.8	+0.1	
	comp=Z,39nm,1.6s							
PMTG				eS	S	13 46 11.9	-5.5	
PMTG				eSS	SS	13 51 28.6	+0.8	
PMTG				eLR	LR	14 01 18.9		
	comp=Z,2µm,20.0s							
MORF	Marmelete	80.19	54	eP	P	13 36 13.4	-1.8	
MORF				eS	S	13 46 16.2	-2.2	
MORF				AMS	AMS	14 09 16.3		
	comp=Z,4µm,26.6s							
MORF	Marmelete	80.19	54	eS	S	13 46 19.2	+0.8	
MORF				eSS	SS	13 51 38.0	+8.8	
MORF	Marmelete	80.19	54	eLR	LR	14 02 00.7		
	comp=Z,4µm,20.0s							
MORF	Marmelete	80.19	54	eP	P	13 36 13.4	-1.8	
MORF				eS	S	13 46 16.2	-2.2	
MTE	Manteigas	80.31	51	eP	P	13 36 16.2	+0.3	
	comp=Z,56nm,1.5s							
MTE				eS	S	13 46 14.9	-4.7	
MTE				eSS	SS	13 51 21.1	-10	
MTE	Manteigas	80.31	51	eLR	LR	14 01 23.5		
	comp=Z,2µm,20.0s							
MTE	Manteigas	80.31	51	eP	P	13 36 16.0	+0.1	
MTE				LR	LR			
	comp=Z,3µm,20.0s							
MESJ	Messejana	80.40	53	eP	P	13 36 14.7	-1.7	
MESJ				eS	S	13 46 18.5	-1.9	
MESJ				AMS	AMS	14 08 12.9		
	comp=Z,2µm,20.4s							
MESJ	Messejana	80.40	53	eP	P	13 36 14.6	-1.7	
MESJ				eS	S	13 46 18.5	-1.9	
MVO	Moncorvo	80.51	50	eP	P	13 36 17.8	+0.9	
MVO	Moncorvo	80.51	50	eS	S	13 46 24.4	+2.7	
MVO				eSS	SS	13 51 32.4	-1.4	
MVO	Moncorvo	80.51	50	eLR	LR	14 01 42.1		
	comp=Z,2µm,20.0s							
PBRG	Braganca	80.57	49	eLR	LR	14 01 37.4		
	comp=Z,2µm,20.0s							
PCVE	Castro Verde	80.59	54	eS	S	13 46 20.1	-2.4	
PCVE				eSS	SS	13 51 41.7	+6.7	
PCVE	Castro Verde	80.59	54	eLR	LR	14 02 10.0		
	comp=Z,3µm,20.0s							
PESTR	Estremoz	80.64	52	eS	S	13 46 16.1	-6.9	
PESTR				eSS	SS	13 51 38.0	+2.3	
PESTR				eLR	LR	14 01 37.4		
	comp=Z,2µm,20.0s							
PMRV	Marv??o	80.65	52	eP	P	13 36 18.0	+0.3	
	comp=Z,62nm,1.7s							
PMRV				eS	S	13 46 15.5	-7.6	
PMRV				eSS	SS	13 51 32.4	-3.5	
PMRV				eLR	LR	14 01 28.1		
	comp=Z,2µm,20.0s							
PBDV	Barranco-do-Ve	80.77	54	eS	S	13 46 22.8	-1.6	
PBDV	Barranco-do-Ve	80.77	54	eLR	LR	14 02 00.7		
	comp=Z,4µm,20.0s							
PVAQ	Vaqueiros	80.89	54	eS	S	13 46 17.3	-8.3	
PVAQ				eSS	SS	13 51 42.6	+3.1	
PVAQ	Vaqueiros	80.89	54	eLR	LR	14 01 51.4		
	comp=Z,3µm,20.0s							
PBAR	Barrancos	81.22	53	eP	P	13 36 21.1	+0.4	
	comp=Z,91nm,1.5s							
PBAR				eS	S	13 46 20.7	-8.4	
PBAR				eSS	SS	13 51 57.6	+13	
PBAR				eLR	LR	14 01 37.4		
	comp=Z,5µm,22.0s							
PAB	San Pablo	82.90	51	eP	P	13 36 30.3	+0.7	
PAB	San Pablo	82.90	51	eP	P	13 36 30.3	+0.7	
PAB				LR	LR			
	comp=Z,2µm,20.0s							
ESDC	Sonseca Array	83.15	51	P	P	13 36 31.3	+0.4	
	comp=Z,1.9nm,0.7s,baz=300,slow=5.2,SNR=10							
ESDC				LR	LR	14 11 36.2		
	comp=Z,2µm,19.5s,baz=270,slow=34							
ESLA	Sonseca Array	83.15	51	eP	P	13 36 31.4	+0.5	
ES19	SONSECA Array	83.19	51	eP	P	13 36 31.7	+0.6	
SEY	Seymchan	83.54	334	P	P	13 36 33.3	+1.1	
	comp=Z,14nm,1.1s,baz=83,slow=7.9,SNR=17							
PET	Petropavlovsk	84.15	324	eP	P	13 36 32.4	-3.2	
PET				eS	S	13 46 53.3	-5.0	
PET				eSS	SS	13 52 36.5	+10	
PET				eSSS	SSS	13 55 55.8		
PET				pmax	pmax			
	comp=Z,200nm,13.0s							
PET				MLR	MLR			
	comp=Z,1µm,21.0s							
PET	Petropavlovsk	84.15	324	PFAKE		13 36 50.0	+14	
PET				LR	LR			
	comp=Z,4µm,21.0s							
PETK	Petropavlovsk-	84.66	324	P	P	13 36 39.1	+0.9	
	comp=Z,4.7nm,0.8s,baz=71,slow=11,SNR=5.0							
KONO	Kongsberg	84.70	29	eP	P	13 36 40.2	+2.0	
KONO	Kongsberg	84.70	29	eP	P	13 36 40.2	+2.0	
KONO				LR	LR			
	comp=Z,2µm,21.0s							
NB2	NORSAR Subarra	84.85	27	P	P	13 36 39.6	+0.6	
	comp=Z,72nm,1.7s,baz=297,slow=5.1							
NB2	NORSAR Subarra	84.85	27	P	P	13 36 39.6	+0.6	
	baz=297,slow=5.1							
NOA	NORSAR Array B	84.85	27	P	P	13 36 40.2	+1.2	
	comp=Z,2.3nm,0.9s,baz=302,slow=5.0,SNR=6.1							
NOA				LR	LR	14 16 16.5		
	comp=Z,621nm,20.1s,baz=300,slow=37							
ARCES	ARCESS Array B	85.56	17	P	P	13 36 42.9	+0.5	
	comp=Z,2.7nm,0.7s,baz=336,slow=5.7,SNR=5.0							
ARCES				LR	LR	14 16 47.2		
	comp=Z,1µm,21.1s,baz=318,slow=37							
MA2	Magadan	85.66	331	P	P	13 36 43.5	+0.4	
MA2				pmax	pmax			
	comp=Z,41nm,1.2s							
MA2				MLR	MLR			
	comp=Z,5µm,20.0s							
MA2	Magadan	85.66	331	P	P	13 36 43.5	+0.4	
	comp=Z,41nm,1.2s							
MA2				LR	LR			
	comp=Z,5µm,20.0s							
MUD	Monsted U'grnd	85.79	32	i P	P	13 36 44.9	+1.2	
MUD				i		13 36 54.3		
	comp=Z,2µm,24.0s							
MUD	Monsted U'grnd	85.79	32	i P	P	13 36 44.9	+1.2	
MUD				i		13 36 54.3		
MUD				MLR	MLR			
	comp=Z,2µm,24.0s							
KEV	Kevo	85.84	16	PFAKE		13 37 00.0	+16	
KEV				LR	LR			
	comp=Z,1µm,20.0s							
TIXI	Tiksi	86.19	346	d iP	P	13 36 45.1	-0.3	
TIXI				pmax	pmax			
	comp=Z,36nm,1.4s							
TIXI				MLR	MLR			
	comp=Z,2µm,23.0s							
TIXI	Tiksi	86.19	346	eP	P	13 36 45.5	+0.1	
TIXI				LR	LR			
	comp=Z,2µm,19.0s							
WLF	Walferdange	86.77	39	PFAKE		13 37 00.0	+11	
WLF				LR	LR			
	comp=Z,2µm,19.0s							
ASCN	Ascension	86.97	99	PFAKE		13 37 00.0	+10	
ASCN				LR	LR			
	comp=Z,1µm,21.0s							
SSB	Saint Sauveur	87.36	43	eP	P	13 36 51.0	-0.8	
SSB				MLR	MLR			
	comp=Z,1µm,21.0s							
SSB	Saint Sauveur	87.36	43	eP	P	13 36 51.0	-0.8	
SSB				LR	LR			
	comp=Z,1µm,21.0s							
COP	Copenhagen	87.78	32	i P	P	13 36 55.8	+2.4	
	comp=Z,1µm,26.0s							
COP	Copenhagen	87.78	32	i P	P	13 36 55.8	+2.4	
COP				MLR	MLR			
	comp=Z,1µm,26.0s							
TARA	Tarawa	87.96	271	PFAKE		13 37 10.0	+15	
TARA				LR	LR			
	comp=Z,103nm,19.0s							
BFO	Black Forest	88.61	40	PFAKE		13 37 10.0	+12	
BFO	

CLL	**Collm**	**90.06**	**36**	*e*P	**P**	**13 37 05.0**	**+0.7**
CLL				*e*		13 37 12.0	
CLL				*i*		13 37 15.3	
CLL				*e*PP	**PP**	**13 40 35.0**	**-2.3**
CLL				*e*SKSac	**SKSac**	**13 47 26.0**	**-7.0**
CLL				*e*PS	**PS**	**13 49 06.0**	**+0.9**
CLL				*e*SS	**SS**	**13 53 49.0**	**-4.4**
CLL				*e*SSS	SSS	13 57 24.0	
CLL				Lm	MLR	14 20 00.0	
	comp=N,500nm,20.9s						
CLL				Lm	MLR	14 20 00.0	
	comp=E,1μm,20.3s						
CLL				Lm	MLR	14 20 00.0	
	comp=Z,2μm,19.9s						
CLL	**Collm**	**90.06**	**36**	*e*P	**P**	**13 37 05.0**	**+0.7**
CLL				*i*		13 37 15.3	
CLL				*e*		13 47 26.0	
CLL				MLR	MLR		
	comp=Z,2μm,19.9s						
NKC	**Novy Kostel**	**90.24**	**37**	*e*PP	PP	13 40 33.4	-5.3
NKC				AMS	AMS	14 20 10.0	
	comp=Z,2μm,19.5s						
RETA	**Reutte**	**90.45**	**40**	*i* PcP	**P**	**13 37 07.4**	**+1.1**
	comp=Z,6.6nm,1.2s						
FUORN	**Ofenpass-Fuorn**	**90.51**	**41**	*e*P	**P**	**13 37 09.0**	**+2.2**
FETA	**Feichten**	**90.62**	**40**	*i* PcP	**P**	**13 37 09.7**	**+2.5**
	comp=Z,7.0nm,1.6s						
FINES	**FINESS Array B**	**90.74**	**23**	P	**P**	**13 37 06.1**	**-1.1**
	comp=Z,4.6nm,0.9s,baz=339,slow=4.7,SNR=9.1						
FINES				LR	LR	14 19 56.8	
	comp=Z,3μm,19.9s,baz=334,slow=37						
BRG	**Berggiesshubel**	**90.79**	**36**	*e*P	**P**	**13 37 08.4**	**+0.7**
	comp=Z,11nm,1.2s						
BRG				PP	**PP**	**13 40 40.6**	**-2.5**
	comp=Z,20nm,1.5s						
BRG				SKS	**SKSac**	**13 47 39.0**	**+1.7**
BRG				S	**S**	**13 48 00.0**	**-2.1**
BRG				SS	**SS**	**13 54 04.0**	**+0.1**
	comp=N,1μm,19.2s						
	comp=E,881nm,19.1s						
	comp=Z,2μm,19.2s						
BRG	**Berggiesshubel**	**90.79**	**36**	*e*P	**P**	**13 37 08.4**	**+0.7**
BRG						13 40 40.6	
BRG						13 47 39.0	
BRG				S	**S**	**13 48 00.0**	**-2.1**
BRG				SS	**SS**	**13 54 04.0**	**+0.1**
BRG				pmax	pmax		
	comp=Z,11nm,1.2s						
BRG				MLR	MLR		
	comp=N,1μm,19.2s						
BRG				MLR	MLR		
	comp=E,881nm,19.1s						
BRG				MLR	MLR		
	comp=Z,2μm,19.2s						
PVCC	**Panska Ves**	**91.31**	**36**	*e*PP	PP	13 40 45.5	-1.6
PVCC				AMS	AMS	14 25 00.0	
	comp=Z,2μm,15.7s						
KHC	**Kasperske Hory**	**91.39**	**37**	*e*P	**P**	**13 37 12.6**	**+2.0**
KHC				*e*pP	**pP**	**13 37 18.8**	**-1.9**
KHC				*e*PP	**PP**	**13 40 45.0**	**-2.9**
KHC				*e*SKS	**SKSac**	**13 47 41.4**	**+0.5**
KHC				*e*PS	**PnS**	**13 49 22.0**	**+1.4**
KHC				*e*SS	**SS**	**13 54 12.6**	**-0.2**
KHC				AMS	AMS	14 20 40.0	
	comp=Z,2μm,18.5s						
KHC	**Kasperske Hory**	**91.39**	**37**	*e*P	**P**	**13 37 12.6**	**+2.0**
KHC				*e*		13 37 18.8	
KHC				*e*		13 40 45.0	
KHC				*e*		13 47 41.4	
KHC				*e*PS	**PnS**	**13 49 22.0**	**+1.4**
KHC				*e*SS	SS	13 54 12.6	-0.2
KHC				MLR	MLR		
	comp=Z,2μm,18.5s						
PRU	**Pruhonice**	**91.55**	**36**	*e*PP	PP	13 40 46.8	-2.2
PRU				*e*SKS	**SKSac**	**13 47 43.5**	**+1.9**
PRU				*e*PS	**PS**	**13 49 21.2**	**-0.4**
PRU				*e*SS	**SS**	**13 54 15.6**	**+0.8**
PRU				AMS	AMS	14 20 50.0	
	comp=Z,2μm,19.3s						
GERES	**GERESS Array B**	**91.60**	**38**	P	**P**	**13 37 11.4**	**-0.3**
	comp=Z,0.8nm,0.5s,baz=343,slow=4.2,SNR=7.6						
GERES				LR	LR	14 22 06.1	
	comp=Z,1μm,18.2s,baz=288,slow=38						
VLC	**Villacollemand**	**91.63**	**43**	PFAKE		13 37 20.0	+8.2
VLC				LR	LR		
	comp=Z,570nm,22.0s						
GOPC	**GO Pecny, Ondr**	**91.72**	**36**	*e*PP	PP	13 40 48.0	-2.5
GOPC				*e*SKS	**SKSac**	**13 47 45.2**	**+2.5**
GOPC				*e*PS	**PS**	**13 49 23.5**	**-0.1**
GOPC				AMS	AMS	14 21 50.0	
	comp=Z,2μm,18.5s						
DBIC	**Dimbokro**	**91.87**	**83**	LR	LR	14 15 37.5	
	comp=Z,870nm,21.0s,baz=273,slow=34						
KSP	**Ksiaz**	**92.11**	**35**	*e*P	P	13 37 21.9	+8.1
KSP				*e*PP	**PP**	**13 40 51.9**	**-1.5**
KSP				*e*S	**SKSac**	**13 47 49.7**	**+4.9**
KSP				LMZ	LR	14 16 10.2	
	comp=Z,2μm,23.4s						
KSP	**Ksiaz**	**92.11**	**35**	*e*P	P	13 37 22.0	+8.2
KSP				*e*		13 40 51.9	
UPC	**Upice**	**92.12**	**35**	*e*PP	PP	13 40 52.9	-0.7
UPC				*e*SKS	**SKSac**	**13 47 47.2**	**+2.3**
UPC				*e*PS	**PS**	**13 49 25.2**	**-2.8**
UPC				*e*SS	**SS**	**13 54 22.4**	**-0.7**
UPC				AMS	AMS	14 23 50.0	
	comp=Z,2μm,16.7s						
KBA	**Koelnbreinsper**	**92.20**	**39**	*i* PcP	**P**	**13 37 15.0**	**+0.5**
	comp=Z,4.5nm,0.7s						
DPC	**Dobruska-Polom**	**92.37**	**35**	*e*P	**P**	**13 37 16.8**	**+1.7**
DPC				*e*pP	**pP**	**13 37 23.6**	**-1.6**
DPC				*e*sP	**sP**	**13 37 26.8**	**-2.1**
DPC				*e*PP	**PP**	**13 40 52.1**	**-3.5**
DPC				*e*SKS	**SKSac**	**13 47 48.9**	**+2.5**
DPC				*e*PS	**PS**	**13 49 27.3**	**-3.6**
DPC				*e*SS	**SS**	**13 54 24.1**	**-2.7**
DPC				AMS	AMS	14 22 20.0	
	comp=Z,1μm,18.5s						
DPC	**Dobruska-Polom**	**92.37**	**35**	*e*P	**P**	**13 37 16.8**	**+1.7**
DPC				*e*		13 37 26.8	
DPC				*e*		13 40 52.1	
DPC				*e*		13 47 48.9	
DPC				*e*PS	**PS**	**13 49 27.3**	**-3.6**
DPC				*e*SS	SS	13 54 24.1	-2.7
DPC				MLR	MLR		
	comp=Z,1μm,18.5s						
MOA	**Molln**	**92.40**	**38**	*i* PcP	**P**	**13 37 17.4**	**+2.1**
TREC	**Trest**	**92.42**	**37**	*e*PP	PP	13 40 53.1	-2.9
TREC				AMS	AMS	14 22 00.0	
	comp=Z,2μm,17.4s						
YAK	**Yakutsk**	**92.73**	**339**	P	**P**	**13 37 16.8**	**+0.4**
	comp=Z,2.9nm,0.3s,baz=139,slow=2.3,SNR=5.0						
YAK	**Yakutsk**	**92.73**	**339**	*e*P	**P**	**13 37 16.2**	**-0.2**
YAK				*e*		13 37 25.3	
YAK				*e**PP	**sP**	**13 37 30.4**	**+0.2**
YAK				*e*S	**SKSac**	**13 47 46.5**	**-1.2**
YAK				*e*		13 48 22.4	
YAK				*e*SS	**SS**	**13 54 34.9**	**+3.9**
YAK				pmax	pmax		
	comp=E,6.0nm,1.1s						
YAK				pmax	pmax		
	comp=Z,16nm,1.1s						
YAK				pmax	pmax		
	comp=N,3.0nm,1.1s						
YAK				smax	smax		
	comp=N,70nm,2.4s						
YAK				smax	smax		
	comp=E,82nm,3.2s						
YAK	**Yakutsk**	**92.73**	**339**	P	**P**	**13 37 16.8**	**+0.4**
YAK				LR	LR		
	comp=Z,10μm,21.0s						
VSL	**Villasalto**	**92.89**	**47**	PFAKE		13 37 30.0	+12
VSL				LR	LR		
	comp=Z,2μm,20.0s						
CONA	**Conrad Observa**	**93.30**	**38**	*i* PcP	**P**	**13 37 20.5**	**+1.0**
	comp=Z,6.1nm,1.3s						
MORC	**Moravsky Berou**	**93.34**	**36**	*e*P	**P**	**13 37 21.7**	**+2.1**
MORC	**Moravsky Berou**	**93.34**	**36**	*e*P	**P**	**13 37 21.7**	**+2.1**
SOKA	**Soboth**	**93.41**	**39**	*i* PcP	**P**	**13 37 20.3**	**+0.2**
	comp=Z,8.4nm,1.2s						
PUL	**Pulkovo**	**93.42**	**23**	*e*P	**P**	**13 37 19.1**	**-0.5**
PUL				pmax	pmax		
	comp=Z,49nm,0.8s						
ARSA	**Arzberg**	**93.43**	**38**	*i* pP	pP	13 37 25.7	-4.5
	comp=Z,2.9nm,0.7s						
OKC	**Ostrava-Krasne**	**93.64**	**35**	*e*PP	PP	13 41 02.9	-2.6
OKC				AMS	AMS	14 25 30.0	
	comp=Z,1μm,17.6s						
NKL	**Nikolayevsk**	**93.73**	**329**	*e*P	P	13 37 16.0	-5.2
NKL				MLR	MLR		
	comp=N,700nm,23.0s						
NKL				MLR	MLR		
	comp=E,1μm,23.0s						
NKL				MLR	MLR		
	comp=Z,600nm,21.0s						
NRIK	**Noril'sk**	**94.07**	**358**	P	**P**	**13 37 22.6**	**+0.1**
	comp=Z,4.6nm,1.0s,baz=11,slow=4.8,SNR=7.9						
NRIK				PP	**PP**	**13 41 08.3**	**+0.1**
	comp=Z,1.0nm,0.5s,baz=24,slow=9.3,SNR=4.0						
OJC	**Ojcow**	**94.35**	**34**	*e*P	**P**	**13 37 25.4**	**+1.2**
OJC				*e*PP	**PP**	**13 41 09.8**	**-1.2**
OJC				*e*S	**SKSac**	**13 47 57.3**	**+0.2**
OJC				LMZ	LR	14 18 59.7	
	comp=Z,2μm,21.5s						
OJC	**Ojcow**	**94.35**	**34**	*e*P	**P**	**13 37 25.4**	**+1.2**
OJC				*e*		13 41 09.7	
OJC				*e*S	**SKSac**	**13 47 57.3**	**+0.2**
OJC				MLR	MLR		
	comp=Z,2μm,21.5s						
AQU	**L'Aquila**	**94.40**	**43**	PFAKE		13 37 40.0	+15
AQU				LR	LR		
	comp=Z,2μm,21.0s						
KEST	**Kesra**	**94.41**	**51**	P	**P**	**13 37 25.9**	**+1.0**
	comp=Z,1.9nm,0.7s,baz=294,slow=16,SNR=2.8						
KEST				LR	LR	14 18 55.5	
	comp=Z,1μm,19.2s,baz=230,slow=35						
VYHS	**Vyhne**	**94.73**	**36**	*e*P	**P**	**13 37 23.4**	**-2.6**
VYHS				*e*		13 37 34.3	
VYHS	**Vyhne**	**94.73**	**36**	*e*P	**P**	**13 37 23.4**	**-2.6**
VYHS				*e*		13 37 34.3	
NIE	**Niedzica**	**95.05**	**35**	*e*P	P	13 37 35.9	+8.4
NIE				*e*PP	**PP**	**13 41 15.3**	**-1.3**
NIE				LMZ	LR	14 13 56.0	
	comp=Z,800nm,28.9s						
NIE	**Niedzica**	**95.05**	**35**	*e*P	P	13 37 35.8	+8.3
NIE				*e*		13 41 15.3	
YUK	**Yuzh-Kuril'sk**	**95.62**	**319**	*i* P	**P**	**13 37 27.8**	**-2.3**
YUK				*i* SP	SP	13 50 02.8	+0.4
YUK				MLR	MLR		
	comp=Z,726nm,24.0s						
YUK				MLR	MLR		
	comp=N,627nm,22.0s						
YUK				MLR	MLR		
	comp=E,237nm,22.0s						
PSZ	**Piszkesteto**	**95.64**	**36**	PFAKE		13 37 40.0	+10
PSZ				LR	LR		
	comp=Z,2μm,19.0s						
KLMR	**Klimovskoe**	**95.82**	**19**	*e*P	**P**	**13 37 29.0**	**-1.6**
KLMR				*e*		13 41 17.3	
KLMR				pmax	pmax		
	comp=Z,13nm,1.4s						
YSS	**Yuzh-Sakhalins**	**96.00**	**323**	PFAKE		13 37 40.0	+8.2
YSS				LR	LR		
	comp=Z,937nm,22.0s						
TORD	**Torodi Ar. Bea**	**96.06**	**74**	P	**P**	**13 37 31.4**	**-1.3**
	comp=Z,1.3nm,0.9s,baz=284,slow=4.0,SNR=6.1						
TORD				PKKP	**PKKPdf**	**13 54 20.7**	**+0.1**
	comp=Z,1.1nm,0.8s,baz=74,slow=2.4,SNR=6.4						
TORD				LR	LR	14 17 59.7	
	comp=Z,2μm,21.0s,baz=295,slow=34						
KWP	**Kalwaria Pacla**	**96.24**	**34**	*e*P	**P**	**13 37 33.9**	**+1.1**
KWP				*e*PP	**PP**	**13 41 24.4**	**-1.3**
KWP				LMZ	LR	14 14 17.1	
	comp=Z,1μm,29.7s						
KWP	**Kalwaria Pacla**	**96.24**	**34**	*e*P	**P**	**13 37 33.9**	**+1.1**
KWP				*e*		13 41 24.4	
TAM	**Tamanrasset**	**96.25**	**64**	PFAKE		13 37 50.0	+16
TAM				LR	LR		
	comp=Z,2μm,22.0s						
KOLS	**Kolonicke sedl**	**96.40**	**35**	*e*	P	13 37 41.6	+8.0
CLTB	**Caltabellotta**	**96.43**	**48**	PFAKE		13 37 50.0	+16
CLTB				LR	LR		
	comp=Z,1μm,19.0s						
CUC	**Castrocucco**	**97.11**	**45**	PFAKE		13 37 50.0	+13
CUC				LR	LR		
	comp=Z,841nm,20.0s						
CEL	**Celeste**	**98.00**	**46**	PFAKE		13 37 50.0	+8.9
CEL				LR	LR		
	comp=Z,904nm,21.0s						
WDD	**Wied Dalam**	**98.14**	**49**	PFAKE		13 37 50.0	+8.3
WDD				LR	LR		
	comp=Z,1μm,19.0s						
TIP	**Timpagrande**	**98.15**	**45**	PFAKE		13 37 50.0	+8.2
TIP				LR	LR		
	comp=Z,2μm,21.0s						
SNZO	**South Karori**	**98.26**	**229**	PFAKE		13 38 00.0	+18
SNZO				LR	LR		
	comp=Z,1μm,19.0s						
ERM	**Erimo**	**98.35**	**318**	PFAKE		13 38 00.0	+17
ERM				LR	LR		
	comp=Z,2μm,22.0s						
KIEV	**Kiev**	**98.91**	**30**	PFAKE		13 38 00.0	+15
KIEV				LR	LR		
	comp=Z,1μm,20.0s						
OBN	**Obninsk**	**99.10**	**24**	*e*P	**Pdif**	**13 37 45.5**	**0.0**
OBN				*e*		13 41 48.1	
OBN				*i* S	**SKSac**	**13 48 25.1**	**+3.6**
OBN				*i* PS	**PS**	**13 50 49.3**	**+5.4**
OBN				pmax	pmax		
	comp=Z,5.0nm,0.9s						
OBN				MLR	MLR		
	comp=Z,2μm,19.0s						
OBN	**Obninsk**	**99.10**	**24**	PFAKE		13 38 00.0	+14
OBN				LR	LR		
	comp=Z,2μm,20.0s						
TIR	**Tirane**	**99.10**	**42**	PFAKE		13 38 00.0	+14
TIR				LR	LR		
	comp=Z,1μm,21.0s						
KLR	**Kul'dur**	**100.57**	**329**	*e*P	**Pdif**	**13 37 52.3**	**0.0**
BOD	**Bodaibo**	**100.94**	**343**	*e*P	**Pdif**	**13 37 47.7**	**-6.0**
VSR	**Storozhevoye**	**103.04**	**26**	*e*P	**Pdif**	**13 38 03.2**	**0.0**
VSR				pmax	pmax		
	comp=Z,10.0nm,1.1s						
HNR	**Honiara**	**103.36**	**264**	PFAKE		13 38 20.0	+15
HNR				LR	LR		
	comp=Z,753nm,22.0s						
MAJO	**Matsushiro**	**104.53**	**316**	PFAKE		13 38 20.0	+10
MAJO				LR	LR		
	comp=Z,2μm,22.0s						
ARU	**Arti**	**104.71**	**13**	PFAKE		13 38 20.0	+10
ARU				LR	LR		
	comp=Z,1μm,20.0s						
MDJ	**Mudanjiang**	**104.75**	**326**	PFAKE		13 38 20.0	+9.1
MDJ				LR	LR		
	comp=Z,4μm,21.0s						
SANT	**Santorini**	**105.47**	**44**	PFAKE		13 42 40.0	
SANT				LR	LR		
	comp=Z,688nm,19.0s						
HIA	**Hailar**	**105.97**	**335**	PFAKE		13 42 40.0	
HIA				LR	LR		
	comp=Z,3μm,20.0s						
QSPA	**South Pole Qui**	**106.63**	**180**	PFAKE		13 42 40.0	
QSPA				LR	LR		
	comp=Z,1μm,20.0s						
SBA	**Scott Base**	**107.15**	**193**	PFAKE		13 42 40.0	
SBA				LR	LR		
	comp=Z,1μm,20.0s						
ISP	**Isparta**	**107.85**	**40**	PFAKE		13 42 40.0	
ISP				LR	LR		
	comp=Z,827nm,21.0s						
ANTO	**Ankara**	**107.90**	**37**	PFAKE		13 42 50.0	
ANTO				LR	LR		
	comp=Z,13nm,21.0s						
BRTR	**Keskin Array B**	**108.48**	**37**	PKKPbc	PKKPbc	13 53 44.4	0.0
	comp=Z,1.7nm,1.1s,baz=116,slow=5.6,SNR=4.6						
TLY	**Talaya**	**109.15**	**345**	PFAKE		13 42 50.0	
TLY				LR	LR		
	comp=Z,2μm,20.0s						
ZALV	**Zalesovo Beam**	**109.57**	**358**	PP	PP	13 43 04.1	-0.7
	comp=Z,1.6nm,0.8s,baz=345,slow=4.6,SNR=3.8						
BRVK	**Borovoye**	**109.89**	**7**	PFAKE		13 42 50.0	
BRVK				LR	LR		
	comp=Z,2μm,19.0s						
KIV	**Kislovodsk**	**110.12**	**29**	*e*P	**Pdif**	**13 38 32.0**	**-3.0**
KIV				*e*		13 43 06.7	
KIV				*e*PS	**PS**	**13 52 35.1**	**-4.3**
KIV				*e*SS	SS	13 58 32.3	-0.6
KIV				*e*SSS	SSS	14 02 37.9	
KIV				pmax	pmax		
	comp=Z,6.0nm,1.0s						
KIV				MLR	MLR		
	comp=Z,974nm,21.0s						
KIV	**Kislovodsk**	**110.12**	**29**	PFAKE		13 42 50.0	
KIV				LR	LR		
	comp=Z,1μm,21.0s						
GUMO	**Guam**	**110.28**	**292**	PFAKE		13 42 50.0	
GUMO				LR	LR		
	comp=Z,740nm,20.0s						
INCN	**Inchon**	**111.22**	**323**	PFAKE		13 42 50.0	
INCN				LR	LR		
	comp=Z,2μm,22.0s						
CSS	**Mathiatis**	**111.42**	**41**	PFAKE		13 42 50.0	
CSS				LR	LR		
	comp=Z,155nm,22.0s						
ULN	**Ulaanbaatar**	**111.69**	**342**	PFAKE		13 42 50.0	
ULN				LR	LR		
	comp=Z,5μm,19.0s						
SONM	**Songino Array**	**111.91**	**342**	PP	PP	13 43 24.9	+2.9
	comp=Z,1.7nm,1.0s,baz=0.0,slow=10,SNR=4.1						
GNI	**Garni**	**114.04**	**30**	PFAKE		13 43 00.0	+16
GNI				LR	LR		
	comp=Z,871nm,19.0s						
BJI	**Beijing**	**114.82**	**331**	PKP	PKPdf	13 42 44.4	-1.0
BJI				PP	**PP**	**13 43 42.7**	**-0.1**
BJI				SS	SS	13 59 36.5	+1.4
BJI				AMB	AMB		
	comp=Z,220nm,5.9s						
BJI				LR	LR		
	comp=Z,500nm,25.6s						
BJI				LR	LR		
	comp=Z,550nm,32.0s						
BJT	**Baijiatuau**	**114.84**	**331**	PFAKE		13 43 00.0	+15
BJT				LR	LR		
	comp=Z,4μm,20.0s						
PMG	**Port Moresby**	**115.57**	**267**	PFAKE		13 43 00.0	+13
PMG				LR	LR		
	comp=Z,834nm,19.0s						
HHC	**Hu-ho-hao-te**	**116.18**	**335**	*e*PKP	**PKPdf**	**13 42 49.0**	**+0.8**
HHC				PP	**PP**	**13 43 51.3**	**-1.1**
HHC				SS	SS	13 59 54.1	+1.2
HHC				AMB	AMB		
	comp=Z,140nm,9.4s						
HHC				LR	LR		
	comp=Z,980nm,20.9s						
HHC				LR	LR		
	comp=Z,860nm,20.0s						
HHC				LR	LR		
	comp=Z,1μm,21.3s						
MKAR	**Makanchi Array**	**116.80**	**359**	PKP	**PKPdf**	**13 42 47.9**	**-1.2**
	comp=Z,0.4nm,0.7s,baz=310,slow=0.9,SNR=5.2						
MKAR				PKKPbc	**PKKPbc**	**13 53 16.9**	**0.0**
	comp=Z,2.4nm,1.0s,baz=151,slow=2.8,SNR=5.9						
CAN	**Canberra**	**117.42**	**239**	PFAKE		13 43 00.0	+9.5
CAN				LR	LR		
	comp=Z,890nm,19.0s						
CTAO	**Charters Tower**	**118.52**	**256**	PFAKE		13 43 10.0	+17
CTAO				LR	LR		
	comp=Z,2μm,20.0s						
TAU	**Tasmania Unive**	**118.60**	**230**	PFAKE		13 43 10.0	+18
TAU				LR	LR		
	comp=Z,860nm,19.0s						
WMQ	**Urumqi**	**119.48**	**355**	PKP	**PKPdf**	**13 42 54.8**	**+0.4**
WMQ				PP	**PP**	**13 44 17.5**	**+2.5**
WMQ				SKKS		13 51 08.6	
WMQ				SS	**SKKSdf**	**14 00 41.5**	**-5.5**
WMQ				AMB	AMB		
	comp=Z,45nm,12.0s						
WMQ				LR	LR		
	comp=Z,350nm,12.6s						
WMQ				LR	LR		
	comp=Z,380nm,21.6s						
WMQ				LR	LR		
	comp=Z,250nm,20.4s						
NJ2	**Nanjing**	**119.57**	**323**	*e*PKP	**PKPdf**	**13 42 55.4**	**+0.7**
TSUM	**Tsumeb**	**119.73**	**103**	PFAKE		13 43 10.0	+15
TSUM				LR	LR		
	comp=Z,614nm,20.0s						
TKM2	**Tokmak 2**	**120.45**	**5**	PFAKE		13 43 10.0	+14
TKM2				LR	LR		
	comp=Z,1μm,20.0s						
EKS2	**Erkin-Say**	**120.54**	**6**	PFAKE		13 43 10.0	+13
EKS2				LR	LR		
	comp=Z,2μm,20.0s						
AAK	**Ala-Archa**	**120.64**	**6**	PFAKE		13 43 10.0	+13
AAK				LR	LR		
	comp=Z,1μm,19.0s						
GEYT	**Alibeck**	**121.49**	**21**	PKP	**PKPdf**	**13 42 58.8**	**+0.5**
	comp=Z,1.1nm,0.3s,baz=232,slow=7.2,SNR=4.2						
GTA	**Gaotai**	**121.53**	**343**	*e*PKP	**PKPdf**	**13 42 58.6**	**+0.1**
GTA				PP	**PP**	**13 44 33.4**	**+4.2**
GTA				SKS	**SKSdf**	**13 50 05.5**	**-3.1**
GTA				SKKS	**SKKSac**	**13 51 21.9**	**-6.1**
GTA				SS	**SS**	**14 01 01.5**	**-0.3**
GTA				LR	LR		
	comp=Z,500nm,24.2s						
GTA				LR	LR		
	comp=Z,720nm,23.9s						
GTA				LR	LR		
	comp=Z,300nm,24.7s						
TATO	**Taipei**	**122.92**	**316**	PFAKE		13 43 10.0	+8.6
TATO				LR	LR		
	comp=Z,1μm,21.0s						
XAN	**Xi'an**	**123.05**	**333**	PKP	**PKPdf**	**13 43 01.2**	**-0.3**
XAN				sPKP		13 43 15.0	
XAN				PP	**PP**	**13 44 45.3**	**+5.6**
XAN				PKS	**PKSdf**	**13 46 35.6**	**-2.7**
XAN				SKS	**SKSdf**	**13 50 07.5**	**-4.0**
XAN				SKKS	**SKKSac**	**13 51 32.2**	**-5.6**
XAN				SS	**SS**	**14 01 23.4**	**+2.0**
XAN				AMB	AMB		
	comp=Z,170nm,6.6s						
XAN				LR	LR		
	comp=Z,1μm,26.3s						
XAN				LR	LR		
	comp=Z,2μm,25.1s						
XAN				LR	LR		
	comp=Z,2μm,22.8s						
YHNB	**Yeheng**	**123.20**	**315**	PFAKE		13 43 20.0	+18
YHNB				LR	LR		
	comp=Z,2μm,22.0s						
WHN	**Wuhan**	**123.22**	**326**	PKP	**PKPdf**	**13 42 59.8**	**-2.0**
WHN				PP	**PP**	**13 44 48.7**	**+7.7**
WHN				SS	SS	14 01 30.2	+6.3
LZH	**Lanzhou**	**123.29**	**338**	*e*PKP	**PKPdf**	**13 43 02.5**	**+0.4**
LZH				sPKP		13 43 06.9	
LZH				PP	**PP**	**13 44 46.3**	**+5.0**
LZH				PKS	**PKSdf**	**13 46 38.0**	**-0.9**
LZH				SKS	**SKSdf**	**13 50 12.0**	**-0.1**
LZH				SKKS	**SKKSac**	**13 51 37.2**	**-2.4**
LZH				SS	**SS**	**14 01 27.6**	**+3.1**
LZH				AMB	AMB		
	comp=Z,280nm,9.5s						
LZH				LR	LR		
	comp=Z,1μm,17.5s						
LZH				LR	LR		
	comp=Z,3μm,18.3s						
LZH				LR	LR		
	comp=Z,3μm,20.5s						
STKA	**Stephens Creek**	**123.56**	**243**	PKP	**PKPdf**	**13 43 01.8**	**-0.5**
	comp=Z,16nm,1.0s,baz=58,slow=1.6,SNR=18						
KSH	**Kashi**	**123.86**	**5**	*e*PKP	**PKPdf**	**13 43 03.6**	**+0.6**
KSH				*es*PKP		13 43 17.2	
KSH				PKS	**PKSdf**	**13 46 40.4**	**+0.6**
KSH				SKS	**SKSdf**	**13 50 12.2**	**-0.8**
KSH				AMB	AMB		
	comp=Z,270nm,7.3s						
KSH				LR	LR		
	comp=Z,100nm,7.7s						
KSH				LR	LR		
	comp=Z,60nm,5.3s						
KSH				LR	LR		
	comp=Z,210nm,6.2s						
ENH	**Enshi**	**125.93**	**330**	PFAKE		13 43 20.0	+13
ENH				LR	LR		
	comp=Z,2μm,20.0s						
CASY	**Casey**	**126.81**	**194**	PFAKE		13 43 20.0	+12
CASY				LR	LR		
	comp=Z,289nm,19.0s						
BOSA	**Boshof**	**127.44**	**113**	PKP	**PKPdf**	**13 43 09.3**	**-0.8**
	comp=Z,7.2nm,1.0s,baz=23,slow=2.2,SNR=6.0						
MAW	**Mawson**	**127.76**	**171**	PKP	**PKPdf**	**13 43 08.5**	**-0.8**
	comp=Z,9.1nm,0.9s,baz=229,slow=3.0,SNR=10.0						
CD2	**Chengdu**	**127.93**

CD2				SKS	**SKSdf**	**13 50 17.0**	**-3.7**
CD2				SKKS	**SKKSac**	**13 52 08.8**	**-0.1**
CD2				SS	**SS**	**14 02 25.7**	**+3.1**
CD2				AMB	AMB		
	comp=Z,270nm,8.3s						
CD2				LR	LR		
	comp=Z,630nm,16.7s						
CD2				LR	LR		
	comp=Z,1μm,23.8s						
LSZ	**Lusaka**	**129.15**	**96**	PFAKE		13 43 30.0	+16
LSZ				LR	LR		
	comp=Z,651nm,19.0s						
WRAB	**Tennant Creek**	**129.60**	**258**	*i* PKIKP	**PKPdf**	**13 43 14.7**	**+0.5**
WRAB				pmax	pmax		
	comp=Z,80nm,1.0s						
WRAB	**Tennant Creek**	**129.60**	**258**	PFAKE		13 43 30.0	+16
WRAB				LR	LR		
	comp=Z,963nm,20.0s						
WRA	**Warramunga Arr**	**129.62**	**258**	PKP	**PKPdf**	**13 43 14.2**	**0.0**
	comp=Z,27nm,1.1s,baz=78,slow=1.6,SNR=55						
DAV	**Davao City (W)**	**130.16**	**295**	PFAKE		13 43 30.0	+15
DAV				LR	LR		
	comp=Z,790nm,20.0s						
ASAR	**Alice Springs**	**130.27**	**253**	PKhKP	PKPpre	13 43 05.4	
	comp=Z,0.5nm,0.8s,baz=101,slow=4.8,SNR=3.7						
ASAR				PKP	**PKPdf**	**13 43 15.2**	**-0.3**
	comp=Z,17nm,1.1s,baz=99,slow=2.2,SNR=42						
ASAR				SKPbc	**SKPbc**	**13 46 39.5**	**+3.1**
	comp=Z,4.5nm,1.2s,baz=94,slow=4.4,SNR=5.1						
GYA	**Guiyang**	**130.47**	**330**	Pdif	**Pdif**	**13 40 02.8**	**-3.1**
GYA				PKP	**PKPdf**	**13 43 14.2**	**-1.8**
GYA				PP	**PP**	**13 45 31.0**	**+1.9**
GYA				PKS	**PKSdf**	**13 46 49.6**	**-3.1**
GYA				SKKS		13 52 20.4	
GYA				SS	**SS**	**14 02 53.2**	**-1.3**
GYA				AMB	AMB		
	comp=Z,160nm,7.9s						
GYA				LR	LR		
	comp=Z,280nm,20.4s						
GYA				LR	LR		
	comp=Z,210nm,20.8s						
GYA				LR	LR		
	comp=Z,250nm,20.2s						
LSA	**Lhasa**	**132.88**	**348**	PFAKE		13 43 30.0	+9.1
LSA				LR	LR		
	comp=Z,1μm,22.0s						
KMI	**Kunming**	**133.43**	**333**	PKP	**PKPdf**	**13 43 19.3**	**-2.4**
KMI				sPKP		13 43 30.9	
KMI				PP	**PP**	**13 45 54.2**	**+6.1**
KMI				SKKS		13 52 40.1	
KMI				SS	**SS**	**14 03 34.7**	**+4.2**
KMI				AMB	AMB		
	comp=Z,250nm,8.0s						
KMI				LR	LR		
	comp=Z,490nm,18.9s						
KMI				LR	LR		
	comp=Z,710nm,19.7s						
KMI				LR	LR		
	comp=Z,750nm,17.3s						
KMBO	**Kilima Mbogo**	**134.06**	**75**	PFAKE		13 43 40.0	+17
KMBO				LR	LR		
	comp=Z,2μm,21.0s						
QIZ	**Qiongzhong**	**134.68**	**320**	PKIKP	PKPdf	13 43 32.3	+8.4
QIZ				PP	PP	13 46 05.6	+9.3
KKM	**Kota Kinabalu**	**138.65**	**300**	PFAKE		13 43 40.0	+8.5
KKM				LR	LR		
	comp=Z,445nm,20.0s						
KAPI	**Kappang**	**140.48**	**283**	PFAKE		13 43 50.0	+15
KAPI				LR	LR		
	comp=Z,435nm,22.0s						
CHTO	**Chiang Mai**	**140.63**	**333**	PFAKE		13 43 50.0	+15
CHTO				LR	LR		
	comp=Z,731nm,20.0s						
CMAR	**Chiang Mai Arr**	**140.94**	**333**	PKhKP	PKPpre	13 43 30.6	
	comp=Z,0.9nm,0.8s,baz=350,slow=4.6,SNR=8.2						
CMAR				PKP	**PKPdf**	**13 43 35.1**	**-0.3**
	comp=Z,2.2nm,0.8s,baz=359,slow=3.7,SNR=9.9						
MBWA	**Marble Bar**	**143.34**	**257**	PFAKE		13 43 50.0	+10
MBWA				LR	LR		
	comp=Z,905nm,19.0s						
NWAO	**Narrogin (SRO)**	**143.73**	**237**	PFAKE		13 43 50.0	+10
NWAO				LR	LR		
	comp=Z,1μm,22.0s						
HYB	**Hyderabad**	**146.00**	**5**	*i* PKP	**PKPab**	**13 43 45.5**	**-0.1**
	comp=Z,38nm,0.8s						
KSM	**Kuching**	**146.07**	**299**	PFAKE		13 44 00.0	+14
KSM				LR	LR		
	comp=Z,678nm,20.0s						
KULM	**Kulim**	**150.89**	**317**	PFAKE		13 44 10.0	+4.7
KULM				LR	LR		
	comp=Z,1μm,19.0s						
DGAR	**Diego Garcia**	**167.42**	**44**	PFAKE		13 44 20.0	+8.5
DGAR				LR	LR		
	comp=Z,2μm,22.0s						

MEX 05 13:39:30.9±0.6, 16°.57N×98°.92W, h11^{km}±7^{km}, MD3.7, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PNIG	**Pinotepa**	**0.78**	**103**	*e*P	P*g*	13 39 44.2	-1.8
PNIG				*e*S	S*g*	13 39 53.8	-2.5
ACX	**Acapulco**	**0.95**	**289**	*e*P	P*g*	13 39 48.8	-0.4
ACX				*e*S	S*g*	13 40 01.2	-0.4
ACP2	**Acapulco**	**0.97**	**289**	*e*P	P*g*	13 39 46.2	-3.5
ACP2				*e*S	S*g*	13 39 59.1	-3.3
CAIG	**El Cayaco**	**1.38**	**291**	*e*P	P*n*	13 39 51.5	-4.6
CAIG				*e*S	S*n*	13 40 09.9	-4.3
MEIG	**Mezcala**	**1.51**	**334**	*e*P	P*n*	13 39 54.6	-3.4
MEIG				*e*S	S*n*	13 40 12.5	-5.1
ARIG	**Puente Sto Nin**	**2.18**	**322**	*i* P	P*n*	13 40 04.1	-3.1
ARIG				*i* S	S*n*	13 40 30.1	-4.1
YAIG	**Yautepec**	**2.29**	**357**	*i* P	P*n*	13 40 06.3	-2.5
YAIG				*i* S	S*n*	13 40 32.1	-4.9

*ISCJB **05** 13:40:05.8±1.2, 38°.27N±0°.07×144°.59E±0°.08, h59^{km}±21^{km}, mb3.5/2, Error ellipse: s-maj=12.3km s-min=9.7km az=148.0*
*JMA **05** 13:40:05.6±0.1, 38°.28N×144°.57E, h39^{km}, M4.0*
*IDC **05** 13:40:05.1±2.8, 37°.60N×144°.67E, h0^{km}, mb3.6/2, mb1 3.7/3, mb1mx3.3/27, mbtmp3.5/3, ML3.2/1, Error ellipse: s-maj=69.0km s-min=36.0km az=66.0*

ISC 05 13:40:06.8±2.3, 38°.27N±0°.07×144°.6E±0°.1, h44^{km}±31^{km}, n18, σ0°.64/22, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.44**	**290**	P	P*n*	13 40 43.9	-0.1
OFUJ				*e*S	**S*n***	**13 41 12.2**	**-0.4**
JIO	**Ouri**	**2.57**	**275**	P	P*n*	13 40 45.6	-0.2
JIO				S	**S*n***	**13 41 15.4**	**-0.4**
JTH	**Tanohata**	**2.70**	**309**	P	P*n*	13 40 47.8	+0.1
JTH				S	**S*n***	**13 41 18.7**	**-0.5**
JMK	**Ichinoseki**	**2.74**	**285**	P	**P*n***	**13 40 48.4**	**+0.3**
JMK				S	**S*n***	**13 41 20.4**	**+0.4**
JOM	**Ohasama**	**2.85**	**296**	P	**P*n***	**13 40 50.0**	**+0.3**
JOM				S	**S*n***	**13 41 23.5**	**+0.7**
JMM	**Marumori**	**3.04**	**263**	P	P*n*	13 40 52.0	-0.3
JOU	**Okura**	**3.10**	**273**	P	**P*n***	**13 40 53.8**	**+0.6**
JOU				S	**S*n***	**13 41 29.4**	**+0.4**
JANG	**Nango**	**3.18**	**312**	P	**P*n***	**13 40 54.7**	**+0.4**
JRG	**Rokugo**	**3.30**	**291**	P	**P*n***	**13 40 56.9**	**+1.0**
JRG				*e*S	**S*n***	**13 41 33.3**	**-0.5**
JYK	**Kaneyama**	**3.39**	**282**	P	**P*n***	**13 40 57.9**	**+0.8**
JYK				*e*S	**S*n***	**13 41 36.6**	**+0.5**
JFT	**Otama**	**3.46**	**259**	P	**P*n***	**13 40 58.6**	**+0.5**
JFT				S	**S*n***	**13 41 37.8**	**0.0**
JNBK	**Urakawa-nobuka**	**4.25**	**341**	P	**P*n***	**13 41 09.2**	**+0.3**
JCH	**Churui**	**4.44**	**348**	P	**P*n***	**13 41 11.2**	**-0.3**
JKB	**Kayabe**	**4.53**	**324**	P	**P*n***	**13 41 14.3**	**+1.5**
JRY	**Ryogami san**	**5.08**	**245**	P	**P*n***	**13 41 20.1**	**-0.3**
MJAR	**Matsushiro Arr**	**5.38**	**253**	Pn	**P*n***	**13 41 24.8**	**+0.4**
	0.9nm,0.3s,baz=78,slow=14,SNR=10.0						
ZALV	**Zalesovo Beam**	**42.97**	**311**	P	P	13 48 09.5	+8.2
	0.5nm,0.5s,baz=78,slow=9.4,SNR=2.2						
WRA	**Warramunga Arr**	**58.70**	**191**	P	**P**	**13 49 59.9**	**0.0**
	0.2nm,0.4s,baz=8.5,slow=6.8,SNR=4.8						

*JMA **05** 13:43:29.3±0.2, 44°.04N×147°.94E, h19^{km}, M3.7*
*SKHL **05** 13:43:30.0±0.3, 44°.30N×148°.10E, h40^{km}±3^{km}, mb4.3/3*

ISC 05 13:43:27.3±3.0, 44°.2N±0°.1×148°.3E±0°.2, h55^{km}±36^{km}, n15, σ1°.47/25, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHO	**Shikotan**	**1.06**	**255**	*e*P	**P*n***	**13 43 47.1**	**+1.1**
SHO				AMB	AMB	13 43 47.5	
	60nm,0.3s						
SHO				*i* S	**S*n***	**13 43 59.6**	**-0.2**
SHO				A	A	13 44 01.6	
	120nm,0.2s						
SHO				A	A	13 44 01.6	
	620nm,0.2s						
KUR	**Kuril'sk**	**1.11**	**346**	*e*P	**P*n***	**13 43 46.9**	**+0.2**
KUR				AMB	AMB	13 43 47.1	
	150nm,0.2s						
KUR				*i* S	**S*n***	**13 43 59.7**	**-1.4**
KUR				A	A	13 44 00.5	
	380nm,0.3s						
KUR				A	A	13 44 00.5	
	400nm,0.3s						
YUK	**Yuzh-Kuril'sk**	**1.73**	**267**	*e*P	**P*n***	**13 43 55.6**	**+0.7**
YUK				AMB	AMB	13 44 00.6	
	100nm,0.1s						
YUK				*i* S	**S*n***	**13 44 14.9**	**-0.9**
YUK				A	A	13 44 19.8	
	160nm,0.2s						
NEM2	**Nemuro 2**	**1.98**	**247**	P	**P*n***	**13 43 59.3**	**+0.9**
NEM2				*e*S	**S*n***	**13 44 21.2**	**-0.9**
JRA	**Rausu**	**2.27**	**266**	P	**P*n***	**13 44 03.3**	**+1.0**
JRA				*e*S	**S*n***	**13 44 28.7**	**-0.4**
JNK	**Nakash**	**2.62**	**259**	P	**P*n***	**13 44 08.2**	**+1.1**
JNK				*e*S	**S*n***	**13 44 37.0**	**-0.7**
JAK	**Akkeshi**	**2.83**	**247**	P	**P*n***	**13 44 10.7**	**+0.7**
JAK				*e*S	**S*n***	**13 44 41.5**	**-1.4**
JTKR	**Abashiri--Toko**	**3.14**	**268**	P	**P*n***	**13 44 15.2**	**+1.0**
JAR	**Ashorobuto**	**3.36**	**257**	P	**P*n***	**13 44 19.0**	**+1.7**
JAR				*e*S	**S*n***	**13 44 55.7**	**-0.2**
JOB	**Onbets**	**3.45**	**250**	P	**P*n***	**13 44 20.0**	**+1.5**
JOB				*e*S	**S*n***	**13 44 56.9**	**-1.1**
JCH	**Churui**	**3.88**	**248**	P	**P*n***	**13 44 26.2**	**+1.8**
JKK2	**Kamakawa 2**	**3.98**	**268**	P	**P*n***	**13 44 27.2**	**+1.4**
JNBK	**Urakawa-nobuka**	**4.43**	**247**	P	**P*n***	**13 44 32.8**	**+0.8**
YSS	**Yuzh-Sakhalins**	**4.77**	**308**	*e*P	**P*n***	**13 44 38.3**	**+1.7**
JKB	**Kayabe**	**5.75**	**249**	P	**P*n***	**13 44 50.6**	**+0.5**
JKB				*e*S	**S*n***	**13 45 50.5**	**-4.3**

*IDC **05** 13:50:52.7±1.9, 36°.01N×141°.51E, h0^{km}, mb3.4/2, mb1 3.4/5, mb1mx3.3/35, mbtmp3.4/5, ML3.1/3, Error ellipse: s-maj=42.5km s-min=21.9km az=91.0*
*ISCJB **05** 13:50:56.7±0.8, 36°.06N±0°.04×141°.17E±0°.08, h31^{km}, mb3.2/2, Error ellipse: s-maj=9.0km s-min=4.9km az=13.2*
*JMA **05** 13:50:57.4±0.1, 36°.01N×141°.12E, h38^{km}±2^{km}, M3.2*

ISC 05 13:50:58.0±1.1, 36°.06N±0°.05×141°.12E±0°.08, h31^{km}, n11, σ1°.19/17, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.42**	**211**	P	**Pb**	**13 51 06.1**	**-1.1**
CHOJ				S	**Sb**	**13 51 12.3**	**-1.2**
JHO	**Hitachi**	**0.71**	**321**	P	**P*n***	**13 51 11.2**	**-0.7**
JYT	**Yasato**	**0.77**	**283**	P	**P*n***	**13 51 11.9**	**-0.8**
JYT				S	**Sb**	**13 51 21.8**	**-1.3**
ONAJ	**Iwakimizuishiy**	**1.07**	**346**	P	**P*n***	**13 51 16.3**	**-0.7**
JFK	**Kawauchi**	**1.32**	**351**	P	**P*n***	**13 51 19.5**	**-0.8**
JFK				*e*S	**S*n***	**13 51 37.5**	**+0.6**
MJAR	**Matsushiro Arr**	**2.40**	**282**	Pn	**P*n***	**13 51 35.8**	**+0.6**
	5.6nm,0.3s,baz=115,slow=7.7,SNR=86						
MAT	**Matsushiro**	**2.40**	**282**	P	**P*n***	**13 51 36.0**	**+0.8**
MAT				*e*S	**S*n***	**13 52 04.3**	**+0.7**
JHJ	**Hachijo jima 2**	**3.14**	**201**	Pn	**P*n***	**13 51 46.5**	**+1.2**
	5.1nm,0.3s,baz=45,slow=17,SNR=3.4						
JHJ				Sn	**S*n***	**13 52 23.4**	**+1.7**
	12nm,0.3s,baz=86,slow=19,SNR=3.0						
ASAJ	**Asahikawa**	**8.12**	**8**	Pn	**P*n***	**13 52 53.8**	**0.0**
	0.2nm,0.3s,baz=166,slow=18,SNR=3.2						
ASAJ				Sn	**S*n***	**13 54 26.7**	**+2.2**
	0.2nm,0.3s,baz=104,slow=33,SNR=2.8						
MKAR	**Makanchi Array**	**44.44**	**303**	P	**P**	**13 59 07.3**	**+1.3**
	0.4nm,0.7s,baz=87,slow=8.9,SNR=5.1						
WRA	**Warramunga Arr**	**56.07**	**188**	P	**P**	**14 00 33.3**	**-0.9**
	0.1nm,0.4s,baz=23,slow=7.2,SNR=6.6						

JMA 05 14:06:37.8±0.1, 37°.63N×141°.64E, h47^{km}±2^{km}, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.66**	**247**	P	P*n*	14 06 50.9	-0.1
JFK				S	S*n*	14 07 00.3	-0.2
JMM	**Marumori**	**0.71**	**290**	P	P*n*	14 06 51.7	+0.1
JMM				*e*S	S*n*	14 07 01.8	+0.3
ONAJ	**Iwakimizuishiy**	**0.85**	**232**	P	P*n*	14 06 53.5	0.0
ONAJ				S	S*n*	14 07 04.5	-0.5
JIO	**Ouri**	**0.85**	**344**	P	P*n*	14 06 53.6	+0.1
JFT	**Otama**	**1.04**	**264**	P	P*n*	14 06 56.7	+0.7
JFT				S	S*n*	14 07 10.0	+0.5
JOU	**Okura**	**1.06**	**314**	P	P*n*	14 06 56.4	0.0
JOU				*e*S	S*n*	14 07 10.3	+0.2
JHO	**Hitachi**	**1.33**	**220**	P	P*n*	14 06 59.9	0.0

*MOS **05** 14:12:55.5±0.9, 55°.15N×160°.63W, h10^{km}, mb6.2/126, MS5.3/36, Error ellipse: s-maj=6.2km s-min=3.7km az=86.9*
*BJI **05** 14:12:58.6, 55°.11N×160°.84W, h35^{km}, mb5.9/87, mB5.7/56, Ms5.5/85, Ms7 5.4/80*
*NEIC **05** 14:13:01.0±0.0, 55°.12N×160°.57W, h39^{km}, Moment Tensor Solution. s42 Moment tensor: Scale 10^{17}Nm; M_{rr}3.22; $M_{\theta\theta}$-2.13; $M_{\phi\phi}$-1.08; $M_{r\theta}$2.48; $M_{\theta\phi}$-0.32; $M_{\phi r}$1.81; Best double couple: $M_0$4.20000×10^{17} NP1:ϕ_s59.00000°, δ69.00000°, λ84.00000°. NP2:ϕ_s254.00000°, δ21.00000°, λ104.00000°. Principal axes: T 4.6400, Plg65.0000°, Azm319.0000°; N -1.1000, Plg5.0000°, Azm61.0000°; P -3.5400, Plg24.0000°, Azm153.0000°;*
*IDC **05** 14:13:01.9±1.3, 55°.12N×160°.55W, h44^{km}±11^{km}, mb5.4/39, mb1 5.5/43, mb1mx5.5/45, mbtmp5.6/43, ML4.8/4, MS5.1/44, Ms1 5.1/44, ms1mx5.0/65 Error ellipse: s-maj=13.1km s-min=7.7km az=15.0*
*NEIC **05** 14:13:01.6±0.1, 55°.09N×160°.54W, h39^{km}, mb5.9/243, ME5.8, MS5.3/100, MW5.7, MW5.7, ML5.7(AEIC), Error ellipse: s-maj=2.8km s-min=1.9km az=174.0, Moment Tensor Solution. s27 Moment tensor: Scale 10^{17}Nm; M_{rr}2.92; $M_{\theta\theta}$-3.07; $M_{\phi\phi}$0.15; $M_{r\theta}$1.83; $M_{\theta\phi}$-1.87; $M_{\phi r}$1.21; Best double couple: $M_0$4.20000×10^{17} NP1:ϕ_s254.00000°, δ29.00000°, λ104.00000°. NP2:ϕ_s59.00000°, δ62.00000°, λ82.00000°. Principal axes: T 3.5900, Plg72.0000°, Azm311.0000°; N 0.9700, Plg7.0000°, Azm62.0000°; P -4.5500, Plg16.0000°, Azm154.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from BB mechanism.*
NEIC Felt [V] at Sand Point. Also felt at Cold Bay and King Cove.
*ISCJB **05** 14:13:01.6±0.2, 55°.09N±0°.01×160°.47W±0°.01, h57^{km}±1^{km}, mb6.0/486, MS5.2/200 Error ellipse: s-maj=2.5km s-min=1.4km az=7.9*
*GCMT **05** 14:13:01.6±0.1, 54°.86N×160°.22W, h55^{km}, MW5.7/134, Moment Tensor Solution. s128, c265; s134, c337; Duration: 1s8 Moment tensor: Scale 10^{17}Nm; M_{rr}3.95±.05; $M_{\theta\theta}$-3.21±.04; $M_{\phi\phi}$-0.73±.04; $M_{r\theta}$2.20±.04; $M_{\theta\phi}$-1.68±.03; $M_{\phi r}$1.06±.03; Best double couple: $M_0$4.69000×10^{17} NP1:ϕ_s64.00000°, δ61.00000°, λ91.00000°. NP2:ϕ_s243.00000°, δ29.00000°, λ89.00000°. Principal axes: T 4.6360, Plg74.0000°, Azm335.0000°; N 0.1140, Plg1.0000°, Azm243.0000°; P -4.7450, Plg16.0000°, Azm153.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*

ISC 05 14:13:01.2±0.2, 55°.08N±0°.03×160°.56W±0°.02, h41^{km}±1^{km}, h40^{km}:pP-P, n2082, σ1°.35/2321, mb6.0/514, MS5.2/208, 206C-42D, Alaska Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SDPT	**Sand Point**	**0.27**	**10**	P	**P*n***	**14 13 10.9**	**+1.7**
SDPT				S	**S*n***	**14 13 18.6**	**+3.8**
DOL	**Dolgoi Island**	**0.75**	**276**	P	**P*n***	**14 13 17.5**	**+2.2**
PS1A	**Pavlof South-1**	**0.76**	**297**	P	**P*n***	**14 13 18.6**	**+3.2**
PS4A	**Pavlof South-4**	**0.79**	**290**	P	**P*n***	**14 13 18.8**	**+3.0**
PN6	**Pavlof North-6**	**0.86**	**296**	P	**P*n***	**14 13 20.7**	**+3.8**
DTNA	**Dutton South F**	**0.97**	**275**	P	**P*n***	**14 13 21.0**	**+2.6**
DT1	**Dutton Round H**	**0.99**	**272**	P	**P*n***	**14 13 20.8**	**+2.3**
VNSW	**Veniaminof 7**	**1.15**	**29**	P	**P*n***	**14 13 23.1**	**+2.3**
VNWF	**Veniaminof 8**	**1.21**	**27**	P	**P*n***	**14 13 24.5**	**+2.7**
BALA	**Baldy Mountain**	**1.28**	**276**	P	**P*n***	**14 13 26.6**	**+4.0**
VNHG	**Veniaminof 1**	**1.39**	**34**	P	**P*n***	**14 13 26.7**	**+2.5**
VNNF	**Veniaminof 3**	**1.40**	**30**	P	**P*n***	**14 13 27.1**	**+2.8**
FALS	**False Pass**	**1.66**	**263**	S	**S*n***	**14 13 53.8**	**+6.0**
CHGN	**Chignik**	**1.73**	**44**	P	**P*n***	**14 13 30.0**	**+1.4**
SSLN	**Shishaldin Nor**	**2.00**	**264**	P	**P*n***	**14 13 36.2**	**+3.7**
SSLS	**Shishaldin Sou**	**2.02**	**261**	P	**P*n***	**14 13 36.2**	**+3.5**
SSLS				S	**S*n***	**14 14 03.5**	**+6.8**
SSLW	**Shishaldin Wes**	**2.08**	**263**	P	**P*n***	**14 13 36.8**	**+3.3**
ANPB	**Aniakchak Plen**	**2.15**	**36**	P	**P*n***	**14 13 36.6**	**+2.0**
WESN	**West Dahl Nort**	**2.38**	**259**	P	**P*n***	**14 13 41.1**	**+3.4**
WEBT	**Westdahl Beart**	**2.47**	**260**	P	**P*n***	**14 13 42.1**	**+3.2**
AKUT	**Akutan**	**3.17**	**255**	P	**P*n***	**14 13 51.7**	**+3.2**
AKUT				S	**S*n***	**14 14 30.1**	**+5.0**
AKGG	**Akutan Green G**	**3.28**	**257**	P	**P*n***	**14 13 53.0**	**+3.0**
AKRB	**Akutan Reef Bi**	**3.34**	**256**	P	**P*n***	**14 13 54.0**	**+3.2**
AKRB				S	**S*n***	**14 14 35.5**	**+6.3**
PLK1	**Peulik 1**	**3.50**	**37**	P	**P*n***	**14 13 57.4**	**+4.3**
PLK5	**Peulik 5**	**3.56**	**33**	P	**P*n***	**14 13 58.4**	**+4.5**
MTBL	**Makushin Table**	**3.73**	**255**	P	**P*n***	**14 13 59.2**	**+2.9**
MGOD	**Makushin Gods**	**3.90**	**253**	P	**P*n***	**14 14 01.1**	**+2.4**
MSOM	**Makushin Julie**	**3.94**	**254**	P	**P*n***	**14 14 01.3**	**+2.3**
MSOM	**Makushin Julie**	**3.94**	**254**	P	**P*n***	**14 14 01.3**	**+2.3**
KELA	**Mount Kelaz**	**4.29**	**36**	P	**P*n***	**14 14 06.0**	**+2.1**
KABU	**Katmai Buttres**	**4.32**	**40**	P	**P*n***	**14 14 07.0**	**+2.5**
KABU				S	**S*n***	**14 14 59.0**	**+5.4**
KABR	**Katmai Barrier**	**4.35**	**43**	P	**P*n***	**14 14 06.2**	**+1.5**
KVTA	**Katmai Vly 10**	**4.40**	**39**	P	**P*n***	**14 14 07.8**	**+2.4**
KAKN	**Katmai Knife C**	**4.43**	**41**	P	**P*n***	**14 14 08.0**	**+2.1**
KAWH	**Katmai**	**4.59**	**41**	P	**P*n***	**14 14 09.8**	**+1.8**
OHAK	**Old Harbor**	**4.60**	**59**	P	**P*n***	**14 14 08.3**	**+0.2**
OHAK				S	**S*n***	**14 15 04.1**	**+3.9**
OKER	**Okmok East Rim**	**4.68**	**253**	P	**P*n***	**14 14 12.3**	**+2.9**
KAHC	**Katmai Hardscr**	**4.70**	**38**	P	**P*n***	**14 14 11.9**	**+2.3**
OKTU	**Okmok Mt. Tuli**	**4.71**	**252**	P	**P*n***	**14 14 12.8**	**+3.2**
OKAK	**Okmok**	**4.80**	**255**	P	**P*n***	**14 14 14.9**	**+4.0**
KDAK	**Kodiak Island**	**5.19**	**55**	LR	LR	14 16 37.2	
	comp=Z,20μm,21.1s,baz=236,slow=42						
KDAK	**Kodiak Island**	**5.19**	**55**	*e*P	**P*n***	**14 14 16.6**	**+0.4**
KDAK	**Kodiak Island**	**5.19**	**55**	S	**S*n***	**14 15 18.1**	**+3.3**
FOSS	**Fourpeaked Sta**	**5.29**	**42**	P	**P*n***	**14 14 19.2**	**+1.5**
NIKH	**Nikolski High**	**5.32**	**250**	P	**P*n***	**14 14 20.9**	**+2.9**
MCNL	**McNeil River**	**5.33**	**37**	P	**P*n***	**14 14 20.4**	**+2.3**
FOPK	**Fourpeaked Vol**	**5.35**	**44**	P	**P*n***	**14 14 19.8**	**+1.3**
CDD	**Cape Douglas**	**5.40**	**42**	P	**P*n***	**14 14 21.0**	**+1.9**
AUI	**Augustine Isla**	**5.76**	**39**	P	**P*n***	**14 14 26.4**	**+2.3**
AUSE	**Augustine SEas**	**5.78**	**39**	P	**P*n***	**14 14 26.3**	**+2.0**
AUL	**Augustine Lava**	**5.79**	**39**	P	**P*n***	**14 14 26.7**	**+2.2**
AUE	**Augustine Isla**	**5.80**	**39**	P	**P*n***	**14 14 27.2**	**+2.6**
ILW	**Iliamna West**	**6.39**	**36**	P	**P*n***	**14 14 35.2**	**+2.3**
SVW2	**Sparrevohn**	**6.58**	**22**	P	**P*n***	**14 14 38.0**	**+2.6**
HOM	**Homer**	**6.66**	**43**	*e*Pn	**P*n***	**14 14 37.7**	**+1.4**
RSO	**Redoubt South**	**6.82**	**35**	P	**P*n***	**14 14 40.9**	**+2.2**
NCT	**North Crescent**	**6.84**	**33**	P	**P*n***	**14 14 41.3**	**+2.4**
RDJH	**Redoubt Jeurge**	**6.90**	**34**	P	**P*n***	**14 14 42.7**	**+2.9**
SPWE	**Spurr West**	**7.51**	**31**	P	**P*n***	**14 14 50.9**	**+2.8**
CKL	**Chakachamna La**	**7.51**	**32**	P	**P*n***	**14 14 50.9**	**+2.7**
SPCR	**Spurr Chakacha**	**7.56**	**32**	P	**P*n***	**14 14 51.3**	**+2.5**
SPU	**Mount Spurr**	**7.59**	**33**	*e*Pn	**P*n***	**14 14 50.7**	**+1.5**
SLKM	**Skilak Lake**	**7.75**	**41**	P	**P*n***	**14 14 52.9**	**+1.6**
SLKM	**Skilak Lake**	**7.75**	**41**	P	**P*n***	**14 14 52.9**	**+1.6**
SEW	**Seward**	**7.80**	**45**	P	**P*n***	**14 14 53.6**	**+1.6**
STLK	**Strandline Lak**	**7.90**	**32**	P	**P*n***	**14 14 55.7**	**+2.3**
TT01	**Tatalina**	**8.19**	**15**	P	**P*n***	**14 14 59.3**	**+2.0**
FIB	**Fire Island**	**8.21**	**38**	P	**P*n***	**14 14 59.5**	**+2.0**
FIB	**Fire Island**	**8.21**	**38**	P	**P*n***	**14 14 59.5**	**+2.0**
TTA	**Tatalina**	**8.21**	**15**	*e*P	**P*n***	**14 14 59.0**	**+1.3**
TTA	**Tatalina**	**8.21**	**15**	P	**P*n***	**14 14 59.3**	**+1.6**
RC01	**Rabbit Creek A**	**8.31**	**39**	P	**P*n***	**14 14 59.4**	**+0.5**
KOFP	**Korovin Flat P**	**8.51**	**256**	P	**P*n***	**14 15 04.4**	**+2.5**
KOKL	**Mount Kliuchef**	**8.55**	**257**	P	**P*n***	**14 15 06.4**	**+4.1**
KOWE	**Korovin West**	**8.56**	**257**	P	**P*n***	**14 15 06.6**	**+4.2**
MID	**Middleton Isla**	**8.85**	**55**	*e*P	**P*n***	**14 15 06.1**	**-0.2**
MID	**Middleton Isla**	**8.85**	**55**	P	**P*n***	**14 15 06.8**	**+0.5**
PMR	**Palmer**	**8.86**	**38**	*e*P	**P*n***	**14 15 06.2**	**-0.3**
PMR	**Palmer

INK Inuvik 18.21 33 *eP* **P 14 17 08.0 -2.3**
INK pmax pmax
comp=Z,930nm,1.2s
INK Inuvik 18.21 33 *eP* **P 14 17 08.0 -2.3**
comp=Z,931nm,1.3s
INK S **Sn 14 20 32.8 +0.3**
BBB Bella Bella 19.36 85 P **P 14 17 23.4 +0.4**
comp=Z,1.0nm,0.3s,baz=289,slow=14,SNR=12
BILL Bilibino 20.10 323*c i P* **P 14 17 31.2 +0.3**
BILL pmax pmax
comp=Z,216nm,1.4s
BILL MLR MLR
comp=Z,12μm,16.0s
BILL Bilibino 20.10 323 *eP* Pn 14 17 32.3 -0.7
comp=Z,2μm,1.2s
BILL LR LR
comp=Z,13μm,20.0s
OCP Olym-Cheeka Pk 23.09 92 P **P 14 18 05.0 +1.9**
OBC Olympics--Boni 23.54 92 P **P 14 18 09.7 +2.2**
PET Petropavlovsk 23.79 282*c i P* **P 14 18 09.0 -0.8**
PET *eS* **S 14 22 19.8 -2.5**
PET pmax pmax
comp=Z,2μm,16.6s
PET pmax pmax
comp=Z,1μm,1.1s
PET MLR MLR
comp=Z,4μm,20.0s
PET Petropavlovsk 23.79 282 *eP* **P 14 18 09.5 -0.2**
comp=Z,1μm,1.1s
OSR Olympics--Salm 23.88 93 P **P 14 18 13.0 +2.2**
MCW Mount Constitu 23.93 90 P **P 14 18 14.1 +3.0**
MCW Mount Constitu 23.93 90 P **P 14 18 14.1 +3.0**
A04D Lummi Island 23.98 90 P **P 14 18 13.7 +2.2**
baz=300,SNR=23
PEA0 Petropavlovsk- 24.30 283 *eP* **P 14 18 14.4 -0.1**
PEA0B Petropavlovsk- 24.30 283 *eP* **P 14 18 15.3 +0.8**
comp=Z,2μm,1.4s
PETK Petropavlovsk- 24.30 283 P **P 14 18 14.8 +0.3**
comp=Z,280nm,0.8s,baz=78,slow=14,SNR=408
PETK PcP **PcP 14 21 53.6 +0.4**
comp=Z,44nm,0.9s,baz=90,slow=6.0,SNR=4.5
PETK LR LR 14 27 47.5
comp=Z,3μm,20.9s,baz=84,slow=36
PETK Petropavlovsk- 24.30 283 P **P 14 18 14.8 +0.3**
PETK 14 21 53.6
PETK pmax pmax
comp=Z,312nm,0.8s
PETK MLR MLR
comp=Z,3μm,21.0s
YKW3 Yellowknife Ar 24.46 54 *eP* **P 14 18 15.3 -0.4**
comp=Z,284nm,1.1s
YKA Yellowknife Ar 24.46 54 P **P 14 18 16.0 +0.1**
comp=Z,113nm,0.8s,baz=266,slow=7.9,SNR=465
YKA PcP **PcP 14 21 53.3 0.0**
comp=Z,30nm,0.7s,baz=281,slow=2.1,SNR=7.4
YKA S **S 14 22 37.6 +4.7**
comp=Z,12nm,1.0s,baz=326,slow=32,SNR=1.7
YKA ScP **ScP 14 25 26.7 -1.7**
comp=Z,5.9nm,1.0s,baz=279,slow=2.2,SNR=5.2
YKA P3KPbc 14 51 25.6
comp=Z,1.3nm,0.7s,baz=93,slow=5.2,SNR=30
YKB5 Yellowknife Ar 24.46 54 *eP* **P 14 18 14.2 -1.6**
CMW Cultus Mountai 24.47 90 P **P 14 18 18.2 +2.1**
GNW Green Mountain 24.50 92 *eP* **P 14 18 18.8 +2.4**
B05A Bryant 24.56 90 P **P 14 18 18.9 +2.0**
baz=301,SNR=31
B05A S **S 14 22 35.9 +1.2**
baz=301
E03A Lebam 24.64 95 *eP* **P 14 18 19.9 +2.4**
comp=Z,391nm,1.0s
B06A Marblemount 24.78 89 *eP* **P 14 18 20.4 +1.5**
comp=Z,155nm,0.9s
SEY Seymchan 24.94 307 P **P 14 18 19.7 -0.5**
comp=Z,64nm,0.9s,baz=88,slow=9.6,SNR=100
SEY PcP **PcP 14 21 54.8 +0.4**
comp=Z,51nm,0.8s,baz=144,slow=2.2,SNR=11
SEY ScP **ScP 14 25 30.2 +0.5**
comp=Z,5.9nm,0.9s,baz=23,slow=2.2,SNR=3.6
SEY LR LR 14 29 31.7
comp=Z,14μm,18.5s,baz=109,slow=40
F03A Seaside 24.98 96 *eP* **P 14 18 22.6 +1.9**
comp=Z,635nm,1.2s
D05A Enumclaw 25.19 92 P **P 14 18 25.3 +2.8**
F04D Rainier, OR 25.21 95 P **P 14 18 24.2 +1.4**
baz=305
C06D Leavenworth 25.43 90 P **P 14 18 26.1 +1.3**
baz=301,SNR=5.2
OBSR Observation Ro 25.44 93 *eP* **P 14 18 27.9 +2.7**
PNT Penticton 25.46 86 *eP* **P 14 18 26.4 +1.3**
PNT Penticton 25.46 86 *eP* **P 14 18 26.4 +1.3**
TDL Tradedollar La 25.52 94 P **P 14 18 27.5 +1.8**
LON Longmire 25.53 93 *eP* **P 14 18 28.0 +2.2**
LON pmax pmax
comp=Z,170nm,1.1s
LON Longmire 25.53 93 *eP* **P 14 18 27.9 +2.2**
comp=Z,172nm,1.2s
G03D McMinnville, O 25.57 97 P **P 14 18 27.3 +1.2**
baz=306,SNR=7.1
F04A Amboy 25.64 95 *eP* **P 14 18 26.7 0.0**
comp=Z,298nm,1.2s
F04A *ePcP* **PcP 14 21 56.9 +0.7**
LTY Liberty 25.91 91 *eP* **P 14 18 30.6 +1.4**
comp=Z,474nm,1.6s
ETW Entiat 25.92 90 *eP* **P 14 18 30.7 +1.3**
COR Corvallis 25.92 98 *eP* **P 14 18 34.3 +5.1**
COR pmax pmax
comp=Z,340nm,1.1s
COR Corvallis 25.92 98 *eP* **P 14 18 34.3 +5.1**
comp=Z,337nm,1.1s
B08A Colville Reser 26.10 88 *eP* **P 14 18 32.1 +1.2**
comp=Z,261nm,1.1s
EBG Ellensburg 26.15 91 P **P 14 18 33.2 +1.8**
MA2 Magadan 26.16 300 *eP* **P 14 18 30.8 -0.5**
MA2 pmax pmax
comp=Z,278nm,2.3s
MA2 Magadan 26.16 300 *eP* **P 14 18 30.8 -0.5**
comp=Z,278nm,2.3s
SKR Severo-Kuril's 26.18 278 *eP* **P 14 18 26.9 -4.6**
SKR *e* 14 19 33.0
SKR pmax pmax
comp=N,160nm,0.9s
SKR pmax pmax
comp=Z,260nm,0.9s
I03D Drain, OR 26.44 100 P **P 14 18 34.5 +0.6**
baz=309,SNR=9.4
H04A Detroit Lake 26.50 97 *eP* **P 14 18 35.1 +0.5**
comp=Z,254nm,1.0s
H04A *eScP* **ScP 14 25 33.5 -1.2**
G05D Wamic, OR 26.67 95 P **P 14 18 37.3 +1.3**
baz=306,SNR=9.7
HSO Harness Mounta 26.70 100 *eP* **P 14 18 40.0 +3.6**
HSO Harness Mounta 26.70 100 *eP* **P 14 18 40.0 +3.6**
HSO *eScP* **ScP 14 25 35.9 +0.5**
I04A Tendick Farm, 26.92 99 P **P 14 18 39.1 +0.9**
baz=308,SNR=16
C09A Chrisman Ranch 27.00 88 *eP* **P 14 18 40.3 +1.4**
comp=Z,258nm,1.4s
D08A Wollman Farm, 27.02 90 *eP* **P 14 18 40.3 +1.2**
comp=Z,244nm,1.4s
D08A *eScP* **ScP 14 25 34.9 -1.2**
HAWA Hanford 27.03 92 *eP* **P 14 18 40.5 +1.2**
comp=Z,202nm,1.0s
HAWA LR LR
comp=Z,7μm,20.0s
G06A Carlson Farm, 27.06 95 *eP* **P 14 18 40.7 +1.1**
G06A *epP* **P 14 18 42.6 +3.0**
G06A *eScP* **ScP 14 25 36.6 +0.3**
I05D Terrebonne, OR 27.19 97 P **P 14 18 41.4 +0.7**
baz=307,SNR=9.8
L02D Cave Junction, 27.29 103 P **P 14 18 42.8 +1.2**
baz=311,SNR=8.4
HUMO Hull Mountain 27.36 101 *eP* **P 14 18 44.0 +1.8**
comp=Z,104nm,1.0s
HUMO *eScP* **ScP 14 25 36.0 -1.3**
NEW Newport 27.42 86 *eP* **P 14 18 43.7 +0.9**
NEW pmax pmax
comp=Z,170nm,1.1s
NEW Newport 27.42 86 *eP* **P 14 18 43.7 +0.9**
comp=Z,171nm,1.1s
J05D Fort Rock, OR 27.90 99 P **P 14 18 48.2 +0.9**
baz=309,SNR=18
K04D Chiloquin, OR 28.03 100 P **P 14 18 49.1 +0.8**
baz=310,SNR=6.8
YBH Yreka Blue Hor 28.07 103 P **P 14 18 50.3 +1.6**
comp=Z,11nm,0.9s,baz=292,slow=6.1,SNR=16
YBH PcP **PcP 14 22 02.1 -0.1**
comp=Z,9.0nm,0.8s,baz=8.1,slow=4.2,SNR=5.1
YBH S **S 14 23 32.7 +2.2**
comp=Z,1.9nm,0.8s,baz=169,slow=23,SNR=2.9
YBH Yreka Blue Hor 28.07 103 *eP* **P 14 18 50.7 +2.0**
comp=Z,58nm,0.9s
YBH PcP **PcP 14 22 02.1 -0.1**
YBH S **S 14 23 32.7 +2.2**
KHMM Horse Mountain 28.07 105 *eP* **P 14 18 50.3 +1.6**
comp=Z,186nm,1.1s
KHMM *eScP* **ScP 14 25 39.9 +0.3**
M02C Callahan 28.21 103 P **P 14 18 50.3 +0.3**
baz=312,SNR=15
K05A Summer Lake 28.45 99 *eP* **P 14 18 53.9 +1.7**
comp=Z,548nm,1.7s
K05A *eSS* SS 14 25 39.7 +2.0
M04C Macdoel 28.52 102 P **P 14 18 53.8 +1.1**
baz=311,SNR=9.1
KMRM Mail Ridge 28.53 106 *eP* **P 14 18 55.0 +2.2**
comp=Z,99nm,0.8s
N02D Trinity Center 28.58 104 P **P 14 18 54.3 +1.2**
baz=313,SNR=7.8
F10A Beach Ranch, E 28.59 90 *eP* **P 14 18 54.5 +1.2**
comp=Z,93nm,1.0s
WALA Waterton Lakes 28.85 82 *eP* **P 14 18 56.4 +0.7**
comp=Z,280nm,1.4s
WDC Whiskeytown Da 28.94 104 *eP* **P 14 18 57.4 +1.1**
WDC pmax pmax
comp=Z,71nm,1.1s
WDC Whiskeytown Da 28.94 104 *eP* **P 14 18 57.4 +1.1**
comp=Z,71nm,1.1s
WDC *eSS* SS 14 25 48.0 +0.7
BSMT Bassoo Peak 28.97 85 *eP* **P 14 18 57.5 +0.7**
BLMT Blacktail Moun 29.13 85 *eP* **P 14 18 58.9 +0.7**
BMO Blue Mountains 29.20 92 *eP* **P 14 18 59.7 +1.0**
comp=Z,151nm,1.4s
BMO LR LR
comp=Z,8μm,21.0s
MOD Modoc Plateau 29.32 100 *eP* **P 14 19 01.4 +1.6**
comp=Z,268nm,1.5s
MOD *eScP* **ScP 14 25 40.4 -3.1**
JTMT Jette 29.32 85 *eP* **P 14 19 00.6 +0.8**
YBMT Yellow Bay 29.41 85 *eP* **P 14 19 01.2 +0.7**
O03D Paynes Creek 29.54 104 P **P 14 19 02.4 +0.7**
baz=313,SNR=14
SWMT Swartz Lake 29.61 85 *eP* **P 14 19 03.2 +1.0**
HOPS Hopland Field 29.74 107 *eP* **P 14 19 02.6 -0.9**
comp=Z,195nm,1.0s
HOPS *eScP* **ScP 14 25 45.0 +0.3**
WVOR Wild Horse Val 29.92 97 *eP* **P 14 19 06.6 +1.5**
WVOR pmax pmax
comp=Z,430nm,1.6s
MSO Missoula 30.01 86 P **P 14 19 06.0 +0.2**
baz=303,SNR=6.0
MSO Missoula 30.01 86 *eP* **P 14 19 06.6 +0.7**
comp=Z,140nm,1.4s
ORV Oroville 30.22 105 *eP* **P 14 19 08.0 +0.3**
ORV pmax pmax
comp=Z,54nm,1.0s
ORV Oroville 30.22 105 *eP* **P 14 19 08.0 +0.3**
comp=Z,54nm,0.9s
CHMT Chamberlain Mo 30.36 86 *eP* **P 14 19 09.2 +0.2**
MFID Camas Ranch 30.91 93 *eP* **P 14 19 15.0 +1.1**
comp=Z,142nm,0.9s
MFID *eScP* **ScP 14 25 48.1 -0.5**
AFDM Forest Hills D 30.94 105 *eP* **P 14 19 15.0 +1.0**
comp=Z,140nm,1.3s
AFDM *eScP* **ScP 14 25 47.6 -1.1**
HRY Holter Researc 31.28 85 *eP* **P 14 19 18.1 +1.1**
LRM Limekiln Ridge 31.43 87 *eP* **P 14 19 19.2 +0.7**
RES Resolute Bay 31.60 28 P **P 14 19 18.9 -0.5**
comp=Z,52nm,0.9s,baz=256,slow=11,SNR=144
RES PcP **PcP 14 22 09.9 -0.7**
comp=Z,58nm,0.8s,baz=321,slow=5.3,SNR=4.7
RES LR LR 14 33 21.7
comp=Z,5μm,20.2s,baz=264,slow=39
DLMT Dillon 31.61 88 *eP* **P 14 19 21.2 +1.2**
comp=Z,100nm,1.3s
DLMT *ePcP* **PcP 14 22 11.8 +0.5**
DLMT *eScP* **ScP 14 25 49.6 -1.4**
HLID Hailey 31.64 92 P **P 14 19 20.6 +0.3**
baz=308,SNR=128
HLID Hailey 31.64 92 *eScP* **ScP 14 25 50.6 -0.5**
HLID LR LR
comp=Z,8μm,20.0s
EGMT Eagleton 31.75 81 P **P 14 19 21.4 +0.1**
baz=302,SNR=34
EGMT Eagleton 31.75 81 *eP* **P 14 19 21.3 +0.1**
comp=Z,180nm,0.9s
EGMT LR LR
comp=Z,5μm,20.0s
MCMT McKenzie Canyo 31.77 89 *eP* **P 14 19 22.2 +0.6**
CMB Columbia Colle 31.91 105 *eP* **P 14 19 23.6 +1.0**
CMB pmax pmax
comp=Z,110nm,1.2s
BOZ Bozeman (W) 32.00 86 P **P 14 19 23.5 +0.1**
baz=305
BOZ Bozeman (W) 32.00 86 *eP* **P 14 19 23.4 0.0**
BOZ pmax pmax
comp=Z,94nm,1.4s
BOZ MLR MLR
comp=Z,2μm,22.0s
BOZ Bozeman (W) 32.00 86 *eP* **P 14 19 23.4 0.0**
comp=Z,94nm,1.4s
BOZ LR LR
comp=Z,2μm,22.0s
WAKR Walker 32.10 104 *eP* **P 14 19 25.8 +1.3**
SAO San Andreas Ge 32.24 108 *eP* **P 14 19 26.4 +0.9**
SAO *e*PP* **pP 14 19 31.6 -5.1**
SAO San Andreas Ge 32.24 108 *eP* **P 14 19 26.4 +0.9**
SAO *epP* **pP 14 19 31.6 -5.1**
QLMT Earthquake Lak 32.59 88 *eP* **P 14 19 29.3 +0.6**
QLMT *ePcP* **PcP 14 22 15.3 +1.2**
NV01 Mina Array Sit 32.79 103 *eP* **P 14 19 31.3 +0.8**
NVAR Mina Array Bea 32.79 103 P **P 14 19 31.5 +1.0**
comp=Z,10nm,0.8s,baz=298,slow=8.6,SNR=61
NVAR PcP **PcP 14 22 15.1 +0.3**
comp=Z,34nm,0.7s,baz=294,slow=2.7,SNR=15
NVAR S **S 14 24 44.7 0.0**
comp=Z,0.7nm,0.8s,baz=294,slow=17,SNR=2.0
NVAR LR LR 14 30 25.6
comp=Z,7μm,21.5s,baz=320,slow=32
NV11 Mina Array Sit 32.87 103 *eP* **P 14 19 32.6 +1.4**
comp=Z,274nm,1.6s
YMC Maple Creek 32.87 87 *eP* **P 14 19 32.1 +0.9**
YHH Holmes Hill 32.95 87 *eP* **P 14 19 32.7 +0.8**
YMR Madison River 32.95 87 *eP* **P 14 19 33.1 +1.3**
comp=Z,241nm,1.1s
ELK Elko 32.95 97 *eP* **P 14 19 33.1 +1.1**
ELK pmax pmax
comp=Z,210nm,1.2s
ELK Elko 32.95 97 *eP* **P 14 19 33.1 +1.1**
comp=Z,210nm,1.3s
GCMT Greycliff 33.04 85 *eP* **P 14 19 33.9 +1.4**
MLAC Mammoth, Mammo 33.06 104 P **P 14 19 32.9 0.0**
baz=316
YFT Old Faithful 33.16 88 *eP* **P 14 19 35.9 +2.2**
comp=Z,102nm,1.0s
TIXI Tiksi 33.22 327 P3KPbc 14 50 45.4
comp=Z,2.1nm,0.7s,baz=306,slow=4.2,SNR=10.0
TIXI Tiksi 33.22 327*ceP* **P 14 19 33.0 -0.5**
TIXI pmax pmax
comp=Z,89nm,1.0s
TIXI MLR MLR
comp=Z,5μm,17.0s
TIXI Tiksi 33.22 327 *eP* **P 14 19 33.1 -0.5**
comp=Z,176nm,1.0s
TIXI *eScP* **ScP 14 25 56.3 +0.5**
TIXI *e* 14 50 45.4
H17A Grant Village 33.34 88 P **P 14 19 35.2 -0.1**
baz=307
H17A Grant Village 33.34 88 *eP* **P 14 19 37.5 +2.2**
comp=Z,188nm,1.3s
LKWY Lake 33.34 87 *eP* **P 14 19 37.4 +2.1**
LKWY pmax pmax
comp=Z,120nm,1.0s
LKWY Lake 33.34 87 *eP* **P 14 19 37.4 +2.1**
comp=Z,118nm,1.0s
LKWY LR LR
comp=Z,3μm,22.0s
IMW Indian Meadow 33.43 89 *eP* **P 14 19 37.5 +1.4**
comp=Z,120nm,1.3s
FLWY Flagg Ranch 33.45 88 *eP* **P 14 19 37.9 +1.7**
comp=Z,252nm,1.3s
YTP The Promontory 33.51 87 *eP* **P 14 19 38.2 +1.4**
NKL Nikolayevsk 33.62 292 *i P* **P 14 19 37.4 +0.1**
NKL pmax pmax
comp=N,40nm,1.0s
NKL pmax pmax
comp=E,65nm,1.0s
NKL pmax pmax
comp=Z,230nm,1.0s
NKL pmax pmax
comp=Z,1μm,2.0s
TYV Tymovskoe 33.64 287 *eP* **P 14 19 39.0 +1.5**
TYV pmax pmax
comp=E,264nm,1.0s
TYV pmax pmax
comp=Z,550nm,1.0s
RLMT Red Lodge 33.66 85 P **P 14 19 39.0 +1.0**
baz=306,SNR=106
RLMT Red Lodge 33.66 85 *eP* **P 14 19 38.8 +0.7**
comp=Z,193nm,1.1s
RLMT LR LR
comp=Z,3μm,22.0s
KIP Kipapa 33.66 176 *eP* **P 14 19 39.0 +1.1**
KIP *e* 14 20 50.2
KIP pmax pmax
comp=Z,200nm,1.0s
KIP Kipapa 33.66 176 *eP* **P 14 19 39.0 +1.1**
comp=Z,199nm,1.0s
KIP *ePP* **PnPn 14 20 50.2 -0.5**
KIP LR LR
comp=Z,11μm,20.0s
HVU Hansel Valley 33.69 93 *eP* **P 14 19 39.4 +1.1**
HVU pmax pmax
comp=Z,170nm,1.0s
HVU Hansel Valley 33.69 93 *eP* **P 14 19 39.4 +1.1**
comp=Z,169nm,1.0s
KUR Kuril'sk 33.75 275 *eP* **P 14 19 37.5 -1.0**
RCTC Rector, Farmer 33.78 106 P **P 14 19 39.7 +0.8**
baz=317
SNOW Snow King Moun 33.80 89 P **P 14 19 40.4 +1.1**
comp=Z,49nm,1.0s
SNOW *ePcP* **PcP 14 22 17.6 0.0**
TIN Tinemaha, Big 33.80 104 P **P 14 19 39.5 +0.3**
baz=316
REDW Red Top Meadow 33.80 89 *eP* **P 14 19 39.7 +0.4**
comp=Z,96nm,1.4s
REDW *eScP* **ScP 14 25 58.3 -0.4**
AHID Auburn Hatcher 34.03 90 *eP* **P 14 19 42.6 +1.3**
comp=Z,102nm,1.3s
AHID LR LR
comp=Z,5μm,19.0s
BGU Big Grassy Mou 34.10 94 *eP* **P 14 19 43.1 +1.3**
comp=Z,394nm,1.8s
BGU *eScP* **ScP 14 25 59.1 -0.6**
SMMC Simmler 34.10 108 P **P 14 19 43.1 +1.3**
baz=318,SNR=8.2
SPUT South Promonto 34.18 93 *eP* **P 14 19 45.8 +3.2**
comp=Z,146nm,1.4s
VES Vestal, Richgr 34.21 107 P **P 14 19 43.2 +0.5**
baz=318,SNR=7.5
HDU Hyde Park 34.26 92 *eP* **P 14 19 44.3 +1.1**
GRAC Grapevine Rang 34.33 104 P **P 14 19 45.2 +1.5**
baz=316
R11A Troy Canyon, C 34.38 100 P **P 14 19 45.2 +0.9**
baz=314,SNR=58
R11A Troy Canyon, C 34.38 100 *eP* **P 14 19 44.8 +0.5**
comp=Z,233nm,1.3s
LAO LASA Array 34.49 81 P **P 14 19 46.1 +1.0**
baz=304,SNR=14
LAO LASA Array 34.49 81 *eP* **P 14 19 46.3 +1.2**
comp=Z,145nm,0.9s
LAO LR LR
comp=Z,5μm,20.0s
HWUT Hardware Ranch 34.50 92 *eP* **P 14 19 46.1 +0.8**
comp=Z,317nm,1.8s
HWUT *eScP* **ScP 14 26 00.2 -0.9**
HWUT LR LR
comp=Z,521nm,21.0s
PKM Mcpherson Peak 34.52 109 P **P 14 19 46.8 +1.2**
baz=319,SNR=10.0
ISA Isabella, Lake 34.68 106 *eScP* **ScP 14 26 01.4 -0.3**
DUG Dugway, Tooele 34.70 95 P **P 14 19 48.1 +1.1**
baz=312,SNR=45
DUG Dugway, Tooele 34.70 95 *eP* **P 14 19 48.6 +1.6**
DUG pmax pmax
comp=Z,280nm,1.2s
DUG Dugway, Tooele 34.70 95 *eP* **P 14 19 48.6 +1.6**
comp=Z,283nm,1.2s
DUG LR LR
comp=Z,3μm,22.0s
DAC Darwin (Calif) 34.72 105 *eP* **P 14 19 48.1 +0.8**
DAC pmax pmax
comp=Z,100nm,0.9s
DAC Darwin (Calif) 34.72 105 *eP* **P 14 19 48.0 +0.8**
comp=Z,100nm,0.8s
DAC *eScP* **ScP 14 26 01.2 -0.8**
ARVC Arvin 34.88 107 P **P 14 19 48.4 0.0**
baz=318
TCUT Toone Canyon 34.91 93 *eP* **P 14 19 50.2 +1.3**
comp=Z,161nm,1.0s
TCUT *eScP* **ScP 14 26 01.9 -0.8**
SBC Santa Barbara 34.91 109 P **P 14 19 50.1 +1.4**
baz=319
BW06 Boulder Array 34.92 89 P **P 14 19 49.0 0.0**
baz=309,SNR=11
BW06 Boulder Array 34.92 89 *eP* **P 14 19 49.2 +0.3**
BW06 LR LR
comp=Z,2μm,20.0s
PD31 Pinedale Array 34.92 89 *eP* **P 14 19 49.2 +0.2**
PDAR Pinedale Array 34.92 89 P **P 14 19 49.1 +0.2**
comp=Z,3.5nm,0.7s,baz=311,slow=5.2,SNR=24
PDAR LR LR 14 33 37.0
comp=Z,1μm,18.1s,baz=312,slow=35
PDAR P3KPbc 14 50 41.0
comp=Z,1.7nm,0.8s,baz=123,slow=5.5,SNR=12
MPMC Manual Prospec 34.94 105 P **P 14 19 50.2 +1.1**
baz=317,SNR=34
TPNV Topopah Spring 34.99 103 P **P 14 19 50.6 +1.1**
baz=316,SNR=42
TPNV Topopah Spring 34.99 103 *eP* **P 14 19 50.7 +1.1**
TPNV pmax pmax
comp=Z,300nm,1.2s
TPNV Topopah Spring 34.99 103 *eP* **P 14 19 50.7 +1.1**
comp=Z,296nm,1.2s
FURC Furnace Creek, 34.99 104 P **P 14 19 50.5 +1.2**
baz=316,SNR=6.6
A25A Svangstu Ranch 35.01 76 P **P 14 19 49.8 +0.4**
baz=302
FCC Fort Churchill 35.13 56 *eP* **P 14 19 50.7 +0.4**
FCC pmax pmax
comp=Z,320nm,1.0s
FCC Fort Churchill 35.13 56 *eP* **P 14 19 50.7 +0.4**
comp=Z,321nm,0.9s
HPAH Hawaii Prepara 35.19 172 *eP* **P 14 19 52.1 +0.8**
comp=Z,282nm,0.8s
JLU Jordanelle 35.22 93 *eP* **P 14 19 53.0 +1.4**
comp=Z,188nm,1.5s
PSUT Pine Spring 35.23 98 *eP* **P 14 19 52.8 +1.1**
comp=Z,233nm,1.4s
LRMC Laurel Mtn Rad 35.25 106 P **P 14 19 52.5 +0.7**
baz=318,SNR=20
NLU North Lily Min 35.29 95 *eP* **P 14 19 53.4 +1.2**
comp=Z,65nm,0.8s
NLU *eScP* **ScP 14 26 03.4 -0.6**
SCZ2 Santa Cruz Isl 35.29 110 P **P 14 19 52.9 +0.9**
baz=320,SNR=8.2
OSI Osito Audit: C 35.32 108 P **P 14 19 53.1 +0.8**
baz=319
OSI Osito Audit: C 35.32 108 *eP* **P 14 19 53.7 +1.5**
comp=Z,76nm,0.8s
B25A Knox Farm, Ray 35.34 77 P **P 14 19 52.8 +0.5**
baz=303,SNR=13
YAK Yakutsk 35.38 310*ceP* **P 14 19 51.3 -1.1**
YAK *e* 14 21 31.8
YAK *e* 14 22 21.3
YAK *eS* **S 14 25 16.4 -7.3**
YAK *eSS* **SnSn 14 27 49.3 +4.7**
YAK pmax pmax
comp=N,21nm,1.1s
YAK pmax pmax
comp=Z,219nm,1.0s
YAK pmax pmax
comp=E,110nm,1.2s
YAK smax smax
comp=N,155nm,2.5s
YAK smax smax
comp=E,74nm,1.6s
YAK MLR MLR
comp=N,2μm,17.0s
YAK MLR MLR
comp=Z,10μm,21.0s

YAK				MLR	MLR		
	comp=E,6μm,18.0s						
YAK	**Yakutsk**	**35.38**	**310**	*e*P	**P**	**14 19 51.5**	**-0.9**
	comp=E,480nm,0.9s						
YAK				*e*S	**S**	**14 25 22.7**	**-1.0**
POHA	**Pohakuloa**	**35.47**	**172**	*e*P	**P**	**14 19 54.6**	**+0.7**
	comp=E,337nm,1.1s						
POHA				*e*PP	**PP**	**14 21 14.2**	**-0.7**
BLG	**Laguna Peak, P**	**35.51**	**109**	P	**P**	**14 19 54.9**	**+1.0**
	baz=319,SNR=7.2						
EDW2	**Edwards Air Fo**	**35.52**	**107**	P	**P**	**14 19 54.7**	**+0.7**
	baz=318,SNR=7.7						
C25A	**Freed Ranch, W**	**35.60**	**78**	P	**P**	**14 19 55.3**	**+0.8**
	baz=304,SNR=6.2						
YUK	**Yuzh-Kuril'sk**	**35.61**	**275**	*i* P	**P**	**14 19 51.3**	**-3.3**
YUK				*i* S	**S**	**14 25 22.9**	**-4.8**
YUK				MLR	MLR		
	comp=E,492nm,17.0s						
YUK				MLR	MLR		
	comp=Z,927nm,17.0s						
YUK				MLR	MLR		
	comp=N,279nm,14.0s						
FLU	**Fool Peak**	**35.62**	**96**	*e*P	**P**	**14 19 56.6**	**+1.6**
A26A	**Wade Farm, Ken**	**35.63**	**75**	P	**P**	**14 19 55.1**	**+0.4**
	baz=303,SNR=27						
YSS	**Yuzh-Sakhalins**	**35.67**	**281**α	*i* P	**P**	**14 19 56.1**	**+1.0**
YSS				*e*		14 21 34.6	
YSS				*e*S	**S**	**14 25 27.7**	**-0.8**
YSS				*e*SS	**SnSn**	**14 27 44.0**	**-8.0**
YSS				pmax	pmax		
	comp=Z,1μm,3.7s						
YSS				pmax	pmax		
	comp=Z,170nm,0.9s						
YSS				MLR	MLR		
	comp=Z,2μm,19.0s						
YSS				MLR	MLR		
	comp=N,1μm,13.0s						
YSS				MLR	MLR		
	comp=E,2μm,18.0s						
YSS	**Yuzh-Sakhalins**	**35.67**	**281**	*e*P	**P**	**14 19 56.3**	**+1.2**
	comp=E,203nm,1.0s						
MLOA	**Mauna Loa Obse**	**35.69**	**172**	*e*P	**P**	**14 19 57.2**	**+1.3**
SHOC	**Shoshone, Teco**	**35.73**	**104**	P	**P**	**14 19 56.9**	**+1.2**
	baz=317,SNR=8.2						
B26A	**Jensen Ranch,**	**35.80**	**76**	P	**P**	**14 19 57.0**	**+0.8**
	baz=303,SNR=23						
DECC	**Green Verdugo**	**35.80**	**108**	P	**P**	**14 19 57.0**	**+0.6**
	baz=319						
GSC	**Goldstone, Bar**	**35.87**	**105**	P	**P**	**14 19 58.0**	**+1.0**
	baz=317,SNR=15						
GSC	**Goldstone, Bar**	**35.87**	**105**	*e*P	**P**	**14 19 57.9**	**+0.9**
GSC				pmax	pmax		
	comp=Z,200nm,1.2s						
GSC	**Goldstone, Bar**	**35.87**	**105**	*e*P	**P**	**14 19 57.9**	**+0.9**
	comp=Z,203nm,1.3s						
GSC				*e*ScP	**ScP**	**14 26 06.2**	**+0.1**
D25A	**Fairfield**	**35.87**	**78**	P	**P**	**14 19 57.6**	**+0.7**
	baz=304,SNR=11						
SNCC	**San Nicolas Is**	**35.91**	**110**	P	**P**	**14 19 58.5**	**+1.1**
	baz=320,SNR=6.0						
SNCC	**San Nicolas Is**	**35.91**	**110**	*e*P	**P**	**14 19 57.9**	**+0.6**
SNCC				*e*pP	**pP**	**14 20 09.5**	**+0.9**
SHPR	**Sheep Range**	**35.91**	**102**	*e*P	**P**	**14 19 58.4**	**+0.9**
	comp=Z,120nm,1.6s						
PASC	**Pasadena Art C**	**35.94**	**108**	*e*P	**P**	**14 19 58.1**	**+0.6**
PASC				*e*pP	**pP**	**14 20 08.9**	**+0.1**
MWC	**Mount Wilson**	**35.97**	**108**	*e*P	**P**	**14 19 59.2**	**+1.1**
MWC				pmax	pmax		
	comp=Z,190nm,1.3s						
MWC	**Mount Wilson**	**35.97**	**108**	*e*P	**P**	**14 19 59.2**	**+1.1**
	comp=Z,186nm,1.3s						
MWC				*e*ScP	**ScP**	**14 26 06.1**	**-0.5**
SGU	**Sterling**	**36.05**	**95**	*e*P	**P**	**14 20 00.8**	**+2.1**
RRX	**Edison Barstow**	**36.07**	**106**	P	**P**	**14 19 59.6**	**+0.8**
	baz=318						
BFSC	**Mount Baldy Ra**	**36.18**	**107**	P	**P**	**14 20 00.9**	**+1.1**
	baz=319,SNR=10.0						
C26A	**Wahner Farm, P**	**36.18**	**77**	P	**P**	**14 20 00.1**	**+0.6**
	baz=304,SNR=13						
E25A	**Miller Ranch,**	**36.20**	**79**	P	**P**	**14 20 00.5**	**+0.8**
	baz=305,SNR=13						
MSU	**Marysvale**	**36.20**	**97**	*e*P	**P**	**14 20 01.9**	**+1.9**
MSU	**Marysvale**	**36.20**	**97**	*e*P	**P**	**14 20 01.9**	**+1.9**
MSU				*e*ScP	**ScP**	**14 26 07.4**	**0.0**
TMUT	**Trail Mountain**	**36.23**	**95**	*e*P	**P**	**14 20 01.7**	**+1.4**
	comp=Z,201nm,1.1s						
TMUT				*e*ScP	**ScP**	**14 26 07.6**	**0.0**
FMP	**Fort Macarthur**	**36.23**	**108**	P	**P**	**14 20 00.6**	**+0.6**
	baz=319						
TUQ	**Turquoise Moun**	**36.26**	**104**	P	**P**	**14 20 01.5**	**+1.0**
	baz=317,SNR=7.4						
B27A	**Peters Farms,**	**36.33**	**75**	P	**P**	**14 20 01.4**	**+0.7**
	baz=304,SNR=7.8						
P17A	**Butcher Ranch,**	**36.37**	**94**	*e*P	**P**	**14 20 03.0**	**+1.6**
	comp=Z,76nm,0.9s						
P17A				*e*ScP	**ScP**	**14 26 07.1**	**-0.9**
CIS	**Catalina Islan**	**36.40**	**109**	P	**P**	**14 20 02.1**	**+0.6**
	baz=320,SNR=6.2						
D26A	**Manning**	**36.44**	**78**	P	**P**	**14 20 02.3**	**+0.6**
	baz=305,SNR=12						
HEC	**Hector,Ludlow**	**36.48**	**105**	P	**P**	**14 20 03.2**	**+1.0**
	baz=318,SNR=8.7						
F25A	**Bowman**	**36.50**	**80**	P	**P**	**14 20 03.4**	**+1.1**
	baz=306,SNR=20						
Q16A	**Castle Valley**	**36.50**	**95**	*e*P	**P**	**14 20 04.1**	**+1.6**
	comp=Z,408nm,1.4s						
Q16A				*e*ScP	**ScP**	**14 26 08.5**	**+0.1**
MTPU	**Mount Pierson**	**36.52**	**97**	*e*P	**P**	**14 20 04.4**	**+1.5**
	comp=Z,329nm,1.8s						
MTPU				*e*ScP	**ScP**	**14 26 08.6**	**-0.1**
P18A	**Preston Nutter**	**36.55**	**94**	*e*P	**P**	**14 20 04.2**	**+1.1**
	comp=Z,144nm,1.1s						
BBRC	**Big Bear Solar**	**36.57**	**106**	P	**P**	**14 20 04.3**	**+1.1**
	baz=318,SNR=6.6						
C27A	**Sayler Ranch,**	**36.58**	**76**	P	**P**	**14 20 03.8**	**+1.0**
	baz=304,SNR=20						
A28A	**Rude Farm, Bot**	**36.60**	**74**	P	**P**	**14 20 03.9**	**+0.8**
	baz=303,SNR=37						
LCMT	**Little Creek M**	**36.64**	**100**	*e*ScP	**ScP**	**14 26 08.5**	**-0.4**
SCI2	**San Clemente I**	**36.65**	**110**	P	**P**	**14 20 04.9**	**+1.3**
	baz=320						
K22A	**Casper**	**36.73**	**87**	P	**P**	**14 20 04.3**	**-0.1**
	baz=309,SNR=8.0						
K22A	**Casper**	**36.73**	**87**	*e*P	**P**	**14 20 04.7**	**+0.3**
	comp=Z,135nm,1.1s						
SRU	**San Rafael Swe**	**36.74**	**95**	*e*P	**P**	**14 20 06.0**	**+1.4**
SRU				pmax	pmax		
	comp=Z,420nm,1.1s						
SRU	**San Rafael Swe**	**36.74**	**95**	*e*P	**P**	**14 20 06.0**	**+1.4**
	comp=Z,425nm,1.1s						
E26A	**Carlson Angus**	**36.75**	**79**	P	**P**	**14 20 04.7**	**+0.4**
	baz=305,SNR=12						
B28A	**Dugan Ranch, T**	**36.80**	**75**	P	**P**	**14 20 05.4**	**+0.6**
	baz=304,SNR=55						
PKCU	**Pink Cliffs**	**36.87**	**98**	*e*P	**P**	**14 20 07.9**	**+2.1**
	comp=Z,506nm,1.9s						
KNB	**Kanab**	**36.87**	**99**	*e*P	**P**	**14 20 07.1**	**+1.4**
KNB				pmax	pmax		
	comp=Z,470nm,1.9s						
KNB	**Kanab**	**36.87**	**99**	*e*P	**P**	**14 20 07.1**	**+1.4**
	comp=Z,470nm,1.9s						
GMRC	**Granite Mounta**	**36.88**	**105**	P	**P**	**14 20 06.8**	**+1.1**
	baz=318,SNR=16						
D27A	**Center**	**36.91**	**77**	P	**P**	**14 20 06.1**	**+0.4**
	baz=305						
MURC	**Murrieta**	**36.91**	**107**	P	**P**	**14 20 07.6**	**+1.7**
	baz=319,SNR=5.5						
MMU	**Miners Mountai**	**36.92**	**96**	*e*P	**P**	**14 20 08.2**	**+2.0**
G25A	**Newell**	**36.95**	**81**	P	**P**	**14 20 06.5**	**+0.4**
	baz=307,SNR=16						
LDFC	**Landfair**	**36.98**	**104**	*e*P	**P**	**14 20 07.4**	**+0.9**
	comp=Z,290nm,1.2s						
F26A	**Lodgepole**	**36.99**	**80**	P	**P**	**14 20 07.2**	**+0.7**
	baz=306,SNR=24						
EKU	**East Kanab**	**37.02**	**99**	*e*P	**P**	**14 20 08.2**	**+1.3**
A29A	**Manning Farm,**	**37.16**	**73**	P	**P**	**14 20 08.2**	**+0.4**
	baz=304,SNR=98						
H25A	**Fruitdale**	**37.20**	**82**	P	**P**	**14 20 08.8**	**+0.6**
	baz=307,SNR=22						
C28A	**Hausauer Farms**	**37.20**	**76**	P	**P**	**14 20 09.0**	**+0.9**
	baz=304,SNR=9.2						
RSSD	**Black Hills**	**37.25**	**83**	P	**P**	**14 20 09.3**	**+0.4**
	baz=308						
RSSD	**Black Hills**	**37.25**	**83**	*e*P	**P**	**14 20 09.2**	**+0.3**
RSSD				pmax	pmax		
	comp=Z,120nm,1.0s						
RSSD	**Black Hills**	**37.25**	**83**	*e*P	**P**	**14 20 09.2**	**+0.3**
	comp=Z,121nm,1.0s						
BELC	**Belle Mtn. Jos**	**37.27**	**106**	P	**P**	**14 20 09.7**	**+0.6**
	baz=318						
E27A	**Carson**	**37.28**	**78**	P	**P**	**14 20 09.1**	**+0.2**
	baz=306						
PFO	**Pinyon Flats O**	**37.31**	**107**	P	**P**	**14 20 09.8**	**+0.4**
	comp=Z,9.1nm,0.8s,baz=333,slow=5.9,SNR=13						
PFO				S	**S**	**14 25 55.3**	**+1.2**
	comp=Z,1.7nm,0.8s,baz=59,slow=19,SNR=11						
PFO				ScP	**ScP**	**14 26 10.4**	**-1.1**
	comp=Z,18nm,1.2s,baz=163,slow=0.9,SNR=5.1						
PFO				LR	LR	14 32 44.1	
	comp=Z,5μm,20.5s,baz=309,slow=32						
PFO	**Pinyon Flats O**	**37.31**	**107**	P	**P**	**14 20 10.0**	**+0.7**
	baz=319,SNR=9.2						
PFO	**Pinyon Flats O**	**37.31**	**107**	*e*P	**P**	**14 20 09.7**	**+0.4**
	comp=Z,126nm,1.1s						
PFO				*e*S	**S**	**14 25 57.7**	**+3.6**
PFO				ScP	**ScP**	**14 26 10.4**	**-1.1**
F27A	**Lemmon**	**37.34**	**79**	P	**P**	**14 20 09.9**	**+0.5**
	baz=306,SNR=50						
B29A	**Wagenman Farm,**	**37.35**	**74**	P	**P**	**14 20 09.7**	**+0.3**
	baz=304,SNR=32						
G26A	**Maurine**	**37.36**	**80**	P	**P**	**14 20 10.2**	**+0.6**
	baz=307,SNR=118						
O20A	**White River Ci**	**37.37**	**91**	P	**P**	**14 20 10.0**	**+0.1**
	baz=312,SNR=18						
O20A	**White River Ci**	**37.37**	**91**	*e*P	**P**	**14 20 10.3**	**+0.4**
	comp=Z,264nm,0.9s						
D28A	**Regan**	**37.39**	**77**	P	**P**	**14 20 10.4**	**+0.6**
	baz=305,SNR=20						
ASAJ	**Asahikawa**	**37.43**	**277**	LR	LR	14 37 28.5	
	comp=Z,2μm,18.9s,baz=60,slow=39						
ASAJ	**Asahikawa**	**37.43**	**277**	*e*P	**P**	**14 20 10.4**	**+0.3**
	comp=Z,294nm,1.0s						
I25A	**Rochford**	**37.48**	**83**	P	**P**	**14 20 10.8**	**-0.1**
	baz=308,SNR=15						
109C	**Camp Elliot, M**	**37.50**	**108**	P	**P**	**14 20 11.9**	**+1.1**
	baz=320,SNR=8.0						
U15A	**North Rim**	**37.59**	**99**	*e*P	**P**	**14 20 13.2**	**+1.3**
	comp=Z,336nm,1.6s						
IRM	**Iron Mountain**	**37.63**	**105**	P	**P**	**14 20 12.8**	**+0.8**
	baz=318,SNR=23						
W13A	**Hualapai Mount**	**37.65**	**102**	*e*P	**P**	**14 20 13.1**	**+0.8**
	comp=Z,266nm,1.5s						
A30A	**Hoffart Farm,**	**37.67**	**73**	P	**P**	**14 20 12.2**	**+0.1**
	baz=304,SNR=41						
H26A	**Fairpoint**	**37.67**	**81**	P	**P**	**14 20 12.4**	**+0.2**
	baz=307						
E28A	**Huff**	**37.68**	**77**	P	**P**	**14 20 12.9**	**+0.7**
	baz=306,SNR=15						
G27A	**Dupree**	**37.69**	**80**	P	**P**	**14 20 12.8**	**+0.5**
	baz=307,SNR=90						
J25A	**Sunshine Ranch**	**37.83**	**84**	P	**P**	**14 20 13.4**	**-0.2**
	baz=308						
BC3	**Big Chuckawall**	**37.83**	**106**	P	**P**	**14 20 14.2**	**+0.4**
	baz=318,SNR=8.8						
MONP2	**Monument Peak**	**37.87**	**107**	P	**P**	**14 20 14.7**	**+0.5**
	baz=319,SNR=9.8						
BAR	**Barrett**	**37.90**	**108**	*e*P	**P**	**14 20 15.2**	**+1.0**
	comp=Z,146nm,1.1s						
B30A	**Myrvik Farm, E**	**37.92**	**73**	P	**P**	**14 20 14.5**	**+0.3**
	baz=304,SNR=46						
PV09	**Paradox Valley**	**37.95**	**94**	*e*P	**P**	**14 20 15.5**	**+0.5**
I26A	**New Underwood**	**37.98**	**82**	P	**P**	**14 20 15.1**	**+0.2**
	baz=308,SNR=8.9						
D29A	**Pettibone, Tap**	**38.01**	**76**	P	**P**	**14 20 15.5**	**+0.4**
	baz=305,SNR=12						
F28A	**McLaughlin**	**38.05**	**78**	P	**P**	**14 20 15.9**	**+0.6**
	baz=306,SNR=48						
H27A	**Howes**	**38.05**	**81**	P	**P**	**14 20 15.5**	**+0.1**
	baz=307,SNR=12						
PDMCI	**Parker Dam,Lak**	**38.08**	**104**	P	**P**	**14 20 16.5**	**+0.8**
	baz=318,SNR=5.7						
PV10	**Paradox Valley**	**38.09**	**94**	*e*P	**P**	**14 20 18.5**	**+2.4**
PV10				*e*ScP	**ScP**	**14 26 14.3**	**-0.3**
PV04	**Paradox Valley**	**38.16**	**94**	*e*P	**P**	**14 20 16.6**	**+0.1**
SWSC	**Sam W. Stewart**	**38.17**	**107**	P	**P**	**14 20 17.4**	**+0.9**
	baz=319,SNR=7.1						
N23A	**Red Feather La**	**38.19**	**89**	P	**P**	**14 20 17.0**	**+0.1**
	baz=311,SNR=10						
N23A	**Red Feather La**	**38.19**	**89**	*e*P	**P**	**14 20 17.6**	**+0.7**
	comp=Z,103nm,1.2s						
PHWY	**Pilot Hill**	**38.21**	**88**	*e*P	**P**	**14 20 16.8**	**-0.3**
	comp=Z,28nm,1.1s						
C30A	**Mose, Pekin**	**38.27**	**75**	P	**P**	**14 20 17.2**	**+0.1**
	baz=305,SNR=19						
ULM	**Lac du Bonnet**	**38.27**	**70**	P	**P**	**14 20 17.2**	**+0.2**
	comp=Z,135nm,0.8s,baz=304,slow=8.7,SNR=137						
ULM				PcP	**PcP**	**14 22 29.9**	**-0.6**
	comp=Z,40nm,0.8s,baz=278,slow=4.7,SNR=3.6						
ULM				S	**S**	**14 26 06.2**	**-1.8**
	comp=Z,11nm,1.0s,baz=74,slow=18,SNR=3.9						
ULM				LR	LR	14 36 12.8	
	comp=Z,5μm,18.8s,baz=310,slow=36						
ULM	**Lac du Bonnet**	**38.27**	**70**	*e*P	**P**	**14 20 17.3**	**+0.2**
	comp=Z,253nm,1.1s						
ULM				PcP	**PcP**	**14 22 29.9**	**-0.6**
ULM				S	**S**	**14 26 06.2**	**-1.8**
E29A	**Napoleon**	**38.27**	**77**	P	**P**	**14 20 17.4**	**+0.1**
	baz=306,SNR=12						
Y12C	**Blythe**	**38.28**	**105**	P	**P**	**14 20 18.4**	**+1.1**
	baz=318,SNR=9.8						
Y12C	**Blythe**	**38.28**	**105**	*e*P	**P**	**14 20 18.6**	**+1.2**
	comp=Z,323nm,1.3s						
Y12C				*e*S	**S**	**14 26 13.7**	**+5.2**
A31A	**Linda, St. Vin**	**38.28**	**72**	P	**P**	**14 20 17.6**	**+0.4**
	baz=304						
J26A	**Sides Ranch, S**	**38.30**	**83**	P	**P**	**14 20 17.6**	**+0.1**
	baz=309,SNR=9.4						
B31A	**Greenbush Farm**	**38.31**	**73**	P	**P**	**14 20 17.7**	**+0.2**
	baz=304,SNR=13						
I27A	**Quinn**	**38.41**	**82**	P	**P**	**14 20 18.7**	**+0.3**
	baz=308,SNR=8.0						
ERM	**Erimo**	**38.42**	**274**	*ce*P	**P**	**14 20 19.5**	**+1.0**
ERM				pmax	pmax		
	comp=Z,352nm,1.2s						
ERM	**Erimo**	**38.42**	**274**	*e*P	**P**	**14 20 19.3**	**+0.8**
	comp=Z,355nm,1.2s						
ERM				*e*S	**S**	**14 26 16.5**	**+6.1**
ERM				LR	LR		
	comp=Z,2μm,22.0s						
G28A	**Parade**	**38.44**	**80**	P	**P**	**14 20 19.1**	**+0.4**
	baz=307,SNR=11						
D30A	**Buchanan**	**38.45**	**75**	P	**P**	**14 20 19.0**	**+0.2**
	baz=306,SNR=54						
PV01	**Paradox Valley**	**38.53**	**94**	*e*P	**P**	**14 20 20.2**	**+0.5**
PV01				*e*S	**S**	**14 26 15.2**	**+2.6**
F29A	**Eureka**	**38.60**	**78**	P	**P**	**14 20 20.2**	**+0.2**
	baz=307,SNR=13						
C31A	**Landman Farms,**	**38.63**	**74**	P	**P**	**14 20 20.1**	**0.0**
	baz=305,SNR=69						
H28A	**Mission Ridge**	**38.63**	**80**	P	**P**	**14 20 20.4**	**+0.1**
	baz=308,SNR=15						
GLA	**Glamis**	**38.63**	**106**	P	**P**	**14 20 21.4**	**+1.1**
	baz=319,SNR=7.4						
GLA	**Glamis**	**38.63**	**106**	*e*P	**P**	**14 20 21.5**	**+1.1**
GLA				*e*S	**S**	**14 26 16.0**	**+2.1**
GLA				pmax	pmax		
	comp=Z,130nm,1.0s						
GLA	**Glamis**	**38.63**	**106**	*e*P	**P**	**14 20 21.5**	**+1.1**
	comp=Z,133nm,1.0s						
GLA				*e*S	**S**	**14 26 16.0**	**+2.1**
A32A	**Rocking H Ranc**	**38.67**	**72**	P	**P**	**14 20 20.6**	**+0.1**
	baz=304,SNR=63						
E30A	**Jud**	**38.72**	**76**	P	**P**	**14 20 21.1**	**0.0**
	baz=306,SNR=21						
SMCO	**Snowmass**	**38.73**	**91**	*e*P	**P**	**14 20 21.7**	**+0.1**
	comp=Z,210nm,1.9s						
WUAZ	**Wupatki**	**38.76**	**100**	P	**P**	**14 20 23.0**	**+1.4**
	baz=316,SNR=33						
WUAZ	**Wupatki**	**38.76**	**100**	*e*P	**P**	**14 20 23.0**	**+1.4**
	comp=Z,211nm,1.1s						
WUAZ				*e*S	**S**	**14 26 17.1**	**+1.0**
JOHN	**Johnston Islan**	**38.89**	**194**	PFAKE		14 20 40.0	+17
JOHN				LR	LR		
	comp=Z,464nm,20.0s						
G29A	**Hoven**	**38.93**	**79**	P	**P**	**14 20 22.8**	**0.0**
	baz=307,SNR=12						
B32A	**Ashes, Strandq**	**38.94**	**72**	P	**P**	**14 20 22.8**	**0.0**
	baz=305,SNR=48						
J27A	**Elkhorn Farm,**	**38.94**	**83**	P	**P**	**14 20 23.2**	**+0.2**
	baz=309						
I28A	**Midland**	**38.96**	**81**	P	**P**	**14 20 23.3**	**+0.3**
	baz=308,SNR=11						
Y14A	**Wickenburg**	**38.99**	**103**	*e*P	**P**	**14 20 23.9**	**+0.5**
	comp=Z,2μm,1.9s						
F30A	**Leola**	**39.05**	**77**	P	**P**	**14 20 23.5**	**-0.2**
	baz=307						
D31A	**Mcclaflin, Tow**	**39.06**	**75**	P	**P**	**14 20 23.7**	**-0.1**
	baz=306,SNR=10						
HABR	**Khabarovsk**	**39.09**	**288***c*	*i* P	**P**	**14 20 22.2**	**-1.8**
HABR				*e*		14 21 52.1	
HABR				*e*PPP	PPP	14 22 14.1	
HABR				*e*		14 22 31.7	
HABR				*e*S	**S**	**14 26 19.8**	**-0.6**
HABR				*e*		14 26 21.4	
HABR				*e*SS	**SS**	**14 29 13.8**	**+0.2**
HABR				*e*		14 29 45.1	
HABR				*e*		14 30 28.8	
HABR				pmax	pmax		
	comp=N,59nm,1.4s						
HABR				pmax	pmax		
	comp=E,135nm,1.4s						
HABR				pmax	pmax		
	comp=Z,285nm,1.4s						
HABR				pmax	pmax		
	comp=Z,471nm,1.0s						
HABR				MLR	MLR		
	comp=Z,2μm,16.0s						
ISCO	**Idaho Springs**	**39.10**	**90**	P	**P**	**14 20 24.6**	**0.0**
	baz=312						
ISCO	**Idaho Springs**	**39.10**	**90**	*e*P	**P**	**14 20 25.4**	**+0.8**
ISCO				pmax	pmax		
	comp=Z,46nm,1.3s						
ISCO	**Idaho Springs**	**39.10**	**90**	PFAKE		14 20 40.0	+15
ISCO				LR	LR		
	comp=Z,5μm,19.0s						
H29A	**Onida**	**39.11**	**80**	P	**P**	**14 20 24.5**	**+0.2**
	baz=308,SNR=6.5						
MVCO	**Mesa Verde**	**39.20**	**95**	P	**P**	**14 20 25.8**	**+0.4**
	baz=314,SNR=21						
MVCO	**Mesa Verde**	**39.20**	**95**	*e*P	**P**	**14 20 25.7**	**+0.3**
	comp=Z,41nm,1.0s						
MVCO				*e*PcP	**PcP**	**14 22 33.9**	**0.0**
A33A	**Warroad**	**39.26**	**71**	P	**P**	**14 20 25.3**	**-0.1**
	baz=304,SNR=55						
E31A	**Nome**	**39.26**	**76**	P	**P**	**14 20 25.4**	**-0.1**
	baz=306,SNR=26						
C32A	**Crookston**	**39.27**	**73**	P	**P**	**14 20 25.5**	**-0.1**
	baz=305,SNR=6.2						
J28A	**Allard Ranch,**	**39.28**	**82**	P	**P**	**14 20 25.9**	**+0.2**
	baz=309,SNR=13						
AGMN	**Agassiz Nation**	**39.37**	**72**	P	**P**	**14 20 26.3**	**0.0**
	baz=305,SNR=217						
AGMN	**Agassiz Nation**	**39.37**	**72**	*e*P	**P**	**14 20 26.2**	**-0.1**
	comp=Z,277nm,0.8s						
AGMN				LR	LR		
	comp=Z,2μm,22.0s						
D32A	**Dogwood Acres,**	**39.41**	**74**	P	**P**	**14 20 26.2**	**-0.5**
	baz=306,SNR=9.4						
G30A	**Faulkton**	**39.41**	**78**	P	**P**	**14 20 26.9**	**+0.1**
	baz=307,SNR=45						
113A	**Mohawk Valley,**	**39.43**	**105**	*e*P	**P**	**14 20 27.9**	**+0.9**
	comp=Z,322nm,1.8s						
I29A	**Vivian Onida**	**39.43**	**80**	P	**P**	**14 20 27.0**	**0.0**
	baz=308,SNR=8.9						
F31A	**Hecla**	**39.47**	**77**	P	**P**	**14 20 26.9**	**-0.3**
	baz=307,SNR=22						
X16A	**Lo Mia Camp, P**	**39.52**	**101**	*e*P	**P**	**14 20 29.6**	**+1.6**
	comp=Z,236nm,1.4s						
B33A	**Robert and Kas**	**39.53**	**72**	P	**P**	**14 20 27.7**	**0.0**
	baz=305,SNR=20						
E32A	**Braaten, Kindr**	**39.69**	**75**	P	**P**	**14 20 28.8**	**-0.3**
	baz=306,SNR=16						
C33A	**Trail**	**39.73**	**73**	P	**P**	**14 20 29.2**	**-0.1**
	baz=306,SNR=18						
S22A	**4UR Ranch, Cre**	**39.79**	**93**	P	**P**	**14 20 32.2**	**+1.8**
	baz=314,SNR=16						
S22A	**4UR Ranch, Cre**	**39.79**	**93**	*e*P	**P**	**14 20 30.6**	**+0.3**
	comp=Z,298nm,1.9s						
J29A	**Okreek**	**39.80**	**81**	P	**P**	**14 20 30.4**	**+0.3**
	baz=309,SNR=18						
CLNS	**Chul'man**	**39.85**	**304**	*e*P	**P**	**14 20 29.1**	**-1.2**
CLNS				*e*		14 22 00.0	
CLNS				*e*		14 22 34.7	
CLNS				*e*S	**S**	**14 26 25.7**	**-6.0**
CLNS				pmax	pmax		
	comp=Z,58nm,1.0s						
CLNS				pmax	pmax		
	comp=E,45nm,1.0s						
CLNS				pmax	pmax		
	comp=N,22nm,0.8s						
CLNS				pmax	pmax		
	comp=Z,20nm,1.1s						
CLNS				pmax	pmax		
	comp=E,16nm,0.8s						
CLNS				pmax	pmax		
	comp=N,47nm,1.1s						
CLNS				smax	smax		
	comp=N,20nm,1.2s						
CLNS				smax	smax		
	comp=E,15nm,1.0s						
CLNS				MLR	MLR		
	comp=Z,4μm,15.0s						
CLNS				MLR	MLR		
	comp=N,2μm,14.0s						
CLNS				MLR	MLR		
	comp=E,4μm,15.0s						
G31A	**Conde**	**39.88**	**78**	P	**P**	**14 20 30.5**	**-0.1**
	baz=308,SNR=8.6						
B34A	**Aery, Baudette**	**39.92**	**71**	P	**P**	**14 20 30.8**	**-0.1**
	baz=305,SNR=203						
Q24A	**Divide**	**39.93**	**90**	P	**P**	**14 20 31.9**	**+0.4**
	baz=313,SNR=10						
Q24A	**Divide**	**39.93**	**90**	*e*P	**P**	**14 20 32.0**	**+0.5**
	comp=E,47nm,1.0s						
SUSD	**Miller**	**39.94**	**79**	P	**P**	**14 20 31.3**	**+0.1**
	baz=308,SNR=22						
W18A	**Petrified Fore**	**39.98**	**98**	P	**P**	**14 20 32.6**	**+0.8**
	baz=316						
W18A	**Petrified Fore**	**39.98**	**98**	*e*P	**P**	**14 20 31.9**	**+0.1**
	comp=E,377nm,1.8s						
I30A	**Oacoma**	**40.00**	**80**	P	**P**	**14 20 31.7**	**0.0**
	baz=308,SNR=17						
D33A	**AnnSam, Waubun**	**40.05**	**74**	P	**P**	**14 20 31.7**	**-0.3**
	baz=306,SNR=29						

E34A	Wadena	40.80	74	P		P	14 20 37.9	-0.3
	baz=307,SNR=5.6							
G33A	Ortonville	40.89	76	P		P	14 20 38.7	-0.3
	baz=308,SNR=44							
H33A	Prehn Over Nor	41.03	77	P		P	14 20 39.9	-0.3
	baz=308,SNR=58							
I32A	Karley and Nic	41.04	78	P		P	14 20 39.7	-0.5
	baz=309							
D35A	Remer	41.07	73	P		P	14 20 40.5	+0.1
	baz=307,SNR=102							
KULLO	Kullorsuaq	41.16	23⇑	*i*P		P	14 20 40.9	0.0
	comp=Z,245nm,0.9s							
KULLO	Kullorsuaq	41.16	23	*i*		P	14 20 40.9	0.0
KULLO				pmax	pmax			
	comp=Z,240nm,0.9s							
F34A	Alexandria	41.18	75	P		P	14 20 40.9	-0.5
	baz=308,SNR=52							
E35A	Pequot Lakes	41.19	73	P		P	14 20 41.4	0.0
	baz=307,SNR=33							
K31A	O'Neill	41.19	81	P		P	14 20 41.4	-0.2
	baz=310,SNR=7.7							
J32A	Parkston	41.23	80	P		P	14 20 41.2	-0.6
	baz=309,SNR=5.5							
G34A	Benson	41.31	76	P		P	14 20 41.9	-0.5
	baz=308,SNR=17							
C36A	Pine Crest Far	41.33	71	P		P	14 20 42.3	-0.3
	baz=306,SNR=118							
KSCO	Kaye Shedlock'	41.35	88	P		P	14 20 43.7	+0.7
	baz=313							
KSCO	Kaye Shedlock'	41.35	88	*e*P		P	14 20 43.7	+0.7
	comp=Z,633nm,1.6s							
I33A	Coleman	41.40	78	P		P	14 20 42.3	-0.9
	baz=309,SNR=5.9							
L31A	Butterfield Fa	41.43	82	P		P	14 20 43.6	+0.1
	baz=310,SNR=6.8							
TUC	Tucson	41.44	102	P		P	14 20 43.5	-0.2
	baz=319							
TUC	Tucson	41.44	102	*e*P		P	14 20 45.1	+1.3
TUC				pmax	pmax			
	comp=Z,200nm,1.4s							
TUC	Tucson	41.44	102	*e*P		P	14 20 45.1	+1.3
	comp=Z,196nm,1.4s							
D36A	Goodland	41.50	72	P		P	14 20 43.8	-0.2
	baz=307,SNR=126							
F35A	Swanville	41.52	74	P		P	14 20 44.0	-0.1
	baz=308,SNR=61							
H34A	Spellman Lake,	41.58	77	P		P	14 20 44.3	-0.4
	baz=308,SNR=44							
T25A	Trinidad	41.60	92	P		P	14 20 45.7	+0.5
	baz=314,SNR=19							
T25A	Trinidad	41.60	92	*e*P		P	14 20 45.9	+0.7
	comp=Z,147nm,1.1s							
K32A	Verdigre	41.61	80	P		P	14 20 44.7	-0.3
	baz=310,SNR=11							
ECSD	EROS Data Cent	41.70	78	*e*P		P	14 20 44.9	-0.7
	comp=Z,113nm,0.9s							
ECSD				LR	LR			
	comp=Z,6μm,20.0s							
C37A	Embarrass	41.70	71	P		P	14 20 45.5	-0.1
	baz=307,SNR=140							
J33A	Davis	41.76	79	P		P	14 20 45.6	-0.6
	baz=310,SNR=10							
E36A	McGregor	41.85	73	P		P	14 20 46.9	+0.1
	baz=307,SNR=147							
M31A	Lambtecht Ranc	41.89	83	P		P	14 20 47.1	-0.2
	baz=311							
D37A	Cotton	41.91	71	P		P	14 20 47.0	-0.4
	baz=307,SNR=72							
I34A	Hadley	41.93	77	P		P	14 20 46.4	-1.1
	baz=309							
EYMN	Ely	41.95	70	*e*P		P	14 20 47.7	+0.1
	comp=Z,302nm,0.8s							
EYMN				LR	LR			
	comp=Z,4μm,19.0s							
G35A	Watkins	41.96	75	P		P	14 20 47.4	-0.4
	baz=308,SNR=48							
ANMO	Albuquerque	41.97	96	P		P	14 20 48.3	+0.1
	comp=Z,10nm,1.1s,baz=325,slow=9.7,SNR=13							
ANMO				PcP		PcP	14 22 43.7	+0.8
	comp=Z,72nm,0.8s,baz=310,slow=3.1,SNR=24							
ANMO				ScP		ScP	14 26 28.5	-1.1
	comp=Z,16nm,1.2s,baz=300,slow=4.7,SNR=7.0							
ANMO	Albuquerque	41.97	96⇓	*e*P		P	14 20 49.3	+1.1
	baz=316							
ANMO	Albuquerque	41.97	96	*e*P		P	14 20 48.8	+0.6
ANMO				pmax	pmax			
	comp=Z,16nm,1.2s							
ANMO	Albuquerque	41.97	96	*e*P		P	14 20 48.9	+0.6
	comp=Z,169nm,1.7s							
ANMO				PcP		PcP	14 22 43.7	+0.8
ANMO				ScP		ScP	14 26 28.5	-1.1
ANMO				LR	LR			
	comp=Z,2μm,19.0s							
LAZ	Ladron	41.97	97	*e*P		P	14 20 49.2	+1.0
L32A	Elgin	42.01	81	P		P	14 20 48.5	+0.2
	baz=310							
H35A	Sunnyside Ranc	42.09	76	P		P	14 20 48.7	-0.1
	baz=309,SNR=52							
F36A	Milaca	42.10	74	P		P	14 20 48.8	-0.1
	baz=308,SNR=92							
K33A	Hardington	42.20	80	P		P	14 20 49.7	-0.1
	baz=310,SNR=10.0							
C38A	Sawbill Land.	42.20	70	P		P	14 20 49.4	-0.3
	baz=307,SNR=100							
N31A	Bailey Ranch,	42.24	83	P		P	14 20 50.1	-0.1
	baz=311							
E37A	Wrenshall	42.29	72	P		P	14 20 50.4	0.0
	baz=308,SNR=29							
BGNE	Belgrade	42.32	82	P		P	14 20 51.0	+0.2
	baz=311,SNR=11							
L33A	Hoskins	42.33	80	P		P	14 20 50.5	-0.3
	baz=310							
LPM	Los Pinos Moun	42.33	96	*e*P		P	14 20 53.5	+2.4
Y22D	IRIS PASSCAL I	42.34	97	P		P	14 20 52.5	+1.4
	baz=317							
J34A	George	42.35	78	P		P	14 20 50.1	-0.9
	baz=310							
G36A	St. Michael	42.36	75	P		P	14 20 51.0	0.0
	baz=308,SNR=40							
BNM	Barren Site	42.45	97	*e*P		P	14 20 53.3	+1.2
O31A	Woolen Ranch,	42.48	84	P		P	14 20 51.7	-0.3
	baz=312							
I35A	Creekview Farm	42.54	77	P		P	14 20 51.8	-0.7
	baz=309							
K34A	Le Mars	42.66	79	P		P	14 20 53.3	-0.1
	baz=310,SNR=8.3							
N32A	Stulken Farm,	42.66	83	P		P	14 20 53.4	-0.1
	baz=311							
H36A	Jessenland, He	42.67	75	P		P	14 20 53.9	+0.3
	baz=309,SNR=90							
J35A	Milford	42.72	78	P		P	14 20 53.4	-0.6
	baz=310							
M33A	Taylor Creek F	42.76	81	P		P	14 20 54.2	-0.1
	baz=311,SNR=15							
C39A	Grand Marais	42.76	69	P		P	14 20 53.9	-0.4
	baz=307,SNR=48							
SPMN	Marine on St.	42.89	74	P		P	14 20 55.2	-0.1
	baz=309,SNR=38							
L34A	Svendsen Farm,	42.96	80	P		P	14 20 55.6	-0.4
	baz=311,SNR=6.4							
121A	Cookes Peak, D	42.97	99	P		P	14 20 58.4	+2.1
	baz=318,SNR=19							
121A	Cookes Peak, D	42.97	99	*e*P		P	14 20 57.1	+0.8
	comp=Z,215nm,1.3s							
121A				*e*PcP		PcP	14 22 47.0	+0.8
121A				*e*ScP		ScP	14 26 32.1	-1.5
I36A	Fitzsimmons Fa	42.98	76	P		P	14 20 55.5	-0.5
	baz=309							
319A	Douglas	42.99	102	*e*P		P	14 20 58.0	+1.7
	comp=Z,116nm,1.3s							
O32A	Brockman Farm,	43.00	83	P		P	14 20 55.8	-0.5
	baz=312,SNR=6.1							
K35A	Storm Lake	43.12	78	P		P	14 20 56.8	-0.4
	baz=310,SNR=6.7							
CBKS	Cedar Bluff	43.14	86	P		P	14 20 57.8	+0.3
	baz=313,SNR=6.5							
CBKS	Cedar Bluff	43.14	86	*e*P		P	14 20 56.0	-1.5
CBKS				*e*			14 22 46.1	
CBKS				pmax	pmax			
	comp=Z,376nm,1.3s							
CBKS				MLR	MLR			
	comp=Z,2μm,21.0s							
CBKS	Cedar Bluff	43.14	86	*e*P		P	14 20 56.0	-1.5
	comp=Z,376nm,1.3s							
CBKS				*e*PcP		PcP	14 22 46.1	-0.4
CBKS				LR	LR			
	comp=Z,2μm,21.0s							
M34A	Aspy Farms, Fr	43.15	81	P		P	14 20 57.4	-0.1
	baz=311							
N33A	J Bar K, Exete	43.16	82	P		P	14 20 57.3	-0.2
	baz=312							
H37A	Dierke Farm, C	43.23	75	P		P	14 20 58.3	+0.3
	baz=309,SNR=27							
J36A	Seneca 1, Swea	43.23	77	P		P	14 20 57.6	-0.5
	baz=310,SNR=5.7							
P32A	Huiting Farm,	43.24	84	P		P	14 20 58.0	-0.3
	baz=312,SNR=27							
I37A	Lemond, Waseca	43.32	76	P		P	14 20 58.8	0.0
	baz=310,SNR=54							
L35A	Bielow Farm, R	43.34	79	P		P	14 20 58.3	-0.7
	baz=311							
USRK	Ussuriysk Ar.	43.36	285	P		P	14 20 58.1	-1.0
	comp=Z,23nm,0.9s,baz=59,slow=7.0,SNR=34							
USRK				PcP		PcP	14 22 47.7	+0.7
	comp=Z,28nm,0.9s,baz=68,slow=3.5,SNR=10							
USRK				LR	LR		14 40 45.9	
	comp=Z,2μm,19.3s,baz=45,slow=38							
O33A	Hebron	43.52	83	P		P	14 21 00.0	-0.5
	baz=312,SNR=36							
K36A	Gilmore City	43.62	78	P		P	14 21 00.6	-0.6
	baz=310,SNR=14							
N34A	Lincoln	43.63	81	P		P	14 21 00.7	-0.7
	baz=312,SNR=6.2							
M35A	Neola	43.68	80	P		P	14 21 01.6	-0.1
	baz=311,SNR=16							
J37A	Redenius Farm,	43.69	77	P		P	14 21 01.5	-0.3
	baz=310,SNR=102							
Q32A	Meitler Ranch,	43.69	85	P		P	14 21 01.9	0.0
	baz=313,SNR=9.5							
L36A	Harm Buss Farm	43.84	79	P		P	14 21 02.4	-0.7
	baz=311,SNR=7.7							
HSIG		43.85	106	*e*P		P	14 21 03.1	-0.1
	comp=Z,129nm,1.2s							
P33A	Williams Farm,	43.89	84	P		P	14 21 03.3	-0.2
	baz=313,SNR=12							
I38A	Scanlan Farm,	43.90	75	P		P	14 21 03.3	-0.2
	baz=310,SNR=58							
O34A	Beatrice	43.96	82	P		P	14 21 03.4	-0.6
	baz=312,SNR=18							
K37A	Belmond	43.99	77	P		P	14 21 03.5	-0.7
	baz=310,SNR=39							
R32A	Long Quarter,	43.99	86	P		P	14 21 04.1	-0.2
	baz=313,SNR=7.7							
N35A	Tabor	44.10	81	P		P	14 21 05.2	+0.1
	baz=312,SNR=16							
Q33A	Connelly Farm,	44.10	84	P		P	14 21 04.9	-0.3
	baz=313,SNR=19							
VLA	Vladivostok	44.11	284*c*	*i*P		P	14 21 04.7	-0.4
VLA				pmax	pmax			
	comp=Z,246nm,1.4s							
M36A	Felix, Anita	44.19	80	P		P	14 21 05.4	-0.5
	baz=311,SNR=15							
J38A	Wedel Dairy, R	44.28	76	P		P	14 21 06.1	-0.5
	baz=310,SNR=26							
BOD	Bodaibo	44.30	310⇓	*i*P		P	14 21 05.1	-1.4
BOD				pmax	pmax			
	comp=Z,67nm,1.1s							
P34A	Walnut Farm, R	44.31	83	P		P	14 21 06.2	-0.6
	baz=313,SNR=17							
L37A	Phoenix Point,	44.34	78	P		P	14 21 06.5	-0.5
	baz=311,SNR=47							
O35A	Humboldt	44.35	82	P		P	14 21 06.1	-1.0
	baz=312							
COWI	Conover	44.35	71	*e*P		P	14 21 06.9	-0.2
	comp=Z,101nm,0.8s							
COWI				LR	LR			
	comp=Z,2μm,19.0s							
S32A	Newby Ranch, P	44.36	87	P		P	14 21 07.2	-0.1
	baz=314							
MDJ	Mudanjiang	44.42	287	P		P	14 21 07.4	-0.2
MDJ				pP	pP		14 21 16.4	-2.8
MDJ				sP	sP		14 21 20.3	-3.7
MDJ				PP	PP		14 22 52.2	+0.7
MDJ				S	S		14 27 37.6	-1.7
MDJ				pmax	pmax			
	comp=Z,63nm,0.9s							
MDJ				pmax	pmax			
	comp=Z,370nm,8.5s							
MDJ				LR	LR			
	comp=Z,2μm,24.4s							
MDJ				LR	LR			
	comp=Z,2μm,21.9s							
MDJ				LR	LR			
	comp=Z,4μm,21.9s							
MDJ	Mudanjiang	44.42	287	*e*P		P	14 21 07.0	-0.6
	comp=Z,58nm,0.9s							
MDJ				*e*PcP		PP	14 22 51.4	-0.1
SRIG	Santa Rosalia	44.47	108	*e*P		P	14 21 08.8	+0.7
	comp=Z,115nm,1.2s							
R33A	Olander Ranch,	44.49	85	P		P	14 21 07.9	-0.4
	baz=313,SNR=6.6							
N36A	Muff Farm, Cla	44.52	80	P		P	14 21 08.3	-0.2
	baz=312,SNR=8.5							
K38A	Parkersburg	44.55	77	P		P	14 21 08.2	-0.5
	baz=311,SNR=7.6							
M37A	Trindle Farm,	44.64	79	P		P	14 21 09.6	+0.2
	baz=312,SNR=30							
Q34A	Chapman	44.67	84	P		P	14 21 09.3	-0.4
	baz=313,SNR=9.2							
T32A	Huddler Ranch,	44.73	87	P		P	14 21 09.8	-0.4
	baz=314							
KSU1	Kansas State U	44.73	83	*e*P		P	14 21 07.9	-2.3
	comp=Z,134nm,1.0s							
KSU1				LR	LR			
	comp=Z,3μm,20.0s							
AMTX	Amarillo	44.76	92	P		P	14 21 10.1	-0.5
	baz=316							
AMTX	Amarillo	44.76	92	*e*P		P	14 21 10.9	+0.4
	comp=Z,86nm,1.1s							
L38A	Oak Wood Farm,	44.78	77	P		P	14 21 10.1	-0.4
	baz=311,SNR=20							
P35A	Duane Minner,	44.78	82	P		P	14 21 10.0	-0.6
	baz=313,SNR=18							
MSTX	Muleshoe	44.79	93	P		P	14 21 10.5	-0.3
	baz=316							
MSTX	Muleshoe	44.79	93	*e*P		P	14 21 11.5	+0.7
	comp=Z,52nm,0.9s							
SCIA	State Center	44.79	78	*e*P		P	14 21 10.5	0.0
	comp=Z,303nm,1.0s							
MSHR	Mys Shultsa	44.87	283*c*	*e*P		P	14 21 11.5	+0.3
R34A	Isabella, Hill	44.92	85	P		P	14 21 11.5	-0.2
	baz=313,SNR=11							
MJAR	Matsushiro Arr	44.94	272	P		P	14 21 12.2	+0.4
	comp=Z,141nm,1.0s,baz=41,slow=6.4,SNR=281							
MJAR				ScP		ScP	14 26 41.2	-0.2
	comp=Z,12nm,1.2s,baz=20,slow=2.3,SNR=7.4							
MJAR				LR	LR		14 39 48.5	
	comp=Z,638nm,21.9s,baz=60,slow=36							
MJB9	Matsu-Tunnel	44.94	272	*e*P		P	14 21 12.2	+0.4
	comp=Z,105nm,1.0s							
MAJO	Matsushiro	44.94	272*c*	*i*P		P	14 21 11.9	+0.1
MAJO	Matsushiro	44.94	272	*e*P		P	14 21 12.2	+0.3
	comp=Z,426nm,1.0s							
MAT	Matsushiro	44.94	272	P		P	14 21 12.1	+0.3
MAT				S		S	14 27 53.8	+6.8
MNTX	Cornudas Mount	44.95	98	P		P	14 21 13.2	+1.1
	baz=318,SNR=32							
S33A	Kaszmaul Farm,	44.97	86	P		P	14 21 11.9	-0.3
	baz=314,SNR=13							
O36A	Bolckow	44.98	81	P		P	14 21 11.8	-0.3
	baz=312,SNR=9.5							
N37A	Lee Faris, Mou	44.99	80	P		P	14 21 12.1	-0.1
	baz=312,SNR=44							
M38A	Pleasantville	45.12	78	P		P	14 21 13.0	-0.2
	baz=312,SNR=38							
P36A	Good Intent, A	45.18	82	P		P	14 21 13.2	-0.5
	baz=313,SNR=24							
T33A	Patterson Ranc	45.19	87	P		P	14 21 13.3	-0.5
	baz=314,SNR=5.3							
Q35A	Mercer Eighty,	45.23	83	P		P	14 21 13.1	-1.0
	baz=313							
U32A	Winter Ranch,	45.24	88	P		P	14 21 14.2	-0.1
	baz=315							
S34A	Willow Spring	45.41	85	P		P	14 21 14.8	-0.8
	baz=314,SNR=14							
O37A	Wolven Farm, M	45.42	80	P		P	14 21 15.2	-0.4
	baz=312,SNR=16							
Q36A	Arnold C. Orve	45.49	83	P		P	14 21 15.3	-0.9
	baz=313,SNR=7.2							
R35A	Emporia Munici	45.50	84	P		P	14 21 15.8	-0.5
	baz=314							
N38A	Joes South For	45.51	79	P		P	14 21 15.9	-0.5
	baz=312,SNR=36							
V32A	Arapaho	45.68	89	P		P	14 21 17.4	-0.3
	baz=315							
P37A	Lathrop	45.69	81	P		P	14 21 17.0	-0.8
	baz=313,SNR=13							
U33A	Lingo Farm, Me	45.71	87	P		P	14 21 17.7	-0.3
	baz=315							
JFWS	Jewell Farm	45.78	75	*e*P		P	14 21 17.6	-0.9
JFWS				pmax	pmax			
	comp=Z,260nm,0.8s							
JFWS	Jewell Farm	45.78	75	PFAKE			14 21 30.0	+12
JFWS				LR	LR			
	comp=Z,6μm,20.0s							
O38A	Galt	45.83	80	P		P	14 21 18.1	-0.7
	baz=312,SNR=12							
T34A	McClaskey Farm	45.83	86	P		P	14 21 18.4	-0.5
	baz=314,SNR=28							
N39A	Derby Farms, D	45.87	79	P		P	14 21 18.3	-0.9
	baz=312,SNR=24							
S35A	Otter Creek Ra	45.87	85	P		P	14 21 18.6	-0.6
	baz=314,SNR=18							
R36A	Gordon, Harris	45.90	83	P		P	14 21 18.6	-0.8
	baz=314,SNR=8.3							
ILULI	Ilulissat	45.90	28⇑	*i*P		P	14 21 18.9	-0.1
	comp=Z,113nm,1.0s							
ILULI				*i*			14 21 35.0	
ILULI	Ilulissat	45.90	28⇑	*i*P		P	14 21 18.9	-0.1
ILULI				pmax	pmax			
	comp=Z,110nm,1.0s							
W32A	Sentinel	45.99	89	P		P	14 21 20.3	+0.1
	baz=316,SNR=10							
U34A	Anderson Ranch	46.04	87	P		P	14 21 20.1	-0.5
	baz=315,SNR=10							
U34A	Anderson Ranch	46.04	87	*e*P		P	14 21 20.3	-0.3
	comp=Z,363nm,1.4s							
V33A	Lossen Ranch,	46.04	88	P		P	14 21 20.2	-0.4
	baz=315							
Q37A	Longview Farm,	46.12	82	P		P	14 21 20.2	-1.0
	baz=313							
P38A	Dawn	46.13	81	P		P	14 21 20.5	-0.7
	baz=313,SNR=26							
KBS	Kingsbay	46.17	2	*e*P		P	14 21 22.3	+1.3
KBS				pmax	pmax			
	comp=Z,500nm,1.1s							
KBS	Kingsbay	46.17	2	*e*P		P	14 21 22.3	+1.3
	comp=Z,503nm,1.1s							
KBS				LR	LR			
	comp=Z,2μm,22.0s							
DAG	Danmarks Havn	46.22	11⇑	*i*P		P	14 21 21.4	0.0
	comp=Z,614nm,1.0s							
DAG				*i*			14 21 34.3	
DAG	Danmarks Havn	46.22	11⇑	*i*P		P	14 21 21.4	0.0
DAG				pmax	pmax			
	comp=Z,610nm,1.0s							
S36A	Lake Cedric, C	46.26	84	P		P	14 21 21.4	-0.9
	baz=314,SNR=10							
O39A	Kirksville	46.27	79	P		P	14 21 21.5	-0.8
	baz=313,SNR=18							
R37A	Teagarden Farm	46.29	83	P		P	14 21 21.2	-1.3
	baz=314							
T35A	Sooner Cattle	46.29	85	P		P	14 21 21.8	-0.8
	baz=314,SNR=12							
W33A	Caddo, Fort Co	46.41	89	P		P	14 21 23.4	-0.1
	baz=316							
JHJ2	Mitsune	46.46	267	*e*P		P	14 21 24.3	+0.5
	comp=Z,405nm,0.9s							
INU	Inuyama	46.46	272	*e*P		P	14 21 24.0	+0.1
	comp=Z,184nm,1.0s							
NRIK	Noril'sk	46.46	333	P		P	14 21 23.6	+0.2
	comp=Z,62nm,0.6s,baz=58,slow=6.5,SNR=127							
NRIK				LR	LR		14 43 49.3	
	comp=Z,5μm,20.4s,baz=50,slow=40							
V34A	Guthrie	46.48	87	P		P	14 21 23.3	-0.7
	baz=315							
V34A	Guthrie	46.48	87	*e*P		P	14 21 23.9	-0.1
	comp=Z,271nm,1.4s							
SUMG	Summit	46.52	21⇑	*i*P		P	14 21 24.9	+0.5
	comp=Z,217nm,1.0s							
SUMG				*i*			14 21 41.1	
SUMG	Summit	46.52	21⇑	*i*P		P	14 21 24.9	+0.5
SUMG				pmax	pmax			
	comp=Z,220nm,1.0s							
SUMG	Summit	46.52	21	*e*P		P	14 21 24.5	+0.1
	comp=Z,479nm,1.4s							
WMOK	Wichita Mounta	46.53	89	*e*P		P	14 21 24.4	-0.1
WMOK				pmax	pmax			
	comp=Z,68nm,0.9s							
WMOK	Wichita Mounta	46.53	89	*e*P		P	14 21 24.4	-0.1
	comp=Z,68nm,0.9s							
Q38A	Cooks Store, C	46.53	81	P		P	14 21 23.0	-1.4
	baz=313,SNR=20							
U35A	Pawnee	46.55	86	P		P	14 21 23.8	-0.7
	baz=315							
T36A	Boggs Farm, Ca	46.56	85	P		P	14 21 23.7	-0.9
	baz=314,SNR=8.8							
S37A	Fort Scott	46.67	83	P		P	14 21 24.2	-1.3
	baz=314,SNR=16							
HIA	Hailar	46.72	298	*e*P		P	14 21 25.5	-0.3
HIA				pmax	pmax			
	comp=Z,70nm,1.3s							
HIA				MLR	MLR			
	comp=Z,3μm,20.0s							
HIA	Hailar	46.72	298	*e*P		P	14 21 25.5	-0.3
	comp=Z,70nm,1.3s							
HIA				LR	LR			
	comp=Z,3μm,20.0s							
O40A	La Belle	46.73	79	P		P	14 21 25.1	-0.9
	baz=313,SNR=52							
W34A	Bridge Creek,	46.75	88	P		P	14 21 25.9	-0.3
	baz=316							
W34A	Bridge Creek,	46.75	88	*e*P		P	14 21 26.5	+0.3
	comp=Z,82nm,1.1s							
X33A	Lawton	46.83	89	P		P	14 21 26.5	-0.3
	baz=316							
Q39A	Willow Grove F	46.84	81	P		P	14 21 25.6	-1.2
	baz=313,SNR=30							
R38A	Fenwick Farm,	46.90	82	P		P	14 21 25.6	-1.7
	baz=314,SNR=16							
V35A	Meyer Ranch, C	46.92	87	P		P	14 21 26.9	-0.5
	baz=315,SNR=11							
SPA0	Spitsbergen Ar	46.99	1	*e*P		P	14 21 27.6	+0.1
P40A	Paris	47.04	80	P		P	14 21 27.5	-0.8
	baz=313,SNR=57							
T37A	Cheneyville 18	47.06	84	P		P	14 21 27.6	-0.9
	baz=314,SNR=24							
U36A	Oologah	47.11	85	P		P	14 21 28.1	-0.8
	baz=315,SNR=5.3							
Y33A	Hilltop Ranch,	47.14	90	P		P	14 21 28.5	-0.7
	baz=316							
X34A	Smith Ranch, M	47.17	89	P		P	14 21 29.0	-0.4
	baz=316							
CN2	Changchun	47.22	289	*e*P		P	14 21 30.0	+0.3
CN2				*e*pP	pP		14 21 42.7	+1.4
CN2				pmax	pmax			
	comp=Z,20nm,1.0s							
CN2				pmax	pmax			
	comp=Z,200nm,5.0s							
CN2				LR	LR			
	comp=Z,2μm,17.0s							
CN2				LR	LR			
	comp=Z,2μm,17.0s							
CN2				LR	LR			
	comp=Z,3μm,19.0s							
S38A	Stockton	47.29	83	P		P	14 21 28.5	-1.8
	baz=314,SNR=12							
R39A	Chumby, Stover	47.31	81	P		P	14 21 28.4	-2.1
	baz=314,SNR=13							
W35A	Tecumseh	47.33	87	P		P	14 21 30.1	-0.5
	baz=316,SNR=8.4							
Q40A	Laux Farm, Aux	47.39	80	P		P	14 21 29.9	-1.1
	baz=314,SNR=27							
TUL1	Leonard

baz=317,SNR=12
ABTX Abilene, Hawle 47.56 92 *e*P **P 14 21 32.7 +0.1**
comp=Z,81nm,0.9s
S39A Bolivar 47.58 82 P **P 14 21 30.4 -2.1**
baz=314,SNR=20
Z33A Whitaker Ranch 47.58 91 P **P 14 21 31.9 -0.8**
baz=317
Y34A Reagan Ranch, 47.68 89 P **P 14 21 33.1 -0.3**
baz=316,SNR=7.7
TX31 Lajitas Ar. Si 47.70 99 *e*P **P 14 21 34.0 +0.2**
TXAR Lajitas Array 47.70 99 P **P 14 21 34.0 +0.2**
comp=Z,9.4nm,0.8s,baz=305,slow=5.8,SNR=86
TXAR PcP **PcP 14 23 02.7 +0.2**
comp=Z,20nm,0.7s,baz=304,slow=1.0,SNR=6.4
TXAR ScP **ScP 14 26 52.1 -1.0**
comp=Z,7.6nm,1.1s,baz=243,slow=1.4,SNR=5.2
TXAR S **S 14 28 27.6 +0.8**
comp=Z,0.2nm,0.6s,baz=316,slow=17,SNR=2.5
TXAR LR LR 14 40 21.1
comp=Z,4μm,20.1s,baz=0.0,slow=34
W36A Wetumka 47.71 87 P **P 14 21 33.0 -0.6**
baz=316,SNR=8.2
R40A Maddies Statio 47.76 81 P **P 14 21 31.8 -2.1**
baz=314,SNR=21
V37A Hulbert 47.81 85 P **P 14 21 33.1 -1.3**
baz=315,SNR=13
X35A Drake 47.81 88 P **P 14 21 33.6 -0.8**
baz=316,SNR=8.8
U38A Gravette 47.85 84 P **P 14 21 33.4 -1.3**
baz=315,SNR=28
HDIL Hopedale 47.89 77 P **P 14 21 34.2 -0.7**
baz=313,SNR=75
HDIL Hopedale 47.89 77 *e*P **P 14 21 34.3 -0.7**
comp=Z,856nm,0.8s
HDIL LR LR
comp=Z,4μm,19.0s
133A Hamilton Ranch 47.99 92 P **P 14 21 35.5 -0.3**
baz=317,SNR=16
Z34A Collier Ranch, 48.01 90 P **P 14 21 35.4 -0.6**
baz=317
T39A Clever 48.01 83 P **P 14 21 34.4 -1.6**
baz=315,SNR=54
CIT Chita 48.03 304 *e*P **sP 14 21 51.2 -1.2**
CIT *e* 14 21 57.6
CIT *e* 14 23 00.8
CIT pmax pmax
comp=Z,200nm,1.4s
X36A Centrahoma 48.05 88 P **P 14 21 35.6 -0.6**
baz=316,SNR=7.1
LPIG La Paz 48.07 109 P **P 14 21 37.9 +1.5**
comp=Z,21nm,0.3s,baz=148,slow=1.0,SNR=9.2
S40A Lebanon 48.11 82 P **P 14 21 34.8 -1.9**
baz=314,SNR=16
Y35A Marietta 48.13 89 P **P 14 21 36.8 0.0**
baz=316,SNR=12
W37B Quinton 48.17 86 P **P 14 21 36.7 -0.4**
baz=316,SNR=16
HHAR Hobbs 48.21 84 *e*P **P 14 21 36.2 -1.3**
comp=Z,98nm,1.1s
V38A Canehill 48.24 85 P **P 14 21 36.6 -1.1**
baz=315,SNR=40
U39A Green Forest 48.40 84 P **P 14 21 37.2 -1.8**
baz=315,SNR=19
HPIG 48.41 102 *e*P **P 14 21 40.4 +1.1**
comp=Z,52nm,0.9s
T40A Mansfield 48.41 82 P **P 14 21 37.1 -2.0**
baz=315,SNR=14
Z35A Perchaven, San 48.42 89 P **P 14 21 38.5 -0.6**
baz=317
233A Rising Star 48.43 92 P **P 14 21 38.5 -0.8**
baz=318,SNR=12
134A White-Moore Ra 48.50 91 P **P 14 21 39.2 -0.6**
baz=317
X37A Clayton 48.59 87 P **P 14 21 40.2 -0.2**
baz=316,SNR=18
SLBS Sierra La Lagu 48.60 109 *e*P **P 14 21 41.5 +0.8**
comp=Z,203nm,1.4s
SLM Saint Louis 48.67 79 *e*P **P 14 21 40.6 -0.4**
SLM pmax pmax
comp=Z,290nm,0.9s
SLM Saint Louis 48.67 79 *e*P **P 14 21 40.6 -0.4**
comp=Z,285nm,0.9s
V39A Pettigrew 48.69 84 P **P 14 21 40.1 -1.2**
baz=315,SNR=18
W38A Poteau 48.74 86 P **P 14 21 41.0 -0.5**
baz=316,SNR=23
U40A Yellville 48.78 83 P **P 14 21 40.2 -1.7**
baz=315,SNR=31
X38A Whitesboro 48.85 86 P **P 14 21 41.9 -0.5**
baz=316,SNR=12
234A Clairette 48.88 91 P **P 14 21 42.3 -0.4**
baz=318,SNR=15
Y37A Hugo 48.89 88 P **P 14 21 42.4 -0.3**
baz=316,SNR=7.5
135A Vickery Place, 48.89 90 P **P 14 21 42.3 -0.5**
baz=317
333A Richland Sprin 48.89 93 P **P 14 21 41.9 -0.9**
baz=318,SNR=9.3
Z36A Blue Ridge 48.93 89 P **P 14 21 42.5 -0.6**
baz=317
JCT Junction City 49.05 94 P **P 14 21 43.6 -0.4**
baz=318,SNR=24
JCT Junction City 49.05 94 *e*P **P 14 21 43.6 -0.4**
JCT pmax pmax
comp=Z,210nm,1.1s
JCT Junction City 49.05 94 *e*P **P 14 21 43.6 -0.4**
comp=Z,208nm,1.1s
W39A Magazine 49.07 85 P **P 14 21 43.1 -1.0**
baz=316,SNR=32
V40A Witts Springs 49.19 84 P **P 14 21 43.3 -1.8**
baz=316,SNR=38
SFIN Lafayette 49.23 75 P **P 14 21 44.9 -0.4**
baz=313,SNR=76
SFIN Lafayette 49.23 75 *e*P **P 14 21 44.8 -0.4**
comp=Z,315nm,0.9s
433A Art 49.25 93 P **P 14 21 44.8 -0.8**
baz=318,SNR=14
WHTX Lake Whitney, 49.28 91 P **P 14 21 45.5 -0.2**
baz=318,SNR=11
WHTX Lake Whitney, 49.28 91 *e*P **P 14 21 45.8 0.0**
comp=Z,120nm,1.1s
334A Lometa 49.32 92 P **P 14 21 45.8 -0.3**
baz=318,SNR=12
X39A Fountain Ranch 49.37 86 P **P 14 21 45.8 -0.6**
baz=316,SNR=26
Y38A Idabel 49.44 87 P **P 14 21 46.2 -0.7**
baz=316
Z37A Pogue Cattle C 49.45 88 P **P 14 21 46.8 -0.2**
baz=317
136A Ennis 49.46 90 P **P 14 21 46.5 -0.6**
baz=317
W40A Ferguson Farm, 49.48 84 P **P 14 21 46.2 -1.0**
baz=316,SNR=16
SNY Shenyang 49.57 288 ⇑P **P 14 21 48.0 +0.3**
SNY PP **PP 14 23 44.1 +2.1**
SNY S **S 14 28 55.6 +3.0**
SNY sS **sS 14 29 09.6 -2.4**
SNY pmax pmax
comp=Z,180nm,1.2s
SNY pmax pmax
comp=Z,2μm,2.9s
SNY LR LR
comp=Z,2μm,20.0s
SNY LR LR
comp=Z,1μm,20.2s
SNY LR LR
comp=Z,5μm,22.4s
CBIJ Chichi jima 49.61 260 *e*P **P 14 21 48.9 +0.6**
comp=Z,2μm,1.4s
JCJ Chichijima 49.61 260 LR LR 14 39 34.5
comp=Z,883nm,21.7s,baz=10.0,slow=32
MIAR Mount Ida 49.66 85 P **P 14 21 47.9 -0.7**
baz=316,SNR=33
434A Burnet 49.68 93 P **P 14 21 48.5 -0.3**
baz=318,SNR=14
Z38A Mt. Pleasant 49.78 88 P **P 14 21 49.1 -0.4**
baz=317
SCHQ Schefferville 49.78 49 P **P 14 21 49.1 -0.2**
comp=Z,142nm,0.8s,baz=321,slow=7.4,SNR=74
SCHQ LR LR 14 43 34.1
comp=Z,2μm,19.0s,baz=320,slow=37
SCHQ Schefferville 49.78 49 *e*P **P 14 21 49.1 -0.2**
comp=Z,216nm,0.9s
533A Kerrville 49.80 94 P **P 14 21 49.2 -0.5**
baz=319
Y39A Lockesburg 49.80 86 P **P 14 21 48.9 -0.7**
baz=316
236A Katherine and 49.81 90 P **P 14 21 49.8 0.0**
baz=318,SNR=12
OLIL Olney 49.81 77 *e*P **P 14 21 49.3 -0.4**
comp=Z,614nm,0.9s
137A Heron Place, G 49.81 89 P **P 14 21 49.5 -0.3**
baz=317
AAM Ann Arbor 49.82 71 *e*P **P 14 21 49.7 0.0**
AAM Ann Arbor 49.82 71 *e*P **P 14 21 49.7 0.0**
comp=Z,492nm,0.1s
AAM LR LR
comp=Z,2μm,19.0s
X201 Greenbrier Sit 49.82 84 *e*P **P 14 21 48.2 -1.5**
comp=Z,238nm,1.7s
335A Moody 49.82 91 P **P 14 21 49.7 -0.1**
baz=318,SNR=6.3
X301 Greenbrier Sit 49.83 84 *e*P **P 14 21 48.7 -1.2**
comp=Z,167nm,1.4s
WHAR Wooly Hollow 49.86 84 *e*P **P 14 21 48.8 -1.2**
comp=Z,99nm,1.2s
SIUC Southern Illin 49.89 79 *e*P **P 14 21 49.0 -1.3**
comp=Z,241nm,0.8s
W41B Gary Mavity, V 49.97 84 P **P 14 21 49.4 -1.5**
baz=316,SNR=12
336A Riesel 50.08 91 P **P 14 21 51.7 -0.1**
baz=318,SNR=14
435B Jarrell 50.10 92 P **P 14 21 51.8 -0.1**
baz=318
X40A Basin Creek Fa 50.12 85 P **P 14 21 50.7 -1.4**
baz=316,SNR=8.5
534A Blanco 50.15 93 P **P 14 21 51.5 -0.9**
baz=319,SNR=7.4
138A Matatall Enter 50.15 88 P **P 14 21 52.1 -0.3**
baz=317
KSRS Korea Array 50.17 281 P **P 14 21 53.2 +0.9**
comp=Z,134nm,1.0s,baz=54,slow=6.8,SNR=208
KSRS PcP **PcP 14 23 11.7 +0.5**
comp=Z,33nm,0.9s,baz=42,slow=3.8,SNR=7.4
KSRS ScP **ScP 14 27 04.4 +1.1**
comp=Z,3.3nm,1.0s,baz=61,slow=5.0,SNR=5.0
KSRS LR LR 14 44 03.9
comp=Z,2μm,19.9s,baz=34,slow=37
KSRS Korea Array 50.17 281 P **P 14 21 53.3 +0.9**
KSRS 14 23 11.7
KSRS pmax pmax
comp=Z,133nm,1.0s
KSRS MLR MLR
comp=Z,2μm,19.9s
KS01 Wonju Array Si 50.17 281 *e*P **P 14 21 52.0 -0.4**
633A Saathoff Ranch 50.17 95 P **P 14 21 51.6 -0.9**
baz=319
UALR University of 50.20 84 *e*P **P 14 21 51.8 -0.8**
comp=Z,52nm,0.9s
KS15 Wonju Array Si 50.20 281 *e*P **P 14 21 54.0 +1.4**
KSAR Wonju Array Be 50.20 281 P **P 14 21 53.3 +0.7**
KSAR 14 23 11.7
KSAR Wonju Array Be 50.20 281 P **P 14 21 53.2 +0.7**
KSAR PcP **PcP 14 23 11.7 +0.3**
KSAR ScP **ScP 14 27 04.4 +0.9**
Y40A Okolona 50.21 86 P **P 14 21 51.9 -0.8**
baz=316
237A Washetta, Mont 50.22 89 P **P 14 21 52.3 -0.6**
baz=318
Z39A Irene McRaven, 50.25 87 P **P 14 21 52.5 -0.5**
baz=317
PARMO Parma 50.33 81 *e*P **P 14 21 53.1 -0.5**
BLO Bloomington 50.39 76 *e*P **P 14 21 53.4 -0.6**
BLO pmax pmax
comp=Z,360nm,1.2s
BLO Bloomington 50.39 76 *e*P **P 14 21 53.4 -0.6**
comp=Z,363nm,1.3s
139A Bunkhouse Ranc 50.54 88 P **P 14 21 55.0 -0.2**
baz=317
WLAR White Oak Lake 50.54 86 *e*P **P 14 21 55.4 +0.2**
comp=Z,378nm,1.2s
SADO Sadowa 50.56 66 *e*P **P 14 21 54.7 -0.5**
comp=Z,171nm,0.8s
436A Wall Ranch, Ga 50.56 91 P **P 14 21 55.4 0.0**
baz=318
USIN University of 50.59 78 *e*P **P 14 21 55.1 -0.5**
comp=Z,611nm,0.8s
832A Faith Ranch, C 50.60 96 P **P 14 21 55.9 +0.1**
baz=320
238A Jacksonville 50.61 89 P **P 14 21 55.7 -0.1**
baz=318,SNR=6.1
733A Divot King Ran 50.66 95 P **P 14 21 56.2 0.0**
baz=320
535A Dale 50.67 93 P **P 14 21 56.3 0.0**
baz=319
337A Centerville 50.68 90 P **P 14 21 56.4 +0.1**
baz=318
Z40A Long Farm, Mag 50.69 86 P **P 14 21 56.2 -0.2**
baz=317,SNR=12
BJO Bjornoya 50.69 0 *e*P **P 14 21 56.9 +1.0**
BJO IAmb IAmb 14 21 58.0
comp=Z,347nm,1.1s
634A China Grove, S 50.70 94 P **P 14 21 56.6 0.0**
baz=319
INCN Inchon 50.88 282 P **P 14 21 58.7 +0.9**
SNR=17
INCN Inchon 50.88 282 P **P 14 21 58.7 +0.9**
SNR=17
INCN Inchon 50.88 282 *e*P **P 14 21 58.8 +1.0**
comp=Z,288nm,1.2s
INCN LR LR
comp=Z,2μm,22.0s
437A Phantom Ranch, 50.90 91 P **P 14 21 58.2 +0.3**
baz=318
833A Chaparral WMA, 50.91 96 P **P 14 21 58.2 +0.2**
baz=320
536A Bastrop 50.92 92 P **P 14 21 58.6 +0.4**
baz=319
239A Gary 50.98 88 P **P 14 21 58.4 -0.1**
baz=318
338A Crockett 50.98 90 P **P 14 21 58.9 +0.3**
baz=318
734A La Parita Cree 50.99 94 P **P 14 21 58.8 +0.2**
baz=319
Z41A Richland Creek 51.03 86 P **P 14 21 58.6 -0.3**
baz=317
635A Leesville 51.03 93 P **P 14 21 58.9 -0.1**
baz=319
140A Cam and Jess, 51.04 87 P **P 14 21 59.1 +0.1**
baz=317,SNR=6.4
NATX Nacogdoches 51.06 89 P **P 14 21 59.1 0.0**
baz=318,SNR=7.9
NATX Nacogdoches 51.06 89 *e*P **P 14 21 59.7 +0.5**
comp=Z,353nm,1.4s
UTMT University of 51.06 80 *e*P **P 14 21 58.9 -0.2**
comp=Z,531nm,1.0s
WCI Wyandotte Cave 51.17 77 *e*P **P 14 21 59.2 -0.8**
WCI pmax pmax
comp=Z,75nm,0.9s
WCI Wyandotte Cave 51.17 77 *e*P **P 14 21 59.2 -0.8**
comp=Z,75nm,0.8s
Y42A Garnett, Star 51.19 85 P **P 14 21 59.6 -0.5**
baz=317,SNR=9.0
SCO Scoresbysund 51.27 17⇑*i*P **P 14 22 00.6 +0.3**
comp=Z,343nm,1.4s
SCO *i* 14 22 17.4
SCO Scoresbysund 51.27 17⇑*i*P **P 14 22 00.6 +0.3**
SCO pmax pmax
comp=Z,340nm,1.4s
438A Sam Houston St 51.34 90 P **P 14 22 02.0 +0.7**
baz=318,SNR=12
537A Green Hill Far 51.35 92 P **P 14 22 01.8 +0.4**
baz=319
240A Hunter Patters 51.37 88 P **P 14 22 01.4 -0.1**
baz=318
636A Smothers Creek 51.37 93 P **P 14 22 02.4 +0.9**
baz=319,SNR=8.1
735A Kenedy 51.41 94 P **P 14 22 02.4 +0.5**
baz=319
339A Huntington 51.43 89 P **P 14 22 02.0 0.0**
baz=318
Z42A Norrel Spur, H 51.51 85 P **P 14 22 02.1 -0.4**
baz=317
933A Laredo 51.51 96 P **P 14 22 03.0 +0.4**
baz=320,SNR=9.5
834A Tilden 51.54 95 P **P 14 22 02.8 0.0**
baz=320
JNU Nakatsue 51.59 275 *e*P **P 14 22 03.9 +0.8**
comp=Z,196nm,1.0s
ACSO Alum Creek Sta 51.61 73 *e*P **P 14 22 02.3 -0.9**
comp=Z,155nm,0.8s
ACSO LR LR
comp=Z,1μm,19.0s
Y43A Makayla and Ka 51.63 84 P **P 14 22 03.0 -0.3**
baz=317
439A Center Grove, 51.71 90 P **P 14 22 03.8 -0.3**
baz=318
538A Harpers Horsep 51.72 91 P **P 14 22 04.3 +0.2**
baz=318
HKT Hockley 51.73 91 *e*P **P 14 22 04.0 -0.1**
HKT pmax pmax
comp=Z,200nm,1.6s
HKT Hockley 51.73 91 *e*P **P 14 22 04.0 -0.1**
comp=Z,196nm,1.6s
340A Bronson 51.75 88 P **P 14 22 04.2 -0.2**
baz=318
736A Circle Diamond 51.76 93 P **P 14 22 04.6 +0.2**
baz=319
WVT Waverly 51.80 80 *e*P **P 14 22 04.2 -0.5**
WVT pmax pmax
comp=Z,290nm,0.9s
WVT Waverly 51.80 80 *e*P **P 14 22 04.2 -0.5**
comp=Z,291nm,0.8s
637A Eagle Lake 51.82 92 P **P 14 22 05.6 +0.7**
baz=319
835A Beeville 51.83 94 P **P 14 22 05.2 +0.3**
baz=320
241A Mo Tay, Goldon 51.87 87 P **P 14 22 05.2 0.0**
baz=318,SNR=11
ERPA Erie 51.92 69 *e*P **P 14 22 05.1 -0.4**
comp=Z,356nm,0.9s
TRQ Mont Tremblant 51.93 62 *e*P **P 14 22 04.7 -0.9**
934A Benavides 51.95 95 P **P 14 22 06.5 +0.6**
baz=320
Z43A Armstrong Fami 51.96 85 P **P 14 22 05.4 -0.4**
baz=317
Y44A Strider, Charl 52.00 83 P **P 14 22 05.7 -0.5**
baz=317,SNR=9.3
OXF Oxford 52.06 82 *e*P **P 14 22 05.7 -0.9**
OXF pmax pmax
comp=Z,560nm,1.1s
OXF Oxford 52.06 82 *e*P **P 14 22 05.7 -0.9**
comp=Z,560nm,1.1s
ALLY Alegheny Colle 52.16 69 *e*P **P 14 22 07.0 -0.4**
comp=Z,549nm,0.9s
IRK Irkutsk 52.17 309 *e*P **P 14 22 06.2 -1.0**
IRK pmax pmax
comp=Z,208nm,1.9s
440A Kirbyville 52.21 89 P **P 14 22 08.1 +0.3**
baz=318
341A Kurthwood 52.23 88 P **P 14 22 08.0 +0.1**
baz=318,SNR=9.5
143A Socs Landing, 52.24 85 P **P 14 22 07.7 -0.2**
baz=317,SNR=10
539A Cross D Ranch, 52.24 90 P **P 14 22 08.5 +0.5**
baz=319
737A Port Lavaca 52.27 93 P **P 14 22 08.3 +0.1**
baz=319
034A Hebbronville 52.27 96 P **P 14 22 08.8 +0.5**
baz=320
242A Grayson 52.28 87 P **P 14 22 08.2 0.0**
baz=318
638A Rosharon 52.34 91 P **P 14 22 09.4 +0.6**
baz=319
KVTX Kingsville 52.35 95 PFAKE 14 22 20.0 +11
KVTX LR LR
comp=Z,1μm,20.0s
Z44A Pea Ridge, Bel 52.37 84 P **P 14 22 08.5 -0.4**
baz=317
Y45A Yeager Farm, C 52.45 83 P **P 14 22 08.7 -0.8**
baz=317,SNR=5.9
M54A Oil Creek Stat 52.52 69 P **P 14 22 09.3 -0.7**
baz=314,SNR=54
540A Vidor 52.60 90 P **P 14 22 09.3 -1.3**
baz=318
MMNY Mt. Morris Dam 52.60 67 *e*P **P 14 22 10.2 -0.3**
comp=Z,456nm,1.1s
441A DeRidder 52.65 88 P **P 14 22 10.5 -0.5**
baz=318
DL2 Dalian 52.66 286⇑*i*P **P 14 22 11.2 +0.2**
DL2 sP **sP 14 22 29.0 +1.5**
DL2 *e*S **S 14 29 35.2 -0.3**
DL2 pmax pmax
comp=Z,130nm,1.0s
DL2 pmax pmax
comp=Z,600nm,6.1s
DL2 LR LR
comp=Z,1μm,20.4s
DL2 LR LR
comp=Z,2μm,20.7s
DL2 LR LR
comp=Z,2μm,22.8s
342A Flagon Creek P 52.68 87 P **P 14 22 11.4 +0.1**
baz=318
035A Encino 52.70 96 P **P 14 22 12.9 +1.4**
baz=320
N54A Moraine State 52.73 70 P **P 14 22 10.6 -0.9**
baz=315,SNR=38
Z45A Winona 52.73 83 P **P 14 22 11.1 -0.5**
baz=317
936A North Padre Is 52.78 95 P **P 14 22 12.4 +0.3**
baz=320
243A Waterproof 52.79 86 P **P 14 22 12.2 +0.2**
baz=318,SNR=7.1
Y46A Houston 52.83 82 P **P 14 22 11.6 -0.7**
baz=317,SNR=34
TLY Talaya 52.84 309*c i*P **P 14 22 12.0 -0.2**
TLY *e*S S 14 29 49.8 +12
TLY *e* 14 31 57.5
TLY *e*SS **SS 14 33 21.7 +5.7**
TLY pmax pmax
comp=Z,136nm,1.0s
TLY MLR MLR
comp=Z,2μm,17.0s
TLY Talaya 52.84 309 *e*P **P 14 22 12.4 +0.2**
comp=Z,121nm,1.0s
144A Alexander Plac 52.85 85 P **P 14 22 12.5 0.0**
baz=317
LONY Lake Ozonia 53.02 63 *e*P **P 14 22 12.7 -1.0**
comp=Z,141nm,0.9s
LONY LR LR
comp=Z,3μm,20.0s
035Z Hargill 53.08 96 P **P 14 22 14.5 +0.3**
baz=320
VBMS Vicksburg 53.10 85 P **P 14 22 14.0 -0.3**
baz=318,SNR=7.9
442A Mamou 53.11 88 P **P 14 22 14.9 +0.5**
baz=318
LMQ La Malbaie 53.12 58 *e*P **P 14 22 13.8 -0.5**
LMQ *ep*P **pP 14 22 23.9 -2.1**
145A Houston Renfro 53.15 84 P **P 14 22 14.0 -0.8**
baz=318,SNR=5.7
343A Vidalia 53.16 87 P **P 14 22 14.3 -0.5**
baz=318
Z46A Louisville 53.29 83 P **P 14 22 15.1 -0.6**
baz=317,SNR=5.4
NRS Narsarsuaq 53.34 33⇑*i*P **P 14 22 16.0 +0.3**
comp=Z,162nm,1.1s
NRS Narsarsuaq 53.34 33⇑*i*P **P 14 22 16.0 +0.3**
NRS pmax pmax
comp=Z,160nm,1.1s
FRNY Flat Rock 53.38 62 *e*P **P 14 22 15.0 -1.2**
comp=Z,186nm,1.0s
Y47A UCPARC, Winfie 53.39 82 P **P 14 22 15.5 -1.0**
baz=317,SNR=35
ZAIG Zacatecas 53.41 103 *e*P **P 14 22 17.5 +0.5**
comp=Z,55nm,1.0s
443A Delano Plantat 53.45 87 P **P 14 22 16.6 -0.2**
baz=318
542A Morse 53.48 88 P **P 14 22 15.3 -1.9**
baz=319
SWET Sewanee 53.52 79 *e*P **P 14 22 16.1 -1.4**
comp=Z,16nm,0.8s
344A Westbrook Farm 53.54 86 P **P 14 22 17.4 -0.2**
baz=318,SNR=8.9
245A Little AP, Sta 53.59 85 P **P 14 22 17.2 -0.8**
baz=318
146A Union 53.63 84 P **P 14 22 17.6 -0.6**
baz=318,SNR=6.0
Z47A Carrollton 53.78 82 P **P 14 22 18.2 -1.1**
baz=317,SNR=17
TZTN Tazewell 53.91 76 *e*P **P 14 22 19.6 -0.7**
comp=Z,186nm,1.0s
ZAK Zakamensk 53.91 308 *e*P **P 14 22 20.1 -0.1**
ZAK *e* 14 23 26.2
ZAK pmax pmax
comp=Z,40nm,1.3s
ULN Ulaanbaatar 53.93 304*ce*P **P 14 22 20.2 -0.3**
ULN pmax pmax
comp=Z,123nm,1.2s
ULN Ulaanbaatar 53.93 304 P **P 14 22 20.2 -0.3**
SNR=46
ULN Ulaanbaatar 53.93 304 P **P 14 22 20.2 -0.3**

SNR=46
ULN Ulaanbaatar 53.93 304 *e*P **P 14 22 20.3 -0.1**
comp=Z,147nm,1.1s
Z48A Northport 53.94 82 P **P 14 22 19.1 -1.4**
baz=317,SNR=21
O56A Blue Knob Stat 53.98 70 P **P 14 22 19.6 -1.2**
baz=315,SNR=68
MOY Mondy 54.02 310 *e*P **P 14 22 21.1 +0.1**
MOY pmax pmax
comp=Z,147nm,2.2s
147A Livingston 54.05 83 P **P 14 22 20.2 -1.0**
baz=318,SNR=12
345A Thompson Farm, 54.05 85 P **P 14 22 20.9 -0.4**
baz=318,SNR=6.7
444A Pine Grove 54.08 87 P **P 14 22 21.0 -0.5**
baz=318
SSPA Standing Stone 54.09 69 *e*P **P 14 22 20.7 -0.7**
comp=Z,356nm,0.8s
CPCT Cooper Cave 54.15 78 *e*P **P 14 22 20.9 -1.2**
comp=Z,75nm,1.0s
MDV Middlebury 54.17 63 *e*P **P 14 22 21.0 -1.1**
KRAR Krasnoyarsk 54.20 318⇑*e*P **P 14 22 22.3 +0.2**
KRAR pmax pmax
comp=Z,177nm,1.4s
SONA1 Songino Array 54.25 304 *e*P **P 14 22 22.3 -0.5**
SONM Songino Array 54.27 304 P **P 14 22 23.0 +0.2**
comp=Z,99nm,0.9s,baz=47,slow=6.1,SNR=282
SONM PcP **PcP 14 23 27.7 +1.1**
comp=Z,53nm,0.9s,baz=82,slow=1.8,SNR=8.0
SONM LR LR 14 48 00.4
comp=Z,6μm,18.2s,baz=40,slow=39
SONM Songino Array 54.27 304 P **P 14 22 23.0 +0.2**
SONM 14 23 27.7
SONM pmax pmax
comp=Z,100nm,0.9s
SONM MLR MLR
comp=Z,6μm,18.2s
544A White Castle 54.29 87 P **P 14 22 23.3 +0.2**
baz=319
445A Amite 54.30 86 P **P 14 22 23.3 +0.2**
baz=318
247A Quitman 54.31 84 P **P 14 22 23.1 -0.1**
baz=318
346A Big Creek Wild 54.31 85 P **P 14 22 22.8 -0.5**
baz=318
ACCN Adirondack Com 54.36 64 *e*P **P 14 22 23.2 -0.2**
comp=Z,532nm,1.4s
TKL Tuckaleechee C 54.42 77 *e*P **P 14 22 22.8 -1.2**
TKL pmax pmax
comp=Z,160nm,1.1s
TKL Tuckaleechee C 54.42 77 *e*P **P 14 22 22.8 -1.2**
comp=Z,156nm,1.1s
LRAL Lakeview Retre 54.51 82 *e*P **P 14 22 22.8 -1.9**
comp=Z,44nm,1.0s
HAMF Hammerfest 54.54 358 *e*P **P 14 22 23.2 -1.1**
HAMF IAmb IAmb 14 22 24.1
comp=Z,103nm,0.9s
HAMF *e* 14 22 33.7
248A Dixon Mills 54.78 83 P **P 14 22 25.8 -0.8**
baz=318,SNR=5.6
446A Poplarville 54.81 85 P **P 14 22 26.4 -0.4**
baz=318,SNR=8.7
BJI Beijing 54.83 291 P **P 14 22 26.8 0.0**
BJI pP **pP 14 22 35.3 -3.3**
BJI sP **sP 14 22 39.8 -3.6**
BJI PP **PP 14 24 29.1 -0.4**
BJI S **S 14 30 04.9 +0.2**
BJI pmax pmax
comp=Z,50nm,1.6s
BJI pmax pmax
comp=Z,1μm,4.6s
BJI LR LR
comp=Z,3μm,18.4s
BJI LR LR
comp=Z,3μm,23.4s
347A Saraland 54.83 84 P **P 14 22 26.5 -0.4**
baz=318,SNR=8.9
BJT Baijiatuau 54.85 291 P **P 14 22 25.9 -1.1**
BJT pmax pmax
comp=Z,123nm,1.4s
BJT MLR MLR
comp=Z,4μm,20.0s
BJT Baijiatuau 54.85 291 P **P 14 22 25.9 -1.1**
comp=Z,123nm,1.4s
BJT LR LR
comp=Z,4μm,20.0s
N59A State Game Lan 55.02 67 P **P 14 22 27.8 -0.5**
baz=316,SNR=35
546A Slidell 55.03 86 P **P 14 22 28.3 -0.1**
baz=319
645A Chauvin 55.10 87 P **P 14 22 28.8 -0.1**
baz=319
BLA Blacksburg 55.16 73 *e*P **P 14 22 28.8 -0.6**
BLA pmax pmax
comp=Z,190nm,0.9s
BLA Blacksburg 55.16 73 *e*P **P 14 22 28.8 -0.6**
comp=Z,191nm,0.8s
BLA LR LR
comp=Z,3μm,19.0s
348A Jackson 55.19 84 P **P 14 22 29.3 -0.3**
baz=318
447A Lucedale 55.22 85 P **P 14 22 29.4 -0.3**
baz=318
PKME Peaks-Kenny Pk 55.23 59 *e*P **P 14 22 29.1 -0.6**
comp=Z,274nm,1.1s
KEV Kevo 55.35 357 *e*P **P 14 22 29.8 -0.3**
KEV pmax pmax
comp=Z,370nm,1.0s
KEV Kevo 55.35 357 *e*P **P 14 22 29.8 -0.3**
comp=Z,371nm,1.0s
KEV LR LR
comp=Z,961nm,20.0s
VWCC Virginia Weste 55.38 73 *e*P **P 14 22 29.8 -1.1**
646A Port Sulphur 55.45 87 P **P 14 22 30.4 -1.0**
baz=319
LUPA Lehigh Univers 55.45 67 *e*P **P 14 22 31.2 -0.2**
comp=Z,344nm,0.9s
ODNJ Ogdensburg 55.51 66 *e*P **P 14 22 31.4 -0.4**
comp=Z,146nm,1.0s
SDMD Soldier's Deli 55.52 69 *e*P **P 14 22 31.3 -0.6**
comp=Z,100nm,0.9s
448A Bay Minette 55.57 84 P **P 14 22 32.2 -0.2**
baz=318
TRO Tromso 55.59 0 *e*P **P 14 22 31.9 0.0**
TRO IAmb IAmb 14 22 33.7
comp=Z,487nm,1.2s
TRO *e* 14 22 48.9
ARA0 ARCESS Array S 55.61 357 *e*P **P 14 22 30.9 -1.2**
ARCES ARCESS Array B 55.61 357 P **P 14 22 31.5 -0.6**
comp=Z,157nm,0.9s,baz=29,slow=7.3,SNR=208
ARCES PcP **PcP 14 23 31.7 +0.4**
comp=Z,50nm,0.8s,baz=12,slow=6.2,SNR=5.2
ARCES LR LR 14 49 28.0
comp=Z,1μm,18.8s,baz=356,slow=39
ARCES PKPPKP **P'P'df 14 52 35.6 -5.7**
comp=Z,5.8nm,1.0s,baz=242,slow=2.6,SNR=5.1
ARE0 ARCESS Array S 55.61 357 *e*P **P 14 22 31.9 -0.2**
ARE0 *e* 14 22 43.3
ARE0 ARCESS Array S 55.61 357 *e*P **P 14 22 31.5 -0.6**
comp=Z,183nm,0.9s
BRNJ Basking Ridge 55.82 66 *e*P **P 14 22 33.8 -0.2**
comp=Z,223nm,0.8s
BRAL Brewton 55.86 83 *e*P **P 14 22 33.9 -0.4**
comp=Z,358nm,1.1s
BRAL LR LR
comp=Z,3μm,21.0s
PAL Palisades 55.93 66 *e*P **P 14 22 34.8 0.0**
PAL pmax pmax
comp=Z,180nm,1.0s
PAL Palisades 55.93 66 *e*P **P 14 22 34.8 0.0**
comp=Z,181nm,1.0s
CPNY Central Park 56.06 66 *e*P **P 14 22 35.5 -0.2**
comp=Z,183nm,0.9s
HRV Adam Dziewonsk 56.07 63 *e*P **P 14 22 35.3 -0.4**
HRV pmax pmax
comp=Z,221nm,1.1s
HRV Adam Dziewonsk 56.07 63 *e*P **P 14 22 35.3 -0.4**
comp=Z,221nm,1.1s
CBN Corbin Frederi 56.11 70 *e*P **P 14 22 34.3 -1.8**
comp=Z,257nm,1.1s
CBN LR LR
comp=Z,3μm,20.0s
KMSC Kings Mountain 56.16 76 P **P 14 22 35.3 -1.2**
baz=317,SNR=42
KMSC Kings Mountain 56.16 76 *e*P **P 14 22 35.3 -1.2**
comp=Z,191nm,1.0s
KTK1 Kautokeino 56.19 358⇑*i*P **P 14 22 35.6 -0.6**
KTK1 IAmb IAmb 14 22 37.3
comp=Z,196nm,1.0s
GOGA Godfrey 56.23 79 *e*P **P 14 22 34.8 -2.3**
GOGA pmax pmax
comp=Z,75nm,1.0s
GOGA MLR MLR
comp=Z,5μm,20.0s
GOGA Godfrey 56.23 79 *e*P **P 14 22 34.8 -2.3**
comp=Z,75nm,1.0s
GOGA LR LR
comp=Z,5μm,20.0s
BORG Borgarnes 56.48 20 *i*P **P 14 22 40.2 +1.9**
BORG Borgarnes 56.48 20 *e*P **P 14 22 39.9 +1.6**
comp=Z,452nm,1.3s
BORG LR LR
comp=Z,2μm,20.0s
URVA University of 56.48 71 *e*P **P 14 22 38.1 -0.6**
MOIG Morelia 56.64 104 *e*pP pP 14 22 52.1 -0.1
HHC Hu-ho-hao-te 56.68 295 *e*P **P 14 22 40.6 +0.3**
HHC PP **PP 14 22 46.9 +0.6**
HHC S **S 14 30 27.4 -2.3**
HHC pmax pmax
comp=Z,94nm,1.2s
HHC pmax pmax
comp=Z,890nm,6.6s
HHC LR LR
comp=Z,2μm,16.5s
HHC LR LR
comp=Z,2μm,16.2s
HHC LR LR
comp=Z,2μm,16.3s
LVZ Lovozero 56.82 353*c e*P **P 14 22 40.4 -0.3**
LVZ pmax pmax
comp=Z,480nm,1.0s
LVZ Lovozero 56.82 353 *e*P **P 14 22 40.5 -0.3**
comp=Z,418nm,1.0s
LVZ LR LR
comp=Z,3μm,21.0s
LMN Caledonia Moun 56.99 56 *e*P **P 14 22 41.8 -0.4**
comp=Z,582nm,1.0s
LOF Lofoten 57.02 3 *e*P **P 14 22 40.9 -1.2**
LOF IAmb IAmb 14 22 42.1
comp=Z,128nm,1.1s
TIA Tai'an 57.08 287⇑P **P 14 22 42.8 -0.3**
TIA pP **sP 14 22 58.8 -0.8**
TIA pmax pmax
comp=Z,110nm,1.3s
TIA LR LR
comp=Z,1μm,20.8s
TIA LR LR
comp=Z,1μm,17.8s
TIA LR LR
comp=Z,1μm,19.0s
APA Apatity 57.22 354⇓*i*P **P 14 22 43.0 -0.6**
APA *i* 14 24 56.0
APA *i* S **S 14 30 34.0 -1.8**
APA *i* PS **PnS 14 30 55.0 +4.4**
APA pmax pmax
comp=Z,162nm,1.2s
STEI Steigen 57.27 2 *e*P **P 14 22 44.0 +0.1**
STEI IAmb IAmb 14 22 44.3
comp=Z,86nm,0.6s
BTO Baotou 57.66 296 *e*P **P 14 22 46.8 -0.4**
BTO pmax pmax
comp=Z,41nm,1.1s
JOW Kunigami 57.78 271 *e*P **P 14 22 48.9 +0.8**
comp=Z,545nm,1.2s
DRLN Deer Lake 57.80 49 *e*P **P 14 22 47.6 -0.2**
comp=Z,302nm,0.9s
NHSC New Hope 58.31 77 *e*P **P 14 22 49.5 -2.1**
comp=Z,353nm,1.1s
NHSC LR LR
comp=Z,6μm,20.0s
CSU Charleston Sou 58.46 77 *e*P **P 14 22 52.4 -0.2**
TIY Taiyuan 58.52 292 *e*P **P 14 22 54.2 +1.0**
TIY pP **sP 14 23 09.4 -0.4**
TIY PP **PP 14 25 00.3 -2.3**
TIY S **S 14 30 55.5 +1.7**
TIY SS **SS 14 34 44.4 -1.6**
TIY pmax pmax
comp=Z,160nm,1.2s
TIY pmax pmax
comp=Z,550nm,3.5s
TIY LR LR
comp=Z,700nm,11.3s
TIY LR LR
comp=Z,1μm,14.2s
TIY LR LR
comp=Z,2μm,18.4s
SSE Sheshan 58.61 280 P **P 14 22 54.0 +0.2**
SSE pmax pmax
comp=Z,170nm,1.2s
SSE pmax pmax
comp=Z,640nm,3.3s
SSE LR LR
comp=Z,970nm,21.6s
SSE LR LR
comp=Z,590nm,21.6s
SSE LR LR
comp=Z,1μm,18.0s
NVS Novosibirsk 58.63 323 *e*P **P 14 22 53.4 -0.2**
NVS *e* 14 26 35.7
NVS pmax pmax
comp=Z,183nm,1.8s
NVS pmax pmax
comp=N,52nm,1.7s
NVS pmax pmax
comp=E,59nm,1.3s
ZALV Zalesovo Beam 58.78 321 P **P 14 22 54.5 -0.1**
comp=E,20nm,0.8s,baz=35,slow=4.4,SNR=86
ZALV LR LR 14 50 28.6
comp=E,8μm,19.5s,baz=35,slow=38
ZALV PKPPKP **P'P'df 14 52 32.6 -3.0**
comp=E,2.5nm,0.9s,baz=238,slow=4.7,SNR=5.5
ZALV Zalesovo Beam 58.78 321 P **P 14 22 54.5 -0.1**
ZALV pmax pmax
comp=Z,20nm,0.8s
ZALV MLR MLR
comp=Z,8μm,19.5s
STOK Stokkvaagen 58.81 3 *e*P **P 14 22 55.0 +0.3**
GUMO Guam 58.99 248 PFAKE 14 23 10.0 +13
GUMO LR LR
comp=Z,740nm,20.0s
MOR8 Moi Rana 59.01 2 *e*P **P 14 22 54.8 -1.4**
MOR8 IAmb IAmb 14 22 55.4
comp=Z,88nm,0.8s
MOR8 *e* 14 23 11.9
NJ2 Nanjing 59.20 283 *e*P **P 14 22 58.0 +0.1**
NJ2 sP **sP 14 23 15.2 +0.7**
NJ2 S **S 14 31 06.7 +4.1**
NJ2 sS **sS 14 31 22.0 -0.3**
NJ2 pmax pmax
comp=Z,150nm,1.3s
NJ2 pmax pmax
comp=Z,1μm,3.9s
NJ2 LR LR
comp=Z,680nm,15.2s
NJ2 LR LR
comp=Z,720nm,19.0s
NJ2 LR LR
comp=Z,900nm,17.9s
TLIG Tlapa 59.81 103 *e*P **P 14 23 04.2 +1.8**
comp=Z,88nm,1.2s
TMCR Tamitsa 60.22 351 *e*P **P 14 23 04.9 +0.5**
TMCR pmax pmax
comp=Z,525nm,1.0s
NSS Namsos 60.58 4 *e*P **P 14 23 06.5 -0.3**
NSS *e* 14 23 20.6
TBLU Trondheim 61.79 5 *e*P **P 14 23 13.8 -1.2**
TBLU IAmb IAmb 14 23 15.9
comp=Z,333nm,1.4s
TBLU *e* 14 23 30.9
MOL Molde 62.32 6 *e*P **P 14 23 18.9 +0.3**
MOL *e* 14 23 35.0
YOJ Yonaguni jima 62.62 274 *e*P **P 14 23 20.3 -0.9**
YOJ Yonaguni jima 62.62 274 *e*P **P 14 23 20.3 -0.9**
YOJ *e*pP **pP 14 23 32.1 -1.0**
AKN Aaknes 62.67 7 *e*P **P 14 23 21.6 +0.6**
AKN *e* 14 23 38.8
WHN Wuhan 62.86 285⇑P **P 14 23 22.6 -0.1**
WHN S **S 14 31 46.4 -2.7**
WHN LR LR
comp=Z,2μm,14.9s
WHN LR LR
comp=Z,3μm,18.3s
WHN LR LR
comp=Z,3μm,21.4s
FOO Floro 63.11 8 *e*P **P 14 23 23.9 +0.1**
FOO IAmb IAmb 14 23 25.5
comp=Z,140nm,1.2s
FOO *e* 14 23 41.2
XAN Xi'an 63.16 291 P **P 14 23 24.7 0.0**
XAN pP pP 14 23 36.7 0.0
XAN sP sP 14 23 40.8 -0.6
XAN PP **PP 14 25 46.2 +2.7**
XAN S **S 14 31 49.2 -3.7**
XAN sS sS 14 32 06.8 -6.0
XAN SS **SS 14 35 56.7 -2.0**
XAN pmax pmax
comp=Z,210nm,1.2s
XAN pmax pmax
comp=Z,610nm,6.7s
XAN LR LR
comp=Z,2μm,17.1s
XAN LR LR
comp=Z,1μm,16.6s
XAN LR LR
comp=Z,2μm,16.6s
SEM Semipalatinsk 63.30 321 *i*P **P 14 23 23.2 -2.1**
comp=Z,662nm,1.4s
SEM LQ LQ 14 46 42.0
SEM LR LR 14 51 07.4
comp=Z,4μm,18.1s
KLMR Klimovskoe 63.32 349 *i*P **P 14 23 25.0 -0.3**
KLMR *e* 14 24 02.4
KLMR pmax pmax
comp=Z,480nm,1.0s
YHNB Yeheng 63.40 275 *e*P **P 14 23 25.9 -0.5**
comp=Z,117nm,1.1s
SVE Sverdlovsk 63.54 336*d i*P **P 14 23 27.2 +0.4**
SVE *e*S **S 14 31 57.8 +0.9**
SVE pmax pmax
comp=Z,464nm,1.1s
SVE MLR MLR
comp=Z,3μm,18.0s
TEIG Tepich 63.55 92 *e*P **P 14 23 26.5 -0.8**
comp=Z,88nm,1.4s
YEL1 Yell 63.57 11⇑*i*P **P 14 23 27.5 +0.6**
HYA Hoyanger 63.62 7 *e*P **P 14 23 27.5 +0.2**
HYA IAmb IAmb 14 23 29.4
comp=Z,313nm,1.6s
HYA *e* 14 23 44.6
KURK Kurchatov 63.62 322 *e*P **P 14 23 27.7 +0.3**
KURK pmax pmax
comp=Z,220nm,1.2s
KURK Kurchatov 63.62 322 *e*P **P 14 23 27.7 +0.3**
comp=Z,220nm,1.2s
KURK LR LR
comp=Z,13μm,20.0s
SUE Sulen 63.62 8 *e*P **P 14 23 26.6 -0.6**
SUE IAmb IAmb 14 23 27.8
comp=Z,118nm,1.2s
SUE *e* 14 23 44.2
FIA1 FINESS Array S 63.70 356 *e*P **P 14 23 27.6 -0.2**
FINES FINESS Array B 63.70 356 P **P 14 23 27.4 -0.3**
comp=Z,244nm,0.8s,baz=21,slow=7.6,SNR=574
FINES LR LR 14 55 23.2
comp=Z,954nm,18.1s,baz=8.5,slow=40
FINES FINESS Array B 63.70 356 *i*P **P 14 23 27.5 -0.3**
FINES pmax pmax
comp=Z,245nm,0.8s
GTA Gaotai 63.71 302⇑P **P 14 23 28.0 -0.4**
GTA pP pP 14 23 39.8 -0.6
GTA sP sP 14 23 44.3 -0.8
GTA S **S 14 31 58.9 -1.0**
GTA sS sS 14 32 16.5 -3.3
GTA SS **SS 14 36 09.6 +2.3**
GTA pmax pmax
comp=Z,160nm,1.5s
GTA pmax pmax
comp=Z,1μm,4.6s
GTA LR LR
comp=Z,3μm,17.6s
GTA LR LR
comp=Z,3μm,18.5s
GTA LR LR
comp=Z,4μm,17.6s
NC204 NORSAR Array S 63.78 5 *e*P **P 14 23 28.2 -0.3**
WAL1 Walls 63.79 12⇑*i*P **P 14 23 28.4 0.0**
NC303 NORSAR Array S 63.86 4 *e*P **P 14 23 29.1 +0.2**
LRW Lerwick 63.96 11⇑*e*P **P 14 23 30.2 +0.7**
LRW AMB AMB 14 23 31.0
comp=Z,288nm,1.0s
LRW AMS AMS 14 48 56.6
comp=Z,1μm,26.9s
NC405 NORSAR Array S 63.99 4 *e*P **P 14 23 29.9 +0.2**
NBO02 NORSAR Array S 64.02 5 *e*P **P 14 23 28.9 -1.0**
NBO00 NORSAR Array S 64.03 5 *e*P **P 14 23 30.1 +0.1**
NB201 NORSAR Array S 64.03 4 *e*P **P 14 23 30.3 +0.2**
NB2 NORSAR Subarra 64.04 4 P **P 14 23 30.1 0.0**
comp=Z,375nm,1.0s,baz=355,slow=6.5
NB2 NORSAR Subarra 64.04 4 P **P 14 23 30.1 0.0**
baz=355,slow=6.5
NOA NORSAR Array B 64.04 4 P **P 14 23 30.1 0.0**
comp=Z,158nm,0.9s,baz=355,slow=6.6,SNR=338
NOA LR LR 14 51 32.0
comp=Z,504nm,20.7s,baz=0.0,slow=36
NOA PKPPKP **P'P'df 14 52 21.3 -6.5**
comp=Z,4.0nm,0.8s,baz=169,slow=1.6,SNR=8.8
ZSN Zaisan 64.17 317 *i*P **P 14 23 30.2 -1.0**
comp=Z,2μm,1.1s
ZSN *e*S **S 14 32 04.8 -0.3**
ZSN LR LR 14 52 03.0
comp=Z,1μm,16.1s
NAO01 NORSAR Array S 64.22 5 *e*P **P 14 23 30.6 -0.7**
ASK Askoy 64.23 8 *e*P **P 14 23 31.4 +0.2**
ASK IAmb IAmb 14 23 33.3
comp=Z,156nm,1.2s
ASK *e* 14 23 49.2
SSLB Suanglung 64.32 275 *e*P **P 14 23 31.8 -0.7**
comp=Z,422nm,1.1s
BVA0 Borovoye Array 64.33 329 *i*P **P 14 23 31.6 -0.5**
BVA0 pmax pmax
comp=Z,309nm,1.2s
BVAR Borovoye Array 64.33 329 P4KPbc 15 00 26.9
comp=Z,1.0nm,0.9s,baz=46,slow=6.4,SNR=6.5
BRVK Borovoye 64.33 329*c e*P **P 14 23 32.3 +0.2**
BRVK pmax pmax
comp=Z,469nm,1.7s
BRVK Borovoye 64.33 329 *e*P **P 14 23 32.4 +0.3**
comp=Z,303nm,1.1s
BRVK LR LR
comp=Z,3μm,19.0s
BER Bergen 64.34 8 *e*P **P 14 23 32.3 +0.3**
BER *e* 14 23 50.0
NC602 NORSAR Array S 64.36 4 *e*P **P 14 23 31.9 -0.3**
ARU Arti 64.38 337*c i*P **P 14 23 32.0 -0.3**
ARU *e* 14 24 06.2
ARU 14 25 50.6
ARU S **S 14 32 09.2 +1.9**
ARU 14 33 24.1
ARU SS **SS 14 36 15.8 -0.7**
ARU pmax pmax
comp=Z,471nm,1.2s
ARU MLR MLR
comp=Z,2μm,19.0s
ARU Arti 64.38 337 *e*P **P 14 23 32.1 -0.3**
comp=Z,288nm,0.9s
ARU LR LR
comp=Z,2μm,19.0s
YULB Yu-li 64.43 275 *e*P **P 14 23 32.2 -1.0**
comp=Z,234nm,1.2s
CCIG Comitan 64.47 98 *e*P **P 14 23 34.2 +0.5**
comp=Z,289nm,2.0s
QZH Quanzhou 64.78 278⇑*i*P **P 14 23 30.9 -4.5**
QZH pP **pP 14 23 44.1 -3.3**
QZH sP **sP 14 23 48.7 -3.4**
QZH S **S 14 32 10.0 -3.0**
QZH pmax pmax
comp=Z,390nm,1.2s
QZH pmax pmax
comp=Z,3μm,2.8s
QZH LR LR
comp=Z,970nm,16.2s
QZH LR LR
comp=Z,930nm,15.9s
QZH LR LR
comp=Z,2μm,19.9s
TPUB Ta-pu 64.89 275 *e*P **P 14 23 35.0 -1.2**
comp=Z,175nm,1.1s
ODD1 Odda 64.90 7⇑*i*P **P 14 23 36.1 +0.3**

ODD1 IAmb IAmb 14 23 37.8
comp=Z,211nm,1.1s
ODD1 e 14 23 52.8
TWG Pinlang 65.01 274 eP **P 14 23 37.2 +0.3**
comp=Z,798nm,1.6s
HFS Hagfors 65.04 3 PKPPKP **P'P'df 14 52 19.6 -6.5**
comp=Z,4.7nm,1.0s,baz=134,slow=4.2,SNR=5.6
OSL Oslo 65.12 5 eP **P 14 23 37.6 +0.5**
PUL Pulkovo 65.17 354 ceP **P 14 23 37.8 +0.4**
PUL pmax pmax
comp=Z,402nm,1.0s
RSC Scourie 65.20 14⇑ eP **P 14 23 38.2 +0.6**
BIGH Upper Bighouse 65.23 13⇑ eP **P 14 23 38.5 +0.7**
BIGH AMB AMB 14 23 39.2
comp=Z,524nm,1.2s
BIGH AMS AMS 14 50 59.7
comp=Z,3μm,20.4s
KONO Kongsberg 65.35 5⇑ iP **P 14 23 39.0 +0.4**
KONO IAmb IAmb 14 23 40.9
comp=Z,359nm,1.2s
KONO e 14 23 55.6
KONO Kongsberg 65.35 5 eP **P 14 23 39.2 +0.6**
KONO pmax pmax
comp=Z,380nm,1.1s
KONO Kongsberg 65.35 5 PFAKE 14 23 50.0 +11
KONO LR LR
comp=Z,943nm,22.0s
BLS5 Blasjo 65.37 7 eP **P 14 23 39.4 +0.6**
BLS5 IAmb IAmb 14 23 40.8
comp=Z,151nm,1.0s
BLS5 e 14 23 56.9
RRH Rhenigidale 65.39 15⇑ eP **P 14 23 39.3 +0.4**
KMY Karmoy 65.49 8 eP **P 14 23 39.4 -0.1**
KMY IAmb IAmb 14 23 40.2
comp=Z,55nm,1.1s
KMY e 14 23 56.8
MK31 Makanchi Array 65.53 318 P **P 14 23 39.4 -0.6**
MK31 pmax pmax
comp=Z,89nm,1.1s
MK31 Makanchi Array 65.53 318 eP **P 14 23 39.6 -0.5**
MKAR Makanchi Array 65.53 318 P **P 14 23 39.5 -0.6**
comp=Z,26nm,0.7s,baz=46,slow=6.9,SNR=192
MKAR PKPPKP **P'P'df 14 52 18.2 -6.3**
comp=Z,6.4nm,1.0s,baz=222,slow=2.4,SNR=13
MKAR LR LR 14 54 14.7
comp=Z,4μm,21.4s,baz=17,slow=38
MKAR P4KPbc 15 00 32.6
comp=Z,0.5nm,1.0s,baz=34,slow=5.0,SNR=4.4
MK01 Makanchi Array 65.55 318 eP **P 14 23 38.7 -1.4**
RRR Rubha Reidh 65.58 14⇑ iP **P 14 23 40.3 +0.2**
MAKZ Makanchi 65.64 318 P **P 14 23 39.5 -1.2**
MAKZ pmax pmax
comp=Z,115nm,1.3s
MAKZ Makanchi 65.64 318 eP **P 14 23 40.1 -0.6**
comp=Z,144nm,1.3s
MVH1 Achvaich 65.74 14⇑ iP **P 14 23 41.5 +0.4**
ENH Enshi 65.75 288 eP **P 14 23 40.9 -0.7**
comp=Z,369nm,1.1s
ENH LR LR
comp=Z,2μm,20.0s
WMQ Urumqi 65.77 313 P **P 14 23 42.4 +0.7**
WMQ PcP **PcP 14 24 15.5 +2.9**
WMQ S **S 14 32 26.1 +1.1**
WMQ ScS **SKSac 14 33 33.6 -0.2**
WMQ pmax pmax
comp=Z,65nm,0.8s
WMQ pmax pmax
comp=Z,290nm,4.4s
WMQ LR LR
comp=Z,1μm,17.0s
WMQ LR LR
comp=Z,580nm,29.0s
WMQ LR LR
comp=Z,2μm,27.4s
STAV Stavanger 65.80 8 eP **P 14 23 41.8 +0.3**
STAV IAmb IAmb 14 23 43.6
comp=Z,202nm,1.3s
STAV e 14 23 58.3
TAOE Nuku Hiva Isla 65.96 158 eP P 14 23 54.2 +11
comp=Z,473nm,1.3s
TAOE eS **S 14 32 33.5 +5.9**
comp=Z,871nm,30.2s
TAOE eSS **SS 14 36 45.5 +1.9**
comp=Z,1μm,31.7s
TAOE eLR LR 14 43 22.3
comp=Z,6μm,28.2s
TAOE Nuku Hiva Isla 65.96 158 eT T 15 34 43.4
comp=Z,223nm,0.3s
TAOE Nuku Hiva Isla 65.96 158 epP pP 14 23 54.6 -0.6
KAC Achnashellach 66.00 14⇑ iP **P 14 23 43.3 +0.5**
KPL Plockton 66.11 15⇑ eP **P 14 23 43.8 +0.3**
KPL AMB AMB 14 23 44.8
comp=Z,159nm,1.0s
KPL AMS AMS 14 52 14.2
comp=Z,2μm,20.9s
MDO Dochfour 66.19 14⇑ iP **P 14 23 44.5 +0.4**
MCD Coleburn Disti 66.20 13⇑ iP **P 14 23 44.8 +0.7**
KSB Sheil Bridge 66.26 14⇑ iP **P 14 23 44.9 +0.4**
MME1 Meikle Cairn 66.50 13⇑ iP **P 14 23 46.3 +0.2**
SNART Snartemo 66.50 7 eP **P 14 23 46.6 +0.6**
SNART IAmb IAmb 14 23 48.2
comp=Z,149nm,1.1s
SNART e 14 24 03.5
VSU Vasula 66.66 356 ceP **P 14 23 46.9 -0.1**
VSU pmax pmax
comp=Z,1μm,1.0s
HOMB Homborsund 66.66 6⇑ iP **P 14 23 47.5 +0.5**
HOMB IAmb IAmb 14 23 49.2
comp=Z,365nm,1.1s
HOMB e 14 24 04.4
DRUM Mains of Drumt 66.95 13⇑ eP **P 14 23 49.2 +0.4**
DRUM AMB AMB 14 23 50.5
comp=Z,878nm,1.0s
DRUM AMS AMS 14 51 15.3
comp=Z,1μm,25.1s
EDU Dundee 67.24 13⇑ eP **P 14 23 51.1 +0.4**
BBSR BB Station 67.28 66 eP **P 14 23 50.7 -0.6**
comp=Z,216nm,1.4s
BBSR LR LR
comp=Z,1μm,21.0s
EAB Aberfoyle 67.41 14⇑ iP **P 14 23 52.3 +0.5**
PGBU Glenifferbraes 67.75 14 eP **P 14 23 54.3 +0.3**
PGBU AMB AMB 14 23 55.2
comp=Z,306nm,1.1s
PGBU AMS AMS 14 52 39.4
comp=Z,2μm,20.2s
EDI Edinburgh 67.82 14⇑ eP **P 14 23 54.6 +0.2**
EDI AMB AMB 14 23 55.6
comp=Z,276nm,1.1s
EDI AMS AMS 14 53 56.2
comp=Z,1μm,22.0s
OTUK Ortayu 67.87 325 P **P 14 23 54.7 -0.2**
OTUK pmax pmax
comp=Z,42nm,1.2s
ESY Stoneypath 67.90 13⇑ eP **P 14 23 55.1 +0.2**
GMK Mull of Kintyr 68.04 15⇑ eP **P 14 23 56.2 +0.4**
CD2 Chengdu 68.33 293⇑ iP **P 14 23 58.6 +0.5**
CD2 sP sP 14 24 15.0 +0.1
CD2 PP **PP 14 26 28.9 +0.1**
CD2 S **S 14 32 56.1 +0.1**
CD2 sS sS 14 33 16.1 0.0
CD2 SS **SS 14 37 20.3 +1.2**
CD2 pmax pmax
comp=Z,690nm,1.0s
CD2 pmax pmax
comp=Z,1μm,5.1s
CD2 LR LR
comp=Z,2μm,22.6s
CD2 LR LR
comp=Z,2μm,23.8s
EKA Eskdalemuir Ar 68.40 14 PKPPKP P'P'df 14 52 10.0 -10
comp=Z,4.0nm,0.7s,baz=145,slow=2.6,SNR=6.6
ESK Eskdalemuir 68.41 14⇑ eP **P 14 23 58.5 +0.3**
ESK AMB AMB 14 23 59.5
comp=Z,288nm,1.1s
ESK AMS AMS 14 52 47.6
comp=Z,2μm,21.4s
ESK Eskdalemuir 68.41 14 iP **P 14 23 58.7 +0.6**
ESK Eskdalemuir 68.41 14 eP **P 14 23 58.8 +0.7**
comp=Z,335nm,1.0s
ESK LR LR
comp=Z,2μm,21.0s
BWH Wardlaw 68.49 14⇑ eP **P 14 23 58.7 +0.1**
MUD Monsted U'grnd 68.51 6⇑ iP **P 14 23 59.6 +0.9**
comp=Z,269nm,1.0s
MUD i 14 24 16.2
MUD Monsted U'grnd 68.51 6⇑ iP **P 14 23 59.6 +0.9**
MUD pmax pmax
comp=Z,270nm,1.0s
MOS Moscow 68.54 349 ciP **P 14 23 57.9 -1.0**
MOS e 14 24 23.6
MOS eS **S 14 32 55.3 -2.4**
MOS pmax pmax
comp=Z,1μm,2.0s
MOS pmax pmax
comp=N,400nm,1.5s
MOS pmax pmax
comp=Z,388nm,1.4s
MOS pmax pmax
comp=N,257nm,1.2s
MOS MLR MLR
comp=Z,2μm,22.0s
ECK Cauldkaine Hil 68.55 14⇑ iP **P 14 23 59.6 +0.6**
BHH Howats Hill 68.63 14⇑ iP **P 14 23 59.7 +0.2**
GAL1 Galloway 68.64 15⇑ eP **P 14 23 59.8 +0.2**
GAL1 AMB AMB 14 24 01.2
comp=Z,159nm,1.1s
APYP Conner 68.81 271 eP **P 14 24 00.4 -0.7**
APYP eS **pP 14 24 12.4 -0.9**
BBO1 Bothel 68.97 14⇑ iP **P 14 24 02.1 +0.5**
TGUH Tegucigalpa,Un 69.03 96 eP **P 14 24 03.0 +0.5**
comp=Z,164nm,0.8s
GMM Mts of Mourne 69.06 16⇑ eP **P 14 24 02.6 +0.5**
KESW Keswick, Cumbr 69.13 14⇑ eP **P 14 24 03.1 +0.4**
KESW AMB AMB 14 24 04.0
comp=Z,289nm,1.1s
GZH Guangzhou 69.20 281 P **P 14 24 00.3 -3.2**
GZH PcP **PcP 14 24 25.0 -2.1**
GZH S **S 14 33 01.0 -5.4**
GZH sS **sS 14 33 23.0 -3.6**
GZH pmax pmax
comp=Z,1μm,3.5s
CAUP Cauayan 69.20 270 eP **P 14 24 04.5 +0.9**
OBN Obninsk 69.27 350 LR LR 14 58 17.3
comp=Z,2μm,21.0s,baz=16,slow=39
OBN Obninsk 69.27 350 ciP **P 14 24 02.9 -0.5**
OBN pmax pmax
comp=Z,569nm,1.7s
OBN Obninsk 69.27 350 eP **P 14 24 03.0 -0.4**
comp=Z,532nm,1.3s
IGLA Glengowla, Co 69.28 18 eP **P 14 24 04.1 +0.6**
ABRA Dolores 69.28 271 eP **P 14 24 04.4 +0.3**
ABRA eS **pP 14 24 21.1 +4.9**
WIM Isle of Man 69.34 15⇑ eP **P 14 24 04.1 +0.2**
AFI Afiamalu 69.37 192 LR LR 14 48 06.8
comp=Z,2μm,20.9s,baz=346,slow=30
COP Copenhagen 69.44 4⇑ iP **P 14 24 04.7 +0.2**
comp=Z,141nm,1.0s
COP i 14 24 21.6
COP Copenhagen 69.44 4⇑ iP **P 14 24 04.7 +0.2**
COP pmax pmax
comp=Z,140nm,1.0s
SHLS Shalkode 69.51 317 iP **P 14 24 04.1 -1.4**
comp=Z,3μm,1.1s
SHLS eS **S 14 33 09.8 -0.2**
SHLS LR LR 14 55 08.4
comp=Z,694nm,16.1s
HPK Haverah Park 69.95 13⇑ eP **P 14 24 08.6 +1.0**
HPK AMB AMB 14 24 09.2
comp=Z,284nm,1.5s
HPK AMS AMS 14 54 49.9
comp=Z,1μm,23.7s
DSB Dublin 69.95 16 eP **P 14 24 08.6 +1.0**
comp=Z,140nm,1.1s
AKTO Aktyubinsk 70.03 335 P **P 14 24 08.2 -0.1**
AKTO pmax pmax
comp=Z,399nm,1.0s
BSD Bornholm Skovb 70.10 3⇑ iP **P 14 24 08.5 -0.1**
comp=Z,161nm,1.1s
BSD i 14 24 25.5
BSD Bornholm Skovb 70.10 3⇑ iP **P 14 24 08.5 -0.1**
BSD i 14 24 25.5
BSD pmax pmax
comp=Z,160nm,1.1s
WME Myndd Eilian 70.12 15⇑ eP **P 14 24 08.1 -0.6**
SATY Saty 70.16 318 iP **P 14 24 07.9 -1.5**
comp=Z,2μm,1.2s
SATY eS **S 14 33 17.2 -0.4**
SATY LR LR 14 55 12.1
comp=Z,2μm,19.5s
NACGM Naroch 70.21 355 eP **P 14 24 09.0 -0.3**
NACGM PM 14 24 10.0
comp=Z,0.9nm,1.0s
KUU Kurty 70.23 320 iP **P 14 24 08.8 -0.9**
comp=Z,1μm,1.2s
KUU eS **S 14 33 19.0 +1.0**
KUU LR LR 14 55 14.6
comp=Z,3μm,19.7s
GYA Guiyang 70.27 288⇑ iP **P 14 24 10.4 +0.2**
GYA pP pP 14 24 22.0 -0.4
GYA PP **PP 14 26 47.8 +2.1**
GYA S **S 14 33 20.2 +1.0**
GYA sS sS 14 33 37.0 -2.3
GYA SKS **SKSac 14 34 04.2 -4.3**
GYA SS **SS 14 37 49.6 +0.3**
GYA pmax pmax
comp=Z,340nm,1.2s
GYA pmax pmax
comp=Z,550nm,5.9s
GYA LR LR
comp=Z,1μm,19.9s
GYA LR LR
comp=Z,1μm,19.0s
GYA LR LR
comp=Z,2μm,21.2s
BALP Baler 70.31 269 eP **P 14 24 10.2 -0.1**
WPM1 Penmaenmawr 70.31 15⇑ iP **P 14 24 09.9 0.0**
LHO Holmfirth 70.32 13⇑ eP **P 14 24 10.5 +0.5**
BCPH Baguio City Da 70.37 271⇓ eP **P 14 24 12.7 +1.8**
YRE Yr Eifl 70.51 15⇑ eP **P 14 24 11.0 -0.1**
VAL Valentia 70.53 19⇓ iP **P 14 24 12.4 +1.2**
MICGM Minsk 70.56 355⇑ iP **P 14 24 11.0 -0.4**
MICGM ⇑ iP **P 14 24 11.0 -0.4**
MICGM PM 14 24 12.0
comp=N,0.9nm,1.0s
MICGM PM 14 24 12.0
comp=Z,0.9nm,1.0s
MICGM ePcP **PcP 14 24 38.0 +5.6**
MICGM ePP **PP 14 26 48.0 +0.8**
MICGM ePPP PPP 14 28 24.0
MICGM eS **S 14 33 18.0 -3.5**
MICGM ePS **PnS 14 33 48.0 -4.5**
MICGM eLR LR 14 48 10.0
MICGM LRM MLR 14 53 48.0
comp=Z,4.5nm,22.0s
MNK Minsk 70.56 355 ciP **P 14 24 11.0 -0.4**
MNK i 14 24 11.0
MNK e 14 24 38.0
MNK e 14 26 48.0
MNK ePPP PPP 14 28 24.0
MNK eS **S 14 33 18.0 -3.5**
MNK ePS **PnS 14 33 48.0 -4.5**
MNK pmax pmax
comp=N,920nm,1.0s
MNK pmax pmax
comp=Z,920nm,1.0s
MDOK Medeo 70.59 319 iP **P 14 24 12.4 +0.4**
comp=Z,2μm,1.2s
MDOK eS **S 14 33 23.9 +1.3**
MDOK LQ LQ 14 50 43.0
MDOK LR LR 14 55 52.7
comp=Z,1μm,19.8s
LMK Market Rasen 70.60 12⇑ eP **P 14 24 12.2 +0.5**
LMK AMB AMB 14 24 13.7
comp=Z,732nm,1.1s
RGN Rugen 70.62 4 eP **P 14 24 13.3 +1.6**
RGN epP **sP 14 24 26.4 -2.2**
PMOR Pomariorio Ree 70.63 167 eP P 14 24 24.7 +13
comp=Z,533nm,1.4s
PMOR Pomariorio Ree 70.63 167 eT T 15 40 39.6
comp=Z,605nm,0.3s
AB31 Akbulak array 70.63 333 iP **P 14 24 12.1 +0.2**
AB31 pmax pmax
comp=Z,332nm,1.1s
ABKAR Akbulak array 70.63 333 eP **P 14 24 12.3 +0.4**
STNC Stoke 70.72 14⇑ eP **P 14 24 13.0 +0.6**
STNC AMB AMB 14 24 14.1
comp=Z,379nm,1.1s
IWEX Carrickbyrne, 70.73 17⇑ eP **P 14 24 12.8 +0.3**
RABL Rabaul 70.75 231 eP **P 14 24 12.4 -0.7**
comp=Z,108nm,1.0s
BOLP Bolinao 70.75 271 eP **P 14 24 12.7 -0.4**
FOEL Foel Wylfa 70.77 14⇑ eP **P 14 24 13.3 +0.5**
FOEL AMB AMB 14 24 14.8
comp=Z,454nm,1.1s
FOEL AMS AMS 14 54 17.9
comp=Z,2μm,25.3s
VAH Vaihoa 70.90 167 eP P 14 24 26.0 +12
comp=Z,548nm,1.2s
VAH Vaihoa 70.90 167 eT T 15 40 59.1
comp=Z,44nm,0.3s
MANU Manus Island 71.08 236 eP **P 14 24 15.2 +0.2**
comp=Z,62nm,0.9s
HLM1 Long Mynd 71.18 14⇑ eP **P 14 24 15.4 +0.2**
HLM1 AMB AMB 14 24 16.6
comp=Z,209nm,1.4s
HLM1 AMS AMS 14 54 20.3
comp=Z,2μm,23.5s
SUW Suwalki 71.23 358 iP **P 14 24 14.9 -0.5**
SUW e 14 24 31.8
SUW LMZ LR 14 52 40.3
comp=Z,2μm,26.3s
SUW Suwalki 71.23 358⇑ iP **P 14 24 14.9 -0.5**
SUW e 14 24 31.8
SCZP Santa Cruz 71.23 271 eP **P 14 24 15.8 -0.3**
GQP Guinayangan 71.27 267⇑ eP **P 14 24 15.9 -0.4**
MTDJ Mount Denham 71.30 85 eP **P 14 24 16.5 -0.1**
comp=Z,268nm,0.9s
GTBY Guantanamo Bay 71.33 82 eP **P 14 24 16.0 -0.6**
comp=Z,124nm,0.9s
GTBY LR LR
comp=Z,3μm,22.0s
TKM2 Tokmak 2 71.34 320 eP **P 14 24 17.3 +0.7**
TKM2 pmax pmax
comp=Z,210nm,1.1s
TKM2 Tokmak 2 71.34 320 eP **P 14 24 17.3 +0.7**
comp=Z,214nm,1.1s
LPW Lampeter 71.40 15⇑ eP **P 14 24 16.5 0.0**
LPW AMB AMB 14 24 17.4
comp=Z,87nm,1.3s
LPW AMS AMS 14 53 01.1
comp=Z,1μm,27.9s
LPSR Galich'ya Gora 71.47 348 eP **P 14 24 16.4 -0.6**
LPSR e 14 24 16.7
LPSR e 14 24 32.9
LPSR pmax pmax
comp=Z,270nm,1.0s
LQP Lukban 71.63 268⇓ eP **P 14 24 19.7 +1.1**
MCH1 Michaelchurch 71.67 14⇑ eP **P 14 24 18.6 +0.4**
MCH1 AMB AMB 14 24 19.5
comp=Z,279nm,1.3s
MCH1 AMS AMS 14 54 57.2
comp=Z,2μm,20.8s
FRU Bishkek 71.78 321⇑ iP **P 14 24 19.0 0.0**
FRU i 14 24 35.0
FRU e 14 27 04.0
FRU eS **S 14 33 38.0 +1.9**
FRU pmax pmax
comp=Z,850nm,2.0s
MONM Monmouth 71.85 14⇑ eP **P 14 24 19.8 +0.5**
MONM AMB AMB 14 24 20.7
comp=Z,236nm,1.3s
MONM AMS AMS 14 55 03.3
comp=Z,2μm,24.5s
SSW Stow on the Wo 71.86 14⇑ eP **P 14 24 20.3 +1.0**
BOAC Boac 71.98 268 eP **P 14 24 20.9 +0.4**
BOAC eS **pP 14 24 38.0 +5.3**
AAK Ala-Archa 71.99 321 P **P 14 24 20.9 +0.4**
AAK pmax pmax
comp=Z,201nm,1.2s
AAK Ala-Archa 71.99 321 eP **P 14 24 21.2 +0.8**
comp=Z,203nm,1.1s
AAK LR LR
comp=Z,7μm,20.0s
STRD Stroud 72.01 14⇑ eP **P 14 24 20.4 +0.2**
STRD AMB AMB 14 24 22.3
comp=Z,534nm,1.5s
STRD AMS AMS 14 54 43.7
comp=Z,2μm,24.6s
PLP Palo 72.03 264⇓ eP **P 14 24 19.9 -0.9**
OLDB Oldbury-Upon-S 72.06 14⇑ eP **P 14 24 20.6 +0.1**
OLDB AMB AMB 14 24 21.8
comp=Z,236nm,1.2s
OLDB AMS AMS 14 54 56.6
comp=Z,2μm,23.0s
EKS2 Erkin-Say 72.23 321 eP **P 14 24 22.6 +0.7**
EKS2 pmax pmax
comp=Z,240nm,1.2s
EKS2 Erkin-Say 72.23 321 eP **P 14 24 22.6 +0.7**
comp=Z,238nm,1.2s
EKS2 LR LR
comp=Z,9μm,19.0s
SKP1 Kophill 72.24 13⇑ eP **P 14 24 21.7 +0.1**
HNR Honiara 72.26 221 LR LR 14 50 01.2
comp=Z,882nm,21.9s,baz=18,slow=31
SWN1 Swindon 72.31 14⇑ eP **P 14 24 22.6 +0.6**
SWN1 AMB AMB 14 24 23.7
comp=Z,431nm,1.1s
GRTK Grand Turk 72.33 78 eP **P 14 24 22.8 +0.3**
GRTK epP **pP 14 24 34.5 -0.2**
GRTK LR LR
comp=Z,3μm,19.0s
VORR Voronezh 72.35 347⇓ iP **P 14 24 20.0 -2.2**
VORR pmax pmax
comp=Z,500nm,1.6s
HTL Hartland 72.43 16⇑ eP **P 14 24 23.3 +0.6**
HTL AMB AMB 14 24 24.2
comp=Z,116nm,1.1s
HTL AMS AMS 14 54 11.7
comp=Z,1μm,22.2s
VRH Novokhopyorsk 72.47 346 eP **P 14 24 22.1 -0.8**
VRH e 14 24 22.3
VRH e 14 24 38.9
VRH pmax pmax
comp=Z,170nm,0.9s
VRH MLR MLR
comp=Z,2μm,19.0s
WOL Wolverton 72.59 13⇑ eP **P 14 24 24.2 +0.5**
WOL AMB AMB 14 24 25.2
comp=Z,485nm,1.1s
VSR Storozhevoye 72.80 347 eP **P 14 24 24.5 -0.4**
VSR e 14 24 24.8
VSR e 14 24 41.2
VSR pmax pmax
comp=Z,220nm,0.6s
VSR MLR MLR
comp=Z,3μm,25.0s
WTSB Winterswijk 72.80 8 eP **P 14 24 25.3 +0.4**
comp=Z,349nm,1.0s
WTSB epP **PcP 14 24 43.0 +1.1**
MNAS Manas 72.84 322 P **P 14 24 25.7 +0.2**
MNAS pmax pmax
comp=Z,279nm,1.2s
PPT Papeete 72.96 169 LR LR 14 49 08.2
comp=Z,1μm,21.1s,baz=17,slow=30
TIAR Tiarei 72.98 169 eP P 14 24 38.6 +12
comp=Z,75nm,1.1s
TIAR Tiarei 72.98 169 eT T 15 43 36.7
comp=Z,57nm,0.3s
PPT2 Papeete2 72.98 169 eP P 14 24 38.7 +12
comp=Z,198nm,1.4s
PPT2 eS **SKiKP 14 33 58.3 +2.9**
comp=Z,4μm,34.8s
PPT2 eLQ LQ 14 42 52.9
comp=Z,2μm,33.0s
PPT2 eLR LR 14 46 47.5
comp=Z,4μm,24.2s,baz=347
PPT2 Papeete2 72.98 169 eT T 15 43 37.3
comp=Z,14nm,0.3s
RCP Roxas 72.99 266⇑ eP **P 14 24 26.9 +0.4**
KK31 Karatay Array 73.00 323 iP **P 14 24 26.2 -0.1**
KK31 pmax pmax
comp=Z,177nm,1.0s
KKAR Karatay Array 73.00 323 eP **P 14 24 26.5 +0.2**
KKAR Karatay Array 73.00 323 eP **P 14 24 26.5 +0.2**
ELSH Elham, Standar 73.05 12⇑ eP **P 14 24 26.7 +0.4**
ELSH AMB AMB 14 24 27.6
comp=Z,313nm,1.1s
PAE Paea 73.05 169 eP P 14 24 38.9 +12
comp=Z,53nm,1.3s
PAE Paea 73.05 169 eT T 15 43 42.5
comp=Z,9.0nm,0.4s
DYA Yadsworthy 73.06 15⇑ eP **P 14 24 26.3 -0.2**
DYA AMB AMB 14 24 27.6
comp=Z,268nm,1.2s

DYA					AMS	AMS	14 54 13.7
	comp=Z,2μm,26.5s						
DYA	**Yadsworthy**	**73.06**	**15**	*e*P	**P**	**P**	**14 24 27.5 +1.0**
CCA1	**Carnmenellis**	**73.09**	**16⇑**	*e*P	**P**	**P**	**14 24 27.2 +0.6**
CCA1					AMB	AMB	14 24 28.1
	comp=Z,260nm,1.0s						
CCA1					AMS	AMS	14 56 50.7
	comp=Z,2μm,21.7s						
TVO	**Taravao**	**73.21**	**169**	*e*P	P	P	14 24 40.2 +13
	comp=Z,86nm,1.3s						
TVO	**Taravao**	**73.21**	**169**	*e*T	T	T	15 43 54.0
	comp=Z,13nm,0.3s						
HMNX	**Herstmonceux**	**73.22**	**13⇑**	*e*P	**P**	**P**	**14 24 28.1 +0.7**
HMNX					AMB	AMB	14 24 28.9
	comp=Z,229nm,1.2s						
HMNX					AMS	AMS	14 52 17.1
	comp=Z,999nm,27.9s						
JTS	**JuntasAbangare**	**73.39**	**96**	*e*P	**P**	**P**	**14 24 28.2 -0.8**
JTS					MLR	MLR	
	comp=Z,980nm,19.0s						
JTS	**JuntasAbangare**	**73.39**	**96**	*e*P	**P**	**P**	**14 24 28.2 -0.8**
JTS					LR	LR	
	comp=Z,980nm,19.0s						
BEL	**Belsk**	**73.45**	**359**	*e*P	**P**	**P**	**14 24 29.3 +0.6**
BEL				*e*			14 24 46.2
BEL					LMZ	LR	14 53 32.4
	comp=Z,2μm,25.2s						
BEL	**Belsk**	**73.45**	**359⇑**	*e*P	**P**	**P**	**14 24 29.3 +0.6**
BEL				*e*			14 24 46.2
KMI	**Kunming**	**73.46**	**290**	P	**P**	**P**	**14 24 29.6 +0.1**
KMI				pP	pP	pP	14 24 41.6 -0.1
KMI				sP	PcP	PcP	14 24 45.5 0.0
KMI				PP	**PP**	**PP**	**14 27 13.8 +0.6**
KMI				S	**S**	**S**	**14 33 52.0 -4.1**
KMI				sS	sS	sS	14 34 13.6 -2.8
KMI				pmax	pmax		
	comp=Z,89nm,1.3s						
KMI				pmax	pmax		
	comp=Z,820nm,3.7s						
KMI				LR	LR		
	comp=Z,1μm,20.2s						
KMI				LR	LR		
	comp=Z,1μm,21.4s						
KMI				LR	LR		
	comp=Z,2μm,22.6s						
BRLS	**Borolday**	**73.56**	**324**	*i* P	**P**	**P**	**14 24 28.3 -1.3**
	comp=Z,176nm,1.1s						
BRLS				*i* S	**SKiKP**	**SKiKP**	**14 33 56.1 +0.2**
BRLS				LR	LR	LR	14 57 30.2
	comp=Z,924nm,16.2s						
CLL	**Collm**	**73.84**	**4⇑**	*i*P	**P**	**P**	**14 24 31.2 +0.1**
	comp=Z,220nm,1.0s						
CLL				*i*			14 24 44.0
CLL				*i*			14 24 48.6
	comp=Z,331nm,1.3s						
CLL				*e*S	**S**	**S**	**14 34 00.0 +0.8**
CLL				*e*			14 34 20.0
CLL				*e*PPS	PPS	PPS	14 35 37.0
CLL				*e*SS	SS	SS	14 39 00.0 +18
CLL				*e*SSS	SSS	SSS	14 42 30.0
CLL				*e*SSSS			14 43 42.0
CLL				*e*PKPPKPd	**P'P'df**	**P'P'df**	**14 52 06.0 -4.7**
CLL				*e*			14 52 18.0
CLL				LmV			15 04 00.0
	comp=Z,900nm,21.1s						
CLL	**Collm**	**73.84**	**4⇑**	*i*P	**P**	**P**	**14 24 31.2 +0.1**
CLL				*i*			14 24 48.6
CLL				*e*S	**S**	**S**	**14 34 00.0 +0.8**
CLL				pmax	pmax		
	comp=Z,220nm,1.0s						
CLL	**Collm**	**73.84**	**4**	*e*P	**P**	**P**	**14 24 29.8 -1.3**
BEBN	**Eben Emael**	**73.87**	**9**	P	**P**	**P**	**14 24 31.6 +0.4**
	comp=Z,47nm,1.7s						
BEBN				XP	**sP**	**sP**	**14 24 48.3 +0.2**
HGN	**Heimansgroeve**	**73.92**	**9**	*e*P	**P**	**P**	**14 24 31.9 +0.4**
	comp=Z,318nm,1.2s						
HGN				*e*pP	**sP**	**sP**	**14 24 49.5 +1.1**
IUG	**Iuzhnay**	**74.01**	**323**	*i* P	**P**	**P**	**14 24 30.3 -2.1**
	comp=Z,3μm,1.1s						
IUG				LR	LR	LR	14 58 03.7
SNF	**Seneffe**	**74.02**	**10**	P	**P**	**P**	**14 24 32.7 +0.6**
SNF				XP	**sP**	**sP**	**14 24 50.1 +1.1**
PAPH	**Port-au-Prince**	**74.05**	**81**	*e*P	**P**	**P**	**14 24 33.8 +1.1**
MEM	**Membach**	**74.08**	**9**	P	**P**	**P**	**14 24 33.0 +0.5**
	comp=Z,127nm,1.3s						
MEM				XP	**sP**	**sP**	**14 24 50.5 +1.1**
KSH	**Kashi**	**74.14**	**318**	P	**P**	**P**	**14 24 37.3 +4.1**
KSH				*e*pP	sP	sP	14 24 50.5 +0.4
KSH				*e*PcP	**PcP**	**PcP**	**14 24 51.5 +3.4**
KSH				*e*sP	pP	pP	14 24 55.9 +10
KSH				S	**S**	**S**	**14 34 08.1 +4.9**
KSH				SKS	**SKKSac**	**SKKSac**	**14 34 37.6 0.0**
KSH				ScS	**ScS**	**ScS**	**14 34 42.8 +2.6**
KSH				pmax	pmax		
	comp=Z,470nm,1.0s						
KSH				LR	LR		
	comp=Z,3μm,15.5s						
KSH				LR	LR		
	comp=Z,1μm,16.0s						
KSH				LR	LR		
	comp=Z,7μm,20.8s						
BCLA	**Clavier**	**74.21**	**9**	P	**P**	**P**	**14 24 33.7 +0.5**
	comp=Z,110nm,1.6s						
BCLA				XP	**sP**	**sP**	**14 24 51.0 +0.9**
SDDR	**Presa de Saban**	**74.25**	**79**	*e*P	**P**	**P**	**14 24 33.7 -0.3**
	comp=Z,216nm,0.8s						
AKASG	**Malin Array Be**	**74.27**	**354**	P	**P**	**P**	**14 24 33.4 -0.2**
	comp=Z,266nm,0.8s,baz=9.0,slow=5.9,SNR=224						
AKASG				PKPPKP	P'P'df		14 52 01.8 -8.2
	comp=Z,0.7nm,0.5s,baz=207,slow=1.0,SNR=5.3						
AKASG				LR	LR		14 57 22.1
	comp=Z,2μm,21.8s,baz=20,slow=36						
AKBB	**Malin Array Si**	**74.27**	**354**	*e*P	**P**	**P**	**14 24 33.1 -0.4**
AKBB	**Malin Array Si**	**74.27**	**354**	*e*P	**P**	**P**	**14 24 33.1 -0.4**
KIEV	**Kiev**	**74.28**	**354**	*c i*P	**P**	**P**	**14 24 33.1 -0.5**
KIEV				pmax	pmax		
	comp=Z,607nm,1.4s						
KIEV	**Kiev**	**74.28**	**354**	*e*P	**P**	**P**	**14 24 33.0 -0.5**
KIEV				LR	LR		
	comp=Z,2μm,19.0s						
AK11	**Malin Array Si**	**74.30**	**354**	*e*P	**P**	**P**	**14 24 33.0 -0.7**
BRG	**Berggiesshubel**	**74.32**	**4⇑**	*i*P	**P**	**P**	**14 24 34.2 +0.4**
	comp=Z,233nm,1.1s						
BRG				*i* pP	**pP**	**pP**	**14 24 45.1 -0.9**
	comp=Z,83nm,1.2s						
BRG				*i* sP	**sP**	**sP**	**14 24 51.7 +1.0**
	comp=Z,349nm,1.3s						
BRG	**Berggiesshubel**	**74.32**	**4⇑**	*i*P	**P**	**P**	**14 24 34.2 +0.4**
BRG				*i* *SP	**sP**	**sP**	**14 24 51.7 +1.0**
BRG				pmax	pmax		
	comp=Z,233nm,1.1s						
BRG				MLR	MLR		
	comp=E,872nm,25.5s						
BRG				MLR	MLR		
	comp=Z,1μm,25.3s						
QIZ	**Qiongzhong**	**74.39**	**281**	P	**P**	**P**	**14 24 35.6 +0.8**
QIZ				S	**S**	**S**	**14 34 07.6 +1.3**
QIZ				pmax	pmax		
	comp=Z,67nm,1.2s						
KSP	**Ksiaz**	**74.41**	**2**	*e*P	**P**	**P**	**14 24 34.6 +0.2**
KSP				*e*			14 24 51.8
KSP				LMZ	LR	LR	14 49 43.8
	comp=Z,2μm,41.3s						
KSP	**Ksiaz**	**74.41**	**2⇑**	*e*P	**P**	**P**	**14 24 34.6 +0.2**
KSP				*e*			14 24 51.8
DOU	**Dourbes**	**74.46**	**10**	P	**P**	**P**	**14 24 35.0 +0.3**
	comp=Z,90nm,1.5s						
DOU				XP	**sP**	**sP**	**14 24 52.8 +1.2**
JQE	**Queens East**	**74.54**	**14⇑**	*i*P	**P**	**P**	**14 24 35.2 +0.1**
JQE				⇑*e*P	**P**	**P**	**14 24 35.7 +0.5**
JRS	**Jersey**	**74.54**	**14⇑**	*e*P	**P**	**P**	**14 24 35.5 +0.4**
PVCC	**Panska Ves**	**74.68**	**3**	*e*P	**P**	**P**	**14 24 36.8 +0.8**
PVCC				*e*pP	**PcP**	**PcP**	**14 24 50.3 +0.2**
PVCC				*e*sP	**sP**	**sP**	**14 24 53.8 +0.9**
PVCC				AMS	AMS		15 04 40.0
	comp=Z,900nm,21.2s						
PVCC	**Panska Ves**	**74.68**	**3**	*e*P	**P**	**P**	**14 24 36.8 +0.8**
PVCC				*e*PP	**PcP**	**PcP**	**14 24 50.3 +0.2**
PVCC				MLR	MLR		
	comp=Z,900nm,21.2s						
UPC	**Upice**	**74.74**	**2**	*e*P	**P**	**P**	**14 24 36.8 +0.5**
UPC				*e*pP	**pP**	**pP**	**14 24 48.4 -0.2**
UPC				*e*sP	**sP**	**sP**	**14 24 54.1 +0.9**
UPC	**Upice**	**74.74**	**2**	*e*P	**P**	**P**	**14 24 36.8 +0.5**
UPC				*e*SP	**sP**	**sP**	**14 24 54.1 +0.9**
MSVF	**Nonsavu**	**74.78**	**201**	*e*P	**P**	**P**	**14 24 37.7 +0.8**
MSVF				pmax	pmax		
	comp=Z,120nm,1.0s						
MSVF	**Nonsavu**	**74.78**	**201**	*e*P	**P**	**P**	**14 24 37.7 +0.8**
	comp=Z,120nm,1.0s						
MSVF				LR	LR		
	comp=Z,2μm,20.0s						
JAY	**Jayapura**	**74.78**	**242**	P	**P**	**P**	**14 24 38.0 +1.0**
	comp=Z,77nm,1.3s,comp=Z,1μm						
NKC	**Novy Kostel**	**74.89**	**5**	*e*P	**P**	**P**	**14 24 38.1 +0.9**
NKC				*e*pP	**pP**	**pP**	**14 24 50.1 +0.6**
NKC				*e*sP	**sP**	**sP**	**14 24 54.9 +0.8**
NKC	**Novy Kostel**	**74.89**	**5**	*e*P	**P**	**P**	**14 24 38.1 +0.9**
NKC				*e*PP	**pP**	**pP**	**14 24 50.1 +0.6**
DPC	**Dobruska-Polom**	**74.91**	**2**	*e*P	**P**	**P**	**14 24 38.0 +0.7**
DPC				*e*pP	**pP**	**pP**	**14 24 50.3 +0.7**
DPC				*e*sP	**sP**	**sP**	**14 24 55.4 +1.2**
DPC				AMS	AMS		15 03 30.0
	comp=Z,1μm,20.2s						
DPC	**Dobruska-Polom**	**74.91**	**2**	*e*P	**P**	**P**	**14 24 38.0 +0.7**
DPC				*e*PP	**pP**	**pP**	**14 24 50.3 +0.7**
DPC				MLR	MLR		
	comp=Z,1μm,20.2s						
DAV	**Davao City (W)**	**75.01**	**261⇑**	*e*P	**P**	**P**	**14 24 37.6 -0.8**
DAV	**Davao City (W)**	**75.01**	**261**	P	**P**	**P**	**14 24 39.6 +1.2**
	SNR=7.2						
DAV	**Davao City (W)**	**75.01**	**261**	P	**P**	**P**	**14 24 39.6 +1.2**
	SNR=7.2						
DAV	**Davao City (W)**	**75.01**	**261**	PFAKE			14 24 50.0 +12
DAV				LR	LR		
	comp=Z,631nm,21.0s						
WLF	**Walferdange**	**75.03**	**9**	P	**P**	**P**	**14 24 39.2 +1.2**
	comp=Z,192nm,1.4s						
WLF				XP	**PcP**	**PcP**	**14 24 52.4 +0.8**
WLF	**Walferdange**	**75.03**	**9**	*e*P	**P**	**P**	**14 24 38.9 +0.9**
WLF	**Walferdange**	**75.03**	**9**	*e*P	**P**	**P**	**14 24 38.9 +0.9**
OJC	**Ojcow**	**75.07**	**360**	*e*P	**P**	**P**	**14 24 38.6 +0.4**
OJC				*e*			14 24 55.3
OJC				LMZ	LR	LR	14 54 53.1
	comp=Z,2μm,25.6s						
OJC	**Ojcow**	**75.07**	**360⇑**	*e*P	**P**	**P**	**14 24 38.6 +0.4**
OJC				*e*			14 24 55.3
OJC	**Ojcow**	**75.07**	**360**	*e*P	**P**	**P**	**14 24 38.4 +0.1**
	comp=Z,126nm,0.9s						
GENI	**Genyem**	**75.12**	**243**	P	**P**	**P**	**14 24 40.2 +1.3**
	comp=Z,155nm,1.7s,comp=Z,3μm						
KRLC	**Kraliky**	**75.19**	**2**	*e*P	**P**	**P**	**14 24 39.5 +0.5**
KRLC				*e*pP	**pP**	**pP**	**14 24 51.4 +0.2**
KRLC				*e*sP	**sP**	**sP**	**14 24 57.2 +1.3**
KRLC	**Kraliky**	**75.19**	**2**	*e*P	**P**	**P**	**14 24 39.5 +0.5**
KRLC				*e*PP	**pP**	**pP**	**14 24 51.4 +0.2**
RAC	**Raciborz**	**75.20**	**1**	*e*P	**P**	**P**	**14 24 39.9 +0.9**
PRU	**Pruhonice**	**75.22**	**3**	*e*P	**P**	**P**	**14 24 39.5 +0.4**
PRU				*e*pP	**pP**	**pP**	**14 24 51.8 +0.5**
PRU				*e*sP	**sP**	**sP**	**14 24 57.0 +1.0**
PRU				*e*x	x	x	14 25 02.8
PRU	**Pruhonice**	**75.22**	**3**	*e*P	**P**	**P**	**14 24 39.5 +0.4**
PRU				*e*PP	**pP**	**pP**	**14 24 51.8 +0.5**
GOPC	**GO Pecny, Ondr**	**75.30**	**3**	*e*P	**P**	**P**	**14 24 40.2 +0.6**
GOPC				*e*pP	**PcP**	**PcP**	**14 24 53.1 +0.3**
GOPC				*e*sP	**sP**	**sP**	**14 24 57.6 +1.1**
GOPC				AMS	AMS		15 04 30.0
	comp=Z,1μm,17.6s						
GOPC	**GO Pecny, Ondr**	**75.30**	**3**	*e*P	**P**	**P**	**14 24 40.2 +0.6**
GOPC				*e*PP	**PcP**	**PcP**	**14 24 53.1 +0.3**
GOPC				MLR	MLR		
	comp=Z,1μm,17.6s						
GRFO	**Grafenberg**	**75.37**	**6**	*e*P	**P**	**P**	**14 24 40.9 +0.9**
GRFO	**Grafenberg**	**75.37**	**6**	*e*P	**P**	**P**	**14 24 40.9 +0.9**
LVV	**L'vov**	**75.40**	**357**	*d i*P	**P**	**P**	**14 24 40.0 -0.1**
LVV				*e*			14 24 57.2
LVV				*e*			14 27 25.4
LVV				*e*S	**S**	**S**	**14 34 12.8 -3.8**
LVV				*e*PS	**PnS**	**PnS**	**14 35 02.8 +6.9**
LVV				*e*SS	SS	SS	14 39 17.0 +11
OKC	**Ostrava-Krasne**	**75.45**	**1**	*e*P	**P**	**P**	**14 24 40.9 +0.5**
OKC				*e*sP	**sP**	**sP**	**14 24 58.3 +1.0**
OKC	**Ostrava-Krasne**	**75.45**	**1**	*e*P	**P**	**P**	**14 24 40.9 +0.5**
OKC				*e*SP	**sP**	**sP**	**14 24 58.3 +1.0**
MORC	**Moravsky Berou**	**75.50**	**1⇓**	*i*P	**P**	**P**	**14 24 41.9 +1.1**
MORC	**Moravsky Berou**	**75.50**	**1**	*e*P	**P**	**P**	**14 24 41.1 +0.3**
MORC	**Moravsky Berou**	**75.50**	**1**	*e*P	**P**	**P**	**14 24 41.1 +0.3**
KWP	**Kalwaria Pacla**	**75.62**	**358**	*i* P	**P**	**P**	**14 24 42.2 +0.8**
KWP				*e*			14 24 59.1
KWP				LMZ	LR	LR	14 55 24.8
	comp=Z,3μm,25.6s						
KWP	**Kalwaria Pacla**	**75.62**	**358⇑**	*i*P	**P**	**P**	**14 24 42.4 +1.0**
KWP	**Kalwaria Pacla**	**75.62**	**358⇑**	*i*P	**P**	**P**	**14 24 42.2 +0.8**
KWP				*e*			14 24 59.1
LSA	**Lhasa**	**75.74**	**302**	P	**P**	**P**	**14 24 44.7 +1.7**
LSA				S	**S**	**S**	**14 34 19.5 -2.5**
LSA				LR	LR		
	comp=Z,460nm,21.5s						
LSA				LR	LR		
	comp=Z,940nm,20.2s						
LSA				LR	LR		
	comp=Z,1μm,25.4s						
LSA	**Lhasa**	**75.74**	**302**	*e*P	**P**	**P**	**14 24 43.9 +0.9**
LSA				pmax	pmax		
	comp=Z,452nm,1.0s						
LSA				MLR	MLR		
	comp=Z,1μm,22.0s						
LSA	**Lhasa**	**75.74**	**302**	*e*P	**P**	**P**	**14 24 43.9 +0.9**
	comp=Z,452nm,1.0s						
LSA				LR	LR		
	comp=Z,1μm,22.0s						
LANF	**Langenberg**	**75.85**	**8⇑**	*e*P	**P**	**P**	**14 24 43.6 +0.9**
STHS	**Stebnicka Huta**	**75.86**	**359**	*e*P	**P**	**P**	**14 24 44.1 +1.3**
STHS				*e*			14 25 02.0
STHS				pmax	pmax		
	comp=Z,246nm,0.9s						
STHS	**Stebnicka Huta**	**75.86**	**359**	*e*P	**P**	**P**	**14 24 44.1 +1.3**
STHS				*e*			14 25 02.0
NIE	**Niedzica**	**75.87**	**359**	*e*P	**P**	**P**	**14 24 43.7 +0.8**
NIE				*e*			14 25 00.8
NIE				LMZ	LR	LR	14 55 21.7
	comp=Z,2μm,24.8s						
NIE	**Niedzica**	**75.87**	**359⇑**	*e*P	**P**	**P**	**14 24 43.7 +0.8**
NIE				*e*			14 25 00.8
TREC	**Trest**	**75.94**	**3**	*e*pP	**pP**	**pP**	**14 24 55.9 +0.4**
TREC				*e*sP	sP	sP	14 25 01.1 +0.9
TREC				AMS	AMS		15 08 10.0
	comp=Z,1μm,16.3s						
VRAC	**Vranov**	**75.95**	**2⇓**	*i*P	**P**	**P**	**14 24 44.5 +1.2**
RAR	**Rarotonga**	**75.99**	**179**	LR	LR	LR	14 51 37.8
	comp=Z,969nm,19.4s,baz=5.5,slow=30						
KHC	**Kasperske Hory**	**76.04**	**4**	*e*P	**P**	**P**	**14 24 44.7 +0.8**
KHC				*e*pP	**pP**	**pP**	**14 24 56.9 +0.8**
KHC				*e*sP	**sP**	**sP**	**14 25 02.2 +1.4**
KHC				*e*PKPPKP	**P'P'df**	**P'P'df**	**14 52 02.8 -4.0**
KHC	**Kasperske Hory**	**76.04**	**4**	*e*P	**P**	**P**	**14 24 44.7 +0.8**
KHC				*e*PP	**pP**	**pP**	**14 24 56.9 +0.8**
KHC	**Kasperske Hory**	**76.04**	**4**	*e*P	**P**	**P**	**14 24 44.8 +0.8**
LANS	**Liptovska Anna**	**76.14**	**360**	*e*P	**P**	**P**	**14 24 46.0 +1.6**
LANS				*e*			14 25 02.7
LANS	**Liptovska Anna**	**76.14**	**360**	*e*P	**P**	**P**	**14 24 46.0 +1.6**
LANS				*e*			14 25 02.7
STU	**Stuttgart**	**76.16**	**7**	*e*P	**P**	**P**	**14 24 44.8 +0.3**
STU				*e*PP	**pP**	**pP**	**14 24 57.6 +0.9**
STU	**Stuttgart**	**76.16**	**7**	*e*P	**P**	**P**	**14 24 44.8 +0.3**
STU				*e*pP	**pP**	**pP**	**14 24 57.6 +0.9**
KOLS	**Kolonicke sedl**	**76.33**	**358**	*e*P	**P**	**P**	**14 24 46.2 +0.7**
KOLS				pmax	pmax		
	comp=Z,158nm,1.2s						
KOLS	**Kolonicke sedl**	**76.33**	**358**	*e*P	**P**	**P**	**14 24 46.2 +0.7**
KOLS				*e*L	L	L	14 55 35.3
GEC2	**GERESS Array S**	**76.33**	**4**	*e*P	**P**	**P**	**14 24 46.0 +0.4**
GEC2	**GERESS Array S**	**76.33**	**4**	*e*P	**P**	**P**	**14 24 46.0 +0.4**
GERES	**GERESS Array B**	**76.33**	**4**	P	**P**	**P**	**14 24 45.9 +0.4**
	comp=Z,76nm,0.9s,baz=0.0,slow=4.0,SNR=356						
GERES				PKKPbc	**PKKPbc**	**PKKPbc**	**14 43 55.0 -0.9**
	comp=Z,0.7nm,0.7s,baz=180,slow=5.2,SNR=3.7						
GERES				PKPPKP	**P'P'df**	**P'P'df**	**14 52 00.6 -5.8**
	comp=Z,1.4nm,0.8s,baz=174,slow=2.4,SNR=8.1						
GEA0	**GERESS Array S**	**76.34**	**4**	*e*P	**P**	**P**	**14 24 44.9 -0.7**
CRVS	**Cervenica-Dubn**	**76.37**	**359**	*e*P	**P**	**P**	**14 24 46.5 +0.8**
CRVS				*e*			14 25 03.9
CRVS	**Cervenica-Dubn**	**76.37**	**359**	*e*P	**P**	**P**	**14 24 46.5 +0.8**
CRVS				*e*			14 25 03.9
THEF	**They Montfort**	**76.44**	**9⇑**	*e*P	**P**	**P**	**14 24 47.1 +1.0**
BFO	**Black Forest**	**76.54**	**8**	*i* P	**P**	**P**	**14 24 47.1 +0.4**
BFO	**Black Forest**	**76.54**	**8**	*e*P	**P**	**P**	**14 24 46.9 +0.2**
BFO				LR	LR		
	comp=Z,1μm,20.0s						
ECH	**Echery**	**76.56**	**8⇑**	*e*P	**P**	**P**	**14 24 47.5 +0.7**
UZH	**Uzhgorod**	**76.63**	**358**	*e*P	**P**	**P**	**14 24 45.7 -1.4**
UZH				*e*			14 25 04.1
UZH				*e*			14 29 34.5
UZH				*e*S	**S**	**S**	**14 34 27.9 -2.3**
UZH				*e*			14 35 34.3
UZH				*e*			14 39 27.9
SMOL	**Smolenice**	**76.76**	**1**	*e*P	**P**	**P**	**14 24 49.5 +1.6**
SMOL				*e*			14 25 01.4
SMOL	**Smolenice**	**76.76**	**1**	*e*P	**P**	**P**	**14 24 49.5 +1.6**
SMOL				*e*			14 25 01.4
SMOL				*e*			14 25 06.7
VYHS	**Vyhne**	**76.80**	**0**	*e*P	**P**	**P**	**14 24 48.7 +0.6**
VYHS				*e*			14 25 06.4
VYHS				pmax	pmax		
	comp=Z,138nm,1.1s						
VYHS	**Vyhne**	**76.80**	**0**	*e*P	**P**	**P**	**14 24 48.7 +0.6**
VYHS				*e*			14 25 06.4
KECS	**Kecovo**	**76.80**	**359**	*e*P	**P**	**P**	**14 24 48.7 +0.6**
KECS				*e*			14 25 01.9
KECS				pmax	pmax		
	comp=Z,110nm,0.9s						
KECS	**Kecovo**	**76.80**	**359**	*e*P	**P**	**P**	**14 24 48.7 +0.6**
KECS				*e*			14 25 01.9
KECS				*e*			14 25 06.9
SORM	**Soroca**	**76.88**	**354⇓**	*i*P	**P**	**P**	**14 24 48.7 +0.2**
MOF	**Molkenrain**	**76.92**	**8⇑**	*e*P	**P**	**P**	**14 24 49.5 +0.6**
TRPA	**Tarpa**	**77.13**	**358**	*e*P	**P**	**P**	**14 24 50.5 +0.6**
BCIP	**Isla Barro Col**	**77.23**	**92**	*e*P	**P**	**P**	**14 24 50.1 -0.8**
BCIP				LR	LR	LR	
	comp=Z,980nm,20.0s						
BCIP	**Isla Barro Col**	**77.23**	**92**	*e*P	**P**	**P**	**14 24 49.4 -1.6**
CONA	**Conrad Observa**	**77.32**	**2**	*i* P	**P**	**P**	**14 24 52.1 +0.9**
	comp=Z,253nm,1.1s						
MOA	**Molln**	**77.35**	**4**	*i* P	**P**	**P**	**14 24 52.0 +0.7**
	comp=Z,81nm,1.1s,SNR=28						
PSZ	**Piszkesteto**	**77.37**	**360⇓**	*i*P	**P**	**P**	**14 24 53.3 +1.9**
PSZ	**Piszkesteto**	**77.37**	**360**	*e*P	**P**	**P**	**14 24 52.4 +1.0**
PSZ	**Piszkesteto**	**77.37**	**360**	*e*P	**P**	**P**	**14 24 52.3 +0.9**
PSZ	**Piszkesteto**	**77.37**	**360**	*e*P	**P**	**P**	**14 24 52.3 +0.9**
PSZ				LR	LR	LR	
	comp=Z,1μm,22.0s						
LOMF	**Lomont**	**77.39**	**9⇑**	*e*P	**P**	**P**	**14 24 52.3 +0.8**
DZET	**Dzherino**	**77.40**	**323**	P	**P**	**P**	**14 24 51.7 -0.1**
DZET				pmax	pmax		
	comp=Z,265nm,0.9s						
BUR08	**Bucovina Ar. S**	**77.53**	**356**	*e*P	**P**	**P**	**14 24 52.8 +0.4**
RETA	**Reutte**	**77.54**	**6**	*i* P	**P**	**P**	**14 24 53.1 +0.7**
	comp=Z,146nm,1.3s,SNR=37						
BMR	**Baia Mare**	**77.56**	**357⇑**	*i*P	**P**	**P**	**14 24 53.0 +0.6**
BURAR	**Bucovina Array**	**77.56**	**356⇑**	*i*P	**P**	**P**	**14 24 52.9 +0.4**
SOP	**Sopron**	**77.58**	**2**	*e*P	**P**	**P**	**14 24 53.6 +1.1**
PMG	**Port Moresby**	**77.63**	**233**	*c i*P	**P**	**P**	**14 24 52.8 -0.3**
PMG				pmax	pmax		
	comp=Z,438nm,1.2s						
PMG	**Port Moresby**	**77.63**	**233**	*e*P	**P**	**P**	**14 24 53.5 +0.4**
DAVA	**Damuels**	**77.69**	**7**	*i* P	**P**	**P**	**14 24 54.1 +0.8**
	comp=Z,60nm,1.0s,SNR=20						
MOTA	**Moosalm**	**77.70**	**6**	*i* P	**P**	**P**	**14 24 54.1 +0.7**
	comp=Z,257nm,1.0s,SNR=92						
PRAR	**RASCA**	**77.77**	**355⇓**	*i*P	**P**	**P**	**14 24 54.0 +0.4**
BUD	**Budapest**	**77.81**	**0⇑**	*e*P	**P**	**P**	**14 24 54.8 +1.1**
WTTA	**Wattenberg**	**77.82**	**5**	*i* P	**P**	**P**	**14 24 55.0 +0.9**
	comp=Z,238nm,1.2s,SNR=67						
SJG	**San Juan**	**77.83**	**76**	P	**P**	**P**	**14 24 53.4 -0.9**
	comp=Z,116nm,0.7s,baz=16,slow=2.5,SNR=43						
SJG	**San Juan**	**77.83**	**76**	*e*P	**P**	**P**	**14 24 53.7 -0.6**
SJG	**San Juan**	**77.83**	**76**	*e*P	**P**	**P**	**14 24 51.4 -2.9**
SQTA	**Sankt Quirin**	**77.83**	**6**	*i* P	**P**	**P**	**14 24 55.5 +1.4**
IAS	**Iasi**	**77.87**	**354⇑**	*i*P	**P**	**P**	**14 24 55.0 +0.9**
PGRA	**Graciosa**	**77.87**	**36**	*e*P	pP	pP	14 25 07.9 +1.3
	comp=Z,622nm,1.3s						
CSKK	**Cs‡kako**	**77.92**	**1⇓**	*e*P	**P**	**P**	**14 24 56.0 +1.6**
KIS	**Kishinev**	**77.99**	**353⇓**	*i*P	**P**	**P**	**14 24 55.0 +0.3**
	comp=Z,1μm,1.4s						
KIS	**Kishinev**	**77.99**	**353**	*i* PcP	**PcP**	**PcP**	**14 25 12.0 +7.6**
KIS				*e*S	**S**	**S**	**14 34 40.0 -4.9**
KIS				LRM	MLR	MLR	14 58 06.0
	comp=Z,2μm,20.0s						
KIS	**Kishinev**	**77.99**	**353⇑**	*i*P	**P**	**P**	**14 24 55.3 +0.6**
KIS	**Kishinev**	**77.99**	**353**	*κ i*P	**P**	**P**	**14 24 55.0 +0.3**
KIS				*i*			14 25 12.0
KIS				*e*S	**S**	**S**	**14 34 40.0 -4.9**
KIS				*e*			14 35 04.0
KIS				*e*			14 35 50.0
KIS				pmax	pmax		
	comp=Z,1μm,1.4s						
KIS		

ANN pmax pmax
comp=Z,192nm,1.3s
ANN MLR MLR
comp=Z,925nm,22.0s
SKNT Sakolnakorn 79.33 284 P **P** **14 25 02.4 -0.2**
comp=Z,606nm,1.2s,comp=Z,8µm
PETR Petresti 79.35 354 ⇓ *iP* **P** **14 25 04.0 +1.7**
KVAR Kislovodsk Arr 79.38 343 LR LR 15 04 06.3
comp=Z,2µm,21.5s,slow=39
KIV Kislovodsk 79.38 343 *i P* **P** **14 25 03.5 +0.9**
SNR=60
KIV Kislovodsk 79.38 343 *eP* **P** **14 25 03.3 +0.7**
KIV *eS* **S** **14 35 02.1 +2.0**
KIV pmax pmax
comp=Z,322nm,1.0s
KIV pmax pmax
comp=Z,389nm,5.7s
KIV MLR MLR
comp=Z,2µm,19.0s
KIV Kislovodsk 79.38 343 *eP* **P** **14 25 03.3 +0.7**
KIV LR LR
comp=Z,2µm,21.0s
GRN Grenoble 79.38 10⇑ *eP* **P** **14 25 03.7 +1.1**
GDM Grand'Maison 79.45 10⇑ *eP* **P** **14 25 04.1 +1.0**
GIUM Giurgiulesti 79.53 354 ⇓ *iP* **P** **14 25 04.4 +1.2**
TIM Timisoara 79.54 359 ⇓ *iP* **P** **14 25 04.4 +1.1**
FAKI Fak Fak 79.56 249 P **P** **14 25 03.9 +0.1**
comp=Z,228nm,1.1s,comp=Z,3µm
FAKI Fak Fak 79.56 249 *eP* **P** **14 25 03.5 -0.3**
KBZ Khabaz 79.56 343 P **P** **14 25 04.4 +1.0**
comp=Z,209nm,0.9s,baz=14,slow=1.5,SNR=248
KBZ PKKPbc **PKKPbc** **14 43 48.9 +0.2**
comp=Z,4.1nm,0.8s,baz=161,slow=0.8,SNR=8.7
KBZ PKPPKP **P'P'df** **14 51 55.7 -4.5**
comp=Z,2.4nm,0.9s,baz=124,slow=3.6,SNR=4.1
KBZ LR LR 15 04 03.7
comp=Z,2µm,21.8s,baz=344,slow=38
SIM Simferopol' 79.57 349 *c iP* **P** **14 25 03.9 +0.4**
SIM pmax pmax
comp=Z,121nm,1.0s
SIM MLR MLR
comp=Z,2µm,21.5s
SMRT St. Maarten 79.59 74 *eP* **P** **14 25 03.4 -0.6**
CMAI Chiengmai2 79.65 290 P **P** **14 25 04.7 +0.2**
comp=Z,663nm,1.1s
MLR Muntele Rosu 79.65 355 LR LR 15 05 55.0
comp=Z,302nm,18.3s,baz=352,slow=40
MLR Muntele Rosu 79.65 355 ⇑ *iP* **P** **14 25 04.6 +0.5**
MLR Muntele Rosu 79.65 355 *eP* **P** **14 25 04.8 +0.7**
MLR Muntele Rosu 79.65 355 *eP* **P** **14 25 04.8 +0.7**
BNI Bardonecchia 79.65 9 *eP* P 14 24 51.1 -13
BNI MLR MLR
comp=Z,1µm,20.0s
BNI Bardonecchia 79.65 9 *eP* P 14 24 51.1 -13
BNI LR LR
comp=Z,1µm,20.0s
BZS Buzias 79.66 358 ⇑ *iP* **P** **14 25 04.6 +0.6**
NCK Nalchik 79.67 342 *c iP* **P** **14 25 05.5 +1.4**
NCK pmax pmax
comp=Z,792nm,1.0s
GRER 79.71 355 ⇑ *iP* **P** **14 25 06.0 +1.8**
PSET Sete Cidades 79.72 35 *eP* **P** **14 25 05.3 +0.8**
comp=Z,321nm,1.0s
BOJS Bojanci 79.72 3⇑ *iP* **P** **14 25 04.6 +0.3**
VOIR 79.74 356 ⇓ *iP* **P** **14 25 05.7 +1.2**
GUN Gumba 79.77 304 *eP* **P** **14 25 05.6 +0.3**
comp=Z,2µm,1.0s
LOT Lotru 79.78 357 ⇓ *iP* **P** **14 25 05.1 +0.3**
SISC Sisak 79.79 2 P **P** **14 25 05.7 +1.0**
ARR Arges 79.83 356 ⇓ *iP* **P** **14 25 05.8 +0.8**
CMLA Cha da Macela 79.83 35 *eP* **P** **14 25 06.4 +1.3**
comp=Z,639nm,1.3s
CFR Carcaliu 79.84 354 ⇓ *iP* **P** **14 25 05.1 +0.2**
SABA Saba 79.85 74 *eP* **P** **14 25 05.3 -0.1**
OG22 Abries 79.91 9⇑ *eP* **P** **14 25 07.5 +1.9**
BART Pico Bartolome 79.94 34 *eP* **P** **14 25 06.1 +0.4**
comp=Z,418nm,1.1s
MOTC Monteria, Cord 79.94 89 *eP* **P** **14 25 05.4 -0.6**
MTUR Matau 79.95 356 ⇑ *iP* **P** **14 25 07.3 +1.6**
ISR Istrita 79.99 355 ⇑ *iP* **P** **14 25 06.1 +0.2**
NEY Neytrino 80.06 343 *c iP* **P** **14 25 07.3 +0.9**
SEUS St. Eustatius 80.09 74 *eP* **P** **14 25 06.3 -0.4**
SECR 80.10 355 ⇑ *iP* **P** **14 25 07.7 +1.3**
KKN Kakani 80.16 305 *eP* **P** **14 25 07.6 +0.4**
comp=Z,2µm,1.3s
PGOR Pogoanele 80.18 355 ⇑ *iP* **P** **14 25 08.1 +1.3**
SOC Sochi 80.21 345 *c iP* **P** **14 25 07.0 +0.1**
SOC *e* 14 28 09.7
SOC *e*PPP PPP 14 30 01.1
SOC *eS* **S** **14 35 12.1 +3.5**
SOC *eSS* **SS** **14 40 25.2 +6.8**
SOC pmax pmax
comp=Z,264nm,0.9s
SOC MLR MLR
comp=Z,3µm,20.0s
LBMI Labuha 80.26 255 P **P** **14 25 07.5 -0.1**
comp=Z,194nm,1.7s,comp=Z,3µm
GKN Gorkha 80.28 305 *eP* **P** **14 25 07.9 +0.1**
comp=Z,1µm,1.2s
PKIN Phulchoki 80.28 305 *eP* **P** **14 25 08.0 0.0**
comp=Z,612nm,1.0s
ZEI Tsey 80.30 342 *eP* **P** **14 25 08.2 +0.4**
ZEI *eS* **S** **14 35 08.8 -1.3**
ZEI pmax pmax
comp=Z,471nm,1.1s
ZEI pmax pmax
comp=N,424nm,1.0s
ZEI pmax pmax
comp=E,239nm,1.0s
DHRM DHARAMSHALA 80.32 314 *eP* **P** **14 25 08.4 +0.3**
GOLR 80.34 356 ⇑ *iP* **P** **14 25 09.2 +1.5**
DMN Daman 80.39 305 *eP* **P** **14 25 08.9 +0.4**
comp=E,1µm,1.2s
JOSI Joshimath 80.40 311 *eP* **P** **14 25 08.6 +0.1**
SULR 80.44 355 ⇓ *iP* **P** **14 25 09.5 +1.3**
AMRR Amara 80.46 354 ⇑ *iP* **P** **14 25 09.1 +0.9**
OSSF Osses 80.46 15⇑ *eP* **P** **14 25 08.6 +0.3**
LAMP Lampang 80.48 289 P **P** **14 25 08.9 +0.1**
comp=E,93nm,0.9s,comp=E,798nm
MDVR Moldovita 80.49 358 ⇑ *iP* **P** **14 25 09.1 +0.6**
KHON Khomkaen 80.50 285 P **P** **14 25 09.3 +0.4**
comp=E,172nm,1.1s,comp=E,2µm
GUDG Gudauri 80.51 341 P **P** **14 25 11.1 +2.2**
BLY Banja Luka 80.53 2⇑ *iP* **P** **14 25 09.0 +0.4**
TIRR Tirgusor 80.54 353 ⇓ *iP* **P** **14 25 09.7 +1.0**
TIRR Tirgusor 80.54 353 *eP* **P** **14 25 08.6 -0.1**
TIRR Tirgusor 80.54 353 *eP* **P** **14 25 08.6 -0.1**
ORDF Ordiarp 80.55 15⇑ *eP* **P** **14 25 08.9 +0.1**
ONI Oni 80.57 342 P **P** **14 25 10.2 +1.2**
ONI Oni 80.57 342 P **P** **14 25 10.2 +1.2**
SRE Strehaia 80.58 357 ⇓ *iP* **P** **14 25 10.1 +1.2**
UTTA Uttaradit 80.61 287 P **P** **14 25 09.5 +0.1**
comp=E,134nm,1.1s,comp=E,1µm
ANWB Willy Bob 80.61 73 *eP* **P** **14 25 09.7 +0.3**
ANWB LR LR
comp=Z,816nm,20.0s
CMMT Chiang Mai 80.61 289 P **P** **14 25 09.0 -0.5**
comp=Z,258nm,1.2s,comp=Z,4µm
CHTO Chiang Mai 80.61 289 P **P** **14 25 09.0 -0.5**
comp=Z,748nm,1.9s,comp=Z,16µm
CHTO Chiang Mai 80.61 289 *eP* **P** **14 25 09.1 -0.5**
CHTO Chiang Mai 80.61 289 P **P** **14 25 09.5 -0.1**
SNR=80
CHTO Chiang Mai 80.61 289 P **P** **14 25 09.5 -0.1**
SNR=80
CHTO Chiang Mai 80.61 289 *eP* **P** **14 25 09.1 -0.4**
CHTO LR LR
comp=Z,731nm,20.0s
HUMR Humele 80.65 356 ⇓ *iP* **P** **14 25 09.4 +0.1**
NVLJ Novalja 80.65 3 P **P** **14 25 09.6 +0.3**
PSMN Pico do Norte, 80.68 35 *eP* **P** **14 25 09.7 +0.1**
comp=Z,347nm,1.4s
CVDA Cernavoda 80.69 354 ⇑ *iP* **P** **14 25 10.8 +1.3**
UDBI Udbina 80.72 3 P **P** **14 25 10.2 +0.5**
LARF Larrau 80.72 15⇑ *eP* **P** **14 25 11.2 +1.4**
AUTN L'Aution 80.77 9⇑ *eP* **P** **14 25 11.8 +1.5**
PCAB Cabril 80.77 20 *eP* **P** **14 25 11.0 +0.9**
comp=Z,151nm,1.7s
REYF Montagne du Re 80.78 15⇑ *eP* **P** **14 25 10.0 -0.1**
DUS Dusheti 80.83 341 P **P** **14 25 14.5 +4.0**
DUS Dusheti 80.83 341 P **P** **14 25 14.5 +4.0**
VLC Villacollemand 80.83 7 *eP* **P** **14 25 10.6 +0.2**
MVIF Mont Vial 80.84 9 *eP* **P** **14 25 11.5 +0.9**
LABF Labassere 80.86 14⇑ *eP* **P** **14 25 10.3 -0.3**

LUCF Luceram 80.86 9 *eP* **P** **14 25 11.3 +0.7**
CMAR Chiang Mai Arr 80.91 289 P **P** **14 25 11.2 +0.1**
comp=Z,293nm,0.9s,baz=16,slow=5.4,SNR=885
CMAR PKiKP **PKiKP** **14 30 36.6 -0.9**
comp=Z,1.9nm,0.8s,baz=338,slow=1.1,SNR=6.3
CMAR PKKPbc **PKKPbc** **14 43 47.8 +2.1**
comp=Z,3.0nm,0.8s,baz=231,slow=3.9,SNR=15
CMAR Chiang Mai Arr 80.91 289 P **P** **14 25 11.2 +0.1**
CMAR pmax pmax
comp=Z,275nm,0.9s
RKT Rikitea 80.91 156 *eLR* LR 14 50 13.5
comp=Z,4µm,30.5s,baz=344
RKT Rikitea 80.91 156 *eT* T 15 53 22.7
comp=Z,10nm,0.3s
SMLA Simla 80.93 313 *eP* **P** **14 25 11.3 +0.3**
PBRG Braganca 80.94 20 *eP* **P** **14 25 11.6 +0.6**
comp=Z,166nm,1.8s
PBRG Braganca 80.94 20 *eLQ* LQ 14 48 27.8
PBRG *eLR* LR 14 52 08.6
comp=Z,1µm,18.0s
KOLN Koldanda 80.96 306 *eP* **P** **14 25 11.6 +0.1**
comp=Z,359nm,0.9s
PYUN Piuthan 80.96 307 *eP* **P** **14 25 11.6 +0.1**
comp=Z,4µm,1.5s
CALN Calern 80.96 9⇑ *eP* **P** **14 25 11.8 +0.6**
VIEF Viey 81.02 14⇑ *eP* **P** **14 25 12.4 +1.0**
REVF Revere 81.02 9⇑ *eP* **P** **14 25 12.0 +0.6**
DBBC Dabeiba 81.06 91 *eP* **P** **14 25 10.9 -1.1**
MELF Melles 81.13 14⇑ *eP* **P** **14 25 11.7 -0.3**
KBL Kabul 81.13 320 *eP* **P** **14 25 11.4 -0.9**
KBL Kabul 81.13 320 *eP* **P** **14 25 11.4 -0.9**
POLO Lamas de Olo 81.14 20 *eP* **P** **14 25 13.0 +0.8**
comp=Z,106nm,1.7s
POLO *epP* **pP** **14 25 25.7 +1.2**
POLO Lamas de Olo 81.14 20 *eLR* LR 14 52 01.1
comp=Z,750nm,20.0s
TBLG Delisi 81.17 341 P **P** **14 25 13.8 +1.6**
TBLG Delisi 81.17 341 P **P** **14 25 13.8 +1.6**
DIVS Divibare 81.19 360 P **P** **14 25 12.5 +0.2**
KKM Kota Kinabalu 81.19 268 *eP* **P** **14 25 13.5 +0.7**
KKM LR LR
comp=Z,2µm,21.0s
DDI Dehra Dun 81.25 312 *eP* **P** **14 25 13.3 +0.4**
PVRL Vila Real 81.25 20 *eP* **P** **14 25 13.9 +1.2**
comp=Z,278nm,1.4s
PVRL *epP* **pP** **14 25 26.6 +1.6**
LRDF Laroque-de-Fa 81.30 12⇑ *eP* **P** **14 25 13.6 +0.8**
SALF Salau 81.30 13 *eP* **P** **14 25 13.1 +0.2**
DGRG David-gareji 81.32 341 P **P** **14 25 15.0 +1.9**
DGRG David-gareji 81.32 341 P **P** **14 25 15.0 +1.9**
CARF Carcanieres 81.46 13⇑ *eP* **P** **14 25 14.4 +0.6**
MVO Moncorvo 81.50 20 *eP* **P** **14 25 14.8 +0.8**
comp=Z,218nm,1.4s
MVO *epP* **pP** **14 25 27.6 +1.3**
MVO *eS* **S** **14 35 18.9 -3.5**
MVO Moncorvo 81.50 20 *eLR* LR 14 52 39.9
comp=Z,1µm,22.0s
ZIMR 81.51 356 ⇓ *iP* **P** **14 25 14.7 +0.8**
GEYT Alibeck 81.61 330 P **P** **14 25 15.7 +1.1**
comp=Z,231nm,0.9s,baz=330,slow=5.1,SNR=308
GEYT PKKPbc **PKKPbc** **14 43 46.1 +2.0**
comp=Z,0.7nm,0.3s,baz=204,slow=11,SNR=3.6
GEYT LR LR 15 06 04.8
comp=Z,3µm,18.8s,baz=20,slow=39
FILF Fillols 81.67 13⇑ *eP* **P** **14 25 15.2 +0.3**
AKH Akhalkalaki 81.71 342 ⇑ *iP* **P** **14 25 16.5 +1.2**
AKH Akhalkalaki 81.71 342 P **P** **14 25 16.8 +1.5**
AKH Akhalkalaki 81.71 342 P **P** **14 25 16.8 +1.5**
MSAI Masohi 81.72 252 P **P** **14 25 16.2 +0.9**
comp=Z,33nm,1.1s,comp=Z,350nm
GDHS Morne Mazeau, 81.76 74 *eP* **P** **14 25 15.6 -0.1**
PVIS Viseu 81.76 21 *eP* **P** **14 25 16.2 +0.8**
comp=Z,275nm,1.8s
PVIS *epP* **pP** **14 25 29.1 +1.4**
VALF Valcebollere 81.76 13⇑ *eP* **P** **14 25 16.3 +0.8**
SJAF Saint Jean de 81.79 12⇑ *eP* **P** **14 25 15.9 +0.5**
SEG Port Louis 81.79 73 *eP* **P** **14 25 15.3 -0.4**
BGD Bogdanovka 81.83 342 P **P** **14 25 18.2 +2.2**
PRD Provadia 81.86 354 *i P* **P** **14 25 16.6 +0.9**
LZG Guadaloupe-1 81.86 74 *eP* **P** **14 25 15.9 -0.2**
MPEP Malo Peshtene 81.87 357 *i P* **P** **14 25 15.9 +0.1**
SZH Strazhica 81.87 355 *i P* **P** **14 25 15.7 -0.1**
PLE Pljevlja 81.96 0⇑ *iP* **P** **14 25 17.2 +0.7**
LKG Breislack 82.00 74 *eP* **P** **14 25 16.5 -0.6**
UPM Unac-Piva 82.09 0⇑ *iP* **P** **14 25 17.5 +0.3**
KKR Kurukshetra 82.09 312 *eP* **P** **14 25 16.9 -0.4**
HELC Santa Helena 82.12 91 *eP* **P** **14 25 16.1 -1.9**
MTE Manteigas 82.13 20 *eP* **P** **14 25 18.2 +0.9**
comp=Z,290nm,1.1s
MTE *epP* **pP** **14 25 31.1 +1.4**
MTE Manteigas 82.13 20 *eS* **S** **14 35 32.5 +3.6**
MTE Manteigas 82.13 20 *eLR* LR 14 52 50.9
comp=Z,1µm,24.0s
MTE Manteigas 82.13 20 *eP* **P** **14 25 18.2 +0.9**
MTE LR LR
comp=Z,1µm,22.0s
SANI Sanana 82.26 255 P **P** **14 25 19.4 +1.2**
comp=Z,220nm,1.2s,comp=Z,3µm
MGG Marie-Galante 82.29 73 *eP* **P** **14 25 18.4 0.0**
BRY Bratogost 82.39 1⇑ *iP* **P** **14 25 18.8 +0.1**
STON Ston 82.41 1 P **P** **14 25 18.4 -0.2**
IVA Berane 82.42 360 ⇑ *iP* **P** **14 25 19.5 +0.7**
BRRC Barranca, Sant 82.42 88 *eP* **P** **14 25 18.9 -0.1**
GRMC Gramalote, San 82.45 87 *eP* **P** **14 25 17.8 -1.6**
CBRI Barrientos, No 82.45 87 *eP* **P** **14 25 19.0 -0.5**
MRSI Marisa 82.46 260 P **P** **14 25 18.5 -0.7**
comp=Z,239nm,1.4s,comp=Z,5µm
NKY Niksic 82.48 0⇑ *iP* **P** **14 25 19.3 +0.1**
NKME Niksic 82.52 0⇑ *iP* **P** **14 25 19.4 +0.1**
NLAI Namlea 82.63 254 P **P** **14 25 20.8 +0.7**
comp=Z,151nm,1.1s,comp=Z,2µm
JMB Yambol 82.63 355 *i P* **P** **14 25 20.4 +0.6**
PGB Panagyurishte 82.66 356 *i P* **P** **14 25 20.4 +0.4**
PCBR Castelo Branco 82.69 21 *eP* **P** **14 25 20.6 +0.5**
comp=Z,273nm,1.0s
PCBR *epP* **pP** **14 25 33.5 +1.0**
PVY Plav 82.70 360 ⇑ *iP* **P** **14 25 20.6 +0.3**
GNI Garni 82.70 341 *i P* **P** **14 25 21.5 +1.0**
SNR=30
GNI Garni 82.70 341 *c iP* **P** **14 25 21.3 +0.9**
GNI pmax pmax
comp=Z,771nm,1.2s
GNI Garni 82.70 341 P **P** **14 25 22.5 +2.0**
SNR=27
GNI Garni 82.70 341 P **P** **14 25 22.5 +2.0**
SNR=27
GNI Garni 82.70 341 *eP* **P** **14 25 22.2 +1.8**
GNI LR LR
comp=Z,3µm,19.0s
PTOM Tomar 82.71 21 *eP* **P** **14 25 21.2 +0.9**
comp=Z,374nm,1.3s
PTOM *epP* **pP** **14 25 34.1 +1.5**
CEME Cevo 82.74 0⇑ *iP* **P** **14 25 20.5 0.0**
SDV Santo Domingo 82.75 85 P **P** **14 25 19.5 -1.5**
comp=Z,38nm,0.5s,baz=328,slow=4.0,SNR=17
SDV Santo Domingo 82.75 85 *eP* **P** **14 25 18.9 -2.1**
AQU L'Aquila 82.80 5 *eP* **P** **14 25 21.7 +0.9**
AQU L'Aquila 82.80 5 *eP* **P** **14 25 21.6 +0.9**
AQU LR LR
comp=Z,860nm,19.0s
DLPL La Plaine 82.81 74 *eP* **P** **14 25 20.1 -1.0**
DLPL La Plaine 82.81 74 *eP* **P** **14 25 20.3 -0.8**
PAMC Pamplona, Colo 82.81 88 *eP* **P** **14 25 19.8 -2.0**
SRAK Srakaew 82.82 284 P **P** **14 25 19.7 -1.4**
comp=Z,1µm,1.0s,comp=Z,11µm
HCY Herceg Novi 82.84 1⇑ *iP* **P** **14 25 20.5 -0.4**
PDG Podgorica 82.86 0⇓ *iP* **P** **14 25 21.8 +0.8**
PDG Podgorica 82.86 0 P **P** **14 25 21.1 +0.1**
TTG Podgorica 82.86 0⇑ *iP* **P** **14 25 21.3 +0.3**
TTG Podgorica 82.86 0 P **P** **14 25 21.1 +0.1**
TTG Podgorica 82.86 0 P **P** **14 25 21.1 +0.1**
BUM Brajici-Budva 82.99 0⇑ *iP* **P** **14 25 21.9 +0.1**
NORC Norcasia 83.01 90 *eP* **P** **14 25 19.8 -2.4**
RTK Rohtak 83.07 312 *eP* **P** **14 25 22.5 +0.2**
PMRV Marv??o 83.10 21 *eP* **P** **14 25 22.8 +0.5**
comp=Z,225nm,1.9s
PMRV *epP* **pP** **14 25 35.2 +0.5**
PMRV Marv??o 83.10 21 *eLQ* LQ 14 50 30.0
PMRV *eLR* LR 14 53 14.4
comp=Z,1µm,22.0s
DRME Dracevica, Mon 83.10 0⇑ *iP* **P** **14 25 22.7 +0.4**
ALMR Almeirim 83.12 22 *eP* **P** **14 25 22.7 +0.3**
ALMR Almeirim 83.12 22 *eP* **P** **14 25 22.7 +0.3**

BARC Barichara 83.14 88 *eP* **P** **14 25 22.6 -0.5**
BHGR Bahadurgarh 83.15 312 *eP* **P** **14 25 22.5 -0.2**
PMAFR Mafra 83.16 22 *eP* **P** **14 25 23.3 +0.7**
comp=Z,651nm,1.0s
PMAFR *epP* **pP** **14 25 35.9 +0.9**
PMAFR Mafra 83.16 22 *eLR* LR 14 52 55.6
comp=Z,2µm,22.0s
LUWI Luwuk 83.23 258 P **P** **14 25 22.2 -1.1**
comp=Z,390nm,1.2s,comp=Z,5µm
LUWI Luwuk 83.23 258 *eP* **P** **14 25 21.8 -1.5**
EDRB Edirne 83.24 355 P **P** **14 25 23.4 +0.4**
EDRB Edirne 83.24 355 P **P** **14 25 23.4 +0.4**
PMTG Montargil 83.28 21 *eP* **P** **14 25 23.6 +0.4**
comp=Z,206nm,1.2s
PMTG *epP* **pP** **14 25 36.4 +0.8**
PMTG Montargil 83.28 21 *eLR* LR 14 52 55.6
comp=Z,1µm,22.0s
CXM Morne La Croix 83.28 74 *eP* **P** **14 25 23.1 -0.6**
BAMF Morne Balai 83.28 74 *eP* **P** **14 25 22.9 -0.8**
SKO Skopje 83.30 358 P **P** **14 25 24.2 +0.9**
SKO Skopje 83.30 358 *i P* **P** **14 25 24.4 +1.1**
SKO Skopje 83.30 358 P **P** **14 25 24.2 +0.9**
SKO Skopje 83.30 358 P **P** **14 25 24.2 +0.9**
ULC Ulcinj 83.33 0⇑ *iP* **P** **14 25 23.6 +0.1**
FDF Fort de France 83.35 74 *eP* **P** **14 25 23.2 -0.7**
FDF Fort de France 83.35 74 *eP* **P** **14 25 23.2 -0.7**
FDF Fort de France 83.35 74 *eP* **P** **14 25 23.3 -0.7**
FDF Fort de France 83.35 74 *eP* **P** **14 25 23.3 -0.7**
FDF LR LR
comp=Z,864nm,21.0s
KKB Krupnik 83.37 357 *i P* **P** **14 25 24.6 +0.9**
PMST Lisbon--Monsan 83.39 22 *eP* **P** **14 25 25.0 +1.2**
comp=Z,365nm,1.2s
PMST *epP* **pP** **14 25 37.9 +1.7**
LIS Lisbon 83.42 22 *eP* P **14 25 24.1 +0.2**
LIS AMS AMS 15 00 59.1
comp=Z,2µm,22.7s
LIS Lisbon 83.42 22 *eP* **P** **14 25 25.1 +1.2**
comp=Z,422nm,2.2s
LIS *epP* **pP** **14 25 37.7 +1.4**
LIS Lisbon 83.42 22 *eP* **P** **14 25 24.1 +0.2**
COEN Coen 83.46 234 *eP* **P** **14 25 24.2 -0.1**
RZN Rozhen 83.50 356 *i P* **P** **14 25 25.2 +0.7**
ES19 SONSECA Array 83.50 18 *eP* **P** **14 25 25.1 +0.6**
KDZ Kurdzhali 83.51 355 *i P* **P** **14 25 25.2 +0.8**
ESDC Sonseca Array 83.51 18 P **P** **14 25 25.1 +0.6**
comp=Z,141nm,0.8s,baz=344,slow=4.7,SNR=490
ESDC PP **PP** **14 28 35.9 -0.4**
comp=Z,16nm,1.0s,baz=350,slow=8.0,SNR=5.1
ESDC PKKPbc **PKKPbc** **14 43 39.8 -0.1**
comp=Z,2.2nm,0.7s,baz=178,slow=1.4,SNR=11
ESDC PKPPKP **P'P'df** **14 51 45.5 -7.5**
comp=Z,3.0nm,0.9s,baz=166,slow=0.5,SNR=7.0
ESDC LR LR 15 04 26.4
comp=Z,763nm,19.4s,baz=355,slow=37
ESLA Sonseca Array 83.51 18 *eP* **P** **14 25 25.2 +0.7**
TOLC Tolima 83.54 91 *eP* **P** **14 25 25.1 -0.2**
TRMF Trois Ilets 83.57 74 *eP* **P** **14 25 24.8 -0.2**
PAB San Pablo 83.57 18 *eP* **P** **14 25 25.3 +0.5**
PAB San Pablo 83.57 18 *eP* **P** **14 25 25.3 +0.5**
BIM Bigot 83.57 74 *eP* **P** **14 25 25.8 +0.7**
PESTR Estremoz 83.60 21 *eP* **P** **14 25 25.2 +0.3**
comp=Z,303nm,1.4s
PESTR *epP* **pP** **14 25 38.1 +0.8**
PESTR Estremoz 83.60 21 *eLQ* LQ 14 47 36.1
PESTR *eLR* LR 14 53 37.9
comp=Z,1µm,20.0s
MMB Musomiste 83.63 357 *i P* **P** **14 25 26.1 +1.0**
MVM Montagne Vaucl 83.64 74 *eP* **P** **14 25 24.5 -0.9**
CHBT CHBT 83.68 283 P **P** **14 25 26.0 +0.4**
comp=Z,535nm,1.3s,comp=Z,7µm
RUSC La Rusia 83.77 89 *eP* **P** **14 25 25.9 -0.7**
KUDL Kundal 83.81 312 *eP* **P** **14 25 25.8 -0.3**
TUMC Tumaco 83.83 96 *eP* **P** **14 25 25.5 -0.8**
EVO Evora 83.84 21 *eP* **P** **14 25 26.8 +0.7**
comp=Z,248nm,1.4s
EVO *epP* **pP** **14 25 39.1 +0.6**
NVR Nevrokopi 83.87 357 P **P** **14 25 27.0 +0.7**
NVR Nevrokopi 83.87 357 P **P** **14 25 27.0 +0.7**
ISK Istanbul-Kandi 83.87 353 P pP 14 25 41.0 +2.4
ROSC El Rosal 83.91 90 P **P** **14 25 27.1 -0.1**
comp=Z,16nm,0.5s,baz=356,slow=4.9,SNR=15
ROSC LR LR 15 04 22.0
comp=Z,192nm,21.4s,baz=32,slow=37
ROSC El Rosal 83.91 90 *eP* **P** **14 25 27.5 +0.2**
ROSC El Rosal 83.91 90 *eP* **P** **14 25 27.6 +0.3**
VAY Valandovo 83.93 358 P **P** **14 25 27.4 +0.9**
VAY Valandovo 83.93 358 *i P* **P** **14 25 27.2 +0.7**
VAY Valandovo 83.93 358 P **P** **14 25 27.4 +0.9**
VAY Valandovo 83.93 358 P **P** **14 25 27.4 +0.9**
TIR Tirane 83.94 360 ⇓ *iP* **P** **14 25 27.9 +1.3**
TIR Tirane 83.94 360 *eP* **P** **14 25 27.5 +0.9**
TIR Tirane 83.94 360 *eP* **P** **14 25 27.4 +0.9**
KNT Kendrikon 84.08 357 P **P** **14 25 28.3 +1.0**
KNT Kendrikon 84.08 357 P **P** **14 25 28.3 +1.0**
KNT Kendrikon 84.08 357 P **P** **14 25 28.3 +1.0**
KHLT Khaolaem Dam 84.09 287 P **P** **14 25 28.0 +0.3**
comp=Z,148nm,1.3s,comp=Z,2µm
SRS Serrai 84.11 357 P **P** **14 25 27.9 +0.4**
SRS Serrai 84.11 357 P **P** **14 25 27.9 +0.4**
SRS Serrai 84.11 357 P **P** **14 25 27.9 +0.4**
PNCL Nicolau / Gran 84.13 22 *eP* **P** **14 25 28.4 +0.8**
comp=Z,447nm,1.3s
PNCL *epP* **pP** **14 25 41.2 +1.2**
PNCL Nicolau / Gran 84.13 22 *eS* S 14 36 08.7 +20
PNCL Nicolau / Gran 84.13 22 *eLQ* LQ 14 47 50.2
PNCL *eLR* LR 14 53 33.2
comp=Z,2µm,22.0s
SRDT SRDT 84.16 287 P **P** **14 25 28.2 +0.1**
comp=Z,1µm,1.2s,comp=Z,13µm
KHET Khetri 84.17 312 *eP* **P** **14 25 27.6 -0.4**
KHET IAmb IAmb 14 25 28.9
comp=Z,168nm,0.9s
OHR Ohrid 84.17 359 *i P* **P** **14 25 28.4 +0.5**
KAVA Kavala 84.19 356 P **P** **14 25 27.8 -0.1**
KAVA Kavala 84.19 356 P **P** **14 25 27.8 -0.1**
ALN Alexandroupoli 84.23 355 P **P** **14 25 28.4 +0.4**
ALN Alexandroupoli 84.23 355 P **P** **14 25 28.4 +0.4**
ALN Alexandroupoli 84.23 355 P **P** **14 25 28.4 +0.4**
BIA Bitola 84.26 359 P **P** **14 25 28.6 +0.3**
BIA Bitola 84.26 359 *i P* **P** **14 25 28.9 +0.6**
BIA Bitola 84.26 359 P **P** **14 25 28.6 +0.3**
GRG Griva 84.30 358 P **P** **14 25 29.3 +0.8**
GRG Griva 84.30 358 P **P** **14 25 29.3 +0.8**
GRG Griva 84.30 358 P **P** **14 25 29.3 +0.8**
MCLT Moule a Chique 84.30 74 *eP* **P** **14 25 27.4 -1.4**
MCLT Moule a Chique 84.30 74 *eP* **P** **14 25 27.8 -1.0**
PBEJ Beja 84.35 21 *eP* **P** **14 25 29.4 +0.7**
comp=Z,179nm,1.4s
PBEJ *epP* **pP** **14 25 42.4 +1.3**
PATY Pattaya 84.36 284 P **P** **14 25 29.8 +0.8**
comp=Z,74nm,1.1s,comp=Z,978nm
ENEZ Enez 84.38 355 P **P** **14 25 29.2 +0.4**
PBAR Barrancos 84.38 21 *eP* **P** **14 25 29.6 +0.7**
comp=Z,903nm,1.2s
PBAR *epP* **pP** **14 25 42.5 +1.2**
PBAR Barrancos 84.38 21 *eS* S 14 36 06.9 +15
PBAR Barrancos 84.38 21 *eLR* LR 14 53 39.0
comp=Z,2µm,20.0s
SOH Sokhos 84.41 357 P **P** **14 25 29.4 +0.4**
SOH Sokhos 84.41 357 P **P** **14 25 29.4 +0.4**
SOH Sokhos 84.41 357 P **P** **14 25 29.4 +0.4**
POPC Popayan, Colom 84.42 94 *eP* **P** **14 25 28.0 -1.7**
MESJ Messejana 84.46 22 *eP* **P** **14 25 29.5 +0.2**
MESJ AMS AMS 15 01 06.6
comp=Z,2µm,21.0s
MESJ Messejana 84.46 22 *eP* **P** **14 25 29.9 +0.6**
comp=Z,148nm,1.4s
MESJ Messejana 84.46 22 *eP* **P** **14 25 29.4 +0.2**
SVB Belmont 84.49 75 *eP* **P** **14 25 29.1 -0.6**
FNA Florina 84.49 359 P **P** **14 25 29.3 -0.2**
FNA Florina 84.49 359 P **P** **14 25 29.3 -0.2**
FNA Florina 84.49 359 P **P** **14 25 29.3 -0.2**
PRAC Prado 84.50 91 *eP* **P** **14 25 28.4 -1.4**
THE Thessaloniki 84.61 357 P **P** **14 25 30.1 +0.1**
THE Thessaloniki 84.61 357 P **P** **14 25 30.1 +0.1**
THE Thessaloniki 84.61 357 P **P** **14 25 30.1 +0.1**
MATE Matera 84.61 2⇑ *iP* **P** **14 25 30.8 +0.8**
PTEO Sao Teotonio 84.63 22 *eP* **P** **14 25 30.9 +0.8**
comp=Z,358nm,1.4s
PTEO *epP* **pP** **14 25 43.9 +1.4**
HORT Hortiatis 84.64 357 P **P** **14 25 30.2 -0.1**
HORT Hortiatis 84.64 357 P **P** **14 25 30.2 -0.1**

SMTH Samothraki Isl 84.68 355 P **P** **14 25 30.4 +0.1**
SMTH Samothraki Isl 84.68 355 P **P** **14 25 30.4 +0.1**
PCVE Castro Verde 84.70 22 *e*P **P** **14 25 31.2 +0.7**
comp=Z,177nm,1.6s
PCVE *e*pP **pP** **14 25 43.9 +1.0**
PCVE Castro Verde 84.70 22 *e*S S 14 36 10.4 +16
PCVE Castro Verde 84.70 22 *e*LR LR 14 53 56.7
comp=Z,2µm,22.0s
ANTO Ankara 84.73 350 *e*P **P** **14 25 31.9 +1.2**
ANTO Ankara 84.73 350 *e*P **P** **14 25 31.9 +1.2**
ANTO LR LR
comp=Z,9.0nm,21.0s
BR231 Keskin MP Arra 84.76 350 *e*P **P** **14 25 32.0 +1.1**
BR131 Keskin Array S 84.78 349 *e*P **P** **14 25 31.7 +0.6**
BRTR Keskin Array B 84.78 349 P **P** **14 25 31.6 +0.5**
comp=Z,138nm,1.0s,baz=29,slow=2.8,SNR=294
BRTR PP **PP** **14 28 47.3 +0.7**
comp=Z,8.3nm,1.0s,baz=18,slow=8.4,SNR=2.7
BRTR PKKPbc **PKKPbc** **14 43 37.1 0.0**
comp=Z,8.0nm,0.8s,baz=175,slow=5.0,SNR=33
BRTR PKPPKP P'P'df 14 51 40.9 -10
comp=Z,2.6nm,0.9s,baz=165,slow=5.1,SNR=8.4
BRTR LR LR 15 10 50.8
comp=Z,968nm,18.7s,baz=342,slow=41
PLG Polygyros 84.85 357 P **P** **14 25 30.5 -0.8**
PLG Polygyros 84.85 357 P **P** **14 25 30.5 -0.8**
PLG Polygyros 84.85 357 P **P** **14 25 30.5 -0.8**
NEST Nestorio 84.86 359 P **P** **14 25 31.8 +0.4**
KTI Kastanea 84.87 358 P **P** **14 25 32.2 +0.7**
OUR Ouranopolis 84.88 357 P **P** **14 25 31.5 +0.2**
OUR Ouranopolis 84.88 357 P **P** **14 25 31.5 +0.2**
OUR Ouranopolis 84.88 357 P **P** **14 25 31.5 +0.2**
MORF Marmelete 84.88 22 *e*P **P** **14 25 31.4 -0.1**
MORF AMS AMS 15 02 16.0
comp=Z,2µm,25.6s
MORF Marmelete 84.88 22 *e*P **P** **14 25 32.3 +0.8**
comp=Z,346nm,1.4s
MORF *e*pP **pP** **14 25 44.6 +0.7**
MORF Marmelete 84.88 22 *e*LR LR 14 54 31.1
comp=Z,2µm,20.0s
MORF Marmelete 84.88 22 *e*P **P** **14 25 31.3 -0.1**
KZN Kozani 84.96 358 P **P** **14 25 32.0 +0.1**
KZN Kozani 84.96 358 P **P** **14 25 32.0 +0.1**
KZN Kozani 84.96 358 P **P** **14 25 32.0 +0.1**
PVAQ Vaqueiros 84.98 21 *e*P **P** **14 25 32.7 +0.8**
comp=Z,256nm,1.4s
PVAQ *e*pP **pP** **14 25 45.5 +1.2**
PVAQ Vaqueiros 84.98 21 *e*S **S** **14 35 58.4 +0.8**
PVAQ Vaqueiros 84.98 21 *e*LQ LQ 14 48 27.8
PVAQ *e*LR LR 14 53 52.0
comp=Z,2µm,22.0s
PFVI Vila Bisbo 85.01 22 *e*P **P** **14 25 32.5 +0.5**
comp=Z,340nm,1.4s
PFVI *e*pP **pP** **14 25 45.5 +1.1**
PFVI Vila Bisbo 85.01 22 *e*LR LR 14 53 42.6
comp=Z,2µm,22.0s
PFVI Vila Bisbo 85.01 22 *e*P **P** **14 25 32.9 +0.8**
BETC Betania 85.02 92 *e*P **P** **14 25 33.3 +0.9**
PHET Kaeng Krachan 85.06 285 P **P** **14 25 32.9 +0.3**
comp=Z,130nm,1.0s,comp=Z,943nm
PENT Pentalofos 85.08 359 P **P** **14 25 32.7 +0.2**
PBDV Barranco-do-Ve 85.09 22 *e*P **P** **14 25 33.6 +1.1**
comp=Z,266nm,1.4s
PBDV *e*pP **pP** **14 25 46.0 +1.1**
PBDV Barranco-do-Ve 85.09 22 *e*S S 14 36 14.4 +16
PBDV Barranco-do-Ve 85.09 22 *e*LR LR 14 53 56.7
comp=Z,2µm,22.0s
LIT Litokhoron 85.15 358 P **P** **14 25 33.0 +0.2**
LIT Litokhoron 85.15 358 P **P** **14 25 33.0 +0.2**
LIT Litokhoron 85.15 358 P **P** **14 25 33.0 +0.2**
GRGR Grenville 85.19 76 *e*P **P** **14 25 34.6 +1.4**
GRGR Grenville 85.19 76 PFAKE 14 25 50.0 +17
GRGR LR LR
comp=Z,1µm,21.0s
CUC Castrocucco 85.25 3 *e*P **P** **14 25 33.1 -0.2**
CUC LR LR
comp=Z,769nm,21.0s
LIA Limnos Island 85.26 356 P **P** **14 25 33.5 +0.3**
LIA Limnos Island 85.26 356 P **P** **14 25 33.5 +0.3**
EZN Ezine 85.28 355 P **P** **14 25 33.5 +0.2**
EZN Ezine 85.28 355 P **P** **14 25 33.5 +0.2**
EZN Ezine 85.28 355 P **P** **14 25 33.5 +0.2**
OTAV Otavalo 85.28 96 *e*P **P** **14 25 34.4 +0.2**
OTAV Otavalo 85.28 96 *e*P **P** **14 25 30.9 -3.4**
PAIG Paliouri 85.29 357 P **P** **14 25 32.0 -1.4**
PAIG Paliouri 85.29 357 P **P** **14 25 32.0 -1.4**
PAIG Paliouri 85.29 357 P **P** **14 25 32.0 -1.4**
RAO Raoul Island 85.31 195 LR LR 14 56 50.5
comp=Z,974nm,21.9s,baz=26,slow=31
KPRO Kipourio 85.32 359 P **P** **14 25 33.9 +0.2**
SJAC San Juan de Ar 85.39 91 *e*P **P** **14 25 34.6 +0.2**
VSL Villasalto 85.40 8 *e*P **P** **14 25 34.5 +0.5**
MEV Metsovon 85.49 359 P **P** **14 25 35.8 +1.2**
MEV Metsovon 85.49 359 P **P** **14 25 35.8 +1.2**
BBGH Gun Hill 85.53 74 *e*P **P** **14 25 37.4 +2.4**
BBGH Gun Hill 85.53 74 *e*P **P** **14 25 37.6 +2.7**
BBGH LR LR
comp=Z,2µm,20.0s
KEK Kerkira 85.58 360 P **P** **14 25 35.2 +0.4**
KEK Kerkira 85.58 360 P **P** **14 25 35.2 +0.4**
JAN Janina 85.62 359 P **P** **14 25 35.9 +0.8**
JAN Janina 85.62 359 P **P** **14 25 35.9 +0.8**
JAN Janina 85.62 359 P **P** **14 25 35.9 +0.8**
SGD Sagiada 85.67 359 P **P** **14 25 34.8 -0.5**
THL Klokotos Trika 85.70 358 P **P** **14 25 35.0 -0.4**
IGT Igoumenitsa 85.75 359 P **P** **14 25 36.1 +0.4**
IGT Igoumenitsa 85.75 359 P **P** **14 25 36.1 +0.4**
IGT Igoumenitsa 85.75 359 P **P** **14 25 36.1 +0.4**
FLOC Florencia 85.79 93 *e*P **P** **14 25 34.6 -1.7**
FYTO Fytoko, Volos 85.83 357 P **P** **14 25 36.1 0.0**
FYTO Fytoko, Volos 85.83 357 P **P** **14 25 36.1 0.0**
PRK Paraskevi 85.86 355 P **P** **14 25 36.0 -0.2**
PRK Paraskevi 85.86 355 P **P** **14 25 36.0 -0.2**
PRK Paraskevi 85.86 355 P **P** **14 25 36.0 -0.2**
XOR Xorichti 85.87 357 P **P** **14 25 36.1 -0.2**
XOR Xorichti 85.87 357 P **P** **14 25 36.1 -0.2**
SIGR SIGRI 85.92 355 P **P** **14 25 36.6 +0.1**
SIGR SIGRI 85.92 355 P **P** **14 25 36.6 +0.1**
NEO Neokhori 85.93 357 P **P** **14 25 36.2 -0.4**
NEO Neokhori 85.93 357 P **P** **14 25 36.2 -0.4**
AOS Alonnisos 86.04 357 P **P** **14 25 37.5 +0.4**
AOS Alonnisos 86.04 357 P **P** **14 25 37.5 +0.4**
SKIA Skiathos 86.06 357 P **P** **14 25 36.6 -0.6**
TIP Timpagrande 86.08 2 ||*i*P **P** **14 25 38.6 +1.2**
TIP Timpagrande 86.08 2 P **P** **14 25 37.3 -0.1**
TIP Timpagrande 86.08 2 *e*P **P** **14 25 37.5 +0.1**
DSL Palaion Diasel 86.14 359 P **P** **14 25 38.1 +0.4**
DSL Palaion Diasel 86.14 359 P **P** **14 25 38.1 +0.4**
BWNR Bhubaneshwar 86.23 300 *e*P **P** **14 25 39.0 +0.7**
AGG Agios Georgios 86.23 358 P **P** **14 25 37.5 -0.6**
AGG Agios Georgios 86.23 358 *e*P **P** **14 25 38.3 +0.2**
AGG Agios Georgios 86.23 358 *e*P **P** **14 25 38.3 +0.2**
EVR Evrytania 86.35 358 P **P** **14 25 39.2 +0.4**
EVR Evrytania 86.35 358 P **P** **14 25 39.2 +0.4**
SMIA Simia 86.35 357 P **P** **14 25 38.5 -0.2**
SBUM Sibu 86.41 269 *e*P **P** **14 25 40.0 +0.7**
KULA Kula-Manisa 86.44 353 P **P** **14 25 39.4 +0.2**
KULA Kula-Manisa 86.44 353 P **P** **14 25 39.4 +0.2**
LKD2 Lefkada island 86.49 359 P **P** **14 25 39.4 0.0**
LKD2 Lefkada island 86.49 359 P **P** **14 25 39.4 0.0**
TOSP Speyside 86.50 75 *e*P **P** **14 25 39.0 -0.7**
TTSI Tana Toraja 86.54 260 P **P** **14 25 39.6 -0.3**
comp=Z,181nm,1.3s,comp=Z,3µm
LKR Lokris 86.59 357 P **P** **14 25 39.1 -0.7**
LKR Lokris 86.59 357 P **P** **14 25 39.1 -0.7**
ANX Ano Chora 86.67 358 P **P** **14 25 40.7 +0.3**
PDO Prodromos 86.68 359 P **P** **14 25 40.6 +0.3**
CHOS Chios island 86.73 355 P **P** **14 25 40.6 0.0**
CHOS Chios island 86.73 355 P **P** **14 25 40.6 0.0**
BKB Balikpapan 86.75 263 P **P** **14 25 41.1 +0.2**
comp=Z,609nm,1.1s,comp=Z,7µm
EREA Eretria 86.79 356 P **P** **14 25 40.6 -0.3**
DSF Desfina 86.84 358 P **P** **14 25 40.2 -1.0**
DSF Desfina 86.84 358 P **P** **14 25 40.2 -1.0**
KALE Kalithea 86.87 358 P **P** **14 25 41.1 -0.2**
KALE Kalithea 86.87 358 P **P** **14 25 41.1 -0.2**
PMOZ Porto Moniz, M 86.97 30 *e*P **P** **14 25 42.5 +0.6**
PMOZ *e*pP **pP** **14 25 55.6 +1.2**
PMOZ Porto Moniz, M 86.97 30 *e*LR LR 14 54 15.5
comp=Z,639nm,22.0s
ISP Isparta 86.98 351 P **P** **14 25 41.9 0.0**
ISP Isparta 86.98 351 *e*P **P** **14 25 42.1 +0.2**
ISP Isparta 86.98 351 *e*P **P** **14 25 42.1 +0.2**
ISP LR LR
comp=Z,1µm,22.0s
CEL Celeste 86.98 3 *e*P **P** **14 25 40.6 -1.2**
CEL LR LR
comp=Z,1µm,21.0s
PMPS Porto Santo 87.00 29 *e*P **P** **14 25 43.0 +1.1**
comp=Z,263nm,1.1s
PMPS *e*pP **pP** **14 25 55.5 +1.1**
LAKA Lakka 87.02 358 P **P** **14 25 42.4 +0.4**
LAKA Lakka 87.02 358 P **P** **14 25 42.4 +0.4**
VILL Villia 87.06 357 P **P** **14 25 41.5 -0.7**
AXS Araxos 87.08 358 P **P** **14 25 43.1 +0.9**
VLS Valsamata 87.10 359 P **P** **14 25 42.6 +0.2**
VLS Valsamata 87.10 359 P **P** **14 25 42.6 +0.2**
VLS Valsamata 87.10 359 P **P** **14 25 42.6 +0.2**
PMAR Madeira 87.14 30 *e*P **P** **14 25 43.7 +0.8**
PMAR *e*pP **pP** **14 25 56.6 +1.3**
PTL Penteli 87.16 357 P **P** **14 25 42.0 -0.7**
PTL Penteli 87.16 357 P **P** **14 25 42.0 -0.7**
KFL Anninata 87.17 359 P **P** **14 25 43.3 +0.6**
THAL Thalero 87.21 357 P **P** **14 25 42.4 -0.5**
JASL Jaisalmer 87.21 316 *e*P **P** **14 25 42.3 -0.8**
RLS Riolos of Patr 87.21 358 P **P** **14 25 43.7 +0.8**
RLS Riolos of Patr 87.21 358 P **P** **14 25 43.7 +0.8**
KLV Kalavryta, Ach 87.21 358 P **P** **14 25 43.1 +0.1**
KLV Kalavryta, Ach 87.21 358 P **P** **14 25 43.1 +0.1**
LTK Loutraki 87.21 357 P **P** **14 25 41.9 -1.0**
LTK Loutraki 87.21 357 P **P** **14 25 41.9 -1.0**
FUL Funchal 87.22 30 *e*P **P** **14 25 44.0 +1.0**
FUL *e*pP **pP** **14 25 56.7 +1.2**
ATH Athens Observa 87.24 357 P **P** **14 25 42.5 -0.5**
ATH Athens Observa 87.24 357 P **P** **14 25 42.5 -0.5**
ATH Athens Observa 87.24 357 P **P** **14 25 42.5 -0.5**
ATHU Athens Univers 87.25 357 P **P** **14 25 42.4 -0.7**
ATHU Athens Univers 87.25 357 P **P** **14 25 42.4 -0.7**
DRO Drossia 87.31 358 P **P** **14 25 44.1 +0.7**
SPSI Sidrap Palu 87.32 259 P **P** **14 25 42.7 -1.0**
comp=Z,79nm,1.1s,comp=Z,1µm
VLY Voula,Athens 87.36 357 P **P** **14 25 42.7 -0.9**
VLY Voula,Athens 87.36 357 P **P** **14 25 42.7 -0.9**
SMG Samos 87.36 354 P **P** **14 25 43.2 -0.4**
SMG Samos 87.36 354 P **P** **14 25 43.2 -0.4**
CTA Charters Tower 87.45 229 LR LR 15 02 33.5
comp=Z,266nm,18.9s,slow=34
CTAO Charters Tower 87.45 229 *e*P **P** **14 25 43.9 -0.2**
CTAO Charters Tower 87.45 229 *e*P **P** **14 25 43.9 -0.2**
CTAO LR LR
comp=Z,1µm,22.0s
DRWC Darouich 87.47 346 *e*P **P** **14 25 45.6 +1.3**
CLTB Caltabellotta 87.55 5 *e*P **P** **14 25 45.0 +0.3**
CLTB LR LR
comp=Z,432nm,20.0s
MZRK Al-Mazaregh 87.64 343 *e*P **P** **14 25 46.2 +1.2**
BHPL Bhopal 87.67 309 *e*P **P** **14 25 44.7 -0.7**
DID Didima 87.72 357 P **P** **14 25 44.0 -1.4**
DID Didima 87.72 357 P **P** **14 25 44.0 -1.4**
AMT Artemida-Makis 87.73 358 P **P** **14 25 45.3 -0.1**
YER Yerkesik 87.84 353 P **P** **14 25 46.2 +0.2**
YER Yerkesik 87.84 353 P **P** **14 25 46.2 +0.2**
YER Yerkesik 87.84 353 P **P** **14 25 46.2 +0.2**
KRND KRANIDI 87.85 357 P **P** **14 25 44.9 -1.0**
VLX Vlachokerasia 87.88 358 P **P** **14 25 46.2 -0.1**
VLX Vlachokerasia 87.88 358 P **P** **14 25 46.2 -0.1**
BODT Bodrum 87.97 354 P **P** **14 25 45.9 -0.7**
BODT Bodrum 87.97 354 P **P** **14 25 45.9 -0.7**
APE Apeiranthos 88.07 355 P **P** **14 25 44.9 -2.2**
APE Apeiranthos 88.07 355 P **P** **14 25 44.9 -2.2**
APE Apeiranthos 88.07 355 P **P** **14 25 44.9 -2.2**
ITM Ithomi 88.08 358 P **P** **14 25 47.2 +0.1**
ITM Ithomi 88.08 358 P **P** **14 25 47.2 +0.1**
JHLN Al Jahlan 88.15 345 *e*P P 14 25 42.3 -5.2
KAPI Kappang 88.19 259 *e*P **P** **14 25 47.8 0.0**
KAPI LR LR
comp=Z,2µm,22.0s
FETY Fethiye 88.27 352 P **P** **14 25 47.9 -0.1**
FETY Fethiye 88.27 352 P **P** **14 25 47.9 -0.1**
KSM Kuching 88.30 270 *e*P **P** **14 25 48.6 +0.2**
KSM LR LR
comp=Z,1µm,19.0s
PYL PYLOS 88.37 358 P **P** **14 25 47.7 -0.7**
PYL PYLOS 88.37 358 P **P** **14 25 47.7 -0.7**
MTN Manton Dam 88.47 245 *e*P **P** **14 25 48.9 -0.1**
MHLO Agia Marina, M 88.50 356 P **P** **14 25 47.4 -1.6**
DGPR DIGLIPUR 88.50 291 *e*P **P** **14 25 49.7 +0.4**
VLI Veliai 88.52 357 P **P** **14 25 47.9 -1.2**
VLI Veliai 88.52 357 P **P** **14 25 47.9 -1.2**
CHLP Challavanipeta 88.61 301 *e*P **P** **14 25 49.6 -0.2**
CHLP IAmb IAmb 14 25 51.2
comp=Z,152nm,1.1s
CHLP *e*pP **pP** **14 26 02.7 +0.4**
CHLP *e*sP **sP** **14 26 06.9 0.0**
BSSI Bau Bau, Buton 88.70 257 P sP 14 26 06.7 -0.6
SURT Suratani 88.76 284 P **P** **14 25 51.3 +0.7**
comp=Z,147nm,1.2s,comp=Z,2µm
ARG Arkhangelos 88.76 353 P **P** **14 25 49.5 -0.8**
ARG Arkhangelos 88.76 353 P **P** **14 25 49.5 -0.8**
ARG Arkhangelos 88.76 353 P **P** **14 25 49.5 -0.8**
SANT Santorini 88.77 355 PFAKE 14 26 00.0 +10
SANT LR LR
comp=Z,1µm,20.0s
KYTH Kithira 88.97 357 P **P** **14 25 50.7 -0.6**
KYTH Kithira 88.97 357 P **P** **14 25 50.7 -0.6**
KEST Kesra 89.14 8 P **P** **14 25 52.4 +0.2**
comp=Z,44nm,0.9s,baz=293,slow=2.8,SNR=38
KEST PKKPbc **PKKPbc** **14 43 28.9 +2.2**
comp=Z,2.2nm,0.8s,baz=195,slow=6.6,SNR=3.9
KEST LR LR 15 11 01.2
comp=Z,616nm,18.6s,baz=268,slow=39
KEST Kesra 89.14 8 *e*P **P** **14 25 52.8 +0.6**
KEST PKKPbc **PKKPbc** **14 43 28.9 +2.2**
TRTT Trang 89.18 282 P **P** **14 25 53.0 +0.5**
comp=Z,458nm,1.2s,comp=Z,6µm
SKLT Songkhla 89.20 281 P **P** **14 25 53.6 +1.0**
comp=Z,531nm,1.4s,comp=Z,7µm
ANKY Antikythira Is 89.36 357 P **P** **14 25 52.6 -0.5**
ANKY Antikythira Is 89.36 357 P **P** **14 25 52.6 -0.5**
KARP Karpathos 89.49 354 *e*P **P** **14 25 52.7 -1.1**
KARP *e*pP **pP** **14 26 05.3 -0.9**
CSS Mathiatis 89.53 349 P **P** **14 25 54.0 +0.1**
CSS Mathiatis 89.53 349 *e*P **P** **14 25 54.5 +0.5**
CSS LR LR
comp=Z,461nm,20.0s
SOEI Soe 89.58 252 P **P** **14 25 53.7 -0.8**
comp=Z,64nm,1.1s,comp=Z,1µm
SOEI Soe 89.58 252 *e*P **P** **14 25 53.4 -1.1**
VIS Vishakhapatnam 89.64 301 *i*P **P** **14 25 54.0 -0.7**
VIS *i*x x 14 26 04.7
IMMV Iera Moni Meta 89.74 356 P **P** **14 25 54.5 -0.4**
VAM Vamos 89.78 356 P **P** **14 25 55.6 +0.5**
VAM Vamos 89.78 356 P **P** **14 25 55.6 +0.5**
VAM Vamos 89.78 356 P **P** **14 25 55.6 +0.5**
ROOS tl_alroos 89.79 345 *e*P **P** **14 25 55.9 +0.6**
NPS Neapolis 89.86 355 P **P** **14 25 53.7 -1.8**
NPS Neapolis 89.86 355 P **P** **14 25 53.7 -1.8**
NPS Neapolis 89.86 355 P **P** **14 25 53.7 -1.8**
PBA Port Blair 89.86 290 *e*P P 14 25 55.3 -0.4
IDI Anoyia 89.87 356 *e*P **P** **14 25 56.3 +0.7**
LAST Lasithi 89.97 355 P **P** **14 25 56.1 0.0**
LAST Lasithi 89.97 355 *e*P **P** **14 25 55.8 -0.3**
ZKR Zakros 89.98 354 P **P** **14 25 53.8 -2.2**
ZKR Zakros 89.98 354 P **P** **14 25 53.8 -2.2**
MDT Midelt 90.05 20 LR LR 15 07 14.0
comp=Z,399nm,21.8s,baz=351,slow=36
SIVA Sivas 90.14 356 P **P** **14 25 56.8 0.0**
SIVA Sivas 90.14 356 P **P** **14 25 56.8 0.0**
EIDS Eidsvold 90.17 223 *e*P **P** **14 25 57.2 +0.5**
EIDS *e*pP **pP** **14 26 10.1 +0.8**
RPR Rampur 90.61 305 *e*P **P** **14 25 58.7 -0.4**
RPR IAmb IAmb 14 26 00.1
comp=Z,126nm,1.4s
RPR *e*pP **pP** **14 26 12.2 +0.5**
RPR *e*sP **sP** **14 26 16.9 +0.6**
KULM Kulim 90.72 280 *e*P **P** **14 25 59.6 -0.1**
comp=Z,225nm,1.3s
KULM LR LR
comp=Z,1µm,19.0s
BRBR Barbar 90.73 346 *e*P **P** **14 25 59.4 -0.4**
PVM Polavaram 90.87 302 *e*P **P** **14 25 59.9 -0.5**
PVM IAmb IAmb 14 26 01.7
comp=Z,132nm,0.9s
PVM *e*pP **pP** **14 26 13.2 +0.3**
PVM *e*sP **sP** **14 26 17.9 +0.4**
SRSP Sriramsagar 90.99 306 *e*P **P** **14 25 59.8 -1.1**
SRSP IAmb IAmb 14 26 00.7
comp=Z,58nm,1.0s
SRSP *e*pP **pP** **14 26 12.7 -0.8**
SRSP *e*sP **sP** **14 26 17.3 -0.7**
ZALF Zalf 91.01 345 *e*P **P** **14 26 01.7 +0.8**
IPM Ipoh 91.17 279 *e*P **P** **14 26 01.7 -0.2**
comp=Z,156nm,1.2s
SALA Sala 91.31 345 *e*P **P** **14 26 03.4 +1.0**
ATAH Atahualpa 91.33 100 P **P** **14 26 04.0 +1.0**
comp=Z,49nm,0.8s,baz=327,slow=3.1,SNR=23
MYKOM Kota Tinggi 91.75 276 *e*P **P** **14 26 04.3 -0.2**
TPRI Tanjung Pinang 92.07 275 P pP 14 26 20.2 +1.7
HYBB Hyderabad (bro 92.20 305 *e*P **P** **14 26 06.0 -0.6**
HYBB IAmb IAmb 14 26 07.3
comp=Z,119nm,1.0s
HYBB *e*pP **pP** **14 26 18.8 -0.4**
HYBB *e*sP **sP** **14 26 23.6 -0.2**
HYB Hyderabad 92.20 305 ||*i*P **P** **14 26 06.0 -0.6**
comp=Z,120nm,1.0s
HYB *e*pP **pP** **14 26 19.0 -0.1**
HYB *e*SKKS **SKSac** **14 36 36.0 -0.6**
HYB *e*S S **14 37 07.0 +0.7**
HYB Hyderabad 92.20 305 *e*P **P** **14 26 05.8 -0.9**
PLAI Plampang 92.42 258 P pP 14 26 21.7 +1.7
KLRI Killari 92.55 307 *e*P **P** **14 26 06.8 -1.4**
KLRI IAmb IAmb 14 26 08.5
comp=Z,158nm,1.0s
KLRI *e*pP **pP** **14 26 19.5 -1.2**
KLRI *e*sP **sP** **14 26 24.7 -0.6**
NJS Nagarjunasagar 92.59 304 *e*P **P** **14 26 07.4 -1.0**
NJS IAmb IAmb 14 26 09.1
comp=Z,50nm,1.1s
NJS *e*pP **pP** **14 26 20.5 -0.4**
NJS *e*sP **sP** **14 26 25.3 -0.2**
WRAB Tennant Creek 92.83 239 *i*P **P** **14 26 08.4 -0.9**
WRAB pmax pmax
comp=Z,160nm,1.1s
WRAB Tennant Creek 92.83 239 *e*P **P** **14 26 08.7 -0.6**
WRA Warramunga Arr 92.84 239 P **P** **14 26 08.4 -0.9**
comp=Z,32nm,1.0s,baz=40,slow=5.3,SNR=122
WRA PP **PP** **14 29 54.5 +2.2**
comp=Z,13nm,1.1s,baz=32,slow=7.8,SNR=7.0
ADKI Addanki 92.88 303 *e*P **P** **14 26 09.7 0.0**
ADKI IAmb IAmb 14 26 10.4
comp=Z,64nm,1.0s
ADKI *e*pP **pP** **14 26 22.6 +0.4**
ADKI *e*sP **sP** **14 26 27.2 +0.4**
CMBY CAMPBELL BAY 93.06 287 *e*P **P** **14 26 09.0 -1.5**
CMBY IAmb IAmb 14 26 10.5
comp=Z,83nm,0.9s
SRLM Srisailam 93.18 304 *e*P **P** **14 26 11.0 -0.1**
SRLM IAmb IAmb 14 26 11.7
comp=Z,59nm,1.0s
SRLM *e*pP **pP** **14 26 24.1 +0.4**
SRLM *e*sP **sP** **14 26 28.8 +0.5**
BANOM Banah 93.36 327 *i*P **P** **14 26 11.4 -0.5**
SNR=9.9
BANOM Banah 93.36 327 P **P** **14 26 12.7 +0.8**
SNR=6.7
BANOM Banah 93.36 327 P **P** **14 26 12.7 +0.8**
SNR=6.7
TSI Tuntungan 93.36 281 P **P** **14 26 12.2 +0.3**
comp=Z,186nm,1.2s,comp=Z,4µm
POO Poona 93.39 309 *e*P **P** **14 26 11.3 -0.8**
POO IAmb IAmb 14 26 13.2
comp=Z,108nm,1.0s
ABJI Asem Bagus 93.59 262 P pP 14 26 25.4 0.0
RCLA Racherla 93.70 304 *e*P **P** **14 26 12.6 -0.9**
RCLA IAmb IAmb 14 26 14.3
comp=Z,57nm,0.9s
RCLA *e*pP **pP** **14 26 26.0 0.0**
RCLA *e*sP **sP** **14 26 30.4 -0.2**
KCSI Kotacane, Aceh 93.79 282 P **P** **14 26 11.5 -2.4**
comp=Z,53nm,1.2s,comp=Z,834nm
UOSS Minazif 94.30 327 *e*P **P** **14 26 15.0 -1.1**
NAZ Nazwa, Dubai 94.43 327 *i*P **P** **14 26 15.9 -0.8**
SNR=10
NAZ Nazwa, Dubai 94.43 327 P **P** **14 26 17.0 +0.2**
SNR=9.3
NAZ Nazwa, Dubai 94.43 327 P **P** **14 26 17.0 +0.2**
SNR=9.3
HATD Hatta, Dubai 94.44 327 *i*P **P** **14 26 16.1 -0.7**
SNR=9.8
HATD Hatta, Dubai 94.44 327 P **P** **14 26 17.0 +0.2**
SNR=12
HATD Hatta, Dubai 94.44 327 P **P** **14 26 17.0 +0.2**
SNR=12
ARMA Armidale 94.51 220 *e*P **P** **14 26 17.8 +1.0**
comp=Z,15nm,0.8s
ASHO Ashiyiah 94.59 327 *i*P **P** **14 26 16.7 -0.8**
SNR=9.4
ASHO Ashiyiah 94.59 327 P **P** **14 26 17.7 +0.1**
SNR=14
ASHO Ashiyiah 94.59 327 P **P** **14 26 17.7 +0.1**
SNR=14
FAQ Al Faqa, Dubai 94.68 327 *i*P **P** **14 26 17.1 -0.8**
SNR=6.6
FAQ Al Faqa, Dubai 94.68 327 P **P** **14 26 18.0 +0.1**
SNR=6.2
FAQ Al Faqa, Dubai 94.68 327 P **P** **14 26 18.0 +0.1**
SNR=6.2
SKHT Srikalahasti 94.82 302 *e*P **P** **14 26 18.2 -0.4**
SKHT IAmb IAmb 14 26 19.8
comp=Z,56nm,1.0s
SKHT *e*pP **pP** **14 26 31.4 +0.3**
SKHT *e*sP **sP** **14 26 36.0 +0.3**
BIDO Bidbid 95.01 325 P **P** **14 26 20.0 +0.6**
SNR=6.9
BIDO Bidbid 95.01 325 P **P** **14 26 20.0 +0.6**
SNR=6.9
MDRS Chennai 95.13 301 *e*P **P** **14 26 20.0 -0.1**
PWJI Pagerwojo 95.16 263 P **P** **14 26 18.8 -1.3**
comp=Z,131nm,1.3s
SMDO Samad 95.46 325 P **P** **14 26 21.9 +0.2**
SNR=12
SMDO Samad 95.46 325 P **P** **14 26 21.9 +0.2**
SNR=12
WBK Wadi Bani Khal 95.57 324 P **P** **14 26 23.1 +1.1**
SNR=8.6
WBK Wadi Bani Khal 95.57 324 P **P** **14 26 23.1 +1.1**
SNR=8.6
ARQ Araqi 95.70 326 P **P** **14 26 22.7 +0.1**
SNR=21
ARQ Araqi 95.70 326 P **P** **14 26 22.7 +0.1**
SNR=21
GSI Gunungsitoli 95.72 280 P **P** **14 26 23.4 +0.6**
GSI Gunungsitoli 95.72 280 *e*P **P** **14 26 22.8 0.0**
FITZ Fitzroy Crossi 95.74 247 *e*P **P** **14 26 22.3 -0.4**
BSY Bisya 96.03 325 P **P** **14 26 24.3 +0.2**
SNR=11
BSY Bisya 96.03 325 P **P** **14 26 24.3 +0.2**
SNR=11
GOA Goa 96.06 308 *e*P **P** **14 26 23.3 -1.0**
NNA Nana 96.16 102 P **P** **14 26 23.9 -0.8**
comp=Z,16nm,0.7s,baz=317,slow=4.3,SNR=8.4
NNA Nana 96.16 102 P **P** **14 26 23.9 -0.8**
NNA LR LR
comp=Z,398nm,21.0s
ASAR Alice Springs 96.21 237 P **P** **14 26 24.1 -0.6**
comp=Z,14nm,0.9s,baz=34,slow=4.6,SNR=94
ASAR PP **PP** **14 30 14.2 -4.4**
comp=Z,3.1nm,0.9s,baz=25,slow=6.9,SNR=4.3
ASAR PKKPbc **PKKPdf** **14 43 10.2 -0.5**
comp=Z,5.3nm,0.8s,baz=204,slow=2.1,SNR=29
PTGA Pitinga 96.67 82 P **P** **14 26 26.2 -0.9**
comp=Z,15nm,0.7s,baz=330,slow=5.1,SNR=27
PTGA PP **PP** **14 30 22.9 +1.1**
comp=Z,9.7nm,1.0s,baz=348,slow=8.6,SNR=4.0
STKA Stephens Creek 99.76 227 P **Pdif** **14 26 40.8 +0.4**
comp=Z,7.0nm,1.0s,baz=15,slow=6.4,SNR=12
STKA PKKPbc **PKKPbc** **14 43 00.6 +1.0**
comp=Z,3.5nm,0.8s,baz=76,slow=3.5,SNR=6.6
CAN Canberra 99.87 220 PFAKE 14 26 50.0 +9.1
CAN LR LR
comp=Z,976nm,20.0s
SAML Samuel 101.50 89 *e*Pdif **Pdif** **14 26 46.7 -1.9**
comp=Z,22nm,1.0s
TAM Tamanrasset 101.53 13 PFAKE 14 27 00.0 +11
TAM LR LR
comp=Z,944nm,21.0s
LPAZ La Paz 104.56 98 Pdiff **Pdif** **14 27 00.3 -2.5**
comp=Z,1.9nm,0.7s,baz=15,slow=9.3,SNR=5.6
COCO West Island 107.12 273 PFAKE 14 31 30.0
COCO LR LR

comp=Z,2μm,20.0s
SIV San Ignacio 108.37 92 Pdiff **Pdif 14 27 18.3 -0.8**
comp=Z,1.9nm,0.8s,baz=293,slow=2.4,SNR=3.9
LVC Limon Verde 109.15 102 PKKPbc PKKPbc 14 42 32.1 +0.8
comp=Z,17nm,0.8s,baz=329,slow=2.3,SNR=3.9
LVC Limon Verde 109.15 102 PKKPbc PKKPbc 14 42 32.1 +0.8
LVC LR LR
comp=Z,1μm,19.0s
TORD Torodi Ar. Bea 110.40 18 Pdiff **Pdif 14 27 27.1 -1.2**
comp=Z,0.4nm,0.8s,baz=339,slow=5.0,SNR=2.9
TORD PP **PP 14 32 03.6 +0.2**
comp=Z,8.0nm,1.1s,baz=357,slow=5.1,SNR=7.3
TORD PKKPbc **PKKPbc 14 42 26.2 -0.5**
comp=Z,8.3nm,0.8s,baz=164,slow=2.4,SNR=30
LCO Las Campanas 113.17 108 PFAKE 14 31 50.0
LCO LR LR
comp=Z,738nm,20.0s
DBIC Dimbokro 115.23 27 PKP **PKPdf 14 31 36.6 -1.5**
comp=Z,6.2nm,0.9s,baz=20,slow=2.9,SNR=4.7
DBIC PKKPbc **PKKPbc 14 42 10.3 -0.2**
comp=Z,6.2nm,0.9s,baz=112,slow=4.2,SNR=5.3
DGAR Diego Garcia 116.61 298 PFAKE 14 31 50.0 +9.3
DGAR LR LR
comp=Z,2μm,21.0s
CPUP Villa Florida 118.62 96 PKP **PKPdf 14 31 42.5 -1.8**
comp=Z,3.0nm,0.7s,baz=233,slow=1.5,SNR=7.0
CPUP PKKPbc **PKKPab 14 42 01.4 -0.8**
comp=Z,9.7nm,0.9s,baz=126,slow=4.5,SNR=15
PLCA Paso Flores 122.13 116 PKP **PKPdf 14 31 49.5 -1.1**
comp=Z,23nm,0.8s,baz=327,slow=2.8,SNR=30
PLCA PKKPbc **PKKPbc 14 41 47.1 +1.1**
comp=Z,4.5nm,0.9s,baz=62,slow=7.9,SNR=4.2
SPB Sao Paulo 122.20 86 PFAKE 14 32 00.0 +8.8
SPB LR LR
comp=Z,1μm,22.0s
KMBO Kilima Mbogo 124.28 338 PKP **PKPdf 14 31 57.2 +1.3**
comp=Z,33nm,0.9s,baz=12,slow=3.2,SNR=60
KMBO Kilima Mbogo 124.28 338 PKPdf **PKPdf 14 31 57.5 +1.6**
SNR=12
KMBO Kilima Mbogo 124.28 338 P **PKPdf 14 31 57.5 +1.6**
SNR=12
KMBO Kilima Mbogo 124.28 338 PKP **PKPdf 14 31 57.2 +1.3**
KMBO LR LR
comp=Z,973nm,22.0s
TRQA Tornquist 124.75 108 *e*PKPdf **PKPdf 14 31 54.6 -1.1**
ASCN Ascension 125.84 43 PFAKE 14 32 10.0 +12
ASCN LR LR
comp=Z,1μm,21.0s
USHA Ushuaia 132.82 128 SKPbc **SKPbc 14 35 33.1 -1.1**
comp=Z,111nm,0.9s,baz=305,slow=8.4,SNR=3.9
VNDA Vanda 134.38 191 PKP **PKPdf 14 32 12.5 -0.2**
comp=Z,6.5nm,0.9s,baz=27,slow=1.8,SNR=8.1
VNDA SKPbc **SKPbc 14 35 37.2 -1.6**
comp=Z,11nm,1.2s,baz=9.5,slow=5.2,SNR=8.7
EFI East Falkland 135.86 119 PFAKE 14 32 30.0 +14
EFI LR LR
comp=Z,2μm,19.0s
SHEL Horse Pasture 136.39 36 PFAKE 14 32 30.0 +12
SHEL LR LR
comp=Z,465nm,20.0s
RER Riviere de l'E 136.56 307 PFAKE 14 32 30.0 +11
RER LR LR
comp=Z,4μm,20.0s
OPO Ambohidratompo 137.88 319 PKP **PKPdf 14 32 22.1 +0.8**
comp=Z,19nm,1.0s
CASY Casey 138.05 217 PFAKE 14 32 30.0 +10
CASY LR LR
comp=Z,227nm,20.0s
LSZ Lusaka 139.70 347 PFAKE 14 32 40.0 +15
LSZ LR LR
comp=Z,907nm,20.0s
PMSA Palmer Station 140.10 138 PKP **PKPdf 14 32 22.1 -1.5**
comp=Z,83nm,1.2s,baz=116,slow=4.6,SNR=5.0
TSUM Tsumeb 144.16 3 *e*PKPdf PKPbc 14 32 30.8 +0.2
MIR Mirnyy 144.57 221 *i* PKIKP **PKPab 14 32 30.0 -0.2**
MATP Matopo 144.73 345 PKP PKPbc 14 32 32.7 +0.3
comp=Z,264nm,0.9s
QSPA South Pole Qui 144.86 180 *e*PKPdf **PKPab 14 32 30.8 -0.6**
HOPE Hope Point 148.39 112 *e*PKPdf **PKPdf 14 32 39.8 +1.5**
LBTB Lobatse 149.62 349 PKPbc **PKPbc 14 32 46.5 +0.4**
comp=Z,314nm,0.9s,baz=358,slow=1.8,SNR=160
BOSA Boshof 153.22 349 PKP **PKPdf 14 32 47.0 +0.2**
comp=Z,14nm,1.0s,baz=31,slow=2.0,SNR=12
BOSA PKPbc **PKPbc 14 32 53.6 -0.7**
comp=Z,73nm,0.8s,baz=13,slow=1.7,SNR=64
BOSA PKPab **PKPab 14 33 05.5 -0.7**
comp=Z,41nm,0.8s,baz=19,slow=2.4,SNR=11
MAW Mawson 156.31 221 PKP **PKPdf 14 32 49.5 -0.1**
comp=Z,4.3nm,0.9s,baz=344,slow=3.4,SNR=6.7
MAW PKPab **PKPab 14 33 18.6 +0.5**
comp=Z,68nm,0.9s,baz=99,slow=4.7,SNR=21
SUR Sutherland 157.28 357 PFAKE 14 33 00.0 +7.7
SUR LR LR
comp=Z,3μm,22.0s
VNA3 Neumayer Olymp 159.50 153 P PKPpre 14 32 50.2
VNA2 Neumayer--Watz 160.28 154 P PKPpre 14 32 51.2
baz=305,slow=2.2
SNAA Sanae 160.82 159 P PKPpre 14 32 51.7
SNAA Sanae 160.82 159 *e*PKIKP PKPpre 14 32 50.9
SNAA Sanae 160.82 159 *e*PKPdf PKPpre 14 32 50.9
SYO Syowa Base 163.27 206⇑ *e*X **PKPdf 14 33 03.0 +5.5**
NVL N'lazarevskaya 163.90 171 *e*PKP2 **PKPab 14 33 49.5 -1.6**
NVL *e*SS SS 14 58 58.3 +56

DDA 05 14:24:52.5, 36°.93N×27°.89E, h7km, Md2.4, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BDRM	**Kayabasi**	**0.38**	**291**	*i* P	Pg	14 25 00.5	+0.6
BDRM				*i* S	Sg	14 25 05.8	+0.9
TURN	**Turunc**	**0.58**	**95**	*i* P	Pg	14 24 59.2	-4.5
TURN				*i* S	Sg	14 25 04.5	-6.8
AYDN	**Tasoluk**	**0.73**	**360**	*i* P	Pg	14 25 06.7	+0.1
AYDN				*i* S	Sg	14 25 15.9	-0.3

ISCJB ***05*** *14:26:13.3±1.2, 8°.38S±0°.09×74°.36W±0°.09, h147km, mb3.1/1, Error ellipse: s-maj=13.8km s-min=10.9km az=38.3*
IDC ***05*** *14:26:15.3±3.1, 8°.41S×74°.48W, h156km±31km, mb3.0/1, mb1 3.5/4, mb1mx3.2/40, mbtmp3.9/4, Error ellipse: s-maj=38.9km s-min=15.7km az=62.0*
ISC 05 14:26:14.3±1.3, 8°.3S±0°.1×74°.3W±0°.1, h147km, n6, σ0§50/7, Peru-Brazil border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ATAH	**Atahualpa**	**4.17**	**285**	P	**Pn**	**14 27 17.1**	**-0.2**
	9.3nm,0.3s,baz=75,slow=5.0,SNR=32						
ATAH				S	**Sn**	**14 28 06.1**	**+0.1**
	11nm,0.3s,baz=44,slow=20,SNR=10						
NNA	**Nana**	**4.46**	**213**	P	**Pn**	**14 27 20.5**	**-0.2**
	6.4nm,0.3s,baz=17,slow=3.0,SNR=11						
NNA				S	Sn	14 28 08.0	-4.3
	17nm,0.3s,baz=8.5,slow=13,SNR=3.7						
SIV	**San Ignacio**	**15.07**	**122**	P	**Pn**	**14 29 39.7**	**-0.2**
	0.9nm,0.3s,baz=300,slow=11,SNR=8.8						
TXAR	**Lajitas Array**	**46.84**	**324**	P	**P**	**14 34 29.6**	**-0.2**
	0.3nm,0.6s,baz=143,slow=7.8,SNR=3.6						
ASAR	**Alice Springs**	**137.96**	**220**	PKP	**PKPdf**	**14 45 22.7**	**+0.2**
	0.5nm,0.6s,baz=133,slow=2.0,SNR=4.4						
WRA	**Warramunga Arr**	**140.23**	**225**	PKP	**PKPdf**	**14 45 27.6**	**+0.9**
	0.5nm,0.4s,baz=125,slow=2.1,SNR=11						

ISCJB ***05*** *14:33:09.8±1.5, 37°.17N±0°.06×141°.48E±0°.10, h24km±8km, mb3.5/5, MS3.9/1, Error ellipse: s-maj=13.7km s-min=8.1km az=25.9*
IDC ***05*** *14:33:13.1±2.2, 37°.01N×141°.55E, h49km±21km, mb3.3/5, mb1 3.5/10, mb1mx3.3/57, mbtmp3.6/10, ML3.3/4, MS4.0/1, Ms1 4.0/1, ms1mx3.6/33, Error ellipse: s-maj=27.5km s-min=19.5km az=92.0*
JMA ***05*** *14:33:14.2±0.1, 37°.18N×141°.12E, h33km±1km, M3.9*
JMA Felt II J1.
ISC 05 14:33:10.2±1.6, 37°.11N±0°.05×141°.43E±0°.07, h19km±5km, n16, σ1§62/19, mb3.6/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.51**	**270**	P	**Pg**	**14 33 21.4**	**+0.9**
ONAJ				S	**Sg**	**14 33 26.3**	**-1.1**
JFK	**Kawauchi**	**0.52**	**301**	P	**Pg**	**14 33 21.4**	**+0.7**
JFK				S	**Sg**	**14 33 26.3**	**-1.4**
JMM	**Marumori**	**0.92**	**326**	P	**Pb**	**14 33 27.7**	**+0.2**
JMM				S	**Sg**	**14 33 37.5**	**-2.7**
JFT	**Otama**	**0.97**	**296**	P	**Pb**	**14 33 28.3**	**-0.1**
JFT				S	Sb	14 33 37.8	-3.0
MJAR	**Matsushiro Arr**	**2.65**	**259**	P	**Pn**	**14 33 53.0**	**+1.1**
	5.8nm,0.3s,baz=80,slow=17,SNR=69						
MAT	**Matsushiro**	**2.65**	**259**	P	**Pn**	**14 33 53.4**	**+1.5**
MAT				*e*S	**Sn**	**14 34 24.7**	**+1.2**
JHJ	**Hachijo jima 2**	**4.20**	**199**	P	**Pn**	**14 34 15.2**	**+1.9**
	5.7nm,0.3s,baz=108,slow=20,SNR=5.8						
JHJ				S	**Sn**	**14 34 58.8**	**-3.0**
	7.7nm,0.3s,baz=34,slow=18,SNR=2.0						
ASAJ	**Asahikawa**	**7.06**	**7**	P	**Pn**	**14 34 54.2**	**+1.7**
	0.7nm,0.3s,baz=222,slow=13,SNR=13						
ASAJ				S	**Sn**	**14 36 11.0**	**-1.2**
	0.2nm,0.3s,baz=108,slow=20,SNR=2.2						
USRK	**Ussuriysk Ar.**	**10.08**	**318**	P	Pn	14 35 37.5	+3.6
	0.1nm,0.3s,baz=150,slow=15,SNR=5.4						
KSRS	**Korea Array**	**10.77**	**276**	P	Pn	14 35 46.8	+3.4
	0.1nm,0.3s,baz=87,slow=14,SNR=3.0						
SONM	**Songino Array**	**27.76**	**304**	P	**P**	**14 38 58.7**	**+0.9**
	0.5nm,0.5s,baz=92,slow=8.7,SNR=2.4						
DAV	**Davao City (W)**	**33.20**	**210**	LR	LR	14 54 09.8	
	comp=Z,249nm,19.6s,baz=38,slow=38						
ZALV	**Zalesovo Beam**	**41.88**	**312**	P	**P**	**14 40 59.9**	**+0.9**
	0.7nm,0.5s,baz=77,slow=6.5,SNR=3.0						
MKAR	**Makanchi Array**	**44.09**	**302**	P	**P**	**14 41 16.5**	**-0.6**
	0.4nm,0.6s,baz=90,slow=8.8,SNR=5.1						
ILAR	**Eielson Array**	**49.43**	**32**	P	**P**	**14 41 57.9**	**-0.6**
	0.6nm,0.8s,baz=270,slow=6.8,SNR=6.5						
WRA	**Warramunga Arr**	**57.13**	**188**	P	**P**	**14 42 53.8**	**-1.8**
	0.3nm,0.5s,baz=6.9,slow=7.4,SNR=7.4						

NIED ***05*** *14:58:00, 38°.20N×144°.10E, h8km, Mw6.0 Best double couple: M0=1.09000×10^18 NP1:φs=178.00000°, δ48.00000°, λ-122.00000°. NP2:φs=41.00000°, δ51.00000°, λ-60.00000°.*
IDC ***05*** *14:58:16.6±0.3, 38°.16N×144°.22E, h0km, mb5.7/60, mb1 5.7/69, mb1mx5.7/78, mbtmp5.7/69, ML5.0/7, MS5.6/49, Ms1 5.6/49, ms1mx5.4/72, Error ellipse: s-maj=9.6km s-min=7.5km az=87.0*
ISCJB ***05*** *14:58:16.4±0.5, 38°.18N±0°.01×144°.08E±0°.01, h6km±3km, mb6.0/337, MS5.8/256, Error ellipse: s-maj=2.5km s-min=1.6km az=162.0*
BJI ***05*** *14:58:17.9, 38°.20N×144°.00E, h20km, mb6.0/85, mB6.1/72, Ms6.3/99, Ms7 6.2/90*
NEIC ***05*** *14:58:18.7±0.1, 38°.17N×144°.03E, h11km, mb6.2/107, ME6.0, MS5.7/149, MW6.1, MW6.1, MW6.0, Error ellipse: s-maj=3.0km s-min=2.0km az=149.0, Moment Tensor Solution. s18 Moment tensor: Scale 10^18Nm; Mrr-1.45; Mθθ-0.64; Mφφ2.09; Mrθ0.13; Mθφ0.55; Mφr-0.04; Best double couple: M0=1.90000×10^18 NP1:φs=201.00000°, δ46.00000°, λ-75.00000°. NP2:φs=1.00000°, δ46.00000°, λ-105.00000°. Principal axes: T 2.2000, Plg0.0000°, Azm101.0000°; N -0.7200, Plg10.0000°, Azm11.0000°; P -1.4800, Plg80.0000°, Azm192.0000°; Broadband fault plane solution: P waves. NP1:φs=20.00000°, δ25.00000°, λ-90.00000°. NP2:φs=200.00000°, δ65.00000°, λ-90.00000°. Principal axes: T Plg20.0000°, Azm290.0000°; N Plg0.0000°, Azm0.0000°; P Plg70.0000°, Azm110.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from BB mechanism.*
NEIC Recorded [3 JMA] in Miyagi.
GCMT ***05*** *14:58:18.7±0.1, 38°.24N×144°.17E, h14km, MW6.1/131, Moment Tensor Solution. s123, c273; s131, c431; Duration: 2§6 Moment tensor: Scale 10^18Nm; Mrr-1.12±.01; Mθθ-0.39±.01; Mφφ1.51±.01; Mrθ0.11±.02; Mθφ0.84±.01; Mφr0.37±.02; Best double couple: M0=1.52400×10^18 NP1:φs=197.00000°, δ52.00000°, λ-95.00000°. NP2:φs=25.00000°, δ38.00000°, λ-84.00000°. Principal axes: T 1.8770, Plg7.0000°, Azm291.0000°; N -0.7030, Plg4.0000°, Azm200.0000°; P -1.1710, Plg82.0000°, Azm84.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*
MOS ***05*** *14:58:19.6±1.0, 38°.23N×144°.12E, h33km, mb6.0/102, MS5.8/60 Error ellipse: s-maj=6.9km s-min=4.3km az=103.0*
JMA ***05*** *14:58:19.1±0.2, 38°.21N×144°.12E, h42km, M6.1*
JMA Felt III J1.
NEIC ***05*** *14:58:21.0±0.0, 37°.97N×144°.44E, h24km, Moment Tensor Solution. s11 Moment tensor: Scale 10^18Nm; Mrr-1.07; Mθθ-0.12; Mφφ1.19; Mrθ-0.08; Mθφ0.20; Mφr0.77; Best double couple: M0=1.40000×10^18 NP1:φs=180.00000°, δ62.00000°, λ-99.00000°. NP2:φs=18.00000°, δ29.00000°, λ-73.00000°. Principal axes: T 1.4400, Plg16.0000°, Azm276.0000°; N -0.1200, Plg7.0000°, Azm183.0000°; P -1.3200, Plg71.0000°, Azm69.0000°;*
NEIC ***05*** *14:58:41.0±0.0, 38°.69N×143°.95E, h13km, Moment Tensor Solution. s78 Moment tensor: Scale 10^18Nm; Mrr-1.41; Mθθ-0.26; Mφφ1.67; Mrθ0.27; Mθφ0.83; Mφr-1.01; Best double couple: M0=2.00000×10^18 NP1:φs=225.00000°, δ37.00000°, λ-50.00000°. NP2:φs=359.00000°, δ62.00000°, λ-116.00000°. Principal axes: T 2.1800, Plg14.0000°, Azm107.0000°; N -0.3000, Plg23.0000°, Azm11.0000°; P -1.8800, Plg63.0000°, Azm226.0000°;*
ISC 05 14:58:19.8±0.4, 38°.20N±0°.03×144°.15E±0°.03, h20km±1km, h20km:pP-P, n2057, σ1§52/2189, mb6.1/393, MS5.8/260, 97C-251D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.13**	**295**	⇑P	**Pn**	**14 58 53.1**	**-1.2**
OFUJ				S	**Sn**	**14 59 18.1**	**-2.1**
JIO	**Ouri**	**2.22**	**277**	⇑P	**Pn**	**14 58 54.4**	**-1.1**
JIO				S	**Sn**	**14 59 19.8**	**-2.5**
MIYJ	**Miyakonagasawa**	**2.28**	**308**	P	**Pn**	**14 58 54.7**	**-1.6**
JMK	**Ichinoseki**	**2.42**	**289**	⇑P	**Pn**	**14 58 57.2**	**-1.0**
JMK				*e*S	**Sn**	**14 59 25.2**	**-2.0**
JOM	**Ohasama**	**2.57**	**300**	⇑P	**Pn**	**14 58 59.4**	**-0.9**
JOM				*e*S	**Sn**	**14 59 29.7**	**-1.3**
JANG	**Nango**	**2.98**	**317**	⇑P	**Pn**	**14 59 04.6**	**-1.4**
JANG				*e*S	**Sn**	**14 59 38.9**	**-2.3**
JYK	**Kaneyama**	**3.06**	**285**	P	**Pn**	**14 59 06.9**	**-0.1**
JYK				*e*S	**Sn**	**14 59 41.7**	**-1.4**
JFT	**Otama**	**3.10**	**258**	⇓P	**Pn**	**14 59 07.3**	**-0.3**
JFT				S	**Sn**	**14 59 42.1**	**-1.9**
ERM	**Erimo**	**3.88**	**349**	*ce*P	**Pn**	**14 59 17.3**	**-1.1**
ERM				pmax	pmax		
	comp=Z,1μm,1.0s						
ERM				MLR	MLR		
	comp=Z,89μm,17.0s						
ERM	**Erimo**	**3.88**	**349**	*e*Pn	**Pn**	**14 59 17.5**	**-0.9**
ERM				*e*Sn	**Sn**	**14 59 59.4**	**-4.0**
JOT	**Ohata**	**3.98**	**324**	P	**Pn**	**14 59 19.0**	**-0.6**
JOT				S	**Sn**	**15 00 01.1**	**-4.6**
BSO1	**Boso 1**	**4.37**	**217**	P	**Pn**	**14 59 22.9**	**-1.6**
JKB	**Kayabe**	**4.39**	**328**	P	**Pn**	**14 59 25.6**	**+0.3**
JKB				*e*S	**Sn**	**15 00 12.3**	**-3.6**
JCH	**Churui**	**4.45**	**352**	P	**Pn**	**14 59 24.7**	**-1.4**
JCH				*e*S	**Sn**	**15 00 11.3**	**-6.0**
JRY	**Ryogami san**	**4.73**	**244**	P	**Pn**	**14 59 29.1**	**-0.9**
JRY				*e*S	**Sn**	**15 00 20.0**	**-4.3**
JOD2	**Odawara 2**	**5.01**	**236**	P	**Pn**	**14 59 32.5**	**-1.4**
JOD2				*e*S	**Sn**	**15 00 26.6**	**-4.7**
MJAR	**Matsushiro Arr**	**5.02**	**253**	Pn	**Pn**	**14 59 34.1**	**+0.2**
	comp=Z,124nm,0.3s,baz=70,slow=11,SNR=980						
MJAR				LR	LR	15 01 38.3	
	comp=Z,56μm,20.8s,baz=95,slow=40						
MAJO	**Matsushiro**	**5.02**	**253**	*d i* P	**Pn**	**14 59 34.3**	**+0.3**
MAJO				MLR	MLR		
	comp=Z,776μm,15.0s						
MAJO	**Matsushiro**	**5.02**	**253**	*e*Pn	**Pn**	**14 59 34.8**	**+0.8**
MAJO				*e*Sn	Sn	15 00 20.5	-11
MAT	**Matsushiro**	**5.02**	**253**	P	**Pn**	**14 59 35.1**	**+1.1**
MAT				*e*S	**Sn**	**15 00 29.9**	**-1.5**
MJB9	**Matsu-Tunnel**	**5.02**	**253**	*e*Pn	**Pn**	**14 59 34.6**	**+0.6**
JOSM	**Okushiri--Mats**	**5.28**	**319**	P	**Pn**	**14 59 36.7**	**-0.8**
NEM2	**Nemuro 2**	**5.30**	**13**	P	**Pn**	**14 59 34.3**	**-3.5**
NEM2				S	**Sn**	**15 00 31.7**	**-6.5**
JTKR	**Abashiri--Toko**	**5.77**	**358**	P	**Pn**	**14 59 42.2**	**-2.0**
JTKR				S	**Sn**	**15 00 44.8**	**-5.0**
JHR	**Hokuryu**	**5.83**	**342**	P	**Pn**	**14 59 45.5**	**+0.4**
JHR				S	**Sn**	**15 00 51.2**	**-0.2**
YUK	**Yuzh-Kuril'sk**	**5.97**	**12**	*i* P	**Pn**	**14 59 44.4**	**-2.6**
YUK				*i* S	**Sn**	**15 00 48.6**	**-6.1**
YUK				pmax	pmax		
	comp=Z,9μm,0.2s						
YUK				MLR	MLR		
	comp=Z,40μm,14.0s						
YUK				MLR	MLR		
	comp=N,48μm,9.0s						
YUK				MLR	MLR		
	comp=E,27μm,14.0s						
SHO	**Shikotan**	**6.01**	**19**	*i* P	**Pn**	**14 59 44.3**	**-3.3**
SHO				*i* S	**Sn**	**15 00 47.3**	**-8.5**
SHO				pmax	pmax		
	comp=Z,11μm,0.7s						
SHO				pmax	pmax		
	comp=N,2μm,0.5s						
SHO				pmax	pmax		
	comp=E,5μm,0.8s						
ASAJ	**Asahikawa**	**6.03**	**349**	Pn	**Pn**	**14 59 48.2**	**+0.4**
	comp=E,54nm,0.3s,baz=198,slow=16,SNR=348						
ASAJ				Sn	**Sn**	**15 00 56.5**	**+0.4**
	comp=E,196nm,0.3s,baz=38,slow=31,SNR=5.0						
ASAJ	**Asahikawa**	**6.03**	**349**	*e*Pn	**Pn**	**14 59 46.7**	**-1.1**
ASAJ				*e*Sn	**Sn**	**15 00 52.0**	**-4.1**
ASAJ				Sn	**Sn**	**15 00 56.5**	**+0.4**
JHJ2	**Mitsune**	**6.18**	**216**	*e*Pn	**Pn**	**14 59 46.1**	**-3.9**
JHJ2				*e*Sn	Sn	15 00 50.7	-9.4
JHJ	**Hachijo jima 2**	**6.19**	**216**	Pn	**Pn**	**14 59 48.1**	**-2.0**
	comp=E,315nm,0.3s,baz=291,slow=23,SNR=103						
JHJ				Sn	**Sn**	**15 00 53.8**	**-6.5**
	comp=E,2μm,0.3s,baz=11,slow=23,SNR=9.3						
JHJ				LR	LR	15 03 08.8	
	comp=E,32μm,18.3s,baz=34,slow=47						
INU	**Inuyama**	**6.40**	**246**	*e*Pn	**Pn**	**14 59 52.8**	**-0.1**
KUR	**Kuril'sk**	**7.55**	**20**	*i* P	**Pn**	**15 00 07.2**	**-1.5**
KUR				*i* S	**Sn**	**15 01 26.3**	**-7.4**
KUR				pmax	pmax		
	comp=Z,2μm,0.5s						
KUR				pmax	pmax		
	comp=E,813nm,0.3s						
KUR				pmax	pmax		
	comp=N,1μm,0.4s						
KUR				MLR	MLR		
	comp=N,46μm,11.0s						
KUR				MLR	MLR		
	comp=Z,49μm,11.0s						
KUR				MLR	MLR		
	comp=E,34μm,8.0s						
YSS	**Yuzh-Sakhalins**	**8.81**	**354⇑**	*e*P	**Pn**	**15 00 25.2**	**-0.7**
YSS				*e*S	**Sn**	**15 01 58.6**	**-6.0**
YSS				pmax	pmax		
	comp=Z,700nm,1.1s						
YSS				pmax	pmax		
	comp=Z,40nm,1.0s						
YSS				MLR	MLR		
	comp=Z,59nm,15.0s						
YSS				MLR	MLR		
	comp=N,53μm,14.0s						
YSS				MLR	MLR		
	comp=E,32μm,14.0s						
YSS	**Yuzh-Sakhalins**	**8.81**	**354**	*e*Pn	**Pn**	**15 00 24.9**	**-1.0**
YSS				*e*Sn	**Sn**	**15 02 04.0**	**-0.6**
VLA	**Vladivostok**	**10.53**	**302**	*c i* P	**Pn**	**15 00 49.8**	**+0.2**
MSHR	**Mys Shultsa**	**10.83**	**298**	*ce*P	**Pn**	**15 00 54.5**	**+0.8**
USRK	**Ussuriysk Ar.**	**10.95**	**307**	Pn	**Pn**	**15 00 55.2**	**0.0**
	comp=E,7.3nm,0.3s,baz=117,slow=13,SNR=90						
USRK				LR	LR	15 04 55.9	
	comp=E,65μm,18.4s,baz=111,slow=36						
UGL	**Uglegorsk**	**10.98**	**353**	*e*P	**Pn**	**15 00 56.0**	**+0.4**
UGL				*e*S	**Sn**	**15 02 56.0**	**-1.7**
UGL				pmax	pmax		
	comp=Z,784nm,1.0s						
UGL				smax	smax		
	comp=N,674nm,1.0s						
UGL				smax	smax		
	comp=E,2μm,1.0s						
UGL				smax	smax		
	comp=N,6μm,4.0s						
UGL				smax	smax		
	comp=E,6μm,4.0s						
UGL				MLR	MLR		
	comp=Z,17μm,18.0s						
UGL				MLR	MLR		
	comp=N,55μm,22.0s						
UGL				MLR	MLR		
	comp=E,78μm,22.0s						
CBIJ	**Chichi jima**	**11.20**	**189**	*e*Pn	Pn	15 00 50.9	-7.8
CBIJ				*e*Sn	Sn	15 02 50.5	-13
JCJ	**Chichijima**	**11.20**	**189**	Pn	Pn	15 00 53.9	-4.9
	comp=E,114nm,0.3s,baz=27,slow=22,SNR=57						
JCJ				Sn	Sn	15 02 48.7	-15
JCJ				LR	LR	15 06 55.9	
	comp=E,5μm,18.5s,baz=3.5,slow=46						
JNU	**Nakatsue**	**11.92**	**249**	Pn	**Pn**	**15 01 08.0**	**-0.7**
	comp=E,2.6nm,0.3s,baz=54,slow=7.6,SNR=64						
JNU				LR	LR	15 06 05.6	
	comp=E,41μm,19.1s,baz=62,slow=39						
JNU	**Nakatsue**	**11.92**	**249**	*e*Pn	**Pn**	**15 01 07.6**	**-1.2**
HABR	**Khabarovsk**	**12.21**	**330**	*c i* P	**Pn**	**15 01 09.5**	**-3.0**
HABR				*e*S	**Sn**	**15 03 22.7**	**-5.2**
HABR				pmax	pmax		
	comp=N,47nm,1.2s						
HABR				pmax	pmax		
	comp=E,40nm,1.2s						
HABR				pmax	pmax		
	comp=Z,129nm,1.2s						
HABR				MLR	MLR		
	comp=Z,13μm,14.0s						
HABR				MLR	MLR		
	comp=N,9μm,11.0s						
HABR				MLR	MLR		
	comp=E,29μm,11.0s						
MDJ	**Mudanjiang**	**12.66**	**305**	P	**Pn**	**15 01 19.8**	**+1.1**
MDJ				S	**Sn**	**15 03 36.5**	**-2.6**
MDJ				ScS	**ScS**	**15 14 03.3**	**-0.3**
MDJ				pmax	pmax		
	comp=E,890nm,1.4s						
MDJ				pmax	pmax		
	comp=E,5μm,7.5s						
MDJ				LR	LR		
	comp=E,32μm,16.6s						
MDJ				LR	LR		
	comp=E,61μm,16.6s						
MDJ				LR	LR		
	comp=E,81μm,15.1s						
MDJ	**Mudanjiang**	**12.66**	**305**	*e*Pn	**Pn**	**15 01 19.3**	**+0.6**
	comp=E,2μm,1.1s						
TYV	**Tymovskoe**	**12.71**	**356**	*e*P	**Pn**	**15 01 18.8**	**-0.4**
TYV				pmax	pmax		
	comp=E,608nm,1.2s						
TYV				pmax	pmax		
	comp=Z,251nm,0.8s						
TYV				pmax	pmax		
	comp=Z,2μm,3.0s						
TYV				MLR	MLR		
	comp=E,40μm,15.0s						
TYV				MLR	MLR		
	comp=Z,16μm,16.0s						
KSRS	**Korea Array**	**12.86**	**272**	Pn	**Pn**	**15 01 21.8**	**+0.4**
	comp=Z,4.9nm,0.3s,baz=88,slow=13,SNR=136						
KSRS				LR	LR	15 05 44.5	
	comp=Z,36μm,21.4s,baz=68,slow=35						
KS01	**Wonju Array Si**	**12.88**	**272**	*e*Pn	**Pn**	**15 01 22.1**	**+0.4**
KS15	**Wonju Array Si**	**12.89**	**272**	*e*Pn	**Pn**	**15 01 22.9**	**+1.1**
KSAR	**Wonju Array Be**	**12.89**	**272**	P	**Pn**	**15 01 21.8**	**0.0**
KSAR	**Wonju Array Be**	**12.89**	**272**	Pn	**Pn**	**15 01 21.8**	**0.0**
INCN	**Inchon**	**13.87**	**272**	Pn	**Pn**	**15 01 36.3**	**+1.0**
	SNR=92						
INCN	**Inchon**	**13.87**	**272**	P	**Pn**	**15 01 36.3**	**+1.0**
	SNR=92						
INCN	**Inchon**	**13.87**	**272**	*e*Pn	**Pn**	**15 01 35.7**	**+0.4**
KLR	**Kul'dur**	**14.19**	**325**	Pn	**Pn**	**15 01 37.9**	**-1.7**
	comp=Z,2.3nm,0.3s,baz=131,slow=13,SNR=64						
KLR				LR	LR	15 07 36.4	
	comp=Z,24μm,20.1s,baz=

SKR				MLR	MLR	
	comp=N,26μm,14.0s					
SKR				MLR	MLR	
	comp=Z,47μm,14.0s					
SKR				MLR	MLR	
	comp=E,48μm,12.0s					
NKL	**Nikolayevsk**	**15.14**	**352**	*e*P	**Pn**	**15 01 50.0 -2.4**
NKL				*e*S	**Sn**	**15 04 35.0 -4.4**
NKL				pmax	pmax	
	comp=N,250nm,1.1s					
NKL				pmax	pmax	
	comp=E,110nm,1.1s					
NKL				pmax	pmax	
	comp=Z,460nm,1.1s					
NKL				pmax	pmax	
	comp=N,1μm,4.0s					
NKL				pmax	pmax	
	comp=Z,2μm,4.0s					
NKL				smax	smax	
	comp=N,3μm,8.0s					
NKL				smax	smax	
	comp=E,5μm,11.0s					
NKL				MLR	MLR	
	comp=E,24μm,15.0s					
NKL				MLR	MLR	
	comp=N,23μm,16.0s					
NKL				MLR	MLR	
	comp=Z,45μm,16.0s					
CN2	**Changchun**	**15.18**	**298**	*e*P	**Pn**	**15 01 50.7 -2.3**
CN2				*e*PP	**pP**	**15 02 02.8 -0.6**
CN2				*e*S	**Sn**	**15 04 36.9 -3.6**
CN2				LR	LR	
	comp=Z,39μm,14.0s					
CN2				LR	LR	
	comp=Z,29μm,14.0s					
CN2				LR	LR	
	comp=Z,35μm,15.0s					
OKH	**Okha**	**15.38**	**357**	*e*P	**Pn**	**15 01 55.0 -0.4**
OKH				*e*S	**Sn**	**15 04 42.8 -2.2**
OKH				pmax	pmax	
	comp=Z,2μm,5.0s					
OKH				smax	smax	
	comp=E,8μm,20.0s					
OKH				smax	smax	
	comp=Z,38μm,16.0s					
SNY	**Shenyang**	**16.17**	**289**	⇑P	**Pn**	**15 02 04.5 -1.3**
SNY				pmax	pmax	
	comp=Z,330nm,2.2s					
SNY				pmax	pmax	
	comp=Z,10μm,5.9s					
SNY				LR	LR	
	comp=Z,46μm,13.7s					
SNY				LR	LR	
	comp=Z,59μm,16.7s					
SNY				LR	LR	
	comp=Z,90μm,16.1s					
JOW	**Kunigami**	**17.52**	**234**	P	**Pn**	**15 02 23.3 +0.5**
	comp=Z,16nm,0.3s,baz=36,slow=10,SNR=63					
JOW				LR	LR	15 09 33.1
	comp=Z,13μm,19.1s,baz=52,slow=39					
JOW	**Kunigami**	**17.52**	**234**	*e*Pn	**Pn**	**15 02 21.2 -1.6**
	comp=Z,994nm,1.1s					
PEA0	**Petropavlovsk-**	**17.61**	**28**	*e*Pn	**Pn**	**15 02 22.0 -1.9**
PEA0B	**Petropavlovsk-**	**17.61**	**28**	*e*Pn	**Pn**	**15 02 23.6 -0.3**
	comp=Z,2μm,1.3s					
PETK	**Petropavlovsk-**	**17.61**	**28**	P	**Pn**	**15 02 23.6 -0.3**
	comp=Z,1.3nm,0.3s,baz=196,slow=9.7,SNR=33					
PETK				LR	LR	15 08 37.8
	comp=Z,5μm,21.0s,baz=212,slow=35					
DL2	**Dalian**	**17.63**	**279**	⇑*i*P	**Pn**	**15 02 23.7 -0.5**
DL2				S	**Sn**	**15 05 42.1 +2.1**
DL2				pmax	pmax	
	comp=Z,1μm,1.5s					
DL2				pmax	pmax	
	comp=Z,9μm,6.9s					
DL2				LR	LR	
	comp=Z,18μm,13.7s					
DL2				LR	LR	
	comp=Z,43μm,16.0s					
DL2				LR	LR	
	comp=Z,65μm,15.3s					
PET	**Petropavlovsk**	**17.91**	**29**	*d i*P	**Pn**	**15 02 24.7 -2.8**
PET				*i* S	**Sn**	**15 05 36.2 -10**
PET				pmax	pmax	
	comp=Z,6μm,12.6s					
PET				pmax	pmax	
	comp=Z,689nm,1.4s					
PET				pmax	pmax	
	comp=Z,8μm,8.4s					
PET				MLR	MLR	
	comp=Z,13μm,16.0s					
PET				MLR	MLR	
	comp=Z,12μm,16.0s					
PET	**Petropavlovsk**	**17.91**	**29**	*e*Pn	**Pn**	**15 02 25.8 -1.6**
	comp=Z,1μm,1.4s					
SSE	**Sheshan**	**20.15**	**256**	P	**P**	**15 02 51.9 -0.9**
SSE				sP	**sP**	**15 03 03.6 +2.7**
SSE				S	**S**	**15 06 37.8 -0.4**
SSE				pmax	pmax	
	comp=Z,4μm,5.8s					
SSE				LR	LR	
	comp=Z,59μm,19.8s					
SSE				LR	LR	
	comp=Z,23μm,19.7s					
SSE				LR	LR	
	comp=Z,35μm,14.3s					
HIA	**Hailar**	**20.73**	**310**	*e*P	**P**	**15 02 58.1 -0.8**
HIA				pmax	pmax	
	comp=Z,2μm,1.3s					
HIA				MLR	MLR	
	comp=Z,35μm,19.0s					
HIA	**Hailar**	**20.73**	**310**	*e*P	**P**	**15 02 58.1 -0.8**
	comp=Z,2μm,1.3s					
HIA				LR	LR	
	comp=Z,35μm,19.0s					
NJ2	**Nanjing**	**21.55**	**261**	*e*P	**P**	**15 03 06.9 -1.0**
NJ2				pP	**pP**	**15 03 11.3 -2.2**
NJ2				sP	**sP**	**15 03 17.4 +1.4**
NJ2				S	**S**	**15 07 08.5 +2.6**
NJ2				pmax	pmax	
	comp=Z,2μm,3.7s					
NJ2				LR	LR	
	comp=Z,60μm,17.4s					
NJ2				LR	LR	
	comp=Z,51μm,16.3s					
NJ2				LR	LR	
	comp=Z,54μm,16.3s					
TIA	**Tai'an**	**21.60**	**273**	⇓P	**P**	**15 03 05.9 -2.5**
TIA				pP	**sP**	**15 03 15.1 -1.4**
TIA				PP	**PnPn**	**15 03 32.9 +3.9**
TIA				S	**S**	**15 07 01.6 -5.2**
TIA				sS	Sn	15 07 10.5 -5.2
TIA				pmax	pmax	
	comp=Z,160nm,2.1s					
TIA				LR	LR	
	comp=Z,24μm,15.5s					
TIA				LR	LR	
	comp=Z,19μm,16.7s					
TIA				LR	LR	
	comp=Z,26μm,19.0s					
BJI	**Beijing**	**21.75**	**284**	P	**P**	**15 03 08.1 -1.9**
BJI				pP	**pP**	**15 03 15.1 -0.5**
BJI				sP	**sP**	**15 03 18.2 0.0**
BJI				S	**S**	**15 07 03.3 -6.4**
BJI				sS	**sS**	**15 07 16.7 -2.0**
BJI				pmax	pmax	
	comp=Z,210nm,2.0s					
BJI				pmax	pmax	
	comp=Z,5μm,3.3s					
BJI				LR	LR	
	comp=Z,47μm,16.1s					
BJI				LR	LR	
	comp=Z,27μm,17.4s					
BJT	**Baijiatuau**	**21.76**	**284**	*e*P	**P**	**15 03 08.0 -2.1**
BJT				pmax	pmax	
	comp=Z,1μm,1.2s					
BJT				MLR	MLR	
	comp=Z,18μm,19.0s					
BJT	**Baijiatuau**	**21.76**	**284**	*e*P	**P**	**15 03 08.0 -2.1**
	comp=Z,1μm,1.2s					
BJT				LR	LR	
	comp=Z,18μm,19.0s					
MA2	**Magadan**	**21.81**	**9**	*e*P	**P**	**15 03 10.8 +0.4**
MA2				pmax	pmax	
	comp=Z,177nm,2.5s					
MA2				MLR	MLR	
	comp=Z,13μm,22.0s					
MA2	**Magadan**	**21.81**	**9**	*e*P	**P**	**15 03 10.8 +0.4**
	comp=Z,177nm,2.5s					
MA2				LR	LR	
	comp=Z,13μm,22.0s					
CLNS	**Chul'man**	**22.59**	**332**	*e*P	**P**	**15 03 18.2 -0.7**
CLNS				*e**PP	**sP**	**15 03 30.7 +3.6**
CLNS				*e*		15 03 40.2
CLNS				*e*		15 07 07.7
CLNS				*e*S	**S**	**15 07 20.8 -4.5**
CLNS				*e*SS	**SnSn**	**15 08 04.6 +10**
CLNS				pmax	pmax	
	comp=Z,523nm,1.1s					
CLNS				pmax	pmax	
	comp=N,553nm,1.3s					
CLNS				pmax	pmax	
	comp=E,186nm,1.1s					
CLNS				pmax	pmax	
	comp=N,804nm,1.0s					
CLNS				pmax	pmax	
	comp=Z,263nm,0.9s					
CLNS				pmax	pmax	
	comp=E,467nm,1.0s					
CLNS				smax	smax	
	comp=N,6μm,9.4s					
CLNS				smax	smax	
	comp=E,6μm,12.2s					
CLNS				MLR	MLR	
	comp=Z,13μm,14.0s					
CLNS				MLR	MLR	
	comp=E,19μm,14.0s					
CLNS				MLR	MLR	
	comp=N,14μm,13.0s					
YOJ	**Yonaguni jima**	**22.60**	**239**	*e*P	**P**	**15 03 15.1 -4.1**
YOJ				pmax	pmax	
	comp=Z,440nm,1.0s					
YOJ	**Yonaguni jima**	**22.60**	**239**	*e*P	**P**	**15 03 15.1 -4.1**
	comp=Z,436nm,1.0s					
TATO	**Taipei**	**23.30**	**242**	P	**P**	**15 03 26.8 +0.3**
	SNR=6.9					
TATO	**Taipei**	**23.30**	**242**	P	**P**	**15 03 26.8 +0.3**
	SNR=6.9					
TATO	**Taipei**	**23.30**	**242**	*e*P	**P**	**15 03 22.7 -3.8**
	comp=Z,850nm,1.3s					
TATO				LR	LR	
	comp=Z,21μm,20.0s					
YHNB	**Yeheng**	**23.58**	**242**	*e*P	**P**	**15 03 26.9 -2.3**
	comp=Z,307nm,1.1s					
YHNB				LR	LR	
	comp=Z,28μm,19.0s					
NACB	**Ninganchiao**	**23.75**	**240**	*e*P	**P**	**15 03 26.4 -4.5**
	comp=Z,803nm,1.6s					
SSLB	**Suanglung**	**24.45**	**241**	*e*P	**P**	**15 03 30.8 -6.6**
	comp=Z,334nm,1.2s					
YULB	**Yu-li**	**24.47**	**239**	*e*P	**P**	**15 03 33.5 -4.1**
	comp=Z,573nm,1.2s					
GUMO	**Guam**	**24.52**	**178**	P	**P**	**15 03 37.4 -0.6**
	comp=Z,291nm,1.0s,baz=186,slow=0.6,SNR=9.1					
GUMO				LR	LR	15 12 24.2
	comp=Z,8μm,19.9s,baz=14,slow=35					
GUMO	**Guam**	**24.52**	**178**	*e*P	**P**	**15 03 33.0 -5.0**
GUMO				pmax	pmax	
	comp=Z,940nm,1.2s					
GUMO	**Guam**	**24.52**	**178**	*e*P	**P**	**15 03 33.0 -5.0**
	comp=Z,935nm,1.3s					
TIY	**Taiyuan**	**24.96**	**279**	*e*P	**P**	**15 03 41.2 -0.7**
TIY				PP	**PnPn**	**15 04 17.6 +2.6**
TIY				S	**S**	**15 08 03.2 -1.4**
TIY				SS	**SnSn**	**15 09 01.2 +8.1**
TIY				pmax	pmax	
	comp=Z,740nm,1.5s					
TIY				pmax	pmax	
	comp=Z,6μm,4.5s					
TIY				LR	LR	
	comp=Z,11μm,13.5s					
TIY				LR	LR	
	comp=Z,30μm,16.0s					
TIY				LR	LR	
	comp=Z,46μm,16.1s					
TPUB	**Ta-pu**	**24.99**	**240**	*e*P	**P**	**15 03 40.9 -1.3**
	comp=Z,728nm,1.1s					
TWG	**Pinlang**	**25.01**	**239**	*e*P	**P**	**15 03 41.4 -1.1**
	comp=Z,3μm,1.1s					
HHC	**Hu-ho-hao-te**	**25.20**	**286**	*e*P	**P**	**15 03 43.5 -0.7**
HHC				pP	pP	15 03 48.2 -1.9
HHC				sP	sP	15 03 51.5 -1.1
HHC				PP	**PnPn**	**15 04 16.2 -2.2**
HHC				S	**S**	**15 08 06.7 -1.8**
HHC				pmax	pmax	
	comp=Z,79nm,1.0s					
HHC				pmax	pmax	
	comp=Z,5μm,4.9s					
HHC				LR	LR	
	comp=Z,32μm,14.8s					
HHC				LR	LR	
	comp=Z,56μm,14.6s					
HHC				LR	LR	
	comp=Z,62μm,13.7s					
SEY	**Seymchan**	**25.27**	**9**	P	**P**	**15 03 45.9 +1.5**
	comp=Z,366nm,0.9s,baz=192,slow=7.3,SNR=204					
SEY	**Seymchan**	**25.27**	**9**	*d e*P	**P**	**15 03 45.6 +1.2**
SMY	**Shemya**	**25.30**	**45**	*e*P	**P**	**15 03 44.9 +0.1**
SMY				pmax	pmax	
	comp=Z,2μm,1.2s					
SMY	**Shemya**	**25.30**	**45**	*e*P	**P**	**15 03 44.9 +0.1**
	comp=Z,2μm,1.2s					
QZH	**Quanzhou**	**25.38**	**246**	⇓*i*P	**P**	**15 03 41.0 -4.7**
QZH				S	**S**	**15 08 05.0 -6.3**
QZH				pmax	pmax	
	comp=Z,1μm,1.2s					
QZH				pmax	pmax	
	comp=Z,12μm,3.6s					
QZH				LR	LR	
	comp=Z,69μm,20.4s					
QZH				LR	LR	
	comp=Z,72μm,22.5s					
QZH				LR	LR	
	comp=Z,40μm,17.5s					
CIT	**Chita**	**25.41**	**313**	*e*P	**P**	**15 03 46.6 +0.7**
CIT				*e*		15 03 58.2
CIT				*e*		15 04 36.0
CIT				*e*S	**S**	**15 08 14.2 +2.7**
YAK	**Yakutsk**	**25.48**	**344**	P	**P**	**15 03 46.7 +0.4**
	comp=Z,321nm,0.7s,baz=154,slow=5.7,SNR=154					
YAK				S	**S**	**15 08 17.2 +5.1**
	comp=Z,17nm,0.5s,baz=240,slow=21,SNR=2.9					
YAK				LR	LR	15 14 43.1
	comp=Z,20μm,19.2s,baz=156,slow=39					
YAK	**Yakutsk**	**25.48**	**344**	*d i*P	**P**	**15 03 46.0 -0.2**
YAK				*e**PP	**sP**	**15 03 56.0 +1.3**
YAK				*e*		15 07 13.9
YAK				*e*S	**S**	**15 08 13.7 +1.5**
YAK				*e*SSS	SSS	15 09 17.1
YAK				pmax	pmax	
	comp=Z,1μm,1.3s					
YAK				pmax	pmax	
	comp=N,1μm,1.4s					
YAK				pmax	pmax	
	comp=E,480nm,1.3s					
YAK				pmax	pmax	
	comp=E,498nm,1.3s					
YAK				pmax	pmax	
	comp=Z,613nm,1.0s					
YAK				pmax	pmax	
	comp=N,2μm,1.4s					
YAK				smax	smax	
	comp=E,2μm,2.1s					
YAK				smax	smax	
	comp=N,5μm,2.0s					
YAK				MLR	MLR	
	comp=E,8μm,14.0s					
YAK				MLR	MLR	
	comp=Z,19μm,18.0s					
YAK				MLR	MLR	
	comp=N,14μm,17.0s					
YAK	**Yakutsk**	**25.48**	**344**	*e*P	**P**	**15 03 46.1 -0.1**
	comp=N,1μm,0.9s					
YAK				S	**S**	**15 08 17.2 +5.1**
WHN	**Wuhan**	**25.68**	**262**	⇓P	**P**	**15 03 48.8 +0.4**
WHN				S	**S**	**15 08 17.0 +1.0**
WHN				LR	LR	
	comp=N,61μm,15.4s					
WHN				LR	LR	
	comp=N,105μm,16.2s					
WHN				LR	LR	
	comp=N,123μm,17.0s					
BTO	**Baotou**	**26.39**	**286**	*e*P	**P**	**15 03 56.2 +1.3**
BTO				pmax	pmax	
	comp=N,62nm,1.3s					
SGCP	**Mt. Cagua**	**27.71**	**230**	*e*P	**P**	**15 04 09.1 +2.3**
BOD	**Bodaibo**	**27.77**	**325**	⇓*i*P	**P**	**15 04 07.1 +0.1**
BOD				pmax	pmax	
	comp=Z,516nm,1.5s					
CVP	**Callao Caves**	**28.26**	**230**	*e*P	**P**	**15 04 11.2 -0.5**
APYP	**Conner**	**28.49**	**231**	*e*P	**P**	**15 04 12.3 -1.4**
PIP	**Pasuquin**	**28.53**	**233**	⇓*e*P	**P**	**15 04 15.7 +1.6**
ULN	**Ulaanbaatar**	**28.55**	**302**	*de*P	**P**	**15 04 15.0 +0.7**
ULN				pmax	pmax	
	comp=Z,160nm,1.7s					
ULN				MLR	MLR	
	comp=Z,26μm,17.0s					
ULN	**Ulaanbaatar**	**28.55**	**302**	P	**P**	**15 04 15.4 +1.2**
	SNR=365					
ULN	**Ulaanbaatar**	**28.55**	**302**	P	**P**	**15 04 15.4 +1.2**
	SNR=365					
ULN	**Ulaanbaatar**	**28.55**	**302**	*e*P	**P**	**15 04 15.0 +0.7**
	comp=Z,1μm,1.5s					
ULN				LR	LR	
	comp=Z,18μm,20.0s					
XAN	**Xi'an**	**28.65**	**273**	P	**P**	**15 04 15.4 +0.2**
XAN				pP	sP	15 04 22.4 -1.3
XAN				sP	pP	15 04 25.8 +4.6
XAN				PP	**PnPn**	**15 05 09.0 +3.5**
XAN				S	**S**	**15 09 01.6 -1.4**
XAN				sS	sS	15 09 14.4 +1.5
XAN				SS	**SnSn**	**15 10 30.4 +6.9**
XAN				pmax	pmax	
	comp=Z,110nm,1.5s					
XAN				pmax	pmax	
	comp=Z,4μm,7.2s					
XAN				LR	LR	
	comp=Z,16μm,15.4s					
XAN				LR	LR	
	comp=Z,19μm,15.4s					
XAN				LR	LR	
	comp=Z,21μm,12.3s					
CAUP	**Cauayan**	**28.85**	**229**	*e*P	**P**	**15 04 17.7 +0.7**
SIPP	**Brgy, Tapao**	**28.93**	**232**	⇑*e*P	**P**	**15 04 21.0 +3.3**
ABRA	**Dolores**	**28.98**	**232**	*e*P	**P**	**15 04 17.1 -1.0**
SONA1	**Songino Array**	**28.98**	**302**	*e*P	**P**	**15 04 18.4 +0.3**
SONM	**Songino Array**	**28.98**	**302**	P	**P**	**15 04 19.3 +1.2**
	comp=Z,49nm,0.8s,baz=103,slow=7.2,SNR=101					
SONM				LR	LR	15 16 17.1
	comp=Z,21μm,18.7s,baz=95,slow=37					
SONM	**Songino Array**	**28.98**	**302**	P	**P**	**15 04 19.3 +1.2**
SONM				pmax	pmax	
	comp=Z,51nm,0.9s					
SONM				MLR	MLR	
	comp=Z,21μm,18.7s					
ENH	**Enshi**	**29.60**	**265**	*e*P	**P**	**15 04 23.2 -0.4**
	comp=Z,627nm,0.8s					
ENH				LR	LR	
	comp=Z,20μm,21.0s					
BALP	**Baler**	**29.94**	**228**	*e*P	**P**	**15 04 26.3 -0.3**
BCPH	**Baguio City Da**	**30.03**	**230**	⇓*e*P	**P**	**15 04 24.1 -3.6**
HKC	**Hong Kong Obse**	**30.19**	**247**	⇑*i*P	**P**	**15 04 31.0 +2.2**
GZH	**Guangzhou**	**30.32**	**249**	P	**P**	**15 04 26.1 -3.9**
GZH				PP	**PnPn**	**15 05 24.4 -3.8**
GZH				S	**S**	**15 09 20.9 -8.2**
GZH				pmax	pmax	
	comp=Z,8μm,9.4s					
GZH				LR	LR	
	comp=Z,23μm,17.3s					
GZH				LR	LR	
	comp=Z,41μm,16.1s					
BOLP	**Bolinao**	**30.43**	**231**	*e*P	**P**	**15 04 29.1 -1.9**
MCO	**Taipa Grande**	**30.75**	**247**	P	P	15 04 40.0 +6.2
SCZP	**Santa Cruz**	**30.90**	**230**	*e*P	**P**	**15 04 33.1 -2.0**
IRK	**Irkutsk**	**30.97**	**310**	*e*P	**P**	**15 04 35.5 0.0**
IRK				pmax	pmax	
	comp=Z,697nm,1.7s					
TLY	**Talaya**	**31.25**	**309**	P	**P**	**15 04 38.7 +0.7**
	comp=Z,11nm,0.7s,baz=121,slow=8.4,SNR=25					
TLY				LR	LR	15 17 52.3
	comp=Z,30μm,18.4s,baz=98,slow=38					
TLY	**Talaya**	**31.25**	**309**	*d i*P	**P**	**15 04 38.4 +0.4**
TLY				*e*		15 05 53.6
TLY				*e*S	**S**	**15 09 45.6 +2.2**
TLY				pmax	pmax	
	comp=Z,559nm,1.8s					
TLY				MLR	MLR	
	comp=Z,41μm,15.0s					
TLY	**Talaya**	**31.25**	**309**	*e*P	**P**	**15 04 38.7 +0.7**
	comp=Z,304nm,1.1s					
AUQP	**San Andres**	**31.27**	**223**	*e*P	**P**	**15 04 40.9 +2.4**
ZAK	**Zakamensk**	**31.30**	**306**	*e*P	**P**	**15 04 39.0 +0.5**
ZAK				pmax	pmax	
	comp=Z,280nm,1.3s					
BOAC	**Boac**	**31.62**	**225**	*e*P	**P**	**15 04 41.3 -0.2**
PLP	**Palo**	**31.93**	**218**	⇓*e*P	**P**	**15 04 43.2 -1.0**
LZH	**Lanzhou**	**32.03**	**279**	⇓P	**P**	**15 04 46.2 +1.0**
LZH				pP	sP	15 04 53.5 -0.2
LZH				sP	pP	15 04 56.9 +5.7
LZH				PP	**PnPn**	**15 05 52.0 +1.5**
LZH				S	**S**	**15 09 55.3 -0.8**
LZH				sS	sS	15 10 07.2 +1.2
LZH				SS	**SnSn**	**15 11 47.0 +1.3**
LZH				pmax	pmax	
	comp=Z,380nm,1.0s					
LZH				pmax	pmax	
	comp=Z,4μm,6.2s					
LZH				LR	LR	
	comp=Z,30μm,14.2s					
LZH				LR	LR	
	comp=Z,25μm,12.8s					
LZH				LR	LR	
	comp=Z,33μm,15.0s					
BILL	**Bilibino**	**32.31**	**15**	*d i*P	**P**	**15 04 46.9 -0.2**
BILL				*i*		15 07 35.4
BILL				*i* SS	SS	15 11 50.0 -28
BILL				pmax	pmax	
	comp=Z,413nm,1.2s					
BILL				MLR	MLR	
	comp=Z,13μm,20.0s					
BILL	**Bilibino**	**32.31**	**15**	*e*P	**P**	**15 04 46.7 -0.3**
	comp=Z,473nm,1.3s					
BILL				LR	LR	
	comp=Z,13μm,21.0s					
RCP	**Roxas**	**32.71**	**221**	⇑*e*P	**P**	**15 04 52.3 +1.3**
MOY	**Mondy**	**32.89**	**308**	*e*P	**P**	**15 04 52.4 -0.1**
MOY				pmax	pmax	
	comp=Z,400nm,2.2s					
LLP	**Lapu-Lapu**	**33.15**	**218**	⇑*e*P	**P**	**15 04 55.2 +0.2**
GYA	**Guiyang**	**33.56**	**261**	⇓*i*P	**P**	**15 04 58.1 -0.5**
GYA				pP	sP	15 05 06.3 -0.8
GYA				PP	**PnPn**	**15 06 12.0 +1.9**
GYA				PcP	**PcP**	**15 07 41.6 +2.6**
GYA				S	**S**	**15 10 18.4 -1.6**
GYA				ScP	**ScP**	**15 11 23.6 +1.2**
GYA				SS	**SnSn**	**15 12 22.9 -0.2**
GYA				ScS	**ScS**	**15 15 22.0 -1.8**
GYA				pmax	pmax	
	comp=Z,240nm,0.9s					
GYA				pmax	pmax	
	comp=Z,1μm,7.6s					
GYA				LR	LR	
	comp=Z,19μm,17.4s					
GYA				LR	LR	
	comp=Z,19μm,17.4s					
GYA				LR	LR	
	comp=Z,23μm,17.3s					
GUIM	**Jordan**	**33.58**	**221**	*e*P	**P**	**15 04 58.2 -0.4**
BUSP	**Coron**	**33.73**	**226**	*e*P	**P**	**15 04 59.8 -0.1**
CD2	**Chengdu**	**33.85**	**270**	⇓*i*P	**P**	**15 05 00.0 -1.0**
CD2				sP	sP	15 05 10.5 +1.0
CD2				PP	**PP**	**15 06 16.5 -1.1**
CD2				S	**S**	**15 10 22.5 -1.8**
CD2				sS	sS	15 10 35.0 +0.8
CD2				pmax	pmax	
	comp=Z,420nm,0.9s					
CD2				pmax	pmax	
	comp=Z,3μm,6.5s					
CD2				LR	LR	
	comp=Z,39μm,15.5s					
CD2				LR	LR	
	comp=Z,26μm,16.7s					
CUYO	**Cuyo Island**	**34.22**	**223**	*e*P	**P**	**15 05 04.3 +0.1**
GTA	**Gaotai**	**34.31**	**286**	⇓P	**P**	**15 05 06.3 +1.2**
GTA				pP	sP	15 05 13.6 0.0
GTA				sP	pP	15 05 17.4 +6.3
GTA				PP	**PP**	**15 06 21.6 -1.2**

GTA			PcP	**PcP**	**15 07 42.2 +1.3**
GTA			S	**S**	**15 10 30.1 -1.4**
GTA			sS	sS	15 10 41.8 +0.4
GTA			PcS	**PcS**	**15 11 27.4 +0.1**
GTA			SS	**SnSn**	**15 12 39.4 -1.7**
GTA			pmax	pmax	
	comp=Z,130nm,1.5s				
GTA			pmax	pmax	
	comp=Z,4μm,6.2s				
GTA			LR	LR	
	comp=Z,21μm,16.2s				
GTA			LR	LR	
	comp=Z,42μm,16.3s				
GTA			LR	LR	
	comp=Z,46μm,16.2s				
TIXI	**Tiksi**	**34.42 352**	LR	LR	15 22 05.8
	comp=Z,14μm,18.2s,baz=170,slow=42				
TIXI	**Tiksi**	**34.42 352**	*de*P	**P**	**15 05 04.9 -0.5**
TIXI			pmax	pmax	
	comp=Z,161nm,1.2s				
TIXI			MLR	MLR	
	comp=Z,14μm,18.0s				
TIXI	**Tiksi**	**34.42 352**	*e*P	**P**	**15 05 04.5 -0.9**
	comp=Z,161nm,1.1s				
CGP	**Cagayan de Oro**	**34.43 216**	⇓*e*P	**P**	**15 05 06.2 +0.2**
BUKP	**Musuan**	**34.77 215**	*e*P	**P**	**15 05 08.7 -0.4**
ENPP	**El Nido**	**34.81 226**	*e*P	**P**	**15 05 09.4 +0.1**
MATI	**Mati**	**35.09 212**	*e*P	**P**	**15 05 10.7 -1.0**
DAV	**Davao City (W)**	**35.26 213**	P	**P**	**15 05 13.1 -0.1**
	comp=Z,94nm,0.3s,baz=60,slow=2.5,SNR=9.9				
DAV	**Davao City (W)**	**35.26 213**	⇓*e*P	**P**	**15 05 11.9 -1.3**
DAV	**Davao City (W)**	**35.26 213**	P	**P**	**15 05 14.1 +0.8**
	SNR=9.2				
DAV	**Davao City (W)**	**35.26 213**	P	**P**	**15 05 14.1 +0.8**
	SNR=9.2				
DAV	**Davao City (W)**	**35.26 213**	P	**P**	**15 05 13.2 -0.1**
DAV			LR	LR	
	comp=Z,9μm,19.0s				
NIKH	**Nikolski High**	**35.37 50**	*e*P	**P**	**15 05 14.8 +1.0**
	comp=Z,198nm,1.0s				
QIZ	**Qiongzhong**	**35.39 247**	P	**P**	**15 05 15.8 +1.5**
QIZ			S	**S**	**15 10 50.9 +2.8**
QIZ			LR	LR	
	comp=Z,14μm,20.6s				
QIZ			LR	LR	
	comp=Z,13μm,20.6s				
PAGZ	**Pagadian**	**35.57 217**	*e*P	**P**	**15 05 15.1 -0.8**
CTBH	**Cotabato--PC H**	**35.72 215**	⇑*e*P	**P**	**15 05 18.4 +1.3**
IPIL	**Ipil**	**36.02 218**	*e*P	**P**	**15 05 19.9 +0.2**
GAMB	**Gambell**	**36.59 31**	*e*P	**P**	**15 05 24.1 0.0**
	comp=Z,46nm,1.0s				
KMI	**Kunming**	**37.28 262**	P	**P**	**15 05 31.1 +0.3**
KMI			pP	sP	15 05 38.3 -1.0
KMI			sP	pP	15 05 42.2 +5.4
KMI			PP	**PnPn**	**15 06 57.9 +1.5**
KMI			S	**S**	**15 11 15.8 -1.6**
KMI			sS	sS	15 11 26.1 -1.3
KMI			SS	**SnSn**	**15 13 43.8 -10**
KMI			pmax	pmax	
	comp=Z,300nm,1.3s				
KMI			pmax	pmax	
	comp=Z,3μm,5.5s				
KMI			LR	LR	
	comp=Z,19μm,18.6s				
KMI			LR	LR	
	comp=Z,25μm,17.1s				
KMI			LR	LR	
	comp=Z,30μm,17.3s				
KRAR	**Krasnoyarsk**	**38.16 315**	*d i*P	**P**	**15 05 37.8 +0.3**
KRAR			pmax	pmax	
	comp=Z,410nm,1.5s				
KRAR			MLR	MLR	
	comp=Z,14μm,16.0s				
TNA	**Tin City**	**38.77 30**	*e*P	**P**	**15 05 43.6 +1.1**
	comp=Z,169nm,1.2s				
MANU	**Manus Island**	**40.15 175**	*e*P	**P**	**15 05 53.0 -1.5**
	comp=Z,159nm,1.3s				
MYLDM	**Lahad Datu**	**40.31 222**	⇑P	**P**	**15 05 55.8 0.0**
MYLDM	**Lahad Datu**	**40.31 222**	*e*P	**P**	**15 05 58.4 +2.5**
	comp=Z,785nm,1.3s				
PANO	**Nakornpanom**	**40.42 250**	P	**P**	**15 05 57.8 +1.0**
	comp=Z,117nm,1.4s,comp=Z,4μm				
RKPI	**Ransiki, Papua**	**40.58 195**	P	**P**	**15 05 59.0 +0.9**
	comp=Z,337nm,1.4s,comp=Z,5μm				
SDKM	**Sandakan**	**40.62 224**	⇑P	**P**	**15 05 58.3 -0.3**
JAY	**Jayapura**	**40.64 185**	P	**P**	**15 05 58.9 +0.3**
	comp=Z,420nm,1.3s,comp=Z,10μm				
SWI	**Sorong**	**40.65 200**	P	**P**	**15 05 58.5 -0.2**
	comp=Z,227nm,1.2s,comp=Z,5μm				
GENI	**Genyem**	**40.76 186**	P	**P**	**15 06 00.4 +0.9**
	comp=Z,1μm,1.3s,comp=Z,18μm				
KKM	**Kota Kinabalu**	**40.83 225**	*e*P	**P**	**15 06 01.8 +1.5**
	comp=Z,676nm,1.6s				
KKM			LR	LR	
	comp=Z,10μm,20.0s				
NONG	**Nongkai**	**40.94 252**	P	**P**	**15 06 01.8 +0.7**
	comp=Z,288nm,0.9s,comp=Z,3μm				
SKNT	**Sakolnakorn**	**40.99 250**	P	**P**	**15 06 02.0 +0.4**
	comp=Z,279nm,1.2s,comp=Z,4μm				
LBMI	**Labuha**	**41.59 206**	P	**P**	**15 06 06.7 +0.3**
	comp=Z,782nm,2.1s,comp=Z,13μm				
CRAI	**Chiangrai**	**41.77 257**	P	**P**	**15 06 08.7 +0.8**
	comp=Z,2μm,1.2s,comp=Z,106μm				
KHON	**Khomkaen**	**42.25 251**	P	**P**	**15 06 12.6 +0.7**
	comp=Z,84nm,1.1s				
WMQ	**Urumqi**	**42.27 296**	⇓*i*P	**P**	**15 06 13.0 +1.2**
WMQ			pP	sP	15 06 20.4 0.0
WMQ			sP	pP	15 06 24.4 +6.4
WMQ			PP	**PP**	**15 07 52.8 +3.1**
WMQ			PcP	**PcP**	**15 08 02.8 -2.6**
WMQ			S	**S**	**15 12 29.4 -2.0**
WMQ			sS	sS	15 12 42.2 +0.7
WMQ			pmax	pmax	
	comp=Z,38nm,1.2s				
WMQ			pmax	pmax	
	comp=Z,2μm,7.4s				
WMQ			LR	LR	
	comp=Z,9μm,16.2s				
WMQ			LR	LR	
	comp=Z,3μm,21.8s				
FAKI	**Fak Fak**	**42.37 198**	P	**P**	**15 06 12.2 -0.6**
	comp=Z,244nm,2.4s,comp=Z,7μm				
FAKI	**Fak Fak**	**42.37 198**	*e*P	**P**	**15 06 12.3 -0.6**
	comp=Z,449nm,1.5s				
MRSI	**Marisa**	**42.74 214**	P	**P**	**15 06 16.4 +0.6**
	comp=Z,1μm,1.4s,comp=Z,17μm				
ZAA0	**Zalesovo Array**	**42.76 311**	*e*P	**P**	**15 06 15.4 -0.1**
ZALV	**Zalesovo Beam**	**42.76 311**	P	**P**	**15 06 15.7 +0.1**
	comp=Z,25nm,0.4s,baz=89,slow=6.5,SNR=120				
ZALV			LR	LR	15 25 44.9
	comp=Z,20μm,18.0s,baz=84,slow=38				
RABL	**Rabaul**	**42.83 168**	*e*P	**P**	**15 06 15.5 -1.1**
	comp=Z,2μm,1.8s				
CMAI	**Chiengmai2**	**42.96 258**	P	**P**	**15 06 18.7 +0.9**
	comp=Z,211nm,1.4s				
UTTA	**Uttaradit**	**43.09 254**	P	**P**	**15 06 19.3 +0.6**
	comp=Z,57nm,1.1s,comp=Z,488nm				
NRIK	**Noril'sk**	**43.14 334**	P	**P**	**15 06 18.5 +0.1**
	comp=Z,121nm,0.9s,baz=108,slow=9.1,SNR=110				
NRIK			LR	LR	15 25 28.9
	comp=Z,28μm,20.4s,baz=105,slow=38				
CHAI	**Chaiyaphum**	**43.15 251**	P	**P**	**15 06 19.5 +0.3**
	comp=Z,105nm,1.1s,comp=Z,882nm				
TT01	**Tatalina**	**43.21 35**	*e*P	**P**	**15 06 20.0 +0.8**
TTA	**Tatalina**	**43.22 35**	*e*P	**P**	**15 06 20.1 +0.8**
TTA			pmax	pmax	
	comp=Z,340nm,1.2s				
TTA	**Tatalina**	**43.22 35**	*e*P	**P**	**15 06 20.1 +0.8**
	comp=Z,345nm,1.3s				
SVW2	**Sparrevohn**	**43.27 38**	*e*P	**P**	**15 06 21.3 +1.6**
	comp=Z,212nm,1.2s				
LAMP	**Lampang**	**43.33 256**	P	**P**	**15 06 21.6 +1.0**
	comp=Z,88nm,0.9s,comp=Z,660nm				
SANI	**Sanana**	**43.43 207**	P	**P**	**15 06 22.5 +1.1**
	comp=Z,590nm,1.6s,comp=Z,8μm				
PBKT	**Sadao Pong**	**43.49 252**	P	**P**	**15 06 22.4 +0.5**
	comp=Z,243nm,1.2s,comp=Z,3μm				
NVS	**Novosibirsk**	**43.62 313**	⇑*i*P	**P**	**15 06 23.5 +0.9**
NVS			*e*S	**S**	**15 12 51.8 +0.9**
NVS			pmax	pmax	
	comp=Z,240nm,1.1s				
NVS			pmax	pmax	
	comp=N,73nm,1.7s				
NVS			pmax	pmax	
	comp=E,162nm,1.1s				
NVS			smax	smax	
	comp=E,178nm,1.9s				
NVS			smax	smax	
	comp=N,70nm,1.6s				
MSAI	**Masohi**	**43.68 202**	P	**P**	**15 06 25.7 +2.3**
	comp=N,262nm,1.5s,comp=N,4μm				
CMMT	**Chiang Mai**	**43.68 257**	P	**P**	**15 06 23.8 +0.3**
	comp=N,166nm,1.5s,comp=N,3μm				
CHTO	**Chiang Mai**	**43.68 257**	P	**P**	**15 06 23.9 +0.4**
	comp=N,737nm,1.5s,comp=N,16μm				
CHTO	**Chiang Mai**	**43.68 257**	*e*P	**P**	**15 06 23.5 0.0**
CHTO			pmax	pmax	
	comp=Z,230nm,1.2s				
CHTO	**Chiang Mai**	**43.68 257**	P	**P**	**15 06 24.3 +0.8**
	SNR=93				
CHTO	**Chiang Mai**	**43.68 257**	P	**P**	**15 06 24.3 +0.8**
	SNR=93				
CHTO	**Chiang Mai**	**43.68 257**	PFAKE		15 06 30.0 +6.5
CHTO			LR	LR	
	comp=Z,9μm,19.0s				
LUWI	**Luwuk**	**43.75 212**	P	**P**	**15 06 22.8 -1.1**
	comp=Z,544nm,1.4s,comp=Z,8μm				
LUWI	**Luwuk**	**43.75 212**	*e*P	**P**	**15 06 22.3 -1.6**
	comp=Z,2μm,1.8s				
CM31	**Chiang Mai Arr**	**43.89 256**	*e*P	**P**	**15 06 26.2 +1.1**
CMAR	**Chiang Mai Arr**	**43.89 256**	P	**P**	**15 06 25.6 +0.5**
	comp=Z,36nm,1.0s,baz=42,slow=8.3,SNR=150				
CMAR			PcP	**PcP**	**15 08 12.0 +0.8**
	comp=Z,32nm,0.9s,baz=10,slow=2.1,SNR=7.5				
CM01	**Chiang Mai Arr**	**43.90 256**	*e*P	**P**	**15 06 24.1 -1.1**
SUKH	**Sukhothai**	**43.95 255**	P	**P**	**15 06 26.5 +0.9**
	comp=Z,58nm,1.1s,comp=Z,467nm				
NLAI	**Namlea**	**44.16 205**	P	**P**	**15 06 28.5 +1.3**
	comp=Z,184nm,1.3s,comp=Z,4μm				
LSA	**Lhasa**	**44.27 275**	P	**P**	**15 06 30.6 +2.0**
LSA			S	**S**	**15 13 05.4 +3.6**
LSA			pmax	pmax	
	comp=Z,2μm,7.9s				
LSA			LR	LR	
	comp=Z,6μm,17.1s				
LSA			LR	LR	
	comp=Z,18μm,15.8s				
LSA			LR	LR	
	comp=Z,28μm,15.8s				
LSA	**Lhasa**	**44.27 275**	*e*P	**P**	**15 06 29.8 +1.2**
LSA			pmax	pmax	
	comp=Z,362nm,1.3s				
LSA			MLR	MLR	
	comp=Z,10μm,22.0s				
LSA	**Lhasa**	**44.27 275**	*e*P	**P**	**15 06 29.8 +1.2**
	comp=Z,362nm,1.3s				
LSA			LR	LR	
	comp=Z,10μm,22.0s				
SRAK	**Srakaew**	**44.32 249**	P	**P**	**15 06 25.9 -2.7**
	comp=Z,902nm,1.0s,comp=Z,7μm				
OHAK	**Old Harbor**	**44.42 44**	*e*P	**P**	**15 06 24.3 -4.6**
	comp=Z,196nm,1.0s				
BNDI	**Bandanaira**	**44.52 200**	P	**P**	**15 06 31.0 +0.9**
	comp=Z,2μm,1.3s,comp=Z,22μm				
RSO	**Redoubt South**	**44.63 39**	*e*P	**P**	**15 06 31.5 +0.7**
NAYO	**Nakonayok**	**44.65 250**	P	**P**	**15 06 32.1 +0.8**
	comp=Z,171nm,1.1s,comp=Z,2μm				
KDAK	**Kodiak Island**	**44.77 43**	LR	LR	15 22 57.3
	comp=Z,8μm,21.6s,baz=244,slow=33				
KDAK	**Kodiak Island**	**44.77 43**	*ce*P	**P**	**15 06 32.7 +1.0**
KDAK	**Kodiak Island**	**44.77 43**	*e*P	**P**	**15 06 32.3 +0.6**
	comp=Z,382nm,0.9s				
MHMT	**Maesarieng**	**44.83 257**	P	**P**	**15 06 33.7 +1.0**
	comp=Z,132nm,1.8s				
BTM	**Bintulu**	**44.93 227**	⇑P	**P**	**15 06 33.2 -0.3**
CHBT	**CHBT**	**44.94 247**	P	**P**	**15 06 34.4 +0.9**
	comp=Z,529nm,1.3s,comp=Z,7μm				
PPLA	**Purkeypile**	**44.96 36**	*e*P	**P**	**15 06 34.9 +1.6**
	comp=Z,1μm,1.3s				
SPU	**Mount Spurr**	**44.98 38**	*e*P	**P**	**15 06 34.5 +1.0**
CAST	**Castle Rocks**	**45.03 35**	*e*P	**P**	**15 06 35.1 +1.3**
	comp=Z,422nm,1.5s				
TARA	**Tarawa**	**45.18 137**	PFAKE		15 06 50.0 +15
TARA			LR	LR	
	comp=Z,744nm,19.0s				
MK01	**Makanchi Array**	**45.35 302**	*e*P	**P**	**15 06 35.6 -0.9**
MK31	**Makanchi Array**	**45.35 302**	*i*P	**P**	**15 06 36.4 -0.1**
MK31			pmax	pmax	
	comp=Z,235nm,0.8s				
MK31	**Makanchi Array**	**45.35 302**	*e*P	**P**	**15 06 36.8 +0.2**
MKAR	**Makanchi Array**	**45.35 302**	P	**P**	**15 06 36.7 +0.2**
	comp=Z,60nm,0.7s,baz=83,slow=9.9,SNR=268				
MKAR			LR	LR	15 26 15.9
	comp=Z,12μm,18.7s,baz=72,slow=37				
BPAW	**Bear Paw Mtn.**	**45.55 34**	*e*P	**P**	**15 06 38.7 +0.9**
	comp=Z,135nm,1.2s				
KTH	**Kantishna Hill**	**45.56 35**	*e*P	**P**	**15 06 39.0 +1.0**
	comp=Z,752nm,1.3s				
MAKZ	**Makanchi**	**45.56 302**	P	**P**	**15 06 38.1 -0.1**
MAKZ			pmax	pmax	
	comp=Z,265nm,1.0s				
MAKZ	**Makanchi**	**45.56 302**	*e*P	**P**	**15 06 38.5 +0.3**
	comp=Z,216nm,0.8s				
SHL	**Shillong**	**45.59 270**	*i*P	**P**	**15 06 37.0 -1.9**
	comp=Z,30nm,1.0s				
SHL			IAmb	IAmb	15 06 42.6
	comp=Z,288nm,1.5s				
SHL			*i*x	x	15 13 24.0
MLY	**Manley**	**45.70 33**	*e*P	**P**	**15 06 40.3 +1.2**
	comp=Z,198nm,1.2s				
JOHN	**Johnston Islan**	**45.76 105**	PFAKE		15 06 50.0 +10
JOHN			LR	LR	
	comp=Z,940nm,20.0s				
TRF	**Thorofare Moun**	**45.84 35**	*e*P	**P**	**15 06 40.8 +0.4**
	comp=Z,172nm,1.2s				
PATY	**Pattaya**	**45.89 249**	P	**P**	**15 06 42.5 +1.4**
	comp=Z,80nm,0.9s				
SEM	**Semipalatinsk**	**45.97 307**	*i*P	**P**	**15 06 39.8 -1.6**
	comp=Z,889nm,1.4s				
SEM			*i*PP	**PP**	**15 08 28.6 -0.4**
SEM			*e*S	**S**	**15 13 22.4 -2.6**
SEM			*i*SS	**SS**	**15 16 49.7 +0.1**
SEM			LR	LR	15 25 59.7
	comp=Z,15μm,17.0s				
SBUM	**Sibu**	**46.04 227**	⇑P	**P**	**15 06 42.5 +0.3**
SBUM	**Sibu**	**46.04 227**	*e*P	**P**	**15 06 42.9 +0.6**
	comp=Z,379nm,1.2s				
COLD	**Coldfoot**	**46.07 30**	*e*P	**P**	**15 06 42.6 +0.7**
	comp=Z,95nm,1.1s				
RC01	**Rabbit Creek A**	**46.11 38**	*e*P	**P**	**15 06 42.6 +0.4**
	comp=Z,288nm,1.1s				
BWN	**Browne**	**46.22 34**	*e*P	**P**	**15 06 44.9 +1.8**
	comp=Z,2μm,1.4s				
KHLT	**Khaolaem Dam**	**46.38 253**	P	**P**	**15 06 46.6 +1.6**
	comp=Z,106nm,1.5s,comp=Z,1μm				
PMR	**Palmer**	**46.38 37**	*e*P	**P**	**15 06 44.4 0.0**
PMR			pmax	pmax	
	comp=Z,380nm,1.2s				
PMR	**Palmer**	**46.38 37**	*e*P	**P**	**15 06 44.4 0.0**
	comp=Z,384nm,1.3s				
MCK	**McKinley**	**46.45 34**	*e*P	**P**	**15 06 45.4 +0.5**
MCK			pmax	pmax	
	comp=Z,310nm,1.2s				
MCK	**McKinley**	**46.45 34**	*e*P	**P**	**15 06 45.4 +0.5**
	comp=Z,306nm,1.2s				
RND	**Reindeer**	**46.48 35**	*e*P	**P**	**15 06 45.4 +0.1**
RND			pmax	pmax	
	comp=Z,580nm,1.4s				
RND	**Reindeer**	**46.48 35**	*e*P	**P**	**15 06 45.4 +0.1**
	comp=Z,581nm,1.4s				
SML	**Sawmill**	**46.76 37**	*e*P	**P**	**15 06 47.9 +0.5**
SML			pmax	pmax	
	comp=Z,1μm,1.3s				
SML	**Sawmill**	**46.76 37**	*e*P	**P**	**15 06 47.9 +0.5**
	comp=Z,1μm,1.4s				
MDM	**Muphy Dome**	**46.77 33**	*e*P	**P**	**15 06 48.4 +0.9**
	comp=Z,404nm,1.2s				
TTSI	**Tana Toraja**	**46.81 214**	P	**P**	**15 06 47.8 -0.5**
	comp=Z,131nm,1.8s,comp=Z,3μm				
WRH	**Wood River Hil**	**46.82 33**	*e*P	**P**	**15 06 47.7 -0.2**
	comp=Z,140nm,1.2s				
COLA	**College**	**46.93 33**	*d i*P	**P**	**15 06 49.2 +0.6**
COLA			pmax	pmax	
	comp=Z,77nm,1.0s				
COLA			MLR	MLR	
	comp=Z,4μm,16.0s				
COLA	**College**	**46.93 33**	*e*P	**P**	**15 06 50.0 +1.4**
	comp=Z,179nm,0.9s				
COLA			LR	LR	
	comp=Z,5μm,19.0s				
KURK	**Kurchatov**	**46.94 308**	P	**P**	**15 06 48.4 -0.5**
KURK			pmax	pmax	
	comp=Z,586nm,0.8s				
KURK	**Kurchatov**	**46.94 308**	*e*P	**P**	**15 06 49.2 +0.3**
	comp=Z,326nm,0.8s				
KURK			S	S	15 13 50.5 +12
KURK			LR	LR	
	comp=Z,18μm,21.0s				
CCB	**Clear Creek Bu**	**46.95 33**	*e*P	**P**	**15 06 49.0 +0.3**
	comp=Z,95nm,1.2s				
KURBB	**Kurchatov Arra**	**47.01 308**	P	**P**	**15 06 49.0 -0.4**
	comp=Z,60nm,0.7s,baz=82,slow=8.4,SNR=316				
KURBB			S	S	15 13 50.5 +11
	comp=Z,5.5nm,0.9s,baz=84,slow=17,SNR=4.8				
SCM	**Sheep Creek Mo**	**47.23 37**	*e*P	**P**	**15 06 51.8 +0.6**
SCM			pmax	pmax	
	comp=Z,430nm,1.1s				
SCM	**Sheep Creek Mo**	**47.23 37**	*e*P	**P**	**15 06 51.8 +0.6**
	comp=Z,426nm,1.1s				
HDA	**Harding Lake**	**47.32 33**	*e*P	**P**	**15 06 51.5 -0.2**
	comp=Z,170nm,1.0s				
IL1	**Eielson Array**	**47.34 33**	*e*P	**P**	**15 06 50.9 -1.0**
ILAR	**Eielson Array**	**47.34 33**	P	**P**	**15 06 51.7 -0.2**
	comp=Z,124nm,0.9s,baz=263,slow=6.0,SNR=325				
ILAR			LR	LR	15 27 51.4
	comp=Z,3μm,20.5s,baz=272,slow=38				
ILB	**Eielson Array**	**47.34 33**	*e*P	**P**	**15 06 51.9 0.0**
MTKI	**Muara Teweh, K**	**47.38 222**	P	**P**	**15 06 53.8 +1.1**
	comp=Z,903nm,1.1s,comp=Z,16μm				
PMG	**Port Moresby**	**47.44 176**	P	**P**	**15 06 53.4 +0.3**
	comp=Z,99nm,0.9s,baz=7.2,slow=8.6,SNR=12				
PMG	**Port Moresby**	**47.44 176**	*de*P	**P**	**15 06 52.7 -0.4**
PMG			pmax	pmax	
	comp=Z,952nm,1.7s				
PMG	**Port Moresby**	**47.44 176**	*e*P	**P**	**15 06 53.7 +0.6**
	comp=Z,164nm,1.0s				
PMG			LR	LR	
	comp=Z,4μm,22.0s				
SAUI	**Saumlaki**	**47.48 197**	P	**P**	**15 06 55.7 +2.2**
	comp=Z,1μm,1.6s,comp=Z,21μm				
SAUI	**Saumlaki**	**47.48 197**	*e*P	**P**	**15 06 55.4 +1.9**
	comp=Z,2μm,1.3s				
SPSI	**Sidrap Palu**	**47.66 214**	P	**P**	**15 06 54.2 -0.6**
	comp=Z,360nm,1.2s,comp=Z,4μm				
KLU	**Klutina**	**47.93 37**	*e*P	**P**	**15 06 57.6 +1.0**
	comp=Z,453nm,1.1s				
SHLS	**Shalkode**	**47.93 297**	*i*P	**P**	**15 06 55.0 -2.0**
	comp=Z,854nm,1.5s				
SHLS			*e*S	**S**	**15 13 50.3 -3.4**
SHLS			LR	LR	15 27 21.5
	comp=Z,5μm,16.0s				
KSM	**Kuching**	**47.94 229**	*e*P	**P**	**15 06 57.6 +0.5**
	comp=Z,852nm,1.4s				
KSM			LR	LR	
	comp=Z,3μm,20.0s				
FYU	**Fort Yukon**	**48.01 31**	*e*P	**P**	**15 06 58.6 +1.7**
	comp=Z,605nm,1.3s				
DIV	**Divide**	**48.03 38**	*e*P	**P**	**15 06 58.4 +1.1**
	comp=Z,810nm,1.3s				
PAX	**Paxson**	**48.03 35**	*e*P	**P**	**15 06 58.4 +1.0**
PAX			pmax	pmax	
	comp=Z,270nm,1.5s				
PAX	**Paxson**	**48.03 35**	*e*P	**P**	**15 06 58.4 +1.0**
	comp=Z,273nm,1.5s				
EYAK	**Cordova Ski Ar**	**48.09 39**	*e*P	**P**	**15 06 58.9 +1.2**
	comp=Z,458nm,1.3s				
STKI	**Sintang**	**48.41 226**	P	**P**	**15 07 01.8 +1.1**
	comp=Z,857nm,1.2s,comp=Z,9μm				
TDK	**Taldyqorghan**	**48.42 300**	*i*P	**P**	**15 06 59.2 -1.4**
	comp=Z,2μm,1.4s				
TDK			*e*S	**S**	**15 13 57.4 -2.9**
TDK			LR	LR	15 27 32.5
	comp=Z,8μm,18.7s				
KAPI	**Kappang**	**48.60 213**	P	**P**	**15 07 02.9 +0.8**
	comp=Z,262nm,0.8s,baz=39,slow=4.4,SNR=84				
KAPI			LR	LR	15 26 35.6
	comp=Z,3μm,21.4s,baz=35,slow=35				
BMRM	**Bremner River**	**48.61 38**	*e*P	**P**	**15 07 02.9 +1.1**
	comp=Z,663nm,1.3s				
RAGM	**Ragged Mountai**	**48.64 39**	*e*P	**P**	**15 07 03.9 +1.9**
	comp=Z,480nm,1.1s				
KPKS	**Kokpek**	**48.68 298**	*i*P	**P**	**15 07 02.5 -0.2**
	comp=Z,3μm,1.3s				
KPKS			*e*PP	**PP**	**15 08 56.0 +0.5**
KPKS			*i*S	**S**	**15 14 02.3 -1.6**
KPKS			LR	LR	15 28 14.6
	comp=Z,6μm,15.2s				
MENT	**Mentasta**	**48.83 35**	*e*P	**P**	**15 07 04.7 +1.2**
	comp=Z,285nm,1.0s				
ZHN	**Zhinishke**	**48.94 298**	*i*P	**P**	**15 07 03.8 -0.9**
	comp=Z,1μm,1.3s				
ZHN			*e*S	**S**	**15 14 06.4 -1.3**
ZHN			LR	LR	15 28 01.8
	comp=Z,3μm,15.3s				
SATY	**Saty**	**48.99 298**	*i*P	**P**	**15 07 04.3 -0.9**
	comp=Z,2μm,1.4s				
SATY			*i*PP	**PP**	**15 08 58.6 +0.2**
SATY			*e*S	**S**	**15 14 05.9 -2.6**
SATY			LR	LR	15 28 01.2
	comp=Z,5μm,14.4s				
GUN	**Gumba**	**49.20 276**	*e*P	**P**	**15 07 08.3 +1.1**
	comp=Z,2μm,1.0s				
BSSI	**Bau Bau, Buton**	**49.30 212**	P	**P**	**15 07 07.5 0.0**
	comp=Z,724nm,1.1s,comp=Z,8μm				
BBKI	**Banjar Baru**	**49.55 220**	P	**P**	**15 07 09.3 -0.1**
	comp=Z,2μm,1.1s,comp=Z,18μm				
KTGM	**Kuala Trenggan**	**49.56 239**	⇑P	**P**	**15 07 10.5 +1.0**
HNR	**Honiara**	**49.63 159**	PFAKE		15 07 20.0 +10
HNR			LR	LR	
	comp=Z,10μm,22.0s				
BALM	**Baldy**	**49.69 38**	*e*P	**P**	**15 07 11.2 +1.0**
BALM			pmax	pmax	
	comp=Z,290nm,1.0s				
BALM	**Baldy**	**49.69 38**	*e*P	**P**	**15 07 11.2 +1.0**
	comp=Z,290nm,1.0s				
KKN	**Kakani**	**49.73 276**	*e*P	**P**	**15 07 11.7 +0.7**
	comp=Z,831nm,0.9s				
PKIN	**Phulchoki**	**49.73 276**	*e*P	**P**	**15 07 11.2 +0.1**
	comp=Z,1μm,1.7s				
EGAK	**Eagle**	**49.79 33**	*e*P	**P**	**15 07 10.8 +0.1**
	comp=Z,153nm,1.0s				
EGAK			LR	LR	
	comp=Z,5μm,22.0s				
MDOK	**Medeo**	**49.91 298**	*i*P	**P**	**15 07 10.0 -2.1**
	comp=Z,2μm,1.3s				
MDOK			*i*PP	**PP**	**15 09 03.8 -2.9**
MDOK			*i*S	**S**	**15 14 17.2 -4.2**
MDOK			*i*SS	**SS**	**15 17 53.8 0.0**
MDOK			LR	LR	15 28 32.6
	comp=Z,7μm,15.7s				
AAA	**Alma-Ata**	**49.94 298**	*i*P	**P**	**15 07 11.8 -0.4**
	comp=Z,2μm,1.6s				
AAA			*e*S	**S**	**15 14 20.3 -1.3**
AAA			LR	LR	15 28 34.8
	comp=Z,5μm,17.1s				
DMN	**Daman**	**49.95 276**	*e*P	**P**	**15 07 13.5 +0.8**
	comp=Z,2μm,2.0s				
SKLT	**Songkhla**	**49.98 243**	P	**P**	**15 07 13.8 +1.1**
	comp=Z,277nm,1.8s,comp=Z,4μm				
SURT	**Suratani**	**50.04 246**	P	**P**	**15 07 14.6 +1.4**
	comp=Z,116nm,1.4s,comp=Z,2μm				
GKN	**Gorkha**	**50.13 277**	*e*P	**P**	**15 07 14.6 +0.6**
	comp=Z,2μm,1.2s				
KUU	**Kurty**	**50.17 299**	*i*P	**P**	**15 07 12.6 -1.4**
	comp=Z,2μm,1.4s				
KUU			*i*PP	**PP**	**15 09 07.1 -1.9**
KUU			*i*S	**S**	**15 14 24.8 +0.1**
KUU			*i*SS	**SS**	**15 17 58.4 +0.7**
KUU			LR	LR	15 28 54.9
	comp=Z,6μm,17.3s				
TRTT	**Trang**	**50.17 245**	P	**P**	**15 07 15.3 +1.1**
	comp=Z,198nm,1.4s,comp=Z,3μm				
PBKI	**Pangkalan Bun**	**50.58 224**	P	**P**	**15 07 18.8 +1.5**
	comp=Z,902nm,1.2s,comp=

BOK				IAmb	IAmb	15 07 23.8
	comp=Z,122nm,0.8s					
SOEI	**Soe**	**51.20 205**	P	**P**	**P**	**15 07 21.6 -0.4**
	comp=Z,954nm,1.1s,comp=Z,14μm					
SOEI	**Soe**	**51.20 205**	*e*P	**P**	**P**	**15 07 21.6 -0.4**
	comp=Z,1μm,1.0s					
KULM	**Kulim**	**51.28 241**	⇑P	**P**	**P**	**15 07 22.9 +0.2**
KULM	**Kulim**	**51.28 241**	*e*P	**P**	**P**	**15 07 23.0 +0.4**
	comp=Z,254nm,1.2s					
KULM				LR	LR	
	comp=Z,7μm,19.0s					
PYUN	**Piuthan**	**51.37 278**	*e*P	**P**	**P**	**15 07 24.1 +0.7**
	comp=Z,2μm,1.0s					
BVA0	**Borovoye Array**	**51.40 312**	P	**P**	**P**	**15 07 22.0 -1.1**
BVA0				pmax	pmax	
	comp=Z,209nm,1.3s					
BVAR	**Borovoye Array**	**51.40 312**	P	**P**	**P**	**15 07 23.6 +0.5**
	comp=Z,22nm,0.6s,baz=77,slow=7.8,SNR=170					
BVAR			S	**S**	**S**	**15 14 43.1 +1.6**
	comp=Z,2.3nm,1.0s,baz=149,slow=33,SNR=2.2					
BVAR			P4KPbc			15 44 53.7
	comp=Z,3.0nm,1.1s,baz=83,slow=3.7,SNR=8.7					
BRVK	**Borovoye**	**51.45 312**	*de*P	**P**	**P**	**15 07 23.8 +0.4**
BRVK				pmax	pmax	
	comp=Z,184nm,1.2s					
BRVK			MLR	MLR		
	comp=Z,23μm,17.0s					
BRVK	**Borovoye**	**51.45 312**	*e*P	**P**	**P**	**15 07 23.8 +0.4**
	comp=Z,178nm,1.0s					
BRVK			LR	LR		
	comp=Z,14μm,19.0s					
OTUK	**Ortayu**	**51.51 306**	P	**P**	**P**	**15 07 23.0 -1.0**
OTUK				pmax	pmax	
	comp=Z,209nm,1.3s					
IPM	**Ipoh**	**51.61 240**	⇑P	**P**	**P**	**15 07 24.0 -1.0**
IPM	**Ipoh**	**51.61 240**	*e*P	**P**	**P**	**15 07 25.4 +0.3**
	comp=Z,268nm,1.1s					
DGPR	**DIGLIPUR**	**51.68 255**	*e*P	**P**	**P**	**15 07 26.1 +0.5**
DGPR				IAmb	IAmb	15 07 27.8
	comp=Z,2μm,1.9s					
FRU	**Bishkek**	**51.70 299**	⇓*i*P		**P**	**15 07 25.0 -0.5**
FRU			*i*			15 09 24.0
FRU			*e*			15 10 25.0
FRU			*e*S		**S**	**15 14 47.0 +1.1**
FRU			*e*			15 17 12.0
FRU			*e*			15 18 12.0
FRU				pmax	pmax	
	comp=Z,2μm,2.5s					
FRU				smax	smax	
	comp=E,4μm,6.0s					
FRU				smax	smax	
	comp=E,840nm,2.5s					
MYKOM	**Kota Tinggi**	**51.71 235**	*e*P	**P**	**P**	**15 07 24.7 -1.0**
	comp=E,357nm,1.3s					
BATI	**Baumata**	**51.83 206**	LR	LR	LR	15 28 47.9
	comp=E,988nm,21.2s,slow=35					
AAK	**Ala-Archa**	**51.85 298**	P	**P**	**P**	**15 07 27.4 +0.6**
	comp=E,54nm,1.0s,baz=93,slow=5.2,SNR=121					
AAK	**Ala-Archa**	**51.85 298**	P	**P**	**P**	**15 07 26.2 -0.6**
AAK				pmax	pmax	
	comp=Z,176nm,1.5s					
AAK	**Ala-Archa**	**51.85 298**	*e*P	**P**	**P**	**15 07 27.3 +0.6**
	comp=Z,140nm,0.9s					
AAK				LR	LR	
	comp=Z,9μm,19.0s					
KSH	**Kashi**	**51.92 294**	P	**P**	**P**	**15 07 31.9 +4.6**
KSH			*es*P		sP	15 07 42.7 +6.8
KSH			*e*PcP		**PcP**	**15 08 43.9 +4.1**
KSH			*e*PP		**PP**	**15 09 31.2 +6.1**
KSH			*e*ScP		**ScP**	**15 12 37.3 +1.8**
KSH			S		**S**	**15 14 53.8 +4.6**
KSH			ScS		**ScS**	**15 17 20.8 +4.3**
KSH				pmax	pmax	
	comp=Z,160nm,1.3s					
KSH				pmax	pmax	
	comp=Z,2μm,4.0s					
KSH				LR	LR	
	comp=Z,23μm,16.2s					
KSH				LR	LR	
	comp=Z,14μm,14.7s					
KSH				LR	LR	
	comp=Z,22μm,15.8s					
TPRI	**Tanjung Pinang**	**51.94 234**	P	**P**	**P**	**15 07 28.8 +1.3**
	comp=Z,311nm,1.3s,comp=Z,9μm					
OPA	**Opana**	**51.95 91**	*e*P	P		15 07 32.7 +5.2
OPA				pmax	pmax	
	comp=Z,330nm,1.0s					
OPA	**Opana**	**51.95 91**	*e*P	P		15 07 32.7 +5.1
	comp=Z,328nm,1.1s					
KIP	**Kipapa**	**52.09 91**	PFAKE			15 07 40.0 +11
KIP				LR	LR	
	comp=Z,8μm,20.0s					
MTN	**Manton Dam**	**52.22 196**	*e*P	**P**	**P**	**15 07 29.0 -0.5**
	comp=Z,1μm,0.9s					
EKS2	**Erkin-Say**	**52.34 299**	*e*P	**P**	**P**	**15 07 30.8 +0.4**
EKS2				pmax	pmax	
	comp=Z,130nm,1.0s					
EKS2	**Erkin-Say**	**52.34 299**	*e*P	**P**	**P**	**15 07 30.8 +0.4**
	comp=Z,126nm,0.9s					
EKS2				LR	LR	
	comp=Z,12μm,21.0s					
INK	**Inuvik**	**52.35 28**	P	**P**	**P**	**15 07 30.7 +0.8**
	comp=Z,68nm,0.9s,baz=280,slow=7.7,SNR=94					
INK				LR	LR	15 32 33.5
	comp=Z,4μm,20.0s,baz=280,slow=39					
INK	**Inuvik**	**52.35 28**	*e*P	**P**	**P**	**15 07 30.5 +0.7**
INK				pmax	pmax	
	comp=Z,260nm,1.4s					
INK	**Inuvik**	**52.35 28**	*e*P	**P**	**P**	**15 07 30.5 +0.7**
	comp=Z,256nm,1.4s					
PBA	**Port Blair**	**52.77 254**	*e*P	P		15 07 33.3 -0.3
PBA				IAmb	IAmb	15 07 36.0
	comp=Z,92nm,0.8s					
PLAI	**Plampang**	**52.87 213**	P	**P**	**P**	**15 07 33.0 -1.3**
	comp=Z,448nm,1.0s,comp=Z,5μm					
BASI	**Baing, Sumba**	**52.97 210**	P	**P**	**P**	**15 07 34.5 -0.5**
	comp=Z,868nm,1.2s,comp=Z,10μm					
BWNR	**Bhubaneshwar**	**53.10 268**	*e*P	**P**	**P**	**15 07 37.0 +0.9**
BWNR				IAmb	IAmb	15 07 38.0
	comp=Z,1μm,2.0s					
TWSI	**Taliwang, Sumb**	**53.18 214**	P	**P**	**P**	**15 07 35.6 -1.0**
	comp=Z,433nm,1.1s,comp=Z,4μm					
MNAS	**Manas**	**53.28 299**	P	**P**	**P**	**15 07 37.7 +0.4**
MNAS				pmax	pmax	
	comp=Z,293nm,0.9s					
PPBI	**Pangkal Pinang**	**53.33 230**	P	**P**	**P**	**15 07 38.7 +0.9**
	comp=Z,246nm,1.5s,comp=Z,4μm					
SRBI	**Singaraja**	**53.37 217**	P	**P**	**P**	**15 07 38.9 +0.9**
	comp=Z,1μm,1.3s,comp=Z,17μm					
SKAG	**Skagway**	**53.43 39**	*e*P	**P**	**P**	**15 07 39.5 +1.5**
	comp=Z,293nm,1.0s					
ABJI	**Asem Bagus**	**53.58 218**	P	**P**	**P**	**15 07 40.0 +0.4**
	comp=Z,536nm,1.9s,comp=Z,9μm					
DNP	**Denpasar**	**53.89 216**	P	**P**	**P**	**15 07 41.9 +0.1**
	comp=Z,971nm,1.4s,comp=Z,17μm					
LHMI	**Lhok Sumawe**	**53.93 245**	P	**P**	**P**	**15 07 46.3 +4.1**
	comp=Z,435nm,1.4s,comp=Z,8μm					
LHMI	**Lhok Sumawe**	**53.93 245**	*e*P	**P**	**P**	**15 07 44.6 +2.4**
	comp=Z,388nm,1.1s					
TSI	**Tuntungan**	**54.01 242**	P	**P**	**P**	**15 07 44.4 +1.6**
	comp=Z,130nm,1.1s,comp=Z,3μm					
DDI	**Dehra Dun**	**54.17 283**	*e*P	**P**	**P**	**15 07 44.5 +0.6**
DDI				IAmb	IAmb	15 07 45.6
	comp=Z,839nm,1.8s					
JAGI	**Jajag, Banyuwa**	**54.21 218**	P	**P**	**P**	**15 07 42.8 -1.4**
	comp=Z,213nm,1.9s,comp=Z,4μm					
JAGI	**Jajag, Banyuwa**	**54.21 218**	*e*P	**P**	**P**	**15 07 42.0 -2.2**
	comp=Z,197nm,1.0s					
PSI	**Prapat**	**54.26 241**	*e*P	**P**	**P**	**15 07 45.1 +0.3**
PSI				pmax	pmax	
	comp=Z,120nm,1.2s					
PSI	**Prapat**	**54.26 241**	*e*P	**P**	**P**	**15 07 45.1 +0.3**
	comp=Z,120nm,1.2s					
GMJI	**Gumukmas**	**54.38 218**	P	**P**	**P**	**15 07 44.7 -0.7**
	comp=Z,126nm,1.2s,comp=Z,3μm					
KK31	**Karatay Array**	**54.42 300**	*i* P	**P**	**P**	**15 07 44.9 -0.6**
KK31				pmax	pmax	
	comp=Z,118nm,1.1s					
KKAR	**Karatay Array**	**54.42 300**	*e*P	**P**	**P**	**15 07 45.8 +0.3**
KKAR	**Karatay Array**	**54.42 300**	*e*P	**P**	**P**	**15 07 45.8 +0.3**
SMLA	**Simla**	**54.48 284**	*e*P	**P**	**P**	**15 07 46.4 +0.3**
SMLA				IAmb	IAmb	15 07 47.5
	comp=Z,316nm,0.7s					
KCSI	**Kotacane, Aceh**	**54.55 243**	P	**P**	**P**	**15 07 46.8 +0.1**
	comp=Z,74nm,1.2s,comp=Z,2μm					
NGJI	**Ngawi**	**54.61 221**	P	**P**	**P**	**15 07 48.4 +1.4**
	comp=Z,394nm,1.2s,comp=Z,9μm					
DHRM	**DHARAMSHALA**	**54.64 286**	*e*P	**P**	**P**	**15 07 47.6 +0.1**
DHRM				IAmb	IAmb	15 07 52.9
	comp=Z,274nm,0.5s					
BKNI	**Bangkinang**	**54.65 237**	P	**P**	**P**	**15 07 48.6 +1.2**
	comp=Z,566nm,1.3s,comp=Z,6μm					
BKNI	**Bangkinang**	**54.65 237**	*e*P	**P**	**P**	**15 07 47.8 +0.4**
	comp=Z,649nm,1.1s					
PMBI	**Palembang**	**54.77 231**	P	**P**	**P**	**15 07 51.0 +2.8**
	comp=Z,695nm,1.1s,comp=Z,11μm					
JWA	**Jwalamukhi**	**54.79 285**	*e*P	**P**	**P**	**15 07 49.0 +0.7**
CMBY	**CAMPBELL BAY**	**54.90 249**	*e*P	**P**	**P**	**15 07 49.6 +0.3**
CMBY				IAmb	IAmb	15 07 50.9
POHA	**Pohakuloa**	**54.94 92**	*e*P	**P**	**P**	**15 07 51.4 +1.6**
	comp=Z,246nm,1.1s					
POHA				LR	LR	
	comp=Z,5μm,19.0s					
MLSI	**Meulaboh, Aceh**	**54.98 244**	P	**P**	**P**	**15 07 50.0 +0.1**
	comp=Z,261nm,1.3s,comp=Z,4μm					
PWJI	**Pagerwojo**	**54.99 220**	P	**P**	**P**	**15 07 48.7 -1.1**
	comp=Z,1μm,1.0s,comp=Z,10μm					
MLOA	**Mauna Loa Obse**	**55.03 92**	*e*P	**P**	**P**	**15 07 52.6 +1.9**
BRLS	**Borolday**	**55.10 300**	⇓*i*P	**P**	**P**	**15 07 50.0 -0.5**
BRLS			*i* S	**S**	**S**	**15 15 31.1 -1.0**
BRLS				LR	LR	15 31 30.4
	comp=Z,3μm,15.1s					
IUG	**Iuzhnay**	**55.11 299**	*i* P	**P**	**P**	**15 07 49.7 -0.9**
	comp=Z,2μm,1.5s					
IUG			*i* S	**S**	**S**	**15 15 30.4 -2.0**
IUG				LR	LR	15 31 27.9
	comp=Z,4μm,15.0s					
MNSI	**Mandailing Nat**	**55.27 239**	P	**P**	**P**	**15 07 51.8 -0.1**
	comp=Z,76nm,1.1s,comp=Z,2μm					
WOJI	**Wonogiri, Jawa**	**55.28 221**	P	**P**	**P**	**15 07 51.9 0.0**
	comp=Z,309nm,1.7s,comp=Z,7μm					
SDSI	**Sungai Dareh**	**55.34 236**	P	**P**	**P**	**15 07 53.3 +0.9**
	comp=Z,421nm,1.0s,comp=Z,21μm					
PCJI	**Pacitan**	**55.45 221**	P	**P**	**P**	**15 07 53.6 +0.4**
	comp=Z,513nm,1.1s,comp=Z,7μm					
CHLP	**Challavanipeta**	**55.46 267**	*e*P	**P**	**P**	**15 07 53.4 +0.1**
CHLP				IAmb	IAmb	15 07 55.7
	comp=Z,390nm,1.3s					
CHLP			*e*S	**S**	**S**	**15 15 36.9 -0.4**
CHLP			IVMs_BB	IVMs_BB		15 36 04.2
	comp=Z,3μm,15.8s					
UGM	**Wanagama**	**55.56 222**	P	**P**	**P**	**15 07 53.7 -0.3**
	comp=Z,2μm,1.1s,comp=Z,21μm					
UGM	**Wanagama**	**55.56 222**	*e*P	**P**	**P**	**15 07 53.2 -0.7**
	comp=Z,2μm,1.1s					
SVE	**Sverdlovsk**	**55.71 319**	*c i*P	**P**	**P**	**15 07 55.5 +0.9**
SVE			*e*			15 10 07.3
SVE			*e*PPP	PPP		15 11 12.7
SVE			*e*S	**S**	**S**	**15 15 40.8 +1.0**
SVE			*e*			15 17 31.7
SVE				pmax	pmax	
	comp=Z,673nm,1.0s					
SVE				MLR	MLR	
	comp=Z,52μm,17.0s					
SVE				MLR	MLR	
	comp=E,36μm,16.0s					
SVE				MLR	MLR	
	comp=N,8μm,16.0s					
CRAG	**Craig**	**55.73 43**	*e*P	**P**	**P**	**15 07 57.0 +2.3**
	comp=N,179nm,1.3s					
WRAK	**Wrangell Islan**	**55.84 42**	*e*P	**P**	**P**	**15 07 57.8 +2.3**
	comp=N,115nm,1.1s					
WRAK				LR	LR	
	comp=Z,5μm,19.0s					
PDSI	**Padang**	**55.95 236**	P	**P**	**P**	**15 07 58.1 +1.2**
	comp=Z,70nm,0.8s,comp=Z,11μm					
LEM	**Lembang**	**56.23 225**	P	P		15 08 04.4 +5.5
	comp=Z,8μm,1.2s,comp=Z,98μm					
LHSI	**Lahat**	**56.24 231**	P	**P**	**P**	**15 07 59.5 +0.7**
	comp=Z,689nm,1.2s,comp=Z,9μm					
KLI	**Kotabumi**	**56.24 229**	P	**P**	**P**	**15 07 59.0 +0.1**
	comp=Z,577nm,1.2s,comp=Z,6μm					
GSI	**Gunungsitoli**	**56.27 241**	P	**P**	**P**	**15 08 00.1 +1.0**
	comp=Z,468nm,1.6s,comp=Z,9μm					
GSI	**Gunungsitoli**	**56.27 241**	*e*P	**P**	**P**	**15 07 58.9 -0.2**
	comp=Z,928nm,1.4s					
DLBC	**Dease Lake**	**56.36 39**	P	**P**	**P**	**15 08 00.3 +1.0**
	comp=Z,112nm,0.8s,baz=294,slow=8.3,SNR=80					
DLBC				LR	LR	15 35 50.7
	comp=Z,3μm,18.9s,baz=299,slow=40					
DLBC	**Dease Lake**	**56.36 39**	*e*P	**P**	**P**	**15 08 01.3 +2.0**
BLSI	**Bandar Lampung**	**56.41 229**	P	**P**	**P**	**15 08 00.0 -0.1**
	comp=Z,334nm,1.1s,comp=Z,5μm					
VIS	**Vishakhapatnam**	**56.47 267**	*e*P	**P**	**P**	**15 08 00.8 +0.2**
VIS				IAmb	IAmb	15 08 14.7
	comp=Z,136nm,0.8s					
MASI	**Maura Aman, Be**	**56.50 233**	P	**P**	**P**	**15 08 01.7 +0.9**
	comp=Z,800nm,1.7s,comp=Z,15μm					
CMJI	**Cimerak**	**56.56 224**	P	**P**	**P**	**15 07 59.9 -1.2**
	comp=Z,129nm,1.5s,comp=Z,2μm					
CISI	**Cisompet, Garu**	**56.72 225**	P	**P**	**P**	**15 08 01.1 -1.2**
	comp=Z,329nm,1.4s,comp=Z,4μm					
CISI	**Cisompet, Garu**	**56.72 225**	*e*P	**P**	**P**	**15 08 00.1 -2.3**
	comp=Z,448nm,1.3s					
LWLI	**Liwa**	**56.84 230**	P	**P**	**P**	**15 08 02.7 -0.6**
	comp=Z,204nm,0.9s,comp=Z,5μm					
CNJI	**Cibinong**	**56.90 225**	P	**P**	**P**	**15 08 01.6 -1.9**
	comp=Z,277nm,1.1s,comp=Z,2μm					
ARU	**Arti**	**56.93 319**	P	**P**	**P**	**15 08 03.9 +0.6**
	comp=Z,113nm,0.8s,baz=76,slow=4.6,SNR=247					
ARU				LR	LR	15 36 23.3
	comp=Z,11μm,18.5s,baz=67,slow=40					
ARU	**Arti**	**56.93 319**	*d i*P	**P**	**P**	**15 08 03.5 +0.3**
ARU						15 08 58.7
ARU						15 10 08.4
ARU				PPP	PPP	15 11 30.0
ARU				S	**S**	**15 15 55.7 -0.2**
ARU						15 17 48.8
ARU				pmax	pmax	
	comp=Z,664nm,1.2s					
ARU				pmax	pmax	
	comp=Z,910nm,9.4s					
ARU				smax	smax	
	comp=N,2μm,12.8s					
ARU				MLR	MLR	
	comp=Z,46μm,17.0s					
ARU	**Arti**	**56.93 319**	*e*P	**P**	**P**	**15 08 03.6 +0.4**
	comp=Z,612nm,1.0s					
KASI	**Kota Agung**	**56.98 229**	P	**P**	**P**	**15 08 03.2 -0.9**
	comp=Z,196nm,1.1s					
CGJI	**Cibinong**	**57.15 227**	P	**P**	**P**	**15 08 03.1 -2.2**
	comp=Z,123nm,1.2s,comp=Z,2μm					
KNTN	**Kanton**	**57.64 125**	*e*P	**P**	**P**	**15 08 10.0 +1.3**
	comp=Z,404nm,1.1s					
PPSI	**Pulau Pagai**	**57.64 235**	P	P		15 08 18.2 +9.4
CTA	**Charters Tower**	**58.01 178**	P	**P**	**P**	**15 08 10.8 -0.4**
	comp=Z,8.5nm,0.6s,baz=1,2,slow=8.1,SNR=13					
CTAO	**Charters Tower**	**58.01 178**	*e*P	**P**	**P**	**15 08 10.2 -1.0**
CTAO				pmax	pmax	
	comp=Z,290nm,1.1s					
CTAO	**Charters Tower**	**58.01 178**	*e*P	**P**	**P**	**15 08 10.2 -1.0**
	comp=Z,288nm,1.1s					
CTAO				LR	LR	
	comp=Z,7μm,20.0s					
PVM	**Polavaram**	**58.08 267**	*e*P	**P**	**P**	**15 08 11.3 -0.5**
PVM				IAmb	IAmb	15 08 13.8
	comp=Z,422nm,1.4s					
PVM			*e*S	**S**	**S**	**15 16 13.4 +1.4**
PVM			IVMs_BB	IVMs_BB		15 33 18.5
	comp=Z,2μm,21.2s					
BHPL	**Bhopal**	**58.13 276**	*e*P	**P**	**P**	**15 08 12.0 -0.3**
BHPL				IAmb	IAmb	15 08 13.1
	comp=Z,613nm,1.7s					
WRAB	**Tennant Creek**	**58.55 191**	*d i*P	**P**	**P**	**15 08 13.4 -1.6**
WRAB				pmax	pmax	
	comp=Z,1μm,1.0s					
WRAB	**Tennant Creek**	**58.55 191**	*e*P	**P**	**P**	**15 08 14.2 -0.8**
	comp=Z,443nm,0.9s					
WRAB				LR	LR	
	comp=Z,7μm,22.0s					
WB2	**Warramunga Arr**	**58.56 191**	*e*P	**P**	**P**	**15 08 13.9 -1.2**
WRA	**Warramunga Arr**	**58.56 191**	P	**P**	**P**	**15 08 14.2 -0.9**
	comp=Z,367nm,0.9s,baz=9.5,slow=7.2,SNR=419					
WRA				S	**S**	**15 16 17.9 -0.2**
	comp=Z,2.6nm,1.1s,baz=14,slow=13,SNR=4.8					
WRA				LR	LR	15 32 26.2
	comp=Z,4μm,21.8s,baz=10.0,slow=35					
WRA				PKPPKP	P'P'df	15 37 53.7 +8.3
	comp=Z,5.7nm,1.2s,baz=163,slow=2.6,SNR=5.6					
WRA				P4KPbc		15 45 23.9
	comp=Z,1.5nm,0.9s,baz=9.1,slow=4.5,SNR=4.8					
FITZ	**Fitzroy Crossi**	**58.64 201**	P	**P**	**P**	**15 08 15.9 +0.3**
	comp=Z,308nm,1.1s,baz=19,slow=7.2,SNR=148					
FITZ	**Fitzroy Crossi**	**58.64 201**	*e*P	**P**	**P**	**15 08 16.0 +0.3**
AB31	**Akbulak array**	**58.85 310**	P	**P**	**P**	**15 08 16.8 0.0**
AB31				pmax	pmax	
	comp=Z,154nm,1.0s					
ABKAR	**Akbulak array**	**58.85 310**	*e*P	**P**	**P**	**15 08 16.8 -0.1**
RPR	**Rampur**	**59.01 270**	*e*P	**P**	**P**	**15 08 17.9 -0.6**
RPR				IAmb	IAmb	15 08 20.7
	comp=Z,327nm,1.0s					
RPR			*e*S	**S**	**S**	**15 16 25.3 +1.1**
RPR			IVMs_BB	IVMs_BB		15 36 14.4
	comp=Z,2μm,21.4s					
KBL	**Kabul**	**59.02 291**	*e*P	**P**	**P**	**15 08 18.4 -0.2**
KBL				pmax	pmax	
	comp=Z,200nm,1.0s					
KBL	**Kabul**	**59.02 291**	*e*P	**P**	**P**	**15 08 18.4 -0.2**
	comp=Z,203nm,0.9s					
AKTO	**Aktyubinsk**	**59.51 312**	P	**P**	**P**	**15 08 21.6 +0.2**
	comp=Z,118nm,1.0s,baz=78,slow=7.3,SNR=136					
AKTO				LR	LR	15 35 29.6
	comp=Z,12μm,18.8s,baz=59,slow=38					
AKTO	**Aktyubinsk**	**59.51 312**	P	**P**	**P**	**15 08 21.0 -0.4**
AKTO				pmax	pmax	
	comp=Z,155nm,1.2s					
SRSP	**Sriramsagar**	**59.72 271**	*e*P	**P**	**P**	**15 08 22.1 -1.3**
SRSP				IAmb	IAmb	15 08 25.4
	comp=Z,711nm,1.1s					
SRSP			*e*S	**S**	**S**	**15 16 32.5 -0.9**
SRSP			IVMs_BB	IVMs_BB		15 38 13.0
	comp=Z,2μm,18.7s					
SPA0	**Spitsbergen Ar**	**59.80 349**	*e*P	**P**	**P**	**15 08 23.3 +0.4**
SPA0			*e*S	**S**	**S**	**15 16 30.3 -2.5**
SPA0			*e*SS	**SS**	**SS**	**15 20 31.7 +3.6**
SPA0			IVMs_BB	IVMs_BB		15 33 39.5
	comp=Z,3μm,15.1s					
SPA0	**Spitsbergen Ar**	**59.80 349**	*e*P	**P**	**P**	**15 08 21.1 -1.9**
SPITS	**Spitsbergen Ar**	**59.80 349**	P	**P**	**P**	**15 08 23.4 +0.4**
	comp=Z,26nm,0.9s,baz=81,slow=6.9,SNR=12					
KBS	**Kingsbay**	**59.87 350**	*e*P	**P**	**P**	**15 08 24.5 +1.0**
KBS				IAmb	IAmb	15 08 38.0
	comp=Z,184nm,0.3s					
KBS			*e*S	**S**	**S**	**15 16 37.0 +3.2**
KBS			*e*SS	**SS**	**SS**	**15 20 38.5 +9.3**
KBS			IVMs_BB	IVMs_BB		15 33 40.6
	comp=Z,2μm,20.5s					
KBS	**Kingsbay**	**59.87 350**	*e*P	**P**	**P**	**15 08 24.1 +0.6**
KBS				pmax	pmax	
	comp=Z,180nm,1.0s					
KBS	**Kingsbay**	**59.87 350**	*e*P	**P**	**P**	**15 08 24.1 +0.6**
	comp=Z,182nm,1.0s					
KBS				LR	LR	
	comp=Z,6μm,20.0s					
ADKI	**Addanki**	**60.18 267**	*e*P	**P**	**P**	**15 08 26.5 0.0**
ADKI				IAmb	IAmb	15 08 28.7
	comp=Z,223nm,1.2s					
ADKI			*e*S	**S**	**S**	**15 16 38.6 -0.6**
ADKI			IVMs_BB	IVMs_BB		15 37 47.4
	comp=Z,3μm,16.3s					
NJS	**Nagarjunasagar**	**60.30 268**	*e*P	**P**	**P**	**15 08 26.6 -0.6**
NJS				IAmb	IAmb	15 08 28.8
	comp=Z,214nm,1.2s					
NJS			*e*S	**S**	**S**	**15 16 41.2 +0.5**
NJS			IVMs_BB	IVMs_BB		15 36 36.8
	comp=Z,3μm,19.7s					
XMIS	**Christmas Isla**	**60.32 225**	*e*P	**P**	**P**	**15 08 24.1 -3.2**
	comp=Z,181nm,1.1s					
HYBB	**Hyderabad (bro**	**60.40 269**	*e*P	**P**	**P**	**15 08 27.8 -0.2**
HYBB				IAmb	IAmb	15 08 29.3
	comp=Z,443nm,1.4s					
HYBB			*e*S	**S**	**S**	**15 16 41.8 -0.4**
HYBB			IVMs_BB	IVMs_BB		15 38 23.9
	comp=Z,2μm,15.6s					
HYB	**Hyderabad**	**60.40 269**	⇓*i*P		**P**	**15 08 28.5 +0.5**
	comp=Z,215nm,1.0s					
HYB			*e*PcP		**PcP**	**15 09 12.5 -0.4**
HYB			*e*S		**S**	**15 16 44.0 +1.8**
HYB			*e*ScS		SKKSac	15 18 18.0 +0.1
HYB			*e*SS		**SS**	**15 20 40.0 0.0**
HYB	**Hyderabad**	**60.40 269**	*e*P		**P**	**15 08 28.3 +0.3**
HYB				IAmb	IAmb	15 08 29.5
	comp=Z,486nm,0.2s					
HSPB	**Hornsund (broa**	**60.75 348**	*e*P	**P**	**P**	**15 08 30.3 +0.8**
HSPB				IAmb	IAmb	15 08 35.6
	comp=Z,846nm,1.6s					
HSPB			*e*S	**S**	**S**	**15 16 43.8 -1.3**
HSPB	**Hornsund (broa**	**60.75 348**	*e*P	**P**	**P**	**15 08 30.1 +0.6**
HSPB			*e*S	**S**	**S**	**15 16 46.8 +1.8**
SRLM	**Srisailam**	**60.88 268**	*e*P	**P**	**P**	**15 08 30.9 -0.4**
SRLM				IAmb	IAmb	15 08 32.5
	comp=Z,238nm,1.3s					
SRLM			*e*S	**S**	**S**	**15 16 48.3 0.0**
SRLM			IVMs_BB	IVMs_BB		15 37 12.5
	comp=Z,3μm,17.6s					
RES	**Resolute Bay**	**60.92 15**	P	**P**	**P**	**15 08 30.7 0.0**
	comp=Z,98nm,0.9s,baz=309,slow=6.8,SNR=128					
RES				LR	LR	15 37 02.6
	comp=Z,3μm,20.4s,baz=322,slow=38					
RES				PKPPKP	P'P'df	15 37 46.7 -9.0
	comp=Z,2.8nm,0.9s,baz=99,slow=3.7,SNR=4.9					
RES	**Resolute Bay**	**60.92 15**	*e*P	**P**	**P**	**15 08 29.2 -1.5**
RES	**Resolute Bay**	**60.92 15**	*e*P	**P**	**P**	**15 08 29.2 -1.5**
RES			P'P'			15 37 46.7
RCLA	**Racherla**	**61.20 267**	*e*P	**P**	**P**	**15 08 32.9 -0.5**
RCLA				IAmb	IAmb	15 08 35.1
	comp=Z,246nm,1.2s					
RCLA			*e*S	**S**	**S**	**15 16 52.7 +0.3**
RCLA			IVMs_BB	IVMs_BB		15 37 24.5
	comp=Z,3μm,18.6s					
MDRS	**Chennai**	**61.57 264**	*e*P	**P**	**P**	**15 08 37.3 +1.4**
MDRS				IAmb	IAmb	15 08 38.2
	comp=Z,402nm,1.4s					
KLRI	**Killari**	**61.58 271**	*e*P	**P**	**P**	**15 08 35.5 -0.6**
KLRI				IAmb	IAmb	15 08 37.7
	comp=Z,397nm,0.9s					
KLRI			*e*S	**S**	**S**	**15 16 55.5 -1.7**
KLRI			IVMs_BB	IVMs_BB		15 37 43.5
	comp=Z,4μm,17.5s					
SKHT	**Srikalahasti**	**61.60 265**	*e*P	**P**	**P**	**15 08 36.2 +0.1**
SKHT				IAmb	IAmb	15 08 38.2
	comp=Z,499nm,1.5s					

comp=Z,8μm,22.0s
MBWA Marble Bar 63.35 206 P P 15 08 48.6 +1.0
SNR=9.8
MBWA Marble Bar 63.35 206 P P 15 08 48.6 +1.0
SNR=9.8
MBWA Marble Bar 63.35 206 eP P 15 08 47.4 -0.2
MBWA LR LR
comp=Z,2μm,21.0s
HAMF Hammerfest 63.42 341 eP P 15 08 47.7 +0.2
HAMF eS S 15 17 21.2 +2.3
HAMF IVMs_BB IVMs_BB 15 39 60.0
comp=Z,3μm,18.8s
POO Poona 63.48 273 eP P 15 08 48.9 +0.2
POO IAmb IAmb 15 08 50.0
comp=Z,400nm,1.2s
DZM Mont Dzumac 63.51 157 P P 15 08 48.7 0.0
comp=Z,82nm,1.1s,baz=4.0,slow=5.4,SNR=8.7
EIDS Eidsvold 63.57 173 eP P 15 08 49.5 +0.6
ARA0 ARCESS Array S 63.66 340 eP P 15 08 48.8 -0.4
ARCES ARCESS Array B 63.66 340 P P 15 08 49.4 +0.3
comp=Z,40nm,0.8s,baz=57,slow=8.0,SNR=63
ARCES PKPPKP P'P'df 15 37 40.8 -10
comp=Z,2.4nm,1.0s,baz=242,slow=2.6,SNR=4.0
ARE0 ARCESS Array S 63.66 340 eP P 15 08 50.4 +1.2
ARE0 eS S 15 17 20.9 -1.0
ARE0 eSS SS 15 21 30.6 +1.9
ARE0 IVMs_BB IVMs_BB 15 41 20.1
comp=Z,3μm,15.4s
ARE0 ARCESS Array S 63.66 340 eP P 15 08 49.5 +0.3
KLMR Klimovskoe 63.92 328 dP P 15 08 50.8 -0.1
KLMR e 15 09 25.6
KLMR i 15 11 11.5
KLMR pmax pmax
comp=Z,374nm,1.4s
PGC Sidney 63.95 48 eP P 15 08 52.8 +1.4
MSVF Nonsavu 64.10 144 eP P 15 08 52.3 -0.4
MSVF Nonsavu 64.10 144 eP P 15 08 52.2 -0.4
MSVF LR LR
comp=Z,6μm,19.0s
BHJ Bhuj 64.19 280 eP P 15 08 53.3 0.0
BHJ IAmb IAmb 15 08 54.8
comp=Z,556nm,1.4s
OSR Olympics--Salm 64.21 49 P P 15 08 55.1 +2.0
NLWA Neilton Lookou 64.32 49 PFAKE 15 09 10.0 +16
NLWA LR LR
comp=Z,2μm,19.0s
A04D Lummi Island 64.35 47 P P 15 08 55.4 +1.5
baz=299,SNR=26
KTK1 Kautokeino 64.62 340 eP P 15 08 55.7 +0.3
KTK1 IAmb IAmb 15 09 09.2
comp=Z,291nm,1.3s
PALK Pallekele 64.74 259 iP P 15 08 57.2 +0.1
SNR=9.3
PALK Pallekele 64.74 259 ceP P 15 08 58.0 +1.0
PALK Pallekele 64.74 259 eP P 15 08 57.8 +0.7
DAG Danmarks Havn 64.79 356 ⇓iP P 15 08 56.3 -0.1
comp=Z,222nm,1.2s
DAG iS S 15 17 34.7 -0.9
comp=Z,4μm,16.0s
DAG Danmarks Havn 64.79 356 ⇓iP P 15 08 56.3 -0.1
DAG iS S 15 17 34.7 -0.9
DAG pmax pmax
comp=Z,350nm,1.2s
DAG MLR MLR
comp=Z,4μm,16.0s
GNW Green Mountain 64.85 48 eP P 15 08 59.0 +1.8
E03A Lebam 64.91 50 P P 15 08 59.5 +1.8
B05A Bryant 64.93 47 P P 15 08 59.1 +1.3
baz=300,SNR=33
B06A Marblemount 65.15 47 eP P 15 09 00.3 +1.1
GEYT Alibeck 65.16 300 P P 15 09 00.0 +0.5
comp=Z,117nm,1.0s,baz=35,slow=3.6,SNR=146
GEYT LR LR 15 40 22.2
comp=Z,7μm,18.3s,baz=75,slow=39
GOA Goa 65.22 271 eP P 15 09 00.6 +0.5
GOA IAmb IAmb 15 09 02.9
comp=Z,1μm,1.4s
F03A Seaside 65.22 50 eP P 15 09 01.7 +2.0
TRO Tromso 65.31 342 ⇓iP P 15 08 59.6 -0.2
TRO IAmb IAmb 15 09 15.6
comp=Z,144nm,0.5s
KMOR Kings Mountain 65.41 50 P P 15 09 02.4 +1.4
F04D Rainier, OR 65.48 50 P P 15 09 02.7 +1.3
baz=300,SNR=5.3
D05A Enumclaw 65.53 48 eP P 15 09 03.8 +2.1
G03D McMinnville, O 65.76 51 P P 15 09 04.9 +1.7
baz=300,SNR=20
OBSR Observation Ro 65.78 49 eP P 15 09 05.4 +1.8
C06D Leavenworth 65.80 47 P P 15 09 04.7 +1.2
baz=301,SNR=21
TDL Tradedollar La 65.82 49 P P 15 09 05.3 +1.5
WRW Wenatchee Ridg 65.84 47 P P 15 09 05.1 +1.3
RCS Mount Rainier- 65.84 49 P P 15 09 05.8 +1.6
FMW Mount Fremont 65.84 49 P P 15 09 05.2 +1.3
LON Longmire 65.86 49 eP P 15 09 05.0 +1.1
LON Longmire 65.86 49 eP P 15 09 05.0 +1.1
VALT Mount Saint He 65.90 49 P P 15 09 06.2 +1.9
F04A Amboy 65.91 50 eP P 15 09 05.8 +1.6
COR Corvallis 66.06 51 eP P 15 09 07.5 +2.4
COR Corvallis 66.06 51 eP P 15 09 07.5 +2.4
TWW Teanaway 66.21 48 P P 15 09 07.9 +1.7
G04A Mulino 66.24 50 P P 15 09 08.0 +1.7
AFI Afiamalu 66.26 132 eP P 15 09 06.2 -0.6
AFI Afiamalu 66.26 132 eP P 15 09 06.2 -0.6
AFI LR LR
comp=Z,5μm,19.0s
LTY Liberty 66.27 48 eP P 15 09 07.6 +1.1
WTV Waterville 66.45 47 P P 15 09 08.5 +0.8
B08A Colville Reser 66.47 46 eP P 15 09 08.6 +0.8
I03D Drain, OR 66.48 52 P P 15 09 09.5 +1.7
baz=301,SNR=64
KULLO Kullorsuaq 66.60 6 ⇓iP P 15 09 07.9 -0.2
comp=Z,263nm,1.1s
comp=Z,7μm,21.0s
KULLO Kullorsuaq 66.60 6 ⇓iP P 15 09 07.9 -0.2
KULLO pmax pmax
comp=Z,260nm,1.1s
KULLO MLR MLR
comp=Z,7μm,21.0s
H04A Detroit Lake 66.69 51 P P 15 09 10.6 +1.4
COCO West Island 66.86 231 ceP P 15 09 12.7 +2.2
COCO West Island 66.86 231 eP P 15 09 11.3 +0.8
COCO LR LR
comp=Z,4μm,22.0s
TRD Trivandrum 66.89 262 eP P 15 09 11.2 +0.3
TRD IAmb IAmb 15 09 12.3
comp=Z,124nm,0.7s
G05D Wamic, OR 66.93 50 P P 15 09 12.1 +1.4
baz=302,SNR=63
I04A Tendick Farm, 67.01 52 P P 15 09 12.6 +1.2
baz=301,SNR=104
L02D Cave Junction, 67.11 54 P P 15 09 13.6 +1.7
baz=301,SNR=22
WIFE Three Sisters- 67.24 51 eP P 15 09 14.7 +1.8
HUMO Hull Mountain 67.29 53 eP P 15 09 14.6 +1.5
G06A Carlson Farm, 67.34 50 eP P 15 09 14.6 +1.2
C09A Chrisman Ranch 67.36 46 eP P 15 09 14.6 +1.1
HAWA Hanford 67.39 48 PFAKE 15 09 30.0 +16
HAWA LR LR
comp=Z,2μm,22.0s
I05D Terrebonne, OR 67.39 51 P P 15 09 15.2 +1.5
baz=302,SNR=46
D08A Wollman Farm, 67.39 47 eP P 15 09 14.6 +1.0
STEI Steigen 67.47 341 eP P 15 09 14.0 +0.3
STEI IAmb IAmb 15 09 29.6
comp=Z,97nm,0.4s
JCC Jacoby Creek, 67.54 55 eP P 15 09 17.1 +2.5
MOS Moscow 67.60 324 keP P 15 09 15.1 +0.4
MOS e 15 09 41.4
MOS e 15 11 43.4
MOS ePPP PPP 15 13 23.1
MOS iS S 15 18 10.7 +0.4
MOS i 15 18 48.0
MOS e 15 19 14.1
MOS eSS SS 15 22 33.7 +3.5
MOS pmax pmax
comp=Z,652nm,1.6s
MOS pmax pmax
comp=N,348nm,1.3s
MOS pmax pmax
comp=E,269nm,1.3s
MOS pmax pmax
comp=N,400nm,1.3s
MOS pmax pmax
comp=Z,1μm,1.8s
MOS pmax pmax
comp=E,400nm,1.5s
MOS smax smax
comp=N,2μm,4.2s
MOS smax smax
comp=E,2μm,5.1s
MOS MLR MLR
comp=Z,18μm,14.0s
MOS MLR MLR
comp=N,9μm,15.0s
MOS MLR MLR
comp=E,13μm,14.0s
KHMM Horse Mountain 67.70 55 eP P 15 09 18.1 +2.2
LOF Lofoten 67.74 342 eP P 15 09 16.3 +0.9
LOF IAmb IAmb 15 09 20.8
comp=Z,94nm,1.2s
NEW Newport 67.77 46 eP P 15 09 16.9 +0.9
NEW Newport 67.77 46 eP P 15 09 16.9 +0.9
NEW LR LR
comp=Z,3μm,19.0s
YBH Yreka Blue Hor 67.90 54 eP P 15 09 18.8 +1.7
YBH Yreka Blue Hor 67.90 54 eP P 15 09 18.8 +1.7
M02C Callahan 67.99 54 P P 15 09 19.4 +1.8
baz=302,SNR=54
J05D Fort Rock, OR 68.01 52 P P 15 09 19.3 +1.6
baz=302,SNR=140
K04D Chiloquin, OR 68.03 53 P P 15 09 19.5 +1.6
baz=302
KMRM Mail Ridge 68.06 56 eP P 15 09 20.6 +2.6
E09A Wood Farm, Sta 68.13 48 eP P 15 09 19.4 +1.2
VRH Novokhopyorsk 68.16 319 eP P 15 09 18.1 -0.2
VRH eS S 15 18 18.8 +1.6
VRH pmax pmax
comp=Z,110nm,1.0s
VRH pmax pmax
comp=Z,260nm,1.3s
VRH smax smax
comp=N,860nm,3.0s
VRH MLR MLR
comp=Z,33μm,21.0s
PUL Pulkovo 68.28 330 ceP P 15 09 19.5 +0.6
PUL pmax pmax
comp=Z,836nm,1.7s
PUL MLR MLR
comp=Z,9μm,19.0s
N02D Trinity Center 68.31 54 P P 15 09 21.4 +1.8
baz=302,SNR=60
M04C Macdoel 68.43 53 P P 15 09 21.9 +1.5
baz=302,SNR=75
OBN Obninsk 68.45 324 P P 15 09 20.3 +0.3
comp=Z,220nm,1.1s,baz=18,slow=1.0,SNR=108
OBN LR LR 15 44 00.5
comp=Z,6μm,19.3s,baz=51,slow=40
OBN Obninsk 68.45 324 dP P 15 09 20.2 +0.1
OBN i 15 09 33.2
OBN iS S 15 18 19.2 -1.3
OBN iSS SS 15 22 44.2 +0.8
OBN pmax pmax
comp=Z,462nm,1.2s
OBN MLR MLR
comp=Z,16μm,15.0s
OBN Obninsk 68.45 324 eP P 15 09 19.8 -0.2
K05A Summer Lake 68.52 52 eP P 15 09 22.9 +1.8
ARMA Armidale 68.62 173 eP P 15 09 22.4 +0.9
WDC Whiskeytown Da 68.62 55 eP P 15 09 22.8 +1.3
WDC Whiskeytown Da 68.62 55 eP P 15 09 22.8 +1.3
FIA1 FINESS Array S 68.78 333 eP P 15 09 22.3 +0.3
FINES FINESS Array B 68.78 333 P P 15 09 22.2 +0.1
comp=Z,69nm,0.7s,baz=48,slow=8.5,SNR=142
FINES PKPPKP P'P'df 15 37 30.4 -12
comp=Z,1.0nm,0.8s,baz=263,slow=1.5,SNR=4.2
FINES LR LR 15 41 13.5
comp=Z,16μm,21.4s,baz=49,slow=37
LPSR Galich'ya Gora 68.79 321 eP P 15 09 22.6 +0.4
LPSR e 15 11 52.2
LPSR eS S 15 18 25.3 +0.7
LPSR pmax pmax
comp=Z,260nm,1.5s
LPSR pmax pmax
comp=Z,370nm,1.4s
LPSR smax smax
comp=N,130nm,2.8s
LPSR MLR MLR
comp=Z,14μm,26.0s
F10A Beach Ranch, E 68.96 48 eP P 15 09 24.6 +1.0
MOR8 Moi Rana 69.01 340 eP P 15 09 22.2 -1.2
WALA Waterton Lakes 69.10 44 eP P 15 09 25.3 +0.8
HOPS Hopland Field 69.13 56 eP P 15 09 26.4 +1.7
VORR Voronezh 69.19 320 eP P 15 09 24.0 -0.7
VORR pmax pmax
comp=Z,250nm,1.2s
O03D Paynes Creek 69.25 55 P P 15 09 26.3 +0.8
baz=303,SNR=72
STOK Stokkvaagen 69.25 341 eP P 15 09 25.1 +0.2
STOK IVMs_BB IVMs_BB 15 41 57.8
comp=N,3μm,16.8s
BSMT Bassoo Peak 69.30 45 eP P 15 09 26.9 +1.1
JMIC Jan Mayen 69.36 351 P P 15 09 27.6 +2.1
comp=N,44nm,0.8s,baz=102,slow=7.5,SNR=3.4
JMIC Jan Mayen 69.36 351 eP P 15 09 26.7 +1.2
JMIC IAmb IAmb 15 09 44.6
comp=Z,189nm,1.2s
JMIC ePP PP 15 12 01.1 +2.9
BLMT Blacktail Moun 69.45 45 eP P 15 09 27.8 +1.1
VSR Storozhevoye 69.47 320 eP P 15 09 26.7 +0.2
VSR e 15 11 56.5
VSR eS S 15 18 30.5 -2.3
VSR eSS SS 15 22 54.9 -4.5
VSR pmax pmax
comp=Z,230nm,1.4s
VSR pmax pmax
comp=Z,210nm,1.3s
VSR smax smax
comp=E,790nm,4.6s
VSR MLR MLR
comp=Z,31μm,15.0s
SUMG Summit 69.50 1 ⇓iP P 15 09 27.7 +0.8
comp=Z,386nm,1.2s
SUMG iS S 15 18 33.3 -0.1
comp=Z,7μm,22.0s
SUMG Summit 69.50 1 ⇓iP P 15 09 27.7 +0.8
SUMG iS S 15 18 33.3 -0.1
SUMG pmax pmax
comp=Z,390nm,1.2s
SUMG MLR MLR
comp=Z,7μm,22.0s
SUMG Summit 69.50 1 eP P 15 09 27.6 +0.8
BMO Blue Mountains 69.53 49 eP P 15 09 28.1 +0.9
comp=Z,66nm,0.8s
BMO LR LR
comp=Z,3μm,19.0s
JTMT Jette 69.64 45 eP P 15 09 28.9 +1.0
MCCM Marconi Confer 69.72 57 eP P 15 09 29.7 +1.5
YBMT Yellow Bay 69.73 45 eP P 15 09 29.3 +1.0
STKA Stephens Creek 69.76 182 P P 15 09 27.8 -0.6
comp=Z,40nm,0.8s,baz=344,slow=7.7,SNR=88
STKA LR LR 15 39 35.8
comp=Z,4μm,21.2s,baz=3.7,slow=36
STKA Stephens Creek 69.76 182 eP P 15 09 27.9 -0.4
ORV Oroville 69.85 55 eP P 15 09 29.9 +0.8
ORV Oroville 69.85 55 eP P 15 09 29.9 +0.8
SWMT Swartz Lake 69.94 45 eP P 15 09 30.4 +0.8
WVOR Wild Horse Val 70.07 51 eP P 15 09 30.1 -0.5
WVOR Wild Horse Val 70.07 51 PFAKE 15 09 40.0 +9.4
WVOR LR LR
comp=Z,4μm,20.0s
MSO Missoula 70.36 46 P P 15 09 32.9 +0.7
baz=305,SNR=44
MSO Missoula 70.36 46 eP P 15 09 32.8 +0.6
AFDM Forest Hills D 70.53 55 eP P 15 09 34.3 +1.0
VSU Vasula 70.53 330 ceP P 15 09 32.8 -0.1
VSU pmax pmax
comp=Z,807nm,1.2s
VSU MLR MLR
comp=Z,19μm,17.0s
CHMT Chamberlain Mo 70.69 45 eP P 15 09 34.6 +0.2
GOF Gofitskoye 70.92 313 ⇑eP P 15 09 36.5 +1.0
GOF eS S 15 18 53.0 +3.0
GOF pmax pmax
comp=Z,634nm,1.4s
GOF pmax pmax
comp=E,137nm,1.5s
NSS Namsos 70.94 340 eP P 15 09 35.3 0.0
NSS IAmb IAmb 15 09 48.6
comp=Z,104nm,1.0s
NSS IVMs_BB IVMs_BB 15 45 15.0
comp=Z,5μm,20.0s
BBOO Buckleboo 71.05 187 eP P 15 09 35.8 -0.5
SCO Scoresbysund 71.16 355 ⇓iP P 15 09 37.1 +0.6
comp=Z,394nm,1.8s
comp=Z,4μm,18.0s
SCO Scoresbysund 71.16 355 ⇓iP P 15 09 37.1 +0.6
SCO pmax pmax
comp=Z,390nm,1.8s
SCO MLR MLR
comp=Z,4μm,18.0s
MFID Camas Ranch 71.22 49 eP P 15 09 38.7 +1.1
CMB Columbia Colle 71.42 56 eP P 15 09 39.9 +1.2
CMB Columbia Colle 71.42 56 eP P 15 09 39.9 +1.2
SAO San Andreas Ge 71.43 58 eP P 15 09 40.1 +1.4
SAO San Andreas Ge 71.43 58 eP P 15 09 40.1 +1.4
NCK Nalchik 71.50 311 dP P 15 09 39.6 +0.5
NCK pmax pmax
comp=Z,277nm,1.4s
NCK MLR MLR
comp=Z,5μm,16.0s
GUDG Gudauri 71.56 310 P P 15 09 41.8 +2.1
DGRG David-gareji 71.59 308 P P 15 09 40.9 +1.2
DGRG David-gareji 71.59 308 P P 15 09 40.9 +1.2
HRY Holter Researc 71.60 45 eP P 15 09 40.8 +1.0
DUS Dusheti 71.64 309 P P 15 09 44.7 +4.7
DUS Dusheti 71.64 309 P P 15 09 44.7 +4.7
ZEI Tsey 71.72 310 eP P 15 09 40.1 -0.6
ZEI eS S 15 18 57.3 -2.5
ZEI e 15 19 40.3
ZEI pmax pmax
comp=Z,545nm,1.5s
ZEI pmax pmax
comp=N,399nm,1.6s
ZEI pmax pmax
comp=E,384nm,1.2s
KIV Kislovodsk 71.77 312 iP P 15 09 41.9 +1.0
SNR=72
KIV Kislovodsk 71.77 312 eP P 15 09 41.8 +1.0
KIV eS S 15 18 59.0 -1.0
KIV eSS SS 15 23 35.1 -0.1
KIV pmax pmax
comp=Z,543nm,1.1s
KIV pmax pmax
comp=Z,637nm,4.2s
KIV Kislovodsk 71.77 312 eP P 15 09 41.8 +1.0
KIV LR LR
comp=Z,16μm,19.0s
WAKR Walker 71.77 55 eP P 15 09 42.4 +1.4
KBZ Khabaz 71.78 312 P P 15 09 41.7 +1.0
comp=Z,159nm,1.1s,baz=58,slow=5.7,SNR=163
KBZ LR LR 15 44 45.9
comp=Z,5μm,18.8s,baz=34,slow=39
KBZ Khabaz 71.78 312 P P 15 09 41.7 +1.0
KBZ pmax pmax
comp=Z,159nm,1.1s
KBZ MLR MLR
comp=Z,5μm,18.8s
LRM Limekiln Ridge 71.78 46 eP P 15 09 41.7 +0.7
TBLG Delisi 71.83 309 P P 15 09 42.4 +1.3
TBLG Delisi 71.83 309 P P 15 09 42.4 +1.3
EGMT Eagleton 71.95 43 P P 15 09 42.4 +0.6
baz=307,SNR=136
EGMT Eagleton 71.95 43 eP P 15 09 42.4 +0.6
EGMT LR LR
comp=Z,3μm,20.0s
DLMT Dillon 71.97 46 eP P 15 09 42.8 +0.7
HLID Hailey 71.98 49 P P 15 09 43.2 +1.0
baz=306,SNR=138
HLID Hailey 71.98 49 eP P 15 09 43.1 +1.0
HLID LR LR
comp=Z,3μm,19.0s
ONI Oni 72.11 310 P P 15 09 44.6 +1.8
ONI Oni 72.11 310 P P 15 09 44.6 +1.8
MCMT McKenzie Canyo 72.14 47 eP P 15 09 43.6 +0.4
NEY Neytrino 72.16 311 dP P 15 09 44.2 +0.9
NEY pmax pmax
comp=Z,2.0nm,0.6s
NEY MLR MLR
comp=Z,4μm,18.0s
ILULI Ilulissat 72.31 6 ⇓iP P 15 09 43.5 +0.1
comp=Z,177nm,0.9s
comp=Z,4μm,16.0s
ILULI Ilulissat 72.31 6 ⇓iP P 15 09 43.5 +0.1
ILULI pmax pmax
comp=Z,180nm,0.9s
ILULI MLR MLR
comp=Z,4μm,16.0s
BOZ Bozeman (W) 72.35 46 P P 15 09 45.2 +0.9
baz=307,SNR=25
BOZ Bozeman (W) 72.35 46 eP P 15 09 45.4 +1.1
BOZ Bozeman (W) 72.35 46 eP P 15 09 44.0 -0.3
BOZ LR LR
comp=Z,3μm,19.0s
TBLU Trondheim 72.42 340 eP P 15 09 44.1 -0.1
TBLU IAmb IAmb 15 09 59.3
comp=Z,111nm,0.9s
NVAR Mina Array Bea 72.54 55 P P 15 09 46.5 +0.8
comp=Z,155nm,0.8s,baz=284,slow=6.7,SNR=279
NVAR PKPPKP P'P'df 15 37 23.8 -11
comp=Z,0.6nm,0.7s,baz=147,slow=3.7,SNR=4.3
WSAR Wadi Sarin 72.65 286 P P 15 09 47.0 +0.7
comp=Z,58nm,1.0s,baz=62,slow=4.4,SNR=20
WSAR LR LR 15 46 14.1
comp=Z,2μm,18.2s,baz=100,slow=40
MLAC Mammoth, Mammo 72.66 56 P P 15 09 47.8 +1.4
baz=305,SNR=28
MICGM Minsk 72.73 327 ⇓iP P 15 09 46.0 -0.2
MICGM ⇓iP P 15 09 46.0 -0.2
MICGM PM 15 09 47.0
comp=Z,0.6nm,1.0s
MICGM PM 15 09 48.0
comp=N,0.6nm,1.2s
MICGM PM 15 09 48.0
comp=E,0.3nm,1.6s
MICGM ePcP PcP 15 10 08.0 +4.5
MICGM ePP PP 15 12 30.0 +2.5
MICGM ePPP PPP 15 14 04.0
MICGM eS S 15 19 10.0 -0.4
MICGM SM 15 19 11.0
comp=E,3.9nm,12.0s
MICGM ePS PnS 15 19 52.0 +10
MICGM eSS SS 15 23 42.0 -7.1
MICGM eSSS SSS 15 27 14.0
MICGM eLQ LQ 15 35 08.0
MICGM LQM 15 38 26.0
comp=E,14nm,20.0s
MICGM eLR LR 15 40 40.0
MICGM LRM MLR 15 44 44.0
comp=Z,36nm,16.0s
MICGM LRM MLR 15 44 48.0
comp=N,6.8nm,14.0s
MICGM LRM MLR 15 44 50.0
comp=E,16nm,16.0s
MICGM LRM MLR 15 44 52.0
comp=Z,38nm,16.0s
MNK Minsk 72.73 327 dP P 15 09 46.0 -0.2
GNI Garni 72.74 308 P P 15 09 47.7 +1.0
comp=Z,423nm,1.4s,baz=186,slow=1.4,SNR=47
GNI Garni 72.74 308 iP P 15 09 48.3 +1.5
SNR=45
GNI Garni 72.74 308 ceP P 15 09 48.0 +1.3
GNI pmax pmax
comp=Z,1μm,1.7s
GNI MLR MLR
comp=Z,24μm,17.0s
GNI Garni 72.74 308 P P 15 09 48.7 +2.0
SNR=71
GNI Garni 72.74 308 P P 15 09 48.7 +2.0
SNR=71
GNI Garni 72.74 308 eP P 15 09 48.3 +1.5
GNI LR LR
comp=Z,11μm,19.0s
WBK Wadi Bani Khal 72.75 285 P P 15 09 48.7 +1.8
SNR=32
WBK Wadi Bani Khal 72.75 285 P P 15 09 48.7 +1.8
SNR=32
AKH Akhalkalaki 72.77 309 ⇑iP P 15 09 48.5 +1.6
AKH Akhalkalaki 72.77 309 P P 15 09 49.6 +2.6
AKH Akhalkalaki 72.77 309 P P 15 09 49.6 +2.6
BGD Bogdanovka 72.79 309 P P 15 09 49.2 +2.1
CHVG Ch'k'valeri 72.85 311 ⇑iP P 15 09 48.6 +1.4
BIDO Bidbid 72.87 287 P P 15 09 49.0 +1.4
SNR=37

BIDO	**Bidbid**	72.87	287	P		**P**	**15 09 49.0 +1.4**
	SNR=37						
BANOM	**Banah**	72.88	290	*i* P		**P**	**15 09 48.2 +0.5**
	SNR=38						
BANOM	**Banah**	72.88	290	P		**P**	**15 09 48.7 +1.0**
	SNR=34						
BANOM	**Banah**	72.88	290	P		**P**	**15 09 48.7 +1.0**
	SNR=34						
NACGM	**Naroch**	72.93	328	*e*P		**P**	**15 09 47.0 -0.4**
NACGM				*e*P		**pP**	**15 09 48.0 -5.8**
NACGM				PM			15 09 49.0
	comp=Z,0.6nm,1.0s						
NACGM				*e*PP		**PP**	**15 12 32.0 +2.8**
NACGM				*e*PPP		PPP	15 14 22.0
NACGM				*e*S		**S**	**15 19 14.0 +1.3**
NACGM				*e*SS		SS	15 24 06.0 +14
NACGM				*e*SSS		SSS	15 27 20.0
NACGM				*e*LQ		LQ	15 35 22.0
NACGM				*e*LR		LR	15 38 02.0
NACGM				LRM		MLR	15 43 04.0
	comp=Z,22nm,21.0s						
QLMT	**Earthquake Lak**	72.95	46	*e*P		**P**	**15 09 49.0 +1.0**
EAK	**Akyaka**	73.13	309	‖ *i*P		**P**	**15 09 49.7 +0.7**
ELK	**Elko**	73.13	51	*e*P		**P**	**15 09 50.6 +1.4**
ELK	**Elko**	73.13	51	*e*P		**P**	**15 09 50.5 +1.4**
YHB	**Horse Butte**	73.14	46	*e*P		**P**	**15 09 50.4 +1.3**
RCTC	**Rector, Farmer**	73.15	57	P		**P**	**15 09 49.5 +0.5**
	baz=305						
EPOS	**Posof**	73.18	310	‖ *i*P		**P**	**15 09 50.8 +1.4**
SMDO	**Samad**	73.19	286	P		**P**	**15 09 50.4 +0.8**
	SNR=28						
SMDO	**Samad**	73.19	286	P		**P**	**15 09 50.4 +0.8**
	SNR=28						
SMMC	**Simmler**	73.22	58	P		**P**	**15 09 50.9 +1.4**
	baz=305,SNR=7.1						
YMC	**Maple Creek**	73.24	46	*e*P		**P**	**15 09 51.0 +1.3**
CAN	**Canberra**	73.29	176	*e*P		**P**	**15 09 47.8 -1.8**
CAN				pmax		pmax	
	comp=Z,165nm,1.4s						
CAN				MLR		MLR	
	comp=Z,3μm,19.0s						
CAN	**Canberra**	73.29	176	*e*P		**P**	**15 09 47.8 -1.8**
	comp=Z,165nm,1.4s						
CAN				LR		LR	
	comp=Z,3μm,19.0s						
CRMT	**Chrome Mountai**	73.30	45	*e*P		**P**	**15 09 51.0 +0.8**
YHH	**Holmes Hill**	73.31	46	*e*P		**P**	**15 09 51.4 +1.2**
YMR	**Madison River**	73.31	46	*e*P		**P**	**15 09 51.6 +1.4**
GCMT	**Greycliff**	73.36	45	*e*P		**P**	**15 09 51.3 +1.0**
YPM	**Purple Mountai**	73.38	46	*e*P		**P**	**15 09 52.3 +1.7**
TIN	**Tinemaha, Big**	73.38	56	P		**P**	**15 09 51.6 +1.0**
	baz=306,SNR=7.6						
MCID	**Moose Creek**	73.48	47	*e*P		**P**	**15 09 53.1 +1.9**
UOSS	**Minazif**	73.51	289	*e*P		**P**	**15 09 50.0 -1.3**
YFT	**Old Faithful**	73.52	46	*e*P		**P**	**15 09 54.0 +2.6**
VES	**Vestal, Richgr**	73.52	57	P		**P**	**15 09 51.6 +0.3**
	baz=306,SNR=15						
PKM	**Mcpherson Peak**	73.58	58	P		**P**	**15 09 53.1 +1.2**
	baz=305,SNR=56						
HATD	**Hatta, Dubai**	73.63	289	*i* P		**P**	**15 09 52.4 +0.4**
	SNR=99						
HATD	**Hatta, Dubai**	73.63	289	P		**P**	**15 09 53.0 +0.9**
	SNR=100						
HATD	**Hatta, Dubai**	73.63	289	P		**P**	**15 09 53.0 +0.9**
	SNR=100						
MOL	**Molde**	73.70	341	*e*P		**P**	**15 09 52.7 +1.0**
MOL				IAmb		IAmb	15 10 13.3
	comp=Z,498nm,2.0s						
LKWY	**Lake**	73.70	46	*e*P		**P**	**15 09 54.1 +1.6**
LKWY				pmax		pmax	
	comp=Z,88nm,1.0s						
LKWY				MLR		MLR	
	comp=Z,4μm,19.0s						
LKWY	**Lake**	73.70	46	*e*P		**P**	**15 09 54.1 +1.6**
	comp=Z,88nm,1.0s						
LKWY				LR		LR	
	comp=Z,4μm,19.0s						
H17A	**Grant Village**	73.70	46	P		**P**	**15 09 55.3 +2.8**
	baz=308,SNR=32						
SOC	**Sochi**	73.72	313	*d* *i*P		**P**	**15 09 52.5 +0.2**
SOC				*e**SP		**PcP**	**15 10 04.6 -3.3**
SOC				*e*PPP		PPP	15 14 22.3
SOC				*i* S		**S**	**15 19 22.9 +0.9**
SOC				*e*SS		**SS**	**15 24 09.8 +5.0**
SOC				pmax		pmax	
	comp=Z,235nm,1.2s						
ASHO	**Ashiyiah**	73.77	289	*i* P		**P**	**15 09 53.2 +0.3**
	SNR=93						
ASHO	**Ashiyiah**	73.77	289	P		**P**	**15 09 53.7 +0.8**
	SNR=93						
ASHO	**Ashiyiah**	73.77	289	P		**P**	**15 09 53.7 +0.8**
	SNR=93						
IMW	**Indian Meadow**	73.80	47	*e*P		**P**	**15 09 54.9 +1.8**
FLWY	**Flagg Ranch**	73.82	46	*e*P		**P**	**15 09 55.1 +2.0**
ARTV	**Artvin**	73.86	310	‖ *i*P		**P**	**15 09 54.6 +1.2**
YTP	**The Promontory**	73.87	46	*e*P		**P**	**15 09 55.5 +2.1**
NAZ	**Nazwa, Dubai**	73.89	289	*i* P		**P**	**15 09 53.7 +0.1**
	SNR=23						
NAZ	**Nazwa, Dubai**	73.89	289	P		**P**	**15 09 54.1 +0.6**
	SNR=31						
NAZ	**Nazwa, Dubai**	73.89	289	P		**P**	**15 09 54.1 +0.6**
	SNR=31						
HFS	**Hagfors**	73.90	337	P		**P**	**15 09 53.0 0.0**
	comp=Z,42nm,0.6s,baz=46,slow=6.4,SNR=85						
HFS				LR		LR	15 45 34.4
	comp=Z,11μm,20.0s,baz=35,slow=38						
FXWY	**Fox Creek**	73.91	47	*e*P		**P**	**15 09 55.1 +1.4**
SBC	**Santa Barbara**	73.91	59	P		**P**	**15 09 54.5 +1.0**
	baz=306						
DBOC	**Boroka**	73.92	310	‖ *i*P		**P**	**15 09 54.4 +0.8**
DAGI	**Agillar**	73.93	310	‖ *i*P		**P**	**15 09 54.8 +1.1**
NB2	**NORSAR Subarra**	73.93	338	P		**P**	**15 09 53.0 -0.2**
	comp=Z,18nm,0.7s,baz=39,slow=6.2						
NB2	**NORSAR Subarra**	73.93	338	P		**P**	**15 09 53.0 -0.2**
	baz=39,slow=6.2						
NOA	**NORSAR Array B**	73.93	338	P		**P**	**15 09 53.3 0.0**
	comp=Z,63nm,0.9s,baz=38,slow=5.8,SNR=88						
NOA				LR		LR	15 47 34.8
	comp=Z,9μm,19.2s,baz=50,slow=40						
NOA	**NORSAR Array B**	73.93	338	P		**P**	**15 09 53.3 0.0**
NOA				pmax		pmax	
	comp=Z,63nm,1.0s						
NOA				MLR		MLR	
	comp=Z,9μm,19.2s						
NPI	**North Pocatell**	73.94	49	*e*P		**P**	**15 09 55.2 +1.4**
GRAC	**Grapevine Rang**	73.98	55	P		**P**	**15 09 55.2 +1.2**
	baz=306,SNR=191						
RLMT	**Red Lodge**	73.99	45	P		**P**	**15 09 55.0 +0.9**
	baz=308,SNR=42						
RLMT	**Red Lodge**	73.99	45	*e*P		**P**	**15 09 55.2 +1.0**
	comp=Z,209nm,1.4s						
RLMT				LR		LR	
	comp=Z,2μm,19.0s						
MOOW	**Moose Ponds**	74.00	47	*e*P		**P**	**15 09 55.5 +1.3**
HVU	**Hansel Valley**	74.01	49	*e*P		**P**	**15 09 55.4 +1.2**
HVU	**Hansel Valley**	74.01	49	*e*P		**P**	**15 09 55.4 +1.2**
ISA	**Isabella, Lake**	74.03	57	P		**P**	**15 09 54.5 +0.2**
	baz=306,SNR=13						
ISA	**Isabella, Lake**	74.03	57	*e*P		**P**	**15 09 54.9 +0.6**
ISA	**Isabella, Lake**	74.03	57	*e*P		**P**	**15 09 54.9 +0.6**
FAQ	**Al Faqa, Dubai**	74.08	289	*i* P		**P**	**15 09 54.7 0.0**
	SNR=35						
FAQ	**Al Faqa, Dubai**	74.08	289	P		**P**	**15 09 55.0 +0.3**
	SNR=31						
FAQ	**Al Faqa, Dubai**	74.08	289	P		**P**	**15 09 55.0 +0.3**
	SNR=31						
ARVC	**Arvin**	74.10	58	P		**P**	**15 09 55.5 +0.8**
	baz=306,SNR=6.7						
DDEM	**Demirkent**	74.14	310	‖ *i*P		**P**	**15 09 55.6 +0.7**
VMUR	**Van-Muradiye**	74.15	307	‖ *i*P		**P**	**15 09 55.5 +0.4**
LOHW	**Long Hollow**	74.17	47	*e*P		**P**	**15 09 56.6 +1.4**
AKN	**Aaknes**	74.17	341	*e*P		**P**	**15 09 55.2 +0.7**
AKN				IAmb		IAmb	15 10 00.6
	comp=Z,339nm,1.6s						
AKN				*e*S		**S**	**15 19 26.6 +0.1**
SNOW	**Snow King Moun**	74.17	47	*e*P		**P**	**15 09 56.4 +1.1**
REDW	**Red Top Meadow**	74.17	47	*e*P		**P**	**15 09 56.0 +0.8**
	comp=Z,248nm,1.4s						
ARQ	**Araqi**	74.19	287	P		**P**	**15 09 55.8 +0.4**
	SNR=81						
ARQ	**Araqi**	74.19	287	P		**P**	**15 09 55.8 +0.4**
	SNR=81						
SCZ2	**Santa Cruz Isl**	74.22	59	P		**P**	**15 09 56.2 +0.8**
	baz=306,SNR=12						
MTUT	**Morton Thiokol**	74.24	49	*e*P		**P**	**15 09 57.1 +1.6**
DAC	**Darwin (Calif)**	74.25	56	*e*P		**P**	**15 09 56.5 +0.8**
DAC	**Darwin (Calif)**	74.25	56	*e*P		**P**	**15 09 56.5 +0.8**
ANN	**Anapa**	74.27	315	*d* *i*P		**P**	**15 09 55.4 0.0**
ANN				*e**PP		**sP**	**15 10 03.6 -0.7**
ANN				*e*			15 12 38.5
ANN				*e*PPP		PPP	15 14 29.6
ANN				*i* S		**S**	**15 19 27.8 -0.3**
ANN				*e*SS		**SS**	**15 24 10.7 -2.4**
ANN				*e*SSS		SSS	15 27 34.9
ANN				pmax		pmax	
	comp=Z,236nm,1.4s						
ANN				MLR		MLR	
	comp=Z,7μm,20.0s						
EATA	**Eleskirt**	74.30	308	‖ *i*P		**P**	**15 09 57.7 +1.6**
R11A	**Troy Canyon, C**	74.33	53	P		**P**	**15 09 57.4 +1.3**
	baz=306,SNR=262						
R11A	**Troy Canyon, C**	74.33	53	*e*P		**P**	**15 09 56.9 +0.8**
	comp=Z,102nm,1.0s						
BGU	**Big Grassy Mou**	74.37	50	*e*P		**P**	**15 09 57.5 +1.2**
AHID	**Auburn Hatcher**	74.40	48	*e*P		**P**	**15 09 57.6 +1.1**
AHID				LR		LR	
	comp=Z,2μm,19.0s						
MPMC	**Manual Prospec**	74.45	56	P		**P**	**15 09 57.8 +0.9**
	baz=306,SNR=132						
OSI	**Osito Audit: C**	74.47	58	P		**P**	**15 09 58.2 +1.3**
	baz=306,SNR=24						
OSI	**Osito Audit: C**	74.47	58	*e*P		**P**	**15 09 58.2 +1.3**
SPUT	**South Promonto**	74.49	50	*e*P		**P**	**15 09 58.8 +1.8**
SFJD	**Kangerlussuaq**	74.52	6	P		**P**	**15 09 56.8 +0.3**
	comp=Z,140nm,0.8s,baz=348,slow=4.6,SNR=43						
SFJD				LR		LR	15 46 08.9
	comp=Z,3μm,19.0s,baz=345,slow=38						
SFJD	**Kangerlussuaq**	74.52	6	*i* P		**P**	**15 09 56.7 +0.3**
	comp=Z,155nm,0.9s						
	comp=Z,3μm,17.0s						
SFJD	**Kangerlussuaq**	74.52	6	*i* P		**P**	**15 09 56.7 +0.3**
SFJD				pmax		pmax	
	comp=Z,160nm,0.9s						
SFJD				MLR		MLR	
	comp=Z,3μm,17.0s						
TVAN	**Van**	74.53	307	‖ *i*P		**P**	**15 09 58.2 +0.9**
BLG	**Laguna Peak, P**	74.54	59	P		**P**	**15 09 57.9 +0.7**
	baz=306,SNR=21						
HOMI	**Horasan**	74.55	309	‖ *i*P		**P**	**15 09 58.7 +1.2**
WVUT	**Wellsville**	74.60	49	*e*P		**P**	**15 09 58.9 +1.3**
FURC	**Furnace Creek,**	74.62	56	P		**P**	**15 09 58.7 +1.1**
	baz=306,SNR=183						
HONU	**Honeyville**	74.62	49	*e*P		**P**	**15 09 58.6 +0.8**
LAO	**LASA Array**	74.66	42	P		**P**	**15 09 58.7 +0.9**
	baz=310,SNR=50						
LAO	**LASA Array**	74.66	42	PFAKE			15 10 10.0 +12
LAO				LR		LR	
	comp=Z,3μm,21.0s						
LRMC	**Laurel Mtn Rad**	74.66	57	P		**P**	**15 09 58.8 +0.8**
	baz=306,SNR=100						
AKASG	**Malin Array Be**	74.69	323	P		**P**	**15 09 57.6 -0.1**
	comp=Z,27nm,0.5s,baz=44,slow=6.3,SNR=238						
AKASG				PKPPKP		P'P'df	15 37 21.9 -10
	comp=Z,0.7nm,0.5s,baz=238,slow=1.2,SNR=4.0						
AKASG				LR		LR	15 45 46.8
	comp=Z,8μm,20.3s,baz=50,slow=38						
AKASG	**Malin Array Be**	74.69	323	P		**P**	**15 09 57.6 -0.1**
AKASG				pmax		pmax	
	comp=Z,30nm,0.5s						
KIEV	**Kiev**	74.70	323	*d* *i*P		**P**	**15 09 57.5 -0.3**
KIEV				pmax		pmax	
	comp=Z,283nm,1.4s						
KIEV				MLR		MLR	
	comp=Z,7μm,19.0s						
KIEV	**Kiev**	74.70	323	*e*P		**P**	**15 09 57.1 -0.7**
KIEV				LR		LR	
	comp=Z,8μm,20.0s						
SNUT	**Stansbury Nort**	74.71	50	*e*P		**P**	**15 09 59.7 +1.4**
TPNV	**Topopah Spring**	74.73	55	P		**P**	**15 09 59.7 +1.1**
	baz=306,SNR=288						
TPNV	**Topopah Spring**	74.73	55	*e*P		**P**	**15 09 59.6 +1.1**
TPNV	**Topopah Spring**	74.73	55	*e*P		**P**	**15 09 59.5 +1.1**
SNCC	**San Nicolas Is**	74.73	60	P		**P**	**15 09 59.4 +1.1**
	baz=306,SNR=22						
SNCC	**San Nicolas Is**	74.73	60	*e*P		**P**	**15 09 59.9 +1.6**
A25A	**Svangstu Ranch**	74.80	39	P		**P**	**15 09 59.1 +0.6**
	baz=311,SNR=41						
EDW2	**Edwards Air Fo**	74.81	58	P		**P**	**15 09 59.8 +1.0**
	baz=306,SNR=213						
BMUT	**Black Mountain**	74.81	48	*e*P		**P**	**15 10 00.2 +1.2**
HWUT	**Hardware Ranch**	74.83	49	*e*P		**P**	**15 10 00.3 +1.3**
HWUT				LR		LR	
	comp=Z,3μm,19.0s						
FSU	**Fish Springs**	74.87	51	*e*P		**P**	**15 10 00.3 +1.1**
GEVA	**Gevas**	74.87	307	‖ *i*P		**P**	**15 10 00.0 +0.7**
RSUT	**Red Spur Mount**	74.90	49	*e*P		**P**	**15 10 00.8 +1.2**
HAKT	**HAKKARI**	74.91	306	‖ *i*P		**P**	**15 10 00.2 +0.6**
EKAR	**Karacoban**	74.93	308	‖ *i*P		**P**	**15 10 01.6 +2.0**
DUG	**Dugway, Tooele**	74.94	51	P		**P**	**15 10 00.9 +1.3**
	baz=308,SNR=142						
DUG	**Dugway, Tooele**	74.94	51	*e*P		**P**	**15 10 00.8 +1.1**
DUG	**Dugway, Tooele**	74.94	51	*e*P		**P**	**15 10 00.8 +1.1**
DUG				LR		LR	
	comp=Z,3μm,19.0s						
DECC	**Green Verdugo**	74.95	58	P		**P**	**15 10 00.3 +0.7**
	baz=306,SNR=10.0						
MCU	**Monte Cristo P**	74.95	49	*e*P		**P**	**15 10 01.0 +1.1**
OSL	**Oslo**	74.97	338	*e*P		**P**	**15 09 59.9 +0.7**
OSL				IAmb		IAmb	15 10 05.1
	comp=Z,936nm,2.1s						
OSL				*e*PP		**PP**	**15 12 46.6 +0.4**
OSL				IVMs_BB		IVMs_BB	15 47 55.0
	comp=Z,4μm,19.0s						
ERZM	**Erzurum**	74.97	309	‖ *i*P		**P**	**15 10 01.1 +1.2**
SUW	**Suwalki**	75.06	328	*e*P		**P**	**15 09 59.9 +0.1**
SUW	**Suwalki**	75.06	328	‖ *e*P		**P**	**15 09 59.9 +0.1**
NWAO	**Narrogin (SRO)**	75.07	203	*e*P		**P**	**15 09 59.2 -0.8**
NWAO	**Narrogin (SRO)**	75.07	203	*e*P		**P**	**15 09 59.2 -0.8**
NWAO				LR		LR	
	comp=Z,2μm,19.0s						
PASC	**Pasadena Art C**	75.09	58	*e*P		**P**	**15 10 01.6 +1.2**
FRB	**Frobisher Bay**	75.12	14	LR		LR	15 48 01.6
	comp=Z,5μm,18.7s,baz=278,slow=40						
MWC	**Mount Wilson**	75.15	58	*e*P		**P**	**15 10 01.8 +0.8**
MWC	**Mount Wilson**	75.15	58	*e*P		**P**	**15 10 01.8 +0.8**
FOO	**Floro**	75.16	341	*e*P		**P**	**15 10 00.3 +0.1**
FOO				IAmb		IAmb	15 10 06.1
	comp=Z,110nm,1.3s						
FOO				*e*PP		**PP**	**15 12 48.9 +1.1**
FOO				*e*S		**S**	**15 19 38.7 +1.2**
B25A	**Knox Farm, Ray**	75.21	40	P		**P**	**15 10 01.6 +0.7**
	baz=311,SNR=13						
TCUT	**Toone Canyon**	75.22	49	*e*P		**P**	**15 10 02.7 +1.3**
HYA	**Hoyanger**	75.23	340	*e*P		**P**	**15 10 01.1 +0.5**
HYA				IAmb		IAmb	15 10 16.8
	comp=Z,255nm,1.4s						
HYA				*e*PP		**PP**	**15 12 47.6 -0.8**
HYA				IVMs_BB		IVMs_BB	15 47 47.4
	comp=Z,3μm,15.6s						
BW06	**Boulder Array**	75.29	47	P		**P**	**15 10 02.1 +0.3**
	baz=309,SNR=181						
BW06	**Boulder Array**	75.29	47	*e*P		**P**	**15 10 02.0 +0.3**
BW06				LR		LR	
	comp=Z,3μm,20.0s						
PD31	**Pinedale Array**	75.29	47	*e*P		**P**	**15 10 02.3 +0.6**
PDAR	**Pinedale Array**	75.29	47	P		**P**	**15 10 02.2 +0.6**
	comp=Z,86nm,0.8s,baz=262,slow=2.4,SNR=180						
FMP	**Fort Macarthur**	75.29	59	P		**P**	**15 10 02.4 +0.9**
	baz=306						
MACK	**Trabzon**	75.30	311	‖ *i*P		**P**	**15 10 02.0 +0.5**
PSUT	**Pine Spring**	75.30	52	*e*P		**P**	**15 10 02.7 +0.9**
SHOC	**Shoshone, Teco**	75.33	56	P		**P**	**15 10 02.5 +0.6**
	baz=307,SNR=16						
GSC	**Goldstone, Bar**	75.34	57	P		**P**	**15 10 02.3 +0.3**
	baz=307,SNR=102						
GSC	**Goldstone, Bar**	75.34	57	*e*P		**P**	**15 10 02.7 +0.7**
GSC	**Goldstone, Bar**	75.34	57	*e*P		**P**	**15 10 02.7 +0.7**
GMU	**Granite Mounta**	75.34	50	*e*P		**P**	**15 10 03.2 +1.2**
A26A	**Wade Farm, Ken**	75.35	39	P		**P**	**15 10 02.4 +0.7**
	baz=312,SNR=21						
CIS	**Catalina Islan**	75.39	59	P		**P**	**15 10 03.0 +0.8**
	baz=306,SNR=38						
BFSC	**Mount Baldy Ra**	75.41	58	P		**P**	**15 10 02.9 +0.5**
	baz=306,SNR=73						
KOPT	**Kop Dagi**	75.43	310	‖ *i*P		**P**	**15 10 04.0 +1.4**
RRX	**Edison Barstow**	75.47	57	P		**P**	**15 10 03.3 +0.7**
	baz=307						
JLU	**Jordanelle**	75.52	50	*e*P		**P**	**15 10 04.2 +1.2**
C25A	**Freed Ranch, W**	75.53	40	P		**P**	**15 10 03.1 +0.3**
	baz=311						
KONO	**Kongsberg**	75.53	338	*e*P		**P**	**15 10 02.9 +0.4**
KONO				IAmb		IAmb	15 10 23.8
	comp=Z,67nm,1.0s						
KONO				*e*PP		**PP**	**15 12 50.7 -0.4**
KONO				*e*S		**S**	**15 19 45.2 +3.5**
KONO				IVMs_BB		IVMs_BB	15 48 31.2
	comp=Z,4μm,19.7s						
KONO	**Kongsberg**	75.53	338	*e*P		**P**	**15 10 03.1 +0.6**
KONO	**Kongsberg**	75.53	338	*e*P		**P**	**15 10 03.1 +0.6**
KONO				LR		LR	
	comp=Z,12μm,20.0s						
NLU	**North Lily Min**	75.54	50	*e*P		**P**	**15 10 04.3 +1.1**
SCI2	**San Clemente I**	75.55	59	P		**P**	**15 10 03.5 +0.5**
	baz=306,SNR=7.0						
DCU	**Deer Creek Res**	75.59	50	*e*P		**P**	**15 10 05.0 +1.6**
B26A	**Jensen Ranch,**	75.61	39	P		**P**	**15 10 03.9 +0.7**
	baz=312,SNR=7.0						
SUE	**Sulen**	75.69	341	*e*P		**P**	**15 10 04.0 +0.7**
SUE				IAmb		IAmb	15 10 17.4
	comp=Z,227nm,1.5s						
SUE				IVMs_BB		IVMs_BB	15 46 36.3
	comp=Z,3μm,16.0s						
SHPR	**Sheep Range**	75.69	55	*e*P		**P**	**15 10 05.3 +1.2**
DAU	**Daniels Canyon**	75.75	50	*e*P		**P**	**15 10 05.9 +1.4**
DAU	**Daniels Canyon**	75.75	50	*e*P		**P**	**15 10 05.9 +1.4**
SIRN	**S¨–rnak**	75.77	307	‖ *i*P		**P**	**15 10 05.0 +0.7**
FLU	**Fool Peak**	75.83	51	*e*P		**P**	**15 10 06.2 +1.3**
TUQ	**Turquoise Moun**	75.84	56	P		**P**	**15 10 05.6 +0.7**
	baz=307,SNR=191						
D25A	**Fairfield**	75.87	41	P		**P**	**15 10 05.2 +0.4**
	baz=312						
BBRC	**Big Bear Solar**	75.88	58	P		**P**	**15 10 05.8 +0.5**
	baz=307,SNR=5.3						
RAO	**Raoul Island**	75.90	146	PFAKE			15 10 20.0 +15
RAO				LR		LR	
	comp=Z,6μm,21.0s						
HEC	**Hector,Ludlow**	75.93	57	P		**P**	**15 10 06.3 +0.9**
	baz=307,SNR=171						
SIM	**Simferopol'**	76.00	317	*d* *i*P		**P**	**15 10 05.7 +0.3**
SIM				*e*			15 10 17.0
SIM				*e*			15 13 01.0
SIM				*e*PPP		PPP	15 14 51.0
SIM				*i* S		**S**	**15 19 48.4 +1.0**
SIM				pmax		pmax	
	comp=Z,97nm,1.3s						
SIM				pmax		pmax	
	comp=Z,380nm,11.1s						
SIM				MLR		MLR	
	comp=E,6μm,16.4s						
C26A	**Wahner Farm, P**	76.04	39	P		**P**	**15 10 06.1 +0.4**
	baz=312,SNR=12						
ASK	**Askoy**	76.07	340	*e*P		**P**	**15 10 06.3 +0.9**
ASK				IAmb		IAmb	15 10 11.4
	comp=Z,100nm,1.1s						
B27A	**Peters Farms,**	76.07	39	P		**P**	**15 10 06.0 +0.2**
	baz=313,SNR=7.5						
MURC	**Murrieta**	76.09	58	P		**P**	**15 10 06.9 +0.6**
	baz=307,SNR=21						
DWU	**Dry Willow Pea**	76.10	52	*e*P		**P**	**15 10 07.8 +1.3**
KELT	**Kelkit**	76.10	310	‖ *i*P		**P**	**15 10 07.6 +1.3**
BER	**Bergen**	76.11	340	*e*P		**P**	**15 10 06.8 +1.0**
BER				IAmb		IAmb	15 10 11.8
	comp=Z,245nm,1.5s						
BER				*e*PP		**PP**	**15 12 58.5 +2.6**
BER				*e*S		**S**	**15 19 50.1 +2.1**
BER				IVMs_BB		IVMs_BB	15 48 13.8
	comp=Z,3μm,16.5s						
WCU	**Willow Creek**	76.13	51	*e*P		**P**	**15 10 08.2 +1.5**
ODD1	**Odda**	76.16	339	*e*P		**P**	**15 10 07.0 +0.9**
ODD1				IAmb		IAmb	15 10 20.4
	comp=Z,101nm,1.0s						
GRSN	**GIRESUNGRSN**	76.20	311	*i* P		**P**	**15 10 09.1 +2.4**
A28A	**Rude Farm, Bot**	76.21	38	P		**P**	**15 10 07.3 +0.7**
	baz=313,SNR=73						
BTMN	**Batman**	76.25	307	*i* P		**P**	**15 10 08.8 +1.7**
SNO	**Snow College**	76.26	51	*e*P		**P**	**15 10 09.0 +1.6**
E25A	**Miller Ranch,**	76.26	41	P		**P**	**15 10 07.6 +0.7**
	baz=312,SNR=47						
SGU	**Sterling**	76.27	51	*e*P		**P**	**15 10 09.0 +1.6**
MSU	**Marysvale**	76.36	52	*e*P		**P**	**15 10 09.5 +1.6**
MSU	**Marysvale**	76.36	52	*e*P		**P**	**15 10 09.5 +1.6**
D26A	**Manning**	76.40	40	P		**P**	**15 10 08.1 +0.3**
	baz=312,SNR=31						
GMRC	**Granite Mounta**	76.40	56	P		**P**	**15 10 09.0 +0.9**
	baz=307,SNR=124						
ORDU	**Ordu-Boztepe**	76.41	312	‖ *i*P		**P**	**15 10 08.4 +0.6**
C27A	**Sayler Ranch,**	76.41	39	P		**P**	**15 10 08.5 +0.7**
	baz=312,SNR=18						
TMUT	**Trail Mountain**	76.47	51	*e*P		**P**	**15 10 09.6 +1.0**
B28A	**Dugan Ranch, T**	76.48	38	P		**P**	**15 10 08.6 +0.5**
	baz=313,SNR=48						
BHU	**Blowhard Mount**	76.50	53	*e*P		**P**	**15 10 10.3 +1.4**
ARGU	**Argyle Ridge**	76.54	50	*e*P		**P**	**15 10 10.3 +1.3**
TNCL	**Tunceli-Merkez**	76.56	309	‖ *i*P		**P**	**15 10 10.3 +1.4**
109C	**Camp Elliot, M**	76.58	59	P		**P**	**15 10 09.8 +0.8**
	baz=307						
PFO	**Pinyon Flats O**	76.58	58	P		**P**	**15 10 09.7 +0.6**
	baz=307,SNR=56						
PFO	**Pinyon Flats O

A30A	Hoffart Farm,	77.13	37	P		P	15 10 12.3	+0.6
	baz=314,SNR=98							
KMY	Karmoy	77.13	340	eP		P	15 10 12.8	+1.3
KMY				IAmb		IAmb	15 10 17.6	
	comp=Z,147nm,1.4s							
KMY				IVMs_BB		IVMs_BB	15 49 39.5	
	comp=Z,2µm,16.8s							
CUZAR	Zara_SIVAS	77.15	311	⇓iP		P	15 10 13.0	+0.8
BC3	Big Chuckawall	77.22	57	P		P	15 10 13.3	+0.7
	baz=308,SNR=56							
D28A	Regan	77.23	39	P		P	15 10 13.0	+0.6
	baz=313,SNR=20							
STAV	Stavanger	77.24	339	eP		P	15 10 12.4	+0.3
STAV				IAmb		IAmb	15 10 16.3	
	comp=Z,146nm,1.3s							
STAV				ePP		PP	15 13 07.3	+1.8
STAV				eS		S	15 19 59.3	-1.1
STAV				IVMs_BB		IVMs_BB	15 43 41.5	
	comp=Z,2µm,25.9s							
ERBA	Erbaa	77.25	312	⇓iP		P	15 10 13.9	+1.3
E27A	Carson	77.25	40	P		P	15 10 13.1	+0.5
	baz=313,SNR=11							
ELZG	Elazig	77.29	309	⇓iP		P	15 10 14.4	+1.3
SNART	Snartemo	77.32	338	eP		P	15 10 13.4	+0.8
SNART				IAmb		IAmb	15 10 15.6	
	comp=Z,58nm,0.6s							
SNART				IVMs_BB		IVMs_BB	15 49 26.0	
	comp=Z,2µm,20.6s							
ULM	Lac du Bonnet	77.32	35	P		P	15 10 12.6	-0.2
	comp=Z,103nm,0.8s,baz=314,slow=6.8,SNR=46							
ULM				LR		LR	15 48 37.5	
	comp=Z,1µm,19.6s,baz=338,slow=39							
F27A	Lemmon	77.39	41	P		P	15 10 13.5	+0.2
	baz=312,SNR=30							
KIS	Kishinev	77.40	321	⇓iP		P	15 10 14.0	+0.7
	comp=Z,500nm,1.5s							
KIS	Kishinev	77.40	321	iPcP		PcP	15 10 26.0	+2.3
KIS	Kishinev	77.40	321	ePP		PP	15 13 14.0	+6.9
KIS	Kishinev	77.40	321	ePS			15 20 32.0	
KIS				LQM			15 40 48.0	
	comp=Z,11µm,22.0s							
KIS				LRM		MLR	15 47 54.0	
	comp=Z,23µm,16.0s							
KIS	Kishinev	77.40	321	⇓iP		P	15 10 14.0	+0.7
KIS				i			15 10 26.0	
KIS				e			15 13 14.0	
KIS				eS		S	15 20 02.0	-0.6
KIS				ePS		PnS	15 20 32.0	-11
KIS				pmax		pmax		
	comp=Z,500nm,1.5s							
KIS				MLR		MLR		
	comp=Z,23µm,17.0s							
KIS				MLR		MLR		
	comp=N,11µm,18.0s							
KIS				MLR		MLR		
	comp=E,12µm,16.0s							
KIS				MLR		MLR		
	comp=Z,23µm,16.0s							
H25A	Fruitdale	77.40	43	P		P	15 10 13.7	+0.3
	baz=312,SNR=16							
SWSC	Sam W. Stewart	77.42	58	P		P	15 10 14.2	+0.6
	baz=308,SNR=11							
BSD	Bornholm Skovb	77.42	333	⇓iP		P	15 10 13.0	-0.2
	comp=Z,268nm,1.3s							
BSD	Bornholm Skovb	77.42	333	⇓iP		P	15 10 13.0	-0.2
BSD				pmax		pmax		
	comp=Z,270nm,1.3s							
B30A	Myrvik Farm, E	77.46	37	P		P	15 10 14.0	+0.4
	baz=314,SNR=62							
G26A	Maurine	77.48	42	P		P	15 10 14.0	+0.2
	baz=312,SNR=55							
RSSD	Black Hills	77.50	43	P		P	15 10 14.2	0.0
	baz=312							
RSSD	Black Hills	77.50	43	eP		P	15 10 14.4	+0.2
RSSD	Black Hills	77.50	43	eP		P	15 10 14.4	+0.2
YEL1	Yell	77.55	343	⇓eP		P	15 10 14.3	+0.5
E28A	Huff	77.59	40	P		P	15 10 15.1	+0.7
	baz=313							
HAVZ	Havza	77.60	313	⇓iP		P	15 10 15.7	+1.1
BEL	Belsk	77.64	328	eP		P	15 10 15.5	+1.0
BEL	Belsk	77.64	328	⇓eP		P	15 10 15.5	+1.0
A31A	Linda, St. Vin	77.66	36	P		P	15 10 14.9	+0.2
	baz=315							
PDMCI	Parker Dam,Lak	77.69	56	P		P	15 10 15.8	+0.7
	baz=308,SNR=29							
CUKAN	kangal_SIVAS	77.69	310	⇓iP		P	15 10 16.8	+1.5
LVV	L'vov	77.70	325	c iP		P	15 10 15.0	+0.1
LVV				e			15 10 26.6	
LVV				e			15 13 09.4	
LVV				eS		S	15 20 03.6	-2.2
LVV				e			15 20 22.8	
LVV				ePS		PnS	15 20 55.0	+8.6
LVV				eSS		SS	15 25 10.2	+5.6
LVV				MLR		MLR		
	comp=N,10µm,16.0s							
LVV				MLR		MLR		
	comp=E,13µm,16.0s							
LVV				MLR		MLR		
	comp=Z,16µm,16.0s							
O20A	White River Ci	77.72	48	P		P	15 10 15.8	+0.3
	baz=310,SNR=34							
I25A	Rochford	77.73	43	P		P	15 10 15.5	0.0
	baz=312,SNR=83							
G27A	Dupree	77.77	41	P		P	15 10 15.7	+0.2
	baz=313,SNR=44							
Y12C	Blythe	77.78	57	P		P	15 10 16.6	+0.9
	baz=308,SNR=22							
B31A	Greenbush Farm	77.80	37	P		P	15 10 15.6	+0.1
	baz=315,SNR=9.4							
D29A	Pettibone, Tap	77.81	39	P		P	15 10 15.5	-0.1
	baz=314							
COP	Copenhagen	77.84	334	⇓iP		P	15 10 16.2	+0.7
	comp=Z,104nm,1.2s							
	comp=Z,4µm,18.0s							
COP	Copenhagen	77.84	334	⇓iP		P	15 10 16.2	+0.7
COP				pmax		pmax		
	comp=Z,100nm,1.2s							
COP				MLR		MLR		
	comp=Z,4µm,18.0s							
H26A	Fairpoint	77.84	42	P		P	15 10 16.1	+0.2
	baz=312,SNR=20							
BOYT	Boyabat	77.85	313	iP		P	15 10 15.4	-0.5
C30A	Mose, Pekin	77.91	38	P		P	15 10 16.2	+0.1
	baz=314,SNR=41							
MZRK	Al-Mazaregh	77.91	306	eP		P	15 10 18.1	+1.8
SHAO	Shalim	77.96	283	P		P	15 10 18.7	+1.8
	SNR=5.2							
SHAO	Shalim	77.96	283	P		P	15 10 18.7	+1.8
	SNR=5.2							
OUZ	Omahuta	77.98	156	eP		P	15 10 18.6	+2.2
A32A	Rocking H Ranc	77.99	36	P		P	15 10 16.4	-0.2
	baz=316,SNR=48							
GLA	Glamis	78.00	57	P		P	15 10 17.8	+0.9
	baz=308,SNR=26							
GLA	Glamis	78.00	57	eP		P	15 10 18.1	+1.1
GLA	Glamis	78.00	57	eP		P	15 10 18.1	+1.1
F28A	McLaughlin	78.03	40	P		P	15 10 17.1	+0.2
	baz=313							
LEOM	Leova	78.04	321	⇑iP		P	15 10 17.6	+0.8
LEOM	Leova	78.04	321	⇑P		P	15 10 17.6	+0.8
AKCD	Akcadag	78.06	309	⇓iP		P	15 10 18.7	+1.4
J25A	Sunshine Ranch	78.11	44	P		P	15 10 17.0	-0.5
	baz=312,SNR=18							
E29A	Napoleon	78.12	39	P		P	15 10 17.2	-0.2
	baz=314							
CUALT	Altinyayla-SIV	78.14	311	⇓iP		P	15 10 19.3	+1.5
D30A	Buchanan	78.19	38	P		P	15 10 17.5	-0.2
	baz=314,SNR=23							
I26A	New Underwood	78.19	43	P		P	15 10 18.3	+0.4
	baz=312,SNR=19							
H27A	Howes	78.20	42	P		P	15 10 18.2	+0.3
	baz=313,SNR=71							
C31A	Landman Farms,	78.20	37	P		P	15 10 17.8	+0.1
	baz=315,SNR=73							
PV09	Paradox Valley	78.23	50	eP		P	15 10 19.4	+1.0
MUD	Monsted U'grnd	78.28	336	⇓iP		P	15 10 18.5	+0.5
	comp=Z,229nm,1.4s							
	comp=Z,13µm,21.0s							
MUD	Monsted U'grnd	78.28	336	⇓iP		P	15 10 18.5	+0.5
MUD				pmax		pmax		
	comp=Z,230nm,1.4s							
MUD				MLR		MLR		
	comp=Z,13µm,21.0s							
B32A	Ashes, Strandq	78.34	36	P		P	15 10 18.1	-0.4
	baz=316,SNR=49							
CUSAR	Sarkisla-SIVAS	78.36	311	⇓iP		P	15 10 20.0	+1.0
ATAB	Bozova	78.36	309	⇓iP		P	15 10 20.5	+1.6
PV10	Paradox Valley	78.36	50	eP		P	15 10 20.4	+1.3
PRAR	RASCA	78.42	322	⇑iP		P	15 10 19.7	+0.7
KWP	Kalwaria Pacla	78.43	326	eP		P	15 10 19.9	+0.9
KWP				eS		S	15 20 20.8	+7.1
KWP	Kalwaria Pacla	78.43	326	⇑iP		P	15 10 20.6	+1.6
KWP	Kalwaria Pacla	78.43	326	⇓eP		P	15 10 19.9	+0.9
KWP				eS		S	15 20 20.8	+7.1
RGN	Rugen	78.44	333	eP		P	15 10 20.3	+1.4
A33A	Warroad	78.48	35	P		P	15 10 19.0	-0.3
	baz=316,SNR=9.3							
G28A	Parade	78.50	41	P		P	15 10 20.0	+0.4
	baz=313,SNR=21							
PV05	Paradox Valley	78.52	50	eP		P	15 10 21.1	+1.1
E30A	Jud	78.53	39	P		P	15 10 19.7	0.0
	baz=314,SNR=28							
SURC	SANLIURFA_SURC	78.54	308	⇓iP		P	15 10 20.7	+0.9
F29A	Eureka	78.54	40	P		P	15 10 19.5	-0.2
	baz=314,SNR=8.0							
COAL	Corum-Alaca	78.56	312	⇓iP		P	15 10 20.9	+1.0
J26A	Sides Ranch, S	78.56	43	P		P	15 10 20.1	+0.1
	baz=312,SNR=23							
N23A	Red Feather La	78.56	47	P		P	15 10 21.3	+1.0
	baz=311,SNR=124							
PHWY	Pilot Hill	78.57	46	eP		P	15 10 20.7	+0.4
I27A	Quinn	78.59	42	P		P	15 10 20.4	+0.3
	baz=313,SNR=48							
TLCR		78.64	319	⇓iP		P	15 10 20.5	+0.3
TLCR		78.64	319	⇓P		P	15 10 20.5	+0.3
BUR08	Bucovina Ar. S	78.71	323	eP		P	15 10 21.5	+0.8
BURAR	Bucovina Array	78.72	323	⇑iP		P	15 10 22.0	+1.2
BURAR	Bucovina Array	78.72	323	⇑P		P	15 10 22.0	+1.2
WUAZ	Wupatki	78.72	54	P		P	15 10 22.0	+0.9
	baz=309,SNR=92							
WUAZ	Wupatki	78.72	54	eP		P	15 10 22.2	+1.1
WUAZ				LR		LR		
	comp=Z,3µm,20.0s							
AGMN	Agassiz Nation	78.72	36	P		P	15 10 20.3	-0.3
	baz=316,SNR=93							
AGMN	Agassiz Nation	78.72	36	eP		P	15 10 20.4	-0.3
AGMN				LR		LR		
	comp=Z,3µm,22.0s							
H28A	Mission Ridge	78.72	41	P		P	15 10 21.2	+0.4
	baz=313							
D31A	Mcclaflin, Tow	78.73	38	P		P	15 10 21.0	+0.3
	baz=315							
C32A	Crookston	78.75	37	P		P	15 10 20.6	-0.2
	baz=316,SNR=12							
ILGA	Ilgaz	78.76	314	⇓iP		P	15 10 22.6	+1.4
PV01	Paradox Valley	78.80	50	eP		P	15 10 22.4	+0.9
TESR	Tescani	78.81	321	⇑iP		P	15 10 22.1	+1.0
B33A	Robert and Kas	78.87	36	P		P	15 10 21.2	-0.2
	baz=316,SNR=20							
GZT	Gaziantep	78.88	309	⇓iP		P	15 10 23.1	+1.2
G29A	Hoven	78.93	40	P		P	15 10 21.9	0.0
	baz=314							
F30A	Leola	78.94	39	P		P	15 10 21.7	-0.2
	baz=314,SNR=10							
CFR	Carcaliu	78.99	320	⇑iP		P	15 10 22.1	0.0
CFR	Carcaliu	78.99	320	⇑P		P	15 10 22.1	0.0
E31A	Nome	79.00	38	P		P	15 10 22.4	+0.2
	baz=315,SNR=40							
D32A	Dogwood Acres,	79.01	38	P		P	15 10 22.0	-0.2
	baz=316,SNR=22							
PETR	Petresti	79.07	320	⇑iP		P	15 10 24.9	+2.4
SMCO	Snowmass	79.08	49	eP		P	15 10 24.1	+0.8
I28A	Midland	79.11	42	P		P	15 10 23.2	+0.3
	baz=313,SNR=113							
RAR	Rarotonga	79.12	128	PFAKE			15 10 40.0	+17
RAR				LR		LR		
	comp=Z,5µm,19.0s							
KOLS	Kolonicke sedl	79.13	325	eP		P	15 10 23.0	+0.1
KOLS				pmax		pmax		
	comp=Z,79nm,1.3s							
KOLS	Kolonicke sedl	79.13	325	eP		P	15 10 23.0	+0.1
KOLS				ePP		PP	15 13 22.5	+0.9
KOLS				eS		S	15 20 23.7	+2.5
KOLS				eL		L	15 49 08.7	
ODBI	Odobesti	79.13	321	⇑iP		P	15 10 24.9	+2.0
B34A	Aery, Baudette	79.15	35	P		P	15 10 22.6	-0.3
	baz=317,SNR=25							
C33A	Trail	79.16	36	P		P	15 10 22.7	-0.3
	baz=316,SNR=23							
J27A	Elkhorn Farm,	79.17	43	P		P	15 10 23.8	+0.5
	baz=313,SNR=22							
H29A	Onida	79.18	41	P		P	15 10 23.4	+0.2
	baz=314,SNR=50							
BTIN	Bart¯-n	79.20	315	⇓iP		P	15 10 23.4	+0.1
VRI	Vrincioaia	79.22	321	⇑iP		P	15 10 25.0	+1.6
VRI	Vrincioaia	79.22	321	⇑P		P	15 10 25.0	+1.6
STHS	Stebnicka Huta	79.23	326	eP		P	15 10 24.4	+1.0
STHS				pmax		pmax		
	comp=Z,83nm,1.3s							
STHS	Stebnicka Huta	79.23	326	eP		P	15 10 24.4	+1.0
OJC	Ojcow	79.26	327	eP		P	15 10 24.3	+0.8
OJC				eS		S	15 20 23.0	+0.5
OJC	Ojcow	79.26	327	⇓eP		P	15 10 24.3	+0.8
OJC				eS		S	15 20 23.0	+0.5
OJC	Ojcow	79.26	327	eP		P	15 10 24.3	+0.8
PLOR	Plostina	79.27	321	⇑iP		P	15 10 24.9	+1.2
PLOR	Plostina	79.27	321	⇑P		P	15 10 24.9	+1.2
HCB	Kahramanmara¯	79.29	309	⇓iP		P	15 10 25.4	+1.4
ELDT	Eldivan	79.30	313	⇓iP		P	15 10 24.9	+0.8
F31A	Hecla	79.31	39	P		P	15 10 23.7	-0.2
	baz=315,SNR=24							
CDAG	Cicekdag	79.33	312	⇓iP		P	15 10 25.0	+0.8
UZH	Uzhgorod	79.34	325	eP		P	15 10 23.7	-0.3
UZH				e			15 10 36.9	
UZH				e			15 13 28.5	
UZH				eS		S	15 20 19.3	-4.1
UZH				e			15 21 11.9	
UZH				e			15 25 27.3	
UZH				MLR		MLR		
	comp=N,6µm,16.0s							
UZH				MLR		MLR		
	comp=E,9µm,16.0s							
UZH				MLR		MLR		
	comp=Z,3µm,16.0s							
TIRR	Tirgusor	79.35	319	⇑iP		P	15 10 25.1	+1.0
TIRR	Tirgusor	79.35	319	⇑P		P	15 10 25.1	+1.0
E32A	Braaten, Kindr	79.37	38	P		P	15 10 23.9	-0.3
	baz=316,SNR=7.5							
G30A	Faulkton	79.37	40	P		P	15 10 24.1	-0.2
	baz=314,SNR=15							
JHLN	Al Jahlan	79.41	307	eP		P	15 10 21.6	-3.1
HARR	Harsova	79.44	319	⇑iP		P	15 10 25.7	+1.1
HARR	Harsova	79.44	319	⇑P		P	15 10 25.7	+1.1
MVCO	Mesa Verde	79.44	51	P		P	15 10 25.8	+0.8
	baz=310,SNR=35							
MVCO	Mesa Verde	79.44	51	PFAKE			15 10 40.0	+15
MVCO				LR		LR		
	comp=Z,2µm,20.0s							
GRER		79.44	320	⇑iP		P	15 10 27.0	+2.4
J28A	Allard Ranch,	79.47	42	P		P	15 10 25.5	+0.6
	baz=313,SNR=32							
ISCO	Idaho Springs	79.47	47	P		P	15 10 26.0	+0.7
	baz=311,SNR=66							
ISCO	Idaho Springs	79.47	47	eP		P	15 10 26.0	+0.7
ISCO	Idaho Springs	79.47	47	eP		P	15 10 26.0	+0.7
ISCO				LR		LR		
	comp=Z,2µm,19.0s							
ANDN	Andirin	79.48	310	⇓iP		P	15 10 26.6	+1.4
BMR	Baia Mare	79.49	324	⇓iP		P	15 10 26.0	+1.2
BMR	Baia Mare	79.49	324	⇓P		P	15 10 26.0	+1.2
ARCR	ARCALIA	79.51	323	⇓iP		P	15 10 26.5	+1.5
CRVS	Cervenica-Dubn	79.52	326	eP		P	15 10 25.8	+0.8
CRVS				e			15 13 26.2	
CRVS				eS		S	15 20 26.4	+1.1
CRVS	Cervenica-Dubn	79.52	326	eP		P	15 10 25.8	+0.8
CRVS				ePP		PP	15 13 26.2	+1.4
CRVS				eS		S	15 20 26.4	+1.1
KAMA	Osmaniye	79.54	309	⇓iP		P	15 10 26.4	+1.0
I29A	Vivian Onida	79.55	41	P		P	15 10 25.4	+0.2
	baz=314,SNR=32							
KUZU	Kuzuini	79.55	309	⇓iP		P	15 10 26.4	+0.9
D33A	AnnSam, Waubun	79.57	37	P		P	15 10 24.7	-0.6
	baz=316,SNR=5.4							
AVNS	Nevsehir-Avano	79.58	311	⇓iP		P	15 10 26.5	+0.8
TRPA	Tarpa	79.60	325	⇓eP		P	15 10 26.5	+1.1
C34A	RKJ Ranch, Bem	79.64	36	P		P	15 10 25.2	-0.5
	baz=317,SNR=16							
NIE	Niedzica	79.64	327	eP		P	15 10 26.9	+1.2
NIE				eS		S	15 20 28.9	+2.1
NIE	Niedzica	79.64	327	⇓eP		P	15 10 26.9	+1.2
NIE				eS		S	15 20 28.8	+2.1
B35A	Bob, Littlefor	79.66	35	P		P	15 10 25.3	-0.5
	baz=317,SNR=120							
BRTR	Keskin Array B	79.68	313	P		P	15 10 26.6	+0.4
	comp=Z,56nm,1.1s,baz=94,slow=3.7,SNR=94							
BRTR				PKKPbc		PKKPbc	15 29 13.7	+1.5
	comp=Z,1.5nm,1.0s,baz=188,slow=2.5,SNR=4.4							
BRTR				LR		LR	15 50 23.5	
	comp=Z,4µm,19.5s,baz=22,slow=39							
PGOR	Pogoanele	79.77	320	⇑iP		P	15 10 28.4	+2.1
G31A	Conde	79.78	40	P		P	15 10 26.4	-0.1
	baz=315,SNR=27							
DOPR	Dopca	79.81	322	⇑iP		P	15 10 28.5	+1.9
ISR	Istrita	79.84	320	⇑iP		P	15 10 28.2	+1.3
ISR	Istrita	79.84	320	⇑P		P	15 10 28.2	+1.3
BCAM	Yenicaga	79.86	314	⇓iP		P	15 10 28.1	+1.0
F32A	Veblen	79.86	38	P		P	15 10 26.6	-0.3
	baz=316,SNR=8.4							
MLR	Muntele Rosu	79.88	321	P		P	15 10 27.8	+0.6
	comp=Z,10nm,0.9s,baz=31,slow=4.3,SNR=45							
MLR				PKKPbc		PKKPbc	15 29 12.4	+0.6
	comp=Z,0.6nm,0.6s,baz=152,slow=2.4,SNR=3.6							
MLR	Muntele Rosu	79.88	321	⇓iP		P	15 10 28.0	+0.9
MLR	Muntele Rosu	79.88	321	⇓P		P	15 10 28.0	+0.9
DRWC	Darouich	79.90	309	eP		P	15 10 28.9	+1.6
D34A	Park Rapids	79.91	37	P		P	15 10 26.7	-0.5
	baz=317,SNR=50							
E33A	Westby DABS, E	79.95	37	P		P	15 10 27.4	0.0
	baz=316,SNR=18							
SUSD	Miller	79.95	40	P		P	15 10 27.6	+0.2
	baz=315,SNR=11							
PSN	Preselentsi	80.01	319	iP		P	15 10 28.9	+1.2
W18A	Petrified Fore	80.01	53	P		P	15 10 29.1	+1.0
	baz=310,SNR=5.6							
214A	Organ Pipe Nat	80.02	57	P		P	15 10 28.8	+0.7
	baz=309,SNR=36							
C35A	Jirik Farms, M	80.03	36	P		P	15 10 27.4	-0.4
	baz=317,SNR=119							
RAC	Raciborz	80.04	328	eP		P	15 10 28.2	+0.5
RAC				MLR		MLR		
	comp=Z,10µm,21.6s							
BIGH	Upper Bighouse	80.04	344	⇓eP		P	15 10 27.7	+0.1
BIGH				AMB		AMB	15 10 29.7	
	comp=Z,251nm,1.6s							
BIGH				AMS		AMS	15 47 41.2	
	comp=Z,8µm,19.5s							
ANTO	Ankara	80.08	313	eP		P	15 10 29.1	+0.8
ANTO	Ankara	80.08	313	eP		P	15 10 29.1	+0.8
I30A	Oacoma	80.08	41	P		P	15 10 28.3	+0.2
	baz=314,SNR=48							
MLA1	Latheron	80.09	343	⇓eP		P	15 10 28.4	+0.5
AKO	Adana	80.10	310	⇓iP		P	15 10 29.4	+1.1
S22A	4UR Ranch, Cre	80.10	50	P		P	15 10 29.7	+1.0
	baz=311,SNR=142							
BBAL	Bala	80.10	313	⇓iP		P	15 10 29.5	+1.0
G32A	Webster	80.11	39	P		P	15 10 28.3	0.0
	baz=315,SNR=11							
ABTO	Aybut	80.14	284	P		P	15 10 28.9	0.0
	SNR=20							
ABTO	Aybut	80.14	284	P		P	15 10 28.9	0.0
	SNR=20							
CJR	Cluj-Napoca	80.14	323	⇑iP		P	15 10 30.2	+1.8
CJR	Cluj-Napoca	80.14	323	⇑P		P	15 10 30.2	+1.8
SECR		80.14	321	⇓iP		P	15 10 30.0	+1.6
H31A	Wolsey	80.17	40	P		P	15 10 28.4	-0.2
	baz=315,SNR=5.7							
LANS	Liptovska Anna	80.20	327	eP		P	15 10 30.0	+1.3
LANS				e			15 10 42.8	
LANS	Liptovska Anna	80.20	327	eP		P	15 10 30.0	+1.3
LANS				e			15 10 42.8	
KSP	Ksiaz	80.23	329	eP		P	15 10 29.5	+0.7
KSP				eS		S	15 20 33.7	+1.0
KSP	Ksiaz	80.23	329	⇓eP		P	15 10 29.5	+0.7
KSP				eS		S	15 20 33.7	+1.0
OKC	Ostrava-Krasne	80.25	328	eP		P	15 10 29.8	+0.9
OKC				ex		x	15 10 41.5	
OKC	Ostrava-Krasne	80.25	328	eP		P	15 10 29.8	+0.9
OKC				e			15 10 41.5	
KECS	Kecovo	80.26	326	eP		P	15 10 29.2	+0.2
KECS				e			15 10 40.8	
KECS				pmax		pmax		
	comp=Z,36nm,1.5s							
KECS	Kecovo	80.26	326	eP		P	15 10 29.2	+0.2
KECS				e			15 10 40.8	
F33A	5 Mile Ranch,	80.29	38	P		P	15 10 29.1	-0.1
	baz=316,SNR=50							
Q24A	Divide	80.29	48	P		P	15 10 30.5	+0.7
	baz=312,SNR=51							
SULR		80.30	320	⇑iP		P	15 10 30.3	+1.1
AKSY	AKSARAY - Alti	80.32	312	⇓iP		P	15 10 30.4	+0.8
E34A	Wadena	80.34	37	P		P	15 10 29.2	-0.2
	baz=317							
VOIR		80.36	321	⇑iP		P	15 10 31.0	+1.4
VOIR		80.36	321	⇑P		P	15 10 31.1	+1.4
DGAR	Diego Garcia	80.42	253	eP		P	15 10 31.1	+0.8
DGAR	Diego Garcia	80.42	253	eP		P	15 10 31.1	+0.8
DGAR				LR		LR		
	comp=Z,3µm,19.0s							
RSC	Scourie	80.45	344	eP		P	15 10 30.5	+0.7
D35A	Remer	80.45	36	P		P	15 10 29.6	-0.5
	baz=317,SNR=50							
J30A	Dallas	80.45	42	P		P	15 10 30.3	+0.2
	baz=314,SNR=17							
I31A	Royce, Wessing	80.46	41	P		P	15 10 29.9	-0.2
	baz=315							
KKUL	Konya-Kulu	80.47	313	⇓iP		P	15 10 31.7	+1.3
DRGR		80.50	324	⇑iP		P	15 10 31.4	+1.0
DRGR		80.50	324	⇑P		P	15 10 31.4	+1.0
C36A	Pine Crest Far	80.51	35	P		P	15 10 30.2	-0.1
	baz=318,SNR=75							
SAHE	Sakarya_HENDEK	80.51	315	⇓iP		P	15 10 30.3	-0.2
MORC	Moravsky Berou	80.54	328	⇑iP		P	15 10 30.8	+0.2
MORC	Moravsky Berou	80.54	328	⇑P		P	15 10 30.8	+0.2
MORC	Mo

TAU	**Tasmania Unive**	80.78 178	*e*P	P		15 10 32.3 +0.8
TAU			LR	LR		
	comp=Z,4μm,20.0s					
D36A	**Goodland**	80.79 36	P	P		15 10 31.1 -0.7
	baz=318,SNR=30					
DED	**Mersin**	80.82 310	⇓*i*P	P		15 10 32.8 +0.5
F34A	**Alexandria**	80.82 38	P	P		15 10 31.9 -0.1
	baz=317,SNR=29					
AUMIH	**MIHALICIK**	80.82 314	⇓*i*P	P		15 10 32.6 +0.3
C37A	**Embarrass**	80.82 35	P	P		15 10 31.8 -0.3
	baz=318,SNR=73					
K30A	**Basset**	80.84 42	P	P		15 10 32.4 +0.1
	baz=314,SNR=22					
J31A	**Geddes**	80.87 41	P	P		15 10 32.1 -0.3
	baz=315,SNR=5.9					
MME1	**Meikle Cairn**	80.89 343	⇓*e*P	P		15 10 32.3 +0.1
SDCO	**Great Sand Dun**	80.89 49	P	P		15 10 33.7 +0.8
	baz=312,SNR=100					
SDCO	**Great Sand Dun**	80.89 49	PFAKE			15 10 50.0 +17
SDCO			LR	LR		
	comp=Z,3μm,19.0s					
H33A	**Prehn Over Nor**	80.90 39	P	P		15 10 32.6 +0.1
	baz=316,SNR=105					
KERG	**Konya-Eregli**	80.92 311	⇓*i*P	P		15 10 33.1 +0.2
PSZ	**Piszkesteto**	80.95 326	⇑*i*P	P		15 10 33.7 +1.0
PSZ	**Piszkesteto**	80.95 326	⇓*e*P	P		15 10 33.8 +1.0
PSZ	**Piszkesteto**	80.95 326	⇑P	P		15 10 33.7 +1.0
PSZ	**Piszkesteto**	80.95 326	*e*P	P		15 10 33.6 +0.8
PSZ			LR	LR		
	comp=Z,10μm,19.0s					
EYMN	**Ely**	80.97 34	*e*P	P		15 10 32.5 -0.3
EYMN			LR	LR		
	comp=Z,3μm,20.0s					
LOT	**Lotru**	80.97 322	⇑*i*P	P		15 10 34.0 +1.0
VYHS	**Vyhne**	80.97 327	*e*P	P		15 10 33.8 +1.0
VYHS			*e*			15 10 45.6
VYHS			*e*			15 13 35.6
VYHS			*e*S	S		15 20 39.1 -1.6
VYHS			pmax	pmax		
	comp=Z,133nm,1.5s					
VYHS			MLR	MLR		
	comp=Z,8μm,17.0s					
VYHS	**Vyhne**	80.97 327	*e*P	P		15 10 33.8 +1.0
VYHS			*e*			15 10 45.6
VYHS			*e*PP	PP		15 13 35.6 -1.3
VYHS			*e*S	S		15 20 39.1 -1.6
VYHS			*e*L	L		15 50 15.4
I32A	**Karley and Nic**	81.00 40	P	P		15 10 32.9 -0.2
	baz=316					
G34A	**Benson**	81.04 38	P	P		15 10 33.4 +0.2
	baz=317,SNR=29					
HUMR	**Humele**	81.04 321	⇑*i*P	P		15 10 34.5 +1.3
AUSIV	**SIVRIHISAR**	81.08 314	⇓*i*P	P		15 10 33.7 0.0
ROOS	**tl_alroos**	81.10 307	*e*P	P		15 10 34.9 +1.1
MDO	**Dochfour**	81.10 343	⇓*i*P	P		15 10 33.5 +0.2
F35A	**Swanville**	81.10 37	P	P		15 10 33.2 -0.4
	baz=317,SNR=26					
TUC	**Tucson**	81.13 56	P	P		15 10 34.9 +0.9
	baz=310					
TUC	**Tucson**	81.13 56	*e*P	P		15 10 34.8 +0.8
TUC	**Tucson**	81.13 56	*e*P	P		15 10 34.8 +0.8
TUC			LR	LR		
	comp=Z,4μm,19.0s					
BRG	**Berggiesshubel**	81.13 331	*i*P	P		15 10 34.1 +0.5
	comp=Z,135nm,1.5s					
BRG			*i*PP	PP		15 13 25.7 -12
	comp=Z,75nm,1.7s					
BRG			S	S		15 20 42.0 -0.1
BRG			SS	SS		15 25 34.0 -22
BRG			*e*PKPPKP	P'P'df		15 37 06.3 -14
	comp=Z,2.1nm,0.6s					
	comp=N,7μm,16.1s					
	comp=E,9μm,15.6s					
	comp=Z,10μm,15.6s					
BRG	**Berggiesshubel**	81.13 331	*i*P	P		15 10 34.1 +0.5
BRG			S	S		15 20 42.0 -0.1
BRG			pmax	pmax		
	comp=Z,135nm,1.5s					
BRG			MLR	MLR		
	comp=N,7μm,16.1s					
BRG			MLR	MLR		
	comp=E,9μm,15.6s					
BRG			MLR	MLR		
	comp=Z,10μm,15.6s					
D37A	**Cotton**	81.14 35	P	P		15 10 32.9 -0.9
	baz=318,SNR=23					
DRUM	**Mains of Drumt**	81.14 342	⇓*e*P	P		15 10 33.9 +0.4
DRUM			AMB	AMB		15 10 36.6
	comp=Z,193nm,1.3s					
DRUM			AMS	AMS		15 43 53.7
	comp=Z,5μm,23.5s					
CLL	**Collm**	81.14 331	⇓*i*P	P		15 10 33.6 0.0
	comp=Z,193nm,1.1s					
CLL			*i*			15 10 37.9
	comp=Z,193nm,1.1s					
CLL			*e*Pmax			15 10 37.0
CLL			*i*			15 10 45.7
	comp=Z,148nm,1.0s					
CLL			*i*			15 11 02.1
CLL			*e*			15 13 21.0
CLL			*e*PP	PP		15 13 41.0 +2.9
CLL			*e*			15 13 52.0
CLL			*e*S	S		15 20 42.0 -0.2
CLL			*e*PS	PnS		15 21 23.0 -6.6
CLL			*e*PPS	PPS		15 22 00.0
CLL			*e*SS	SS		15 25 48.0 -8.0
CLL			*e*			15 26 42.0
CLL			*e*SSS	SSS		15 29 30.0
CLL			LmH			15 45 00.0
	comp=N,10μm,19.9s					
CLL			LmH			15 45 00.0
	comp=E,11μm,21.4s					
CLL			Lmax			15 50 00.0
CLL			LmV			15 51 00.0
	comp=N,8μm,19.9s					
CLL			LmV			15 51 00.0
	comp=E,5μm,19.3s					
CLL			LmV			15 51 00.0
	comp=Z,11μm,19.8s					
CLL	**Collm**	81.14 331	⇓*i*P	P		15 10 33.6 0.0
CLL			*i*			15 10 45.7
CLL			*e*S	S		15 20 42.0 -0.2
CLL			pmax	pmax		
	comp=Z,193nm,1.1s					
CLL			MLR	MLR		
	comp=Z,11μm,19.8s					
PVCC	**Panska Ves**	81.16 330	*e*P	P		15 10 34.7 +0.9
PVCC			*e*x	x		15 10 46.3
PVCC			*e*PP	PP		15 13 37.8 -0.5
PVCC			*e*S	S		15 20 45.1 +2.6
PVCC			AMS	AMS		15 50 10.0
	comp=Z,8μm,16.3s					
PVCC	**Panska Ves**	81.16 330	*e*P	P		15 10 34.7 +0.9
PVCC			*e*			15 10 46.3
PVCC			*e*			15 13 37.8
PVCC			*e*S	S		15 20 45.1 +2.6
PVCC			MLR	MLR		
	comp=Z,8μm,16.3s					
RRH	**Rhenigidale**	81.16 345	*e*P	P		15 10 34.2 +0.6
E36A	**McGregor**	81.23 36	P	P		15 10 34.0 -0.2
	baz=318,SNR=51					
C38A	**Sawbill Land.**	81.24 34	P	P		15 10 33.9 -0.4
	baz=319,SNR=101					
KAC	**Achnashellach**	81.25 344	⇓*i*P	P		15 10 34.5 +0.4
J32A	**Parkston**	81.27 41	P	P		15 10 34.2 -0.3
	baz=315,SNR=5.9					
VRAC	**Vranov**	81.30 328	P	P		15 10 35.5 +1.0
	comp=Z,102nm,1.1s,baz=45,slow=5.1,SNR=104					
VRAC	**Vranov**	81.30 328	⇑*i*P	P		15 10 36.1 +1.6
VRAC	**Vranov**	81.30 328	⇑P	P		15 10 36.1 +1.6
I33A	**Coleman**	81.32 40	P	P		15 10 34.8 0.0
	baz=316,SNR=17					
K31A	**O'Neill**	81.33 42	P	P		15 10 34.9 0.0
	baz=315,SNR=46					
ISK	**Istanbul-Kandi**	81.35 316	P	P		15 10 49.5 +15
KDHN	**Kadinhani**	81.37 313	⇓*i*P	P		15 10 35.3 0.0
SIRR	**Siria**	81.38 324	⇑*i*P	P		15 10 36.1 +1.1
H34A	**Spellman Lake,**	81.39 39	P	P		15 10 34.9 -0.2
	baz=317,SNR=12					
BORA	**Eskisehir**	81.39 315	⇓*i*P	P		15 10 35.2 -0.1
HIZ	**Hauiti**	81.40 156	*e*P	P		15 10 37.2 +2.3
ESKT	**Eskisehir**	81.42 314	⇓*i*P	P		15 10 35.5 0.0
SZH	**Strazhica**	81.46 319	*i*P	P		15 10 35.9 +0.4
BUY	**Buyukada**	81.47 316	⇓*i*P	P		15 10 35.8 +0.2
ZIMR		81.47 320	⇑*i*P	P		15 10 37.0 +1.5
ZIMR		81.47 320	⇑P	P		15 10 37.0 +1.5
KPL	**Plockton**	81.48 344	⇓*e*P	P		15 10 35.5 +0.3
KPL			AMB	AMB		15 10 39.5
	comp=Z,305nm,1.3s					
KPL			AMS	AMS		15 48 54.1
	comp=Z,4μm,20.4s					
KIZK	**Mersin**	81.53 310	⇓*i*P	P		15 10 35.7 -0.2
KSB	**Sheil Bridge**	81.55 344	⇓*i*P	P		15 10 36.0 +0.4
GOPC	**GO Pecny, Ondr**	81.56 330	*e*P	P		15 10 36.8 +0.9
GOPC			*e*x	x		15 10 48.3
GOPC	**GO Pecny, Ondr**	81.56 330	*e*P	P		15 10 36.8 +0.9
GOPC			*e*			15 10 48.3
SMOL	**Smolenice**	81.56 327	*e*P	P		15 10 37.1 +1.2
SMOL			*e*			15 10 50.0
SMOL	**Smolenice**	81.56 327	*e*P	P		15 10 37.1 +1.2
SMOL			*e*			15 10 50.0
AUKUT	**KUTAHYA**	81.58 315	⇓*i*P	P		15 10 39.1 +2.8
E37A	**Wrenshall**	81.59 36	P	P		15 10 35.4 -0.7
	baz=318,SNR=5.4					
F36A	**Milaca**	81.59 37	P	P		15 10 35.4 -0.7
	baz=318,SNR=24					
EDU	**Dundee**	81.60 342	⇓*e*P	P		15 10 36.4 +0.4
PRU	**Pruhonice**	81.60 330	*e*P	P		15 10 36.9 +0.8
PRU			*e*x	x		15 10 49.5
PRU	**Pruhonice**	81.60 330	*e*P	P		15 10 36.9 +0.8
PRU			*e*			15 10 49.5
L31A	**Butterfield Fa**	81.60 42	P	P		15 10 36.5 +0.1
	baz=315,SNR=83					
AUBOZ	**BOZOYUK**	81.61 315	⇓*i*P	P		15 10 36.6 +0.2
G35A	**Watkins**	81.61 38	P	P		15 10 36.4 +0.1
	baz=317,SNR=25					
ECSD	**EROS Data Cent**	81.64 40	PFAKE			15 10 50.0 +14
ECSD			LR	LR		
	comp=Z,3μm,21.0s					
BUD	**Budapest**	81.66 326	⇓*e*P	P		15 10 37.2 +0.8
C39A	**Grand Marais**	81.66 34	P	P		15 10 35.7 -0.8
	baz=320,SNR=27					
JMB	**Yambol**	81.69 318	*i*P	P		15 10 37.3 +0.6
K32A	**Verdigre**	81.72 41	P	P		15 10 36.3 -0.6
	baz=315,SNR=6.1					
KSCO	**Kaye Shedlock'**	81.72 46	P	P		15 10 37.4 +0.3
	baz=313					
KMER	**Konya-Meram**	81.73 312	⇓*i*P	P		15 10 37.5 +0.3
J33A	**Davis**	81.76 40	P	P		15 10 37.0 -0.1
	baz=316,SNR=10					
TREC	**Trest**	81.76 329	*e*P	P		15 10 37.7 +0.7
TREC			*e*x	x		15 10 46.6
TREC			*e*x	x		15 10 49.1
TREC			*e*S	S		15 20 51.4 +2.6
TREC			MLR	MLR		
	comp=Z,7μm,15.0s					
TREC	**Trest**	81.76 329	*e*P	P		15 10 37.7 +0.7
TREC			*e*			15 10 46.6
TREC			*e*			15 10 49.1
TREC			*e*S	S		15 20 51.4 +2.6
TREC			MLR	MLR		
	comp=Z,7μm,15.0s					
I34A	**Hadley**	81.80 39	P	P		15 10 37.3 0.0
	baz=317,SNR=9.5					
PVL	**Pavlikeni**	81.81 320	*i*P	P		15 10 38.2 +0.9
H35A	**Sunnyside Ranc**	81.83 38	P	P		15 10 37.8 +0.4
	baz=317,SNR=108					
IGD	**Bursa**	81.83 316	⇓*i*P	P		15 10 36.7 -0.8
HWQ	**Hawqa**	81.87 307	*e*P	P		15 10 38.3 +0.4
ZALF	**Zalf**	81.87 306	*e*P	P		15 10 39.4 +1.5
BZS	**Buzias**	81.88 323	⇑*i*P	P		15 10 38.3 +0.7
BZS	**Buzias**	81.88 323	⇑P	P		15 10 38.3 +0.7
BOLV	**Bolvadin**	81.91 313	⇓*i*P	P		15 10 38.6 +0.5
URZ	**Urewera**	81.91 154	LR	LR		15 45 28.4
	comp=Z,3μm,19.0s,baz=342,slow=35					
URZ	**Urewera**	81.91 154	*e*P	P		15 10 36.5 -1.1
T25A	**Trinidad**	81.94 49	P	P		15 10 39.0 +0.6
	baz=312,SNR=116					
ULDT	**Uludag**	81.95 315	*i*P	P		15 10 39.2 +0.8
G36A	**St. Michael**	81.95 37	P	P		15 10 38.1 0.0
	baz=318,SNR=10.0					
EDRB	**Edirne**	82.05 318	P	P		15 10 39.4 +0.8
EDRB	**Edirne**	82.05 318	P	P		15 10 39.4 +0.8
ESY	**Stoneypath**	82.07 342	⇓*i*P	P		15 10 38.9 +0.4
CSKK	**Cs˘ţkako**	82.09 326	⇓*e*P	P		15 10 39.1 +0.4
LAZ	**Ladron**	82.10 52	*e*P	P		15 10 40.5 +1.2
M31A	**Lambtecht Ranc**	82.12 43	P	P		15 10 38.9 -0.1
	baz=315,SNR=8.8					
L32A	**Elgin**	82.16 42	P	P		15 10 39.3 0.0
	baz=316					
ERMK	**Ermenek**	82.16 311	⇓*i*P	P		15 10 39.5 -0.1
ANMO	**Albuquerque**	82.17 51	P	P		15 10 40.8 +1.2
	baz=312					
ANMO	**Albuquerque**	82.17 51	*c*eP	P		15 10 40.2 +0.6
ANMO			pmax	pmax		
	comp=Z,151nm,1.2s					
ANMO			MLR	MLR		
	comp=Z,2μm,20.0s					
ANMO	**Albuquerque**	82.17 51	*e*P	P		15 10 40.5 +0.9
ANMO			LR	LR		
	comp=Z,2μm,19.0s					
EDI	**Edinburgh**	82.20 342	⇓*e*P	P		15 10 39.0 -0.1
EDI			AMS	AMS		15 44 22.0
	comp=Z,3μm,30.0s					
EAB	**Aberfoyle**	82.23 343	⇓*i*P	P		15 10 39.9 +0.6
K33A	**Hardington**	82.25 41	P	P		15 10 40.0 +0.3
	baz=316,SNR=7.5					
J34A	**George**	82.30 40	P	P		15 10 39.4 -0.5
	baz=317					
BHL	**Bhannes**	82.30 307	*e*P	P		15 10 40.5 +0.3
H36A	**Jessenland, He**	82.35 38	P	P		15 10 40.5 +0.4
	baz=318,SNR=35					
I35A	**Creekview Farm**	82.37 39	P	P		15 10 40.3 0.0
	baz=317					
SALA	**Sala**	82.39 306	*e*P	P		15 10 42.3 +1.5
SPMN	**Marine on St.**	82.41 37	P	P		15 10 40.4 0.0
	baz=318,SNR=14					
L33A	**Hoskins**	82.43 41	P	P		15 10 40.2 -0.5
	baz=316					
RCY	**Rachaya**	82.45 307	*e*P	P		15 10 41.7 +0.6
MDVR	**Moldovita**	82.45 323	⇓*i*P	P		15 10 41.2 +0.5
Y22D	**IRIS PASSCAL I**	82.45 52	P	P		15 10 41.8 +0.7
	baz=311					
LPM	**Los Pinos Moun**	82.48 52	*e*P	P		15 10 42.0 +0.8
DQRL	**Deir Qamar**	82.48 307	*e*P	P		15 10 41.9 +0.7
GDZ	**Gediz**	82.48 314	⇓*i*P	P		15 10 41.4 +0.3
N31A	**Bailey Ranch,**	82.49 43	P	P		15 10 40.5 -0.5
	baz=315,SNR=5.9					
BAGO	**Egridir - ISPA**	82.50 313	⇓*i*P	P		15 10 41.5 +0.3
MPEP	**Malo Peshtene**	82.51 321	*i*P	P		15 10 41.9 +0.9
BGNE	**Belgrade**	82.51 42	P	P		15 10 40.9 -0.2
	baz=315,SNR=6.2					
DIM	**Dimitrovgrad**	82.54 319	*i*P	P		15 10 42.3 +1.1
SOP	**Sopron**	82.58 327	⇓*e*P	P		15 10 42.5 +1.2
BNM	**Barren Site**	82.58 52	*e*P	P		15 10 42.7 +0.8
PGBU	**Glenifferbraes**	82.61 343	⇓*e*P	P		15 10 41.5 +0.2
PGBU			AMB	AMB		15 10 43.7
	comp=Z,327nm,1.5s					
PGBU			AMS	AMS		16 00 06.1
	comp=Z,3μm,17.4s					
J35A	**Milford**	82.61 39	P	P		15 10 41.2 -0.4
	baz=317					
SART	**Tekirdag**	82.63 317	⇓*i*P	P		15 10 42.0 +0.2
ASF	**Jabal al Asfar**	82.64 305	P	P		15 10 42.8 +0.8
	comp=Z,63nm,1.3s,baz=292,slow=0.8,SNR=68					
K34A	**Le Mars**	82.66 40	P	P		15 10 41.5 -0.4
	baz=317,SNR=20					
KHC	**Kasperske Hory**	82.66 330	*e*P	P		15 10 42.4 +0.7
KHC			*e*x	x		15 10 55.2
KHC			*e*PP	PP		15 13 50.0 -0.7
KHC			*e*S	S		15 21 00.2 +2.1
KHC	**Kasperske Hory**	82.66 330	*e*P	P		15 10 42.4 +0.7
KHC			*e*			15 10 55.2
KHC			*e*			15 13 50.0
KHC			*e*S	S		15 21 00.2 +2.1
CONA	**Conrad Observa**	82.68 328	*i*pP	P		15 10 42.8 +0.9
	comp=Z,136nm,1.2s,SNR=98					
PMOR	**Pomariorio Ree**	82.68 115	*e*P	P		15 10 43.6 +1.5
	comp=Z,326nm,1.2s					
PMOR	**Pomariorio Ree**	82.68 115	*e*T	T		16 43 19.8
	comp=Z,22nm,0.2s					
DURS	**Dursunbey**	82.69 315	⇓*i*P	P		15 10 42.4 +0.2
I36A	**Fitzsimmons Fa**	82.72 38	P	P		15 10 41.7 -0.4
	baz=318,SNR=6.0					
EKA	**Eskdalemuir Ar**	82.73 342	P	P		15 10 42.5 +0.6
	comp=Z,29nm,0.7s,baz=27,slow=4.9,SNR=52					
ESK	**Eskdalemuir**	82.76 342	⇓*e*P	P		15 10 42.4 +0.4
ESK			AMS	AMS		15 44 39.2
	comp=Z,4μm,27.1s					
ESK	**Eskdalemuir**	82.76 342	*c*eP	P		15 10 43.0 +1.0
ESK	**Eskdalemuir**	82.76 342	*e*P	P		15 10 43.1 +1.1
ESK			LR	LR		
	comp=Z,4μm,20.0s					
ISP	**Isparta**	82.76 313	P	P		15 10 42.1 -0.5
ISP	**Isparta**	82.76 313	P	P		15 10 42.1 -0.5
ISP			MLR	MLR		
	comp=Z,5μm,19.0s					
ISP	**Isparta**	82.76 313	P	P		15 10 42.1 -0.5
ISP			LR	LR		
	comp=Z,5μm,19.0s					
O31A	**Woolen Ranch,**	82.77 44	P	P		15 10 41.9 -0.6
	baz=315,SNR=5.8					
GAZI	**Gazipasa**	82.79 311	⇓*i*P	P		15 10 41.8 -0.9
WTSB	**Winterswijk**	82.80 335	*e*P	P		15 10 42.4 +0.1
	comp=Z,242nm,1.8s					
KESN	**Edirne-Kesan**	82.81 317	⇓*i*P	P		15 10 43.2 +0.2
H37A	**Dierke Farm, C**	82.83 37	P	P		15 10 42.7 0.0
	baz=318,SNR=22					
GERES	**GERESS Array B**	82.84 330	P	P		15 10 43.0 +0.2
	comp=Z,10nm,0.6s,baz=38,slow=5.0,SNR=71					
GERES			LR	LR		15 50 56.8
	comp=Z,8μm,19.5s,baz=28,slow=38					
GERES	**GERESS Array B**	82.84 330	P	P		15 10 43.0 +0.2
GERES			pmax	pmax		
	comp=Z,10.0nm,0.6s					
GERES			MLR	MLR		
	comp=Z,8μm,19.5s					
ECK	**Cauldkaine Hil**	82.86 342	⇓*e*P	P		15 10 43.1 +0.6
PGB	**Panagyurishte**	82.88 320	*i*P	P		15 10 43.8 +0.8
KDZ	**Kurdzhali**	82.89 319	*i*P	P		15 10 44.1 +1.1
N32A	**Stulken Farm,**	82.89 43	P	P		15 10 42.5 -0.6
	baz=315					
M33A	**Taylor Creek F**	82.89 42	P	P		15 10 42.6 -0.5
	baz=316,SNR=7.1					
TCHB	**Talchebab**	82.91 306	*e*P	P		15 10 45.0 +1.6
121A	**Cookes Peak, D**	82.92 54	P	P		15 10 44.4 +0.8
	baz=311,SNR=44					
PLD	**Plovdiv**	82.93 319	*i*P	P		15 10 43.4 +0.2
DEMI	**Demirci**	82.94 315	⇓*i*P	P		15 10 43.8 +0.3
BHH	**Howats Hill**	82.96 342	⇓*i*P	P		15 10 43.8 +0.7
KHAL	**Karahalli**	82.97 314	⇓*i*P	P		15 10 43.8 +0.1
BWH	**Wardlaw**	82.99 342	⇓*e*P	P		15 10 44.0 +0.7
I37A	**Lemond, Waseca**	83.02 38	P	P		15 10 43.9 +0.2
	baz=318,SNR=53					
VAH	**Vaihoa**	83.03 115	*e*P	P		15 10 45.2 +1.3
	comp=Z,241nm,1.4s					
CSS	**Mathiatis**	83.03 309	P	P		15 10 44.0 +0.1
CSS	**Mathiatis**	83.03 309	P	P		15 10 44.0 +0.1
CSS			LR	LR		
	comp=Z,1μm,21.0s					
L34A	**Svendsen Farm,**	83.04 41	P	P		15 10 43.4 -0.4
	baz=316					
MMAI	**Mount Meron Ar**	83.04 307	P	P		15 10 45.2 +1.1
	comp=Z,216nm,1.2s,baz=46,slow=6.0,SNR=89					
BALY	**Balya**	83.06 316	⇓*i*P	P		15 10 44.6 +0.5
J36A	**Seneca 1, Swea**	83.07 39	P	P		15 10 43.7 -0.2
	baz=318					
K35A	**Storm Lake**	83.07 40	P	P		15 10 43.1 -0.9
	baz=317					
ALN	**Alexandroupoli**	83.09 318	P	P		15 10 44.3 +0.2
ALN	**Alexandroupoli**	83.09 318	P	P		15 10 44.3 +0.2
ALN	**Alexandroupoli**	83.09 318	P	P		15 10 44.3 +0.2
ENEZ	**Enez**	83.15 317	P	P		15 10 44.8 +0.4
RZN	**Rozhen**	83.22 319	*i*P	P		15 10 45.6 +0.6
PPT	**Papeete**	83.24 118	LR	LR		15 40 37.6
	comp=Z,3μm,19.7s,baz=302,slow=30					
PPT2	**Papeete2**	83.25 118	*e*P	P		15 10 46.7 +1.5
	comp=Z,148nm,1.2s					
PPT2	**Papeete2**	83.25 118	*e*S	S		15 21 01.0 -3.9
	comp=Z,14μm,35.0s					
PPT2	**Papeete2**	83.25 118	*e*LQ	LQ		15 32 43.3
	comp=Z,4μm,30.0s					
PPT2			*e*LR	LR		15 36 40.3
	comp=Z,14μm,30.8s					
PPT2	**Papeete2**	83.25 118	*e*T	T		16 44 08.7
	comp=Z,14nm,0.3s					
O32A	**Brockman Farm,**	83.26 43	P	P		15 10 44.3 -0.7
	baz=316					
M34A	**Aspy Farms, Fr**	83.26 41	P	P		15 10 44.4 -0.6
	baz=316					
BBO1	**Bothel**	83.29 342	⇓*i*P	P		15 10 45.7 +0.9
GMK	**Mull of Kintyr**	83.30 343	⇓*e*P	P		15 10 45.4 +0.6
PAE	**Paea**	83.30 119	*e*T	T		16 44 12.9
	comp=Z,20nm,0.3s					
KULA	**Kula-Manisa**	83.34 315	P	P		15 10 45.8 +0.3
KULA	**Kula-Manisa**	83.34 315	P	P		15 10 45.8 +0.3
ALFC	**Alefka**	83.35 310	P	P		15 10 46.7 +1.1
ARSA	**Arzberg**	83.35 328	*i*pP	P		15 10 46.1 +0.8
	comp=Z,114nm,1.6s,SNR=29					
L35A	**Bielow Farm, R**	83.36 40	P	P		15 10 44.8 -0.6
	baz=317					
N33A	**J Bar K, Exete**	83.36 42	P	P		15 10 44.8 -0.7
	baz=316					
KESW	**Keswick, Cumbr**	83.39 342	⇓*e*P	P		15 10 45.9 +0.6
KESW			AMB	AMB		15 10 47.1
	comp=Z,329nm,1.5s					
MOA	**Molln**	83.40 329	*i*pP	P		15 10 46.2 +0.7
	comp=Z,146nm,1.4s,SNR=69					
COWI	**Conover**	83.42 34	PFAKE			15 11 00.0 +14
COWI			LR	LR		
	comp=Z,2μm,19.0s					
BEHE	**Becsehely**	83.42 326	⇓*e*P	P		15 10 45.7 0.0
KORT	**Korkueli**	83.43 312	⇓*i*P	P		15 10 45.4 -0.7
SZAC	**Souni**	83.45 309	P	P		15 10 47.7 +1.6
J37A	**Redenius Farm,**	83.47 38	P	P		15 10 46.0 0.0
	baz=318					
CBKS	**Cedar Bluff**	83.48 45	P	P		15 10 45.3 -0.9
	baz=315,SNR=9.8					
CBKS	**Cedar Bluff**	83.48 45	PFAKE			15 11 00.0 +14
CBKS			LR	LR		
	comp=Z,2μm,19.0s					
I38A	**Scanlan Farm,**	83.52 37	P	P		15 10 45.8 -0.4
	baz=319,SNR=29					
K36A	**Gilmore City**	83.52 39	P	P		15 10 46.0 -0.2
	baz=318,SNR=10					
GAL1	**Galloway**	83.53 342	*e*P	P		15 10 45.4 -0.6
GAL1			AMB	AMB		15 10 47.3
	comp=Z,106nm,1.4s					
P32A	**Huiting Farm,**	83.53 44	P	P		15 10 45.7 -0.7
	baz=315,SNR=34					
AKHS	**Akhisar**	83.56 315	⇓*i*P	P		15 10 46.7 +0.1
HPK	**Haverah Park**	83.58 340	⇓*e*P	P		15 10 46.5 +0.2
HPK			AMB	AMB		15 10 52.3
	comp=Z,356nm,1.9s					
HPK			AMS	AMS		15 51 05.2
	comp=Z,6μm,20.4s					
SCHQ	**Schefferville**	83.59 17	P	P		15 10 46.5 0.0
	comp=Z,64nm,0.9s,baz=352,slow=5.3,SNR=26					
SCHQ			LR	LR		15 49 08.4
	comp=Z,4μm,21.5s,baz=351,slow=36					
AKMC	**Akamas**	83.60 310	P	P		15 10 47.6 +0.8
TVO	**Taravao**	83.61 118	*e*P	P		15 10 48.6 +1.6
	comp=Z,59nm,1.0s					
SMTH	**Samothraki Isl**	83.67 318	P	P		15 10 46.8 -0.3
SMTH	**Samothraki Isl**	83.67 318	P	P		15 10 46.8 -0.3
DNZL	**Cakirolu

Q32A **Meitler Ranch,** 84.00 44 P P 15 10 48.0 -0.9
baz=315,SNR=27
PERS **Pernice** 84.01 327 *i* P P 15 10 48.9 +0.1
PERS *e*PP PP 15 14 07.9 +6.1
PERS *e*S S 15 21 11.4 -0.4
LHO **Holmfirth** 84.01 340⇓*i*P P 15 10 49.0 +0.4
SOKA **Soboth** 84.01 328 *i* pP P 15 10 49.4 +0.6
comp=Z,123nm,0.7s,SNR=93
HGN **Heimansgroeve** 84.11 335 *e*S S 15 21 07.4 -5.1
PRK **Paraskevi** 84.15 316 P P 15 10 49.7 +0.2
PRK **Paraskevi** 84.15 316 P P 15 10 49.7 +0.2
PRK **Paraskevi** 84.15 316 P P 15 10 49.7 +0.2
O34A **Beatrice** 84.16 42 P P 15 10 48.6 -1.0
baz=316,SNR=16
P33A **Williams Farm,** 84.16 43 P P 15 10 48.6 -1.0
baz=316,SNR=29
BEBN **Eben Emael** 84.17 335 P P 15 10 49.7 +0.4
WIM **Isle of Man** 84.18 342⇓*e*P P 15 10 50.0 +0.6
M36A **Felix, Anita** 84.22 40 P P 15 10 49.6 -0.3
baz=317,SNR=26
MEM **Membach** 84.22 335 P P 15 10 48.7 -0.9
comp=Z,50nm,1.7s
SRS **Serrai** 84.22 319 P P 15 10 49.7 -0.2
SRS **Serrai** 84.22 319 P P 15 10 49.7 -0.2
SRS **Serrai** 84.22 319 P P 15 10 49.7 -0.2
N35A **Tabor** 84.22 41 P P 15 10 49.8 -0.1
baz=317,SNR=17
L37A **Phoenix Point,** 84.25 39 P P 15 10 49.5 -0.5
baz=318,SNR=16
LIA **Limnos Island** 84.27 317 P P 15 10 50.1 0.0
LIA **Limnos Island** 84.27 317 P P 15 10 50.1 0.0
R32A **Long Quarter,** 84.32 45 P P 15 10 49.5 -1.0
baz=315
K38A **Parkersburg** 84.35 38 P P 15 10 50.3 -0.1
baz=319
OBKA **Obir** 84.35 328 *i* P P 15 10 50.5 0.0
comp=Z,29nm,0.8s,SNR=13
TAOE **Nuku Hiva Isla** 84.37 106 *e*PP PP 15 14 04.7 -1.5
comp=Z,295nm,25.7s
TAOE *e*S S 15 21 11.0 -5.3
comp=Z,9µm,32.6s
TAOE **Nuku Hiva Isla** 84.37 106 *e*LQ LQ 15 32 57.6
comp=Z,6µm,28.6s
TAOE *e*LR LR 15 37 05.5
comp=Z,14µm,33.4s
AYDN **Tasoluk** 84.38 314⇓*i*P P 15 10 52.1 +1.3
AKAS **Kas** 84.39 312⇓*i*P P 15 10 50.6 -0.4
GMM **Mts of Mourne** 84.39 343⇓*e*P P 15 10 50.5 0.0
KBA **Koelnbreinsper** 84.39 329 *i* P P 15 10 51.0 +0.1
comp=Z,94nm,1.2s,SNR=39
Q33A **Connelly Farm,** 84.40 44 P P 15 10 50.0 -0.8
baz=316,SNR=36
SIGR **SIGRI** 84.40 317 P P 15 10 50.6 -0.2
SIGR **SIGRI** 84.40 317 P P 15 10 50.6 -0.2
FETY **Fethiye** 84.41 313 P P 15 10 50.8 -0.2
FETY **Fethiye** 84.41 313 P P 15 10 50.8 -0.2
KSL **Kastellorizon** 84.46 312 P P 15 10 51.1 0.0
KSL **Kastellorizon** 84.46 312 P P 15 10 51.1 0.0
MEH **Mehetia** 84.50 118 *e*T T 16 45 41.7
comp=Z,78nm,0.2s
O35A **Humboldt** 84.51 42 P P 15 10 50.9 -0.5
baz=317
STNC **Stoke** 84.51 340⇓*e*P P 15 10 52.0 +0.9
YER **Yerkesik** 84.52 314 P P 15 10 51.8 +0.3
YER **Yerkesik** 84.52 314 P P 15 10 51.8 +0.3
YER **Yerkesik** 84.52 314 P P 15 10 51.8 +0.3
TURN **Turunc** 84.52 313⇓*i*P P 15 10 53.2 +1.7
KNT **Kendrikon** 84.54 320 P P 15 10 51.7 +0.2
KNT **Kendrikon** 84.54 320 P P 15 10 51.7 +0.2
KNT **Kendrikon** 84.54 320 P P 15 10 51.7 +0.2
P34A **Walnut Farm, R** 84.55 43 P P 15 10 50.6 -1.0
baz=316,SNR=62
SOH **Sokhos** 84.56 319 P P 15 10 51.5 -0.1
SOH **Sokhos** 84.56 319 P P 15 10 51.5 -0.1
SOH **Sokhos** 84.56 319 P P 15 10 51.5 -0.1
BLY **Banja Luka** 84.58 325⇑*i*P P 15 10 51.7 +0.1
OUR **Ouranopolis** 84.58 318 P P 15 10 54.8 +3.1
OUR **Ouranopolis** 84.58 318 P P 15 10 54.8 +3.1
OUR **Ouranopolis** 84.58 318 P P 15 10 54.8 +3.1
VAY **Valandovo** 84.59 320 P P 15 10 51.9 +0.2
VAY **Valandovo** 84.59 320 *i* P P 15 10 52.2 +0.5
VAY **Valandovo** 84.59 320 P P 15 10 51.9 +0.2
VAY **Valandovo** 84.59 320 P P 15 10 51.9 +0.2
UCC **Uccle** 84.60 336 P P 15 10 51.6 0.0
URLA **Izmir** 84.60 316⇓*i*P P 15 10 52.1 +0.3
N36A **Muff Farm, Cla** 84.60 41 P P 15 10 52.1 +0.3
baz=317,SNR=17
BCLA **Clavier** 84.61 335 P P 15 10 51.8 +0.2
comp=Z,80nm,1.7s
MYKA **Terra Mystica** 84.63 328 *i* P P 15 10 51.8 -0.1
comp=Z,64nm,0.8s,SNR=31
L38A **Oak Wood Farm,** 84.63 39 P P 15 10 51.8 -0.1
baz=318,SNR=8.9
M37A **Trindle Farm,** 84.63 40 P P 15 10 52.4 +0.5
baz=318,SNR=5.4
PLE **Pljevlja** 84.65 323⇓*i*P P 15 10 52.9 +0.8
DGB **˜zmir** 84.66 315⇓*i*P P 15 10 51.5 -0.6
SKO **Skopje** 84.67 321 P P 15 10 53.2 +1.0
SKO **Skopje** 84.67 321 *i* P P 15 10 53.2 +1.0
SKO **Skopje** 84.67 321 P P 15 10 53.2 +1.0
SKO **Skopje** 84.67 321 P P 15 10 53.2 +1.0
SCIA **State Center** 84.68 39 PFAKE 15 11 00.0 +7.8
SCIA LR LR
comp=Z,4µm,22.0s
S32A **Newby Ranch, P** 84.71 45 P P 15 10 52.3 -0.1
baz=315,SNR=5.8
GCAM **G?zelcaml?** 84.72 315⇓*i*P P 15 10 52.8 +0.4
LJU **Ljubljana** 84.73 327 *i* P P 15 10 52.1 -0.2
ZEY **˜zmir** 84.74 316⇓*i*P P 15 10 52.7 +0.2
IVA **Berane** 84.75 322⇓*i*P P 15 10 53.2 +0.6
WME **Myndd Eilian** 84.77 342⇓*i*P P 15 10 52.3 0.0
WPM1 **Penmaenmawr** 84.80 341⇓*e*P P 15 10 52.9 +0.4
R33A **Olander Ranch,** 84.81 44 P P 15 10 52.4 -0.5
baz=316,SNR=17
PLG **Polygyros** 84.84 319 P P 15 10 53.0 0.0
PLG **Polygyros** 84.84 319 P P 15 10 53.0 0.0
PLG **Polygyros** 84.84 319 P P 15 10 53.0 0.0
HORT **Hortiatis** 84.85 319 P P 15 10 52.7 -0.5
HORT **Hortiatis** 84.85 319 P P 15 10 52.7 -0.5
SNF **Seneffe** 84.87 336 P P 15 10 53.2 +0.3
CHOS **Chios island** 84.88 316 P P 15 10 53.4 +0.1
CHOS **Chios island** 84.88 316 P P 15 10 53.4 +0.1
WLF1 **Llynfaes** 84.89 342 *e*P P 15 10 53.3 +0.3
WLF1 AMB AMB 15 10 54.3
comp=Z,211nm,1.5s
THE **Thessaloniki** 84.89 319 P P 15 10 52.8 -0.4
THE **Thessaloniki** 84.89 319 P P 15 10 52.8 -0.4
THE **Thessaloniki** 84.89 319 P P 15 10 52.8 -0.4
PVY **Plav** 84.93 322⇓*i*P P 15 10 53.5 -0.1
SMG **Samos** 84.93 315 P P 15 10 53.4 -0.1
SMG **Samos** 84.93 315 P P 15 10 53.4 -0.1
WTTA **Wattenberg** 84.93 330 *i* PcP P 15 10 54.1 +0.5
comp=Z,104nm,1.6s,SNR=20
Q34A **Chapman** 84.94 43 P P 15 10 53.2 -0.4
baz=316,SNR=37
GRG **Griva** 84.94 320 P P 15 10 53.3 -0.3
GRG **Griva** 84.94 320 P P 15 10 53.3 -0.3
GRG **Griva** 84.94 320 P P 15 10 53.3 -0.3
FOEL **Foel Wylfa** 84.95 341⇓*e*P P 15 10 53.8 +0.4
FOEL AMB AMB 15 10 59.3
comp=Z,503nm,1.3s
FOEL AMS AMS 15 50 02.6
comp=Z,5µm,21.2s
LANF **Langenberg** 84.97 333⇓*e*P P 15 10 54.0 +0.5
WLF **Walferdange** 84.97 334 P P 15 10 54.0 +0.5
comp=Z,124nm,1.8s
WLF **Walferdange** 84.97 334 PFAKE 15 11 00.0 +6.5
WLF LR LR
comp=Z,11µm,22.0s
YLL **Llanberis** 84.97 341 *e*P P 15 10 54.1 +0.8
YRC **Rhoscolyn** 84.97 342⇓*e*P P 15 10 53.3 -0.1
UPM **Unac-Piva** 84.97 323⇓*i*P P 15 10 53.5 -0.4
KSU1 **Kansas State U** 84.98 43 PFAKE 15 11 10.0 +16
KSU1 LR LR
comp=Z,2µm,20.0s
P35A **Duane Minner,** 84.99 42 P P 15 10 53.3 -0.5
baz=317,SNR=27
MNTX **Cornudas Mount** 85.00 53 P P 15 10 54.6 +0.6
baz=312,SNR=45
ABTA **Abfaltersbach** 85.00 329 *i* P P 15 10 53.2 -0.6
comp=Z,88nm,1.4s,SNR=26
N37A **Lee Faris, Mou** 85.03 40 P P 15 10 54.1 +0.1
baz=318,SNR=26
PAIG **Paliouri** 85.04 318 P P 15 10 55.2 +1.2
PAIG **Paliouri** 85.04 318 P P 15 10 55.2 +1.2
JAVS **Javornik** 85.04 328 *i* P P 15 10 53.0 -1.0
JAVS *e*S S 15 21 21.9 -0.3
BDRM **Kayabasi** 85.05 314⇓*i*P P 15 10 54.3 +0.2
M38A **Pleasantville** 85.06 39 P P 15 10 54.1 0.0
baz=318,SNR=35
MSTX **Muleshoe** 85.07 50 P P 15 10 54.0 -0.4
baz=314,SNR=16
MOTA **Moosalm** 85.08 330 *i* PcP P 15 10 54.6 +0.3
comp=Z,282nm,1.4s,SNR=42
T32A **Huddler Ranch,** 85.08 46 P P 15 10 54.4 0.0
baz=315,SNR=46
RETA **Reutte** 85.10 330 *i* PcP P 15 10 55.0 +0.7
comp=Z,295nm,1.4s,SNR=92
AMTX **Amarillo** 85.10 49 P P 15 10 55.5 +1.0
baz=314
RPZ **Rata Peaks** 85.10 161 P P 15 10 54.0 +0.1
RPZ LR LR 15 47 24.3
comp=Z,3µm,18.9s,baz=331,slow=35
O36A **Bolckow** 85.10 41 P P 15 10 54.2 -0.1
baz=317,SNR=21
BODT **Bodrum** 85.12 314 P P 15 10 54.7 +0.2
BODT **Bodrum** 85.12 314 P P 15 10 54.7 +0.2
DOU **Dourbes** 85.13 335 P P 15 10 54.4 +0.2
comp=Z,59nm,1.8s
YRE **Yr Eifl** 85.18 342⇓*e*P P 15 10 54.6 +0.1
HLM1 **Long Mynd** 85.21 341⇓*e*P P 15 10 54.8 +0.1
HLM1 AMB AMB 15 10 56.7
comp=Z,156nm,1.6s
HLM1 AMS AMS 15 51 53.6
comp=Z,5µm,21.0s
R34A **Isabella, Hill** 85.22 44 P P 15 10 54.9 -0.1
baz=316
ARG **Arkhangelos** 85.26 313 P P 15 10 54.5 -0.7
ARG **Arkhangelos** 85.26 313 P P 15 10 54.5 -0.7
ARG **Arkhangelos** 85.26 313 P P 15 10 54.5 -0.7
NKME **Niksic** 85.28 323⇑*i*P P 15 10 55.1 -0.2
S33A **Kaszmaul Farm,** 85.31 45 P P 15 10 55.5 0.0
baz=316,SNR=30
BFO **Black Forest** 85.32 332*ce*P P 15 10 55.5 +0.2
BFO **Black Forest** 85.32 332 PFAKE 15 11 10.0 +15
BFO LR LR
comp=Z,6µm,19.0s
P36A **Good Intent, A** 85.35 42 P P 15 10 55.2 -0.4
baz=317,SNR=46
SKP1 **Kophill** 85.36 339 *e*P P 15 10 54.8 -0.6
JFWS **Jewell Farm** 85.36 37 PFAKE 15 11 10.0 +14
JFWS LR LR
comp=Z,4µm,21.0s
BRY **Bratogost** 85.38 323⇓*i*P P 15 10 55.2 -0.6
PDG **Podgorica** 85.40 322⇑*i*P P 15 10 56.5 +0.8
PDG **Podgorica** 85.40 322 P P 15 10 55.6 -0.1
TTG **Podgorica** 85.40 322 *e*P P 15 10 55.7 0.0
TTG **Podgorica** 85.40 322 P P 15 10 55.6 -0.1
TTG **Podgorica** 85.40 322 P P 15 10 55.6 -0.1
BIA **Bitola** 85.44 320 *i* P P 15 10 56.3 +0.2
Q35A **Mercer Eighty,** 85.47 43 P P 15 10 55.7 -0.5
baz=317,SNR=44
CEME **Cevo** 85.47 323⇓*i*P P 15 10 55.7 -0.5
AOS **Alonnisos** 85.49 318 P P 15 10 56.1 -0.2
AOS **Alonnisos** 85.49 318 P P 15 10 56.1 -0.2
FETA **Feichten** 85.49 330 *i* PcP P 15 10 56.5 +0.1
comp=Z,142nm,1.5s,SNR=48
N38A **Joes South For** 85.50 40 P P 15 10 56.2 -0.1
baz=318,SNR=26
O37A **Wolven Farm, M** 85.50 41 P P 15 10 56.6 +0.2
baz=318,SNR=32
KTI **Kastanea** 85.51 320 P P 15 10 56.5 0.0
NIS1 **Nisyros Isl.** 85.53 314 P P 15 10 56.0 -0.5
NIS1 **Nisyros Isl.** 85.53 314 P P 15 10 56.0 -0.5
LIT **Litokhoron** 85.53 319 P P 15 10 55.8 -0.7
LIT **Litokhoron** 85.53 319 P P 15 10 55.8 -0.7
LIT **Litokhoron** 85.53 319 P P 15 10 55.8 -0.7
T33A **Patterson Ranc** 85.54 45 P P 15 10 56.5 -0.1
baz=316,SNR=14
EIL **Elat** 85.54 304 P P 15 10 57.0 +0.2
comp=Z,66nm,1.2s,baz=25,slow=4.3,SNR=18
FNA **Florina** 85.59 320 P P 15 10 56.1 -0.7
FNA **Florina** 85.59 320 P P 15 10 56.1 -0.7
FNA **Florina** 85.59 320 P P 15 10 56.1 -0.7
DAVA **Dauels** 85.60 331 *i* PcP P 15 10 57.5 +0.6
comp=Z,190nm,1.1s,SNR=50
U32A **Winter Ranch,** 85.61 46 P P 15 10 57.5 +0.5
baz=315,SNR=14
DRME **Dracevica, Mon** 85.61 322⇓*i*P P 15 10 57.0 +0.1
OHR **Ohrid** 85.64 321 *i* P P 15 10 57.0 -0.1
BUM **Brajici-Budva** 85.67 323⇓*i*P P 15 10 57.1 -0.1
STRD **Stroud** 85.69 340⇓*e*P P 15 10 57.0 0.0
STRD AMB AMB 15 10 59.1
comp=Z,618nm,1.5s
STRD AMS AMS 15 49 13.8
comp=Z,5µm,18.6s
Q36A **Arnold C. Orve** 85.70 42 P P 15 10 56.9 -0.5
baz=317,SNR=13
XOR **Xorichti** 85.71 318 P P 15 10 56.7 -0.7
XOR **Xorichti** 85.71 318 P P 15 10 56.7 -0.7
MCH1 **Michaelchurch** 85.71 340⇓*e*P P 15 10 57.5 +0.4
MCH1 AMB AMB 15 11 02.7
comp=Z,323nm,1.5s
MCH1 AMS AMS 15 53 31.5
comp=Z,5µm,19.4s
S34A **Willow Spring** 85.72 44 P P 15 10 57.5 0.0
baz=316,SNR=22
HCY **Herceg Novi** 85.75 323⇓*i*P P 15 10 56.9 -0.6
KZN **Kozani** 85.75 320 P P 15 10 57.1 -0.6
KZN **Kozani** 85.75 320 P P 15 10 57.1 -0.6
KZN **Kozani** 85.75 320 P P 15 10 57.1 -0.6
ULC **Ulcinj** 85.76 322⇓*i*P P 15 10 57.7 +0.1
R35A **Emporia Munici** 85.77 43 P P 15 10 57.8 +0.1
baz=317,SNR=50
HMNX **Herstmonceux** 85.79 338⇓*e*P P 15 10 58.4 +0.9
HMNX AMB AMB 15 10 59.4
comp=Z,464nm,1.4s
HMNX AMS AMS 15 51 14.1
comp=Z,7µm,20.9s
MONM **Monmouth** 85.80 340⇓*e*P P 15 10 57.6 0.0
MONM AMB AMB 15 10 58.9
comp=Z,304nm,1.5s
MONM AMS AMS 15 54 20.5
comp=Z,5µm,18.6s
N39A **Derby Farms, D** 85.81 39 P P 15 10 57.8 0.0
baz=319,SNR=48
FYTO **Fytoko, Volos** 85.81 318 P P 15 10 56.9 -1.0
FYTO **Fytoko, Volos** 85.81 318 P P 15 10 56.9 -1.0
SWN1 **Swindon** 85.82 339⇓*e*P P 15 10 58.4 +0.7
SWN1 AMB AMB 15 10 60.0
comp=Z,572nm,1.4s
SWN1 AMS AMS 15 49 03.9
comp=Z,5µm,19.8s
P37A **Lathrop** 85.82 41 P P 15 10 57.8 -0.1
baz=318,SNR=33
WOL **Wolverton** 85.84 339 *e*P P 15 10 57.5 -0.2
WOL AMB AMB 15 10 58.8
comp=Z,368nm,1.6s
WOL AMS AMS 15 55 43.7
comp=Z,4µm,17.8s
ECH **Echery** 85.84 333⇓*e*P P 15 10 58.1 +0.2
O38A **Galt** 85.88 40 P P 15 10 58.1 -0.1
baz=318,SNR=14
LPW **Lampeter** 85.88 341⇓*e*P P 15 10 58.0 0.0
LPW AMB AMB 15 11 01.9
comp=Z,266nm,1.2s
LPW AMS AMS 15 51 52.7
comp=Z,4µm,22.3s
OLDB **Oldbury-Upon-S** 85.89 340⇓*e*P P 15 10 58.0 0.0
OLDB AMB AMB 15 10 59.8
comp=Z,127nm,1.6s
OLDB AMS AMS 15 54 18.2
comp=Z,5µm,18.5s
TIR **Tirane** 85.92 321⇑*i*P P 15 10 58.0 -0.4
TIR **Tirane** 85.92 321 ⇑P P 15 10 58.0 -0.4
TIR **Tirane** 85.92 321 PFAKE 15 11 10.0 +12
TIR LR LR
comp=Z,9µm,20.0s
DAVOX **Davos/Dischmat** 86.02 330 P P 15 10 59.4 +0.4
comp=Z,41nm,0.8s,baz=33,slow=2.5,SNR=57
BATH **Bath** 86.03 340 *e*P P 15 10 58.2 -0.5
BATH AMB AMB 15 11 02.5
comp=Z,248nm,1.4s
BATH AMS AMS 15 49 46.7
comp=Z,6µm,19.2s
NEST **Nestorio** 86.03 320 P P 15 10 59.0 -0.1
V32A **Arapaho** 86.05 47 P P 15 10 59.8 +0.6
baz=315,SNR=41
SMIA **Simia** 86.06 318 P P 15 10 58.5 -0.6
U33A **Lingo Farm, Me** 86.07 46 P P 15 10 59.3 0.0
baz=316,SNR=25
APE **Apeiranthos** 86.11 315 P P 15 10 58.0 -1.5
APE **Apeiranthos** 86.11 315 P P 15 10 58.0 -1.5
APE **Apeiranthos** 86.11 315 P P 15 10 58.0 -1.5
R36A **Gordon, Harris** 86.14 43 P P 15 10 59.4 -0.1
baz=317,SNR=135
PENT **Pentalofos** 86.15 320 P P 15 10 59.2 -0.5
MOF **Molkenrain** 86.16 333⇓*e*P P 15 10 59.6 0.0
T34A **McClaskey Farm** 86.17 45 P P 15 10 59.6 -0.1
baz=316,SNR=34
S35A **Otter Creek Ra** 86.17 44 P P 15 10 60.0 +0.3
baz=317,SNR=73
THL **Klokotos Trika** 86.17 319 P P 15 10 58.2 -1.4
KPRO **Kipourio** 86.22 320 P P 15 10 59.1 -0.9
P38A **Dawn** 86.22 41 P P 15 10 59.8 -0.1
baz=318,SNR=9.7
THEF **They Montfort** 86.25 333⇓*e*P P 15 11 00.3 +0.4
O39A **Kirksville** 86.25 40 P P 15 11 00.0 0.0
baz=319,SNR=20
Q37A **Longview Farm,** 86.30 42 P P 15 10 59.5 -0.7
baz=318
IWEX **Carrickbyrne,** 86.31 343 *e*P P 15 11 00.8 +0.7
PTL **Penteli** 86.31 317 P P 15 10 59.3 -1.1
PTL **Penteli** 86.31 317 P P 15 10 59.3 -1.1
LKR **Lokris** 86.33 318 P P 15 10 59.3 -1.2
LKR **Lokris** 86.33 318 P P 15 10 59.3 -1.2
W32A **Sentinel** 86.36 47 P P 15 11 00.8 +0.2
baz=315,SNR=51
U34A **Anderson Ranch** 86.39 45 P P 15 11 01.0 +0.2
baz=316,SNR=44
V33A **Lossen Ranch,** 86.41 46 P P 15 11 01.1 +0.1
baz=316,SNR=16
AGG **Agios Georgios** 86.41 318 P P 15 10 59.1 -1.8
AGG **Agios Georgios** 86.41 318 P P 15 10 59.1 -1.8
AGG **Agios Georgios** 86.41 318 P P 15 10 59.1 -1.8
MEV **Metsovon** 86.41 320 P P 15 11 00.8 -0.3
MEV **Metsovon** 86.41 320 P P 15 11 00.8 -0.3
ATHU **Athens Univers** 86.42 317 P P 15 10 59.5 -1.4
ATHU **Athens Univers** 86.42 317 P P 15 10 59.5 -1.4
ATH **Athens Observa** 86.45 317 P P 15 10 59.5 -1.5
ATH **Athens Observa** 86.45 317 P P 15 10 59.5 -1.5
ATH **Athens Observa** 86.45 317 P P 15 10 59.5 -1.5
TUE **Stuetta** 86.48 331 PFAKE 15 11 10.0 +8.7
TUE LR LR
comp=Z,9µm,19.0s
VLY **Voula,Athens** 86.50 317 P P 15 10 59.6 -1.7
VLY **Voula,Athens** 86.50 317 P P 15 10 59.6 -1.7
R37A **Teagarden Farm** 86.51 42 P P 15 11 00.9 -0.5
baz=318,SNR=23
VILL **Villia** 86.53 317 P P 15 10 59.4 -2.1
S36A **Lake Cedric, C** 86.53 43 P P 15 11 01.1 -0.4
baz=317,SNR=33
T35A **Sooner Cattle** 86.62 44 P P 15 11 02.2 +0.3
baz=317,SNR=28
SANT **Santorini** 86.66 315 PFAKE 15 11 10.0 +7.8
SANT LR LR
comp=Z,4µm,19.0s
Q38A **Cooks Store, C** 86.67 41 P P 15 11 01.6 -0.5
baz=318,SNR=27
O40A **La Belle** 86.69 40 P P 15 11 02.2 0.0
baz=319,SNR=35
LOMF **Lomont** 86.69 333⇓*e*P P 15 11 02.5 +0.3
JAN **Janina** 86.70 320 P P 15 11 02.2 -0.1
JAN **Janina** 86.70 320 P P 15 11 02.2 -0.1
JAN **Janina** 86.70 320 P P 15 11 02.2 -0.1
DSF **Desfina** 86.76 318 P P 15 11 00.5 -2.2
DSF **Desfina** 86.76 318 P P 15 11 00.5 -2.2
W33A **Caddo, Fort Co** 86.78 47 P P 15 11 03.6 +0.8
baz=316,SNR=23
V34A **Guthrie** 86.84 46 P P 15 11 03.2 +0.2
baz=316,SNR=29
T36A **Boggs Farm, Ca** 86.86 44 P P 15 11 03.0 -0.1
baz=317,SNR=26
U35A **Pawnee** 86.89 45 P P 15 11 02.9 -0.3
baz=317,SNR=13
WMOK **Wichita Mounta** 86.90 47 PFAKE 15 11 20.0 +17
WMOK LR LR
comp=Z,2µm,19.0s
S37A **Fort Scott** 86.92 43 P P 15 11 02.9 -0.5
baz=318,SNR=38
Q39A **Willow Grove F** 86.94 41 P P 15 11 03.3 -0.1
baz=319,SNR=82
ANX **Ano Chora** 86.94 318 P P 15 11 02.8 -0.8
THAL **Thalero** 86.97 318 P P 15 11 01.2 -2.4
DSL **Palaion Diasel** 86.97 319 P P 15 11 03.3 -0.3
DSL **Palaion Diasel** 86.97 319 P P 15 11 03.3 -0.3
KALE **Kalithea** 86.98 318 P P 15 11 02.3 -1.4
KALE **Kalithea** 86.98 318 P P 15 11 02.3 -1.4
P40A **Paris** 87.05 40 P P 15 11 04.2 +0.2
baz=319,SNR=47
IGT **Igoumenitsa** 87.06 320 P P 15 10 59.8 -4.2
IGT **Igoumenitsa** 87.06 320 P P 15 10 59.8 -4.2
IGT **Igoumenitsa** 87.06 320 P P 15 10 59.8 -4.2
R38A **Fenwick Farm,** 87.09 42 P P 15 11 03.1 -1.1
baz=318,SNR=25
W34A **Bridge Creek,** 87.12 46 P P 15 11 04.4 0.0
baz=316,SNR=22
ZKR **Zakros** 87.13 314 P P 15 11 00.9 -3.5
ZKR **Zakros** 87.13 314 P P 15 11 00.9 -3.5
LAKA **Lakka** 87.18 318 P P 15 11 03.7 -1.0
LAKA **Lakka** 87.18 318 P P 15 11 03.7 -1.0
KEK **Kerkira** 87.19 320 P P 15 11 03.9 -0.8
KEK **Kerkira** 87.19 320 P P 15 11 03.9 -0.8
X33A **Lawton** 87.20 47 P P 15 11 04.6 -0.2
baz=316,SNR=13
KLV **Kalavryta, Ach** 87.23 318 P P 15 11 03.3 -1.7
KLV **Kalavryta, Ach** 87.23 318 P P 15 11 03.3 -1.7
V35A **Meyer Ranch, C** 87.27 45 P P 15 11 05.1 0.0
baz=317,SNR=6.3
PDO **Prodromos** 87.33 319 P P 15 11 04.6 -0.7
T37A **Cheneyville 18** 87.34 43 P P 15 11 05.2 -0.2
baz=318,SNR=23
DYA **Yadsworthy** 87.38 340⇓*e*P P 15 11 04.3 -1.0
DYA AMB AMB 15 11 10.5
comp=Z,136nm,1.9s
DYA AMS AMS 15 52 40.5
comp=Z,4µm,15.9s
U36A **Oologah** 87.43 44 P P 15 11 06.0 +0.2
baz=317
Q40A **Laux Farm, Aux** 87.44 40 P P 15 11 05.5 -0.4
baz=319,SNR=29
R39A **Chumby, Stover** 87.45 41 P P 15 11 05.2 -0.8
baz=319,SNR=28
VAL **Valentia** 87.49 344 *e*P P 15 11 00.9 -4.9
VAL **Valentia** 87.49 344⇓*i*S S 15 21 54.7 +9.1
S38A **Stockton** 87.50 42 P P 15 11 05.5 -0.8
baz=318,SNR=12
Y33A **Hilltop Ranch,** 87.51 48 P P 15 11 06.2 -0.1
baz=316,SNR=29
LAST **Lasithi** 87.52 314⇑*i*P P 15 11 07.1 +0.7
LAST **Lasithi** 87.52 314 P P 15 11 05.9 -0.5
LAST **Lasithi** 87.52 314 P P 15 11 05.9 -0.5
DRO **Drossia** 87.53 318 P P 15 11 05.9 -0.5
X34A **Smith Ranch, M** 87.54 47 P P 15 11 06.5 0.0
baz=316,SNR=29
RLS **Riolos of Patr** 87.58 318 P P 15 11 06.1 -0.4
RLS **Riolos of Patr** 87.58 318 P P 15 11 06.1 -0.4
VLX **Vlachokerasia** 87.61 317 P P 15 11 05.1 -1.7
VLX **Vlachokerasia** 87.61 317 P P 15 11 05.1 -1.7
HDIL **Hopedale** 87.63 38 P P 15 11 06.7 0.0
baz=321,SNR=20
HDIL **Hopedale** 87.63 38 PFAKE 15 11 20.0 +13
HDIL LR LR
comp=Z,3µm,21.0s
TXAR **Lajitas Array** 87.68 54 P P 15 11 07.4 +0.1
comp=Z,10nm,0.6s,baz=283,slow=1.8,SNR=76
TXAR PKKPbc **PKKPbc** 15 28 55.0 +1.5
comp=Z,1.8nm,0.7s,baz=153,slow=5.2,SNR=12
TXAR LR LR 15 44 07.3
comp=Z,2µm,21.7s,baz=0.0,slow=31
W35A **Tecumseh** 87.69 46 P P 15 11 07.1 -0.1
baz=317,SNR=16
T38A **Diamond** 87.74 43 P P 15 11 07.1 -0.3
baz=318,SNR=47
TUL1 **Leonard** 87.75 45 P P 15 11 07.3 -0.1
baz=317,SNR=14
V36A **Jenks** 87.75 45 P P 15 11 07.6 +0.1
baz=317,SNR=22
U37A **Salina** 87.76 44 P P 15 11 07.2 -0.2
baz=318,SNR=22
IDI **Anoyia** 87.76 314 P P 15 11 07.7 +0.1
comp=Z,30nm,0.9s,baz=31,slow=3.0,SNR=11
IDI **Anoyia** 87.76 314⇑*i*P P 15 11 06.4 -1.1

S39A	Bolivar	87.77	42	P	P	15 11 06.5	-1.0
	baz=318,SNR=32						
VLI	Veliai	87.79	317	P	P	15 10 55.8	-12
AMT	Artemida-Makis	87.85	318	P	P	15 11 06.6	-1.3
R40A	Maddies Statio	87.87	41	P	P	15 11 07.5	-0.4
	baz=319,SNR=40						
ABTX	Abilene, Hawle	87.89	49	P	P	15 11 08.2	0.0
	baz=315,SNR=11						
KFL	Anninata	87.90	319	P	P	15 11 08.3	+0.2
Z33A	Whitaker Ranch	87.94	48	P	P	15 11 08.0	-0.3
	baz=316,SNR=18						
CCA1	Carnmenellis	87.94	341‖	eP	P	15 11 07.4	-0.7
CCA1				AMB	AMB	15 11 10.3	
	comp=Z,133nm,1.6s						
CCA1				AMS	AMS	15 50 36.0	
	comp=Z,4µm,22.1s						
VLS	Valsamata	87.95	319	P	P	15 11 07.2	-1.1
VLS	Valsamata	87.95	319	P	P	15 11 07.2	-1.1
VLS	Valsamata	87.95	319	P	P	15 11 07.2	-1.1
JQE	Queens East	87.97	339‖	eP	P	15 11 08.0	-0.1
JQE			‖	eP	P	15 11 08.1	-0.1
VLC	Villacollemand	87.98	329	PFAKE		15 11 20.0	+12
VLC				LR	LR		
	comp=Z,6µm,21.0s						
MATE	Matera	87.99	323‖	iP	P	15 11 07.8	-0.6
ITM	Ithomi	87.99	317	P	P	15 11 07.8	-0.8
ITM	Ithomi	87.99	317	P	P	15 11 07.8	-0.8
SIVA	Sivas	88.00	314	P	P	15 11 08.8	+0.2
SIVA	Sivas	88.00	314	P	P	15 11 08.8	+0.2
JSA	Saint Aubin	88.02	339‖	eP	P	15 11 08.4	0.0
JSA				AMB	AMB	15 11 09.4	
	comp=Z,140nm,1.9s						
Y34A	Reagan Ranch,	88.05	47	P	P	15 11 08.7	-0.2
	baz=316,SNR=15						
VAM	Vamos	88.06	315	P	P	15 11 08.6	-0.3
VAM	Vamos	88.06	315	P	P	15 11 08.6	-0.3
VAM	Vamos	88.06	315	P	P	15 11 08.6	-0.3
W36A	Wetumka	88.07	45	P	P	15 11 08.7	-0.2
	baz=317,SNR=14						
V37A	Hulbert	88.13	44	P	P	15 11 08.8	-0.4
	baz=318,SNR=38						
U38A	Gravette	88.13	43	P	P	15 11 08.8	-0.4
	baz=318,SNR=21						
IMMV	Iera Moni Meta	88.14	315	P	P	15 11 08.0	-1.3
AQU	L'Aquila	88.16	326	PFAKE		15 11 20.0	+11
AQU				LR	LR		
	comp=Z,10µm,19.0s						
X35A	Drake	88.18	46	P	P	15 11 09.0	-0.5
	baz=316,SNR=22						
ANKY	Antikythira Is	88.22	316	P	P	15 11 10.3	+0.7
ANKY	Antikythira Is	88.22	316	P	P	15 11 10.3	+0.7
T39A	Clever	88.24	42	P	P	15 11 09.2	-0.5
	baz=318,SNR=20						
S40A	Lebanon	88.27	42	P	P	15 11 09.3	-0.5
	baz=319,SNR=34						
PYL	PYLOS	88.30	317	P	P	15 11 08.1	-1.9
PYL	PYLOS	88.30	317	P	P	15 11 08.1	-1.9
133A	Hamilton Ranch	88.33	49	P	P	15 11 10.4	+0.2
	baz=316,SNR=11						
Z34A	Collier Ranch,	88.38	48	P	P	15 11 10.1	-0.3
	baz=316						
X36A	Centrahoma	88.41	46	P	P	15 11 10.5	-0.1
	baz=317,SNR=38						
Y35A	Marietta	88.50	47	P	P	15 11 10.9	-0.1
	baz=316,SNR=6.3						
W37B	Quinton	88.51	45	P	P	15 11 11.4	+0.4
	baz=317,SNR=14						
V38A	Canehill	88.54	44	P	P	15 11 10.9	-0.3
	baz=318,SNR=54						
T40A	Mansfield	88.60	42	P	P	15 11 10.6	-0.8
	baz=319,SNR=37						
U39A	Green Forest	88.66	43	P	P	15 11 11.5	-0.3
	baz=318,SNR=40						
BNI	Bardonecchia	88.69	331	PFAKE		15 11 20.0	+8.1
BNI				LR	LR		
	comp=Z,11µm,21.0s						
233A	Rising Star	88.76	49	P	P	15 11 12.4	+0.1
	baz=316,SNR=15						
GDM	Grand'Maison	88.77	332	eP	P	15 11 13.2	+0.9
Z35A	Perchaven, San	88.79	47	P	P	15 11 12.2	-0.2
	baz=316,SNR=13						
SFIN	Lafayette	88.81	37	P	P	15 11 12.4	+0.1
	baz=322,SNR=26						
AAM	Ann Arbor	88.83	33	PFAKE		15 11 20.0	+7.6
AAM				LR	LR		
	comp=Z,3µm,20.0s						
134A	White-Moore Ra	88.85	48	P	P	15 11 13.0	+0.3
	baz=316						
GRN	Grenoble	88.88	332	eP	P	15 11 13.7	+1.0
CUC	Castrocucco	88.92	323	PFAKE		15 11 20.0	+7.0
CUC				LR	LR		
	comp=Z,5µm,19.0s						
X37A	Clayton	88.95	45	P	P	15 11 13.2	+0.1
	baz=317,SNR=13						
V39A	Pettigrew	88.98	43	P	P	15 11 12.8	-0.5
	baz=318,SNR=41						
U40A	Yellville	89.02	43	P	P	15 11 13.2	-0.2
	baz=319,SNR=89						
PLDF	La Plantade	89.02	334‖	eP	P	15 11 15.1	+1.8
W38A	Poteau	89.07	44	P	P	15 11 13.7	0.0
	baz=318,SNR=22						
TIP	Timpagrande	89.11	322⇑	iP	P	15 11 13.8	-0.1
TIP	Timpagrande	89.11	322	P	P	15 11 13.2	-0.7
TIP	Timpagrande	89.11	322	P	P	15 11 13.2	-0.7
TIP				LR	LR		
	comp=Z,9µm,19.0s						
AGO	Saint Agoulin	89.12	334‖	eP	P	15 11 15.4	+1.7
X38A	Whitesboro	89.19	45	P	P	15 11 14.6	+0.4
	baz=318,SNR=40						
333A	Richland Sprin	89.20	50	P	P	15 11 14.4	0.0
	baz=316,SNR=36						
234A	Clairette	89.22	49	P	P	15 11 14.6	+0.2
	baz=316,SNR=26						
Y37A	Hugo	89.25	46	P	P	15 11 14.4	-0.1
	baz=317						
135A	Vickery Place,	89.25	48	P	P	15 11 14.7	+0.2
	baz=316						
SSB	Saint Sauveur	89.29	333‖	eP	P	15 11 14.9	+0.3
SSB	Saint Sauveur	89.29	333	PFAKE		15 11 30.0	+15
SSB				LR	LR		
	comp=Z,7µm,20.0s						
JCT	Junction City	89.30	51	P	P	15 11 14.7	-0.2
	baz=315						
Z36A	Blue Ridge	89.31	47	P	P	15 11 15.0	+0.2
	baz=317,SNR=12						
W39A	Magazine	89.38	44	P	P	15 11 15.0	-0.1
	baz=318,SNR=16						
V40A	Witts Springs	89.44	43	P	P	15 11 14.8	-0.7
	baz=319,SNR=16						
433A	Art	89.54	50	P	P	15 11 15.5	-0.5
	baz=316,SNR=18						
WHTX	Lake Whitney,	89.63	48	P	P	15 11 16.7	+0.3
	baz=316						
334A	Lometa	89.64	49	P	P	15 11 16.5	0.0
	baz=316,SNR=25						
X39A	Fountain Ranch	89.70	45	P	P	15 11 17.0	+0.3
	baz=318,SNR=51						
W40A	Ferguson Farm,	89.77	44	P	P	15 11 16.4	-0.5
	baz=319,SNR=24						
LBL	Lubilhac	89.79	334‖	eP	P	15 11 18.8	+1.9
Y38A	Idabel	89.79	45	P	P	15 11 16.7	-0.4
	baz=318,SNR=5.6						
Z37A	Pogue Cattle C	89.82	46	P	P	15 11 17.1	-0.1
	baz=317,SNR=14						
136A	Ennis	89.83	47	P	P	15 11 17.2	-0.1
	baz=317						
MIAR	Mount Ida	89.98	44	P	P	15 11 18.3	+0.4
	baz=318,SNR=74						
434A	Burnet	89.99	50	P	P	15 11 17.7	-0.4
	baz=316,SNR=16						
533A	Kerrville	90.06	51	P	P	15 11 18.2	-0.2
	baz=316,SNR=5.5						
Y39A	Lockesburg	90.14	45	P	P	15 11 18.6	-0.1
	baz=318,SNR=37						
Z38A	Mt. Pleasant	90.15	46	P	P	15 11 18.5	-0.3
	baz=318						
335A	Moody	90.16	49	P	P	15 11 18.5	-0.3
	baz=316						
236A	Katherine and	90.17	48	P	P	15 11 18.9	0.0
	baz=317						
137A	Heron Place, G	90.19	47	P	P	15 11 18.8	-0.1
	baz=317						
W41B	Gary Mavity, V	90.23	43	P	P	15 11 18.9	-0.1
	baz=319,SNR=32						
CEL	Celeste	90.25	322	PFAKE		15 11 30.0	+11
CEL				LR	LR		
	comp=Z,7µm,21.0s						
633A	Saathoff Ranch	90.41	51	P	P	15 11 20.1	+0.1
	baz=315,SNR=13						
435B	Jarrell	90.42	49	P	P	15 11 19.9	-0.2
	baz=316						
X40A	Basin Creek Fa	90.43	44	P	P	15 11 20.0	0.0
	baz=319,SNR=27						
534A	Blanco	90.43	50	P	P	15 11 19.9	-0.2
	baz=316,SNR=27						
336A	Riesel	90.43	48	P	P	15 11 20.5	+0.4
	baz=317,SNR=7.7						
LONY	Lake Ozonia	90.44	27	PFAKE		15 11 30.0	+10
LONY				LR	LR		
	comp=Z,3µm,21.0s						
138A	Matatall Enter	90.52	46	P	P	15 11 21.0	+0.5
	baz=318						
Y40A	Okolona	90.54	44	P	P	15 11 20.6	+0.1
	baz=319,SNR=15						
237A	Washetta, Mont	90.59	47	P	P	15 11 21.0	+0.2
	baz=317						
Z39A	Irene McRaven,	90.61	46	P	P	15 11 21.1	+0.3
	baz=318						
832A	Faith Ranch, C	90.74	53	P	P	15 11 21.8	+0.2
	baz=315						
ACSO	Alum Creek Sta	90.81	34	PFAKE		15 11 30.0	+8.3
ACSO				LR	LR		
	comp=Z,4µm,20.0s						
733A	Divot King Ran	90.86	52	P	P	15 11 22.4	+0.3
	baz=315						
139A	Bunkhouse Ranc	90.90	46	P	P	15 11 22.3	0.0
	baz=318						
436A	Wall Ranch, Ga	90.90	49	P	P	15 11 23.0	+0.7
	baz=317,SNR=6.4						
634A	China Grove, S	90.97	51	P	P	15 11 22.5	-0.1
	baz=316						
535A	Dale	90.97	50	P	P	15 11 22.3	-0.3
	baz=316						
238A	Jacksonville	90.98	47	P	P	15 11 23.3	+0.6
	baz=318						
Z40A	Long Farm, Mag	91.03	45	P	P	15 11 23.3	+0.5
	baz=318,SNR=18						
337A	Centerville	91.04	48	P	P	15 11 23.5	+0.5
	baz=317						
833A	Chaparral WMA,	91.07	52	P	P	15 11 23.2	+0.1
	baz=315						
M54A	Oil Creek Stat	91.17	31	P	P	15 11 23.5	+0.2
	baz=327,SNR=11						
734A	La Parita Cree	91.22	51	P	P	15 11 23.9	+0.1
	baz=316						
536A	Bastrop	91.25	49	P	P	15 11 24.2	+0.3
	baz=316						
437A	Phantom Ranch,	91.25	48	P	P	15 11 24.8	+0.9
	baz=317,SNR=5.0						
635A	Leesville	91.31	50	P	P	15 11 24.9	+0.7
	baz=316						
239A	Gary	91.35	47	P	P	15 11 24.5	+0.1
	baz=318						
338A	Crockett	91.35	47	P	P	15 11 24.9	+0.5
	baz=317						
Z41A	Richland Creek	91.36	45	P	P	15 11 24.9	+0.5
	baz=319						
140A	Cam and Jess,	91.39	46	P	P	15 11 25.1	+0.6
	baz=318						
NATX	Nacogdoches	91.43	47	P	P	15 11 25.0	+0.3
	baz=318						
Y42A	Garnett, Star	91.49	44	P	P	15 11 25.2	+0.2
	baz=319						
N54A	Moraine State	91.49	32	P	P	15 11 25.0	+0.2
	baz=327,SNR=11						
PKME	Peaks-Kenny Pk	91.62	23	PFAKE		15 11 40.0	+15
PKME				LR	LR		
	comp=Z,4µm,22.0s						
933A	Laredo	91.65	53	P	P	15 11 26.6	+0.8
	baz=315,SNR=24						
ATD	Arta Tunnel	91.67	286	P	P	15 11 27.0	+0.9
	comp=Z,90nm,1.1s,baz=5.1,slow=3.7,SNR=8.2						
735A	Kenedy	91.67	51	P	P	15 11 26.7	+0.8
	baz=316						
636A	Smothers Creek	91.68	50	P	P	15 11 26.7	+0.8
	baz=316,SNR=12						
537A	Green Hill Far	91.69	49	P	P	15 11 26.5	+0.5
	baz=317,SNR=7.3						
438A	Sam Houston St	91.70	48	P	P	15 11 26.6	+0.7
	baz=317,SNR=18						
240A	Hunter Patters	91.73	46	P	P	15 11 26.6	+0.5
	baz=318						
834A	Tilden	91.74	52	P	P	15 11 27.0	+0.8
	baz=316						
339A	Huntington	91.80	47	P	P	15 11 26.8	+0.4
	baz=318						
Z42A	Norrel Spur, H	91.82	44	P	P	15 11 26.4	-0.1
	baz=319						
Y43A	Makayla and Ka	91.89	43	P	P	15 11 27.1	+0.3
	baz=320						
LRDF	Laroque-de-Fa	92.03	333‖	eP	P	15 11 28.1	+0.8
736A	Circle Diamond	92.05	50	P	P	15 11 28.9	+1.3
	baz=316						
835A	Beeville	92.06	51	P	P	15 11 28.7	+0.9
	baz=316						
CLTB	Caltabellotta	92.07	323	PFAKE		15 11 40.0	+12
CLTB				LR	LR		
	comp=Z,3µm,21.0s						
538A	Harpers Horsep	92.07	48	P	P	15 11 28.5	+0.8
	baz=317						
439A	Center Grove,	92.08	48	P	P	15 11 28.2	+0.5
	baz=318						
340A	Bronson	92.12	47	P	P	15 11 27.7	-0.2
	baz=318						
934A	Benavides	92.13	52	P	P	15 11 29.0	+0.9
	baz=316						
637A	Eagle Lake	92.14	49	P	P	15 11 29.0	+0.9
	baz=317						
241A	Mo Tay, Goldon	92.22	46	P	P	15 11 29.0	+0.6
	baz=319						
Y44A	Strider, Charl	92.24	43	P	P	15 11 28.6	+0.2
	baz=320,SNR=9.1						
VSL	Villasalto	92.25	327	PFAKE		15 11 40.0	+12
VSL				LR	LR		
	comp=Z,4µm,20.0s						
Z43A	Armstrong Fami	92.25	44	P	P	15 11 29.0	+0.5
	baz=320						
SJAF	Saint Jean de	92.31	332	eP	P	15 11 28.3	-0.3
FILF	Fillols	92.36	333‖	eP	P	15 11 29.4	+0.5
CARF	Carcanieres	92.38	333‖	eP	P	15 11 29.6	+0.5
034A	Hebbronville	92.41	53	P	P	15 11 30.4	+1.1
	baz=316,SNR=12						
143A	Socs Landing,	92.55	44	P	P	15 11 30.2	+0.3
	baz=320						
KVTX	Kingsville	92.56	52	PFAKE		15 11 40.0	+10
KVTX				LR	LR		
	comp=Z,2µm,20.0s						
737A	Port Lavaca	92.57	50	P	P	15 11 30.4	+0.4
	baz=317						
440A	Kirbyville	92.58	47	P	P	15 11 30.1	0.0
	baz=318						
341A	Kurthwood	92.60	46	P	P	15 11 30.6	+0.5
	baz=319						
539A	Cross D Ranch,	92.61	48	P	P	15 11 29.6	-0.6
	baz=318						
242A	Grayson	92.62	45	P	P	15 11 30.7	+0.5
	baz=319						
Z44A	Pea Ridge, Bel	92.64	43	P	P	15 11 30.0	-0.3
	baz=320						
O56A	Blue Knob Stat	92.66	31	P	P	15 11 30.2	-0.2
	baz=328,SNR=13						
Y45A	Yeager Farm, C	92.67	42	P	P	15 11 30.7	+0.3
	baz=321,SNR=11						
SALF	Salau	92.67	334	eP	P	15 11 32.5	+2.1
638A	Rosharon	92.69	49	P	P	15 11 32.2	+1.7
	baz=317						
MELF	Melles	92.72	334	eP	P	15 11 30.9	+0.3
WDD	Wied Dalam	92.81	321	PFAKE		15 11 40.0	+9.0
WDD				LR	LR		
	comp=Z,6µm,19.0s						
035A	Encino	92.86	52	P	P	15 11 32.1	+0.7
	baz=316						
REYF	Montagne du Re	92.94	335	eP	P	15 11 34.0	+2.4
540A	Vidor	92.97	47	P	P	15 11 31.7	-0.1
	baz=318						
Z45A	Winona	92.97	43	P	P	15 11 32.5	+0.7
	baz=321						
738A	Farr-Stevens R	92.99	49	P	P	15 11 32.5	+0.5
	baz=317						
Y46A	Houston	93.01	42	P	P	15 11 31.9	-0.1
	baz=321,SNR=19						
441A	DeRidder	93.02	47	P	P	15 11 32.4	+0.4
	baz=319						
342A	Flagon Creek P	93.04	46	P	P	15 11 33.0	+0.8
	baz=319						
243A	Waterproof	93.13	45	P	P	15 11 32.8	+0.2
	baz=320						
144A	Alexander Plac	93.14	44	P	P	15 11 32.9	+0.3
	baz=320						
LARF	Larrau	93.16	335	eP	P	15 11 33.5	+0.9
N59A	State Game Lan	93.21	29	P	P	15 11 32.8	0.0
	baz=330,SNR=11						
035Z	Hargill	93.22	53	P	P	15 11 34.8	+1.7
	baz=316						
VBMS	Vicksburg	93.41	44	P	P	15 11 34.5	+0.7
	baz=320						
145A	Houston Renfro	93.43	43	P	P	15 11 34.5	+0.6
	baz=320						
442A	Mamou	93.48	46	P	P	15 11 34.7	+0.5
	baz=319						
Z46A	Louisville	93.50	42	P	P	15 11 34.5	+0.3
	baz=321						
343A	Vidalia	93.51	45	P	P	15 11 34.8	+0.5
	baz=319						
Y47A	UCPARC, Winfie	93.52	41	P	P	15 11 33.7	-0.6
	baz=322						
541A	Lake Charles	93.53	47	P	P	15 11 35.3	+0.9
	baz=318						
443A	Delano Plantat	93.81	46	P	P	15 11 36.3	+0.6
	baz=319						
542A	Morse	93.85	47	P	P	15 11 36.5	+0.6
	baz=319						
344A	Westbrook Farm	93.87	44	P	P	15 11 36.0	+0.1
	baz=320						
146A	Union	93.87	43	P	P	15 11 36.3	+0.3
	baz=321						
245A	Little AP, Sta	93.89	44	P	P	15 11 36.1	0.0
	baz=320						
Z47A	Carrollton	93.96	42	P	P	15 11 36.1	-0.2
	baz=322						
Z48A	Northport	94.09	41	P	P	15 11 36.3	-0.6
	baz=322						
TKL	Tuckaleechee C	94.16	37	LR	LR	15 54 12.7	
	comp=Z,970nm,19.6s,baz=327,slow=36						
147A	Livingston	94.26	42	P	P	15 11 37.6	-0.1
	baz=321						
246A	Jackson Lee, B	94.31	43	P	P	15 11 38.4	+0.4
	baz=321						
345A	Thompson Farm,	94.37	44	P	P	15 11 38.7	+0.4
	baz=320						
444A	Pine Grove	94.42	45	P	P	15 11 38.8	+0.3
	baz=320						
BLA	Blacksburg	94.43	34	PFAKE		15 11 50.0	+11
BLA				LR	LR		
	comp=Z,3µm,21.0s						
247A	Quitman	94.56	43	P	P	15 11 39.5	+0.4
	baz=321						
346A	Big Creek Wild	94.62	44	P	P	15 11 39.7	+0.3
	baz=321						
445A	Amite	94.64	45	P	P	15 11 39.1	-0.4
	baz=320						
CBN	Corbin Frederi	94.90	32	PFAKE		15 11 50.0	+9.4
CBN				LR	LR		
	comp=Z,3µm,19.0s						
347A	Saraland	95.11	43	P	P	15 11 41.5	-0.1
	baz=321						
446A	Poplarville	95.13	44	P	P	15 11 41.8	0.0
	baz=321						
KEST	Kesra	95.38	325	P	P	15 11 42.6	-0.3
	comp=Z,36nm,1.2s,baz=200,slow=1.4,SNR=12						
KEST				LR	LR	16 00 08.1	
	comp=Z,9µm,18.2s,baz=321,slow=39						
348A	Jackson	95.44	43	P	P	15 11 43.0	-0.1
	baz=322						
KMSC	Kings Mountain	95.73	36	P	P	15 11 43.6	-0.9
	baz=326,SNR=8.9						
PBRG	Braganca	96.07	339	eLR	LR	15 44 56.9	
BRAL	Brewton	96.08	42	PFAKE		15 12 00.0	+14
BRAL				LR	LR		
	comp=Z,2µm,20.0s						
GOGA	Godfrey	96.12	38	PFAKE		15 12 00.0	+14
GOGA				LR	LR		
	comp=Z,2µm,19.0s						
MVO	Moncorvo	96.74	339	eP	P	15 11 47.5	-1.5
MVO	Moncorvo	96.74	339	eLR	LR	15 45 00.0	
POLO	Lamas de Olo	96.76	339	eP	P	15 11 49.0	-0.1
POLO	Lamas de Olo	96.76	339	eLR	LR	15 45 09.8	
PVRL	Vila Real	96.83	339	eP	P	15 11 49.9	+0.5
ESDC	Sonseca Array	97.16	336	P	P	15 11 50.5	-0.4
	comp=Z,3.7nm,0.8s,baz=34,slow=3.0,SNR=13						
RKT	Rikitea	97.20	114	eSKSac	SKSac	15 22 23.5	-3.8
	comp=Z,960nm,30.8s						
RKT	Rikitea	97.20	114	ePS	PS	15 24 35.5	-2.5
	comp=Z,3µm,31.2s						
RKT				eSS	SS	15 29 48.6	-3.4
	comp=Z,3µm,27.8s						
RKT	Rikitea	97.20	114	eLR	LR	15 42 43.7	
	comp=Z,6µm,27.5s						
PAB	San Pablo	97.41	336	PFAKE		15 12 00.0	+7.9
PAB				LR	LR		
	comp=Z,10µm,21.0s						
MTE	Manteigas	97.59	339	eP	P	15 11 52.7	-0.2
MTE	Manteigas	97.59	339	eLR	LR	15 45 28.6	
MTE	Manteigas	97.59	339	PFAKE		15 12 00.0	+7.1
MTE				LR	LR		
	comp=Z,5µm,19.0s						
TIGA	Tifton	97.65	40	P	P	15 11 53.0	-0.3
	baz=324						
NHSC	New Hope	97.94	36	PFAKE		15 12 10.0	+15
NHSC				LR	LR		
	comp=Z,3µm,19.0s						
PMRV	Marv??o	98.45	338	eP	Pdif	15 11 56.9	+0.2
PMRV	Marv??o	98.45	338	eLR	LR	15 45 56.3	
PMTG	Montargil	99.02	339	eLR	LR	15 45 56.3	
PESTR	Estremoz	99.03	338	eLR	LR	15 46 02.3	
PMAFR	Mafra	99.43	339	eLR	LR	15 46 27.9	
PBAR	Barrancos	99.50	337	eP	Pdif	15 12 00.7	-0.7
PVAQ	Vaqueiros	100.42	338	eLR	LR	15 45 20.7	
PBDV	Barranco-do-Ve	100.63	338	eLR	LR	15 46 00.2	
RER	Riviere de l'E	101.57	252	PFAKE		15 12 20.0	+9.2
RER				LR	LR		
	comp=Z,4µm,20.0s						
CMLA	Cha da Macela	103.81	352	PFAKE		15 12 30.0	+9.4
CMLA				LR	LR		
	comp=Z,2µm,20.0s						
TEIG	Tepich	103.85	50	PFAKE		15 12 30.0	+9.0
TEIG				LR	LR		
	comp=Z,1µm,19.0s						
KMBO	Kilima Mbogo	103.95	280	Pdiff	Pdif	15 12 20.6	-1.3
	comp=Z,3.8nm,0.7s,baz=38,slow=8.2,SNR=6.8						
KMBO	Kilima Mbogo	103.95	280	Pdif	Pdif	15 12 20.6	-1.3
KMBO				LR	LR		
	comp=Z,3µm,19.0s						
BBSR	BB Station	104.82	25	PFAKE		15 12 40.0	+15
BBSR				LR	LR		
	comp=Z,2µm,20.0s						
PMOZ	Porto Moniz, M	107.24	344	eLR	LR	15 46 00.2	
CASY	Casey	107.33	194	PFAKE		15 17 00.0	
CASY				LR	LR		
	comp=Z,300nm,21.0s						
TAM	Tamanrasset	107.97	320	PFAKE		15 17 00.0	
TAM				LR	LR		
	comp=Z,4µm,19.0s						
GTBY	Guantanamo Bay	111.42	40	PFAKE		15 17 00.0	
GTBY				LR	LR		
	comp=Z,2µm,19.0s						
MTDJ	Mount Denham	111.58	43	PFAKE		15 17 10.0	
MTDJ				LR	LR		
	comp=Z,3µm,21.0s						
GRTK	Grand Turk	111.98	35	PFAKE		15 17 10.0	
GRTK				LR	LR		
	comp=Z,2µm,21.0s						
JTS	JuntasAbangare	113.47	54	PFAKE		15 17 10.0	
JTS				LR	LR		
	comp=Z,1µm,20.0s						
SDDR	Presa de Saban	114.10	37	PFAKE		15 17 10.0	+12
SDDR				LR	LR		
	comp=Z,2µm,20.0s						
VNDA	Vanda	115.97	176	PKP	PKPdf	15 16 59.6	-0.2
	comp=Z,4.2nm,0.7s,baz=325,slow=4.4,SNR=21						
SBA	Scott Base	116.60	175	PFAKE		15 17 10.0	+9.0
SBA				LR	LR		
	comp=Z,1µm,21.0s						
BCIP	Isla Barro Col	117.53	51	PFAKE		15 17 20.0	+15
BCIP				LR	LR		
	comp=Z,1µm,20.0s						
PAYG	Puerto Ayora	117.73	67	PFAKE		15 17 20.0	+15
PAYG				LR	LR		
	comp=Z,2µm,19.0s						
TORD	Tor

comp=Z,8.3nm,0.9s,baz=31,slow=1.8,SNR=24
TORD PKKPbc **PKKPbc 15 27 25.9 +1.7**
comp=Z,9.5nm,0.8s,baz=213,slow=3.3,SNR=20
RPN Rapa Nui 118.61 103 PFAKE 15 17 20.0 +14
RPN LR LR
comp=Z,1μm,19.0s
ANWB Willy Bob 119.32 29 PFAKE 15 17 20.0 +12
ANWB LR LR
comp=Z,2μm,20.0s
CAPC Capurgana 119.44 49 *e*P PKPdf 15 17 23.8 +15
LSZ Lusaka 119.61 274 PKP **PKPdf 15 17 08.3 -0.5**
comp=Z,7.7nm,0.7s,baz=31,slow=2.7,SNR=14
LSZ Lusaka 119.61 274 PKP **PKPdf 15 17 08.3 -0.5**
LSZ LR LR
comp=Z,2μm,20.0s
MAW Mawson 121.54 206 PKP **PKPdf 15 17 11.2 +0.4**
comp=Z,41nm,0.9s,baz=51,slow=1.5,SNR=42
FDF Fort de France 122.24 29 PFAKE 15 17 30.0 +16
FDF LR LR
comp=Z,2μm,21.0s
HELC Santa Helena 122.47 49 *e*P **PKPdf 15 17 13.1 -1.6**
BRRC Barranca, Sant 122.79 46 *e*P **PKPdf 15 17 15.6 +0.7**
CBRI Barrientos, No 122.81 45 *e*P **PKPdf 15 17 17.2 +2.1**
SDV Santo Domingo 123.02 42 PKP **PKPdf 15 17 15.3 -0.3**
comp=Z,25nm,0.4s,baz=306,slow=2.9,SNR=8.6
SDV Santo Domingo 123.02 42 PKP **PKPdf 15 17 15.3 -0.3**
SDV LR LR
comp=Z,2μm,22.0s
GRGC Isla de Gorgon 123.35 54 *e*P **PKPdf 15 17 14.8 -1.2**
BARC Barichara 123.51 46 *e*P **PKPdf 15 17 18.5 +1.9**
TOLC Tolima 123.87 50 *e*P **PKPdf 15 17 18.1 +0.7**
RUSC La Rusia 124.14 47 *e*P **PKPdf 15 17 19.3 +1.2**
ROSC El Rosal 124.27 49 PKP **PKPdf 15 17 18.4 +0.2**
comp=Z,53nm,1.1s,baz=18,slow=2.9,SNR=15
ROSC El Rosal 124.27 49 *e*P **PKPdf 15 17 20.1 +1.9**
BBGH Gun Hill 124.30 28 PFAKE 15 17 30.0 +12
BBGH LR LR
comp=Z,3μm,21.0s
GRGR Grenville 124.40 31 PFAKE 15 17 30.0 +12
GRGR LR LR
comp=Z,2μm,22.0s
POPC Popayan, Colom 124.64 53 *e*P **PKPdf 15 17 17.2 -1.5**
PRAC Prado 124.82 50 *e*P **PKPdf 15 17 13.9 -4.9**
CMBC Cumbal 125.14 55 *e*P **PKPdf 15 17 20.5 +0.5**
OTAV Otavalo 125.26 56 PFAKE 15 17 30.0 +10
OTAV LR LR
comp=Z,1μm,19.0s
OTAV Otavalo 125.26 56 *e*P **PKPdf 15 17 18.9 -1.3**
SJAC San Juan de Ar 125.73 49 *e*P **PKPdf 15 17 22.6 +1.9**
FLOC Florencia 126.02 52 *e*P **PKPdf 15 17 19.7 -1.4**
DBIC Dimbokro 126.86 320 PKP **PKPdf 15 17 22.1 -0.6**
comp=Z,31nm,1.0s,baz=40,slow=2.4,SNR=17
DBIC PP **PP 15 19 15.7 -3.5**
comp=Z,26nm,1.1s,baz=4.7,slow=6.4,SNR=4.7
TIC Toumodi 126.96 320 *e*P **PKPdf 15 17 21.9 -1.0**
TIC Toumodi 126.96 320 *e*P **PP 15 19 17.1 -2.8**
KIC Kosan Boka 127.06 320 *e*P **PKPdf 15 17 21.6 -1.5**
comp=Z,74nm,1.0s
KIC Kosan Boka 127.06 320 *e*P **PP 15 19 17.4 -3.2**
comp=Z,157nm,1.1s
LIC Lamto 127.33 320 *e*P **PKPdf 15 17 23.2 -0.4**
comp=Z,140nm,1.8s
LIC Lamto 127.33 320 *e*P **PP 15 19 19.3 -3.0**
comp=Z,118nm,1.6s
QSPA South Pole Qui 127.94 180 PFAKE 15 17 40.0 +17
QSPA LR LR
comp=Z,2μm,19.0s
TSUM Tsumeb 130.16 277 PKP **PKPdf 15 17 28.5 -0.4**
comp=Z,10nm,0.9s,baz=17,slow=4.2,SNR=13
TSUM PP **PP 15 19 42.6 +0.6**
comp=Z,3.4nm,0.9s,baz=5.4,slow=7.9,SNR=3.0
TSUM Tsumeb 130.16 277 PKP **PKPdf 15 17 28.5 -0.4**
TSUM PP **PP 15 19 42.6 +0.6**
TSUM LR LR
comp=Z,3μm,21.0s
SYO Syowa Base 130.23 207 ⇑ *i*P PKPpre 15 17 21.0
SYO Syowa Base 130.23 207 ⇓ *e*P **PKPdf 15 17 25.6 -1.7**
ATAH Atahualpa 130.69 62 PKP **PKPdf 15 17 31.4 +1.0**
comp=Z,58nm,1.0s,baz=349,slow=3.4,SNR=14
SUR Sutherland 134.00 259 PFAKE 15 17 50.0 +14
SUR LR LR
comp=Z,4μm,19.0s
NNA Nana 135.15 66 PKP **PKPdf 15 17 37.6 -0.8**
comp=Z,22nm,0.8s,baz=294,slow=6.2,SNR=6.8
NNA Nana 135.15 66 PKP **PKPdf 15 17 37.6 -0.8**
NNA *e*PKPdf **PKiKP 15 17 39.3 -0.5**
NNA LR LR
comp=Z,1μm,19.0s
PTGA Pitinga 136.62 37 PKP **PKPdf 15 17 40.5 -0.7**
comp=Z,32nm,1.1s,baz=314,slow=2.5,SNR=14
PTGA PP **PP 15 20 22.8 +0.7**
comp=Z,14nm,1.0s,baz=346,slow=8.5,SNR=6.6
PTGA Pitinga 136.62 37 PKP **PKPdf 15 17 40.5 -0.7**
PTGA PP **PP 15 20 22.8 +0.7**
PTGA LR LR
comp=Z,38μm,20.0s
NVL N'lazarevskaya 139.19 202 PKHKP PKPpre 15 17 32.5
SAML Samuel 141.87 47 *e*PKPpre PKPpre 15 17 45.2
SAML LR LR
comp=Z,2μm,20.0s
SNAA Sanae 142.49 196 PKP PKPpre 15 17 45.6
SNAA Sanae 142.49 196 *e*PKHKP PKPpre 15 17 45.7
SNAA Sanae 142.49 196 *e*PKPdf PKPpre 15 17 45.7
VNA2 Neumayer--Watz 144.03 195 PKP **PKPab 15 17 50.6 +0.4**
baz=89,slow=2.1
ASCN Ascension 144.16 322 PFAKE 15 18 10.0 +15
ASCN LR LR
comp=Z,2μm,21.0s
LPAZ La Paz 144.22 61 PKP **PKPab 15 17 53.3 +0.1**
comp=Z,34nm,1.0s,baz=349,slow=5.0,SNR=37
VNA3 Neumayer Olymp 144.24 194 PKP **PKPab 15 17 50.9 -0.1**
VNA1 Neumayer--Stat 144.43 195 PKP **PKPab 15 17 51.5 -0.2**
SHEL Horse Pasture 145.48 302 *e*PKIKP **PKPdf 15 17 56.3 -0.6**
SHEL MLR MLR
comp=Z,982nm,19.0s
SHEL Horse Pasture 145.48 302 *e*PKPbc **PKPdf 15 17 56.3 -0.6**
SHEL LR LR
comp=Z,982nm,19.0s
LVC Limon Verde 147.73 71 PKPbc **PKPdf 15 18 02.1 +1.1**
comp=Z,881nm,1.2s,baz=260,slow=1.7,SNR=36
LVC Limon Verde 147.73 71 *e*PKPbc **PKPdf 15 18 02.5 +1.5**
LVC LR LR
comp=Z,2μm,20.0s
RCBR Riachuelo 147.78 0 PKPbc **PKPbc 15 18 03.6 -0.2**
comp=Z,213nm,1.1s,baz=341,slow=3.1,SNR=21
RCBR Riachuelo 147.78 0 *e*PKPdf **PKPdf 15 18 00.2 -0.7**
RCBR PKPbc **PKPbc 15 18 03.6 -0.2**
RCBR LR LR
comp=Z,2μm,20.0s
PMSA Palmer Station 148.65 157 PKPbc **PKPbc 15 18 04.0 -0.4**
comp=Z,62nm,1.0s,baz=228,slow=2.6,SNR=4.5
PMSA Palmer Station 148.65 157 *e*PKPbc **PKPbc 15 18 03.4 -1.0**
PMSA LR LR
comp=Z,2μm,19.0s
SIV San Ignacio 148.66 52 PKPbc **PKPdf 15 18 03.3 +1.1**
comp=Z,118nm,1.1s,baz=335,slow=0.9,SNR=31
LCO Las Campanas 149.70 83 *e*PKPbc **PKPbc 15 18 09.5 +1.0**
LCO LR LR
comp=Z,2μm,21.0s
USHA Ushuaia 152.42 138 PKPbc **PKPbc 15 18 14.3 +0.6**
comp=Z,553nm,1.0s,baz=315,slow=1.6,SNR=11
PLCA Paso Flores 153.19 106 PKP **PKPdf 15 18 07.8 -0.8**
comp=Z,13nm,1.2s,baz=234,slow=5.7,SNR=4.7
PLCA PKPbc **PKPbc 15 18 15.5 -0.5**
comp=Z,39nm,1.1s,baz=276,slow=3.0,SNR=12
CPUP Villa Florida 158.38 63 PKP **PKPdf 15 18 15.6 -0.2**
comp=Z,28nm,1.1s,baz=344,slow=1.2,SNR=19
CPUP PKPab **PKPab 15 18 48.4 -1.9**
comp=Z,15nm,1.0s,baz=343,slow=6.6,SNR=3.1
EFI East Falkland 159.40 138 PFAKE 15 18 30.0 +14
EFI LR LR
comp=Z,3μm,19.0s
TRQA Tornquist 159.46 98 PFAKE 15 18 30.0 +13
TRQA LR LR
comp=Z,2μm,21.0s
LPA La Plata 161.96 86 PKP **PKPab 15 19 08.0 +2.2**
LPA SKIKP 15 21 50.0
SPB Sao Paulo 162.39 38 PFAKE 15 18 30.0 +10
SPB LR LR
comp=Z,2μm,20.0s
HOPE Hope Point 163.91 179 PFAKE 15 18 30.0 +9.3
HOPE LR LR
comp=Z,3μm,19.0s

MOS ***05*** *15:06:07.0±1.0,51°.59N×178°.34W,h33km,mb5.3/82, Error ellipse: s-maj=6.9km s-min=5.5km az=80.1*
BJI ***05*** *15:06:09.6,51°.43N×178°.50W,h68km,mb5.5/63, mB5.9/23,Ms5.7/21,Ms7 5.5/18*
ISCJB ***05*** *15:06:10.1±0.3,51°.49N±0°.03×178°.27W±0°.02,h69km±2km, mb5.2/284,Error ellipse: s-maj=4.9km s-min=2.0km az=176.8*
NEIC ***05*** *15:06:11.1±0.3,51°.49N×178°.38W,h61km±2km,mb5.3/196, ML5.3(AEIC),Error ellipse: s-maj=4.0km s-min=1.8km az=174.0*
IDC ***05*** *15:06:11.2±1.7,51°.57N×178°.33W,h60km±14km,mb4.7/51, mb1 4.8/53,mb1mx4.7/71,mbtmp5.0/53,MS4.9/3, Ms1 4.9/3,ms1mx4.1/71,Error ellipse: s-maj=11.7km s-min=7.9km az=158.0*
ISC 05 15:06:11.2±0.6,51°.49N±0°.06×178°.36W±0°.03,h62km±4km, n1032,σ1°01/1076,mb5.3/287,46C-13D,Andreanof Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GALAA	**Gareloi Lava P**	**0.37**	**317**	*e*Pn	**Pn**	**15 06 21.1**	**-1.0**
GAEA	**Gareloi East**	**0.38**	**321**	*e*Pn	**Pn**	**15 06 21.1**	**-1.0**
TAFL	**Tanaga Flats**	**0.40**	**47**	*e*Pn	**Pn**	**15 06 20.0**	**-2.2**
TAPA	**Tanaga Point A**	**0.47**	**46**	*e*Pn	**Pn**	**15 06 21.0**	**-2.0**
TAFP	**Tanaga Falls P**	**0.47**	**30**	*e*Pn	**Pn**	**15 06 21.4**	**-1.7**
KIKV	**Kanaga Island**	**0.84**	**62**	*e*Pn	**Pn**	**15 06 25.3**	**-1.9**
KIRH	**Kanaga Island**	**0.89**	**62**	*e*Pn	**Pn**	**15 06 26.1**	**-1.8**
ADAG	**Mount Adagdak**	**1.20**	**65**	*e*Pn	**Pn**	**15 06 30.8**	**-1.1**
ETKA	**Kagalaska Isla**	**1.27**	**72**	*e*Pn	**Pn**	**15 06 30.9**	**-2.0**
GSCK	**Great Sitkin C**	**1.47**	**68**	*e*Pn	**Pn**	**15 06 34.1**	**-1.3**
GSMY	**Great Sitkin M**	**1.54**	**68**	*e*Pn	**Pn**	**15 06 35.0**	**-1.4**
GSTR	**Great Sitkin T**	**1.56**	**66**	*e*Pn	**Pn**	**15 06 36.1**	**-0.5**
KOWE	**Korovin West**	**2.69**	**69**	*e*Pn	**Pn**	**15 06 52.9**	**+0.8**
KOKL	**Mount Kliuchef**	**2.71**	**70**	*e*Pn	**Pn**	**15 06 52.9**	**+0.5**
KOKV	**Korovin Volcan**	**2.74**	**70**	P	**Pn**	**15 06 52.5**	**-0.3**
KOKV				S	**Sn**	**15 07 27.1**	**+2.3**
KOFP	**Korovin Flat P**	**2.76**	**72**	P	**Pn**	**15 06 53.0**	**0.0**
SMY	**Shemya**	**4.81**	**288**	*e*P	**Pn**	**15 07 20.4**	**-0.5**
SMY	**Shemya**	**4.81**	**288**	*e*Pn	**Pn**	**15 07 20.4**	**-0.5**
NIKH	**Nikolski High**	**6.03**	**72**	*e*Pn	**Pn**	**15 07 37.5**	**-0.1**
OKTU	**Okmok Mt. Tuli**	**6.59**	**69**	P	**Pn**	**15 07 45.9**	**+0.5**
OKER	**Okmok East Rim**	**6.60**	**69**	P	**Pn**	**15 07 46.0**	**+0.4**
MSOM	**Makushin Julie**	**7.33**	**67**	*e*P	**Pn**	**15 07 56.9**	**+1.5**
MSOM	**Makushin Julie**	**7.33**	**67**	*e*Pn	**Pn**	**15 07 56.9**	**+1.5**
AKRB	**Akutan Reef Bi**	**7.91**	**66**	P	**Pn**	**15 08 04.8**	**+1.5**
AKGG	**Akutan Green G**	**7.97**	**65**	P	**Pn**	**15 08 05.7**	**+1.6**
AKUT	**Akutan**	**8.08**	**66**	*e*Pn	**Pn**	**15 08 07.5**	**+1.9**
WESN	**West Dahl Nort**	**8.86**	**64**	*e*Pn	**Pn**	**15 08 17.6**	**+1.3**
SSLW	**Shshaldin Wes**	**9.17**	**63**	P	**Pn**	**15 08 22.3**	**+1.7**
FALS	**False Pass**	**9.59**	**64**	*e*Pn	**Pn**	**15 08 27.6**	**+1.3**
SDPT	**Sand Point**	**11.35**	**63**	*e*Pn	**Pn**	**15 08 49.8**	**-0.4**
CHGN	**Chignik**	**12.70**	**60**	*e*Pn	**Pn**	**15 09 08.1**	**-0.5**
GAMB	**Gambell**	**12.82**	**13**	*e*Pn	**Pn**	**15 09 10.8**	**+0.6**
PET	**Petropavlovsk**	**14.15**	**285**	*e*P	**P**	**15 09 34.2**	**+0.3**
PET				pmax	pmax		
	comp=Z,41nm,1.0s						
PET	**Petropavlovsk**	**14.15**	**285**	*e*Pn	**Pn**	**15 09 30.0**	**+1.8**
PEA0	**Petropavlovsk-**	**14.72**	**286**	*e*Pn	**Pn**	**15 09 36.1**	**+0.5**
PEA0B	**Petropavlovsk-**	**14.72**	**286**	*e*Pn	**Pn**	**15 09 36.1**	**+0.4**
PEA1	**Petropavlovsk-**	**14.72**	**286**	*e*Pn	**Pn**	**15 09 36.9**	**+1.3**
PETK	**Petropavlovsk-**	**14.72**	**286**	P	**Pn**	**15 09 36.9**	**+1.3**
	comp=Z,1.2nm,0.3s,baz=93,slow=20,SNR=13						
TNA	**Tin City**	**15.09**	**17**	*e*Pn	**P**	**15 09 42.9**	**-1.4**
	comp=Z,44nm,1.0s						
OHAK	**Old Harbor**	**15.65**	**59**	*e*Pn	**Pn**	**15 09 43.7**	**-3.9**
	comp=Z,170nm,0.9s						
SVW2	**Sparrevohn**	**15.80**	**44**	*e*Pn	**P**	**15 09 51.2**	**-1.1**
	comp=Z,260nm,1.4s						
SKR	**Severo-Kuril's**	**16.03**	**277**	*e*P	**Pn**	**15 09 49.5**	**-3.0**
KDAK	**Kodiak Island**	**16.14**	**57**	*i* P	**Pn**	**15 09 51.2**	**-2.5**
KDAK	**Kodiak Island**	**16.14**	**57**	*e*Pn	**Pn**	**15 09 52.2**	**-1.5**
	comp=Z,83nm,0.7s						
TT01	**Tatalina**	**16.54**	**38**	*e*Pn	**P**	**15 10 01.3**	**+0.9**
TTA	**Tatalina**	**16.56**	**38**	*e*P	**P**	**15 10 01.4**	**+0.7**
TTA				pmax	pmax		
	comp=Z,100nm,1.0s						
TTA	**Tatalina**	**16.56**	**38**	*e*Pn	**P**	**15 10 01.4**	**+0.7**
	comp=Z,102nm,1.0s						
RSO	**Redoubt South**	**16.81**	**48**	*e*Pn	**P**	**15 10 03.7**	**0.0**
HOM	**Homer**	**17.08**	**51**	*e*Pn	**Pn**	**15 10 05.6**	**+0.2**
	comp=Z,185nm,0.8s						
SPU	**Mount Spurr**	**17.39**	**46**	*e*Pn	**P**	**15 10 10.9**	**+1.0**
PPLA	**Purkeypile**	**18.05**	**41**	*e*P	**Pn**	**15 10 22.0**	**+4.5**
	comp=Z,129nm,0.8s						
BILL	**Bilibino**	**18.21**	**341**	*i* P	**Pn**	**15 10 21.0**	**+1.8**
BILL				pmax	pmax		
	comp=Z,92nm,1.0s						
BILL				MLR	MLR		
	comp=Z,13μm,20.0s						
BILL	**Bilibino**	**18.21**	**341**	*e*P	**Pn**	**15 10 20.7**	**+1.4**
	comp=Z,87nm,0.9s						
SEW	**Seward**	**18.27**	**51**	*e*P	**P**	**15 10 17.8**	**-1.6**
	comp=Z,98nm,0.8s						
CAST	**Castle Rocks**	**18.34**	**39**	*e*P	**Pn**	**15 10 20.7**	**-0.2**
	comp=Z,80nm,0.6s						
RC01	**Rabbit Creek A**	**18.42**	**47**	*e*P	**Pn**	**15 10 22.2**	**+0.4**
	comp=Z,37nm,0.8s						
PMR	**Palmer**	**18.86**	**46**	*e*P	**Pn**	**15 10 27.0**	**0.0**
PMR				pmax	pmax		
	comp=Z,31nm,0.9s						
PMR	**Palmer**	**18.86**	**46**	*e*P	**Pn**	**15 10 27.0**	**0.0**
	comp=Z,31nm,0.9s						
KTH	**Kantishna Hill**	**18.86**	**40**	*e*P	**Pn**	**15 10 26.7**	**-0.5**
	comp=Z,276nm,0.9s						
TRF	**Thorofare Moun**	**19.07**	**40**	*e*P	**P**	**15 10 29.0**	**+0.5**
	comp=Z,187nm,0.9s						
BPAW	**Bear Paw Mtn.**	**19.09**	**38**	*e*P	**Pn**	**15 10 29.3**	**-0.6**
	comp=Z,82nm,0.8s						
MA2	**Magadan**	**19.10**	**307**	*e*P	**Pn**	**15 10 30.2**	**+0.2**
MA2				pmax	pmax		
	comp=Z,83nm,0.8s						
MA2	**Magadan**	**19.10**	**307**	*e*P	**Pn**	**15 10 30.2**	**+0.2**
	comp=Z,83nm,0.8s						
SML	**Sawmill**	**19.29**	**46**	*e*P	**P**	**15 10 31.3**	**+0.7**
SML				pmax	pmax		
	comp=Z,75nm,0.9s						
SML	**Sawmill**	**19.29**	**46**	*e*P	**P**	**15 10 31.3**	**+0.7**
	comp=Z,75nm,0.9s						
SEY	**Seymchan**	**19.35**	**318**	P	**Pn**	**15 10 32.2**	**-0.6**
	comp=Z,1.5nm,0.3s,baz=97,slow=15,SNR=11						
SEY				PcP	**PcP**	**15 14 50.5**	**-0.1**
	comp=Z,0.3nm,0.3s,baz=202,slow=3.6,SNR=5.5						
SEY	**Seymchan**	**19.35**	**318**	*e*P	**Pn**	**15 10 32.1**	**-0.7**
RND	**Reindeer**	**19.64**	**41**	*e*P	**P**	**15 10 34.2**	**-0.3**
RND				pmax	pmax		
	comp=Z,88nm,0.7s						
RND	**Reindeer**	**19.64**	**41**	*e*P	**P**	**15 10 34.2**	**-0.3**
	comp=Z,88nm,0.7s						
RND				*e*ScP	**ScP**	**15 18 23.0**	**+1.3**
MLY	**Manley**	**19.65**	**36**	*e*P	**Pn**	**15 10 35.8**	**-0.6**
	comp=Z,75nm,0.7s						
MLY				*e*ScP	**ScP**	**15 18 21.7**	**0.0**
BWN	**Browne**	**19.72**	**39**	*e*P	**P**	**15 10 34.8**	**-0.5**
	comp=Z,183nm,0.9s						
MCK	**McKinley**	**19.74**	**40**	*e*P	**P**	**15 10 35.1**	**-0.5**
MCK				pmax	pmax		
	comp=Z,58nm,0.8s						
MCK	**McKinley**	**19.74**	**40**	*e*P	**P**	**15 10 35.1**	**-0.5**
	comp=Z,58nm,0.8s						
SCM	**Sheep Creek Mo**	**19.75**	**46**	*e*P	**P**	**15 10 34.4**	**-1.3**
SCM				pmax	pmax		
	comp=Z,80nm,0.8s						
SCM	**Sheep Creek Mo**	**19.75**	**46**	*e*P	**P**	**15 10 34.4**	**-1.3**
	comp=Z,80nm,0.8s						
EYAK	**Cordova Ski Ar**	**20.16**	**51**	*e*P	**P**	**15 10 39.9**	**-0.1**
	comp=Z,59nm,1.1s						
DIV	**Divide**	**20.28**	**49**	*e*P	Pn	15 10 43.1	-0.8
	comp=Z,71nm,0.9s						
KLU	**Klutina**	**20.30**	**48**	*e*P	Pn	15 10 43.1	-1.1
	comp=Z,76nm,0.9s						
WRH	**Wood River Hil**	**20.39**	**39**	*e*P	**P**	**15 10 41.9**	**-0.7**
MDM	**Murphy Dome**	**20.55**	**37**	*e*P	**P**	**15 10 44.4**	**+0.1**
	comp=Z,148nm,1.0s						
CCB	**Clear Creek Bu**	**20.58**	**39**	*e*P	**P**	**15 10 44.4**	**-0.1**
	comp=Z,44nm,0.8s						
RAGM	**Ragged Mountai**	**20.65**	**51**	*e*P	Pn	15 10 47.9	-0.4
	comp=Z,110nm,1.1s						
COLA	**College**	**20.66**	**38**	*c*e*P	**P**	**15 10 46.0**	**+0.6**
COLA				pmax	pmax		
	comp=Z,122nm,1.0s						
COLA	**College**	**20.66**	**38**	*e*P	**P**	**15 10 46.3**	**+0.9**
	comp=Z,116nm,0.9s						
BMRM	**Bremner River**	**20.80**	**50**	*e*P	**P**	**15 10 46.6**	**-0.4**
	comp=Z,108nm,0.9s						
HDA	**Harding Lake**	**20.82**	**40**	*e*P	**P**	**15 10 47.4**	**+0.3**
	comp=Z,54nm,0.9s						
PAX	**Paxson**	**20.92**	**44**	*e*P	**P**	**15 10 48.0**	**-0.3**
PAX				pmax	pmax		
	comp=Z,100nm,0.8s						
PAX	**Paxson**	**20.92**	**44**	*e*P	**P**	**15 10 48.0**	**-0.3**
	comp=Z,100nm,0.8s						
IL1	**Eielson Array**	**20.99**	**39**	*e*P	**P**	**15 10 49.8**	**+0.8**
ILAR	**Eielson Array**	**20.99**	**39**	P	**P**	**15 10 48.0**	**-1.0**
	comp=Z,11nm,0.7s,baz=235,slow=8.2,SNR=13						
ILAR				S	**S**	**15 14 39.6**	**+0.6**
	comp=Z,0.8nm,1.0s,baz=248,slow=21,SNR=2.8						
ILAR				PcP	**PcP**	**15 14 53.1**	**-0.5**
	comp=Z,7.8nm,0.6s,baz=288,slow=3.3,SNR=22						
ILAR				ScP	**ScP**	**15 18 24.4**	**-0.3**
	comp=Z,1.7nm,0.9s,baz=290,slow=2.6,SNR=6.4						
ILB	**Eielson Array**	**20.99**	**39**	*e*P	**P**	**15 10 49.4**	**+0.4**
ILB				*e*PcP	**PcP**	**15 14 53.0**	**-0.6**
COLD	**Coldfoot**	**21.02**	**31**	*e*P	**P**	**15 10 49.2**	**0.0**
	comp=Z,44nm,0.8s						
CRQM	**Cirque**	**21.46**	**51**	*e*P	**P**	**15 10 55.1**	**+0.9**
	comp=Z,47nm,0.6s						
MENT	**Mentasta**	**21.68**	**45**	*e*P	**P**	**15 10 56.1**	**-0.2**
	comp=Z,57nm,0.8s						
DOT	**Dot Lake**	**21.73**	**43**	*e*P	**P**	**15 10 56.8**	**-0.2**
	comp=Z,152nm,0.7s						
BALM	**Baldy**	**21.89**	**50**	*e*P	**P**	**15 10 58.9**	**+0.1**
BALM				pmax	pmax		
	comp=Z,32nm,0.9s						
BALM	**Baldy**	**21.89**	**50**	*e*P	**P**	**15 10 58.9**	**+0.1**
	comp=Z,32nm,0.9s						
FYU	**Fort Yukon**	**22.38**	**35**	*e*P	**P**	**15 11 03.5**	**-0.3**
	comp=Z,231nm,1.4s						
KUR	**Kuril'sk**	**23.15**	**268**	*e*P	**P**	**15 11 12.7**	**+0.8**
EGAK	**Eagle**	**23.29**	**41**	*e*P	**P**	**15 11 12.2**	**-0.9**
	comp=Z,78nm,1.1s						
DAWY	**Dawson**	**23.84**	**43**	*e*P	**P**	**15 11 17.1**	**-1.1**
	comp=Z,37nm,0.8s						
DAWY				*e*ScP	**ScP**	**15 18 32.8**	**+0.6**
TYV	**Tymovskoe**	**24.25**	**284**	*e*P	**P**	**15 11 17.0**	**-5.1**
TYV				pmax	pmax		
	comp=Z,24nm,0.8s						
NKL	**Nikolayevsk**	**24.85**	**290**	*e*P	**P**	**15 11 28.0**	**+0.5**
NKL				pmax	pmax		
	comp=E,200nm,1.0s						
NKL				pmax	pmax		
	comp=Z,65nm,1.0s						
YUK	**Yuzh-Kuril'sk**	**24.98**	**267**	*e*P	**P**	**15 11 29.8**	**+1.1**
SKAG	**Skagway**	**25.26**	**55**	*e*P	**P**	**15 11 30.7**	**-0.4**
	comp=Z,21nm,0.9s						
YSS	**Yuzh-Sakhalins**	**25.58**	**275**	⇑ *i*P	**P**	**15 11 35.3**	**+1.2**
YSS				pmax	pmax		
	comp=Z,160nm,0.9s						
YSS	**Yuzh-Sakhalins**	**25.58**	**275**	*e*P	**P**	**15 11 34.6**	**+0.4**
	comp=Z,166nm,0.9s						
ASAJ	**Asahikawa**	**26.98**	**270**	P	**P**	**15 11 47.0**	**+0.2**
	comp=Z,158nm,1.0s,baz=28,slow=5.2,SNR=17						
ASAJ	**Asahikawa**	**26.98**	**270**	P	**P**	**15 11 47.0**	**+0.2**
ASAJ				pmax	pmax		
	comp=Z,158nm,1.0s						
ASAJ	**Asahikawa**	**26.98**	**270**	*e*P	**P**	**15 11 47.8**	**+1.0**
	comp=Z,193nm,1.0s						
INK	**Inuvik**	**27.21**	**35**	P	**P**	**15 11 48.6**	**-0.1**
	comp=Z,5.0nm,0.5s,baz=252,slow=6.2,SNR=6.2						
INK				PcP	**PcP**	**15 15 07.2**	**+0.2**
	comp=Z,27nm,0.8s,baz=286,slow=3.4,SNR=13						
INK				ScP	**ScP**	**15 18 41.6**	**0.0**
	comp=Z,12nm,1.2s,baz=303,slow=2.4,SNR=7.4						
INK	**Inuvik**	**27.21**	**35**	*e*P	**P**	**15 11 48.4**	**-0.2**
	comp=Z,17nm,0.8s						
INK				*e*PcP	**PcP**	**15 15 07.2**	**+0.2**
INK				*e*ScP	**ScP**	**15 18 42.6**	**+0.9**
ERM	**Erimo**	**27.73**	**265**	*c*e*P	**P**	**15 11 55.8**	**+2.3**
ERM				pmax	pmax		
	comp=Z,61nm,1.0s						
ERM	**Erimo**	**27.73**	**265**	*e*P	**P**	**15 11 54.6**	**+1.1**
	comp=Z,50nm,0.9s						
DLBC	**Dease Lake**	**28.07**	**57**	P	**P**	**15 11 56.6**	**+0.1**
	comp=Z,5.1nm,0.8s,baz=191,slow=26,SNR=2.7						
DLBC				PcP	**PcP**	**15 15 09.9**	**+0.6**
	comp=Z,6.0nm,0.8s,baz=261,slow=6.7,SNR=5.3						
DLBC	**Dease Lake**	**28.07**	**57**	*e*P	**P**	**15 11 57.1**	**+0.6**
	comp=Z,14nm,1.0s						
DLBC				*e*PcP	**PcP**	**15 15 10.0**	**+0.7**
YAK	**Yakutsk**	**29.55**	**311**	*e*P	**P**	**15 12 10.8**	**+1.3**
YAK				pmax	pmax		
	comp=Z,16nm,0.9s						
TIXI	**Tiksi**	**30.68**	**330**	P	**P**	**15 12 20.4**	**+1.1**
	comp=Z,7.1nm,0.5s,baz=113,slow=14,SNR=6.3						
TIXI				PcP	**PcP**	**15 15 15.5**	**-0.1**
	comp=Z,44nm,1.0s,baz=138,slow=2.3,SNR=12						
TIXI				ScP	**ScP**	**15 18 52.3**	**-0.3**
	comp=Z,10.0nm,0.9s,baz=121,slow=3.0,SNR=7.2						
TIXI	**Tiksi**	**30.68**	**330**	*e*P	**P**	**15 12 21.3**	**+2.0**
TIXI				pmax	pmax		
	comp=Z,8.0nm,0.9s						
KLR	**Kul'dur**	**31.41**	**286**	P	**P**	**15 12 26.1**	**0.0**
	comp=Z,29nm,0.5s,baz=74,slow=7.6,SNR=108						
USRK	**Ussuriysk Ar.**	**33.55**	**277**	P	**P**	**15 12 44.5**	**-0.3**
	comp=Z,53nm,0.8s,baz=58,slow=7.8,SNR=65						
USRK				PcP	**PcP**	**15 15 24.7**	**+0.7**
	comp=Z,6.6nm,0.8s,baz=149,slow=0.4,SNR=4.9						
H11N2	**WAKE ISLAND Hy**	**33.75**	**206**	T	T	15 48 39.6	
	baz=17,slow=76,SNR=226						
H11N3	**WAKE ISLAND Hy**	**33.76**	**206**	T	T	15 48 40.4	
	baz=17,slow=76,SNR=269						
H11N1	**WAKE ISLAND Hy**	**33.77**	**206**	T	T	15 48 40.9	
	baz=17,slow=76,SNR=191						
KIP	**Kipapa**	**33.94**	**145**	*c*e*P	**P**	**15 12 50.0**	**+1.6**
MAJO	**Matsushiro**	**34.07**	**261**	*c*e*P	**P**	**15 12 50.5**	**+1.1**
MAJO				pmax	pmax		
	comp=Z,136nm,1.2s						
MAJO	**Matsushiro**	**34.07**	**261**	*e*P	**P**	**15 12 49.9**	**+0.4**

INU	Inuyama	35.58	261	eP	P	15 13 02.3	-0.1
	comp=Z,24nm,0.8s						
B05A	Bryant	35.65	72	P	P	15 13 04.1	+1.3
	baz=297,SNR=19						
B06A	Marblemount	35.90	72	eP	P	15 13 05.3	+0.4
	comp=Z,49nm,0.8s						
F04D	Rainier, OR	36.12	76	P	P	15 13 08.0	+1.0
	baz=299						
D05A	Enumclaw	36.21	74	eP	P	15 13 09.3	+1.6
	comp=Z,152nm,1.0s						
G03D	McMinnville, O	36.40	78	P	P	15 13 10.5	+1.2
	baz=300						
C06D	Leavenworth	36.52	72	P	P	15 13 10.9	+0.6
	baz=298						
LON	Longmire	36.52	75	eP	P	15 13 11.9	+1.4
LON				pmax	pmax		
	comp=Z,29nm,0.8s						
LON	Longmire	36.52	75	eP	P	15 13 11.8	+1.4
	comp=Z,29nm,0.8s						
F04A	Amboy	36.55	76	eP	P	15 13 11.6	+0.9
	comp=Z,77nm,0.7s						
COR	Corvallis	36.69	79	eP	P	15 13 13.4	+1.6
COR				pmax	pmax		
	comp=Z,71nm,0.9s						
COR	Corvallis	36.69	79	eP	P	15 13 13.3	+1.6
	comp=Z,71nm,0.8s						
LTY	Liberty	36.97	73	eP	P	15 13 14.7	+0.5
	comp=Z,42nm,0.9s						
I03D	Drain, OR	37.13	80	P	P	15 13 17.0	+1.5
	baz=302						
H04A	Detroit Lake	37.33	78	eP	P	15 13 18.2	+1.0
	comp=Z,101nm,0.8s						
HSO	Harness Mounta	37.38	80	eScP	ScP	15 19 20.8	+3.8
G05D	Wamic, OR	37.57	76	P	P	15 13 20.5	+1.2
	baz=301						
I04A	Tendick Farm,	37.65	79	P	P	15 13 21.1	+1.1
	baz=302,SNR=17						
CN2	Changchun	37.79	281	eP	P	15 13 19.8	-1.3
CN2				pmax	pmax		
	comp=Z,20nm,0.9s						
L02D	Cave Junction,	37.80	82	P	P	15 13 22.2	+0.9
	baz=304						
HUMO	Hull Mountain	37.96	81	eP	P	15 13 23.7	+1.1
	comp=Z,14nm,0.9s						
I05D	Terrebonne, OR	38.02	78	P	P	15 13 24.1	+0.9
	baz=302,SNR=9.0						
HAWA	Hanford	38.07	74	eP	P	15 13 24.1	+0.6
	comp=Z,94nm,0.8s						
D08A	Wollman Farm,	38.11	73	eP	P	15 13 23.9	+0.1
	comp=Z,58nm,0.8s						
C09A	Chrisman Ranch	38.13	71	eP	P	15 13 24.1	+0.1
	comp=Z,64nm,0.8s						
CBIJ	Chichi jima	38.37	246	eP	P	15 13 26.3	+0.1
	comp=Z,306nm,0.8s						
JCJ	Chichijima	38.37	246	P	P	15 13 26.6	+0.4
	comp=Z,280nm,0.5s,baz=284,slow=18,SNR=17						
KHMM	Horse Mountain	38.45	84	eP	P	15 13 28.9	+2.0
	comp=Z,47nm,1.0s						
NEW	Newport	38.59	70	eP	P	15 13 28.0	+0.2
NEW				pmax	pmax		
	comp=Z,79nm,0.8s						
NEW	Newport	38.59	70	eP	P	15 13 28.0	+0.2
YBH	Yreka Blue Hor	38.59	82	eP	P	15 13 29.6	+1.6
YBH				pmax	pmax		
	comp=Z,24nm,0.8s						
YBH	Yreka Blue Hor	38.59	82	eP	P	15 13 29.6	+1.6
	comp=Z,24nm,0.8s						
J05D	Fort Rock, OR	38.65	79	P	P	15 13 29.6	+1.1
	baz=303,SNR=8.5						
M02C	Callahan	38.70	83	P	P	15 13 29.6	+0.7
	baz=305						
E09A	Wood Farm, Sta	38.84	73	eP	P	15 13 30.4	+0.5
	comp=Z,53nm,1.0s						
N02D	Trinity Center	39.03	83	P	P	15 13 33.0	+1.4
	baz=305,SNR=5.5						
M04C	Macdoel	39.10	82	P	P	15 13 33.5	+1.1
	baz=304,SNR=9.1						
K05A	Summer Lake	39.16	80	eP	P	15 13 34.4	+1.4
	comp=Z,50nm,0.8s						
WDC	Whiskeytown Da	39.36	84	eP	P	15 13 35.3	+1.0
WDC				pmax	pmax		
	comp=Z,41nm,1.2s						
WDC	Whiskeytown Da	39.36	84	eP	P	15 13 35.3	+1.0
	comp=Z,41nm,1.2s						
RES	Resolute Bay	39.53	25	P	P	15 13 35.5	+0.2
	comp=Z,7.7nm,1.0s,baz=264,slow=8.1,SNR=5.1						
RES				PcP	PcP	15 15 41.1	-0.3
	comp=Z,20nm,0.7s,baz=268,slow=1.0,SNR=15						
KSRS	Korea Array	39.91	271	P	P	15 13 40.0	+1.1
	comp=Z,52nm,0.8s,baz=58,slow=8.2,SNR=84						
KSRS				PcP	PcP	15 15 44.4	+1.1
	comp=Z,4.9nm,0.9s,baz=63,slow=3.8,SNR=4.4						
KSRS				LR	LR	15 30 48.5	
	comp=Z,891nm,18.8s,baz=60,slow=37						
KS01	Wonju Array Si	39.91	271	eP	P	15 13 39.4	+0.5
KS01	Wonju Array Si	39.91	271	epP	P	15 13 39.5	+0.6
KS15	Wonju Array Si	39.94	271	eP	P	15 13 39.8	+0.7
KS15	Wonju Array Si	39.94	271	epP	P	15 13 40.0	+0.9
KSAR	Wonju Array Be	39.94	271	P	P	15 13 40.0	+0.9
KSAR						15 15 44.4	
KSAR	Wonju Array Be	39.94	271	P	P	15 13 40.0	+0.9
KSAR				PcP	PcP	15 15 44.4	+1.0
O03D	Paynes Creek	39.98	83	P	P	15 13 40.3	+0.7
	baz=306						
MOD	Modoc Plateau	39.99	80	eP	P	15 13 40.6	+0.9
	comp=Z,31nm,0.8s						
SNY	Shenyang	40.03	280	⇑P	P	15 13 40.3	+0.5
SNY				pmax	pmax		
	comp=Z,76nm,1.1s						
BSMT	Bassoo Peak	40.16	69	eP	P	15 13 41.1	0.0
BLMT	Blacktail Moun	40.33	69	eP	P	15 13 42.5	0.0
JTMT	Jette	40.51	69	eP	P	15 13 44.0	+0.1
YBMT	Yellow Bay	40.61	69	eP	P	15 13 44.6	-0.1
INCN	Inchon	40.70	272	eP	P	15 13 46.0	+0.5
	comp=Z,116nm,0.9s						
WVOR	Wild Horse Val	40.71	79	eP	P	15 13 46.9	+1.3
WVOR				pmax	pmax		
	comp=Z,42nm,0.8s						
WVOR	Wild Horse Val	40.71	79	eP	P	15 13 46.4	+0.7
	comp=Z,42nm,0.8s						
JNU	Nakatsue	40.86	263	P	P	15 13 47.4	+0.6
	comp=Z,77nm,0.9s,baz=49,slow=7.1,SNR=24						
JNU				PcP	PcP	15 15 46.4	-0.2
	comp=Z,11nm,0.8s,baz=321,slow=1.3,SNR=4.2						
JNU	Nakatsue	40.86	263	eP	P	15 13 47.8	+1.0
	comp=Z,144nm,1.1s						
JNU				ePcP	PcP	15 15 46.3	-0.2
MSO	Missoula	41.17	70	P	P	15 13 49.3	-0.1
	baz=301,SNR=11						
MSO	Missoula	41.17	70	eP	P	15 13 49.3	-0.1
	comp=Z,56nm,0.9s						
MFID	Camas Ranch	41.88	76	eP	P	15 13 55.4	+0.2
	comp=Z,24nm,0.9s						
HRY	Holter Researc	42.47	69	eP	P	15 13 59.8	-0.2
HRY				ePcP	PcP	15 15 51.7	0.0
WAKR	Walker	42.52	84	eP	P	15 14 01.6	+1.0
HLID	Hailey	42.65	75	P	P	15 14 01.8	+0.3
	baz=304,SNR=11						
MCMT	McKenzie Canyo	42.88	72	eP	P	15 14 03.3	-0.2
EGMT	Eagleton	42.98	66	P	P	15 14 03.3	-0.7
	baz=301						
BOZ	Bozeman (W)	43.16	70	P	P	15 14 05.6	0.0
	baz=303,SNR=28						
NVAR	Mina Array Bea	43.27	83	P	P	15 14 07.2	+0.6
	comp=Z,12nm,0.8s,baz=289,slow=7.8,SNR=8.5						
NVAR				PcP	PcP	15 15 54.9	+0.2
	comp=Z,4.3nm,0.7s,baz=278,slow=3.4,SNR=3.6						
NV01	Mina Array Sit	43.27	83	eP	P	15 14 06.8	+0.2
NV01				ePP	PcP	15 15 54.7	0.0
NV11	Mina Array Sit	43.36	83	eP	P	15 14 08.1	+0.8
	comp=Z,18nm,0.9s						
QLMT	Earthquake Lak	43.73	71	eP	P	15 14 10.2	0.0
ELK	Elko	43.77	78	eP	P	15 14 11.4	+0.8
ELK				pmax	pmax		
	comp=Z,28nm,0.8s						
ELK	Elko	43.77	78	eP	P	15 14 11.2	+0.6
	comp=Z,28nm,0.8s						
TIN	Tinemaha, Big	44.16	85	P	P	15 14 14.1	+0.4
	baz=309						
GCMT	Greycliff	44.23	69	eP	P	15 14 13.8	-0.4
YFT	Old Faithful	44.29	71	eP	P	15 14 16.0	+1.3
	comp=Z,54nm,0.8s						
VES	Vestal, Richgr	44.40	87	P	P	15 14 15.7	+0.3
	baz=310						
YLT	Little Thumb C	44.44	71	eP	P	15 14 17.9	+1.8
LKWY	Lake	44.48	71	eP	P	15 14 17.7	+1.4
LKWY				pmax	pmax		
	comp=Z,56nm,0.8s						
LKWY	Lake	44.48	71	eP	P	15 14 17.7	+1.4
	comp=Z,56nm,0.8s						
PKM	Mcpherson Peak	44.56	88	P	P	15 14 17.4	+0.4
	baz=311						
YTP	The Promontory	44.65	71	eP	P	15 14 18.7	+1.0
HVU	Hansel Valley	44.66	76	eP	P	15 14 18.3	+0.7
HVU				pmax	pmax		
	comp=Z,46nm,0.7s						
HVU	Hansel Valley	44.66	76	eP	P	15 14 18.3	+0.7
	comp=Z,46nm,0.7s						
GRAC	Grapevine Rang	44.74	84	P	P	15 14 18.8	+0.6
	baz=309						
RLMT	Red Lodge	44.84	70	P	P	15 14 19.2	+0.1
	baz=304,SNR=20						
ISA	Isabella, Lake	44.90	86	P	P	15 14 19.6	+0.1
	baz=310						
REDW	Red Top Meadow	44.90	73	eP	P	15 14 20.2	+0.6
	comp=Z,33nm,1.1s						
LOHW	Long Hollow	44.90	72	eP	P	15 14 19.6	-0.1
	comp=Z,15nm,0.8s						
R11A	Troy Canyon, C	45.00	81	P	P	15 14 20.6	+0.1
	baz=308,SNR=13						
BGU	Big Grassy Mou	45.01	77	eP	P	15 14 21.0	+0.6
	comp=Z,29nm,0.9s						
DAC	Darwin (Calif)	45.05	85	eP	P	15 14 21.5	+0.6
DAC				pmax	pmax		
	comp=Z,11nm,0.9s						
DAC	Darwin (Calif)	45.05	85	eP	P	15 14 21.1	+0.2
	comp=Z,10nm,0.8s						
AHID	Auburn Hatcher	45.09	74	eP	P	15 14 21.6	+0.5
	comp=Z,30nm,0.9s						
SPUT	South Promonto	45.13	76	eP	P	15 14 22.0	+0.5
	comp=Z,31nm,0.9s						
MPMC	Manual Prospec	45.26	85	P	P	15 14 22.7	+0.2
	baz=310						
FURC	Furnace Creek,	45.39	84	P	P	15 14 23.6	+0.4
	baz=310,SNR=6.0						
OSI	Osito Audit: C	45.42	88	P	P	15 14 23.7	+0.1
	baz=311						
OSI	Osito Audit: C	45.42	88	eP	P	15 14 24.4	+0.8
	comp=Z,19nm,0.8s						
TPNV	Topopah Spring	45.46	83	P	P	15 14 24.3	+0.2
	baz=309,SNR=9.4						
TPNV	Topopah Spring	45.46	83	eP	P	15 14 23.7	-0.4
TPNV	Topopah Spring	45.46	83	eP	P	15 14 23.7	-0.4
HWUT	Hardware Ranch	45.49	75	eP	P	15 14 24.5	+0.2
	comp=Z,30nm,1.0s						
LRMC	Laurel Mtn Rad	45.51	86	P	P	15 14 24.1	-0.3
	baz=310						
BLG	Laguna Peak, P	45.53	89	P	P	15 14 24.8	+0.3
	baz=311						
DUG	Dugway, Tooele	45.58	78	P	P	15 14 25.4	+0.5
	baz=307,SNR=19						
DUG	Dugway, Tooele	45.58	78	eP	P	15 14 25.6	+0.7
DUG	Dugway, Tooele	45.58	78	eP	P	15 14 25.7	+0.8
BJI	Beijing	45.62	282	P	P	15 14 25.7	+0.7
BJI				pmax	pmax		
	comp=Z,45nm,1.1s						
EDW2	Edwards Air Fo	45.70	87	P	P	15 14 25.7	-0.2
	baz=311						
LAO	LASA Array	45.73	66	P	P	15 14 25.8	-0.1
	baz=304,SNR=6.3						
LAO	LASA Array	45.73	66	eP	P	15 14 26.1	+0.1
	comp=Z,70nm,1.0s						
LAO				ePcP	PcP	15 16 02.9	+0.2
TCUT	Toone Canyon	45.88	76	eP	P	15 14 28.0	+0.6
	comp=Z,60nm,0.8s						
BW06	Boulder Array	46.02	73	P	P	15 14 28.2	-0.2
	baz=306,SNR=30						
PD31	Pinedale Array	46.02	73	eP	P	15 14 28.1	-0.4
PDAR	Pinedale Array	46.02	73	P	P	15 14 28.5	0.0
	comp=Z,39nm,0.7s,baz=317,slow=3.2,SNR=64						
MWC	Mount Wilson	46.09	88	eP	P	15 14 29.7	+0.6
MWC				pmax	pmax		
	comp=Z,34nm,1.1s						
MWC	Mount Wilson	46.09	88	eP	P	15 14 29.1	+0.1
	comp=Z,34nm,1.1s						
SHOC	Shoshone, Teco	46.11	85	P	P	15 14 29.2	+0.2
	baz=310						
JLU	Jordanelle	46.16	76	eP	P	15 14 30.1	+0.4
	comp=Z,39nm,0.9s						
GSC	Goldstone, Bar	46.17	86	P	P	15 14 29.6	0.0
	baz=310,SNR=11						
GSC	Goldstone, Bar	46.17	86	eP	P	15 14 29.8	+0.2
GSC				e		15 16 04.7	
GSC				pmax	pmax		
	comp=Z,25nm,0.8s						
GSC	Goldstone, Bar	46.17	86	eP	P	15 14 29.8	+0.2
	comp=Z,25nm,0.8s						
GSC				ePcP	PcP	15 16 04.7	+0.2
NLU	North Lily Min	46.17	77	eP	P	15 14 29.8	+0.1
	comp=Z,36nm,0.9s						
TLY	Talaya	46.23	303	P	P	15 14 30.5	+0.7
	comp=Z,3.3nm,0.6s,baz=231,slow=15,SNR=3.3						
TLY				PcP	PcP	15 16 05.6	+1.2
	comp=Z,28nm,0.8s,baz=358,slow=1.2,SNR=16						
A25A	Svangstu Ranch	46.23	62	P	P	15 14 29.4	-0.5
	baz=303,SNR=10						
BFSC	Mount Baldy Ra	46.33	87	P	P	15 14 30.7	-0.1
	baz=311,SNR=6.0						
CIS	Catalina Islan	46.41	89	P	P	15 14 31.4	0.0
	baz=312						
MPU	Maple Canyon	46.41	77	eP	P	15 14 32.0	+0.5
	comp=Z,26nm,0.8s						
ULN	Ulaanbaatar	46.45	296	ceP	P	15 14 34.4	+2.6
ULN				pmax	pmax		
	comp=Z,13nm,1.0s						
B25A	Knox Farm, Ray	46.58	63	P	P	15 14 31.5	-1.0
	baz=304						
SCI2	San Clemente I	46.60	89	P	P	15 14 33.0	+0.1
	baz=312						
TUQ	Turquoise Moun	46.63	85	P	P	15 14 33.2	-0.1
	baz=310						
HEC	Hector,Ludlow	46.77	86	P	P	15 14 34.4	+0.1
	baz=311						
SONA1	Songino Array	46.83	297	eP	P	15 14 34.6	0.0
SONA1				ePcP	PcP	15 16 05.3	-1.4
C25A	Freed Ranch, W	46.84	63	P	P	15 14 33.5	-1.1
	baz=304						
SONA0	Songino Array	46.84	297	eP	P	15 14 35.0	+0.3
SONA0				ePcP	PcP	15 16 06.9	+0.1
SONM	Songino Array	46.84	297	P	P	15 14 35.0	+0.3
	comp=Z,11nm,0.9s,baz=71,slow=7.0,SNR=11						
SONM				PcP	PcP	15 16 06.9	+0.1
	comp=Z,22nm,0.9s,baz=82,slow=2.9,SNR=13						
SONM	Songino Array	46.84	297	P	P	15 14 35.0	+0.3
SONM						15 16 06.9	
SONM				pmax	pmax		
	comp=Z,12nm,0.9s						
SONM				pmax	pmax		
	comp=Z,22nm,0.9s						
JOW	Kunigami	46.86	259	P	P	15 14 34.9	0.0
	comp=Z,45nm,0.9s,baz=30,slow=5.6,SNR=13						
JOW				PcP	PcP	15 16 07.0	+0.1
	comp=Z,9.3nm,0.6s,baz=260,slow=6.3,SNR=5.5						
JOW				LR	LR	15 32 13.3	
	comp=Z,2μm,20.5s,baz=170,slow=33						
JOW	Kunigami	46.86	259	eP	P	15 14 35.1	+0.2
	comp=Z,57nm,0.9s						
JOW				PcP	PcP	15 16 07.0	+0.1
MSU	Marysvale	47.00	79	eP	P	15 14 37.4	+1.2
MSU	Marysvale	47.00	79	eP	P	15 14 37.0	+0.8
B26A	Jensen Ranch,	47.03	62	P	P	15 14 34.8	-1.3
	baz=304						
MURC	Murrieta	47.04	88	P	P	15 14 35.7	-0.6
	baz=312						
GMRC	Granite Mounta	47.22	85	P	P	15 14 37.4	-0.4
	baz=311,SNR=5.1						
P17A	Butcher Ranch,	47.28	77	eP	P	15 14 38.8	+0.5
	comp=Z,43nm,0.8s						
C26A	Wahner Farm, P	47.42	63	P	P	15 14 38.2	-0.9
	baz=304						
TIA	Tai'an	47.42	278	⇑P	P	15 14 39.6	+0.4
TIA				pmax	pmax		
	comp=Z,100nm,0.8s						
E25A	Miller Ranch,	47.44	65	P	P	15 14 38.9	-0.4
	baz=305,SNR=5.6						
PFO	Pinyon Flats O	47.49	87	P	P	15 14 39.6	-0.4
	baz=312						
BELC	Belle Mtn. Jos	47.52	86	P	P	15 14 39.7	-0.6
	baz=311						
B27A	Peters Farms,	47.55	62	P	P	15 14 39.1	-1.0
	baz=304						
SRU	San Rafael Swe	47.64	77	eP	P	15 14 41.9	+0.8
SRU				pmax	pmax		
	comp=Z,60nm,0.8s						
SRU	San Rafael Swe	47.64	77	eP	P	15 14 41.6	+0.5
	comp=Z,60nm,0.8s						
MMU	Miners Mountai	47.74	79	eP	P	15 14 42.8	+0.9
F25A	Bowman	47.74	66	P	P	15 14 41.1	-0.5
	baz=305						
C27A	Sayler Ranch,	47.81	63	P	P	15 14 41.5	-0.6
	baz=305						
A28A	Rude Farm, Bot	47.81	61	P	P	15 14 41.1	-1.0
	baz=304						
K22A	Casper	47.89	71	P	P	15 14 42.3	-0.7
	baz=307,SNR=8.7						
K22A	Casper	47.89	71	eP	P	15 14 42.4	-0.6
	comp=Z,52nm,0.8s						
HHC	Hu-ho-hao-te	47.92	286	eP	P	15 14 44.5	+1.3
HHC				pmax	pmax		
	comp=Z,76nm,1.0s						
IRM	Iron Mountain	47.95	86	P	P	15 14 43.2	-0.2
	baz=311						
E26A	Carlson Angus	47.99	64	P	P	15 14 42.8	-0.8
	baz=305						
MONP2	Monument Peak	47.99	88	P	P	15 14 43.6	-0.3
	baz=312						
B28A	Dugan Ranch, T	48.02	61	P	P	15 14 43.0	-0.7
	baz=305						
BC3	Big Chuckawall	48.09	86	P	P	15 14 44.1	-0.5
	baz=312						
W13A	Hualapai Mount	48.12	84	eP	P	15 14 44.6	-0.3
	comp=Z,13nm,0.8s						
D27A	Center	48.15	63	P	P	15 14 44.1	-0.6
	baz=305						
G25A	Newell	48.19	66	P	P	15 14 44.1	-1.0
	baz=306						
F26A	Lodgepole	48.23	65	P	P	15 14 44.8	-0.6
	baz=306						
U15A	North Rim	48.25	81	eP	P	15 14 46.3	+0.3
	comp=Z,48nm,0.8s						
SWSC	Sam W. Stewart	48.34	87	P	P	15 14 46.3	-0.1
	baz=312						
A29A	Manning Farm,	48.37	60	P	P	15 14 45.3	-1.1
	baz=305						
O20A	White River Ci	48.39	75	P	P	15 14 46.8	-0.1
	baz=308,SNR=9.7						
O20A	White River Ci	48.39	75	eP	P	15 14 46.6	-0.3
	comp=Z,92nm,0.8s						
H25A	Fruitdale	48.42	67	P	P	15 14 46.3	-0.6
	baz=306,SNR=9.0						
RSSD	Black Hills	48.47	68	P	P	15 14 46.4	-1.0
	baz=307						
RSSD	Black Hills	48.47	68	eP	P	15 14 46.9	-0.6
RSSD				e		15 16 12.4	
RSSD				pmax	pmax		
	comp=Z,27nm,0.9s						
RSSD	Black Hills	48.47	68	eP	P	15 14 46.9	-0.6
	comp=Z,27nm,0.9s						
RSSD				ePcP	PcP	15 16 12.4	-0.3
PDMCI	Parker Dam,Lak	48.48	85	P	P	15 14 47.1	-0.3
	baz=311						
F27A	Lemmon	48.59	65	P	P	15 14 47.7	-0.5
	baz=306						
G26A	Maurine	48.60	66	P	P	15 14 47.6	-0.6
	baz=306,SNR=9.1						
Y12C	Blythe	48.60	85	P	P	15 14 48.3	-0.1
	baz=312						
Y12C	Blythe	48.60	85	eP	P	15 14 48.1	-0.2
	comp=Z,29nm,1.0s						
D28A	Regan	48.63	63	P	P	15 14 47.7	-0.8
	baz=306						
I25A	Rochford	48.70	68	P	P	15 14 48.2	-1.0
	baz=307						
A30A	Hoffart Farm,	48.86	60	P	P	15 14 49.2	-1.0
	baz=305						
PV09	Paradox Valley	48.87	77	eP	P	15 14 50.9	+0.2
GLA	Glamis	48.88	86	P	P	15 14 49.9	-0.7
	baz=312						
GLA	Glamis	48.88	86	eP	P	15 14 50.7	+0.1
GLA				pmax	pmax		
	comp=Z,17nm,0.8s						
GLA	Glamis	48.88	86	eP	P	15 14 50.6	+0.1
	comp=Z,17nm,0.8s						
H26A	Fairpoint	48.90	67	P	P	15 14 49.5	-1.1
	baz=307						
G27A	Dupree	48.93	65	P	P	15 14 49.7	-1.1
	baz=306,SNR=7.2						
PV10	Paradox Valley	49.00	77	eP	P	15 14 52.1	+0.4
J25A	Sunshine Ranch	49.04	69	P	P	15 14 50.7	-1.0
	baz=307,SNR=7.2						
NJ2	Nanjing	49.08	272	eP	P	15 14 52.3	+0.3
NJ2				pmax	pmax		
	comp=Z,53nm,0.8s						
B30A	Myrvik Farm, E	49.13	60	P	P	15 14 51.5	-0.8
	baz=306						
PV05	Paradox Valley	49.16	77	eP	P	15 14 53.0	+0.1
I26A	New Underwood	49.20	67	P	P	15 14 52.4	-0.5
	baz=307,SNR=5.2						
D29A	Pettibone, Tap	49.25	62	P	P	15 14 51.7	-1.5
	baz=306						
H27A	Howes	49.29	66	P	P	15 14 52.8	-0.7
	baz=307						
F28A	McLaughlin	49.29	64	P	P	15 14 52.7	-0.9
	baz=306						
N23A	Red Feather La	49.30	72	P	P	15 14 53.9	0.0
	baz=308,SNR=7.3						
PHWY	Pilot Hill	49.34	72	eP	P	15 14 53.5	-0.7
	comp=Z,11nm,0.8s						
ULM	Lac du Bonnet	49.39	57	P	P	15 14 53.4	-0.9
	comp=Z,4.1nm,0.5s,baz=291,slow=6.8,SNR=3.3						
WUAZ	Wupatki	49.40	81	P	P	15 14 54.9	+0.2
	baz=311,SNR=7.7						
WUAZ	Wupatki	49.40	81	eP	P	15 14 55.1	+0.5
	comp=Z,38nm,0.8s						
PV01	Paradox Valley	49.44	77	eP	P	15 14 54.8	-0.3
C30A	Mose, Pekin	49.48	61	P	P	15 14 54.1	-0.9
	baz=306						
J26A	Sides Ranch, S	49.51	68	P	P	15 14 54.2	-1.1
	baz=307						
E29A	Napoleon	49.51	63	P	P	15 14 54.2	-1.0
	baz=306						
B31A	Greenbush Farm	49.51	60	P	P	15 14 54.3	-0.9
	baz=306						
I27A	Quinn	49.64	67	P	P	15 14 55.8	-0.5
	baz=307,SNR=8.4						
D30A	Buchanan	49.68	62	P	P	15 14 55.3	-1.1
	baz=306						
G28A	Parade	49.68	65	P	P	15 14 55.6	-1.0
	baz=307						
KBS	Kingsbay	49.70	357	eP	P	15 14 56.6	+0.4
KBS				e		15 16 16.3	
KBS				pmax	pmax		
	comp=Z,31nm,0.9s						
KBS	Kingsbay	49.70	357	eP	P	15 14 56.5	+0.4
	comp=Z,31nm,0.9s						
KBS				ePcP	PcP	15 16 16.3	0.0
C31A	Landman Farms,	49.84	61	P	P	15 14 56.2	-1.4
	baz=306						
A32A	Rocking H Ranc	49.84	59	P	P	15 14 56.3	-1.4
	baz=306						
F29A	Eureka	49.84	64	P	P	15 14 56.5	-1.2
	baz=307						
H28A	Mission Ridge	49.87	66	P	P	15 14 57.3	-0.6
	baz=307,SNR=6.8						
E30A	Jud	49.96	63	P	P	15 14 57.9	-0.6
	baz=307						
MVCO	Mesa Verde	50.08	78	P	P	15 14 59.7	-0.1
	baz=310,SNR=6.4						
X16A	Lo Mia Camp, P	50.08	83	eP	P	15 15 00.5	+0.6
	comp=Z,15nm,0.8s

baz=307
J28A Allard Ranch, 50.50 67 P P 15 15 02.7 -0.1
baz=308,SNR=12
AGMN Agassiz Nation 50.55 59 P P 15 15 01.7 -1.3
baz=307
G30A Faulkton 50.65 64 P P 15 15 02.6 -1.2
baz=308
I29A Vivian Onida 50.67 66 P P 15 15 02.8 -1.2
baz=308
W18A Petrified Fore 50.67 81 P P 15 15 04.2 -0.1
baz=311
F31A Hecla 50.71 63 P P 15 15 02.6 -1.6
baz=307
B33A Robert and Kas 50.71 59 P P 15 15 02.9 -1.3
baz=307
S22A 4UR Ranch, Cre 50.75 76 P P 15 15 05.5 +0.5
baz=310,SNR=8.2
214A Organ Pipe Nat 50.88 86 P P 15 15 05.7 0.0
baz=313,SNR=5.8
C33A Trail 50.92 60 P P 15 15 05.3 -0.5
baz=307
X18A Snowflake 50.93 81 *e*P P 15 15 06.7 +0.4
comp=Z,28nm,0.8s
Q24A Divide 50.98 74 P P 15 15 06.2 -0.5
baz=310
Q24A Divide 50.98 74 *e*P P 15 15 07.1 +0.3
comp=Z,19nm,0.8s
B34A Aery, Baudette 51.08 58 P P 15 15 06.0 -1.0
baz=307,SNR=6.8
G31A Conde 51.12 63 P P 15 15 06.7 -0.6
baz=308
SUSD Miller 51.18 65 P P 15 15 07.2 -0.6
baz=308
I30A Oacoma 51.24 65 P P 15 15 07.3 -1.0
baz=308
D33A AnnSam, Waubun 51.25 60 P P 15 15 07.3 -1.0
baz=307
SDCO Great Sand Dun 51.55 75 P P 15 15 11.3 +0.3
baz=310,SNR=13
J30A Dallas 51.56 66 P P 15 15 09.9 -0.8
baz=309
OGNE Ogallala 51.58 70 P P 15 15 10.6 -0.3
baz=309,SNR=5.6
OGNE Ogallala 51.58 70 *e*P P 15 15 11.6 +0.6
comp=Z,71nm,0.8s
D34A Park Rapids 51.64 60 P P 15 15 09.8 -1.4
baz=308,SNR=6.7
B35A Bob, Littlefor 51.65 58 P P 15 15 09.9 -1.3
baz=308
I31A Royce, Wessing 51.67 65 P P 15 15 10.0 -1.5
baz=308
F33A 5 Mile Ranch, 51.80 62 P P 15 15 11.2 -1.2
baz=308
TUC Tucson 51.90 84 P P 15 15 13.0 -0.4
baz=313
TUC Tucson 51.90 84 *e*P P 15 15 13.7 +0.3
TUC pmax pmax
comp=Z,20nm,0.8s
TUC Tucson 51.90 84 *e*P P 15 15 13.7 +0.3
comp=Z,20nm,0.8s
K30A Basset 51.90 67 P P 15 15 12.9 -0.3
baz=309,SNR=7.1
C35A Jirik Farms, M 51.92 59 P P 15 15 12.1 -1.2
baz=308
H32A Carlson Farm, 51.99 64 P P 15 15 12.4 -1.5
baz=308
E34A Wadena 52.01 60 P P 15 15 12.5 -1.4
baz=308,SNR=5.9
J31A Geddes 52.01 66 P P 15 15 13.0 -1.1
baz=309
G33A Ortonville 52.12 62 P P 15 15 13.2 -1.6
baz=308
D35A Remer 52.26 59 P P 15 15 14.0 -1.8
baz=308,SNR=7.4
H33A Prehn Over Nor 52.27 63 P P 15 15 14.1 -1.9
baz=309,SNR=5.2
E35A Pequot Lakes 52.39 60 P P 15 15 15.4 -1.4
baz=308
F34A Alexandria 52.40 61 P P 15 15 15.4 -1.5
baz=308,SNR=6.1
KSCO Kaye Shedlock' 52.46 72 *e*P P 15 15 18.1 +0.5
comp=Z,73nm,0.8s
C36A Pine Crest Far 52.49 58 P P 15 15 16.1 -1.4
baz=308
G34A Benson 52.54 62 P P 15 15 16.5 -1.4
baz=309
T25A Trinidad 52.61 75 P P 15 15 18.9 +0.1
baz=311,SNR=15
T25A Trinidad 52.61 75 *e*P P 15 15 18.9 +0.1
comp=Z,71nm,0.9s
I33A Coleman 52.64 64 P P 15 15 17.8 -0.9
baz=309
L31A Butterfield Fa 52.66 67 P P 15 15 18.5 -0.3
baz=310,SNR=13
D36A Goodland 52.67 59 P P 15 15 18.1 -0.8
baz=308
F35A Swanville 52.74 61 P P 15 15 17.7 -1.6
baz=309,SNR=5.5
LAZ Ladron 52.75 80 *e*P P 15 15 20.4 +0.6
ANMO Albuquerque 52.80 79 P P 15 15 19.7 -0.5
baz=312
ANMO Albuquerque 52.80 79 *ce*P P 15 15 21.2 +1.0
ANMO pmax pmax
comp=Z,20nm,1.2s
ANMO Albuquerque 52.80 79 *e*P P 15 15 20.4 +0.1
comp=Z,14nm,0.8s
H34A Spellman Lake, 52.82 63 P P 15 15 18.9 -1.1
baz=309
K32A Verdigre 52.85 66 P P 15 15 19.0 -1.2
baz=309
C37A Embarrass 52.85 58 P P 15 15 19.2 -0.9
baz=309,SNR=6.0
WHN Wuhan 52.92 274 P P 15 15 20.9 +0.1
J33A Davis 53.00 65 P P 15 15 19.8 -1.6
baz=309
E36A McGregor 53.04 59 P P 15 15 20.5 -1.0
baz=309,SNR=6.3
D37A Cotton 53.08 58 P P 15 15 20.6 -1.3
baz=309
M31A Lambtecht Ranc 53.11 68 P P 15 15 21.0 -1.2
baz=310
LPM Los Pinos Moun 53.12 79 *e*P P 15 15 23.1 +0.6
SUMG Summit 53.12 14 *e*P P 15 15 21.8 -0.5
SUMG pmax pmax
comp=Z,24nm,1.1s
SUMG Summit 53.12 14 *e*P P 15 15 21.8 -0.5
comp=Z,24nm,1.1s
G35A Watkins 53.18 61 P P 15 15 21.4 -1.2
baz=309
BNM Barren Site 53.23 79 *e*P P 15 15 23.9 +0.5
F36A Milaca 53.30 60 P P 15 15 22.4 -1.1
baz=309
H35A Sunnyside Ranc 53.32 62 P P 15 15 22.6 -1.1
baz=309
C38A Sawbill Land. 53.34 57 P P 15 15 22.6 -1.2
baz=309
N31A Bailey Ranch, 53.46 68 P P 15 15 23.9 -0.8
baz=310
BGNE Belgrade 53.55 67 P P 15 15 24.3 -1.1
baz=310
SSLB Suanglung 53.60 263 *e*P P 15 15 25.5 -0.5
comp=Z,87nm,0.9s
121A Cookes Peak, D 53.61 82 P P 15 15 26.2 +0.1
baz=313,SNR=8.6
O31A Woolen Ranch, 53.67 69 P P 15 15 25.4 -0.9
baz=310
YULB Yu-li 53.67 262 *e*P P 15 15 25.8 -0.7
comp=Z,37nm,1.1s
C39A Grand Marais 53.88 57 P P 15 15 26.3 -1.3
baz=309
H36A Jessenland, He 53.90 62 P P 15 15 27.3 -0.6
baz=310
K34A Le Mars 53.90 65 P P 15 15 27.0 -1.0
baz=310
XAN Xi'an 53.91 281 P P 15 15 28.2 +0.1
XAN pmax pmax
comp=Z,80nm,0.9s
M33A Taylor Creek F 53.99 66 P P 15 15 27.8 -0.8
baz=310
ZAA1 Zalesovo Array 54.15 314 *e*P P 15 15 30.0 +0.5
ZAA1 *e*PcP **PcP 15 16 33.4 0.0**
ZALV Zalesovo Beam 54.15 314 P P 15 15 30.0 +0.5
comp=Z,2.6nm,0.7s,baz=60,slow=7.7,SNR=4.0
ZALV PcP **PcP 15 16 33.4 0.0**
comp=Z,21nm,0.7s,baz=30,slow=4.1,SNR=20
TPUB Ta-pu 54.16 263 *e*P P 15 15 29.3 -0.7
comp=Z,57nm,0.9s
O32A Brockman Farm, 54.21 68 P P 15 15 29.7 -0.5
baz=311
QZH Quanzhou 54.23 266 ⇑*i*P P 15 15 26.6 -3.9
QZH pmax pmax
comp=Z,180nm,1.1s
TWG Pinlang 54.23 262 *e*P P 15 15 29.1 -1.4
comp=Z,78nm,1.0s
CBKS Cedar Bluff 54.30 71 P P 15 15 30.9 0.0
baz=311,SNR=7.9
N33A J Bar K, Exete 54.38 67 P P 15 15 30.6 -0.9
baz=311
P32A Huiting Farm, 54.44 69 P P 15 15 30.8 -1.1
baz=311,SNR=8.9
H37A Dierke Farm, C 54.45 61 P P 15 15 31.5 -0.4
baz=310
I37A Lemond, Waseca 54.55 62 P P 15 15 31.9 -0.7
baz=310
O33A Hebron 54.74 68 P P 15 15 32.9 -1.1
baz=311,SNR=13
K36A Gilmore City 54.86 64 P P 15 15 33.9 -1.0
baz=311
N34A Lincoln 54.86 67 P P 15 15 34.0 -0.9
baz=311
Q32A Meitler Ranch, 54.88 70 P P 15 15 34.7 -0.4
baz=311,SNR=23
M35A Neola 54.91 66 P P 15 15 34.9 -0.4
baz=311,SNR=5.8
J37A Redenius Farm, 54.92 63 P P 15 15 34.7 -0.6
baz=311
P33A Williams Farm, 55.09 69 P P 15 15 36.0 -0.6
baz=311,SNR=14
R32A Long Quarter, 55.16 70 P P 15 15 36.4 -0.7
baz=312,SNR=7.9
O34A Beatrice 55.18 67 P P 15 15 36.2 -1.0
baz=311,SNR=16
K37A Belmond 55.23 63 P P 15 15 36.2 -1.3
baz=311
Q33A Connelly Farm, 55.30 69 P P 15 15 37.5 -0.6
baz=312,SNR=27
N35A Tabor 55.34 66 P P 15 15 37.8 -0.5
baz=311,SNR=8.4
M36A Felix, Anita 55.43 65 P P 15 15 38.1 -0.9
baz=311
S32A Newby Ranch, P 55.51 71 P P 15 15 38.6 -1.1
baz=312
J38A Wedel Dairy, R 55.51 62 P P 15 15 38.6 -1.0
baz=311
P34A Walnut Farm, R 55.52 68 P P 15 15 38.6 -1.1
baz=312,SNR=11
L37A Phoenix Point, 55.58 64 P P 15 15 38.9 -1.2
baz=311,SNR=6.0
LZH Lanzhou 55.61 286 ⇑P P 15 15 41.9 +1.3
LZH pP pP 15 15 58.5 +1.6
LZH sP sP 15 16 05.6 +1.7
LZH PP **PP 15 17 48.0 +3.0**
LZH S **S 15 23 20.1 -1.8**
LZH sS sS 15 23 47.2 -2.1
LZH SS **SS 15 27 05.3 -1.9**
LZH pmax pmax
comp=Z,300nm,1.5s
LZH pmax pmax
comp=Z,2μm,7.4s
LZH LR LR
comp=Z,3μm,13.7s
LZH LR LR
comp=Z,3μm,13.9s
LZH LR LR
comp=Z,3μm,14.2s
MNTX Cornudas Mount 55.66 81 P P 15 15 40.8 0.0
baz=314,SNR=15
R33A Olander Ranch, 55.67 70 P P 15 15 39.9 -0.9
baz=312,SNR=7.7
MSTX Muleshoe 55.71 77 P P 15 15 41.0 -0.3
baz=313,SNR=7.3
MSTX Muleshoe 55.71 77 *e*P P 15 15 40.7 -0.6
comp=Z,38nm,0.7s
AMTX Amarillo 55.76 75 P P 15 15 41.0 -0.6
baz=313
N36A Muff Farm, Cla 55.76 66 P P 15 15 40.7 -0.7
baz=311,SNR=8.1
GTA Gaotai 55.78 292 ⇓P P 15 15 42.7 +1.0
GTA pP pP 15 15 58.7 +0.7
GTA sP sP 15 16 05.7 +0.7
GTA PcP **PcP 15 16 40.8 +0.7**
T32A Huddler Ranch, 55.87 72 P P 15 15 41.4 -0.8
baz=312,SNR=8.2
Q34A Chapman 55.87 69 P P 15 15 41.6 -0.6
baz=312,SNR=22
M37A Trindle Farm, 55.88 65 P P 15 15 42.0 -0.3
baz=311
P35A Duane Minner, 56.00 68 P P 15 15 42.0 -1.1
baz=312,SNR=20
L38A Oak Wood Farm, 56.02 63 P P 15 15 42.6 -0.6
baz=311
R34A Isabella, Hill 56.10 69 P P 15 15 43.0 -0.9
baz=312,SNR=14
ENH Enshi 56.13 277 *e*P P 15 15 44.0 -0.2
comp=Z,51nm,0.9s
S33A Kaszmaul Farm, 56.13 71 P P 15 15 43.4 -0.7
baz=312,SNR=7.3
O36A Bolckow 56.21 66 P P 15 15 43.4 -1.1
baz=312,SNR=10
N37A Lee Faris, Mou 56.23 65 P P 15 15 44.0 -0.7
baz=312,SNR=14
T33A Patterson Ranc 56.33 71 P P 15 15 44.6 -0.9
baz=312,SNR=5.1
U32A Winter Ranch, 56.36 72 P P 15 15 45.3 -0.4
baz=313
M38A Pleasantville 56.36 64 P P 15 15 44.6 -1.1
baz=312
P36A Good Intent, A 56.41 67 P P 15 15 44.8 -1.3
baz=312,SNR=19
Q35A Mercer Eighty, 56.44 68 P P 15 15 44.6 -1.6
baz=312,SNR=5.8
S34A Willow Spring 56.59 70 P P 15 15 46.1 -1.2
baz=312,SNR=7.0
O37A Wolven Farm, M 56.66 66 P P 15 15 46.7 -1.0
baz=312,SNR=18
R35A Emporia Munici 56.70 69 P P 15 15 47.0 -1.1
baz=312,SNR=17
Q36A Arnold C. Orve 56.70 68 P P 15 15 46.5 -1.6
baz=312,SNR=8.7
N38A Joes South For 56.75 65 P P 15 15 47.3 -1.2
baz=312,SNR=5.2
V32A Arapaho 56.78 73 P P 15 15 48.2 -0.5
baz=313
U33A Lingo Farm, Me 56.85 72 P P 15 15 48.4 -0.8
baz=313
P37A Lathrop 56.92 67 P P 15 15 48.3 -1.4
baz=312,SNR=12
T34A McClaskey Farm 57.00 71 P P 15 15 49.4 -0.8
baz=313,SNR=16
W32A Sentinel 57.06 74 P P 15 15 50.3 -0.4
baz=313
S35A Otter Creek Ra 57.06 69 P P 15 15 49.7 -1.0
baz=313,SNR=14
O38A Galt 57.07 66 P P 15 15 49.4 -1.3
baz=312,SNR=10
R36A Gordon, Harris 57.11 68 P P 15 15 50.0 -1.0
baz=312,SNR=37
N39A Derby Farms, D 57.11 64 P P 15 15 49.5 -1.4
baz=312
V33A Lossen Ranch, 57.16 72 P P 15 15 50.6 -0.8
baz=313
U34A Anderson Ranch 57.19 71 P P 15 15 50.8 -0.8
baz=313,SNR=14
U34A Anderson Ranch 57.19 71 *e*P P 15 15 50.9 -0.7
comp=Z,131nm,0.8s
Q37A Longview Farm, 57.34 67 P P 15 15 50.9 -1.7
baz=312,SNR=5.5
P38A Dawn 57.37 66 P P 15 15 51.4 -1.4
baz=312,SNR=26
S36A Lake Cedric, C 57.46 69 P P 15 15 52.3 -1.2
baz=313,SNR=11
T35A Sooner Cattle 57.47 70 P P 15 15 52.4 -1.2
baz=313,SNR=7.4
R37A Teagarden Farm 57.51 68 P P 15 15 52.1 -1.7
baz=313,SNR=6.2
O39A Kirksville 57.51 65 P P 15 15 52.6 -1.2
baz=312
WMOK Wichita Mounta 57.60 74 *e*P P 15 15 55.0 +0.5
WMOK pmax pmax
comp=Z,41nm,1.0s
WMOK Wichita Mounta 57.60 74 *e*P P 15 15 54.5 -0.1
comp=Z,41nm,1.0s
V34A Guthrie 57.61 72 P P 15 15 53.8 -0.8
baz=313,SNR=7.4
V34A Guthrie 57.61 72 *e*P P 15 15 54.1 -0.4
comp=Z,61nm,0.8s
U35A Pawnee 57.71 71 P P 15 15 54.3 -0.9
baz=313,SNR=5.8
T36A Boggs Farm, Ca 57.74 70 P P 15 15 54.2 -1.3
baz=313,SNR=6.2
Q38A Cooks Store, C 57.77 67 P P 15 15 53.9 -1.7
baz=313,SNR=17
W34A Bridge Creek, 57.87 72 P P 15 15 56.2 -0.2
baz=313
W34A Bridge Creek, 57.87 72 *e*P P 15 15 56.5 +0.1
comp=Z,46nm,0.9s
S37A Fort Scott 57.88 68 P P 15 15 55.0 -1.5
baz=313,SNR=30
X33A Lawton 57.91 74 P P 15 15 56.4 -0.2
baz=314
O40A La Belle 57.98 65 P P 15 15 56.0 -1.0
baz=313,SNR=14
ARA0 ARCESS Array S 58.03 350 *e*P P 15 15 55.8 -1.2
ARCES ARCESS Array B 58.03 350 P P 15 15 56.1 -0.8
comp=Z,6.6nm,0.6s,baz=21,slow=7.2,SNR=50
ARCES PcP **PcP 15 16 47.8 -0.5**
comp=Z,16nm,0.8s,baz=20,slow=4.0,SNR=9.3
V35A Meyer Ranch, C 58.06 71 P P 15 15 56.4 -1.3
baz=313,SNR=5.1
Q39A Willow Grove F 58.08 66 P P 15 15 56.3 -1.5
baz=313,SNR=37
R38A Fenwick Farm, 58.12 67 P P 15 15 55.9 -2.2
baz=313,SNR=13
Y33A Hilltop Ranch, 58.20 74 P P 15 15 57.7 -1.0
baz=314,SNR=8.7
T37A Cheneyville 18 58.26 69 P P 15 15 57.8 -1.3
baz=313,SNR=21
X34A Smith Ranch, M 58.26 73 P P 15 15 59.2 0.0
baz=314
P40A Paris 58.28 65 P P 15 15 58.1 -1.0
baz=313,SNR=26
U36A Oologah 58.28 70 P P 15 15 58.2 -1.0
baz=313,SNR=6.8
LTX Lajitas 58.37 82 *e*P P 15 15 59.7 -0.3
LTX Lajitas 58.37 82 *e*P P 15 15 59.7 -0.3
TXAR Lajitas Array 58.37 82 P P 15 15 59.7 -0.3
comp=Z,16nm,0.7s,baz=307,slow=5.2,SNR=40
LVZ Lovozero 58.40 346 *e*P P 15 15 58.3 -1.3
LVZ pmax pmax
comp=Z,24nm,0.8s
LVZ Lovozero 58.40 346 *e*P P 15 15 58.3 -1.3
comp=Z,24nm,0.8s
W35A Tecumseh 58.46 72 P P 15 16 00.3 -0.1
baz=314,SNR=18
S38A Stockton 58.50 68 P P 15 15 58.9 -1.8
baz=313,SNR=25
ABTX Abilene, Hawle 58.54 76 P P 15 16 00.8 -0.3
baz=314,SNR=13
ABTX Abilene, Hawle 58.54 76 *e*P P 15 16 00.9 -0.2
comp=Z,77nm,1.0s
R39A Chumby, Stover 58.54 67 P P 15 15 59.0 -2.0
baz=313
V36A Jenks 58.57 71 P P 15 16 00.5 -0.8
baz=314,SNR=15
TUL1 Leonard 58.58 71 P P 15 16 00.7 -0.7
baz=314,SNR=9.5
TUL1 Leonard 58.58 71 *e*P P 15 16 00.9 -0.4
comp=Z,63nm,0.8s
Z33A Whitaker Ranch 58.61 75 P P 15 16 01.0 -0.6
baz=314,SNR=6.4
Q40A Laux Farm, Aux 58.63 66 P P 15 16 00.3 -1.3
baz=313,SNR=19
U37A Salina 58.63 70 P P 15 16 00.5 -1.2
baz=314,SNR=18
T38A Diamond 58.69 69 P P 15 16 00.7 -1.3
baz=313,SNR=12
Y34A Reagan Ranch, 58.75 74 P P 15 16 02.2 -0.3
baz=314,SNR=19
S39A Bolivar 58.80 68 P P 15 16 00.7 -2.1
baz=313,SNR=11
W36A Wetumka 58.85 72 P P 15 16 02.8 -0.4
baz=314,SNR=9.8
GZH Guangzhou 58.85 269 P P 15 15 59.8 -3.5
X35A Drake 58.92 73 P P 15 16 03.1 -0.6
baz=314,SNR=7.5
V37A Hulbert 58.98 70 P P 15 16 03.3 -0.8
baz=314,SNR=6.9
133A Hamilton Ranch 58.99 75 P P 15 16 03.9 -0.3
baz=314,SNR=16
R40A Maddies Statio 59.00 66 P P 15 16 02.3 -1.9
baz=313,SNR=23
U38A Gravette 59.04 69 P P 15 16 03.2 -1.3
baz=314,SNR=12
Z34A Collier Ranch, 59.06 74 P P 15 16 04.4 -0.3
baz=314,SNR=6.6
HDIL Hopedale 59.12 63 P P 15 16 03.8 -1.2
baz=313
KURK Kurchatov 59.14 314 P P 15 16 05.2 +0.2
KURK 15 16 53.2
KURK pmax pmax
comp=Z,13nm,0.8s
KURK pmax pmax
comp=Z,15nm,0.8s
KURK Kurchatov 59.14 314 *e*P P 15 16 05.2 +0.2
KURK *e*PcP **PcP 15 16 53.2 +0.2**
X36A Centrahoma 59.17 72 P P 15 16 04.9 -0.5
baz=314,SNR=11
CD2 Chengdu 59.22 282 P P 15 16 06.2 +0.3
CD2 pmax pmax
comp=Z,130nm,0.9s
Y35A Marietta 59.22 73 P P 15 16 05.4 -0.3
baz=314,SNR=8.3
T39A Clever 59.23 68 P P 15 16 04.2 -1.6
baz=314,SNR=22
KURBB Kurchatov Arra 59.25 314 P P 15 16 05.2 -0.5
comp=Z,12nm,0.8s,baz=41,slow=6.6,SNR=14
KURBB PcP **PcP 15 16 53.2 -0.2**
comp=Z,14nm,0.8s,baz=43,slow=3.6,SNR=10
W37B Quinton 59.32 71 P P 15 16 06.0 -0.5
baz=314,SNR=9.4
S40A Lebanon 59.34 67 P P 15 16 05.6 -1.0
baz=314,SNR=6.1
HHAR Hobbs 59.41 69 *e*P P 15 16 05.8 -1.3
comp=Z,43nm,0.9s
233A Rising Star 59.41 76 P P 15 16 06.6 -0.6
baz=315,SNR=8.1
V38A Canehill 59.42 70 P P 15 16 06.3 -0.9
baz=314,SNR=15
Z35A Perchaven, San 59.49 74 P P 15 16 06.6 -1.1
baz=314
WMQ Urumqi 59.51 303 P P 15 16 08.3 +0.6
WMQ pP sP 15 16 28.7 -2.4
WMQ sP pP 15 16 35.9 +12
WMQ PcP **PcP 15 16 55.7 +1.0**
WMQ PcS **PcS 15 20 53.3 -3.5**
WMQ S **S 15 24 13.0 +0.5**
WMQ ScS **ScS 15 25 43.6 -8.6**
WMQ SS **SS 15 28 13.0 +5.2**
WMQ pmax pmax
comp=Z,8.0nm,1.0s
WMQ pmax pmax
comp=Z,2μm,12.0s
134A White-Moore Ra 59.52 75 P P 15 16 07.6 -0.3
baz=314,SNR=14
U39A Green Forest 59.61 69 P P 15 16 07.1 -1.3
baz=314,SNR=16
T40A Mansfield 59.63 67 P P 15 16 07.1 -1.5
baz=314,SNR=24
X37A Clayton 59.74 71 P P 15 16 08.8 -0.5
baz=314,SNR=5.9
333A Richland Sprin 59.84 77 P P 15 16 09.5 -0.7
baz=315,SNR=6.6
234A Clairette 59.88 75 P P 15 16 10.1 -0.3
baz=315,SNR=17
V39A Pettigrew 59.89 69 P P 15 16 09.4 -1.0
baz=314,SNR=7.2
W38A Poteau 59.91 70 P P 15 16 10.2 -0.3
baz=314,SNR=15
135A Vickery Place, 59.93 75 P P 15 16 10.2 -0.6
baz=315,SNR=7.2
JCT Junction City 59.94 78 P P 15 16 09.7 -1.1
baz=315
JCT Junction City 59.94 78 *e*P P 15 16 10.2 -0.6
JCT pmax pmax
comp=Z,27nm,0.9s
JCT Junction City 59.94 78 *e*P P 15 16 10.2 -0.6
comp=Z,27nm,0.9s
U40A Yellville 59.99 68 P P 15 16 09.9 -1.2
baz=314,SNR=20
X38A Whitesboro 60.00 71 P P 15 16 10.8 -0.4
baz=314,SNR=6.3
Y37A Hugo 60.01 72 P P 15 16 11.1 -0.1
baz=314

Z36A	Blue Ridge	60.02	73	P	P	15 16 10.6	-0.7
	baz=314,SNR=5.9						
MK32	Makanchi Array	60.18	309	eP	P	15 16 11.8	-0.4
MKAR	Makanchi Array	60.18	309	P	P	15 16 11.8	-0.4
	comp=Z,7.0nm,0.6s,baz=46,slow=6.9,SNR=15						
433A	Art	60.18	77	P	P	15 16 11.3	-1.1
	baz=315,SNR=10						
W39A	Magazine	60.25	70	P	P	15 16 12.3	-0.5
	baz=314,SNR=9.7						
334A	Lometa	60.29	76	P	P	15 16 12.9	-0.3
	baz=315,SNR=15						
WHTX	Lake Whitney,	60.30	75	P	P	15 16 13.2	0.0
	baz=315						
V40A	Witts Springs	60.39	69	P	P	15 16 12.5	-1.3
	baz=314,SNR=12						
SFIN	Lafayette	60.46	61	P	P	15 16 13.9	-0.3
	baz=314,SNR=18						
SFIN	Lafayette	60.46	61	eP	P	15 16 13.8	-0.3
	comp=Z,111nm,0.8s						
136A	Ennis	60.52	74	P	P	15 16 15.2	+0.5
	baz=315						
X39A	Fountain Ranch	60.54	71	P	P	15 16 14.7	-0.1
	baz=314,SNR=17						
Z37A	Pogue Cattle C	60.56	73	P	P	15 16 15.0	+0.1
	baz=315						
Y38A	Idabel	60.58	72	P	P	15 16 15.1	0.0
	baz=315						
GYA	Guiyang	60.58	276⇑	iP	P	15 16 15.2	-0.2
GYA				pP	pP	15 16 34.2	+2.4
GYA				sP	sP	15 16 41.0	+2.2
GYA				PP	PP	15 18 33.3	+4.1
GYA				ScP	ScP	15 20 55.5	+0.6
GYA				S	S	15 24 25.8	-1.0
GYA				sS	sS	15 24 55.2	+0.6
GYA				SS	SS	15 28 25.9	+0.4
GYA				pmax	pmax		
	comp=Z,40nm,1.0s						
GYA				pmax	pmax		
	comp=Z,140nm,6.0s						
GYA				LR	LR		
	comp=Z,590nm,18.2s						
GYA				LR	LR		
	comp=Z,520nm,19.0s						
GYA				LR	LR		
	comp=Z,550nm,19.0s						
434A	Burnet	60.64	77	P	P	15 16 15.2	-0.4
	baz=315,SNR=16						
W40A	Ferguson Farm,	60.67	69	P	P	15 16 15.0	-0.8
	baz=314,SNR=11						
533A	Kerrville	60.70	78	P	P	15 16 14.9	-1.1
	baz=315,SNR=5.1						
MANU	Manus Island	60.74	220	eP	P	15 16 15.6	-0.7
	comp=Z,16nm,0.8s						
335A	Moody	60.82	76	P	P	15 16 17.0	+0.2
	baz=315						
MIAR	Mount Ida	60.83	70	P	P	15 16 16.3	-0.5
	baz=315,SNR=19						
236A	Katherine and	60.85	74	P	P	15 16 17.0	0.0
	baz=315,SNR=7.1						
137A	Heron Place, G	60.90	73	P	P	15 16 17.2	0.0
	baz=315						
Z38A	Mt. Pleasant	60.90	72	P	P	15 16 16.8	-0.5
	baz=315,SNR=6.4						
Y39A	Lockesburg	60.95	71	P	P	15 16 17.4	-0.2
	baz=315						
BVAR	Borovoye Array	60.98	320	P	P	15 16 17.4	-0.1
	comp=Z,10nm,0.6s,baz=53,slow=6.6,SNR=32						
BVAR				PcP	PcP	15 17 00.4	+0.1
	comp=Z,7.0nm,0.6s,baz=59,slow=3.9,SNR=9.0						
X201	Greenbrier Sit	61.02	69	eP	P	15 16 17.0	-1.1
	comp=Z,60nm,1.0s						
X301	Greenbrier Sit	61.03	69	eP	P	15 16 17.3	-0.8
	comp=Z,67nm,0.9s						
633A	Saathoff Ranch	61.04	78	P	P	15 16 17.3	-1.1
	baz=316						
OLIL	Olney	61.05	63	eP	P	15 16 17.8	-0.4
	comp=Z,161nm,0.9s						
WHAR	Wooly Hollow	61.06	69	eP	P	15 16 17.4	-0.9
	comp=Z,61nm,1.0s						
WHAR				ePcP	PcP	15 17 00.3	-0.6
534A	Blanco	61.07	77	P	P	15 16 17.9	-0.6
	baz=315						
435B	Jarrell	61.08	76	P	P	15 16 18.2	-0.4
	baz=315						
PBMO	Poplar Bluff	61.10	66	eP	P	15 16 17.2	-1.4
	comp=Z,77nm,0.9s						
336A	Riesel	61.10	75	P	P	15 16 18.5	-0.1
	baz=315,SNR=12						
SIUC	Southern Illin	61.13	65	eP	P	15 16 17.9	-0.9
	comp=Z,64nm,0.8s						
W41B	Gary Mavity, V	61.17	69	P	P	15 16 18.1	-1.0
	baz=315,SNR=15						
138A	Matatall Enter	61.25	73	P	P	15 16 19.4	-0.3
	baz=315,SNR=8.2						
237A	Washetta, Mont	61.29	74	P	P	15 16 19.3	-0.6
	baz=315						
X40A	Basin Creek Fa	61.30	70	P	P	15 16 19.3	-0.7
	baz=315,SNR=8.3						
Y40A	Okolona	61.38	71	P	P	15 16 19.9	-0.6
	baz=315						
Z39A	Irene McRaven,	61.38	72	P	P	15 16 20.2	-0.3
	baz=315						
832A	Faith Ranch, C	61.39	80	P	P	15 16 20.3	-0.4
	baz=316,SNR=6.0						
UALR	University of	61.39	69	eP	P	15 16 20.0	-0.5
	comp=Z,60nm,1.3s						
733A	Divot King Ran	61.50	79	P	P	15 16 21.4	0.0
	baz=316						
436A	Wall Ranch, Ga	61.56	76	P	P	15 16 21.8	0.0
	baz=315,SNR=5.1						
PARMO	Parma	61.56	66	eP	P	15 16 21.2	-0.5
535A	Dale	61.62	77	P	P	15 16 21.9	-0.3
	baz=316						
BLO	Bloomington	61.62	62	eP	P	15 16 21.5	-0.5
BLO				pmax	pmax		
	comp=Z,71nm,0.8s						
BLO	Bloomington	61.62	62	eP	P	15 16 21.5	-0.5
	comp=Z,71nm,0.8s						
WLAR	White Oak Lake	61.70	71	eP	P	15 16 22.7	0.0
	comp=Z,82nm,0.9s						
833A	Chaparral WMA,	61.72	79	P	P	15 16 22.8	-0.1
	baz=316						
HBAR	Harrisburg	61.82	68	eP	P	15 16 22.7	-0.8
USIN	University of	61.83	64	eP	P	15 16 23.1	-0.4
	comp=Z,195nm,0.8s						
Z40A	Long Farm, Mag	61.84	71	P	P	15 16 23.4	-0.2
	baz=315						
734A	La Parita Cree	61.86	78	P	P	15 16 24.3	+0.5
	baz=316						
437A	Phantom Ranch,	61.92	75	P	P	15 16 24.6	+0.4
	baz=316						
635A	Leesville	61.95	77	P	P	15 16 24.4	0.0
	baz=316,SNR=8.1						
239A	Gary	62.08	73	P	P	15 16 25.2	0.0
	baz=315						
NATX	Nacogdoches	62.15	73	P	P	15 16 26.0	+0.3
	baz=316						
NATX	Nacogdoches	62.15	73	eP	P	15 16 25.8	+0.1
NATX				LR	LR		
	comp=Z,3μm,19.0s						
140A	Cam and Jess,	62.17	72	P	P	15 16 25.7	-0.2
	baz=315						
Z41A	Richland Creek	62.19	71	P	P	15 16 25.8	-0.2
	baz=315						
UTMT	University of	62.30	66	eP	P	15 16 26.2	-0.4
	comp=Z,217nm,0.8s						
933A	Laredo	62.30	80	P	P	15 16 26.7	-0.1
	baz=316						
735A	Kenedy	62.31	78	P	P	15 16 26.7	-0.1
	baz=316						
636A	Smothers Creek	62.32	77	P	P	15 16 26.7	-0.2
	baz=316						
CCAR	Cane Creek	62.33	70	eP	P	15 16 27.4	+0.5
	comp=Z,67nm,0.9s						
HALT	Halls	62.33	66	eP	P	15 16 26.5	-0.4
537A	Green Hill Far	62.34	76	P	P	15 16 27.5	+0.4
	baz=316						
438A	Sam Houston St	62.38	75	P	P	15 16 27.1	-0.1
	baz=316						
834A	Tilden	62.38	79	P	P	15 16 27.4	+0.1
	baz=316						
WCI	Wyandotte Cave	62.41	63	eP	P	15 16 27.0	-0.4
WCI				pmax	pmax		
	comp=Z,87nm,0.8s						
WCI	Wyandotte Cave	62.41	63	eP	P	15 16 27.0	-0.4
	comp=Z,87nm,0.8s						
240A	Hunter Patters	62.48	72	P	P	15 16 27.5	-0.4
	baz=316						
Z42A	Norrel Spur, H	62.68	70	P	P	15 16 29.0	-0.2
	baz=316						
736A	Circle Diamond	62.69	77	P	P	15 16 29.7	+0.3
	baz=316						
835A	Beeville	62.70	78	P	P	15 16 30.3	+0.9
	baz=316,SNR=5.1						
HKT	Hockley	62.73	76	eP	P	15 16 29.9	+0.4
HKT				pmax	pmax		
	comp=Z,46nm,1.4s						
HKT	Hockley	62.73	76	eP	P	15 16 29.9	+0.4
	comp=Z,46nm,1.4s						
439A	Center Grove,	62.77	74	P	P	15 16 30.4	+0.5
	baz=316						
934A	Benavides	62.77	79	P	P	15 16 30.6	+0.6
	baz=316						
637A	Eagle Lake	62.79	76	P	P	15 16 30.6	+0.6
	baz=316						
340A	Bronson	62.85	73	P	P	15 16 30.5	+0.1
	baz=316,SNR=5.9						
241A	Mo Tay, Goldon	63.00	72	P	P	15 16 31.5	+0.1
	baz=316,SNR=6.6						
WVT	Waverly	63.04	65	eP	P	15 16 31.7	+0.1
WVT				pmax	pmax		
	comp=Z,51nm,0.8s						
WVT	Waverly	63.04	65	eP	P	15 16 31.3	-0.3
	comp=Z,51nm,0.8s						
034A	Hebbronville	63.06	80	P	P	15 16 32.1	+0.3
	baz=316						
ALLY	Alegheny Colle	63.27	56	eP	P	15 16 33.6	+0.6
	comp=Z,57nm,0.8s						
143A	Socs Landing,	63.41	70	P	P	15 16 34.4	+0.3
	baz=316						
HNR	Honiara	63.50	204	LR	LR	15 39 51.0	
	comp=Z,1μm,19.4s,baz=308,slow=32						
035A	Encino	63.51	79	P	P	15 16 35.2	+0.4
	baz=317						
Z44A	Pea Ridge, Bel	63.57	69	P	P	15 16 35.0	-0.1
	baz=316,SNR=6.1						
M54A	Oil Creek Stat	63.62	56	P	P	15 16 35.3	-0.2
	baz=316						
MMNY	Mt. Morris Dam	63.64	54	eP	P	15 16 35.6	+0.2
	comp=Z,47nm,0.8s						
Y45A	Yeager Farm, C	63.67	68	P	P	15 16 35.5	-0.2
	baz=316,SNR=7.6						
N54A	Moraine State	63.85	57	P	P	15 16 36.4	-0.5
	baz=317						
035Z	Hargill	63.87	80	P	P	15 16 37.5	+0.3
	baz=317						
Z45A	Winona	63.94	69	P	P	15 16 37.5	0.0
	baz=316						
243A	Waterproof	63.95	71	P	P	15 16 37.6	0.0
	baz=316,SNR=9.0						
KLMR	Klimovskoe	63.96	340	eP	P	15 16 35.7	-1.6
KLMR				pmax	pmax		
	comp=Z,26nm,1.2s						
KMI	Kunming	63.98	278	P	P	15 16 38.9	+0.7
KMI				pmax	pmax		
	comp=Z,51nm,1.0s						
KMI				pmax	pmax		
	comp=Z,2μm,14.5s						
144A	Alexander Plac	64.04	70	P	P	15 16 38.1	-0.1
	baz=316						
Y46A	Houston	64.05	68	P	P	15 16 37.8	-0.5
	baz=316,SNR=12						
GENI	Genyem	64.34	227	P	P	15 16 41.3	+1.0
	comp=Z,149nm,1.1s						
145A	Houston Renfro	64.35	69	P	P	15 16 39.9	-0.3
	baz=316						
Z46A	Louisville	64.50	68	P	P	15 16 41.0	-0.2
	baz=316,SNR=6.3						
Y47A	UCPARC, Winfie	64.62	67	P	P	15 16 41.5	-0.5
	baz=316,SNR=17						
344A	Westbrook Farm	64.70	71	P	P	15 16 42.7	+0.1
	baz=316						
SWET	Sewanee	64.77	65	eP	P	15 16 42.1	-0.9
	comp=Z,27nm,0.8s						
245A	Little AP, Sta	64.78	70	P	P	15 16 42.9	-0.2
	baz=316						
146A	Union	64.83	69	P	P	15 16 43.4	0.0
	baz=316						
Z47A	Carrollton	65.00	68	P	P	15 16 43.9	-0.6
	baz=316,SNR=16						
TZTN	Tazewell	65.14	62	eP	P	15 16 45.6	+0.2
	comp=Z,66nm,0.9s						
Z48A	Northport	65.17	67	P	P	15 16 44.8	-0.7
	baz=317,SNR=14						
147A	Livingston	65.26	68	P	P	15 16 45.9	-0.3
	baz=317,SNR=14						
CPCT	Cooper Cave	65.39	64	eP	P	15 16 46.3	-0.7
	comp=Z,36nm,0.6s						
247A	Quitman	65.51	69	P	P	15 16 47.6	-0.2
	baz=317						
KSPA	Keystone Colle	65.58	54	eP	P	15 16 43.0	-5.1
	comp=Z,167nm,1.0s						
TKL	Tuckaleechee C	65.66	63	eP	P	15 16 48.1	-0.6
TKL				pmax	pmax		
	comp=Z,123nm,0.9s						
TKL	Tuckaleechee C	65.66	63	eP	P	15 16 48.1	-0.6
	comp=Z,123nm,0.9s						
FIA0	FINESS Array S	65.74	347	eP	P	15 16 47.7	-1.1
FIA0	FINESS Array S	65.74	347	eP	P	15 16 47.7	-1.1
FINES	FINESS Array B	65.74	347	P	P	15 16 47.7	-1.1
	comp=Z,9.8nm,0.7s,baz=17,slow=6.8,SNR=15						
248A	Dixon Mills	65.99	68	P	P	15 16 50.6	-0.3
	baz=317,SNR=8.4						
347A	Saraland	66.03	69	P	P	15 16 51.3	+0.2
	baz=317,SNR=5.8						
348A	Jackson	66.39	69	P	P	15 16 53.2	-0.3
	baz=317						
447A	Lucedale	66.40	70	P	P	15 16 53.3	-0.3
	baz=317						
LUPA	Lehigh Univers	66.49	54	eP	P	15 16 53.6	-0.4
	comp=Z,30nm,0.6s						
ODNJ	Ogdensburg	66.52	53	eP	P	15 16 53.6	-0.5
ODNJ				ePcP	sP	15 17 18.6	+0.9
448A	Bay Minette	66.77	69	P	P	15 16 56.0	+0.1
	baz=317						
AAK	Ala-Archa	67.00	310	P	P	15 16 57.5	0.0
	comp=Z,8.3nm,0.5s,baz=105,slow=5.0,SNR=12						
BRAL	Brewton	67.07	69	eP	P	15 16 58.5	+0.7
	comp=Z,200nm,0.9s						
SWI	Sorong	67.23	237	P	P	15 16 58.7	-0.2
	comp=Z,119nm,0.9s						
NC204	NORSAR Array S	67.35	355	eP	P	15 16 58.5	-0.7
KMSC	Kings Mountain	67.39	62	P	P	15 16 59.3	-0.5
	baz=318,SNR=22						
KMSC	Kings Mountain	67.39	62	eP	P	15 16 59.7	-0.1
	comp=Z,110nm,0.8s						
NC405	NORSAR Array S	67.46	355	eP	P	15 16 59.7	-0.1
NB201	NORSAR Array S	67.55	355	eP	P	15 17 00.0	-0.4
NB2	NORSAR Subarra	67.56	355	P	P	15 16 59.7	-0.8
	comp=Z,7.9nm,0.7s,baz=5.9,slow=6.5						
NB200	NORSAR Array S	67.56	355	eP	P	15 17 00.1	-0.3
NOA	NORSAR Array B	67.56	355	P	P	15 17 00.1	-0.3
	comp=Z,8.7nm,0.8s,baz=3.0,slow=6.7,SNR=20						
LSA	Lhasa	67.66	290	eP	P	15 17 03.5	+1.4
LSA				pmax	pmax		
	comp=Z,130nm,0.8s						
LSA	Lhasa	67.66	290	eP	P	15 17 03.5	+1.4
	comp=Z,130nm,0.8s						
AKTO	Aktyubinsk	67.75	325	P	P	15 17 01.6	-0.2
	comp=Z,16nm,0.8s,baz=72,slow=12,SNR=13						
HFS	Hagfors	68.31	354	P	P	15 17 04.4	-0.7
	comp=Z,7.2nm,0.5s,baz=29,slow=3.4,SNR=21						
FAKI	Fak Fak	68.47	235	P	P	15 17 06.5	-0.2
	comp=Z,54nm,0.8s,comp=Z,2μm						
FAKI	Fak Fak	68.47	235	eP	P	15 17 06.1	-0.7
	comp=Z,42nm,0.8s						
KSH	Kashi	68.65	307	P	P	15 17 13.7	+5.9
KSH				ep	sP	15 17 30.4	-1.0
KSH				ePP	PP	15 19 49.7	+10
KSH				S	S	15 26 11.6	+5.8
KSH				ScS	ScS	15 27 05.8	+3.5
KSH				pmax	pmax		
	comp=Z,24nm,0.9s						
KSH				pmax	pmax		
	comp=Z,690nm,5.3s						
KSH				LR	LR		
	comp=Z,2μm,11.3s						
KSH				LR	LR		
	comp=Z,2μm,13.1s						
KSH				LR	LR		
	comp=Z,2μm,14.3s						
PANO	Nakornpanom	68.72	271	P	P	15 17 08.6	+0.3
	comp=Z,40nm,0.9s						
TIGA	Tifton	68.86	66	P	P	15 17 08.7	-0.3
	baz=318						
NONG	Nongkai	68.95	273	P	P	15 17 09.8	+0.1
	comp=Z,64nm,0.8s						
CRAI	Chiangrai	69.06	276	P	P	15 17 10.9	+0.5
	comp=Z,615nm,1.3s,comp=Z,102μm						
SKNT	Sakolnakorn	69.25	271	P	P	15 17 11.4	-0.2
	comp=Z,72nm,0.9s						
MYLDM	Lahad Datu	69.43	252	eP	P	15 17 13.9	+1.2
	comp=Z,52nm,1.0s						
OBN	Obninsk	69.86	339	P	P	15 17 14.1	-0.7
	comp=Z,12nm,0.4s,baz=328,slow=8.0,SNR=6.0						
OBN	Obninsk	69.86	339⇑	eP	P	15 17 15.1	+0.3
OBN				pmax	pmax		
	comp=Z,17nm,0.7s						
OBN	Obninsk	69.86	339	eP	P	15 17 13.7	-1.1
	comp=Z,159nm,1.7s						
CMAI	Chiengmai2	70.10	277	P	P	15 17 17.6	+0.6
	comp=Z,32nm,1.0s,comp=Z,6μm						
KKM	Kota Kinabalu	70.11	254	eP	P	15 17 17.1	+0.1
	comp=Z,30nm,1.0s						
SHL	Shillong	70.28	286⇑	iP	P	15 17 14.0	-4.1
KHON	Khomkaen	70.45	272	P	P	15 17 19.0	0.0
	comp=Z,39nm,0.8s,comp=Z,452nm						
LAMP	Lampang	70.79	276	P	P	15 17 21.9	+0.8
	comp=Z,9.4nm,1.0s						
UTTA	Uttaradit	70.81	274	P	P	15 17 21.1	0.0
	comp=Z,29nm,0.9s,comp=Z,208nm						
CMMT	Chiang Mai	71.00	276	P	P	15 17 22.7	+0.4
	comp=Z,22nm,1.3s						
CHTO	Chiang Mai	71.00	276	P	P	15 17 22.8	+0.5
	comp=Z,97nm,1.3s						
CHTO	Chiang Mai	71.00	276	eP	P	15 17 21.9	-0.4
CHTO				pmax	pmax		
	comp=Z,19nm,0.9s						
CHTO	Chiang Mai	71.00	276	eP	P	15 17 21.9	-0.4
	comp=Z,19nm,0.9s						
SANI	Sanana	71.04	241	P	P	15 17 23.0	+0.5
	comp=Z,33nm,0.8s						
MRSI	Marisa	71.22	246	P	P	15 17 23.0	-0.6
	comp=Z,58nm,0.9s,comp=Z,2μm						
CM31	Chiang Mai Arr	71.27	276	eP	P	15 17 24.1	+0.1
CMAR	Chiang Mai Arr	71.27	276	P	P	15 17 24.2	+0.3
	comp=Z,17nm,0.8s,baz=26,slow=6.8,SNR=64						
CM01	Chiang Mai Arr	71.29	276	eP	P	15 17 23.9	-0.1
CHAI	Chaiyaphum	71.30	272	P	P	15 17 24.1	0.0
	comp=Z,12nm,0.9s,comp=Z,157nm						
PBKT	Sadao Pong	71.43	273	P	P	15 17 25.0	+0.1
	comp=Z,40nm,0.8s						
SUKH	Sukhothai	71.58	275	P	P	15 17 26.1	+0.3
	comp=Z,8.4nm,1.0s,comp=Z,71nm						
LPSR	Galich'ya Gora	71.63	337	eP	P	15 17 25.3	-0.3
LPSR				pmax	pmax		
	comp=Z,10.0nm,1.1s						
LUWI	Luwuk	71.99	244	P	P	15 17 27.1	-1.2
	comp=Z,84nm,0.9s						
GUN	Gumba	72.07	292	eP	P	15 17 30.3	+1.2
	comp=Z,549nm,0.5s						
VRH	Novokhopyorsk	72.20	335	eP	P	15 17 27.9	-1.1
VRH				pmax	pmax		
	comp=Z,10.0nm,0.6s						
KKN	Kakani	72.50	293	eP	P	15 17 32.6	+1.1
	comp=Z,243nm,0.6s						
PKIN	Phulchoki	72.60	292	eP	P	15 17 32.8	+0.7
	comp=Z,139nm,0.6s						
SRAK	Srakaew	72.70	271	P	P	15 17 30.6	-1.9
	comp=Z,181nm,0.8s,comp=Z,1μm						
GKN	Gorkha	72.71	293	eP	P	15 17 33.6	+0.9
	comp=Z,248nm,0.7s						
DMN	Daman	72.74	293	eP	P	15 17 34.4	+1.4
	comp=Z,303nm,0.9s						
VSR	Storozhevoye	72.85	336	eP	P	15 17 32.1	-0.8
VSR				pmax	pmax		
	comp=Z,10.0nm,0.5s						
NAYO	Nakonayok	72.92	272	P	P	15 17 34.1	+0.3
	comp=Z,48nm,1.2s						
EKA	Eskdalemuir Ar	73.47	3	P	P	15 17 36.0	-0.5
	comp=Z,2.3nm,0.3s,baz=1.7,slow=5.3,SNR=23						
EKA	Eskdalemuir Ar	73.47	3	P	P	15 17 36.0	-0.5
EKA				pmax	pmax		
	comp=Z,4.0nm,0.5s						
CHBT	CHBT	73.48	270	P	P	15 17 37.9	+0.8
	comp=Z,38nm,1.4s,comp=Z,3μm						
KOLN	Koldanda	73.48	294	eP	P	15 17 38.0	+0.7
	comp=Z,166nm,0.9s						
PYUN	Piuthan	73.58	294	eP	P	15 17 38.7	+0.8
	comp=Z,395nm,1.0s						
KHLT	Khaolaem Dam	74.26	274	P	P	15 17 44.2	+2.5
	comp=Z,13nm,1.8s						
PATY	Pattaya	74.26	271	P	P	15 17 42.3	+0.6
	comp=Z,25nm,0.8s						
SRDT	SRDT	74.27	273	P	P	15 17 42.3	+0.6
	comp=Z,99nm,1.1s,comp=Z,8μm						
DZM	Mont Dzumac	74.45	195	P	P	15 17 43.1	+0.5
	comp=Z,6.3nm,0.6s,baz=31,slow=12,SNR=7.7						
TTSI	Tana Toraja	75.30	246	P	P	15 17 47.2	-0.5
	comp=Z,38nm,1.2s						
AKASG	Malin Array Be	75.53	342	P	P	15 17 47.8	-0.7
	comp=Z,6.6nm,0.3s,baz=20,slow=6.1,SNR=20						
AKBB	Malin Array Si	75.53	342	eP	P	15 17 47.1	-1.4
AKBB				pmax	pmax		
	comp=Z,20nm,0.7s						
AKBB	Malin Array Si	75.53	342	eP	P	15 17 47.0	-1.4
	comp=Z,20nm,0.7s						
KIEV	Kiev	75.54	342	eP	P	15 17 48.5	0.0
KIEV				pmax	pmax		
	comp=Z,29nm,1.0s						
KIEV	Kiev	75.54	342	eP	P	15 17 47.3	-1.2
	comp=Z,21nm,0.7s						
AK11	Malin Array Si	75.56	342	eP	P	15 17 47.8	-0.9
SPSI	Sidrap Palu	76.08	245	P	P	15 17 51.7	-0.4
	comp=Z,18nm,0.8s						
CLL	Collm	77.13	353⇓	iP	P	15 17 57.6	+0.1
	comp=Z,15nm,1.0s						
CLL				i		15 18 07.5	
CLL	Collm	77.13	353⇓	iP	P	15 17 57.6	+0.1
CLL				i		15 18 07.5	
CLL				pmax	pmax		
	comp=Z,15nm,1.0s						
CLL	Collm	77.13	353	eP	P	15 17 57.7	+0.2
	comp=Z,12nm,0.8s						
GOF	Gofitskoye	77.40	331⇑	eP	P	15 17 59.8	+0.6
BRG	Berggiesshubel	77.48	352	iP	P	15 17 59.7	+0.2
	comp=Z,13nm,1.0s						
BRG	Berggiesshubel	77.48	352	iP	P	15 17 59.7	+0.2
BRG				pmax	pmax		
	comp=Z,13nm,1.0s						
MTN	Manton Dam	77.56	230	eP	P	15 17 59.4	-1.0
	comp=Z,52nm,0.8s						
KWP	Kalwaria Pacla	77.67	346⇓	iP	P	15 18 00.9	+0.3
CTAO	Charters Tower	77.72	214	eP	P	15 18 00.9	-0.2
CTAO				pmax	pmax		
	comp=Z,110nm,0.9s						
CTAO	Charters Tower	77.72	214	eP	P	15 18 00.5	-0.7
	comp=Z,111nm,0.9s						
KRLC	Kraliky	77.99	350	eP	P	15 18 03.4	+0.9
KRLC	Kraliky	77.99	350	eP	P	15 18 03.4	+0.9
STHS	Stebnicka Huta	78.09	347	eP	P	15 18 03.6	+0.6
STHS				pmax	pmax		
	comp=Z,12nm,0.9s						
STHS	Stebnicka Huta	78.09	347	eP	P	15 18 03.6	+0.6
GEYT	Alibeck	78.19	318	P	P	15 18 03.9	+0.1
	comp=Z,7.1nm,0.8s,baz=0.0,slow=4.4,SNR=7.1						
MEM	Membach	78.21	357	P	P	15 18 04.8	+1.2
	comp=Z,8.9nm,0.9s						
BBSR	BB Station	78.26	52	eP	P	15 18 03.2	-0.9
	comp=Z,36nm,0.9s						
KOLS	Kolonicke sedl	78.41	346	eP	P	15 18 05.0	+0.2
KOLS				pmax	pmax		
	comp=Z,14nm,1.1s						
KOLS	Kolonicke s

KBZ pmax pmax
comp=Z,15nm,0.8s
DOU Dourbes 78.76 358 P P 15 18 06.7 +0.1
VRAC Vranov 78.77 350 P P 15 18 06.6 -0.1
comp=Z,11nm,0.8s,baz=12,slow=4.1,SNR=8.5
VRAC Vranov 78.77 350⇑ *i*P P 15 18 07.2 +0.5
SKLT Songkhla 78.83 267 P P 15 18 08.1 +0.6
comp=Z,29nm,0.9s
TREC Trest 78.90 351 *e*P P 15 18 07.5 +0.1
TREC Trest 78.90 351 *e*P P 15 18 07.5 +0.1
TRTT Trang 78.90 269 P P 15 18 08.6 +0.7
comp=Z,25nm,1.0s
KECS Kecovo 79.11 347 *e*P P 15 18 08.6 0.0
KECS pmax pmax
comp=Z,9.0nm,0.9s
KECS Kecovo 79.11 347 *e*P P 15 18 08.5 0.0
WLF Walferdange 79.15 357 P P 15 18 10.6 +1.8
comp=Z,11nm,1.0s
ZEI Tsey 79.19 330 *e*P P 15 18 08.5 -0.9
ZEI pmax pmax
comp=Z,93nm,1.0s
BUR08 Bucovina Ar. S 79.20 344 *e*P P 15 18 09.3 +0.1
ANN Anapa 79.22 335 *e*P P 15 18 08.5 -0.7
ANN pmax pmax
comp=Z,24nm,1.4s
BURAR Bucovina Array 79.22 344⇑ *i*P P 15 18 08.4 -0.9
KHC Kasperske Hory 79.24 352 *e*P P 15 18 10.0 +0.7
KHC Kasperske Hory 79.24 352 *e*P P 15 18 09.2 -0.1
KHC pmax pmax
comp=Z,5.0nm,0.9s
KHC Kasperske Hory 79.24 352 *e*P P 15 18 09.2 -0.1
comp=Z,4.7nm,0.9s
VYHS Vyhne 79.31 348 *e*P P 15 18 10.7 +1.0
VYHS pmax pmax
comp=Z,8.0nm,1.1s
VYHS Vyhne 79.31 348 *e*P P 15 18 10.7 +1.0
GERES GERESS Array B 79.51 352 P P 15 18 10.6 -0.3
comp=Z,5.7nm,0.7s,baz=36,slow=7.1,SNR=9.1
GERES GERESS Array B 79.51 352 P P 15 18 10.6 -0.3
GERES pmax pmax
comp=Z,4.0nm,0.6s
PKDT Phuket 79.70 270 P P 15 18 12.9 +0.6
comp=Z,88nm,1.2s
PSZ Piszkesteto 79.74 348⇓ *i*P P 15 18 11.2 -0.9
LEOM Leova 79.76 342⇑ *i*P P 15 18 12.4 +0.3
CHVG Ch'k'valeri 79.81 331⇑ *i*P P 15 18 12.7 +0.2
TGUH Tegucigalpa,Un 79.82 80 *e*P P 15 18 13.4 +0.6
comp=Z,72nm,1.0s
ARCR ARCALIA 79.88 344⇓ *i*P P 15 18 13.9 +1.1
TESR Tescani 80.03 343⇑ *i*P P 15 18 13.5 -0.1
CONA Conrad Observa 80.21 350 *i* P P 15 18 15.1 +0.4
comp=Z,18nm,0.9s,SNR=5.3
KULM Kulim 80.27 266 *e*P P 15 18 15.0 -0.3
comp=Z,18nm,0.8s
BFO Black Forest 80.39 355 *i* P P 15 18 16.8 +1.2
DRGR 80.43 345⇑ *i*P P 15 18 15.6 -0.3
MOA Molln 80.45 351 *i* PcP P 15 18 19.2 +3.3
comp=Z,18nm,1.5s
AKH Akhalkalaki 80.56 329⇑ *i*P P 15 18 16.0 -0.8
VRI Vrincioaia 80.64 343⇑ *i*P P 15 18 17.4 +0.5
IPM Ipoh 80.66 265 *e*P P 15 18 16.4 -1.1
comp=Z,23nm,0.8s
PLOR Plostina 80.67 343⇓ *i*P P 15 18 18.0 +0.9
DOPR Dopca 80.78 343⇓ *i*P P 15 18 18.9 +1.2
ARSA Arzberg 80.92 350 *i* P P 15 18 18.6 +0.2
comp=Z,16nm,1.1s
MYKOM Kota Tinggi 81.00 262 *e*P P 15 18 19.4 +0.2
comp=Z,21nm,1.0s
CFR Carcaliu 81.03 341⇓ *i*P P 15 18 19.3 +0.4
RETA Reutte 81.09 354 *i* P P 15 18 20.1 +0.8
comp=Z,17nm,1.3s
MLR Muntele Rosu 81.14 343 P P 15 18 20.3 +0.6
comp=Z,3.3nm,0.5s,baz=353,slow=6.4,SNR=16
MLR Muntele Rosu 81.14 343⇑ *i*P P 15 18 20.2 +0.4
MLR Muntele Rosu 81.14 343 *e*P P 15 18 20.4 +0.6
MLR pmax pmax
comp=Z,70nm,1.4s
MLR Muntele Rosu 81.14 343 *e*P P 15 18 20.9 +1.1
comp=Z,70nm,1.4s
MOTA Moosalm 81.21 354 *i* P P 15 18 20.9 +0.8
comp=Z,3.1nm,0.5s,SNR=6.3
WTTA Wattenberg 81.25 353 *i* P P 15 18 21.1 +0.7
comp=Z,16nm,0.7s
GNI Garni 81.29 328 P P 15 18 21.7 +1.0
comp=Z,10nm,0.7s,baz=11,slow=3.4,SNR=5.6
GNI Garni 81.29 328 *e*P P 15 18 22.1 +1.4
GNI pmax pmax
comp=Z,31nm,1.2s
GNI Garni 81.29 328 *e*P P 15 18 21.7 +1.0
comp=Z,31nm,1.2s
KBA Koelnbreinsper 81.30 352 *i* P P 15 18 21.1 +0.5
comp=Z,31nm,0.6s,SNR=16
SQTA Sankt Quirin 81.33 353 *i* P P 15 18 21.0 +0.3
VOIR 81.36 344⇓ *i*P P 15 18 21.9 +1.1
ARR Arges 81.50 344⇑ *i*P P 15 18 22.0 +0.5
SOKA Soboth 81.53 351 *i* PcP P 15 18 23.0 +1.3
comp=Z,35nm,1.1s,SNR=9.1
HARR Harsova 81.54 341⇑ *i*P P 15 18 21.6 0.0
FETA Feichten 81.56 354 *i* P P 15 18 22.6 +0.6
comp=Z,20nm,1.1s
PERS Pernice 81.57 351 *i* P P 15 18 22.1 +0.2
TIRR Tirgusor 81.66 341⇑ *i*P P 15 18 22.7 +0.4
ABTA Abfaltersbach 81.70 352 *i* P P 15 18 23.3 +0.8
comp=Z,26nm,1.1s
MYKA Terra Mystica 81.72 352 *i* P P 15 18 23.3 +0.7
comp=Z,11nm,0.9s
BZS Buzias 81.75 346⇑ *i*P P 15 18 22.7 -0.1
OBKA Obir 81.75 351 *i* P P 15 18 23.6 +0.7
comp=Z,15nm,0.7s
DAVOX Davos/Dischmat 81.85 354 P P 15 18 23.6 +0.1
comp=Z,8.7nm,0.6s,baz=349,slow=14,SNR=7.7
SULR 81.87 343⇓ *i*P P 15 18 24.6 +1.2
FUORN Ofenpass-Fuorn 81.99 354 *e*P P 15 18 24.7 +0.3
comp=Z,14nm,0.9s
ROBS Robic 82.11 352 *i* P P 15 18 24.3 -0.3
TUE Stuetta 82.19 355 *e*P P 15 18 26.0 +0.6
comp=Z,46nm,1.5s
HUMR Humele 82.25 343⇑ *i*P P 15 18 25.1 -0.3
WRAB Tennant Creek 82.27 224 *c*eP P 15 18 25.8 +0.1
WRAB pmax pmax
comp=Z,26nm,1.7s
WR1 Warramunga Arr 82.28 224 *e*P P 15 18 25.0 -0.8
comp=Z,18nm,0.9s
WR1 *e*PKKPbc **PKKPbc 15 36 51.9 +0.1**
WRA Warramunga Arr 82.28 224 P P 15 18 25.0 -0.8
comp=Z,12nm,0.8s,baz=32,slow=5.9,SNR=23
WRA PKKPbc **PKKPbc 15 36 51.9 +0.1**
comp=Z,0.3nm,0.5s,baz=222,slow=2.1,SNR=8.2
WRA Warramunga Arr 82.28 224 P P 15 18 25.0 -0.8
WRA pmax pmax
comp=Z,12nm,0.8s
MTDJ Mount Denham 82.47 70 *e*P P 15 18 27.2 +0.1
comp=Z,209nm,1.5s
MDVR Moldovita 82.55 346⇑ *i*P P 15 18 28.0 +1.0
TSI Tuntungan 82.96 267 P P 15 18 29.3 -0.2
PSI Prapat 83.28 266 *e*P P 15 18 31.1 -0.2
PSI pmax pmax
comp=Z,76nm,0.8s
PSI Prapat 83.28 266 *e*P P 15 18 30.8 -0.5
comp=Z,76nm,0.8s
PLE Pljevlja 84.31 347⇑ *i*P P 15 18 34.3 -1.9
HYB Hyderabad 84.43 291⇑ *i*P P 15 18 37.0 -0.1
comp=Z,125nm,1.0s
UPM Unac-Piva 84.50 347⇑ *i*P P 15 18 33.8 -3.5
IVA Berane 84.69 347⇑ *i*P P 15 18 38.1 0.0
FITZ Fitzroy Crossi 84.75 232 *e*P P 15 18 38.8 +0.4
comp=Z,41nm,0.9s
BRY Bratogost 84.85 348⇑ *i*P P 15 18 36.6 -2.3
NKY Niksic 84.87 347⇑ *i*P P 15 18 37.7 -1.3
NKME Niksic 84.92 347 *e*P P 15 18 38.4 -0.8
PVY Plav 84.95 347⇑ *i*P P 15 18 38.5 -0.9
BR101 Keskin Array S 84.96 336 *e*P P 15 18 39.3 -0.3
BR131 Keskin Array S 84.96 336 *e*P P 15 18 39.2 -0.3
BRTR Keskin Array B 84.96 336 P P 15 18 39.3 -0.3
comp=Z,21nm,0.8s,baz=48,slow=2.8,SNR=40
BRTR Keskin Array B 84.96 336 *i* P P 15 18 39.2 -0.3
BRTR pmax pmax
comp=Z,22nm,0.9s
ANTO Ankara 85.04 336 *e*P P 15 18 40.2 +0.3
ANTO pmax pmax
comp=Z,33nm,1.0s
ANTO Ankara 85.04 336 *e*P P 15 18 40.1 +0.3
comp=Z,33nm,1.0s
BR231 Keskin MP Arra 85.07 336 *e*P P 15 18 39.6 -0.4
CEME Cevo 85.14 347⇑ *i*P P 15 18 39.4 -0.9

PDG Podgorica 85.21 347⇑ *i*P P 15 18 39.9 -0.7
TTG Podgorica 85.21 347⇑ *i*P P 15 18 39.9 -0.7
GSI Gunungsitoli 85.28 266 *e*P P 15 18 40.5 -0.8
comp=Z,40nm,0.8s
HCY Herceg Novi 85.30 348⇑ *i*P P 15 18 41.1 +0.1
BUM Brajici-Budva 85.39 347⇑ *i*P P 15 18 40.5 -1.1
DRME Dracevica, Mon 85.46 347⇑ *i*P P 15 18 40.2 -1.6
SDDR Presa de Saban 85.49 65 *e*P P 15 18 42.2 -0.2
comp=Z,19nm,0.8s
ULC Ulcinj 85.67 347⇑ *i*P P 15 18 41.1 -1.8
AS01 Alice Springs 85.73 223 *e*P P 15 18 43.4 +0.1
AS31 Alice Springs 85.75 223 *e*P P 15 18 43.2 -0.2
comp=Z,6.0nm,0.8s
ASAR Alice Springs 85.75 223 P P 15 18 43.6 +0.3
comp=Z,14nm,0.8s,baz=15,slow=9.9,SNR=5.0
ASAR PKKPbc **PKKPbc 15 36 45.0 +1.2**
comp=Z,0.5nm,0.7s,baz=204,slow=1.7,SNR=7.7
ASAR Alice Springs 85.75 223 P P 15 18 43.6 +0.3
ASAR pmax pmax
comp=Z,18nm,0.8s
AQU L'Aquila 85.98 351 *e*P P 15 18 45.4 +0.9
AQU pmax pmax
comp=Z,57nm,1.0s
AQU L'Aquila 85.98 351 *e*P P 15 18 45.4 +0.9
comp=Z,57nm,1.0s
POO Poona 86.25 295⇓ *i*P P 15 18 43.0 -3.2
comp=Z,39nm,1.0s
PBRG Braganca 86.80 6 *e*LR LR 15 45 10.8
comp=Z,5μm,20.0s
POLO Lamas de Olo 87.15 7 *e*P P 15 18 49.8 -0.5
POLO Lamas de Olo 87.15 7 *e*LQ LQ 15 40 17.9
POLO *e*LR LR 15 45 12.5
comp=Z,2μm,20.0s
PVRL Vila Real 87.25 7 *e*P P 15 18 50.6 -0.1
MVO Moncorvo 87.42 7 *e*P P 15 18 50.9 -0.6
MVO Moncorvo 87.42 7 *e*LQ LQ 15 42 31.1
MVO *e*LR LR 15 45 29.4
comp=Z,6μm,20.0s
PVIS Viseu 87.80 7 *e*P P 15 18 52.7 -0.6
MTE Manteigas 88.14 7 *e*P P 15 18 54.6 -0.4
MTE Manteigas 88.14 7 *e*LR LR 15 45 20.6
comp=Z,5μm,20.0s
PCBR Castelo Branco 88.70 7 *e*P P 15 18 56.6 -0.9
TIP Timpagrande 88.74 348⇑ *i*P P 15 18 57.4 -0.5
TIP Timpagrande 88.74 348 *e*P P 15 18 57.1 -0.8
comp=Z,23nm,1.0s
ES19 SONSECA Array 89.06 4 *e*P P 15 18 58.2 -1.1
SJG San Juan 89.06 62 P P 15 18 60.0 +0.4
comp=Z,36nm,0.7s,baz=358,slow=2.1,SNR=13
SJG San Juan 89.06 62 *e*P P 15 19 00.6 +1.1
SJG pmax pmax
comp=Z,48nm,0.9s
ESDC Sonseca Array 89.08 4 P P 15 18 58.1 -1.3
comp=Z,5.0nm,0.6s,baz=0.8,slow=4.3,SNR=11
ESLA Sonseca Array 89.08 4 *e*P P 15 18 58.5 -0.9
comp=Z,12nm,1.1s
PMRV Marv??o 89.11 7 *e*P P 15 18 58.5 -1.0
PMRV Marv??o 89.11 7 *e*LQ LQ 15 40 50.2
PMRV *e*LR LR 15 46 07.8
comp=Z,4μm,20.0s
PMTG Montargil 89.41 8 *e*P P 15 18 59.6 -1.3
PMTG Montargil 89.41 8 *e*LQ LQ 15 41 06.4
PMTG *e*LR LR 15 46 00.9
comp=Z,4μm,20.0s
PMAFR Mafra 89.43 8 *e*LR LR 15 46 39.9
comp=Z,6μm,20.0s
PESTR Estremoz 89.66 7 *e*P P 15 19 00.9 -1.2
PESTR Estremoz 89.66 7 *e*LR LR 15 46 18.8
comp=Z,3μm,20.0s
CEL Celeste 89.76 349 *e*P P 15 19 00.2 -2.4
comp=Z,37nm,1.0s
STKA Stephens Creek 90.17 213 P P 15 19 04.9 +0.7
comp=Z,26nm,0.8s,baz=357,slow=6.0,SNR=39
STKA Stephens Creek 90.17 213 *e*P P 15 19 04.8 +0.7
comp=Z,6.2nm,0.8s
PNCL Nicolau / Gran 90.33 8 *e*P P 15 19 02.0 -3.2
PNCL Nicolau / Gran 90.33 8 *e*LQ LQ 15 41 38.6
PNCL *e*LR LR 15 46 35.8
comp=Z,5μm,18.0s
PBAR Barrancos 90.39 7 *e*P P 15 19 04.6 -0.9
comp=Z,55nm,1.8s
PBAR Barrancos 90.39 7 *e*LQ LQ 15 39 29.5
PBAR *e*LR LR 15 45 39.0
comp=Z,13μm,20.0s
PBEJ Beja 90.47 7 *e*P P 15 19 05.0 -0.9
MMAI Mount Meron Ar 90.77 332 P P 15 19 06.5 -0.9
comp=Z,5.1nm,0.7s,baz=17,slow=6.1,SNR=7.4
SMRT St. Maarten 90.79 59 *e*P P 15 19 07.8 +0.2
comp=Z,112nm,0.8s
PCVE Castro Verde 90.85 8 *e*P P 15 19 07.1 -0.5
PCVE Castro Verde 90.85 8 *e*LQ LQ 15 42 10.9
PCVE *e*LR LR 15 46 32.5
comp=Z,4μm,18.0s
PVAQ Vaqueiros 91.10 7 *e*LR LR 15 45 53.8
comp=Z,7μm,18.0s
ASF Jabal al Asfar 91.11 331 P P 15 19 08.2 -0.9
comp=Z,6.4nm,0.9s,baz=13,slow=3.4,SNR=7.9
PALK Pallekele 91.12 283 *i* P P 15 19 11.4 +2.2
MORF Marmelete 91.12 8 *e*LR LR 15 45 13.7
comp=Z,4μm,18.0s
PBDV Barranco-do-Ve 91.24 8 *e*LR LR 15 45 44.8
comp=Z,7μm,20.0s
PFVI Vila Bisbo 91.28 8 *e*LQ LQ 15 42 51.3
PFVI *e*LR LR 15 45 24.9
comp=Z,4μm,20.0s
KEST Kesra 92.89 354 P P 15 19 16.6 -0.5
comp=Z,11nm,0.9s,baz=261,slow=2.2,SNR=6.0
TOA1 Torodi Ar. Sit 115.63 360 *e*PKPdf PKPdf 15 24 45.6 -0.8
TOA1 *e*PKKPbc **PKKPbc 15 35 16.6 -0.4**
TOA0 Torodi Ar. Sit 115.64 360 *e*PKPdf PKPdf 15 24 43.1 -3.3
TOA0 *e*PKPdf **PKiKP 15 24 45.4 -1.0**
TORD Torodi Ar. Bea 115.64 360 PKP PKPdf 15 24 45.6 -0.8
comp=Z,6.7nm,0.8s,baz=344,slow=2.4,SNR=21
TORD PKKPbc **PKKPbc 15 35 16.6 -0.4**
comp=Z,1.4nm,0.9s,baz=199,slow=1.9,SNR=5.2
KMBO Kilima Mbogo 121.56 317 PKP PKPdf 15 24 57.5 -0.7
comp=Z,7.2nm,0.8s,baz=7.5,slow=2.8,SNR=13
DBIC Dimbokro 121.80 8 PKP PKPdf 15 24 57.8 -0.5
comp=Z,14nm,0.5s,baz=356,slow=2.5,SNR=43
DBIC Dimbokro 121.80 8 *e*PKPdf PKPdf 15 24 57.7 -0.6
TIC Toumodi 121.81 8 *e*PKIKP PKPdf 15 24 57.7 -0.7
KIC Kosan Boka 122.12 7 *e*PKIKP PKPdf 15 24 58.3 -0.6
comp=Z,64nm,0.9s
LIC Lamto 122.23 8 *e*PKIKP PKPdf 15 24 58.3 -0.8
comp=Z,24nm,0.6s
CPUP Villa Florida 129.31 84 PKP PKPdf 15 25 11.8 -0.4
comp=Z,4.3nm,0.9s,baz=278,slow=2.1,SNR=3.7
VNDA Vanda 129.33 185 PKP PKPdf 15 25 11.6 +0.9
comp=Z,1.5nm,1.0s,baz=314,slow=3.5,SNR=4.2
PLCA Paso Flores 130.74 107 PKP PKPdf 15 25 14.8 +0.1
comp=Z,5.8nm,1.0s,baz=272,slow=6.9,SNR=3.9
QSPA South Pole Qui 141.24 180 *e*PKPpre PKPpre 15 25 26.6
QSPA *e*PKPdf **PKiKP 15 25 35.8 -0.2**
TSUM Tsumeb 145.41 333 PKPbc PKPbc 15 25 42.2 +0.1
comp=Z,59nm,0.9s,baz=0.5,slow=5.8,SNR=75
TSUM Tsumeb 145.41 333 *e*PKPdf PKPdf 15 25 42.0 -0.2
TSUM *e*PKPdf **PKPbc 15 25 42.2 +0.1**
MAW Mawson 146.74 218 PKPbc PKPbc 15 25 44.4 -0.2
comp=Z,75nm,0.9s,baz=96,slow=3.6,SNR=68
MAW Mawson 146.74 218 *e*PKPdf PKPdf 15 25 42.7 +0.1
MAW *e*PKPbc **PKPbc 15 25 44.9 +0.4**
LBTB Lobatse 147.84 316 *e*PKPbc PKPbc 15 25 49.7 +0.7
comp=Z,181nm,0.8s,baz=43,slow=1.5,SNR=60
LBTB Lobatse 147.84 316 *e*PKPbc PKPbc 15 25 49.3 +0.3
BOSA Boshof 151.10 313 PKPbc PKPbc 15 25 57.2 +0.2
comp=Z,97nm,0.8s,baz=20,slow=1.7,SNR=41
BOSA Boshof 151.10 313 *e*PKPbc PKPbc 15 25 56.9 -0.1
SYO Syowa Base 154.91 212⇓ *e*PKPdf PKPdf 15 25 52.8 -2.4
VNA3 Neumayer Olymp 159.52 170 P PKPab 15 26 38.7 -0.9
SNAA Sanae 159.65 176 P PKPab 15 26 38.7 -1.5
VNA2 Neumayer--Watz 160.06 171 P PKPab 15 26 41.4 -0.5
baz=175,slow=2.3
VNA1 Neumayer--Stat 160.24 170 P PKPab 15 26 41.9 -0.8

*ISCJB **05** 15:06:22.8±0.2,2.77N±0.03×128.63E±0.04,h250km,*
mb4.9/67,Error ellipse: s-maj=6.5km s-min=3.9km
az=154.3
*NEIC **05** 15:06:22.5±0.8,2.80N×128.67E,h230km±8km,mb5.1/62,*
Error ellipse: s-maj=5.7km s-min=3.4km az=63.0
*IDC **05** 15:06:23.2±2.0,2.75N×128.60E,h238km±20km,mb4.2/15,*
mb1 4.3/15,mb1mx3.9/57,mbtmp4.7/15,Error ellipse:
s-maj=22.7km s-min=9.0km az=68.0
ISC 05 15:06:24.1±0.4,**2.75N**±0.05×**128.54E**±0.06,**h250**km,**n99,**

σ1$57/104,**mb4.9**/66,**2C-1D,Halmahera**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GSPH	**General Santos**	**4.88**	**313**	⇓ *i*P	**Pn**	**15 07 39.8**	**+1.2**
BIPH	**Bislig**	**5.81**	**338**	⇑ *i*P	**Pn**	**15 07 50.2**	**+0.3**
BIPH				*i* S	**S**	**15 08 51.1**	**-7.5**
CTBH	**Cotabato--PC H**	**6.16**	**316**	⇑ *e*P	**Pn**	**15 07 51.0**	**-3.3**
FAKI	**Fak Fak**	**6.75**	**147**	*e*Pn	**Pn**	**15 08 00.0**	**-1.7**
LUWI	**Luwuk**	**6.89**	**237**	*e*Pn	**Pn**	**15 08 02.6**	**-0.8**
LUWI				*e*S	**S**	**15 09 17.0**	**-6.2**
KKM	**Kota Kinabalu**	**12.71**	**285**	*e*Pn	**Pn**	**15 09 16.6**	**-0.1**
MTN	**Manton Dam**	**15.71**	**171**	*e*P	**P**	**15 09 50.7**	**-1.1**
162nm,1.7s							
SBUM	**Sibu**	**16.31**	**269**	*e*P	**Pn**	**15 10 01.2**	**+1.2**
58nm,0.8s							
JAGI	**Jajag, Banyuwa**	**18.17**	**232**	*e*P	**Pn**	**15 10 20.3**	**-1.6**
40nm,0.9s							
KSM	**Kuching**	**18.26**	**266**	*e*P	**Pn**	**15 10 21.5**	**-1.5**
66nm,1.0s							
GUMO	**Guam**	**19.40**	**55**	*e*P	**Pn**	**15 10 31.5**	**-4.8**
289nm,1.5s							
UGM	**Wanagama**	**20.86**	**239**	*e*P	**P**	**15 10 48.9**	**+1.4**
289nm,1.4s							
FITZ	**Fitzroy Crossi**	**20.92**	**188**	P	**P**	**15 10 47.9**	**-0.1**
9.4nm,0.5s,baz=24,slow=11,SNR=6.6							
FITZ	**Fitzroy Crossi**	**20.92**	**188**	*e*P	**P**	**15 10 47.8**	**-0.2**
31nm,1.0s							
TWG	**Pinlang**	**21.22**	**341**	*e*P	**P**	**15 10 48.6**	**-2.4**
96nm,0.7s							
YULB	**Yu-li**	**21.68**	**342**	*e*P	**P**	**15 10 52.1**	**-3.2**
43nm,1.5s							
TPUB	**Ta-pu**	**21.82**	**340**	*e*P	**P**	**15 10 55.0**	**-1.5**
30nm,0.7s							
COEN	**Coen**	**22.05**	**139**	*e*P	**P**	**15 10 57.8**	**-1.0**
127nm,1.9s							
SSLB	**Suanglung**	**22.16**	**341**	*e*P	**P**	**15 10 58.7**	**-1.0**
18nm,0.8s							
YOJ	**Yonaguni jima**	**22.23**	**347**	*e*P	**P**	**15 10 57.4**	**-2.9**
230nm,1.7s							
NACB	**Ninganchiao**	**22.33**	**343**	*e*P	**P**	**15 11 01.2**	**0.0**
19nm,0.8s							
YHNB	**Yeheng**	**22.86**	**343**	*e*P	**P**	**15 11 06.5**	**+0.4**
28nm,0.8s							
CISI	**Cisompet, Garu**	**23.07**	**244**	*e*P	**P**	**15 11 08.9**	**+0.7**
58nm,0.6s							
TATO	**Taipei**	**23.11**	**344**	*e*P	**P**	**15 11 08.1**	**-0.2**
253nm,1.9s							
WRAB	**Tennant Creek**	**23.26**	**166**	*e*P	**P**	**15 11 10.4**	**+0.7**
159nm,1.8s							
WR1	**Warramunga Arr**	**23.26**	**166**	*e*P	**P**	**15 11 09.3**	**-0.5**
105nm,1.5s							
WR1				*e*ScP	**ScP**	**15 18 05.8**	**+1.9**
WRA	**Warramunga Arr**	**23.26**	**166**	P	**P**	**15 11 09.3**	**-0.5**
9.2nm,0.6s,baz=342,slow=10,SNR=13							
WRA				ScP	**ScP**	**15 18 05.8**	**+1.9**
0.8nm,0.5s,baz=343,slow=3.0,SNR=6.4							
WB2	**Warramunga Arr**	**23.27**	**166**	*e*P	**P**	**15 11 10.6**	**+0.8**
39nm,1.0s							
MYKOM	**Kota Tinggi**	**24.69**	**268**	*e*P	**P**	**15 11 24.8**	**+2.0**
20nm,0.8s							
MBWA	**Marble Bar**	**25.28**	**200**	*e*P	**P**	**15 11 28.2**	**+0.2**
104nm,1.5s							
XMIS	**Christmas Isla**	**26.31**	**240**	*e*P	**P**	**15 11 37.3**	**0.0**
119nm,1.4s							
MNAI	**Manna**	**26.52**	**255**	*e*P	**P**	**15 11 40.1**	**+0.8**
560nm,1.4s							
AS31	**Alice Springs**	**26.77**	**169**	*e*P	**P**	**15 11 41.0**	**-0.3**
5.0nm,0.8s							
ASAR	**Alice Springs**	**26.78**	**169**	P	**P**	**15 11 41.0**	**-0.3**
6.3nm,0.4s,baz=352,slow=7.1,SNR=10							
ASAR				ScP	**ScP**	**15 18 15.8**	**+1.9**
1.0nm,0.5s,baz=345,slow=2.8,SNR=8.9							
AS01	**Alice Springs**	**26.78**	**169**	*e*P	**P**	**15 11 41.4**	**-0.1**
IPM	**Ipoh**	**27.51**	**274**	*e*P	**P**	**15 11 49.2**	**+1.2**
12nm,0.6s							
KULM	**Kulim**	**27.93**	**276**	*e*P	**P**	**15 11 52.8**	**+1.1**
19nm,1.0s							
JNU	**Nakatsue**	**30.29**	**4**	*e*P	**P**	**15 12 12.2**	**-0.2**
100nm,2.0s							
GSI	**Gunungsitoli**	**30.98**	**268**	*e*P	**P**	**15 12 19.3**	**+0.7**
65nm,1.2s							
LHMI	**Lhok Sumawe**	**31.61**	**275**	*e*P	**P**	**15 12 26.2**	**+2.1**
88nm,0.8s							
ENH	**Enshi**	**32.78**	**329**	*e*P	**P**	**15 12 34.8**	**+0.7**
118nm,1.8s							
CM01	**Chiang Mai Arr**	**32.89**	**300**	*e*P	**P**	**15 12 37.6**	**+2.4**
CM31	**Chiang Mai Arr**	**32.92**	**300**	*e*P	**P**	**15 12 37.9**	**+2.4**
CMAR	**Chiang Mai Arr**	**32.92**	**300**	P	**P**	**15 12 37.5**	**+2.1**
12nm,0.8s,baz=123,slow=7.6,SNR=42							
CHTO	**Chiang Mai**	**33.07**	**301**	*e*P	**P**	**15 12 38.6**	**+1.9**
23nm,0.8s							
INU	**Inuyama**	**33.37**	**13**	*e*P	**P**	**15 12 39.3**	**+0.2**
24nm,0.8s							
KS15	**Wonju Array Si**	**34.53**	**359**	*e*P	**P**	**15 12 49.8**	**+0.8**
KSAR	**Wonju Array Be**	**34.53**	**359**	P	**P**	**15 12 49.6**	**+0.7**
KSRS	**Korea Array**	**34.54**	**359**	P	**P**	**15 12 49.6**	**+0.6**
6.1nm,0.7s,baz=175,slow=9.9,SNR=17							
BBOO	**Buckleboo**	**36.08**	**169**	*e*P	**P**	**15 13 02.3**	**0.0**
38nm,1.4s							
STKA	**Stephens Creek**	**36.61**	**161**	P	**P**	**15 13 06.7**	**-0.1**
8.6nm,0.4s,baz=339,slow=8.9,SNR=23							
STKA	**Stephens Creek**	**36.61**	**161**	*e*P	**P**	**15 13 06.7**	**-0.1**
2.3nm,0.8s							
NWAO	**Narrogin (SRO)**	**37.07**	**196**	*e*P	**P**	**15 13 11.1**	**+0.6**
90nm,1.5s							
ARMA	**Armidale**	**39.67**	**148**	*e*P	**P**	**15 13 32.8**	**+0.4**
68nm,1.6s							
LSA	**Lhasa**	**44.44**	**311**	*e*P	**P**	**15 14 13.0**	**+1.7**
78nm,1.8s							
DZM	**Mont Dzumac**	**44.50**	**126**	P	**P**	**15 14 11.7**	**+0.3**
5.4nm,0.6s,baz=274,slow=15,SNR=8.1							
SONA1	**Songino Array**	**48.81**	**340**	*e*P	P	15 14 35.5	-8.9
TLY	**Talaya**	**53.03**	**341**	*e*P	**P**	**15 15 17.6**	**+2.1**
PEA0B	**Petropavlovsk-**	**55.67**	**21**	*e*P	**P**	**15 15 35.2**	**+0.7**
78nm,1.6s							
YAK	**Yakutsk**	**59.14**	**1**	*e*P	**P**	**15 15 59.4**	**+1.0**
22nm,0.7s							
MK01	**Makanchi Array**	**59.37**	**325**	*e*P	**P**	**15 16 01.3**	**+1.0**
MK31	**Makanchi Array**	**59.38**	**325**	*e*P	**P**	**15 16 01.4**	**+1.0**
MK32	**Makanchi Array**	**59.38**	**325**	*e*P	**P**	**15 16 01.2**	**+0.8**
MKAR	**Makanchi Array**	**59.38**	**325**	P	**P**	**15 16 01.2**	**+0.8**
9.0nm,0.6s,baz=116,slow=8.4,SNR=52							
WKZ	**Wanaka**	**59.53**	**148**	*e*P	**P**	**15 16 02.6**	**+1.2**
254nm,1.9s							
MAKZ	**Makanchi**	**59.57**	**325**	*e*P	**P**	**15 16 02.7**	**+1.0**
22nm,1.3s							
WHZ	**Wether Hill Ro**	**59.68**	**149**	*e*P	**P**	**15 16 02.1**	**-0.2**
72nm,1.5s							
THZ	**Tophouse**	**59.83**	**143**	*e*P	**P**	**15 16 03.9**	**+0.3**
126nm,1.8s							
LBZ	**Lake Benmore**	**59.87**	**147**	*e*P	**P**	**15 16 04.5**	**+0.8**
26nm,0.9s							
RPZ	**Rata Peaks**	**59.93**	**146**	*e*P	**P**	**15 16 04.9**	**+0.8**
93nm,1.8s							
LTZ	**Lake Taylor**	**60.06**	**144**	*e*P	**P**	**15 16 06.2**	**+1.1**
131nm,1.9s							
OXZ	**Oxford**	**60.26**	**145**	*e*P	**P**	**15 16 06.8**	**+0.5**
101nm,1.9s							
OXZ				*e*PcP	**PcP**	**15 16 48.1**	**-0.9**
ODZ	**Otahua Downs**	**60.55**	**147**	*e*P	**P**	**15 16 08.8**	**+0.5**
84nm,1.8s							
KHZ	**Kahutara**	**60.60**	**143**	*e*P	**P**	**15 16 08.7**	**+0.1**
164nm,1.8s							
URZ	**Urewera**	**60.60**	**137**	*e*P	**P**	**15 16 08.6**	**-0.1**
41nm,1.6s							
BKZ	**Black Stump Fm**	**60.66**	**139**	*e*P	**P**	**15 16 09.7**	**+0.5**
22nm,0.9s							
SNZO	**South Karori**	**60.67**	**141**	*e*P	**P**	**15 16 08.8**	**-0.4**
67nm,1.5s							
MQZ	**McQueen's Vall**	**60.84**	**145**	*e*P	**P**	**15 16 11.2**	**+0

KBL	Kabul	63.55	307	*e*P		P		15 16 29.3	+0.6
	81nm,1.4s								
KKAR	Karatay Array	65.17	317	*e*P		P		15 16 39.4	+0.6
TIXI	Tiksi	68.80	0	P		P		15 17 01.1	+0.2
	3.9nm,0.4s,baz=153,slow=6.1,SNR=9.3								
TIXI	Tiksi	68.80	0	*e*P		P		15 17 01.1	+0.2
	18nm,1.1s								
BRVK	Borovoye	69.19	327	*e*P		P		15 17 04.4	+0.6
	15nm,0.7s								
WSAR	Wadi Sarin	70.47	294	P		P		15 17 12.3	+0.1
	3.6nm,0.8s,baz=135,slow=7.1,SNR=3.6								
PAF	Port-aux-Franc	72.13	216	*e*P		P		15 17 22.7	+1.3
	796nm,1.7s								
GEYT	Alibeck	72.91	309	P		P		15 17 27.2	+0.8
	2.6nm,0.5s,baz=147,slow=3.5,SNR=4.2								
ARA0	ARCESS Array S	91.98	340	*e*P		P		15 19 03.7	-0.5
ARCES	ARCESS Array B	91.98	340	P		P		15 19 03.7	-0.5
	3.1nm,0.8s,baz=83,slow=5.8,SNR=9.6								
HFS	Hagfors	99.71	333	P		Pdif		15 19 38.9	-0.5
	0.8nm,0.4s,baz=76,slow=6.1,SNR=4.1								
AAM	Ann Arbor	126.52	29	*e*PKPpre		PKPpre		15 24 47.5	

IDC 05 15:06:36.9±597.0, 47°35N×48°42E, h0km, Error ellipse: s-maj=221.6km s-min=136.6km az=48.0, Western Kazakhstan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I31KZ	AKTYUBINSK INF	7.04	61	*i*		15 48 50.0	
	baz=249,slow=327,SNR=3.8						
I43RU	DUBNA INFRASONI	1.63	328	*i*		16 21 20.0	
	baz=140,slow=312,SNR=0.5						
I46RU	ZALESOVO INFRA	23.80	60	*i*		17 32 40.0	
	baz=267,slow=329,SNR=0.9						

*IDC **05** 15:08:14.3±2.0, 38°07N×144°23E, h0km, mb4.4/2, mb1 4.4/6, mb1mx3.9/62, mbtmp4.5/6, ML4.1/4, Error ellipse: s-maj=49.1km s-min=29.5km az=88.0*
*ISCJB **05** 15:08:17.5±0.8, 38°22N±0°04×144°07E±0°06, h33km, mb4.5/2, Error ellipse: s-maj=7.1km s-min=5.7km az=12.4*
*JMA **05** 15:08:18.1±0.3, 38°19N×143°95E, h29km, M4.1*

ISC 05 15:08:17.5±1.2, 38°16N±0°05×144°16E±0°09, h35km, n24, σ1°79/37, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	2.15	296	P	Pn	15 08 51.1	+0.2
OFUJ				*e*S	Sn	15 09 16.0	-0.4
JIO	Ouri	2.23	279	P	Pn	15 08 51.7	-0.2
JIO				S	Sn	15 09 17.2	-0.9
JMK	Ichinoseki	2.44	290	P	Pn	15 08 55.3	+0.6
JTH	Tanohata	2.52	316	S	Sn	15 09 24.0	-1.4
JOM	Ohasama	2.59	301	P	Pn	15 08 57.8	+0.9
JMM	Marumori	2.67	265	P	Pn	15 08 58.4	+0.4
JMM				S	Sn	15 09 27.9	-1.2
JFK	Kawauchi	2.72	254	P	Pn	15 08 58.5	-0.1
JOU	Okura	2.76	275	P	Pn	15 09 00.4	+1.2
JOU				S	Sn	15 09 30.9	-0.3
JANG	Nango	3.02	318	P	Pn	15 09 03.8	+1.1
JANG				S	Sn	15 09 35.8	-1.8
JRG	Rokugo	3.02	295	P	Pn	15 09 04.4	+1.7
JRG				*e*S	Sn	15 09 38.2	+0.5
JYK	Kaneyama	3.07	286	P	Pn	15 09 04.8	+1.3
JYK				*e*S	Sn	15 09 38.6	-0.4
JFT	Otama	3.09	259	P	Pn	15 09 05.3	+1.6
JFT				S	Sn	15 09 40.1	+0.6
JTM	Tenmabayashi	3.55	319	P	Pn	15 09 11.1	+1.0
JTM				S	Sn	15 09 49.3	-1.5
JNBK	Urakawa-nobuka	4.26	346	P	Pn	15 09 21.5	+1.8
JNBK				S	Sn	15 10 06.5	-1.7
JKB	Kayabe	4.43	328	S	Sn	15 10 09.4	-3.1
JCH	Churui	4.49	353	S	Sn	15 10 11.1	-2.9
JRY	Ryogami san	4.71	245	P	Pn	15 09 27.0	+0.9
JRY				S	Sn	15 10 17.7	-1.8
MJAR	Matsushiro Arr	5.00	253	Pn	Pn	15 09 31.8	+1.7
	7.6nm,0.3s,baz=73,slow=9.1,SNR=38						
MAT	Matsushiro	5.00	253	P	Pn	15 09 32.3	+2.2
MAT				*e*S	Sn	15 10 27.9	+1.2
ASAJ	Asahikawa	6.07	349	Pn	Pn	15 09 45.7	+1.1
	1.4nm,0.3s,baz=185,slow=16,SNR=15						
JHJ	Hachijo jima 2	6.16	217	Pn	Pn	15 09 44.5	-1.4
	33nm,0.3s,baz=147,slow=22,SNR=13						
JHJ				Sn	Sn	15 10 49.5	-5.6
	19nm,0.3s,baz=248,slow=19,SNR=3.2						
JCJ	Chichijima	11.15	189	Pn	Pn	15 10 51.9	-2.5
	4.0nm,0.3s,baz=350,slow=15,SNR=3.7						
JCJ				Sn	Sn	15 12 45.2	-13
	4.3nm,0.3s,baz=90,slow=20,SNR=2.9						
WRA	Warramunga Arr	58.52	191	P	P	15 18 11.8	+1.4
	5.7nm,0.9s,baz=8.1,slow=7.0,SNR=14						
ASAR	Alice Springs	62.24	191	P	P	15 18 38.2	+2.5
	3.0nm,1.0s,baz=19,slow=5.1,SNR=5.5						

MEX 05 15:09:12.0±0.6, 16°64N×98°88W, h3km±10km, MD3.9, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PNIG	Pinotepa	0.77	109	*e*P	Pg	15 09 25.9	-0.8
PNIG				*e*S	Sg	15 09 36.8	+0.1
ACX	Acapulco	0.96	284	*i* P	Pg	15 09 29.9	-0.5
ACX				*i* S	Sg	15 09 43.4	+0.5
TLIG	Tlapa	0.96	18	*e*P	Pg	15 09 28.6	-2.0
TLIG				*e*S	Sg	15 09 41.5	-1.6
CAIG	El Cayaco	1.39	287	*e*P	Pn	15 09 34.2	-4.0
CAIG				*i* S	Sg	15 09 52.3	-4.3
MEIG	Mezcala	1.46	331	*e*P	Pn	15 09 35.8	-3.5
MEIG				*i* S	Sb	15 09 54.0	-4.8
HUIG	Huatulco	2.80	108	*i* P	Pn	15 09 55.0	-2.7
HUIG				*e*S	Sn	15 10 27.3	-4.8

*IDC **05** 15:12:49.2±0.6, 38°16N×144°15E, h0km, mb4.3/23, mb1 4.4/29, mb1mx4.2/64, mbtmp4.3/29, ML3.6/6, Error ellipse: s-maj=16.3km s-min=13.9km az=106.0*
*ISCJB **05** 15:12:51.7±1.1, 38°30N±0°03×144°03E±0°03, h23km±8km, mb4.5/68, MS4.4/2, Error ellipse: s-maj=4.8km s-min=4.0km az=160.2*
*MOS **05** 15:12:51.8±1.2, 38°31N×144°17E, h33km, mb4.7/32, Error ellipse: s-maj=10.1km s-min=6.7km az=103.3*
*JMA **05** 15:12:52.5±0.2, 38°26N×144°04E, h39km, M4.5*
*NEIC **05** 15:12:53.0±1.6, 38°25N×144°07E, h20km±11km, mb4.7/28, Error ellipse: s-maj=6.1km s-min=4.3km az=133.0*

ISC 05 15:12:52.9±1.0, 38°23N±0°05×144°13E±0°06, h23km±6km, n166, σ1°61/192, mb4.6/68, 2C-2D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	2.10	295	P	Pn	15 13 25.2	-1.5
JIO	Ouri	2.19	277	P	Pn	15 13 27.0	-0.9
JIO				S	Sn	15 13 52.4	-2.0
JMK	Ichinoseki	2.39	288	P	Pn	15 13 29.5	-1.1
JMK				*e*S	Sn	15 13 56.8	-2.3
JTH	Tanohata	2.45	315	P	Pn	15 13 30.7	-0.8
JTH				*e*S	Sn	15 13 58.2	-2.5
JOM	Ohasama	2.54	300	P	Pn	15 13 32.0	-0.7
JOM				*e*S	Sn	15 14 01.3	-1.5
JMM	Marumori	2.66	263	P	Pn	15 13 33.1	-1.2
JMM				*e*S	Sn	15 14 02.8	-3.0
JFK	Kawauchi	2.72	252	P	Pn	15 13 33.3	-1.9
JFK				S	Sn	15 14 04.2	-3.1
JOU	Okura	2.73	274	P	Pn	15 13 35.1	-0.2
JOU				S	Sn	15 14 06.6	-1.0
JANG	Nango	2.95	317	P	Pn	15 13 37.2	-1.1
JANG				*e*S	Sn	15 14 10.4	-2.5
JRG	Rokugo	2.96	294	P	Pn	15 13 38.5	-0.1
JRG				*e*S	Sn	15 14 12.6	-0.8
JYK	Kaneyama	3.03	284	P	Pn	15 13 39.3	-0.2
JYK				S	Sn	15 14 15.2	+0.2
JFT	Otama	3.08	258	P	Pn	15 13 40.1	-0.1
JFT				S	Sn	15 14 14.5	-1.8
JTM	Tenmabayashi	3.48	318	P	Pn	15 13 45.7	+0.1
JTM				S	Sn	15 14 23.7	-2.4
ERM	Erimo	3.85	349	*e*P	Pn	15 13 49.1	-1.6
ERM	Erimo	3.85	349	*e*Pn	Pn	15 13 49.6	-1.1
JOT	Ohata	3.94	324	P	Pn	15 13 52.2	+0.3
JOT				*e*S	Sn	15 14 34.2	-3.2
JNBK	Urakawa-nobuka	4.18	346	P	Pn	15 13 55.2	0.0
JNBK				S	Sn	15 14 39.8	-3.5
JKB	Kayabe	4.36	328	P	Pn	15 13 58.0	+0.4
JKB				*e*S	Sn	15 14 43.7	-3.9
JCH	Churui	4.42	353	P	Pn	15 13 57.6	-0.9
JCH				*e*S	Sn	15 14 44.7	-4.5
JRY	Ryogami san	4.72	244	P	Pn	15 14 01.8	-1.0
JRY				*e*S	Sn	15 14 52.6	-4.2
MJAR	Matsushiro Arr	5.00	252	Pn	Pn	15 14 07.0	+0.4
	4.8nm,0.3s,baz=76,slow=14,SNR=21						
MAJO	Matsushiro	5.00	252	*e*P	Pn	15 14 07.2	+0.6
MAJO	Matsushiro	5.00	252	*e*Pn	Pn	15 14 07.2	+0.6
MAT	Matsushiro	5.00	252	P	Pn	15 14 07.3	+0.7
MAT				*e*S	Sn	15 14 59.0	-4.8
MJB9	Matsu-Tunnel	5.01	252	*e*Pn	Pn	15 14 07.2	+0.5
YUK	Yuzh-Kuril'sk	5.94	12	*i* P	Pn	15 14 16.7	-2.8
YUK				*i* S	Sn	15 15 18.8	-8.0
YUK				pmax	pmax		
	comp=N,20nm,0.2s						
YUK				pmax	pmax		
	comp=Z,72nm,0.2s						
ASAJ	Asahikawa	5.99	349	Pn	Pn	15 14 19.9	-0.3
	comp=Z,4.3nm,0.3s,baz=214,slow=11,SNR=22						
ASAJ				Sn	Sn	15 15 28.9	+0.9
	comp=Z,2.8nm,0.3s,baz=256,slow=34,SNR=4.3						
ASAJ	Asahikawa	5.99	349	*e*Pn	Pn	15 14 18.8	-1.3
ASAJ				Sn	Sn	15 15 28.9	+0.9
SHO	Shikotan	5.99	19	*i* P	Pn	15 14 16.1	-4.0
SHO				*i* S	Sn	15 15 18.9	-9.1
SHO				pmax	pmax		
	comp=Z,136nm,0.6s						
SHO				pmax	pmax		
	comp=N,56nm,0.5s						
SHO				pmax	pmax		
	comp=E,71nm,0.5s						
JHJ	Hachijo jima 2	6.20	216	Pn	Pn	15 14 20.9	-2.1
	comp=E,15nm,0.3s,baz=92,slow=20,SNR=4.8						
JHJ				Sn	Sn	15 15 25.6	-7.7
	comp=E,45nm,0.3s,baz=122,slow=22,SNR=7.3						
INU	Inuyama	6.39	245	*e*Pn	Pn	15 14 26.4	+0.8
KUR	Kuril'sk	7.53	21	*e*P	Pn	15 14 39.7	-1.6
KUR				*e*S	Sn	15 15 55.5	-10
KUR				pmax	pmax		
	comp=Z,37nm,0.6s						
KUR				pmax	pmax		
	comp=N,10.0nm,0.6s						
KUR				pmax	pmax		
	comp=E,16nm,0.6s						
KUR				smax	smax		
	comp=E,66nm,0.5s						
KUR				smax	smax		
	comp=N,25nm,0.3s						
YSS	Yuzh-Sakhalins	8.78	354⇑	*e*P	Pn	15 14 59.6	+1.3
YSS				pmax	pmax		
	comp=Z,20nm,1.0s						
YSS	Yuzh-Sakhalins	8.78	354	*e*Pn	Pn	15 14 58.9	+0.6
MSHR	Mys Shultsa	10.80	298	*e*P	Pn	15 15 24.4	-1.6
USRK	Ussuriysk Ar.	10.91	307	Pn	Pn	15 15 29.0	+1.4
	comp=Z,0.5nm,0.3s,baz=116,slow=14,SNR=14						
JNU	Nakatsue	11.91	249	*e*Pn	Pn	15 15 40.2	-1.2
MDJ	Mudanjiang	12.63	305	P	Pn	15 15 52.0	+1.0
MDJ				pmax	pmax		
	comp=Z,32nm,1.0s						
MDJ				pmax	pmax		
	comp=Z,7μm,7.5s						
MDJ	Mudanjiang	12.63	305	*e*Pn	Pn	15 15 51.5	+0.4
KSRS	Korea Array	12.84	272	Pn	Pn	15 15 54.6	+0.7
	comp=Z,0.1nm,0.3s,baz=93,slow=13,SNR=6.0						
KS15	Wonju Array Si	12.87	272	*e*Pn	Pn	15 15 53.8	-0.5
KSAR	Wonju Array Be	12.87	272	P	Pn	15 15 54.6	+0.3
KSAR	Wonju Array Be	12.87	272	Pn	Pn	15 15 54.6	+0.3
KLR	Kul'dur	14.15	325	Pn	Pn	15 16 10.7	-1.1
	comp=Z,0.3nm,0.3s,baz=116,slow=10,SNR=4.3						
NJ2	Nanjing	21.53	261	*e*P	P	15 17 40.5	+0.1
NJ2				pmax	pmax		
	comp=Z,18nm,0.5s						
BJI	Beijing	21.72	284	P	P	15 17 41.8	-0.6
BJI				pmax	pmax		
	comp=Z,9.0nm,0.9s						
HHC	Hu-ho-hao-te	25.17	286	*e*P	P	15 18 16.2	-0.4
HHC				pmax	pmax		
	comp=Z,29nm,1.0s						
HHC				pmax	pmax		
	comp=Z,1μm,4.6s						
SEY	Seymchan	25.24	9	P	P	15 18 18.2	+1.4
	comp=Z,4.6nm,0.9s,baz=198,slow=7.2,SNR=14						
SEY	Seymchan	25.24	9	*e*P	P	15 18 15.9	-0.9
YAK	Yakutsk	25.44	344	P	P	15 18 19.1	+0.4
	comp=Z,40nm,0.7s,baz=146,slow=1.2,SNR=14						
YAK	Yakutsk	25.44	344	*e*P	P	15 18 18.2	-0.4
YAK				pmax	pmax		
	comp=Z,36nm,0.9s						
YAK	Yakutsk	25.44	344	*e*P	P	15 18 18.6	-0.1
	comp=Z,38nm,0.8s						
ULN	Ulaanbaatar	28.51	302	*e*P	P	15 18 45.1	-1.5
ULN				pmax	pmax		
	comp=Z,6.0nm,1.1s						
SONA1	Songino Array	28.95	302	*e*P	P	15 18 50.4	-0.1
SONA0	Songino Array	28.95	302	*e*P	P	15 18 51.5	+1.0
	comp=Z,9.5nm,1.2s						
SONM	Songino Array	28.95	302	P	P	15 18 51.5	+1.0
	comp=Z,3.3nm,0.8s,baz=88,slow=9.1,SNR=4.5						
TLY	Talaya	31.22	309	*e*P	P	15 19 08.5	-1.9
TLY				pmax	pmax		
	comp=Z,3.0nm,1.2s						
LZH	Lanzhou	32.00	279	*e*P	P	15 19 20.0	+2.4
LZH				pP	sP	15 19 27.5	+0.1
LZH				sP	pP	15 19 31.0	+6.5
LZH				*e*PP	PnPn	15 20 25.6	+2.6
LZH				pmax	pmax		
	comp=Z,23nm,1.1s						
LZH				pmax	pmax		
	comp=Z,75nm,5.3s						
LZH				LR	LR		
	comp=N,360nm,13.3s						
LZH				LR	LR		
	comp=E,350nm,12.7s						
LZH				LR	LR		
	comp=Z,410nm,15.6s						
BILL	Bilibino	32.29	15	*i* P	P	15 19 18.7	-0.9
BILL				pmax	pmax		
	comp=Z,3.0nm,1.0s						
GYA	Guiyang	33.54	261	P	P	15 19 31.5	+0.4
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
CD2	Chengdu	33.83	270	P	P	15 19 32.7	-0.8
CD2				pmax	pmax		
	comp=Z,2.0nm,0.6s						
GTA	Gaotai	34.28	286	*e*P	P	15 19 39.1	+1.6
GTA				pP	sP	15 19 46.4	-0.8
GTA				sP	pP	15 19 49.8	+5.4
GTA				pmax	pmax		
	comp=Z,17nm,0.9s						
TIXI	Tiksi	34.39	352	*e*P	P	15 19 36.7	-1.1
TIXI				pmax	pmax		
	comp=Z,2.0nm,0.9s						
KMI	Kunming	37.27	262	P	P	15 20 04.6	+1.3
KMI				pmax	pmax		
	comp=Z,10.0nm,1.2s						
KMI				pmax	pmax		
	comp=Z,11μm,23.3s						
WMQ	Urumqi	42.23	296	*e*P	P	15 20 46.5	+2.3
WMQ				LR	LR		
	comp=N,2μm,1.2s						
WMQ				LR	LR		
	comp=E,980nm,15.0s						
WMQ				LR	LR		
	comp=Z,700nm,18.6s						
ZAA1	Zalesovo Array	42.72	311	*e*P	P	15 20 48.1	+0.2
ZAA1				*e*PcP	PcP	15 22 38.9	-0.3
ZALV	Zalesovo Beam	42.72	311	P	P	15 20 48.1	+0.2
	comp=Z,2.4nm,0.6s,baz=90,slow=8.2,SNR=5.2						
ZALV				PcP	PcP	15 22 38.9	-0.3
	comp=Z,1.7nm,0.2s,baz=99,slow=4.4,SNR=4.0						
NRIK	Noril'sk	43.10	334	P	P	15 20 51.1	+0.2
	comp=Z,2.5nm,0.8s,baz=137,slow=12,SNR=4.6						
CHTO	Chiang Mai	43.67	257	*e*P	P	15 20 56.6	+0.5
CHTO				pmax	pmax		
	comp=Z,11nm,1.4s						
CHTO	Chiang Mai	43.67	257	*e*P	P	15 20 56.5	+0.5
	comp=Z,12nm,1.4s						
CM01	Chiang Mai Arr	43.89	256	*e*P	P	15 20 58.9	+1.1
MK01	Makanchi Array	45.32	302	*e*P	P	15 21 09.2	+0.3
MK31	Makanchi Array	45.32	302	*e*P	P	15 21 09.1	+0.1
MK31	Makanchi Array	45.32	302	*e*P	P	15 21 09.1	+0.1
MK32	Makanchi Array	45.32	302	*e*P	P	15 21 09.3	+0.4
MKAR	Makanchi Array	45.32	302	P	P	15 21 09.3	+0.4
	comp=Z,3.7nm,0.7s,baz=86,slow=8.9,SNR=12						
MKAR	Makanchi Array	45.32	302	*i* P	P	15 21 09.5	+0.5
MKAR				pmax	pmax		
	comp=Z,4.0nm,0.7s						
KURK	Kurchatov	46.90	308	P	P	15 21 22.0	+0.7
KURK				pmax	pmax		
	comp=Z,5.0nm,0.8s						
KURK	Kurchatov	46.90	308	*e*P	P	15 21 22.0	+0.7
KURBB	Kurchatov Arra	46.97	307	P	P	15 21 22.0	+0.2
	comp=Z,4.6nm,0.8s,baz=82,slow=8.2,SNR=17						
ILAR	Eielson Array	47.33	33	P	P	15 21 24.6	+0.2
	comp=Z,1.2nm,0.9s,baz=269,slow=5.3,SNR=5.3						
ILB	Eielson Array	47.33	33	*e*P	P	15 21 24.4	0.0
KAPI	Kappang	48.61	213	*e*P	P	15 21 35.9	+1.0
	comp=Z,1.4nm,0.3s,baz=25,slow=8.5,SNR=3.9						
KAPI	Kappang	48.61	213	*e*P	P	15 21 35.6	+0.7
	comp=Z,14nm,1.2s						
TKM2	Tokmak 2	50.96	298	*e*P	P	15 21 53.7	+0.9
TKM2				pmax	pmax		
	comp=Z,14nm,0.8s						
TKM2	Tokmak 2	50.96	298	*e*P	P	15 21 53.7	+0.9
	comp=Z,14nm,0.8s						
BRVK	Borovoye	51.42	312	*e*P	P	15 21 53.6	-2.2
BRVK				pmax	pmax		
	comp=Z,4.0nm,1.0s						
AAK	Ala-Archa	51.82	298	*e*P	P	15 21 57.6	-1.6
AAK				pmax	pmax		
	comp=Z,6.0nm,1.1s						
SVE	Sverdlovsk	55.67	319	*e*P	P	15 22 27.7	+0.7
SVE				pmax	pmax		
	comp=Z,22nm,1.0s						
ARU	Arti	56.89	319	P	P	15 22 35.9	+0.2
	comp=Z,6.7nm,0.6s,baz=94,slow=4.4,SNR=9.7						
ARU	Arti	56.89	319	*d i* P	P	15 22 35.8	+0.2
ARU						15 24 44.9	
ARU				S	S	15 30 30.3	+2.5
ARU				SS	SS	15 34 20.6	+5.0
ARU				pmax	pmax		
	comp=Z,28nm,1.2s						
ARU	Arti	56.89	319	*e*P	P	15 22 34.9	-0.8
	comp=Z,20nm,1.0s						
WR1	Warramunga Arr	58.59	191	*e*P	P	15 22 46.8	-1.1
	comp=Z,9.3nm,0.9s						
WRA	Warramunga Arr	58.59	191	P	P	15 22 46.8	-1.1
	comp=Z,6.8nm,0.9s,baz=9.0,slow=7.4,SNR=16						
ABKAR	Akbulak array	58.81	310	*e*P	P	15 22 49.3	+0.1
AKTO	Aktyubinsk	59.47	312	P	P	15 22 54.5	+0.7
	comp=Z,5.8nm,0.8s,baz=72,slow=11,SNR=12						
AKTO	Aktyubinsk	59.47	312	P	P	15 22 54.5	+0.7
AKTO				pmax	pmax		
	comp=Z,7.0nm,0.8s						
HYB	Hyderabad	60.38	269	*i* P	P	15 23 01.0	+0.5
YKA	Yellowknife Ar	61.68	31	P	P	15 23 09.0	+0.3
	comp=Z,1.0nm,0.9s,baz=303,slow=6.6,SNR=5.8						
YKA	Yellowknife Ar	61.68	31	P	P	15 23 09.0	+0.3
YKA				pmax	pmax		
	comp=Z,1.0nm,0.9s						
YKB5	Yellowknife Ar	61.68	31	*e*P	P	15 23 09.2	+0.5
AS31	Alice Springs	62.31	191	*e*P	P	15 23 13.8	+0.4
	comp=Z,3.3nm,1.8s						
ASAR	Alice Sprngs	62.31	191	P	P	15 23 11.9	-1.4
	comp=Z,1.0nm,0.8s,baz=17,slow=9.9,SNR=5.5						
ARA0	ARCESS Array S	63.63	340	*e*P	P	15 23 21.6	0.0
ARCES	ARCESS Array B	63.63	340	P	P	15 23 21.6	0.0
	comp=Z,1.9nm,0.8s,baz=59,slow=10,SNR=5.3						
KLMR	Klimovskoe	63.89	328	*e*P	P	15 23 22.2	-1.2
KLMR				pmax	pmax		
	comp=Z,8.0nm,1.1s						
GEYT	Alibeck	65.13	300	P	P	15 23 32.0	+0.1
	comp=Z,3.6nm,0.6s,baz=343,slow=4.5,SNR=5.9						
H04A	Detroit Lake	66.69	51	*e*P	P	15 23 42.8	+0.9
	comp=Z,8.2nm,0.9s						
NEW	Newport	67.76	46	*e*P	P	15 23 49.8	+1.1
NEW				pmax	pmax		
	comp=Z,8.0nm,1.2s						
NEW	Newport	67.76	46	*e*P	P	15 23 49.8	+1.1
	comp=Z,7.6nm,1.2s						
OBN	Obninsk	68.41	324	*e*P	P	15 23 51.3	-1.2
OBN				pmax	pmax		
	comp=Z,9.0nm,1.0s						
K05A	Summer Lake	68.52	52	*e*P	P	15 23 55.4	+1.8
	comp=Z,20nm,1.3s						
FIA0	FINESS Array S	68.75	333	*e*P	P	15 23 54.8	+0.3
FIA0	FINESS Array S	68.75	333	*e*P	P	15 23 54.8	+0.3
FINES	FINESS Array B	68.75	333	P	P	15 23 54.8	+0.3
	comp=Z,4.2nm,0.7s,baz=67,slow=6.4,SNR=11						
WALA	Waterton Lakes	69.10	44	*e*P	P	15 23 58.1	+1.0
	comp=Z,18nm,1.6s						
MOD	Modoc Plateau	69.33	53	*e*P	P	15 24 00.1	+1.4
	comp=Z,11nm,1.4s						
WVOR	Wild Horse Val	70.07	51	*e*P	P	15 24 04.7	+1.5
WVOR				pmax	pmax		
	comp=Z,9.0nm,1.4s						
WVOR	Wild Horse Val	70.07	51	*e*P	P	15 24 04.7	+1.5
	comp=Z,9.1nm,1.4s						
CMB	Columbia Colle	71.42	56	*e*P	P	15 24 12.7	+1.3
CMB				pmax	pmax		
	comp=Z,7.0nm,1.0s						
CMB	Columbia Colle	71.42	56	*e*P	P	15 24 12.7	+1.3
	comp=Z,6.6nm,1.0s						
KIV	Kislovodsk	71.73	312	*e*P	P	15 24 13.4	+0.2
KIV				pmax	pmax		
	comp=Z,16nm,1.1s						
KBZ	Khabaz	71.74	312	P	P	15 24 14.2	+1.0
	comp=Z,5.5nm,0.9s,baz=56,slow=2.9,SNR=7.2						
LRM	Limekiln Ridge	71.78	46	*e*P	P	15 24 13.6	-0.1
NV01	Mina Array Sit	72.54	55	*e*P	P	15 24 19.6	+1.2
NVAR	Mina Array Bea	72.54	55	P	P	15 24 19.8	+1.4
	comp=Z,4.1nm,1.0s,baz=293,slow=6.0,SNR=12						
IMW	Indian Meadow	73.80	47	*e*P	P	15 24 26.4	+0.6
	comp=Z,3.5nm,0.9s						
NB2	NORSAR Subarra	73.90	338	P	P	15 24 25.3	-0.4
	comp=Z,1.2nm,0.7s,baz=37,slow=6.2						
NB200	NORSAR Array S	73.90	338	*e*P	P	15 24 24.4	-1.3
NOA	NORSAR Array B	73.90	338	P	P	15 24 24.4	-1.3
	comp=Z,2.2nm,0.8s,baz=38,slow=5.8,SNR=7.2						
HVU	Hansel Valley	74.00	49	*e*P	P	15 24 28.2	+1.4
HVU				pmax	pmax		
	comp=Z,4.0nm,1.1s						
HVU	Hansel Valley	74.00	49	*e*P	P	15

VYHS	Vyhne	80.94	327	*e*P		P	15 25 04.4 -0.9
CLL	Collm	81.11	331	*i* P		P	15 25 04.5 -1.6
	comp=Z,6.0nm,0.8s						
CLL				⇓*i*			15 25 06.3
CLL	Collm	81.11	331	*i* P		P	15 25 04.5 -1.6
CLL				pmax	pmax		
	comp=Z,6.0nm,0.8s						
KHC	Kasperske Hory	82.62	330	*e*P		P	15 25 14.8 +0.6
KHC				*e*sP		sP	15 25 26.5 +2.1
KHC	Kasperske Hory	82.62	330	*e*P		P	15 25 14.8 +0.6
KHC				*e*			15 25 26.5
GERES	GERESS Array B	82.80	330	P		P	15 25 14.7 -0.5
	comp=Z,0.3nm,0.3s,baz=104,slow=4.3,SNR=4.0						
COWI	Conover	83.41	34	*e*P		P	15 25 18.3 0.0
	comp=Z,8.6nm,0.3s						
BFO	Black Forest	85.28	332	*i* P		P	15 25 28.7 +0.9
BFO	Black Forest	85.28	332	*e*P		P	15 25 27.9 +0.2
	comp=Z,12nm,1.2s						
FUORN	Ofenpass-Fuorn	85.97	330	*e*P		P	15 25 31.8 +0.3
	comp=Z,7.6nm,0.8s						
VNA2	Neumayer--Watz	144.06	195	PKP	PKPbc		15 32 23.4 0.0
	baz=92,slow=1.5						
VNA3	Neumayer Olymp	144.26	194	PKP	PKPab		15 32 23.4 -0.4
VNA1	Neumayer--Stat	144.45	195	PKP	PKPbc		15 32 24.8 +0.1

*IDC **05** 15:19:26.9±1.0, 37°.94N×144°.36E, h0km, mb3.5/5, mb1 3.6/8, mb1mx3.5/63, mbtmp3.6/8, ML3.6/3, Error ellipse: s-maj=34.5km s-min=18.8km az=107.0*
*ISCJB **05** 15:19:30.8±0.8, 38°.17N±0°.05×144°.11E±0°.05, h33km, mb3.5/5, Error ellipse: s-maj=7.2km s-min=5.4km az=141.9*
*JMA **05** 15:19:32.3±0.2, 38°.23N×143°.97E, h31km, M3.9*
ISC 05 15:19:32.3±1.1, 38°.12N±0°.05×144°.10E±0°.09, h35km, n20, σ1§47/34, mb3.5/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	2.13	298	P	Pn	15 20 04.9	-0.6
OFUJ				*e*S	Sn	15 20 29.7	-1.0
JIO	Ouri	2.19	280	P	Pn	15 20 06.1	-0.1
JIO				S	Sn	15 20 31.0	-1.1
JMK	Ichinoseki	2.41	291	P	Pn	15 20 09.1	-0.1
JMK				S	Sn	15 20 36.1	-1.4
JMM	Marumori	2.62	266	P	Pn	15 20 12.5	+0.3
JMM				*e*S	Sn	15 20 42.2	-0.6
JFK	Kawauchi	2.67	255	P	Pn	15 20 12.6	-0.2
JFK				S	Sn	15 20 44.0	+0.1
JOU	Okura	2.72	276	P	Pn	15 20 14.4	+0.9
JOU				S	Sn	15 20 45.4	+0.3
JRG	Rokugo	3.00	296	P	Pn	15 20 17.8	+0.5
JRG				*e*S	Sn	15 20 52.1	+0.1
JFT	Otama	3.04	260	P	Pn	15 20 19.1	+1.2
JFT				S	Sn	15 20 53.9	+0.8
JYK	Kaneyama	3.04	286	P	Pn	15 20 18.5	+0.6
JYK				S	Sn	15 20 53.6	+0.5
JNBK	Urakawa-nobuka	4.29	346	P	Pn	15 20 35.7	+0.7
JNBK				S	Sn	15 21 21.4	-2.3
JKB	Kayabe	4.44	329	P	Pn	15 20 38.0	+0.8
JKB				*e*S	Sn	15 21 23.5	-4.1
JRY	Ryogami san	4.66	245	P	Pn	15 20 40.7	+0.6
JRY				*e*S	Sn	15 21 30.5	-2.5
MJAR	Matsushiro Arr	4.95	253	Pn	Pn	15 20 45.9	+1.7
	1.6nm,0.3s,baz=83,slow=15,SNR=18						
JHJ	Hachijo jima 2	6.10	216	Pn	Pn	15 20 58.8	-1.2
	7.6nm,0.3s,baz=253,slow=19,SNR=3.1						
JHJ				Sn	Sn	15 22 05.0	-3.5
	7.3nm,0.3s,baz=233,slow=20,SNR=3.6						
ASAJ	Asahikawa	6.10	350	Pn	Pn	15 20 59.2	-0.7
	1.3nm,0.3s,baz=218,slow=6.9,SNR=13						
ASAJ				Sn	Sn	15 22 07.5	-0.9
	0.5nm,0.3s,baz=49,slow=20,SNR=2.5						
SEY	Seymchan	25.36	9	P	P	15 24 57.1	+1.4
	1.0nm,0.6s,baz=172,slow=7.1,SNR=4.5						
MKAR	Makanchi Array	45.36	302	P	P	15 27 48.5	+1.4
	0.4nm,0.6s,baz=91,slow=9.7,SNR=4.2						
WRA	Warramunga Arr	58.47	191	P	P	15 29 24.4	-0.4
	0.4nm,0.4s,baz=9.1,slow=6.9,SNR=5.2						
YKA	Yellowknife Ar	61.79	31	P	P	15 29 48.0	+0.9
	0.1nm,0.5s,baz=305,slow=6.7,SNR=3.0						
ASAR	Alice Springs	62.20	191	P	P	15 29 48.0	-2.3
	0.2nm,0.7s,baz=9.6,slow=7.8,SNR=3.2						

*IDC **05** 15:20:52.3±1.1, 4°.25S×102°.16E, h0km, mb4.2/11, mb1 4.2/11, mb1mx3.9/61, mbtmp4.2/11, Error ellipse: s-maj=47.0km s-min=14.6km az=55.0*
*ISCJB **05** 15:20:55.3±0.5, 4°.44S±0°.06×101°.98E±0°.05, h37km, mb4.2/16, Error ellipse: s-maj=9.7km s-min=5.0km az=38.3*
*NEIC **05** 15:20:58.0±0.4, 4°.25S×102°.16E, h35km, mb4.3/8, Error ellipse: s-maj=12.2km s-min=6.0km az=46.0*
NEIC Felt [II] at Bengkulu.
*DJA **05** 15:21:00.2±0.6, 4°S±5°×10°2E±°, h30km±5km, M4.2/7, mb4.2/2, MLv4.2/7*
ISC 05 15:20:57.6±0.8, 4°.37S±0°.09×102°.07E±0°.09, h37km, n64, σ1§05/52, mb4.2/15, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MNAI	Manna	0.88	90	P	Pn	15 21 14.1	+0.6
MNAI	Manna	0.88	90	*e*Pn	Pn	15 21 14.3	+0.8
MNAI				*e*Sn	Sn	15 21 23.5	-1.7
MASI	Maura Aman, Be	1.23	8	P	Pn	15 21 20.2	+1.9
LHSI	Lahat	1.55	70	P	Pn	15 21 23.5	+0.9
LWLI	Liwa	2.08	108	P	Pn	15 21 31.4	+1.3
PPSI	Pulau Pagai	2.60	308	P	Pn	15 21 40.5	+3.4
KASI	Kota Agung	2.68	115	P	Pn	15 21 39.1	+0.9
KLI	Kotabumi	2.82	100	P	Pn	15 21 41.6	+1.4
PMBI	Palembang	3.05	62	P	Pn	15 21 44.5	+1.1
BLSI	Bandar Lampung	3.32	108	P	Pn	15 21 51.5	+4.5
PDSI	Padang	3.79	335	P	Pn	15 21 58.2	+4.7
RGRI	Rengat	4.00	4	P	Pn	15 21 56.1	-0.3
CGJI	Cibinong	4.24	122	P	Pn	15 22 01.5	+1.8
PPBI	Pangkal Pinang	4.61	62	P	Pn	15 22 04.9	+0.1
BKNI	Bangkinang	4.78	348	P	Pn	15 22 11.9	+4.8
MNSI	Mandailing Nat	5.70	334	P	Pn	15 22 23.1	+3.3
TPRI	Tanjung Pinang	5.80	25	P	Pn	15 22 23.1	+2.0
MYKOM	Kota Tinggi	6.37	16	*e*Pn	Pn	15 22 31.5	+2.5
CISI	Cisompet, Garu	6.53	119	P	Pn	15 22 40.8	+10
CISI	Cisompet, Garu	6.53	119	*e*Pn	Pn	15 22 31.7	+0.5
XMIS	Christmas Isla	7.04	150	*e*Pn	Pn	15 22 34.5	-3.6
GSI	Gunungsitoli	7.21	321	*e*Pn	Pn	15 22 43.2	+2.8
PSI	Prapat	7.79	336	*e*Pn	Pn	15 22 44.6	-3.9
IPM	Ipoh	8.85	353	*e*Pn	Pn	15 22 59.2	-3.8
UGM	Wanagama	9.11	113	*e*Pn	Pn	15 23 08.5	+1.8
COCO	West Island	9.34	213	*e*Pn	Pn	15 23 14.0	+4.3
JAGI	Jajag, Banyuwa	12.68	109	*e*Pn	Pn	15 23 54.8	-0.7
MYLDM	Lahad Datu	18.95	60	*e*P	P	15 25 16.9	+1.1
	14nm,1.2s						
LUWI	Luwuk	20.94	82	*e*P	P	15 25 36.6	-0.8
	22nm,0.9s						
CM01	Chiang Mai Arr	22.85	352	*e*P	P	15 25 58.3	+0.4
CM31	Chiang Mai Arr	22.89	352	*e*P	P	15 25 57.6	-0.6
CHTO	Chiang Mai	23.24	352	*e*P	P	15 26 00.4	-1.4
	2.1nm,0.8s						
FITZ	Fitzroy Crossi	26.79	122	P	P	15 26 33.7	-0.7
	1.4nm,0.4s,baz=338,slow=6.3,SNR=8.1						
FITZ	Fitzroy Crossi	26.79	122	*e*P	P	15 26 33.8	-0.6
	40nm,1.8s						
H08S2	Diego Garcia H	29.59	262	T	T	15 57 32.9	
	baz=86,slow=75,SNR=14						
H08S3	Diego Garcia H	29.60	262	T	T	15 57 33.5	
	baz=86,slow=75,SNR=15						
H08S1	Diego Garcia H	29.61	262	T	T	15 57 34.3	
	baz=86,slow=75,SNR=14						
H01W3	Cape Leeuwin H	32.36	161	T	T	16 01 21.1	
	baz=339,slow=76,SNR=11						
H01W2	Cape Leeuwin H	32.37	161	T	T	16 01 22.9	
	baz=339,slow=76,SNR=16						
H01W1	Cape Leeuwin H	32.37	161	T	T	16 01 20.9	
	baz=339,slow=76,SNR=14						
WR1	Warramunga Arr	35.03	119	*e*P	P	15 27 46.5	-0.6
	27nm,1.8s						
WR1				*e*PcP	PcP	15 30 18.6	-0.1
WRA	Warramunga Arr	35.03	119	P	P	15 27 46.5	-0.6
	0.6nm,0.3s,baz=308,slow=9.3,SNR=37						
WRA				PcP	PcP	15 30 18.6	-0.1
	0.7nm,0.7s,baz=299,slow=2.4,SNR=4.7						
AS31	Alice Springs	36.20	125	*e*P	P	15 27 56.7	-0.5
	2.6nm,1.4s						
ASAR	Alice Springs	36.20	125	P	P	15 27 57.2	0.0
	1.2nm,0.8s,baz=296,slow=7.4,SNR=23						
ASAR				PcP	PcP	15 30 22.4	+0.2
	0.4nm,0.7s,baz=305,slow=1.9,SNR=4.5						
STKA	Stephens Creek	46.04	131	P	P	15 29 18.6	+0.7
	2.1nm,0.5s,baz=311,slow=8.0,SNR=9.4						
STKA	Stephens Creek	46.04	131	*e*P	P	15 29 18.3	+0.4
	4.0nm,1.8s						
KS15	Wonju Array Si	48.04	28	*e*P	P	15 29 34.4	+1.1
SONA0	Songino Array	52.12	4	*e*P	P	15 30 04.5	+0.3
	16nm,2.0s						
SONM	Songino Array	52.12	4	P	P	15 30 04.5	+0.3
	1.1nm,0.5s,baz=180,slow=8.6,SNR=7.6						
MK01	Makanchi Array	53.84	343	*e*P	P	15 30 16.6	-0.3
MK31	Makanchi Array	53.86	343	*e*P	P	15 30 17.3	+0.3
MK32	Makanchi Array	53.86	343	*e*P	P	15 30 17.0	0.0
MKAR	Makanchi Array	53.86	343	P	P	15 30 17.0	0.0
	2.8nm,0.5s,baz=152,slow=8.9,SNR=36						
MKAR	Makanchi Array	53.86	343	*e*P	P	15 30 17.3	+0.3
USRK	Ussuriysk Ar.	55.32	26	P	P	15 30 26.7	-0.9
	3.0nm,0.6s,baz=207,slow=6.3,SNR=9.9						
KLR	Kul'dur	59.29	22	P	P	15 30 53.4	-2.1
	0.7nm,0.4s,baz=260,slow=6.1,SNR=5.3						
ZAA0	Zalesovo Array	59.88	348	*e*P	P	15 30 58.9	-0.5
ZALV	Zalesovo Beam	59.88	348	P	P	15 30 59.0	-0.5
	3.6nm,0.4s,baz=176,slow=5.2,SNR=16						
ZAA1	Zalesovo Array	59.88	348	*e*P	P	15 30 59.0	-0.5
BVAR	Borovoye Array	63.11	339	P	P	15 31 20.8	-0.6
	1.5nm,0.5s,baz=146,slow=11,SNR=8.6						
ABKAR	Akbulak array	64.70	331	*e*P	P	15 31 31.8	-0.1
BR101	Keskin Array S	76.44	312	*e*P	P	15 32 43.7	-0.1
BRTR	Keskin Array B	76.44	312	P	P	15 32 43.7	-0.1
	0.6nm,0.6s,baz=92,slow=6.2,SNR=3.7						
TXAR	Lajitas Array	145.20	42	PKPbc	PKPbc	15 40 31.7	-0.1
	1.7nm,0.5s,baz=258,slow=0.8,SNR=8.6						

*IDC **05** 15:22:24.5±1.8, 38°.15N×144°.19E, h0km, mb3.6/3, mb1 3.7/6, mb1mx3.4/61, mbtmp3.7/6, ML3.6/3, MS4.2/1, Ms1 4.2/1, ms1mx3.6/58, Error ellipse: s-maj=48.7km s-min=24.7km az=81.0*
*JMA **05** 15:22:28.7±0.2, 38°.29N×143°.79E, h1km, M3.9*
*NEIC **05** 15:22:28.5±0.9, 38°.16N×144°.33E, h35km, mb4.1/1, Error ellipse: s-maj=17.8km s-min=11.2km az=107.0*
*ISCJB **05** 15:22:29.1±1.0, 38°.30N±0°.04×144°.07E±0°.07, h57km±12km, mb3.8/4, MS4.2/1, Error ellipse: s-maj=9.6km s-min=5.4km az=26.1*
ISC 05 15:22:31.3±1.7, 38°.23N±0°.06×144°.02E±0°.08, h45km±18km, n30, σ1§30/37, mb3.9/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	2.02	295	P	Pn	15 23 01.9	-1.0
OFUJ				*e*S	Sn	15 23 26.0	-1.0
JIO	Ouri	2.11	277	P	Pn	15 23 03.1	-1.0
JIO				S	Sn	15 23 27.8	-1.2
JMK	Ichinoseki	2.31	289	P	Pn	15 23 06.2	-0.6
JMK				S	Sn	15 23 33.2	-0.7
JOM	Ohasama	2.46	301	P	Pn	15 23 08.6	-0.3
JOM				*e*S	Sn	15 23 37.7	0.0
JMM	Marumori	2.57	263	P	Pn	15 23 09.4	-1.0
JMM				*e*S	Sn	15 23 38.6	-1.8
JOU	Okura	2.64	274	P	Pn	15 23 11.2	-0.2
JOU				*e*S	Sn	15 23 42.3	+0.1
JRG	Rokugo	2.89	295	P	Pn	15 23 15.0	+0.3
JRG				S	Sn	15 23 49.3	+1.1
JYK	Kaneyama	2.95	285	P	Pn	15 23 15.8	+0.2
JYK				*e*S	Sn	15 23 50.2	+0.5
JFT	Otama	3.00	257	P	Pn	15 23 16.2	-0.1
JFT				S	Sn	15 23 50.6	-0.4
JTM	Tenmabayashi	3.42	319	P	Pn	15 23 23.2	+1.1
JTM				*e*S	Sn	15 23 59.3	-2.1
ERM	Erimo	3.83	350	*e*Pn	Pn	15 23 26.9	-0.8
ERM				*e*Sn	Sn	15 24 07.8	-3.8
JNBK	Urakawa-nobuka	4.16	347	P	Pn	15 23 31.1	-1.1
JNBK				S	Sn	15 24 17.2	-2.3
JKB	Kayabe	4.31	329	P	Pn	15 23 35.4	+1.1
JKB				S	Sn	15 24 20.2	-3.0
JCH	Churui	4.41	354	P	Pn	15 23 33.8	-1.8
JCH				*e*S	Sn	15 24 21.8	-3.8
JRY	Ryogami san	4.65	243	P	Pn	15 23 37.9	-1.1
JRY				S	Sn	15 24 28.5	-3.1
MJAR	Matsushiro Arr	4.92	252	Pn	Pn	15 23 42.6	-0.1
	1.7nm,0.3s,baz=76,slow=15,SNR=12						
MAJO	Matsushiro	4.92	252	*e*Pn	Pn	15 23 43.2	+0.5
MJB9	Matsu-Tunnel	4.92	252	*e*Pn	Pn	15 23 43.5	+0.7
ASAJ	Asahikawa	5.97	350	Pn	Pn	15 23 56.5	-0.6
	1.1nm,0.3s,baz=199,slow=10,SNR=7.8						
ASAJ				Sn	Sn	15 25 04.2	-0.1
	0.2nm,0.3s,baz=120,slow=20,SNR=3.0						
ASAJ	Asahikawa	5.97	350	*e*Pn	Pn	15 23 56.2	-1.0
ASAJ				Sn	Sn	15 25 04.2	-0.1
JHJ2	Mitsune	6.15	215	*e*Pn	Pn	15 23 54.8	-4.7
JHJ	Hachijo jima 2	6.15	215	Pn	Pn	15 23 55.1	-4.5
	10nm,0.3s,baz=114,slow=21,SNR=6.6						
JHJ				Sn	Sn	15 25 02.0	-6.7
	5.8nm,0.3s,baz=60,slow=20,SNR=3.8						
INU	Inuyama	6.31	245	*e*Pn	Pn	15 24 02.0	+0.2
CBIJ	Chichi jima	11.21	188	*e*Pn	Pn	15 25 04.7	-4.2
ZALV	Zalesovo Beam	42.65	311	P	P	15 30 22.7	-0.5
	0.7nm,0.3s,baz=80,slow=9.2,SNR=3.8						
RSO	Redoubt South	44.68	39	*e*P	P	15 30 35.2	-4.4
PSI	Prapat	54.18	241	LR	LR	15 53 46.2	
	comp=Z,238nm,21.6s,slow=35						
WRA	Warramunga Arr	58.58	191	P	P	15 32 23.2	-0.3
	0.6nm,0.5s,baz=8.5,slow=7.0,SNR=9.6						
AS31	Alice Springs	62.30	190	*e*P	P	15 32 49.4	+0.5
	2.3nm,1.5s						
ASAR	Alice Springs	62.30	190	P	P	15 32 47.8	-1.0
	0.2nm,0.7s,baz=0.9,slow=6.5,SNR=4.1						

*IDC **05** 15:26:41.8±0.9, 37°.34N×141°.55E, h0km, mb3.8/9, mb1 3.9/12, mb1mx3.6/68, mbtmp3.7/12, ML2.9/3, Error ellipse: s-maj=25.4km s-min=18.0km az=93.0*
*ISCJB **05** 15:26:42.8±1.1, 37°.38N±0°.03×141°.63E±0°.07, h19km±7km, mb4.2/16, Error ellipse: s-maj=9.7km s-min=5.5km az=15.3*
*JMA **05** 15:26:42.9±0.2, 37°.39N×141°.61E, h23km±2km, M3.7*
*NEIC **05** 15:26:46.7±1.9, 37°.43N×141°.45E, h30km±14km, mb5.0/7, Error ellipse: s-maj=8.2km s-min=5.9km az=110.0*
ISC 05 15:26:43.4±1.5, 37°.43N±0°.04×141°.56E±0°.05, h8km±9km, n49, σ1§18/50, mb4.0/16, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	0.55	264	P	Pg	15 26 54.1	+0.1
ONAJ	Iwakimizuishiy	0.69	242	P	Pg	15 26 56.2	-0.5
ONAJ				S	Sg	15 27 06.0	+0.3
JMM	Marumori	0.75	306	P	Pg	15 26 57.6	-0.2
JMM				S	Sb	15 27 08.6	-0.4
JFT	Otama	0.98	276	P	Pg	15 27 02.0	-0.2
JFT				S	Sb	15 27 15.5	-0.1
JIO	Ouri	1.04	351	P	Pg	15 27 02.7	-0.6
JIO				S	Sg	15 27 16.6	-0.2
JHO	Hitachi	1.14	224	P	Pg	15 27 02.8	-2.4
JOU	Okura	1.17	323	P	Pg	15 27 05.5	-0.4
JOU				S	Sn	15 27 21.9	-0.3
MJAR	Matsushiro Arr	2.83	253	Pn	Pn	15 27 29.0	+0.2
	4.8nm,0.3s,baz=83,slow=16,SNR=42						
MAJO	Matsushiro	2.83	253	*e*Pn	Pn	15 27 29.4	+0.6
MAT	Matsushiro	2.83	253	P	Pn	15 27 29.6	+0.8
MAT				*e*S	Sb	15 28 07.5	-1.3
MJB9	Matsu-Tunnel	2.83	253	*e*Pn	Pn	15 27 29.2	+0.4
INU	Inuyama	4.21	242	*e*Pn	Pn	15 27 48.9	+1.0
ERM	Erimo	4.74	15	*e*Pn	Pn	15 27 56.5	+1.4
ERM				*e*Sn	Sn	15 28 46.3	-3.9
ASAJ	Asahikawa	6.73	6	Pn	Pn	15 28 22.2	-0.2
	0.5nm,0.3s,baz=274,slow=14,SNR=3.5						
ASAJ				Sn	Sn	15 29 36.5	-2.6
	0.4nm,0.3s,baz=93,slow=32,SNR=2.4						
JNU	Nakatsue	9.73	247	*e*Pn	Pn	15 28 59.4	-4.3
USRK	Ussuriysk Ar.	9.91	316	Pn	Pn	15 29 07.8	+1.7
	0.1nm,0.3s,baz=132,slow=16,SNR=2.8						
CBIJ	Chichi jima	10.32	177	*e*Pn	Pn	15 29 11.9	+0.2
BJT	Baijiatuau	19.96	285	*e*P	P	15 31 14.0	-1.8
	8.6nm,0.5s						
H11N2	WAKE ISLAND Hy	28.25	122	T	T	16 02 06.6	
	baz=314,slow=75,SNR=18						
H11N1	WAKE ISLAND Hy	28.26	122	T	T	16 02 08.2	
	baz=314,slow=75,SNR=27						
H11N3	WAKE ISLAND Hy	28.27	122	T	T	16 02 09.7	
	baz=314,slow=75,SNR=26						
H11S1	WAKE ISLAND Hy	28.98	124	T	T	16 03 06.1	
	baz=316,slow=76,SNR=24						
H11S3	WAKE ISLAND Hy	28.98	124	T	T	16 03 01.8	
	baz=316,slow=76,SNR=25						
H11S2	WAKE ISLAND Hy	29.00	124	T	T	16 03 01.9	
	baz=316,slow=76,SNR=23						
ZAA1	Zalesovo Array	41.73	312	*e*P	P	15 34 32.3	-0.3
ZALV	Zalesovo Beam	41.73	312	P	P	15 34 32.3	-0.3
	0.5nm,0.3s,baz=74,slow=6.2,SNR=3.7						
CHGN	Chignik	43.60	44	*e*P	P	15 34 50.5	+2.8
MK01	Makanchi Array	44.01	302	*e*P	P	15 34 50.8	-0.4
MK31	Makanchi Array	44.01	302	*e*P	P	15 34 50.6	-0.6
MK32	Makanchi Array	44.01	302	*e*P	P	15 34 51.1	-0.1
MKAR	Makanchi Array	44.01	302	P	P	15 34 51.1	-0.1
	1.0nm,0.7s,baz=89,slow=9.8,SNR=11						
MKAR	Makanchi Array	44.01	302	*e*P	P	15 34 50.6	-0.6
MAKZ	Makanchi	44.22	302	*e*P	P	15 34 52.4	-0.5
	1.8nm,0.8s						
KAPI	Kappang	46.86	210	*e*P	P	15 35 15.3	+1.3
	17nm,1.4s						
PMG	Port Moresby	46.88	172	*e*P	P	15 35 15.6	+1.4
	36nm,1.1s						
ILAR	Eielson Array	49.10	33	P	P	15 35 31.8	+0.9
	0.6nm,0.8s,baz=267,slow=6.3,SNR=7.4						
ILB	Eielson Array	49.10	33	*e*P	P	15 35 31.4	+0.5
DIV	Divide	49.89	37	*e*P	P	15 35 38.3	+1.2
	8.7nm,0.9s						
ARU	Arti	56.14	318	*e*P	P	15 36 23.1	0.0
	38nm,1.8s						
WRAB	Tennant Creek	57.46	188	*e*P	P	15 36 31.8	-1.0
	21nm,1.3s						
WR1	Warramunga Arr	57.47	188	*e*P	P	15 36 31.8	-1.1
	46nm,1.8s						
WRA	Warramunga Arr	57.47	188	P	P	15 36 31.8	-1.1
	0.8nm,0.6s,baz=5.4,slow=7.4,SNR=18						
ABKAR	Akbulak array	57.77	310	*e*P	P	15 36 33.5	-1.3
ASAR	Alice Springs	61.20	188	P	P	15 36 57.5	-1.1
	0.3nm,0.7s,baz=14,slow=14,SNR=7.5						
YKA	Yellowknife Ar	63.41	30	P	P	15 37 13.7	+0.7
	0.2nm,0.7s,baz=302,slow=6.4,SNR=5.0						
FIA0	FINESS Array S	68.52	332	*e*P	P	15 37 45.8	0.0
FINES	FINESS Array B	68.52	332	P	P	15 37 45.8	0.0
	1.4nm,0.7s,baz=52,slow=5.4,SNR=3.3						
NOA	NORSAR Array B	73.87	337	P	P	15 38 18.4	+0.1
	1.0nm,0.8s,baz=38,slow=5.7,SNR=3.7						
AKASG	Malin Array Be	74.06	322	P	P	15 38 19.0	-0.6
	0.7nm,0.5s,baz=49,slow=6.0,SNR=4.0						

*IDC **05** 15:31:06.2±0.6, 30°.49N×142°.03E, h0km, mb4.1/24, mb1 4.2/27, mb1mx4.0/68, mbtmp4.1/27, ML3.8/3, Error ellipse: s-maj=19.6km s-min=13.0km az=76.0*
*ISCJB **05** 15:31:07.8±0.3, 30°.46N±0°.03×141°.96E±0°.07, h23km, mb4.2/33, MS4.2/1, Error ellipse: s-maj=9.4km s-min=4.1km az=162.7*
*NEIC **05** 15:31:08.4±2.5, 30°.50N×142°.02E, h14km±15km, mb4.4/10, Error ellipse: s-maj=8.5km s-min=5.4km az=78.0*
ISC 05 15:31:09.6±0.5, 30°.49N±0°.05×142°.01E±0°.09, h23km, n75, σ1§00/81, mb4.3/33, Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHJ2	Mitsune	3.21	325	*e*Pn	Pn	15 31 55.9	-2.8
JHJ	Hachijo jima 2	3.23	325	Pn	Pn	15 31 58.0	-0.9
	11nm,0.3s,baz=78,slow=20,SNR=3.7						
JHJ				Sn	Sn	15 32 37.4	+0.7
	21nm,0.3s,baz=62,slow=23,SNR=5.1						
CBIJ	Chichi jima	3.39	177	*e*Pn	Pn	15 32 00.5	-0.6
CBIJ				*e*Sn	Sn	15 32 38.2	-2.3
JCJ	Chichijima	3.39	177	Pn	Pn	15 32 00.4	-0.7
	14nm,0.3s,baz=3.0,slow=19,SNR=13						
JCJ				Sn	Sn	15 32 39.3	-1.2
	54nm,0.3s,baz=276,slow=23,SNR=9.5						
INU	Inuyama	6.41	320	*e*Pn	Pn	15 32 42.1	-0.5
INU				*e*Sn	Sn	15 33 42.3	-13
MJAR	Matsushiro Arr	6.82	333	Pn	Pn	15 32 48.2	0.0
	3.9nm,0.3s,baz=159,slow=11,SNR=82						
MAJO	Matsushiro	6.82	333	*e*Pn	Pn	15 32 48.6	+0.4
MAT	Matsushiro	6.82	333	P	Pn	15 32 48.5	+0.3
MJB9	Matsu-Tunnel	6.82	333	*e*Pn	Pn	15 32 48.6	+0.3
KSRS	Korea Array	13.59	304	Pn	Pn	15 34 23.2	+2.3
	0.1nm,0.3s,baz=112,slow=14,SNR=5.6						
KSAR	Wonju Array Be	13.61	304	Pn	Pn	15 34 23.2	+2.0
MDJ	Mudanjiang	17.17	329	P	Pn	15 35 07.7	-0.2
MDJ				pmax	pmax		
	comp=Z,17nm,0.8s						
MDJ				pmax	pmax		
	comp=Z,2μm,9.7s						
MDJ	Mudanjiang	17.17	329	*e*Pn	Pn	15

comp=Z,7.6nm,0.5s,baz=6.1,slow=7.5,SNR=122
AS31 **Alice Springs** 54.41 189 *eP* P 15 40 35.0 0.0
comp=Z,1.3nm,0.6s
ASAR **Alice Springs** 54.41 189 P P 15 40 35.2 +0.3
comp=Z,1.6nm,0.6s,baz=5.2,slow=6.0,SNR=49
ILAR **Eielson Array** 54.83 30 P P 15 40 36.8 -0.8
comp=Z,0.7nm,0.8s,baz=256,slow=6.1,SNR=6.4
ILB **Eielson Array** 54.83 30 *eP* P 15 40 36.8 -0.8
ILB **Eielson Array** 54.83 30 *eP* P 15 40 36.7 -0.9
VOSK **Vostochnaya** 55.15 316 *eP* P 15 40 40.1 0.0
comp=Z,2.3nm,0.7s
BVAR **Borovoye Array** 55.48 316 P P 15 40 42.3 -0.1
comp=Z,1.5nm,0.6s,baz=94,slow=7.8,SNR=7.2
KKAR **Karatay Array** 57.02 304 *eP* P 15 40 54.0 +0.4
ARU **Arti** 61.67 321 P P 15 41 25.6 +0.1
comp=Z,2.1nm,0.5s,baz=63,slow=3.0,SNR=6.7
ARU **Arti** 61.67 321 *eP* P 15 41 25.6 +0.1
comp=Z,7.1nm,1.0s
STKA **Stephens Creek** 62.03 180 P P 15 41 28.8 +0.7
comp=Z,1.0nm,0.5s,baz=350,slow=10,SNR=6.2
STKA **Stephens Creek** 62.03 180 *eP* P 15 41 29.0 +1.0
comp=Z,6.1nm,2.0s
ABKAR **Akbulak array** 62.65 313 *eP* P 15 41 32.0 -0.2
AKTO **Aktyubinsk** 63.52 315 P P 15 41 39.2 +1.2
comp=Z,1.2nm,0.5s,baz=85,slow=7.4,SNR=5.4
GEYT **Alibeck** 67.56 302 P P 15 42 03.0 -1.3
comp=Z,2.5nm,0.8s,baz=66,slow=12,SNR=5.5
YKA **Yellowknife Ar** 69.25 29 P P 15 42 14.2 -0.1
comp=Z,0.6nm,0.8s,baz=292,slow=6.0,SNR=10.0
YKB5 **Yellowknife Ar** 69.25 29 *eP* P 15 42 13.9 -0.4
ARA0 **ARCESS Array S** 70.30 340 *eP* P 15 42 21.1 +0.3
ARCES **ARCESS Array B** 70.30 340 P P 15 42 21.1 +0.3
comp=Z,2.5nm,1.1s,baz=50,slow=8.4,SNR=2.8
FIA0 **FINESS Array S** 74.85 333 *eP* P 15 42 48.1 +0.2
FINES **FINESS Array B** 74.85 333 P P 15 42 48.1 +0.2
comp=Z,2.4nm,0.8s,baz=105,slow=6.5,SNR=6.4
KBZ **Khabaz** 75.60 312 P P 15 42 53.3 +0.7
comp=Z,2.4nm,0.7s,baz=124,slow=6.4,SNR=6.8
NV01 **Mina Array Sit** 78.56 52 *eP* P 15 43 10.2 +0.5
NVAR **Mina Array Bea** 78.56 52 P P 15 43 09.9 +0.3
comp=Z,1.0nm,0.5s,baz=293,slow=5.9,SNR=11
AKASG **Malin Array Be** 79.80 323 P P 15 43 15.6 -0.3
comp=Z,0.3nm,0.3s,baz=52,slow=5.4,SNR=4.0
NB2 **NORSAR Subarra** 80.41 338 P P 15 43 18.8 -0.3
comp=Z,1.9nm,0.8s,baz=40,slow=5.6
NB200 **NORSAR Array S** 80.41 338 *eP* P 15 43 19.1 +0.1
NOA **NORSAR Array B** 80.41 338 P P 15 43 19.1 +0.1
comp=Z,1.5nm,0.8s,baz=41,slow=5.3,SNR=5.7
BR101 **Keskin Array S** 83.59 313 *eP* P 15 43 37.2 +0.9
BRTR **Keskin Array B** 83.59 313 P P 15 43 37.2 +0.9
comp=Z,2.1nm,0.9s,baz=116,slow=2.9,SNR=6.7
BR231 **Keskin MP Arra** 84.07 313 *eP* P 15 43 37.8 -1.0
LTX **Lajitas** 93.69 53 *eP* P 15 44 25.8 +1.0
TXAR **Lajitas Array** 93.69 53 P P 15 44 25.8 +1.0
comp=Z,0.5nm,0.6s,baz=306,slow=2.4,SNR=5.8

*IDC **05** 15:32:05.1±0.8, 38°.18N×144°.24E, h0km, mb4.1/14, mb1 4.2/21, mb1mx3.9/75, mbtmp4.2/21, ML3.8/6, Error ellipse: s-maj=22.5km s-min=15.0km az=97.0*
*ISCJB **05** 15:32:08.4±0.3, 38°.25N±0°.03×144°.08E±0°.04, h33km, mb4.5/34, Error ellipse: s-maj=4.6km s-min=4.0km az=163.4*
*JMA **05** 15:32:08.6±0.2, 38°.35N×143°.98E, h23km, M4.1*
*NEIC **05** 15:32:10.5±0.3, 38°.27N×144°.13E, h35km, mb4.6/21, Error ellipse: s-maj=6.3km s-min=4.8km az=130.0*
ISC 05 15:32:10.3±0.5, 38°.23N±0°.04×144°.07E±0°.06, h35km, n84, σ1§56/92, mb4.5/34, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	2.06	295	P	Pn	15 32 41.5	-0.9
OFUJ				S	Sn	15 33 05.8	-1.1
JIO	**Ouri**	2.15	277	P	Pn	15 32 42.9	-0.7
JIO				S	Sn	15 33 08.0	-1.1
MIYJ	**Miyakonagasawa**	2.21	308	P	Pn	15 32 43.0	-1.5
MIYJ				eS	Sn	15 33 08.9	-1.7
JMK	**Ichinoseki**	2.35	289	P	Pn	15 32 45.7	-0.6
JOM	**Ohasama**	2.50	301	P	Pn	15 32 47.7	-0.7
JANG	**Nango**	2.92	318	P	Pn	15 32 52.8	-1.4
JANG				S	Sn	15 33 26.3	-1.7
JYK	**Kaneyama**	2.99	284	P	Pn	15 32 55.1	-0.1
JYK				S	Sn	15 33 29.7	-0.1
JFT	**Otama**	3.04	258	P	Pn	15 32 56.4	+0.5
JFT				S	Sn	15 33 31.2	+0.2
JAW	**Awa shima**	3.80	275	P	Pn	15 33 06.7	+0.4
ERM	**Erimo**	3.85	350	ePn	Pn	15 33 05.4	-1.5
ERM				eSn	Sn	15 33 44.0	-6.9
JOT	**Ohata**	3.92	324	P	Pn	15 33 09.7	+1.8
JKB	**Kayabe**	4.33	328	P	Pn	15 33 13.8	+0.2
MJAR	**Matsushiro Arr**	4.96	252	Pn	Pn	15 33 22.5	+0.2
	5.0nm,0.3s,baz=70,slow=11,SNR=22						
MAJO	**Matsushiro**	4.96	252	ePn	Pn	15 33 23.6	+1.3
MAT	**Matsushiro**	4.96	252	P	Pn	15 33 23.8	+1.5
MAT				eS	Sn	15 34 19.2	+0.7
MJB9	**Matsu-Tunnel**	4.96	252	ePn	Pn	15 33 23.5	+1.2
ASAJ	**Asahikawa**	5.99	350	Pn	Pn	15 33 34.9	-1.4
	3.6nm,0.3s,baz=184,slow=11,SNR=52						
ASAJ				Sn	Sn	15 34 44.7	+1.1
	1.9nm,0.3s,baz=68,slow=30,SNR=3.4						
JHJ2	**Mitsune**	6.17	215	ePn	Pn	15 33 37.4	-1.4
JHJ2				eSn	Sn	15 34 42.8	-5.4
JHJ	**Hachijo jima 2**	6.18	216	Pn	Pn	15 33 36.9	-2.1
	9.7nm,0.3s,baz=328,slow=19,SNR=3.3						
JHJ				Sn	Sn	15 34 43.1	-5.3
	38nm,0.3s,baz=62,slow=22,SNR=6.6						
INU	**Inuyama**	6.35	245	ePn	Pn	15 33 41.7	+0.3
YSS	**Yuzh-Sakhalins**	8.77	354	ePn	Pn	15 34 12.1	-2.5
USRK	**Ussuriysk Ar.**	10.88	307	Pn	Pn	15 34 44.8	+1.5
	0.5nm,0.3s,baz=114,slow=13,SNR=16						
CBIJ	**Chichi jima**	11.21	189	ePn	Pn	15 34 45.1	-3.0
KSRS	**Korea Array**	12.79	272	Pn	Pn	15 35 11.1	+1.5
	0.5nm,0.3s,baz=88,slow=14,SNR=7.8						
KS01	**Wonju Array Si**	12.81	272	ePn	Pn	15 35 09.0	-0.8
KS15	**Wonju Array Si**	12.82	271	ePn	Pn	15 35 10.7	+0.7
KSAR	**Wonju Array Be**	12.82	271	Pn	Pn	15 35 11.1	+1.1
KLR	**Kul'dur**	14.13	325	Pn	Pn	15 35 26.7	-1.1
	0.2nm,0.3s,baz=136,slow=15,SNR=4.4						
JOW	**Kunigami**	17.48	234	P	P	15 36 12.1	-0.1
	0.3nm,0.3s,baz=76,slow=12,SNR=4.9						
JOW	**Kunigami**	17.48	234	ePn	P	15 36 12.5	+0.3
	40nm,1.2s						
PEA0	**Petropavlovsk-**	17.62	28	ePn	Pn	15 36 10.3	-2.6
HIA	**Hailar**	20.66	310	*eP*	P	15 36 44.5	-2.4
	16nm,1.0s						
SEY	**Seymchan**	25.25	9	P	P	15 37 33.4	+0.6
	1.9nm,0.6s,baz=214,slow=9.7,SNR=8.5						
YAK	**Yakutsk**	25.43	344	P	P	15 37 35.2	+0.8
	14nm,0.6s,baz=48,slow=0.3,SNR=8.1						
YAK	**Yakutsk**	25.43	344	*eP*	P	15 37 34.9	+0.5
	17nm,0.8s						
SONA1	**Songino Array**	28.91	302	*eP*	P	15 38 07.8	+1.8
SONA0	**Songino Array**	28.91	302	*eP*	P	15 38 07.8	+1.9
	4.0nm,1.0s						
SONM	**Songino Array**	28.91	302	P	P	15 38 07.8	+1.9
	2.2nm,0.7s,baz=104,slow=8.5,SNR=5.0						
TLY	**Talaya**	31.18	309	*eP*	P	15 38 26.2	+0.3
	4.1nm,0.9s						
TIXI	**Tiksi**	34.39	352	P	P	15 38 53.7	+0.1
	0.8nm,0.5s,baz=128,slow=6.3,SNR=3.7						
TIXI	**Tiksi**	34.39	352	*eP*	P	15 38 53.7	+0.1
	13nm,2.0s						
NIKH	**Nikolski High**	35.40	50	*eP*	P	15 39 02.9	+0.4
	182nm,1.3s						
KWAJ	**Kwajalein Atol**	36.17	138	*eP*	P	15 39 09.3	-0.2
	135nm,0.9s						
ZAA0	**Zalesovo Array**	42.69	311	*eP*	P	15 40 04.2	+0.7
ZAA1	**Zalesovo Array**	42.69	311	*eP*	P	15 40 04.5	+1.1
ZALV	**Zalesovo Beam**	42.69	311	P	P	15 40 04.5	+1.1
	1.6nm,0.5s,baz=94,slow=7.9,SNR=4.1						
CHTO	**Chiang Mai**	43.62	257	*eP*	P	15 40 12.2	+0.7
	2.2nm,0.7s						
CM01	**Chiang Mai Arr**	43.84	256	*eP*	P	15 40 14.5	+1.3
SPU	**Mount Spurr**	45.00	38	*eP*	P	15 40 23.5	+1.5
CAST	**Castle Rocks**	45.05	35	*eP*	P	15 40 21.9	-0.4
	16nm,1.9s						
MK01	**Makanchi Array**	45.28	302	*eP*	P	15 40 25.4	+1.0
MK31	**Makanchi Array**	45.28	302	*eP*	P	15 40 25.1	+0.7
MK32	**Makanchi Array**	45.28	302	*eP*	P	15 40 25.4	+1.0
MKAR	**Makanchi Array**	45.28	302	P	P	15 40 25.4	+1.0
	2.1nm,0.6s,baz=85,slow=9.4,SNR=6.2						
MKAR	**Makanchi Array**	45.28	302	*eP*	P	15 40 25.1	+0.7
MAKZ	**Makanchi**	45.49	302	*eP*	P	15 40 26.9	+0.8
	3.5nm,0.9s						
BWN	**Browne**	46.23	34	*eP*	P	15 40 31.0	-0.7
	9.8nm,1.0s						
RND	**Reindeer**	46.50	35	*eP*	P	15 40 34.2	+0.3
	20nm,1.9s						
MDM	**Murphy Dome**	46.78	33	*eP*	P	15 40 35.9	-0.1
	14nm,1.8s						
PMG	**Port Moresby**	47.47	176	*eP*	P	15 40 41.3	-0.4
	33nm,1.0s						
KSM	**Kuching**	47.91	228	*eP*	P	15 40 47.5	+2.2
	12nm,1.1s						
DIV	**Divide**	48.05	38	*eP*	P	15 40 44.6	-1.3
	48nm,1.9s						
TKM2	**Tokmak 2**	50.92	298	*eP*	P	15 41 10.0	+1.7
	6.8nm,0.7s						
VOSK	**Vostochnaya**	51.06	312	*eP*	P	15 41 09.6	+0.7
	12nm,1.8s						
IPM	**Ipoh**	51.56	240	*eP*	P	15 41 12.8	-0.3
	7.8nm,1.1s						
MTN	**Manton Dam**	52.23	196	*eP*	P	15 41 18.4	+0.5
	43nm,1.5s						
WR1	**Warramunga Arr**	58.58	191	*eP*	P	15 42 03.2	-0.4
	18nm,1.6s						
WRA	**Warramunga Arr**	58.58	191	P	P	15 42 03.2	-0.4
	2.4nm,0.6s,baz=9.2,slow=7.2,SNR=9.0						
ABKAR	**Akbulak array**	58.78	310	*eP*	P	15 42 05.6	+0.9
AKTO	**Aktyubinsk**	59.44	312	P	P	15 42 10.7	+1.4
	2.4nm,0.7s,baz=66,slow=14,SNR=4.1						
ASAR	**Alice Springs**	62.30	191	P	P	15 42 29.1	+0.2
	0.5nm,0.7s,baz=2.5,slow=7.5,SNR=4.3						
ARA0	**ARCESS Array S**	63.61	340	*eP*	P	15 42 37.4	+0.2
ARCES	**ARCESS Array B**	63.61	340	P	P	15 42 37.4	+0.2
	1.3nm,0.8s,baz=50,slow=6.5,SNR=5.2						
AFI	**Afiamalu**	66.33	132	*eP*	P	15 42 56.7	+1.2
	184nm,2.0s						
FIA1	**FINESS Array S**	68.72	333	*eP*	P	15 43 09.1	-0.9
	23nm,1.6s						
FIA0	**FINESS Array S**	68.73	333	*eP*	P	15 43 10.5	+0.5
FINES	**FINESS Array B**	68.73	333	P	P	15 43 10.5	+0.5
	2.6nm,0.7s,baz=70,slow=6.7,SNR=6.3						
AKASG	**Malin Array Be**	74.62	323	P	P	15 43 45.7	0.0
	1.8nm,0.6s,baz=44,slow=6.6,SNR=6.1						
PD31	**Pinedale Array**	75.32	47	*eP*	P	15 43 50.2	0.0
PDAR	**Pinedale Array**	75.32	47	P	P	15 43 50.8	+0.6
	0.5nm,0.5s,baz=236,slow=1.0,SNR=2.4						
GERES	**GERESS Array B**	82.78	330	P	P	15 44 30.6	-0.1
	0.3nm,0.2s,baz=43,slow=6.0,SNR=3.6						
SNAA	**Sanae**	142.50	196	P	PKPpre	15 51 25.6	
VNA2	**Neumayer--Watz**	144.04	196	P	PKPbc	15 51 39.4	+0.4
	baz=114,slow=2.7						
VNA3	**Neumayer Olymp**	144.25	194	P	PKPbc	15 51 39.8	+0.1

*NEIC **05** 15:41:01.5, 36°.60S×177°.42E, h169km, MG4.1(WEL), After WEL.*
WEL 05 15:41:01.4±0.5, 36°.53S×177°.35E, h161km±6km, ML4.1/12, 4C-5D, Error ellipse: s-maj=7.2km s-min=6.7km az=90.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HAZ	**Te Kaha**	1.27	164	PN	Pn	15 41 29.4	-0.1
HAZ				SN	Sn	15 41 51.6	+0.4
MXZ	**Matakaoa Point**	1.28	144	PN	Pn	15 41 30.0	+0.4
MXZ				SN	Sn	15 41 51.4	0.0
MXZ				AML	AML	15 41 59.8	
MXZ	**Matakaoa Point**	1.28	144	ePn	Pn	15 41 27.4	-2.2
MXZ				Sn	Sn	15 41 51.4	0.0
PKGZ	**Pakihiroa**	1.47	157	PN	Pn	15 41 31.9	+0.3
WMGZ	**Waiomatatini S**	1.54	147	PN	Pn	15 41 32.2	+0.1
WMGZ				SN	Sn	15 41 55.7	-0.2
WMGZ	**Waiomatatini S**	1.54	147	Pn	Pn	15 41 32.2	+0.1
PUZ	**Puketiti**	1.70	155	PN	Pn	15 41 33.5	-0.3
PUZ				AML	AML	15 42 10.0	
PUZ				AML	AML	15 42 11.2	
PUZ	**Puketiti**	1.70	155	Pn	Pn	15 41 33.5	-0.3
TWGZ	**Tauwhareparae**	1.72	163	PN	Pn	15 41 34.3	+0.2
TWGZ				SN	Sn	15 41 59.4	0.0
URZ	**Urewera**	1.74	186	PN	Pn	15 41 34.2	0.0
URZ				AML	AML	15 42 02.9	
URZ				AML	AML	15 42 04.0	
URZ	**Urewera**	1.74	186	ePn	Pn	15 41 34.5	+0.3
URZ				eS	Sn	15 42 02.9	+3.3
MWZ	**Matawai**	1.81	176	PN	Pn	15 41 34.7	-0.3
MWZ				AML	AML	15 42 07.9	
MWZ				AML	AML	15 42 13.3	
TKGZ	**Te Karaka**	1.95	168	⇓PN	Pn	15 41 36.2	-0.3
TKGZ	**Te Karaka**	1.95	168	Pn	Pn	15 41 36.2	-0.3
RAGZ	**Rawiri**	1.96	179	⇑PN	Pn	15 41 37.0	+0.2
RAGZ	**Rawiri**	1.96	179	Pn	Pn	15 41 37.0	+0.2
MUGZ	**Murupara**	2.00	193	PN	Pn	15 41 37.3	+0.2
CNGZ	**Carnagh Statio**	2.06	161	PN	Pn	15 41 37.7	-0.1
CNGZ	**Carnagh Statio**	2.06	161	Pn	Pn	15 41 37.7	-0.1
PRRZ	**Plateau Road**	2.11	201	PN	Pn	15 41 39.0	+0.6
PRRZ	**Plateau Road**	2.11	201	Pn	Pn	15 41 39.1	+0.7
RIGZ	**Rimuhau**	2.20	172	PN	Pn	15 41 38.8	-0.7
SNGZ	**Shannon Statio**	2.25	180	PN	Pn	15 41 39.5	-0.6
SNGZ	**Shannon Statio**	2.25	180	Pn	Pn	15 41 39.5	-0.6
RAHZ	**Arahi**	2.39	185	PN	Pn	15 41 41.3	-0.4
RAHZ	**Arahi**	2.39	185	Pn	Pn	15 41 38.8	-2.9
MRHZ	**Matea Rd**	2.42	198	PN	Pn	15 41 42.0	0.0
PRGZ	**Paritu Road**	2.42	170	PN	Pn	15 41 41.3	-0.9
PRGZ	**Paritu Road**	2.42	170	Pn	Pn	15 41 41.3	-0.9
KNZ	**Kokohu**	2.50	174	PN	Pn	15 41 41.8	-1.1
KNZ	**Kokohu**	2.50	174	ePn	Pn	15 41 41.9	-1.1
WHHZ	**Waihua**	2.54	182	PN	Pn	15 41 42.8	-0.7
NMHZ	**Naumai**	2.60	189	⇑PN	Pn	15 41 44.3	0.0
NMHZ	**Naumai**	2.60	189	Pn	Pn	15 41 44.3	0.0
MHGZ	**Mahia Peninsul**	2.65	171	⇓PN	Pn	15 41 43.8	-1.0
MHGZ	**Mahia Peninsul**	2.65	171	Pn	Pn	15 41 43.8	-1.0
BKZ	**Black Stump Fm**	2.72	194	PN	Pn	15 41 44.6	-1.1
BKZ				AML	AML	15 42 25.7	
BKZ	**Black Stump Fm**	2.72	194	ePn	Pn	15 41 44.6	-1.1
BKZ				eS	Sn	15 42 25.7	+5.6
ARHZ	**Aropaoanui**	2.74	186	⇓PN	Pn	15 41 45.1	-0.9
ARHZ	**Aropaoanui**	2.74	186	Pn	Pn	15 41 45.1	-0.9
HIZ	**Hauiti**	2.80	224	PN	Pn	15 41 48.7	+2.0
HIZ	**Hauiti**	2.80	224	ePn	Pn	15 41 48.7	+2.0
MCHZ	**McNeill Hill**	2.95	190	PN	Pn	15 41 47.6	-0.9
MCHZ	**McNeill Hill**	2.95	190	Pn	Pn	15 41 47.6	-0.9
KWHZ	**Kaweka Forest**	2.98	194	PN	Pn	15 41 47.8	-1.2
WNVZ	**Wahianoa**	3.12	206	⇓PN	Pn	15 41 50.4	-0.4
WNVZ	**Wahianoa**	3.12	206	ePn	Pn	15 41 50.4	-0.4
BHHZ	**Black Hill Sta**	3.12	199	PN	Pn	15 41 49.4	-1.4
BHHZ	**Black Hill Sta**	3.12	199	Pn	Pn	15 41 49.4	-1.4
CKHZ	**Cape Kidnapper**	3.13	184	PN	Pn	15 41 49.2	-1.6
CKHZ	**Cape Kidnapper**	3.13	184	Pn	Pn	15 41 49.2	-1.6
MOVZ	**Moawhango**	3.14	203	PN	Pn	15 41 49.8	-1.1
MOVZ	**Moawhango**	3.14	203	ePn	Pn	15 41 49.8	-1.1
KRHZ	**Kereru**	3.20	194	PN	Pn	15 41 49.9	-1.8
MTVZ	**Mangateitei**	3.21	207	PN	Pn	15 41 50.4	-1.5
KAHZ	**Kahuranaki**	3.28	186	PN	Pn	15 41 51.0	-1.7
KAHZ	**Kahuranaki**	3.28	186	Pn	Pn	15 41 51.0	-1.7
VRZ	**Vera Road**	3.30	218	PN	Pn	15 41 54.8	+1.8
VRZ	**Vera Road**	3.30	218	Pn	Pn	15 41 54.8	+1.8
PNHZ	**Pukenui**	3.50	195	PN	Pn	15 41 53.1	-2.3
PNHZ	**Pukenui**	3.50	195	Pn	Pn	15 41 53.3	-2.1
PXZ	**Pawanui**	3.52	186	PN	Pn	15 41 53.1	-2.5
PXZ				AML	AML	15 42 38.0	
PXZ				AML	AML	15 42 38.0	
PXZ	**Pawanui**	3.52	186	ePn	Pn	15 41 53.1	-2.5
PXZ				eS	Sn	15 42 38.0	+0.1
WPHZ	**Waipukurau**	3.60	191	PN	Pn	15 41 54.7	-2.0
WPHZ	**Waipukurau**	3.60	191	Pn	Pn	15 41 54.7	-2.0
TSZ	**Takapari Road**	3.69	197	PN	Pn	15 41 55.5	-2.4
TSZ	**Takapari Road**	3.69	197	Pn	Pn	15 41 55.5	-2.4
PRHZ	**Porangahau**	3.77	188	PN	Pn	15 41 56.3	-2.7
PRHZ	**Porangahau**	3.77	188	Pn	Pn	15 41 56.3	-2.7
DVHZ	**Dannevirke**	3.88	194	PN	Pn	15 41 57.4	-2.9
DVHZ	**Dannevirke**	3.88	194	Pn	Pn	15 41 57.4	-2.9
ANWZ	**Angora Road**	3.98	190	⇑PN	Pn	15 41 58.9	-2.7
POWZ	**Post Office Ro**	4.05	197	PN	Pn	15 41 59.9	-2.6
POWZ	**Post Office Ro**	4.05	197	Pn	Pn	15 41 59.9	-2.6
PRWZ	**Pori Road**	4.16	195	PN	Pn	15 42 01.2	-2.8
PRWZ	**Pori Road**	4.16	195	Pn	Pn	15 42 01.2	-2.8
BFZ	**Birch Farm**	4.23	191	⇓PN	Pn	15 42 01.6	-3.3
BFZ				AML	AML	15 42 54.5	
BFZ	**Birch Farm**	4.23	191	ePn	Pn	15 42 01.5	-3.4
BFZ				eS	Sn	15 42 48.3	-6.2
BFZ				eS	Sn	15 42 54.5	0.0
MRZ	**Mangatainoka R**	4.35	198	PN	Pn	15 42 02.9	-3.5
MRZ	**Mangatainoka R**	4.35	198	ePn	Pn	15 42 02.9	-3.5
TIWZ	**Tintock**	4.39	195	⇑PN	Pn	15 42 03.6	-3.4
TIWZ				AML	AML	15 42 59.0	
TIWZ				AML	AML	15 42 59.5	
TIWZ	**Tintock**	4.39	195	Pn	Pn	15 42 03.6	-3.4
CPWZ	**Castlepoint**	4.46	191	PN	Pn	15 42 04.9	-3.0
CPWZ	**Castlepoint**	4.46	191	Pn	Pn	15 42 04.9	-3.0
HOWZ	**Holdsworth Sta**	4.59	198	PN	Pn	15 42 05.6	-4.0
HOWZ	**Holdsworth Sta**	4.59	198	Pn	Pn	15 42 05.6	-4.0
OGWZ	**Otaki Gorge**	4.61	201	PN	Pn	15 42 06.2	-3.5
OGWZ	**Otaki Gorge**	4.61	201	Pn	Pn	15 42 06.2	-3.5
TMWZ	**Te Maipa**	4.71	194	PN	Pn	15 42 07.2	-3.9
TMWZ	**Te Maipa**	4.71	194	Pn	Pn	15 42 07.2	-3.9
KIW	**Kapiti Island**	4.73	203	PN	Pn	15 42 07.7	-3.6
MTW	**Mount Morrison**	4.84	197	PN	Pn	15 42 08.4	-4.4
MTW	**Mount Morrison**	4.84	197	ePn	Pn	15 42 08.4	-4.4
CAW	**Cannon Point**	4.91	201	PN	Pn	15 42 09.3	-4.3
CAW				AML	AML	15 43 09.9	
CAW				AML	AML	15 43 12.0	
DUWZ	**D'Urville Isla**	5.04	211	PN	Pn	15 42 11.9	-3.5
MSWZ	**Moikau Station**	5.14	198	PN	Pn	15 42 12.0	-4.9
MSWZ	**Moikau Station**	5.14	198	Pn	Pn	15 42 12.0	-4.9
WEL	**Wellington**	5.16	202	PN	Pn	15 42 12.7	-4.2
WEL				AML	AML	15 43 13.0	
WEL	**Wellington**	5.16	202	Pn	Pn	15 42 12.7	-4.2
SNZO	**South Karori**	5.20	203	ePn	Pn	15 42 13.0	-4.5
SNZO				eS	Sn	15 43 11.2	-5.9
BHW	**Baring Head**	5.24	201	PN	Pn	15 42 13.4	-4.6
TCW	**Tory Channel**	5.25	206	PN	Pn	15 42 13.9	-4.3
TCW				AML	AML	15 43 17.6	
TCW				AML	AML	15 43 20.0	
TCW	**Tory Channel**	5.25	206	ePn	Pn	15 42 13.9	-4.3
TCW				eS	Sn	15 43 17.6	-0.8
PLWZ	**Palliser**	5.29	197	PN	Pn	15 42 13.9	-4.8
PLWZ	**Palliser**	5.29	197	Pn	Pn	15 42 13.9	-4.8
TUWZ	**Tuamarina**	5.56	207	PN	Pn	15 42 17.8	-4.5
TUWZ				AML	AML	15 43 21.2	
NNZ	**Nelson**	5.61	212	PN	Pn	15 42 19.2	-3.8
NNZ	**Nelson**	5.61	212	Pn	Pn	15 42 19.2	-3.8
THZ	**Tophouse**	6.26	212	PN	Pn	15 42 27.7	-4.0
THZ	**Tophouse**	6.26	212	ePn	Pn	15 42 27.8	-3.9
THZ				eS	Sn	15 43 32.5	-10
KHZ	**Kahutara**	6.58	205	PN	Pn	15 42 30.7	-5.0
KHZ	**Kahutara**	6.58	205	ePn	Pn	15 42 31.0	-4.7
KHZ				eS	Sn	15 43 34.1	-16
LTZ	**Lake Taylor**	7.37	211	PN	Pn	15 42 41.2	-5.1
LTZ	**Lake Taylor**	7.37	211	ePn	Pn	15 42 42.7	-3.7
LTZ				e		15 43 48.9	
OXZ	**Oxford**	7.92	209	PN	Pn	15 42 47.0	-6.5
OXZ	**Oxford**	7.92	209	ePn	Pn	15 42 47.6	-6.0
OXZ				e		15 44 02.0	
MQZ	**McQueen's Vall**	8.02	205	PN	Pn	15 42 48.2	-6.8
MQZ	**McQueen's Vall**	8.02	205	ePn	Pn	15 42 48.2	-6.7
MQZ				eS	Sn	15 44 06.2	-18
RPZ	**Rata Peaks**	8.64	212	ePn	Pn	15 42 58.9	-4.3
RPZ				eS	Sn	15 44 25.3	-14
ODZ	**Otahua Downs**	9.90	209	ePn	Pn	15 43 13.9	-5.9
ODZ				eS	Sn	15 44 50.5	-19

*ISCJB **05** 15:41:11.7±0.7, 55°.01N±0°.07×160°.26W±0°.07, h65km±5km, mb3.7/7, Error ellipse: s-maj=13.6km s-min=3.7km az=152.8*
*NEIC **05** 15:41:11.9, 54°.89N×160°.34W, h22km, ML3.5(AEIC), After AEIC.*
*IDC **05** 15:41:13.4±6.4, 55°.21N×160°.55W, h49km±44km, mb3.5/7, mb1 3.5/9, mb1mx3.2/60, mbtmp3.6/9, ML3.6/2, Error ellipse: s-maj=90.2km s-min=26.2km az=163.0*
**ISC 05 15:41:10.9±1.5, 54°.9N±0°.1×160°.17W±0°.07, h47km±

*CSEM **05** 15:41:52.8, 37.°79N×14.°98E, h28km, ML2.6/20*
ROM 05 15:41:52.8±0.1, 37.°79N×14.°98E, h28km±2km, Ml2.6/20, Error ellipse: s-maj=2.0km s-min=1.1km az=102.0, Sicily

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ESLN	**Serra La Nave**	**0.10**	**180**	Pg	Pb	15 41 57.5	-0.6
ESLN	256nm,0.7s			Sg	Sb	15 42 01.5	-0.1
ESLN	**Serra La Nave**	**0.10**	**180**	Pg	Pb	15 41 57.5	-0.6
ESLN	256nm,0.7s			Sg	Sb	15 42 01.5	-0.1
MMME	**Mongiuffi-Meli**	**0.26**	**57**	Pg	Pb	15 41 59.4	-0.3
MMME	609nm,0.5s			Sg	Sn	15 42 05.5	-0.6
MMME	**Mongiuffi-Meli**	**0.26**	**57**	Pg	Pb	15 41 59.4	-0.3
MMME	609nm,0.5s			Sg	Sn	15 42 05.5	-0.6
MNO	**Monte Soro**	**0.26**	**303**	Pg	Pb	15 41 59.3	-0.5
MNO	351nm,0.6s			Sg	Sb	15 42 04.5	0.0
MNO	**Monte Soro**	**0.26**	**303**	Pg	Pb	15 41 59.3	-0.5
MNO	351nm,0.6s			Sg	Sb	15 42 04.5	0.0
MUCR	**Ucria**	**0.26**	**342**	Pg	Pb	15 41 59.0	-0.7
MUCR				Sg	Sb	15 42 04.1	-0.3
MUCR	**Ucria**	**0.26**	**342**	Pg	Pb	15 41 59.0	-0.7
MUCR				Sg	Sb	15 42 04.1	-0.3
NOV	**Novara**	**0.27**	**28**	Pg	Pb	15 41 59.7	0.0
NOV	668nm,0.3s			Sg	Sb	15 42 04.7	+0.3
NOV	**Novara**	**0.27**	**28**	Pg	Pb	15 41 59.7	0.0
NOV	668nm,0.3s			Sg	Sb	15 42 04.7	+0.3
ECNV	**Catenanuova**	**0.28**	**227**	Pg	Pn	15 42 01.0	-0.2
	664nm,0.9s						
ECNV	**Catenanuova**	**0.28**	**227**	Pg	Pn	15 42 01.0	-0.2
	664nm,0.9s						
GALF	**Gagliano Caste**	**0.33**	**256**	Pg	Pb	15 42 00.6	0.0
GALF	596nm,0.7s			Sg	Sn	15 42 07.2	-0.6
GALF	**Gagliano Caste**	**0.33**	**256**	Pg	Pb	15 42 00.6	0.0
GALF	596nm,0.7s			Sg	Sn	15 42 07.2	-0.6
MCSR	**Castroreale**	**0.35**	**39**	Pg	Pb	15 42 00.4	-0.5
MCSR				Sg	Sb	15 42 06.8	+0.5
MCSR	**Castroreale**	**0.35**	**39**	Pg	Pb	15 42 00.4	-0.5
MCSR				Sg	Sb	15 42 06.8	+0.5
CAGR	**Agira**	**0.41**	**246**	Pg	Pn	15 42 02.8	-0.1
	439nm,0.5s						
CAGR	**Agira**	**0.41**	**246**	Pg	Pn	15 42 02.8	-0.1
	439nm,0.5s						
HLNI	**Lentini**	**0.45**	**191**	Pg	Pb	15 42 02.0	-0.3
HLNI				Sg	Sb	15 42 09.2	+0.4
HLNI	**Lentini**	**0.45**	**191**	Pg	Pb	15 42 02.0	-0.3
HLNI	156nm,0.2s			Sg	Sb	15 42 09.2	+0.4
MPNC	**Port Mandanici**	**0.46**	**40**	Pg	Pb	15 42 02.5	-0.1
MPNC	616nm,0.9s			Sg	Sn	15 42 10.6	-0.3
MPNC	**Port Mandanici**	**0.46**	**40**	Pg	Pb	15 42 02.5	-0.1
MPNC	616nm,0.9s			Sg	Sn	15 42 10.6	-0.3
HCRL	**Carlentini**	**0.51**	**175**	Pg	Pb	15 42 03.0	-0.3
HCRL	501nm,0.4s			Sg	Sn	15 42 11.3	-0.7
HCRL	**Carlentini**	**0.51**	**175**	Pg	Pb	15 42 03.0	-0.3
HCRL	501nm,0.4s			Sg	Sn	15 42 11.3	-0.7
MILZ	**Milazzo**	**0.52**	**23**	Pg	Pb	15 42 03.7	+0.2
MILZ	310nm,0.4s			Sg	Sn	15 42 11.8	-0.5
MILZ	**Milazzo**	**0.52**	**23**	Pg	Pb	15 42 03.7	+0.2
MILZ	310nm,0.4s			Sg	Sn	15 42 11.8	-0.5
HAGA	**Augusta**	**0.53**	**164**	Pg	Pb	15 42 03.4	-0.1
HAGA	181nm,0.4s			Sg	Sn	15 42 11.8	-0.6
HAGA	**Augusta**	**0.53**	**164**	Pg	Pb	15 42 03.4	-0.1
HAGA	181nm,0.4s			Sg	Sn	15 42 11.8	-0.6
VPL	**Vulcano Piano**	**0.59**	**1**	Pg	Pb	15 42 04.6	0.0
	787nm,0.5s						
VPL	**Vulcano Piano**	**0.59**	**1**	Pg	Pb	15 42 04.6	0.0
	787nm,0.5s						
MSRU	**Castanea**	**0.63**	**42**	Pg	Pb	15 42 05.5	+0.2
	229nm,0.3s						
MSRU	**Castanea**	**0.63**	**42**	Pg	Pb	15 42 05.5	+0.2
	229nm,0.3s						
SSY	**Sortino**	**0.64**	**173**	Pg	Pb	15 42 05.1	-0.4
SSY	378nm,0.3s			Sg	Sn	15 42 15.3	0.0
SSY	**Sortino**	**0.64**	**173**	Pg	Pb	15 42 05.1	-0.4
SSY	378nm,0.3s			Sg	Sn	15 42 15.3	0.0
HVZN	**Vizzini**	**0.65**	**199**	Pg	Pb	15 42 05.4	-0.2
	313nm,0.5s						
HVZN	**Vizzini**	**0.65**	**199**	Pg	Pb	15 42 05.4	-0.2
	313nm,0.5s						
PLLN	**Pollina**	**0.69**	**287**	Pg	Pn	15 42 07.5	+0.7
	180nm,0.5s						
PLLN	**Pollina**	**0.69**	**287**	Pg	Pn	15 42 07.5	+0.7
	180nm,0.5s						
RAFF	**Raffo Rosso**	**0.75**	**221**	Pg	Pn	15 42 07.4	-0.1
RAFF	**Raffo Rosso**	**0.75**	**221**	Pg	Pn	15 42 07.4	-0.1
GIB	**Gibilmanna**	**0.78**	**285**	Pg	Pn	15 42 08.3	+0.3
	354nm,0.7s						
GIB	**Gibilmanna**	**0.78**	**285**	Pg	Pn	15 42 08.3	+0.3
	354nm,0.7s						
MSCL	**Scilla**	**0.78**	**55**	Pg	Pb	15 42 07.8	-0.1
	113nm,0.5s						
MSCL	**Scilla**	**0.78**	**55**	Pg	Pb	15 42 07.8	-0.1
	113nm,0.5s						
IFIL	**Filicudi I Eol**	**0.84**	**337**	Pg	Pn	15 42 08.4	-0.3
	232nm,0.4s						
IFIL	**Filicudi I Eol**	**0.84**	**337**	Pg	Pn	15 42 08.4	-0.3
	232nm,0.4s						
HAVL	**Avola**	**0.84**	**172**	Pg	Pn	15 42 08.3	-0.5
HAVL	150nm,0.3s			Sg	Sn	15 42 21.0	+0.8
HAVL	**Avola**	**0.84**	**172**	Pg	Pn	15 42 08.3	-0.5
HAVL	150nm,0.3s			Sg	Sn	15 42 21.0	+0.8
SOI	**Samo**	**0.90**	**71**	Pg	Pb	15 42 10.6	+0.8
	43nm,0.4s						
SOI	**Samo**	**0.90**	**71**	Pg	Pb	15 42 10.6	+0.8
	43nm,0.4s						

*CSEM **05** 15:42:49.9, 37.°79N×14.°95E, h28km, ML2.8/10*
ROM 05 15:42:49.9±0.1, 37.°79N×14.°95E, h28km±2km, Ml2.8/10, Error ellipse: s-maj=1.4km s-min=0.7km az=101.0, Sicily

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ESLN	**Serra La Nave**	**0.10**	**167**	Pg	Pb	15 42 54.8	-0.3
	676nm,0.3s						
ESLN	**Serra La Nave**	**0.10**	**167**	Pg	Pb	15 42 54.8	-0.3
	676nm,0.3s						
MNO	**Monte Soro**	**0.25**	**306**	Pg	Pb	15 42 56.6	-0.1
MNO				Sg	Sb	15 43 01.3	0.0
MNO	**Monte Soro**	**0.25**	**306**	Pg	Pb	15 42 56.6	-0.1
MNO				Sg	Sb	15 43 01.3	0.0
MUCR	**Ucria**	**0.26**	**347**	Pg	Pb	15 42 56.4	-0.4
MUCR				Sg	Sb	15 43 01.4	0.0
MUCR	**Ucria**	**0.26**	**347**	Pg	Pb	15 42 56.4	-0.4
MUCR				Sg	Sb	15 43 01.4	0.0
ECNV	**Catenanuova**	**0.27**	**225**	Pg	Pn	15 42 57.8	-0.2
ECNV	**Catenanuova**	**0.27**	**225**	Pg	Pn	15 42 57.8	-0.2
MMME	**Mongiuffi-Meli**	**0.28**	**58**	Pg	Pb	15 42 57.1	+0.1
MMME				Sg	Sb	15 43 02.8	+0.9
MMME	**Mongiuffi-Meli**	**0.28**	**58**	Pg	Pb	15 42 57.1	+0.1
MMME				Sg	Sb	15 43 02.8	+0.9
NOV	**Novara**	**0.28**	**32**	Pg	Pb	15 42 56.9	-0.1
NOV	1μm,0.4s			Sg	Sb	15 43 01.9	+0.1
NOV	**Novara**	**0.28**	**32**	Pg	Pb	15 42 56.9	-0.1
NOV	1μm,0.4s			Sg	Sb	15 43 01.9	+0.1
MCSR	**Castroreale**	**0.37**	**41**	Pg	Pb	15 42 58.0	-0.2
MCSR				Sg	Sb	15 43 04.2	+0.3
MCSR	**Castroreale**	**0.37**	**41**	Pg	Pb	15 42 58.0	-0.2
MCSR				Sg	Sb	15 43 04.2	+0.3
HLNI	**Lentini**	**0.44**	**188**	Pg	Pb	15 42 59.4	+0.1
HLNI	348nm,0.4s			Sg	Sb	15 43 06.5	+0.9
HLNI	**Lentini**	**0.44**	**188**	Pg	Pb	15 42 59.4	+0.1
HLNI	348nm,0.4s			Sg	Sb	15 43 06.5	+0.9
MPNC	**Port Mandanici**	**0.48**	**42**	Pg	Pb	15 43 00.0	+0.1
MPNC	685nm,0.4s			Sg	Sn	15 43 07.7	-0.8
MPNC	**Port Mandanici**	**0.48**	**42**	Pg	Pb	15 43 00.0	+0.1
MPNC	685nm,0.4s			Sg	Sn	15 43 07.7	-0.8
HCRL	**Carlentini**	**0.51**	**172**	Pg	Pb	15 43 00.5	+0.2
HCRL	2μm,0.5s			Sg	Sb	15 43 07.8	+0.4
HCRL	**Carlentini**	**0.51**	**172**	Pg	Pb	15 43 00.5	+0.2
HCRL	2μm,0.5s			Sg	Sb	15 43 07.8	+0.4
HAGA	**Augusta**	**0.53**	**162**	Pg	Pb	15 43 00.7	0.0
HAGA	289nm,0.4s			Sg	Sn	15 43 09.0	-0.6
HAGA	**Augusta**	**0.53**	**162**	Pg	Pb	15 43 00.7	0.0
HAGA	289nm,0.4s			Sg	Sn	15 43 09.0	-0.6
MILZ	**Milazzo**	**0.53**	**25**	Pg	Pb	15 43 00.8	0.0
MILZ	509nm,0.4s			Sg	Sb	15 43 08.8	+0.6
MILZ	**Milazzo**	**0.53**	**25**	Pg	Pb	15 43 00.8	0.0
MILZ	509nm,0.4s			Sg	Sb	15 43 08.8	+0.6
VPL	**Vulcano Piano**	**0.59**	**3**	Pg	Pb	15 43 01.8	0.0
VPL	1μm,0.5s			Sg	Sn	15 43 11.1	-0.2
VPL	**Vulcano Piano**	**0.59**	**3**	Pg	Pb	15 43 01.8	0.0
VPL	1μm,0.5s			Sg	Sn	15 43 11.1	-0.2
HVZN	**Vizzini**	**0.64**	**197**	Pg	Pb	15 43 02.6	+0.1
HVZN				Sg	Sb	15 43 11.2	+0.1
HVZN	**Vizzini**	**0.64**	**197**	Pg	Pb	15 43 02.6	+0.1
HVZN				Sg	Sb	15 43 11.2	+0.1
SSY	**Sortino**	**0.64**	**171**	Pg	Pb	15 43 02.6	0.0
SSY	692nm,0.3s			Sg	Sn	15 43 12.3	-0.1
SSY	**Sortino**	**0.64**	**171**	Pg	Pb	15 43 02.6	0.0
SSY	692nm,0.3s			Sg	Sn	15 43 12.3	-0.1
MSRU	**Castanea**	**0.65**	**43**	Pg	Pn	15 43 03.1	-0.2
MSRU				Sg	Sn	15 43 12.8	+0.1
MSRU	**Castanea**	**0.65**	**43**	Pg	Pn	15 43 03.1	-0.2
MSRU				Sg	Sn	15 43 12.8	+0.1
PLLN	**Pollina**	**0.67**	**288**	Pg	Pn	15 43 04.1	+0.5
	233nm,0.5s						
PLLN	**Pollina**	**0.67**	**288**	Pg	Pn	15 43 04.1	+0.5
	233nm,0.5s						
MSCL	**Scilla**	**0.80**	**56**	Pg	Pn	15 43 05.4	0.0
MSCL	**Scilla**	**0.80**	**56**	Pg	Pn	15 43 05.4	0.0
HAVL	**Avola**	**0.84**	**170**	Pg	Pn	15 43 05.9	0.0
HAVL				Sg	Sn	15 43 17.9	+0.6
HAVL	**Avola**	**0.84**	**170**	Pg	Pn	15 43 05.9	0.0
HAVL				Sg	Sn	15 43 17.9	+0.6
HMDC	**Modica**	**0.84**	**189**	Pg	Pb	15 43 05.5	-0.4
HMDC				Sg	Sn	15 43 18.2	+0.9
HMDC	**Modica**	**0.84**	**189**	Pg	Pb	15 43 05.5	-0.4
HMDC				Sg	Sn	15 43 18.2	+0.9
SOI	**Samo**	**0.92**	**72**	Pg	Pb	15 43 07.6	+0.3
	75nm,0.5s						
SOI	**Samo**	**0.92**	**72**	Pg	Pb	15 43 07.6	+0.3
	75nm,0.5s						
JOPP	**Joppolo**	**1.10**	**42**	Pg	Pn	15 43 09.8	+0.2
JOPP	**Joppolo**	**1.10**	**42**	Pg	Pn	15 43 09.8	+0.2

*IDC **05** 15:45:33.8±1.1, 37.°06N×143.°58E, h0km, mb3.6/4, mb1 3.9/7, mb1mx3.5/51, mbtmp3.7/7, ML3.7/3, Error ellipse: s-maj=32.2km s-min=20.3km az=100.0*
*ISCJB **05** 15:45:37.2±0.8, 37.°06N±0.°04×143.°29E±0.°06, h33km, mb3.7/4, Error ellipse: s-maj=6.6km s-min=5.6km az=173.5*
*JMA **05** 15:45:38.0±0.2, 37.°07N×143.°25E, h46km, M3.7*
ISC 05 15:45:38.7±1.1, 37.°07N±0.°05×143.°32E±0.°08, h35km, n22, σ1§48/31, mb3.6/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.97**	**280**	P	**Pn**	**15 46 09.1**	**-0.6**
JFK				*e*S	**Sn**	**15 46 31.8**	**-1.4**
ONAJ	**Iwakimizuishiy**	**2.02**	**272**	*e*S	**Sn**	**15 46 32.7**	**-1.6**
JIO	**Ouri**	**2.09**	**312**	P	**Pn**	**15 46 10.8**	**-0.4**
JIO				S	**Sn**	**15 46 34.8**	**-1.1**
JMM	**Marumori**	**2.16**	**292**	*e*S	**Sn**	**15 46 36.7**	**-1.1**
JHO	**Hitachi**	**2.25**	**259**	P	**Pn**	**15 46 13.0**	**-0.5**
JHO				S	**Sn**	**15 46 39.1**	**-0.9**
OFUJ	**Ofunato**	**2.40**	**328**	S	**Sn**	**15 46 41.4**	**-2.2**
CHOJ	**Chosi**	**2.41**	**236**	P	**Pn**	**15 46 15.5**	**-0.1**
JOU	**Okura**	**2.47**	**302**	P	**Pn**	**15 46 16.7**	**+0.2**
JOU				S	**Sn**	**15 46 45.7**	**+0.2**
JOM	**Ohasama**	**2.88**	**327**	S	**Sn**	**15 46 54.9**	**-0.7**
JYK	**Kaneyama**	**2.98**	**309**	P	**Pn**	**15 46 23.9**	**+0.4**
BSO1	**Boso 1**	**3.07**	**219**	P	**Pn**	**15 46 24.1**	**-0.1**
JAG	**Ashikaga**	**3.17**	**260**	P	**Pn**	**15 46 26.3**	**+0.2**
JAG				*e*S	**Sn**	**15 47 02.0**	**-0.6**
JRY	**Ryogami san**	**3.71**	**255**	P	**Pn**	**15 46 33.8**	**+0.3**
JRY				S	**Sn**	**15 47 14.2**	**-1.8**
JOD2	**Odawara 2**	**3.87**	**244**	P	**Pn**	**15 46 35.4**	**-0.3**
JOD2				S	**Sn**	**15 47 18.5**	**-1.4**
MJAR	**Matsushiro Arr**	**4.13**	**264**	Pn	**Pn**	**15 46 40.6**	**+1.3**
	3.9nm,0.3s,baz=87,slow=14,SNR=29						
MAT	**Matsushiro**	**4.13**	**264**	P	**Pn**	**15 46 40.9**	**+1.5**
MAT				*e*S	**Sn**	**15 47 27.5**	**+1.0**
JHJ	**Hachijo jima 2**	**4.89**	**217**	Pn	**Pn**	**15 46 49.3**	**-0.4**
	10nm,0.3s,baz=307,slow=16,SNR=12						
JHJ				Sn	**Sn**	**15 47 40.9**	**-4.2**
	31nm,0.3s,baz=280,slow=22,SNR=7.1						
ASAJ	**Asahikawa**	**7.07**	**356**	Pn	Pn	15 47 17.4	-2.2
	1.2nm,0.3s,baz=212,slow=18,SNR=18						
ASAJ				Sn	**Sn**	**15 48 34.9**	**-3.8**
	0.3nm,0.3s,baz=205,slow=14,SNR=2.4						
MKAR	**Makanchi Array**	**45.39**	**302**	P	**P**	**15 53 55.7**	**+2.0**
	0.3nm,0.6s,baz=84,slow=9.9,SNR=2.4						
ILAR	**Eielson Array**	**48.65**	**32**	P	**P**	**15 54 18.2**	**-0.7**
	0.2nm,0.6s,baz=275,slow=6.4,SNR=3.3						
WRA	**Warramunga Arr**	**57.33**	**190**	P	**P**	**15 55 23.8**	**+0.5**
	2.1nm,0.7s,baz=7.7,slow=7.0,SNR=23						
ASAR	**Alice Springs**	**61.05**	**190**	P	**P**	**15 55 49.6**	**+0.7**
	0.8nm,0.7s,baz=6.3,slow=7.9,SNR=22						

*ISCJB **05** 15:48:21.8±1.5, 38.°32N±0.°05×142.°28E±0.°08, h29km±8km, mb3.4/4, Error ellipse: s-maj=11.5km s-min=6.9km az=26.7*
*JMA **05** 15:48:23.7±0.2, 38.°36N×142.°19E, h31km±2km, M3.9*
JMA Felt I J1.
*IDC **05** 15:48:26.2±3.0, 38.°39N×142.°45E, h57km±29km, mb3.2/4, mb1 3.3/6, mb1mx3.0/53, mbtmp3.4/6, ML2.8/2, Error ellipse: s-maj=39.1km s-min=18.1km az=93.0*
ISC 05 15:48:21.4±2.9, 38.°24N±0.°05×142.°22E±0.°09, h16km±16km, n14, σ1§39/22, mb3.6/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.72**	**288**	P	**Pb**	**15 48 36.6**	**+1.0**
JIO				S	**Sg**	**15 48 45.3**	**+0.2**
OFUJ	**Ofunato**	**0.95**	**333**	P	**Pb**	**15 48 39.1**	**-0.4**
OFUJ				S	**Sb**	**15 48 49.6**	**-2.2**
JMK	**Ichinoseki**	**1.06**	**312**	P	**Pb**	**15 48 41.2**	**-0.2**
JMK				S	**Sb**	**15 48 53.9**	**-1.1**
JMM	**Marumori**	**1.19**	**252**	P	**Pb**	**15 48 44.2**	**+0.6**
JMM				S	**Sb**	**15 48 59.1**	**+0.4**
JOU	**Okura**	**1.23**	**276**	P	**Pb**	**15 48 45.1**	**+0.7**
JOU				S	**Sb**	**15 49 00.7**	**+0.7**
JFK	**Kawauchi**	**1.38**	**231**	P	**Pb**	**15 48 47.1**	**+0.3**
JFK				S	**Sn**	**15 49 03.6**	**-0.3**
JYK	**Kaneyama**	**1.61**	**295**	P	**Pn**	**15 48 50.1**	**+0.9**
MJAR	**Matsushiro Arr**	**3.62**	**243**	P	**Pb**	**15 49 22.7**	**-2.3**
	1.1nm,0.3s,baz=90,slow=15,SNR=7.7						
MAT	**Matsushiro**	**3.62**	**243**	P	**Pb**	**15 49 23.3**	**-1.7**
MAT				*e*S	**Sb**	**15 50 05.3**	**-3.4**
ASAJ	**Asahikawa**	**5.88**	**3**	P	**Pn**	**15 49 48.7**	**+0.9**
	0.2nm,0.3s,baz=37,slow=20,SNR=4.0						
ASAJ				S	**Sn**	**15 50 53.4**	**-1.5**
	0.4nm,0.3s,baz=293,slow=16,SNR=2.3						
ZALV	**Zalesovo Beam**	**41.59**	**311**	P	**P**	**15 56 08.8**	**+0.5**
	0.6nm,0.5s,baz=88,slow=7.3,SNR=3.1						
MKAR	**Makanchi Array**	**44.04**	**301**	P	**P**	**15 56 28.3**	**0.0**
	0.1nm,0.4s,baz=88,slow=9.2,SNR=2.3						
WRA	**Warramunga Arr**	**58.34**	**189**	P	**P**	**15 58 17.1**	**+1.4**
	0.3nm,0.4s,baz=6.6,slow=7.4,SNR=7.2						
ASAR	**Alice Springs**	**62.07**	**189**	P	**P**	**15 58 41.5**	**+0.3**
	0.3nm,0.8s,baz=14,slow=11,SNR=5.0						

*IDC **05** 15:57:00.2±2.0, 38.°25N×144.°48E, h0km, mb3.5/4, mb1 3.6/7, mb1mx3.4/42, mbtmp3.5/7, ML3.4/3, Error ellipse: s-maj=54.5km s-min=21.8km az=70.0*
*ISCJB **05** 15:57:03.3±0.8, 38.°32N±0.°04×144.°11E±0.°06, h29km, mb3.5/4, Error ellipse: s-maj=7.7km s-min=5.3km az=37.1*
*JMA **05** 15:57:03.9±0.3, 38.°29N×144.°09E, h39km, M3.5*
ISC 05 15:57:05.0±1.2, 38.°27N±0.°06×144.°15E±0.°08, h29km, n21, σ1§53/33, mb3.5/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.10**	**294**	P	**Pn**	**15 57 37.2**	**-1.0**
JIO	**Ouri**	**2.21**	**276**	P	**Pn**	**15 57 38.9**	**-0.7**
JIO				*e*S	**Sn**	**15 58 03.8**	**-2.1**
JMK	**Ichinoseki**	**2.39**	**288**	P	**Pn**	**15 57 41.5**	**-0.6**
JOM	**Ohasama**	**2.53**	**299**	P	**Pn**	**15 57 43.9**	**-0.2**
JOM				*e*S	**Sn**	**15 58 11.9**	**-2.0**
JMM	**Marumori**	**2.67**	**262**	P	**Pn**	**15 57 45.3**	**-0.8**
JMM				S	**Sn**	**15 58 15.2**	**-2.3**
JOU	**Okura**	**2.74**	**273**	P	**Pn**	**15 57 47.0**	**0.0**
JOU				*e*S	**Sn**	**15 58 17.9**	**-1.2**
JFK	**Kawauchi**	**2.74**	**252**	P	**Pn**	**15 57 45.7**	**-1.3**
JFK				*e*S	**Sn**	**15 58 15.8**	**-3.4**
JRG	**Rokugo**	**2.96**	**293**	P	**Pn**	**15 57 50.2**	**+0.2**
JRG				*e*S	**Sn**	**15 58 24.7**	**+0.1**
JYK	**Kaneyama**	**3.04**	**284**	P	**Pn**	**15 57 51.4**	**+0.4**
JYK				S	**Sn**	**15 58 25.9**	**-0.5**
JFT	**Otama**	**3.10**	**257**	P	**Pn**	**15 57 52.3**	**+0.3**
JFT				S	**Sn**	**15 58 27.3**	**-0.8**
JNBK	**Urakawa-nobuka**	**4.15**	**346**	P	**Pn**	**15 58 06.0**	**-0.3**
JNBK				S	**Sn**	**15 58 51.5**	**-2.3**
JKB	**Kayabe**	**4.33**	**328**	P	**Pn**	**15 58 10.2**	**+1.4**
JCH	**Churui**	**4.38**	**352**	P	**Pn**	**15 58 08.5**	**-1.0**
JCH				*e*S	**Sn**	**15 58 57.3**	**-2.3**
JRY	**Ryogami san**	**4.75**	**243**	P	**Pn**	**15 58 14.0**	**-0.7**
JRY				S	**Sn**	**15 59 05.9**	**-2.9**
MJAR	**Matsushiro Arr**	**5.03**	**252**	Pn	**Pn**	**15 58 19.5**	**+1.0**
	1.4nm,0.3s,baz=80,slow=15,SNR=19						
ASAJ	**Asahikawa**	**5.96**	**349**	Pn	**Pn**	**15 58 30.5**	**-0.6**
	1.1nm,0.3s,baz=189,slow=8.9,SNR=16						
ASAJ				Sn	**Sn**	**15 59 35.5**	**-3.0**
	baz=30,slow=20,SNR=2.1						
KLR	**Kul'dur**	**14.13**	**325**	Pn	**Pn**	**16 00 23.2**	**+0.2**
	0.1nm,0.3s,baz=180,slow=20,SNR=2.2						
SONM	**Songino Array**	**28.94**	**302**	P	**P**	**16 03 03.8**	**+2.1**
	0.4nm,0.4s,baz=79,slow=9.0,SNR=3.4						
MKAR	**Makanchi Array**	**45.31**	**302**	P	**P**	**16 05 21.5**	**+1.4**
	0.6nm,0.8s,baz=78,slow=8.0,SNR=5.0						
WRA	**Warramunga Arr**	**58.63**	**191**	P	**P**	**16 06 59.2**	**-0.2**
	0.4nm,0.5s,baz=9.8,slow=7.1,SNR=7.7						
ASAR	**Alice Springs**	**62.35**	**191**	P	**P**	**16 07 24.9**	**+0.1**
	0.2nm,0.8s,baz=3.7,slow=6.0,SNR=3.5						

*ISK **05** 16:00:18.7, 39.°17N×33.°31E, h13km, MD2.9*
*DDA **05** 16:00:20.2, 39.°01N×33.°85E, h7km, Md2.6*
*CSEM **05** 16:00:20.6±0.2, 39.°02N×33.°84E, h2km, MD2.9, Error ellipse: s-maj=5.1km s-min=4.6km az=167.0*
ISC 05 16:00:20.0±0.9, 39.°04N±0.°03×33.°75E±0.°04, h15km±7km, n22, σ1§23/36, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SERE	**Sereflikochisa**	**0.17**	**237**	*e*PG	**Pg**	**16 00 25.1**	**+0.8**
SERE	**Sereflikochisa**	**0.17**	**237**	*e*Pg	**Pg**	**16 00 25.2**	**+0.8**
KAMT	**Kaman**	**0.33**	**356**	*e*PG	**Pg**	**16 00 26.9**	**-0.1**
KAMT				*e*SG	**Sg**	**16 00 32.2**	**+0.5**
KAMT	**Kaman**	**0.33**	**356**	*e*Pg	**Pg**	**16 00 26.9**	**-0.1**
KAMT				*e*Sg	**Sg**	**16 00 32.2**	**+0.5**
AKSY	**AKSARAY - Alti**	**0.39**	**178**	P	**Pg**	**16 00 27.7**	**-0.3**
AKSY				S	**Sg**	**16 00 33.2**	**-0.2**
AKSY	**AKSARAY - Alti**	**0.39**	**178**	*i* P	**Pg**	**16 00 27.7**	**-0.3**
AKSY				*i* S	**Sg**	**16 00 33.2**	**-0.2**
KKUL	**Konya-Kulu**	**0.66**	**282**	P	**Pn**	**16 00 34.9**	**0.0**
KKUL				S	**Sn**	**16 00 46.5**	**+1.4**
KKUL	**Konya-Kulu**	**0.66**	**282**	*i* P	**Pn**	**16 00 34.9**	**0.0**
KKUL				*i* S	**Sn**	**16 00 46.5**	**+1.4**
BBAL	**Bala**	**0.70**	**316**	P	**Pn**	**16 00 35.2**	**-0.3**
BBAL				S	**Sn**	**16 00 46.5**	**+0.4**
BBAL	**Bala**	**0.70**	**316**	*i* P	**Pn**	**16 00 35.2**	**-0.3**
BBAL				*i* S	**Sn**	**16 00 46.5**	**+0.4**
CDAG	**Cicekdag**	**0.76**	**40**	P	**Pb**	**16 00 34.4**	**-0.6**
CDAG				S	**Sb**	**16 00 43.6**	**-1.6**
CDAG	**Cicekdag**	**0.76**	**40**	*i* P	**Pb**	**16 00 34.4**	**-0.6**
CDAG				*i* S	**Sb**	**16 00 43.6**	**-1.6**
AVNS	**Nevsehir-Avano**	**0.89**	**105**	P	**Pb**	**16 00 36.1**	**-1.1**
AVNS				S	**Sb**	**16 00 47.2**	**-1.7**
AVNS	**Nevsehir-Avano**	**0.89**	**105**	*i* P	**Pb**	**16 00 36.1**	**-1.1**
AVNS				*i* S	**Sb**	**16 00 47.2**	**-1.7**
NIG	**Nigde**	**1.15**	**144**	*e*PN	**Pg**	**16 00 45.9**	**+3.7**
CORM	**Corum**	**1.33**	**31**	*e*PN	**Pb**	**16 00 45.1**	**+0.4**
CORM	**Corum**	**1.33**	**31**	*e*Pn	**Pb**	**16 00 45.1**	**+0.4**
YOZ	**Yozgat**	**1.36**	**63**	*e*PN	**Pg**	**16 00 47.8**

TBLG	**Delisi**	**1.24 130**	P		Pg	16 09 57.2	+0.6
TBLG			S		Sn	16 10 14.4	+1.5
TBLG	**Delisi**	**1.24 130**	P		Pg	16 09 57.2	+0.6
TBLG			S		Sn	16 10 14.4	+1.5
BGD	**Bogdanovka**	**1.28 176**	P		Pn	16 09 56.7	-0.1
BGD			S		Sn	16 10 14.4	+0.4
BGD	**Bogdanovka**	**1.28 176**	P		Pn	16 09 56.7	-0.1
BGD			S		Sn	16 10 14.4	+0.3
ARTV	**Artvin**	**1.78 221**	P		Pb	16 10 04.8	-0.7
ARTV			S		Sb	16 10 27.7	-0.2
ARTV	**Artvin**	**1.78 221**	*i* P		Pb	16 10 04.8	-0.7
ARTV			*i* S		Sb	16 10 27.7	-0.2
DGRG	**David-gareji**	**1.79 127**	P		Pg	16 10 06.4	-0.6
DGRG			S		Sg	16 10 32.7	+2.5
DBOC	**Borcka**	**1.80 229**	P		Pn	16 10 04.6	+0.8
DBOC			S		Sb	16 10 28.8	+0.5
DBOC	**Borcka**	**1.80 229**	*i* P		Pn	16 10 04.6	+0.8
DBOC			*i* S		Sb	16 10 28.8	+0.5
DAGI	**Agillar**	**1.87 219**	*i* P		Pb	16 10 06.2	-0.8
DAGI			*i* S		Sg	16 10 31.7	-1.1
DDEM	**Demirkent**	**2.09 219**	P		Pb	16 10 09.9	-0.8
DDEM			S		Sg	16 10 38.4	-1.5
DDEM	**Demirkent**	**2.09 219**	*i* P		Pb	16 10 09.9	-0.8
DDEM			*i* S		Sg	16 10 38.4	-1.5

*IDC **05** 16:12:05.5±1.9, 40°.76N×76°.85E, h0km, mb3.7/3, mb1 3.5/4, mb1mx3.2/35, mbtmp3.5/4, ML2.6/1, Error ellipse: s-maj=60.5km s-min=22.6km az=142.0*
*NNC **05** 16:12:06.3±3.0, 40°.58N×77°.35E, h0km, mb4.0, mpv3.6, Error ellipse: s-maj=23.3km s-min=12.6km az=141.0*
*KRNET **05** 16:12:07.6±0.1, 40°.68N×77°.28E, h17km, mb3.5*
*SOME **05** 16:12:08.8, 40°.75N×77°.42E, h5km*
*ISCJB **05** 16:12:11.0±0.7, 40°.57N±0°.04×77°.22E±0°.04, h10km, mb3.7/3, Error ellipse: s-maj=5.6km s-min=3.4km az=156.3*

ISC 05 16:12:08.0±1.0, **40°.71N**±0°.05×**77°.37E**±0°.03, **h10**km, **n50**, σ1°.**79**/84, **mb3.7**/3, **31C-21D, Kyrgyzstan-Xinjiang border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NRN	**Naryn**	**1.26**	**305**	⇓*i*P	**Pn**	**16 12 31.1**	**-1.0**
NRN	baz=307			⇓*i*S	**Sb**	**16 12 49.0**	**+0.4**
KDJ	**Kajisay**	**1.43**	**354**	⇓*e*P	**Pb**	**16 12 35.0**	**+0.1**
KDJ	baz=357			⇓*e*S	**Sg**	**16 12 56.2**	**+2.2**
ULHL	**Ulahol**	**1.75**	**331**	⇑*i*P	**Pb**	**16 12 40.8**	**+0.4**
ULHL	baz=333			⇑*i*S	**Sg**	**16 13 06.1**	**+1.7**
PRZ	**Przheval'sk**	**1.93**	**23**	⇑*e*P	**Pg**	**16 12 44.4**	**-0.7**
PRZ	baz=25			⇑*i*S	**Sg**	**16 13 11.2**	**+1.0**
BOOM	**Boomskoye usch**	**2.08**	**329**	⇑*i*P	**Pn**	**16 12 45.0**	**+1.9**
BOOM	baz=331			⇑*e*S	**Sb**	**16 13 12.5**	**+0.6**
ANVS	**Anan'yevo**	**2.08**	**6**	⇓*e*P	**Pb**	**16 12 46.6**	**+0.5**
ANVS	baz=8.0			⇓*e*S	**Sg**	**16 13 14.8**	**-0.2**
KZA	**Kyzart**	**2.10**	**311**	⇑*i*P	**Pb**	**16 12 47.2**	**+0.7**
KZA	baz=313			⇑*i*S	**Sb**	**16 13 14.5**	**+1.7**
TNSS	**Tian-Shan**	**2.35**	**352**	*e*P	**Pb**	**16 12 50.9**	**+0.2**
TNSS	197nm,0.3s			*e*S	**Sb**	**16 13 21.2**	**+1.2**
MDOK	**Medeo**	**2.46**	**355**	*e*P	**Pb**	**16 12 53.9**	**+1.4**
MDOK	71nm,0.6s			*e*S	**Sg**	**16 13 26.2**	**-1.0**
SATY	**Saty**	**2.47**	**18**	*e*P	**Pb**	**16 12 53.8**	**+1.1**
SATY	81nm,0.8s			*e*S	**Sg**	**16 13 26.0**	**-1.4**
KNDC	**Almaty**	**2.52**	**353**	⇓Pg	**Pg**	**16 12 55.5**	**-0.9**
KNDC	61nm,0.5s			⇓Lg	Lg	16 13 31.0	
KOTS	**Kotyrbulak**	**2.53**	**356**	*e*P	**Pb**	**16 12 53.6**	**0.0**
KOTS				*e*S	**Sb**	**16 13 26.0**	**+1.1**
KST	**Kastek**	**2.56**	**336**	*e*P	**Pb**	**16 12 55.5**	**+1.4**
KST	21nm,0.6s			*e*S	**Sg**	**16 13 28.9**	**-1.4**
TKM2	**Tokmak 2**	**2.58**	**330**	⇓*i*P	**Pb**	**16 12 54.6**	**+0.1**
TKM2	baz=331			⇓*i*S	**Sb**	**16 13 27.4**	**+1.1**
TKM2	**Tokmak 2**	**2.58**	**330**	⇓Pg	**Pb**	**16 12 55.6**	**+1.2**
TKM2	71nm,0.8s			⇓Lg	Lg	16 13 32.6	
AAA	**Alma-Ata**	**2.58**	**353**	⇑*i*P	**Pg**	**16 12 57.0**	**-0.5**
AAA	159nm,0.3s			⇑*i*S	**Sg**	**16 13 31.3**	**+0.4**
ZHN	**Zhinishke**	**2.58**	**18**	*e*P	**Pg**	**16 12 57.2**	**-0.3**
ZHN	16nm,0.2s			*e*S	**Sg**	**16 13 31.8**	**+0.8**
UCH	**Uchtor**	**2.63**	**306**	⇑*i*P	**Pb**	**16 12 54.6**	**-0.9**
UCH	baz=308			⇑*i*S	**Sb**	**16 13 27.6**	**-0.4**
KBK	**Karagaybulak**	**2.66**	**318**	⇓*i*P	**Pb**	**16 12 54.8**	**-1.1**
KBK	baz=319			⇓*i*S	**Sb**	**16 13 28.7**	**+0.1**
DGS	**Degeres**	**2.80**	**335**	*e*P	**Pb**	**16 12 58.1**	**-0.1**
DGS	17nm,0.7s			*e*S	**Sb**	**16 13 33.7**	**+1.2**
KURS	**Kuram**	**2.84**	**12**	*e*P	**Pb**	**16 13 00.5**	**+1.6**
KURS	44nm,0.4s			*e*S	**Sg**	**16 13 37.8**	**-1.5**
AAK	**Ala-Archa**	**2.89**	**313**	⇑*i*P	**Pb**	**16 12 58.5**	**-1.2**
AAK	baz=314			⇑*i*S	**Sb**	**16 13 33.5**	**-1.7**
AAK	**Ala-Archa**	**2.89**	**313**	Pg	**Pb**	**16 13 00.6**	**+0.9**
AAK	45nm,0.9s			Lg	Lg	16 13 41.2	
KPKS	**Kokpek**	**2.92**	**19**	*e*P	**Pg**	**16 13 02.8**	**-1.2**
KPKS	68nm,0.5s			*e*S	**Sg**	**16 13 42.0**	**+0.1**
CHMS	**Chumysh**	**3.01**	**320**	⇓*i*P	**Pb**	**16 13 00.0**	**-1.7**
CHMS	baz=322			⇓*i*S	**Sb**	**16 13 36.9**	**-1.7**
SFK	**Sufi-Kurgan**	**3.04**	**258**	⇑*i*P	**Pn**	**16 12 59.2**	**+2.9**
SFK	baz=258			⇑*e*S	**Sn**	**16 13 35.2**	**+2.3**
SFK	**Sufi-Kurgan**	**3.04**	**258**	⇑Pg	**Pn**	**16 13 00.6**	**+4.3**
SFK	4.5nm,0.5s			⇑Lg	Lg	16 13 38.4	
PDGK	**Podgornoye**	**3.05**	**30**	⇑*i*P	**Pb**	**16 13 03.7**	**+1.3**
PDGK	baz=31			⇑*i*S	**Sg**	**16 13 42.4**	**-3.7**
PDGK	**Podgornoye**	**3.05**	**30**	⇑Pg	**Pb**	**16 13 03.9**	**+1.5**
PDGK	21nm,0.5s			⇑Lg	Lg	16 13 45.3	
AML	**Almayashu**	**3.11**	**298**	⇑*i*P	**Pn**	**16 13 01.1**	**+3.6**
AML	baz=299			⇑*i*S	**Sn**	**16 13 38.1**	**+3.2**
CHKK	**Chushkaly**	**3.17**	**355**	*e*P	**Pb**	**16 13 04.2**	**-0.3**
CHKK	68nm,0.7s			*e*S	**Sb**	**16 13 44.3**	**+1.1**
KUU	**Kurty**	**3.27**	**347**	*e*P	**Pg**	**16 13 09.2**	**-1.5**
KUU	39nm,0.5s			⇑*i*S	**Sg**	**16 13 52.7**	**-0.4**
MNBS	**Baschi**	**3.45**	**12**	*e*P	**Pb**	**16 13 08.3**	**-1.0**
MNBS	47nm,0.4s 8.4nm,0.5s			*e*S	**Sb**	**16 13 51.0**	**-0.4**
OHH	**Osh**	**3.50**	**268**	⇑*i*P	**Pn**	**16 13 04.1**	**+1.6**
OHH	210nm,0.5s baz=269			⇑*i*S	**Sn**	**16 13 46.3**	**+2.3**
ARXS	**Arharly**	**3.52**	**5**	*e*P	**Pb**	**16 13 10.7**	**+0.2**
ARXS	26nm,0.5s			*e*S	**Sb**	**16 13 55.7**	**+2.5**
KTMS	**Ketmen**	**3.52**	**38**	*e*P	**Pb**	**16 13 10.7**	**+0.2**
KTMS	62nm,0.6s 7.7nm,0.3s			*e*S	**Sb**	**16 13 55.4**	**+2.0**
MRKS	**Merke**	**3.71**	**305**	*e*P	**Pb**	**16 13 16.7**	**+3.0**
MRKS	88nm,0.4s 13nm,0.4s			⇑*i*S	**Sg**	**16 14 05.5**	**-1.6**
DJR	**Jarkent**	**4.04**	**25**	*e*P	**Pg**	**16 13 22.2**	**-3.1**
DJR	27nm,0.3s 13nm,0.3s			*e*S	**Sg**	**16 14 15.4**	**-2.2**
MNAS	**Manas**	**4.06**	**298**	⇑*e*P	**Pn**	**16 13 12.6**	**+2.3**
MNAS	64nm,0.6s baz=298			⇑*e*S	**Sn**	**16 14 00.1**	**+2.1**
MNAS	**Manas**	**4.06**	**298**	⇓Pg	**Pb**	**16 13 20.4**	**+0.7**
MNAS	5.9nm,0.8s 8.8nm,0.6s			⇓Lg	Lg	16 14 15.6	
TDK	**Taldyqorghan**	**4.36**	**10**	*e*P	**Pg**	**16 13 29.2**	**-2.4**
TDK	23nm,0.7s 90nm,1.2s			*e*S	**Sg**	**16 14 27.2**	**-0.9**
KAPS	**Kapalarasan**	**4.80**	**17**	*e*P	**Pg**	**16 13 36.7**	**-3.2**
KAPS	5.8nm,0.6s 14nm,0.6s			⇓*i*S	**Sg**	**16 14 40.1**	**-2.0**
KK31	**Karatay Array**	**5.65**	**297**	⇑Pg	**Pg**	**16 13 52.7**	**-3.5**
KK31	0.6nm,0.4s,baz=117,slow=17			⇓Lg	Lg	16 15 05.9	
MKAR	**Makanchi Array**	**7.05**	**29**	Pn	**Pn**	**16 13 53.2**	**+2.0**
MKAR	5.5nm,0.8s,baz=107,slow=29,SNR=16 0.1nm,0.3s,baz=208,slow=16,SNR=5.2			Lg	Lg	16 15 52.5	
OTUK	**Ortayu**	**8.35**	**336**	⇓Lg	Lg	16 16 30.5	
BVAR	**Borovoye Array**	**13.20**	**341**	Lg	Lg	16 19 01.2	
ZALV	**Zalesovo Beam**	**14.16**	**18**	Pn	**P**	**16 15 33.1**	**-3.1**
SONM	**Songino Array**	**21.88**	**61**	P	**P**	**16 17 05.0**	**+3.9**
PETK	**Petropavlovsk-**	**53.46**	**48**	P	**P**	**16 21 27.7**	**-0.4**
TORD	**Torodi Ar. Bea**	**70.73**	**271**	P	**P**	**16 23 21.3**	**-3.3**

*BJI **05** 16:15:18.0, 25°.10S×177°.50W, h130km, mb5.4/57, mB5.5/26*
*MOS **05** 16:15:22.4±0.8, 24°.98S×177°.55W, h161km, mb5.3/49, Error ellipse: s-maj=9.0km s-min=7.2km az=82.5*
*ISCJB **05** 16:15:24.5±0.1, 25°.16S±0°.03×177°.56W±0°.02, h185km, mb5.3/261, Error ellipse: s-maj=4.6km s-min=2.5km az=152.7*
*NEIC **05** 16:15:25.1±0.1, 25°.19S×177°.55W, mb5.3/170, Error ellipse: s-maj=4.3km s-min=2.8km az=144.0*
*GCMT **05** 16:15:25.1±0.2, 25°.12S×177°.16W, h186km±1km, MW5.6/120, Moment Tensor Solution. s88, c125; s120, c224; Duration: 1s6 Moment tensor: Scale 10^{17} Nm; M_{rr}3.35±.05; $M_{\theta\theta}$-3.42±.07; $M_{\phi\phi}$0.06±.07; $M_{r\theta}$-0.89±.06; $M_{\theta\phi}$0.12±.07; $M_{\phi r}$-0.17±.06; Best double couple: $M_0$3.50600×10^{17} NP1:ϕ_s269.00000°, δ52.00000°, λ86.00000°. NP2:ϕ_s95.00000°, δ38.00000°, λ95.00000°. Principal axes: T 3.4750, Plg82.0000°, Azm157.0000°; N 0.0550, Plg3.0000°, Azm271.0000°; P -3.5380, Plg7.0000°, Azm2.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*
*IDC **05** 16:15:26.1±0.4, 25°.02S×177°.54W, h184km±2km, mb4.8/30, mb1 4.9/30, mb1mx4.8/36, mbtmp5.2/30, MS4.6/4, Ms1 4.6/4, ms1mx3.9/44 Error ellipse: s-maj=10.8km s-min=8.0km az=163.0*

ISC 05 16:15:25.3±0.2, **25°.22S**±0°.04×**177°.37W**±0°.04, **h185**km±1km, **h185**km; **pP-P**, **n1237**, σ1°.**51**/1549, **mb5.3**/259, **156C-32D, South of Fiji Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**4.04**	**187**	P	**Pn**	**16 16 27.4**	**+0.2**
RAO	765nm,0.3s,baz=76,slow=10,SNR=20 2μm,0.3s,baz=256,slow=24,SNR=16			S	**Sn**	**16 17 17.5**	**+1.8**
RAO	**Raoul Island**	**4.04**	**187**	*e*P	**Pn**	**16 16 27.0**	**-0.1**
RAO				*e*		16 17 16.5	
RAO	**Raoul Island**	**4.04**	**187**	*e*Pn	**Pn**	**16 16 27.0**	**-0.1**
RAO				*e*Sn	**Sn**	**16 17 16.5**	**+0.8**
MSVF	**Nonsavu**	**8.58**	**329**	*e*P	**Pn**	**16 17 25.9**	**-0.5**
MSVF	**Nonsavu**	**8.58**	**329**	*e*Pn	**Pn**	**16 17 25.9**	**-0.5**
NIUE	**Niue**	**9.22**	**50**	P	Pn	16 17 29.3	-5.4
AFI	**Afiamalu**	**12.42**	**26**	P	Pn	16 18 06.4	-10
AFI	81nm,0.3s,baz=353,slow=2.3,SNR=103 55nm,0.3s,baz=228,slow=22,SNR=6.3			S	Sn	16 20 13.3	-21
AFI	**Afiamalu**	**12.42**	**26**	*e*Pn	Pn	16 18 06.2	-10
AFI				*e*Sn	Sn	16 20 10.4	-24
OUZ	**Omahuta**	**12.65**	**216**	*e*Pn	**P**	**16 18 22.5**	**-0.5**
WMGZ	**Waiomatatini S**	**13.06**	**195**	PN	Pn	16 18 16.1	-7.9
WMGZ				SN	Sn	16 20 38.9	-10
HAZ	**Te Kaha**	**13.16**	**197**	PN	Pn	16 18 17.6	-7.5
PKGZ	**Pakihiroa**	**13.21**	**196**	PN	Pn	16 18 16.6	-9.3
PKGZ				SN	Sn	16 20 40.2	-13
PUZ	**Puketiti**	**13.34**	**195**	PN	Pn	16 18 17.7	-10
PUZ				SN	Sn	16 20 42.2	-14
TWGZ	**Tauwhareparae**	**13.51**	**196**	PN	Pn	16 18 21.2	-8.5
CNGZ	**Carnagh Statio**	**13.74**	**195**	PN	Pn	16 18 23.8	-8.7
MWZ	**Matawai**	**13.77**	**197**	PN	Pn	16 18 23.8	-9.1
TKGZ	**Te Karaka**	**13.79**	**196**	PN	Pn	16 18 23.9	-9.1
URZ	**Urewera**	**13.81**	**198**	P	Pn	16 18 26.6	-6.8
URZ	1.2nm,0.3s,baz=279,slow=4.6,SNR=14			S	Sn	16 20 57.0	-10
URZ	**Urewera**	**13.81**	**198**	*e*Pn	Pn	16 18 26.8	-6.6
URZ				*e*Sn	Sn	16 20 53.7	-14
URZ	**Urewera**	**13.81**	**198**	PN	Pn	16 18 25.4	-8.0
URZ				SN	Sn	16 20 50.2	-17
MUGZ	**Murupara**	**14.12**	**199**	PN	Pn	16 18 32.2	-5.0
SNGZ	**Shannon Statio**	**14.24**	**197**	PN	Pn	16 18 31.6	-7.1
MRHZ	**Matea Rd**	**14.55**	**200**	PN	Pn	16 18 37.3	-5.4
NMHZ	**Naumai**	**14.68**	**198**	PN	Pn	16 18 38.6	-5.7
ARHZ	**Aropaoanui**	**14.78**	**197**	PN	Pn	16 18 39.7	-5.8
BKZ	**Black Stump Fm**	**14.84**	**199**	*e*Pn	Pn	16 18 40.1	-6.1
BKZ				*e*S	Sn	16 21 13.9	-18
BKZ	**Black Stump Fm**	**14.84**	**199**	PN	Pn	16 18 38.1	-8.0
MCHZ	**McNeill Hill**	**15.04**	**198**	PN	**Pn**	**16 18 44.1**	**-4.4**
KWHZ	**Kaweka Forest**	**15.09**	**199**	PN	**Pn**	**16 18 43.3**	**-6.0**
DZM	**Mont Dzumac**	**15.16**	**279**	P	**P**	**16 18 54.7**	**+3.6**
	3.6nm,0.3s,baz=69,slow=17,SNR=36						
BHHZ	**Black Hill Sta**	**15.26**	**200**	PN	**Pn**	**16 18 45.5**	**-5.9**
KAHZ	**Kahuranaki**	**15.31**	**197**	PN	**Pn**	**16 18 45.9**	**-6.0**
KRHZ	**Kereru**	**15.31**	**199**	PN	**Pn**	**16 18 45.5**	**-6.4**
PXZ	**Pawanui**	**15.54**	**197**	PN	Pn	16 18 47.4	-7.3
TSZ	**Takapari Road**	**15.82**	**199**	PN	**Pn**	**16 18 52.4**	**-5.7**
DVHZ	**Dannevirke**	**15.98**	**198**	PN	**P**	**16 18 53.4**	**-6.5**
ANWZ	**Angora Road**	**16.04**	**197**	PN	**P**	**16 18 54.8**	**-5.8**
BFZ	**Birch Farm**	**16.31**	**198**	*e*P	**P**	**16 18 58.5**	**-5.1**
BFZ	43nm,0.8s			*e*S	S	16 21 47.4	-17
MRZ	**Mangatainoka R**	**16.48**	**199**	PN	P	16 18 56.7	-8.7
TIWZ	**Tintock**	**16.50**	**198**	PN	**P**	**16 18 58.7**	**-7.0**
RAR	**Rarotonga**	**16.66**	**80**	P	**Pn**	**16 19 13.1**	**+4.7**
RAR	2.2nm,0.3s,baz=129,slow=8.0,SNR=3.2 4.8nm,0.3s,baz=90,slow=20,SNR=3.8			S	**S**	**16 22 11.5**	**-0.5**
RAR				LR	LR	16 24 04.5	
RAR	comp=Z,928nm,21.1s,baz=246,slow=31			T	T	16 35 31.3	
RAR	**Rarotonga**	**16.66**	**80**	*e*P	**Pn**	**16 19 09.5**	**+1.1**
RAR	30nm,0.3s,baz=263,slow=10.0,SNR=4.4 213nm,1.0s			*e*S	**S**	**16 22 11.5**	**-0.5**
RAR				TT		16 35 31.3	
HOWZ	**Holdsworth Sta**	**16.72**	**199**	PN	**P**	**16 19 01.3**	**-6.8**
OGWZ	**Otaki Gorge**	**16.75**	**200**	PN	**P**	**16 19 02.1**	**-6.3**
TMWZ	**Te Maipa**	**16.81**	**198**	PN	**P**	**16 19 03.7**	**-5.3**
KIW	**Kapiti Island**	**16.87**	**201**	PN	**P**	**16 19 02.7**	**-7.1**
FUNA	**Funafuti**	**16.92**	**348**	*e*P	**P**	**16 19 07.3**	**-3.1**
CAW	**Cannon Point**	**17.05**	**200**	PN	P	16 19 04.5	-7.2
TRWZ	**Traveller**	**17.13**	**198**	PN	**P**	**16 19 06.8**	**-5.7**
DUWZ	**D'Urville Isla**	**17.15**	**203**	PN	**P**	**16 19 05.7**	**-7.1**
SNZO	**South Karori**	**17.34**	**200**	*e*P	**P**	**16 19 08.9**	**-6.0**
TCW	**Tory Channel**	**17.39**	**202**	PN	**P**	**16 19 09.1**	**-6.3**
PLWZ	**Palliser**	**17.41**	**199**	PN	**P**	**16 19 12.5**	**-3.2**
TUWZ	**Tuamarina**	**17.70**	**202**	PN	**P**	**16 19 12.7**	**-6.0**
NNZ	**Nelson**	**17.71**	**203**	PN	**P**	**16 19 13.3**	**-5.6**
THZ	**Tophouse**	**18.36**	**204**	*e*P	**P**	**16 19 21.4**	**-4.6**
THZ	**Tophouse**	**18.36**	**204**	PN	**P**	**16 19 22.3**	**-3.8**
KHZ	**Kahutara**	**18.72**	**201**	*e*P	**P**	**16 19 25.5**	**-4.3**
KHZ	**Kahutara**	**18.72**	**201**	PN	**P**	**16 19 25.3**	**-4.5**
LTZ	**Lake Taylor**	**19.48**	**203**	*e*P	**P**	**16 19 38.7**	**+0.7**
OXZ	**Oxford**	**20.04**	**203**	*e*P	**P**	**16 19 41.2**	**-2.9**
OXZ	**Oxford**	**20.04**	**203**	PN	**P**	**16 19 40.5**	**-3.5**
CRLZ	**Canterbury Las**	**20.05**	**202**	*e*P	**P**	**16 19 42.0**	**-2.2**
MQZ	**McQueen's Vall**	**20.16**	**201**	*e*P	**P**	**16 19 41.2**	**-4.1**
MQZ	**McQueen's Vall**	**20.16**	**201**	PN	**P**	**16 19 41.0**	**-4.3**
WVZ	**Waitaha Valley**	**20.31**	**206**	PN	**P**	**16 19 48.1**	**+1.2**
RPZ	**Rata Peaks**	**20.73**	**204**	P	**P**	**16 19 49.1**	**-2.3**
RPZ	16nm,0.4s,baz=74,slow=0.9,SNR=31 21nm,0.5s,baz=295,slow=22,SNR=14			S	**S**	**16 23 27.1**	**-5.4**
FOZ	**Fox Glacier**	**21.06**	**207**	*e*P	**P**	**16 19 54.8**	**-0.1**
FOZ	**Fox Glacier**	**21.06**	**207**	PN	**P**	**16 19 54.5**	**-0.4**
LBZ	**Lake Benmore**	**21.63**	**205**	*e*P	**P**	**16 20 00.0**	**-0.9**
LBZ	**Lake Benmore**	**21.63**	**205**	PN	**P**	**16 19 60.0**	**-0.9**
JCZ	**Jackson Bay**	**21.93**	**207**	PN	**P**	**16 20 02.4**	**-1.6**
ODZ	**Otahua Downs**	**22.02**	**203**	*e*P	**P**	**16 20 03.0**	**-1.8**
ODZ	105nm,1.7s			*e*S	**S**	**16 23 52.8**	**-1.4**
ODZ	**Otahua Downs**	**22.02**	**203**	PN	**P**	**16 20 05.1**	**+0.3**
WKZ	**Wanaka**	**22.45**	**206**	*e*P	**P**	**16 20 07.7**	**-1.2**
WKZ	404nm,1.9s			*e*sP	pP	16 20 52.3	+11
WKZ	**Wanaka**	**22.45**	**206**	PN	**P**	**16 20 07.6**	**-1.3**
KNTN	**Kanton**	**22.97**	**15**	*e*P	**P**	**16 20 12.3**	**-1.5**
MLZ	**Mavora Lakes**	**23.26**	**207**	*e*P	**P**	**16 20 16.4**	**+0.2**
MLZ	**Mavora Lakes**	**23.26**	**207**	PN	**P**	**16 20 16.0**	**-0.2**
DCZ	**Deep Cove**	**23.74**	**208**	*e*P	**P**	**16 20 20.3**	**-0.2**
WHZ	**Wether Hill Ro**	**23.76**	**206**	*e*P	**P**	**16 20 20.3**	**-0.4**
WHZ	**Wether Hill Ro**	**23.76**	**206**	PN	**P**	**16 20 20.7**	**0.0**
PYZ	**Puysegur Point**	**24.50**	**207**	*e*P	**P**	**16 20 27.6**	**+0.2**
HNR	**Honiara**	**26.67**	**302**	P	**P**	**16 20 50.1**	**+2.8**
HNR	**Honiara**	**26.67**	**302**	*e*P	**P**	**16 20 47.2**	**-0.1**
HNR	**Honiara**	**26.67**	**302**	*e*P	**P**	**16 20 47.2**	**-0.1**
HNR				*ep*P	**pP**	**16 21 26.2**	**+1.1**
PAE	**Paea**	**26.90**	**79**	*e*T	T	16 47 31.0	
PPT2	**Papeete2**	**26.93**	**79**	*e*LQ	LQ	16 26 28.6	
PPT2	22nm,0.3s 1μm,22.2s			*e*LR	LR	16 27 32.3	
PPT2	**Papeete2**	**26.93**	**79**	*e*T	T	16 47 32.3	
PPT	**Papeete**	**26.94**	**79**	LR	LR	16 29 25.4	
ARMA	**Armidale**	**27.85**	**252**	*e*P	**P**	**16 20 57.9**	**+0.1**
ARMA				*ep*P	**pP**	**16 21 36.5**	**+0.8**
TARA	**Tarawa**	**28.04**	**339**	*e*P	**P**	**16 20 57.9**	**-1.5**
MEH	**Mehetia**	**28.18**	**81**	*e*T	T	16 49 39.2	
EIDS	**Eidsvold**	**28.49**	**263**	P	**P**	**16 21 03.9**	**+0.5**
EIDS	**Eidsvold**	**28.49**	**263**	*e*P	**P**	**16 21 03.5**	**+0.1**
EIDS				*ep*P	**pP**	**16 21 44.6**	**+3.3**
MGCD	**Mangrove Creek**	**28.56**	**246**	P	**P**	**16 21 05.9**	**+2.0**
RMQ	**Roma**	**30.46**	**260**	P	**P**	**16 21 22.7**	**+1.9**
CAN	**Canberra**	**30.61**	**243**	*e*P	**P**	**16 21 24.1**	**+2.0**
CAN	**Canberra**	**30.61**	**243**	*e*P	**P**	**16 21 24.1**	**+2.0**
YNG	**Young**	**30.94**	**245**	P	**P**	**16 21 27.0**	**+2.0**
CMSA	**Cobar Meteorol**	**32.99**	**250**	P	**P**	**16 21 43.7**	**+0.9**
TOO	**Toolangi**	**33.79**	**240**	P	**P**	**16 21 51.0**	**+1.3**
CTA	**Charters Tower**	**33.88**	**271**	P	**P**	**16 21 51.2**	**+0.5**
CTAO	**Charters Tower**	**33.88**	**271**	*e*P	**P**	**16 21 51.3**	**+0.5**
CTAO	**Charters Tower**	**33.88**	**271**	*e*P	**P**	**16 21 51.3**	**+0.5**
QLP	**Quilpie**	**34.48**	**259**	P	**P**	**16 21 56.0**	**+0.2**
RABL	**Rabaul**	**35.96**	**301**	*e*P	**P**	**16 22 06.3**	**-2.2**
RABL				*ep*P	**pP**	**16 22 49.1**	**+1.7**
MTSU	**Mount Surprise**	**36.20**	**273**	P	**P**	**16 22 11.0**	**+0.4**
STKA	**Stephens Creek**	**36.48**	**250**	P	**P**	**16 22 13.4**	**+0.6**
STKA				PcP	**PcP**	**16 24 33.6**	**+1.1**
STKA	**Stephens Creek**	**36.48**	**250**	P	**P**	**16 22 13.1**	**+0.3**
STKA	**Stephens Creek**	**36.48**	**250**	*e*P	**P**	**16 22 12.6**	**-0.2**
STKA				*e*		16 24 33.6	
STKA	**Stephens Creek**	**36.48**	**250**	*e*P	**P**	**16 22 12.6**	**-0.2**
STKA				*ep*P	**pP**	**16 22 55.9**	**+4.1**
STKA				*e*PcP	**PcP**	**16 24 33.6**	**+1.1**
ARPS	**Mount Arapiles**	**36.56**	**242**	P	**P**	**16 22 13.9**	**+0.5**
PMG	**Port Moresby**	**37.18**	**289**	P	**P**	**16 22 18.5**	**-0.3**
PMG				PcP	**PcP**	**16 24 36.3**	**+1.4**
PMG	**Port Moresby**	**37.18**	**289**	*e*P	**P**	**16 22 17.6**	**-1.2**
PMG	**Port Moresby**	**37.18**	**289**	*e*P	**P**	**16 22 17.8**	**-1.1**
PMG				*ep*P	**pP**	**16 23 01.5**	**+3.6**
PMG				*e*PcP	**PcP**	**16 24 31.1**	**-3.8**
PMG				PcP	**PcP**	**16 24 36.3**	**+1.4**
RKT	**Rikitea**	**38.63**	**96**	*e*LR	LR	16 33 09.1	
RKT	**Rikitea**	**38.63**	**96**	*e*T	T	17 02 53.2	
COEN	**Coen**	**38.69**	**279**	P	**P**	**16 22 31.8**	**+0.3**
COEN	**Coen**	**38.69**	**279**	*e*P	**P**	**16 22 31.4**	**0.0**
COEN				*ep*P	**pP**	**16 23 14.8**	**+3.9**
COEN				*e*PcP	**PcP**	**16 24 41.0**	**+1.4**
HTT	**Hallett**	**38.74**	**247**	P	**P**	**16 22 31.6**	**-0.2**
QIS	**Mount Isa**	**39.78**	**268**	P	**P**	**16 22 40.6**	**+0.1**
MANU	**Manus Island**	**41.05**	**299**	*e*P	**P**	**16 22 48.6**	**-2.3**
MANU				*ep*P	**pP**	**16 23 29.7**	**-1.0**
MANU				*e*PcP	**PcP**	**16 24 48.6**	**+1.4**
BBOO	**Buckleboo**	**41.16**	**248**	P	**P**	**16 22 50.7**	**-0.9**
BBOO	**Buckleboo**	**41.16**	**248**	*e*P	**P**	**16 22 50.3**	**-1.3**
BBOO				*ep*P	**pP**	**16 23 34.2**	**+2.8**

AS01	Alice Springs	44.15	261	eP	P	16 23 15.1 -0.8
AS01				epP	pP	16 23 55.5 -0.6
AS01				ePcP	PcP	16 24 57.2 -0.4
AS31	Alice Springs	44.19	261	eP	P	16 23 15.5 -0.7
AS31				epP	pP	16 23 56.2 -0.2
AS31				ePcP	PcP	16 24 57.6 0.0
AS31				eScP	ScP	16 28 35.1 +3.1
AS31				eS	S	16 29 33.9 -1.6
ASAR	Alice Springs	44.19	261	P	P	16 23 15.3 -0.8
	comp=Z,38nm,0.9s,baz=100,slow=8.1,SNR=138					
ASAR				pP	pP	16 23 57.0 +0.6
	comp=Z,81nm,0.9s,baz=94,slow=8.4,SNR=13					
ASAR				PcP	PcP	16 24 58.5 +0.8
	comp=Z,22nm,1.1s,baz=99,slow=4.6,SNR=5.7					
ASAR				ScP	ScP	16 28 35.2 +3.1
	comp=Z,3.2nm,1.0s,baz=106,slow=4.9,SNR=4.3					
ASAR				S	S	16 29 33.9 -1.6
	comp=Z,4.8nm,1.1s,baz=97,slow=15,SNR=5.4					
ASAR				LR	LR	16 40 08.6
	comp=Z,598nm,19.9s,baz=112,slow=34					
WB2	Warramunga Arr	44.70	267	eP	P	16 23 18.5 -1.7
WB2				epP	pP	16 24 00.4 -0.2
WB2				ePcP	PcP	16 25 00.1 +0.7
WRAB	Tennant Creek	44.70	267	ceP	P	16 23 18.7 -1.6
WRAB				pmax	pmax	
	comp=Z,145nm,1.0s					
WRAB	Tennant Creek	44.70	267	eP	P	16 23 18.6 -1.7
WRAB				epP	pP	16 24 00.2 -0.4
WRAB				ePcP	PcP	16 25 00.0 +0.6
WR1	Warramunga Arr	44.71	267	eP	P	16 23 18.7 -1.6
WR1				epP	pP	16 24 01.0 +0.3
WR1				ePcP	PcP	16 25 00.1 +0.7
WR1				eScP	ScP	16 28 37.4 +3.2
WR1				eS	S	16 29 37.6 -5.4
WRA	Warramunga Arr	44.71	267	P	P	16 23 18.7 -1.6
	comp=Z,36nm,0.8s,baz=99,slow=7.3,SNR=156					
WRA				pP	pP	16 24 01.0 +0.3
	comp=Z,157nm,1.1s,baz=101,slow=8.3,SNR=16					
WRA				PcP	PcP	16 25 00.1 +0.6
	comp=Z,35nm,1.0s,baz=101,slow=3.8,SNR=9.1					
WRA				ScP	ScP	16 28 37.4 +3.2
	comp=Z,4.9nm,1.0s,baz=100,slow=4.2,SNR=4.5					
WRA				S	S	16 29 37.6 -5.4
	comp=Z,8.1nm,1.0s,baz=99,slow=14,SNR=5.9					
JAY	Jayapura	46.23	292	P	P	16 23 30.8 -1.5
	comp=Z,2.5nm,0.6s,baz=91,slow=22,SNR=11					
JAY				pP	pP	16 24 13.2 +0.3
	comp=Z,8.2nm,1.1s,baz=273,slow=23,SNR=8.1					
KDU	Kakadu	48.79	275	P	P	16 23 51.5 -0.4
	baz=49,SNR=5.9					
WRKA	Warakurna	48.89	258	P	P	16 23 51.4 -1.3
	baz=49,SNR=91					
MTN	Manton Dam	49.94	274	P	P	16 23 59.5 -1.2
	baz=50,SNR=9.9					
MTN	Manton Dam	49.94	274	eP	P	16 23 59.0 -1.7
MTN				epP	pP	16 24 43.5 +1.6
MTN				ePcP	PcP	16 25 18.2 +0.1
FITZ	Fitzroy Crossi	53.11	266	P	P	16 24 23.9 -0.3
	baz=53,SNR=26					
FITZ	Fitzroy Crossi	53.11	266	eP	P	16 24 24.4 +0.2
FITZ				epP	pP	16 25 07.1 +1.2
FITZ				ePcP	PcP	16 25 29.0 -1.0
SBA	Scott Base	53.22	184	eP	P	16 24 27.9 +3.8
SBA				pmax	pmax	
	comp=Z,330nm,1.8s					
SBA	Scott Base	53.22	184	eP	P	16 24 27.9 +3.8
	comp=Z,328nm,1.8s					
FAKI	Fak Fak	53.25	286	P	pP	16 25 08.9 +1.9
FAKI	Fak Fak	53.25	286	eP	P	16 24 23.6 -1.6
FAKI				epP	pP	16 25 07.0 0.0
VNDA	Vanda	53.28	186	P	P	16 24 27.8 +3.2
	comp=Z,13nm,1.0s,baz=4.1,slow=7.9,SNR=29					
VNDA	Vanda	53.28	186	eP	P	16 24 27.3 +2.8
	comp=Z,48nm,1.4s					
SWI	Sorong	55.12	288	P	P	16 24 37.3 -1.5
	comp=Z,127nm,0.9s,comp=Z,3μm					
KLBR	Kellerberrin	56.69	248	P	P	16 24 49.3 -0.5
	baz=57,SNR=7.4					
RKGY	Rocky Gully	56.79	244	P	P	16 24 50.0 -0.3
	baz=57,SNR=6.2					
SOEI	Soe	57.34	275	P	pP	16 25 41.8 +4.9
SOEI	Soe	57.34	275	eP	P	16 24 55.1 +0.6
SOEI				epP	pP	16 25 40.0 +3.1
NLAI	Namlea	57.61	283	P	P	16 24 55.0 -1.3
	comp=Z,79nm,1.6s,comp=Z,3μm					
BLDU	Ballidu	57.77	249	P	P	16 24 56.6 -0.7
	baz=58,SNR=36					
LBMI	Labuha	58.50	286	P	P	16 25 01.2 -1.3
	comp=Z,46nm,1.0s,comp=Z,1μm					
MORW	Morawa	58.67	250	P	P	16 25 03.2 -0.4
	baz=59,SNR=8.0					
SANI	Sanana	59.15	284	P	P	16 25 07.4 +0.4
	comp=Z,69nm,0.9s,comp=Z,2μm					
CASY	Casey	59.98	206	eP	P	16 25 12.5 +0.6
	comp=Z,77nm,0.8s					
EDFI	Ende, Flores	60.07	274	P	P	16 25 12.7 -0.7
	comp=Z,106nm,1.0s,comp=Z,3μm					
BASI	Baing, Sumba	60.49	272	P	pP	16 26 05.6 +6.7
LUWI	Luwuk	62.45	283	P	P	16 25 28.3 -1.0
	comp=Z,155nm,1.2s,comp=Z,2μm					
LUWI	Luwuk	62.45	283	eP	P	16 25 28.3 -1.0
LUWI				ePcP	PcP	16 26 07.5 +0.6
LUWI				epP	pP	16 26 13.0 +0.7
KAPI	Kappang	63.37	277	eP	P	16 25 34.4 -1.0
	comp=Z,108nm,1.4s					
KAPI				ePcP	PcP	16 26 10.7 0.0
KAPI				epP	pP	16 26 18.3 -0.2
PLAI	Plampang	63.57	273	P	P	16 25 35.5 -1.2
	comp=Z,230nm,1.1s,comp=Z,2μm					
SPSI	Sidrap Palu	63.81	278	P	P	16 25 36.1 -2.1
	comp=Z,34nm,1.1s,comp=Z,612nm					
MRSI	Marisa	63.90	284	P	P	16 25 36.2 -2.6
	comp=Z,35nm,1.0s					
TTSI	Tana Toraja	64.17	279	P	P	16 25 39.4 -1.2
	comp=Z,35nm,1.6s,comp=Z,624nm					
TWSI	Taliwang, Sumb	64.42	272	P	P	16 25 41.4 -0.8
	comp=Z,99nm,1.3s,comp=Z,1μm					
QSPA	South Pole Qui	64.87	180	eP	P	16 25 46.2 +1.8
DNP	Denpasar	65.96	272	P	P	16 25 54.1 +2.0
	comp=Z,230nm,1.1s,comp=Z,8μm					
SRBI	Singaraja	66.19	272	P	P	16 25 53.1 -0.5
	comp=Z,88nm,1.2s,comp=Z,2μm					
JAGI	Jajag, Banyuwa	67.00	271	P	P	16 25 56.9 -1.8
	comp=Z,140nm,1.3s,comp=Z,2μm					
JAGI	Jajag, Banyuwa	67.00	271	eP	P	16 25 57.1 -1.6
	comp=Z,168nm,1.2s					
JAGI				epP	pP	16 26 40.1 -2.2
ABJI	Asem Bagus	67.19	272	P	P	16 25 59.7 -0.2
	comp=Z,80nm,1.2s					
GMJI	Gumukmas	67.72	271	P	P	16 26 02.1 -1.1
	comp=Z,66nm,1.1s					
BBKI	Banjar Baru	68.45	277	P	P	16 26 07.6 -0.2
	comp=Z,110nm,1.2s,comp=Z,2μm					
MYLDM	Lahad Datu	69.17	286	⇓P	P	16 26 11.2 -0.9
MYLDM	Lahad Datu	69.17	286	eP	P	16 26 12.7 +0.5
	comp=Z,66nm,1.2s					
TSM	Tawau	69.28	285	⇓P	P	16 26 11.9 -1.1
PWJI	Pagerwojo	69.30	271	P	P	16 26 13.3 +0.2
	comp=Z,64nm,1.2s					
PCJI	Pacitan	69.80	270	P	P	16 26 16.8 +0.7
	comp=Z,184nm,1.4s,comp=Z,2μm					
NGJI	Ngawi	69.88	271	P	P	16 26 27.2 +11
	comp=Z,66nm,1.2s					
WOJI	Wonogiri, Jawa	70.17	271	P	P	16 26 19.1 +0.7
	comp=Z,143nm,1.3s,comp=Z,8μm					
SDKM	Sandakan	70.52	286	⇑P	P	16 26 19.5 -1.0
KKM	Kota Kinabalu	71.57	286	⇓P	P	16 26 25.2 -1.6
KKM	Kota Kinabalu	71.57	286	eP	P	16 26 25.4 -1.5
KKM				epP	pP	16 27 10.6 -0.4
PBKI	Pangkalan Bun	71.64	276	P	P	16 26 29.5 +2.3
	comp=Z,327nm,1.2s					
STKI	Sintang	73.01	278	P	P	16 26 34.5 -0.8
	comp=Z,80nm,1.2s					
CISI	Cisompet, Garu	73.10	270	P	P	16 26 36.2 +0.2
	comp=Z,112nm,1.4s,comp=Z,1μm					
CISI	Cisompet, Garu	73.10	270	eP	P	16 26 34.6 -1.3
	comp=Z,198nm,1.4s					
CISI				epP	pP	16 27 19.3 -1.0
SBUM	Sibu	73.41	281	⇓P	P	16 26 36.3 -1.4
SBUM	Sibu	73.41	281	eP	P	16 26 35.8 -1.8
	comp=Z,92nm,1.6s					
SBUM				epP	pP	16 27 23.3 +1.2
LEM	Lembang	73.58	270	P	P	16 26 44.3 +5.4
	comp=Z,1μm,1.3s					
JOW	Kunigami	73.65	311	P	P	16 26 38.3 -0.5
	comp=Z,30nm,0.7s,baz=125,slow=4.2,SNR=14					
JOW				pP	pP	16 27 22.9 -0.3
	comp=Z,74nm,1.1s,baz=106,slow=8.8,SNR=7.0					
JOW	Kunigami	73.65	311	eP	P	16 26 38.1 -0.7
JOW				epP	pP	16 27 22.6 -0.6
CNJI	Cibinong	73.83	269	P	P	16 26 40.7 +0.6
	comp=Z,106nm,1.2s					
MJAR	Matsushiro Arr	74.35	324	P	P	16 26 41.5 -1.1
	comp=Z,4.0nm,0.8s,baz=152,slow=5.4,SNR=15					
MJAR				pP	pP	16 27 25.4 -1.7
	comp=Z,8.2nm,1.0s,baz=168,slow=7.0,SNR=3.6					
MAT	Matsushiro	74.35	324	P	P	16 26 41.0 -1.6
MJB9	Matsu-Tunnel	74.35	324	eP	P	16 26 41.0 -1.7
MJB9				epP	pP	16 27 27.3 +0.2
CBJI	Citeko	74.44	270	P	P	16 26 43.2 -0.4
	comp=Z,255nm,1.5s,comp=Z,12μm					
KSM	Kuching	74.68	279	eP	P	16 26 43.8 -1.2
	comp=Z,192nm,1.4s					
KSM				epP	pP	16 27 29.1 -0.4
CGJI	Cibinong	75.41	270	P	P	16 26 49.3 +0.1
	comp=Z,97nm,1.3s,comp=Z,1μm					
JNU	Nakatsue	76.11	317	P	P	16 26 52.8 0.0
	comp=Z,7.0nm,0.8s,baz=84,slow=3.3,SNR=5.4					
JNU	Nakatsue	76.11	317	eP	P	16 26 52.0 -0.7
	comp=Z,77nm,1.6s					
NACB	Ninganchiao	76.81	305	eP	P	16 26 54.9 -1.9
NACB				epP	pP	16 27 40.6 -1.0
PPBI	Pangkal Pinang	76.86	274	P	P	16 26 57.1 -0.3
	comp=Z,58nm,1.3s,comp=Z,4μm					
KLI	Kotabumi	76.89	271	P	P	16 26 57.9 +0.4
	comp=Z,136nm,0.7s					
KASI	Kota Agung	76.94	270	P	P	16 26 58.1 +0.3
	comp=Z,127nm,1.4s,comp=Z,2μm					
KUR	Kuril'sk	76.94	336	eP	P	16 26 58.0 +1.0
TPUB	Ta-pu	77.04	304	eP	P	16 26 56.2 -2.0
	comp=Z,265nm,0.6s					
SSLB	Suanglung	77.07	304	eP	P	16 26 56.2 -2.1
	comp=Z,165nm,0.5s					
YHNB	Yeheng	77.26	305	eP	P	16 26 58.4 -1.1
	comp=Z,148nm,0.5s					
MAW	Mawson	77.34	200	P	P	16 27 01.7 +2.6
	comp=Z,50nm,0.8s,baz=122,slow=6.8,SNR=62					
MAW	Mawson	77.34	200	eP	P	16 27 00.2 +1.2
	comp=Z,19nm,0.9s					
TATO	Taipei	77.36	305	eP	P	16 26 58.4 -1.5
TATO				epP	pP	16 27 44.4 -0.3
H06S1	SOCORRO T	77.99	63	T	T	17 52 16.4
	SNR=6.7					
H06E1	SOCORRO T-PHAS	78.04	63	T	T	17 52 23.6
	SNR=7.4					
ASAJ	Asahikawa	78.14	332	P	P	16 27 04.8 +1.1
	comp=Z,24nm,0.8s,baz=215,slow=7.3,SNR=21					
ASAJ				pP	pP	16 27 47.7 -0.9
	comp=Z,19nm,1.0s,baz=141,slow=16,SNR=2.7					
ASAJ	Asahikawa	78.14	332	eP	P	16 27 03.4 -0.3
	comp=Z,32nm,0.9s					
ASAJ				epP	pP	16 27 49.4 +0.8
LHSI	Lahat	78.53	271	P	P	16 27 07.1 +0.5
	comp=Z,67nm,1.2s					
SKR	Severo-Kuril's	79.12	343	eP	P	16 27 09.2 +0.3
QZH	Quanzhou	79.50	304	⇑iP	P	16 27 07.0 -4.6
QZH				pmax	pmax	
	comp=Z,120nm,0.8s					
TPRI	Tanjung Pinang	79.63	276	P	P	16 27 13.9 +1.3
	comp=Z,61nm,1.0s,comp=Z,2μm					
MASI	Maura Aman, Be	79.97	271	P	P	16 27 15.3 +0.8
	comp=Z,230nm,1.5s,comp=Z,8μm					
SNCC	San Nicolas Is	80.06	46	P	P	16 27 15.3 +0.9
	baz=231					
YSS	Yuzh-Sakhalins	80.36	334	⇑eP	P	16 27 16.5 +0.8
YSS	Yuzh-Sakhalins	80.36	334	eP	P	16 27 15.7 0.0
	comp=Z,63nm,0.8s					
YSS				epP	pP	16 28 00.4 -0.4
SCZ2	Santa Cruz Isl	80.45	45	P	P	16 27 17.6 +1.0
	baz=231					
SCI2	San Clemente I	80.53	47	P	P	16 27 18.0 +1.0
	baz=232					
MYKOM	Kota Tinggi	80.61	276	eP	P	16 27 17.0 -0.8
	comp=Z,131nm,1.5s					
MYKOM				epP	pP	16 28 02.0 -1.0
FALS	False Pass	80.65	8	eP	P	16 27 16.7 -0.3
	comp=Z,59nm,0.9s					
PET	Petropavlovsk	80.66	346	⇑iP	P	16 27 16.6 -0.5
PET				pmax	pmax	
	comp=Z,62nm,0.7s					
PET	Petropavlovsk	80.66	346	eP	P	16 27 16.7 -0.5
	comp=Z,39nm,0.7s					
PET				epP	pP	16 28 03.3 +0.9
SBC	Santa Barbara	80.68	45	P	P	16 27 18.8 +1.1
	baz=231					
KSRS	Korea Array	80.80	319	P	P	16 27 18.3 +0.1
	comp=Z,3.8nm,0.7s,baz=126,slow=5.7,SNR=14					
KSAR	Wonju Array Be	80.81	319	P	P	16 27 18.3 0.0
KSAR	Wonju Array Be	80.81	319	P	P	16 27 18.3 0.0
KS01	Wonju Array Si	80.83	319	eP	P	16 27 18.0 -0.5
KS01				epP	pP	16 28 02.6 -1.0
CIS	Catalina Islan	80.88	47	P	P	16 27 19.2 +0.3
	baz=232,SNR=7.8					
BLG	Laguna Peak, P	80.89	46	P	P	16 27 19.5 +0.6
	baz=231					
PKM	Mcpherson Peak	80.90	45	P	P	16 27 20.3 +1.2
	baz=231					
PEA0	Petropavlovsk-	80.96	345	eP	P	16 27 18.7 -0.1
PEA0				epP	pP	16 28 04.0 0.0
PEA0B	Petropavlovsk-	80.96	345	eP	P	16 27 18.5 -0.3
	comp=Z,138nm,0.8s					
PETK	Petropavlovsk-	80.96	345	P	P	16 27 18.7 -0.1
	comp=Z,106nm,0.7s,baz=122,slow=4.1,SNR=138					
PETK				pP	pP	16 28 03.8 -0.2
	comp=Z,23nm,0.9s,baz=121,slow=7.1,SNR=2.2					
PETK	Petropavlovsk-	80.96	345	P	P	16 27 18.7 -0.1
PETK				*PP	pP	16 28 03.8 -0.2
PETK				pmax	pmax	
	comp=Z,105nm,0.7s					
PETK				pmax	pmax	
	comp=Z,23nm,0.9s					
PEA1	Petropavlovsk-	80.97	345	eP	P	16 27 18.7 -0.1
PEA1				epP	pP	16 28 03.8 -0.2
SMMC	Simmler	81.06	44	P	P	16 27 20.9 +1.1
	baz=231					
FMP	Fort Macarthur	81.15	46	P	P	16 27 21.1 +0.9
	baz=232					
LPIG	La Paz	81.35	58	P	P	16 27 21.4 0.0
	comp=Z,23nm,0.3s,baz=153,slow=1.7,SNR=7.3					
SLBS	Sierra La Lagu	81.41	59	eP	P	16 27 21.7 -0.2
	comp=Z,187nm,1.9s					
SLBS				epP	pP	16 28 07.3 +0.2
OSI	Osito Audit: C	81.43	45	P	P	16 27 22.8 +1.1
	baz=232					
109C	Camp Elliot, M	81.44	48	P	P	16 27 22.5 +0.7
	baz=233					
DECC	Green Verdugo	81.46	46	P	P	16 27 22.1 +0.2
	baz=232					
PASC	Pasadena Art C	81.50	46	eP	P	16 27 21.8 -0.3
	comp=Z,25nm,0.8s					
BAR	Barrett	81.60	48	eP	P	16 27 23.1 +0.4
	comp=Z,55nm,1.4s					
MWC	Mount Wilson	81.62	46	eP	P	16 27 23.1 +0.2
MWC				pmax	pmax	
	comp=Z,50nm,1.2s					
MWC	Mount Wilson	81.62	46	eP	P	16 27 23.1 +0.2
	comp=Z,50nm,1.2s					
MWC				epP	pP	16 28 08.2 -0.1
SRIG	Santa Rosalia	81.64	55	eP	P	16 27 23.0 +0.1
	comp=Z,82nm,1.3s					
SRIG				epP	pP	16 28 09.2 +1.0
ARVC	Arvin	81.68	45	P	P	16 27 23.9 +0.9
	baz=231					
MURC	Murrieta	81.81	47	P	P	16 27 24.6 +0.8
	baz=233,SNR=9.7					
BFSC	Mount Baldy Ra	81.89	46	P	P	16 27 24.6 +0.3
	baz=232,SNR=12					
MONP2	Monument Peak	81.90	48	P	P	16 27 25.1 +0.7
	baz=233,SNR=22					
VES	Vestal, Richgr	81.96	44	P	P	16 27 25.1 +0.7
	baz=231					
KMRM	Mail Ridge	82.05	39	eP	P	16 27 26.2 +1.3
	comp=Z,107nm,1.1s					
KMRM				epP	pP	16 28 11.0 +0.8
EDW2	Edwards Air Fo	82.06	46	P	P	16 27 26.0 +1.0
	baz=232,SNR=37					
RCTC	Rector, Farmer	82.16	44	P	P	16 27 26.1 +0.7
	baz=231					
ISA	Isabella, Lake	82.24	45	P	P	16 27 27.1 +1.0
	baz=232,SNR=11					
ISA	Isabella, Lake	82.24	45	eP	P	16 27 27.0 +1.0
ISA				e*PP	pP	16 28 11.4 0.0
ISA				pmax	pmax	
	comp=Z,67nm,1.3s					
ISA	Isabella, Lake	82.24	45	eP	P	16 27 27.0 +1.0
	comp=Z,67nm,1.3s					
ISA				epP	pP	16 28 11.4 0.0
SYO	Syowa Base	82.27	193	⇓eP	P	16 27 24.8 -0.7
PFO	Pinyon Flats O	82.30	47	P	P	16 27 26.9 +0.5
	comp=Z,17nm,0.9s,baz=245,slow=3.8,SNR=28					
PFO	Pinyon Flats O	82.30	47	P	P	16 27 27.3 +0.8
	baz=233,SNR=16					
PFO	Pinyon Flats O	82.30	47	eP	P	16 27 27.1 +0.7
	comp=Z,116nm,1.8s					
PFO				epP	pP	16 28 13.5 +1.7
SWSC	Sam W. Stewart	82.35	48	P	P	16 27 27.4 +0.9
	baz=234,SNR=6.8					
BBRC	Big Bear Solar	82.39	47	P	P	16 27 27.7 +0.7
	baz=233					
VLA	Vladivostok	82.47	325	⇑iP	P	16 27 27.0 +0.2
VLA				pmax	pmax	
	comp=Z,48nm,1.4s					
MSHR	Mys Shultsa	82.47	324	eP	P	16 27 27.9 +1.0
KHMM	Horse Mountain	82.48	38	eP	P	16 27 28.0 +0.8
	comp=Z,59nm,1.4s					
KHMM				epP	pP	16 28 15.6 +3.0
PDSI	Padang	82.52	273	P	P	16 27 28.9 +1.0
	comp=Z,22nm,1.1s					
CMB	Columbia Colle	82.55	42	eP	P	16 27 28.3 +0.8
CMB				e*PP	pP	16 28 13.3 +0.4
CMB				pmax	pmax	
	comp=Z,52nm,1.3s					
CMB	Columbia Colle	82.55	42	eP	P	16 27 28.3 +0.8
	comp=Z,52nm,1.3s					
CMB				epP	pP	16 28 13.3 +0.4
LRMC	Laurel Mtn Rad	82.63	45	P	P	16 27 28.9 +0.7
	baz=232,SNR=19					
RRX	Edison Barstow	82.71	46	P	P	16 27 29.1 +0.7
	baz=233					
AFDM	Forest Hills D	82.79	41	eP	P	16 27 29.4 +0.7
	comp=Z,38nm,1.2s					
BELC	Belle Mtn. Jos	82.84	47	P	P	16 27 30.2 +0.9
	baz=233,SNR=34					
ORV	Oroville	82.87	40	eP	P	16 27 29.8 +0.7
ORV				pmax	pmax	
	comp=Z,35nm,1.0s					
ORV	Oroville	82.87	40	eP	P	16 27 29.8 +0.7
	comp=Z,35nm,1.0s					
ORV				epP	pP	16 28 15.1 +0.6
WDC	Whiskeytown Da	82.95	39	eP	P	16 27 30.3 +0.9
WDC				pmax	pmax	
	comp=Z,73nm,1.3s					
WDC	Whiskeytown Da	82.95	39	eP	P	16 27 30.3 +0.9
	comp=Z,73nm,1.3s					
BC3	Big Chuckawall	83.00	48	P	P	16 27 31.1 +1.1
	baz=234,SNR=30					
GLA	Glamis	83.07	49	P	P	16 27 31.4 +1.1
	baz=234,SNR=15					
GLA	Glamis	83.07	49	eP	P	16 27 31.6 +1.3
GLA				e*PP	pP	16 28 16.8 +1.1
GLA				pmax	pmax	
	comp=Z,134nm,1.4s					
GLA	Glamis	83.07	49	eP	P	16 27 31.6 +1.3
	comp=Z,134nm,1.4s					
GLA				epP	pP	16 28 16.8 +1.1
GSC	Goldstone, Bar	83.09	46	P	P	16 27 31.3 +0.9
	baz=233,SNR=14					
GSC	Goldstone, Bar	83.09	46	eP	P	16 27 31.2 +0.8
GSC				pmax	pmax	
	comp=Z,99nm,1.5s					
GSC	Goldstone, Bar	83.09	46	eP	P	16 27 31.2 +0.8
	comp=Z,99nm,1.5s					
MPMC	Manual Prospec	83.11	45	P	P	16 27 31.6 +0.9
	baz=232,SNR=34					
HEC	Hector,Ludlow	83.11	46	P	P	16 27 31.6 +1.0
	baz=233,SNR=27					
N02D	Trinity Center	83.12	38	P	P	16 27 32.0 +1.6
	baz=228,SNR=14					
USRK	Ussuriysk Ar.	83.18	326	P	P	16 27 31.4 +0.9
	comp=Z,26nm,0.9s,baz=128,slow=3.8,SNR=54					
USRK				pP	pP	16 28 16.6 +0.7
	comp=Z,3.8nm,0.8s,baz=132,slow=2.1,SNR=1.6					
DAC	Darwin (Calif)	83.18	45	eP	P	16 27 31.2 +0.2
DAC				pmax	pmax	
	comp=Z,23nm,1.3s					
DAC	Darwin (Calif)	83.18	45	eP	P	16 27 31.2 +0.2
	comp=Z,23nm,1.3s					
DAC				epP	pP	16 28 19.0 +2.6
O03D	Paynes Creek	83.18	39	P	P	16 27 31.3 +0.6
	baz=229,SNR=18					
MLAC	Mammoth, Mammo	83.24	43	P	P	16 27 32.4 +1.0
	baz=231					
TIN	Tinemaha, Big	83.26	44	P	P	16 27 32.1 +0.8
	baz=232					
SNAA	Sanae	83.30	178	P	P	16 27 32.1 +1.1
SNAA	Sanae	83.30	178	ciP	P	16 27 31.3 +0.4
SNAA	Sanae	83.30	178	eP	P	16 27 31.4 +0.4
	comp=Z,6μm,1.2s					
SNAA				epP	pP	16 28 17.3 +1.0
M02C	Callahan	83.31	38	P	P	16 27 32.8 +1.4
	baz=228,SNR=23					
NJ2	Nanjing	83.33	310	eP	P	16 27 32.0 +0.4
NJ2				pmax	pmax	
	comp=Z,19nm,0.5s					
VNA3	Neumayer Olymp	83.41	176	P	P	16 27 32.3 +0.8
L02D	Cave Junction,	83.42	37	P	P	16 27 33.3 +1.5
	baz=227					
WAKR	Walker	83.42	42	eP	P	16 27 33.0 +0.8
WAKR				epP	pP	16 28 18.5 +0.8
IRM	Iron Mountain	83.50	48	P	P	16 27 33.9 +1.4
	baz=234,SNR=39					
HSIG		83.53	54	eP	P	16 27 33.1 +0.4
	comp=Z,151nm,1.9s					
HSIG				epP	pP	16 28 18.8 +0.6
GMRC	Granite Mounta	83.53	47	P	P	16 27 33.9 +1.2
	baz=233,SNR=26					
TYV	Tymovskoe	83.56	336	eP	P	16 27 30.0 -2.3
TYV				pmax	pmax	
	comp=Z,68nm,0.8s					
YBH	Yreka Blue Hor	83.62	38	P	P	16 27 34.1 +1.1
	comp=Z,20nm,0.9s,baz=203,slow=3.2,SNR=33					
YBH				pP	pP	16 28 19.0 +0.5
	comp=Z,5.6nm,0.7s,baz=132,slow=4.2,SNR=1.6					
YBH	Yreka Blue Hor	83.62	38	eP	P	16 27 34.0 +1.1
	comp=Z,33nm,1.0s					
YBH				epP	pP	16 28 19.0 +0.5
113A	Mohawk Valley,	83.63	49	eP	P	16 27 33.8 +0.8
	comp=Z,84nm,1.4s					
113A				epP	pP	16 28 19.5 +0.9
Y12C	Blythe	83.68	48	P	P	16 27 34.9 +1.6
	baz=234					
Y12C	Blythe	83.68	48	eP	P	16 27 34.8 +1.4
	comp=Z,93nm,1.4s					
TUQ	Turquoise Moun	83.75	46	P	P	16 27 34.9 +1.1

comp=Z,56nm,1.0s
IPM *e*P **pP** 16 28 21.4 -1.2
TPNV Topopah Spring 84.45 45 P **P** 16 27 38.3 +1.0
baz=233,SNR=29
TPNV Topopah Spring 84.45 45 *e*P **P** 16 27 38.3 +1.0
TPNV pmax pmax
comp=Z,36nm,1.1s
TPNV Topopah Spring 84.45 45 *e*P **P** 16 27 37.9 +0.5
comp=Z,36nm,1.1s
I03D Drain, OR 84.59 36 P **P** 16 27 38.4 +0.7
baz=228,SNR=9.8
OHAK Old Harbor 84.59 13 *e*P **P** 16 27 37.0 -0.3
OHAK *e*pP **pP** 16 28 23.9 +1.0
MDJ Mudanjiang 84.70 325 P **P** 16 27 38.6 +0.4
MDJ pmax pmax
comp=Z,48nm,1.1s
MDJ pmax pmax
comp=Z,520nm,8.3s
MDJ Mudanjiang 84.70 325 *e*P **P** 16 27 38.1 -0.1
comp=Z,52nm,1.0s
MDJ *e*pP **pP** 16 28 26.2 +2.4
K04D Chiloquin, OR 84.75 38 P **P** 16 27 39.6 +0.9
baz=229
HABR Khabarovsk 84.82 330 *de*P **P** 16 27 37.3 -1.4
HABR *e* 16 30 54.8
HABR *e*PPP PPP 16 32 48.1
HABR *e*S **S** 16 37 47.8 -3.1
HABR *e**SS **pS** 16 38 48.8 +1.0
HABR *e*SS **SS** 16 43 30.2 +1.9
HABR *e*SSS SSS 16 47 01.4
HABR pmax pmax
comp=N,25nm,1.1s
HABR pmax pmax
comp=Z,98nm,1.1s
HABR pmax pmax
comp=E,20nm,1.1s
HABR MLR MLR
comp=Z,385nm,16.0s
Y14A Wickenburg 84.82 49 *e*P **P** 16 27 40.2 +1.1
comp=Z,222nm,1.3s
Y14A *e*pP **pP** 16 28 26.3 +1.5
SHPR Sheep Range 84.88 46 *e*P **P** 16 27 40.8 +1.2
comp=Z,69nm,1.5s
W13A Hualapai Mount 84.90 47 *e*P **P** 16 27 40.7 +1.0
comp=Z,64nm,1.4s
KULM Kulim 85.00 278 *e*P **P** 16 27 40.8 +0.3
comp=Z,126nm,1.6s
KULM *e*pP **pP** 16 28 25.9 -0.1
MOD Modoc Plateau 85.09 39 *e*P **P** 16 27 40.8 +0.3
comp=Z,47nm,1.0s
MOD *e*pP **pP** 16 28 26.7 +0.6
I04A Tendick Farm, 85.16 37 P **P** 16 27 41.2 +0.6
baz=228,SNR=8.7
KDAK Kodiak Island 85.26 13 P P 16 27 54.6 +14
comp=Z,35nm,1.2s,baz=208,slow=3.8,SNR=7.3
KDAK pP sP 16 28 40.1 -5.6
comp=Z,29nm,1.2s,baz=154,slow=3.9,SNR=1.7
KDAK Kodiak Island 85.26 13 *e*P **P** 16 27 41.3 +0.7
KDAK *e**PP **pP** 16 28 26.4 +0.1
KDAK *e**SP **sP** 16 28 40.1 -5.6
KDAK Kodiak Island 85.26 13 *e*P **P** 16 27 41.3 +0.7
KDAK *e*PcP PcP 16 27 54.6 +11
KDAK *e*pP **pP** 16 28 26.4 +0.1
KDAK *e*sP **sP** 16 28 40.1 -5.6
K05A Summer Lake 85.29 38 *e*P **P** 16 27 42.1 +0.7
comp=Z,79nm,1.1s
K05A *e*pP **pP** 16 28 27.0 -0.1
TUC Tucson 85.45 51 P **P** 16 27 44.0 +1.7
baz=236
TUC Tucson 85.45 51 *e*P **P** 16 27 43.5 +1.2
TUC pmax pmax
comp=Z,128nm,1.4s
TUC Tucson 85.45 51 *e*P **P** 16 27 43.5 +1.2
comp=Z,128nm,1.4s
TUC *e*pP **pP** 16 28 29.7 +1.7
J05D Fort Rock, OR 85.47 37 P **P** 16 27 43.2 +0.9
baz=229,SNR=27
PSI Prapat 85.49 275 *e*P **P** 16 27 41.3 -1.7
PSI pmax pmax
comp=Z,107nm,1.4s
PSI Prapat 85.49 275 *e*P **P** 16 27 41.3 -1.7
comp=Z,106nm,1.4s
PSI *e*pP **pP** 16 28 28.8 +0.1
PLCA Paso Flores 85.63 133 P **P** 16 27 44.9 +1.6
comp=Z,15nm,1.0s,baz=272,slow=2.6,SNR=13
PLCA Paso Flores 85.63 133 *e*P **P** 16 27 44.5 +1.3
PLCA pmax pmax
comp=Z,37nm,1.1s
PLCA Paso Flores 85.63 133 *e*P **P** 16 27 44.5 +1.3
comp=Z,37nm,1.1s
G03D McMinnville, O 85.67 35 P **P** 16 27 43.7 +0.7
baz=227
WHN Wuhan 85.70 307 ⇓P **P** 16 27 44.0 +0.5
R11A Troy Canyon, C 85.71 44 P **P** 16 27 44.1 +0.5
baz=233,SNR=14
R11A Troy Canyon, C 85.71 44 *e*P **P** 16 27 43.6 0.0
comp=Z,10nm,1.1s
SKLT Songkhla 85.85 280 P **P** 16 27 46.6 +2.0
comp=Z,53nm,1.2s,comp=Z,799nm
H04A Detroit Lake 85.88 36 *e*P **P** 16 27 44.1 0.0
comp=Z,78nm,1.5s
H04A *e*pP **pP** 16 28 30.4 +0.6
319A Douglas 86.02 53 *e*P **P** 16 27 46.3 +1.1
comp=Z,94nm,1.3s
319A *e*pP **pP** 16 28 32.5 +1.6
GSI Gunungsitoli 86.07 273 P **P** 16 27 48.3 +2.5
comp=Z,89nm,1.5s
GSI Gunungsitoli 86.07 273 *e*P **P** 16 27 43.8 -1.9
comp=Z,50nm,0.8s
I05D Terrebonne, OR 86.10 37 P **P** 16 27 45.9 +0.7
baz=229
TSI Tuntungan 86.11 276 P **P** 16 27 50.5 +4.6
comp=Z,55nm,1.2s
NKL Nikolayevsk 86.13 336 *i*P **P** 16 27 45.0 0.0
NKL pmax pmax
comp=N,17nm,1.0s
NKL pmax pmax
comp=E,15nm,1.0s
NKL pmax pmax
comp=Z,140nm,1.0s
X16A Lo Mia Camp, P 86.16 49 *e*P **P** 16 27 46.7 +0.8
comp=Z,37nm,1.0s
X16A *e*pP **pP** 16 28 33.2 +1.5
CN2 Changchun 86.38 322 *e*P **P** 16 27 45.9 -0.6
CN2 pmax pmax
comp=Z,70nm,1.2s
WVOR Wild Horse Val 86.38 39 *e*P **P** 16 27 47.3 +0.6
WVOR pmax pmax
comp=Z,43nm,1.4s
WVOR Wild Horse Val 86.38 39 *e*P **P** 16 27 46.7 0.0
comp=Z,43nm,1.4s
WVOR *e*pP **pP** 16 28 32.4 -0.1
F04D Rainier, OR 86.39 35 P **P** 16 27 47.7 +1.2
baz=228
HPIG 86.40 58 *e*P **P** 16 27 47.6 +0.3
comp=Z,76nm,2.0s
E03A Lebam 86.42 34 *e*P **P** 16 27 47.6 +1.0
comp=Z,52nm,1.0s
LCMT Little Creek M 86.43 46 *e*P **P** 16 27 47.8 +0.7
comp=Z,36nm,1.2s
LCMT *e*pP **pP** 16 28 33.8 +0.9
F04A Amboy 86.59 35 *e*P **P** 16 27 48.1 +0.6
comp=Z,147nm,1.8s
KNB Kanab 86.70 46 *e*P **P** 16 27 49.3 +0.8
KNB pmax pmax
comp=Z,97nm,1.6s
KNB Kanab 86.70 46 *e*P **P** 16 27 49.3 +0.8
comp=Z,97nm,1.6s
G05D Wamic, OR 86.71 36 P **P** 16 27 49.2 +1.1
baz=229
CROR Criterion Ridg 86.72 36 P **P** 16 27 48.7 +0.4
U15A North Rim 86.72 47 *e*P **P** 16 27 49.5 +0.8
comp=Z,33nm,0.9s
U15A *e*pP **pP** 16 28 34.7 +0.2
ZAIG Zacatecas 86.79 63 *e*P **P** 16 27 50.5 +1.1
ZAIG *e*pP **pP** 16 28 35.1 -0.1
CHBT CHBT 86.79 286 P **P** 16 27 51.7 +2.6
comp=Z,72nm,1.2s,comp=Z,1μm
PANO Nakornpanom 86.81 290 P **P** 16 27 49.6 +0.4
comp=Z,74nm,1.1s
WUAZ Wupatki 86.82 48 P **P** 16 27 50.0 +0.9
baz=236
WUAZ Wupatki 86.82 48 *e*P **P** 16 27 49.9 +0.9
comp=Z,35nm,1.1s
WUAZ *e*pP **pP** 16 28 36.0 +1.1
KCSI Kotacane, Aceh 86.83 275 P **P** 16 27 51.7 +2.2
comp=Z,17nm,1.4s
NLWA Neilton Lookou 86.84 33 *e*P **P** 16 27 50.3 +1.6
comp=Z,43nm,1.3s
KLR Kul'dur 86.87 329 P **P** 16 27 49.5 +0.7
comp=Z,31nm,0.9s,baz=103,slow=4.9
TIA Tai'an 86.88 313 ⇑P **P** 16 27 49.6 +0.5
TIA pmax pmax
comp=Z,80nm,1.1s
PSUT Pine Spring 86.91 45 *e*P **P** 16 27 50.0 +0.5
comp=Z,15nm,0.9s
TRTT Trang 86.96 280 P **P** 16 27 52.3 +2.2
comp=Z,64nm,1.3s,comp=Z,1μm
G06A Carlson Farm, 87.07 36 *e*P **P** 16 27 50.4 +0.5
comp=Z,32nm,1.2s
VTHM Trough 87.07 36 P **P** 16 27 50.4 +0.4
HOM Homer 87.18 13 *e*P **P** 16 27 50.3 +0.3
HOM *e*pP **pP** 16 28 36.4 +0.5
X18A Snowflake 87.25 50 *e*P **P** 16 27 52.1 +0.9
comp=Z,30nm,1.0s
X18A *e*pP **pP** 16 28 37.4 +0.3
PKCU Pink Cliffs 87.28 46 *e*P **P** 16 27 53.5 +2.0
comp=Z,135nm,2.0s
ELK Elko 87.36 42 *e*P **P** 16 27 51.9 +0.2
ELK pmax pmax
comp=Z,12nm,1.0s
ELK Elko 87.36 42 *e*P **P** 16 27 51.9 +0.2
comp=Z,12nm,1.0s
LON Longmire 87.45 35 *e*P **P** 16 27 51.9 +0.2
LON pmax pmax
comp=Z,15nm,1.1s
LON Longmire 87.45 35 *e*P **P** 16 27 51.9 +0.2
comp=Z,15nm,1.1s
GNW Green Mountain 87.48 34 *e*P **P** 16 27 52.5 +0.9
SRAK Srakaew 87.60 287 P **P** 16 27 53.3 +0.3
comp=Z,63nm,1.4s,comp=Z,790nm
D05A Enumclaw 87.65 34 *e*P **P** 16 27 54.0 +1.4
comp=Z,156nm,1.2s
D05A *e*pP **pP** 16 28 39.8 +1.3
TLIG Tlapa 87.67 69 *e*P **P** 16 27 54.2 +0.8
TLIG *e*pP **pP** 16 28 40.0 +0.7
121A Cookes Peak, D 87.70 52 P **P** 16 27 55.0 +1.6
baz=238,SNR=15
MTPU Mount Pierson 87.70 46 *e*P **P** 16 27 54.8 +1.3
comp=Z,37nm,0.9s
MTPU *e*pP **pP** 16 28 40.0 +0.6
W18A Petrified Fore 87.72 49 P **P** 16 27 54.2 +0.8
baz=237
W18A Petrified Fore 87.72 49 *e*P **P** 16 27 54.1 +0.7
comp=Z,114nm,1.7s
SVW2 Sparrevohn 87.81 10 *e*P **P** 16 27 52.5 -0.5
comp=Z,97nm,1.8s
SVW2 *e*pP **pP** 16 28 40.0 +1.1
KHON Khomkaen 87.97 289 P **P** 16 27 57.6 +2.9
comp=Z,13nm,1.1s
MSU Marysvale 87.98 45 *e*P **P** 16 27 58.5 +3.9
MSU Marysvale 87.98 45 *e*P **P** 16 27 58.5 +3.9
SEW Seward 88.04 14 *e*P **P** 16 27 54.1 +0.1
SEW *e*pP **pP** 16 28 40.2 +0.2
PATY Pattaya 88.14 285 P **P** 16 27 58.9 +3.3
comp=Z,16nm,1.0s
SURT Suratani 88.25 281 P **P** 16 27 59.3 +3.2
comp=Z,20nm,1.1s,comp=Z,383nm
B05A Bryant 88.31 33 P **P** 16 27 56.5 +0.9
baz=228,SNR=14
A04D Lummi Island 88.32 33 P **P** 16 27 56.4 +0.8
baz=228,SNR=11
E07A Sunnyside 88.34 36 *e*P **P** 16 27 56.4 +0.6
comp=Z,60nm,1.0s
NAYO Nakonayok 88.36 287 P **P** 16 27 58.8 +2.2
comp=Z,16nm,1.2s,comp=Z,1μm
LTY Liberty 88.37 35 *e*P **P** 16 27 56.0 0.0
comp=Z,27nm,1.0s
MLSI Meulaboh, Aceh 88.38 275 P **P** 16 27 58.8 +2.0
comp=Z,133nm,1.2s
HAWA Hanford 88.41 36 *e*P **P** 16 27 57.4 +1.3
comp=Z,88nm,1.3s
NONG Nongkai 88.47 291 P **P** 16 27 57.8 +0.7
comp=Z,63nm,1.2s
CHAI Chaiyaphum 88.49 288 P **P** 16 27 58.1 +0.9
comp=Z,7.4nm,0.9s,comp=Z,279nm
SPU Mount Spurr 88.51 12 *e*P **P** 16 27 55.2 -1.1
SPU *e*pP **pP** 16 28 41.8 -0.5
DUG Dugway, Tooele 88.53 44 P **P** 16 27 57.6 +0.5
baz=235
DUG Dugway, Tooele 88.53 44 *e*P **P** 16 27 57.7 +0.6
DUG pmax pmax
comp=Z,10.0nm,1.1s
DUG Dugway, Tooele 88.53 44 *e*P **P** 16 27 57.7 +0.6
comp=Z,10nm,1.1s
MFID Camas Ranch 88.61 40 *e*P **P** 16 27 57.5 +0.2
comp=Z,74nm,1.8s
C06D Leavenworth 88.69 34 P **P** 16 27 57.9 +0.4
baz=229
ETW Entiat 88.77 35 *e*P **P** 16 27 58.6 +0.7
B06A Marblemount 88.79 33 *e*P **P** 16 27 57.8 0.0
comp=Z,38nm,1.0s
GAMB Gambell 88.81 3 *e*P **P** 16 27 57.7 +0.2
comp=Z,128nm,1.9s
GAMB *e*pP **pP** 16 28 42.6 -1.0
BGU Big Grassy Mou 88.82 43 *e*P **P** 16 27 58.1 -0.3
comp=Z,8.7nm,1.2s
Q16A Castle Valley 88.86 46 *e*P **P** 16 27 59.4 +0.7
comp=Z,89nm,1.8s
Q16A *e*pP **pP** 16 28 44.9 +0.2
NLU North Lily Min 88.86 44 *e*P **P** 16 27 59.1 +0.4
comp=Z,12nm,1.1s
RC01 Rabbit Creek A 88.88 13 *e*P **P** 16 27 57.8 -0.2
comp=Z,130nm,1.4s
RC01 *e*pP **pP** 16 28 43.7 -0.3
MNTX Cornudas Mount 89.02 54 P **P** 16 28 00.3 +0.9
baz=240
TMUT Trail Mountain 89.04 45 *e*P **P** 16 28 00.8 +1.1
comp=Z,50nm,0.8s
TMUT *e*pP **pP** 16 28 45.5 -0.2
TX31 Lajitas Ar. Si 89.12 57 *e*P **P** 16 28 00.3 +0.3
TX31 *e*pP **pP** 16 28 44.9 -1.1
LTX Lajitas 89.12 57 *e*P **P** 16 28 00.8 +0.8
LTX *e**PP **pP** 16 28 45.1 -0.9
LTX Lajitas 89.12 57 *e*P **P** 16 28 00.8 +0.8
LTX *e*pP **pP** 16 28 45.1 -0.9
LTX *e*PKKPdf **PKKPbc** 16 45 39.0 +2.0
TXAR Lajitas Array 89.12 57 P **P** 16 28 00.8 +0.8
comp=Z,6.8nm,0.9s,baz=214,slow=5.8,SNR=60
TXAR pP **pP** 16 28 45.1 -0.9
comp=Z,7.9nm,0.9s,baz=203,slow=4.4,SNR=3.6
TXAR PKKP **PKKPbc** 16 45 39.0 +2.0
comp=Z,0.4nm,0.7s,baz=132,slow=3.5,SNR=5.3
Y22D IRIS PASSCAL I 89.13 51 P **P** 16 28 01.5 +1.4
baz=239
LAZ Ladron 89.14 51 *e*P **P** 16 28 01.3 +1.2
LAZ *e*pP **pP** 16 28 47.8 +1.6
D08A Wollman Farm, 89.15 36 *e*P **P** 16 27 59.8 +0.2
comp=Z,81nm,1.0s
D08A *e*pP **pP** 16 28 46.0 +0.4
ENH Enshi 89.16 304 *e*P **P** 16 28 00.2 +0.1
comp=Z,166nm,1.3s
ENH *e*pP **pP** 16 28 46.0 -0.1
PHET Kaeng Krachan 89.22 285 P **P** 16 28 02.7 +2.0
comp=Z,41nm,1.1s,comp=Z,367nm
E09A Wood Farm, Sta 89.22 36 *e*P **P** 16 28 00.6 +0.6
comp=Z,79nm,1.1s
E09A *e*pP **pP** 16 28 45.8 -0.2
EYAK Cordova Ski Ar 89.27 15 *e*P **P** 16 27 59.7 0.0
comp=Z,54nm,1.0s
BNM Barren Site 89.38 52 *e*P **P** 16 28 02.0 +0.7
BNM *e*pP **pP** 16 28 47.7 +0.3
SRU San Rafael Swe 89.38 46 *e*P **P** 16 28 01.6 +0.4
SRU pmax pmax
comp=Z,35nm,1.0s
SRU San Rafael Swe 89.38 46 *e*P **P** 16 28 01.6 +0.4
comp=Z,35nm,1.0s
RAGM Ragged Mountai 89.38 16 *e*P **P** 16 28 00.9 +0.5
comp=Z,67nm,1.2s
RAGM *e*pP **pP** 16 28 46.5 0.0
F10A Beach Ranch, E 89.39 37 *e*P **P** 16 28 00.6 -0.3
comp=Z,75nm,1.0s
SPUT South Promonto 89.40 43 *e*P **P** 16 28 01.9 +0.7
comp=Z,41nm,1.3s
SPUT *e*pP **pP** 16 28 45.8 -1.4
P17A Butcher Ranch, 89.44 45 *e*P **P** 16 28 01.8 +0.4
comp=Z,41nm,1.2s
P17A *e*pP **pP** 16 28 47.6 +0.2
TT01 Tatalina 89.45 10 *e*P **P** 16 28 00.8 +0.2
TT01 *e*pP **pP** 16 28 46.9 +0.2
LPM Los Pinos Moun 89.46 51 *e*P **P** 16 28 02.2 +0.6
LPM *e*pP **pP** 16 28 48.6 +0.9
PMR Palmer 89.46 13 *e*P **P** 16 28 00.2 -0.4
PMR *e**PP **pP** 16 28 46.1 -0.6
PMR Palmer 89.46 13 *e*P **P** 16 28 00.2 -0.4
PMR *e*pP **pP** 16 28 46.1 -0.6
HVU Hansel Valley 89.47 43 *e*P **P** 16 28 01.8 +0.4
HVU pmax pmax
comp=Z,130nm,1.9s
HVU Hansel Valley 89.47 43 *e*P **P** 16 28 01.8 +0.4
comp=Z,130nm,1.9s
GYA Guiyang 89.47 300 P **P** 16 28 03.0 +1.2
GYA pP pP 16 28 37.5 -10
GYA sP sP 16 28 51.0 -16
GYA PP **PP** 16 31 38.8 +2.7
GYA SKS **SKSac** 16 38 18.0 +3.3
GYA S **ScS** 16 38 40.4 -0.3
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,140nm,6.2s
TTA Tatalina 89.48 10 *e*P **P** 16 28 00.8 0.0
TTA pmax pmax
comp=Z,52nm,1.1s
TTA Tatalina 89.48 10 *e*P **P** 16 28 00.8 0.0
comp=Z,52nm,1.1s
TTA *e*pP **pP** 16 28 47.3 +0.4
HLID Hailey 89.52 40 P **P** 16 28 02.5 +0.8
baz=234
HLID Hailey 89.52 40 *e*P **P** 16 28 02.4 +0.8
comp=Z,36nm,1.3s
JLU Jordanelle 89.62 44 *e*P **P** 16 28 02.5 +0.2
comp=Z,111nm,1.9s
JLU *e*pP **pP** 16 28 48.3 0.0
BJT Baijiatuau 89.63 315 *e*P **P** 16 28 02.4 +0.4
BJT pmax pmax
comp=Z,202nm,1.6s
BJT Baijiatuau 89.63 315 *e*P **P** 16 28 02.4 +0.4
comp=Z,202nm,1.6s
BJT *e*pP **pP** 16 28 49.4 +1.3
BJI Beijing 89.64 315 P **P** 16 28 02.7 +0.7
BJI pP pP 16 28 34.2 -14
BJI sP sP 16 28 48.8 -19
BJI SKS **SKSac** 16 38 13.5 -1.3
BJI S **ScS** 16 38 41.6 +0.4
BJI pmax pmax
comp=Z,64nm,1.2s
PBKT Sadao Pong 89.66 288 P **P** 16 28 03.9 +1.3
comp=Z,47nm,1.2s,comp=Z,1μm
MVCO Mesa Verde 89.69 48 P **P** 16 28 03.1 +0.4
baz=238
PV05 Paradox Valley 89.75 47 *e*P **P** 16 28 03.6 +0.6
B08A Colville Reser 89.77 34 *e*P **P** 16 28 02.3 -0.2
comp=Z,33nm,0.9s
DIV Divide 89.78 15 *e*P **P** 16 28 02.0 -0.3
comp=Z,61nm,1.0s
DIV *e*pP **pP** 16 28 46.7 -1.6
WRAK Wrangell Islan 89.80 23 *e*P **P** 16 28 03.2 +0.9
WRAK *e*pP **pP** 16 28 48.9 +0.5
SML Sawmill 89.82 13 *e*P **P** 16 28 02.3 -0.1
SML pmax pmax
comp=Z,56nm,1.4s
SML Sawmill 89.82 13 *e*P **P** 16 28 02.3 -0.1
comp=Z,56nm,1.4s
P18A Preston Nutter 89.85 45 *e*P **P** 16 28 04.3 +0.8
comp=Z,58nm,1.8s
ANMO Albuquerque 89.91 51 P **P** 16 28 04.5 +0.8
comp=Z,14nm,1.0s,baz=223,slow=4.3,SNR=38
ANMO Albuquerque 89.91 51 P **P** 16 28 04.5 +0.8
baz=239
ANMO Albuquerque 89.91 51 *ce*P **P** 16 28 04.4 +0.7
ANMO pmax pmax
comp=Z,19nm,1.1s
ANMO Albuquerque 89.91 51 *e*P **P** 16 28 04.2 +0.5
comp=Z,53nm,1.4s
BMRM Bremner River 89.91 15 *e*P **P** 16 28 03.4 +0.5
comp=Z,65nm,0.9s
BMRM *e*pP **pP** 16 28 49.1 +0.1
TCUT Toone Canyon 89.94 44 *e*P **P** 16 28 04.2 +0.5
comp=Z,148nm,1.4s
PV10 Paradox Valley 89.95 47 *e*P **P** 16 28 04.1 +0.2
PV09 Paradox Valley 89.96 47 *e*P **P** 16 28 04.2 +0.3
C09A Chrisman Ranch 89.96 35 *e*P **P** 16 28 03.5 +0.1
comp=Z,44nm,0.9s
C09A *e*pP **pP** 16 28 49.4 -0.1
SCM Sheep Creek Mo 90.06 14 *e*P **P** 16 28 03.0 -0.6
SCM pmax pmax
comp=Z,72nm,1.0s
SCM Sheep Creek Mo 90.06 14 *e*P **P** 16 28 03.0 -0.6
comp=Z,72nm,1.0s
KLU Klutina 90.06 14 *e*P **P** 16 28 03.9 +0.2
KLU *e*pP **pP** 16 28 49.0 -0.7
PPLA Purkeypile 90.07 11 *e*P **P** 16 28 02.0 -1.7
comp=Z,38nm,1.4s
PPLA *e*pP **pP** 16 28 48.9 -0.9
CRQM Cirque 90.08 16 *e*P **P** 16 28 04.4 +0.5
CRQM *e*pP **pP** 16 28 48.6 -1.4
HWUT Hardware Ranch 90.11 43 *e*P **P** 16 28 04.8 +0.3
comp=Z,13nm,1.0s
PV01 Paradox Valley 90.13 47 *e*P **P** 16 28 04.5 -0.2
SRDT SRDT 90.29 286 P **P** 16 28 07.9 +2.3
comp=Z,119nm,1.3s,comp=Z,2μm
BALM Baldy 90.53 16 *e*P **P** 16 28 06.7 +0.9
BALM *e**SP **pP** 16 28 52.4 +0.5
BALM Baldy 90.53 16 *e*P **P** 16 28 06.5 +0.6
BALM *e*pP **pP** 16 28 50.5 -1.4
UTTA Uttaradit 90.53 289 P **P** 16 28 09.1 +2.4
comp=Z,7.6nm,1.3s,comp=Z,81nm
CAST Castle Rocks 90.58 11 *e*P **P** 16 28 04.2 -1.7
CAST *e*pP **pP** 16 28 50.4 -1.6
TNA Tin City 90.78 4 *e*P **P** 16 28 06.5 -0.2
comp=Z,47nm,1.0s
TNA *e*pP **pP** 16 28 51.7 -1.1
NEW Newport 90.86 35 *e*P **P** 16 28 08.0 +0.4
NEW Newport 90.86 35 *e*P **P** 16 28 08.0 +0.4
NEW *e*pP **pP** 16 28 54.3 +0.6
NANT Nan 90.87 290 P **P** 16 28 08.6 +0.3
comp=Z,9.3nm,1.3s,comp=Z,87nm
KTH Kantishna Hill 90.91 12 *e*P **P** 16 28 06.1 -1.4
KTH *e*pP **pP** 16 28 52.6 -1.0
TRF Thorofare Moun 90.93 12 *e*P **P** 16 28 06.6 -1.1
TRF *e*pP **pP** 16 28 52.5 -1.3
KHLT Khaolaem Dam 90.95 286 P **P** 16 28 12.3 +3.6
comp=Z,11nm,1.2s,comp=Z,362nm
AHID Auburn Hatcher 91.05 42 *e*P **P** 16 28 09.4 +0.6
comp=Z,53nm,1.1s
AHID *e*pP **pP** 16 28 54.4 -0.5
SEY Seymchan 91.08 347 P **P** 16 28 08.3 +0.2
comp=Z,14nm,0.7s,baz=152,slow=4.8,SNR=65
SEY pP **pP** 16 28 53.0 -1.3
comp=Z,40nm,1.1s,baz=104,slow=4.6,SNR=5.5
SEY Seymchan 91.08 347 *ce*P **P** 16 28 08.1 -0.1
S22A 4UR Ranch, Cre 91.10 48 P **P** 16 28 10.1 +0.8
baz=239,SNR=35
S22A 4UR Ranch, Cre 91.10 48 *e*P **P** 16 28 09.7 +0.4
comp=Z,30nm,1.1s
S22A *e*pP **pP** 16 28 54.5 -0.9
RND Reindeer 91.16 12 *e*P **P** 16 28 07.7 -1.0
RND Reindeer 91.16 12 *e*P **P** 16 28 07.7 -1.0
RND *e*pP **pP** 16 28 54.0 -0.7
SKAG Skagway 91.19 20 *e*P **P** 16 28 10.1 +1.3
SKAG *e*pP **pP** 16 28 55.5 +0.6
SUKH Sukhothai 91.21 289 P **P** 16 28 11.9 +2.1
comp=Z,8.5nm,1.2s,comp=Z,81nm
BPAW Bear Paw Mtn. 91.40 11 *e*P **P** 16 28 08.9 -0.8
BPAW *e*pP **pP** 16 28 55.1 -0.7
O20A White River Ci 91.42 46 P **P** 16 28 11.1 +0.5
baz=238
XAN Xi'an 91.44 307 P **P** 16 28 11.4 +0.8
XAN pmax pmax
comp=Z,48nm,1.0s
XAN pmax pmax
comp=Z,670nm,10.2s
MCK McKinley 91.44 12 *e*P **P** 16 28 09.4 -0.5
MCK McKinley 91.44 12 *e*P **P** 16 28 09.4 -0.5
MCK *e*pP **pP** 16 28 56.0 0.0
832A Faith Ranch, C 91.46 59 P **P** 16 28 10.6 -0.2
baz=242
PAX Paxson 91.47 14 *e*P **P** 16 28 09.3 -0.8
PAX pmax pmax
comp=Z,35nm,1.2s
PAX Paxson 91.47 14 *e*P **P** 16 28 09.3 -0.8
comp=Z,35nm,1.2s
REDW Red Top Meadow 91.53 42 *e*P **P** 16 28 11.4 +0.3
comp=Z,68nm,1.3s
REDW *e*pP **pP** 16 28 57.8 +0.6

FXWY	Fox Creek	91.58	42	eP	P	16 28 11.1	-0.3
	comp=Z,30nm,1.2s						
FXWY				epP	pP	16 28 57.1	-0.3
DLMT	Dillon	91.63	40	eP	P	16 28 11.9	+0.5
	comp=Z,38nm,1.1s						
DLMT				epP	pP	16 28 56.1	-1.4
SNOW	Snow King Moun	91.65	42	eP	P	16 28 12.2	+0.5
	comp=Z,50nm,1.0s						
SNOW				epP	pP	16 28 57.4	-0.3
LAMP	Lampang	91.66	290	P	P	16 28 13.6	+1.7
	comp=Z,16nm,1.1s,comp=Z,142nm						
933A	Laredo	91.70	60	P	P	16 28 12.3	+0.4
	baz=242						
MSO	Missoula	91.72	38	P	P	16 28 11.4	-0.3
	baz=234,SNR=5.8						
MSO	Missoula	91.72	38	eP	P	16 28 11.8	+0.1
	comp=Z,16nm,1.2s						
BWN	Browne	91.74	12	eP	P	16 28 10.1	-1.1
BWN				epP	pP	16 28 59.0	+1.7
SMCO	Snowmass	91.75	47	eP	P	16 28 12.9	+0.5
	comp=Z,24nm,1.1s						
CRAI	Chiangrai	91.78	291	P	P	16 28 13.4	+0.9
	comp=Z,166nm,1.8s,comp=Z,73µm						
IMW	Indian Meadow	91.78	42	eP	P	16 28 12.8	+0.5
	comp=Z,45nm,1.1s						
IMW				epP	pP	16 28 58.0	-0.4
MOOW	Moose Ponds	91.81	42	eP	P	16 28 12.5	+0.1
	comp=Z,58nm,1.8s						
LOHW	Long Hollow	91.82	42	eP	P	16 28 12.7	+0.3
	comp=Z,65nm,1.5s						
LOHW				epP	pP	16 28 58.0	-0.6
MENT	Mentasta	91.83	15	eP	P	16 28 11.8	+0.1
	comp=Z,76nm,1.8s						
034A	Hebbronville	91.91	61	P	P	16 28 14.4	+1.5
	baz=243						
833A	Chaparral WMA,	91.93	60	P	P	16 28 13.0	+0.1
	baz=242						
KMI	Kunming	91.99	297	P	P	16 28 14.3	+0.7
KMI				pP	pP	16 28 49.1	-11
KMI				sP	sP	16 29 03.5	-16
KMI				PP	PP	16 31 58.5	+2.4
KMI				S	S	16 39 00.4	+0.6
KMI				sS	pS	16 39 59.9	+1.0
KMI				SS	SS	16 45 17.9	+4.1
KMI				pmax	pmax		
	comp=Z,38nm,1.6s						
KMI				LR	LR		
	comp=Z,380nm,13.3s						
KMI				LR	LR		
	comp=Z,210nm,13.5s						
KMI				LR	LR		
	comp=Z,230nm,14.7s						
BW06	Boulder Array	92.00	43	P	P	16 28 13.3	0.0
	baz=237,SNR=30						
BW06	Boulder Array	92.00	43	eP	P	16 28 12.8	-0.4
	comp=Z,20nm,0.9s						
BW06				epP	pP	16 28 58.7	-0.7
PD31	Pinedale Array	92.00	43	eP	P	16 28 13.1	-0.1
PD31				epP	pP	16 28 58.1	-1.3
PDAR	Pinedale Array	92.00	43	P	P	16 28 13.2	-0.1
	comp=Z,13nm,0.8s,baz=205,slow=3.1,SNR=88						
PDAR				pP	pP	16 28 58.1	-1.3
	comp=Z,3.7nm,0.9s,baz=197,slow=4.6,SNR=2.5						
SDCO	Great Sand Dun	92.00	49	P	P	16 28 14.2	+0.7
	baz=240,SNR=16						
FLWY	Flagg Ranch	92.03	41	eP	P	16 28 13.9	+0.6
	comp=Z,46nm,1.0s						
MSTX	Muleshoe	92.05	53	P	P	16 28 14.0	+0.4
	baz=241						
MSTX	Muleshoe	92.05	53	eP	P	16 28 13.2	-0.3
	comp=Z,114nm,1.8s						
MSTX				epP	pP	16 28 59.8	+0.2
DLBC	Dease Lake	92.16	23	P	P	16 28 13.9	+0.5
	comp=Z,6.6nm,0.8s,baz=236,slow=7.8,SNR=12						
DLBC				pP	pP	16 28 59.5	0.0
	comp=Z,13nm,1.1s,baz=224,slow=7.2,SNR=6.0						
DLBC	Dease Lake	92.16	23	eP	P	16 28 13.9	+0.5
DLBC				epP	pP	16 28 60.0	+0.5
733A	Divot King Ran	92.19	59	P	P	16 28 14.2	+0.1
	baz=242						
CM01	Chiang Mai Arr	92.19	289	eP	P	16 28 15.4	+1.0
CM01				epP	pP	16 29 01.1	+0.6
YMR	Madison River	92.19	41	eP	P	16 28 14.7	+0.6
	comp=Z,139nm,1.8s						
YMR				epP	pP	16 29 00.6	+0.4
CM31	Chiang Mai Arr	92.22	289	eP	P	16 28 15.7	+1.2
WRH	Wood River Hil	92.27	12	eP	P	16 28 12.6	-1.1
WRH				epP	pP	16 28 59.0	-0.7
H17A	Grant Village	92.27	41	P	P	16 28 16.0	+1.5
	baz=236						
H17A	Grant Village	92.27	41	eP	P	16 28 15.2	+0.7
	comp=Z,17nm,0.8s						
934A	Benavides	92.29	61	P	P	16 28 15.8	+1.2
	baz=243						
MLY	Manley	92.29	11	eP	P	16 28 12.5	-1.3
MLY				epP	pP	16 28 58.6	-1.4
035A	Encino	92.32	61	P	P	16 28 15.7	+0.9
	baz=243						
BOZ	Bozeman (W)	92.35	40	P	P	16 28 15.4	+0.7
	baz=236,SNR=42						
CMMT	Chiang Mai	92.37	290	P	P	16 28 16.2	+1.0
	comp=Z,40nm,1.3s,comp=Z,797nm						
DOT	Dot Lake	92.37	14	eP	P	16 28 13.9	-0.4
DOT				epP	pP	16 29 00.3	0.0
CHTO	Chiang Mai	92.38	290	P	P	16 28 16.3	+1.0
	comp=Z,177nm,1.3s,comp=Z,3µm						
CHTO	Chiang Mai	92.38	290	eP	P	16 28 15.9	+0.6
CHTO				e*PP	pP	16 29 01.8	+0.4
CHTO				pmax	pmax		
	comp=Z,54nm,1.3s						
CHTO	Chiang Mai	92.38	290	eP	P	16 28 15.9	+0.6
	comp=Z,54nm,1.3s						
CHTO				epP	pP	16 29 01.8	+0.4
HDA	Harding Lake	92.44	13	eP	P	16 28 13.7	-0.7
HDA				epP	pP	16 29 00.6	0.0
T25A	Trinidad	92.45	50	P	P	16 28 15.7	+0.2
	baz=240						
T25A	Trinidad	92.45	50	eP	P	16 28 15.7	+0.2
	comp=Z,12nm,1.1s						
T25A				epP	pP	16 29 04.3	+2.7
LKWY	Lake	92.47	41	eP	P	16 28 17.8	+2.4
LKWY				pmax	pmax		
	comp=Z,32nm,1.1s						
LKWY	Lake	92.47	41	eP	P	16 28 17.3	+1.9
	comp=Z,32nm,1.1s						
CCB	Clear Creek Bu	92.48	12	eP	P	16 28 13.5	-1.1
CCB				epP	pP	16 29 01.2	+0.5
JCT	Junction City	92.61	58	P	P	16 28 15.8	-0.3
	baz=242						
JCT	Junction City	92.61	58	eP	P	16 28 16.6	+0.5
JCT				pmax	pmax		
	comp=Z,57nm,1.6s						
JCT	Junction City	92.61	58	eP	P	16 28 16.6	+0.5
	comp=Z,56nm,1.6s						
633A	Saathoff Ranch	92.62	59	P	P	16 28 16.7	+0.5
	baz=243						
MDM	Murphy Dome	92.68	12	eP	P	16 28 14.5	-1.1
MDM				epP	pP	16 29 02.1	+0.4
CMAI	Chiengmai2	92.77	291	P	P	16 28 19.8	+2.5
	comp=Z,42nm,2.0s						
IL1	Eielson Array	92.77	13	eP	P	16 28 14.7	-1.2
IL1				epP	pP	16 29 04.2	+2.1
ILAR	Eielson Array	92.77	13	P	P	16 28 15.2	-0.8
	comp=Z,6.2nm,0.9s,baz=223,slow=5.5,SNR=46						
ILAR				pP	pP	16 29 04.3	+2.2
	comp=Z,16nm,1.1s,baz=225,slow=5.0,SNR=7.2						
ILAR				PP	PP	16 31 58.1	-3.0
	comp=Z,3.8nm,1.0s,baz=225,slow=7.6,SNR=4.1						
ILAR				PKKPbc	PKKPdf	16 45 27.8	+0.3
	comp=Z,0.2nm,0.8s,baz=237,slow=1.6,SNR=4.5						
ILB	Eielson Array	92.77	13	eP	P	16 28 14.9	-1.1
ILB				epP	pP	16 29 04.0	+1.9
Q24A	Divide	92.86	48	P	P	16 28 17.8	+0.4
	baz=240,SNR=11						
Q24A	Divide	92.86	48	eP	P	16 28 17.7	+0.3
	comp=Z,56nm,1.7s						
ISCO	Idaho Springs	92.97	47	P	P	16 28 18.3	+0.5
	baz=240,SNR=6.3						
ISCO	Idaho Springs	92.97	47	eP	P	16 28 18.4	+0.5
ISCO				pmax	pmax		
	comp=Z,8.0nm,1.1s						
ISCO	Idaho Springs	92.97	47	eP	P	16 28 18.4	+0.5
	comp=Z,8.0nm,1.1s						
533A	Kerrville	93.01	58	P	P	16 28 18.3	+0.3
	baz=243						
WALA	Waterton Lakes	93.04	36	eP	P	16 28 17.0	-0.7
	comp=Z,15nm,1.0s						
HHC	Hu-ho-hao-te	93.05	314	eP	P	16 28 18.8	+0.8
HHC				S	S	16 39 07.3	-0.9
HHC				pmax	pmax		
	comp=Z,68nm,1.5s						
HHC				pmax	pmax		
	comp=Z,490nm,7.1s						
835A	Beeville	93.14	60	P	P	16 28 19.7	+1.2
	baz=243						
AMTX	Amarillo	93.28	53	P	P	16 28 19.4	+0.2
	baz=242						
433A	Art	93.28	58	P	P	16 28 19.4	+0.2
	baz=243						
N23A	Red Feather La	93.31	46	P	P	16 28 19.3	-0.1
	baz=239,SNR=7.3						
N23A	Red Feather La	93.31	46	eP	P	16 28 19.6	+0.2
	comp=Z,17nm,1.0s						
735A	Kenedy	93.41	60	P	P	16 28 20.5	+0.7
	baz=243						
534A	Blanco	93.43	58	P	P	16 28 19.7	-0.2
	baz=243						
RLMT	Red Lodge	93.45	41	P	P	16 28 20.7	+0.8
	baz=237,SNR=10						
333A	Richland Sprin	93.62	57	P	P	16 28 20.8	+0.1
	baz=243						
ABTX	Abilene, Hawle	93.72	56	P	P	16 28 21.3	+0.1
	baz=242,SNR=7.3						
ABTX	Abilene, Hawle	93.72	56	eP	P	16 28 21.5	+0.3
ABTX				epP	pP	16 29 07.3	0.0
BILL	Bilibino	93.77	354	c iP	P	16 28 20.3	-0.2
BILL				pmax	pmax		
	comp=Z,38nm,1.1s						
BILL	Bilibino	93.77	354	eP	P	16 28 20.1	-0.3
BILL				epP	pP	16 29 04.5	-2.2
CD2	Chengdu	93.80	302	P	P	16 28 22.1	+0.5
CD2				pP	pP	16 28 55.9	-12
CD2				sP	sP	16 29 10.0	-17
CD2				PP	PP	16 32 09.0	-1.0
CD2				SKS	SKSac	16 38 43.8	+5.0
CD2				S	ScS	16 39 20.1	+3.7
CD2				sS	sS	16 40 19.6	-17
CD2				SS	SS	16 45 43.3	+4.2
CD2				pmax	pmax		
	comp=Z,60nm,1.0s						
CD2				pmax	pmax		
	comp=Z,410nm,11.3s						
CD2				LR	LR		
	comp=Z,460nm,12.5s						
CD2				LR	LR		
	comp=Z,560nm,13.1s						
DAWY	Dawson	93.82	16	eP	P	16 28 21.1	+0.2
DAWY				epP	pP	16 29 07.2	+0.1
K22A	Casper	93.83	44	P	P	16 28 21.6	-0.1
	baz=239,SNR=8.3						
K22A	Casper	93.83	44	eP	P	16 28 21.9	+0.2
	comp=Z,20nm,1.0s						
BTO	Baotou	93.93	313	eP	P	16 28 21.7	-0.4
434A	Burnet	93.94	58	P	P	16 28 22.6	+0.4
	baz=243						
EGAK	Eagle	94.00	15	eP	P	16 28 22.1	+0.4
	comp=Z,59nm,1.6s						
233A	Rising Star	94.00	57	P	P	16 28 23.3	+0.8
	baz=243						
334A	Lometa	94.20	57	P	P	16 28 23.4	+0.1
	baz=243						
133A	Hamilton Ranch	94.26	56	P	P	16 28 24.1	+0.5
	baz=243						
636A	Smothers Creek	94.28	60	P	P	16 28 23.6	-0.2
	baz=244						
COLD	Coldfoot	94.40	10	eP	P	16 28 23.1	-0.3
COLD				epP	pP	16 29 10.4	+0.8
234A	Clairette	94.58	57	P	P	16 28 25.3	+0.2
	baz=243,SNR=5.6						
Z33A	Whitaker Ranch	94.68	55	P	P	16 28 26.1	+0.6
	baz=243						
EGMT	Eagleton	94.74	39	P	P	16 28 26.3	+0.8
	baz=237						
EGMT	Eagleton	94.74	39	eP	P	16 28 26.2	+0.6
	comp=Z,22nm,1.6s						
134A	White-Moore Ra	94.88	56	P	P	16 28 26.9	+0.5
	baz=243						
W32A	Sentinel	95.16	54	P	P	16 28 28.6	+0.9
	baz=243						
WMOK	Wichita Mounta	95.33	54	eP	P	16 28 27.5	-1.0
WMOK	Wichita Mounta	95.33	54	eP	P	16 28 27.5	-1.0
WMOK				epP	pP	16 29 13.8	-0.9
W33A	Caddo, Fort Co	95.74	54	P	P	16 28 30.4	+0.1
	baz=243						
J25A	Sunshine Ranch	95.93	45	P	P	16 28 31.6	+0.4
	baz=241						
X34A	Smith Ranch, M	95.97	55	P	P	16 28 32.2	+0.8
	baz=244						
LZH	Lanzhou	96.07	307	⇑P	P	16 28 33.0	+1.0
LZH				pP	pP	16 29 07.2	-11
LZH				sP	sP	16 29 21.2	-16
LZH				SKS	SKSac	16 38 54.3	+3.4
LZH				S	ScS	16 39 36.1	+0.7
LZH				sS	sS	16 40 36.2	-20
LZH				pmax	pmax		
	comp=Z,53nm,1.2s						
LZH				pmax	pmax		
	comp=Z,410nm,9.0s						
LZH				LR	LR		
	comp=Z,2µm,18.0s						
LZH				LR	LR		
	comp=Z,2µm,17.5s						
LZH				LR	LR		
	comp=Z,3µm,19.5s						
LAO	LASA Array	96.08	41	P	P	16 28 32.1	+0.4
	baz=240						
RSSD	Black Hills	96.14	44	P	P	16 28 32.9	+0.7
	baz=241						
RSSD	Black Hills	96.14	44	eP	P	16 28 32.0	-0.2
RSSD				e*PP	pP	16 29 17.2	-1.2
RSSD				pmax	pmax		
	comp=Z,25nm,1.0s						
RSSD	Black Hills	96.14	44	eP	P	16 28 32.0	-0.2
	comp=Z,25nm,1.0s						
RSSD				epP	pP	16 29 17.2	-1.2
I25A	Rochford	96.28	44	P	P	16 28 33.3	+0.5
	baz=241						
J26A	Sides Ranch, S	96.36	45	P	P	16 28 33.6	+0.6
	baz=241						
S32A	Newby Ranch, P	96.55	51	P	P	16 28 34.6	+0.6
	baz=243						
H25A	Fruitdale	96.66	44	P	P	16 28 34.7	+0.4
	baz=241						
YAK	Yakutsk	96.69	338	P	P	16 28 32.8	-1.0
	comp=Z,9.0nm,0.3s,baz=90,slow=1.0,SNR=20						
YAK				pP	pP	16 29 18.1	-2.0
	comp=Z,7.9nm,0.4s,baz=136,slow=2.1,SNR=1.4						
YAK	Yakutsk	96.69	338	eP	P	16 28 32.8	-1.0
YAK				eS	SKSac	16 38 47.1	-5.3
YAK				eSS	SS	16 46 21.5	+3.0
YAK				pmax	pmax		
	comp=Z,45nm,0.9s						
YAK				pmax	pmax		
	comp=E,14nm,1.3s						
YAK				pmax	pmax		
	comp=N,12nm,1.2s						
YAK				smax	smax		
	comp=N,123nm,2.1s						
YAK				smax	smax		
	comp=E,123nm,1.9s						
YAK	Yakutsk	96.69	338	eP	P	16 28 33.0	-0.9
	comp=E,70nm,1.2s						
YAK				epP	pP	16 29 18.1	-2.0
W35A	Tecumseh	96.91	54	P	P	16 28 36.4	+0.8
	baz=244						
J27A	Elkhorn Farm,	97.02	45	P	Pdif	16 28 36.9	+0.8
	baz=242						
H26A	Fairpoint	97.17	44	P	Pdif	16 28 37.2	+0.5
	baz=242						
V35A	Meyer Ranch, C	97.21	54	P	Pdif	16 28 37.1	+0.1
	baz=244						
I27A	Quinn	97.37	45	P	Pdif	16 28 38.1	+0.5
	baz=242						
R33A	Olander Ranch,	97.49	51	P	Pdif	16 28 38.8	+0.5
	baz=244						
J28A	Allard Ranch,	97.59	46	P	Pdif	16 28 39.7	+1.1
	baz=243						
G26A	Maurine	97.60	43	P	Pdif	16 28 39.1	+0.6
	baz=242						
W37B	Quinton	97.98	55	Pdiff	Pdif	16 28 42.0	+1.6
	baz=245						
F27A	Lemmon	98.23	43	Pdiff	Pdif	16 28 42.1	+0.7
	baz=242						
K30A	Basset	98.31	47	Pdiff	Pdif	16 28 42.8	+1.0
	baz=244						
Q34A	Chapman	98.50	51	Pdiff	Pdif	16 28 43.3	+0.7
	baz=245						
D26A	Manning	98.52	42	Pdiff	Pdif	16 28 43.6	+1.0
	baz=242						
W38A	Poteau	98.63	55	Pdiff	Pdif	16 28 44.1	+0.7
	baz=245						
INK	Inuvik	98.66	15	P	P	16 28 42.1	-0.5
	comp=E,2.3nm,0.8s,baz=187,slow=3.8,SNR=12						
INK				pP	pP	16 29 27.1	-1.8
	comp=E,6.4nm,1.2s,baz=238,slow=11,SNR=3.4						
INK				LR	LR	17 07 14.0	
	comp=E,631nm,21.4s,baz=9.0,slow=32						
INK	Inuvik	98.66	15	eP	P	16 28 41.8	-0.8
INK				epP	pP	16 29 27.1	-1.8
B25A	Knox Farm, Ray	98.67	41	Pdiff	Pdif	16 28 44.4	+1.1
	baz=242						
J30A	Dallas	98.68	46	Pdiff	Pdif	16 28 44.6	+1.1
	baz=244						
X39A	Fountain Ranch	98.70	56	Pdiff	Pdif	16 28 44.7	+1.1
	baz=246						
BGNE	Belgrade	98.73	48	Pdiff	Pdif	16 28 44.9	+1.2
	baz=244						
MIAR	Mount Ida	99.11	56	Pdiff	Pdif	16 28 46.6	+1.1
	baz=246						
ULN	Ulaanbaatar	99.28	319	ceP	Pdif	16 28 45.5	-0.6
ULN				pmax	pmax		
	comp=Z,3.0nm,0.9s						
343A	Vidalia	99.30	60	Pdiff	Pdif	16 28 47.2	+0.8
	baz=246						
645A	Chauvin	99.38	62	Pdiff	Pdif	16 28 47.5	+0.7
	baz=246						
SONA0	Songino Array	99.67	318	ePdif	Pdif	16 28 47.5	-0.3
SONA0				ePKKPbc	PKKPbc	16 45 09.8	-0.1
SONM	Songino Array	99.67	318	P	Pdif	16 28 47.5	-0.3
	comp=Z,2.5nm,1.0s,baz=90,slow=3.0,SNR=9.9						
SONM				PKKPbc	PKKPbc	16 45 09.8	-0.1
	comp=Z,1.5nm,0.8s,baz=272,slow=3.1,SNR=7.1						
SONA1	Songino Array	99.67	318	ePdif	Pdif	16 28 46.4	-1.4
SONA1				ePKKPbc	PKKPbc	16 45 09.7	-0.3
LPAZ	La Paz	99.70	113	P	Pdif	16 28 52.0	+2.7
	comp=Z,2.4nm,1.0s,baz=237,slow=4.3,SNR=5.7						
D28A	Regan	99.72	42	Pdiff	Pdif	16 28 48.8	+0.8
	baz=244						
R37A	Teagarden Farm	99.74	52	Pdiff	Pdif	16 28 48.7	+0.5
	baz=246						
V40A	Witts Springs	100.19	55	Pdiff	Pdif	16 28 51.4	+1.0
	baz=246						
R38A	Fenwick Farm,	100.35	53	Pdiff	Pdif	16 28 51.3	+0.4
	baz=246						
GTA	Gaotai	100.38	309	eP	Pdif	16 28 51.2	0.0
GTA				pP	pP	16 29 23.6	-14
GTA				sP	sP	16 29 37.8	-19
GTA				pmax	pmax		
	comp=Z,9.0nm,1.7s						
BOD	Bodaibo	100.44	330	eP	Pdif	16 28 47.1	-3.7
BOD				pmax	pmax		
	comp=Z,4.0nm,1.7s						
YKA	Yellowknife Ar	100.54	25	P	Pdif	16 28 50.6	-0.5
	comp=Z,1.2nm,0.8s,baz=238,slow=4.4,SNR=27						
YKA				pP	pP	16 29 37.9	+0.5
	comp=Z,1.0nm,0.8s,baz=237,slow=4.4,SNR=3.9						
YKA				PKKPbc	PKKPbc	16 45 05.9	-1.8
	comp=Z,0.6nm,0.7s,baz=42,slow=2.5,SNR=10						
YKA				PKPPKP	P'P'df	16 53 26.2	+5.0
	comp=Z,0.1nm,0.5s,baz=38,slow=2.0,SNR=5.7						
YKB5	Yellowknife Ar	100.54	25	ePdif	Pdif	16 28 50.2	-0.9
YKB5				e		16 29 37.9	
YKB5				ePKKPbc	PKKPbc	16 45 04.5	-3.3
YKB5				eP'P'df	P'P'df	16 53 23.2	+2.0
245A	Little AP, Sta	100.94	60	Pdiff	Pdif	16 28 54.6	+0.9
	baz=247						
R39A	Chumby, Stover	101.03	53	Pdiff	Pdif	16 28 54.5	+0.5
	baz=247						
A29A	Manning Farm,	101.29	41	Pdiff	Pdif	16 28 55.5	+0.6
	baz=245						
C31A	Landman Farms,	101.72	43	Pdiff	Pdif	16 28 57.6	+0.9
	baz=246						
ZAK	Zakamensk	102.61	320	eP	Pdif	16 28 59.8	-1.0
ZAK				pmax	pmax		
	comp=Z,3.0nm,1.3s						
TLY	Talaya	102.94	321	eP	Pdif	16 29 01.5	-0.6
TLY	Talaya	102.94	321	ePdif	Pdif	16 29 01.5	-0.6
TIXI	Tiksi	103.44	345	Pdiff	Pdif	16 29 02.3	-1.5
	comp=Z,1.1nm,0.2s,baz=133,slow=6.2,SNR=3.2						
A33A	Warroad	103.61	42	Pdiff	Pdif	16 29 06.0	+0.8
	baz=247						
F36A	Milaca	103.61	46	Pdiff	Pdif	16 29 05.6	+0.4
	baz=248						
C35A	Jirik Farms, M	104.01	44	Pdiff	Pdif	16 29 07.5	+0.5
	baz=248						
D36A	Goodland	104.33	44	Pdiff	Pdif	16 29 09.2	+0.8
	baz=248						
C36A	Pine Crest Far	104.75	44	Pdiff	Pdif	16 29 10.9	+0.7
	baz=249						
D37A	Cotton	104.79	45	Pdiff	Pdif	16 29 11.7	+1.3
	baz=249						
C37A	Embarrass	105.15	44	Pdiff	PKiKP	16 33 26.1	+0.6
	baz=249						
TZTN	Tazewell	107.45	57	ePdif	Pdif	16 29 19.0	-3.6
WMQ	Urumqi	110.41	310	ePKP	PKiKP	16 33 34.7	-0.8
RES	Resolute Bay	112.15	17	PKiKP	PKiKP	16 33 37.2	-0.5
	comp=Z,3.1nm,0.8s,baz=276,slow=2.8,SNR=15						
RES				PP	PP	16 34 26.5	+0.9
	comp=Z,3.0nm,1.0s,baz=289,slow=7.9,SNR=5.4						
RES				PKKPbc	PKKPab	16 44 37.7	+0.8
	comp=Z,3.7nm,1.1s,baz=338,slow=12,SNR=7.7						
RES	Resolute Bay	112.15	17	ePKiKP	PKiKP	16 33 36.9	-0.8
RES				ePP	PP	16 34 27.2	+1.6
RES				ePKKPbc	PKKPab	16 44 40.1	+3.2
SDMD	Soldier's Deli	113.34	56	ePKiKP	PKiKP	16 33 35.4	-5.7
ZAA0	Zalesovo Array	114.49	320	ePKiKP	PKPdf	16 33 41.1	-1.7
ZAA0				e		16 34 31.3	
ZAA1	Zalesovo Array	114.49	320	ePKiKP	PKPdf	16 33 42.0	-0.8
ZALV	Zalesovo Beam	114.49	320	PKP	PKPdf	16 33 42.0	-0.8
	comp=Z,3.4nm,0.6s,baz=187,slow=1.4,SNR=20						
MK01	Makanchi Array	114.80	312	ePdif	Pdif	16 29 52.6	-2.4
MK01				ePKiKP	PKPdf	16 33 42.6	-1.1
MK01				e		16 34 30.0	
MK01				ePKKPbc	PKKPbc	16 44 21.4	-1.0
MK01				ePKKPab	PKKPab	16 44 28.1	+1.8
MK31	Makanchi Array	114.81	312	i PKiKP	PKPdf	16 33 42.5	-1.2
MK31				pmax	pmax		
	comp=Z,13nm,1.0s						
MK32	Makanchi Array	114.81	312	ePdif	Pdif	16 29 55.6	+0.6
MK32				ePKiKP	PKPdf	16 33 43.1	-0.6
MK32				e		16 34 30.7	
MK32				ePKKPbc	PKKPbc	16 44 18.6	-3.6
MKAR	Makanchi Array	114.81	312	Pdiff	Pdif	16 29 55.6	+0.6
	comp=Z,0.5nm,0.7s,baz=82,slow=9.1,SNR=3.6						
MKAR				PKP	PKPdf	16 33 43.1	-0.6
	comp=Z,6.3nm,0.7s,baz=72,slow=1.7,SNR=59						
MKAR				pPKP	pPKiKP	16 34 30.7	-1.3
	comp=Z,2.9nm,0.8s,baz=48,slow=1.8,SNR=4.1						
MKAR				PKKPbc	PKKPbc	16 44 18.6	-3.6
	comp=Z,0.8nm,0.4s,baz=276,slow=5.5,SNR=3.5						
MKAR	Makanchi Array	114.81	312	ePdif	Pdif	16 29 52.1	-2.9
MKAR				ePKiKP	PKPdf	16 33 42.5	-1.2
MKAR				e		16 34 29.6	
MKAR				ePKKPbc	PKKPbc	16 44 22.1	-0.2
NRIK	Noril'sk	115.12	337	PKP	PKPdf	16 33

KSH AMB AMB
comp=E,110nm,5.0s
KSH LR LR
comp=E,1µm,9.5s
KSH LR LR
comp=E,700nm,10.3s
KSH LR LR
comp=E,450nm,12.0s
TKM2 Tokmak 2 118.84 307 *e*PKIKP **PKPdf 16 33 50.7 -1.2**
TKM2 Tokmak 2 118.84 307 *e*PKPdf **PKPdf 16 33 50.7 -1.2**
TKM2 *ep*PKPdf **pPKPdf 16 34 38.1 -2.1**
FRU Bishkek 119.54 306 *e*PKIKP **PKPdf 16 33 50.0 -3.0**
AAK Ala-Archa 119.60 306 PKP **PKPdf 16 33 52.5 -0.7**
comp=E,4.3nm,0.7s,baz=178,slow=2.2,SNR=11
AAK Ala-Archa 119.60 306 PKIKP **PKPdf 16 33 52.4 -0.9**
AAK pmax pmax
comp=Z,6.0nm,1.0s
AAK Ala-Archa 119.60 306 *e*PKPdf **PKPdf 16 33 52.3 -1.0**
EKS2 Erkin-Say 120.13 306 *e*PKIKP **PKPdf 16 33 53.4 -0.8**
EKS2 Erkin-Say 120.13 306 *e*PKPdf **PKPdf 16 33 53.4 -0.8**
EKS2 *ep*PKPdf **pPKPdf 16 34 41.1 -1.4**
OTUK Ortayu 121.68 313 PKIKP **PKPdf 16 33 56.1 -0.8**
OTUK pmax pmax
comp=Z,34nm,0.9s
KULLO Kullorsuaq 122.01 16⇑*i*P **PKPdf 16 33 55.7 -1.0**
comp=Z,27nm,0.9s
KULLO Kullorsuaq 122.01 16⇑*i*PKIKP **PKPdf 16 33 55.7 -1.0**
KULLO pmax pmax
comp=Z,27nm,0.9s
BOSA Boshof 122.22 204 PKP **PKPdf 16 33 60.0 +1.2**
comp=Z,20nm,1.1s,baz=185,slow=2.6,SNR=18
BOSA Boshof 122.22 204 PKIKP **PKPdf 16 34 00.0 +1.2**
BOSA pmax pmax
comp=Z,21nm,1.1s
KK31 Karatay Array 122.57 306 *i*PKIKP **PKPdf 16 33 58.0 -0.8**
KK31 pmax pmax
comp=Z,20nm,0.9s
KKAR Karatay Array 122.57 306 *e*PKIKP **PKPdf 16 33 58.2 -0.5**
KKAR Karatay Array 122.57 306 *e*PKPdf **PKPdf 16 33 58.2 -0.5**
KKAR *ep*PKPdf **pPKPdf 16 34 45.0 -2.1**
KBL Kabul 122.57 296 *e*PKIKP **PKPdf 16 33 59.2 -0.1**
KBL Kabul 122.57 296 *e*PKPdf **PKPdf 16 33 59.2 -0.1**
KBL *ep*PKPdf **pPKPdf 16 34 46.2 -1.4**
BVA0 Borovoye Array 123.01 318 *i*PKIKP **PKPdf 16 33 58.4 -0.9**
BVA0 pmax pmax
comp=Z,31nm,1.0s
BRVK Borovoye 123.07 318*c i*PKIKP **PKPdf 16 33 59.1 -0.3**
BRVK pmax pmax
comp=Z,36nm,1.0s
BRVK Borovoye 123.07 318 *e*PKPdf **PKPdf 16 33 58.5 -0.9**
BRVK *ep*PKPdf **pPKPdf 16 34 45.5 -2.1**
LBTB Lobatse 125.34 206 *e*PKIKP **PKPdf 16 34 04.8 -0.1**
LBTB Lobatse 125.34 206 *e*PKPdf **PKPdf 16 34 04.8 -0.1**
KBS Kingsbay 126.06 358 *e*PKPdf **PKPdf 16 34 04.8 +0.4**
KBS IAmb IAmb 16 34 05.9
comp=Z,24nm,0.9s
KBS Kingsbay 126.06 358 *e*PKIKP **PKPdf 16 34 04.4 0.0**
KBS Kingsbay 126.06 358 *e*PKPdf **PKPdf 16 34 04.4 0.0**
SPA0 Spitsbergen Ar 126.59 357 *e*P **PKPdf 16 34 05.4 -0.1**
SPA0 *e* 16 34 55.0
SPA0 Spitsbergen Ar 126.59 357 *e*PKPdf **PKPdf 16 34 05.0 -0.5**
SPA0 *ep*PKPdf **pPKPdf 16 34 53.0 -0.8**
DAG Danmarks Havn 127.36 6⇑*i*P **PKPdf 16 34 05.6 -1.3**
comp=Z,12nm,1.0s
DAG *i* 16 34 53.3
DAG Danmarks Havn 127.36 6⇑*i*PKIKP **PKPdf 16 34 05.6 -1.3**
DAG pmax pmax
comp=Z,12nm,1.0s
SUMG Summit 127.57 14 *i*P **PKPdf 16 34 07.8 -0.2**
comp=Z,41nm,1.3s
SUMG Summit 127.57 14 *e*PKIKP **PKPdf 16 34 07.6 -0.3**
SUMG Summit 127.57 14 *e*PKPdf **PKPdf 16 34 07.6 -0.3**
SUMG *ep*PKPdf **pPKPdf 16 34 55.3 -1.0**
HSPB Hornsund (broa 127.78 356 *e*PKPdf **PKPdf 16 34 07.1 -0.6**
SVE Sverdlovsk 128.15 324 *e*PKIKP **PKPdf 16 34 09.0 0.0**
SVE pmax pmax
comp=Z,57nm,1.5s
ARU Arti 129.36 323 *i*PKIKP **PKPdf 16 34 11.3 0.0**
ARU 16 36 21.9
ARU SS SS 16 53 35.7 +6.3
ARU Arti 129.36 323 *e*PKPdf **PKPdf 16 34 10.9 -0.3**
ARU *ep*PKPdf **pPKPdf 16 34 58.8 -0.8**
AB31 Akbulak array 129.84 314 *i*PKIKP **PKPdf 16 34 11.4 -1.0**
AB31 pmax pmax
comp=Z,25nm,1.5s
ABKAR Akbulak array 129.84 314 *e*PKPdf **PKPdf 16 34 12.0 -0.4**
ABKAR *ep*PKPdf **pPKPdf 16 34 58.9 -1.8**
AKTO Aktyubinsk 130.90 316 PKIKP **PKPdf 16 34 13.6 -0.8**
AKTO pmax pmax
comp=Z,28nm,1.1s
GEYT Alibeck 131.70 299 PKP **PKPdf 16 34 17.6 +1.2**
comp=Z,15nm,0.9s,baz=256,slow=1.2,SNR=25
GEYT pPKP **pPKPdf 16 35 04.9 +0.2**
comp=Z,8.8nm,0.9s,baz=285,slow=2.3,SNR=3.9
GEYT SKPbc **SKPab 16 37 25.7 +0.1**
comp=Z,8.4nm,1.0s,baz=70,slow=4.9,SNR=4.6
UOSS Minazif 131.75 282 *e*PKPdf **PKPdf 16 34 16.4 -0.5**
UOSS *ep*PKPdf **pPKPdf 16 35 03.8 -1.3**
HATD Hatta, Dubai 131.79 282 P **PKPdf 16 34 19.0 +2.1**
SNR=6.3
HATD Hatta, Dubai 131.79 282 PKPdf **PKPdf 16 34 19.0 +2.1**
SNR=6.3
ASHO Ashiyiah 131.83 281 P **PKPdf 16 34 17.7 +0.7**
SNR=6.6
ASHO Ashiyiah 131.83 281 PKPdf **PKPdf 16 34 17.7 +0.7**
SNR=6.6
SCO Scoresbysund 132.53 11⇑*i*P **PKPdf 16 34 16.8 -0.1**
comp=Z,10nm,0.9s
SCO Scoresbysund 132.53 11⇑*i*PKIKP **PKPdf 16 34 16.8 -0.1**
SCO pmax pmax
comp=Z,10.0nm,0.9s
LSZ Lusaka 132.66 214 *e*PKIKP **PKPdf 16 34 19.8 +0.9**
LSZ Lusaka 132.66 214 *e*PKPdf **PKPdf 16 34 19.8 +0.9**
HAMF Hammerfest 132.95 351 *e*PKPdf **PKPdf 16 34 18.0 +0.3**
LVZ Lovozero 133.07 344 *e*PKIKP **PKPdf 16 34 17.3 -0.7**
LVZ *e* 16 35 04.0
LVZ Lovozero 133.07 344 *e*PKPdf **PKPdf 16 34 17.3 -0.7**
LVZ *ep*PKPdf **pPKPdf 16 35 04.0 -2.3**
TSUM Tsumeb 133.51 200 *e*PKPdf **PKPdf 16 34 20.2 -0.3**
ARA0 ARCESS Array S 133.65 349 *e*PKPdf **PKPdf 16 34 18.4 -0.6**
ARA0 *ep*PKPdf **pPKiKP 16 34 18.9 -1.5**
ARA0 *ep*PKPdf **pPKPdf 16 35 05.4 -2.0**
ARA0 *ep*PKPdf pPKPdf 16 35 06.2 -1.1
ARA0 *e*SKPbc **SKPab 16 37 32.4 -0.5**
ARCES ARCESS Array B 133.65 349 PKP **PKPdf 16 34 18.9 -0.2**
comp=Z,10nm,0.6s,baz=46,slow=1.6,SNR=62
ARCES pPKP **pPKPdf 16 35 06.2 -1.1**
comp=Z,6.5nm,0.9s,baz=48,slow=1.8,SNR=2.7
ARCES SKPbc **SKPab 16 37 32.4 -0.5**
comp=Z,4.0nm,1.1s,baz=354,slow=1.2,SNR=4.4
ARE0 ARCESS Array S 133.65 349 *e*P **PKPdf 16 34 18.7 -0.4**
ARE0 IAmb IAmb 16 34 20.9
comp=Z,20nm,0.9s
ARE0 ARCESS Array S 133.65 349 *e*PKPdf **PKPdf 16 34 18.5 -0.5**
KTK1 Kautokeino 134.49 350 *e*PKPdf **PKPdf 16 34 20.2 -0.4**
KTK1 IAmb IAmb 16 34 22.1
comp=Z,8.0nm,0.8s
TRO Tromso 134.53 352 *e*PKPdf **PKPdf 16 34 20.0 -0.6**
TMCR Tamitsa 134.78 339 *e*PKIKP **PKPdf 16 34 21.2 0.0**
TMCR pmax pmax
comp=Z,21nm,0.5s
KLMR Klimovskoe 136.40 335 *e*PKIKP PKPpre 16 34 19.3
KLMR pmax pmax
comp=Z,33nm,1.2s
KMBO Kilima Mbogo 137.47 237 PKP **PKPdf 16 34 27.6 -0.6**
comp=Z,7.8nm,1.0s,baz=360,slow=1.0,SNR=9.5
KMBO Kilima Mbogo 137.47 237 *e*PKHKP PKPpre 16 34 18.4
KMBO *e* 16 34 29.3
KMBO Kilima Mbogo 137.47 237 *e*PKPpre PKPpre 16 34 18.4
KMBO *e*PKPdf **PKiKP 16 34 29.2 -0.9**
KMBO *ep*PKPdf pPKPdf 16 35 17.1 +0.6
DAMY Dhamar 139.47 263 *e*PKPpre PKPpre 16 34 23.8
DAMY *e*PKPdf **PKiKP 16 34 34.5 +0.4**
DAMY *ep*PKPdf pPKPdf 16 35 20.3 +0.2
MOS Moscow 140.28 329 *e*PKIKP **PKPdf 16 34 30.9 -0.7**
FIA1 FINESS Array S 140.44 343 *e*PKPpre PKPpre 16 34 23.8
FIA1 *e*PKPpre PKPpre 16 34 24.2
FIA1 *e*PKPdf **PKPdf 16 34 31.2 -0.6**
FIA1 *ep*PKPdf pPKPdf 16 35 18.5 -1.6
FIA1 *ep*PKPdf pPKPdf 16 35 19.1 -0.9
FIA0 FINESS Array S 140.44 343 *e*PKHKP PKPpre 16 34 24.0
FIA0 FINESS Array S 140.44 343 *e*PKPpre PKPpre 16 34 24.0
FIA0 *e*SKPbc **SKiKP 16 37 52.4 -0.5**

FINES FINESS Array B 140.44 343 PKhKP PKPpre 16 34 24.0
comp=Z,6.3nm,0.7s,baz=134,slow=5.5,SNR=26
FINES SKPbc **SKiKP 16 37 52.4 -0.5**
comp=Z,3.9nm,0.9s,baz=63,slow=8.8,SNR=5.7
VRH Novokhopyorsk 140.50 321 *e*PKIKP PKPpre 16 34 27.4
VRH pmax pmax
comp=Z,10.0nm,0.8s
OBN Obninsk 141.13 329*c i*PKIKP **PKPdf 16 34 32.4 -0.8**
OBN pmax pmax
comp=Z,73nm,1.7s
OBN Obninsk 141.13 329 *e*PKPpre PKPpre 16 34 26.0
OBN *ep*PKPdf pPKPdf 16 35 21.2 -0.3
LPSR Galich'ya Gora 141.36 325 *e*PKHKP PKPpre 16 34 28.3
LPSR pmax pmax
comp=Z,10.0nm,1.0s
TBLG Delisi 141.62 306 P PKPpre 16 34 30.2
TBLG Delisi 141.62 306 PKHKP PKPpre 16 34 30.2
GUDG Gudauri 141.66 307 P PKPpre 16 34 31.1
VSR Storozhevoye 141.92 323 *e*PKHKP PKPpre 16 34 28.6
VSR pmax pmax
comp=Z,10.0nm,0.9s
GNI Garni 141.92 304 *e*PKHKP PKPpre 16 34 30.9
GNI Garni 141.92 304 *e*PKPpre PKPpre 16 34 30.9
ZEI Tsey 141.99 308 *i*PKIKP PKPpre 16 34 32.6
ZEI pmax pmax
comp=Z,49nm,1.4s
ONI Oni 142.36 308 P PKPpre 16 34 32.3
ONI Oni 142.36 308 PKIKP PKPpre 16 34 32.3
KBZ Khabaz 142.46 310 PKhKP PKPpre 16 34 31.7
comp=Z,6.0nm,1.0s,baz=22,slow=1.4,SNR=7.8
KIV Kislovodsk 142.54 310 *e*PKHKP PKPpre 16 34 32.1
KIV pmax pmax
comp=Z,15nm,1.1s
KIV Kislovodsk 142.54 310 *e*PKPpre PKPpre 16 34 31.9
KIV *ep*PKPdf pPKPdf 16 35 22.9 -1.7
AKH Akhalkalaki 142.61 306⇓*i*PKIKP PKPpre 16 34 32.9
AKH Akhalkalaki 142.61 306 P PKPpre 16 34 33.6
AKH Akhalkalaki 142.61 306 PKIKP PKPpre 16 34 33.6
VSU Vasula 142.66 339 *i*PKIKP **PKPdf 16 34 35.4 -0.4**
VSU pmax pmax
comp=Z,52nm,1.0s
HAKT HAKKARI 143.11 300⇑*i*P PKPpre 16 34 34.0
EPOS Posof 143.15 306⇑*i*P PKPpre 16 34 34.3
CHVG Ch'k'valeri 143.31 308⇑*i*P **PKPdf 16 34 36.6 -0.9**
GEVA Gevas 143.51 301⇑*i*P PKPbc 16 34 35.8 -0.3
NC204 NORSAR Array S 143.53 353 *e*PKPpre PKPpre 16 34 34.7
NC204 *ep*PKPdf pPKPdf 16 35 22.9 -2.8
EATA Eleskirt 143.67 304⇑*i*P PKPbc 16 34 36.5 -0.2
NB201 NORSAR Array S 143.70 353 *e*PKPpre PKPpre 16 34 34.9
NB201 *ep*PKPdf pPKPdf 16 35 22.1 -3.9
NB2 NORSAR Subarra 143.72 353 PKP PKPab 16 34 34.8 -0.1
comp=Z,77nm,1.1s,baz=14,slow=3.7
NB2 NORSAR Subarra 143.72 353 PKP PKPab 16 34 34.8 -0.1
baz=14,slow=3.7
NB200 NORSAR Array S 143.72 353 *e*PKPpre PKPpre 16 34 35.0
NOA NORSAR Array B 143.72 353 PKhKP PKPpre 16 34 35.0
comp=Z,22nm,0.8s,baz=15,slow=4.7,SNR=76
NBO02 NORSAR Array S 143.75 353 *e*PKPpre PKPpre 16 34 34.6
NBO02 *ep*PKPdf pPKPdf 16 35 22.6 -3.4
NBO00 NORSAR Array S 143.77 353 *e*PKPpre PKPpre 16 34 35.0
NBO00 *ep*PKPdf pPKPdf 16 35 22.3 -3.8
ARTV Artvin 143.81 306⇑*i*P PKPab 16 34 35.9 -0.3
DAGI Agillar 143.84 306⇑*i*P PKPab 16 34 36.2 +0.1
NAO01 NORSAR Array S 143.94 353 *e*PKPdf PKPab 16 34 35.2 -0.6
NAO01 *ep*PKPdf pPKPdf 16 35 23.8 -2.6
DBOC Borcka 143.96 306⇑*i*P PKPbc 16 34 36.9 -0.2
NC602 NORSAR Array S 143.97 353 *e*PKPdf PKPab 16 34 35.7 -0.2
NC602 IAmb IAmb 16 34 36.8
comp=Z,78nm,1.2s
NC602 NORSAR Array S 143.97 353 *e*PKPdf PKPab 16 34 35.0 -0.9
DDEM Demirkent 144.00 306⇑*i*P **PKPab 16 34 37.0 +0.2**
HOMI Horasan 144.08 304⇑*i*P **PKPab 16 34 37.4 +0.1**
EKAR Karacoban 144.12 303⇑*i*P **PKPdf 16 34 38.9 -0.5**
SIRN S¨–rnak 144.14 300⇑*i*P **PKPab 16 34 37.4 0.0**
SUE Sulen 144.15 358 *e*PKPdf **PKPab 16 34 36.6 +0.1**
ERZM Erzurum 144.51 304⇑*i*P **PKPdf 16 34 39.8 -0.3**
SOC Sochi 144.70 311 *e*PKIKP **PKPab 16 34 38.4 -0.8**
SOC *e* 16 38 02.4
SOC *e*PPP PPP 16 41 12.4
SOC *e*SS SS 16 56 37.8 +6.0
SOC pmax pmax
comp=Z,49nm,0.9s
ASK Askoy 144.71 358 *e*PKPdf PKPbc 16 34 38.9 +0.2
BER Bergen 144.81 358 *e*PKPdf PKPbc 16 34 39.0 0.0
OSL Oslo 144.85 353 *e*PKPdf PKPbc 16 34 38.8 -0.3
ECAT Cat-ERZURUM 144.87 304⇑*i*P **PKPdf 16 34 40.8 +0.1**
BNGL BINGOL 144.87 302⇑*i*P **PKPdf 16 34 41.2 +0.6**
BTMN Batman 144.97 301⇑*i*P **PKPdf 16 34 40.9 +0.3**
KOPT Kop Dagi 145.14 304⇑*i*P **PKPab 16 34 41.8 +0.5**
ODD1 Odda 145.22 356 *e*PKPdf **PKPdf 16 34 39.8 -0.6**
BGOL Bingol 145.23 303⇑*i*P **PKPab 16 34 41.9 +0.4**
KONO Kongsberg 145.25 354 *e*P **PKPab 16 34 40.6 -0.1**
KONO IAmb IAmb 16 34 40.9
comp=Z,242nm,1.1s
KONO *e* 16 35 26.3
KONO Kongsberg 145.25 354 *e*PKIKP **PKPdf 16 34 39.4 -0.9**
KONO *e* 16 35 25.7
KONO Kongsberg 145.25 354 *e*PKPdf **PKPdf 16 34 39.4 -0.9**
KONO *ep*PKPdf **pPKPdf 16 35 25.7 -3.0**
MICGM Minsk 145.29 334⇑*i*PKP **PKPdf 16 34 39.0 -1.5**
MICGM ⇑*i*PKP **PKPdf 16 34 39.0 -1.5**
MICGM PKPM 16 34 40.0
comp=Z,1.1nm,1.0s
MICGM PKPM 16 34 41.0
comp=N,0.5nm,1.4s
MICGM PKPM 16 34 42.0
comp=E,0.4nm,1.2s
MICGM *ep*PKP **pPKPdf 16 35 26.0 -2.9**
MICGM *e*PP **PP 16 38 04.0 +2.4**
MICGM *e*SKS SKSdf 16 41 06.0 -26
MICGM *e*PS 16 48 32.0
MICGM *e*PPS PPS 16 50 28.0
MICGM *e*SS SS 16 54 28.0 -129
MNK Minsk 145.29 334*c i*PKP2 **PKPdf 16 34 39.0 -1.5**
MNK *e* 16 38 04.0
MNK *e*PPS PPS 16 50 28.0
MNK pmax pmax
comp=Z,1µm,1.0s
MNK pmax pmax
comp=N,510nm,1.4s
MNK pmax pmax
comp=E,370nm,1.2s
NACGM Naroch 145.41 335 *e*P **PKPbc 16 34 41.0 -0.1**
MACK Trabzon 145.45 306⇑*i*P **PKPbc 16 34 41.8 0.0**
MARD Mardin 145.45 300⇑*i*P **PKPbc 16 34 42.0 0.0**
BLS5 Blasjo 145.71 357 *e*PKPdf **PKPbc 16 34 41.7 -0.2**
BLS5 IAmb IAmb 16 34 43.7
comp=Z,182nm,1.5s
BLS5 *e* 16 35 27.2
MZRK Al-Mazaregh 145.77 297 *e*P **PKPab 16 34 44.1 +0.5**
ANN Anapa 145.80 314*c i*PKP2 **PKPbc 16 34 42.3 -0.3**
ANN *e* 16 38 07.0
ANN 16 41 39.2
ANN pmax pmax
comp=Z,451nm,1.6s
EUZM Uzumlu 145.81 304⇑*i*P **PKPab 16 34 44.1 +0.4**
DIYA Diyarbakir 145.86 301⇑*i*P **PKPab 16 34 43.7 -0.2**
KMY Karmoy 145.98 358 *e*PKPdf **PKPbc 16 34 42.5 -0.2**
KMY *e* 16 35 29.0
KELT Kelkit 146.03 305⇑*i*P **PKPab 16 34 44.6 0.0**
TNCL Tunceli-Merkez 146.06 303⇑*i*P **PKPdf 16 34 43.1 +0.6**
SFNV Sufian 146.12 298 *e*P **PKPbc 16 34 44.3 +0.3**
STAV Stavanger 146.24 357 *e*PKPdf **PKPbc 16 34 43.1 -0.2**
STAV *e* 16 35 29.9
GRSN GIRESUNGRSN 146.54 307 *i*P **PKPdf 16 34 44.1 +0.9**
REFA Refahiye_ERZ¨ 146.58 304⇑*i*P **PKPdf 16 34 43.3 -0.2**
ELZG Elazig 146.62 302⇑*i*P **PKPab 16 34 46.5 -0.5**
HOMB Homborsund 146.71 354 *e*PKPdf **PKPbc 16 34 44.8 0.0**
HOMB *e* 16 35 31.0
SNART Snartemo 146.75 356 *e*PKPdf **PKPbc 16 34 44.4 -0.5**
SNART *e* 16 35 31.3
SUSE Susehri 146.79 306⇑*i*P **PKPbc 16 34 46.4 +0.5**
KEMA Kemaliye 146.82 304⇑*i*P **PKPbc 16 34 46.4 +0.5**
ORDU Ordu-Boztepe 146.82 307⇑*i*P **PKPbc 16 34 45.9 +0.1**
CUZAR Zara_SIVAS 147.20 305⇑*i*P **PKPab 16 34 48.2 -1.0**
SURC SANLIURFA_SURC 147.24 299⇑*i*P **PKPbc 16 34 47.3 +0.2**
AKASG Malin Array Be 147.36 328 PKPbc **PKPbc 16 34 46.2 -0.6**
comp=Z,37nm,0.8s,baz=41,slow=4.0,SNR=115
AKASG pPKPbc **pPKPbc 16 35 33.3 -1.4**
comp=Z,95nm,1.1s,baz=43,slow=3.9,SNR=6.0
AKBB Malin Array Si 147.36 328 *e*PKIKP **PKPdf 16 34 43.0 -1.1**
AKBB *e* 16 34 46.2

AKBB Malin Array Si 147.36 328 *e*PKPdf **PKPdf 16 34 43.0 -1.1**
AKBB *e*PKPbc **PKPbc 16 34 46.2 -0.6**
AKBB *ep*PKPdf **pPKPdf 16 35 34.0 +1.5**
ATAB Bozova 147.37 301⇑*i*P **PKPbc 16 34 48.2 +0.8**
KIEV Kiev 147.37 328 *e*PKIKP **PKPdf 16 34 42.9 -1.3**
KIEV *e* 16 34 46.1
KIEV Kiev 147.37 328 *e*PKPdf **PKPdf 16 34 42.9 -1.3**
KIEV *e*PKPbc **PKPbc 16 34 46.1 -0.8**
KIEV *ep*PKPdf **pPKPdf 16 35 34.0 +1.5**
AK11 Malin Array Si 147.40 328 *e*PKPdf **PKPdf 16 34 42.5 -1.7**
AK11 *e*PKPbc **PKPbc 16 34 46.3 -0.7**
AK11 *ep*PKPdf **pPKPdf 16 35 32.4 -0.3**
SUW Suwalki 147.42 337 *e*PKPc 16 34 46.4
SUW Suwalki 147.42 337⇑*e*PKP2 **PKPbc 16 34 46.4 -0.5**
AKCD Akcadag 147.48 302⇑*i*P **PKPbc 16 34 48.7 +0.9**
CUKAN kangal_SIVAS 147.58 304⇑*i*P **PKPbc 16 34 48.6 +0.6**
ERBA Erbaa 147.71 307⇑*i*P **PKPbc 16 34 48.8 +0.6**
SIM Simferopol' 147.87 316*c i*PKP2 **PKPbc 16 34 48.8 +0.4**
SIM pmax pmax
comp=Z,78nm,0.9s
CUGUR Gurin_S¨VAS 147.88 303⇑*i*P **PKPbc 16 34 49.8 +0.9**
SAMS Samsun-Alacam 147.90 308⇑*i*P **PKPbc 16 34 48.3 -0.3**
GZT Gaziantep 147.96 301⇑*i*P **PKPbc 16 34 49.7 +0.5**
TOKA Tokat 148.02 306 *i*P **PKPab 16 34 51.6 -0.7**
CUALT Altinyayla-SIV 148.12 304⇑*i*P **PKPbc 16 34 50.4 +0.9**
HAVZ Havza 148.33 308⇑*i*P **PKPbc 16 34 50.6 +0.8**
MUD Monsted U'grnd 148.44 353⇑*i*P **PKPbc 16 34 49.5 +0.1**
comp=Z,114nm,1.0s
MUD *i* 16 35 36.5
MUD Monsted U'grnd 148.44 353⇑*i*PKP2 **PKPbc 16 34 49.5 +0.1**
MUD pmax pmax
comp=Z,110nm,1.0s
CUSAR Sarkisla-SIVAS 148.46 305⇑*i*P **PKPbc 16 34 51.0 +0.7**
KUZU Kuzuini 148.47 300⇑*i*P **PKPbc 16 34 51.0 +0.6**
HCB Kahramanmara¨ 148.48 301⇑*i*P **PKPbc 16 34 50.4 +0.1**
KAMA Osmaniye 148.70 301⇑*i*P **PKPbc 16 34 51.3 +0.4**
ROOS tl_alroos 148.72 295 *e*P **PKPbc 16 34 51.9 +0.9**
COP Copenhagen 148.73 349⇑*i*P **PKPbc 16 34 50.3 +0.1**
comp=Z,44nm,0.9s
COP Copenhagen 148.73 349⇑*i*PKP2 **PKPbc 16 34 50.3 +0.1**
COP pmax pmax
comp=Z,44nm,0.9s
BOYT Boyabat 148.79 309 *i*P **PKPbc 16 34 51.8 +0.8**
BSD Bornholm Skovb 148.79 346⇑*i*P **PKPbc 16 34 50.2 -0.2**
comp=Z,252nm,1.4s
BSD *i* 16 35 35.7
BSD Bornholm Skovb 148.79 346⇑*i*PKP2 **PKPbc 16 34 50.2 -0.2**
BSD pmax pmax
comp=Z,250nm,1.4s
ZALF Zalf 148.81 292 *e*P **PKPbc 16 34 52.2 +1.0**
ANDN Andirin 148.86 301⇑*i*P **PKPbc 16 34 52.0 +0.7**
COAL Corum-Alaca 149.13 307⇑*i*P **PKPbc 16 34 52.6 +0.7**
SALA Sala 149.34 292 *e*P **PKPbc 16 34 53.6 +0.8**
YAYL Yayladag 149.38 299⇑*i*P **PKPbc 16 34 52.4 -0.3**
SORM Soroca 149.46 325⇓*i*P **PKPbc 16 34 52.6 +0.3**
SORM Soroca 149.46 325⇓⇓PKP2 **PKPbc 16 34 52.6 +0.3**
AKO Adana 149.58 302⇑*i*P **PKPbc 16 34 53.6 +0.6**
ESK Eskdalemuir 149.63 7*c i*PKP2 **PKPbc 16 34 52.5 0.0**
ESK Eskdalemuir 149.63 7 *e*PKPbc **PKPbc 16 34 52.1 -0.4**
AVNS Nevsehir-Avano 149.68 304⇑*i*P **PKPbc 16 34 53.5 +0.1**
ILGA Ilgaz 149.75 309⇑*i*P **PKPbc 16 34 54.4 +0.8**
CDAG Cicekdag 149.78 306⇑*i*P **PKPdf 16 34 47.6 -1.0**
HWQ Hawqa 149.81 295 *e*P **PKPbc 16 34 53.8 0.0**
KIS Kishinev 149.91 323 *e*P **PKPdf 16 34 47.0 -1.4**
KIS Kishinev 149.91 323 *e*PKIKP **PKPdf 16 34 47.0 -1.4**
KIS *i* 16 35 42.0
TCHB Talchebab 149.98 292 *e*P **PKPbc 16 34 54.9 +0.7**
RCY Rachaya 150.00 294 *e*P **PKPbc 16 34 55.0 +0.6**
BEL Belsk 150.04 337 *e*PKPc **PKPbc 16 34 54.1 +0.5**
BEL Belsk 150.04 337⇑*e*PKP2 **PKPbc 16 34 54.1 +0.5**
BHL Bhannes 150.10 295 *e*P **PKPbc 16 34 54.8 +0.3**
ELDT Eldivan 150.16 308⇑*i*P **PKPbc 16 34 54.8 +0.2**
DQRL Deir Qamar 150.19 294 *e*P **PKPbc 16 34 55.5 +0.8**
DED Mersin 150.21 301⇑*i*P **PKPbc 16 34 54.4 -0.2**
BR101 Keskin Array S 150.28 307 *e*PKPdf **PKPdf 16 34 49.0 -0.5**
BR101 *e*PKPbc **PKPbc 16 34 54.5 -0.3**
BR101 *e*PKPab **PKPab 16 35 02.0 +0.4**
BR101 *ep*PKPdf **pPKPdf 16 35 42.1 +4.3**
BR131 Keskin Array S 150.28 307 *e*PKPdf **PKPdf 16 34 48.7 -0.8**
BR131 *e*PKPbc **PKPbc 16 34 54.4 -0.3**
BRTR Keskin Array B 150.28 307 PKP **PKPdf 16 34 49.0 -0.5**
comp=Z,7.2nm,1.1s,baz=149,slow=2.6,SNR=25
BRTR PKPbc **PKPbc 16 34 54.5 -0.4**
comp=Z,30nm,0.8s,baz=139,slow=3.8,SNR=84
BRTR PKPab **PKPab 16 35 02.0 +0.4**
comp=Z,56nm,0.8s,baz=88,slow=3.7,SNR=32
BRTR pPKPbc **pPKPbc 16 35 42.1 -0.7**
comp=Z,23nm,1.0s,baz=90,slow=2.6,SNR=2.9
BRTR Keskin Array B 150.28 307 PKIKP **PKPdf 16 34 49.0 -0.5**
BRTR pmax pmax
comp=Z,24nm,1.0s
LVV L'vov 150.35 331*d i*PKIKP **PKPbc 16 34 54.2 -0.2**
AKSY AKSARAY - Alti 150.53 305⇑*i*P **PKPbc 16 34 55.2 -0.2**
BTIN Bart¨–n 150.54 311⇑*i*P **PKPbc 16 34 54.3 -0.8**
LEOM Leova 150.54 323⇑*i*P **PKPbc 16 34 55.3 +0.3**
LEOM Leova 150.54 323⇑⇑PKIKP **PKPbc 16 34 55.3 +0.3**
KERG Konya-Eregli 150.61 302⇑*i*P **PKPbc 16 34 54.8 -0.8**
BBAL Bala 150.72 307⇑*i*P **PKPbc 16 34 55.6 -0.2**
KIZK Mersin 150.83 300⇑*i*P **PKPbc 16 34 55.8 -0.1**
ANTO Ankara 150.84 307 *e*PKIKP **PKPdf 16 34 50.1 -0.1**
ANTO Ankara 150.84 307 *e*PKPdf **PKPdf 16 34 50.1 -0.1**
ANTO *e*PKPbc **PKiKP 16 34 56.4 -0.2**
ANTO *e*PKPab **PKPab 16 35 04.6 +0.7**
ANTO *ep*PKPdf **pPKPdf 16 35 43.4 +4.7**
BR231 Keskin MP Arra 150.86 307 *e*PKPdf **PKPdf 16 34 49.3 -1.0**
BR231 *e*PKPdf **PKPbc 16 34 50.6 -5.5**
BR231 *e*PKPbc **PKiKP 16 34 55.6 -1.1**
BR231 *e*PKPbc **PKPab 16 34 56.3 -7.8**
BR231 *e*PKPab PKPab 16 35 02.9 -1.2
BR231 *e*PKPab PKPab 16 35 04.9 +0.8
BR231 *ep*PKPdf **pPKPdf 16 35 42.5 +3.8**
BR231 *ep*PKPdf pPKPdf 16 35 42.8 +4.0
TLCR 150.97 320⇓*i*P **PKPbc 16 34 56.5 +0.5**
TLCR 150.97 320⇓⇓PKIKP **PKPbc 16 34 56.5 +0.5**
KKUL Konya-Kulu 150.99 306⇑*i*P **PKPbc 16 34 56.6 +0.1**
BCAM Yenicaga 151.00 310⇑*i*P **PKPbc 16 34 56.5 +0.1**
PRAR RASCA 151.05 326⇑*i*P **PKPbc 16 34 56.6 +0.4**
KWP Kalwaria Pacla 151.06 333 *e*PKPc **PKPbc 16 34 56.5 +0.4**
KWP Kalwaria Pacla 151.06 333⇑*i*P **PKPbc 16 34 56.7 +0.6**
KWP Kalwaria Pacla 151.06 333⇑*e*PKIKP **PKPbc 16 34 56.5 +0.4**
PHNC Paralimni 151.24 297 P **PKPbc 16 34 57.0 0.0**
BUR08 Bucovina Ar. S 151.37 327 *e*PKPdf **PKPdf 16 34 50.9 +0.1**
BUR08 *e*PKPbc **PKiKP 16 34 57.9 +0.4**
CFR Carcaliu 151.37 321⇑*i*P **PKPbc 16 34 57.1 +0.2**
CFR Carcaliu 151.37 321⇑PKIKP **PKPbc 16 34 57.1 +0.2**
TESR Tescani 151.38 324⇓*i*P **PKPbc 16 34 57.1 +0.1**
BURAR Bucovina Array 151.38 327⇑*i*P **PKPbc 16 34 57.6 +0.5**
BURAR Bucovina Array 151.38 327⇑PKIKP **PKPbc 16 34 57.6 +0.5**
TIRR Tirgusor 151.62 319⇓*i*P **PKPbc 16 34 58.3 +0.8**
TIRR Tirgusor 151.62 319⇓⇓PKIKP **PKPbc 16 34 58.3 +0.8**
TIRR Tirgusor 151.62 319 *e*PKPbc **PKPbc 16 34 57.4 -0.1**
TIRR *e*PKPab **PKPab 16 35 07.4 +0.5**
ODBI Odobesti 151.63 322⇑*i*P **PKPab 16 35 09.0 +2.1**
OJC Ojcow 151.72 336 *e*PKPc **PKPbc 16 34 57.8 +0.2**
OJC Ojcow 151.72 336 *e*PKIKP **PKPdf 16 34 51.0 -0.1**
OJC Ojcow 151.72 336 *e*PKPdf **PKPdf 16 34 51.0 -0.1**
OJC *e*PKPbc **PKPbc 16 34 57.5 -0.2**
OJC *ep*PKPdf **pPKPdf 16 35 44.3 +4.8**
VRI Vrincioaia 151.75 323⇓*i*P **PKPbc 16 34 58.0 +0.2**
VRI Vrincioaia 151.75 323⇓⇓PKIKP **PKPbc 16 34 58.0 +0.2**
ERMK Ermenek 151.75 301⇑*i*P **PKPbc 16 34 58.2 -0.2**
HARR Harsova 151.77 320⇑*i*P **PKPbc 16 34 58.4 +0.5**
HARR Harsova 151.77 320⇑⇑PKIKP **

MANR	Mangalia	151.87 318	⇓*i*P	PKPbc	16 34 58.9	+0.8
AUSIV	SIVRIHISAR	151.90 307	⇑*i*P	PKPbc	16 34 58.2	-0.2
GRER		151.91 322	⇓*i*P	PKPbc	16 34 59.6	+1.4
UZH	Uzhgorod	152.00 332	*e*PKIKP	PKPbc	16 34 56.7	-1.5
UZH			*e*		16 35 51.7	
CRVS	Cervenica-Dubn	152.14 333	*e*PKIKP	PKPdf	16 34 52.3	+0.5
CRVS	Cervenica-Dubn	152.14 333	*e*PKP	PKPdf	16 34 52.3	+0.5
CRVS			*e*		16 34 59.3	
BMR	Baia Mare	152.17 329	⇑*i*P	PKPbc	16 34 58.8	+0.1
BMR	Baia Mare	152.17 329	⇑PKIKP	PKPbc	16 34 58.8	+0.1
KAND	Kocaeli-Kandir	152.17 311	⇑*i*P	PKPbc	16 34 58.3	-0.6
ARCR	ARCALIA	152.18 327	⇑*i*P	PKPbc	16 34 59.3	+0.6
NIE	Niedzica	152.19 335	*e*PKPc	PKPbc	16 34 59.5	+0.8
NIE	Niedzica	152.19 335	⇑*e*PKIKP	PKPbc	16 34 59.5	+0.8
SZAC	Souni	152.21 297	P	PKPbc	16 35 02.0	+0.7
TRPA	Tarpa	152.27 331	*e*PKPdf	PKPbc	16 34 59.0	+0.1
ISR	Istrita	152.31 322	⇓*i*P	PKPbc	16 34 59.7	+0.5
ISR	Istrita	152.31 322	⇓PKIKP	PKPbc	16 34 59.7	+0.5
GAZI	Gazipasa	152.32 300	⇑*i*P	PKPbc	16 34 58.4	-1.0
KSP	Ksiaz	152.34 341	*e*PKPc	PKPbc	16 34 59.6	+0.6
KSP	Ksiaz	152.34 341	⇑*e*PKIKP	PKPbc	16 34 59.6	+0.6
ALFC	Alefka	152.36 298	P	PKPbc	16 34 59.9	+0.3
ESKT	Eskisehir	152.36 308	*i*P	PKPdf	16 34 51.0	-1.6
RAC	Raciborz	152.40 338	*e*PKIKP	PKPdf	16 34 52.7	+0.6
DOPR	Dopca	152.40 324	⇓*i*P	PKPbc	16 34 59.9	+0.6
MLR	Muntele Rosu	152.41 323	⇑*i*P	PKPbc	16 34 59.3	-0.2
MLR	Muntele Rosu	152.41 323	*e*PKIKP	PKPdf	16 34 51.0	-1.5
MLR			*e*		16 35 09.1	
MLR			*e*		16 35 48.2	
MLR	Muntele Rosu	152.41 323	*e*PKPdf	PKPdf	16 34 51.0	-1.5
MLR			*e*PKPbc	PKPbc	16 34 59.0	-0.5
MLR			*e*PKPab	PKPab	16 35 09.1	-1.3
MLR			*e*		16 35 48.2	
BOLV	Bolvadin	152.59 306	⇑*i*P	PKPbc	16 34 59.8	-0.3
PPCY	Paphos	152.62 298	P	PKPbc	16 35 00.1	0.0
AUKIR	K¯–rka- Seyitg	152.68 308	*i*P	PKPbc	16 35 01.1	+0.8
UPC	Upice	152.72 341	⇑*e*PKIKP	PKPbc	16 35 00.5	+0.7
UPC			*e*PKPAB	PKPab	16 35 12.1	+0.8
UPC			*ep*PKP	pPKPdf	16 35 47.2	+6.1
UPC	Upice	152.72 341	*e*PKIKP	PKPbc	16 35 00.5	+0.7
UPC			*e*		16 35 47.2	
LANS	Liptovska Anna	152.73 335	*e*PKIKP	PKPdf	16 34 54.1	+1.4
LANS	Liptovska Anna	152.73 335	*e*PKP	PKPdf	16 34 54.0	+1.4
LANS			*e*		16 35 01.1	
SULR		152.74 321	⇓*i*P	PKPbc	16 35 00.3	+0.3
CLL	Collm	152.76 346	*e*PKPdf	PKPdf	16 34 53.0	+0.4
	comp=Z,21nm,1.1s					
CLL			⇑*i*PKPbc	PKiKP	16 35 00.0	0.0
	comp=Z,75nm,1.0s					
CLL			⇓*i*PKPab	PKPab	16 35 11.3	-0.1
	comp=Z,44nm,1.0s					
CLL			*e*		16 35 41.0	
CLL			*ep*PKPab	pPKPab	16 35 47.0	-11
	comp=Z,97nm,1.2s					
CLL			*e*		16 35 54.0	
CLL			*e*		16 36 07.0	
CLL	Collm	152.76 346	⇓*i*(P)	PKPab	16 35 07.4	-4.0
	comp=Z,33nm,0.8s					
CLL	Collm	152.76 346	*e*PKIKP	PKPdf	16 34 52.2	-0.4
CLL			*e*		16 35 46.6	
CLL	Collm	152.76 346	*e*PKPdf	PKPdf	16 34 52.2	-0.4
CLL			*e*PKPbc	PKPbc	16 34 59.5	-0.3
CLL			*e*		16 35 46.6	
DPC	Dobruska-Polom	152.77 341	*e*PKPDF	PKPdf	16 34 53.1	+0.4
DPC			⇑*e*PKP	PKiKP	16 35 00.6	+0.4
DPC			*ex*	x	16 35 07.7	
DPC			*e*PKPAB	PKPab	16 35 12.4	+0.8
DPC			*ex*	x	16 35 20.3	
DPC			*ep*PKP	pPKPdf	16 35 47.4	+6.2
DPC	Dobruska-Polom	152.77 341	*e*PKIKP	PKPdf	16 34 53.1	+0.4
DPC			*e*		16 35 07.7	
DPC			*e*		16 35 47.4	
CJR	Cluj-Napoca	152.81 327	⇑*i*P	PKPbc	16 35 00.6	+0.4
CJR	Cluj-Napoca	152.81 327	⇑PKIKP	PKPbc	16 35 00.6	+0.4
KECS	Kecovo	152.87 333	*e*PKIKP	PKPbc	16 35 00.1	-0.1
KECS			*e*		16 35 11.7	
KECS	Kecovo	152.87 333	*e*PKP	PKPbc	16 35 00.1	-0.1
KECS			*e*		16 35 11.7	
KRLC	Kraliky	152.87 340	*e*PKPDF	PKPdf	16 34 52.9	0.0
KRLC			⇑*e*PKP	PKiKP	16 35 00.4	0.0
KRLC			*ex*	x	16 35 07.1	
KRLC			*e*PKPAB	PKPab	16 35 12.0	0.0
KRLC			*ep*PKP	pPKPdf	16 35 47.4	+6.0
KRLC	Kraliky	152.87 340	*e*PKIKP	PKPdf	16 34 52.9	0.0
KRLC			*e*		16 35 12.0	
KRLC			*e*		16 35 47.4	
MORC	Moravsky Berou	152.88 339	⇑*i*P	PKPdf	16 34 52.9	0.0
MORC	Moravsky Berou	152.88 339	*e*PKIKP	PKPdf	16 34 52.6	-0.3
MORC	Moravsky Berou	152.88 339	*e*PKPdf	PKPdf	16 34 52.6	-0.3
MORC			*e*PKPbc	PKiKP	16 35 00.9	+0.5
VOIR		152.93 324	⇑*i*P	PKPbc	16 35 02.3	+1.7
VOIR		152.93 324	⇑PKIKP	PKPbc	16 35 02.3	+1.7
PRD	Provadia	152.93 318	*e*P	PKPab	16 35 13.4	+1.0
BRG	Berggiesshubel	152.95 344	*e*PKP	PKPdf	16 34 52.8	-0.1
	comp=Z,36nm,1.4s					
BRG			*i*		16 35 00.7	
	comp=Z,59nm,0.9s					
BRG			*i*		16 35 12.1	
	comp=Z,35nm,0.8s					
BRG			*i*pPKP	pPKPdf	16 35 42.1	+0.8
	comp=Z,90nm,1.3s					
BRG	Berggiesshubel	152.95 344	*e*PKIKP	PKPdf	16 34 52.8	-0.1
BRG			*i*		16 35 12.1	
BRG			pmax	pmax		
	comp=Z,36nm,1.4s					
BAGO	Egridir - ISPA	152.96 305	⇑*i*P	PKPbc	16 35 00.4	-0.5
BUY	Buyukada	153.01 312	⇑*i*P	PKPbc	16 35 00.2	-0.6
PVCC	Panska Ves	153.10 343	*e*PKPDF	PKPdf	16 34 53.2	+0.1
PVCC			⇑*e*PKP	PKiKP	16 35 01.3	+0.5
PVCC			*e*PKPAB	PKPab	16 35 13.8	+0.9
PVCC			*ex*	x	16 35 21.1	
PVCC			*ep*PKP	pPKPdf	16 35 49.0	+7.4
PVCC	Panska Ves	153.10 343	*e*PKIKP	PKPdf	16 34 53.2	+0.1
PVCC			*e*		16 35 49.0	
WTSB	Winterswijk	153.10 354	*e*PKPdf	PKPdf	16 34 52.8	-0.2
WTSB			*e*PKPbc	PKPbc	16 35 00.4	-0.2
	comp=Z,131nm,1.1s					
WTSB			*e*PKPab	PKPab	16 35 12.3	-0.4
WTSB			*ep*PKPbc	pPKPbc	16 35 48.0	-0.7
DRGR		153.18 328	⇓*i*P	PKPbc	16 35 01.1	+0.1
DRGR		153.18 328	⇓PKIKP	PKPbc	16 35 01.1	+0.1
ARR	Arges	153.20 324	⇑*i*P	PKPbc	16 35 02.4	+1.3
IGD	Bursa	153.21 311	⇑*i*P	PKPbc	16 35 00.1	-1.1
ISP	Isparta	153.22 305	*e*PKIKP	PKPbc	16 34 59.8	-1.7
ISP			*e*		16 35 12.7	
ISP	Isparta	153.22 305	*e*PKPbc	PKPbc	16 34 59.8	-1.7
ISP			*e*PKPab	PKPab	16 35 12.7	-1.3
ULDT	Uludag	153.31 310	⇑*i*P	PKPbc	16 35 01.4	-0.3
VYHS	Vyhne	153.50 335	*e*PKIKP	PKPdf	16 34 53.6	-0.2
VYHS	Vyhne	153.50 335	*e*PKP	PKPdf	16 34 53.6	-0.2
VYHS			*e*		16 35 01.6	
VYHS			*e*		16 35 15.1	
GDZ	Gediz	153.51 308	⇑*i*P	PKPbc	16 35 01.6	-0.5
HUMR	Humele	153.55 322	⇑*i*P	PKPbc	16 35 01.5	-0.3
PSZ	Piszkesteto	153.56 333	⇑*i*P	PKPbc	16 35 01.8	0.0
PSZ	Piszkesteto	153.56 333	*e*PKIKP	PKPdf	16 34 52.5	-1.5
PSZ			*e*		16 35 13.3	
PSZ	Piszkesteto	153.56 333	*e*PKPdf	PKPdf	16 34 52.5	-1.5
PSZ			*e*PKPbc	PKPbc	16 35 01.4	-0.5
PSZ			*e*PKPab	PKPab	16 35 13.3	-1.7
VRAC	Vranov	153.60 339	⇑*i*P	PKPbc	16 35 02.2	+0.4
PRU	Pruhonice	153.60 343	*e*PKPDF	PKPdf	16 34 53.8	-0.1
PRU			⇑*e*PKP	PKPbc	16 35 01.7	-0.1
PRU			*e*PKPAB	PKPab	16 35 15.3	+0.3
PRU			*ex*	x	16 35 21.9	
PRU			*ep*PKP	pPKPdf	16 35 50.4	+8.1
PRU	Pruhonice	153.60 343	*e*PKIKP	PKPdf	16 34 53.8	-0.1
PRU			*e*		16 35 50.4	
KORT	Korkueli	153.62 303	⇑*i*P	PKPbc	16 35 01.6	-0.8
SZH	Strazhica	153.77 319	*e*P	PKPab	16 35 16.7	+0.7
KHAL	Karahalli	153.78 306	⇑*i*P	PKPbc	16 35 02.3	-0.3
JMB	Yambol	153.84 317	*e*P	PKPab	16 35 17.3	+1.0
NKC	Novy Kostel	153.90 346	*e*PKPDF	PKPdf	16 34 53.7	-0.6
NKC			⇑*e*PKP	PKiKP	16 35 02.6	+0.1
NKC			*e*PKPAB	PKPab	16 35 16.4	+0.1
NKC			*ep*PKP	pPKPdf	16 35 51.1	+8.3
NKC			*ex*	x	16 36 01.9	
NKC	Novy Kostel	153.90 346	*e*PKIKP	PKPdf	16 34 53.7	-0.6
NKC			*e*		16 35 16.4	
NKC			*e*		16 35 51.1	
TREC	Trest	153.95 341	*e*PKPAB	PKPab	16 35 17.0	+0.4
TREC	Trest	153.95 341	*e*PKP2	PKPab	16 35 17.0	+0.4
SMOL	Smolenice	154.00 337	*e*PKP2	PKPab	16 35 17.7	+0.9
SMOL	Smolenice	154.00 337	*e*PKP	PKPab	16 35 17.7	+0.9
DURS	Dursunbey	154.00 310	⇑*i*P	PKPbc	16 35 02.5	-0.6
SIRR	Siria	154.06 329	⇑*i*P	PKPdf	16 34 53.2	-1.5
GOLH	Golhisar	154.13 304	⇑*i*P	PKPbc	16 35 02.9	-0.6
BUD	Budapest	154.26 334	*e*	PKPdf	16 34 54.5	-0.4
BEBN	Eben Emael	154.36 356	PKPbc	PKPbc	16 35 05.4	+2.1
BEBN			PKPab	PKPab	16 35 18.2	0.0
DNZL	Cakiroluk	154.36 305	⇑*i*P	PKPdf	16 34 54.5	-1.1
HGN	Heimansgroeve	154.37 355	*e*PKPbc	PKPab	16 35 18.0	-0.2
	comp=Z,45nm,1.0s					
HGN			*ep*PKPbc	pPKPbc	16 36 03.1	+12
MEM	Membach	154.52 355	PKPbc	PKPbc	16 35 03.6	0.0
MEM			PKPab	PKPab	16 35 18.6	-0.2
BZS	Buzias	154.55 328	⇓*i*P	PKPdf	16 34 54.9	-0.4
BZS	Buzias	154.55 328	⇓PKIKP	PKPdf	16 34 54.9	-0.4
KHC	Kasperske Hory	154.64 343	*e*PKPDF	PKPdf	16 34 54.5	-0.9
KHC			⇑*e*PKP	PKiKP	16 35 04.5	+0.4
KHC			*e*PKPAB	PKPab	16 35 19.5	0.0
KHC			*ep*PKP	pPKPdf	16 35 50.5	+6.6
KHC			*ex*	x	16 36 04.0	
KHC	Kasperske Hory	154.64 343	*e*PKIKP	PKPdf	16 34 54.5	-0.9
KHC			*e*		16 35 19.5	
KHC			*e*		16 35 50.5	
KHC	Kasperske Hory	154.64 343	*e*PKPdf	PKPdf	16 34 54.8	-0.6
KHC			*e*PKPbc	PKiKP	16 35 04.5	+0.4
KHC			*e*PKPab	PKPab	16 35 19.7	+0.2
CSKK	Cs¯‡kako	154.66 335	*e*P	PKPdf	16 34 55.4	0.0
GRFO	Grafenberg	154.67 347	*e*PKIKP	PKPdf	16 34 54.8	-0.6
GRFO	Grafenberg	154.67 347	*e*PKPdf	PKPdf	16 34 54.8	-0.6
GRFO			*e*PKPab	PKPab	16 35 20.1	+0.6
GRFO			*ep*PKPab	pPKPab	16 36 04.9	-1.3
SNF	Seneffe	154.72 358	PKPbc	PKPbc	16 35 04.6	+0.5
SNF			PKPab	PKPab	16 35 19.8	+0.1
BCLA	Clavier	154.76 356	PKP	PKPdf	16 34 54.6	-0.9
BCLA			PKPab	PKPab	16 35 19.2	-0.7
GEC2	GERESS Array S	154.87 343	*e*PKIKP	PKPdf	16 34 55.2	-0.6
GEC2			*e*		16 35 20.3	
GEC2	GERESS Array S	154.87 343	*e*PKPdf	PKPdf	16 34 55.1	-0.6
GEC2			*e*PKPbc	PKiKP	16 35 05.0	+0.3
GEC2			*e*PKPab	PKPab	16 35 20.3	-0.3
GERES	GERESS Array B	154.87 343	PKP	PKPdf	16 34 55.8	-0.1
	comp=Z,3.4nm,0.8s,baz=48,slow=2.0,SNR=12					
GERES			PKPbc	PKPbc	16 35 04.5	-0.1
	comp=Z,3.8nm,0.8s,baz=42,slow=2.2,SNR=8.8					
GERES			PKPab	PKPab	16 35 20.7	+0.1
	comp=Z,6.6nm,0.7s,baz=32,slow=3.3,SNR=9.9					
GEA0	GERESS Array S	154.88 343	*e*PKPdf	PKPdf	16 34 54.8	-1.0
GEA0			*e*PKPbc	PKPbc	16 35 04.6	-0.1
GEA0			*e*PKPab	PKPab	16 35 20.4	-0.2
MPEP	Malo Peshtene	154.99 322	*e*P	PKPab	16 35 21.0	-0.2
KDZ	Kurdzhali	155.01 317	*e*P	PKPab	16 35 22.2	+0.8
SOP	Sopron	155.01 337	*e*PKPdf	PKPdf	16 34 55.3	-0.6
ALN	Alexandroupoli	155.02 314	P	PKPab	16 35 21.5	+0.1
CONA	Conrad Observa	155.04 339	*i*PKPdf	PKPdf	16 34 56.1	0.0
	comp=Z,22nm,1.7s,SNR=10					
CONA			*i*PKiKP	PKPab	16 35 05.7	-16
	comp=Z,31nm,1.5s					
CONA			*i*PKPab	PKPab	16 35 22.5	+1.1
	comp=Z,60nm,1.6s					
MDVR	Moldovita	155.11 326	⇑*i*P	PKPdf	16 35 05.1	+8.9
DOU	Dourbes	155.12 357	PKPbc	PKPdf	16 35 05.3	+9.3
DOU			PKPab	PKPab	16 35 21.3	-0.1
YER	Yerkesik	155.12 305	P	PKPab	16 35 22.0	-0.1
PGB	Panagyurishte	155.24 320	*e*P	PKPab	16 35 23.1	+0.7
RZN	Rozhen	155.42 317	*e*P	PKPab	16 35 23.9	+0.5
WLF	Walferdange	155.44 354	PKPbc	PKPdf	16 35 06.7	+10
WLF			PKPab	PKPab	16 35 23.1	+0.2
WLF	Walferdange	155.44 354	*e*PKIKP	PKPdf	16 34 56.1	-0.3
WLF			*e*		16 35 23.1	
WLF			*e*		16 35 54.1	
WLF	Walferdange	155.44 354	*e*PKPdf	PKPdf	16 34 56.1	-0.3
WLF			*e*PKPdif	PKPdf	16 35 06.3	+10
WLF			*e*PKPab	PKPab	16 35 23.1	+0.2
WLF			*e*		16 35 54.1	
WLF			*ep*PKPab	pPKPab	16 36 08.0	-1.4
SMTH	Samothraki Isl	155.57 314	P	PKPab	16 35 23.5	-0.3
SMTH	Samothraki Isl	155.57 314	*e*PKPab	PKPab	16 35 23.5	-0.3
MOA	Molln	155.61 341	*i*PKPdf	PKPdf	16 34 56.4	-0.3
	comp=Z,16nm,1.8s,SNR=6.2					
MOA			*i*PKPab	PKPab	16 35 25.0	+1.3
	comp=Z,41nm,1.7s,SNR=7.3					
PRK	Paraskevi	155.69 311	P	PKPab	16 35 24.0	-0.3
ARSA	Arzberg	155.74 338	*i*PKPdf	PKPdf	16 34 56.5	-0.4
	comp=Z,15nm,1.8s					
ARSA			*i*PKPab	PKPab	16 35 24.9	+0.6
	comp=Z,29nm,1.3s,SNR=5.2					
LANF	Langenberg	155.94 352	PKP	PKPdf	16 34 57.7	+0.6
KAVA	Kavala	155.94 316	P	PKPab	16 35 25.1	-0.2
KAVA	Kavala	155.94 316	*e*PKPab	PKPab	16 35 25.1	-0.2
BEHE	Becsehely	155.97 335	*e*PKPdf	PKPab	16 35 25.8	+0.6
SMG	Samos	155.97 307	P	PKPab	16 35 25.2	-0.4
SIGR	SIGRI	155.99 311	P	PKPab	16 35 25.6	0.0
SIGR	SIGRI	155.99 311	*e*PKPab	PKPab	16 35 25.6	0.0
MMB	Musomiste	156.08 318	*e*P	PKPab	16 35 26.5	+0.5
NVR	Nevrokopi	156.14 318	P	PKPab	16 35 26.2	-0.1
NIS1	Nisyros Isl.	156.14 304	P	PKPab	16 35 25.9	-0.5
NIS1	Nisyros Isl.	156.14 304	*e*PKPab	PKPab	16 35 25.9	-0.5
KKB	Krupnik	156.30 320	*e*P	PKPab	16 35 27.6	+0.7
SOKA	Soboth	156.41 338	*i*PKPdf	PKPdf	16 34 57.3	-0.6
	comp=Z,22nm,1.5s,SNR=11					
SOKA			*i*PKPab	PKPab	16 35 27.5	+0.3
	comp=Z,47nm,1.4s,SNR=9.8					
PERS	Pernice	156.41 338	*e*PKPdf	PKPdf	16 34 56.5	-1.4
PERS			*i*PKPab	PKPab	16 35 26.7	-0.5
PERS			*e*		16 36 11.9	
SRS	Serrai	156.44 317	P	PKPab	16 35 27.4	-0.1
BFO	Black Forest	156.50 350	*e*PKIKP	PKPdf	16 34 56.6	-1.3
BFO			*e*		16 35 25.8	
BFO			*e*		16 35 55.9	
BFO	Black Forest	156.50 350	*e*PKPdf	PKPdf	16 34 56.6	-1.3
BFO			*e*PKPdif	PKPdf	16 35 08.2	+10
BFO			*e*PKPab	PKPab	16 35 25.8	-1.7
BFO			*e*		16 35 55.9	
BFO			*ep*PKPab	pPKPab	16 36 11.9	-2.1
KARP	Karpathos	156.52 302	*e*PKPdf	PKPdf	16 34 56.1	-2.2
KARP			*e*PKPab	PKPab	16 35 28.4	+0.3
KBA	Koelnbreinsper	156.58 341	*i*PKPdf	PKPdf	16 34 57.5	-0.8
	comp=Z,11nm,1.3s					
KBA			*i*PKPab	PKPab	16 35 29.2	+1.1
	comp=Z,14nm,0.8s,SNR=5.5					
OUR	Ouranopolis	156.64 315	P	PKPab	16 35 28.6	+0.2
OUR	Ouranopolis	156.64 315	*e*PKP2	PKPab	16 35 28.6	+0.2
OUR	Ouranopolis	156.64 315	*e*PKPab	PKPab	16 35 28.6	+0.2
OBKA	Obir	156.72 339	*i*PKPdf	PKPdf	16 34 57.6	-0.7
	comp=Z,11nm,1.7s					
OBKA			*i*PKPab	PKPab	16 35 28.8	+0.2
	comp=Z,13nm,1.1s					
ECH	Echery	156.77 352	PKP	PKPdf	16 34 58.1	-0.2
KNT	Kendrikon	156.84 318	P	PKPab	16 35 29.1	-0.1
RETA	Reutte	156.86 346	*i*PKPdf	PKPdf	16 34 58.2	-0.3
	comp=Z,1.2nm,0.5s					
RETA			*i*PKPab	PKPab	16 35 29.4	+0.3
	comp=Z,23nm,1.0s,SNR=5.1					
RETA			*i*pPKPab	pPKPab	16 36 14.7	-1.0
	comp=Z,18nm,0.9s					
WTTA	Wattenberg	156.87 344	*i*PKPdf	PKPdf	16 34 57.0	-1.6
	comp=Z,17nm,1.4s					
WTTA			*i*PKPab	PKPab	16 35 30.2	+0.9
	comp=Z,34nm,0.9s					
MYKA	Terra Mystica	156.89 340	*i*PKPdf	PKPdf	16 34 56.8	-1.7
	comp=Z,0.1nm,0.3s					
MYKA			*i*PKPab	PKPab	16 35 29.0	-0.3
	comp=Z,24nm,0.9s,SNR=6.8					
MOTA	Moosalm	156.92 345	*i*PKPdf	PKPdf	16 34 58.6	-0.1
	comp=Z,14nm,1.3s					
MOTA			*i*PKPab	PKPab	16 35 30.0	+0.5
	comp=Z,22nm,0.9s					
VAY	Valandovo	156.94 319	P	PKPab	16 35 29.7	+0.1
VAY	Valandovo	156.94 319	*i*PKP	PKPab	16 35 30.1	+0.5
VAY	Valandovo	156.94 319	*e*PKP2	PKPab	16 35 29.7	+0.1
VAY	Valandovo	156.94 319	*e*PKPab	PKPab	16 35 29.7	+0.1
PLG	Polygyros	156.96 316	P	PKPab	16 35 28.9	-0.9
PAIG	Paliouri	157.06 315	P	PKPab	16 35 29.9	-0.3
THE	Thessaloniki	157.11 317	P	PKPab	16 35 29.7	-0.7
ABTA	Abfaltersbach	157.11 342	*i*PKPdf	PKPdf	16 34 57.8	-1.1
	comp=Z,24nm,1.7s,SNR=9.4					
ABTA			*i*PKPab	PKPab	16 35 30.0	-0.3
	comp=Z,29nm,0.9s,SNR=5.7					
ABTA			*i*pPKPab	pPKPab	16 36 15.6	-1.2
	comp=Z,30nm,0.9s					
LJU	Ljubljana	157.13 338	*i*PKPdf	PKPdf	16 34 58.3	-0.4
LJU			*e*		16 35 09.3	
LJU			*e*PKPab	PKPab	16 35 29.6	-0.7
MOF	Molkenrain	157.13 352	PKP	PKPdf	16 34 58.3	-0.5
SKO	Skopje	157.18 322	P	PKPab	16 35 31.4	+0.7
SKO	Skopje	157.18 322	*i*PKP	PKPab	16 35 31.6	+0.9
DAVA	Damuels	157.24 347	*i*PKPdf	PKPdf	16 34 58.8	-0.2
	comp=Z,8.3nm,1.0s					
DAVA			*i*PKPab	PKPab	16 35 31.5	+0.6
	comp=Z,20nm,1.0s					
DAVA			*i*pPKPab	pPKPab	16 36 16.1	-1.2
	comp=Z,24nm,1.1s					
GRG	Griva	157.26 318	P	PKPab	16 35 29.8	-1.3
FETA	Feichten	157.31 346	*i*PKPdf	PKPdf	16 34 58.7	-0.5
	comp=Z,17nm,1.3s,SNR=5.9					
FETA			*i*PKPab	PKPab	16 35 31.9	+0.7
BOJS	Bojanci	157.35 336	*e*PKPdf	PKPdf	16 34 58.7	-0.4
BOJS			*e*PKPab	PKPab	16 35 30.8	-0.4
SANT	Santorini	157.51 305	P	PKPab	16 35 30.9	-1.4
SANT	Santorini	157.51 305	*e*PKPab	PKPab	16 35 31.0	-1.4
THR3	Thira Island,	157.54 305	P	PKPab	16 35 30.6	-1.8
THR3	Thira Island,	157.54 305	*e*PKPab	PKPab	16 35 30.6	-1.8
LOMF	Lomont	157.66 352	PKP	PKPdf	16 34 59.6	+0.1
LIT	Litokhoron	157.72 317	P	PKPab	16 35 32.6	-0.5
LIT	Litokhoron	157.72 317	*e*PKP2	PKPab	16 35 32.6	-0.5
LIT	Litokhoron	157.72 317	*e*PKPab	PKPab	16 35 32.6	-0.5
KTI	Kastanea	157.77 318	P	PKPab	16 35 33.2	-0.3
FUORN	Ofenpass-Fuorn	157.79 346	*e*PKPdf	PKPdf	16 34 59.1	-0.8
FUORN			*e*PKPdif	PKPdf	16 35 11.7	+12
FUORN			*e*PKPab	PKPab	16 35 33.2	-0.2
FUORN			*ep*PKPab	pPKPab	16 36 18.1	-1.8
BIA	Bitola	157.86 320	*i*PKP	PKPab	16 35 33.8	+0.1
LAST	Lasithi	157.95 302	⇑*i*P	PKPab	16 35 34.1	-0.3
LAST	Lasithi	157.95 302	P	PKPab	16 35 34.0	-0.3
LAST	Lasithi	157.95 302	*e*PKPdf	PKPdf	16 34 58.3	-1.9
LAST			*e*PKPab	PKPab	16 35 33.8	-0.6
FNA	Florina	157.98 319	P	PKPab	16 35 33.5	-0.7
PDG	Podgorica	158.03 325	⇓*i*P	PKPab	16 35 34.3	0.0
PDG	Podgorica	158.03 325	P	PKPab	16 35 34.0	-0.3
OHR	Ohrid	158.10 321	*i*PKP	PKPab	16 35 34.7	0.0
TUE	Stuetta	158.12 347	*e*PKPdf	PKPdf	16 34 59.0	-1.3
TUE			*e*PKPab	PKPab	16 35 34.8	+0.1
LKR	Lokris	158.19 313	P	PKPab	16 35 34.0	-1.2
NEST	Nestorio	158.40 319	P	PKPab	16 35 36.1	0.0
AGG	Agios Georgios	158.43 314	P	PKPab	16 35 33.5	-2.8
SENIN	Lac Senin/Sane	158.57 351	*e*PKPdf	PKPdf	16 35 00.6	-0.2
SENIN			*e*PKPab	PKPab	16 35 36.5	-0.3
SENIN			*ep*PKPab	pPKPab	16 36 21.7	-1.5
ANX	Ano Chora	158.94 314	P	PKPab	16 35 37.0	-1.5
JAN	Janina	158.99 318	P	PKPab	16 35 39.1	+0.5
KLV	Kalavryta, Ach	159.08 312	P	PKPab	16 35 37.9	-1.2
KLV	Kalavryta, Ach	159.08 312	*e*PKPab	PKPab	16 35 37.9	-1.2
DSL	Palaion Diasel	159.16 316	P	PKPab	16 35 38.7	-0.7
ANKY	Antikythira Is	159.31 306	P	PKPab	16 35 40.4	+0.3
ANKY	Antikythira Is	159.31 306	*e*PKPab	PKPab	16 35 40.4	+0.3
SGD	Sagiada	159.39 318	P	PKPab	16 35 40.3	0.0
RLS	Riolos of Patr	159.53 313	P	PKPab	16 35 40.8	-0.2
LKD2	Lefkada island	159.63 316	P	PKPab	16 35 41.0	-0.5
AMT	Artemida-Makis	159.65 312	P	PKPab	16 35 39.7	-1.9
LIC	Lamto	159.74 158	*e*PKP1	PKPab	16 35 44.0	+1.7
	comp=Z,1μm,1.5s					
SSB	Saint Sauveur	159.93 356	*e*PKPdf	PKPdf	16 35

Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**2.77**	**39**	Pn	Pn	16 23 16.1	-1.7
	4.1nm,0.3s,baz=221,slow=20,SNR=5.4						
AFI				Sn	Sn	16 23 43.5	-8.5
	17nm,0.3s,baz=60,slow=20,SNR=7.1						
STKA	**Stephens Creek**	**43.55**	**241**	P	P	16 30 37.5	-0.3
	1.4nm,0.8s,baz=45,slow=7.1,SNR=2.8						
WRA	**Warramunga Arr**	**49.52**	**257**	P	P	16 31 24.5	-0.4
	0.6nm,0.7s,baz=92,slow=6.9,SNR=6.4						
ASAR	**Alice Springs**	**49.74**	**252**	P	P	16 31 25.9	-0.7
	2.0nm,0.5s,baz=89,slow=8.3,SNR=36						
BRTR	**Keskin Array B**	**146.56**	**320**	PKPbc	PKPab	16 42 17.0	+0.1
	0.6nm,0.5s,baz=90,slow=2.2,SNR=3.0						

*IDC **05** 16:27:03.0±1.3,21°.86N×121°.55E,h0km,mb3.4/5, mb1 3.6/6,mb1mx3.4/46,mbtmp3.5/6,MS3.7/1,Ms1 3.7/1, ms1mx3.1/22,Error ellipse: s-maj=44.8km s-min=21.5km az=89.0*

*ISCJB **05** 16:27:06.3±0.5,22°.17N±0°.03×121°.49E±0°.03,h19km±4km, mb3.4/4,Error ellipse: s-maj=4.9km s-min=4.3km az=160.3*

*TAP **05** 16:27:06.8,22°.24N×121°.46E,h22km,ML3.8,B*

ISC 05 16:27:04.4±1.6,22°.11N±0°.04×121°.51E±0°.05,h8km±9km, n69,σ1§03/88,mb3.5/4,11C,Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LAY	**Lan-yu**	**0.08**	**154**	⇑*i*P	Pg	16 27 12.1	+5.6
	baz=150						
LAY				*e*S	Sg	16 27 15.9	+7.9
	baz=150						
TSEB	**Hengchuen, Pin**	**0.61**	**250**	P	**Pn**	**16 27 19.0**	**-0.3**
	baz=249						
TSEB				S	**Sn**	**16 27 27.9**	**-1.3**
	baz=249						
TAW	**Tawu**	**0.62**	**293**	⇑*i*P	**Pg**	**16 27 17.1**	**+0.7**
	baz=282						
TAW				S	**Sg**	**16 27 24.4**	**0.0**
	baz=282						
EAST	**Anshuo**	**0.67**	**294**	⇑*i*P	**Pg**	**16 27 17.9**	**+0.5**
	baz=284						
EAST				*e*S	**Sg**	**16 27 25.5**	**-0.6**
	baz=284						
TWK1	**Hengchun**	**0.68**	**256**	*e*P	**Pb**	**16 27 19.1**	**+0.7**
	baz=254						
TWK1				*e*S	**Sb**	**16 27 27.8**	**-0.2**
	baz=254						
ECL	**Taimali**	**0.71**	**313**	⇑*i*P	**Pg**	**16 27 17.9**	**-0.1**
	baz=294						
ECL				S	**Sg**	**16 27 25.7**	**-1.5**
	baz=294						
TTN	**Taitung**	**0.72**	**332**	*e*P	**Pg**	**16 27 18.9**	**+0.6**
	baz=339						
TTN				*e*S	**Sg**	**16 27 29.2**	**+1.5**
	baz=339						
HEN	**Hengchun**	**0.73**	**262**	⇑P	**Pb**	**16 27 20.0**	**+0.7**
	baz=250						
HEN				*i*S	**Sb**	**16 27 29.4**	**+0.1**
	baz=250						
TWG	**Pinlang**	**0.81**	**330**	⇑*i*P	**Pg**	**16 27 19.5**	**-0.5**
	baz=313						
TWG				S	**Sg**	**16 27 28.7**	**-2.0**
	baz=313						
SCZT	**Fangliau**	**0.87**	**287**	⇑*e*P	**Pg**	**16 27 21.2**	**+0.2**
	baz=279						
CHKT	**Chengkung**	**0.99**	**352**	*e*P	**Pb**	**16 27 22.4**	**-1.4**
	baz=2.0						
SSD	**Sandimen**	**1.03**	**308**	*e*P	**Pb**	**16 27 23.0**	**-1.4**
	baz=310						
TWP	**Hsiaoliuchiu**	**1.09**	**282**	*e*P	**Pn**	**16 27 26.7**	**+0.7**
	baz=276						
SGLT	**Jiouru**	**1.12**	**303**	*e*P	**Pg**	**16 27 27.1**	**+1.2**
	baz=298						
ELDTW	**Lidau**	**1.16**	**337**	*e*P	**Pn**	**16 27 25.5**	**-1.6**
	baz=337						
KAU	**Kaohsiung**	**1.20**	**292**	*e*P	**Pb**	**16 27 28.1**	**+0.7**
	baz=287						
TWM1	**Shoushan**	**1.23**	**305**	*e*P	**Pb**	**16 27 28.7**	**+0.8**
	baz=301						
TWF1	**Yuli**	**1.25**	**351**	*e*P	**Pn**	**16 27 26.6**	**-1.6**
	baz=340						
STYT	**Tauyuan**	**1.26**	**326**	*e*P	**Pn**	**16 27 26.5**	**-1.8**
	baz=335						
SGST	**Jiashian**	**1.29**	**318**	*e*P	**Pn**	**16 27 28.6**	**-0.2**
	baz=319						
SGST				*e*S	**Sb**	**16 27 44.7**	**-1.0**
	baz=319						
EHY	**Hungye**	**1.40**	**353**	*e*P	**Pn**	**16 27 28.2**	**-2.0**
	baz=342						
WTP	**Ta-pu**	**1.40**	**324**	⇑P	**Pn**	**16 27 30.0**	**-0.2**
	baz=323						
WTP				*e*S	**Sn**	**16 27 47.8**	**-1.1**
	baz=323						
CHN1	**Nanshi**	**1.40**	**320**	⇑*i*P	**Pn**	**16 27 30.6**	**+0.3**
	baz=318						
CHN1				*e*S	**Sn**	**16 27 48.5**	**-0.5**
	baz=318						
CHN3	**Shinhua**	**1.43**	**312**	*e*P	**Pn**	**16 27 31.4**	**+0.8**
	baz=310						
CHN3				*e*S	**Sb**	**16 27 51.3**	**+1.7**
	baz=310						
YUS	**Yu-Shan**	**1.46**	**339**	*e*P	**Pn**	**16 27 30.3**	**-1.2**
	baz=332						
TWK	**Hsinying**	**1.49**	**321**	*e*P	**Pn**	**16 27 31.5**	**0.0**
	baz=320						
TWK				*e*S	**Sn**	**16 27 50.5**	**-0.6**
	baz=320						
CHN4	**Tsaushan**	**1.50**	**326**	⇑P	**Pn**	**16 27 31.7**	**+0.1**
	baz=336						
CHN4				*e*S	**Sn**	**16 27 51.7**	**+0.4**
	baz=336						
ALS	**Alishan**	**1.54**	**335**	*e*P	**Pn**	**16 27 31.7**	**-0.7**
	baz=335						
ALS				*e*S	**Sn**	**16 27 52.5**	**-0.2**
	baz=335						
SCLT	**Jiali**	**1.61**	**311**	*e*P	**Pn**	**16 27 32.9**	**-0.2**
	baz=308						
CHN5	**Tsauling**	**1.67**	**333**	*e*P	**Pn**	**16 27 34.3**	**+0.4**
	baz=333						
CHN5				*e*S	**Sn**	**16 27 55.1**	**-0.5**
	baz=333						
ESL	**Shilin**	**1.69**	**358**	*e*P	**Pn**	**16 27 33.9**	**-0.3**
	baz=349						
CHY	**Chiayi**	**1.71**	**324**	*e*P	**Pn**	**16 27 34.8**	**+0.4**
	baz=306						
CHN2	**Minshiung**	**1.71**	**326**	*e*P	**Pn**	**16 27 34.8**	**+0.4**
	baz=307						
WGK	**Gukeng**	**1.79**	**331**	*e*P	**Pn**	**16 27 35.8**	**+0.1**
	baz=331						
WGK				*e*S	**Sn**	**16 27 58.0**	**-0.6**
	baz=331						
SMLT	**Sun Moon Lake**	**1.85**	**342**	*e*P	**Pn**	**16 27 37.0**	**+0.5**
	baz=353						
SMLT				*e*S	**Sn**	**16 28 01.1**	**+1.0**
	baz=353						
TYC	**Yuchr**	**1.88**	**341**	*e*P	**Pn**	**16 27 37.9**	**+1.1**
	baz=343						
TYC				*e*S	**Sn**	**16 28 01.3**	**+0.5**
	baz=343						
WNT	**Mingjian**	**1.92**	**337**	*e*P	**Pn**	**16 27 38.1**	**+0.8**
	baz=319						
WNT				*e*S	**Sn**	**16 28 01.5**	**-0.1**
	baz=319						
WSF	**Szhu**	**1.93**	**322**	*e*P	**Pn**	**16 27 37.0**	**-0.5**
	baz=321						
WSF				*e*S	**Sn**	**16 28 01.3**	**-0.7**
	baz=321						
TWD	**Chiawan**	**1.96**	**2**	*e*P	**Pn**	**16 27 37.6**	**-0.3**
	baz=14						
WHF	**Hehuan Shan**	**2.04**	**354**	*e*P	**Pn**	**16 27 38.9**	**-0.5**
	baz=6.0						
WDGT	**Dungji**	**2.06**	**304**	*e*P	**Pn**	**16 27 38.0**	**-1.2**
	baz=301						
TWT	**Tachien**	**2.15**	**352**	*e*P	**Pn**	**16 27 41.7**	**+1.0**
	baz=3.0						
TCU	**Taichung**	**2.17**	**339**	*e*P	**Pn**	**16 27 41.7**	**+0.9**
	baz=323						
ENA	**Nanau**	**2.31**	**5**	*e*P	**Pn**	**16 27 42.4**	**-0.4**
	baz=8.0						
PNG	**Penghu**	**2.31**	**309**	*e*P	**Pn**	**16 27 41.8**	**-1.0**
	baz=306						
NNS	**Nan Shan**	**2.32**	**357**	*e*P	**Pn**	**16 27 44.7**	**+1.7**
	baz=359						
TWQ1	**Liyutan**	**2.33**	**343**	*e*P	**Pn**	**16 27 43.9**	**+0.9**
	baz=327						
TWQ1				*e*S	**Sn**	**16 28 11.9**	**+0.2**
	baz=327						
NSY	**Sanyi**	**2.39**	**343**	*e*P	**Pn**	**16 27 45.2**	**+1.3**
	baz=328						
NSY				*e*S	**Sn**	**16 28 14.2**	**+0.8**
	baz=328						
TWC	**Suao**	**2.50**	**7**	*e*P	**Pn**	**16 27 46.9**	**+1.5**
	baz=17						
TWC				*e*S	**Sn**	**16 28 15.7**	**-0.4**
	baz=17						
ENTT	**Nioudou**	**2.52**	**1**	*e*P	**Pn**	**16 27 45.9**	**+0.3**
	baz=3.0						
NSTT	**Nanjuang**	**2.55**	**349**	*e*P	**Pn**	**16 27 47.9**	**+1.8**
	baz=335						
NSTT				*e*S	**Sn**	**16 28 17.3**	**0.0**
	baz=335						
NSK	**Sanguang**	**2.56**	**357**	*e*P	**Pn**	**16 27 46.6**	**+0.4**
	baz=9.0						
NSK				*e*S	**Sn**	**16 28 16.4**	**-1.2**
	baz=9.0						
TWE	**Neicheng**	**2.60**	**3**	*e*P	**Pn**	**16 27 47.2**	**+0.5**
	baz=356						
YOJ	**Yonaguni jima**	**2.71**	**30**	*e*P	**Pn**	**16 27 49.2**	**+1.0**
	baz=32						
EGS		**2.75**	**8**	*e*P	**Pn**	**16 27 50.7**	**+2.0**
	baz=18						
TWB1	**Santiao Chiao**	**2.92**	**9**	*e*P	**Pn**	**16 27 51.3**	**+0.2**
	baz=20						
NWF	**Wu-fen Shan**	**2.96**	**5**	*e*P	**Pn**	**16 27 53.0**	**+1.3**
	baz=358						
KNM	**Kinmen**	**3.64**	**310**	*e*P	**Pn**	**16 28 00.7**	**-0.4**
	baz=305						
QZH	**Quanzhou**	**3.89**	**317**	⇑*i*Pn	Pn	16 27 58.7	-5.7
QZH				Sn	Sn	16 28 41.1	-9.2
JOW	**Kunigami**	**7.75**	**51**	Pn	**Pn**	**16 28 57.7**	**+0.2**
	baz=180,slow=20						
JOW				Sn	Sn	16 30 20.1	-5.3
	0.4nm,0.3s,baz=49,slow=20,SNR=3.0						
KSRS	**Korea Array**	**16.26**	**19**	LR	LR	16 38 00.1	
	comp=Z,265nm,18.3s,baz=50,slow=40						
MJAR	**Matsushiro Arr**	**20.41**	**42**	P	Pn	16 31 44.2	+0.1
	1.1nm,0.8s,baz=235,slow=13,SNR=4.3						
SONM	**Songino Array**	**28.39**	**338**	P	**P**	**16 33 00.9**	**+1.6**
	0.6nm,0.6s,baz=131,slow=6.5,SNR=3.0						
H11S3	**WAKE ISLAND Hy**	**42.41**	**86**	T	T	17 20 14.9	
	baz=283,slow=75,SNR=6.8						
H11S1	**WAKE ISLAND Hy**	**42.42**	**86**	T	T	17 20 14.0	
	baz=283,slow=75,SNR=12						
H11S2	**WAKE ISLAND Hy**	**42.42**	**86**	T	T	17 20 15.3	
	baz=283,slow=75,SNR=9.4						
WRA	**Warramunga Arr**	**43.64**	**162**	P	**P**	**16 35 06.6**	**-3.0**
	0.2nm,0.3s,baz=345,slow=8.9,SNR=4.5						
ASAR	**Alice Springs**	**47.08**	**164**	P	**P**	**16 35 35.0**	**-1.8**
	0.4nm,0.8s,baz=341,slow=7.1,SNR=12						
YKA	**Yellowknife Ar**	**84.75**	**23**	P	**P**	**16 39 40.6**	**+1.7**
	0.1nm,0.3s,baz=310,slow=5.7,SNR=3.4						

*ISCJB **05** 16:29:58.0±0.5,58°.90N±0°.04×154°.83W±0°.09, h156km±4km,mb2.5/1,Error ellipse: s-maj=8.4km s-min=5.3km az=34.1*

*IDC **05** 16:30:01.7±8.6,59°.10N×154°.33W,h118km±90km,mb2.6/1, mb1 3.3/3,mb1mx2.9/43,mbtmp3.4/3,ML3.6/2,Error ellipse: s-maj=101.1km s-min=64.2km az=115.0*

*NEIC **05** 16:30:01.3,58°.89N×154°.80W,h137km,MG2.8(AEIC), After AEIC.*

ISC 05 16:29:57.8±1.3,58°.90N±0°.05×154°.71W±0°.06, h157km±9km,n77,σ1§65/86,Alaska Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAHC	**Katmai Hardscr**	**0.29**	**211**	P	**Pn**	**16 30 19.5**	**+0.2**
KAHC				S	**Sn**	**16 30 34.0**	**-1.6**
MCNL	**McNeil River**	**0.35**	**34**	P	**Pn**	**16 30 19.8**	**+0.5**
KAWH	**Katmai**	**0.52**	**185**	P	**Pn**	**16 30 20.4**	**+0.3**
FOSS	**Fourpeaked Sta**	**0.54**	**100**	*e*Pn	**Pn**	**16 30 20.9**	**+0.8**
CDD	**Cape Douglas**	**0.56**	**87**	P	**Pn**	**16 30 21.2**	**+1.0**
KVTA	**Katmai Vly 10**	**0.60**	**211**	P	**Pn**	**16 30 21.0**	**+0.5**
KAKN	**Katmai Knife C**	**0.63**	**197**	P	**Pn**	**16 30 21.3**	**+0.5**
KAKN				S	**Sn**	**16 30 37.2**	**-1.0**
FOPK	**Fourpeaked Vol**	**0.66**	**102**	P	**Pn**	**16 30 21.4**	**+0.6**
KABU	**Katmai Buttres**	**0.70**	**205**	P	**Pn**	**16 30 21.8**	**+0.6**
KABU				S	**Sn**	**16 30 38.4**	**-0.5**
KELA	**Mount Kelaz**	**0.71**	**230**	P	**Pn**	**16 30 21.5**	**+0.3**
KABR	**Katmai Barrier**	**0.78**	**190**	P	**Pn**	**16 30 22.1**	**+0.4**
AUI	**Augustine Isla**	**0.79**	**56**	P	**Pn**	**16 30 23.0**	**+1.3**
AUI				S	**Sn**	**16 30 40.1**	**+0.2**
AUSE	**Augustine SEas**	**0.81**	**56**	P	**Pn**	**16 30 23.0**	**+1.3**
AUL	**Augustine Lava**	**0.82**	**53**	P	**Pn**	**16 30 23.3**	**+1.5**
AUE	**Augustine Isla**	**0.83**	**56**	*e*Pn	**Pn**	**16 30 23.4**	**+1.6**
OPT	**Oil Point**	**1.07**	**45**	*e*Pn	**Pn**	**16 30 25.5**	**+1.7**
ILW	**Iliamna West**	**1.42**	**34**	*e*Pn	**Pn**	**16 30 28.6**	**+1.4**
PLK3	**Peulik 3**	**1.47**	**215**	P	**Pn**	**16 30 28.6**	**+1.1**
PLK1	**Peulik 1**	**1.49**	**223**	P	**Pn**	**16 30 28.8**	**+1.1**
KDAK	**Kodiak Island**	**1.59**	**134**	P	Pn	16 30 44.7	+16
	9.4nm,0.3s,baz=11,slow=2.2,SNR=114						
KDAK				S	Sn	16 31 06.9	+14
	28nm,0.3s,baz=28,slow=23,SNR=42						
KDAK	**Kodiak Island**	**1.59**	**134**	*e*Pn	**Pn**	**16 30 30.6**	**+1.9**
KDAK				*e*Sn	**Sn**	**16 30 52.9**	**+0.5**
HOM	**Homer**	**1.75**	**63**	*e*Pn	**Pn**	**16 30 31.5**	**+1.1**
OHAK	**Old Harbor**	**1.85**	**155**	*e*Pn	**Pn**	**16 30 32.0**	**+0.4**
OHAK				*e*Sn	**Sn**	**16 30 54.3**	**-3.2**
RDWB	**Redoubt West**	**1.85**	**30**	P	**Pn**	**16 30 33.2**	**+1.4**
RDWB				S	**Sn**	**16 30 58.5**	**+0.5**
RSO	**Redoubt South**	**1.85**	**32**	*e*Pn	**Pn**	**16 30 33.4**	**+1.6**
NCT	**North Crescent**	**1.90**	**28**	*e*Pn	**Pn**	**16 30 33.8**	**+1.6**
SVW2	**Sparrevohn**	**2.25**	**349**	*e*Pn	**Pn**	**16 30 37.3**	**+1.2**
CKL	**Chakachamna La**	**2.59**	**26**	P	**Pn**	**16 30 42.3**	**+1.9**
SPWE	**Spurr West**	**2.62**	**23**	P	**Pn**	**16 30 42.7**	**+2.0**
SPU	**Mount Spurr**	**2.65**	**29**	*e*Pn	**Pn**	**16 30 42.8**	**+1.7**
SLKM	**Skilak Lake**	**2.79**	**53**	*e*Pn	**Pn**	**16 30 45.8**	**+3.0**
SEW	**Seward**	**2.94**	**64**	*e*Pn	**Pn**	**16 30 46.8**	**+2.2**
SEW				*e*Sn	Sn	16 31 11.1	-10
SEW				S	**Sn**	**16 31 20.8**	**-0.1**
STLK	**Strandline Lak**	**2.98**	**28**	P	**Pn**	**16 30 47.6**	**+2.4**
CHGN	**Chignik**	**3.28**	**219**	*e*Pn	**Pn**	**16 30 49.6**	**+0.7**
RC01	**Rabbit Creek A**	**3.33**	**47**	*e*Pn	**Pn**	**16 30 51.2**	**+1.7**
RC01				*e*Sn	Sn	16 31 19.8	-10
PMR	**Palmer**	**3.88**	**43**	*e*Pn	**Pn**	**16 30 58.4**	**+1.9**
TT01	**Tatalina**	**4.07**	**352**	*e*Pn	**Pn**	**16 31 01.2**	**+2.1**
TTA	**Tatalina**	**4.09**	**352**	*e*Pn	**Pn**	**16 31 01.2**	**+1.8**
PPLA	**Purkeypile**	**4.20**	**16**	*e*Pn	**Pn**	**16 31 03.4**	**+2.6**
SML	**Sawmill**	**4.31**	**45**	*e*Pn	**Pn**	**16 31 02.7**	**+0.5**
SML				*e*Sn	Sn	16 31 42.3	-10
MID	**Middleton Isla**	**4.34**	**79**	*e*Pn	**Pn**	**16 31 04.5**	**+1.9**
SCM	**Sheep Creek Mo**	**4.70**	**48**	*e*Pn	**Pn**	**16 31 08.4**	**+1.0**
CAST	**Castle Rocks**	**4.71**	**15**	*e*Pn	**Pn**	**16 31 09.5**	**+2.1**
SDPT	**Sand Point**	**4.75**	**224**	*e*Pn	**Pn**	**16 31 08.3**	**+0.4**
DIV	**Divide**	**5.01**	**60**	*e*Pn	**Pn**	**16 31 13.5**	**+2.0**
DIV				*e*Sn	**Sn**	**16 32 03.8**	**-5.1**
KTH	**Kantishna Hill**	**5.01**	**20**	*e*Pn	**Pn**	**16 31 12.9**	**+1.5**
TRF	**Thorofare Moun**	**5.04**	**23**	*e*Pn	**Pn**	**16 31 13.4**	**+1.4**
KLU	**Klutina**	**5.10**	**56**	*e*Pn	**Pn**	**16 31 14.0**	**+1.4**
RAGM	**Ragged Mountai**	**5.31**	**69**	*e*Pn	**Pn**	**16 31 17.3**	**+2.0**
RND	**Reindeer**	**5.34**	**30**	*e*Pn	**Pn**	**16 31 16.4**	**+0.6**
BMRM	**Bremner River**	**5.49**	**64**	*e*Pn	**Pn**	**16 31 19.6**	**+1.9**
BMRM				*e*Sn	**Sn**	**16 32 15.7**	**-4.6**
BPAW	**Bear Paw Mtn.**	**5.51**	**17**	*e*Pn	**Pn**	**16 31 18.9**	**+0.9**
MCK	**McKinley**	**5.59**	**27**	*e*Pn	**Pn**	**16 31 20.4**	**+1.4**
BWN	**Browne**	**5.85**	**23**	*e*Pn	**Pn**	**16 31 23.9**	**+1.4**
PAX	**Paxson**	**6.08**	**44**	*e*Pn	**Pn**	**16 31 26.4**	**+0.8**
FALS	**False Pass**	**6.26**	**233**	*e*Pn	**Pn**	**16 31 26.1**	**-1.7**
BARK	**Barkley Ridge**	**6.38**	**71**	*e*Pn	**Pn**	**16 31 32.2**	**+2.6**
WRH	**Wood River Hil**	**6.41**	**27**	*e*Pn	**Pn**	**16 31 30.3**	**+0.4**
MLY	**Manley**	**6.43**	**15**	*e*Pn	**Pn**	**16 31 30.6**	**+0.5**
KIAG	**Kiagna River**	**6.54**	**67**	P	**Pn**	**16 31 33.7**	**+2.0**
PTPK	**Patty Peak**	**6.55**	**64**	P	**Pn**	**16 31 34.5**	**+2.5**
BALM	**Baldy**	**6.57**	**66**	*e*Pn	**Pn**	**16 31 34.1**	**+2.0**
CCB	**Clear Creek Bu**	**6.63**	**27**	*e*Pn	**Pn**	**16 31 32.9**	**+0.1**
HDA	**Harding Lake**	**6.65**	**30**	*e*Pn	**Pn**	**16 31 33.3**	**+0.3**
MENT	**Mentasta**	**6.71**	**48**	*e*Pn	**Pn**	**16 31 35.4**	**+1.5**
PS08	**TAPS Pump Stn8**	**6.79**	**30**	*e*Pn	**Pn**	**16 31 35.5**	**+0.6**
MDM	**Murphy Dome**	**6.80**	**24**	*e*Pn	**Pn**	**16 31 35.7**	**+0.6**
COLA	**College**	**6.81**	**25**	*e*Pn	**Pn**	**16 31 35.7**	**+0.6**
IL1	**Eielson Array**	**6.95**	**29**	*e*Pn	**Pn**	**16 31 37.5**	**+0.4**
ILAR	**Eielson Array**	**6.95**	**29**	P	**Pn**	**16 31 37.3**	**+0.2**
	2.4nm,0.3s,baz=214,slow=13,SNR=67						
ILAR				S	**Sn**	**16 32 52.2**	**-2.8**
	0.4nm,0.3s,baz=217,slow=20,SNR=4.3						
ILB	**Eielson Array**	**6.95**	**29**	*e*Pn	**Pn**	**16 31 37.2**	**+0.2**
DOT	**Dot Lake**	**7.00**	**43**	*e*Pn	**Pn**	**16 31 39.2**	**+1.5**
COLD	**Coldfoot**	**8.60**	**12**	*e*Pn	**Pn**	**16 31 59.4**	**+0.4**
FYU	**Fort Yukon**	**8.83**	**25**	*e*Pn	**Pn**	**16 32 02.2**	**+0.3**
DAWY	**Dawson**	**8.96**	**48**	*e*Pn	**Pn**	**16 32 06.0**	**+2.2**
YKA	**Yellowknife Ar**	**19.72**	**62**	P	**Pn**	**16 34 18.6**	**+0.6**
	0.1nm,0.3s,baz=276,slow=9.8,SNR=12						
TXAR	**Lajitas Array**	**45.45**	**108**	P	P	16 38 07.6	+6.6
	0.1nm,0.7s,baz=286,slow=4.5,SNR=2.9						

*ISCJB **05** 16:44:30.8±0.3,59°.35N±0°.03×153°.62W±0°.05, h118km±3km,mb3.6/3,Error ellipse: s-maj=4.9km s-min=3.7km az=36.7*

*IDC **05** 16:44:30.0±6.7,59°.41N×153°.87W,h79km±66km,mb3.6/3, mb1 3.5/5,mb1mx3.2/41,mbtmp3.6/5,ML3.2/2,Error ellipse: s-maj=47.3km s-min=20.6km az=15.0*

*NEIC **05** 16:44:33.0,59°.32N×153°.64W,h107km,MG3.1(AEIC), After AEIC.*

ISC 05 16:44:32.0±0.8,59°.33N±0°.04×153°.50W±0°.04, h116km±5km,n98,σ1§75/119,mb3.7/3,Southern Alaska

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AUI	**Augustine Isla**	**0.04**	**87**	P	**Pn**	**16 44 47.6**	**-0.3**
AUI				S	**Sn**	**16 44 58.9**	**-0.9**
AUW	**Augustine West**	**0.04**	**19**	P	**Pn**	**16 44 47.7**	**-0.2**
AUSE	**Augustine SEas**	**0.05**	**81**	P	**Pn**	**16 44 47.5**	**-0.3**
AUL	**Augustine Lava**	**0.06**	**33**	P	**Pn**	**16 44 47.7**	**-0.2**
AUL				S	**Sn**	**16 44 59.0**	**-0.8**
AUE	**Augustine Isla**	**0.07**	**68**	*e*Pn	**Pn**	**16 44 47.7**	**-0.2**
OPT	**Oil Point**	**0.35**	**23**	*e*Pn	**Pn**	**16 44 48.6**	**-0.1**
CDD	**Cape Douglas**	**0.41**	**191**	P	**Pn**	**16 44 48.5**	**-0.5**
CDD				S	**Sn**	**16 45 00.1**	**-1.7**
MCNL	**McNeil River**	**0.46**	**251**	P	**Pn**	**16 44 48.3**	**-0.9**
FONW	**Fourpeaked Sta**	**0.55**	**204**	P	**Pn**	**16 44 49.3**	**-0.6**
FOSS	**Fourpeaked Sta**	**0.55**	**191**	*e*Pn	**Pn**	**16 44 49.3**	**-0.5**
FOSS				*e*Sn	**Sn**	**16 45 02.3**	**-0.9**
FOPK	**Fourpeaked Vol**	**0.58**	**179**	P	**Pn**	**16 44 49.4**	**-0.7**
ILS	**Iliamna Low So**	**0.66**	**19**	P	**Pn**	**16 44 50.5**	**-0.2**
IVE	**Iliamna Volcan**	**0.73**	**19**	P	**Pn**	**16 44 51.2**	**-0.1**
IVE				S	**Sn**	**16 45 05.1**	**-0.8**
ILW	**Iliamna West**	**0.75**	**14**	*e*Pn	**Pn**	**16 44 51.3**	**-0.3**
HOM	**Homer**	**1.00**	**70**	*e*Pn	**Pn**	**16 44 54.2**	**+0.6**
HOM				*e*Sn	**Sn**	**16 45 11.0**	**+1.0**
KAHC	**Katmai Hardscr**	**1.04**	**229**	P	**Pn**	**16 44 53.1**	**-1.1**
KAWH	**Katmai**	**1.17**	**216**	P	**Pn**	**16 44 54.6**	**-0.9**
RSO	**Redoubt South**	**1.19**	**18**	*e*Pn	**Pn**	**16 44 55.9**	**0.0**
RSO				*e*Sn	**Sn**	**16 45 13.5**	**-0.5**
NCT	**North Crescent**	**1.27**	**13**	*e*Pn	**Pn**	**16 44 56.6**	**+0.1**
RDJH	**Redoubt Jeurge**	**1.31**	**15**	P	**Pn**	**16 44 57.1**	**0.0**
RDJH				S	**Sn**	**16 45 16.1**	**0.0**
KAKN	**Katmai Knife C**	**1.32**	**219**	P	**Pn**	**16 44 56.3**	**-0.9**
KAKN				S	**Sn**	**16 45 14.2**	**-2.1**
KVTA	**Katmai Vly 10**	**1.34**	**225**	P	**Pn**	**16 44 56.5**	**-0.8**
KABR	**Katmai Barrier**	**1.43**	**213**	P	**Pn**	**16 44 57.4**	**-0.9**
KELA	**Mount Kelaz**	**1.47**	**233**	P	**Pn**	**16 44 58.0**	**-0.9**
KDAK	**Kodiak Island**	**1.63**	**163**	P	Pn	16 45 15.3	+15
	90nm,0.3s,baz=29,slow=6.5,SNR=515						
KDAK				S	Sn	16 45 35.9	+14
	90nm,0.3s,baz=181,slow=21,SNR=32						
KDAK	**Kodiak Island**	**1.63**	**163**	*e*Pn	**Pn**	**16 45 00.3**	**-0.3**
KDAK				P	**Sn**	**16 45 15.3**	**-7.0**
KDAK				*e*Sn	**Sn**	**16 45 20.8**	**-1.6**
KDAK				S	Sn	16 45 36.0	+14
CKL	**Chakachamna La**	**1.96**	**17**	P	**Pn**	**16 45 05.1**	**+0.4**
SPCR	**Spurr Chakacha**	**1.98**	**18**	P	**Pn**	**16 45 05.3**	**+0.3**
SPU	**Mount Spurr**	**1.99**	**21**	*e*Pn	**Pn**	**16 45 05.0**	**-0.1**
SPU				*e*Sn	**Sn**	**16 45 29.4**	**-1.0**
SPWE	**Spurr West**	**2.00**	**13**	P	**Pn**	**16 45 05.1**	**-0.2**
SVW2	**Sparrevohn**	**2.05**	**330**	*e*Pn	**Pn**	**16 45 04.8**	**-1.1**
SVW2				*e*Sn	**Sn**	**16 45 28.7**	**-3.1**
OHAK	**Old Harbor**	**2.12**	**177**	*e*Pn	**Pn**	**16 45 05.7**	**-1.0**
SEW	**Seward**	**2.19**	**68**	*e*Pn	**Pn**	**16 45 08.4**	**+0.9**
SEW				*e*Sn	**Sn**	**16 45 30.2**	**-4.6**
PLK1	**Peulik 1**	**2.24**	**228**	P	**Pn**	**16 45 07.5**	**-0.7**
STLK	**Strandline Lak**	**2.32**	**20**	P	**Pn**	**16 45 10.0**	**+0.7**
FIB	**Fire Island**	**2.47**	**

az=113.0,Sicily

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MNO	**Monte Soro**	**0.24**	**302**	Pg	Pb	16 45 08.2	-0.1
MNO				Sg	Sn	16 45 13.4	-0.1
	57nm,0.6s						
MNO	**Monte Soro**	**0.24**	**302**	Pg	Pb	16 45 08.2	-0.1
MNO				Sg	Sn	16 45 13.4	-0.1
	57nm,0.6s						
MUCR	**Ucria**	**0.25**	**345**	Pg	Pb	16 45 08.0	-0.2
MUCR				Sg	Sb	16 45 13.1	0.0
MUCR	**Ucria**	**0.25**	**345**	Pg	Pb	16 45 08.0	-0.2
MUCR				Sg	Sb	16 45 13.1	0.0
NOV	**Novara**	**0.26**	**33**	Pg	Pb	16 45 08.5	+0.1
NOV				Sg	Sb	16 45 13.6	+0.3
	107nm,0.3s						
NOV	**Novara**	**0.26**	**33**	Pg	Pb	16 45 08.5	+0.1
NOV				Sg	Sb	16 45 13.6	+0.3
	107nm,0.3s						
MMME	**Mongiuffi-Meli**	**0.27**	**61**	Pg	Pb	16 45 08.6	+0.1
MMME				Sg	Sn	16 45 14.3	+0.3
	102nm,0.4s						
MMME	**Mongiuffi-Meli**	**0.27**	**61**	Pg	Pb	16 45 08.6	+0.1
MMME				Sg	Sn	16 45 14.3	+0.3
	102nm,0.4s						
GALF	**Gagliano Caste**	**0.32**	**253**	Pg	Pn	16 45 09.6	0.0
GALF				Sg	Sn	16 45 16.3	+1.0
GALF	**Gagliano Caste**	**0.32**	**253**	Pg	Pn	16 45 09.6	0.0
GALF				Sg	Sn	16 45 16.3	+1.0
MCSR	**Castroreale**	**0.35**	**42**	Pg	Pb	16 45 09.6	+0.1
MCSR				Sg	Sn	16 45 15.6	-0.3
MCSR	**Castroreale**	**0.35**	**42**	Pg	Pb	16 45 09.6	+0.1
MCSR				Sg	Sn	16 45 15.6	-0.3
HLNI	**Lentini**	**0.46**	**188**	Pg	Pb	16 45 11.0	0.0
HLNI				Sg	Sn	16 45 18.2	-0.4
	43nm,0.3s						
HLNI	**Lentini**	**0.46**	**188**	Pg	Pb	16 45 11.0	0.0
HLNI				Sg	Sn	16 45 18.2	-0.4
	43nm,0.3s						
MPNC	**Port Mandanici**	**0.46**	**42**	Pg	Pn	16 45 11.7	+0.2
MPNC				Sg	Sn	16 45 19.4	+0.8
MPNC	**Port Mandanici**	**0.46**	**42**	Pg	Pn	16 45 11.7	+0.2
MPNC				Sg	Sn	16 45 19.4	+0.8
HCRL	**Carlentini**	**0.52**	**173**	Pg	Pb	16 45 12.0	0.0
HCRL				Sg	Sn	16 45 20.1	0.0
	137nm,0.3s						
HCRL	**Carlentini**	**0.52**	**173**	Pg	Pb	16 45 12.0	0.0
HCRL				Sg	Sn	16 45 20.1	0.0
	137nm,0.3s						
HVZN	**Vizzini**	**0.66**	**197**	Pg	Pn	16 45 14.4	+0.2
HVZN				Sg	Sn	16 45 24.6	+1.1
HVZN	**Vizzini**	**0.66**	**197**	Pg	Pn	16 45 14.4	+0.2
HVZN				Sg	Sn	16 45 24.6	+1.1
SSY	**Sortino**	**0.66**	**172**	Pg	Pb	16 45 14.3	+0.1
SSY				Sg	Sn	16 45 24.1	+0.6
	82nm,0.3s						
SSY	**Sortino**	**0.66**	**172**	Pg	Pb	16 45 14.3	+0.1
SSY				Sg	Sn	16 45 24.1	+0.6
	82nm,0.3s						

ISCJB ***05*** *16:47:10.1±0.5, 13.°02N±0.°07×88.°74W±0.°05, h73km±5km, mb3.6/5, Error ellipse: s-maj=13.5km s-min=3.4km az=30.1*

IDC ***05*** *16:47:11.2±9.8, 13.°27N×88.°44W, h62km±71km, mb3.3/5, mb1 3.7/6, mb1mx3.4/38, mbtmp3.6/6, ML3.3/1, MS3.7/1, Ms1 3.7/1, ms1mx3.2/25, Error ellipse: s-maj=76.7km s-min=65.9km az=42.0*

CASC ***05*** *16:47:12.3±14.0, 13.°17N×88.°72W, h63km±108km, MD4.0, ML3.9*

ISC 05 16:47:10.2±1.0,**12.°92N**±0.°08×**88.°79W**±0.°05,**h59**km±9km, **n38**,σ1**s30**/54,**mb3.5**/5,**1C-12D**,**Off coast of central America**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TECA	**Tecapa**	**0.64**	**26**	⇓*e*P	**Pn**	**16 47 23.9**	**+0.1**
SNVI	**San Vicente**	**0.69**	**356**	⇓*i*P	**Pn**	**16 47 24.3**	**-0.2**
SNVI				*e*S	**Sn**	**16 47 34.8**	**-0.1**
LCY	**Lacayo**	**0.69**	**44**	⇓*e*P	**Pn**	**16 47 24.7**	**+0.2**
PACA	**Pacayal**	**0.71**	**40**	⇓*i*P	**Pn**	**16 47 25.0**	**+0.3**
VSM	**San Miguel**	**0.71**	**45**	⇓*i*P	**Pn**	**16 47 25.1**	**+0.3**
LFRS	**El Faro**	**0.74**	**339**	⇓*e*P	**Pn**	**16 47 24.6**	**-0.6**
LBRS	**Las Brisas**	**0.85**	**343**	*e*P	**Pn**	**16 47 26.2**	**-0.2**
SNET	**Serv Nac Est T**	**0.87**	**331**	*e*P	**Pn**	**16 47 26.2**	**-0.5**
SNET				AML	AML	16 47 40.2	
	comp=Z,4μm,0.2s						
LFU	**La Fuente**	**0.88**	**339**	⇓*e*P	**Pn**	**16 47 26.6**	**-0.2**
LFU				*e*S	**Sn**	**16 47 38.8**	**-0.1**
COLS	**Colinas**	**0.89**	**326**	*e*P	**Pn**	**16 47 26.4**	**-0.6**
BOQS	**Boqueron**	**0.94**	**330**	⇓*e*P	**Pn**	**16 47 27.5**	**-0.1**
BOQS				*e*S	**Sn**	**16 47 39.9**	**-0.6**
CNCH	**Conchagua**	**1.00**	**69**	⇓*e*P	**Pn**	**16 47 28.7**	**+0.4**
CNCH				*e*S	**Sn**	**16 47 42.6**	**+0.9**
CAHU	**Cacacuatique**	**1.02**	**34**	⇓*e*P	**Pn**	**16 47 29.2**	**+0.5**
CSGN	**Cosiguina Volc**	**1.20**	**87**	*e*P	**Pn**	**16 47 30.9**	**-0.1**
CSGN				*e*S	**Sn**	**16 47 44.8**	**-1.7**
SBLS	**San Blas**	**1.22**	**319**	*e*P	**Pn**	**16 47 31.6**	**+0.2**
SBLS				*e*S	**Sn**	**16 47 47.4**	**+0.3**
SNJE	**San Jose**	**1.23**	**320**	*e*P	**Pn**	**16 47 31.5**	**0.0**
SNJE				*e*S	**Sn**	**16 47 47.6**	**+0.3**
RTR	**El Retiro**	**1.28**	**320**	*e*P	**Pn**	**16 47 32.2**	**+0.1**
RTR				*e*S	**Sn**	**16 47 48.6**	**+0.2**
RBDL	**Robledal**	**1.47**	**324**	⇓*e*P	**Pn**	**16 47 34.7**	**+0.1**
TGUH	**Tegucigalpa,Un**	**1.86**	**52**	*e*P	**Pn**	**16 47 40.6**	**+0.8**
TGUH				⇓*e*P	**Pn**	**16 47 40.7**	**+0.9**
TELN	**Telica**	**1.94**	**99**	*e*P	**Pn**	**16 47 40.4**	**-0.5**
TELN				*e*S	**Sn**	**16 48 03.6**	**-0.7**
IXG	**Ixpaco**	**2.04**	**308**	⇑*e*P	**Pn**	**16 47 42.1**	**-0.3**
MOMN	**Momotombo**	**2.26**	**103**	*e*P	**Pn**	**16 47 44.8**	**-0.5**
COPN	**Copaltepe**	**2.27**	**109**	*e*P	**Pn**	**16 47 44.9**	**-0.5**
COPN				*e*P	**Pn**	**16 47 45.2**	**-0.2**
COPN				*e*S	**Sn**	**16 48 12.1**	**-0.2**
COPN				AML	AML	16 48 18.9	
	comp=Z,797nm,0.4s						
APYN	**Apoyeque**	**2.48**	**106**	*e*P	**Pn**	**16 47 47.6**	**-0.7**
BOAB	**BOACO BROADBAN**	**3.09**	**98**	*e*P	**Pn**	**16 47 55.6**	**-0.9**
JCR	**Jicaral**	**4.73**	**130**	*e*P	**Pn**	**16 48 21.2**	**+2.1**
CGA2	**Cerro Gallo 2**	**5.13**	**124**	*e*P	**Pn**	**16 48 28.5**	**+3.8**
URSC	**Urasca**	**5.79**	**121**	*e*P	**Pn**	**16 48 37.1**	**+3.2**
URSC				*e*S	**Sn**	**16 49 42.2**	**+3.1**
BUS	**Buena Vista**	**5.96**	**124**	*e*P	**Pn**	**16 48 39.6**	**+3.2**
BUS				*e*S	**Sn**	**16 49 41.2**	**-2.4**
CMIG	**Matias Romero**	**7.20**	**306**	P	**Pn**	**16 48 55.2**	**+2.3**
	comp=Z,0.5nm,0.3s,baz=75,slow=12,SNR=3.1						
CMIG				S	**Sn**	**16 50 15.7**	**+2.4**
	comp=Z,1.4nm,0.3s,baz=270,slow=11,SNR=4.2						
TEIG	**Tepich**	**7.28**	**4**	P	**Pn**	**16 48 55.0**	**+1.0**
	comp=Z,0.8nm,0.3s,baz=263,slow=22,SNR=4.4						
TXAR	**Lajitas Array**	**21.39**	**322**	P	**P**	**16 51 54.2**	**+1.1**
	comp=Z,0.7nm,0.7s,baz=149,slow=11,SNR=7.2						
TKL	**Tuckaleechee C**	**23.09**	**10**	LR	LR	17 01 23.8	
	comp=Z,180nm,19.3s,baz=90,slow=38						
NVAR	**Mina Array Bea**	**36.49**	**319**	P	**P**	**16 54 11.4**	**+1.3**
	comp=Z,0.4nm,0.7s,baz=156,slow=6.7,SNR=3.4						
NVAR				PcP	**PcP**	**16 56 33.0**	**0.0**
	comp=Z,0.2nm,0.5s,baz=146,slow=2.9,SNR=3.6						
YKA	**Yellowknife Ar**	**52.82**	**345**	P	**P**	**16 56 18.4**	**-1.0**
	comp=Z,0.7nm,0.3s,baz=140,slow=7.7,SNR=42						
YKA				pP	**pP**	**16 56 34.3**	**-0.6**
	comp=Z,0.9nm,0.8s,baz=144,slow=7.5,SNR=6.7						
INK	**Inuvik**	**62.37**	**343**	P	**P**	**16 57 25.0**	**-1.4**
	comp=Z,1.6nm,0.8s,baz=123,slow=6.8,SNR=8.7						
ILAR	**Eielson Array**	**65.06**	**336**	P	**P**	**16 57 43.1**	**-1.2**
	comp=Z,0.4nm,0.8s,baz=102,slow=3.4,SNR=4.4						
WRA	**Warramunga Arr**	**138.14**	**255**	PKP	**PKPdf**	**17 06 29.7**	**+0.2**
	comp=Z,0.2nm,0.5s,baz=89,slow=3.5,SNR=5.4						

MOS ***05*** *16:57:31.4±0.9, 55.°08N×160.°62W, h10km, mb6.3/114, MS5.4/73, Error ellipse: s-maj=6.2km s-min=3.4km az=88.2*

BJI ***05*** *16:57:34.1, 55.°10N×160.°40W, h48km, mb5.9/90, mB6.1/58, Ms5.7/91, Ms7 5.7/79*

NEIC ***05*** *16:57:36.6±0.1, 55.°02N×160.°69W, h36km, mb6.1/298, ME5.7, MS5.4/144, MW5.8, MW5.8, ML5.8(AEIC), Error ellipse: s-maj=2.7km s-min=2.0km az=178.0, Moment Tensor Solution. s62 Moment tensor: Scale 10^17^Nm; M_{rr}5.31; $M_{\theta\theta}$-4.91; $M_{\phi\phi}$-0.40; $M_{r\theta}$2.74; $M_{r\phi}$-3.36; $M_{\theta\phi}$1.25; Best double couple: $M_0$6.80000×10^17^ NP1:ϕ_s239.00000°, δ32.00000°, λ86.00000°. NP2:ϕ_s64.00000°, δ58.00000°, λ93.00000°. Principal axes: T 6.0300, Plg77.0000°, Azm342.0000°; N 1.3900, Plg2.0000°, Azm243.0000°; P -7.4100, Plg13.0000°, Azm152.0000°; Broadband fault plane solution: P waves. NP1:ϕ_s240.00000°, δ25.00000°, λ90.00000°. NP2:ϕ_s60.00000°, δ65.00000°, λ90.00000°. Principal axes: T Plg70.0000°, Azm330.0000°; N Plg0.0000°, Azm0.0000°; P Plg20.0000°, Azm150.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from BB mechanism.*

NEIC Items knocked from shelves [V] at Sand Point. Felt [III] at King Cove. Also felt at Cold Bay, False Pass and Perryville.

GCMT ***05*** *16:57:36.6±0.1, 54.°79N×160.°34W, h56km, MW5.8/137, Moment Tensor Solution. s130, c262; s137, c350; Duration: 2s0 Moment tensor: Scale 10^17^Nm; M_{rr}5.75±.07; $M_{\theta\theta}$-5.53±.07; $M_{\phi\phi}$-0.22±.06; $M_{r\theta}$3.27±.07; $M_{\theta\phi}$-2.80±.05; $M_{r\phi}$2.10±.06; Best double couple: $M_0$7.35900×10^17^ NP1:ϕ_s61.00000°, δ61.00000°, λ84.00000°. NP2:ϕ_s254.00000°, δ30.00000°, λ101.00000°. Principal axes: T 6.8970, Plg73.0000°, Azm316.0000°; N 0.9220, Plg5.0000°, Azm64.0000°; P -7.8210, Plg16.0000°, Azm156.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*

IDC ***05*** *16:57:37.5±0.3, 55.°05N×160.°58W, h40km±2km, mb5.6/46, mb1 5.6/47, mb1mx5.5/54, mbtmp5.8/47, ML4.7/1, MS5.3/50, Ms1 5.3/50, ms1mx5.3/55 Error ellipse: s-maj=11.1km s-min=6.7km az=14.0*

ISCJB ***05*** *16:57:37.4±0.2, 55.°03N±0.°01×160.°46W±0.°01, h53km±1km, mb6.0/547, MS5.4/263, Error ellipse: s-maj=2.4km s-min=1.4km az=10.1*

NEIC ***05*** *16:57:38.0±0.0, 55.°14N×160.°62W, h46km, Moment Tensor Solution. s22 Moment tensor: Scale 10^17^Nm; M_{rr}4.82; $M_{\theta\theta}$-3.45; $M_{\phi\phi}$-1.37; $M_{r\theta}$3.57; $M_{r\phi}$0.15; $M_{\theta\phi}$2.88; Best double couple: $M_0$6.30000×10^17^ NP1:ϕ_s64.00000°, δ69.00000°, λ78.00000°. NP2:ϕ_s274.00000°, δ24.00000°, λ118.00000°. Principal axes: T 7.0600, Plg63.0000°, Azm314.0000°; N -2.0300, Plg10.0000°, Azm67.0000°; P -5.0300, Plg23.0000°, Azm162.0000°;*

ISC 05 16:57:37.1±0.2,**55.°04N**±0.°03×**160.°49W**±0.°02,**h43**km±1km, **h43**km:**pP-P**,**n2347**,σ1**s43**/2710,**mb6.0**/569,**MS5.4**/280, **249C-33D**,**Alaska Peninsula**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SDPT	**Sand Point**	**0.31**	**2**	*e*Pn	**Pn**	**16 57 47.0**	**+1.3**
SDPT				*e*Sn	**Sn**	**16 57 54.7**	**+2.9**
DOL	**Dolgoi Island**	**0.80**	**278**	P	**Pn**	**16 57 53.9**	**+2.0**
PS4A	**Pavlof South-4**	**0.84**	**292**	P	**Pn**	**16 57 55.2**	**+2.7**
PN7A	**Pavlof North-7**	**0.95**	**295**	P	**Pn**	**16 57 56.2**	**+2.1**
DTNA	**Dutton South F**	**1.02**	**277**	*e*Pn	**Pn**	**16 57 57.3**	**+2.3**
DRIA	**Deer Island**	**1.02**	**267**	P	**Pn**	**16 57 56.6**	**+1.6**
DT1	**Dutton Round H**	**1.03**	**274**	*e*Pn	**Pn**	**16 57 57.3**	**+2.1**
VNWF	**Veniaminof 8**	**1.23**	**25**	P	**Pn**	**16 58 01.0**	**+3.0**
BALA	**Baldy Mountain**	**1.33**	**278**	*e*Pn	**Pn**	**16 58 02.9**	**+3.7**
VNHG	**Veniaminof 1**	**1.40**	**32**	P	**Pn**	**16 58 03.2**	**+2.9**
VNNF	**Veniaminof 3**	**1.41**	**28**	P	**Pn**	**16 58 03.5**	**+3.1**
FALS	**False Pass**	**1.70**	**265**	*e*Pn	**Pn**	**16 58 06.9**	**+2.7**
FALS				*e*Sn	**Sn**	**16 58 29.4**	**+4.8**
CHGN	**Chignik**	**1.73**	**42**	*e*Pn	**Pn**	**16 58 06.3**	**+1.7**
SSLN	**Shishaldin Nor**	**2.04**	**265**	P	**Pn**	**16 58 12.3**	**+3.3**
SSLS	**Shishaldin Sou**	**2.05**	**262**	P	**Pn**	**16 58 12.3**	**+3.1**
SSLW	**Shishaldin Wes**	**2.11**	**264**	P	**Pn**	**16 58 13.0**	**+3.0**
ANPB	**Aniakchak Plen**	**2.16**	**34**	P	**Pn**	**16 58 12.7**	**+2.0**
AZAC	**Aniakchak**	**2.25**	**33**	P	**Pn**	**16 58 14.1**	**+2.1**
WESN	**West Dahl Nort**	**2.42**	**260**	*e*Pn	**Pn**	**16 58 17.4**	**+3.3**
WEBT	**Westdahl Beart**	**2.51**	**261**	P	**Pn**	**16 58 18.7**	**+3.4**
AKUT	**Akutan**	**3.20**	**256**	*e*Pn	**Pn**	**16 58 27.4**	**+2.5**
AKUT				*e*Sn	**Sn**	**16 59 10.3**	**+8.6**
AKGG	**Akutan Green G**	**3.31**	**257**	P	**Pn**	**16 58 28.9**	**+2.6**
AKGG				S	**Sn**	**16 59 08.6**	**+4.3**
AKRB	**Akutan Reef Bi**	**3.37**	**257**	P	**Pn**	**16 58 30.0**	**+2.8**
AKRB				S	**Sn**	**16 59 10.3**	**+4.3**
PLK1	**Peulik 1**	**3.51**	**36**	P	**Pn**	**16 58 31.5**	**+2.4**
PLK3	**Peulik 3**	**3.54**	**40**	P	**Pn**	**16 58 33.2**	**+3.6**
PLK5	**Peulik 5**	**3.58**	**33**	P	**Pn**	**16 58 33.1**	**+3.1**
MSW	**Makushin Switc**	**3.84**	**255**	P	**Pn**	**16 58 36.2**	**+2.5**
MGOD	**Makushin Gods**	**3.93**	**254**	*e*Pn	**Pn**	**16 58 37.2**	**+2.3**
MSOM	**Makushin Julie**	**3.96**	**255**	*e*P	**Pn**	**16 58 37.6**	**+2.3**
MSOM	**Makushin Julie**	**3.96**	**255**	*e*Pn	**Pn**	**16 58 37.6**	**+2.3**
KELA	**Mount Kelaz**	**4.30**	**36**	P	**Pn**	**16 58 42.2**	**+2.3**
KABU	**Katmai Buttres**	**4.33**	**39**	P	**Pn**	**16 58 43.1**	**+2.7**
KABU				S	**Sn**	**16 59 31.9**	**+2.3**
KABR	**Katmai Barrier**	**4.35**	**42**	P	**Pn**	**16 58 42.6**	**+1.9**
KVTA	**Katmai Vly 10**	**4.41**	**38**	P	**Pn**	**16 58 44.0**	**+2.6**
KAKN	**Katmai Knife C**	**4.43**	**40**	P	**Pn**	**16 58 44.7**	**+2.9**
KAKN				S	**Sn**	**16 59 37.2**	**+5.1**
OHAK	**Old Harbor**	**4.59**	**59**	*e*Pn	**Pn**	**16 58 43.7**	**-0.1**
OHAK				*e*Sn	**Sn**	**16 59 39.5**	**+3.7**
KAWH	**Katmai**	**4.59**	**41**	P	**Pn**	**16 58 46.0**	**+2.0**
KAHC	**Katmai Hardscr**	**4.71**	**38**	P	**Pn**	**16 58 48.0**	**+2.3**
OKER	**Okmok East Rim**	**4.71**	**253**	P	**Pn**	**16 58 48.9**	**+3.2**
OKTU	**Okmok Mt. Tuli**	**4.73**	**253**	P	**Pn**	**16 58 48.9**	**+3.0**
OKAK	**Okmok**	**4.83**	**256**	*e*Pn	**Pn**	**16 58 51.0**	**+3.8**
KDAK	**Kodiak Island**	**5.18**	**55**	P	Pn	16 59 07.2	+15
	52nm,0.3s,baz=247,slow=6.6,SNR=214						
KDAK				LR	LR	17 01 13.6	
	comp=Z,33μm,20.5s,baz=236,slow=41						
KDAK	**Kodiak Island**	**5.18**	**55**	*i* P	**Pn**	**16 58 51.7**	**-0.3**
KDAK	**Kodiak Island**	**5.18**	**55**	*e*Pn	**Pn**	**16 58 51.8**	**-0.3**
KDAK				*e*Sn	**Sn**	**16 59 52.6**	**+2.3**
FOSS	**Fourpeaked Sta**	**5.30**	**42**	*e*Pn	**Pn**	**16 58 56.4**	**+2.7**
MCNL	**McNeil River**	**5.34**	**36**	P	**Pn**	**16 58 56.6**	**+2.4**
NIKH	**Nikolski High**	**5.35**	**251**	*e*Pn	**Pn**	**16 58 50.9**	**-3.4**
NIKH				*e*Sn	**Sn**	**16 59 52.6**	**-2.0**
FOPK	**Fourpeaked Vol**	**5.35**	**43**	P	**Pn**	**16 58 56.2**	**+1.8**
CDD	**Cape Douglas**	**5.41**	**41**	P	**Pn**	**16 58 57.2**	**+2.1**
AUI	**Augustine Isla**	**5.77**	**39**	P	**Pn**	**16 59 03.3**	**+3.2**
AUSE	**Augustine SEas**	**5.78**	**39**	P	**Pn**	**16 59 03.2**	**+3.0**
AUL	**Augustine Lava**	**5.80**	**38**	P	**Pn**	**16 59 02.9**	**+2.4**
AUE	**Augustine Isla**	**5.80**	**39**	*e*Pn	**Pn**	**16 59 03.3**	**+2.7**
ILS	**Iliamna Low So**	**6.35**	**36**	P	**Pn**	**16 59 11.4**	**+3.3**
SVW2	**Sparrevohn**	**6.61**	**21**	*e*Pn	**Pn**	**16 59 14.8**	**+3.2**
HOM	**Homer**	**6.66**	**42**	*e*Pn	**Pn**	**16 59 13.6**	**+1.3**
RSO	**Redoubt South**	**6.83**	**34**	*e*Pn	**Pn**	**16 59 16.4**	**+1.6**
RDJH	**Redoubt Jeurge**	**6.91**	**33**	P	**Pn**	**16 59 19.1**	**+3.2**
CKL	**Chakachamna La**	**7.53**	**32**	P	**Pn**	**16 59 27.2**	**+2.9**
SPU	**Mount Spurr**	**7.60**	**33**	*e*Pn	**Pn**	**16 59 27.1**	**+1.9**
SLKM	**Skilak Lake**	**7.75**	**41**	*e*P	**Pn**	**16 59 29.5**	**+2.2**
SLKM	**Skilak Lake**	**7.75**	**41**	*e*Pn	**Pn**	**16 59 29.5**	**+2.2**
SEW	**Seward**	**7.80**	**45**	*e*Pn	**Pn**	**16 59 29.1**	**+1.2**
STLK	**Strandline Lak**	**7.92**	**32**	P	**Pn**	**16 59 32.2**	**+2.6**
FIB	**Fire Island**	**8.21**	**37**	*e*P	**Pn**	**16 59 35.8**	**+2.3**
FIB	**Fire Island**	**8.21**	**37**	*e*Pn	**Pn**	**16 59 35.8**	**+2.3**
TTA	**Tatalina**	**8.24**	**14**	*e*P	**Pn**	**16 59 34.7**	**+0.7**
TTA	**Tatalina**	**8.24**	**14**	*e*Pn	**Pn**	**16 59 34.7**	**+0.7**
RC01	**Rabbit Creek A**	**8.32**	**39**	*e*Pn	**Pn**	**16 59 35.6**	**+0.6**
KOFP	**Korovin Flat P**	**8.54**	**257**	P	**Pn**	**16 59 39.9**	**+1.8**
MID	**Middleton Isla**	**8.84**	**54**	*e*P	**Pn**	**16 59 42.4**	**+0.3**
MID	**Middleton Isla**	**8.84**	**54**	*e*Pn	**Pn**	**16 59 42.4**	**+0.3**
PMR	**Palmer**	**8.87**	**38**	*e*P	**Pn**	**16 59 42.4**	**-0.2**
PMR	**Palmer**	**8.87**	**38**	*e*Pn	**Pn**	**16 59 42.4**	**-0.2**
PPLA	**Purkeypile**	**8.96**	**25**	*e*Pn	**Pn**	**16 59 40.1**	**-3.9**
PPLA				*e*Pn	Pn	16 59 46.6	+2.7
SML	**Sawmill**	**9.30**	**38**	*e*P	**Pn**	**16 59 46.8**	**-1.7**
SML	**Sawmill**	**9.30**	**38**	*e*Pn	**Pn**	**16 59 46.8**	**-1.7**
CAST	**Castle Rocks**	**9.44**	**24**	*e*Pn	**Pn**	**16 59 52.6**	**+2.3**
EYAK	**Cordova Ski Ar**	**9.60**	**49**	*e*Pn	**Pn**	**16 59 52.0**	**-0.6**
SCM	**Sheep Creek Mo**	**9.68**	**40**	*e*P	**Pn**	**16 59 53.8**	**+0.1**
SCM	**Sheep Creek Mo**	**9.68**	**40**	*e*Pn	**Pn**	**16 59 53.8**	**+0.1**
KTH	**Kantishna Hill**	**9.83**	**26**	*e*Pn	**Pn**	**16 59 57.5**	**+1.8**
DIV	**Divide**	**9.88**	**46**	*e*Pn	**Pn**	**16 59 56.5**	**0.0**
TRF	**Thorofare Moun**	**9.91**	**28**	*e*Pn	**Pn**	**16 59 57.9**	**+0.9**
RAGM	**Ragged Mountai**	**10.00**	**51**	*e*Pn	**Pn**	**16 59 58.2**	**+0.1**
KLU	**Klutina**	**10.02**	**44**	*e*Pn	**Pn**	**16 59 58.3**	**-0.1**
BPAW	**Bear Paw Mtn.**	**10.27**	**24**	*e*Pn	**Pn**	**17 00 03.7**	**+2.0**
RND	**Reindeer**	**10.27**	**31**	*e*P	**Pn**	**17 00 01.1**	**-0.8**
RND	**Reindeer**	**10.27**	**31**	*e*Pn	**Pn**	**17 00 01.1**	**-0.8**
GAMB	**Gambell**	**10.44**	**332**	*e*Pn	**Pn**	**17 00 06.2**	**+2.3**
MCK	**McKinley**	**10.50**	**29**	*e*P	**Pn**	**17 00 05.8**	**+0.9**
MCK	**McKinley**	**10.50**	**29**	*e*Pn	**Pn**	**17 00 05.8**	**+0.9**
BWN	**Browne**	**10.71**	**27**	*e*Pn	**Pn**	**17 00 09.4**	**+1.8**
CRQM	**Cirque**	**10.85**	**51**	*e*Pn	**Pn**	**17 00 10.1**	**+0.4**
PAX	**Paxson**	**11.07**	**38**	*e*P	**Pn**	**17 00 12.3**	**-0.5**
PAX	**Paxson**	**11.07**	**38**	*e*Pn	**Pn**	**17 00 12.3**	**-0.5**
MLY	**Manley**	**11.13**	**22**	*e*Pn	**Pn**	**17 00 13.9**	**+0.4**
TNA	**Tin City**	**11.17**	**344**	*e*Pn	**Pn**	**17 00 16.7**	**+2.8**
WRH	**Wood River Hil**	**11.31**	**28**	*e*Pn	**Pn**	**17 00 14.4**	**-1.5**
BALM	**Baldy**	**11.32**	**51**	*e*P	**Pn**	**17 00 16.5**	**+0.4**
BALM	**Baldy**	**11.32**	**51**	*e*Pn	**Pn**	**17 00 16.5**	**+0.4**
CCB	**Clear Creek Bu**	**11.53**	**28**	*e*Pn	**Pn**	**17 00 16.8**	**-2.1**
HDA	**Harding Lake**	**11.59**	**30**	*e*Pn	**Pn**	**17 00 17.9**	**-1.8**
MDM	**Murphy Dome**	**11.66**	**27**	*e*Pn	**Pn**	**17 00 19.4**	**-1.4**
COLA	**College**	**11.69**	**27**	*de*P	**Pn**	**17 00 20.0**	**-1.1**
COLA				pmax	pmax		
	comp=Z,72nm,1.2s						
COLA	**College**	**11.69**	**27**	*e*Pn	**Pn**	**17 00 19.2**	**-1.8**
MENT	**Mentasta**	**11.69**	**41**	*e*Pn	**Pn**	**17 00 20.1**	**-1.0**
ILAR	**Eielson Array**	**11.88**	**29**	P	**Pn**	**17 00 21.7**	**-1.9**
	comp=Z,3.5nm,0.3s,baz=227,slow=13,SNR=77						
ILAR				LR	LR	17 05 21.8	
	comp=Z,28μm,20.0s,baz=246,slow=39						
ILB	**Eielson Array**	**11.88**	**29**	*e*Pn	**Pn**	**17 00 21.7**	**-1.9**
IL1	**Eielson Array**	**11.88**	**29**	*e*Pn	**Pn**	**17 00 21.7**	**-1.9**
DOT	**Dot Lake**	**11.99**	**37**	*e*Pn	**Pn**	**17 00 25.4**	**+0.1**
COLD	**Coldfoot**	**13.17**	**18**	*e*Pn	**Pn**	**17 00 42.2**	**+0.9**
EGAK	**Eagle**	**13.69**	**37**	*e*Pn	**Pn**	**17 00 47.4**	**-1.0**
FYU	**Fort Yukon**	**13.69**	**26**	*e*Pn	**Pn**	**17 00 46.0**	**-2.3**
DAWY	**Dawson**	**13.94**	**41**	*e*Pn	**Pn**	**17 00 51.6**	**-0.1**
SKAG	**Skagway**	**14.28**	**62**	*e*Pn	**Pn**	**17 00 57.4**	**+1.1**
SMY	**Shemya**	**15.13**	**272**	*e*P	**Pn**	**17 01 08.7**	**+1.0**
SMY				pmax	pmax		
	comp=Z,1μm,1.3s						
SMY	**Shemya**	**15.13**	**272**	*e*Pn	**Pn**	**17 01 08.2**	**+0.5**
	comp=Z,1μm,1.3s						
CRAG	**Craig**	**15.57**	**77**	*e*Pn	**Pn**	**17 01 14.2**	**+0.8**
	comp=Z,608nm,1.7s						
WRAK	**Wrangell Islan**	**15.87**	**73**	*e*Pn	**P**	**17 01 19.1**	**-1.2**
	comp=Z,238nm,0.9s						
DLBC	**Dease Lake**	**16.97**	**66**	P	**P**	**17 01 33.3**	**+0.7**
	comp=Z,1.3nm,0.3s,baz=271,slow=12,SNR=105						
DLBC	**Dease Lake**	**16.97**	**66**	*e*Pn	**P**	**17 01 32.9**	**+0.2**
	comp=Z,608nm,1.4s						
INK	**Inuvik**	**18.22**	**33**	P	**P**	**17 01 43.8**	**-2.5**
	comp=Z,9.2nm,0.3s,baz=229,slow=12,SNR=153						
INK	**Inuvik**	**18.22**	**33**	*e*P	**P**	**17 01 44.1**	**-2.1**
INK				pmax	pmax		
	comp=Z,690nm,1.2s						
INK	**Inuvik**	**18.22**	**33**	*e*P	**P**	**17 01 44.5**	**-1.7**
	comp=Z,686nm,1.3s						
BBB	**Bella Bella**	**19.32

SKR e 17 03 47.0
SKR eS S 17 07 35.0 -1.7
SKR pmax pmax
comp=Z,390nm,0.9s
SKR pmax pmax
comp=E,80μm,0.5s
SKR MLR MLR
comp=N,4μm,16.0s
SKR MLR MLR
comp=E,5μm,16.0s
SKR MLR MLR
comp=Z,5μm,16.0s
I03D Drain, OR 26.40 100 P P 17 03 09.6 +0.3
baz=309,SNR=8.4
H04A Detroit Lake 26.46 97 eP P 17 03 11.9 +2.0
comp=Z,687nm,1.4s
H04A eScP ScP 17 10 08.5 -1.4
G05D Wamic, OR 26.62 95 P P 17 03 11.5 +0.2
baz=306,SNR=13
E07A Sunnyside 26.71 91 eP P 17 03 11.5 -0.7
comp=Z,864nm,1.9s
I04A Tendick Farm, 26.87 99 P P 17 03 15.1 +1.5
baz=308,SNR=19
I04A S S 17 07 49.8 +2.8
baz=308
C09A Chrisman Ranch 26.96 88 eP P 17 03 16.1 +1.8
comp=Z,123nm,1.0s
D08A Wollman Farm, 26.98 90 eP P 17 03 15.8 +1.3
comp=Z,809nm,1.9s
HAWA Hanford 26.99 92 eP P 17 03 17.2 +2.6
comp=Z,1μm,1.8s
HAWA LR LR
comp=Z,10μm,19.0s
G06A Carlson Farm, 27.02 95 eP P 17 03 17.8 +2.9
comp=Z,374nm,2.0s
I05D Terrebonne, OR 27.15 97 P P 17 03 17.2 +1.1
baz=307
L02D Cave Junction, 27.24 103 P P 17 03 18.5 +1.6
baz=311,SNR=8.7
HUMO Hull Mountain 27.31 101 eP P 17 03 19.7 +2.2
comp=Z,442nm,1.9s
HUMO eScP ScP 17 10 12.0 -0.5
NEW Newport 27.38 86 P P 17 03 19.6 +1.5
baz=301,SNR=14
NEW Newport 27.38 86 eP P 17 03 20.1 +2.0
NEW pmax pmax
comp=Z,210nm,1.4s
NEW Newport 27.38 86 eP P 17 03 20.1 +2.0
comp=Z,209nm,1.4s
NEW LR LR
comp=Z,8μm,20.0s
E09A Wood Farm, Sta 27.72 90 eP P 17 03 23.0 +1.8
comp=Z,543nm,1.7s
J05D Fort Rock, OR 27.86 99 P P 17 03 23.1 +0.6
baz=309,SNR=12
K04D Chiloquin, OR 27.98 100 P P 17 03 24.6 +1.0
baz=310,SNR=8.3
YBH Yreka Blue Hor 28.02 103 P P 17 03 26.2 +2.3
comp=Z,14nm,0.9s,baz=301,slow=6.5,SNR=14
YBH pP pP 17 03 37.1 +1.5
comp=Z,54nm,0.9s,baz=326,slow=5.2,SNR=25
YBH Yreka Blue Hor 28.02 103 eP P 17 03 26.6 +2.7
YBH epP pP 17 03 37.0 +1.5
YBH eScP ScP 17 10 13.8 -1.0
KHMM Horse Mountain 28.02 105 eP P 17 03 26.6 +2.5
comp=Z,178nm,1.0s
KHMM eScP ScP 17 10 13.9 -1.0
M02C Callahan 28.16 103 P P 17 03 26.4 +1.1
baz=312,SNR=11
K05A Summer Lake 28.40 99 eP P 17 03 29.6 +2.1
comp=Z,930nm,1.9s
K05A eScP ScP 17 10 15.3 -0.8
M04C Macdoel 28.48 102 P P 17 03 29.1 +1.0
baz=311,SNR=6.3
KMRM Mail Ridge 28.48 106 eP P 17 03 30.8 +2.7
comp=Z,151nm,1.0s
N02D Trinity Center 28.53 104 P P 17 03 29.4 +0.9
baz=312,SNR=9.7
F10A Beach Ranch, E 28.55 90 eP P 17 03 30.6 +2.0
comp=Z,352nm,1.8s
WALA Waterton Lakes 28.82 82 eP P 17 03 32.1 +1.1
comp=Z,214nm,1.4s
WDC Whiskeytown Da 28.89 104 eP P 17 03 33.4 +1.9
WDC pmax pmax
comp=Z,72nm,1.0s
WDC Whiskeytown Da 28.89 104 eP P 17 03 33.4 +1.9
comp=Z,72nm,1.0s
BMO Blue Mountains 29.16 92 PFAKE 17 03 50.0 +16
BMO LR LR
comp=Z,13μm,21.0s
MOD Modoc Plateau 29.27 100 eP P 17 03 37.1 +2.0
comp=Z,408nm,1.7s
MOD eScP ScP 17 10 17.1 -1.7
O03D Paynes Creek 29.49 104 P P 17 03 38.4 +1.4
baz=313,SNR=13
WVOR Wild Horse Val 29.87 97 eP P 17 03 42.1 +1.6
WVOR pmax pmax
comp=Z,363nm,1.5s
WVOR MLR MLR
comp=Z,10μm,20.0s
WVOR Wild Horse Val 29.87 97 eP P 17 03 42.0 +1.6
comp=Z,363nm,1.5s
WVOR LR LR
comp=Z,10μm,20.0s
MSO Missoula 29.97 86 P P 17 03 41.9 +0.6
baz=303,SNR=9.0
MSO Missoula 29.97 86 eP P 17 03 42.9 +1.6
comp=Z,72nm,1.2s
ORV Oroville 30.17 105 eP P 17 03 43.9 +0.9
ORV e 17 10 19.2
ORV pmax pmax
comp=Z,53nm,0.9s
ORV Oroville 30.17 105 eP P 17 03 43.9 +0.9
comp=Z,53nm,0.9s
ORV eScP ScP 17 10 19.1 -2.4
MFID Camas Ranch 30.87 93 eP P 17 03 50.8 +1.5
comp=Z,394nm,1.8s
MFID eScP ScP 17 10 23.6 -0.3
AFDM Forest Hills D 30.89 105 eP P 17 03 50.8 +1.5
comp=Z,238nm,1.6s
AFDM eScP ScP 17 10 22.1 -1.8
DLMT Dillon 31.57 88 eP P 17 03 56.8 +1.4
DLMT epP pP 17 04 07.3 +0.2
HLID Hailey 31.59 92 P P 17 03 56.6 +0.9
baz=308,SNR=22
HLID Hailey 31.59 92 eP P 17 03 57.8 +2.1
comp=Z,436nm,1.9s
HLID LR LR
comp=Z,13μm,20.0s
RES Resolute Bay 31.62 27 eP P 17 03 55.0 -0.3
RES pmax pmax
comp=Z,290nm,1.7s
RES Resolute Bay 31.62 27 eP P 17 03 55.0 -0.3
comp=Z,294nm,1.8s
EGMT Eagleton 31.72 81 P P 17 03 57.1 +0.5
baz=302,SNR=23
EGMT Eagleton 31.72 81 eP P 17 03 57.5 +0.9
comp=Z,209nm,1.2s
EGMT LR LR
comp=Z,9μm,20.0s
CMB Columbia Colle 31.86 105 eP P 17 03 59.7 +1.8
CMB pmax pmax
comp=Z,86nm,1.1s
CMB Columbia Colle 31.86 105 eP P 17 03 59.6 +1.8
comp=Z,86nm,1.1s
CMB epP pP 17 04 09.9 +0.4
BOZ Bozeman (W) 31.96 86 P P 17 03 59.1 +0.3
baz=305,SNR=8.1
BOZ Bozeman (W) 31.96 86 PFAKE 17 04 10.0 +11
BOZ LR LR
comp=Z,4μm,20.0s
WAKR Walker 32.05 104 eP P 17 04 01.6 +1.9
WAKR epP pP 17 04 12.7 +1.2
SAO San Andreas Ge 32.19 108 eP P 17 04 00.1 -0.6
SAO pmax pmax
comp=Z,68nm,1.1s
SAO San Andreas Ge 32.19 108 eP P 17 04 00.1 -0.6
comp=Z,68nm,1.1s
SAO epP pP 17 04 12.2 -0.2
NV01 Mina Array Sit 32.74 103 eP P 17 04 07.6 +1.8
NV01 ePcP PcP 17 06 50.8 +0.4
NV01 eScP ScP 17 10 29.4 -1.1
NVAR Mina Array Bea 32.74 103 P P 17 04 07.9 +2.1
comp=Z,6.7nm,0.8s,baz=298,slow=8.7,SNR=41
NVAR pP pP 17 04 18.2 +0.7
comp=Z,66nm,0.7s,baz=310,slow=9.1,SNR=79
NVAR PcP PcP 17 06 51.2 +0.9
comp=Z,24nm,0.9s,baz=278,slow=2.4,SNR=6.4
NVAR ScP ScP 17 10 30.8 +0.3
comp=Z,12nm,1.1s,baz=281,slow=3.2,SNR=9.0
NVAR LR LR 17 15 01.5
comp=Z,11μm,21.3s,baz=318,slow=32
NVAR P3KPbc 17 35 27.0
comp=Z,2.2nm,1.0s,baz=143,slow=4.7,SNR=8.7
NV11 Mina Array Sit 32.82 103 eP P 17 04 07.9 +1.5
comp=Z,406nm,1.8s
NV11 epP pP 17 04 18.4 +0.3
NV11 eScP ScP 17 10 29.6 -1.0
YMC Maple Creek 32.84 87 eP P 17 04 08.3 +1.7
YHH Holmes Hill 32.91 87 eP P 17 04 08.8 +1.5
ELK Elko 32.91 97 eP P 17 04 09.5 +2.2
ELK pmax pmax
comp=Z,170nm,1.3s
ELK Elko 32.91 97 eP P 17 04 09.1 +1.8
comp=Z,170nm,1.3s
ELK epP pP 17 04 19.5 +0.5
YMR Madison River 32.91 87 eP P 17 04 08.8 +1.6
comp=Z,329nm,1.4s
YMR epP pP 17 04 19.5 +0.5
MLAC Mammoth, Mammo 33.01 104 P P 17 04 09.8 +1.6
baz=316
YFT Old Faithful 33.12 88 eP P 17 04 11.3 +2.2
comp=Z,105nm,1.1s
TIXI Tiksi 33.27 327 P P 17 04 09.5 -0.3
comp=Z,58nm,1.0s,baz=91,slow=9.3,SNR=73
TIXI PcP PcP 17 06 51.4 +0.5
comp=Z,31nm,0.6s,baz=45,slow=1.3,SNR=11
TIXI ScP ScP 17 10 32.1 +0.7
comp=Z,8.7nm,0.6s,baz=100,slow=4.0,SNR=9.0
TIXI LR LR 17 20 14.1
comp=Z,7μm,18.1s,baz=98,slow=41
TIXI Tiksi 33.27 327 ceP P 17 04 09.1 -0.7
TIXI MLR MLR
comp=Z,9μm,24.0s
TIXI Tiksi 33.27 327 eP P 17 04 09.1 -0.7
comp=Z,130nm,1.0s
TIXI eScP ScP 17 10 31.4 0.0
H17A Grant Village 33.30 88 P P 17 04 12.2 +1.5
baz=307,SNR=12
H17A Grant Village 33.30 88 eP P 17 04 13.7 +3.0
comp=Z,243nm,1.4s
LKWY Lake 33.30 87 eP P 17 04 13.4 +2.7
LKWY pmax pmax
comp=Z,72nm,0.9s
LKWY MLR MLR
comp=Z,4μm,20.0s
LKWY Lake 33.30 87 eP P 17 04 13.4 +2.7
comp=Z,72nm,0.9s
LKWY LR LR
comp=Z,4μm,20.0s
IMW Indian Meadow 33.39 89 eP P 17 04 13.0 +1.5
comp=Z,101nm,1.2s
FLWY Flagg Ranch 33.41 88 eP P 17 04 13.4 +1.7
comp=Z,378nm,1.6s
FXWY Fox Creek 33.50 89 eP P 17 04 14.1 +1.7
comp=Z,157nm,1.9s
MOOW Moose Ponds 33.59 89 eP P 17 04 14.7 +1.5
comp=Z,173nm,1.9s
KIP Kipapa 33.62 176 eP P 17 04 15.3 +2.0
KIP pmax pmax
comp=Z,2μm,2.5s
KIP Kipapa 33.62 176 PFAKE 17 04 30.0 +17
KIP LR LR
comp=Z,19μm,20.0s
RLMT Red Lodge 33.62 85 P P 17 04 13.9 +0.5
baz=306,SNR=73
RLMT Red Lodge 33.62 85 PFAKE 17 04 30.0 +17
RLMT LR LR
comp=Z,5μm,22.0s
HVU Hansel Valley 33.65 93 eP P 17 04 15.5 +1.9
HVU pmax pmax
comp=Z,587nm,1.9s
HVU Hansel Valley 33.65 93 eP P 17 04 15.5 +1.9
comp=Z,587nm,1.9s
NKL Nikolayevsk 33.67 292 iP P 17 04 13.5 0.0
NKL e 17 05 36.0
NKL e 17 06 52.8
NKL e 17 09 33.0
NKL pmax pmax
comp=N,55nm,1.0s
NKL pmax pmax
comp=E,90nm,1.0s
NKL pmax pmax
comp=Z,320nm,1.0s
NKL pmax pmax
comp=N,400nm,4.0s
NKL pmax pmax
comp=E,600nm,4.0s
NKL pmax pmax
comp=Z,2μm,4.0s
NKL MLR MLR
comp=N,2μm,19.0s
NKL MLR MLR
comp=E,4μm,19.0s
NKL MLR MLR
comp=Z,7μm,17.0s
TYV Tymovskoe 33.69 287 eP P 17 04 14.8 +1.1
TYV pmax pmax
comp=E,370nm,1.0s
TYV pmax pmax
comp=Z,717nm,1.0s
TYV MLR MLR
comp=Z,2μm,20.0s
RCTC Rector, Farmer 33.73 106 P P 17 04 14.7 +0.5
baz=317,SNR=6.3
LOHW Long Hollow 33.76 89 eP P 17 04 15.8 +1.2
comp=Z,208nm,1.9s
TIN Tinemaha, Big 33.76 104 P P 17 04 15.9 +1.4
baz=316,SNR=5.9
REDW Red Top Meadow 33.77 89 eP P 17 04 16.7 +2.0
comp=Z,257nm,1.8s
KUR Kuril'sk 33.79 275 eP P 17 04 12.6 -2.0
KUR eS S 17 09 38.1 +2.9
KUR eSSS SSS 17 12 04.8
KUR pmax pmax
comp=N,22nm,1.4s
KUR pmax pmax
comp=E,39nm,1.4s
KUR pmax pmax
comp=Z,97nm,1.4s
KUR pmax pmax
comp=Z,436nm,6.4s
KUR MLR MLR
comp=N,604nm,15.0s
KUR MLR MLR
comp=E,1μm,15.0s
KUR MLR MLR
comp=Z,2μm,15.0s
AHID Auburn Hatcher 33.99 90 eP P 17 04 18.1 +1.5
comp=Z,71nm,1.1s
AHID LR LR
comp=Z,7μm,19.0s
SMMC Simmler 34.05 108 P P 17 04 18.5 +1.5
baz=318,SNR=6.9
BGU Big Grassy Mou 34.06 94 eP P 17 04 18.3 +1.1
comp=Z,206nm,1.4s
SPUT South Promonto 34.14 93 eP P 17 04 18.6 +0.7
comp=Z,326nm,1.8s
VES Vestal, Richgr 34.16 107 P P 17 04 18.8 +0.9
baz=317,SNR=9.0
GRAC Grapevine Rang 34.28 104 P P 17 04 19.9 +0.9
baz=316,SNR=12
R11A Troy Canyon, C 34.33 100 P P 17 04 20.9 +1.3
baz=314,SNR=53
R11A Troy Canyon, C 34.33 100 eP P 17 04 21.0 +1.4
comp=Z,157nm,1.3s
HWUT Hardware Ranch 34.46 92 eP P 17 04 22.1 +1.4
comp=Z,380nm,1.9s
HWUT eScP ScP 17 10 35.8 -0.6
HWUT LR LR
comp=Z,9μm,19.0s
LAO LASA Array 34.46 81 P P 17 04 21.0 +0.5
baz=304,SNR=13
LAO LASA Array 34.46 81 eP P 17 04 22.0 +1.5
comp=Z,235nm,1.3s
LAO LR LR
comp=Z,7μm,20.0s
PKM Mcpherson Peak 34.47 109 P P 17 04 22.2 +1.4
baz=319,SNR=8.7
ISA Isabella, Lake 34.63 106 P P 17 04 24.4 +2.3
baz=317,SNR=6.6
ISA Isabella, Lake 34.63 106 eP P 17 04 23.7 +1.6
ISA pmax pmax
comp=Z,176nm,1.4s
ISA Isabella, Lake 34.63 106 eP P 17 04 23.7 +1.6
comp=Z,176nm,1.4s
ISA epP pP 17 04 34.0 +0.2
DUG Dugway, Tooele 34.66 95 P P 17 04 24.1 +1.7
baz=312,SNR=41
DUG Dugway, Tooele 34.66 95 eP P 17 04 24.3 +1.9
DUG pmax pmax
comp=Z,550nm,1.7s
DUG Dugway, Tooele 34.66 95 eP P 17 04 24.3 +1.9
comp=Z,551nm,1.7s
DUG LR LR
comp=Z,5μm,22.0s
DAC Darwin (Calif) 34.67 105 eP P 17 04 24.4 +1.9
DAC pmax pmax
comp=Z,99nm,0.8s
DAC Darwin (Calif) 34.67 105 eP P 17 04 24.3 +1.7
comp=Z,99nm,0.8s
DAC epP pP 17 04 35.0 +0.8
ARVC Arvin 34.83 107 P P 17 04 25.8 +2.1
baz=318
SBC Santa Barbara 34.86 109 P P 17 04 26.7 +2.8
baz=319
TCUT Toone Canyon 34.86 93 eP P 17 04 26.1 +1.9
comp=Z,109nm,0.9s
TCUT epP pP 17 04 36.6 +0.7
BW06 Boulder Array 34.88 89 P P 17 04 25.6 +1.3
baz=309
BW06 Boulder Array 34.88 89 eP P 17 04 24.7 +0.4
BW06 epP pP 17 04 36.0 -0.1
BW06 LR LR
comp=Z,2μm,20.0s
PD31 Pinedale Array 34.88 89 eP P 17 04 24.6 +0.2
PDAR Pinedale Array 34.88 89 P P 17 04 25.4 +1.0
comp=Z,1.6nm,0.4s,baz=312,slow=4.6,SNR=17
PDAR LR LR 17 17 37.3
comp=Z,3μm,19.0s,baz=312,slow=34
PDAR P3KPbc 17 35 16.9
comp=Z,1.6nm,0.7s,baz=122,slow=5.4,SNR=13
MPMC Manual Prospec 34.89 105 P P 17 04 26.1 +1.6
baz=317,SNR=28
FURC Furnace Creek, 34.94 104 P P 17 04 26.5 +1.9
baz=316,SNR=11
TPNV Topopah Spring 34.94 103 P P 17 04 26.4 +1.6
baz=316,SNR=38
TPNV Topopah Spring 34.94 103 eP P 17 04 26.3 +1.5
TPNV pmax pmax
comp=Z,749nm,1.6s
TPNV Topopah Spring 34.94 103 eP P 17 04 26.3 +1.5
comp=Z,749nm,1.6s
TPNV epP pP 17 04 37.6 +1.0
A25A Svangstu Ranch 34.98 76 P P 17 04 25.8 +0.9
baz=302,SNR=12
FCC Fort Churchill 35.12 56 eP P 17 04 26.5 +0.6
FCC pmax pmax
comp=Z,387nm,1.3s
FCC Fort Churchill 35.12 56 eP P 17 04 26.5 +0.6
comp=Z,387nm,1.3s
FCC epP pP 17 04 37.5 -0.1
HPAH Hawaii Prepara 35.14 172 eP P 17 04 27.9 +1.4
comp=Z,314nm,0.8s
HPAH epP pP 17 04 38.7 +0.4
JLU Jordanelle 35.17 93 eP P 17 04 28.6 +1.6
comp=Z,406nm,1.9s
JLU epP pP 17 04 38.5 -0.2
PSUT Pine Spring 35.19 98 eP P 17 04 28.5 +1.5
comp=Z,188nm,1.3s
PSUT epP pP 17 04 39.2 +0.5
LRMC Laurel Mtn Rad 35.20 106 P P 17 04 28.2 +1.1
baz=317,SNR=14
SCZ2 Santa Cruz Isl 35.24 110 P P 17 04 29.0 +1.7
baz=319,SNR=7.0
NLU North Lily Min 35.24 95 eP P 17 04 28.8 +1.3
comp=Z,46nm,0.8s
NLU epP pP 17 04 39.9 +0.7
NLU eScP ScP 17 10 37.9 -1.4
OSI Osito Audit: C 35.27 108 P P 17 04 29.6 +2.0
baz=318
B25A Knox Farm, Ray 35.31 77 P P 17 04 28.7 +0.9
baz=303,SNR=9.3
POHA Pohakuloa 35.42 172 eP P 17 04 29.9 +0.8
comp=Z,269nm,0.9s
POHA LR LR
comp=Z,7μm,22.0s
YAK Yakutsk 35.44 310 P P 17 04 27.7 -1.0
comp=Z,170nm,0.5s,baz=235,slow=1.2,SNR=164
YAK PcP PcP 17 06 57.6 +0.4
comp=Z,93nm,0.6s,baz=274,slow=1.0,SNR=6.0
YAK LR LR 17 20 25.7
comp=Z,16μm,20.1s,baz=82,slow=39
YAK Yakutsk 35.44 310 ciP P 17 04 27.6 -1.0
YAK ePPP PPP 17 06 00.2
YAK e 17 06 57.4
YAK e*SS S 17 10 08.0 +7.8
YAK eSSS SSS 17 12 42.3
YAK pmax pmax
comp=Z,196nm,0.9s
YAK pmax pmax
comp=E,120nm,1.2s
YAK pmax pmax
comp=N,25nm,1.3s
YAK pmax pmax
comp=N,203nm,1.7s
YAK pmax pmax
comp=Z,191nm,1.3s
YAK pmax pmax
comp=E,220nm,1.6s
YAK smax smax
comp=E,295nm,2.2s
YAK smax smax
comp=N,169nm,1.4s
YAK MLR MLR
comp=Z,16μm,22.0s
YAK MLR MLR
comp=N,3μm,17.0s
YAK MLR MLR
comp=E,11μm,20.0s
YAK Yakutsk 35.44 310 eP P 17 04 27.4 -1.3
comp=E,422nm,0.9s
YAK ePcP PcP 17 06 57.2 -0.1
BLG Laguna Peak, P 35.46 109 P P 17 04 30.6 +1.5
baz=319,SNR=9.5
EDW2 Edwards Air Fo 35.47 107 P P 17 04 31.1 +1.9
baz=318,SNR=8.8
C25A Freed Ranch, W 35.56 78 P P 17 04 31.4 +1.4
baz=304,SNR=5.2
A26A Wade Farm, Ken 35.60 75 P P 17 04 31.2 +1.0
baz=303,SNR=21
MLOA Mauna Loa Obse 35.64 172 eP P 17 04 32.2 +0.9
YUK Yuzh-Kuril'sk 35.66 275 iP P 17 04 29.8 -0.9
SHOC Shoshone, Teco 35.68 104 P P 17 04 32.5 +1.4
baz=317,SNR=9.3
YSS Yuzh-Sakhalins 35.72 281 ciP P 17 04 31.9 +0.7
YSS e 17 05 51.4
YSS eS S 17 10 02.5 -2.2
YSS pmax pmax
comp=Z,2μm,4.0s
YSS pmax pmax
comp=Z,220nm,0.7s
YSS MLR MLR
comp=Z,2μm,19.0s
YSS MLR MLR
comp=N,1μm,15.0s
YSS MLR MLR
comp=E,3μm,15.0s
YSS Yuzh-Sakhalins 35.72 281 eP P 17 04 31.6 +0.4
comp=E,186nm,0.7s
YSS LR LR
comp=Z,2μm,22.0s
DECC Green Verdugo 35.75 108 P P 17 04 33.7 +2.0
baz=319
B26A Jensen Ranch, 35.77 76 P P 17 04 33.1 +1.4
baz=303
GSC Goldstone, Bar 35.82 105 P P 17 04 34.1 +1.8
baz=317,SNR=8.8
GSC Goldstone, Bar 35.82 105 eP P 17 04 33.7 +1.4
GSC pmax pmax
comp=Z,740nm,2.0s
GSC Goldstone, Bar 35.82 105 eP P 17 04 33.7 +1.4
comp=Z,740nm,2.0s
GSC eScP ScP 17 10 40.6 -0.7
D25A Fairfield 35.84 78 P P 17 04 34.2 +1.8
baz=304
SNCC San Nicolas Is 35.86 110 P P 17 04 34.5 +1.9
baz=320,SNR=6.0
SNCC San Nicolas Is 35.86 110 eP P 17 04 35.1 +2.5
comp=Z,283nm,1.3s
SHPR Sheep Range 35.87 102 eP P 17 04 34.6 +1.8

comp=Z,109nm,1.6s
WCU Willow Creek 35.90 96 *e*P **P 17 04 35.5 +2.3**
MWC Mount Wilson 35.92 108 *e*P **P 17 04 35.0 +1.6**
MWC pmax pmax
comp=Z,282nm,1.4s
MWC Mount Wilson 35.92 108 *e*P **P 17 04 35.0 +1.6**
comp=Z,282nm,1.4s
MWC *ep*P **pP 17 04 45.8 +0.8**
MWC *e*ScP **ScP 17 10 41.3 -0.5**
SGU Sterling 36.01 95 *e*P **P 17 04 36.8 +2.7**
A27A Ledoux Ranch, 36.01 74 P **P 17 04 34.7 +1.0**
baz=303
RRX Edison Barstow 36.02 106 P **P 17 04 35.7 +1.7**
baz=318
BFSC Mount Baldy Ra 36.13 107 P **P 17 04 36.8 +1.8**
baz=319,SNR=12
C26A Wahner Farm, P 36.15 77 P **P 17 04 35.3 +0.3**
baz=304,SNR=9.5
E25A Miller Ranch, 36.17 79 P **P 17 04 36.7 +1.5**
baz=305,SNR=5.9
FMP Fort Macarthur 36.18 108 P **P 17 04 37.6 +2.4**
baz=319
TMUT Trail Mountain 36.18 95 *e*P **P 17 04 37.6 +2.0**
comp=Z,394nm,1.6s
TMUT *ep*P **pP 17 04 48.0 +0.6**
TUQ Turquoise Moun 36.21 104 P **P 17 04 36.5 +0.8**
baz=317,SNR=31
B27A Peters Farms, 36.30 75 P **P 17 04 37.6 +1.4**
baz=304,SNR=6.3
P17A Butcher Ranch, 36.33 94 *e*P **P 17 04 38.1 +1.3**
comp=Z,500nm,2.0s
P17A *ep*P **pP 17 04 49.2 +0.7**
P17A *e*ScP **ScP 17 10 42.2 -1.0**
CIS Catalina Islan 36.35 109 P **P 17 04 38.2 +1.5**
baz=320,SNR=8.5
D26A Manning 36.41 78 P **P 17 04 38.0 +0.8**
baz=305,SNR=8.9
HEC Hector,Ludlow 36.42 105 P **P 17 04 39.1 +1.6**
baz=318,SNR=11
Q16A Castle Valley 36.46 95 *e*P **P 17 04 39.2 +1.3**
comp=Z,922nm,1.8s
Q16A *ep*P **pP 17 04 50.3 +0.7**
Q16A *e*ScP **ScP 17 10 43.3 -0.4**
F25A Bowman 36.47 80 P **P 17 04 39.0 +1.3**
baz=306,SNR=13
MTPU Mount Pierson 36.48 97 *e*P **P 17 04 40.3 +2.1**
comp=Z,345nm,1.7s
MTPU *ep*P **pP 17 04 50.7 +0.7**
P18A Preston Nutter 36.51 94 *e*P **P 17 04 40.1 +1.7**
comp=Z,178nm,1.2s
P18A *ep*P **pP 17 04 51.0 +0.8**
BBRC Big Bear Solar 36.52 106 P **P 17 04 40.4 +1.9**
baz=318
C27A Sayler Ranch, 36.55 76 P **P 17 04 39.3 +1.0**
baz=304,SNR=9.2
A28A Rude Farm, Bot 36.57 74 P **P 17 04 39.3 +0.7**
baz=303,SNR=22
LCMT Little Creek M 36.59 100 *e*P **P 17 04 40.7 +1.7**
comp=Z,707nm,2.0s
LCMT *ep*P **pP 17 04 51.5 +0.8**
LCMT *e*ScP **ScP 17 10 43.2 -0.9**
SCI2 San Clemente I 36.59 110 P **P 17 04 40.5 +1.6**
baz=320,SNR=5.9
K22A Casper 36.70 87 P **P 17 04 40.5 +0.6**
baz=309,SNR=6.6
K22A Casper 36.70 87 *e*P **P 17 04 40.1 +0.3**
comp=Z,142nm,1.1s
K22A *ep*P **pP 17 04 51.7 +0.1**
SRU San Rafael Swe 36.70 95 *e*P **P 17 04 41.8 +1.9**
SRU pmax pmax
comp=Z,178nm,0.7s
SRU San Rafael Swe 36.70 95 *e*P **P 17 04 41.8 +1.9**
comp=Z,178nm,0.7s
SRU *ep*P **pP 17 04 52.4 +0.7**
E26A Carlson Angus 36.71 79 P **P 17 04 40.2 +0.4**
baz=305,SNR=7.8
B28A Dugan Ranch, T 36.77 75 P **P 17 04 41.6 +1.4**
baz=304,SNR=38
PKCU Pink Cliffs 36.82 98 *e*P **P 17 04 42.6 +1.5**
comp=Z,67nm,0.8s
PKCU *ep*P **pP 17 04 53.9 +1.0**
KNB Kanab 36.83 99 *e*P **P 17 04 43.1 +2.1**
KNB pmax pmax
comp=Z,430nm,1.9s
KNB Kanab 36.83 99 *e*P **P 17 04 43.2 +2.2**
comp=Z,428nm,2.0s
GMRC Granite Mounta 36.83 105 P **P 17 04 42.5 +1.4**
baz=318,SNR=82
MURC Murrieta 36.86 107 P **P 17 04 42.6 +1.4**
baz=319,SNR=6.7
D27A Center 36.88 77 P **P 17 04 42.3 +1.1**
baz=305
MMU Miners Mountai 36.88 96 *e*P **P 17 04 43.8 +2.3**
G25A Newell 36.92 81 P **P 17 04 42.8 +1.2**
baz=307
LDFC Landfair 36.93 104 *e*P **P 17 04 43.0 +1.2**
comp=Z,382nm,1.4s
LDFC *ep*P **pP 17 04 54.0 +0.5**
F26A Lodgepole 36.96 80 P **P 17 04 42.9 +1.0**
baz=306,SNR=14
A29A Manning Farm, 37.14 73 P **P 17 04 44.3 +0.9**
baz=303,SNR=52
H25A Fruitdale 37.16 82 P **P 17 04 44.1 +0.5**
baz=307,SNR=19
C28A Hausauer Farms 37.17 76 P **P 17 04 44.5 +0.9**
baz=304,SNR=5.9
RSSD Black Hills 37.21 83 P **P 17 04 45.5 +1.2**
baz=308
RSSD Black Hills 37.21 83 *e*P **P 17 04 44.7 +0.4**
RSSD pmax pmax
comp=Z,241nm,1.4s
RSSD Black Hills 37.21 83 *e*P **P 17 04 44.7 +0.4**
comp=Z,241nm,1.4s
RSSD *ep*P **pP 17 04 56.1 +0.1**
BELC Belle Mtn. Jos 37.23 106 P **P 17 04 45.7 +1.3**
baz=318,SNR=13
E27A Carson 37.24 78 P **P 17 04 44.9 +0.6**
baz=306,SNR=5.1
PFO Pinyon Flats O 37.26 107 LR LR 17 17 20.1
comp=Z,7µm,20.9s,baz=334,slow=32
PFO Pinyon Flats O 37.26 107 P **P 17 04 46.5 +1.9**
baz=319,SNR=7.4
PFO Pinyon Flats O 37.26 107 *e*P **P 17 04 45.8 +1.1**
PFO pmax pmax
comp=Z,171nm,1.3s
PFO Pinyon Flats O 37.26 107 *e*P **P 17 04 45.8 +1.1**
comp=Z,171nm,1.3s
F27A Lemmon 37.31 79 P **P 17 04 45.7 +0.8**
baz=306,SNR=27
B29A Wagenman Farm, 37.32 74 P **P 17 04 46.0 +1.1**
baz=304,SNR=40
G26A Maurine 37.33 80 P **P 17 04 46.5 +1.4**
baz=307,SNR=43
O20A White River Ci 37.33 91 P **P 17 04 46.3 +1.1**
baz=312,SNR=15
O20A White River Ci 37.33 91 *e*P **P 17 04 46.5 +1.2**
comp=Z,217nm,1.0s
D28A Regan 37.36 77 P **P 17 04 46.6 +1.4**
baz=305,SNR=12
I25A Rochford 37.45 83 P **P 17 04 46.9 +0.7**
baz=308,SNR=10
109C Camp Elliot, M 37.45 108 P **P 17 04 47.8 +1.7**
baz=320,SNR=8.9
ASAJ Asahikawa 37.48 277 P **P 17 04 46.8 +0.6**
comp=Z,267nm,0.9s,baz=39,slow=3.1,SNR=212
ASAJ LR LR 17 22 04.9
comp=Z,3µm,18.9s,baz=70,slow=39
ASAJ Asahikawa 37.48 277 *e*P **P 17 04 45.7 -0.5**
comp=Z,375nm,1.0s
U15A North Rim 37.55 99 *e*P **P 17 04 48.8 +1.5**
comp=Z,89nm,1.1s
IRM Iron Mountain 37.58 105 P **P 17 04 49.1 +1.8**
baz=318,SNR=26
W13A Hualapai Mount 37.60 102 *e*P **P 17 04 48.9 +1.3**
comp=Z,494nm,1.8s
H26A Fairpoint 37.63 81 P **P 17 04 48.5 +0.8**
baz=307,SNR=7.7
A30A Hoffart Farm, 37.64 73 P **P 17 04 48.2 +0.7**
baz=304,SNR=33
E28A Huff 37.65 77 P **P 17 04 49.1 +1.4**
baz=306
G27A Dupree 37.66 80 P **P 17 04 48.8 +1.0**
baz=307,SNR=50
BC3 Big Chuckawall 37.78 106 P **P 17 04 50.3 +1.2**
baz=318,SNR=8.4
J25A Sunshine Ranch 37.80 84 P **P 17 04 50.3 +1.2**
baz=308

MONP2 Monument Peak 37.82 107 P **P 17 04 51.1 +1.5**
baz=319,SNR=12
BAR Barrett 37.84 108 *e*P **P 17 04 51.1 +1.6**
comp=Z,188nm,1.2s
B30A Myrvik Farm, E 37.90 73 P **P 17 04 50.9 +1.2**
baz=304,SNR=52
PV09 Paradox Valley 37.91 94 *e*P **P 17 04 51.5 +1.1**
I26A New Underwood 37.94 82 P **P 17 04 51.1 +0.8**
baz=308,SNR=7.3
D29A Pettibone, Tap 37.98 76 P **P 17 04 51.7 +1.2**
baz=305
F28A McLaughlin 38.02 78 P **P 17 04 51.8 +1.0**
baz=306,SNR=26
H27A Howes 38.02 81 P **P 17 04 52.1 +1.2**
baz=307
PDMCI Parker Dam,Lak 38.03 104 P **P 17 04 53.3 +2.3**
baz=318,SNR=8.0
PV10 Paradox Valley 38.05 94 *e*P **P 17 04 52.9 +1.5**
PV10 *e*ScP **ScP 17 10 49.2 -0.6**
SWSC Sam W. Stewart 38.12 107 P **P 17 04 53.0 +1.2**
baz=319,SNR=8.0
N23A Red Feather La 38.15 89 P **P 17 04 53.3 +1.0**
baz=311,SNR=7.9
N23A Red Feather La 38.15 89 *e*P **P 17 04 53.4 +1.0**
comp=Z,219nm,1.5s
PHWY Pilot Hill 38.17 88 *e*P **P 17 04 52.3 -0.2**
comp=Z,27nm,1.1s
PV05 Paradox Valley 38.22 95 *e*P **P 17 04 53.6 +0.8**
Y12C Blythe 38.23 105 P **P 17 04 54.9 +2.2**
baz=318
Y12C Blythe 38.23 105 *e*P **P 17 04 53.9 +1.2**
comp=Z,677nm,1.6s
C30A Mose, Pekin 38.24 75 P **P 17 04 53.1 +0.4**
baz=305,SNR=15
E29A Napoleon 38.24 77 P **P 17 04 53.9 +1.2**
baz=306,SNR=9.0
ULM Lac du Bonnet 38.24 70 P **P 17 04 53.3 +0.7**
comp=Z,91nm,0.9s,baz=302,slow=8.7,SNR=72
ULM S **S 17 10 41.6 -1.6**
comp=Z,29nm,1.3s,baz=78,slow=16,SNR=4.2
ULM LR LR 17 20 49.2
comp=Z,9µm,18.8s,baz=310,slow=36
ULM Lac du Bonnet 38.24 70 *e*P **P 17 04 53.1 +0.5**
comp=Z,214nm,1.0s
ULM S **S 17 10 41.6 -1.6**
A31A Linda, St. Vin 38.26 72 P **P 17 04 53.9 +1.2**
baz=304
J26A Sides Ranch, S 38.26 83 P **P 17 04 53.8 +0.8**
baz=309
B31A Greenbush Farm 38.29 73 P **P 17 04 54.1 +1.1**
baz=304
I27A Quinn 38.38 82 P **P 17 04 54.8 +0.9**
baz=308,SNR=13
G28A Parade 38.41 80 P **P 17 04 55.3 +1.1**
baz=307
D30A Buchanan 38.42 75 P **P 17 04 55.3 +1.1**
baz=306,SNR=30
ERM Erimo 38.47 274 *de*P **P 17 04 54.5 0.0**
ERM pmax pmax
comp=Z,457nm,1.2s
ERM MLR MLR
comp=Z,6µm,22.0s
ERM Erimo 38.47 274 *e*P **P 17 04 54.8 +0.2**
comp=Z,305nm,1.0s
ERM LR LR
comp=Z,3µm,21.0s
PV01 Paradox Valley 38.48 94 *e*P **P 17 04 56.2 +1.2**
F29A Eureka 38.57 78 P **P 17 04 56.0 +0.5**
baz=306,SNR=9.1
GLA Glamis 38.58 106 P **P 17 04 57.0 +1.3**
baz=319,SNR=8.1
GLA Glamis 38.58 106 *e*P **P 17 04 57.3 +1.6**
GLA pmax pmax
comp=Z,674nm,1.9s
GLA Glamis 38.58 106 *e*P **P 17 04 57.3 +1.6**
comp=Z,674nm,1.9s
H28A Mission Ridge 38.59 80 P **P 17 04 56.7 +1.0**
baz=308,SNR=8.9
C31A Landman Farms, 38.60 74 P **P 17 04 56.1 +0.4**
baz=305,SNR=48
A32A Rocking H Ranc 38.64 72 P **P 17 04 56.4 +0.4**
baz=304,SNR=18
E30A Jud 38.69 76 P **P 17 04 57.4 +1.0**
baz=306,SNR=7.8
SMCO Snowmass 38.69 91 *e*P **P 17 04 58.5 +1.5**
comp=Z,55nm,1.1s
WUAZ Wupatki 38.72 100 P **P 17 04 58.5 +1.6**
baz=316,SNR=57
WUAZ Wupatki 38.72 100 *e*P **P 17 04 58.3 +1.3**
comp=Z,712nm,1.9s
WUAZ *e*S **S 17 10 51.4 +0.5**
WUAZ LR LR
comp=Z,7µm,22.0s
JOHN Johnston Islan 38.86 194 PFAKE 17 05 10.0 +12
JOHN LR LR
comp=Z,632nm,19.0s
G29A Hoven 38.90 79 P **P 17 04 59.0 +0.8**
baz=307
J27A Elkhorn Farm, 38.91 83 P **P 17 04 59.3 +0.9**
baz=309
B32A Ashes, Strandq 38.91 72 P **P 17 04 58.8 +0.5**
baz=305,SNR=9.9
I28A Midland 38.92 81 P **P 17 04 59.4 +0.9**
baz=308,SNR=21
Y14A Wickenburg 38.94 103 *e*P **P 17 05 00.2 +1.5**
comp=Z,2µm,2.0s
Y14A *e*ScP **ScP 17 10 52.3 -0.7**
F30A Leola 39.02 77 P **P 17 04 59.6 +0.3**
baz=307
D31A Mcclaflin, Tow 39.03 75 P **P 17 04 59.5 +0.2**
baz=306,SNR=8.8
ISCO Idaho Springs 39.06 90 P **P 17 05 01.0 +1.0**
baz=312
ISCO Idaho Springs 39.06 90 *e*P **P 17 05 03.4 +3.4**
ISCO pmax pmax
comp=Z,110nm,1.7s
ISCO Idaho Springs 39.06 90 *e*P **P 17 05 03.4 +3.4**
ISCO LR LR
comp=Z,8µm,19.0s
H29A Onida 39.08 80 P **P 17 05 00.8 +1.0**
baz=308,SNR=13
HABR Khabarovsk 39.15 288 *c i*P **P 17 04 58.2 -2.0**
HABR *e* 17 06 28.1
HABR *e*PPP PPP 17 06 49.9
HABR *e* 17 07 08.0
HABR *e*S **S 17 10 55.7 -1.0**
HABR *e* 17 10 57.6
HABR *e*SS **SS 17 13 49.9 -0.4**
HABR *e* 17 14 20.8
HABR *e* 17 15 04.6
HABR pmax pmax
comp=N,61nm,0.9s
HABR pmax pmax
comp=E,178nm,0.9s
HABR pmax pmax
comp=Z,355nm,0.9s
HABR pmax pmax
comp=Z,810nm,1.1s
HABR MLR MLR
comp=N,2µm,18.0s
HABR MLR MLR
comp=E,4µm,18.0s
HABR MLR MLR
comp=Z,3µm,18.0s
MVCO Mesa Verde 39.16 95 P **P 17 05 01.6 +0.9**
baz=314,SNR=22
MVCO Mesa Verde 39.16 95 PFAKE 17 05 10.0 +9.2
MVCO LR LR
comp=Z,4µm,22.0s
E31A Nome 39.23 76 P **P 17 05 01.0 +0.1**
baz=306,SNR=12
A33A Warroad 39.23 71 P **P 17 05 01.4 +0.5**
baz=304,SNR=78
J28A Allard Ranch, 39.24 82 P **P 17 05 02.1 +0.9**
baz=309,SNR=7.8
C32A Crookston 39.25 73 P **P 17 05 01.3 +0.3**
baz=305,SNR=6.4
AGMN Agassiz Nation 39.34 72 P **P 17 05 02.3 +0.5**
baz=305,SNR=85
AGMN Agassiz Nation 39.34 72 *e*P **P 17 05 02.4 +0.5**
comp=Z,187nm,0.8s
AGMN LR LR
comp=Z,3µm,19.0s
D32A Dogwood Acres, 39.38 74 P **P 17 05 02.2 +0.1**
baz=306,SNR=5.6
G30A Faulkton 39.38 78 P **P 17 05 03.0 +0.8**
baz=307,SNR=28

113A Mohawk Valley, 39.38 105 *e*P **P 17 05 03.6 +1.2**
comp=Z,534nm,1.9s
I29A Vivian Onida 39.40 80 P **P 17 05 03.2 +0.8**
baz=308,SNR=9.2
F31A Hecla 39.44 77 P **P 17 05 03.2 +0.5**
baz=307,SNR=6.0
X16A Lo Mia Camp, P 39.47 101 *e*P **P 17 05 05.3 +2.0**
comp=Z,262nm,1.4s
B33A Robert and Kas 39.51 72 P **P 17 05 03.8 +0.6**
baz=305,SNR=20
E32A Braaten, Kindr 39.67 75 P **P 17 05 04.9 +0.3**
baz=306,SNR=9.9
C33A Trail 39.70 73 P **P 17 05 05.5 +0.6**
baz=306
S22A 4UR Ranch, Cre 39.75 93 P **P 17 05 07.1 +1.3**
baz=314,SNR=15
S22A 4UR Ranch, Cre 39.75 93 *e*P **P 17 05 06.8 +1.1**
comp=Z,398nm,1.9s
G31A Conde 39.85 78 P **P 17 05 06.6 +0.5**
baz=308
Q24A Divide 39.89 90 P **P 17 05 08.1 +1.2**
baz=313,SNR=5.5
Q24A Divide 39.89 90 *e*P **P 17 05 08.1 +1.2**
comp=Z,73nm,1.3s
B34A Aery, Baudette 39.90 71 P **P 17 05 06.9 +0.5**
baz=305,SNR=72
SUSD Miller 39.91 79 P **P 17 05 07.1 +0.5**
baz=308,SNR=19
CLNS Chul'man 39.91 304 *e*P **P 17 05 03.9 -2.6**
CLNS *e* 17 07 11.4
CLNS pmax pmax
comp=N,20nm,0.9s
CLNS pmax pmax
comp=Z,46nm,1.1s
CLNS pmax pmax
comp=E,37nm,0.9s
CLNS MLR MLR
comp=E,7µm,16.0s
CLNS MLR MLR
comp=Z,8µm,16.0s
CLNS MLR MLR
comp=N,3µm,13.0s
W18A Petrified Fore 39.93 98 P **P 17 05 08.8 +1.6**
baz=316
I30A Oacoma 39.97 80 P **P 17 05 08.0 +0.9**
baz=308
D33A AnnSam, Waubun 40.02 74 P **P 17 05 07.9 +0.4**
baz=306
F32A Veblen 40.06 76 P **P 17 05 08.2 +0.3**
baz=307
H31A Wolsey 40.15 79 P **P 17 05 09.4 +0.8**
baz=308
G32A Webster 40.23 77 P **P 17 05 10.1 +0.8**
baz=308
X18A Snowflake 40.23 99 *e*P **P 17 05 11.2 +1.6**
comp=N,485nm,1.6s
C34A RKJ Ranch, Bem 40.24 72 P **P 17 05 09.6 +0.3**
baz=306,SNR=7.5
J30A Dallas 40.30 81 P **P 17 05 10.8 +0.9**
baz=309,SNR=21
E33A Westby DABS, E 40.31 74 P **P 17 05 10.7 +0.8**
baz=307
OGNE Ogallala 40.37 85 P **P 17 05 11.5 +1.0**
baz=311,SNR=5.9
OGNE Ogallala 40.37 85 *e*P **P 17 05 12.3 +1.7**
OGNE LR LR
comp=Z,5µm,22.0s
I31A Royce, Wessing 40.40 79 P **P 17 05 11.7 +1.0**
baz=308
D34A Park Rapids 40.41 73 P **P 17 05 10.9 +0.1**
baz=306,SNR=16
B35A Bob, Littlefor 40.47 71 P **P 17 05 11.8 +0.6**
baz=306,SNR=70
KLR Kul'dur 40.51 291 P **P 17 05 11.0 -0.5**
comp=Z,107nm,0.9s,baz=59,slow=8.4,SNR=276
SDCO Great Sand Dun 40.51 92 P **P 17 05 13.5 +1.4**
baz=314,SNR=18
SDCO Great Sand Dun 40.51 92 PFAKE 17 05 20.0 +8.0
SDCO LR LR
comp=Z,6µm,20.0s
214A Organ Pipe Nat 40.52 105 P **P 17 05 13.7 +1.8**
baz=319,SNR=26
F33A 5 Mile Ranch, 40.55 76 P **P 17 05 12.1 +0.2**
baz=307,SNR=6.6
K30A Basset 40.64 82 P **P 17 05 14.1 +1.4**
baz=310,SNR=14
C35A Jirik Farms, M 40.72 72 P **P 17 05 13.5 +0.2**
baz=306,SNR=54
H32A Carlson Farm, 40.72 78 P **P 17 05 13.7 +0.3**
baz=308,SNR=13
J31A Geddes 40.74 80 P **P 17 05 14.4 +0.9**
baz=309,SNR=5.6
E34A Wadena 40.77 74 P **P 17 05 14.1 +0.4**
baz=307,SNR=16
G33A Ortonville 40.86 76 P **P 17 05 14.5 +0.1**
baz=308,SNR=27
H33A Prehn Over Nor 41.00 77 P **P 17 05 16.1 +0.4**
baz=308,SNR=38
I32A Karley and Nic 41.00 78 P **P 17 05 16.0 +0.4**
baz=309
D35A Remer 41.04 73 P **P 17 05 16.7 +0.7**
baz=307,SNR=74
F34A Alexandria 41.15 75 P **P 17 05 17.2 +0.4**
baz=308,SNR=14
K31A O'Neill 41.16 81 P **P 17 05 18.0 +1.0**
baz=310
E35A Pequot Lakes 41.16 73 P **P 17 05 17.8 +0.9**
baz=307,SNR=17
KULLO Kullorsuaq 41.19 23⇑ *i*P **P 17 05 17.3 +0.6**
comp=Z,111nm,0.9s
comp=Z,9µm,22.0s
KULLO Kullorsuaq 41.19 23⇑ *i*P **P 17 05 17.3 +0.6**
KULLO pmax pmax
comp=Z,110nm,0.9s
KULLO MLR MLR
comp=Z,9µm,22.0s
J32A Parkston 41.20 80 P **P 17 05 17.4 +0.1**
baz=309,SNR=8.8
G34A Benson 41.28 76 P **P 17 05 18.1 +0.2**
baz=308,SNR=7.8
C36A Pine Crest Far 41.31 71 P **P 17 05 18.6 +0.5**
baz=306,SNR=68
KSCO Kaye Shedlock' 41.31 88 P **P 17 05 20.1 +1.7**
baz=313
I33A Coleman 41.37 78 P **P 17 05 19.0 +0.3**
baz=309
TUC Tucson 41.39 102 P **P 17 05 21.7 +2.6**
baz=319
TUC Tucson 41.39 102 *e*P **P 17 05 20.3 +1.2**
TUC pmax pmax
comp=Z,147nm,1.3s
TUC MLR MLR
comp=Z,3µm,21.0s
TUC Tucson 41.39 102 *e*P **P 17 05 20.3 +1.2**
comp=Z,147nm,1.3s
TUC LR LR
comp=Z,3µm,21.0s
L31A Butterfield Fa 41.40 82 P **P 17 05 20.4 +1.4**
baz=310
D36A Goodland 41.47 72 P **P 17 05 19.9 +0.4**
baz=307,SNR=54
F35A Swanville 41.49 74 P **P 17 05 20.3 +0.6**
baz=308,SNR=48
H34A Spellman Lake, 41.55 77 P **P 17 05 20.5 +0.3**
baz=308,SNR=12
T25A Trinidad 41.56 92 P **P 17 05 21.9 +1.4**
baz=314,SNR=18
T25A Trinidad 41.56 92 *e*P **P 17 05 21.7 +1.2**
comp=Z,569nm,1.9s
K32A Verdigre 41.58 80 P **P 17 05 21.2 +0.8**
baz=310
ECSD EROS Data Cent 41.67 78 PFAKE 17 05 30.0 +8.9
ECSD LR LR
comp=Z,9µm,20.0s
C37A Embarrass 41.68 71 P **P 17 05 21.9 +0.8**
baz=307,SNR=75
J33A Davis 41.73 79 P **P 17 05 21.9 +0.2**
baz=309
E36A McGregor 41.82 73 P **P 17 05 23.1 +0.8**
baz=307,SNR=92
M31A Lambtecht Ranc 41.86 83 P **P 17 05 23.3 +0.6**
baz=311
D37A Cotton 41.89 71 P **P 17 05 23.2 +0.3**
baz=307,SNR=50
I34A Hadley 41.90 77 P **P 17 05 23.2 +0.2**
baz=309
EYMN Ely 41.92 70 *e*P **P 17 05 23.8 +0.7**
EYMN LR LR

comp=Z,6µm,19.0s
ANMO Albuquerque 41.93 96 P **P 17 05 24.7 +1.1**
comp=Z,9.3nm,1.1s,baz=322,slow=11,SNR=10
ANMO pP **pP 17 05 35.6 +0.1**
comp=Z,22nm,0.8s,baz=317,slow=10,SNR=19
ANMO LR LR 17 21 48.1
comp=Z,3µm,18.7s,baz=310,slow=35
ANMO Albuquerque 41.93 96 P **P 17 05 25.0 +1.4**
baz=316
ANMO Albuquerque 41.93 96 *e*P **P 17 05 24.5 +0.9**
ANMO *e* 17 07 19.0
ANMO pmax pmax
comp=Z,164nm,1.5s
ANMO Albuquerque 41.93 96 *e*P **P 17 05 24.5 +0.9**
comp=Z,164nm,1.5s
ANMO pP **pP 17 05 35.6 +0.1**
ANMO *e*PcP **PcP 17 07 18.9 +0.6**
ANMO *e*ScP **ScP 17 11 04.2 -0.6**
LAZ Ladron 41.93 97 *e*P **P 17 05 25.3 +1.7**
G35A Watkins 41.93 75 P **P 17 05 23.6 +0.4**
baz=308,SNR=27
L32A Elgin 41.98 81 P **P 17 05 24.5 +0.8**
baz=310,SNR=6.7
H35A Sunnyside Ranc 42.06 76 P **P 17 05 24.7 +0.4**
baz=309,SNR=42
F36A Milaca 42.07 74 P **P 17 05 24.5 +0.1**
baz=308,SNR=51
K33A Hardington 42.16 80 P **P 17 05 25.7 +0.5**
baz=310
C38A Sawbill Land. 42.18 70 P **P 17 05 25.6 +0.4**
baz=307,SNR=44
N31A Bailey Ranch, 42.21 83 P **P 17 05 26.8 +1.2**
baz=311
E37A Wrenshall 42.26 72 P **P 17 05 26.3 +0.4**
baz=308,SNR=17
LPM Los Pinos Moun 42.28 97 *e*P **P 17 05 27.9 +1.4**
LPM *e*PcP **PcP 17 07 20.2 +0.7**
BGNE Belgrade 42.28 82 P **P 17 05 27.1 +0.9**
baz=311
BGNE Belgrade 42.28 82 *e*P **P 17 05 26.9 +0.7**
comp=Z,875nm,1.4s
Y22D IRIS PASSCAL I 42.29 97 P **P 17 05 28.6 +2.1**
baz=317
L33A Hoskins 42.29 81 P **P 17 05 26.6 +0.4**
baz=310
J34A George 42.32 78 P **P 17 05 26.5 +0.1**
baz=310
G36A St. Michael 42.33 75 P **P 17 05 27.1 +0.6**
baz=308,SNR=19
BNM Barren Site 42.40 97 *e*P **P 17 05 29.1 +1.6**
BNM *e*ScP **ScP 17 11 05.1 -1.7**
O31A Woolen Ranch, 42.44 84 P **P 17 05 28.2 +0.7**
baz=312
I35A Creekview Farm 42.51 77 P **P 17 05 28.0 +0.1**
baz=309
K34A Le Mars 42.62 79 P **P 17 05 29.9 +1.0**
baz=310
N32A Stulken Farm, 42.62 83 P **P 17 05 29.7 +0.7**
baz=311
H36A Jesseenland, He 42.64 75 P **P 17 05 30.0 +1.0**
baz=309,SNR=46
J35A Milford 42.69 78 P **P 17 05 30.0 +0.6**
baz=310
M33A Taylor Creek F 42.72 81 P **P 17 05 30.3 +0.5**
baz=311,SNR=5.1
C39A Grand Marais 42.74 69 P **P 17 05 29.7 0.0**
baz=307,SNR=19
SPMN Marine on St. 42.86 74 P **P 17 05 31.5 +0.7**
baz=309,SNR=9.1
SPMN Marine on St. 42.86 74 *e*P **P 17 05 30.9 +0.1**
comp=Z,162nm,1.1s
121A Cookes Peak, D 42.92 99 P **P 17 05 33.7 +2.0**
baz=318,SNR=19
L34A Svendsen Farm, 42.93 80 P **P 17 05 31.7 +0.3**
baz=311,SNR=6.5
319A Douglas 42.94 102 *e*P **P 17 05 33.4 +1.7**
comp=Z,280nm,1.6s
I36A Fitzsimmons Fa 42.95 76 P **P 17 05 31.9 +0.4**
baz=309
O32A Brockman Farm, 42.97 83 P **P 17 05 32.6 +0.8**
baz=312
H11N2 WAKE ISLAND Hy 43.02 228 T T 17 51 04.6
baz=27,slow=76,SNR=129
H11N3 WAKE ISLAND Hy 43.02 228 T T 17 51 03.4
baz=27,slow=76,SNR=245
H11N1 WAKE ISLAND Hy 43.03 228 T T 17 50 47.5
baz=27,slow=76,SNR=481
K35A Storm Lake 43.09 78 P **P 17 05 33.0 +0.3**
baz=310
CBKS Cedar Bluff 43.10 86 P **P 17 05 34.0 +1.1**
baz=313,SNR=7.9
CBKS Cedar Bluff 43.10 86 PFAKE 17 05 50.0 +17
CBKS LR LR
comp=Z,3µm,20.0s
M34A Aspy Farms, Fr 43.12 81 P **P 17 05 33.4 +0.5**
baz=311,SNR=5.2
N33A J Bar K, Exete 43.12 82 P **P 17 05 33.8 +0.8**
baz=312
H37A Dierke Farm, C 43.20 75 P **P 17 05 34.2 +0.6**
baz=309,SNR=16
J36A Seneca 1, Swea 43.20 77 P **P 17 05 33.6 +0.1**
baz=310,SNR=7.4
P32A Huiting Farm, 43.21 84 P **P 17 05 33.9 +0.2**
baz=312,SNR=9.3
I37A Lemond, Waseca 43.29 76 P **P 17 05 34.8 +0.5**
baz=310,SNR=25
L35A Bielow Farm, R 43.31 79 P **P 17 05 34.3 -0.1**
baz=311
USRK Ussuriysk Ar. 43.41 285 P **P 17 05 34.2 -1.0**
comp=Z,23nm,0.8s,baz=61,slow=7.6,SNR=41
USRK PcP **PcP 17 07 24.0 +1.1**
comp=Z,9.2nm,0.4s,baz=38,slow=3.5,SNR=10
USRK ScP **ScP 17 11 09.8 -0.7**
comp=Z,8.0nm,1.1s,baz=38,slow=5.7,SNR=3.7
USRK LR LR 17 25 32.0
comp=Z,3µm,19.8s,baz=48,slow=39
O33A Hebron 43.49 83 P **P 17 05 36.0 +0.1**
baz=312,SNR=18
K36A Gilmore City 43.58 78 P **P 17 05 36.6 0.0**
baz=310,SNR=9.8
N34A Lincoln 43.60 81 P **P 17 05 37.1 +0.3**
baz=312,SNR=5.1
FRB Frobisher Bay 43.64 40 LR LR 17 25 11.6
comp=Z,2µm,21.8s,baz=72,slow=38
M35A Neola 43.64 80 P **P 17 05 37.8 +0.6**
baz=311
J37A Redenius Farm, 43.66 77 P **P 17 05 37.5 +0.3**
baz=310,SNR=41
Q32A Meitler Ranch, 43.66 85 P **P 17 05 38.2 +0.9**
baz=313,SNR=9.0
HSIG 43.80 106 *e*P **P 17 05 39.4 +0.9**
comp=Z,222nm,1.4s
L36A Harm Buss Farm 43.81 79 P **P 17 05 38.6 +0.1**
baz=311,SNR=6.5
P33A Williams Farm, 43.85 84 P **P 17 05 39.5 +0.6**
baz=312
I38A Scanlan Farm, 43.87 75 P **P 17 05 39.3 +0.4**
baz=310,SNR=30
O34A Beatrice 43.92 82 P **P 17 05 39.6 +0.2**
baz=312,SNR=12
R32A Long Quarter, 43.96 86 P **P 17 05 40.4 +0.6**
baz=313,SNR=7.0
K37A Belmond 43.96 77 P **P 17 05 39.6 -0.1**
baz=310,SNR=10
Q33A Connelly Farm, 44.07 84 P **P 17 05 41.1 +0.5**
baz=313,SNR=13
N35A Tabor 44.07 81 P **P 17 05 41.5 +0.9**
baz=312,SNR=7.5
M36A Felix, Anita 44.16 80 P **P 17 05 42.0 +0.7**
baz=311
VLA Vladivostok 44.16 284*c i*P **P 17 05 40.8 -0.4**
VLA pmax pmax
comp=Z,265nm,1.2s
VLA MLR MLR
comp=Z,1µm,20.0s
H11S1 WAKE ISLAND Hy 44.19 228 T T 17 52 05.6
baz=26,slow=76,SNR=201
H11S2 WAKE ISLAND Hy 44.20 228 T T 17 52 06.9
baz=26,slow=76,SNR=155
H11S3 WAKE ISLAND Hy 44.20 228 T T 17 52 17.2
baz=26,slow=76,SNR=177
J38A Wedel Dairy, R 44.25 76 P **P 17 05 42.4 +0.4**
baz=310,SNR=22
P34A Walnut Farm, R 44.27 83 P **P 17 05 42.3 +0.1**
baz=312,SNR=12
L37A Phoenix Point, 44.31 78 P **P 17 05 42.7 +0.2**
baz=311,SNR=28
O35A Humboldt 44.31 82 P **P 17 05 42.1 -0.4**
baz=312
S32A Newby Ranch, P 44.32 87 P **P 17 05 43.6 +0.9**
baz=314
COWI Conover 44.33 71 *e*P **P 17 05 42.9 +0.3**
comp=Z,64nm,0.6s
COWI LR LR
comp=Z,3µm,19.0s
BOD Bodaibo 44.36 310⇓*i*P **P 17 05 41.2 -1.5**
BOD pmax pmax
comp=Z,79nm,1.1s
SRIG Santa Rosalia 44.41 108 *e*P **P 17 05 44.9 +1.5**
comp=Z,266nm,1.6s
R33A Olander Ranch, 44.45 85 P **P 17 05 44.3 +0.6**
baz=313,SNR=7.5
MDJ Mudanjiang 44.48 287 P **P 17 05 43.3 -0.5**
MDJ pP pP 17 05 54.6 -1.2
MDJ sP sP 17 06 00.2 -0.6
MDJ pmax pmax
comp=Z,67nm,0.9s
MDJ pmax pmax
comp=Z,710nm,7.6s
MDJ LR LR
comp=Z,2µm,26.1s
MDJ LR LR
comp=Z,4µm,27.8s
MDJ LR LR
comp=Z,6µm,27.8s
MDJ Mudanjiang 44.48 287 *e*P **P 17 05 42.9 -0.9**
comp=Z,99nm,1.1s
MDJ LR LR
comp=Z,6µm,22.0s
N36A Muff Farm, Cla 44.49 80 P **P 17 05 44.6 +0.6**
baz=312,SNR=7.2
K38A Parkersburg 44.52 77 P **P 17 05 44.3 +0.2**
baz=311,SNR=8.4
M37A Trindle Farm, 44.61 79 P **P 17 05 45.8 +0.9**
baz=311,SNR=16
Q34A Chapman 44.63 84 P **P 17 05 45.3 +0.2**
baz=313,SNR=9.6
T32A Huddler Ranch, 44.69 87 P **P 17 05 45.9 +0.3**
baz=314,SNR=5.6
KSU1 Kansas State U 44.70 83 PFAKE 17 06 00.0 +14
KSU1 LR LR
comp=Z,4µm,20.0s
AMTX Amarillo 44.72 92 P **P 17 05 46.9 +1.0**
baz=316
MSTX Muleshoe 44.74 93 P **P 17 05 47.0 +0.8**
baz=316
MSTX Muleshoe 44.74 93 *e*P **P 17 05 46.6 +0.5**
comp=Z,278nm,1.7s
L38A Oak Wood Farm, 44.75 78 P **P 17 05 46.4 +0.4**
baz=311
P35A Duane Minner, 44.75 82 P **P 17 05 46.3 +0.3**
baz=313,SNR=23
SCIA State Center 44.76 78 *e*P **P 17 05 46.8 +0.7**
comp=Z,430nm,1.3s
SCIA LR LR
comp=Z,8µm,20.0s
CPRX Cap Rock 44.80 95 *e*P P 17 05 53.7 +7.1
R34A Isabella, Hill 44.88 85 P **P 17 05 47.5 +0.4**
baz=313,SNR=13
MNTX Cornudas Mount 44.91 98 P **P 17 05 48.5 +1.1**
baz=318,SNR=14
MSHR Mys Shultsa 44.92 284*c i*P **P 17 05 47.3 0.0**
S33A Kaszmaul Farm, 44.93 86 P **P 17 05 47.8 +0.3**
baz=314,SNR=7.9
O36A Bolckow 44.94 81 P **P 17 05 47.8 +0.3**
baz=312,SNR=5.1
N37A Lee Faris, Mou 44.95 80 P **P 17 05 48.2 +0.6**
baz=312,SNR=18
MJAR Matsushiro Arr 44.98 272 ScP **ScP 17 11 16.6 -0.4**
comp=Z,17nm,1.3s,baz=12,slow=3.0,SNR=5.9
MJAR LR LR 17 24 24.5
comp=Z,1µm,21.9s,baz=60,slow=36
MAJO Matsushiro 44.98 272 PFAKE 17 06 00.0 +12
MAJO LR LR
comp=Z,5µm,22.0s
M38A Pleasantville 45.09 78 P **P 17 05 48.8 +0.1**
baz=312,SNR=27
T33A Patterson Ranc 45.15 87 P **P 17 05 49.8 +0.6**
baz=314
P36A Good Intent, A 45.15 82 P **P 17 05 49.3 +0.1**
baz=313,SNR=16
Q35A Mercer Eighty, 45.19 83 P **P 17 05 49.8 +0.2**
baz=313
U32A Winter Ranch, 45.20 88 P **P 17 05 50.5 +0.8**
baz=315
S34A Willow Spring 45.37 85 P **P 17 05 51.0 0.0**
baz=314,SNR=8.5
O37A Wolven Farm, M 45.38 80 P **P 17 05 51.4 +0.4**
baz=312,SNR=24
Q36A Arnold C. Orve 45.45 83 P **P 17 05 51.7 +0.1**
baz=313
R35A Emporia Munici 45.46 84 P **P 17 05 51.9 +0.2**
baz=314
N38A Joes South For 45.48 79 P **P 17 05 51.9 +0.1**
baz=312,SNR=26
V32A Arapaho 45.64 89 P **P 17 05 54.1 +1.0**
baz=315
P37A Lathrop 45.66 81 P **P 17 05 53.3 0.0**
baz=313,SNR=15
U33A Lingo Farm, Me 45.67 87 P **P 17 05 53.5 +0.1**
baz=315,SNR=6.7
JFWS Jewell Farm 45.76 75 *e*P **P 17 05 53.7 -0.2**
JFWS pmax pmax
comp=Z,160nm,0.8s
JFWS Jewell Farm 45.76 75 *e*P **P 17 05 53.7 -0.2**
comp=Z,161nm,0.8s
JFWS LR LR
comp=Z,11µm,19.0s
T34A McClaskey Farm 45.80 86 P **P 17 05 54.5 +0.2**
baz=314,SNR=17
O38A Galt 45.80 80 P **P 17 05 54.8 +0.5**
baz=312
S35A Otter Creek Ra 45.84 85 P **P 17 05 54.5 -0.1**
baz=314,SNR=13
N39A Derby Farms, D 45.84 79 P **P 17 05 54.6 0.0**
baz=312,SNR=24
R36A Gordon, Harris 45.86 83 P **P 17 05 55.1 +0.2**
baz=314
ILULI Ilulissat 45.92 28⇑*i*P **P 17 05 55.1 +0.2**
ILULI *i* 17 06 11.1
comp=Z,4µm,19.0s
ILULI Ilulissat 45.92 28⇑*i*P **P 17 05 55.1 +0.2**
ILULI MLR MLR
comp=Z,4µm,19.0s
W32A Sentinel 45.95 89 P **P 17 05 56.3 +0.8**
baz=316,SNR=7.8
U34A Anderson Ranch 46.00 87 P **P 17 05 55.9 0.0**
baz=315,SNR=6.1
U34A Anderson Ranch 46.00 87 *e*P **P 17 05 55.8 -0.2**
comp=Z,279nm,1.5s
V33A Lossen Ranch, 46.01 88 P **P 17 05 56.4 +0.4**
baz=315
Q37A Longview Farm, 46.08 82 P **P 17 05 56.5 -0.1**
baz=313
P38A Dawn 46.10 81 P **P 17 05 56.7 0.0**
baz=313,SNR=29
KBS Kingsbay 46.21 2⇑*i*P **P 17 05 58.5 +1.5**
KBS IAmb IAmb 17 06 00.4
comp=Z,2µm,2.1s
KBS *e*S **S 17 12 39.4 -0.5**
KBS IAMs_20 IAMs_20 17 22 48.4
comp=Z,4µm,24.0s
KBS Kingsbay 46.21 2 *e*P **P 17 05 58.1 +1.0**
KBS *e* 17 07 33.2
KBS pmax pmax
comp=Z,971nm,1.6s
KBS MLR MLR
comp=Z,4µm,22.0s
KBS Kingsbay 46.21 2 *e*P **P 17 05 58.1 +1.0**
comp=Z,971nm,1.6s
KBS *e*PcP **PcP 17 07 33.2 +1.2**
KBS LR LR
comp=Z,4µm,22.0s
S36A Lake Cedric, C 46.22 84 P **P 17 05 57.2 -0.5**
baz=314,SNR=8.9
O39A Kirksville 46.23 79 P **P 17 05 57.5 -0.3**
baz=312,SNR=7.1
DAG Danmarks Havn 46.25 11 *i*P **P 17 05 57.2 -0.2**
DAG *i*S **S 17 12 42.3 +1.9**
comp=Z,8µm,22.0s
DAG Danmarks Havn 46.25 11 *i*P **P 17 05 57.2 -0.2**
DAG *i*S **S 17 12 42.3 +1.9**
DAG MLR MLR
comp=Z,9µm,22.0s
R37A Teagarden Farm 46.25 83 P **P 17 05 57.6 -0.3**
baz=314
T35A Sooner Cattle 46.26 85 P **P 17 05 57.8 -0.2**
baz=314,SNR=8.7
W33A Caddo, Fort Co 46.37 89 P **P 17 05 59.7 +0.8**
baz=316,SNR=7.2
V34A Guthrie 46.44 87 P **P 17 05 59.6 +0.2**
baz=315
V34A Guthrie 46.44 87 *e*P **P 17 05 59.2 -0.1**
comp=Z,121nm,1.2s
WMOK Wichita Mounta 46.49 89 *e*P **P 17 06 00.0 +0.1**
WMOK pmax pmax
comp=Z,60nm,0.8s
WMOK MLR MLR
comp=Z,5µm,21.0s
WMOK Wichita Mounta 46.49 89 *e*P **P 17 05 60.0 +0.1**
comp=Z,60nm,0.8s
WMOK LR LR
comp=Z,5µm,21.0s
Q38A Cooks Store, C 46.50 81 P **P 17 05 59.4 -0.4**
baz=313,SNR=13
JHJ Hachijo jima 2 46.51 267 LR LR 17 23 57.0
comp=Z,2µm,21.7s,baz=56,slow=34
U35A Pawnee 46.51 86 P **P 17 05 59.9 -0.1**
baz=315,SNR=7.9
NRIK Noril'sk 46.52 333 P **P 17 05 59.9 +0.3**
comp=Z,102nm,0.5s,baz=65,slow=8.1,SNR=90
NRIK PP **PP 17 07 52.6 +3.7**
comp=Z,32nm,0.8s,baz=43,slow=2.9,SNR=3.6
NRIK LR LR 17 28 25.9
comp=Z,9µm,20.5s,baz=52,slow=40
T36A Boggs Farm, Ca 46.52 85 P **P 17 05 59.8 -0.2**
baz=314,SNR=5.9
SUMG Summit 46.55 21⇑*i*P **P 17 06 01.1 +0.8**
comp=Z,7µm,18.0s
SUMG Summit 46.55 21⇑*i*P **P 17 06 01.1 +0.8**
SUMG MLR MLR
comp=Z,7µm,18.0s
SUMG Summit 46.55 21 *e*P **P 17 06 00.6 +0.3**
comp=Z,1µm,1.9s
SUMG *e*PcP **PcP 17 07 35.0 +1.3**
S37A Fort Scott 46.64 83 P **P 17 06 00.7 -0.3**
baz=314,SNR=13
O40A La Belle 46.70 79 P **P 17 06 01.4 0.0**
baz=313,SNR=34
W34A Bridge Creek, 46.71 88 P **P 17 06 02.1 +0.5**
baz=316
W34A Bridge Creek, 46.71 88 *e*P **P 17 06 02.1 +0.5**
comp=Z,167nm,1.5s
HIA Hailar 46.77 298 *e*P **P 17 06 01.2 -0.7**
HIA *e* 17 07 34.4
HIA MLR MLR
comp=Z,5µm,20.0s
HIA Hailar 46.77 298 *e*P **P 17 06 01.2 -0.7**
HIA *e*PcP **PcP 17 07 34.4 -0.1**
HIA LR LR
comp=Z,5µm,20.0s
X33A Lawton 46.79 89 P **P 17 06 03.0 +0.8**
baz=316
Q39A Willow Grove F 46.81 81 P **P 17 06 01.5 -0.7**
baz=313,SNR=15
R38A Fenwick Farm, 46.87 82 P **P 17 06 01.6 -1.2**
baz=314,SNR=8.8
V35A Meyer Ranch, C 46.88 87 P **P 17 06 03.1 +0.2**
baz=315,SNR=5.6
P40A Paris 47.00 80 P **P 17 06 03.6 -0.1**
baz=313,SNR=34
SPA0 Spitsbergen Ar 47.03 1⇑*i*P **P 17 06 03.4 -0.1**
SPA0 IAMs_20 IAMs_20 17 23 37.7
comp=Z,5µm,23.1s
SPA0 Spitsbergen Ar 47.03 1 *e*P **P 17 06 03.2 -0.3**
SPA0 *e*PcP **PcP 17 07 34.7 -0.2**
T37A Cheneyville 18 47.03 84 P **P 17 06 03.7 -0.2**
baz=314,SNR=26
U36A Oologah 47.07 85 P **P 17 06 04.4 +0.1**
baz=315
Y33A Hilltop Ranch, 47.10 90 P **P 17 06 05.2 +0.6**
baz=316
X34A Smith Ranch, M 47.13 89 P **P 17 06 05.9 +1.0**
baz=316,SNR=5.6
S38A Stockton 47.25 83 P **P 17 06 05.1 -0.7**
baz=314,SNR=19
CN2 Changchun 47.27 289 *e*P **P 17 06 05.1 -0.7**
CN2 *e*sP sP 17 06 22.8 -0.2
CN2 pmax pmax
comp=Z,20nm,1.1s
CN2 pmax pmax
comp=Z,200nm,3.0s
CN2 LR LR
comp=Z,2µm,17.0s
CN2 LR LR
comp=Z,3µm,17.0s
CN2 LR LR
comp=Z,4µm,18.0s
R39A Chumby, Stover 47.27 81 P **P 17 06 05.0 -0.9**
baz=314,SNR=11
W35A Tecumseh 47.29 87 P **P 17 06 06.4 +0.4**
baz=316,SNR=9.4
Q40A Laux Farm, Aux 47.35 80 P **P 17 06 05.9 -0.6**
baz=314,SNR=18
TUL1 Leonard 47.38 86 P **P 17 06 06.7 -0.1**
baz=315,SNR=9.5
TUL1 Leonard 47.38 86 *e*P **P 17 06 06.5 -0.2**
comp=Z,99nm,0.8s
V36A Jenks 47.38 86 P **P 17 06 06.7 0.0**
baz=315,SNR=9.9
U37A Salina 47.41 85 P **P 17 06 06.8 -0.2**
baz=315,SNR=12
T38A Diamond 47.45 84 P **P 17 06 06.7 -0.5**
baz=314,SNR=20
ABTX Abilene, Hawle 47.52 92 P **P 17 06 08.1 +0.3**
baz=317,SNR=7.9
ABTX Abilene, Hawle 47.52 92 *e*P **P 17 06 08.2 +0.3**
comp=Z,140nm,1.1s
Z33A Whitaker Ranch 47.54 91 P **P 17 06 08.0 0.0**
baz=317
SFJD Kangerlussuaq 47.54 30 LR LR 17 27 47.0
comp=Z,3µm,20.6s,baz=310,slow=38
SFJD Kangerlussuaq 47.54 30⇑*i*P **P 17 06 08.7 +1.1**
comp=Z,230nm,0.7s
SFJD *i* 17 06 24.9
SFJD *i*S **S 17 12 59.5 +0.5**
SFJD Kangerlussuaq 47.54 30⇑*i*P **P 17 06 08.7 +1.1**
SFJD *i*S **S 17 12 59.5 +0.5**
SFJD pmax pmax
comp=Z,230nm,0.7s
SFJD Kangerlussuaq 47.54 30 *e*P **P 17 06 08.3 +0.8**
comp=Z,920nm,1.5s
S39A Bolivar 47.54 82 P **P 17 06 06.6 -1.4**
baz=314,SNR=13
Y34A Reagan Ranch, 47.64 89 P **P 17 06 09.2 +0.4**
baz=316,SNR=14
TX31 Lajitas Ar. Si 47.66 99 *e*P **P 17 06 09.9 +0.8**
TX31 *e*PcP **PcP 17 07 37.9 -0.2**
LTX Lajitas 47.66 99 *e*P **P 17 06 10.2 +1.1**
LTX *e* 17 07 38.9
LTX Lajitas 47.66 99 *e*P **P 17 06 10.2 +1.1**
LTX *e*pP **pP 17 06 20.6 -0.6**
LTX *e*PcP **PcP 17 07 38.9 +0.9**
LTX *e*ScP **ScP 17 11 27.9 -0.4**
TXAR Lajitas Array 47.66 99 P **P 17 06 10.2 +1.1**
comp=Z,11nm,0.9s,baz=304,slow=6.2,SNR=73
TXAR pP **pP 17 06 20.6 -0.6**
comp=Z,48nm,0.8s,baz=311,slow=5.5,SNR=30
TXAR PcP **PcP 17 07 38.9 +0.9**
comp=Z,13nm,0.8s,baz=257,slow=1.3,SNR=1.9
TXAR ScP **ScP 17 11 27.9 -0.4**
comp=Z,3.0nm,0.8s,baz=270,slow=1.3,SNR=4.0
TXAR LR LR 17 24 57.1
comp=Z,7µm,20.1s,baz=0.0,slow=34
TXAR PKPPKP **P'P'df 17 37 16.2 -6.7**
comp=Z,3.3nm,1.2s,baz=131,slow=3.8,SNR=3.9
W36A Wetumka 47.67 87 P **P 17 06 09.4 +0.4**
baz=316,SNR=8.9
R40A Maddies Statio 47.73 81 P **P 17 06 08.6 -0.8**
baz=314,SNR=13
V37A Hulbert 47.77 85 P **P 17 06 09.4 -0.3**
baz=315,SNR=11
X35A Drake 47.77 88 P **P 17 06 09.8 0.0**
baz=316
U38A Gravette 47.81 84 P **P 17 06 09.7 -0.4**
baz=315,SNR=18
HDIL Hopedale 47.86 77 P **P 17 06 10.2 -0.2**
baz=313,SNR=28
HDIL Hopedale 47.86 77 *e*P **P 17 06 10.5 +0.2**
comp=Z,537nm,0.8s
HDIL LR LR
comp=Z,7µm,19.0s

133A	Hamilton Ranch	47.95	92	P	P	17 06 11.4 +0.2
	baz=317,SNR=15					
Z34A	Collier Ranch,	47.97	90	P	P	17 06 11.4 +0.1
	baz=317					
T39A	Clever	47.98	83	P	P	17 06 10.5 -0.9
	baz=315,SNR=25					
X36A	Centrahoma	48.01	88	P	P	17 06 12.1 +0.5
	baz=316,SNR=6.5					
LPIG	La Paz	48.02	109	LR	LR	17 24 12.1
	comp=Z,2μm,19.3s,baz=302,slow=33					
S40A	Lebanon	48.08	82	P	P	17 06 10.9 -1.2
	baz=314,SNR=9.7					
CIT	Chita	48.09	304	*e*P	P	17 06 11.4 -0.7
Y35A	Marietta	48.09	89	P	P	17 06 12.9 +0.7
	baz=316					
W37B	Quinton	48.13	86	P	P	17 06 13.0 +0.5
	baz=316,SNR=7.5					
HHAR	Hobbs	48.18	84	*e*P	P	17 06 12.3 -0.6
	comp=Z,54nm,1.0s					
HSPB	Hornsund (broa	48.20	1⇑	*i*P	P	17 06 12.7 +0.2
HSPB				*e*S	S	17 13 08.8 +0.7
HSPB				IAMs_20	IAMs_20	17 23 35.2
	comp=Z,5μm,23.7s					
HSPB	Hornsund (broa	48.20	1	*e*P	P	17 06 12.7 +0.2
HSPB				*e*		17 07 39.4
HSPB				*e*S	S	17 13 06.6 -1.5
HSPB				MLR	MLR	
	comp=Z,5μm,27.7s					
V38A	Canehill	48.20	85	P	P	17 06 12.8 -0.4
	baz=315,SNR=24					
HPIG		48.36	102	*e*P	P	17 06 15.9 +1.2
	comp=Z,145nm,1.4s					
U39A	Green Forest	48.37	84	P	P	17 06 13.5 -0.9
	baz=315,SNR=16					
T40A	Mansfield	48.38	82	P	P	17 06 13.3 -1.2
	baz=315,SNR=12					
Z35A	Perchaven, San	48.38	90	P	P	17 06 15.1 +0.6
	baz=317					
233A	Rising Star	48.39	92	P	P	17 06 14.9 +0.2
	baz=318,SNR=18					
134A	White-Moore Ra	48.45	91	P	P	17 06 15.7 +0.6
	baz=317					
SLBS	Sierra La Lagu	48.55	109	*e*P	P	17 06 17.5 +1.5
	comp=Z,303nm,1.4s					
X37A	Clayton	48.56	87	P	P	17 06 16.4 +0.6
	baz=316,SNR=11					
SLM	Saint Louis	48.64	79	*e*P	P	17 06 16.1 -0.3
SLM				pmax	pmax	
	comp=Z,299nm,1.0s					
SLM	Saint Louis	48.64	79	*e*P	P	17 06 16.1 -0.3
	comp=Z,299nm,1.0s					
V39A	Pettigrew	48.66	84	P	P	17 06 16.0 -0.7
	baz=315,SNR=14					
W38A	Poteau	48.70	86	P	P	17 06 17.2 +0.2
	baz=316,SNR=19					
U40A	Yellville	48.74	83	P	P	17 06 16.3 -1.0
	baz=315,SNR=17					
X38A	Whitesboro	48.81	86	P	P	17 06 18.3 +0.5
	baz=316,SNR=12					
234A	Clairette	48.84	91	P	P	17 06 18.7 +0.6
	baz=318,SNR=7.8					
333A	Richland Sprin	48.85	93	P	P	17 06 18.3 +0.1
	baz=318,SNR=13					
Y37A	Hugo	48.85	88	P	P	17 06 18.7 +0.6
	baz=316,SNR=8.9					
135A	Vickery Place,	48.85	90	P	P	17 06 18.7 +0.6
	baz=317					
Z36A	Blue Ridge	48.90	89	P	P	17 06 18.8 +0.3
	baz=317,SNR=7.0					
JCT	Junction City	49.01	94	P	P	17 06 20.0 +0.6
	baz=318,SNR=18					
JCT	Junction City	49.01	94	*e*P	P	17 06 19.8 +0.4
JCT				pmax	pmax	
	comp=Z,140nm,1.0s					
JCT	Junction City	49.01	94	*e*P	P	17 06 19.8 +0.4
W39A	Magazine	49.03	85	P	P	17 06 19.3 -0.2
	baz=316,SNR=25					
V40A	Witts Springs	49.15	84	P	P	17 06 19.7 -0.8
	baz=315,SNR=19					
SFIN	Lafayette	49.20	75	P	P	17 06 20.9 +0.1
	baz=313,SNR=39					
SFIN	Lafayette	49.20	75	*e*P	P	17 06 20.9 +0.1
	comp=Z,558nm,1.4s					
433A	Art	49.21	93	P	P	17 06 21.0 0.0
	baz=318,SNR=19					
WHTX	Lake Whitney,	49.24	91	P	P	17 06 21.9 +0.7
	baz=318,SNR=7.0					
WHTX	Lake Whitney,	49.24	91	*e*P	P	17 06 21.6 +0.5
	comp=Z,133nm,1.0s					
334A	Lometa	49.27	92	P	P	17 06 21.9 +0.5
	baz=318,SNR=20					
X39A	Fountain Ranch	49.34	86	P	P	17 06 21.9 +0.1
	baz=316,SNR=24					
Y38A	Idabel	49.40	87	P	P	17 06 22.9 +0.6
	baz=316					
Z37A	Pogue Cattle C	49.41	88	P	P	17 06 23.1 +0.7
	baz=317					
136A	Ennis	49.42	90	P	P	17 06 23.2 +0.7
	baz=317					
W40A	Ferguson Farm,	49.45	84	P	P	17 06 22.4 -0.2
	baz=316,SNR=5.9					
SNY	Shenyang	49.62	288	⇑P	P	17 06 24.0 +0.2
SNY				pmax	pmax	
	comp=Z,250nm,1.4s					
SNY				pmax	pmax	
	comp=Z,2μm,3.3s					
SNY				LR	LR	
	comp=Z,2μm,13.1s					
SNY				LR	LR	
	comp=Z,3μm,12.7s					
SNY				LR	LR	
	comp=Z,4μm,13.1s					
MIAR	Mount Ida	49.62	85	P	P	17 06 23.9 -0.1
	baz=316,SNR=28					
434A	Burnet	49.64	93	P	P	17 06 25.0 +0.8
	baz=318,SNR=24					
CBIJ	Chichi jima	49.65	260	*e*P	P	17 06 25.0 +0.8
	comp=Z,2μm,1.1s					
JCJ	Chichijima	49.65	260	P	P	17 06 24.9 +0.7
	comp=Z,519nm,0.5s,baz=283,slow=21,SNR=62					
JCJ				LR	LR	17 24 11.2
	comp=Z,1μm,21.8s,baz=44,slow=32					
Z38A	Mt. Pleasant	49.74	88	P	P	17 06 25.4 +0.5
	baz=317					
533A	Kerrville	49.75	94	P	P	17 06 25.1 +0.1
	baz=319					
Y39A	Lockesburg	49.76	86	P	P	17 06 25.3 +0.2
	baz=316					
236A	Katherine and	49.77	90	P	P	17 06 25.8 +0.7
	baz=318,SNR=11					
137A	Heron Place, G	49.77	89	P	P	17 06 26.0 +0.8
	baz=317					
335A	Moody	49.78	91	P	P	17 06 26.1 +0.9
	baz=318					
OLIL	Olney	49.78	78	*e*P	P	17 06 25.0 -0.1
	comp=Z,891nm,1.3s					
OLIL				*e*pP	pP	17 06 36.2 -1.1
SCHQ	Schefferville	49.78	49	P	P	17 06 25.2 +0.3
	comp=Z,97nm,1.0s,baz=317,slow=7.6,SNR=32					
SCHQ				LR	LR	17 28 20.4
	comp=Z,3μm,19.2s,baz=321,slow=37					
SCHQ	Schefferville	49.78	49	*e*P	P	17 06 24.6 -0.3
	comp=Z,553nm,1.5s					
SCHQ				*e*pP	pP	17 06 36.5 -0.6
X201	Greenbrier Sit	49.78	84	*e*P	P	17 06 24.2 -1.0
	comp=Z,85nm,1.2s					
AAM	Ann Arbor	49.79	71	PFAKE		17 06 40.0 +15
AAM				LR	LR	
	comp=Z,4μm,20.0s					
X301	Greenbrier Sit	49.80	84	*e*P	P	17 06 24.3 -1.0
	comp=Z,192nm,1.5s					
WHAR	Wooly Hollow	49.82	84	*e*P	P	17 06 24.9 -0.6
	comp=Z,92nm,1.2s					
PBMO	Poplar Bluff	49.83	81	*e*P	P	17 06 24.3 -1.2
	comp=Z,86nm,1.0s					
PBMO				*e*PcP	PcP	17 07 45.2 -0.4
SIUC	Southern Illin	49.86	79	*e*P	P	17 06 25.2 -0.5
	comp=Z,709nm,1.6s					
W41B	Gary Mavity, V	49.93	84	P	P	17 06 25.6 -0.7
	baz=316,SNR=13					
336A	Riesel	50.04	91	P	P	17 06 27.6 +0.4
	baz=318					
435B	Jarrell	50.06	92	P	P	17 06 28.4 +1.0
	baz=318					
X40A	Basin Creek Fa	50.09	85	P	P	17 06 26.9 -0.6
	baz=316,SNR=6.5					
534A	Blanco	50.11	93	P	P	17 06 27.9 +0.2
	baz=319,SNR=7.7					
138A	Matatall Enter	50.11	88	P	P	17 06 28.4 +0.7
	baz=317					
633A	Saathoff Ranch	50.13	95	P	P	17 06 29.3 +1.4
	baz=319					
UALR	University of	50.16	84	*e*P	P	17 06 27.5 -0.6
	comp=Z,117nm,1.5s					
UALR				*e*PcP	PcP	17 07 47.1 +0.3
Y40A	Okolona	50.17	86	P	P	17 06 28.1 0.0
	baz=316					
237A	Washetta, Mont	50.18	90	P	P	17 06 29.1 +0.8
	baz=318					
Z39A	Irene McRaven,	50.21	87	P	P	17 06 28.7 +0.3
	baz=317					
KS01	Wonju Array Si	50.22	281	*e*P	P	17 06 28.5 0.0
KSRS	Korea Array	50.22	281	P	P	17 06 29.2 +0.8
	comp=Z,167nm,1.0s,baz=54,slow=7.0,SNR=271					
KSRS				PcP	PcP	17 07 48.1 +1.1
	comp=Z,37nm,0.9s,baz=50,slow=3.1,SNR=4.1					
KSRS				ScP	ScP	17 11 40.0 +1.0
	comp=Z,3.9nm,1.0s,baz=50,slow=6.0,SNR=4.6					
KSRS				LR	LR	17 28 40.3
	comp=Z,2μm,19.9s,baz=38,slow=37					
KSRS	Korea Array	50.22	281	P	P	17 06 29.2 +0.8
KSRS						17 07 48.1
KSRS				pmax	pmax	
	comp=Z,167nm,1.0s					
KSRS				pmax	pmax	
	comp=Z,37nm,0.9s					
KSRS				MLR	MLR	
	comp=Z,2μm,19.9s					
KS15	Wonju Array Si	50.25	281	*e*P	P	17 06 29.3 +0.6
KS15				*e*PcP	PcP	17 07 48.1 +1.0
KS15				*e*ScP	ScP	17 11 40.0 +0.8
KSAR	Wonju Array Be	50.25	281	P	P	17 06 29.2 +0.5
KSAR						17 07 48.1
KSAR	Wonju Array Be	50.25	281	P	P	17 06 29.2 +0.5
KSAR				PcP	PcP	17 07 48.1 +1.0
KSAR				ScP	ScP	17 11 40.0 +0.8
PARMO	Parma	50.30	81	*e*P	P	17 06 28.6 -0.5
BLO	Bloomington	50.36	76	*e*P	P	17 06 29.4 -0.1
BLO				*e*		17 07 48.4
BLO				pmax	pmax	
	comp=Z,275nm,1.1s					
BLO	Bloomington	50.36	76	*e*P	P	17 06 29.4 -0.1
	comp=Z,275nm,1.1s					
BLO				*e*PcP	PcP	17 07 48.4 +0.8
WLAR	White Oak Lake	50.50	86	*e*P	P	17 06 31.0 +0.4
	comp=Z,291nm,1.3s					
436A	Wall Ranch, Ga	50.52	91	P	P	17 06 32.0 +1.2
	baz=318					
SADO	Sadowa	50.53	66	LR	LR	17 28 26.4
	comp=Z,3μm,19.5s,baz=0.0,slow=37					
SADO	Sadowa	50.53	66	*e*P	P	17 06 30.5 -0.2
	comp=Z,765nm,2.0s					
SADO				*e*PcP	PcP	17 07 46.3 -1.8
832A	Faith Ranch, C	50.56	96	P	P	17 06 31.9 +0.7
	baz=320					
USIN	University of	50.56	78	*e*P	P	17 06 30.8 -0.3
	comp=Z,832nm,1.2s					
238A	Jacksonville	50.58	89	P	P	17 06 32.3 +1.1
	baz=318					
733A	Divot King Ran	50.62	95	P	P	17 06 32.4 +0.8
	baz=319					
535A	Dale	50.62	93	P	P	17 06 32.7 +1.1
	baz=319					
337A	Centerville	50.64	90	P	P	17 06 32.7 +1.0
	baz=318					
Z40A	Long Farm, Mag	50.65	86	P	P	17 06 32.5 +0.7
	baz=317,SNR=8.7					
634A	China Grove, S	50.66	94	P	P	17 06 32.9 +1.0
	baz=319					
BJO	Bjornoya	50.73	0⇑	*i*P	P	17 06 32.5 +0.7
BJO				*e*		17 16 24.0
GLAT	Glass	50.84	81	*e*P	P	17 06 33.3 +0.2
437A	Phantom Ranch,	50.85	91	P	P	17 06 34.7 +1.4
	baz=318					
833A	Chaparral WMA,	50.86	96	P	P	17 06 34.6 +1.2
	baz=320					
536A	Bastrop	50.88	92	P	P	17 06 35.0 +1.4
	baz=319					
INCN	Inchon	50.92	282	P	P	17 06 34.9 +1.0
	SNR=22					
INCN	Inchon	50.92	282	P	P	17 06 34.9 +1.0
	SNR=22					
INCN	Inchon	50.92	282	*e*P	P	17 06 34.4 +0.6
	comp=Z,427nm,1.3s					
INCN				LR	LR	
	comp=Z,1μm,22.0s					
239A	Gary	50.94	88	P	P	17 06 34.4 +0.4
	baz=318,SNR=5.9					
338A	Crockett	50.94	90	P	P	17 06 35.1 +1.1
	baz=318					
734A	La Parita Cree	50.94	95	P	P	17 06 35.2 +1.1
	baz=319					
635A	Leesville	50.99	93	P	P	17 06 35.1 +0.7
	baz=319					
Z41A	Richland Creek	50.99	86	P	P	17 06 35.0 +0.6
	baz=317					
140A	Cam and Jess,	51.00	87	P	P	17 06 35.3 +0.9
	baz=317					
NATX	Nacogdoches	51.02	89	P	P	17 06 35.3 +0.7
	baz=318,SNR=5.1					
NATX	Nacogdoches	51.02	89	*e*P	P	17 06 35.4 +0.7
	comp=Z,240nm,1.1s					
NATX				LR	LR	
	comp=Z,7μm,19.0s					
UTMT	University of	51.03	80	*e*P	P	17 06 35.0 +0.4
	comp=Z,678nm,1.3s					
UTMT				*e*PcP	PcP	17 07 50.3 +0.3
HALT	Halls	51.06	81	*e*P	P	17 06 35.4 +0.6
CCAR	Cane Creek	51.10	85	*e*P	P	17 06 35.5 +0.4
	comp=Z,1μm,1.9s					
WCI	Wyandotte Cave	51.14	77	*e*P	P	17 06 34.8 -0.7
WCI				pmax	pmax	
	comp=Z,64nm,0.8s					
WCI	Wyandotte Cave	51.14	77	*e*P	P	17 06 34.8 -0.7
	comp=Z,64nm,0.8s					
Y42A	Garnett, Star	51.16	85	P	P	17 06 36.0 +0.4
	baz=317					
438A	Sam Houston St	51.30	90	P	P	17 06 38.0 +1.4
	baz=318,SNR=12					
SCO	Scoresbysund	51.30	17⇑	*i*P	P	17 06 36.9 +0.7
	comp=Z,84nm,0.7s					
SCO				*i* S	S	17 13 53.4 +1.9
	comp=Z,4μm,18.0s					
SCO	Scoresbysund	51.30	17⇑	*i*P	P	17 06 36.9 +0.7
SCO				*i* S	S	17 13 53.4 +1.9
SCO				pmax	pmax	
	comp=Z,84nm,0.7s					
SCO				MLR	MLR	
	comp=Z,4μm,18.0s					
537A	Green Hill Far	51.31	92	P	P	17 06 38.3 +1.5
	baz=319					
240A	Hunter Patters	51.33	88	P	P	17 06 37.6 +0.7
	baz=318					
636A	Smothers Creek	51.33	93	P	P	17 06 38.5 +1.6
	baz=319,SNR=12					
735A	Kenedy	51.37	94	P	P	17 06 38.9 +1.6
	baz=319					
339A	Huntington	51.39	89	P	P	17 06 38.5 +1.1
	baz=318					
141A	Papa Simpson,	51.41	87	P	P	17 06 38.6 +1.1
	baz=317					
933A	Laredo	51.47	96	P	P	17 06 39.1 +1.1
	baz=320,SNR=8.5					
Z42A	Norrel Spur, H	51.47	85	P	P	17 06 38.3 +0.3
	baz=317					
834A	Tilden	51.49	95	P	P	17 06 39.6 +1.4
	baz=320					
ACSO	Alum Creek Sta	51.58	73	*e*P	P	17 06 38.4 -0.3
	comp=Z,167nm,1.1s					
ACSO				LR	LR	
	comp=Z,2μm,19.0s					
Y43A	Makayla and Ka	51.59	84	P	P	17 06 39.1 +0.3
	baz=317					
JNU	Nakatsue	51.63	275	LR	LR	17 27 34.5
	comp=Z,4μm,21.9s,baz=78,slow=35					
439A	Center Grove,	51.67	90	P	P	17 06 40.9 +1.5
	baz=318					
538A	Harpers Horsep	51.68	91	P	P	17 06 41.4 +1.9
	baz=318					
HKT	Hockley	51.68	91	*e*P	P	17 06 39.4 -0.1
HKT				pmax	pmax	
	comp=Z,205nm,1.4s					
HKT	Hockley	51.68	91	*e*P	P	17 06 39.4 -0.1
	comp=Z,205nm,1.4s					
340A	Bronson	51.71	88	P	P	17 06 40.3 +0.6
	baz=318					
736A	Circle Diamond	51.72	93	P	P	17 06 41.7 +1.9
	baz=319					
WVT	Waverly	51.76	80	*e*P	P	17 06 40.0 -0.1
WVT				pmax	pmax	
	comp=Z,361nm,1.1s					
WVT	Waverly	51.76	80	*e*P	P	17 06 40.0 -0.1
	comp=Z,361nm,1.1s					
WVT				*e*pP	pP	17 06 51.3 -1.0
637A	Eagle Lake	51.78	92	P	P	17 06 42.2 +2.0
	baz=319					
835A	Beeville	51.78	94	P	P	17 06 42.2 +1.9
	baz=320					
241A	Mo Tay, Goldon	51.83	87	P	P	17 06 41.4 +0.8
	baz=318,SNR=8.1					
ERPA	Erie	51.90	69	*e*P	P	17 06 41.4 +0.3
	comp=Z,1μm,1.8s					
934A	Benavides	51.91	96	P	P	17 06 43.1 +1.8
	baz=320					
TRQ	Mont Tremblant	51.91	62	*e*P	P	17 06 40.6 -0.6
TRQ				*e*pP	pP	17 06 50.9 -2.5
Z43A	Armstrong Fami	51.92	85	P	P	17 06 41.5 +0.2
	baz=317					
H06N1	SOCORRO T-PHAS	51.92	114	T	T	18 02 02.7
	SNR=38					
BUF	Buffalo	51.95	67	*e*P	P	17 06 41.4 0.0
Y44A	Strider, Charl	51.97	83	P	P	17 06 41.8 +0.2
	baz=317,SNR=17					
H06E1	SOCORRO T-PHAS	52.02	114	T	T	18 02 07.5
	SNR=48					
H06S1	SOCORRO T	52.04	114	T	T	18 01 46.5
	SNR=14					
ALLY	Alegheny Colle	52.14	69	*e*P	P	17 06 42.7 -0.1
	comp=Z,437nm,1.0s					
440A	Kirbyville	52.17	89	P	P	17 06 44.1 +1.0
	baz=318					
341A	Kurthwood	52.19	88	P	P	17 06 44.1 +0.8
	baz=318					
143A	Socs Landing,	52.20	85	P	P	17 06 44.0 +0.6
	baz=317,SNR=7.4					
539A	Cross D Ranch,	52.20	90	P	P	17 06 44.4 +1.0
	baz=318					
737A	Port Lavaca	52.22	93	P	P	17 06 45.4 +1.9
	baz=319					
IRK	Irkutsk	52.22	309	*e*P	P	17 06 42.4 -0.9
IRK				pmax	pmax	
	comp=Z,238nm,2.2s					
034A	Hebbronville	52.23	96	P	P	17 06 44.8 +1.2
	baz=320					
242A	Grayson	52.24	87	P	P	17 06 44.3 +0.6
	baz=318					
638A	Rosharon	52.30	91	P	P	17 06 45.6 +1.4
	baz=319					
KVTX	Kingsville	52.31	95	PFAKE		17 07 00.0 +16
KVTX				LR	LR	
	comp=Z,2μm,19.0s					
Z44A	Pea Ridge, Bel	52.34	84	P	P	17 06 44.4 +0.1
	baz=317,SNR=8.5					
Y45A	Yeager Farm, C	52.42	83	P	P	17 06 44.7 -0.2
	baz=317,SNR=7.7					
M54A	Oil Creek Stat	52.50	69	P	P	17 06 45.3 -0.2
	baz=314,SNR=31					
540A	Vidor	52.56	90	P	P	17 06 47.5 +1.5
	baz=318					
MMNY	Mt. Morris Dam	52.58	67	*e*P	P	17 06 46.0 -0.1
	comp=Z,524nm,1.3s					
441A	DeRidder	52.61	88	P	P	17 06 47.8 +1.3
	baz=318					
738A	Farr-Stevens R	52.62	92	P	P	17 06 47.5 +1.0
	baz=319					
342A	Flagon Creek P	52.65	87	P	P	17 06 47.7 +1.0
	baz=318					
035A	Encino	52.66	96	P	P	17 06 48.6 +1.8
	baz=320					
Z45A	Winona	52.69	83	P	P	17 06 47.0 0.0
	baz=317					
JMIC	Jan Mayen	52.70	11	LR	LR	17 28 49.3
	comp=Z,4μm,21.4s,baz=324,slow=36					
JMIC	Jan Mayen	52.70	11⇑	*i*P	P	17 06 47.6 +1.1
JMIC				IAmb	IAmb	17 07 05.0
	comp=Z,980nm,2.1s					
JMIC				IAMs_20	IAMs_20	17 27 58.1
	comp=Z,4μm,21.9s					
N54A	Moraine State	52.70	70	P	P	17 06 46.5 -0.6
	baz=315,SNR=24					
DL2	Dalian	52.72	287	P	P	17 06 47.6 +0.5
DL2				sP	sP	17 07 02.5 -1.9
DL2				*e*S	S	17 14 11.8 +0.1
DL2				pmax	pmax	
	comp=Z,170nm,0.9s					
DL2				pmax	pmax	
	comp=Z,4μm,4.5s					
DL2				LR	LR	
	comp=Z,2μm,25.3s					
DL2				LR	LR	
	comp=Z,2μm,21.1s					
DL2				LR	LR	
	comp=Z,4μm,26.7s					
936A	North Padre Is	52.74	95	P	P	17 06 48.7 +1.3
	baz=320					
243A	Waterproof	52.76	86	P	P	17 06 48.7 +1.3
	baz=318					
Y46A	Houston	52.80	82	P	P	17 06 47.8 0.0
	baz=317,SNR=37					
144A	Alexander Plac	52.81	85	P	P	17 06 48.2 +0.3
	baz=317					
TLY	Talaya	52.89	309	P	P	17 06 49.0 +0.7
	comp=Z,61nm,0.6s,baz=31,slow=6.8,SNR=148					
TLY				ScP	ScP	17 11 52.5 +2.1
	comp=Z,2.1nm,0.6s,baz=61,slow=1.7,SNR=3.2					
TLY				LR	LR	17 31 08.3
	comp=Z,3μm,19.7s,baz=38,slow=38					
TLY	Talaya	52.89	309	*c i*P	P	17 06 48.3 0.0
TLY				*e*		17 07 58.0
TLY				*e*		17 08 47.9
TLY				*e*S	S	17 14 10.8 -3.1
TLY				pmax	pmax	
	comp=Z,191nm,1.5s					
TLY				MLR	MLR	
	comp=Z,3μm,17.0s					
TLY	Talaya	52.89	309	*e*P	P	17 06 48.4 +0.1
	comp=Z,96nm,0.8s					
LONY	Lake Ozonia	53.01	63	*e*P	P	17 06 48.9 -0.3
	comp=Z,274nm,1.5s					
LONY				LR	LR	
	comp=Z,6μm,20.0s					
035Z	Hargill	53.04	96	P	P	17 06 51.2 +1.6
	baz=320					
VBMS	Vicksburg	53.06	85	P	P	17 06 50.1 +0.3
	baz=318,SNR=5.4					
442A	Mamou	53.07	88	P	P	17 06 50.9 +1.1
	baz=318					
145A	Houston Renfro	53.12	84	P	P	17 06 50.3 +0.2
	baz=317,SNR=6.6					
343A	Vidalia	53.12	87	P	P	17 06 50.8 +0.7
	baz=318					
541A	Lake Charles	53.12	89	P	P	17 06 51.6 +1.4
	baz=319					
Z46A	Louisville	53.25	83	P	P	17 06 51.1 0.0
	baz=317,SNR=5.7					
NRS	Narsarsuaq	53.35	33⇑	*i*P	P	17 06 52.2 +0.8
NRS				*i*		17 07 08.6
NRS	Narsarsuaq	53.35	33⇑	*i*P	P	17 06 52.2 +0.8
Y47A	UCPARC, Winfie	53.36	82	P	P	17 06 51.6 -0.3
	baz=317,SNR=27					
ZAIG	Zacatecas	53.36	103	*e*P	P	17 06 52.5 +0.1
	comp=Z,62nm,1.1s					
FRNY	Flat Rock	53.36	62	*e*P	P	17 06 50.7 -1.1
	comp=Z,137nm,1.1s					
443A	Delano Plantat	53.41	87	P	P	17 06 53.4 +1.1
	baz=318					
542A	Morse	53.44	88	P	P	17 06 54.1 +1.6
	baz=319					
SWET	Sewanee	53.49	79	*e*P	P	17 06 52.0 -1.0
	comp=Z,14nm,0.8s					
344A	Westbrook Farm	53.50	86	P	P	17 06 53.9 +0.9
	baz=318,SNR=7.2					
245A	Little AP, Sta	53.55	85	P	P	17 06 53.7 +0.3
	baz=318,SNR=7.7					
146A	Union	53.59	84	P	P	17 06 53.9 +0.3
	baz=318,SNR=5.2					
Z47A	Carrollton	53.74	82	P	P	17 06 54.5 -0.2
	baz=317,SNR=15					
543A	St. Martinvill	53.87	88	P	P	17 06 56.8 +1.1
	baz=319					
TZTN	Tazewell	53.88	76	*e*P	P	17 06 55.4 -0.3
	comp=Z,314nm,1.3s					

Z48A	**Northport**	**53.91**	**82**	P	**P**	**17 06 55.3**	**-0.6**
	baz=317,SNR=15						
O56A	**Blue Knob Stat**	**53.96**	**70**	P	**P**	**17 06 55.6**	**-0.8**
	baz=315,SNR=36						
ZAK	**Zakamensk**	**53.97**	**308**	*e*P	**P**	**17 06 56.2**	**-0.1**
ZAK				*e*		17 08 00.0	
ZAK				pmax	pmax		
	comp=Z,45nm,1.3s						
ZAK				pmax	pmax		
	comp=Z,114nm,1.5s						
ULN	**Ulaanbaatar**	**53.99**	**304**	*c*eP	**P**	**17 06 56.1**	**-0.5**
ULN				pmax	pmax		
	comp=Z,143nm,1.2s						
ULN				MLR	MLR		
	comp=Z,10μm,18.0s						
ULN	**Ulaanbaatar**	**53.99**	**304**	P	**P**	**17 06 56.6**	**+0.1**
	SNR=63						
ULN	**Ulaanbaatar**	**53.99**	**304**	P	**P**	**17 06 56.6**	**+0.1**
	SNR=63						
ULN	**Ulaanbaatar**	**53.99**	**304**	*e*P	**P**	**17 06 56.2**	**-0.3**
ULN				*e*PcP	**PcP**	**17 08 02.0**	**+0.8**
ULN				LR	LR		
	comp=Z,10μm,19.0s						
246A	**Jackson Lee, B**	**54.01**	**84**	P	**P**	**17 06 57.1**	**+0.4**
	baz=318						
345A	**Thompson Farm,**	**54.01**	**85**	P	**P**	**17 06 57.3**	**+0.6**
	baz=318						
147A	**Livingston**	**54.01**	**83**	P	**P**	**17 06 56.2**	**-0.5**
	baz=318,SNR=11						
444A	**Pine Grove**	**54.04**	**87**	P	**P**	**17 06 58.2**	**+1.3**
	baz=318						
SSPA	**Standing Stone**	**54.06**	**69**	*e*P	**P**	**17 06 56.6**	**-0.4**
	comp=Z,281nm,0.9s						
MOY	**Mondy**	**54.08**	**310**	*e*P	**P**	**17 06 57.2**	**+0.1**
MOY				pmax	pmax		
	comp=Z,188nm,4.1s						
CPCT	**Cooper Cave**	**54.12**	**78**	*e*P	**P**	**17 06 56.8**	**-0.7**
	comp=Z,91nm,1.2s						
MDV	**Middlebury**	**54.16**	**63**	*e*P	**P**	**17 06 56.9**	**-0.7**
544A	**White Castle**	**54.25**	**87**	P	**P**	**17 06 59.2**	**+0.7**
	baz=319						
KRAR	**Krasnoyarsk**	**54.26**	**318**	*c i*P	**P**	**17 06 58.0**	**-0.2**
KRAR				pmax	pmax		
	comp=Z,201nm,1.4s						
KRAR				MLR	MLR		
	comp=Z,5μm,18.0s						
445A	**Amite**	**54.26**	**86**	P	**P**	**17 06 59.6**	**+1.0**
	baz=318						
247A	**Quitman**	**54.28**	**84**	P	**P**	**17 06 59.2**	**+0.5**
	baz=318,SNR=11						
346A	**Big Creek Wild**	**54.28**	**85**	P	**P**	**17 06 59.1**	**+0.5**
	baz=318						
SONA1	**Songino Array**	**54.31**	**304**	*e*P	**P**	**17 06 58.6**	**-0.3**
SONA1				*e*PcP	**PcP**	**17 08 03.1**	**+0.6**
SONA0	**Songino Array**	**54.32**	**304**	*e*P	**P**	**17 06 59.1**	**+0.2**
SONA0				*e*pP	**sP**	**17 07 15.6**	**-0.7**
SONA0				*e*PcP	**PcP**	**17 08 03.5**	**+1.0**
SONA0				*e*ScP	**ScP**	**17 11 59.2**	**+2.4**
SONM	**Songino Array**	**54.32**	**304**	P	**P**	**17 06 59.1**	**+0.2**
	comp=Z,93nm,0.6s,baz=44,slow=6.5,SNR=253						
SONM				sP	**sP**	**17 07 15.6**	**-0.7**
	comp=Z,105nm,0.9s,baz=40,slow=4.5,SNR=15						
SONM				PcP	**PcP**	**17 08 03.5**	**+1.0**
	comp=Z,34nm,0.5s,baz=86,slow=1.8,SNR=9.5						
SONM				ScP	**ScP**	**17 11 59.2**	**+2.4**
	comp=Z,6.3nm,0.9s,baz=20,slow=4.7,SNR=3.8						
SONM				LR	LR	17 32 36.8	
	comp=Z,10μm,18.2s,baz=44,slow=39						
SONM				PKPPKP	**P'P'df**	**17 37 11.0**	**-6.3**
	comp=Z,2.7nm,1.1s,baz=164,slow=3.1,SNR=5.6						
ACCN	**Adirondack Com**	**54.34**	**64**	*e*P	**P**	**17 06 59.0**	**0.0**
	comp=Z,255nm,1.1s						
TKL	**Tuckaleechee C**	**54.39**	**77**	LR	LR	17 30 04.6	
	comp=Z,7μm,19.1s,baz=330,slow=36						
TKL	**Tuckaleechee C**	**54.39**	**77**	*e*P	**P**	**17 06 58.7**	**-0.7**
TKL				pmax	pmax		
	comp=Z,164nm,1.2s						
TKL	**Tuckaleechee C**	**54.39**	**77**	*e*P	**P**	**17 06 58.7**	**-0.7**
	comp=Z,164nm,1.2s						
HAMF	**Hammerfest**	**54.58**	**358**	⇑*i*P	**P**	**17 06 59.8**	**-0.5**
HAMF				*e*S	**S**	**17 14 39.5**	**+3.3**
HAMF				IAMs_20	IAMs_20	17 26 49.3	
	comp=Z,4μm,25.7s						
545A	**Edgard**	**54.69**	**87**	P	**P**	**17 07 02.7**	**+1.0**
	baz=319						
248A	**Dixon Mills**	**54.74**	**83**	P	**P**	**17 07 02.2**	**+0.2**
	baz=318,SNR=5.9						
446A	**Poplarville**	**54.78**	**85**	P	**P**	**17 07 02.5**	**+0.2**
	baz=318,SNR=7.2						
347A	**Saraland**	**54.80**	**84**	P	**P**	**17 07 02.5**	**+0.1**
	baz=318,SNR=7.7						
TRY	**Troy**	**54.80**	**64**	*e*P	**P**	**17 07 02.5**	**+0.1**
	comp=Z,249nm,1.0s						
HNH	**Hanover**	**54.82**	**62**	*e*P	**P**	**17 07 02.4**	**0.0**
	comp=Z,230nm,1.2s						
BJI	**Beijing**	**54.88**	**291**	P	**P**	**17 07 02.7**	**-0.2**
BJI				pP	**pP**	**17 07 13.7**	**-1.5**
BJI				sP	**sP**	**17 07 17.8**	**-2.4**
BJI				PP	**PP**	**17 09 06.5**	**+0.8**
BJI				S	**S**	**17 14 37.6**	**-3.3**
BJI				sS	**sS**	**17 15 02.3**	**+0.9**
BJI				pmax	pmax		
	comp=Z,71nm,1.9s						
BJI				pmax	pmax		
	comp=Z,2μm,5.0s						
BJI				LR	LR		
	comp=Z,4μm,19.7s						
BJI				LR	LR		
	comp=Z,4μm,29.5s						
BJT	**Baijiatuau**	**54.90**	**291**	*e*P	**P**	**17 07 02.6**	**-0.5**
BJT				pmax	pmax		
	comp=Z,318nm,1.9s						
BJT				MLR	MLR		
	comp=Z,6μm,20.0s						
BJT	**Baijiatuau**	**54.90**	**291**	*e*P	**P**	**17 07 02.6**	**-0.5**
	comp=Z,318nm,1.9s						
BJT				LR	LR		
	comp=Z,6μm,20.0s						
546A	**Slidell**	**54.99**	**86**	P	**P**	**17 07 04.1**	**+0.3**
	baz=319						
N59A	**State Game Lan**	**54.99**	**67**	P	**P**	**17 07 04.0**	**+0.2**
	baz=316,SNR=26						
645A	**Chauvin**	**55.06**	**87**	P	**P**	**17 07 04.0**	**-0.4**
	baz=319						
BLA	**Blacksburg**	**55.13**	**73**	*e*P	**P**	**17 07 04.9**	**0.0**
BLA				pmax	pmax		
	comp=Z,130nm,1.0s						
BLA	**Blacksburg**	**55.13**	**73**	*e*P	**P**	**17 07 04.9**	**0.0**
	comp=Z,127nm,0.9s						
BLA				LR	LR		
	comp=Z,7μm,19.0s						
348A	**Jackson**	**55.15**	**84**	P	**P**	**17 07 05.7**	**+0.7**
	baz=318						
447A	**Lucedale**	**55.18**	**85**	P	**P**	**17 07 06.1**	**+0.9**
	baz=318						
PKME	**Peaks-Kenny Pk**	**55.22**	**59**	*e*P	**P**	**17 07 05.5**	**+0.2**
	comp=Z,439nm,1.5s						
PKME				LR	LR		
	comp=Z,4μm,21.0s						
VWCC	**Virginia Weste**	**55.35**	**73**	*e*P	**P**	**17 07 05.6**	**-0.8**
KEV	**Kevo**	**55.39**	**357**	*e*P	**P**	**17 07 05.9**	**-0.2**
KEV				pmax	pmax		
	comp=Z,213nm,0.7s						
KEV				MLR	MLR		
	comp=Z,1μm,20.0s						
KEV	**Kevo**	**55.39**	**357**	*e*P	**P**	**17 07 05.9**	**-0.2**
	comp=Z,213nm,0.7s						
KEV				LR	LR		
	comp=Z,1μm,20.0s						
646A	**Port Sulphur**	**55.41**	**87**	P	**P**	**17 07 08.2**	**+1.3**
	baz=319						
ODNJ	**Ogdensburg**	**55.49**	**66**	*e*P	**P**	**17 07 07.2**	**-0.1**
	comp=Z,380nm,1.7s						
SDMD	**Soldier's Deli**	**55.50**	**69**	*e*P	**P**	**17 07 07.0**	**-0.4**
	comp=Z,70nm,0.9s						
448A	**Bay Minette**	**55.54**	**84**	P	**P**	**17 07 08.3**	**+0.6**
	baz=318						
WVL	**Waterville**	**55.54**	**60**	*e*P	**P**	**17 07 07.1**	**-0.5**
	comp=Z,435nm,1.3s						
TRO	**Tromso**	**55.63**	**0**	⇑*i*P	**P**	**17 07 08.4**	**+0.5**
TRO				IAmb	IAmb	17 07 25.6	
	comp=Z,882nm,1.7s						
TRO				IAMs_20	IAMs_20	17 28 17.1	
	comp=Z,4μm,25.6s						
ARA0	**ARCESS Array S**	**55.66**	**357**	*e*P	**P**	**17 07 07.6**	**-0.5**
ARA0				*e*pP	**sP**	**17 07 23.9**	**-1.6**
ARA0				*e*PcP	**PcP**	**17 08 07.9**	**+0.8**
ARCES	**ARCESS Array B**	**55.66**	**357**	P	**P**	**17 07 07.8**	**-0.3**
	comp=Z,48nm,0.5s,baz=25,slow=6.7,SNR=266						
ARCES				sP	**sP**	**17 07 23.9**	**-1.6**
	comp=Z,58nm,0.9s,baz=352,slow=7.6,SNR=7.0						
ARCES				PcP	**PcP**	**17 08 07.9**	**+0.8**
	comp=Z,44nm,0.7s,baz=19,slow=4.1,SNR=6.0						
ARCES				LR	LR	17 34 04.8	
	comp=Z,2μm,18.7s,baz=357,slow=39						
ARCES				PKPPKP	P'P'df	17 37 06.9	-10
	comp=Z,3.4nm,0.9s,baz=316,slow=3.3,SNR=5.3						
ARE0	**ARCESS Array S**	**55.66**	**357**	⇑*i*P	**P**	**17 07 07.9**	**-0.3**
ARE0				*e*S	**S**	**17 14 50.2**	**-0.4**
ARE0	**ARCESS Array S**	**55.66**	**357**	*e*P	**P**	**17 07 07.3**	**-0.8**
	comp=Z,231nm,1.2s						
ARE0				*e*PcP	**PcP**	**17 08 07.5**	**+0.4**
BRNJ	**Basking Ridge**	**55.80**	**67**	*e*P	**P**	**17 07 09.4**	**-0.1**
	comp=Z,145nm,0.8s						
BRAL	**Brewton**	**55.82**	**83**	PFAKE		17 07 20.0	+10
BRAL				LR	LR		
	comp=Z,5μm,22.0s						
PAL	**Palisades**	**55.91**	**66**	*e*P	**P**	**17 07 10.6**	**+0.3**
PAL				pmax	pmax		
	comp=Z,460nm,1.7s						
PAL	**Palisades**	**55.91**	**66**	*e*P	**P**	**17 07 10.2**	**-0.1**
	comp=Z,464nm,1.7s						
CPNY	**Central Park**	**56.04**	**66**	*e*P	**P**	**17 07 11.4**	**+0.2**
	comp=Z,602nm,1.8s						
HRV	**Adam Dziewonsk**	**56.05**	**63**	*e*P	**P**	**17 07 11.3**	**0.0**
HRV				pmax	pmax		
	comp=Z,180nm,1.2s						
HRV	**Adam Dziewonsk**	**56.05**	**63**	*e*P	**P**	**17 07 11.3**	**0.0**
	comp=Z,180nm,1.2s						
CBN	**Corbin Frederi**	**56.08**	**70**	PFAKE		17 07 30.0	+18
CBN				LR	LR		
	comp=Z,5μm,20.0s						
KMSC	**Kings Mountain**	**56.13**	**76**	P	**P**	**17 07 11.6**	**-0.4**
	baz=317,SNR=28						
KMSC	**Kings Mountain**	**56.13**	**76**	*e*P	**P**	**17 07 11.3**	**-0.7**
	comp=Z,271nm,1.4s						
YLE	**Yale**	**56.20**	**65**	*e*P	**P**	**17 07 12.3**	**0.0**
	comp=Z,683nm,1.5s						
GOGA	**Godfrey**	**56.20**	**79**	PFAKE		17 07 30.0	+18
GOGA				LR	LR		
	comp=Z,8μm,20.0s						
KTK1	**Kautokeino**	**56.23**	**358**	⇑*i*P	**P**	**17 07 11.9**	**-0.3**
KTK1				*e*PP	PP	17 09 06.9	-10
WES	**Weston**	**56.26**	**63**	*e*P	**P**	**17 07 13.0**	**+0.2**
WES				pmax	pmax		
	comp=Z,511nm,1.2s						
WES	**Weston**	**56.26**	**63**	*e*P	**P**	**17 07 12.9**	**+0.2**
	comp=Z,511nm,1.2s						
BCX	**Boston College**	**56.38**	**63**	*e*P	**P**	**17 07 13.2**	**-0.4**
	comp=Z,577nm,1.3s						
URVA	**University of**	**56.45**	**71**	*e*P	**P**	**17 07 13.8**	**-0.4**
BRYW	**Bryant College**	**56.49**	**64**	*e*P	**P**	**17 07 14.3**	**-0.1**
	comp=Z,262nm,1.0s						
BORG	**Borgarnes**	**56.50**	**20**	LR	LR	17 34 25.4	
	comp=Z,3μm,19.6s,baz=324,slow=39						
BORG	**Borgarnes**	**56.50**	**20**	*i* P	**P**	**17 07 16.5**	**+2.3**
BORG	**Borgarnes**	**56.50**	**20**	*e*P	**P**	**17 07 15.9**	**+1.7**
	comp=Z,608nm,1.4s						
EMMW	**East Machias**	**56.52**	**59**	*e*P	**P**	**17 07 14.1**	**-0.5**
	comp=Z,294nm,1.1s						
HHC	**Hu-ho-hao-te**	**56.74**	**295**	*e*P	**P**	**17 07 16.6**	**+0.2**
HHC				pP	sP	17 07 32.3	-1.4
HHC				sP	pP	17 07 38.0	+9.3
HHC				S	**S**	**17 15 05.4**	**-0.5**
HHC				sS	sS	17 15 27.2	+0.8
HHC				pmax	pmax		
	comp=Z,100nm,1.0s						
HHC				pmax	pmax		
	comp=Z,1μm,6.9s						
HHC				LR	LR		
	comp=Z,3μm,16.3s						
HHC				LR	LR		
	comp=Z,3μm,15.7s						
HHC				LR	LR		
	comp=Z,4μm,15.5s						
LVZ	**Lovozero**	**56.86**	**353**	*c i*P	**P**	**17 07 16.6**	**-0.2**
LVZ				pmax	pmax		
	comp=Z,435nm,1.4s						
LVZ				MLR	MLR		
	comp=Z,5μm,21.0s						
LVZ	**Lovozero**	**56.86**	**353**	*e*P	**P**	**17 07 16.5**	**-0.3**
	comp=Z,457nm,1.2s						
LVZ				LR	LR		
	comp=Z,5μm,21.0s						
LMN	**Caledonia Moun**	**56.98**	**56**	*e*P	**P**	**17 07 17.5**	**-0.4**
	comp=Z,575nm,1.1s						
LOF	**Lofoten**	**57.06**	**3**	*e*P	**P**	**17 07 17.7**	**-0.4**
LOF				IAmb	IAmb	17 07 20.1	
	comp=Z,64nm,0.5s						
TIA	**Tai'an**	**57.13**	**287**	⇑P	**P**	**17 07 19.1**	**0.0**
TIA				pmax	pmax		
	comp=Z,140nm,1.3s						
TIA				LR	LR		
	comp=Z,620nm,14.3s						
TIA				LR	LR		
	comp=Z,2μm,14.9s						
APA	**Apatity**	**57.27**	**354**	⇓*i*P	**P**	**17 07 19.6**	**0.0**
APA				pmax	pmax		
	comp=Z,173nm,1.4s						
APA				MLR	MLR		
	comp=Z,4μm,20.0s						
STEI	**Steigen**	**57.30**	**2**	*e*P	**P**	**17 07 19.9**	**+0.1**
STEI				IAmb	IAmb	17 07 20.1	
	comp=Z,94nm,0.6s						
TIGA	**Tifton**	**57.59**	**80**	P	**P**	**17 07 21.6**	**-0.8**
	baz=319						
BTO	**Baotou**	**57.72**	**296**	*e*P	**P**	**17 07 23.0**	**-0.3**
BTO				pmax	pmax		
	comp=Z,35nm,0.8s						
TARA	**Tarawa**	**57.74**	**212**	PFAKE		17 07 40.0	+17
TARA				LR	LR		
	comp=Z,367nm,22.0s						
DRLN	**Deer Lake**	**57.79**	**49**	*e*P	**P**	**17 07 23.4**	**-0.1**
	comp=Z,552nm,1.4s						
JOW	**Kunigami**	**57.82**	**272**	P	**P**	**17 07 24.8**	**+0.7**
	comp=Z,134nm,1.1s,baz=36,slow=4.9,SNR=28						
JOW				sP	**sP**	**17 07 40.6**	**-0.8**
	comp=Z,357nm,1.1s,baz=30,slow=8.5,SNR=14						
JOW	**Kunigami**	**57.82**	**272**	*e*P	**P**	**17 07 24.8**	**+0.7**
	comp=Z,785nm,1.3s						
JOW				sP	**sP**	**17 07 40.6**	**-0.8**
NHSC	**New Hope**	**58.28**	**77**	PFAKE		17 07 40.0	+13
NHSC				LR	LR		
	comp=Z,10μm,19.0s						
TIY	**Taiyuan**	**58.57**	**292**	*e*P	**P**	**17 07 29.6**	**+0.3**
TIY				pP	**sP**	**17 07 46.1**	**-0.5**
TIY				S	**S**	**17 15 25.7**	**-4.2**
TIY				pmax	pmax		
	comp=Z,95nm,1.0s						
TIY				pmax	pmax		
	comp=Z,1μm,3.8s						
TIY				LR	LR		
	comp=Z,960nm,11.4s						
TIY				LR	LR		
	comp=Z,2μm,15.2s						
TIY				LR	LR		
	comp=Z,2μm,15.9s						
SSE	**Sheshan**	**58.65**	**280**	P	**P**	**17 07 30.4**	**+0.6**
SSE				pmax	pmax		
	comp=Z,250nm,1.2s						
SSE				pmax	pmax		
	comp=Z,1μm,3.7s						
SSE				LR	LR		
	comp=Z,1μm,21.6s						
SSE				LR	LR		
	comp=Z,740nm,21.6s						
SSE				LR	LR		
	comp=Z,1μm,28.5s						
NVS	**Novosibirsk**	**58.69**	**323**	*e*P	**P**	**17 07 29.8**	**+0.1**
NVS				pmax	pmax		
	comp=Z,93nm,1.2s						
NVS				pmax	pmax		
	comp=N,39nm,1.4s						
NVS				pmax	pmax		
	comp=E,52nm,1.2s						
ZAA1	**Zalesovo Array**	**58.83**	**321**	*e*P	**P**	**17 07 30.8**	**0.0**
ZAA1				*e*PcP	**PcP**	**17 08 21.2**	**+1.4**
ZALV	**Zalesovo Beam**	**58.84**	**321**	P	**P**	**17 07 30.8**	**0.0**
	comp=E,16nm,0.6s,baz=41,slow=6.1,SNR=104						
ZALV				PcP	**PcP**	**17 08 21.2**	**+1.4**
	comp=E,14nm,0.5s,baz=41,slow=0.9,SNR=7.7						
ZALV				LR	LR	17 35 05.1	
	comp=E,13μm,19.4s,baz=32,slow=38						
ZALV				PKPPKP	P'P'df	17 36 55.7	-15
	comp=E,1.7nm,0.8s,baz=222,slow=2.0,SNR=6.4						
STOK	**Stokkvaagen**	**58.85**	**3**	*e*P	**P**	**17 07 31.1**	**+0.5**
GUMO	**Guam**	**59.02**	**248**	P	**P**	**17 07 31.1**	**-1.3**
	comp=E,81nm,0.4s,baz=40,slow=1.8,SNR=11						
GUMO				LR	LR	17 30 04.9	
	comp=E,775nm,21.5s,baz=35,slow=33						
MOR8	**Moi Rana**	**59.05**	**2**	⇑*i*P	**P**	**17 07 31.2**	**-0.9**
MOR8				IAmb	IAmb	17 07 31.9	
	comp=Z,90nm,0.6s						
NJ2	**Nanjing**	**59.25**	**283**	*e*P	**P**	**17 07 34.0**	**+0.1**
NJ2				sP	**sP**	**17 07 50.9**	**-0.4**
NJ2				S	**S**	**17 15 37.0**	**-1.7**
NJ2				pmax	pmax		
	comp=Z,200nm,0.8s						
NJ2				pmax	pmax		
	comp=Z,1μm,4.5s						
NJ2				LR	LR		
	comp=Z,2μm,23.9s						
NJ2				LR	LR		
	comp=Z,2μm,24.4s						
NJ2				LR	LR		
	comp=Z,3μm,26.0s						
TLIG	**Tlapa**	**59.76**	**103**	*e*P	**P**	**17 07 38.3**	**+0.6**
	comp=Z,88nm,1.0s						
TMCR	**Tamitsa**	**60.27**	**351**	*e*P	**P**	**17 07 40.6**	**+0.2**
TMCR				pmax	pmax		
	comp=Z,251nm,0.8s						
NSS	**Namsos**	**60.62**	**4**	⇑*i*P	**P**	**17 07 43.0**	**+0.1**
NSS				*e*		17 07 59.3	
TBLU	**Trondheim**	**61.82**	**5**	⇑*i*P	**P**	**17 07 50.4**	**-0.6**
CMIG	**Matias Romero**	**62.21**	**100**	LR	LR	17 33 25.1	
	comp=Z,2μm,21.6s,baz=300,slow=34						
MOL	**Molde**	**62.35**	**6**	⇑*i*P	**P**	**17 07 55.1**	**+0.6**
YOJ	**Yonaguni jima**	**62.66**	**274**	*e*P	**P**	**17 07 55.7**	**-1.4**
YOJ				pmax	pmax		
	comp=Z,592nm,1.1s						
YOJ	**Yonaguni jima**	**62.66**	**274**	*e*P	**P**	**17 07 55.7**	**-1.4**
	comp=Z,592nm,1.1s						
AKN	**Aaknes**	**62.71**	**7**	⇑*i*P	**P**	**17 07 57.9**	**+1.0**
AKN				*e*pP	**pP**	**17 08 10.7**	**+1.3**
AKN				*e*S	**S**	**17 16 17.4**	**-4.6**
AKN				IAMs_20	IAMs_20	17 33 40.4	
	comp=Z,3μm,22.9s						
WHN	**Wuhan**	**62.91**	**285**	⇑P	**P**	**17 07 59.0**	**+0.3**
WHN				pP	**sP**	**17 08 13.9**	**-2.3**
WHN				pmax	pmax		
	comp=Z,260nm,0.7s						
WHN				LR	LR		
	comp=Z,4μm,18.7s						
WHN				LR	LR		
	comp=Z,5μm,19.2s						
WHN				LR	LR		
	comp=Z,5μm,23.9s						
TATO	**Taipei**	**63.14**	**276**	*e*P	**P**	**17 08 01.2**	**+0.8**
	comp=Z,605nm,1.8s						
TATO				LR	LR		
	comp=Z,2μm,21.0s						
FOO	**Floro**	**63.15**	**8**	⇑*i*P	**P**	**17 07 59.8**	**0.0**
XAN	**Xi'an**	**63.21**	**292**	P	**P**	**17 08 01.0**	**+0.2**
XAN				pP	pP	17 08 14.2	+0.9
XAN				sP	sP	17 08 19.5	+1.3
XAN				pmax	pmax		
	comp=Z,190nm,1.1s						
XAN				pmax	pmax		
	comp=Z,980nm,6.5s						
XAN				LR	LR		
	comp=Z,2μm,19.6s						
XAN				LR	LR		
	comp=Z,2μm,20.4s						
XAN				LR	LR		
	comp=Z,3μm,23.1s						
SEM	**Semipalatinsk**	**63.36**	**321**	*i* P	**P**	**17 07 59.8**	**-1.6**
	comp=Z,556nm,1.5s						
SEM				*e*S	**S**	**17 16 30.1**	**-0.2**
SEM				LR	LR	17 35 42.9	
	comp=Z,6μm,17.7s						
KLMR	**Klimovskoe**	**63.37**	**349**	*i* P	**P**	**17 08 01.2**	**-0.1**
KLMR				*e*		17 08 37.7	
KLMR				pmax	pmax		
	comp=Z,377nm,1.1s						
YHNB	**Yeheng**	**63.44**	**276**	*e*P	**P**	**17 08 01.0**	**-1.4**
	comp=Z,92nm,1.0s						
YHNB				LR	LR		
	comp=Z,1μm,22.0s						
TEIG	**Tepich**	**63.50**	**92**	LR	LR	17 37 48.5	
	comp=Z,492nm,19.0s,baz=358,slow=38						
TEIG	**Tepich**	**63.50**	**92**	*e*P	**P**	**17 08 02.0**	**-0.8**
	comp=Z,176nm,1.8s						
SVE	**Sverdlovsk**	**63.59**	**336**	*d i*P	**P**	**17 08 03.3**	**+0.4**
SVE				*e*PPP	PPP	17 11 50.2	
SVE				*e*S	**S**	**17 16 34.3**	**+1.2**
SVE				pmax	pmax		
	comp=Z,441nm,1.2s						
SVE				MLR	MLR		
	comp=Z,5μm,18.0s						
YEL1	**Yell**	**63.60**	**11**	⇑*i*P	**P**	**17 08 03.9**	**+1.1**
HYA	**Hoyanger**	**63.66**	**7**	*e*P	**P**	**17 08 03.7**	**+0.5**
SUE	**Sulen**	**63.66**	**8**	⇑*i*P	**P**	**17 08 03.3**	**+0.1**
SUE				*e*pP	**pP**	**17 08 16.4**	**+0.7**
SUE				IAmb	IAmb	17 08 21.2	
	comp=Z,137nm,1.0s						
SUE				IAMs_20	IAMs_20	17 30 41.4	
	comp=Z,2μm,21.4s						
KURK	**Kurchatov**	**63.68**	**323**	P	**P**	**17 08 02.6**	**-0.9**
KURK				pmax	pmax		
	comp=Z,198nm,0.7s						
KURK	**Kurchatov**	**63.68**	**323**	*e*P	**P**	**17 08 03.9**	**+0.4**
	comp=Z,250nm,1.3s						
KURK				LR	LR		
	comp=Z,25μm,19.0s						
NACB	**Ninganchiao**	**63.70**	**275**	*e*P	**P**	**17 08 02.9**	**-1.2**
	comp=Z,454nm,1.3s						
FIA1	**FINESS Array S**	**63.74**	**356**	*e*P	**P**	**17 08 03.3**	**-0.4**
	comp=Z,498nm,1.0s						
FIA1				*e*pP	**sP**	**17 08 20.4**	**-0.9**
FIA0	**FINESS Array S**	**63.74**	**356**	*e*P	**P**	**17 08 03.8**	**+0.1**
FIA0	**FINESS Array S**	**63.74**	**356**	*e*P	**P**	**17 08 03.8**	**+0.1**
FIA0				*e*pP	**pP**	**17 08 17.3**	**+1.0**
FIA0				*e*sP	**sP**	**17 08 20.6**	**-0.6**
FINES	**FINESS Array B**	**63.74**	**356**	P	**P**	**17 08 03.8**	**+0.1**
	comp=Z,154nm,0.6s,baz=21,slow=7.5,SNR=995						
FINES				pP	**pP**	**17 08 17.3**	**+1.0**
	comp=Z,364nm,1.0s,baz=15,slow=8.1,SNR=14						
FINES				sP	**sP**	**17 08 20.6**	**-0.6**
	comp=Z,355nm,1.0s,baz=29,slow=4.4,SNR=12						
FINES				PKPPKP	P'P'df	17 36 53.3	-10
	comp=Z,7.7nm,0.9s,baz=122,slow=2.5,SNR=11						
FINES				LR	LR	17 40 08.6	
	comp=Z,2μm,18.0s,baz=12,slow=40						
FINES	**FINESS Array B**	**63.74**	**356**	*i* P	**P**	**17 08 03.7**	**-0.1**
FINES				pmax	pmax		
	comp=Z,154nm,0.6s						
GTA	**Gaotai**	**63.77**	**302**	⇑P	**P**	**17 08 04.4**	**-0.1**
GTA				pP	pP	17 08 17.3	+0.3
GTA				sP	sP	17 08 22.4	+0.4
GTA				PP	**PP**	**17 10 25.2**	**+0.6**
GTA				S	**S**	**17 16 31.9**	**-4.2**
GTA				sS	sS	17 16 54.8	-2.1
GTA				SS	**SS**	**17 20 41.2**	**-2.5**
GTA				pmax	pmax		
	comp=Z,170nm,1.5s						
GTA				pmax	pmax		
	comp=Z,2μm,6.9s						
GTA				LR	LR		
	comp=Z,5μm,15.2s						
GTA				LR	LR		
	comp

NB201	NORSAR Array S	64.07	4	eP	P	17 08 06.2	+0.2
NB201				epP	sP	17 08 23.4	-0.1
NB2	NORSAR Subarra	64.08	4	P	P	17 08 06.4	+0.3
	comp=Z,521nm,1.1s,baz=354,slow=6.9						
NB2	NORSAR Subarra	64.08	4	P	P	17 08 06.4	+0.3
	baz=354,slow=6.9						
NB200	NORSAR Array S	64.08	4	eP	P	17 08 06.4	+0.3
NB200				epP	pP	17 08 20.0	+1.4
NOA	NORSAR Array B	64.08	4	P	P	17 08 06.4	+0.3
	comp=Z,73nm,0.7s,baz=356,slow=6.6,SNR=370						
NOA				pP	pP	17 08 20.0	+1.4
	comp=Z,224nm,1.0s,baz=355,slow=6.6,SNR=18						
NOA				LR	LR	17 36 08.8	
	comp=Z,850nm,20.7s,baz=0.0,slow=36						
NOA				PKPPKP	P'P'df	17 36 58.0	-5.2
	comp=Z,3.8nm,0.9s,baz=187,slow=3.1,SNR=7.3						
SAN1	Sandwick	64.10	11⇑	iP	P	17 08 06.9	+0.8
ZSN	Zaisan	64.23	317	iP	P	17 08 04.4	-2.9
	comp=Z,2μm,1.2s						
ZSN				eS	S	17 16 39.2	-2.1
ZSN				LR	LR	17 36 20.7	
	comp=Z,3μm,17.0s						
NAO01	NORSAR Array S	64.26	5	eP	P	17 08 07.2	0.0
ASK	Askoy	64.26	8⇑	iP	P	17 08 07.9	+0.7
ASK				epP	pP	17 08 21.1	+1.4
LZH	Lanzhou	64.31	297	⇑P	P	17 08 08.5	+0.4
LZH				pP	pP	17 08 21.9	+1.2
LZH				sP	sP	17 08 26.0	+0.4
LZH				PP	PP	17 10 31.2	+1.8
LZH				S	S	17 16 40.0	-2.9
LZH				sS	sS	17 17 02.0	-1.8
LZH				SS	SS	17 20 51.0	-1.3
LZH				pmax	pmax		
	comp=Z,510nm,1.5s						
LZH				pmax	pmax		
	comp=Z,2μm,7.8s						
LZH				LR	LR		
	comp=Z,4μm,16.2s						
LZH				LR	LR		
	comp=Z,5μm,17.0s						
LZH				LR	LR		
	comp=Z,5μm,19.5s						
SSLB	Suanglung	64.37	275	eP	P	17 08 08.2	-0.3
	comp=Z,442nm,1.1s						
BER	Bergen	64.37	8⇑	iP	P	17 08 08.4	+0.5
BER				IAMs_20	IAMs_20	17 30 58.3	
	comp=Z,2μm,27.4s						
BVA0	Borovoye Array	64.38	329	iP	P	17 08 07.3	-0.8
BVA0				pmax	pmax		
	comp=Z,184nm,0.8s						
BVAR	Borovoye Array	64.38	329	P	P	17 08 08.7	+0.5
	comp=Z,114nm,0.7s,baz=38,slow=7.1,SNR=722						
BVAR				PcP	PcP	17 08 43.3	+1.0
	comp=Z,42nm,0.6s,baz=22,slow=3.2,SNR=5.0						
BVAR				PKPPKP	P'P'df	17 36 44.2	-18
	comp=Z,2.1nm,1.0s,baz=177,slow=3.0,SNR=5.8						
BVAR				LR	LR	17 40 01.6	
	comp=Z,4μm,18.6s,baz=47,slow=40						
BRVK	Borovoye	64.39	329	ceP	P	17 08 08.3	+0.2
BRVK				pmax	pmax		
	comp=Z,362nm,1.7s						
BRVK				MLR	MLR		
	comp=Z,5μm,18.0s						
BRVK	Borovoye	64.39	329	eP	P	17 08 08.4	+0.3
	comp=Z,573nm,1.6s						
BRVK				LR	LR		
	comp=Z,5μm,20.0s						
NC602	NORSAR Array S	64.40	4⇑	iP	P	17 08 08.4	+0.3
NC602	NORSAR Array S	64.40	4	eP	P	17 08 08.1	0.0
ARU	Arti	64.43	337	ciP	P	17 08 08.4	0.0
ARU						17 08 39.9	
ARU						17 10 26.6	
ARU				PPP	PPP	17 12 06.1	
ARU				S	S	17 16 45.1	+1.7
ARU						17 18 05.4	
ARU				SSS	SSS	17 23 53.1	
ARU				pmax	pmax		
	comp=Z,423nm,1.2s						
ARU	Arti	64.43	337	eP	P	17 08 08.2	-0.2
	comp=Z,194nm,0.6s						
ARU				LR	LR		
	comp=Z,3μm,19.0s						
YULB	Yu-li	64.48	275	eP	P	17 08 07.8	-1.3
	comp=Z,577nm,1.6s						
QZH	Quanzhou	64.82	278⇑	iP	P	17 08 07.4	-4.0
QZH				pP	pP	17 08 22.8	-1.1
QZH				S	S	17 16 44.4	-4.7
QZH				pmax	pmax		
	comp=Z,660nm,1.4s						
QZH				pmax	pmax		
	comp=Z,3μm,3.0s						
QZH				LR	LR		
	comp=Z,2μm,17.4s						
QZH				LR	LR		
	comp=Z,3μm,21.6s						
QZH				LR	LR		
	comp=Z,3μm,22.9s						
TPUB	Ta-pu	64.93	275	eP	P	17 08 11.3	-0.8
	comp=Z,376nm,1.4s						
ODD1	Odda	64.94	7⇑	iP	P	17 08 12.4	+0.7
TWG	Pinlang	65.05	274	eP	P	17 08 12.0	-0.9
	comp=Z,782nm,1.5s						
OSL	Oslo	65.16	5	eP	P	17 08 13.5	+0.5
RSC	Scourie	65.23	14⇑	iP	P	17 08 14.3	+0.8
BIGH	Upper Bighouse	65.26	13⇑	eP	P	17 08 14.6	+0.9
BIGH				AMB	AMB	17 08 15.4	
	comp=Z,420nm,1.3s						
BIGH				AMS	AMS	17 35 24.3	
	comp=Z,5μm,22.9s						
KONO	Kongsberg	65.39	6⇑	iP	P	17 08 15.5	+1.0
KONO				IAmb	IAmb	17 08 33.0	
	comp=Z,576nm,1.2s						
KONO	Kongsberg	65.39	6	eP	P	17 08 15.2	+0.7
KONO				pmax	pmax		
	comp=Z,532nm,1.2s						
KONO				MLR	MLR		
	comp=Z,2μm,22.0s						
KONO	Kongsberg	65.39	6	eP	P	17 08 15.2	+0.7
	comp=Z,532nm,1.2s						
KONO				LR	LR		
	comp=Z,2μm,22.0s						
BLS5	Blasjo	65.41	7⇑	iP	P	17 08 15.4	+0.7
BLS5				e		17 08 32.8	
BLS5				IAMs_20	IAMs_20	17 37 01.9	
	comp=Z,2μm,23.0s						
RRH	Rhenigidale	65.42	15⇑	iP	P	17 08 15.6	+0.8
MLA1	Latheron	65.51	13⇑	eP	P	17 08 15.9	+0.5
KMY	Karmoy	65.53	8	eP	P	17 08 15.8	+0.4
KMY				IAmb	IAmb	17 08 33.6	
	comp=Z,233nm,1.6s						
MK31	Makanchi Array	65.59	318	iP	P	17 08 15.5	-0.6
MK31				pmax	pmax		
	comp=Z,22nm,0.6s						
MK31	Makanchi Array	65.59	318	eP	P	17 08 15.5	-0.6
MK32	Makanchi Array	65.59	318	eP	P	17 08 15.6	-0.5
MK32				ePKKPdf	PKKPdf	17 28 34.9	+2.6
MKAR	Makanchi Array	65.59	318	P	P	17 08 15.6	-0.5
	comp=Z,26nm,0.4s,baz=41,slow=6.0,SNR=259						
MKAR				PKKP	PKKPdf	17 28 34.9	+2.6
	comp=Z,0.7nm,1.0s,baz=15,slow=5.0,SNR=3.9						
MKAR				PKPPKP	P'P'df	17 36 54.4	-5.5
	comp=Z,6.2nm,1.0s,baz=220,slow=3.2,SNR=14						
MKAR				LR	LR	17 38 51.1	
	comp=Z,7μm,21.1s,baz=32,slow=38						
MKAR	Makanchi Array	65.59	318	iP	P	17 08 09.8	-6.3
MK01	Makanchi Array	65.60	318	eP	P	17 08 15.4	-0.8
RRR	Rubha Reidh	65.61	15⇑	iP	P	17 08 16.8	+0.8
MAKZ	Makanchi	65.70	318	P	P	17 08 15.5	-1.3
MAKZ				pmax	pmax		
	comp=Z,52nm,0.6s						
MAKZ	Makanchi	65.70	318	eP	P	17 08 16.2	-0.6
	comp=Z,198nm,1.4s						
MVH1	Achvaich	65.77	14⇑	iP	P	17 08 17.9	+0.9
ENH	Enshi	65.80	288	eP	P	17 08 17.4	-0.3
	comp=Z,451nm,1.1s						
ENH				LR	LR		
	comp=Z,3μm,19.0s						
WMQ	Urumqi	65.83	313⇑	iP	P	17 08 18.4	+0.6
WMQ				pP	sP	17 08 34.9	-0.4
WMQ				PcP	PcP	17 08 49.8	+1.3
WMQ				PcS		17 12 51.0	
WMQ				S	S	17 17 03.0	+1.8
WMQ				sS	sS	17 17 21.2	-0.9
WMQ				ScS	SKSac	17 18 03.3	-6.4
WMQ				SS	SS	17 21 18.6	+3.2
WMQ				pmax	pmax		
	comp=Z,100nm,0.8s						
WMQ				pmax	pmax		
	comp=Z,480nm,4.0s						
WMQ				LR	LR		
	comp=Z,2μm,24.2s						
WMQ				LR	LR		
	comp=Z,1μm,19.8s						
WMQ				LR	LR		
	comp=Z,3μm,26.6s						
STAV	Stavanger	65.84	8	eP	P	17 08 17.3	-0.1
STAV				i		17 08 34.6	
TAOE	Nuku Hiva Isla	65.90	158	eP	P	17 08 29.9	+11
	comp=Z,698nm,1.4s						
TAOE				eS	S	17 17 09.3	+6.8
	comp=Z,5μm,32.5s						
TAOE				eSS	SS	17 21 20.2	+1.9
	comp=Z,2μm,32.5s						
TAOE				eLR	LR	17 27 57.3	
	comp=Z,9μm,28.1s,baz=356						
TAOE	Nuku Hiva Isla	65.90	158	eT	T	18 19 19.4	
	comp=Z,193nm,0.2s						
KAC	Achnashellach	66.03	14⇑	iP	P	17 08 19.5	+0.8
KPL	Plockton	66.13	15⇑	iP	P	17 08 20.1	+0.8
KPL				AMS	AMS	17 36 39.9	
	comp=Z,3μm,21.7s						
MDO	Dochfour	66.22	14⇑	iP	P	17 08 20.6	+0.7
MCD	Coleburn Disti	66.23	13⇑	iP	P	17 08 21.1	+1.1
KSB	Sheil Bridge	66.29	15⇑	iP	P	17 08 21.2	+0.8
MME1	Meikle Cairn	66.53	13⇑	iP	P	17 08 22.5	+0.6
SNART	Snartemo	66.54	7	eP	P	17 08 22.9	+1.0
HOMB	Homborsund	66.69	6⇑	iP	P	17 08 23.8	+0.9
HOMB				epP	pP	17 08 37.3	+1.8
HOMB				esP	sP	17 08 41.5	+1.1
HOMB				IAMs_20	IAMs_20	17 35 49.6	
	comp=Z,3μm,23.0s						
VSU	Vasula	66.70	356	ciP	P	17 08 23.3	+0.4
VSU				pmax	pmax		
	comp=Z,459nm,0.9s						
DRUM	Mains of Drumt	66.98	13⇑	iP	P	17 08 25.7	+0.9
DRUM				AMB	AMB	17 08 26.3	
	comp=Z,631nm,0.7s						
DRUM				AMS	AMS	17 35 52.6	
	comp=Z,2μm,22.8s						
BBSR	BB Station	67.26	66	eP	P	17 08 26.3	-0.6
	comp=Z,210nm,1.4s						
BBSR				LR	LR		
	comp=Z,2μm,21.0s						
EDU	Dundee	67.27	13⇑	iP	P	17 08 27.3	+0.7
EAB	Aberfoyle	67.44	14⇑	iP	P	17 08 28.7	+1.0
PGBU	Glenifferbraes	67.78	14⇑	eP	P	17 08 30.4	+0.6
PGBU				AMB	AMB	17 08 31.4	
	comp=Z,292nm,1.5s						
PGBU				AMS	AMS	17 37 15.1	
	comp=Z,3μm,23.9s						
EDI	Edinburgh	67.85	14⇑	eP	P	17 08 31.1	+0.8
EDI				AMB	AMB	17 08 31.8	
	comp=Z,184nm,1.2s						
EDI				AMS	AMS	17 36 44.4	
	comp=Z,2μm,21.6s						
OTUK	Ortayu	67.93	325	P	P	17 08 31.0	0.0
OTUK				pmax	pmax		
	comp=Z,211nm,1.2s						
ESY	Stoneypath	67.93	13⇑	eP	P	17 08 31.5	+0.6
IDGL	Inch Island, C	68.03	16⇑	eP	P	17 08 32.4	+1.0
GMK	Mull of Kintyr	68.07	15⇑	iP	P	17 08 32.5	+0.8
CD2	Chengdu	68.38	293	P	P	17 08 35.0	+0.9
CD2				sP	sP	17 08 51.1	-0.6
CD2				PP	PP	17 11 05.5	+0.6
CD2				S	S	17 17 31.7	-0.5
CD2				sS	sS	17 17 54.7	+1.5
CD2				SS	SS	17 21 53.4	-2.1
CD2				pmax	pmax		
	comp=Z,870nm,0.9s						
CD2				pmax	pmax		
	comp=Z,2μm,4.4s						
CD2				LR	LR		
	comp=Z,3μm,21.4s						
CD2				LR	LR		
	comp=Z,3μm,26.2s						
ESK	Eskdalemuir	68.44	14	eP	P	17 08 34.9	+0.9
ESK				AMS	AMS	17 37 12.8	
	comp=Z,3μm,22.7s						
ESK	Eskdalemuir	68.44	14	iP	P	17 08 35.2	+1.2
ESK	Eskdalemuir	68.44	14	eP	P	17 08 35.1	+1.1
	comp=Z,1μm,1.9s						
ESK				LR	LR		
	comp=Z,4μm,22.0s						
BWH	Wardlaw	68.52	14⇑	iP	P	17 08 35.3	+0.8
MUD	Monsted U'grnd	68.54	6⇑	iP	P	17 08 35.8	+1.2
MUD				i		17 08 52.3	
MUD	Monsted U'grnd	68.54	6⇑	iP	P	17 08 35.8	+1.2
TDK	Taldyqorghan	68.57	319	iP	P	17 08 33.6	-1.4
	comp=Z,2μm,1.2s						
TDK				LR	LR	17 38 36.7	
	comp=Z,3μm,18.2s						
ECK	Cauldkaine Hil	68.58	14⇑	iP	P	17 08 35.7	+0.8
MOS	Moscow	68.59	349	αiP	P	17 08 34.9	0.0
MOS				e		17 08 59.6	
MOS				e		17 11 09.7	
MOS				ePPP	PPP	17 12 45.5	
MOS				eS	S	17 17 30.2	-3.6
MOS				e		17 18 27.4	
MOS				pmax	pmax		
	comp=Z,282nm,0.8s						
MOS				pmax	pmax		
	comp=Z,900nm,1.5s						
BHH	Howats Hill	68.66	14⇑	iP	P	17 08 36.1	+0.8
GAL1	Galloway	68.67	15⇑	iP	P	17 08 35.5	+0.1
APYP	Conner	68.85	271	eP	P	17 08 36.1	-1.0
TGUH	Tegucigalpa,Un	68.98	96	eP	P	17 08 38.6	+0.7
	comp=Z,143nm,0.8s						
GMM	Mts of Mourne	69.08	16⇑	iP	P	17 08 38.6	+0.6
KESW	Keswick, Cumbr	69.16	14⇑	iP	P	17 08 39.3	+0.8
KESW				AMB	AMB	17 08 40.1	
	comp=Z,232nm,1.4s						
LCP	Cassop	69.23	13⇑	eP	P	17 08 40.1	+1.1
CAUP	Cauayan	69.25	270	eP	P	17 08 40.1	+0.6
GZH	Guangzhou	69.25	281	P	P	17 08 36.5	-3.0
GZH				S	S	17 17 37.7	-4.8
GZH				pmax	pmax		
	comp=Z,2μm,5.6s						
GZH				LR	LR		
	comp=Z,2μm,20.0s						
GZH				LR	LR		
	comp=Z,4μm,20.2s						
SIPP	Brgy, Tapao	69.25	272	⇑eP	P	17 08 39.7	+0.2
IGLA	Glengowla, Co	69.30	18	⇑eP	P	17 08 40.1	+0.8
OBN	Obninsk	69.32	350	ciP	P	17 08 39.1	-0.3
OBN				eS	S	17 17 38.3	-4.0
OBN				eSS	SS	17 22 16.3	+7.9
OBN				pmax	pmax		
	comp=Z,439nm,1.7s						
OBN				MLR	MLR		
	comp=Z,5μm,22.0s						
OBN	Obninsk	69.32	350	eP	P	17 08 38.8	-0.6
	comp=Z,360nm,1.0s						
OBN				epP	sP	17 08 55.7	-1.3
OBN				eP'P'df	P'P'df	17 36 40.9	-13
OBN				LR	LR		
	comp=Z,5μm,21.0s						
ABRA	Dolores	69.33	271	eP	P	17 08 40.2	+0.2
AFI	Afiamalu	69.34	192	LR	LR	17 32 32.1	
	comp=Z,3μm,21.0s,baz=350,slow=30						
WIM	Isle of Man	69.37	15⇑	eP	P	17 08 40.5	+0.7
COP	Copenhagen	69.48	4⇑	iP	P	17 08 41.4	+1.0
	comp=Z,96nm,0.7s						
COP	Copenhagen	69.48	4⇑	iP	P	17 08 41.4	+1.0
COP				pmax	pmax		
	comp=Z,96nm,0.7s						
SHLS	Shalkode	69.57	317	iP	P	17 08 39.9	-1.6
	comp=Z,3μm,1.4s						
SHLS				eS	S	17 17 45.3	-1.0
SHLS				LR	LR	17 39 40.0	
	comp=Z,1μm,17.2s						
KPKS	Kokpek	69.77	318	iP	P	17 08 42.0	-0.6
	comp=Z,3μm,1.2s						
KPKS				eS	S	17 17 49.1	+0.8
KPKS				LR	LR	17 39 42.7	
	comp=Z,4μm,19.3s						
DSB	Dublin	69.98	16	eP	P	17 08 43.8	+0.3
	comp=Z,92nm,1.0s						
HPK	Haverah Park	69.98	13⇑	eP	P	17 08 44.7	+1.1
HPK				AMB	AMB	17 08 46.0	
	comp=Z,172nm,0.7s						
HPK				AMS	AMS	17 39 27.1	
	comp=Z,2μm,23.0s						
AKTO	Aktyubinsk	70.08	335	P	P	17 08 44.8	+0.5
	comp=Z,215nm,0.6s,baz=31,slow=6.4,SNR=703						
AKTO				PKPPKP	P'P'df	17 36 44.7	-8.0
	comp=Z,2.8nm,0.9s,baz=251,slow=6.0,SNR=7.2						
AKTO	Aktyubinsk	70.08	335	P	P	17 08 44.0	-0.3
AKTO				pmax	pmax		
	comp=Z,288nm,0.8s						
ZHN	Zhinishke	70.12	318	iP	P	17 08 43.7	-1.0
	comp=Z,427nm,1.2s						
ZHN				eS	S	17 17 52.9	+0.4
ZHN				LR	LR	17 39 55.3	
	comp=Z,3μm,19.7s						
BSD	Bornholm Skovb	70.14	3⇑	iP	P	17 08 45.1	+0.6
	comp=Z,106nm,0.7s						
BSD				i		17 09 01.5	
BSD	Bornholm Skovb	70.14	3⇑	iP	P	17 08 45.1	+0.6
BSD				i		17 09 01.5	
BSD				pmax	pmax		
	comp=Z,110nm,0.7s						
WME	Myndd Eilian	70.15	15⇑	iP	P	17 08 45.1	+0.6
SATY	Saty	70.22	318	iP	P	17 08 43.8	-1.6
	comp=Z,2μm,1.2s						
SATY				eS	S	17 17 52.8	-0.9
SATY				LR	LR	17 39 49.5	
	comp=Z,4μm,20.3s						
WLF1	Llynfaes	70.24	15⇑	eP	P	17 08 45.6	+0.5
WLF1				AMB	AMB	17 08 46.4	
	comp=Z,101nm,1.7s						
YRC	Rhoscolyn	70.25	15⇑	eP	P	17 08 45.6	+0.4
NACGM	Naroch	70.25	356	eP	P	17 08 44.0	-1.2
NACGM				ePcP	sP	17 09 02.0	-0.8
NACGM				eS	S	17 17 50.0	-3.4
NACGM				ePS	PnS	17 18 56.0	+32
NACGM				eLQ	LQ	17 32 32.0	
KUU	Kurty	70.29	320	iP	P	17 08 44.1	-1.6
	comp=Z,980nm,1.1s						
KUU				eS	S	17 17 53.8	-0.4
KUU				LR	LR	17 40 05.7	
	comp=Z,4μm,18.1s						
GYA	Guiyang	70.32	288⇑	iP	P	17 08 45.8	-0.4
GYA				pP	pP	17 09 00.4	+1.5
GYA				sP	PcP	17 09 06.8	-0.8
GYA				PP	PP	17 11 24.0	+2.1
GYA				S	S	17 17 56.4	+1.2
GYA				SKS	SKSac	17 18 39.6	-4.7
GYA				SS	SS	17 22 24.5	-1.2
GYA				pmax	pmax		
	comp=Z,300nm,1.2s						
GYA				pmax	pmax		
	comp=Z,1μm,9.0s						
GYA				LR	LR		
	comp=Z,2μm,18.7s						
GYA				LR	LR		
	comp=Z,1μm,19.6s						
GYA				LR	LR		
	comp=Z,2μm,20.9s						
WPM1	Penmaenmawr	70.34	15⇑	iP	P	17 08 46.0	+0.2
BALP	Baler	70.34	269	eP	P	17 08 45.8	-0.5
LHO	Holmfirth	70.35	13⇑	iP	P	17 08 46.7	+0.8
BCPH	Baguio City Da	70.41	271⇓	eP	P	17 08 45.9	-1.1
YLL	Llanberis	70.42	15⇑	eP	P	17 08 46.5	+0.3
YRE	Yr Eifl	70.54	15⇑	iP	P	17 08 47.2	+0.3
VAL	Valentia	70.56	19	eP	P	17 08 43.7	-3.4
PVCP	Virac	70.58	266	eP	P	17 08 48.5	+0.8
PMOR	Pomariorio Ree	70.58	167	eP	P	17 09 00.1	+13
	comp=Z,834nm,1.4s						
PMOR	Pomariorio Ree	70.58	167	eT	T	18 25 15.4	
	comp=Z,636nm,0.3s						
AAA	Alma-Ata	70.59	319	iP	P	17 08 46.9	-0.6
	comp=Z,2μm,1.3s						
AAA				eS	S	17 17 58.7	+0.8
AAA				LR	LR	17 39 58.6	
	comp=Z,3μm,21.2s						
MICGM	Minsk	70.60	355⇑	iP	P	17 08 46.0	-1.3
MICGM				⇑iP	P	17 08 46.0	-1.3
MICGM				PM		17 08 47.0	
	comp=Z,0.8nm,1.0s						
MICGM				PM		17 08 48.0	
	comp=N,0.6nm,1.4s						
MICGM				ePcP	sP	17 09 03.0	-2.0
MICGM				ePPP	PPP	17 12 58.0	
MICGM				eS	S	17 17 52.0	-5.5
MICGM				ePS	PnS	17 18 24.0	-4.9
MICGM				eSS	SS	17 22 30.0	+1.8
MICGM				eSSS	SSS	17 25 34.0	
MICGM				eLQ	LQ	17 30 20.0	
MICGM				eLR	LR	17 32 42.0	
MICGM				LRM	MLR	17 38 36.0	
	comp=Z,6.4nm,22.0s						
MNK	Minsk	70.60	355	ciP	P	17 08 46.0	-1.3
MNK				e		17 09 03.0	
MNK				eS	S	17 17 52.0	-5.5
MNK				ePS	PnS	17 18 24.0	-4.9
MNK				eSS	SS	17 22 30.0	+1.8
MNK				eSSS	SSS	17 25 34.0	
MNK				pmax	pmax		
	comp=Z,800nm,1.0s						
MNK				pmax	pmax		
	comp=N,570nm,1.4s						
LMK	Market Rasen	70.63	12⇑	eP	P	17 08 48.4	+0.9
LMK				AMB	AMB	17 08 49.3	
	comp=Z,601nm,1.4s						
MDOK	Medeo	70.65	319	iP	P	17 08 46.5	-1.6
	comp=Z,1μm,1.3s						
MDOK				eS	S	17 17 58.4	-0.3
MDOK				LR	LR	17 39 50.6	
	comp=Z,3μm,19.1s						
RGN	Rugen	70.66	4	eP	P	17 08 48.7	+1.1
	comp=Z,942nm,1.1s						
AB31	Akbulak array	70.69	333	P	P	17 08 47.7	-0.2
AB31				pmax	pmax		
	comp=Z,112nm,0.5s						
ABKAR	Akbulak array	70.69	333	eP	P	17 08 48.4	+0.5
KLNR	Kaliningrad	70.72	360	iP	P	17 08 47.8	-0.2
KLNR				pmax	pmax		
	comp=Z,647nm,1.5s						
IWEX	Carrickbyrne,	70.75	17⇑	eP	P	17 08 48.8	+0.6
RABL	Rabaul	70.75	231	eP	P	17 08 47.4	-1.4
	comp=Z,483nm,1.8s						
BOLP	Bolinao	70.79	271	eP	P	17 08 48.7	-0.3
FOEL	Foel Wylfa	70.80	14⇑	iP	P	17 08 49.4	+0.7
FOEL				AMB	AMB	17 08 50.5	
	comp=Z,353nm,1.5s						
FOEL				AMS	AMS	17 38 55.1	
	comp=Z,3μm,22.5s						
VAH	Vaihoa	70.85	167	eP	P	17 09 01.4	+12
	comp=Z,652nm,1.2s						
VAH	Vaihoa	70.85	167	eT	T	18 25 35.1	
	comp=Z,41nm,0.3s						
MANU	Manus Island	71.09	237	eP	P	17 08 50.9	0.0
	comp=Z,301nm,1.6s						
HLM1	Long Mynd	71.21	14⇑	iP	P	17 08 52.0	+0.9
HLM1				AMB	AMB	17 08 52.8	
	comp=Z,175nm,1.7s						
HLM1				AMS	AMS	17 39 07.6	
	comp=Z,3μm,21.7s						
MTDJ	Mount Denham	71.26	85	eP	P	17 08 52.0	0.0
	comp=Z,228nm,1.0s						
MTDJ				LR	LR		
	comp=Z,2μm,22.0s						
SUW	Suwalki	71.27	358	eP	P	17 08 51.2	-0.2
SUW				epP	sP	17 09 07.8	-1.2
SUW				eS	S	17 18 05.8	+0.7
SUW				LMZ	LR	17 37 03.8	
	comp=Z,3μm,27.7s						
SUW	Suwalki	71.27	358	⇑eP	P	17 08 51.2	-0.2
SUW				e*PP	sP	17 09 07.8	-1.2
SCZP	Santa Cruz	71.28	271	eP	P	17 08 51.3	-0.7
GTBY	Guantanamo Bay	71.30	82	eP	P	17 08 52.2	+0.1
	comp=Z,140nm,1.1s						
GTBY				LR	LR		
	comp=Z,5μm,22.0s						
TKM2	Tokmak 2	71.40	320	eP	P	17 08 53.4	+0.7
TKM2				pmax	pmax		
	comp=Z,419nm,1.5s						
TKM2				MLR	MLR		
	comp=Z,10μm,20.0s						
TKM2	Tokmak 2	71.40	320	eP	P	17 08 53.4	+0.7
	comp=Z,419nm,1.5s						
TKM2				LR	LR		
	comp=Z,10μm,20.0s						
LPW	Lampeter	71.43	15⇑	iP	P	17 08 52.5	+0.1
LPW				AMB	AMB	17 08 53.7	

comp=Z,94nm,1.8s
LPW AMS AMS 17 37 37.6
comp=Z,2μm,24.0s
LPSR Galich'ya Gora 71.52 348 *e*P **P 17 08 52.6 -0.3**
LPSR *e* 17 09 09.2
LPSR *e*PPP PPP 17 13 09.6
LPSR *e*S **S 17 18 00.8 -7.3**
LPSR pmax pmax
comp=Z,110nm,0.6s
LPSR smax smax
comp=N,200nm,7.7s
MCH1 Michaelchurch 71.70 14⇑ *e*P **P 17 08 54.4 +0.3**
MCH1 AMB AMB 17 08 55.7
comp=Z,269nm,1.6s
MCH1 AMS AMS 17 39 34.1
comp=Z,3μm,22.2s
FRU Bishkek 71.83 321 *i* P **P 17 08 55.0 -0.1**
FRU *i* 17 09 13.0
FRU pmax pmax
comp=Z,2μm,2.5s
MONM Monmouth 71.88 14⇑ *i*P **P 17 08 56.0 +0.9**
MONM AMB AMB 17 08 56.8
comp=Z,222nm,1.8s
MONM AMS AMS 17 39 28.2
comp=Z,3μm,23.3s
SSW Stow on the Wo 71.89 14⇑ *i*P **P 17 08 56.2 +1.0**
BOAC Boac 72.02 268 *e*P **P 17 08 56.9 +0.5**
STRD Stroud 72.03 14⇑ *i*P **P 17 08 57.0 +1.0**
STRD AMB AMB 17 08 58.4
comp=Z,314nm,0.8s
STRD AMS AMS 17 39 21.2
comp=Z,3μm,21.3s
AAK Ala-Archa 72.05 321 P **P 17 08 57.6 +1.1**
comp=Z,79nm,0.8s,baz=95,slow=2.2,SNR=135
AAK Ala-Archa 72.05 321 P **P 17 08 56.6 +0.1**
AAK pmax pmax
comp=Z,238nm,1.4s
AAK Ala-Archa 72.05 321 *e*P **P 17 08 57.0 +0.5**
comp=Z,575nm,1.8s
AAK LR LR
comp=Z,12μm,19.0s
PLP Palo 72.06 264⇓ *e*P **P 17 08 56.6 -0.1**
OLDB Oldbury-Upon-S 72.09 14 *e*P **P 17 08 56.8 +0.5**
OLDB AMB AMB 17 08 58.0
comp=Z,274nm,1.7s
OLDB AMS AMS 17 39 46.3
comp=Z,3μm,21.8s
HNR Honiara 72.26 221 LR LR 17 34 48.1
comp=Z,1μm,21.6s,baz=14,slow=31
SKP1 Kophill 72.27 13⇑ *e*P **P 17 08 57.9 +0.5**
EKS2 Erkin-Say 72.29 321 *e*P **P 17 08 58.6 +0.7**
EKS2 pmax pmax
comp=Z,579nm,1.8s
EKS2 MLR MLR
comp=Z,14μm,20.0s
EKS2 Erkin-Say 72.29 321 *e*P **P 17 08 58.6 +0.7**
comp=Z,579nm,1.8s
EKS2 LR LR
comp=Z,14μm,20.0s
GRTK Grand Turk 72.30 78 PFAKE 17 09 10.0 +12
GRTK LR LR
comp=Z,5μm,20.0s
SWN1 Swindon 72.34 14⇑ *e*P **P 17 08 58.5 +0.7**
SWN1 AMB AMB 17 08 59.9
comp=Z,393nm,1.6s
SWN1 AMS AMS 17 39 42.7
comp=Z,3μm,21.4s
OCLP Ormoc 72.36 264 *e*P **P 17 08 58.7 +0.2**
VORR Voronezh 72.40 347 *e*P **P 17 08 56.0 -2.2**
VORR pmax pmax
comp=Z,500nm,1.2s
HTL Hartland 72.45 16⇑ *e*P **P 17 08 59.2 +0.6**
HTL AMB AMB 17 09 00.3
comp=Z,95nm,1.5s
HTL AMS AMS 17 38 45.3
comp=Z,2μm,26.7s
VRH Novokhopyorsk 72.52 346 *e*P **P 17 08 58.3 -0.6**
VRH *e* 17 09 15.0
VRH *e*PPP PPP 17 13 21.1
VRH pmax pmax
comp=Z,190nm,0.7s
VRH MLR MLR
comp=Z,4μm,22.0s
WOL Wolverton 72.62 13⇑ *i*P **P 17 09 00.6 +1.1**
WOL AMB AMB 17 09 01.4
comp=Z,461nm,1.6s
WOL AMS AMS 17 39 38.4
comp=Z,3μm,25.1s
WTSB Winterswijk 72.84 8 *e*P **P 17 09 01.5 +0.7**
comp=Z,304nm,1.2s
WTSB *e*pP **sP 17 09 18.5 0.0**
VSR Storozhevoye 72.85 347 *e*P **P 17 09 00.8 -0.1**
VSR *e* 17 09 01.5
VSR *e* 17 09 17.6
VSR *e*PPP PPP 17 13 23.9
VSR *e*S **S 17 18 16.9 -6.5**
VSR pmax pmax
comp=Z,780nm,1.4s
VSR pmax pmax
comp=Z,360nm,0.4s
VSR smax smax
comp=N,590nm,8.1s
VSR MLR MLR
comp=Z,4μm,21.0s
MNAS Manas 72.90 322 P **P 17 09 01.1 -0.5**
MNAS pmax pmax
comp=Z,253nm,1.3s
PPT Papeete 72.91 169 LR LR 17 33 43.5
comp=Z,2μm,21.2s,baz=341,slow=30
TIAR Tiarei 72.93 169 *e*P P 17 09 13.9 +12
comp=Z,156nm,1.2s
TIAR Tiarei 72.93 169 *e*T T 18 28 12.5
comp=Z,53nm,0.3s
PPT2 Papeete2 72.94 169 *e*P P 17 09 14.2 +12
comp=Z,231nm,1.4s
PPT2 *e*S **SKiKP 17 18 33.9 +3.2**
comp=Z,7μm,33.8s
PPT2 Papeete2 72.94 169 *e*LR LR 17 31 07.1
comp=Z,7μm,24.2s,baz=348
PPT2 Papeete2 72.94 169 *e*T T 18 28 12.9
comp=Z,20nm,0.3s
PAE Paea 73.01 169 *e*P P 17 09 14.1 +12
comp=Z,68nm,1.5s
PAE Paea 73.01 169 *e*T T 18 28 18.3
comp=Z,5.5nm,0.3s
RCP Roxas 73.02 266⇑ *e*P **P 17 09 02.9 +0.5**
KK31 Karatay Array 73.05 323 *i* P **P 17 09 02.3 0.0**
KK31 pmax pmax
comp=Z,95nm,0.8s
KKAR Karatay Array 73.05 323 *e*P **P 17 09 02.6 +0.3**
KKAR Karatay Array 73.05 323 *e*P **P 17 09 02.6 +0.3**
ELSH Elham, Standar 73.08 12⇑ *e*P **P 17 09 02.9 +0.6**
ELSH AMB AMB 17 09 03.8
comp=Z,260nm,1.6s
DYA Yadsworthy 73.08 15⇑ *i*P **P 17 09 02.7 +0.4**
DYA AMB AMB 17 09 03.8
comp=Z,203nm,1.4s
DYA AMS AMS 17 39 05.8
comp=Z,3μm,25.0s
DYA Yadsworthy 73.08 15 *e*P **P 17 09 03.0 +0.7**
comp=Z,196nm,1.0s
TVO Taravao 73.16 169 *e*P P 17 09 15.5 +12
comp=Z,104nm,1.3s
TVO Taravao 73.16 169 *e*T T 18 28 29.6
comp=Z,10nm,0.3s
SJMP San Jose 73.23 268 *e*P **P 17 09 03.9 +0.2**
LLP Lapu-Lapu 73.33 264⇑ *e*P **P 17 09 03.8 -0.4**
JTS JuntasAbangare 73.35 96 PFAKE 17 09 20.0 +16
JTS LR LR
comp=Z,1μm,19.0s
MEH Mehetia 73.39 168 *e*T T 18 28 46.5
comp=Z,82nm,0.2s
BEL Belsk 73.49 359 *e*P **P 17 09 05.4 +0.8**
BEL *e*pP **sP 17 09 22.1 -0.2**
BEL LMZ LR 17 38 18.9
comp=Z,4μm,25.0s
BEL Belsk 73.49 359⇑ *e*P **P 17 09 05.4 +0.8**
BEL *e**PP **sP 17 09 22.1 -0.2**
KMI Kunming 73.51 290 P **P 17 09 05.9 +0.4**
KMI pP pP 17 09 19.1 +0.8
KMI sP sP 17 09 25.1 +1.9
KMI PP **PP 17 11 51.2 +1.9**
KMI S **SKiKP 17 18 29.2 -2.7**
KMI sS sS 17 18 52.0 -1.4
KMI pmax pmax
comp=Z,100nm,1.6s
KMI pmax pmax
comp=Z,1μm,3.9s
KMI LR LR
comp=Z,2μm,19.9s
KMI LR LR
comp=Z,2μm,19.3s
KMI LR LR
comp=Z,3μm,23.1s
BRLS Borolday 73.61 324 *i* P **P 17 09 04.0 -1.6**
comp=Z,128nm,1.1s
BRLS *i* S **S 17 18 32.1 -0.3**
BRLS LR LR 17 42 00.7
comp=Z,2μm,15.4s
UCC Uccle 73.78 10 P **P 17 09 07.4 +1.0**
UCC XP **sP 17 09 24.0 0.0**
GUIM Jordan 73.87 265 *e*P **P 17 09 07.2 -0.2**
CLL Collm 73.88 4⇑ *i*P **P 17 09 07.5 +0.5**
comp=Z,141nm,0.9s
CLL *e* 17 09 20.0
CLL *i* 17 09 24.3
comp=Z,468nm,1.4s
CLL *e*S **SKiKP 17 18 33.0 +1.5**
CLL *e* 17 18 54.0
CLL *e*PS **PnS 17 19 15.0 +3.0**
CLL *e* 17 19 31.0
CLL *e*SS SS 17 23 30.0 +12
CLL *e*SSS SSS 17 27 00.0
CLL *e*SSSS 17 28 30.0
CLL *e*PKPPKPd**P'P'df 17 36 41.0 -5.2**
CLL *e* 17 36 51.0
CLL Lm MLR 17 44 00.0
comp=Z,2μm,21.5s
CLL Collm 73.88 4⇑ *i*P **P 17 09 07.5 +0.5**
CLL *i* 17 09 24.3
CLL *e*S **SKiKP 17 18 33.0 +1.5**
CLL pmax pmax
comp=Z,141nm,0.9s
CLL MLR MLR
comp=Z,2μm,21.5s
CLL Collm 73.88 4 *e*P **P 17 09 07.0 +0.1**
comp=Z,524nm,1.4s
BEBN Eben Emael 73.90 9 P **P 17 09 08.0 +0.9**
BEBN XP **sP 17 09 24.5 -0.2**
HGN Heimansgroeve 73.96 9 *e*P **P 17 09 07.5 +0.1**
comp=Z,365nm,1.5s
HGN *e*pP **sP 17 09 25.6 +0.5**
PAPH Port-au-Prince 74.01 81 *e*P **P 17 09 09.5 +1.3**
comp=Z,222nm,1.0s
SNF Seneffe 74.05 10 P **P 17 09 08.7 +0.7**
SNF AP **pP 17 09 20.6 -0.1**
SNF XP **sP 17 09 26.1 +0.4**
IUG Iuzhnay 74.06 323 *i* P **P 17 09 07.2 -1.1**
comp=Z,3μm,0.9s
IUG LR LR 17 42 25.6
comp=Z,2μm,17.4s
MEM Membach 74.12 9 P **P 17 09 09.2 +0.8**
comp=Z,83nm,1.4s
MEM AP **pP 17 09 21.8 +0.7**
MEM XP **sP 17 09 26.4 +0.3**
BUSP Coron 74.13 268 *e*P **P 17 09 09.1 +0.2**
KSH Kashi 74.20 318 P **P 17 09 13.4 +4.2**
KSH *e*pP sP 17 09 26.5 -0.4
KSH *e*PcP **PcP 17 09 28.2 +4.2**
KSH *e*sP pP 17 09 31.7 +10
KSH S **S 17 18 43.4 +4.1**
KSH ScS **ScS 17 19 19.0 +2.9**
KSH pmax pmax
comp=Z,650nm,1.3s
KSH LR LR
comp=Z,5μm,16.1s
KSH LR LR
comp=Z,2μm,15.1s
KSH LR LR
comp=Z,12μm,20.7s
SDDR Presa de Saban 74.22 80 *e*P **P 17 09 09.5 0.0**
comp=Z,146nm,0.9s
SDDR *e*pP **sP 17 09 26.7 -0.5**
SDDR LR LR
comp=Z,3μm,20.0s
BCLA Clavier 74.24 9 P **P 17 09 09.9 +0.8**
BCLA AP **PcP 17 09 23.0 -0.8**
BCLA XP **sP 17 09 26.8 +0.1**
AKASG Malin Array Be 74.32 354 P **P 17 09 09.3 -0.2**
comp=Z,250nm,0.6s,baz=9.8,slow=6.3,SNR=247
AKASG sP **sP 17 09 25.6 -1.5**
comp=Z,171nm,0.7s,baz=8.8,slow=5.9,SNR=8.5
AKASG PKPPKP **P'P'df 17 36 39.2 -6.1**
comp=Z,2.1nm,0.9s,baz=191,slow=0.9,SNR=5.7
AKBB Malin Array Si 74.32 354 *e*P **P 17 09 09.3 -0.2**
AKBB pmax pmax
comp=Z,529nm,1.0s
AKBB Malin Array Si 74.32 354 *e*P **P 17 09 09.3 -0.2**
comp=Z,529nm,1.0s
KIEV Kiev 74.32 354 *e*P **P 17 09 09.4 -0.1**
KIEV *e**PP **sP 17 09 26.5 -0.7**
KIEV pmax pmax
comp=Z,571nm,1.1s
KIEV MLR MLR
comp=Z,4μm,22.0s
KIEV Kiev 74.32 354 *e*P **P 17 09 09.4 -0.1**
comp=Z,571nm,1.1s
KIEV *e*pP **sP 17 09 26.5 -0.7**
KIEV LR LR
comp=Z,4μm,22.0s
AK11 Malin Array Si 74.34 354 *e*P **P 17 09 09.0 -0.6**
AK11 *e*pP **sP 17 09 25.8 -1.5**
BRG Berggiesshubel 74.35 4⇑ *i*P **P 17 09 10.5 +0.8**
comp=Z,166nm,1.1s
BRG *i* pP **pP 17 09 22.5 0.0**
comp=Z,102nm,1.2s
BRG *i* sP **sP 17 09 27.8 +0.4**
comp=Z,491nm,1.4s
BRG PP **PP 17 11 52.0 -3.4**
BRG Berggiesshubel 74.35 4⇑ *i*P **P 17 09 10.5 +0.8**
BRG *i **SP **sP 17 09 27.8 +0.4**
BRG 17 11 52.0
BRG pmax pmax
comp=Z,166nm,1.1s
QIZ Qiongzhong 74.44 281 P **P 17 09 11.6 +0.9**
QIZ pP **PcP 17 09 25.0 -0.2**
QIZ sP **sP 17 09 29.7 +1.3**
QIZ S **S 17 18 46.6 +4.3**
QIZ pmax pmax
comp=Z,69nm,1.1s
QIZ LR LR
comp=Z,740nm,20.1s
QIZ LR LR
comp=Z,320nm,19.6s
KSP Ksiaz 74.45 2 *e*P **P 17 09 11.0 +0.7**
KSP *e*pP **sP 17 09 27.7 -0.3**
KSP *e*S **S 17 18 40.8 -0.7**
KSP LMZ LR 17 34 36.1
comp=Z,2μm,30.6s
KSP Ksiaz 74.45 2⇑ *e*P **P 17 09 11.0 +0.7**
KSP *e**PP **sP 17 09 27.7 -0.3**
DOU Dourbes 74.49 10 P **P 17 09 11.5 +0.9**
comp=Z,66nm,1.5s
DOU AP **pP 17 09 24.0 +0.7**
DOU XP **sP 17 09 28.6 +0.3**
JSA Saint Aubin 74.56 15⇑ *i*P **P 17 09 11.7 +0.8**
JSA AMB AMB 17 09 12.5
comp=Z,224nm,1.5s
JRS Jersey 74.57 15⇑ *e*P **P 17 09 11.5 +0.5**
JRS ⇑ *e*P **P 17 09 11.7 +0.8**
JQE Queens East 74.57 14⇑ *i*P **P 17 09 11.7 +0.7**
JQE ⇑ *i*P **P 17 09 11.8 +0.7**
CUYO Cuyo Island 74.59 267 *e*P **P 17 09 12.1 +0.5**
BUKP Musuan 74.68 262 *e*P **P 17 09 12.8 +0.7**
PVCC Panska Ves 74.72 3⇑ *e*P **P 17 09 13.0 +1.1**
PVCC *e*sP **sP 17 09 29.8 +0.2**
PVCC *e*S **S 17 18 45.8 +1.3**
PVCC AMS AMS 17 49 10.0
comp=Z,2μm,19.8s
PVCC Panska Ves 74.72 3 *e*P **P 17 09 13.0 +1.1**
PVCC *e**SP **sP 17 09 29.8 +0.2**
PVCC *e*S **S 17 18 45.8 +1.3**
PVCC MLR MLR
comp=Z,2μm,19.8s
MSVF Nonsavu 74.75 201 *e*P **P 17 09 13.5 +1.1**
MSVF pmax pmax
comp=Z,180nm,1.3s
MSVF Nonsavu 74.75 201 *e*P **P 17 09 13.1 +0.8**
comp=Z,181nm,1.3s
MSVF LR LR
comp=Z,4μm,22.0s
MATI Mati 74.76 260 *e*P **P 17 09 11.6 -1.0**
UPC Upice 74.78 2⇑ *i*P **P 17 09 13.2 +1.0**
UPC *e*pP **PcP 17 09 25.9 -0.3**
UPC *e*sP **sP 17 09 29.9 0.0**
UPC *e*S **S 17 18 45.8 +0.6**
UPC AMS AMS 17 48 10.0
comp=Z,2μm,20.7s
UPC Upice 74.78 2⇑ *i*P **P 17 09 13.2 +1.0**
UPC *e**PP **PcP 17 09 25.9 -0.3**
UPC *e*S **S 17 18 45.8 +0.6**
UPC MLR MLR
comp=Z,2μm,20.7s
NKC Novy Kostel 74.93 5⇑ *i*P **P 17 09 14.3 +1.2**
NKC *e*pP **PcP 17 09 26.9 +0.1**
NKC *e*sP **sP 17 09 31.1 +0.3**
NKC *e*S **S 17 18 45.5 -1.4**
NKC AMS AMS 17 50 50.0
comp=Z,1μm,20.3s
NKC Novy Kostel 74.93 5⇑ *i*P **P 17 09 14.3 +1.2**
NKC *e**PP **PcP 17 09 26.9 +0.1**
NKC *e*S **S 17 18 45.5 -1.4**
NKC MLR MLR
comp=Z,1μm,20.3s
DPC Dobruska-Polom 74.95 2⇑ *i*P **P 17 09 14.5 +1.3**
DPC *e*pP **PcP 17 09 27.3 +0.4**
DPC *e*sP **sP 17 09 31.3 +0.4**
DPC AMS AMS 17 48 20.0
comp=Z,2μm,21.1s
DPC Dobruska-Polom 74.95 2⇑ *i*P **P 17 09 14.5 +1.3**
DPC *e**PP **PcP 17 09 27.3 +0.4**
DPC MLR MLR
comp=Z,2μm,21.1s
DAV Davao City (W) 75.04 261⇑ *e*P **P 17 09 13.6 -0.6**
DAV Davao City (W) 75.04 261 P **P 17 09 15.2 +1.0**
SNR=13
DAV Davao City (W) 75.04 261 P **P 17 09 15.2 +1.0**
SNR=13
DAV Davao City (W) 75.04 261 PFAKE 17 09 30.0 +16
DAV LR LR
comp=Z,738nm,21.0s
WLF Walferdange 75.07 9 P **P 17 09 15.3 +1.4**
comp=Z,140nm,1.6s
WLF AP **PcP 17 09 27.9 +0.5**
WLF XP **sP 17 09 32.0 +0.4**
WLF Walferdange 75.07 9 *e*P **P 17 09 14.9 +1.0**
WLF pmax pmax
comp=Z,498nm,1.5s
WLF MLR MLR
comp=Z,2μm,20.0s
WLF Walferdange 75.07 9 *e*P **P 17 09 14.9 +1.0**
comp=Z,498nm,1.5s
WLF LR LR
comp=Z,2μm,20.0s
OJC Ojcow 75.11 360 *e*P **P 17 09 14.9 +0.7**
OJC *e*pP **sP 17 09 31.2 -0.6**
OJC *e*S **S 17 18 46.7 -2.2**
OJC LMZ LR 17 39 28.9
comp=Z,4μm,24.9s
OJC Ojcow 75.11 360⇑ *e*P **P 17 09 14.9 +0.7**
OJC *e**PP **sP 17 09 31.2 -0.6**
OJC Ojcow 75.11 360 *e*P **P 17 09 14.8 +0.7**
comp=Z,245nm,1.2s
GENI Genyem 75.14 243 P **P 17 09 15.3 +0.6**
ENPP El Nido 75.22 268 *e*P **P 17 09 15.9 +0.7**
KRLC Kraliky 75.23 2⇑ *i*P **P 17 09 15.9 +1.0**
KRLC *e*pP **PcP 17 09 28.4 +0.2**
KRLC *e*sP **sP 17 09 33.1 +0.5**
KRLC *e*PKPPKP P'P'df 17 36 35.8 -8.0
KRLC Kraliky 75.23 2⇑ *i*P **P 17 09 15.9 +1.0**
KRLC *e**PP **PcP 17 09 28.4 +0.2**
RAC Raciborz 75.24 1 *e*P **P 17 09 16.2 +1.3**
RAC *e*S **S 17 18 48.5 -1.8**
RAC MLR MLR
comp=Z,2μm,21.2s
PRU Pruhonice 75.26 3⇑ *e*P **P 17 09 15.9 +0.9**
PRU *e*pP **PcP 17 09 28.5 +0.3**
PRU *e*sP **sP 17 09 32.7 0.0**
PRU Pruhonice 75.26 3 *e*P **P 17 09 15.9 +0.9**
PRU *e**PP **PcP 17 09 28.5 +0.3**
GOPC GO Pecny, Ondr 75.34 3⇑ *i*P **P 17 09 16.5 +1.0**
GOPC *e*pP **PcP 17 09 29.1 +0.5**
GOPC *e*sP **sP 17 09 33.5 +0.3**
GOPC *e*S **S 17 18 49.5 -2.0**
GOPC AMS AMS 17 53 00.0
comp=Z,2μm,18.5s
GOPC GO Pecny, Ondr 75.34 3⇑ *i*P **P 17 09 16.5 +1.0**
GOPC *e**PP **PcP 17 09 29.1 +0.5**
GOPC *e*S **S 17 18 49.5 -2.0**
GOPC MLR MLR
comp=Z,2μm,18.5s
GRFO Grafenberg 75.41 6 *e*P **P 17 09 16.9 +1.0**
GRFO pmax pmax
comp=Z,625nm,1.6s
GRFO Grafenberg 75.41 6 *e*P **P 17 09 16.9 +1.0**
comp=Z,625nm,1.6s
LVV L'vov 75.44 357 *d*i*P* **P 17 09 16.0 0.0**
LVV *i* 17 09 32.8
LVV *e* 17 12 05.8
LVV *e*PPP PPP 17 13 56.8
LVV *e*S **S 17 18 52.8 +0.2**
LVV *e*PS **PnS 17 19 46.2 +14**
OKC Ostrava-Krasne 75.49 1⇑ *e*P **P 17 09 17.2 +0.9**
OKC *e*pP **PcP 17 09 29.9 +0.7**
OKC *e*sP **sP 17 09 34.4 +0.4**
OKC *e*S **S 17 18 52.3 -0.7**
OKC AMS AMS 17 50 40.0
comp=Z,1μm,19.2s
OKC Ostrava-Krasne 75.49 1 *e*P **P 17 09 17.2 +0.9**
OKC *e**PP **PcP 17 09 29.9 +0.7**
OKC *e*S **S 17 18 52.3 -0.7**
OKC MLR MLR
comp=Z,1μm,19.2s
MORC Moravsky Berou 75.54 1⇑ *i*P **P 17 09 17.7 +1.0**
MORC Moravsky Berou 75.54 1 *e*P **P 17 09 17.2 +0.5**
MORC *e**PP **sP 17 09 34.4 0.0**
MORC pmax pmax
comp=Z,1μm,1.3s
MORC Moravsky Berou 75.54 1 *e*P **P 17 09 17.2 +0.5**
comp=Z,1μm,1.3s
MORC *e*pP **sP 17 09 34.4 0.0**
KWP Kalwaria Pacla 75.67 358 *e*P **P 17 09 18.3 +1.0**
KWP *e*pP **sP 17 09 34.9 -0.1**
KWP *e*S **S 17 18 53.9 -1.1**
KWP LMZ LR 17 39 56.2
comp=Z,5μm,25.9s
KWP Kalwaria Pacla 75.67 358⇑ *i*P **P 17 09 18.8 +1.5**
KWP Kalwaria Pacla 75.67 358⇑ *e*P **P 17 09 18.3 +1.0**
KWP *e**PP **sP 17 09 34.9 -0.1**
CTBH Cotabato--PC H 75.68 262⇑ *i*P **P 17 09 18.5 +0.7**
CTBH *i* S **pP 17 09 33.1 +2.4**
LSA Lhasa 75.80 302 *e*P **P 17 09 20.1 +1.1**
LSA *e**PP **sP 17 09 36.9 +0.2**
LSA pmax pmax
comp=Z,322nm,1.0s
LSA MLR MLR
comp=Z,4μm,19.0s
LSA Lhasa 75.80 302 *e*P **P 17 09 20.1 +1.1**
comp=Z,322nm,1.0s
LSA *e*pP **sP 17 09 36.9 +0.2**
LSA LR LR
comp=Z,4μm,19.0s
LANF Langenberg 75.89 8⇑ *e*P **P 17 09 19.8 +1.2**
STHS Stebnicka Huta 75.90 359 *e*P **P 17 09 20.4 +1.7**
STHS *e* 17 09 37.5
STHS pmax pmax
comp=Z,201nm,0.7s
STHS Stebnicka Huta 75.90 359 *e*P **P 17 09 20.4 +1.7**
STHS *e* 17 09 37.5
NIE Niedzica 75.91 359 *e*P **P 17 09 19.9 +1.1**
NIE *e*pP **sP 17 09 36.7 +0.2**
NIE LMZ LR 17 39 57.9
comp=Z,2μm,24.7s
NIE Niedzica 75.91 359⇑ *e*P **P 17 09 19.9 +1.1**
NIE *e**PP **sP 17 09 36.7 +0.2**
RAR Rarotonga 75.94 179 LR LR 17 36 03.6
comp=Z,2μm,20.1s,baz=10,slow=30
TREC Trest 75.98 3⇑ *e*P **P 17 09 19.8 +0.6**
TREC *e*sP **sP 17 09 36.9 0.0**
TREC AMS AMS 17 52 40.0
comp=Z,2μm,17.3s
TREC Trest 75.98 3 *e*P **P 17 09 19.8 +0.6**
TREC *e**SP **sP 17 09 36.9 0.0**

TREC MLR MLR
comp=Z,2μm,17.3s
VRAC Vranov 75.99 2⇑iP P 17 09 20.7 +1.5
KHC Kasperske Hory 76.08 4⇑iP P 17 09 21.1 +1.3
KHC epP pP 17 09 33.8 +1.2
KHC esP sP 17 09 38.3 +0.8
KHC eS S 17 19 01.7 +2.0
KHC eSS SS 17 23 53.7 +1.8
KHC ePKPPKP P'P'df 17 36 35.2 -7.1
KHC AMS AMS 17 48 50.0
comp=Z,2μm,18.8s
KHC Kasperske Hory 76.08 4⇑iP P 17 09 21.1 +1.3
KHC e*PP pP 17 09 33.8 +1.2
KHC eS S 17 19 01.7 +2.0
KHC eSS SS 17 23 53.7 +1.8
KHC MLR MLR
comp=Z,2μm,18.8s
KHC Kasperske Hory 76.08 4 eP P 17 09 20.6 +0.8
comp=Z,196nm,1.3s
KHC epP sP 17 09 38.2 +0.7
IPIL Ipil 76.17 264 eP P 17 09 20.0 -0.6
LANS Liptovska Anna 76.18 0 eP P 17 09 22.1 +1.7
LANS e 17 09 39.1
LANS Liptovska Anna 76.18 0 eP P 17 09 22.0 +1.7
LANS e 17 09 39.1
STU Stuttgart 76.20 7 eP P 17 09 21.1 +0.7
STU pmax pmax
comp=Z,522nm,1.6s
STU Stuttgart 76.20 7 eP P 17 09 21.1 +0.7
comp=Z,522nm,1.6s
H07N1 FLORES T-PHASE 76.21 38 eP P 17 09 22.1 +1.5
GEC2 GERESS Array S 76.37 4 eP P 17 09 21.9 +0.4
GEC2 pmax pmax
comp=Z,259nm,1.3s
GEC2 GERESS Array S 76.37 4 eP P 17 09 21.9 +0.4
comp=Z,259nm,1.3s
GERES GERESS Array B 76.37 4 P P 17 09 22.2 +0.8
comp=Z,36nm,0.8s,baz=358,slow=4.3,SNR=274
GERES pP pP 17 09 34.9 +0.6
comp=Z,74nm,1.1s,baz=5.2,slow=2.9,SNR=7.8
GERES sP sP 17 09 39.5 +0.3
comp=Z,94nm,1.1s,baz=3.8,slow=4.0,SNR=12
GERES PKKPbc PKKPbc 17 28 32.1 +0.7
comp=Z,0.2nm,0.3s,baz=132,slow=2.0,SNR=3.9
GERES PKP2ab 17 36 24.4
comp=Z,0.3nm,0.6s,baz=151,slow=3.0,SNR=4.0
KOLS Kolonicke sedl 76.37 358 eP P 17 09 22.6 +1.2
KOLS e 17 09 39.4
KOLS pmax pmax
comp=Z,90nm,1.0s
KOLS Kolonicke sedl 76.37 358 eP P 17 09 22.6 +1.2
KOLS e 17 09 39.4
KOLS eS S 17 19 20.2 +17
KOLS eL L 17 40 19.9
GEA0 GERESS Array S 76.38 4 eP P 17 09 21.6 +0.1
CRVS Cervenica-Dubn 76.42 359 eP P 17 09 22.8 +1.2
CRVS e 17 09 39.2
CRVS eS S 17 19 03.1 -0.3
CRVS Cervenica-Dubn 76.42 359 eP P 17 09 22.8 +1.2
CRVS e 17 09 39.2
CRVS eS S 17 19 03.1 -0.3
H07S1 FLORES T-PHASE 76.45 38 eP P 17 09 23.0 +1.0
BFO Black Forest 76.57 8 iP P 17 09 23.1 +0.6
BFO Black Forest 76.57 8 eP P 17 09 22.6 0.0
comp=Z,472nm,1.9s
BFO LR LR
comp=Z,1μm,19.0s
ECH Echery 76.59 8⇑eP P 17 09 23.4 +0.7
UZH Uzhgorod 76.67 358 eP P 17 09 22.3 -0.7
UZH e 17 09 40.5
UZH eS S 17 19 05.3 -0.8
SMOL Smolenice 76.80 1 eP P 17 09 25.4 +1.6
SMOL e 17 09 42.3
SMOL Smolenice 76.80 1 eP P 17 09 25.4 +1.6
SMOL e 17 09 42.3
VYHS Vyhne 76.84 0 eP P 17 09 25.0 +1.0
VYHS e 17 09 41.7
VYHS eS S 17 19 06.8 -1.2
VYHS pmax pmax
comp=Z,81nm,1.0s
VYHS Vyhne 76.84 0 eP P 17 09 25.0 +1.0
VYHS e 17 09 41.7
VYHS eS S 17 19 06.8 -1.2
VYHS eL L 17 38 38.2
KECS Kecovo 76.84 359 eP P 17 09 25.3 +1.3
KECS e 17 09 42.1
KECS pmax pmax
comp=Z,75nm,0.8s
KECS Kecovo 76.84 359 eP P 17 09 25.3 +1.3
KECS e 17 09 42.1
SORM Soroca 76.93 354⇑iP P 17 09 24.8 +0.3
MOF Molkenrain 76.95 9⇑eP P 17 09 25.6 +0.8
TRPA Tarpa 77.17 358⇑eP P 17 09 27.1 +1.3
TRPA eS sP 17 09 43.8 +0.2
BCIP Isla Barro Col 77.19 92 eP P 17 09 25.9 -0.5
comp=Z,142nm,1.3s
BCIP LR LR
comp=Z,2μm,22.0s
CONA Conrad Observa 77.36 3 iP P 17 09 28.4 +1.4
comp=Z,122nm,0.8s,SNR=155
CONA isP sP 17 09 45.7 +0.9
comp=Z,329nm,1.1s
MOA Molln 77.39 4 iP P 17 09 28.1 +0.9
comp=Z,67nm,1.2s,SNR=32
MOA isP sP 17 09 46.0 +1.2
comp=Z,160nm,1.4s
PSZ Piszkesteto 77.41 360⇑iP P 17 09 29.1 +1.8
PSZ Piszkesteto 77.41 360 eP P 17 09 28.9 +1.5
PSZ pmax pmax
comp=Z,386nm,1.2s
PSZ MLR MLR
comp=Z,1μm,22.0s
PSZ Piszkesteto 77.41 360 eP P 17 09 28.9 +1.5
comp=Z,386nm,1.2s
PSZ LR LR
comp=Z,1μm,22.0s
LOMF Lomont 77.42 9⇑eP P 17 09 28.4 +1.0
BUR08 Bucovina Ar. S 77.58 356 eP P 17 09 28.9 +0.7
RETA Reutte 77.58 6 iP P 17 09 29.3 +1.0
comp=Z,105nm,1.2s,SNR=55
RETA isP sP 17 09 47.3 +1.3
comp=Z,205nm,1.3s
BMR Baia Mare 77.60 357⇑iP P 17 09 29.7 +1.4
BURAR Bucovina Array 77.60 356⇑iP P 17 09 29.6 +1.2
PMG Port Moresby 77.63 233 LR LR 17 40 17.2
comp=Z,823nm,20.2s,baz=30,slow=33
PMG Port Moresby 77.63 233 eP P 17 09 29.4 +0.6
PMG pmax pmax
comp=Z,370nm,1.2s
PMG Port Moresby 77.63 233 eP P 17 09 28.8 0.0
comp=Z,367nm,1.3s
DAVA Damuels 77.72 7 iP P 17 09 30.1 +0.9
comp=Z,3.5nm,0.5s,SNR=18
MOTA Moosalm 77.74 6 iP P 17 09 30.3 +1.0
comp=Z,208nm,1.2s,SNR=75
SJG San Juan 77.81 76 P P 17 09 30.9 +1.1
comp=Z,66nm,0.7s,baz=316,slow=2.6,SNR=27
SJG San Juan 77.81 76 eP P 17 09 30.9 +1.1
SJG MLR MLR
comp=Z,2μm,20.0s
SJG San Juan 77.81 76 eP P 17 09 30.9 +1.1
SJG LR LR
comp=Z,2μm,20.0s
PRAR RASCA 77.81 355⇑iP P 17 09 30.4 +0.9
BUD Budapest 77.85 0⇑eP P 17 09 31.0 +1.4
WTTA Wattenberg 77.85 5 iP P 17 09 31.2 +1.3
comp=Z,100nm,0.8s,SNR=55
SQTA Sankt Quirin 77.87 6 iP P 17 09 31.3 +1.4
PGRA Graciosa 77.88 36 eP P 17 09 32.5 +2.5
comp=Z,474nm,1.6s
IAS Iasi 77.91 354⇓iP P 17 09 30.8 +0.8
PCED Cedros 78.00 37 eP P 17 09 32.1 +1.5
comp=Z,180nm,0.7s
ARSA Arzberg 78.03 3 iP P 17 09 32.2 +1.5
comp=Z,102nm,1.2s,SNR=46
KIS Kishinev 78.03 354⇑iP P 17 09 31.0 +0.4
comp=Z,900nm,1.5s
KIS Kishinev 78.03 354 *i* PcP **PcP 17 09 48.0 +7.8**
KIS Kishinev 78.03 354 *e*PP PP 17 12 23.0 -3.4
KIS Kishinev 78.03 354 *e*PPP PPP 17 14 18.0
KIS eS S 17 19 20.0 -0.9
KIS LRM MLR 17 42 40.0
comp=Z,4μm,24.0s
KIS Kishinev 78.03 354⇓iP P 17 09 31.1 +0.4
KIS Kishinev 78.03 354 *i* P **P 17 09 31.0 +0.4**
KIS *i* 17 09 48.0
KIS *e* 17 12 23.0
KIS *e*PPP PPP 17 14 18.0
KIS *e*S **S 17 19 20.0 -0.9**
KIS *i* 17 19 34.0
KIS *e* 17 20 00.0
KIS *i* 17 20 30.0
KIS pmax pmax
comp=Z,900nm,1.5s
KIS pmax pmax
comp=Z,2μm,4.0s
CALA Caldeira 78.04 37 eP P 17 09 32.5 +1.5
FETA Feichten 78.04 6 iP P 17 09 32.3 +1.3
comp=Z,189nm,1.2s,SNR=64
ROSA Rosais 78.07 36 eP P 17 09 32.7 +1.6
comp=Z,330nm,1.5s
HOR Horta 78.11 37 eP P 17 09 32.0 +0.7
comp=Z,86nm,1.0s
KBA Koelnbreinsper 78.12 4 iP P 17 09 33.0 +1.6
comp=Z,283nm,1.2s,SNR=165
ARCR ARCALIA 78.17 357⇓iP P 17 09 33.4 +2.0
PMAN Manadas 78.20 36 eP P 17 09 33.3 +1.5
comp=Z,163nm,1.6s
PICO Pico 78.21 37 eP P 17 09 32.3 +0.4
comp=Z,296nm,1.3s
PCAN Candelaria 78.22 37 eP P 17 09 32.1 +0.2
comp=Z,111nm,0.3s
GOF Gofitskoye 78.30 343⇑eP P 17 09 33.3 +1.1
GOF pmax pmax
comp=Z,867nm,0.6s
AGO Saint Agoulin 78.33 12⇑eP P 17 09 34.6 +2.2
SWI Sorong 78.40 251 P P 17 09 34.1 +1.0
FUORN Ofenpass-Fuorn 78.41 6 eP P 17 09 34.5 +1.3
comp=Z,358nm,1.3s
ABTA Abfaltersbach 78.41 5 iP P 17 09 33.8 +0.9
comp=Z,134nm,1.1s,SNR=58
SENIN Lac Senin/Sane 78.44 9 eP P 17 09 34.1 +0.8
comp=Z,71nm,1.0s
PLDF La Plantade 78.47 11⇑eP P 17 09 35.5 +2.3
ADH Angra Heroismo 78.47 36 eP P 17 09 34.8 +1.6
comp=Z,239nm,1.0s
TUE Stuetta 78.50 7 eP P 17 09 34.8 +1.3
comp=Z,470nm,1.8s
TUE LR LR
comp=Z,2μm,22.0s
DRGR 78.50 358⇓iP P 17 09 34.9 +1.5
CJR Cluj-Napoca 78.56 357⇓iP P 17 09 35.4 +1.7
MYKA Terra Mystica 78.58 4 iP P 17 09 34.5 +0.7
comp=Z,70nm,1.0s,SNR=26
SOKA Soboth 78.58 3 iP P 17 09 35.0 +1.2
comp=Z,372nm,1.2s,SNR=148
LEOM Leova 78.59 354⇑iP P 17 09 35.0 +1.3
PYM Petit Puy Mans 78.61 12⇑eP P 17 09 35.9 +1.9
PERS Pernice 78.63 3⇑iP P 17 09 35.2 +1.1
PERS *i* pP **sP 17 09 52.0 +0.2**
PERS eS S 17 19 27.7 +0.3
TESR Tescani 78.64 355⇑iP P 17 09 35.2 +1.1
OBKA Obir 78.74 3 iP P 17 09 35.9 +1.2
comp=Z,322nm,1.0s,SNR=117
CRAI Chiangrai 78.74 289 P P 17 09 35.2 +0.2
comp=Z,3μm,1.4s,comp=Z,121μm
BEHE Becsehely 78.84 2⇑eP P 17 09 36.7 +1.6
SHL Shillong 78.84 299 eP P 17 09 34.3 -1.4
SHL *i* x x 17 19 43.0
KOGS Kog 78.85 2 eP P 17 09 36.1 +0.9
PANO Nakornpanom 78.89 284 P P 17 09 36.1 +0.3
comp=Z,361nm,1.6s,comp=Z,6μm
FRNF Fournols 78.92 12⇑eP P 17 09 36.6 +0.9
NONG Nongkai 78.97 286 P P 17 09 36.1 -0.2
comp=Z,296nm,1.3s,comp=Z,5μm
SIRR Siria 79.05 358⇓iP P 17 09 38.6 +2.3
MDB Medias 79.11 357⇑iP P 17 09 38.3 +1.7
LBL Lubilhac 79.15 12⇑eP P 17 09 39.0 +2.0
LJU Ljubljana 79.20 4⇑iP P 17 09 37.5 +0.3
LJU *e*pP **sP 17 09 54.3 -0.6**
SSB Saint Sauveur 79.25 11⇑eP P 17 09 38.3 +0.8
SSB Saint Sauveur 79.25 11 eP P 17 09 37.6 +0.1
SSB pmax pmax
comp=Z,270nm,1.7s
SSB Saint Sauveur 79.25 11 eP P 17 09 37.9 +0.4
comp=Z,266nm,1.7s
SSB LR LR
comp=Z,2μm,20.0s
VRI Vrincioaia 79.28 355⇑iP P 17 09 39.2 +1.6
PLOR Plostina 79.30 355⇑iP P 17 09 39.5 +1.8
PAYG Puerto Ayora 79.32 107 PFAKE 17 09 50.0 +12
PAYG LR LR
comp=Z,1μm,22.0s
ODBI Odobesti 79.37 355⇓iP P 17 09 40.3 +2.3
ANN Anapa 79.38 347 *c iP* **P 17 09 37.9 -0.2**
ANN *e*PP **PcP 17 09 46.9 +0.8**
ANN eS S 17 19 34.3 -1.0
ANN pmax pmax
comp=Z,233nm,2.1s
ANN MLR MLR
comp=Z,1μm,22.0s
PETR Petresti 79.40 355⇑iP P 17 09 39.8 +1.6
GRN Grenoble 79.41 10⇑eP P 17 09 39.7 +1.3
KVAR Kislovodsk Arr 79.43 343 P P 17 09 39.7 +1.1
comp=Z,160nm,0.8s,baz=312,slow=0.5,SNR=126
KIV Kislovodsk 79.43 343 eP P 17 09 39.4 +0.9
KIV Kislovodsk 79.43 343 *i* **P P 17 09 39.5 +0.9**
SNR=17
KIV Kislovodsk 79.43 343 eP P 17 09 39.4 +0.9
KIV eS S 17 19 37.8 +1.7
KIV pmax pmax
comp=Z,258nm,0.9s
KIV pmax pmax
comp=Z,411nm,4.2s
KIV MLR MLR
comp=Z,3μm,19.0s
KIV Kislovodsk 79.43 343 eP P 17 09 39.3 +0.7
comp=Z,213nm,0.7s
KIV LR LR
comp=Z,3μm,22.0s
GDM Grand'Maison 79.48 10⇑eP P 17 09 40.2 +1.3
SMRT St. Maarten 79.56 74 eP P 17 09 39.0 -0.6
comp=Z,131nm,1.0s
GIUM Giurgiulesti 79.58 354⇑iP P 17 09 40.7 +1.5
FAKI Fak Fak 79.58 249 P P 17 09 40.0 +0.4
FAKI Fak Fak 79.58 249 eP P 17 09 39.7 +0.1
comp=Z,438nm,1.4s
KBZ Khabaz 79.61 343 P P 17 09 40.7 +1.3
comp=Z,152nm,1.0s,baz=26,slow=2.0,SNR=221
KBZ PKKPbc **PKKPbc 17 28 26.3 +2.1**
comp=Z,1.7nm,0.7s,baz=230,slow=4.7,SNR=6.6
KBZ PKPPKP **P'P'df 17 36 33.2 -2.4**
comp=Z,1.3nm,0.8s,baz=115,slow=1.2,SNR=4.2
KBZ LR LR 17 48 51.1
comp=Z,3μm,21.7s,baz=0.5,slow=39
SIM Simferopol' 79.61 350 *c iP* **P 17 09 40.0 +0.6**
SIM *i* 17 09 56.0
SIM pmax pmax
comp=Z,77nm,0.9s
SIM MLR MLR
comp=N,4μm,22.1s
URIC Uribia, Colomb 79.66 84 eP P 17 09 41.2 +1.1
BNI Bardonecchia 79.69 9 PFAKE 17 09 50.0 +10
BNI LR LR
comp=Z,2μm,20.0s
MLR Muntele Rosu 79.69 355 eP P 17 09 40.9 +0.9
MLR pmax pmax
comp=Z,406nm,1.5s
MLR Muntele Rosu 79.69 355 eP P 17 09 40.9 +0.9
comp=Z,406nm,1.5s
BZS Buzias 79.70 358⇓iP P 17 09 41.3 +1.4
CMAI Chiengmai2 79.70 290 P P 17 09 40.7 +0.2
comp=Z,664nm,1.3s,comp=Z,13μm
NCK Nalchik 79.72 342 *ceP* **P 17 09 41.4 +1.4**
NCK MLR MLR
comp=Z,3μm,24.0s
PSET Sete Cidades 79.73 35 eP P 17 09 42.9 +2.7
comp=Z,561nm,1.7s
GRER 79.75 355⇓iP P 17 09 42.1 +1.9
BOJS Bojanci 79.76 3⇑iP P 17 09 41.0 +0.8
BOJS *e*pP **sP 17 09 57.8 -0.1**
VOIR 79.79 356⇓iP P 17 09 41.8 +1.4
PDA Ponta Delgada 79.81 35 eP P 17 09 43.2 +2.6
comp=Z,350nm,1.6s
SABA Saba 79.82 74 eP P 17 09 40.9 0.0
comp=Z,264nm,1.4s
LOT Lotru 79.82 357⇓iP P 17 09 41.6 +0.9
GUN Gumba 79.83 305 eP P 17 09 42.1 +0.8
comp=Z,2μm,1.1s
TLCR 79.83 353⇓iP P 17 09 42.1 +1.5
CMLA Cha da Macela 79.84 35 eP P 17 09 42.3 +1.5
comp=Z,413nm,1.7s
ARR Arges 79.87 356⇓iP P 17 09 42.7 +1.8
CFR Carcaliu 79.89 354⇑iP P 17 09 41.7 +0.9
MOTC Monteria, Cord 79.91 89 eP P 17 09 41.2 -0.2
OG22 Abries 79.94 9⇑eP P 17 09 43.5 +2.1
BANR Banloc 79.94 359⇑iP P 17 09 42.7 +1.6
BART Pico Bartolome 79.95 34 eP P 17 09 42.1 +0.6
comp=Z,478nm,1.3s
MTUR Matau 80.00 356⇓iP P 17 09 44.7 +3.1
ISR Istrita 80.04 355⇓iP P 17 09 42.8 +1.0
MMPI Merauke 80.06 240 P P 17 09 45.8 +3.7
SEUS St. Eustatius 80.07 74 eP P 17 09 42.1 -0.1
comp=Z,203nm,0.9s
NEY Neytrino 80.11 343 *ceP* **P 17 09 44.2 +1.8**
NEY MLR MLR
comp=Z,3μm,23.0s
SECR 80.14 355⇑iP P 17 09 43.7 +1.4
KKN Kakani 80.21 305 eP P 17 09 43.8 +0.6
comp=Z,354nm,0.5s
PGOR Pogoanele 80.22 355⇓iP P 17 09 44.0 +1.3
SOC Sochi 80.26 345 *c iP* **P 17 09 43.4 +0.5**
SOC *e* 17 12 51.0
SOC *e*PPP PPP 17 14 37.7
SOC eS S 17 19 46.2 +1.6
SOC pmax pmax
comp=Z,188nm,0.8s
SOC MLR MLR
comp=Z,5μm,22.0s
LBMI Labuha 80.28 255 P P 17 09 43.6 +0.2
GKN Gorkha 80.33 306 eP P 17 09 44.3 +0.5
comp=Z,2μm,1.2s
PKIN Phulchoki 80.34 305 eP P 17 09 44.4 +0.5
comp=Z,446nm,0.6s
ZEI Tsey 80.35 342 eP P 17 09 44.6 +0.9
ZEI eS S 17 19 44.5 -1.6
ZEI *e* 17 20 03.3
ZEI pmax pmax
comp=Z,238nm,0.8s
ZEI pmax pmax
comp=N,290nm,1.0s
ZEI pmax pmax
comp=E,150nm,0.9s
DHRM DHARAMSHALA 80.38 314 eP P 17 09 44.3 +0.3
DHRM IAmb IAmb 17 09 44.9
GOLR 80.39 356⇑iP P 17 09 45.4 +1.8
HARR Harsova 80.39 354⇓iP P 17 09 44.8 +1.2
DMN Daman 80.45 305 eP P 17 09 45.3 +0.8
comp=E,421nm,0.5s
JOSI Joshimath 80.46 311 eP P 17 09 43.8 -0.7
SULR 80.49 355⇑iP P 17 09 45.2 +1.1
OSSF Osses 80.49 15⇑eP P 17 09 44.7 +0.5
LAMP Lampang 80.53 289 P P 17 09 44.8 +0.1
comp=E,106nm,1.4s,comp=E,1μm
MDVR Moldovita 80.53 358⇓iP P 17 09 45.7 +1.3
KHON Khomkaen 80.54 285 P P 17 09 45.2 +0.4
comp=E,162nm,1.3s,comp=E,2μm
GUDG Gudauri 80.56 342 P P 17 09 47.0 +2.1
ANWB Willy Bob 80.58 73 PFAKE 17 10 00.0 +15
ANWB LR LR
comp=Z,1μm,20.0s
ORDF Ordiarp 80.58 15⇑eP P 17 09 44.7 0.0
TIRR Tirgusor 80.59 354⇓iP P 17 09 46.1 +1.5
TIRR Tirgusor 80.59 354 eP P 17 09 45.0 +0.4
TIRR pmax pmax
comp=Z,299nm,1.1s
TIRR Tirgusor 80.59 354 eP P 17 09 45.0 +0.4
comp=Z,299nm,1.1s
SRE Strehaia 80.62 357⇓iP P 17 09 46.3 +1.4
MYLDM Lahad Datu 80.62 266 eP P 17 09 46.6 +1.4
comp=Z,396nm,1.3s
ONI Oni 80.62 342 P P 17 09 46.0 +1.0
ONI Oni 80.62 342 P P 17 09 46.0 +1.0
UTTA Uttaradit 80.66 287 P P 17 09 45.3 -0.1
comp=Z,159nm,1.1s,comp=Z,1μm
CMMT Chiang Mai 80.67 289 P P 17 09 45.0 -0.5
comp=Z,342nm,1.3s,comp=Z,6μm
CHTO Chiang Mai 80.67 289 P P 17 09 45.1 -0.4
comp=Z,941nm,1.2s,comp=Z,27μm
CHTO Chiang Mai 80.67 289 eP P 17 09 45.1 -0.4
CHTO pmax pmax
comp=Z,792nm,1.5s
CHTO MLR MLR
comp=Z,1μm,21.0s
CHTO Chiang Mai 80.67 289 P P 17 09 45.9 +0.4
SNR=87
CHTO Chiang Mai 80.67 289 P P 17 09 45.9 +0.4
SNR=87
CHTO Chiang Mai 80.67 289 eP P 17 09 45.1 -0.4
comp=Z,792nm,1.5s
CHTO LR LR
comp=Z,1μm,21.0s
PSMA Santa Maria 80.67 35 eP P 17 09 45.4 +0.2
comp=Z,235nm,1.4s
PSMN Pico do Norte, 80.69 35 eP P 17 09 46.1 +0.8
comp=Z,151nm,1.4s
NVLJ Novalja 80.69 3 P P 17 09 45.6 +0.4
HUMR Humele 80.70 356⇓iP P 17 09 45.5 +0.3
CHVG Ch'k'valeri 80.73 343 eP P 17 09 47.0 +1.6
CHVG Ch'k'valeri 80.73 343⇓iP P 17 09 47.3 +1.8
CVDA Cernavoda 80.73 354⇑iP P 17 09 47.0 +1.6
LARF Larrau 80.75 15⇑eP P 17 09 47.3 +1.7
UDBI Udbina 80.75 3 P P 17 09 46.4 +0.7
PCAB Cabril 80.80 21 eP P 17 09 47.2 +1.3
comp=Z,139nm,1.7s
PCAB epP pP 17 10 00.0 +1.2
PCAB esP sP 17 10 07.1 +3.4
REYF Montagne du Re 80.80 15 eP P 17 09 46.3 +0.3
RKT Rikitea 80.86 156 eP P 17 09 56.2 +10
comp=Z,276nm,1.4s
RKT Rikitea 80.86 156 *e*LR LR 17 34 49.3
comp=Z,7μm,30.8s,baz=334
RKT Rikitea 80.86 156 *e*T T 18 37 59.2
comp=Z,7.9nm,0.3s
VLC Villacollemand 80.87 7 PFAKE 17 10 00.0 +14
VLC LR LR
comp=Z,869nm,21.0s
MVIF Mont Vial 80.88 9⇑eP P 17 09 47.5 +1.1
DUS Dusheti 80.88 341 P P 17 09 50.3 +3.9
DUS Dusheti 80.88 341 P P 17 09 50.3 +3.9
LABF Labassere 80.89 14⇑eP P 17 09 46.5 +0.1
LUCF Luceram 80.90 9 eP P 17 09 47.5 +1.0
CM31 Chiang Mai Arr 80.96 289 eP P 17 09 47.5 +0.4
CMAR Chiang Mai Arr 80.96 289 P P 17 09 47.8 +0.8
comp=Z,228nm,0.8s,baz=21,slow=6.4,SNR=1246
PBRG Braganca 80.96 20 eP P 17 09 47.2 +0.4
comp=Z,144nm,1.5s
PBRG epP pP 17 10 00.6 +0.9
PBRG esP sP 17 10 05.3 +0.7
PBRG Braganca 80.96 20 *e*S sS 17 20 15.5 +1.8
PBRG Braganca 80.96 20 *e*LR LR 17 35 44.7
comp=Z,2μm,20.0s
CM01 Chiang Mai Arr 80.98 289 eP P 17 09 47.3 +0.2
SMLA Simla 80.99 313 eP P 17 09 47.2 +0.2
CALN Calern 81.00 9⇑eP P 17 09 48.2 +1.1
KOLN Koldanda 81.02 306 eP P 17 09 48.1 +0.6
comp=Z,462nm,0.8s
PYUN Piuthan 81.02 307 eP P 17 09 48.2 +0.7
comp=Z,2μm,1.1s
VIEF Viey 81.05 14⇑eP P 17 09 48.9 +1.6
REVF Revere 81.05 9⇑eP P 17 09 48.0 +0.8
POLO Lamas de Olo 81.17 20 eP P 17 09 49.5 +1.5
comp=Z,93nm,1.6s
POLO epP pP 17 10 01.8 +1.0
POLO esP sP 17 10 06.5 +0.8
POLO Lamas de Olo 81.17 20 *e*PP PP 17 12 58.4 +5.7
POLO eS S 17 19 48.5 -6.0
POLO Lamas de Olo 81.17 20 *e*LQ LQ 17 32 27.1
POLO eLR LR 17 35 57.9
comp=Z,1μm,22.0s
KBL Kabul 81.19 321 eP P 17 09 47.4 -0.9
KBL pmax pmax
comp=Z,469nm,1.4s
KBL Kabul 81.19 321 eP P 17 09 47.4 -0.9
comp=Z,468nm,1.4s
MANR Mangalia 81.21 353⇓iP P 17 09 49.5 +1.5
TBLG Delisi 81.22 341 eP P 17 09 50.6 +2.4
TBLG Delisi 81.22 341 P P 17 09 49.4 +1.3
TBLG Delisi 81.22 341 P P 17 09 49.4 +1.3
DIVS Divibare 81.23 360 P P 17 09 49.0 +0.8
KKM Kota Kinabalu 81.23 268 eP P 17 09 49.2 +0.5
comp=Z,575nm,1.6s
KKM LR LR

comp=Z,796nm,22.0s
PVRL Vila Real 81.28 20 *e*P **P 17 09 50.1 +1.6**
comp=Z,296nm,1.7s
PVRL *e*pP **pP 17 10 02.5 +1.1**
DDI Dehra Dun 81.31 312 *e*P **P 17 09 49.0 +0.1**
LRDF Laroque-de-Fa 81.33 13⇑ *e*P **P 17 09 49.9 +1.2**
SALF Salau 81.33 14⇑ *e*P **P 17 09 49.0 +0.2**
CHAI Chaiyaphum 81.36 285 P **P 17 09 48.9 -0.3**
comp=Z,70nm,1.2s,comp=Z,740nm
PSN Preselentsi 81.37 354 *i* P **P 17 09 50.0 +1.2**
DGRG David-gareji 81.38 341 P **P 17 09 50.7 +1.7**
DGRG David-gareji 81.38 341 P **P 17 09 50.7 +1.7**
SUKH Sukhothai 81.38 288 P **P 17 09 49.3 +0.1**
comp=Z,50nm,1.1s,comp=Z,598nm
PBKT Sadao Pong 81.38 286 P **P 17 09 49.1 -0.2**
comp=Z,354nm,1.2s,comp=Z,5μm
CARF Carcanieres 81.49 13⇑ *e*P **P 17 09 50.4 +0.7**
MVO Moncorvo 81.52 20 *e*P **P 17 09 51.2 +1.4**
comp=Z,217nm,1.8s
MVO *e*pP **pP 17 10 03.5 +0.8**
MVO *e*sP **sP 17 10 08.6 +1.0**
MVO *e*S **S 17 20 04.3 +6.2**
MVO Moncorvo 81.52 20 *e*LQ LQ 17 31 34.5
MVO *e*LR LR 17 36 19.8
comp=Z,2μm,20.0s
ZIMR 81.55 356 ||*i*P **P 17 09 51.2 +1.4**
GEYT Alibeck 81.67 330 P **P 17 09 51.9 +1.3**
comp=Z,203nm,1.0s,baz=332,slow=5.0,SNR=325
GEYT pP **pP 17 10 05.0 +1.5**
comp=Z,56nm,0.8s,baz=348,slow=5.0,SNR=7.0
GEYT LR LR 17 50 41.3
comp=Z,5μm,18.7s,baz=25,slow=39
FILF Fillols 81.70 13⇑ *e*P **P 17 09 51.4 +0.7**
GDHS Morne Mazeau, 81.73 74 *e*P **P 17 09 51.5 +0.3**
comp=Z,446nm,1.3s
AKH Akhalkalaki 81.76 342⇑ *i*P **P 17 09 53.0 +1.8**
AKH Akhalkalaki 81.76 342 P **P 17 09 52.7 +1.5**
AKH Akhalkalaki 81.76 342 P **P 17 09 52.7 +1.5**
PVIS Viseu 81.78 21 *e*P **P 17 09 52.6 +1.4**
comp=Z,295nm,1.7s
PVIS *e*pP **pP 17 10 05.0 +0.9**
VALF Valcebollere 81.79 13⇑ *e*P **P 17 09 52.5 +1.2**
EPOS Posof 81.81 343 *i* P **P 17 09 52.9 +1.5**
SJAF Saint Jean de 81.82 12⇑ *e*P **P 17 09 52.3 +1.0**
DZM Mont Dzumac 81.84 211 P **P 17 09 52.6 +1.1**
comp=Z,73nm,1.0s,baz=74,slow=9.9,SNR=23
BGD Bogdanovka 81.89 342 P **P 17 09 53.9 +2.0**
PRD Provadia 81.90 354 *i* P **P 17 09 52.9 +1.3**
MPEP Malo Peshtene 81.91 357 *i* P **P 17 09 51.9 +0.2**
SZH Strazhica 81.91 355 *i* P **P 17 09 52.0 +0.3**
LKG Breislack 81.97 74 *e*P **P 17 09 52.9 +0.3**
PVL Pavlikeni 81.99 356 *i* P **P 17 09 53.2 +1.1**
PLE Pljevlja 82.00 0⇑ *i*P **P 17 09 53.2 +0.9**
HELC Santa Helena 82.08 91 *e*P **P 17 09 53.9 +0.5**
UPM Unac-Piva 82.13 0⇑ *i*P **P 17 09 53.6 +0.5**
DBOC Borcka 82.14 343 *i* P **P 17 09 54.3 +1.3**
TBG Guadaloupe-3 82.14 74 *e*P **P 17 09 53.6 +0.3**
KKR Kurukshetra 82.15 312 *e*P **P 17 09 53.5 +0.4**
KKR IAmb IAmb 17 09 54.2
comp=Z,406nm,1.0s
MTE Manteigas 82.16 21 *e*P **P 17 09 54.6 +1.5**
comp=Z,298nm,1.8s
MTE *e*pP **pP 17 10 06.8 +0.7**
MTE *e*sP **sP 17 10 11.8 +0.9**
MTE *e*S **S 17 20 00.4 -4.2**
MTE Manteigas 82.16 21 *e*LR LR 17 36 28.6
comp=Z,2μm,22.0s
MTE Manteigas 82.16 21 *e*P **P 17 09 54.2 +1.1**
comp=Z,411nm,1.3s
MTE LR LR
comp=Z,2μm,20.0s
ARTV Artvin 82.25 343 *i* P **P 17 09 54.9 +1.0**
SANI Sanana 82.29 255 P **P 17 09 55.5 +1.5**
PCAS Casmilo, Conde 82.30 21 *e*P **P 17 09 55.2 +1.4**
comp=Z,304nm,2.0s
PCAS *e*pP **pP 17 10 07.6 +0.9**
PCAS *e*sP **sP 17 10 12.5 +0.9**
PCAS *e*S **S 17 20 01.6 -4.3**
PCAS Casmilo, Conde 82.30 21 *e*LR LR 17 36 33.0
comp=Z,2μm,22.0s
DAGI Agillar 82.36 343 *i* P **P 17 09 55.5 +1.3**
BRRC Barranca, Sant 82.38 89 *e*P **P 17 09 53.9 -0.7**
SNOP Sinop 82.39 348 *e*P **P 17 09 54.4 +0.2**
GRMC Gramalote, San 82.41 87 *e*P **P 17 09 54.7 -0.2**
CBRI Barrientos, No 82.41 87 *e*P **P 17 09 53.8 -1.1**
BRY Bratogost 82.43 1⇑ *i*P **P 17 09 55.0 +0.4**
EAK Akyaka 82.44 342 *i* P **P 17 09 56.5 +1.7**
STON Ston 82.45 1 P **P 17 09 54.6 +0.1**
IVA Berane 82.46 360⇑ *i*P **P 17 09 55.6 +0.9**
MRSI Marisa 82.49 260 P **P 17 09 54.5 -0.6**
NKME Niksic 82.56 0⇑ *i*P **P 17 09 55.7 +0.5**
DDEM Demirkent 82.57 343 *i* P **P 17 09 56.7 +1.4**
BZK Bozkurt 82.58 349 *e*P **P 17 09 56.2 +1.0**
KARS Kars 82.60 342 *e*P **P 17 09 57.8 +2.2**
NLAI Namlea 82.66 254 P **P 17 09 56.8 +0.9**
JMB Yambol 82.68 355 *i* P **P 17 09 56.4 +0.7**
PGB Panagyurishte 82.70 357 *i* P **P 17 09 56.6 +0.7**
PCBR Castelo Branco 82.71 21 *e*P **P 17 09 57.3 +1.4**
comp=Z,209nm,1.6s
PCBR *e*pP **pP 17 10 09.3 +0.4**
SDV Santo Domingo 82.71 85 P **P 17 09 56.2 -0.3**
comp=Z,35nm,0.6s,baz=318,slow=4.2,SNR=22
SDV pP **pP 17 10 08.5 -0.9**
comp=Z,30nm,0.4s,baz=224,slow=13,SNR=2.9
SDV Santo Domingo 82.71 85 *e*P **P 17 09 56.0 -0.6**
comp=Z,150nm,1.3s
SDV pP **pP 17 10 08.5 -0.9**
SDV LR LR
comp=Z,2μm,21.0s
PTOM Tomar 82.73 21 *e*P **P 17 09 57.3 +1.2**
comp=Z,289nm,1.5s
PTOM *e*pP **pP 17 10 10.0 +1.0**
PVY Plav 82.74 360⇑ *i*P **P 17 09 56.7 +0.5**
DIKM Dikmen 82.75 348 *e*P **P 17 09 57.9 +1.8**
GNI Garni 82.75 341 *i* P **P 17 09 57.6 +1.2**
SNR=31
GNI Garni 82.75 341 *e*P **P 17 09 58.1 +1.7**
GNI pmax pmax
comp=Z,625nm,1.5s
GNI MLR MLR
comp=Z,4μm,20.0s
GNI Garni 82.75 341 P **P 17 09 58.6 +2.2**
SNR=23
GNI Garni 82.75 341 P **P 17 09 58.6 +2.2**
SNR=23
GNI Garni 82.75 341 *e*P **P 17 09 58.1 +1.7**
comp=Z,625nm,1.5s
GNI LR LR
comp=Z,4μm,20.0s
PAMC Pamplona, Colo 82.78 88 *e*P **P 17 09 56.8 -0.4**
CEME Cevo 82.78 0⇑ *i*P **P 17 09 56.4 0.0**
KTUT Trabzon 82.79 345 *e*P **P 17 09 57.6 +1.3**
MACK Trabzon 82.83 345 *i* P **P 17 09 58.0 +1.4**
AQU L'Aquila 82.84 5 *e*P **P 17 09 56.6 0.0**
AQU pmax pmax
comp=Z,280nm,1.4s
AQU L'Aquila 82.84 5 *e*P **P 17 09 56.6 0.0**
comp=Z,279nm,1.4s
AQU LR LR
comp=Z,1μm,20.0s
SRAK Srakaew 82.87 284 P **P 17 09 55.6 -1.5**
comp=Z,1μm,1.0s,comp=Z,11μm
HCY Hercog Novi 82.88 1⇑ *i*P **P 17 09 56.8 0.0**
PDG Podgorica 82.90 0⇑ *i*P **P 17 09 57.8 +0.9**
PDG Podgorica 82.90 0 P **P 17 09 57.5 +0.6**
TTG Podgorica 82.90 0⇑ *i*P **P 17 09 57.5 +0.6**
TTG Podgorica 82.90 0 P **P 17 09 57.5 +0.6**
TTG Podgorica 82.90 0 P **P 17 09 57.5 +0.6**
SAMS Samsun-Alacam 82.92 347 *i* P **P 17 09 58.5 +1.5**
NORC Norcasia 82.97 90 *e*P **P 17 09 57.2 -0.5**
BYBT Boyabat 82.98 349 *e*P **P 17 09 58.8 +1.5**
ESPY Espiye-Giresun 83.01 345 *e*P **P 17 09 58.2 +0.7**
BOYT Boyabat 83.02 348 *i* P **P 17 09 59.7 +2.2**
NAYO Nakonayok 83.02 285 P **P 17 09 58.0 +0.1**
comp=Z,290nm,1.4s,comp=Z,7μm
BUM Brajici-Budva 83.03 6⇑ *i*P **P 17 09 57.8 +0.2**
ORDU Ordu-Boztepe 83.06 346 *i* P **P 17 09 58.8 +1.0**
GRSN GIRESUNGRSN 83.07 346 *i* P **P 17 09 59.0 +1.2**
BTIN Bart¯–n 83.08 350 *i* P **P 17 10 01.8 +4.0**
BARC Barichara 83.10 88 *e*P **P 17 09 56.8 -1.8**
PMRV Marv??o 83.12 21 *e*P **P 17 09 59.3 +1.2**
comp=Z,210nm,1.9s
PMRV *e*pP **pP 17 10 11.4 +0.3**
PMRV *e*sP **sP 17 10 16.4 +0.5**
PMRV *e*S **S 17 20 05.5 -8.9**
PMRV Marv??o 83.12 21 *e*LR LR 17 36 28.6
comp=Z,2μm,24.0s
PLD Plovdiv 83.12 356 *i* P **P 17 09 58.7 +0.7**
ALMR Almeirim 83.14 22 *e*P **P 17 09 58.7 +0.5**
ALMR Almeirim 83.14 22 *e*P **P 17 09 58.6 +0.5**
DIM Dimitrovgrad 83.14 355 *i* P **P 17 09 59.5 +1.4**
DRME Dracevica, Mon 83.14 0⇑ *i*P **P 17 09 58.7 +0.5**
PMAFR Mafra 83.18 22 *e*P **P 17 09 59.7 +1.3**
comp=Z,416nm,2.0s
PMAFR *e*pP **pP 17 10 12.1 +0.8**
PMAFR *e*sP **sP 17 10 17.0 +0.8**
PMAFR *e*S **S 17 20 10.5 -4.5**
PMAFR Mafra 83.18 22 *e*LR LR 17 37 21.3
comp=Z,3μm,22.0s
KVT Kavak 83.21 347 *e*P **P 17 10 00.5 +1.9**
PCM Pelee Case Pet 83.22 74 *e*P **P 17 09 58.8 -0.2**
CXM Morne La Croix 83.25 74 *e*P **P 17 09 59.9 +0.7**
BAMF Morne Balai 83.26 74 *e*P **P 17 09 59.6 +0.5**
HAVZ Havza 83.26 348 *i* P **P 17 10 00.4 +1.6**
LUWI Luwuk 83.27 258 P **P 17 09 58.1 -1.0**
LUWI Luwuk 83.27 258 *e*P **P 17 09 57.9 -1.2**
comp=Z,989nm,1.3s
EDRB Edirne 83.29 355 *e*P **P 17 10 00.0 +1.2**
EDRB Edirne 83.29 355 P **P 17 09 59.8 +0.9**
EDRB Edirne 83.29 355 P **P 17 09 59.8 +0.9**
BOK Bokaro 83.29 302 *e*P **P 17 09 59.4 +0.2**
BOK IAmb IAmb 17 10 00.9
comp=Z,494nm,1.5s
PMTG Montargil 83.30 21 *e*P **P 17 09 59.9 +0.9**
comp=Z,185nm,1.8s
PMTG *e*pP **pP 17 10 12.3 +0.4**
PMTG *e*sP **sP 17 10 17.1 +0.3**
PMTG Montargil 83.30 21 *e*LR LR 17 36 28.6
comp=Z,2μm,24.0s
BAYT Ayd¯–ntepe-Bay 83.31 344 *e*P **P 17 10 00.6 +1.3**
FDF Fort de France 83.32 74 *e*P **P 17 09 59.1 -0.4**
FDF Fort de France 83.32 74 *e*P **P 17 09 59.9 +0.4**
FDF Fort de France 83.32 74 *e*P **P 17 09 59.5 0.0**
FDF pmax pmax
comp=Z,104nm,1.0s
FDF MLR MLR
comp=Z,1μm,21.0s
FDF Fort de France 83.32 74 *e*P **P 17 09 59.5 0.0**
comp=Z,104nm,1.0s
FDF LR LR
comp=Z,1μm,21.0s
SKO Skopje 83.35 359 P **P 17 10 00.4 +1.2**
SKO Skopje 83.35 359 *i* P **P 17 10 00.6 +1.4**
GUMT Gumushane 83.35 345 *e*P **P 17 10 01.3 +1.9**
ULC Ulcinj 83.37 0⇑ *i*P **P 17 09 59.7 +0.4**
PMST Lisbon--Monsan 83.41 22 *e*P **P 17 10 01.2 +1.6**
comp=Z,312nm,2.0s
PMST *e*pP **pP 17 10 13.3 +0.8**
KKB Krupnik 83.42 357 *i* P **P 17 10 00.7 +1.1**
SAFT Safranbolu 83.43 350 *e*P **P 17 10 01.1 +1.4**
LIS Lisbon 83.44 22 *e*P **P 17 10 00.2 +0.5**
LIS AMS AMS 17 45 58.6
comp=Z,4μm,27.2s
LIS Lisbon 83.44 22 *e*P **P 17 10 01.3 +1.6**
comp=Z,418nm,1.7s
LIS *e*pP **pP 17 10 13.7 +1.1**
LIS Lisbon 83.44 22 *e*P **P 17 10 00.2 +0.5**
EATA Eleskirt 83.44 342 *i* P **P 17 10 02.2 +2.1**
PHSR Pinarhisar 83.46 354 *e*P **P 17 10 00.4 +0.6**
COEN Coen 83.47 234 *e*P **P 17 09 59.9 -0.1**
comp=Z,138nm,1.5s
KDZE Karadeniz Ereo 83.48 351 *e*P **P 17 09 59.8 -0.1**
TOS Tosya 83.49 349 *e*P **P 17 10 02.2 +2.1**
TOLC Tolima 83.50 91 *e*P **P 17 10 00.9 +0.1**
ILGA Ilgaz 83.51 349 *i* P **P 17 10 02.0 +1.7**
ERBA Erbaa 83.52 347 *i* P **P 17 10 00.5 +0.3**
ES19 SONSECA Array 83.53 18 *e*P **P 17 10 01.3 +1.1**
ESDC Sonseca Array 83.54 18 P **P 17 10 01.5 +1.2**
comp=Z,61nm,0.6s,baz=342,slow=4.6,SNR=351
ESDC pP **pP 17 10 13.9 +0.7**
comp=Z,158nm,0.9s,baz=339,slow=4.1,SNR=23
ESDC PKKPbc **PKKPbc 17 28 14.6 -1.0**
comp=Z,2.5nm,0.9s,baz=162,slow=1.4,SNR=10.0
ESDC PKPPKP P'P'df 17 36 18.9 -1.0
comp=Z,1.4nm,0.8s,baz=174,slow=1.1,SNR=7.5
ESLA Sonseca Array 83.54 18 *e*P **P 17 10 01.2 +0.9**
comp=Z,213nm,0.9s
RZN Rozhen 83.54 356 *i* P **P 17 10 01.5 +1.1**
BIM Bigot 83.54 74 *e*P **P 17 10 01.4 +0.8**
KDZ Kurdzhali 83.55 356 *i* P **P 17 10 01.4 +1.1**
ERZM Erzurum 83.59 343 *i* P **P 17 10 03.0 +2.2**
EZM Erzurum 83.59 343 *e*P **P 17 10 03.0 +2.2**
PAB San Pablo 83.60 18 *e*P **P 17 10 01.5 +0.9**
PAB pmax pmax
comp=Z,138nm,1.0s
PAB MLR MLR
comp=Z,2μm,21.0s
PAB San Pablo 83.60 18 *e*P **P 17 10 01.5 +0.9**
comp=Z,138nm,1.0s
PAB LR LR
comp=Z,2μm,21.0s
KOPT Kop Dagi 83.62 344 *i* P **P 17 10 03.3 +2.3**
PESTR Estremoz 83.62 21 *e*P **P 17 10 01.7 +1.0**
comp=Z,258nm,1.3s
PESTR *e*pP **pP 17 10 14.2 +0.6**
PESTR *e*sP **sP 17 10 19.2 +0.7**
PESTR *e*S **S 17 20 17.2 -2.3**
PESTR Estremoz 83.62 21 *e*LR LR 17 36 46.1
comp=Z,2μm,22.0s
MMB Musomiste 83.67 357 *i* P **P 17 10 02.4 +1.5**
KELT Kelkit 83.69 345 *i* P **P 17 10 02.8 +1.6**
RSDY Resadiye-TOKAT 83.72 346 *e*P **P 17 10 03.3 +2.1**
RUSC La Rusia 83.73 89 *e*P **P 17 10 02.1 0.0**
CHBT CHBT 83.73 283 P **P 17 10 01.9 +0.4**
comp=Z,670nm,1.4s,comp=Z,10μm
SUSE Susehri 83.78 346 *i* P **P 17 10 02.7 +1.0**
TUMC Tumaco 83.79 96 *e*P **P 17 10 01.3 -0.5**
CTKS Kestanelik-??a 83.79 353 *e*P **P 17 10 02.4 +0.9**
KAND Kocaeli-Kandir 83.80 352 *i* P **P 17 10 02.3 +0.8**
BGKT Bogazkoy 83.82 353 *e*P **P 17 10 02.8 +1.1**
EVO Evora 83.86 21 *e*P **P 17 10 02.9 +1.0**
comp=Z,199nm,2.4s
EVO *e*pP **pP 17 10 15.3 +0.5**
EVO *e*sP **sP 17 10 20.4 +0.7**
ROSC El Rosal 83.87 90 P **P 17 10 03.4 +0.6**
comp=Z,9.4nm,0.7s,baz=65,slow=3.3,SNR=15
ROSC LR LR 17 48 58.2
comp=Z,356nm,21.4s,baz=3.5,slow=37
ROSC El Rosal 83.87 90 *e*P **P 17 10 03.1 +0.4**
comp=Z,35nm,1.0s
KUDL Kundal 83.87 312 *e*P **P 17 10 02.1 0.0**
CLDR Caldiran 83.89 341 *e*P **P 17 10 04.4 +2.1**
TOKT Tokat 83.90 347 *e*P **P 17 10 04.2 +2.0**
TOKA Tokat 83.90 347 *i* P **P 17 10 02.5 +0.4**
NVR Nevrokopi 83.91 357 P **P 17 10 03.3 +1.2**
NVR Nevrokopi 83.91 357 P **P 17 10 03.3 +1.2**
BCAM Yenicaga 83.91 350 *i* P **P 17 10 03.4 +1.1**
ISK Istanbul-Kandi 83.92 353 *e*P pP 17 10 17.4 +2.4
ISK Istanbul-Kandi 83.92 353 P pP 17 10 16.9 +1.8
ISK Istanbul-Kandi 83.92 353 P pP 17 10 16.9 +1.8
CRLT Corlu 83.94 354 *e*P **P 17 10 03.6 +1.3**
ECAT Cat-ERZURUM 83.95 343 *i* P **P 17 10 04.4 +1.8**
CANT Cankiri 83.96 349 *e*P **P 17 10 04.6 +2.1**
VAY Valandovo 83.97 358 P **P 17 10 03.7 +1.3**
VAY Valandovo 83.97 358 *i* P **P 17 10 03.8 +1.3**
TIR Tirane 83.98 360 ||*i*P **P 17 10 04.1 +1.6**
TIR Tirane 83.98 360 *e*P **P 17 10 03.0 +0.5**
TIR pmax pmax
comp=Z,312nm,1.4s
TIR MLR MLR
comp=Z,3μm,22.0s
TIR Tirane 83.98 360 *e*P **P 17 10 03.0 +0.5**
comp=Z,312nm,1.4s
TIR LR LR
comp=Z,3μm,22.0s
SAHE Sakarya_HENDEK 83.99 351 *i* P **P 17 10 03.4 +0.9**
TKR Tekirdag 84.09 354 *e*P **P 17 10 04.0 +1.0**
ELDT Eldivan 84.10 349 *i* P **P 17 10 04.9 +1.6**
EKAR Karacoban 84.11 343 *i* P **P 17 10 05.9 +2.5**
HRT Hereke 84.11 352 *e*P **P 17 10 04.4 +1.2**
KNT Kendrikon 84.12 357 *e*P **P 17 10 03.8 +0.6**
KNT Kendrikon 84.12 357 P **P 17 10 04.5 +1.3**
KNT Kendrikon 84.12 357 P **P 17 10 04.5 +1.3**
KNT Kendrikon 84.12 357 P **P 17 10 04.5 +1.3**
BUY Buyukada 84.13 353 *i* P **P 17 10 03.8 +0.6**
KHLT Khaolaem Dam 84.14 287 P **P 17 10 03.9 +0.3**
comp=Z,161nm,1.4s,comp=Z,2μm
SRS Serrai 84.15 357 P **P 17 10 04.3 +1.0**
SRS Serrai 84.15 357 *e*P **P 17 10 04.3 +1.0**
SRS Serrai 84.15 357 *e*P **P 17 10 04.3 +1.0**
PNCL Nicolau / Gran 84.15 22 *e*P **P 17 10 04.6 +1.2**
comp=Z,346nm,1.3s
PNCL *e*pP **pP 17 10 17.0 +0.7**
PNCL *e*sP **sP 17 10 22.1 +0.9**
PNCL Nicolau / Gran 84.15 22 *e*S **S 17 20 28.3 +3.5**
PNCL Nicolau / Gran 84.15 22 *e*LR LR 17 38 00.8
comp=Z,4μm,22.0s
COAL Corum-Alaca 84.16 348 *i* P **P 17 10 05.4 +1.9**
CUZAR Zara_SIVAS 84.16 346 *i* P **P 17 10 05.5 +1.9**
ERZN Erzincan 84.17 344 *e*P **P 17 10 05.0 +1.4**
YEDI Yedisu-Bingol 84.18 344 *e*P **P 17 10 05.7 +2.0**
SPNC Sapanca-Adapaz 84.20 352 *e*P **P 17 10 04.8 +1.2**
OHR Ohrid 84.21 359 *i* P **P 17 10 04.7 +0.9**
SRDT SRDT 84.21 287 P **P 17 10 03.9 -0.1**
comp=Z,1μm,1.4s,comp=Z,17μm
KHET Khetri 84.22 312 *e*P **P 17 10 03.0 -0.9**
KHET IAmb IAmb 17 10 04.9
comp=Z,125nm,0.7s
SVSK Karacayir 84.23 347 *e*P **P 17 10 06.0 +2.2**
KAVA Kavala 84.24 356 P **P 17 10 04.8 +1.0**
KAVA Kavala 84.24 356 *e*P **P 17 10 04.8 +1.0**
BTAS Taskesti 84.25 351 *i* P **P 17 10 05.1 +1.2**
ALN Alexandroupoli 84.27 355 *e*P **P 17 10 04.9 +1.0**
ALN Alexandroupoli 84.27 355 P **P 17 10 04.8 +0.9**
ALN Alexandroupoli 84.27 355 P **P 17 10 04.8 +0.9**
ALN Alexandroupoli 84.27 355 P **P 17 10 04.8 +0.9**
CORM Corum 84.27 348 *e*P **P 17 10 06.2 +2.1**
MCLT Moule a Chique 84.28 74 *e*P **P 17 10 04.0 -0.3**
BIA Bitola 84.30 359 *i* P **P 17 10 04.6 +0.4**
KESN Edirne-Kesan 84.31 355 *i* P **P 17 10 05.2 +0.6**
SAUI Saumlaki 84.33 248 P **P 17 10 05.6 +1.1**
SAUI Saumlaki 84.33 248 *e*P **P 17 10 04.9 +0.5**
comp=Z,1μm,1.2s
MDUB Mudurnu 84.33 351 *e*P **P 17 10 05.8 +1.4**
GRG Griva 84.34 358 *e*P **P 17 10 06.7 +2.4**
GRG Griva 84.34 358 P **P 17 10 05.7 +1.4**
PBEJ Beja 84.38 21 *e*P **P 17 10 05.4 +0.9**
comp=Z,156nm,1.4s
PBEJ *e*pP **pP 17 10 18.5 +1.0**
POPC Popayan, Colom 84.38 94 *e*P **P 17 10 04.6 -0.5**
PBAR Barrancos 84.40 21 *e*P **P 17 10 05.7 +1.0**
comp=Z,690nm,1.4s
PBAR *e*pP **pP 17 10 18.2 +0.6**
PBAR *e*sP **sP 17 10 23.3 +0.8**
PBAR Barrancos 84.40 21 *e*S **S 17 20 30.8 +3.5**
PBAR Barrancos 84.40 21 *e*LR LR 17 36 46.1
comp=Z,4μm,20.0s
PATY Pattaya 84.41 284 P **P 17 10 05.4 +0.4**
comp=Z,62nm,1.2s,comp=Z,2μm
SART Tekirdag 84.42 354 *i* P **P 17 10 06.0 +1.3**
RKY Sarkoy-Tekirda 84.42 354 *e*P **P 17 10 05.6 +0.8**
ENEZ Enez 84.42 355 *e*P **P 17 10 05.8 +1.1**
ENEZ Enez 84.42 355 P **P 17 10 05.6 +0.9**
ARMT Armutlu 84.43 353 *e*P **P 17 10 05.5 +0.8**
GULT Gulveren 84.43 352 *e*P **P 17 10 06.0 +1.2**
SOH Sokhos 84.45 357 P **P 17 10 05.8 +0.9**
SOH Sokhos 84.45 357 *e*P **P 17 10 05.8 +0.9**
SOH Sokhos 84.45 357 *e*P **P 17 10 05.8 +0.9**
PRAC Prado 84.45 91 *e*P **P 17 10 03.4 -1.9**
SVB Belmont 84.46 75 *e*P **P 17 10 04.9 -0.3**
SVB Belmont 84.46 75 *e*P **P 17 10 05.0 -0.3**
ILIC Ilic-Erzincan 84.47 345 *e*P **P 17 10 06.8 +1.6**
MRMT Marmara Adasi 84.48 354 *e*P **P 17 10 06.0 +0.9**
MESJ Messejana 84.48 22 *e*P **P 17 10 05.5 +0.4**
MESJ *e*S **S 17 20 24.4 -3.6**
MESJ AMS AMS 17 45 45.0
comp=Z,3μm,21.4s
MESJ Messejana 84.48 22 *e*P **P 17 10 05.8 +0.8**
comp=Z,124nm,1.4s
MESJ *e*pP **pP 17 10 18.6 +0.6**
MESJ *e*sP **sP 17 10 23.5 +0.6**
MESJ Messejana 84.48 22 *e*P **P 17 10 05.4 +0.4**
MESJ *e*S **S 17 20 24.4 -3.6**
ADVT Abdulvahap 84.50 352 *e*P **P 17 10 06.1 +1.1**
REFA Refahiye_ERZ¯ 84.50 345 *i* P **P 17 10 04.3 -1.0**
VANB Van 84.51 341 *e*P **P 17 10 07.8 +2.4**
FNA Florina 84.53 359 *e*P **P 17 10 06.6 +1.2**
FNA Florina 84.53 359 P **P 17 10 05.8 +0.5**
FNA Florina 84.53 359 P **P 17 10 05.8 +0.5**
FNA Florina 84.53 359 P **P 17 10 05.8 +0.5**
GEMT Gemlik 84.53 353 *e*P **P 17 10 06.4 +1.2**
BNGL BINGOL 84.56 343 *i* P **P 17 10 07.9 +2.2**
TVAN Van 84.58 341 *i* P **P 17 10 07.7 +1.9**
BNGB Bing¯¶‖ 84.60 344 *e*P **P 17 10 07.8 +2.0**
BGOL Bingol 84.60 344 *i* P **P 17 10 07.6 +1.8**
IZI Iznik 84.61 352 *e*P **P 17 10 07.0 +1.3**
MDNY Mudanya-Bursa 84.62 353 *e*P **P 17 10 06.6 +0.9**
MATE Matera 84.65 2⇑ *i*P **P 17 10 07.3 +1.5**
THE Thessaloniki 84.65 357 P **P 17 10 06.2 +0.4**
PTEO Sao Teotonio 84.66 22 *e*P **P 17 10 07.2 +1.3**
comp=Z,313nm,1.7s
PTEO *e*pP **pP 17 10 19.0 +0.1**
TNCL Tunceli-Merkez 84.66 344 *i* P **P 17 10 08.1 +2.0**
KEMA Kemaliye 84.66 345 *i* P **P 17 10 07.6 +1.6**
HORT Hortiatis 84.68 357 *e*P **P 17 10 07.6 +1.4**
HORT Hortiatis 84.68 357 P **P 17 10 06.5 +0.4**
HORT Hortiatis 84.68 357 P **P 17 10 06.5 +0.4**
IGD Bursa 84.70 353 *i* P **P 17 10 06.2 +0.1**
EDC Edincik 84.72 354 *e*P **P 17 10 06.8 +0.6**
CAVI Cavuskoy 84.72 352 *e*P **P 17 10 07.4 +1.2**
PCVE Castro Verde 84.72 22 *e*P **P 17 10 07.3 +1.0**
comp=Z,164nm,1.9s
PCVE *e*pP **pP 17 10 19.9 +0.7**
PCVE *e*sP **sP 17 10 24.7 +0.6**
PCVE Castro Verde 84.72 22 *e*S **S 17 20 32.0 +1.6**
PCVE Castro Verde 84.72 22 *e*LR LR 17 37 52.0
comp=Z,3μm,22.0s
SMTH Samothraki Isl 84.72 355 P **P 17 10 06.1 -0.1**
SMTH Samothraki Isl 84.72 355 *e*P **P 17 10 06.1 -0.1**
YOZ Yozgat 84.72 348 *e*P **P 17 10 07.8 +1.3**
GELI Tayfur-Gelibol 84.75 355 *e*P **P 17 10 07.1 +0.8**
LPK Lapseki 84.75 354 *e*P **P 17 10 07.6 +1.3**
CUKAN kangal_SIVAS 84.76 346 *i* P **P 17 10 08.5 +1.9**
LOD Lodumlu 84.76 350 *e*P **P 17 10 07.8 +1.2**
KCTX Karacabey (Bur 84.76 353 *e*P **P 17 10 07.4 +0.9**
ANTO Ankara 84.78 350 *e*P **P 17 10 07.7 +1.0**
ANTO pmax pmax
comp=Z,621nm,1.5s
ANTO Ankara 84.78 350 *e*P **P 17 10 07.7 +1.0**
comp=Z,621nm,1.5s
BR231 Keskin MP Arra 84.81 350 *e*P **P 17 10 07.9 +1.1**
CUSAR Sarkisla-SIVAS 84.83 347 *i* P **P 17 10 08.2 +1.3**
ULDT Uludag 84.83 353 *i* P **P 17 10 08.3 +1.3**
BR101 Keskin Array S 84.83 349 *e*P **P 17 10 07.9 +0.9**
BR101 *e*pP **pP 17 10 21.6 +1.6**
BR101 *e*PKKPbc **PKKPbc 17 28 13.1 +0.4**
BR101 *e*P'P'df **P'P'df 17 36 23.4 -2.8**
BR131 Keskin Array S 84.83 349 *e*P **P 17 10 07.7 +0.7**
BRTR Keskin Array B 84.83 349 P **P 17 10 07.9 +0.9**
comp=Z,79nm,0.8s,baz=15,slow=2.1,SNR=235
BRTR pP **pP 17 10 21.6 +1.6**
comp=Z,52nm,0.8s,baz=64,slow=2.9,SNR=7.7
BRTR PKPKPbc **PKKPbc 17 28 13.1 +0.4**
comp=Z,4.6nm,0.8s,baz=170,slow=5.6,SNR=20
BRTR PKPPKP **P'P'df 17 36 23.4 -2.8**
comp=Z,2.4nm,1.0s,baz=180,slow=0.7,SNR=5.4
BRTR LR LR 17 55 27.6
comp=Z,1μm,19.0s,baz=6.0,slow=41
GEVA Gevas 84.85 342 *i* P **P 17 10 08.8 +1.7**
CDAG Cicekdag 84.85 349 *i* P **P 17 10 08.2 +1.2**
PLG Polygyros 84.90 357 P **P 17 10 07.6 +0.4**
PLG Polygyros 84.90 357 P **P 17 10 07.6 +0.4**
PLG Polygyros 84.90 357 P **P 17 10 07.6 +0.4**
PTK Pertek 84.90 345 *e*P **P 17 10 09.5 +2.1**
CUALT Altinyayla-SIV 84.90 347 *i* P **P 17 10 09.3 +2.0**
MORF Marmelete 84.90 22 *e*P **P 17 10 07.5 +0.3**
MORF AMS AMS 17 46 52.3
comp=Z,4μm,22.5s
MORF Marmelete 84.90 22 *e*P **P 17 10 08.4 +1.2**
comp=Z,299nm,1.6s
MORF *e*pP **pP 17 10 20.8 +0.6**
MORF *e*sP **sP 17 10 25.9 +0.8**
MORF Marmelete 84.90 22 *e*S **S 17 20 33.0 +0.6**
MORF Marmelete 84.90 22 *e*LR LR 17 36 35.5
comp=Z,4μm,22.0s
MORF Marmelete 84.90 22 *e*P **P 17 10 07.5 +0.3**
NEST Nestorio 84.91 359 P **P 17 10 08.2 +0.9**
AUMIH MIHALICIK 84.91 351 *i* P **P 17 10 08.4 +1.0**

KTI Kastanea 84.91 358 P P 17 10 08.3 +0.9
OUR Ouranopolis 84.92 357 eP P 17 10 07.7 +0.6
OUR Ouranopolis 84.92 357 P P 17 10 07.8 +0.6
OUR Ouranopolis 84.92 357 eP P 17 10 07.8 +0.6
OUR Ouranopolis 84.92 357 eP P 17 10 07.8 +0.6
BETC Betania 84.97 93 eP P 17 10 08.7 +0.8
KZN Kozani 85.00 358 P P 17 10 08.1 +0.3
KZN Kozani 85.00 358 P P 17 10 08.1 +0.3
KZN Kozani 85.00 358 P P 17 10 08.1 +0.3
PVAQ Vaqueiros 85.01 21 eP P 17 10 08.9 +1.2
comp=Z,216nm,1.4s
PVAQ epP pP 17 10 21.4 +0.7
PVAQ esP sP 17 10 26.4 +0.9
PVAQ eS S 17 20 15.6 -18
PVAQ Vaqueiros 85.01 21 eLR LR 17 37 52.0
comp=Z,3µm,22.0s
PFVI Vila Bisbo 85.03 22 eP P 17 10 08.8 +1.0
comp=Z,272nm,1.3s
PFVI epP pP 17 10 21.4 +0.6
PFVI esP sP 17 10 26.4 +0.7
PFVI Vila Bisbo 85.03 22 eS S 17 20 35.8 +2.3
PFVI Vila Bisbo 85.03 22 eLR LR 17 38 05.2
comp=Z,3µm,22.0s
PFVI Vila Bisbo 85.03 22 eP P 17 10 07.9 +0.1
comp=Z,303nm,1.1s
BBAL Bala 85.07 349 i P P 17 10 09.5 +1.3
PHET Kaeng Krachan 85.11 285 P P 17 10 08.8 +0.3
comp=Z,107nm,0.9s,comp=Z,843nm
PBDV Barranco-do-Ve 85.12 22 eP P 17 10 09.7 +1.4
comp=Z,260nm,1.9s
PBDV epP pP 17 10 22.4 +1.1
PBDV Barranco-do-Ve 85.12 22 eS S 17 20 28.6 -5.9
PBDV Barranco-do-Ve 85.12 22 eLR LR 17 36 45.1
comp=Z,3µm,22.0s
PENT Pentalofos 85.12 359 P P 17 10 09.2 +0.8
GRGR Grenville 85.17 76 PFAKE 17 10 20.0 +11
GRGR LR LR
comp=Z,2µm,20.0s
AFSR Af¨ar-Bala (A 85.17 350 eP P 17 10 10.1 +1.5
KAMT Kaman 85.18 349 eP P 17 10 10.3 +1.6
LIT Litokhoron 85.19 358 P P 17 10 09.2 +0.6
OTAV Otavalo 85.24 96 eP P 17 10 10.0 +0.3
comp=Z,118nm,1.6s
OTAV LR LR
comp=Z,646nm,22.0s
OTAV Otavalo 85.24 96 eP P 17 10 09.9 +0.3
RAO Raoul Island 85.28 195 PFAKE 17 10 20.0 +11
RAO LR LR
comp=Z,4µm,19.0s
CUC Castrocucco 85.28 3 eP P 17 10 08.8 -0.4
comp=Z,167nm,1.3s
CUC LR LR
comp=Z,1µm,20.0s
LIA Limnos Island 85.31 356 P P 17 10 09.9 +0.8
LIA Limnos Island 85.31 356 P P 17 10 09.9 +0.8
ESKT Eskisehir 85.31 351 i P P 17 10 10.3 +1.0
SVRH Sivrihisar-ESK 85.32 351 eP P 17 10 10.0 +0.6
BOZC Bozcaada 85.32 355 i P P 17 10 09.7 +0.5
EZN Ezine 85.32 355 eP P 17 10 09.2 -0.1
EZN Ezine 85.32 355 P P 17 10 09.8 +0.6
EZN Ezine 85.32 355 eP P 17 10 09.8 +0.6
EZN Ezine 85.32 355 eP P 17 10 09.8 +0.6
AUSIV SIVRIHISAR 85.33 351 i P P 17 10 10.3 +0.9
SVAN Silvan-Diyarba 85.33 343 eP P 17 10 10.8 +1.4
BALY Balya 85.33 354 i P P 17 10 08.5 -0.9
PAIG Paliouri 85.33 357 P P 17 10 09.3 0.0
PAIG Paliouri 85.33 357 eP P 17 10 09.3 0.0
PAIG Paliouri 85.33 357 eP P 17 10 09.3 0.0
ELZG Elazig 85.35 345 i P P 17 10 11.6 +2.0
KPRO Kipourio 85.36 359 P P 17 10 10.3 +0.8
CUGUR Gurin_S¨VAS 85.37 346 i P P 17 10 11.9 +2.2
SVRC Sivrice-ELAZID 85.41 345 eP P 17 10 12.4 +2.4
DURS Dursunbey 85.42 353 i P P 17 10 10.5 +0.6
BALB Balikesir 85.42 354 eP P 17 10 09.4 -0.3
BNN Bunyan 85.43 347 eP P 17 10 11.6 +1.6
VSL Villasalto 85.43 8 eP P 17 10 10.2 +0.4
comp=Z,128nm,0.9s
VSL LR LR
comp=Z,1µm,20.0s
HKR Hakkari 85.44 341 eP P 17 10 11.6 +1.5
KKUL Konya-Kulu 85.46 350 i P P 17 10 11.6 +1.5
DARE Darende-Malaty 85.49 346 eP P 17 10 12.6 +2.4
TVSB Tavsanli 85.49 352 eP P 17 10 11.2 +1.0
BBGH Gun Hill 85.50 74 PFAKE 17 10 20.0 +10
BBGH LR LR
comp=Z,3µm,22.0s
MEV Metsovon 85.53 359 P P 17 10 12.2 +1.7
BTMN Batman 85.57 343 i P P 17 10 12.5 +1.9
AUKIR K¨rka- Seyitg 85.58 351 i P P 17 10 11.5 +0.9
AVNS Nevsehir-Avano 85.60 348 i P P 17 10 12.1 +1.3
SERE Sereflikochisa 85.61 349 eP P 17 10 12.6 +1.7
KEK Kerkira 85.62 360 P P 17 10 11.5 +0.8
KEK Kerkira 85.62 360 P P 17 10 11.5 +0.8
JAN Janina 85.67 359 P P 17 10 12.4 +1.4
JAN Janina 85.67 359 P P 17 10 12.4 +1.4
JAN Janina 85.67 359 P P 17 10 12.4 +1.4
DYBB Diyarbakir 85.70 344 eP P 17 10 13.2 +1.9
AKCD Akcadag 85.70 346 i P P 17 10 13.2 +1.9
SGD Sagiada 85.72 359 P P 17 10 12.2 +1.0
DIYA Diyarbakir 85.73 344 i P P 17 10 13.3 +1.9
THL Klokotos Trika 85.74 358 P P 17 10 11.4 +0.1
FLOC Florencia 85.75 93 eP P 17 10 09.9 -1.8
IGT Igoumenitsa 85.79 359 P P 17 10 12.2 +0.6
AYVA Ayvalik 85.82 354 i P P 17 10 12.4 +0.7
KIZT Kizilcal 85.85 350 eP P 17 10 12.9 +0.9
GDZ Gediz 85.85 352 i P P 17 10 12.6 +0.5
FYTO Fytoko, Volos 85.88 357 P P 17 10 12.2 +0.2
AKSY AKSARAY - Alti 85.88 349 i P P 17 10 13.6 +1.5
PRK Paraskevi 85.90 355 P P 17 10 12.5 +0.4
PRK Paraskevi 85.90 355 P P 17 10 12.5 +0.4
PRK Paraskevi 85.90 355 P P 17 10 12.5 +0.4
XOR Xorichti 85.91 357 P P 17 10 12.5 +0.3
XOR Xorichti 85.91 357 P P 17 10 12.5 +0.3
DEMI Demirci 85.95 353 i P P 17 10 13.0 +0.5
SIGR SIGRI 85.96 355 eP P 17 10 12.7 +0.3
SIGR SIGRI 85.96 355 P P 17 10 12.8 +0.4
SIGR SIGRI 85.96 355 eP P 17 10 12.8 +0.4
CHBY Cihanbeyli 86.04 350 eP P 17 10 14.1 +1.1
DKL Dikili 86.04 354 eP P 17 10 12.9 +0.1
AOS Alonnisos 86.08 357 P P 17 10 13.1 +0.1
AOS Alonnisos 86.08 357 eP P 17 10 13.1 +0.1
BOLV Bolvadin 86.10 351 i P P 17 10 14.5 +1.2
SKIA Skiathos 86.10 357 P P 17 10 13.3 +0.2
TIP Timpagrande 86.12 2 ⇑iP P 17 10 14.6 +1.3
TIP Timpagrande 86.12 2 P P 17 10 14.2 +0.9
TIP Timpagrande 86.12 2 eP P 17 10 13.8 +0.5
comp=Z,514nm,1.5s
TIP LR LR
comp=Z,2µm,20.0s
MAZI Mazidag 86.13 343 eP P 17 10 14.8 +1.4
AKHS Akhisar 86.18 354 i P P 17 10 13.8 +0.3
AKS Akhisar 86.18 354 eP P 17 10 14.5 +0.9
KDHN Kadinhani 86.18 350 i P P 17 10 14.4 +0.7
DSL Palaion Diasel 86.19 359 P P 17 10 13.7 +0.1
MARD Mardin 86.22 343 i P P 17 10 15.8 +1.9
AGG Agios Georgios 86.28 358 eP P 17 10 14.9 +0.9
AGG Agios Georgios 86.28 358 P P 17 10 14.0 0.0
AGG Agios Georgios 86.28 358 eP P 17 10 13.4 -0.6
AGG pmax pmax
comp=Z,460nm,1.2s
AGG Agios Georgios 86.28 358 eP P 17 10 13.4 -0.6
comp=Z,460nm,1.2s
BWNR Bhubaneshwar 86.28 301 eP P 17 10 15.1 +0.9
NIG Nigde 86.32 348 eP P 17 10 16.1 +1.5
EVR Evrytania 86.39 358 P P 17 10 15.7 +1.0
EVR Evrytania 86.39 358 P P 17 10 15.7 +1.0
SMIA Simia 86.40 357 P P 17 10 14.8 +0.2
URFA Urfa 86.41 345 eP P 17 10 16.9 +2.2
SBUM Sibu 86.45 269 eP P 17 10 15.7 +0.5
comp=Z,506nm,1.6s
ATAB Bozova 86.46 345 i P P 17 10 17.0 +2.1
LADK Ladik-KONYA 86.47 350 eP P 17 10 16.1 +1.0
KULA Kula-Manisa 86.48 353 eP P 17 10 15.9 +0.8
KULA Kula-Manisa 86.48 353 P P 17 10 15.6 +0.5
KULA Kula-Manisa 86.48 353 P P 17 10 15.6 +0.5
LKD2 Lefkada island 86.53 359 P P 17 10 15.9 +0.6
LKD2 Lefkada island 86.53 359 P P 17 10 15.9 +0.6
KHAL Karahalli 86.56 352 i P P 17 10 16.0 +0.5
TTSI Tana Toraja 86.58 260 P P 17 10 15.3 -0.4
KHL Karahalli 86.61 352 eP P 17 10 15.9 +0.2
KMRS Kahramanmaras 86.62 346 eP P 17 10 17.4 +1.6
ANDN Andirin 86.62 347 i P P 17 10 17.4 +1.6
LKR Lokris 86.63 357 P P 17 10 15.4 -0.3
LKR Lokris 86.63 357 P P 17 10 15.4 -0.3
GZT Gaziantep 86.67 346 i P P 17 10 17.9 +1.8
IZM Izmir 86.69 354 eP P 17 10 16.6 +0.5
ANX Ano Chora 86.71 358 P P 17 10 17.0 +0.7
BLCB Balcova 86.72 354 eP P 17 10 16.0 -0.1
PDO Prodromos 86.72 359 P P 17 10 16.9 +0.7
KONT Konya--Tatoy 86.73 350 eP P 17 10 17.4 +1.2
URLA Izmir 86.77 354 i P P 17 10 17.0 +0.5
CHOS Chios island 86.77 355 eP P 17 10 17.1 +0.6
CHOS Chios island 86.77 355 P P 17 10 16.8 +0.3
CHOS Chios island 86.77 355 P P 17 10 16.8 +0.3
HCB Kahramanmara¯ 86.78 346 i P P 17 10 17.9 +1.4
BKB Balikpapan 86.78 263 P P 17 10 17.5 +0.8
EREA Eretria 86.83 357 P P 17 10 16.8 +0.1
BAGO Egridir - ISPA 86.83 351 i P P 17 10 17.5 +0.7
AKO Adana 86.86 347 i P P 17 10 18.1 +1.2
EFP Efpalio 86.88 358 P P 17 10 18.3 +1.4
DSF Desfina 86.88 358 P P 17 10 16.6 -0.4
DSF Desfina 86.88 358 eP P 17 10 16.6 -0.4
SERG Sergoula 86.89 358 P P 17 10 17.3 +0.3
ZEY ¯zmir 86.89 354 i P P 17 10 17.4 +0.4
KMER Konya-Meram 86.90 350 i P P 17 10 18.2 +1.0
GAZ Gaziantep 86.91 346 eP P 17 10 18.9 +1.7
KALE Kalithea 86.91 358 P P 17 10 17.3 +0.1
KAMA Osmaniye 86.97 346 i P P 17 10 18.9 +1.3
PMOZ Porto Moniz, M 86.98 30 eP P 17 10 18.7 +1.0
comp=Z,165nm,1.1s
PMOZ Porto Moniz, M 86.98 30 eLR LR 17 40 52.0
comp=Z,963nm,22.0s
SURC SANLIURFA_SURC 86.99 345 i P P 17 10 19.1 +1.6
PMPS Porto Santo 87.01 29 eP P 17 10 18.6 +0.9
comp=Z,186nm,1.6s
PMPS epP pP 17 10 30.9 +0.2
CEL Celeste 87.02 3 eP P 17 10 16.1 -1.6
comp=Z,114nm,0.8s
CEL LR LR
comp=Z,1µm,20.0s
ISP Isparta 87.02 351 eP P 17 10 18.9 +1.1
ISP Isparta 87.02 351 ⇑iP P 17 10 18.2 +0.4
ISP Isparta 87.02 351 P P 17 10 18.2 +0.4
ISP Isparta 87.02 351 eP P 17 10 17.9 +0.1
ISP pmax pmax
comp=Z,615nm,1.5s
ISP MLR MLR
comp=Z,2µm,21.0s
ISP Isparta 87.02 351 eP P 17 10 17.9 +0.1
comp=Z,615nm,1.5s
ISP LR LR
comp=Z,2µm,21.0s
DGB ¯zmir 87.06 354 i P P 17 10 18.0 +0.2
KERG Konya-Eregli 87.06 348 i P P 17 10 18.2 +0.2
LAKA Lakka 87.06 358 P P 17 10 18.4 +0.5
AYDB Zeytinkoy-Aydi 87.10 353 eP P 17 10 18.8 +0.6
KARA Karaisali 87.10 348 eP P 17 10 19.2 +1.1
VILL Villia 87.11 357 P P 17 10 17.6 -0.5
AXS Araxos 87.12 359 P P 17 10 19.1 +1.0
VLS Valsamata 87.15 359 P P 17 10 18.8 +0.5
VLS Valsamata 87.15 359 P P 17 10 18.8 +0.5
VLS Valsamata 87.15 359 P P 17 10 18.8 +0.5
PMAR Madeira 87.16 30 eP P 17 10 19.8 +1.2
comp=Z,97nm,1.6s
PMAR epP pP 17 10 32.4 +0.8
PTL Penteli 87.20 357 P P 17 10 18.5 -0.1
SFNV Sufian 87.20 343 eP P 17 10 20.0 +1.4
KFL Anninata 87.21 359 P P 17 10 18.9 +0.3
DENT Denizli 87.21 352 eP P 17 10 19.8 +1.2
THAL Thalero 87.25 358 P P 17 10 18.6 -0.1
RLS Riolos of Patr 87.25 358 P P 17 10 20.1 +1.4
RLS Riolos of Patr 87.25 358 P P 17 10 20.1 +1.4
KLV Kalavryta, Ach 87.26 358 P P 17 10 19.5 +0.6
LTK Loutraki 87.26 357 P P 17 10 18.2 -0.6
CEYT Ceyhan 87.26 347 eP P 17 10 20.6 +1.8
JASL Jaisalmer 87.27 316 eP P 17 10 17.3 -1.7
DNZL Cakiroluk 87.28 352 i P P 17 10 20.1 +1.0
ATH Athens Observa 87.28 357 P P 17 10 18.6 -0.3
ATH Athens Observa 87.28 357 P P 17 10 18.6 -0.3
ATH Athens Observa 87.28 357 P P 17 10 18.6 -0.3
ATHU Athens Univers 87.29 357 P P 17 10 18.6 -0.3
ATHU Athens Univers 87.29 357 eP P 17 10 18.6 -0.3
KUZU Kuzuini 87.32 346 i P P 17 10 21.0 +1.8
SUTC Sutluce-Ispart 87.32 351 eP P 17 10 19.6 +0.3
DRO Drossia 87.36 358 P P 17 10 20.2 +0.9
SPSI Sidrap Palu 87.36 259 P P 17 10 18.6 -0.9
BCK Bucak 87.38 351 eP P 17 10 20.1 +0.6
AYDN Tasoluk 87.39 353 i P P 17 10 20.2 +0.7
GCAM G?zelcaml? 87.39 354 i P P 17 10 19.5 +0.1
VLY Voula,Athens 87.40 357 P P 17 10 18.9 -0.6
SMG Samos 87.40 354 P P 17 10 18.9 -0.6
SMG Samos 87.40 354 P P 17 10 18.9 -0.6
DED Mersin 87.43 348 i P P 17 10 19.8 +0.2
CTA Charters Tower 87.45 229 LR LR 17 41 55.4
comp=Z,435nm,21.8s,baz=46,slow=30
CTAO Charters Tower 87.45 229 eP P 17 10 19.5 -0.3
CTAO pmax pmax
comp=Z,532nm,1.0s
CTAO MLR MLR
comp=Z,1µm,20.0s
CTAO Charters Tower 87.45 229 eP P 17 10 19.5 -0.3
comp=Z,532nm,1.0s
CTAO LR LR
comp=Z,1µm,20.0s
DRWC Darouich 87.52 346 eP P 17 10 21.6 +1.4
MERS Mersin 87.55 348 eP P 17 10 20.3 0.0
CLTB Caltabellotta 87.59 5 PFAKE 17 10 30.0 +9.5
CLTB LR LR
comp=Z,773nm,19.0s
ZKS Zakynthos 87.62 359 P P 17 10 20.6 0.0
MTKI Muara Teweh, K 87.67 265 P P 17 10 22.1 +1.1
comp=Z,431nm,1.3s
GOLH Golhisar 87.68 352 i P P 17 10 22.0 +1.0
BHPL Bhopal 87.73 309 eP P 17 10 20.8 -0.5
EBNR Beni Rached 87.73 14 P P 17 10 23.8 +2.6
DID Didima 87.76 357 P P 17 10 20.2 -1.1
GLHS Glhisar (BURDU 87.77 352 eP P 17 10 22.7 +1.3
AMT Artemida-Makis 87.78 358 P P 17 10 21.8 +0.5
TAHT Tahtakopru-Hat 87.83 347 eP P 17 10 23.1 +1.6
KORT Korkueli 87.85 351 i P P 17 10 22.2 +0.3
YER Yerkesik 87.88 353 eP P 17 10 22.1 +0.2
YER Yerkesik 87.88 353 P P 17 10 22.7 +0.8
KRND KRANIDI 87.89 357 P P 17 10 21.3 -0.5
VLX Vlachokerasia 87.92 358 P P 17 10 22.5 +0.4
ERMK Ermenek 87.96 349 i P P 17 10 22.9 +0.5
KIZK Mersin 87.98 348 i P P 17 10 22.8 +0.5
EANR Ain N¨Sour 88.00 15 P P 17 10 22.9 +0.4
BDRM Kayabasi 88.01 354 i P P 17 10 22.4 0.0
EMHD Djebel Mahouad 88.02 13 P P 17 10 24.9 +2.3
BODT Bodrum 88.02 354 eP P 17 10 22.4 0.0
BODT Bodrum 88.02 354 P P 17 10 22.0 -0.5
APE Apeiranthos 88.11 355 eP P 17 10 21.8 -1.2
APE Apeiranthos 88.11 355 ⇑iP P 17 10 23.0 +0.1
APE Apeiranthos 88.11 355 P P 17 10 21.2 -1.8
APE Apeiranthos 88.11 355 ceP P 17 10 23.1 +0.1
TURN Turunc 88.12 353 i P P 17 10 24.2 +1.3
ITM Ithomi 88.12 358 P P 17 10 23.4 +0.4
ITM Ithomi 88.12 358 P P 17 10 23.4 +0.4
ELL Elmali 88.14 352 eP P 17 10 24.0 +0.8
DALY Dalyan (Mu¨la 88.17 353 eP P 17 10 23.9 +0.8
YAYL Yayladag 88.17 347 i P P 17 10 24.1 +0.7
KAPI Kappang 88.22 259 eP P 17 10 23.3 -0.4
comp=Z,381nm,1.2s
KAPI LR LR
comp=Z,682nm,22.0s
IKL Isikli 88.27 349 eP P 17 10 23.9 +0.3
FETY Fethiye 88.32 352 eP P 17 10 24.7 +0.7
FETY Fethiye 88.32 352 P P 17 10 24.0 +0.1
KSM Kuching 88.34 270 eP P 17 10 24.1 -0.2
comp=Z,159nm,1.1s
KSM LR LR
comp=Z,534nm,22.0s
PYL PYLOS 88.41 358 P P 17 10 21.9 -2.4
ODJA Bouhanifia 88.42 16 P P 17 10 23.0 -1.4
GAZI Gazipasa 88.43 350 i P P 17 10 23.8 -0.6
NIS1 Nisyros Isl. 88.48 354 eP P 17 10 24.3 -0.4
NIS1 Nisyros Isl. 88.48 354 P P 17 10 23.7 -1.0
MTN Manton Dam 88.50 245 eP P 17 10 24.3 -0.5
comp=Z,224nm,1.4s
MHLO Agia Marina, M 88.54 356 P P 17 10 23.7 -1.2
DGPR DIGLIPUR 88.55 291 eP P 17 10 25.5 +0.3
DGPR IAmb IAmb 17 10 26.5
VLI Veliai 88.56 357 P P 17 10 24.4 -0.6
ETRT Tiaret 88.58 15 P P 17 10 26.2 +0.9
CHLP Challavanipeta 88.67 301 eP P 17 10 25.5 -0.3
CHLP IAmb IAmb 17 10 26.8
comp=Z,112nm,0.9s
CHLP epP pP 17 10 37.4 -1.3
CHLP esP sP 17 10 41.8 -1.9
CHLP eSKSac SKSac 17 20 51.3 -0.2
CHLP IVMs_BB IVMs_BB 17 55 57.9
comp=Z,514nm,21.6s
AKAS Kas 88.68 352 i P P 17 10 26.3 +0.5
CMBO Columbo, Santo 88.71 355 P P 17 10 24.1 -1.6
BSSI Bau Bau, Buton 88.73 258 P P 17 10 38.8 +13
ARG Arkhangelos 88.81 353 P P 17 10 25.9 -0.3
ARG Arkhangelos 88.81 353 P P 17 10 25.9 -0.3
ARG Arkhangelos 88.81 353 P P 17 10 25.9 -0.3
SURT Suratani 88.81 284 P P 17 10 27.1 +0.6
comp=Z,168nm,1.7s,comp=Z,3µm
SANT Santorini 88.81 355 ⇑iP P 17 10 25.9 -0.3
SANT Santorini 88.81 355 P P 17 10 24.5 -1.7
SANT Santorini 88.81 355 eP P 17 10 24.4 -1.9
comp=Z,586nm,1.7s
SANT LR LR
comp=Z,1µm,21.0s
STKI Sintang 88.81 268 P P 17 10 26.2 -0.3
KYTH Kithira 89.01 357 P P 17 10 26.9 -0.3
KEST Kesra 89.17 8 P P 17 10 28.8 +0.8
comp=Z,32nm,1.0s,baz=320,slow=2.3,SNR=21
KEST pP pP 17 10 41.1 +0.1
comp=Z,68nm,0.9s,baz=305,slow=4.6,SNR=18
KEST LR LR 17 54 20.2
comp=Z,1µm,18.9s,baz=320,slow=38
KEST Kesra 89.17 8 eP P 17 10 28.6 +0.5
comp=Z,91nm,1.0s
KEST pP pP 17 10 41.1 +0.1
TRTT Trang 89.22 282 P P 17 10 28.9 +0.5
comp=Z,484nm,1.4s,comp=Z,7µm
LFK Lefkose 89.24 349 eP P 17 10 28.1 -0.2
SKLT Songkhla 89.25 281 P P 17 10 29.3 +0.8
comp=Z,690nm,1.5s,comp=Z,10µm
WDD Wied Dalam 89.36 4 PFAKE 17 10 40.0 +11
WDD LR LR
comp=Z,1µm,21.0s
MAMC Mammari 89.38 349 P P 17 10 29.5 +0.6
ANKY Antikythira Is 89.40 357 P P 17 10 29.2 +0.3
PHNC Paralimni 89.45 348 P P 17 10 25.6 -3.6
ALFC Alefka 89.46 349 P P 17 10 30.0 +0.7
LEF Lefka 89.47 349 eP P 17 10 30.0 +0.7
KARP Karpathos 89.54 354 eP P 17 10 28.3 -1.4
comp=Z,59nm,0.8s
CSS Mathiatis 89.57 349 P P 17 10 30.2 +0.4
CSS Mathiatis 89.57 349 eP P 17 10 29.7 -0.1
comp=Z,170nm,1.8s
CSS LR LR
comp=Z,319nm,22.0s
SOEI Soe 89.61 252 P P 17 10 37.7 +7.5
comp=Z,86nm,1.7s
SOEI Soe 89.61 252 eP P 17 10 29.6 -0.7
comp=Z,103nm,1.1s
AKMC Akamas 89.62 350 P P 17 10 29.9 -0.1
VIS Vishakhapatnam 89.69 301 eP P 17 10 30.6 0.0
BBKI Banjar Baru 89.75 264 P P 17 10 29.6 -1.2
PPCY Paphos 89.76 349 P P 17 10 25.1 -5.5
IMMV Iera Moni Meta 89.78 356 P P 17 10 30.8 0.0
VAM Vamos 89.83 356 P P 17 10 31.6 +0.6
VAM Vamos 89.83 356 P P 17 10 31.6 +0.6
VAM Vamos 89.83 356 P P 17 10 31.6 +0.6
SZAC Souni 89.83 349 P P 17 10 32.1 +1.1
ROOS tl_alroos 89.84 345 eP P 17 10 32.0 +0.9
NPS Neapolis 89.91 355 P P 17 10 30.4 -1.0
NPS Neapolis 89.91 355 P P 17 10 30.4 -1.0
NPS Neapolis 89.91 355 P P 17 10 30.4 -1.0
PBA Port Blair 89.91 290 eP P 17 10 31.3 -0.4
IDI Anoyia 89.92 356 P P 17 10 30.4 -1.1
comp=Z,13nm,0.4s,baz=16,slow=10,SNR=23
IDI Anoyia 89.92 356 ||iP P 17 10 30.8 -0.7
IDI Anoyia 89.92 356 P P 17 10 29.7 -1.8
IDI Anoyia 89.92 356 eP P 17 10 30.1 -1.4
comp=Z,312nm,1.8s
PKDT Phuket 89.94 284 P P 17 10 32.5 +0.7
comp=Z,378nm,1.5s
LAST Lasithi 90.01 355 P P 17 10 32.0 0.0
LAST Lasithi 90.01 355 eP P 17 10 31.2 -0.7
comp=Z,171nm,0.8s
ZKR Zakros 90.02 355 P P 17 10 31.0 -0.9
EIDS Eidsvold 90.17 223 eP P 17 10 33.6 +1.2
comp=Z,144nm,1.5s
SIVA Sivas 90.19 356 P P 17 10 33.2 +0.6
SIVA Sivas 90.19 356 P P 17 10 33.2 +0.6
RPR Rampur 90.66 305 eP P 17 10 34.5 -0.6
RPR IAmb IAmb 17 10 35.5
comp=Z,222nm,1.7s
RPR epP pP 17 10 47.4 -0.7
RPR esP sP 17 10 51.2 -1.8
RPR IVMs_BB IVMs_BB 17 55 03.9
comp=Z,972nm,19.1s
KULM Kulim 90.77 280 eP P 17 10 35.5 -0.1
comp=Z,466nm,1.5s
KULM LR LR
comp=Z,987nm,20.0s
PVM Polavaram 90.93 302 eP P 17 10 36.0 -0.3
PVM IAmb IAmb 17 10 37.2
comp=Z,137nm,0.9s
PVM epP pP 17 10 48.1 -1.3
PVM esP sP 17 10 53.1 -1.1
PVM eSKSac SKSac 17 21 02.5 -2.2
PVM IVMs_BB IVMs_BB 17 54 39.9
comp=Z,1µm,16.7s
PBKI Pangkalan Bun 90.95 267 P P 17 10 37.5 +1.1
BHJ Bhuj 91.04 315 eP P 17 10 36.7 -0.1
SRSP Sriramsagar 91.05 306 eP P 17 10 35.7 -1.2
SRSP IAmb IAmb 17 10 37.2
comp=Z,56nm,0.8s
SRSP epP pP 17 10 48.6 -1.4
SRSP esP sP 17 10 52.9 -1.9
SRSP eSKSac SKSac 17 21 00.7 -4.8
SRSP IVMs_BB IVMs_BB 17 51 59.0
comp=Z,1µm,24.1s
ZALF Zalf 91.06 345 eP P 17 10 37.7 +0.9
IPM Ipoh 91.22 279 eP P 17 10 37.5 -0.3
comp=Z,408nm,1.6s
ATAH Atahualpa 91.28 101 P P 17 10 39.9 +1.5
comp=Z,59nm,1.1s,baz=335,slow=3.6,SNR=25
SALA Sala 91.36 346 eP P 17 10 39.4 +1.0
MYKOM Kota Tinggi 91.80 276 eP P 17 10 40.7 +0.3
comp=Z,154nm,1.4s
TPRI Tanjung Pinang 92.12 275 P P 17 10 42.9 +1.0
HYBB Hyderabad (bro 92.26 305 eP P 17 10 42.2 -0.4
HYBB IAmb IAmb 17 10 42.9
comp=Z,118nm,1.0s
HYBB epP pP 17 10 53.8 -1.8
HYBB esP sP 17 10 58.0 -2.5
HYBB eSKSac SKSac 17 21 11.4 -1.0
HYBB IVMs_BB IVMs_BB 17 56 15.8
comp=Z,1µm,20.4s
HYB Hyderabad 92.26 305 ⇑iP P 17 10 42.5 -0.1
comp=Z,150nm,1.0s
HYB epP pP 17 10 55.5 -0.1
HYB eSKKS SKKSac 17 21 32.0 +2.3
HYB eS S 17 21 42.0 -0.3
HYB Hyderabad 92.26 305 eP P 17 10 42.4 -0.1
HYB IAmb IAmb 17 10 42.8
comp=Z,127nm,1.0s
PLAI Plampang 92.46 258 P P 17 10 43.3 0.0
comp=Z,54nm,1.7s,comp=Z,1µm
KLRI Killari 92.60 307 eP P 17 10 43.1 -1.1
KLRI IAmb IAmb 17 10 44.6
comp=Z,129nm,0.9s
KLRI epP pP 17 10 55.5 -1.7
KLRI esP sP 17 11 00.4 -1.6
KLRI eSKSac SKSac 17 21 12.0 -2.3
KLRI IVMs_BB IVMs_BB 17 56 54.2
comp=Z,2µm,19.5s
NJS Nagarjunasagar 92.64 304 eP P 17 10 43.4 -0.9
NJS IAmb IAmb 17 10 44.6
comp=Z,52nm,1.0s
NJS epP pP 17 10 55.7 -1.7
NJS esP sP 17 11 00.7 -1.5
NJS eSKSac SKSac 17 21 16.0 +1.6
NJS IVMs_BB IVMs_BB 17 56 06.2
comp=Z,2µm,21.3s
WRAB Tennant Creek 92.84 239 ceP P 17 10 44.8 -0.2
WRAB pmax pmax
comp=Z,87nm,1.2s
WRAB Tennant Creek 92.84 239 eP P 17 10 43.9 -1.1
comp=Z,71nm,1.1s

WRAB				LR	LR		
	comp=Z,678nm,22.0s						
WB2	**Warramunga Arr**	**92.85**	**239**	*e*P	**P**	**17 10 44.0**	**-1.1**
	comp=Z,76nm,1.1s						
WR1	**Warramunga Arr**	**92.86**	**239**	*e*P	**P**	**17 10 44.3**	**-0.7**
	comp=Z,80nm,1.1s						
WRA	**Warramunga Arr**	**92.86**	**239**	P	**P**	**17 10 44.3**	**-0.7**
	comp=Z,34nm,1.0s,baz=39,slow=5.4,SNR=78						
WRA	**Warramunga Arr**	**92.86**	**239**	*i* P	**P**	**17 10 44.2**	**-0.9**
WRA				pmax	pmax		
	comp=Z,35nm,1.0s						
ADKI	**Addanki**	**92.94**	**303**	*e*P	**P**	**17 10 45.2**	**-0.4**
ADKI				IAmb	IAmb	17 10 46.4	
	comp=Z,73nm,1.0s						
ADKI				*e*pP	**pP**	**17 10 57.0**	**-1.6**
ADKI				*e*sP	**sP**	**17 11 02.2**	**-1.3**
ADKI				*e*SKSac	**SKSac**	**17 21 18.3**	**+2.2**
ADKI				IVMs_BB	IVMs_BB	17 56 06.5	
	comp=Z,1μm,16.1s						
CMBY	**CAMPBELL BAY**	**93.11**	**287**	*e*P	**P**	**17 10 46.6**	**+0.1**
SRLM	**Srisailam**	**93.23**	**304**	*e*P	**P**	**17 10 46.7**	**-0.4**
SRLM				IAmb	IAmb	17 10 47.2	
	comp=Z,95nm,1.3s						
SRLM				*e*pP	**pP**	**17 10 59.5**	**-0.6**
SRLM				*e*sP	**sP**	**17 11 03.7**	**-1.3**
SRLM				*e*SKSac	**SKSac**	**17 21 15.2**	**-2.6**
SRLM				IVMs_BB	IVMs_BB	17 56 25.0	
	comp=Z,2μm,20.3s						
SRBI	**Singaraja**	**93.30**	**261**	P	sP	17 11 05.0	-0.1
TSI	**Tuntungan**	**93.41**	**281**	P	**P**	**17 10 47.7**	**-0.1**
BANOM	**Banah**	**93.41**	**327**	P	**P**	**17 10 47.5**	**-0.2**
POO	**Poona**	**93.44**	**309**	*e*P	**P**	**17 10 47.0**	**-1.0**
ABJI	**Asem Bagus**	**93.62**	**262**	P	**P**	**17 10 48.3**	**-0.4**
	comp=Z,73nm,1.3s						
PPBI	**Pangkal Pinang**	**93.70**	**272**	P	**P**	**17 10 49.0**	**-0.1**
	comp=Z,70nm,1.4s,comp=Z,1μm						
RCLA	**Racherla**	**93.76**	**304**	*e*P	**P**	**17 10 48.8**	**-0.7**
RCLA				IAmb	IAmb	17 10 49.8	
	comp=Z,64nm,1.0s						
RCLA				*e*pP	**pP**	**17 11 00.8**	**-1.7**
RCLA				*e*sP	**sP**	**17 11 06.4**	**-1.0**
RCLA				*e*SKSac	**SKSac**	**17 21 21.1**	**+0.5**
RCLA				IVMs_BB	IVMs_BB	17 56 48.7	
	comp=Z,1μm,17.1s						
PSI	**Prapat**	**93.78**	**280**	*e*P	**P**	**17 10 48.8**	**-0.9**
PSI				pmax	pmax		
	comp=Z,224nm,1.1s						
PSI	**Prapat**	**93.78**	**280**	*e*P	**P**	**17 10 48.8**	**-0.9**
	comp=Z,224nm,1.1s						
KCSI	**Kotacane, Aceh**	**93.84**	**282**	P	**P**	**17 10 50.5**	**+0.7**
	comp=Z,52nm,1.2s,comp=Z,956nm						
JAGI	**Jajag, Banyuwa**	**94.22**	**261**	P	pP	17 11 01.4	-3.2
GMJI	**Gumukmas**	**94.46**	**262**	P	**P**	**17 10 51.0**	**-1.6**
	comp=Z,71nm,1.3s						
NAZ	**Nazwa, Dubai**	**94.48**	**328**	P	**P**	**17 10 52.8**	**+0.1**
HATD	**Hatta, Dubai**	**94.49**	**327**	P	**P**	**17 10 52.3**	**-0.4**
ARMA	**Armidale**	**94.50**	**220**	*e*P	**P**	**17 10 54.0**	**+1.5**
	comp=Z,90nm,1.1s						
BKNI	**Bangkinang**	**94.60**	**277**	P	sP	17 11 11.4	+0.2
FAQ	**Al Faqa, Dubai**	**94.73**	**327**	P	**P**	**17 10 53.3**	**-0.5**
NGJI	**Ngawi**	**94.86**	**264**	P	**P**	**17 10 55.9**	**+1.5**
	comp=Z,137nm,1.4s						
SKHT	**Srikalahasti**	**94.87**	**302**	*e*P	**P**	**17 10 54.3**	**-0.2**
SKHT				IAmb	IAmb	17 10 55.3	
	comp=Z,68nm,1.1s						
SKHT				*e*pP	**pP**	**17 11 06.8**	**-0.8**
SKHT				*e*sP	**sP**	**17 11 11.4**	**-1.1**
SKHT				IVMs_BB	IVMs_BB	17 57 00.6	
	comp=Z,1μm,19.5s						
MNSI	**Mandailing Nat**	**95.05**	**279**	P	**P**	**17 10 57.0**	**+1.7**
	comp=Z,26nm,0.9s						
WSAR	**Wadi Sarin**	**95.16**	**324**	P	**P**	**17 10 56.1**	**+0.4**
	comp=Z,62nm,0.8s,baz=38,slow=2.8,SNR=50						
WSAR				pP	**pP**	**17 11 09.1**	**+0.2**
	comp=Z,298nm,1.1s,baz=331,slow=0.7,SNR=9.8						
MDRS	**Chennai**	**95.19**	**301**	*e*P	**P**	**17 10 55.9**	**0.0**
MDRS				IAmb	IAmb	17 11 15.3	
	comp=Z,82nm,0.9s						
WOJI	**Wonogiri, Jawa**	**95.55**	**264**	P	pP	17 11 10.1	-0.5
PCJI	**Pacitan**	**95.69**	**264**	P	pP	17 11 11.0	-0.3
FITZ	**Fitzroy Crossi**	**95.76**	**247**	*e*P	**P**	**17 10 57.9**	**-0.5**
	comp=Z,39nm,1.0s						
GSI	**Gunungsitoli**	**95.77**	**281**	P	pP	17 11 11.5	-0.2
GSI	**Gunungsitoli**	**95.77**	**281**	*e*P	**P**	**17 10 57.8**	**-0.8**
	comp=Z,488nm,1.7s						
NNA	**Nana**	**96.11**	**102**	PFAKE		17 11 10.0	+10
NNA				LR	LR		
	comp=Z,484nm,21.0s						
GOA	**Goa**	**96.12**	**308**	*e*P	**P**	**17 10 59.3**	**-0.9**
GOA				IAmb	IAmb	17 11 00.0	
	comp=Z,50nm,0.7s						
AS01	**Alice Springs**	**96.20**	**237**	*e*P	**P**	**17 10 59.9**	**-0.5**
AS31	**Alice Springs**	**96.22**	**237**	*e*P	**P**	**17 11 00.1**	**-0.3**
	comp=Z,5.5nm,1.0s						
ASAR	**Alice Springs**	**96.22**	**237**	P	**P**	**17 11 00.0**	**-0.4**
	comp=Z,16nm,1.0s,baz=34,slow=4.3,SNR=84						
ASAR				PKKP	**PKKPdf**	**17 27 46.2**	**-0.1**
	comp=Z,2.1nm,0.6s,baz=200,slow=2.5,SNR=30						
LHSI	**Lahat**	**96.55**	**273**	P	pP	17 11 19.7	+4.5
PTGA	**Pitinga**	**96.63**	**82**	P	**P**	**17 11 02.2**	**-0.4**
	comp=Z,11nm,0.9s,baz=343,slow=4.9,SNR=18						
PTGA				pP	**pP**	**17 11 14.4**	**-1.3**
	comp=Z,16nm,0.8s,baz=340,slow=7.7,SNR=8.7						
CBJI	**Citeko**	**96.74**	**268**	P	pP	17 11 16.3	+0.2
SNZO	**South Karori**	**98.29**	**199**	PFAKE		17 11 20.0	+11
SNZO				LR	LR		
	comp=Z,3μm,22.0s						
STKA	**Stephens Creek**	**99.77**	**227**	P	**Pdif**	**17 11 16.9**	**+0.8**
	comp=Z,7.8nm,1.0s,baz=356,slow=8.8,SNR=13						
STKA	**Stephens Creek**	**99.77**	**227**	*e*P	**Pdif**	**17 11 16.4**	**+0.3**
STKA				pmax	pmax		
	comp=Z,3.0nm,1.1s						
STKA	**Stephens Creek**	**99.77**	**227**	*e*Pdif	**Pdif**	**17 11 16.4**	**+0.3**
	comp=Z,3.2nm,1.1s						
CAN	**Canberra**	**99.86**	**220**	PFAKE		17 11 30.0	+13
CAN				LR	LR		
	comp=Z,2μm,22.0s						
PALK	**Pallekele**	**99.92**	**298**	P	**Pdif**	**17 11 17.9**	**+0.5**
	comp=Z,13nm,0.6s,baz=301,slow=1.7,SNR=11						
PALK	**Pallekele**	**99.92**	**298**	*e*P	**Pdif**	**17 11 18.3**	**+0.9**
PALK				pmax	pmax		
	comp=Z,116nm,1.6s						
PALK	**Pallekele**	**99.92**	**298**	*e*Pdif	**Pdif**	**17 11 18.3**	**+0.9**
	comp=Z,116nm,1.6s						
TRD	**Trivandrum**	**100.73**	**302**	*e*P	**Pdif**	**17 11 20.9**	**0.0**
MBWA	**Marble Bar**	**101.43**	**250**	PFAKE		17 11 40.0	+16
MBWA				LR	LR		
	comp=Z,679nm,19.0s						
SAML	**Samuel**	**101.46**	**89**	*e*Pdif	**Pdif**	**17 11 22.5**	**-1.6**
SAML				LR	LR		
	comp=Z,2μm,21.0s						
TAM	**Tamanrasset**	**101.56**	**13**	*e*P	**Pdif**	**17 11 24.3**	**-0.5**
TAM				MLR	MLR		
	comp=Z,1μm,20.0s						
TAM	**Tamanrasset**	**101.56**	**13**	*e*Pdif	**Pdif**	**17 11 24.2**	**-0.5**
TAM				LR	LR		
	comp=Z,1μm,20.0s						
LPAZ	**La Paz**	**104.52**	**98**	Pdiff	**Pdif**	**17 11 37.2**	**-1.2**
	comp=Z,4.0nm,1.1s,baz=356,slow=9.5,SNR=6.1						
LPAZ	**La Paz**	**104.52**	**98**	*e*P	**Pdif**	**17 11 36.8**	**-1.5**
LPAZ	**La Paz**	**104.52**	**98**	*e*Pdif	**Pdif**	**17 11 36.8**	**-1.5**
PB11	**IPOC Station P**	**106.42**	**101**	*e*Pdif	**Pdif**	**17 11 45.6**	**-0.6**
TAU	**Tasmania Unive**	**107.19**	**217**	PFAKE		17 16 10.0	
TAU				LR	LR		
	comp=Z,2μm,19.0s						
SIV	**San Ignacio**	**108.33**	**92**	Pdiff	**Pdif**	**17 11 57.4**	**+2.8**
	comp=Z,1.3nm,0.7s,baz=307,slow=3.5,SNR=4.0						
SIV				PKiKP	**PKiKP**	**17 16 02.8**	**+2.2**
	comp=Z,1.9nm,0.9s,baz=225,slow=1.4,SNR=2.7						
LVC	**Limon Verde**	**109.10**	**102**	PFAKE		17 16 10.0	
LVC				LR	LR		
	comp=Z,765nm,22.0s						
TOA1	**Torodi Ar. Sit**	**110.42**	**19**	*e*Pdif	**Pdif**	**17 12 04.0**	**-0.1**
TOA1				*e*PKiKP	**PKiKP**	**17 16 04.3**	**-0.3**
TOA1				*e*PKKPbc	**PKKPbc**	**17 27 02.0**	**-0.3**
TORD	**Torodi Ar. Bea**	**110.42**	**19**	Pdiff	**Pdif**	**17 12 04.0**	**-0.1**
	comp=Z,0.3nm,0.5s,baz=356,slow=5.0,SNR=4.9						
TORD				PKiKP	**PKiKP**	**17 16 04.3**	**-0.3**
	comp=Z,1.5nm,0.5s,baz=341,slow=3.1,SNR=9.3						
TORD				PKKPbc	**PKKPbc**	**17 27 02.0**	**-0.2**
	comp=Z,6.6nm,0.8s,baz=159,slow=2.2,SNR=22						
NWAO	**Narrogin (SRO)**	**112.17**	**244**	PFAKE		17 16 20.0	
NWAO				LR	LR		
	comp=Z,1μm,21.0s						
LCO	**Las Campanas**	**113.12**	**108**	PFAKE		17 16 20.0	
LCO				LR	LR		
	comp=Z,1μm,19.0s						
RCBR	**Riachuelo**	**114.05**	**64**	PFAKE		17 16 20.0	+8.4
RCBR				LR	LR		
	comp=Z,1μm,21.0s						
DBIC	**Dimbokro**	**115.24**	**27**	PKP	**PKPdf**	**17 16 13.5**	**-0.3**
	comp=Z,6.0nm,1.0s,baz=7.1,slow=1.3,SNR=3.2						
DBIC				PKKPbc	**PKKPbc**	**17 26 47.9**	**+1.8**
	comp=Z,4.1nm,0.8s,baz=203,slow=5.5,SNR=3.6						
DGAR	**Diego Garcia**	**116.67**	**298**	PFAKE		17 16 30.0	+13
DGAR				LR	LR		
	comp=Z,2μm,19.0s						
CPUP	**Villa Florida**	**118.58**	**96**	PKP	**PKPdf**	**17 16 18.3**	**-1.5**
	comp=Z,3.4nm,0.9s,baz=283,slow=4.6,SNR=4.2						
CPUP				PKKPab	**PKKPab**	**17 26 37.1**	**-1.0**
	comp=Z,9.9nm,0.9s,baz=130,slow=4.5,SNR=12						
CPUP	**Villa Florida**	**118.58**	**96**	*e*PKPdf	**PKPdf**	**17 16 18.3**	**-1.5**
CPUP				*e*PKKPbc	**PKKPab**	**17 26 36.3**	**-1.8**
PLCA	**Paso Flores**	**122.08**	**116**	PKP	**PKPdf**	**17 16 25.9**	**-0.3**
	comp=Z,15nm,0.9s,baz=7.2,slow=3.5,SNR=15						
PLCA				pPKP	**pPKPdf**	**17 16 39.4**	**-0.3**
	comp=Z,18nm,0.9s,baz=288,slow=1.8,SNR=10						
PLCA				PKKPbc	PKKPbc	17 26 37.2	+15
	comp=Z,10nm,1.1s,baz=197,slow=5.0,SNR=5.0						
PLCA	**Paso Flores**	**122.08**	**116**	*e*PKIKP	**PKPdf**	**17 16 25.4**	**-0.8**
PLCA	**Paso Flores**	**122.08**	**116**	*e*PKPdf	**PKPdf**	**17 16 25.4**	**-0.8**
PLCA				*e*pPKPdf	**pPKPdf**	**17 16 38.7**	**-1.0**
PLCA				PKKPbc	PKKPbc	17 26 37.2	+15
SPB	**Sao Paulo**	**122.16**	**86**	PFAKE		17 16 40.0	+13
SPB				LR	LR		
	comp=Z,1μm,20.0s						
KMBO	**Kilima Mbogo**	**124.34**	**338**	PKP	**PKPdf**	**17 16 32.9**	**+1.2**
	comp=Z,22nm,0.9s,baz=17,slow=4.0,SNR=36						
KMBO				pPKP	**pPKPdf**	**17 16 45.9**	**+0.8**
	comp=Z,40nm,1.0s,baz=21,slow=3.8,SNR=18						
KMBO				SKP		17 20 03.3	
	comp=Z,2.8nm,0.9s,baz=1.3,slow=6.7,SNR=4.0						
KMBO	**Kilima Mbogo**	**124.34**	**338**	*e*PKIKP	**PKPdf**	**17 16 32.3**	**+0.7**
KMBO				MLR	MLR		
	comp=Z,1μm,22.0s						
KMBO	**Kilima Mbogo**	**124.34**	**338**	PKPdf	**PKPdf**	**17 16 33.6**	**+1.9**
SNR=17							
KMBO	**Kilima Mbogo**	**124.34**	**338**	P	**PKPdf**	**17 16 33.6**	**+1.9**
SNR=17							
KMBO	**Kilima Mbogo**	**124.34**	**338**	*e*PKPdf	**PKPdf**	**17 16 32.3**	**+0.7**
KMBO				*e*pPKPdf	**pPKPdf**	**17 16 45.9**	**+0.8**
KMBO				*e*SKPdf	**SKPdf**	**17 20 03.3**	**0.0**
KMBO				LR	LR		
	comp=Z,1μm,22.0s						
TRQA	**Tornquist**	**124.70**	**108**	PFAKE		17 16 40.0	+8.8
TRQA				LR	LR		
	comp=Z,2μm,20.0s						
CHRN	**Cochrane**	**125.75**	**123**	*e*PKPdf	**PKPdf**	**17 16 33.2**	**+0.4**
ASCN	**Ascension**	**125.84**	**43**	PFAKE		17 16 50.0	+16
ASCN				LR	LR		
	comp=Z,1μm,19.0s						
SBA	**Scott Base**	**134.16**	**189**	PFAKE		17 17 00.0	+12
SBA				LR	LR		
	comp=Z,2μm,20.0s						
VNDA	**Vanda**	**134.35**	**191**	PKhKP	PKPpre	17 16 45.0	
	comp=Z,7.8nm,1.0s,baz=316,slow=4.9,SNR=7.0						
VNDA				SKPbc	**SKPbc**	**17 20 12.8**	**-1.4**
	comp=Z,13nm,1.2s,baz=5.2,slow=5.1,SNR=8.8						
VNDA	**Vanda**	**134.35**	**191**	*e*PKPpre	PKPpre	17 16 43.9	
VNDA				*e*SKPbc	**SKPbc**	**17 20 12.8**	**-1.4**
SHEL	**Horse Pasture**	**136.40**	**37**	PFAKE		17 17 10.0	+16
SHEL				LR	LR		
	comp=Z,561nm,22.0s						
OPO	**Ambohidratompo**	**137.93**	**319**	PKP	**PKPdf**	**17 16 58.3**	**+1.3**
	comp=Z,14nm,1.0s,baz=324,slow=0.8,SNR=8.7						
CASY	**Casey**	**138.04**	**217**	PFAKE		17 17 10.0	+15
CASY				LR	LR		
	comp=Z,280nm,21.0s						
LSZ	**Lusaka**	**139.75**	**347**	PKhKP	PKPpre	17 16 52.1	
	comp=Z,12nm,0.5s,baz=11,slow=3.0,SNR=28						
LSZ	**Lusaka**	**139.75**	**347**	*e*PKHKP	PKPpre	17 16 51.8	
LSZ				MLR	MLR		
	comp=Z,1μm,20.0s						
LSZ	**Lusaka**	**139.75**	**347**	*e*PKPpre	PKPpre	17 16 51.8	
LSZ				LR	LR		
	comp=Z,1μm,20.0s						
PMSA	**Palmer Station**	**140.04**	**138**	PKP	**PKPdf**	**17 16 58.3**	**-0.8**
	comp=Z,42nm,1.0s,baz=306,slow=6.5,SNR=4.0						
TSUM	**Tsumeb**	**144.19**	**3**	PKP	PKPbc	17 17 06.4	0.0
	comp=Z,73nm,0.6s,baz=358,slow=4.4,SNR=118						
TSUM				SKP		17 20 38.9	
	comp=Z,9.3nm,0.9s,baz=9.1,slow=6.3,SNR=3.1						
TSUM	**Tsumeb**	**144.19**	**3**	*e*PKPdf	PKPbc	17 17 06.3	-0.1
TSUM				*e*SKPdf	**LR**	**17 20 38.9**	**+0.1**
TSUM				LR	LR		
	comp=Z,1μm,20.0s						
MIR	**Mirnyy**	**144.57**	**221**	*i* PKIKP	PKPbc	17 17 06.0	0.0
MIR				pmax	pmax		
	comp=Z,40nm,1.2s						
MATP	**Matopo**	**144.78**	**345**	PKP	PKPbc	17 17 08.4	+0.2
	comp=Z,184nm,0.8s,baz=356,slow=3.1,SNR=294						
QSPA	**South Pole Qui**	**144.82**	**180**	*e*PKPdf	**PKPab**	**17 17 04.7**	**-2.2**
QSPA				LR	LR		
	comp=Z,1μm,20.0s						
LBTB	**Lobatse**	**149.67**	**349**	*e*PKHKP	**PKPdf**	**17 17 17.3**	**+0.1**
LBTB				*e*		17 17 22.8	
LBTB	**Lobatse**	**149.67**	**349**	*e*PKPdf	**PKPdf**	**17 17 17.2**	**+0.1**
LBTB				*e*PKPbc	**PKiKP**	**17 17 22.8**	**-0.1**
LBTB				*e*pPKPab	**pPKPab**	**17 17 35.2**	**-5.0**
BOSA	**Boshof**	**153.27**	**349**	PKP	**PKPdf**	**17 17 22.4**	**-0.2**
	comp=Z,16nm,1.1s,baz=19,slow=3.2,SNR=10.0						
BOSA				PKPbc	**PKiKP**	**17 17 30.4**	**+0.2**
	comp=Z,50nm,0.8s,baz=20,slow=1.7,SNR=66						
BOSA	**Boshof**	**153.27**	**349**	*e*PKPdf	**PKPdf**	**17 17 22.4**	**-0.2**
BOSA				*e*PKPbc	**PKiKP**	**17 17 30.4**	**+0.2**
BOSA				*e*PKPbc	**PKPbc**	**17 17 30.5**	**+0.4**
MAW	**Mawson**	**156.30**	**221**	PKP	**PKPdf**	**17 17 24.5**	**-0.7**
	comp=Z,5.3nm,0.9s,baz=95,slow=5.2,SNR=4.9						
MAW				PKPbc	**pPKPdf**	**17 17 34.0**	**-4.8**
	comp=Z,15nm,1.0s,baz=80,slow=3.6,SNR=8.5						
MAW				PKPab	**PKPab**	**17 17 54.5**	**+0.7**
	comp=Z,86nm,0.9s,baz=70,slow=4.1,SNR=17						
MAW	**Mawson**	**156.30**	**221**	*e*PKPdf	**PKPdf**	**17 17 25.1**	**-0.2**
MAW				*e*PKPdif	**pPKPdf**	**17 17 34.5**	**-4.3**
MAW				*e*PKPab	**PKPab**	**17 17 54.1**	**+0.3**
SUR	**Sutherland**	**157.33**	**357**	PKPbc	pPKPdf	17 17 41.8	+0.3
	comp=Z,1.2nm,1.0s,baz=164,slow=5.3,SNR=4.4						
SUR	**Sutherland**	**157.33**	**357**	*e*PKPdif	**pPKPdf**	**17 17 41.4**	**-0.2**
SUR				LR	LR		
	comp=Z,4μm,20.0s						
VNA3	**Neumayer Olymp**	**159.45**	**153**	P	**PKPdf**	**17 17 26.2**	**-3.0**
VNA1	**Neumayer--Stat**	**160.18**	**153**	P	**PKPdf**	**17 17 26.0**	**-3.9**
VNA2	**Neumayer--Watz**	**160.23**	**154**	P	**PKPdf**	**17 17 27.3**	**-2.7**
	baz=223,slow=1.6						
SNAA	**Sanae**	**160.76**	**159**	P	**PKPdf**	**17 17 27.9**	**-2.7**
SNAA	**Sanae**	**160.76**	**159**	*e*PKIKP	**PKPdf**	**17 17 27.4**	**-3.2**
SNAA	**Sanae**	**160.76**	**159**	*e*PKPdf	**PKPdf**	**17 17 27.4**	**-3.2**
SNAA				*e*PKPab	PKPab	17 18 23.8	+11
SYO	**Syowa Base**	**163.25**	**205⇑**	*e*X	**PKPdf**	**17 17 30.4**	**-2.7**
SYO	**Syowa Base**	**163.25**	**205⇑**	*e*pPKPab	pPKPab	17 18 33.4	-3.7

JMA 05 16:59:27.2, 36.92N×140.69E, h7km±1km, M2.7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.20**	**26**	P	Pg	16 59 31.3	0.0
JHO	**Hitachi**	**0.32**	**198**	P	Pg	16 59 33.4	-0.1
JHO				S	Sg	16 59 38.0	+0.2
JFK	**Kawauchi**	**0.47**	**18**	P	Pg	16 59 36.1	-0.2
JFK				S	Sg	16 59 42.6	+0.1
JFT	**Otama**	**0.66**	**335**	P	Pg	16 59 40.0	+0.1
JFT				S	Sg	16 59 48.8	+0.2
JMM	**Marumori**	**0.95**	**5**	P	Pg	16 59 44.6	-0.8
JMM				S	Sg	16 59 57.3	-0.4
JOU	**Okura**	**1.44**	**359**	P	Pn	16 59 53.9	+0.1
JOU				S	Sn	17 00 12.8	-0.2
JIO	**Ouri**	**1.62**	**19**	S	Sn	17 00 16.8	-0.5
MAT	**Matsushiro**	**2.03**	**260**	P	Pb	17 00 03.2	-1.2
MAT				S	Sb	17 00 29.1	-0.8

NIED ***05*** *17:04:00, 37.10N×140.90E, h5km, Mw4.9 Best double couple: M0=2.76000×10^16 NP1:φs=69.00000°, δ=28.00000°, λ=-84.00000°. NP2:φs=242.00000°, δ=62.00000°, λ=-93.00000°.*

IDC ***05*** *17:04:26.6±0.4, 37.06N×140.86E, h0km, mb5.0/30, mb1 5.0/34, mb1mx5.0/49, mbtmp4.9/34, ML4.7/4, MS4.4/5, Ms1 4.4/5, ms1mx3.8/58, Error ellipse: s-maj=12.1km s-min=10.7km az=119.0*

BJI ***05*** *17:04:26.8, 37.07N×140.92E, h15km, mb5.0/36, mB5.3/23, Ms5.0/28, Ms7 4.7/26*

ISCJB ***05*** *17:04:27.2±0.4, 37.11N±0.02×140.81E±0.02, h7km±2km, mb5.1/140, MS5.2/14, Error ellipse: s-maj=3.7km s-min=3.2km az=154.2*

JMA ***05*** *17:04:27.3, 37.10N×140.81E, h6km±1km, M5.2 Broadband fault plane solution: P waves. NP1: φs=241.00000°, δ=64.00000°, λ=-98.00000°. NP2:φs=79.00000°, δ=28.00000°, λ=-73.00000°. Principal axes: T Plg18.0000°, Azm337.0000°; N Plg8.0000°, Azm245.0000°; P Plg70.0000°, Azm133.0000°;*

NEIC ***05*** *17:04:29.5±2.1, 37.07N×140.75E, h15km±13km, mb5.2/84 Error ellipse: s-maj=5.8km s-min=4.3km az=140.0*

NEIC Recorded [5L JMA] in Fukushima.

MOS ***05*** *17:04:32.8±1.1, 37.36N×140.67E, h37km, mb5.4/37, MS5.4/8, Error ellipse: s-maj=9.9km s-min=5.5km az=99.8*

ISC 05 17:04:28.9±0.5, 37.09N±0.03×140.88E±0.03, h12km±2km, n404, σ1§45/445, mb5.2/140, MS5.4/15, 37C-11D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.07**	**277**	⇓P	**Pg**	**17 04 28.4**	**-3.1**
ONAJ				S	**Sg**	**17 04 29.0**	**-4.4**
JFK	**Kawauchi**	**0.27**	**358**	⇑P	**Pg**	**17 04 32.8**	**-1.8**
JHO	**Hitachi**	**0.54**	**208**	⇑P	**Pg**	**17 04 37.2**	**-2.4**
JHO				S	**Sg**	**17 04 44.8**	**-2.0**
JFT	**Otama**	**0.61**	**314**	⇑P	**Pg**	**17 04 38.6**	**-2.2**
JFT				*e*S	**Sg**	**17 04 46.6**	**-2.3**
JMM	**Marumori**	**0.78**	**355**	⇑P	**Pg**	**17 04 41.7**	**-2.2**
JMM				S	**Sg**	**17 04 52.5**	**-1.6**
JSB	**Shiboa**	**0.78**	**261**	⇑P	**Pg**	**17 04 41.9**	**-2.2**
JSB				S	**Sg**	**17 04 52.3**	**-2.0**
JFY	**Yanaizu**	**0.99**	**289**	⇑P	**Pb**	**17 04 45.3**	**-2.7**
JFY				S	**Sg**	**17 04 57.4**	**-3.6**
I30JP	**ISUMI INFRASON**	**1.84**	**195**	Pg	**Pn**	**17 05 00.0**	**-0.3**
	baz=4.6,slow=16,SNR=0.7						
I30JP				*i*		17 15 40.0	
	baz=17,slow=320,SNR=1.1						
MJAR	**Matsushiro Arr**	**2.22**	**256**	Pn	**Pn**	**17 05 04.5**	**-0.9**
	194nm,0.3s,baz=70,slow=16,SNR=309						
MJAR				LR	LR	17 05 29.8	
	comp=Z,778nm,20.8s,baz=80,slow=29						
MJAR				Lg	Lg	17 05 34.1	
	203nm,0.3s,baz=86,slow=28,SNR=11						
MAJO	**Matsushiro**	**2.22**	**256**	*c*eP	**Pn**	**17 05 04.9**	**-0.6**
MAJO				pmax	pmax		
	comp=Z,2μm,0.7s						
MAJO	**Matsushiro**	**2.22**	**256**	*e*Pn	**Pn**	**17 05 05.1**	**-0.4**
MAT	**Matsushiro**	**2.22**	**256**	P	**Pn**	**17 05 05.1**	**-0.4**
MAT				*e*S	**Sn**	**17 05 34.0**	**+1.2**
MJB9	**Matsu-Tunnel**	**2.22**	**257**	*e*Pn	**Pn**	**17 05 05.1**	**-0.4**
INU	**Inuyama**	**3.58**	**242**	*e*Pn	**Pn**	**17 05 24.7**	**+0.5**
JHJ	**Hachijo jima 2**	**4.07**	**193**	Pn	**Pn**	**17 05 30.2**	**-0.7**
	comp=Z,50nm,0.3s,baz=90,slow=23,SNR=15						
JHJ				Sn	**Sn**	**17 06 20.1**	**+1.7**
	comp=Z,142nm,0.3s,baz=276,slow=23,SNR=8.2						
JHJ				LR	LR	17 07 08.7	
	comp=Z,3μm,21.3s,baz=22,slow=40						
JHJ2	**Mitsune**	**4.07**	**193**	*e*Pn	**Pn**	**17 05 30.3**	**-0.6**
ERM	**Erimo**	**5.22**	**19**	*i* P	**Pn**	**17 05 49.1**	**+2.4**
ERM	**Erimo**	**5.22**	**19**	*e*Pn	**Pn**	**17 05 45.3**	**-1.4**
ASAJ	**Asahikawa**	**7.14**	**10**	Pn	**Pn**	**17 06 12.8**	**-0.2**
	comp=Z,13nm,0.3s,baz=216,slow=8.8,SNR=20						
ASAJ				LR	LR	17 08 57.0	
	comp=Z,2μm,21.7s,baz=222,slow=38						
ASAJ	**Asahikawa**	**7.14**	**10**	*e*Pn	**Pn**	**17 06 12.6**	**-0.4**
JNU	**Nakatsue**	**9.10**	**247**	Pn	**Pn**	**17 06 39.8**	**-0.3**
	comp=Z,12nm,0.3s,baz=22,slow=0.8,SNR=87						
JNU	**Nakatsue**	**9.10**	**247**	*e*Pn	**Pn**	**17 06 39.9**	**-0.2**
VLA	**Vladivostok**	**9.15**	**314**	*j i*P	**Pn**	**17

YAK e 17 20 51.7
YAK pmax pmax
comp=N,74nm,1.1s
YAK pmax pmax
comp=Z,168nm,0.9s
YAK pmax pmax
comp=E,15nm,1.2s
YAK pmax pmax
comp=Z,131nm,1.9s
YAK smax smax
comp=E,175nm,1.8s
YAK smax smax
comp=N,172nm,2.1s
YAK Yakutsk 25.92 348 eP **P 17 09 59.1 -1.5**
comp=N,162nm,0.9s
SEY Seymchan 26.82 12 P **P 17 10 07.2 -1.5**
comp=N,18nm,1.0s,baz=152,slow=10,SNR=5.5
ULN Ulaanbaatar 26.97 304 eP **P 17 10 09.8 -0.6**
ULN pmax pmax
comp=Z,30nm,1.0s
ULN Ulaanbaatar 26.97 304 eP **P 17 10 10.8 +0.3**
comp=Z,34nm,1.0s
ULN ePcP **PcP 17 13 31.7 -0.2**
SONM Songino Array 27.40 304 P **P 17 10 13.0 -1.3**
comp=Z,9.0nm,0.8s,baz=98,slow=8.7,SNR=4.3
SONM PcP **PcP 17 13 31.8 -1.2**
comp=Z,5.4nm,0.9s,baz=116,slow=2.0,SNR=4.5
H11N2 WAKE ISLAND Hy 28.54 120 T T 17 40 09.5
baz=313,slow=75,SNR=1117
H11N1 WAKE ISLAND Hy 28.55 120 T T 17 40 10.1
baz=313,slow=75,SNR=1496
H11N3 WAKE ISLAND Hy 28.56 120 T T 17 40 10.8
baz=313,slow=75,SNR=1034
H11S1 WAKE ISLAND Hy 29.25 122 T T 17 41 08.5
baz=314,slow=76,SNR=588
H11S3 WAKE ISLAND Hy 29.25 122 T T 17 41 05.4
baz=314,slow=76,SNR=524
H11S2 WAKE ISLAND Hy 29.26 122 T T 17 41 09.9
baz=314,slow=76,SNR=347
LZH Lanzhou 29.64 279 ⇑P **P 17 10 34.0 -0.4**
LZH pP pP 17 10 38.3 +0.2
LZH sP sP 17 10 40.8 +1.1
LZH PP **PnPn 17 11 31.0 +1.9**
LZH S **S 17 15 26.0 -3.7**
LZH sS sS 17 15 35.2 -0.7
LZH SS **SnSn 17 16 58.3 +0.1**
LZH pmax pmax
comp=Z,52nm,1.2s
LZH pmax pmax
comp=Z,460nm,9.3s
LZH LR LR
comp=Z,1μm,11.8s
LZH LR LR
comp=Z,1μm,11.3s
LZH LR LR
comp=Z,2μm,14.0s
GYA Guiyang 30.81 260 P **P 17 10 45.6 +0.8**
GYA PP **PnPn 17 11 47.4 +2.5**
GYA PcP **PcP 17 13 43.2 +1.3**
GYA S **S 17 15 47.0 -1.2**
GYA ScP **ScP 17 17 24.5 +0.2**
GYA SS **SnSn 17 17 28.0 +1.1**
GYA ScS **ScS 17 21 20.2 -1.0**
GYA pmax pmax
comp=Z,30nm,0.8s
GYA pmax pmax
comp=Z,130nm,5.0s
GYA LR LR
comp=Z,2μm,17.7s
GYA LR LR
comp=Z,2μm,17.6s
GYA LR LR
comp=Z,2μm,17.9s
CD2 Chengdu 31.25 270 P **P 17 10 46.6 -1.9**
CD2 PP **PP 17 11 56.7 -2.3**
CD2 S **S 17 15 52.4 -2.4**
CD2 pmax pmax
comp=Z,70nm,1.3s
CD2 pmax pmax
comp=Z,410nm,7.7s
CD2 LR LR
comp=Z,670nm,14.3s
CD2 LR LR
comp=Z,990nm,13.7s
KMI Kunming 34.55 261 P **P 17 11 18.6 +1.0**
KMI pP sP 17 11 22.4 -0.6
KMI sP pP 17 11 24.2 +2.8
KMI PP **PnPn 17 12 32.1 -0.7**
KMI S **S 17 16 43.3 -3.3**
KMI sS sS 17 16 51.9 -0.9
KMI SS **SnSn 17 18 55.0 -2.9**
KMI pmax pmax
comp=Z,22nm,1.1s
KMI pmax pmax
comp=Z,310nm,4.5s
KMI LR LR
comp=Z,2μm,19.9s
KMI LR LR
comp=Z,2μm,19.3s
KMI LR LR
comp=Z,3μm,23.1s
TIXI Tiksi 35.18 353 P **P 17 11 22.1 -0.1**
comp=Z,28nm,0.8s,baz=152,slow=6.8,SNR=9.9
TIXI Tiksi 35.18 353 eP **P 17 11 22.4 +0.1**
comp=Z,35nm,0.9s
WMQ Urumqi 40.43 297 P **P 17 12 09.3 +2.2**
WMQ sP sP 17 12 16.3 +3.8
WMQ PcP **PcP 17 14 11.5 +1.6**
WMQ ScP **ScP 17 17 57.0 -1.9**
WMQ S **S 17 18 18.8 +3.5**
WMQ ScS **ScS 17 22 11.7 -1.3**
WMQ pmax pmax
comp=Z,7.0nm,0.8s
WMQ pmax pmax
comp=Z,120nm,11.0s
WMQ LR LR
comp=Z,870nm,17.6s
WMQ LR LR
comp=Z,330nm,24.4s
WMQ LR LR
comp=Z,470nm,28.8s
TNA Tin City 41.01 30 eP **P 17 12 12.5 +1.1**
comp=Z,92nm,1.6s
ZAA0 Zalesovo Array 41.56 312 eP **P 17 12 15.1 -1.1**
ZALV Zalesovo Beam 41.56 312 P **P 17 12 16.1 -0.1**
comp=Z,19nm,0.8s,baz=94,slow=6.6,SNR=9.2
ZALV PcP **PcP 17 14 11.7 -1.5**
comp=Z,11nm,0.7s,baz=88,slow=2.7,SNR=8.5
NRIK Noril'sk 43.04 335 P **P 17 12 27.8 -0.2**
comp=Z,19nm,1.0s,baz=98,slow=12,SNR=3.7
NRIK PcP **PcP 17 14 17.7 -0.2**
comp=Z,3.6nm,0.6s,baz=101,slow=4.4,SNR=3.7
MKAR Makanchi Array 43.73 302 P **P 17 12 34.1 +0.2**
comp=Z,10nm,0.7s,baz=88,slow=9.1,SNR=7.3
MKAR PcP **PcP 17 14 20.5 -0.1**
comp=Z,5.4nm,0.8s,baz=74,slow=4.3,SNR=4.1
KURK Kurchatov 45.56 308 eP **P 17 12 47.3 -1.1**
comp=Z,76nm,0.9s
KAPI Kappang 46.30 210 eP **P 17 12 53.6 -1.0**
comp=Z,123nm,1.1s
RSO Redoubt South 47.12 38 eScS **P 17 13 02.5 +1.7**
KDAK Kodiak Island 47.34 42 P P 17 13 16.9 +15
comp=Z,28nm,0.8s,baz=290,slow=3.9,SNR=14
KDAK Kodiak Island 47.34 42 eP **P 17 13 01.5 -0.7**
PPLA Purkeypile 47.36 35 eP **P 17 13 03.3 +0.7**
CAST Castle Rocks 47.41 34 eP **P 17 13 05.9 +3.1**
comp=Z,20nm,0.9s
SPU Mount Spurr 47.44 37 eP **P 17 13 04.9 +1.8**
BPAW Bear Paw Mtn. 47.91 33 eP **P 17 13 09.2 +2.6**
comp=Z,13nm,1.0s
KTH Kantishna Hill 47.94 34 eP **P 17 13 07.5 +0.5**
comp=Z,38nm,1.2s
TRF Thorofare Moun 48.22 34 eP **P 17 13 10.8 +1.6**
comp=Z,112nm,1.7s
RC01 Rabbit Creek A 48.57 37 eP **P 17 13 12.2 +0.5**
comp=Z,26nm,1.0s
BWN Browne 48.57 33 eP **P 17 13 12.9 +1.2**
comp=Z,65nm,1.1s
SEW Seward 48.78 39 eP **P 17 13 11.8 -1.6**
comp=Z,12nm,0.9s
MCK McKinley 48.82 34 eP **P 17 13 14.3 +0.7**
comp=Z,38nm,1.2s
PMR Palmer 48.83 37 eP **P 17 13 13.0 -0.7**
comp=Z,19nm,0.9s
MDM Murphy Dome 49.09 32 eP **P 17 13 17.2 +1.4**
comp=Z,30nm,1.1s
SOEI Soe 49.14 202 eP **P 17 13 16.7 0.0**
SOEI esP **sP 17 13 23.1 +1.0**
SML Sawmill 49.20 36 eP **P 17 13 17.2 +0.6**
comp=Z,32nm,0.8s
IL1 Eielson Array 49.67 32 eP **P 17 13 19.1 -1.0**
ILAR Eielson Array 49.67 32 P **P 17 13 19.5 -0.6**
comp=Z,11nm,0.8s,baz=270,slow=6.6,SNR=31
ILB Eielson Array 49.67 32 eP **P 17 13 19.0 -1.1**
KSH Kashi 49.99 294 eP **P 17 13 27.3 +4.2**
KSH epP sP 17 13 31.9 +3.4
KSH ePP **PP 17 15 22.2 +4.3**
KSH S **S 17 20 37.0 +3.3**
KSH ScS **ScS 17 23 15.0 +0.5**
KSH pmax pmax
comp=Z,150nm,3.5s
KSH LR LR
comp=Z,2μm,10.3s
KSH LR LR
comp=Z,970nm,10.2s
KSH LR LR
comp=Z,1μm,11.9s
BVAR Borovoye Array 50.22 312 P **P 17 13 24.6 +0.1**
comp=Z,15nm,0.8s,baz=83,slow=8.9,SNR=7.5
BVAR PcP **PcP 17 14 44.0 +0.6**
comp=Z,15nm,0.8s,baz=96,slow=3.0,SNR=9.2
KLU Klutina 50.37 37 eP **P 17 13 26.0 +0.4**
comp=Z,52nm,1.6s
DIV Divide 50.48 37 eP **P 17 13 27.3 +0.9**
comp=Z,20nm,0.9s
DOT Dot Lake 50.99 34 eP **P 17 13 29.6 -0.6**
comp=Z,30nm,0.9s
MENT Mentasta 51.23 35 eP **P 17 13 33.1 +1.1**
comp=Z,19nm,1.0s
KKAR Karatay Array 52.73 300 eP **P 17 13 42.8 -0.6**
GSI Gunungsitoli 53.47 239 eP **P 17 13 47.8 -1.4**
comp=Z,193nm,1.7s
LEM Lembang 53.63 223 P **P 17 13 54.0 +3.5**
comp=Z,40nm,0.9s,baz=13,slow=5.4,SNR=7.6
ARU Arti 56.03 318 LR LR 17 40 48.6
comp=Z,3μm,18.8s,baz=10.0,slow=39
WRAB Tennant Creek 57.05 187 eP **P 17 14 12.8 -2.0**
WB2 Warramunga Arr 57.06 187 eP **P 17 14 12.6 -2.3**
comp=Z,20nm,0.9s
WRA Warramunga Arr 57.06 187 P **P 17 14 13.0 -1.9**
comp=Z,6.2nm,0.5s,baz=4.0,slow=7.2,SNR=46
AKTO Aktyubinsk 58.32 312 P **P 17 14 26.1 +2.6**
comp=Z,11nm,0.8s,baz=62,slow=10,SNR=4.7
SPA0 Spitsbergen Ar 60.38 349 eP **P 17 14 37.0 -0.4**
KBS Kingsbay 60.52 350 eP **P 17 14 39.3 +1.0**
comp=Z,48nm,0.8s
ASAR Alice Springs 60.79 187 P **P 17 14 39.6 -1.2**
comp=Z,2.5nm,0.7s,baz=2.1,slow=4.8,SNR=9.6
MBWA Marble Bar 61.28 203 eP **P 17 14 44.1 0.0**
LVZ Lovozero 61.88 336 eP **P 17 14 47.1 -0.6**
comp=Z,32nm,1.2s
KEV Kevo 63.24 339 eP **P 17 14 56.6 0.0**
comp=Z,47nm,1.1s
GEYT Alibeck 63.44 299 P **P 17 14 59.0 +0.5**
comp=Z,18nm,0.9s,baz=54,slow=2.6,SNR=8.1
DZM Mont Dzumac 63.59 153 P **P 17 14 59.9 +0.3**
comp=Z,16nm,1.1s,baz=66,slow=16,SNR=3.7
ARA0 ARCESS Array S 63.79 339 eP **P 17 14 59.5 -0.8**
ARCES ARCESS Array B 63.79 339 P **P 17 15 00.1 -0.2**
comp=Z,20nm,0.8s,baz=64,slow=8.2,SNR=25
ARE0 ARCESS Array S 63.79 339 eP **P 17 15 00.2 -0.1**
comp=Z,33nm,1.1s
YKA Yellowknife Ar 63.97 30 P **P 17 15 00.6 -1.0**
comp=Z,2.5nm,0.7s,baz=304,slow=7.0,SNR=11
YKA PcP **PcP 17 15 38.8 +1.9**
comp=Z,1.4nm,0.7s,baz=298,slow=4.3,SNR=4.1
YKA Yellowknife Ar 63.97 30 P **P 17 15 00.6 -1.0**
YKA 17 15 38.8
YKA pmax pmax
comp=Z,2.0nm,0.7s
YKA pmax pmax
comp=Z,1.0nm,0.7s
DAG Danmarks Havn 65.68 355 *i* P **P 17 15 12.1 -0.4**
comp=Z,52nm,0.8s
DAG Danmarks Havn 65.68 355 *i* P **P 17 15 12.1 -0.4**
DAG pmax pmax
comp=Z,39nm,0.8s
MOS Moscow 66.95 323 eP **P 17 15 19.5 -1.5**
MOS *e* 17 15 47.8
MOS *e* 17 17 49.9
MOS pmax pmax
comp=Z,84nm,1.3s
MOS pmax pmax
comp=Z,100nm,1.5s
MOS MLR MLR
comp=Z,2μm,16.0s
OBN Obninsk 67.79 323 ⇓*i*P **P 17 15 26.6 +0.3**
OBN pmax pmax
comp=Z,31nm,1.7s
KULLO Kullorsuaq 67.96 5 *i* P **P 17 15 27.9 +0.9**
comp=Z,33nm,0.9s
KULLO Kullorsuaq 67.96 5 *i* P **P 17 15 27.9 +0.9**
KULLO pmax pmax
comp=Z,33nm,0.9s
FIA1 FINESS Array S 68.56 332 eP **P 17 15 29.7 -1.3**
FINES FINESS Array B 68.56 332 P **P 17 15 29.7 -1.3**
comp=Z,54nm,0.8s,baz=75,slow=8.1,SNR=45
STKA Stephens Creek 68.62 179 P **P 17 15 30.5 -1.1**
comp=Z,2.8nm,0.7s,baz=335,slow=7.7,SNR=6.4
I03D Drain, OR 69.20 51 P **P 17 15 37.1 +1.8**
baz=302
H04A Detroit Lake 69.39 49 eP **P 17 15 37.8 +1.2**
comp=Z,58nm,1.9s
G05D Wamic, OR 69.61 48 P **P 17 15 39.5 +1.6**
baz=302
I04A Tendick Farm, 69.72 50 P **P 17 15 39.8 +1.1**
baz=302
ZEI Tsey 70.43 309 eP **P 17 15 41.4 -1.8**
ZEI pmax pmax
comp=Z,35nm,1.1s
KBZ Khabaz 70.54 310 P **P 17 15 45.1 +1.6**
comp=Z,11nm,0.9s,baz=56,slow=3.2,SNR=4.5
KVAR Kislovodsk Arr 70.54 311 P **P 17 15 44.4 +0.6**
comp=Z,54nm,1.2s,baz=132,slow=20,SNR=7.3
KIV Kislovodsk 70.55 311 eP **P 17 15 44.1 +0.3**
KIV pmax pmax
comp=Z,58nm,1.0s
KIV Kislovodsk 70.55 311 eP **P 17 15 43.8 0.0**
comp=Z,62nm,1.1s
SUMG Summit 70.62 360 *i* P **P 17 15 44.9 +0.8**
comp=Z,59nm,0.9s
SUMG Summit 70.62 360 *i* P **P 17 15 44.9 +0.8**
SUMG pmax pmax
comp=Z,59nm,0.9s
SUMG Summit 70.62 360 eP **P 17 15 44.2 +0.1**
comp=Z,54nm,0.8s
YBH Yreka Blue Hor 70.64 52 eP **P 17 15 47.1 +2.7**
YBH pmax pmax
comp=Z,9.0nm,1.2s
YBH Yreka Blue Hor 70.64 52 eP **P 17 15 47.1 +2.7**
comp=Z,8.5nm,1.2s
K05A Summer Lake 71.23 50 eP **P 17 15 49.4 +1.3**
comp=Z,81nm,1.8s
SCO Scoresbysund 72.01 354 *i* P **P 17 15 52.1 +0.1**
comp=Z,29nm,0.9s
SCO Scoresbysund 72.01 354 *i* P **P 17 15 52.1 +0.1**
SCO pmax pmax
comp=Z,29nm,0.9s
BMO Blue Mountains 72.20 47 eP **P 17 15 53.9 +0.1**
BMO pmax pmax
comp=Z,8.0nm,1.0s
BMO Blue Mountains 72.20 47 eP **P 17 15 53.9 +0.1**
comp=Z,7.7nm,1.0s
NACGM Naroch 72.44 326 *e* **P 17 15 55.0 +0.2**
WVOR Wild Horse Val 72.78 50 eP **P 17 15 57.4 +0.1**
WVOR pmax pmax
comp=Z,36nm,1.8s
WVOR Wild Horse Val 72.78 50 eP **P 17 15 57.4 +0.1**
comp=Z,36nm,1.8s
ANN Anapa 73.18 314 eP **P 17 15 58.3 -1.1**
ANN eS **S 17 25 22.8 -4.2**
ANN pmax pmax
comp=Z,52nm,1.3s
NC405 NORSAR Array S 73.75 337 eP **P 17 16 02.6 +0.1**
NC303 NORSAR Array S 73.78 337 eP **P 17 16 03.3 +0.7**
MFID Camas Ranch 73.90 48 eP **P 17 16 04.8 +0.9**
comp=Z,55nm,1.9s
NC204 NORSAR Array S 73.92 337 eP **P 17 16 01.9 -1.7**
NB201 NORSAR Array S 73.94 337 eP **P 17 16 02.4 -1.2**
NB2 NORSAR Subarra 73.97 337 P **P 17 16 02.8 -1.0**
comp=Z,42nm,0.9s,baz=40,slow=6.2
NB2 NORSAR Subarra 73.97 337 P **P 17 16 02.8 -1.0**
baz=40,slow=6.2
NOA NORSAR Array B 73.97 337 P **P 17 16 02.7 -1.2**
comp=Z,36nm,0.8s,baz=39,slow=5.8,SNR=63
NOA PP **PP 17 18 50.1 +1.9**
comp=Z,1.0nm,0.8s,baz=49,slow=8.6,SNR=3.3
AKASG Malin Array Be 73.99 322 P **P 17 16 03.6 -0.4**
comp=Z,23nm,0.9s,baz=47,slow=6.1,SNR=33
AKASG Malin Array Be 73.99 322 *i* P **P 17 16 03.5 -0.6**
AKASG pmax pmax
comp=Z,17nm,0.8s
AKBB Malin Array Si 73.99 322 eP **P 17 16 04.2 +0.1**
AKBB pmax pmax
comp=Z,33nm,0.9s
AKBB Malin Array Si 73.99 322 eP **P 17 16 04.2 +0.1**
comp=Z,33nm,0.9s
KIEV Kiev 74.00 322 *c*eP **P 17 16 04.4 +0.3**
KIEV pmax pmax
comp=Z,40nm,1.0s
AK11 Malin Array Si 74.03 322 eP **P 17 16 04.3 0.0**
NBO02 NORSAR Array S 74.07 337 eP **P 17 16 04.0 -0.4**
NC602 NORSAR Array S 74.10 337 eP **P 17 16 03.9 -0.7**
NBO00 NORSAR Array S 74.11 337 eP **P 17 16 05.4 +0.8**
CMB Columbia Colle 74.18 54 eP **P 17 16 06.3 +0.8**
CMB pmax pmax
comp=Z,18nm,1.5s
CMB Columbia Colle 74.18 54 eP **P 17 16 06.3 +0.8**
comp=Z,18nm,1.5s
NAO01 NORSAR Array S 74.22 337 eP **P 17 16 05.8 +0.5**
EGMT Eagleton 74.50 41 P **P 17 16 07.5 +0.3**
baz=309
DLMT Dillon 74.60 45 eP **P 17 16 09.2 +1.2**
comp=Z,11nm,1.0s
SUW Suwalki 74.61 327 eP **P 17 16 06.8 -0.8**
SUW Suwalki 74.61 327 eP **P 17 16 06.8 -0.8**
SUW MLR MLR
comp=Z,3μm,27.7s
HLID Hailey 74.64 47 P **P 17 16 08.7 +0.4**
baz=307
BOZ Bozeman (W) 74.96 44 P **P 17 16 10.4 +0.4**
baz=308
SIM Simferopol' 74.99 315 eP **P 17 16 10.9 +0.9**
SIM pmax pmax
comp=Z,25nm,1.0s
NV01 Mina Array Sit 75.29 53 eP **P 17 16 13.0 +0.9**
NVAR Mina Array Bea 75.29 53 P **P 17 16 13.9 +1.7**
comp=Z,4.2nm,0.8s,baz=281,slow=6.3,SNR=6.6
SFJD Kangerlussuaq 75.86 5 P **P 17 16 15.8 +1.2**
comp=Z,16nm,0.8s,baz=322,slow=4.3,SNR=7.6
SFJD Kangerlussuaq 75.86 5 *i* P **P 17 16 14.8 +0.2**
comp=Z,22nm,0.9s
SFJD Kangerlussuaq 75.86 5 *i* P **P 17 16 14.8 +0.2**
SFJD pmax pmax
comp=Z,22nm,0.9s
SFJD Kangerlussuaq 75.86 5 eP **P 17 16 15.7 +1.1**
comp=Z,21nm,0.9s
SORM Soroca 76.08 320 ⇑*i*P **P 17 16 16.4 +0.3**
SORM Soroca 76.08 320 ⇑P **P 17 16 16.4 +0.3**
H17A Grant Village 76.32 44 eP **P 17 16 20.9 +2.9**
comp=Z,11nm,1.0s
IMW Indian Meadow 76.43 45 eP **P 17 16 20.3 +1.6**
comp=Z,8.3nm,0.9s
FXWY Fox Creek 76.54 45 eP **P 17 16 20.8 +1.6**
comp=Z,8.1nm,1.1s
RLMT Red Lodge 76.59 43 P **P 17 16 19.7 +0.3**
baz=310
MOOW Moose Ponds 76.63 45 eP **P 17 16 20.1 +0.3**
comp=Z,36nm,2.0s
HVU Hansel Valley 76.68 48 eP **P 17 16 21.3 +1.3**
HVU pmax pmax
comp=Z,6.0nm,0.9s
HVU Hansel Valley 76.68 48 eP **P 17 16 21.3 +1.3**
comp=Z,6.0nm,0.9s
DAC Darwin (Calif) 77.01 54 eP **P 17 16 23.2 +1.2**
DAC pmax pmax
comp=Z,20nm,1.7s
DAC Darwin (Calif) 77.01 54 eP **P 17 16 23.2 +1.2**
comp=Z,20nm,1.7s
R11A Troy Canyon, C 77.06 52 P **P 17 16 23.6 +1.4**
baz=307
R11A Troy Canyon, C 77.06 52 eP **P 17 16 23.2 +1.0**
comp=Z,8.2nm,1.0s
LVV L'vov 77.08 324 *d*iP **P 17 16 21.0 -0.8**
BEL Belsk 77.16 327 eP **P 17 16 23.4 +1.2**
BEL Belsk 77.16 327 eP **P 17 16 23.4 +1.2**
BEL MLR MLR
comp=Z,4μm,25.0s
BSD Bornholm Skovb 77.19 332 *i* P **P 17 16 22.8 +0.5**
comp=Z,59nm,0.9s
BSD Bornholm Skovb 77.19 332 *i* P **P 17 16 22.8 +0.5**
BSD pmax pmax
comp=Z,59nm,0.9s
MPMC Manual Prospec 77.21 54 P **P 17 16 23.6 +0.5**
baz=307
TPNV Topopah Spring 77.48 53 P **P 17 16 25.3 +0.7**
baz=307
TPNV Topopah Spring 77.48 53 eP **P 17 16 25.5 +1.0**
TPNV pmax pmax
comp=Z,10.0nm,0.9s
TPNV Topopah Spring 77.48 53 eP **P 17 16 25.5 +1.0**
comp=Z,9.8nm,0.9s
HWUT Hardware Ranch 77.50 47 eP **P 17 16 26.9 +2.3**
comp=Z,18nm,1.2s
BORG Borgarnes 77.53 352 *i* P **P 17 16 27.8 +3.7**
BORG Borgarnes 77.53 352 eP **P 17 16 25.9 +1.8**
comp=Z,37nm,0.8s
EDW2 Edwards Air Fo 77.58 56 P **P 17 16 26.4 +1.4**
baz=307
DUG Dugway, Tooele 77.64 49 P **P 17 16 25.0 -0.3**
baz=308
DUG Dugway, Tooele 77.64 49 eP **P 17 16 27.0 +1.7**
DUG pmax pmax
comp=Z,8.0nm,0.9s
DUG Dugway, Tooele 77.64 49 eP **P 17 16 27.0 +1.7**
comp=Z,7.9nm,0.9s
COP Copenhagen 77.68 333 *i* P **P 17 16 25.1 +0.1**
comp=Z,29nm,0.9s
COP Copenhagen 77.68 333 *i* P **P 17 16 25.1 +0.1**
COP pmax pmax
comp=Z,29nm,0.9s
KWP Kalwaria Pacla 77.83 324 eP **P 17 16 26.4 +0.3**
KWP Kalwaria Pacla 77.83 324 ⇑*i*P **P 17 16 26.4 +0.3**
KWP Kalwaria Pacla 77.83 324 eP **P 17 16 26.4 +0.3**
KWP MLR MLR
comp=Z,5μm,25.9s
BW06 Boulder Array 77.93 45 P **P 17 16 27.9 +0.9**
baz=310
BW06 Boulder Array 77.93 45 eP **P 17 16 28.6 +1.6**
comp=Z,5.6nm,0.9s
PDAR Pinedale Array 77.93 45 P **P 17 16 26.6 -0.4**
comp=Z,3.0nm,0.7s,baz=280,slow=1.1,SNR=12
BUR08 Bucovina Ar. S 77.99 321 eP **P 17 16 27.9 +0.8**
BURAR Bucovina Array 78.00 321 ⇑*i*P **P 17 16 27.6 +0.4**
BURAR Bucovina Array 78.00 321 ⇑P **P 17 16 27.6 +0.4**
TESR Tescani 78.02 320 ⇑*i*P **P 17 16 28.1 +1.0**
PSUT Pine Spring 78.02 51 eP **P 17 16 30.1 +2.5**
comp=Z,8.2nm,1.1s
GSC Goldstone, Bar 78.11 55 P **P 17 16 28.9 +0.9**
baz=307
GSC Goldstone, Bar 78.11 55 eP **P 17 16 29.9 +1.9**
GSC pmax pmax
comp=Z,9.0nm,1.4s
GSC Goldstone, Bar 78.11 55 eP **P 17 16 29.9 +1.9**
comp=Z,9.4nm,1.4s
CFR Carcaliu 78.12 318 ⇓*i*P **P 17 16 28.2 +0.5**
CFR Carcaliu 78.12 318 ⇓P **P 17 16 28.2 +0.5**
MUD Monsted U'grnd 78.22 335 *i* P **P 17 16 28.3 +0.3**
comp=Z,25nm,0.9s
MUD Monsted U'grnd 78.22 335 *i* P **P 17 16 28.3 +0.3**
MUD pmax pmax
comp=Z,25nm,0.9s
NLU North Lily Min 78.23 49 eP **P 17 16 29.8 +1.1**
comp=Z,5.8nm,0.9s
VRI Vrincioaia 78.41 319 ⇑*i*P **P 17 16 29.7 +0.4**
VRI Vrincioaia 78.41 319 ⇑P **P 17 16 29.7 +0.4**
SHPR Sheep Range 78.44 53 eP **P 17 16 31.4 +1.4**
comp=Z,23nm,1.5s
BR131 Keskin Array S 78.49 311 eP **P 17 16 30.2 +0.1**
BRTR Keskin Array B 78.49 311 P **P 17 16 30.4 +0.3**
comp=Z,8.8nm,1.0s,baz=92,slow=4.3,SNR=9.3
BRTR Keskin Array B 78.49 311 *i* P **P 17 16 30.3 +0.2**
BRTR pmax pmax
comp=Z,9.0nm,1.0s
KOLS Kolonicke sedl 78.52 324 eP **P 17 16 31.1 +1.1**
KOLS pmax pmax
comp=Z,14nm,1.0s
KOLS Kolonicke sedl 78.52 324 eP **P 17 16 31.0 +1.1**

KOLS *e*PP **PP** **17 19 23.4 -3.5**
TUQ Turquoise Moun 78.60 54 P **P** **17 16 31.7 +1.0**
baz=308
STHS Stebnicka Huta 78.67 325 *e*P **P** **17 16 32.1 +1.4**
STHS pmax pmax
comp=Z,17nm,0.9s
STHS Stebnicka Huta 78.67 325 *e*P **P** **17 16 32.1 +1.4**
UZH Uzhgorod 78.73 324 *e*P **P** **17 16 29.5 -1.5**
UZH *e* 17 16 38.1
OJC Ojcow 78.75 326 *e*P **P** **17 16 31.3 +0.2**
OJC Ojcow 78.75 326 *e*P **P** **17 16 31.3 +0.2**
OJC MLR MLR
comp=Z,4μm,24.9s
OJC Ojcow 78.75 326 *e*P **P** **17 16 30.8 -0.4**
comp=Z,65nm,1.0s
ARCR ARCALIA 78.79 321⇑*i*P **P** **17 16 32.8 +1.4**
ANTO Ankara 78.91 312 *e*P **P** **17 16 32.8 +0.5**
ANTO pmax pmax
comp=Z,30nm,1.1s
ANTO Ankara 78.91 312 *e*P **P** **17 16 32.8 +0.5**
comp=Z,30nm,1.1s
CRVS Cervenica-Dubn 78.93 324 *e*P **P** **17 16 32.1 -0.1**
CRVS Cervenica-Dubn 78.93 324 *e*P **P** **17 16 32.0 -0.1**
BR231 Keskin MP Arra 78.94 312 *e*P **P** **17 16 31.1 -1.4**
DOPR Dopca 79.03 320⇑*i*P **P** **17 16 33.6 +0.8**
MLR Muntele Rosu 79.06 319⇑*i*P **P** **17 16 33.9 +0.8**
MLR Muntele Rosu 79.06 319⇑P **P** **17 16 33.9 +0.8**
NIE Niedzica 79.10 325 *e*P **P** **17 16 33.7 +0.6**
NIE Niedzica 79.10 325 *e*P **P** **17 16 33.7 +0.6**
NIE MLR MLR
comp=Z,2μm,24.7s
A29A Manning Farm, 79.13 36 P **P** **17 16 33.6 +0.4**
baz=315
GMRC Granite Mounta 79.17 55 P **P** **17 16 34.9 +1.1**
baz=308
P17A Butcher Ranch, 79.33 48 *e*P **P** **17 16 35.8 +1.1**
comp=Z,79nm,1.9s
LCMT Little Creek M 79.34 52 *e*P **P** **17 16 36.1 +1.3**
comp=Z,12nm,1.2s
MTPU Mount Pierson 79.36 50 *e*P **P** **17 16 36.6 +1.4**
comp=Z,13nm,1.0s
Q16A Castle Valley 79.42 49 *e*P **P** **17 16 36.4 +1.1**
comp=Z,19nm,1.3s
P18A Preston Nutter 79.53 48 *e*P **P** **17 16 37.1 +1.2**
comp=Z,38nm,1.9s
A30A Hoffart Farm, 79.55 35 P **P** **17 16 35.9 +0.3**
baz=316
VOIR 79.56 320⇓*i*P **P** **17 16 37.1 +1.3**
VOIR 79.56 320⇓P **P** **17 16 37.1 +1.3**
KNB Kanab 79.61 51 *e*P **P** **17 16 37.9 +1.6**
KNB pmax pmax
comp=Z,26nm,1.3s
KNB Kanab 79.61 51 *e*P **P** **17 16 37.9 +1.6**
comp=Z,26nm,1.3s
LANS Liptovska Anna 79.67 325 *e*P **P** **17 16 38.2 +2.0**
LANS Liptovska Anna 79.67 325 *e*P **P** **17 16 38.2 +2.0**
KECS Kecovo 79.68 324 *e*P **P** **17 16 37.3 +1.1**
KECS pmax pmax
comp=Z,7.0nm,1.1s
KECS Kecovo 79.68 324 *e*P **P** **17 16 37.3 +1.1**
ULM Lac du Bonnet 79.69 33 P **P** **17 16 36.4 +0.2**
comp=Z,4.8nm,0.6s,baz=304,slow=3.9,SNR=3.7
SRU San Rafael Swe 79.69 49 *e*P **P** **17 16 37.7 +1.0**
SRU pmax pmax
comp=Z,10.0nm,0.9s
SRU San Rafael Swe 79.69 49 *e*P **P** **17 16 37.7 +1.0**
comp=Z,9.5nm,0.9s
OKC Ostrava-Krasne 79.77 326 *e*P **P** **17 16 36.2 -0.5**
OKC Ostrava-Krasne 79.77 326 *e*P **P** **17 16 36.2 -0.5**
OKC MLR MLR
comp=Z,2μm,14.9s
DRGR 79.81 322⇑*i*P **P** **17 16 38.3 +1.2**
DRGR 79.81 322⇑P **P** **17 16 38.3 +1.2**
ARR Arges 79.83 320⇑*i*P **P** **17 16 38.7 +1.5**
KSP Ksiaz 79.83 328 *e*P **P** **17 16 37.7 +0.7**
KSP Ksiaz 79.83 328 *e*P **P** **17 16 37.7 +0.7**
BC3 Big Chuckawall 80.00 55 P **P** **17 16 39.5 +1.2**
baz=308
MORC Moravsky Berou 80.08 327⇑*i*P **P** **17 16 39.4 +1.0**
MORC Moravsky Berou 80.08 327⇑P **P** **17 16 39.4 +1.0**
MORC Moravsky Berou 80.08 327 *e*P **P** **17 16 38.7 +0.3**
comp=Z,127nm,1.0s
DPC Dobruska-Polom 80.18 328 *e*P **P** **17 16 39.1 +0.1**
DPC *ex* x 17 16 40.4
DPC Dobruska-Polom 80.18 328 *e*P **P** **17 16 39.1 +0.1**
KRLC Kraliky 80.19 327 *e*P **P** **17 16 38.8 -0.2**
KRLC *ex* x 17 16 40.1
KRLC Kraliky 80.19 327 *e*P **P** **17 16 38.8 -0.2**
UPC Upice 80.20 328 *ex* x 17 16 39.9
G27A Dupree 80.30 39 P **P** **17 16 39.9 +0.2**
baz=314
PSZ Piszkesteto 80.36 324⇑*i*P **P** **17 16 40.3 +0.3**
PSZ Piszkesteto 80.36 324⇑P **P** **17 16 40.3 +0.3**
PSZ Piszkesteto 80.36 324 *e*P **P** **17 16 40.8 +0.8**
comp=Z,35nm,1.0s
VYHS Vyhne 80.44 325 *e*P **P** **17 16 41.5 +1.2**
VYHS pmax pmax
comp=Z,15nm,1.1s
VYHS Vyhne 80.44 325 *e*P **P** **17 16 41.5 +1.2**
PDMCI Parker Dam,Lak 80.45 54 P **P** **17 16 41.7 +1.0**
baz=309
B32A Ashes, Strandq 80.75 35 P **P** **17 16 41.0 -1.0**
baz=317
BRG Berggiesshubel 80.78 329 *i* P **P** **17 16 42.2 +0.1**
comp=Z,32nm,1.0s
BRG *e*PKPPKP 17 36 41.8
comp=Z,9.1nm,1.3s
BRG Berggiesshubel 80.78 329 *i* P **P** **17 16 42.2 +0.1**
BRG pmax pmax
comp=Z,32nm,1.0s
PVCC Panska Ves 80.79 329 *ex* **P** **17 16 43.6 +1.4**
CLL Collm 80.83 330 *i* P **P** **17 16 42.0 -0.4**
comp=Z,56nm,0.9s
CLL Collm 80.83 330 *i* P **P** **17 16 42.0 -0.4**
CLL pmax pmax
comp=Z,56nm,0.9s
CLL Collm 80.83 330 *e*P **P** **17 16 42.0 -0.4**
comp=Z,59nm,0.9s
VRAC Vranov 80.84 327⇑*i*P **P** **17 16 42.7 +0.2**
VRAC Vranov 80.84 327⇑P **P** **17 16 42.7 +0.2**
PV10 Paradox Valley 81.05 48 *e*P **P** **17 16 45.0 +0.9**
SMOL Smolenice 81.06 326 *e*P **P** **17 16 45.5 +1.8**
SMOL Smolenice 81.06 326 *e*P **P** **17 16 45.5 +1.8**
PV04 Paradox Valley 81.12 48 *e*P **P** **17 16 45.2 +0.8**
AGMN Agassiz Nation 81.13 34 P **P** **17 16 42.7 -1.3**
baz=319
GOPC GO Pecny, Ondr 81.16 328 *ex* **P** **17 16 45.4 +1.2**
BZS Buzias 81.17 322⇑*i*P **P** **17 16 45.1 +0.8**
BZS Buzias 81.17 322⇑P **P** **17 16 45.1 +0.8**
PV05 Paradox Valley 81.21 49 *e*P **P** **17 16 46.5 +1.5**
H28A Mission Ridge 81.25 40 P **P** **17 16 44.7 -0.1**
baz=315
TREC Trest 81.33 327 *ex* **P** **17 16 45.8 +0.7**
Y14A Wickenburg 81.42 54 *e*P **P** **17 16 47.4 +1.5**
comp=Z,116nm,0.2s
WUAZ Wupatki 81.46 52 P **P** **17 16 46.1 -0.1**
baz=310
WUAZ Wupatki 81.46 52 *e*P **P** **17 16 46.4 +0.2**
comp=Z,11nm,0.9s
PV01 Paradox Valley 81.49 48 *e*P **P** **17 16 47.3 +0.9**
MDVR Moldovita 81.72 321⇑*i*P **P** **17 16 48.1 +0.8**
NKC Novy Kostel 81.89 329 *ex* **P** **17 16 48.8 +0.8**
B35A Bob, Littlefor 82.03 33 P **P** **17 16 47.9 -1.0**
baz=319
ISCO Idaho Springs 82.11 45 P **P** **17 16 50.0 +0.2**
baz=312
MVCO Mesa Verde 82.14 49 *e*P **P** **17 16 52.2 +2.3**
comp=Z,8.1nm,1.0s
CONA Conrad Observa 82.19 326 *i* pP **P** **17 16 50.8 +1.1**
SNR=7.7
KHC Kasperske Hory 82.27 328 *e*P **P** **17 16 49.7 -0.4**
KHC *ex* **P** **17 16 51.1 +1.0**
KHC Kasperske Hory 82.27 328 *e*P **P** **17 16 49.7 -0.4**
KHC Kasperske Hory 82.27 328 *e*P **P** **17 16 49.6 -0.4**
comp=Z,13nm,0.9s
C35A Jirik Farms, M 82.42 34 P **P** **17 16 49.7 -1.1**
baz=319
GEC2 GERESS Array S 82.44 328 *e*P **P** **17 16 49.9 -1.2**
GEC2 pmax pmax
comp=Z,19nm,1.0s
GEC2 GERESS Array S 82.44 328 *e*P **P** **17 16 49.9 -1.2**
comp=Z,19nm,1.0s
GERES GERESS Array B 82.44 328 P **P** **17 16 50.1 -0.9**
comp=Z,11nm,0.8s,baz=42,slow=5.2,SNR=27
GERES PP **PP** **17 19 59.0 -0.3**
comp=Z,0.3nm,0.3s,baz=59,slow=6.5,SNR=3.7
GEA0 GERESS Array S 82.44 328 *e*P **P** **17 16 49.5 -1.6**
S22A 4UR Ranch, Cre 82.78 48 P **P** **17 16 54.2 +0.9**
baz=312
GRFO Grafenberg 82.81 330 *e*P **P** **17 16 53.7 +0.8**
GRFO pmax pmax
comp=Z,48nm,0.9s
GRFO Grafenberg 82.81 330 *e*P **P** **17 16 53.6 +0.8**
comp=Z,48nm,0.9s
MOA Molln 82.96 327 *i* PcP **P** **17 16 55.0 +1.3**
SNR=6.2
ESK Eskdalemuir 82.96 340 *i* P **P** **17 16 55.5 +2.0**
C37A Embarrass 83.19 33 P **P** **17 16 54.4 -0.5**
baz=320
EYMN Ely 83.32 32 P **P** **17 16 55.2 -0.3**
baz=320
H33A Prehn Over Nor 83.37 37 P **P** **17 16 56.2 +0.3**
baz=317
SOKA Soboth 83.51 326 *i* P **P** **17 16 56.5 -0.1**
SNR=18
C38A Sawbill Land. 83.59 32 P **P** **17 16 55.7 -1.2**
baz=321
VAY Valandovo 83.72 318 *i* P **P** **17 16 57.5 -0.2**
SKO Skopje 83.86 319 *i* P **P** **17 16 59.7 +1.3**
TUC Tucson 83.89 54 *e*P **P** **17 17 00.4 +1.6**
TUC pmax pmax
comp=Z,5.0nm,1.0s
TUC Tucson 83.89 54 *e*P **P** **17 17 00.4 +1.6**
comp=Z,5.4nm,1.0s
KBA Konbreinsper 83.95 327 *i* PcP **P** **17 16 59.4 +0.4**
SNR=6.1
MEM Membach 84.07 333 P **P** **17 17 00.0 +0.8**
comp=Z,13nm,1.1s
H35A Sunnyside Ranc 84.28 36 P **P** **17 17 00.1 -0.3**
baz=319
STU Stuttgart 84.35 330 *e*P **P** **17 17 01.6 +0.8**
STU pmax pmax
comp=Z,66nm,1.1s
STU Stuttgart 84.35 330 *e*P **P** **17 17 01.6 +0.8**
comp=Z,66nm,1.1s
BCLA Clavier 84.48 333 P **P** **17 17 01.4 +0.1**
comp=Z,5.7nm,0.9s
T25A Trinidad 84.61 47 *e*P **P** **17 17 03.6 +1.0**
comp=Z,10nm,0.9s
PDG Podgorica 84.65 321⇑*i*P **P** **17 17 02.5 +0.1**
MOTA Moosalm 84.70 328 *i* PcP **P** **17 17 03.5 +0.7**
SNR=5.8
LANF Langenberg 84.72 331⇓*e*P **P** **17 17 03.3 +0.6**
RETA Reutte 84.73 329 *i* PcP **P** **17 17 04.0 +1.2**
SNR=14
SNF Seneffe 84.77 334 P **P** **17 17 02.3 -0.5**
WLF Walferdange 84.79 332 P **P** **17 17 03.6 +0.7**
comp=Z,22nm,1.8s
OHR Ohrid 84.81 319 *i* P **P** **17 17 03.9 +0.6**
ANMO Albuquerque 84.87 50 P **P** **17 17 06.2 +2.3**
comp=Z,3.7nm,0.8s,baz=308,slow=3.8,SNR=7.5
ANMO Albuquerque 84.87 50 P **P** **17 17 05.7 +1.7**
baz=312
ANMO Albuquerque 84.87 50*ce*P **P** **17 17 06.4 +2.5**
ANMO pmax pmax
comp=Z,7.0nm,1.0s
ANMO Albuquerque 84.87 50 *e*P **P** **17 17 04.8 +0.9**
comp=Z,5.2nm,0.9s
DOU Dourbes 85.00 333 P **P** **17 17 04.1 +0.1**
BFO Black Forest 85.04 330 *i* P **P** **17 17 05.2 +0.9**
BFO Black Forest 85.04 330 *e*P **P** **17 17 03.0 -1.3**
comp=Z,46nm,0.8s
FETA Feichten 85.11 328 *i* PcP **P** **17 17 05.8 +0.9**
SNR=5.9
DAVA Damuels 85.25 329 *i* PcP **P** **17 17 06.6 +1.0**
SNR=12
BNM Barren Site 85.30 50 *e*P **P** **17 17 06.7 +0.6**
SCHQ Schefferville 85.39 16 P **P** **17 17 05.1 -0.8**
comp=Z,5.5nm,0.8s,baz=304,slow=3.7,SNR=4.9
ECH Echery 85.59 331 *e*P **P** **17 17 07.0 -0.1**
FUORN Ofenpass-Fuorn 85.62 328 *e*P **P** **17 17 07.1 -0.5**
comp=Z,38nm,0.8s
121A Cookes Peak, D 85.66 52 P **P** **17 17 08.3 +0.4**
baz=312
121A Cookes Peak, D 85.66 52 *e*P **P** **17 17 08.6 +0.7**
comp=Z,6.0nm,0.9s
MOF Molkenrain 85.90 331⇓*e*P **P** **17 17 08.7 0.0**
TUE Stuetta 86.12 329 *e*P **P** **17 17 10.6 +0.6**
comp=Z,16nm,0.9s
LAST Lasithi 86.38 312⇑*i*P **P** **17 17 11.6 +0.4**
LAST Lasithi 86.38 312 *e*P **P** **17 17 12.1 +0.8**
comp=Z,57nm,1.1s
JFWS Jewell Farm 87.78 35 *e*P **P** **17 17 19.8 +2.0**
JFWS pmax pmax
comp=Z,34nm,1.1s
JFWS Jewell Farm 87.78 35 *e*P **P** **17 17 19.8 +2.0**
comp=Z,34nm,1.1s
PLDF La Plantade 88.81 332 *e*P **P** **17 17 24.0 +1.3**
AGO Saint Agoulin 88.92 332⇓*e*P **P** **17 17 23.8 +0.6**
CEL Celeste 89.46 320 *e*P **P** **17 17 26.6 +0.6**
comp=Z,25nm,0.9s
TX31 Lajitas Ar. Si 90.42 52 *e*P **P** **17 17 30.2 -0.4**
KEST Kesra 94.72 322 P **P** **17 17 50.6 +0.3**
comp=Z,9.1nm,1.1s,baz=354,slow=4.0,SNR=4.0
ES19 SONSECA Array 97.00 333 *e*P **P** **17 18 00.5 -0.1**
ESDC Sonseca Array 97.05 333 P **P** **17 18 00.5 -0.4**
comp=Z,2.2nm,0.7s,baz=20,slow=4.4,SNR=8.7
TLIG Tlapa 101.98 57 *e*Pdif **Pdif** **17 18 25.2 +1.9**
TORD Torodi Ar. Bea 116.99 314 PKP **PKPdf** **17 23 12.2 -1.9**
comp=Z,1.0nm,0.7s,baz=27,slow=1.4,SNR=5.9
DBIC Dimbokro 125.95 316 PKP **PKPdf** **17 23 30.8 -0.6**
comp=Z,3.4nm,0.7s,baz=21,slow=2.6,SNR=5.1
BOSA Boshof 126.17 259 PKP **PKPdf** **17 23 31.0 -0.5**
comp=Z,5.4nm,0.8s,baz=315,slow=3.3,SNR=3.2
PTGA Pitinga 139.01 33 PKP **PKPdf** **17 23 56.1 +0.1**
comp=Z,1.0nm,0.3s,baz=126,slow=4.1,SNR=5.2
SAML Samuel 144.50 44 *e*PKPdf **PKPdf** **17 24 05.2 -0.5**
LPAZ La Paz 147.03 59 PKPbc **PKPbc** **17 24 12.0 -0.8**
comp=Z,7.2nm,0.7s,baz=314,slow=2.8,SNR=19
LPAZ La Paz 147.03 59 *e*PKPdf **PKPbc** **17 24 11.9 -0.8**
PB11 IPOC Station P 148.26 65 *e*PKPbc **PKPbc** **17 24 16.5 +1.1**
PB01 IPOC Station P 149.18 67 *e*PKPbc **PKPbc** **17 24 18.9 +1.2**
LVC Limon Verde 150.55 69 PKPbc **PKPbc** **17 24 21.8 +0.5**
comp=Z,25nm,0.9s,baz=280,slow=5.7,SNR=5.7
LVC Limon Verde 150.55 69 *e*PKPbc **PKPbc** **17 24 22.9 +1.5**
SIV San Ignacio 151.37 49 PKPbc **PKPbc** **17 24 22.2 -0.8**
comp=Z,9.1nm,0.8s,baz=325,slow=3.0,SNR=3.7

IDC 05 17:05:01.9±1.0, 6°.75N×60°.17E, h0km, mb4.2/5, mb1 4.4/5, mb1mx3.8/51, mbtmp4.3/5, Error ellipse: s-maj=43.5km s-min=24.0km az=177.0, Carlsberg Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08N2	**Diego Garcia H**	**16.90**	**140**	T	T	17 26 06.5	
baz=319							
H08N3	**Diego Garcia H**	**16.91**	**140**	T	T	17 26 07.6	
baz=319							
H08N1	**Diego Carcia H**	**16.92**	**140**	T	T	17 26 08.2	
baz=319							
KMBO	**Kilima Mbogo**	**24.17**	**252**	P	P	17 10 22.1	+1.6
8.6nm,1.2s,baz=58,slow=13,SNR=9.2							
SONM	**Songino Array**	**56.69**	**36**	P	P	17 14 48.0	+0.7
1.3nm,0.8s,baz=257,slow=5.8,SNR=3.4							
TORD	**Torodi Ar. Bea**	**57.84**	**281**	P	P	17 14 54.3	-1.6
2.3nm,1.2s,baz=96,slow=5.2,SNR=5.6							
WRA	**Warramunga Arr**	**77.57**	**112**	P	P	17 17 00.1	-0.3
6.0nm,1.1s,baz=286,slow=5.0,SNR=4.7							
ASAR	**Alice Springs**	**77.97**	**116**	P	P	17 17 02.7	0.0
4.9nm,1.0s,baz=295,slow=5.9,SNR=7.9							

IDC 05 17:06:18.4±1.1, 6°.69N×60°.31E, h0km, mb4.2/5, mb1 4.3/5, mb1mx3.7/52, mbtmp4.2/5, MS4.5/4, Ms1 4.5/4, ms1mx4.0/37, Error ellipse: s-maj=39.6km s-min=26.3km az=17.0, Carlsberg Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08N2	**Diego Garcia H**	**16.76**	**140**	T	T	17 27 05.9	
baz=321,slow=74							
H08N3	**Diego Garcia H**	**16.77**	**140**	T	T	17 27 00.5	
baz=83,slow=74							
H08N1	**Diego Carcia H**	**16.78**	**140**	T	T	17 26 51.7	
SNR=350							
PALK	**Pallekele**	**20.25**	**87**	LR	LR	17 16 41.7	
comp=Z,2μm,21.6s,baz=296,slow=31							
KMBO	**Kilima Mbogo**	**24.29**	**252**	P	P	17 11 37.9	-0.2
3.0nm,0.6s,baz=56,slow=14,SNR=5.7							
KMBO				LR	LR	17 20 00.1	
comp=Z,1μm,19.9s,baz=90,slow=34							
OPO	**Ambohidratompo**	**28.24**	**207**	LR	LR	17 20 22.9	
comp=Z,955nm,21.4s,baz=1.5,slow=30							
BRTR	**Keskin Array B**	**40.70**	**328**	P	P	17 14 01.1	+0.1
2.4nm,0.9s,baz=140,slow=5.5,SNR=2.2							
TSUM	**Tsumeb**	**49.33**	**238**	LR	LR	17 34 54.5	
comp=Z,473nm,19.5s,baz=109,slow=35							
KSRS	**Korea Array**	**68.21**	**52**	P	P	17 17 20.6	-0.4
1.1nm,0.6s,baz=266,slow=6.3,SNR=4.5							
WRA	**Warramunga Arr**	**77.41**	**112**	P	P	17 18 16.1	0.0
3.7nm,1.1s,baz=296,slow=4.4,SNR=4.4							
ASAR	**Alice Springs**	**77.81**	**116**	P	P	17 18 18.5	+0.2
2.1nm,0.9s,baz=288,slow=5.4,SNR=5.7							

JMA 05 17:06:29.4, 37°.10N×140°.79E, h7km±1km, M2.5, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.01**	**76**	P	Pg	17 06 30.5	-0.2
ONAJ				S	Sg	17 06 31.3	-0.4
JFK	**Kawauchi**	**0.27**	**14**	P	Pg	17 06 34.8	0.0
JFK				S	Sg	17 06 38.7	+0.2
JHO	**Hitachi**	**0.52**	**200**	P	Pg	17 06 39.2	-0.2
JHO				S	Sg	17 06 46.1	-0.1

IDC 05 17:22:04.2±7.0, 16°.27S×172°.31W, h112km±44km, mb3.3/3, mb1 3.5/4, mb1mx3.2/49, mbtmp3.6/4, Error ellipse: s-maj=116.8km s-min=28.9km az=132.0, Samoa Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**2.40**	**12**	P	Pn	17 22 43.3	+0.8
4.7nm,0.3s,baz=197,slow=4.9,SNR=14							
AFI				S	Sn	17 23 12.3	+0.5
20nm,0.3s,baz=94,slow=22,SNR=12							
WRA	**Warramunga Arr**	**50.67**	**257**	P	P	17 30 52.0	-0.5
0.3nm,0.7s,baz=98,slow=6.2,SNR=4.6							
ASAR	**Alice Springs**	**50.84**	**253**	P	P	17 30 53.9	+0.1
0.6nm,0.5s,baz=90,slow=7.7,SNR=19							
ILAR	**Eielson Array**	**83.09**	**11**	P	P	17 34 17.1	+0.1
1.1nm,1.1s,baz=215,slow=4.4,SNR=4.4							

IDC 05 17:23:31.2±2.0, 38°.25N×144°.42E, h0km, mb3.3/2, mb1 3.4/4, mb1mx3.1/61, mbtmp3.3/4, ML3.1/2, Error ellipse: s-maj=58.2km s-min=26.9km az=83.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**5.23**	**253**	Pn	Pn	17 24 50.3	-0.3
0.9nm,0.3s,baz=82,slow=15,SNR=6.4							
ASAJ	**Asahikawa**	**6.02**	**347**	Pn	Pn	17 25 02.6	+1.1
0.4nm,0.3s,baz=186,slow=11,SNR=7.4							
ASAJ				Sn	Sn	17 26 09.8	-1.4
baz=162,slow=20,SNR=2.8							
WRA	**Warramunga Arr**	**58.65**	**191**	P	P	17 33 29.9	-0.3
0.3nm,0.6s,baz=9.4,slow=7.1,SNR=5.9							
ASAR	**Alice Springs**	**62.37**	**191**	P	P	17 33 55.7	+0.1
0.2nm,0.8s,baz=8.9,slow=6.6,SNR=4.1							

IDC 05 17:26:02.3±1.1, 6°.76N×60°.28E, h0km, mb3.6/8, mb1 3.7/8, mb1mx3.5/42, mbtmp3.6/8, Error ellipse: s-maj=30.0km s-min=21.9km az=168.0, Carlsberg Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KMBO	**Kilima Mbogo**	**24.28**	**252**	P	P	17 31 22.2	+0.3
2.0nm,0.7s,baz=47,slow=13,SNR=4.4							
CMAR	**Chiang Mai Arr**	**39.39**	**69**	P	P	17 33 35.4	+1.3
0.5nm,0.7s,baz=276,slow=8.1,SNR=3.7							
BRTR	**Keskin Array B**	**40.61**	**328**	P	P	17 33 44.2	0.0
0.7nm,0.8s,baz=134,slow=4.2,SNR=3.1							
MKAR	**Makanchi Array**	**44.14**	**22**	P	P	17 34 13.0	+0.4
0.5nm,0.9s,baz=205,slow=5.4,SNR=4.1							
BVAR	**Borovoye Array**	**46.86**	**8**	P	P	17 34 32.3	-1.8
0.8nm,0.8s,baz=213,slow=4.3,SNR=4.5							
ZALV	**Zalesovo Beam**	**51.07**	**18**	P	P	17 35 06.5	+0.2
0.5nm,0.3s,baz=229,slow=6.8,SNR=6.8							
TORD	**Torodi Ar. Bea**	**57.94**	**281**	P	P	17 35 57.3	+0.3
0.8nm,1.1s,baz=106,slow=3.1,SNR=3.0							
ASAR	**Alice Springs**	**77.88**	**116**	P	P	17 38 01.6	-0.9
1.2nm,1.1s,baz=294,slow=5.6,SNR=6.4							

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*IASPEI **05** 17:28:32.8±0.8, 32°.87N±0°.03×116°.21W±0°.02, h17km±6km, Error ellipse: s-maj=3.7km s-min=3.4km az=16.0, GT5 selection from ISC bulletin GT5 identified by Bond˜jr and McLaughlin (2009) selection criteria Bond˜jr and McLaughlin, A new ground truth data set for seismic studies, Seism. Res. Let., 80, 465-472, 2009*

*ISCJB **05** 17:28:33.5±0.3, 32°.86N±0°.02×116°.22W±0°.02, h18km±4km, Error ellipse: s-maj=3.1km s-min=2.7km az=159.7*

*ECX **05** 17:28:34.5±0.6, 32°.85N×116°.24W, h4km, MD2.9, ML3.1*

ISC 05 17:28:32.8±0.8, 32°.88N±0°.02×116°.21W±0°.02, h16km±6km, n35, σ0°50/53, 5C-5D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBKC	**Canebrake**	**0.04**	**302**⇓*i*P		**Pg**	**17 28 36.0**	**+0.2**
MONP	**Monument Peak,**	**0.18**	**275**⇑*i*P		**Pb**	**17 28 37.7**	**-0.1**
MONP2	**Monument Peak**	**0.18**	**275**	P	**Pb**	**17 28 37.7**	**-0.1**
baz=104,SNR=1000							
MONP2				S	**Sg**	**17 28 40.4**	**-0.1**
baz=104							
CRR	**Carrizo Plain**	**0.20**	**87**⇑*i*P		**Pb**	**17 28 38.4**	**+0.3**
IKP	**In-Ko-Pah, Jac**	**0.24**	**160**⇓*i*P		**Pb**	**17 28 38.6**	**-0.1**
RMX	**La Rumorosa**	**0.29**	**158** *e*P		**Pg**	**17 28 38.9**	**-0.2**
RMX				*e*S	**Sg**	**17 28 43.2**	**-0.2**
RMX				AML	AML	17 28 43.9	
comp=N,2μm,0.2s							
RMX				⇓*e*		17 28 43.9	
YUH	**Yuha Desert**	**0.33**	**133**⇓*i*P		**Pb**	**17 28 40.3**	**0.0**
SWSC	**Sam W. Stewart**	**0.35**	**79**	P	**Pb**	**17 28 41.0**	**+0.4**
baz=257,SNR=132							
SWSC				S	**Sb**	**17 28 46.1**	**+0.2**
baz=257							
COK	**Cook Ranch**	**0.41**	**94**⇑*i*P		**Pb**	**17 28 42.4**	**+0.9**
WESC	**Westside Schoo**	**0.42**	**106** *e*P		**Pb**	**17 28 42.5**	**+0.8**
BAR	**Barrett**	**0.44**	**244**⇑*e*P		**Pb**	**17 28 41.9**	**-0.3**
SDRC	**San Diego Road**	**0.64**	**257** *e*P		**Pg**	**17 28 45.2**	**0.0**
DREC	**Desert Rsrch C**	**0.64**	**96** *e*P		**Pn**	**17 28 46.9**	**-0.3**
CBX	**Cerro Bola**	**0.68**	**215** *e*P		**Pb**	**17 28 46.3**	**-0.1**
CBX				*e*S	**Sg**	**17 28 55.3**	**+0.1**
109C	**Camp Elliot, M**	**0.76**	**271**	P	**Pg**	**17 28 47.3**	**-0.2**
baz=92,SNR=40							
109C				S	**Sg**	**17 28 56.9**	**-0.6**
baz=92							
TPFO	**Pinon Flats**	**0.76**	**344**	P	**Pb**	**17 28 48.1**	**+0.4**
baz=167,SNR=85							
TPFO				S	**Sb**	**17 28 57.8**	**+0.1**
baz=167							
PFO	**Pinyon Flats O**	**0.76**	**344**	P	**Pb**	**17 28 48.2**	**+0.5**
baz=167,SNR=65							
PFO				S	**Sb**	**17 28 58.1**	**+0.2**
baz=167							
CPBX	**Cerro Prieto**	**0.89**	**121** *e*P		**Pn**	**17 28 50.6**	**0.0**
CPBX				*e*S	**Sn**	**17 29 02.6**	**-0.5**
CPBX				AML	AML	17 29 05.1	
comp=E,2μm,0.7s							
CPBX				⇑*e*		17 29 05.1	
BC3	**Big Chuckawall**	**1.00**	**39**	P	**Pb**	**17 28 51.9**	**+0.1**
baz=220,SNR=35							
BC3				S	**Sb**	**17 29 04.4**	**-0.4**
baz=220							
MURC	**Murrieta**	**1.10**	**311**	P	**Pb**	**17 28 53.4**	**0.0**
baz=133,SNR=24							
MURC				S	**Sg**	**17 29 07.9**	**-0.5**
baz=133							
BELC	**Belle Mtn. Jos**	**1.14**	**9**	P	**Pb**	**17 28 53.9**	**-0.2**
baz=191,SNR=102							
BELC				S	**Sg**	**17 29 09.7**	**+0.1**
baz=191							
GLA	**Glamis**	**1.17**	**81**	P	**Pn**	**17 28 54.2**	**-0.4**
baz=261,SNR=104							
PBX	**Punta Banda**	**1.21**	**201** *e*P		**Pn**	**17 28 55.0**	**-0.1**
PBX				*e*S	**Sn**	**17 29 10.9**	**-0.2**
ECNX	**Esteban Cantu**	**1.26**	**195** *e*P		**Pn**	**17 28 55.6**	**-0.1**
ECNX				*e*S	**Sn**	**17 29 12.5**	**0.0**

ZAX	**El Zacaton**	**1.36 182**	*e*P	**Pn**	**17 28 57.4**	**+0.3**
ZAX			*e*S	**Sb**	**17 29 15.2**	**+0.1**
ZAX			⇓*e*		17 29 23.2	
ZAX			AML	AML	17 29 23.2	
	comp=E,296nm,0.6s					
BBRC	**Big Bear Solar**	**1.50 337**	Pb	**Pb**	**17 29 00.2**	**-0.3**
	baz=158,SNR=12					
BBRC			Sb	**Sg**	**17 29 20.6**	**-0.8**
	baz=158					
IRM	**Iron Mountain**	**1.56 34**	S	**Sn**	**17 29 19.8**	**+0.1**
	baz=216					
Y12C	**Blythe**	**1.66 58**	S	**Sn**	**17 29 22.0**	**-0.1**
	baz=239					
ECBX	**El Chinero**	**1.71 145**	*e*P	**Pb**	**17 29 03.5**	**-0.3**
ECBX			*e*S	**Sb**	**17 29 25.8**	**+0.8**
BFSC	**Mount Baldy Ra**	**1.82 319**	Sb	**Sb**	**17 29 29.5**	**+1.1**
	baz=139					
CIS	**Catalina Islan**	**1.93 286**	S	**Sn**	**17 29 29.0**	**+0.2**
	baz=106					
GMRC	**Granite Mounta**	**1.96 13**	P	**Pn**	**17 29 05.6**	**+0.1**
	baz=194					
GMRC			Sb	**Sg**	**17 29 34.6**	**-1.2**
	baz=194					
SCI2	**San Clemente I**	**1.97 274**	P	**Pn**	**17 29 05.9**	**+0.5**
	baz=93					
SCI2			S	**Sn**	**17 29 30.7**	**+0.9**
	baz=93					
RRX	**Edison Barstow**	**2.10 342**	Sb	**Sg**	**17 29 39.0**	**-1.4**
	baz=163					
DECC	**Green Verdugo**	**2.25 308**	Sb	**Sb**	**17 29 41.7**	**+1.2**
	baz=128					

JMA 05 17:31:00.5±0.3, 40°.21N×143°.33E, h11km±3km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.16 257**		P	Pb	17 31 22.0	-0.5
JTH				*e*S	Sb	17 31 37.4	-0.1
MIYJ	**Miyakonagasawa**	**1.32 242**		P	Pn	17 31 24.8	-0.1
JANG	**Nango**	**1.40 277**		P	Pn	17 31 25.8	-0.1
JKZ	**Kuzumaki**	**1.55 262**		P	Pn	17 31 28.5	+0.4
OFUJ	**Ofunato**	**1.71 229**		P	Pn	17 31 30.2	0.0
JOM	**Ohasama**	**1.73 246**		P	Pn	17 31 31.1	+0.6
JOM				*e*S	Sb	17 31 53.4	-0.7
JTM	**Tenmabayashi**	**1.82 289**		P	Pn	17 31 32.5	+0.8
JMK	**Ichinoseki**	**2.06 233**		P	Pn	17 31 35.5	+0.5
JAH	**Hinai**	**2.06 270**		P	Pn	17 31 36.2	+1.1
JAH				S	Sb	17 32 03.2	-0.4
JOT	**Ohata**	**2.09 305**		P	Pn	17 31 36.1	+0.6
JNBK	**Urakawa-nobuka**	**2.11 348**		P	Pn	17 31 37.0	+1.2
JRG	**Rokugo**	**2.23 249**		P	Pb	17 31 39.1	-1.7
JCH	**Churui**	**2.40 1**		P	Pn	17 31 39.7	0.0
JCH				S	Sn	17 32 07.5	-1.7
JKB	**Kayabe**	**2.41 315**		P	Pb	17 31 42.2	-1.7
JYK	**Kaneyama**	**2.63 242**		P	Pn	17 31 44.4	+1.5

JMA 05 17:35:24.2, 37°.10N×140°.80E, h6km±1km, M3.0, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.00 321**		P	Pg	17 35 25.2	-0.2
ONAJ				S	Sg	17 35 26.0	-0.2
JFK	**Kawauchi**	**0.27 13**		P	Pg	17 35 29.7	+0.1
JFK				S	Sg	17 35 33.8	+0.6
JHO	**Hitachi**	**0.52 201**		P	Pg	17 35 34.0	-0.3
JHO				S	Sg	17 35 41.4	+0.3
JFT	**Otama**	**0.56 319**		P	Pg	17 35 35.4	+0.4
JFT				S	Sg	17 35 43.3	+1.1
JMM	**Marumori**	**0.77 360**		P	Pg	17 35 38.5	-0.4
JMM				S	Sg	17 35 48.9	+0.1
JFY	**Yanaizu**	**0.93 290**		P	Pg	17 35 42.0	0.0
JFY				*e*S	Sg	17 35 54.4	+0.4
MAT	**Matsushiro**	**2.15 256**		P	Pn	17 36 01.3	+0.6
MAT				S	Sb	17 36 30.9	+0.3

JMA 05 18:00:42.1±0.3, 38°.16N×142°.63E, h28km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.05 287**		P	Pn	18 01 01.1	+0.2
JIO				S	Sn	18 01 14.4	-0.2
OFUJ	**Ofunato**	**1.19 321**		P	Pn	18 01 02.5	-0.4
MIYJ	**Miyokonagasawa**	**1.55 336**		P	Pn	18 01 08.9	+1.1
MIYJ				S	Sn	18 01 27.5	+0.5
JFK	**Kawauchi**	**1.60 241**		P	Pn	18 01 07.8	-0.8
JOM	**Ohasama**	**1.68 322**		P	Pn	18 01 10.5	+0.9
JFT	**Otama**	**1.93 251**		P	Pn	18 01 14.0	+1.0
JFT				*e*S	Sn	18 01 36.3	0.0
JRG	**Rokugo**	**1.99 309**		P	Pn	18 01 13.3	-0.6
JKZ	**Kuzumaki**	**2.08 331**		P	Pb	18 01 17.8	-1.5
JKZ				S	Sb	18 01 43.6	-1.1

*IDC **05** 18:06:46.9±1.4, 36°.76N×140°.67E, h0km, mb3.6/4, mb1 3.7/6, mb1mx3.4/55, mbtmp3.7/6, ML3.4/2, Error ellipse: s-maj=30.5km s-min=19.6km az=74.0*
*ISCJB **05** 18:06:47.2±0.8, 36°.68N±0°.03×140°.74E±0°.06, h12km±4km, mb3.5/4, Error ellipse: s-maj=9.1km s-min=4.7km az=21.5*
*JMA **05** 18:06:48.4, 36°.72N×140°.61E, h7km±1km, M3.5 Broadband fault plane solution: P waves. NP1: ϕ_s=337.00000°, δ60.00000°, λ-80.00000°. NP2: ϕ_s=138.00000°, δ32.00000°, λ-107.00000°. Principal axes: T Plg14.0000°, Azm60.0000°; N Plg9.0000°, Azm152.0000°; P Plg73.0000°, Azm273.0000°;*
JMA Felt III J1.

ISC 05 18:06:48.4±0.9, 36°.72N±0°.03×140°.60E±0°.05, h9km±7km, n16, σ0§64/23, mb3.8/4, 4C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.11 194**		⇑P	**Pg**	**18 06 50.9**	**-0.1**
JHO				S	**Sg**	**18 06 52.8**	**0.0**
ONAJ	**Iwakimizuishiy**	**0.42 22**		⇑P	**Pg**	**18 06 56.5**	**-0.1**
ONAJ				S	**Sg**	**18 07 02.3**	**+0.2**
JYT	**Yasato**	**0.59 214**		⇑P	**Pg**	**18 06 59.7**	**-0.1**
JSB	**Shiboa**	**0.60 295**		P	**Pb**	**18 07 00.8**	**-0.3**
JFK	**Kawauchi**	**0.69 18**		⇑P	**Pg**	**18 07 01.2**	**-0.4**
JFK				S	**Sg**	**18 07 10.4**	**-0.2**
JFT	**Otama**	**0.83 345**		⇓P	**Pg**	**18 07 04.5**	**+0.2**
JFT				S	**Sg**	**18 07 15.1**	**0.0**
JAG	**Ashikaga**	**0.97 253**		P	**Pg**	**18 07 06.3**	**-0.7**
JFY	**Yanaizu**	**0.99 314**		P	**Pg**	**18 07 07.6**	**+0.1**
MJAR	**Matsushiro Arr**	**1.93 266**		Pn	**Pn**	**18 07 22.4**	**+0.9**
	20nm,0.3s,baz=87,slow=12,SNR=55						
MJAR				Sn	**Sb**	**18 07 47.5**	**-0.5**
	28nm,0.3s,baz=82,slow=25,SNR=5.9						
MAT	**Matsushiro**	**1.93 266**		P	**Pn**	**18 07 22.6**	**+1.1**
MAT				S	**Sb**	**18 07 48.6**	**+0.5**
JHJ	**Hachijo jima 2**	**3.65 191**		Pn	**Pn**	**18 07 46.0**	**+1.0**
	4.4nm,0.3s,baz=39,slow=16,SNR=2.2						
JHJ				Sn	**Sn**	**18 08 27.6**	**-0.6**
	7.8nm,0.3s,baz=77,slow=17,SNR=2.8						
ASAJ	**Asahikawa**	**7.55 11**		Pn	**Pn**	**18 08 38.8**	**+0.3**
	0.8nm,0.3s,baz=214,slow=8.1,SNR=8.1						
ZALV	**Zalesovo Beam**	**41.65 313**		P	**P**	**18 14 35.7**	**-1.1**
	0.9nm,0.4s,baz=106,slow=7.0,SNR=5.3						
MKAR	**Makanchi Array**	**43.74 302**		P	**P**	**18 14 54.2**	**+0.2**
	0.1nm,0.5s,baz=89,slow=7.5,SNR=2.9						
WRA	**Warramunga Arr**	**56.66 187**		P	**P**	**18 16 31.3**	**-0.7**
	1.1nm,0.9s,baz=5.6,slow=7.4,SNR=7.3						
ASAR	**Alice Springs**	**60.39 187**		P	**P**	**18 16 59.1**	**+1.0**
	0.7nm,0.8s,baz=7.0,slow=6.0,SNR=6.1						

IDC 05 18:15:51.6±2.3, 1°.64N×127°.55E, h0km, mb3.1/3, mb1 3.4/3, mb1mx3.2/44, mbtmp3.2/3, Error ellipse: s-maj=186.4km s-min=25.2km az=67.0, Halmahera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**22.46 163**		P	P	18 20 53.0	+0.5
	0.5nm,0.4s,baz=342,slow=11,SNR=11						
ASAR	**Alice Springs**	**25.91 167**		P	P	18 21 25.0	-0.6
	0.1nm,0.5s,baz=348,slow=9.0,SNR=5.0						
MKAR	**Makanchi Array**	**59.73 326**		P	P	18 25 58.3	0.0
	0.1nm,0.3s,baz=126,slow=6.1,SNR=3.9						

*ISCJB **05** 18:18:14.1±0.7, 3°.55S±0°.06×99°.41E±0°.07, h33km, mb4.0/11, Error ellipse: s-maj=11.0km s-min=6.6km az=149.7*
*IDC **05** 18:18:14.8±1.9, 3°.10S×100°.09E, h0km, mb3.9/9, mb1 4.0/9, mb1mx3.7/41, mbtmp3.9/9, MS3.5/1, Ms1 3.5/1, ms1mx3.3/34, Error ellipse: s-maj=63.0km s-min=18.0km az=61.0*
*DJA **05** 18:18:16.4±1.0, 4°.S±4°.×10°.0E±°, h31km±11km, M4.6/14, mB5.2/2, mb4.8/7, MLv4.4/14, Mw(mB)4.5/2*
*NEIC **05** 18:18:19.9±8.6, 3°.01S×100°.34E, h28km±58km, mb4.3/2, Error ellipse: s-maj=40.6km s-min=14.7km az=70.0*

ISC 05 18:18:16.8±1.0, 3°.53S±0°.09×99°.5E±0°.1, h35km, n39, σ1§63/31, mb4.0/11, Southwest of Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PPSI	**Pulau Pagai**	**0.89 32**		P	**Pn**	**18 18 32.3**	**-0.5**
PPSI				S	**Sn**	**18 18 44.6**	**+0.1**
MASI	**Maura Aman, Be**	**2.72 82**		P	**Pn**	**18 19 00.0**	**+1.9**
PDSI	**Padang**	**2.75 20**		P	**Pn**	**18 18 57.0**	**-1.5**
SDSI	**Sungai Dareh**	**3.19 36**		P	**Pn**	**18 19 04.5**	**0.0**
MNAI	**Manna**	**3.51 104**		P	**Pn**	**18 19 09.6**	**+0.7**
LHSI	**Lahat**	**3.99 94**		P	**Pn**	**18 19 16.6**	**+1.1**
MNSI	**Mandailing Nat**	**4.29 1**		P	**Pn**	**18 19 18.4**	**-1.3**
LWLI	**Liwa**	**4.75 108**		P	**Pn**	**18 19 26.0**	**0.0**
KASI	**Kota Agung**	**5.33 112**		P	**Pn**	**18 19 34.0**	**+0.1**
	80nm,0.7s,2μm0.7nm						
KLI	**Kotabumi**	**5.47 104**		P	**Pn**	**18 19 37.0**	**+1.2**
	47nm,0.4s,0.5nm						
PPBI	**Pangkal Pinang**	**6.73 79**		P	Pn	18 19 57.6	+4.5
CGJI	**Cibinong**	**6.85 117**		P	**Pn**	**18 19 53.6**	**-1.3**
	55nm,0.7s,1μm0.3nm						
KCSI	**Kotacane, Aceh**	**7.22 346**		P	**Pn**	**18 20 00.6**	**+0.7**
	13nm,2.6s,0.1nm						
CBJI	**Citeko**	**7.83 112**		P	Pn	18 20 14.8	+6.5
CNJI	**Cibinong**	**8.44 117**		P	**Pn**	**18 20 14.9**	**-1.8**
	61nm,0.9s						
LEM	**Lembang**	**8.69 113**		Pn	**Pn**	**18 20 24.5**	**+4.3**
	2.1nm,0.3s,baz=323,slow=20,SNR=2.5						
LEM				LR	LR	18 23 59.7	
	comp=Z,301nm,20.6s,baz=272,slow=41						
CISI	**Cisompet, Garu**	**9.16 116**		P	**Pn**	**18 20 25.3**	**-1.3**
	96nm,0.6s						
CISI	**Cisompet, Garu**	**9.16 116**		*e*P	**Pn**	**18 20 24.5**	**-2.1**
	68nm,0.6s						
CMJI	**Cimerak**	**9.82 116**		P	**Pn**	**18 20 33.7**	**-1.9**
H08S2	**Diego Garcia H**	**27.22 260**		T	T	18 53 10.8	
	baz=80,slow=75,SNR=65						
H08S3	**Diego Garcia H**	**27.23 260**		T	T	18 53 10.8	
	baz=80,slow=75,SNR=50						
H08S1	**Diego Carcia H**	**27.24 260**		T	T	18 53 09.1	
	baz=80,slow=75,SNR=60						
H01W3	**Cape Leeuwin H**	**34.02 158**		T	T	19 01 13.6	
	baz=336,slow=76,SNR=8.4						
H01W2	**Cape Leeuwin H**	**34.03 158**		T	T	19 01 14.7	
	baz=336,slow=76,SNR=9.1						
H01W1	**Cape Leeuwin H**	**34.03 158**		T	T	19 01 14.7	
	baz=336,slow=76,SNR=7.1						
WRA	**Warramunga Arr**	**37.65 118**		P	**P**	**18 25 29.9**	**+1.0**
	0.9nm,0.5s,baz=302,slow=9.1,SNR=9.3						
WRAB	**Tennant Creek**	**37.66 118**		*e*P	**P**	**18 25 26.9**	**-2.0**
	2.0nm,0.7s						
ASAR	**Alice Springs**	**38.76 124**		P	**P**	**18 25 39.5**	**+1.3**
	0.7nm,0.6s,baz=299,slow=7.5,SNR=32						
STKA	**Stephens Creek**	**48.50 130**		P	**P**	**18 26 58.1**	**+1.7**
	1.8nm,0.6s,baz=303,slow=5.9,SNR=7.9						
KSAR	**Wonju Array Be**	**48.53 30**		P	**P**	**18 26 54.3**	**-2.3**
KSRS	**Korea Array**	**48.56 30**		P	**P**	**18 26 54.3**	**-2.5**
	0.3nm,0.4s,baz=213,slow=18,SNR=3.1						
SONM	**Songino Array**	**51.50 6**		P	**P**	**18 27 20.2**	**+1.1**
	0.9nm,0.7s,baz=189,slow=8.3,SNR=3.0						
MKAR	**Makanchi Array**	**52.37 345**		P	**P**	**18 27 26.3**	**+0.8**
	0.8nm,0.4s,baz=154,slow=8.1,SNR=12						
MJAR	**Matsushiro Arr**	**53.74 39**		P	**P**	**18 27 33.2**	**-2.6**
	1.0nm,0.9s,baz=223,slow=8.5,SNR=4.3						
ZALV	**Zalesovo Beam**	**58.58 350**		P	**P**	**18 28 10.3**	**+0.4**
	1.4nm,0.4s,baz=160,slow=4.7,SNR=5.6						
KLR	**Kul'dur**	**59.50 24**		P	**P**	**18 28 16.1**	**-0.3**
	1.0nm,0.7s,baz=262,slow=6.5,SNR=3.9						
ABKAR	**Akbulak array**	**62.76 332**		*e*P	**P**	**18 28 38.2**	**-0.3**
	3.1nm,0.7s						
QSPA	**South Pole Qui**	**86.45 180**		P	P	18 31 03.7	+8.0
TXAR	**Lajitas Array**	**146.18 38**		PKPbc	**PKPab**	**18 37 55.5**	**+0.6**
	1.1nm,0.7s,baz=286,slow=0.7,SNR=13						

*IDC **05** 18:18:47.4±0.5, 37°.89N×142°.58E, h0km, mb4.0/20, mb1 4.1/26, mb1mx4.0/50, mbtmp4.0/26, ML3.6/3, MS3.2/1, Ms1 3.2/1, ms1mx2.7/39, Error ellipse: s-maj=17.0km s-min=12.7km az=97.0*
*ISCJB **05** 18:18:50.6±0.7, 37°.95N±0°.04×142°.69E±0°.05, h34km±6km, mb4.1/32, Error ellipse: s-maj=7.7km s-min=4.9km az=34.2*
*MOS **05** 18:18:50.7±1.1, 37°.99N×142°.66E, h33km, mb4.3/11, Error ellipse: s-maj=11.7km s-min=7.0km az=83.0*
*NEIC **05** 18:18:51.8±2.1, 37°.94N×142°.66E, h29km±14km, mb4.7/3, Error ellipse: s-maj=10.8km s-min=5.9km az=116.0*
*JMA **05** 18:18:52.1±0.2, 37°.98N×142°.58E, h40km±4km, M4.2*

ISC 05 18:18:52.2±3.4, 38°.00N±0°.06×142°.67E±0°.06, h31km±24km, n89, σ1§41/81, mb4.0/32, 7C-3D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.13 294**		P	**Pn**	**18 19 11.3**	**-0.6**
JIO				S	**Sn**	**18 19 24.2**	**-2.2**
OFUJ	**Ofunato**	**1.33 324**		P	**Pn**	**18 19 14.4**	**-0.3**
OFUJ				S	**Sn**	**18 19 30.4**	**-1.0**
JMK	**Ichinoseki**	**1.48 310**		P	**Pn**	**18 19 16.9**	**+0.2**
JMK				S	**Sn**	**18 19 34.2**	**-0.8**
JMM	**Marumori**	**1.49 265**		P	**Pn**	**18 19 15.8**	**-1.0**
JMM				S	**Sn**	**18 19 32.6**	**-2.6**
JFK	**Kawauchi**	**1.56 247**		P	**Pn**	**18 19 16.3**	**-1.5**
JFK				S	**Sn**	**18 19 33.8**	**-3.2**
JOU	**Okura**	**1.62 284**		P	**Pn**	**18 19 18.8**	**+0.1**
MIYJ	**Miyakonagasawa**	**1.71 337**		P	**Pn**	**18 19 19.6**	**-0.2**
MIYJ				*e*S	**Sn**	**18 19 39.9**	**-0.7**
JOM	**Ohasama**	**1.82 324**		P	**Pn**	**18 19 21.8**	**+0.4**
JFT	**Otama**	**1.91 256**		P	**Pn**	**18 19 22.6**	**0.0**
JFT				S	**Sn**	**18 19 44.6**	**-1.0**
JYK	**Kaneyama**	**2.03 297**		P	**Pn**	**18 19 24.8**	**+0.5**
JYS	**Shiratake**	**2.06 277**		P	**Pn**	**18 19 25.2**	**+0.5**
JYS				*e*S	**Sn**	**18 19 49.1**	**-0.3**
JRG	**Rokugo**	**2.12 312**		P	**Pn**	**18 19 26.7**	**+1.3**
JKZ	**Kuzumaki**	**2.24 333**		P	**Pn**	**18 19 27.7**	**+0.5**
JANG	**Nango**	**2.53 340**		P	**Pn**	**18 19 32.5**	**+1.3**
MJAR	**Matsushiro Arr**	**3.84 249**		Pn	**Pn**	**18 19 50.0**	**+0.8**
	4.9nm,0.3s,baz=65,slow=11,SNR=64						
MJAR				LR	LR	18 21 42.0	
	comp=Z,308nm,18.5s,baz=105,slow=47						
MAJO	**Matsushiro**	**3.84 249**		*d*P	**Pn**	**18 19 50.4**	**+1.2**
MAJO	**Matsushiro**	**3.84 249**		*e*Pn	**Pn**	**18 19 49.8**	**+0.6**
MAT	**Matsushiro**	**3.84 249**		P	**Pn**	**18 19 49.8**	**+0.6**
MAT				*e*S	**Sn**	**18 20 37.9**	**+4.5**
ERM	**Erimo**	**4.03 5**		*d*P	**Pn**	**18 19 51.7**	**0.0**
ERM	**Erimo**	**4.03 5**		*e*Pn	**Pn**	**18 19 51.3**	**-0.4**
JHJ2	**Mitsune**	**5.40 206**		*e*Pn	**Pn**	**18 20 08.4**	**-2.3**
	96nm,0.4s						
JHJ	**Hachijo jima 2**	**5.41 207**		Pn	**Pn**	**18 20 08.6**	**-2.2**
	80nm,0.3s,baz=327,slow=22,SNR=72						
JHJ				Sn	Sn	18 21 04.5	-7.5
	116nm,0.3s,baz=73,slow=19,SNR=9.0						
ASAJ	**Asahikawa**	**6.11 360**		Pn	**Pn**	**18 20 21.0**	**+0.7**
	3.4nm,0.3s,baz=201,slow=11,SNR=44						
ASAJ				Sn	**Sn**	**18 21 27.5**	**-1.6**
	2.3nm,0.3s,baz=162,slow=20,SNR=2.7						
ASAJ	**Asahikawa**	**6.11 360**		*e*Pn	**Pn**	**18 20 20.7**	**+0.3**
	9.8nm,0.7s						
ASAJ				Sn	**Sn**	**18 21 27.5**	**-1.6**
YUK	**Yuzh-Kuril'sk**	**6.49 21**		*i*P	**Pn**	**18 20 25.2**	**-0.3**
YUK				*i*S	**Sn**	**18 21 33.8**	**-4.7**
YUK				pmax	pmax		
	comp=Z,129nm,0.6s						
YUK				pmax	pmax		
	comp=N,109nm,0.5s						
YUK				pmax	pmax		
	comp=E,99nm,0.1s						
YUK				MLR	MLR		
	comp=Z,278nm,8.0s						
SHO	**Shikotan**	**6.66 27**		*i*P	**Pn**	**18 20 26.7**	**-1.1**
SHO				*i*S	Sn	18 21 34.9	-7.6
SHO				pmax	pmax		
	comp=Z,55nm,0.7s						
KUR	**Kuril'sk**	**8.21 27**		*i*P	**Pn**	**18 20 48.8**	**-0.2**
KUR				*i*S	Sn	18 22 14.7	-6.0
KUR				pmax	pmax		
	comp=E,20nm,0.6s						
KUR				pmax	pmax		
	comp=Z,29nm,0.6s						
KUR				pmax	pmax		
	comp=N,10.0nm,0.4s						
KUR				MLR	MLR		
	comp=Z,403nm,11.0s						
YSS	**Yuzh-Sakhalins**	**8.95 0**		*e*P	**Pn**	**18 21 00.2**	**+1.0**
YSS				*e*S	**Sn**	**18 22 36.6**	**-2.3**
YSS				pmax	pmax		
	comp=Z,30nm,0.7s						
YSS				MLR	MLR		
	comp=Z,300nm,16.0s						
YSS	**Yuzh-Sakhalins**	**8.95 0**		*e*Pn	**Pn**	**18 21 00.0**	**+0.8**
	comp=Z,18nm,0.6s						
USRK	**Ussuriysk Ar.**	**10.16 311**		Pn	**Pn**	**18 21 16.1**	**+0.3**
	comp=Z,0.2nm,0.3s,baz=120,slow=13,SNR=2.5						
JNU	**Nakatsue**	**10.76 247**		Pn	**Pn**	**18 21 22.0**	**-2.2**
	comp=Z,0.2nm,0.3s,baz=80,slow=16,SNR=3.8						
CBIJ	**Chichi jima**	**10.88 182**		Pn	Pn	18 21 21.8	-4.1
CBIJ				Sn	Sn	18 23 13.6	-13
JCJ	**Chichijima**	**10.88 182**		Pn	Pn	18 21 21.8	-4.1
	comp=Z,27nm,0.3s,baz=264,slow=23,SNR=29						
JCJ				Sn	Sn	18 23 13.6	-13
	baz=72,slow=20						
KSRS	**Korea Array**	**11.69 272**		Pn	**Pn**	**18 21 39.3**	**+2.5**
	comp=Z,0.1nm,0.3s,baz=88,slow=14,SNR=3.0						
KSAR	**Wonju Array Be**	**11.72 272**		P	**Pn**	**18 21 39.3**	**+2.0**
KSAR	**Wonju Array Be**	**11.72 272**		Pn	**Pn**	**18 21 39.3**	**+2.0**
KLR	**Kul'dur**	**13.71 328**		Pn	**Pn**	**18 22 03.7**	**-0.7**
	comp=Z,0.1nm,0.3s,baz=126,slow=11,SNR=7.1						
MA2	**Magadan**	**22.21 11**		*e*P	**P**	**18 23 48.8**	**+3.0**
YAK	**Yakutsk**	**25.36 346**		P	**P**	**18 24 16.3**	**+0.2**
	comp=Z,8.0nm,0.5s,baz=157,slow=3.1,SNR=12						
YAK	**Yakutsk**	**25.36 346**		*e*P	**P**	**18 24 16.2**	**0.0**
YAK				pmax	pmax		
	comp=E,5.0nm,1.5s						
YAK				pmax	pmax		
	comp=Z,16nm,1.1s						
YAK				pmax	pmax		
	comp=N,10.0nm,1.3s						
YAK	**Yakutsk**	**25.36 346**		*e*P	**P**	**18 24 15.9**	**-0.3**
	comp=N,12nm,0.7s						
SEY	**Seymchan**	**25.66 10**		P	**P**	**18 24 20.7**	**+1.8**
	comp=N,7.0nm,0.8s,baz=192,slow=5.7,SNR=21						
SEY	**Seymchan**	**25.66 10**		*i*P	**P**	**18 24 21.4**	**+2.5**
BOD	**Bodaibo**	**27.27 326**		*e*P	**P**	**18 24 32.7**	**-0.8**
BOD				pmax	pmax		
	comp=Z,4.0nm,0.9s						
ULN	**Ulaanbaatar**	**27.66 302**		*c*eP	P	18 24 48.6	+11
ULN				pmax	pmax		
	comp=Z,4.0nm,2.5s						
H11N2	**WAKE ISLAND Hy**	**27.82 124**		T	T	18 53 46.9	
	baz=316,slow=76,SNR=107						
H11N1	**WAKE ISLAND Hy**	**27.83 124**		T	T	18 53 45.8	
	baz=316,slow=76,SNR=90						
H11N3	**WAKE ISLAND Hy**	**27.84 124**		T	T	18 53 46.9	
	baz=316,slow=76,SNR=88						
SONM	**Songino Array**	**28.09 302**		P	**P**	**18 24 41.8**	**+0.6**
	comp=Z,0.7nm,0.6s,baz=123,slow=8.7,SNR=4.2						
ENH	**Enshi**	**28.41 264**		*e*P	**P**	**18 24 43.6**	**-0.4**
	comp=Z,9.1nm,0.6s						
H11S1	**WAKE ISLAND Hy**	**28.58 126**		T	T	18 54 44.0	
	baz=317,slow=76,SNR=55						
H11S3	**WAKE ISLAND Hy**	**28.59 126**		T	T	18 54 44.6	
	baz=317,slow=76,SNR=58						
H11S2	**WAKE ISLAND Hy**	**28.60 126**		T	T	18 54 45.2	
	baz=317,slow=76,SNR=57						
TLY	**Talaya**	**30.47 309**		*e*P	P	18 25 13.5	+11
TLY				pmax	pmax		
	comp=Z,1.0nm,0.7s						
ZAK	**Zakamensk**	**30.47 307**		*e*P	**P**	**18 25 00.7**	**-1.5**
ZAK				pmax	pmax		
	comp=Z,2.0nm,0.8s						
BILL	**Bilibino**	**32.82 16**		*i*P	P	18 25 28.0	+5.5
BILL				pmax	pmax		
	comp=Z,1.0nm,1.0s						
TIXI	**Tiksi**	**34.46 352**		*i*P	P	18 25 42.6	+6.0
ZALV	**Zalesovo Beam**	**42.01 312**		P	**P**	**18 26 40.1**	**-0.3**
	comp=Z,1.6nm,0.5s,baz=88,slow=6.7,SNR=8.0						
MKAR	**Makanchi Array**	**44.46 301**		P	**P**	**18 26 59.5**	**-0.8**
	comp=Z,0.8nm,0.7s,baz=85,slow=9.1,SNR=8.3						
MKAR	**Makanchi Array**	**44.46 301**		*c*eP	P	18 27 18.1	+18
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.5s						
KURK	**Kurchatov**	**46.13 308**		*e*P	P	18 27 25.3	+12
KURK				pmax	pmax		
	comp=Z,6.0nm,1.0s						
ILAR	**Eielson Array**	**48.14 33**		P	**P**	**18 27 30.1**	**+1.1**
	comp=Z,0.8nm,0.7s,baz=270,slow=6.8,SNR=9.7						
BVAR	**Borovoye Array**	**50.66 312**		P	**P**	**18 27 48.5**	**+0.1**
	comp=Z,0.4nm,0.4s,baz=72,slow=9.5,SNR=3.5						
BVAR				PcP	**PcP**	**18 29 05.6**	**+0.1**
	comp=Z,1.0nm,0.5s,baz=103,slow=4.7,SNR=4.5						
BRVK	**Borovoye**	**50.72 312**		*c*eP	P	18 28 00.4	+12
BRVK				pmax	pmax		
	comp=Z,8.0nm,2.5s						
INK	**Inuvik**	**53.07 28**		P	**P**	**18 28 07.2**	**+1.2**
	comp=Z,0.6nm

az=141.4
*JMA **05** 18:32:07.5, 37°.73N×139°.93E, h8km±1km, M3.4*
Broadband fault plane solution: P waves. NP1: φs22.00000°, δ48.00000°, λ73.00000°. NP2: φs227.00000°, δ44.00000°, λ108.00000°. Principal axes: T Plg77.0000°, Azm223.0000°; N Plg13.0000°, Azm34.0000°; P Plg2.0000°, Azm124.0000°;
JMA Felt III J1.
ISC 05 18:32:07.3±1.0, 37°.73N±0°.04×139°.93E±0°.03, h12km±8km, n23, σ0°66/28, mb3.4/6, 2C-5D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
JFY	**Yanaizu**	**0.37**	**210**	⇑P		**Pg**	**18 32 14.7**	**0.0**
JFY				S		**Sg**	**18 32 19.6**	**-0.1**
JFT	**Otama**	**0.38**	**123**	⇓P		**Pg**	**18 32 15.0**	**+0.1**
JNS	**Sasagawa**	**0.50**	**280**	⇓P		**Pg**	**18 32 17.0**	**0.0**
JNS				eS		**Sg**	**18 32 23.7**	**+0.4**
JYS	**Shiratake**	**0.50**	**12**	P		**Pb**	**18 32 17.9**	**-0.1**
JYS				eS		**Sb**	**18 32 24.8**	**-0.5**
JMM	**Marumori**	**0.69**	**78**	P		**Pg**	**18 32 20.9**	**+0.2**
JMM				eS		**Sg**	**18 32 30.0**	**+0.1**
JFK	**Kawauchi**	**0.83**	**116**	⇓P		**Pg**	**18 32 23.0**	**-0.3**
JOU	**Okura**	**0.86**	**42**	P		**Pb**	**18 32 24.2**	**+0.1**
JHK	**Hiroka**	**0.87**	**237**	⇑P		**Pg**	**18 32 23.7**	**-0.4**
JHK				eS		**Sg**	**18 32 34.8**	**-0.8**
JYA	**Atsumi**	**0.88**	**349**	⇓P		**Pg**	**18 32 24.2**	**-0.1**
JAW	**Awa shima**	**0.90**	**323**	⇓P		**Pb**	**18 32 24.9**	**0.0**
JIZZ	**Izumozaki**	**0.99**	**259**	P		**Pn**	**18 32 27.1**	**+0.1**
JIZZ				eS		**Sn**	**18 32 41.5**	**+0.6**
MJAR	**Matsushiro Arr**	**1.82**	**230**	Pn		**Pn**	**18 32 39.0**	**+0.6**
	16nm,0.3s,baz=66,slow=15,SNR=194							
MJAR				Sn		**Sb**	**18 33 03.4**	**+0.2**
	18nm,0.3s,baz=21,slow=27,SNR=9.4							
MAT	**Matsushiro**	**1.82**	**230**	P		**Pn**	**18 32 39.1**	**+0.7**
MAT				S		**Sb**	**18 33 03.6**	**+0.4**
KSRS	**Korea Array**	**9.54**	**272**	Pn		**Pn**	**18 34 26.4**	**+2.0**
	0.2nm,0.3s,baz=85,slow=14,SNR=3.5							
KLR	**Kul'dur**	**12.93**	**335**	Pn		P	18 35 16.5	-4.9
	0.1nm,0.3s,baz=143,slow=19,SNR=2.2							
TLY	**Talaya**	**28.98**	**310**	LR		LR	18 48 57.7	
	comp=Z,308nm,19.7s,baz=264,slow=35							
JAY	**Jayapura**	**40.05**	**179**	LR		LR	18 56 52.0	
	comp=Z,468nm,18.0s,slow=37							
ZALV	**Zalesovo Beam**	**40.57**	**312**	P		**P**	**18 39 45.1**	**-1.3**
	0.2nm,0.3s,baz=79,slow=7.5,SNR=2.4							
MKAR	**Makanchi Array**	**42.75**	**301**	P		**P**	**18 40 03.4**	**-1.0**
	0.3nm,0.7s,baz=92,slow=9.7,SNR=4.8							
ILAR	**Eielson Array**	**49.54**	**33**	P		**P**	**18 40 58.2**	**+0.7**
	0.2nm,0.5s,baz=251,slow=5.6,SNR=2.9							
WRA	**Warramunga Arr**	**57.60**	**186**	P		**P**	**18 41 56.4**	**-0.7**
	0.7nm,0.8s,baz=2.5,slow=7.2,SNR=6.5							
ASAR	**Alice Springs**	**61.33**	**186**	P		**P**	**18 42 22.9**	**+0.1**
	0.4nm,1.0s,baz=357,slow=10,SNR=4.6							
YKA	**Yellowknife Ar**	**63.80**	**30**	P		**P**	**18 42 38.5**	**-0.3**
	0.2nm,0.6s,baz=307,slow=7.0,SNR=3.7							

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*IDC **05** 18:34:19.1±0.8, 38°.01N×144°.76E, h0km, mb3.6/7, mb1 3.9/13, mb1mx3.6/44, mbtmp3.8/13, ML3.9/5, MS4.4/1, Ms1 4.4/1, ms1mx3.5/35, Error ellipse: s-maj=23.0km s-min=16.5km az=100.0*
*ISCJB **05** 18:34:25.3±1.0, 38°.16N±0°.04×144°.37E±0°.07, h59km±10km, mb3.6/7, MS4.5/1, Error ellipse: s-maj=9.5km s-min=5.8km az=22.7*
*JMA **05** 18:34:26.1±0.2, 38°.11N×144°.30E, h48km, M4.5*
ISC 05 18:34:27.3±1.6, 38°.09N±0°.06×144°.31E±0°.08, h58km±18km, n38, σ1°29/30, mb3.6/7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.29**	**296**	P		Pn	18 35 02.4	-0.2
JIO	**Ouri**	**2.36**	**280**	P		Pn	18 35 03.3	-0.2
JIO				S		**Sn**	**18 35 30.5**	**-0.8**
JMK	**Ichinoseki**	**2.57**	**290**	P		Pn	18 35 06.5	+0.1
JMK				S		**Sn**	**18 35 37.0**	**+0.5**
JTH	**Tanohata**	**2.65**	**315**	P		Pn	18 35 07.1	-0.4
JTH				eS		Sn	18 35 36.6	-1.9
JOM	**Ohasama**	**2.73**	**301**	P		Pn	18 35 08.7	+0.1
JOM				S		**Sn**	**18 35 40.2**	**-0.3**
JMM	**Marumori**	**2.79**	**266**	P		Pn	18 35 09.2	-0.2
JMM				S		**Sn**	**18 35 40.7**	**-1.2**
JFK	**Kawauchi**	**2.82**	**256**	P		Pn	18 35 08.9	-1.0
JOU	**Okura**	**2.88**	**277**	P		Pn	18 35 11.2	+0.4
JOU				S		**Sn**	**18 35 44.4**	**+0.1**
JANG	**Nango**	**3.15**	**317**	P		Pn	18 35 13.7	-0.6
JRG	**Rokugo**	**3.15**	**295**	P		**Pn**	**18 35 15.1**	**+0.7**
JRG				S		**Sn**	**18 35 51.9**	**+1.0**
JFT	**Otama**	**3.20**	**261**	P		**Pn**	**18 35 15.5**	**+0.4**
JFT				S		**Sn**	**18 35 52.0**	**0.0**
JYK	**Kaneyama**	**3.21**	**286**	P		**Pn**	**18 35 15.9**	**+0.7**
JYK				S		**Sn**	**18 35 53.1**	**+1.0**
JTM	**Tenmabayashi**	**3.68**	**318**	P		Pn	18 35 21.4	-0.2
JTM				S		Sn	18 36 01.2	-2.5
JOT	**Ohata**	**4.14**	**324**	P		**Pn**	**18 35 27.9**	**0.0**
JOT				S		Sn	18 36 12.2	-2.7
JNBK	**Urakawa-nobuka**	**4.35**	**345**	P		Pn	18 35 29.9	-0.9
JNBK				S		**Sn**	**18 36 18.3**	**-1.8**
JKB	**Kayabe**	**4.55**	**327**	P		**Pn**	**18 35 33.8**	**+0.3**
JKB				S		Sn	18 36 21.6	-3.4
JCH	**Churui**	**4.57**	**351**	P		Pn	18 35 32.1	-1.7
JCH				S		**Sn**	**18 36 22.7**	**-3.0**
JRY	**Ryogami san**	**4.80**	**246**	P		**Pn**	**18 35 36.7**	**-0.3**
JRY				S		**Sn**	**18 36 28.9**	**-2.3**
MJAR	**Matsushiro Arr**	**5.10**	**254**	Pn		**Pn**	**18 35 42.4**	**+1.2**
	12nm,0.3s,baz=92,slow=15,SNR=26							
MAT	**Matsushiro**	**5.11**	**254**	P		**Pn**	**18 35 42.4**	**+1.2**
ASAJ	**Asahikawa**	**6.16**	**348**	Pn		**Pn**	**18 35 54.7**	**-0.8**
	1.3nm,0.3s,baz=200,slow=13,SNR=24							
ASAJ				Sn		**Sn**	**18 37 05.4**	**+0.9**
	1.6nm,0.3s,baz=90,slow=20,SNR=3.6							
JHJ	**Hachijo jima 2**	**6.18**	**218**	Pn		Pn	18 35 53.9	-2.1
	36nm,0.3s,baz=329,slow=23,SNR=11							
USRK	**Ussuriysk Ar.**	**11.11**	**307**	Pn		**Pn**	**18 37 04.0**	**+0.7**
	0.2nm,0.3s,baz=106,slow=15,SNR=4.1							
JCJ	**Chichijima**	**11.11**	**190**	Pn		Pn	18 36 57.2	-6.2
	2.0nm,0.3s,baz=41,slow=20,SNR=4.0							
KSRS	**Korea Array**	**12.98**	**272**	Pn		**Pn**	**18 37 31.2**	**+2.3**
	0.1nm,0.3s,baz=84,slow=14,SNR=3.5							
H11N2	**WAKE ISLAND Hy**	**26.82**	**127**	T		T	19 08 22.4	
	baz=312,slow=74,SNR=4.6							
H11N1	**WAKE ISLAND Hy**	**26.83**	**127**	T		T	19 08 22.4	
	baz=312							
H11N3	**WAKE ISLAND Hy**	**26.84**	**127**	T		T	19 08 23.5	
	baz=312,slow=74,SNR=5.7							
H11S1	**WAKE ISLAND Hy**	**27.61**	**129**	T		T	19 09 11.8	
	baz=314,slow=76,SNR=18							
H11S3	**WAKE ISLAND Hy**	**27.61**	**129**	T		T	19 09 12.2	
	baz=314,slow=76,SNR=10							
H11S2	**WAKE ISLAND Hy**	**27.63**	**129**	T		T	19 09 12.3	
	baz=314,slow=76,SNR=10.0							
MKAR	**Makanchi Array**	**45.51**	**302**	P		**P**	**18 42 43.2**	**+2.3**
	0.7nm,0.8s,baz=81,slow=10.0,SNR=8.1							
WRA	**Warramunga Arr**	**58.48**	**191**	P		**P**	**18 44 16.7**	**-0.7**
	0.5nm,0.5s,baz=13,slow=7.6,SNR=6.3							
WRA				LR		LR	19 09 28.5	
	comp=Z,318nm,19.1s,baz=50,slow=36							
YKA	**Yellowknife Ar**	**61.73**	**31**	P		**P**	**18 44 38.6**	**-0.5**
	0.1nm,0.5s,baz=298,slow=6.3,SNR=4.2							
ASAR	**Alice Springs**	**62.20**	**191**	P		**P**	**18 44 42.4**	**-0.4**
	0.3nm,0.9s,baz=16,slow=7.1,SNR=3.9							
FINES	**FINESS Array B**	**68.93**	**333**	P		**P**	**18 45 25.2**	**-0.5**
	0.8nm,0.8s,baz=54,slow=9.3,SNR=3.7							
NVAR	**Mina Array Bea**	**72.50**	**55**	P		**P**	**18 45 47.0**	**-1.2**
	0.4nm,0.7s,baz=247,slow=6.7,SNR=3.1							
NOA	**NORSAR Array B**	**74.08**	**338**	P		**P**	**18 45 58.2**	**+1.4**
	0.7nm,0.7s,baz=37,slow=5.9,SNR=3.2							

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*NIED **05** 18:36:00, 35°.70N×142°.30E, h5km, Mw5.2 Best double couple: M0 7.73000×10^16 NP1: φs181.00000°, δ28.00000°, λ64.00000°. NP2: φs30.00000°, δ65.00000°, λ104.00000°.*
*IDC **05** 18:36:11.9±0.5, 35°.61N×142°.07E, h0km, mb4.5/29, mb1 4.6/34, mb1mx4.6/45, mbtmp4.6/34, ML3.9/3, MS4.7/28, Ms1 4.8/28, ms1mx4.6/41, Error ellipse: s-maj=13.4km s-min=11.9km az=104.0*
*JMA **05** 18:36:12.3±0.3, 35°.69N×142°.35E, h51km, M5.4*
*ISCJB **05** 18:36:14.2±0.8, 35°.68N±0°.02×142°.01E±0°.03, h21km±5km, mb4.9/174, MS5.2/56, Error ellipse: s-maj=3.9km s-min=3.1km az=43.3*
*MOS **05** 18:36:15.6±1.2, 35°.70N×141°.99E, h33km, mb5.2/63, MS5.4/13, Error ellipse: s-maj=7.4km s-min=4.2km az=114.3*
*NEIC **05** 18:36:17.0±1.8, 35°.59N×141°.99E, h30km±13km, mb5.0/94, Error ellipse: s-maj=6.3km s-min=4.4km az=131.0*
*GCMT **05** 18:36:17.0±0.2, 35°.58N×142°.25E, h16km, MW5.2/100, Moment Tensor Solution. s45,c68; s100,c180; Duration: 1!0 Moment tensor: Scale 10^17 Nm; Mrr 0.64±.03; Mθθ -0.18±.02; Mφφ -0.46±.02; Mrθ 0.36±.05; Mθφ -0.23±.01; Mφr 0.45±.05; Best double couple: M0 0.84400×10^17 NP1: φs36.00000°, δ67.00000°, λ95.00000°. NP2: φs204.00000°, δ24.00000°, λ79.00000°. Principal axes: T 0.8710, Plg68.0000°, Azm314.0000°; N -0.0560, Plg4.0000°, Azm214.0000°; P -0.8160, Plg21.0000°, Azm122.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
ISC 05 18:36:16.6±0.5, 35°.68N±0°.03×142°.10E±0°.03, h27km±2km, h26km: pP-P, n460, σ2°35/500, mb5.0/174, MS5.2/58, 31C-7D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.01**	**272**	⇑P		**Pn**	**18 36 33.4**	**-1.6**
CHOJ				eS		**Sn**	**18 36 49.7**	**+1.3**
BSO2	**Boso 2**	**1.44**	**231**	S		**Sb**	**18 37 03.7**	**+3.4**
JHO	**Hitachi**	**1.55**	**307**	⇑P		**Pn**	**18 36 40.0**	**-2.5**
BSO3	**Boso 3**	**1.57**	**237**	P		**Pn**	**18 36 41.7**	**-0.7**
BSO3				S		**Sn**	**18 37 01.6**	**-0.2**
JFK	**Kawauchi**	**1.96**	**330**	P		**Pn**	**18 36 45.3**	**-2.7**
JFK				S		**Sn**	**18 37 09.9**	**-1.8**
JAG	**Ashikaga**	**2.27**	**290**	⇑P		**Pn**	**18 36 50.6**	**-1.8**
JFT	**Otama**	**2.32**	**323**	P		**Pn**	**18 36 51.6**	**-1.5**
JFT				eS		**Sn**	**18 37 20.4**	**-0.4**
JIM2	**Oshima 3**	**2.39**	**247**	P		**Pn**	**18 36 52.6**	**-1.4**
JIM2				eS		**Sn**	**18 37 22.5**	**+0.1**
JMM	**Marumori**	**2.42**	**335**	P		**Pn**	**18 36 51.7**	**-2.7**
JOD2	**Odawara 2**	**2.50**	**261**	P		**Pn**	**18 36 54.0**	**-1.4**
JKT	**Katashina**	**2.55**	**296**	P		**Pn**	**18 36 55.0**	**-1.3**
JKT				S		**Sn**	**18 37 26.1**	**-0.4**
JFY	**Yanaizu**	**2.59**	**312**	P		**Pn**	**18 36 55.4**	**-1.4**
JRY	**Ryogami san**	**2.62**	**278**	P		**Pn**	**18 36 56.6**	**-0.6**
JHJ2	**Mitsune**	**3.18**	**217**	ePn		**Pn**	**18 37 01.4**	**-3.5**
JHJ	**Hachijo jima 2**	**3.19**	**218**	Pn		**Pn**	**18 37 03.1**	**-1.9**
	102nm,0.3s,baz=72,slow=20,SNR=16							
JHJ				Sn		**Sn**	**18 37 38.3**	**-3.9**
	81nm,0.3s,baz=62,slow=21,SNR=5.6							
MJAR	**Matsushiro Arr**	**3.27**	**286**	Pn		**Pn**	**18 37 05.6**	**-0.5**
	10nm,0.3s,baz=92,slow=10,SNR=49							
MAJO	**Matsushiro**	**3.27**	**286**	eP		**Pn**	**18 37 05.8**	**-0.3**
MAJO	**Matsushiro**	**3.27**	**286**	ePn		**Pn**	**18 37 05.8**	**-0.3**
MAT	**Matsushiro**	**3.27**	**286**	P		**Pn**	**18 37 05.7**	**-0.4**
MJB9	**Matsu-Tunnel**	**3.27**	**286**	ePn		**Pn**	**18 37 05.7**	**-0.5**
INU	**Inuyama**	**4.16**	**267**	ePn		**Pn**	**18 37 17.6**	**-0.7**
ERM	**Erimo**	**6.38**	**7**	*c*eP		**Pn**	**18 37 48.1**	**-0.7**
ERM				pmax		pmax		
	comp=Z,60nm,0.7s							
ERM	**Erimo**	**6.38**	**7**	*e*Pn		**Pn**	**18 37 44.5**	**-4.3**
ASAJ	**Asahikawa**	**8.44**	**2**	Pn		**Pn**	**18 38 13.3**	**-3.7**
	comp=Z,9.5nm,0.3s,baz=248,slow=7.5,SNR=14							
ASAJ				Sn		**Sn**	**18 39 47.2**	**-4.1**
	comp=Z,1.3nm,0.3s,baz=270,slow=20,SNR=4.6							
CBIJ	**Chichi jima**	**8.55**	**180**	ePn		Pn	18 38 14.1	-4.6
CBIJ				Sn		Sn	18 39 43.0	-11
JCJ	**Chichijima**	**8.55**	**180**	Pn		Pn	18 38 13.9	-4.7
	comp=Z,16nm,0.3s,baz=273,slow=21,SNR=23							
JCJ				Sn		Sn	18 39 43.0	-11
	comp=Z,12nm,0.3s,baz=319,slow=19,SNR=3.1							
JCJ				LR		LR	18 43 41.5	
	comp=Z,937nm,20.1s,baz=344,slow=53							
YUK	**Yuzh-Kuril'sk**	**8.83**	**18**	eP		**Pn**	**18 38 18.7**	**-3.7**
SHO	**Shikotan**	**8.95**	**23**	*i* P		Pn	18 38 28.6	+4.5
SHO				pmax		pmax		
	comp=Z,32nm,0.5s							
JNU	**Nakatsue**	**9.62**	**258**	Pn		**Pn**	**18 38 33.0**	**-0.4**
	comp=Z,0.7nm,0.3s,baz=70,slow=9.2,SNR=20							
JNU				LR		LR	18 42 18.8	
	comp=Z,5μm,21.6s,baz=83,slow=38							
JNU	**Nakatsue**	**9.62**	**258**	ePn		**Pn**	**18 38 32.7**	**-0.6**
KUR	**Kuril'sk**	**10.50**	**23**	eP		**Pn**	**18 38 44.7**	**-0.6**
KUR				pmax		pmax		
	comp=Z,15nm,1.0s							
KUR				pmax		pmax		
	comp=Z,189nm,5.8s							
KUR				pmax		pmax		
	comp=N,400nm,3.9s							
KUR				pmax		pmax		
	comp=E,485nm,3.9s							
VLA	**Vladivostok**	**10.85**	**316**	⇑ *i* P		**Pn**	**18 38 49.8**	**-0.2**
VLA				eS		**Sn**	**18 40 50.5**	**+0.1**
VLA				pmax		pmax		
	comp=Z,105nm,1.3s							
VLA				MLR		MLR		
	comp=E,362μm,14.0s							
MSHR	**Mys Shultsa**	**10.94**	**312**	*c*eP		**Pn**	**18 38 50.9**	**-0.4**
YSS	**Yuzh-Sakhalins**	**11.28**	**2**	eP		**Pn**	**18 38 52.0**	**-3.9**
YSS				pmax		pmax		
	comp=Z,30nm,0.8s							
YSS				MLR		MLR		
	comp=Z,9μm,13.0s							
YSS				MLR		MLR		
	comp=N,8μm,14.0s							
YSS				MLR		MLR		
	comp=E,4μm,12.0s							
YSS	**Yuzh-Sakhalins**	**11.28**	**2**	ePn		**Pn**	**18 38 52.3**	**-3.6**
USRK	**Ussuriysk Ar.**	**11.51**	**321**	Pn		**Pn**	**18 38 58.5**	**-0.6**
	comp=E,0.2nm,0.3s,baz=131,slow=12,SNR=24							
USRK				LR		LR	18 43 12.8	
	comp=E,5μm,18.1s,baz=131,slow=36							
KSRS	**Korea Array**	**11.54**	**283**	Pn		**Pn**	**18 39 01.1**	**+1.5**
	comp=E,0.2nm,0.3s,baz=100,slow=13,SNR=51							
KSRS				LR		LR	18 43 18.9	
	comp=E,3μm,19.4s,baz=92,slow=37							
KS01	**Wonju Array Si**	**11.57**	**283**	ePn		**Pn**	**18 39 00.1**	**+0.2**
KS15	**Wonju Array Si**	**11.57**	**283**	ePn		**Pn**	**18 39 01.1**	**+1.1**
KSAR	**Wonju Array Be**	**11.57**	**283**	P		**Pn**	**18 39 01.1**	**+1.1**
KSAR	**Wonju Array Be**	**11.57**	**283**	Pn		**Pn**	**18 39 01.1**	**+1.1**
INCN	**Inchon**	**12.57**	**283**	Pn		**Pn**	**18 39 14.0**	**+0.4**
MDJ	**Mudanjiang**	**13.08**	**317**	P		**P**	**18 39 29.7**	**-0.8**
MDJ				S		Sn	18 41 55.1	+10
MDJ	**Mudanjiang**	**13.08**	**317**	ScS		ScS	18 51 52.6	-7.0
MDJ				pmax		pmax		
	comp=Z,27nm,0.9s							
MDJ				pmax		pmax		
	comp=Z,1μm,7.0s							
MDJ				LR		LR		
	comp=N,10μm,14.4s							
MDJ				LR		LR		
	comp=E,7μm,15.4s							
MDJ				LR		LR		
	comp=Z,10μm,12.3s							
MDJ	**Mudanjiang**	**13.08**	**317**	*e*Pn		**Pn**	**18 39 21.3**	**+0.8**
	comp=Z,45nm,1.1s							
UGL	**Uglegorsk**	**13.39**	**360**	eP		**Pn**	**18 39 24.0**	**-0.7**
UGL				pmax		pmax		
	comp=Z,1μm,8.0s							
UGL				MLR		MLR		
	comp=N,11μm,16.0s							
UGL				MLR		MLR		
	comp=E,8μm,16.0s							
UGL				MLR		MLR		
	comp=Z,8μm,16.0s							
HABR	**Khabarovsk**	**13.81**	**340**	eP		Pn	18 39 25.5	-4.9
HABR				eS		**Sn**	**18 41 54.2**	**-8.6**
HABR				pmax		pmax		
	comp=Z,26nm,1.4s							
HABR				MLR		MLR		
	comp=Z,4μm,14.0s							
JOW	**Kunigami**	**14.74**	**237**	Pn		**Pn**	**18 39 43.4**	**+0.1**
	comp=Z,0.3nm,0.3s,baz=35,slow=17,SNR=9.4							
JOW	**Kunigami**	**14.74**	**237**	Pn		**Pn**	**18 39 43.5**	**+0.3**
CN2	**Changchun**	**15.15**	**307**	eP		**Pn**	**18 39 46.5**	**-2.1**
CN2				eS		**Sn**	**18 42 34.3**	**-1.2**
CN2				pmax		pmax		
	comp=Z,20nm,0.8s							
CN2				pmax		pmax		
	comp=Z,200nm,5.0s							
CN2				LR		LR		
	comp=N,8μm,13.0s							
CN2				LR		LR		
	comp=E,10μm,13.0s							
CN2				LR		LR		
	comp=Z,13μm,13.0s							
TYV	**Tymovskoe**	**15.19**	**1**	eP		**Pn**	**18 39 46.8**	**-2.3**
TYV				eS		**Sn**	**18 42 33.0**	**-3.3**
TYV				pmax		pmax		
	comp=Z,22nm,0.8s							
TYV				smax		smax		
	comp=E,4μm,10.0s							
TYV				MLR		MLR		
	comp=N,16μm,15.0s							
TYV				MLR		MLR		
	comp=Z,2μm,16.0s							
KLR	**Kul'dur**	**15.53**	**334**	Pn		**Pn**	**18 39 49.8**	**-3.8**
	comp=Z,0.2nm,0.3s,baz=136,slow=12,SNR=11							
KLR				LR		LR	18 45 46.7	
	comp=Z,6μm,18.9s,baz=142,slow=37							
SNY	**Shenyang**	**15.69**	**299**	⇑P		**Pn**	**18 39 53.6**	**-2.1**
SNY				S		**Sn**	**18 42 46.3**	**-2.4**
SNY				pmax		pmax		
	comp=Z,24nm,1.2s							
SNY				pmax		pmax		
	comp=Z,2μm,12.0s							
SNY				LR		LR		
	comp=N,4μm,12.5s							
SNY				LR		LR		
	comp=E,9μm,12.6s							
SNY				LR		LR		
	comp=Z,12μm,12.8s							
DL2	**Dalian**	**16.61**	**287**	P		**Pn**	**18 40 06.4**	**-1.0**
DL2				S		**Sn**	**18 43 13.2**	**+2.2**
DL2				pmax		pmax		
	comp=Z,88nm,1.1s							
DL2				pmax		pmax		
	comp=Z,2μm,11.0s							
DL2				LR		LR		
	comp=N,12μm,15.0s							
DL2				LR		LR		
	comp=E,10μm,12.6s							
DL2				LR		LR		
	comp=Z,13μm,12.4s							
NKL	**Nikolayevsk**	**17.50**	**357**	*e*P		**P**	**18 40 23.0**	**+3.6**
NKL				*e*S		**Sn**	**18 43 32.0**	**-0.4**
NKL				pmax		pmax		
	comp=Z,500nm,8.0s							
NKL				MLR		MLR		
	comp=N,5μm,17.0s							
NKL				MLR		MLR		
	comp=E,6μm,15.0s							
NKL				MLR		MLR		
	comp=Z,8μm,15.0s							
SSE	**Sheshan**	**18.05**	**261**	P		**Pn**	**18 40 23.5**	**-1.9**
SSE				sP		**sP**	**18 40 34.8**	**-1.5**
SSE				S		**Sn**	**18 43 45.8**	**-0.2**
SSE				sS		**sS**	**18 44 02.9**	**+0.1**
SSE				pmax		pmax		
	comp=Z,33nm,0.7s							
SSE				pmax		pmax		
	comp=Z,520nm,10.1s							
SSE				LR		LR		
	comp=N,10μm,15.5s							
SSE				LR		LR		
	comp=E,6μm,15.5s							
SSE				LR		LR		
	comp=Z,4μm,17.7s							
NJ2	**Nanjing**	**19.63**	**266**	*e*P		**P**	**18 40 40.7**	**-2.4**
NJ2				S		**S**	**18 44 23.2**	**0.0**
NJ2				pmax		pmax		
	comp=Z,12nm,0.5s							
NJ2				pmax		pmax		
	comp=Z,780nm,10.5s							
NJ2				LR		LR		
	comp=N,8μm,15.2s							
NJ2				LR		LR		
	comp=E,4μm,17.9s							
NJ2				LR		LR		
	comp=Z,4μm,15.2s							
NJ2	**Nanjing**	**19.63**	**266**	*e*P		**P**	**18 40 43.3**	**+0.2**
NJ2				pmax		pmax		
	comp=Z,20nm,0.5s							
TIA	**Tai'an**	**20.22**	**279**	⇓P		P	18 40 39.0	-10
TIA				S		Sn	18 44 40.1	+1.7
TIA				pmax		pmax		
	comp=Z,10.0nm,0.7s							
TIA				pmax		pmax		
	comp=Z,1μm,9.8s							
TIA				LR		LR		
	comp=N,9μm,14.3s							
TIA				LR		LR		
	comp=E,4μm,14.9s							
TIA				LR		LR		
	comp=Z,5μm,14.3s							
PEA0	**Petropavlovsk-**	**20.61**	**27**	*e*P		**P**	**18 40 52.8**	**-0.7**
PEA0B	**Petropavlovsk-**	**20.61**	**27**	*e*P		**P**	**18 40 54.1**	**+0.6**
	comp=Z,132nm,1.5s							
PETK	**Petropavlovsk-**	**20.61**	**27**	P		**P**	**18 40 53.9**	**+0.3**
	comp=Z,16nm,1.0s,baz=212,slow=5.3,SNR=8.4							
PETK				LR		LR	18 50 29.5	
	comp=Z,1μm,18.9s,baz=213,slow=42							
BJI	**Beijing**	**20.90**	**290**	P		**P**	**18 40 53.9**	**-2.9**
BJI				S		**S**	**18 44 44.5**	**-3.9**
BJI				pmax		pmax		
	comp=Z,21nm,1.3s							
BJI				pmax		pmax		
	comp=Z,940nm,14.2s							
BJI				LR		LR		
	comp=N,4μm,13.6s							
BJI				LR		LR		
	comp=E,4μm,15.4s							
BJT	**Baijiatuau**	**20.91**	**290**	*e*P		**P**	**18 40 54.2**	**-2.7**
BJT				pmax		pmax		
	comp=Z,17nm,0.4s							
BJT	**Baijiatuau**	**20.91**	**290**	*e*P		**P**	**18 40 54.2**	**-2.7**
	comp=Z,17nm,0.4s							
PET	**Petropavlovsk**	**20.91**	**29**	*e*P		Pn	18 40 59.4	+0.1
PET				*i* S		**S**	**18 44 46.8**	**-1.5**
PET				pmax		pmax		
	comp=Z,300nm,6.9s							
PET				pmax		pmax		
	comp=Z,61nm,1.3s							
PET				MLR		MLR		
	comp=Z,3μm,17.0s							
PET	**Petropavlovsk**	**20.91**	**29**	*e*P		Pn	18 40 59.6	+0.3
	comp=Z,93nm,1.3s							
HIA	**Hailar**	**21.26**	**317**	*e*P		**P**	**18

HHC S **S** **18 45 56.1 +4.2**
HHC SS **SnSn** **18 46 46.5 +10**
HHC pmax pmax
comp=Z,31nm,0.8s
HHC pmax pmax
comp=Z,430nm,4.1s
HHC LR LR
comp=N,3μm,12.6s
HHC LR LR
comp=E,5μm,13.3s
HHC LR LR
comp=Z,5μm,13.5s
MA2 **Magadan** **24.57 11** *e*P **P** **18 41 33.2 -0.8**
MA2 pmax pmax
comp=Z,615nm,1.5s
MA2 **Magadan** **24.57 11** *e*P **P** **18 41 33.2 -0.8**
comp=Z,615nm,1.5s
BTO **Baotou** **25.62 291** *e*P **P** **18 41 42.0 -1.9**
CIT **Chita** **26.05 318** *e*P **P** **18 41 47.2 -0.4**
CIT *e* 18 41 58.7
CIT pmax pmax
comp=Z,142nm,1.3s
H11N2 **WAKE ISLAND Hy 26.99 119** T T 19 10 07.7
baz=311,slow=75,SNR=31
H11N1 **WAKE ISLAND Hy 26.99 120** T T 19 10 06.0
baz=311,slow=75,SNR=27
H11N3 **WAKE ISLAND Hy 27.00 119** T T 19 10 06.6
baz=311,slow=75,SNR=25
XAN **Xi'an** **27.21 276** P **P** **18 41 56.4 -1.8**
XAN PP S 18 46 19.4 -16
XAN S **S** **18 46 29.9 -5.6**
XAN SS **SnSn** **18 47 39.4 -4.7**
XAN pmax pmax
comp=Z,4.0nm,0.7s
XAN pmax pmax
comp=Z,580nm,6.6s
XAN LR LR
comp=N,4μm,13.3s
XAN LR LR
comp=E,5μm,14.5s
XAN LR LR
comp=Z,6μm,14.9s
YAK **Yakutsk** **27.51 347** P **P** **18 41 59.7 -0.9**
comp=Z,58nm,0.9s,baz=68,slow=5.3,SNR=46
YAK LR LR 18 53 08.4
comp=Z,3μm,18.4s,baz=157,slow=37
YAK **Yakutsk** **27.51 347** *ce*P **P** **18 41 59.6 -0.9**
YAK *e**PP **pP** **18 42 06.8 -1.6**
YAK *e* 18 42 44.0
YAK *e*S **S** **18 46 36.9 -2.7**
YAK *e**SS **sS** **18 46 57.2 +4.6**
YAK *e*SS **SnSn** **18 47 49.3 -1.6**
YAK pmax pmax
comp=E,10.0nm,1.4s
YAK pmax pmax
comp=Z,64nm,1.0s
YAK pmax pmax
comp=N,27nm,1.1s
YAK pmax pmax
comp=E,20nm,0.8s
YAK pmax pmax
comp=N,141nm,1.6s
YAK pmax pmax
comp=Z,94nm,1.4s
YAK smax smax
comp=E,294nm,4.3s
YAK smax smax
comp=N,825nm,4.1s
YAK MLR MLR
comp=N,5μm,15.0s
YAK MLR MLR
comp=Z,6μm,16.0s
YAK MLR MLR
comp=E,2μm,16.0s
YAK **Yakutsk** **27.51 347** *e*P **P** **18 41 58.9 -1.6**
comp=E,52nm,0.8s
H11S1 **WAKE ISLAND Hy 27.66 122** T T 19 10 57.1
baz=313,slow=76,SNR=50
H11S3 **WAKE ISLAND Hy 27.66 122** T T 19 10 54.9
baz=313,slow=76,SNR=42
H11S2 **WAKE ISLAND Hy 27.68 122** T T 19 10 56.0
baz=313,slow=76,SNR=40
ENH **Enshi** **27.81 268** *e*P **P** **18 42 01.4 -2.2**
comp=E,63nm,0.9s
GZH **Guangzhou** **27.92 251** P **P** **18 41 59.3 -5.2**
GZH S **S** **18 46 39.5 -7.2**
GZH pmax pmax
comp=Z,750nm,12.3s
SEY **Seymchan** **28.02 10** P **P** **18 42 05.3 +0.2**
comp=Z,3.9nm,0.7s,baz=208,slow=8.6,SNR=12
SEY **Seymchan** **28.02 10** *ce*P **P** **18 42 05.9 +0.8**
ULN **Ulaanbaatar** **28.59 306** *ce*P **P** **18 42 10.5 0.0**
ULN pmax pmax
comp=Z,23nm,1.0s
ULN **Ulaanbaatar** **28.59 306** *e*P **P** **18 42 10.3 -0.3**
comp=Z,41nm,1.2s
BOD **Bodaibo** **28.97 329** *e*P **P** **18 42 12.4 -1.2**
BOD pmax pmax
comp=Z,51nm,1.5s
SONA1 **Songino Array** **29.01 306** *e*P **P** **18 42 13.6 -0.7**
SONM **Songino Array** **29.02 306** P **P** **18 42 14.2 -0.1**
comp=Z,9.0nm,0.6s,baz=104,slow=8.5,SNR=26
SONM PcP **PcP** **18 45 21.6 -0.7**
comp=Z,1.0nm,0.7s,baz=120,slow=4.1,SNR=2.2
SONM LR LR 18 53 35.4
comp=Z,1μm,20.2s,baz=94,slow=36
LZH **Lanzhou** **30.87 282** ⇑P **P** **18 42 30.1 -0.8**
LZH pP pP 18 42 33.6 -5.1
LZH sP sP 18 42 35.4 -6.6
LZH PP **PnPn** **18 43 31.2 -0.4**
LZH S **S** **18 47 32.0 -1.3**
LZH sS sS 18 47 38.1 -8.2
LZH SS **SnSn** **18 49 14.3 +0.8**
LZH pmax pmax
comp=Z,65nm,1.2s
LZH pmax pmax
comp=Z,380nm,5.4s
LZH LR LR
comp=N,4μm,12.6s
LZH LR LR
comp=E,5μm,13.5s
LZH LR LR
comp=Z,5μm,14.5s
IRK **Irkutsk** **31.43 314** *e*P **P** **18 42 34.5 -0.9**
IRK pmax pmax
comp=Z,80nm,1.6s
ZAK **Zakamensk** **31.56 310** *e*P **P** **18 42 35.4 -1.3**
ZAK pmax pmax
comp=Z,31nm,1.3s
GYA **Guiyang** **31.58 263** P **P** **18 42 37.8 +0.7**
GYA PP **PnPn** **18 43 41.0 +0.1**
GYA PcP **PcP** **18 45 30.8 +1.5**
GYA S **S** **18 47 45.4 +1.0**
GYA ScP **ScP** **18 49 14.0 +3.4**
GYA SS **SnSn** **18 49 33.2 +2.4**
GYA **Guiyang** **31.58 263** ScS ScS 18 53 10.3 +1.5
GYA pmax pmax
comp=Z,30nm,0.8s
GYA pmax pmax
comp=Z,130nm,5.6s
GYA LR LR
comp=N,750nm,17.8s
GYA LR LR
comp=E,650nm,18.0s
GYA LR LR
comp=Z,670nm,18.4s
TLY **Talaya** **31.65 312** P **P** **18 42 37.7 +0.3**
comp=Z,7.3nm,0.8s,baz=120,slow=5.0,SNR=17
TLY **Talaya** **31.65 312** *c i*P **P** **18 42 37.2 -0.2**
TLY *e*PPP PPP 18 43 44.2
TLY *e*S **S** **18 47 41.3 -3.6**
TLY pmax pmax
comp=Z,67nm,1.1s
TLY MLR MLR
comp=Z,4μm,14.0s
TLY **Talaya** **31.65 312** *e*P **P** **18 42 37.1 -0.3**
comp=Z,68nm,1.2s
DAV **Davao City (W)** **32.26 212** LR LR 18 53 37.1
comp=Z,1μm,21.0s,baz=54,slow=32
QIZ **Qiongzhong** **32.91 248** P **P** **18 42 48.2 -0.5**
QIZ LR LR
comp=Z,12nm,1.7s
QIZ **Qiongzhong** **32.91 248** PP PP 18 44 06.0 +2.7
QIZ S **S** **18 48 03.3 -1.8**
QIZ LR LR
comp=N,560nm,14.6s
QIZ LR LR
comp=E,2μm,11.9s
MOY **Mondy** **33.25 312** *e*P **P** **18 42 50.7 -0.8**
MOY pmax pmax
comp=Z,78nm,3.9s
GTA **Gaotai** **33.52 289** ⇑P **P** **18 42 53.6 -0.4**
GTA pP pP 18 42 58.7 -3.2
GTA sP sP 18 43 01.9 -3.3
GTA PP **PP** **18 44 08.0 -1.9**
GTA PcP **PcP** **18 45 35.7 +1.3**
GTA S **S** **18 48 17.4 +3.0**
GTA sS sS 18 48 24.4 -3.0
GTA SS **SnSn** **18 50 25.1 +7.5**
GTA pmax pmax
comp=Z,23nm,1.1s
GTA pmax pmax
comp=Z,600nm,5.2s
GTA LR LR
comp=N,4μm,14.5s
GTA LR LR
comp=E,3μm,13.1s
GTA LR LR
comp=Z,3μm,14.7s
BILL **Bilibino** **35.18 16** *e*P **P** **18 43 06.9 -0.9**
BILL pmax pmax
comp=Z,27nm,1.2s
BILL **Bilibino** **35.18 16** *e*P **P** **18 43 06.9 -0.9**
comp=Z,27nm,1.2s
KMI **Kunming** **35.34 264** P **P** **18 43 10.5 +0.5**
KMI pP pP 18 43 11.1 -6.8
KMI sP sP 18 43 11.8 -9.4
KMI PP **PP** **18 44 29.4 -1.0**
KMI S **S** **18 48 42.2 -0.7**
KMI sS sS 18 48 45.1 -11
KMI SS **SnSn** **18 51 00.5 -1.7**
KMI pmax pmax
comp=Z,12nm,1.1s
KMI pmax pmax
comp=Z,340nm,6.9s
KMI LR LR
comp=N,4μm,17.0s
KMI LR LR
comp=E,4μm,16.1s
KMI LR LR
comp=Z,3μm,16.6s
TIXI **Tiksi** **36.70 353** P **P** **18 43 20.1 -0.7**
comp=Z,7.9nm,0.7s,baz=140,slow=5.8,SNR=25
TIXI **Tiksi** **36.70 353** *ce*P **P** **18 43 20.2 -0.7**
TIXI pmax pmax
comp=Z,11nm,0.7s
TIXI **Tiksi** **36.70 353** *e*P **P** **18 43 20.0 -0.8**
comp=Z,14nm,0.8s
MYLDM **Lahad Datu** **37.33 221** *e*P **P** **18 43 28.9 +2.1**
comp=Z,29nm,1.1s
SWI **Sorong** **37.73 198** P **P** **18 43 29.2 -1.0**
PANO **Nakornpanom** **38.02 251** P P 18 43 38.2 +5.6
comp=Z,92nm,1.8s,comp=Z,3μm
LBMI **Labuha** **38.61 204** P **P** **18 43 37.6 0.0**
KRAR **Krasnoyarsk** **38.83 317** *e*P **P** **18 43 38.2 -0.8**
KRAR pmax pmax
comp=Z,13nm,0.9s
CRAI **Chiangrai** **39.63 259** P **P** **18 43 46.8 +0.6**
comp=Z,328nm,1.1s,comp=Z,103μm
KHON **Khomkaen** **39.88 251** P P 18 43 54.2 +6.0
comp=Z,9.3nm,0.9s,comp=Z,472nm
SANI **Sanana** **40.44 205** P **P** **18 43 52.3 -0.5**
CHAI **Chaiyaphum** **40.78 252** P **P** **18 43 54.6 -1.1**
comp=Z,10nm,0.9s,comp=Z,91nm
UTTA **Uttaradit** **40.84 255** P **P** **18 43 55.4 -0.7**
comp=Z,6.0nm,1.0s,comp=Z,51nm
CMAI **Chiengmai2** **40.85 259** P **P** **18 44 01.1 +4.7**
comp=Z,280nm,1.1s
LAMP **Lampang** **41.14 257** P **P** **18 44 01.5 +2.9**
comp=Z,6.2nm,1.1s
PBKT **Sadao Pong** **41.18 253** P **P** **18 43 58.1 -0.9**
comp=Z,25nm,1.4s
NLAI **Namlea** **41.19 203** P P 18 44 11.2 +12
CMMT **Chiang Mai** **41.52 258** P **P** **18 44 01.5 -0.3**
comp=Z,15nm,2.0s,comp=Z,463nm
CHTO **Chiang Mai** **41.52 258** P **P** **18 44 01.6 -0.2**
comp=Z,68nm,2.0s,comp=Z,2μm
CHTO **Chiang Mai** **41.52 258** *e*P **P** **18 44 01.0 -0.8**
CHTO pmax pmax
comp=Z,12nm,1.0s
CHTO **Chiang Mai** **41.52 258** *e*P **P** **18 44 01.0 -0.8**
comp=Z,12nm,1.0s
SUKH **Sukhothai** **41.71 256** P **P** **18 44 03.5 +0.2**
comp=Z,4.6nm,1.1s,comp=Z,46nm
CM31 **Chiang Mai Arr** **41.72 257** *e*P **P** **18 44 04.2 +0.8**
CM01 **Chiang Mai Arr** **41.73 257** *e*P **P** **18 44 02.1 -1.3**
TNA **Tin City** **41.77 29** *e*P **P** **18 44 04.3 +1.1**
comp=Z,8.6nm,1.0s
SRAK **Srakaew** **41.88 249** P **P** **18 44 00.5 -4.2**
comp=Z,110nm,1.0s,comp=Z,764nm
NAYO **Nakonayok** **42.25 250** P **P** **18 44 07.1 -0.6**
comp=Z,25nm,1.1s,comp=Z,4μm
CHBT **CHBT** **42.45 248** P **P** **18 44 08.9 -0.5**
comp=Z,63nm,0.9s
MHMT **Maesarieng** **42.68 258** P **P** **18 44 12.8 +1.6**
comp=Z,12nm,1.6s,comp=Z,200nm
LSA **Lhasa** **42.91 277** *e*P **P** **18 44 13.4 -0.1**
LSA pmax pmax
comp=Z,18nm,1.0s
LSA **Lhasa** **42.91 277** *e*P **P** **18 44 13.4 -0.1**
comp=Z,18nm,1.0s
ZALV **Zalesovo Beam** **43.24 313** P **P** **18 44 15.0 -0.3**
comp=Z,12nm,0.7s,baz=87,slow=5.9,SNR=30
ZALV PcP **PcP** **18 46 03.4 -0.7**
comp=Z,3.8nm,0.7s,baz=78,slow=3.6,SNR=3.0
ZALV LR LR 19 03 11.7
comp=Z,1μm,19.2s,baz=77,slow=37
PATY **Pattaya** **43.45 249** P P 18 44 27.5 +10
TTSI **Tana Toraja** **43.81 213** P **P** **18 44 21.7 +1.4**
SRDT **SRDT** **43.92 252** P **P** **18 44 21.3 0.0**
comp=Z,75nm,1.4s,comp=Z,2μm
SHL **Shillong** **43.97 271** *e*P P 18 44 17.0 -4.8
KHLT **Khaolaem Dam** **44.07 253** P P 18 44 29.5 +7.0
comp=Z,12nm,1.0s
NVS **Novosibirsk** **44.18 315** ⇓ *i*P **P** **18 44 22.9 0.0**
NVS *e*S **S** **18 50 59.4 +5.1**
NVS pmax pmax
comp=Z,40nm,1.2s
NVS pmax pmax
comp=N,5.0nm,0.8s
NVS pmax pmax
comp=E,27nm,1.1s
NVS smax smax
comp=E,14nm,1.8s
PHET **Kaeng Krachan** **44.40 250** P **P** **18 44 25.4 +0.3**
comp=E,16nm,1.0s,comp=E,126nm
NRIK **Noril'sk** **44.73 336** P **P** **18 44 26.6 -0.5**
comp=E,9.3nm,1.0s,baz=118,slow=9.0,SNR=11
NRIK LR LR 19 05 27.2
comp=E,4μm,18.2s,baz=102,slow=39
KSM **Kuching** **45.04 228** *e*P **P** **18 44 31.9 +1.7**
comp=E,104nm,1.9s
MK01 **Makanchi Array** **45.32 303** *e*P **P** **18 44 31.0 -1.1**
MK31 **Makanchi Array** **45.32 303** *i* P **P** **18 44 31.1 -1.0**
MK31 pmax pmax
comp=Z,26nm,0.9s
MK31 **Makanchi Array** **45.32 303** *e*P **P** **18 44 31.6 -0.6**
MKAR **Makanchi Array** **45.32 303** P **P** **18 44 31.7 -0.5**
comp=Z,20nm,0.9s,baz=88,slow=9.6,SNR=38
MKAR **Makanchi Array** **45.32 303** *ce*P **P** **18 44 31.5 -0.6**
MKAR pmax pmax
comp=Z,19nm,0.9s
MKAR **Makanchi Array** **45.32 303** *e*P **P** **18 44 31.6 -0.6**
STKI **Sintang** **45.47 226** P **P** **18 44 33.7 +0.1**
MAKZ **Makanchi** **45.53 303** *e*P **P** **18 44 33.2 -0.6**
MAKZ pmax pmax
comp=Z,32nm,0.9s
MAKZ **Makanchi** **45.53 303** *e*P **P** **18 44 33.2 -0.6**
comp=Z,32nm,0.9s
KAPI **Kappang** **45.59 212** *e*P **P** **18 44 34.7 +0.1**
comp=Z,111nm,1.3s
TT01 **Tatalina** **46.22 34** *e*P **P** **18 44 42.8 +3.9**
TTA **Tatalina** **46.22 34** *e*P **P** **18 44 43.3 +4.2**
TTA pmax pmax
comp=Z,13nm,1.3s
TTA **Tatalina** **46.22 34** *e*P **P** **18 44 43.3 +4.2**
comp=Z,13nm,1.3s
BBKI **Banjar Baru** **46.56 219** P **P** **18 44 45.0 +2.8**
KURK **Kurchatov** **47.21 309** P **P** **18 44 45.7 -1.2**
KURK pmax pmax
comp=Z,215nm,1.1s
SURT **Suratani** **47.54 247** P **P** **18 44 51.4 +1.6**
comp=Z,17nm,1.2s
TRTT **Trang** **47.61 245** P **P** **18 44 51.8 +1.4**
comp=Z,27nm,1.8s
RSO **Redoubt South** **47.63 37** *e*P **P** **18 44 48.8 -1.4**
KDAK **Kodiak Island** **47.74 41** *ce*P **P** **18 44 50.5 -0.4**
KDAK **Kodiak Island** **47.74 41** *e*P **P** **18 44 50.0 -0.9**
comp=Z,165nm,1.8s
GUN **Gumba** **47.86 277** *e*P **P** **18 44 51.5 -1.2**
comp=Z,107nm,1.0s
PPLA **Purkeypile** **47.97 34** *e*P **P** **18 44 53.7 +0.9**
comp=Z,68nm,1.5s
SPU **Mount Spurr** **47.98 37** *e*P **P** **18 44 53.8 +0.9**
CAST **Castle Rocks** **48.04 33** *e*P **P** **18 44 54.7 +1.5**
comp=Z,53nm,1.8s
SOEI **Soe** **48.22 204** P **P** **18 44 59.8 +4.6**
SOEI **Soe** **48.22 204** P **P** **18 44 56.2 +1.0**
comp=Z,94nm,1.0s
PKIN **Phulchoki** **48.39 277** *e*P **P** **18 44 55.8 -0.9**
comp=Z,70nm,1.4s
KKN **Kakani** **48.40 277** *e*P **P** **18 44 56.2 -0.5**
comp=Z,62nm,1.0s
BPAW **Bear Paw Mtn.** **48.56 33** *e*P **P** **18 45 00.0 +2.8**
comp=Z,20nm,1.5s
KULM **Kulim** **48.64 241** *e*P **P** **18 44 57.3 -1.1**
comp=Z,30nm,1.1s
MLY **Manley** **48.71 31** *e*P **P** **18 44 59.4 +1.1**
comp=Z,24nm,1.3s
GKN **Gorkha** **48.83 278** *e*P **P** **18 44 59.4 -0.5**
comp=Z,178nm,1.3s
MYKOM **Kota Tinggi** **48.92 235** *e*P **P** **18 44 59.6 -0.9**
comp=Z,24nm,1.2s
IPM **Ipoh** **48.93 240** *e*P **P** **18 44 59.2 -1.4**
comp=Z,40nm,0.9s
COLD **Coldfoot** **49.07 28** *e*P **P** **18 45 05.0 +4.0**
comp=Z,6.9nm,1.0s
RC01 **Rabbit Creek A** **49.11 37** *e*P **P** **18 45 04.3 +2.9**
comp=Z,24nm,1.1s
TPRI **Tanjung Pinang** **49.12 234** P **P** **18 45 02.0 -0.1**
MTN **Manton Dam** **49.36 194** *e*P **P** **18 45 03.0 -0.8**
comp=Z,148nm,1.4s
PMR **Palmer** **49.39 36** *e*P **P** **18 45 03.7 +0.2**
PMR pmax pmax
comp=Z,45nm,1.3s
PMR **Palmer** **49.39 36** *e*P **P** **18 45 03.7 +0.2**
comp=Z,45nm,1.3s
MCK **McKinley** **49.45 33** *e*P **P** **18 45 07.8 +3.7**
MCK pmax pmax
comp=Z,13nm,1.1s
MCK **McKinley** **49.45 33** *e*P **P** **18 45 07.8 +3.7**
comp=Z,13nm,1.1s
RND **Reindeer** **49.49 34** *e*P **P** **18 45 07.2 +2.8**
RND pmax pmax
comp=Z,20nm,1.1s
RND **Reindeer** **49.49 34** *e*P **P** **18 45 07.2 +2.8**
comp=Z,20nm,1.1s
KOLN **Koldanda** **49.76 278** *e*P **P** **18 45 06.5 -0.6**
comp=Z,70nm,1.4s
MDM **Murphy Dome** **49.77 32** *e*P **P** **18 45 07.3 +0.9**
comp=Z,35nm,1.2s
WRH **Wood River Hil** **49.83 32** *e*P **P** **18 45 07.4 +0.5**
comp=Z,9.9nm,1.2s
PLAI **Plampang** **49.86 212** P **P** **18 45 07.4 -0.2**
COLA **College** **49.93 32** *e*P **P** **18 45 08.6 +1.0**
COLA pmax pmax
comp=Z,17nm,1.1s
COLA **College** **49.93 32** *e*P **P** **18 45 08.6 +1.0**
comp=Z,17nm,1.1s
CCB **Clear Creek Bu** **49.95 32** *e*P **P** **18 45 09.1 +1.3**
comp=Z,24nm,1.8s
PYUN **Piuthan** **50.11 279** *e*P **P** **18 45 09.3 -0.5**
comp=Z,185nm,1.1s
TWSI **Taliwang, Sumb** **50.17 213** P **P** **18 45 09.2 -0.8**
IL1 **Eielson Array** **50.35 32** *e*P **P** **18 45 09.9 -0.9**
ILAR **Eielson Array** **50.35 32** P **P** **18 45 10.5 -0.3**
comp=Z,6.2nm,0.7s,baz=266,slow=6.3,SNR=48
ILAR LR LR 19 07 40.4
comp=Z,428nm,20.4s,baz=283,slow=38
ILB **Eielson Array** **50.35 32** *e*P **P** **18 45 10.5 -0.3**
SRBI **Singaraja** **50.37 216** P P 18 45 05.3 -6.1
PPBI **Pangkal Pinang** **50.45 230** P **P** **18 45 11.5 -0.7**
ABJI **Asem Bagus** **50.59 217** P P 18 45 24.7 +12
TKM2 **Tokmak 2** **50.77 300** *e*P **P** **18 45 15.3 +0.7**
TKM2 pmax pmax
comp=Z,93nm,1.3s
TKM2 **Tokmak 2** **50.77 300** *e*P **P** **18 45 15.3 +0.7**
comp=Z,93nm,1.3s
KLU **Klutina** **50.93 36** *e*P **P** **18 45 16.3 +1.0**
comp=Z,17nm,0.9s
FYU **Fort Yukon** **51.01 29** *e*P **P** **18 45 17.2 +1.5**
comp=Z,56nm,1.4s
DIV **Divide** **51.03 36** *e*P **P** **18 45 17.7 +1.7**
comp=Z,28nm,0.9s
PAX **Paxson** **51.04 34** *e*P P 18 45 20.8 +4.7
PAX pmax pmax
comp=Z,10.0nm,1.1s
PAX **Paxson** **51.04 34** *e*P P 18 45 20.8 +4.7
comp=Z,10nm,1.1s
EYAK **Cordova Ski Ar** **51.09 37** *e*P **P** **18 45 17.9 +1.5**
comp=Z,19nm,0.8s
KSH **Kashi** **51.48 295** *e*P P 18 45 27.7 +7.9
KSH *e*ScP **ScP** **18 50 36.3 +7.6**
KSH PcS **PcS** **18 50 36.5 +4.6**
KSH S S 18 52 51.4 +13
KSH ScS **ScS** **18 55 14.7 +6.2**
KSH pmax pmax
comp=Z,320nm,5.1s
KSH LR LR
comp=N,2μm,11.4s
KSH LR LR
comp=E,3μm,15.3s
KSH LR LR
comp=Z,3μm,14.0s
FRU **Bishkek** **51.49 300** *e*P **P** **18 45 18.0 -1.8**
FRU pmax pmax
comp=Z,100nm,2.0s
PSI **Prapat** **51.60 241** *e*P **P** **18 45 19.6 -1.3**
PSI pmax pmax
comp=Z,32nm,1.0s
PSI **Prapat** **51.60 241** *e*P **P** **18 45 19.6 -1.3**
comp=Z,32nm,1.0s
BMRM **Bremner River** **51.61 37** *e*P **P** **18 45 21.6 +1.2**
comp=Z,26nm,1.0s
AAK **Ala-Archa** **51.63 300** *e*P **P** **18 45 19.7 -1.3**
AAK pmax pmax
comp=Z,24nm,1.1s
AAK **Ala-Archa** **51.63 300** *e*P **P** **18 45 21.6 +0.6**
OTUK **Ortayu** **51.68 307** P **P** **18 45 19.6 -1.5**
OTUK pmax pmax
comp=Z,38nm,1.3s
MENT **Mentasta** **51.84 34** *e*P **P** **18 45 25.2 +3.1**
comp=Z,15nm,1.0s
BKNI **Bangkinang** **51.89 237** P **P** **18 45 24.5 +1.5**
comp=Z,234nm,1.0s,comp=Z,2μm
BKNI **Bangkinang** **51.89 237** *e*P **P** **18 45 22.4 -0.6**
comp=Z,257nm,1.0s
PMBI **Palembang** **51.90 230** P P 18 45 35.2 +12
BVA0 **Borovoye Array** **51.90 313** *i* P **P** **18 45 21.7 -0.9**
BVA0 pmax pmax
comp=Z,29nm,1.5s
BRVK **Borovoye** **51.96 313** *ce*P **P** **18 45 22.8 -0.2**
BRVK pmax pmax
comp=Z,13nm,1.2s
BRVK **Borovoye** **51.96 313** *e*P **P** **18 45 22.5 -0.6**
comp=Z,32nm,1.3s
PWJI **Pagerwojo** **52.00 219** P **P** **18 45 21.3 -2.4**
EKS2 **Erkin-Say** **52.13 300** *e*P **P** **18 45 24.8 +0.1**
EKS2 pmax pmax
comp=Z,14nm,1.0s
EKS2 **Erkin-Say** **52.13 300** *e*P **P** **18 45 24.8 +0.1**
comp=Z,14nm,1.0s
MNSI **Mandailing Nat** **52.56 238** P **P** **18 45 30.3 +2.4**
comp=Z,28nm,1.4s,comp=Z,1μm
UGM **Wanagama** **52.58 221** P **P** **18 45 30.4 +2.3**
EGAK **Eagle** **52.80 32** *e*P **P** **18 45 29.0 -0.1**
comp=Z,30nm,1.7s
MNAS **Manas** **53.08 300** P **P** **18 45 30.7 -1.0**
MNAS pmax pmax
comp=Z,25nm,0.9s
LEM **Lembang** **53.28 225** P P 18 45 38.6 +5.1
KLI **Kotabumi** **53.35 229** P P 18 45 39.3 +5.5
LHSI **Lahat** **53.38 231** P **P** **18 45 35.9 +2.0**
CBJI **Citeko** **53.40 226** P P 18 45 45.8 +12
BLSI **Bandar Lampung** **53.51 228** P P 18 45 44.8 +10
GSI **Gunungsitoli** **53.60 241** P **P** **18 45 36.1 +0.5**
GSI **Gunungsitoli** **53.60 241** *e*P **P** **18 45 35.0 -0.6**
comp=Z,202nm,1.0s

DAWY Dawson 53.64 32 *e*P P 18 45 40.6 +5.2
comp=Z,21nm,1.4s
LWLI Liwa 53.96 229 P P 18 45 45.2 +6.8
KK31 Karatay Array 54.29 301 *i* P **P 18 45 39.7 -0.7**
KK31 pmax pmax
comp=Z,16nm,0.9s
KKAR Karatay Array 54.29 301 *e*P **P 18 45 40.3 -0.2**
KKAR Karatay Array 54.29 301 *e*P **P 18 45 40.3 -0.2**
INK Inuvik 55.34 27 P **P 18 45 47.8 +0.2**
comp=Z,6.1nm,0.8s,baz=294,slow=6.5,SNR=22
INK Inuvik 55.34 27 *e*P **P 18 45 47.8 +0.2**
INK pmax pmax
comp=Z,24nm,1.4s
INK Inuvik 55.34 27 *e*P **P 18 45 47.8 +0.2**
comp=Z,24nm,1.4s
FITZ Fitzroy Crossi 55.72 199 *e*P **P 18 45 50.9 +0.2**
comp=Z,58nm,1.4s
WRAB Tennant Creek 55.79 189 *ce*P **P 18 45 50.4 -0.9**
WRAB pmax pmax
comp=Z,55nm,1.2s
WRAB Tennant Creek 55.79 189 *e*P **P 18 45 49.8 -1.6**
comp=Z,72nm,1.1s
WB2 Warramunga Arr 55.80 189 *e*P **P 18 45 50.5 -0.9**
comp=Z,77nm,1.1s
WRA Warramunga Arr 55.80 189 P **P 18 45 50.0 -1.4**
comp=Z,14nm,0.8s,baz=7.4,slow=7.5,SNR=84
WRA Warramunga Arr 55.80 189 P **P 18 45 50.0 -1.4**
SVE Sverdlovsk 56.53 319 *e*P **P 18 45 55.9 -0.4**
ARU Arti 57.75 319 *e*P **P 18 46 04.1 -0.8**
ARU pmax pmax
comp=Z,20nm,0.9s
ARU Arti 57.75 319 *e*P **P 18 46 04.1 -0.8**
comp=Z,20nm,0.9s
HYB Hyderabad 58.74 270 ⇑ *i*P **P 18 46 12.0 -0.4**
AB31 Akbulak array 59.24 311 P **P 18 46 13.3 -2.1**
AB31 pmax pmax
comp=Z,7.0nm,0.8s
ABKAR Akbulak array 59.24 311 *e*P **P 18 46 14.2 -1.2**
DLBC Dease Lake 59.35 38 P **P 18 46 17.0 +0.9**
comp=Z,4.1nm,0.8s,baz=308,slow=8.1,SNR=7.6
AS01 Alice Springs 59.52 189 *e*P **P 18 46 16.0 -1.5**
AS31 Alice Springs 59.53 189 *e*P **P 18 46 16.8 -0.8**
comp=Z,6.6nm,0.8s
ASAR Alice Springs 59.53 189 P **P 18 46 16.9 -0.7**
comp=Z,4.0nm,0.8s,baz=17,slow=12,SNR=38
AKTO Aktyubinsk 60.00 313 P **P 18 46 18.3 -2.3**
AKTO pmax pmax
comp=Z,8.0nm,1.0s
POO Poona 61.99 273 ⇑ *i*P **P 18 46 32.0 -2.7**
comp=Z,4.0nm,2.0s
KBS Kingsbay 62.09 350 *e*P **P 18 46 35.4 +1.1**
KBS pmax pmax
comp=Z,18nm,0.9s
KBS Kingsbay 62.09 350 *e*P **P 18 46 35.4 +1.1**
comp=Z,18nm,0.9s
RES Resolute Bay 63.77 14 *e*P **P 18 46 45.1 -0.5**
RES pmax pmax
comp=Z,10.0nm,0.8s
RES Resolute Bay 63.77 14 *e*P **P 18 46 45.1 -0.5**
comp=Z,10nm,0.8s
TMCR Tamitsa 64.20 332 *e*P **P 18 46 48.9 +0.4**
TMCR pmax pmax
comp=Z,17nm,0.5s
YKA Yellowknife Ar 64.70 30 P **P 18 46 51.3 -0.5**
comp=Z,1.4nm,0.8s,baz=300,slow=6.3,SNR=15
YKB5 Yellowknife Ar 64.70 30 *e*P **P 18 46 51.4 -0.4**
GEYT Alibeck 64.98 300 P **P 18 46 53.7 -0.5**
comp=Z,4.4nm,0.9s,baz=64,slow=3.4,SNR=12
GEYT LR LR 19 15 45.2
comp=Z,514nm,21.4s,baz=50,slow=36
KLMR Klimovskoe 65.20 328 *e*P **P 18 46 52.5 -2.6**
KLMR *e* 18 49 14.2
ARCES ARCESS Array B 65.46 340 P **P 18 46 57.7 +1.0**
comp=Z,2.3nm,0.7s,baz=62,slow=8.4,SNR=5.7
ARCES LR LR 19 20 59.7
comp=Z,2μm,18.4s,baz=43,slow=41
AFI Afiamalu 65.84 130 P **P 18 46 59.6 -0.3**
AFI Afiamalu 65.84 130 P **P 18 46 59.6 -0.3**
DAG Danmarks Havn 67.17 355 *i* P **P 18 47 07.1 -0.4**
DAG Danmarks Havn 67.17 355 *e*P **P 18 47 07.1 -0.4**
STKA Stephens Creek 67.20 180 P **P 18 47 07.6 -0.5**
comp=Z,2.4nm,0.8s,baz=336,slow=6.8,SNR=5.8
STKA LR LR 19 14 07.1
comp=Z,335nm,22.0s,baz=257,slow=34
STKA Stephens Creek 67.20 180 *e*P **P 18 47 07.5 -0.7**
comp=Z,2.3nm,0.9s
JCW Jim Creek 67.98 46 *e*P **P 18 47 13.1 -0.1**
BBOO Buckleboo 68.36 185 *e*P **P 18 47 14.7 -0.8**
MOS Moscow 68.67 324 *e*P **P 18 47 21.2 +3.9**
MOS *e* 18 49 52.2
MOS *e*S **S 18 56 18.4 +0.1**
MOS MLR MLR
comp=E,3μm,14.0s
MOS MLR MLR
comp=Z,3μm,14.0s
VRH Novokhopyorsk 68.96 318 *e*P **P 18 47 17.7 -1.4**
VRH *e*S **S 18 56 19.9 -2.0**
VRH pmax pmax
comp=Z,10.0nm,0.6s
VRH smax smax
comp=E,150nm,4.0s
VRH MLR MLR
comp=Z,3μm,14.0s
B08A Colville Reser 69.40 45 *e*P **P 18 47 25.9 +3.9**
comp=Z,33nm,1.8s
OBN Obninsk 69.52 324 ⇓ *e*P **P 18 47 21.2 -1.3**
OBN *i* 18 47 35.3
OBN *e* 18 49 57.9
OBN *i*S **S 18 56 23.2 -5.1**
OBN *i*SS **SS 19 00 53.6 -1.6**
OBN pmax pmax
comp=Z,16nm,1.2s
OBN MLR MLR
comp=Z,1μm,15.0s
LPSR Galich'ya Gora 69.70 321 *e*P **P 18 47 22.7 -1.0**
LPSR *e*S **S 18 56 29.4 -1.2**
LPSR pmax pmax
comp=Z,10.0nm,0.9s
LPSR smax smax
comp=N,190nm,5.6s
LPSR MLR MLR
comp=Z,2μm,14.0s
FIA1 FINESS Array S 70.27 333 *e*P **P 18 47 26.2 -0.9**
FINES FINESS Array B 70.27 333 P **P 18 47 26.4 -0.7**
comp=Z,3.7nm,0.8s,baz=74,slow=8.1,SNR=13
FINES LR LR 19 20 32.2
comp=Z,1μm,19.5s,baz=30,slow=38
VSR Storozhevoye 70.32 319 *e*P **P 18 47 26.2 -1.3**
VSR *e*S **S 18 56 34.2 -3.7**
VSR pmax pmax
comp=Z,10.0nm,0.9s
VSR smax smax
comp=E,220nm,5.0s
VSR MLR MLR
comp=Z,3μm,14.0s
GOF Gofitskoye 71.41 312 ⇓ *e*P **P 18 47 34.3 0.0**
VSU Vasula 71.91 330 *ce*P **P 18 47 38.4 +1.4**
VSU pmax pmax
comp=Z,100nm,2.5s
SUMG Summit 72.04 0 *i* P **P 18 47 39.1 +1.0**
SUMG Summit 72.04 0 *e*P **P 18 47 38.8 +0.7**
SUMG pmax pmax
comp=Z,16nm,1.0s
SUMG Summit 72.04 0 *e*P **P 18 47 38.8 +0.7**
comp=Z,16nm,1.0s
ZEI Tsey 72.09 310 *e*P **P 18 47 36.9 -1.8**
ZEI pmax pmax
comp=Z,33nm,1.4s
KBZ Khabaz 72.21 311 P **P 18 47 38.8 -0.3**
comp=Z,9.2nm,0.9s,baz=43,slow=2.1,SNR=17
KIV Kislovodsk 72.22 312 *e*P **P 18 47 38.9 -0.4**
KIV *e*S **S 18 56 57.9 -2.5**
KIV *e*SS **SS 19 01 35.0 -2.5**
KIV pmax pmax
comp=Z,27nm,1.1s
KIV Kislovodsk 72.22 312 *e*P **P 18 47 39.3 0.0**
comp=Z,31nm,1.0s
JTMT Jette 72.59 43 *e*P **P 18 47 45.2 +3.7**
SWMT Swartz Lake 72.89 44 *e*P **P 18 47 47.2 +4.0**
GNI Garni 72.97 307 *ce*P **P 18 47 45.5 +1.6**
GNI pmax pmax
comp=Z,56nm,1.2s
GNI Garni 72.97 307 P **P 18 47 44.2 +0.3**
comp=Z,100nm,1.2s
SCO Scoresbysund 73.52 354 *i* P **P 18 47 48.1 +1.7**

SCO Scoresbysund 73.52 354 *e*P **P 18 47 48.1 +1.7**
BPMT Black Pine Rid 73.81 44 *e*P **P 18 47 47.2 -1.7**
MICGM Minsk 73.93 326 *e*P **P 18 47 53.0 +3.9**
MICGM *e*PP **PP 18 50 36.0 +2.4**
MICGM *e*S S 18 57 32.0 +13
MICGM *e*PS **PnS 18 58 04.0 +10**
MICGM *e*SS **SS 19 02 12.0 +9.2**
MICGM *e*LQ LQ 19 16 12.0
MICGM LQM 19 21 10.0
comp=E,2.7nm,14.0s
MICGM *e*LR LR 19 22 32.0
MICGM LRM MLR 19 25 20.0
comp=Z,6.3nm,14.0s
MICGM LRM MLR 19 25 24.0
comp=E,4.1nm,15.0s
MNK Minsk 73.93 326 *e*P **P 18 47 53.0 +3.9**
MNK *e* 18 50 36.0
MNK *e*S **S 18 57 22.0 +2.8**
MNK *e*PS **PnS 18 58 04.0 +10**
MNK MLR MLR
comp=Z,6μm,14.0s
MNK MLR MLR
comp=E,4μm,15.0s
SOC Sochi 74.22 312 *e*P **P 18 47 50.0 -1.0**
SOC *e* 18 50 37.7
SOC *e*S **SKiKP 18 57 17.8 +1.3**
SOC *e*SS **SS 19 02 11.3 +3.5**
SOC *e*SSS SSS 19 05 25.5
SOC pmax pmax
comp=Z,24nm,0.7s
LRM Limekiln Ridge 74.73 44 *e*P **P 18 47 54.6 +0.3**
ANN Anapa 74.87 314 *e*P **P 18 47 52.9 -1.8**
ANN *e*S **S 18 57 26.8 -3.3**
ANN pmax pmax
comp=Z,22nm,1.3s
NV01 Mina Array Sit 75.35 53 *e*P **P 18 47 59.9 +1.9**
NVAR Mina Array Bea 75.35 53 P **P 18 47 59.1 +1.2**
comp=Z,1.8nm,0.8s,baz=281,slow=6.8,SNR=8.6
NVAR LR LR 19 14 06.3
comp=Z,206nm,21.3s,baz=297,slow=30
NC405 NORSAR Array S 75.44 338 *e*P **P 18 47 58.0 +0.3**
NC204 NORSAR Array S 75.61 338 *e*P **P 18 47 59.1 +0.4**
NB2 NORSAR Subarra 75.65 338 P **P 18 47 57.9 -1.1**
comp=Z,35nm,1.7s,baz=38,slow=5.6
NB2 NORSAR Subarra 75.65 338 P **P 18 47 57.9 -1.1**
baz=38,slow=5.6
NOA NORSAR Array B 75.65 338 P **P 18 47 58.5 -0.6**
comp=Z,3.0nm,0.8s,baz=39,slow=5.7,SNR=11
NOA LR LR 19 24 20.4
comp=Z,1μm,19.1s,baz=50,slow=38
AKASG Malin Array Be 75.71 323 P **P 18 47 58.6 -0.9**
comp=Z,2.0nm,0.5s,baz=46,slow=6.4,SNR=15
AKASG LR LR 19 21 52.0
comp=Z,679nm,19.9s,baz=45,slow=36
KIEV Kiev 75.72 323 *e*P **P 18 47 57.8 -1.7**
KIEV pmax pmax
comp=Z,7.0nm,1.0s
KIEV Kiev 75.72 323 *e*P **P 18 47 58.9 -0.6**
comp=Z,22nm,1.3s
AK11 Malin Array Si 75.75 323 *e*P **P 18 47 59.4 -0.3**
NBO02 NORSAR Array S 75.75 338 *e*P **P 18 47 59.0 -0.6**
ELK Elko 76.00 50 *e*P **P 18 48 06.2 +4.6**
ELK pmax pmax
comp=Z,14nm,1.6s
ELK Elko 76.00 50 *e*P **P 18 48 06.2 +4.6**
comp=Z,14nm,1.6s
H17A Grant Village 76.64 45 *e*P **P 18 48 07.6 +2.4**
comp=Z,4.6nm,0.4s
SIM Simferopol' 76.69 316 *e*P P 18 48 09.8 +4.7
SIM pmax pmax
comp=Z,17nm,0.9s
SIM MLR MLR
comp=N,640nm,16.2s
IMW Indian Meadow 76.73 45 *e*P **P 18 48 06.7 +0.9**
comp=N,7.0nm,1.1s
FLWY Flagg Ranch 76.76 45 *e*P P 18 48 11.0 +5.2
comp=N,40nm,1.8s
FXWY Fox Creek 76.83 46 *e*P **P 18 48 10.9 +4.6**
comp=N,18nm,1.7s
MOOW Moose Ponds 76.93 45 *e*P **P 18 48 10.2 +3.4**
comp=N,27nm,1.9s
REDW Red Top Meadow 77.10 46 *e*P **P 18 48 11.1 +3.3**
R11A Troy Canyon, C 77.16 52 *e*P **P 18 48 10.7 +2.5**
comp=N,11nm,1.5s
TPNV Topopah Spring 77.53 53 *e*P **P 18 48 14.8 +4.5**
TPNV pmax pmax
comp=Z,9.0nm,1.2s
TPNV Topopah Spring 77.53 53 *e*P **P 18 48 14.8 +4.5**
comp=Z,8.9nm,1.2s
HWUT Hardware Ranch 77.74 47 *e*P **P 18 48 15.6 +4.2**
comp=Z,23nm,1.5s
SORM Soroca 77.79 321 ⇑ *i*P **P 18 48 10.5 -0.7**
DUG Dugway, Tooele 77.82 49 *e*P **P 18 48 11.1 -0.7**
DUG pmax pmax
comp=Z,10.0nm,1.1s
DUG Dugway, Tooele 77.82 49 *e*P **P 18 48 11.1 -0.7**
comp=Z,10nm,1.1s
FRB Frobisher Bay 77.96 13 P **P 18 48 11.3 -0.6**
comp=Z,5.7nm,0.7s,baz=337,slow=6.4,SNR=7.1
PSUT Pine Spring 78.15 51 *e*P **P 18 48 18.4 +4.6**
comp=Z,6.5nm,1.0s
BW06 Boulder Array 78.22 46 *e*P **P 18 48 13.3 -0.8**
PDAR Pinedale Array 78.22 46 P **P 18 48 14.1 0.0**
comp=Z,1.0nm,0.6s,baz=85,slow=1.8,SNR=9.1
NLU North Lily Min 78.42 49 *e*P **P 18 48 18.2 +3.0**
comp=Z,7.1nm,1.2s
LVV L'vov 78.80 324 *e*P P 18 48 28.2 +11
LVV MLR MLR
comp=N,2μm,14.0s
LVV MLR MLR
comp=E,400nm,14.0s
LVV MLR MLR
comp=Z,1μm,14.0s
RAR Rarotonga 78.91 126 LR LR 19 22 53.7
comp=Z,471nm,18.1s,baz=328,slow=36
MSU Marysvale 79.22 50 *e*P **P 18 48 24.3 +4.7**
MSU Marysvale 79.22 50 *e*P **P 18 48 24.3 +4.7**
LCMT Little Creek M 79.44 52 *e*P **P 18 48 24.1 +3.3**
comp=Z,4.9nm,0.9s
KWP Kalwaria Pacla 79.56 325 *e*P **P 18 48 21.6 +0.6**
KWP Kalwaria Pacla 79.56 325 ⇑ *i*P **P 18 48 21.3 +0.3**
KWP Kalwaria Pacla 79.56 325 *e*P **P 18 48 21.6 +0.6**
BUR08 Bucovina Ar. S 79.71 322 *e*P **P 18 48 21.8 -0.2**
KNB Kanab 79.71 52 *e*P **P 18 48 26.4 +4.1**
KNB pmax pmax
comp=Z,22nm,1.4s
KNB Kanab 79.71 52 *e*P **P 18 48 26.4 +4.1**
comp=Z,22nm,1.4s
BURAR Bucovina Array 79.72 322 ⇑ *i*P **P 18 48 20.0 -2.0**
TESR Tescani 79.73 321 ⇑ *i*P **P 18 48 22.1 +0.1**
SRU San Rafael Swe 79.88 49 *e*P **P 18 48 27.3 +4.1**
SRU pmax pmax
comp=Z,8.0nm,0.8s
SRU San Rafael Swe 79.88 49 *e*P **P 18 48 27.3 +4.1**
comp=Z,7.8nm,0.8s
VRI Vrincioaia 80.12 320 ⇑ *i*P **P 18 48 22.9 -1.2**
BR131 Keskin Array S 80.17 312 *e*P **P 18 48 24.7 0.0**
BRTR Keskin Array B 80.17 312 P **P 18 48 24.6 -0.1**
comp=Z,6.4nm,1.0s,baz=112,slow=3.7,SNR=22
KOLS Kolonicke sedl 80.25 325 *e*P **P 18 48 24.4 -0.3**
KOLS *e* 18 48 30.7
KOLS pmax pmax
comp=Z,10.0nm,1.4s
KOLS MLR MLR
comp=Z,2μm,16.9s
KOLS Kolonicke sedl 80.25 325 *e*P **P 18 48 24.4 -0.3**
KOLS *e* 18 48 30.7
KOLS *e*PP **PP 18 51 19.2 -7.6**
KOLS *e*L L 19 27 18.1
STHS Stebnicka Huta 80.39 325 *e*P **P 18 48 26.0 +0.5**
STHS pmax pmax
comp=Z,6.0nm,1.1s
STHS Stebnicka Huta 80.39 325 *e*P **P 18 48 26.0 +0.5**
URZ Urewera 80.39 153 LR LR 19 18 28.5
comp=Z,500nm,21.2s,baz=269,slow=32
UZH Uzhgorod 80.45 324 *e*P **P 18 48 25.5 -0.3**
OJC Ojcow 80.48 327 *e*P **P 18 48 25.6 -0.3**
OJC Ojcow 80.48 327 *e*P **P 18 48 25.6 -0.3**
ANTO Ankara 80.59 313 *e*P **P 18 48 27.2 +0.4**
ANTO pmax pmax
comp=Z,50nm,1.6s
ANTO Ankara 80.59 313 *e*P **P 18 48 27.2 +0.4**
comp=Z,50nm,1.6s
BR231 Keskin MP Arra 80.62 313 *e*P **P 18 48 25.3 -1.7**
CRVS Cervenica-Dubn 80.65 325 *e*P **P 18 48 27.1 +0.2**

CRVS Cervenica-Dubn 80.65 325 *e*P **P 18 48 27.1 +0.2**
DOPR Dopca 80.75 321 ⇓ *i*P **P 18 48 27.2 -0.3**
MLR Muntele Rosu 80.78 320 ⇑ *i*P **P 18 48 26.0 -1.8**
NIE Niedzica 80.82 326 *e*P **P 18 48 27.0 -0.8**
NIE Niedzica 80.82 326 *e*P **P 18 48 27.0 -0.8**
PV04 Paradox Valley 81.32 49 *e*P **P 18 48 31.6 +0.7**
LANS Liptovska Anna 81.39 326 *e*P **P 18 48 32.1 +1.2**
LANS *e* 18 48 38.2
LANS Liptovska Anna 81.39 326 *e*P **P 18 48 32.1 +1.2**
LANS *e* 18 48 38.2
PV05 Paradox Valley 81.40 49 *e*P **P 18 48 32.5 +1.1**
KECS Kecovo 81.40 325 *e*P **P 18 48 31.9 +1.0**
KECS pmax pmax
comp=Z,3.0nm,1.0s
KECS Kecovo 81.40 325 *e*P **P 18 48 31.9 +1.0**
OKC Ostrava-Krasne 81.49 327 *e*PP PP 18 51 38.0 +1.1
OKC *e*S **S 18 58 44.2 +3.2**
OKC AMS AMS 19 27 40.0
comp=Z,2μm,14.9s
PV01 Paradox Valley 81.69 49 *e*P **P 18 48 33.7 +0.7**
comp=Z,506nm,1.0s
MORC Moravsky Berou 81.80 327 *e*P **P 18 48 34.1 +1.1**
MORC pmax pmax
comp=Z,29nm,1.0s
MORC Moravsky Berou 81.80 327 *e*P **P 18 48 34.1 +1.1**
comp=Z,29nm,1.0s
DPC Dobruska-Polom 81.90 328 *e*P **P 18 48 33.2 -0.4**
DPC *e*PCP **PcP 18 48 38.3 -0.8**
DPC *e*pP **sP 18 48 44.5 -0.8**
DPC *e*PP **PP 18 51 39.3 -1.1**
DPC *e*S **S 18 58 48.0 +2.6**
DPC AMS AMS 19 30 00.0
comp=Z,2μm,13.2s
DPC Dobruska-Polom 81.90 328 *e*P **P 18 48 33.2 -0.4**
DPC *e* 18 48 44.5
DPC *e* 18 51 39.3
DPC *e*S **S 18 58 48.0 +2.6**
DPC MLR MLR
comp=Z,2μm,13.2s
KRLC Kraliky 81.91 328 *e*P **P 18 48 33.3 -0.3**
KRLC *e*pP **sP 18 48 44.1 -1.2**
KRLC Kraliky 81.91 328 *e*P **P 18 48 33.3 -0.3**
KRLC *e* 18 48 44.1
UPC Upice 81.92 329 *e*S **S 18 58 48.3 +2.8**
UPC AMS AMS 19 30 00.0
comp=Z,4μm,13.9s
SMCO Snowmass 81.99 47 *e*P **P 18 48 35.4 +0.7**
comp=Z,8.6nm,1.2s
PSZ Piszkesteto 82.08 325 ⇓ *i*P **P 18 48 34.5 -0.1**
PSZ Piszkesteto 82.08 325 *e*P **P 18 48 34.9 +0.3**
PSZ pmax pmax
comp=Z,15nm,1.1s
PSZ Piszkesteto 82.08 325 *e*P **P 18 48 34.9 +0.3**
comp=Z,15nm,1.1s
VYHS Vyhne 82.16 326 *e*P **P 18 48 34.5 -0.4**
VYHS pmax pmax
comp=Z,5.0nm,1.2s
VYHS Vyhne 82.16 326 *e*P **P 18 48 34.5 -0.4**
VYHS *e*PP **PP 18 51 43.4 +0.9**
VYHS *e*S S 18 58 31.0 -17
BRG Berggiesshubel 82.50 330 *e*P **P 18 48 35.6 -1.0**
comp=Z,7.1nm,1.4s
BRG Berggiesshubel 82.50 330 *e*P **P 18 48 35.6 -1.0**
BRG SS SS 19 04 15.0 +3.4
BRG pmax pmax
comp=Z,7.0nm,1.4s
BRG MLR MLR
comp=N,2μm,14.2s
BRG MLR MLR
comp=E,2μm,14.4s
BRG MLR MLR
comp=Z,3μm,14.1s
PVCC Panska Ves 82.51 329 AMS AMS 19 32 00.0
comp=Z,2μm,14.2s
CLL Collm 82.55 331 *i* P **P 18 48 35.8 -1.0**
CLL *e* 18 48 42.0
CLL *i* 18 48 46.8
comp=Z,10.0nm,1.1s
CLL *e* 18 49 08.0
CLL *e*PP **PP 18 51 48.0 +2.4**
CLL *e*S S 18 58 41.0 -11
CLL *e*SS **SS 19 04 06.0 -6.3**
CLL *e* 19 04 54.0
CLL *e*SSS SSS 19 09 00.0
CLL *e* 19 11 18.0
CLL Lmax 19 29 00.0
CLL Collm 82.55 331 *i* P **P 18 48 35.8 -1.0**
CLL *i* 18 48 46.8
CLL *e*S S 18 58 41.0 -11
214A Organ Pipe Nat 82.78 56 *e*P **P 18 48 39.6 +1.1**
comp=Z,108nm,1.7s
GOPC GO Pecny, Ondr 82.88 329 *e*S **S 18 58 56.1 +0.7**
GOPC AMS AMS 19 30 30.0
comp=Z,3μm,13.5s
PRU Pruhonice 82.93 329 *e*PP PP 18 51 50.5 +1.7
PRU *e*S **S 18 58 57.5 +1.7**
PRU AMS AMS 19 30 30.0
comp=Z,3μm,13.6s
TREC Trest 83.05 328 *e*S **S 18 58 59.0 +1.8**
TREC AMS AMS 19 31 00.0
comp=Z,3μm,13.9s
MDVR Moldovita 83.44 322 ⇑ *i*P **P 18 48 41.0 -0.7**
PPT Papeete 83.53 117 LR LR 19 23 14.9
comp=Z,276nm,18.6s,baz=260,slow=34
PPT2 Papeete2 83.54 117 *e*LR LR 19 14 41.9
comp=Z,1μm,26.2s,baz=309
NKC Novy Kostel 83.60 330 AMS AMS 19 30 30.0
comp=Z,2μm,13.9s
SDCO Great Sand Dun 83.80 47 *e*P **P 18 48 44.3 +0.4**
comp=Z,18nm,1.9s
KHC Kasperske Hory 83.99 329 *e*P **P 18 48 43.5 -0.9**
KHC *e*PCP **PcP 18 48 48.6 +0.3**
KHC *e*PP **PP 18 51 59.9 +2.4**
KHC *e*S **S 18 59 06.7 0.0**
KHC AMS AMS 19 31 20.0
comp=Z,2μm,13.6s
KHC Kasperske Hory 83.99 329 *e*P **P 18 48 43.5 -0.9**
KHC *e* 18 48 48.6
KHC *e* 18 51 59.9
KHC *e*S **S 18 59 06.7 0.0**
KHC MLR MLR
comp=Z,2μm,13.6s
KHC Kasperske Hory 83.99 329 *e*P **P 18 48 44.2 -0.2**
comp=Z,3.3nm,1.0s
GERES GERESS Array B 84.16 329 P **P 18 48 44.5 -0.8**
comp=Z,1.1nm,0.7s,baz=46,slow=5.8,SNR=9.6
GERES LR LR 19 28 12.4
comp=Z,1μm,20.1s,baz=11,slow=37
GEA0 GERESS Array S 84.16 329 *e*P **P 18 48 44.3 -1.0**
GRFO Grafenberg 84.52 330 P **P 18 48 47.5 +0.5**
GRFO pmax pmax
comp=Z,55nm,1.6s
GRFO Grafenberg 84.52 330 P **P 18 48 47.5 +0.5**
comp=Z,55nm,1.6s
T25A Trinidad 84.85 47 *e*P **P 18 48 50.2 +1.0**
comp=Z,37nm,1.8s
ANMO Albuquerque 85.03 50 P **P 18 48 50.4 +0.3**
comp=Z,7.3nm,1.1s,baz=306,slow=4.9,SNR=9.2
ANMO Albuquerque 85.03 50 *ce*P **P 18 48 51.6 +1.5**
ANMO pmax pmax
comp=Z,10.0nm,1.2s
ANMO Albuquerque 85.03 50 *e*P **P 18 48 51.7 +1.6**
comp=Z,12nm,1.2s
TAOE Nuku Hiva Isla 85.30 104 *e*LR LR 19 15 33.4
comp=Z,1μm,31.0s
SKO Skopje 85.57 320 *i* P **P 18 48 54.7 +2.2**
SCHQ Schefferville 86.48 16 LR LR 19 28 48.7
comp=Z,474nm,21.5s,baz=346,slow=36
BFO Black Forest 86.76 331 *ce*P **P 18 48 58.0 -0.2**
TX31 Lajitas Ar. Si 90.50 53 *e*P **P 18 49 16.4 0.0**
TXAR Lajitas Array 90.50 53 P **P 18 49 16.8 +0.4**
comp=Z,3.8nm,0.8s,baz=298,slow=3.6,SNR=24
TXAR LR LR 19 28 48.2
comp=Z,94nm,18.0s,baz=0.0,slow=35
KEST Kesra 96.44 323 LR LR 19 38 09.3
comp=Z,869nm,18.5s,baz=346,slow=38
RKT Rikitea 97.72 113 *e*LR LR 19 21 03.0
comp=Z,742nm,30.5s,baz=310
ESDC Sonseca Array 98.75 334 LR LR 19 40 33.5
comp=Z,607nm,18.3s,baz=25,slow=39
TORD Torodi Ar. Bea 118.68 315 PKP **PKPdf 18 55 01.3 -1.5**
comp=Z,1.1nm,1.1s,baz=341,slow=2.9,SNR=3.6
TORD PP **PP 18 56 19.9 +0.1**
comp=Z,0.9nm,0.8s,baz=31,slow=8.2,SNR=4.5

LBTB	Lobatse	125.02	262	*e*PKIKP	PKPdf	18 55 15.0	+0.3
LBTB	Lobatse	125.02	262	*e*PKPdf	PKPdf	18 55 15.0	+0.3
QSPA	South Pole Qui	125.42	180	*e*PKPdf	PKPdf	18 55 17.4	+3.3
SAML	Samuel	144.79	47	*e*PKPdf	PKPab	18 55 49.9	-0.6
LPAZ	La Paz	146.86	62	PKPbc	PKPdf	18 55 56.2	+0.4
	comp=Z,11nm,1.1s,baz=333,slow=3.6,SNR=15						
LPAZ	La Paz	146.86	62	*e*PKPdf	PKPdf	18 55 57.3	+1.5
PB11	IPOC Station P	147.90	69	*e*PKPdf	PKPdf	18 55 57.2	+0.3
LVC	Limon Verde	150.08	73	*e*PKPbc	PKPbc	18 56 06.4	+0.8
LCO	Las Campanas	151.59	86	*e*PKPbc	PKPbc	18 56 09.3	+0.5

GEN ***05*** *18:44:08.7, 44°.59N×7°.22E, h14km, ML0.6*
CSEM ***05*** *18:44:08.1±0.4, 44°.61N×7°.27E, h20km, ML1.3/8, Error ellipse: s-maj=8.9km s-min=5.0km az=86.0*
LDG 05 18:44:08.6±0.1, 44°.61N×7°.26E, h2km, Md1.6/1, Ml1.4/7, Error ellipse: s-maj=2.8km s-min=1.4km az=85.0, Northern Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BHB	Bricherasio	0.23	1	P	Pg	18 44 13.9	+0.8
MBDF	Montbardon	0.36	289	*e*Pg	Pg	18 44 16.0	+0.4
MBDF				*e*Sg	Sg	18 44 20.6	+0.2
	5.8nm,0.2s						
MBDF	Montbardon	0.36	289	*e*Pg	Pg	18 44 16.0	+0.4
MBDF				*e*Sg	Sg	18 44 20.6	+0.2
	2.9nm,0.2s						
STV	Sant Anna di V	0.37	172	P	Pg	18 44 15.8	+0.2
STV				S	Sg	18 44 20.7	+0.3
RRL	Rocca Remolon	0.45	313	P	Pg	18 44 17.6	+0.3
RRL				S	Sg	18 44 23.7	+0.4
SBF	Sospel	0.76	170	*e*Sg	Sg	18 44 32.5	-0.4
	0.8nm,0.2s						
SBF	Sospel	0.76	170	*e*Sg	Sg	18 44 32.5	-0.4
	0.4nm,0.2s						
LPG	La Plagne	0.96	338	*e*Pg	Pg	18 44 26.8	-0.2
LPG				*e*Sg	Sg	18 44 39.2	-0.2
	0.7nm,0.2s						
LPG	La Plagne	0.96	338	*e*Pg	Pg	18 44 26.8	-0.2
LPG				*e*Sg	Sg	18 44 39.2	-0.2
	0.3nm,0.2s						
LPL	La Plagne	0.98	338	*e*Pg	Pg	18 44 27.3	-0.1
LPL				*e*Sg	Sg	18 44 39.8	-0.3
	1.0nm,0.2s						
LPL	La Plagne	0.98	338	*e*Pg	Pg	18 44 27.3	-0.1
LPL				*e*Sg	Sg	18 44 39.8	-0.3
	0.5nm,0.2s						
ORIF	Oris-en-Rattie	1.03	288	*e*Pg	Pg	18 44 28.0	-0.3
ORIF				*e*Sg	Sg	18 44 40.3	-1.3
	0.6nm,0.2s						
ORIF	Oris-en-Rattie	1.03	288	*e*Pg	Pg	18 44 28.0	-0.3
ORIF				*e*Sg	Sg	18 44 40.3	-1.3
	0.3nm,0.2s						
FRF	La Foret Royal	1.14	203	*e*Pg	Pg	18 44 30.0	-0.4
FRF				*e*Sg	Sg	18 44 44.4	-0.7
	1.1nm,0.2s						
FRF	La Foret Royal	1.14	203	*e*Pg	Pg	18 44 30.0	-0.4
FRF				*e*Sg	Sg	18 44 44.4	-0.7
	0.6nm,0.2s						
SMRF	Simiane la Rot	1.36	243	*e*Sg	Sg	18 44 52.1	-0.3
	0.3nm,0.2s						
SMRF	Simiane la Rot	1.36	243	*e*Sg	Sg	18 44 52.1	-0.3
	0.2nm,0.2s						
LMR	La Mourre	1.38	203	*e*Sg	Sg	18 44 51.8	-1.2
	0.7nm,0.2s						
LMR	La Mourre	1.38	203	*e*Sg	Sg	18 44 51.8	-1.2
	0.3nm,0.2s						
VIVF	Saint-Julien-I	1.86	279	*e*Sg	Sb	18 45 07.4	+0.4
	0.8nm,0.2s						
VIVF	Saint-Julien-I	1.86	279	*e*Sg	Sb	18 45 07.4	+0.4
	0.4nm,0.2s						

ISCJB ***05*** *18:44:53.3±0.2, 47°.91N±0°.01×6°.41E±0°.01, h8km±2km, Error ellipse: s-maj=1.9km s-min=1.5km az=147.1*
STR ***05*** *18:44:54.1±0.1, 47°.94N×6°.38E, h8km, Ml2.7, Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*
CSEM ***05*** *18:44:54.8±0.1, 47°.89N×6°.45E, h19km±1km, ML2.9/28, Error ellipse: s-maj=2.0km s-min=1.5km az=142.0*
BGR ***05*** *18:44:55.7±0.8, 47°.92N×6°.47E, h10km, ML2.5/12, Error ellipse: s-maj=6.7km s-min=3.3km az=64.0*
LDG ***05*** *18:44:55.9±0.1, 47°.91N×6°.49E, h15km, Md2.9/4, Ml2.9/26, Error ellipse: s-maj=1.3km s-min=1.0km az=137.0*
BNS ***05*** *18:44:58.2±0.3, 47°.94N×6°.44E, h4km, ML2.3*
ISC 05 18:44:56.1±0.9, 47°.92N±0°.01×6°.50E±0°.01, h17km±2km, n175, σ2°.09/260, 3C-3D, France

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HAU	Haudompre	0.13	308	*e*Pg	Pg	18 45 00.0	-0.1
HAU				*e*Sg	Sg	18 45 02.7	-0.1
HAU	Haudompre	0.13	308	*e*Pg	Pg	18 45 00.0	-0.1
HAU				*e*Sg	Sg	18 45 02.7	-0.1
HINF	Hinterlafeld	0.26	114	*e*Pg	Pg	18 45 02.0	+0.1
HINF				*e*Sg	Sg	18 45 05.8	-0.1
HINF	Hinterlafeld	0.26	114	*e*Pg	Pg	18 45 02.0	+0.1
HINF				*e*Sg	Sg	18 45 05.8	-0.1
MOF	Molkenrain	0.43	99	Pg	Pg	18 45 04.0	-0.9
MOF				Sg	Sg	18 45 11.0	+0.1
MOF	Molkenrain	0.43	99	Pg	Pg	18 45 04.0	-0.9
MOF	Molkenrain	0.43	99	⇑P*	Pg	18 45 05.1	+0.2
MOF				S*	Sg	18 45 11.3	+0.4
ECH	Echery	0.53	56	Pg	Pg	18 45 05.9	-0.8
ECH				Sg	Sb	18 45 14.4	+0.1
ECH	Echery	0.53	56	Pg	Pg	18 45 05.9	-0.8
ECH	Echery	0.53	56	Pb	Pg	18 45 06.9	+0.2
ECH	Echery	0.53	56	⇑*i*P*	Pg	18 45 06.9	+0.2
ECH				S*	Sb	18 45 14.3	0.0
ECH				SmS		18 45 15.7	
LOMF	Lomont	0.61	159	Pg	Pg	18 45 06.9	-1.4
LOMF				Sg	Sg	18 45 16.2	-0.3
LOMF	Lomont	0.61	159	⇓P*	Pg	18 45 08.0	-0.3
LOMF				Pg	Pb	18 45 08.2	-0.3
LOMF				S*	Sg	18 45 16.4	-0.1
CDF	Champ du Feu	0.71	46	*e*Pg	Pg	18 45 10.1	0.0
CDF	Champ du Feu	0.71	46	*e*Pn	Pb	18 45 10.7	+0.6
CDF				*e*Sg	Sb	18 45 20.1	+0.5
	123nm,0.2s						
CDF	Champ du Feu	0.71	46	*e*Pg	Pg	18 45 10.1	0.0
CDF	Champ du Feu	0.71	46	*e*Pn	Pb	18 45 10.7	+0.6
CDF				*e*Sg	Sb	18 45 20.1	+0.5
	62nm,0.2s						
BOURR	Bourrignon	0.72	137	⇓P*	Pg	18 45 10.2	-0.1
BOURR				Pg	Pg	18 45 10.3	-0.1
BOURR				Sg	Sg	18 45 20.1	+0.2
WLS	Welschbruch	0.75	49	Pg	Pg	18 45 11.1	+0.3
WLS	Welschbruch	0.75	49	Pg	Pg	18 45 11.1	+0.3
WLS				Sg	Sb	18 45 21.6	+0.9
LIBD	Limburg	0.77	73	Sg	Sb	18 45 22.4	+1.2
LIBD	Limburg	0.77	73	⇓Pg	Pb	18 45 11.6	+0.5
PAGF	Fort de Pagny	0.82	321	*e*Pg	Pg	18 45 12.0	-0.1
	baz=160						
PAGF				*e*Sg	Sg	18 45 22.5	-0.4
	21nm,0.2s,baz=173						
PAGF	Fort de Pagny	0.82	321	*e*Pg	Pg	18 45 12.0	-0.1
	baz=160						
PAGF				*e*Sg	Sg	18 45 22.5	-0.4
	11nm,0.2s,baz=173						
BBS	Basel-Blauen	0.82	124	Pg	Pg	18 45 11.8	-0.3
BBS				Sg	Sg	18 45 22.4	-0.6
FBB	Freiburg im Br	0.91	85	Sg	Sb	18 45 26.8	+1.6
FBB	Freiburg im Br	0.91	85	Sg	Sb	18 45 26.8	+1.6
KIZ	Kirchzarten	0.95	88	⇑Pg	Pg	18 45 13.8	-0.7
KIZ				S	Sg	18 45 25.6	-1.5
KIZ				Sg	Sb	18 45 27.1	+0.6
BALST	Balsthal	1.00	126	Sg	Sg	18 45 28.2	-0.4
BALST	Balsthal	1.00	126	Pg	Pg	18 45 14.9	-0.6
BALST				Sg	Sg	18 45 28.2	-0.4
FELD	Feldberg im Sc	1.01	92	Pg	Pg	18 45 14.9	-0.9
FELD				Sg	Sg	18 45 28.9	-0.1
SFTF	Sexfontaines	1.02	287	*e*Pg	Pg	18 45 15.2	-0.7
	baz=117						
SFTF				*e*Sg	Sg	18 45 28.7	-0.6
	126nm,0.2s						
SFTF	Sexfontaines	1.02	287	*e*Pg	Pg	18 45 15.2	-0.7
	baz=117						
SFTF				*e*Sg	Sg	18 45 28.7	-0.6
	63nm,0.2s						
MEZF	Maizieres J'vi	1.13	301	*e*Pg	Pg	18 45 17.4	-0.5
	baz=119						
MEZF				*e*Sg	Sg	18 45 32.1	-0.6
	83nm,0.3s,baz=120						
MEZF	Maizieres J'vi	1.13	301	*e*Pg	Pg	18 45 17.4	-0.5
	baz=119						
MEZF				*e*Sg	Sg	18 45 32.1	-0.6
	42nm,0.3s,baz=120						
SULZ	Cheisacher	1.16	109	Pg	Pg	18 45 17.8	-0.7
SULZ	Cheisacher	1.16	109	Sg	Sg	18 45 33.2	-0.4
SULZ	Cheisacher	1.16	109	*e*Pg	Pg	18 45 17.8	-0.7
SULZ				Sg	Sg	18 45 33.2	-0.4
OPP	Oppenau	1.26	62	P	Pn	18 45 17.0	-2.0
OPP	Oppenau	1.26	62	P	Pn	18 45 17.0	-2.0
OPP				Pg	Pb	18 45 19.7	+0.3
OPP				Sg	Sg	18 45 36.8	-0.2
BFO	Black Forest	1.29	71	Pg	Pg	18 45 21.1	+0.1
BFO				Sg	Sn	18 45 37.9	+1.7
CABF	La Chapelle	1.34	192	*e*Pn	Pn	18 45 18.5	-1.6
CABF	La Chapelle	1.34	192	*e*Pg	Pn	18 45 21.0	+0.9
CABF				*e*Sg	Sb	18 45 38.2	+0.4
	21nm,0.2s						
CABF	La Chapelle	1.34	192	*e*Pn	Pn	18 45 18.5	-1.6
CABF	La Chapelle	1.34	192	*e*Pg	Pn	18 45 21.0	+0.9
CABF				*e*Sg	Sb	18 45 38.2	+0.4
	10nm,0.2s						
SLE	Schleitheim	1.35	96	Pg	Pn	18 45 20.8	+0.6
SLE	Schleitheim	1.35	96	Sg	Sg	18 45 39.6	-0.1
SLE	Schleitheim	1.35	96	Pg	Pn	18 45 20.8	+0.6
SLE				Sg	Sg	18 45 39.6	-0.1
LANF	Langenberg	1.37	39	Pg	Pn	18 45 20.8	+0.4
LANF				Sg	Sn	18 45 39.7	+1.6
LANF	Langenberg	1.37	39	Pg	Pg	18 45 22.5	0.0
LANF				Sg	Sn	18 45 39.7	+1.6
LANF	Langenberg	1.37	39	Pg	Pn	18 45 20.8	+0.4
LANF	Langenberg	1.37	39	Pg	Pg	18 45 22.4	0.0
PEB	Petersbachel	1.40	35	P	Pn	18 45 18.9	-1.9
PEB				S	Sb	18 45 36.1	-3.2
PEB				Sg	Sn	18 45 40.6	+1.7
PEB	Petersbachel	1.40	35	Pg	Pb	18 45 22.5	+0.7
PEB	Petersbachel	1.40	35	P	Pn	18 45 18.9	-1.9
PEB				Pg	Pb	18 45 22.5	+0.7
PEB				S	Sb	18 45 36.1	-3.2
PEB				Sg	Sn	18 45 40.6	+1.7
SPAK	Spaichingen-Ko	1.54	83	Pg	Pb	18 45 24.8	+0.5
SPAK				Sg	Sg	18 45 47.1	+1.2
SISB	Singen-Schiene	1.68	97	P	Pn	18 45 25.2	+0.6
SISB	Singen-Schiene	1.68	97	P	Pn	18 45 25.2	+0.6
SISB				Pg	Pg	18 45 28.6	+0.2
SISB				Sg	Sg	18 45 50.0	-0.1
LBG	Lerchenberg	1.70	63	P	Pn	18 45 23.2	-1.8
LBG	Lerchenberg	1.70	63	P	Pn	18 45 23.2	-1.8
LBG				Pg	Pg	18 45 28.9	+0.1
WILA	Wila	1.70	107	Sg	Sg	18 45 50.8	-0.2
WILA	Wila	1.70	107	Sg	Sg	18 45 50.9	-0.2
KTD	Kalmit	1.75	36	Pg	Pb	18 45 28.0	+0.3
KTD				Sg	Sg	18 45 52.1	-0.3
WLF	Walferdange	1.76	353	Pg	Pg	18 45 30.8	+0.9
WLF	Walferdange	1.76	353	Pg	Pg	18 45 30.8	+0.9
WLF				*e*Sg	Sg	18 45 52.2	-0.5
GUT	Gutenstein	1.76	84	P	Pn	18 45 24.5	-1.3
GUT	Gutenstein	1.76	84	Pg	Pg	18 45 30.0	0.0
GUT	Gutenstein	1.76	84	S	Sn	18 45 44.8	-3.0
GUT				Sg	Sg	18 45 52.8	0.0
GUT	Gutenstein	1.76	84	P	Pn	18 45 24.5	-1.3
GUT				Pg	Pg	18 45 30.0	0.0
GUT				S	Sn	18 45 44.8	-3.0
GUT				Sg	Sg	18 45 52.8	0.0
RIVT	Riveris	1.79	5	Sg	Sb	18 45 52.5	+1.9
RIVT	Riveris	1.79	5	Sg	Sb	18 45 52.5	+1.9
RUP	Ruppelstein	1.82	11	Pg	Pb	18 45 30.2	+1.3
RUP				Sg	Sg	18 45 53.8	-0.8
RUP	Ruppelstein	1.82	11	Pg	Pn	18 45 28.8	+2.2
RUP	Ruppelstein	1.82	11	Pg	Pb	18 45 30.2	+1.3
LOR	Lormes	1.91	251	*e*Pn	Pn	18 45 26.0	-1.8
	baz=75						
LOR	Lormes	1.91	251	*e*Pg	Pb	18 45 31.6	+1.2
	baz=73						
LOR				*e*Sg	Sb	18 45 55.4	+1.5
	26nm,0.2s,baz=67						
LOR	Lormes	1.91	251	*e*Pn	Pn	18 45 26.0	-1.8
	baz=75						
LOR	Lormes	1.91	251	*e*Pg	Pb	18 45 31.6	+1.2
	baz=73						
LOR				*e*Sg	Sb	18 45 55.4	+1.5
	13nm,0.2s,baz=67						
IMS	Imsbach	1.91	28	Pg	Pb	18 45 31.9	+1.4
IMS	Imsbach	1.91	28	Pg	Pb	18 45 31.9	+1.4
STU	Stuttgart	1.99	64	Sg	Sg	18 46 00.4	+0.4
STU	Stuttgart	1.99	64	*e*Sg	Sg	18 46 00.4	+0.4
ABH	Alteburg	2.08	19	Sg	Sg	18 46 02.6	-0.3
ABH	Alteburg	2.08	19	Pn	Pn	18 45 27.7	-2.5
SSF	Saint Saulge	2.21	248	*e*Pn	Pn	18 45 30.0	-1.9
SSF	Saint Saulge	2.21	248	*e*Pg	Pb	18 45 36.7	+1.2
SSF				*e*Sg	Sb	18 46 04.6	+2.0
	11nm,0.2s						
SSF	Saint Saulge	2.21	248	*e*Pn	Pn	18 45 30.0	-1.9
SSF	Saint Saulge	2.21	248	*e*Pg	Pb	18 45 36.7	+1.2
SSF				*e*Sg	Sb	18 46 04.6	+2.0
	5.7nm,0.2s						
SMF	Signal de Mont	2.22	236	*e*Pg	Pb	18 45 37.1	+1.4
SMF				*e*Sg	Sb	18 46 05.4	+2.5
	23nm,0.2s						
SMF	Signal de Mont	2.22	236	*e*Pg	Pb	18 45 37.1	+1.4
SMF				*e*Sg	Sb	18 46 05.4	+2.5
	12nm,0.2s						
TOD	Tromm	2.27	41	Pn	Pn	18 45 31.2	-1.6
TOD	Tromm	2.27	41	Pg	Pb	18 45 38.1	+1.5
TOD				Sg	Sg	18 46 09.3	+0.2
BGG	Burgeitz	2.35	13	Pn	Pn	18 45 36.0	+2.2
BGG				Sn	Sn	18 46 04.7	+2.5
	11nm,0.3s						
BGG	Burgeitz	2.35	13	*e*Pn	Pn	18 45 36.0	+2.2
BGG				*e*Sn	Sn	18 46 04.7	+2.5
	11nm,0.3s						
DAVA	Damuels	2.37	104	Pn	Pn	18 45 35.2	+0.8
	0.2nm,0.1s						
DAVA				*i* Sg	Sg	18 46 11.2	-1.2
	12nm,0.3s						
DAVA	Damuels	2.37	104	Pn	Pn	18 45 35.2	+0.8
	0.2nm,0.1s						
DAVA				Sg	Sg	18 46 11.0	-1.4
DAVA	Damuels	2.37	104	*e*Sg	Sg	18 46 11.0	-1.4
HILG	Hillesheim	2.37	3	Pn	Pn	18 45 36.4	+2.2
HILG	Hillesheim	2.37	3	*e*Pn	Pn	18 45 36.4	+2.2
LPL	La Plagne	2.41	176	*e*Pn	Pn	18 45 34.0	-1.0
LPL	La Plagne	2.41	176	*e*Pg	Pb	18 45 40.7	+1.5
LPL				*e*Sg	Sb	18 46 11.6	+2.9
	4.1nm,0.3s						
LPL	La Plagne	2.41	176	*e*Pn	Pn	18 45 34.0	-1.0
LPL	La Plagne	2.41	176	*e*Pg	Pb	18 45 40.7	+1.5
LPL				*e*Sg	Sb	18 46 11.6	+2.9
	2.0nm,0.3s						
AVF	Avril sur Loir	2.42	243	*e*Pg	Pb	18 45 41.1	+1.9
AVF				*e*Sg	Sb	18 46 11.8	+3.1
	4.7nm,0.2s						
AVF	Avril sur Loir	2.42	243	*e*Pg	Pb	18 45 41.1	+1.9
AVF				*e*Sg	Sb	18 46 11.8	+3.1
	2.3nm,0.2s						
LPG	La Plagne	2.43	176	*e*Pn	Pn	18 45 34.5	-0.8
LPG	La Plagne	2.43	176	*e*Pg	Pb	18 45 41.4	+1.8
LPG				*e*Sg	Sb	18 46 12.6	+3.3
	8.6nm,0.3s						
LPG	La Plagne	2.43	176	*e*Pn	Pn	18 45 34.5	-0.8
LPG	La Plagne	2.43	176	*e*Pg	Pb	18 45 41.4	+1.8
LPG				*e*Sg	Sb	18 46 12.6	+3.3
	4.3nm,0.3s						
GIVF	Givet	2.44	334	*e*Pn	Pn	18 45 33.8	-1.4
GIVF	Givet	2.44	334	*e*Pg	Pb	18 45 41.8	+2.2
GIVF				*e*Sg	Sg	18 46 13.5	-1.2
	4.7nm,0.2s						
GIVF	Givet	2.44	334	*e*Pn	Pn	18 45 33.8	-1.4
GIVF	Givet	2.44	334	*e*Pg	Pb	18 45 41.8	+2.2
GIVF				*e*Sg	Sg	18 46 13.5	-1.2
	2.3nm,0.2s						
BAIF	Baives	2.62	326	*e*Pn	Pn	18 45 36.0	-1.5
BAIF	Baives	2.62	326	*e*Pg	Pb	18 45 44.8	+2.3
BAIF				*e*Sg	Sg	18 46 18.7	-1.5
	4.5nm,0.3s						
BAIF	Baives	2.62	326	*e*Pn	Pn	18 45 36.0	-1.5
BAIF	Baives	2.62	326	*e*Pg	Pb	18 45 44.8	+2.3
BAIF				*e*Sg	Sg	18 46 18.7	-1.5
	2.2nm,0.3s						
TNS	Taunus Mts	2.63	28	Sg	Sg	18 46 18.5	-2.2
TNS	Taunus Mts	2.63	28	*e*Sg	Sg	18 46 18.5	-2.2
AHRW	Bad Neuenahr-A	2.65	8	*e*Sg	Sg	18 46 19.5	-1.6
STB	Steinbach	2.68	5	Pn	Pn	18 45 40.4	+2.0
STB	Steinbach	2.68	5	*e*Pn	Pn	18 45 40.4	+2.0
HYF	Humbligny	2.69	257	*e*Sg	Sb	18 46 20.4	+3.8
HYF	Humbligny	2.69	257	*e*Sg	Sb	18 46 20.4	+3.8
KLL	Kalltalsperre	2.73	357	Pn	Pn	18 45 40.9	+1.8
KLL	Kalltalsperre	2.73	357	*e*Pn	Pn	18 45 40.9	+1.8
PLDF	La Plantade	2.78	226	Pn	Pn	18 45 36.7	-3.1
PLDF				Sg	Sb	18 46 23.0	+4.0
PLDF	La Plantade	2.78	226	Pn	Pn	18 45 36.7	-3.1
PLDF				Sg	Sb	18 46 23.0	+4.0
BGF	Bois d'Agland	2.84	243	*e*Pg	Pb	18 45 48.5	+2.2
BGF				*e*Sg	Sb	18 46 24.8	+4.0
	12nm,0.3s						
BGF	Bois d'Agland	2.84	243	*e*Pg	Pb	18 45 48.5	+2.2
BGF				*e*Sg	Sb	18 46 24.8	+4.0
	6.2nm,0.3s						
RETA	Reutte	2.91	97	*i* Sg	Sg	18 46 28.9	-0.7
	5.3nm,0.3s						
RETA	Reutte	2.91	97	Sg	Sg	18 46 28.9	-0.7
	5.3nm,0.3s						
AGO	Saint Agoulin	2.97	232	Pn	Pn	18 45 39.2	-3.2
AGO				Sg	Sb	18 46 29.2	+4.6
AGO	Saint Agoulin	2.97	232	Pn	Pn	18 45 39.2	-3.2
AGO				Sg	Sb	18 46 29.2	+4.6
ORIF	Oris-en-Rattie	3.04	188	*e*Pn	Pn	18 45 41.6	-1.8
ORIF	Oris-en-Rattie	3.04	188	*e*Pg	Pb	18 45 52.0	+2.3
ORIF				*e*Sg	Sb	18 46 31.2	+4.7
	12nm,0.3s						
ORIF	Oris-en-Rattie	3.04	188	*e*Pn	Pn	18 45 41.6	-1.8
ORIF	Oris-en-Rattie	3.04	188	*e*Pg	Pb	18 45 52.0	+2.3
ORIF				*e*Sg	Sb	18 46 31.2	+4.7
	5.8nm,0.3s						
HOBG	Hohbusch	3.11	10	Pn	Pn	18 45 46.4	+2.1
HOBG	Hohbusch	3.11	10	*e*Pn	Pn	18 45 46.4	+2.1
MOTA	Moosalm	3.17	99	*i* Pg	Pn	18 45 46.7	+1.4
	0.3nm,0.1s						
MOTA				*i* Sg	Sg	18 46 36.3	-1.4
	5.4nm,0.3s						
MBDF	Montbardon	3.20	177	*e*Pn	Pn	18 45 44.1	-1.7
MBDF	Montbardon	3.20	177	*e*Pg	Pb	18 45 55.3	+2.7
MBDF				*e*Sg	Sb	18 46 36.1	+4.7
	1.1nm,0.2s						
MBDF	Montbardon	3.20	177	*e*Pn	Pn	18 45 44.1	-1.7
MBDF	Montbardon	3.20	177	*e*Pg	Pb	18 45 55.3	+2.7
MBDF				*e*Sg	Sb	18 46 36.1	+4.7
	0.6nm,0.2s						
PYM	Petit Puy Mans	3.24	229	Pn	Pn	18 45 43.0	-3.2
PYM				Sg	Sg	18 46 38.3	-1.8
PYM	Petit Puy Mans	3.24	229	Pn	Pn	18 45 43.0	-3.2
PYM				Sg	Sg	18 46 38.3	-1.8
VIVF	Saint-Julien-I	3.32	203	*e*Pn	Pn	18 45 45.0	-2.2
VIVF	Saint-Julien-I	3.32	203	*e*Pg	Pb	18 45 57.2	+2.7
VIVF				*e*Sg	Sb	18 46 39.9	+5.3
	8.1nm,0.2s						
VIVF	Saint-Julien-I	3.32	203	*e*Pn	Pn	18 45 45.0	-2.2
VIVF	Saint-Julien-I	3.32	203	*e*Pg	Pb	18 45 57.2	+2.7
VIVF				*e*Sg	Sb	18 46 39.9	+5.3
	4.1nm,0.2s						
TCF	Toulx Ste Croi	3.36	242	*e*Pn	Pn	18 45 45.9	-1.9
TCF	Toulx Ste Croi	3.36	242	*e*Pg	Pb	18 45 57.9	+2.8
TCF				*e*Sg	Sb	18 46 40.8	+5.1
	4.7nm,0.3s						
TCF	Toulx Ste Croi	3.36	242	*e*Pn	Pn	18 45 45.9	-1.9
TCF	Toulx Ste Croi	3.36	242	*e*Pg	Pb	18 45 57.9	+2.8
TCF				*e*Sg	Sb	18 46 40.8	+5.1
	2.3nm,0.3s						
GRF	Grafenberg Arr	3.59	59	*e*Sg	Sg	18 46 49.9	-1.3
LASF	Ste Croix	4.27	207	*e*Pg	Pb	18 46 14.5	+3.9
LASF				*e*Sg	Sg	18 47 09.0	-4.1
	5.1nm,0.4s						
LASF	Ste Croix	4.27	207	*e*Pg	Pb	18 46 14.5	+3.9
LASF				*e*Sg	Sg	18 47 09.0	-4.1
	2.5nm,0.4s						
CAF	Calviac	4.29	227	*e*Sg	Sg	18 47 10.1	-3.7
	1.2nm,0.2s						
CAF	Calviac	4.29	227	*e*Sg	Sg	18 47 10.1	-3.7
	0.6nm,0.2s						
RJF	Les Rejaudoux	4.32	235	*e*Sg	Sg	18 47 10.7	-4.1
	2.2nm,0.2s						
RJF	Les Rejaudoux	4.32	235	*e*Sg	Sg	18 47 10.7	-4.1
	1.1nm,0.2s						
LDF	La Druitiere	4.48	281	*e*Sg	Sg	18 47 16.0	-3.7
	7.2nm,0.3s						
LDF	La Druitiere	4.48	281	*e*Sg	Sg	18 47 16.0	-3.7
	3.6nm,0.3s						
NKC	Novy Kostel	4.54	57	*e*PG	Pg	18 46 22.7	-0.3
NKC				*e*SG	Sg	18 47 21.8	+0.1
	comp=Z,4.6nm,0.4s						
MFF	Saint Martin d	4.72	256	*e*Sg	Sg	18 47 23.1	-4.3

baz=319
TWP Hsiaoliuchiu 1.98 307 *e*P Pn 18 48 22.2 -0.2
baz=295
CHKT Chengkung 2.05 342 ⇓P Pn 18 48 21.3 -2.0
baz=353
CHKT *e*S Sn 18 48 45.2 -3.7
baz=353
SSD Sandimen 2.08 320 *e*P Pn 18 48 23.5 -0.2
baz=322
SGLT Jiouru 2.15 317 *e*P Pn 18 48 25.0 +0.3
baz=332
ELDTW Lidau 2.25 335 *e*P Pn 18 48 25.4 -0.8
baz=325
TWM1 Shoushan 2.26 318 *e*P Pn 18 48 26.2 -0.1
baz=331
TWF1 Yuli 2.31 342 *e*P Pn 18 48 25.5 -1.5
baz=355
STYT Tauyuan 2.35 329 *e*P Pn 18 48 28.1 +0.6
baz=331
YULB Yu-li 2.35 342 *e*Pn Pn 18 48 25.9 -1.5
SGST Jiashian 2.37 325 *e*P Pn 18 48 28.8 +1.0
baz=327
SGST *e*S Sb 18 49 00.2 -0.7
baz=327
EHY Hungye 2.45 344 ⇑P Pn 18 48 27.6 -1.2
baz=331
CHN1 Nanshi 2.48 325 *e*P Pn 18 48 30.8 +1.4
baz=327
CHN1 *e*S Sb 18 49 01.9 -2.3
baz=327
CHN3 Shinhua 2.49 321 *e*P Pn 18 48 30.7 +1.3
baz=323
WTP Ta-pu 2.49 327 *e*P Pn 18 48 30.8 +1.4
baz=330
WTP *e*S Sb 18 49 02.4 -2.0
baz=330
TPUB Ta-pu 2.52 328 *e*Pn Pn 18 48 31.0 +1.1
YUS Yu-Shan 2.55 336 P Pn 18 48 30.6 -0.1
baz=330
TWK Hsinying 2.57 326 *e*P Pn 18 48 31.8 +1.3
baz=328
CHN4 Tsaushan 2.58 328 *e*P Pn 18 48 31.9 +1.2
baz=330
ALS Alishan 2.63 334 P Pn 18 48 32.3 +0.7
baz=335
ALS *e*S Sb 18 49 05.9 -2.7
baz=335
ESL Shilin 2.72 348 P Pn 18 48 31.2 -1.3
baz=359
ESL *e*S Sn 18 49 04.0 -1.5
baz=359
CHN5 Tsauling 2.76 332 *e*P Pn 18 48 34.4 +1.2
baz=318
CHN5 *e*S Sb 18 49 10.1 -2.1
baz=318
CHY Chiayi 2.79 327 *e*P Pn 18 48 33.6 0.0
baz=329
CHY *e*S Sn 18 49 08.7 +1.4
baz=329
CHN2 Minshiung 2.79 328 *e*P Pn 18 48 35.2 +1.6
baz=330
SSLB Suanglung 2.82 339 *e*Pn Pn 18 48 34.0 -0.1
WGK Gukeng 2.89 331 *e*P Pn 18 48 35.9 +1.1
baz=333
WGK *e*S Sb 18 49 12.7 -3.1
baz=333
SGCP Mt. Cagua 2.89 180 *e*P Pn 18 48 33.1 -1.8
SGCP *e*S Sn 18 48 48.5 -21
SMLT Sun Moon Lake 2.93 339 ⇑P Pn 18 48 37.0 +1.4
baz=324
SMLT *e*S Sn 18 49 13.0 +2.1
baz=324
TWD Chiawan 2.95 352 *e*P Pn 18 48 33.9 -1.9
baz=352
TYC Yuchr 2.96 338 P Pn 18 48 37.7 +1.8
baz=325
TYC *e*S Sb 18 49 14.6 -3.4
baz=325
WNT Mingjian 3.00 335 *e*P Pn 18 48 37.5 +1.0
baz=322
NACB Ninganchiao 3.04 352 *e*Pn Pn 18 48 34.9 -2.2
WDGT Dungji 3.07 314 *e*P Pn 18 48 36.6 -0.7
baz=316
WDGT *e*S Sn 18 49 11.3 -2.8
baz=316
WHF Hehuan Shan 3.08 346 *e*P Pn 18 48 37.1 -0.7
baz=358
PIP Pasuquin 3.12 206 ⇓*i*P Pn 18 48 38.4 +0.3
TWT Tachien 3.20 345 *e*P Pn 18 48 39.5 +0.2
baz=355
TCU Taichung 3.25 337 *e*P Pn 18 48 42.0 +2.1
baz=324
TCU *e*S Sn 18 49 21.1 +2.4
baz=324
ENA Nanau 3.28 355 *e*P Pn 18 48 39.9 -0.3
baz=355
HATJ Hateruma jima 3.31 29 P Pn 18 48 41.0 +0.3
HATJ S Sn 18 49 18.2 -1.9
NNS Nan Shan 3.34 349 *e*P Pn 18 48 41.6 +0.4
baz=1.0
NNS *e*S Sn 18 49 20.5 -0.6
baz=1.0
PNG Penghu 3.35 316 *e*P Pn 18 48 40.9 -0.3
baz=318
PNG *e*S Sn 18 49 19.3 -1.8
baz=318
APYP Conner 3.36 194 *e*P Pn 18 48 41.2 -0.1
JYNG Yonaunijimaku 3.39 14 P Pn 18 48 41.7 0.0
JYNG S Sn 18 49 20.0 -2.0
TWQ1 Liyutan 3.40 340 P Pn 18 48 44.1 +2.1
baz=329
TWQ1 *e*S Sn 18 49 25.0 +2.5
baz=329
YOJ Yonaguni jima 3.41 15 P Pn 18 48 42.2 +0.1
YOJ S Sn 18 49 21.0 -1.6
YOJ Yonaguni jima 3.41 15 *e*P Pn 18 48 41.8 -0.3
YOJ Yonaguni jima 3.41 15 *e*Pn Pn 18 48 41.8 -0.3
CVP Callao Caves 3.43 184 *e*P Pn 18 48 42.4 0.0
TWC Suao 3.45 357 *e*P Pn 18 48 42.2 -0.4
baz=357
TWC *e*S Sn 18 49 21.7 -1.9
baz=357
NSY Sanyi 3.47 340 *e*P Pn 18 48 44.9 +2.0
baz=327
NSY *e*S Sn 18 49 26.6 +2.5
baz=327
ENTT Nioudou 3.51 352 *e*P Pn 18 48 43.2 -0.2
baz=353
IRIF Iriomote-Funau 3.52 25 P Pn 18 48 44.0 +0.4
IRIF S Sn 18 49 23.4 -2.0
JKRS Kuro-shima 3.56 30 P Pn 18 48 44.7 +0.6
JKRS S Sn 18 49 24.7 -1.6
YHNB Yeheng 3.56 350 *e*Pn Pn 18 48 44.1 -0.1
NSK Sanguang 3.57 350 P Pn 18 48 44.6 +0.2
TWE Neicheng 3.58 354 *e*P Pn 18 48 44.8 +0.5
baz=355
NSTT Nanjuang 3.60 344 *e*P Pn 18 48 45.9 +1.1
baz=330
EGS 3.68 358 *e*P Pn 18 48 46.3 +0.5
baz=9.0
EGS *e*S Sn 18 49 30.1 +0.8
baz=9.0
ABRA Dolores 3.71 200 *e*P Pn 18 48 48.4 +2.2
JIJ Ishigaki jima 3.73 30 P Pn 18 48 46.3 -0.2
JIJ S Sn 18 49 27.8 -2.7
TWB1 Santiao Chiao 3.84 359 P Pn 18 48 48.6 +0.6
baz=8.0
TWB1 *e*S Sn 18 49 32.0 -1.2
baz=8.0
TATO Taipei 3.85 352 *e*Pn Pn 18 48 48.5 +0.5
NWF Wu-fen Shan 3.92 356 *e*P Pn 18 48 48.4 -0.7
baz=357
NWF *e*S Sn 18 49 36.2 +1.0
baz=357
TWS1 Kuangyinshan 3.98 351 *e*P Pn 18 48 50.7 +0.8
baz=1.0
TWS1 *e*S Sn 18 49 39.0 +2.3
baz=1.0
JISG Ishigakijimahi 4.00 31 P Pn 18 48 49.8 -0.4
JISG S Sn 18 49 34.9 -2.2
TWY Chenhua 4.13 354 *e*P Pn 18 48 55.4 +3.4
baz=355
CAUP Cauayan 4.19 183 *e*P Pn 18 48 54.8 +2.0
JTJ Tarama 4.24 34 P Pn 18 48 53.9 +0.4
JTJ S Sn 18 49 40.6 -2.5
PCYT Pengchaiyu 4.46 0 *e*P Pn 18 48 56.6 0.0
baz=1.0

JIRB Irabujima 4.65 37 P Pn 18 49 00.1 +1.0
JIRB S Sn 18 49 50.7 -2.4
KNM Kinmen 4.67 315 *e*P Pn 18 48 58.9 -0.5
baz=315
JMJ Miyako jima 2 4.71 39 S Sn 18 49 53.8 -0.8
JOGS Gusukube 4.73 40 P Pn 18 49 01.7 +1.5
JOGS S Sn 18 49 54.0 -1.2
JIKM Ikemajima 4.76 37 P Pn 18 49 02.1 +1.4
JIKM S Sn 18 49 55.0 -1.0
BCPH Baguio City Da 4.95 197 ⇓*e*P Pn 18 49 08.6 +5.2
BOLP Bolinao 5.16 204 *e*P Pn 18 49 07.3 +1.2
BALP Baler 5.40 185 *e*P Pn 18 49 09.7 +0.3
JKE Kume jima 2 6.73 39 P Pn 18 49 29.5 +1.8
JAGN Aguni-jima 7.19 40 P Pn 18 49 35.9 +1.8
JJT2 Tamagusuku 2 7.20 45 P Pn 18 49 36.4 +2.3
JNTH Nagotoyohara 7.63 44 P Pn 18 49 41.1 +1.0
JIH Iheya 7.96 41 P Pn 18 49 45.9 +1.3
JOW Kunigami 8.01 44 Pn Pn 18 49 44.5 -0.8
5.2nm,0.3s,baz=140,slow=23,SNR=44
JOW Sn Sn 18 51 12.4 -3.6
baz=270,slow=20
JOW Kunigami 8.01 44 P Pn 18 49 45.9 +0.6
JNU Nakatsue 14.27 31 Pn Pn 18 51 11.1 +0.1
0.3nm,0.3s,baz=232,slow=12,SNR=3.1
ENH Enshi 14.52 311 Pn Pn 18 51 16.3 +1.8
PANO Nakornpanom 16.96 259 P P 18 51 57.4 +9.1
13nm,1.3s
KSAR Wonju Array Be 17.00 16 P P 18 51 47.6 -1.0
KSAR Wonju Array Be 17.00 16 Pn P 18 51 47.5 -1.0
KSRS Korea Array 17.03 16 Pn Pn 18 51 47.5 +0.5
0.7nm,0.3s,baz=196,slow=13,SNR=20
BJT Baijiatuau 19.48 346 *e*P Pn 18 52 17.1 +0.1
BJT Baijiatuau 19.48 346 *e*P Pn 18 52 17.1 +0.1
CRAI Chiangrai 20.32 271 P Pn 18 52 36.2 +9.0
570nm,1.1s,80μm
PBKT Sadao Pong 20.47 261 P Pn 18 52 36.5 +7.5
8.0nm,0.9s
MRSI Marisa 20.54 180 P Pn 18 52 30.9 +1.1
MAJO Matsushiro 20.81 39 *i*P Pn 18 52 34.3 +1.4
MAJO pmax pmax
comp=Z,29nm,1.1s
MAJO Matsushiro 20.81 39 *e*P P 18 52 30.9 +0.4
MJAR Matsushiro Arr 20.81 39 P Pn 18 52 32.9 0.0
comp=Z,4.4nm,1.0s,baz=234,slow=10,SNR=7.0
CMMT Chiang Mai 21.85 268 P P 18 52 49.2 +7.4
comp=Z,5.4nm,1.1s
CHTO Chiang Mai 21.85 268 P P 18 52 49.3 +7.5
comp=Z,31nm,1.2s
CHTO Chiang Mai 21.85 268 P P 18 52 40.3 -1.5
CHTO pmax pmax
comp=Z,6.0nm,1.1s
CHTO Chiang Mai 21.85 268 P P 18 52 40.3 -1.5
comp=Z,5.6nm,1.1s
LBMI Labuha 22.29 166 P P 18 52 46.5 0.0
MSHR Mys Shultsa 22.69 18 *ce*P P 18 52 54.9 +4.4
TTSI Tana Toraja 24.14 186 P P 18 53 06.0 +0.8
MDJ Mudanjiang 24.22 13 *e*P P 18 53 07.8 +2.1
comp=Z,10nm,0.9s
USRK Ussuriysk Ar. 24.42 17 P P 18 53 10.2 +2.8
comp=Z,11nm,0.9s,baz=212,slow=9.0,SNR=19
BBKI Banjar Baru 25.46 197 P P 18 53 18.8 +1.6
comp=Z,28nm,0.9s
ASAJ Asahikawa 28.55 32 P P 18 53 47.7 +3.0
comp=Z,9.1nm,0.7s,baz=195,slow=8.4,SNR=15
KLR Kul'dur 29.07 13 P P 18 53 51.7 +2.5
comp=Z,7.2nm,0.9s,baz=233,slow=5.6,SNR=18
ULN Ulaanbaatar 29.28 339 *ce*P P 18 53 50.6 -0.8
ULN pmax pmax
comp=Z,7.0nm,0.9s
ULN Ulaanbaatar 29.28 339 *e*P P 18 53 51.0 -0.4
SONM Songino Array 29.48 338 P P 18 53 53.0 -0.1
comp=Z,4.7nm,0.7s,baz=161,slow=9.7,SNR=14
YSS Yuzh-Sakhalins 30.74 28 *e*P P 18 54 06.9 +2.8
YSS pmax pmax
comp=Z,9.0nm,0.9s
TLY Talaya 33.69 339 *e*P P 18 54 30.2 +0.2
TLY pmax pmax
comp=Z,2.0nm,0.6s
TLY Talaya 33.69 339 *e*P P 18 54 29.8 -0.2
comp=Z,1.9nm,0.6s
MKAR Makanchi Array 41.11 318 P P 18 55 33.7 +0.8
comp=Z,5.7nm,0.6s,baz=113,slow=9.6,SNR=82
YAK Yakutsk 41.19 5 *e*P P 18 55 33.4 +0.1
YAK pmax pmax
comp=Z,5.0nm,0.9s
H11N1 WAKE ISLAND Hy 41.92 84 T T 19 40 29.5
baz=280,slow=74,SNR=93
H11N2 WAKE ISLAND Hy 41.93 84 T T 19 40 31.1
baz=280,slow=74,SNR=139
H11N3 WAKE ISLAND Hy 41.94 84 T T 19 40 33.0
baz=280,slow=74,SNR=124
H11S3 WAKE ISLAND Hy 41.96 86 T T 19 40 33.5
baz=282,slow=75,SNR=439
PETK Petropavlovsk- 41.96 32 P P 18 55 42.0 +2.2
comp=Z,2.9nm,0.7s,baz=197,slow=4.5,SNR=3.2
PETK Petropavlovsk- 41.96 32 P P 18 55 42.0 +2.2
H11S1 WAKE ISLAND Hy 41.97 86 T T 19 40 34.1
baz=282,slow=75,SNR=469
H11S2 WAKE ISLAND Hy 41.98 86 T T 19 40 34.9
baz=282,slow=75,SNR=376
PET Petropavlovsk 42.39 32 *e*P P 18 55 45.2 +2.0
PET pmax pmax
comp=Z,23nm,0.8s
WRAB Tennant Creek 42.56 163 *e*P P 18 55 42.7 -2.3
WRAB Tennant Creek 42.56 163 *e*P P 18 55 42.7 -2.3
WRA Warramunga Arr 42.56 163 P P 18 55 42.5 -2.5
comp=Z,2.3nm,0.7s,baz=343,slow=8.7,SNR=3.1
ZALV Zalesovo Beam 43.24 329 P P 18 55 50.3 +0.2
comp=Z,11nm,0.8s,baz=118,slow=7.4,SNR=43
NVS Novosibirsk 44.51 329 *e*P P 18 55 57.4 -2.9
NVS pmax pmax
comp=Z,7.0nm,1.3s
NVS pmax pmax
comp=E,7.0nm,1.4s
ASAR Alice Springs 46.01 165 P P 18 56 11.6 -1.1
comp=E,0.7nm,0.5s,baz=346,slow=7.6,SNR=23
ASAR PcP PcP 18 57 47.5 -1.8
comp=E,0.4nm,0.7s,baz=348,slow=4.2,SNR=2.7
BRVK Borovoye 50.62 322 *ce*P P 18 56 48.9 +1.0
BRVK pmax pmax
comp=Z,10.0nm,1.2s
TIXI Tiksi 50.67 3 *e*P P 18 56 48.7 +0.8
TIXI pmax pmax
comp=Z,4.0nm,1.7s
NRIK Noril'sk 52.53 345 P P 18 57 01.3 -0.7
comp=Z,3.3nm,0.8s,baz=127,slow=4.8,SNR=7.6
BILL Bilibino 54.27 19 *i*P P 18 57 14.8 +0.1
BILL pmax pmax
comp=Z,3.0nm,0.8s
BILL Bilibino 54.27 19 P P 18 57 15.8 +1.1
comp=Z,2.1nm,0.4s
STKA Stephens Creek 55.94 160 P P 18 57 26.1 -1.1
comp=Z,3.5nm,0.6s,baz=337,slow=7.6,SNR=16
ABKAR Akbulak array 56.16 316 *e*P P 18 57 28.9 +0.2
comp=Z,3.4nm,0.4s
SVE Sverdlovsk 56.98 325 *e*P P 18 57 35.0 +0.7
SVE pmax pmax
comp=Z,15nm,1.2s
GEYT Alibeck 57.06 302 P P 18 57 36.0 +0.7
comp=Z,1.8nm,0.7s,baz=94,slow=4.6,SNR=3.9
ARU Arti 58.02 324 *d i*P P 18 57 41.8 0.0
ARU 18 58 32.3
ARU 18 59 46.1
ARU S S 19 05 30.8 -11
ARU 19 07 18.9
ARU pmax pmax
comp=Z,23nm,1.2s
ARU Arti 58.02 324 *e*P P 18 57 41.7 0.0
comp=Z,14nm,0.6s
ZEI Tsey 67.44 309 *e*P P 18 58 43.6 -1.5
ZEI pmax pmax
comp=Z,18nm,1.5s
KBZ Khabaz 68.03 310 P P 18 58 48.1 -0.3
comp=Z,1.7nm,0.8s,baz=62,slow=15,SNR=4.1
KIV Kislovodsk 68.14 310 *e*P P 18 58 50.0 +0.7
KIV pmax pmax
comp=Z,7.0nm,1.0s
KLMR Klimovskoe 68.16 328 *e*P P 18 58 47.0 -2.0
KLMR *e* 18 59 12.8
KLMR pmax pmax
comp=Z,6.0nm,1.3s
KODAK Kodiak Island 69.92 35 *i*P P 18 59 01.6 +1.7
KTH Kantishna Hill 69.97 28 *e*P P 18 59 02.3 +2.0
comp=Z,21nm,1.7s
OBN Obninsk 70.39 323 *e*P P 18 59 01.3 -1.6

OBN pmax pmax
comp=Z,4.0nm,1.0s
SML Sawmill 71.41 30 *e*P P 18 59 08.9 -0.2
SML pmax pmax
comp=Z,5.0nm,1.5s
SML Sawmill 71.41 30 *e*P P 18 59 08.8 -0.2
comp=Z,4.7nm,1.5s
ILAR Eielson Array 71.53 27 P P 18 59 10.3 +0.6
comp=Z,0.6nm,0.8s,baz=276,slow=4.9,SNR=6.8
FINES FINESS Array B 74.47 330 P P 18 59 26.5 -0.7
comp=Z,1.9nm,0.7s,baz=108,slow=6.2,SNR=9.6
FINES FINESS Array B 74.47 330 *i*P P 18 59 27.1 0.0
FINES pmax pmax
comp=Z,2.0nm,0.7s
DAWY Dawson 74.86 27 *e*P P 18 59 30.6 +1.2
comp=Z,4.3nm,0.9s
BRTR Keskin Array B 75.64 307 P P 18 59 34.2 -0.3
comp=Z,1.2nm,0.7s,baz=100,slow=5.4,SNR=7.3
BRTR Keskin Array B 75.64 307 *ce*P P 18 59 34.5 0.0
BRTR pmax pmax
comp=Z,1.0nm,0.6s
AKASG Malin Array Be 75.68 319 P P 18 59 33.0 -1.3
comp=Z,1.7nm,0.6s,baz=60,slow=5.7,SNR=7.1
AKASG Malin Array Be 75.68 319 *ce*P P 18 59 33.5 -0.8
AKASG pmax pmax
comp=Z,2.0nm,0.6s
STHS Stebnicka Huta 80.96 319 *e*P P 19 00 03.9 +0.3
STHS pmax pmax
comp=Z,2.0nm,1.1s
STHS Stebnicka Huta 80.96 319 *e*P P 19 00 03.9 +0.3
CRVS Cervenica-Dubn 81.02 319 *e*P P 19 00 04.9 +1.0
CRVS Cervenica-Dubn 81.02 319 *e*P P 19 00 04.9 +1.0
NB2 NORSAR Subarra 81.28 333 P P 19 00 03.2 -1.9
comp=Z,1.1nm,0.8s,baz=60,slow=5.1
NOA NORSAR Array B 81.28 333 P P 19 00 03.5 -1.7
comp=Z,0.5nm,0.7s,baz=61,slow=4.6,SNR=3.6
LANS Liptovska Anna 82.14 320 *e*P P 19 00 10.0 +0.1
LANS Liptovska Anna 82.14 320 *e*P P 19 00 10.0 +0.1
VYHS Vyhne 82.78 319 *e*P P 19 00 12.9 -0.3
VYHS pmax pmax
comp=Z,3.0nm,1.1s
VYHS Vyhne 82.78 319 *e*P P 19 00 12.9 -0.3
CLL Collm 84.96 323 *e*P P 19 00 24.0 -0.3
CLL Collm 84.96 323 *e*P P 19 00 24.0 -0.3
YKA Yellowknife Ar 85.44 23 P P 19 00 26.8 +0.4
comp=Z,4.2nm,0.7s,baz=312,slow=4.6,SNR=100
GERES GERESS Array B 85.70 321 P P 19 00 27.6 -0.6
comp=Z,1.0nm,0.7s,baz=64,slow=6.1,SNR=10

CASC 05 18:50:39.6±7.7, 13°.81N×83°.02W, h0km±79km, MD4.5, ML3.8, 1D, Nicaragua

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
ESPN	**Las Esperanzas**	**2.03**	**218**	*e*P	Pn	Pn	18 51 11.6	-3.5
ESPN				*e*S	Sn	Sn	18 51 36.0	-5.2
ESPN				AML	AML	AML	18 51 40.8	
	comp=N,1μm,0.3s							
TISN	**Laguna Tiscapa**	**3.58**	**243**	*e*P	Pn	Pn	18 51 37.0	+0.6
APYN	**Apoyeque**	**3.60**	**245**	*e*P	Pn	Pn	18 51 36.7	-0.1
MOMN	**Momotombo**	**3.70**	**248**	*e*P	Pn	Pn	18 51 38.5	+0.4
CNGN	**Cerro Negro**	**3.81**	**251**	*e*P	Pn	Pn	18 51 40.6	+0.9
CNGN				*e*S	Sn	Sn	18 52 28.9	+3.5
COPN	**Copaltepe**	**3.84**	**246**	*e*P	Pn	Pn	18 51 40.9	+0.9
URSC	**Urasca**	**4.02**	**191**	*e*P	Pn	Pn	18 51 40.5	-2.1
CGA2	**Cerro Gallo 2**	**4.02**	**201**	*e*P	Pn	Pn	18 51 44.2	+1.5
CGA2				*e*S	Sn	Sn	18 52 33.6	+3.0
TGUH	**Tegucigalpa,Un**	**4.14**	**274**	*e*P	Pn	Pn	18 51 48.0	+3.9
BUS	**Buena Vista**	**4.29**	**190**	⇓*e*P	Pn	Pn	18 51 44.2	-2.4
BUS				*e*S	Sb	Sb	18 52 46.4	-2.3
JCR	**Jicaral**	**4.43**	**208**	*e*P	Pn	Pn	18 51 45.6	-2.7
JCR				*e*S	Sn	Sn	18 52 46.5	+5.9

IDC ***05*** *19:11:15.6±3.0, 39°.41N×143°.07E, h0km, mb3.2/2, mb1 3.3/3, mb1mx3. 1/36, mbtmp3. 1/3, ML2.9/1, Error ellipse: s-maj=71.0km s-min=36.4km az=66.0*
ISCJB ***05*** *19:11:20.6±1.6, 39°.10N±0°.04×142°.5E±0°.1, h21km±9km, mb3.1/2, Error ellipse: s-maj=13.4km s-min=7.5km az=0.0*
JMA ***05*** *19:11:22.8±0.1, 39°.14N×142°.35E, h28km±1km, M3.0*
ISC 05 19:11:21.1±2.1, 39°.09N±0°.05×142°.4E±0°.2, h20km±11km, n12, σ0°.55/19, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.59**	**269**	P	**Pb**	**Pb**	**19 11 33.5**	**+0.7**
OFUJ				S	**Sb**	**Sb**	**19 11 41.0**	**+0.3**
MIYJ	**Miyakonagasawa**	**0.68**	**316**	P	**Pb**	**Pb**	**19 11 34.4**	**+0.1**
MIYJ				S	**Sb**	**Sb**	**19 11 42.6**	**-0.6**
JMK	**Ichinoseki**	**0.95**	**262**	P	**Pb**	**Pb**	**19 11 39.2**	**+0.4**
JMK				S	**Sb**	**Sb**	**19 11 50.9**	**-0.1**
JOM	**Ohasama**	**0.96**	**294**	P	**Pb**	**Pb**	**19 11 39.3**	**+0.3**
JOM				S	**Sb**	**Sb**	**19 11 51.3**	**0.0**
JIO	**Ouri**	**1.05**	**233**	P	**Pn**	**Pn**	**19 11 40.7**	**0.0**
JIO				S	**Sb**	**Sb**	**19 11 53.0**	**-1.0**
JKZ	**Kuzumaki**	**1.23**	**317**	P	**Pn**	**Pn**	**19 11 43.7**	**+0.5**
JKZ				S	**Sn**	**Sn**	**19 11 58.4**	**-0.9**
JRG	**Rokugo**	**1.43**	**283**	P	**Pb**	**Pb**	**19 11 47.2**	**+0.2**
JRG				S	**Sb**	**Sb**	**19 12 05.4**	**+0.7**
JANG	**Nango**	**1.46**	**332**	P	**Pn**	**Pn**	**19 11 46.6**	**+0.3**
JANG				S	**Sn**	**Sn**	**19 12 04.2**	**-0.7**
JYK	**Kaneyama**	**1.62**	**265**	P	**Pb**	**Pb**	**19 11 50.0**	**-0.3**
MJAR	**Matsushiro Arr**	**4.20**	**234**	Pn	Pn	Pn	19 12 28.9	+5.0
	0.5nm,0.3s,baz=45,slow=11,SNR=12							
MKAR	**Makanchi Array**	**43.74**	**300**	P	**P**	**P**	**19 19 24.6**	**-0.2**
	0.2nm,0.7s,baz=74,slow=8.2,SNR=2.8							
WRA	**Warramunga Arr**	**59.21**	**189**	P	**P**	**P**	**19 21 21.1**	**+0.4**
	0.1nm,0.4s,baz=6.3,slow=7.0,SNR=4.3							

JMA ***05*** *19:30:48.9, 24°.71N×122°.52E, h32km±2km, M2.6*
TAP ***05*** *19:30:49.3, 24°.78N×122°.52E, h12km, ML3.5, D*
ISC 05 19:30:47.0±1.1, 24°.81N±0°.03×122°.58E±0°.02, h8km±9km, n53, σ0°.92/91, Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
JYNG	**Yonagunijimaku**	**0.49**	**137**	P	**Pb**	**Pb**	**19 30 58.6**	**+0.8**
JYNG				S	**Sb**	**Sb**	**19 31 05.4**	**+0.3**
YOJ	**Yonaguni jima**	**0.53**	**131**	P	**Pb**	**Pb**	**19 30 59.3**	**+0.9**
YOJ				S	**Sb**	**Sb**	**19 31 06.2**	**0.0**
TWB1	**Santiao Chiao**	**0.57**	**291**	*i*P	**Pb**	**Pb**	**19 30 59.3**	**+0.1**
	baz=295							
TWB1				*i*S	**Sb**	**Sb**	**19 31 07.1**	**-0.4**
	baz=295							
EGS		**0.59**	**274**	*i*P	**Pb**	**Pb**	**19 30 59.4**	**-0.1**
	baz=276							
TWC	**Suao**	**0.69**	**253**	*i*P	**Pg**	**Pg**	**19 31 00.7**	**+0.4**
	baz=254							
TWC				S	**Sb**	**Sb**	**19 31 10.4**	**-0.5**
	baz=254							
ILA	**Ilan**	**0.75**	**267**	*e*P	**Pb**	**Pb**	**19 31 02.4**	**+0.1**
	baz=268							
ILA				S	**Sg**	**Sg**	**19 31 12.1**	**+0.7**
	baz=268							
NWF	**Wu-fen Shan**	**0.77**	**290**	*i*P	**Pb**	**Pb**	**19 31 03.1**	**+0.4**
	baz=293							
NWF				*i*S	**Sb**	**Sb**	**19 31 13.2**	**-0.1**
	baz=293							
TWE	**Neicheng**	**0.83**	**264**	*i*P	**Pb**	**Pb**	**19 31 03.5**	**-0.2**
	baz=265							
TWE				S	**Sg**	**Sg**	**19 31 13.9**	**+0.1**
	baz=265							
ENA	**Nanau**	**0.85**	**244**	*i*P	**Pg**	**Pg**	**19 31 03.5**	**+0.2**
	baz=243							
ENA				*i*S	**Sg**	**Sg**	**19 31 14.1**	**-0.3**
	baz=243							
ENTT	**Nioudou**	**0.93**	**260**	*i*P	**Pg**	**Pg**	**19 31 05.2**	**+0.2**
	baz=260							
ENTT				*i*S	**Sb**	**Sb**	**19 31 17.6**	**-0.4**
	baz=260							
PCYT	**Pengchaiyu**	**0.94**	**331**	P	**Pn**	**Pn**	**19 31 06.6**	**+0.2**
	baz=334							
TAP1	**Taipei**	**0.98**	**284**	*e*P	**Pn**	**Pn**	**19 31 07.5**	**+0.5**
	baz=285							
TAP1				*e*S	**Sb**	**Sb**	**19 31 19.4**	**0.0**
	baz=285							
TAP	**Taipei**	**1.00**	**284**	*e*P	**Pg**	**Pg**	**19 31 05.2**	**-1.1**
	baz=285							
TAP				*i*S	**Sg**	**Sg**	**19 31 19.2**	**0.0**
	baz=285							
TWY	**Chenhua**	**1.00**	**298**	*i*P	**Pn**	**Pn**	**19 31 07.6**	**+0.3**
	baz=300							
TWY				*i*S	**Sb**	**Sb**	**19 31 19.9**	**0.0**

	baz=300						
TWS1	**Kuangyinshan**	**1.09**	**286**	*e*P	**Pn**	**19 31 09.8**	**+1.2**
	baz=287						
TWS1				S	**Sg**	**19 31 22.1**	**0.0**
	baz=287						
NSK	**Sanguang**	**1.12**	**263**	*i* P	**Pg**	**19 31 08.2**	**-0.2**
	baz=264						
NSK				*e*S	**Sg**	**19 31 21.5**	**-1.4**
	baz=264						
TWD	**Chiawan**	**1.15**	**231**	P	**Pg**	**19 31 09.1**	**0.0**
	baz=230						
TWD				*e*S	**Sb**	**19 31 24.6**	**+0.4**
	baz=230						
IRIF	**Iriomote-Funau**	**1.15**	**114**	P	**Pg**	**19 31 09.0**	**-0.1**
IRIF				S	**Sb**	**19 31 24.4**	**+0.2**
NNS	**Nan Shan**	**1.16**	**252**	*i* P	**Pg**	**19 31 09.2**	**0.0**
	baz=251						
NNS				*i* S	**Sg**	**19 31 23.8**	**-0.5**
	baz=251						
NCU	**National Centr**	**1.27**	**278**	*e*S	**Sn**	**19 31 28.6**	**+0.3**
	baz=278						
HATJ	**Hateruma jima**	**1.35**	**124**	P	**Pb**	**19 31 12.7**	**+0.2**
HATJ				S	**Sb**	**19 31 29.0**	**-0.8**
WHF	**Hehuan Shan**	**1.36**	**241**	*i* P	**Pn**	**19 31 12.7**	**-0.1**
	baz=240						
WHF				*e*S	**Sg**	**19 31 31.0**	**0.0**
	baz=240						
TWT	**Tachien**	**1.39**	**247**	*i* P	**Pb**	**19 31 13.5**	**+0.2**
	baz=246						
TWT				S	**Sg**	**19 31 31.7**	**-0.1**
	baz=246						
JKRS	**Kuro-shima**	**1.42**	**113**	P	**Pn**	**19 31 13.2**	**+0.1**
JKRS				S	**Sb**	**19 31 31.7**	**-0.4**
ESL	**Shilin**	**1.44**	**227**	*i* P	**Pb**	**19 31 14.2**	**+0.2**
	baz=225						
ESL				*e*S	**Sg**	**19 31 33.8**	**+0.5**
	baz=225						
NSTT	**Nanjuang**	**1.44**	**263**	P	**Pg**	**19 31 14.9**	**+0.2**
	baz=263						
NSTT				*i* S	**Sn**	**19 31 31.9**	**-0.7**
	baz=263						
JIJ	**Ishigaki jima**	**1.49**	**107**	P	**Pn**	**19 31 14.5**	**+0.4**
JIJ				S	**Sn**	**19 31 32.3**	**-1.4**
JISG	**Ishigakijimahi**	**1.59**	**98**	S	**Sn**	**19 31 35.4**	**-0.8**
NSY	**Sanyi**	**1.70**	**257**	*e*P	**Pg**	**19 31 19.2**	**-0.4**
	baz=257						
TWQ1	**Liyutan**	**1.71**	**255**	*e*P	**Pg**	**19 31 19.6**	**-0.1**
	baz=254						
EHY	**Hungye**	**1.73**	**222**	*e*P	**Pn**	**19 31 16.9**	**-0.4**
	baz=220						
EHY				S	**Sn**	**19 31 39.0**	**-0.7**
	baz=220						
SMLT	**Sun Moon Lake**	**1.79**	**239**	*e*P	**Pb**	**19 31 20.4**	**+0.4**
	baz=238						
TYC	**Yuchr**	**1.81**	**240**	*e*P	**Pb**	**19 31 20.4**	**0.0**
	baz=239						
TYC				*e*S	**Sb**	**19 31 43.3**	**+0.2**
	baz=239						
TWF1	**Yuli**	**1.86**	**219**	*e*P	**Pn**	**19 31 19.1**	**-0.1**
	baz=217						
TWF1				*e*S	**Sn**	**19 31 43.5**	**+0.6**
	baz=217						
WNT	**Mingjian**	**1.96**	**242**	*e*P	**Pb**	**19 31 23.1**	**+0.1**
	baz=241						
WNT				*e*S	**Sb**	**19 31 47.5**	**0.0**
	baz=241						
YUS	**Yu-Shan**	**1.98**	**229**	*e*P	**Pn**	**19 31 22.2**	**+1.0**
	baz=227						
YUS				*e*S	**Sn**	**19 31 46.7**	**+0.2**
	baz=227						
CHKT	**Chengkung**	**2.03**	**213**	*e*P	**Pn**	**19 31 21.3**	**-0.2**
	baz=212						
CHKT				*e*S	**Sn**	**19 31 46.1**	**-0.9**
	baz=212						
ALS	**Alishan**	**2.07**	**232**	P	**Pn**	**19 31 23.4**	**+1.1**
	baz=230						
CHN5	**Tsauling**	**2.11**	**236**	*e*P	**Pb**	**19 31 24.8**	**-0.7**
	baz=235						
WGK	**Gukeng**	**2.15**	**239**	*e*P	**Pb**	**19 31 25.8**	**-0.4**
	baz=238						
ELDTW	**Lidau**	**2.15**	**222**	P	**Pn**	**19 31 23.9**	**+0.6**
	baz=220						
ELDTW				*e*S	**Sn**	**19 31 48.4**	**-1.9**
	baz=220						
CHN4	**Tsaushan**	**2.32**	**232**	P	**Pn**	**19 31 26.6**	**+1.1**
	baz=231						
CHN4				*e*S	**Sb**	**19 31 57.6**	**-0.3**
	baz=231						
STYT	**Tauyuan**	**2.33**	**226**	*i* P	**Pn**	**19 31 26.8**	**+1.0**
	baz=224						
STYT				*e*S	**Sn**	**19 31 56.2**	**+1.5**
	baz=224						
WTP	**Ta-pu**	**2.38**	**229**	*e*P	**Pn**	**19 31 28.0**	**+1.7**
	baz=228						
WTP				*e*S	**Sb**	**19 31 58.9**	**-0.6**
	baz=228						
TWG	**Pinlang**	**2.41**	**215**	*e*S	**Sn**	**19 31 55.8**	**-0.6**
	baz=214						
CHN1	**Nanshi**	**2.47**	**230**	P	**Pn**	**19 31 29.0**	**+1.4**
	baz=228						
SGST	**Jiashian**	**2.51**	**227**	P	**Pn**	**19 31 29.6**	**+1.6**
	baz=226						
SGST				*e*S	**Sn**	**19 32 00.7**	**+1.9**
	baz=226						
ECL	**Taimali**	**2.66**	**214**	*e*P	**Pn**	**19 31 32.0**	**+1.9**
	baz=213						
ECL				*e*S	**Sn**	**19 32 01.1**	**-1.4**
	baz=213						
SSD	**Sandimen**	**2.72**	**221**	*e*P	**Pn**	**19 31 33.3**	**+2.4**
	baz=220						
SSD				*e*S	**Sb**	**19 32 07.0**	**-2.3**
	baz=220						
EAST	**Anshuo**	**2.89**	**214**	*e*P	**Pb**	**19 31 36.7**	**-2.1**
	baz=212						
EAST				*e*S	**Sb**	**19 32 12.1**	**-2.2**
	baz=212						
LAY	**Lan-yu**	**2.91**	**199**	*e*P	**Pn**	**19 31 34.2**	**+0.6**
	baz=197						
SCZT	**Fangliau**	**3.02**	**217**	*e*P	**Pn**	**19 31 37.6**	**+2.5**
	baz=215						
TWK1	**Hengchun**	**3.28**	**210**	*e*S	**Sn**	**19 32 19.4**	**+1.4**
	baz=209						

MAN 05 19:32:14.7″14N×126″12E, h20km, mb4.6, ML3.5, MS3.4, 2C-1D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MATI	**Mati**	**0.24**	**144**	*e*P	Pb	19 32 21.8	+2.0
MATI				*e*S	Sb	19 32 29.9	+6.3
KCP	**Kidapawan**	**1.02**	**263**	⇓*i*P	Pb	19 32 32.6	-0.5
KCP				*i* S	Sn	19 32 48.3	+1.2
BIPH	**Bislig**	**1.07**	**13**	⇑*i*P	Pn	19 32 43.1	+9.3
BIPH				*i* S	Sn	19 33 02.5	+14
BUKP	**Musuan**	**1.28**	**305**	*e*P	Pn	19 32 37.0	+0.3
BUKP				*e*S	Sb	19 32 59.0	+5.6
GSPH	**General Santos**	**1.56**	**228**	⇑*i*P	Pn	19 32 37.9	-2.8
PAGZ	**Pagadian**	**2.80**	**285**	*e*P	Pn	19 32 59.0	+1.3

*NEIC **05** 19:47:36.0, 32.°05N×115.°16W, h10km, ML3.4(PAS), After PAS.*
*ISCJB **05** 19:47:36.1±0.4, 32.°14N±0.°02×115.°14W±0.°03, h27km±4km, Error ellipse: s-maj=4.6km s-min=3.8km az=170.8*
*ECX **05** 19:47:37.3±0.9, 32.°09N×115.°17W, h7km, MD3.5, ML3.7*
*MEX **05** 19:47:38.4±0.8, 32.°15N×115.°16W, h8km±11km, MD4.0*

ISC 05 19:47:35.2±1.2, 32°14N±0.°02×115°18W±0.°03, h16km±10km, n36, σ0§55/52, 3C-4D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MBIG	**Mexicali**	**0.26**	**356**	*e*P	**Pn**	**19 47 43.5**	**-1.0**
MBIG				*e*S	**Sb**	**19 47 46.1**	**+0.2**
MBIG	**Mexicali**	**0.26**	**356**	*e*P	**Pn**	**19 47 43.5**	**-1.0**
CPBX	**Cerro Prieto**	**0.29**	**338**	*e*P	**Pn**	**19 47 44.2**	**-0.7**
CPBX				*i* S	**Sb**	**19 47 46.6**	**-0.2**
CPBX	**Cerro Prieto**	**0.29**	**338**	*e*P	**Pn**	**19 47 44.0**	**-0.9**
CPBX				*e*S	**Sb**	**19 47 48.5**	**+1.6**
CPBX				⇑*e*		19 47 52.1	
CPBX				AML	AML	19 47 52.1	
	comp=N,28μm,0.4s						
EMSC	**East Mesa**	**0.61**	**15**	⇓*i*P	**Pn**	**19 47 49.1**	**-0.2**
YMD	**Yuma Desert**	**0.67**	**52**	*e*P	**Pn**	**19 47 49.5**	**-0.6**
ECBX	**El Chinero**	**0.68**	**171**	*e*P	**Pb**	**19 47 48.5**	**-0.2**
ECBX				*e*S	**Sg**	**19 47 57.2**	**-0.2**
SGL	**Mount Signal**	**0.69**	**317**	*e*P	**Pn**	**19 47 49.8**	**-0.5**
DREC	**Desert Rsrch C**	**0.70**	**341**	*e*P	**Pn**	**19 47 50.5**	**+0.1**
COA	**Coachella**	**0.72**	**4**	⇓*i*P	**Pn**	**19 47 50.5**	**-0.3**
WESC	**Westside Schoo**	**0.77**	**323**	*e*P	**Pn**	**19 47 51.3**	**-0.1**
YUH	**Yuha Desert**	**0.81**	**309**	⇑*i*P	**Pn**	**19 47 51.6**	**-0.4**
RMX	**La Rumorosa**	**0.89**	**301**	*e*P	**Pn**	**19 47 53.3**	**0.0**
RMX				*e*S	**Sn**	**19 48 05.5**	**-0.4**
GLA	**Glamis**	**0.95**	**18**	P	**Pn**	**19 47 53.7**	**-0.3**
	baz=196						
SWSC	**Sam W. Stewart**	**0.96**	**327**	P	**Pg**	**19 47 53.5**	**-0.2**
	baz=149						
SPIG	**San Pedro Mart**	**1.12**	**193**	*e*P	**Pb**	**19 47 56.4**	**-0.1**
SPIG				*e*S	**Sn**	**19 48 11.9**	**-0.1**
SPIG	**San Pedro Mart**	**1.12**	**193**	*e*P	**Pb**	**19 47 56.4**	**-0.1**
SPIG				*e*S	**Sn**	**19 48 11.9**	**-0.1**
SPIG	**San Pedro Mart**	**1.12**	**193**	*e*P	**Pb**	**19 47 56.4**	**-0.1**
SPX	**San Pedro Mart**	**1.12**	**193**	*e*P	**Pn**	**19 47 56.5**	**-0.2**
SPX				*e*S	**Sg**	**19 48 11.7**	**0.0**
SPX	**San Pedro Mart**	**1.12**	**193**	*e*P	**Pn**	**19 47 56.5**	**-0.2**
SPX				⇓*e*		19 48 12.7	
SPX				AML	AML	19 48 12.7	
	comp=E,918nm,0.4s						
ZAX	**El Zacaton**	**1.13**	**236**	*e*P	**Pn**	**19 47 56.5**	**0.0**
ZAX				*e*S	**Sb**	**19 48 11.0**	**+0.2**
CBX	**Cerro Bola**	**1.27**	**278**	*e*P	**Pb**	**19 47 59.0**	**+0.2**
CBX				*e*S	**Sb**	**19 48 14.5**	**-0.6**
CBX	**Cerro Bola**	**1.27**	**278**	*e*P	**Pb**	**19 47 59.0**	**+0.2**
CBX				*e*S	**Sb**	**19 48 14.5**	**-0.6**
CBX	**Cerro Bola**	**1.27**	**278**	⇑*e*P	**Pb**	**19 47 59.1**	**+0.2**
CBX				*e*S	**Sg**	**19 48 16.9**	**+0.5**
CBX				⇓*e*		19 48 18.2	
CBX				AML	AML	19 48 18.2	
	comp=E,3μm,0.5s						
MONP2	**Monument Peak**	**1.29**	**306**	P	**Pb**	**19 47 59.0**	**-0.2**
	baz=128						
MONP2				S	**Sg**	**19 48 18.2**	**+1.2**
	baz=128						
TJIG	**Tijuana**	**1.30**	**283**	*e*P	**Pb**	**19 47 59.3**	**-0.1**
TJIG				*e*S	**Sn**	**19 48 16.2**	**+0.2**
ECNX	**Esteban Cantu**	**1.30**	**249**	*e*P	**Pb**	**19 47 59.2**	**-0.2**
PBX	**Punta Banda**	**1.38**	**253**	*e*P	**Pn**	**19 48 00.2**	**+0.4**
BC3	**Big Chuckawall**	**1.52**	**351**	P	**Pn**	**19 48 02.2**	**+0.3**
	baz=171						
BC3				S	**Sn**	**19 48 20.9**	**-0.7**
	baz=171						
Y12C	**Blythe**	**1.69**	**19**	P	**Pn**	**19 48 04.6**	**+0.5**
	baz=198						
109C	**Camp Elliot, M**	**1.79**	**295**	Sb	**Sg**	**19 48 32.1**	**-0.8**
	baz=117						
PFO	**Pinyon Flats O**	**1.82**	**324**	P	**Pn**	**19 48 06.2**	**+0.2**
	baz=145						
IRM	**Iron Mountain**	**2.01**	**1**	P	**Pn**	**19 48 09.3**	**+0.8**
	baz=180						
214A	**Organ Pipe Nat**	**2.02**	**95**	P	**Pn**	**19 48 08.2**	**-0.5**
	baz=273						
CIS	**Catalina Islan**	**3.00**	**296**	P	**Pn**	**19 48 22.9**	**+0.7**
	baz=116						
TUC	**Tucson**	**3.73**	**86**	*i* P	**Pn**	**19 48 33.2**	**+1.0**
TUC				*i* S	**Sn**	**19 49 16.2**	**+0.4**

JMA 05 19:52:00.9±0.3, 37.°99N×142.°23E, h33km±3km, M3.7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.83**	**304**	P	Pn	19 52 16.4	+0.1
JIO				S	Sn	19 52 27.2	-0.3
JMM	**Marumori**	**1.14**	**264**	P	Pn	19 52 20.8	+0.2
JMM				S	Sn	19 52 35.6	+0.5
OFUJ	**Ofunato**	**1.17**	**338**	P	Pn	19 52 20.8	-0.2
JFK	**Kawauchi**	**1.24**	**240**	P	Pn	19 52 21.9	-0.1
JFK				S	Sn	19 52 37.4	-0.2
JMK	**Ichinoseki**	**1.25**	**321**	P	Pn	19 52 22.9	+0.9
JOU	**Okura**	**1.29**	**287**	P	Pb	19 52 23.9	-0.7
JOU				S	Sb	19 52 40.3	-0.6
JFT	**Otama**	**1.57**	**253**	P	Pb	19 52 28.1	-1.3
MIYJ	**Miyakonagasawa**	**1.62**	**349**	P	Pn	19 52 26.7	-0.4

*ISCJB **05** 19:57:18.7±0.6, 34.°03N±0.°02×25.°24E±0.°02, h15km±4km, mb4.0/32, MS3.5/1, Error ellipse: s-maj=4.0km s-min=2.3km az=38.4*
*ATH **05** 19:57:19.1, 34.°12N×25.°27E, h10km±1km, ML3.9/7, Error ellipse: s-maj=2.0km s-min=1.0km az=354.0*
*CSEM **05** 19:57:19.4±0.2, 34.°10N×25.°22E, h5km, mb4.1/20, Error ellipse: s-maj=4.9km s-min=2.6km az=40.0*
*IDC **05** 19:57:19.0±0.6, 34.°27N×25.°29E, h0km, mb4.0/22, mb1 4.2/32, mb1mx4.1/60, mbtmp4.1/32, ML3.8/9, MS3.4/1, Ms1 3.4/1, ms1mx2.5/56, Error ellipse: s-maj=13.1km s-min=11.8km az=20.0*
*THE **05** 19:57:21.5, 34.°24N×25.°23E, h0km±1km, ML3.8/14, Error ellipse: s-maj=2.6km s-min=0.6km az=175.0*
*MOS **05** 19:57:22.2±1.4, 34.°15N×25.°15E, h33km, mb4.3/23, Error ellipse: s-maj=10.0km s-min=5.2km az=78.6*
*HLW **05** 19:57:25.1, 34.°01N×25.°55E, h31km±29km, Md3.2, Ml3.3*
*GII **05** 19:57:27.1±0.0, 33.°85N×25.°95E, h1km±1km, mb4.2/2, MD4.1/2*
*DDA **05** 19:57:52.6, 36.°19N×26.°23E, h65km, Md3.9*

ISC 05 19:57:18.5±1.2, 34.°06N±0.°03×25.°27E±0.°02, h0km±7km, n361, σ1§46/423, mb4.0/32, 7C, Crete

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SIVA	**Sivas**	**1.02**	**338**	P	**Pg**	**19 57 37.5**	**-0.6**
SIVA				S	**Sg**	**19 57 51.7**	**+0.3**
SIVA	**Sivas**	**1.02**	**338**	P	**Pg**	**19 57 37.8**	**-0.3**
SIVA				S	**Sg**	**19 57 50.6**	**-0.8**
SIVA	**Sivas**	**1.02**	**338**	P	**Pg**	**19 57 37.8**	**-0.3**
SIVA				S	**Sg**	**19 57 50.6**	**-0.8**
SIVA				AML	AML	19 57 52.1	
	comp=E,98350μm,0.8s						
SIVA				AML	AML	19 57 54.5	
	comp=N,70861μm,0.5s						
LAST	**Lasithi**	**1.11**	**9**	P	**Pg**	**19 57 38.8**	**-0.9**
LAST				S	**Sg**	**19 57 54.1**	**0.0**
LAST	**Lasithi**	**1.11**	**9**	P	**Pg**	**19 57 38.9**	**-0.8**
LAST				S	**Sg**	**19 57 54.1**	**0.0**
LAST	**Lasithi**	**1.11**	**9**	P	**Pg**	**19 57 38.9**	**-0.8**
NPS	**Neapolis**	**1.23**	**13**	P	**Pg**	**19 57 41.0**	**-1.0**
NPS				S	**Sg**	**19 57 58.0**	**0.0**
NPS	**Neapolis**	**1.23**	**13**	P	**Pg**	**19 57 41.0**	**-1.0**
NPS				S	**Sg**	**19 57 58.0**	**0.0**
NPS	**Neapolis**	**1.23**	**13**	P	**Pg**	**19 57 40.7**	**-1.4**
NPS				S	**Sg**	**19 57 58.6**	**+0.6**
NPS				AML	AML	19 58 00.7	
	comp=N,6766μm,0.6s						
NPS				AML	AML	19 58 11.5	
	comp=E,6530μm,0.7s						
GVD	**Gavdhos**	**1.25**	**309**	P	**Pg**	**19 57 42.2**	**-0.1**
GVD				S	**Sb**	**19 57 58.9**	**-0.5**
GVD	**Gavdhos**	**1.25**	**309**	P	**Pg**	**19 57 42.2**	**-0.1**
GVD				S	**Sb**	**19 57 58.9**	**-0.5**
GVD	**Gavdhos**	**1.25**	**309**	P	**Pb**	**19 57 42.6**	**-0.2**
GVD				S	**Sb**	**19 57 59.3**	**-0.1**
GVD				AML	AML	19 58 03.7	
	comp=E,11655μm,0.5s						
GVD				AML	AML	19 58 04.5	
	comp=N,14138μm,0.4s						
IACM	**Heraklion**	**1.25**	**353**	P	**Pg**	**19 57 41.9**	**-0.5**
IACM				S	**Sg**	**19 57 58.4**	**-0.3**
IACM	**Heraklion**	**1.25**	**353**	P	**Pg**	**19 57 41.9**	**-0.5**
IACM				S	**Sg**	**19 57 58.4**	**-0.3**
IACM	**Heraklion**	**1.25**	**353**	P	**Pn**	**19 57 43.7**	**+0.6**
IACM				S	**Sg**	**19 57 58.9**	**+0.2**
IACM				AML	AML	19 58 09.7	
	comp=N,41736μm,0.9s						
IACM				AML	AML	19 58 09.8	
	comp=E,36475μm,0.8s						
IDI	**Anoyia**	**1.26**	**346**	Pn	**Pg**	**19 57 41.5**	**-1.2**
	comp=E,26nm,0.3s,baz=186,slow=19,SNR=152						
IDI				Sn	**Sg**	**19 57 57.8**	**-1.1**
	comp=E,362nm,0.3s,baz=238,slow=15,SNR=72						
IDI	**Anoyia**	**1.26**	**346**	P	**Pg**	**19 57 41.4**	**-1.2**
IDI				S	**Sg**	**19 57 57.9**	**-1.1**
IDI	**Anoyia**	**1.26**	**346**	P	**Pg**	**19 57 41.2**	**-1.4**
IDI				S	**Sg**	**19 57 57.5**	**-1.5**
IDI				AML	AML	19 58 00.0	
	comp=E,6154μm,0.5s						
IDI				AML	AML	19 58 02.4	
	comp=N,4972μm,0.5s						
ZKR	**Zakros**	**1.31**	**36**	P	**Pg**	**19 57 43.1**	**-0.5**
ZKR				S	**Sg**	**19 58 00.9**	**+0.4**
ZKR	**Zakros**	**1.31**	**36**	P	**Pg**	**19 57 43.1**	**-0.5**
ZKR				S	**Sg**	**19 58 00.6**	**+0.1**
ZKR	**Zakros**	**1.31**	**36**	P	**Pg**	**19 57 42.9**	**-0.6**
ZKR				S	**Sg**	**19 58 00.6**	**+0.1**
ZKR				AML	AML	19 58 07.8	
	comp=E,7618μm,0.8s						
ZKR				AML	AML	19 58 09.2	
	comp=N,5743μm,0.7s						
VAM	**Vamos**	**1.60**	**327**	P	**Pn**	**19 57 47.4**	**-0.6**
VAM				S	**Sn**	**19 58 07.5**	**-1.9**
VAM	**Vamos**	**1.60**	**327**	P	**Pn**	**19 57 47.4**	**-0.6**
VAM	**Vamos**	**1.60**	**327**	P	**Pn**	**19 57 47.4**	**-0.6**
VAM				S	**Sn**	**19 58 08.4**	**-1.0**
IMMV	**Iera Moni Meta**	**1.75**	**323**	P	**Pn**	**19 57 49.8**	**-0.2**
IMMV				S	**Sn**	**19 58 11.6**	**-1.4**
IMMV	**Iera Moni Meta**	**1.75**	**323**	P	**Pn**	**19 57 49.8**	**-0.2**
IMMV				S	**Sn**	**19 58 11.6**	**-1.4**
IMMV	**Iera Moni Meta**	**1.75**	**323**	P	**Pn**	**19 57 49.2**	**-0.8**
IMMV				S	**Sg**	**19 58 15.3**	**+0.6**
IMMV				AML	AML	19 58 16.5	
	comp=N,4475μm,0.8s						
IMMV				AML	AML	19 58 21.8	
	comp=E,5157μm,0.8s						
KARP	**Karpathos**	**2.15**	**46**	*e*PN	**Pb**	**19 57 57.9**	**-0.4**
KARP	**Karpathos**	**2.15**	**46**	*e*Pn	**Pb**	**19 57 57.9**	**-0.4**
KARP	**Karpathos**	**2.15**	**46**	P	**Pb**	**19 57 59.1**	**+0.8**
KARP	**Karpathos**	**2.15**	**46**	P	**Pb**	**19 57 59.1**	**+0.8**
THR6	**Thira Island,**	**2.29**	**3**	P	**Pn**	**19 57 57.3**	**-0.1**
THR6	**Thira Island,**	**2.29**	**3**	P	**Pn**	**19 57 57.3**	**-0.1**
THR3	**Thira Island,**	**2.34**	**3**	P	**Pn**	**19 57 58.0**	**-0.2**
THR3	**Thira Island,**	**2.34**	**3**	P	**Pn**	**19 57 58.0**	**-0.2**
THR5	**Thira Island,**	**2.35**	**2**	*e*PN	**Pn**	**19 57 57.9**	**-0.4**
THR5	**Thira Island,**	**2.35**	**2**	P	**Pn**	**19 57 57.5**	**-0.8**
THR5	**Thira Island,**	**2.35**	**2**	P	**Pn**	**19 57 57.5**	**-0.8**
THR5	**Thira Island,**	**2.35**	**2**	*e*Pn	**Pn**	**19 57 57.9**	**-0.4**
THR7	**Fira-Santorini**	**2.36**	**3**	P	**Pn**	**19 57 58.4**	**0.0**
THR7	**Fira-Santorini**	**2.36**	**3**	P	**Pn**	**19 57 58.4**	**0.0**
THR2	**Thira Island,**	**2.38**	**3**	P	**Pn**	**19 57 58.7**	**0.0**
THR2	**Thira Island,**	**2.38**	**3**	P	**Pn**	**19 57 58.7**	**0.0**
CMBO	**Columbo, Santo**	**2.41**	**3**	P	**Pn**	**19 57 58.6**	**-0.4**
CMBO	**Columbo, Santo**	**2.41**	**3**	P	**Pn**	**19 57 58.6**	**-0.4**
ANKY	**Antikythira Is**	**2.42**	**319**	P	**Pn**	**19 57 58.2**	**-1.0**
ANKY				S	**Sn**	**19 58 28.3**	**-1.2**
ANKY	**Antikythira Is**	**2.42**	**319**	P	**Pn**	**19 57 58.2**	**-1.0**
ANKY				S	**Sn**	**19 58 28.3**	**-1.2**
SLUM	**Salum**	**2.56**	**181**	P	**Pb**	**19 58 04.0**	**-1.3**
	baz=187						
SLUM				AMP		19 58 00.0	
	comp=N,90μm,0.7s,logA/T=5.1,baz=187						
SLUM				S	**Sn**	**19 58 33.0**	**0.0**
	baz=187						
SLUM	**Salum**	**2.56**	**181**	P	**Pb**	**19 58 04.0**	**-1.3**
MHLO	**Agia Marina, M**	**2.71**	**345**	P	**Pn**	**19 58 03.0**	**-0.3**
MHLO				S	**Sn**	**19 58 35.3**	**-1.5**
MHLO	**Agia Marina, M**	**2.71**	**345**	P	**Pn**	**19 58 03.0**	**-0.3**
MHLO				S	**Sn**	**19 58 35.3**	**-1.5**
MHLO	**Agia Marina, M**	**2.71**	**345**	P	**Pn**	**19 58 04.4**	**+1.1**
KYTH	**Kithira**	**2.85**	**321**	P	**Pn**	**19 58 04.7**	**-0.5**
KYTH				S	**Sn**	**19 58 39.7**	**-0.6**
KYTH	**Kithira**	**2.85**	**321**	P	**Pn**	**19 58 04.7**	**-0.5**
KYTH				S	**Sn**	**19 58 39.7**	**-0.6**
KYTH	**Kithira**	**2.85**	**321**	P	**Pb**	**19 58 09.2**	**-1.1**
APE	**Apeiranthos**	**3.01**	**4**	*e*PN	**Pn**	**19 58 07.5**	**+0.1**
APE	**Apeiranthos**	**3.01**	**4**	P	**Pn**	**19 58 07.0**	**-0.3**
APE				S	**Sn**	**19 58 42.0**	**-2.1**
APE	**Apeiranthos**	**3.01**	**4**	*i* P	**Pn**	**19 58 08.3**	**+0.9**
APE	**Apeiranthos**	**3.01**	**4**	P	**Pn**	**19 58 07.0**	**-0.3**
APE	**Apeiranthos**	**3.01**	**4**	*e*Pn	**Pn**	**19 58 07.5**	**+0.1**
APE				S	**Sn**	**19 58 42.0**	**-2.1**
APE	**Apeiranthos**	**3.01**	**4**	P	**Pn**	**19 58 07.5**	**+0.1**
SERI	**Serifos**	**3.16**	**349**	P	**Pn**	**19 58 11.6**	**+2.2**
SERI	**Serifos**	**3.16**	**349**	P	**Pn**	**19 58 11.6**	**+2.2**
ARG	**Arkhangelos**	**3.18**	**47**	P	**Pb**	**19 58 14.1**	**-1.7**
VLI	**Veliai**	**3.26**	**325**	P	**Pn**	**19 58 10.5**	**-0.3**
VLI				S	**Sn**	**19 58 49.3**	**-1.0**
VLI	**Veliai**	**3.26**	**325**	P	**Pn**	**19 58 10.5**	**-0.3**
VLI				S	**Sn**	**19 58 49.3**	**-1.0**
VLI	**Veliai**	**3.26**	**325**	P	**Pn**	**19 58 11.3**	**+0.5**
HMAT	**Matruh**	**3.34**	**152**	S	**Sn**	**19 58 49.4**	**-2.8**
	baz=155						
HMAT				AMP		19 58 00.0	
	comp=N,90μm,0.6s,logA/T=5.2,baz=155						
BODT	**Bodrum**	**3.42**	**29**	*e*PN	**Pn**	**19 58 14.2**	**+1.1**
BODT	**Bodrum**	**3.42**	**29**	P	**Pn**	**19 58 12.8**	**-0.3**
BODT	**Bodrum**	**3.42**	**29**	P	**Pn**	**19 58 12.8**	**-0.3**
BODT	**Bodrum**	**3.42**	**29**	*e*Pn	**Pn**	**19 58 14.2**	**+1.1**
BDRM	**Kayabasi**	**3.48**	**30**	P	**Pn**	**19 58 16.2**	**+2.3**
BDRM	**Kayabasi**	**3.48**	**30**	*i* P	**Pn**	**19 58 16.2**	**+2.3**
KRND	**KRANIDI**	**3.73**	**333**	P	**Pn**	**19 58 16.5**	**-0.8**
KRND				S	**Sn**	**19 59 00.9**	**-1.0**
KRND	**KRANIDI**	**3.73**	**333**	P	**Pn**	**19 58 16.5**	**-0.8**
KRND				S	**Sn**	**19 59 00.9**	**-1.0**
KRND	**KRANIDI**	**3.73**	**333**	P	**Pn**	**19 58 18.4**	**+1.1**
DID	**Didima**	**3.81**	**335**	P	**Pn**	**19 58 18.4**	**0.0**
DID				S	**Sn**	**19 59 01.5**	**-2.4**
DID	**Didima**	**3.81**	**335**	P	**Pn**	**19 58 18.4**	**0.0**
DID				S	**Sn**	**19 59 01.5**	**-2.4**
DID	**Didima**	**3.81**	**335**	P	**Pn**	**19 58 17.1**	**-1.3**
SMG	**Samos**	**3.85**	**19**	P	**Pn**	**19 58 19.5**	**+0.5**
SMG	**Samos**	**3.85**	**19**	P	**

PROD	Prodromos	4.60	336	P		Pn	19 58 29.4 +0.1
PROD	Prodromos	4.60	336	P		Pn	19 58 29.4 +0.1
GLHS	Glhisar (BURDU	4.63	47	*e*PN		Pn	19 58 31.7 +2.0
GLHS	Glhisar (BURDU	4.63	47	*e*Pn		Pn	19 58 31.7 +2.0
ELL	Elmali	4.64	53	*e*PN		Pn	19 58 32.2 +2.3
ELL	Elmali	4.64	53	*e*Pn		Pn	19 58 32.2 +2.3
KLV	Kalavryta, Ach	4.71	328	P		Pn	19 58 31.7 +1.0
KLV				S		Sn	19 59 25.4 -0.6
KLV	Kalavryta, Ach	4.71	328	P		Pn	19 58 29.9 -0.8
KLV				S		Sn	19 59 25.4 -0.6
KLV	Kalavryta, Ach	4.71	328	P		Pn	19 58 29.9 -0.8
GOLH	Golhisar	4.72	47	P		Pn	19 58 33.0 +2.1
GOLH	Golhisar	4.72	47	*i* P		Pn	19 58 33.0 +2.1
DNZL	Cakiroluk	4.74	39	P		Pn	19 58 35.1 +3.7
DNZL	Cakiroluk	4.74	39	*i* P		Pn	19 58 35.1 +3.7
DRO	Drossia	4.83	324	P		Pn	19 58 32.6 +0.2
DRO	Drossia	4.83	324	P		Pn	19 58 32.6 +0.2
DRO	Drossia	4.83	324	P		Pn	19 58 34.5 +2.0
DSF	Desfina	4.87	334	P		Pn	19 58 33.0 0.0
DSF	Desfina	4.87	334	P		Pn	19 58 33.0 0.0
LAKA	Lakka	4.95	328	P		Pn	19 58 36.8 +2.9
LAKA	Lakka	4.95	328	P		Pn	19 58 36.9 +2.9
KALE	Kalithea	5.00	331	P		Pn	19 58 34.1 -0.7
KALE	Kalithea	5.00	331	P		Pn	19 58 34.1 -0.7
KORT	Korkueli	5.08	53	P		Pn	19 58 38.6 +2.7
KORT	Korkueli	5.08	53	*i* P		Pn	19 58 38.6 +2.7
SMIA	Simia	5.08	342	P		Pn	19 58 36.5 +0.6
SMIA	Simia	5.08	342	P		Pn	19 58 36.5 +0.6
KULA	Kula-Manisa	5.22	31	*e*PN		Pn	19 58 39.6 +1.8
KULA	Kula-Manisa	5.22	31	*e*Pn		Pn	19 58 39.6 +1.8
AKHS	Akhisar	5.22	22	P		Pn	19 58 39.7 +1.9
AKHS	Akhisar	5.22	22	*i* P		Pn	19 58 39.7 +1.9
ANTB	Antalya	5.23	56	*e*PN		Pn	19 58 40.2 +2.4
ANTB	Antalya	5.23	56	*e*Pn		Pn	19 58 40.2 +2.4
PRK	Paraskevi	5.24	9	P		Pn	19 58 37.2 -0.7
PRK	Paraskevi	5.24	9	P		Pn	19 58 37.2 -0.7
AGG	Agios Georgios	5.49	335	*e*PN		Pn	19 58 40.6 -0.7
AGG	Agios Georgios	5.49	335	P		Pn	19 58 40.7 -0.7
AGG				S		Sn	19 59 44.9 -0.3
AGG	Agios Georgios	5.49	335	P		Pn	19 58 40.7 -0.7
AGG				S		Sn	19 59 44.9 -0.3
AGG	Agios Georgios	5.49	335	P		Pn	19 58 41.4 0.0
KHAL	Karahalli	5.49	37	*i* P		Pn	19 58 42.9 +1.4
DEMI	Demirci	5.69	28	*i* P		Pn	19 58 46.7 +2.4
SUTC	Sutluce-Ispart	5.77	52	*e*PN		Pn	19 58 48.2 +2.8
GDZ	Gediz	6.05	33	*i* P		Pn	19 58 51.0 +1.7
GAZI	Gazipasa	6.17	67	*i* P		Pn	19 58 51.0 +0.3
TVSB	Tavsanli	6.34	31	*e*PN		Pn	19 58 55.0 +1.8
LEF	Lefka	6.37	78	*e*PN		Pn	19 58 55.3 +1.7
CSS	Mathiatis	6.72	80	P		Pn	19 58 59.1 +0.8
CSS	Mathiatis	6.72	80	Pn		Pn	19 58 59.5 +1.2
CSS				Sn		Sn	20 00 13.1 -2.4
CSS	Mathiatis	6.72	80	P		Pn	19 58 59.1 +0.8
CSS	Mathiatis	6.72	80	Pn		Pn	19 58 59.5 +1.2
CSS				Sn		Sn	20 00 13.1 -2.4
HORT	Hortiatis	6.75	346	*e*PN		Pn	19 58 58.7 0.0
ERMK	Ermenek	6.75	65	*i* P		Pn	19 59 01.6 +2.5
RKY	Sarkoy-Tekirda	6.79	12	*e*PN		Pn	19 59 00.4 +1.1
KMER	Konya-Meram	6.84	55	*i* P		Pn	19 59 03.9 +3.7
LFK	Lefkose	6.92	78	*e*PN		Pn	19 59 03.3 +2.2
KONT	Konya--Tatoy	6.93	54	*e*PN		Pn	19 59 03.5 +2.3
KDHN	Kadinhani	7.10	49	*i* P		Pn	19 59 04.7 +1.1
IKL	Isikli	7.23	70	*e*PN		Pn	19 59 07.0 +1.7
GRG	Griva	7.25	343	*e*PN		Pn	19 59 06.0 +0.4
FNA	Florina	7.39	336	*e*PN		Pn	19 59 06.5 -1.0
GULT	Gulveren	7.61	32	*e*PN		Pn	19 59 12.1 +1.4
SUZ	Suez	7.68	121	P		Pn	19 59 12.9 +1.3
	baz=121						
SUZ	Suez	7.68	121	P		Pn	19 59 12.9 +1.3
KERG	Konya-Eregli	7.94	63	*i* P		Pn	19 59 16.9 +1.7
MERS	Mersin	8.05	67	*e*PN		Pn	19 59 18.4 +1.8
KZIT	Kziot	8.33	110	*e*PN		Pn	19 59 21.2 +0.8
KZIT	Kziot	8.33	110	Pn		Pn	19 59 20.5 +0.1
KZIT				Sn		Sn	20 00 49.8 -5.4
KZIT	Kziot	8.33	110	Pn		Pn	19 59 20.5 +0.1
SLTI	Sal'it	8.39	100	Pn		Pn	19 59 21.1 -0.2
SLTI	Sal'it	8.39	100	Pn		Pn	19 59 21.1 -0.2
BLGI	Bet Lehem HaGe	8.40	96	Pn		Pn	19 59 23.0 +1.6
BLGI	Bet Lehem HaGe	8.40	96	Pn		Pn	19 59 23.0 +1.6
HNKL	Nakhl	8.47	117	P		Pn	19 59 22.9 +0.6
	baz=117						
HNKL	Nakhl	8.47	117	P		Pn	19 59 22.9 +0.6
AMAZ	Amatzia	8.50	105	Pn		Pn	19 59 23.1 +0.2
AMAZ				Sn		Sn	20 00 55.1 -4.4
AMAZ	Amatzia	8.50	105	Pn		Pn	19 59 23.1 +0.2
MMA0B	Mount Meron ar	8.53	94	Pn		Pn	19 59 24.3 +1.1
MMA0B	Mount Meron ar	8.53	94	Pn		Pn	19 59 24.3 +1.1
MMAI	Mount Meron Ar	8.53	94	Pn		Pn	19 59 22.7 -0.5
	comp=N,2.9nm,0.3s,baz=271,slow=11,SNR=22						
MMAI				Sn		Sn	20 00 55.0 -5.1
	comp=N,1.6nm,0.3s,baz=264,slow=22,SNR=4.0						
REVI	Revivim	8.53	108	Pn		Pn	19 59 23.6 +0.4
REVI	Revivim	8.53	108	Pn		Pn	19 59 23.6 +0.4
NIG	Nigde	8.57	59	*e*PN		Pn	19 59 25.3 +1.4
KARA	Karaisali	8.58	65	*e*PN		Pn	19 59 25.6 +1.7
MMLI	Mount Malkishu	8.66	98	Pn		Pn	19 59 24.8 -0.2
MMLI				Sn		Sn	20 00 58.9 -4.4
MMLI	Mount Malkishu	8.66	98	Pn		Pn	19 59 24.8 -0.2
RMNI	Mount Ramon	8.74	111	Pn		Pn	19 59 27.5 +1.3
RMNI	Mount Ramon	8.74	111	Pn		Pn	19 59 27.5 +1.3
BRTR	Keskin Array B	8.77	47	Pn		Pn	19 59 27.5 +1.0
	comp=N,0.2nm,0.3s,baz=223,slow=14,SNR=10						
BRTR	Keskin Array B	8.77	47	*ce*P		Pn	19 59 29.5 +3.0
BRTR				pmax	pmax		
	comp=Z,3.0nm,0.9s						
HMDT	Nahal Hemdat	8.79	99	Pn		Pn	19 59 26.8 +0.1
HMDT				Sn		Sn	20 01 01.0 -5.5
HMDT	Nahal Hemdat	8.79	99	Pn		Pn	19 59 26.8 +0.1
DSI	Dead Sea	8.87	104	Pn		Pn	19 59 27.9 +0.1
DSI	Dead Sea	8.87	104	Pn		Pn	19 59 27.9 +0.1
KRMI	Paran Flat	8.93	114	Pn		Pn	19 59 29.6 +0.8
KRMI	Paran Flat	8.93	114	Pn		Pn	19 59 29.6 +0.8
MZDA	Masada	8.94	105	Pn		Pn	19 59 29.0 +0.2
MZDA	Masada	8.94	105	Pn		Pn	19 59 29.0 +0.2
PRNI	Paran	9.04	112	Pn		Pn	19 59 31.1 +0.9
PRNI	Paran	9.04	112	Pn		Pn	19 59 31.1 +0.9
AVNS	Nevsehir-Avano	9.05	56	*i* P		Pn	19 59 34.1 +3.7
ZFRI	Zfri	9.09	110	Pn		Pn	19 59 31.3 +0.5
ZFRI	Zfri	9.09	110	Pn		Pn	19 59 31.3 +0.5
YAYL	Yayladag	9.10	74	*i* P		Pn	19 59 30.6 -0.5
CDAG	Cicekdag	9.16	50	*i* P		Pn	19 59 35.2 +3.2
HRFI	Mount Harif	9.21	113	Pn		Pn	19 59 33.8 +1.2
HRFI				Sn		Sn	20 01 12.8 -4.1
HRFI	Mount Harif	9.21	113	Pn		Pn	19 59 33.8 +1.2
HDK1	Dakhla	9.22	156	P		Pn	19 59 34.5 +1.8
	baz=157						
HDK1	Dakhla	9.22	156	P		Pn	19 59 34.5 +1.8
TAHT	Tahtakopru-Hat	9.23	72	*e*PN		Pn	19 59 33.6 +0.9
MBRI	Mt Berech	9.23	115	Pn		Pn	19 59 33.3 +0.4
MBRI	Mt Berech	9.23	115	Pn		Pn	19 59 33.3 +0.4
EIL	Elat	9.32	115	Pn		Pn	19 59 34.6 +0.6
	comp=Z,4.3nm,0.3s,baz=314,slow=7.4,SNR=46						
EIL				Sn		Sn	20 01 14.0 -5.7
	comp=Z,0.4nm,0.3s,baz=16,slow=19,SNR=2.4						
EIL	Elat	9.32	115	Pn		Pn	19 59 34.5 +0.4
EIL	Elat	9.32	115	Pn		Pn	19 59 34.5 +0.4
VAE	Valguarnera	9.46	294	Pn		Pn	19 59 37.9 +1.9
	comp=Z,1.0nm,0.3s,baz=209,slow=9.7,SNR=3.3						
HHRG	Al Ghardaqah	9.88	131	P		Pn	19 59 43.7 +2.0
	baz=132						
HHRG	Al Ghardaqah	9.88	131	P		Pn	19 59 43.7 +2.0
ASF	Jabal al Asfar	9.93	98	Pn		Pn	19 59 42.1 -0.4
	comp=Z,0.4nm,0.3s,baz=222,slow=9.1,SNR=7.8						
HCB	Kahramanmara¯	10.02	68	*i* P		Pn	19 59 43.4 -0.2
UDBI	Udbina	12.77	328	*e*Pn		Pn	20 00 18.5 -2.8
UDBI				Sn		Sn	20 02 34.8 -9.3
UDBI	Udbina	12.77	328	*e*Pn		Pn	20 00 18.4 -2.8
NVLJ	Novalja	13.21	326	*e*Pn		Pn	20 00 24.7 -2.4
NVLJ	Novalja	13.21	326	*e*Pn		Pn	20 00 24.7 -2.4
SOKA	Soboth	14.80	331	*i* P		P	20 00 55.9 +0.7
	comp=Z,7.4nm,1.5s						
SOKA	Soboth	14.80	331	P		P	20 00 55.9 +0.7
	comp=Z,7.4nm,1.5s						
OBKA	Obir	14.86	330	P		P	20 00 55.2 -0.6
	comp=Z,9.1nm,0.8s						
OBKA	Obir	14.86	330	P		P	20 00 55.2 -0.6
	comp=Z,9.1nm,0.8s						
CONA	Conrad Observa	15.55	336	*i* Sn		Sn	20 03 47.4 -4.5
	comp=Z,3.2nm,1.8s						
KBA	Koelnbreinsper	15.82	329	*i* Pn		Pn	20 01 02.1 -0.5
	comp=Z,2.7nm,0.6s						
ABTA	Abfaltersbach	15.94	326	*i* pP		P	20 01 09.2 +1.4
	comp=Z,12nm,0.8s						
ABTA	Abfaltersbach	15.94	326	P		P	20 01 09.2 +1.4
	comp=Z,12nm,0.8s						
MOA	Molln	16.06	332	*i* P		P	20 01 10.0 +0.9
	comp=Z,4.8nm,0.9s						
MOA	Molln	16.06	332	P		P	20 01 10.0 +0.9
	comp=Z,4.8nm,0.9s						
NEY	Neytrino	16.41	51	*i* P		Pn	20 01 11.8 +1.6
NEY	Neytrino	16.41	51	*i* P		Pn	20 01 11.8 +1.6
VRAC	Vranov	16.53	340	Pn		Pn	20 01 10.2 -1.4
	comp=Z,0.4nm,0.3s,baz=139,slow=15,SNR=2.8						
VRAC	Vranov	16.53	340	*e*Pn		Pn	20 01 11.2 -0.4
GNI	Garni	16.67	63	Pn		Pn	20 01 14.9 +1.4
	comp=Z,0.6nm,0.3s,baz=9.0,slow=3.1,SNR=5.8						
GNI	Garni	16.67	63	*ce*P		P	20 01 16.7 +0.7
GNI				pmax	pmax		
	comp=Z,41nm,1.0s						
GNI	Garni	16.67	63	*e*P		P	20 01 16.7 +0.7
	comp=Z,41nm,1.0s						
MORC	Moravsky Berou	16.70	342	*e*Pn		Pn	20 01 13.2 -0.6
WTTA	Wattenberg	16.72	326	*i* pP		P	20 01 18.7 +2.1
	comp=Z,15nm,1.2s						
WTTA	Wattenberg	16.72	326	P		P	20 01 18.7 +2.1
	comp=Z,15nm,1.2s						
KIV	Kislovodsk	16.73	49	*e*P		P	20 01 16.4 -0.2
KIV				pmax	pmax		
	comp=Z,28nm,1.1s						
KIV				MLR	MLR		
	comp=Z,67nm,13.0s						
KIV	Kislovodsk	16.73	49	*e*P		P	20 01 16.4 -0.2
	comp=Z,67nm,13.0s						
KVAR	Kislovodsk Arr	16.73	49	Pn		P	20 01 16.6 -0.1
	baz=232,slow=5.0,SNR=9.3						
KBZ	Khabaz	16.75	50	Pn		P	20 01 16.1 -0.6
	comp=Z,0.1nm,0.3s,baz=235,slow=7.3,SNR=16						
KIEV	Kiev	16.87	9	*e*P		Pn	20 01 16.9 +1.1
KIEV				pmax	pmax		
	comp=Z,4.0nm,0.5s						
KIEV	Kiev	16.87	9	*e*P		Pn	20 01 16.9 +1.1
	comp=Z,4.0nm,0.5s						
AKASG	Malin Array Be	16.88	9	Pn		Pn	20 01 16.8 +0.9
	comp=Z,2.9nm,0.3s,baz=199,slow=10,SNR=12						
ZEI	Tsey	16.98	54	*e*P		P	20 01 19.1 -0.3
ZEI				pmax	pmax		
	comp=Z,29nm,1.0s						
ZEI	Tsey	16.98	54	*e*P		P	20 01 19.1 -0.3
	comp=Z,29nm,1.0s						
FETA	Feichten	16.98	324	*i* P		P	20 01 19.4 0.0
	comp=Z,13nm,1.0s						
FETA	Feichten	16.98	324	P		P	20 01 19.4 0.0
	comp=Z,13nm,1.0s						
NCK	Nalchik	17.08	51	*e*P		P	20 01 20.4 0.0
NCK				pmax	pmax		
	comp=Z,16nm,1.1s						
NCK	Nalchik	17.08	51	*e*P		P	20 01 20.4 0.0
	comp=Z,16nm,1.1s						
GERES	GERESS Array B	17.09	333	Pn		Pn	20 01 18.4 -0.4
	comp=Z,0.2nm,0.3s,baz=154,slow=14,SNR=7.7						
GERES				LR	LR		20 08 23.7
	comp=Z,126nm,18.1s,baz=158,slow=39						
KRLC	Kraliky	17.18	341	*e*P		P	20 01 20.9 -0.5
KRLC				*ex*	x		20 01 31.0
KRLC	Kraliky	17.18	341	*e*P		P	20 01 20.9 -0.5
KRLC	Kraliky	17.18	341	*e*P		P	20 01 20.9 -0.5
RETA	Reutte	17.30	325	*i* pP		P	20 01 24.3 +1.5
	comp=Z,5.5nm,0.6s						
RETA	Reutte	17.30	325	P		P	20 01 24.3 +1.5
	comp=Z,5.5nm,0.6s						
KHC	Kasperske Hory	17.38	334	*e*P		P	20 01 24.3 +0.6
KHC				*ex*	x		20 01 32.6
KHC	Kasperske Hory	17.38	334	*e*P		P	20 01 24.3 +0.6
KHC	Kasperske Hory	17.38	334	*e*P		P	20 01 24.3 +0.6
DPC	Dobruska-Polom	17.55	341	*e*P		P	20 01 26.4 +0.8
DPC	Dobruska-Polom	17.55	341	*e*P		P	20 01 26.4 +0.8
DPC	Dobruska-Polom	17.55	341	*e*P		P	20 01 26.4 +0.8
DAVA	Damuels	17.58	323	*i* P		P	20 01 26.8 +0.7
	comp=Z,9.3nm,1.0s						
DAVA	Damuels	17.58	323	P		P	20 01 26.8 +0.7
	comp=Z,9.3nm,1.0s						
BFO	Black Forest	19.06	323	*i* P		Pn	20 01 44.8 +1.9
CLL	Collm	19.40	336	*e*P		P	20 01 45.0 -0.9
CLL				*e*			20 01 52.0
CLL	Collm	19.40	336	*e*P		P	20 01 45.0 -0.9
CLL	Collm	19.40	336	*e*P		P	20 01 45.0 -0.9
VSR	Storozhevoye	19.90	26	*e*P		Pn	20 01 52.8 -0.1
VSR				pmax	pmax		
	comp=Z,10.0nm,1.2s						
VSR	Storozhevoye	19.90	26	*e*P		Pn	20 01 52.8 -0.1
	comp=Z,10.0nm,1.2s						
VRH	Novokhopyorsk	20.89	30	*e*P		P	20 02 01.5 -0.6
VRH				pmax	pmax		
	comp=Z,20nm,0.7s						
VRH	Novokhopyorsk	20.89	30	*e*P		P	20 02 01.5 -0.6
	comp=Z,20nm,0.7s						
OBN	Obninsk	22.48	17	*e*P		P	20 02 21.3 +2.3
OBN				*e*			20 02 42.7
OBN				pmax	pmax		
	comp=Z,4.0nm,0.8s						
OBN				MLR	MLR		
	comp=Z,136nm,15.0s						
ESDC	Sonseca Array	23.99	292	P		P	20 02 34.7 0.0
	comp=Z,2.9nm,0.7s,baz=84,slow=9.4,SNR=25						
VSU	Vasula	24.43	2	*e*P		P	20 02 41.5 +3.1
VSU				pmax	pmax		
	comp=Z,8.0nm,0.9s						
MDT	Midelt	24.93	276	P		P	20 02 43.6 +0.2
	comp=Z,2.8nm,0.9s,baz=87,slow=12,SNR=5.8						
GEYT	Alibeck	26.78	72	P		P	20 03 00.9 +0.8
	comp=Z,1.1nm,0.5s,baz=297,slow=9.8,SNR=5.0						
HFS	Hagfors	27.16	347	P		P	20 03 02.6 -0.6
	comp=Z,1.3nm,0.7s,baz=173,slow=13,SNR=3.6						
FINES	FINESS Array B	27.40	1	P		P	20 03 03.5 -1.8
	comp=Z,0.7nm,0.5s,baz=156,slow=10,SNR=4.2						
FINES	FINESS Array B	27.40	1	*ce*P		P	20 03 06.8 +1.5
FINES				pmax	pmax		
	comp=Z,1.0nm,0.5s						
FINES	FINESS Array B	27.40	1	*e*P		P	20 03 06.8 +1.5
	comp=Z,1.0nm,0.5s						
KLMR	Klimovskoe	28.35	15	*e*P		P	20 03 12.0 -1.8
KLMR				pmax	pmax		
	comp=Z,3.0nm,0.9s						
KLMR	Klimovskoe	28.35	15	*e*P		P	20 03 12.0 -1.8
	comp=Z,3.0nm,0.9s						
NB2	NORSAR Subarra	28.48	346	P		P	20 03 14.4 -0.6
	comp=Z,1.5nm,1.0s,baz=156,slow=9.3						
NB2	NORSAR Subarra	28.48	346	P		P	20 03 14.4 -0.6
	comp=Z,1.5nm,1.0s,SNR=4.2						
NOA	NORSAR Array B	28.48	346	P		P	20 03 13.8 -1.3
	comp=Z,0.8nm,0.8s,baz=160,slow=9.0,SNR=4.8						
AKTK	Aktyubinsk	28.94	46	P		P	20 03 18.2 -1.0
	comp=Z,1.0nm,0.4s						
AKTO	Aktyubinsk	28.94	46	P		P	20 03 18.2 -1.0
	comp=Z,0.7nm,0.4s,baz=215,slow=6.6,SNR=4.8						
EKA	Eskdalemuir Ar	28.99	326	P		P	20 03 18.7 -0.9
	comp=Z,0.8nm,0.6s,baz=151,slow=9.2,SNR=4.0						
EKA	Eskdalemuir Ar	28.99	326	P		P	20 03 18.7 -0.9
EKA				pmax	pmax		
	comp=Z,2.0nm,0.8s						
EKA	Eskdalemuir Ar	28.99	326	P		P	20 03 18.7 -0.9
	comp=Z,2.0nm,0.8s						
TORD	Torodi Ar. Bea	29.86	231	P		P	20 03 29.7 +2.0
	comp=Z,2.0nm,0.6s,baz=38,slow=9.4,SNR=18						
ARU	Arti	31.89	35	*ci* P		P	20 03 45.3 +0.1
ARU				S		S	20 08 57.1 +0.4
ARU				SS		SnSn	20 10 43.3 -0.7
ARU				pmax	pmax		
	comp=Z,4.0nm,1.0s						
ARU	Arti	31.89	35	*i* P		P	20 03 45.3 +0.1
	comp=Z,4.0nm,1.0s						
ARU				S		S	20 08 57.1 +0.4
ARCES	ARCESS Array B	35.52	0	P		P	20 04 14.8 -1.9
	comp=Z,0.8nm,0.7s,baz=178,slow=9.0,SNR=7.9						
BRVK	Borovoye	36.99	45	*ce*P		P	20 04 31.7 +2.3
BRVK				pmax	pmax		
	comp=Z,4.0nm,2.5s						
BRVK	Borovoye	36.99	45	*e*P		P	20 04 31.7 +2.3
	comp=Z,4.0nm,2.5s						
MKAR	Makanchi Array	44.31	56	P		P	20 05 30.9 +0.9
	comp=Z,6.1nm,0.7s,baz=279,slow=6.2,SNR=67						
MKAR				PcP		PP	20 07 13.2 +0.2
	comp=Z,1.2nm,1.0s,baz=264,slow=5.8,SNR=2.4						
MKAR	Makanchi Array	44.31	56	*ce*P		P	20 05 30.8 +0.8
MKAR				pmax	pmax		
	comp=Z,6.0nm,0.7s						
MKAR	Makanchi Array	44.31	56	*e*P		P	20 05 30.8 +0.8
	comp=Z,6.0nm,0.7s						
NVS	Novosibirsk	44.81	44	*e*P		P	20 05 35.0 +1.2
NVS	Novosibirsk	44.81	44	*e*P		P	20 05 35.0 +1.2
ZALV	Zalesovo Beam	45.70	45	P		P	20 05 40.5 -0.5
	comp=Z,1.9nm,0.5s,baz=266,slow=10.0,SNR=12						
LSZ	Lusaka	49.14	176	P		P	20 06 10.6 +2.4
	comp=Z,2.6nm,1.0s,baz=16,slow=15,SNR=2.9						
TLY	Talaya	57.29	46	*e*P		P	20 07 11.1 +3.4
TLY				pmax	pmax		
	comp=Z,2.0nm,1.3s						
ZAK	Zakamensk	57.41	48	*e*P		P	20 07 08.4 -0.3
ZAK				pmax	pmax		
	comp=Z,3.0nm,1.0s						
ZAK	Zakamensk	57.41	48	*e*P		P	20 07 08.4 -0.3
	comp=Z,3.0nm,1.0s						
SONM	Songino Array	60.12	50	P		P	20 07 26.7 -1.0
	comp=Z,3.0nm,0.7s,baz=288,slow=8.4,SNR=11						
ULN	Ulaanbaatar	60.52	50	*ce*P		P	20 07 32.1 +1.6
ULN				pmax	pmax		
	comp=Z,3.0nm,0.8s						
ULN	Ulaanbaatar	60.52	50	*e*P		P	20 07 32.1 +1.6
	comp=Z,3.0nm,0.8s						
BOD	Bodaibo	61.26	38	*e*P		P	20 07 34.3 -0.8
BOD				pmax	pmax		
	comp=Z,3.0nm,1.1s						
BOD	Bodaibo	61.26	38	*e*P		P	20 07 34.3 -0.8
	comp=Z,3.0nm,1.1s						
BOSA	Boshof	62.34	180	P		P	20 07 44.7 +2.0
	comp=Z,3.4nm,1.0s,baz=10,slow=4.4,SNR=3.5						
BOSA	Boshof	62.34	180	P		P	20 07 44.7 +2.0
BOSA				pmax	pmax		
	comp=Z,2.0nm,0.7s						
BOSA	Boshof	62.34	180	P		P	20 07 44.7 +2.0
	comp=Z,2.0nm,0.7s						
KLR	Kul'dur	74.54	41	P		P	20 08 58.4 -0.4
	comp=Z,1.2nm,0.6s,baz=334,slow=16						
USRK	Ussuriysk Ar.	77.55	45	P		P	20 09 15.5 -0.6
	comp=Z,3.1nm,0.7s,baz=280,slow=5.9,SNR=8.5						
YKA	Yellowknife Ar	78.52	342	P		P	20 09 20.9 -0.2
	comp=Z,0.3nm,0.6s,baz=31,slow=5.3,SNR=7.5						
KSRS	Korea Array	78.88	52	P		P	20 09 23.9 +0.3
	comp=Z,1.6nm,0.7s,baz=301,slow=3.9,SNR=5.0						
ILAR	Eielson Array	81.30	357	P		P	20 09 35.2 -1.0
	comp=Z,0.2nm,0.6s,baz=3.2,slow=3.0,SNR=3.6						
MJAR	Matsushiro Arr	85.99	48	P		P	20 10 01.3 +0.5
	comp=Z,1.3nm,0.8s,baz=293,slow=5.4,SNR=5.7						
PDAR	Pinedale Array	93.08	328	P		P	20 10 34.0 -0.5
	comp=Z,0.1nm,0.3s,baz=23,slow=7.1,SNR=2.5						

IDC ***05*** *19:58:07.0±0.8, 17°.76N×120°.34E, h0km, mb3.7/10, mb1 3.8/10, mb1mx3.6/52, mbtmp3.7/10, MS3.5/2, Ms1 3.5/2, ms1mx2.8/56, Error ellipse: s-maj=51.2km s-min=17.6km az=70.0*
MAN ***05*** *19:58:13, 18°.02N×120°.15E, h24km, mb4.8, ML3.7, MS3.8*
MAN INTENSITY II - LAOAG CITY PASUQUIN ILOCOS NORTE.
ISCJB ***05*** *19:58:14.2±0.7, 18°.02N±0°.04×120°.19E±0°.07, h52km±8km, mb3.6/9, MS3.6/2, Error ellipse: s-maj=11.5km s-min=7.0km az=16.5*
ISC 05 19:58:15.0±1.1, 18°.01N±0°.05×120°.23E±0°.07, h50km±11km, n23, σ1§54/26, mb3.7/9, 2D, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PIP	Pasuquin	0.48	50	‖ *i* P	Pn	19 58 25.3	-0.7
PIP				*e*S	Sn	19 58 35.0	+1.0
APYP	Conner	0.97	99	*e*P	Pn	19 58 31.5	-0.8
APYP				*e*S	Sn	19 58 45.9	+0.7
CVP	Callao Caves	1.55	101	*e*P	Pn	19 58 40.1	0.0
CVP				*e*S	Sn	19 59 00.3	+1.3
BOLP	Bolinao	1.65	191	*e*P	Pn	19 58 39.7	-1.9
BOLP				*e*S	Sn	19 59 02.2	+0.6
SGCP	Mt. Cagua	1.74	82	*e*P	Pn	19 58 43.4	+0

ellipse: s-maj=31.3km s-min=21.6km az=157.0
*ISCJB **05** 20:08:51.4±0.6,54.˚98N±0.˚07×160.˚28W±0.˚08,h65km±6km, mb3.8/7,Error ellipse: s-maj=13.6km s-min=3.3km az=150.8*
*NEIC **05** 20:08:51.4,54.˚90N×160.˚32W,h25km,ML3.7(AEIC),After AEIC.*
NEIC Felt at Sand Point.

ISC 05 20:08:52.0±1.2,55.˚0N±0.˚1×160.˚28W±0.˚07,h51km±10km, n70,σ1§25/74,mb3.9/7,Alaska Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SDPT	**Sand Point**	**0.39**	**344**	P	**Pn**	20 09 01.2	**-0.9**
SDPT				S	**Sn**	20 09 08.6	**-0.8**
PS4A	**Pavlof South-4**	**0.97**	**293**	P	**Pn**	20 09 09.0	**-0.5**
HAG	**Hague Volcano**	**0.99**	**291**	P	**Pn**	20 09 09.4	**-0.2**
PN6	**Pavlof North-6**	**1.05**	**298**	P	**Pn**	20 09 10.7	**+0.2**
PN6				S	**Sn**	20 09 26.4	**+2.1**
DTNA	**Dutton South F**	**1.15**	**279**	P	**Pn**	20 09 11.3	**-0.5**
DT1	**Dutton Round H**	**1.16**	**277**	P	**Pn**	20 09 11.2	**-0.7**
VNWF	**Veniaminof 8**	**1.25**	**19**	P	**Pn**	20 09 14.4	**+1.2**
VNHG	**Veniaminof 1**	**1.40**	**27**	P	**Pn**	20 09 16.6	**+1.3**
VNNF	**Veniaminof 3**	**1.42**	**22**	P	**Pn**	20 09 17.0	**+1.4**
BALA	**Baldy Mountain**	**1.46**	**280**	P	**Pn**	20 09 16.7	**+0.8**
CHGN	**Chignik**	**1.70**	**38**	P	**Pn**	20 09 20.5	**+1.3**
FALS	**False Pass**	**1.81**	**267**	P	**Pn**	20 09 20.6	**-0.1**
FALS				S	**Sn**	20 09 43.6	**+1.1**
ANPB	**Aniakchak Plen**	**2.15**	**31**	P	**Pn**	20 09 26.4	**+1.0**
SSLN	**Shishaldin Nor**	**2.15**	**267**	P	**Pn**	20 09 26.5	**+1.0**
SSLS	**Shishaldin Sou**	**2.17**	**264**	P	**Pn**	20 09 26.4	**+0.7**
SSLS				S	**Sn**	20 09 53.6	**+2.3**
SSLW	**Shishaldin Wes**	**2.23**	**266**	P	**Pn**	20 09 27.2	**+0.7**
AZAC	**Aniakchak**	**2.24**	**30**	P	**Pn**	20 09 27.5	**+0.7**
ANNE	**Aniakchak Nort**	**2.31**	**32**	P	**Pn**	20 09 28.6	**+1.0**
WESN	**West Dahl Nort**	**2.52**	**262**	P	**Pn**	20 09 31.3	**+0.8**
WEBT	**Westdahl Beart**	**2.62**	**263**	P	**Pn**	20 09 32.8	**+0.9**
WESP	**Westdahl Peak**	**2.62**	**261**	P	**Pn**	20 09 32.8	**+0.9**
WESP				S	**Sn**	20 10 04.9	**+2.5**
AKSA	**Akutan Strait**	**3.26**	**257**	P	**Pn**	20 09 41.3	**+0.7**
AKSA				S	**Sn**	20 10 19.5	**+1.3**
AKUT	**Akutan**	**3.31**	**257**	P	**Pn**	20 09 41.4	**+0.2**
AKGG	**Akutan Green G**	**3.41**	**259**	P	**Pn**	20 09 43.2	**+0.5**
PLK1	**Peulik 1**	**3.49**	**34**	P	**Pn**	20 09 46.3	**+2.5**
UNV	**Unalaska Valle**	**3.81**	**255**	P	**Pn**	20 09 47.9	**-0.2**
MTBL	**Makushin Table**	**3.87**	**257**	P	**Pn**	20 09 49.3	**+0.3**
MGOD	**Makushin Gods**	**4.03**	**256**	P	**Pn**	20 09 51.3	**+0.1**
MSOM	**Makushin Julie**	**4.07**	**256**	P	**Pn**	20 09 51.5	**-0.1**
KELA	**Mount Kelaz**	**4.28**	**34**	P	**Pn**	20 09 56.0	**+1.4**
KABR	**Katmai Barrier**	**4.32**	**41**	P	**Pn**	20 09 56.2	**+1.1**
KVTA	**Katmai Vly 10**	**4.38**	**37**	P	**Pn**	20 09 57.4	**+1.5**
KAKN	**Katmai Knife C**	**4.40**	**39**	P	**Pn**	20 09 57.7	**+1.4**
OHAK	**Old Harbor**	**4.52**	**57**	P	**Pn**	20 09 57.4	**-0.4**
KAWH	**Katmai**	**4.56**	**39**	P	**Pn**	20 09 59.3	**+0.8**
KAHC	**Katmai Hardscr**	**4.69**	**36**	P	**Pn**	20 10 02.0	**+1.8**
OKTU	**Okmok Mt. Tuli**	**4.83**	**254**	P	**Pn**	20 10 02.5	**+0.3**
KDAK	**Kodiak Island**	**5.12**	**54**	Pn	Pn	20 10 20.6	+15
	3.9nm,0.3s,baz=181,slow=5.7,SNR=65						
KDAK				Sn	Sn	20 11 15.7	+12
	4.6nm,0.3s,baz=150,slow=24,SNR=5.7						
KDAK	**Kodiak Island**	**5.12**	**54**	P	**Pn**	20 10 05.7	**-0.4**
FOPK	**Fourpeaked Vol**	**5.32**	**42**	P	**Pn**	20 10 09.7	**+0.8**
CDD	**Cape Douglas**	**5.38**	**40**	P	**Pn**	20 10 10.8	**+1.2**
AUSE	**Augustine SEas**	**5.76**	**38**	P	**Pn**	20 10 17.0	**+2.3**
RSO	**Redoubt South**	**6.82**	**33**	P	**Pn**	20 10 31.2	**+1.8**
NCT	**North Crescent**	**6.84**	**32**	P	**Pn**	20 10 31.7	**+2.0**
SPWE	**Spurr West**	**7.52**	**30**	P	**Pn**	20 10 41.3	**+2.3**
CKL	**Chakachamna La**	**7.52**	**31**	P	**Pn**	20 10 40.4	**+1.3**
SLKM	**Skilak Lake**	**7.72**	**40**	P	**Pn**	20 10 42.7	**+1.0**
SEW	**Seward**	**7.77**	**44**	P	**Pn**	20 10 43.3	**+1.0**
STLK	**Strandline Lak**	**7.91**	**31**	P	**Pn**	20 10 46.3	**+2.0**
TT01	**Tatalina**	**8.25**	**14**	P	**Pn**	20 10 49.4	**+0.5**
TTA	**Tatalina**	**8.28**	**14**	P	**Pn**	20 10 49.8	**+0.4**
RC01	**Rabbit Creek A**	**8.29**	**38**	*e*Pn	**Pn**	20 10 50.6	**+1.1**
	7.6nm,0.6s						
PPLA	**Purkeypile**	**8.97**	**24**	P	**Pn**	20 11 00.7	**+1.8**
KTH	**Kantishna Hill**	**9.83**	**25**	*e*Pn	**Pn**	20 11 12.6	**+2.0**
	8.5nm,1.0s						
TRF	**Thorofare Moun**	**9.91**	**27**	*e*Pn	**Pn**	20 11 12.2	**+0.4**
	27nm,1.3s						
BPAW	**Bear Paw Mtn.**	**10.28**	**23**	*e*Pn	**Pn**	20 11 18.4	**+1.7**
	1.4nm,0.9s						
PAX	**Paxson**	**11.05**	**38**	*e*Pn	**Pn**	20 11 26.1	**-1.1**
	3.5nm,0.6s						
TNA	**Tin City**	**11.26**	**344**	*e*Pn	**Pn**	20 11 30.8	**+0.8**
	6.1nm,0.9s						
ILAR	**Eielson Array**	**11.87**	**29**	Pn	Pn	20 11 32.8	-5.6
	0.1nm,0.3s,baz=216,slow=13,SNR=2.8						
ILAR				Sn	Sn	20 13 43.8	-5.4
	0.1nm,0.3s,baz=202,slow=24,SNR=2.7						
COLD	**Coldfoot**	**13.19**	**17**	*e*Pn	**Pn**	20 11 56.9	**+0.5**
	4.6nm,1.3s						
DAWY	**Dawson**	**13.90**	**41**	*e*Pn	**Pn**	20 12 06.9	**+0.8**
	6.2nm,0.6s						
DLBC	**Dease Lake**	**16.89**	**66**	P	**Pn**	20 12 45.0	**+0.4**
	0.1nm,0.3s,baz=252,slow=12,SNR=3.6						
INK	**Inuvik**	**18.21**	**32**	P	**P**	20 12 58.9	**-1.5**
	0.3nm,0.3s,baz=212,slow=14,SNR=11						
YKA	**Yellowknife Ar**	**24.40**	**54**	P	**P**	20 14 05.7	**+0.6**
	0.6nm,0.4s,baz=271,slow=8.6,SNR=16						
TXAR	**Lajitas Array**	**47.53**	**99**	P	**P**	20 17 23.5	**+1.3**
	0.4nm,0.6s,baz=321,slow=7.0,SNR=3.3						
SONM	**Songino Array**	**54.46**	**304**	P	**P**	20 18 12.4	**-1.6**
	0.7nm,0.6s,baz=62,slow=6.7,SNR=2.6						
ARCES	**ARCESS Array B**	**55.72**	**358**	P	**P**	20 18 20.3	**-2.3**
	1.1nm,0.9s,baz=352,slow=7.8,SNR=5.3						
FINES	**FINESS Array B**	**63.81**	**357**	P	**P**	20 19 17.6	**-0.6**
	0.8nm,0.5s,baz=21,slow=7.6,SNR=15						
AKTO	**Aktyubinsk**	**70.19**	**335**	P	**P**	20 19 58.6	**-0.3**
	1.1nm,0.6s,baz=34,slow=2.1,SNR=5.0						
ESDC	**Sonseca Array**	**83.56**	**18**	P	**P**	20 21 15.1	**+0.7**
	0.3nm,0.5s,baz=341,slow=5.4,SNR=5.0						

*SOME **05** 20:09:21.4,41.˚08N×71.˚88E,h5km*
*KRNET **05** 20:09:22.2±0.1,40.˚98N×71.˚96E,h15km,mb1.6*
*NNC **05** 20:09:23.9±10.0,41.˚06N×72.˚06E,h11km±71km,mb2.9, mpv2.3,Error ellipse: s-maj=50.4km s-min=17.1km az=67.0*

ISC 05 20:09:21.7±1.3,40.˚98N±0.˚03×71.˚93E±0.˚04,h6km±12km, n11,σ0§69/22,11C-6D,Tajikistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OHH	**Osh**	**0.80**	**125**	⇓*eP*	**Pg**	20 09 36.8	**-0.1**
	baz=125						
OHH				⇓*eS*	**Sb**	20 09 48.3	**-0.7**
	baz=125						
ARK	**Arkit**	**0.82**	**2**	⇑*iP*	**Pg**	20 09 37.7	**+0.3**
	baz=1.0						
ARK				⇑*iS*	**Sb**	20 09 50.0	**+0.2**
	baz=1.0						
BTK	**Batken**	**1.25**	**223**	⇑*iP*	**Pg**	20 09 45.3	**-0.3**
	baz=224						
BTK				⇑*iS*	**Sn**	20 10 04.1	**+1.1**
	baz=224						
SFK	**Sufi-Kurgan**	**1.54**	**128**	⇓*iP*	**Pg**	20 09 51.1	**-0.1**
	baz=128						
SFK				⇓*iS*	**Sg**	20 10 11.7	**+0.5**
	baz=128						
SFK	**Sufi-Kurgan**	**1.54**	**128**	⇑P	**Pb**	20 09 50.6	**-0.2**
	2.0nm,0.4s						
SFK				⇑S	**Sg**	20 10 11.7	**+0.5**
	10nm,0.4s						
MNAS	**Manas**	**1.57**	**16**	⇑*iP*	**Pg**	20 09 51.9	**+0.2**
	baz=15						
MNAS				⇑*iS*	**Sg**	20 10 12.9	**+0.8**
	baz=15						
MNAS	**Manas**	**1.57**	**16**	⇓P	**Pn**	20 09 50.0	**-0.2**
	0.7nm,0.3s						
MNAS				⇓S	**Sb**	20 10 11.0	**-0.3**
	5.2nm,0.4s						
AML	**Almayashu**	**1.76**	**48**	⇑*iP*	**Pb**	20 09 53.9	**-0.7**
	baz=48						
AML				⇑*iS*	**Sb**	20 10 16.5	**-0.5**
	baz=48						
IUG	**Iuzhnay**	**1.84**	**310**	*e*P	**Pn**	20 09 54.5	**+0.6**
	19nm,0.2s						
IUG				*e*S	**Sb**	20 10 19.2	**0.0**
	30nm,0.2s						
KK31	**Karatay Array**	**2.37**	**334**	Pn	**Pn**	20 10 02.3	**+1.2**
	0.6nm,0.3s,baz=144,slow=15,SNR=17						
KK31				⇑Sn	**Sn**	20 10 30.2	**-0.3**
	1.0nm,0.3s,baz=138,slow=25,SNR=10						
BRLS	**Borolday**	**2.46**	**318**	*e*P	**Pb**	20 10 04.8	**-1.6**
	0.7nm,0.3s						
BRLS				*e*S	**Sb**	20 10 36.7	**-0.3**
	4.7nm,0.2s						

*NIED **05** 20:10:00,36.˚70N×142.˚10E,h23km,Mw4.1 Best double couple: M0:1.45000×10^15 NP1:φs=203.00000°,δ22.00000°, λ88.00000°. NP2:φs=25.00000°,δ68.00000°,λ91.00000°.*
*IDC **05** 20:10:56.3±0.7,36.˚59N×142.˚12E,h0km,mb4.0/19, mb1 4.0/25,mb1mx3.8/65,mbtmp4.0/25,ML3.8/5,Error ellipse: s-maj=19.5km s-min=14.7km az=87.0*
*JMA **05** 20:10:58.8±0.3,36.˚70N×142.˚11E,h25km,M4.1*
*NEIC **05** 20:11:00.7±2.3,36.˚52N×142.˚18E,h33km±16km,mb4.3/4, Error ellipse: s-maj=10.4km s-min=7.5km az=89.0*

ISC 05 20:10:56.1±1.9,36.˚63N±0.˚04×142.˚17E±0.˚06,h1km±11km, n60,σ1§41/64,mb4.0/23,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**1.20**	**293**	P	**Pg**	20 11 18.7	**-0.4**
JFK	**Kawauchi**	**1.27**	**306**	P	**Pg**	20 11 19.8	**-0.7**
JHO	**Hitachi**	**1.29**	**270**	P	**Pg**	20 11 20.9	**0.0**
JHO				*e*S	**Sg**	20 11 36.6	**-1.0**
JMM	**Marumori**	**1.65**	**319**	P	**Pn**	20 11 25.5	**-0.7**
JFT	**Otama**	**1.71**	**302**	P	**Pn**	20 11 27.1	**0.0**
JFT				S	**Sn**	20 11 48.1	**-1.6**
JIO	**Ouri**	**1.93**	**340**	P	**Pn**	20 11 29.8	**-0.3**
JIO				S	**Sn**	20 11 52.9	**-2.1**
JOU	**Okura**	**2.11**	**326**	P	**Pn**	20 11 33.2	**+0.7**
JOU				*e*S	**Sn**	20 11 58.0	**-1.3**
JFY	**Yanaizu**	**2.12**	**292**	P	**Pn**	20 11 33.5	**+0.8**
JAG	**Ashikaga**	**2.20**	**265**	P	**Pn**	20 11 34.6	**+0.8**
BSO1	**Boso 1**	**2.20**	**207**	P	**Pn**	20 11 35.2	**+1.9**
JMK	**Ichinoseki**	**2.44**	**342**	P	**Pn**	20 11 37.5	**+0.5**
JMK				S	**Sn**	20 12 06.0	**-1.4**
JNS	**Sasagawa**	**2.57**	**298**	P	**Pn**	20 11 40.4	**+1.6**
MJAR	**Matsushiro Arr**	**3.19**	**270**	Pn	**Pn**	20 11 48.9	**+1.4**
	19nm,0.3s,baz=95,slow=9.3,SNR=368						
MAJO	**Matsushiro**	**3.19**	**270**	*e*Pn	**Pn**	20 11 48.6	**+1.1**
MAT	**Matsushiro**	**3.19**	**270**	P	**Pn**	20 11 49.4	**+1.9**
MAT				S	**Sb**	20 12 30.4	**-2.6**
JHJ	**Hachijo jima 2**	**4.02**	**210**	Pn	**Pn**	20 11 59.3	**+0.6**
	22nm,0.3s,baz=93,slow=22,SNR=8.9						
JHJ				Sn	**Sn**	20 12 43.4	**-3.1**
	53nm,0.3s,baz=52,slow=22,SNR=8.7						
ERM	**Erimo**	**5.43**	**8**	*e*Pn	**Pn**	20 12 17.7	**-0.4**
ASAJ	**Asahikawa**	**7.48**	**2**	Pn	**Pn**	20 12 47.0	**+0.6**
	1.3nm,0.3s,baz=196,slow=22,SNR=7.6						
ASAJ				Sn	**Sn**	20 14 09.0	**-2.8**
	0.8nm,0.3s,baz=253,slow=19,SNR=2.8						
ASAJ	**Asahikawa**	**7.48**	**2**	*e*Pn	**Pn**	20 12 46.3	**0.0**
ASAJ				Pn	**Pn**	20 12 47.0	**+0.6**
ASAJ				Sn	**Sn**	20 14 09.0	**-2.8**
CBIJ	**Chichi jima**	**9.51**	**180**	Pn	**Pn**	20 13 12.8	**-1.4**
CBIJ				Sn	Sn	20 14 52.7	-9.0
JCJ	**Chichijima**	**9.51**	**180**	Pn	**Pn**	20 13 12.8	**-1.4**
	3.3nm,0.3s,baz=88,slow=21,SNR=6.2						
JCJ				Sn	Sn	20 14 52.7	-9.0
	baz=344,slow=19						
USRK	**Ussuriysk Ar.**	**10.83**	**317**	Pn	**Pn**	20 13 34.3	**+2.1**
	0.2nm,0.3s,baz=137,slow=14,SNR=4.4						
KSRS	**Korea Array**	**11.42**	**278**	Pn	**Pn**	20 13 42.3	**+2.0**
	0.1nm,0.3s,baz=92,slow=16,SNR=4.1						
KSAR	**Wonju Array Be**	**11.45**	**278**	Pn	**Pn**	20 13 42.3	**+1.6**
MDJ	**Mudanjiang**	**12.44**	**314**	*e*P	**Pn**	20 13 58.7	**+4.5**
KLR	**Kul'dur**	**14.71**	**332**	Pn	**P**	20 14 29.0	**-2.6**
	0.2nm,0.3s,baz=175,slow=11,SNR=3.1						
YAK	**Yakutsk**	**26.60**	**347**	P	**P**	20 16 35.8	**+0.2**
	6.0nm,0.4s,baz=358,slow=4.3,SNR=6.1						
SEY	**Seymchan**	**27.07**	**10**	P	**P**	20 16 41.5	**+1.6**
	1.7nm,0.6s,baz=117,slow=5.8,SNR=6.0						
H11N2	**WAKE ISLAND Hy**	**27.42**	**121**	T	T	20 45 44.4	
	baz=313,slow=75,SNR=12						
H11N1	**WAKE ISLAND Hy**	**27.43**	**121**	T	T	20 45 45.5	
	baz=313,slow=75,SNR=11						
H11N3	**WAKE ISLAND Hy**	**27.44**	**121**	T	T	20 45 48.9	
	baz=313,slow=75,SNR=10						
ENH	**Enshi**	**27.91**	**266**	*e*P	**P**	20 16 46.9	**-0.9**
	8.2nm,0.7s						
ULN	**Ulaanbaatar**	**28.08**	**305**	*e*P	**P**	20 16 50.0	**+0.7**
	3.0nm,0.8s						
H11S1	**WAKE ISLAND Hy**	**28.13**	**123**	T	T	20 46 49.1	
	baz=315,slow=76,SNR=13						
H11S3	**WAKE ISLAND Hy**	**28.13**	**123**	T	T	20 46 46.9	
	baz=315,slow=76,SNR=12						
H11S2	**WAKE ISLAND Hy**	**28.15**	**123**	T	T	20 46 46.9	
	baz=315,slow=76,SNR=7.6						
SONM	**Songino Array**	**28.51**	**304**	P	**P**	20 16 53.3	**+0.2**
	4.5nm,0.8s,baz=104,slow=9.2,SNR=17						
TLY	**Talaya**	**31.05**	**311**	P	**P**	20 17 16.0	**+0.5**
	1.1nm,0.5s,baz=87,slow=7.3,SNR=3.3						
TIXI	**Tiksi**	**35.76**	**353**	P	**P**	20 17 57.2	**+1.0**
	1.8nm,0.3s,baz=226,slow=2.3,SNR=5.4						
ZALV	**Zalesovo Beam**	**42.63**	**313**	P	**P**	20 18 54.4	**+0.6**
	2.5nm,0.7s,baz=90,slow=7.4,SNR=11						
LSA	**Lhasa**	**42.85**	**276**	*e*P	**P**	20 18 58.3	**+1.8**
	2.4nm,0.8s						
MKAR	**Makanchi Array**	**44.85**	**303**	P	**P**	20 19 11.6	**-0.2**
	0.7nm,0.6s,baz=85,slow=10,SNR=14						
KURK	**Kurchatov**	**46.66**	**308**	*e*P	**P**	20 19 25.6	**-0.4**
	8.9nm,0.8s						
ILAR	**Eielson Array**	**49.51**	**32**	P	**P**	20 19 49.1	**+1.2**
	0.4nm,0.8s,baz=253,slow=6.6,SNR=5.8						
BVAR	**Borovoye Array**	**51.29**	**313**	PcP	**PcP**	20 21 16.2	**-0.4**
	0.7nm,0.7s,baz=96,slow=4.3,SNR=2.7						
BRVK	**Borovoye**	**51.35**	**313**	*e*P	**P**	20 20 02.1	**+0.1**
WRAB	**Tennant Creek**	**56.74**	**189**	*e*P	**P**	20 20 40.2	**-1.4**
WRA	**Warramunga Arr**	**56.75**	**189**	P	**P**	20 20 41.6	**-0.1**
	0.6nm,0.9s,baz=7.1,slow=7.0,SNR=9.1						
ARU	**Arti**	**57.06**	**319**	P	**P**	20 20 43.3	**-0.3**
	1.5nm,0.5s,baz=9.3,slow=4.8,SNR=3.6						
AKTO	**Aktyubinsk**	**59.40**	**312**	P	**P**	20 20 58.9	**-1.1**
	1.2nm,0.7s,baz=86,slow=10,SNR=3.8						
ASAR	**Alice Springs**	**60.48**	**189**	P	**P**	20 21 07.2	**-0.4**
	0.2nm,0.6s,baz=16,slow=12,SNR=4.5						
GEYT	**Alibeck**	**64.56**	**299**	P	**P**	20 21 35.4	**+0.4**
	0.5nm,0.3s,baz=57,slow=5.3,SNR=4.2						
FINES	**FINESS Array B**	**69.45**	**333**	P	**P**	20 22 05.4	**-0.1**
	1.0nm,0.7s,baz=38,slow=9.9,SNR=4.0						
NB2	**NORSAR Subarra**	**74.79**	**338**	P	**P**	20 22 37.8	**+0.1**
	comp=Z,2.7nm,1.1s,baz=41,slow=6.2						
NOA	**NORSAR Array B**	**74.79**	**338**	P	**P**	20 22 37.9	**+0.2**
	comp=Z,0.9nm,0.8s,baz=38,slow=5.7,SNR=4.6						
AKASG	**Malin Array Be**	**74.99**	**323**	P	**P**	20 22 39.0	**+0.1**
	comp=Z,0.6nm,0.4s,baz=49,slow=6.6,SNR=4.3						
BRTR	**Keskin Array B**	**79.57**	**312**	P	**P**	20 23 04.9	**-0.2**
	comp=Z,0.9nm,0.9s,baz=66,slow=3.0,SNR=4.2						
GERES	**GERESS Array B**	**83.37**	**329**	P	**P**	20 23 24.7	**-0.3**
	comp=Z,0.5nm,0.7s,baz=49,slow=4.1,SNR=4.3						
TXAR	**Lajitas Array**	**89.88**	**53**	P	**P**	20 23 58.2	**+1.1**
	comp=Z,0.2nm,0.4s,baz=358,slow=0.1,SNR=6.8						
LPAZ	**La Paz**	**146.36**	**61**	PKPbc	**PKPbc**	20 30 40.5	**+0.5**
	comp=Z,0.5nm,0.4s,baz=252,slow=3.2,SNR=2.7						

MEX 05 20:11:39.5±0.3,30.˚82N×105.˚63W,h8km±10km,MD4.2, Texas-Mexico border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CGIG		**2.07**	**258**	*e*P	Pn	20 12 11.4	-3.4
CGIG				*e*S	Sn	20 12 36.4	-4.4
121A	**Cookes Peak, D**	**2.51**	**314**	*e*P	Pn	20 12 17.6	-3.2
121A				*e*S	Sn	20 12 47.7	-3.9
319A	**Douglas**	**3.18**	**281**	*i*P	Pn	20 12 27.4	-2.5
319A				*e*S	Sn	20 13 04.4	-3.7

*ISCJB **05** 20:15:08.2±0.4,36.˚67N±0.˚04×142.˚34E±0.˚04,h15km, mb4.2/39,MS3.8/8,Error ellipse: s-maj=5.5km s-min=4.6km az=140.7*
*IDC **05** 20:15:08.2±0.6,36.˚68N×142.˚26E,h0km,mb4.1/25, mb1 4.2/33,mb1mx4.0/72,mbtmp4.1/33,ML4.0/7,MS3.7/12, Ms1 3.7/12,ms1mx3.4/46,Error ellipse: s-maj=14.9km s-min=13.0km az=114.0*
*JMA **05** 20:15:09.3±0.3,36.˚73N×142.˚30E,h19km,M4.2*
*MOS **05** 20:15:14.1±1.1,37.˚05N×142.˚05E,h36km,mb4.5/14,Error ellipse: s-maj=10.3km s-min=6.6km az=110.4*
*NEIC **05** 20:15:14.1±1.2,36.˚69N×142.˚16E,h39km±10km,mb4.7/5, Error ellipse: s-maj=10.3km s-min=8.3km az=120.0*

ISC 05 20:15:10.4±0.5,36.˚73N±0.˚05×142.˚30E±0.˚05,h15km,n94, σ1§38/97,mb4.2/39,MS3.9/8,7C-2D,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**1.26**	**288**	P	**Pn**	20 15 31.5	**-2.0**
ONAJ				*e*S	**Sb**	20 15 49.0	**-1.0**
JFK	**Kawauchi**	**1.31**	**300**	P	**Pn**	20 15 32.7	**-1.5**
JHO	**Hitachi**	**1.40**	**266**	P	**Pn**	20 15 34.0	**-1.4**
CHOJ	**Chosi**	**1.55**	**229**	*e*S	**Sn**	20 15 55.4	**-1.9**
JMM	**Marumori**	**1.65**	**314**	P	**Pn**	20 15 37.6	**-1.3**
JFT	**Otama**	**1.76**	**297**	P	**Pn**	20 15 39.6	**-0.7**
JFT				*e*S	**Sn**	20 16 01.7	**-0.7**
JIO	**Ouri**	**1.88**	**337**	P	**Pn**	20 15 41.4	**-0.6**
JOU	**Okura**	**2.09**	**322**	P	**Pn**	20 15 45.4	**+0.5**
MJAR	**Matsushiro Arr**	**3.30**	**268**	Pn	**Pn**	20 16 01.9	**+0.4**
	37nm,0.3s,baz=88,slow=14,SNR=74						
MJAR				LR	LR	20 17 31.0	
	comp=Z,849nm,18.2s,baz=115,slow=44						
MAJO	**Matsushiro**	**3.30**	**268**	*e*P	**Pn**	20 16 02.2	**+0.7**
MAJO	**Matsushiro**	**3.30**	**268**	*e*Pn	**Pn**	20 16 02.2	**+0.7**
MAT	**Matsushiro**	**3.30**	**268**	P	**Pn**	20 16 02.0	**+0.5**
MAT				*e*S	**Sn**	20 16 40.7	**+0.2**
JHJ	**Hachijo jima 2**	**4.15**	**211**	Pn	**Pn**	20 16 12.3	**-0.9**
	50nm,0.3s,baz=79,slow=22,SNR=9.7						
JHJ				Sn	**Sn**	20 16 57.1	**-4.4**
	100nm,0.3s,baz=58,slow=22,SNR=13						
ERM	**Erimo**	**5.32**	**7**	*e*P	**Pn**	20 16 28.7	**-0.6**
ERM	**Erimo**	**5.32**	**7**	*e*Pn	**Pn**	20 16 28.3	**-1.0**
	20nm,0.6s						
ASAJ	**Asahikawa**	**7.38**	**2**	Pn	**Pn**	20 16 57.0	**-0.6**
	4.1nm,0.3s,baz=209,slow=10,SNR=11						
ASAJ				Sn	**Sn**	20 18 15.8	**-5.3**
	baz=192,slow=19,SNR=2.0						
ASAJ				LR	LR	20 20 15.2	
	comp=Z,298nm,21.8s,baz=162,slow=41						
ASAJ	**Asahikawa**	**7.38**	**2**	*e*Pn	**Pn**	20 16 56.7	**-0.9**
	5.2nm,0.5s						
ASAJ				Sn	**Sn**	20 18 15.8	**-5.3**
CBIJ	**Chichi jima**	**9.60**	**181**	Pn	**Pn**	20 17 26.8	**-1.4**
CBIJ				Sn	Sn	20 19 04.1	-12
JCJ	**Chichijima**	**9.61**	**181**	Pn	**Pn**	20 17 26.8	**-1.4**
	7.2nm,0.3s,baz=294,slow=20,SNR=5.6						
JCJ				Sn	Sn	20 19 04.1	-12
	baz=0.0,slow=20						
JNU	**Nakatsue**	**10.04**	**252**	Pn	**Pn**	20 17 33.8	**-0.4**
	0.7nm,0.3s,baz=69,slow=4.3,SNR=5.8						
JNU				LR	LR	20 21 52.8	
	comp=Z,484nm,18.2s,baz=312,slow=40						
YSS	**Yuzh-Sakhalins**	**10.22**	**2**	*e*P	**Pn**	20 17 35.9	**-0.6**
USRK	**Ussuriysk Ar.**	**10.83**	**317**	Pn	**Pn**	20 17 45.0	**+0.2**
	0.2nm,0.3s,baz=130,slow=14,SNR=5.3						
USRK				LR	LR	20 21 44.8	
	comp=Z,474nm,18.0s,baz=107,slow=37						
KSRS	**Korea Array**	**11.51**	**278**	Pn	**Pn**	20 17 55.2	**+1.1**
	0.2nm,0.3s,baz=88,slow=14,SNR=6.2						
KSRS				LR	LR	20 22 10.3	
	comp=Z,459nm,18.4s,baz=68,slow=37						
KSAR	**Wonju Array Be**	**11.54**	**278**	P	**Pn**	20 17 55.2	**+0.6**
KSAR	**Wonju Array Be**	**11.54**	**278**	Pn	**Pn**	20 17 55.2	**+0.6**
KLR	**Kul'dur**	**14.67**	**332**	Pn	**Pn**	20 18 38.0	**+0.8**
	0.1nm,0.3s,baz=146,slow=14,SNR=2.7						
KLR

ASAR Alice Springs 60.59 189 P **P 20 25 20.1 -0.4**
comp=Z,0.6nm,0.7s,baz=6.8,slow=7.3,SNR=8.1
RES Resolute Bay 62.72 15 P **P 20 25 34.5 +0.3**
comp=Z,0.6nm,0.4s,baz=327,slow=3.9,SNR=4.5
YKA Yellowknife Ar 63.71 30 P **P 20 25 41.6 +0.7**
comp=Z,0.3nm,0.6s,baz=301,slow=6.3,SNR=5.2
FINES FINESS Array B 69.41 333 P **P 20 26 17.4 0.0**
comp=Z,2.0nm,0.7s,baz=66,slow=9.4,SNR=4.7
FINES LR LR 21 00 13.8
comp=Z,83nm,18.8s,baz=8.0,slow=39
FINES FINESS Array B 69.41 333*ce*P **P 20 26 17.6 +0.2**
FINES pmax pmax
comp=Z,2.0nm,0.7s
VSU Vasula 71.08 330 *e*P **P 20 26 25.9 -1.7**
VSU pmax pmax
comp=Z,29nm,1.0s
KBZ Khabaz 71.64 311 P **P 20 26 31.6 +0.4**
comp=Z,3.5nm,0.9s,baz=70,slow=3.3,SNR=7.6
KIV Kislovodsk 71.64 311 *e*P **P 20 26 32.4 +0.9**
KIV pmax pmax
comp=Z,10.0nm,1.1s
KIV MLR MLR
comp=Z,61nm,17.0s
NVAR Mina Array Bea 74.60 53 P **P 20 26 51.1 +1.9**
comp=Z,0.4nm,0.6s,baz=309,slow=5.7,SNR=3.3
HFS Hagfors 74.66 336 P **P 20 26 50.8 +2.0**
comp=Z,1.1nm,0.7s,baz=69,slow=8.4,SNR=4.6
NB2 NORSAR Subarra 74.74 338 P **P 20 26 49.4 +0.1**
comp=Z,0.5nm,0.6s,baz=38,slow=5.9
NOA NORSAR Array B 74.74 338 P **P 20 26 49.5 +0.1**
comp=Z,2.0nm,1.0s,baz=40,slow=5.7,SNR=4.3
NOA LR LR 21 03 17.5
comp=Z,56nm,18.7s,baz=355,slow=39
AKASG Malin Array Be 74.97 323 P **P 20 26 50.7 -0.2**
comp=Z,2.1nm,0.6s,baz=47,slow=6.8,SNR=8.1
AKASG LR LR 21 01 46.8
comp=Z,52nm,18.0s,baz=70,slow=37
AKASG Malin Array Be 74.97 323*ce*P **P 20 26 50.5 -0.3**
AKASG pmax pmax
comp=Z,2.0nm,0.6s
BRTR Keskin Array B 79.58 312 P **P 20 27 18.1 +0.9**
comp=Z,1.3nm,0.9s,baz=101,slow=6.4,SNR=6.2
BRTR Keskin Array B 79.58 312*ce*P **P 20 27 19.2 +2.1**
BRTR pmax pmax
comp=Z,1.0nm,0.9s
VYHS Vyhne 81.38 326 *e*P **P 20 27 27.9 +1.5**
VYHS Vyhne 81.38 326 *e*P **P 20 27 27.9 +1.5**
CLL Collm 81.71 331 ||*i*P **P 20 27 28.3 +0.2**
comp=Z,4.0nm,1.0s
CLL *i* 20 27 38.4
CLL Collm 81.71 331 ||*i*P **P 20 27 28.3 +0.2**
CLL *i* 20 27 38.4
CLL pmax pmax
comp=Z,4.0nm,1.0s
KHC Kasperske Hory 83.17 329 *e*P **P 20 27 35.6 -0.2**
KHC *ep*P **sP 20 27 45.6 +3.0**
KHC Kasperske Hory 83.17 329 *e*P **P 20 27 35.6 -0.2**
KHC *e* 20 27 45.6
KHC *e**PP 20 38 45.8
GERES GERESS Array B 83.34 329 P **P 20 27 36.8 -0.1**
comp=Z,0.6nm,0.6s,baz=27,slow=3.3,SNR=7.5
BFO Black Forest 85.92 331*ce*P **P 20 27 51.0 +1.3**
TXAR Lajitas Array 89.74 53 P **P 20 28 10.0 +1.5**
comp=Z,0.2nm,0.3s,baz=331,slow=7.2,SNR=2.3
TXAR Lajitas Array 89.74 53 P **P 20 28 10.0 +1.5**
TZTN Tazewell 95.60 35 *e*P **P 20 28 37.8 +2.4**
comp=Z,67nm,0.8s
LPAZ La Paz 146.23 61 PKPbc **PKPbc 20 34 51.9 +0.4**
comp=Z,1.1nm,0.8s,baz=268,slow=4.0,SNR=3.0
SIV San Ignacio 150.73 51 PKPbc **PKPbc 20 35 00.9 -1.6**
comp=Z,1.7nm,0.7s,baz=344,slow=7.4,SNR=2.9

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*HEL **05** 20:21:09.1±0.6, 67°.61N×34°.01E, h0km, ML2.1, Explosion*
*IDC **05** 20:21:13.2±2.6, 67°.70N×33°.34E, h0km, mb1 3.2/4, mb1mx2.9/76, mbtmp3.1/4, ML2.7/4, Error ellipse: s-maj=31.4km s-min=10.2km az=70.0*
ISC 05 20:21:11.1±2.1, 67°.56N±0°.05×33°.4E±0°.1, h0km, n14, σ1§30/22, Baltic States-Belarus-Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VRF	**Varrio**	**1.46**	**279**	PG	**Pg**	**20 21 38.9**	**-0.1**
VRF				SG	**Sn**	**20 21 58.9**	**+0.5**
VRF				MSG		20 21 59.4	
comp=Z,17nm,0.2s							
KU6	**Riekki**	**2.07**	**224**	PG	**Pb**	**20 21 49.2**	**-0.3**
baz=41							
KU6				MSG		20 22 16.5	
comp=Z,7.2nm,0.2s							
KU6				SG	**Sg**	**20 22 19.4**	**+1.9**
MSF	**Maaselka**	**2.39**	**228**	PB	**Pb**	**20 21 54.3**	**-0.6**
MSF				SG	**Sg**	**20 22 29.6**	**+1.8**
SGF	**Sodankyl**	**2.64**	**271**	PB	**Pb**	**20 21 57.8**	**-1.4**
SGF				SG	**Sg**	**20 22 38.2**	**+2.4**
RNF	**Rovaniemi**	**3.04**	**255**	PN	**Pn**	**20 22 02.0**	**+1.7**
RNF				SN	**Sb**	**20 22 41.0**	**-2.6**
KEV	**Kevo**	**3.21**	**316**	PN	**Pn**	**20 22 02.8**	**+0.1**
KEV				SN	**Sn**	**20 22 41.4**	**-0.2**
ARCES ARCESS Array B		**3.51**	**308**	Pn	**Pn**	**20 22 06.7**	**-0.1**
comp=Z,2.1nm,0.3s,baz=122,slow=15,SNR=200							
ARCES				Pg	**Pb**	**20 22 14.8**	**+0.8**
comp=Z,2.7nm,0.3s,baz=120,slow=15,SNR=25							
ARCES				Sn	**Sn**	**20 22 47.8**	**-1.2**
comp=Z,1.3nm,0.3s,baz=118,slow=25,SNR=13							
ARCES				Lg	Lg	20 22 58.6	
comp=Z,3.7nm,0.3s,baz=117,slow=32,SNR=16							
HEF	**Hetta**	**3.76**	**288**	PN	**Pn**	**20 22 10.7**	**+0.4**
baz=93							
TOF	**Tornio**	**3.88**	**252**	PN	**Pn**	**20 22 12.7**	**+0.9**
OUL	**Oulu**	**3.91**	**234**	PB	**Pb**	**20 22 19.9**	**-0.9**
LANU	**Lannavaara**	**4.36**	**282**	PN	**Pn**	**20 22 18.5**	**+0.1**
FINES FINESS Array B		**6.90**	**211**	Pn	**Pn**	**20 22 54.0**	**+0.8**
comp=Z,0.1nm,0.3s,baz=22,slow=16,SNR=3.2							
FINES				Lg	Lg	20 24 44.6	
comp=Z,0.4nm,0.3s,baz=26,slow=26,SNR=11							
HFS	**Hagfors**	**11.39**	**239**	Pn	**Pn**	**20 23 54.5**	**-0.3**
comp=Z,0.1nm,0.3s,baz=62,slow=15,SNR=2.9							
NOA	**NORSAR Array B**	**11.58**	**246**	Pn	**Pn**	**20 23 55.7**	**-1.7**
comp=Z,0.1nm,0.3s,baz=45,slow=11,SNR=3.1							

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*IDC **05** 20:26:30.7±0.7, 37°.57N×142°.80E, h0km, mb3.8/16, mb1 3.9/21, mb1mx3.8/54, mbtmp3.8/21, ML3.4/4, MS2.9/2, Ms1 2.9/2, ms1mx2.5/51, Error ellipse: s-maj=17.3km s-min=15.3km az=118.0*
*JMA **05** 20:26:31.2±0.3, 37°.62N×142°.61E, h0km, M4.1*
*ISCJB **05** 20:26:32.9±0.5, 37°.64N±0°.06×142°.68E±0°.05, h24km, mb3.9/19, MS2.9/1, Error ellipse: s-maj=8.9km s-min=5.3km az=158.3*
*NEIC **05** 20:26:33.7±4.5, 37°.62N×142°.78E, h17km±28km, mb4.7/2, Error ellipse: s-maj=14.0km s-min=9.0km az=130.0*
ISC 05 20:26:34.8±0.6, 37°.63N±0°.06×142°.66E±0°.07, h24km, n42, σ1§34/39, mb3.9/19, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.32**	**309**	P	**Pn**	**20 26 55.7**	**-2.1**
JFK	**Kawauchi**	**1.44**	**260**	P	**Pn**	**20 26 57.7**	**-1.8**
JFK				S	**Sn**	**20 27 16.3**	**-1.4**
JMM	**Marumori**	**1.50**	**280**	P	**Pn**	**20 26 58.4**	**-1.8**
JMM				S	**Sn**	**20 27 17.6**	**-1.4**
ONAJ	**Iwakimizuishiy**	**1.57**	**251**	P	**Pn**	**20 26 59.7**	**-1.6**
JOU	**Okura**	**1.74**	**296**	P	**Pn**	**20 27 02.4**	**-1.1**
JFT	**Otama**	**1.85**	**267**	P	**Pn**	**20 27 04.5**	**-0.5**
JFT				S	**Sn**	**20 27 27.7**	**+0.1**
JHO	**Hitachi**	**1.95**	**239**	P	**Pn**	**20 27 05.4**	**-1.0**
MJAR	**Matsushiro Arr**	**3.72**	**254**	Pn	**Pn**	**20 27 32.5**	**+1.8**
2.6nm,0.3s,baz=77,slow=14,SNR=34							
MAJO	**Matsushiro**	**3.72**	**254**	*e*Pn	**Pn**	**20 27 32.8**	**+2.0**
JHJ	**Hachijo jima 2**	**5.07**	**208**	Pn	**Pn**	**20 27 49.8**	**+0.4**
11nm,0.3s,baz=72,slow=20,SNR=3.4							
JHJ				Sn	**Sn**	**20 28 45.0**	**-2.2**
10nm,0.3s,baz=53,slow=20,SNR=2.7							
ASAJ	**Asahikawa**	**6.49**	**360**	Pn	**Pn**	**20 28 07.4**	**-1.3**
1.0nm,0.3s,baz=213,slow=14,SNR=17							
ASAJ				Sn	Sn	20 29 16.1	-5.8
0.5nm,0.3s,baz=270,slow=20,SNR=2.2							
USRK	**Ussuriysk Ar.**	**10.40**	**312**	Pn	**Pn**	**20 29 03.8**	**+1.4**
0.4nm,0.3s,baz=117,slow=14,SNR=5.3							
KSRS	**Korea Array**	**11.70**	**274**	Pn	**Pn**	**20 29 20.7**	**+0.5**
baz=87,slow=14,SNR=2.9							
KSRS				LR	LR	20 33 30.3	
comp=Z,55nm,21.8s,baz=52,slow=35							
KSAR Wonju Array Be		**11.73**	**274**	Pn	**Pn**	**20 29 20.7**	**0.0**
KLR Kul'dur		**14.03**	**329**	Pn	**Pn**	**20 29 49.5**	**-2.4**
0.1nm,0.3s,baz=127,slow=12,SNR=6.1							
SEY Seymchan		**26.03**	**10**	P	**P**	**20 32 05.9**	**+0.2**
2.4nm,0.6s,baz=185,slow=9.9,SNR=9.9							
H11N2 WAKE ISLAND Hy		**27.62**	**123**	T	T	21 01 14.6	
baz=316,slow=75,SNR=36							
H11N1 WAKE ISLAND Hy		**27.63**	**124**	T	T	21 01 14.6	
baz=316,slow=75,SNR=38							
H11N3 WAKE ISLAND Hy		**27.64**	**123**	T	T	21 01 15.2	
baz=316,slow=75,SNR=31							
SONM Songino Array		**28.29**	**303**	P	**P**	**20 32 27.4**	**+1.0**
1.3nm,0.7s,baz=106,slow=8.4,SNR=5.9							
H11S1 WAKE ISLAND Hy		**28.37**	**126**	T	T	21 02 12.4	
baz=317,slow=76,SNR=54							
ENH Enshi		**28.37**	**265**	*e*P	P	20 32 31.9	+4.8
4.0nm,0.5s							
H11S3 WAKE ISLAND Hy		**28.37**	**126**	T	T	21 02 14.6	
baz=317,slow=76,SNR=36							
H11S2 WAKE ISLAND Hy		**28.39**	**126**	T	T	21 02 14.1	
baz=317,slow=76,SNR=28							
ZALV Zalesovo Beam		**42.25**	**312**	P	**P**	**20 34 26.3**	**+0.4**
1.8nm,0.7s,baz=90,slow=8.2,SNR=3.8							
ZALV				PcP	**PcP**	**20 36 17.4**	**-2.1**
0.2nm,0.3s,baz=83,slow=4.5,SNR=2.5							
MKAR Makanchi Array		**44.65**	**302**	P	**P**	**20 34 45.6**	**+0.3**
1.3nm,0.6s,baz=87,slow=10,SNR=17							
KURK Kurchatov		**46.35**	**308**	*e*P	**P**	**20 34 58.3**	**-0.5**
8.2nm,0.7s							
KURBB Kurchatov Arra		**46.42**	**308**	P	**P**	**20 34 59.3**	**0.0**
2.3nm,0.6s,baz=82,slow=8.5,SNR=25							
SML Sawmill		**47.93**	**37**	*e*P	**P**	**20 35 11.1**	**+0.1**
ILAR Eielson Array		**48.46**	**33**	P	**P**	**20 35 14.8**	**-0.2**
1.0nm,0.5s,baz=257,slow=5.8,SNR=12							
HNR Honiara		**49.53**	**157**	LR	LR	20 54 52.4	
comp=Z,12nm,19.3s,baz=296,slow=34							
BVAR Borovoye Array		**50.91**	**312**	P	**P**	**20 35 33.8**	**0.0**
0.4nm,0.5s,baz=66,slow=12,SNR=4.2							
WRA Warramunga Arr		**57.79**	**189**	P	**P**	**20 36 23.4**	**-0.7**
1.5nm,0.7s,baz=7.2,slow=7.1,SNR=14							
ASAR Alice Springs		**61.52**	**189**	P	**P**	**20 36 48.4**	**-1.4**
0.7nm,0.8s,baz=5.7,slow=6.7,SNR=8.9							
YKA Yellowknife Ar		**62.80**	**31**	P	**P**	**20 36 57.7**	**-0.2**
0.4nm,0.7s,baz=301,slow=6.5,SNR=7.2							
FINES FINESS Array B		**68.75**	**333**	P	**P**	**20 37 36.2**	**-0.1**
1.2nm,0.9s,baz=37,slow=7.1,SNR=2.8							
NVAR Mina Array Bea		**73.84**	**54**	P	**P**	**20 38 08.2**	**+0.5**
0.4nm,0.5s,baz=275,slow=5.5,SNR=3.8							
NOA NORSAR Array B		**74.02**	**338**	P	**P**	**20 38 08.2**	**+0.1**
0.7nm,0.9s,baz=38,slow=5.9,SNR=2.4							
AKASG Malin Array Be		**74.43**	**323**	P	**P**	**20 38 13.8**	**+3.1**
0.2nm,0.3s,baz=42,slow=6.0,SNR=4.5							
PDAR Pinedale Array		**76.54**	**46**	P	**P**	**20 38 23.1**	**-0.2**
0.4nm,0.6s,baz=267,slow=3.0,SNR=4.7							
BRTR Keskin Array B		**79.20**	**312**	P	**P**	**20 38 40.1**	**+2.2**
0.2nm,0.4s,baz=75,slow=5.2,SNR=4.0							
TXAR Lajitas Array		**88.97**	**53**	P	**P**	**20 39 27.3**	**-0.5**
0.2nm,0.6s,baz=317,slow=32,SNR=3.3							

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*ISCJB **05** 20:30:34.4±0.3, 22°.50S±0°.07×12°.81W±0°.09, h10km, mb4.4/26, MS4.0/13, Error ellipse: s-maj=13.0km s-min=9.4km az=25.2*
*IDC **05** 20:30:34.6±0.5, 22°.45S×12°.87W, h0km, mb4.3/21, mb1 4.4/21, mb1mx4.3/35, mbtmp4.3/21, MS4.0/13, Ms1 4.0/13, ms1mx3.7/29, Error ellipse: s-maj=19.4km s-min=14.7km az=131.0*
*NEIC **05** 20:30:36.1±0.2, 22°.47S×12°.81W, h10km, mb4.7/3, Error ellipse: s-maj=10.1km s-min=8.0km az=140.0*
ISC 05 20:30:36.1±0.5, 22°.51S±0°.10×12°.8W±0°.1, h10km, n60, σ0§81/45, mb4.4/26, MS4.0/13, 1C, Southern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H10S2 ASCENSION HYDR		**13.59**	**352**	T	T	20 47 28.9	
baz=173,slow=75,SNR=53							
H10S3 ASCENSION HYDR		**13.59**	**352**	T	T	20 47 29.2	
baz=173,slow=75,SNR=48							
H10S1 ASCENSION HYDR		**13.60**	**352**	T	T	20 47 29.9	
baz=173,slow=75,SNR=57							
H10N1 ASCENSION HYDR		**14.66**	**353**	T	T	20 48 51.3	
baz=160							
H10N3 ASCENSION HYDR		**14.67**	**353**	T	T	20 48 52.7	
baz=160							
H10N2 ASCENSION HYDR		**14.68**	**353**	T	T	20 48 51.3	
baz=160							
RCBR Riachuelo		**27.78**	**303**	LR	LR	20 44 26.0	
comp=Z,381nm,21.2s,baz=122,slow=30							
TSUM Tsumeb		**28.57**	**89**	LR	LR	20 46 18.0	
comp=Z,374nm,18.2s,baz=230,slow=33							
DBIC Dimbokro		**30.03**	**16**	LR	LR	20 46 09.1	
comp=Z,106nm,19.0s,baz=174,slow=31							
BOSA Boshof		**34.78**	**108**	P	**P**	**20 37 26.8**	**-0.4**
2.7nm,0.8s,baz=293,slow=6.4,SNR=5.2							
BOSA				LR	LR	20 49 07.0	
comp=Z,208nm,19.6s,baz=244,slow=32							
TORD Torodi Ar. Bea		**38.18**	**23**	P	**P**	**20 37 55.8**	**-0.3**
16nm,0.9s,baz=198,slow=8.9,SNR=67							
TORD				LR	LR	20 50 55.1	
comp=Z,145nm,18.9s,baz=250,slow=32							
LSZ Lusaka		**39.36**	**87**	P	**P**	**20 38 07.3**	**+1.1**
4.1nm,0.8s,baz=234,slow=5.7,SNR=8.7							
LSZ Lusaka		**39.36**	**87**	*e*P	**P**	**20 38 06.2**	**0.0**
5.9nm,1.0s							
CPUP Villa Florida		**40.56**	**255**	P	**P**	**20 38 16.5**	**+0.5**
4.9nm,0.9s,baz=103,slow=7.5,SNR=7.4							
CPUP				LR	LR	20 52 35.1	
comp=Z,301nm,18.1s,baz=124,slow=33							
SIV San Ignacio		**45.86**	**269**	P	**P**	**20 38 58.4**	**-0.6**
1.4nm,0.6s,baz=124,slow=3.6,SNR=3.3							
SIV				LR	LR	20 56 19.0	
comp=Z,378nm,19.5s,baz=170,slow=34							
VNA2 Neumayer–Watz		**48.54**	**178**	P	**P**	**20 39 19.7**	**+0.6**
baz=355,slow=10							
VNA3 Neumayer Olymp		**48.79**	**179**	P	**P**	**20 39 20.8**	**-0.2**
SNAA Sanae		**49.52**	**176**	P	P	20 39 22.6	-4.0
SAML Samuel		**50.09**	**277**	*e*P	**P**	**20 39 33.3**	**+1.6**
9.1nm,1.1s							
PLCA Paso Flores		**51.50**	**235**	P	**P**	**20 39 41.9**	**-0.2**
5.3nm,0.9s,baz=103,slow=7.6,SNR=4.9							
LPAZ La Paz		**52.30**	**266**	P	**P**	**20 39 48.2**	**-0.8**
1.1nm,0.7s,baz=85,slow=3.7,SNR=4.0							
LPAZ				LR	LR	21 01 23.5	
comp=Z,116nm,18.1s,baz=158,slow=35							
KMBO Kilima Mbogo		**53.07**	**74**	LR	LR	21 00 17.2	
comp=Z,167nm,19.6s,baz=274,slow=34							
SYO Syowa Base		**56.06**	**160**	⇑*i*P	**P**	**20 40 13.4**	**-1.5**
KEST Kesra		**61.61**	**20**	P	**P**	**20 40 54.6**	**+0.6**
4.0nm,0.9s,baz=155,slow=4.2,SNR=5.0							
ESDC Sonseca Array		**62.41**	**8**	P	**P**	**20 40 58.9**	**-0.4**
0.6nm,0.8s,baz=185,slow=7.3,SNR=7.3							
MAW Mawson		**63.95**	**156**	P	**P**	**20 41 09.6**	**+0.5**
5.3nm,0.8s,baz=257,slow=6.7,SNR=5.6							
ROSC El Rosal		**65.94**	**286**	LR	LR	21 09 17.1	
comp=Z,157nm,19.2s,baz=115,slow=35							
QSPA South Pole Qui		**67.70**	**180**	*e*P	**P**	**20 41 34.3**	**+0.8**
52nm,1.0s							
FETA Feichten		**72.40**	**17**	*i*P	**P**	**20 42 00.1**	**-2.3**
3.6nm,1.0s							
DAVA Damuels		**72.42**	**16**	*i*P	**P**	**20 42 01.2**	**-1.4**
CONA Conrad Observa		**74.69**	**20**	*i*P	**P**	**20 42 16.5**	**+0.6**
6.2nm,1.2s							
GERES GERESS Array B		**74.88**	**18**	P	**P**	**20 42 16.2**	**-0.7**
1.1nm,0.8s,baz=204,slow=2.9,SNR=8.8							
BRTR Keskin Array B		**75.58**	**35**	P	**P**	**20 42 22.0**	**+0.7**
4.2nm,0.9s,baz=199,slow=6.5,SNR=16							
VYHS Vyhne		**76.15**	**21**	*e*P	**P**	**20 42 24.1**	**0.0**
MLR Muntele Rosu		**76.31**	**27**	P	**P**	**20 42 24.7**	**-0.6**
1.2nm,0.7s,baz=205,slow=6.1,SNR=6.6							
KECS Kecovo		**76.70**	**22**	*e*P	**P**	**20 42 27.6**	**+0.4**
BRG Berggiesshubel		**76.78**	**17**	*e*(P)	**P**	**20 42 27.7**	**0.0**
7.3nm,1.2s							
CRVS Cervenica-Dubn		**77.39**	**22**	*e*P	**P**	**20 42 31.6**	**+0.4**
KOLS Kolonicke sedl		**77.71**	**23**	*e*P	**P**	**20 42 33.9**	**+1.0**
VNDA Vanda		**80.14**	**179**	P	**P**	**20 42 46.6**	**+0.6**
1.9nm,0.9s,baz=229,slow=5.2,SNR=7.6							
AKASG Malin Array Be		**81.78**	**25**	P	**P**	**20 42 54.2**	**-0.7**
4.7nm,0.8s,baz=219,slow=5.0,SNR=16							
GNI Garni		**82.20**	**41**	LR	LR	21 16 44.7	
comp=Z,38nm,19.2s,baz=260,slow=34							
WSAR Wadi Sarin		**83.03**	**61**	LR	LR	21 18 22.3	
comp=Z,98nm,21.2s,slow=34							
KBZ Khabaz		**83.37**	**37**	P	**P**	**20 43 03.2**	**-0.2**
2.2nm,0.9s,baz=253,slow=3.1,SNR=5.7							
HFS Hagfors		**85.14**	**13**	P	**P**	**20 43 11.2**	**-0.8**
2.5nm,0.9s,baz=160,slow=4.7,SNR=3.8							
NB2 NORSAR Subarra		**85.49**	**11**	P	**P**	**20 43 14.3**	**+0.5**
comp=Z,3.8nm,1.0s,baz=203,slow=5.3							
NOA NORSAR Array B		**85.49**	**11**	P	**P**	**20 43 14.1**	**+0.3**
comp=Z,1.8nm,0.9s,baz=203,slow=5.4,SNR=4.2							
FINES FINESS Array B		**89.31**	**18**	P	**P**	**20 43 32.9**	**+0.8**
comp=Z,3.2nm,0.9s,baz=160,slow=7.3,SNR=8.9							
GEYT Alibeck		**89.66**	**48**	P	**P**	**20 43 35.8**	**+1.3**
comp=Z,1.2nm,0.6s,baz=263,slow=9.9,SNR=6.5							
SCHQ Schefferville		**89.78**	**332**	P	**P**	**20 43 34.8**	**+0.2**
comp=Z,4.6nm,0.8s,baz=231,slow=10,SNR=3.6							
SCHQ				LR	LR	21 17 50.6	
comp=Z,56nm,18.8s,baz=102,slow=32							
YKA Yellowknife Ar		**115.14**	**330**	PKP	**PKPdf**	**20 49 16.4**	**-0.7**
comp=Z,0.4nm,0.9s,baz=100,slow=1.4,SNR=5.7							
CMAR Chiang Mai Arr		**116.44**	**80**	PKP	**PKPdf**	**20 49 20.9**	**0.0**
comp=Z,0.3nm,0.6s,baz=274,slow=5.3,SNR=2.6							
ASAR Alice Springs		**123.84**	**143**	PKP	**PKPdf**	**20 49 34.1**	**-1.0**
comp=Z,0.9nm,0.9s,baz=185,slow=1.0,SNR=7.6							
TIXI Tiksi		**126.22**	**14**	PKP	**PKPdf**	**20 49 37.7**	**-0.4**
comp=Z,1.5nm,0.3s,baz=37,slow=5.1,SNR=4.8							
WRA Warramunga Arr		**127.00**	**140**	PKP	**PKPdf**	**20 49 40.5**	**-0.8**
comp=Z,1.2nm,0.9s,baz=226,slow=2.1,SNR=4.3							
ILAR Eielson Array		**128.28**	**337**	PKP	**PKPdf**	**20 49 41.6**	**-0.7**
comp=Z,1.3nm,0.9s,baz=3.0,slow=0.9,SNR=13							
KSAR Wonju Array Be		**143.13**	**57**	PKPpre	PKPpre	20 50 05.8	
KSRS Korea Array		**143.16**	**57**	PKhKP	PKPpre	20 50 05.8	
comp=Z,1.9nm,0.8s,baz=284,slow=2.2,SNR=6.5							
HNR Honiara		**147.48**	**167**	PKPbc	**PKPab**	**20 50 22.7**	**-0.4**
comp=Z,81nm,0.7s,baz=123,slow=7.8,SNR=4.9							
MJAR Matsushiro Arr		**151.30**	**54**	PKPbc	**PKPbc**	**20 50 29.9**	**-0.3**
comp=Z,3.9nm,0.9s,baz=288,slow=1.8,SNR=15							
MJAR				PKPab	**PKPab**	**20 50 37.7**	**-0.6**
comp=Z,3.6nm,1.0s,baz=295,slow=5.4,SNR=6.8							

IDC 05 20:47:12.9±1.8, 11°.57S×123°.64E, h0km, mb3.6/1, mb1 3.9/4, mb1mx3.5/37, mbtmp3.7/4, ML3.5/3, MS3.2/4, Ms1 3.2/4, ms1mx2.7/32, Error ellipse: s-maj=110.5km s-min=27.3km az=59.0, South of Timor

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**6.78**	**164**	Pn	Pn	20 48 54.3	+0.7
0.7nm,0.3s,baz=340,slow=9.2,SNR=57							
FITZ				Sn	Sn	20 50 02.2	-9.4
3.3nm,0.3s,baz=337,slow=11,SNR=13							
FITZ				LR	LR	20 51 00.9	
comp=Z,25nm,20.5s,baz=180,slow=34							
WRA Warramunga Arr		**13.24**	**130**	Pn	Pn	20 50 22.0	-0.3
0.3nm,0.3s,baz=305,slow=14,SNR=20							
WRA				Sn	Sn	20 52 39.7	-11
0.7nm,0.3s,baz=305,slow=25,SNR=9.6							
ASAR Alice Springs		**15.49**	**142**	Pn	Pn	20 50 52.1	-0.8
0.2nm,0.3s,baz=317,slow=12,SNR=20							
ASAR				Sn	Sn	20 53 35.2	-10
0.4nm,0.3s,baz=54,slow=12,SNR=8.2							
JCJ Chichijima		**42.45**	**25**	LR	LR	21 10 00.8	
comp=Z,47nm,21.0s,baz=130,slow=32							
MKAR Makanchi Array		**68.86**	**331**	P	P	20 58 19.4	0.0
0.2nm,0.4s,baz=143,slow=7.5,SNR=5.2							
PPT Papeete		**83.56**	**107**	LR	LR	21 33 10.1	
comp=Z,30nm,20.3s,baz=56,slow=33							
NRIK Noril'sk		**84.56**	**348**	LR	LR	21 39 26.5	
comp=Z,34nm,20.5s,baz=77,slow=37							

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*ISCJB **05** 20:47:40.9±0.6, 6°.05S±0°.09×154°.83E±0°.06, h89km, mb4.2/15, Error ellipse: s-maj=12.9km s-min=8.9km az=172.9*
*IDC **05** 20:47:44.9±2.0, 6°.09S×154°.77E, h112km±16km, mb4.0/13, mb1 4.1/17, mb1mx3.8/45, mbtmp4.4/17, MS4.0/2, Ms1 4.0/2, ms1mx2.9/34, Error ellipse: s-maj=16.5km s-min=13.9km az=25.0*
*NEIC **05** 20:47:45.3±1.1, 6°.08S×154°.77E, h118km±9km, mb4.6/2, Error ellipse: s-maj=11.5km s-min=7.9km az=199.0*
ISC 05 20:47:42.2±0.6, 6°.0S±0°.1×154°.84E±0°.08, h89km, n25, σ1§41/25, mb4.2/15, 1D, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR Honiara		**6.10**	**124**	P	**Pn**	**20 49 12.9**	**+3.1**
5.9nm,0.3s,baz=225,slow=4.3,SNR=3.2							
PMG Port Moresby		**8.34**	**246**	P	**Pn**	**20 49 43.0**	**+2.7**
5.2nm,0.3s,baz=65,slow=7.4,SNR=11							
PMG				S	**Sn**	**20 51 14.1**	**+1.2**
8.8nm,0.3s,baz=92,slow=19,SNR=7.2							
PMG				LR	LR	20 53 01.0	
comp=Z,100nm,18.2s,baz=70,slow=38							
JAY Jayapura		**14.52**	**283**	P	**Pn**	**20 51 03.8**	**+0.4**
0.1nm,0.3s,baz=90,slow=20,SNR=4.0							
DZM Mont Dzumac		**19.52**	**146**	P	**Pn**	**20 52 03.9**	**-0.9**
6.0nm,0.3s,baz=270,slow=8.3,SNR=61							
WRAB Tennant Creek		**24.26**	**233**	*e*P	P	20

IUG	**Iuzhnay**	**5.58**	**350**	*e*P	Pn	21 07 21.0	+4.3
	19nm,0.3s						
IUG				*e*S	**Sn**	**21 08 21.0**	**+1.5**
	136nm,0.6s						
MNAS	**Manas**	**5.90**	**8**	⇓P	**Pn**	**21 07 24.1**	**+3.1**
	1.5nm,0.2s						
MNAS				⇑S	**Sn**	**21 08 27.1**	**-0.2**
	16nm,0.7s						
BRLS	**Borolday**	**6.26**	**349**	*e*P	Pn	21 07 29.2	+3.4
BRLS				*e*S	**Sn**	**21 08 34.3**	**-1.5**
AAK	**Ala-Archa**	**6.45**	**21**	P	**Pn**	**21 07 31.3**	**+2.8**
	3.2nm,0.3s,baz=182,slow=5.6,SNR=19						
AAK				S	**Sn**	**21 08 39.5**	**-1.2**
	0.9nm,0.3s,baz=302,slow=22,SNR=13						
AAK	**Ala-Archa**	**6.45**	**21**	⇑P	**Pn**	**21 07 31.2**	**+2.6**
	3.7nm,0.4s						
AAK				⇑S	**Sn**	**21 08 39.8**	**-0.9**
	7.5nm,0.5s						
KK31	**Karatay Array**	**6.47**	**355**	⇑P	**Pn**	**21 07 31.7**	**+3.0**
	1.0nm,0.2s,baz=175,slow=12,SNR=115						
KK31				⇑S	**Sn**	**21 08 40.5**	**-0.6**
	14nm,0.7s,baz=179,slow=20,SNR=4.9						
TKM2	**Tokmak 2**	**7.07**	**26**	⇑P	**Pn**	**21 07 39.4**	**+2.5**
	1.6nm,0.4s						
TKM2				⇑S	**Sn**	**21 08 53.8**	**-2.0**
	1.8nm,0.6s						
GEYT	**Alibeck**	**10.61**	**281**	P	**Pn**	**21 08 27.2**	**+2.3**
	0.4nm,0.3s,baz=112,slow=16,SNR=4.5						
GEYT				S	**Sn**	**21 10 20.7**	**-0.9**
	0.4nm,0.3s,baz=167,slow=20,SNR=3.3						
MKAR	**Makanchi Array**	**13.01**	**35**	P	**Pn**	**21 08 56.8**	**+0.1**
	0.1nm,0.3s,baz=206,slow=9.6,SNR=3.6						
PYUN	**Piuthan**	**13.02**	**128**	*e*P	**Pn**	**21 08 56.7**	**-0.5**
	5.4nm,0.3s						
KOLN	**Koldanda**	**13.64**	**127**	*e*P	**Pn**	**21 09 05.0**	**-0.2**
	3.0nm,0.3s						
GKN	**Gorkha**	**14.16**	**124**	*e*P	**Pn**	**21 09 11.4**	**-0.5**
	5.8nm,0.3s						
KKN	**Kakani**	**14.73**	**123**	*e*P	**Pn**	**21 09 18.6**	**-0.7**
	2.7nm,0.2s						
KURBB	**Kurchatov Arra**	**14.89**	**18**	P	**P**	**21 09 23.2**	**-0.7**
	0.0nm,0.3s,baz=206,slow=10,SNR=6.6						
PKIN	**Phulchoki**	**14.95**	**123**	*e*P	**Pn**	**21 09 22.2**	**+0.1**
	2.2nm,0.2s						
AB31	**Akbulak array**	**15.08**	**330**	⇓P	**P**	**21 09 25.4**	**-0.6**
	0.2nm,0.2s,baz=166,slow=12,SNR=5.0						
AB31				S	**Sn**	**21 12 11.2**	**+1.5**
	1.3nm,0.6s,baz=132,slow=24,SNR=4.5						
BVAR	**Borovoye Array**	**16.38**	**358**	P	**P**	**21 09 41.3**	**+0.8**
	0.3nm,0.3s,baz=152,slow=9.9,SNR=4.9						
AKTO	**Aktyubinsk**	**16.78**	**329**	P	**P**	**21 09 46.2**	**+1.4**
	0.6nm,0.3s,baz=130,slow=9.1,SNR=11						
AKTO	**Aktyubinsk**	**16.78**	**329**	⇓P	**P**	**21 09 45.5**	**+0.7**
	1.6nm,0.4s						
AKTO				⇓S	**Sn**	**21 12 44.8**	**-5.9**
	1.9nm,0.9s						
ZALV	**Zalesovo Beam**	**19.67**	**24**	P	**P**	**21 10 15.1**	**-1.2**
	0.7nm,0.3s,baz=212,slow=10,SNR=6.5						
FINES	**FINESS Array B**	**37.51**	**326**	P	**P**	**21 12 58.5**	**-0.7**
	0.5nm,0.4s,baz=116,slow=9.3,SNR=8.5						
ARCES	**ARCESS Array B**	**41.10**	**337**	P	**P**	**21 13 28.2**	**-0.8**
	5.7nm,1.2s,baz=106,slow=8.9,SNR=7.3						
NB2	**NORSAR Subarra**	**44.42**	**323**	P	**P**	**21 13 54.4**	**-1.5**
	comp=Z,0.6nm,0.5s,baz=97,slow=7.9						
NOA	**NORSAR Array B**	**44.42**	**323**	P	**P**	**21 13 53.9**	**-2.0**
	comp=Z,0.8nm,0.5s,baz=96,slow=7.8,SNR=5.8						

*IDC **05** 21:23:22.0±0.7,0°.65N×126°.96E, h0km, mb4.0/8, mb1 4.2/10, mb1mx3.9/40, mbtmp4.1/10, ML3.9/2, Error ellipse: s-maj=35.0km s-min=11.5km az=75.0*
*ISCJB **05** 21:23:25.1±0.6, 0°.60N±0°.06×126°.82E±0°.09, h33km, mb4.3/12, Error ellipse: s-maj=13.1km s-min=9.0km az=12.2*
*NEIC **05** 21:23:27.7±1.9, 0°.60N×126°.88E, h39km±19km, mb4.2/4, Error ellipse: s-maj=14.8km s-min=7.5km az=63.0*
ISC 05 21:23:27.5±0.7, 0°.64N±0°.08×126°.8E±0°.1, h35km, n16, σ0°88/18, mb4.2/12, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAPI	**Kappang**	**9.03**	**231**	Pn	**Pn**	**21 25 35.8**	**+0.4**
	3.4nm,0.3s,baz=19,slow=5.1,SNR=24						
KAPI				Sn	**Sn**	**21 27 14.4**	**-1.5**
	2.2nm,0.3s,baz=86,slow=19,SNR=6.1						
KSM	**Kuching**	**16.53**	**273**	*e*Pn	**Pn**	**21 27 17.7**	**+0.8**
	3.2nm,0.7s						
FITZ	**Fitzroy Crossi**	**18.66**	**184**	P	**P**	**21 27 41.9**	**-0.8**
	0.1nm,0.3s,baz=19,slow=12,SNR=3.1						
WRAB	**Tennant Creek**	**21.74**	**161**	*e*P	**P**	**21 28 15.6**	**-0.5**
	3.7nm,0.3s						
WRA	**Warramunga Arr**	**21.75**	**161**	P	**P**	**21 28 15.8**	**-0.3**
	3.3nm,0.4s,baz=338,slow=11,SNR=66						
WRA				S	**S**	**21 32 17.0**	**+2.0**
	0.4nm,0.6s,baz=322,slow=22,SNR=3.1						
ASAR	**Alice Springs**	**25.13**	**165**	P	**P**	**21 28 48.8**	**-0.7**
	5.2nm,0.3s,baz=346,slow=12,SNR=115						
COCO	**West Island**	**32.38**	**246**	*e*P	**P**	**21 29 54.6**	**+0.4**
	180nm,0.6s						
MJAR	**Matsushiro Arr**	**37.25**	**15**	P	**P**	**21 30 35.3**	**-0.6**
	0.9nm,0.4s,baz=185,slow=8.9,SNR=7.4						
USRK	**Ussuriysk Ar.**	**43.61**	**5**	P	**P**	**21 31 27.5**	**-0.9**
	0.8nm,0.4s,baz=181,slow=5.8,SNR=4.8						
SONM	**Songino Array**	**50.24**	**342**	P	**P**	**21 32 20.8**	**+0.5**
	0.7nm,0.5s,baz=163,slow=7.2,SNR=3.8						
TLY	**Talaya**	**54.48**	**342**	*e*P	**P**	**21 32 52.0**	**+0.5**
	1.3nm,0.5s						
MKAR	**Makanchi Array**	**60.14**	**326**	P	**P**	**21 33 32.2**	**+0.6**
	0.9nm,0.4s,baz=117,slow=8.0,SNR=27						
MA2	**Magadan**	**61.66**	**14**	*e*P	**P**	**21 33 41.8**	**+0.1**
	11nm,0.5s						
ZALV	**Zalesovo Beam**	**63.37**	**334**	P	**P**	**21 33 53.6**	**+0.4**
	0.4nm,0.4s,baz=131,slow=6.0,SNR=2.6						
GEYT	**Alibeck**	**72.90**	**310**	P	**P**	**21 34 53.7**	**+0.2**
	1.1nm,0.6s,baz=134,slow=4.3,SNR=3.7						
TORD	**Torodi Ar. Bea**	**123.91**	**286**	PKP	**PKPdf**	**21 42 22.1**	**-0.9**
	0.3nm,0.6s,baz=74,slow=1.2,SNR=2.8						

*ISCJB **05** 21:48:13.6±0.9, 35°.94S±0°.03×73°.13W±0°.10, h28km, Error ellipse: s-maj=11.2km s-min=4.9km az=5.0*
*GUC **05** 21:48:13.9±0.6, 35°.93S×73°.11W, h24km±5km, ML3.7*
ISC 05 21:48:14.7±1.7, 36°.02S±0°.05×73°.1W±0°.1, h28km, n17, σ1°20/23, 2C, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
COCH	**Cobquecura**	**0.29**	**113**	*e*P	**Pb**	**21 48 21.2**	**-0.6**
COCH				*i* S	**Sb**	**21 48 26.4**	**-0.2**
COCH				IAML		21 48 26.7	
	comp=N,15μm,0.2s						
CCSP	**San Pedro de C**	**0.83**	**180**	*e*P	**Pn**	**21 48 30.3**	**-0.1**
CCSP				*i* S	**Sn**	**21 48 42.6**	**+0.9**
CCSP				IAML		21 48 45.4	
	comp=N,4μm,0.3s						
CCHI	**Chillan**	**1.02**	**125**	*e*P	**Pn**	**21 48 33.0**	**-0.1**
CCHI				*i* S	**Sb**	**21 48 47.1**	**+0.3**
CCHI				IAML		21 48 54.6	
	comp=N,2μm,0.7s						
TALC	**Talca**	**1.35**	**63**	⇑*i* P	**Pn**	**21 48 37.0**	**-0.7**
TALC				*i* S	**Sn**	**21 48 53.5**	**-1.2**
RCDM	**Rinconada Maip**	**3.16**	**38**	*e*P	**Pn**	**21 49 01.9**	**-0.6**
CLCH	**Cerro Calan**	**3.37**	**40**	*e*P	**Pn**	**21 49 05.2**	**-0.2**
CLCH				*e*S	**Sn**	**21 49 44.8**	**+0.2**
CLCH				IAML		21 50 06.2	
	comp=N,269nm,0.5s						
PEL	**Peldehue**	**3.50**	**36**	⇑*i* P	**Pn**	**21 49 06.8**	**-0.4**
PEL				IAML		21 50 06.1	
	comp=E,116nm,0.6s						
ROCH	**El Roble**	**3.50**	**30**	*e*P	**Pn**	**21 49 06.1**	**-1.3**
AAGR	**Agrelo**	**4.59**	**52**	*i* P	**Pn**	**21 49 24.3**	**+2.0**
ARCO	**CERRO ARCO**	**4.69**	**49**	*i* P	**Pn**	**21 49 26.0**	**+2.3**
ARCO				IAML		21 51 25.6	
	comp=Z,37nm,0.1s						
AUSP	**Uspallata**	**4.89**	**40**	*i* P	**Pn**	**21 49 27.9**	**+1.3**
ASAL	**Salagasta**	**4.92**	**47**	*i* P	**Pn**	**21 49 28.4**	**+1.6**
RTLS	**Leoncito**	**5.27**	**38**	*i* P	**Pn**	**21 49 31.6**	**-0.2**
RTLS				*i* S	**Sb**	**21 50 51.5**	**+2.3**
RTLL	**Cerro Villicun**	**6.07**	**41**	*i* P	**Pn**	**21 49 41.5**	**-1.0**
ACAN	**Cantantal**	**6.17**	**54**	*i* P	**Pn**	**21 49 44.4**	**+0.4**
AMOG	**MOGNA**	**6.37**	**39**	*i* P	**Pn**	**21 49 45.1**	**-1.6**
MRA	**San Martin**	**7.10**	**62**	*i* P	**Pn**	**21 49 55.9**	**-0.9**
MRA				IAML		21 50 34.5	
	comp=Z,5.0nm,0.7s						

*NIED **05** 21:55:00.37°.40N×141°.30E, h47km, Mw3.8 Best double couple: M0:6.02000×10^14 NP1:φs356.00000°, δ31.00000°, λ-108.00000°. NP2:φs196.00000°, δ61.00000°, λ-80.00000°.*
*IDC **05** 21:55:21.1±1.2, 37°.43N×141°.36E, h0km, mb3.5/6, mb1 3.6/9, mb1mx3.5/51, mbtmp3.6/9, ML3.1/3, Error ellipse: s-maj=26.3km s-min=20.0km az=109.0*
*ISCJB **05** 21:55:24.2±0.9, 37°.36N±0°.03×141°.41E±0°.08, h38km±9km, mb3.5/6, Error ellipse: s-maj=11.1km s-min=5.4km az=12.7*
*JMA **05** 21:55:25.9±0.1, 37°.40N×141°.29E, h34km±1km, M3.8*
JMA Felt II J1.
ISC 05 21:55:24.4±1.5, 37°.39N±0°.04×141°.34E±0°.07, h24km±11km, n23, σ0°96/27, mb3.6/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.37**	**267**	P	**Pn**	**21 55 33.9**	**-0.4**
JFK				S	**Sn**	**21 55 39.2**	**-1.6**
ONAJ	**Iwakimizuishiy**	**0.52**	**237**	P	**Pn**	**21 55 36.0**	**-0.3**
ONAJ				S	**Sb**	**21 55 43.0**	**+0.9**
JMM	**Marumori**	**0.65**	**318**	P	**Pn**	**21 55 37.6**	**-0.5**
JMM				S	**Sb**	**21 55 46.2**	**+0.5**
JFT	**Otama**	**0.81**	**280**	P	**Pn**	**21 55 40.8**	**+0.5**
JFT				S	**Sn**	**21 55 51.1**	**-0.5**
JHO	**Hitachi**	**0.99**	**219**	P	**Pb**	**21 55 42.5**	**-0.4**
JHO				S	**Sb**	**21 55 54.7**	**-0.8**
JIO	**Ouri**	**1.07**	**0**	P	**Pb**	**21 55 44.0**	**-0.2**
JIO				S	**Sb**	**21 55 57.2**	**-0.5**
JOU	**Okura**	**1.12**	**331**	P	**Pb**	**21 55 45.4**	**+0.4**
JOU				S	**Sn**	**21 55 59.6**	**+0.4**
MJAR	**Matsushiro Arr**	**2.65**	**252**	Pn	**Pn**	**21 56 07.2**	**+1.6**
	5.7nm,0.3s,baz=78,slow=16,SNR=38						
MJAR				Sn	**Sn**	**21 56 38.9**	**+1.9**
	8.1nm,0.3s,baz=87,slow=27,SNR=6.0						
MAT	**Matsushiro**	**2.65**	**252**	P	**Pn**	**21 56 07.5**	**+1.9**
MAT				S	**Sb**	**21 56 41.4**	**-1.8**
JHJ	**Hachijo jima 2**	**4.44**	**197**	Pn	**Pn**	**21 56 30.9**	**+0.7**
	15nm,0.3s,baz=78,slow=22,SNR=6.3						
JHJ				Sn	**Sn**	**21 57 20.6**	**-0.7**
	12nm,0.3s,baz=68,slow=19,SNR=3.7						
ASAJ	**Asahikawa**	**6.79**	**8**	Pn	**Pn**	**21 57 01.9**	**-0.5**
	0.1nm,0.3s,baz=216,slow=14,SNR=2.0						
SONM	**Songino Array**	**27.54**	**303**	P	**P**	**22 01 08.8**	**-0.6**
	0.5nm,0.7s,baz=111,slow=8.2,SNR=2.6						
H11N2	**WAKE ISLAND Hy**	**28.38**	**121**	T	T	22 30 52.4	
	baz=317						
H11N1	**WAKE ISLAND Hy**	**28.39**	**121**	T	T	22 30 53.5	
	baz=317						
H11N3	**WAKE ISLAND Hy**	**28.39**	**121**	T	T	22 30 51.8	
	baz=317						
H11S1	**WAKE ISLAND Hy**	**29.10**	**123**	T	T	22 31 46.1	
	baz=320						
H11S3	**WAKE ISLAND Hy**	**29.10**	**123**	T	T	22 31 45.6	
	baz=320						
H11S2	**WAKE ISLAND Hy**	**29.11**	**123**	T	T	22 31 43.9	
	baz=320						
ZALV	**Zalesovo Beam**	**41.64**	**312**	P	**P**	**22 03 10.7**	**+0.3**
	0.6nm,0.5s,baz=94,slow=5.9,SNR=4.3						
MKAR	**Makanchi Array**	**43.88**	**302**	P	**P**	**22 03 28.8**	**-0.1**
	0.6nm,0.6s,baz=87,slow=10,SNR=9.5						
ILAR	**Eielson Array**	**49.23**	**33**	P	**P**	**22 04 11.1**	**+0.6**
	0.2nm,0.6s,baz=287,slow=6.5,SNR=3.6						
BVAR	**Borovoye Array**	**50.29**	**312**	P	**P**	**22 04 18.5**	**-0.3**
	0.2nm,0.3s,baz=70,slow=12,SNR=3.8						
WRA	**Warramunga Arr**	**57.40**	**188**	P	**P**	**22 05 11.0**	**0.0**
	0.4nm,0.6s,baz=5.8,slow=6.9,SNR=2.8						

*ISCJB **05** 22:03:26.6±0.4, 13°.58N±0°.06×92°.90E±0°.07, h29km, mb4.2/20, Error ellipse: s-maj=10.3km s-min=6.8km az=145.3*
*NEIC **05** 22:03:29.3±1.7, 13°.59N×92°.88E, h34km±12km, mb4.4/7, Error ellipse: s-maj=6.1km s-min=4.9km az=73.0*
*IDC **05** 22:03:29.9±5.0, 13°.59N×92°.92E, h36km±43km, mb3.5/11, mb1 3.7/13, mb1mx3.4/65, mbtmp3.8/13, ML4.1/2, Error ellipse: s-maj=29.1km s-min=16.3km az=50.0*
ISC 05 22:03:28.8±0.5, 13°.63N±0°.07×92°.93E±0°.07, h29km, n32, σ0°96/30, mb4.0/20, Andaman Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**7.51**	**50**	Pn	**Pn**	**22 05 17.6**	**+1.1**
	1.0nm,0.3s,baz=240,slow=15,SNR=41						
CMAR				Sn	**Sn**	**22 06 37.8**	**-2.9**
	1.0nm,0.3s,baz=239,slow=26,SNR=6.9						
CHTO	**Chiang Mai**	**7.74**	**47**	*e*Pn	**Pn**	**22 05 20.4**	**+0.8**
	4.8nm,0.6s						
KULM	**Kulim**	**11.25**	**137**	*e*Pn	**Pn**	**22 06 08.0**	**+0.2**
PALK	**Pallekele**	**13.58**	**243**	Pn	**Pn**	**22 06 38.7**	**-0.9**
	0.8nm,0.3s,baz=116,slow=12,SNR=6.8						
PALK				Sn	Sn	22 08 55.5	-14
	3.5nm,0.3s,baz=115,slow=8.6,SNR=10						
PKIN	**Phulchoki**	**15.55**	**334**	*e*P	**Pn**	**22 07 04.1**	**-2.3**
	9.6nm,0.3s						
GKN	**Gorkha**	**16.25**	**333**	*e*P	**Pn**	**22 07 13.8**	**-1.4**
	13nm,0.3s						
KOLN	**Koldanda**	**16.54**	**330**	*e*P	**Pn**	**22 07 19.0**	**+0.1**
	13nm,0.5s						
PYUN	**Piuthan**	**17.11**	**329**	*e*P	**Pn**	**22 07 26.2**	**0.0**
	14nm,0.5s						
KSM	**Kuching**	**21.02**	**124**	*e*P	**P**	**22 08 10.9**	**+0.6**
	2.0nm,0.6s						
ENH	**Enshi**	**22.54**	**40**	*e*P	**P**	**22 08 26.8**	**+0.3**
	8.0nm,0.8s						
COCO	**West Island**	**25.95**	**171**	*e*P	**P**	**22 08 58.1**	**-0.7**
	331nm,1.0s						
H08S3	**Diego Garcia H**	**29.30**	**225**	T	T	22 40 04.2	
	baz=50						
H08S2	**Diego Garcia H**	**29.30**	**225**	T	T	22 39 50.7	
	baz=50,slow=74						
H08S1	**Diego Carcia H**	**29.31**	**225**	T	T	22 40 04.9	
	baz=50,slow=74						
MKAR	**Makanchi Array**	**34.24**	**347**	P	**P**	**22 10 13.1**	**+1.0**
	0.3nm,0.6s,baz=184,slow=8.2,SNR=4.1						
SONM	**Songino Array**	**35.90**	**16**	P	**P**	**22 10 26.2**	**-0.3**
	0.6nm,0.8s,baz=193,slow=5.6,SNR=3.2						
KURBB	**Kurchatov Arra**	**38.71**	**345**	P	**P**	**22 10 50.9**	**+0.9**
	0.6nm,0.7s,baz=166,slow=7.6,SNR=7.4						
KURK	**Kurchatov**	**38.77**	**345**	P	**P**	**22 10 50.9**	**+0.3**
GEYT	**Alibeck**	**39.23**	**314**	P	**P**	**22 10 56.0**	**+1.3**
	2.0nm,0.7s,baz=120,slow=8.8,SNR=5.5						
ZALV	**Zalesovo Beam**	**40.73**	**353**	P	**P**	**22 11 06.7**	**-0.1**
	0.4nm,0.5s,baz=184,slow=9.1,SNR=2.9						
MBWA	**Marble Bar**	**43.46**	**142**	*e*P	**P**	**22 11 28.8**	**-0.7**
	3.7nm,0.9s						
MAJO	**Matsushiro**	**46.39**	**52**	*e*P	**P**	**22 11 53.5**	**+0.7**
	1.5nm,0.5s						
WRA	**Warramunga Arr**	**52.66**	**128**	P	**P**	**22 12 40.8**	**-0.1**
	2.5nm,0.6s,baz=302,slow=10,SNR=44						
WRAB	**Tennant Creek**	**52.66**	**128**	*e*P	**P**	**22 12 40.7**	**-0.1**
	4.3nm,0.6s						
ASAR	**Alice Springs**	**54.59**	**132**	P	**P**	**22 12 54.9**	**0.0**
	1.2nm,0.6s,baz=308,slow=6.6,SNR=13						
BRTR	**Keskin Array B**	**57.86**	**308**	P	**P**	**22 13 17.9**	**-0.3**
	0.9nm,0.7s,baz=129,slow=8.0,SNR=6.2						
CTAO	**Charters Tower**	**62.24**	**122**	*e*P	**P**	**22 13 48.6**	**+0.3**
	14nm,0.7s						
MA2	**Magadan**	**62.29**	**29**	*e*P	**P**	**22 13 48.6**	**+0.6**
	11nm,0.5s						
FINES	**FINESS Array B**	**67.11**	**331**	P	**P**	**22 14 19.3**	**-0.1**
	0.4nm,0.7s,baz=118,slow=28,SNR=3.6						
GERES	**GERESS Array B**	**72.79**	**317**	P	**P**	**22 14 55.2**	**+0.4**
	0.4nm,0.6s,baz=150,slow=4.0,SNR=5.2						
NOA	**NORSAR Array B**	**74.17**	**330**	P	**P**	**22 15 02.4**	**-0.2**
	0.4nm,0.7s,baz=90,slow=5.8,SNR=2.6						
RAO	**Raoul Island**	**95.81**	**119**	*e*P	**P**	**22 16 52.7**	**-0.2**
	177nm,0.3s						

*ISCJB **05** 22:06:22.7±1.4, 34°.07N±0°.04×25°.32E±0°.04, h1km±9km, mb3.5/6, Error ellipse: s-maj=7.4km s-min=5.1km az=36.0*
*ATH **05** 22:06:24.1, 34°.13N×25°.30E, h9km±2km, ML3.0/5, Error ellipse: s-maj=3.1km s-min=1.6km az=356.0*
*CSEM **05** 22:06:24.9±0.5, 34°.17N×25°.29E, h2km, ML3.0, Error ellipse: s-maj=8.6km s-min=4.9km az=175.0*
*IDC **05** 22:06:24.5±1.1, 34°.16N×25°.25E, h0km, mb3.5/6, mb1 3.6/11, mb1mx3.4/49, mbtmp3.5/11, ML3.8/4, Error ellipse: s-maj=18.5km s-min=13.0km az=60.0*
*THE **05** 22:06:26.3, 34°.25N×25°.29E, h0km±2km, ML3.0/8, Error ellipse: s-maj=4.2km s-min=1.2km az=168.0*
ISC 05 22:06:24.4±1.7, 34°.16N±0°.06×25°.29E±0°.03, h0km±10km, n37, σ0°66/59, mb3.8/6, Crete

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SIVA	**Sivas**	**0.94**	**335**	P	**Pb**	**22 06 42.9**	**-0.7**
SIVA				S	**Sb**	**22 06 56.2**	**-0.4**
SIVA	**Sivas**	**0.94**	**335**	P	**Pb**	**22 06 42.9**	**-0.7**
SIVA				S	**Sb**	**22 06 56.2**	**-0.4**
SIVA	**Sivas**	**0.94**	**335**	P	**Pb**	**22 06 43.1**	**-0.4**
SIVA				S	**Sb**	**22 06 56.5**	**-0.1**
SIVA				AML	AML	22 06 58.6	
	comp=E,9185μm,0.6s						
SIVA				AML	AML	22 06 59.2	
	comp=N,7029μm,0.6s						
LAST	**Lasithi**	**1.01**	**9**	P	**Pg**	**22 06 43.7**	**0.0**
LAST				S	**Sb**	**22 06 59.0**	**+0.4**
LAST	**Lasithi**	**1.01**	**9**	P	**Pg**	**22 06 43.7**	**0.0**
LAST				S	**Sb**	**22 06 57.6**	**-1.0**
LAST	**Lasithi**	**1.01**	**9**	P	**Pg**	**22 06 43.5**	**-0.2**
NPS	**Neapolis**	**1.13**	**13**	P	**Pg**	**22 06 45.9**	**0.0**
NPS				S	**Sb**	**22 07 02.5**	**+0.5**
NPS	**Neapolis**	**1.13**	**13**	P	**Pg**	**22 06 46.0**	**0.0**
NPS				S	**Sb**	**22 07 02.3**	**+0.3**
NPS	**Neapolis**	**1.13**	**13**	P	**Pg**	**22 06 46.0**	**0.0**
NPS				S	**Sb**	**22 07 02.3**	**+0.3**
NPS				AML	AML	22 07 05.6	
	comp=N,487μm,0.6s						
NPS				AML	AML	22 07 16.0	
	comp=E,805μm,0.6s						
IDI	**Anoyia**	**1.17**	**344**	Pg	**Pg**	**22 06 46.7**	**-0.2**
	comp=E,4.4nm,0.3s,baz=194,slow=8.7,SNR=65						
IDI				Lg	Lg	22 07 03.3	
	comp=E,38nm,0.3s,baz=291,slow=17,SNR=24						
IDI	**Anoyia**	**1.17**	**344**	P	**Pg**	**22 06 46.5**	**-0.3**
IDI				S	**Sb**	**22 07 02.8**	**-0.5**
IDI	**Anoyia**	**1.17**	**344**	P	**Pg**	**22 06 46.5**	**-0.3**
IDI				S	**Sb**	**22 07 03.1**	**-0.2**
IDI	**Anoyia**	**1.17**	**344**	P	**Pg**	**22 06 46.3**	**-0.5**
IDI				S	**Sb**	**22 07 03.1**	**-0.2**
IDI				AML	AML	22 07 06.1	
	comp=E,487μm,0.4s						
IDI				AML	AML	22 07 13.9	
	comp=N,408μm,0.4s						
GVD	**Gavdhos**	**1.20**	**304**	P	**Pb**	**22 06 48.0**	**0.0**
GVD				S	**Sn**	**22 07 05.3**	**-0.2**
GVD	**Gavdhos**	**1.20**	**304**	P	**Pb**	**22 06 48.0**	**0.0**
GVD				S	**Sb**	**22 07 03.9**	**-0.2**
GVD	**Gavdhos**	**1.20**	**304**	P	**Pg**	**22 06 47.2**	**-0.2**
GVD				S	**Sb**	**22 07 03.9**	**-0.2**
GVD				AML	AML	22 07 07.3	
	comp=E,2466μm,0.5s						
GVD				AML	AML	22 07 09.8	
	comp=N,2317μm,0.4s						
ZKR	**Zakros**	**1.22**	**38**	P	**Pg**	**22 06 47.7**	**0.0**
ZKR				S	**Sn**	**22 07 05.5**	**-0.3**
ZKR	**Zakros**	**1.22**	**38**	P	**Pg**	**22 06 47.7**	**0.0**
ZKR				S	**Sn**	**22 07 05.5**	**-0.3**
ZKR	**Zakros**	**1.22**	**38**	P	**Pb**	**22 06 48.0**	**-0.2**
VAM	**Vamos**	**1.53**	**324**	P	**Pn**	**22 06 53.1**	**+0.1**
VAM				S	**Sg**	**22 07 13.7**	**0.0**
VAM	**Vamos**	**1.53**	**324**	P	**Pn**	**22 06 53.1**	**+0.1**
VAM				S	**Sg**	**22 07 13.7**	**0.0**
IMMV	**Iera Moni Meta**	**1.69**	**320**	P	**Pb**	**22 06 56.0**	**-0.3**
IMMV				S	**Sn**	**22 07 16.6**	**-0.8**
IMMV	**Iera Moni Meta**	**1.69**	**320**	P	**Pb**	**22 06 56.0**	**-0.3**
IMMV				S	**Sn**	**22 07 16.6**	**-0.8**
IMMV	**Iera Moni Meta**	**1.69**	**320**	P	**Pb**	**22 06 56.1**	**-0.2**
IMMV				S	**Sg**	**22 07 19.8**	**+1.2**
IMMV				AML	AML	22 07 28.3	
	comp=E,620μm,0.5s						
IMMV				AML	AML	22 07 34.0	
	comp=N,596μm,0.6s						
KARP	**Karpathos**	**2.06**	**48**	P	**Pb**	**22 07 01.5**	**-1.2**
KARP	**Karpathos**	**2.06**	**48**	P	**Pb**	**22 07 01.5**	**-1.2**
MMAI	**Mount Meron Ar**	**8.51**	**95**	Pn	**Pn**	**22 08 28.6**	**-0.3**
	comp=N,0.4nm,0.3s,baz=281,slow=12,SNR=3.6						
MMAI				Sn	**Sn**	**22 10 04.7**	**-1.0**
	comp=N,0.4nm,0.3s,baz=261,slow=26,SNR=3.1						
BRTR	**Keskin Array B**	**8.68**	**48**	Pn	**Pn**	**22 08 34.2**	**+2.9**
	comp=N,0.1nm,0.3s,baz=233,slow=12,SNR=4.2						
EIL	**Elat**	**9.35**	**116**	Pn	**Pn**	**22 08 40.1**	**-0.3**
	comp=N,0.4nm,0.3s,baz=305,slow=10,SNR=6.9						
VRAC	**Vranov**	**16.45**	**340**	Pn	**Pn**	**22 10 16.0**	**-0.4**
	comp=N,0.7nm,0.3s,baz=162,slow=16,SNR=4.2						
GERES	**GERESS Array B**	**17.01**	**333**	Pn	**P**	**22 10 26.2**	**+0.6**
	comp=N,0.1nm,0.3s,baz=146,slow=12,SNR=5.3						
**

JOM	**Ohasama**	**2.59 298**	P	Pn	22 17 02.6	+1.9
JOM			S	Sn	22 17 33.2	+2.1
JMM	**Marumori**	**2.76 262**	S	Sn	22 17 35.8	+0.4
JOU	**Okura**	**2.82 272**	S	Sn	22 17 39.1	+2.2
JRG	**Rokugo**	**3.03 292**	P	Pn	22 17 09.4	+2.6
JRG			S	Sn	22 17 45.8	+3.8
JYK	**Kaneyama**	**3.11 283**	P	Pn	22 17 10.1	+2.2
JYK			S	Sn	22 17 47.2	+3.2
JFT	**Otama**	**3.19 257**	S	Sn	22 17 47.6	+1.5
JTM	**Tenmabayashi**	**3.50 316**	S	Sn	22 17 54.4	+0.9
JNBK	**Urakawa-nobuka**	**4.14 344**	P	Pn	22 17 23.1	+1.1
JNBK			S	Sn	22 18 09.7	+0.4
JCH	**Churui**	**4.36 351**	P	Pn	22 17 25.1	0.0
JCH			*e*S	Sn	22 18 12.6	-2.3

IDC ***05*** *22:17:07.6±2.5, 5°.34N×125°.10E, h0km, mb3.3/3, mb1 3.6/3, mb1mx3.2/58, mbtmp3.3/3, Error ellipse: s-maj=242.3km s-min=26.9km az=65.0*
ISCJB ***05*** *22:17:13.7±1.2, 5°.21N±0°.09×124°.9E±0°.4, h62km, mb3.3/3, Error ellipse: s-maj=57.1km s-min=12.0km az=176.5*
ISC 05 22:17:15.9±1.3, 5°.3N±0°.1×125°.0E±0°.5, h62km, n4, σ1§67/5, mb3.3/3, 1D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GSPH	**General Sports**	**0.83**	**358**	‖ *i* P	**Pn**	**22 17 33.5**	**+1.5**
GSPH				*i* S	**Sn**	**22 17 42.1**	**-1.7**
WRA	**Warramunga Arr**	**26.68**	**160**	P	**P**	**22 22 48.7**	**-0.6**
	0.3nm,0.4s,baz=339,slow=10,SNR=5.5						
ASAR	**Alice Springs**	**30.04**	**163**	P	**P**	**22 23 19.1**	**-0.1**
	0.2nm,0.6s,baz=347,slow=7.9,SNR=3.9						
MKAR	**Makanchi Array**	**55.32**	**325**	P	**P**	**22 26 43.0**	**-0.3**
	0.2nm,0.4s,baz=126,slow=7.2,SNR=5.4						

IDC 05 22:19:28.4±31.0, 23°.00S×176°.39W, h0km, mb3.9/4, mb1 4.0/4, mb1mx3.7/40, mbtmp3.9/4, Error ellipse: s-maj=558.8km s-min=141.6km az=79.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**34.81**	**268**	P	P	22 26 21.2	0.0
	1.7nm,0.4s,baz=111,slow=8.6,SNR=2.2						
STKA	**Stephens Creek**	**38.13**	**247**	P	P	22 26 48.9	-0.6
	0.9nm,0.4s,baz=80,slow=9.3,SNR=5.3						
ASAR	**Alice Springs**	**45.46**	**259**	P	P	22 27 49.3	-0.4
	0.2nm,0.3s,baz=94,slow=8.7,SNR=4.3						
WRA	**Warramunga Arr**	**45.79**	**264**	P	P	22 27 52.6	+0.3
	0.7nm,0.3s,baz=101,slow=8.1,SNR=14						

NIED ***05*** *22:19:00, 39°.10N×142°.90E, h23km, Mw4.0 Best double couple: M0 1.20000×10^15 NP1:φ§178.00000°, δ16.00000°, λ61.00000°. NP2:φ§28.00000°, δ76.00000°, λ§98.00000°.*
JMA ***05*** *22:19:59.6±0.2, 39°.13N×142°.95E, h21km±2km, M3.9*
ISCJB ***05*** *22:20:00.6±0.8, 39°.12N±0°.03×143°.00E±0°.07, h40km±6km, mb4.0/26, MS3.5/4, Error ellipse: s-maj=9.0km s-min=4.8km az=21.3*
NEIC ***05*** *22:20:03.6±0.9, 39°.18N×143°.01E, h49km±7km, mb4.3/6, Error ellipse: s-maj=12.1km s-min=6.8km az=121.0*
IDC ***05*** *22:20:03.3±2.0, 39°.18N×142°.92E, h45km±17km, mb3.7/20, mb1 3.7/24, mb1mx3.6/57, mbtmp3.9/24, ML3.8/4, MS3.3/9, Ms1 3.3/9, ms1mx2.9/42, Error ellipse: s-maj=20.5km s-min=13.0km az=102.0*
ISC 05 22:20:02.1±0.8, 39°.11N±0°.05×143°.0E±0°.1, h38km±2km, n59, σ1§50/64, mb4.0/26, MS3.4/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**1.02**	**298**	P	**Pn**	**22 20 17.5**	**-2.4**
OFUJ	**Ofunato**	**1.03**	**269**	P	**Pn**	**22 20 18.0**	**-2.0**
OFUJ				S	**Sn**	**22 20 30.5**	**-2.6**
JOM	**Ohasama**	**1.37**	**286**	P	**Pn**	**22 20 23.1**	**-1.5**
JOM				S	**Sn**	**22 20 39.9**	**-1.6**
JMK	**Ichinoseki**	**1.39**	**264**	P	**Pn**	**22 20 23.6**	**-1.3**
JMK				S	**Sn**	**22 20 40.9**	**-1.1**
JIO	**Ouri**	**1.44**	**244**	P	**Pn**	**22 20 24.3**	**-1.3**
JIO			*e*S	**Sn**	**22 20 41.2**	**-2.0**
JKZ	**Kuzumaki**	**1.55**	**305**	P	**Pn**	**22 20 26.2**	**-1.1**
JKZ				S	**Sn**	**22 20 46.7**	**+0.5**
JANG	**Nango**	**1.70**	**318**	P	**Pn**	**22 20 27.6**	**-1.6**
JANG			*e*S	**Sn**	**22 20 49.4**	**-0.3**
JRG	**Rokugo**	**1.85**	**280**	P	**Pn**	**22 20 31.0**	**-0.3**
JOU	**Okura**	**1.96**	**249**	P	**Pn**	**22 20 32.7**	**-0.2**
JOU				S	**Sn**	**22 20 57.0**	**+0.7**
JYK	**Kaneyama**	**2.06**	**266**	P	**Pn**	**22 20 34.2**	**0.0**
JMM	**Marumori**	**2.12**	**235**	P	**Pn**	**22 20 34.4**	**-0.6**
JMM			*e*S	**Sn**	**22 20 59.5**	**-0.7**
JFK	**Kawauchi**	**2.41**	**224**	P	**Pn**	**22 20 38.1**	**-0.9**
JFK			*e*S	**Sn**	**22 21 05.7**	**-1.5**
JYS	**Shirataka**	**2.45**	**250**	P	**Pn**	**22 20 39.9**	**+0.3**
JYS			S	**Sn**	**22 21 09.6**	**+1.2**
JFT	**Otama**	**2.62**	**234**	P	**Pn**	**22 20 42.2**	**+0.3**
ERM	**Erimo**	**2.91**	**2**	*e*Pn	**Pn**	**22 20 44.4**	**-1.4**
ERM			*e*Sn	**Sn**	**22 21 19.6**	**+0.2**
MJAR	**Matsushiro Arr**	**4.57**	**237**	P	**Pn**	**22 21 10.7**	**+1.9**
	8.0nm,0.3s,baz=35,slow=13,SNR=113						
MJAR				LR	LR	22 23 02.2	
	comp=Z,156nm,20.8s,baz=35,slow=39						
MAJO	**Matsushiro**	**4.57**	**237**	*e*Pn	**Pn**	**22 21 10.6**	**+1.8**
MAT	**Matsushiro**	**4.57**	**237**	P	**Pn**	**22 21 10.5**	**+1.8**
ASAJ	**Asahikawa**	**5.01**	**357**	P	**Pn**	**22 21 15.9**	**+1.2**
	2.2nm,0.3s,baz=219,slow=10,SNR=11						
ASAJ				S	**Sn**	**22 22 09.4**	**-1.9**
	2.3nm,0.3s,baz=6.3,slow=18,SNR=2.3						
JHJ	**Hachijo jima 2**	**6.51**	**204**	P	**Pn**	**22 21 36.2**	**+0.8**
	16nm,0.3s,baz=252,slow=20,SNR=2.3						
JHJ				S	**Sn**	**22 22 43.7**	**-4.7**
	22nm,0.3s,baz=131,slow=23,SNR=5.3						
USRK	**Ussuriysk Ar.**	**9.67**	**305**	P	**Pn**	**22 22 22.4**	**+3.7**
	0.3nm,0.3s,baz=106,slow=13,SNR=8.7						
USRK				LR	LR	22 25 59.3	
	comp=Z,244nm,18.2s,baz=117,slow=37						
JNU	**Nakatsue**	**11.47**	**242**	LR	LR	22 27 31.1	
	comp=Z,159nm,19.3s,baz=115,slow=39						
KSRS	**Korea Array**	**11.96**	**267**	P	**Pn**	**22 22 53.8**	**+3.9**
	0.4nm,0.3s,baz=77,slow=14,SNR=3.9						
KSRS				LR	LR	22 27 08.6	
	comp=Z,91nm,18.2s,baz=88,slow=36						
KSAR	**Wonju Array Be**	**11.99**	**267**	P	**Pn**	**22 22 53.8**	**+3.4**
KLR	**Kul'dur**	**12.93**	**325**	P	**Pn**	**22 23 04.2**	**+1.1**
	0.2nm,0.3s,baz=144,slow=19,SNR=3.1						
KLR				LR	LR	22 28 06.0	
	comp=Z,110nm,18.4s,baz=138,slow=38						
YAK	**Yakutsk**	**24.36**	**345**	*e*P	**P**	**22 25 15.5**	**-0.7**
	24nm,0.4s						
SEY	**Seymchan**	**24.52**	**10**	P	**P**	**22 25 18.8**	**+1.1**
	2.3nm,0.5s,baz=205,slow=6.6,SNR=7.8						
SONM	**Songino Array**	**27.74**	**300**	P	**P**	**22 25 47.0**	**0.0**
	1.1nm,0.6s,baz=93,slow=10,SNR=6.8						
SONM				LR	LR	22 37 22.2	
	comp=Z,68nm,18.0s,baz=100,slow=38						
H11N2	**WAKE ISLAND Hy 28.25**	**126**		T	T	22 55 30.1	
	baz=317,slow=74						
H11N1	**WAKE ISLAND Hy 28.26**	**126**		T	T	22 55 30.0	
	baz=317,slow=74						
H11N3	**WAKE ISLAND Hy 28.27**	**126**		T	T	22 55 33.9	
	baz=317						
H11S1	**WAKE ISLAND Hy 29.05**	**128**		T	T	22 56 36.0	
	baz=319,slow=76,SNR=16						
H11S3	**WAKE ISLAND Hy 29.05**	**128**		T	T	22 56 37.1	
	baz=319,slow=76,SNR=18						
H11S2	**WAKE ISLAND Hy 29.07**	**128**		T	T	22 56 36.0	
	baz=319,slow=76,SNR=12						
TLY	**Talaya**	**29.98**	**308**	LR	LR	22 38 46.8	
	comp=Z,74nm,18.6s,baz=120,slow=38						
ZALV	**Zalesovo Beam**	**41.47**	**311**	P	**P**	**22 27 44.8**	**-0.3**
	2.2nm,0.4s,baz=89,slow=7.6,SNR=14						
MKAR	**Makanchi Array**	**44.10**	**301**	P	**P**	**22 28 06.2**	**-0.3**
	2.4nm,0.7s,baz=85,slow=9.6,SNR=26						
MKAR				LR	LR	22 47 11.6	
	comp=Z,49nm,19.0s,baz=56,slow=37						
KURK	**Kurchatov**	**45.66**	**307**	*e*P	**P**	**22 28 18.4**	**-0.4**
	1.5nm,0.4s						
KURBB	**Kurchatov Arra**	**45.73**	**307**	P	**P**	**22 28 19.0**	**-0.4**
	8.6nm,0.6s,baz=80,slow=8.5,SNR=72						
COLA	**College**	**46.66**	**33**	*e*P	**P**	**22 28 26.2**	**-0.3**
	2.1nm,0.4s						
ILAR	**Eielson Array**	**47.08**	**33**	P	**P**	**22 28 31.0**	**+1.2**
	0.3nm,0.7s,baz=279,slow=5.9,SNR=4.3						
TKM2	**Tokmak 2**	**49.76**	**297**	*e*P	**P**	**22 28 51.4**	**+0.3**
	2.5nm,0.7s						
TKM2				*e*		22 29 02.5	
BVAR	**Borovoye Array**	**50.12**	**311**	P	**P**	**22 28 52.9**	**-0.5**
	1.9nm,0.5s,baz=59,slow=8.9,SNR=6.5						
AAK	**Ala-Archa**	**50.62**	**297**	*e*P	**P**	**22 28 57.7**	**+0.2**
	0.6nm,0.4s						
INK	**Inuvik**	**51.98**	**28**	P	**P**	**22 29 08.2**	**+1.3**
	0.7nm,0.5s,baz=303,slow=5.3,SNR=3.9						
ARU	**Arti**	**55.64**	**318**	P	**P**	**22 29 34.0**	**0.0**
	1.7nm,0.6s,baz=20,slow=5.0,SNR=5.1						
ABKAR	**Akbulak array**	**57.57**	**310**	*e*P	**P**	**22 29 47.5**	**-0.3**
	1.2nm,0.5s						
AKTO	**Aktyubinsk**	**58.23**	**311**	P	**P**	**22 29 52.2**	**-0.2**
	1.3nm,0.8s,baz=71,slow=15,SNR=4.9						
WRA	**Warramunga Arr**	**59.30**	**189**	P	**P**	**22 29 59.9**	**-0.1**
	0.7nm,0.7s,baz=6.7,slow=7.1,SNR=6.6						
YKA	**Yellowknife Ar**	**61.39**	**31**	P	**P**	**22 30 12.2**	**-1.7**
	0.2nm,0.7s,baz=301,slow=6.6,SNR=4.1						
ARCES	**ARCESS Array B**	**62.49**	**339**	P	**P**	**22 30 21.6**	**+0.3**
	1.0nm,0.8s,baz=49,slow=8.4,SNR=3.5						
ASAR	**Alice Springs**	**63.02**	**189**	P	**P**	**22 30 26.3**	**+1.0**
	0.2nm,0.4s,baz=1.6,slow=8.8,SNR=4.0						
GEYT	**Alibeck**	**63.92**	**299**	P	**P**	**22 30 30.8**	**-0.5**
	0.8nm,0.5s,baz=93,slow=8.7,SNR=2.8						
FINES	**FINESS Array B**	**67.56**	**332**	P	**P**	**22 30 53.6**	**-0.6**
	0.6nm,0.6s,baz=21,slow=11,SNR=5.9						
FINES				LR	LR	23 02 46.7	
	comp=Z,53nm,18.9s,baz=36,slow=38						
NB2	**NORSAR Subarra**	**72.75**	**338**	P	**P**	**22 31 24.9**	**-1.2**
	comp=Z,0.8nm,0.7s,baz=40,slow=6.2						
NOA	**NORSAR Array B**	**72.75**	**338**	P	**P**	**22 31 26.1**	**0.0**
	comp=Z,1.1nm,0.8s,baz=38,slow=6.1,SNR=5.8						
AKASG	**Malin Array Be**	**73.41**	**323**	P	**P**	**22 31 29.9**	**-0.2**
	comp=Z,0.5nm,0.4s,baz=46,slow=6.7,SNR=3.5						
BRTR	**Keskin Array B**	**78.40**	**312**	P	**P**	**22 31 59.2**	**+0.3**
	comp=Z,0.5nm,0.6s,baz=40,slow=11,SNR=3.6						
GERES	**GERESS Array B**	**81.59**	**329**	P	**P**	**22 32 15.5**	**-0.5**
	comp=Z,0.2nm,0.4s,baz=35,slow=8.7,SNR=2.6						

IDC ***05*** *22:22:23.8±1.1, 55°.01N×160°.45W, h39km±7km, mb3.8/20, mb1 3.9/21, mb1mx3.7/55, mbtmp4.1/21, ML4.2/1, MS3.1/1, Ms1 3.1/1, ms1mx2.4/43, Error ellipse: s-maj=30.1km s-min=16.6km az=177.0*
ISCJB ***05*** *22:22:24.4±0.6, 54°.95N±0°.07×160°.32W±0°.07, h64km±4km, mb4.0/21, Error ellipse: s-maj=12.2km s-min=3.6km az=152.4*
NEIC ***05*** *22:22:24.2, 54°.88N×160°.34W, h30km, ML3.8(AEIC), After AEIC.*
ISC 05 22:22:24.2±0.7, 54°.95N±0°.07×160°.33W±0°.05, h45km±5km, n74, σ1§58/82, mb4.2/21, Alaska Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SDPT	**Sand Point**	**0.41**	**348**	P	**Pn**	**22 22 34.1**	**0.0**
SDPT				S	**Sn**	**22 22 41.9**	**+0.7**
PS1A	**Pavlof South-1**	**0.94**	**301**	P	**Pn**	**22 22 41.7**	**+0.7**
PS1A				S	**Sn**	**22 22 54.8**	**+1.4**
PS4A	**Pavlof South-4**	**0.96**	**295**	P	**Pn**	**22 22 41.9**	**+0.5**
PN6	**Pavlof North-6**	**1.04**	**300**	P	**Pn**	**22 22 43.8**	**+1.3**
PN6				S	**Sn**	**22 22 59.1**	**+3.2**
DRIA	**Deer Island**	**1.11**	**272**	P	**Pn**	**22 22 43.1**	**-0.3**
DTNA	**Dutton South F**	**1.12**	**281**	P	**Pn**	**22 22 43.1**	**-0.4**
DT1	**Dutton Round H**	**1.13**	**279**	P	**Pn**	**22 22 43.8**	**+0.1**
VNWF	**Veniaminof 8**	**1.28**	**20**	P	**Pn**	**22 22 47.7**	**+1.9**
VNWF				S	**Sn**	**22 23 05.9**	**+4.0**
BALA	**Baldy Mountain**	**1.43**	**281**	P	**Pn**	**22 22 49.6**	**+1.8**
VNHG	**Veniaminof 1**	**1.44**	**27**	P	**Pn**	**22 22 49.9**	**+2.0**
VNNF	**Veniaminof 3**	**1.46**	**23**	P	**Pn**	**22 22 50.5**	**+2.3**
CHGN	**Chignik**	**1.74**	**38**	P	**Pn**	**22 22 53.5**	**+1.6**
FALS	**False Pass**	**1.78**	**268**	P	**Pn**	**22 22 53.5**	**+1.0**
FALS				S	**Sn**	**22 23 17.3**	**+3.4**
SSLN	**Shishaldin Nor**	**2.12**	**268**	P	**Pn**	**22 22 59.1**	**+1.9**
SSLS	**Shishaldin Sou**	**2.13**	**265**	P	**Pn**	**22 22 59.3**	**+1.9**
SSLS				S	**Sn**	**22 23 26.4**	**+3.7**
ANPB	**Aniakchak Plen**	**2.19**	**31**	P	**Pn**	**22 22 59.6**	**+1.4**
SSLW	**Shishaldin Wes**	**2.20**	**267**	P	**Pn**	**22 23 00.0**	**+1.8**
ANPK	**Aniakchak Peak**	**2.27**	**32**	P	**Pn**	**22 23 00.9**	**+1.6**
AZAC	**Aniakchak**	**2.28**	**30**	P	**Pn**	**22 23 00.9**	**+1.4**
ANNE	**Aniakchak Nort**	**2.35**	**32**	P	**Pn**	**22 23 02.3**	**+1.9**
WESN	**West Dahl Nort**	**2.49**	**263**	P	**Pn**	**22 23 04.0**	**+1.7**
WEBT	**Westdahl Beart**	**2.59**	**264**	P	**Pn**	**22 23 05.2**	**+1.6**
WECS	**Westdahl Cape**	**2.61**	**263**	P	**Pn**	**22 23 05.9**	**+1.9**
AKGG	**Akutan Green G**	**3.38**	**260**	P	**Pn**	**22 23 15.9**	**+1.5**
AKRB	**Akutan Reef Bi**	**3.44**	**259**	P	**Pn**	**22 23 17.0**	**+1.7**
PLK1	**Peulik 1**	**3.53**	**34**	P	Pn	22 23 19.9	+3.3
UNV	**Unalaska Valle**	**3.77**	**256**	P	**Pn**	**22 23 20.6**	**+0.8**
MTBL	**Makushin Table**	**3.83**	**258**	P	**Pn**	**22 23 21.9**	**+1.2**
MSOM	**Makushin Julie**	**4.03**	**256**	P	**Pn**	**22 23 24.2**	**+0.9**
KELA	**Mount Kelaz**	**4.32**	**34**	P	**Pn**	**22 23 29.1**	**+1.7**
KABR	**Katmai Barrier**	**4.36**	**41**	P	**Pn**	**22 23 29.3**	**+1.4**
KVTA	**Katmai Vly 10**	**4.42**	**37**	P	**Pn**	**22 23 30.6**	**+1.8**
KAKN	**Katmai Knife C**	**4.44**	**39**	P	**Pn**	**22 23 31.1**	**+1.9**
OHAK	**Old Harbor**	**4.56**	**57**	*e*Pn	**Pn**	**22 23 32.4**	**+1.8**
KAHC	**Katmai Hardscr**	**4.73**	**36**	P	**Pn**	**22 23 34.9**	**+1.9**
KDAK	**Kodiak Island**	**5.16**	**53**	Pn	Pn	22 23 53.7	+15
	0.2nm,0.3s,baz=219,slow=3.6,SNR=7.1						
KDAK				Sn	Sn	22 24 51.8	+15
	2.9nm,0.3s,baz=141,slow=24,SNR=6.5						
KDAK	**Kodiak Island**	**5.16**	**53**	P	**Pn**	**22 23 41.3**	**+2.5**
KDAK				Sn	Sn	22 24 51.8	+15
FOSS	**Fourpeaked Sta**	**5.31**	**41**	P	**Pn**	**22 23 42.4**	**+1.5**
FOPK	**Fourpeaked Vol**	**5.36**	**42**	P	**Pn**	**22 23 42.9**	**+1.2**
NIKH	**Nikolski High**	**5.41**	**252**	P	**Pn**	**22 23 43.2**	**+1.0**
CDD	**Cape Douglas**	**5.42**	**40**	P	**Pn**	**22 23 44.9**	**+2.5**
AUW	**Augustine West**	**5.79**	**37**	P	**Pn**	**22 23 50.2**	**+2.7**
SVW2	**Sparrevohn**	**6.66**	**20**	P	**Pn**	**22 24 01.0**	**+1.5**
NCT	**North Crescent**	**6.88**	**32**	P	**Pn**	**22 24 04.0**	**+1.5**
TT01	**Tatalina**	**8.29**	**14**	P	**Pn**	**22 24 22.8**	**+1.1**
TTA	**Tatalina**	**8.31**	**14**	P	**Pn**	**22 24 23.0**	**+0.9**
PPLA	**Purkeypile**	**9.01**	**24**	Pn	**Pn**	**22 24 33.5**	**+1.8**
	14nm,0.8s						
TNA	**Tin City**	**11.29**	**344**	*e*Pn	**Pn**	**22 25 04.0**	**+1.4**
	5.4nm,0.4s						
ILAR	**Eielson Array**	**11.91**	**29**	Pn	Pn	22 25 09.2	-2.1
	baz=209,slow=13,SNR=1.6						
ILAR				Sn	**Sn**	**22 27 19.5**	**-3.0**
	0.1nm,0.3s,baz=219,slow=18,SNR=3.9						
INK	**Inuvik**	**18.25**	**32**	P	**P**	**22 26 32.1**	**-1.3**
	0.6nm,0.3s,baz=238,slow=15,SNR=12						
YKA	**Yellowknife Ar**	**24.44**	**53**	P	**P**	**22 27 38.7**	**+0.5**
	0.5nm,0.5s,baz=267,slow=7.7,SNR=12						
YKA				PcP	**PcP**	**22 31 16.2**	**+0.4**
	0.2nm,0.4s,baz=269,slow=2.1,SNR=4.5						
PETK	**Petropavlovsk-**	**24.46**	**283**	P	**P**	**22 27 37.9**	**-0.7**
	6.0nm,0.4s,baz=81,slow=14,SNR=22						
YBH	**Yreka Blue Hor**	**27.31**	**103**	LR	LR	22 37 12.1	
	comp=Z,37nm,20.3s,baz=304,slow=32						
RES	**Resolute Bay**	**31.66**	**27**	P	**P**	**22 28 41.9**	**-0.7**
	0.9nm,0.8s,baz=248,slow=5.4,SNR=3.4						
NVAR	**Mina Array Bea**	**32.63**	**103**	pP	**pP**	**22 29 04.6**	**+0.8**
	0.6nm,0.7s,baz=312,slow=9.4,SNR=2.8						
NVAR				PcP	**PcP**	**22 31 35.4**	**-1.5**
	0.2nm,0.4s,baz=298,slow=1.9,SNR=2.6						
SPITS	**Spitsbergen Ar**	**47.12**	**1**	P	**P**	**22 30 50.7**	**-0.4**
	2.3nm,0.8s,baz=0.8,slow=10,SNR=8.9						
TXAR	**Lajitas Array**	**47.55**	**99**	P	**P**	**22 30 55.6**	**+0.4**
	0.1nm,0.5s,baz=328,slow=3.3,SNR=2.6						
TXAR				pP	**pP**	**22 31 06.8**	**-0.9**
	0.3nm,0.8s,baz=320,slow=4.1,SNR=5.1						
SONM	**Songino Array**	**54.45**	**304**	P	**P**	**22 31 46.9**	**0.0**
	1.5nm,0.7s,baz=48,slow=5.8,SNR=6.7						
ARCES	**ARCESS Array B**	**55.75**	**358**	P	**P**	**22 31 54.9**	**-0.9**
	2.0nm,0.7s,baz=7.5,slow=7.3,SNR=11						
ZALV	**Zalesovo Beam**	**58.97**	**321**	P	**P**	**22 32 18.5**	**-0.1**
	0.3nm,0.3s,baz=30,slow=6.3,SNR=3.0						
FINES	**FINESS Array B**	**63.84**	**357**	P	**P**	**22 32 50.9**	**-0.5**
	1.6nm,0.4s,baz=16,slow=7.8,SNR=23						
NB2	**NORSAR Subarra**	**64.17**	**5**	P	**P**	**22 32 53.5**	**0.0**
	comp=Z,0.7nm,0.7s,baz=356,slow=6.5						
NOA	**NORSAR Array B**	**64.17**	**5**	P	**P**	**22 32 53.7**	**+0.2**
	comp=Z,1.4nm,0.8s,baz=355,slow=6.5,SNR=6.8						
BVAR	**Borovoye Array**	**64.51**	**329**	P	**P**	**22 32 56.0**	**+0.2**
	comp=Z,2.6nm,0.6s,baz=66,slow=8.8,SNR=10						
ARU	**Arti**	**64.55**	**337**	P	**P**	**22 32 55.7**	**-0.3**
	comp=Z,1.8nm,0.5s,baz=59,slow=4.0,SNR=5.5						
MKAR	**Makanchi Array**	**65.72**	**318**	P	**P**	**22 33 03.1**	**-0.8**
	comp=Z,0.3nm,0.5s,baz=51,slow=5.6,SNR=6.5						
AKTO	**Aktyubinsk**	**70.21**	**335**	P	**P**	**22 33 31.9**	**0.0**
	comp=Z,2.6nm,0.6s,baz=17,slow=5.3,SNR=12						
AKASG	**Malin Array Be**	**74.42**	**354**	P	**P**	**22 33 56.5**	**-0.5**
	comp=Z,1.2nm,0.4s,baz=9.8,slow=6.2,SNR=9.5						
GERES	**GERESS Array B**	**76.46**	**4**	P	**P**	**22 34 09.7**	**+0.9**
	comp=Z,0.2nm,0.3s,baz=345,slow=4.6,SNR=3.5						
KBZ	**Khabaz**	**79.73**	**343**	P	**P**	**22 34 25.5**	**-1.4**
	comp=Z,2.6nm,0.9s,baz=332,slow=7.6,SNR=5.2						
CMAR	**Chiang Mai Arr**	**81.08**	**289**	P	**P**	**22 34 33.9**	**-0.6**
	comp=Z,3.0nm,0.9s,baz=20,slow=5.8						
CMAR				pP	**pP**	**22 34 46.0**	**-1.9**
	comp=Z,1.7nm,0.9s,baz=36,slow=4.7,SNR=2.1						
GEYT	**Alibeck**	**81.80**	**330**	P	**P**	**22 34 37.7**	**-0.5**
	comp=Z,2.1nm,0.9s,baz=333,slow=2.3,SNR=4.3						
ESDC	**Sonseca Array**	**83.60**	**18**	P	**P**	**22 34 48.5**	**+0.9**
	comp=Z,0.7nm,0.6s,baz=344,slow=4.7,SNR=7.7						
ESDC				pP	**pP**	**22 35 00.2**	**-0.7**
	comp=Z,0.7nm,0.6s,baz=337,slow=4.2,SNR=5.5						
BRTR	**Keskin Array B**	**84.94**	**349**	P	**P**	**22 34 55.2**	**+0.8**
	comp=Z,0.6nm,0.7s,baz=129,slow=4.0,SNR=3.6						

NIED ***05*** *22:26:00, 36°.50N×142°.60E, h23km, Mw3.9 Best double couple: M0 8.21000×10^14 NP1:φ§22.00000°, δ38.00000°, λ111.00000°. NP2:φ§176.00000°, δ54.00000°, λ74.00000°.*
IDC ***05*** *22:26:04.9±0.6, 36°.36N×142°.62E, h0km, mb4.0/20, mb1 4.1/26, mb1mx4.0/48, mbtmp4.0/26, ML3.8/6, MS2.7/1, Ms1 2.7/1, ms1mx2.2/35, Error ellipse: s-maj=16.1km s-min=13.8km az=147.0*
ISCJB ***05*** *22:26:05.6±1.4, 36°.44N±0°.04×142°.61E±0°.04, h15km±10km, mb4.0/30, MS3.7/1, Error ellipse: s-maj=7.3km s-min=5.9km az=165.7*
JMA ***05*** *22:26:07.1±0.2, 36°.48N×142°.60E, h32km, M4.0*
MOS ***05*** *22:26:08.6±1.4, 36°.47N×142°.54E, h33km, mb4.4/12, Error ellipse: s-maj=11.3km s-min=7.8km az=116.6*
NEIC ***05*** *22:26:09.8±0.4, 36°.30N×142°.59E, h35km, mb4.2/2, Error ellipse: s-maj=9.5km s-min=8.2km az=136.0*
ISC 05 22:26:08.5±2.7, 36°.45N±0°.05×142°.61E±0°.06, h23km±19km, n73, σ1§32/78, mb4.0/30, 3C-4D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**1.59**	**295**	P	**Pn**	**22 26 33.9**	**-1.4**
ONAJ				S	**Sn**	**22 26 54.1**	**-1.1**
CHOJ	**Chosi**	**1.60**	**243**	P	**Pn**	**22 26 34.4**	**-1.0**
CHOJ			*e*S	**Sn**	**22 26 54.1**	**-1.3**
JHO	**Hitachi**	**1.65**	**276**	P	**Pn**	**22 26 34.4**	**-1.7**
JHO			S	**Sn**	**22 26 54.9**	**-1.7**
JFK	**Kawauchi**	**1.66**	**304**	P	**Pn**	**22 26 34.6**	**-1.7**
JFK			S	**Sn**	**22 26 55.4**	**-1.6**
JMM	**Marumori**	**2.02**	**315**	P	**Pn**	**22 26 39.6**	**-1.6**
JMM			S	**Sn**	**22 27 03.2**	**-2.6**
JFT	**Otama**	**2.11**	**301**	P	**Pn**	**22 26 41.9**	**-0.5**
BSO1	**Boso 1**	**2.23**	**217**	P	**Pn**	**22 26 42.8**	**-0.8**
JAG	**Ashikaga**	**2.54**	**270**	P	**Pn**	**22 26 47.5**	**-0.9**
JMK	**Ichinoseki**	**2.73**	**337**	P	**Pn**	**22 26 49.9**	**-1.0**
JRY	**Ryogami san**	**3.03**	**263**	P	**Pn**	**22 26 53.9**	**-1.2**
JYK	**Kaneyama**	**3.04**	**325**	P	**Pn**	**22 26 53.9**	**-1.3**
JOD2	**Odawara 2**	**3.10**	**249**	P	**Pn**	**22 26 55.8**	**-0.2**
JYN	**Shinmoh**	**3.43**	**255**	P	**Pn**	**22 27 00.8**	**+0.2**
MJAR	**Matsushiro Arr**	**3.55**	**273**	Pn

comp=Z,8.0nm,1.1s
NVAR Mina Array Bea 74.57 54 P **P 22 37 47.5 +1.6**
comp=Z,0.4nm,0.6s,baz=316,slow=4.1,SNR=5.1
NB2 NORSAR Subarra 75.09 338 P **P 22 37 48.3 0.0**
comp=Z,0.6nm,0.8s,baz=40,slow=5.9
NOA NORSAR Array B 75.09 338 P **P 22 37 48.4 +0.1**
comp=Z,1.3nm,0.9s,baz=41,slow=5.8,SNR=4.5
AKASG Malin Array Be 75.34 323 P **P 22 37 50.0 +0.2**
comp=Z,1.4nm,0.7s,baz=46,slow=5.8,SNR=7.6
AKASG Malin Array Be 75.34 323 P **P 22 37 50.0 +0.2**
PDAR Pinedale Array 77.39 46 P **P 22 38 01.8 -0.1**
comp=Z,0.1nm,0.5s,baz=306,slow=5.4,SNR=2.8
BRTR Keskin Array B 79.95 312 P **P 22 38 17.2 +1.3**
comp=Z,1.0nm,0.9s,baz=122,slow=5.4,SNR=5.1
CLL Collm 82.08 331 *e*(P) P 22 38 38.0 +11
CLL Collm 82.08 331 *e*P P 22 38 38.0 +11
KHC Kasperske Hory 83.54 329 *e*pP pP 22 38 45.8 +3.7
GERES GERESS Array B 83.71 329 P **P 22 38 34.5 -1.0**
comp=Z,0.1nm,0.4s,baz=27,slow=1.5,SNR=4.5
ANMO Albuquerque 84.22 50 *e*P **P 22 38 41.1 +2.6**
ANMO pmax pmax
comp=Z,1.0nm,0.8s
TXAR Lajitas Array 89.71 53 P **P 22 39 05.9 +0.7**
comp=Z,0.6nm,0.7s,baz=304,slow=4.2,SNR=9.3
LPAZ La Paz 146.14 62 PKPbc **PKPbc 22 45 48.0 0.0**
comp=Z,1.9nm,0.7s,baz=305,slow=4.9,SNR=9.1

NIED ***05*** *22:32:00, 38°.40N×143°.90E, h5km, Mw3.7 Best double couple: M₀3.93000×10¹⁴ NP1:φs358.00000°, δ34.00000°, λ-94.00000°. NP2:φs182.00000°, δ56.00000°, λ-88.00000°.*
ISCJB ***05*** *22:32:40.9±0.7, 38°.16N±0°.06×144°.14E±0°.06, h10km, mb3.6/10, Error ellipse: s-maj=8.7km s-min=6.2km az=147.2*
IDC ***05*** *22:32:40.2±1.0, 38°.20N×144°.46E, h0km, mb3.6/10, mb1 3.7/14, mb1mx3.6/38, mbtmp3.6/14, ML3.6/4, Error ellipse: s-maj=25.2km s-min=18.8km az=91.0*
JMA ***05*** *22:32:44.9±0.3, 38°.35N×143°.86E, h9km, M3.7*
ISC 05 22:32:41.4±0.9, 38°.17N±0°.07×144°.25E±0°.08, h10km, n25, σ2S08/31, mb3.7/10, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.22**	**295**	P	**Pn**	**22 33 17.7**	**-0.5**
JIO	**Ouri**	**2.30**	**278**	S	**Sn**	**22 33 43.9**	**-3.7**
MIYJ	**Miyakonagasawa**	**2.36**	**307**	P	**Pn**	**22 33 19.2**	**-1.0**
JMK	**Ichinoseki**	**2.50**	**289**	P	**Pn**	**22 33 21.9**	**-0.2**
JOM	**Ohasama**	**2.65**	**300**	P	**Pn**	**22 33 24.6**	**+0.4**
JYK	**Kaneyama**	**3.14**	**285**	P	**Pn**	**22 33 31.5**	**+0.6**
JYK				S	**Sn**	**22 34 06.2**	**-2.2**
JFT	**Otama**	**3.16**	**259**	P	**Pn**	**22 33 32.4**	**+1.2**
JFT				S	**Sn**	**22 34 07.1**	**-1.9**
JKB	**Kayabe**	**4.46**	**327**	P	**Pn**	**22 33 50.2**	**+1.2**
JCH	**Churui**	**4.50**	**352**	P	**Pn**	**22 33 48.8**	**-0.7**
JRY	**Ryogami san**	**4.78**	**245**	P	**Pn**	**22 33 54.1**	**+0.6**
MJAR	**Matsushiro Arr**	**5.08**	**253**	Pn	**Pn**	**22 33 59.5**	**+2.0**
	3.6nm,0.3s,baz=59,slow=9.1,SNR=21						
MJAR				Sn	**Sn**	**22 34 54.5**	**-1.7**
	1.2nm,0.3s,baz=86,slow=24,SNR=5.1						
MAT	**Matsushiro**	**5.08**	**253**	P	**Pn**	**22 33 59.8**	**+2.2**
MAT				S	**Sn**	**22 34 55.8**	**-0.5**
ASAJ	**Asahikawa**	**6.08**	**349**	Pn	**Pn**	**22 34 12.7**	**+1.5**
	1.6nm,0.3s,baz=187,slow=6.0,SNR=6.5						
ASAJ				Sn	**Sn**	**22 35 16.4**	**-4.3**
	0.3nm,0.3s,baz=174,slow=18,SNR=2.0						
JHJ	**Hachijo jima 2**	**6.21**	**217**	Pn	**Pn**	**22 34 13.4**	**+0.3**
	10nm,0.3s,baz=72,slow=20,SNR=3.8						
JHJ				Sn	**Sn**	**22 35 17.6**	**-6.5**
	26nm,0.3s,baz=81,slow=22,SNR=6.0						
USRK	**Ussuriysk Ar.**	**11.03**	**307**	Pn	**Pn**	**22 35 21.3**	**+2.2**
	0.5nm,0.3s,baz=183,slow=24,SNR=4.1						
SONM	**Songino Array**	**29.07**	**302**	P	**P**	**22 38 43.3**	**+1.3**
	0.2nm,0.4s,baz=82,slow=12,SNR=2.7						
ZALV	**Zalesovo Beam**	**42.83**	**312**	P	**P**	**22 40 39.0**	**-0.3**
	0.3nm,0.4s,baz=82,slow=9.9,SNR=1.9						
MKAR	**Makanchi Array**	**45.43**	**302**	P	**P**	**22 41 01.4**	**+1.1**
	0.5nm,0.7s,baz=84,slow=9.4,SNR=5.3						
KURBB	**Kurchatov Arra**	**47.09**	**308**	P	**P**	**22 41 14.2**	**+1.0**
	0.3nm,0.3s,baz=81,slow=8.2,SNR=4.5						
WRA	**Warramunga Arr**	**58.54**	**191**	P	**P**	**22 42 39.3**	**+1.2**
	1.2nm,0.7s,baz=12,slow=7.3,SNR=6.3						
YKA	**Yellowknife Ar**	**61.69**	**31**	P	**P**	**22 42 57.4**	**-1.8**
	0.1nm,0.3s,baz=267,slow=5.6,SNR=3.2						
ASAR	**Alice Springs**	**62.27**	**191**	P	**P**	**22 43 04.7**	**+1.2**
	0.4nm,0.7s,baz=16,slow=7.0,SNR=4.1						
ARCES	**ARCESS Array B**	**63.72**	**340**	P	**P**	**22 43 14.0**	**+1.3**
	1.3nm,0.8s,baz=60,slow=7.6,SNR=3.2						
FINES	**FINESS Array B**	**68.85**	**333**	P	**P**	**22 43 46.9**	**+1.3**
	0.9nm,0.9s,baz=46,slow=5.5,SNR=3.6						
PDAR	**Pinedale Array**	**75.26**	**47**	P	**P**	**22 44 24.5**	**-0.2**
	0.2nm,0.6s,baz=232,slow=1.0,SNR=3.0						

JMA 05 22:36:03.6, 37°.05N×140°.67E, h9km±1km, M2.0, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.36**	**27**	P	Pg	22 36 10.6	-0.1
JFK				S	Sg	22 36 15.5	+0.1
JHO	**Hitachi**	**0.45**	**191**	P	Pg	22 36 12.2	-0.1
JHO				S	Sg	22 36 18.4	+0.2
JFT	**Otama**	**0.54**	**330**	P	Pg	22 36 14.4	+0.3
JFT				S	Sg	22 36 21.4	+0.3
JMM	**Marumori**	**0.82**	**7**	P	Pg	22 36 19.1	-0.3
JMM				S	Sg	22 36 29.7	-0.4
JOU	**Okura**	**1.31**	**360**	S	Sb	22 36 45.3	-0.1

NIED ***05*** *22:36:00, 37°.00N×140°.50E, h5km, Mw3.9 Best double couple: M₀7.30000×10¹⁴ NP1:φs299.00000°, δ35.00000°, λ-98.00000°. NP2:φs128.00000°, δ55.00000°, λ-85.00000°.*
IDC ***05*** *22:36:55.7±0.6, 37°.02N×140°.42E, h0km, mb3.8/20, mb1 4.0/23, mb1mx3.9/35, mbtmp3.9/23, ML3.9/3, MS3.0/1, Ms1 3.0/1, ms1mx2.4/37, Error ellipse: s-maj=16.3km s-min=13.0km az=118.0*
ISCJB ***05*** *22:36:57.0±0.4, 37°.03N±0°.03×140°.54E±0°.03, h20km±3km, mb3.9/26, Error ellipse: s-maj=5.1km s-min=4.0km az=135.6*
JMA ***05*** *22:36:57.1, 37°.02N×140°.51E, h6km±1km, M4.0 Broadband fault plane solution: P waves. NP1: φs120.00000°, δ48.00000°, λ-90.00000°. NP2: φs300.00000°, δ42.00000°, λ-90.00000°. Principal axes: T Plg3.0000°, Azm210.0000°; N Plg0.0000°, Azm120.0000°; P Plg87.0000°, Azm30.0000°;*
JMA Felt III J1.
NEIC ***05*** *22:37:01.6±0.9, 37°.05N×140°.35E, h39km±7km, mb4.3/6 Error ellipse: s-maj=9.9km s-min=6.4km az=136.0*
NEIC Recorded [3 JMA] in Fukushima.
ISC 05 22:36:56.7±1.1, 37°.04N±0°.03×140°.44E±0°.04, h6km±7km, n50, σ0S60/53, mb3.9/26, 5C-1D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.29**	**78**	⇑P	**Pg**	**22 37 02.2**	**-0.3**
ONAJ				S	**Sg**	**22 37 06.1**	**-0.2**
JSB	**Shiboa**	**0.42**	**260**	⇑P	**Pb**	**22 37 07.0**	**+0.4**
JSB				S	**Sb**	**22 37 13.8**	**+0.5**
JHO	**Hitachi**	**0.44**	**166**	⇑P	**Pg**	**22 37 04.9**	**-0.3**
JHO				S	**Sg**	**22 37 11.0**	**0.0**
JFK	**Kawauchi**	**0.48**	**47**	⇑P	**Pg**	**22 37 05.9**	**0.0**
JFK				S	**Sg**	**22 37 12.2**	**+0.1**
JFT	**Otama**	**0.48**	**350**	⇑P	**Pb**	**22 37 07.3**	**-0.4**
JFT				S	**Sb**	**22 37 14.4**	**-0.7**
JFY	**Yanaizu**	**0.69**	**302**	⇓P	**Pb**	**22 37 11.5**	**+0.3**
JFY				S	**Sb**	**22 37 20.9**	**-0.1**
MJAR	**Matsushiro Arr**	**1.86**	**255**	Pn	**Pb**	**22 37 30.2**	**-0.9**
	83nm,0.3s,baz=76,slow=16,SNR=148						
MJAR				Sn	**Sb**	**22 37 54.8**	**+0.1**
	56nm,0.3s,baz=77,slow=24,SNR=14						
MJAR				LR	LR	22 38 30.7	
	comp=Z,194nm,19.2s,baz=90,slow=52						
MAJO	**Matsushiro**	**1.86**	**255**	*e*Pn	**Pb**	**22 37 31.1**	**-0.1**
MAJO				*e*Sn	**Sn**	**22 37 53.3**	**+0.4**
MAT	**Matsushiro**	**1.86**	**255**	P	**Pb**	**22 37 30.9**	**-0.2**
MAT				S	**Sg**	**22 37 56.2**	**-0.3**
JHJ	**Hachijo jima 2**	**3.95**	**188**	Pn	**Pn**	**22 37 58.3**	**+0.5**
	9.4nm,0.3s,baz=66,slow=20,SNR=4.1						
JHJ				Sn	**Sn**	**22 38 44.7**	**+0.2**
	12nm,0.3s,baz=53,slow=20,SNR=2.9						
ASAJ	**Asahikawa**	**7.26**	**12**	Pn	**Pn**	**22 38 44.8**	**+1.5**
	4.7nm,0.3s,baz=212,slow=10,SNR=5.1						
ASAJ				Sn	**Sn**	**22 40 06.2**	**+0.3**
	0.6nm,0.3s,baz=282,slow=19,SNR=2.9						
JNU	**Nakatsue**	**8.76**	**246**	LR	LR	22 42 43.4	
	comp=Z,92nm,19.7s,baz=115,slow=40						
USRK	**Ussuriysk Ar.**	**9.61**	**321**	Pn	Pn	22 39 18.8	+3.3
	0.1nm,0.3s,baz=138,slow=15,SNR=2.0						
KSRS	**Korea Array**	**9.99**	**276**	Pn	**Pn**	**22 39 21.1**	**+0.4**
	0.2nm,0.3s,baz=83,slow=14,SNR=2.7						
KSAR	**Wonju Array Be**	**10.02**	**276**	Pn	**Pn**	**22 39 21.1**	**0.0**
YAK	**Yakutsk**	**25.90**	**348**	*e*P	**P**	**22 42 28.4**	**-0.7**
	9.7nm,0.5s						
ENH	**Enshi**	**26.56**	**264**	*e*P	**P**	**22 42 36.0**	**+0.5**
	7.6nm,0.8s						
SEY	**Seymchan**	**26.94**	**12**	P	**P**	**22 42 40.5**	**+1.9**
	1.3nm,0.2s,baz=260,slow=7.3,SNR=2.5						
SONM	**Songino Array**	**27.14**	**304**	P	**P**	**22 42 40.6**	**-0.1**
	2.0nm,0.8s,baz=101,slow=7.6,SNR=10.0						
H11N2	**WAKE ISLAND Hy**	**28.82**	**119**	T	T	23 12 45.4	
	baz=316,slow=75						
H11N1	**WAKE ISLAND Hy**	**28.83**	**120**	T	T	23 12 46.7	
	baz=316						
H11N3	**WAKE ISLAND Hy**	**28.84**	**119**	T	T	23 12 46.8	
	baz=316,slow=75						
H11S1	**WAKE ISLAND Hy**	**29.52**	**122**	T	T	23 13 35.9	
	baz=314,slow=76,SNR=38						
H11S3	**WAKE ISLAND Hy**	**29.52**	**122**	T	T	23 13 36.1	
	baz=314,slow=76,SNR=33						
H11S2	**WAKE ISLAND Hy**	**29.54**	**122**	T	T	23 13 37.1	
	baz=314,slow=76,SNR=28						
TIXI	**Tiksi**	**35.19**	**354**	P	**P**	**22 43 50.1**	**-1.0**
	2.1nm,0.3s,baz=108,slow=13,SNR=3.3						
ZALV	**Zalesovo Beam**	**41.34**	**312**	P	**P**	**22 44 42.5**	**-0.5**
	1.3nm,0.8s,baz=69,slow=4.1,SNR=5.9						
MKAR	**Makanchi Array**	**43.45**	**302**	P	**P**	**22 45 00.5**	**+0.1**
	0.8nm,0.7s,baz=89,slow=8.4,SNR=8.5						
COLA	**College**	**49.49**	**32**	P	**P**	**22 45 48.5**	**+1.0**
	1.6nm,0.4s						
ILAR	**Eielson Array**	**49.91**	**32**	P	**P**	**22 45 50.8**	**+0.1**
	0.6nm,0.8s,baz=269,slow=7.6,SNR=5.8						
EKS2	**Erkin-Say**	**50.30**	**298**	*e*P	**P**	**22 45 54.3**	**+0.1**
	1.0nm,0.7s						
INK	**Inuvik**	**54.74**	**27**	P	**P**	**22 46 26.6**	**+0.1**
	0.5nm,0.8s,baz=257,slow=7.8,SNR=3.4						
WRA	**Warramunga Arr**	**56.97**	**187**	P	**P**	**22 46 42.1**	**-1.0**
	2.1nm,0.7s,baz=5.5,slow=7.4,SNR=14						
ABKAR	**Akbulak array**	**57.34**	**310**	*e*P	**P**	**22 46 45.2**	**-0.3**
	1.3nm,0.5s						
ASAR	**Alice Springs**	**60.69**	**187**	P	**P**	**22 47 08.6**	**-0.4**
	0.7nm,0.8s,baz=10,slow=7.2,SNR=7.8						
GEYT	**Alibeck**	**63.15**	**299**	P	**P**	**22 47 25.4**	**-0.1**
	1.9nm,0.9s,baz=15,slow=6.2,SNR=3.6						
ARCES	**ARCESS Array B**	**63.72**	**339**	P	**P**	**22 47 28.4**	**-0.3**
	1.7nm,0.8s,baz=50,slow=8.8,SNR=8.7						
YKA	**Yellowknife Ar**	**64.19**	**30**	P	**P**	**22 47 31.9**	**0.0**
	0.2nm,0.8s,baz=299,slow=6.9,SNR=4.5						
FINES	**FINESS Array B**	**68.44**	**332**	P	**P**	**22 47 58.6**	**-0.5**
	1.0nm,0.7s,baz=46,slow=8.2,SNR=6.9						
AKASG	**Malin Array Be**	**73.81**	**322**	P	**P**	**22 48 31.0**	**-0.9**
	0.4nm,0.4s,baz=48,slow=5.8,SNR=5.1						
NB2	**NORSAR Subarra**	**73.88**	**337**	P	**P**	**22 48 31.7**	**-0.5**
	comp=Z,1.5nm,0.8s,baz=41,slow=5.9						
NOA	**NORSAR Array B**	**73.88**	**337**	P	**P**	**22 48 31.6**	**-0.5**
	comp=Z,1.0nm,0.8s,baz=40,slow=5.8,SNR=5.1						
NVAR	**Mina Array Bea**	**75.61**	**53**	P	**P**	**22 48 43.7**	**+0.9**
	comp=Z,0.3nm,0.6s,baz=289,slow=5.8,SNR=3.7						
RLMT	**Red Lodge**	**76.87**	**43**	*e*P	**P**	**22 48 49.6**	**-0.2**
	comp=Z,1.5nm,0.4s						
PDAR	**Pinedale Array**	**78.22**	**45**	P	**P**	**22 48 57.7**	**+0.3**
	comp=Z,0.4nm,0.7s,baz=343,slow=2.8,SNR=2.9						
BRTR	**Keskin Array B**	**78.26**	**311**	P	**P**	**22 48 57.9**	**+0.3**
	comp=Z,0.6nm,0.7s,baz=54,slow=7.3,SNR=3.2						
GERES	**GERESS Array B**	**82.29**	**328**	P	**P**	**22 49 18.8**	**-0.3**
	comp=Z,0.3nm,0.4s,baz=44,slow=5.9,SNR=4.6						
TXAR	**Lajitas Array**	**90.73**	**52**	P	**P**	**22 50 01.1**	**+0.2**
	comp=Z,0.2nm,0.6s,baz=306,slow=4.2,SNR=3.8						
TORD	**Torodi Ar. Bea**	**116.77**	**314**	PKP	**PKPdf**	**22 55 41.5**	**-1.1**
	comp=Z,0.3nm,0.7s,baz=358,slow=1.9,SNR=2.3						
LPAZ	**La Paz**	**147.36**	**58**	PKPbc	**PKPbc**	**22 56 43.4**	**+0.8**
	comp=Z,0.5nm,0.6s,baz=297,slow=2.3,SNR=3.6						

NNC 05 22:44:25.7±17.0, 37°.86N×71°.67E, h24km±482km, mb3.5, mpv3.1, 4D, Error ellipse: s-maj=465.7km s-min=70.2km az=10.0, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFK	**Sufi-Kurgan**	**2.58**	**33**	⇓P	Pn	22 45 04.4	-1.9
	1.7nm,0.3s						
SFK				⇓S	Sn	22 45 35.5	-1.5
	3.6nm,0.3s						
MNAS	**Manas**	**4.67**	**8**	⇓P	Pn	22 45 33.3	-1.4
	1.5nm,0.4s						
MNAS				⇓S	Sn	22 46 26.1	-2.1
	0.7nm,0.3s						
KK31	**Karatay Array**	**5.31**	**351**	P	Pn	22 45 43.7	+0.2
	1.6nm,0.4s,baz=164,slow=11,SNR=24						
KK31				S	Sn	22 46 43.5	-0.4
	0.9nm,0.6s,baz=174,slow=24,SNR=5.7						

NIED ***05*** *22:46:00, 36°.60N×141°.80E, h26km, Mw4.3 Best double couple: M₀3.18000×10¹⁵ NP1:φs185.00000°, δ31.00000°, λ-70.00000°. NP2:φs342.00000°, δ62.00000°, λ-101.00000°.*
IDC ***05*** *22:46:47.1±0.5, 36°.53N×141°.68E, h0km, mb4.2/25, mb1 4.3/30, mb1mx4.3/37, mbtmp4.2/30, ML3.8/4, MS3.3/6, Ms1 3.3/6, ms1mx3.0/42, Error ellipse: s-maj=15.9km s-min=11.3km az=100.0*
ISCJB ***05*** *22:46:48.2±0.9, 36°.52N±0°.02×141°.94E±0°.03, h23km±5km, mb4.5/81, MS3.6/8, Error ellipse: s-maj=4.7km s-min=3.8km az=19.5*
JMA ***05*** *22:46:50.6±0.2, 36°.57N×141°.82E, h44km, M4.1*
JMA Felt II J1.
NEIC ***05*** *22:46:52.0±0.5, 36°.55N×141°.83E, h37km±4km, mb4.8/27, Error ellipse: s-maj=5.3km s-min=3.8km az=111.0*
NEIC Recorded [2 JMA] in Fukushima and Ibaraki.
MOS ***05*** *22:46:52.4±0.8, 36°.88N×141°.59E, h33km, mb4.7/28, Error ellipse: s-maj=11.4km s-min=6.3km az=112.2*
ISC 05 22:46:49.1±1.4, 36°.56N±0°.03×141°.87E±0°.04, h15km±8km, n194, σ1S38/210, mb4.6/81, MS3.5/8, 11C-2D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**1.02**	**303**	P	**Pb**	**22 47 07.8**	**-0.6**
ONAJ				S	**Sb**	**22 47 20.8**	**-0.8**
JHO	**Hitachi**	**1.05**	**273**	P	**Pb**	**22 47 08.3**	**-0.6**
JHO				*e*S	**Sb**	**22 47 21.4**	**-1.1**
JFK	**Kawauchi**	**1.14**	**316**	P	**Pb**	**22 47 10.0**	**-0.4**
JFK				S	**Sb**	**22 47 25.0**	**0.0**
JFT	**Otama**	**1.56**	**308**	P	**Pb**	**22 47 17.1**	**-0.5**
JFT				S	**Sn**	**22 47 36.1**	**0.0**
JMM	**Marumori**	**1.56**	**327**	P	**Pn**	**22 47 16.2**	**-0.1**
JFY	**Yanaizu**	**1.93**	**297**	P	**Pb**	**22 47 22.7**	**-1.3**
JFY				S	**Sn**	**22 47 46.0**	**+0.6**
JAG	**Ashikaga**	**1.95**	**267**	P	**Pn**	**22 47 21.8**	**+0.2**
JAG				S	**Sn**	**22 47 44.8**	**-1.1**
BSO1	**Boso 1**	**2.04**	**201**	P	**Pn**	**22 47 23.0**	**+0.7**
BSO1				*e*S	**Sb**	**22 47 49.2**	**-1.1**
JNS	**Sasagawa**	**2.40**	**302**	P	**Pb**	**22 47 30.3**	**-1.6**
MJAR	**Matsushiro Arr**	**2.95**	**271**	Pn	**Pn**	**22 47 36.2**	**+0.9**
	143nm,0.3s,baz=88,slow=9.2,SNR=393						
MJAR				Sn	**Sn**	**22 48 11.8**	**+1.3**
	55nm,0.3s,baz=86,slow=20,SNR=14						
MJAR				LR	LR	22 48 57.1	
	comp=Z,865nm,18.1s,baz=110,slow=47						
MAJO	**Matsushiro**	**2.95**	**271**	*c i*P	**Pn**	**22 47 37.0**	**+1.6**
MAJO	**Matsushiro**	**2.95**	**271**	*e*Pn	**Pn**	**22 47 37.1**	**+1.8**
MAJO				*e*Sn	**Sn**	**22 48 11.2**	**+0.7**
MAT	**Matsushiro**	**2.95**	**271**	P	**Pn**	**22 47 36.6**	**+1.2**
MAT				S	**Sn**	**22 48 11.9**	**+1.4**
MJB9	**Matsu-Tunnel**	**2.95**	**271**	*e*Pn	**Pn**	**22 47 37.2**	**+1.7**
JHJ2	**Mitsune**	**3.83**	**207**	*e*Pn	**Pn**	**22 47 47.8**	**+0.3**
JHJ2				*e*Sn	**Sn**	**22 48 31.6**	**-0.6**
JHJ	**Hachijo jima 2**	**3.84**	**207**	Pn	**Pn**	**22 47 47.8**	**+0.2**
	102nm,0.3s,baz=313,slow=16,SNR=32						
JHJ				Sn	**Sn**	**22 48 30.4**	**-2.0**
	260nm,0.3s,baz=135,slow=23,SNR=12						
JHJ				LR	LR	22 48 36.3	
	comp=Z,136nm,19.7s,baz=67,slow=29						
INU	**Inuyama**	**4.12**	**254**	*e*Pn	**Pn**	**22 47 53.4**	**+2.0**
ERM	**Erimo**	**5.54**	**10**	*d i*P	**Pn**	**22 48 10.7**	**-0.2**
ERM	**Erimo**	**5.54**	**10**	*e*Pn	**Pn**	**22 48 10.9**	**0.0**
ERM				*e*Sn	**Sn**	**22 49 15.9**	**+1.6**
ASAJ	**Asahikawa**	**7.57**	**4**	Pn	**Pn**	**22 48 38.8**	**0.0**
	1.7nm,0.3s,baz=208,slow=13,SNR=6.9						
ASAJ				Sn	**Sn**	**22 50 01.7**	**-2.6**
	1.4nm,0.3s,baz=35,slow=16,SNR=3.5						
ASAJ	**Asahikawa**	**7.57**	**4**	*e*Pn	**Pn**	**22 48 39.3**	**+0.5**
ASAJ				Sn	**Sn**	**22 50 01.7**	**-2.6**
YUK	**Yuzh-Kuril'sk**	**8.07**	**21**	*i*P	**Pn**	**22 48 43.8**	**-1.8**
CBIJ	**Chichi jima**	**9.44**	**178**	*e*Pn	**Pn**	**22 49 03.9**	**-0.5**
CBIJ				Sn	Sn	22 50 40.5	-10
JCJ	**Chichijima**	**9.44**	**178**	Pn	**Pn**	**22 49 02.6**	**-1.9**
	baz=356,slow=19						
JCJ				Sn	Sn	22 50 40.5	-10
	27nm,0.3s,baz=246,slow=20,SNR=7.0						
JNU	**Nakatsue**	**9.66**	**252**	Pn	**Pn**	**22 49 08.3**	**+0.7**
	0.6nm,0.3s,baz=71,slow=5.0,SNR=6.6						
JNU				LR	LR	22 53 02.4	
	comp=Z,228nm,18.7s,baz=28,slow=40						
JNU	**Nakatsue**	**9.66**	**252**	*e*Pn	**Pn**	**22 49 08.8**	**+1.2**
USRK	**Ussuriysk Ar.**	**10.72**	**318**	Pn	**Pn**	**22 49 24.9**	**+2.9**
	0.2nm,0.3s,baz=131,slow=12,SNR=4.7						
KSRS	**Korea Array**	**11.19**	**279**	Pn	**Pn**	**22 49 32.6**	**+4.2**
	0.3nm,0.3s,baz=98,slow=14,SNR=11						
KSRS				LR	LR	22 53 47.5	
	comp=Z,198nm,18.5s,baz=83,slow=38						
KS15	**Wonju Array Si**	**11.22**	**279**	*e*Pn	**Pn**	**22 49 30.2**	**+1.3**
KSAR	**Wonju Array Be**	**11.22**	**279**	P	**Pn**	**22 49 32.6**	**+3.7**
KSAR	**Wonju Array Be**	**11.22**	**279**	Pn	**Pn**	**22 49 32.6**	**+3.7**
KLR	**Kul'dur**	**14.66**	**333**	Pn	**Pn**	**22 50 14.8**	**-1.0**
	0.1nm,0.3s,baz=144,slow=19,SNR=2.9						
JOW	**Kunigami**	**15.08**	**234**	Pn	**Pn**	**22 50 18.9**	**-2.7**
	0.6nm,0.3s,baz=61,slow=17,SNR=1.6						
NJ2	**Nanjing**	**19.52**	**263**	*e*P	**Pn**	**22 51 17.4**	**+0.2**
NJ2				pmax	pmax		
	comp=Z,13nm,0.5s						
PETK	**Petropavlovsk-**	**19.92**	**29**	P	**Pn**	**22 51 22.6**	**+0.9**
	comp=Z,1.8nm,0.7s,baz=223,slow=12,SNR=2.7						
PETK				LR	LR	22 58 56.9	
	comp=Z,75nm,20.8s,baz=226,slow=36						
BJI	**Beijing**	**20.44**	**288**	P	**P**	**22 51 26.7**	**+0.9**
BJI				pmax	pmax		
	comp=Z,8.0nm,1.2s						
TWG	**Pinlang**	**22.61**	**238**	*e*P	**P**	**22 51 48.6**	**-0.6**
	comp=Z,87nm,1.3s						
HHC	**Hu-ho-hao-te**	**23.97**	**290**	*e*P	**P**	**22 52 04.2**	**+1.2**
HHC				S	**S**	**22 56 23.1**	**+3.9**
HHC				pmax	pmax		
	comp=Z,18nm,0.9s						
HHC				pmax	pmax		
	comp=Z,79nm,4.4s						
HHC				LR	LR		
	comp=N,110nm,12.6s						
HHC				LR	LR		
	comp=E,98nm,11.8s						
HHC				LR	LR		
	comp=Z,76nm,12.6s						
YAK	**Yakutsk**	**26.61**	**347**	P	**P**	**22 52 26.7**	**+0.1**
	comp=Z,15nm,0.4s,baz=196,slow=3.2,SNR=4.9						
YAK	**Yakutsk**	**26.61**	**347**	*e*P	**P**	**22 52 26.5**	**0.0**
YAK				*e*		22 53 05.9	
YAK				*e*		22 55 45.6	
YAK				*e*S	**S**	**22 56 57.9**	**-2.7**
YAK				*e*SS	**SnSn**	**22 58 02.1**	**-1.1**
YAK				*e*		23 03 18.7	
YAK				pmax	pmax		
	comp=Z,28nm,0.9s						
YAK				pmax	pmax		
	comp=E,4.0nm,1.1s						
YAK				pmax	pmax		
	comp=N,11nm,1.1s						
YAK				pmax	pmax		
	comp=Z,82nm,3.0s						
YAK				pmax	pmax		
	comp=N,57nm,3.2s						
YAK				pmax	pmax		
	comp=E,41nm,3.3s						
YAK				smax	smax		
	comp=N,29nm,2.5s						
YAK				smax	smax		
	comp=E,17nm,1.9s						
YAK				MLR	MLR		
	comp=Z,100nm,17.0s						
YAK				MLR	MLR		
	comp=N,77nm,17.0s						
YAK	**Yakutsk**	**26.61**	**347**	*e*P	**P**	**22 52 26.7**	**+0.1**
	comp=N,28nm,0.7s						
XAN	**Xi'an**	**26.94**	**274**	P	**P**	**22 52 28.5**	**-1.4**
XAN				pmax	pmax		
	comp=Z,3.0nm,0.5s						
XAN				pmax	pmax		
	comp=Z,22nm,3.6s						
SEY	**Seymchan**	**27.19**	**11**	P	**P**	**22 52 31.5**	**-0.2**
	comp=Z,1.1nm,0.2s,baz=180,slow=9.1,SNR=3.3						
H11N2	**WAKE ISLAND Hy**	**27.59**	**121**

GTA					pmax	pmax		
	comp=Z,100nm,4.3s							
GTA					LR	LR		
	comp=N,80nm,16.2s							
GTA					LR	LR		
	comp=E,80nm,14.3s							
GTA					LR	LR		
	comp=Z,92nm,16.6s							
BILL	**Bilibino**	**34.38**	**16**	*i* P	P		22 53 40.4	+5.3
BILL					pmax	pmax		
	comp=Z,1.0nm,1.0s							
BILL					MLR	MLR		
	comp=Z,49nm,17.0s							
KMI	**Kunming**	**35.26**	**262**	P	**P**		**22 53 43.2**	**-0.2**
KMI					pmax	pmax		
	comp=Z,8.0nm,0.6s							
KMI					pmax	pmax		
	comp=Z,83nm,5.2s							
TIXI	**Tiksi**	**35.81**	**353**	P	**P**		**22 53 48.2**	**+0.9**
	comp=Z,0.9nm,0.3s,baz=155,slow=3.3,SNR=2.5							
TIXI	**Tiksi**	**35.81**	**353**	*e*P	**P**		**22 53 46.0**	**-1.3**
TIXI					pmax	pmax		
	comp=Z,3.0nm,1.2s							
PANO	**Nakornpanom**	**38.14**	**250**	P	**P**		**22 54 09.0**	**+1.2**
	comp=Z,26nm,1.1s							
NONG	**Nongkai**	**38.71**	**252**	P	**P**		**22 54 12.7**	**+0.2**
	comp=Z,20nm,1.1s							
SKNT	**Sakolnakorn**	**38.72**	**250**	P	**P**		**22 54 13.0**	**+0.3**
	comp=Z,16nm,1.0s							
CRAI	**Chiangrai**	**39.63**	**257**	P	**P**		**22 54 20.9**	**+0.6**
	comp=Z,373nm,0.9s,comp=Z,57µm							
UTTA	**Uttaradit**	**40.89**	**254**	P	**P**		**22 54 31.2**	**+0.5**
	comp=Z,2.4nm,0.9s							
PBKT	**Sadao Pong**	**41.26**	**252**	P	**P**		**22 54 34.0**	**+0.3**
	comp=Z,11nm,0.9s							
WMQ	**Urumqi**	**41.38**	**297**	P	**P**		**22 54 36.7**	**+2.1**
WMQ				pP	sP		22 54 42.3	+1.0
WMQ				sP	pP		22 54 50.5	+11
WMQ					pmax	pmax		
	comp=Z,7.0nm,0.8s							
WMQ					pmax	pmax		
	comp=Z,38nm,4.6s							
WMQ					LR	LR		
	comp=N,58nm,26.6s							
WMQ					LR	LR		
	comp=E,28nm,31.8s							
WMQ					LR	LR		
	comp=Z,14nm,26.6s							
LUWI	**Luwuk**	**41.41**	**210**	*e*P	**P**		**22 54 35.1**	**+0.2**
	comp=Z,21nm,0.6s							
CHTO	**Chiang Mai**	**41.53**	**257**	*e*P	**P**		**22 54 36.0**	**0.0**
CHTO					pmax	pmax		
	comp=Z,3.0nm,0.9s							
CHTO	**Chiang Mai**	**41.53**	**257**	*e*P	**P**		**22 54 36.0**	**0.0**
	comp=Z,2.8nm,0.9s							
CMAR	**Chiang Mai Arr**	**41.74**	**256**	P	**P**		**22 54 37.3**	**-0.3**
	comp=Z,1.0nm,0.3s,baz=50,slow=7.4,SNR=6.9							
CM01	**Chiang Mai Arr**	**41.74**	**256**	*e*P	**P**		**22 54 37.2**	**-0.6**
SRAK	**Srakaew**	**42.02**	**248**	P	**P**		**22 54 37.1**	**-2.9**
NAYO	**Nakonayok**	**42.38**	**249**	P	**P**		**22 54 43.9**	**+1.0**
	comp=Z,6.5nm,1.0s,comp=Z,4µm							
ZAA0	**Zalesovo Array**	**42.51**	**313**	*e*P	**P**		**22 54 43.2**	**-0.3**
ZALV	**Zalesovo Beam**	**42.51**	**313**	P	**P**		**22 54 43.4**	**-0.1**
	comp=Z,4.8nm,0.6s,baz=86,slow=6.7,SNR=24							
ZALV					LR	LR	23 13 09.1	
	comp=Z,37nm,18.9s,baz=72,slow=37							
CHBT	**CHBT**	**42.62**	**247**	P	**P**		**22 54 45.9**	**+1.1**
	comp=Z,16nm,1.0s,comp=Z,2µm							
SDPT	**Sand Point**	**42.87**	**45**	*e*P	**P**		**22 54 46.1**	**-0.4**
	comp=Z,223nm,2.0s							
NVS	**Novosibirsk**	**43.43**	**314**	*e*P	**P**		**22 54 50.9**	**-0.1**
NVS					pmax	pmax		
	comp=Z,7.0nm,1.0s							
NVS					pmax	pmax		
	comp=E,5.0nm,0.8s							
SBUM	**Sibu**	**43.59**	**226**	*e*P	**P**		**22 54 52.2**	**-0.5**
	comp=E,12nm,0.6s							
NRIK	**Noril'sk**	**43.85**	**335**	P	**P**		**22 54 53.8**	**-0.4**
	comp=E,1.0nm,0.6s,baz=135,slow=5.7,SNR=2.4							
MK01	**Makanchi Array**	**44.68**	**303**	*e*P	**P**		**22 55 00.5**	**-0.8**
MK31	**Makanchi Array**	**44.68**	**303**	*e*P	**P**		**22 55 00.4**	**-0.8**
MK31	**Makanchi Array**	**44.68**	**303**	*e*P	**P**		**22 55 00.4**	**-0.8**
MKAR	**Makanchi Array**	**44.68**	**303**	P	**P**		**22 55 00.8**	**-0.4**
	comp=E,4.5nm,0.9s,baz=87,slow=9.2,SNR=37							
MKAR	**Makanchi Array**	**44.68**	**303**	*e*P	**P**		**22 55 00.4**	**-0.9**
MAKZ	**Makanchi**	**44.89**	**303**	*e*P	**P**		**22 55 02.7**	**-0.2**
MAKZ					pmax	pmax		
	comp=Z,4.0nm,0.6s							
MAKZ	**Makanchi**	**44.89**	**303**	*e*P	**P**		**22 55 02.7**	**-0.2**
	comp=Z,3.7nm,0.6s							
SAUI	**Saumlaki**	**45.40**	**195**	*e*P	**P**		**22 55 06.8**	**-0.4**
	comp=Z,544nm,1.2s							
KSM	**Kuching**	**45.49**	**227**	*e*P	**P**		**22 55 07.6**	**-0.4**
	comp=Z,6.5nm,0.9s							
PMG	**Port Moresby**	**45.99**	**173**	*e*P	**P**		**22 55 11.0**	**-0.7**
PMG					pmax	pmax		
	comp=Z,69nm,1.6s							
PMG	**Port Moresby**	**45.99**	**173**	*e*P	**P**		**22 55 11.0**	**-0.7**
	comp=Z,69nm,1.6s							
KAPI	**Kappang**	**46.24**	**211**	*e*P	**P**		**22 55 13.2**	**-0.6**
	comp=Z,16nm,1.3s							
KURK	**Kurchatov**	**46.52**	**309**	*e*P	**P**		**22 55 15.0**	**-0.6**
KURK					pmax	pmax		
	comp=Z,11nm,0.8s							
KURK	**Kurchatov**	**46.52**	**309**	*e*P	**P**		**22 55 15.0**	**-0.6**
	comp=Z,11nm,0.8s							
GUN	**Gumba**	**47.57**	**276**	*e*P	**P**		**22 55 24.6**	**0.0**
	comp=Z,18nm,0.5s							
HOM	**Homer**	**47.62**	**39**	*e*P	**P**		**22 55 22.8**	**-1.3**
	comp=Z,130nm,0.9s							
PKIN	**Phulchoki**	**48.10**	**276**	*e*P	**P**		**22 55 28.0**	**-0.6**
	comp=Z,9.1nm,0.5s							
KKN	**Kakani**	**48.10**	**276**	*e*P	**P**		**22 55 28.3**	**-0.2**
	comp=Z,5.3nm,0.5s							
DMN	**Daman**	**48.32**	**276**	*e*P	**P**		**22 55 29.9**	**-0.4**
	comp=Z,7.4nm,0.6s							
GKN	**Gorkha**	**48.52**	**277**	*e*P	**P**		**22 55 31.5**	**-0.2**
	comp=Z,33nm,0.8s							
SEW	**Seward**	**48.71**	**38**	*e*P	**P**		**22 55 31.8**	**-0.6**
	comp=Z,15nm,0.9s							
MCK	**McKinley**	**48.83**	**34**	*e*P	**P**		**22 55 33.5**	**+0.1**
MCK					pmax	pmax		
	comp=Z,27nm,2.0s							
MCK	**McKinley**	**48.83**	**34**	*e*P	**P**		**22 55 33.5**	**+0.1**
	comp=Z,27nm,2.0s							
KULM	**Kulim**	**48.90**	**241**	*e*P	**P**		**22 55 34.0**	**-0.5**
	comp=Z,12nm,1.3s							
KOLN	**Koldanda**	**49.45**	**277**	*e*P	**P**		**22 55 38.8**	**-0.1**
	comp=Z,3.4nm,0.3s							
ILAR	**Eielson Array**	**49.70**	**32**	P	**P**		**22 55 41.3**	**+1.3**
	comp=Z,0.6nm,0.8s,baz=260,slow=4.8,SNR=6.0							
PYUN	**Piuthan**	**49.80**	**278**	*e*P	**P**		**22 55 41.6**	**0.0**
	comp=Z,50nm,0.8s							
TKM2	**Tokmak 2**	**50.18**	**299**	*e*P	**P**		**22 55 44.8**	**+0.5**
TKM2					pmax	pmax		
	comp=Z,5.0nm,0.8s							
TKM2	**Tokmak 2**	**50.18**	**299**	*e*P	**P**		**22 55 44.8**	**+0.5**
	comp=Z,5.0nm,0.8s							
MID	**Middleton Isla**	**50.33**	**39**	*e*P	**P**		**22 55 43.8**	**-1.0**
MID	**Middleton Isla**	**50.33**	**39**	*e*P	**P**		**22 55 43.8**	**-1.0**
	comp=Z,266nm,1.4s							
KSH	**Kashi**	**50.94**	**295**	P	**P**		**22 55 54.1**	**+4.2**
KSH				*es*P	sP		22 56 05.2	+8.5
KSH				*e*ScP	**ScP**		**23 01 02.4**	**+0.5**
KSH				S	**S**		**23 03 10.9**	**+4.7**
KSH	**Kashi**	**50.94**	**295**	SS	**SS**		**23 06 43.7**	**+3.0**
KSH					pmax	pmax		
	comp=Z,99nm,5.7s							
KSH					LR	LR		
	comp=N,160nm,7.5s							
KSH					LR	LR		
	comp=E,140nm,5.8s							
KSH					LR	LR		
	comp=Z,110nm,5.3s							
AAK	**Ala-Archa**	**51.04**	**299**	*e*P	**P**		**22 55 50.7**	**0.0**
AAK					pmax	pmax		
	comp=Z,2.0nm,0.8s							
AAK	**Ala-Archa**	**51.04**	**299**	*e*P	**P**		**22 55 50.7**	**0.0**
	comp=Z,2.4nm,0.8s							
BRVK	**Borovoye**	**51.22**	**313**	*ce*P	**P**		**22 55 52.2**	**+0.5**
BRVK					pmax	pmax		
	comp=Z,8.0nm,2.5s							
BRVK	**Borovoye**	**51.22**	**313**	*e*P	**P**		**22 55 51.4**	**-0.3**
	comp=Z,4.4nm,0.7s							
KKAR	**Karatay Array**	**53.68**	**301**	*e*P	**P**		**22 56 10.1**	**0.0**
KKAR					pmax	pmax		
	comp=Z,9.0nm,1.1s							
KKAR	**Karatay Array**	**53.68**	**301**	*e*P	**P**		**22 56 10.1**	**0.0**
	comp=Z,8.6nm,1.1s							
KIP	**Kipapa**	**53.90**	**89**	*ce*P	P		22 56 25.2	+13
INK	**Inuvik**	**54.64**	**27**	P	**P**		**22 56 18.2**	**+1.5**
	comp=Z,0.6nm,0.5s,baz=310,slow=7.7,SNR=6.5							
SVE	**Sverdlovsk**	**55.75**	**319**	*e*P	**P**		**22 56 25.0**	**+0.2**
SVE					pmax	pmax		
	comp=Z,9.0nm,0.9s							
WB2	**Warramunga Arr**	**56.64**	**188**	*e*P	**P**		**22 56 31.2**	**-0.4**
	comp=Z,18nm,1.1s							
WRA	**Warramunga Arr**	**56.64**	**188**	P	**P**		**22 56 31.2**	**-0.4**
	comp=Z,10nm,0.9s,baz=6.2,slow=7.4,SNR=33							
WRA	**Warramunga Arr**	**56.64**	**188**	*ce*P	P		22 56 38.7	+7.1
WRA					pmax	pmax		
	comp=Z,2.0nm,0.3s							
ARU	**Arti**	**56.96**	**319**	*d i*P	**P**		**22 56 33.0**	**-0.5**
ARU							22 57 30.5	
ARU							22 58 43.9	
ARU					S	**S**	**23 04 20.6**	**-6.2**
ARU					pmax	pmax		
	comp=Z,6.0nm,0.7s							
ARU	**Arti**	**56.96**	**319**	*e*P	**P**		**22 56 32.8**	**-0.7**
	comp=Z,8.6nm,0.9s							
KBL	**Kabul**	**57.93**	**291**	*e*P	**P**		**22 56 39.7**	**-1.3**
KBL					pmax	pmax		
	comp=Z,6.0nm,1.1s							
KBL	**Kabul**	**57.93**	**291**	*e*P	**P**		**22 56 39.7**	**-1.3**
	comp=Z,6.0nm,1.1s							
ABKAR	**Akbulak array**	**58.53**	**310**	*e*P	**P**		**22 56 44.2**	**-0.4**
AS01	**Alice Springs**	**60.36**	**188**	*e*P	**P**		**22 56 57.2**	**-0.3**
AS31	**Alice Springs**	**60.37**	**188**	*e*P	**P**		**22 56 56.7**	**-0.8**
	comp=Z,1.6nm,0.9s							
ASAR	**Alice Springs**	**60.37**	**188**	P	**P**		**22 56 57.5**	**-0.1**
	comp=Z,4.4nm,0.8s,baz=11,slow=6.4,SNR=36							
YKA	**Yellowknife Ar**	**64.03**	**30**	P	**P**		**22 57 22.8**	**+1.1**
	comp=Z,0.5nm,0.6s,baz=301,slow=6.6,SNR=11							
KLMR	**Klimovskoe**	**64.35**	**328**	*e*P	**P**		**22 57 22.0**	**-1.8**
KLMR					pmax	pmax		
	comp=Z,5.0nm,0.8s							
GEYT	**Alibeck**	**64.39**	**299**	P	**P**		**22 57 24.6**	**+0.1**
	comp=Z,2.0nm,0.6s,baz=20,slow=4.7,SNR=7.9							
ARCES	**GERESS Array B**	**64.57**	**340**	P	**P**		**22 57 25.4**	**+0.2**
	comp=Z,2.3nm,1.0s,baz=64,slow=9.5,SNR=4.5							
STKA	**Stephens Creek**	**68.08**	**180**	P	**P**		**22 57 48.2**	**+0.3**
	comp=Z,2.7nm,0.8s,baz=331,slow=6.7,SNR=5.8							
OBN	**Obninsk**	**68.70**	**324**	*e*P	**P**		**22 57 51.6**	**0.0**
OBN				*e*			22 58 02.5	
OBN					pmax	pmax		
	comp=Z,5.0nm,0.9s							
FIA1	**FINESS Array S**	**69.40**	**332**	*e*P	**P**		**22 57 55.8**	**-0.2**
FINES	**FINESS Array B**	**69.41**	**332**	P	**P**		**22 57 55.9**	**-0.1**
	comp=Z,4.5nm,0.8s,baz=46,slow=8.2,SNR=20							
FINES	**FINESS Array B**	**69.41**	**332**	*ce*P	**P**		**22 57 56.0**	**+0.1**
FINES					pmax	pmax		
	comp=Z,5.0nm,0.7s							
VSU	**Vasula**	**71.05**	**330**	*ce*P	**P**		**22 58 06.4**	**+0.3**
VSU					pmax	pmax		
	comp=Z,22nm,1.0s							
KBZ	**Khabaz**	**71.49**	**311**	P	**P**		**22 58 09.2**	**+0.2**
	comp=Z,3.3nm,0.8s,baz=67,slow=1.7,SNR=7.9							
KIV	**Kislovodsk**	**71.50**	**311**	*e*P	**P**		**22 58 09.8**	**+0.6**
KIV					pmax	pmax		
	comp=Z,7.0nm,0.9s							
KIV	**Kislovodsk**	**71.50**	**311**	*e*P	**P**		**22 58 08.6**	**-0.6**
	comp=Z,10nm,0.9s							
NC204	**NORSAR Array S**	**74.72**	**338**	*e*P	**P**		**22 58 28.4**	**+0.6**
NB201	**NORSAR Array S**	**74.73**	**337**	*e*P	**P**		**22 58 27.4**	**-0.6**
NB2	**NORSAR Subarra**	**74.77**	**338**	P	**P**		**22 58 28.0**	**-0.1**
	comp=Z,3.5nm,0.6s,baz=39,slow=5.9							
NOA	**NORSAR Array B**	**74.77**	**338**	P	**P**		**22 58 28.3**	**+0.2**
	comp=Z,5.2nm,0.8s,baz=39,slow=5.8,SNR=27							
AKASG	**Malin Array Be**	**74.90**	**323**	P	**P**		**22 58 28.6**	**-0.4**
	comp=Z,4.3nm,0.6s,baz=47,slow=6.1,SNR=21							
KIEV	**Kiev**	**74.91**	**323**	*e*P	**P**		**22 58 28.0**	**-1.1**
KIEV					pmax	pmax		
	comp=Z,7.0nm,0.8s							
KIEV	**Kiev**	**74.91**	**323**	*e*P	**P**		**22 58 28.0**	**-1.1**
	comp=Z,6.9nm,0.8s							
NVAR	**Mina Array Bea**	**74.98**	**53**	P	**P**		**22 58 32.1**	**+2.0**
	comp=Z,0.8nm,0.9s,baz=287,slow=7.3,SNR=4.6							
PDAR	**Pinedale Array**	**77.74**	**46**	P	**P**		**22 58 46.6**	**+1.0**
	comp=Z,0.1nm,0.4s,baz=228,slow=1.1,SNR=3.1							
KWP	**Kalwria Pacla**	**78.73**	**325**	*e*P	**P**		**22 58 51.6**	**+0.9**
KWP	**Kalwaria Pacla**	**78.73**	**325**	*e*P	**P**		**22 58 51.6**	**+0.9**
BUR08	**Bucovina Ar. S**	**78.90**	**322**	*e*P	**P**		**22 58 50.9**	**-0.9**
BRTR	**Keskin Array B**	**79.44**	**312**	P	**P**		**22 58 55.2**	**+0.2**
	comp=Z,1.6nm,0.8s,baz=103,slow=3.8,SNR=6.2							
BRTR	**Keskin Array B**	**79.44**	**312**	*ce*P	**P**		**22 58 55.5**	**+0.5**
BRTR					pmax	pmax		
	comp=Z,2.0nm,0.9s							
STHS	**Stebnicka Huta**	**79.56**	**325**	*e*P	**P**		**22 58 55.9**	**+0.7**
STHS					pmax	pmax		
	comp=Z,3.0nm,1.1s							
STHS	**Stebnicka Huta**	**79.56**	**325**	*e*P	**P**		**22 58 55.9**	**+0.7**
BR231	**Keskin MP Arra**	**79.88**	**312**	*e*P	**P**		**22 58 55.8**	**-1.5**
NIE	**Niedzica**	**79.99**	**326**	*e*P	**P**		**22 58 58.4**	**+0.8**
NIE	**Niedzica**	**79.99**	**326**	*e*P	**P**		**22 58 58.4**	**+0.8**
DPC	**Dobruska-Polom**	**81.06**	**328**	*es*P	sP		22 59 20.3	+10
UPC	**Upice**	**81.07**	**328**	*e*P	**P**		**22 59 04.1**	**+0.8**
UPC	**Upice**	**81.07**	**328**	*e*P	**P**		**22 59 04.1**	**+0.8**
VYHS	**Vyhne**	**81.33**	**326**	*e*P	**P**		**22 59 05.5**	**+0.8**
VYHS					pmax	pmax		
	comp=Z,2.0nm,1.0s							
VYHS	**Vyhne**	**81.33**	**326**	*e*P	**P**		**22 59 05.5**	**+0.8**
BRG	**Berggiesshubel**	**81.65**	**330**	*e*P	**P**		**22 59 06.4**	**0.0**
	comp=Z,3.1nm,0.7s							
BRG	**Berggiesshubel**	**81.65**	**330**	*e*P	**P**		**22 59 06.4**	**0.0**
BRG					pmax	pmax		
	comp=Z,3.0nm,0.7s							
PVCC	**Panska Ves**	**81.66**	**329**	*e*P	**P**		**22 59 07.3**	**+0.9**
PVCC	**Panska Ves**	**81.66**	**329**	*e*P	**P**		**22 59 07.3**	**+0.9**
CLL	**Collm**	**81.69**	**330**	*i* P	**P**		**22 59 06.5**	**-0.1**
	comp=Z,9.0nm,1.3s							
CLL				*i*			22 59 14.3	
CLL				*i*			22 59 22.1	
	comp=Z,6.0nm,0.9s							
CLL	**Collm**	**81.69**	**330**	*i* P	**P**		**22 59 06.5**	**-0.1**
CLL				*i*			22 59 14.3	
CLL				*i*			22 59 22.1	
CLL					pmax	pmax		
	comp=Z,9.0nm,1.3s							
CLL	**Collm**	**81.69**	**330**	*e*P	**P**		**22 59 06.8**	**+0.3**
	comp=Z,5.9nm,0.9s							
PRU	**Pruhonice**	**82.08**	**329**	*e*P	**P**		**22 59 09.4**	**+0.7**
PRU	**Pruhonice**	**82.08**	**329**	*e*P	**P**		**22 59 09.4**	**+0.7**
KHC	**Kasperske Hory**	**83.14**	**329**	*e*P	**P**		**22 59 14.8**	**+0.5**
KHC				*es*P	sP		22 59 30.8	+10
KHC	**Kasperske Hory**	**83.14**	**329**	*e*P	**P**		**22 59 14.8**	**+0.5**
KHC				*e*			22 59 30.8	
GERES	**GERESS Array B**	**83.31**	**328**	P	**P**		**22 59 15.3**	**0.0**
	comp=Z,1.3nm,0.7s,baz=32,slow=5.2,SNR=12							
GEA0	**GERESS Array S**	**83.31**	**328**	*e*P	**P**		**22 59 15.0**	**-0.3**
BFO	**Black Forest**	**85.90**	**331**	*ce*P	**P**		**22 59 29.4**	**+1.2**
TXAR	**Lajitas Array**	**90.12**	**53**	P	**P**		**22 59 50.3**	**+1.4**
	comp=Z,0.4nm,0.8s,baz=318,slow=1.7,SNR=4.2							
VWCC	**Virginia Weste**	**96.96**	**32**	*e*P	P		23 00 15.0	-5.1
SHEL	**Horse Pasture**	**144.70**	**297**	*i* PKIKP	**PKPdf**		**23 06 32.9**	**+7.2**
LPAZ	**La Paz**	**146.61**	**61**	PKPbc	**PKPbc**		**23 06 31.6**	**+0.4**
	comp=Z,2.4nm,0.5s,baz=347,slow=2.9,SNR=12							

PRU 05 22:57:57.3, 49.79N×18.61E, h0km, Czech and Slovak Republics

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	ISC	Res
OKC	**Ostrava-Krasne**	**0.30**	**279**	*e*PG	Pg	22 58 03.3		+0.2
OKC				*e*SG	Sg	22 58 07.3		+0.3
	comp=Z,4.5nm,0.5s							
KRLC	**Kraliky**	**1.22**	**284**	*e*PG	Pg	22 58 19.9		-0.7
KRLC				*e*SG	Sg	22 58 36.1		-0.2
DPC	**Dobruska-Polom**	**1.58**	**292**	*e*SG	Sn	22 58 47.1		-0.6

PGC ***05*** *23:03:09.8, 61.42N×140.01W, h1km, ML3.1/10, 152km Wnw of Haines Jct., Yt Southern Yukon Territory, Canada*
NEIC ***05*** *23:03:09.0, 61.41N×140.01W, h1km, ML3.0(AEIC), ML3.1(OTT), After OTT.*
IDC ***05*** *23:03:10.6±1.0, 61.52N×140.05W, h0km, mb3.1/3, mb1 3.4/7, mb1mx3.2/43, mbtmp3.1/7, ML2.9/4, Error ellipse: s-maj=17.2km s-min=8.5km az=40.0*
ISC 05 23:03:09.3±1.0, 61.41N±0.02×140.01W±0.02, h6km±8km, n72, σ1.59/128, Southern Yukon Territory

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	ISC	Res
YUK3	**Moose Creek**	**0.43**	**330**	P	**Pg**	**23 03 17.2**		**-0.4**
YUK3				S	**Sg**	**23 03 22.8**		**-0.5**
YUK3	**Moose Creek**	**0.43**	**330**	P	**Pg**	**23 03 17.2**		**-0.4**
YUK3				S	**Sg**	**23 03 22.8**		**-0.5**
YUK2	**White River**	**0.55**	**314**	P	**Pg**	**23 03 19.5**		**-0.4**
YUK2				S	**Sg**	**23 03 27.1**		**0.0**
YUK2	**White River**	**0.55**	**314**	P	**Pg**	**23 03 19.5**		**-0.4**
YUK2				S	**Sg**	**23 03 27.1**		**0.0**
LOGN	**Logan Glacier**	**0.76**	**220**	P	**Pg**	**23 03 23.1**		**-0.7**
LOGN				S	**Sg**	**23 03 33.8**		**+0.2**
CTGM	**Chitina Glacie**	**0.78**	**236**	P	**Pg**	**23 03 23.4**		**-0.8**
CTGM				S	**Sg**	**23 03 34.2**		**-0.1**
CTGM	**Chitina Glacie**	**0.78**	**236**	P	**Pg**	**23 03 23.5**		**-0.8**
CTGM				S	**Sg**	**23 03 34.1**		**-0.3**
YUK1	**Sand Pete Hill**	**0.79**	**342**	P	**Pg**	**23 03 23.8**		**-0.6**
YUK1				S	**Sg**	**23 03 33.0**		**-1.7**
YUK1	**Sand Pete Hill**	**0.79**	**342**	P	**Pg**	**23 03 23.8**		**-0.6**
YUK1				S	**Sg**	**23 03 33.0**		**-1.7**
BARN	**Barnard Glacie**	**0.87**	**247**	P	**Pg**	**23 03 25.0**		**-1.0**
BARN				S	**Sg**	**23 03 37.0**		**-0.3**
YUK6	**Outpost Mounta**	**0.92**	**120**	P	**Pg**	**23 03 26.3**		**-0.6**
YUK6				S	**Sb**	**23 03 39.8**		**-0.5**
YUK6	**Outpost Mounta**	**0.92**	**120**	P	**Pg**	**23 03 26.3**		**-0.6**
YUK6				S	**Sb**	**23 03 39.8**		**-0.5**
YUK5	**Granite Creek**	**1.07**	**104**	P	**Pg**	**23 03 29.0**		**-0.8**
YUK5				S	**Sg**	**23 03 43.0**		**-0.7**
YUK5	**Granite Creek**	**1.07**	**104**	P	**Pg**	**23 03 29.0**		**-0.8**
YUK5				S	**Sg**	**23 03 43.0**		**-0.7**
BVCY	**Beaver Creek**	**1.09**	**339**	P	**Pg**	**23 03 29.2**		**-0.9**
BVCY				S	**Sg**	**23 03 44.4**		**+0.2**
BVCY	**Beaver Creek**	**1.09**	**339**	P	**Pg**	**23 03 29.2**		**-0.9**
BVCY				S	**Sg**	**23 03 44.4**		**+0.2**
TABL	**Table Mountain**	**1.12**	**210**	P	**Pg**	**23 03 29.7**		**-1.0**
TABL				S	**Sg**	**23 03 44.5**		**-0.6**
BALM	**Baldy**	**1.19**	**253**	P	**Pg**	**23 03 30.9**		**-1.1**
BALM				S	**Sg**	**23 03 47.7**		**+0.2**
BALM	**Baldy**	**1.19**	**253**	P	**Pg**	**23 03 30.9**		**-1.1**
BALM				S	**Sg**	**23 03 47.5**		**0.0**
PTPK	**Patty Peak**	**1.21**	**261**	P	**Pg**	**23 03 31.1**		**-1.3**
KIAG	**Kiagna River**	**1.24**	**248**	P	**Pg**	**23 03 31.5**		**-1.5**
YUK7	**Dusty Glacier**	**1.26**	**133**	P	**Pg**	**23 03 32.7**		**-0.8**
YUK7				S	**Sb**	**23 03 50.2**		**+0.1**
YUK7	**Dusty Glacier**	**1.26**	**133**	P	**Pg**	**23 03 32.7**		**-0.8**
YUK7				S	**Sb**	**23 03 50.2**		**+0.1**
RKAV	**Rock Avalanche**	**1.29**	**211**	P	**Pg**	**23 03 32.6**		**-1.4**
HYT	**Haines Junctio**	**1.35**	**115**	P	**Pg**	**23 03 33.8**		**-1.3**
HYT				S	**Sg**	**23 03 51.5**		**-1.0**
HYT	**Haines Junctio**	**1.35**	**115**	P	**Pg**	**23 03 33.8**		**-1.3**
HYT				S	**Sg**	**23 03 51.5**		**-1.0**
BAGL	**Bagley Icefiel**	**1.37**	**229**	P	**Pn**	**23 03 34.0**		**-0.9**
BAGL				S	**Sg**	**23 03 51.9**		**-1.4**
ISLE	**Juniper Island**	**1.39**	**236**	P	**Pg**	**23 03 34.3**		**-1.6**
MCARA	**McCarthy VSAT**	**1.45**	**270**	P	**Pn**	**23 03 35.6**		**-0.4**
BARK	**Barkley Ridge**	**1.58**	**231**	P	**Pn**	**23 03 37.2**		**-0.6**
CRQM	**Cirque**	**1.66**	**248**	P	**Pn**	**23 03 38.3**		**-0.7**
VRDI	**Verde Repeater**	**1.67**	**265**	P	**Pn**	**23 03 38.9**		**-0.3**
KULT	**Kultieth River**	**1.77**	**230**	P	**Pn**	**23 03 39.2**		**-1.2**
BC05	**Beaver Creek A**	**1.85**	**335**	P	**Pn**	**23 03 41.5**		**-0.1**
KHIT	**Khitrov Hills**	**1.86**	**240**	P	**Pn**	**23 03 41.5**		**-0.1**
BCA3	**Beaver Creek A**	**1.86**	**334**	P	**Pn**	**23 03 41.8**		**+0.1**
BC04	**Beaver Creek A**	**1.87**	**335**	P	**Pn**	**23 03 41.9**		**0.0**
BMRM	**Bremner River**	**2.27**	**261**	*e*Pn	**Pn**	**23 03 49.1**		**+1.8**
BMRM				Sg	**Sg**	**23 04 22.6**		**+0.5**
WHY	**Whitehorse**	**2.60**	**104**	Pn	**Pn**	**23 03 51.8**		**-0.1**
WHY				Pg	**Pb**	**23 03 56.5**		**+0.2**
WHY				Sn	**Sn**	**23 04 25.5**		**+1.4**
WHY				Sg	**Sb**	**23 04 30.8**		**+2.2**
WHY	**Whitehorse**	**2.60**	**104**	P	**Pn**	**23 03 51.9**		**-0.1

NIED ***05*** *23:09:00, 37.30N×142.50E, 8km, Mw4.3 Best double couple: M0 3.37000×10^15 NP1:φ=17.00000°, δ=34.00000°, λ=-105.00000°. NP2:φ=215.00000°, δ=57.00000°, λ=-80.00000°.*

JMA ***05*** *23:09:06.5±0.1, 37.34N×142.56E, h0km, M4.6*

JMA Felt I J1.

IDC ***05*** *23:09:08.8±0.5, 37.27N×142.55E, h0km, mb4.2/25, mb1 4.3/33, mb1mx4.3/40, mbtmp4.2/33, ML3.4/7, MS3.3/5, Ms1 3.3/5, ms1mx3.0/50, Error ellipse: s-maj=14.4km s-min=11.4km az=114.0*

ISCJB ***05*** *23:09:09.1±0.2, 37.29N±0.03×142.52E±0.02, h9km, mb4.5/79, MS4.3/3, Error ellipse: s-maj=4.1km s-min=2.8km az=166.5*

NEIC ***05*** *23:09:10.7±1.9, 37.26N×142.56E, h10km±11km, mb4.7/43, Error ellipse: s-maj=5.4km s-min=3.7km az=137.0*

NEIC Recorded [1 JMA] in Miyagi.

ISC 05 23:09:11.0±0.5, 37.23N±0.06×142.55E±0.05, h9km, n165, σ1§19/131, mb4.5/79, MS4.1/4, 3C-3D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.34**	**276**	P	Pn	23 09 32.0	-4.0
JFK				S	**Sb**	**23 09 50.6**	**-3.1**
ONAJ	**Iwakimizuishiy**	**1.41**	**265**	P	Pn	23 09 33.4	-3.4
ONAJ				S	**Sn**	**23 09 53.4**	**-2.1**
JMM	**Marumori**	**1.54**	**295**	P	Pn	23 09 34.2	-4.4
JMM				S	**Sn**	**23 09 55.1**	**-3.6**
JIO	**Ouri**	**1.55**	**323**	P	Pn	23 09 34.2	-4.6
JIO				S	Sn	23 09 54.6	-4.4
JFT	**Otama**	**1.79**	**280**	P	Pn	23 09 39.1	-3.0
JFT				S	**Sn**	**23 10 03.4**	**-1.5**
JOU	**Okura**	**1.88**	**308**	P	Pn	23 09 39.6	-3.7
JMK	**Ichinoseki**	**2.02**	**329**	P	Pn	23 09 41.4	-3.8
JMK				S	Sn	23 10 06.4	-4.1
JYS	**Shirataka**	**2.21**	**297**	P	Pn	23 09 45.4	-2.4
JFY	**Yanaizu**	**2.28**	**275**	P	Pn	23 09 46.7	-2.1
JFY				*e*S	**Sn**	**23 10 15.5**	**-1.5**
JOM	**Ohasama**	**2.45**	**337**	P	Pn	23 09 47.4	-3.8
MJAR	**Matsushiro Arr**	**3.55**	**260**	Pn	**Pn**	**23 10 06.5**	**+0.3**
	6.8nm,0.3s,baz=90,slow=16,SNR=22						
MJAR				Sn	**Sn**	**23 10 47.2**	**-1.2**
	5.7nm,0.3s,baz=75,slow=17,SNR=7.1						
MJAR				LR	LR	23 11 57.2	
	comp=Z,341nm,18.1s,baz=70,slow=48						
MAJO	**Matsushiro**	**3.55**	**260**	*e*Pn	**Pn**	**23 10 07.0**	**+0.7**
MJB9	**Matsu-Tunnel**	**3.55**	**260**	*e*Pn	**Pn**	**23 10 07.0**	**+0.6**
JHJ2	**Mitsune**	**4.68**	**209**	*e*Pn	**Pn**	**23 10 22.1**	**+0.3**
JHJ	**Hachijo jima 2**	**4.68**	**210**	Pn	**Pn**	**23 10 21.9**	**0.0**
	32nm,0.3s,baz=138,slow=23,SNR=12						
JHJ				Sn	**Sn**	**23 11 15.2**	**-1.1**
	46nm,0.3s,baz=254,slow=23,SNR=6.3						
ERM	**Erimo**	**4.81**	**5**	*e*Pn	Pn	23 10 20.3	-3.2
INU	**Inuyama**	**4.85**	**249**	*e*Pn	**Pn**	**23 10 24.7**	**+0.6**
ASAJ	**Asahikawa**	**6.88**	**0**	Pn	Pn	23 10 50.5	-1.6
	1.2nm,0.3s,baz=195,slow=15,SNR=4.9						
ASAJ				Sn	Sn	23 12 01.9	-8.6
	1.9nm,0.3s,baz=180,slow=20,SNR=1.9						
ASAJ				LR	LR	23 13 42.8	
	comp=Z,235nm,20.1s,baz=186,slow=40						
ASAJ	**Asahikawa**	**6.88**	**0**	*e*Pn	**Pn**	**23 10 51.7**	**-0.3**
ASAJ				Sn	Sn	23 12 01.9	-8.6
YSS	**Yuzh-Sakhalins**	**9.72**	**1**	*e*Pn	**Pn**	**23 11 30.9**	**0.0**
CBIJ	**Chichi jima**	**10.11**	**182**	Pn	Pn	23 11 34.2	-2.1
CBIJ				Sn	Sn	23 13 17.6	-12
JCJ	**Chichijima**	**10.11**	**182**	Pn	Pn	23 11 34.2	-2.1
	baz=288,slow=19						
JCJ				Sn	Sn	23 13 17.6	-12
	2.3nm,0.3s,baz=288,slow=20,SNR=2.6						
JNU	**Nakatsue**	**10.39**	**250**	Pn	**Pn**	**23 11 40.3**	**+0.1**
	0.1nm,0.3s,baz=53,slow=7.4,SNR=3.5						
JNU				Sn	Sn	23 13 27.9	-9.0
	0.4nm,0.3s,baz=101,slow=5.2,SNR=2.1						
USRK	**Ussuriysk Ar.**	**10.61**	**314**	Pn	**Pn**	**23 11 45.9**	**+2.7**
	0.7nm,0.3s,baz=124,slow=14,SNR=18						
USRK				LR	LR	23 15 09.6	
	comp=Z,192nm,20.3s,baz=130,slow=34						
KSRS	**Korea Array**	**11.65**	**276**	Pn	**Pn**	**23 11 58.1**	**+0.7**
	0.5nm,0.3s,baz=90,slow=13,SNR=8.2						
KSRS				LR	LR	23 15 55.5	
	comp=Z,112nm,19.3s,baz=72,slow=35						
KS01	**Wonju Array Si**	**11.67**	**276**	*e*Pn	**Pn**	**23 11 57.7**	**0.0**
KS15	**Wonju Array Si**	**11.68**	**275**	*e*Pn	**Pn**	**23 11 57.8**	**0.0**
KSAR	**Wonju Array Be**	**11.68**	**275**	Pn	**Pn**	**23 11 58.1**	**+0.3**
MDJ	**Mudanjiang**	**12.26**	**311**	P	**Pn**	**23 12 08.2**	**+2.5**
MDJ				S	**Sn**	**23 14 21.9**	**-0.6**
MDJ				pmax	pmax		
	comp=Z,10.0nm,1.0s						
MDJ				pmax	pmax		
	comp=Z,55nm,5.0s						
MDJ				LR	LR		
	comp=N,220nm,13.1s						
MDJ				LR	LR		
	comp=E,99nm,15.1s						
MDJ				LR	LR		
	comp=Z,220nm,12.1s						
INCN	**Inchon**	**12.67**	**276**	*e*Pn	**Pn**	**23 12 12.2**	**+0.8**
KLR	**Kul'dur**	**14.33**	**330**	Pn	Pn	23 12 30.6	-3.4
	comp=Z,0.1nm,0.3s,baz=124,slow=12,SNR=5.0						
KLR				LR	LR	23 18 05.2	
	comp=Z,186nm,18.5s,baz=148,slow=38						
PETK	**Petropavlovsk-**	**19.07**	**29**	P	**P**	**23 13 33.1**	**-0.5**
	comp=Z,0.3nm,0.3s,baz=216,slow=7.1,SNR=3.4						
NJ2	**Nanjing**	**20.15**	**262**	*e*P	**P**	**23 13 44.4**	**-1.1**
NJ2				pmax	pmax		
	comp=Z,20nm,0.5s						
BJI	**Beijing**	**20.77**	**286**	P	**P**	**23 13 55.4**	**+3.2**
BJI				pmax	pmax		
	comp=Z,15nm,1.1s						
BJI				pmax	pmax		
	comp=Z,110nm,7.3s						
MA2	**Magadan**	**22.99**	**11**	*e*P	**P**	**23 14 15.5**	**-0.2**
	comp=Z,26nm,0.7s						
HHC	**Hu-ho-hao-te**	**24.27**	**288**	*e*P	**P**	**23 14 31.8**	**+3.2**
HHC				sP	sP	23 14 41.9	+9.4
HHC				PP	**PnPn**	**23 15 03.1**	**+4.9**
HHC				S	**S**	**23 18 47.6**	**+0.1**
HHC				sS	sS	23 18 57.4	+5.4
HHC				pmax	pmax		
	comp=Z,20nm,0.8s						
HHC				pmax	pmax		
	comp=Z,64nm,4.0s						
HHC				LR	LR		
	comp=N,110nm,12.5s						
HHC				LR	LR		
	comp=E,200nm,12.6s						
HHC				LR	LR		
	comp=Z,190nm,12.5s						
YAK	**Yakutsk**	**26.09**	**346**	P	**P**	**23 14 42.6**	**-2.0**
	comp=Z,19nm,0.4s,baz=23,slow=0.7,SNR=3.9						
SEY	**Seymchan**	**26.43**	**10**	P	**P**	**23 14 46.1**	**-1.7**
	comp=Z,5.3nm,0.5s,baz=185,slow=5.6,SNR=13						
XAN	**Xi'an**	**27.44**	**274**	P	**P**	**23 14 57.6**	**+0.4**
XAN				pmax	pmax		
	comp=Z,6.0nm,0.6s						
XAN				pmax	pmax		
	comp=Z,15nm,4.8s						
H11N2	**WAKE ISLAND Hy**	**27.48**	**123**	T	T	23 43 46.2	
	baz=315,slow=75,SNR=225						
H11N1	**WAKE ISLAND Hy**	**27.48**	**123**	T	T	23 43 46.9	
	baz=315,slow=75,SNR=254						
H11N3	**WAKE ISLAND Hy**	**27.49**	**123**	T	T	23 43 46.8	
	baz=315,slow=75,SNR=152						
ULN	**Ulaanbaatar**	**28.00**	**304**	*e*P	**P**	**23 15 01.3**	**-1.0**
	comp=Z,6.2nm,0.8s						
H11S1	**WAKE ISLAND Hy**	**28.21**	**125**	T	T	23 44 39.3	
	baz=317,slow=76,SNR=358						
H11S3	**WAKE ISLAND Hy**	**28.21**	**125**	T	T	23 44 39.7	
	baz=317,slow=76,SNR=404						
H11S2	**WAKE ISLAND Hy**	**28.23**	**125**	T	T	23 44 40.9	
	baz=317,slow=76,SNR=416						
ENH	**Enshi**	**28.25**	**266**	*e*P	**P**	**23 15 04.6**	**0.0**
	comp=Z,28nm,0.9s						
SONA1	**Songino Array**	**28.43**	**303**	*e*P	P	23 15 04.5	-1.6
SONM	**Songino Array**	**28.43**	**303**	P	P	23 15 04.6	-1.5
	comp=Z,9.5nm,0.9s,baz=104,slow=8.7,SNR=41						
LZH	**Lanzhou**	**30.93**	**280**	*e*P	**P**	**23 15 29.2**	**+0.8**
LZH				pP	sP	23 15 36.3	+4.0
LZH				sP	pP	23 15 39.5	+8.4
LZH				*e*PP	**PnPn**	**23 16 30.5**	**+1.7**
LZH				pmax	pmax		
	comp=Z,23nm,1.0s						
LZH				pmax	pmax		
	comp=Z,74nm,5.2s						
LZH				LR	LR		
	comp=N,350nm,13.2s						
LZH				LR	LR		
	comp=E,350nm,12.8s						
LZH				LR	LR		
	comp=Z,420nm,16.7s						
GYA	**Guiyang**	**32.15**	**261**	P	**P**	**23 15 40.0**	**+0.9**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
CD2	**Chengdu**	**32.58**	**270**	P	P	23 15 41.6	-1.2
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
GTA	**Gaotai**	**33.38**	**287**	*e*P	**P**	**23 15 49.7**	**-0.1**
GTA				pP	sP	23 15 58.8	+5.2
GTA				sP	pP	23 16 03.3	+11
GTA				pmax	pmax		
	comp=Z,6.0nm,0.9s						
BILL	**Bilibino**	**33.59**	**16**	*e*P	**P**	**23 15 51.1**	**0.0**
	comp=Z,9.9nm,1.4s						
KMI	**Kunming**	**35.89**	**262**	P	**P**	**23 16 12.3**	**+0.6**
KMI				pmax	pmax		
	comp=Z,7.0nm,0.6s						
KMI				pmax	pmax		
	comp=Z,72nm,5.3s						
WMQ	**Urumqi**	**41.56**	**297**	P	**P**	**23 17 01.5**	**+2.5**
WMQ				pP	sP	23 17 06.2	+3.3
WMQ				sP	pP	23 17 18.4	+17
WMQ				pmax	pmax		
	comp=Z,3.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,22nm,3.5s						
WMQ				LR	LR		
	comp=N,120nm,26.6s						
WMQ				LR	LR		
	comp=E,480nm,31.8s						
WMQ				LR	LR		
	comp=Z,160nm,31.8s						
CHTO	**Chiang Mai**	**42.22**	**256**	*e*P	**P**	**23 17 04.5**	**0.0**
	comp=Z,1.1nm,1.8s						
CM01	**Chiang Mai Arr**	**42.43**	**256**	*e*P	**P**	**23 17 05.7**	**-0.6**
ZAA0	**Zalesovo Array**	**42.46**	**312**	*e*P	P	23 17 04.6	-1.4
ZALV	**Zalesovo Beam**	**42.46**	**312**	P	P	23 17 04.1	-2.0
	comp=Z,4.9nm,0.8s,baz=94,slow=6.7,SNR=21						
NRIK	**Noril'sk**	**43.48**	**335**	P	**P**	**23 17 13.2**	**-0.9**
	comp=Z,1.8nm,0.5s,baz=127,slow=5.3,SNR=4.5						
TT01	**Tatalina**	**44.74**	**35**	*e*P	**P**	**23 17 24.1**	**-0.2**
MK01	**Makanchi Array**	**44.78**	**302**	*e*P	P	23 17 23.5	-1.4
MK31	**Makanchi Array**	**44.79**	**302**	*e*P	P	23 17 23.9	-1.0
MKAR	**Makanchi Array**	**44.79**	**302**	P	**P**	**23 17 24.1**	**-0.9**
	comp=Z,2.7nm,0.7s,baz=88,slow=9.1,SNR=28						
MKAR	**Makanchi Array**	**44.79**	**302**	*e*P	P	23 17 23.9	-1.0
SVW2	**Sparrevohn**	**44.82**	**37**	*e*P	**P**	**23 17 24.6**	**-0.4**
	comp=Z,5.8nm,1.0s						
MAKZ	**Makanchi**	**45.00**	**302**	*e*P	**P**	**23 17 26.1**	**-0.5**
	comp=Z,4.6nm,0.8s						
RSO	**Redoubt South**	**46.19**	**38**	*e*P	**P**	**23 17 36.0**	**-0.1**
KURK	**Kurchatov**	**46.53**	**308**	*e*P	P	23 17 37.1	-1.5
	comp=Z,16nm,0.7s						
SPU	**Mount Spurr**	**46.53**	**37**	*e*P	**P**	**23 17 37.9**	**-0.7**
CAST	**Castle Rocks**	**46.55**	**34**	*e*P	**P**	**23 17 38.6**	**-0.1**
	comp=Z,17nm,1.9s						
KTH	**Kantishna Hill**	**47.08**	**34**	*e*P	**P**	**23 17 42.7**	**-0.1**
	comp=Z,7.7nm,1.2s						
KAPI	**Kappang**	**47.10**	**212**	*e*P	**P**	**23 17 42.6**	**-0.8**
	comp=Z,21nm,1.3s						
MLY	**Manley**	**47.20**	**32**	*e*P	**P**	**23 17 42.7**	**-1.1**
	comp=Z,2.9nm,1.0s						
TRF	**Thorofare Moun**	**47.36**	**34**	*e*P	**P**	**23 17 45.1**	**-0.1**
	comp=Z,11nm,1.6s						
SEW	**Seward**	**47.84**	**39**	*e*P	**P**	**23 17 48.5**	**-0.3**
	comp=Z,14nm,0.9s						
PMR	**Palmer**	**47.93**	**37**	*e*P	**P**	**23 17 49.1**	**-0.3**
	comp=Z,20nm,1.8s						
MCK	**McKinley**	**47.97**	**34**	*e*P	**P**	**23 17 49.4**	**-0.3**
	comp=Z,11nm,1.4s						
RND	**Reindeer**	**48.01**	**34**	*e*P	**P**	**23 17 49.3**	**-0.8**
	comp=Z,19nm,1.8s						
GUN	**Gumba**	**48.04**	**276**	*e*P	**P**	**23 17 50.2**	**-0.9**
	comp=Z,17nm,0.6s						
MDM	**Murphy Dome**	**48.27**	**32**	*e*P	**P**	**23 17 51.5**	**-0.5**
	comp=Z,4.8nm,1.0s						
WRH	**Wood River Hil**	**48.33**	**33**	*e*P	**P**	**23 17 52.2**	**-0.3**
	comp=Z,4.1nm,1.2s						
KKN	**Kakani**	**48.57**	**276**	*e*P	**P**	**23 17 55.2**	**+0.1**
	comp=Z,20nm,0.8s						
PKIN	**Phulchoki**	**48.57**	**276**	*e*P	**P**	**23 17 54.9**	**-0.3**
	comp=Z,6.4nm,0.8s						
HDA	**Harding Lake**	**48.83**	**33**	*e*P	**P**	**23 17 56.0**	**-0.3**
	comp=Z,45nm,1.1s						
IL1	**Eielson Array**	**48.84**	**32**	*e*P	P	23 17 55.1	-1.3
ILAR	**Eielson Array**	**48.84**	**32**	P	P	23 17 55.2	-1.2
	comp=Z,1.5nm,0.8s,baz=266,slow=6.5,SNR=15						
ILB	**Eielson Array**	**48.84**	**32**	*e*P	**P**	**23 17 55.6**	**-0.8**
GKN	**Gorkha**	**48.98**	**277**	*e*P	**P**	**23 17 59.0**	**+0.8**
	comp=Z,37nm,0.9s						
KLU	**Klutina**	**49.47**	**37**	*e*P	**P**	**23 18 00.6**	**-0.8**
	comp=Z,30nm,2.0s						
PAX	**Paxson**	**49.56**	**35**	*e*P	**P**	**23 18 01.6**	**-0.4**
	comp=Z,8.3nm,1.5s						
DIV	**Divide**	**49.57**	**37**	*e*P	**P**	**23 18 01.3**	**-0.8**
	comp=Z,16nm,1.2s						
KOLN	**Koldanda**	**49.91**	**277**	*e*P	**P**	**23 18 07.8**	**+2.5**
	comp=Z,9.1nm,0.6s						
DOT	**Dot Lake**	**50.14**	**34**	*e*P	**P**	**23 18 06.4**	**+0.1**
	comp=Z,46nm,2.0s						
PYUN	**Piuthan**	**50.24**	**278**	*e*P	**P**	**23 18 10.3**	**+2.4**
	comp=Z,61nm,1.0s						
TKM2	**Tokmak 2**	**50.34**	**299**	*e*P	**P**	**23 18 08.7**	**+0.3**
	comp=Z,6.1nm,0.7s						
MENT	**Mentasta**	**50.36**	**35**	*e*P	**P**	**23 18 07.6**	**-0.5**
	comp=Z,4.7nm,1.1s						
KSH	**Kashi**	**51.16**	**294**	*e*P	P	23 18 18.8	+4.3
KSH				*e*pP	sP	23 18 26.5	+8.0
KSH				*e*sP	pP	23 18 29.7	+12
KSH				S	**S**	**23 25 36.7**	**+3.9**
KSH				ScS	**ScS**	**23 28 04.6**	**-0.9**
KSH				pmax	pmax		
	comp=Z,91nm,3.5s						
KSH				LR	LR		
	comp=N,660nm,14.4s						
KSH				LR	LR		
	comp=E,580nm,11.8s						
AAK	**Ala-Archa**	**51.20**	**299**	*e*P	**P**	**23 18 14.5**	**-0.4**
	comp=E,3.2nm,0.8s						
EKS2	**Erkin-Say**	**51.69**	**299**	*e*P	P	23 18 17.4	-1.1
	comp=E,4.2nm,0.8s						
YKU2	**Yakutat**	**52.82**	**39**	*e*P	P	23 18 25.0	-1.4
	comp=E,739nm,1.0s						
KIP	**Kipapa**	**53.35**	**90**	*e*P	P	23 18 29.3	-1.5
	comp=E,530nm,2.0s						
INK	**Inuvik**	**53.80**	**27**	P	**P**	**23 18 32.5**	**-0.9**
	comp=E,1.9nm,1.0s,baz=300,slow=9.7,SNR=5.2						
KKAR	**Karatay Array**	**53.81**	**300**	*e*P	**P**	**23 18 33.1**	**-0.9**
SKAG	**Skagway**	**54.98**	**38**	*e*P	**P**	**23 18 42.2**	**-0.1**
ARU	**Arti**	**56.82**	**319**	*e*P	P	23 18 53.9	-1.5
	comp=E,14nm,1.4s						
WB2	**Warramunga Arr**	**57.38**	**189**	*e*P	**P**	**23 18 58.8**	**-0.9**
	comp=E,14nm,1.1s						
WRA	**Warramunga Arr**	**57.39**	**189**	P	**P**	**23 18 58.9**	**-0.9**
	comp=E,6.8nm,0.8s,baz=9.0,slow=7.4,SNR=20						
KBL	**Kabul**	**58.19**	**291**	*e*P	**P**	**23 19 05.9**	**+0.2**
	comp=E,3.7nm,0.8s						
ABKAR	**Akbulak array**	**58.51**	**310**	*e*P	**P**	**23 19 07.3**	**-0.1**
	comp=E,1.4nm,0.4s						
SPITS	**Spitsbergen Ar**	**60.51**	**349**	P	**P**	**23 19 22.1**	**+1.3**
	comp=E,7.1nm,1.0s,baz=40,slow=9.7,SNR=3.4						
AS01	**Alice Springs**	**61.10**	**189**	*e*P	**P**	**23 19 24.8**	**-0.7**
AS31	**Alice Springs**	**61.11**	**189**	*e*P	**P**	**23 19 25.4**	**-0.2**
	comp=E,1.5nm,0.8s						
ASAR	**Alice Springs**	**61.11**	**189**	P	**P**	**23 19 25.1**	**-0.5**
	comp=E,4.6nm,0.8s,baz=9.6,slow=6.1,SNR=33						
RES	**Resolute Bay**	**62.19**	**15**	P	P	23 19 30.9	-1.3
	comp=E,2.5nm,0.8s,baz=311,slow=9.6,SNR=12						
RES	**Resolute Bay**	**62.19**	**15**	*e*P	P	23 19 30.7	-1.5
YKA	**Yellowknife Ar**	**63.18**	**30**	P	P	23 19 37.5	-1.5
	comp=E,0.7nm,0.7s,baz=303,slow=6.5,SNR=13						
ARCES	**ARCESS Array B**	**64.14**	**340**	P	**P**	**23 19 45.7**	**+0.5**
	comp=E,0.8nm,0.7s,baz=46,slow=8.0,SNR=3.0						
GEYT	**Alibeck**	**64.53**	**299**	P	**P**	**23 19 48.6**	**+0.2**
	comp=E,1.3nm,0.6s,baz=44,slow=8.8,SNR=4.0						
OBN	**Obninsk**	**68.48**	**324**	*e*P	**P**	**23 20 12.7**	**-0.6**
	comp=E,24nm,0.5s						
STKA	**Stephens Creek**	**68.75**	**181**	P	**P**	**23 20 14.7**	**-0.4**
	comp=E,2.8nm,0.8s,baz=348,slow=7.1,SNR=6.1						
FIA1	**FINESS Array S**	**69.06**	**333**	*e*P	**P**	**23 20 16.6**	**-0.2**
FINES	**FINESS Array B**	**69.06**	**333**	P	**P**	**23 20 16.1**	**-0.6**
	comp=E,5.1nm,0.7s,baz=54,slow=9.7,SNR=23						
K05A	**Summer Lake**	**70.12**	**51**	*e*P	**P**	**23 20 24.6**	**+0.7**
	comp=E,24nm,1.7s						
BMO	**Blue Mountains**	**71.13**	**48**	*e*P	**P**	**23 20 29.3**	**-0.6**
	comp=E,0.5nm,0.5s						
KBZ	**Khabaz**	**71.46**	**311**	P	**P**	**23 20 31.6**	**-0.2**
	comp=E,3.5nm,0.8s,baz=52,slow=6.1,SNR=9.2						
KIV	**Kislovodsk**	**71.46**	**311**	*e*P	**P**	**23 20 33.8**	**+1.9**
	comp=E,11nm,1.0s						
EGMT	**Eagleton**	**73.52**	**42**	*e*P	**P**	**23 20 43.6**	**-0.5**
	comp=E,12nm,1.4s						
NV01	**Mina Array Sit**	**74.14**	**54**	*e*P	**P**	**23 20 48.0**	**-0.2**
NVAR	**Mina Array Bea**	**74.14**	**54**	P	**P**	**23 20 48.1**	**0.0**
	comp=E,0.7nm,0.5s,baz=287,slow=6.6,SNR=6.1						
NC204	**NORSAR Array S**	**74.31**	**338**	*e*P	**P**	**23 20 49.2**	**+0.7**
NB2	**NORSAR Subarra**	**74.36**	**338**	P	P	23 20 47.5	-1.2
	comp=Z,12nm,1.7s,baz=39,slow=6.2						
NOA	**NORSAR Array B**	**74.36**	**338**	P	P	23 20 47.0	-1.7
	comp=Z,1.5nm,0.8s,baz=39,slow=5.8,SNR=6.4						
AKASG	**Malin Array Be**	**74.70**	**323**	P	P	23 20 48.9	-1.9
	comp=Z,1.7nm,0.5s,baz=46,slow=6.1,SNR=13						
FXWY	**Fox Creek**	**75.50**	**46**	*e*P	**P**	**23 20 56.8**	**+0.9**
	comp=Z,1.9nm,0.6s						
WASM	**Alta Sierra Ca**	**75.53**	**56**	*e*P	P	23 20 55.0	-1.2
R11A	**Troy Canyon, C**	**75.93**	**52**	*e*P	**P**	**23 20 58.4**	**0.0**
	comp=Z,4.6nm,1.4s						
BW06	**Boulder Array**	**76.88**	**46**	*e*P	**P**	**23 21 02.7**	**-1.1**
PDAR	**Pinedale Array**	**76.88**	**46**	P	**P**	**23 21 03.0**	**-0.8**
	comp=Z,0.9nm,0.6s,baz=255,slow=2.2,SNR=12						
MTPU	**Mount Pierson**	**78.25**	**51**	*e*P	**P**	**23 21 12.3**	**+0.7**
	comp=Z,2.3nm,0.6s						
KWP	**Kalwaria Pacla**	**78.50**	**325**	*e*P	**P**	**23 21 13.6**	**+1.2**
KWP	**Kalwaria Pacla**	**78.50**	**325**	↓*i*P	**P**	**23 21 12.4**	**0.0**
SRU	**San Rafael Swe**	**78.60**	**49**	*e*P	**P**	**23 21 13.6**	**+0.2**
	comp=Z,3.3nm,0.8s						
BUR08	**Bucovina Ar. S**	**78.71**	**322**	*e*P	**P**	**23 21 13.2**	**-0.5**
BURAR	**Bucovina Array**	**78.72**	**322**	↑*i*P	**P**	**23 21 13.5**	**-0.3**
ULM	**Lac du Bonnet**	**78.84**	**34**	P	**P**	**23 21 13.6**	**-0.6**
	comp=Z,2.1nm,0.5s,baz=333,slow=3.2,SNR=3.0						
KOLS	**Kolonicke sedl**	**79.20**	**325**	*e*P	**P**	**23 21 16.2**	**0.0**
STHS	**Stebnicka Huta**	**79.32**	**325**	*e*P	**P**	**23 21 17.1**	**+0.2**
OJC	**Ojcow**	**79.38**	**327**	*e*P	**P**	**23 21 17.0**	**-0.3**
BRTR	**Keskin Array B**	**79.40**	**312**	P	P	23 21 16.6	-1.1
	comp=Z,0.7nm,0.7s,baz=358,slow=5.6,SNR=3.7						
CRVS	**Cervenica-Dubn**	**79.59**	**325**	*e*P	**P**	**23 21 17.7**	**-0.7**
NIE	**Niedzica**	**79.75**	**326**	*e*P	**P**	**23 21 19.0**	**-0.2**
DOPR	**Dopca**	**79.78**	**321**	↑*i*P	**P**	**23 21 19.7**	**+0.2**
PV10	**Paradox Valley**	**79.96**	**49**	*e*P	**P**	**23 21 21.3**	**+0.4**
VOIR		**80.31**	**321**	↓*i*P	**P**	**23 21 24.8**	**+2.3**
DRGR		**80.52**	**323**	↑*i*P	P	23 21 22.0	-1.5
ARR	**Arges**	**80.57**	**321**	↓*i*P	**P**	**23 21 24.5**	**+0.7**
DPC	**Dobruska-Polom**	**80.77**	**328**	*e*P	**P**	**23 21 25.5**	**+0.7**
VYHS	**Vyhne**	**81.08**	**326**	*e*P	**P**	**23 21 26.9**	**+0.5**
KHC	**Kasperske Hory**	**82.85**	**329**	*e*P	**P**	**23 21 35.7**	**0.0**
GERES	**GERESS Array B**	**83.02**	**329**	P	P	23 21 34.3	-2.4
	comp=Z,0.4nm,0.7s,baz=58,slow=3.3,SNR=4.4						
TXAR	**Lajitas Array**	**89.28**	**53**	P	**P**	**23 22 07.3**	**-0.6**
	comp=Z,0.6nm,0.6s,baz=266,slow=2.6,SNR=7.1						
CPCT	**Cooper Cave**	**95.51**	**37**	*e*P	**P**	**23 22 37.3**	**+0.8**
	comp=Z,3.4nm,0.6s						
LPAZ	**La Paz**	**145.81**	**61**	PKPbc	**PKPdf**	**23 28 49.6**	**-1.7**
	comp=Z,2.2nm,0.8s,baz=357,slow=1.4,SNR=7.9						

NIED ***05*** *23:15:00, 37.30N×142.50E, h5km, Mw3.6 Best double couple: M0 2.93000×10^14 NP1:φ=201.00000°, δ=47.00000°, λ=-120.00000°. NP2:φ=61.00000°, δ=50.00000°, λ=-62.00000°.*

JMA 05 23:15:14.7±0.4, 37.34N×142.52E, h12km, M3.8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.31**	**272**	P	Pn	23 15 38.7	-0.2
ONAJ	**Iwakimizuishiy**	**1.40**	**261**	P	Pn	23 15 39.9	-0.1
ONAJ				*e*S	Sn	23 15 58.2	-0.2
JIO	**Ouri**	**1.45**	**321**	P	Pn	23 15 40.8	+0.1
JIO				S	Sn	23 15 59.6	0.0
JMM	**Marumori**	**1.47**	**291**	P	Pn	23 15 41.1	+0.1
JMM				*e*S	Sn	23 16 00.3	+0.2
JFT	**Otama**	**1.75**	**277**	P	Pb	23 15 46.0	-0.7
JFT				S	Sb	23 16 08.7	+0.1
JOU	**Okura**	**1.79**	**305**	P	Pb	23 15 46.5	-1.0
JOU				*e*

JTK	**Tokunoshima**	**1.65**	**10**	P	**Pn**	**23 21 51.0**	**-0.1**
JTK				*e*S	**Sn**	**23 22 11.0**	**-0.5**
JKE	**Kume jima 2**	**1.66**	**276**	P	**Pn**	**23 21 49.8**	**-1.4**
JAMN	**Amaminishikomi**	**2.14**	**13**	P	**Pn**	**23 21 57.6**	**-0.2**
JAMN				*e*S	**Sn**	**23 22 23.3**	**-0.2**
JMZ	**Minamidaito 2**	**2.36**	**98**	P	**Pn**	**23 21 58.8**	**-2.1**
JMZ				*e*S	**Sn**	**23 22 25.7**	**-3.4**
JAM	**Amami Oshima**	**2.41**	**21**	P	**Pn**	**23 22 01.1**	**-0.5**
JAM				*e*S	**Sn**	**23 22 30.0**	**-0.3**
JZK	**Kikaishima**	**2.46**	**29**	P	**Pn**	**23 22 03.3**	**+1.0**
JZK				*e*S	**Sn**	**23 22 33.7**	**+2.1**
JTAJ	**Takarajima**	**3.03**	**10**	P	**Pn**	**23 22 09.6**	**-0.5**
JOGS	**Gusukube**	**3.22**	**245**	P	**Pn**	**23 22 11.2**	**-1.6**
JOGS				*e*S	**Sn**	**23 22 47.7**	**-2.6**
JIKM	**Ikemajima**	**3.29**	**249**	P	**Pn**	**23 22 11.7**	**-1.9**
JMJ	**Miyako jima 2**	**3.29**	**247**	P	**Pn**	**23 22 12.0**	**-1.7**
JIRB	**Irabujima**	**3.39**	**248**	P	**Pn**	**23 22 13.2**	**-1.8**
JNN	**Nakanoshima**	**3.83**	**17**	P	**Pn**	**23 22 21.3**	**+0.1**
JTJ	**Tarama**	**3.85**	**248**	P	**Pn**	**23 22 18.9**	**-2.5**
JISG	**Ishigakijimahi**	**4.20**	**249**	P	**Pn**	**23 22 23.1**	**-3.1**
JIJ	**Ishigaki jima**	**4.43**	**247**	P	**Pn**	**23 22 26.2**	**-3.2**
JKRS	**Kuro-shima**	**4.59**	**246**	P	**Pn**	**23 22 29.0**	**-2.6**
IRIF	**Iriomote-Funau**	**4.79**	**249**	P	**Pn**	**23 22 31.2**	**-3.1**
HATJ	**Hateruma jima**	**4.84**	**245**	P	**Pn**	**23 22 32.7**	**-2.3**
YOJ	**Yonaguni jima**	**5.35**	**253**	P	**Pn**	**23 22 39.2**	**-2.8**
YOJ	**Yonaguni jima**	**5.35**	**253**	*e*P	**Pn**	**23 22 39.3**	**-2.8**
YOJ	**Yonaguni jima**	**5.35**	**253**	*e*Pn	**Pn**	**23 22 39.3**	**-2.8**
JYNG	**Yonagunijimaku**	**5.41**	**253**	P	**Pn**	**23 22 40.1**	**-2.7**
TATO	**Taipei**	**6.55**	**261**	Pn	**Pn**	**23 22 58.8**	**+0.3**
	SNR=9.3						
TATO	**Taipei**	**6.55**	**261**	P	**Pn**	**23 22 58.8**	**+0.3**
	SNR=9.3						
TATO	**Taipei**	**6.55**	**261**	*e*Pn	**Pn**	**23 22 56.5**	**-2.0**
NACB	**Ninganchiao**	**6.67**	**254**	*e*Pn	**Pn**	**23 22 56.5**	**-3.6**
YHNB	**Yeheng**	**6.72**	**259**	*e*Pn	**Pn**	**23 22 58.9**	**-2.0**
YULB	**Yu-li**	**7.20**	**249**	*e*Pn	Pn	23 23 02.5	-5.0
JNU	**Nakatsue**	**7.21**	**15**	Pn	**Pn**	**23 23 09.0**	**+1.4**
	13nm,0.3s,baz=187,slow=7.3,SNR=151						
JNU				Sn	**Sn**	**23 24 30.3**	**+1.6**
	3.2nm,0.3s,baz=72,slow=20,SNR=1.9						
JNU				LR	LR	23 26 24.8	
	comp=Z,8μm,19.3s,baz=196,slow=42						
JNU	**Nakatsue**	**7.21**	**15**	*e*Pn	**Pn**	**23 23 08.0**	**+0.4**
JNU				Sn	**Sn**	**23 24 30.3**	**+1.6**
SSLB	**Suanglung**	**7.35**	**253**	*e*Pn	**Pn**	**23 23 05.8**	**-3.7**
TWG	**Pinlang**	**7.64**	**246**	*e*Pn	Pn	23 23 07.8	-5.7
TPUB	**Ta-pu**	**7.80**	**250**	*e*Pn	**Pn**	**23 23 12.1**	**-3.7**
SSE	**Sheshan**	**8.18**	**309**	P	**Pn**	**23 23 21.7**	**+0.9**
SSE				pmax	pmax		
	comp=Z,100nm,0.9s						
SSE				pmax	pmax		
	comp=Z,840nm,7.3s						
SSE				LR	LR		
	comp=N,19μm,11.9s						
SSE				LR	LR		
	comp=E,20μm,11.8s						
SSE				LR	LR		
	comp=Z,33μm,11.6s						
QZH	**Quanzhou**	**9.14**	**265**	⇑*i*P	Pn	23 23 27.6	-6.4
QZH				S	Sn	23 25 05.7	-10
QZH				LR	LR		
	comp=N,15μm,13.2s						
QZH				LR	LR		
	comp=E,18μm,10.4s						
QZH				LR	LR		
	comp=Z,22μm,11.4s						
NJ2	**Nanjing**	**10.36**	**307**	*e*P	**Pn**	**23 23 52.3**	**+1.5**
NJ2				S	**Sn**	**23 25 50.4**	**+4.3**
NJ2				pmax	pmax		
	comp=Z,44nm,0.5s						
NJ2				pmax	pmax		
	comp=Z,1μm,4.5s						
NJ2				LR	LR		
	comp=Z,23μm,12.5s						
NJ2				LR	LR		
	comp=Z,29μm,11.4s						
NJ2				LR	LR		
	comp=Z,43μm,12.5s						
KS15	**Wonju Array Si**	**11.27**	**357**	*e*Pn	**Pn**	**23 24 04.6**	**+1.4**
KSAR	**Wonju Array Be**	**11.27**	**357**	P	**Pn**	**23 24 04.8**	**+1.6**
KSAR						23 26 01.5	
KSAR	**Wonju Array Be**	**11.27**	**357**	Pn	**Pn**	**23 24 04.8**	**+1.6**
KSAR				Sn	**Sn**	**23 26 01.5**	**-6.8**
KSRS	**Korea Array**	**11.28**	**357**	Pn	**Pn**	**23 24 04.8**	**+1.5**
	comp=Z,1.0nm,0.3s,baz=175,slow=14,SNR=20						
KSRS				Sn	**Sn**	**23 26 01.5**	**-7.0**
	baz=174,slow=13,SNR=2.4						
KSRS				LR	LR	23 28 46.6	
	comp=Z,8μm,18.0s,baz=177,slow=39						
KSRS	**Korea Array**	**11.28**	**357**	P	**Pn**	**23 24 04.8**	**+1.5**
KSRS						23 26 01.5	
KSRS				pmax	pmax		
	comp=Z,1.0nm,0.3s						
KSRS				MLR	MLR		
	comp=Z,8μm,18.0s						
KS01	**Wonju Array Si**	**11.30**	**357**	*e*Pn	**Pn**	**23 24 04.2**	**+0.6**
INCN	**Inchon**	**11.42**	**352**	*e*Pn	**Pn**	**23 24 04.4**	**-0.9**
INU	**Inuyama**	**11.66**	**36**	*e*Pn	**Pn**	**23 24 10.7**	**+2.2**
JHJ	**Hachijo jima 2**	**11.93**	**52**	Pn	**Pn**	**23 24 13.7**	**+1.4**
	comp=Z,7.5nm,0.3s,baz=240,slow=20,SNR=2.8						
JHJ				LR	LR	23 27 35.0	
	comp=Z,2μm,21.9s,baz=248,slow=31						
CBIJ	**Chichi jima**	**12.17**	**83**	*e*Pn	**Pn**	**23 24 17.3**	**+1.7**
CBIJ				Sn	**Sn**	**23 26 22.9**	**-7.5**
JCJ	**Chichijima**	**12.17**	**83**	Pn	**Pn**	**23 24 16.3**	**+0.7**
	comp=Z,8.5nm,0.3s,baz=292,slow=14,SNR=6.2						
JCJ				Sn	**Sn**	**23 26 22.9**	**-7.5**
	comp=Z,6.0nm,0.3s,baz=298,slow=23,SNR=4.8						
JCJ				LR	LR	23 28 16.6	
	comp=Z,1μm,20.3s,baz=265,slow=34						
MAJO	**Matsushiro**	**13.19**	**36**	*e*P	**Pn**	**23 24 31.0**	**+1.5**
MAJO	**Matsushiro**	**13.19**	**36**	*e*Pn	**Pn**	**23 24 31.1**	**+1.5**
MAT	**Matsushiro**	**13.19**	**36**	P	**Pn**	**23 24 31.9**	**+2.4**
MAT				S	S	23 27 09.4	-10
MJAR	**Matsushiro Arr**	**13.19**	**36**	Pn	**Pn**	**23 24 30.8**	**+1.3**
	comp=Z,0.2nm,0.3s,baz=236,slow=13,SNR=13						
MJB9	**Matsu-Tunnel**	**13.19**	**36**	*e*Pn	**Pn**	**23 24 30.1**	**+0.6**
WHN	**Wuhan**	**13.30**	**292**	P	**Pn**	**23 24 30.5**	**-0.5**
WHN				PP	**P**	**23 24 41.4**	**+0.9**
WHN				S	**Sn**	**23 27 02.2**	**+4.1**
WHN				LR	LR		
	comp=Z,17μm,13.9s						
WHN				LR	LR		
	comp=Z,40μm,13.5s						
WHN				LR	LR		
	comp=Z,44μm,13.7s						
HKC	**Hong Kong Obse**	**13.73**	**257**	P	**Pn**	**23 24 36.0**	**-0.8**
TIA	**Tai'an**	**14.03**	**318**	⇑P	**Pn**	**23 24 41.3**	**+0.3**
TIA				pmax	pmax		
	comp=Z,30nm,1.1s						
TIA				pmax	pmax		
	comp=Z,2μm,9.0s						
TIA				LR	LR		
	comp=Z,12μm,12.5s						
TIA				LR	LR		
	comp=Z,12μm,12.5s						
TIA				LR	LR		
	comp=Z,21μm,13.1s						
GZH	**Guangzhou**	**14.23**	**261**	P	Pn	23 24 34.4	-9.3
GZH				PP	**P**	**23 24 46.0**	**-4.8**
GZH				S	**Sn**	**23 27 22.6**	**+1.9**
GZH				LR	LR		
	comp=N,8μm,14.5s						
GZH				LR	LR		
	comp=E,6μm,14.1s						
PLP	**Palo**	**15.30**	**194**	⇓*e*P	**Pn**	**23 24 56.2**	**-2.0**
SNY	**Shenyang**	**16.18**	**346**	⇑P	**P**	**23 25 11.4**	**-0.9**
SNY				S	**S**	**23 28 17.0**	**-3.6**
SNY				pmax	pmax		
	comp=E,84nm,1.5s						
SNY				pmax	pmax		
	comp=E,2μm,12.2s						
SNY				LR	LR		
	comp=E,10μm,14.9s						
SNY				LR	LR		
	comp=E,4μm,10.0s						
SNY				LR	LR		
	comp=E,17μm,13.2s						
LLP	**Lapu-Lapu**	**16.36**	**196**	⇑*e*P	**P**	**23 25 16.5**	**+2.0**
VLA	**Vladivostok**	**17.13**	**8**	*e*P	**Pn**	**23 25 19.8**	**-1.6**
VLA				pmax	pmax		
	comp=Z,15nm,0.7s						
BJT	**Baijiatuau**	**17.29**	**326**	*e*P	**Pn**	**23 25 23.6**	**+0.2**
BJT				pmax	pmax		
	comp=Z,156nm,0.8s						
BJT	**Baijiatuau**	**17.29**	**326**	*e*Pn	**Pn**	**23 25 23.6**	**+0.2**
	comp=Z,156nm,0.8s						
BJI	**Beijing**	**17.31**	**326**	P	**Pn**	**23 25 23.2**	**-0.4**
BJI				S	**Sn**	**23 28 39.1**	**+3.7**
BJI				pmax	pmax		
	comp=Z,190nm,1.3s						
BJI				pmax	pmax		
	comp=Z,3μm,10.8s						
BJI				LR	LR		
	comp=Z,26μm,13.6s						
ENH	**Enshi**	**17.35**	**288**	*e*Pn	**Pn**	**23 25 22.7**	**-1.6**
	comp=Z,99nm,0.8s						
CN2	**Changchun**	**17.79**	**352**	*e*P	**Pn**	**23 25 29.4**	**-0.2**
CN2				*e*PP	**PnPn**	**23 25 41.1**	**+0.6**
CN2				pmax	pmax		
	comp=Z,40nm,1.4s						
CN2				pmax	pmax		
	comp=Z,200nm,3.0s						
CN2				LR	LR		
	comp=Z,14μm,12.0s						
CN2				LR	LR		
	comp=Z,3μm,12.0s						
CN2				LR	LR		
	comp=Z,14μm,13.0s						
TIY	**Taiyuan**	**17.90**	**314**	*e*P	**Pn**	**23 25 31.1**	**0.0**
TIY				PP	**sP**	**23 25 40.2**	**-1.6**
TIY				S	**S**	**23 28 54.3**	**-1.7**
TIY				pmax	pmax		
	comp=Z,310nm,1.5s						
TIY				pmax	pmax		
	comp=Z,1μm,4.0s						
TIY				LR	LR		
	comp=Z,13μm,12.4s						
TIY				LR	LR		
	comp=Z,8μm,12.5s						
TIY				LR	LR		
	comp=Z,16μm,13.0s						
USRK	**Ussuriysk Ar.**	**18.21**	**8**	P	**Pn**	**23 25 34.4**	**-0.3**
	comp=Z,1.7nm,0.3s,baz=185,slow=8.4,SNR=108						
USRK				LR	LR	23 32 52.2	
	comp=Z,2μm,19.5s,baz=176,slow=38						
MDJ	**Mudanjiang**	**18.44**	**2**	P	**Pn**	**23 25 38.1**	**+0.6**
MDJ				pP	pP	23 25 41.0	-3.2
MDJ				sP	sP	23 25 42.8	-4.7
MDJ				S	**S**	**23 29 05.7**	**-0.7**
MDJ				ScS	**ScS**	**23 37 23.3**	**+1.4**
MDJ				pmax	pmax		
	comp=Z,690nm,9.7s						
MDJ				LR	LR		
	comp=Z,3μm,14.4s						
MDJ				LR	LR		
	comp=Z,3μm,11.8s						
MDJ				LR	LR		
	comp=Z,5μm,17.0s						
MDJ	**Mudanjiang**	**18.44**	**2**	*e*P	**Pn**	**23 25 38.6**	**+1.1**
	comp=Z,71nm,1.3s						
QIZ	**Qiongzhong**	**18.72**	**252**	P	**Pn**	**23 25 42.0**	**+0.9**
QIZ				sP	**pP**	**23 25 44.5**	**-3.1**
QIZ				S	**S**	**23 29 13.4**	**+1.0**
QIZ				pmax	pmax		
	comp=Z,37nm,1.3s						
QIZ				LR	LR		
	comp=Z,2μm,18.6s						
QIZ				LR	LR		
	comp=Z,4μm,21.1s						
XAN	**Xi'an**	**18.75**	**299**	P	**P**	**23 25 39.7**	**-1.2**
XAN				pP	Pn	23 25 42.7	+1.3
XAN				sP	pP	23 25 46.1	-1.7
XAN				S	**S**	**23 29 16.0**	**+3.2**
XAN				sS	sS	23 29 19.7	-4.5
XAN				SS	**SnSn**	**23 29 27.7**	**+3.2**
XAN				pmax	pmax		
	comp=Z,200nm,0.8s						
XAN				pmax	pmax		
	comp=Z,1μm,8.8s						
XAN				LR	LR		
	comp=Z,8μm,11.8s						
XAN				LR	LR		
	comp=Z,9μm,13.5s						
XAN				LR	LR		
	comp=Z,11μm,14.4s						
DAV	**Davao City (W)**	**19.20**	**189**	P	**P**	**23 25 46.2**	**+0.3**
	comp=Z,68nm,0.3s,baz=319,slow=2.4,SNR=4.9						
DAV				LR	LR	23 34 12.3	
	comp=Z,659nm,18.3s,baz=348,slow=40						
GYA	**Guiyang**	**19.69**	**276**	⇑*i*P	**P**	**23 25 51.2**	**-0.1**
GYA				PP	**PnPn**	**23 26 09.4**	**+2.7**
GYA				S	**S**	**23 29 25.7**	**-6.4**
GYA				SS	**SnSn**	**23 29 51.2**	**+3.5**
GYA				PcP	**PcP**	**23 30 11.8**	**+1.9**
GYA				pmax	pmax		
	comp=Z,90nm,1.2s						
GYA				pmax	pmax		
	comp=Z,920nm,7.8s						
GYA				LR	LR		
	comp=Z,9μm,17.8s						
GYA				LR	LR		
	comp=Z,6μm,18.2s						
GYA				LR	LR		
	comp=Z,8μm,18.4s						
GUMO	**Guam**	**19.71**	**126**	P	**Pn**	**23 25 53.6**	**+0.6**
	comp=Z,16nm,0.3s,baz=325,slow=4.9,SNR=9.6						
GUMO				LR	LR	23 31 51.0	
	comp=Z,1μm,21.5s,baz=316,slow=32						
GUMO	**Guam**	**19.71**	**126**	*e*P	**Pn**	**23 25 53.8**	**+0.7**
GUMO				pmax	pmax		
	comp=Z,2μm,1.6s						
GUMO	**Guam**	**19.71**	**126**	*e*P	**Pn**	**23 25 53.8**	**+0.7**
	comp=Z,1μm,1.6s						
ERM	**Erimo**	**19.83**	**33**	*ce*P	**P**	**23 25 52.5**	**-0.1**
ERM				pmax	pmax		
	comp=Z,56nm,0.8s						
ERM	**Erimo**	**19.83**	**33**	*e*P	**P**	**23 25 52.8**	**+0.3**
	comp=Z,95nm,0.8s						
HHC	**Hu-ho-hao-te**	**20.37**	**320**	*e*P	**P**	**23 25 58.1**	**-0.5**
HHC				sP	pP	23 26 06.4	+0.8
HHC				PP	**PnPn**	**23 26 24.4**	**+8.5**
HHC				S	**S**	**23 29 38.2**	**-7.5**
HHC				sS	Sn	23 29 52.8	+3.3
HHC				pmax	pmax		
	comp=Z,120nm,0.9s						
HHC				pmax	pmax		
	comp=Z,840nm,4.1s						
HHC				LR	LR		
	comp=Z,14μm,10.6s						
HHC				LR	LR		
	comp=Z,10μm,12.3s						
HHC				LR	LR		
	comp=Z,14μm,11.5s						
BTO	**Baotou**	**21.13**	**318**	*e*P	**P**	**23 26 05.3**	**-1.5**
BTO				pmax	pmax		
	comp=Z,29nm,1.2s						
ASAJ	**Asahikawa**	**21.20**	**29**	P	**P**	**23 26 07.5**	**+0.1**
	comp=Z,18nm,0.7s,baz=250,slow=17,SNR=14						
ASAJ				LR	LR	23 34 40.0	
	comp=Z,3μm,21.1s,baz=232,slow=38						
ASAJ	**Asahikawa**	**21.20**	**29**	*e*P	**P**	**23 26 06.5**	**-0.9**
	comp=Z,80nm,1.1s						
KDM	**Kudat**	**22.19**	**212**	⇑P	**P**	**23 26 17.2**	**-1.0**
CD2	**Chengdu**	**22.33**	**288**	⇑P	**P**	**23 26 17.5**	**-2.3**
CD2				PP	**PnPn**	**23 26 46.1**	**+3.3**
CD2				S	**S**	**23 30 22.2**	**-1.9**
CD2				sS	sS	23 30 27.7	-8.0
CD2				SS	**SnSn**	**23 30 57.8**	**+5.3**
CD2				pmax	pmax		
	comp=Z,230nm,0.9s						
CD2				pmax	pmax		
	comp=Z,1μm,14.3s						
CD2				LR	LR		
	comp=Z,21μm,13.7s						
CD2				LR	LR		
	comp=Z,20μm,13.7s						
YUK	**Yuzh-Kuril'sk**	**22.66**	**34**	*i*P	**P**	**23 26 24.1**	**+1.1**
HABR	**Khabarovsk**	**22.84**	**11**	*e*P	**P**	**23 26 22.1**	**-2.8**
HABR				*e**PP	**pP**	**23 26 31.0**	**-0.9**
HABR				*e**SP	**sP**	**23 26 35.4**	**+0.2**
HABR				*e*PPP	PPP	23 26 54.0	
HABR				*e*		23 30 15.6	
HABR				*e*S	**S**	**23 30 27.1**	**-5.5**
HABR				*e**SS	**sS**	**23 30 42.6**	**-2.2**
HABR				*e*SSS	SSS	23 31 11.8	
HABR				*e*		23 37 35.4	
HABR				pmax	pmax		
	comp=Z,20nm,1.4s						
HABR				pmax	pmax		
	comp=Z,33nm,0.8s						
HABR				pmax	pmax		
	comp=N,18nm,0.7s						
HABR				pmax	pmax		
	comp=Z,28nm,1.0s						
HABR				MLR	MLR		
	comp=Z,3μm,15.0s						
MYLDM	**Lahad Datu**	**23.00**	**207**	⇑P	**P**	**23 26 26.0**	**-0.7**
MYLDM	**Lahad Datu**	**23.00**	**207**	*e*P	**P**	**23 26 28.7**	**+1.9**
	comp=Z,250nm,1.3s						
MYLDM				LR	LR		
	comp=Z,3μm,18.0s						
SDKM	**Sandakan**	**23.14**	**210**	⇑P	**P**	**23 26 28.2**	**-0.1**
KLR	**Kul'dur**	**23.16**	**5**	P	**P**	**23 26 26.6**	**-1.6**
	comp=Z,30nm,0.9s,baz=198,slow=7.6,SNR=54						
KLR				LR	LR	23 36 19.5	
	comp=Z,2μm,18.2s,baz=179,slow=39						
KKM	**Kota Kinabalu**	**23.25**	**213**	⇑P	**P**	**23 26 29.0**	**-0.5**
KKM	**Kota Kinabalu**	**23.25**	**213**	*e*P	**P**	**23 26 28.9**	**-0.5**
	comp=Z,126nm,1.3s						
KKM				LR	LR		
	comp=Z,4μm,19.0s						
KMI	**Kunming**	**23.35**	**273**	P	**P**	**23 26 29.6**	**-0.9**
KMI				pP	pP	23 26 32.3	-5.4
KMI				sP	sP	23 26 33.7	-7.3
KMI				PP	**PnPn**	**23 26 59.1**	**+2.2**
KMI				S	**S**	**23 30 36.0**	**-6.1**
KMI				SS	**SnSn**	**23 31 20.9**	**+3.3**
KMI				pmax	pmax		
	comp=Z,230nm,1.6s						
KMI				pmax	pmax		
	comp=Z,1μm,3.6s						
KMI				LR	LR		
	comp=Z,5μm,12.6s						
KMI				LR	LR		
	comp=Z,8μm,10.2s						
KMI				LR	LR		
	comp=Z,6μm,11.1s						
LZH	**Lanzhou**	**23.35**	**301**	⇑P	**P**	**23 26 28.9**	**-1.5**
LZH				pP	pP	23 26 32.1	-5.5
LZH				sP	sP	23 26 34.0	-6.9
LZH				PP	**PnPn**	**23 27 00.0**	**+3.2**
LZH				S	**S**	**23 30 36.3**	**-5.6**
LZH				SS	**SnSn**	**23 31 22.1**	**+4.6**
LZH				pmax	pmax		
	comp=Z,350nm,1.3s						
LZH				pmax	pmax		
	comp=Z,1μm,5.0s						
LZH				LR	LR		
	comp=Z,7μm,12.1s						
LZH				LR	LR		
	comp=Z,6μm,12.5s						
LZH				LR	LR		
	comp=Z,8μm,14.0s						
YSS	**Yuzh-Sakhalins**	**23.59**	**25**	*c i*P	**P**	**23 26 33.0**	**+0.6**
YSS				*e*S	**S**	**23 30 40.9**	**-4.2**
YSS				pmax	pmax		
	comp=Z,2μm,1.7s						
YSS				pmax	pmax		
	comp=Z,70nm,0.9s						
YSS				MLR	MLR		
	comp=Z,2μm,20.0s						
YSS				MLR	MLR		
	comp=N,1μm,13.0s						
YSS				MLR	MLR		
	comp=E,1μm,16.0s						
YSS	**Yuzh-Sakhalins**	**23.59**	**25**	*e*P	**P**	**23 26 33.8**	**+1.4**
	comp=E,739nm,0.9s						
YSS				LR	LR		
	comp=Z,949nm,21.0s						
PANO	**Nakornpanom**	**24.02**	**253**	P	**P**	**23 26 38.1**	**+1.4**
	comp=Z,135nm,1.4s,comp=Z,3μm						
TSM	**Tawau**	**24.06**	**207**	⇑P	**P**	**23 26 36.4**	**-0.7**
HIA	**Hailar**	**24.08**	**346**	*e*P	**P**	**23 26 37.3**	**+0.2**
HIA				pmax	pmax		
	comp=Z,44nm,1.0s						
HIA				MLR	MLR		
	comp=Z,3μm,20.0s						
HIA	**Hailar**	**24.08**	**346**	*e*P	**P**	**23 26 37.3**	**+0.2**
	comp=Z,44nm,1.0s						
HIA				LR	LR		
	comp=Z,3μm,20.0s						
KUR	**Kuril'sk**	**24.52**	**34**	*e*P	**P**	**23 26 41.7**	**+0.6**
SKNT	**Sakolnakorn**	**24.63**	**253**	P	**P**	**23 26 42.9**	**+0.5**
	comp=Z,105nm,1.2s,comp=Z,4μm						
NONG	**Nongkai**	**24.91**	**256**	P	**P**	**23 26 45.2**	**+0.3**
	comp=Z,125nm,1.2s,comp=Z,12μm						
KHON	**Khomkaen**	**25.91**	**253**	P	**P**	**23 26 55.1**	**+1.1**
	comp=Z,53nm,0.9s,comp=Z,696nm						
MRSI	**Marisa**	**26.33**	**195**	P	**P**	**23 27 01.1**	**+3.4**
	comp=Z,97nm,1.1s						
LBMI	**Labuha**	**26.66**	**182**	P	**P**	**23 27 01.5**	**+0.8**
TYV	**Tymovskoe**	**26.91**	**20**	*e*P	**P**	**23 27 02.5**	**-0.2**
TYV				*e*S	**S**	**23 31 46.0**	**+8.1**
TYV				pmax	pmax		
	comp=Z,141nm,1.0s						
TYV				smax	smax		
	comp=E,4μm,14.0s						
TYV				MLR	MLR		
	comp=E,3μm,18.0s						
TYV				MLR	MLR		
	comp=Z,1μm,14.0s						
SWI	**Sorong**	**26.98**	**174**	P	**P**	**23 27 01.4**	**-2.2**
BTM	**Bintulu**	**27.27**	**216**	⇑P	**P**	**23 27 05.7**	**-0.6**
UTTA	**Uttaradit**	**27.30**	**258**	P	**P**	**23 27 06.5**	**0.0**
	comp=Z,20nm,1.1s,comp=Z,162nm						
PBKT	**Sadao Pong**	**27.41**	**255**	P	**P**	**23 27 08.0**	**+0.5**
	comp=Z,93nm,1.1s,comp=Z,1μm						
GTA	**Gaotai**	**27.46**	**306**	⇑P	**P**	**23 27 06.5**	**-1.4**
GTA				pP	pP	23 27 10.7	-4.8
GTA				sP	sP	23 27 13.5	-5.1
GTA				PP	**PnPn**	**23 27 57.8**	**+4.9**
GTA				PcP	**PcP**	**23 30 26.9**	**+0.8**
GTA				S	**S**	**23 31 51.0**	**+3.8**
GTA				sS	sS	23 31 57.2	-2.4
GTA				PcS	**PcS**	**23 34 07.0**	**-0.9**
GTA				pmax	pmax		
	comp=Z,360nm,1.1s						
GTA				pmax	pmax		
	comp=Z,780nm,6.2s						
GTA				LR	LR		
	comp=Z,5μm,12.8s						
GTA				LR	LR		
	comp=Z,7μm,14.3s						
GTA				LR	LR		
	comp=Z,9μm,13.3s						
ULN	**Ulaanbaatar**	**27.51**	**328**	*ce*P	**P**	**23 27 06.6**	**-1.7**
ULN				pmax	pmax		
	comp=Z,405nm,1.7s						
ULN	**Ulaanbaatar**	**27.51**	**328**	P	**P**	**23 27 07.1**	**-1.2**
	SNR=116						
ULN	**Ulaanbaatar**	**27.51**	**328**	P	**P**	**23 27 07.1**	**-1.2**
	SNR=116						
ULN	**Ulaanbaatar**	**27.51**	**328**	*e*P	**P**	**23 27 06.8**	**-1.5**
	comp=Z,194nm,0.9s						
ULN				LR	LR		
	comp=Z,3μm,19.0s						
LUWI	**Luwuk**	**27.62**	**193**	P	P	23 27 19.4	+10
LUWI	**Luwuk**	**27.62**	**193**	*e*P	**P**	**23 27 09.0**	**-0.3**
	comp=Z,107nm,1.1s						
LUWI				LR	LR		
	comp=Z,1μm,20.0s						
SRAK	**Srakaew**	**27.67**	**249**	P	**P**	**23 27 06.1**	**-3.7**
SONM	**Songino Array**	**27.81**	**327**	P	**P**	**23 27 09.3**	**-1.6**
	comp=Z,127nm,1.0s,baz=141,slow=8.3,SNR=73						
SONM				ScP	**ScP**	**23 34 05.9**	**0.0**
	comp=Z,2.2nm,1.1s,baz=153,slow=4.8,SNR=3.9						
SONM				LR	LR	23 39 31.0	
	comp=Z,3μm,19.0s,baz=141,slow=39						
SONA1	**Songino Array**	**27.81**	**327**	*e*P	**P**	**23 27 08.7**	**-2.3**
SONA1				*e*ScP	**ScP**	**23 34 06.8**	**+0.8**
LAMP	**Lampang**	**27.82**	**260**	P	**P**	**23 27 11.6**	**+0.4**
	comp=Z,55nm,0.9s,comp=Z,381nm						
CHBT	**CHBT**	**28.07**	**247**	P	**P**	**23 27 14.0**	**+0.5**
	comp=Z,92nm,0.8s,comp=Z,1μm						
NAYO	**Nakonayok**	**28.13**	**251**	P	**P**

CHTO e 23 30 29.6
CHTO pmax pmax
comp=Z,82nm,0.8s
CHTO Chiang Mai 28.33 261 P P 23 27 16.2 +0.4
SNR=46
CHTO Chiang Mai 28.33 261 P P 23 27 16.2 +0.4
SNR=46
CHTO Chiang Mai 28.33 261 *e*P **P 23 27 15.9 +0.1**
comp=Z,82nm,0.8s
CHTO *e*PcP **PcP 23 30 29.6 +1.2**
CHTO LR LR
comp=Z,6μm,19.0s
SBUM Sibu 28.36 216 ⇑P **P 23 27 15.4 -0.5**
SBUM Sibu 28.36 216 *e*P **P 23 27 16.0 +0.1**
comp=Z,74nm,1.1s
NKL Nikolayevsk 28.43 15 *i* P **P 23 27 17.0 +0.8**
NKL *e* 23 27 25.2
NKL *e*S **S 23 32 01.0 -0.8**
NKL pmax pmax
comp=N,400nm,4.0s
NKL pmax pmax
comp=Z,700nm,4.0s
NKL pmax pmax
comp=N,290nm,2.0s
NKL pmax pmax
comp=E,180nm,2.0s
NKL pmax pmax
comp=Z,460nm,1.4s
NKL smax smax
comp=N,1μm,12.0s
NKL MLR MLR
comp=N,4μm,14.0s
NKL MLR MLR
comp=E,2μm,14.0s
NKL MLR MLR
comp=Z,6μm,14.0s
CM01 Chiang Mai Arr 28.46 260 *e*P **P 23 27 15.8 -1.1**
CM01 *e*PcP **PcP 23 30 29.8 +1.1**
CM31 Chiang Mai Arr 28.46 260 *e*P **P 23 27 17.6 +0.7**
FAKI Fak Fak 29.12 173 P **P 23 27 22.1 -0.6**
comp=Z,190nm,0.9s,comp=Z,2μm
FAKI Fak Fak 29.12 173 *e*P **P 23 27 22.1 -0.6**
comp=Z,145nm,0.9s
NLAI Namlea 29.26 183 P **P 23 27 28.6 +4.7**
comp=Z,62nm,1.0s,comp=Z,12μm
MSAI Masohi 29.33 179 P P 23 27 31.2 +6.6
MHMT Maesarieng 29.46 261 P **P 23 27 26.5 +0.7**
comp=Z,54nm,1.0s,comp=Z,561nm
SRDT SRDT 29.99 253 P **P 23 27 31.3 +0.8**
comp=Z,140nm,1.1s,comp=Z,7μm
KSM Kuching 30.21 219 ⇑P **P 23 27 31.8 -0.7**
KSM Kuching 30.21 219 *e*P **P 23 27 33.0 +0.6**
comp=Z,104nm,1.3s
KSM LR LR
comp=Z,1μm,19.0s
KHLT Khaolaem Dam 30.24 254 P **P 23 27 33.9 +1.2**
comp=Z,24nm,1.4s,comp=Z,416nm
PHET Kaeng Krachan 30.25 250 P **P 23 27 34.2 +1.4**
comp=Z,15nm,0.9s,comp=Z,157nm
TTSI Tana Toraja 30.25 198 P P 23 27 42.7 +10
STKI Sintang 30.76 215 P P 23 27 42.9 +5.6
comp=Z,34nm,1.2s,comp=Z,25μm
JAY Jayapura 30.81 156 LR LR 23 37 57.2
comp=Z,44nm,19.1s,slow=32
ZAK Zakamensk 31.04 328 *e*P **P 23 27 36.6 -2.9**
ZAK pmax pmax
comp=Z,14nm,1.6s
SPSI Sidrap Palu 31.15 197 P P 23 27 46.8 +6.2
comp=Z,16nm,1.0s
TLY Talaya 31.75 330 P **P 23 27 44.7 -1.0**
comp=Z,8.9nm,0.8s,baz=154,slow=5.7,SNR=23
TLY Talaya 31.75 330*c i*P **P 23 27 44.0 -1.7**
TLY *e* 23 28 56.6
TLY *e*S **S 23 32 52.1 -2.0**
TLY *e*SS **SnSn 23 34 40.9 -1.0**
TLY pmax pmax
comp=Z,40nm,1.2s
TLY MLR MLR
comp=Z,4μm,11.0s
TLY Talaya 31.75 330 *e*P **P 23 27 44.3 -1.4**
comp=Z,35nm,1.1s
TLY LR LR
comp=Z,3μm,19.0s
IRK Irkutsk 31.87 331 *e*P **P 23 27 44.7 -2.0**
IRK pmax pmax
comp=Z,73nm,2.3s
KTGM Kuala Trenggan 31.98 234 ⇑P **P 23 27 46.8 -1.2**
KAPI Kappang 32.16 197 LR LR 23 40 01.0
comp=Z,640nm,21.9s,baz=15,slow=35
KAPI Kappang 32.16 197 *e*P **P 23 27 48.1 -1.4**
KAPI *e*pwP **pP 23 27 55.3 -1.9**
BBKI Banjar Baru 32.33 206 P **P 23 27 51.8 +0.8**
MOY Mondy 32.97 328 *e*P **P 23 27 54.1 -2.4**
MOY pmax pmax
comp=Z,67nm,2.3s
TRTT Trang 32.99 242 P **P 23 28 00.3 +3.4**
comp=Z,33nm,1.5s
SHL Shillong 33.00 277 *e*P **P 23 27 56.6 -0.5**
SURT Suratani 33.06 244 P **P 23 27 58.5 +1.0**
comp=Z,48nm,1.1s,comp=Z,546nm
LSA Lhasa 33.20 285 *e*P **P 23 27 59.0 -0.2**
LSA pmax pmax
comp=Z,43nm,1.0s
LSA MLR MLR
comp=Z,2μm,19.0s
LSA Lhasa 33.20 285 *e*P **P 23 27 59.0 -0.2**
comp=Z,43nm,1.0s
LSA LR LR
comp=Z,2μm,19.0s
BOD Bodaibo 33.30 346 *e*P **P 23 27 56.9 -2.3**
BOD pmax pmax
comp=Z,8.0nm,1.3s
MANU Manus Island 33.38 144 *e*P **P 23 28 00.5 +0.2**
comp=Z,55nm,1.7s
KULM Kulim 33.84 237 *e*P **P 23 28 04.9 +0.6**
comp=Z,68nm,0.9s
KULM LR LR
comp=Z,1μm,21.0s
MYKOM Kota Tinggi 33.98 229 ⇑P **P 23 28 04.0 -1.4**
MYKOM Kota Tinggi 33.98 229 *e*P **P 23 28 06.5 +1.0**
comp=Z,51nm,1.2s
PKDT Phuket 34.04 243 P **P 23 28 08.5 +2.4**
comp=Z,101nm,1.4s
IPM Ipoh 34.09 235 ⇑P **P 23 28 05.1 -1.5**
IPM Ipoh 34.09 235 *e*P **P 23 28 06.5 0.0**
comp=Z,85nm,0.9s
PEA0 Petropavlovsk- 34.58 31 *e*P **P 23 28 10.8 +0.5**
PEA0B Petropavlovsk- 34.58 31 *e*P **P 23 28 11.3 +1.0**
comp=Z,72nm,1.1s
PETK Petropavlovsk- 34.58 31 P **P 23 28 09.8 -0.5**
comp=Z,18nm,1.0s,baz=216,slow=4.8,SNR=8.4
PETK LR LR 23 43 15.2
comp=Z,544nm,18.3s,baz=229,slow=38
PET Petropavlovsk 34.97 32 *e*P **P 23 28 12.0 -1.7**
PET *e*S **S 23 33 41.2 -2.6**
PET pmax pmax
comp=Z,200nm,8.2s
PET pmax pmax
comp=Z,100nm,1.6s
PET MLR MLR
comp=Z,900nm,18.0s
PET MLR MLR
comp=Z,800nm,19.0s
PET Petropavlovsk 34.97 32 *e*P **P 23 28 14.9 +1.2**
comp=Z,307nm,1.7s
PET LR LR
comp=Z,863nm,19.0s
EDFI Ende, Flores 35.34 192 P **P 23 28 20.5 +3.1**
comp=Z,41nm,1.0s
PPBI Pangkal Pinang 35.57 221 P P 23 28 26.2 +7.0
YAK Yakutsk 35.87 1 P **P 23 28 21.0 -0.3**
comp=Z,133nm,0.7s,baz=182,slow=2.1,SNR=24
YAK LR LR 23 43 22.1
comp=Z,2μm,18.3s,baz=186,slow=37
YAK Yakutsk 35.87 1 *e*P **P 23 28 21.5 +0.2**
YAK *e* 23 29 39.4
YAK *e* 23 30 47.8
YAK *e*S **S 23 33 58.9 +1.4**
YAK *e* 23 38 33.3
YAK pmax pmax
comp=Z,97nm,0.8s
YAK pmax pmax
comp=N,29nm,1.0s
YAK pmax pmax
comp=E,7.0nm,0.9s
YAK pmax pmax
comp=Z,53nm,1.8s
YAK pmax pmax
comp=N,58nm,1.5s
YAK pmax pmax
comp=E,24nm,1.6s
YAK smax smax
comp=N,448nm,3.9s
YAK smax smax
comp=E,109nm,2.5s
YAK MLR MLR
comp=Z,2μm,13.0s
YAK MLR MLR
comp=N,1μm,12.0s
YAK MLR MLR
comp=E,444nm,11.0s
YAK Yakutsk 35.87 1 *e*P **P 23 28 21.9 +0.6**
comp=E,165nm,0.8s
DGPR DIGLIPUR 35.88 256 *e*P **P 23 28 20.1 -1.8**
DGPR IAmb IAmb 23 28 23.6
comp=Z,286nm,1.4s
SOEI Soe 35.95 187 P **P 23 28 23.3 +0.8**
SOEI Soe 35.95 187 *e*P **P 23 28 20.4 -2.2**
comp=Z,131nm,0.9s
PLAI Plampang 36.34 198 P **P 23 28 25.6 -0.2**
comp=Z,294nm,1.3s,comp=Z,3μm
TWSI Taliwang, Sumb 36.51 200 P **P 23 28 30.6 +3.3**
comp=Z,101nm,1.3s,comp=Z,1μm
LHMI Lhok Sumawe 36.73 241 *e*P **P 23 28 29.2 -0.1**
comp=Z,216nm,1.1s
PBA Port Blair 36.73 254 *e*P P 23 28 27.8 -1.4
MA2 Magadan 36.77 19 *e*P **P 23 28 29.8 +0.8**
MA2 pmax pmax
comp=Z,282nm,1.0s
MA2 MLR MLR
comp=Z,997nm,22.0s
MA2 Magadan 36.77 19 *e*P **P 23 28 29.8 +0.8**
comp=Z,282nm,1.0s
MA2 LR LR
comp=Z,997nm,22.0s
PSI Prapat 36.77 236 *e*P **P 23 28 30.5 +0.8**
PSI pmax pmax
comp=Z,65nm,1.1s
PSI Prapat 36.77 236 *e*P **P 23 28 30.5 +0.8**
comp=Z,65nm,1.1s
KCSI Kotacane, Aceh 37.16 238 P **P 23 28 32.7 -0.2**
JAGI Jajag, Banyuwa 37.18 204 P P 23 28 43.6 +11
JAGI Jajag, Banyuwa 37.18 204 *e*P **P 23 28 33.3 +0.3**
comp=Z,59nm,1.1s
NGJI Ngawi 37.26 209 P P 23 28 39.3 +5.7
comp=Z,124nm,1.1s
WMQ Urumqi 37.44 309⇓*i*P **P 23 28 34.7 -0.3**
WMQ pP pP 23 28 40.2 -2.5
WMQ sP sP 23 28 42.6 -3.2
WMQ PP **PnPn 23 30 04.6 +3.2**
WMQ PcP **PcP 23 30 54.2 +0.9**
WMQ S **S 23 34 30.4 +8.4**
WMQ ScS **ScS 23 38 46.5 -0.6**
WMQ pmax pmax
comp=Z,92nm,0.8s
WMQ pmax pmax
comp=Z,180nm,3.5s
WMQ LR LR
comp=Z,2μm,12.4s
WMQ LR LR
comp=Z,2μm,11.0s
WMQ LR LR
comp=Z,1μm,15.2s
MNSI Mandailing Nat 37.65 233 P **P 23 28 36.5 -0.5**
PWJI Pagerwojo 37.70 208 P **P 23 28 37.7 +0.4**
MLSI Meulaboh, Aceh 37.75 240 P **P 23 28 37.5 -0.4**
WOJI Wonogiri, Jawa 37.91 209 P **P 23 28 41.3 +2.1**
GUN Gumba 37.97 283 *e*P **P 23 28 39.6 -0.5**
comp=Z,831nm,1.2s
PCJI Pacitan 38.12 209 P P 23 28 52.7 +12
UGM Wanagama 38.16 210 P **P 23 28 41.9 +0.6**
PDSI Padang 38.25 230 P **P 23 28 42.5 +0.4**
PKIN Phulchoki 38.44 282 *e*P **P 23 28 43.0 -0.9**
comp=Z,483nm,0.9s
KKN Kakani 38.52 282 *e*P **P 23 28 44.0 -0.5**
comp=Z,798nm,1.0s
LEM Lembang 38.61 215 P P 23 28 52.3 +7.1
comp=Z,31nm,0.8s,baz=28,slow=15,SNR=3.7
LEM LR LR 23 46 00.9
comp=Z,512nm,19.8s,baz=17,slow=38
BOK Bokaro 38.69 276 *e*P **P 23 28 46.1 +0.4**
BOK IAmb IAmb 23 28 47.6
comp=Z,141nm,0.8s
DMN Daman 38.69 282 *e*P **P 23 28 45.6 -0.4**
comp=Z,874nm,1.1s
MASI Maura Aman, Be 38.73 225 P **P 23 28 48.1 +2.0**
SBJI Serang 38.80 217 P P 23 28 57.4 +11
MTN Manton Dam 38.84 176 *e*P **P 23 28 46.0 -1.0**
comp=Z,161nm,0.9s
GKN Gorkha 39.05 283 *e*P **P 23 28 48.3 -0.6**
comp=Z,936nm,1.0s
BWNR Bhubaneshwar 39.64 271 *e*P **P 23 28 54.4 +0.7**
BWNR IAmb IAmb 23 28 55.9
comp=Z,180nm,1.6s
PMG Port Moresby 39.68 151 P **P 23 28 53.9 0.0**
comp=Z,20nm,0.5s,baz=349,slow=13,SNR=3.8
PMG LR LR 23 43 18.7
comp=Z,1μm,20.5s,baz=316,slow=33
SEY Seymchan 39.99 17 P **P 23 28 57.0 +1.0**
comp=Z,36nm,0.7s,baz=210,slow=6.1,SNR=40
SEY Seymchan 39.99 17*ce*P **P 23 28 57.3 +1.3**
KOLN Koldanda 39.99 283 *e*P **P 23 28 56.4 -0.4**
comp=Z,502nm,1.0s
PYUN Piuthan 40.48 283 *e*P **P 23 29 00.7 -0.2**
comp=Z,1μm,1.1s
ZSN Zaisan 40.61 313 *i* P P 23 28 55.2 -6.3
comp=Z,221nm,1.4s
ZSN *e*S S 23 34 59.0 -11
ZSN LR LR 23 45 36.7
comp=Z,2μm,12.6s
CHLP Challavanipeta 41.76 269 *e*P **P 23 29 11.5 +0.3**
CHLP IAmb IAmb 23 29 13.0
comp=Z,117nm,1.0s
CHLP *e*S **S 23 35 26.0 -1.1**
CHLP IVMs_BB IVMs_BB 23 49 54.5
comp=Z,520nm,19.6s
MK01 Makanchi Array 41.83 312 *e*P **P 23 29 10.9 -0.6**
MK31 Makanchi Array 41.84 312 *e*P **P 23 29 10.5 -1.2**
MK31 Makanchi Array 41.84 312 *e*P **P 23 29 10.4 -1.2**
MKAR Makanchi Array 41.84 312 P **P 23 29 10.8 -0.9**
comp=Z,35nm,0.6s,baz=99,slow=10,SNR=348
MKAR PcP **PcP 23 31 07.7 +0.5**
comp=Z,14nm,0.7s,baz=72,slow=4.0,SNR=6.2
MKAR LR LR 23 47 05.2
comp=Z,645nm,19.3s,baz=102,slow=37
MKAR Makanchi Array 41.84 312*ce*P **P 23 29 10.3 -1.3**
MKAR pmax pmax
comp=Z,35nm,0.6s
MKAR Makanchi Array 41.84 312 *e*P **P 23 29 10.4 -1.2**
MKAR PcP **PcP 23 31 07.7 +0.5**
MAKZ Makanchi 42.06 312 *e*P **P 23 29 12.3 -1.1**
MAKZ pmax pmax
comp=Z,154nm,1.1s
MAKZ Makanchi 42.06 312 *e*P **P 23 29 12.3 -1.1**
comp=Z,154nm,1.1s
COEN Coen 42.31 159 *e*P **P 23 29 16.2 +0.5**
comp=Z,48nm,1.0s
ZAA0 Zalesovo Array 42.52 323 *e*P **P 23 29 19.7 +2.8**
ZALV Zalesovo Beam 42.52 323 P **P 23 29 15.5 -1.5**
comp=Z,19nm,0.6s,baz=110,slow=7.9,SNR=64
ZALV PcP **PcP 23 31 09.1 -0.1**
comp=Z,9.1nm,0.9s,baz=130,slow=4.3,SNR=4.0
ZALV LR LR 23 48 20.5
comp=Z,2μm,19.3s,baz=115,slow=38
VIS Vishakhapatnam 42.67 268 *e*P **P 23 29 18.8 +0.1**
VIS IAmb IAmb 23 29 20.0
comp=Z,70nm,0.4s
SHLS Shalkode 42.90 306 *i* P **P 23 29 18.0 -2.5**
comp=Z,780nm,1.5s
SHLS LR LR 23 47 12.6
comp=Z,729nm,13.3s
NVS Novosibirsk 43.72 323 *e*P **P 23 29 26.2 -0.4**
NVS *e* 23 31 09.3
NVS *e*S **S 23 35 59.3 +4.2**
NVS pmax pmax
comp=N,57nm,2.0s
NVS pmax pmax
comp=Z,140nm,2.0s
NVS pmax pmax
comp=E,93nm,1.9s
NVS pmax pmax
comp=Z,31nm,1.3s
NVS pmax pmax
comp=E,16nm,1.7s
NVS smax smax
comp=E,63nm,2.4s
NVS smax smax
comp=N,22nm,2.7s
KPKS Kokpek 43.80 306 *i* P **P 23 29 25.4 -2.2**
comp=N,3μm,1.4s
KPKS LR LR 23 47 30.9
comp=N,1μm,13.7s
ZHN Zhinishke 43.95 306 *i* P **P 23 29 26.7 -2.2**
comp=N,812nm,1.6s
ZHN LR LR 23 47 25.2
comp=N,743nm,13.5s
SATY Saty 43.96 306 *i* P **P 23 29 26.5 -2.4**
comp=N,3μm,1.4s
SATY LR LR 23 47 54.2
comp=N,1μm,13.5s
SEM Semipalatinsk 44.03 317 *i* P **P 23 29 27.4 -1.8**
comp=N,2μm,1.1s
SEM *e*S **S 23 35 55.5 -4.3**
SEM LR LR 23 48 28.2
comp=N,6μm,13.6s
FITZ Fitzroy Crossi 44.09 184 *e*P **P 23 29 30.1 +0.1**
comp=N,73nm,0.9s
TDK Taldyqorghan 44.19 309 *i* P **P 23 29 28.2 -2.4**
comp=N,2μm,1.3s
PVM Polavaram 44.36 268 *e*P **P 23 29 32.0 -0.3**
PVM IAmb IAmb 23 29 33.1
comp=Z,45nm,0.8s
PVM *e*S **S 23 36 05.3 -0.1**
PVM IVMs_BB IVMs_BB 23 51 14.9
comp=Z,486nm,10.4s
DDI Dehra Dun 44.45 288 *e*P **P 23 29 31.6 -1.3**
MDOK Medeo 44.96 306 *i* P **P 23 29 36.5 -0.5**
comp=Z,387nm,1.3s
MDOK *i* PP **PP 23 31 20.1 -2.1**
MDOK *e*S **S 23 36 12.2 -1.7**
MDOK *i* SS **ScS 23 39 32.9 0.0**
MDOK LRM MLR 23 50 03.8
comp=Z,1μm,13.6s
AAA Alma-Ata 45.05 306 *e*P **P 23 29 37.1 -0.5**
comp=Z,664nm,1.3s
AAA LR LR 23 48 36.8
comp=Z,961nm,14.0s
SMLA Simla 45.11 289 *e*P **P 23 29 36.9 -1.2**
KURK Kurchatov 45.11 317 P **P 23 29 36.9 -1.0**
KURK 23 31 18.0
KURK pmax pmax
comp=Z,76nm,0.9s
KURK pmax pmax
comp=Z,8.0nm,0.8s
KURK Kurchatov 45.11 317 *e*P **P 23 29 36.0 -1.8**
comp=Z,459nm,1.7s
KURK PcP **PcP 23 31 18.0 -0.1**
KURK LR LR
comp=Z,4μm,19.0s
KURBB Kurchatov Arra 45.15 316 P **P 23 29 36.9 -1.2**
comp=Z,76nm,0.9s,baz=102,slow=8.5,SNR=224
KURBB PcP **PcP 23 31 18.0 -0.3**
comp=Z,7.9nm,0.8s,baz=113,slow=4.0,SNR=4.6
TIXI Tiksi 45.53 0 P **P 23 29 40.5 -0.3**
comp=Z,24nm,0.7s,baz=146,slow=7.8,SNR=67
TIXI Tiksi 45.53 0*ce*P **P 23 29 40.3 -0.5**
TIXI pmax pmax
comp=Z,174nm,1.7s
TIXI Tiksi 45.53 0 *e*P **P 23 29 40.5 -0.3**
comp=Z,151nm,1.3s
TIXI LR LR
comp=Z,2μm,20.0s
KUU Kurty 45.54 307 *i* P **P 23 29 39.6 -1.8**
comp=Z,1μm,1.3s
KUU *e*S **S 23 36 17.0 -5.0**
KUU LR LR 23 49 32.9
comp=Z,2μm,13.8s
KSH Kashi 45.60 301 P **P 23 29 45.0 +2.9**
KSH *e*pP pP 23 29 49.3 -0.6
KSH *e*sP sP 23 29 51.1 -1.8
KSH *e*ScP **ScP 23 35 14.1 +2.6**
KSH S **S 23 36 27.4 +4.2**
KSH SS **SS 23 39 43.6 -3.6**
KSH pmax pmax
comp=Z,93nm,1.2s
KSH LR LR
comp=Z,2μm,11.9s
KSH LR LR
comp=Z,2μm,12.5s
KSH LR LR
comp=Z,4μm,13.2s
DHRM DHARAMSHALA 45.71 290 *e*P **P 23 29 41.7 -1.4**
DHRM IAmb IAmb 23 29 43.3
comp=Z,50nm,0.7s
RPR Rampur 45.93 271 *e*P **P 23 29 44.1 -0.6**
RPR *e*S **S 23 36 27.5 -0.6**
RPR IVMs_BB IVMs_BB 23 51 38.5
comp=Z,613nm,14.3s
TKM2 Tokmak 2 46.01 305 *e*P **P 23 29 45.3 0.0**
TKM2 pmax pmax
comp=Z,80nm,0.8s
TKM2 Tokmak 2 46.01 305 *e*P **P 23 29 45.3 0.0**
comp=Z,80nm,0.8s
TKM2 LR LR
comp=Z,2μm,19.0s
WRAB Tennant Creek 46.15 173 *e*P **P 23 29 46.4 +0.1**
WRAB pmax pmax
comp=Z,130nm,0.8s
WRAB Tennant Creek 46.15 173 *e*P **P 23 29 46.4 +0.1**
comp=Z,127nm,0.8s
WRAB LR LR
comp=Z,699nm,20.0s
WRA Warramunga Arr 46.16 173 P **P 23 29 45.8 -0.7**
comp=Z,42nm,0.8s,baz=353,slow=8.4,SNR=122
WRA S **S 23 36 29.3 -1.9**
comp=Z,3.5nm,1.1s,baz=357,slow=15,SNR=8.9
WRA LR LR 23 49 39.1
comp=Z,616nm,19.3s,baz=50,slow=37
WRA Warramunga Arr 46.16 173 *i* P **P 23 29 45.7 -0.7**
WRA pmax pmax
comp=Z,44nm,0.8s
WB2 Warramunga Arr 46.16 173 *e*P **P 23 29 46.1 -0.3**
comp=Z,145nm,0.8s
ADKI Addanki 46.34 267 *e*P **P 23 29 48.2 +0.2**
ADKI IAmb IAmb 23 29 49.3
comp=Z,49nm,0.8s
ADKI *e*S **S 23 36 34.4 +0.5**
ADKI IVMs_BB IVMs_BB 23 53 51.3
comp=Z,597nm,15.2s
BHPL Bhopal 46.37 278 *e*P **P 23 29 47.5 -0.7**
BHPL IAmb IAmb 23 29 49.0
comp=Z,30nm,0.6s
HNR Honiara 46.68 135 P **P 23 29 50.8 +0.3**
comp=Z,32nm,0.3s,baz=168,slow=7.4,SNR=4.4
HNR Honiara 46.68 135 P **P 23 29 50.8 +0.3**
HNR MLR MLR
comp=Z,862nm,20.0s
HNR Honiara 46.68 135 P **P 23 29 50.8 +0.3**
HNR LR LR
comp=Z,862nm,20.0s
NJS Nagarjunasagar 46.68 268 *e*P **P 23 29 50.8 +0.1**
NJS IAmb IAmb 23 29 51.4
comp=Z,30nm,0.8s
NJS *e*S **S 23 36 39.0 +0.1**
NJS IVMs_BB IVMs_BB 23 53 23.2
comp=Z,516nm,10.7s
FRU Bishkek 46.72 305 *e*P **P 23 29 49.0 -1.7**
FRU *e* 23 31 38.0
FRU pmax pmax
comp=Z,160nm,1.8s
SRSP Sriramsagar 46.76 272 *e*P **P 23 29 50.6 -0.7**
SRSP IAmb IAmb 23 29 52.1
comp=Z,66nm,1.0s
SRSP *e*S **S 23 36 39.2 -0.9**
SRSP IVMs_BB IVMs_BB 23 52 00.8
comp=Z,613nm,14.9s
AAK Ala-Archa 46.80 305 P **P 23 29 50.6 -1.0**
comp=Z,13nm,0.6s,baz=113,slow=6.2,SNR=34
AAK PcP **PcP 23 31 25.3 +0.9**
comp=Z,11nm,0.9s,baz=145,slow=7.3,SNR=4.8
AAK Ala-Archa 46.80 305*c i*P **P 23 29 51.0 -0.5**
AAK pmax pmax
comp=Z,28nm,1.3s
AAK Ala-Archa 46.80 305 *e*P **P 23 29 51.6 +0.1**
comp=Z,3.4nm,0.9s
AAK PcP **PcP 23 31 25.3 +0.9**
AAK LR LR
comp=Z,668nm,19.0s

HYB	**Hyderabad**	**47.06 270**	*i* P	**P**	**23 29 54.0 +0.3**
	comp=Z,50nm,1.0s				
HYB	**Hyderabad**	**47.06 270**	*e*P	**P**	**23 29 53.8 +0.1**
HYBB	**Hyderabad (bro**	**47.06 270**	*e*P	**P**	**23 29 53.4 -0.4**
HYBB			IAmb	IAmb	23 29 54.2
	comp=Z,41nm,0.8s				
HYBB			*e*S	**S**	**23 36 43.2 -1.3**
HYBB			IVMs_BB	IVMs_BB	23 52 03.7
	comp=Z,492nm,13.9s				
MDRS	**Chennai**	**47.14 264**	*e*P	**P**	**23 29 53.9 -0.4**
SRLM	**Srisailam**	**47.21 268**	*e*P	**P**	**23 29 53.9 -1.0**
SRLM			IAmb	IAmb	23 29 55.5
	comp=Z,48nm,0.9s				
SRLM			*e*S	**S**	**23 36 46.5 -0.1**
SRLM			IVMs_BB	IVMs_BB	23 52 44.4
	comp=Z,347nm,20.2s				
EKS2	**Erkin-Say**	**47.33 305**	*e*P	**P**	**23 29 55.7 +0.1**
EKS2			pmax	pmax	
	comp=Z,32nm,1.0s				
EKS2	**Erkin-Say**	**47.33 305**	*e*P	**P**	**23 29 55.7 +0.1**
	comp=Z,32nm,1.0s				
EKS2			LR	LR	
	comp=Z,1μm,22.0s				
SKHT	**Srikalahasti**	**47.35 265**	*e*P	**P**	**23 29 54.7 -1.2**
SKHT			IAmb	IAmb	23 29 57.7
	comp=Z,63nm,0.9s				
SKHT			*e*S	**S**	**23 36 48.3 -0.2**
RCLA	**Racherla**	**47.39 267**	*e*P	**P**	**23 29 55.2 -1.0**
RCLA			IAmb	IAmb	23 29 56.9
	comp=Z,38nm,0.9s				
RCLA			*e*S	**S**	**23 36 48.9 -0.1**
RCLA			IVMs_BB	IVMs_BB	23 53 55.1
	comp=Z,358nm,11.7s				
BILL	**Bilibino**	**47.63 18***c*	*i*P	**P**	**23 29 58.4 +1.0**
BILL			*i*		23 30 12.0
BILL			*i*		23 31 26.7
BILL			*i* S	**S**	**23 36 53.5 +2.3**
BILL			pmax	pmax	
	comp=Z,110nm,1.0s				
BILL			MLR	MLR	
	comp=Z,1μm,16.0s				
BILL	**Bilibino**	**47.63 18**	*e*P	**P**	**23 29 57.7 +0.3**
	comp=Z,98nm,1.0s				
BILL			LR	LR	
	comp=Z,1μm,20.0s				
MBWA	**Marble Bar**	**47.82 191**	*e*P	**P**	**23 29 59.3 -0.1**
	comp=Z,42nm,1.0s				
KLRI	**Killari**	**48.60 272**	*e*P	**P**	**23 30 04.9 -0.8**
KLRI			IAmb	IAmb	23 30 06.4
	comp=Z,176nm,0.9s				
KLRI			*e*S	**S**	**23 37 05.5 -0.9**
KLRI			IVMs_BB	IVMs_BB	23 53 06.2
	comp=Z,626nm,16.9s				
CTAO	**Charters Tower**	**49.05 158**	*e*P	**P**	**23 30 09.1 +0.2**
CTAO			pmax	pmax	
	comp=Z,390nm,0.9s				
CTAO	**Charters Tower**	**49.05 158**	*e*P	**P**	**23 30 09.1 +0.2**
	comp=Z,386nm,0.9s				
CTAO			LR	LR	
	comp=Z,874nm,20.0s				
PALK	**Pallekele**	**49.26 256**	*i* P	**P**	**23 30 12.4 +1.7**
PALK	**Pallekele**	**49.26 256**	*e*P	**P**	**23 30 09.8 -0.9**
	comp=Z,58nm,1.1s				
NRIK	**Noril'sk**	**49.43 342**	P	**P**	**23 30 10.0 -1.2**
	comp=Z,22nm,0.8s,baz=120,slow=9.4,SNR=21				
NRIK			PcP	**PcP**	**23 31 33.7 +0.6**
	comp=Z,29nm,0.8s,baz=108,slow=2.5,SNR=7.4				
NRIK			LR	LR	23 52 18.1
	comp=Z,1μm,18.8s,baz=133,slow=38				
KKAR	**Karatay Array**	**49.74 305**	*e*P	**P**	**23 30 14.2 +0.2**
KKAR	**Karatay Array**	**49.74 305**	*e*P	**P**	**23 30 14.2 +0.2**
AS31	**Alice Springs**	**49.79 174**	*e*P	**P**	**23 30 14.7 +0.2**
	comp=Z,17nm,0.6s				
ASAR	**Alice Springs**	**49.79 174**	P	**P**	**23 30 14.6 +0.1**
	comp=Z,24nm,0.8s,baz=1.3,slow=8.4,SNR=184				
ASAR			S	**S**	**23 37 23.8 +1.2**
	comp=Z,4.0nm,1.2s,baz=12,slow=22,SNR=7.4				
ASAR			LR	LR	23 50 08.8
	comp=Z,408nm,21.4s,baz=354,slow=35				
AS01	**Alice Springs**	**49.80 174**	*e*P	**P**	**23 30 14.6 +0.1**
IUG	**Iuzhnay**	**50.10 304**	*i* P	**P**	**23 30 14.9 -2.0**
	comp=Z,678nm,1.5s				
IUG			LR	LR	23 52 06.5
	comp=Z,583nm,13.4s				
BRLS	**Borolday**	**50.35 305**	*e*P	**P**	**23 30 16.2 -2.5**
BRLS			*e*S	**S**	**23 37 23.6 -6.6**
BRVK	**Borovoye**	**50.63 318***ce*P		**P**	**23 30 20.0 -0.6**
BRVK			pmax	pmax	
	comp=Z,216nm,1.2s				
BRVK	**Borovoye**	**50.63 318**	*e*P	**P**	**23 30 19.9 -0.6**
	comp=Z,180nm,1.1s				
BRVK			LR	LR	
	comp=Z,3μm,20.0s				
POO	**Poona**	**50.92 273**	*e*P	**P**	**23 30 22.5 -0.8**
POO			IAmb	IAmb	23 30 24.6
	comp=Z,201nm,1.4s				
KBL	**Kabul**	**51.45 294**	*e*P	**P**	**23 30 27.2 -0.1**
KBL			pmax	pmax	
	comp=Z,1μm,1.9s				
KBL	**Kabul**	**51.45 294**	*e*P	**P**	**23 30 27.2 -0.1**
	comp=Z,1μm,1.9s				
GOA	**Goa**	**51.98 270**	*e*P	**P**	**23 30 31.1 -0.1**
GOA			IAmb	IAmb	23 30 32.8
	comp=Z,93nm,0.8s				
TRD	**Trivandrum**	**51.98 260**	IAmb	IAmb	23 30 18.3
	comp=Z,35nm,0.6s				
TRD			*e*P	**P**	**23 30 29.8 -1.4**
BHJ	**Bhuj**	**53.26 280**	*e*P	**P**	**23 30 40.7 +0.2**
BHJ			IAmb	IAmb	23 30 41.6
	comp=Z,69nm,0.5s				
GAMB	**Gambell**	**53.53 28**	*e*P	**P**	**23 30 42.9 +1.0**
	comp=Z,33nm,1.1s				
UNV	**Unalaska Valle**	**54.60 41**	*e*P	**P**	**23 30 50.9 +1.0**
	comp=Z,101nm,1.6s				
TNA	**Tin City**	**55.54 27**	*e*P	**P**	**23 30 58.0 +1.5**
	comp=Z,97nm,1.0s				
EIDS	**Eidsvold**	**55.63 155**	*e*P	**P**	**23 30 57.7 +0.1**
	comp=Z,37nm,0.9s				
FALS	**False Pass**	**56.45 40**	*e*P	**P**	**23 31 03.6 +0.4**
	comp=Z,55nm,0.6s				
SVE	**Sverdlovsk**	**56.53 322***d*	*i*P	**P**	**23 31 03.0 -0.8**
SVE			*e*S	**S**	**23 38 55.1 +1.5**
SVE			pmax	pmax	
	comp=Z,175nm,1.5s				
SVE			MLR	MLR	
	comp=Z,6μm,13.0s				
SVE			MLR	MLR	
	comp=E,5μm,13.0s				
ABKAR	**Akbulak array**	**56.95 313**	*e*P	**P**	**23 31 06.3 -0.5**
ARU	**Arti**	**57.67 322**	P	**P**	**23 31 11.4 -0.4**
	comp=E,38nm,0.7s,baz=95,slow=4.0,SNR=63				
ARU	**Arti**	**57.67 322***d*	*i*P	**P**	**23 31 10.3 -1.5**
ARU					23 32 04.6
ARU					23 33 16.5
ARU			PPP	PPP	23 34 37.5
ARU			S	**S**	**23 39 04.7 -3.9**
ARU					23 40 55.2
ARU			SSS	SSS	23 45 13.2
ARU			pmax	pmax	
	comp=Z,148nm,1.7s				
ARU			MLR	MLR	
	comp=Z,5μm,17.0s				
ARU	**Arti**	**57.67 322**	*e*P	**P**	**23 31 10.7 -1.1**
	comp=Z,70nm,0.9s				
ARU			LR	LR	
	comp=Z,3μm,20.0s				
STKA	**Stephens Creek**	**59.02 167**	P	**P**	**23 31 21.3 -0.1**
	comp=Z,10nm,0.7s,baz=338,slow=8.0,SNR=21				
STKA			LR	LR	23 55 45.4
	comp=Z,289nm,21.2s,baz=352,slow=35				
STKA	**Stephens Creek**	**59.02 167**	*e*P	**P**	**23 31 21.3 -0.1**
STKA			pmax	pmax	
	comp=Z,9.0nm,1.3s				
STKA	**Stephens Creek**	**59.02 167**	*e*P	**P**	**23 31 21.3 -0.1**
	comp=Z,8.7nm,1.4s				
BBOO	**Buckleboo**	**59.07 173**	*e*P	**P**	**23 31 22.0 +0.2**
	comp=Z,66nm,1.1s				
CHGN	**Chignik**	**59.28 38**	*e*P	**P**	**23 31 24.3 +1.2**
GEYT	**Alibeck**	**59.63 300**	P	**P**	**23 31 26.4 +0.5**
	comp=Z,46nm,0.7s,baz=64,slow=3.4,SNR=100				
GEYT			LR	LR	00 01 32.4
	comp=Z,2μm,18.2s,baz=85,slow=40				
FUNA	**Funafuti**	**60.00 118**	PFAKE		23 31 40.0 +11
FUNA			LR	LR	
	comp=Z,9μm,19.0s				
TT01	**Tatalina**	**60.41 31**	*e*P	**P**	**23 31 32.2 +1.5**
ARMA	**Armidale**	**60.41 157**	*e*P	**P**	**23 31 32.2 +1.0**
	comp=Z,30nm,0.9s				
TTA	**Tatalina**	**60.41 31**	*e*P	**P**	**23 31 32.2 +1.4**
TTA			pmax	pmax	
	comp=Z,31nm,1.0s				
TTA	**Tatalina**	**60.41 31**	*e*P	**P**	**23 31 32.2 +1.4**
	comp=Z,31nm,1.0s				
SVW2	**Sparrevohn**	**60.64 33**	*e*P	**P**	**23 31 33.9 +1.6**
	comp=Z,36nm,0.9s				
RSO	**Reoubt South**	**62.05 33**	*e*P	**P**	**23 31 43.7 +1.6**
PPLA	**Purkeypile**	**62.16 31**	*e*P	**P**	**23 31 44.7 +2.0**
	comp=Z,115nm,1.4s				
CAST	**Castle Rocks**	**62.18 30**	*e*P	**P**	**23 31 44.6 +1.9**
	comp=Z,51nm,0.9s				
SPU	**Mount Spurr**	**62.34 33**	*e*P	**P**	**23 31 45.3 +1.4**
BPAW	**Bear Paw Mtn.**	**62.63 29**	*e*P	**P**	**23 31 47.3 +1.6**
	comp=Z,38nm,0.9s				
MLY	**Manley**	**62.67 28**	*e*P	**P**	**23 31 48.1 +2.0**
	comp=Z,55nm,0.8s				
KTH	**Kantishna Hill**	**62.69 30**	*e*P	**P**	**23 31 48.1 +1.9**
	comp=Z,48nm,1.1s				
COLD	**Coldfoot**	**62.77 26**	*e*P	**P**	**23 31 48.5 +1.9**
	comp=Z,29nm,1.0s				
TRF	**Thorofare Moun**	**62.98 30**	*e*P	**P**	**23 31 49.7 +1.4**
	comp=Z,29nm,0.9s				
BWN	**Browne**	**63.29 29**	*e*P	**P**	**23 31 52.5 +2.5**
	comp=Z,100nm,1.0s				
BIDO	**Bidbid**	**63.29 284**	P	**P**	**23 31 52.0 +1.2**
	SNR=20				
BIDO	**Bidbid**	**63.29 284**	P	**P**	**23 31 52.0 +1.2**
	SNR=20				
RC01	**Rabbit Creek A**	**63.47 33**	*e*P	**P**	**23 31 52.5 +1.1**
	comp=Z,91nm,1.4s				
SMDO	**Samad**	**63.51 284**	P	**P**	**23 31 53.0 +0.6**
	SNR=12				
SMDO	**Samad**	**63.51 284**	P	**P**	**23 31 53.0 +0.6**
	SNR=12				
MCK	**McKinley**	**63.56 30**	*e*P	**P**	**23 31 53.0 +1.1**
MCK			pmax	pmax	
	comp=Z,63nm,1.0s				
MCK	**McKinley**	**63.56 30**	*e*P	**P**	**23 31 53.0 +1.1**
	comp=Z,63nm,1.0s				
RND	**Reindeer**	**63.63 30**	*e*P	**P**	**23 31 53.2 +0.8**
RND			pmax	pmax	
	comp=Z,68nm,0.8s				
RND	**Reindeer**	**63.63 30**	*e*P	**P**	**23 31 53.2 +0.8**
	comp=Z,68nm,0.8s				
PMR	**Palmer**	**63.70 32**	*e*P	**P**	**23 31 53.4 +0.6**
PMR			pmax	pmax	
	comp=Z,85nm,1.3s				
PMR	**Palmer**	**63.70 32**	*e*P	**P**	**23 31 53.4 +0.6**
	comp=Z,86nm,1.4s				
SEW	**Seward**	**63.73 34**	*e*P	**P**	**23 31 54.2 +1.2**
	comp=Z,78nm,0.9s				
MDM	**Murphy Dome**	**63.74 28**	*e*P	**P**	**23 31 54.6 +1.5**
	comp=Z,131nm,0.9s				
WRH	**Wood River Hil**	**63.85 29**	*e*P	**P**	**23 31 54.9 +1.1**
	comp=Z,34nm,0.9s				
DGAR	**Diego Garcia**	**63.89 247**	PFAKE		23 32 10.0 +15
DGAR			LR	LR	
	comp=Z,1μm,19.0s				
COLA	**College**	**63.91 28**	*e*P	**P**	**23 31 56.5 +2.4**
COLA			pmax	pmax	
	comp=Z,37nm,0.8s				
COLA	**College**	**63.91 28**	*e*P	**P**	**23 31 56.5 +2.4**
	comp=Z,37nm,0.8s				
COLA			LR	LR	
	comp=Z,510nm,19.0s				
CCB	**Clear Creek Bu**	**63.96 28**	*e*P	**P**	**23 31 55.4 +0.9**
	comp=Z,113nm,2.0s				
SML	**Sawmill**	**64.05 32**	*e*P	**P**	**23 31 56.2 +1.0**
SML			pmax	pmax	
	comp=Z,42nm,1.0s				
SML	**Sawmill**	**64.05 32**	*e*P	**P**	**23 31 56.2 +1.0**
	comp=Z,42nm,1.0s				
CAN	**Canberra**	**64.11 162**	*e*P	**P**	**23 31 56.7 +0.9**
CAN			pmax	pmax	
	comp=Z,170nm,1.7s				
CAN	**Canberra**	**64.11 162**	*e*P	**P**	**23 31 56.7 +0.9**
	comp=Z,172nm,1.7s				
CAN			LR	LR	
	comp=Z,877nm,20.0s				
BANOM	**Banah**	**64.12 288**	P	**P**	**23 31 57.1 +0.8**
IL1	**Eielson Array**	**64.33 28**	*e*P	**P**	**23 31 56.8 -0.2**
ILAR	**Eielson Array**	**64.33 28**	P	**P**	**23 31 57.0 0.0**
	comp=Z,6.8nm,0.8s,baz=271,slow=5.7,SNR=56				
ILAR			PKP2ab		00 01 02.4
	comp=Z,0.4nm,0.8s,baz=110,slow=1.3,SNR=4.4				
ILAR			LR	LR	00 03 00.8
	comp=Z,466nm,18.3s,baz=298,slow=39				
ILAR	**Eielson Array**	**64.33 28**	P	**P**	**23 31 57.0 0.0**
ILB	**Eielson Array**	**64.33 28**	*e*P	**P**	**23 31 57.4 +0.4**
HDA	**Harding Lake**	**64.35 29**	*e*P	**P**	**23 31 57.9 +0.8**
	comp=Z,50nm,0.9s				
SCM	**Sheep Creek Mo**	**64.52 32**	*e*P	**P**	**23 31 59.6 +1.3**
SCM			pmax	pmax	
	comp=Z,110nm,1.1s				
SCM	**Sheep Creek Mo**	**64.52 32**	*e*P	**P**	**23 31 59.6 +1.3**
	comp=Z,106nm,1.2s				
HATD	**Hatta, Dubai**	**64.61 286**	*i* P	**P**	**23 32 00.0 +0.6**
	SNR=7.1				
ASHO	**Ashiyiah**	**64.72 286**	*i* P	**P**	**23 32 00.7 +0.5**
	SNR=13				
ASHO	**Ashiyiah**	**64.72 286**	P	**P**	**23 32 01.7 +1.5**
	SNR=10				
ASHO	**Ashiyiah**	**64.72 286**	P	**P**	**23 32 01.7 +1.5**
	SNR=10				
ARQ	**Araqi**	**64.75 285**	P	**P**	**23 32 00.8 +0.4**
	SNR=11				
ARQ	**Araqi**	**64.75 285**	P	**P**	**23 32 00.8 +0.4**
	SNR=11				
FYU	**Fort Yukon**	**64.79 26**	*e*P	**P**	**23 32 02.5 +2.7**
	comp=Z,63nm,1.0s				
MSVF	**Nonsavu**	**64.89 127**	*e*P	**P**	**23 32 02.4 +1.1**
MSVF			pmax	pmax	
	comp=Z,56nm,1.0s				
MSVF	**Nonsavu**	**64.89 127**	*e*P	**P**	**23 32 02.4 +1.1**
	comp=Z,56nm,1.0s				
NAZ	**Nazwa, Dubai**	**64.96 287**	*i* P	**P**	**23 32 02.1 +0.3**
	SNR=14				
FAQ	**Al Faqa, Dubai**	**65.10 287**	*i* P	**P**	**23 32 02.8 +0.2**
	SNR=14				
PAX	**Paxson**	**65.21 30**	*e*P	**P**	**23 32 03.9 +1.1**
PAX			pmax	pmax	
	comp=Z,44nm,1.0s				
PAX	**Paxson**	**65.21 30**	*e*P	**P**	**23 32 03.9 +1.1**
	comp=Z,44nm,1.0s				
KLU	**Klutina**	**65.24 32**	*e*P	**P**	**23 32 04.3 +1.3**
	comp=Z,50nm,1.3s				
DIV	**Divide**	**65.37 32**	*e*P	**P**	**23 32 05.7 +1.8**
	comp=Z,53nm,0.9s				
EYAK	**Cordova Ski Ar**	**65.48 33**	*e*P	**P**	**23 32 06.4 +2.0**
	comp=Z,30nm,1.0s				
DOT	**Dot Lake**	**65.72 29**	*e*P	**P**	**23 32 06.8 +0.7**
	comp=Z,107nm,0.9s				
BMRM	**Bremner River**	**65.96 32**	*e*P	**P**	**23 32 09.0 +1.4**
	comp=Z,84nm,1.1s				
MENT	**Mentasta**	**66.00 30**	*e*P	**P**	**23 32 08.9 +1.0**
	comp=Z,62nm,1.0s				
RAGM	**Ragged Mountai**	**66.03 33**	*e*P	**P**	**23 32 10.1 +2.0**
	comp=Z,89nm,1.0s				
EGAK	**Eagle**	**66.75 28**	*e*P	**P**	**23 32 13.9 +1.3**
	comp=Z,24nm,0.9s				
EGAK			LR	LR	
	comp=Z,456nm,22.0s				
BALM	**Baldy**	**67.02 32**	*e*P	**P**	**23 32 16.0 +1.5**
BALM			pmax	pmax	
	comp=Z,24nm,1.0s				
BALM	**Baldy**	**67.02 32**	*e*P	**P**	**23 32 16.0 +1.5**
	comp=Z,24nm,1.1s				
TMCR	**Tamitsa**	**67.04 332**	*e*P	**P**	**23 32 13.0 -1.4**
TMCR			pmax	pmax	
	comp=Z,98nm,0.9s				
KLMR	**Klimovskoe**	**67.09 328**⇑	*i*P	**P**	**23 32 13.7 -1.1**
KLMR			*e*		23 34 41.4
KLMR			pmax	pmax	
	comp=Z,127nm,1.5s				
LVZ	**Lovozero**	**67.53 336***ce*P		**P**	**23 32 16.9 -0.6**
LVZ			pmax	pmax	
	comp=Z,65nm,1.7s				
LVZ	**Lovozero**	**67.53 336**	*e*P	**P**	**23 32 17.5 0.0**
	comp=Z,44nm,1.0s				
LVZ			LR	LR	
	comp=Z,838nm,19.0s				
DAWY	**Dawson**	**67.66 28**	*e*P	**P**	**23 32 19.8 +1.3**
HOPEN	**Hopen**	**67.88 346**	*e*P	**P**	**23 32 20.3 +0.8**
APA	**Apatity**	**68.07 336**⇑	*i*P	**P**	**23 32 22.0 +1.2**
APA			pmax	pmax	
	comp=Z,81nm,1.0s				
APA			MLR	MLR	
	comp=Z,2μm,16.0s				
VRH	**Novokhopyorsk**	**68.20 317**	*e*P	**P**	**23 32 20.8 -1.1**
VRH			pmax	pmax	
	comp=Z,30nm,0.7s				
VRH			MLR	MLR	
	comp=Z,2μm,13.0s				
GUDG	**Gudauri**	**68.73 308**	P	**P**	**23 32 28.2 +2.4**
TBLG	**Delisi**	**68.75 307**	P	**P**	**23 32 25.8 +0.2**
TBLG	**Delisi**	**68.75 307**	P	**P**	**23 32 25.8 +0.2**
INK	**Inuvik**	**68.82 23**	P	**P**	**23 32 26.5 +1.1**
	comp=Z,17nm,1.0s,baz=288,slow=6.9,SNR=50				
SPA0	**Spitsbergen Ar**	**68.97 348**	*e*P	**P**	**23 32 26.7 +0.4**
SPA0			*e*S	**S**	**23 41 21.6 -7.5**
SPA0	**Spitsbergen Ar**	**68.97 348**	*e*P	**P**	**23 32 27.2 +0.8**
GOF	**Gofitskoye**	**69.00 311**⇑	*e*P	**P**	**23 32 27.9 +0.8**
GOF			pmax	pmax	
	comp=Z,77nm,0.9s				
ZEI	**Tsey**	**69.05 308**	*e*P	**P**	**23 32 27.5 -0.2**
ZEI			pmax	pmax	
	comp=Z,132nm,0.7s				
NCK	**Nalchik**	**69.06 309***c*	*i*P	**P**	**23 32 27.2 -0.3**
NCK			pmax	pmax	
	comp=Z,34nm,1.0s				
GNI	**Garni**	**69.20 305**	*i* P	**P**	**23 32 30.0 +1.3**
	SNR=18				
GNI	**Garni**	**69.20 305***ce*P		**P**	**23 32 29.3 +0.7**
GNI			pmax	pmax	
	comp=Z,222nm,1.2s				
GNI	**Garni**	**69.20 305**	P	**P**	**23 32 30.1 +1.5**
	SNR=24				
GNI	**Garni**	**69.20 305**	P	**P**	**23 32 30.1 +1.5**
	SNR=24				
GNI	**Garni**	**69.20 305**	*e*P	**P**	**23 32 29.5 +0.8**
	comp=Z,73nm,1.0s				
GNI			LR	LR	
	comp=Z,1μm,19.0s				
MOS	**Moscow**	**69.34 323**	*e*P	**P**	**23 32 27.3 -1.7**
MOS			*i*		23 32 38.3
MOS			*e*		23 32 50.8
MOS			*e*S	**S**	**23 41 31.7 -2.3**
MOS			pmax	pmax	
	comp=Z,99nm,0.7s				
MOS			pmax	pmax	
	comp=Z,100nm,0.9s				
MOS			MLR	MLR	
	comp=E,4μm,13.0s				
MOS			MLR	MLR	
	comp=Z,4μm,13.0s				
KBS	**Kingsbay**	**69.38 349**	*e*P	**P**	**23 32 28.9 0.0**
KBS			*e*S	**S**	**23 41 28.7 -5.1**
KBS	**Kingsbay**	**69.38 349**	*e*P	**P**	**23 32 29.8 +0.9**
KBS			pmax	pmax	
	comp=Z,36nm,0.8s				
KBS	**Kingsbay**	**69.38 349**	*e*P	**P**	**23 32 29.8 +0.9**
	comp=Z,36nm,0.8s				
KBS			LR	LR	
	comp=Z,759nm,19.0s				
ONI	**Oni**	**69.42 308**	P	**P**	**23 32 30.8 +1.0**
ONI	**Oni**	**69.42 308**	P	**P**	**23 32 30.8 +1.0**
KBZ	**Khabaz**	**69.48 309**	P	**P**	**23 32 30.6 +0.5**
	comp=Z,68nm,0.9s,baz=86,slow=4.7,SNR=94				
KBZ			LR	LR	00 08 38.1
	comp=Z,840nm,18.8s,baz=98,slow=41				
LPSR	**Galich'ya Gora**	**69.49 319**	*e*P	**P**	**23 32 29.1 -0.8**
LPSR			pmax	pmax	
	comp=Z,30nm,0.8s				
LPSR			MLR	MLR	
	comp=Z,2μm,15.0s				
KIV	**Kislovodsk**	**69.56 310**	*i* P	**P**	**23 32 31.4 +0.7**
	SNR=50				
KIV	**Kislovodsk**	**69.56 310**	*e*P	**P**	**23 32 31.1 +0.4**
KIV			*e*S	**S**	**23 41 33.8 -3.4**
KIV			pmax	pmax	
	comp=Z,141nm,1.1s				
KIV			pmax	pmax	
	comp=Z,92nm,3.0s				
KIV			MLR	MLR	
	comp=Z,1μm,17.0s				
KIV	**Kislovodsk**	**69.56 310**	*e*P	**P**	**23 32 31.3 +0.7**
	comp=Z,354nm,1.6s				
KIV			LR	LR	
	comp=Z,1μm,20.0s				
KEV	**Kevo**	**69.63 339**	*e*P	**P**	**23 32 30.6 +0.1**
KEV			pmax	pmax	
	comp=Z,73nm,0.9s				
KEV	**Kevo**	**69.63 339**	*e*P	**P**	**23 32 30.6 +0.1**
	comp=Z,73nm,0.9s				
KEV			LR	LR	
	comp=Z,528nm,22.0s				
HSPB	**Hornsund (broa**	**69.68 347**	*e*P	**P**	**23 32 31.2 +0.5**
HSPB	**Hornsund (broa**	**69.68 347**	*e*P	**P**	**23 32 31.2 +0.5**
BGD	**Bogdanovka**	**69.70 307**	P	**P**	**23 32 33.2 +1.4**
AKH	**Akhalkalaki**	**69.74 307**	P	**P**	**23 32 33.1 +1.2**
AKH	**Akhalkalaki**	**69.74 307**	P	**P**	**23 32 33.1 +1.2**
NEY	**Neytrino**	**69.74 309***c*	*i*P	**P**	**23 32 32.7 +0.8**
NEY			pmax	pmax	
	comp=Z,17nm,0.8s				
VSR	**Storozhevoye**	**69.74 318**	*e*P	**P**	**23 32 30.5 -1.0**
VSR			*e*S	**S**	**23 41 33.6 -5.3**
VSR			pmax	pmax	
	comp=Z,70nm,1.6s				
VSR			smax	smax	
	comp=E,200nm,5.7s				
VSR			MLR	MLR	
	comp=Z,2μm,14.0s				
EAK	**Akyaka**	**69.87 306**	*i* P	**P**	**23 32 34.6 +1.8**
OBN	**Obninsk**	**70.10 322**	P	**P**	**23 32 33.1 -0.5**
	comp=Z,45nm,0.7s,baz=103,slow=3.3,SNR=20				
OBN	**Obninsk**	**70.10 322***c*	*i*P	**P**	**23 32 33.0 -0.6**
OBN			*i*		23 32 41.7
OBN			*i* S	**S**	**23 41 46.6 +3.7**
OBN			*i* SS	**SS**	**23 46 13.3 +1.1**
OBN			pmax	pmax	
	comp=Z,195nm,2.5s				
OBN			MLR	MLR	
	comp=Z,2μm,15.0s				
OBN	**Obninsk**	**70.10 322**	*e*P	**P**	**23 32 33.2 -0.4**
	comp=Z,324nm,1.9s				
OBN			LR	LR	
	comp=Z,3μm,21.0s				
ARA0	**ARCESS Array S**	**70.20 339**	*e*P	**P**	**23 32 34.0 -0.1**
ARCES	**ARCESS Array B**	**70.20 339**	P	**P**	**23 32 34.0 -0.1**
	comp=Z,35nm,0.9s,baz=68,slow=8.0,SNR=66				
ARCES			LR	LR	00 07 30.0
	comp=Z,542nm,20.3s,baz=50,slow=39				
ARE0	**ARCESS Array S**	**70.20 339**	*e*P	**P**	**23 32 33.2 -0.9**
ARE0			*e*S	**S**	**23 41 40.7 -3.1**
ARE0	**ARCESS Array S**	**70.20 339**	*e*P	**P**	**23 32 34.1 0.0**
	comp=Z,81nm,1.1s				
EPOS	**Posof**	**70.26 307**	*i* P	**P**	**23 32 36.4 +1.3**
HAMF	**Hammerfest**	**70.36 340**	*e*P	**P**	**23 32 35.2 +0.2**
HAMF			IAmb	IAmb	23 32 35.8
	comp=Z,61nm,0.9s				
HAMF			*e*S	**S**	**23 41 42.5 -3.0**
HAMF			IAMs_20	IAMs_20	00 10 25.9
	comp=Z,2μm,15.1s				
VMUR	**Van-Muradiye**	**70.42 305**	*i* P	**P**	**23 32 37.2 +1.0**
HAKT	**HAKKARI**	**70.77 303**	*i* P	**P**	**23 32 38.9 +0.5**
SKAG	**Skagway**	**70.82 33**	*e*P	**P**	**23 32 40.2 +2.3**
	comp=Z,38nm,1.0s				
TAU	**Tasmania Unive**	**70.85 166**	PFAKE		23 32 50.0 +12
TAU			LR	LR	
	comp=Z,778nm,19.0s				
ARTV	**Artvin**	**70.93 307**	*i* P	**P**	**23 32 40.3 +1.0**
EATA	**Eleskirt**	**70.94 306**	*i* P	**P**	**23 32 40.8 +1.3**
DAGI	**Agillar**	**70.97 307**	*i* P	**P**	**23 32 40.3 +0.9**
DBAD	**Bademkaya**	**71.15 307**	*i* P	**P**	**23 32 41.4 +0.9**
KTK1	**Kautokeino**	**71.15 338**	*e*P	**P**	**23 32 40.0 +0.2**
KTK1			IAmb	IAmb	23 32 40.8
	comp=Z,67nm,0.8s				
HOMI	**Horasan**	**71.31 306**	*i* P	**P**	**23 32 43.1 +1.5**
EKAR	**Karacoban**	**71.44 305**	*i* P	**P**	**23 32 44.6 +2.1**
SOC	**Sochi**	**71.72 310**	*e*P	**P**	**23 32 43.3 -0.4**
SOC			*e*SP	**sP**	**23 32 56.1 +1.3**
SOC			*e*		23 35 21.2
SOC			*e*S	**S**	**23 41 59.8 -2.4**
SOC			pmax	p

comp=Z,94nm,0.6s
BNGL BINGOL 72.22 305 *i* P **P 23 32 48.9 +1.8**
TRO Tromso 72.26 340 *e*P **P 23 32 46.0 -0.4**
TRO IAmb IAmb 23 32 47.1
comp=Z,48nm,0.9s
TRO *e*S **S 23 42 03.0 -4.4**
TRO *e*SS **SS 23 46 44.2 -0.4**
KOPT Kop Dagi 72.34 306 *i* P **P 23 32 49.5 +1.7**
BTMN Batman 72.48 304 *i* P **P 23 32 49.3 +0.8**
ANN Anapa 72.86 312 *c i* P **P 23 32 50.1 -0.4**
ANN *i* *PP **sP 23 33 00.2 -1.5**
ANN *e*S **S 23 42 13.3 -1.9**
ANN pmax pmax
comp=Z,162nm,1.1s
MARD Mardin 73.05 304 *i* P **P 23 32 52.8 +0.9**
FIA1 FINESS Array S 73.10 331 *e*P **P 23 32 51.5 -0.1**
FINES FINESS Array B 73.10 331 P **P 23 32 51.5 -0.1**
comp=Z,53nm,0.8s,baz=73,slow=6.6,SNR=167
FINES LR LR 00 08 20.2
comp=Z,2μm,19.2s,baz=66,slow=39
KELT Kelkit 73.19 307 *i* P **P 23 32 53.9 +1.1**
DIYA Diyarbakir 73.33 304 *i* P **P 23 32 54.7 +1.2**
TNCL Tunceli-Merkez 73.34 306 *i* P **P 23 32 54.8 +1.2**
WRAK Wrangell Islan 73.38 35 *e*P **P 23 32 56.0 +2.7**
comp=Z,35nm,1.0s
WRAK LR LR
comp=Z,298nm,19.0s
DLBC Dease Lake 73.75 32 *e*P **P 23 32 58.1 +2.5**
comp=Z,46nm,1.3s
REFA Refahiye_ERZ¯ 73.81 306 *i* P **P 23 32 56.6 +0.2**
SUSE Susehri 73.92 307 *i* P **P 23 32 58.1 +1.0**
ELZG Elazig 73.96 305 *i* P **P 23 32 58.9 +1.5**
VSU Vasula 74.00 328 *c e*P **P 23 32 57.1 +0.2**
VSU pmax pmax
comp=Z,481nm,1.2s
KEMA Kemaliye 74.05 306 *i* P **P 23 32 59.1 +1.3**
STEI Steigen 74.27 339 *e*P **P 23 32 57.8 -0.5**
CUZAR Zara_SIVAS 74.35 307 *i* P **P 23 33 00.5 +1.0**
CUKAN kangal_SIVAS 74.77 307 *i* P **P 23 33 03.0 +0.9**
ERBA Erbaa 74.79 308 *i* P **P 23 33 02.8 +0.9**
AKCD Akcadag 74.81 305 *i* P **P 23 33 03.3 +1.0**
SURC SANLIURFA_SURC 74.82 304 *i* P **P 23 33 02.9 +0.7**
SAMS Samsun-Alacam 74.94 309 *i* P **P 23 33 01.2 -1.5**
SIM Simferopol' 75.02 313 *c i* P **P 23 33 03.4 +0.3**
SIM *e*S **S 23 42 43.7 +4.2**
SIM pmax pmax
comp=Z,78nm,1.0s
MICGM Minsk 75.02 324⇑ *e*P **P 23 33 03.0 +0.1**
MICGM PM 23 33 04.0
comp=Z,0.2nm,1.2s
MICGM *e*LR LR 00 07 18.0
MICGM LRM MLR 00 09 40.0
comp=Z,8.1nm,12.0s
MICGM LRM MLR 00 09 42.0
comp=E,5.3nm,13.0s
MNK Minsk 75.02 324⇑ *e*P **P 23 33 03.0 +0.1**
MNK pmax pmax
comp=Z,210nm,1.2s
MNK MLR MLR
comp=Z,8μm,12.0s
MNK MLR MLR
comp=E,5μm,13.0s
CUGUR Gurin_S¯VAS 75.13 306 *i* P **P 23 33 01.7 -2.4**
CUALT Altinyayla-SIV 75.30 307 *i* P **P 23 33 06.7 +1.7**
HAVZ Havza 75.37 309 *i* P **P 23 33 06.1 +0.8**
DAG Danmarks Havn 75.37 353⇑ *i* P **P 23 33 04.6 0.0**
comp=E,41nm,0.9s
DAG Danmarks Havn 75.37 353⇑ *i* P **P 23 33 04.6 0.0**
DAG pmax pmax
comp=Z,34nm,0.9s
GZT Gaziantep 75.42 305 *i* P **P 23 33 06.8 +1.0**
NACGM Naroch 75.44 324 *e*P **P 23 33 06.0 +0.7**
NACGM PM 23 33 17.0
comp=Z,0.5nm,1.0s
NACGM *e*LQ LQ 00 00 13.0
NACGM *e*LR LR 00 08 24.0
RES Resolute Bay 75.55 11 P **P 23 33 06.5 +0.8**
comp=Z,90nm,0.8s,baz=305,slow=5.6,SNR=30
CUSAR Sarkisla-SIVAS 75.62 307 *i* P **P 23 33 07.8 +1.0**
BOYT Boyabat 75.81 309 *i* P **P 23 33 08.9 +1.1**
AKASG Malin Array Be 75.81 320 P **P 23 33 07.3 -0.3**
comp=Z,64nm,0.7s,baz=55,slow=6.0,SNR=271
AKASG LR LR 00 09 24.4
comp=Z,1μm,19.2s,baz=55,slow=38
AKBB Malin Array Si 75.81 320 *e*P **P 23 33 07.5 -0.1**
AKBB Malin Array Si 75.81 320 *e*P **P 23 33 07.5 -0.1**
KIEV Kiev 75.83 320 *c i* P **P 23 33 07.2 -0.4**
KIEV pmax pmax
comp=Z,87nm,0.8s
KIEV Kiev 75.83 320 *e*P **P 23 33 07.4 -0.2**
comp=Z,76nm,0.8s
KIEV LR LR
comp=Z,2μm,20.0s
AK11 Malin Array Si 75.86 320 *e*P **P 23 33 07.4 -0.4**
STOK Stokkvaagen 75.86 338 *e*P **P 23 33 08.6 +1.1**
HCB Kahramanmara¯ 75.91 305 *i* P **P 23 33 09.2 +0.8**
KUZU Kuzuini 76.00 304 *i* P **P 23 33 10.0 +1.0**
KAMA Osmaniye 76.15 305 *i* P **P 23 33 10.6 +0.7**
COAL Corum-Alaca 76.20 308 *i* P **P 23 33 10.8 +0.7**
ANDN Andirin 76.24 305 *i* P **P 23 33 11.4 +1.0**
ILGA Ilgaz 76.78 309 *i* P **P 23 33 14.8 +1.3**
AVNS Nevsehir-Avano 76.86 307 *i* P **P 23 33 14.5 +0.6**
CDAG Cicekdag 76.88 308 *i* P **P 23 33 14.5 +0.5**
AKO Adana 76.94 305 *i* P **P 23 33 15.5 +1.2**
YAYL Yayladag 77.01 304 *i* P **P 23 33 14.6 -0.2**
ELDT Eldivan 77.20 309 *i* P **P 23 33 16.8 +0.9**
NSS Namsos 77.23 337 *e*P **P 23 33 13.4 -1.9**
BR131 Keskin Array S 77.36 308 *e*P **P 23 33 17.1 +0.4**
BRTR Keskin Array B 77.36 308 P **P 23 33 17.0 +0.3**
comp=Z,71nm,0.8s,baz=97,slow=5.0,SNR=274
BRTR LR LR 00 11 33.0
comp=Z,219nm,20.2s,baz=54,slow=39
SORM Soroca 77.40 318⇓ *i* P **P 23 33 16.7 +0.1**
BTIN Bart¯–n 77.56 310 *i* P **P 23 33 18.1 +0.5**
KIS Kishinev 77.59 316 *e*P **P 23 33 18.0 +0.3**
KIS *e*S S 23 43 18.0 +10
KIS LRM MLR 00 11 50.0
comp=Z,2μm,15.0s
KIS Kishinev 77.59 316⇓ *i* P **P 23 33 17.9 +0.3**
KIS Kishinev 77.59 316 *e*P **P 23 33 18.0 +0.3**
KIS *e* 23 33 25.0
KIS *e*S S 23 43 18.0 +10
KIS MLR MLR
comp=N,1μm,15.0s
KIS MLR MLR
comp=E,2μm,15.0s
KIS MLR MLR
comp=Z,2μm,15.0s
KIS MLR MLR
comp=Z,2μm,16.0s
DED Mersin 77.61 305 *i* P **P 23 33 18.2 +0.2**
AKSY AKSARAY - Alti 77.70 307 *i* P **P 23 33 17.7 -0.8**
SUW Suwalki 77.72 324 *e*P **P 23 33 18.3 +0.1**
SUW LMZ LR 00 10 44.6
comp=Z,3μm,18.0s
SUW Suwalki 77.72 324⇑ *e*P **P 23 33 18.3 +0.1**
SUW MLR MLR
comp=Z,3μm,18.0s
BBAL Bala 77.79 308 *i* P **P 23 33 19.6 +0.4**
ANTO Ankara 77.89 308 *e*P **P 23 33 20.3 +0.7**
ANTO pmax pmax
comp=Z,96nm,1.0s
ANTO Ankara 77.89 308 *e*P **P 23 33 20.3 +0.7**
comp=Z,96nm,1.0s
ANTO LR LR
comp=Z,10.0nm,21.0s
BR231 Keskin MP Arra 77.92 308 *e*P **P 23 33 20.6 +0.7**
KERG Konya-Eregli 77.93 306 *i* P **P 23 33 20.0 +0.1**
BCAM Yenicaga 78.02 310 *i* P **P 23 33 20.7 +0.4**
KKUL Konya-Kulu 78.09 308 *i* P **P 23 33 21.5 +0.7**
LEOM Leova 78.17 316⇓ *i* P **P 23 33 21.5 +0.6**
IAS Iasi 78.28 317⇑ *i* P **P 23 33 22.3 +0.8**
TLCR 78.36 315⇑ *i* P **P 23 33 23.2 +1.2**
YKW3 Yellowknife Ar 78.40 25 *e*P **P 23 33 22.3 +0.5**
comp=Z,69nm,1.5s
YKA Yellowknife Ar 78.44 25 P **P 23 33 23.1 +1.0**
comp=Z,13nm,0.8s,baz=299,slow=5.4,SNR=146
YKA PKKPbc **PKKPbc 23 52 21.9 +2.1**
comp=Z,0.2nm,0.8s,baz=112,slow=2.7,SNR=4.1
YKA PKPPKP **P'P'df 00 00 34.3 +7.5**
comp=Z,0.1nm,0.6s,baz=123,slow=2.3,SNR=3.7
YKB5 Yellowknife Ar 78.44 25 *e*P **P 23 33 21.8 -0.3**
TBLU Trondheim 78.59 336 *e*P **P 23 33 22.1 -0.8**
TBLU IAmb IAmb 23 33 25.9
comp=Z,80nm,1.3s
GIUM Giurgiulesti 78.62 315⇑ *i* P **P 23 33 24.6 +1.2**
DAMY Dhamar 78.63 281 *e*P **P 23 33 25.8 +1.4**
comp=Z,52nm,1.1s
CFR Carcaliu 78.80 315⇑ *i* P **P 23 33 25.6 +1.2**
SAHE Sakarya_HENDEK 78.84 310 *i* P **P 23 33 24.4 -0.4**
BTAS Taskesti 78.86 310 *i* P **P 23 33 25.5 +0.6**
KDHN Kadinhani 78.93 307 *i* P **P 23 33 25.5 +0.1**
TIRR Tirgusor 78.93 314⇓ *i* P **P 23 33 25.8 +0.6**
TIRR Tirgusor 78.93 314 *e*P **P 23 33 25.4 +0.3**
TIRR pmax pmax
comp=Z,66nm,1.1s
TIRR Tirgusor 78.93 314 *e*P **P 23 33 25.4 +0.3**
comp=Z,66nm,1.1s
AUSIV SIVRIHISAR 78.95 308 *i* P **P 23 33 25.8 +0.3**
KLNR Kaliningrad 78.96 326 *i* P **P 23 33 24.7 -0.4**
KLNR pmax pmax
comp=Z,180nm,1.3s
PRAR RASCA 79.02 317⇑ *i* P **P 23 33 26.5 +0.8**
HFS Hagfors 79.05 332 P **P 23 33 25.3 -0.2**
comp=Z,33nm,0.8s,baz=67,slow=5.0,SNR=65
KMER Konya-Meram 79.06 307 *i* P **P 23 33 26.3 +0.1**
ERMK Ermenek 79.13 305 *i* P **P 23 33 26.8 +0.1**
PETR Petresti 79.13 316⇓ *i* P **P 23 33 28.4 +2.2**
HARR Harsova 79.14 314⇑ *i* P **P 23 33 27.9 +1.6**
TESR Tescani 79.14 317⇑ *i* P **P 23 33 27.0 +0.7**
LVV L'vov 79.20 320 *d i* P **P 23 33 26.7 +0.2**
LVV *e* 23 36 25.9
LVV *e*PPP PPP 23 38 20.3
LVV *e*S **S 23 43 23.5 -1.3**
LVV *e*PS PnS 23 44 28.3 +19
LVV MLR MLR
comp=N,400nm,17.0s
LVV MLR MLR
comp=E,2μm,17.0s
LVV MLR MLR
comp=Z,1μm,17.0s
ODBI Odobesti 79.22 316⇓ *i* P **P 23 33 29.3 +2.6**
NC405 NORSAR Array S 79.29 334 *e*P **P 23 33 26.9 0.0**
NC303 NORSAR Array S 79.36 334 *e*P **P 23 33 27.2 0.0**
VRI Vrincioaia 79.38 316⇑ *i* P **P 23 33 29.6 +1.9**
ESKT Eskisehir 79.40 309 *i* P **P 23 33 27.8 -0.2**
PSN Preselentsi 79.42 313 *i* P **P 23 33 28.9 +1.1**
PLOR Plostina 79.44 316⇓ *i* P **P 23 33 30.0 +2.0**
KULLO Kullorsuaq 79.44 2⇑ *i* P **P 23 33 27.9 +0.5**
comp=Z,31nm,0.9s
KULLO Kullorsuaq 79.44 2⇑ *i* P **P 23 33 27.9 +0.5**
KULLO pmax pmax
comp=Z,31nm,0.9s
GRER 79.45 315⇑ *i* P **P 23 33 30.1 +2.1**
NB201 NORSAR Array S 79.50 334 *e*P **P 23 33 27.7 -0.3**
MAMC Mammari 79.51 304 P **P 23 33 29.0 +0.5**
CSS Mathiatis 79.51 304 P **P 23 33 29.3 +0.7**
CSS Mathiatis 79.51 304 P **P 23 33 28.9 +0.4**
CSS Mathiatis 79.51 304 *e*P **P 23 33 28.9 +0.4**
comp=Z,35nm,0.7s
CSS LR LR
comp=Z,154nm,19.0s
BUR08 Bucovina Ar. S 79.52 318 *e*P **P 23 33 28.8 +0.3**
BURAR Bucovina Array 79.52 318⇓ *i* P **P 23 33 29.7 +1.2**
BORA Eskisehir 79.53 309 *i* P **P 23 33 28.7 0.0**
NB2 NORSAR Subarra 79.53 334 P **P 23 33 28.0 -0.2**
comp=Z,57nm,0.8s,baz=52,slow=5.6
NB2 NORSAR Subarra 79.53 334 P **P 23 33 28.0 -0.2**
baz=52,slow=5.6
NOA NORSAR Array B 79.53 334 P **P 23 33 27.9 -0.3**
comp=Z,42nm,0.8s,baz=52,slow=5.4,SNR=208
NOA LR LR 00 13 53.4
comp=Z,977nm,19.9s,baz=35,slow=40
SNZO South Karori 79.56 147 *e*P **P 23 33 29.8 +1.4**
comp=Z,86nm,0.5s
SNZO LR LR
comp=Z,508nm,20.0s
AMRR Amara 79.56 315⇓ *i* P **P 23 33 30.3 +1.7**
NC204 NORSAR Array S 79.57 334 *e*P **P 23 33 27.9 -0.6**
NC602 NORSAR Array S 79.58 334 *e*P **P 23 33 24.7 -3.7**
NC602 *e*S **S 23 43 27.3 -1.2**
NC602 NORSAR Array S 79.58 334 *e*P **P 23 33 27.9 -0.5**
PGOR Pogoanele 79.65 315⇓ *i* P **P 23 33 31.0 +1.9**
NBO02 NORSAR Array S 79.67 334 *e*P **P 23 33 28.7 -0.2**
BOLV Bolvadin 79.67 308 *i* P **P 23 33 30.0 +0.5**
RPZ Rata Peaks 79.68 150 *e*P **P 23 33 29.1 0.0**
comp=Z,42nm,1.0s
NBO00 NORSAR Array S 79.71 334 *e*P **P 23 33 29.3 +0.2**
GAZI Gazipasa 79.73 305 *i* P **P 23 33 29.4 -0.4**
NAO01 NORSAR Array S 79.78 334 *e*P **P 23 33 29.0 -0.5**
ISR Istrita 79.84 315⇓ *i* P **P 23 33 31.8 +1.6**
SZAC Souni 79.93 304 P **P 23 33 31.8 +0.9**
ALFC Alefka 79.98 304 P **P 23 33 31.4 +0.3**
ISK Istanbul-Kandi 79.98 311 P P 23 33 45.8 +15
MOL Molde 79.99 336 *e*P **P 23 33 31.1 +0.6**
MOL IAmb IAmb 23 33 33.2
comp=Z,31nm,0.7s
BUY Buyukada 80.03 311 *i* P **P 23 33 31.7 +0.5**
BEL Belsk 80.03 323 *e*P **P 23 33 32.0 +1.0**
BEL LMZ LR 00 11 43.5
comp=Z,4μm,16.8s
BEL Belsk 80.03 323⇑ *e*P **P 23 33 32.0 +1.0**
BEL MLR MLR
comp=Z,4μm,16.8s
MLR Muntele Rosu 80.04 316⇓ *i* P **P 23 33 32.6 +1.2**
MLR Muntele Rosu 80.04 316 *e*P **P 23 33 31.9 +0.5**
MLR pmax pmax
comp=Z,78nm,1.0s
MLR Muntele Rosu 80.04 316 *e*P **P 23 33 31.9 +0.5**
comp=Z,78nm,1.0s
KWP Kalwaria Pacla 80.05 321 *e*P **P 23 33 32.1 +0.9**
KWP *e*S **S 23 43 35.1 +1.3**
KWP LMZ LR 00 11 18.4
comp=Z,2μm,18.5s
KWP Kalwaria Pacla 80.05 321⇑ *i* P **P 23 33 32.3 +1.1**
KWP Kalwaria Pacla 80.05 321⇑ *e*P **P 23 33 32.1 +0.9**
KWP *e*S **S 23 43 35.1 +1.3**
KWP MLR MLR
comp=Z,2μm,18.5s
BAGO Egridir - ISPA 80.10 307 *i* P **P 23 33 32.3 +0.5**
PRD Provadia 80.14 313 *i* P **P 23 33 32.7 +0.9**
DOPR Dopca 80.17 316⇑ *i* P **P 23 33 33.2 +1.3**
SECR 80.17 315⇑ *i* P **P 23 33 34.0 +2.1**
SULR 80.22 315⇑ *i* P **P 23 33 34.3 +2.2**
IGD Bursa 80.23 310 *i* P **P 23 33 31.8 -0.6**
AKMC Akamas 80.23 304 P **P 23 33 32.6 +0.1**
PPCY Paphos 80.28 304 P **P 23 33 33.0 +0.3**
ARCR ARCALIA 80.29 318⇓ *i* P **P 23 33 34.1 +1.6**
ULDT Uludag 80.33 310 *i* P **P 23 33 33.8 +0.7**
ISP Isparta 80.36 307⇓ *i* P **P 23 33 33.7 +0.5**
ISP Isparta 80.36 307 P **P 23 33 32.8 -0.4**
ISP Isparta 80.36 307 *e*P **P 23 33 33.4 +0.2**
ISP pmax pmax
comp=Z,84nm,1.1s
ISP Isparta 80.36 307 *e*P **P 23 33 33.4 +0.2**
comp=Z,84nm,1.1s
ISP LR LR
comp=Z,554nm,20.0s
OSL Oslo 80.38 333 *e*P **P 23 33 32.7 0.0**
OSL IAmb IAmb 23 33 33.7
comp=Z,85nm,0.7s
BVCR Bucharest-Old 80.43 315⇑ *i* P **P 23 33 34.6 +1.3**
AKN Aaknes 80.44 336 *e*P **P 23 33 33.5 +0.5**
AKN IAmb IAmb 23 33 34.4
comp=Z,66nm,0.9s
AKN *e*S **S 23 43 31.4 -6.1**
BMR Baia Mare 80.52 319⇓ *i* P **P 23 33 35.6 +1.9**
GDZ Gediz 80.55 309 *i* P **P 23 33 34.2 0.0**
VOIR 80.63 316⇓ *i* P **P 23 33 35.3 +0.8**
KOLS Kolonicke sedl 80.63 320 *e*P **P 23 33 34.8 +0.5**
KOLS pmax pmax
comp=Z,18nm,1.0s
KOLS MLR MLR
comp=Z,1μm,16.9s
MDB Medias 80.71 317⇑ *i* P **P 23 33 36.5 +1.7**
UZH Uzhgorod 80.77 320 *e*P **P 23 33 34.4 -0.6**
UZH *e* 23 33 43.6
UZH *e* 23 33 51.6
UZH *e* 23 38 27.6
UZH *e*S **S 23 43 40.4 -1.0**
UZH *e* 23 44 40.4
UZH MLR MLR
comp=N,1μm,14.0s
UZH MLR MLR
comp=E,1μm,14.0s
UZH MLR MLR
comp=Z,700nm,14.0s
KORT Korkueli 80.84 307 *i* P **P 23 33 35.5 -0.4**
KHAL Karahalli 80.86 308 *i* P **P 23 33 35.6 -0.2**
TRPA Tarpa 80.87 319⇑ *e*P **P 23 33 36.4 +0.8**
CJR Cluj-Napoca 80.92 318⇑ *i* P **P 23 33 38.2 +2.2**
ARR Arges 80.92 316⇓ *i* P **P 23 33 37.5 +1.5**
STHS Stebnicka Huta 80.98 321 *e*P **P 23 33 36.9 +0.7**
STHS pmax pmax
comp=Z,28nm,1.1s
STHS Stebnicka Huta 80.98 321 *e*P **P 23 33 36.9 +0.7**
KONO Kongsberg 81.01 333 *e*P **P 23 33 36.0 -0.1**
KONO *e*S **S 23 43 42.5 -1.0**
KONO Kongsberg 81.01 333 *e*P **P 23 33 36.3 +0.2**
KONO pmax pmax
comp=Z,41nm,1.0s
KONO Kongsberg 81.01 333 *e*P **P 23 33 36.3 +0.2**
comp=Z,41nm,1.0s
KONO LR LR
comp=Z,1μm,19.0s
JMB Yambol 81.01 313 *i* P **P 23 33 37.2 +0.7**
DURS Dursunbey 81.02 310 *i* P **P 23 33 37.1 +0.3**
SZH Strazhica 81.07 314 *i* P **P 23 33 37.3 +0.5**
HUMR Humele 81.09 315⇓ *i* P **P 23 33 37.6 +0.7**
DEMI Demirci 81.10 309 *i* P **P 23 33 37.2 +0.1**
CRVS Cervenica-Dubn 81.11 320 *e*P **P 23 33 37.8 +0.9**
CRVS Cervenica-Dubn 81.11 320 *e*P **P 23 33 37.8 +0.9**
SUMG Summit 81.13 356⇑ *i* P **P 23 33 38.3 +1.3**
comp=Z,201nm,0.8s
SUMG Summit 81.13 356 *e*P **P 23 33 38.3 +1.3**
SUMG pmax pmax
comp=Z,220nm,0.9s
SUMG Summit 81.13 356 *e*P **P 23 33 38.3 +1.3**
comp=Z,225nm,0.9s
EDRB Edirne 81.19 312 P **P 23 33 38.2 +0.8**
ZIMR 81.26 314⇓ *i* P **P 23 33 38.8 +1.1**
BSD Bornholm Skovb 81.30 328⇑ *i* P **P 23 33 37.9 +0.2**
comp=Z,94nm,0.8s
BSD Bornholm Skovb 81.30 328⇑ *i* P **P 23 33 37.9 +0.2**
BSD pmax pmax
comp=Z,94nm,0.8s
GOLH Golhisar 81.30 307 *i* P **P 23 33 38.0 -0.3**
KULA Kula-Manisa 81.38 309 P **P 23 33 38.6 0.0**
SCO Scoresbysund 81.38 350⇑ *i* P **P 23 33 38.7 +0.8**
comp=Z,83nm,1.2s
SCO *i* 23 33 50.2
SCO Scoresbysund 81.38 350⇑ *i* P **P 23 33 38.7 +0.8**
SCO *i* 23 33 50.2
SCO pmax pmax
comp=Z,83nm,1.2s
HYA Hoyanger 81.38 336 *e*P **P 23 33 38.1 +0.1**
HYA IAmb IAmb 23 33 39.1
comp=Z,57nm,0.9s
OJC Ojcow 81.39 322 *e*P **P 23 33 39.1 +0.8**
OJC *e*S S 23 43 59.9 +12
OJC LMZ LR 00 12 29.7
comp=Z,4μm,16.9s
OJC Ojcow 81.39 322⇑ *e*P **P 23 33 39.1 +0.8**
OJC MLR MLR
comp=Z,4μm,16.9s
OJC Ojcow 81.39 322 *e*P **P 23 33 38.4 0.0**
comp=Z,102nm,1.0s
DRGR 81.42 318⇑ *i* P **P 23 33 40.2 +1.6**
LOT Lotru 81.42 317⇓ *i* P **P 23 33 40.0 +1.3**
SART Tekirdag 81.42 311 *i* P **P 23 33 39.6 +0.8**
DNZL Cakiroluk 81.47 308 *i* P **P 23 33 39.9 +0.6**
PVL Pavlikeni 81.48 314 *i* P **P 23 33 40.3 +1.4**
NIE Niedzica 81.52 321 *e*P **P 23 33 39.3 +0.2**
NIE *e*S S 23 44 01.3 +12
NIE LMZ LR 00 12 35.2
comp=Z,2μm,18.6s
NIE Niedzica 81.52 321⇑ *e*P **P 23 33 39.3 +0.2**
NIE MLR MLR
comp=Z,2μm,18.6s
FOO Floro 81.52 336 *e*P **P 23 33 39.2 +0.5**
FOO IAmb IAmb 23 33 39.7
comp=Z,33nm,1.0s
FOO *e*S **S 23 43 45.9 -2.8**
BALY Balya 81.55 310 *i* P **P 23 33 39.9 +0.4**
KESN Edirne-Kesan 81.70 311 *i* P **P 23 33 40.8 +0.2**
AKAS Kas 81.71 306 *i* P **P 23 33 37.6 -2.8**
DEV Deva 81.74 317⇓ *i* P **P 23 33 41.8 +1.5**
KSL Kastellorizon 81.77 306 P **P 23 33 39.5 -1.1**
KECS Kecovo 81.88 320 *e*P **P 23 33 41.6 +0.6**
KECS pmax pmax
comp=Z,31nm,1.7s
KECS Kecovo 81.88 320 *e*P **P 23 33 41.6 +0.6**
DIM Dimitrovgrad 81.89 313 *i* P **P 23 33 42.1 +1.0**
FETY Fethiye 81.91 307 P **P 23 33 41.0 -0.4**
OSD Olympics--Snow 81.95 40 P **P 23 33 43.8 +2.2**
SUE Sulen 81.98 336 *e*P **P 23 33 41.8 +0.6**
SUE IAmb IAmb 23 33 42.3
comp=Z,42nm,0.8s
SUE *e*S **S 23 43 52.0 -1.5**
SUE *e*SS **SS 23 49 09.8 -1.6**
ODD1 Odda 82.02 334 *e*P **P 23 33 41.6 0.0**
NLWA Neilton Lookou 82.07 41 *e*P **P 23 33 44.1 +2.0**
comp=Z,37nm,1.2s
NLWA LR LR
comp=Z,202nm,21.0s
ALN Alexandroupoli 82.09 312 P **P 23 33 42.3 +0.1**
ENEZ Enez 82.09 311 P **P 23 33 42.9 +0.7**
LANS Liptovska Anna 82.12 321 *e*P **P 23 33 43.6 +1.3**
LANS Liptovska Anna 82.12 321 *e*P **P 23 33 43.6 +1.3**
COP Copenhagen 82.14 329⇑ *i* P **P 23 33 43.0 +0.9**
comp=Z,39nm,0.8s
COP Copenhagen 82.14 329⇑ *i* P **P 23 33 43.0 +0.9**
COP pmax pmax
comp=Z,39nm,0.8s
SRE Strehaia 82.15 316⇑ *i* P **P 23 33 44.3 +1.9**
TURN Turunc 82.15 307 *i* P **P 23 33 44.9 +2.3**
KDZ Kurdzhali 82.16 313 *i* P **P 23 33 43.3 +0.7**
ASK Askoy 82.20 335 *e*P **P 23 33 42.5 +0.2**
ASK IAmb IAmb 23 33 45.6
comp=Z,23nm,0.9s
BER Bergen 82.21 335 *e*P **P 23 33 42.4 0.0**
BER IAmb IAmb 23 33 44.1
comp=Z,30nm,0.9s
BER *e*S **S 23 43 53.2 -2.7**
BER *e*SS **SS 23 49 12.3 -2.6**
YER Yerkesik 82.26 307 P **P 23 33 43.9 +0.6**
AYDN Tasoluk 82.31 308 *i* P **P 23 33 44.5 +1.0**
RAC Raciborz 82.34 322 *e*P **P 23 33 44.3 +1.0**
RAC MLR MLR
comp=Z,4μm,17.4s
RGN Rugen 82.38 328 *e*P **P 23 33 44.7 +1.3**
comp=Z,96nm,1.0s
AYVA Ayvalik 82.39 310 *i* P **P 23 33 44.2 +0.5**
EZN Ezine 82.40 311 P **P 23 33 43.8 0.0**
BLS5 Blasjo 82.40 334 *e*P **P 23 33 43.8 +0.3**
BLS5 *e*S **S 23 43 56.0 -2.0**
PLD Plovdiv 82.42 313 *i* P **P 23 33 44.6 +0.7**
MPEP Malo Peshtene 82.44 315 *i* P **P 23 33 44.8 +0.8**
OKC Ostrava-Krasne 82.50 322⇑ *e*P **P 23 33 44.9 +0.8**
OKC *e*PCP **pP 23 33 51.5 -0.9**
OKC *ex* x 23 33 55.6
OKC AMS AMS 00 13 00.0
comp=Z,3μm,15.0s
OKC Ostrava-Krasne 82.50 322 *e*P **P 23 33 44.9 +0.8**
OKC *e* 23 33 55.6
OKC MLR MLR
comp=Z,3μm,15.0s
PSZ Piszkesteto 82.51 320⇑ *i* P **P 23 33 45.9 +1.5**
PSZ Piszkesteto 82.51 320⇑ *e*P **P 23 33 45.0 +0.6**
PSZ Piszkesteto 82.51 320 *e*P **P 23 33 45.4 +1.0**
PSZ pmax pmax
comp=Z,120nm,1.5s
PSZ Piszkesteto 82.51 320 *e*P **P 23 33 45.4 +1.0**
comp=Z,117nm,1.5s
PSZ LR LR
comp=Z,1μm,19.0s
PGB Panagyurishte 82.55 314 *i* P **P 23 33 45.5 +0.8**
RZN Rozhen 82.60 313 *i* P **P 23 33 45.7 +0.6**
SMTH Samothraki Isl 82.64 311 P **P 23 33 45.1 0.0**
B05A Bryant 82.65 39 P **P 23 33 46.0 +1.0**
baz=301
BZS Buzias 82.66 317⇓ *i* P **P 23 33 45.6 +0.5**
E03A Lebam 82.68 41 *e*P **P 23 33 48.0 +2.8**
comp=Z,64nm,1.0s
PRK Paraskevi 82.70 310 P **P 23 33 45.8 +0.4**
GCAM G?zelcaml? 82.75 308 *i* P **P 23 33 46.4 +0.7**
JCW Jim Creek 82.78 39 P **P 23 33 47.5 +1.8**
SNART Snartemo 82.80 333 *e*P **P 23 33 45.6 +0.1**
SNART IAmb IAmb 23 33 46.5
comp=Z,45nm,0.8s

VYHS	**Vyhne**	**82.82 321**	*e*P	**P**	**23 33 47.0 +1.1**
VYHS			*e*		23 33 56.7
VYHS			*e*S	**S**	**23 44 00.1 -2.5**
VYHS			pmax	pmax	
	comp=Z,43nm,1.1s				
VYHS			MLR	MLR	
	comp=Z,2µm,18.1s				
DGB	**˜zmir**	**82.83 309**	*i* P	**P**	**23 33 46.8 +0.7**
MORC	**Moravsky Berou**	**82.86 322⇑**	*i*P	**P**	**23 33 47.8 +1.7**
MORC	**Moravsky Berou**	**82.86 322**	*e*P	**P**	**23 33 47.0 +0.9**
MORC			pmax	pmax	
	comp=Z,210nm,1.1s				
MORC	**Moravsky Berou**	**82.86 322**	*e*P	**P**	**23 33 47.0 +0.9**
	comp=Z,214nm,1.2s				
B06A	**Marblemount**	**82.87 39**	*e*P	**P**	**23 33 48.5 +2.4**
	comp=Z,81nm,1.5s				
BDRM	**Kayabasi**	**82.89 308**	*i* P	**P**	**23 33 45.5 -1.0**
URLA	**Izmir**	**82.89 309**	*i* P	**P**	**23 33 46.8 +0.4**
KSP	**Ksiaz**	**82.96 324**	*e*P	**P**	**23 33 47.6 +1.1**
KSP			LMZ	LR	00 13 52.2
	comp=Z,3µm,18.0s				
KSP	**Ksiaz**	**82.96 324⇑**	*e*P	**P**	**23 33 47.6 +1.1**
KSP			MLR	MLR	
	comp=Z,3µm,18.0s				
SIGR	**SIGRI**	**83.01 310**	P	**P**	**23 33 47.0 0.0**
ZEY	**˜zmir**	**83.01 309**	*i* P	**P**	**23 33 47.0 0.0**
KMY	**Karmoy**	**83.01 334**	*e*P	**P**	**23 33 44.0 -2.6**
KMY			IAmb	IAmb	23 33 47.7
	comp=Z,29nm,0.9s				
MDVR	**Moldovita**	**83.01 317⇓**	*i*P	**P**	**23 33 48.0 +1.0**
STAV	**Stavanger**	**83.02 334**	*e*P	**P**	**23 33 47.0 +0.3**
STAV			*e*S	**S**	**23 44 03.0 -1.1**
SMG	**Samos**	**83.02 309**	P	**P**	**23 33 47.4 +0.2**
BANR	**Banloc**	**83.07 317⇓**	*i*P	**P**	**23 33 48.7 +1.5**
KAVA	**Kavala**	**83.07 312**	P	**P**	**23 33 47.9 +0.6**
KRLC	**Kraliky**	**83.11 323**	*e*P	**P**	**23 33 48.1 +0.7**
KRLC			*ex*	x	23 33 57.7
KRLC	**Kraliky**	**83.11 323**	*e*P	**P**	**23 33 48.1 +0.7**
KRLC			*e*		23 33 57.7
MUD	**Monsted U'grnd**	**83.14 331⇑**	*i*P	**P**	**23 33 47.9 +0.6**
	comp=Z,86nm,0.9s				
MUD	**Monsted U'grnd**	**83.14 331⇑**	*i*P	**P**	**23 33 47.9 +0.6**
MUD			pmax	pmax	
	comp=Z,86nm,0.9s				
DPC	**Dobruska-Polom**	**83.21 323**	*e*P	**P**	**23 33 48.8 +0.9**
DPC			*ex*	x	23 33 55.6
DPC			*ex*	x	23 33 58.3
DPC			*e*PP	**PP**	**23 36 59.3 +0.4**
DPC			*e*S	**S**	**23 44 11.6 +5.0**
DPC			AMS	AMS	00 15 10.0
	comp=Z,3µm,13.0s				
DPC	**Dobruska-Polom**	**83.21 323**	*e*P	**P**	**23 33 48.8 +0.9**
DPC			*e*		23 33 58.3
DPC			*e*		23 36 59.3
DPC			*e*S	**S**	**23 44 11.6 +5.0**
DPC			MLR	MLR	
	comp=Z,3µm,13.0s				
BUD	**Budapest**	**83.24 320⇑**	*e*P	**P**	**23 33 48.6 +0.6**
D05A	**Enumclaw**	**83.27 40**	*e*P	**P**	**23 33 50.8 +2.6**
	comp=Z,52nm,1.1s				
UPC	**Upice**	**83.29 324⇑**	*e*P	**P**	**23 33 49.2 +0.9**
UPC			*ex*	x	23 33 59.1
UPC			*e*PP	**PP**	**23 37 01.9 +2.4**
UPC			*e*S	**S**	**23 44 12.3 +5.0**
UPC			AMS	AMS	00 15 00.0
	comp=Z,4µm,12.9s				
UPC	**Upice**	**83.29 324**	*e*P	**P**	**23 33 49.2 +0.9**
UPC			*e*		23 33 59.1
UPC			*e*		23 37 01.9
UPC			*e*S	**S**	**23 44 12.3 +5.0**
UPC			MLR	MLR	
	comp=Z,4µm,12.9s				
MMB	**Musomiste**	**83.30 313**	*i* P	**P**	**23 33 48.9 +0.3**
NVR	**Nevrokopi**	**83.33 313**	P	**P**	**23 33 49.0 +0.3**
GSM	**Grass Mountain**	**83.38 40**	P	**P**	**23 33 51.1 +2.2**
GSM	**Grass Mountain**	**83.38 40**	P	**P**	**23 33 51.1 +2.2**
G03D	**McMinnville, O**	**83.53 43**	P	**P**	**23 33 51.0 +1.4**
	baz=301				
TDL	**Tradedollar La**	**83.58 41**	P	**P**	**23 33 52.0 +2.1**
KKB	**Krupnik**	**83.59 314**	*i* P	**P**	**23 33 50.4 +0.4**
SMOL	**Smolenice**	**83.60 321**	*e*P	**P**	**23 33 51.2 +1.3**
SMOL	**Smolenice**	**83.60 321**	*e*P	**P**	**23 33 51.2 +1.3**
LON	**Longmire**	**83.61 41**	*e*P	**P**	**23 33 52.1 +2.1**
LON			pmax	pmax	
	comp=Z,17nm,1.1s				
LON	**Longmire**	**83.61 41**	*e*P	**P**	**23 33 52.1 +2.1**
	comp=Z,16nm,1.1s				
SRS	**Serrai**	**83.62 313**	P	**P**	**23 33 50.0 -0.2**
VRAC	**Vranov**	**83.64 322⇓**	*i*P	**P**	**23 33 51.8 +1.7**
F04A	**Amboy**	**83.67 42**	*e*P	**P**	**23 33 52.3 +2.0**
	comp=Z,44nm,1.0s				
OUR	**Ouranopolis**	**83.74 312**	P	**P**	**23 33 50.9 +0.2**
CSKK	**Cs˙ţkako**	**83.74 320**	*e*P	**P**	**23 33 51.6 +0.9**
KARP	**Karpathos**	**83.79 306**	P	**P**	**23 33 51.5 +0.3**
KARP	**Karpathos**	**83.79 306**	*e*P	**P**	**23 33 51.7 +0.6**
	comp=Z,56nm,1.1s				
COR	**Corvallis**	**83.83 43**	*e*P	**P**	**23 33 54.6 +3.5**
COR			pmax	pmax	
	comp=Z,79nm,1.2s				
COR	**Corvallis**	**83.83 43**	*e*P	**P**	**23 33 54.6 +3.5**
	comp=Z,79nm,1.2s				
RNO	**Roman Nose**	**83.90 44**	P	**P**	**23 33 53.9 +2.3**
LTY	**Liberty**	**84.00 40**	*e*P	**P**	**23 33 53.6 +1.5**
	comp=Z,26nm,1.2s				
PVCC	**Panska Ves**	**84.05 324⇑**	*e*P	**P**	**23 33 53.1 +1.0**
PVCC			*ex*	x	23 34 02.8
PVCC			*ex*	x	23 34 06.5
PVCC			*e*PP	**PP**	**23 37 05.8 +0.2**
PVCC			AMS	AMS	00 15 30.0
	comp=Z,3µm,12.9s				
PVCC	**Panska Ves**	**84.05 324**	*e*P	**P**	**23 33 53.1 +1.0**
PVCC			*e*		23 34 02.8
PVCC			*e*		23 34 06.5
PVCC			*e*		23 37 05.8
PVCC			MLR	MLR	
	comp=Z,3µm,12.9s				
KNT	**Kendrikon**	**84.06 313**	P	**P**	**23 33 52.6 +0.2**
PLG	**Polygyros**	**84.08 312**	P	**P**	**23 33 52.3 -0.3**
PAIG	**Paliouri**	**84.14 312**	P	**P**	**23 33 52.7 -0.1**
B08A	**Colville Reser**	**84.16 38**	*e*P	**P**	**23 33 54.6 +1.8**
	comp=Z,57nm,1.4s				
BRG	**Berggiesshubel**	**84.18 325**	*i* P	**P**	**23 33 53.6 +0.8**
	comp=Z,55nm,1.1s				
BRG			*i*		23 34 03.4
	comp=Z,67nm,1.3s				
BRG			PP	**PP**	**23 37 10.0 +3.3**
BRG			S	**S**	**23 44 22.0 +5.8**
BRG			SS	SS	23 49 58.0 +14
	comp=N,1µm,13.9s				
	comp=E,2µm,16.5s				
	comp=Z,3µm,16.5s				
BRG	**Berggiesshubel**	**84.18 325**	*i* P	**P**	**23 33 53.6 +0.8**
BRG			*i*		23 34 03.4
BRG					23 37 10.0
BRG			S	**S**	**23 44 22.0 +5.8**
BRG			pmax	pmax	
	comp=Z,55nm,1.1s				
BRG			MLR	MLR	
	comp=N,1µm,13.9s				
BRG			MLR	MLR	
	comp=E,2µm,16.5s				
BRG			MLR	MLR	
	comp=Z,3µm,16.5s				
NAC	**Naches**	**84.19 40**	P	**P**	**23 33 55.1 +2.1**
VAY	**Valandovo**	**84.19 313**	P	**P**	**23 33 53.2 +0.2**
VAY	**Valandovo**	**84.19 313**	*i* P	**P**	**23 33 53.6 +0.6**
HORT	**Hortiatis**	**84.20 312**	P	**P**	**23 33 52.8 -0.4**
APE	**Apeiranthos**	**84.24 308⇑**	*i*P	**P**	**23 33 53.2 -0.3**
TREC	**Trest**	**84.25 323⇑**	*e*P	**P**	**23 33 54.1 +0.9**
TREC			*ex*	x	23 34 03.8
TREC			*e*S	**S**	**23 44 17.1 +0.1**
TREC			AMS	AMS	00 14 10.0
	comp=Z,3µm,16.2s				
TREC	**Trest**	**84.25 323**	*e*P	**P**	**23 33 54.1 +0.9**
TREC			*e*		23 34 03.8
TREC			*e*S	**S**	**23 44 17.1 +0.1**
TREC			MLR	MLR	
	comp=Z,3µm,16.2s				
I03D	**Drain, OR**	**84.26 44**	P	**P**	**23 33 54.9 +1.6**
	baz=301,SNR=8.8				
THE	**Thessaloniki**	**84.27 313**	P	**P**	**23 33 53.0 -0.4**
GOPC	**GO Pecny, Ondr**	**84.28 324**	*e*P	**P**	**23 33 54.4 +1.0**
GOPC			*ex*	x	23 34 03.9
GOPC			*e*PP	**PP**	**23 37 06.9 -0.6**
GOPC			*e*S	**S**	**23 44 17.5 +0.2**
GOPC			AMS	AMS	00 15 30.0
	comp=Z,3µm,13.2s				
GOPC	**GO Pecny, Ondr**	**84.28 324**	*e*P	**P**	**23 33 54.4 +1.0**
GOPC			*e*		23 34 03.9
GOPC			*e*		23 37 06.9
GOPC			*e*S	**S**	**23 44 17.5 +0.2**
GOPC			MLR	MLR	
	comp=Z,3µm,13.2s				
PRU	**Pruhonice**	**84.37 324⇑**	*i*P	**P**	**23 33 54.6 +0.8**
PRU			*ex*	x	23 34 04.2
PRU			*ex*	x	23 34 17.6
PRU			*e*PP	**PP**	**23 37 06.6 -1.6**
PRU			*e*S	**S**	**23 44 17.2 -0.9**
PRU			AMS	AMS	00 15 40.0
	comp=Z,3µm,12.5s				
PRU	**Pruhonice**	**84.37 324⇑**	*i*P	**P**	**23 33 54.6 +0.8**
PRU			*e*		23 34 04.2
PRU			*e*		23 37 06.6
PRU			*e*S	**S**	**23 44 17.2 -0.9**
PRU			MLR	MLR	
	comp=Z,3µm,12.5s				
CLL	**Collm**	**84.41 325⇑**	*i*P	**P**	**23 33 54.4 +0.4**
	comp=Z,77nm,0.8s				
CLL			*e*		23 34 01.0
CLL			*i*		23 34 04.4
	comp=Z,77nm,1.0s				
CLL			*i* PP	**PP**	**23 37 08.2 -0.3**
CLL			*e*		23 37 17.0
CLL			*e*PPP	PPP	23 40 00.0
CLL			*e*S	**S**	**23 44 22.0 +3.5**
CLL			*e*PS	**PnS**	**23 45 11.0 -2.8**
CLL			*e*SS	**SS**	**23 49 42.0 -5.9**
CLL			*e*		23 54 29.0
CLL			*e*SSSS		23 56 12.0
CLL			LmH		00 08 00.0
	comp=N,4µm,21.0s				
CLL			LmH		00 08 00.0
	comp=E,3µm,21.4s				
CLL			Lm	MLR	00 15 00.0
	comp=Z,3µm,18.0s				
CLL	**Collm**	**84.41 325⇑**	*i*P	**P**	**23 33 54.4 +0.4**
CLL			*i*		23 34 04.4
CLL			*e*S	**S**	**23 44 22.0 +3.5**
CLL			pmax	pmax	
	comp=Z,77nm,0.8s				
CLL			MLR	MLR	
	comp=Z,3µm,18.0s				
CLL	**Collm**	**84.41 325**	*e*P	**P**	**23 33 54.1 +0.1**
	comp=Z,85nm,0.7s				
DIVS	**Divibare**	**84.42 317**	P	**P**	**23 33 54.4 +0.1**
H04A	**Detroit Lake**	**84.46 43**	*e*P	**P**	**23 33 56.1 +1.7**
	comp=Z,50nm,1.4s				
GRG	**Griva**	**84.48 313**	P	**P**	**23 33 54.2 -0.4**
SOP	**Sopron**	**84.54 321⇑**	*e*P	**P**	**23 33 55.8 +1.1**
SKO	**Skopje**	**84.60 314**	P	**P**	**23 33 56.0 +0.9**
SKO	**Skopje**	**84.60 314**	*i* P	**P**	**23 33 56.4 +1.2**
SANT	**Santorini**	**84.62 308**	*e*P	**P**	**23 33 54.6 -0.8**
	comp=Z,126nm,1.0s				
SANT			LR	LR	
	comp=Z,402nm,19.0s				
ZKR	**Zakros**	**84.68 306**	P	**P**	**23 33 55.1 -0.5**
G05D	**Wamic, OR**	**84.69 42**	P	**P**	**23 33 56.9 +1.3**
	baz=302				
EREA	**Eretria**	**84.70 310**	P	**P**	**23 33 55.7 -0.1**
XOR	**Xorichti**	**84.74 311**	P	**P**	**23 33 55.5 -0.4**
I04A	**Tendick Farm,**	**84.79 43**	P	**P**	**23 33 57.0 +0.9**
	baz=302,SNR=8.7				
CONA	**Conrad Observa**	**84.80 321**	*i* pP	**P**	**23 33 57.4 +1.3**
	comp=Z,108nm,1.8s,SNR=46				
LIT	**Litchoron**	**84.85 312**	P	**P**	**23 33 56.1 -0.4**
L02D	**Cave Junction,**	**84.88 45**	P	**P**	**23 33 57.3 +0.8**
	baz=301				
FYTO	**Fytoko, Volos**	**84.89 312**	P	**P**	**23 33 56.2 -0.4**
ILULI	**Ilulissat**	**84.91 360⇑**	*i*P	**P**	**23 33 56.4 +0.3**
ILULI	**Ilulissat**	**84.91 360⇑**	*i*P	**P**	**23 33 56.4 +0.3**
KTI	**Kastanea**	**84.95 313**	P	**P**	**23 33 56.6 -0.5**
SMIA	**Simia**	**84.97 311**	P	**P**	**23 33 55.7 -1.4**
ATHU	**Athens Univers**	**85.03 310**	P	**P**	**23 33 56.0 -1.4**
NPS	**Neapolis**	**85.04 307**	P	**P**	**23 33 57.4 -0.1**
HUMO	**Hull Mountain**	**85.06 45**	*e*P	**P**	**23 33 59.0 +1.5**
	comp=Z,35nm,1.5s				
ATH	**Athens Observa**	**85.07 310**	P	**P**	**23 33 56.1 -1.4**
VLY	**Voula,Athens**	**85.08 310**	P	**P**	**23 33 55.5 -2.1**
G06A	**Carlson Farm,**	**85.10 42**	*e*P	**P**	**23 33 59.8 +2.1**
	comp=Z,108nm,1.8s				
D08A	**Wollman Farm,**	**85.11 39**	*e*P	**P**	**23 33 59.2 +1.6**
	comp=Z,36nm,1.2s				
HAWA	**Hanford**	**85.12 40**	*e*P	**P**	**23 33 58.6 +1.0**
	comp=Z,62nm,1.5s				
BIA	**Bitola**	**85.16 314**	*i* P	**P**	**23 33 58.0 0.0**
I05D	**Terrebonne, OR**	**85.16 43**	P	**P**	**23 33 59.3 +1.3**
	baz=302				
LAST	**Lasithi**	**85.19 307⇓**	*i*P	**P**	**23 33 59.0 +0.7**
LAST	**Lasithi**	**85.19 307**	P	**P**	**23 33 58.6 +0.3**
LAST	**Lasithi**	**85.19 307**	*e*P	**P**	**23 33 58.4 +0.1**
	comp=Z,574nm,1.4s				
KZN	**Kozani**	**85.22 313**	P	**P**	**23 33 57.9 -0.5**
LKR	**Lokris**	**85.23 311**	P	**P**	**23 33 57.4 -0.9**
FNA	**Florina**	**85.24 313**	P	**P**	**23 33 57.9 -0.5**
VILL	**Villia**	**85.25 310**	P	**P**	**23 33 56.7 -1.8**
NKC	**Novy Kostel**	**85.33 325⇑**	*e*PP	PP	23 37 19.1 +3.0
NKC			*e*SKS	**S**	**23 44 23.4 -4.3**
NKC			AMS	AMS	00 16 20.0
	comp=Z,3µm,12.9s				
ARSA	**Arzberg**	**85.37 321**	*i* PcP	**P**	**23 33 59.7 +0.8**
	comp=Z,47nm,1.7s,SNR=22				
KHC	**Kasperske Hory**	**85.37 323**	*e*P	**P**	**23 33 59.3 +0.4**
KHC			*ex*	x	23 34 09.2
KHC			*e*PP	**PP**	**23 37 19.9 +3.4**
KHC			*e*SKS	**S**	**23 44 24.4 -3.8**
KHC			AMS	AMS	00 16 20.0
	comp=Z,3µm,12.8s				
KHC	**Kasperske Hory**	**85.37 323**	*e*P	**P**	**23 33 59.3 +0.4**
KHC			*e*		23 34 09.2
KHC			*e*		23 37 19.9
KHC			*e*S	**S**	**23 44 24.4 -3.8**
KHC			MLR	MLR	
	comp=Z,3µm,12.8s				
KHC	**Kasperske Hory**	**85.37 323**	*e*P	**P**	**23 33 59.3 +0.4**
	comp=Z,22nm,1.2s				
KOGS	**Kog**	**85.40 320**	*i* P	**P**	**23 33 59.0 0.0**
NEW	**Newport**	**85.44 38**	P	**P**	**23 34 00.3 +1.0**
	baz=305,SNR=11				
NEW	**Newport**	**85.44 38**	*e*P	**P**	**23 34 00.7 +1.4**
NEW			pmax	pmax	
	comp=Z,16nm,1.1s				
NEW	**Newport**	**85.44 38**	*e*P	**P**	**23 34 00.7 +1.4**
	comp=Z,16nm,1.1s				
NEW			LR	LR	
	comp=Z,324nm,20.0s				
OHR	**Ohrid**	**85.45 314**	*i* P	**P**	**23 33 59.5 +0.1**
GEC2	**GERESS Array S**	**85.47 323**	*e*P	**P**	**23 33 59.9 +0.4**
GEC2			pmax	pmax	
	comp=Z,48nm,1.2s				
GEC2	**GERESS Array S**	**85.47 323**	*e*P	**P**	**23 33 59.9 +0.4**
	comp=Z,48nm,1.2s				
GERES	**GERESS Array B**	**85.47 323**	P	**P**	**23 34 00.1 +0.6**
	comp=Z,12nm,0.7s,baz=46,slow=4.6,SNR=115				
GERES			LR	LR	00 15 32.1
	comp=Z,3µm,18.0s,baz=54,slow=38				
GEA0	**GERESS Array S**	**85.47 323**	*e*P	**P**	**23 33 59.1 -0.4**
AGG	**Agios Georgios**	**85.50 311**	P	**P**	**23 33 58.3 -1.4**
AGG	**Agios Georgios**	**85.50 311**	*e*P	**P**	**23 33 58.9 -0.8**
AGG			pmax	pmax	
	comp=Z,170nm,1.0s				
AGG	**Agios Georgios**	**85.50 311**	*e*P	**P**	**23 33 58.9 -0.8**
	comp=Z,166nm,1.0s				
IDI	**Anoyia**	**85.55 307⇑**	*i*P	**P**	**23 33 59.9 -0.2**
IDI	**Anoyia**	**85.55 307**	P	**P**	**23 33 59.4 -0.7**
IDI	**Anoyia**	**85.55 307**	*e*P	**P**	**23 33 59.8 -0.3**
	comp=Z,132nm,1.2s				
LTK	**Loutraki**	**85.56 310**	P	**P**	**23 33 58.2 -1.8**
DID	**Didima**	**85.63 310**	P	**P**	**23 33 57.9 -2.5**
NEST	**Nestorio**	**85.64 313**	P	**P**	**23 34 00.2 -0.3**
DSF	**Desfina**	**85.67 311**	P	**P**	**23 33 58.9 -1.7**
KPRO	**Kipourio**	**85.67 313**	P	**P**	**23 33 59.8 -0.8**
YBH	**Yreka Blue Hor**	**85.67 45**	*e*P	**P**	**23 34 02.8 +2.1**
YBH			pmax	pmax	
	comp=Z,45nm,1.6s				
YBH	**Yreka Blue Hor**	**85.67 45**	*e*P	**P**	**23 34 02.8 +2.1**
	comp=Z,45nm,1.6s				
MOA	**Molln**	**85.73 322**	*i* PcP	**P**	**23 34 01.7 +1.0**
	comp=Z,25nm,0.8s,SNR=19				
SIVA	**Sivas**	**85.74 307⇑**	*i*P	**P**	**23 34 02.3 +1.4**
SIVA	**Sivas**	**85.74 307**	P	**P**	**23 34 01.1 +0.2**
KRND	**KRANIDI**	**85.75 310**	P	**P**	**23 33 58.2 -2.8**
PDG	**Podgorica**	**85.75 316⇓**	*i*P	**P**	**23 34 02.6 +1.8**
PDG	**Podgorica**	**85.75 316**	P	**P**	**23 34 01.9 +1.1**
M02C	**Callahan**	**85.76 46**	P	**P**	**23 34 01.9 +0.9**
	baz=302				
THAL	**Thalero**	**85.76 310**	P	**P**	**23 33 59.1 -1.9**
BLY	**Banja Luka**	**85.78 318⇑**	*i*P	**P**	**23 34 01.6 +0.6**
J05D	**Fort Rock, OR**	**85.78 43**	P	**P**	**23 34 02.7 +1.5**
	baz=302,SNR=13				
K04D	**Chiloquin, OR**	**85.81 44**	P	**P**	**23 34 02.3 +1.0**
	baz=302				
EVR	**Evrytania**	**85.90 312**	P	**P**	**23 34 00.8 -1.0**
TIR	**Tirane**	**85.93 314⇑**	*i*P	**P**	**23 34 03.5 +1.7**
TIR	**Tirane**	**85.93 314**	*e*P	**P**	**23 34 02.8 +1.0**
TIR			pmax	pmax	
	comp=Z,90nm,0.9s				
TIR			MLR	MLR	
	comp=Z,1µm,19.0s				
TIR	**Tirane**	**85.93 314**	*e*P	**P**	**23 34 02.8 +1.0**
	comp=Z,90nm,0.9s				
TIR			LR	LR	
	comp=Z,1µm,19.0s				
KALE	**Kalithea**	**85.94 311**	P	**P**	**23 34 01.4 -0.6**
PERS	**Pernice**	**85.94 321**	*i* P	**P**	**23 34 02.1 +0.3**
SOKA	**Soboth**	**85.97 321**	*i* PcP	**P**	**23 34 02.3 +0.4**
	comp=Z,34nm,1.1s,SNR=18				
VAM	**Vamos**	**85.98 308**	P	**P**	**23 34 02.4 +0.2**
SERG	**Sergoula**	**85.99 311**	P	**P**	**23 34 00.7 -1.5**
ANX	**Ano Chora**	**85.99 311**	P	**P**	**23 34 01.3 -0.9**
N02D	**Trinity Center**	**86.07 46**	P	**P**	**23 34 04.3 +1.7**
	baz=302				
FURI	**Furi**	**86.09 278**	*e*P	**P**	**23 34 06.1 +2.6**
	comp=Z,175nm,1.6s				
KLV	**Kalavryta, Ach**	**86.11 311**	P	**P**	**23 34 01.4 -1.4**
IMMV	**Iera Moni Meta**	**86.11 308**	P	**P**	**23 34 02.7 -0.1**
LAKA	**Lakka**	**86.13 311**	P	**P**	**23 34 02.1 -0.8**
JAN	**Janina**	**86.16 313**	P	**P**	**23 34 03.5 +0.5**
M04C	**Macdoel**	**86.20 45**	P	**P**	**23 34 04.8 +1.5**
	baz=302,SNR=7.1				
VLI	**Veliai**	**86.23 309**	P	**P**	**23 34 01.5 -1.8**
DSL	**Palaion Diasel**	**86.27 312**	P	**P**	**23 34 02.7 -0.8**
GRFO	**Grafenberg**	**86.29 325**	*e*P	**P**	**23 34 04.4 +1.0**
GRFO			pmax	pmax	
	comp=Z,170nm,1.3s				
GRFO	**Grafenberg**	**86.29 325**	*e*P	**P**	**23 34 04.4 +1.0**
	comp=Z,170nm,1.3s				
VLX	**Vlachokerasia**	**86.29 310**	P	**P**	**23 34 02.6 -1.2**
K05A	**Summer Lake**	**86.29 44**	*e*P	**P**	**23 34 05.7 +1.9**
	comp=Z,62nm,1.2s				
OBKA	**Obir**	**86.34 321**	*i* PcP	**P**	**23 34 05.2 +1.4**
	comp=Z,21nm,1.1s				
GVD	**Gavdhos**	**86.34 307**	P	**P**	**23 34 03.6 -0.3**
DRO	**Drossia**	**86.45 311**	P	**P**	**23 34 04.5 0.0**
PDO	**Prodromos**	**86.48 311**	P	**P**	**23 34 03.5 -1.1**
BOJS	**Bojanci**	**86.50 320**	*i* P	**P**	**23 34 05.0 +0.5**
RLS	**Riolos of Patr**	**86.57 311**	P	**P**	**23 34 04.9 -0.1**
IGT	**Igoumenitsa**	**86.57 313**	P	**P**	**23 34 04.2 -0.8**
SGD	**Sagiada**	**86.59 313**	P	**P**	**23 34 05.0 -0.1**
LJU	**Ljubljana**	**86.61 320**	*i* P	**P**	**23 34 05.3 +0.2**
AMT	**Artemida-Makis**	**86.67 310**	P	**P**	**23 34 04.7 -0.8**
KBA	**Koelnbreinsper**	**86.69 322**	*i* PcP	**P**	**23 34 06.1 +0.5**
	comp=Z,24nm,0.7s,SNR=17				
ITM	**Ithomi**	**86.70 310**	P	**P**	**23 34 05.6 -0.1**
WALA	**Waterton Lakes**	**86.70 36**	*e*P	**P**	**23 34 07.8 +2.2**
	comp=Z,46nm,1.4s				
LKD2	**Lefkada island**	**86.74 312**	P	**P**	**23 34 06.0 +0.2**
MYKA	**Terra Mystica**	**86.78 321**	*i* PcP	**P**	**23 34 06.5 +0.5**
	comp=Z,20nm,0.7s,SNR=6.2				
BSMT	**Bassoo Peak**	**86.95 37**	P	**P**	**23 34 09.0 +2.1**
PYL	**PYLOS**	**86.97 310**	P	**P**	**23 34 05.9 -1.1**
KFL	**Anninata**	**87.00 311**	P	**P**	**23 34 06.2 -0.9**
O03D	**Paynes Creek**	**87.01 46**	P	**P**	**23 34 08.1 +0.8**
	baz=302				
VLS	**Valsamata**	**87.10 311**	P	**P**	**23 34 07.4 -0.2**
MOD	**Modoc Plateau**	**87.11 44**	*e*P	**P**	**23 34 09.8 +2.0**
	comp=Z,44nm,1.1s				
SFJD	**Kangerlussuaq**	**87.14 360**	P	**P**	**23 34 07.3 +0.1**
	comp=Z,35nm,0.7s,baz=13,slow=3.6,SNR=18				
SFJD	**Kangerlussuaq**	**87.14 360⇑**	*i*P	**P**	**23 34 07.2 +0.1**
SFJD	**Kangerlussuaq**	**87.14 360**	*e*P	**P**	**23 34 07.2 +0.1**
	comp=Z,62nm,1.0s				
SFJD			LR	LR	
	comp=Z,653nm,21.0s				
ZKS	**Zakynthos**	**87.21 311**	P	**P**	**23 34 07.7 -0.5**
BMO	**Blue Mountains**	**87.28 41**	*e*P	**P**	**23 34 09.6 +1.1**
	comp=Z,8.7nm,0.9s				
BMO			LR	LR	
	comp=Z,219nm,20.0s				
JTMT	**Jette**	**87.29 37**	*e*P	**P**	**23 34 10.6 +2.1**
ABTA	**Abfaltersbach**	**87.34 322**	*i* PcP	**P**	**23 34 08.7 0.0**
	comp=Z,20nm,0.7s,SNR=18				
WTTA	**Wattenberg**	**87.52 323**	*i* PcP	**P**	**23 34 09.6 -0.1**
	comp=Z,56nm,1.9s,SNR=7.3				
SWMT	**Swartz Lake**	**87.59 37**	*e*P	**P**	**23 34 11.2 +1.3**
ORV	**Oroville**	**87.60 47**	*e*P	**P**	**23 34 12.7 +2.7**
ORV			pmax	pmax	
	comp=Z,21nm,1.2s				
ORV	**Oroville**	**87.60 47**	*e*P	**P**	**23 34 12.7 +2.7**
	comp=Z,21nm,1.2s				
MOTA	**Moosalm**	**87.76 323**	*i* P	**P**	**23 34 10.3 -0.5**
	comp=Z,28nm,0.8s,SNR=28				
WVOR	**Wild Horse Val**	**87.85 43**	*e*P	**P**	**23 34 13.3 +2.0**
WVOR			pmax	pmax	
	comp=Z,23nm,1.1s				
WVOR	**Wild Horse Val**	**87.85 43**	*e*P	**P**	**23 34 13.3 +2.0**
	comp=Z,22nm,1.1s				
WVOR			LR	LR	
	comp=Z,202nm,19.0s				
RETA	**Reutte**	**87.86 323**	*i* P	**P**	**23 34 10.9 -0.3**
	comp=Z,14nm,0.8s,SNR=6.0				
STU	**Stuttgart**	**87.90 325**	*e*P	**P**	**23 34 11.8 +0.6**
STU			pmax	pmax	
	comp=Z,42nm,0.8s				
STU	**Stuttgart**	**87.90 325**	*e*P	**P**	**23 34 11.8 +0.6**
	comp=Z,42nm,0.8s				
MSO	**Missoula**	**88.03 38**	P	**P**	**23 34 12.5 +0.5**
	baz=307				
MSO	**Missoula**	**88.03 38**	*e*P	**P**	**23 34 13.5 +1.4**
	comp=Z,12nm,1.1s				
FETA	**Feichten**	**88.16 323**	*i* PcP	**P**	**23 34 12.7 0.0**
	comp=Z,26nm,0.9s,SNR=18				
AFDM	**Forest Hills D**	**88.27 47**	*e*P	**P**	**23 34 15.2 +2.0**
	comp=Z,22nm,1.4s				
FCC	**Fort Churchill**	**88.28 21**	*e*P	**P**	**23 34 13.9 +1.1**
FCC			pmax	pmax	
	comp=Z,45nm,1.1s

CMB pmax pmax
comp=Z,11nm,0.9s
CMB Columbia Colle 89.15 48 *eP* **P 23 34 18.9 +1.5**
comp=Z,11nm,0.9s
SNF Seneffe 89.21 328 P **P 23 34 19.8 +2.5**
TUE Stuetta 89.25 323 *eP* **P 23 34 17.8 -0.1**
comp=Z,48nm,0.8s
TUE LR LR
comp=Z,3µm,20.0s
CUC Castrocucco 89.25 315 PFAKE 23 34 30.0 +12
CUC LR LR
comp=Z,372nm,20.0s
DOU Dourbes 89.34 328 P **P 23 34 17.9 0.0**
comp=Z,7.8nm,1.0s
FRB Frobisher Bay 89.38 8 P **P 23 34 17.8 -0.1**
comp=Z,17nm,0.8s,baz=338,slow=6.4,SNR=19
AQU L'Aquila 89.40 318 *eP* **P 23 34 19.8 +1.3**
AQU pmax pmax
comp=Z,110nm,1.0s
AQU L'Aquila 89.40 318 *eP* **P 23 34 19.8 +1.3**
comp=Z,113nm,1.0s
AQU LR LR
comp=Z,1µm,20.0s
LRM Limekiln Ridge 89.46 38 *eP* **P 23 34 20.9 +1.9**
EGMT Eagleton 89.51 35 P **P 23 34 20.0 +1.1**
baz=310
EGMT Eagleton 89.51 35 *eP* **P 23 34 20.6 +1.7**
comp=Z,22nm,1.0s
EGMT LR LR
comp=Z,223nm,20.0s
WAKR Walker 89.52 47 *eP* **P 23 34 22.3 +3.0**
DLMT Dillon 89.66 38 *eP* **P 23 34 21.9 +2.1**
comp=Z,35nm,1.1s
HLID Hailey 89.72 40 P **P 23 34 21.5 +1.3**
baz=307,SNR=13
HLID Hailey 89.72 40 *eP* **P 23 34 22.2 +2.1**
comp=Z,20nm,1.3s
HLID LR LR
comp=Z,298nm,19.0s
MCMT McKenzie Canyo 89.85 39 *eP* **P 23 34 23.9 +3.1**
BOZ Bozeman (W) 90.02 38 *eP* **P 23 34 23.4 +1.9**
BOZ pmax pmax
comp=Z,39nm,1.7s
BOZ MLR MLR
comp=Z,370nm,19.0s
BOZ Bozeman (W) 90.02 38 *eP* **P 23 34 23.4 +1.9**
comp=Z,39nm,1.7s
BOZ LR LR
comp=Z,370nm,19.0s
VLC Villacollemand 90.09 321 PFAKE 23 34 30.0 +8.3
VLC LR LR
comp=Z,810nm,19.0s
CWF Charnwood Fore 90.15 332 *eP* **P 23 34 21.6 -0.1**
comp=Z,42nm,1.2s
CEL Celeste 90.17 313 *eP* **P 23 34 22.9 +0.7**
comp=Z,48nm,0.8s
CEL LR LR
comp=Z,492nm,19.0s
NV01 Mina Array Sit 90.30 46 *eP* **P 23 34 24.5 +1.5**
NVAR Mina Array Bea 90.30 46 P **P 23 34 24.4 +1.4**
comp=Z,3.4nm,1.0s,baz=286,slow=4.5,SNR=9.8
NVAR LR LR 00 07 31.0
comp=Z,114nm,22.0s,baz=310,slow=31
SENIN Lac Senin/Sane 90.42 324 *eP* **P 23 34 23.1 -0.3**
comp=Z,13nm,1.0s
PPT Papeete 90.53 109 LR LR 00 07 58.6
comp=Z,421nm,21.2s,baz=323,slow=31
PPT2 Papeete2 90.54 109 *eS* **S 23 45 11.4 -7.0**
comp=Z,124nm,23.0s
PPT2 Papeete2 90.54 109 *e*LR LR 00 03 19.9
comp=Z,693nm,21.5s,baz=301
QLMT Earthquake Lak 90.64 38 *eP* **P 23 34 27.0 +2.5**
ELK Elko 90.90 43 *eP* **P 23 34 28.2 +2.4**
ELK pmax pmax
comp=Z,13nm,1.1s
ELK Elko 90.90 43 *eP* **P 23 34 28.2 +2.4**
comp=Z,13nm,1.1s
GCMT Greycliff 90.99 37 *eP* **P 23 34 28.0 +2.0**
YMR Madison River 91.00 38 *eP* **P 23 34 29.0 +2.9**
comp=Z,24nm,1.1s
YFT Old Faithful 91.21 38 *eP* **P 23 34 31.2 +4.1**
comp=Z,44nm,1.4s
LKWY Lake 91.38 38 PFAKE 23 34 40.0 +12
LKWY LR LR
comp=Z,588nm,21.0s
H17A Grant Village 91.39 38 P **P 23 34 30.8 +2.8**
baz=310
H17A Grant Village 91.39 38 *eP* **P 23 34 32.0 +4.0**
comp=Z,27nm,1.1s
IMW Indian Meadow 91.50 39 *eP* **P 23 34 31.3 +2.7**
comp=Z,14nm,1.1s
FLWY Flagg Ranch 91.52 38 *eP* **P 23 34 31.6 +3.0**
comp=Z,28nm,1.1s
FXWY Fox Creek 91.62 39 *eP* **P 23 34 31.5 +2.4**
comp=Z,10nm,1.1s
RLMT Red Lodge 91.64 37 P **P 23 34 30.3 +1.2**
baz=311
RLMT Red Lodge 91.64 37 *eP* **P 23 34 30.2 +1.2**
comp=Z,20nm,1.3s
RLMT LR LR
comp=Z,323nm,19.0s
MOOW Moose Ponds 91.71 39 *eP* **P 23 34 31.8 +2.4**
comp=Z,6.9nm,1.1s
KMBO Kilima Mbogo 91.72 270 P **P 23 34 29.6 -0.4**
comp=Z,4.2nm,0.9s,baz=49,slow=8.0,SNR=10
KMBO PP **PP 23 38 09.6 +0.7**
comp=Z,1.3nm,0.8s,baz=39,slow=10,SNR=3.1
KMBO Kilima Mbogo 91.72 270 *ceP* **P 23 34 30.5 +0.5**
KMBO pmax pmax
comp=Z,4.0nm,0.9s
KMBO Kilima Mbogo 91.72 270 *eP* **P 23 34 30.6 +0.5**
comp=Z,53nm,1.9s
KMBO PP **PP 23 38 09.6 +0.7**
KMBO LR LR
comp=Z,238nm,19.0s
GRAC Grapevine Rang 91.72 47 P **P 23 34 30.6 +1.2**
baz=305
HVU Hansel Valley 91.76 41 *eP* **P 23 34 32.2 +2.5**
HVU pmax pmax
comp=Z,11nm,1.0s
HVU Hansel Valley 91.76 41 *eP* **P 23 34 32.2 +2.5**
comp=Z,11nm,1.0s
LOHW Long Hollow 91.87 39 *eP* **P 23 34 31.8 +1.5**
comp=Z,9.0nm,1.3s
DAC Darwin (Calif) 91.98 48 *eP* **P 23 34 32.8 +1.9**
DAC pmax pmax
comp=Z,11nm,1.2s
DAC Darwin (Calif) 91.98 48 *eP* **P 23 34 32.8 +1.9**
comp=Z,11nm,1.2s
R11A Troy Canyon, C 92.10 45 P **P 23 34 33.1 +1.8**
baz=306
R11A Troy Canyon, C 92.10 45 *eP* **P 23 34 33.3 +2.0**
comp=Z,9.3nm,1.0s
AHID Auburn Hatcher 92.12 40 PFAKE 23 34 40.0 +8.6
AHID LR LR
comp=Z,335nm,21.0s
BGU Big Grassy Mou 92.14 42 *eP* **P 23 34 33.8 +2.4**
comp=Z,9.3nm,1.1s
A25A Svangstu Ranch 92.14 31 P **P 23 34 32.1 +1.0**
baz=315
MPMC Manual Prospec 92.18 48 P **P 23 34 32.7 +1.0**
baz=305,SNR=9.3
LAO LASA Array 92.19 34 P **P 23 34 33.2 +1.8**
baz=313
LAO LASA Array 92.19 34 *eP* **P 23 34 33.5 +2.0**
comp=Z,36nm,1.1s
LAO LR LR
comp=Z,280nm,20.0s
SPUT South Promonto 92.25 41 *eP* **P 23 34 33.7 +1.8**
comp=Z,13nm,1.2s
CLTB Caltabellotta 92.30 314 PFAKE 23 34 40.0 +7.9
CLTB LR LR
comp=Z,284nm,19.0s
FURC Furnace Creek, 92.36 47 P **P 23 34 33.4 +1.2**
baz=305,SNR=11
WDD Wied Dalam 92.42 312 PFAKE 23 34 40.0 +7.4
WDD LR LR
comp=Z,397nm,22.0s
TPNV Topopah Spring 92.48 47 P **P 23 34 34.0 +0.9**
baz=306,SNR=13
TPNV Topopah Spring 92.48 47 *eP* **P 23 34 34.5 +1.4**
TPNV pmax pmax
comp=Z,15nm,1.0s
TPNV Topopah Spring 92.48 47 *eP* **P 23 34 34.5 +1.4**
comp=Z,15nm,0.9s
EDW2 Edwards Air Fo 92.50 49 P **P 23 34 34.1 +1.1**
baz=305,SNR=6.7

HWUT Hardware Ranch 92.58 41 *eP* **P 23 34 35.8 +2.3**
comp=Z,32nm,1.3s
HWUT LR LR
comp=Z,307nm,19.0s
SSB Saint Sauveur 92.58 324 *eP* **P 23 34 34.0 +0.8**
SSB pmax pmax
comp=Z,6.0nm,0.9s
SSB Saint Sauveur 92.58 324 *eP* **P 23 34 34.0 +0.8**
comp=Z,6.3nm,0.9s
SSB LR LR
comp=Z,1µm,20.0s
B25A Knox Farm, Ray 92.59 32 P **P 23 34 33.6 +0.4**
baz=315
DUG Dugway, Tooele 92.71 42 P **P 23 34 35.4 +1.4**
baz=308
DUG Dugway, Tooele 92.71 42 *eP* **P 23 34 35.8 +1.8**
DUG pmax pmax
comp=Z,20nm,1.2s
DUG Dugway, Tooele 92.71 42 *eP* **P 23 34 35.8 +1.8**
comp=Z,20nm,1.3s
DUG LR LR
comp=Z,253nm,20.0s
A27A Ledoux Ranch, 92.99 30 P **P 23 34 36.2 +1.2**
baz=317
BW06 Boulder Array 93.00 39 P **P 23 34 36.1 +0.6**
baz=310
BW06 Boulder Array 93.00 39 *eP* **P 23 34 36.5 +1.0**
comp=Z,7.2nm,1.0s
BW06 LR LR
comp=Z,378nm,21.0s
PD31 Pinedale Array 93.00 39 *eP* **P 23 34 37.0 +1.6**
PDAR Pinedale Array 93.00 39 P **P 23 34 35.8 +0.4**
comp=Z,3.0nm,0.9s,baz=318,slow=2.0,SNR=18
GSC Goldstone, Bar 93.06 48 P **P 23 34 36.7 +1.0**
baz=305,SNR=10
GSC Goldstone, Bar 93.06 48 *eP* **P 23 34 37.6 +1.9**
GSC pmax pmax
comp=Z,18nm,1.0s
GSC Goldstone, Bar 93.06 48 *eP* **P 23 34 37.6 +1.9**
comp=Z,18nm,1.0s
PSUT Pine Spring 93.08 44 *eP* **P 23 34 37.9 +2.1**
comp=Z,11nm,1.1s
BFSC Mount Baldy Ra 93.09 49 P **P 23 34 37.2 +1.3**
baz=305
CASY Casey 93.17 187 *eP* **P 23 34 37.0 +1.9**
comp=Z,37nm,0.9s
NLU North Lily Min 93.31 42 *eP* **P 23 34 39.6 +2.7**
comp=Z,15nm,1.3s
D25A Fairfield 93.31 33 P **P 23 34 38.3 +1.8**
baz=315
C26A Wahner Farm, P 93.41 32 P **P 23 34 38.0 +1.0**
baz=316
SHPR Sheep Range 93.45 46 *eP* **P 23 34 39.8 +2.2**
comp=Z,20nm,1.1s
A28A Rude Farm, Bot 93.46 30 P **P 23 34 37.9 +0.8**
baz=318
VSL Villasalto 93.55 317 *eP* **P 23 34 39.5 +1.7**
comp=Z,46nm,1.0s
VSL LR LR
comp=Z,450nm,21.0s
TUQ Turquoise Moun 93.58 48 P **P 23 34 38.9 +0.8**
baz=306,SNR=13
HEC Hector,Ludlow 93.65 48 P **P 23 34 39.1 +0.7**
baz=306
E25A Miller Ranch, 93.73 33 P **P 23 34 40.4 +1.9**
baz=315
B28A Dugan Ranch, T 93.76 30 P **P 23 34 39.7 +1.2**
baz=317
C27A Sayler Ranch, 93.77 31 P **P 23 34 39.4 +0.8**
baz=316
MURC Murrieta 93.77 50 P **P 23 34 39.9 +1.0**
baz=305
D26A Manning 93.82 32 P **P 23 34 39.6 +0.8**
baz=316
A29A Manning Farm, 93.91 29 P **P 23 34 40.8 +1.6**
baz=318
F25A Bowman 94.10 34 P **P 23 34 42.0 +1.7**
baz=315
GMRC Granite Mounta 94.13 48 P **P 23 34 41.9 +1.2**
baz=306,SNR=7.5
PFO Pinyon Flats O 94.27 49 P **P 23 34 42.1 +0.8**
baz=305,SNR=6.8
PFO Pinyon Flats O 94.27 49 *eP* **P 23 34 43.0 +1.7**
PFO pmax pmax
comp=Z,34nm,1.1s
PFO Pinyon Flats O 94.27 49 *eP* **P 23 34 43.0 +1.7**
comp=Z,34nm,1.1s
PFO LR LR
comp=Z,456nm,21.0s
A30A Hoffart Farm, 94.31 29 P **P 23 34 41.8 +0.7**
baz=319
ULM Lac du Bonnet 94.32 27 P **P 23 34 41.4 +0.3**
comp=Z,9.2nm,1.0s,baz=316,slow=5.8,SNR=7.9
ULM LR LR 00 21 17.8
comp=Z,266nm,19.0s,baz=350,slow=38
ULM Lac du Bonnet 94.32 27 *eP* **P 23 34 41.8 +0.8**
LDFC Landfair 94.33 48 *eP* **P 23 34 43.4 +1.9**
comp=Z,32nm,1.0s
BELC Belle Mtn. Jos 94.36 49 P **P 23 34 42.4 +0.6**
baz=306,SNR=6.5
LCMT Little Creek M 94.38 45 *eP* **P 23 34 44.6 +2.8**
comp=Z,12nm,1.3s
P17A Butcher Ranch, 94.41 42 *eP* **P 23 34 45.0 +3.1**
comp=Z,13nm,0.9s
MTPU Mount Pierson 94.42 44 *eP* **P 23 34 45.9 +3.7**
comp=Z,24nm,1.6s
MDND Maddock 94.55 30 P **P 23 34 43.3 +1.1**
baz=318
F26A Lodgepole 94.55 33 P **P 23 34 43.4 +1.1**
baz=316
P18A Preston Nutter 94.61 42 *eP* **P 23 34 45.1 +2.1**
comp=Z,7.9nm,0.9s
KNB Kanab 94.65 45 *eP* **P 23 34 46.7 +3.6**
KNB pmax pmax
comp=Z,41nm,1.5s
KNB Kanab 94.65 45 *eP* **P 23 34 46.7 +3.6**
comp=Z,41nm,1.6s
BAR Barrett 94.66 50 *eP* **P 23 34 44.6 +1.6**
comp=Z,12nm,0.9s
B30A Myrvik Farm, E 94.66 29 P **P 23 34 43.4 +0.7**
baz=319
MONP2 Monument Peak 94.71 50 P **P 23 34 44.5 +1.1**
baz=305,SNR=7.7
SRU San Rafael Swe 94.77 42 *eP* **P 23 34 45.8 +2.2**
SRU pmax pmax
comp=Z,7.0nm,1.0s
SRU San Rafael Swe 94.77 42 *eP* **P 23 34 45.8 +2.2**
comp=Z,7.0nm,1.0s
IRM Iron Mountain 94.84 48 P **P 23 34 45.0 +1.1**
baz=306,SNR=8.9
F27A Lemmon 94.85 33 P **P 23 34 44.3 +0.7**
baz=316
BC3 Big Chuckawall 94.93 49 P **P 23 34 45.2 +0.9**
baz=306,SNR=8.7
TAOE Nuku Hiva Isla 94.94 97 *e*LR LR 00 05 24.0
comp=Z,404nm,26.4s
H25A Fruitdale 94.95 35 P **P 23 34 45.2 +1.1**
baz=315
G26A Maurine 94.98 34 P **P 23 34 45.2 +0.9**
baz=316
RSSD Black Hills 95.08 35 P **P 23 34 44.8 -0.1**
baz=314
RSSD Black Hills 95.08 35 *eP* **P 23 34 48.5 +3.6**
RSSD pmax pmax
comp=Z,6.0nm,1.0s
RSSD Black Hills 95.08 35 *eP* **P 23 34 48.5 +3.6**
comp=Z,6.0nm,1.0s
A32A Rocking H Ranc 95.10 28 P **P 23 34 45.2 +0.5**
baz=320
SWSC Sam W. Stewart 95.10 50 P **P 23 34 46.2 +1.2**
baz=306
W13A Hualapai Mount 95.12 47 *eP* **P 23 34 47.2 +1.9**
I25A Rochford 95.30 35 P **P 23 34 46.5 +0.5**
baz=315
PDMCI Parker Dam,Lak 95.42 48 P **P 23 34 47.8 +1.4**
baz=307
O20A White River Ci 95.46 40 P **P 23 34 47.7 +1.0**
baz=311
D30A Buchanan 95.48 30 P **P 23 34 46.9 +0.5**
baz=319
B32A Ashes, Strandq 95.48 28 P **P 23 34 46.3 -0.1**
baz=320
Y12C Blythe 95.50 48 P **P 23 34 47.7 +0.9**
baz=307
Y12C Blythe 95.50 48 *eP* **P 23 34 49.1 +2.3**
comp=Z,16nm,1.0s
A33A Warroad 95.54 27 P **P 23 34 46.8 +0.1**
baz=321

GLA Glamis 95.70 49 P **P 23 34 48.5 +0.7**
baz=306
GLA Glamis 95.70 49 *eP* **P 23 34 50.7 +2.9**
GLA pmax pmax
comp=Z,11nm,0.8s
GLA Glamis 95.70 49 *eP* **P 23 34 50.7 +2.9**
comp=Z,11nm,0.8s
KEST Kesra 95.89 314 P **P 23 34 49.5 +0.9**
comp=Z,7.3nm,0.9s,baz=289,slow=5.7,SNR=9.7
KEST Kesra 95.89 314 *eP* **P 23 34 50.0 +1.4**
comp=Z,20nm,1.1s
PV09 Paradox Valley 96.00 42 *eP* **P 23 34 52.3 +3.0**
I27A Quinn 96.12 34 P **P 23 34 50.8 +1.2**
baz=316
PV10 Paradox Valley 96.13 42 *eP* **P 23 34 53.3 +3.4**
J26A Sides Ranch, S 96.14 35 P **P 23 34 50.3 +0.6**
baz=315
B34A Aery, Baudette 96.20 27 P **P 23 34 50.5 +0.9**
baz=322
N23A Red Feather La 96.26 38 P **P 23 34 51.3 +0.8**
baz=313
Y14A Wickenburg 96.40 47 *eP* **P 23 34 52.9 +2.0**
WUAZ Wupatki 96.49 45 P **P 23 34 52.5 +1.0**
baz=309
WUAZ Wupatki 96.49 45 *eP* **P 23 34 53.9 +2.4**
comp=Z,8.8nm,1.0s
WUAZ LR LR
comp=Z,191nm,21.0s
B35A Bob, Littlefor 96.68 27 P **P 23 34 52.3 +0.4**
baz=323
SMCO Snowmass 96.83 40 *eP* **P 23 34 57.2 +4.0**
comp=Z,4.8nm,1.0s
D34A Park Rapids 97.07 28 P **P 23 34 53.5 -0.2**
baz=321
C35A Jirik Farms, M 97.10 27 P **P 23 34 53.4 -0.4**
baz=322
X16A Lo Mia Camp, P 97.13 46 *eP* Pdif 23 34 56.6 +2.1
ISCO Idaho Springs 97.19 39 PFAKE 23 35 10.0 +15
ISCO LR LR
comp=Z,317nm,19.0s
MVCO Mesa Verde 97.21 43 PFAKE 23 35 10.0 +15
MVCO LR LR
comp=Z,212nm,20.0s
C36A Pine Crest Far 97.52 27 P Pdif 23 34 56.0 +0.3
baz=323
F33A 5 Mile Ranch, 97.55 30 P Pdif 23 34 56.5 +0.6
baz=320
214A Organ Pipe Nat 97.72 49 P Pdif 23 34 57.1 +0.1
baz=307
EYMN Ely 97.90 26 P **P 23 34 57.1 -0.3**
baz=324
EYMN Ely 97.90 26 *eP* Pdif 23 34 58.2 +0.8
comp=Z,7.4nm,0.9s
EYMN LR LR
comp=Z,385nm,20.0s
C38A Sawbill Land. 98.18 26 P **P 23 34 58.6 -0.1**
baz=325
SCHQ Schefferville 98.25 9 P **P 23 34 58.2 -0.6**
comp=Z,4.1nm,0.9s,baz=14,slow=8.3,SNR=3.4
SCHQ LR LR 00 22 09.4
comp=Z,280nm,21.9s,baz=350,slow=37
E36A McGregor 98.34 28 P **P 23 34 59.3 -0.1**
baz=323
OGNE Ogallala 98.36 36 PFAKE 23 35 10.0 +10
OGNE LR LR
comp=Z,379nm,20.0s
SDCO Great Sand Dun 98.64 41 PFAKE 23 35 10.0 +8.7
SDCO LR LR
comp=Z,297nm,20.0s
TUC Tucson 98.86 48 PFAKE 23 35 10.0 +7.9
TUC LR LR
comp=Z,341nm,20.0s
ECSD EROS Data Cent 99.02 31 PFAKE 23 35 20.0 +18
ECSD LR LR
comp=Z,347nm,19.0s
ANMO Albuquerque 99.94 43 *ceP* **Pdif 23 35 10.5 +3.5**
ANMO pmax pmax
comp=Z,5.0nm,2.5s
ANMO Albuquerque 99.94 43 PFAKE 23 35 20.0 +13
ANMO LR LR
comp=Z,233nm,19.0s
COWI Conover 100.34 26 PFAKE 23 35 20.0 +12
COWI LR LR
comp=Z,440nm,20.0s
ES19 SONSECA Array 100.93 325 *e*Pdif **Pdif 23 35 11.3 +0.1**
ESDC Sonseca Array 100.99 325 P **Pdif 23 35 11.2 -0.2**
comp=Z,3.0nm,0.8s,baz=28,slow=4.8,SNR=14
CBKS Cedar Bluff 101.12 37 PFAKE 23 35 20.0 +8.0
CBKS LR LR
comp=Z,286nm,19.0s
PAB San Pablo 101.28 325 PFAKE 23 35 20.0 +7.3
PAB LR LR
comp=Z,1µm,19.0s
SCIA State Center 102.01 31 PFAKE 23 35 30.0 +14
SCIA LR LR
comp=Z,243nm,20.0s
MTE Manteigas 102.24 327 PFAKE 23 35 30.0 +13
MTE LR LR
comp=Z,1µm,20.0s
JFWS Jewell Farm 102.51 28 PFAKE 23 35 30.0 +12
JFWS LR LR
comp=Z,365nm,19.0s
KSU1 Kansas State U 102.54 34 PFAKE 23 35 30.0 +12
KSU1 LR LR
comp=Z,445nm,21.0s
WMOK Wichita Mounta 104.61 39 PFAKE 23 35 40.0 +12
WMOK LR LR
comp=Z,283nm,20.0s
HDIL Hopedale 104.85 29 PFAKE 23 35 40.0 +12
HDIL LR LR
comp=Z,388nm,21.0s
RKT Rikitea 105.28 108 *e*LR LR 00 10 16.2
comp=Z,626nm,34.2s
TXAR Lajitas Array 105.45 46 Pdiff **Pdif 23 35 35.8 +4.3**
comp=Z,0.2nm,0.7s,baz=236,slow=1.0,SNR=2.2
TXAR PKiKP **PKiKP 23 39 44.1 -1.0**
comp=Z,1.0nm,0.9s,baz=298,slow=3.9,SNR=4.1
AAM Ann Arbor 105.65 24 PFAKE 23 40 00.0
AAM LR LR
comp=Z,367nm,22.0s
LSZ Lusaka 105.78 261 PFAKE 23 40 00.0
LSZ LR LR
comp=Z,516nm,22.0s
LONY Lake Ozonia 106.44 17 PFAKE 23 40 00.0
LONY LR LR
comp=Z,390nm,20.0s
PKME Peaks-Kenny Pk 107.07 13 PFAKE 23 40 00.0
PKME LR LR
comp=Z,430nm,21.0s
ACSO Alum Creek Sta 107.69 25 PFAKE 23 40 00.0
ACSO LR LR
comp=Z,319nm,20.0s
NATX Nacogdoches 109.13 38 PFAKE 23 40 00.0
NATX LR LR
comp=Z,413nm,21.0s
BLA Blacksburg 111.30 25 PFAKE 23 40 10.0
BLA LR LR
comp=Z,496nm,20.0s
CBN Corbin Frederi 111.49 22 PFAKE 23 40 10.0
CBN LR LR
comp=Z,402nm,19.0s
GOGA Godfrey 113.37 29 PFAKE 23 40 10.0
GOGA LR LR
comp=Z,520nm,20.0s
BRAL Brewton 113.58 33 PFAKE 23 40 10.0
BRAL LR LR
comp=Z,372nm,21.0s
NHSC New Hope 115.00 26 PFAKE 23 40 20.0 +17
NHSC LR LR
comp=Z,465nm,20.0s
TEIG Tepich 121.62 41 PFAKE 23 40 30.0 +14
TEIG LR LR
comp=Z,142nm,19.0s
DBIC Dimbokro 124.31 299 PKP **PKPdf 23 40 21.0 -0.2**
comp=Z,6.3nm,0.8s,baz=57,slow=4.1,SNR=7.0
GTBY Guantanamo Bay 128.72 29 PFAKE 23 40 40.0 +10
GTBY LR LR
comp=Z,326nm,19.0s
GRTK Grand Turk 128.89 24 PFAKE 23 40 40.0 +10
GRTK LR LR
comp=Z,495nm,20.0s
MTDJ Mount Denham 129.08 33 PFAKE 23 40 40.0 +10
MTDJ LR LR
comp=Z,337nm,22.0s
SDDR Presa de Saban 131.14 25 PFAKE 23 40 50.0 +16
SDDR LR LR

comp=Z,445nm,22.0s
JTS JuntasAbangare 131.23 46 PFAKE 23 40 50.0 +16
JTS LR LR
comp=Z,435nm,19.0s
SJG San Juan 133.71 20 PFAKE 23 40 50.0 +11
SJG LR LR
comp=Z,372nm,19.0s
BCIP Isla Barro Col 135.30 42 PFAKE 23 40 50.0 +7.9
BCIP LR LR
comp=Z,228nm,19.0s
FDF Fort de France 138.26 14 PFAKE 23 41 00.0 +12
FDF LR LR
comp=Z,233nm,20.0s
SDV Santo Domingo 140.46 31 PFAKE 23 41 00.0 +8.1
SDV LR LR
comp=Z,386nm,19.0s
GRGR Grenville 140.65 16 PFAKE 23 41 00.0 +8.1
GRGR LR LR
comp=Z,314nm,22.0s
NNA Nana 152.19 64 PFAKE 23 41 20.0 +2.0
NNA LR LR
comp=Z,161nm,20.0s
SAML Samuel 159.54 35 *e*PKPdf **PKPdf 23 41 21.6 +0.6**
SAML LR LR
comp=Z,417nm,20.0s
LPAZ La Paz 161.57 61 PKP **PKPdf 23 41 23.8 -0.2**
comp=Z,1.4nm,1.0s,baz=190,slow=2.2,SNR=4.1
CPUP Villa Florida 174.65 93 PKP **PKPdf 23 41 31.6 -0.2**
comp=Z,2.6nm,0.9s,baz=178,slow=3.4,SNR=4.5
SPB Sao Paulo 175.60 305 PFAKE 23 41 40.0 +7.9
SPB LR LR
comp=Z,422nm,20.0s

*ISCJB **05** 23:23:10.0±0.5, 79°.09N±0°.06×3°.5E±0°.3, h10km, mb3.9/14, MS3.4/5, Error ellipse: s-maj=10.0km s-min=5.9km az=27.5*
*IDC **05** 23:23:10.7±0.6, 79°.16N×2°.84E, h0km, mb3.9/14, mb1 4.1/20, mb1mx4.0/54, mbtmp4.0/20, ML3.4/4, MS3.4/11, Ms1 3.4/11, ms1mx3.2/41, Error ellipse: s-maj=17.2km s-min=10.6km az=47.0*
*CSEM **05** 23:23:11.5±0.3, 79°.23N×4°.21E, h10km, ML3.7, Error ellipse: s-maj=12.9km s-min=7.6km az=30.0*
*NEIC **05** 23:23:11.2±0.6, 79°.18N×2°.64E, h10km, mb4.1/1, Error ellipse: s-maj=15.3km s-min=10.0km az=213.0*
*BER **05** 23:23:14.7±1.4, 79°.15N×4°.42E, h10km, MD2.5, ML3.2, ML3.7(NAO)*
*NAO **05** 23:23:17.7±2.6, 78°.85N×5°.87E, ML3.7*
ISC 05 23:23:11.0±0.5, 79°.10N±0°.07×2°.91E±0°.04, h10km, n68, σ2s85/75, mb3.8/14, MS3.4/5, 4C-2D, Greenland Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KBS	**Kingsbay**	**1.74**	**91**	Pg	**Pn**	**23 23 38.9**	**-2.3**
KBS				Lg	Lg	23 23 57.5	
KBS	**Kingsbay**	**1.74**	**91**	↑*i*P	**Pn**	**23 23 38.9**	**-2.3**
KBS				*e*S	**Sn**	**23 23 57.1**	**-6.2**
KBS				IAML		23 23 59.9	
comp=Z,832nm,0.2s							
KBS	**Kingsbay**	**1.74**	**91**	Pg	**Pn**	**23 23 38.9**	**-2.3**
KBS				*e*S	**Sn**	**23 23 57.1**	**-6.2**
SNR=50							
KBS	**Kingsbay**	**1.74**	**91**	*e*Pn	**Pn**	**23 23 38.8**	**-2.3**
SPA0	**Spitsbergen Ar**	**2.82**	**102**	Pn	**Pn**	**23 23 55.1**	**-0.8**
baz=306,slow=7.9							
SPA0				Lg	Lg	23 24 26.5	
baz=325,slow=37							
SPA0	**Spitsbergen Ar**	**2.82**	**102**	*e*P	**Pn**	**23 23 54.9**	**-1.1**
SPA0				*e*S	**Sn**	**23 24 23.8**	**-6.1**
SPA0				Lg	Lg	23 24 26.5	
baz=325,slow=37							
SPA0	**Spitsbergen Ar**	**2.82**	**102**	*e*P	**Pn**	**23 23 54.9**	**-1.1**
SNR=50							
SPA0				*e*S	**Sn**	**23 24 23.8**	**-6.1**
SNR=50							
SPA0				Lg	Lg	23 24 26.5	
SPITS	**Spitsbergen Ar**	**2.82**	**102**	Pn	**Pn**	**23 23 55.0**	**-1.1**
baz=302,slow=7.8,SNR=9175							
SPITS				Sn	**Sn**	**23 24 26.5**	**-3.4**
baz=329,slow=22,SNR=5.6							
SPITS				LR	LR	23 25 06.1	
comp=Z,976nm,19.1s,baz=30,slow=41							
HSP	**Hornsund**	**3.36**	**122**	Pn	**Pn**	**23 24 01.1**	**-2.2**
HSP				Sn	**Sn**	**23 24 39.0**	**-4.1**
HSPB	**Hornsund (broa**	**3.36**	**122**	*e*P	**Pn**	**23 24 01.8**	**-1.5**
HSPB				*e*S	**Sn**	**23 24 37.4**	**-5.8**
HSPB				IAML		23 24 45.5	
comp=Z,84nm,0.3s							
HSPB	**Hornsund (broa**	**3.36**	**122**	Pn	**Pn**	**23 24 01.1**	**-2.3**
HSPB	**Hornsund (broa**	**3.36**	**122**	*e*P	**Pn**	**23 24 01.8**	**-1.5**
SNR=50							
HSPB				*e*S	**Sn**	**23 24 37.4**	**-5.8**
SNR=50							
HSPB				Sn	**Sn**	**23 24 39.0**	**-4.2**
DAG	**Danmarks Havn**	**5.06**	**254**	*i*P	**Pn**	**23 24 24.3**	**-2.4**
DAG				*i*S	**Sn**	**23 25 18.3**	**-6.8**
HOPEN	**Hopen**	**5.33**	**108**	Pn	**Pn**	**23 24 28.2**	**-2.1**
HOPEN				Sn	Sn	23 25 24.5	-7.1
HOPEN	**Hopen**	**5.33**	**108**	*e*P	**Pn**	**23 24 28.2**	**-2.1**
HOPEN				*e*S	Sn	23 25 24.1	-7.5
HOPEN				IAML		23 25 28.4	
comp=Z,81nm,0.3s							
HOPEN	**Hopen**	**5.33**	**108**	*e*P	**Pn**	**23 24 28.2**	**-2.1**
SNR=49							
HOPEN				*e*S	Sn	23 25 24.1	-7.5
SNR=49							
BJO1	**Bjornoya**	**5.88**	**133**	Pn	**Pn**	**23 24 38.3**	**+0.4**
BJO	**Bjornoya**	**5.90**	**133**	P	**Pn**	**23 24 38.3**	**+0.1**
BJO	**Bjornoya**	**5.90**	**133**	P	**Pn**	**23 24 38.3**	**+0.1**
SNR=49							
JMIC	**Jan Mayen**	**8.64**	**206**	Pn	Pn	23 25 24.8	+9.0
JMIC	**Jan Mayen**	**8.64**	**206**	Pn	**Pn**	**23 25 15.6**	**-0.1**
comp=Z,10nm,0.3s,baz=54,slow=0.9,SNR=34							
JMIC				Sn	**Sn**	**23 26 47.7**	**-5.4**
comp=Z,3.4nm,0.3s,baz=173,slow=17,SNR=4.6							
JMIC				LR	LR	23 27 38.3	
comp=Z,39nm,20.6s,baz=72,slow=31							
JMIC	**Jan Mayen**	**8.64**	**206**	*e*P	**Pn**	**23 25 15.6**	**-0.1**
JMIC				*e*S	Pn	23 25 24.8	+9.0
JMIC				IAML		23 25 25.3	
comp=Z,96nm,0.2s							
SCO	**Scoresbysund**	**10.68**	**230**	*i*P	**Pn**	**23 25 42.6**	**-1.1**
ARA0	**ARCESS Array S**	**11.24**	**136**	Pn	**Pn**	**23 25 49.9**	**-1.5**
baz=349,slow=12							
ARA0	**ARCESS Array S**	**11.24**	**136**	P	**Pn**	**23 25 49.9**	**-1.5**
baz=349,slow=12							
ARA0	**ARCESS Array S**	**11.24**	**136**	Pn	**Pn**	**23 25 49.9**	**-1.5**
SNR=4.5							
ARCES	**ARCESS Array B**	**11.24**	**136**	Pn	**Pn**	**23 25 52.3**	**+0.9**
comp=Z,0.4nm,0.3s,baz=341,slow=11,SNR=17							
ARCES				Sn	**Sn**	**23 27 54.0**	**-2.9**
comp=Z,0.6nm,0.3s,baz=0.7,slow=20,SNR=5.6							
ARCES				LR	LR	23 29 54.6	
comp=Z,100nm,20.3s,baz=334,slow=36							
ARCES	**ARCESS Array B**	**11.24**	**136**	Sn	**Sn**	**23 27 54.0**	**-2.9**
SUMG	**Summit**	**11.72**	**259**	*i*P	**Pn**	**23 25 56.2**	**-2.1**
SUMG	**Summit**	**11.72**	**259**	*e*P	**Pn**	**23 25 56.2**	**-2.1**
comp=Z,62nm,0.4s							
KULLO	**Kullorsuaq**	**13.76**	**283**	*i*P	Pn	23 26 20.4	-5.3
NB2	**NORSAR Subarra**	**18.32**	**167**	P	**Pn**	**23 27 27.5**	**+2.6**
comp=Z,3.4nm,1.1s,baz=357,slow=6.5							
NOA	**NORSAR Array B**	**18.32**	**167**	P	**Pn**	**23 27 27.4**	**+2.6**
comp=Z,0.1nm,0.3s,baz=358,slow=12,SNR=3.3							
SFJD	**Kangerlussuaq**	**18.70**	**260**	P	**P**	**23 27 25.3**	**-3.6**
comp=Z,1.6nm,0.3s,baz=44,slow=10,SNR=8.6							
SFJD				LR	LR	23 35 00.8	
comp=Z,177nm,20.7s,baz=24,slow=38							
SFJD	**Kangerlussuaq**	**18.70**	**260**	*i*P	**P**	**23 27 25.0**	**-4.0**
SFJD	**Kangerlussuaq**	**18.70**	**260**	*e*P	**P**	**23 27 25.0**	**-4.0**
comp=Z,8.3nm,0.6s							
FIA0	**FINESS Array S**	**19.08**	**145**	P	**Pn**	**23 27 35.3**	**+1.4**
baz=346,slow=11							
FIA0	**FINESS Array S**	**19.08**	**145**	P	**Pn**	**23 27 35.3**	**+1.4**
baz=346,slow=11							
FIA0	**FINESS Array S**	**19.08**	**145**	P	**Pn**	**23 27 35.3**	**+1.4**
SNR=2.6							
FINES	**FINESS Array B**	**19.08**	**145**	P	**Pn**	**23 27 35.4**	**+1.4**
comp=Z,0.2nm,0.3s,baz=346,slow=11,SNR=13							
FINES				LR	LR	23 34 30.1	
comp=Z,118nm,21.8s,baz=352,slow=36							
HFS	**Hagfors**	**19.35**	**164**	P	**Pn**	**23 27 38.1**	**+0.9**
slow=10							
HFS	**Hagfors**	**19.35**	**164**	P	**Pn**	**23 27 38.2**	**+1.0**
comp=Z,0.6nm,0.3s,baz=354,slow=8.1,SNR=32							
HFS				LR	LR	23 34 57.5	
comp=Z,74nm,18.0s,baz=23,slow=36							
HFS	**Hagfors**	**19.35**	**164**	P	**Pn**	**23 27 38.1**	**+0.9**
slow=10							
HFS	**Hagfors**	**19.35**	**164**	P	**Pn**	**23 27 38.1**	**+0.9**
SNR=0.8							
RES	**Resolute Bay**	**20.03**	**310**	P	**P**	**23 27 40.1**	**-3.3**
comp=Z,1.5nm,0.3s,baz=36,slow=12,SNR=64							
RES				LR	LR	23 35 31.1	
comp=Z,107nm,20.9s,baz=68,slow=37							
NRIK	**Noril'sk**	**22.47**	**68**	P	**P**	**23 28 10.6**	**+0.8**
comp=Z,11nm,1.0s,baz=354,slow=7.2,SNR=14							
EKA	**Eskdalemuir Ar**	**23.96**	**189**	P	**P**	**23 28 26.8**	**+1.9**
comp=Z,0.7nm,0.5s,baz=357,slow=7.7,SNR=7.0							
FRB	**Frobisher Bay**	**25.01**	**274**	P	**P**	**23 28 35.2**	**+0.8**
comp=Z,4.4nm,0.6s,baz=29,slow=9.8,SNR=12							
FRB				LR	LR	23 38 12.1	
comp=Z,116nm,21.7s,baz=350,slow=36							
OBN	**Obninsk**	**26.55**	**135**	P	**P**	**23 28 49.3**	**+0.9**
comp=Z,5.2nm,0.3s,baz=178,slow=18,SNR=4.2							
ARU	**Arti**	**28.84**	**108**	LR	LR	23 41 51.3	
comp=Z,87nm,18.9s,baz=56,slow=39							
AKASG	**Malin Array Be**	**29.98**	**146**	P	**P**	**23 29 19.7**	**+0.6**
comp=Z,1.8nm,0.7s,baz=349,slow=9.4,SNR=6.9							
KWP	**Kalwaria Pacla**	**30.42**	**154**	↑↑*i*P	**P**	**23 29 26.3**	**+3.3**
GERES	**GERESS Array B**	**30.62**	**166**	P	**P**	**23 29 26.5**	**+1.7**
comp=Z,0.5nm,0.5s,baz=23,slow=10,SNR=7.9							
BURAR	**Bucovina Array**	**32.64**	**152**	↑↑*i*P	**P**	**23 29 44.4**	**+1.8**
SCHQ	**Schefferville**	**32.98**	**266**	LR	LR	23 43 08.0	
comp=Z,61nm,19.7s,baz=38,slow=36							
DRGR		**33.24**	**155**	||*i*P	**P**	**23 29 50.6**	**+2.8**
YKA	**Yellowknife Ar**	**34.04**	**313**	P	**P**	**23 29 55.1**	**+0.6**
comp=Z,0.8nm,0.9s,baz=20,slow=9.4,SNR=9.2							
BZS	**Buzias**	**34.32**	**156**	||*i*P	**P**	**23 30 00.3**	**+3.2**
MDVR	**Moldovita**	**35.16**	**157**	↑↑*i*P	**P**	**23 30 07.2**	**+2.7**
ILAR	**Eielson Array**	**35.27**	**338**	P	**P**	**23 30 06.7**	**+1.6**
comp=Z,1.1nm,0.9s,baz=7.2,slow=6.7,SNR=9.9							
KBZ	**Khabaz**	**38.56**	**132**	P	**P**	**23 30 35.5**	**+2.2**
comp=Z,2.9nm,0.8s,baz=340,slow=3.4,SNR=7.5							
ESDC	**Sonseca Array**	**39.63**	**188**	P	**P**	**23 30 44.5**	**+2.1**
comp=Z,0.9nm,0.5s,baz=2.1,slow=9.1,SNR=10							
BRTR	**Keskin Array B**	**41.31**	**143**	P	**P**	**23 30 58.9**	**+2.5**
comp=Z,1.3nm,0.7s,baz=2.6,slow=5.5,SNR=6.7							
ULM	**Lac du Bonnet**	**42.77**	**291**	LR	LR	23 49 15.1	
comp=Z,100nm,18.5s,baz=9.0,slow=37							
NVAR	**Mina Array Bea**	**57.98**	**308**	P	**P**	**23 33 04.6**	**+1.2**
comp=Z,0.8nm,0.9s,baz=50,slow=6.0,SNR=3.2							
MJAR	**Matsushiro Arr**	**61.77**	**40**	P	**P**	**23 33 30.4**	**+1.2**
comp=Z,3.3nm,0.9s,baz=341,slow=6.3,SNR=5.0							
TXAR	**Lajitas Array**	**64.47**	**292**	P	**P**	**23 33 48.1**	**+0.8**
comp=Z,0.3nm,0.6s,baz=59,slow=4.5,SNR=4.0							
ASAR	**Alice Springs**	**120.42**	**53**	PKP	**PKPdf**	**23 42 01.6**	**-0.2**
comp=Z,0.2nm,0.6s,baz=4.8,slow=2.2,SNR=3.3							

BER 05 23:25:03.8±1.0, 71°.52N×9°.61W, h3km±999km, MD2.6, ML2.4, Jan Mayen Island region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JNW	**Jan Mayen West**	**0.62**	**141**	*e*P	Pg	23 25 15.8	+0.1
JNW				*e*S	Sg	23 25 24.6	+1.0
JNW				IAML		23 25 25.4	
comp=Z,190nm,0.2s							
JNE	**Jan Mayen East**	**0.68**	**140**	*e*S	Sg	23 25 25.2	-0.3

WEL 05 23:29:55.9±0.5, 36°.82S×179°.03W, h33km, ML3.8/4, Error ellipse: s-maj=6.1km s-min=5.2km az=0.0, East of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WMGZ	**Waiomatatini S**	**2.27**	**243**	PN	Pn	23 30 30.3	-0.7
WMGZ				SN	Sn	23 30 56.4	-1.4
PUZ	**Puketiti**	**2.49**	**239**	PN	Pn	23 30 32.6	-1.6
PUZ				SN	Sn	23 31 01.5	-1.9
PKGZ	**Pakihiroa**	**2.54**	**244**	PN	Pn	23 30 33.9	-0.9
HAZ	**Te Kaha**	**2.71**	**249**	PN	Pn	23 30 36.3	-0.8
TWGZ	**Tauwhareparae**	**2.73**	**240**	PN	Pn	23 30 37.3	-0.1
CNGZ	**Carnagh Statio**	**2.75**	**232**	PN	Pn	23 30 37.5	-0.1
MWZ	**Matawai**	**3.12**	**240**	PN	Pn	23 30 41.5	-1.3
MWZ				AML	AML	23 31 21.6	
RIGZ	**Rimuhau**	**3.16**	**233**	SN	Sn	23 31 17.5	-2.4
URZ	**Urewera**	**3.39**	**244**	PN	Pn	23 30 45.8	-0.5
URZ				SN	Sn	23 31 23.3	-2.1
URZ				AML	AML	23 31 23.7	
KNZ	**Kokohu**	**3.41**	**229**	PN	Pn	23 30 45.5	-1.1
ARHZ	**Aropaoanui**	**3.97**	**231**	PN	Pn	23 30 54.1	-0.4
ARHZ				SN	Sn	23 31 37.4	-2.4
PXZ	**Pawanui**	**4.54**	**224**	AML	AML	23 31 52.9	
BFZ	**Birch Farm**	**5.34**	**222**	PN	Pn	23 31 09.8	-3.3
BFZ				SN	Sn	23 32 07.1	-6.4

JMA 05 23:30:16.7±0.2, 38°.02N×144°.06E, h36km, M3.7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.15**	**300**	P	Pn	23 30 51.4	+1.4
OFUJ				S	Sn	23 31 17.0	+1.5
JIO	**Ouri**	**2.18**	**282**	P	Pn	23 30 51.7	+1.3
JIO				S	Sn	23 31 17.4	+1.3
JMK	**Ichinoseki**	**2.42**	**294**	P	Pn	23 30 55.4	+1.8
JMM	**Marumori**	**2.59**	**268**	P	Pn	23 30 57.5	+1.5
JMM				S	Sn	23 31 27.3	+1.1
JOM	**Ohasama**	**2.60**	**305**	P	Pn	23 30 58.7	+2.5
JOM				S	Sn	23 31 29.6	+3.0
JFK	**Kawauchi**	**2.61**	**256**	S	Sn	23 31 27.8	+1.0
JOU	**Okura**	**2.70**	**278**	P	Pn	23 31 00.0	+2.5
JOU				S	Sn	23 31 31.8	+2.9
JFT	**Otama**	**2.99**	**262**	P	Pn	23 31 03.7	+2.1
JFT				S	Sn	23 31 38.9	+2.7
JYK	**Kaneyama**	**3.04**	**288**	P	Pn	23 31 04.8	+2.6
JNBK	**Urakawa-nobuka**	**4.37**	**347**	P	Pn	23 31 21.8	+1.3
JNBK				S	Sn	23 32 10.5	+0.4
JRY	**Ryogami san**	**4.59**	**246**	P	Pn	23 31 24.8	+1.3
JRY				*e*S	Sn	23 32 14.5	-1.1
JCH	**Churui**	**4.62**	**354**	P	Pn	23 31 24.2	+0.3
JCH				*e*S	Sn	23 32 14.2	-2.1
MAT	**Matsushiro**	**4.89**	**254**	P	Pn	23 31 30.9	+3.2
MAT				*e*S	Sn	23 32 27.1	+4.0

JMA 06 00:01:53.3, 36°.93N×140°.69E, h9km±1km, M2.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.19**	**27**	P	Pg	00 01 57.4	+0.1
ONAJ				S	Sg	00 02 00.5	+0.4
JHO	**Hitachi**	**0.33**	**197**	P	Pg	00 01 59.7	-0.2
JHO				S	Sg	00 02 04.3	0.0
JFK	**Kawauchi**	**0.46**	**19**	P	Pg	00 02 02.1	-0.2
JFK				S	Sg	00 02 08.5	+0.1
JFT	**Otama**	**0.65**	**334**	S	Sg	00 02 14.7	+0.3
JMM	**Marumori**	**0.94**	**5**	S	Sg	00 02 23.1	-0.5
JIO	**Ouri**	**1.61**	**19**	S	Sn	00 02 42.1	-0.7
MAT	**Matsushiro**	**2.03**	**260**	P	Pn	00 02 28.6	+0.9
MAT				S	Sn	00 02 54.0	+0.8

IDC 06 00:05:23.5±8.8, 18°.51S×170°.99E, h230km±51km, mb3.5/3, mb1 3.6/4, mb1mx3.2/36, mbtmp4.1/4, MS2.6/1, Ms1 2.6/1, ms1mx2.4/25, Error ellipse: s-maj=108.2km s-min=77.9km az=125.0, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**5.55**	**229**	P	Pn	00 06 45.6	0.0
1.4nm,0.3s,baz=130,slow=22,SNR=13							
DZM				S	S	00 07 51.2	+0.4
0.8nm,0.3s,baz=115,slow=22,SNR=2.0							
STKA	**Stephens Creek**	**29.63**	**238**	P	P	00 11 08.0	+0.2
1.4nm,0.6s,baz=63,slow=8.8,SNR=6.6							
JAY	**Jayapura**	**33.65**	**295**	LR	LR	00 22 26.0	
comp=Z,11nm,21.1s,baz=358,slow=30							
WRA	**Warramunga Arr**	**34.59**	**262**	P	P	00 11 50.6	-0.4
0.5nm,0.5s,baz=99,slow=7.1,SNR=13							
ASAR	**Alice Springs**	**34.91**	**255**	P	P	00 11 53.8	0.0
4.3nm,0.4s,baz=82,slow=8.9,SNR=46							

JMA 06 00:15:04.8±0.1, 35°.49N×140°.96E, h24km±1km, M3.5, 3C,

Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.23**	**339**	↑P	Pb	00 15 10.6	-0.1
CHOJ				S	Sb	00 15 15.0	+0.3
JCN	**Nagara**	**0.62**	**264**	P	Pn	00 15 17.6	-0.5
KTR	**Katsuura**	**0.63**	**237**	*e*S	Sb	00 15 25.5	0.0
BSO4	**Boso 4**	**0.71**	**226**	P	Pn	00 15 19.1	-0.2
BSO3	**Boso 3**	**0.78**	**208**	↑↑P	Pb	00 15 19.4	-0.1
BSO1	**Boso 1**	**0.83**	**179**	↑↑P	Pb	00 15 19.3	-1.0
JYT	**Yasato**	**0.96**	**320**	P	Pn	00 15 22.1	-0.7
JYT				S	Sb	00 15 35.1	0.0
JHO	**Hitachi**	**1.16**	**344**	P	Pn	00 15 25.3	-0.3
MAT	**Matsushiro**	**2.47**	**296**	P	Pb	00 15 49.6	+1.1
MAT				S	Sb	00 16 21.6	+3.2

*JMA **06** 00:17:08.5±0.2, 39°.61N×143°.54E, h26km±5km, M4.2*
*ISCJB **06** 00:17:09.4±1.2, 39°.59N±0°.03×143°.53E±0°.04, h28km±8km, mb4.1/35, MS3.6/3, Error ellipse: s-maj=6.2km s-min=3.7km az=141.4*
*MOS **06** 00:17:09.5±1.1, 39°.52N×143°.55E, h33km, mb4.4/25, Error ellipse: s-maj=10.7km s-min=5.9km az=95.2*
*IDC **06** 00:17:13.3±3.0, 39°.56N×143°.38E, h40km±26km, mb3.7/20, mb1 3.9/24, mb1mx3.8/38, mbtmp3.9/24, ML3.5/4, MS3.5/8, Ms1 3.5/8, ms1mx3.2/40, Error ellipse: s-maj=18.4km s-min=15.6km az=125.0*
ISC 06 00:17:10.7±2.0, 39°.56N±0°.04×143°.48E±0°.05, h24km±14km, n81, σ1s55/100, mb4.2/35, MS3.6/3, 6C, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**1.29**	**272**	P	**Pn**	**00 17 31.7**	**-1.4**
MIYJ				S	**Sn**	**00 17 48.9**	**-0.6**
JTH	**Tanohata**	**1.31**	**288**	P	**Pn**	**00 17 31.8**	**-1.6**
JTH				S	**Sn**	**00 17 49.2**	**-0.8**
OFUJ	**Ofunato**	**1.48**	**252**	P	**Pn**	**00 17 34.8**	**-1.0**
OFUJ				S	**Sn**	**00 17 54.2**	**-0.2**
JOM	**Ohasama**	**1.70**	**268**	P	**Pn**	**00 17 38.2**	**-0.5**
JOM				S	**Sn**	**00 18 00.8**	**+1.1**
JKZ	**Kuzumaki**	**1.71**	**285**	P	**Pn**	**00 17 38.4**	**-0.6**
JKZ				S	**Sn**	**00 17 59.4**	**-0.8**
JANG	**Nango**	**1.72**	**299**	P	**Pn**	**00 17 37.1**	**-2.0**
JANG				S	**Sn**	**00 17 59.7**	**-0.6**
JMK	**Ichinoseki**	**1.86**	**252**	P	**Pn**	**00 17 40.3**	**-0.6**
JMK				*e*S	**Sn**	**00 18 03.1**	**-0.5**
JIO	**Ouri**	**1.99**	**237**	P	**Pn**	**00 17 41.8**	**-1.0**
JIO				*e*S	**Sn**	**00 18 07.4**	**+0.4**
JRG	**Rokugo**	**2.21**	**267**	P	**Pn**	**00 17 45.6**	**-0.2**
JTM	**Tenmabayashi**	**2.22**	**304**	P	**Pn**	**00 17 45.0**	**-1.0**
JAH	**Hinai**	**2.28**	**287**	P	**Pn**	**00 17 45.8**	**-1.0**
JAH				S	**Sn**	**00 18 14.1**	**0.0**
ERM	**Erimo**	**2.47**	**354**	*ce*P	**Pn**	**00 17 49.0**	**-0.3**
ERM				pmax	pmax		
comp=Z,43nm,1.2s							
JEM	**Erimo**	**2.47**	**354**	P	**Pn**	**00 17 48.6**	**-0.8**
JEM				S	**Sn**	**00 18 16.8**	**-1.9**
JOU	**Okura**	**2.50**	**243**	P	**Pn**	**00 17 49.7**	**-0.1**
JYK	**Kaneyama**	**2.51**	**256**	P	**Pn**	**00 17 49.8**	**-0.1**
JYK				*e*S	**Sn**	**00 18 19.3**	**-0.4**
JYW	**Yuwa**	**2.53**	**271**	P	**Pn**	**00 17 51.7**	**+1.5**
JYW				*e*S	**Sn**	**00 18 21.3**	**+1.0**
JOT	**Ohata**	**2.60**	**315**	P	**Pn**	**00 17 50.5**	**-0.7**
JNBK	**Urakawa-nobuka**	**2.78**	**349**	P	**Pn**	**00 17 53.4**	**-0.2**
JNBK				S	**Sn**	**00 18 24.9**	**-1.4**
ASAJ	**Asahikawa**	**4.61**	**352**	Pn	**Pn**	**00 18 19.1**	**+0.4**
comp=Z,3.6nm,0.3s,baz=229,slow=13,SNR=14							
ASAJ				Sn	**Sn**	**00 19 09.3**	**-2.1**
comp=Z,4.0nm,0.3s,baz=131,slow=27,SNR=3.9							
YUK	**Yuzh-Kuril'sk**	**4.82**	**21**	*e*P	**Pn**	**00 18 21.6**	**0.0**
YUK				*e*S	**Sn**	**00 19 13.1**	**-3.4**
YUK				pmax	pmax		
comp=Z,194nm,0.4s							
YUK				pmax	pmax		
comp=E,48nm,0.2s							
YUK				pmax	pmax		
comp=N,55nm,0.4s							
SHO	**Shikotan**	**4.99**	**29**	*e*P	**Pn**	**00 18 22.7**	**-1.2**
SHO				*e*S	**Sn**	**00 19 15.3**	**-5.4**
SHO				pmax	pmax		
comp=Z,36nm,0.4s							
SHO				pmax	pmax		
comp=N,15nm,0.3s							
SHO				pmax	pmax		
comp=E,11nm,0.3s							
MAJO	**Matsushiro**	**5.14**	**236**	*e*P	**Pn**	**00 18 24.2**	**-1.8**
MAT	**Matsushiro**	**5.14**	**236**	P	**Pn**	**00 18 27.1**	**+1.1**
MAT				*e*S	**Sb**	**00 19 38.8**	**-2.2**
MJAR	**Matsushiro Arr**	**5.14**	**236**	Pn	**Pn**	**00 18 27.1**	**+1.1**
comp=E,2.1nm,0.3s,baz=42,slow=12,SNR=23							
MJAR				LR	LR	00 20 37.4	
comp=E,246nm,19.7s,baz=0.0,slow=40							
KUR	**Kuril'sk**	**6.54**	**28**	*e*P	**Pn**	**00 18 44.7**	**-0.5**
KUR				*e*S	**Sn**	**00 19 54.7**	**-4.2**
KUR				pmax	pmax		
comp=Z,39nm,0.4s							
JHJ	**Hachijo jima 2**	**7.08**	**206**	Sn	**Sn**	**00 20 07.6**	**-4.9**
comp=Z,15nm,0.3s,baz=243,slow=20,SNR=3.2							
YSS	**Yuzh-Sakhalins**	**7.42**	**356**	*e*P	**Pn**	**00 19 00.3**	**+3.0**
YSS				pmax	pmax		
comp=Z,34nm,2.5s							
USRK	**Ussuriysk Ar.**	**9.75**	**302**	Pn	**Pn**	**00 19 33.0**	**+3.8**
comp=Z,0.4nm,0.3s,baz=93,slow=13,SNR=12							
USRK				LR	LR	00 23 12.4	
comp=Z,259nm,18.2s,baz=128,slow=37							
JNU	**Nakatsue**	**12.02**	**242**	LR	LR	00

PMG Port Moresby 48.83 175 *ceP* **P 00 25 52.1 -1.9**
PMG pmax pmax
comp=Z,177nm,1.2s
BVAR Borovoye Array 50.11 311 P **P 00 26 03.8 +0.3**
comp=Z,3.1nm,0.8s,baz=84,slow=6.1,SNR=10
BVAR Borovoye Array 50.11 311 P **P 00 26 03.8 +0.3**
BVAR pmax pmax
comp=Z,2.0nm,0.7s
AAK Ala-Archa 50.76 297 *eP* **P 00 26 07.8 -1.0**
AAK pmax pmax
comp=Z,7.0nm,0.9s
SVE Sverdlovsk 54.36 318 *eP* **P 00 26 35.2 +0.2**
SVE pmax pmax
comp=Z,14nm,1.5s
ARU Arti 55.57 318 *c iP* **P 00 26 44.0 +0.2**
ARU 00 28 47.6
ARU S **S 00 34 29.7 +2.0**
ARU SS **SS 00 38 09.0 -3.2**
ARU pmax pmax
comp=Z,8.0nm,1.0s
RES Resolute Bay 59.75 15 P **P 00 27 12.9 +0.1**
comp=Z,1.3nm,0.9s,baz=302,slow=7.7,SNR=6.8
WRA Warramunga Arr 59.80 190 P **P 00 27 14.2 +0.3**
comp=Z,0.8nm,0.7s,baz=8.7,slow=7.0,SNR=9.0
YKA Yellowknife Ar 60.81 31 P **P 00 27 21.2 +0.9**
comp=Z,0.3nm,0.7s,baz=302,slow=6.4,SNR=6.4
KLMR Klimovskoe 62.50 328 *eP* **P 00 27 30.5 -1.2**
KLMR pmax pmax
comp=Z,3.0nm,0.9s
ASAR Alice Springs 63.52 190 P **P 00 27 39.5 +0.6**
comp=Z,0.7nm,0.8s,baz=10,slow=7.6,SNR=4.3
GEYT Alibeck 64.05 299 P **P 00 27 40.8 -1.6**
comp=Z,1.1nm,0.8s,baz=48,slow=8.8,SNR=3.6
VRH Novokhopyorsk 66.81 318 *eP* **P 00 27 59.0 -0.9**
VRH pmax pmax
comp=Z,10.0nm,1.1s
OBN Obninsk 67.05 323 *eP* **P 00 27 59.5 -1.9**
OBN *e* 00 28 24.6
OBN pmax pmax
comp=Z,3.0nm,1.0s
FINES FINESS Array B 67.34 332 P **P 00 28 03.5 +0.4**
comp=Z,3.8nm,0.9s,baz=34,slow=7.8,SNR=10
VSR Storozhevoye 68.11 319 *eP* **P 00 28 06.9 -1.3**
VSR pmax pmax
comp=Z,3.0nm,0.5s
KBZ Khabaz 70.49 311 P **P 00 28 25.1 +2.1**
comp=Z,2.7nm,0.9s,baz=19,slow=1.5,SNR=7.4
NVAR Mina Array Bea 72.19 55 P **P 00 28 35.4 +1.7**
comp=Z,0.2nm,0.3s,baz=313,slow=6.6,SNR=1.9
NB2 NORSAR Subarra 72.48 338 P **P 00 28 35.0 +0.1**
comp=Z,4.7nm,1.0s,baz=38,slow=6.2
NOA NORSAR Array B 72.48 338 P **P 00 28 35.4 +0.5**
comp=Z,2.4nm,0.8s,baz=38,slow=5.9,SNR=13
NOA NORSAR Array B 72.48 338 P **P 00 28 35.4 +0.5**
NOA pmax pmax
comp=Z,3.0nm,0.8s
AKASG Malin Array Be 73.29 323 P **P 00 28 38.6 -1.1**
comp=Z,0.6nm,0.4s,baz=45,slow=8.6,SNR=5.9
AKASG Malin Array Be 73.29 323 *ceP* **P 00 28 38.5 -1.3**
AKASG pmax pmax
comp=Z,1.0nm,0.4s
PDAR Pinedale Array 74.75 47 P **P 00 28 48.7 -0.1**
comp=Z,0.2nm,0.5s,baz=358,slow=2.7,SNR=2.4
STHS Stebnicka Huta 77.82 326 *eP* **P 00 29 06.9 +1.1**
STHS pmax pmax
comp=Z,2.0nm,0.9s
STHS Stebnicka Huta 77.82 326 *eP* **P 00 29 06.9 +1.1**
BRTR Keskin Array B 78.39 312 P **P 00 29 09.3 0.0**
comp=Z,1.0nm,1.0s,baz=64,slow=5.7,SNR=4.4
VYHS Vyhne 79.56 326 *eP* **P 00 29 16.4 +1.0**
VYHS pmax pmax
comp=Z,2.0nm,1.1s
VYHS Vyhne 79.56 326 *eP* **P 00 29 16.4 +1.0**
CLL Collm 79.70 331 *e*(P) **P 00 29 16.0 -0.1**
comp=Z,5.0nm,1.2s
CLL Collm 79.70 331 *eP* **P 00 29 16.0 -0.1**
RAR Rarotonga 80.36 128 LR LR 01 05 44.2
comp=Z,24nm,18.9s,baz=42,slow=36
GERES GERESS Array B 81.41 329 P **P 00 29 25.4 0.0**
comp=Z,0.5nm,0.7s,baz=64,slow=3.1,SNR=5.1

ISCJB ***06*** *00:24:24.4±0.6, 30.°76N±0.°04×105.°69W±0.°04, h10km, Error ellipse: s-maj=5.9km s-min=5.1km az=158.6*
NEIC ***06*** *00:24:26.1±0.6, 30.°75N×105.°73W, h10km, ML2.8, Error ellipse: s-maj=9.9km s-min=7.8km az=151.0*
MEX ***06*** *00:24:28.5±0.6, 30.°72N×105.°66W, h10km±11km, MD4.1*
ISC 06 00:24:23.3±1.0, 30.°76N±0.°05×105.°67W±0.°04, h10km, n12, σ1§61/21, Texas-Mexico border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CGIG		**2.03**	**259**	*eP*	**Pb**	**00 25 00.0**	**-0.3**
CGIG				*i* S	**Sb**	**00 25 24.4**	**-1.4**
CGIG		**2.03**	**259**	*eP*	**Pb**	**00 25 00.0**	**-0.3**
CGIG				*i* S	**Sb**	**00 25 24.4**	**-1.4**
121A	**Cookes Peak, D**	**2.52**	**315**	*eP*	**Pb**	**00 25 06.9**	**-1.8**
121A				*eS*	**Sn**	**00 25 36.5**	**+1.2**
121A	**Cookes Peak, D**	**2.52**	**315**	*ePn*	**Pb**	**00 25 07.1**	**-1.6**
121A				*eSg*	**Sg**	**00 25 46.8**	**+2.4**
319A	**Douglas**	**3.16**	**282**	*eP*	**Pn**	**00 25 15.5**	**+2.3**
319A				*eS*	**Sn**	**00 25 52.6**	**+1.6**
HPIG		**3.81**	**180**	*eP*	Pn	00 25 24.8	+2.6
HPIG				*i* S	**Sn**	**00 26 07.5**	**+0.2**
HPIG		**3.81**	**180**	*eP*	Pn	00 25 24.8	+2.6
HPIG				*i* S	**Sn**	**00 26 07.5**	**+0.2**
MSTX	**Muleshoe**	**4.03**	**37**	*ePn*	Pn	00 25 28.6	+3.5
MSTX				*ePb*	**Pg**	**00 25 39.4**	**-1.1**
MSTX				*eSb*	**Sg**	**00 26 31.1**	**-1.6**
ANMO	**Albuquerque**	**4.22**	**351**	*ePn*	Pn	00 25 31.2	+3.3
ANMO				*ePg*	**Pg**	**00 25 44.6**	**+0.4**
ANMO				*eSb*	**Sg**	**00 26 37.2**	**-1.7**
TUC	**Tucson**	**4.63**	**291**	*ePn*	**Pn**	**00 25 35.2**	**+1.9**
TUC				*ePb*	**Pg**	**00 25 50.2**	**-1.8**
TUC				*eSg*	**Sg**	**00 26 50.8**	**-1.2**
AMTX	**Amarillo**	**5.31**	**38**	*ePn*	**Pn**	**00 25 45.2**	**+2.6**
AMTX				*ePg*	**Pg**	**00 26 04.5**	**-0.4**
AMTX				*eSg*	Sg	00 27 20.3	+6.6
ABTX	**Abilene, Hawle**	**5.46**	**69**	*ePn*	Pn	00 25 48.8	+4.0

CSEM ***06*** *00:26:22.4, 44.°61N×7.°27E, h2km, ML1.2/8*
LDG 06 00:26:22.4±0.1, 44.°61N×7.°27E, h2km, Md1.5/1, Ml1.2/8, Error ellipse: s-maj=1.9km s-min=0.9km az=74.0, Northern Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MBDF	**Montbardon**	**0.38**	**288**	*ePg*	Pg	00 26 30.1	+0.5
MBDF				*eSg*	Sg	00 26 34.6	+0.1
4.5nm,0.2s							
MBDF	**Montbardon**	**0.38**	**288**	*ePg*	Pg	00 26 30.1	+0.5
MBDF				*eSg*	Sg	00 26 34.6	+0.1
2.2nm,0.2s							
SBF	**Sospel**	**0.76**	**171**	*ePg*	Pg	00 26 36.9	0.0
SBF				*eSg*	Sg	00 26 46.6	0.0
0.7nm,0.2s							
SBF	**Sospel**	**0.76**	**171**	*ePg*	Pg	00 26 36.9	0.0
SBF				*eSg*	Sg	00 26 46.6	0.0
0.3nm,0.2s							
LPG	**La Plagne**	**0.96**	**338**	*ePg*	Pg	00 26 40.9	0.0
LPG				*eSg*	Sg	00 26 53.3	0.0
0.4nm,0.3s							
LPG	**La Plagne**	**0.96**	**338**	*ePg*	Pg	00 26 40.9	0.0
LPG				*eSg*	Sg	00 26 53.3	0.0
0.2nm,0.3s							
LPL	**La Plagne**	**0.98**	**337**	*ePg*	Pg	00 26 41.1	-0.2
LPL				*eSg*	Sg	00 26 53.9	-0.1
0.5nm,0.3s							
LPL	**La Plagne**	**0.98**	**337**	*ePg*	Pg	00 26 41.1	-0.2
LPL				*eSg*	Sg	00 26 53.9	-0.1
0.2nm,0.3s							
ORIF	**Oris-en-Rattie**	**1.04**	**288**	*ePg*	Pg	00 26 42.0	-0.3
ORIF				*eSg*	Sg	00 26 55.5	-0.2
0.4nm,0.3s							
ORIF	**Oris-en-Rattie**	**1.04**	**288**	*ePg*	Pg	00 26 42.0	-0.3
ORIF				*eSg*	Sg	00 26 55.5	-0.2
0.2nm,0.3s							
FRF	**La Foret Royal**	**1.14**	**203**	*ePg*	Pg	00 26 44.0	-0.2
FRF				*eSg*	Sg	00 26 58.5	-0.5
0.5nm,0.2s							
FRF	**La Foret Royal**	**1.14**	**203**	*ePg*	Pg	00 26 44.0	-0.2
FRF				*eSg*	Sg	00 26 58.5	-0.5
0.2nm,0.2s							
SMRF	**Simiane la Rot**	**1.37**	**243**	*eSg*	Sg	00 27 06.2	-0.3
0.3nm,0.2s							
SMRF	**Simiane la Rot**	**1.37**	**243**	*eSg*	Sg	00 27 06.2	-0.3
0.2nm,0.2s							
LMR	**La Mourre**	**1.39**	**204**	*ePg*	Pn	00 26 47.9	-0.9
LMR				*eSg*	Sg	00 27 05.8	-1.2
1.2nm,0.2s							
LMR	**La Mourre**	**1.39**	**204**	*ePg*	Pn	00 26 47.9	-0.9
LMR				*eSg*	Sg	00 27 05.8	-1.2
0.6nm,0.2s							
VIVF	**Saint-Julien-l**	**1.87**	**279**	*eSg*	Sb	00 27 21.4	+0.3
0.3nm,0.2s							
VIVF	**Saint-Julien-l**	**1.87**	**279**	*eSg*	Sb	00 27 21.4	+0.3
0.2nm,0.2s							

ISK ***06*** *00:35:13.6, 37.°15N×29.°93E, h9km, MD2.6*
DDA ***06*** *00:35:14.8, 36.°56N×30.°09E, h7km, Md2.4*
CSEM ***06*** *00:35:17.0±0.9, 36.°83N×29.°91E, h10km, MD2.6, Error ellipse: s-maj=23.2km s-min=17.7km az=144.0*
ISC 06 00:35:13.4±1.7, 36.°60N±0.°05×30.°21E±0.°07, h25km±14km, n14, σ0§70/24, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ELL	**Elmali**	**0.29**	**302**	*ePG*	**Pn**	**00 35 21.8**	**-0.3**
ELL				*eSG*	**Sn**	**00 35 28.1**	**+0.4**
ELL	**Elmali**	**0.29**	**302**	*ePg*	**Pn**	**00 35 21.8**	**-0.3**
ELL				*eSg*	**Sn**	**00 35 28.1**	**+0.4**
KORT	**Korkueli**	**0.42**	**15**	P	**Pn**	**00 35 23.6**	**-0.4**
KORT				S	**Sn**	**00 35 31.9**	**+0.9**
KORT	**Korkueli**	**0.42**	**15**	*i* P	**Pn**	**00 35 23.6**	**-0.4**
KORT				*i* S	**Sn**	**00 35 31.9**	**+0.9**
AKAS	**Kas**	**0.61**	**234**	P	**Pb**	**00 35 25.3**	**-0.2**
AKAS				S	**Sn**	**00 35 36.8**	**+1.2**
AKAS	**Kas**	**0.61**	**234**	*i* P	**Pb**	**00 35 25.3**	**-0.2**
AKAS				*i* S	**Sn**	**00 35 36.8**	**+1.2**
GOLH	**Golhisar**	**0.82**	**321**	P	**Pb**	**00 35 29.6**	**+0.4**
GOLH	**Golhisar**	**0.82**	**321**	*i* P	**Pb**	**00 35 29.6**	**+0.4**
FETY	**Fethiye**	**0.91**	**273**	*ePG*	**Pb**	**00 35 30.4**	**-0.1**
FETY				*eSG*	**Sb**	**00 35 42.6**	**+0.4**
FETY	**Fethiye**	**0.91**	**273**	*ePg*	**Pb**	**00 35 30.4**	**-0.1**
FETY				*eSg*	**Sb**	**00 35 42.6**	**+0.4**
DALY	**Dalyan (Mu¨la**	**1.27**	**280**	*ePG*	**Pn**	**00 35 34.7**	**-0.8**
DALY	**Dalyan (Mu¨la**	**1.27**	**280**	*ePg*	**Pn**	**00 35 34.7**	**-0.8**
KHAL	**Karahalli**	**1.86**	**342**	P	**Pn**	**00 35 42.7**	**-1.1**
KHAL				S	**Sn**	**00 36 06.5**	**0.0**
KHAL	**Karahalli**	**1.86**	**342**	*i* P	**Pn**	**00 35 42.7**	**-1.1**
KHAL				*i* S	**Sn**	**00 36 06.5**	**0.0**

ISCJB ***06*** *00:37:08.7±1.2, 38.°20N±0.°03×144.°11E±0.°04, h32km±9km, mb3.8/19, Error ellipse: s-maj=5.9km s-min=4.7km az=149.1*
JMA ***06*** *00:37:08.2±0.2, 38.°19N×144.°15E, h44km, M4.2*
IDC ***06*** *00:37:09.7±0.7, 38.°04N×144.°16E, h29km±3km, mb3.6/15, mb1 3.9/21, mb1mx3.7/39, mbtmp3.8/21, ML3.8/5, MS2.9/4, Ms1 2.9/4, ms1mx2.6/43, Error ellipse: s-maj=16.1km s-min=13.6km az=155.0*
NEIC ***06*** *00:37:09.7±2.8, 38.°11N×144.°22E, h28km±19km, mb4.0/4, Error ellipse: s-maj=13.3km s-min=8.0km az=123.0*
ISC 06 00:37:09.6±0.6, 38.°19N±0.°05×144.°17E±0.°06, h26km±3km, n48, σ1§44/77, mb3.8/19, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.15**	**295**	P	**Pn**	**00 37 42.6**	**-1.1**
OFUJ				*eS*	**Sn**	**00 38 07.4**	**-2.1**
JIO	**Ouri**	**2.23**	**278**	P	**Pn**	**00 37 43.8**	**-1.1**
JIO				S	**Sn**	**00 38 09.8**	**-1.7**
JMK	**Ichinoseki**	**2.43**	**289**	P	**Pn**	**00 37 46.8**	**-0.8**
JMK				S	**Sn**	**00 38 14.9**	**-1.6**
JTH	**Tanohata**	**2.50**	**315**	P	**Pn**	**00 37 47.7**	**-0.9**
JTH				S	**Sn**	**00 38 17.0**	**-1.2**
JOM	**Ohasama**	**2.58**	**301**	P	**Pn**	**00 37 48.9**	**-0.8**
JOM				S	**Sn**	**00 38 19.0**	**-1.2**
JMM	**Marumori**	**2.68**	**264**	P	**Pn**	**00 37 49.9**	**-1.2**
JMM				S	**Sn**	**00 38 20.5**	**-2.2**
JFK	**Kawauchi**	**2.73**	**253**	P	**Pn**	**00 37 50.1**	**-1.8**
JFK				*eS*	**Sn**	**00 38 21.2**	**-2.9**
JOU	**Okura**	**2.76**	**275**	P	**Pn**	**00 37 51.7**	**-0.5**
JOU				S	**Sn**	**00 38 23.8**	**-0.9**
JANG	**Nango**	**2.99**	**317**	P	**Pn**	**00 37 54.5**	**-0.9**
JANG				*eS*	**Sn**	**00 38 28.8**	**-1.6**
JRG	**Rokugo**	**3.01**	**295**	P	**Pn**	**00 37 55.4**	**-0.2**
JRG				*eS*	**Sn**	**00 38 30.3**	**-0.5**
JYK	**Kaneyama**	**3.07**	**285**	P	**Pn**	**00 37 56.3**	**-0.1**
JYK				*eS*	**Sn**	**00 38 32.3**	**0.0**
JFT	**Otama**	**3.10**	**259**	P	**Pn**	**00 37 56.4**	**-0.5**
JFT				S	**Sn**	**00 38 32.1**	**-1.1**
JTM	**Tenmabayashi**	**3.53**	**318**	P	**Pn**	**00 38 01.8**	**-0.9**
JTM				*eS*	**Sn**	**00 38 41.5**	**-2.0**
ERM	**Erimo**	**3.89**	**349**	*ePn*	**Pn**	**00 38 06.9**	**-0.8**
ERM				*ePb*	**Pb**	**00 38 18.7**	**+1.1**
JNBK	**Urakawa-nobuka**	**4.22**	**346**	P	**Pn**	**00 38 11.7**	**-0.5**
JNBK				S	**Sn**	**00 38 58.7**	**-2.0**
JKB	**Kayabe**	**4.40**	**328**	P	**Pn**	**00 38 13.4**	**-1.3**
JKB				S	**Sn**	**00 39 01.5**	**-3.6**
JCH	**Churui**	**4.46**	**352**	P	**Pn**	**00 38 13.4**	**-2.1**
JCH				S	**Sn**	**00 39 02.7**	**-3.8**
JRY	**Ryogami san**	**4.74**	**244**	P	**Pn**	**00 38 17.9**	**-1.4**
JRY				S	**Sn**	**00 39 09.1**	**-4.3**
MJAR	**Matsushiro Arr**	**5.02**	**253**	Pn	**Pn**	**00 38 23.6**	**+0.4**
5.1nm,0.3s,baz=67,slow=9.1,SNR=48							
MJAR				Sn	**Sn**	**00 39 19.9**	**-0.6**
2.5nm,0.3s,baz=92,slow=26,SNR=4.2							
MJAR				LR	LR	00 40 03.1	
comp=Z,87nm,19.1s,baz=90,slow=35							
MAJO	**Matsushiro**	**5.02**	**253**	*ePn*	**Pn**	**00 38 23.5**	**+0.2**
46nm,0.6s							
MAT	**Matsushiro**	**5.02**	**253**	P	**Pn**	**00 38 23.1**	**-0.2**
MAT				S	**Sn**	**00 39 21.3**	**+0.8**
ASAJ	**Asahikawa**	**6.03**	**349**	Pn	**Pn**	**00 38 37.7**	**+0.6**
3.9nm,0.3s,baz=241,slow=23,SNR=6.7							
ASAJ				Sn	**Sn**	**00 39 41.7**	**-3.6**
0.6nm,0.3s,baz=56,slow=20,SNR=2.5							
ASAJ	**Asahikawa**	**6.03**	**349**	*ePn*	**Pn**	**00 38 37.4**	**+0.2**
9.7nm,1.0s							
ASAJ				*eSn*	**Sn**	**00 39 44.1**	**-1.2**
JHJ	**Hachijo jima 2**	**6.19**	**216**	Pn	**Pn**	**00 38 37.5**	**-1.9**
24nm,0.3s,baz=72,slow=23,SNR=8.9							
JHJ				Sn	Sn	00 39 38.3	-11
17nm,0.3s,baz=256,slow=19,SNR=2.2							
JHJ				LR	LR	00 42 26.1	
comp=Z,51nm,18.1s,baz=130,slow=52							
USRK	**Ussuriysk Ar.**	**10.96**	**307**	Pn	**Pn**	**00 39 46.5**	**+1.8**
0.4nm,0.3s,baz=116,slow=13,SNR=7.2							
JNU	**Nakatsue**	**11.93**	**249**	LR	LR	00 44 39.9	
comp=Z,82nm,19.4s,baz=119,slow=38							
KSRS	**Korea Array**	**12.87**	**272**	Pn	**Pn**	**00 40 12.2**	**+1.5**
0.2nm,0.3s,baz=92,slow=14,SNR=6.1							
KSRS				LR	LR	00 44 32.0	
comp=Z,93nm,20.7s,baz=62,slow=34							
KSAR	**Wonju Array Be**	**12.90**	**272**	Pn	**Pn**	**00 40 12.2**	**+1.1**
KLR	**Kul'dur**	**14.20**	**325**	Pn	Pn	00 40 31.7	+2.8
0.1nm,0.3s,baz=144,slow=13,SNR=4.4							
SEY	**Seymchan**	**25.27**	**9**	P	**P**	**00 42 34.6**	**+1.3**
1.1nm,0.4s,baz=135,slow=4.0,SNR=4.6							
SEY				pP	**sP**	**00 42 44.1**	**-0.2**
2.7nm,0.7s,baz=186,slow=7.8,SNR=6.8							
SONM	**Songino Array**	**29.00**	**302**	P	**P**	**00 43 08.1**	**+0.9**
0.6nm,0.5s,baz=83,slow=11,SNR=5.0							
ZALV	**Zalesovo Beam**	**42.77**	**312**	P	**P**	**00 45 04.6**	**0.0**
0.5nm,0.4s,baz=167,slow=36,SNR=3.1							
ZALV				pP	**sP**	**00 45 14.4**	**-1.3**
1.4nm,0.5s,baz=86,slow=9.4,SNR=6.7							
ZALV				PcP	**PcP**	**00 46 54.8**	**-0.8**
0.3nm,0.3s,baz=95,slow=2.9,SNR=3.9							
ZALV				pPcP		00 47 05.0	
0.6nm,0.4s,baz=98,slow=3.0,SNR=3.3							
MKAR	**Makanchi Array**	**45.36**	**302**	P	**P**	**00 45 25.8**	**+0.2**
1.2nm,0.7s,baz=84,slow=9.8,SNR=14							
MKAR				pP	**pP**	**00 45 33.8**	**+0.2**
0.8nm,0.6s,baz=87,slow=9.5,SNR=7.3							
KURK	**Kurchatov**	**46.95**	**308**	*eP*	**P**	**00 45 38.0**	**+0.1**
5.6nm,0.6s							
ILAR	**Eielson Array**	**47.34**	**33**	P	**P**	**00 45 41.2**	**+0.4**
0.3nm,0.5s,baz=321,slow=33,SNR=4.9							
ILAR				pP	**pP**	**00 45 49.8**	**+0.9**
0.5nm,0.8s,baz=260,slow=6.7,SNR=3.9							
AAK	**Ala-Archa**	**51.86**	**298**	*eP*	**P**	**00 46 16.0**	**+0.2**
0.6nm,0.2s							
EKS2	**Erkin-Say**	**52.35**	**299**	*eP*	**P**	**00 46 19.8**	**+0.4**
0.6nm,0.4s							
WRA	**Warramunga Arr**	**58.56**	**191**	P	**P**	**00 47 02.4**	**-1.6**
1.3nm,0.5s,baz=10,slow=7.3,SNR=9.2							
ABKAR	**Akbulak array**	**58.86**	**310**	*eP*	**P**	**00 47 06.0**	**+0.2**
0.3nm,0.4s							
YKA	**Yellowknife Ar**	**61.70**	**31**	P	**P**	**00 47 26.1**	**+1.1**
0.2nm,0.6s,baz=304,slow=6.7,SNR=4.5							
YKA				pP	**pP**	**00 47 34.4**	**+1.2**
0.3nm,0.7s,baz=301,slow=6.6,SNR=5.8							
ASAR	**Alice Springs**	**62.28**	**191**	P	**P**	**00 47 27.8**	**-1.6**
0.4nm,0.5s,baz=11,slow=7.4,SNR=6.2							
FINES	**FINESS Array B**	**68.79**	**333**	P	**P**	**00 48 11.9**	**+0.9**
1.0nm,0.8s,baz=28,slow=8.6,SNR=4.8							
FINES				pP	**pP**	**00 48 19.6**	**+0.2**
0.8nm,0.7s,baz=98,slow=12,SNR=2.9							
KBZ	**Khabaz**	**71.79**	**312**	P	**P**	**00 48 30.2**	**+0.5**
0.4nm,0.4s,baz=62,slow=3.7,SNR=4.8							
NVAR	**Mina Array Bea**	**72.54**	**55**	P	**P**	**00 48 35.3**	**+0.7**
0.3nm,0.5s,baz=304,slow=7.2,SNR=3.0							
NVAR				pP	**sP**	**00 48 45.0**	**-1.0**
0.9nm,0.7s,baz=288,slow=6.2,SNR=4.9							
NOA	**NORSAR Array B**	**73.94**	**338**	P	**P**	**00 48 42.0**	**-0.2**
1.0nm,0.9s,baz=38,slow=5.8,SNR=3.5							
AKASG	**Malin Array Be**	**74.70**	**323**	P	**P**	**00 48 45.4**	**-1.3**
1.0nm,0.5s,baz=48,slow=7.8,SNR=5.1							
PDAR	**Pinedale Array**	**75.29**	**47**	P	**P**	**00 48 50.9**	**+0.3**
0.2nm,0.5s,baz=0.0,slow=0.0,SNR=3.1							
PDAR				pP	**pP**	**00 48 59.1**	**+0.1**
0.5nm,0.7s,baz=230,slow=1.6,SNR=4.4							
GERES	**GERESS Array B**	**82.85**	**330**	P	**P**	**00 49 32.3**	**+0.6**
0.4nm,0.8s,baz=305,slow=4.7,SNR=3.6							

NIED ***06*** *00:45:00, 37.°00N×142.°40E, h14km, Mw3.6 Best double couple: M0=3.22000×10^14 NP1:φ0=159.00000°, δ56.00000°, λ-143.00000°. NP2:φ0=47.00000°, δ60.00000°, λ-40.00000°.*
JMA ***06*** *00:45:47.2±0.3, 36.°99N×142.°39E, h8km±4km, M3.8*
IDC ***06*** *00:45:56.7±2.2, 37.°89N×141.°38E, h0km, mb3.4/3, mb1 3.5/4, mb1mx3.2/35, mbtmp3.3/4, ML3.0/1, Error ellipse: s-maj=43.1km s-min=30.0km az=69.0*
ISC 06 00:45:49.8±3.7, 37.°06N±0.°10×142.°2E±0.°1, h11km±17km, n12, σ1§26/19, mb3.2/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.12**	**286**	P	**Pb**	**00 46 10.6**	**-0.6**
JFK				S	**Sn**	**00 46 28.1**	**+1.3**
ONAJ	**Iwakimizuishiy**	**1.14**	**272**	P	**Pb**	**00 46 11.3**	**-0.2**
ONAJ				S	**Sn**	**00 46 28.4**	**+1.0**
JMM	**Marumori**	**1.40**	**306**	P	**Pb**	**00 46 15.6**	**-0.2**
JMM				S	**Sg**	**00 46 35.8**	**+1.1**
JHO	**Hitachi**	**1.40**	**252**	P	**Pn**	**00 46 14.9**	**-0.3**
JHO				*eS*	**Sn**	**00 46 33.6**	**-0.1**
JIO	**Ouri**	**1.56**	**334**	P	**Pn**	**00 46 17.0**	**-0.3**
JFT	**Otama**	**1.57**	**287**	P	**Pn**	**00 46 17.6**	**0.0**
JFT				S	**Sg**	**00 46 40.8**	**+0.4**
JOU	**Okura**	**1.80**	**317**	P	**Pb**	**00 46 22.5**	**-0.2**
JOU				S	**Sg**	**00 46 47.6**	**0.0**
MJAR	**Matsushiro Arr**	**3.27**	**262**	Pn	**Pn**	**00 46 42.5**	**+1.7**
2.3nm,0.3s,baz=87,slow=15,SNR=12							
MJAR				Sn	**Sn**	**00 47 21.0**	**+1.3**
1.2nm,0.3s,baz=92,slow=17,SNR=4.0							
MAT	**Matsushiro**	**3.27**	**262**	P	**Pn**	**00 46 42.6**	**+1.7**
MAT				S	**Sb**	**00 47 24.1**	**-3.4**
SONM	**Songino Array**	**28.31**	**304**	P	**P**	**00 51 43.3**	**-0.1**
0.2nm,0.4s,baz=94,slow=6.6,SNR=2.7							
MKAR	**Makanchi Array**	**44.66**	**302**	P	**P**	**00 54 02.4**	**+0.1**
0.2nm,0.5s,baz=93,slow=6.7,SNR=3.1							
WRA	**Warramunga Arr**	**57.18**	**189**	P	P	00 55 50.6	+14
0.6nm,0.9s,baz=10,slow=8.0,SNR=3.3							

ISCJB ***06*** *00:45:57.7±0.7, 30.°96N±0.°05×105.°64W±0.°03, h10km, Error ellipse: s-maj=7.2km s-min=4.1km az=172.1*
NEIC ***06*** *00:45:59.3±1.1, 30.°81N×105.°71W, h10km, ML2.8, Error ellipse: s-maj=20.2km s-min=9.0km az=172.0*
MEX ***06*** *00:46:03.5±0.5, 30.°92N×105.°68W, h16km±13km, MD4.0*
ISC 06 00:45:57.9±0.9, 30.°87N±0.°05×105.°70W±0.°03, h10km, n11, σ2§14/27, Texas-Mexico border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CGIG		**2.03**	**256**	*eP*	**Pb**	**00 46 33.9**	**-1.0**
CGIG				*eS*	**Sn**	**00 46 58.0**	**+0.3**
CGIG		**2.03**	**256**	*eP*	**Pb**	**00 46 33.9**	**-1.0**
CGIG				*eS*	**Sn**	**00 46 58.0**	**+0.3**
121A	**Cookes Peak, D**	**2.43**	**313**	*eP*	**Pb**	**00 46 39.8**	**-2.0**
121A				*eS*	**Sn**	**00 47 07.7**	**0.0**
121A	**Cookes Peak, D**	**2.43**	**313**	*ePn*	**Pb**	**00 46 39.8**	**-2.0**
121A				*eSg*	**Sg**	**00 47 17.7**	**+1.8**
319A	**Douglas**	**3.11**	**280**	*eP*	**Pn**	**00 46 49.3**	**+2.1**
319A				*eS*	**Sn**	**00 47 25.6**	**+1.1**
MSTX	**Muleshoe**	**3.96**	**38**	*ePn*	Pn	00 47 02.7	+4.0
MSTX				*ePg*	**Pg**	**00 47 11.6**	**-2.1**
MSTX				*eSg*	**Sg**	**00 48 06.8**	**+1.9**
ANMO	**Albuquerque**	**4.11**	**351**	*ePn*	**Pn**	**00 47 02.9**	**+2.0**
ANMO				*ePb*	**Pg**	**00 47 14.5**	**-2.1**
ANMO				*eSn*	**Sn**	**00 47 53.7**	**+4.5**
ANMO				*eSg*	**Sg**	**00 48 10.2**	**+0.3**
TUC	**Tucson**	**4.57**	**290**	*ePn*	**Pn**	**00 47 08.3**	**+1.2**
TUC				*eSg*	**Sg**	**00 48 24.2**	**-0.4**
AMTX	**Amarillo**	**5.24**	**39**	Pn	**Pn**	**00 47 17.4**

MRVT	Maraveh tapeh	2.72	55	ePn	Pn	00 50 04.9	+1.6
IRAZ	Razeghan	2.83	256	ePn	Pn	00 50 05.4	+0.5
IRAZ				eAMB	AMB	00 50 54.5	
	comp=Z,616nm,0.3s						
IRAZ	Razeghan	2.83	256	ePn	Pn	00 50 05.4	+0.5
ASAO	Ashtian	3.10	241	ePn	Pn	00 50 10.9	+2.2
IKLH	Kolahrood	3.13	207	ePn	Pn	00 50 10.0	+0.9
IKLH				eAMB	AMB	00 50 20.8	
	comp=Z,549nm,0.1s						
IKLH	Kolahrood	3.13	207	ePn	Pn	00 50 10.0	+0.9
IZEF	Zefreh	3.31	194	ePn	Pn	00 50 12.6	+1.0
IZEF				eAMB	AMB	00 50 24.8	
	comp=Z,232nm,0.1s						
IZEF	Zefreh	3.31	194	ePn	Pn	00 50 12.6	+1.0
IPIR	Pirpir	3.96	211	ePn	Pn	00 50 21.5	+1.0
IPIR				eAMB	AMB	00 50 37.4	
	comp=Z,148nm,0.2s						
IPIR	Pirpir	3.96	211	ePn	Pn	00 50 21.5	+1.0
ICHK	Chekchek	3.97	166	ePn	Pn	00 50 21.5	+0.9
ICHK				eAMB	AMB	00 51 32.9	
	comp=Z,135nm,0.4s						
ICHK	Chekchek	3.97	166	ePn	Pn	00 50 21.5	+0.9
ISAD	Sadrabad	4.20	175	ePn	Pg	00 50 38.2	-1.8
ISAD				eAMB	AMB	00 51 42.0	
	comp=Z,170nm,0.2s						
ASTR	Astara	4.34	306	P	Pn	00 50 26.1	+0.6
	SNR=5.3						
ASTR				⇑S	Sn	00 51 15.2	-0.9
ASTR	Astara	4.34	306	P	Pn	00 50 26.1	+0.6
	SNR=5.3						
ASTR				S	Sn	00 51 15.2	-0.9
IRAM	Ramesheh	4.36	190	ePn	Pn	00 50 28.7	+2.7
IRAM				eAMB	AMB	00 50 45.8	
	comp=Z,47nm,0.2s						
IRAM	Ramesheh	4.36	190	ePn	Pn	00 50 28.7	+2.7
LKRN	Lenkeran, Azer	4.43	307	P	Pn	00 50 27.1	+0.4
	SNR=3.0						
LKRN				⇓S	Sn	00 51 17.9	-0.5
LKRN	Lenkeran, Azer	4.43	307	P	Pn	00 50 27.1	+0.4
	SNR=3.0						
LKRN				S	Sn	00 51 17.9	-0.5
LRK	Lerik	4.69	304	P	Pn	00 50 30.9	+0.5
	SNR=4.9						
LRK				⇓S	Sn	00 51 24.5	-0.4
LRK	Lerik	4.69	304	P	Pn	00 50 30.9	+0.5
	SNR=4.9						
LRK				S	Sn	00 51 24.5	-0.4
GLBA	Clilabad	4.99	310	⇓P	Pn	00 50 35.6	+1.2
GLBA				⇑S	Sn	00 51 32.5	+0.4
GLBA	Clilabad	4.99	310	P	Pn	00 50 35.6	+1.2
GLBA				S	Sn	00 51 32.5	+0.4
KDMR	Kurdemir	5.86	318	⇑S	Sn	00 51 51.1	-2.4
KDMR	Kurdemir	5.86	318	S	Sn	00 51 51.1	-2.4
PQL	Pirkuli	5.95	323	⇑P	Pn	00 50 49.7	+2.0
PQL				⇓S	Sn	00 51 56.2	+0.2
PQL	Pirkuli	5.95	323	P	Pn	00 50 49.7	+2.0
PQL				S	Sn	00 51 56.2	+0.2
XNQ	Khinaliq	6.46	323	⇑P	Pn	00 50 56.7	+1.8
	SNR=2.8						
XNQ				⇓S	Sn	00 52 06.8	-2.0
XNQ	Khinaliq	6.46	323	P	Pn	00 50 56.7	+1.8
	SNR=2.8						
XNQ				S	Sn	00 52 06.8	-2.0
QSAR	Qusar	6.67	325	⇑P	Pn	00 51 00.4	+2.8
QSAR				⇑S	Sn	00 52 14.2	+0.5
SEKA	Sheki	6.97	319	⇓P	Pn	00 51 03.0	+1.2
SEKA				⇓S	Sn	00 52 20.3	-0.8
SEKA	Sheki	6.97	319	P	Pn	00 51 03.0	+1.2
SEKA				S	Sn	00 52 20.3	-0.8
GANJ	Ganja	7.10	312	⇑P	Pn	00 51 04.2	+0.7
GANJ				⇓S	Sn	00 52 22.7	-1.6
GANJ	Ganja	7.10	312	P	Pn	00 51 04.2	+0.7
GANJ				S	Sn	00 52 22.7	-1.6

IDC 06 01:03:56.1±3.6,**14°.51S**×**170°.16W**,**h0**km,**mb4.1**/3, **mb1 4.3**/3,**mb1mx3.7**/32,**mbtmp4.1**/3,**Error ellipse: s-maj=215.8km s-min=51.6km az=145.0,Samoa Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	Stephens Creek	47.19	240	P	P	01 12 30.9	+0.1
	1.0nm,0.5s,baz=64,slow=7.1,SNR=5.2						
WRA	Warramunga Arr	53.10	256	P	P	01 13 15.3	-0.6
	0.3nm,0.3s,baz=95,slow=7.3,SNR=12						
ASAR	Alice Springs	53.36	251	P	P	01 13 18.1	+0.2
	3.3nm,0.4s,baz=88,slow=8.1,SNR=55						
ARCES	ARCESS Array B	124.12	353	PKP	PKPdf	01 22 55.8	-0.3
	1.1nm,0.8s,baz=355,slow=2.2,SNR=4.1						

*ISCJB **06** 01:05:13.9±0.8,6°.80N±0°.06×72°.97W±0°.05,h157km±7km, Error ellipse: s-maj=11.7km s-min=6.3km az=139.8*
*RSNC **06** 01:05:16.5±0.7,6°.77N×73°.09W,h144km±5km,ML2.3*
*FUNV **06** 01:05:16.3,6°.99N×73°.07W,h156km,MW2.5*

ISC 06 01:05:12.2±1.6,**6°.86N**±0°.05×**73°.04W**±0°.06,**h172**km±9km, **n16**,σ2$14/29,**1D,Northern Colombia**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BARC	Barichara	0.30	209	eP	Pn	01 05 35.8	+0.1
BARC				eS	Sn	01 05 50.6	-3.0
BARC				i		01 05 51.8	
	comp=Z,80nm,0.2s						
PAMC	Pamplona, Colo	0.59	35	eP	Pn	01 05 38.8	+1.7
PAMC				eS	Sn	01 05 55.6	-0.5
PAMC				i		01 05 57.5	
	comp=Z,16nm,0.2s						
BRRC	Barranca, Sant	0.71	290	eP	Pn	01 05 37.7	+0.6
BRRC				eS	Sn	01 05 54.8	-1.4
BRRC				i		01 05 58.1	
	comp=Z,70nm,0.1s						
GRMC	Gramalote, San	0.89	15	eP	Pn	01 05 41.7	+3.2
GRMC				i		01 05 43.0	
	comp=Z,27nm,0.1s						
GRMC				eS	Sn	01 06 00.9	+2.2
CBRI	Barrientos, No	0.89	16	eP	Pn	01 05 40.4	+1.9
CBRI				eS	Sn	01 05 59.2	+0.4
RUSC	La Rusia	0.96	183	eP	Pn	01 05 39.6	+0.3
RUSC				eS	Sn	01 05 58.2	-2.0
RUSC				i		01 05 59.2	
	comp=Z,24nm,0.2s						
CAPV	Capacho	1.23	36	eP	Pn	01 05 42.6	+1.3
CAPV				eS	Sn	01 06 01.5	-2.2
OCAC	Ocana	1.40	349	eP	Pn	01 05 44.6	+1.9
NORC	Norcasia	2.23	235	eP	Pn	01 05 52.1	+0.8
NORC				eS	Sn	01 06 20.1	-1.6
HELC	Santa Helena	2.56	255	eP	Pn	01 05 58.0	+2.5
VIGV	El Vigia	2.58	40	eP	Pn	01 05 57.5	+2.1
VIGV				eS	Sn	01 06 26.4	-2.5
SOCV	Socops	2.59	57	eP	Pn	01 05 57.0	+1.5
SOCV				eS	Sn	01 06 27.9	-1.2
ELOV	Elorza	3.53	87	eP	Pn	01 06 09.5	+2.4
ELOV				eS	Sn	01 06 49.3	-0.6
PRAC	Prado	3.62	211	eP	Pn	01 06 10.1	+1.7
VIRV	Villa del Rosa	3.68	10	eP	Pn	01 06 10.0	+1.0
VIRV				eS	Sn	01 06 49.0	-4.4
CURV	Curarigua	4.37	44	⇓eP	Pn	01 06 18.4	+0.5
CURV				eS	Sn	01 07 05.8	-3.5

*CRAAG **06** 01:10:04.9,36°.84N×2°.70E,Ml3.5*
*ISCJB **06** 01:10:06.5±0.5,37°.07N±0°.03×2°.63E±0°.04,h14km, Error ellipse: s-maj=5.2km s-min=3.7km az=14.9*
*CSEM **06** 01:10:06.0±0.2,36°.95N×2°.69E,h2km,mb3.8, Error ellipse: s-maj=6.0km s-min=4.9km az=83.0*
*MDD **06** 01:10:06.9±1.2,36°.94N×2°.76E,h6km±16km,mb3.8/12, Error ellipse: s-maj=12.8km s-min=6.4km az=120.0, PRXIMO*

ISC 06 01:10:05.8±0.8,**36°.94N**±0°.04×**2°.73E**±0°.03,**h14**km,**n61**, σ1$37/82,**1D,Northern Algeria**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ABA	Alger-Bouzarea	0.28	120	P	Pg	01 10 11.6	-0.1
ABA	Alger-Bouzarea	0.28	120	P	Pg	01 10 11.6	-0.1
ABA	Alger-Bouzarea	0.28	120	P	Pg	01 10 11.6	-0.1
EMHD	Djebel Mahouad	0.76	166	P	Pg	01 10 20.4	-0.2
EMHD	Djebel Mahouad	0.76	166	P	Pg	01 10 20.4	-0.2
EMHD	Djebel Mahouad	0.76	166	P	Pg	01 10 20.4	-0.2
ADJB	Djebel Djouab	0.97	144	P	Pb	01 10 24.4	0.0
ADJB	Djebel Djouab	0.97	144	P	Pb	01 10 24.4	0.0
ADJB	Djebel Djouab	0.97	144	P	Pb	01 10 24.4	0.0
EBNR	Beni Rached	1.16	236	P	Pb	01 10 28.0	+0.4
EBNR	Beni Rached	1.16	236	P	Pb	01 10 28.0	+0.4
ECHA	Ech Chlef	1.35	235	P	Pb	01 10 31.1	+0.3
ECHA	Ech Chlef	1.35	235	P	Pb	01 10 31.1	+0.3
ECHF	Ech Chlef	1.36	235	P	Pb	01 10 31.1	0.0
ECHF	Ech Chlef	1.36	235	P	Pb	01 10 31.1	0.0
EANR	'Ain N'Sour	1.64	233	P	Pb	01 10 36.0	+0.1
EANR	'Ain N'Sour	1.64	233	P	Pb	01 10 36.0	+0.1
EANR	'Ain N'Sour	1.64	233	P	Pb	01 10 36.0	+0.1
OKGL	Djebel Kef Gue	1.91	242	P	Pb	01 10 41.1	+0.8
	24nm,0.2s,SNR=7.9						
OKGL				S	Sb	01 11 03.6	-0.4
	74nm,0.3s,SNR=4.0						
OKGL	Djebel Kef Gue	1.91	242	P	Pb	01 10 41.1	+0.8
	24nm,0.2s,SNR=7.9						
OKGL				S	Sb	01 11 03.6	-0.4
	74nm,0.3s,SNR=4.0						
ETRT	Tiaret	1.93	217	P	Pg	01 10 42.1	-0.7
ETRT	Tiaret	1.93	217	P	Pg	01 10 42.1	-0.7
ETRT	Tiaret	1.93	217	P	Pg	01 10 42.1	-0.7
EIBI	Ibiza	2.35	333	P	Pn	01 10 44.9	+1.0
	6.3nm,0.2s,SNR=25						
EIBI				S	Sn	01 11 11.3	-1.3
	23nm,0.3s,SNR=12						
EIBI	Ibiza	2.35	333	P	Pn	01 10 44.9	+1.0
	6.3nm,0.2s,SNR=25						
ETOS	Mallorca	2.82	1	P	Pn	01 10 51.5	+1.1
	5.2nm,0.4s,SNR=17						
ETOS				S	Sn	01 11 22.9	-1.3
	3.1nm,0.2s,SNR=6.3						
ETOS	Mallorca	2.82	1	P	Pn	01 10 51.5	+1.1
	5.2nm,0.4s,SNR=17						
EMUR	La Murta	3.28	287	P	Pn	01 10 57.6	+0.8
	1.4nm,0.4s,SNR=7.9						
EMUR				S	Sn	01 11 35.4	-0.3
	2.4nm,0.3s,SNR=7.9						
EMUR	La Murta	3.28	287	P	Pn	01 10 57.6	+0.8
	1.4nm,0.4s,SNR=7.9						
EMUR				S	Sn	01 11 35.4	-0.3
	2.4nm,0.3s,SNR=7.9						
ETOB	Tobarra	3.79	298	P	Pn	01 11 05.0	+1.2
	2.7nm,0.2s,SNR=21						
ETOB				S	Sn	01 11 47.5	-0.7
	1.2nm,0.2s						
ETOB	Tobarra	3.79	298	P	Pn	01 11 05.0	+1.2
	2.7nm,0.2s,SNR=21						
ETOB				S	Sn	01 11 47.5	-0.7
	1.2nm,0.2s						
EMOS	Mosqueruela	4.24	325	⇓P	Pn	01 11 11.5	+1.5
	2.6nm,0.2s,SNR=18						
EMOS				S	Sn	01 11 57.7	-1.6
	2.1nm,0.2s,SNR=5.6						
EMOS	Mosqueruela	4.24	325	P	Pn	01 11 11.5	+1.5
	2.6nm,0.2s,SNR=18						
EBR	Ebro Roquetas	4.25	336	P	Pn	01 11 10.6	+0.6
	35nm,0.3s,SNR=7.9						
EBR	Ebro Roquetas	4.25	336	P	Pn	01 11 10.6	+0.6
	35nm,0.3s,SNR=7.9						
SESP	Santiago Espad	4.35	287	P	Pn	01 11 12.9	+1.3
	1.4nm,0.2s,SNR=7.9						
SESP				S	Sn	01 12 02.0	-0.2
	5.0nm,0.4s,SNR=7.9						
SESP	Santiago Espad	4.35	287	P	Pn	01 11 12.9	+1.3
	1.4nm,0.2s,SNR=7.9						
SESP				S	Sn	01 12 02.0	-0.2
	5.0nm,0.4s,SNR=7.9						
ERTA	Horta de San J	4.42	336	P	Pn	01 11 14.5	+2.1
	0.5nm,0.2s,SNR=7.9						
ERTA				S	Sn	01 12 01.5	-2.2
	1.4nm,0.3s,SNR=7.9						
ERTA	Horta de San J	4.42	336	P	Pn	01 11 14.5	+2.1
	0.5nm,0.2s,SNR=7.9						
EBER	Berja	4.50	271	P	Pn	01 11 14.4	+0.8
	2.7nm,0.5s,SNR=7.9						
EBER				S	Sn	01 12 04.6	-1.3
	1.7nm,0.3s,SNR=7.9						
EBER	Berja	4.50	271	P	Pn	01 11 14.4	+0.8
	2.7nm,0.5s,SNR=7.9						
GORA	Gorafe	4.63	278	P	Pn	01 11 17.8	+2.4
	1.6nm,0.2s,SNR=7.9						
GORA	Gorafe	4.63	278	P	Pn	01 11 17.8	+2.4
	1.6nm,0.2s,SNR=7.9						
EQES	Quesada	4.70	282	P	Pn	01 11 18.1	+1.8
	1.1nm,0.3s,SNR=12						
EQES				S	Sn	01 12 09.9	-0.7
	1.6nm,0.3s						
EQES	Quesada	4.70	282	P	Pn	01 11 18.1	+1.8
	1.1nm,0.3s,SNR=12						
EQES				S	Sn	01 12 09.9	-0.7
	1.6nm,0.3s						
CFON	Fontmartina	4.82	357	P	Pn	01 11 19.2	+1.2
	1.9nm,0.4s,SNR=7.9						
CFON				S	Sn	01 12 10.8	-2.8
	1.4nm,0.2s,SNR=7.9						
CFON	Fontmartina	4.82	357	P	Pn	01 11 19.2	+1.2
	1.9nm,0.4s,SNR=7.9						
SJAF	Saint Jean de	5.54	1	P	Pn	01 11 30.4	+2.7
	1.1nm,0.4s,SNR=7.9						
SJAF				S	Sn	01 12 28.5	-2.7
	0.3nm,0.3s,SNR=4.0						
SJAF	Saint Jean de	5.54	1	P	Pn	01 11 30.4	+2.7
	1.1nm,0.4s,SNR=7.9						
CLLI	Llivia	5.56	354	P	Pn	01 11 30.4	+2.2
	0.8nm,0.4s,SNR=7.9						
CLLI				S	Sn	01 12 29.7	-2.2
	0.3nm,0.2s,SNR=7.9						
CLLI	Llivia	5.56	354	P	Pn	01 11 30.4	+2.2
	0.8nm,0.4s,SNR=7.9						
CSOR	Sort	5.56	348	P	Pn	01 11 30.0	+1.8
	0.6nm,0.2s,SNR=7.9						
CSOR				S	Sn	01 12 30.4	-1.5
	3.2nm,0.6s,SNR=7.9						
CSOR	Sort	5.56	348	P	Pn	01 11 30.0	+1.8
	0.6nm,0.2s,SNR=7.9						
ESDC	Sonseca Array	5.92	299	P	Pn	01 11 33.9	+0.8
	0.3nm,0.1s,baz=109,slow=14,SNR=4.4						
ESDC				S	Sn	01 12 38.8	-2.0
	0.3nm,0.1s,baz=117,slow=24,SNR=3.5						
ESDC	Sonseca Array	5.92	299	P	Pn	01 11 33.9	+0.8
	0.3nm,0.1s,SNR=4.4						
EADA	Adamuz	5.93	284	P	Pn	01 11 33.9	+0.7
	0.2nm,0.1s,SNR=4.0						
EADA				S	Sn	01 12 39.6	-1.4
	0.3nm,0.2s,SNR=4.0						
EADA	Adamuz	5.93	284	P	Pn	01 11 33.9	+0.7
	0.2nm,0.1s,SNR=4.0						
ECAB	El Cabril	6.57	282	P	Pn	01 11 41.8	-0.2
	0.3nm,0.2s,SNR=7.9						
ECAB	El Cabril	6.57	282	P	Pn	01 11 41.8	-0.2
	0.3nm,0.2s,SNR=7.9						
EARI	Arriondas	8.79	319	P	Pn	01 12 15.5	+3.1
	1.7nm,0.5s,SNR=5.4						
EARI	Arriondas	8.79	319	P	Pn	01 12 15.5	+3.1
	1.7nm,0.5s,SNR=5.4						

*ISCJB **06** 01:24:28.7±0.6,86°.64N±0°.06×4°.4E±°,h10km,mb3.5/10, MS3.2/3,Error ellipse: s-maj=16.9km s-min=8.9km az=174.3*
*IDC **06** 01:24:29.0±0.8,86°.72N×45°.63E,h0km,mb3.6/9, mb1 3.8/13,mb1mx3.6/36,mbtmp3.6/13,ML3.6/4,MS3.0/6, Ms1 3.0/6,ms1mx2.7/45,Error ellipse: s-maj=27.8km s-min=13.1km az=91.0*

ISC 06 01:24:30.6±0.7,**86°.62N**±0°.07×**43°.8E**±0°.1,**h10**km,**n16**, σ1$23/15,**mb3.7**/10,**MS3.2**/3,**North of Franz Josef Land**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SPITS	Spitsbergen Ar	9.02	217	Pn	Pn	01 26 40.6	+0.1
	baz=38,slow=14,SNR=42						
SPITS				Sn	Sn	01 28 20.2	-1.7
	baz=337,slow=32,SNR=1.6						
SPITS				LR	LR	01 29 42.2	
	comp=Z,49nm,20.8s,baz=70,slow=34						
ARCES	ARCESS Array B	17.39	202	Pn	Pn	01 28 31.7	-1.2
	0.2nm,0.3s,baz=4.1,slow=9.9,SNR=9.9						
ARCES				LR	LR	01 35 12.7	
	comp=Z,31nm,19.7s,baz=348,slow=37						
RES	Resolute Bay	18.10	326	P	P	01 28 42.0	+0.1
	0.1nm,0.3s,baz=11,slow=12,SNR=8.1						
NRIK	Noril'sk	18.48	129	P	P	01 28 45.9	-0.2
	0.4nm,0.3s,baz=5.9,slow=9.4,SNR=5.4						
NRIK				LR	LR	01 36 32.8	
	comp=Z,50nm,18.4s,baz=87,slow=39						
INK	Inuvik	25.22	358	P	P	01 29 54.8	-1.1
	1.6nm,0.8s,baz=6.5,slow=15,SNR=9.3						
FINES	FINESS Array B	25.50	200	P	P	01 30 00.0	+1.6
	2.7nm,0.9s,baz=31,slow=7.8,SNR=5.6						
ILAR	Eielson Array	28.73	10	P	P	01 30 26.4	-1.0
	0.5nm,0.8s,baz=356,slow=6.7,SNR=6.7						
YKA	Yellowknife Ar	30.85	341	P	P	01 30 44.7	-1.5
	0.1nm,0.6s,baz=4.0,slow=8.1,SNR=6.3						
AKASG	Malin Array Be	36.20	196	P	P	01 31 33.4	+0.6
	1.5nm,0.7s,baz=3.7,slow=8.9,SNR=5.0						
TLY	Talaya	36.90	116	LR	LR	01 46 59.3	
	comp=Z,28nm,18.6s,baz=335,slow=37						
MKAR	Makanchi Array	40.78	139	P	P	01 32 11.2	-0.3
	0.3nm,0.8s,baz=16,slow=4.5,SNR=3.3						
ULM	Lac du Bonnet	42.58	322	P	P	01 32 28.4	+2.3
	1.2nm,0.4s,baz=245,slow=2.2,SNR=2.5						
BRTR	Keskin Array B	47.12	191	P	P	01 33 03.4	+0.9
	0.3nm,0.5s,baz=1.8,slow=8.8,SNR=2.4						
PDAR	Pinedale Array	50.48	335	P	P	01 33 28.4	0.0
	0.6nm,0.9s,baz=15,slow=7.5,SNR=3.0						
PDAR				LR	LR	01 54 41.1	
	comp=Z,23nm,19.4s,baz=106,slow=36						
YBH	Yreka Blue Hor	51.77	347	LR	LR	01 57 12.2	
	comp=Z,26nm,19.9s,baz=148,slow=38						
TXAR	Lajitas Array	63.71	328	P	P	01 35 01.9	0.0
	0.4nm,0.7s,baz=90,slow=0.6,SNR=4.3						

*ISN **06** 01:39:10.8±0.9,33°.75N×45°.25E,h0km±4km,ML3.2*
*CSEM **06** 01:39:12.0±0.3,33°.91N×45°.30E,h5km,ML3.2,Error ellipse: s-maj=9.3km s-min=5.9km az=149.0*

TEH 06 01:39:12.0,33°.88N×45°.24E,h3km,**ML3.2,Iran-Iraq border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BHD	Baghdad	0.94	230	ePg	Pg	01 39 30.0	0.0
	SNR=9.0						
BHD				eSg	Sg	01 39 43.0	+0.8
	SNR=9.0						
IGHG	Ghaleghazi	1.19	68	ePg	Pg	01 39 33.6	-1.2
IGHG				eAMB	AMB	01 39 36.0	
	comp=Z,5μm,0.1s						
IGHG				eSg	Sg	01 39 49.7	-0.6
IGHG	Ghaleghazi	1.19	68	ePg	Pg	01 39 33.6	-1.2
IGHG				eSg	Sg	01 39 49.7	-0.6
IVIS	Veis	1.48	64	ePg	Pn	01 39 38.5	-1.2
IVIS				eAMB	AMB	01 39 39.9	
	comp=Z,2μm,0.1s						
IVIS				eSg	Sb	01 39 57.5	-2.0
IVIS	Veis	1.48	64	ePg	Pn	01 39 38.5	-1.2
IVIS				eSg	Sb	01 39 57.5	-2.0
ILIN	Lien	1.76	54	ePn	Pn	01 39 43.2	-0.5
ILIN				eAMB	AMB	01 40 08.7	
	comp=Z,2μm,0.3s						
ILIN	Lien	1.76	54	ePn	Pn	01 39 43.2	-0.5
IBZA	Bozab	2.25	74	ePn	Pn	01 39 50.4	0.0
IBZA				eAMB	AMB	01 40 30.8	
	comp=N,2μm,0.4s						
IBZA	Bozab	2.25	74	ePn	Pn	01 39 50.4	0.0
RTB	Rutbah	4.21	260	ePn	Pn	01 40 17.0	-0.1
	SNR=3.0						
RTB				i Sn	Sn	01 41 04.0	-2.8
	SNR=3.0						
IPIR	Pirpir	4.88	103	ePn	Pn	01 40 22.9	-3.7
IPIR				eAMB	AMB	01 41 24.4	
	comp=Z,193nm,0.2s						
IPIR	Pirpir	4.88	103	ePn	Pn	01 40 22.9	-3.7
IKLH	Kolahrood	5.32	94	ePn	Pn	01 40 31.9	-0.7
IKLH				eAMB	AMB	01 40 36.3	
	comp=Z,122nm,0.2s						
IKLH	Kolahrood	5.32	94	ePn	Pn	01 40 31.9	-0.7
IGAR	Gharneh	5.89	103	ePn	Pn	01 40 34.7	-5.7
IGAR				eAMB	AMB	01 41 48.3	
	comp=Z,121nm,0.2s						
IZEF	Zefreh	6.01	97	ePn	Pn	01 40 41.3	-0.8
IZEF				eAMB	AMB	01 41 56.5	
	comp=Z,41nm,0.2s						
IZEF	Zefreh	6.01	97	ePn	Pn	01 40 41.3	-0.8
IRAM	Ramesheh	6.36	107	ePn	Pn	01 40 45.5	-1.3
IRAM				eAMB	AMB	01 42 06.2	
	comp=Z,63nm,0.3s						
IRAM	Ramesheh	6.36	107	ePn	Pn	01 40 45.5	-1.3
IKAZ	Kazeroun	6.95	124	ePn	Pn	01 40 53.5	-1.5
IKAZ				eAMB	AMB	01 42 19.9	
	comp=Z,120nm,0.1s						
IKAZ	Kazeroun	6.95	124	ePn	Pn	01 40 53.5	-1.5

*ISCJB **06** 01:47:32.5±1.4,38°.06N±0°.04×143°.68E±0°.04, h28km±11km,mb3.8/15,MS3.0/1,Error ellipse: s-maj=6.3km s-min=5.0km az=144.9*
*JMA **06** 01:47:32.1±0.2,38°.04N×143°.71E,h36km,M4.0*
*IDC **06** 01:47:35.2±0.6,37°.83N×143°.90E,h38km±4km,mb3.6/15, mb1 3.8/18,mb1mx3.6/43,mbtmp3.8/18,ML3.4/3,MS2.7/5, Ms1 2.7/5,ms1mx2.5/43,Error ellipse: s-maj=15.4km s-min=12.8km az=125.0*

ISC 06 01:47:34.0±0.6,**38°.01N**±0°.05×**143°.74E**±0°.06,**h27**km±3km, **n40**,σ1$82/66,**mb3.8**/15,**Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	1.93	284	P	Pn	01 48 03.4	-1.6
JIO				S	Sn	01 48 26.3	-2.1
OFUJ	Ofunato	1.94	304	P	Pn	01 48 03.4	-1.7
JMK	Ichinoseki	2.19	296	P	Pn	01 48 07.3	-1.2
JMK				eS	Sn	01 48 33.2	-1.5
JMM	Marumori	2.33	267	P	Pn	01 48 08.8	-1.7
JMM				S	Sn	01 48 36.0	-2.3
JFK	Kawauchi	2.36	255	P	Pn	01 48 09.0	-2.0
JFK				eS	Sn	01 48 35.1	-3.9
JOM	Ohasama	2.40	308	P	Pn	01 48 10.2	-1.3
JOM				S	Sn	01 48 39.1	-1.0
JTH	Tanohata	2.41	323	P	Pn	01 48 10.2	-1.5
JTH				S	Sn	01 48 38.6	-1.7
JOU	Okura	2.44	279	P	Pn	01 48 11.3	-0.8
JOU				S	Sn	01 48 40.6	-0.5
JFT	Otama	2.74	261	P	Pn	01 48 15.4	-0.7
JFT				S	Sn	01 48 46.6	-1.7
JRG	Rokugo	2.79	301	P	Pn	01 48 16.3	-0.6
JRG				S	Sn	01 48 47.6	-2.0
JYK	Kaneyama	2.80

TLY	**Talaya**	**31.11**	**309**	P		**P**	**01 53 52.1**	**+2.1**
	1.5nm,0.5s,baz=106,slow=2.4,SNR=2.9							
TLY				LR		LR	02 07 14.2	
	comp=Z,28nm,18.1s,baz=22,slow=38							
ZALV	**Zalesovo Beam**	**42.63**	**312**	P		**P**	**01 55 30.0**	**+2.3**
	1.1nm,0.3s,baz=86,slow=8.8,SNR=4.4							
MKAR	**Makanchi Array**	**45.17**	**302**	P		**P**	**01 55 49.8**	**+1.5**
	1.1nm,0.7s,baz=88,slow=7.8,SNR=8.7							
KURBB	**Kurchatov Arra**	**46.86**	**308**	P		**P**	**01 56 03.2**	**+1.7**
	2.5nm,0.4s,baz=80,slow=8.4,SNR=14							
ILAR	**Eielson Array**	**47.68**	**33**	P		**P**	**01 56 07.9**	**+0.2**
	0.8nm,0.8s,baz=264,slow=6.6,SNR=6.4							
ILAR				pP		**sP**	**01 56 19.4**	**+0.2**
	1.0nm,0.7s,baz=263,slow=6.3,SNR=7.5							
BVAR	**Borovoye Array**	**51.28**	**312**	P		**P**	**01 56 37.0**	**+1.7**
	0.2nm,0.3s,baz=220,slow=44,SNR=2.5							
INK	**Inuvik**	**52.67**	**28**	P		**P**	**01 56 46.1**	**+0.7**
	0.4nm,0.4s,baz=275,slow=6.3,SNR=5.7							
INK				pP		**sP**	**01 56 57.4**	**+0.5**
	0.7nm,0.5s,baz=297,slow=7.5,SNR=3.3							
WRA	**Warramunga Arr**	**58.32**	**190**	P		**P**	**01 57 24.8**	**-1.7**
	3.0nm,0.7s,baz=10,slow=7.3,SNR=13							
WRA				pP		**pP**	**01 57 36.5**	**+1.5**
	1.9nm,0.8s,baz=9.9,slow=7.3,SNR=5.4							
RES	**Resolute Bay**	**61.19**	**15**	P		**P**	**01 57 46.2**	**+0.6**
	0.3nm,0.5s,baz=313,slow=4.6,SNR=3.5							
RES				pP		**sP**	**01 57 57.8**	**+0.5**
	0.7nm,0.7s,baz=312,slow=9.3,SNR=2.7							
YKA	**Yellowknife Ar**	**62.03**	**31**	P		**P**	**01 57 51.3**	**-0.2**
	0.3nm,0.7s,baz=303,slow=6.7,SNR=6.5							
YKA				pP		**sP**	**01 58 03.2**	**0.0**
	0.6nm,0.7s,baz=301,slow=6.6,SNR=11							
ASAR	**Alice Springs**	**62.04**	**190**	P		**P**	**01 57 51.0**	**-1.0**
	0.7nm,0.5s,baz=7.6,slow=7.1,SNR=9.2							
ASAR				pP		**sP**	**01 58 02.5**	**-1.1**
	0.1nm,0.3s,baz=268,slow=39,SNR=3.2							
FINES	**FINESS Array B**	**68.80**	**333**	P		**P**	**01 58 36.6**	**+1.3**
	0.7nm,0.7s,baz=352,slow=12,SNR=2.8							
FINES				pP		**sP**	**01 58 46.9**	**-0.1**
	1.0nm,0.6s,baz=54,slow=9.7,SNR=2.9							
PDAR	**Pinedale Array**	**75.66**	**47**	P		**P**	**01 59 16.9**	**-0.1**
	0.4nm,0.5s,baz=338,slow=1.6,SNR=3.8							
PDAR				pP		**sP**	**01 59 28.9**	**+0.1**
	0.1nm,0.3s,baz=140,slow=44,SNR=2.4							
TXAR	**Lajitas Array**	**88.06**	**54**	P		**P**	**02 00 21.3**	**-0.9**
	0.1nm,0.5s,baz=250,slow=5.9,SNR=2.5							
TXAR				pP		**sP**	**02 00 33.4**	**-0.8**

*ISCJB **06** 01:48:07.5±0.3, 58.°15N±0.°03×152.°47W±0.°04, h38km±4km, mb4.2/34, Error ellipse: s-maj=4.7km s-min=3.1km az=155.9*
*NEIC **06** 01:48:09.1, 58.°09N×152.°55W, h44km, mb4.4/27, ML3.8(AEIC), After AEIC.*
NEIC Felt [III] at Kodiak.
*IDC **06** 01:48:09.2±1.3, 58.°39N×152.°89W, h47km±8km, mb3.3/5, mb1 3.6/9, mb1mx3.4/45, mbtmp3.6/9, ML3.6/4, MS2.7/1, Ms1 2.8/1, ms1mx2.3/22, Error ellipse: s-maj=22.7km s-min=19.1km az=46.0*

ISC 06 01:48:08.6±0.5, 58.°15N±0.°04×152.°51W±0.°04, h35km±4km, n144, σ1$19/157, mb4.3/34, Kodiak Island region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KDAK	**Kodiak Island**	**0.36**	**186**	P	Pn	01 48 32.4	+15
	448nm,0.3s,baz=23,slow=8.1,SNR=6176						
FOPK	**Fourpeaked Vol**	**0.80**	**321**	P	**Pn**	**01 48 22.9**	**-0.5**
FOSS	**Fourpeaked Sta**	**0.91**	**317**	P	**Pn**	**01 48 24.4**	**-0.4**
CDD	**Cape Douglas**	**0.99**	**323**	P	**Pn**	**01 48 25.9**	**0.0**
OHAK	**Old Harbor**	**1.01**	**205**	P	**Pn**	**01 48 25.3**	**-0.9**
OHAK				S	**Sn**	**01 48 38.6**	**-0.6**
KAWH	**Katmai**	**1.23**	**282**	P	**Pn**	**01 48 29.0**	**-0.4**
AUI	**Augustine Isla**	**1.29**	**338**	P	**Pn**	**01 48 30.9**	**+0.9**
AUI				S	**Sn**	**01 48 46.0**	**0.0**
AUSE	**Augustine SEas**	**1.29**	**339**	P	**Pn**	**01 48 30.9**	**+0.9**
AUE	**Augustine Isla**	**1.30**	**340**	P	**Pn**	**01 48 31.5**	**+1.4**
KABR	**Katmai Barrier**	**1.31**	**270**	P	**Pn**	**01 48 29.8**	**-0.5**
AUL	**Augustine Lava**	**1.33**	**339**	P	**Pn**	**01 48 31.5**	**+0.9**
AUL				S	**Sn**	**01 48 49.0**	**+1.8**
KAKN	**Katmai Knife C**	**1.36**	**278**	P	**Pn**	**01 48 30.6**	**-0.5**
KAKN				S	**Sn**	**01 48 47.9**	**0.0**
KAHC	**Katmai Hardscr**	**1.41**	**292**	P	**Pn**	**01 48 32.0**	**+0.2**
KAHC				S	**Sn**	**01 48 50.1**	**+0.9**
MCNL	**McNeil River**	**1.42**	**318**	P	**Pn**	**01 48 32.0**	**+0.2**
KABU	**Katmai Buttres**	**1.48**	**276**	P	**Pn**	**01 48 33.1**	**+0.4**
KVTA	**Katmai Vly 10**	**1.49**	**280**	P	**Pn**	**01 48 33.0**	**+0.1**
HOM	**Homer**	**1.58**	**16**	P	**Pn**	**01 48 35.2**	**+1.2**
HOM				S	**Sn**	**01 48 56.2**	**+3.0**
KELA	**Mount Kelaz**	**1.73**	**281**	P	**Pn**	**01 48 36.0**	**-0.2**
ILW	**Iliamna West**	**1.95**	**351**	P	**Pn**	**01 48 40.0**	**+0.7**
PLK3	**Peulik 3**	**2.06**	**259**	P	**Pn**	**01 48 41.1**	**+0.5**
PLK2	**Peulik 2**	**2.07**	**261**	P	**Pn**	**01 48 41.0**	**+0.2**
PLK1	**Peulik 1**	**2.21**	**263**	P	**Pn**	**01 48 43.4**	**+0.7**
RSO	**Redoubt South**	**2.33**	**357**	*e*Pn	**Pn**	**01 48 45.0**	**+0.5**
RDWB	**Redoubt West**	**2.36**	**356**	P	**Pn**	**01 48 45.5**	**+0.6**
NCT	**North Crescent**	**2.44**	**355**	P	**Pn**	**01 48 46.7**	**+0.9**
RDJH	**Redoubt Jeurge**	**2.46**	**357**	P	**Pn**	**01 48 47.2**	**+1.0**
SLKM	**Skilak Lake**	**2.64**	**25**	P	**Pn**	**01 48 49.1**	**+0.5**
SPU	**Mount Spurr**	**3.06**	**4**	*e*Pn	**Pn**	**01 48 55.0**	**+0.7**
CKL	**Chakachamna La**	**3.06**	**2**	P	**Pn**	**01 48 55.4**	**+0.9**
SPCR	**Spurr Chakacha**	**3.07**	**3**	P	**Pn**	**01 48 55.4**	**+0.9**
SPWE	**Spurr West**	**3.14**	**360**	P	**Pn**	**01 48 56.7**	**+1.2**
FIB	**Fire Island**	**3.25**	**20**	P	**Pn**	**01 48 58.3**	**+1.4**
ANPK	**Aniakchak Peak**	**3.30**	**249**	P	**Pn**	**01 48 58.1**	**+0.4**
SVW2	**Sparrevohn**	**3.35**	**334**	P	**Pn**	**01 48 58.7**	**+0.4**
STLK	**Strandline Lak**	**3.38**	**5**	P	**Pn**	**01 48 59.9**	**+1.0**
ANPB	**Aniakchak Plen**	**3.40**	**249**	P	**Pn**	**01 48 58.8**	**-0.2**
MID	**Middleton Isla**	**3.46**	**66**	P	**Pn**	**01 48 59.7**	**-0.1**
CHGN	**Chignik**	**3.71**	**243**	*e*Pn	**Pn**	**01 49 02.8**	**-0.4**
VNHG	**Veniaminof 1**	**4.10**	**245**	P	**Pn**	**01 49 08.2**	**-0.6**
EYAK	**Cordova Ski Ar**	**4.22**	**52**	*e*Pn	**Pn**	**01 49 10.7**	**+0.5**
VLZ	**Valdez**	**4.33**	**44**	P	**Pn**	**01 49 12.4**	**+0.6**
SCM	**Sheep Creek Mo**	**4.52**	**33**	P	**Pn**	**01 49 15.1**	**+0.6**
RAGM	**Ragged Mountai**	**4.60**	**57**	*e*Pn	**Pn**	**01 49 17.0**	**+1.4**
KLU	**Klutina**	**4.72**	**42**	P	**Pn**	**01 49 17.9**	**+0.6**
TT01	**Tatalina**	**5.08**	**342**	P	**Pn**	**01 49 22.2**	**+0.1**
TTA	**Tatalina**	**5.10**	**342**	P	**Pn**	**01 49 22.6**	**+0.1**
SDPT	**Sand Point**	**5.20**	**241**	*e*Pn	**Pn**	**01 49 23.9**	**+0.1**
KHIT	**Khitrov Hills**	**5.28**	**60**	P	**Pn**	**01 49 25.3**	**+0.5**
CAST	**Castle Rocks**	**5.30**	**2**	P	**Pn**	**01 49 25.5**	**+0.5**
KULT	**Kultieth River**	**5.45**	**63**	P	**Pn**	**01 49 28.3**	**+1.0**
VRDI	**Verde Repeater**	**5.53**	**52**	P	**Pn**	**01 49 29.5**	**+1.1**
RND	**Reindeer**	**5.57**	**17**	P	**Pn**	**01 49 28.9**	**0.0**
TGL	**Tana Glacier**	**5.59**	**58**	P	**Pn**	**01 49 29.3**	**+0.2**
BARK	**Barkley Ridge**	**5.61**	**62**	P	**Pn**	**01 49 30.3**	**+0.8**
ISLE	**Juniper Island**	**5.75**	**60**	P	**Pn**	**01 49 32.3**	**+0.9**
MCARA	**McCarthy VSAT**	**5.79**	**52**	P	**Pn**	**01 49 32.8**	**+1.0**
MESA	**MESA**	**5.80**	**65**	P	**Pn**	**01 49 33.0**	**+0.9**
BAGL	**Bagley Icefiel**	**5.83**	**62**	P	**Pn**	**01 49 33.6**	**+1.3**
KIAG	**Kiagna River**	**5.87**	**57**	P	**Pn**	**01 49 33.6**	**+0.6**
BALM	**Baldy**	**5.92**	**56**	P	**Pn**	**01 49 34.6**	**+0.9**
PTPK	**Patty Peak**	**5.93**	**55**	P	**Pn**	**01 49 34.5**	**+0.5**
RKAV	**Rock Avalanche**	**6.12**	**65**	P	**Pn**	**01 49 37.7**	**+1.2**
BWN	**Browne**	**6.22**	**12**	P	**Pn**	**01 49 38.4**	**+0.7**
BARN	**Barnard Glacie**	**6.23**	**57**	P	**Pn**	**01 49 38.4**	**+0.4**
TABL	**Table Mountain**	**6.26**	**64**	P	**Pn**	**01 49 39.4**	**+0.9**
CTGM	**Chitina Glacie**	**6.34**	**59**	P	**Pn**	**01 49 39.7**	**+0.2**
LOGN	**Logan Glacier**	**6.45**	**61**	P	**Pn**	**01 49 41.3**	**+0.3**
MENT	**Mentasta**	**6.47**	**38**	*e*Pn	**Pn**	**01 49 42.8**	**+1.6**
WRH	**Wood River Hil**	**6.69**	**17**	P	**Pn**	**01 49 44.5**	**+0.3**
YKU2	**Yakutat**	**6.80**	**73**	*e*Pn	**Pn**	**01 49 47.0**	**+1.3**
HDA	**Harding Lake**	**6.83**	**21**	P	**Pn**	**01 49 46.4**	**+0.3**
DOT	**Dot Lake**	**6.88**	**33**	*e*Pn	**Pn**	**01 49 49.0**	**+2.2**
CCB	**Clear Creek Bu**	**6.90**	**17**	P	**Pn**	**01 49 46.7**	**-0.3**
MLY	**Manley**	**6.96**	**6**	P	**Pn**	**01 49 48.5**	**+0.6**
COLA	**College**	**7.11**	**16**	P	**Pn**	**01 49 50.4**	**+0.6**
MDM	**Murphy Dome**	**7.13**	**15**	P	**Pn**	**01 49 50.0**	**-0.2**
IL1	**Eielson Array**	**7.17**	**20**	P	**Pn**	**01 49 50.8**	**+0.1**
ILAR	**Eielson Array**	**7.17**	**20**	P	**Pn**	**01 49 50.0**	**-0.7**
	1.2nm,0.3s,baz=211,slow=14,SNR=46						
ILAR				S	**Sn**	**01 51 04.9**	**-6.0**
	0.5nm,0.3s,baz=208,slow=22,SNR=4.3						
ILAR				LR	LR	01 52 45.4	
	comp=Z,53nm,18.4s,baz=92,slow=39						
ILB	**Eielson Array**	**7.17**	**20**	P	**Pn**	**01 49 50.7**	**0.0**
BCA3	**Beaver Creek A**	**7.22**	**42**	P	**Pn**	**01 49 51.2**	**-0.3**
IM3	**Indian Mountai**	**7.89**	**356**	P	**Pn**	**01 50 00.1**	**-0.5**
PLBC	**Pleasant Camp**	**8.48**	**74**	P	**Pn**	**01 50 09.2**	**+0.5**
EGAK	**Eagle**	**8.58**	**34**	*e*Pn	**Pn**	**01 50 10.7**	**+0.7**
DAWY	**Dawson**	**8.68**	**41**	*e*Pn	**Pn**	**01 50 13.1**	**+1.6**
UNV	**Unalaska Valle**	**8.94**	**247**	*e*Pn	**Pn**	**01 50 14.9**	**-0.1**
SKAG	**Skagway**	**9.01**	**74**	*e*Pn	**Pn**	**01 50 17.2**	**+1.2**
FYU	**Fort Yukon**	**9.10**	**19**	*e*Pn	**Pn**	**01 50 17.8**	**+0.8**
WHY	**Whitehorse**	**9.33**	**67**	P	**Pn**	**01 50 20.3**	**-0.2**
BM3	**Burnt Mountain**	**9.97**	**18**	P	**Pn**	**01 50 27.6**	**-1.6**
TNA	**Tin City**	**10.38**	**322**	*e*Pn	**Pn**	**01 50 34.2**	**-0.4**
DLBC	**Dease Lake**	**11.82**	**79**	P	**Pn**	**01 50 56.0**	**+1.5**
	0.7nm,0.3s,baz=2.6,slow=24,SNR=8.7						
DLBC				S	**Sn**	**01 53 03.2**	**-1.7**
	0.1nm,0.3s,baz=81,slow=24,SNR=1.8						
DLBC	**Dease Lake**	**11.82**	**79**	*e*Pn	**Pn**	**01 50 55.2**	**+0.7**
DLBC				S	**Sn**	**01 53 03.2**	**-1.7**
INK	**Inuvik**	**13.23**	**32**	P	**Pn**	**01 51 13.0**	**-0.5**
	0.1nm,0.3s,baz=230,slow=16,SNR=5.7						
INK	**Inuvik**	**13.23**	**32**	*e*Pn	**Pn**	**01 51 14.0**	**+0.5**
YKA	**Yellowknife Ar**	**19.06**	**61**	P	**Pn**	**01 52 28.3**	**-0.1**
	0.1nm,0.3s,baz=272,slow=10,SNR=32						
YKA				pP	**sP**	**01 52 39.4**	**-1.7**
	0.3nm,0.3s,baz=273,slow=9.8,SNR=11						
YKB5	**Yellowknife Ar**	**19.06**	**61**	*e*P	**Pn**	**01 52 28.0**	**-0.4**
LON	**Longmire**	**21.70**	**108**	*e*P	**P**	**01 52 57.4**	**+1.2**
	11nm,1.6s						
B08A	**Colville Reser**	**21.91**	**102**	*e*P	**P**	**01 52 59.9**	**+1.4**
	9.1nm,1.4s						
F04A	**Amboy**	**21.96**	**111**	*e*P	**P**	**01 53 00.2**	**+1.3**
	17nm,1.3s						
BHMT	**Big Hole Peak**	**24.64**	**99**	*e*P	**P**	**01 53 30.3**	**+4.6**
BHMT				*e*PcP	**PcP**	**01 57 02.9**	**+0.7**
RES	**Resolute Bay**	**26.77**	**30**	P	**P**	**01 53 43.8**	**-0.7**
	0.5nm,0.6s,baz=259,slow=7.9,SNR=3.4						
PEA0	**Petropavlovsk-**	**28.02**	**281**	*e*P	**P**	**01 53 54.9**	**-1.0**
PEA0B	**Petropavlovsk-**	**28.02**	**281**	*e*P	**P**	**01 53 56.2**	**+0.4**
	41nm,1.4s						
YFT	**Old Faithful**	**28.91**	**100**	*e*P	**P**	**01 54 05.2**	**+1.1**
	9.1nm,0.2s						
WAKR	**Walker**	**29.03**	**118**	*e*P	**P**	**01 54 05.4**	**+0.2**
IMW	**Indian Meadow**	**29.24**	**101**	*e*P	**P**	**01 54 07.0**	**-0.1**
	4.9nm,1.3s						
LOHW	**Long Hollow**	**29.61**	**101**	*e*P	**P**	**01 54 10.7**	**+0.3**
	10nm,2.0s						
NV01	**Mina Array Sit**	**29.63**	**117**	*e*P	**P**	**01 54 11.5**	**+0.9**
SNOW	**Snow King Moun**	**29.64**	**101**	*e*P	**P**	**01 54 11.7**	**+1.1**
	1.9nm,0.7s						
NV11	**Mina Array Sit**	**29.70**	**117**	*e*P	**P**	**01 54 12.2**	**+1.2**
	12nm,1.8s						
HVU	**Hansel Valley**	**29.80**	**106**	*e*P	**P**	**01 54 11.8**	**-0.1**
	3.6nm,1.3s						
LAO	**LASA Array**	**29.86**	**92**	*e*P	**P**	**01 54 14.1**	**+1.7**
	11nm,1.6s						
BW06	**Boulder Array**	**30.75**	**101**	*e*P	**P**	**01 54 21.5**	**+1.1**
DUG	**Dugway, Tooele**	**30.95**	**108**	*e*P	**P**	**01 54 23.5**	**+1.4**
	1.9nm,0.8s						
TCUT	**Toone Canyon**	**30.98**	**105**	*e*P	**P**	**01 54 23.2**	**+0.7**
	3.9nm,0.9s						
TCUT				*e*ScP	**ScP**	**02 00 56.1**	**-1.4**
PV09	**Paradox Valley**	**34.10**	**106**	*e*P	**P**	**01 54 49.8**	**-0.1**
U15A	**North Rim**	**34.12**	**112**	*e*P	**P**	**01 54 50.5**	**+0.5**
	5.4nm,1.3s						
W13A	**Hualapai Mount**	**34.41**	**115**	*e*P	**P**	**01 54 52.4**	**0.0**
	1.8nm,0.4s						
OGNE	**Ogallala**	**35.99**	**96**	*e*P	**P**	**01 55 06.4**	**+0.5**
	13nm,0.9s						
ECSD	**EROS Data Cent**	**36.91**	**88**	*e*P	**P**	**01 55 14.6**	**+1.0**
	8.6nm,1.7s						
KSCO	**Kaye Shedlock'**	**37.09**	**99**	*e*P	**P**	**01 55 16.1**	**+0.8**
	8.8nm,0.5s						
T25A	**Trinidad**	**37.56**	**103**	*e*P	**P**	**01 55 20.7**	**+1.3**
	6.7nm,0.9s						
SPMN	**Marine on St.**	**37.92**	**83**	*e*P	**P**	**01 55 23.5**	**+1.4**
	8.6nm,1.4s						
HPAH	**Hawaii Prepara**	**38.14**	**185**	*e*P	**P**	**01 55 24.2**	**0.0**
TUC	**Tucson**	**38.17**	**114**	*e*P	**P**	**01 55 24.9**	**+0.5**
	6.2nm,2.0s						
BNM	**Barren Site**	**38.75**	**108**	*e*P	**P**	**01 55 30.5**	**+1.1**
COWI	**Conover**	**39.26**	**79**	*e*P	**P**	**01 55 34.5**	**+1.2**
	30nm,1.9s						
YSS	**Yuzh-Sakhalins**	**39.41**	**283**	*e*P	**P**	**01 55 34.3**	**-0.2**
	20nm,1.1s						
KSU1	**Kansas State U**	**40.19**	**93**	*e*P	**P**	**01 55 42.9**	**+1.7**
	6.3nm,0.5s						
AMTX	**Amarillo**	**40.70**	**102**	*e*P	**P**	**01 55 47.0**	**+1.4**
	28nm,1.9s						
MSTX	**Muleshoe**	**40.85**	**104**	*e*P	**P**	**01 55 47.8**	**+1.0**
	13nm,1.6s						
GDL2	**Guadalupe Moun**	**41.44**	**107**	*e*P	**P**	**01 55 52.9**	**+1.2**
SFJD	**Kangerlussuaq**	**42.55**	**35**	*e*P	**P**	**01 56 01.8**	**+1.6**
	15nm,1.3s						
SPA0	**Spitsbergen Ar**	**43.76**	**3**	*e*P	**P**	**01 56 10.6**	**+0.7**
TX31	**Lajitas Ar. Si**	**44.11**	**109**	*e*P	**P**	**01 56 13.8**	**+0.5**
TXAR	**Lajitas Array**	**44.11**	**109**	P	**P**	**01 56 14.5**	**+1.2**
	0.4nm,1.0s,baz=356,slow=8.1,SNR=2.6						
TXAR				pP	**sP**	**01 56 28.0**	**+0.2**
	0.4nm,0.8s,baz=272,slow=5.8,SNR=3.7						
PARMO	**Parma**	**45.63**	**90**	*e*P	**P**	**01 56 26.2**	**+1.0**
ARCES	**ARCESS Array B**	**52.61**	**1**	P	**P**	**01 57 14.9**	**-3.3**
	2.2nm,0.9s,baz=355,slow=5.5,SNR=2.9						
ARCES				sP	**sP**	**01 57 34.6**	**+1.8**
	2.1nm,0.9s,baz=49,slow=9.8,SNR=2.3						
HHC	**Hu-ho-hao-te**	**59.28**	**299**	*e*P	**P**	**01 58 06.9**	**+0.5**
HHC				pmax	pmax		
	comp=Z,26nm,1.1s						
HHC				pmax	pmax		
	comp=Z,93nm,6.3s						
KURK	**Kurchatov**	**63.72**	**326**	P	**P**	**01 58 34.1**	**-1.9**
KURBB	**Kurchatov Arra**	**63.82**	**327**	P	**P**	**01 58 34.1**	**-2.6**
	comp=Z,0.2nm,0.3s,baz=26,slow=6.7,SNR=4.3						
MKAR	**Makanchi Array**	**66.05**	**322**	P	**P**	**01 58 48.9**	**-2.4**
	comp=Z,0.1nm,0.4s,baz=43,slow=3.2,SNR=2.5						
WMQ	**Urumqi**	**66.78**	**317**	*e*P	**P**	**01 58 58.3**	**+2.2**
CD2	**Chengdu**	**71.03**	**298**	P	**P**	**01 59 20.9**	**-1.7**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						

MEX 06 01:49:15.1±0.5, 14.°58N×91.°19W, h28km±28km, MD3.8, Guatemala

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THIG		**1.09**	**287**	*e*P	Pn	01 49 31.4	-3.2
THIG				*i* S	Sn	01 49 44.4	-4.3
CCIG	**Comitan**	**1.92**	**332**	*e*P	Pn	01 49 45.0	-1.2
CCIG				*e*S	Sn	01 50 06.1	-3.4
PCIG		**2.26**	**300**	*i* P	Pn	01 49 47.8	-2.7
PCIG				*e*S	Sn	01 50 15.2	-2.3

*BEO **06** 01:53:43.3±0.5, 43.°87N×17.°15E, h6km±3km, M3.0/1*
*CSEM **06** 01:53:44.2±0.1, 43.°88N×17.°30E, h2km, ML3.0/4, Error ellipse: s-maj=4.5km s-min=2.5km az=41.0*
*PDG **06** 01:53:44.9±0.4, 43.°95N×17.°43E, h4km, ML3.1/10, Error ellipse: s-maj=0.7km s-min=1.2km az=0.0*
*LDG **06** 01:53:44.3±0.1, 43.°83N×17.°08E, h10km, Ml3.2/5, Error ellipse: s-maj=5.3km s-min=2.6km az=30.0*
*PRU **06** 01:53:49.5, 44.°25N×17.°52E, h0km*

ISC 06 01:53:43.7±0.9, 43.°88N±0.°02×17.°27E±0.°02, h1km±8km, n123, σ1$33/180, 16C-13D, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BLY	**Banja Luka**	**0.87**	**356**	⇑*i*P	**Pg**	**01 54 00.6**	**+0.2**
BLY	**Banja Luka**	**0.87**	**356**	*e*Pg	**Pg**	**01 54 00.7**	**+0.3**
BLY				*e*Sg	**Sg**	**01 54 13.1**	**+1.5**
BLY	**Banja Luka**	**0.87**	**356**	*e*Pg	**Pg**	**01 54 00.7**	**+0.3**
BLY				*e*Sg	**Sg**	**01 54 13.1**	**+1.5**
DOB	**Doboj**	**1.04**	**35**	⇑*i*Pg	**Pg**	**01 54 02.6**	**-1.0**
DOB				*e*Sg	**Sg**	**01 54 17.6**	**+0.6**
STON	**Ston**	**1.06**	**163**	*e*Pg	**Pg**	**01 54 02.6**	**-1.3**
STON				Sg	**Sg**	**01 54 17.5**	**-0.2**
STON	**Ston**	**1.06**	**163**	*e*Pg	**Pg**	**01 54 02.6**	**-1.3**
STON				*e*Sg	**Sb**	**01 54 18.7**	**-0.3**
STON	**Ston**	**1.06**	**163**	*e*Pg	**Pg**	**01 54 02.6**	**-1.3**
STON				*e*Sg	**Sg**	**01 54 17.6**	**0.0**
UDBI	**Udbina**	**1.26**	**301**	*i* Pg	**Pg**	**01 54 06.2**	**-1.7**
UDBI				Sg	**Sg**	**01 54 25.6**	**+1.3**
UDBI	**Udbina**	**1.26**	**301**	*i* Pg	**Pg**	**01 54 06.2**	**-1.7**
UDBI				Sg	**Sg**	**01 54 25.5**	**+1.3**
BRY	**Bratogost**	**1.35**	**136**	⇓*i*Pg	**Pg**	**01 54 08.9**	**-0.6**
BRY				*e*Sg	**Sn**	**01 54 29.9**	**+1.6**
BRY	**Bratogost**	**1.35**	**136**	⇓*i*Pg	**Pg**	**01 54 08.9**	**-0.6**
BRY				*e*Sg	**Sb**	**01 54 27.6**	**+0.1**
UPM	**Unac-Piva**	**1.37**	**119**	⇑*i*Pg	**Pg**	**01 54 09.4**	**-0.5**
UPM				*e*Sg	**Sn**	**01 54 29.6**	**+0.7**
UPM	**Unac-Piva**	**1.37**	**119**	⇑*i*Pg	**Pg**	**01 54 09.4**	**-0.5**
UPM				*e*Sg	**Sn**	**01 54 28.9**	**0.0**
TREB	**Trebinje**	**1.41**	**146**	*e*Pg	**Pg**	**01 54 08.5**	**-2.1**
TREB				*e*Sg	**Sb**	**01 54 29.1**	**0.0**
BBLS	**Lazići**	**1.54**	**90**	*i* Pn	**Pn**	**01 54 12.4**	**0.0**
BBLS				*e*Sn	**Sn**	**01 54 34.9**	**+1.9**
BBLS	**Lazići**	**1.54**	**90**	*i* Pn	**Pn**	**01 54 12.4**	**0.0**
BBLS				*e*Sn	**Sn**	**01 54 33.7**	**+0.7**
PLE	**Pljevlja**	**1.63**	**109**	⇑*i*Pg	**Pn**	**01 54 13.8**	**+0.1**
PLE				*e*Sg	**Sg**	**01 54 37.7**	**+1.5**
PLE	**Pljevlja**	**1.63**	**109**	⇑*i*Pg	**Pn**	**01 54 13.8**	**+0.1**
PLE				*e*Sg	**Sg**	**01 54 37.7**	**+1.5**
NKY	**Niksic**	**1.65**	**130**	⇑*i*Pn	**Pn**	**01 54 14.4**	**+0.5**
NKY				*e*Sn	**Sg**	**01 54 39.5**	**+2.8**
NKY	**Niksic**	**1.65**	**130**	⇑*i*Pn	**Pn**	**01 54 14.4**	**+0.5**
NKY				*e*Sn	**Sg**	**01 54 39.5**	**+2.8**
NKME	**Niksic**	**1.66**	**132**	⇓*i*Pn	**Pb**	**01 54 14.8**	**-0.2**
NKME				*e*Sn	**Sg**	**01 54 40.0**	**+3.1**
NKME	**Niksic**	**1.66**	**132**	⇓*i*Pn	**Pb**	**01 54 14.8**	**-0.2**
NKME				*e*Sn	**Sg**	**01 54 40.0**	**+3.1**
HCY	**Herceg Novi**	**1.69**	**148**	⇑*i*Pn	**Pb**	**01 54 15.8**	**+0.2**
HCY				*e*Sn	**Sg**	**01 54 40.8**	**+2.8**
HCY	**Herceg Novi**	**1.69**	**148**	⇑*i*Pn	**Pb**	**01 54 15.8**	**+0.2**
HCY				*e*Sn	**Sn**	**01 54 36.6**	**0.0**
BLJ	**Bijeljina**	**1.69**	**57**	*e*Pn	**Pn**	**01 54 13.3**	**-1.0**
BLJ				*e*Sn	**Sn**	**01 54 35.5**	**-1.1**
TEKS	**Tekeris**	**1.75**	**67**	*e*Pn	**Pn**	**01 54 14.8**	**-0.4**
TEKS				*e*Sg	**Sg**	**01 54 41.1**	**+1.1**
TEKS	**Tekeris**	**1.75**	**67**	*e*Pn	**Pn**	**01 54 14.8**	**-0.4**
TEKS				*e*Sn	**Sn**	**01 54 38.6**	**+0.4**
TEKS				*e*Sg	**Sg**	**01 54 41.1**	**+1.1**
CEME	**Cevo**	**1.80**	**137**	⇑*i*Pn	**Pb**	**01 54 17.4**	**0.0**
CEME				*e*Sn	**Sg**	**01 54 43.6**	**+2.2**
CEME	**Cevo**	**1.80**	**137**	⇑*i*Pn	**Pb**	**01 54 17.4**	**0.0**
CEME				*e*Sn	**Sg**	**01 54 43.6**	**+2.2**
NVLJ	**Novalja**	**1.86**	**292**	*e*Pn	**Pn**	**01 54 17.5**	**+0.9**
NVLJ	**Novalja**	**1.86**	**292**	*e*Pn	**Pn**	**01 54 17.4**	**+0.9**
DIVS	**Divibare**	**1.98**	**83**	*i* Pn	**Pn**	**01 54 17.9**	**-0.4**

MOA Sn **Sn** **01 55 49.2 +3.6**
comp=Z,8.7nm,0.7s
SMOL Smolenice 4.63 1 *e* Pb 01 55 01.0 -4.7
SMOL *e* 01 55 48.8
VYHS Vyhne 4.74 13 *e* **Pn** **01 54 59.1 +2.9**
VYHS *e* 01 55 49.7
DRGR 4.81 51⇑*i*P **Pn** **01 54 59.8 +2.5**
MOTA Moosalm 5.54 311 *i* Pn **Pn** **01 55 10.2 +2.8**
comp=Z,3.4nm,0.3s
MOTA Moosalm 5.54 311 Pn **Pn** **01 55 10.2 +2.8**
comp=Z,3.4nm,0.3s
FETA Feichten 5.57 307 *i* Pn Pn 01 55 11.2 +3.4
comp=Z,1.2nm,0.4s
RETA Reutte 5.81 311 *i* Pn **Pn** **01 55 13.7 +2.7**
comp=Z,1.5nm,0.3s
RETA *i* Sn **Sn** **01 56 21.4 +3.1**
comp=Z,2.6nm,0.5s
RETA Reutte 5.81 311 Pn **Pn** **01 55 13.7 +2.7**
comp=Z,1.5nm,0.3s
KHC Kasperske Hory 5.84 335 *e*PN **Pn** **01 55 13.2 +1.9**
KHC *ex* x 01 55 20.0
KHC *e*SN **Sn** **01 56 17.5 -1.3**
DPC Dobruska-Polom 6.50 355 *e*SN **Sn** **01 56 30.9 -4.4**
SBF Sospel 7.11 273 *e*P **Pn** **01 55 29.1 +0.3**
SBF *e*Sn Sn 01 56 39.1 -11
comp=Z,4.8nm,0.5s
SBF Sospel 7.11 273 *e*P **Pn** **01 55 29.1 +0.3**
MBDF Montbardon 7.58 280 *e*Sn Sn 01 56 50.8 -11
comp=Z,3.6nm,0.5s
LPG La Plagne 7.67 286 *e*Sn Sn 01 56 53.2 -11
comp=Z,3.3nm,0.5s
LPL La Plagne 7.69 286 *e*P **Pn** **01 55 37.8 +0.9**
LPL *e*Sn Sn 01 56 53.6 -11
comp=Z,4.1nm,0.3s
LPL La Plagne 7.69 286 *e*P **Pn** **01 55 37.8 +0.9**
FRF La Foret Royal 7.71 271 *e*Pn Pn 01 55 32.9 -4.0
ORIF Oris-en-Rattie 8.22 281 *e*P **Pn** **01 55 44.9 +0.7**
ORIF *e*Sn Sn 01 57 06.0 -12
comp=Z,2.7nm,0.5s
ORIF Oris-en-Rattie 8.22 281 *e*P **Pn** **01 55 44.9 +0.7**
CDF Champ du Feu 8.29 307 *e*P **Pn** **01 55 46.6 +1.6**
CDF Champ du Feu 8.29 307 *e*P **Pn** **01 55 46.6 +1.6**
LOR Lormes 9.99 294 *e*P **Pn** **01 56 09.0 +0.6**
LOR Lormes 9.99 294 *e*P **Pn** **01 56 09.0 +0.6**

IDC 06 02:10:53.8±2.2, 7°.08S×154°.94E, h0km, mb3.6/5, mb1 3.8/5, mb1mx3.7/27, mbtmp3.6/5, MS3.4/2, Ms1 3.4/2, ms1mx2.7/38, Error ellipse: s-maj=78.6km s-min=29.1km az=120.0, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**23.73**	**235**	P	P	02 16 07.8	-0.1
1.6nm,0.8s,baz=58,slow=10,SNR=5.4							
ASAR	**Alice Springs**	**26.08**	**228**	P	P	02 16 29.4	0.0
0.6nm,0.8s,baz=58,slow=8.4,SNR=4.4							
JHJ	**Hachijo jima 2**	**42.49**	**341**	LR	LR	02 34 29.2	
comp=Z,31nm,21.0s,baz=12,slow=33							
SONM	**Songino Array**	**69.38**	**327**	P	P	02 22 03.3	-0.4
0.2nm,0.4s,baz=142,slow=7.3,SNR=2.2							
MKAR	**Makanchi Array**	**83.43**	**319**	P	P	02 23 23.9	+0.6
0.3nm,0.6s,baz=96,slow=4.3,SNR=3.0							
DLBC	**Dease Lake**	**88.24**	**31**	LR	LR	02 58 04.9	
comp=Z,25nm,18.5s,baz=341,slow=32							
YKA	**Yellowknife Ar**	**96.44**	**28**	P	P	02 24 24.4	-0.2
0.2nm,0.7s,baz=268,slow=4.2,SNR=5.2							
TORD	**Torodi Ar. Bea**	**152.99**	**285**	PKPbc	PKPbc	02 30 54.3	-0.1
0.3nm,0.6s,baz=77,slow=2.7,SNR=5.4							

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*IDC **06** 02:16:15.1±0.9, 20°.95N×121°.87E, h0km, mb3.6/8, mb1 3.7/8, mb1mx3.6/31, mbtmp3.6/8, Error ellipse: s-maj=46.7km s-min=18.6km az=69.0*
*ISCJB **06** 02:16:18.4±0.8, 20°.9N±0°.2×121°.8E±0°.3, h33km, mb3.4/8, Error ellipse: s-maj=44.4km s-min=15.7km az=158.4*
ISC 06 02:16:20.3±1.0, 20°.9N±0°.2×121°.8E±0°.3, h35km, n14, σ1°05/8, mb3.5/8, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SONM	**Songino Array**	**29.59**	**339**	P	**P**	**02 22 21.3**	**-0.8**
0.4nm,0.7s,baz=156,slow=11,SNR=3.4							
MKAR	**Makanchi Array**	**41.10**	**318**	P	**P**	**02 24 02.1**	**+1.3**
1.2nm,0.7s,baz=106,slow=8.9,SNR=9.1							
H11N1	**WAKE ISLAND Hy**	**42.20**	**83**	T	T	03 09 04.2	
baz=274,slow=74,SNR=62							
H11N2	**WAKE ISLAND Hy**	**42.20**	**83**	T	T	03 09 02.7	
baz=274,slow=74,SNR=37							
H11N3	**WAKE ISLAND Hy**	**42.21**	**83**	T	T	03 09 03.8	
baz=274,slow=74,SNR=45							
H11S3	**WAKE ISLAND Hy**	**42.22**	**85**	T	T	03 09 02.1	
baz=281,slow=75,SNR=376							
H11S1	**WAKE ISLAND Hy**	**42.23**	**85**	T	T	03 09 00.7	
baz=281,slow=75,SNR=271							
H11S2	**WAKE ISLAND Hy**	**42.24**	**85**	T	T	03 09 01.7	
baz=281,slow=75,SNR=204							
WRA	**Warramunga Arr**	**42.43**	**162**	P	**P**	**02 24 12.3**	**+0.4**
0.3nm,0.7s,baz=344,slow=9.2,SNR=2.7							
ZALV	**Zalesovo Beam**	**43.29**	**329**	P	**P**	**02 24 19.2**	**+0.7**
0.6nm,0.4s,baz=113,slow=6.8,SNR=5.0							
ASAR	**Alice Springs**	**45.87**	**164**	P	**P**	**02 24 38.9**	**-0.5**
0.1nm,0.4s,baz=342,slow=8.8,SNR=3.0							
ILAR	**Eielson Array**	**71.84**	**27**	P	**P**	**02 27 40.1**	**+0.9**
0.2nm,0.6s,baz=260,slow=5.2,SNR=3.1							
FINES	**FINESS Array B**	**74.54**	**330**	P	**P**	**02 27 54.1**	**-1.1**
0.3nm,0.4s,baz=329,slow=38,SNR=3.3							
YKA	**Yellowknife Ar**	**85.73**	**23**	P	**P**	**02 28 55.1**	**-0.4**
0.6nm,0.8s,baz=312,slow=4.9,SNR=13							

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*IDC **06** 02:26:54.5±1.1, 20°.89N×122°.18E, h0km, mb3.5/7, mb1 3.7/8, mb1mx3.5/36, mbtmp3.6/8, ML3.3/1, Error ellipse: s-maj=43.8km s-min=21.6km az=69.0*
*ISCJB **06** 02:26:57.6±0.8, 20°.9N±0°.1×122°.2E±0°.2, h33km, mb3.4/7, Error ellipse: s-maj=22.4km s-min=15.2km az=169.9*
ISC 06 02:26:59.6±1.0, 20°.9N±0°.1×122°.2E±0°.2, h35km, n15, σ0°75/8, mb3.5/7, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JOW	**Kunigami**	**8.12**	**42**	Pn	**Pn**	**02 28 55.2**	**+0.2**
0.8nm,0.3s,baz=222,slow=19,SNR=3.3							
SONM	**Songino Array**	**29.75**	**338**	P	**P**	**02 33 02.1**	**-0.7**
0.5nm,0.8s,baz=148,slow=8.5,SNR=3.2							
MKAR	**Makanchi Array**	**41.37**	**318**	P	**P**	**02 34 42.6**	**+0.3**
0.8nm,0.7s,baz=119,slow=9.9,SNR=7.1							
H11N1	**WAKE ISLAND Hy**	**41.84**	**83**	T	T	03 19 44.1	
baz=274,slow=75,SNR=75							
H11N2	**WAKE ISLAND Hy**	**41.84**	**83**	T	T	03 19 41.4	
baz=274,slow=75,SNR=42							
H11N3	**WAKE ISLAND Hy**	**41.85**	**83**	T	T	03 19 45.3	
baz=274,slow=75,SNR=48							
H11S3	**WAKE ISLAND Hy**	**41.87**	**85**	T	T	03 19 38.9	
baz=282,slow=75,SNR=166							
H11S1	**WAKE ISLAND Hy**	**41.87**	**85**	T	T	03 19 40.4	
baz=282,slow=75,SNR=152							
H11S2	**WAKE ISLAND Hy**	**41.88**	**85**	T	T	03 19 40.4	
baz=282,slow=75,SNR=118							
WRA	**Warramunga Arr**	**42.30**	**163**	P	**P**	**02 34 50.4**	**+0.3**
0.7nm,1.1s,baz=345,slow=9.3,SNR=3.1							
ZALV	**Zalesovo Beam**	**43.51**	**329**	P	**P**	**02 34 59.0**	**-0.6**
1.0nm,0.7s,baz=123,slow=4.8,SNR=3.8							
ASAR	**Alice Springs**	**45.74**	**165**	P	**P**	**02 35 17.2**	**-0.5**
0.1nm,0.3s,baz=342,slow=7.8,SNR=2.6							
FINES	**FINESS Array B**	**74.74**	**330**	P	**P**	**02 38 36.9**	**+1.2**
0.3nm,0.4s,baz=214,slow=36,SNR=2.6							
YKA	**Yellowknife Ar**	**85.62**	**23**	P	**P**	**02 39 33.9**	**-0.4**
0.3nm,0.7s,baz=311,slow=4.7,SNR=6.9							
H06E1	**SOCORRO T-PHASE**	**114.72**	**57**	T	T	04 51 16.0	
SNR=10							

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*IDC **06** 02:37:05.5±1.3, 2°.78S×139°.47E, h0km, mb3.5/3, mb1 3.8/4, mb1mx3.5/44, mbtmp3.6/4, ML3.9/1, Error ellipse: s-maj=30.2km s-min=14.9km az=132.0*
ISC 06 02:37:10.9±1.1, 2°.9S±0°.1×139°.6E±0°.2, h46km, n7, σ0°77/8, Near north coast of Irian Jaya

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GENI	**Genyem**	**0.67**	**62**	P	**Pn**	**02 37 24.8**	**+0.7**
GENI				S	Sn	02 37 50.4	+17
JAY	**Jayapura**	**1.19**	**71**	Pn	**Pn**	**02 37 30.7**	**-0.5**
1.4nm,0.3s,baz=251,slow=20,SNR=19							
JAY	**Jayapura**	**1.19**	**71**	P	**Pn**	**02 37 31.0**	**-0.2**
JAY				S	Sn	02 37 56.6	+10
WRA	**Warramunga Arr**	**17.69**	**196**	Pn	**Pn**	**02 41 13.3**	**-0.7**
0.4nm,0.3s,baz=18,slow=12,SNR=7.9							
WRA				Sn	**S**	**02 44 36.8**	**+1.0**
0.7nm,0.3s,baz=13,slow=21,SNR=5.1							
FITZ	**Fitzroy Crossi**	**20.36**	**221**	P	**P**	**02 41 43.2**	**-0.6**
3.0nm,0.8s,baz=294,slow=12,SNR=6.4							
FITZ				S	Sn	02 45 35.5	+0.7
36nm,0.9s,baz=246,slow=12,SNR=5.6							
ASAR	**Alice Springs**	**21.35**	**194**	P	**P**	**02 41 55.0**	**+0.5**
1.0nm,0.5s,baz=21,slow=11,SNR=15							
SONM	**Songino Array**	**58.27**	**334**	P	**P**	**02 47 01.0**	**0.0**
0.2nm,0.4s,baz=151,slow=7.9,SNR=1.9							

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*IDC **06** 02:37:18.1±0.5, 2°.78S×139°.27E, h0km, mb4.3/20, mb1 4.4/22, mb1mx4.3/45, mbtmp4.3/22, ML4.3/2, MS4.7/12, Ms1 4.6/12, ms1mx4.3/26, Error ellipse: s-maj=16.1km s-min=8.7km az=99.0*
*DJA **06** 02:37:20.1±0.3, 3°S±5°×14°0E±°, h10km, M5.0/19, mb5.0/19, mB5.4/11, MLv5.0/2, Mw(mB)4.9/11*
*BJI **06** 02:37:21.4, 2°.91S×139°.51E, h46km, mb4.8/44, mB4.9/29, Ms4.6/30, Ms7 4.3/29*
*MOS **06** 02:37:21.3±1.0, 2°.77S×139°.18E, h33km, mb4.9/25, Error ellipse: s-maj=10.3km s-min=7.1km az=95.5*
*ISCJB **06** 02:37:22.5±0.2, 2°.86S±0°.03×139°.27E±0°.03, h46km, mb4.8/89, MS4.5/29, Error ellipse: s-maj=4.6km s-min=3.9km az=154.1*
*GCMT **06** 02:37:23.0±0.2, 2°.46S×139°.41E, h38km±1km, MW5.0/70, Moment Tensor Solution. s51,c63; s70,c103; Duration: 0 Moment tensor: Scale 10^16Nm; Mr2.83±.17; Mθθ-2.28±.12; Mφφ-0.55±.15; Mrθ-2.79±.15; Mφθ2.33±.08; Mφr1.63±.20; Best double couple: M0=4.66900×10^16 NP1:φs=301.00000°, δ67.00000°, λ86.00000°. NP2: φs=131.00000°, δ23.00000°, λ100.00000°. Principal axes: T 4.1410, Plg68.0000°, Azm203.0000°; N 1.0490, Plg4.0000°, Azm302.0000°; P -5.1970, Plg22.0000°, Azm34.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **06** 02:37:23.0±1.4, 2°.83S×139°.20E, h35km±10km, mb4.9/55 Error ellipse: s-maj=4.5km s-min=4.1km az=150.0*
ISC 06 02:37:24.3±0.3, 2°.90S±0°.04×139°.22E±0°.04, h46km, n186, σ1°85/207, mb4.8/88, MS4.4/29, 6C, Near north coast of Irian Jaya

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAY	**Jayapura**	**1.54**	**75**	Pn	**Pn**	**02 37 45.7**	**-3.5**
19nm,0.3s,baz=270,slow=23,SNR=39							
JAY				Sn	**Sn**	**02 38 05.2**	**-2.9**
28nm,0.3s,baz=272,slow=24,SNR=14							
RKPI	**Ransiki, Papua**	**5.22**	**285**	P	**Pn**	**02 38 42.2**	**+2.3**
390nm,0.8s,7μm1.3nm							
MMPI	**Merauke**	**5.65**	**168**	P	Pn	02 38 51.1	+5.4
FAKI	**Fak Fak**	**6.96**	**270**	P	**Pn**	**02 39 05.2**	**+1.4**
95nm,0.8s,1μm0.4nm							
FAKI	**Fak Fak**	**6.96**	**270**	*e*Pn	**Pn**	**02 39 04.3**	**+0.6**
FAKI				*e*Sn	**Sn**	**02 40 18.8**	**-2.9**
MANU	**Manus Island**	**8.19**	**84**	*e*Pn	**Pn**	**02 39 21.0**	**+0.4**
SWI	**Sorong**	**8.21**	**284**	P	**Pn**	**02 39 23.0**	**+2.1**
82nm,0.7s							
SAUI	**Saumlaki**	**9.36**	**237**	*e*Pn	**Pn**	**02 39 34.3**	**-2.3**
BNDI	**Bandanaira**	**9.43**	**260**	P	**Pn**	**02 39 39.3**	**+1.7**
348nm,0.9s							
PMG	**Port Moresby**	**10.20**	**130**	Pn	Pn	02 39 54.6	+6.4
2.6nm,0.3s,baz=299,slow=10,SNR=6.6							
PMG				LR	LR	02 44 54.0	
comp=Z,2μm,21.3s,baz=292,slow=44							
PMG	**Port Moresby**	**10.20**	**130**	*ce*P	Pn	02 39 56.0	+7.9
PMG				pmax	pmax		
comp=Z,218nm,1.0s							
MSAI	**Masohi**	**10.28**	**267**	P	**Pn**	**02 39 50.9**	**+1.6**
comp=Z,38nm,0.9s,comp=Z,3μm							
COEN	**Coen**	**11.66**	**161**	*e*Pn	**Pn**	**02 40 09.5**	**+1.4**
LBMI	**Labuha**	**11.93**	**281**	P	**Pn**	**02 40 14.6**	**+2.8**
comp=Z,129nm,0.8s,comp=Z,1μm							
NLAI	**Namlea**	**12.11**	**268**	P	**Pn**	**02 40 16.1**	**+1.9**
comp=Z,125nm,0.9s,comp=Z,1μm							
MTN	**Manton Dam**	**12.71**	**219**	*e*Pn	**Pn**	**02 40 21.4**	**-1.1**
SANI	**Sanana**	**13.24**	**273**	P	**Pn**	**02 40 31.2**	**+1.4**
comp=Z,138nm,0.7s,comp=Z,1μm							
SOEI	**Soe**	**16.34**	**245**	P	**P**	**02 41 12.3**	**-0.7**
comp=Z,419nm,0.9s,comp=Z,4μm							
SOEI	**Soe**	**16.34**	**245**	*e*Pn	**Pn**	**02 41 10.9**	**+0.2**
comp=Z,322nm,0.9s							
LUWI	**Luwuk**	**16.54**	**276**	P	**Pn**	**02 41 12.9**	**-0.3**
comp=Z,113nm,1.4s,comp=Z,6μm							
LUWI	**Luwuk**	**16.54**	**276**	*e*Pn	**Pn**	**02 41 11.4**	**-1.8**
GUMO	**Guam**	**17.32**	**19**	*e*P	**Pn**	**02 41 20.1**	**-2.8**
GUMO				pmax	pmax		
comp=Z,209nm,1.1s							
GUMO	**Guam**	**17.32**	**19**	*e*Pn	**Pn**	**02 41 20.1**	**-2.8**
comp=Z,209nm,1.1s							
WRAB	**Tennant Creek**	**17.58**	**195**	*ce*P	**P**	**02 41 27.8**	**+1.1**
WRAB				pmax	pmax		
comp=Z,74nm,1.0s							
WRAB	**Tennant Creek**	**17.58**	**195**	*e*Pn	**P**	**02 41 26.7**	**+0.1**
comp=Z,62nm,1.0s							
WRAB				*e*S	**S**	**02 44 46.6**	**-0.4**
WB2	**Warramunga Arr**	**17.59**	**195**	*e*Pn	**Pn**	**02 41 26.1**	**-0.1**
comp=Z,68nm,0.9s							
WRA	**Warramunga Arr**	**17.59**	**195**	P	**Pn**	**02 41 26.1**	**-0.1**
comp=Z,1.7nm,0.3s,baz=14,slow=11,SNR=26							
WRA				S	**S**	**02 44 46.1**	**-1.2**
comp=Z,1.2nm,0.3s,baz=12,slow=22,SNR=5.1							
WRA				LR	LR	02 48 55.1	
comp=Z,5μm,18.3s,baz=15,slow=39							
MRSI	**Marisa**	**17.59**	**281**	P	**P**	**02 41 29.6**	**+2.8**
comp=Z,49nm,0.9s,comp=Z,2μm							
EDFI	**Ende, Flores**	**18.37**	**251**	P	**Pn**	**02 41 37.7**	**+1.8**
comp=Z,26nm,0.9s,comp=Z,2μm							
CTA	**Charters Tower**	**18.41**	**159**	LR	LR	02 49 07.4	
comp=Z,2μm,21.2s,baz=346,slow=38							
TTSI	**Tana Toraja**	**19.37**	**269**	P	**Pn**	**02 41 50.2**	**+2.4**
comp=Z,51nm,1.1s,comp=Z,1μm							
KAPI	**Kappang**	**19.53**	**263**	P	**P**	**02 41 48.2**	**+0.1**
comp=Z,0.3nm,0.3s,baz=333,slow=2.3,SNR=2.4							
KAPI	**Kappang**	**19.53**	**263**	*e*P	**P**	**02 41 46.7**	**-1.5**
comp=Z,25nm,1.1s							
FITZ	**Fitzroy Crossi**	**20.13**	**220**	P	**P**	**02 41 55.4**	**+0.7**
comp=Z,19nm,0.7s,baz=42,slow=10,SNR=6.6							
FITZ				LR	LR	02 50 36.0	
comp=Z,3μm,18.5s,baz=40,slow=39							
FITZ	**Fitzroy Crossi**	**20.13**	**220**	*e*P	**P**	**02 41 54.6**	**-0.1**
FITZ				*e*S	**S**	**02 45 35.0**	**-3.4**
AS01	**Alice Springs**	**21.26**	**193**	*e*P	**P**	**02 42 02.9**	**-3.9**
AS31	**Alice Springs**	**21.27**	**194**	*e*P	**P**	**02 42 01.2**	**-5.7**
comp=Z,20nm,0.6s							
ASAR	**Alice Springs**	**21.27**	**194**	P	**P**	**02 42 08.4**	**+1.5**
comp=Z,8.2nm,0.5s,baz=19,slow=9.7,SNR=25							
ASAR				S	Sn	02 46 07.6	-2.4
comp=Z,7.6nm,0.9s,baz=7.9,slow=30,SNR=4.4							
ASAR				LR	LR	02 51 09.6	
comp=Z,4μm,18.1s,baz=16,slow=39							
HNR	**Honiara**	**21.59**	**108**	P	**P**	**02 42 10.4**	**-0.1**
comp=Z,38nm,0.3s,baz=70,slow=19,SNR=2.3							
HNR	**Honiara**	**21.59**	**108**	*e*P	**P**	**02 42 10.4**	**-0.1**
HNR				pmax	pmax		
comp=Z,93nm,0.8s							
HNR	**Honiara**	**21.59**	**108**	*e*P	**P**	**02 42 10.4**	**-0.1**
comp=Z,93nm,0.8s							
MYLDM	**Lahad Datu**	**22.20**	**291**	*e*P	**P**	**02 42 16.6**	**-0.3**
comp=Z,113nm,1.3s							
KKM	**Kota Kinabalu**	**24.63**	**291**	*e*P	**P**	**02 42 40.5**	**-0.4**
comp=Z,57nm,1.7s							
EIDS	**Eidsvold**	**25.09**	**154**	*e*P	**P**	**02 42 44.9**	**+0.1**
comp=Z,27nm,0.9s							
ABJI	**Asem Bagus**	**25.34**	**258**	P	**P**	**02 42 50.4**	**+3.3**
JAGI	**Jajag, Banyuwa**	**25.54**	**256**	*e*P	**P**	**02 42 48.9**	**-0.1**
comp=Z,67nm,1.3s							
MBWA	**Marble Bar**	**26.25**	**225**	*e*P	**P**	**02 42 56.0**	**+0.6**
comp=Z,18nm,0.6s							
SBUM	**Sibu**	**27.51**	**281**	*e*P	**P**	**02 43 06.4**	**-0.3**
comp=Z,31nm,2.0s							
STKA	**Stephens Creek**	**28.91**	**176**	P	**P**	**02 43 20.8**	**+1.8**
comp=Z,2.1nm,0.7s,baz=339,slow=11,SNR=4.9							
STKA				LR	LR	02 56 13.4	
comp=Z,2μm,18.3s,baz=352,slow=39							
SMRI	**Semarang**	**28.96**	**261**	*e*P	**P**	**02 43 19.6**	**0.0**
comp=Z,41nm,0.9s							
TPUB	**Ta-pu**	**31.73**	**326**	*e*P	**P**	**02 43 42.5**	**-1.6**
comp=Z,13nm,1.0s							
NACB	**Ninganchiao**	**31.91**	**328**	*e*P	**P**	**02 43 45.2**	**-0.4**
comp=Z,15nm,0.8s							
SSLB	**Suanglung**	**31.94**	**327**	*e*P	**P**	**02 43 45.5**	**-0.4**
comp=Z,9.4nm,1.0s							
TATO	**Taipei**	**32.62**	**329**	*e*P	**P**	**02 43 50.9**	**-1.0**
comp=Z,131nm,1.4s							
CAN	**Canberra**	**33.51**	**165**	*e*P	**P**	**02 43 59.9**	**+0.4**
CAN				pmax	pmax		
comp=Z,92nm,1.9s							
CAN	**Canberra**	**33.51**	**165**	*e*P	**P**	**02 43 59.9**	**+0.4**
comp=Z,92nm,1.9s							
XMIS	**Christmas Isla**	**34.15**	**256**	*e*P	**P**	**02 44 04.2**	**-1.2**
comp=Z,170nm,1.5s							
MYKOM	**Kota Tinggi**	**35.66**	**277**	*e*P	**P**	**02 44 17.3**	**-1.1**
comp=Z,12nm,1.1s							
JHJ2	**Mitsune**	**35.83**	**1**	*e*P	**P**	**02 44 18.9**	**-0.6**
comp=Z,781nm,1.7s							
MJAR	**Matsushiro Arr**	**39.25**	**359**	P	**P**	**02 44 48.5**	**+0.1**
comp=Z,0.6nm,0.3s,baz=167,slow=7.4,SNR=3.3							
NJ2	**Nanjing**	**39.78**	**332**	*e*P	**P**	**02 44 52.9**	**0.0**
NJ2				pmax	pmax		
comp=Z,12nm,0.7s							
PSI	**Prapat**	**40.67**	**278**	*e*P	**P**	**02 44 59.6**	**-1.2**
PSI				pmax	pmax		
comp=Z,15nm,1.0s							
PSI	**Prapat**	**40.67**	**278**	*e*P	**P**	**02 44 59.6**	**-1.2**
comp=Z,15nm,1.0s							
WHN	**Wuhan**	**40.86**	**326**⇑	*i*P	**P**	**02 45 03.2**	**+1.3**
WHN				pP	**pP**	**02 45 15.1**	**+0.8**
WHN				sP	**sP**	**02 45 22.5**	**+2.8**
WHN				S	**S**	**02 51 15.7**	**+5.6**
WHN				LR	LR		
comp=Z,400nm,20.2s							
KS15	**Wonju Array Si**	**41.50**	**346**	*e*P	**P**	**02 45 07.2**	**+0.2**
INCN	**Inchon**	**41.85**	**345**	*e*P	**P**	**02 45 09.8**	**-0.1**
comp=Z,36nm,0.6s							
GYA	**Guiyang**	**42.92**	**315**	P	**P**	**02 45 20.0**	**+1.1**
GYA				pP	pP	02 45 32.2	+0.8
GYA				sP	sP	02 45 37.8	+1.0
GYA				PP	**PP**	**02 47 02.0**	**+2.8**
GYA				ScP	**ScP**	**02 50 57.9**	**+1.3**
GYA				S	**S**	**02 51 41.4**	**+0.5**
GYA				SS	**SS**	**02 54 47.0**	**-6.9**
GYA				pmax	pmax		
comp=Z,20nm,1.0s							
GYA				pmax	pmax		
comp=Z,120nm,5.2s							
GYA				LR	LR		
comp=Z,510nm,18.9s							
GYA				LR	LR		
comp=Z,460nm,18.8s							
GYA				LR	LR		
comp=Z,450nm,19.0s							
COCO	**West Island**	**42.96**	**255**	*e*P	**P**	**02 45 18.5**	**-0.7**
COCO	**West Island**	**42.96**	**255**	*e*P	**P**	**02 45 18.5**	**-0.7**
comp=Z,136nm,1.0s							
LHMI	**Lhok Sumawe**	**42.99**	**281**	*e*P	**P**	**02 45 18.3**	**-1.3**
comp=Z,151nm,1.1s							
CM01	**Chiang Mai Arr**	**44.95**	**300**	*e*P	**P**	**02 45 36.0**	**+0.9**
KMI	**Kunming**	**45.03**	**310**	P	**P**	**02 45 39.7**	**+3.7**
KMI				pP	pP	02 45 49.6	+1.0
KMI				sP	sP	02 45 54.5	+0.5
KMI				S	**S**	**02 52 13.5**	**+1.5**
KMI				SS	**ScS**	**02 55 27.4**	**-2.5**
KMI				pmax	pmax		
comp=Z,17nm,0.6s							
KMI				pmax	pmax		
comp=Z,89nm,3.9s							
KMI				LR	LR		
comp=Z,200nm,25.4s							
KMI				LR	LR		
comp=Z,160nm,24.7s							
KMI				LR	LR		
comp=Z,300nm,30.1s							
CHTO	**Chiang Mai**	**45.12**	**300**	*e*P	**P**	**02 45 36.2**	**-0.3**
CHTO				pmax	pmax		
comp=Z,28nm,2.0s							
CHTO	**Chiang Mai**	**45.12**	**300**	*e*P	**P**	**02 45 36.2**	**-0.3**
comp=Z,28nm,2.0s							
XAN	**Xi'an**	**46.53**	**325**	P	**P**	**02 45 48.0**	**+0.6**
XAN				pP	pP	02 46 00.7	+0.6
XAN				PP	**PP**	**02 47 34.7**	**-2.8**
XAN				S	**S**	**02 52 28.5**	**-4.4**
XAN				pmax	pmax		
comp=Z,7.0nm,0.8s							
XAN				pmax	pmax		
comp=Z,25nm,4.3s							
XAN				LR	LR		
comp=Z,170nm,18.4s							
XAN				LR	LR		
comp=Z,95nm,16.4s							
XAN				LR	LR		
comp=Z,220nm,22.2s							
USRK	**Ussuriysk Ar.**	**47.34**	**353**	P	**P**	**02 45 53.4**	**-0.2**
comp=Z,1.1nm,0.8s,baz=152,slow=8.6,SNR=3.4							
CD2	**Chengdu**	**47.66**	**318**	P	**P**	**02 45 56.2**	**-0.2**
CD2				sP	sP	02 46 13.9	-0.6
CD2				PP	**PP**	**02 47 48.1**	**-0.4**
CD2				S	**S**	**02 52 49.9**	**+0.7**
CD2				sS	sS	02 53 10.9	+0.5
CD2				pmax	pmax		
comp=Z,20nm,0.7s							
CD2				pmax	pmax		
comp=Z,100nm,6.0s							
CD2				LR	LR		
comp=Z,230nm,18.0s							
CD2				LR	LR		
comp=Z,290nm,18.6s							
BJI	**Beijing**	**47.68**	**336**	P	**P**	**02 45 55.6**	**-0.6**
BJI				pP	**pP**	**02 46 07.9**	**-1.0**
BJI				S	**S**	**02 52 51.7**	**+2.8**
BJI				pmax	pmax		
comp=Z,20nm,0.9s							
BJI				LR	LR		
comp=Z,320nm,19.7s							
BJI				LR	LR		
comp=Z,270nm,19.7s							
BJI				LR	LR		
comp=Z,360nm,20.4s							
MDJ	**Mudanjiang**	**48.09**	**351**	P	**P**	**02 45 59.8**	**+0.5**
MDJ				pmax	pmax		
comp

LZH					*e*S	**S**	02 53 27.0	-8.2
LZH					pmax	pmax		
	comp=Z,22nm,1.0s							
LZH					pmax	pmax		
	comp=Z,80nm,4.0s							
LZH					LR	LR		
	comp=Z,200nm,14.4s							
LZH					LR	LR		
	comp=Z,190nm,15.6s							
LZH					LR	LR		
	comp=Z,290nm,16.9s							
KLR	**Kul'dur**	**52.33**	**354**	P	**P**		02 46 31.3	0.0
	comp=Z,1.8nm,0.5s,baz=157,slow=9.4,SNR=5.3							
JOHN	**Johnston Islan**	**54.23**	**67**	*e*P	**P**		02 46 45.3	-0.6
	comp=Z,256nm,1.2s							
GTA	**Gaotai**	**55.53**	**323**	*e*P	**P**		02 46 55.4	+0.3
GTA				S	**S**		02 54 36.3	-1.1
GTA				SS	**SS**		02 58 19.6	-3.5
GTA				pmax	pmax			
	comp=Z,4.0nm,1.0s							
GTA				pmax	pmax			
	comp=Z,59nm,5.5s							
GTA				LR	LR			
	comp=Z,130nm,18.5s							
GTA				LR	LR			
	comp=Z,130nm,19.0s							
GTA				LR	LR			
	comp=Z,190nm,19.0s							
ULN	**Ulaanbaatar**	**57.85**	**335**	*ce*P	**P**		02 47 10.6	-0.9
ULN				pmax	pmax			
	comp=Z,8.0nm,1.7s							
ULN	**Ulaanbaatar**	**57.85**	**335**	*e*P	**P**		02 47 10.5	-1.0
	comp=Z,9.7nm,1.3s							
PEA0	**Petropavlovsk-**	**57.93**	**13**	*e*P	**P**		02 47 12.2	+0.4
PETK	**Petropavlovsk-**	**57.93**	**13**	P	**P**		02 47 12.4	+0.7
	comp=Z,4.8nm,0.8s,baz=303,slow=17,SNR=2.6							
PET	**Petropavlovsk**	**58.08**	**14**	*e*P	**P**		02 47 17.1	+4.4
PET				*e*S	**S**		02 55 15.8	+5.6
PET	**Petropavlovsk**	**58.08**	**14**	*e*P	**P**		02 47 13.2	+0.5
	comp=Z,47nm,1.0s							
SONM	**Songino Array**	**58.11**	**335**	P	**P**		02 47 13.7	+0.4
	comp=Z,0.7nm,0.7s,baz=155,slow=9.6,SNR=2.9							
SONM				LR	LR		03 12 46.8	
	comp=Z,434nm,19.4s,baz=144,slow=37							
SONA1	**Songino Array**	**58.12**	**335**	*e*P	**P**		02 47 13.1	-0.2
PALK	**Pallekele**	**59.26**	**280**	*e*P	**P**		02 47 20.7	-1.1
PALK				pmax	pmax			
	comp=Z,77nm,1.6s							
PALK	**Pallekele**	**59.26**	**280**	*e*P	**P**		02 47 20.7	-1.1
	comp=Z,77nm,1.6s							
ZAK	**Zakamensk**	**61.38**	**335**	*e*P	**P**		02 47 34.7	-0.9
ZAK				pmax	pmax			
	comp=Z,7.0nm,1.4s							
TLY	**Talaya**	**62.20**	**336**	*e*P	P		02 47 50.1	+9.1
TLY				*e*S	**S**		02 56 01.9	-1.4
TLY				*e*SS	**SS**		03 00 09.5	+2.3
TLY				pmax	pmax			
	comp=Z,5.0nm,0.8s							
TLY				MLR	MLR			
	comp=Z,179nm,20.0s							
BOD	**Bodaibo**	**63.83**	**345**	*e*P	**P**		02 47 51.0	-0.7
BOD				pmax	pmax			
	comp=Z,5.0nm,1.5s							
YAK	**Yakutsk**	**65.17**	**355**	*e*P	**P**		02 48 00.4	+0.1
YAK				pmax	pmax			
	comp=Z,21nm,0.9s							
YAK				pmax	pmax			
	comp=N,6.0nm,1.1s							
YAK				pmax	pmax			
	comp=E,3.0nm,1.1s							
WMQ	**Urumqi**	**65.48**	**321**	P	**P**		02 48 03.4	+0.6
WMQ				pP	pP		02 48 16.4	+0.4
WMQ				sP	sP		02 48 23.0	+1.7
WMQ				PP	**PP**		02 50 30.4	+3.0
WMQ				ScP			02 52 36.0	
WMQ				S	**S**		02 56 39.8	-4.6
WMQ				sS	sS		02 57 04.8	-1.7
WMQ				ScS	**SKSac**		02 57 50.8	-3.8
WMQ				pmax	pmax			
	comp=E,6.0nm,0.6s							
WMQ				pmax	pmax			
	comp=E,42nm,5.2s							
WMQ				LR	LR			
	comp=E,53nm,22.2s							
WMQ				LR	LR			
	comp=E,20nm,21.0s							
CASY	**Casey**	**66.39**	**192**	*e*P	**P**		02 48 09.6	+1.4
	comp=E,45nm,1.6s							
SEY	**Seymchan**	**66.41**	**7**	P	**P**		02 48 08.8	+0.4
	comp=E,0.6nm,0.3s,baz=359,slow=22,SNR=2.3							
SEY	**Seymchan**	**66.41**	**7**	*e*P	**P**		02 48 10.1	+1.7
MK01	**Makanchi Array**	**70.23**	**322**	*e*P	**P**		02 48 32.2	-0.5
MK31	**Makanchi Array**	**70.25**	**322**	*e*P	**P**		02 48 32.8	0.0
MK31	**Makanchi Array**	**70.25**	**322**	*e*P	**P**		02 48 32.8	0.0
MKAR	**Makanchi Array**	**70.25**	**322**	P	**P**		02 48 32.8	0.0
	comp=E,3.1nm,0.7s,baz=113,slow=8.2,SNR=24							
MAKZ	**Makanchi**	**70.45**	**322**	*e*P	**P**		02 48 33.7	-0.3
MAKZ				pmax	pmax			
	comp=Z,8.0nm,0.8s							
MAKZ	**Makanchi**	**70.45**	**322**	*e*P	**P**		02 48 33.7	-0.3
	comp=Z,7.6nm,0.8s							
PPT2	**Papeete2**	**71.22**	**107**	*e*S	**S**		02 57 52.1	-1.5
	comp=Z,78nm,25.2s							
PPT2				*e*LQ	LQ		03 07 26.4	
	comp=Z,841nm,38.0s							
PPT2				*e*LR	LR		03 10 25.4	
	comp=Z,269nm,27.0s							
KSH	**Kashi**	**71.58**	**313**	P	**P**		02 48 42.9	+1.7
KSH				*e*pP	pP		02 48 55.8	+1.3
KSH				*e*sP	PcP		02 49 01.1	+0.8
KSH				*e*PP	**PP**		02 51 24.5	+3.9
KSH				S	**S**		02 57 57.8	+0.5
KSH				pmax	pmax			
	comp=Z,59nm,4.2s							
KSH				LR	LR			
	comp=Z,130nm,7.2s							
ZALV	**Zalesovo Beam**	**72.36**	**330**	P	**P**		02 48 44.6	-0.6
	comp=Z,1.1nm,0.4s,baz=104,slow=5.3,SNR=7.4							
TKM2	**Tokmak 2**	**73.03**	**317**	*e*P	**P**		02 48 48.3	-1.6
TKM2				pmax	pmax			
	comp=Z,4.0nm,0.8s							
TKM2	**Tokmak 2**	**73.03**	**317**	*e*P	**P**		02 48 48.3	-1.6
	comp=Z,3.6nm,0.8s							
BILL	**Bilibino**	**73.27**	**10**	*e*P	**P**		02 48 49.8	-0.6
BILL				pmax	pmax			
	comp=Z,2.0nm,0.7s							
BILL	**Bilibino**	**73.27**	**10**	*e*P	**P**		02 48 49.8	-0.6
	comp=Z,2.1nm,0.7s							
SFK	**Sufi-Kurgan**	**73.55**	**313**	P	**P**		02 48 54.6	+1.6
NVS	**Novosibirsk**	**73.61**	**330**	*e*P	**P**		02 48 51.5	-1.2
AAK	**Ala-Archa**	**73.70**	**316**	*e*P	**P**		02 48 53.6	-0.1
AAK				pmax	pmax			
	comp=Z,1.0nm,0.4s							
AAK	**Ala-Archa**	**73.70**	**316**	*e*P	**P**		02 48 53.6	-0.1
	comp=Z,1.2nm,0.4s							
KURK	**Kurchatov**	**74.17**	**325**	*i*P	**P**		02 48 54.5	-1.5
KURK				pmax	pmax			
	comp=Z,4.0nm,0.9s							
KURK	**Kurchatov**	**74.17**	**325**	P	**P**		02 48 55.8	-0.2
KURBB	**Kurchatov Arra**	**74.18**	**325**	P	**P**		02 48 55.8	-0.3
	comp=Z,2.2nm,0.8s,baz=114,slow=5.5,SNR=18							
TIXI	**Tiksi**	**74.72**	**357**	P	**P**		02 48 58.1	-0.7
	comp=Z,1.7nm,0.4s,baz=114,slow=1.5,SNR=3.0							
TIXI	**Tiksi**	**74.72**	**357**	*ce*P	**P**		02 49 01.7	+2.9
TIXI				pmax	pmax			
	comp=Z,2.0nm,1.0s							
MNAS	**Manas**	**75.04**	**315**	P	**P**		02 49 04.3	+2.8
VNDA	**Vanda**	**75.54**	**175**	P	**P**		02 49 06.0	+2.5
	comp=Z,9.6nm,0.7s,baz=315,slow=6.1,SNR=22							
VNDA				LR	LR		03 22 24.5	
	comp=Z,580nm,19.2s,baz=346,slow=36							
VNDA	**Vanda**	**75.54**	**175**	P	**P**		02 49 04.3	+0.8
VNDA	**Vanda**	**75.54**	**175**	*e*P	**P**		02 49 04.8	+1.3
	comp=Z,12nm,0.8s							
SBA	**Scott Base**	**76.30**	**174**	P	**P**		02 49 11.4	+3.6
BRVK	**Borovoye**	**79.83**	**325**	*e*P	**P**		02 49 28.0	+0.2
BRVK				pmax	pmax			
	comp=Z,7.0nm,0.8s							
BRVK	**Borovoye**	**79.83**	**325**	*e*P	**P**		02 49 28.0	+0.2
	comp=Z,6.6nm,0.8s							
NRIK	**Noril'sk**	**80.05**	**344**	P	**P**		02 49 28.5	-0.1
	comp=Z,2.3nm,0.5s,baz=153,slow=5.6,SNR=4.2							
NRIK				LR	LR		03 24 31.0	
	comp=Z,148nm,21.1s,baz=114,slow=35							
TAOE	**Nuku Hiva Isla**	**80.31**	**98**	*e*LR	LR		03 14 50.9	
	comp=Z,313nm,26.9s							

TT01	**Tatalina**	**81.36**	**25**	*e*P	**P**		02 49 36.4	+0.6
TT01				*e*PcP	**PcP**		02 49 40.3	-1.5
TTA	**Tatalina**	**81.37**	**25**	*e*P	**P**		02 49 36.6	+0.6
TTA				pmax	pmax			
	comp=Z,21nm,1.8s							
TTA	**Tatalina**	**81.37**	**25**	*e*P	**P**		02 49 36.6	+0.6
	comp=Z,21nm,1.8s							
MAW	**Mawson**	**82.14**	**202**	P	**P**		02 49 40.0	+0.2
	comp=Z,3.0nm,0.9s,baz=46,slow=11,SNR=2.5							
MAW				LR	LR		03 24 01.8	
	comp=Z,525nm,19.3s,baz=60,slow=34							
PPLA	**Purkeypile**	**82.98**	**25**	*e*P	**P**		02 49 43.3	-1.2
	comp=Z,33nm,1.9s							
RC01	**Rabbit Creek A**	**83.47**	**28**	*e*P	**P**		02 49 45.8	-1.1
	comp=Z,7.0nm,1.0s							
PMR	**Palmer**	**83.91**	**27**	*e*P	**P**		02 49 48.8	-0.2
PMR				pmax	pmax			
	comp=Z,5.0nm,0.9s							
PMR	**Palmer**	**83.91**	**27**	*e*P	**P**		02 49 48.8	-0.2
	comp=Z,4.6nm,0.9s							
MLY	**Manley**	**84.31**	**24**	*e*P	**P**		02 49 51.6	+0.5
	comp=Z,4.9nm,1.2s							
SML	**Sawmill**	**84.33**	**27**	*e*P	**P**		02 49 50.7	-0.6
SML				pmax	pmax			
	comp=Z,9.0nm,1.0s							
SML	**Sawmill**	**84.33**	**27**	*e*P	**P**		02 49 50.7	-0.6
	comp=Z,9.2nm,1.0s							
RND	**Reindeer**	**84.58**	**25**	*e*P	**P**		02 49 52.1	-0.4
RND				pmax	pmax			
	comp=Z,7.0nm,1.0s							
RND	**Reindeer**	**84.58**	**25**	*e*P	**P**		02 49 52.1	-0.4
	comp=Z,7.1nm,1.0s							
MCK	**McKinley**	**84.64**	**25**	*e*P	**P**		02 49 51.9	-0.9
MCK				pmax	pmax			
	comp=Z,8.0nm,1.0s							
MCK	**McKinley**	**84.64**	**25**	*e*P	**P**		02 49 51.9	-0.9
	comp=Z,7.9nm,1.0s							
GEYT	**Alibeck**	**84.76**	**308**	P	**P**		02 49 53.8	-0.2
	comp=Z,2.3nm,0.7s,baz=111,slow=3.3,SNR=3.9							
WRH	**Wood River Hil**	**85.22**	**25**	*e*P	**P**		02 49 55.1	-0.5
	comp=Z,5.6nm,1.0s							
DIV	**Divide**	**85.33**	**28**	*e*P	**P**		02 49 56.1	-0.2
	comp=Z,12nm,0.9s							
CCB	**Clear Creek Bu**	**85.39**	**24**	*e*P	**P**		02 49 55.4	-1.1
	comp=Z,5.5nm,0.9s							
COLA	**College**	**85.43**	**24**	*e*P	**P**		02 49 56.1	-0.5
COLA				pmax	pmax			
	comp=Z,4.0nm,0.8s							
COLA	**College**	**85.43**	**24**	*e*P	**P**		02 49 56.1	-0.5
	comp=Z,3.7nm,0.8s							
HDA	**Harding Lake**	**85.67**	**25**	*e*P	**P**		02 49 58.0	+0.1
	comp=Z,7.7nm,1.1s							
IL1	**Eielson Array**	**85.80**	**24**	*e*P	**P**		02 49 56.7	-1.9
ILAR	**Eielson Array**	**85.80**	**24**	P	**P**		02 49 56.7	-1.8
	comp=Z,2.1nm,0.9s,baz=255,slow=4.6,SNR=16							
ILAR				LR	LR		03 23 01.0	
	comp=Z,84nm,21.1s,baz=245,slow=32							
ILB	**Eielson Array**	**85.80**	**24**	*e*P	**P**		02 49 57.4	-1.1
FYU	**Fort Yukon**	**86.93**	**23**	*e*P	**P**		02 50 04.2	+0.1
	comp=Z,18nm,1.2s							
QSPA	**South Pole Qui**	**87.04**	**180**	*e*P	**P**		02 50 05.8	+1.0
	comp=Z,66nm,1.1s							
ARU	**Arti**	**87.23**	**327**	*c i*P	**P**		02 50 04.4	-1.3
ARU				S	S		03 00 28.3	-14
ARU				pmax	pmax			
	comp=Z,4.0nm,1.2s							
EGAK	**Eagle**	**88.19**	**25**	*e*P	**P**		02 50 10.4	+0.3
	comp=Z,15nm,1.6s							
DAWY	**Dawson**	**88.82**	**26**	*e*P	**P**		02 50 13.0	-0.2
	comp=Z,9.3nm,1.2s							
KIV	**Kislovodsk**	**96.71**	**314**	*e*P	**P**		02 50 48.1	-2.0
KIV				pmax	pmax			
	comp=Z,5.0nm,1.4s							
OBN	**Obninsk**	**99.60**	**325**	*e*P	**Pdif**		02 51 01.9	-0.8
OBN				pmax	pmax			
	comp=Z,4.0nm,0.8s							
YKA	**Yellowknife Ar**	**100.01**	**27**	P	**Pdif**		02 51 02.4	-2.0
	comp=Z,0.1nm,0.5s,baz=297,slow=4.0,SNR=2.5							
YKA				PKKPbc	**PKKPbc**		03 07 23.1	-2.6
	comp=Z,0.3nm,0.7s,baz=96,slow=2.6,SNR=4.8							
ARCES	**ARCESS Array B**	**100.86**	**341**	P	**Pdif**		02 51 08.2	+0.2
	comp=Z,2.0nm,0.9s,baz=72,slow=7.8,SNR=3.9							
OKC	**Ostrava-Krasne**	**111.84**	**323**	AMS	AMS		03 46 50.0	
	comp=Z,100nm,19.9s							
DPC	**Dobruska-Polom**	**112.71**	**324**	AMS	AMS		03 47 20.0	
	comp=Z,100nm,15.6s							
UPC	**Upice**	**112.83**	**325**	AMS	AMS		03 47 20.0	
	comp=Z,200nm,20.8s							
TREC	**Trest**	**113.65**	**324**	AMS	AMS		03 48 20.0	
	comp=Z,100nm,19.9s							
PVCC	**Panska Ves**	**113.65**	**325**	AMS	AMS		03 48 50.0	
	comp=Z,100nm,27.0s							
GOPC	**GO Pecny, Ondr**	**113.79**	**324**	AMS	AMS		03 48 20.0	
	comp=Z,200nm,26.5s							
PRU	**Pruhonice**	**113.90**	**325**	AMS	AMS		03 48 10.0	
	comp=Z,200nm,17.0s							
KHC	**Kasperske Hory**	**114.85**	**324**	AMS	AMS		03 47 10.0	
	comp=Z,200nm,21.2s							
TORD	**Torodi Ar. Bea**	**136.80**	**286**	PKP	**PKPdf**		02 56 44.4	+1.5
	comp=Z,1.6nm,0.8s,baz=65,slow=1.6,SNR=8.9							
DBIC	**Dimbokro**	**144.01**	**277**	PKP	PKPbc		02 56 54.8	+0.9
	comp=Z,5.7nm,0.8s,baz=103,slow=5.9,SNR=6.6							
CPUP	**Villa Florida**	**146.82**	**152**	PKPbc	**PKPbc**		02 57 01.7	-0.5
	comp=Z,0.7nm,0.7s,baz=206,slow=17,SNR=1.5							
SJG	**San Juan**	**150.91**	**57**	*e*PKIKP	**PKPdf**		02 57 08.2	+1.0
SJG	**San Juan**	**150.91**	**57**	*e*PKPdf	**PKPdf**		02 57 08.2	+1.0

IDC 06 02:42:56.8±6.0, 9°.31N×102°.93W, h0km, mb3.2/3, mb1 3.6/4, mb1mx3.4/36, mbtmp3.2/4, ML3.6/1, MS3.1/4, Ms1 3.2/4, ms1mx3.0/10, Error ellipse: s-maj=154.8km s-min=104.2km az=88.0, Northern East Pacific Rise

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
H06E1	**SOCORRO T-PHAS**	**12.20**	**321**		T	T	02 56 59.0	
	SNR=5.4							
LPIG	**La Paz**	**16.32**	**335**		Pn	Pn	02 46 47.7	+0.3
	24nm,0.3s,baz=7.8,slow=11,SNR=5.2							
LPIG					LR	LR	02 51 00.7	
	comp=Z,102nm,18.5s,baz=156,slow=30							
TXAR	**Lajitas Array**	**19.94**	**358**		P	P	02 47 30.2	-0.2
	0.0nm,0.3s,baz=182,slow=9.3,SNR=6.9							
TXAR					LR	LR	02 54 19.6	
	comp=Z,56nm,18.9s,baz=0.0,slow=34							
TKL	**Tuckaleechee C**	**31.51**	**31**		LR	LR	03 02 10.6	
	comp=Z,23nm,21.3s,baz=302,slow=37							
PDAR	**Pinedale Array**	**33.83**	**351**		P	P	02 49 40.8	-0.3
	0.1nm,0.4s,baz=171,slow=6.2,SNR=2.9							
LPAZ	**La Paz**	**42.81**	**126**		LR	LR	03 07 22.4	
	comp=Z,26nm,20.7s,baz=312,slow=34							
YKA	**Yellowknife Ar**	**53.77**	**353**		P	P	02 52 21.5	+0.8
	0.1nm,0.6s,baz=160,slow=6.9,SNR=2.7							
ILAR	**Eielson Array**	**63.28**	**341**		P	P	02 53 26.4	-0.7
	0.6nm,0.8s,baz=146,slow=5.8,SNR=5.5							

IDC 06 02:55:13.7±5.2, 17°.35S×69°.15W, h172km±28km, mb2.9/2, mb1 3.1/2, mb1mx2.9/22, mbtmp3.4/2, Error ellipse: s-maj=87.7km s-min=51.2km az=13.0, Peru-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
LPAZ	**La Paz**	**1.44**	**43**		P	Pn	02 55 45.0	-0.2
	2.4nm,0.3s,baz=229,slow=4.4,SNR=59							
LPAZ					S	Sn	02 56 09.3	+0.1
	1.4nm,0.3s,baz=122,slow=4.7,SNR=21							
TORD	**Torodi Ar. Bea**	**76.22**	**71**		P	P	03 06 43.7	0.0
	0.3nm,0.7s,baz=252,slow=5.0,SNR=4.6							
YKA	**Yellowknife Ar**	**87.21**	**341**		P	P	03 07 40.1	0.0
	0.1nm,0.5s,baz=133,slow=4.8,SNR=4.1							

*ISCJB **06** 03:02:25.5±1.3, 36°.36N±0°.05×142°.1E±0°.1, h19km, mb3.3/3, Error ellipse: s-maj=15.0km s-min=6.5km az=8.4*
*JMA **06** 03:02:26.7±0.4, 36°.38N×142°.10E, h42km, M2.6*
*IDC **06** 03:02:33.3±2.6, 36°.82N×141°.70E, h29km±9km, mb3.2/3, mb1 3.3/4, mb1mx3.0/51, mbtmp3.2/4, ML2.6/1, Error ellipse: s-maj=69.5km s-min=29.2km az=60.0*

ISC 06 03:02:27.0±1.5, 36°.40N±0°.05×142°.0E±0°.1, h19km, n13, σ1§18/16, mb3.3/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.17**	**234**		S	**Sb**	**03 03 02.4**	**-0.9**
JFK	**Kawauchi**	**1.33**	**317**		P	**Pg**	**03 02 51.4**	**-1.4**
JFT	**Otama**	**1.75**	**310**		P	**Pb**	**03 02 57.3**	**-1.3**
JFT					*e*S	**Sn**	**03 03 17.3**	**-0.9**
JMM	**Marumori**	**1.77**	**327**		P	**Pn**	**03 02 55.7**	**-0.8**
BSO1	**Boso 1**	**1.93**	**206**		P	**Pn**	**03 02 57.1**	**-1.3**
BSO1					*e*S	**Sn**	**03 03 21.2**	**-0.7**
BSO3	**Boso 3**	**2.01**	**218**		P	**Pn**	**03 02 59.3**	**-0.3**
JAG	**Ashikaga**	**2.07**	**272**		P	**Pn**	**03 03 00.9**	**+0.2**
JRY	**Ryogami san**	**2.55**	**262**		P	**Pn**	**03 03 07.4**	**+0.1**
JMK	**Ichinoseki**	**2.63**	**346**		P	**Pn**	**03 03 07.9**	**-0.5**
MJAR	**Matsushiro Arr**	**3.07**	**274**		Pn	**Pn**	**03 03 16.0**	**+1.4**
	0.9nm,0.3s,baz=120,slow=9.3,SNR=6.6							
SONM	**Songino Array**	**28.55**	**305**		P		**03 08 22.5**	**+0.9**
	0.2nm,0.3s,baz=96,slow=8.9,SNR=2.3							
SONM					pP	**sP**	**03 08 30.6**	**+0.9**
	0.9nm,0.8s,baz=111,slow=9.2,SNR=4.4							
MKAR	**Makanchi Array**	**44.87**	**303**		P		**03 10 41.4**	**+1.3**
	0.1nm,0.6s,baz=90,slow=1.4,SNR=2.3							
MKAR					pP	**sP**	**03 10 50.5**	**+2.1**
	0.5nm,0.7s,baz=87,slow=9.8,SNR=3.4							
WRA	**Warramunga Arr**	**56.50**	**189**		P		03 12 15.4	+7.5
	0.8nm,1.0s,baz=7.1,slow=7.7,SNR=2.7							

*ISCJB **06** 03:05:01.6±0.6, 12°.38N±0°.07×141°.8E±0°.2, h33km, mb4.3/21, MS3.3/10, Error ellipse: s-maj=25.4km s-min=10.3km az=0.5*
*NEIC **06** 03:05:09.1±1.2, 12°.31N×141°.68E, h85km±13km, mb4.2/7, Error ellipse: s-maj=13.7km s-min=7.4km az=103.0*
*IDC **06** 03:05:10.8±3.3, 12°.34N×141°.82E, h101km±31km, mb3.9/14, mb1 4.0/15, mb1mx3.7/51, mbtmp4.2/15, MS3.3/11, Ms1 3.3/11, ms1mx3.1/40, Error ellipse: s-maj=26.5km s-min=14.2km az=90.0*

ISC 06 03:05:03.3±0.6, 12°.4N±0°.1×141°.8E±0°.1, h33km, n33, σ0§60/25, mb4.4/21, MS3.3/10, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
GUMO	**Guam**	**3.21**	**68**		P	**Pb**	**03 05 59.6**	**0.0**
	19nm,0.3s,baz=187,slow=20,SNR=3.6							
GUMO					LR	LR	03 07 11.7	
	comp=Z,274nm,18.1s,baz=122,slow=38							
FAKI	**Fak Fak**	**17.93**	**213**		*e*Pn	**Pn**	**03 09 10.2**	**0.0**
JHJ	**Hachijo jima 2**	**20.72**	**355**		LR	LR	03 15 58.9	
	comp=Z,95nm,19.9s,baz=132,slow=31							
PMG	**Port Moresby**	**22.29**	**166**		LR	LR	03 17 20.2	
	comp=Z,167nm,21.8s,baz=112,slow=33							
JNU	**Nakatsue**	**22.93**	**336**		LR	LR	03 17 14.9	
	comp=Z,56nm,21.2s,baz=118,slow=32							
KSRS	**Korea Array**	**27.89**	**336**		LR	LR	03 20 20.8	
	comp=Z,48nm,21.0s,baz=162,slow=33							
ASAJ	**Asahikawa**	**31.62**	**1**		LR	LR	03 24 37.8	
	comp=Z,25nm,21.4s,baz=51,slow=37							
WRAB	**Tennant Creek**	**32.95**	**193**		*e*P		**03 11 34.8**	**-0.2**
	4.4nm,0.6s							
WRA	**Warramunga Arr**	**32.96**	**193**		P		**03 11 35.2**	**+0.1**
	3.8nm,0.7s,baz=12,slow=9.7,SNR=24							
ASAR	**Alice Springs**	**36.66**	**192**		P		**03 12 07.9**	**+0.9**
	0.5nm,0.4s,baz=20,slow=12,SNR=8.1							
ASAR					LR	LR	03 28 15.6	
	comp=Z,81nm,18.1s,baz=283,slow=38							
KLR	**Kul'dur**	**37.67**	**349**		LR	LR	03 25 34.5	
	comp=Z,58nm,20.6s,slow=32							
PETK	**Petropavlovsk-**	**42.56**	**14**		LR	LR	03 27 34.5	
	comp=Z,34nm,21.1s,baz=194,slow=32							
STKA	**Stephens Creek**	**44.01**	**180**		P		**03 13 07.5**	**-0.2**
	0.6nm,0.4s,baz=351,slow=9.7,SNR=5.2							
STKA					LR	LR	03 31 07.9	
	comp=Z,36nm,18.8s,baz=24,slow=35							
MKAR	**Makanchi Array**	**60.30**	**317**		P		**03 15 09.9**	**+1.0**
	4.5nm,1.1s,baz=98,slow=8.7,SNR=16							
ZALV	**Zalesovo Beam**	**60.89**	**325**		P		**03 15 12.7**	**+0.1**
	1.2nm,0.4s,baz=91,slow=6.7,SNR=3.5							
KURK	**Kurchatov**	**63.60**	**321**		*e*P		**03 15 30.8**	**0.0**
	26nm,1.0s							
KURBB	**Kurchatov Arra**	**63.63**	**321**		P		**03 15 31.7**	**+0.7**
	7.4nm,0.9s,baz=105,slow=6.7,SNR=40							
TKM2	**Tokmak 2**	**64.27**	**312**		*e*P		**03 15 35.9**	**+0.2**
	1.4nm,0.7s							
EKS2	**Erkin-Say**	**65.57**	**311**		*e*P		**03 15 44.1**	**0.0**
	2.3nm,0.8s							
NRIK	**Noril'sk**	**66.31**	**342**		P		**03 15 48.8**	**+0.7**
	3.2nm,0.7s,baz=128,slow=7.7,SNR=6.2							
BVAR	**Borovoye Array**	**69.03**	**322**		P		**03 16 06.1**	**+0.5**
	2.9nm,0.6s,baz=94,slow=7.6,SNR=18							
BRVK	**Borovoye**	**69.10**	**322**		*e*P		**03 16 06.4**	**+0.4**
	2.2nm,0.5s							
ILAR	**Eielson Array**	**70.92**	**25**		P		**03 16 16.7**	**-0.3**
	0.7nm,0.6s,baz=248,slow=6.1,SNR=20							
PPT	**Papeete**	**73.98**	**112**		LR	LR	03 43 22.5	
	comp=Z,45nm,21.5s,baz=30,slow=31							
ABKAR	**Akbulak array**	**75.43**	**318**		*e*P		**03 16 43.3**	**-0.6**
	0.7nm,0.6s							
ARU	**Arti**	**76.05**	**325**		P		**03

0.8nm,0.7s,baz=55,slow=7.0,SNR=7.2
MKAR Makanchi Array 55.50 304 P **P 03 27 27.6 -0.5**
0.4nm,0.6s,baz=52,slow=6.3,SNR=4.4
ARCES ARCESS Array B 56.38 347 P **P 03 27 34.3 +0.2**
1.0nm,0.7s,baz=34,slow=6.6,SNR=2.7
TXAR Lajitas Array 63.50 76 P **P 03 28 23.6 0.0**
0.3nm,0.6s,baz=303,slow=6.0,SNR=4.9
FINES FINESS Array B 63.79 343 P **P 03 28 25.2 +0.4**
1.2nm,0.7s,baz=19,slow=12,SNR=5.2
NOA NORSAR Array B 66.29 350 P **P 03 28 41.3 +0.1**
0.6nm,0.7s,baz=12,slow=6.4,SNR=3.6
GERES GERESS Array B 77.91 346 P P 03 30 00.3 +9.3
0.2nm,0.5s,baz=90,slow=1.3,SNR=3.9

*NEIC **06** 03:20:48.3, 19°.55N×65°.37W, h73km, MD3.5(RSPR), After RSPR.*
RSPR 06 03:20:48.3, 19°.55N×65°.37W, h73km±14km, MD3.5/6, 12C-9D, Puerto Rico region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STVI	**Saint Thomas**	**1.25**	**162**	⇓*eP*	Pn	03 21 09.5	-0.7
STVI	**Saint Thomas**	**1.25**	**162**	⇓*eP*	Pn	03 21 09.5	-0.7
STVI	**Saint Thomas**	**1.25**	**162**	⇓*eP*	Pn	03 21 09.5	-0.7
CBYP	**Canovanas**	**1.35**	**200**	⇑*eP*	Pn	03 21 10.5	-0.9
CBYP	**Canovanas**	**1.35**	**200**	⇑*eP*	Pn	03 21 10.5	-0.9
CBYP				*eS*	Sn	03 21 28.1	-0.7
CBYP	**Canovanas**	**1.35**	**200**	⇑*eP*	Pn	03 21 10.5	-0.9
CBYP				*eS*	Sn	03 21 28.1	-0.7
MTP	**Monte Pirata**	**1.45**	**187**	⇓*eP*	Pn	03 21 12.6	-0.2
MTP	**Monte Pirata**	**1.45**	**187**	⇓*eP*	Pn	03 21 12.6	-0.2
MTP				*eS*	Sn	03 21 30.9	-0.2
MTP	**Monte Pirata**	**1.45**	**187**	⇓*eP*	Pn	03 21 12.6	-0.2
MTP				*eS*	Sn	03 21 30.9	-0.2
HUMP	**Col San Antoni**	**1.47**	**198**	⇑*eP*	Pn	03 21 12.4	-0.6
HUMP	**Col San Antoni**	**1.47**	**198**	⇑*eP*	Pn	03 21 12.4	-0.6
HUMP				*eS*	Sn	03 21 30.6	-0.9
HUMP	**Col San Antoni**	**1.47**	**198**	⇑*eP*	Pn	03 21 12.4	-0.6
HUMP				*eS*	Sn	03 21 30.6	-0.9
SJG	**San Juan**	**1.61**	**207**	⇓*eP*	Pn	03 21 14.0	-0.8
SJG				*eS*	Sn	03 21 34.1	-0.7
SJG	**San Juan**	**1.61**	**207**	⇓*eP*	Pn	03 21 14.0	-0.8
SJG				*eS*	Sn	03 21 34.1	-0.7
SJG	**San Juan**	**1.61**	**207**	⇓*eP*	Pn	03 21 14.0	-0.8
AOPR	**Arecibo Observ**	**1.77**	**228**	⇑*eP*	Pn	03 21 16.0	-1.0
AOPR	**Arecibo Observ**	**1.77**	**228**	⇑*eP*	Pn	03 21 16.0	-1.0
AOPR				*eS*	Sn	03 21 38.7	-0.1
AOPR	**Arecibo Observ**	**1.77**	**228**	⇑*eP*	Pn	03 21 16.0	-1.0
AOPR				*eS*	Sn	03 21 38.7	-0.1
CRPR	**Cabo Rojo, PR**	**2.25**	**227**	⇑*eP*	Pn	03 21 22.8	-0.5
CRPR	**Cabo Rojo, PR**	**2.25**	**227**	⇑*eP*	Pn	03 21 22.8	-0.5
CRPR	**Cabo Rojo, PR**	**2.25**	**227**	⇑*eP*	Pn	03 21 22.8	-0.5

*CRAAG **06** 03:24:45.3, 36°.85N×2°.72E, Ml3.3*
*ISCJB **06** 03:24:46.3±0.5, 37°.04N±0°.03×2°.70E±0°.05, h14km, Error ellipse: s-maj=5.8km s-min=4.1km az=2.0*
*CSEM **06** 03:24:46.1±0.2, 36°.96N×2°.71E, h2km, ML3.3, Error ellipse: s-maj=5.7km s-min=4.5km az=85.0*
*MDD **06** 03:24:46.7±0.5, 36°.98N×2°.76E, h0km, mb3.7/5, Error ellipse: s-maj=7.1km s-min=4.6km az=52.0, PRX/MO*
ISC 06 03:24:46.1±0.9, 36°.95N±0°.04×2°.74E±0°.04, h14km, n43, σ1°38/61, Northern Algeria

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ABA	**Alger-Bouzarea**	**0.28**	**122**	P	**Pg**	**03 24 51.8**	**-0.1**
ABA	**Alger-Bouzarea**	**0.28**	**122**	P	**Pg**	**03 24 51.8**	**-0.1**
ABA	**Alger-Bouzarea**	**0.28**	**122**	P	**Pg**	**03 24 51.8**	**-0.1**
EMHD	**Djebel Mahouad**	**0.76**	**167**	P	**Pg**	**03 25 00.2**	**-0.8**
EMHD	**Djebel Mahouad**	**0.76**	**167**	P	**Pg**	**03 25 00.2**	**-0.8**
EMHD	**Djebel Mahouad**	**0.76**	**167**	P	**Pg**	**03 25 00.2**	**-0.8**
EBNR	**Beni Rached**	**1.18**	**236**	P	**Pb**	**03 25 08.1**	**-0.1**
EBNR	**Beni Rached**	**1.18**	**236**	P	**Pb**	**03 25 08.1**	**-0.1**
AKET	**Djebel Ketaf**	**1.28**	**134**	P	**Pn**	**03 25 11.0**	**+1.2**
AKET	**Djebel Ketaf**	**1.28**	**134**	P	**Pn**	**03 25 11.0**	**+1.2**
AKET	**Djebel Ketaf**	**1.28**	**134**	P	**Pn**	**03 25 11.0**	**+1.2**
ECHA	**Ech Chlef**	**1.36**	**235**	P	**Pn**	**03 25 11.3**	**+0.6**
ECHA	**Ech Chlef**	**1.36**	**235**	P	**Pn**	**03 25 11.3**	**+0.6**
ECHF	**Ech Chlef**	**1.38**	**235**	P	**Pn**	**03 25 11.3**	**+0.4**
ECHF	**Ech Chlef**	**1.38**	**235**	P	**Pn**	**03 25 11.3**	**+0.4**
EANR	**'Ain N'Sour**	**1.66**	**234**	P	**Pb**	**03 25 16.3**	**-0.1**
EANR	**'Ain N'Sour**	**1.66**	**234**	P	**Pb**	**03 25 16.3**	**-0.1**
EANR	**'Ain N'Sour**	**1.66**	**234**	P	**Pb**	**03 25 16.3**	**-0.1**
OKGL	**Djebel Kef Gue**	**1.92**	**242**	P	**Pn**	**03 25 19.6**	**+1.2**
	9.2nm,0.2s,SNR=7.9						
OKGL				S	**Sb**	**03 25 44.8**	**+0.1**
	107nm,0.3s,SNR=7.9						
OKGL	**Djebel Kef Gue**	**1.92**	**242**	P	**Pn**	**03 25 19.6**	**+1.2**
	9.2nm,0.2s,SNR=7.9						
OKGL				S	**Sb**	**03 25 44.8**	**+0.1**
	107nm,0.3s,SNR=7.9						
ETRT	**Tiaret**	**1.94**	**217**	P	**Pb**	**03 25 22.0**	**+0.7**
ETRT	**Tiaret**	**1.94**	**217**	P	**Pb**	**03 25 22.0**	**+0.7**
ETRT	**Tiaret**	**1.94**	**217**	P	**Pb**	**03 25 22.0**	**+0.7**
EIBI	**Ibiza**	**2.35**	**332**	P	**Pn**	**03 25 25.1**	**+0.8**
	4.3nm,0.2s,SNR=19						
EIBI				S	**Sn**	**03 25 52.3**	**-0.7**
	5.0nm,0.2s,SNR=6.5						
EIBI	**Ibiza**	**2.35**	**332**	P	**Pn**	**03 25 25.1**	**+0.8**
	4.3nm,0.2s,SNR=19						
EIBI				S	**Sn**	**03 25 52.3**	**-0.7**
	5.0nm,0.2s,SNR=6.5						
ETOS	**Mallorca**	**2.82**	**1**	P	**Pn**	**03 25 31.5**	**+0.8**
	2.2nm,0.3s,SNR=10						
ETOS				S	**Sn**	**03 26 02.4**	**-2.1**
	3.6nm,0.3s,SNR=5.9						
ETOS	**Mallorca**	**2.82**	**1**	P	**Pn**	**03 25 31.5**	**+0.8**
	2.2nm,0.3s,SNR=10						
ETOS				S	**Sn**	**03 26 02.4**	**-2.1**
	3.6nm,0.3s,SNR=5.9						
ETOB	**Tobarra**	**3.80**	**298**	P	**Pn**	**03 25 45.0**	**+0.7**
	0.9nm,0.2s,SNR=17						
ETOB				S	**Sn**	**03 26 26.7**	**-2.1**
	2.0nm,0.4s,SNR=7.9						
ETOB	**Tobarra**	**3.80**	**298**	P	**Pn**	**03 25 45.0**	**+0.7**
	0.9nm,0.2s,SNR=17						
ETOB				S	**Sn**	**03 26 26.7**	**-2.1**
	2.0nm,0.4s,SNR=7.9						
EMOS	**Mosqueruela**	**4.24**	**325**	P	**Pn**	**03 25 51.5**	**+1.1**
	1.8nm,0.2s,SNR=18						
EMOS				S	**Sn**	**03 26 37.4**	**-2.4**
	1.4nm,0.3s,SNR=7.9						
EMOS	**Mosqueruela**	**4.24**	**325**	P	**Pn**	**03 25 51.5**	**+1.1**
	1.8nm,0.2s,SNR=18						
EMOS				S	**Sn**	**03 26 37.4**	**-2.4**
	1.4nm,0.3s,SNR=7.9						
SESP	**Santiago Espad**	**4.36**	**287**	P	**Pn**	**03 25 53.1**	**+1.0**
	1.0nm,0.3s,SNR=7.9						
SESP				S	**Sn**	**03 26 42.7**	**-0.1**
	1.3nm,0.2s,SNR=7.9						
SESP	**Santiago Espad**	**4.36**	**287**	P	**Pn**	**03 25 53.1**	**+1.0**
	1.0nm,0.3s,SNR=7.9						
SESP				S	**Sn**	**03 26 42.7**	**-0.1**
	1.3nm,0.2s,SNR=7.9						
EQES	**Quesada**	**4.71**	**282**	P	**Pn**	**03 25 58.3**	**+1.5**
	1.7nm,0.3s,SNR=7.9						
EQES				S	**Sn**	**03 26 50.7**	**-0.6**
	0.6nm,0.5s,SNR=7.9						
EQES	**Quesada**	**4.71**	**282**	P	**Pn**	**03 25 58.3**	**+1.5**
	1.7nm,0.3s,SNR=7.9						
EQES				S	**Sn**	**03 26 50.7**	**-0.6**
	0.6nm,0.5s,SNR=7.9						
CFON	**Fontmartina**	**4.81**	**357**	P	**Pn**	**03 25 59.8**	**+1.6**
	1.0nm,0.2s,SNR=7.9						
CFON				S	**Sn**	**03 26 54.1**	**+0.3**
	1.5nm,0.2s,SNR=7.9						
CFON	**Fontmartina**	**4.81**	**357**	P	**Pn**	**03 25 59.8**	**+1.6**
	1.0nm,0.2s,SNR=7.9						
CFON				S	**Sn**	**03 26 54.1**	**+0.3**
	1.5nm,0.2s,SNR=7.9						
CLLI	**Llivia**	**5.56**	**354**	P	**Pn**	**03 26 10.4**	**+1.9**
	0.3nm,0.3s,SNR=7.9						
CLLI				S	**Sn**	**03 27 08.4**	**-3.8**
	0.5nm,0.3s,SNR=4.0						
CLLI	**Llivia**	**5.56**	**354**	P	**Pn**	**03 26 10.4**	**+1.9**
	0.3nm,0.3s,SNR=7.9						
CSOR	**Sort**	**5.56**	**348**	P	**Pn**	**03 26 10.2**	**+1.7**
	0.6nm,0.2s,SNR=7.9						
CSOR				S	**Sn**	**03 27 09.6**	**-2.7**
	1.1nm,0.4s,SNR=7.9						
CSOR	**Sort**	**5.56**	**348**	P	**Pn**	**03 26 10.2**	**+1.7**
	0.6nm,0.2s,SNR=7.9						
EARI	**Arriondas**	**8.79**	**319**	P	**Pn**	**03 26 55.7**	**+2.9**
	1.1nm,0.4s,SNR=7.9						
EARI	**Arriondas**	**8.79**	**319**	P	**Pn**	**03 26 55.7**	**+2.9**
	1.1nm,0.4s,SNR=7.9						

*CSEM **06** 03:28:55.3, 37°.79N×14°.96E, h28km, ML2.4/22*
ROM 06 03:28:55.3±0.1, 37°.79N×14°.96E, h28km±2km, Ml2.4/22, 2C, Error ellipse: s-maj=1.5km s-min=0.9km az=102.0, Sicily

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ESLN	**Serra La Nave**	**0.10**	**174**	Pg	Pb	03 29 00.2	-0.4
ESLN				Sg	Sb	03 29 04.7	+0.5
	243nm,0.3s						
ESLN	**Serra La Nave**	**0.10**	**174**	Pg	Pb	03 29 00.2	-0.4
ESLN				Sg	Sb	03 29 04.7	+0.5
	243nm,0.3s						
MNO	**Monte Soro**	**0.26**	**304**	Pg	Pb	03 29 02.0	-0.2
MNO				Sg	Sb	03 29 06.7	-0.2
	137nm,0.3s						
MNO	**Monte Soro**	**0.26**	**304**	Pg	Pb	03 29 02.0	-0.2
MNO				Sg	Sb	03 29 06.7	-0.2
	137nm,0.3s						
MUCR	**Ucria**	**0.26**	**345**	Pg	Pb	03 29 01.8	-0.4
MUCR				Sg	Sb	03 29 06.9	0.0
MUCR	**Ucria**	**0.26**	**345**	Pg	Pb	03 29 01.8	-0.4
MUCR				Sg	Sb	03 29 06.9	0.0
MMME	**Mongiuffi-Meli**	**0.27**	**58**	⇑*iPg*	Pb	03 29 02.4	+0.1
MMME				Sg	Sn	03 29 08.2	-0.6
	392nm,0.6s						
MMME	**Mongiuffi-Meli**	**0.27**	**58**	⇑*iPg*	Pb	03 29 02.4	+0.1
MMME				Sg	Sn	03 29 08.2	-0.6
	392nm,0.6s						
ECNV	**Catenanuova**	**0.28**	**226**	Pg	Pn	03 29 03.3	-0.2
	451nm,0.9s						
ECNV	**Catenanuova**	**0.28**	**226**	Pg	Pn	03 29 03.3	-0.2
	451nm,0.9s						
NOV	**Novara**	**0.28**	**30**	Pg	Pb	03 29 02.2	-0.2
NOV				Sg	Sb	03 29 07.3	+0.2
	371nm,0.3s						
NOV	**Novara**	**0.28**	**30**	Pg	Pb	03 29 02.2	-0.2
NOV				Sg	Sb	03 29 07.3	+0.2
	371nm,0.3s						
GALF	**Gagliano Caste**	**0.32**	**256**	Pg	Pb	03 29 03.2	+0.2
GALF				Sg	Sn	03 29 09.9	-0.1
	347nm,0.7s						
GALF	**Gagliano Caste**	**0.32**	**256**	Pg	Pb	03 29 03.2	+0.2
GALF				Sg	Sn	03 29 09.9	-0.1
	347nm,0.7s						
MCSR	**Castroreale**	**0.36**	**40**	Pg	Pb	03 29 03.4	-0.1
MCSR				Sg	Sb	03 29 09.6	+0.5
MCSR	**Castroreale**	**0.36**	**40**	Pg	Pb	03 29 03.4	-0.1
MCSR				Sg	Sb	03 29 09.6	+0.5
CAGR	**Agira**	**0.40**	**246**	Pg	Pn	03 29 05.3	0.0
	231nm,0.5s						
CAGR	**Agira**	**0.40**	**246**	Pg	Pn	03 29 05.3	0.0
	231nm,0.5s						
HLNI	**Lentini**	**0.45**	**189**	Pg	Pb	03 29 04.8	0.0
HLNI				Sg	Sb	03 29 11.9	+0.7
	181nm,0.2s						
HLNI	**Lentini**	**0.45**	**189**	Pg	Pb	03 29 04.8	0.0
HLNI				Sg	Sb	03 29 11.9	+0.7
	181nm,0.2s						
MPNC	**Port Mandanici**	**0.47**	**41**	Pg	Pb	03 29 05.4	+0.2
MPNC				Sg	Sn	03 29 13.1	-0.5
	293nm,0.6s						
MPNC	**Port Mandanici**	**0.47**	**41**	Pg	Pb	03 29 05.4	+0.2
MPNC				Sg	Sn	03 29 13.1	-0.5
	293nm,0.6s						
HCRL	**Carlentini**	**0.51**	**174**	Pg	Pb	03 29 05.8	0.0
HCRL				Sg	Sn	03 29 13.9	-0.5
	517nm,0.3s						
HCRL	**Carlentini**	**0.51**	**174**	Pg	Pb	03 29 05.8	0.0
HCRL				Sg	Sn	03 29 13.9	-0.5
	517nm,0.3s						
HAGA	**Augusta**	**0.53**	**163**	Pg	Pb	03 29 06.1	0.0
HAGA				Sg	Sn	03 29 14.4	-0.5
	123nm,0.3s						
HAGA	**Augusta**	**0.53**	**163**	Pg	Pb	03 29 06.1	0.0
HAGA				Sg	Sn	03 29 14.4	-0.5
	123nm,0.3s						
MILZ	**Milazzo**	**0.53**	**24**	Pg	Pb	03 29 06.1	0.0
MILZ				Sg	Sn	03 29 14.2	-0.7
	233nm,0.4s						
MILZ	**Milazzo**	**0.53**	**24**	Pg	Pb	03 29 06.1	0.0
MILZ				Sg	Sn	03 29 14.2	-0.7
	233nm,0.4s						
AGST	**Augusta-Monte**	**0.57**	**158**	Pg	Pb	03 29 06.8	0.0
AGST				Sg	Sn	03 29 15.8	-0.2
	299nm,1.2s						
AGST	**Augusta-Monte**	**0.57**	**158**	Pg	Pb	03 29 06.8	0.0
AGST				Sg	Sn	03 29 15.8	-0.2
	299nm,1.2s						
VPL	**Vulcano Piano**	**0.59**	**2**	Pg	Pb	03 29 07.3	+0.1
	608nm,0.7s						
VPL	**Vulcano Piano**	**0.59**	**2**	Pg	Pb	03 29 07.3	+0.1
	608nm,0.7s						
SSY	**Sortino**	**0.64**	**172**	Pg	Pb	03 29 08.0	0.0
SSY				Sg	Sn	03 29 17.8	0.0
	374nm,0.4s						
SSY	**Sortino**	**0.64**	**172**	Pg	Pb	03 29 08.0	0.0
SSY				Sg	Sn	03 29 17.8	0.0
	374nm,0.4s						
HVZN	**Vizzini**	**0.64**	**198**	Pg	Pb	03 29 07.8	-0.2
HVZN	**Vizzini**	**0.64**	**198**	Pg	Pb	03 29 07.8	-0.2
MSRU	**Castanea**	**0.64**	**42**	Pg	Pn	03 29 08.3	-0.2
	133nm,0.3s						
MSRU	**Castanea**	**0.64**	**42**	Pg	Pn	03 29 08.3	-0.2
	133nm,0.3s						
PLLN	**Pollina**	**0.68**	**288**	Pg	Pn	03 29 09.7	+0.6
	119nm,0.4s						
PLLN	**Pollina**	**0.68**	**288**	Pg	Pn	03 29 09.7	+0.6
	119nm,0.4s						
RAFF	**Raffo Rosso**	**0.74**	**220**	Pg	Pn	03 29 09.9	0.0
	96nm,0.4s						
RAFF	**Raffo Rosso**	**0.74**	**220**	Pg	Pn	03 29 09.9	0.0
	96nm,0.4s						
GIB	**Gibilmanna**	**0.77**	**285**	Pg	Pn	03 29 11.0	+0.7
	185nm,0.6s						
GIB	**Gibilmanna**	**0.77**	**285**	Pg	Pn	03 29 11.0	+0.7
	185nm,0.6s						
MSCL	**Scilla**	**0.79**	**56**	Pg	Pn	03 29 10.9	+0.3
	83nm,0.5s						
MSCL	**Scilla**	**0.79**	**56**	Pg	Pn	03 29 10.9	+0.3
	83nm,0.5s						
IFIL	**Filicudi I Eol**	**0.83**	**338**	Pg	Pn	03 29 10.9	-0.3
	182nm,0.4s						
IFIL	**Filicudi I Eol**	**0.83**	**338**	Pg	Pn	03 29 10.9	-0.3
	182nm,0.4s						
HAVL	**Avola**	**0.84**	**171**	Pg	Pn	03 29 11.2	0.0
	171nm,0.3s						
HAVL	**Avola**	**0.84**	**171**	Pg	Pn	03 29 11.2	0.0
	171nm,0.3s						
MPAZ	**Palizzi**	**0.84**	**78**	Pg	Pb	03 29 12.0	+0.6
	56nm,0.3s						
MPAZ	**Palizzi**	**0.84**	**78**	Pg	Pb	03 29 12.0	+0.6
	56nm,0.3s						
IACL	**Alicudi**	**0.88**	**327**	Pg	Pn	03 29 11.5	-0.3
	84nm,0.3s						
IACL	**Alicudi**	**0.88**	**327**	Pg	Pn	03 29 11.5	-0.3
	84nm,0.3s						
SOI	**Samo**	**0.91**	**72**	Pg	Pb	03 29 12.9	+0.4
	27nm,0.4s						
SOI	**Samo**	**0.91**	**72**	Pg	Pb	03 29 12.9	+0.4
	27nm,0.4s						

*CSEM **06** 03:29:40.6, 37°.79N×14°.98E, h27km, ML2.5/20*
ROM 06 03:29:40.6±0.1, 37°.79N×14°.98E, h27km±2km, Ml2.5/20, Error ellipse: s-maj=1.6km s-min=0.9km az=100.0, Sicily

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ESLN	**Serra La Nave**	**0.10**	**183**	Pg	Pb	03 29 45.0	-0.7
ESLN				Sg	Sb	03 29 49.1	0.0
	243nm,0.3s						
ESLN	**Serra La Nave**	**0.10**	**183**	Pg	Pb	03 29 45.0	-0.7
ESLN				Sg	Sb	03 29 49.1	0.0
	243nm,0.3s						
MMME	**Mongiuffi-Meli**	**0.26**	**56**	Pg	Pb	03 29 47.4	+0.1
MMME				Sg	Sn	03 29 53.0	-1.1
	392nm,0.6s						
MMME	**Mongiuffi-Meli**	**0.26**	**56**	Pg	Pb	03 29 47.4	+0.1
MMME				Sg	Sn	03 29 53.0	-1.1
	392nm,0.6s						
MNO	**Monte Soro**	**0.27**	**303**	Pg	Pb	03 29 47.0	-0.5
MNO				Sg	Sb	03 29 52.1	-0.1
	137nm,0.3s						
MNO	**Monte Soro**	**0.27**	**303**	Pg	Pb	03 29 47.0	-0.5
MNO				Sg	Sb	03 29 52.1	-0.1
	137nm,0.3s						
MUCR	**Ucria**	**0.27**	**342**	Pg	Pb	03 29 47.0	-0.4
MUCR				Sg	Sb	03 29 51.8	-0.3
MUCR	**Ucria**	**0.27**	**342**	Pg	Pb	03 29 47.0	-0.4
MUCR				Sg	Sb	03 29 51.8	-0.3
NOV	**Novara**	**0.27**	**27**	Pg	Pb	03 29 47.2	-0.2
NOV				Sg	Sb	03 29 52.2	+0.1
	371nm,0.3s						
NOV	**Novara**	**0.27**	**27**	Pg	Pb	03 29 47.2	-0.2
NOV				Sg	Sb	03 29 52.2	+0.1
	371nm,0.3s						
ECNV	**Catenanuova**	**0.29**	**228**	Pg	Pn	03 29 48.8	-0.3
	451nm,0.9s						
ECNV	**Catenanuova**	**0.29**	**228**	Pg	Pn	03 29 48.8	-0.3
	451nm,0.9s						
GALF	**Gagliano Caste**	**0.34**	**257**	Pg	Pb	03 29 48.3	0.0
GALF				Sg	Sn	03 29 55.0	-0.8
	347nm,0.7s						
GALF	**Gagliano Caste**	**0.34**	**257**	Pg	Pb	03 29 48.3	0.0
GALF				Sg	Sn	03 29 55.0	-0.8
	347nm,0.7s						
MCSR	**Castroreale**	**0.35**	**38**	Pg	Pb	03 29 48.3	-0.3
MCSR				Sg	Sb	03 29 54.6	+0.6
MCSR	**Castroreale**	**0.35**	**38**	Pg	Pb	03 29 48.3	-0.3
MCSR				Sg	Sb	03 29 54.6	+0.6
CAGR	**Agira**	**0.41**	**247**	Pg	Pn	03 29 50.5	-0.4
	231nm,0.5s						
CAGR	**Agira**	**0.41**	**247**	Pg	Pn	03 29 50.5	-0.4
	231nm,0.5s						
HLNI	**Lentini**	**0.45**	**191**	Pg	Pb	03 29 49.9	-0.1
HLNI				Sg	Sb	03 29 56.8	+0.4
	181nm,0.2s						
HLNI	**Lentini**	**0.45**	**191**	Pg	Pb	03 29 49.9	-0.1
HLNI				Sg	Sb	03 29 56.8	+0.4
	181nm,0.2s						
MPNC	**Port Mandanici**	**0.46**	**39**	Pg	Pb	03 29 50.3	0.0
MPNC				Sg	Sn	03 29 58.1	-0.8
	293nm,0.6s						
MPNC	**Port Mandanici**	**0.46**	**39**	Pg	Pb	03 29 50.3	0.0
MPNC				Sg	Sn	03 29 58.1	-0.8
	293nm,0.6s						
HCRL	**Carlentini**	**0.51**	**175**	Pg	Pb	03 29 50.8	-0.2
HCRL				Sg	Sb	03 29 58.9	+0.9
	517nm,0.3s						
HCRL	**Carlentini**	**0.51**	**175**	Pg	Pb	03 29 50.8	-0.2
HCRL				Sg	Sb	03 29 58.9	+0.9
	517nm,0.3s						
HAGA	**Augusta**	**0.52**	**164**	Pg	Pb	03 29 50.3	-0.9
HAGA				Sg	Sn	03 29 59.4	-0.9
	123nm,0.3s						
HAGA	**Augusta**	**0.52**	**164**	Pg	Pb	03 29 50.3	-0.9
HAGA				Sg	Sn	03 29 59.4	-0.9
	123nm,0.3s						
MILZ	**Milazzo**	**0.52**	**22**	Pg	Pn	03 29 52.4	+0.1
MILZ				Sg	Sb	03 29 59.2	+0.7
	233nm,0.4s						
MILZ	**Milazzo**	**0.52**	**22**	Pg	Pn	03 29 52.4	+0.1
MILZ				Sg	Sb	03 29 59.2	+0.7
	233nm,0.4s						
AGST	**Augusta-Monte**	**0.57**	**160**	Pg	Pb	03 29 51.8	-0.2
AGST				Sg	Sn	03 30 00.7	-0.7
	299nm,1.2s						
AGST	**Augusta-Monte**	**0.57**	**160**	Pg	Pb	03 29 51.8	-0.2
AGST				Sg	Sn	03 30 00.7	-0.7
	299nm,1.2s						
VPL	**Vulcano Piano**	**0.59**	**0**	Pg	Pb	03 29 52.2	-0.2
	608nm,0.7s						
VPL	**Vulcano Piano**	**0.59**	**0**	Pg	Pb	03 29 52.2	-0.2
	608nm,0.7s						
MSRU	**Castanea**	**0.63**	**41**	Pg	Pb	03 29 53.3	+0.2
	133nm,0.3s						
MSRU	**Castanea**	**0.63**	**41**	Pg	Pb	03 29 53.3	+0.2
	133nm,0.3s						
SSY	**Sortino**	**0.64**	**173**	Pg	Pb	03 29 52.9	-0.3
SSY				Sg	Sn	03 30 02.8	-0.4
	374nm,0.4s						
SSY	**Sortino**	**0.64**	**173**	Pg	Pb	03 29 52.9	-0.3
SSY				Sg	Sn	03 30 02.8	-0.4
	374nm,0.4s						
HVZN	**Vizzini**	**0.64**	**199**	Pg	Pb	03 29 52.9	-0.4
HVZN	**Vizzini**	**0.64**	**199**	Pg	Pb	03 29 52.9	-0.4
PLLN	**Pollina**	**0.69**	**287**	Pg	Pn	03 29 55.2	+0.5
	119nm,0.4s						
PLLN	**Pollina**	**0.69**	**287**	Pg	Pn	03 29 55.2	+0.5
	119nm,0.4s						
RAFF	**Raffo Rosso**	**0.75**	**221**	Pg	Pb	03 29 55.0	0.0
	96nm,0.4s						
RAFF	**Raffo Rosso**	**0.75**	**221**	Pg	Pb	03 29 55.0	0.0
	96nm,0.4s						
GIB	**Gibilmanna**	**0.78**	**285**	Pg	Pn	03 29 56.1	+0.1
	185nm,0.6s						
GIB	**Gibilmanna**	**0.78**	**285**	Pg	Pn	03 29 56.1	+0.1
	185nm,0.6s						
HAVL	**Avola**	**0.83**	**172**	Pg	Pb	03 29 56.3	-0.2
HAVL				Sg	Sn	03 30 08.7	+0.6
	171nm,0.3s						
HAVL	**Avola**	**0.83**	**172**	Pg	Pb	03 29 56.3	-0.2
HAVL				Sg	Sn	03 30 08.7	+0.6
	171nm,0.3s						
IFIL

	baz=308								
AAK				⇑iS		Sg	03 34 56.7	-0.8
	baz=308								
AAK	**Ala-Archa**	**1.01**	**308**	P		**Pg**	03 34 43.2	-1.1
	1.8nm,0.3s								
AAK				S		**Sg**	03 34 56.8	-0.7
	2.6nm,0.2s								
KST	**Kastek**	**1.06**	**15**	eP		**Pg**	03 34 45.2	-0.1
	3.5nm,0.3s								
KST				eS		**Sg**	03 34 58.9	-0.2
	43nm,0.3s								
CHMS	**Chumysh**	**1.16**	**328**	⇑iP		**Pb**	03 34 45.4	-2.0
	baz=329								
CHMS				⇑iS		**Sb**	03 35 01.1	-1.6
	baz=329								
KDJ	**Kajisay**	**1.20**	**84**	⇓iP		**Pb**	03 34 47.2	-0.9
	baz=84								
KDJ				⇓iS		**Sb**	03 35 03.0	-0.9
	baz=84								
DGS	**Degeres**	**1.23**	**6**	eP		**Pg**	03 34 49.8	+1.3
	2.9nm,0.3s								
DGS				eS		**Sn**	03 35 07.0	+1.1
	6.3nm,0.2s								
IZV	**Izvestkoviy**	**1.27**	**36**	eP		**Pn**	03 34 49.2	-0.2
	1.8nm,0.1s								
IZV				eS		**Sb**	03 35 06.2	+0.1
	17nm,0.2s								
MTBS	**Maitube**	**1.28**	**29**	eP		**Pn**	03 34 47.4	-2.0
	2.4nm,0.1s								
MTBS				eS		**Sb**	03 35 02.7	-3.5
	7.4nm,0.4s								
AML	**Almayashu**	**1.41**	**275**	⇑iP		**Pn**	03 34 49.8	-1.7
	baz=275								
AML				⇑iS		**Sn**	03 35 09.5	-1.1
	baz=275								
TNSS	**Tian-Shan**	**1.44**	**44**	eP		**Pb**	03 34 52.8	+0.4
	2.3nm,0.2s								
TNSS				eS		**Sg**	03 35 12.6	+1.5
	6.1nm,0.2s								
MDOK	**Medeo**	**1.58**	**43**	eP		**Pn**	03 34 54.4	+0.7
	1.3nm,0.1s								
MDOK				eS		**Sb**	03 35 15.3	+0.4
	4.3nm,0.5s								
AAA	**Alma-Ata**	**1.61**	**38**	eP		**Pn**	03 34 53.0	-0.9
	25nm,0.1s								
AAA				eS		**Sn**	03 35 12.3	-2.7
	100nm,0.0s								
KOTS	**Kotyrbulak**	**1.66**	**42**	eP		**Pb**	03 34 56.7	+0.7
	4.2nm,0.1s								
KOTS				eS		**Sg**	03 35 19.2	+0.9
	11nm,0.6s								
ANVS	**Anan'yevo**	**1.72**	**63**	⇑iP		**Pb**	03 34 57.0	-0.1
	baz=63								
ANVS				⇑iS		**Sb**	03 35 19.7	+0.6
	baz=63								
MRKS	**Merke**	**1.89**	**293**	eP		**Pb**	03 35 00.7	+0.8
	16nm,0.9s								
MRKS				eS		**Sb**	03 35 25.8	+2.0
	17nm,0.5s								
KUU	**Kurty**	**1.96**	**16**	eP		**Pb**	03 35 01.1	+0.2
	2.6nm,0.2s								
KUU				eS		**Sb**	03 35 26.6	+1.0
	1.6nm,0.2s								
CHKK	**Chushkaly**	**2.13**	**29**	eP		**Pb**	03 35 04.4	+0.5
	4.5nm,0.5s								
CHKK				eS		**Sb**	03 35 32.3	+1.8
	17nm,0.2s								
MNAS	**Manas**	**2.33**	**283**	⇑Pg		**Pb**	03 35 07.1	-0.4
	1.2nm,0.4s								
MNAS				⇓Lg		Lg	03 35 38.9	
	8.2nm,0.8s								
SATY	**Saty**	**2.33**	**63**	eP		**Pb**	03 35 08.3	+0.8
	5.8nm,0.2s								
SATY				⇑iS		**Sg**	03 35 38.8	-1.0
	12nm,0.1s								
ZHN	**Zhinishke**	**2.40**	**60**	eP		**Pb**	03 35 09.1	+0.5
	3.6nm,0.2s								
ZHN				eS		**Sb**	03 35 40.4	+1.9
	21nm,0.3s								
KURS	**Kuram**	**2.41**	**51**	eP		**Pb**	03 35 09.8	+1.1
	2.4nm,0.5s								
KURS				eS		**Sg**	03 35 41.4	-0.8
	3.6nm,0.7s								
SFK	**Sufi-Kurgan**	**2.54**	**219**	⇑Pg		**Pb**	03 35 12.3	+1.2
	0.5nm,0.3s								
SFK				⇓Lg		Lg	03 35 47.1	
	4.5nm,0.5s								
ARXS	**Arharly**	**2.74**	**36**	eP		**Pb**	03 35 15.0	+0.6
	3.7nm,0.3s								
ARXS				eS		**Sb**	03 35 50.9	+2.5
	12nm,0.4s								
MNBS	**Baschi**	**2.92**	**44**	eP		**Pb**	03 35 17.7	+0.3
	1.4nm,0.2s								
MNBS				eS		**Sb**	03 35 55.0	+1.6
	20nm,0.5s								
DJR	**Jarkent**	**3.85**	**52**	eP		**Pb**	03 35 34.6	+1.3
	0.4nm,0.1s								
DJR				eS		**Sb**	03 36 24.2	+4.0
	4.3nm,0.6s								
KK31	**Karatay Array**	**3.90**	**288**	⇑Pg		**Pb**	03 35 35.6	+1.5
	0.3nm,0.3s,baz=107,slow=18,SNR=4.6								
KK31				⇓Lg		Lg	03 36 26.9	
	0.9nm,0.5s,baz=108,slow=29,SNR=3.5								
IUG	**Iuzhnay**	**4.13**	**274**	eP		**Pb**	03 35 40.6	+2.5
IUG				eS		**Sb**	03 36 34.2	+5.9

NIED ***06*** *03:40:00, 38°.30N×144°.00E, h11km, Mw3.4 Best double couple: M0 1.52000×10^14 NP1:φs 58.00000°, δ 69.00000°, λ -18.00000°. NP2:φs 154.00000°, δ 73.00000°, λ -158.00000°.*

JMA 06 03:40:03.0±0.1, 38°.26N×143°.96E, h30km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**1.97**	**295**	P		Pn	03 40 35.6 +1.3
OFUJ				S		Sn	03 40 59.7 +1.7
JIO	**Ouri**	**2.06**	**276**	P		Pn	03 40 36.7 +1.1
JIO				S		Sn	03 41 01.6 +1.4
JMK	**Ichinoseki**	**2.25**	**289**	P		Pn	03 40 39.8 +1.6
JTH	**Tanohata**	**2.34**	**316**	eS		Sn	03 41 07.9 +0.8
JOM	**Ohasama**	**2.41**	**301**	P		Pn	03 40 42.0 +1.6
JOM				S		Sn	03 41 11.0 +2.2
JMM	**Marumori**	**2.53**	**262**	P		Pn	03 40 43.0 +1.0
JMM				S		Sn	03 41 12.4 +0.6
JOU	**Okura**	**2.59**	**273**	P		Pn	03 40 44.5 +1.6
JOU				S		Sn	03 41 15.6 +2.1
JRG	**Rokugo**	**2.83**	**295**	P		Pn	03 40 48.4 +2.2
JRG				S		Sn	03 41 22.9 +3.6
JYK	**Kaneyama**	**2.90**	**284**	P		Pn	03 40 49.1 +2.0
JYK				S		Sn	03 41 23.8 +2.9
JFT	**Otama**	**2.96**	**257**	S		Sn	03 41 24.1 +1.6
JTM	**Tenmabayashi**	**3.37**	**319**	S		Sn	03 41 33.1 +0.5

IDC 06 03:46:13.1±1.4, 2°.98S×139°.69E, h0km, mb3.3/2, mb1 3.4/3, mb1mx3.3/31, mbtmp3.3/3, ML3.2/1, Error ellipse: s-maj=33.9km s-min=19.7km az=142.0, Near north coast of Irian Jaya

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAY	**Jayapura**	**1.12**	**66**	Pn		Pb	03 46 35.4 +0.1
	0.3nm,0.3s,baz=93,slow=24,SNR=8.4						
JAY				Sn		Sn	03 46 54.7 +2.5
	0.4nm,0.3s,baz=90,slow=24,SNR=10						
WRA	**Warramunga Arr**	**17.65**	**197**	P		P	03 50 21.3 -0.4
	0.1nm,0.3s,baz=18,slow=12,SNR=4.9						
ASAR	**Alice Springs**	**21.31**	**195**	P		P	03 51 00.8 -0.8
	0.2nm,0.5s,baz=20,slow=9.3,SNR=3.7						
ZALV	**Zalesovo Beam**	**72.66**	**330**	P		P	03 57 42.9 +0.3
	0.4nm,0.3s,baz=140,slow=9.1,SNR=2.3						

IDC ***06*** *03:50:46.8±3.8, 34°.79N×142°.89E, h0km, mb3.5/2, mb1 3.7/5, mb1mx3.3/46, mbtmp3.7/5, ML3.6/3, MS3.0/3, Ms1 3.0/3, ms1mx2.5/33, Error ellipse: s-maj=73.7km s-min=34.6km az=46.0*

JMA ***06*** *03:50:49.1±0.5, 34°.86N×142°.90E, h66km, M3.3*

ISC 06 03:50:47.7±2.9, 34°.83N±0°.06×142.77E±0°.09, h9km±15km, n20, σ1§12/27, MS3.0/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**1.48**	**264**	P		**Pb**	**03 51 15.3 +0.2**
BSO1				eS		**Sg**	**03 51 35.4 +0.1**
BSO2	**Boso 2**	**1.66**	**268**	eS		**Sg**	**03 51 40.5 -0.4**
CHOJ	**Chosi**	**1.79**	**300**	P		**Pn**	**03 51 19.9 +1.2**
BSO3	**Boso 3**	**1.86**	**270**	P		**Pb**	**03 51 21.3 -0.3**
BSO3				eS		**Sg**	**03 51 46.3 -1.0**
BSO4	**Boso 4**	**2.00**	**275**	P		**Pb**	**03 51 24.1 -0.1**
BSO4				eS		**Sb**	**03 51 49.4 +0.2**
JIM2	**Oshima 3**	**2.75**	**269**	P		**Pn**	**03 51 32.1 +0.2**
JIM2				eS		**Sn**	**03 52 04.7 -0.6**
JHJ2	**Mitsune**	**2.99**	**236**	eS		**Sn**	**03 52 09.6 -1.6**
JHJ	**Hachijo jima 2**	**3.01**	**236**	Pn		**Pn**	**03 51 36.6 +1.1**
	14nm,0.3s,baz=270,slow=20,SNR=5.1						
JHJ				Sn		**Sn**	**03 52 09.8 -1.9**
	20nm,0.3s,baz=71,slow=22,SNR=6.0						
JOD2	**Odawara 2**	**3.05**	**279**	P		**Pn**	**03 51 35.1 -1.0**
JOD2				eS		**Sn**	**03 52 12.1 -0.6**
JAG	**Ashikaga**	**3.13**	**302**	P		**Pn**	**03 51 38.2 +1.0**
JAG				S		**Sn**	**03 52 15.0 +0.2**
JFT	**Otama**	**3.33**	**325**	P		**Pn**	**03 51 40.0 +0.1**
JFT				eS		**Sn**	**03 52 16.6 -3.0**
JRY	**Ryogami san**	**3.37**	**292**	P		**Pn**	**03 51 42.3 +1.8**
JRY				eS		**Sn**	**03 52 21.0 +0.3**
JYN	**Shimob**	**3.52**	**282**	P		**Pn**	**03 51 43.7 +1.1**
JYN				eS		**Sn**	**03 52 24.9 +0.4**
MJAR	**Matsushiro Arr**	**4.08**	**296**	Pn		**Pn**	**03 51 51.4 +1.0**
	1.4nm,0.3s,baz=101,slow=7.2,SNR=13						
JCJ	**Chichijima**	**7.72**	**184**	Pn		**Pn**	**03 52 39.6 -0.7**
	3.3nm,0.3s,baz=88,slow=21,SNR=4.6						
SONM	**Songino Array**	**29.96**	**307**	LR		LR	04 10 56.0
	comp=Z,38nm,18.7s,baz=85,slow=40						
JAY	**Jayapura**	**37.20**	**183**	LR		LR	04 11 07.5
	comp=Z,18nm,20.1s,baz=2.0,slow=33						
WRA	**Warramunga Arr**	**55.05**	**190**	P		**P**	**04 00 21.0 +1.2**
	0.6nm,0.7s,baz=12,slow=7.3,SNR=4.9						
ASAR	**Alice Springs**	**58.78**	**190**	P		**P**	**04 00 46.2 -0.1**
	0.2nm,0.6s,baz=9.5,slow=7.9,SNR=3.2						
NOA	**NORSAR Array B**	**76.64**	**338**	LR		LR	04 39 45.5
	comp=Z,8.4nm,20.9s,baz=0.0,slow=38						

SJA ***06*** *03:51:03.1±0.4, 23°.94S×67°.07W, h200km±6km, ML1.9, MW2.5*

ISCJB ***06*** *03:51:05.0±0.7, 23°.94S±0°.08×67°.20W±0°.05, h178km, Error ellipse: s-maj=11.6km s-min=5.3km az=18.2*

GUC ***06*** *03:51:06.1±0.5, 23°.66S×67°.73W, h243km±11km, ML3.7*

ISC 06 03:51:04.8±1.4, 23°.96S±0°.09×67°.16W±0°.05, h178km, n12, σ1§03/21, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SLA	**San Lorenzo**	**1.69**	**117**	iP		**Pn**	**03 51 39.0 +0.2**
HJA	**Humahuaca**	**1.77**	**66**	iP		**Pn**	**03 51 40.1 +0.3**
HJA				iS		**Sn**	**03 52 07.3 +0.5**
HJA				IAML			03 52 10.3
	comp=Z,10nm,0.5s						
AZAP	**Zapla**	**1.93**	**98**	iP		**Pn**	**03 51 41.0 -0.3**
LVC	**Limon Verde**	**2.09**	**309**	iP		**Pn**	**03 51 44.2 +1.0**
LVC				iS		**Sn**	**03 52 14.5 +1.6**
YJA	**Yavi**	**2.33**	**41**	iP		**Pn**	**03 51 46.1 +0.1**
YJA				IAML			03 52 20.5
	comp=Z,2.0nm,0.7s						
PB06	**IPOC Station P**	**2.54**	**299**	iP		**Pn**	**03 51 49.0 +0.9**
PB06				iS		**Sn**	**03 52 21.8 +0.2**
PB06				IAML			03 52 23.3
	comp=N,218nm,0.1s						
PB09	**IPOC Station P**	**2.88**	**318**	iP		**Pn**	**03 51 53.4 +1.3**
PB09				iS		**Sn**	**03 52 29.1 +0.1**
PB09				IAML			03 52 35.7
	comp=E,187nm,0.2s						
PB10	**IPOC Station P**	**3.14**	**277**	iP		**Pn**	**03 51 55.5 +0.4**
PB10				iS		**Sn**	**03 52 33.6 -0.7**
PB10				IAML			03 52 38.8
	comp=E,112nm,0.2s						
PB04	**IPOC Station P**	**3.19**	**300**	iP		**Pn**	**03 51 56.1 +0.3**
PB04				iS		**Sn**	**03 52 33.9 -1.7**
PB04				IAML			03 52 36.7
	comp=N,157nm,0.2s						
PB07	**IPOC Station P**	**3.35**	**311**	iP		**Pn**	**03 51 58.2 +0.3**
PB07				iS		**Sn**	**03 52 37.1 -2.2**
PB07				IAML			03 52 38.6
	comp=E,142nm,0.3s						
PB01	**IPOC Station P**	**3.61**	**323**	iP		**Pn**	**03 52 01.1 0.0**
PB01				iS		**Sn**	**03 52 43.0 -1.9**
PB01				IAML			03 52 44.3
	comp=E,69nm,0.2s						
PB08	**IPOC Station P**	**4.22**	**334**	iP		**Pn**	**03 52 09.8 +0.7**
PB08				iS		**Sn**	**03 52 58.9 -0.5**
PB08				IAML			03 53 03.8
	comp=E,36nm,0.6s						

NIED ***06*** *03:52:00, 38°.40N×144°.50E, h5km, Mw3.9 Best double couple: M0 8.31000×10^14 NP1:φs 34.00000°, δ 20.00000°, λ -88.00000°. NP2:φs 212.00000°, δ 70.00000°, λ -91.00000°.*

IDC ***06*** *03:52:28.8±1.0, 38°.32N×144°.87E, h0km, mb3.7/10, mb1 3.9/13, mb1mx3.7/42, mbtmp3.8/13, ML3.1/3, MS2.7/4, Ms1 2.7/4, ms1mx2.4/48, Error ellipse: s-maj=26.3km s-min=18.9km az=89.0*

ISCJB ***06*** *03:52:32.7±0.7, 38°.46N±0°.05×144°.44E±0°.06, h29km, mb3.6/10, Error ellipse: s-maj=7.2km s-min=5.4km az=139.6*

JMA ***06*** *03:52:32.3±0.2, 38°.44N×144°.47E, h37km, M3.6*

ISC 06 03:52:34.3±1.0, 38°.43N±0°.07×144°.36E±0°.07, h29km, n31, σ2§11/35, mb3.7/10, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.20**	**288**	P		**Pn**	**03 53 09.0 +0.1**
JIO	**Ouri**	**2.37**	**272**	P		**Pn**	**03 53 11.3 +0.2**
JIO				eS		**Sn**	**03 53 40.0 +0.9**
JTH	**Tanohata**	**2.46**	**309**	S		**Sn**	**03 53 41.5 +0.1**
JMK	**Ichinoseki**	**2.51**	**283**	P		**Pn**	**03 53 13.7 +0.6**
JMK				S		**Sn**	**03 53 44.6 +1.8**
JOM	**Ohasama**	**2.61**	**294**	P		**Pn**	**03 53 14.8 +0.3**
JOM				S		**Sn**	**03 53 46.6 +1.4**
JMM	**Marumori**	**2.87**	**260**	P		**Pn**	**03 53 18.1 +0.1**
JMM				eS		**Sn**	**03 53 52.3 +0.7**
JOU	**Okura**	**2.91**	**270**	P		**Pn**	**03 53 19.6 +1.0**
JOU				S		**Sn**	**03 53 54.5 +2.0**
JFK	**Kawauchi**	**2.96**	**250**	P		**Pn**	**03 53 18.9 -0.4**
JFK				S		**Sn**	**03 53 54.2 +0.4**
JRG	**Rokugo**	**3.06**	**289**	P		**Pn**	**03 53 21.2 +0.5**
JYK	**Kaneyama**	**3.17**	**280**	P		**Pn**	**03 53 23.0 +0.8**
JFT	**Otama**	**3.31**	**255**	P		**Pn**	**03 53 25.3 +1.2**
JFT				S		**Sn**	**03 54 04.2 +1.7**
JTM	**Tenmabayashi**	**3.46**	**314**	P		**Pn**	**03 53 26.0 -0.2**
JTM				eS		**Sn**	**03 54 05.9 -0.4**
MJAR	**Matsushiro Arr**	**5.24**	**251**	Pn		**Pn**	**03 53 52.5 +1.8**
	2.8nm,0.3s,baz=65,slow=9.6,SNR=23						
MJAR				Sn		**Sb**	**03 54 59.4 -8.3**
	0.2nm,0.3s,baz=186,slow=22,SNR=4.2						
MJAR				LR		LR	03 56 14.4
	comp=Z,76nm,18.2s,baz=345,slow=40						
MAT	**Matsushiro**	**5.25**	**251**	P		**Pn**	**03 53 52.5 +1.8**
MAT				S		**Sn**	**03 54 55.1 +4.9**
ASAJ	**Asahikawa**	**5.83**	**347**	Pn		**Pn**	**03 53 58.5 -0.2**
	0.5nm,0.3s,baz=342,slow=31,SNR=2.9						
ASAJ				Sn		**Sn**	**03 55 05.7 +1.0**
	1.5nm,0.3s,baz=242,slow=29,SNR=3.2						
USRK	**Ussuriysk Ar.**	**10.94**	**306**	Pn		**Pn**	**03 55 10.6 +1.9**
	0.2nm,0.3s,baz=113,slow=12,SNR=8.1						
USRK				LR		LR	03 59 01.3
	comp=Z,42nm,18.2s,baz=46,slow=35						
JNU	**Nakatsue**	**12.16**	**248**	LR		LR	04 00 24.4
	comp=Z,36nm,19.3s,baz=116,slow=38						
KSRS	**Korea Array**	**13.02**	**271**	LR		LR	03 59 51.5
	comp=Z,35nm,21.5s,baz=88,slow=33						
SEY	**Seymchan**	**25.01**	**9**	P		**P**	**03 57 55.3 -0.1**
	1.3nm,0.6s,baz=145,slow=5.5,SNR=3.6						
H11N2	**WAKE ISLAND Hy**	**26.99**	**127**	T		T	04 26 01.7
	baz=332						
H11N1	**WAKE ISLAND Hy**	**27.00**	**127**	T		T	04 26 03.2
	baz=332						
H11N3	**WAKE ISLAND Hy**	**27.01**	**127**	T		T	04 26 03.0
	baz=332						
SONM	**Songino Array**	**29.00**	**301**	P		P	03 58 34.3 +2.7
	0.5nm,0.6s,baz=95,slow=8.6,SNR=3.6						
ZALV	**Zalesovo Beam**	**42.73**	**311**	P		**P**	**04 00 30.3 +1.8**
	0.5nm,0.4s,baz=79,slow=9.2,SNR=2.5						
MKAR	**Makanchi Array**	**45.37**	**301**	P		**P**	**04 00 51.2 +1.3**
	0.5nm,0.7s,baz=83,slow=9.9,SNR=5.9						
WRA	**Warramunga Arr**	**58.82**	**191**	P		**P**	**04 02 28.5 -1.5**
	1.2nm,0.7s,baz=12,slow=7.4,SNR=12						
YKA	**Yellowknife Ar**	**61.41**	**31**	P		**P**	**04 02 44.8 -2.5**
	0.1nm,0.7s,baz=299,slow=6.5,SNR=3.2						
ASAR	**Alice Springs**	**62.54**	**191**	P		**P**	**04 02 54.4 -1.0**
	0.5nm,0.8s,baz=7.0,slow=8.4,SNR=5.4						
FINES	**FINESS Array B**	**68.65**	**333**	P		**P**	**04 03 35.1 +0.8**
	1.3nm,0.8s,baz=52,slow=7.5,SNR=4.2						
KBZ	**Khabaz**	**71.75**	**312**	P		**P**	**04 03 55.9 +2.3**
	1.9nm,0.8s,baz=36,slow=4.1,SNR=3.8						
BRTR	**Keskin Array B**	**79.65**	**313**	P		P	04 04 41.5 +2.4
	0.5nm,0.8s,baz=8.2,slow=11,SNR=3.6						

IDC ***06*** *03:59:29.5±0.8, 37°.74S×176°.52E, h174km±6km, mb3.7/4, mb1 3.9/4, mb1mx3.6/27, mbtmp4.2/4, Error ellipse: s-maj=34.8km s-min=19.9km az=44.0*

ISCJB ***06*** *03:59:30.3±0.2, 38°.31S±0°.02×175°.94E±0°.04, h177km±2km, mb4.6/16, Error ellipse: s-maj=5.4km s-min=3.9km az=19.0*

NEIC ***06*** *03:59:30.9, 38°.17S×176°.04E, h174km, mb4.3/6, After WEL.*

WEL ***06*** *03:59:31.3±0.3, 38°.18S×176°.05E, h171km±2km, ML5.2/21, Error ellipse: s-maj=1.4km s-min=1.1km az=90.0*

WEL Felt from Bay of Plenty to Nelson, maximum reported intensity MM 4.

ISC 06 03:59:31.3±0.6, 38°.40S±0°.04×175°.95E±0°.04, h173km±5km, n187, σ1§87/201, mb4.6/16, 56C-29D, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GRRZ	**Galatos Road**	**0.13**	**69**	⇓PN		**Pn**	**03 59 54.2 -0.1**
GRRZ				SN		**Sn**	**04 00 11.9 0.0**
WPRZ	**Whakapapatarin**	**0.21**	**126**	⇑PN		**Pn**	**03 59 54.5 +0.1**
HRRZ	**Handcock Road**	**0.26**	**88**	⇓PN		**Pn**	**03 59 54.4 -0.1**
TLZ	**Tolley Road**	**0.33**	**282**	⇑PN		**Pn**	**03 59 55.0 +0.3**
HLRZ	**Highlands Stat**	**0.35**	**65**	PN		**Pn**	**03 59 54.6 -0.2**
ALRZ	**Allen Road**	**0.35**	**118**	PN		**Pn**	**03 59 54.9 +0.2**
WATZ	**Wairara**	**0.35**	**209**	⇑PN		**Pn**	**03 59 55.5 +0.8**
PRRZ	**Plateau Road**	**0.36**	**106**	PN		**Pn**	**03 59 54.6 -0.1**
OMRZ	**Omania**	**0.44**	**49**	⇓PN		**Pn**	**03 59 54.1 -1.0**
KARZ	**Kaharoa**	**0.44**	**32**	⇓PN		**Pn**	**03 59 54.0 -1.0**
KARZ				SN		**Sn**	**04 00 12.3 -1.0**
RRRZ	**Republican Roa**	**0.45**	**83**	⇓PN		**Pn**	**03 59 54.4 -0.6**
TARZ	**Mount Tarawera**	**0.47**	**70**	PN		**Pn**	**03 59 54.6 -0.6**
RATZ	**Rangitukua**	**0.49**	**197**	PN		**Pn**	**03 59 56.1 +0.8**
HATZ	**Hinemaiaia**	**0.51**	**167**	⇑PN		**Pn**	**03 59 55.9 +0.6**
LIRZ	**Lichensteins R**	**0.52**	**41**	⇓PN		**Pn**	**03 59 54.3 -1.1**
KMRZ	**Kaimai**	**0.55**	**359**	⇓PN		**Pn**	**03 59 54.5 -1.1**
MRHZ	**Matea Rd**	**0.57**	**140**	⇑PN		**Pn**	**03 59 55.9 +0.3**
RITZ	**Rihia Road**	**0.58**	**187**	⇑PN		**Pn**	**03 59 56.9 +1.3**
KATZ	**Kakaramea**	**0.61**	**199**	⇑PN		**Pn**	**03 59 57.1 +1.1**
MUGZ	**Murupara**	**0.65**	**97**	PN		**Pn**	**03 59 55.2 -0.7**
MARZ	**Manawahe**	**0.70**	**54**	⇓PN		**Pn**	**03 59 55.2 -1.2**
TGRZ	**Tauranga**	**0.71**	**20**	⇓PN		**Pn**	**03 59 54.8 -1.6**
OPRZ	**Ohinepanea**	**0.73**	**41**	⇓PN		**Pn**	**03 59 54.8 -1.6**
KRVZ	**Karewarewa**	**0.74**	**199**	⇑PN		**Pn**	**03 59 57.8 +1.2**
TOZ	**Tahuroa Road**	**0.75**	**332**	⇓PN		**Pn**	**03 59 55.6 -1.0**
WTVZ	**West Tongariro**	**0.77**	**201**	⇑PN		**Pn**	**03 59 58.1 +1.3**
TWVZ	**Taurewa**	**0.78**	**211**	⇑PN		**Pn**	**03 59 58.3 +1.4**
OTVZ	**Oturere**	**0.80**	**196**	⇑PN		**Pn**	**03 59 58.4 +1.4**
NGZ	**Ngauruhoe**	**0.82**	**199**	⇑PN		**Pn**	**03 59 58.4 +1.2**
HIZ	**Hauiti**	**0.87**	**262**	⇑PN		**Pn**	**03 59 58.1 +0.8**
HIZ	**Hauiti**	**0.87**	**262**	ePn		**Pn**	**03 59 58.2 +1.0**
HIZ				eSn		**Sn**	**04 00 17.4 +0.1**
BKZ	**Black Stump Fm**	**0.88**	**151**	⇑PN		**Pn**	**03 59 58.2 +0.8**
BKZ				AML		AML	04 00 18.4
BKZ				AML		AML	04 00 19.8
BKZ	**Black Stump Fm**	**0.88**	**151**	ePn		**Pn**	**03 59 58.4 +1.0**
BKZ				eSn		**Sn**	**04 00 11.4 -6.3**
TUVZ	**Tukino**	**0.90**	**195**	⇑PN		**Pn**	**03 59 59.2 +1.6**
FWVZ	**Far West T-bar**	**0.91**	**200**	⇑PN		**Pn**	**03 59 59.1 +1.2**
URZ	**Urewera**	**0.92**	**82**	P		**Pn**	**03 59 56.2 -1.5**
	326nm,0.3s,baz=257,slow=5.5,SNR=1268						
URZ				S		**Sn**	**04 00 14.3 -3.7**
	760nm,0.3s,baz=275,slow=2.8,SNR=107						
URZ	**Urewera**	**0.92**	**82**	⇓PN		**Pn**	**03 59 56.1 -1.5**
URZ				SN		**Sn**	**04 00 14.4 -3.6**
URZ				AML		AML	04 00 15.2
URZ	**Urewera**	**0.92**	**82**	ePn		**Pn**	**03 59 56.3 -1.5**
URZ				eS		**Sn**	**04 00 11.6 -6.4**
DRZ	**Dome Shelter**	**0.93**	**199**	PN		**Pn**	**03 59 59.7 +1.6**
WHVZ	**Whangaehu Hut**	**0.93**	**198**	⇓PN		**Pn**	**03 59 59.4 +1.5**
NMHZ	**Naumai**	**0.97**	**136**	⇑PN		**Pn**	**03 59 59.5 +1.4**
WNVZ	**Wahianoa**	**0.97**	**196**	⇑PN		**Pn**	**03 59 59.7 +1.5**
PKVZ	**Pokaka**	**1.01**	**208**	PN		**Pn**	**03 59 59.9 +1.5**
MOVZ	**Moawhango**	**1.02**	**189**	⇑PN		**Pn**	**03 59 59.8 +1.3**
RAHZ	**Arahi**	**1.03**	**121**	⇑PN		**Pn**	**03 59 59.1 +0.7**
MTVZ	**Mangateitei**	**1.05**	**201**	PN		**Pn**	**04 00 00.4 +1.7**
KWHZ	**Kaweka Forest**	**1.09**	**160**	⇑PN		**Pn**	**04 00 00.4 +1.4**
BHHZ	**Black Hill Sta**	**1.09**	**175**	⇑PN		**Pn**	**04 00 00.3 +1.3**
MYRZ	**Mayor Island**	**1.14**	**12**	PN		**Pn**	**03 59 57.5 -2.0**
**S

BFZ	Birch Farm	2.29 174	ePn	Pn	04 00 12.1	+1.0
BFZ			eSn	Sn	04 00 36.9	-5.2
TIWZ	Tintock	2.38 181	⇑PN	Pn	04 00 13.1	+1.0
TIWZ			AML	AML	04 00 46.8	
TIWZ			AML	AML	04 00 47.3	
OGWZ	Otaki Gorge	2.49 194	⇑PN	Pn	04 00 14.5	+1.1
CPWZ	Castlepoint	2.52 176	⇑PN	Pn	04 00 15.2	+1.5
HOWZ	Holdsworth Sta	2.52 188	⇑PN	Pn	04 00 14.5	+0.8
KIW	Kapiti Island	2.59 198	⇑PN	Pn	04 00 15.2	+0.7
KIW			AML	AML	04 00 51.2	
KIW			AML	AML	04 00 51.8	
TMWZ	Te Maipa	2.71 181	PN	Pn	04 00 16.6	+0.6
MTW	Mount Morrison	2.78 187	⇑PN	Pn	04 00 17.3	+0.4
MTW			AML	AML	04 00 55.0	
MTW			AML	AML	04 00 55.7	
CAW	Cannon Point	2.79 194	PN	Pn	04 00 17.6	+0.6
CAW			AML	AML	04 00 55.5	
CAW			AML	AML	04 00 57.4	
DUWZ	D'Urville Isla	2.87 212	PN	Pn	04 00 18.4	+0.5
TRWZ	Traveller	3.00 184	⇑PN	Pn	04 00 20.0	+0.4
TRWZ			AML	AML	04 01 00.5	
TRWZ			AML	AML	04 01 02.0	
PAWZ	Paruwai Farm	3.01 188	⇑PN	Pn	04 00 19.9	+0.3
PAWZ			AML	AML	04 00 58.1	
PAWZ			AML	AML	04 01 00.4	
WEL	Wellington	3.02 197	PN	Pn	04 00 20.3	+0.5
WEL			AML	AML	04 01 00.3	
MSWZ	Moikau Station	3.06 190	⇑PN	Pn	04 00 20.5	+0.2
MSWZ			AML	AML	04 00 59.0	
MSWZ			AML	AML	04 01 00.8	
SNZO	South Karori	3.06 198	ePn	Pn	04 00 20.4	+0.2
SNZO			eS	Sn	04 00 57.1	-1.4
TCW	Tory Channel	3.09 204	⇑PN	Pn	04 00 20.9	+0.3
TCW			AML	AML	04 01 01.6	
TCW			AML	AML	04 01 02.0	
BHW	Baring Head	3.12 195	⇑PN	Pn	04 00 21.1	+0.2
BHW			AML	AML	04 01 02.0	
BHW			AML	AML	04 01 02.8	
PLWZ	Palliser	3.21 189	⇑PN	Pn	04 00 22.2	0.0
TUWZ	Tuamarina	3.40 206	PN	Pn	04 00 24.5	+0.1
TUWZ			AML	AML	04 01 06.6	
TUWZ			AML	AML	04 01 09.2	
NNZ	Nelson	3.44 214	⇑PN	Pn	04 00 24.9	-0.1
QRZ	Quartz Range	3.59 226	PN	Pn	04 00 26.3	-0.6
BSWZ	Blackbirch Sta	3.68 205	PN	Pn	04 00 27.9	0.0
BSWZ			AML	AML	04 01 15.6	
BSWZ			AML	AML	04 01 15.9	
OUZ	Omahuta	3.69 329	ePn	Pn	04 00 26.7	-1.5
OUZ			eS	Sn	04 01 01.7	-11
THZ	Tophouse	4.09 214	PN	Pn	04 00 32.8	-0.5
THZ	Tophouse	4.09 214	ePn	Pn	04 00 34.6	+1.3
THZ			eSn	Sn	04 01 18.7	-3.2
KHZ	Kahutara	4.42 204	PN	Pn	04 00 37.0	-0.4
KHZ	Kahutara	4.42 204	ePn	Pn	04 00 37.2	-0.1
KHZ			eS	Sn	04 01 28.2	-1.1
DSZ	Denniston Nort	4.61 222	PN	Pn	04 00 39.2	-0.8
LTZ	Lake Taylor	5.20 211	PN	Pn	04 00 46.8	-0.8
LTZ	Lake Taylor	5.20 211	ePn	Pn	04 00 47.6	-0.1
INZ	Inchbonnie	5.52 217	PN	Pn	04 00 49.9	-1.8
OXZ	Oxford	5.75 210	PN	Pn	04 00 52.9	-1.9
OXZ	Oxford	5.75 210	ePn	Pn	04 00 53.7	-1.1
CRLZ	Canterbury Las	5.75 205	⇑PN	Pn	04 00 53.5	-1.3
CRLZ	Canterbury Las	5.75 205	ePn	Pn	04 00 53.3	-1.5
CRLZ			eSn	Sn	04 01 51.0	-10
MQZ	McQueen's Vall	5.86 204	⇓PN	Pn	04 00 54.2	-2.0
MQZ	McQueen's Vall	5.86 204	ePn	Pn	04 00 54.5	-1.7
WVZ	Waitaha Valley	6.12 219	PN	Pn	04 00 58.3	-1.4
RPZ	Rata Peaks	6.47 213	P	Pn	04 01 04.9	+0.6
	11nm,0.3s,baz=202,slow=3.2,SNR=26					
RPZ			S	Sn	04 02 13.4	-4.3
	30nm,0.3s,baz=198,slow=22,SNR=26					
RPZ	Rata Peaks	6.47 213	PN	Pn	04 01 03.5	-0.9
RPZ	Rata Peaks	6.47 213	ePn	Pn	04 01 04.0	-0.4
RPZ			eS	Sn	04 02 09.5	-8.2
FOZ	Fox Glacier	6.92 220	PN	Pn	04 01 09.1	-1.0
FOZ	Fox Glacier	6.92 220	ePn	Pn	04 01 09.8	-0.3
FOZ			eSn	Sn	04 02 21.2	-6.9
LBZ	Lake Benmore	7.39 214	PN	Pn	04 01 14.9	-1.5
LBZ	Lake Benmore	7.39 214	ePn	Pn	04 01 16.2	-0.2
ODZ	Otahua Downs	7.73 209	PN	Pn	04 01 19.8	-1.1
ODZ	Otahua Downs	7.73 209	ePn	Pn	04 01 20.0	-1.0
ODZ			eS	Sn	04 02 38.9	-8.7
CTZ	Chatham Island	7.74 136	PN	Pn	04 01 22.5	+1.5
JCZ	Jackson Bay	7.83 221	PN	Pn	04 01 19.9	-2.4
WKZ	Wanaka	8.26 217	PN	Pn	04 01 25.5	-2.3
WKZ	Wanaka	8.26 217	ePn	Pn	04 01 25.4	-2.5
EAZ	Earnscleugh	8.44 214	PN	Pn	04 01 28.6	-1.6
MLZ	Mavora Lakes	9.09 217	ePn	Pn	04 01 37.7	-1.1
MLZ			eSn	Sn	04 03 10.3	-10
WHZ	Wether Hill Ro	9.56 216	ePn	Pn	04 01 45.4	+0.4
WHZ			eS	Sn	04 03 27.2	-4.0
DCZ	Deep Cove	9.63 220	ePn	Pn	04 01 44.2	-1.7
DZM	Mont Dzumac	18.21 331	P	Pn	04 03 31.8	-1.6
	0.2nm,0.3s,baz=157,slow=14,SNR=4.6					
STKA	Stephens Creek	28.72 273	P	P	04 05 14.7	+2.3
	1.7nm,0.8s,baz=139,slow=11,SNR=3.1					
AS01	Alice Springs	38.53 280	eP	P	04 06 37.3	+0.2
AS31	Alice Springs	38.56 280	eP	P	04 06 38.5	+1.2
	1.7nm,0.8s					
ASAR	Alice Springs	38.57 280	P	P	04 06 38.0	+0.6
	1.9nm,0.3s,baz=118,slow=6.3,SNR=54					
VNDA	Vanda	39.69 185	P	P	04 06 50.4	+4.5
	4.1nm,0.8s,baz=2.6,slow=6.0,SNR=16					
VNDA	Vanda	39.69 185	eP	P	04 06 50.3	+4.3
	3.6nm,0.7s					
WB2	Warramunga Arr	40.31 285	eP	P	04 06 51.2	-0.6
	42nm,2.0s					
WRAB	Tennant Creek	40.32 285	eP	P	04 06 52.6	+0.7
	4.0nm,1.1s					
WRA	Warramunga Arr	40.32 285	P	P	04 06 52.1	+0.2
	1.1nm,0.6s,baz=124,slow=8.1,SNR=9.0					
CASY	Casey	45.74 211	eP	P	04 07 34.9	+0.2
	25nm,1.5s					
QSPA	South Pole Qui	51.73 180	eP	P	04 08 24.3	+3.7
	58nm,0.8s					
SYO	Syowa Base	68.15 196	eP	P	04 10 11.2	-0.9
SNAA	Sanae	70.23 180	P	P	04 10 26.3	+1.4
SNAA	Sanae	70.23 180	eP	P	04 10 26.4	+1.4
	832nm,1.5s					
VNA3	Neumayer Olymp	70.59 178	P	P	04 10 28.5	+1.5
VNA2	Neumayer--Watz	70.96 179	P	P	04 10 31.1	+1.8
	baz=170,slow=5.1					
VNA1	Neumayer--Stat	71.22 179	P	P	04 10 32.9	+2.1
NJ2	Nanjing	87.95 314	eP	P	04 12 00.8	-0.5
NJ2			pmax	pmax		
	comp=Z,6.0nm,0.5s					
KMI	Kunming	93.18 300	P	P	04 12 25.7	-0.4
KMI			pmax	pmax		
	comp=Z,5.0nm,1.0s					
BJI	Beijing	95.32 318	P	P	04 12 37.2	+1.9
BJI			pmax	pmax		
	comp=Z,7.0nm,0.4s					
CD2	Chengdu	96.30 305	P	P	04 12 41.0	+1.0
CD2			pmax	pmax		
	comp=Z,1.0nm,0.6s					
HHC	Hu-ho-hao-te	98.36 316	eP	Pdif	04 12 52.4	+3.2
HHC			pmax	pmax		
	comp=Z,32nm,1.4s					
HHC			pmax	pmax		
	comp=Z,63nm,7.4s					
LZH	Lanzhou	99.62 309	eP	Pdif	04 12 57.3	+2.3
LZH			pP	pP	04 13 40.6	+2.2
LZH			sP	sP	04 13 57.6	+1.1
LZH			pmax	pmax		
	comp=Z,13nm,1.0s					
MKAR	Makanchi Array	118.94 308	PKP	PKPdf	04 17 54.9	-3.8
	comp=Z,0.1nm,0.2s,baz=51,slow=3.0,SNR=3.1					
ABKAR	Akbulak array	133.87 305	ePKPdf	PKPdf	04 18 27.1	+0.1
ARCES	ARCESS Array B	145.03 342	PKP	PKPbc	04 18 44.7	-1.8
	comp=Z,2.1nm,1.0s,baz=68,slow=3.4,SNR=5.0					
LIC	Lamto	147.96 178	ePKP1	PKPab	04 18 59.6	0.0
	comp=Z,13nm,0.4s					
KIC	Kosan Boka	148.10 179	ePKP1	PKPab	04 19 00.2	0.0
	comp=Z,29nm,0.8s					
TIC	Toumodi	148.38 178	ePKP1	PKPab	04 19 01.2	-0.1
FINES	FINESS Array B	150.34 331	PKPbc	PKPbc	04 18 59.2	-1.8
	comp=Z,0.7nm,0.7s,baz=183,slow=32,SNR=3.5					
BRTR	Keskin Array B	150.84 285	PKPbc	PKPbc	04 19 01.5	-1.7
	comp=Z,1.5nm,0.8s,baz=150,slow=5.3,SNR=8.0					
TORD	Torodi Ar. Bea	154.34 193	PKP	PKPdf	04 19 00.9	-2.1
	comp=Z,0.7nm,1.1s,baz=212,slow=5.3,SNR=2.5					
TORD			PKPbc	PKPbc	04 19 10.6	-0.8
	comp=Z,0.4nm,0.5s,baz=158,slow=3.1,SNR=9.7					
TORD			PKPab	PKPab	04 19 25.9	-0.2
	comp=Z,1.0nm,0.6s,baz=163,slow=3.1,SNR=13					

TAP 06 04:05:27.4, 24°.25N×121°.09E, h13km±1km, ML2.8, 1C, B, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWT	Tachien	0.08	90	i P	Pg	04 05 30.6	+0.2
	baz=93						
TWT				eS	Sg	04 05 32.2	-0.3
	baz=93						
WHF	Hehuan Shan	0.19	124	⇑ i P	Pb	04 05 32.6	-0.4
	baz=123						
TWQ1	Liyutan	0.30	288	eP	Pb	04 05 34.5	-0.2
	baz=288						
NNS	Nan Shan	0.32	54	P	Pb	04 05 34.6	-0.4
	baz=55						
SMLT	Sun Moon Lake	0.41	205	P	Pb	04 05 36.3	-0.2
	baz=204						
TYC	Yuchr	0.41	212	P	Pb	04 05 36.2	-0.2
	baz=210						
NSK	Sanguang	0.49	30	P	Pb	04 05 37.9	+0.1
	baz=30						
WDT	Danda	0.50	176	eP	Pg	04 05 37.2	-0.1
	baz=174						
ESL	Shilin	0.54	144	eP	Pg	04 05 38.2	+0.3
	baz=143						
CHN5	Tsauling	0.76	210	eP	Pn	04 05 43.8	0.0
	baz=210						

TAP 06 04:05:32.0, 24°.24N×121°.15E, h15km, ML2.8, A, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWT	Tachien	0.03	54	i P	Pg	04 05 35.0	+0.1
	baz=35						
TWT				S	Sg	04 05 36.4	-0.4
	baz=35						
WHF	Hehuan Shan	0.14	132	i P	Pb	04 05 37.0	+0.4
	baz=131						
WHF				eS	Sb	04 05 39.9	+0.4
	baz=131						
WHF	Hehuan Shan	0.14	132	eS	Pb	04 05 36.9	+0.4
	baz=123						
NNS	Nan Shan	0.28	45	P	Pb	04 05 39.0	+0.1
	baz=46						
NNS				eS	Sb	04 05 43.1	-0.4
	baz=46						
TWQ1	Liyutan	0.36	288	eP	Pn	04 05 41.8	-0.9
	baz=287						
TWQ1				eS	Sb	04 05 45.8	+0.1
	baz=287						
NSTT	Nanjuang	0.41	341	P	Pb	04 05 41.7	+0.7
	baz=341						
NSTT				S	Sb	04 05 47.5	+0.3
	baz=341						
SMLT	Sun Moon Lake	0.42	213	P	Pg	04 05 40.5	0.0
	baz=212						
TYC	Yuchr	0.43	219	eP	Pg	04 05 40.5	-0.1
	baz=217						
TWD	Chiawan	0.43	111	P	Pb	04 05 41.8	+0.5
	baz=110						
TWD				eS	Sb	04 05 47.9	+0.3
	baz=110						
NSK	Sanguang	0.47	23	P	Pb	04 05 42.4	+0.3
	baz=24						
NSK				S	Sb	04 05 48.6	-0.3
	baz=24						
WDT	Danda	0.48	182	P	Pg	04 05 41.6	-0.1
	baz=181						
ESL	Shilin	0.49	149	P	Pb	04 05 42.6	+0.3
	baz=148						
ESL				S	Sg	04 05 48.3	-0.1
	baz=148						
ENTT	Nioudou	0.55	43	eP	Pb	04 05 43.6	+0.3
	baz=43						
ENTT				eS	Sb	04 05 51.5	+0.5
	baz=43						
ENA	Nanau	0.57	70	P	Pb	04 05 44.1	+0.5
	baz=71						
ENA				eS	Sb	04 05 51.7	+0.2
	baz=71						
TWE	Neicheng	0.67	44	eP	Pb	04 05 46.1	+0.8
	baz=45						
TWC	Suao	0.73	60	eP	Pb	04 05 47.0	+0.6
	baz=60						
TWC				eS	Sb	04 05 57.2	+0.9
	baz=60						
YUS	Yu-Shan	0.77	194	eP	Pg	04 05 46.2	-0.8
	baz=193						
CHN5	Tsauling	0.77	214	eP	Pn	04 05 48.0	-0.4
	baz=214						
CHN5				eS	Sn	04 05 59.1	-0.7
	baz=214						
TWF1	Yuli	0.89	171	eP	Pb	04 05 49.0	-0.1
	baz=171						
TWF1				eS	Sg	04 06 01.4	+0.4
	baz=171						
CHN4	Tsaushan	1.02	210	P	Pn	04 05 52.5	+0.7
	baz=210						
STYT	Tauyuan	1.13	199	P	Pg	04 05 53.6	-0.2
	baz=198						
CHN1	Nanshi	1.20	209	eP	Pg	04 05 55.1	0.0
	baz=208						
CHN1				eS	Sg	04 06 11.9	+1.3
	baz=208						
SGST	Jiashian	1.26	205	eP	Pg	04 05 56.8	+0.5
	baz=204						
SGST				eS	Sg	04 06 13.7	+0.9
	baz=204						
TWG	Pinlang	1.41	183	eP	Pb	04 05 58.1	+0.1
	baz=182						

*IDC **06** 04:10:08.9±0.5, 2°.81S×139°.32E, h0km, mb4.2/15, mb1 4.4/16, mb1mx4.2/38, mbtmp4.2/16, ML4.5/1, MS3.9/8, Ms1 3.9/8, ms1mx3.4/32, Error ellipse: s-maj=13.3km s-min=10.4km az=105.0*
*DJA **06** 04:10:09.6±1.5, 4°.S±13°.×14°.0E±°, h25km±17km, M4.5/3, mB4.9/1, mb4.5/1, MLv4.5/3, Mw(mB)4.2/1*
*NEIC **06** 04:10:12.3±2.5, 2°.77S×139°.22E, h21km±18km, mb4.6/18, Error ellipse: s-maj=8.3km s-min=7.1km az=64.0*
*ISCJB **06** 04:10:13.6±0.3, 2°.88S±0°.03×139°.20E±0°.04, h46km, mb4.4/32, MS3.9/8, Error ellipse: s-maj=5.8km s-min=4.9km az=9.5*
ISC 06 04:10:15.2±0.4, 2°.93S±0°.05×139°.31E±0°.04, h46km, n67, σ2°.32/72, mb4.3/32, MS4.0/9, Near north coast of Irian Jaya

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GENI	Genyem	0.92	69	P	Pn	04 10 28.6	-3.1
GENI				S	Sn	04 10 44.4	+0.6
JAY	Jayapura	1.45	74	Pg	Pn	04 10 35.3	-3.7
	13nm,0.3s,baz=257,slow=20,SNR=138						
JAY				Lg	Lg	04 10 53.1	
	27nm,0.3s,baz=90,slow=20,SNR=28						
JAY	Jayapura	1.45	74	P	Pn	04 10 35.4	-3.6
JAY				S	Sn	04 10 53.7	-3.2
FAKI	Fak Fak	7.06	270	P	Pn	04 11 55.8	-0.2
FAKI	Fak Fak	7.06	270	ePn	Pn	04 11 55.5	-0.5
FAKI				eSn	Sn	04 13 13.4	-1.5
PMG	Port Moresby	10.11	130	Pn	Pn	04 12 45.6	+7.8
	1.6nm,0.3s,baz=322,slow=8.7,SNR=8.3						
PMG	Port Moresby	10.11	130	ePn	Pn	04 12 41.0	+3.2
COEN	Coen	11.61	161	ePn	Pn	04 13 00.7	+2.4
MTN	Manton Dam	12.75	219	ePn	Pn	04 13 13.8	-0.2
SOEI	Soe	16.41	245	ePn	Pn	04 14 01.5	-1.1
GUMO	Guam	17.31	18	LR	LR	04 20 50.9	
	comp=Z,168nm,18.0s,baz=144,slow=37						
WRAB	Tennant Creek	17.58	196	ePn	Pn	04 14 16.1	-0.9
	35nm,0.9s						
WRAB				eS	Sn	04 17 22.9	-9.1
WB2	Warramunga Arr	17.59	196	ePn	Pn	04 14 16.7	-0.4
	28nm,0.8s						
WRA	Warramunga Arr	17.60	196	P	Pn	04 14 16.4	-0.8
	1.6nm,0.3s,baz=17,slow=13,SNR=38						
WRA				S	Sn	04 17 27.7	-4.7
	0.4nm,0.3s,baz=15,slow=22,SNR=4.8						
WRA				LR	LR	04 21 44.0	
	comp=Z,702nm,18.2s,baz=10.0,slow=39						
CTA	Charters Tower	18.35	159	P	Pn	04 14 28.8	+2.4
	0.3nm,0.3s,baz=344,slow=7.4,SNR=2.8						
CTAO	Charters Tower	18.35	159	eP	Pn	04 14 28.1	+1.6
	30nm,0.7s						
FITZ	Fitzroy Crossi	20.18	221	P	P	04 14 46.7	+0.7
	12nm,0.7s,baz=40,slow=11,SNR=16						
FITZ				S	S	04 18 26.3	-3.9
	13nm,0.9s,baz=18,slow=19,SNR=3.5						
FITZ				LR	LR	04 23 25.0	
	comp=Z,505nm,18.2s,baz=28,slow=39						
FITZ	Fitzroy Crossi	20.18	221	eP	P	04 14 46.2	+0.2
	102nm,1.8s						
FITZ				eS	S	04 18 21.9	-8.2
AS01	Alice Springs	21.26	194	eP	P	04 14 58.1	+0.4
AS31	Alice Springs	21.27	194	eP	P	04 14 59.0	+1.2
	10nm,0.7s						
ASAR	Alice Springs	21.27	194	P	P	04 14 59.0	+1.1
	5.5nm,0.4s,baz=22,slow=10,SNR=60						
ASAR				S	S	04 18 56.2	+4.3
	2.3nm,0.7s,baz=14,slow=27,SNR=4.6						
MYLDM	Lahad Datu	22.30	291	eP	P	04 15 05.2	-3.8
	29nm,1.2s						
EIDS	Eidsvold	25.02	154	eP	P	04 15 37.6	+2.5
	50nm,1.5s						
MBWA	Marble Bar	26.30	225	eP	P	04 15 46.4	-0.3
	17nm,0.8s						
STKA	Stephens Creek	28.88	176	P	P	04 16 10.6	+1.0
	2.1nm,0.6s,baz=347,slow=12,SNR=6.2						
STKA				LR	LR	04 29 01.7	
	comp=Z,354nm,18.2s,baz=18,slow=39						
BBOO	Buckleboo	29.88	186	eP	P	04 16 20.1	+1.5
	3.0nm,0.4s						
JHJ	Hachijo jima 2	35.85	1	LR	LR	04 29 44.1	
	comp=Z,109nm,18.1s,baz=261,slow=33						
NJ2	Nanjing	39.84	332	eP	P	04 17 44.9	+0.6
NJ2				pmax	pmax		
	comp=Z,9.0nm,0.5s						
KSAR	Wonju Array Be	41.54	346	P	P	04 17 56.9	-1.4
KSRS	Korea Array	41.55	346	P	P	04 17 56.9	-1.4
	comp=Z,1.6nm,0.7s,baz=163,slow=8.4,SNR=4.1						
CMAR	Chiang Mai Arr	45.07	300	P	P	04 18 27.2	+0.1
	comp=Z,1.6nm,0.3s,baz=116,slow=6.1						
KMI	Kunming	45.12	310	P	P	04 18 27.1	-0.5
KMI				pmax	pmax		
	comp=Z,6.0nm,1.1s						
CD2	Chengdu	47.75	318	P	P	04 18 46.1	-1.8
CD2				pmax	pmax		
	comp=Z,2.0nm,0.6s						
CN2	Changchun	48.16	347	eP	P	04 18 52.5	+1.7
HHC	Hu-ho-hao-te	50.40	333	eP	P	04 19 10.5	+2.4
HHC				S	S	04 26 21.4	+3.0
HHC				pmax	pmax		
	comp=Z,26nm,1.1s						
HHC				pmax	pmax		
	comp=Z,50nm,6.7s						
HHC				LR	LR		
	comp=N,250nm,14.8s						
HHC				LR	LR		
	comp=E,320nm,14.8s						
HHC				LR	LR		
	comp=Z,330nm,15.3s						
KLR	Kul'dur	52.36	354	P	P	04 19 22.2	-0.3
	comp=Z,1.3nm,0.7s,baz=213,slow=0.9,SNR=4.8						
GTA	Gaotai	55.60	323	eP	P	04 19 46.7	+0.2
GTA				pP	pP	04 19 57.0	-2.5
GTA				sP	sP	04 20 01.1	-3.7
GTA				pmax	pmax		
	comp=Z,4.0nm,1.0s						
PETK	Petropavlovsk-	57.93	13	P	P	04 20 01.9	-0.7
	comp=Z,2.0nm,0.7s,baz=185,slow=11,SNR=3.1						
PETK				LR	LR	04 46 46.2	
	comp=Z,39nm,18.5s,baz=190,slow=38						
SONM	Songino Array	58.17	334	P	P	04 20 05.1	+0.5
	comp=Z,0.4nm,0.5s,baz=150,slow=3.2,SNR=2.3						
TLY	Talaya	62.26	336	P	P	04 20 31.3	-1.0
	comp=Z,2.4nm,0.6s,baz=344,slow=4.8,SNR=3.8						
TLY	Talaya	62.26	336	eP	P	04 20 31.3	-1.0
	comp=Z,10nm,0.9s						
WMQ	Urumqi	65.55	321	eP	P	04 20 54.2	0.0
WMQ				LR	LR		
	comp=Z,10.0nm,18.4s						
MK01	Makanchi Array	70.31	322	eP	P	04 21 23.9	-0.1
MK31	Makanchi Array	70.33	322	eP	P	04 21 23.3	-0.9
MKAR	Makanchi Array	70.33	322	P	P	04 21 24.4	+0.2
	comp=Z,1.7nm,0.6s,baz=113,slow=7.7,SNR=20						
MKAR	Makanchi Array	70.33	322	eP	P	04 21 22.9	-1.2
MAKZ	Makanchi	70.53	322	eP	P	04 21 24.5	-0.9
	comp=Z,3.4nm,0.6s						
KSH	Kashi	71.67	313	eP	P	04 21 34.7	+2.1
KSH				epP	pP	04 21 45.0	-0.9
KSH				S	S	04 30 50.4	+1.2
KSH				pmax	pmax		
	comp=Z,61nm,5.4s						
KSH				LR	LR		
	comp=N,150nm,8.0s						
KSH				LR	LR		
	comp=E,98nm,10.8s						
ZALV	Zalesovo Beam	72.42	330	P	P	04 21 35.5	-1.1
	comp=E,1.5nm,0.5s,baz=124,slow=6.8,SNR=6.1						
TKM2	Tokmak 2	73.12	317	eP	P	04 21 40.1	-1.1
	comp=E,1.8nm,0.8s						
KURK	Kurchatov	74.24	325	P	P	04 21 46.6	-0.8
KURBB	Kurchatov Arra	74.25	325	P	P	04 21 46.6	-0.8
	comp=E,1.0nm,0.6s,baz=112,slow=5.2,SNR=7.5						
VNDA	Vanda	75.51	175	P	P	04 21 56.7	+2.5
	comp=E,5.4nm,0.7s,baz=324,slow=6.2,SNR=40						
VNDA				LR	LR	04 55 12.9	
	comp=E,83nm,18.8s,baz=304,slow=36						
VNDA	Vanda	75.51	175	eP	P	04 21 56.8	+2.5
	comp=E,6.8nm,0.8s						
BVAR	Borovoye Array	79.83	325	P	P	04 22 18.8	0.0
	comp=E,2.2nm,0.5s,baz=125,slow=8.1,SNR=11						
BRVK	Borovoye	79.91	325	eP	P	04 22 18.9	-0.2
	comp=E,2.0nm,0.4s						
MAW	Mawson	82.15	202	LR	LR	04 56 40.6	
	comp=E,104nm,19.4s,baz=184,slow=34						
MCK	McKinley	84.62	25	eP	P	04 22 44.5	+0.9
	comp=E,1.3nm,0.5s						
ABKAR	Akbulak array	85.27	320	eP	P	04 22 46.7	-0.5
	comp=E,0.2nm,0.3s						
CCB	Clear Creek Bu	85.37	24	eP	P	04 22 47.2	0.0
	comp=E,2.2nm,0.8s						
ILAR	Eielson Array	85.78	24	P	P	04 22 48.4	-1.0
	comp=E,1.2nm,0.8s,baz=260,slow=4.5,SNR=12						
QSPA	South Pole Qui	87.02	180	eP	P	04 22 57.3	+1.7
	comp=E,16nm,0.6s						
GNI	Garni	95.37	310	eP	P	04 23 34.4	-0.7
	comp=E,39nm,0.8s						
ARCES	ARCESS Array B	100.91	341	P	Pdif	04 23 57.9	-1.3
	comp=E,0.9nm,0.6s,baz=82,slow=6.6,SNR=4.0						
TORD	Torodi Ar. Bea	136.90	286	PKP	PKPdf	04 29 34.1	+0.2
	comp=E,0.9nm,0.7s,baz=41,slow=2.2,SNR=8.9						
DBIC	Dimbokro	144.11	277	PKP	PKPbc	04 29 45.4	+0.2
	comp=E,3.3nm,0.7s,baz=31,slow=7.2,SNR=5.5						
LPAZ	La Paz	146.83	126	PKPbc	PKPab	04 29 56.2	+0.7
	comp=E,0.5nm,0.5s,baz=262,slow=7.1,SNR=2.5						

*NIED **06** 04:22:00, 38°.60N×142°.10E, h68km, Mw3.9 Best double couple: M0 7.50000×10^14 NP1:φs322.00000

mb3.8/6, New Ireland region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**7.69**	**236**	P	**Pn**	**04 32 02.7**	**+2.6**
	5.7nm,0.3s,baz=46,slow=9.7,SNR=5.8						
PMG				S	**Sn**	**04 33 24.4**	**-1.6**
	1.8nm,0.3s,baz=141,slow=9.0,SNR=2.3						
WRA	**Warramunga Arr**	**23.86**	**230**	P	**P**	**04 35 20.4**	**+0.2**
	1.0nm,0.5s,baz=54,slow=9.8,SNR=17						
ASAR	**Alice Springs**	**26.49**	**224**	P	**P**	**04 35 43.5**	**-0.6**
	0.3nm,0.4s,baz=57,slow=8.6,SNR=5.7						
STKA	**Stephens Creek**	**28.94**	**201**	P	**P**	**04 36 05.8**	**0.0**
	0.8nm,0.5s,baz=36,slow=14,SNR=4.1						
FITZ	**Fitzroy Crossi**	**30.22**	**242**	P	**P**	**04 36 15.9**	**-1.5**
	3.4nm,0.9s,baz=41,slow=11,SNR=3.6						
SONM	**Songino Array**	**66.97**	**328**	P	**P**	**04 40 59.7**	**+0.7**
	0.7nm,0.5s,baz=140,slow=7.2,SNR=4.0						
ZALV	**Zalesovo Beam**	**81.81**	**326**	P	**P**	**04 42 24.6**	**-0.4**
	0.6nm,0.3s,baz=116,slow=9.8,SNR=2.1						
TORD	**Torodi Ar. Bea**	**151.13**	**288**	PKPbc	**PKPbc**	**04 49 59.8**	**-0.4**
	0.7nm,0.4s,baz=73,slow=2.0,SNR=20						

*IDC **06** 04:32:44.2±0.5, 38.°01N×143.°94E, h0km, mb4.1/21, mb1 4.2/26, mb1mx4.1/46, mbtmp4.1/26, ML3.8/4, MS3.4/14, Ms1 3.4/14, ms1mx3.1/36, Error ellipse: s-maj=14.6km s-min=12.7km az=103.0*

*NEIC **06** 04:32:45.7±2.2, 38.°03N×144.°00E, h10km±13km, mb4.5/20, Error ellipse: s-maj=5.8km s-min=4.2km az=113.0*

*MOS **06** 04:32:47.1±1.2, 38.°13N×144.°03E, h33km, mb4.5/32, Error ellipse: s-maj=9.6km s-min=5.8km az=98.6*

*JMA **06** 04:32:47.1±0.2, 38.°08N×143.°87E, h41km, M4.4*

ISC 06 04:32:48.2±1.7, 38.°16N±0.°05×143.°97E±0.°04, h24km±12km, n136, σ1.9°71/156, mb4.3/59, MS3.5/14, 5C-2D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.02**	**298**	P	**Pn**	**04 33 19.5**	**-1.3**
OFUJ				S	**Sn**	**04 33 43.3**	**-2.0**
JIO	**Ouri**	**2.08**	**279**	P	**Pn**	**04 33 19.9**	**-1.7**
JIO				S	**Sn**	**04 33 43.3**	**-3.5**
JMK	**Ichinoseki**	**2.30**	**291**	P	**Pn**	**04 33 23.2**	**-1.3**
JMK				S	**Sn**	**04 33 50.5**	**-1.5**
JTH	**Tanohata**	**2.42**	**318**	P	**Pn**	**04 33 25.5**	**-0.7**
JTH				*e*S	**Sn**	**04 33 52.8**	**-2.2**
JOM	**Ohasama**	**2.47**	**303**	S	**Sn**	**04 33 55.2**	**-1.1**
JMM	**Marumori**	**2.53**	**264**	P	**Pn**	**04 33 25.5**	**-2.2**
JMM				S	**Sn**	**04 33 53.9**	**-3.9**
JFK	**Kawauchi**	**2.58**	**253**	P	**Pn**	**04 33 25.7**	**-2.8**
JFK				S	**Sn**	**04 33 54.7**	**-4.4**
JOU	**Okura**	**2.61**	**275**	P	**Pn**	**04 33 27.8**	**-1.1**
JRG	**Rokugo**	**2.88**	**296**	P	**Pn**	**04 33 32.2**	**-0.4**
JRG				S	**Sn**	**04 34 05.6**	**-1.0**
JANG	**Nango**	**2.92**	**320**	P	**Pn**	**04 33 33.0**	**-0.1**
JANG				S	**Sn**	**04 34 05.2**	**-2.2**
JYK	**Kaneyama**	**2.93**	**286**	P	**Pn**	**04 33 32.5**	**-0.8**
JYK				S	**Sn**	**04 34 06.6**	**-1.1**
JFT	**Otama**	**2.95**	**258**	P	**Pn**	**04 33 32.3**	**-1.2**
JFT				*e*S	**Sn**	**04 34 05.1**	**-3.1**
JTM	**Tenmabayashi**	**3.45**	**320**	P	**Pn**	**04 33 40.4**	**0.0**
JTM				S	**Sn**	**04 34 18.6**	**-1.9**
ERM	**Erimo**	**3.90**	**351**	*e*P	**Pn**	**04 33 45.9**	**-0.6**
ERM	**Erimo**	**3.90**	**351**	*e*Pn	**Pn**	**04 33 45.9**	**-0.6**
ERM				*e*Sn	**Sn**	**04 34 29.1**	**-2.4**
MJAR	**Matsushiro Arr**	**4.87**	**252**	Pn	**Pn**	**04 33 59.5**	**-0.4**
	3.3nm,0.3s,baz=66,slow=10,SNR=26						
MJAR				LR	LR	04 36 10.4	
	comp=Z,391nm,18.6s,baz=85,slow=43						
MAJO	**Matsushiro**	**4.87**	**252**	*d* iP	**Pn**	**04 33 59.4**	**-0.6**
MAJO	**Matsushiro**	**4.87**	**252**	*e*Pn	**Pn**	**04 33 59.3**	**-0.7**
MAT	**Matsushiro**	**4.87**	**252**	P	**Pn**	**04 33 59.6**	**-0.3**
MAT				*e*S	**Sn**	**04 34 58.4**	**+2.8**
MJB9	**Matsu-Tunnel**	**4.87**	**252**	*e*Pn	**Pn**	**04 33 59.9**	**0.0**
YUK	**Yuzh-Kuril'sk**	**6.04**	**13**	*e*P	**Pn**	**04 34 14.3**	**-1.6**
YUK				*e*S	**Sn**	**04 35 20.1**	**-4.1**
YUK				pmax	pmax		
	comp=Z,99nm,0.7s						
YUK				pmax	pmax		
	comp=E,60nm,0.3s						
YUK				pmax	pmax		
	comp=N,80nm,0.6s						
ASAJ	**Asahikawa**	**6.04**	**351**	Pn	**Pn**	**04 34 16.3**	**+0.3**
	comp=N,5.1nm,0.3s,baz=232,slow=7.9,SNR=7.6						
ASAJ	**Asahikawa**	**6.04**	**351**	*e*Pn	**Pn**	**04 34 16.7**	**+0.7**
ASAJ				*e*Sn	**Sn**	**04 35 22.7**	**-1.6**
JHJ	**Hachijo jima 2**	**6.08**	**215**	Pn	**Pn**	**04 34 14.0**	**-2.6**
	comp=N,7.8nm,0.3s,baz=305,slow=23,SNR=3.3						
SHO	**Shikotan**	**6.10**	**20**	*e*P	**Pn**	**04 34 14.0**	**-2.7**
SHO				*e*S	Sn	04 35 19.8	-5.9
SHO				pmax	pmax		
	comp=Z,131nm,0.6s						
SHO				pmax	pmax		
	comp=E,119nm,0.8s						
SHO				pmax	pmax		
	comp=N,72nm,0.6s						
INU	**Inuyama**	**6.25**	**245**	*e*Pn	**Pn**	**04 34 17.6**	**-1.3**
KUR	**Kuril'sk**	**7.64**	**21**	*e*P	**Pn**	**04 34 36.0**	**-1.9**
KUR				*e*S	**Sn**	**04 35 58.9**	**-4.8**
KUR				pmax	pmax		
	comp=Z,33nm,0.4s						
YSS	**Yuzh-Sakhalins**	**8.83**	**355**	*e*P	**Pn**	**04 34 55.3**	**+1.1**
YSS				pmax	pmax		
	comp=Z,34nm,1.7s						
USRK	**Ussuriysk Ar.**	**10.85**	**308**	Pn	**Pn**	**04 35 20.9**	**-1.0**
	comp=Z,0.4nm,0.3s,baz=118,slow=15,SNR=8.9						
USRK				LR	LR	04 39 20.6	
	comp=Z,241nm,18.6s,baz=124,slow=36						
JNU	**Nakatsue**	**11.78**	**249**	Pn	Pn	04 35 31.0	-3.7
	comp=Z,0.2nm,0.3s,baz=14,slow=8.3,SNR=2.0						
JNU				LR	LR	04 40 33.8	
	comp=Z,182nm,19.3s,baz=115,slow=40						
MDJ	**Mudanjiang**	**12.57**	**305**	P	**Pn**	**04 35 46.1**	**+0.7**
MDJ				S	**Sn**	**04 38 00.7**	**-3.9**
MDJ				ScP	**ScP**	**04 44 55.8**	**+1.2**
MDJ				pmax	pmax		
	comp=Z,13nm,1.4s						
MDJ				pmax	pmax		
	comp=Z,31nm,2.1s						
MDJ				LR	LR		
	comp=N,140nm,15.5s						
MDJ				LR	LR		
	comp=E,210nm,17.3s						
MDJ				LR	LR		
	comp=Z,270nm,14.1s						
MDJ	**Mudanjiang**	**12.57**	**305**	*e*Pn	**Pn**	**04 35 45.9**	**+0.5**
	comp=Z,5.9nm,0.4s						
KSRS	**Korea Array**	**12.71**	**272**	Pn	**Pn**	**04 35 48.9**	**+1.5**
	comp=Z,0.2nm,0.3s,baz=89,slow=14,SNR=7.5						
KSRS				LR	LR	04 40 16.3	
	comp=Z,177nm,20.1s,baz=90,slow=36						
KSAR	**Wonju Array Be**	**12.75**	**272**	P	**Pn**	**04 35 48.9**	**+1.0**
KSAR	**Wonju Array Be**	**12.75**	**272**	Pn	**Pn**	**04 35 48.9**	**+1.0**
KLR	**Kul'dur**	**14.14**	**325**	Pn	**Pn**	**04 36 04.0**	**-2.9**
	comp=Z,0.1nm,0.3s,baz=141,slow=9.5,SNR=8.8						
KLR				LR	LR	04 41 31.8	
	comp=Z,43nm,20.7s,baz=120,slow=37						
KLR	**Kul'dur**	**14.14**	**325**	P	**Pn**	**04 36 04.0**	**-2.9**
KLR				MLR	MLR		
	comp=Z,43nm,20.7s						
CN2	**Changchun**	**15.07**	**298**	*e*P	**P**	**04 36 22.4**	**-2.2**
CN2				*e*sP	pP	04 36 32.2	+1.1
CN2				*e*S	**Sn**	**04 39 08.6**	**+3.0**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
CN2				pmax	pmax		
	comp=Z,200nm,3.0s						
CN2				LR	LR		
	comp=N,800nm,14.0s						
CN2				LR	LR		
	comp=E,700nm,14.0s						
CN2				LR	LR		
	comp=Z,1μm,13.0s						
NKL	**Nikolayevsk**	**15.16**	**352**	*e*P	**Pn**	**04 36 20.0**	**-0.6**
NJ2	**Nanjing**	**21.40**	**261**	*e*P	**P**	**04 37 37.6**	**+3.4**
NJ2				pmax	pmax		
	comp=Z,13nm,0.5s						
BJI	**Beijing**	**21.62**	**284**	P	**P**	**04 37 38.1**	**+1.6**
BJI				pmax	pmax		
	comp=Z,12nm,1.9s						
HHC	**Hu-ho-hao-te**	**25.07**	**286**	*e*P	**P**	**04 38 11.4**	**+0.5**
HHC				sP	sP	04 38 23.3	+2.4
HHC				PP	**PnPn**	**04 38 49.4**	**+4.8**
HHC				S	**S**	**04 42 32.0**	**-2.0**
HHC				SS	**SnSn**	**04 43 32.9**	**+9.1**
HHC				pmax	pmax		
	comp=Z,60nm,0.8s						
HHC				pmax	pmax		
	comp=Z,100nm,4.4s						
HHC				LR	LR		
	comp=N,920nm,12.7s						
HHC				LR	LR		
	comp=E,860nm,11.9s						
HHC				LR	LR		
	comp=Z,1μm,11.9s						
SEY	**Seymchan**	**25.32**	**9**	P	**P**	**04 38 13.9**	**+1.2**
	comp=Z,3.9nm,0.7s,baz=193,slow=7.1,SNR=9.9						
SEY	**Seymchan**	**25.32**	**9**	*e*P	**P**	**04 38 14.5**	**+1.8**
YAK	**Yakutsk**	**25.47**	**344**	*e*P	**P**	**04 38 15.3**	**+1.2**
YAK				pmax	pmax		
	comp=Z,9.0nm,0.5s						
WHN	**Wuhan**	**25.53**	**262**	P	**P**	**04 38 16.6**	**+1.6**
BOD	**Bodaibo**	**27.72**	**325**	*e*P	**P**	**04 38 34.2**	**-0.2**
BOD				pmax	pmax		
	comp=Z,2.0nm,1.5s						
ULN	**Ulaanbaatar**	**28.44**	**302**	*e*P	**P**	**04 38 42.9**	**+1.7**
ULN				pmax	pmax		
	comp=Z,11nm,1.7s						
ULN	**Ulaanbaatar**	**28.44**	**302**	*e*P	**P**	**04 38 42.1**	**+1.0**
	comp=Z,7.9nm,1.2s						
XAN	**Xi'an**	**28.51**	**273**	P	**P**	**04 38 42.4**	**+0.6**
XAN				pP	pP	04 38 49.3	+0.4
XAN				sP	sP	04 38 52.7	+0.8
XAN				pmax	pmax		
	comp=Z,4.0nm,0.9s						
XAN				pmax	pmax		
	comp=Z,59nm,6.5s						
SONA1	**Songino Array**	**28.88**	**302**	*e*P	**P**	**04 38 45.8**	**+0.7**
SONM	**Songino Array**	**28.88**	**302**	P	**P**	**04 38 45.7**	**+0.7**
	comp=Z,2.2nm,0.8s,baz=101,slow=8.8,SNR=12						
SONM				LR	LR	04 50 42.2	
	comp=Z,98nm,18.7s,baz=160,slow=37						
TLY	**Talaya**	**31.17**	**309**	LR	LR	04 52 16.9	
	comp=Z,93nm,18.5s,baz=110,slow=38						
ZAK	**Zakamensk**	**31.20**	**306**	*e*P	**P**	**04 39 04.4**	**-1.1**
ZAK				pmax	pmax		
	comp=Z,4.0nm,1.4s						
LZH	**Lanzhou**	**31.89**	**279**	*e*P	P	04 39 17.6	+5.8
LZH				pP	sP	04 39 24.7	+2.8
LZH				sP	pP	04 39 27.9	+9.0
LZH				pmax	pmax		
	comp=Z,16nm,1.0s						
BILL	**Bilibino**	**32.38**	**15**	*e*P	**P**	**04 39 15.8**	**+0.2**
BILL				pmax	pmax		
	comp=Z,7.0nm,1.5s						
BILL	**Bilibino**	**32.38**	**15**	*e*P	**P**	**04 39 15.6**	**0.0**
	comp=Z,0.8nm,0.6s						
CD2	**Chengdu**	**33.70**	**270**	P	**P**	**04 39 26.1**	**-1.5**
CD2				pmax	pmax		
	comp=Z,6.0nm,0.7s						
GTA	**Gaotai**	**34.19**	**286**	*e*P	**P**	**04 39 33.0**	**+1.2**
GTA				pP	sP	04 39 42.7	+0.8
GTA				sP	pP	04 39 47.0	+8.1
GTA				S	**S**	**04 44 56.8**	**-0.2**
GTA				sS	sS	04 45 12.2	+3.4
GTA				SS	**SnSn**	**04 47 07.0**	**+1.2**
GTA				pmax	pmax		
	comp=Z,4.0nm,1.4s						
GTA				LR	LR		
	comp=N,99nm,19.5s						
GTA				LR	LR		
	comp=E,180nm,18.1s						
GTA				LR	LR		
	comp=Z,170nm,16.2s						
KMI	**Kunming**	**37.14**	**262**	P	**P**	**04 39 55.3**	**-2.1**
KMI				pP	pP	04 40 01.0	-3.5
KMI				S	**S**	**04 45 42.5**	**-0.1**
KMI				pmax	pmax		
	comp=Z,7.0nm,0.7s						
KMI				pmax	pmax		
	comp=Z,87nm,3.7s						
KMI				LR	LR		
	comp=N,53nm,14.1s						
KMI				LR	LR		
	comp=E,98nm,14.1s						
KMI				LR	LR		
	comp=Z,87nm,15.8s						
WMQ	**Urumqi**	**42.15**	**296**	*e*P	**P**	**04 40 40.5**	**+1.8**
WMQ				pmax	pmax		
	comp=Z,4.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,32nm,4.0s						
WMQ				LR	LR		
	comp=Z,13nm,37.2s						
ZAA0	**Zalesovo Array**	**42.67**	**312**	*e*P	**P**	**04 40 43.2**	**+0.5**
ZALV	**Zalesovo Beam**	**42.67**	**312**	P	**P**	**04 40 43.2**	**+0.5**
	comp=Z,1.3nm,0.5s,baz=81,slow=9.2,SNR=6.9						
ZALV				LR	LR	04 59 11.4	
	comp=Z,66nm,18.9s,baz=72,slow=37						
NRIK	**Noril'sk**	**43.11**	**334**	LR	LR	05 01 18.7	
	comp=Z,60nm,19.0s,baz=127,slow=40						
NVS	**Novosibirsk**	**43.55**	**313**	*e*P	P	04 41 02.0	+12
MK01	**Makanchi Array**	**45.25**	**302**	*e*P	**P**	**04 41 03.7**	**+0.2**
MK31	**Makanchi Array**	**45.25**	**302**	*e*P	**P**	**04 41 03.8**	**+0.2**
MK31	**Makanchi Array**	**45.25**	**302**	*e*P	**P**	**04 41 03.8**	**+0.2**
MKAR	**Makanchi Array**	**45.25**	**302**	P	**P**	**04 41 04.0**	**+0.5**
	comp=Z,2.5nm,0.7s,baz=86,slow=9.5,SNR=22						
MKAR				LR	LR	05 00 39.6	
	comp=Z,50nm,18.7s,baz=74,slow=37						
MKAR	**Makanchi Array**	**45.25**	**302**	*ce*P	P	04 41 09.3	+5.7
MKAR				pmax	pmax		
	comp=Z,2.0nm,0.7s						
MKAR	**Makanchi Array**	**45.25**	**302**	*e*P	**P**	**04 41 03.8**	**+0.3**
MAKZ	**Makanchi**	**45.46**	**302**	*e*P	**P**	**04 41 05.9**	**+0.7**
MAKZ				pmax	pmax		
	comp=Z,7.0nm,0.9s						
MAKZ	**Makanchi**	**45.46**	**302**	*e*P	**P**	**04 41 05.9**	**+0.7**
	comp=Z,6.7nm,0.9s						
KURK	**Kurchatov**	**46.84**	**308**	*ce*P	**P**	**04 41 14.5**	**-1.5**
KURK				pmax	pmax		
	comp=Z,12nm,2.5s						
IL1	**Eielson Array**	**47.45**	**33**	*e*P	**P**	**04 41 20.9**	**+0.4**
ILAR	**Eielson Array**	**47.45**	**33**	P	**P**	**04 41 21.5**	**+1.0**
	comp=Z,0.9nm,0.8s,baz=266,slow=6.1,SNR=9.8						
DOT	**Dot Lake**	**48.73**	**34**	*e*P	**P**	**04 41 31.3**	**+0.8**
	comp=Z,3.0nm,0.7s						
HNR	**Honiara**	**49.65**	**159**	P	**P**	**04 41 36.5**	**-1.4**
	comp=Z,69nm,0.3s,baz=225,slow=7.1,SNR=5.2						
TKM2	**Tokmak 2**	**50.88**	**298**	*e*P	**P**	**04 41 48.4**	**+1.0**
TKM2				pmax	pmax		
	comp=Z,9.0nm,0.9s						
TKM2	**Tokmak 2**	**50.88**	**298**	*e*P	**P**	**04 41 48.4**	**+1.0**
	comp=Z,9.3nm,0.9s						
BVAR	**Borovoye Array**	**51.32**	**312**	P	**P**	**04 41 50.7**	**+0.4**
	comp=Z,1.7nm,0.7s,baz=70,slow=9.8,SNR=7.6						
BRVK	**Borovoye**	**51.37**	**312**	*e*P	**P**	**04 41 51.6**	**+1.0**
BRVK				pmax	pmax		
	comp=Z,1.0nm,0.9s						
AAK	**Ala-Archa**	**51.74**	**298**	*e*P	**P**	**04 41 54.4**	**+0.6**
AAK				pmax	pmax		
	comp=Z,6.0nm,1.0s						
AAK	**Ala-Archa**	**51.74**	**298**	*e*P	**P**	**04 41 53.8**	**0.0**
	comp=Z,1.3nm,0.4s						
EKS2	**Erkin-Say**	**52.23**	**299**	*e*P	**P**	**04 41 57.5**	**+0.1**
EKS2				pmax	pmax		
	comp=Z,2.0nm,0.5s						
EKS2	**Erkin-Say**	**52.23**	**299**	*e*P	**P**	**04 41 57.5**	**+0.1**
	comp=Z,1.7nm,0.5s						
INK	**Inuvik**	**52.45**	**28**	P	**P**	**04 41 59.5**	**+1.0**
	comp=Z,0.9nm,0.8s,baz=301,slow=6.9,SNR=3.6						
INK	**Inuvik**	**52.45**	**28**	*e*P	**P**	**04 41 59.2**	**+0.8**
INK				pmax	pmax		
	comp=Z,2.0nm,1.1s						
INK	**Inuvik**	**52.45**	**28**	*e*P	**P**	**04 41 59.2**	**+0.8**
	comp=Z,2.3nm,1.1s						
ARU	**Arti**	**56.86**	**319**	*d* iP	**P**	**04 42 30.9**	**+0.3**
ARU						04 43 25.4	
ARU						04 44 34.9	
ARU				S	**S**	**04 50 23.3**	**+0.8**
ARU				SS	**SS**	**04 54 07.6**	**-2.6**
ARU				pmax	pmax		
	comp=Z,21nm,1.7s						
ARU				MLR	MLR		
	comp=Z,137nm,16.0s						
ARU	**Arti**	**56.86**	**319**	*e*P	**P**	**04 42 31.1**	**+0.6**
	comp=Z,10nm,0.9s						
WRAB	**Tennant Creek**	**58.49**	**191**	*e*P	**P**	**04 42 40.5**	**-1.9**
WRAB				pmax	pmax		
	comp=Z,14nm,0.7s						
WRAB	**Tennant Creek**	**58.49**	**191**	*e*P	**P**	**04 42 40.5**	**-1.9**
	comp=Z,14nm,0.7s						
WB2	**Warramunga Arr**	**58.50**	**191**	*e*P	**P**	**04 42 41.1**	**-1.4**
	comp=Z,17nm,0.7s						
WRA	**Warramunga Arr**	**58.50**	**191**	P	**P**	**04 42 40.7**	**-1.8**
	comp=Z,15nm,0.7s,baz=9.2,slow=7.0,SNR=120						
ABKAR	**Akbulak array**	**58.76**	**310**	*e*P	**P**	**04 42 44.1**	**+0.1**
	comp=Z,1.7nm,0.6s						
AKTO	**Aktyubinsk**	**59.43**	**312**	P	**P**	**04 42 49.0**	**+0.3**
	comp=Z,3.2nm,0.7s,baz=79,slow=11,SNR=9.4						
AKTO	**Aktyubinsk**	**59.43**	**312**	P	**P**	**04 42 49.0**	**+0.3**
AKTO				pmax	pmax		
	comp=Z,3.0nm,0.7s						
RES	**Resolute Bay**	**60.99**	**15**	P	**P**	**04 42 59.1**	**+0.2**
	baz=320,slow=6.7						
RES	**Resolute Bay**	**60.99**	**15**	*e*P	**P**	**04 42 59.5**	**+0.5**
RES				pmax	pmax		
	comp=Z,5.0nm,1.3s						
RES	**Resolute Bay**	**60.99**	**15**	*e*P	**P**	**04 42 59.5**	**+0.5**
	comp=Z,4.8nm,1.3s						
YKA	**Yellowknife Ar**	**61.80**	**31**	P	**P**	**04 43 05.1**	**+0.5**
	comp=Z,0.6nm,0.7s,baz=304,slow=6.6,SNR=20						
YKB5	**Yellowknife Ar**	**61.80**	**31**	*e*P	**P**	**04 43 04.6**	**0.0**
AS01	**Alice Springs**	**62.22**	**190**	*e*P	**P**	**04 43 06.3**	**-1.5**
AS31	**Alice Springs**	**62.22**	**190**	*e*P	**P**	**04 43 06.8**	**-1.1**
	comp=Z,1.0nm,0.6s						
ASAR	**Alice Springs**	**62.23**	**190**	P	**P**	**04 43 06.6**	**-1.3**
	comp=Z,2.9nm,0.8s,baz=16,slow=7.1,SNR=25						
ASAR				LR	LR	05 10 46.9	
	comp=Z,31nm,20.3s,baz=240,slow=37						
ARCES	**ARCESS Array B**	**63.65**	**340**	P	**P**	**04 43 17.2**	**+0.4**
	comp=Z,1.0nm,0.8s,baz=42,slow=11,SNR=3.6						
KLMR	**Klimovskoe**	**63.88**	**328**	*e*P	**P**	**04 43 16.4**	**-2.1**
KLMR				pmax	pmax		
	comp=Z,5.0nm,1.3s						
GEYT	**Alibeck**	**65.06**	**300**	P	**P**	**04 43 26.5**	**-0.1**
	comp=Z,2.6nm,0.5s,baz=64,slow=12,SNR=3.7						
YBH	**Yreka Blue Hor**	**68.04**	**54**	P	**P**	**04 43 46.9**	**+1.1**
	comp=Z,2.7nm,1.1s,baz=107,slow=1.9,SNR=4.0						
OBN	**Obninsk**	**68.39**	**324**	*e*P	**P**	**04 43 47.1**	**-0.4**
OBN				*e*		04 46 21.7	
OBN				pmax	pmax		
	comp=Z,5.0nm,0.8s						
K05A	**Summer Lake**	**68.65**	**52**	*e*P	P	04 43 53.0	+3.3
	comp=Z,15nm,1.3s						
FINES	**FINESS Array B**	**68.75**	**333**	P	**P**	**04 43 49.8**	**+0.1**
	comp=Z,2.4nm,0.7s,baz=56,slow=7.6,SNR=12						
FINES				LR	LR	05 14 51.0	
	comp=Z,52nm,22.0s,baz=30,slow=37						
SUMG	**Summit**	**69.54**	**1**	*e*P	**P**	**04 43 55.2**	**+0.3**
SUMG				pmax	pmax		
	comp=Z,3.0nm,0.7s						
SUMG	**Summit**	**69.54**	**1**	*e*P	**P**	**04 43 55.2**	**+0.3**
	comp=Z,2.9nm,0.7s						
STKA	**Stephens Creek**	**69.72**	**182**	P	**P**	**04 43 54.6**	**-1.2**
	comp=Z,1.6nm,0.7s,baz=357,slow=6.3,SNR=3.3						
KBZ	**Khabaz**	**71.69**	**311**	P	**P**	**04 44 08.7**	**+0.7**
	comp=Z,4.8nm,0.9s,baz=62,slow=3.6,SNR=8.3						
NVAR	**Mina Array Bea**	**72.68**	**55**	P	**P**	**04 44 15.7**	**+1.4**
	comp=Z,1.0nm,0.8s,baz=290,slow=7.2,SNR=7.1						
NB2	**NORSAR Subarra**	**73.91**	**338**	P	**P**	**04 44 20.9**	**0.0**
	comp=Z,0.6nm,0.5s,baz=37,slow=6.2						
NOA	**NORSAR Array B**	**73.91**	**338**	P	**P**	**04 44 21.2**	**+0.3**
	comp=Z,1.0nm,0.6s,baz=37,slow=5.9,SNR=5.4						
NOA				LR	LR	05 23 23.2	
	comp=Z,11nm,18.2s,baz=95,slow=41						
FXWY	**Fox Creek**	**74.04**	**47**	*e*P	**P**	**04 44 22.6**	**+0.4**
	comp=Z,12nm,1.9s						
R11A	**Troy Canyon, C**	**74.46**	**53**	*e*P	**P**	**04 44 25.2**	**+0.5**
	comp=Z,2.6nm,1.3s						
AKASG	**Malin Array Be**	**74.63**	**323**	P	**P**	**04 44 25.4**	**+0.2**
	comp=Z,1.7nm,0.6s,baz=46,slow=6.8,SNR=9.0						
AKASG	**Malin Array Be**	**74.63**	**323**	*ce*P	**P**	**04 44 25.3**	**+0.1**
AKASG				pmax	pmax		
	comp=Z,2.0nm,0.6s						
PDAR	**Pinedale Array**	**75.42**	**47**	P	**P**	**04 44 30.9**	**+0.7**
	comp=Z,0.7nm,0.6s,baz=247,slow=1.4,SNR=11						
BUR08	**Bucovina Ar. S**	**78.65**	**323**	*e*P	**P**	**04 44 48.0**	**-0.2**
N23A	**Red Feather La**	**78.69**	**47**	*e*P	**P**	**04 44 48.7**	**-0.1**
	comp=Z,12nm,1.5s						
BRTR	**Keskin Array B**	**79.60**	**313**	P	**P**	**04 44 54.3**	**+0.7**
	comp=Z,0.9nm,0.9s,baz=2.6,slow=3.2,SNR=3.2						
BRTR				LR	LR	05 24 56.9	
	comp=Z,17nm,19.1s,baz=95,slow=39						
PSZ	**Piszkesteto**	**80.90**	**326**	*e*P	**P**	**04 45 00.0**	**-0.3**
PSZ				pmax	pmax		
	comp=Z,2.0nm,0.5s						
PSZ	**Piszkesteto**	**80.90**	**326**	*e*P	**P**	**04 45 00.0**	**-0.3**
	comp=Z,2.0nm,0.5s						
CLL	**Collm**	**81.11**	**331**	*e*P	**P**	**04 45 01.0**	**-0.2**
	comp=Z,6.0nm,0.8s						
CLL	**Collm**	**81.11**	**331**	*e*P	**P**	**04 45 01.0**	**-0.2**
CLL				pmax	pmax		
	comp=Z,6.0nm,0.8s						
ANMO	**Albuquerque**	**82.30**	**51**	*ce*P	**P**	**04 45 09.5**	**+1.4**
ANMO				pmax	pmax		
	comp=Z,2.0nm,1.2s						
KHC	**Kasperske Hory**	**82.62**	**330**	*e*P	**P**	**04 45 10.0**	**+0.7**
KHC	**Kasperske Hory**	**82.62**	**330**	*e*P	**P**	**04 45 10.0**	**+0.7**
BFO	**Black Forest**	**85.29**	**332**	*i* P	**P**	**04 45 24.0**	**+1.1**

*NIED **06** 05:09:00.38.°40N×144.°50E, h5km, Mw3.5 Best double couple: M0 2.14000×10^14 NP1:φs 21.00000°, δ 14.00000°, λ -65.00000°. NP2:φs 176.00000°, δ 77.00000°, λ -96.00000°.*

JMA 06 05:09:26.1±0.2, 38.°45N×144.°49E, h38km, M3.7, Off east coast of Honshu

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

ELZG	**Elazig**	**1.12**	**7**	*i* P	**Pb**	**05 09 59.8**	**-0.1**
ELZG				*i* S	**Sn**	**05 10 15.6**	**-0.8**
AKCD	**Akcadag**	**1.15**	**323**	P	**Pn**	**05 10 00.7**	**-0.1**
AKCD				S	**Sn**	**05 10 17.0**	**0.0**
AKCD	**Akcadag**	**1.15**	**323**	*i* P	**Pn**	**05 10 00.7**	**-0.1**
AKCD				*i* S	**Sn**	**05 10 17.0**	**0.0**
DIYA	**Diyarbakir**	**1.18**	**62**	P	**Pn**	**05 10 01.8**	**+0.7**
DIYA				S	**Sn**	**05 10 17.6**	**+0.1**
DIYA	**Diyarbakir**	**1.18**	**62**	*i* P	**Pn**	**05 10 01.8**	**+0.7**
DIYA				*i* S	**Sn**	**05 10 17.6**	**+0.1**
DYBB	**Diyarbakir**	**1.20**	**61**	*e*PN	**Pb**	**05 10 01.1**	**-0.1**
DIY	**Diyarbakir**	**1.24**	**65**	*e*Pn	**Pg**	**05 10 01.1**	**-0.6**
GAZ	**Gaziantep**	**1.29**	**261**	*e*PN	**Pg**	**05 10 03.4**	**+0.8**
GAZ	**Gaziantep**	**1.29**	**261**	*e*Pn	**Pg**	**05 10 03.4**	**+0.8**
MAZI	**Mazidag**	**1.31**	**86**	*e*PN	**Pn**	**05 10 02.8**	**-0.1**
MAZI				*e*SN	**Sn**	**05 10 21.2**	**+0.4**
MAZI	**Mazidag**	**1.31**	**86**	*e*Pn	**Pn**	**05 10 02.8**	**-0.1**
MAZI				*e*Sn	**Sn**	**05 10 21.2**	**+0.4**
SFNV	**Sufian**	**1.42**	**132**	*e*P	**Pn**	**05 10 04.6**	**+0.2**
SFNV				*e*S	**Sb**	**05 10 22.7**	**-0.6**
SFNV				AML	AML	05 10 29.6	
	comp=N,67nm,0.4s						
SFNV				AML	AML	05 10 29.7	
	comp=E,91nm,0.4s						
SFNV	**Sufian**	**1.42**	**132**	*e*P	**Pn**	**05 10 04.6**	**+0.2**
SFNV				*e*S	**Sb**	**05 10 22.7**	**-0.6**
	comp=E,91nm,0.4s						
KBSD	**Kabsdagh**	**1.44**	**105**	*e*P	**Pb**	**05 10 05.0**	**-0.2**
KBSD				*e*S	**Sg**	**05 10 24.2**	**+0.1**
KBSD				AML	AML	05 10 28.4	
	comp=E,31nm,0.3s						
KBSD				AML	AML	05 10 32.5	
	comp=N,65nm,0.2s						
KBSD	**Kabsdagh**	**1.44**	**105**	*e*P	**Pb**	**05 10 05.0**	**-0.2**
KBSD				*e*S	**Sg**	**05 10 24.2**	**+0.1**
	comp=N,65nm,0.2s						
KUZU	**Kuzuini**	**1.51**	**247**	P	**Pg**	**05 10 07.3**	**+0.4**
KUZU				S	**Sg**	**05 10 27.5**	**+1.0**
KUZU	**Kuzuini**	**1.51**	**247**	*i* P	**Pg**	**05 10 07.3**	**+0.4**
KUZU				*i* S	**Sg**	**05 10 27.5**	**+1.0**
HCB	**Kahramanmara¯**	**1.51**	**269**	*i* P	**Pg**	**05 10 06.9**	**0.0**
HCB				*i* S	**Sb**	**05 10 26.2**	**+0.3**
MARD	**Mardin**	**1.57**	**92**	*i* P	**Pg**	**05 10 08.8**	**+0.7**
MARD				*i* S	**Sg**	**05 10 29.9**	**+1.4**
PTK	**Pertek**	**1.58**	**17**	*e*PN	**Pb**	**05 10 07.1**	**-0.6**
PTK	**Pertek**	**1.58**	**17**	*e*Pn	**Pb**	**05 10 07.1**	**-0.6**
DARE	**Darende-Malaty**	**1.58**	**319**	*e*PN	**Pb**	**05 10 07.5**	**-0.2**
DARE	**Darende-Malaty**	**1.58**	**319**	*e*Pn	**Pb**	**05 10 07.5**	**-0.2**
DRWC	**Darouich**	**1.87**	**247**	*e*P	**Pn**	**05 10 10.8**	**+0.2**
DRWC				*e*S	**Sn**	**05 10 32.6**	**-2.1**
DRWC				AML	AML	05 10 47.9	
	comp=N,16nm,0.4s						
DRWC				AML	AML	05 10 48.2	
	comp=E,17nm,0.4s						
DRWC	**Darouich**	**1.87**	**247**	*e*P	**Pn**	**05 10 10.8**	**+0.2**
DRWC				*e*S	**Sn**	**05 10 32.6**	**-2.1**
	comp=E,17nm,0.4s						
BTCH	**Batrach**	**2.31**	**235**	*e*P	**Pn**	**05 10 16.7**	**0.0**
BTCH				*e*S	**Sn**	**05 10 44.5**	**-1.0**
BTCH				AML	AML	05 10 59.3	
	comp=N,25nm,0.6s						
BTCH				AML	AML	05 10 59.6	
	comp=E,40nm,0.4s						
BTCH	**Batrach**	**2.31**	**235**	*e*P	**Pn**	**05 10 16.7**	**0.0**
BTCH				*e*S	**Sn**	**05 10 44.5**	**-1.0**
	comp=E,40nm,0.4s						
TAHT	**Tahtakopru-Hat**	**2.33**	**245**	*e*PN	**Pn**	**05 10 18.2**	**+1.4**
TAHT	**Tahtakopru-Hat**	**2.33**	**245**	*e*Pn	**Pn**	**05 10 18.2**	**+1.4**

NIED ***06*** *05:14:00, 39.°10N×142.°20E, h47km, Mw4.7 Best double couple: M0 1.32000×10^16 NP1:φ=163.00000°, δ=21.00000°, λ=28.00000°. NP2:φ=46.00000°, δ=80.00000°, λ=108.00000°.*
JMA ***06*** *05:14:56.9±0.1, 39.°08N×142.°23E, h44km±1km, M4.7*
JMA Felt III J1.
ISCJB ***06*** *05:14:57.3±0.3, 39.°09N±0.°02×142.°12E±0.°03, h53km±2km, mb4.8/176, MS4.1/41, Error ellipse: s-maj=4.5km s-min=3.0km az=139.0*
MOS ***06*** *05:14:58.1±1.0, 39.°16N×142.°10E, h59km, mb5.1/63, MS4.1/22, Error ellipse: s-maj=6.6km s-min=4.2km az=104.3*
IDC ***06*** *05:14:59.2±1.7, 39.°03N×142.°12E, h60km±15km, mb4.3/25, mb1 4.4/33, mb1mx4.4/45, mbtmp4.6/33, MS3.9/26, Ms1 3.9/26, ms1mx3.8/37, Error ellipse: s-maj=13.9km s-min=10.6km az=91.0*
NEIC ***06*** *05:14:59.8±0.4, 39.°09N×142.°08E, h59km±3km, mb4.8/100, Error ellipse: s-maj=4.1km s-min=2.7km az=142.0*
NEIC Recorded [3 JMA] in Iwate.
ISC 06 05:14:56.9±0.5, 39.°03N±0.°03×142.°28E±0.°04, h41km±3km, h41km:pP-P, n432, σ1§60/463, mb4.8/178, MS4.2/44, 24C-13D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.48**	**276**	P	**Pn**	**05 15 07.0**	**-0.5**
OFUJ				S	**Sn**	**05 15 14.0**	**-0.9**
MIYJ	**Miyakonagasawa**	**0.65**	**327**	P	**Pn**	**05 15 08.8**	**-1.0**
MIYJ				S	**Sn**	**05 15 17.3**	**-1.7**
JMK	**Ichinoseki**	**0.83**	**265**	P	**Pn**	**05 15 11.8**	**-0.4**
JMK				S	**Sn**	**05 15 22.2**	**-1.1**
JOM	**Ohasama**	**0.89**	**300**	P	**Pn**	**05 15 12.3**	**-0.7**
JOM				S	**Sn**	**05 15 23.6**	**-1.1**
JIO	**Ouri**	**0.93**	**232**	P	**Pn**	**05 15 13.2**	**-0.3**
JIO				S	**Sn**	**05 15 24.6**	**-1.0**
JTH	**Tanohata**	**0.96**	**340**	P	**Pn**	**05 15 13.1**	**-0.9**
JRG	**Rokugo**	**1.33**	**286**	P	**Pn**	**05 15 18.7**	**-0.3**
JRG				S	**Sn**	**05 15 35.3**	**-0.3**
JOU	**Okura**	**1.43**	**243**	P	**Pn**	**05 15 20.7**	**+0.3**
JANG	**Nango**	**1.47**	**336**	P	**Pn**	**05 15 20.2**	**-0.7**
JANG				S	**Sn**	**05 15 39.1**	**+0.2**
JYK	**Kaneyama**	**1.50**	**266**	P	**Pn**	**05 15 21.3**	**-0.1**
ERM	**Erimo**	**3.06**	**12**	*de*P	**Pn**	**05 15 42.4**	**-0.3**
ERM				pmax	pmax		
	comp=Z,89nm,1.0s						
ERM	**Erimo**	**3.06**	**12**	*e*Pn	**Pn**	**05 15 42.6**	**-0.1**
ERM				*e*Sn	**Sn**	**05 16 19.4**	**+1.5**
MJAR	**Matsushiro Arr**	**4.07**	**234**	P	**Pn**	**05 15 59.4**	**+2.7**
	comp=Z,28nm,0.3s,baz=40,slow=11,SNR=120						
MJAR				LR	LR	05 17 50.0	
	comp=Z,658nm,18.6s,baz=70,slow=43						
MAJO	**Matsushiro**	**4.07**	**234**	*d i*P	**Pn**	**05 16 00.0**	**+3.3**
MAJO	**Matsushiro**	**4.07**	**234**	*e*Pn	**Pn**	**05 15 59.3**	**+2.6**
MAJO				*e*Sn	**Sn**	**05 16 37.4**	**-5.8**
MAT	**Matsushiro**	**4.07**	**234**	P	**Pn**	**05 15 58.8**	**+2.1**
MAT				S	**Sn**	**05 16 45.9**	**+2.8**
MJB9	**Matsu-Tunnel**	**4.07**	**234**	*e*Pn	**Pn**	**05 15 59.5**	**+2.8**
MJB9				*e*Sn	**Sn**	**05 16 37.4**	**-5.8**
ASAJ	**Asahikawa**	**5.09**	**3**	P	**Pn**	**05 16 12.2**	**+1.6**
	comp=Z,6.5nm,0.3s,baz=203,slow=13,SNR=19						
ASAJ	**Asahikawa**	**5.09**	**3**	*e*Pn	**Pn**	**05 16 11.0**	**+0.4**
ASAJ				*e*Sn	**Sn**	**05 17 05.8**	**-2.3**
INU	**Inuyama**	**5.58**	**230**	*e*Pn	**Pn**	**05 16 20.7**	**+3.2**
INU				*e*Sn	Sn	05 17 11.0	-9.3
YUK	**Yuzh-Kuril'sk**	**5.67**	**27**	*e*P	**Pn**	**05 16 18.2**	**-0.4**
YUK				*e*S	**Sn**	**05 17 18.5**	**-4.0**
YUK				pmax	pmax		
	comp=Z,201nm,0.5s						
YUK				pmax	pmax		
	comp=E,178nm,0.4s						
YUK				pmax	pmax		
	comp=N,147nm,0.5s						
YUK				MLR	MLR		
	comp=Z,948nm,15.0s						
SHO	**Shikotan**	**5.92**	**34**	*e*P	**Pn**	**05 16 20.2**	**-1.8**
SHO				*e*S	**Sn**	**05 17 22.4**	**-6.1**
SHO				pmax	pmax		
	comp=Z,145nm,0.5s						
SHO				pmax	pmax		
	comp=E,63nm,0.7s						
SHO				pmax	pmax		
	comp=N,21nm,0.2s						
JHJ2	**Mitsune**	**6.23**	**199**	*e*Pn	**Pn**	**05 16 24.3**	**-2.1**
JHJ2				*e*Sn	**Sn**	**05 17 35.8**	**-0.5**
JHJ	**Hachijo jima 2**	**6.24**	**200**	P	**Pn**	**05 16 26.2**	**-0.1**
	comp=N,37nm,0.3s,baz=131,slow=22,SNR=10						
JHJ				S	**Sn**	**05 17 34.6**	**-1.8**
	comp=N,161nm,0.3s,baz=58,slow=24,SNR=13						
KUR	**Kuril'sk**	**7.46**	**32**	*e*P	**Pn**	**05 16 43.7**	**+0.6**
KUR				*e*S	**Sn**	**05 18 03.2**	**-3.1**
KUR				pmax	pmax		
	comp=Z,41nm,0.6s						
KUR				smax	smax		
	comp=N,63nm,0.4s						
KUR				smax	smax		
	comp=E,77nm,0.4s						
YSS	**Yuzh-Sakhalins**	**7.93**	**2⇑**	*e*P	**Pn**	**05 16 50.6**	**+1.1**
YSS				*e*S	**Sn**	**05 18 18.6**	**+0.7**
YSS				pmax	pmax		
	comp=Z,80nm,0.9s						
YSS				pmax	pmax		
	comp=N,90nm,0.8s						
YSS				MLR	MLR		
	comp=Z,500nm,17.0s						
YSS	**Yuzh-Sakhalins**	**7.93**	**2**	*e*Pn	**Pn**	**05 16 50.0**	**+0.4**
VLA	**Vladivostok**	**8.85**	**301⇑**	*i*P	**Pn**	**05 17 05.0**	**+2.8**
VLA				*i* S	**Sn**	**05 18 43.8**	**+3.2**
VLA				pmax	pmax		
	comp=Z,83nm,0.8s						
MSHR	**Mys Shultsa**	**9.15**	**296**	*c*eP	**Pn**	**05 17 08.4**	**+2.1**
USRK	**Ussuriysk Ar.**	**9.28**	**307**	P	**Pn**	**05 17 10.4**	**+2.4**
	comp=Z,2.7nm,0.3s,baz=126,slow=15,SNR=45						
USRK				LR	LR	05 20 33.6	
	comp=Z,1μm,19.2s,baz=129,slow=36						
HABR	**Khabarovsk**	**10.79**	**333**	*e*P	**Pn**	**05 17 27.0**	**-1.7**
HABR				S	**Sn**	**05 19 25.0**	**-2.9**
HABR				pmax	pmax		
	comp=Z,18nm,1.1s						
HABR				MLR	MLR		
	comp=Z,327nm,15.0s						
JNU	**Nakatsue**	**10.95**	**241**	P	**Pn**	**05 17 33.4**	**+2.3**
	comp=Z,0.6nm,0.3s,baz=211,slow=3.3,SNR=4.1						
JNU				LR	LR	05 22 11.5	
	comp=Z,472nm,19.9s,baz=22,slow=40						
MDJ	**Mudanjiang**	**10.99**	**305**	P	**Pn**	**05 17 30.8**	**-0.7**
MDJ				sP		05 17 46.1	
MDJ				S	**Sn**	**05 19 38.4**	**+5.4**
MDJ				ScP	**ScP**	**05 26 54.7**	**-2.2**
MDJ				pmax	pmax		
	comp=Z,6.0nm,0.4s						
MDJ				pmax	pmax		
	comp=Z,53nm,4.2s						
MDJ				LR	LR		
	comp=N,390nm,18.2s						
MDJ				LR	LR		
	comp=E,560nm,21.5s						
MDJ				LR	LR		
	comp=Z,940nm,22.0s						
MDJ	**Mudanjiang**	**10.99**	**305**	*e*Pn	**Pn**	**05 17 35.5**	**+4.0**
KSRS	**Korea Array**	**11.40**	**267**	P	**Pn**	**05 17 39.9**	**+2.7**
	comp=Z,0.4nm,0.3s,baz=74,slow=14,SNR=14						
KSRS				LR	LR	05 21 46.0	
	comp=Z,478nm,18.1s,baz=76,slow=36						
KS01	**Wonju Array Si**	**11.42**	**267**	*e*Pn	**Pn**	**05 17 37.2**	**-0.2**
KS15	**Wonju Array Si**	**11.44**	**267**	*e*Pn	**Pn**	**05 17 37.7**	**+0.1**
KSAR	**Wonju Array Be**	**11.44**	**267**	P	**Pn**	**05 17 39.9**	**+2.3**
KSAR	**Wonju Array Be**	**11.44**	**267**	P	**Pn**	**05 17 39.9**	**+2.3**
CBIJ	**Chichi jima**	**11.90**	**180**	*e*Pn	**Pn**	**05 17 42.1**	**-1.9**
CBIJ				*e*Sn	**Sn**	**05 19 48.5**	**-7.0**
JCJ	**Chichijima**	**11.90**	**180**	P	**Pn**	**05 17 44.6**	**+0.6**
	comp=Z,10.0nm,0.3s,baz=1.3,slow=20,SNR=8.3						
KLR	**Kul'dur**	**12.68**	**327**	P	**Pn**	**05 17 54.6**	**+0.1**
	comp=Z,0.2nm,0.3s,baz=137,slow=12,SNR=12						
KLR				LR	LR	05 22 44.8	
	comp=Z,972nm,19.7s,baz=136,slow=37						
CN2	**Changchun**	**13.50**	**296**	*e*P	**Pn**	**05 18 06.5**	**+0.7**
CN2				*es*P	sP	05 18 26.0	
CN2				*e*S	**Sn**	**05 20 33.3**	**-1.0**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.6s						
CN2				pmax	pmax		
	comp=Z,200nm,3.0s						
NKL	**Nikolayevsk**	**14.17**	**356**	*e*P	**Pn**	**05 18 13.0**	**-1.7**
NKL				pmax	pmax		
	comp=N,13nm,1.0s						
NKL				pmax	pmax		
	comp=E,10.0nm,1.0s						
NKL				pmax	pmax		
	comp=Z,17nm,1.0s						
NKL				MLR	MLR		
	comp=N,350nm,15.0s						
NKL				MLR	MLR		
	comp=E,500nm,15.0s						
NKL				MLR	MLR		
	comp=Z,500nm,15.0s						
PETK	**Petropavlovsk-**	**17.63**	**32**	LR	LR	05 26 08.0	
	comp=Z,195nm,19.1s,baz=220,slow=38						
TIA	**Tai'an**	**20.11**	**270**	⇓P	**P**	**05 19 25.7**	**-1.5**
TIA				pP	Pn	05 19 33.4	+4.1
TIA				S	**S**	**05 23 11.3**	**+0.5**
TIA				pmax	pmax		
	comp=Z,30nm,0.7s						
TIA				LR	LR		
	comp=N,300nm,22.0s						
TIA				LR	LR		
	comp=E,310nm,20.8s						
TIA				LR	LR		
	comp=Z,390nm,23.8s						
BJI	**Beijing**	**20.14**	**281**	P	**P**	**05 19 25.1**	**-2.4**
BJI				pP	**pP**	**05 19 38.7**	**+1.1**
BJI				sP	**sP**	**05 19 43.7**	**+0.9**
BJI				S	**S**	**05 23 07.9**	**-3.5**
BJI				sS	**sS**	**05 23 28.3**	**+0.7**
BJI				pmax	pmax		
	comp=Z,11nm,1.1s						
BJI				pmax	pmax		
	comp=Z,210nm,4.1s						
BJI				LR	LR		
	comp=N,120nm,15.2s						
BJI				LR	LR		
	comp=E,360nm,14.0s						
BJI				LR	LR		
	comp=Z,300nm,29.8s						
BJT	**Baijiatuau**	**20.15**	**281**	*e*P	**P**	**05 19 28.0**	**+0.4**
BJT				pmax	pmax		
	comp=Z,18nm,0.7s						
BJT	**Baijiatuau**	**20.15**	**281**	*e*P	**P**	**05 19 28.0**	**+0.4**
	comp=Z,18nm,0.7s						
NJ2	**Nanjing**	**20.27**	**257**	*e*P	**P**	**05 19 27.6**	**-1.3**
NJ2				pmax	pmax		
	comp=Z,20nm,0.5s						
CLNS	**Chul'man**	**21.18**	**333**	*e*P	**P**	**05 19 37.1**	**-1.5**
CLNS				pmax	pmax		
	comp=Z,22nm,0.6s						
CLNS				pmax	pmax		
	comp=N,14nm,0.8s						
CLNS				pmax	pmax		
	comp=E,17nm,0.8s						
MA2	**Magadan**	**21.26**	**12**	*e*P	**P**	**05 19 39.6**	**+0.2**
MA2				pmax	pmax		
	comp=Z,215nm,0.8s						
MA2	**Magadan**	**21.26**	**12**	*e*P	**P**	**05 19 39.6**	**+0.2**
	comp=Z,215nm,0.8s						
YOJ	**Yonaguni jima**	**21.83**	**234**	*e*P	**P**	**05 19 45.3**	**-0.5**
YOJ				pmax	pmax		
	comp=Z,86nm,1.2s						
YOJ	**Yonaguni jima**	**21.83**	**234**	*e*P	**P**	**05 19 45.3**	**-0.5**
	comp=Z,86nm,1.2s						
HHC	**Hu-ho-hao-te**	**23.57**	**284**	*e*P	**P**	**05 20 02.3**	**-1.5**
HHC				pP	pP	05 20 17.4	+2.9
HHC				PP	**PnPn**	**05 20 35.4**	**+3.7**
HHC				S	**S**	**05 24 09.9**	**-5.2**
HHC				pmax	pmax		
	comp=Z,65nm,0.7s						
HHC				pmax	pmax		
	comp=Z,150nm,3.7s						
HHC				LR	LR		
	comp=N,1μm,11.4s						
HHC				LR	LR		
	comp=E,2μm,12.2s						
HHC				LR	LR		
	comp=Z,2μm,12.2s						
YULB	**Yu-li**	**23.69**	**235**	*e*P	**P**	**05 20 06.2**	**+1.3**
	comp=Z,9.8nm,0.9s						
YAK	**Yakutsk**	**24.29**	**346**	P	**P**	**05 20 09.0**	**-1.0**
	comp=Z,30nm,0.3s,baz=21,slow=2.7,SNR=16						
YAK	**Yakutsk**	**24.29**	**346**	*e*P	**P**	**05 20 08.6**	**-1.5**
YAK				*e*S	**S**	**05 24 25.5**	**-0.5**
YAK				*e*SS	**SnSn**	**05 25 10.8**	**-0.4**
YAK				*e*		05 31 12.4	
YAK				pmax	pmax		
	comp=Z,128nm,0.9s						
YAK				pmax	pmax		
	comp=N,35nm,1.0s						
YAK				pmax	pmax		
	comp=E,18nm,1.0s						
YAK				pmax	pmax		
	comp=Z,27nm,0.9s						
YAK				pmax	pmax		
	comp=N,12nm,0.9s						
YAK				pmax	pmax		
	comp=E,10.0nm,0.9s						
YAK				smax	smax		
	comp=E,77nm,2.5s						
YAK				smax	smax		
	comp=N,127nm,2.4s						
YAK				MLR	MLR		
	comp=Z,293nm,20.0s						
YAK				MLR	MLR		
	comp=N,170nm,15.0s						
YAK				MLR	MLR		
	comp=E,175nm,20.0s						
YAK	**Yakutsk**	**24.29**	**346**	*e*P	**P**	**05 20 09.1**	**-1.0**
	comp=E,123nm,0.9s						
WHN	**Wuhan**	**24.38**	**258⇓**	*i*P	**P**	**05 20 10.5**	**-0.7**
WHN				pP	**pP**	**05 20 22.5**	**+0.1**
WHN				*e*S	**S**	**05 24 25.3**	**-2.8**
WHN				pmax	pmax		
	comp=Z,36nm,0.6s						
WHN				LR	LR		
	comp=N,490nm,14.5s						
WHN				LR	LR		
	comp=E,450nm,9.6s						
WHN				LR	LR		
	comp=Z,780nm,20.3s						
SEY	**Seymchan**	**24.70**	**11**	P	**P**	**05 20 14.6**	**+0.7**
	comp=Z,14nm,0.7s,baz=194,slow=6.6,SNR=34						
SEY	**Seymchan**	**24.70**	**11**	*e*P	**P**	**05 20 14.7**	**+0.8**
GUMO	**Guam**	**25.44**	**174**	LR	LR	05 30 18.5	
	comp=Z,140nm,21.6s,baz=58,slow=36						
BOD	**Bodaibo**	**26.25**	**325⇓**	*i*P	**P**	**05 20 26.5**	**-1.4**
BOD				pmax	pmax		
	comp=Z,20nm,0.8s						
ULN	**Ulaanbaatar**	**26.86**	**301**	*c*eP	**P**	**05 20 33.7**	**-0.1**
ULN				pmax	pmax		
	comp=Z,6.0nm,1.0s						
ULN	**Ulaanbaatar**	**26.86**	**301**	*e*P	**P**	**05 20 33.8**	**0.0**
	comp=Z,6.3nm,1.0s						
XAN	**Xi'an**	**27.17**	**270**	P	**P**	**05 20 36.4**	**-0.1**
XAN				pP	sP	05 20 50.9	-1.7
XAN				S	S	05 25 51.2	+39
XAN				pmax	pmax		
	comp=Z,12nm,0.7s						
XAN				pmax	pmax		
	comp=Z,75nm,6.6s						
XAN				LR	LR		
	comp=N,130nm,17.4s						
XAN				LR	LR		
	comp=E,170nm,20.3s						
XAN				LR	LR		
	comp=Z,190nm,25.1s						
SONA1	**Songino Array**	**27.30**	**301**	*e*P	**P**	**05 20 37.2**	**-0.4**
SONM	**Songino Array**	**27.30**	**301**	P	**P**	**05 20 37.5**	**-0.2**
	comp=Z,2.7nm,0.7s,baz=96,slow=8.8,SNR=17						
SONM				LR	LR	05 31 44.7	
	comp=Z,340nm,19.7s,baz=118,slow=37						
ENH	**Enshi**	**28.24**	**262**	*e*P	**P**	**05 20 45.1**	**-1.0**
	comp=Z,33nm,0.8s						
H11N2	**WAKE ISLAND Hy**	**28.66**	**125**	T	T	05 51 15.9	
	baz=318,slow=75,SNR=1510						
H11N1	**WAKE ISLAND Hy**	**28.66**	**125**	T	T	05 51 16.6	
	baz=318,slow=75,SNR=2801						
H11N3	**WAKE ISLAND Hy**	**28.67**	**125**	T	T	05 51 17.4	
	baz=318,slow=75,SNR=2057						
H11S1	**WAKE ISLAND Hy**	**29.44**	**127**	T	T	05 52 15.4	
	baz=319,slow=76,SNR=373						
H11S3	**WAKE ISLAND Hy**	**29.44**	**127**	T	T	05 52 14.7	
	baz=319,slow=76,SNR=455						
H11S2	**WAKE ISLAND Hy**	**29.45**	**127**	T	T	05 52 15.3	
	baz=319,slow=76,SNR=300						
TLY	**Talaya**	**29.59**	**308**	P	**P**	**05 20 57.7**	**-0.1**
	comp=Z,13nm,0.9s,baz=157,slow=5.7,SNR=8.4						
TLY	**Talaya**	**29.59**	**308**	*e*P	**P**	**05 20 57.1**	**-0.8**
TLY				*e*S	**S**	**05 25 53.9**	**+3.8**
TLY				pmax	pmax		
	comp=Z,14nm,0.9s						
TLY				MLR	MLR		
	comp=Z,411nm,17.0s						
TLY	**Talaya**	**29.59**	**308**	*e*P	**P**	**05 20 57.8**	**-0.1**
	comp=Z,14nm,1.0s						
ZAK	**Zakamensk**	**29.62**	**305**	*e*P	**P**	**05 20 56.9**	**-1.4**
ZAK				pmax	pmax		
	comp=Z,13nm,1.0s						
LZH	**Lanzhou**	**30.46**	**277**	*e*P	**P**	**05 21 10.6**	**+4.7**
LZH				pP	sP	05 21 25.3	+3.3
LZH				sP	pP	05 21 31.7	+15
LZH				pmax	pmax		
	comp=Z,25nm,1.0s						
LZH				pmax	pmax		
	comp=Z,76nm,6.3s						
LZH				LR	LR		
	comp=N,190nm,14.0s						
LZH				LR	LR		
	comp=E,400nm,16.0s						
LZH				LR	LR		
	comp=Z,310nm,16.7s						
MOY	**Mondy**	**31.22**	**308**	*e*P	**P**	**05 21 11.7**	**-0.7**
MOY				pmax	pmax		
	comp=Z,11nm,1.7s						
BILL	**Bilibino**	**31.92**	**17**	*c*eP	**P**	**05 21 18.7**	**+0.5**
BILL				*e*		05 21 31.6	
BILL				*e*PPP	PPP	05 22 31.8	
BILL				pmax	pmax		
	comp=Z,10.0nm,1.0s						
BILL	**Bilibino**	**31.92**	**17**	*e*P	**P**	**05 21 18.7**	**+0.5**
	comp=Z,6.5nm,0.8s						
GYA	**Guiyang**	**32.27**	**258**	P	**P**	**05 21 21.0**	**-0.9**
GYA				pP	sP	05 21 36.8	-1.2
GYA				sP	pP	05 21 46.0	+13
GYA				PP	**PnPn**	**05 22 30.3**	**+1.2**
GYA				PcP	**PcP**	**05 24 11.0**	**+1.6**
GYA				S	S	05 26 55.4	+23
GYA				sS	sS	05 26 55.9	+4.5
GYA				ScP	**ScP**	**05 27 54.8**	**+5.0**
GYA				SS	**SnSn**	**05 28 25.0**	**-1.6**
GYA	**Guiyang**	**32.27**	**258**	ScS	ScS	05 31 45.2	-3.9
GYA				pmax	pmax		
	comp=Z,20nm,0.8s						
GYA				pmax	pmax		
	comp=Z,120nm,4.9s						
GYA				LR	LR		
	comp=N,560nm,17.0s						
GYA				LR	LR		
	comp=E,510nm,17.2s						
GYA				LR	LR		
	comp=Z,520nm,17.4s						
CD2	**Chengdu**	**32.40**	**267**	P	**P**	**05 21 20.5**	**-2.4**
CD2				pmax	pmax		
	comp=Z,10.0nm,0.6s						
GTA	**Gaotai**	**32.68**	**284**	*e*P	**P**	**05 21 25.1**	**-0.3**
GTA				pP	sP	05 21 40.6	-0.9
GTA				sP	pP	05 21 48.0	+11
GTA				PcP	**PcP**	**05 24 12.5**	**+2.1**
GTA				S	**S**	**05 26 34.8**	**-4.1**
GTA				sS	sS	05 26 59.2	+1.6
GTA				SS	**SnSn**	**05 28 32.6**	**-3.7**
GTA				pmax	pmax		
	comp=Z,13nm,1.1s						
GTA				pmax	pmax		
	comp=Z,67nm,5.2s						
GTA				LR	LR		
	comp=N,140nm,20.9s						
GTA				LR	LR		
	comp=E,410nm,19.0s						
GTA				LR	LR		
	comp=Z,490nm,19.0s						
TIXI	**Tiksi**	**33.40**	**352**	P	**P**	**05 21 30.6**	**-0.5**
	comp=Z,4.5nm,0.7s,baz=95,slow=11,SNR=3.6			

KMI pmax pmax
comp=Z,99nm,3.4s
KMI LR LR
comp=N,100nm,19.9s
KMI LR LR
comp=E,240nm,16.5s
KMI LR LR
comp=Z,210nm,17.1s
KRAR Krasnoyarsk 36.53 314 *e*P **P 05 21 58.7 +0.5**
KRAR pmax pmax
comp=Z,22nm,0.4s
TNA Tin City 38.78 30 *e*P **P 05 22 19.4 +2.3**
comp=Z,12nm,0.9s
SKNT Sakolnakorn 39.92 248 P **P 05 22 27.9 +0.7**
comp=Z,18nm,1.7s
CRAI Chiangrai 40.55 255 P **P 05 22 32.4 +0.1**
comp=Z,122nm,0.8s
WMQ Urumqi 40.59 295⇑ *i*P **P 05 22 32.2 -0.3**
WMQ pP pP 05 22 39.8 -4.2
WMQ sP sP 05 22 49.4 +0.6
WMQ PP **PnPn 05 24 09.9 -0.6**
WMQ S **S 05 28 38.5 -0.7**
WMQ pmax pmax
comp=Z,36nm,0.6s
WMQ pmax pmax
comp=Z,40nm,3.9s
WMQ LR LR
comp=N,52nm,26.6s
WMQ LR LR
comp=E,51nm,39.8s
WMQ LR LR
comp=Z,66nm,24.4s
SDPT Sand Point 40.93 47 *e*P **P 05 22 36.5 +1.4**
comp=Z,34nm,0.9s
ZAA0 Zalesovo Array 41.11 311 *e*P **P 05 22 36.0 -0.5**
ZALV Zalesovo Beam 41.11 311 P **P 05 22 36.1 -0.4**
comp=Z,15nm,0.7s,baz=87,slow=7.6,SNR=57
ZALV PcP **PcP 05 24 35.0 -0.4**
comp=Z,1.8nm,0.5s,baz=84,slow=2.2,SNR=3.3
ZALV LR LR 05 40 23.5
comp=Z,388nm,18.4s,baz=70,slow=37
CMAI Chiengmai2 41.72 256 P **P 05 22 46.2 +4.0**
comp=Z,35nm,1.1s,comp=Z,2μm
NRIK Noril'sk 41.76 334 P **P 05 22 40.7 -1.0**
comp=Z,2.5nm,0.5s,baz=125,slow=8.3,SNR=7.6
NRIK PcP **PcP 05 24 37.2 -0.1**
comp=Z,6.9nm,0.8s,baz=62,slow=3.1,SNR=4.3
NRIK LR LR 05 40 58.9
comp=Z,456nm,19.9s,baz=113,slow=37
UTTA Uttaradit 41.93 252 P **P 05 22 45.1 +1.4**
comp=Z,1.9nm,0.8s,comp=Z,56nm
NVS Novosibirsk 41.99 312 *e*P **P 05 22 42.9 -0.8**
NVS pmax pmax
comp=E,9.0nm,1.1s
NVS pmax pmax
comp=Z,13nm,1.1s
CHGN Chignik 42.07 46 *e*P **P 05 22 42.6 -1.8**
PBKT Sadao Pong 42.37 250 P **P 05 22 47.7 +0.4**
comp=Z,7.6nm,1.1s
CMMT Chiang Mai 42.47 254 P **P 05 22 48.1 0.0**
comp=Z,13nm,0.8s
CHTO Chiang Mai 42.47 254 P **P 05 22 48.2 +0.1**
comp=Z,58nm,0.8s
CHTO Chiang Mai 42.47 254 *e*P **P 05 22 48.3 +0.1**
CHTO pmax pmax
comp=Z,11nm,0.8s
CHTO Chiang Mai 42.47 254 *e*P **P 05 22 48.3 +0.1**
comp=Z,11nm,0.8s
CM31 Chiang Mai Arr 42.69 254 *e*P **P 05 22 49.9 0.0**
CM01 Chiang Mai Arr 42.70 254 *e*P **P 05 22 49.7 -0.2**
LSA Lhasa 42.74 274 *e*P **P 05 22 51.8 +1.0**
LSA pmax pmax
comp=Z,9.0nm,0.9s
LSA Lhasa 42.74 274 *e*P **P 05 22 51.8 +1.0**
comp=Z,9.2nm,0.9s
TT01 Tatalina 43.39 36 *e*P **P 05 22 55.6 +0.5**
TTA Tatalina 43.40 36 *e*P **P 05 22 55.9 +0.7**
TTA pmax pmax
comp=Z,3.0nm,1.0s
TTA Tatalina 43.40 36 *e*P **P 05 22 55.9 +0.7**
comp=Z,3.4nm,1.0s
SVW2 Sparrevohn 43.53 39 *e*P **P 05 22 56.5 +0.3**
comp=Z,7.3nm,0.8s
MHMT Maesarieng 43.62 254 P **P 05 22 58.3 +0.9**
comp=Z,9.6nm,0.8s
MK01 Makanchi Array 43.67 300 *e*P **P 05 22 56.9 -0.6**
MK31 Makanchi Array 43.67 300 *i*P **P 05 22 57.1 -0.5**
MK31 pmax pmax
comp=Z,24nm,0.7s
MK31 Makanchi Array 43.67 300 *e*P **P 05 22 57.1 -0.5**
MKAR Makanchi Array 43.67 300 P **P 05 22 57.0 -0.5**
comp=Z,22nm,0.7s,baz=85,slow=9.7,SNR=183
MKAR LR LR 05 41 43.1
comp=Z,185nm,21.1s,baz=46,slow=37
MKAR Makanchi Array 43.67 300 P **P 05 22 57.1 -0.5**
MKAR pmax pmax
comp=Z,23nm,0.7s
MKAR MLR MLR
comp=Z,185nm,21.1s
MAKZ Makanchi 43.88 301 *e*P **P 05 22 58.8 -0.4**
MAKZ pmax pmax
comp=Z,23nm,0.9s
MAKZ Makanchi 43.88 301 *e*P **P 05 22 58.8 -0.4**
comp=Z,23nm,0.9s
RABL Rabaul 43.96 166 *e*P **P 05 23 00.1 0.0**
comp=Z,243nm,0.4s
SHL Shillong 44.14 268 *e*P **P 05 23 01.0 -0.8**
RSO Redoubt South 44.92 39 *e*P **P 05 23 09.4 +1.9**
PPLA Purkeypile 45.15 36 *e*P **P 05 23 11.7 +2.5**
comp=Z,24nm,1.4s
KDAK Kodiak Island 45.17 43 *i*P **P 05 23 05.7 -3.6**
KDAK Kodiak Island 45.17 43 *e*P **P 05 23 10.4 +1.1**
comp=Z,12nm,0.6s
CAST Castle Rocks 45.20 35 *e*P **P 05 23 12.1 +2.6**
comp=Z,7.7nm,0.8s
SPU Mount Spurr 45.24 38 *e*P **P 05 23 12.2 +2.2**
KURK Kurchatov 45.27 307 *ce*P **P 05 23 09.2 -1.0**
KURK pmax pmax
comp=Z,68nm,0.8s
KURK pmax pmax
comp=Z,117nm,0.8s
KURK Kurchatov 45.27 307 *e*P **P 05 23 09.6 -0.6**
comp=Z,58nm,0.8s
BPAW Bear Paw Mtn. 45.69 34 *e*P **P 05 23 15.5 +2.1**
comp=Z,3.3nm,0.8s
KTH Kantishna Hill 45.72 35 *e*P **P 05 23 15.1 +1.4**
comp=Z,14nm,0.8s
MLY Manley 45.80 33 *e*P **P 05 23 16.6 +2.3**
comp=Z,6.6nm,0.8s
TRF Thorofare Moun 46.00 35 *e*P **P 05 23 17.7 +1.6**
comp=Z,7.4nm,0.8s
COLD Coldfoot 46.08 30 *e*P **P 05 23 18.4 +1.9**
comp=Z,7.0nm,1.2s
BWN Browne 46.35 34 *e*P **P 05 23 20.0 +1.5**
comp=Z,38nm,1.1s
RC01 Rabbit Creek A 46.37 38 *e*P **P 05 23 18.9 +0.2**
comp=Z,15nm,0.8s
SEW Seward 46.59 40 *e*P **P 05 23 22.9 +2.5**
comp=Z,9.7nm,0.9s
MCK McKinley 46.60 35 *e*P **P 05 23 22.1 +1.5**
MCK pmax pmax
comp=Z,8.0nm,0.8s
MCK McKinley 46.60 35 *e*P **P 05 23 22.1 +1.5**
comp=Z,8.1nm,0.8s
PMR Palmer 46.62 38 *e*P **P 05 23 21.3 +0.6**
PMR pmax pmax
comp=Z,9.0nm,0.6s
PMR Palmer 46.62 38 *e*P **P 05 23 21.3 +0.6**
comp=Z,9.2nm,0.6s
RND Reindeer 46.65 35 *e*P **P 05 23 22.2 +1.2**
RND pmax pmax
comp=Z,10.0nm,0.9s
RND Reindeer 46.65 35 *e*P **P 05 23 22.2 +1.2**
comp=Z,10.0nm,0.9s
MDM Murphy Dome 46.87 33 *e*P **P 05 23 24.8 +2.1**
comp=Z,12nm,1.0s
WRH Wood River Hil 46.94 34 *e*P **P 05 23 24.7 +1.5**
comp=Z,4.7nm,0.7s
SML Sawmill 46.99 37 *e*P **P 05 23 25.3 +1.6**
SML pmax pmax
comp=Z,13nm,0.7s
SML Sawmill 46.99 37 *e*P **P 05 23 25.2 +1.6**
comp=Z,13nm,0.7s
CCB Clear Creek Bu 47.06 34 *e*P **P 05 23 25.5 +1.4**
comp=Z,2.5nm,0.6s
HDA Harding Lake 47.44 34 *e*P **P 05 23 27.7 +0.6**
comp=Z,9.0nm,0.8s
IL1 Eielson Array 47.45 33 *e*P **P 05 23 27.7 +0.5**
ILAR Eielson Array 47.45 33 P **P 05 23 28.2 +1.1**
comp=Z,8.2nm,0.6s,baz=267,slow=6.4,SNR=128
ILAR Eielson Array 47.45 33 P **P 05 23 28.3 +1.1**
ILAR pmax pmax
comp=Z,9.0nm,0.6s
ILB Eielson Array 47.45 33 *e*P **P 05 23 28.2 +1.1**
SCM Sheep Creek Mo 47.46 37 *e*P **P 05 23 29.2 +1.8**
SCM pmax pmax
comp=Z,14nm,0.7s
SCM Sheep Creek Mo 47.46 37 *e*P **P 05 23 29.1 +1.8**
comp=Z,14nm,0.7s
GUN Gumba 47.67 274 *e*P **P 05 23 29.6 -0.1**
comp=Z,56nm,0.6s
FYU Fort Yukon 48.04 31 *e*P **P 05 23 34.4 +2.8**
comp=Z,55nm,1.9s
KLU Klutina 48.16 38 *e*P **P 05 23 34.8 +2.0**
comp=Z,12nm,0.7s
KKN Kakani 48.19 275 *e*P **P 05 23 33.4 -0.2**
comp=Z,65nm,0.7s
PKIN Phulchoki 48.20 274 *e*P **P 05 23 32.9 -0.9**
comp=Z,15nm,0.7s
PAX Paxson 48.21 36 *e*P **P 05 23 35.5 +2.3**
PAX pmax pmax
comp=Z,4.0nm,0.7s
PAX Paxson 48.21 36 *e*P **P 05 23 35.5 +2.3**
comp=Z,3.6nm,0.7s
DIV Divide 48.28 38 *e*P **P 05 23 35.7 +2.0**
comp=Z,15nm,0.8s
EYAK Cordova Ski Ar 48.37 39 *e*P **P 05 23 36.3 +2.0**
comp=Z,13nm,0.7s
PMG Port Moresby 48.40 174 LR LR 05 44 34.5
comp=Z,12nm,20.2s,baz=70,slow=37
GKN Gorkha 48.59 275 *e*P **P 05 23 36.2 -0.4**
comp=Z,49nm,0.8s
DOT Dot Lake 48.77 35 *e*P **P 05 23 38.5 +1.1**
comp=Z,9.8nm,0.7s
BMRM Bremner River 48.86 38 *e*P **P 05 23 38.9 +0.8**
comp=Z,13nm,0.8s
MENT Mentasta 49.01 36 *e*P **P 05 23 40.7 +1.5**
comp=Z,8.2nm,0.9s
TKM2 Tokmak 2 49.31 297 P **P 05 23 41.8 -0.2**
TKM2 pmax pmax
comp=Z,32nm,1.0s
TKM2 Tokmak 2 49.31 297 *e*P **P 05 23 42.2 +0.2**
comp=Z,27nm,0.8s
KOLN Koldanda 49.50 275 *e*P **P 05 23 43.4 -0.3**
comp=Z,21nm,0.6s
BVA0 Borovoye Array 49.76 311 P **P 05 23 44.2 -0.8**
BVA0 pmax pmax
comp=Z,13nm,0.6s
BRVK Borovoye 49.81 311 P **P 05 23 44.9 -0.5**
BRVK pmax pmax
comp=Z,28nm,0.8s
BRVK Borovoye 49.81 311 *e*P **P 05 23 45.0 -0.4**
comp=Z,22nm,0.9s
PYUN Piuthan 49.82 276 *e*P **P 05 23 45.9 -0.2**
comp=Z,163nm,0.9s
EGAK Eagle 49.89 33 *e*P **P 05 23 47.0 +1.1**
comp=Z,7.6nm,1.1s
BALM Baldy 49.94 38 *e*P **P 05 23 48.4 +1.9**
BALM pmax pmax
comp=Z,8.0nm,0.8s
BALM Baldy 49.94 38 *e*P **P 05 23 48.4 +1.9**
comp=Z,8.2nm,0.8s
FRU Bishkek 50.02 297 *e*P **P 05 23 46.0 -1.2**
FRU *e* 05 24 02.0
AAK Ala-Archa 50.17 297 P **P 05 23 47.6 -0.9**
AAK pmax pmax
comp=Z,7.0nm,0.7s
AAK Ala-Archa 50.17 297 *e*P **P 05 23 48.2 -0.4**
comp=Z,8.2nm,0.9s
KSH Kashi 50.24 293 P **P 05 23 53.0 +3.9**
KSH *e*pP sP 05 24 08.8 +3.2
KSH *e*sP pP 05 24 15.7 +15
KSH *e*PP **PP 05 25 50.4 +5.9**
KSH *e*ScP **ScP 05 29 00.6 +0.4**
KSH PcS **PcS 05 29 07.1 +2.2**
KSH S **S 05 31 00.7 +2.1**
KSH sS sS 05 31 27.2 +9.2
KSH ScS **ScS 05 33 36.5 -0.4**
KSH Kashi 50.24 293 SS **SS 05 34 33.6 +1.6**
KSH pmax pmax
comp=Z,9.0nm,0.9s
KSH pmax pmax
comp=Z,100nm,3.9s
KSH LR LR
comp=N,170nm,6.7s
KSH LR LR
comp=E,95nm,5.8s
KSH LR LR
comp=Z,110nm,7.1s
EKS2 Erkin-Say 50.66 297 *e*P **P 05 23 51.8 -0.3**
EKS2 pmax pmax
comp=Z,12nm,0.8s
EKS2 Erkin-Say 50.66 297 *e*P **P 05 23 51.8 -0.3**
comp=Z,12nm,0.8s
DAWY Dawson 50.76 34 *e*P **P 05 23 54.4 +1.9**
comp=Z,2.7nm,1.0s
SOEI Soe 51.35 203 *e*P **P 05 23 56.7 -0.8**
comp=Z,66nm,0.7s
INK Inuvik 52.30 28 *e*P **P 05 24 05.5 +1.6**
INK pmax pmax
comp=Z,9.0nm,1.1s
INK Inuvik 52.30 28 *e*P **P 05 24 05.5 +1.6**
comp=Z,8.7nm,1.1s
KK31 Karatay Array 52.74 299 *i*P **P 05 24 07.0 -0.6**
KK31 pmax pmax
comp=Z,16nm,0.8s
KKAR Karatay Array 52.74 299 *e*P **P 05 24 07.0 -0.5**
KKAR Karatay Array 52.74 299 *e*P **P 05 24 07.0 -0.5**
SVE Sverdlovsk 54.12 318 *de*P **P 05 24 17.5 +0.1**
SVE pmax pmax
comp=Z,73nm,0.8s
SVE MLR MLR
comp=Z,536nm,17.0s
ARU Arti 55.33 318 *c i*P **P 05 24 25.7 -0.5**
ARU *PP **sP 05 24 41.0 -1.8**
ARU 05 25 24.8
ARU 05 26 27.0
ARU S **S 05 32 05.5 -1.7**
ARU SS **SS 05 35 49.2 -2.2**
ARU pmax pmax
comp=Z,44nm,0.7s
ARU MLR MLR
comp=Z,449nm,18.0s
ARU Arti 55.33 318 *e*P **P 05 24 25.9 -0.3**
comp=Z,46nm,0.8s
AB31 Akbulak array 57.19 309 P **P 05 24 38.8 -0.8**
AB31 pmax pmax
comp=Z,16nm,0.6s
ABKAR Akbulak array 57.19 309 *e*P **P 05 24 38.8 -0.8**
KBL Kabul 57.36 290 *e*P **P 05 24 40.5 -0.8**
KBL pmax pmax
comp=Z,8.0nm,0.8s
KBL Kabul 57.36 290 *e*P **P 05 24 40.5 -0.8**
comp=Z,8.3nm,0.8s
KBS Kingsbay 58.81 350 *e*P **P 05 24 51.3 +0.8**
KBS pmax pmax
comp=Z,32nm,1.1s
KBS Kingsbay 58.81 350 *e*P **P 05 24 51.3 +0.8**
comp=Z,32nm,1.1s
FITZ Fitzroy Crossi 58.93 199 P **P 05 24 51.8 -0.2**
comp=Z,3.1nm,0.8s,baz=343,slow=7.9,SNR=4.6
FITZ Fitzroy Crossi 58.93 199 *e*P **P 05 24 52.4 +0.5**
comp=Z,40nm,1.6s
WRAB Tennant Creek 59.12 189 *e*P **P 05 24 52.9 -0.4**
WRAB Tennant Creek 59.12 189 *e*P **P 05 24 52.9 -0.4**
WB2 Warramunga Arr 59.13 189 *e*P **P 05 24 53.2 -0.2**
comp=Z,10nm,0.8s
WRA Warramunga Arr 59.13 189 P **P 05 24 52.9 -0.5**
comp=Z,4.2nm,0.6s,baz=6.8,slow=7.1,SNR=139
RES Resolute Bay 60.50 15 *e*P **P 05 25 02.5 +0.4**
RES pmax pmax
comp=Z,8.0nm,0.8s
RES Resolute Bay 60.50 15 *e*P **P 05 25 02.5 +0.4**
comp=Z,7.7nm,0.8s
TMCR Tamitsa 61.33 331 *e*P **P 05 25 07.2 -0.7**
TMCR pmax pmax
comp=Z,45nm,1.1s
YKW3 Yellowknife Ar 61.70 31 *e*P **P 05 25 10.7 +0.2**
comp=Z,15nm,1.9s
YKA Yellowknife Ar 61.74 31 P **P 05 25 11.3 +0.6**
comp=Z,1.7nm,0.8s,baz=302,slow=6.6,SNR=38
YKB5 Yellowknife Ar 61.74 31 *e*P **P 05 25 10.8 +0.1**
KEV Kevo 61.82 339 *e*P **P 05 25 11.4 +0.2**
KEV Kevo 61.82 339 *e*P **P 05 25 11.4 +0.2**
KEV pmax pmax
comp=Z,19nm,0.9s
KEV Kevo 61.82 339 *e*P **P 05 25 11.4 +0.2**
comp=Z,19nm,0.9s
ARA0 ARCESS Array S 62.38 339 *e*P **P 05 25 14.8 -0.1**
ARCES ARCESS Array B 62.38 339 P **P 05 25 14.2 -0.7**
comp=Z,5.1nm,0.8s,baz=55,slow=6.3,SNR=17
ARCES LR LR 05 56 57.0
comp=Z,55nm,18.9s,baz=50,slow=40
ARE0 ARCESS Array S 62.38 339 *e*P **P 05 25 14.9 0.0**
ARE0 ARCESS Array S 62.38 339 *e*P **P 05 25 15.1 +0.2**
comp=Z,44nm,1.6s
KLMR Klimovskoe 62.44 327 *e*P **P 05 25 12.2 -3.2**
KLMR *e**PP **sP 05 25 31.4 -0.8**
KLMR *e* 05 27 29.4
KLMR pmax pmax
comp=Z,13nm,0.8s
AS01 Alice Springs 62.85 189 *e*P **P 05 25 18.3 -0.2**
ASAR Alice Springs 62.86 189 P **P 05 25 18.6 -0.1**
comp=Z,1.5nm,0.7s,baz=6.6,slow=5.2,SNR=17
ASAR LR LR 05 53 50.7
comp=Z,56nm,19.1s,baz=304,slow=37
KTK1 Kautokeino 63.33 339 *e*P **P 05 25 21.2 0.0**
KTK1 IAmb IAmb 05 25 21.7
comp=Z,16nm,0.9s
GEYT Alibeck 63.48 298 P **P 05 25 22.6 -0.2**
comp=Z,9.5nm,0.6s,baz=29,slow=3.4,SNR=14
GEYT LR LR 05 54 41.8
comp=Z,91nm,19.5s,baz=60,slow=38
HEF Hetta 63.61 339 *e*P **P 05 25 22.9 -0.2**
DAG Danmarks Havn 63.85 355 *i*P **P 05 25 24.2 -0.3**
comp=Z,9.2nm,0.8s
DAG Danmarks Havn 63.85 355 *i*P **P 05 25 24.2 -0.3**
DAG pmax pmax
comp=Z,7.0nm,0.8s
KIF Kilpisjarvi 64.00 340 *e*P **P 05 25 25.3 -0.3**
TRO Tromso 64.05 341 *e*P **P 05 25 25.5 -0.4**
MOS Moscow 66.06 323 *e*P **P 05 25 34.5 -4.7**
MOS *e* 05 25 59.4
VRH Novokhopyorsk 66.57 318 *e*P **P 05 25 40.6 -1.9**
VRH pmax pmax
comp=Z,50nm,1.8s
LTY Liberty 66.79 47 *e*P **P 05 25 45.8 +1.6**
comp=Z,3.6nm,0.7s
OBN Obninsk 66.91 323 *ce*P **P 05 25 44.4 -0.3**
OBN *e* 05 25 59.5
OBN *e* 05 26 11.0
OBN *e* 05 28 10.4
OBN pmax pmax
comp=Z,34nm,2.5s
OBN MLR MLR
comp=Z,196nm,16.0s
LPSR Galich'ya Gora 67.22 320 *e*P **P 05 25 45.7 -0.9**
LPSR pmax pmax
comp=Z,10.0nm,0.8s
H04A Detroit Lake 67.30 50 *e*P **P 05 25 49.4 +2.0**
comp=Z,28nm,1.9s
FIA1 FINESS Array S 67.37 332 *e*P **P 05 25 47.2 -0.2**
comp=Z,24nm,0.8s
FINES FINESS Array B 67.37 332 P **P 05 25 47.1 -0.3**
comp=Z,19nm,0.7s,baz=47,slow=8.4,SNR=77
FINES LR LR 05 57 04.9
comp=Z,233nm,21.8s,baz=18,slow=38
C09A Chrisman Ranch 67.85 46 *e*P **P 05 25 52.6 +1.8**
comp=Z,6.3nm,0.8s
VSR Storozhevoye 67.89 319 *e*P **P 05 25 49.4 -1.5**
VSR pmax pmax
comp=Z,10.0nm,0.5s
HUMO Hull Mountain 67.96 53 *e*P **P 05 25 54.2 +2.7**
comp=Z,16nm,1.8s
SUMG Summit 68.69 0 *i*P **P 05 25 56.5 +0.4**
comp=Z,10nm,0.7s
SUMG Summit 68.69 0 *i*P **P 05 25 56.5 +0.4**
SUMG pmax pmax
comp=Z,10.0nm,0.7s
SUMG Summit 68.69 0 *e*P **P 05 25 56.9 +0.8**
comp=Z,11nm,0.7s
VSU Vasula 69.08 329 *de*P **P 05 25 58.2 0.0**
VSU pmax pmax
comp=Z,60nm,1.0s
GOF Gofitskoye 69.28 312 *e*P **P 05 25 58.7 -1.0**
WALA Waterton Lakes 69.50 43 *e*P **P 05 26 02.3 +1.1**
comp=Z,3.9nm,0.8s
ARMA Armidale 69.64 171 *e*P **P 05 26 03.4 +1.4**
comp=Z,47nm,1.1s
ZEI Tsey 70.07 309 *e*P **P 05 26 03.2 -1.7**
ZEI pmax pmax
comp=Z,14nm,0.8s
JTMT Jette 70.08 44 *e*P **P 05 26 06.6 +1.8**
KIV Kislovodsk 70.12 311 *e*P **P 05 26 05.7 +0.6**
KIV pmax pmax
comp=Z,26nm,0.8s
KIV Kislovodsk 70.12 311 *e*P **P 05 26 05.7 +0.6**
comp=Z,26nm,0.8s
KBZ Khabaz 70.13 310 P **P 05 26 05.3 +0.4**
comp=Z,10nm,0.9s,baz=55,slow=3.8,SNR=16
KBZ LR LR 06 01 43.0
comp=Z,65nm,19.1s,baz=35,slow=40
SWMT Swartz Lake 70.38 44 *e*P **P 05 26 08.1 +1.5**
UOSS Minazif 71.86 288 *e*P **P 05 26 15.7 0.0**
comp=Z,0.9nm,0.9s
FCC Fort Churchill 71.91 27 *e*P **P 05 26 16.0 +0.5**
FCC pmax pmax
comp=Z,6.0nm,0.8s
FCC Fort Churchill 71.91 27 *e*P **P 05 26 16.0 +0.5**
comp=Z,6.1nm,0.8s
LRM Limekiln Ridge 72.25 45 *e*P **P 05 26 19.7 +1.6**
NC405 NORSAR Array S 72.40 337 *e*P **P 05 26 18.5 0.0**
NC303 NORSAR Array S 72.42 337 *e*P **P 05 26 18.5 0.0**
DLMT Dillon 72.45 46 *e*P **P 05 26 21.2 +2.0**
comp=Z,3.4nm,0.8s
NC204 NORSAR Array S 72.56 338 *e*P **P 05 26 19.1 -0.3**
NB201 NORSAR Array S 72.58 337 *e*P **P 05 26 19.5 0.0**
NB2 NORSAR Subarra 72.61 337 P **P 05 26 19.2 -0.5**
comp=Z,8.8nm,0.7s,baz=39,slow=6.2
NOA NORSAR Array B 72.61 337 P **P 05 26 19.6 -0.1**
comp=Z,7.3nm,0.7s,baz=39,slow=6.0,SNR=39
NOA LR LR 06 00 50.7
comp=Z,138nm,21.7s,baz=30,slow=38
NOA NORSAR Array B 72.61 337 P **P 05 26 19.6 -0.1**
NOA pmax pmax
comp=Z,11nm,0.9s
NOA MLR MLR
comp=Z,138nm,21.7s
ANN Anapa 72.64 314 *e*P **P 05 26 17.2 -2.9**
ANN *e* 05 28 59.0
ANN *e*S **S 05 35 36.0 -6.0**
ANN *e* 05 36 19.0
ANN pmax pmax
comp=Z,106nm,1.9s
NBO02 NORSAR Array S 72.71 338 *e*P **P 05 26 19.9 -0.4**
NBO00 NORSAR Array S 72.75 338 *e*P **P 05 26 20.5 0.0**
NAO01 NORSAR Array S 72.87 337 *e*P **P 05 26 21.5 +0.4**
AKASG Malin Array Be 73.14 322 P **P 05 26 22.1 -0.8**
comp=Z,7.6nm,0.6s,baz=44,slow=6.0,SNR=39
AKASG LR LR 06 01 25.4
comp=Z,136nm,18.6s,baz=40,slow=38
AKBB Malin Array Si 73.14 322 *e*P **P 05 26 22.6 -0.3**
AKBB pmax pmax
comp=Z,13nm,0.6s
AKBB Malin Array Si 73.14 322 *e*P **P 05 26 22.6 -0.3**
comp=Z,13nm,0.6s
KIEV Kiev 73.15 322 *e*P **P 05 26 22.4 -0.6**
KIEV pmax pmax
comp=Z,14nm,0.8s
KIEV Kiev 73.15 322 *e*P **P 05 26 22.4 -0.6**
comp=Z,14nm,0.8s
AK11 Malin Array Si 73.18 322 *e*P **P 05 26 22.6 -0.6**
NV01 Mina Array Sit 73.25 54 *e*P **P 05 26 25.7 +1.6**
NVAR Mina Array Bea 73.25 54 P **P 05 26 26.0 +1.9**
comp=Z,1.7nm,0.8s,baz=287,slow=6.1,SNR=12
NVAR LR LR 05 52 13.8
comp=Z,11nm,21.6s,baz=339,slow=30
SUW Suwalki 73.58 327 *e*P **P 05 26 25.1 -0.3**
SUW Suwalki 73.58 327 *e*P **P 05 26 25.1 -0.3**
GCMT Greycliff 73.79 44 *e*P **P 05 26 29.1 +2.0**
SFJD Kangerlussuaq 73.84 5 *i*P **P 05 26 26.8 0.0**
comp=Z,6.2nm,0.9s
SFJD Kangerlussuaq 73.84 5 *i*P **P 05 26 26.8 0.0**
SFJD pmax pmax
comp=Z,6.0nm,0.9s
KONO Kongsberg 74.21 337 *e*P **P 05 26 28.9 -0.2**
KONO pmax pmax
comp=Z,16nm,1.2s

KONO	Kongsberg	74.21	337	eP		P	05 26 28.9	-0.2
	comp=Z,16nm,1.2s							
HVU	Hansel Valley	74.57	49	eP		P	05 26 32.4	+0.7
HVU					pmax	pmax		
	comp=Z,2.0nm,0.8s							
HVU	Hansel Valley	74.57	49	eP		P	05 26 32.4	+0.7
	comp=Z,1.9nm,0.8s							
R11A	Troy Canyon, C	75.00	53	eP		P	05 26 35.6	+1.3
	comp=Z,1.5nm,0.8s							
LAO	LASA Array	75.02	42	eP		P	05 26 35.7	+1.6
	comp=Z,4.3nm,0.8s							
SORM	Soroca	75.28	321	⇑iP		P	05 26 34.5	-1.0
SORM	Soroca	75.28	321	⇑P		P	05 26 34.5	-1.0
TPNV	Topopah Spring	75.44	54	eP		P	05 26 37.2	+0.3
TPNV					pmax	pmax		
	comp=Z,9.0nm,1.5s							
TPNV	Topopah Spring	75.44	54	eP		P	05 26 37.1	+0.3
	comp=Z,8.6nm,1.5s							
DUG	Dugway, Tooele	75.54	50	eP		P	05 26 39.3	+2.0
DUG					pmax	pmax		
	comp=Z,3.0nm,0.8s							
DUG	Dugway, Tooele	75.54	50	eP		P	05 26 39.3	+2.0
	comp=Z,2.6nm,0.8s							
BW06	Boulder Array	75.78	46	eP		P	05 26 40.0	+1.2
	comp=Z,1.8nm,0.7s							
PD31	Pinedale Array	75.78	46	eP		P	05 26 39.6	+0.8
PDAR	Pinedale Array	75.78	46	P		P	05 26 39.9	+1.1
	comp=Z,1.6nm,0.6s,baz=259,slow=2.3,SNR=23							
BSD	Bornholm Skovb	76.01	332	iP		P	05 26 39.1	-0.4
	comp=Z,15nm,0.8s							
BSD	Bornholm Skovb	76.01	332	i P		P	05 26 39.1	-0.4
BSD					pmax	pmax		
	comp=Z,15nm,0.8s							
NLU	North Lily Min	76.13	50	eP		P	05 26 42.6	+1.9
	comp=Z,2.6nm,1.0s							
BEL	Belsk	76.15	327	eP		P	05 26 41.1	+0.8
BEL	Belsk	76.15	327	eP		P	05 26 41.2	+0.8
MPU	Maple Canyon	76.35	49	eP		P	05 26 43.9	+1.9
	comp=Z,2.7nm,0.8s							
KWP	Kalwaria Pacla	76.91	325	eP		P	05 26 45.2	+0.5
KWP	Kalwaria Pacla	76.91	325	⇓iP		P	05 26 45.5	+0.8
KWP	Kalwaria Pacla	76.91	325	⇓P		P	05 26 45.5	+0.8
BUR08	Bucovina Ar. S	77.16	322	eP		P	05 26 46.6	+0.3
BURAR	Bucovina Array	77.17	322	⇑iP		P	05 26 45.9	-0.5
BURAR	Bucovina Array	77.17	322	⇑P		P	05 26 45.9	-0.5
TESR	Tescani	77.24	320	⇑iP		P	05 26 46.4	-0.3
MTPU	Mount Pierson	77.28	51	eP		P	05 26 47.7	+0.2
	comp=Z,4.4nm,1.2s							
LCMT	Little Creek M	77.28	53	eP		P	05 26 47.9	+0.7
	comp=Z,1.9nm,0.9s							
RAO	Raoul Island	77.41	145	eP		P	05 26 48.3	+0.7
RAO	Raoul Island	77.41	145	eP		P	05 26 48.3	+0.7
	comp=Z,691nm,0.8s							
SRU	San Rafael Swe	77.59	50	eP		P	05 26 50.7	+1.7
SRU					pmax	pmax		
	comp=Z,5.0nm,0.7s							
SRU	San Rafael Swe	77.59	50	eP		P	05 26 50.6	+1.7
	comp=Z,4.5nm,0.7s							
VRI	Vrincioaia	77.65	320	⇑iP		P	05 26 49.8	+0.8
VRI	Vrincioaia	77.65	320	⇑P		P	05 26 49.8	+0.8
STHS	Stebnicka Huta	77.72	325	eP		P	05 26 50.3	+1.0
STHS					pmax	pmax		
	comp=Z,6.0nm,0.9s							
STHS	Stebnicka Huta	77.72	325	eP		P	05 26 50.3	+1.0
OJC	Ojcow	77.77	326	eP		P	05 26 49.6	+0.1
OJC	Ojcow	77.77	326	eP		P	05 26 49.6	+0.1
OJC	Ojcow	77.77	326	eP		P	05 26 50.0	+0.5
	comp=Z,19nm,1.0s							
UZH	Uzhgorod	77.82	324	eP		P	05 26 48.7	-1.1
UZH				e			05 26 53.0	
RSSD	Black Hills	77.89	42	eP		P	05 26 51.6	+1.0
RSSD					pmax	pmax		
	comp=Z,3.0nm,0.6s							
RSSD	Black Hills	77.89	42	eP		P	05 26 51.6	+1.0
	comp=Z,2.8nm,0.6s							
CRVS	Cervenica-Dubn	78.00	325	eP		P	05 26 51.0	+0.1
CRVS	Cervenica-Dubn	78.00	325	eP		P	05 26 51.0	+0.1
BR131	Keskin Array S	78.04	312	eP		P	05 26 51.7	+0.2
BRTR	Keskin Array B	78.04	312	P		P	05 26 51.2	-0.2
	comp=Z,1.3nm,0.5s,baz=106,slow=3.5,SNR=8.1							
BRTR					PP	PP	05 29 53.0	+5.5
	comp=Z,0.8nm,0.7s,baz=34,slow=7.5,SNR=3.6							
BRTR					LR	LR	06 05 43.6	
	comp=Z,45nm,18.9s,baz=60,slow=39							
NIE	Niedzica	78.14	326	eP		P	05 26 52.2	+0.6
NIE	Niedzica	78.14	326	eP		P	05 26 52.2	+0.6
BR231	Keskin MP Arra	78.47	312	eP		P	05 26 52.1	-1.6
LANS	Liptovska Anna	78.70	326	eP		P	05 26 56.1	+1.3
LANS	Liptovska Anna	78.70	326	eP		P	05 26 56.1	+1.3
KECS	Kecovo	78.75	325	eP		P	05 26 54.9	-0.1
KECS					pmax	pmax		
	comp=Z,3.0nm,1.0s							
KECS	Kecovo	78.75	325	eP		P	05 26 54.9	-0.1
OKC	Ostrava-Krasne	78.76	327		AMS	AMS	06 04 10.0	
	comp=Z,200nm,19.9s							
KSP	Ksiaz	78.77	328	eP		P	05 26 55.4	+0.4
KSP	Ksiaz	78.77	328	eP		P	05 26 55.4	+0.4
VOIR		78.79	320	⇑iP		P	05 26 56.3	+0.9
VOIR		78.79	320	⇑P		P	05 26 56.3	+0.9
PV09	Paradox Valley	78.81	49	eP		P	05 26 58.1	+2.2
PV10	Paradox Valley	78.95	49	eP		P	05 26 58.7	+2.1
MORC	Moravsky Berou	79.06	327	⇑iP		P	05 26 57.3	+0.6
MORC	Moravsky Berou	79.06	327	⇑P		P	05 26 57.3	+0.6
MORC	Moravsky Berou	79.06	327	eP		P	05 26 57.3	+0.6
	comp=Z,46nm,0.9s							
DPC	Dobruska-Polom	79.13	328	eP		P	05 26 57.5	+0.4
DPC					AMS	AMS	06 04 00.0	
	comp=Z,200nm,23.2s							
DPC	Dobruska-Polom	79.13	328	eP		P	05 26 57.5	+0.4
DPC					MLR	MLR		
	comp=Z,200nm,23.2s							
UPC	Upice	79.14	328	eP		P	05 26 57.4	+0.3
UPC					AMS	AMS	06 04 10.0	
	comp=Z,200nm,24.0s							
UPC	Upice	79.14	328	eP		P	05 26 57.4	+0.3
UPC					MLR	MLR		
	comp=Z,200nm,24.0s							
PSZ	Piszkesteto	79.43	325	⇓iP		P	05 26 59.0	+0.2
PSZ	Piszkesteto	79.43	325	⇓P		P	05 26 59.0	+0.2
PSZ	Piszkesteto	79.43	325	eP		P	05 26 59.4	+0.6
	comp=Z,11nm,1.0s							
VYHS	Vyhne	79.47	326	eP		P	05 26 59.1	+0.2
VYHS					pmax	pmax		
	comp=Z,4.0nm,1.1s							
VYHS	Vyhne	79.47	326	eP		P	05 26 59.1	+0.2
BRG	Berggiesshubel	79.68	330	i P		P	05 27 00.0	0.0
	comp=Z,9.6nm,0.8s							
BRG	Berggiesshubel	79.68	330	i P		P	05 27 00.0	0.0
BRG					pmax	pmax		
	comp=Z,10.0nm,0.8s							
PVCC	Panska Ves	79.70	329		AMS	AMS	06 04 50.0	
	comp=Z,200nm,17.9s							
CLL	Collm	79.71	330	i P		P	05 27 00.0	-0.1
	comp=Z,20nm,0.8s							
CLL					L	L	06 06 00.0	
	comp=Z,100nm,20.3s							
CLL	Collm	79.71	330	i P		P	05 27 00.0	-0.1
CLL					pmax	pmax		
	comp=Z,20nm,0.8s							
CLL	Collm	79.71	330	eP		P	05 27 00.1	-0.1
	comp=Z,20nm,0.8s							
VRAC	Vranov	79.82	327	⇑iP		P	05 26 57.0	-3.8
VRAC	Vranov	79.82	327	⇑P		P	05 26 57.0	-3.8
X16A	Lo Mia Camp, P	80.07	54	eP		P	05 27 03.7	+1.0
	comp=Z,10nm,1.9s							
GOPC	GO Pecny, Ondr	80.10	329	eP		P	05 27 02.9	+0.6
GOPC					AMS	AMS	06 04 30.0	
	comp=Z,200nm,23.2s							
GOPC	GO Pecny, Ondr	80.10	329	eP		P	05 27 02.9	+0.6
GOPC					MLR	MLR		
	comp=Z,200nm,23.2s							
PRU	Pruhonice	80.14	329	eP		P	05 27 03.0	+0.5
PRU					AMS	AMS	06 04 20.0	
	comp=Z,200nm,24.3s							
PRU	Pruhonice	80.14	329	eP		P	05 27 03.0	+0.5
PRU					MLR	MLR		
	comp=Z,200nm,24.3s							
TREC	Trest	80.29	328	eP		P	05 27 04.0	+0.6
TREC	Trest	80.29	328	eP		P	05 27 04.0	+0.6
BZS	Buzias	80.33	322	⇓iP		P	05 27 01.9	-1.7
BZS	Buzias	80.33	322	⇓P		P	05 27 01.9	-1.7
MDVR	Moldovita	80.90	322	⇑iP		P	05 27 06.2	-0.6
CONA	Conrad Observa	81.19	327	i P		P	05 27 08.9	+0.6
	comp=Z,7.7nm,0.8s							
KHC	Kasperske Hory	81.20	329	eP		P	05 27 08.6	+0.3
KHC					AMS	AMS	06 05 20.0	
	comp=Z,200nm,21.4s							
KHC	Kasperske Hory	81.20	329	eP		P	05 27 08.6	+0.3
KHC					MLR	MLR		
	comp=Z,200nm,21.4s							
KHC	Kasperske Hory	81.20	329	eP		P	05 27 08.8	+0.5
	comp=Z,4.1nm,0.8s							
GEC2	GERESS Array S	81.38	329	eP		P	05 27 09.3	0.0
GEC2	GERESS Array S	81.38	329	eP		P	05 27 09.3	0.0
GERES	GERESS Array B	81.38	329	P		P	05 27 09.2	0.0
	comp=Z,3.6nm,0.7s,baz=34,slow=5.0,SNR=25							
GERES					LR	LR	06 06 17.1	
	comp=Z,210nm,19.4s,baz=52,slow=38							
GEA0	GERESS Array S	81.38	329	eP		P	05 27 08.8	-0.5
SOKA	Soboth	82.52	326	i P		P	05 27 15.3	0.0
	comp=Z,18nm,0.9s,SNR=9.7							
OBKA	Obir	82.86	327	i P		P	05 27 16.6	-0.5
	comp=Z,6.9nm,0.8s							
KBA	Koelnbreinsper	82.92	328	i P		P	05 27 17.1	-0.4
	comp=Z,10nm,0.8s,SNR=7.0							
MYKA	Terra Mystica	83.15	327	i P		P	05 27 17.9	-0.7
	comp=Z,3.9nm,0.5s							
SCHQ	Schefferville	83.23	16	P		P	05 27 18.9	+0.2
	comp=Z,4.7nm,0.9s,baz=259,slow=15,SNR=3.6							
SCHQ					LR	LR	06 06 09.2	
	comp=Z,40nm,21.3s,baz=334,slow=37							
ABTA	Abfaltersbach	83.53	328	i P		P	05 27 19.7	-0.8
	comp=Z,7.3nm,0.8s							
MOTA	Moosalm	83.62	329	i P		P	05 27 21.5	+0.4
	comp=Z,8.3nm,0.6s,SNR=5.6							
RETA	Reutte	83.64	329	i P		P	05 27 21.2	+0.1
	comp=Z,15nm,1.0s,SNR=9.0							
PDG	Podgorica	83.84	321	⇑iP		P	05 27 21.9	-0.2
BFO	Black Forest	83.90	331	i P		P	05 27 22.7	+0.4
BFO	Black Forest	83.90	331	eP		P	05 27 22.6	+0.3
	comp=Z,21nm,1.4s							
FETA	Feichten	84.03	329	i P		P	05 27 23.1	-0.1
	comp=Z,12nm,1.0s							
DAVA	Damuels	84.16	330	i PcP		P	05 27 24.2	+0.3
	comp=Z,21nm,0.9s,SNR=6.0							
PMOR	Pomariorio Ree	84.36	114	eT		T	07 00 49.8	
	comp=Z,34nm,0.3s							
FUORN	Ofenpass-Fuorn	84.55	329	eP		P	05 27 26.4	+0.4
	comp=Z,21nm,0.8s							
PPT	Papeete	84.92	117	LR		LR	05 56 17.1	
	comp=Z,77nm,21.7s,baz=330,slow=29							
PPT2	Papeete2	84.94	117	eLR		LR	05 54 18.7	
	comp=Z,150nm,23.2s							
PPT2	Papeete2	84.94	117	eT		T	07 01 32.5	
	comp=Z,13nm,0.3s							
PAE	Paea	84.98	117	eT		T	07 01 35.3	
	comp=Z,2.7nm,0.3s							
TIAR	Tiarei	85.08	117	eT		T	07 01 41.8	
	comp=Z,5.7nm,0.3s							
SENIN	Lac Senin/Sane	85.92	331	eP		P	05 27 32.5	-0.2
	comp=Z,6.1nm,0.8s							
TAOE	Nuku Hiva Isla	86.00	105	eLR		LR	05 54 55.6	
	comp=Z,124nm,23.0s							
MEH	Mehetia	86.18	117	eT		T	07 03 05.6	
	comp=Z,67nm,0.3s							
TX31	Lajitas Ar. Si	88.36	53	eP		P	05 27 45.4	+0.6
TXAR	Lajitas Array	88.37	53	P		P	05 27 45.8	+1.0
	comp=Z,0.6nm,0.6s,baz=287,slow=3.1,SNR=13							
WHAR	Wooly Hollow	90.50	42	eP		P	05 27 55.4	+0.9
	comp=Z,6.2nm,0.5s							
H06N1	SOCORRO T-PHAS	90.62	65	T		T	07 08 59.5	
	SNR=11							
H06E1	SOCORRO T-PHAS	90.72	65	T		T	07 09 12.8	
	SNR=8.1							
KEST	Kesra	93.84	323	LR		LR	06 15 22.3	
	comp=Z,136nm,18.0s,baz=302,slow=39							
ES19	SONSECA Array	95.75	334	eP		P	05 28 18.5	-0.2
ESDC	Sonseca Array	95.80	334	LR		LR	06 16 35.7	
	comp=Z,108nm,18.1s,baz=20,slow=39							
RKT	Rikitea	98.88	112	eLR		LR	06 00 57.4	
	comp=Z,558nm,35.8s							
TORD	Torodi Ar. Bea	116.39	316	PKP		PKPdf	05 33 35.4	-1.2
	comp=Z,0.3nm,0.5s,baz=33,slow=2.2,SNR=4.1							
SNAA	Sanae	142.85	197	PKP		PKPpre	05 34 19.4	
VNA2	Neumayer--Watz	144.42	197	PKP		PKPbc	05 34 26.0	-0.1
	baz=121,slow=1.8							
VNA3	Neumayer Olymp	144.67	195	PKP		PKPab	05 34 26.1	-0.6
VNA1	Neumayer--Stat	144.82	197	PKP		PKPbc	05 34 27.6	+0.3
LPAZ	La Paz	145.07	58	PKPbc		PKPdf	05 34 30.8	-0.2
	comp=Z,1.7nm,0.5s,baz=17,slow=3.6,SNR=10							
RCBR	Riachuelo	146.91	357	ePKPbc		PKPbc	05 34 35.9	+0.5

IDC 06 05:26:12.2±3.2, 0°.65N×125°.75E, h0km, mb3.4/3, mb1 3.6/3, mb1mx3.4/27, mbtmp3.5/3, Error ellipse: s-maj=427.2km s-min=24.9km az=65.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	22.13	158	P		P	05 31 08.2	-1.3
	2.5nm,0.8s,baz=330,slow=12,SNR=5.1							
ASAR	Alice Springs	25.43	162	P		P	05 31 42.8	+0.9
	0.2nm,0.5s,baz=346,slow=15,SNR=3.0							
MKAR	Makanchi Array	59.55	327	P		P	05 36 17.5	-0.1
	0.7nm,0.5s,baz=127,slow=8.4,SNR=8.9							

IDC 06 05:34:20.5±1.3, 2°.71S×139°.28E, h0km, mb3.6/3, mb1 3.9/4, mb1mx3.6/28, mbtmp3.7/4, ML3.8/1, MS3.4/2, Ms1 3.5/2, ms1mx2.7/25, Error ellipse: s-maj=19.8km s-min=12.5km az=139.0, Near north coast of Irian Jaya

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
JAY	Jayapura	1.43	82	Pg		Pn	05 34 47.0	-0.8
	1.8nm,0.3s,baz=264,slow=22,SNR=32							
JAY				Lg		Lg	05 35 05.8	
	2.9nm,0.3s,baz=88,slow=24,SNR=19							
WRA	Warramunga Arr	17.80	195	P		Pn	05 38 30.2	+0.3
	0.3nm,0.3s,baz=17,slow=12,SNR=10							
WRA				S		Sn	05 41 37.7	-11
	0.1nm,0.3s,baz=14,slow=21,SNR=4.0							
ASAR	Alice Springs	21.48	194	P		P	05 39 11.0	+0.1
	1.0nm,0.5s,baz=22,slow=11,SNR=11							
ASAR				S		S	05 43 10.4	+0.3
	0.7nm,0.8s,baz=8.9,slow=25,SNR=3.4							
ASAJ	Asahikawa	46.71	3	LR		LR	06 00 34.6	
	comp=Z,22nm,19.4s,baz=284,slow=34							
MKAR	Makanchi Array	70.14	322	P		P	05 45 34.9	0.0
	0.3nm,0.5s,baz=119,slow=7.8,SNR=4.6							
VNDA	Vanda	75.73	175	P		P	05 46 08.3	+0.8
	1.1nm,0.8s,baz=322,slow=5.6,SNR=6.1							
VNDA				LR		LR	06 18 19.5	
	comp=Z,47nm,18.8s,baz=306,slow=35							

*ISK **06** 05:37:06.3, 36°.91N×29°.33E, h3km, MD3.0*
*DDA **06** 05:37:07.7, 36°.92N×29°.33E, h7km, Ml2.9*
*CSEM **06** 05:37:07.4±0.2, 36°.90N×29°.33E, h2km, MD3.0, Error ellipse: s-maj=3.7km s-min=3.3km az=175.0*

ISC 06 05:37:07.6±1.1, 36°.93N±0°.02×29°.37E±0°.02, h9km±9km, n45, σ1§69/64, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
GLHS	Glhisar (BURDU	0.25	24	ePG		Pg	05 37 12.5	-0.2
GLHS				eSG		Sb	05 37 17.2	+1.0
GLHS	Glhisar (BURDU	0.25	24	ePg		Pg	05 37 12.5	-0.2
GLHS				eSg		Sb	05 37 17.2	+1.0
GOLH	Golhisar	0.34	26	P		Pg	05 37 14.4	-0.1
GOLH				S		Sb	05 37 21.5	0.0
GOLH	Golhisar	0.34	26	i P		Pg	05 37 14.4	-0.1
GOLH				i S		Sb	05 37 21.6	0.0
FETY	Fethiye	0.37	219	ePG		Pb	05 37 13.9	-2.5
FETY	Fethiye	0.37	219	ePg		Pb	05 37 13.9	-2.5
ELL	Elmali	0.47	112	ePG		Pb	05 37 16.5	-1.5
ELL				eSG		Sb	05 37 24.1	-0.9
ELL	Elmali	0.47	112	ePg		Pb	05 37 16.5	-1.5
ELL				eSg		Sb	05 37 24.1	-0.9
DALY	Dalyan (Mu¨la	0.59	260	ePG		Pg	05 37 17.5	-1.4
DALY	Dalyan (Mu¨la	0.59	260	ePg		Pg	05 37 17.5	-1.4
TURN	Turunc	0.62	265	i P		Pn	05 37 24.2	+1.7
TURN				i S		Sn	05 37 38.2	+5.6
AKAS	Kas	0.72	165	P		Pb	05 37 20.9	-1.4
AKAS	Kas	0.72	165	i P		Pb	05 37 20.9	-1.4
AKAS				i S		Sn	05 37 37.8	+2.6
KORT	Korkueli	0.79	84	P		Pn	05 37 24.6	-0.3
KORT	Korkueli	0.79	84	i P		Pn	05 37 24.6	-0.3
KORT				i S		Sn	05 37 39.8	+2.9
DNZL	Cakiroluk	0.81	341	P		Pg	05 37 22.1	-1.1
DNZL				S		Sn	05 37 35.1	-2.4
DNZL	Cakiroluk	0.81	341	i P		Pg	05 37 22.1	-1.1
DNZL				i S		Sn	05 37 35.1	-2.4
DENT	Denizli	0.87	342	ePG		Pb	05 37 23.9	-1.0
DENT	Denizli	0.87	342	ePg		Pb	05 37 23.9	-1.0
YER	Yerkesik	0.90	284	ePG		Pb	05 37 23.9	-1.5
YER	Yerkesik	0.90	284	ePg		Pb	05 37 23.9	-1.5
AYDN	Tasoluk	1.40	302	P		Pg	05 37 34.2	-0.2
AYDN				S		Sg	05 37 53.6	+1.0
AYDN	Tasoluk	1.40	302	i P		Pg	05 37 34.2	-0.2
AYDN				i S		Sg	05 37 53.6	+1.0
KHL	Karahalli	1.40	5	ePN		Pg	05 37 33.8	-0.6
KHL				eSN		Sg	05 37 53.8	+1.1
KHL	Karahalli	1.40	5	ePn		Pg	05 37 33.8	-0.6
KHL				eSn		Sg	05 37 53.8	+1.1
SUTC	Sutluce-Ispart	1.41	67	ePN		Pg	05 37 34.5	-0.2
SUTC	Sutluce-Ispart	1.41	67	ePn		Pg	05 37 34.5	-0.2
KHAL	Karahalli	1.44	4	P		Pg	05 37 34.8	-0.5
KHAL				S		Sg	05 37 56.8	+2.7
KHAL	Karahalli	1.44	4	i P		Pg	05 37 34.8	-0.5
KHAL				i S		Sg	05 37 56.8	+2.7
BDRM	Kayabasi	1.55	276	P		Pg	05 37 36.6	-0.7
BDRM				S		Sg	05 37 58.7	+1.2
BDRM	Kayabasi	1.55	276	i P		Pg	05 37 36.6	-0.7
BDRM				i S		Sg	05 37 58.7	+1.2
AYDB	Zeytinkoy-Aydi	1.56	311	ePN		Pb	05 37 35.4	-1.3
AYDB	Zeytinkoy-Aydi	1.56	311	ePn		Pb	05 37 35.4	-1.3
BODT	Bodrum	1.66	275	ePN		Pb	05 37 36.9	-1.4
BODT	Bodrum	1.66	275	ePn		Pb	05 37 36.9	-1.4
KULA	Kula-Manisa	1.68	341	ePN		Pb	05 37 37.5	-1.3
KULA	Kula-Manisa	1.68	341	ePn		Pb	05 37 37.5	-1.3
IZM	Izmir	2.23	312	ePN		Pb	05 37 45.2	-2.8
IZM	Izmir	2.23	312	ePn		Pb	05 37 45.3	-2.8
TVSB	Tavsanli	2.52	2	ePN		Pn	05 37 49.5	+0.7
TVSB	Tavsanli	2.52	2	ePn		Pn	05 37 49.5	+0.7
KONT	Konya--Tatoy	2.59	66	ePN		Pb	05 37 51.2	-2.9
KONT	Konya--Tatoy	2.59	66	ePn		Pb	05 37 51.2	-2.9
KIZT	Kizilcal	2.78	45	ePN		Pn	05 37 54.0	+1.6
KIZT	Kizilcal	2.78	45	ePn		Pn	05 37 54.0	+1.6

*IDC **06** 05:41:39.9±0.7, 11°.77S×115°.77E, h0km, mb4.3/11, mb1 4.4/13, mb1mx4.2/27, mbtmp4.3/13, ML4.1/2, MS3.2/3, Ms1 3.2/3, ms1mx2.7/33, Error ellipse: s-maj=29.6km s-min=15.7km az=65.0*
*ISCJB **06** 05:41:42.4±0.4, 11°.70S±0°.04×115°.79E±0°.03, h33km, mb4.4/16, MS3.2/2, Error ellipse: s-maj=5.6km s-min=4.3km az=40.1*
*NEIC **06** 05:41:45.1±0.4, 11°.81S×115°.77E, h35km, mb4.5/7, Error ellipse: s-maj=11.9km s-min=8.2km az=48.0*
*DJA **06** 05:41:46.7±0.5, 12°.2S±4°×11°.6E±°, h48km±16km, M4.7/19, mb4.8/13, mB5.0/6, MLv4.8/19, Mw(mB)4.3/6*

ISC 06 05:41:44.7±0.5, 11°.74S±0°.06×115°.75E±0°.05, h35km, n58, σ1§63/59, mb4.4/16, South of Bali

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
DNP	Denpasar	3.09	350	P		Pn	05 42 31.3	+0.3
DNP				S		Sn	05 43 06.6	-0.1
TWSI	Taliwang, Sumb	3.18	21	P		Pn	05 42 33.1	+0.8
TWSI				S		Sn	05 43 06.6	-2.4
PLAI	Plampang	3.51	35	P		Pn	05 42 37.3	+0.5
PLAI				S		Sn	05 43 13.4	-3.8
JAGI	Jajag, Banyuwa	3.61	334	P		Pn	05 42 36.6	-1.5
JAGI				S		Sn	05 43 17.9	-1.6
JAGI	Jajag, Banyuwa	3.61	334	ePn		Pn	05 42 37.3	-0.8
JAGI				eSn		Sn	05 43 18.8	-0.8
SRBI	Singaraja	3.67	352	P		Pn	05 42 40.0	+1.1
GMJI	Gumukmas	4.12	326	P		Pn	05 42 44.9	-0.3
GMJI				S		Sn	05 43 30.1	-2.2
ABJI	Asem Bagus	4.19	339	P		Pn	05 42 44.3	-1.9
BASI	Baing, Sumba	4.97	73	P		Pn	05 42 58.3	+1.4
BASI				S		Sn	05 43 50.0	-3.3
PWJI	Pagerwojo	5.36	313	P		Pn	05 42 59.9	-2.3
	95nm,0.7s,0.9nm							
PWJI				S		Sn	05 43 57.9	-4.9
	95nm,0.7s,0.9nm							
PCJI	Pacitan	5.72	308	P		Pn	05 43 06.6	-0.5
	55nm,1.7s,0.4nm							
PCJI				S		Sn	05 43 59.2	-12
	55nm,1.7s,0.4nm							
GRJI	Gresik	5.78	326	P		Pn	05 43 04.8	-3.2
	37nm,0.5s,710nm0.3nm							
NGJI	Ngawi	6.06	315	P		Pn	05 43 15.0	+3.1
UGM	Wanagama	6.40	306	P		Pn	05 43 17.0	+0.4
	239nm,1.6s,1.3nm							
EDFI	Ende, Flores	6.56	64	P		Pn	05 43 18.1	-0.7
	54nm,0.6s,1μm0.3nm							
SMRI	Semarang	7.01	311	P		Pn	05 43 23.9	-1.0
	62nm,0.7s,0.4nm							
BS

7.2nm,0.9s,baz=242,slow=3.1,SNR=3.6
BRVK Borovoye 75.32 334 *eP* **P 05 53 25.2 +1.0**
2.2nm,0.8s
QSPA South Pole Qui 78.28 180 *eP* **P 05 53 41.2 +0.3**
49nm,1.6s
KBZ Khabaz 85.98 316 P P 05 54 23.7 +2.3
3.9nm,1.0s,baz=107,slow=8.2,SNR=5.5
BRTR Keskin Array B 91.43 310 P **P 05 54 47.8 +0.1**
0.7nm,0.7s,baz=29,slow=3.3,SNR=3.1
TORD Torodi Ar. Bea 115.76 279 PKP **PKPdf 06 00 25.1 +0.6**
0.2nm,0.6s,baz=122,slow=1.9,SNR=3.4
YKA Yellowknife Ar 117.98 24 PKP **PKPdf 06 00 28.1 +0.8**
0.4nm,0.6s,baz=310,slow=2.0,SNR=13
NVAR Mina Array Bea 125.22 51 PKP **PKPdf 06 00 43.6 +1.3**
0.7nm,0.8s,baz=247,slow=2.6,SNR=4.9
SNOW Snow King Moun 129.00 43 *e*PKPdf **PKPdf 06 00 52.5 +3.1**
WCI Wyandotte Cave 147.08 33 *e*PKPdf **PKPab 06 01 25.1 -0.8**
LPAZ La Paz 151.89 172 PKPbc **PKPbc 06 01 38.8 +1.1**
1.3nm,0.8s,baz=206,slow=1.9,SNR=4.9

JMA 06 05:51:39.7, 36°.85N×140°.59E, h7km±1km, M2.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.24**	**184**	P	Pg	05 51 44.6	+0.2
JHO				S	Sg	05 51 47.8	+0.2
ONAJ	**Iwakimizuishiy**	**0.30**	**34**	S	Sg	05 51 49.9	+0.2
JFT	**Otama**	**0.70**	**343**	P	Pg	05 51 53.1	0.0
JFT				S	Sg	05 52 02.4	+0.2
JMM	**Marumori**	**1.03**	**9**	S	Sg	05 52 12.0	-0.8
MAT	**Matsushiro**	**1.94**	**262**	P	Pn	05 52 13.7	+0.6
MAT				S	Sb	05 52 38.9	-0.9

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*NIED **06** 06:01:00, 38°.20N×144°.10E, h5km, Mw3.6 Best double couple: M₀2.91000×10¹⁴ NP1:φs358.00000°, δ45.00000°, λ-81.00000°. NP2:φs166.00000°, δ46.00000°, λ-99.00000°.*
*IDC **06** 06:01:55.3±1.1, 38°.02N×144°.16E, h0km, mb3.4/5, mb1 3.7/7, mb1mx3.5/49, mbtmp3.6/7, ML3.8/2, MS2.6/1, Ms1 2.6/1, ms1mx2.0/38, Error ellipse: s-maj=30.9km s-min=21.1km az=125.0*
*ISCJB **06** 06:01:56.9±0.8, 38°.13N±0°.04×144°.19E±0°.06, h33km, mb3.5/5, Error ellipse: s-maj=6.8km s-min=6.2km az=177.3*
*JMA **06** 06:01:58.4±0.2, 38°.18N×144°.08E, h45km, M4.0*
ISC 06 06:02:00.1±1.0, 38°.19N±0°.05×144°.08E±0°.08, h35km, n21, σ2°29/32, mb3.5/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.08**	**296**	P	**Pn**	**06 02 32.0**	**-0.5**
OFUJ				S	**Sn**	**06 02 57.1**	**-0.1**
JIO	**Ouri**	**2.16**	**278**	P	**Pn**	**06 02 33.1**	**-0.5**
JIO				S	**Sn**	**06 02 58.5**	**-0.6**
JMK	**Ichinoseki**	**2.36**	**290**	P	**Pn**	**06 02 36.2**	**-0.1**
JMK				*e*S	**Sn**	**06 03 04.7**	**+0.6**
JOM	**Ohasama**	**2.52**	**301**	P	**Pn**	**06 02 38.7**	**+0.2**
JOM				S	**Sn**	**06 03 08.9**	**+0.9**
JANG	**Nango**	**2.95**	**318**	*e*S	**Sn**	**06 03 17.2**	**-1.3**
JYK	**Kaneyama**	**3.00**	**285**	P	**Pn**	**06 02 45.6**	**+0.4**
JYK				S	**Sn**	**06 03 21.3**	**+1.4**
JFT	**Otama**	**3.04**	**258**	P	**Pn**	**06 02 46.1**	**+0.5**
JFT				S	**Sn**	**06 03 21.1**	**+0.3**
BSO1	**Boso 1**	**4.33**	**216**	P	**Pn**	**06 03 01.0**	**-1.9**
BSO1				S	**Sn**	**06 03 50.3**	**-1.5**
JCH	**Churui**	**4.45**	**353**	P	**Pn**	**06 03 02.9**	**-2.1**
JCH				*e*S	**Sn**	**06 03 51.9**	**-3.6**
JRY	**Ryogami san**	**4.67**	**244**	P	**Pn**	**06 03 07.6**	**-0.6**
JRY				S	**Sn**	**06 03 58.4**	**-2.8**
MJAR	**Matsushiro Arr**	**4.96**	**252**	Pn	**Pn**	**06 03 12.7**	**+0.6**
	3.1nm,0.3s,baz=70,slow=9.4,SNR=12						
MAT	**Matsushiro**	**4.96**	**252**	P	**Pn**	**06 03 13.3**	**+1.2**
MAT				S	**Sn**	**06 04 10.2**	**+2.0**
JOD2	**Odawara 2**	**4.96**	**235**	*e*S	**Sn**	**06 04 04.0**	**-4.2**
JTKR	**Abashiri--Toko**	**5.77**	**359**	P	**Pn**	**06 03 21.1**	**-2.1**
JTKR				S	**Sn**	**06 04 22.1**	**-6.0**
JHJ	**Hachijo jima 2**	**6.15**	**216**	Pn	**Pn**	**06 03 26.3**	**-2.2**
	8.6nm,0.3s,baz=96,slow=18,SNR=3.8						
JHJ				Sn	**Sn**	**06 04 31.8**	**-5.8**
	8.1nm,0.3s,baz=0.0,slow=20,SNR=3.8						
USRK	**Ussuriysk Ar.**	**10.90**	**307**	LR	LR	06 08 58.1	
	comp=Z,30nm,18.2s,baz=137,slow=38						
MKAR	**Makanchi Array**	**45.30**	**302**	P	**P**	**06 10 15.6**	**+1.3**
	0.4nm,0.6s,baz=93,slow=9.6,SNR=8.2						
KURBB	**Kurchatov Arra**	**46.97**	**308**	P	**P**	**06 10 28.3**	**+1.0**
	0.6nm,0.6s,baz=80,slow=7.6,SNR=4.1						
ILAR	**Eielson Array**	**47.38**	**33**	P	**P**	**06 10 33.3**	**+2.9**
	0.2nm,0.6s,baz=269,slow=7.2,SNR=3.3						
WRA	**Warramunga Arr**	**58.55**	**191**	P	**P**	**06 11 52.2**	**-0.9**
	0.9nm,0.6s,baz=8.2,slow=7.0,SNR=12						
YKA	**Yellowknife Ar**	**61.73**	**31**	P	**P**	**06 12 14.7**	**+0.2**
	0.1nm,0.8s,baz=302,slow=6.9,SNR=3.0						

IDC 06 06:27:27.6±3.5, 3°.72S×99°.25E, h0km, mb3.8/6, mb1 3.9/6, mb1mx3.6/39, mbtmp3.8/6, Error ellipse: s-maj=150.9km s-min=20.4km az=57.0, Southwest of Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08S2	**Diego Garcia H**	**26.91**	**260**	T	T	07 02 45.4	
	baz=80,slow=75						
H08S3	**Diego Garcia H**	**26.91**	**261**	T	T	07 02 45.4	
	baz=80,slow=75						
H08S1	**Diego Carcia H**	**26.92**	**260**	T	T	07 02 46.0	
	baz=80,slow=75						
WRA	**Warramunga Arr**	**37.81**	**118**	P	P	06 34 45.8	-0.3
	0.6nm,0.7s,baz=296,slow=8.7,SNR=5.9						
ASAR	**Alice Springs**	**38.88**	**124**	P	P	06 34 54.9	-0.4
	0.3nm,0.5s,baz=296,slow=7.5,SNR=5.8						
STKA	**Stephens Creek**	**48.59**	**130**	P	P	06 36 13.0	-0.2
	1.7nm,0.8s,baz=310,slow=11,SNR=3.6						
SONM	**Songino Array**	**51.72**	**6**	P	P	06 36 36.8	0.0
	0.6nm,0.6s,baz=179,slow=7.2,SNR=3.1						
MKAR	**Makanchi Array**	**52.48**	**345**	P	P	06 36 42.0	-0.4
	0.4nm,0.4s,baz=155,slow=9.3,SNR=8.4						
ZALV	**Zalesovo Beam**	**58.72**	**350**	P	P	06 37 26.5	-0.5
	1.5nm,0.6s,baz=166,slow=9.0,SNR=4.5						
TXAR	**Lajitas Array**	**146.51**	**38**	PKPbc	PKPbc	06 47 12.2	+0.4
	0.8nm,0.8s,baz=306,slow=0.7,SNR=12						

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*NIED **06** 06:29:00, 37°.90N×141°.90E, h35km, Mw3.8 Best double couple: M₀6.21000×10¹⁴ NP1:φs225.00000°, δ21.00000°, λ159.00000°. NP2:φs335.00000°, δ82.00000°, λ70.00000°.*
*JMA **06** 06:29:06.9±0.1, 37°.91N×141°.94E, h38km±2km, M3.8*
JMA Felt I J1.
*IDC **06** 06:29:09.8±4.6, 37°.99N×141°.78E, h68km±44km, mb3.2/6, mb1 3.5/7, mb1mx3.2/43, mbtmp3.5/7, ML3.5/1, MS2.8/4, Ms1 2.8/4, ms1mx2.4/30, Error ellipse: s-maj=39.2km s-min=19.7km az=104.0*
ISC 06 06:29:05.9±1.9, 37°.91N±0°.05×141°.95E±0°.09, h31km±13km, n20, σ1°04/24, mb3.5/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.72**	**319**	P	**Pb**	**06 29 20.5**	**+0.5**
JIO				S	**Sn**	**06 29 29.8**	**-0.2**
JMM	**Marumori**	**0.92**	**267**	P	**Pb**	**06 29 23.3**	**0.0**
JMM				S	**Sn**	**06 29 34.4**	**-0.5**
JFK	**Kawauchi**	**1.02**	**238**	P	**Pb**	**06 29 24.6**	**-0.3**
JFK				S	**Sb**	**06 29 37.4**	**-0.6**
JOU	**Okura**	**1.11**	**294**	P	**Pb**	**06 29 26.4**	**-0.2**
JOU				S	**Sb**	**06 29 40.8**	**+0.1**
JMK	**Ichinoseki**	**1.19**	**331**	P	**Pn**	**06 29 27.1**	**+0.7**
JMK				S	**Sn**	**06 29 41.5**	**0.0**
ONAJ	**Iwakimizuishiy**	**1.23**	**229**	P	**Pn**	**06 29 27.4**	**+0.4**
ONAJ				S	**Sn**	**06 29 42.7**	**+0.2**
JFT	**Otama**	**1.34**	**253**	P	**Pb**	**06 29 30.3**	**-0.1**
JFT				S	**Sb**	**06 29 47.0**	**-0.2**
JYS	**Shiratake**	**1.52**	**282**	P	**Pb**	**06 29 32.6**	**-0.9**
MJAR	**Matsushiro Arr**	**3.29**	**247**	P	**Pn**	**06 29 57.7**	**+2.4**
	5.0nm,0.3s,baz=55,slow=11,SNR=17						
MJAR				LR	LR	06 31 29.9	
	comp=Z,168nm,19.5s,baz=75,slow=44						
MAT	**Matsushiro**	**3.29**	**247**	P	**Pn**	**06 29 58.2**	**+2.9**
MAT				S	**Sb**	**06 30 41.6**	**-1.5**

USRK	**Ussuriysk Ar.**	**9.80**	**313**	P	Pn	06 31 29.7	+5.1
	0.2nm,0.3s,baz=126,slow=14,SNR=3.9						
JNU	**Nakatsue**	**10.21**	**245**	LR	LR	06 35 52.4	
	comp=Z,68nm,19.1s,baz=115,slow=40						
KSRS	**Korea Array**	**11.13**	**272**	LR	LR	06 35 43.5	
	comp=Z,34nm,19.8s,baz=54,slow=36						
PETK	**Petropavlovsk-**	**18.71**	**31**	LR	LR	06 40 41.6	
	comp=Z,19nm,18.3s,baz=68,slow=37						
SONM	**Songino Array**	**27.66**	**302**	P	**P**	**06 34 49.8**	**-1.2**
	0.3nm,0.3s,baz=101,slow=7.5,SNR=2.9						
ILAR	**Eielson Array**	**48.52**	**33**	P	**P**	**06 37 44.6**	**-1.0**
	0.6nm,0.9s,baz=266,slow=5.6,SNR=6.8						
WRA	**Warramunga Arr**	**57.99**	**188**	P	**P**	**06 38 55.6**	**-0.1**
	1.1nm,0.6s,baz=6.9,slow=7.5,SNR=14						
ASAR	**Alice Springs**	**61.72**	**188**	P	**P**	**06 39 21.3**	**0.0**
	0.3nm,0.6s,baz=19,slow=6.9,SNR=3.5						
YKA	**Yellowknife Ar**	**62.83**	**31**	P	**P**	**06 39 28.4**	**+0.2**
	0.1nm,0.5s,baz=298,slow=5.7,SNR=5.0						
TXAR	**Lajitas Array**	**89.25**	**53**	P	**P**	**06 41 59.6**	**+0.4**
	0.1nm,0.5s,baz=306,slow=3.2,SNR=3.0						

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*NIED **06** 06:43:00, 38°.40N×142°.20E, h35km, Mw3.8 Best double couple: M₀5.55000×10¹⁴ NP1:φs2.00000°, δ31.00000°, λ-157.00000°. NP2:φs253.00000°, δ79.00000°, λ-61.00000°.*
*ISCJB **06** 06:43:54.0±1.2, 38°.38N±0°.05×142°.2E±0°.1, h42km±10km, mb3.6/6, Error ellipse: s-maj=14.3km s-min=6.9km az=18.3*
*JMA **06** 06:43:53.9±0.1, 38°.41N×142°.20E, h36km±1km, M4.2*
JMA Felt II J1.
*IDC **06** 06:43:58.1±3.6, 38°.43N×142°.16E, h63km±26km, mb3.4/6, mb1 3.5/9, mb1mx3.3/59, mbtmp3.7/9, ML3.1/3, MS2.5/2, Ms1 2.5/2, ms1mx2.2/47, Error ellipse: s-maj=47.9km s-min=23.9km az=146.0*
ISC 06 06:43:53.3±1.4, 38°.36N±0°.06×142°.13E±0°.10, h22km±8km, n19, σ0°64/23, mb3.6/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.62**	**279**	P	**Pn**	**06 44 06.9**	**+0.2**
JIO				S	**Sn**	**06 44 15.7**	**-0.3**
OFUJ	**Ofunato**	**0.81**	**334**	P	**Pb**	**06 44 08.5**	**-0.1**
OFUJ				S	**Sb**	**06 44 18.7**	**-0.4**
JMK	**Ichinoseki**	**0.93**	**310**	P	**Pb**	**06 44 10.9**	**+0.3**
JMK				S	**Sb**	**06 44 22.6**	**+0.1**
JOU	**Okura**	**1.15**	**271**	P	**Pb**	**06 44 15.1**	**+0.6**
JOU				S	**Sn**	**06 44 30.5**	**+1.4**
JMM	**Marumori**	**1.16**	**245**	P	**Pb**	**06 44 14.7**	**+0.1**
JMM				S	**Sn**	**06 44 29.9**	**+0.6**
JOM	**Ohasama**	**1.29**	**330**	P	**Pn**	**06 44 16.0**	**0.0**
JOM				S	**Sn**	**06 44 32.4**	**-0.2**
JFK	**Kawauchi**	**1.40**	**225**	P	**Pn**	**06 44 17.6**	**+0.1**
JFK				S	**Sn**	**06 44 34.7**	**-0.6**
JYK	**Kaneyama**	**1.49**	**293**	P	**Pb**	**06 44 19.7**	**-0.6**
JRG	**Rokugo**	**1.56**	**312**	P	**Pb**	**06 44 20.7**	**-0.8**
MJAR	**Matsushiro Arr**	**3.60**	**241**	P	Pb	06 44 52.3	-4.0
	2.2nm,0.3s,baz=58,slow=9.2,SNR=8.4						
ASAJ	**Asahikawa**	**5.77**	**3**	P	**Pn**	**06 45 19.0**	**+1.5**
	1.2nm,0.3s,baz=233,slow=15,SNR=2.9						
ASAJ				LR	LR	06 48 00.1	
	comp=Z,67nm,21.5s,baz=152,slow=42						
USRK	**Ussuriysk Ar.**	**9.60**	**311**	P	Pn	06 46 14.2	+4.1
	0.2nm,0.3s,baz=133,slow=14,SNR=6.8						
JNU	**Nakatsue**	**10.53**	**244**	LR	LR	06 50 30.5	
	comp=Z,17nm,18.3s,baz=115,slow=37						
SEY	**Seymchan**	**25.39**	**11**	P	**P**	**06 49 19.0**	**+0.3**
	1.2nm,0.5s,baz=242,slow=12,SNR=5.3						
SONM	**Songino Array**	**27.54**	**302**	P	**P**	**06 49 37.9**	**-0.6**
	0.4nm,0.4s,baz=94,slow=9.6,SNR=3.1						
ZALV	**Zalesovo Beam**	**41.45**	**311**	P	**P**	**06 51 38.4**	**+0.3**
	1.3nm,0.5s,baz=99,slow=9.2,SNR=5.0						
MKAR	**Makanchi Array**	**43.91**	**301**	P	**P**	**06 51 58.0**	**-0.2**
	0.3nm,0.5s,baz=85,slow=10,SNR=5.4						
KURBB	**Kurchatov Arra**	**45.65**	**307**	P	**P**	**06 52 12.1**	**+0.2**
	2.2nm,0.4s,baz=82,slow=8.2,SNR=18						
YKA	**Yellowknife Ar**	**62.38**	**31**	P	**P**	**06 54 13.1**	**-0.7**
	0.1nm,0.5s,baz=305,slow=6.9,SNR=3.8						

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*BJI **06** 06:46:22.6, 0°.10S×123°.00E, h82km, mb5.5/85, mB5.5/50, Ms4.9/79, Ms7 4.6/73*
*NEIC **06** 06:46:23.0±0.0, 0°.33S×122°.91E, h85km, Moment Tensor Solution. s20 Moment tensor: Scale 10¹⁷Nm; Mrr1.65; Mθθ-0.19; Mφφ-1.46; Mrθ-0.14; Mθφ-1.10; Mφr-0.94; Best double couple: M₀2.10000×10¹⁷ NP1:φs198.00000°, δ59.00000°, λ76.00000°. NP2:φs44.00000°, δ34.00000°, λ112.00000°. Principal axes: T 1.9300, Plg72.0000°, Azm73.0000°; N 0.3600, Plg12.0000°, Azm205.0000°; P -2.2900, Plg12.0000°, Azm298.0000°;*
*NEIC **06** 06:46:23.5±0.1, 0°.07S×122°.95E, h82km, mb5.8/153, MW5.5, MW5.5 Error ellipse: s-maj=3.3km s-min=2.6km az=66.0, Moment Tensor Solution. s24 Moment tensor: Scale 10¹⁷Nm; Mrr1.65; Mθθ-0.43; Mφφ-1.22; Mrθ0.07; Mθφ-1.01; Mφr-1.48; Best double couple: M₀2.30000×10¹⁷ NP1:φs192.00000°, δ66.00000°, λ69.00000°. NP2: φs56.00000°, δ32.00000°, λ129.00000°. Principal axes: T 2.3600, Plg63.0000°, Azm67.0000°; N -0.0600, Plg19.0000°, Azm201.0000°; P -2.2900, Plg18.0000°, Azm298.0000°;*
NEIC Felt [IV] at Gorontalo and [III] at Luwuk and Manado.
*GCMT **06** 06:46:23.5±0.1, 0°.05S×122°.89E, h92km, MW5.5/127, Moment Tensor Solution. s123,c219; s127,c269; Duration: 1s4 Moment tensor: Scale 10¹⁷Nm; Mrr1.67±.02; Mθθ-0.44±.02; Mφφ-1.23±.03; Mrθ0.12±.02; Mθφ-1.29±.02; Mφr-0.97±.02; Best double couple: M₀2.19900×10¹⁷ NP1:φs195.00000°, δ59.00000°, λ64.00000°. NP2:φs59.00000°, δ40.00000°, λ126.00000°. Principal axes: T 2.0820, Plg65.0000°, Azm58.0000°; N 0.2330, Plg22.0000°, Azm210.0000°; P -2.3170, Plg11.0000°, Azm304.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*
*IDC **06** 06:46:24.0±1.3, 0°.09S×122°.84E, h90km±11km, mb5.0/44, mb1 5.0/47, mb1mx4.9/53, mbtmp5.3/47, MS4.3/42, Ms1 4.3/42, ms1mx4.2/57 Error ellipse: s-maj=11.0km s-min=6.5km az=69.0*
*ISCJB **06** 06:46:24.5±0.2, 0°.14S±0°.01×122°.96E±0°.02, h109km±2km, mb5.5/258, Error ellipse: s-maj=2.6km s-min=2.3km az=149.7*
*MOS **06** 06:46:25.5±1.3, 0°.03S×122°.89E, h114km, mb5.5/76, MS4.3/18, Error ellipse: s-maj=7.1km s-min=4.1km az=110.5*
*KLM **06** 06:46:25.1, 0°.32S×122°.90E, h86km, mb5.7, MS6.3*
*DJA **06** 06:46:26.0±0.2, 0°.S±2°×12°.3E±°, h91km±2km, M5.7/109, mb5.8/109, mB6.0/82, MLv6.4/7, Mw(mB)5.6/82, Mwp6.0/4*
ISC 06 06:46:25.3±0.3, 0°.11S±0°.02×122°.86E±0°.03, h101km±2km, h101km:pP-P, n1406, σ1°53/1511, mb5.6/278, 50C-28D, Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LUWI	**Luwuk**	**0.93**	**185**	P	**Pn**	**06 46 42.8**	**-2.3**
LUWI				S	**Sn**	**06 46 58.8**	**-1.1**
LUWI	**Luwuk**	**0.93**	**185**	*e*Pn	**Pn**	**06 46 42.8**	**-2.3**
MRSI	**Marisa**	**1.08**	**302**	P	**Pn**	**06 46 45.9**	**-0.7**
MRSI				S	**Sn**	**06 47 01.6**	**-1.2**
SANI	**Sanana**	**3.68**	**122**	P	**Pn**	**06 47 17.8**	**-2.4**
TTSI	**Tana Toraja**	**4.21**	**226**	P	**Pn**	**06 47 27.3**	**0.0**
SGSI	**Sangihe**	**4.62**	**35**	P	**Pn**	**06 47 31.9**	**-1.0**
LBMI	**Labuha**	**4.68**	**97**	P	**Pn**	**06 47 32.2**	**-1.4**
SPSI	**Sidrap Palu**	**4.92**	**219**	P	**Pn**	**06 47 36.6**	**-0.3**
NLAI	**Namlea**	**5.26**	**126**	P	**Pn**	**06 47 39.5**	**-2.1**
KAPI	**Kappang**	**5.78**	**212**	P	**Pn**	**06 47 47.8**	**-0.8**
	116nm,0.3s,baz=31,slow=9.7,SNR=194						
KAPI				S	**Sn**	**06 48 50.1**	**-3.5**
	82nm,0.3s,baz=255,slow=18,SNR=8.5						
KAPI	**Kappang**	**5.78**	**212**	*e*Pn	**Pn**	**06 47 48.6**	**0.0**
KAPI				S	**Sn**	**06 48 50.1**	**-3.5**
BKB	**Balikpapan**	**6.07**	**259**	P	**Pn**	**06 47 53.5**	**+1.0**
BSSI	**Bau Bau, Buton**	**6.45**	**201**	P	**Pn**	**06 47 58.1**	**+0.4**
	2μm,0.8s,22μm6.8nm						
MYLDM	**Lahad Datu**	**6.82**	**320**	*e*Pn	**Pn**	**06 48 05.5**	**+2.8**
MSAI	**Masohi**	**6.87**	**118**	P	**Pn**	**06 48 02.3**	**-1.2**
	870nm,0.8s,7μm6.2nm						

CTBH	**Cotabato--PC H**	**7.41**	**11**	⇑*i*P	**Pn**	**06 48 11.2**	**+0.4**
CTBH				*i*S	**Sn**	**06 49 29.4**	**-3.9**
KCP	**Kidapawan**	**7.41**	**17**	⇓*e*P	**Pn**	**06 48 12.6**	**+1.7**
DAV	**Davao City (W)**	**7.63**	**21**	P	**Pn**	**06 48 17.7**	**+4.0**
	73nm,0.3s,baz=183,slow=2.8,SNR=18						
DAV				S	**Sn**	**06 49 42.6**	**+4.0**
	baz=326,slow=24,SNR=2.6						
DAV				LR	LR	06 51 25.8	
	comp=Z,3μm,19.2s,baz=198,slow=40						
DAV	**Davao City (W)**	**7.63**	**21**	⇑*e*P	**Pn**	**06 48 15.3**	**+1.6**
DAV	**Davao City (W)**	**7.63**	**21**	⇑S	**Sn**	**06 49 37.8**	**-0.9**
DAV	**Davao City (W)**	**7.63**	**21**	*e*Pn	**Pn**	**06 48 17.1**	**+3.4**
DAV				S	**Sn**	**06 49 42.6**	**+4.0**
MATI	**Mati**	**7.78**	**26**	*e*P	**Pn**	**06 48 16.8**	**+0.9**
IPIL	**Ipil**	**7.85**	**358**	*e*P	**Pn**	**06 48 17.8**	**+1.1**
PAGZ	**Pagadian**	**7.92**	**4**	*e*P	**Pn**	**06 48 17.9**	**+0.2**
MTKI	**Muara Teweh, K**	**8.00**	**264**	P	**Pn**	**06 48 20.0**	**+1.1**
	1μm,0.8s						
BUKP	**Musuan**	**8.23**	**15**	*e*P	**Pn**	**06 48 23.1**	**+1.0**
BNDI	**Bandanaira**	**8.30**	**122**	P	**Pn**	**06 48 20.6**	**-2.3**
	6μm,1.1s,57μm						
SWI	**Sorong**	**8.44**	**95**	P	**Pn**	**06 48 22.2**	**-2.6**
	1μm,1.0s,11μm						
DCPH	**Dipolog City**	**8.64**	**3**	⇓*e*P	**Pn**	**06 48 29.0**	**+1.4**
EDFI	**Ende, Flores**	**8.66**	**188**	P	**Pn**	**06 48 26.3**	**-1.7**
	295nm,0.9s,4μm110μm						
BBKI	**Banjar Baru**	**8.68**	**247**	P	**Pn**	**06 48 28.6**	**+0.6**
	1μm,0.7s,12μm						
CGP	**Cagayan de Oro**	**8.70**	**12**	⇓*e*P	**Pn**	**06 48 30.8**	**+2.5**
KKM	**Kota Kinabalu**	**9.01**	**313**	*e*Pn	**Pn**	**06 48 34.8**	**+2.1**
SOEI	**Soe**	**9.69**	**172**	P	**Pn**	**06 48 43.1**	**+1.2**
	855nm,0.9s,12μm						
SOEI	**Soe**	**9.69**	**172**	*e*Pn	**Pn**	**06 48 42.4**	**+0.4**
FAKI	**Fak Fak**	**9.80**	**107**	P	**Pn**	**06 48 38.7**	**-4.6**
	1μm,0.9s,10μm						
FAKI	**Fak Fak**	**9.80**	**107**	*e*Pn	**Pn**	**06 48 38.5**	**-4.7**
PLAI	**Plampang**	**10.03**	**210**	P	**Pn**	**06 48 46.9**	**+0.4**
	192nm,0.8s,2μm						
BASI	**Baing, Sumba**	**10.30**	**193**	P	**Pn**	**06 48 52.0**	**+1.9**
	661nm,1.3s,12μm						
BTM	**Bintulu**	**10.30**	**289**	⇑P	**Pn**	**06 48 51.6**	**+1.4**
LLP	**Lapu-Lapu**	**10.41**	**6**	*e*P	**Pn**	**06 48 52.9**	**+1.2**
LLP				*e*S	**Sn**	**06 50 51.8**	**+5.3**
TWSI	**Taliwang, Sumb**	**10.44**	**215**	P	**Pn**	**06 48 54.1**	**+2.1**
	104nm,1.0s,1μm						
GUIM	**Jordan**	**10.66**	**359**	*e*P	**Pn**	**06 48 57.4**	**+2.3**
JAP	**San Jose, Anti**	**10.82**	**355**	⇓*e*P	**Pn**	**06 49 00.0**	**+2.9**
SBUM	**Sibu**	**10.93**	**283**	*e*Pn	**Pn**	**06 48 59.9**	**+1.2**
SRBI	**Singaraja**	**10.99**	**224**	P	**Pn**	**06 49 01.1**	**+1.6**
	203nm,1.1s,2μm						
STKI	**Sintang**	**11.38**	**271**	P	**Pn**	**06 49 06.3**	**+1.5**
	891nm,1.2s,23μm						
PLP	**Palo**	**11.39**	**11**	⇓*e*P	**Pn**	**06 49 06.1**	**+1.2**
RKPI	**Ransiki, Papua**	**11.41**	**97**	P	**Pn**	**06 49 03.8**	**-1.3**
	767nm,1.0s,8μm						
DNP	**Denpasar**	**11.42**	**222**	P	**Pn**	**06 49 08.2**	**+2.9**
	597nm,0.7s						
PBKI	**Pangkalan Bun**	**11.47**	**257**	P	**Pn**	**06 49 08.0**	**+2.0**
	1μm,1.2s,11μm						
SAUI	**Saumlaki**	**11.49**	**133**	P	**Pn**	**06 49 05.7**	**-0.6**
	1μm,1.2s,14μm						
SAUI	**Saumlaki**	**11.49**	**133**	*e*Pn	**Pn**	**06 49 05.3**	**-1.0**
ABJI	**Asem Bagus**	**11.50**	**228**	P	**Pn**	**06 49 09.4**	**+3.1**
	176nm,1.3s,3μm						
RCP	**Roxas**	**11.59**	**359**	⇑*e*P	**Pn**	**06 49 10.7**	**+3.1**
BWJI	**Bawean**	**11.67**	**241**	P	**Pn**	**06 49 11.8**	**+3.2**
	207nm,1.3s,8μm						
ENPP	**El Nido**	**11.74**	**343**	*e*P	**Pn**	**06 49 12.7**	**+3.1**
JAGI	**Jajag, Banyuwa**	**12.01**	**226**	P	**Pn**	**06 49 17.4**	**+4.2**
	353nm,1.1s,4μm						
JAGI	**Jajag, Banyuwa**	**12.01**	**226**	*e*Pn	**Pn**	**06 49 15.2**	**+2.0**
BUSP	**Coron**	**12.31**	**348**	*e*P	**Pn**	**06 49 20.4**	**+3.2**
GRJI	**Gresik**	**12.37**	**237**	P	**Pn**	**06 49 20.4**	**+2.5**
	256nm,1.0s,2μm						
GMJI	**Gumukmas**	**12.40**	**229**	P	**Pn**	**06 49 19.7**	**+1.4**
	463nm,1.1s,4μm						
KSM	**Kuching**	**12.64**	**277**	⇓P	**Pn**	**06 49 22.7**	**+1.1**
KSM	**Kuching**	**12.64**	**277**	*e*Pn	**Pn**	**06 49 22.4**	**+0.8**
AUQP	**San Andres**	**13.34**	**359**	*e*P	**P**	**06 49 35.7**	**-0.9**
NGJI	**Ngawi**	**13.46**	**237**	P	**P**	**06 49 35.5**	**-2.4**
	360nm,1.0s,5μm						
BOAC	**Boac**	**13.51**	**356**	*e*P	**P**	**06 49 36.8**	**-1.7**
PWJI	**Pagerwojo**	**13.53**	**234**	P	**Pn**	**06 49 35.0**	**+1.8**
	334nm,1.1s,3μm						
PVCP	**Virac**	**13.67**	**5**	*e*P	**P**	**06 49 39.2**	**-1.1**
GQP	**Guinayangan**	**13.93**	**358**	⇑*e*P	**P**	**06 49 41.9**	**-1.2**
PCJI	**Pacitan**	**14.14**	**235**	P	**P**	**06 49 43.4**	**-2.1**
	724nm,0.8s,6μm						
WOJI	**Wonogiri, Jawa**	**14.16**	**237**	P	**Pn**	**06 49 42.7**	**+1.4**
	338nm,1.0s,5μm						
SMRI	**Semarang**	**14.18**	**241**	P	**P**	**06 49 44.3**	**-

MNAI	**Manna**	20.32 258	P	Pn	06 50 55.9 -0.6
	920nm,1.2s,16μm				
MNAI	**Manna**	20.32 258	*e*P	**P**	**06 50 54.9 +1.2**
	2μm,1.5s				
MASI	**Maura Aman, Be**	20.82 261	P	Pn	06 51 01.4 -1.0
	2μm,1.3s,26μm				
MBWA	**Marble Bar**	21.15 188	*e*P	**P**	**06 51 02.3 -0.1**
	555nm,1.5s				
SDSI	**Sungai Dareh**	21.44 268	P	**P**	**06 51 07.8 +2.2**
FRIM	**Kepong**	21.48 279	⇓P	**P**	**06 51 07.5 +1.5**
BKNI	**Bangkinang**	21.82 271	P	**P**	**06 51 10.4 +0.8**
	755nm,1.1s,38μm				
BKNI	**Bangkinang**	21.82 271	*e*P	**P**	**06 51 10.8 +1.2**
	720nm,1.0s				
IPM	**Ipoh**	22.28 282	*e*P	**P**	**06 51 14.6 +0.1**
	328nm,1.1s				
PDSI	**Padang**	22.41 268	P	**P**	**06 51 16.6 +0.8**
WRAB	**Tennant Creek**	22.70 151	*c i*P	**P**	**06 51 16.8 -1.9**
WRAB			pmax	pmax	
	comp=Z,935nm,1.7s				
WRAB	**Tennant Creek**	22.70 151	*e*P	**P**	**06 51 17.0 -1.7**
	comp=Z,169nm,0.9s				
WRA	**Warramunga Arr**	22.70 151	P	**P**	**06 51 16.8 -1.9**
	comp=Z,95nm,0.9s,baz=335,slow=9.6,SNR=179				
WRA			S	**S**	**06 55 17.0 -2.8**
	comp=Z,19nm,1.0s,baz=346,slow=16,SNR=4.2				
WRA			ScP	**ScP**	**06 58 36.6 +0.1**
	comp=Z,22nm,0.9s,baz=327,slow=2.5,SNR=11				
WRA			LR	LR	07 00 44.0
	comp=Z,1μm,19.6s,baz=320,slow=38				
WB2	**Warramunga Arr**	22.70 151	*e*P	**P**	**06 51 16.9 -1.8**
	comp=Z,227nm,1.0s				
KULM	**Kulim**	22.81 284	*e*P	**P**	**06 51 20.1 +0.2**
	comp=Z,390nm,1.4s				
TWG	**Pinlang**	22.85 356	*e*P	**P**	**06 51 19.8 -0.4**
	comp=Z,592nm,0.9s				
QIZ	**Qiongzhong**	22.91 327	P	**P**	**06 51 21.7 +0.9**
QIZ			S	**S**	**06 55 24.7 +1.7**
QIZ			pmax	pmax	
	comp=Z,100nm,1.4s				
PPSI	**Pulau Pagai**	22.99 263	P	**P**	**06 51 24.5 +2.9**
MNSI	**Mandailing Nat**	23.29 272	P	**P**	**06 51 24.6 +0.1**
	comp=Z,664nm,1.0s,comp=Z,14μm				
SKLT	**Songkhla**	23.33 289	P	**P**	**06 51 25.7 +0.9**
	comp=Z,254nm,1.1s,comp=Z,3μm				
TPUB	**Ta-pu**	23.37 355	*e*P	**P**	**06 51 24.5 -0.6**
	comp=Z,2μm,1.7s				
YULB	**Yu-li**	23.41 356	*e*P	**P**	**06 51 24.6 -0.8**
	comp=Z,255nm,1.2s				
SSLB	**Suanglung**	23.82 356	*e*P	**P**	**06 51 28.9 -0.2**
	comp=Z,246nm,0.8s				
HKC	**Hong Kong Obse**	23.82 340	P	**P**	**06 51 31.0 +1.8**
MCO	**Taipa Grande**	23.88 338	P	**P**	**06 51 34.0 +4.3**
GIRL	**Giralia**	23.92 200	P	**P**	**06 51 30.9 +0.9**
	baz=24,SNR=8.4				
CHBT	**CHBT**	24.03 303	P	**P**	**06 51 32.8 +1.7**
	comp=Z,1μm,1.1s,comp=Z,12μm				
PSI	**Prapat**	24.10 277	*e*P	**P**	**06 51 32.2 +0.3**
PSI			pmax	pmax	
	comp=Z,320nm,1.1s				
PSI	**Prapat**	24.10 277	*e*P	**P**	**06 51 32.2 +0.3**
	comp=Z,316nm,1.1s				
NACB	**Ninganchiao**	24.17 357	*e*P	**P**	**06 51 32.7 +0.5**
	comp=Z,108nm,0.9s				
COEN	**Coen**	24.37 125	P	**P**	**06 51 32.8 -1.5**
	baz=24,SNR=48				
COEN	**Coen**	24.37 125	*e*P	**P**	**06 51 32.8 -1.5**
	comp=Z,138nm,0.8s				
TRTT	**Trang**	24.40 289	P	**P**	**06 51 35.8 +1.3**
	comp=Z,200nm,1.2s,comp=Z,3μm				
YOJ	**Yonaguni jima**	24.42 0	*e*P	**P**	**06 51 35.8 +1.3**
YOJ			pmax	pmax	
	comp=Z,500nm,1.3s				
YOJ	**Yonaguni jima**	24.42 0	*e*P	**P**	**06 51 35.8 +1.3**
	comp=Z,499nm,1.3s				
TSI	**Tuntungan**	24.54 279	P	**P**	**06 51 37.2 +1.4**
PBSI	**Pulau Batu**	24.57 270	P	**P**	**06 51 42.8 +6.7**
	comp=Z,658nm,1.5s,comp=Z,11μm				
MANU	**Manus Island**	24.58 95	*e*P	**P**	**06 51 36.8 +0.7**
	comp=Z,420nm,0.8s				
YHNB	**Yeheng**	24.67 357	*e*P	**P**	**06 51 38.1 +1.2**
	comp=Z,189nm,0.9s				
PANO	**Nakornpanom**	24.84 315	P	**P**	**06 51 39.9 +1.5**
	comp=Z,294nm,1.6s,comp=Z,5μm				
GZH	**Guangzhou**	24.84 339	P	**P**	**06 51 43.9 +5.5**
GZH			PcP	**PcP**	**06 55 11.5 -0.7**
GZH			pmax	pmax	
	comp=Z,1μm,1.5s				
SRAK	**Srakaew**	24.93 305	P	**P**	**06 51 36.2 -3.1**
TATO	**Taipei**	24.97 357	*e*P	**P**	**06 51 40.2 +0.7**
	comp=Z,242nm,0.8s				
KRAB	**Krabi**	24.99 290	P	**P**	**06 51 42.3 +2.4**
	comp=Z,292nm,1.0s,comp=Z,4μm				
SKNT	**Sakolnakorn**	25.18 313	P	**P**	**06 51 42.7 +1.2**
	comp=Z,484nm,1.2s,comp=Z,6μm				
QZH	**Quanzhou**	25.24 351	⇑*i*P	**P**	**06 51 39.4 -2.6**
QZH			pP	**pP**	**06 52 04.4 +0.2**
QZH			sP	**sP**	**06 52 16.1 +0.1**
QZH			S	**S**	**06 55 57.9 -2.4**
QZH			pmax	pmax	
	comp=Z,290nm,1.0s				
QZH			pmax	pmax	
	comp=Z,1μm,4.0s				
QZH			LR	LR	
	comp=Z,2μm,16.0s				
GSI	**Gunungsitoli**	25.32 273	P	**P**	**06 51 42.8 -0.1**
GSI	**Gunungsitoli**	25.32 273	*e*P	**P**	**06 51 42.5 -0.3**
	comp=Z,348nm,0.7s				
KCSI	**Kotacane, Aceh**	25.33 278	P	**P**	**06 51 42.5 -0.5**
WRKA	**Warakurna**	25.34 168	P	**P**	**06 51 42.4 -0.5**
	baz=25,SNR=89				
PATY	**Pattaya**	25.36 302	P	**P**	**06 51 46.3 +3.1**
	comp=Z,17nm,0.9s				
SURT	**Suratani**	25.60 291	P	**P**	**06 51 46.9 +1.5**
	comp=Z,170nm,1.4s,comp=Z,2μm				
KHON	**Khomkaen**	25.64 311	P	**P**	**06 51 47.6 +1.9**
	comp=Z,399nm,0.9s,comp=Z,3μm				
NAYO	**Nakonayok**	25.68 305	P	**P**	**06 51 47.7 +1.6**
	comp=Z,340nm,0.8s,comp=Z,3μm				
PKDT	**Phuket**	25.70 289	P	**P**	**06 51 47.9 +1.6**
	comp=Z,194nm,1.4s				
GUMO	**Guam**	25.70 57	P	**P**	**06 51 44.9 -1.4**
	comp=Z,136nm,0.5s,baz=187,slow=8.9,SNR=9.6				
GUMO	**Guam**	25.70 57	*e*P	**P**	**06 51 45.4 -0.9**
	comp=Z,400nm,1.0s				
AS31	**Alice Springs**	25.76 156	*e*P	**P**	**06 51 46.2 -0.6**
	comp=Z,28nm,0.6s				
ASAR	**Alice Springs**	25.76 156	P	**P**	**06 51 46.2 -0.5**
	comp=Z,58nm,0.9s,baz=334,slow=8.6,SNR=376				
ASAR			PcP	**PcP**	**06 55 14.3 -0.1**
	comp=Z,41nm,0.5s,baz=349,slow=2.2,SNR=28				
ASAR			ScP	**ScP**	**06 58 45.6 +0.7**
	comp=Z,11nm,0.8s,baz=337,slow=2.4,SNR=7.8				
ASAR			LR	LR	07 02 30.6
	comp=Z,2μm,20.0s,baz=336,slow=38				
AS01	**Alice Springs**	25.78 156	*e*P	**P**	**06 51 45.3 -1.7**
PMG	**Port Moresby**	25.90 112	P	**P**	**06 51 47.5 -0.5**
	comp=Z,290nm,0.9s,baz=281,slow=2.6,SNR=29				
PMG			LR	LR	07 04 13.3
	comp=Z,1μm,19.6s,baz=274,slow=41				
PMG	**Port Moresby**	25.90 112	*c i*P	**P**	**06 51 47.0 -1.1**
PMG			pmax	pmax	
	comp=Z,1μm,1.0s				
PMG	**Port Moresby**	25.90 112	*e*P	**P**	**06 51 47.6 -0.5**
	comp=Z,263nm,0.9s				
QIS	**Mount Isa**	26.11 142	P	**P**	**06 51 49.4 -0.6**
	baz=26,SNR=87				
LHMI	**Lhok Sumawe**	26.41 282	*e*P	**P**	**06 51 53.0 +0.3**
	comp=Z,423nm,1.0s				
PHET	**Kaeng Krachan**	26.41 300	P	**P**	**06 51 54.4 +1.7**
	comp=Z,31nm,1.1s,comp=Z,430nm				
NONG	**Nongkai**	26.49 314	P	**P**	**06 51 54.2 +0.8**
	comp=Z,250nm,1.2s				
MLSI	**Meulaboh, Aceh**	26.78 280	P	**P**	**06 51 56.0 -0.1**
PBKT	**Sadao Pong**	27.21 309	P	**P**	**06 52 01.1 +1.3**
	comp=Z,198nm,1.1s,comp=Z,2μm				
JOW	**Kunigami**	27.29 11	*e*P	**P**	**06 52 01.8 +1.4**
	comp=Z,52nm,0.9s				
SRDT	**SRDT**	27.53 302	P	**P**	**06 52 05.2 +2.5**
	comp=Z,260nm,1.5s,comp=Z,6μm				
LOEI	**Loei**	27.53 311	P	**P**	**06 52 01.6 -1.2**
	comp=Z,424nm,0.9s,comp=Z,4μm				
MTSU	**Mount Surprise**	27.68 131	P	**P**	**06 52 03.9 -0.2**
	baz=28,SNR=16				
KHLT	**Khaolaem Dam**	28.20 303	P	**P**	**06 52 11.0 +2.3**
	comp=Z,84nm,1.1s,comp=Z,1μm				
UTTA	**Uttaradit**	28.21 310	P	**P**	**06 52 10.5 +1.7**
	comp=Z,64nm,1.3s,comp=Z,518nm				
SUKH	**Sukhothai**	28.78 309	P	**P**	**06 52 15.9 +2.1**
	comp=Z,79nm,0.9s,comp=Z,669nm				
LAMP	**Lampang**	29.38 310	P	**P**	**06 52 21.5 +2.3**
	comp=Z,79nm,0.9s,comp=Z,604nm				
MORW	**Morawa**	29.53 192	P	**P**	**06 52 19.7 -0.6**
	baz=30,SNR=15				
RABL	**Rabaul**	29.56 98	*e*P	**P**	**06 52 21.3 +0.4**
	comp=Z,834nm,0.8s				
CMBY	**CAMPBELL BAY**	29.71 284	*e*P	**P**	**06 52 22.2 0.0**
CM01	**Chiang Mai Arr**	29.84 309	*e*P	**P**	**06 52 25.3 +2.1**
CM31	**Chiang Mai Arr**	29.87 309	*e*P	**P**	**06 52 26.1 +2.6**
CMAR	**Chiang Mai Arr**	29.87 309	LR	LR	07 07 09.7
	comp=Z,3μm,19.6s,baz=133,slow=42				
CRAI	**Chiangrai**	29.88 314	P	**P**	**06 52 25.3 +1.7**
	comp=Z,382nm,1.3s				
CMMT	**Chiang Mai**	30.07 310	P	**P**	**06 52 27.2 +1.9**
	comp=Z,380nm,1.2s,comp=Z,4μm				
CHTO	**Chiang Mai**	30.08 310	P	**P**	**06 52 27.2 +1.9**
	comp=Z,2μm,1.2s,comp=Z,16μm				
CHTO	**Chiang Mai**	30.08 310	*e*P	**P**	**06 52 27.7 +2.4**
CHTO			pmax	pmax	
	comp=Z,470nm,1.1s				
CHTO	**Chiang Mai**	30.08 310	*e*P	**P**	**06 52 27.7 +2.4**
	comp=Z,467nm,1.1s				
CTA	**Charters Tower**	30.32 132	P	**P**	**06 52 27.5 +0.1**
	comp=Z,24nm,0.8s,baz=315,slow=11,SNR=20				
CTA			PcP	**PcP**	**06 55 26.2 +0.7**
	comp=Z,11nm,0.5s,baz=48,slow=1.2,SNR=6.0				
CTA			LR	LR	07 06 27.5
	comp=Z,714nm,19.5s,baz=320,slow=40				
CTAO	**Charters Tower**	30.32 132	*e*P	**P**	**06 52 27.0 -0.5**
CTAO			*e*		06 59 01.1
CTAO			pmax	pmax	
	comp=Z,350nm,1.1s				
CTAO	**Charters Tower**	30.32 132	*e*P	**P**	**06 52 26.9 -0.5**
	comp=Z,351nm,1.1s				
MHMT	**Maesarieng**	30.50 308	P	**P**	**06 52 31.3 +2.2**
	comp=Z,162nm,1.1s				
CMAI	**Chiengmai2**	30.67 312	P	**P**	**06 52 32.7 +2.0**
	comp=Z,182nm,1.2s,comp=Z,2μm				
GYA	**Guiyang**	30.68 331	⇓*i*P	**P**	**06 52 32.6 +2.0**
GYA			pP	pP	06 52 54.0 +0.8
GYA			sP	sP	06 53 03.2 -1.7
GYA			PP	**PnPn**	**06 53 37.8 +3.1**
GYA			PcP	**PcP**	**06 55 28.3 +1.8**
GYA			S	**S**	**06 57 28.9 +2.8**
GYA			sS	sS	06 58 05.0 -0.3
GYA			ScP	**ScP**	**06 59 01.2 +1.0**
GYA			SS	**SnSn**	**06 59 19.4 +4.5**
GYA			ScS	**ScS**	**07 02 57.6 +0.6**
GYA			pmax	pmax	
	comp=Z,90nm,1.0s				
GYA			pmax	pmax	
	comp=Z,280nm,8.4s				
GYA			LR	LR	
	comp=Z,1μm,16.8s				
GYA			LR	LR	
	comp=Z,540nm,14.6s				
GYA			LR	LR	
	comp=Z,540nm,14.6s				
BLDU	**Ballidu**	30.90 190	P	**P**	**06 52 31.5 -0.9**
	baz=31,SNR=110				
SSE	**Sheshan**	31.07 357	P	**P**	**06 52 33.2 -0.7**
SSE			sP	**pP**	**06 53 01.1 +4.6**
SSE			S	**S**	**06 57 34.6 +2.7**
SSE			PcS	**PcS**	**06 59 10.3 -1.2**
SSE			pmax	pmax	
	comp=Z,18nm,0.7s				
SSE			pmax	pmax	
	comp=Z,150nm,4.4s				
SSE			LR	LR	
	comp=Z,2μm,32.7s				
SSE			LR	LR	
	comp=Z,950nm,34.1s				
KMBL	**Kambalda**	31.11 182	P	**P**	**06 52 33.5 -0.7**
	baz=31,SNR=20				
WHN	**Wuhan**	31.54 346	P	**P**	**06 52 41.0 +3.0**
WHN			S	**S**	**06 57 43.3 +4.1**
WHN			pmax	pmax	
	comp=Z,88nm,1.0s				
WHN			pmax	pmax	
	comp=Z,1μm,2.9s				
WHN			LR	LR	
	comp=Z,2μm,9.0s				
WHN			LR	LR	
	comp=Z,3μm,9.7s				
WHN			LR	LR	
	comp=Z,3μm,17.4s				
KLBR	**Kellerberrin**	31.69 188	P	**P**	**06 52 38.5 -0.8**
	baz=32,SNR=21				
KMI	**Kunming**	31.74 324	P	**P**	**06 52 43.1 +2.9**
KMI			pP	pP	06 53 02.5 -0.3
KMI			sP	sP	06 53 14.8 +0.3
KMI			PP	**PP**	**06 53 53.8 0.0**
KMI			S	**S**	**06 57 48.3 +5.3**
KMI			SS	**SnSn**	**06 59 45.8 +4.9**
KMI			pmax	pmax	
	comp=Z,79nm,1.5s				
KMI			pmax	pmax	
	comp=Z,300nm,3.1s				
KMI			LR	LR	
	comp=Z,1μm,16.3s				
KMI			LR	LR	
	comp=Z,320nm,14.0s				
KMI			LR	LR	
	comp=Z,1μm,34.3s				
PBA	**Port Blair**	32.11 292	*e*P	P	06 52 43.6 +0.4
PBA			IAmb	IAmb	06 52 46.5
	comp=Z,76nm,1.0s				
NJ2	**Nanjing**	32.21 354	*e*P	**P**	**06 52 45.3 +1.5**
NJ2			pP	**pP**	**06 53 02.1 -4.4**
NJ2			sP	**sP**	**06 53 13.6 -4.6**
NJ2			S	**S**	**06 57 51.4 +1.8**
NJ2			sS	**sS**	**06 58 24.5 -4.4**
NJ2			pmax	pmax	
	comp=Z,39nm,1.3s				
NJ2			pmax	pmax	
	comp=Z,100nm,6.8s				
NJ2			LR	LR	
	comp=Z,490nm,17.9s				
NJ2			LR	LR	
	comp=Z,1μm,14.1s				
NJ2			LR	LR	
	comp=Z,460nm,15.8s				
DGPR	**DIGLIPUR**	32.46 295	*e*P	**P**	**06 52 46.1 -0.2**
DGPR			IAmb	IAmb	06 52 49.6
	comp=Z,76nm,1.0s				
ENH	**Enshi**	32.78 338	*e*P	**P**	**06 52 50.9 +1.9**
	comp=Z,226nm,0.8s				
CBIJ	**Chichi jima**	32.82 33	*e*P	**P**	**06 52 47.8 -1.4**
	comp=Z,1μm,0.4s				
JCJ	**Chichijima**	32.82 33	LR	LR	07 04 58.0
	comp=Z,304nm,21.6s,baz=236,slow=34				
NWAO	**Narrogin (SRO)**	33.07 189	P	**P**	**06 52 51.0 -0.5**
	comp=Z,31nm,0.5s,baz=249,slow=8.8,SNR=30				
NWAO			LR	LR	07 08 29.9
	comp=Z,431nm,18.0s,baz=242,slow=40				
NWAO	**Narrogin (SRO)**	33.07 189	P	**P**	**06 52 50.9 -0.5**
	baz=33,SNR=15				
NWAO	**Narrogin (SRO)**	33.07 189	P	**P**	**06 52 51.0 -0.5**
NWAO			pmax	pmax	
	comp=Z,31nm,0.5s				
NWAO			MLR	MLR	
	comp=Z,431nm,18.0s				
NWAO	**Narrogin (SRO)**	33.07 189	*e*P	**P**	**06 52 50.8 -0.6**
	comp=Z,848nm,1.6s				
QLP	**Quilpie**	33.42 144	P	**P**	**06 52 54.2 -0.3**
	baz=33,SNR=36				
JNU	**Nakatsue**	33.90 12	LR	LR	07 06 34.1
	comp=Z,353nm,21.6s,baz=134,slow=36				
JNU	**Nakatsue**	33.90 12	*e*P	**P**	**06 52 58.6 -0.1**
	comp=Z,62nm,0.9s				
RKGY	**Rocky Gully**	34.76 189	P	**P**	**06 53 07.0 +1.0**
	baz=35,SNR=10				
BBOO	**Buckleboo**	34.83 160	P	**P**	**06 53 05.9 -0.7**
	baz=35,SNR=91				
BBOO	**Buckleboo**	34.83 160	*e*P	**P**	**06 53 06.0 -0.7**
	comp=Z,103nm,0.8s				
CD2	**Chengdu**	35.78 331	P	**P**	**06 53 16.1 +1.2**
CD2			pP	pP	06 53 36.2 -1.6
CD2			sP	sP	06 53 46.4 -3.0
CD2			PP	**PnPn**	**06 54 39.5 +1.2**
CD2			S	**S**	**06 58 45.6 +0.6**
CD2			sS	sS	06 59 24.2 -0.4
CD2			pmax	pmax	
	comp=Z,200nm,2.4s				
CD2			pmax	pmax	
	comp=Z,200nm,3.9s				
CD2			LR	LR	
	comp=Z,2μm,13.2s				
CD2			LR	LR	
	comp=Z,2μm,14.4s				
PATS	**Pohnpei**	36.04 78	P	**P**	**06 53 17.8 +0.6**
	baz=36,SNR=7.2				
PATS	**Pohnpei**	36.04 78	*e*P	**P**	**06 53 14.3 -3.0**
	comp=Z,316nm,0.9s				
RMQ	**Roma**	36.20 138	P	**P**	**06 53 18.3 -0.2**
	baz=36,SNR=6.3				
STKA	**Stephens Creek**	36.23 152	P	**P**	**06 53 18.2 -0.4**
	comp=Z,71nm,0.7s,baz=324,slow=8.8,SNR=190				
STKA			PcP	**PcP**	**06 55 41.5 -0.5**
	comp=Z,36nm,0.5s,baz=1.1,slow=5.4,SNR=7.3				
STKA			ScP	**ScP**	**06 59 19.2 -0.2**
	comp=Z,9.3nm,0.8s,baz=329,slow=3.8,SNR=4.6				
STKA	**Stephens Creek**	36.23 152	P	**P**	**06 53 18.2 -0.4**
	baz=36,SNR=103				
STKA	**Stephens Creek**	36.23 152	*e*P	**P**	**06 53 18.3 -0.4**
	comp=Z,20nm,0.9s				
STKA			PcP	**PcP**	**06 55 41.5 -0.5**
STKA			ScP	**ScP**	**06 59 19.2 -0.2**
XAN	**Xi'an**	36.40 340	P	**P**	**06 53 21.0 +0.9**
XAN			pP	pP	06 53 45.6 +2.5
XAN			S	**S**	**06 58 54.8 +0.6**
XAN			sS	sS	06 59 36.4 +2.4
XAN			SS	**SnSn**	**07 01 27.5 -5.5**
XAN			pmax	pmax	
	comp=Z,96nm,1.3s				
XAN			pmax	pmax	
	comp=Z,200nm,4.4s				
XAN			LR	LR	
	comp=Z,1μm,20.3s				
XAN			LR	LR	
	comp=Z,2μm,21.3s				
XAN			LR	LR	
	comp=Z,1μm,19.3s				
HTT	**Hallett**	36.43 157	P	**P**	**06 53 20.4 0.0**
	baz=36,SNR=118				
TIA	**Tai'an**	36.52 352	⇓P	**P**	**06 53 22.3 +1.2**
TIA			pP	**pP**	**06 53 43.6 -0.5**
TIA			S	**S**	**06 58 55.4 -0.6**
TIA			sS	**sS**	**06 59 31.5 -4.3**
TIA			pmax	pmax	
	comp=Z,40nm,0.9s				
TIA			pmax	pmax	
	comp=Z,350nm,3.5s				
TIA			LR	LR	
	comp=Z,270nm,6.0s				
TIA			LR	LR	
	comp=Z,990nm,11.9s				
TIA			LR	LR	
	comp=Z,470nm,8.6s				
EIDS	**Eidsvold**	37.07 135	P	**P**	**06 53 24.6 -1.3**
	baz=37,SNR=6.6				
EIDS	**Eidsvold**	37.07 135	*e*P	**P**	**06 53 24.5 -1.4**
	comp=Z,110nm,1.4s				
KS15	**Wonju Array Si**	37.65 7	*e*P	**P**	**06 53 31.8 +1.2**
KSAR	**Wonju Array Be**	37.65 7	P	**P**	**06 53 31.3 +0.7**
KSAR	**Wonju Array Be**	37.65 7	P	**P**	**06 53 31.2 +0.7**
KSRS	**Korea Array**	37.67 7	P	**P**	**06 53 31.2 +0.6**
	comp=Z,7.5nm,0.5s,baz=186,slow=9.7,SNR=20				
KSRS			LR	LR	07 08 05.9
	comp=Z,204nm,21.8s,baz=186,slow=35				
KSRS	**Korea Array**	37.67 7	P	**P**	**06 53 31.3 +0.6**
KSRS			pmax	pmax	
	comp=Z,7.0nm,0.5s				
KSRS			MLR	MLR	
	comp=Z,204nm,21.8s				
INU	**Inuyama**	37.67 19	*e*P	**P**	**06 53 29.9 -0.9**
	comp=Z,122nm,0.7s				
KS01	**Wonju Array Si**	37.69 7	*e*P	**P**	**06 53 30.3 -0.5**
CMSA	**Cobar Meteorol**	38.01 147	P	**P**	**06 53 33.9 +0.2**
	baz=38,SNR=221				
HNR	**Honiara**	38.06 105	P	**P**	**06 53 33.5 -0.9**
	comp=Z,883nm,0.8s,baz=213,slow=2.2,SNR=37				
HNR	**Honiara**	38.06 105	*e*P	**P**	**06 53 33.0 -1.4**
HNR	**Honiara**	38.06 105	*e*P	**P**	**06 53 33.3 -1.1**
	comp=Z,972nm,0.9s				
DL2	**Dalian**	38.84 358	P	**P**	**06 53 40.7 +0.2**
DL2			sP	**pP**	**06 54 08.1 +4.4**
DL2			S	**S**	**06 59 28.0 -2.9**
DL2			pmax	pmax	
	comp=Z,75nm,0.9s				
DL2			pmax	pmax	
	comp=Z,170nm,3.6s				
DL2			LR	LR	
	comp=Z,710nm,16.2s				
DL2			LR	LR	
	comp=Z,910nm,16.2s				
DL2			LR	LR	
	comp=Z,910nm,13.5s				
TIY	**Taiyuan**	38.84 347	*e*P	**P**	**06 53 40.7 0.0**
TIY			S	**S**	**06 59 31.0 -0.2**
TIY			pmax	pmax	
	comp=Z,70nm,1.0s				
TIY			pmax	pmax	
	comp=Z,290nm,4.8s				
TIY			LR	LR	
	comp=Z,530nm,11.2s				
TIY			LR	LR	
	comp=Z,270nm,6.4s				
TIY			LR	LR	
	comp=Z,570nm,12.0s				
MAJO	**Matsushiro**	39.15 20	*i*P	**P**	**06 53 41.5 -1.7**
MAJO	**Matsushiro**	39.15 20	*e*P	**P**	**06 53 41.4 -1.7**
	comp=Z,158nm,0.9s				
MAT	**Matsushiro**	39.15 20	P	**P**	**06 53 41.6 -1.6**
MAT			S	**S**	**06 59 32.0 -3.8**
MAT	**Matsushiro**	39.15 20	S	**S**	**06 59 32.3 -3.5**
MJAR	**Matsushiro Arr**	39.15 20	P	**P**	**06 53 41.8 -1.4**
	comp=Z,76nm,0.6s,baz=193,slow=8.9,SNR=134				
MJAR			ScP	**ScP**	**06 59 30.4 +0.1**
	comp=Z,8.4nm,1.0s,baz=206,slow=4.7,SNR=4.8				
MJAR			LR	LR	07 11 37.3
	comp=Z,332nm,18.5s,baz=200,slow=39				
MJAR	**Matsushiro Arr**	39.15 20	P	**P**	**06 53 41.8 -1.4**
MJAR					06 59 30.4
MJAR			pmax	pmax	
	comp=Z,109nm,0.9s				
MJAR			pmax	pmax	
	comp=N,8.0nm,1.0s				
MJAR			MLR	MLR	
	comp=Z,332nm,18.5s				
MJB9	**Matsu-Tunnel**	39.15 20	*e*P	**P**	**06 53 42.1 -1.2**
	comp=Z,42nm,1.0s				
SHL	**Shillong**	39.32 313	⇓*i*P	**P**	**06 53 46.0 +1.0**
SHL			IAmb	IAmb	06 53 46.8
	comp=Z,326nm,1.2s				
SHL			*ex*	x	06 59 36.0
LZH	**Lanzhou**	40.12 336	⇑P	**P**	**06 53 53.7 +2.3**
LZH			PP	**PnPn**	**06 55 30.0 -0.1**
LZH			*e*S	**S**	**06 59 54.2 +3.7**
LZH			sS	sS	07 00 26.3 -4.4
LZH			SS	**SS**	**07 02 46.3 -5.9**
LZH			pmax	pmax	
	comp=Z,190nm,1.3s				
LZH			pmax	pmax	
	comp=Z,550nm,4.0s				
LZH			LR	LR	
	comp=Z,770nm,12.0s				
LZH			LR	LR	
	comp=Z,720nm,12.4s				
LZH			LR	LR	
	comp=Z,1μm,14.4s				
BJT	**Baijiatuau**	40.40 352	*e*P	**P**	**06 53 53.6 +0.2**
BJT	**Baijiatuau**	40.40 352	*e*P	**P**	**06 53 53.6 +0.2**
BJI	**Beijing**	40.42 352	P	**P**	**06 53 54.4 +0.8**
BJI			pP	**pP**	**06 54 18.0 +1.1**
BJI			S	**S**	**06 59 48.9 -5.6**
BJI			sS	**sS**	**07 00 35.7 +1.0**
BJI			ScS	**ScS**	**07 03 47.5 -1.8**
BJI			pmax	pmax	
	comp=Z,45nm,1.6s				
BJI			pmax	pmax	
	comp=Z,430nm,4.2s				
BJI			LR	LR	
	comp=Z,380nm,21.0s				
BJI			LR	LR	
	comp=Z,600nm,16.3s				
BJI			LR	LR	
	comp=Z,730nm,34.5s				
ARPS	**Mount Arapiles**	40.50 156	P	**P**	**06 53 54.5 +0.2**

baz=40,SNR=33
ARMA Armidale 40.70 140 P P 06 53 57.2 +0.9
baz=41,SNR=70
ARMA Armidale 40.70 140 eP P 06 53 56.5 +0.2
comp=Z,87nm,0.7s
YNG Young 41.58 147 P P 06 54 04.2 +0.8
baz=42,SNR=60
HHC Hu-ho-hao-te 42.04 347 eP P 06 54 07.8 +0.8
HHC pP pP 06 54 31.1 +0.6
HHC sP sP 06 54 42.8 +0.9
HHC ScP **ScP 06 59 41.9 +0.2**
HHC PcS **PcS 06 59 50.6 -1.5**
HHC S **S 07 00 21.7 +3.0**
HHC sS sS 07 01 00.4 +1.2
HHC SS **SS 07 03 25.7 -4.2**
HHC pmax pmax
comp=Z,68nm,0.9s
HHC pmax pmax
comp=Z,540nm,5.8s
HHC LR LR
comp=Z,4μm,13.7s
HHC LR LR
comp=Z,3μm,14.9s
HHC LR LR
comp=Z,5μm,13.7s
BTO Baotou 42.17 345 eP P 06 54 07.7 -0.4
MGCD Mangrove Creek 42.31 144 P P 06 54 10.7 +1.5
baz=42,SNR=14
LSA Lhasa 42.33 317 P P 06 54 12.3 +2.3
LSA pmax pmax
comp=Z,55nm,0.6s
LSA Lhasa 42.33 317 eP P 06 54 12.3 +2.3
LSA pmax pmax
comp=Z,129nm,0.8s
LSA Lhasa 42.33 317 eP P 06 54 12.3 +2.3
comp=Z,130nm,0.8s
CHLP Challavanipeta 42.35 298 eP P 06 54 11.0 +1.2
CHLP IAmb IAmb 06 54 12.5
comp=Z,134nm,1.2s
CHLP eS **S 07 00 26.2 +2.4**
CAN Canberra 42.68 148 eP P 06 54 13.4 +1.1
CAN pmax pmax
comp=Z,350nm,0.8s
CAN Canberra 42.68 148 eP P 06 54 13.3 +1.1
comp=Z,353nm,0.8s
VIS Vishakhapatnam 42.72 297 eP P 06 54 13.5 +0.7
VIS IAmb IAmb 06 54 19.6
comp=Z,123nm,1.4s
TOO Toolangi 42.74 153 P P 06 54 13.6 +1.0
baz=43,SNR=77
CNB Canberra Magne 42.87 148 P P 06 54 14.6 +0.8
baz=43,SNR=58
BOK Bokaro 43.02 306 eP P 06 54 16.5 +1.4
BOK IAmb IAmb 06 54 18.1
comp=Z,34nm,0.4s
CN2 Changchun 43.77 3 eP P 06 54 20.0 -0.8
CN2 esP pP 06 54 47.0 +2.6
CN2 eS **S 07 00 44.0 +0.1**
CN2 pmax pmax
comp=Z,20nm,1.0s
CN2 pmax pmax
comp=Z,200nm,4.0s
VLA Vladivostok 43.79 10deP P 06 54 21.7 +0.8
VLA pmax pmax
comp=Z,40nm,0.4s
PVM Polavaram 44.10 295 eP P 06 54 24.6 +0.8
PVM IAmb IAmb 06 54 26.9
comp=Z,45nm,1.2s
PVM eS **S 07 00 50.3 +0.9**
MDRS Chennai 44.21 289 eP P 06 54 25.6 +0.9
MDRS IAmb IAmb 06 54 28.1
comp=Z,342nm,2.4s
GTA Gaotai 44.62 334 eP P 06 54 29.2 +1.3
GTA pP pP 06 54 53.7 +2.2
GTA sP sP 06 55 04.6 +1.6
GTA PcP **PcP 06 56 10.2 +1.1**
GTA ScP **ScP 06 59 53.0 +0.7**
GTA S **S 07 00 58.4 +1.8**
GTA sS sS 07 01 38.8 +1.4
GTA SS **ScS 07 04 12.3 -3.5**
GTA pmax pmax
comp=Z,44nm,1.1s
GTA pmax pmax
comp=Z,410nm,5.9s
GTA LR LR
comp=Z,590nm,18.5s
GTA LR LR
comp=Z,510nm,20.0s
GTA LR LR
comp=Z,680nm,18.1s
USRK Ussuriysk Ar. 44.86 9 P P 06 54 29.1 -0.4
comp=Z,44nm,0.5s,baz=185,slow=8.5,SNR=183
USRK LR LR 07 12 37.4
comp=Z,321nm,21.0s,baz=166,slow=35
SKHT Srikalahasti 44.88 290 eP P 06 54 31.2 +1.1
SKHT IAmb IAmb 06 54 32.6
comp=Z,173nm,1.9s
SKHT eS **S 07 01 01.5 +0.8**
MDJ Mudanjiang 44.93 7 P P 06 54 29.8 -0.2
MDJ pP pP 06 54 49.2 -4.5
MDJ sP sP 06 54 58.3 -6.8
MDJ ScP **ScP 06 59 55.2 +2.0**
MDJ PcS **PcS 07 00 04.1 +0.6**
MDJ S **S 07 00 59.7 -0.9**
MDJ ScS **ScS 07 04 15.7 -1.5**
MDJ pmax pmax
comp=Z,42nm,1.4s
MDJ pmax pmax
comp=Z,160nm,2.7s
MDJ LR LR
comp=Z,290nm,19.6s
MDJ LR LR
comp=Z,480nm,17.8s
MDJ LR LR
comp=Z,390nm,17.2s
MDJ Mudanjiang 44.93 7 eP P 06 54 30.3 +0.2
comp=Z,106nm,1.1s
GUN Gumba 45.08 311 eP P 06 54 33.0 +1.1
comp=Z,360nm,0.4s
ADKI Addanki 45.19 293 eP P 06 54 34.1 +1.5
ADKI IAmb IAmb 06 54 35.6
comp=Z,66nm,1.2s
ADKI eS **S 07 01 05.5 +0.3**
PKIN Phulchoki 45.27 311 eP P 06 54 33.8 +0.4
comp=Z,71nm,0.4s
KKN Kakani 45.47 311 eP P 06 54 35.7 +0.8
comp=Z,101nm,0.4s
DMN Daman 45.51 310 eP P 06 54 36.1 +0.9
comp=Z,373nm,1.0s
ERM Erimo 45.76 21deP P 06 54 36.9 +0.3
ERM pmax pmax
comp=Z,170nm,1.7s
ERM Erimo 45.76 21 eP P 06 54 37.4 +0.8
comp=Z,112nm,1.1s
NJS Nagarjunasagar 46.01 293 eP P 06 54 39.2 +0.2
NJS IAmb IAmb 06 54 41.3
comp=Z,73nm,1.4s
NJS eS **S 07 01 15.9 -1.0**
RCLA Racherla 46.03 292 eP P 06 54 39.2 0.0
RCLA IAmb IAmb 06 54 41.5
comp=Z,51nm,0.9s
RCLA eS **S 07 01 16.6 -0.6**
GKN Gorkha 46.06 311 eP P 06 54 40.3 +0.8
comp=Z,169nm,0.4s
SRLM Srisailam 46.26 293 eP P 06 54 41.6 +0.6
SRLM IAmb IAmb 06 54 49.0
comp=Z,39nm,0.9s
SRLM eScP **ScP 06 59 57.9 -1.6**
SRLM eS **S 07 01 18.9 -1.7**
TRD Trivandrum 46.52 282 eP P 06 54 41.7 -1.4
TRD IAmb IAmb 06 54 50.8
comp=Z,34nm,0.5s
RPR Rampur 46.72 296 eP P 06 54 45.0 +0.5
RPR IAmb IAmb 06 54 46.7
comp=Z,46nm,0.7s
RPR eS **S 07 01 27.5 +0.5**
KOLN Koldanda 46.74 310 eP P 06 54 45.8 +1.0
comp=Z,341nm,0.7s
HYB Hyderabad 46.94 294 *i* P **P 06 54 47.5 +1.1**
comp=Z,55nm,1.0s
HYB epP **pP 06 55 10.5 +0.3**
HYB eS **S 07 01 34.0 +3.6**
HYB Hyderabad 46.94 294 eP P 06 54 46.9 +0.5
HYB IAmb IAmb 06 54 47.7
comp=Z,39nm,0.5s

HYBB Hyderabad (bro 46.95 294 eP P 06 54 46.9 +0.5
HYBB IAmb IAmb 06 54 48.8
comp=Z,82nm,1.3s
HYBB eS **S 07 01 28.4 -2.1**
PYUN Piuthan 47.37 310 eP P 06 54 50.7 +0.9
comp=Z,633nm,0.8s
ASAJ Asahikawa 47.42 19 P P 06 54 50.7 +1.1
comp=Z,155nm,0.6s,baz=228,slow=9.8,SNR=81
ASAJ Asahikawa 47.42 19 eP P 06 54 49.6 0.0
comp=Z,195nm,0.6s
MOO Moorlands 47.49 156 P P 06 54 51.2 +1.0
baz=48,SNR=5.9
SRSP Sriramsagar 47.59 296 eP P 06 54 52.2 +0.9
SRSP IAmb IAmb 06 54 52.8
comp=Z,31nm,0.7s
SRSP eS **S 07 01 38.2 -1.2**
DZM Mont Dzumac 47.74 120 LR LR 07 15 31.0
comp=Z,252nm,20.3s,baz=243,slow=37
TAU Tasmania Unive 47.94 156 eP P 06 54 54.8 +1.3
TAU pmax pmax
comp=Z,180nm,1.3s
TAU Tasmania Unive 47.94 156 eP P 06 54 54.8 +1.3
comp=Z,176nm,1.3s
YUK Yuzh-Kuril'sk 48.50 22 eP P 06 54 56.0 -1.9
YUK e 06 56 49.4
YUK S **S 07 01 50.8 -0.7**
YUK pmax pmax
comp=Z,650nm,2.3s
YUK pmax pmax
comp=E,202nm,1.1s
YUK pmax pmax
comp=Z,534nm,1.1s
YUK pmax pmax
comp=N,165nm,0.6s
KLRI Killari 48.91 294 eP P 06 55 01.7 +0.1
KLRI IAmb IAmb 06 55 03.2
comp=Z,86nm,0.9s
KLRI eS **S 07 01 56.2 -2.0**
HIA Hailar 49.25 357 eP P 06 55 03.5 -0.1
HIA Hailar 49.25 357 eP P 06 55 03.5 -0.1
HABR Khabarovsk 49.53 11ceP P 06 55 03.2 -2.4
HABR e*SP **pP 06 55 32.2 +2.5**
HABR e 06 56 58.1
HABR ePPP PPP 06 57 53.1
HABR eS **S 07 02 05.3 -0.4**
HABR e 07 04 47.0
HABR eSS **SS 07 05 39.8 +0.6**
HABR eSSS SSS 07 07 06.1
HABR pmax pmax
comp=E,72nm,2.0s
HABR pmax pmax
comp=Z,168nm,2.0s
HABR pmax pmax
comp=N,91nm,2.0s
HABR pmax pmax
comp=Z,481nm,1.9s
HABR MLR MLR
comp=Z,165nm,20.0s
ULN Ulaanbaatar 49.72 346*c i* P **P 06 55 07.5 +0.2**
ULN pmax pmax
comp=Z,134nm,1.7s
ULN Ulaanbaatar 49.72 346 *e*P **P 06 55 08.0 +0.7**
comp=Z,70nm,1.0s
KLR Kul'dur 49.74 8 P **P 06 55 06.4 -0.8**
comp=Z,16nm,0.6s,baz=194,slow=7.9,SNR=28
KLR LR LR 07 15 59.7
comp=Z,310nm,21.2s,baz=188,slow=36
KLR Kul'dur 49.74 8*c i* P **P 06 55 05.8 -1.4**
SONM Songino Array 49.85 346 P **P 06 55 08.9 +0.6**
comp=Z,40nm,0.7s,baz=162,slow=8.9,SNR=152
SONM ScP **ScP 07 00 13.3 -0.8**
comp=Z,4.2nm,1.0s,baz=177,slow=5.9,SNR=4.1
BHPL Bhopal 49.85 301 *e*P **P 06 55 08.6 0.0**
BHPL IAmb IAmb 06 55 10.2
comp=Z,61nm,0.4s
SONA1 Songino Array 49.86 346 *e*P **P 06 55 09.6 +1.2**
YSS Yuzh-Sakhalins 50.00 18*ce*P **P 06 55 08.6 -0.6**
YSS e*SP **pP 06 55 37.0 +3.7**
YSS e 06 56 28.0
YSS e 06 57 03.0
YSS eS **S 07 02 16.5 +4.1**
YSS pmax pmax
comp=Z,500nm,2.0s
YSS pmax pmax
comp=Z,120nm,0.7s
YSS pmax pmax
comp=N,50nm,0.4s
YSS MLR MLR
comp=Z,300nm,16.0s
YSS Yuzh-Sakhalins 50.00 18 *e*P **P 06 55 08.7 -0.5**
comp=Z,374nm,1.5s
TARA Tarawa 50.08 88 *e*P **P 06 55 11.1 +0.6**
comp=Z,161nm,0.9s
KUR Kuril'sk 50.28 23 *e*P **P 06 55 11.8 +0.4**
POO Poona 51.55 294 *e*P **P 06 55 21.2 -0.3**
POO IAmb IAmb 06 55 22.1
DDI Dehra Dun 52.22 310 *e*P **P 06 55 27.0 +0.7**
DDI IAmb IAmb 06 55 35.6
comp=Z,49nm,0.7s
CIT Chita 52.53 353 *e*P **P 06 55 28.5 +0.4**
CIT e 06 55 54.9
CIT e 06 56 37.8
CIT pmax pmax
comp=Z,136nm,1.7s
ZAK Zakamensk 53.00 344 *e*P **P 06 55 31.4 -0.3**
ZAK e 07 02 57.1
ZAK pmax pmax
comp=Z,25nm,1.6s
SMLA Simla 53.27 310 *e*P **P 06 55 34.2 +0.3**
SMLA IAmb IAmb 06 55 36.1
comp=Z,582nm,1.2s
TYV Tymovskoe 53.50 15 *e*P **P 06 55 35.8 +0.6**
TYV e 07 02 49.0
TYV pmax pmax
comp=Z,62nm,1.0s
WMQ Urumqi 53.81 329⇑*i i*P **P 06 55 39.1 +1.4**
WMQ pP pP 06 56 03.2 +1.1
WMQ sP sP 06 56 13.9 +0.6
WMQ PcP **PcP 06 56 42.5 +0.2**
WMQ PP **PP 06 57 41.6 +1.8**
WMQ S **S 07 03 06.5 +1.6**
WMQ sS sS 07 03 44.2 -2.5
WMQ ScS **ScS 07 05 15.6 -1.9**
WMQ pmax pmax
comp=Z,24nm,0.8s
WMQ pmax pmax
comp=Z,210nm,4.0s
WMQ LR LR
comp=Z,350nm,14.4s
WMQ LR LR
comp=Z,240nm,19.8s
WMQ LR LR
comp=Z,220nm,22.0s
TLY Talaya 54.09 345 P **P 06 55 41.2 +1.6**
comp=Z,9.6nm,0.7s,baz=179,slow=6.4,SNR=13
TLY Talaya 54.09 345*c i* P **P 06 55 40.5 +0.9**
TLY e 06 56 07.3
TLY e 06 56 45.4
TLY eS **S 07 03 07.8 -0.5**
TLY e 07 05 15.4
TLY pmax pmax
comp=Z,86nm,1.7s
TLY MLR MLR
comp=Z,313nm,17.0s
TLY Talaya 54.09 345 *e*P **P 06 55 41.2 +1.6**
comp=Z,65nm,0.5s
DHRM DHARAMSHALA 54.43 311 *e*P **P 06 55 43.0 +0.4**
DHRM IAmb IAmb 06 55 45.2
comp=Z,2μm,1.8s
IRK Irkutsk 54.45 346 *e*P **P 06 55 42.7 +0.5**
IRK e 06 56 05.9
IRK pmax pmax
comp=Z,132nm,1.8s
MOY Mondy 54.79 344 *e*P **P 06 55 46.2 +1.5**
MOY pmax pmax
comp=Z,136nm,2.0s
NKL Nikolayevsk 55.12 13 *i* P **P 06 55 46.5 -0.3**
NKL eS **S 07 03 17.0 -4.8**
NKL pmax pmax
comp=N,400nm,4.0s
NKL pmax pmax
comp=Z,700nm,2.5s
NKL pmax pmax
comp=N,140nm,1.3s
NKL pmax pmax

comp=E,80nm,1.3s
NKL pmax pmax
comp=Z,240nm,1.0s
NKL smax smax
comp=N,500nm,8.0s
NKL smax smax
comp=E,500nm,8.0s
NKL MLR MLR
comp=E,350nm,14.0s
NKL MLR MLR
comp=Z,500nm,14.0s
FUNA Funafuti 56.74 100 *e*P **P 06 55 59.3 +0.2**
comp=Z,234nm,0.9s
CLNS Chul'man 56.79 1 *e*P **P 06 55 56.3 -2.5**
CLNS pmax pmax
comp=Z,34nm,1.1s
CLNS pmax pmax
comp=E,12nm,0.8s
CLNS pmax pmax
comp=N,15nm,1.0s
MSVF Nonsavu 57.01 111*c i*P **P 06 56 01.9 +0.8**
MSVF pmax pmax
comp=Z,189nm,1.0s
MSVF Nonsavu 57.01 111 *e*P **P 06 56 01.8 +0.8**
comp=Z,167nm,1.1s
KSH Kashi 58.16 318 P **P 06 56 09.9 +1.0**
KSH epP pP 06 56 33.7 +0.1
KSH esP sP 06 56 45.2 +0.4
KSH ePcP **PcP 06 57 00.0 +0.6**
KSH ePP **PP 06 58 21.5 +2.7**
KSH PcS **PcS 07 00 59.7 -1.4**
KSH S **S 07 04 01.6 -1.2**
KSH ScS **ScS 07 05 47.9 -1.4**
KSH SS **SS 07 07 57.7 +1.6**
KSH pmax pmax
comp=Z,120nm,2.3s
KSH LR LR
comp=Z,290nm,11.0s
KSH LR LR
comp=Z,150nm,5.9s
KSH LR LR
comp=Z,510nm,18.9s
BOD Bodaibo 58.18 354⇓*i i*P **P 06 56 07.9 -0.6**
BOD pmax pmax
comp=Z,71nm,1.8s
MK01 Makanchi Array 58.61 328 *e*P **P 06 56 12.9 +1.2**
MK31 Makanchi Array 58.63 328 *e*P **P 06 56 12.2 +0.3**
MK31 Makanchi Array 58.63 328 *e*P **P 06 56 12.2 +0.3**
MKAR Makanchi Array 58.63 328 P **P 06 56 12.1 +0.2**
comp=Z,12nm,0.3s,baz=128,slow=8.4,SNR=172
MKAR LR LR 07 22 56.9
comp=Z,345nm,19.6s,baz=118,slow=37
MKAR PKP2bc 07 25 59.9
comp=Z,1.3nm,0.8s,baz=355,slow=2.3,SNR=5.5
OUZ Omahuta 58.72 132 *e*P **P 06 56 12.7 0.0**
comp=Z,82nm,1.1s
MAKZ Makanchi 58.80 328 *e*P **P 06 56 13.2 +0.1**
MAKZ pmax pmax
comp=Z,73nm,0.9s
MAKZ Makanchi 58.80 328 *e*P **P 06 56 13.2 +0.1**
comp=Z,73nm,0.9s
DCZ Deep Cove 59.67 145 *e*P **P 06 56 19.7 +0.7**
comp=Z,121nm,1.2s
SFK Sufi-Kurgan 60.06 318 P **P 06 56 21.7 -0.4**
SFK pmax pmax
comp=Z,14nm,0.7s
FOZ Fox Glacier 60.16 142 *e*P **P 06 56 22.8 +0.4**
comp=Z,124nm,1.2s
MLZ Mavora Lakes 60.17 145 *e*P **P 06 56 22.8 +0.3**
comp=Z,114nm,1.1s
TKM2 Tokmak 2 60.18 322 P **P 06 56 23.4 +0.5**
TKM2 pmax pmax
comp=Z,16nm,1.0s
TKM2 Tokmak 2 60.18 322 *e*P **P 06 56 23.6 +0.7**
comp=Z,51nm,0.8s
WHZ Wether Hill Ro 60.37 145 *e*P **P 06 56 23.7 -0.2**
comp=Z,172nm,1.2s
WKZ Wanaka 60.39 144 *e*P **P 06 56 24.3 +0.3**
comp=Z,503nm,1.9s
WKZ Wanaka 60.39 144 PN **P 06 56 23.7 -0.3**
PEA0 Petropavlovsk- 60.44 23 *e*P **P 06 56 24.4 +0.3**
PEA0B Petropavlovsk- 60.44 23 *e*P **P 06 56 24.9 +0.7**
comp=Z,405nm,1.4s
PETK Petropavlovsk- 60.44 23 P **P 06 56 24.4 +0.2**
comp=Z,72nm,0.6s,baz=231,slow=2.4,SNR=149
PETK LR LR 07 23 48.0
comp=Z,134nm,19.5s,baz=214,slow=37
WVZ Waitaha Valley 60.48 141 PN **P 06 56 24.3 -0.4**
QRZ Quartz Range 60.51 138 PN **P 06 56 25.7 +0.8**
AAK Ala-Archa 60.72 321 P **P 06 56 27.5 +1.0**
comp=Z,13nm,0.8s,baz=111,slow=6.7,SNR=26
AAK PKP2bc 07 25 54.2
comp=Z,8.4nm,1.0s,baz=219,slow=3.7,SNR=9.6
AAK Ala-Archa 60.72 321*d i*P **P 06 56 26.7 +0.2**
AAK pmax pmax
comp=Z,46nm,1.9s
AAK Ala-Archa 60.72 321 *e*P **P 06 56 27.5 +1.0**
comp=Z,130nm,1.5s
AAK ⇑*e* 07 25 54.2
FRU Bishkek 60.74 321⇑*e*P **P 06 56 26.5 0.0**
FRU *i* 06 56 52.0
FRU eS **S 07 04 37.5 +1.7**
FRU *e* 07 06 04.0
FRU pmax pmax
comp=Z,75nm,2.1s
FRU smax smax
comp=N,950nm,5.0s
INZ Inchbonnie 60.75 141 PN **P 06 56 25.8 -0.6**
PET Petropavlovsk 60.76 24 *e*P **P 06 56 26.2 -0.1**
PET eS **S 07 04 36.9 +1.4**
PET pmax pmax
comp=Z,251nm,1.5s
PET pmax pmax
comp=Z,300nm,16.4s
PET Petropavlovsk 60.76 24 *e*P **P 06 56 27.5 +1.2**
comp=Z,448nm,1.4s
LBZ Lake Benmore 60.84 143 *e*P **P 06 56 27.3 +0.2**
comp=Z,776nm,2.0s
LBZ Lake Benmore 60.84 143 PN **P 06 56 26.7 -0.4**
KBL Kabul 60.90 310 *e*P **P 06 56 27.9 0.0**
KBL pmax pmax
comp=Z,120nm,0.9s
KBL Kabul 60.90 310 *e*P **P 06 56 27.9 0.0**
comp=Z,117nm,0.8s
KRAR Krasnoyarsk 60.99 341⇓*e*P **P 06 56 28.1 +0.3**
KRAR pmax pmax
comp=Z,34nm,1.2s
RPZ Rata Peaks 61.02 142 P **P 06 56 28.6 +0.3**
comp=Z,348nm,0.9s,baz=297,slow=1.7,SNR=115
RPZ LR LR 07 22 57.7
comp=Z,624nm,20.2s,baz=324,slow=36
RPZ Rata Peaks 61.02 142 *e*P **P 06 56 28.6 +0.3**
comp=Z,402nm,0.9s
RPZ Rata Peaks 61.02 142 PN **P 06 56 28.5 +0.2**
HIZ Hauiti 61.05 135 *e*P **P 06 56 30.2 +1.6**
comp=Z,130nm,1.1s
TOZ Tahuroa Road 61.17 134 PN **P 06 56 30.4 +1.0**
EKS2 Erkin-Say 61.19 320 *e*P **P 06 56 30.3 +0.7**
EKS2 pmax pmax
comp=Z,70nm,1.1s
EKS2 Erkin-Say 61.19 320 *e*P **P 06 56 30.3 +0.7**
comp=Z,70nm,1.1s
THZ Tophouse 61.21 139 *e*P **P 06 56 29.9 +0.2**
comp=Z,131nm,1.3s
LTZ Lake Taylor 61.30 140 *e*P **P 06 56 30.7 +0.4**
comp=Z,150nm,1.3s
OXZ Oxford 61.43 141 *e*P **P 06 56 30.9 -0.2**
comp=Z,80nm,0.4s
OXZ Oxford 61.43 141 PN **P 06 56 30.7 -0.4**
MCQ Macquarie Isla 61.78 157 P **P 06 56 34.6 +1.4**
baz=62,SNR=4.9
MCQ Macquarie Isla 61.78 157 *e*P **P 06 56 34.6 +1.4**
MCQ pmax pmax
comp=Z,420nm,1.3s
MCQ Macquarie Isla 61.78 157 *e*P **P 06 56 34.6 +1.4**
comp=Z,416nm,1.3s
CRLZ Canterbury Las 61.92 141 *e*P **P 06 56 35.2 +0.8**
comp=Z,219nm,1.6s
KHZ Kahutara 61.94 140 *e*P **P 06 56 34.6 +0.1**
comp=Z,147nm,1.2s
KHZ Kahutara 61.94 140 PN **P 06 56 34.1 -0.3**
MQZ McQueen's Vall 62.01 141 *e*P **P 06 56 35.5 +0.6**
comp=Z,388nm,1.7s
MQZ McQueen's Vall 62.01 141 PN **P 06 56 35.0 +0.1**
SNZO South Karori 62.19 138 *e*P **P 06 56 35.2 -1.0**
comp=Z,241nm,1.0s

YAK Yakutsk 62.19 4 P **P 06 56 35.9 +0.1**
comp=Z,72nm,0.6s,baz=180,slow=2.5,SNR=18
YAK Yakutsk 62.19 4 *eP* **P 06 56 35.0 -0.8**
YAK *e**PP **pP 06 57 00.7 -0.1**
YAK *e* 06 57 14.3
YAK *e* 06 58 53.0
YAK *e*S **S 07 04 49.2 -4.1**
YAK *e**SS **sS 07 05 32.1 -4.0**
YAK *e* 07 06 13.3
YAK *e*SS **SS 07 08 53.6 -4.6**
YAK pmax pmax
comp=Z,135nm,1.3s
YAK pmax pmax
comp=N,88nm,1.3s
YAK pmax pmax
comp=E,31nm,1.4s
YAK pmax pmax
comp=Z,71nm,1.4s
YAK pmax pmax
comp=N,67nm,1.8s
YAK pmax pmax
comp=E,42nm,1.6s
YAK smax smax
comp=E,310nm,3.3s
YAK smax smax
comp=N,211nm,3.2s
YAK Yakutsk 62.19 4 *eP* **P 06 56 35.6 -0.1**
comp=N,142nm,1.0s
OGWZ Otaki Gorge 62.28 137 PN **P 06 56 36.0 -0.8**
ZAA0 Zalesovo Array 62.35 336 *eP* **P 06 56 35.5 -1.5**
ZALV Zalesovo Beam 62.35 336 P **P 06 56 36.2 -0.8**
comp=N,5.9nm,0.4s,baz=122,slow=5.4,SNR=34
ZALV LR LR 07 24 07.4
comp=N,348nm,20.2s,baz=90,slow=36
ZALV PKP2bc 07 25 40.4
comp=N,1.1nm,0.4s,baz=301,slow=3.1,SNR=3.5
BKZ Black Stump Fm 62.48 135 *eP* **P 06 56 38.0 -0.3**
comp=N,320nm,1.4s
BKZ Black Stump Fm 62.48 135 PN **P 06 56 37.8 -0.4**
MRZ Mangataiinoka R 62.49 137 PN **P 06 56 37.2 -1.0**
URZ Urewera 62.55 134 P **P 06 56 37.8 -0.8**
comp=N,33nm,0.4s,baz=258,slow=4.9,SNR=26
URZ LR LR 07 25 53.7
comp=N,183nm,18.6s,baz=312,slow=38
URZ Urewera 62.55 134 *eP* **P 06 56 38.3 -0.3**
comp=N,231nm,1.4s
URZ Urewera 62.55 134 PN **P 06 56 37.8 -0.8**
BFZ Birch Farm 62.95 137 *eP* **P 06 56 41.4 +0.1**
comp=N,135nm,1.0s
BFZ Birch Farm 62.95 137 PN **P 06 56 40.5 -0.8**
KURBB Kurchatov Arra 62.98 330 P **P 06 56 40.2 -1.0**
comp=N,6.6nm,0.4s,baz=133,slow=5.9,SNR=61
KURBB PKP2bc 07 25 43.4
comp=N,2.2nm,0.7s,baz=283,slow=3.5,SNR=6.1
KURK Kurchatov 62.99 330*c iP* **P 06 56 41.2 -0.1**
KURK pmax pmax
comp=Z,91nm,1.2s
KURK Kurchatov 62.99 330 *eP* **P 06 56 41.4 +0.1**
comp=Z,158nm,0.9s
KURK ⇑*e* 07 25 43.4
PKGZ Pakihiroa 63.10 133 PN **P 06 56 42.4 0.0**
TWGZ Tauwhareparae 63.14 134 PN **P 06 56 42.6 -0.1**
RIGZ Rimuhau 63.20 134 PN **P 06 56 42.3 -0.7**
PUZ Puketiti 63.30 133 PN **P 06 56 43.0 -0.7**
MA2 Magadan 63.38 15 *eP* **P 06 56 43.9 +0.2**
MA2 pmax pmax
comp=Z,2μm,1.2s
MA2 Magadan 63.38 15 *eP* **P 06 56 43.9 +0.2**
comp=Z,2μm,1.2s
RAO Raoul Island 63.38 123 LR LR 07 25 14.0
comp=Z,264nm,19.4s,baz=67,slow=37
KK31 Karatay Array 63.50 320 P **P 06 56 44.8 -0.1**
KK31 pmax pmax
comp=Z,32nm,1.0s
KKAR Karatay Array 63.50 320 *eP* **P 06 56 44.9 0.0**
KKAR Karatay Array 63.50 320 *eP* **P 06 56 44.9 0.0**
NVS Novosibirsk 63.64 336⇑*iP* **P 06 56 45.4 -0.1**
NVS *i* *PP **pP 06 57 10.9 +0.3**
NVS *e* 06 57 22.3
NVS *e*S **S 07 05 09.1 -2.5**
NVS pmax pmax
comp=Z,96nm,1.7s
NVS pmax pmax
comp=N,72nm,1.8s
NVS pmax pmax
comp=E,65nm,1.7s
NVS smax smax
comp=E,91nm,2.4s
NVS smax smax
comp=N,73nm,2.5s
OTUK Ortayu 64.93 325 P **P 06 56 53.8 -0.4**
OTUK pmax pmax
comp=Z,65nm,1.2s
KNTN Kanton 65.45 93 *eP* **P 06 56 59.2 +1.0**
comp=Z,104nm,0.6s
AFI Afiamalu 66.10 105 P **P 06 57 03.3 +1.0**
comp=Z,99nm,1.0s,baz=265,slow=11,SNR=10
AFI Afiamalu 66.10 105 *eP* **P 06 57 03.6 +1.3**
AFI pmax pmax
comp=Z,110nm,1.0s
AFI Afiamalu 66.10 105 *eP* **P 06 57 02.9 +0.6**
comp=Z,108nm,1.0s
WSAR Wadi Sarin 66.47 295 P **P 06 57 08.9 +4.4**
comp=Z,4.2nm,0.6s,baz=134,slow=6.6,SNR=4.3
WSAR LR LR 07 29 38.9
comp=Z,189nm,18.6s,slow=39
CASY Casey 66.61 185 *eP* **P 06 57 04.3 -0.3**
comp=Z,79nm,1.0s
SEY Seymchan 66.64 14 P **P 06 57 06.0 +1.2**
comp=Z,98nm,1.1s,baz=219,slow=5.9,SNR=108
SEY Seymchan 66.64 14*cePP* **06 57 04.9 +0.1**
MRIV Mauritius Mete 66.92 248 *eP* **P 06 57 07.2 -0.3**
SMY Shemya 67.71 31 *eP* **P 06 57 12.7 +1.0**
SMY pmax pmax
comp=Z,450nm,1.0s
SMY Shemya 67.71 31 *eP* **P 06 57 12.7 +1.0**
comp=Z,450nm,1.0s
BVA0 Borovoye Array 68.50 329 P **P 06 57 15.4 -1.3**
BVA0 pmax pmax
comp=Z,56nm,1.5s
BVAR Borovoye Array 68.50 329 P **P 06 57 16.3 -0.4**
comp=Z,15nm,1.0s,baz=133,slow=6.5,SNR=25
BVAR Borovoye Array 68.50 329 P **P 06 57 16.3 -0.4**
BVAR pmax pmax
comp=Z,14nm,1.0s
BRVK Borovoye 68.57 329*c iP* **P 06 57 16.5 -0.6**
BRVK pmax pmax
comp=Z,66nm,1.7s
BRVK Borovoye 68.57 329 *eP* **P 06 57 16.7 -0.4**
comp=Z,84nm,1.2s
MIR Mirnyy 69.59 192 *i* P **P 06 57 23.0 -0.1**
MIR pmax pmax
comp=Z,14nm,1.0s
GEYT Alibeck 70.35 311 P **P 06 57 29.5 +1.0**
comp=Z,15nm,0.9s,baz=141,slow=5.0,SNR=13
GEYT LR LR 07 34 58.7
comp=Z,122nm,18.5s,baz=120,slow=41
TIXI Tiksi 71.74 2 P **P 06 57 34.6 -1.5**
comp=Z,35nm,0.7s,baz=156,slow=5.1,SNR=92
TIXI LR LR 07 29 31.2
comp=Z,334nm,21.1s,baz=218,slow=36
TIXI Tiksi 71.74 2*c iP* **P 06 57 34.4 -1.7**
TIXI pmax pmax
comp=Z,94nm,1.3s
TIXI MLR MLR
comp=Z,294nm,18.0s
TIXI Tiksi 71.74 2 *eP* **P 06 57 34.8 -1.3**
comp=Z,142nm,1.3s
AB31 Akbulak array 72.72 322 *i* P **P 06 57 41.4 -1.0**
AB31 pmax pmax
comp=Z,25nm,1.1s
ABKAR Akbulak array 72.72 322 *eP* **P 06 57 41.7 -0.7**
NRIK Noril'sk 73.27 348 P **P 06 57 44.6 -0.6**
comp=Z,12nm,0.6s,baz=140,slow=5.7,SNR=39
NRIK LR LR 07 30 54.1
comp=Z,329nm,21.2s,baz=129,slow=36
BILL Bilibino 74.25 16*c iP* **P 06 57 49.5 -1.5**
BILL *i* 06 58 03.6
BILL *e* 07 00 40.6
BILL pmax pmax
comp=Z,115nm,1.7s
BILL Bilibino 74.25 16 *eP* **P 06 57 50.4 -0.6**
comp=Z,100nm,1.3s
AKTO Aktyubinsk 74.31 323 P **P 06 57 51.2 -0.4**
comp=Z,14nm,0.8s,baz=106,slow=6.4,SNR=52
AKTO LR LR 07 34 57.2
comp=Z,200nm,19.2s,baz=114,slow=39
SVE Sverdlovsk 75.24 330*de*P **P 06 57 56.2 -0.7**
SVE *e*S **S 07 07 20.6 -7.2**
SVE pmax pmax
comp=Z,77nm,0.9s
ARU Arti 76.15 329 P **P 06 58 00.8 -1.3**
comp=Z,6.1nm,0.2s,baz=104,slow=3.9,SNR=30
ARU LR LR 07 35 14.9
comp=Z,158nm,18.7s,baz=126,slow=38
ARU Arti 76.15 329*d iP* **P 06 58 00.4 -1.7**
ARU *PP **pP 06 58 24.7 -3.2**
ARU 07 00 51.3
ARU PPP PPP 07 02 41.0
ARU S **S 07 07 37.7 -0.1**
ARU *SS **ScS 07 08 14.5 +6.6**
ARU SS **SS 07 12 28.9 -4.3**
ARU pmax pmax
comp=Z,77nm,1.7s
ARU Arti 76.15 329 *eP* **P 06 58 00.7 -1.4**
comp=Z,39nm,0.8s
NIKH Nikolski High 77.16 35 *eP* **P 06 58 08.2 +0.3**
comp=Z,160nm,0.9s
UNV Unalaska Valle 78.76 35 *eP* **P 06 58 16.6 -0.1**
comp=Z,170nm,0.9s
MAW Mawson 78.85 200 P **P 06 58 17.4 +0.5**
comp=Z,13nm,0.6s,baz=76,slow=4.5,SNR=22
MAW Mawson 78.85 200 P **P 06 58 17.4 +0.5**
baz=79,SNR=19
MAW Mawson 78.85 200 *eP* **P 06 58 17.1 +0.2**
MAW Mawson 78.85 200 *eP* **P 06 58 17.1 +0.2**
comp=Z,16nm,1.0s
DAMY Dhamar 78.86 285 *eP* **P 06 58 18.5 +0.1**
AKUT Akutan 79.25 35 *eP* **P 06 58 19.6 +0.2**
comp=Z,457nm,0.8s
GAMB Gambell 79.46 24 *eP* **P 06 58 21.2 +0.9**
comp=Z,130nm,1.2s
KIP Kipapa 79.92 68*de*P **P 06 58 25.3 +1.6**
HON Honolulu 79.92 68 *eP* **P 06 58 24.5 +0.8**
HON Honolulu 79.92 68 *eP* **P 06 58 24.5 +0.8**
comp=Z,743nm,1.2s
VNDA Vanda 80.16 172 P **P 06 58 23.9 0.0**
comp=Z,26nm,0.8s,baz=317,slow=6.0,SNR=145
VNDA LR LR 07 36 14.3
comp=Z,174nm,18.1s,baz=327,slow=37
VNDA Vanda 80.16 172 *eP* **P 06 58 23.9 0.0**
comp=Z,28nm,0.7s
FALS False Pass 80.76 34 *eP* **P 06 58 27.6 +0.1**
comp=Z,546nm,0.7s
GNI Garni 80.98 311*c iP* **P 06 58 29.2 -0.1**
GNI pmax pmax
comp=Z,38nm,1.2s
GNI Garni 80.98 311 *eP* **P 06 58 30.4 +1.1**
comp=Z,39nm,1.0s
SBA Scott Base 81.12 171 *eP* **P 06 58 29.9 +0.9**
SBA Scott Base 81.12 171 *eP* **P 06 58 29.9 +0.9**
comp=Z,28nm,0.9s
TBLG Delisi 81.20 312 P **P 06 58 30.4 +0.2**
TBLG Delisi 81.20 312 P **S 07 08 26.7 -5.7**
TBLG Delisi 81.20 312 P **P 06 58 30.4 +0.2**
GUDG Gudauri 81.50 313 P **P 06 58 33.8 +1.8**
TNA Tin City 81.61 23 *eP* **P 06 58 31.6 -0.1**
comp=Z,49nm,1.1s
ZEI Tsey 81.96 313 *eP* **P 06 58 32.4 -2.0**
ZEI *e*S **S 07 08 36.7 -3.9**
ZEI pmax pmax
comp=Z,56nm,1.1s
HPAH Hawaii Prepara 82.00 70 *eP* **P 06 58 36.6 +1.8**
comp=Z,244nm,1.0s
MLOA Mauna Loa Obse 82.09 70 *eP* **P 06 58 37.3 +1.5**
AKH Akhalkalaki 82.09 312⇑*iP* **P 06 58 37.2 +2.1**
AKH Akhalkalaki 82.09 312 P **P 06 58 35.5 +0.4**
AKH Akhalkalaki 82.09 312 P **S 07 08 35.6 -6.3**
AKH Akhalkalaki 82.09 312 P **P 06 58 35.5 +0.4**
POHA Pohakuloa 82.14 70 *eP* **P 06 58 37.6 +1.8**
comp=Z,966nm,1.1s
ONI Oni 82.27 313 P **P 06 58 36.1 +0.2**
ONI Oni 82.27 313 P **S 07 08 38.7 -4.7**
ONI Oni 82.27 313 P **P 06 58 36.1 +0.2**
UWE Uwekahuna 82.35 71 *eP* **P 06 58 37.6 +0.8**
comp=Z,524nm,1.2s
SDPT Sand Point 82.52 34 *eP* **P 06 58 36.7 0.0**
comp=Z,443nm,0.8s
KBZ Khabaz 82.81 314 P **P 06 58 38.9 +0.4**
comp=Z,7.6nm,1.0s,baz=98,slow=5.2,SNR=14
KBZ LR LR 07 41 03.4
comp=Z,80nm,19.2s,baz=92,slow=40
GOF Gofitskoye 82.87 315⇑*eP* **P 06 58 38.2 -0.6**
GOF pmax pmax
comp=Z,19nm,0.9s
NEY Neytrino 82.88 313*d iP* **P 06 58 40.1 +1.0**
KVAR Kislovodsk Arr 82.98 314 LR LR 07 40 46.7
comp=Z,100nm,20.0s,baz=74,slow=39
KIV Kislovodsk 82.99 314 *eP* **P 06 58 40.1 +0.5**
KIV pmax pmax
comp=Z,22nm,0.9s
KIV Kislovodsk 82.99 314 *eP* **P 06 58 40.1 +0.5**
comp=Z,22nm,0.9s
CHVG Ch'k'valeri 83.28 313‖*iP* P 06 58 51.0 +10
CHGN Chignik 83.83 33 *eP* **P 06 58 42.4 -1.0**
VRH Novokhopyorsk 84.52 321 *eP* **P 06 58 46.2 -0.8**
VRH *e**PP **pP 06 59 11.2 -2.1**
VRH *e*S **S 07 08 56.9 -8.6**
VRH pmax pmax
comp=Z,90nm,1.4s
VRH smax smax
comp=E,290nm,3.6s
KMBO Kilima Mbogo 85.60 269 P **P 06 58 53.9 +0.3**
comp=E,4.5nm,0.8s,baz=57,slow=4.8,SNR=13
KMBO LR LR 07 35 22.7
comp=E,198nm,19.6s,baz=108,slow=34
KMBO Kilima Mbogo 85.60 269 *eP* **P 06 58 53.6 0.0**
KMBO Kilima Mbogo 85.60 269 *eP* **P 06 58 53.6 0.0**
comp=E,50nm,1.6s
SVW2 Sparrevohn 86.00 29 *eP* **P 06 58 54.5 +0.2**
TTA Tatalina 86.05 27 *eP* **P 06 58 54.5 -0.1**
VSR Storozhevoye 86.12 321 *eP* **P 06 58 53.8 -1.2**
VSR *e**PP **pP 06 59 18.8 -2.6**
VSR *e*S **S 07 09 14.5 -6.8**
VSR pmax pmax
comp=Z,100nm,1.3s
VSR smax smax
comp=N,360nm,4.8s
LPSR Galich'ya Gora 86.38 323 *eP* **P 06 58 55.6 -0.7**
LPSR *e*S **S 07 09 19.2 -4.6**
LPSR pmax pmax
comp=Z,80nm,1.2s
LPSR smax smax
comp=N,480nm,6.0s
OHAK Old Harbor 86.75 33 *eP* **P 06 58 58.1 +0.2**
comp=N,161nm,1.0s
ANN Anapa 86.82 315 *eP* **P 06 58 56.8 -1.8**
ANN PPP PPP 07 04 18.0
ANN *e*S S 07 09 14.4 -14
ANN *e* 07 09 34.0
ANN pmax pmax
comp=Z,89nm,1.2s
KLMR Klimovskoe 86.83 331 *eP* **P 06 58 56.3 -2.0**
KLMR pmax pmax
comp=Z,47nm,1.0s
KDAK Kodiak Island 87.18 32 *i* P **P 06 58 59.7 -0.3**
KDAK Kodiak Island 87.18 32 *eP* **P 06 58 59.2 -0.8**
comp=Z,306nm,2.0s
RSO Redoubt South 87.31 30 *eP* **P 06 58 60.0 -1.0**
MOS Moscow 87.39 326 *eP* **P 06 58 59.1 -2.0**
MOS *e* 07 09 14.8
MOS *e*S **S 07 09 27.1 -6.2**
MOS pmax pmax
comp=Z,136nm,1.3s
MOS pmax pmax
comp=Z,200nm,1.7s
SYO Syowa Base 87.48 201‖*iX* **P 06 58 59.8 -1.4**
SYO Syowa Base 87.48 201‖*pP* pP 06 59 24.0 -3.7
PPT Papeete 87.65 107 LR LR 07 38 00.7
comp=Z,53nm,21.9s,baz=260,slow=35
PPT2 Papeete2 87.65 107 *eS* **S 07 09 43.1 +5.6**
comp=Z,451nm,26.8s
PPT2 Papeete2 87.65 107 *e*LR LR 07 26 57.5
comp=Z,2μm,39.5s
SPU Mount Spurr 87.72 29 *eP* **P 06 59 01.1 -1.5**
PPLA Purkeypile 87.79 27 *eP* **P 06 59 02.7 -0.4**
comp=Z,94nm,1.6s
HOM Homer 87.81 30 *eP* **P 06 59 02.9 -0.1**
comp=Z,124nm,0.9s
TMCR Tamitsa 87.83 334 *eP* **P 06 59 02.4 -0.6**
TMCR pmax pmax
comp=Z,17nm,0.5s
CAST Castle Rocks 87.88 27 *eP* **P 06 59 03.0 -0.4**
comp=Z,14nm,0.8s
MMAI Mount Meron Ar 87.92 303 LR LR 07 44 25.4
comp=Z,83nm,20.4s,baz=105,slow=40
OBN Obninsk 87.95 325 LR LR 07 41 45.0
comp=Z,125nm,19.7s,baz=100,slow=38
OBN Obninsk 87.95 325*d iP* **P 06 59 03.2 -0.6**
OBN *e* 06 59 43.3
OBN *e* 07 02 37.7
OBN pmax pmax
comp=Z,119nm,1.7s
OBN MLR MLR
comp=Z,236nm,22.0s
OBN Obninsk 87.95 325 *eP* **P 06 59 04.0 +0.2**
comp=Z,93nm,1.3s
EIL Elat 88.23 300 LR LR 07 45 55.7
comp=Z,58nm,18.5s,baz=60,slow=40
KTH Kantishna Hill 88.40 27 *eP* **P 06 59 05.2 -0.7**
comp=Z,45nm,1.2s
BPAW Bear Paw Mtn. 88.41 26 *eP* **P 06 59 05.5 -0.3**
comp=Z,44nm,1.1s
TRF Thorofare Moun 88.68 27 *eP* **P 06 59 06.3 -1.0**
comp=Z,49nm,1.1s
RC01 Rabbit Creek A 88.83 29 *eP* **P 06 59 07.0 -0.8**
comp=Z,37nm,1.0s
COLD Coldfoot 88.91 23 *eP* **P 06 59 08.2 +0.1**
comp=Z,46nm,1.0s
SEW Seward 88.94 30 *eP* **P 06 59 07.8 -0.5**
comp=Z,70nm,1.0s
BWN Browne 89.08 26 *eP* **P 06 59 09.3 +0.4**
comp=Z,81nm,1.0s
PMR Palmer 89.14 29 *eP* **P 06 59 08.0 -1.2**
PMR Palmer 89.14 29 *eP* **P 06 59 08.0 -1.2**
comp=Z,52nm,1.3s
PMOR Pomariorio Ree 89.25 105 *eP* **P 06 59 13.5 +2.8**
comp=Z,218nm,1.0s
MCK McKinley 89.30 26 *eP* **P 06 59 09.2 -0.8**
MCK pmax pmax
comp=Z,85nm,1.1s
MCK McKinley 89.30 26 *eP* **P 06 59 09.2 -0.8**
comp=Z,85nm,1.1s
RND Reindeer 89.33 27 *eP* **P 06 59 09.2 -1.0**
RND pmax pmax
comp=Z,58nm,1.0s
RND Reindeer 89.33 27 *eP* **P 06 59 09.2 -1.0**
comp=Z,58nm,1.0s
LVZ Lovozero 89.42 338⇑*eP* **P 06 59 08.7 -1.8**
LVZ pmax pmax
comp=Z,16nm,1.3s
BR131 Keskin Array S 89.46 310 *eP* **P 06 59 10.6 -0.9**
BRTR Keskin Array B 89.46 310 P **P 06 59 10.9 -0.5**
comp=Z,7.4nm,1.1s,baz=123,slow=4.6,SNR=13
BRTR PKKPbc **PKKPbc 07 16 48.0 +0.6**
comp=Z,2.0nm,0.9s,baz=348,slow=5.5,SNR=4.9
BRTR LR LR 07 45 42.7
comp=Z,100nm,21.3s,baz=94,slow=40
BRTR Keskin Array B 89.46 310 P **P 06 59 11.0 -0.5**
BRTR pmax pmax
comp=Z,7.0nm,1.1s
VAH Vaihoa 89.51 105 *eP* **P 06 59 14.4 +2.5**
SML Sawmill 89.53 28 *eP* **P 06 59 10.8 -0.4**
SML Sawmill 89.53 28 *eP* **P 06 59 10.8 -0.4**
comp=Z,72nm,1.0s
MDM Murphy Dome 89.63 25 *eP* **P 06 59 10.1 -1.5**
comp=Z,24nm,1.1s
WRH Wood River Hil 89.69 26 *eP* **P 06 59 10.7 -1.1**
comp=Z,65nm,1.2s
COLA College 89.79 25 *eP* **P 06 59 10.7 -1.5**
COLA pmax pmax
comp=Z,12nm,1.0s
COLA College 89.79 25 *eP* **P 06 59 10.7 -1.5**
comp=Z,12nm,1.0s
CCB Clear Creek Bu 89.81 26 *eP* **P 06 59 11.1 -1.3**
comp=Z,56nm,1.2s
QSPA South Pole Qui 89.83 180 *eP* **P 06 59 12.6 0.0**
SCM Sheep Creek Mo 90.00 28 *eP* **P 06 59 13.2 -0.2**
SCM Sheep Creek Mo 90.00 28 *eP* **P 06 59 13.2 -0.2**
comp=Z,60nm,1.1s
ANTO Ankara 90.11 310 *eP* **P 06 59 14.3 -0.1**
ANTO pmax pmax
comp=Z,9.0nm,0.8s
ANTO Ankara 90.11 310 *eP* **P 06 59 14.3 -0.1**
comp=Z,9.3nm,0.8s
BR231 Keskin MP Arra 90.13 310 *eP* **P 06 59 11.2 -3.4**
HDA Harding Lake 90.18 26 *eP* **P 06 59 12.4 -1.7**
comp=Z,23nm,0.9s
IL1 Eielson Array 90.20 25 *eP* **P 06 59 12.2 -2.0**
ILAR Eielson Array 90.20 25 P **P 06 59 12.3 -1.9**
comp=Z,3.4nm,0.5s,baz=264,slow=3.8,SNR=46
ILAR PKKPbc **PKKPdf 07 16 43.0 +1.2**
comp=Z,2.1nm,0.7s,baz=110,slow=2.4,SNR=19
ILAR LR LR 07 38 05.1
comp=Z,88nm,21.2s,baz=292,slow=34
ILB Eielson Array 90.20 25 *eP* **P 06 59 12.4 -1.9**
KLU Klutina 90.68 29 *eP* **P 06 59 16.2 -0.4**
comp=Z,24nm,0.8s
DIV Divide 90.76 29 *eP* **P 06 59 17.1 +0.2**
comp=Z,80nm,1.1s
EYAK Cordova Ski Ar 90.78 30 *eP* **P 06 59 17.1 +0.2**
comp=Z,100nm,1.6s
PAX Paxson 90.86 27 *eP* **P 06 59 16.8 -0.6**
PAX Paxson 90.86 27 *eP* **P 06 59 16.8 -0.6**
comp=Z,66nm,1.2s
FYU Fort Yukon 90.86 24 *eP* **P 06 59 17.9 +0.7**
comp=Z,83nm,1.2s
RAGM Ragged Mountai 91.32 30 *eP* **P 06 59 19.8 +0.3**
comp=Z,76nm,1.3s
BMRM Bremner River 91.33 29 *eP* **P 06 59 19.6 +0.1**
comp=Z,56nm,1.1s
DOT Dot Lake 91.47 26 *eP* **P 06 59 19.8 -0.3**
comp=Z,121nm,1.4s
MENT Mentasta 91.66 27 *eP* **P 06 59 21.0 -0.1**
comp=Z,20nm,0.9s
AKASG Malin Array Be 92.39 321 P **P 06 59 23.4 -1.2**
comp=Z,2.0nm,0.5s,baz=73,slow=4.3,SNR=18
AKASG PKKPbc **PKKPdf 07 16 37.1 -0.5**
comp=Z,1.3nm,0.5s,baz=273,slow=3.3,SNR=6.4
AKASG LR LR 07 44 49.7
comp=Z,214nm,21.8s,baz=90,slow=38
AKASG Malin Array Be 92.39 321 *i* P **P 06 59 24.2 -0.4**
AKASG pmax pmax
comp=Z,2.0nm,0.5s
AKBB Malin Array Si 92.39 321 *eP* **P 06 59 23.9 -0.7**
AKBB pmax pmax
comp=Z,9.0nm,0.9s
AKBB Malin Array Si 92.39 321 *eP* **P 06 59 23.9 -0.7**
comp=Z,9.4nm,0.9s
KIEV Kiev 92.40 321*d iP* **P 06 59 23.7 -0.9**
KIEV pmax pmax
comp=Z,9.0nm,1.1s
KIEV Kiev 92.40 321 *eP* **P 06 59 24.3 -0.4**
comp=Z,8.8nm,0.8s
AK11 Malin Array Si 92.43 321 *eP* **P 06 59 23.5 -1.3**
BALM Baldy 92.43 29 *eP* **P 06 59 25.1 +0.4**
BALM Baldy 92.43 29 *eP* **P 06 59 25.1 +0.4**
comp=Z,48nm,1.0s
EGAK Eagle 92.66 25 *eP* **P 06 59 24.5 -1.0**
comp=Z,60nm,1.3s
ARCES ARCESS Array B 92.68 340 P **P 06 59 23.5 -2.0**
comp=Z,2.4nm,0.4s,baz=87,slow=6.3,SNR=26
ARCES PKiKP **PKiKP 07 04 13.3 +0.1**
comp=Z,3.6nm,1.0s,baz=85,slow=0.6,SNR=6.2
ARCES PKKPbc **PKKPdf 07 16 36.3 -1.2**
comp=Z,2.1nm,0.4s,baz=256,slow=2.2,SNR=25
ARCES LR LR 07 43 55.5
comp=Z,179nm,21.2s,baz=86,slow=37
ARE0 ARCESS Array S 92.68 340 *eP* **P 06 59 25.0 -0.6**
HAMF Hammerfest 93.14 341 *eP* **P 06 59 26.4 -1.2**
VSU Vasula 93.30 328⇑*eP* **P 06 59 29.4 +0.8**
VSU pmax pmax
comp=Z,16nm,0.9s
FIA1 FINESS Array S 93.34 331 *eP* **P 06 59 28.7 -0.1**
FINES FINESS Array B 93.34 331 P **P 06 59 27.2 -1.5**
comp=Z,1.3nm,0.5s,baz=60,slow=4.2,SNR=14
FINES PKKPbc **PKKPbc 07 16 40.6 +2.3**
comp=Z,0.6nm,0.4s,baz=264,slow=1.4,SNR=3.6
SPA0 Spitsbergen Ar 93.46 349 *eP* **P 06 59 27.7 -1.3**
SPA0 Spitsbergen Ar 93.46 349 *eP* **P 06 59 28.1 -1.0**
SPITS Spitsbergen Ar 93.46 349 P **P 06 59 27.4 -1.6**
comp=Z,24nm,0.7s,baz=132,slow=14,SNR=18
DAWY Dawson 93.50 26 *eP* **P 06 59 29.4 -0.1**
comp=Z,65nm,1.1s
KTK1 Kautokeino 93.55 339 *eP* **P 06 59 31.3 +1.7**
HSPB Hornsund (broa 93.97 347 *eP* **P 06 59 30.2 -1.1**
MATP Matopo 94.05 250 P **P 06 59 31.9 -1.2**
comp=Z,11nm,0.8s,baz=115,slow=3.9,SNR=22

VRI Vrincioaia 94.35 316⇑ iP P 06 59 34.4 +0.6
VRI Vrincioaia 94.35 316⇑ P P 06 59 34.4 +0.6
TESR Tescani 94.36 316⇑ iP P 06 59 34.0 +0.2
LSZ Lusaka 94.48 255 P P 06 59 33.6 -1.5
comp=Z,4.2nm,0.4s,baz=110,slow=5.1,SNR=7.1
MLR Muntele Rosu 94.93 316 LR LR 07 48 48.9
comp=Z,35nm,20.0s,baz=75,slow=40
MLR Muntele Rosu 94.93 316⇑ iP P 06 59 35.5 -1.1
MLR Muntele Rosu 94.93 316⇑ P P 06 59 35.5 -1.1
MLR Muntele Rosu 94.93 316 eP P 06 59 36.6 0.0
INK Inuvik 95.12 21 P P 06 59 36.0 -0.8
comp=Z,15nm,0.8s,baz=290,slow=4.6,SNR=79
INK Inuvik 95.12 21 P P 06 59 36.0 -0.8
INK pmax pmax
comp=Z,15nm,0.8s
INK Inuvik 95.12 21 eP P 06 59 36.3 -0.5
comp=Z,48nm,1.3s
BURAR Bucovina Array 95.24 318⇑ iP P 06 59 37.7 -0.2
BURAR Bucovina Array 95.24 318⇑ P P 06 59 37.7 -0.2
BUR08 Bucovina Ar. S 95.25 318 eP P 06 59 38.0 0.0
SKAG Skagway 96.09 30 eP P 06 59 41.1 -0.3
comp=Z,61nm,0.9s
IDI Anoyia 96.57 305 LR LR 07 54 16.9
comp=Z,28nm,18.5s,baz=94,slow=42
BOSA Boshof 96.63 241 P P 06 59 43.9 -0.8
comp=Z,2.0nm,0.6s,baz=106,slow=4.5,SNR=4.7
BOSA LR LR 07 38 22.1
comp=Z,232nm,20.7s,baz=102,slow=32
KWP Kalwaria Pacla 96.66 320 eP P 06 59 44.3 +0.1
KWP Kalwaria Pacla 96.66 320⇓ iP P 06 59 44.6 +0.4
KWP Kalwaria Pacla 96.66 320⇓ P P 06 59 44.6 +0.4
TAOE Nuku Hiva Isla 96.90 99 eS S 07 11 06.5 +5.8
comp=Z,200nm,33.3s
TAOE Nuku Hiva Isla 96.90 99 eLR LR 07 31 22.2
comp=Z,583nm,39.9s
DRGR 97.03 317⇑ iP Pdif 06 59 46.8 +0.7
DRGR 97.03 317⇑ P Pdif 06 59 46.8 +0.7
KOLS Kolonicke sedl 97.03 319 eP Pdif 06 59 46.2 +0.2
KOLS pmax pmax
comp=Z,20nm,1.5s
KOLS Kolonicke sedl 97.03 319 eP Pdif 06 59 46.1 +0.1
KOLS e 07 00 10.5
UZH Uzhgorod 97.06 319⇑ iP P 06 59 45.7 -0.3
UZH eS S 07 10 56.7 -3.8
UZH e 07 21 26.5
CRVS Cervenica-Dubn 97.57 319 eP Pdif 06 59 49.3 +0.9
CRVS e 07 00 27.0
CRVS Cervenica-Dubn 97.57 319 eP Pdif 06 59 49.3 +0.9
CRVS e 07 00 13.4
CRVS e 07 00 27.0
STHS Stebnicka Huta 97.63 320 eP Pdif 06 59 49.4 +0.7
STHS pmax pmax
comp=Z,8.0nm,1.2s
STHS Stebnicka Huta 97.63 320 eP Pdif 06 59 49.4 +0.7
STHS e 07 00 14.1
NIE Niedzica 98.24 320 eP Pdif 06 59 51.9 +0.5
NIE Niedzica 98.24 320 eP Pdif 06 59 51.9 +0.5
WRAK Wrangell Islan 98.25 33 eP Pdif 06 59 52.3 +1.1
comp=Z,54nm,1.3s
KECS Kecovo 98.27 319 eP P 06 59 50.8 -0.7
KECS e 07 03 57.3
KECS pmax pmax
comp=Z,3.0nm,1.0s
KECS Kecovo 98.27 319 eP P 06 59 50.8 -0.7
KECS e 07 00 05.8
KECS ePP PP 07 03 57.3 +5.0
OJC Ojcow 98.43 321 eP Pdif 06 59 52.4 +0.2
OJC Ojcow 98.43 321 eP Pdif 06 59 52.7 +0.5
OJC Ojcow 98.43 321 eP Pdif 06 59 52.6 +0.5
NSS Namsos 98.96 336 eP P 06 59 53.0 -1.2
DLBC Dease Lake 99.00 31 P Pdif 06 59 54.7 +0.1
comp=Z,6.5nm,0.8s,baz=196,slow=2.2,SNR=18
DLBC Dease Lake 99.00 31 eP Pdif 06 59 55.3 +0.7
comp=Z,42nm,1.4s
VYHS Vyhne 99.35 319 eP Pdif 06 59 56.6 +0.3
VYHS e 07 04 09.0
VYHS Vyhne 99.35 319 eP Pdif 06 59 56.6 +0.3
VYHS ePP PP 07 04 09.0 +8.5
OKC Ostrava-Krasne 99.54 321 eSKS SKSac 07 10 23.1 -3.4
OKC ex x 07 18 50.9
HFS Hagfors 99.55 331 LR LR 07 48 17.1
comp=Z,220nm,20.8s,slow=37
MORC Moravsky Berou 99.94 321⇑ iP Pdif 06 59 58.8 -0.2
MORC Moravsky Berou 99.94 321⇑ P Pdif 06 59 58.8 -0.2
NB2 NORSAR Subarra 100.43 333 P Pdif 06 59 58.2 -2.7
comp=Z,3.5nm,0.9s,baz=72,slow=4.6
NB2 NORSAR Subarra 100.43 333 P Pdif 06 59 58.2 -2.7
baz=72,slow=4.6
NOA NORSAR Array B 100.43 333 P Pdif 06 59 59.2 -1.7
comp=Z,0.8nm,0.7s,baz=67,slow=4.8,SNR=3.3
DAG Danmarks Havn 100.49 352 iP Pdif 06 59 58.6 -2.2
comp=Z,37nm,1.5s
DAG Danmarks Havn 100.49 352 iP Pdif 06 59 58.6 -2.2
DAG pmax pmax
comp=Z,100nm,1.5s
SNAA Sanae 100.54 195 P PKiKP 07 04 29.5 +2.4
SNAA Sanae 100.54 195⇑ eP Pdif 07 00 00.9 -0.3
SNAA pmax pmax
comp=Z,215nm,1.0s
DPC Dobruska-Polom 100.59 321 ex PKiKP 07 04 20.9 -6.9
DPC ex x 07 04 38.2
DPC AMS AMS 07 46 50.0
comp=Z,300nm,24.7s
UPC Upice 100.74 322 ex PKiKP 07 04 39.3 +11
UPC eSKS SKSac 07 10 28.6 -3.8
UPC AMS AMS 07 46 30.0
comp=Z,300nm,19.6s
RKT Rikitea 101.15 113 eLR LR 07 33 17.8
comp=Z,535nm,37.2s
PVCC Panska Ves 101.63 322 AMS AMS 07 47 20.0
comp=Z,300nm,25.3s
GOPC GO Pecny, Ondr 101.65 321 eSKS SKSac 07 10 34.4 -2.4
GOPC ex x 07 13 55.9
GOPC AMS AMS 07 47 20.0
comp=Z,200nm,23.1s
PRU Pruhonice 101.78 321 eSKS SKSac 07 10 34.8 -2.6
PRU ex x 07 13 55.8
PRU AMS AMS 07 47 30.0
comp=Z,300nm,25.7s
BRG Berggiesshubel 101.93 322 eP Pdif 07 00 08.1 +0.4
comp=Z,9.8nm,1.3s
BRG pP pP 07 00 31.0 -3.7
BRG e 07 04 40.0
BRG ePP PKiKP 07 04 48.8 +19
comp=Z,15nm,1.3s
BRG Berggiesshubel 101.93 322 eP Pdif 07 00 08.1 +0.4
BRG pmax pmax
comp=Z,15nm,1.3s
VNA2 Neumayer--Watz 102.16 195 P PKiKP 07 04 30.0 0.0
baz=65,slow=1.7
RES Resolute Bay 102.23 10 P Pdif 07 00 06.9 -1.6
comp=Z,6.3nm,1.1s,baz=304,slow=7.2,SNR=17
RES Resolute Bay 102.23 10 ePdif Pdif 07 00 08.2 -0.3
CLL Collm 102.39 323 ePS PS 07 13 14.0 -18
CLL L L 07 52 00.0
comp=Z,200nm,21.1s
VNA3 Neumayer Olymp 102.53 194 P PKiKP 07 04 30.6 -0.1
GERES GERESS Array B 102.60 320 P Pdif 07 00 11.0 +0.1
comp=Z,0.3nm,0.4s,baz=104,slow=5.6,SNR=7.0
GERES PP PKiKP 07 04 29.7 -1.8
comp=Z,1.1nm,0.7s,baz=65,slow=6.3,SNR=4.2
GERES PKKPbc PKKPbc 07 16 09.2 -3.1
comp=Z,1.2nm,0.6s,baz=253,slow=1.4,SNR=8.7
GEA0 GERESS Array S 102.60 320 ePdif Pdif 07 00 10.9 0.0
KHC Kasperske Hory 102.61 321 ePP PP 07 04 30.3 +5.3
KHC epPKP PKiKP 07 04 53.3 +22
KHC eSKS 07 10 38.2
KHC ePKKP PKKPbc 07 16 08.5 -3.7
KHC eSS SS 07 19 01.0 +4.6
YKW3 Yellowknife Ar 104.52 24 ePdif Pdif 07 00 18.9 0.0
YKA Yellowknife Ar 104.56 24 Pdif Pdif 07 00 18.9 -0.2
comp=Z,1.9nm,0.7s,baz=298,slow=4.8,SNR=31
YKA PKiKP PKiKP 07 04 33.9 -0.6
comp=Z,0.7nm,0.6s,baz=292,slow=2.1,SNR=19
YKA PKKPbc PKKPbc 07 16 02.8 -4.0
comp=Z,2.0nm,0.5s,baz=117,slow=2.8,SNR=43
YKB5 Yellowknife Ar 104.56 24 ePdif Pdif 07 00 19.0 -0.1
E03A Lebam 106.11 41 ePdif Pdif 07 00 26.7 +0.3
B05A Bryant 106.52 39 P PKiKP 07 04 39.2 +0.6
baz=289
SUMG Summit 106.69 354 iP Pdif 07 00 39.7 +11
SUMG Summit 106.69 354 eP Pdif 07 00 39.7 +11
D05A Enumclaw 106.93 40 ePdif Pdif 07 00 31.8 +1.7
L02D Cave Junction, 107.35 46 P PKiKP 07 04 40.6 +0.3
baz=286
H04A Detroit Lake 107.59 43 ePdif Pdif 07 00 33.8 +0.6
HUMO Hull Mountain 107.68 45 ePKiKP PKiKP 07 04 42.3 +1.3
G05D Wamic, OR 108.00 42 P PKiKP 07 04 41.5 -0.1
baz=289
M02C Callahan 108.10 46 P PKiKP 07 04 41.5 -0.4
baz=286
YBH Yreka Blue Hor 108.11 46 Pdiff Pdif 07 00 34.9 -0.7
comp=Z,2.5nm,1.2s,baz=25,slow=1.3,SNR=3.6
YBH PKiKP PKiKP 07 04 42.4 +0.5
comp=Z,1.8nm,0.8s,baz=250,slow=2.9,SNR=4.4
B08A Colville Reser 108.21 38 ePdif Pdif 07 00 36.3 +0.5
N02D Trinity Center 108.33 47 P PKiKP 07 04 41.9 -0.4
baz=286
K04D Chiloquin, OR 108.53 45 P PKiKP 07 04 42.2 -0.5
baz=288
J05D Fort Rock, OR 108.68 44 P PKiKP 07 04 43.0 0.0
baz=288
K05A Summer Lake 109.10 44 ePdif Pdif 07 00 41.0 +0.9
NEW Newport 109.61 38 eP Pdif 07 00 42.7 +0.7
NEW Newport 109.61 38 ePdif Pdif 07 00 42.7 +0.7
MOD Modoc Plateau 109.77 45 ePKiKP PKiKP 07 04 45.6 +0.5
AFDM Forest Hills D 110.19 48 ePKiKP PKiKP 07 04 47.0 +1.2
WVOR Wild Horse Val 110.77 44 ePKKPab PKKPab 07 15 56.7 +0.1
JTMT Jette 111.56 38 ePdif Pdif 07 00 51.4 +0.5
SWMT Swartz Lake 111.84 38 ePdif Pdif 07 00 53.0 +0.9
MSO Missoula 112.17 38 P PKiKP 07 04 49.3 -0.2
baz=295
PKM Mcpherson Peak 112.24 52 P PKiKP 07 04 49.1 -0.9
baz=286
NVAR Mina Array Bea 112.33 48 Pdiff Pdif 07 00 55.4 +0.8
comp=Z,1.1nm,0.7s,baz=265,slow=5.2,SNR=7.7
NVAR PKiKP PKiKP 07 04 51.3 +1.1
comp=Z,4.1nm,0.7s,baz=257,slow=1.9,SNR=21
NVAR PP PP 07 05 41.3 +4.6
comp=Z,10nm,1.0s,baz=269,slow=9.0,SNR=9.1
NVAR PKKPbc PKKPbc 07 15 36.2 -5.5
comp=Z,0.7nm,0.7s,baz=139,slow=3.8,SNR=4.6
MFID Camas Ranch 112.33 42 ePKiKP PKiKP 07 04 50.2 +0.3
SBC Santa Barbara 112.44 53 P PKiKP 07 04 49.7 -0.4
baz=286
SFJD Kangerlussuaq 113.09 357 PKiKP PKiKP 07 04 50.7 +0.3
comp=Z,3.5nm,0.5s,baz=357,slow=2.1,SNR=3.7
CWC Cottonwood Cre 113.13 50 P PKiKP 07 04 51.4 -0.3
baz=288
HLID Hailey 113.22 42 P PKiKP 07 04 52.2 +0.5
baz=294
HLID Hailey 113.22 42 ePKiKP PKiKP 07 04 51.4 -0.2
GRAC Grapevine Rang 113.50 49 P PKiKP 07 04 52.2 0.0
baz=289
DAC Darwin (Calif) 113.55 50 ePKIKP PKiKP 07 04 53.4 +0.9
DAC Darwin (Calif) 113.55 50 ePKiKP PKiKP 07 04 53.4 +0.9
DLMT Dillon 113.65 39 ePKPdf PKiKP 07 04 52.7 +0.4
EDW2 Edwards Air Fo 113.67 52 P PKiKP 07 04 52.9 +0.3
baz=288
MPMC Manual Prospec 113.70 50 P PKiKP 07 04 53.1 +0.3
baz=288
MCMT McKenzie Canyo 113.72 40 ePKiKP PKiKP 07 04 54.1 +1.4
LRMC Laurel Mtn Rad 113.73 51 P PKiKP 07 04 52.4 -0.4
baz=288
ELK Elko 113.75 45 ePKIKP PKiKP 07 04 53.4 +0.6
ELK Elko 113.75 45 ePKiKP PKiKP 07 04 53.4 +0.6
FURC Furnace Creek, 114.05 50 P PKPdf 07 04 54.1 +1.0
baz=289
BFSC Mount Baldy Ra 114.13 52 P PKPdf 07 04 53.6 0.0
baz=288
BOZ Bozeman (W) 114.13 39 P PKPdf 07 04 53.3 0.0
baz=297
BOZ Bozeman (W) 114.13 39 ePKIKP PKPdf 07 04 53.2 -0.1
BOZ Bozeman (W) 114.13 39 ePKPdf PKPdf 07 04 53.2 -0.1
EGMT Eagleton 114.14 36 P PKPdf 07 04 53.3 +0.2
baz=300
EGMT Eagleton 114.14 36 ePKiKP PKPdf 07 04 53.0 -0.1
TPNV Topopah Spring 114.36 49 P PKPdf 07 04 54.6 +0.6
baz=290
R11A Troy Canyon, C 114.37 47 P PKPdf 07 04 54.0 0.0
baz=291
R11A Troy Canyon, C 114.37 47 ePKiKP PKiKP 07 04 54.9 +0.9
GSC Goldstone, Bar 114.47 51 P PKPdf 07 04 54.8 +0.7
baz=289
GSC Goldstone, Bar 114.47 51 ePKIKP PKPdf 07 04 55.2 +1.1
GSC Goldstone, Bar 114.47 51 ePKiKP PKiKP 07 04 55.2 +1.0
SHOC Shoshone, Teco 114.69 50 P PKPdf 07 04 55.4 +0.9
baz=289
BBRC Big Bear Solar 114.70 52 P PKPdf 07 04 55.3 +0.5
baz=288
109C Camp Elliot, M 114.97 53 P PKPdf 07 04 55.9 +0.9
baz=287
HEC Hector,Ludlow 114.99 51 P PKPdf 07 04 56.2 +1.0
baz=289
HVU Hansel Valley 115.05 43 ePKIKP PKPdf 07 04 55.7 +0.5
HVU Hansel Valley 115.05 43 ePKiKP PKPdf 07 04 55.7 +0.5
TUQ Turquoise Moun 115.11 50 P PKPdf 07 04 56.3 +0.9
baz=289
BGU Big Grassy Mou 115.22 44 ePKPdf PKPdf 07 04 56.0 +0.5
PFO Pinyon Flats O 115.27 53 P PKPdf 07 04 56.5 +0.7
baz=288
PFO Pinyon Flats O 115.27 53 ePKIKP PKPdf 07 04 56.7 +0.9
PFO Pinyon Flats O 115.27 53 ePKPdf PKPdf 07 04 56.7 +0.9
GCMT Greycliff 115.28 38 ePKPdf PKPdf 07 04 56.9 +1.4
SHPR Sheep Range 115.33 49 ePKPdf PKPdf 07 04 57.1 +1.2
IMW Indian Meadow 115.36 40 ePKiKP PKiKP 07 04 55.8 -0.1
H17A Grant Village 115.36 40 P PKPdf 07 04 56.6 +0.8
baz=297
H17A Grant Village 115.36 40 ePKiKP PKiKP 07 04 55.3 -0.5
BAR Barrett 115.38 54 ePKPdf PKPdf 07 04 57.2 +1.3
SPUT South Promonto 115.47 43 ePKPdf PKPdf 07 04 56.3 +0.3
BELC Belle Mtn. Jos 115.51 52 P PKPdf 07 04 56.9 +0.7
baz=289
MONP2 Monument Peak 115.52 53 P PKPdf 07 04 57.0 +0.6
baz=288
GMRC Granite Mounta 115.53 51 P PKPdf 07 04 56.7 +0.5
baz=289
MOOW Moose Ponds 115.55 40 ePKPdf PKPdf 07 04 56.5 +0.4
PSUT Pine Spring 115.57 47 ePKPdf PKPdf 07 04 57.2 +0.9
REDW Red Top Meadow 115.66 41 ePKPdf PKPdf 07 04 57.0 +0.6
DUG Dugway, Tooele 115.67 45 P PKPdf 07 04 56.8 +0.5
baz=294
DUG Dugway, Tooele 115.67 45 ePKIKP PKPdf 07 04 57.0 +0.6
DUG Dugway, Tooele 115.67 45 ePKPdf PKPdf 07 04 57.0 +0.6
SNOW Snow King Moun 115.67 41 ePKPdf PKPdf 07 04 57.2 +0.8
LOHW Long Hollow 115.70 40 ePKPdf PKPdf 07 04 56.9 +0.5
AHID Auburn Hatcher 115.76 41 ePKPdf PKPdf 07 04 56.3 -0.2
RLMT Red Lodge 115.85 38 P PKPdf 07 04 57.4 +0.7
baz=299
RLMT Red Lodge 115.85 38 ePKPdf PKPdf 07 04 56.9 +0.2
LDFC Landfair 115.86 51 ePKPdf PKPdf 07 04 57.3 +0.5
SWSC Sam W. Stewart 116.00 53 P PKPdf 07 04 57.5 +0.5
baz=288
BC3 Big Chuckawall 116.05 52 P PKPdf 07 04 57.5 +0.2
baz=289
IRM Iron Mountain 116.13 52 P PKPdf 07 04 57.9 +0.6
baz=289
TCUT Toone Canyon 116.26 43 ePKPdf PKPdf 07 04 58.4 +0.7
NLU North Lily Min 116.28 45 ePKPdf PKPdf 07 04 58.8 +1.2
JLU Jordanelle 116.45 44 ePKPdf PKPdf 07 04 58.3 +0.2
LCMT Little Creek M 116.59 48 ePKPdf PKPdf 07 04 59.3 +1.0
GLA Glamis 116.74 53 P PKPdf 07 04 58.2 -0.3
baz=289
GLA Glamis 116.74 53 ePKIKP PKPdf 07 05 00.3 +1.8
GLA Glamis 116.74 53 ePKPdf PKPdf 07 05 00.3 +1.8
Y12C Blythe 116.75 52 P PKPdf 07 04 58.2 -0.3
baz=289
Y12C Blythe 116.75 52 ePKPdf PKPdf 07 04 59.6 +1.2
BW06 Boulder Array 116.77 41 P PKPdf 07 04 57.9 -0.6
baz=298
BW06 Boulder Array 116.77 41 ePKPdf PKPdf 07 04 57.8 -0.8
PD31 Pinedale Array 116.77 41 ePKPdf PKPdf 07 04 58.7 +0.2
PDAR Pinedale Array 116.77 41 PKP PKPdf 07 04 58.5 -0.1
comp=Z,4.6nm,1.0s,baz=207,slow=1.0,SNR=20
PDAR PKKPbc PKKPbc 07 15 27.4 +0.7
comp=Z,2.5nm,0.5s,baz=102,slow=5.7,SNR=23
MSU Marysvale 116.79 46 ePKIKP PKPdf 07 04 59.6 +0.9
MSU Marysvale 116.79 46 ePKPdf PKPdf 07 04 59.6 +0.9
W13A Hualapai Mount 116.79 50 ePKPdf PKPdf 07 04 60.0 +1.2
LAO LASA Array 116.89 36 P PKPdf 07 04 58.9 +0.5
baz=302
LAO LASA Array 116.89 36 ePKPdf PKPdf 07 04 58.9 +0.5
KNB Kanab 116.90 48 ePKIKP PKPdf 07 04 59.8 +0.9
KNB Kanab 116.90 48 ePKPdf PKPdf 07 04 59.8 +0.9
MTPU Mount Pierson 116.97 47 ePKPdf PKPdf 07 05 00.7 +1.4
PKCU Pink Cliffs 117.11 47 ePKPdf PKPdf 07 05 01.4 +2.0
TMUT Trail Mountain 117.17 45 ePKPdf PKPdf 07 05 00.2 +0.7
Q16A Castle Valley 117.35 45 ePKPdf PKPdf 07 05 00.6 +0.8
A25A Svangstu Ranch 117.37 32 P PKPdf 07 04 59.3 +0.1
baz=306
P17A Butcher Ranch, 117.42 45 ePKPdf PKPdf 07 05 00.4 +0.6
U15A North Rim 117.52 48 ePKPdf PKPdf 07 05 01.6 +1.3
ES19 SONSECA Array 117.57 316 ePKPdf PKPdf 07 05 00.8 +0.8
ESDC Sonseca Array 117.62 316 PKP PKPdf 07 05 00.7 +0.7
comp=Z,0.3nm,0.4s,baz=29,slow=3.4,SNR=4.2
ESDC PP PP 07 06 14.3 +0.8
comp=Z,0.2nm,0.3s,baz=69,slow=7.5,SNR=4.2
ESDC PKKPbc PKKPbc 07 15 23.6 +0.3
comp=Z,2.4nm,0.8s,baz=276,slow=3.8,SNR=5.4
113A Mohawk Valley, 117.68 53 ePKPdf PKPdf 07 05 01.9 +1.6
P18A Preston Nutter 117.70 44 ePKPdf PKPdf 07 05 01.6 +1.1
SRU San Rafael Swe 117.72 45 ePKIKP PKPdf 07 05 00.7 +0.2
SRU San Rafael Swe 117.72 45 ePKPdf PKPdf 07 05 00.7 +0.2
Y14A Wickenburg 117.88 51 ePKPdf PKPdf 07 05 01.4 +0.6
A26A Wade Farm, Ken 117.96 32 P PKPdf 07 05 00.3 -0.1
baz=307
C25A Freed Ranch, W 118.00 33 P PKPdf 07 05 00.6 +0.1
baz=305
D25A Fairfield 118.29 34 P PKPdf 07 05 00.9 -0.2
baz=305
A27A Ledoux Ranch, 118.34 31 P PKPdf 07 05 00.8 -0.3
baz=308
WUAZ Wupatki 118.55 49 P PKPdf 07 05 01.9 -0.2
baz=293
WUAZ Wupatki 118.55 49 ePKPdf PKPdf 07 05 03.1 +1.0
C26A Wahner Farm, P 118.57 33 P PKPdf 07 05 01.1 -0.5
baz=306
E25A Miller Ranch, 118.62 35 P PKPdf 07 05 01.3 -0.4
baz=305
B27A Peters Farms, 118.67 32 P PKPdf 07 05 01.5 -0.2
baz=308
214A Organ Pipe Nat 118.71 53 P PKPdf 07 05 02.2 -0.1
baz=290
214A Organ Pipe Nat 118.71 53 ePKPdf PKPdf 07 05 03.2 +0.8
K22A Casper 118.79 40 P PKPdf 07 05 01.3 -1.1
baz=300
K22A Casper 118.79 40 ePKPdf PKPdf 07 05 01.8 -0.6
D26A Manning 118.85 34 P PKPdf 07 05 01.4 -0.8
baz=306
O20A White River Ci 118.86 43 P PKPdf 07 05 02.2 -0.4
baz=297
O20A White River Ci 118.86 43 ePKPdf PKPdf 07 05 02.9 +0.3
A28A Rude Farm, Bot 118.88 31 P PKPdf 07 05 01.3 -0.8
baz=309,SNR=7.4
F25A Bowman 118.91 35 P PKPdf 07 05 01.8 -0.6
baz=304
X16A Lo Mia Camp, P 118.91 50 ePKPdf PKPdf 07 05 03.6 +0.8
C27A Sayler Ranch, 118.96 33 P PKPdf 07 05 01.8 -0.5
baz=307
PV09 Paradox Valley 118.97 45 ePKPdf PKPdf 07 05 03.5 +0.5
PV10 Paradox Valley 119.09 45 ePKPdf PKPdf 07 05 03.8 +0.6
B28A Dugan Ranch, T 119.11 31 P PKPdf 07 05 02.1 -0.4
baz=308
E26A Carlson Angus 119.17 34 P PKPdf 07 05 02.1 -0.7
baz=306
PV05 Paradox Valley 119.17 45 ePKPdf PKPdf 07 05 03.9 +0.6
PV04 Paradox Valley 119.18 45 ePKPdf PKPdf 07 05 03.8 +0.6
D27A Center 119.31 33 P PKPdf 07 05 02.3 -0.8
baz=307
A29A Manning Farm, 119.40 30 P PKPdf 07 05 02.1 -1.0
baz=310,SNR=14
F26A Lodgepole 119.41 35 P PKPdf 07 05 02.7 -0.6
baz=305
PV15 Paradox Valley 119.50 45 ePKPdf PKPdf 07 05 04.4 +0.5
PV01 Paradox Valley 119.53 45 ePKPdf PKPdf 07 05 04.6 +0.6
C28A Hausauer Farms 119.56 32 P PKPdf 07 05 02.9 -0.6
baz=308
H25A Fruitdale 119.56 37 P PKPdf 07 05 02.9 -0.8
baz=304
RSSD Black Hills 119.57 37 P PKPdf 07 05 02.9 -1.0
baz=303
RSSD Black Hills 119.57 37 ePKIKP PKPdf 07 05 02.6 -1.3
RSSD Black Hills 119.57 37 ePKPdf PKPdf 07 05 02.6 -1.3
B29A Wagenman Farm, 119.63 31 P PKPdf 07 05 02.6 -0.9
baz=309,SNR=13
E27A Carson 119.69 34 P PKPdf 07 05 03.2 -0.6
baz=306
F27A Lemmon 119.76 35 P PKPdf 07 05 02.4 -1.6
baz=306
G26A Maurine 119.76 35 P PKPdf 07 05 03.3 -0.7
baz=305
D28A Regan 119.78 33 P PKPdf 07 05 03.3 -0.6
baz=308
I25A Rochford 119.81 37 P PKPdf 07 05 03.2 -1.1
baz=303
A30A Hoffart Farm, 119.86 30 P PKPdf 07 05 02.7 -1.3
baz=311,SNR=8.4
MDND Maddock 119.89 32 P PKPdf 07 05 04.0 -0.1
baz=309
MDND Maddock 119.89 32 ePKPdf PKPdf 07 05 03.7 -0.4
W18A Petrified Fore 119.94 49 P PKPdf 07 05 04.8 0.0
baz=294
W18A Petrified Fore 119.94 49 ePKPdf PKPdf 07 05 05.9 +1.1
MVCO Mesa Verde 119.98 46 P PKPdf 07 05 04.8 -0.1
baz=296
MVCO Mesa Verde 119.98 46 ePKPdf PKPdf 07 05 05.8 +0.9
X18A Snowflake 120.01 49 ePKPdf PKPdf 07 05 05.9 +0.9
N23A Red Feather La 120.04 41 P PKPdf 07 05 03.7 -1.3
baz=300
N23A Red Feather La 120.04 41 ePKPdf PKPdf 07 05 06.3 +1.3
H26A Fairpoint 120.05 36 P PKPdf 07 05 03.4 -1.1
baz=304
E28A Huff 120.09 33 P PKPdf 07 05 03.6 -0.9
baz=307
G27A Dupree 120.10 35 P PKPdf 07 05 03.7 -1.0
baz=306
J25A Sunshine Ranch 120.11 38 P PKPdf 07 05 03.9 -0.9
baz=303
ULM Lac du Bonnet 120.15 28 PKP PKPdf 07 05 02.9 -1.6
comp=Z,10.0nm,0.9s,baz=304,slow=3.5,SNR=10
ULM Lac du Bonnet 120.15 28 ePKPdf PKPdf 07 05 03.5 -1.0
B30A Myrvik Farm, E 120.16 30 P PKPdf 07 05 03.2 -1.4
baz=310,SNR=14
SMCO Snowmass 120.17 43 ePKPdf PKPdf 07 05 06.1 +0.7
TUC Tucson 120.20 52 P PKPdf 07 05 04.2 -1.1
baz=291
TUC Tucson 120.20 52 ePKIKP PKPdf 07 05 05.7 +0.4
TUC Tucson 120.20 52 ePKPdf PKPdf 07 05 05.7 +0.4
TOA0 Torodi Ar. Sit 120.30 285 ePKPdf PKPdf 07 05 04.6 -1.1
TORD Torodi Ar. Bea 120.30 285 PKP PKPdf 07 05 04.8 -1.0
comp=Z,6.3nm,0.6s,baz=56,slow=1.7,SNR=45
TORD PKKPbc PKKPbc 07 15 13.3 +0.4
comp=Z,7.3nm,0.7s,baz=297,slow=3.7,SNR=27
I26A New Underwood 120.32 37 P PKPdf 07 05 04.1 -1.0
baz=304
D29A Pettibone, Tap 120.38 32 P PKPdf 07 05 03.9 -1.1
baz=308
A31A Linda, St. Vin 120.41 29 P PKPdf 07 05 04.1 -0.9
baz=312
H27A Howes 120.45 36 P PKPdf 07 05 04.2 -1.1
baz=305
F28A McLaughlin 120.47 34 P PKPdf 07 05 04.4 -0.9
baz=307
B31A Greenbush Farm 120.52 30 P PKPdf 07 05 03.7 -1.5
baz=311,SNR=5.4
C30A Mose, Pekin 120.57 31 P PKPdf 07 05 04.4 -1.0
baz=310,SNR=8.6
J26A Sides Ranch, S 120.59 38 P PKPdf 07 05 04.5 -1.2
baz=304
SRIG Santa Rosalia 120.66 58 ePKPdf PKPdf 07 05 06.7 +0.6
E29A Napoleon 120.66 33 P PKPdf 07 05 04.6 -1.1
baz=308
A32A Rocking H Ranc 120.76 29 P PKPdf 07 05 04.5 -1.2
baz=312
I27A Quinn 120.78 36 P PKPdf 07 05 04.6 -1.4
baz=305
ISCO Idaho Springs 120.79 42 P PKPdf 07 05 06.0 -0.5
baz=299
ISCO Idaho Springs 120.79 42 ePKIKP PKPdf 07 05 06.7 +0.2
ISCO Idaho Springs 120.79 42 ePKPdf PKPdf 07 05 06.7 +0.2
D30A Buchanan 120.80 32 P PKPdf 07 05 04.6 -1.2
baz=309,SNR=17
C31A Landman Farms, 120.89 31 P PKPdf 07 05 04.9 -1.1
baz=311,SNR=27
S22A 4UR Ranch, Cre 120.93 45 P PKPdf 07 05 06.8 0.0
baz=297
S22A 4UR Ranch, Cre 120.93 45 ePKPdf PKPdf 07 05 07.8 +1.0
F29A Eureka 121.02 34 P PKPdf 07 05 05.4 -0.9
baz=308
H28A Mission Ridge 121.04 35 P PKPdf 07 05 05.4 -1.0
baz=306
B32A Ashes, Strandq 121.09 30 P PKPdf 07 05 05.3 -1.1
baz=312,SNR=16
E30A Jud 121.10 33 P PKPdf 07 05 05.5 -1.0
baz=309,SNR=14

HSIG		121.20	56	ePKPdf	PKPdf	07 05 07.8	+0.6
J27A	Elkhorn Farm, baz=304	121.27	37	P	PKPdf	07 05 06.0	-1.0
A33A	Warroad baz=314,SNR=9.9	121.28	29	P	PKPdf	07 05 05.8	-0.9
I28A	Midland baz=306	121.34	36	P	PKPdf	07 05 06.2	-0.9
G29A	Hoven baz=307	121.35	34	P	PKPdf	07 05 05.9	-1.1
D31A	Mcclaflin, Tow baz=310	121.38	31	P	PKPdf	07 05 05.6	-1.4
F30A	Leola baz=308	121.45	33	P	PKPdf	07 05 06.0	-1.2
C32A	Crookston baz=312	121.48	30	P	PKPdf	07 05 05.5	-1.6
Q24A	Divide baz=299	121.52	43	P	PKPdf	07 05 05.5	-2.4
Q24A	Divide	121.52	43	ePKPdf	PKPdf	07 05 08.5	+0.6
H29A	Onida baz=307	121.53	35	P	PKPdf	07 05 06.1	-1.2
E31A	Nome baz=310,SNR=7.0	121.61	32	P	PKPdf	07 05 05.8	-1.6
B33A	Robert and Kas baz=313	121.64	29	P	PKPdf	07 05 05.8	-1.6
D32A	Dogwood Acres, baz=311	121.69	31	P	PKPdf	07 05 06.1	-1.5
319A	Douglas	121.73	53	ePKPdf	PKPdf	07 05 09.4	+1.1
G30A	Faulkton baz=308,SNR=16	121.83	34	P	PKPdf	07 05 06.8	-1.1
I29A	Vivian Onida baz=306	121.84	36	P	PKPdf	07 05 06.7	-1.3
F31A	Hecla baz=309	121.86	33	P	PKPdf	07 05 06.8	-1.2
SDCO	Great Sand Dun baz=298	121.86	44	P	PKPdf	07 05 08.0	-0.5
SDCO	Great Sand Dun	121.86	44	ePKPdf	PKPdf	07 05 08.3	-0.3
C33A	Trail baz=313,SNR=7.1	121.90	30	P	PKPdf	07 05 06.1	-1.9
B34A	Aery, Baudette baz=314,SNR=9.4	121.95	29	P	PKPdf	07 05 06.3	-1.7
E32A	Braaten, Kindr baz=311	122.02	31	P	PKPdf	07 05 06.7	-1.5
LAZ	Ladron	122.18	48	ePKPdf	PKPdf	07 05 09.8	+0.6
G31A	Conde baz=309	122.28	33	P	PKPdf	07 05 07.1	-1.7
SUSD	Miller baz=308	122.36	34	P	PKPdf	07 05 07.3	-1.6
C34A	RKJ Ranch, Bem baz=314,SNR=8.5	122.40	29	P	PKPdf	07 05 07.4	-1.5
I30A	Oacoma baz=307	122.41	35	P	PKPdf	07 05 07.6	-1.5
ANMO	Albuquerque baz=296	122.45	48	P	PKPdf	07 05 08.9	-0.7
ANMO ANMO	Albuquerque comp=Z,36nm,1.2s	122.45	48c	iPKIKP pmax	PKPdf pmax	07 05 09.5	-0.2
ANMO	Albuquerque	122.45	48	ePKPdf	PKPdf	07 05 09.7	+0.1
121A	Cookes Peak, D baz=294	122.46	51	P	PKPdf	07 05 08.8	-0.9
121A	Cookes Peak, D	122.46	51	ePKPdf	PKPdf	07 05 10.1	+0.3
F32A	Veblen baz=310	122.46	32	P	PKPdf	07 05 07.5	-1.6
B35A	Bob, Littlefor baz=315,SNR=8.5	122.47	28	P	PKPdf	07 05 08.1	-1.0
OGNE	Ogallala baz=303	122.54	39	P	PKPdf	07 05 08.7	-0.8
OGNE	Ogallala	122.54	39	ePKPdf	PKPdf	07 05 09.4	-0.1
LPM	Los Pinos Moun	122.60	48	ePKPdf	PKPdf	07 05 10.7	+0.7
H31A	Wolsey baz=308	122.60	34	P	PKPdf	07 05 07.9	-1.5
E33A	Westby DABS, E baz=312	122.63	31	P	PKPdf	07 05 08.1	-1.3
D34A	Park Rapids baz=313	122.65	30	P	PKPdf	07 05 08.0	-1.4
G32A	Webster baz=310	122.65	33	P	PKPdf	07 05 07.5	-2.0
BNM	Barren Site	122.67	48	ePKPdf	PKPdf	07 05 10.7	+0.6
J30A	Dallas baz=307	122.72	36	P	PKPdf	07 05 07.9	-1.8
C35A	Jirik Farms, M baz=314,SNR=10	122.82	29	P	PKPdf	07 05 08.2	-1.5
I31A	Royce, Wessing baz=308	122.85	35	P	PKPdf	07 05 08.3	-1.6
T25A	Trinidad baz=299	122.91	44	P	PKPdf	07 05 09.8	-0.7
T25A	Trinidad	122.91	44	ePKPdf	PKPdf	07 05 11.3	+0.8
F33A	5 Mile Ranch, baz=311,SNR=17	122.92	32	P	PKPdf	07 05 08.7	-1.3
K30A	Basset baz=306	123.04	36	P	PKPdf	07 05 09.6	-0.7
E34A	Wadena baz=313,SNR=12	123.05	30	P	PKPdf	07 05 09.4	-0.8
H32A	Carlson Farm, baz=309,SNR=9.5	123.17	34	P	PKPdf	07 05 09.7	-0.8
J31A	Geddes baz=308	123.18	35	P	PKPdf	07 05 09.9	-0.7
KSCO	Kaye Shedlock' baz=302	123.19	42	P	PKPdf	07 05 08.7	-2.2
KSCO	Kaye Shedlock'	123.19	42	ePKPdf	PKPdf	07 05 11.6	+0.7
D35A	Remer baz=314,SNR=11	123.22	29	P	PKPdf	07 05 09.0	-1.5
G33A	Ortonville baz=311,SNR=8.7	123.27	32	P	PKPdf	07 05 09.6	-1.1
C36A	Pine Crest Far baz=316,SNR=6.1	123.32	28	P	PKPdf	07 05 09.2	-1.5
E35A	Pequot Lakes baz=314,SNR=8.8	123.40	30	P	PKPdf	07 05 09.8	-1.1
H33A	Prehn Over Nor baz=310,SNR=7.6	123.43	33	P	PKPdf	07 05 10.1	-0.9
I32A	Karley and Nic baz=309	123.45	34	P	PKPdf	07 05 09.9	-1.2
F34A	Alexandria baz=312	123.49	31	P	PKPdf	07 05 10.1	-1.0
K31A	O'Neill baz=307,SNR=14	123.58	36	P	PKPdf	07 05 10.3	-1.1
D36A	Goodland baz=315	123.58	29	P	PKPdf	07 05 09.9	-1.3
J32A	Parkston baz=308	123.65	35	P	PKPdf	07 05 10.5	-0.9
C37A	Embarrass baz=316	123.65	28	P	PKPdf	07 05 10.5	-0.8
G34A	Benson baz=312	123.66	32	P	PKPdf	07 05 10.6	-0.8
SLBS	Sierra La Lagu	123.71	61	ePKPdf	PKPdf	07 05 13.5	+1.3
F35A	Swanville baz=313,SNR=11	123.80	31	P	PKPdf	07 05 10.6	-1.1
L31A	Butterfield Fa baz=307,SNR=8.0	123.80	37	P	PKPdf	07 05 10.5	-1.3
EYMN	Ely baz=317	123.81	27	P	PKPdf	07 05 10.4	-1.2
EYMN	Ely	123.81	27	ePKPdf	PKPdf	07 05 10.8	-0.8
I33A	Coleman baz=310	123.81	34	P	PKPdf	07 05 10.8	-0.9
D37A	Cotton baz=316,SNR=8.9	123.95	28	P	PKPdf	07 05 10.7	-1.2
H34A	Spellman Lake, baz=311	123.97	32	P	PKPdf	07 05 11.0	-1.0
E36A	McGregor baz=315,SNR=16	124.00	29	P	PKPdf	07 05 10.7	-1.3
K32A	Verdigre baz=308,SNR=14	124.01	36	P	PKPdf	07 05 10.8	-1.4
C38A	Sawbill Land. baz=317	124.08	27	P	PKPdf	07 05 10.8	-1.3
ECSD	EROS Data Cent baz=310	124.11	34	P	PKPdf	07 05 10.9	-1.4
ECSD	EROS Data Cent	124.11	34	ePKPdf	PKPdf	07 05 11.8	-0.6
J33A	Davis baz=309	124.18	34	P	PKPdf	07 05 11.2	-1.3
M31A	Lambtecht Ranc baz=306	124.21	37	P	PKPdf	07 05 11.0	-1.6
G35A	Watkins baz=313,SNR=16	124.28	31	P	PKPdf	07 05 11.6	-1.0
F36A	Milaca baz=314,SNR=29	124.33	30	P	PKPdf	07 05 11.7	-1.0
I34A	Hadley baz=311	124.33	33	P	PKPdf	07 05 11.7	-1.1
E37A	Wrenshall baz=316	124.38	29	P	PKPdf	07 05 11.7	-1.1
L32A	Elgin baz=308	124.39	36	P	PKPdf	07 05 12.2	-0.7
H35A	Sunnyside Ranc baz=312,SNR=19	124.45	32	P	PKPdf	07 05 12.2	-0.7
USHA	Ushuaia comp=Z,87nm,0.6s,baz=234,slow=0.9,SNR=14	124.46	172	PKP	PKPdf	07 05 13.3	+0.7
C39A	Grand Marais baz=319	124.52	26	P	PKPdf	07 05 11.8	-1.2
N31A	Bailey Ranch, baz=306	124.53	38	P	PKPdf	07 05 12.0	-1.3
K33A	Hardington baz=309	124.61	35	P	PKPdf	07 05 12.4	-1.0
G36A	St. Michael baz=314,SNR=8.4	124.65	31	P	PKPdf	07 05 12.3	-1.0
MNTX	Cornudas Mount baz=295	124.66	51	P	PKPdf	07 05 13.4	-0.3
MNTX	Cornudas Mount	124.66	51	ePKPdf	PKPdf	07 05 14.3	+0.6
BGNE	Belgrade baz=307,SNR=5.7	124.67	37	P	PKPdf	07 05 12.3	-1.2
BGNE	Belgrade	124.67	37	ePKPdf	PKPdf	07 05 12.9	-0.6
O31A	Woolen Ranch, baz=305	124.69	39	P	PKPdf	07 05 12.8	-0.8
L33A	Hoskins baz=308	124.73	36	P	PKPdf	07 05 12.8	-0.7
J34A	George baz=310	124.77	34	P	PKPdf	07 05 12.4	-1.2
SCHQ	Schefferville comp=Z,7.3nm,0.6s,baz=279,slow=3.6,SNR=20	124.88	7	PKP	PKPdf	07 05 12.9	-0.6
SCHQ	Schefferville	124.88	7	ePKPdf	PKPdf	07 05 13.3	-0.2
I35A	Creekview Farm baz=312	124.93	33	P	PKPdf	07 05 12.6	-1.3
N32A	Stulken Farm, baz=307	124.97	38	P	PKPdf	07 05 13.1	-1.0
H36A	Jessenland, He baz=313,SNR=14	125.00	31	P	PKPdf	07 05 13.7	-0.3
K34A	Le Mars baz=310,SNR=8.5	125.08	34	P	PKPdf	07 05 13.0	-1.2
J35A	Milford baz=311	125.13	33	P	PKPdf	07 05 12.7	-1.6
SPMN	Marine on St. baz=315,SNR=12	125.13	30	P	PKPdf	07 05 13.1	-1.1
SPMN	Marine on St.	125.13	30	ePKPdf	PKPdf	07 05 13.7	-0.6
M33A	Taylor Creek F baz=308,SNR=6.5	125.14	36	P	PKPdf	07 05 12.9	-1.5
CBKS	Cedar Bluff baz=304	125.19	40	P	PKPdf	07 05 13.5	-1.1
CBKS	Cedar Bluff	125.19	40	ePKIKP	PKPdf	07 05 13.8	-0.8
CBKS	Cedar Bluff	125.19	40	ePKPdf	PKPdf	07 05 13.8	-0.8
CPRX	Cap Rock	125.23	48	ePKPdf	PKPdf	07 05 15.8	+0.8
O32A	Brockman Farm, baz=306,SNR=8.5	125.28	38	P	PKPdf	07 05 13.5	-1.2
I36A	Fitzsimmons Fa baz=313,SNR=6.5	125.34	32	P	PKPdf	07 05 14.1	-0.5
L34A	Svendsen Farm, baz=309	125.37	35	P	PKPdf	07 05 13.7	-1.1
P32A	Huiting Farm, baz=306,SNR=18	125.45	39	P	PKPdf	07 05 14.3	-0.8
N33A	J Bar K, Exete baz=307	125.50	37	P	PKPdf	07 05 13.8	-1.3
H37A	Dierke Farm, C baz=314	125.53	31	P	PKPdf	07 05 13.8	-1.2
K35A	Storm Lake baz=311,SNR=6.8	125.54	34	P	PKPdf	07 05 14.1	-1.0
M34A	Aspy Farms, Fr baz=309	125.54	36	P	PKPdf	07 05 13.5	-1.6
CLNB	Carlsbad	125.56	49	ePKPdf	PKPdf	07 05 16.1	+0.5
MSTX	Muleshoe baz=298	125.61	47	P	PKPdf	07 05 15.1	-0.6
MSTX	Muleshoe	125.61	47	ePKPdf	PKPdf	07 05 15.8	+0.1
J36A	Seneca 1, Swea baz=312,SNR=5.6	125.63	33	P	PKPdf	07 05 14.6	-0.7
I37A	Lemond, Waseca baz=313,SNR=5.9	125.67	32	P	PKPdf	07 05 14.3	-1.0
L35A	Bielow Farm, R baz=310,SNR=14	125.76	35	P	PKPdf	07 05 14.2	-1.3
O33A	Hebron baz=307,SNR=28	125.81	38	P	PKPdf	07 05 14.4	-1.3
Q32A	Meitler Ranch, baz=305,SNR=6.6	125.84	39	P	PKPdf	07 05 15.1	-0.7
AMTX	Amarillo baz=300	125.95	45	P	PKPdf	07 05 15.1	-1.1
AMTX	Amarillo	125.95	45	ePKPdf	PKPdf	07 05 15.8	-0.4
N34A	Lincoln baz=308	126.00	36	P	PKPdf	07 05 14.4	-1.6
K36A	Gilmore City baz=312,SNR=21	126.03	34	P	PKPdf	07 05 15.1	-1.0
J37A	Redenius Farm, baz=313,SNR=6.8	126.07	32	P	PKPdf	07 05 15.0	-1.1
R32A	Long Quarter, baz=305,SNR=17	126.07	40	P	PKPdf	07 05 14.9	-1.3
M35A	Neola baz=310,SNR=6.0	126.08	35	P	PKPdf	07 05 14.9	-1.2
P33A	Williams Farm, baz=306	126.13	39	P	PKPdf	07 05 15.1	-1.2
I38A	Scanlan Farm, baz=314,SNR=12	126.20	31	P	PKPdf	07 05 15.2	-1.2
COWI	Conover	126.26	27	ePKPdf	PKPdf	07 05 16.0	-0.4
L36A	Harm Buss Farm baz=311	126.26	34	P	PKPdf	07 05 15.1	-1.4
O34A	Beatrice baz=308	126.29	37	P	PKPdf	07 05 15.2	-1.4
Q33A	Connelly Farm, baz=306,SNR=11	126.30	39	P	PKPdf	07 05 15.9	-0.8
HPIG		126.31	56	ePKPdf	PKPdf	07 05 17.6	+0.3
S32A	Newby Ranch, P baz=304	126.33	41	P	PKPdf	07 05 15.9	-0.9
K37A	Belmond baz=312,SNR=7.1	126.39	33	P	PKPdf	07 05 15.4	-1.3
N35A	Tabor baz=309,SNR=6.7	126.50	36	P	PKPdf	07 05 16.0	-1.0
P34A	Walnut Farm, R baz=307,SNR=14	126.60	38	P	PKPdf	07 05 16.4	-0.8
M36A	Felix, Anita baz=310	126.61	35	P	PKPdf	07 05 15.9	-1.3
R33A	Olander Ranch, baz=306,SNR=16	126.61	40	P	PKPdf	07 05 16.4	-0.9
J38A	Wedel Dairy, R baz=314	126.63	32	P	PKPdf	07 05 16.1	-1.1
T32A	Huddler Ranch, baz=304,SNR=12	126.63	42	P	PKPdf	07 05 16.9	-0.5
O35A	Humboldt baz=309	126.71	37	P	PKPdf	07 05 16.2	-1.2
L37A	Phoenix Point, baz=312	126.75	34	P	PKPdf	07 05 16.1	-1.4
Q34A	Chapman baz=307,SNR=9.9	126.91	39	P	PKPdf	07 05 17.5	-0.3
N36A	Muff Farm, Cla baz=310	126.92	36	P	PKPdf	07 05 17.1	-0.7
K38A	Parkersburg baz=313	126.94	33	P	PKPdf	07 05 17.1	-0.6
TX31	Lajitas Ar. Si	126.99	52	ePKPdf	PKPdf	07 05 17.6	-0.8
TXAR	Lajitas Array comp=Z,0.4nm,0.6s,baz=312,slow=0.5,SNR=5.3	126.99	52	PKhKP	PKPpre	07 05 00.6	
TXAR	comp=Z,5.3nm,0.7s,baz=228,slow=1.5,SNR=35			PKP	PKPdf	07 05 17.4	-1.0
TXAR	comp=Z,4.5nm,1.0s,baz=270,slow=2.5,SNR=5.0			SKPbc	SKPbc	07 08 28.4	
TXAR	comp=Z,0.3nm,0.6s,baz=111,slow=5.4,SNR=5.4			PKKPbc	PKKPbc	07 14 47.2	-0.7
KSU1	Kansas State U baz=307	127.00	38	P	PKPdf	07 05 17.3	-0.7
KSU1	Kansas State U	127.00	38	ePKPdf	PKPdf	07 05 17.6	-0.4
S33A	Kaszmaul Farm, baz=305	127.01	41	P	PKPdf	07 05 17.6	-0.5
U32A	Winter Ranch, baz=303,SNR=7.5	127.02	42	P	PKPdf	07 05 17.9	-0.3
M37A	Trindle Farm, baz=311,SNR=7.7	127.06	34	P	PKPdf	07 05 16.9	-1.1
R34A	Isabella, Hill baz=306,SNR=14	127.08	39	P	PKPdf	07 05 17.6	-0.6
P35A	Duane Minner, baz=308,SNR=6.8	127.10	37	P	PKPdf	07 05 17.0	-1.2
T33A	Patterson Ranc baz=304,SNR=19	127.14	41	P	PKPdf	07 05 17.7	-0.6
L38A	Oak Wood Farm, baz=313	127.18	33	P	PKPdf	07 05 17.5	-0.8
SCIA	State Center	127.20	33	ePKPdf	PKPdf	07 05 18.6	+0.3
KIC	Kosan Boka comp=Z,122nm,1.7s	127.34	278	ePKP2	PKPdf	07 05 19.6	+0.3
V32A	Arapaho baz=303,SNR=16	127.35	43	P	PKPdf	07 05 18.6	-0.2
O36A	Bolckow baz=310	127.36	36	P	PKPdf	07 05 17.7	-0.9
N37A	Lee Faris, Mou baz=311,SNR=7.2	127.40	35	P	PKPdf	07 05 18.1	-0.7
DBIC	Dimbokro comp=Z,2.8nm,0.4s,baz=70,slow=2.8,SNR=10	127.43	278	PKP	PKPdf	07 05 19.6	+0.1
Q35A	Mercer Eighty, baz=308,SNR=19	127.50	38	P	PKPdf	07 05 18.4	-0.6
S34A	Willow Spring baz=306	127.52	40	P	PKPdf	07 05 17.9	-1.1
W32A	Sentinel baz=302,SNR=8.2	127.53	44	P	PKPdf	07 05 18.3	-0.8
M38A	Pleasantville baz=312,SNR=6.5	127.54	34	P	PKPdf	07 05 18.3	-0.6
P36A	Good Intent, A baz=309	127.54	37	P	PKPdf	07 05 17.9	-1.1
U33A	Lingo Farm, Me	127.59	42	P	PKPdf	07 05 18.4	-0.8
TIC	Toumodi baz=304	127.59	278	ePKP2	PKPdf	07 05 19.5	-0.3
LIC	Lamto comp=Z,69nm,1.7s	127.64	278	ePKP2	PKPdf	07 05 20.7	+0.8
R35A	Emporia Munici baz=307	127.73	39	P	PKPdf	07 05 18.5	-0.9
Q36A	Arnold C. Orve baz=308	127.80	38	P	PKPdf	07 05 18.4	-1.1
V33A	Lossen Ranch, baz=304,SNR=15	127.81	43	P	PKPdf	07 05 19.1	-0.6
O37A	Wolven Farm, M baz=310,SNR=7.0	127.82	36	P	PKPdf	07 05 18.6	-0.9
T34A	McClaskey Farm baz=306,SNR=6.9	127.86	41	P	PKPdf	07 05 19.1	-0.6
N38A	Joes South For baz=312	127.93	35	P	PKPdf	07 05 18.5	-1.2
U34A	Anderson Ranch baz=305,SNR=10	127.97	42	P	PKPdf	07 05 19.7	-0.3
U34A	Anderson Ranch	127.97	42	ePKPdf	PKPdf	07 05 20.2	+0.2
S35A	Otter Creek Ra baz=307,SNR=14	128.04	40	P	PKPdf	07 05 19.6	-0.4
W33A	Caddo, Fort Co baz=303,SNR=6.9	128.06	43	P	PKPdf	07 05 20.1	-0.1
WMOK	Wichita Mounta	128.06	44	ePKIKP	PKPdf	07 05 20.4	+0.2
WMOK	Wichita Mounta	128.06	44	ePKPdf	PKPdf	07 05 20.4	+0.2
JFWS	Jewell Farm	128.07	31	ePKIKP	PKPdf	07 05 19.1	-0.8
JFWS	Jewell Farm	128.07	31	ePKPdf	PKPdf	07 05 19.1	-0.8
P37A	Lathrop baz=310,SNR=10.0	128.07	36	P	PKPdf	07 05 18.7	-1.3
R36A	Gordon, Harris baz=308,SNR=5.8	128.16	38	P	PKPdf	07 05 19.5	-0.7
O38A	Galt baz=311	128.24	35	P	PKPdf	07 05 19.2	-1.1
N39A	Derby Farms, D baz=312	128.29	34	P	PKPdf	07 05 19.3	-1.0
V34A	Guthrie baz=304,SNR=18	128.32	42	P	PKPdf	07 05 20.1	-0.5
V34A	Guthrie	128.32	42	ePKPdf	PKPdf	07 05 21.0	+0.4
X33A	Lawton baz=303,SNR=17	128.37	44	P	PKPdf	07 05 19.9	-0.8
T35A	Sooner Cattle baz=306,SNR=9.6	128.37	40	P	PKPdf	07 05 20.2	-0.5
Q37A	Longview Farm, baz=309	128.46	37	P	PKPdf	07 05 19.7	-1.1
S36A	Lake Cedric, C baz=308,SNR=13	128.47	39	P	PKPdf	07 05 20.0	-0.9
W34A	Bridge Creek, baz=304	128.49	43	P	PKPdf	07 05 20.6	-0.3
W34A	Bridge Creek,	128.49	43	ePKPdf	PKPdf	07 05 22.1	+1.1
P38A	Dawn baz=311,SNR=8.0	128.53	36	P	PKPdf	07 05 20.2	-0.7
U35A	Pawnee baz=306,SNR=14	128.54	41	P	PKPdf	07 05 20.5	-0.5
ABTX	Abilene, Hawle baz=300,SNR=11	128.55	47	P	PKPdf	07 05 20.9	-0.3
ABTX	Abilene, Hawle	128.55	47	ePKPdf	PKPdf	07 05 21.6	+0.4
Y33A	Hilltop Ranch, baz=302,SNR=12	128.56	45	P	PKPdf	07 05 21.0	-0.1
R37A	Teagarden Farm baz=309,SNR=13	128.59	38	P	PKPdf	07 05 20.2	-0.9
O39A	Kirksville baz=312,SNR=8.3	128.68	35	P	PKPdf	07 05 20.1	-1.1
T36A	Boggs Farm, Ca baz=307,SNR=13	128.69	40	P	PKPdf	07 05 20.8	-0.5
X34A	Smith Ranch, M baz=303,SNR=14	128.79	44	P	PKPdf	07 05 21.6	0.0
V35A	Meyer Ranch, C baz=305,SNR=13	128.82	42	P	PKPdf	07 05 21.3	-0.3
Z33A	Whitaker Ranch baz=302,SNR=11	128.84	46	P	PKPdf	07 05 21.4	-0.2
Q38A	Cooks Store, C baz=310,SNR=9.8	128.91	37	P	PKPdf	07 05 20.7	-1.0
S37A	Fort Scott baz=308,SNR=17	128.93	39	P	PKPdf	07 05 21.1	-0.6
133A	Hamilton Ranch baz=301,SNR=11	129.08	46	P	PKPdf	07 05 22.0	-0.2
W35A	Tecumseh baz=305,SNR=15	129.14	42	P	PKPdf	07 05 21.7	-0.5
O40A	La Belle baz=313	129.15	34	P	PKPdf	07 05 21.2	-0.8
U36A	Oologah baz=306	129.18	40	P	PKPdf	07 05 21.5	-0.7
Y34A	Reagan Ranch, baz=303,SNR=12	129.20	44	P	PKPdf	07 05 21.9	-0.5
R38A	Fenwick Farm, baz=310,SNR=12	129.23	38	P	PKPdf	07 05 21.0	-1.2
Q39A	Willow Grove F baz=311,SNR=6.7	129.23	36	P	PKPdf	07 05 21.5	-0.7
T37A	Cheneyville 18 baz=308,SNR=13	129.26	39	P	PKPdf	07 05 21.6	-0.8
233A	Rising Star baz=301,SNR=11	129.40	47	P	PKPdf	07 05 22.2	-0.6
V36A	Jenks baz=306,SNR=6.5	129.40	41	P	PKPdf	07 05 22.5	-0.2
Z34A	Collier Ranch, baz=302	129.40	45	P	PKPdf	07 05 22.1	-0.6
TUL1	Leonard baz=306,SNR=7.1	129.43	41	P	PKPdf	07 05 22.0	-0.7
TUL1	Leonard	129.43	41	ePKPdf	PKPdf	07 05 23.4	+0.7
P40A	Paris baz=312	129.45	35	P	PKPdf	07 05 21.8	-0.9
JCT	Junction City baz=299	129.48	49	P	PKPdf	07 05 22.3	-0.7
JCT	Junction City	129.48	49	ePKIKP	PKPdf	07 05 23.2	+0.2
JCT	Junction City	129.48	49	ePKPdf	PKPdf	07 05 23.2	+0.2
X35A	Drake baz=304	129.50	43	P	PKPdf	07 05 21.9	-1.0
U37A	Salina baz=307,SNR=14	129.57	40	P	PKPdf	07 05 22.5	-0.4
S38A	Stockton baz=309,SNR=17	129.58	38	P	PKPdf	07 05 22.2	-0.8
W36A	Wetumka baz=305,SNR=15	129.59	42	P	PKPdf	07 05 22.6	-0.5
R39A	Chumby, Stover baz=310,SNR=13	129.67	37	P	PKPdf	07 05 22.1	-1.0
333A	Richland Sprin baz=300,SNR=22	129.68	48	P	PKPdf	07 05 22.9	-0.4
134A	White-Moore Ra baz=302,SNR=14	129.71	46	P	PKPdf	07 05 23.2	-0.1
T38A	Diamond baz=308,SNR=22	129.71	39	P	PKPdf	07 05 22.4	-0.8
Y35A	Marietta baz=304,SNR=11	129.73	44	P	PKPdf	07 05 22.6	-0.7
X36A	Centralhoma baz=305,SNR=13	129.83	43	P	PKPdf	07 05 22.9	-0.6
V37A	Hulbert baz=307,SNR=16	129.87	41	P	PKPdf	07 05 23.0	-0.6
433A	Art baz=300,SNR=26	129.88	49	P	PKPdf	07 05 22.9	-0.8
Z35A	Perchaven, San baz=303,SNR=8.6	129.89	45	P	PKPdf	07 05 23.3	-0.4
S39A	Bolivar baz=310,SNR=26	129.90	38	P	PKPdf	07 05 22.7	-0.9
234A	Clairette baz=301,SNR=14	129.96	47	P	PKPdf	07 05 23.3	-0.5
U38A	Gravette baz=308,SNR=23	130.02	40	P	PKPdf	07 05 23.3	-0.6
W37B	Quinton baz=306,SNR=12	130.12	42	P	PKPdf	07 05 24.0	-0.1
R40A	Maddies Statio baz=311	130.15	36	P	PKPdf	07 05 23.3	-0.6
135A	Vickery Place, baz=302,SNR=7.0	130.19	46	P	PKPdf	07 05 24.2	0.0
334A	Lometa baz=301,SNR=13	130.23	47	P	PKPdf	07 05 24.1	-0.3
Y36A	Durant baz=304	130.25	43	P	PKPdf	07 05 24.1	-0.2
533A	Kerrville baz=299,SNR=9.8	130.26	49	P	PKPdf	07 05 23.8	-0.8
HDIL	Hopedale baz=316	130.26	32	P	PKPdf	07 05 23.8	-0.3
HDIL	Hopedale	130.26	32	ePKPdf	PKPdf	07 05 24.3	+0.1
T39A	Clever baz=309,SNR=13	130.29	38	P	PKPdf	07 05 23.3	-1.1
V38A	Canehill baz=307,SNR=12	130.36	40	P	PKPdf	07 05 23.8	-0.7
832A	Faith Ranch, C baz=297,SNR=29	130.37	52	P	PKPdf	07 05 25.0	+0.3
HHAR	Hobbs	130.40	39	ePKPdf	PKPdf	07 05 24.1	-0.5
ZAIG	Zacatecas	130.43	60	ePKPdf	PKPdf	07 05 26.0	+0.7
633A	Saathoff Ranch baz=298,SNR=15	130.44	50	P	PKPdf	07 05 24.6	-0.2
S40A	Lebanon baz=310	130.46	37	P	PKPdf	07 05 24.2	-0.4
WHTX	Lake Whitney, baz=302	130.46	46	P	PKPdf	07 05 24.6	-0.2
WHTX	Lake Whitney,	130.46	46	ePKPdf	PKPdf	07 05 25.3	+0.5
434A	Burnet	130.47	48	P	PKPdf	07 05 24.6	-0.2

baz=300,SNR=17
X37A Clayton 130.48 42 P **PKPdf** 07 05 24.7 0.0
baz=306
Z36A Blue Ridge 130.50 44 P **PKPdf** 07 05 24.3 -0.5
baz=304,SNR=8.2
U39A Green Forest 130.63 39 P **PKPdf** 07 05 23.9 -1.1
baz=309,SNR=14
Y37A Hugo 130.66 43 P **PKPdf** 07 05 24.7 -0.4
baz=305,SNR=7.6
733A Divot King Ran 130.70 51 P **PKPdf** 07 05 25.2 -0.1
baz=298,SNR=8.0
534A Blanco 130.70 49 P **PKPdf** 07 05 25.1 -0.2
baz=300,SNR=13
T40A Mansfield 130.74 38 P **PKPdf** 07 05 24.6 -0.6
baz=310
W38A Poteau 130.76 41 P **PKPdf** 07 05 24.9 -0.3
baz=307,SNR=6.5
X38A Whitesboro 130.79 42 P **PKPdf** 07 05 25.4 0.0
baz=306,SNR=7.6
833A Chaparral WMA, 130.80 52 P **PKPdf** 07 05 25.9 +0.4
baz=297,SNR=16
335A Moody 130.85 47 P **PKPdf** 07 05 25.2 -0.3
baz=301
V39A Pettigrew 130.86 40 P **PKPdf** 07 05 25.0 -0.6
baz=308
136A Ennis 130.87 45 P **PKPdf** 07 05 25.6 +0.1
baz=303,SNR=7.8
435B Jarrell 130.99 48 P **PKPdf** 07 05 25.4 -0.5
baz=301
U40A Yellville 131.04 39 P **PKPdf** 07 05 25.3 -0.5
baz=309
Z37A Pogue Cattle C 131.10 44 P **PKPdf** 07 05 26.3 +0.3
baz=304
634A China Grove, S 131.11 50 P **PKPdf** 07 05 26.0 -0.1
baz=299
236A Katherine and 131.12 46 P **PKPdf** 07 05 26.0 0.0
baz=303,SNR=8.1
W39A Magazine 131.16 40 P **PKPdf** 07 05 25.5 -0.5
baz=308
734A La Parita Cree 131.21 50 P **PKPdf** 07 05 26.8 +0.5
baz=298,SNR=6.7
933A Laredo 131.22 52 P **PKPdf** 07 05 27.2 +0.9
baz=297,SNR=9.2
336A Riesel 131.22 47 P **PKPdf** 07 05 26.8 +0.6
baz=302,SNR=6.5
Y38A Idabel 131.29 42 P **PKPdf** 07 05 25.9 -0.4
baz=306,SNR=8.2
137A Heron Place, G 131.34 45 P **PKPdf** 07 05 26.8 +0.3
baz=304,SNR=7.7
X39A Fountain Ranch 131.36 41 P **PKPdf** 07 05 26.7 +0.2
baz=307,SNR=18
535A Dale 131.38 49 P **PKPdf** 07 05 27.4 +0.8
baz=300,SNR=6.8
V40A Witts Springs 131.40 39 P **PKPdf** 07 05 25.8 -0.7
baz=309
SADO Sadowa 131.43 21 *e*PKPdf **PKPdf** 07 05 26.2 0.0
Z38A Mt. Pleasant 131.51 43 P **PKPdf** 07 05 26.6 -0.2
baz=305
SFIN Lafayette 131.53 31 P **PKPdf** 07 05 26.2 -0.4
baz=318
SFIN Lafayette 131.53 31 *e*PKPdf **PKPdf** 07 05 27.1 +0.5
635A Leesville 131.55 49 P **PKPdf** 07 05 27.7 +0.8
baz=300,SNR=8.7
834A Tilden 131.55 51 P **PKPdf** 07 05 27.8 +0.9
baz=298,SNR=8.5
436A Wall Ranch, Ga 131.58 47 P **PKPdf** 07 05 27.5 +0.5
baz=302
W40A Ferguson Farm, 131.63 40 P **PKPdf** 07 05 27.9 +1.0
baz=308
237A Washetta, Mont 131.63 45 P **PKPdf** 07 05 27.7 +0.7
baz=303,SNR=8.8
AAM Ann Arbor 131.69 26 *e*PKIKP **PKPdf** 07 05 26.6 -0.2
AAM Ann Arbor 131.69 26 *e*PKPdf **PKPdf** 07 05 26.6 -0.2
MIAR Mount Ida 131.69 41 P **PKPdf** 07 05 27.0 0.0
baz=307
MIAR Mount Ida 131.69 41 *e*PKIKP **PKPdf** 07 05 27.5 +0.5
MIAR Mount Ida 131.69 41 *e*PKPdf **PKPdf** 07 05 27.5 +0.5
Y39A Lockesburg 131.72 42 P **PKPdf** 07 05 27.1 0.0
baz=306
536A Bastrop 131.74 48 P **PKPdf** 07 05 27.6 +0.4
baz=301
138A Matatall Enter 131.77 44 P **PKPdf** 07 05 28.1 +0.8
baz=304
735A Kenedy 131.78 50 P **PKPdf** 07 05 28.3 +1.0
baz=299
934A Benavides 131.82 52 P **PKPdf** 07 05 28.4 +1.0
baz=298
034A Hebbronville 131.94 53 P **PKPdf** 07 05 28.8 +1.1
baz=297
337A Centerville 131.95 46 P **PKPdf** 07 05 28.2 +0.6
baz=303,SNR=6.8
X201 Greenbrier Sit 132.02 39 *e*PKPdf **PKPdf** 07 05 27.9 +0.3
X301 Greenbrier Sit 132.03 40 *e*PKPdf **PKPdf** 07 05 27.9 +0.3
437A Phantom Ranch, 132.03 47 P **PKPdf** 07 05 28.4 +0.7
baz=302
835A Beeville 132.04 51 P **PKPdf** 07 05 28.7 +0.9
baz=299
636A Smothers Creek 132.04 49 P **PKPdf** 07 05 28.8 +1.0
baz=300,SNR=15
Z39A Irene McRaven, 132.06 43 P **PKPdf** 07 05 28.2 +0.5
baz=306
WHAR Wooly Hollow 132.07 39 *e*PKPdf **PKPdf** 07 05 27.9 +0.2
238A Jacksonville 132.12 45 P **PKPdf** 07 05 28.7 +0.8
baz=304
W41B Gary Mavity, V 132.16 39 P **PKPdf** 07 05 27.4 -0.5
baz=309
OLIL Olney 132.21 33 *e*PKPdf **PKPdf** 07 05 28.7 +0.9
Y40A Okolona 132.21 41 P **PKPdf** 07 05 27.9 -0.2
baz=307
X40A Basin Creek Fa 132.22 41 P **PKPdf** 07 05 27.4 -0.6
baz=308
PBMO Poplar Bluff 132.24 37 *e*PKPdf **PKPdf** 07 05 28.3 +0.3
139A Bunkhouse Ranc 132.25 44 P **PKPdf** 07 05 28.3 +0.2
baz=305
537A Green Hill Far 132.29 48 P **PKPdf** 07 05 28.8 +0.5
baz=301
736A Circle Diamond 132.30 49 P **PKPdf** 07 05 29.2 +0.9
baz=300
SIUC Southern Illin 132.31 35 *e*PKPdf **PKPdf** 07 05 28.9 +0.8
338A Crockett 132.34 46 P **PKPdf** 07 05 28.4 0.0
baz=303
UALR University of 132.35 40 *e*PKPdf **PKPdf** 07 05 29.4 +1.2
WLAR White Oak Lake 132.52 42 *e*PKPdf **PKPdf** 07 05 30.1 +1.5
438A Sam Houston St 132.55 46 P **PKPdf** 07 05 29.8 +1.0
baz=303
239A Gary 132.57 44 P **PKPdf** 07 05 29.7 +0.9
baz=305
NATX Nacogdoches 132.58 45 P **PKPdf** 07 05 29.9 +1.1
baz=304
NATX Nacogdoches 132.58 45 *e*PKPdf **PKPdf** 07 05 30.3 +1.5
Z40A Long Farm, Mag 132.58 42 P **PKPdf** 07 05 29.8 +1.1
baz=307
MOIG Morelia 132.68 63 *e*PKPdf **PKPdf** 07 05 30.4 +0.8
HKT Hockley 132.72 48 *e*PKIKP **PKPdf** 07 05 30.2 +1.2
HKT Hockley 132.72 48 *e*PKPdf **PKPdf** 07 05 30.1 +1.2
PARMO Parma 132.72 36 *e*PKPdf **PKPdf** 07 05 30.0 +1.1
BLO Bloomington 132.73 31 *e*PKIKP **PKPdf** 07 05 29.4 +0.5
BLO Bloomington 132.73 31 *e*PKPdf **PKPdf** 07 05 29.4 +0.5
538A Harpers Horsep 132.82 47 P **PKPdf** 07 05 30.8 +1.5
baz=302
140A Cam and Jess, 132.83 43 P **PKPdf** 07 05 30.8 +1.6
baz=306
339A Huntington 132.89 45 P **PKPdf** 07 05 30.5 +1.1
baz=304
HBAR Harrisburg 132.91 38 *e*PKPdf **PKPdf** 07 05 30.3 +1.0
PVMO Portageville 132.92 36 *e*PKPdf **PKPdf** 07 05 31.3 +2.0
Z41A Richland Creek 132.98 42 P **PKPdf** 07 05 30.2 +0.7
baz=307
USIN University of 133.00 33 *e*PKPdf **PKPdf** 07 05 31.2 +1.8
GNAR Gosnell 133.03 37 *e*PKPdf **PKPdf** 07 05 30.2 +0.7
439A Center Grove, 133.04 46 P **PKPdf** 07 05 30.6 +0.9
baz=303
240A Hunter Patters 133.05 44 P **PKPdf** 07 05 30.8 +1.1
baz=305
Y42A Garnett, Star 133.30 41 P **PKPdf** 07 05 31.1 +1.1
baz=309
141A Papa Simpson, 133.31 43 P **PKPdf** 07 05 30.5 +0.4
baz=307
340A Bronson 133.32 45 P **PKPdf** 07 05 30.6 +0.4
baz=305
ERPA Erie 133.38 23 *e*PKPdf **PKPdf** 07 05 30.4 +0.3
UTMT University of 133.46 36 *e*PKPdf **PKPdf** 07 05 31.8 +1.5
HALT Halls 133.47 37 *e*PKPdf **PKPdf** 07 05 30.9 +0.6
Z42A Norrel Spur, H 133.54 41 P **PKPdf** 07 05 31.0 +0.4
baz=308
WCI Wyandotte Cave 133.55 32 *e*PKIKP **PKPdf** 07 05 31.2 +0.7
WCI Wyandotte Cave 133.55 32 *e*PKPdf **PKPdf** 07 05 31.2 +0.7

241A Mo Tay, Goldon 133.64 43 P **PKPdf** 07 05 31.5 +0.8
baz=306
440A Kirbyville 133.65 45 P **PKPdf** 07 05 31.7 +0.9
baz=304
ACSO Alum Creek Sta 133.65 27 *e*PKPdf **PKPdf** 07 05 29.8 -0.8
Y43A Makayla and Ka 133.81 40 P **PKPdf** 07 05 31.3 +0.3
baz=310
341A Kurthwood 133.87 44 P **PKPdf** 07 05 31.1 -0.1
baz=305
MDV Middlebury 134.02 16 *e*PKPdf **PKPdf** 07 05 31.4 +0.3
M54A Oil Creek Stat 134.03 24 P **PKPdf** 07 05 31.3 0.0
baz=328
WVT Waverly 134.21 35 *e*PKIKP **PKPdf** 07 05 32.7 +1.0
WVT Waverly 134.21 35 *e*PKPdf **PKPdf** 07 05 32.7 +1.0
Y44A Strider, Charl 134.23 39 P **PKPdf** 07 05 32.2 +0.4
baz=310
143A Socs Landing, 134.25 42 P **PKPdf** 07 05 32.8 +0.9
baz=308
N54A Moraine State 134.36 24 P **PKPdf** 07 05 32.7 +0.8
baz=327
OXF Oxford 134.37 38 *e*PKIKP **PKPdf** 07 05 33.9 +1.8
OXF Oxford 134.37 38 *e*PKPdf **PKPdf** 07 05 33.9 +1.8
342A Flagon Creek P 134.43 44 P **PKPdf** 07 05 33.4 +1.1
baz=306
Z44A Pea Ridge, Bel 134.53 40 P **PKPdf** 07 05 34.0 +1.7
baz=310
243A Waterproof 134.70 42 P **PKPdf** 07 05 34.0 +1.3
baz=308
Y45A Yeager Farm, C 134.71 39 P **PKPdf** 07 05 34.3 +1.5
baz=311
Z45A Winona 134.94 39 P **PKPdf** 07 05 34.8 +1.6
baz=311
Y46A Houston 135.13 38 P **PKPdf** 07 05 34.6 +1.1
baz=312
244A Avery, Jackson 135.14 42 P **PKPdf** 07 05 34.4 +0.9
baz=308
VBMS Vicksburg 135.14 41 P **PKPdf** 07 05 35.2 +1.6
baz=309
145A Houston Renfro 135.28 41 P **PKPdf** 07 05 35.2 +1.4
baz=310
SSPA Standing Stone 135.47 23 *e*PKPdf **PKPdf** 07 05 33.6 -0.4
344A Westbrook Farm 135.47 42 P **PKPdf** 07 05 35.3 +1.1
baz=308
O56A Blue Knob Stat 135.52 24 P **PKPdf** 07 05 35.4 +1.3
baz=329
Z46A Louisville 135.53 39 P **PKPdf** 07 05 35.3 +1.0
baz=311
TLIG Tlapa 135.72 65 *e*PKPdf **PKPdf** 07 05 37.3 +2.2
Y47A UCPARC, Winfie 135.74 37 P **PKPdf** 07 05 35.4 +0.7
baz=313
146A Union 135.82 40 P **PKPdf** 07 05 35.8 +1.0
baz=311
SWET Sewanee 135.94 35 *e*PKPdf **PKPdf** 07 05 35.1 +0.1
544A White Castle 135.98 44 P **PKPdf** 07 05 36.3 +1.1
baz=306
N59A State Game Lan 136.00 20 P **PKPdf** 07 05 35.9 +1.0
baz=333
Z47A Carrollton 136.07 38 P **PKPdf** 07 05 35.4 +0.1
baz=312
445A Amite 136.18 43 P **PKPdf** 07 05 36.0 +0.4
baz=308
ODNJ Ogdensburg 136.25 19 *e*PKPdf **PKPdf** 07 05 36.3 +1.0
TZTN Tazewell 136.25 31 *e*PKPdf **PKPdf** 07 05 36.8 +1.2
Z48A Northport 136.27 38 P **PKPdf** 07 05 36.3 +0.6
baz=313
346A Big Creek Wild 136.36 41 P **PKPdf** 07 05 36.2 +0.3
baz=309
247A Quitman 136.49 40 P **PKPdf** 07 05 36.3 +0.2
baz=311
CPCT Cooper Cave 136.56 33 *e*PKPdf **PKPdf** 07 05 36.4 +0.2
446A Poplarville 136.80 42 P **PKPdf** 07 05 37.4 +0.7
baz=309
TKL Tuckaleechee C 136.81 32 *e*PKIKP **PKPdf** 07 05 36.8 +0.2
TKL Tuckaleechee C 136.81 32 *e*PKPdf **PKPdf** 07 05 36.8 +0.2
LRAL Lakeview Retre 136.85 38 *e*PKPdf **PKPdf** 07 05 37.0 +0.2
347A Saraland 136.96 41 P **PKPdf** 07 05 37.4 +0.4
baz=310
248A Dixon Mills 137.02 39 P **PKPdf** 07 05 37.9 +0.8
baz=312
BLA Blacksburg 137.26 28 *e*PKIKP **PKPdf** 07 05 37.0 -0.5
BLA Blacksburg 137.26 28 *e*PKPdf **PKPdf** 07 05 37.0 -0.5
447A Lucedale 137.27 42 P **PKPdf** 07 05 38.2 +0.7
baz=310
348A Jackson 137.36 40 P **PKPdf** 07 05 38.3 +0.6
baz=311
PLCA Paso Flores 137.56 165 PKP **PKPdf** 07 05 38.4 +0.4
comp=Z,9.9nm,0.7s,baz=154,slow=3.3,SNR=6.3
PLCA SKPbc **SKPbc** 07 09 03.1 +0.5
comp=Z,7.0nm,0.9s,baz=240,slow=4.2,SNR=4.8
448A Bay Minette 137.71 41 P **PKPdf** 07 05 38.9 +0.5
baz=311
CBN Corbin Frederi 137.76 24 *e*PKPdf **PKPdf** 07 05 38.5 +0.2
BRAL Brewton 138.07 40 *e*PKPdf **PKPdf** 07 05 39.0 0.0
KMSC Kings Mountain 138.47 30 P **PKPdf** 07 05 40.6 +0.9
baz=322
KMSC Kings Mountain 138.47 30 *e*PKPpre PKPpre 07 05 29.2
KMSC *e*PKPdf **PKPdf** 07 05 39.8 +0.1
TIGA Tifton 140.02 36 *e*PKPdf **PKPdf** 07 05 41.9 -0.7
TRQA Tornquist 141.76 174 *e*PKPpre PKPpre 07 05 39.4
TRQA *e*PKPdf **PKiKP** 07 05 47.5 -1.0
TEIG Tepich 143.56 55 *e*PKPdf PKPbc 07 05 46.5 -0.3
DWPF Disney Wildern 143.71 38 *e*PKPdf PKPbc 07 05 47.3 +0.3
ROC1 El Roble 144.59 160 *i* P **PKPab** 07 05 49.6 -0.2
ROC1 El Roble 144.59 160 *e*PKPdf **PKPab** 07 05 49.7 0.0
AAGR Agrelo 145.20 163 *i* P **PKPdf** 07 05 52.2 +0.3
ARCO CERRO ARCO 145.40 162 *i* P **PKPbc** 07 05 52.5 +0.1
ASAL Salagasta 145.66 162 *i* P **PKPab** 07 05 53.4 0.0
AUSP Uspallata 145.83 161 *i* P **PKPbc** 07 05 54.0 +0.2
SUCO SUCO 145.94 168 *i* P **PKPbc** 07 05 53.7 -0.2
RTLS Leoncito 146.25 161 *i* P **PKPdf** 07 05 54.4 +0.5
ACAN Cantantal 146.43 165 *i* P **PKPdf** 07 05 54.4 +0.4
RTCV Cerro Valdivia 146.43 162 *i* P **PKPbc** 07 05 55.1 -0.3
MRA San Martin 146.65 167 *i* P **PKPdf** 07 05 54.8 +0.4
PAYG Puerto Ayora 146.85 91 *e*PKPbc **PKPab** 07 05 58.9 +0.3
RTLL Cerro Villicun 146.94 162 *i* P **PKPbc** 07 05 56.5 -0.4
TGUH Tegucigalpa,Un 147.12 64 *e*PKPdf **PKPbc** 07 05 57.0 -0.7
AMOG MOGNA 147.30 162 *i* P **PKPbc** 07 05 58.0 +0.1
AVFE Valle Fertil 147.87 163 *i* P **PKPbc** 07 05 59.5 0.0
LCO Las Campanas 148.28 157 *e*PKPdf **PKPdf** 07 05 57.9 +0.5
LCO *e*PKPbc **PKPbc** 07 06 01.4 +0.6
AGUA GUANDACOL 148.64 161 *i* P **PKPdf** 07 05 58.7 +0.9
VCA Vinchina 149.43 161 *i* P **PKPbc** 07 06 03.6 0.0
CYA Choya 150.43 164 *i* P **PKPbc** 07 06 05.6 -0.3
HDC Heredia 151.43 69 *e*PKPdf **PKPdf** 07 06 03.9 +1.4
AHML Horco Molle 152.13 164 *i* P **PKPbc** 07 06 10.2 +0.3
AHML *i* P **PKPbc** 07 06 10.2 +0.3
FSA Cafayete 152.58 163 *i* P **PKPbc** 07 06 11.1 0.0
MTDJ Mount Denham 153.06 47 *e*PKPbc **PKPbc** 07 06 11.8 -0.5
MTDJ *e*PKPab **PKPab** 07 06 24.3 +0.4
PB10 IPOC Station P 153.15 152 *e*PKPbc **PKPbc** 07 06 12.9 +0.7
GTBY Guantanamo Bay 153.59 41 *e*PKPbc **PKPbc** 07 06 12.9 -0.3
CPUP Villa Florida 153.72 180 PKP **PKPdf** 07 06 06.0 +0.6
comp=Z,9.9nm,1.0s,baz=132,slow=3.2,SNR=9.5
CPUP PKPbc **PKPbc** 07 06 13.3 0.0
comp=Z,20nm,0.5s,baz=137,slow=2.2,SNR=72
CPUP PKPab **PKPab** 07 06 26.4 +0.2
comp=Z,18nm,0.7s,baz=164,slow=6.3,SNR=7.6
PB04 IPOC Station P 154.35 151 *e*PKPbc **PKPbc** 07 06 15.5 +0.5
LVC Limon Verde 154.68 154 PKPbc **PKPbc** 07 06 17.0 +1.1
comp=Z,39nm,0.4s,baz=251,slow=2.5,SNR=19
LVC PKPab **PKPab** 07 06 32.3 +1.4
comp=Z,71nm,0.6s,baz=225,slow=6.7,SNR=9.9
LVC Limon Verde 154.68 154 *e*PKPbc **PKPbc** 07 06 17.1 +1.1
LVC *e*PKPab **PKPab** 07 06 31.9 +1.0
HJA Humahuaca 155.47 161 *i* P **PKPdf** 07 06 09.8 +1.3
BCIP Isla Barro Col 155.68 68 *e*PKPab **PKPab** 07 06 36.7 +1.6
BCIP Isla Barro Col 155.68 68 *e*P PKPdf 07 06 18.1 +10
PB01 IPOC Station P 155.76 151 *e*PKPdf **PKPdf** 07 06 09.2 +0.7
PAPH Port-au-Prince 156.41 38 *e*PKPdf **PKPdf** 07 06 09.8 +0.5
SDDR Presa de Saban 156.66 36 *e*PKPab **PKPab** 07 06 38.8 -0.3
NNA Nana 157.05 122 PKP **PKPdf** 07 06 11.1 +0.9
comp=Z,5.8nm,0.4s,baz=206,slow=1.0,SNR=4.2
NNA PKPbc PKPbc 07 06 21.3
comp=Z,10nm,0.8s,baz=212,slow=6.5,SNR=3.8
NNA PKPab **PKPab** 07 06 41.6 +0.6
comp=Z,31nm,0.9s,baz=245,slow=3.5,SNR=8.2
BANI BANI 157.67 35 *e*PKPab **PKPab** 07 06 43.9 +0.3
OTAV Otavalo 158.69 90 *e*PKPdf **PKPdf** 07 06 13.7 +0.8
DBBC Dabeiba 159.78 70 *i* Pg **PKPdf** 07 06 17.5 +3.9
DBBC *e*P **PKPdf** 07 06 19.0 +5.4
SJG San Juan 160.04 26 *e*PKIKP **PKPdf** 07 06 13.1 -0.6
SJG *e* 07 06 53.5
SJG San Juan 160.04 26 *e*PKPdf **PKPdf** 07 06 13.1 -0.6
SJG *e*PKPab **PKPab** 07 06 53.5 -0.1

HUMP Col San Antoni 160.14 25 *e*PKPdf **PKPdf** 07 06 13.4 -0.4
CRUC La Cruz 160.14 86 *e*P **PKPdf** 07 06 18.6 +4.1
LPAZ La Paz 160.43 147 PKP **PKPdf** 07 06 15.7 +0.7
comp=Z,7.0nm,0.8s,baz=39,slow=0.4,SNR=19
LPAZ PKPab **PKPab** 07 06 56.6 +0.4
comp=Z,18nm,0.8s,baz=176,slow=1.6,SNR=12
HELC Santa Helena 160.68 71 *e*P **PKPdf** 07 06 18.5 +3.5
HELC *e*P **PKPdf** 07 06 18.5 +3.5
GUYC Guyana, Colomb 161.08 74 *e*P **PKPdf** 07 06 20.6 +5.0
GUYC *e*P **PKPdf** 07 06 20.6 +5.0
SMRT St. Maarten 161.24 18 *e*PKPdf **PKPdf** 07 06 15.3 +0.3
FLOC Florencia 161.44 85 *e*P **PKPdf** 07 06 16.4 +1.0
BRRC Barranca, Sant 162.07 67 *e*P **PKPdf** 07 06 16.4 +0.4
ROSC El Rosal 162.21 74 PKP **PKPdf** 07 06 17.7 +1.1
comp=Z,10nm,0.8s,baz=70,slow=3.7,SNR=16
ROSC PKPab **PKPab** 07 07 05.4 +1.3
comp=Z,54nm,0.9s,baz=193,slow=3.7,SNR=17
ROSC El Rosal 162.21 74 *e*PKPdf **PKPdf** 07 06 17.2 +0.6
ROSC *e*PKPab **PKPab** 07 07 06.2 +2.2
BTLC Betulia, Santa 162.55 67 *e*P **PKPdf** 07 06 17.9 +1.2
GIRC Giron, Santand 162.56 66 *e*P **PKPdf** 07 06 16.6 -0.1
GRMC Gramalote, San 162.65 64 *e*P **PKPdf** 07 06 15.9 -0.9
CBRI Barrientos, No 162.66 64 *e*P **PKPdf** 07 06 16.7 -0.1
BARC Barichara 162.75 68 *e*P **PKPdf** 07 06 15.2 -1.8
SIV San Ignacio 163.54 167 PKP **PKPdf** 07 06 18.0 +0.6
comp=Z,8.0nm,0.9s,baz=201,slow=1.3,SNR=12
SIV PKPab **PKPab** 07 07 07.9 -1.0
comp=Z,16nm,0.8s,baz=223,slow=3.6,SNR=10
SDV Santo Domingo 163.98 57 PKP **PKPdf** 07 06 17.6 -0.4
comp=Z,9.3nm,0.4s,baz=122,slow=1.5,SNR=8.5
SDV PKPab **PKPab** 07 07 11.8 +0.4
comp=Z,52nm,0.7s,baz=314,slow=3.4,SNR=9.7
SDV Santo Domingo 163.98 57 *e*PKPdf **PKPdf** 07 06 16.9 -1.1
SDV *e*PKPab **PKPab** 07 07 12.2 +0.8
PCM Pelee Case Pet 164.84 15 *e*P **PKPab** 07 07 10.7 -4.0
PCM Pelee Case Pet 164.84 15 *e*P **PKPab** 07 07 14.3 -0.4
CXM Morne La Croix 164.86 15 *e*P **PKPab** 07 07 13.8 -1.0
BAMF Morne Balai 164.86 15 *e*P **PKPab** 07 07 14.6 -0.2
GBMF Grand Be 164.87 15 *e*P **PKPab** 07 07 15.1 +0.2
PML Morne Lenard 164.88 15 *e*P **PKPab** 07 07 14.9 0.0
FDF Fort de France 164.94 15 *e*P **PKPab** 07 07 14.5 -0.6
FDF Fort de France 164.94 15 *e*PKIKP **PKPdf** 07 06 18.5 -0.1
FDF Fort de France 164.94 15 *e*PKPdf **PKPdf** 07 06 18.5 -0.1
ZAM Aeronautique 165.12 15 *e*P **PKPab** 07 07 16.3 +0.4
TRMF Trois Ilets 165.15 15 *e*P **PKPab** 07 07 15.8 -0.2
MVM Montagne Vaucl 165.17 14 *e*P **PKPab** 07 07 16.7 +0.6
SAML Samuel 169.18 146 *e*PKPdf **PKPdf** 07 06 21.4 -0.4
PTGA Pitinga 177.06 106 PKP **PKPdf** 07 06 24.7 -0.2
comp=Z,7.7nm,1.1s,baz=184,slow=1.4,SNR=10
PTGA PKPab PKPab 07 08 10.1 +0.7
comp=Z,9.7nm,0.8s,baz=250,slow=4.0,SNR=9.5
PTGA Pitinga 177.06 106 *e*PKPdf **PKPdf** 07 06 23.6 -1.4
PTGA *e*PKPab PKPab 07 08 09.7 +0.3

SJA 06 06:49:27.5±0.2, 31°.55S×69°.21W, h94km±1km, ML1.5, MW2.1, San Juan Province

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
RTLS	**Leoncito**	**0.26**	**196**	*i* P		Pn	06 49 42.7	+1.1
RTLS				*i* S		Sn	06 49 53.9	+1.7
RTCV	**Cerro Valdivia**	**0.65**	**119**	*i* P		Pn	06 49 44.7	+0.7
RTLL	**Cerro Villicun**	**0.66**	**71**	*i* P		Pn	06 49 44.9	+0.8
RTLL				*i* S		Sn	06 49 57.8	+1.2
AUSP	**Uspallata**	**0.69**	**193**	*i* P		Pn	06 49 45.8	+1.1
AUSP				*i* S		Sn	06 49 59.3	+1.9
AMOG	**MOGNA**	**0.86**	**46**	*i* P		Pn	06 49 47.0	+0.9
AMOG				*i* S		Sn	06 50 01.2	+1.2
ASAL	**Salagasta**	**1.09**	**163**	*i* P		Pn	06 49 49.6	+1.0
ASAL				*i* S		Sn	06 50 06.0	+1.5
ARCO	**CERRO ARCO**	**1.31**	**170**	*i* P		Pn	06 49 52.3	+1.0
ARCO				*i* S		Sn	06 50 10.8	+1.5
ARCO				IAML			06 50 13.7	
comp=Z,12nm,0.6s								
AVFE	**Valle Fertil**	**1.75**	**60**	IAML			06 50 22.6	
comp=Z,2.2nm,0.2s								

JMA 06 06:53:46.0±0.2, 38°.24N×144°.00E, h34km, M4.2, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.01**	**295**	P		Pn	06 54 18.9	+1.4
OFUJ				S		Sn	06 54 43.1	+1.7
JIO	**Ouri**	**2.10**	**277**	P		Pn	06 54 20.1	+1.4
JIO				S		Sn	06 54 45.1	+1.6
MIYJ	**Miyakonagasawa**	**2.16**	**309**	P		Pn	06 54 20.8	+1.2
MIYJ				*e*S		Sn	06 54 46.0	+0.8
JMK	**Ichinoseki**	**2.29**	**289**	P		Pn	06 54 23.1	+1.7
JMK				S		Sn	06 54 50.8	+2.4
JOM	**Ohasama**	**2.45**	**301**	*e*S		Sn	06 54 54.3	+2.1
JMM	**Marumori**	**2.56**	**263**	P		Pn	06 54 26.4	+1.4
JMM				S		Sn	06 54 56.8	+1.8
JFK	**Kawauchi**	**2.62**	**252**	P		Pn	06 54 26.7	+0.7
JFK				*e*S		Sn	06 54 57.4	+0.7
JOU	**Okura**	**2.63**	**274**	P		Pn	06 54 28.2	+2.2
JOU				S		Sn	06 54 59.4	+2.7
JRG	**Rokugo**	**2.87**	**295**	P		Pn	06 54 32.0	+2.6
JRG				*e*S		Sn	06 55 05.6	+2.9
JANG	**Nango**	**2.87**	**319**	S		Sn	06 55 04.1	+1.3
JYK	**Kaneyama**	**2.93**	**284**	P		Pn	06 54 32.6	+2.4
JYK				S		Sn	06 55 07.0	+2.8

DDA 06 06:57:36.5, 38°.28N×26°.57E, h7km, Md2.3, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
ZEY	**¨zmir**	**0.06**	**235**	*i* P		Pg	06 57 38.3	+0.1
ZEY				*i* S		Sg	06 57 40.1	+0.7
URLA	**Izmir**	**0.09**	**14**	*i* P		Pg	06 57 38.4	-0.3
URLA				*i* S		Sg	06 57 40.7	+0.5
DGB	**¨zmir**	**0.33**	**132**	*i* P		Pg	06 57 43.4	+0.4
DGB				*i* S		Sg	06 57 48.5	+1.1

*NIED **06** 06:57:00, 38°.20N×143°.90E, h5km, Mw3.6 Best double couple: M0=2.93000×10^14 NP1:φ0=8.00000°, δ21.00000°, λ-89.00000°. NP2:φ0=187.00000°, δ69.00000°, λ-90.00000°.*

JMA 06 06:57:50.0±0.2, 38°.21N×143°.94E, h25km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**1.98**	**297**	P		Pn	06 58 22.8	+0.9
OFUJ				S		Sn	06 58 47.2	+1.3
JIO	**Ouri**	**2.05**	**278**	P		Pn	06 58 23.9	+1.0
JIO				S		Sn	06 58 49.2	+1.5
JMK	**Ichinoseki**	**2.26**	**290**	P		Pn	06 58 26.9	+1.2
JMK				S		Sn	06 58 54.4	+1.7
JOM	**Ohasama**	**2.42**	**302**	P		Pn	06 58 29.8	+1.8
JOM				*e*S		Sn	06 58 58.3	+1.5
JMM	**Marumori**	**2.51**	**263**	P		Pn	06 58 30.4	+1.2
JMM				*e*S		Sn	06 59 00.7	+1.8
JFK	**Kawauchi**	**2.57**	**252**	P		Pn	06 58 30.8	+0.7
JOU	**Okura**	**2.58**	**274**	P		Pn	06 58 32.1	+1.9
JOU				S		Sn	06 59 03.2	+2.4
JRG	**Rokugo**	**2.84**	**296**	P		Pn	06 58 35.8	+2.0
JRG				*e*S		Sn	06 59 10.3	+3.1
JYK	**Kaneyama**	**2.90**	**285**	P		Pn	06 58 37.1	+2.6
JYK				*e*S		Sn	06 59 11.7	+3.2
JFT	**Otama**	**2.93**	**257**	P		Pn	06 58 36.5	+1.4
JFT				S		Sn	06 59 12.0	+2.5
MAT	**Matsushiro**	**4.86**	**252**	P		Pn	06 59 04.2	+2.7

*IDC **06** 07:15:16.4±1.5, 23°.37N×94°.12E, h0km, mb3.6/5, mb1 3.8/5, mb1mx3.4/56, mbtmp3.6/5, Error ellipse: s-maj=73.4km s-min=20.3km az=64.0*
*ISCJB **06** 07:15:23.4±0.8, 23°.3N±0°.1×93°.71E±0°.09, h73km, mb3.5/6, Error ellipse: s-maj=19.6km s-min=6.7km az=30.3*

ISC 06 07:15:24.6±1.2, 23°.3N±0°.2×93°.8E±0°.1, h73km, n14, σ18 76/22, mb3.6/6, Myanmar-India border region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
SHL	**Shillong**	**2.84**	**323**	*e*P		**Pn**	**07 16 10.5**	**+2.7**
SHL				*e*S		**Sn**	**07 16 40.0**	**-1.0**
GUN	**Gumba**	**8.47**	**305**	*e*Pn		**Pn**	**07 17 26.8**	**+1.9**

GUN *e*Sn **Sn** **07 18 59.0 -0.1**
181nm,0.6s
PKIN Phulchoki 8.68 301 *e*Pn **Pn** **07 17 29.2 +1.5**
PKIN *e*Sn **Sn** **07 19 04.2 +0.1**
46nm,0.3s
KKN Kakani 8.87 302 *e*Pn **Pn** **07 17 31.8 +1.6**
KKN *e*Sn **Sn** **07 19 08.4 -0.3**
29nm,0.2s
DMN Daman 8.92 301 *e*Pn **Pn** **07 17 33.6 +2.6**
DMN *e*Sn **Sn** **07 19 11.2 +1.1**
52nm,0.4s
GKN Gorkha 9.47 302 *e*Pn **Pn** **07 17 40.1 +1.7**
GKN *e*Sn **Sn** **07 19 20.7 -2.6**
80nm,0.3s
KOLN Koldanda 10.20 298 *e*Pn **Pn** **07 17 49.3 +0.9**
KOLN *e*Sn **Sn** **07 19 39.6 -1.6**
73nm,0.4s
PYUN Piuthan 10.83 298 *e*Pn **Pn** **07 17 57.1 +0.2**
PYUN *e*Sn **Sn** **07 19 54.2 -2.3**
24nm,0.3s
MKAR Makanchi Array 25.20 341 P **P** **07 20 44.1 +0.8**
0.8nm,0.5s,baz=160,slow=8.7,SNR=8.9
SONM Songino Array 26.49 19 P **P** **07 20 53.8 -1.3**
0.2nm,0.3s,baz=197,slow=4.5,SNR=2.6
KURBB Kurchatov Arra 29.75 340 P **P** **07 21 20.9 -3.1**
0.2nm,0.3s,baz=141,slow=8.3,SNR=4.0
WRA Warramunga Arr 58.42 134 P **P** **07 25 12.1 -0.9**
0.3nm,0.3s,baz=321,slow=7.4,SNR=10
ARCES ARCESS Array B 60.80 338 P **P** **07 25 30.1 +1.4**
0.9nm,0.7s,baz=102,slow=8.4,SNR=3.8
ASAR Alice Springs 60.82 137 P **P** **07 25 30.3 +0.8**
0.4nm,0.5s,baz=320,slow=7.1,SNR=10

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*SKHL **06** 07:16:58.0±0.2, 44°.40N×148°.90E, h43km±2km, mb4.7/5*
*JMA **06** 07:16:58.5±0.6, 44°.48N×148°.44E, h98km, M3.7*
ISC 06 07:16:58.0±4.0, 44°.3N±0°.1×148°.7E±0°.2, h55km, n12, σ2s37/17, 2D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUR	**Kuril'sk**	**1.08**	**327**	⇓*i*P	**Pn**	**07 17 15.7**	**-1.2**
KUR				AMB	AMB	07 17 16.0	
	330nm,0.4s						
KUR				*i* S	**Sn**	**07 17 29.0**	**-2.0**
KUR				A	A	07 17 35.2	
	350nm,0.2s						
KUR				A	A	07 17 35.2	
	120nm,0.2s						
SHO	**Shikotan**	**1.43**	**252**	*e*P	**Pn**	**07 17 23.8**	**+2.2**
SHO				AMB	AMB	07 17 24.2	
	140nm,0.2s						
SHO				*i* S	**Sn**	**07 17 43.0**	**+3.7**
SHO				A	A	07 17 45.2	
	320nm,0.2s						
SHO				A	A	07 17 45.2	
	480nm,0.2s						
YUK	**Yuzh-Kuril'sk**	**2.07**	**263**	⇓*i*P	**Pn**	**07 17 30.9**	**+0.6**
YUK				AMB	AMB	07 17 31.1	
	110nm,0.3s						
YUK				*i* S	**Sn**	**07 17 55.7**	**+0.8**
YUK				A	A	07 17 58.6	
	450nm,0.3s						
YUK				A	A	07 17 58.6	
	220nm,0.3s						
NEM2	**Nemuro 2**	**2.35**	**247**	P	**Pn**	**07 17 34.6**	**+0.5**
NEM2				*e*S	**Sn**	**07 18 02.6**	**+0.8**
JNK	**Nakash**	**2.97**	**257**	P	**Pn**	**07 17 42.4**	**-0.3**
JAK	**Akkeshi**	**3.20**	**247**	P	**Pn**	**07 17 45.5**	**-0.3**
JAK				*e*S	**Sn**	**07 18 21.8**	**-0.8**
JAR	**Ashorobuto**	**3.72**	**256**	P	**Pn**	**07 17 52.8**	**-0.1**
JCH	**Churui**	**4.25**	**248**	*e*S	**Sn**	**07 18 45.7**	**-2.8**
YSS	**Yuzh-Sakhalins**	**4.93**	**304**	*e*P	**Pn**	**07 18 11.3**	**+1.9**
YSS				AMB	AMB	07 18 12.6	
	20nm,0.3s						
JKB	**Kayabe**	**6.12**	**249**	*e*S	**Sn**	**07 19 28.6**	**-5.9**
UGL	**Uglegorsk**	**6.59**	**318**	*e*P	**Pn**	**07 18 33.9**	**+1.8**
UGL				AMB	AMB	07 18 35.4	
	40nm,0.4s						
TYV	**Tymovskoe**	**7.71**	**330**	*e*P	**Pn**	**07 18 49.1**	**+1.6**

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*IDC **06** 07:17:01.1±1.0, 14°.59S×166°.77E, h0km, mb4.1/12, mb1 4.2/13, mb1mx4.1/39, mbtmp4.0/13, ML4.0/1, MS3.4/2, Ms1 3.4/2, ms1mx2.8/42, Error ellipse: s-maj=34.6km s-min=19.7km az=122.0*
*NEIC **06** 07:17:02.6±0.4, 14°.58S×166°.79E, h10km, mb4.7/7, Error ellipse: s-maj=14.3km s-min=10.0km az=99.0*
*ISCJB **06** 07:17:03.4±0.5, 14°.66S±0°.05×166°.7E±0°.1, h28km, mb4.2/19, MS3.2/1, Error ellipse: s-maj=15.8km s-min=7.6km az=0.6*
ISC 06 07:17:05.5±0.6, 14°.62S±0°.07×166°.7E±0°.1, h28km, n26, σ1s04/25, mb4.3/19, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**7.42**	**182**	Pn	**Pn**	**07 18 51.7**	**-0.3**
	2.3nm,0.3s,baz=359,slow=18,SNR=27						
DZM				Sn	**Sn**	**07 20 14.9**	**-0.3**
	1.1nm,0.3s,baz=162,slow=21,SNR=3.5						
HNR	**Honiara**	**8.41**	**307**	LR	LR	07 22 09.0	
	comp=Z,240nm,18.1s,baz=228,slow=37						
HNR	**Honiara**	**8.41**	**307**	Pn	**Pn**	**07 19 05.5**	**0.0**
STKA	**Stephens Creek**	**28.68**	**229**	P	**P**	**07 23 00.7**	**+0.6**
	1.4nm,0.6s,baz=46,slow=8.1,SNR=5.2						
WRA	**Warramunga Arr**	**31.35**	**256**	P	**P**	**07 23 23.4**	**-0.5**
	0.8nm,0.8s,baz=86,slow=9.3,SNR=4.9						
ASAR	**Alice Springs**	**32.23**	**249**	P	**P**	**07 23 30.6**	**-1.1**
	0.7nm,0.7s,baz=75,slow=9.4,SNR=14						
GUMO	**Guam**	**35.41**	**321**	LR	LR	07 37 18.7	
	comp=Z,52nm,22.0s,baz=92,slow=34						
MJAR	**Matsushiro Arr**	**57.57**	**333**	P	**P**	**07 26 51.9**	**-0.9**
	1.3nm,0.5s,baz=172,slow=8.2,SNR=4.0						
SBA	**Scott Base**	**63.24**	**180**	*e*P	**P**	**07 27 31.6**	**+0.6**
	9.4nm,1.2s						
USRK	**Ussuriysk Ar.**	**66.56**	**333**	P	**P**	**07 27 54.3**	**+1.3**
	2.3nm,0.8s,baz=119,slow=8.4,SNR=3.3						
KLR	**Kul'dur**	**70.70**	**337**	P	**P**	**07 28 18.9**	**+0.3**
	1.2nm,0.5s,baz=126,slow=4.0,SNR=5.2						
QSPA	**South Pole Qui**	**75.41**	**180**	*e*P	**P**	**07 28 46.6**	**+0.1**
	8.1nm,0.9s						
SEY	**Seymchan**	**78.11**	**353**	P	**P**	**07 29 00.8**	**-0.7**
	0.9nm,0.3s,baz=135,slow=7.1,SNR=4.6						
SONM	**Songino Array**	**82.10**	**324**	P	**P**	**07 29 24.4**	**+0.8**
	0.3nm,0.5s,baz=123,slow=5.3,SNR=1.6						
BILL	**Bilibino**	**82.43**	**360**	*e*P	**P**	**07 29 24.7**	**0.0**
	2.4nm,0.4s						
PMR	**Palmer**	**83.57**	**20**	*e*P	**P**	**07 29 30.1**	**-0.6**
	2.6nm,0.7s						
MCK	**McKinley**	**85.21**	**18**	*e*P	**P**	**07 29 38.3**	**-0.7**
	3.1nm,0.6s						
COLA	**College**	**86.37**	**18**	*e*P	**P**	**07 29 42.9**	**-1.7**
	11nm,1.2s						
ILAR	**Eielson Array**	**86.58**	**18**	P	**P**	**07 29 43.7**	**-2.0**
	3.3nm,0.6s,baz=242,slow=5.0,SNR=36						
COLD	**Coldfoot**	**87.46**	**15**	*e*P	**P**	**07 29 50.7**	**+0.7**
	1.9nm,0.8s						
NVAR	**Mina Array Bea**	**87.59**	**49**	P	**P**	**07 29 53.0**	**+1.5**
	0.3nm,0.5s,baz=236,slow=9.6,SNR=3.6						
MKAR	**Makanchi Array**	**96.77**	**316**	P	**P**	**07 30 33.8**	**+0.1**
	0.4nm,0.7s,baz=104,slow=6.1,SNR=3.6						
YKA	**Yellowknife Ar**	**97.69**	**27**	P	**P**	**07 30 35.5**	**-1.8**
	0.3nm,0.7s,baz=255,slow=4.6,SNR=9.4						
ARCES	**ARCESS Array B**	**120.02**	**345**	PKP	**PKPdf**	**07 35 52.4**	**-0.5**
	2.0nm,0.7s,baz=66,slow=3.0,SNR=5.9						
FINES	**FINESS Array B**	**125.43**	**338**	PKP	**PKPdf**	**07 36 04.7**	**+1.2**
	1.8nm,0.8s,baz=42,slow=3.1,SNR=5.4						
KEST	**Kesra**	**150.80**	**320**	PKPbc	**PKPbc**	**07 36 57.2**	**+1.4**
	4.8nm,0.8s,baz=15,slow=2.4,SNR=6.2						

MEX 06 07:21:10.3±0.6, 16°.65N×98°.89W, h16km±999km, MD3.9, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PNIG	**Pinotepa**	**0.77**	**109**	*e*P	Pb	07 21 23.0	-2.4
PNIG				*e*S	Sg	07 21 31.8	-3.8
ACX	**Acapulco**	**0.96**	**283**	*e*P	Pb	07 21 26.4	-2.1
ACX				*e*S	Sb	07 21 38.8	-2.2
CAIG	**El Cayaco**	**1.38**	**287**	*e*P	Pn	07 21 31.1	-3.7
CAIG				*e*S	Sn	07 21 47.0	-5.9
VHO	**Vista Hermosa**	**2.10**	**78**	*e*P	Pn	07 21 41.7	-3.3
VHO				*i* S	Sn	07 22 06.6	-4.5
HUIG	**Huatulco**	**2.81**	**108**	*e*P	Pn	07 21 52.8	-1.8
HUIG				*i* S	Sn	07 22 24.0	-4.2

MEX 06 07:26:47.0±0.5, 30°.63N×105°.53W, h5km, MD3.9, Texas-Mexico border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CGIG		**2.13**	**264**	*e*P	Pn	07 27 20.8	-2.6
CGIG				*i* S	Sn	07 27 46.8	-3.5
121A	**Cookes Peak, D**	**2.70**	**315**	*e*P	Pn	07 27 28.2	-3.1
121A				*e*S	Sn	07 28 00.9	-3.6
319A	**Douglas**	**3.31**	**284**	*e*P	Pn	07 27 36.6	-3.0
319A				*i* S	Sn	07 28 14.8	-4.4

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*ISCJB **06** 07:49:17.7±1.1, 36°.52N±0°.08×70°.9E±0°.1, h188km, mb3.1/3, Error ellipse: s-maj=16.3km s-min=10.6km az=23.3*
*IDC **06** 07:49:20.3±6.6, 36°.51N×71°.36E, h203km±53km, mb2.9/3, mb1 3.0/7, mb1mx2.8/65, mbtmp3.4/7, Error ellipse: s-maj=66.3km s-min=30.0km az=53.0*
*NNC **06** 07:49:23.6±1.6, 36°.94N×70°.75E, h193km±29km, mb2.2, mpv3.3, Error ellipse: s-maj=21.8km s-min=12.8km az=61.0*
ISC 06 07:49:18.4±1.3, 36°.6N±0°.1×70°.9E±0°.1, h188km, n13, σ1s72/18, mb3.1/3, 6C-4D, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFK	**Sufi-Kurgan**	**4.02**	**30**	⇑P	**Pn**	**07 50 22.1**	**+1.9**
	1.3nm,0.4s						
SFK				⇓S	**Sn**	**07 51 08.7**	**0.0**
	7.5nm,0.4s						
MNAS	**Manas**	**6.05**	**12**	⇑P	**Pn**	**07 50 47.0**	**+0.8**
	1.5nm,0.5s						
MNAS				⇑S	**Sn**	**07 51 53.6**	**-1.9**
KK31	**Karatay Array**	**6.54**	**358**	⇓P	**Pn**	**07 50 53.7**	**+1.2**
	0.6nm,0.2s,baz=184,slow=12,SNR=34						
KK31				⇑S	**Sn**	**07 52 03.0**	**-3.8**
	2.0nm,0.3s,baz=181,slow=21,SNR=10						
AAK	**Ala-Archa**	**6.68**	**24**	P	**Pn**	**07 50 56.1**	**+1.7**
	1.4nm,0.3s,baz=196,slow=4.0,SNR=6.9						
AAK				S	**Sn**	**07 52 09.5**	**-0.9**
	0.3nm,0.3s,baz=338,slow=22,SNR=8.4						
AAK	**Ala-Archa**	**6.68**	**24**	⇓P	**Pn**	**07 50 55.5**	**+1.1**
	1.1nm,0.3s						
AAK				⇑S	**Sn**	**07 52 09.2**	**-1.2**
	3.0nm,0.6s						
TKM2	**Tokmak 2**	**7.32**	**28**	⇑P	**Pn**	**07 51 03.4**	**+0.5**
	3.9nm,0.6s						
MKAR	**Makanchi Array**	**13.31**	**36**	P	**Pn**	**07 52 20.8**	**+0.9**
	0.0nm,0.3s,baz=231,slow=6.9,SNR=2.7						
AB31	**Akbulak array**	**14.97**	**331**	⇓P	**P**	**07 52 41.5**	**0.0**
	0.1nm,0.3s,baz=147,slow=12,SNR=12						
BVAR	**Borovoye Array**	**16.46**	**359**	P	**Pn**	**07 52 59.7**	**+1.1**
	0.3nm,0.3s,baz=175,slow=18,SNR=3.4						
AKTO	**Aktyubinsk**	**16.67**	**330**	P	**Pn**	**07 53 03.1**	**+2.0**
	0.3nm,0.3s,baz=151,slow=9.0,SNR=4.6						
YKA	**Yellowknife Ar**	**81.19**	**3**	P	**P**	**08 01 13.3**	**+0.7**
	0.1nm,0.3s,baz=351,slow=5.4,SNR=5.9						
WRA	**Warramunga Arr**	**82.12**	**122**	P	**P**	**08 01 15.6**	**-2.6**
	1.0nm,1.0s,baz=325,slow=5.0,SNR=6.3						
ASAR	**Alice Springs**	**84.38**	**125**	P	**P**	**08 01 28.9**	**-0.8**
	0.2nm,0.5s,baz=304,slow=4.3,SNR=4.1						

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*NIED **06** 07:56:00, 38°.30N×141°.80E, h56km, Mw4.0 Best double couple: M0:1.32000×10^15 NP1:φ0=252.00000°, δ29.00000°, λ124.00000°. NP2:φ0=34.00000°, δ67.00000°, λ73.00000°.*
*MOS **06** 07:56:09.2±1.6, 38°.41N×141°.79E, h33km, mb4.3/16, Error ellipse: s-maj=10.3km s-min=6.4km az=81.1*
*ISCJB **06** 07:56:10.4±0.5, 38°.31N±0°.03×141°.86E±0°.06, h57km±4km, mb4.2/30, MS3.4/1, Error ellipse: s-maj=8.0km s-min=3.8km az=23.8*
*JMA **06** 07:56:12.5±0.1, 38°.34N×141°.73E, h51km±1km, M4.1*
JMA Felt III J1.
*IDC **06** 07:56:14.3±2.1, 38°.33N×141°.53E, h69km±19km, mb3.7/19, mb1 3.9/25, mb1mx3.7/63, mbtmp4.0/25, MS2.8/6, Ms1 2.8/6, ms1mx2.6/44, Error ellipse: s-maj=16.2km s-min=13.0km az=89.0*
ISC 06 07:56:11.4±0.9, 38°.29N±0°.05×141°.85E±0°.06, h46km±8km, n69, σ1s34/81, mb4.1/30, 7C-3D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.42**	**293**	P	**Pn**	**07 56 22.0**	**+0.5**
JIO				S	**Sn**	**07 56 28.3**	**-0.4**
OFUJ	**Ofunato**	**0.80**	**350**	P	**Pn**	**07 56 26.7**	**+0.3**
OFUJ				S	**Sn**	**07 56 36.8**	**-0.5**
JMK	**Ichinoseki**	**0.82**	**324**	P	**Pn**	**07 56 26.9**	**+0.2**
JMK				S	**Sn**	**07 56 37.0**	**-0.8**
JMM	**Marumori**	**0.93**	**244**	P	**Pn**	**07 56 28.2**	**+0.1**
JMM				S	**Sn**	**07 56 39.5**	**-0.8**
JOU	**Okura**	**0.93**	**275**	P	**Pn**	**07 56 28.3**	**+0.1**
JOU				S	**Sn**	**07 56 39.7**	**-0.7**
JFK	**Kawauchi**	**1.20**	**220**	P	**Pn**	**07 56 32.4**	**+0.6**
JFK				S	**Sn**	**07 56 47.2**	**+0.3**
JOM	**Ohasama**	**1.26**	**340**	P	**Pn**	**07 56 33.0**	**+0.4**
JOM				S	**Sn**	**07 56 48.3**	**-0.1**
JYK	**Kaneyama**	**1.32**	**299**	P	**Pn**	**07 56 33.4**	**-0.1**
JYS	**Shirataka**	**1.40**	**268**	P	**Pn**	**07 56 34.8**	**+0.2**
JFT	**Otama**	**1.42**	**238**	P	**Pn**	**07 56 35.6**	**+0.8**
JRG	**Rokugo**	**1.46**	**320**	P	**Pn**	**07 56 35.6**	**+0.3**
JRG				S	**Sn**	**07 56 53.8**	**+0.6**
MJA0	**Matsu Arr-Jizo**	**3.35**	**240**	*e*P	**Pn**	**07 57 03.8**	**+2.5**
MJA0				pmax	pmax		
	comp=Z,15nm,0.3s						
MJAR	**Matsushiro Arr**	**3.38**	**240**	P	**Pn**	**07 57 03.6**	**+2.0**
	comp=Z,15nm,0.3s,baz=36,slow=14,SNR=66						
MAJO	**Matsushiro**	**3.38**	**240**	*c i*P	**Pn**	**07 57 03.7**	**+2.0**
MAT	**Matsushiro**	**3.38**	**240**	P	**Pn**	**07 57 03.6**	**+1.9**
MAT				S	**Sn**	**07 57 41.5**	**+1.0**
ERM	**Erimo**	**3.86**	**15**	⇑*i*P	**Pn**	**07 57 08.4**	**+0.2**
JHJ	**Hachijo jima 2**	**5.42**	**199**	P	**Pn**	**07 57 30.6**	**+0.9**
	comp=Z,30nm,0.3s,baz=325,slow=18,SNR=18						
JHJ				S	**Sn**	**07 58 30.5**	**-0.3**
	comp=Z,66nm,0.3s,baz=99,slow=20,SNR=8.8						
ASAJ	**Asahikawa**	**5.85**	**5**	P	**Pn**	**07 57 35.2**	**-0.3**
	comp=Z,3.3nm,0.3s,baz=200,slow=8.9,SNR=6.8						
ASAJ				S	**Sn**	**07 58 43.5**	**+2.1**
	comp=Z,2.8nm,0.3s,baz=284,slow=11,SNR=4.4						
YUK	**Yuzh-Kuril'sk**	**6.49**	**27**	*e*P	**Pn**	**07 57 44.3**	**0.0**
YUK				*e*S	**Sn**	**07 58 53.3**	**-3.7**
YUK				pmax	pmax		
	comp=Z,147nm,0.9s						
YUK				pmax	pmax		
	comp=N,88nm,0.4s						
YUK				pmax	pmax		
	comp=E,140nm,0.6s						
SHO	**Shikotan**	**6.73**	**32**	*e*P	**Pn**	**07 57 46.5**	**-1.1**
SHO				*e*S	Sn	07 58 57.0	-5.9
SHO				pmax	pmax		
	comp=Z,24nm,0.4s						
SHO				pmax	pmax		
	comp=E,18nm,0.3s						
SHO				pmax	pmax		
	comp=N,13nm,0.4s						
KUR	**Kuril'sk**	**8.27**	**31**	*e*P	**Pn**	**07 58 11.0**	**+2.3**
KUR				*e*S	**Sn**	**07 59 40.9**	**+0.2**
KUR				pmax	pmax		
	comp=Z,25nm,0.3s						
YSS	**Yuzh-Sakhalins**	**8.69**	**4**	*e*P	**Pn**	**07 58 16.5**	**+2.1**
VLA	**Vladivostok**	**8.97**	**306**	*e*P	Pn	07 58 28.4	+10
USRK	**Ussuriysk Ar.**	**9.48**	**312**	P	**Pn**	**07 58 26.3**	**+1.0**
	comp=Z,1.8nm,0.3s,baz=124,slow=13,SNR=15						
USRK				LR	LR	08 01 52.2	
	comp=Z,97nm,20.3s,baz=43,slow=36						
JNU	**Nakatsue**	**10.30**	**243**	P	**Pn**	**07 58 34.5**	**-2.0**
	comp=Z,0.1nm,0.3s,baz=114,slow=16,SNR=1.7						
JNU				LR	LR	08 03 07.5	
	comp=Z,46nm,18.3s,baz=136,slow=41						
KSRS	**Korea Array**	**11.04**	**270**	P	**Pn**	**07 58 47.5**	**+0.8**
	comp=Z,0.7nm,0.3s,baz=75,slow=14,SNR=4.9						
KSRS				LR	LR	08 02 40.8	
	comp=Z,34nm,21.2s,baz=83,slow=36						
JCJ	**Chichijima**	**11.16**	**178**	P	**Pn**	**07 58 47.5**	**-0.9**
	comp=Z,5.2nm,0.3s,baz=50,slow=18,SNR=6.3						
JCJ				LR	LR	08 03 54.8	
	comp=Z,14nm,18.2s,baz=6.0,slow=41						
KLR	**Kul'dur**	**13.13**	**330**	P	**Pn**	**07 59 15.4**	**+0.2**
	comp=Z,0.1nm,0.3s,baz=138,slow=14,SNR=2.1						
KLR				LR	LR	08 04 11.1	
	comp=Z,44nm,18.9s,baz=156,slow=37						
KLR	**Kul'dur**	**13.13**	**330**	⇑*i*P	**P**	**07 59 24.9**	**+0.7**
MA2	**Magadan**	**22.06**	**12**	*i* P	**P**	**08 01 00.3**	**-1.8**
YAK	**Yakutsk**	**24.93**	**346**	*i* P	**P**	**08 01 33.1**	**+3.1**
SEY	**Seymchan**	**25.50**	**11**	P	**P**	**08 01 35.6**	**+0.5**
	comp=Z,0.6nm,0.4s,baz=307,slow=1.3,SNR=5.1						
SEY	**Seymchan**	**25.50**	**11**	*i* P	**P**	**08 01 30.9**	**-4.2**
BOD	**Bodaibo**	**26.67**	**326**	*e*P	**P**	**08 01 44.2**	**-1.5**
BOD				pmax	pmax		
	comp=Z,2.0nm,0.9s						
ULN	**Ulaanbaatar**	**26.96**	**302**	⇓*i*P	**P**	**08 01 48.8**	**+0.1**
ULN				pmax	pmax		
	comp=Z,3.0nm,1.5s						
SONM	**Songino Array**	**27.39**	**302**	P	**P**	**08 01 50.8**	**-1.7**
	comp=Z,0.8nm,0.6s,baz=89,slow=8.9,SNR=3.3						
TLY	**Talaya**	**29.79**	**309**	*e*P	P	08 02 16.9	+3.2
TLY				pmax	pmax		
	comp=Z,4.0nm,1.0s						
BILL	**Bilibino**	**32.73**	**17**	⇓*i*P	**P**	**08 02 37.7**	**-1.6**
BILL				*e*		08 02 53.9	
BILL				pmax	pmax		
	comp=Z,6.0nm,2.0s						
TIXI	**Tiksi**	**34.09**	**353**	*e*P	**P**	**08 02 50.3**	**-0.8**
TIXI				pmax	pmax		
	comp=Z,13nm,4.0s						
KRAR	**Krasnoyarsk**	**36.81**	**315**	*i* P	**P**	**08 03 15.8**	**+1.2**
KRAR				pmax	pmax		
	comp=Z,19nm,0.5s						
ZALV	**Zalesovo Beam**	**41.34**	**311**	P	**P**	**08 03 50.6**	**-1.8**
	comp=Z,2.7nm,0.5s,baz=94,slow=6.4,SNR=4.5						
ZALV	**Zalesovo Beam**	**41.34**	**311**	P	**P**	**08 03 50.7**	**-1.8**
ZALV				pmax	pmax		
	comp=Z,2.0nm,0.4s						
MKAR	**Makanchi Array**	**43.76**	**301**	P	**P**	**08 04 11.5**	**-0.8**
	comp=Z,3.0nm,0.7s,baz=86,slow=9.9,SNR=25						
MKAR	**Makanchi Array**	**43.76**	**301**	*e*P	**P**	**08 04 12.5**	**+0.2**
MKAR				pmax	pmax		
	comp=Z,3.0nm,0.7s						
KURK	**Kurchatov**	**45.44**	**307**	*c i*P	**P**	**08 04 24.8**	**-0.8**
KURK				pmax	pmax		
	comp=Z,14nm,0.8s						
KURBB	**Kurchatov Arra**	**45.51**	**307**	P	**P**	**08 04 25.4**	**-0.7**
	comp=Z,8.9nm,0.7s,baz=82,slow=8.2,SNR=87						
ILAR	**Eielson Array**	**48.26**	**33**	P	**P**	**08 04 48.5**	**+1.0**
	comp=Z,0.6nm,0.7s,baz=267,slow=6.3,SNR=7.1						
BVAR	**Borovoye Array**	**49.99**	**312**	P	**P**	**08 04 59.0**	**-1.8**
	comp=Z,1.0nm,0.5s,baz=64,slow=10,SNR=5.4						
BVAR				PcP	**PcP**	**08 06 20.3**	**0.0**
	comp=Z,1.8nm,0.6s,baz=100,slow=3.5,SNR=5.9						
BRVK	**Borovoye**	**50.05**	**312**	*c i*P	**P**	**08 05 00.7**	**-0.5**
BRVK				pmax	pmax		
	comp=Z,3.0nm,0.7s						
AAK	**Ala-Archa**	**50.21**	**298**	⇑*i*P	**P**	**08 05 03.1**	**+0.3**
AAK				pmax	pmax		
	comp=Z,3.0nm,0.8s						
INK	**Inuvik**	**53.12**	**28**	P	**P**	**08 05 25.0**	**+1.1**
	comp=Z,1.0nm,0.7s,baz=285,slow=5.9,SNR=7.4						
ARU	**Arti**	**55.65**	**318**	P	**P**	**08 05 40.5**	**-2.0**
	comp=Z,1.9nm,0.3s,baz=84,slow=5.5,SNR=4.5						
ARU				LR	LR	08 29 28.8	
	comp=Z,29nm,19.4s,baz=118,slow=36						
ARU	**Arti**	**55.65**	**318**	*d i*P	**P**	**08 05 41.3**	**-1.2**
ARU						08 07 45.2	
ARU				S	S	08 13 32.7	+7.6
ARU				pmax	pmax		
	comp=Z,4.0nm,1.0s						
WRA	**Warramunga Arr**	**58.35**	**188**	P	**P**	**08 06 01.9**	**0.0**
	comp=Z,3.0nm,0.4s,baz=6.1,slow=7.1,SNR=33						
RES	**Resolute Bay**	**61.30**	**15**	P	**P**	**08 06 21.9**	**+0.3**
	comp=Z,0.9nm,0.5s,baz=309,slow=4.4,SNR=15						
ASAR	**Alice Springs**	**62.07**	**188**	P	**P**	**08 06 27.9**	**+0.5**
	comp=Z,1.3nm,0.7s,baz=352,slow=3.9,SNR=24						
YKA	**Yellowknife Ar**	**62.56**	**31**	P	**P**	**08 06 30.7**	**+0.6**
	comp=Z,0.5nm,0.7s,baz=302,slow=6.7,SNR=12						
KLMR	**Klimovskoe**	**62.88**	**327**	P	**P**	**08 06 31.4**	**-1.0**
KLMR				pmax	pmax		
	comp=Z,3.0nm,0.7s						
ARCES	**ARCESS Array B**	**62.95**	**339**	P	**P**	**08 06 31.6**	**-1.1**
	comp=Z,2.8nm,1.1s,baz=67,slow=11,SNR=4.3						
OBN	**Obninsk**	**67.30**	**323**	⇑*i*P	**P**	**08 07 00.4**	**-0.7**
OBN				pmax	pmax		
	comp=Z,14nm,0.5s						
FINES	**FINESS Array B**	**67.87**	**332**	P	**P**	**08 07 03.1**	**-1.5**
	comp=Z,0.6nm,0.6s,baz=27,slow=4.7,SNR=3.8						
FINES	**FINESS Array B**	**67.87**	**332**	*e*P	**P**	**08 07 06.1**	**+1.5**
FINES				pmax	pmax		
	comp=Z,1.0nm,0.6s						
KIV	**Kislovodsk**	**70.35**	**311**	*i* P	**P**	**08 07 19.8**	**-0.6**
KIV				pmax	pmax		
	comp=Z,5.0nm,0.6s						
NB2	**NORSAR Subarra**	**73.17**	**337**	P	**P**	**08 07 36.6**	**-0.4**
	comp=Z,0.8nm,0.6s,baz=38,slow=5.9						
NOA	**NORSAR Array B**	**73.17**	**337**	P	**P**	**08 07 37.0**	**0.0**
	comp=Z,1.8nm,0.8s,baz=38,slow=6.0,SNR=7.8						
NVAR	**Mina Array Bea**	**73.97**	**54**	P	**P**	**08 07 44.3**	**+2.0**
	comp=Z,0.2nm,0.6s,baz=305,slow=5.9,SNR=2.5						
PDAR	**Pinedale Array**	**76.55**	**46**	P	**P**	**08 07 58.4**	**+1.3**
	comp=Z,0.7nm,0.6s,baz=253,slow=1.8,SNR=9.9						
TXAR	**Lajitas Array**	**89.09**	**53**	P	**P**	**08 09 03.4**	**+1.3**
	comp=Z,0.5nm,0.6s,baz=298,slow=2.7,SNR=10.0						
LPAZ	**La Paz**	**145.76**	**59**	PKPbc	**PKPab**	**08 15 47.3**	**+0.3**
	comp=Z,1.2nm,0.7s,baz=353,slow=5.6,SNR=7.3						

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*ISCJB **06** 08:00:39.0±0.2, 17°.76S±0°.05×179°.67W±0°.05, h600km, mb4.3/117, Error ellipse:

WRA	Warramunga Arr	43.60	260	P	P	08 07 51.7	-1.1
	4.9nm,0.5s,baz=94,slow=7.2,SNR=65						
WRA				PcP	PcP	08 09 26.5	-0.1
	1.3nm,0.8s,baz=92,slow=3.6,SNR=4.7						
AS01	Alice Springs	43.76	254	eP	P	08 07 53.3	-0.7
AS31	Alice Springs	43.80	254	eP	P	08 07 53.9	-0.4
	12nm,0.8s						
ASAR	Alice Springs	43.80	254	P	P	08 07 53.9	-0.4
	30nm,0.4s,baz=89,slow=7.9,SNR=683						
ASAR				PcP	PcP	08 09 27.1	-0.2
	1.4nm,0.6s,baz=98,slow=4.5,SNR=4.3						
ASAR				ScP	ScP	08 12 23.4	+0.8
	0.4nm,0.6s,baz=92,slow=3.7,SNR=4.3						
ASAR				S	S	08 13 40.0	-2.8
	1.5nm,1.0s,baz=78,slow=17,SNR=7.7						
MTN	Manton Dam	47.73	269	eP	P	08 08 23.6	-0.6
	43nm,1.4s						
FAKI	Fak Fak	49.50	282	eP	P	08 08 37.1	-0.1
	48nm,1.6s						
FITZ	Fitzroy Crossi	51.99	261	P	P	08 08 55.3	+0.1
	3.4nm,0.3s,baz=68,slow=7.8,SNR=30						
FITZ	Fitzroy Crossi	51.99	261	eP	P	08 08 55.3	+0.1
	41nm,1.5s						
SOEI	Soe	55.00	270	eP	P	08 09 17.9	+1.3
	49nm,1.0s						
MBWA	Marble Bar	57.07	256	eP	P	08 09 29.6	-1.0
	109nm,1.6s						
SBA	Scott Base	60.50	183	eP	P	08 09 54.0	+1.5
	18nm,1.8s						
VNDA	Vanda	60.51	185	P	P	08 09 52.3	-0.2
	0.6nm,0.5s,baz=4.0,slow=9.8,SNR=3.0						
VNDA	Vanda	60.51	185	eP	P	08 09 53.2	+0.6
	8.1nm,1.6s						
KAPI	Kappang	60.61	274	eP	P	08 09 54.7	+0.3
	21nm,1.3s						
CASY	Casey	65.82	205	eP	P	08 10 27.0	+0.3
	48nm,2.0s						
MJAR	Matsushiro Arr	67.15	324	P	P	08 10 35.7	+0.3
	1.2nm,0.8s,baz=164,slow=5.3,SNR=3.0						
UNV	Unalaska Valle	72.19	8	eP	P	08 11 03.8	-1.0
	118nm,1.8s						
QSPA	South Pole Qui	72.29	180	eP	P	08 11 05.7	+0.1
SDPT	Sand Point	74.60	11	eP	P	08 11 17.4	-1.0
	132nm,1.7s						
CHGN	Chignik	75.89	12	eP	P	08 11 25.2	-0.3
MWC	Mount Wilson	78.03	48	eP	P	08 11 38.8	+0.8
	8.0nm,0.9s						
CMB	Columbia Colle	78.47	44	eP	P	08 11 41.0	+0.9
	7.2nm,0.9s						
ISA	Isabella, Lake	78.49	47	eP	P	08 11 41.0	+0.7
	9.6nm,1.0s						
AFDM	Forest Hills D	78.59	43	eP	P	08 11 41.6	+0.9
	5.8nm,0.9s						
WAKR	Walker	79.35	44	eP	P	08 11 45.9	+1.0
HUMO	Hull Mountain	79.45	39	eP	P	08 11 46.6	+1.4
	7.0nm,1.1s						
GSC	Goldstone, Bar	79.47	48	eP	P	08 11 46.5	+1.0
	12nm,1.4s						
NV01	Mina Array Sit	80.06	44	eP	P	08 11 49.1	+0.4
NVAR	Mina Array Bea	80.06	44	P	P	08 11 49.4	+0.7
	5.0nm,0.8s,baz=226,slow=9.3,SNR=35						
NV11	Mina Array Sit	80.16	44	eP	P	08 11 49.9	+0.8
	9.2nm,1.1s						
MOD	Modoc Plateau	80.66	41	eP	P	08 11 52.4	+0.8
	8.7nm,0.9s						
TPNV	Topopah Spring	80.69	46	eP	P	08 11 52.6	+0.7
	6.0nm,1.0s						
K05A	Summer Lake	80.77	40	eP	P	08 11 52.6	+0.4
	14nm,1.0s						
214A	Organ Pipe Nat	80.77	52	eP	P	08 11 53.7	+1.4
	5.3nm,0.7s						
H04A	Detroit Lake	81.12	37	eP	P	08 11 54.3	+0.5
	6.0nm,0.6s						
SHPR	Sheep Range	81.23	47	eP	P	08 11 56.0	+1.3
	3.3nm,1.0s						
Y14A	Wickenburg	81.54	50	eP	P	08 11 57.1	+0.9
	18nm,0.9s						
R11A	Troy Canyon, C	81.85	46	eP	P	08 11 58.5	+0.6
	3.0nm,1.0s						
WVOR	Wild Horse Val	81.99	41	eP	P	08 11 59.1	+0.8
	8.9nm,0.9s						
RC01	Rabbit Creek A	82.13	14	eP	P	08 11 58.8	+0.3
	8.7nm,1.1s						
TUC	Tucson	82.46	53	eP	P	08 12 02.5	+1.6
	5.8nm,1.1s						
TT01	Tatalina	82.50	11	eP	P	08 12 00.6	+0.4
TTA	Tatalina	82.52	11	eP	P	08 12 00.0	-0.4
	5.7nm,1.1s						
EYAK	Cordova Ski Ar	82.66	16	eP	P	08 12 00.5	-0.6
	33nm,1.7s						
PMR	Palmer	82.72	14	eP	P	08 12 00.5	-0.8
	7.3nm,1.2s						
LCMT	Little Creek M	82.82	48	eP	P	08 12 03.9	+1.2
	5.2nm,1.0s						
X16A	Lo Mia Camp, P	82.91	51	eP	P	08 12 04.8	+1.5
	7.1nm,0.9s						
KNB	Kanab	83.12	48	eP	P	08 12 05.3	+1.1
	4.9nm,1.0s						
PSUT	Pine Spring	83.12	46	eP	P	08 12 05.2	+1.0
	4.1nm,0.8s						
DIV	Divide	83.14	16	eP	P	08 12 03.5	-0.1
	9.8nm,0.7s						
319A	Douglas	83.20	54	eP	P	08 12 06.0	+1.3
	6.6nm,0.9s						
U15A	North Rim	83.22	48	eP	P	08 12 05.2	+0.4
	8.4nm,0.9s						
ELK	Elko	83.28	44	eP	P	08 12 06.0	+1.0
	3.9nm,1.0s						
BMRM	Bremner River	83.31	16	eP	P	08 12 04.3	-0.1
	5.4nm,0.7s						
SCM	Sheep Creek Mo	83.35	15	eP	P	08 12 04.5	-0.1
	9.9nm,0.8s						
SEY	Seymchan	83.39	347	P	P	08 12 04.3	-0.4
	2.2nm,0.6s,baz=190,slow=11,SNR=8.6						
WUAZ	Wupatki	83.46	50	eP	P	08 12 05.9	0.0
	6.3nm,1.0s						
LTY	Liberty	83.47	36	eP	P	08 12 06.0	+0.4
	4.6nm,1.0s						
HAWA	Hanford	83.63	37	eP	P	08 12 07.2	+0.9
	8.9nm,0.9s						
MAW	Mawson	83.64	200	P	P	08 12 06.5	+0.5
	3.0nm,0.6s,baz=168,slow=6.1,SNR=5.1						
MAW	Mawson	83.64	200	eP	P	08 12 06.4	+0.5
	5.5nm,1.7s						
CAST	Castle Rocks	83.70	12	eP	P	08 12 04.9	-1.4
	8.3nm,0.8s						
BALM	Baldy	83.99	17	eP	P	08 12 07.5	-0.3
	4.8nm,0.8s						
MTPU	Mount Pierson	84.05	47	eP	P	08 12 10.8	+1.8
	7.8nm,1.4s						
KTH	Kantishna Hill	84.06	12	eP	P	08 12 06.8	-1.3
	3.9nm,1.0s						
TRF	Thorofare Moun	84.10	13	eP	P	08 12 07.5	-0.9
	6.5nm,0.8s						
MFID	Camas Ranch	84.26	41	eP	P	08 12 10.5	+0.9
	5.6nm,1.0s						
D08A	Wollman Farm,	84.35	37	eP	P	08 12 10.3	+0.6
	6.9nm,0.8s						
RND	Reindeer	84.37	13	eP	P	08 12 09.2	-0.4
	9.1nm,1.0s						
MCK	McKinley	84.64	13	eP	P	08 12 10.5	-0.4
	5.2nm,0.8s						
F10A	Beach Ranch, E	84.74	38	eP	P	08 12 12.2	+0.4
B08A	Colville Reser	84.84	36	eP	P	08 12 12.3	+0.1
	5.2nm,0.8s						
MENT	Mentasta	85.19	16	eP	P	08 12 13.7	+0.1
	2.7nm,0.8s						
HLID	Hailey	85.22	41	eP	P	08 12 15.3	+0.9
	5.2nm,0.8s						
TMUT	Trail Mountain	85.30	46	eP	P	08 12 16.5	+1.5
	3.2nm,0.8s						
SPUT	South Promonto	85.40	44	eP	P	08 12 16.2	+0.9
	5.5nm,1.2s						
HVU	Hansel Valley	85.41	44	eP	P	08 12 16.2	+0.9
	19nm,1.8s						
WRH	Wood River Hil	85.46	13	eP	P	08 12 13.6	-1.2
	9.1nm,1.3s						
CCB	Clear Creek Bu	85.68	13	eP	P	08 12 14.6	-1.2
	3.4nm,0.9s						
SRU	San Rafael Swe	85.69	47	eP	P	08 12 16.5	-0.2
	2.9nm,0.8s						
DOT	Dot Lake	85.70	15	eP	P	08 12 15.7	-0.2
	11nm,1.1s						
MDM	Murphy Dome	85.86	13	eP	P	08 12 15.6	-1.1
	7.4nm,1.4s						
COLA	College	85.87	13	eP	P	08 12 15.9	-0.8
	5.4nm,0.9s						
IL1	Eielson Array	85.99	13	eP	P	08 12 16.5	-0.7
ILAR	Eielson Array	85.99	13	P	P	08 12 16.0	-1.3
	1.2nm,0.8s,baz=238,slow=6.2,SNR=16						
TCUT	Toone Canyon	86.01	45	eP	P	08 12 19.4	+1.1
	7.8nm,0.7s						
DLBC	Dease Lake	86.12	24	eP	P	08 12 19.4	+1.3
	16nm,1.6s						
MNTX	Cornudas Mount	86.37	55	eP	P	08 12 20.7	+0.8
	2.2nm,0.9s						
HHC	Hu-ho-hao-te	86.41	315	eP	P	08 12 21.8	+1.9
HHC				pmax	pmax		
	comp=Z,22nm,1.2s						
HHC				pmax	pmax		
	comp=Z,61nm,7.2s						
TX31	Lajitas Ar. Si	86.82	58	eP	P	08 12 23.7	+1.5
TXAR	Lajitas Array	86.82	58	P	P	08 12 23.6	+1.4
	comp=Z,5.2nm,1.0s,baz=235,slow=4.4,SNR=35						
MCMT	McKenzie Canyo	86.82	41	eP	P	08 12 23.0	+1.0
ANMO	Albuquerque	86.85	52	eP	P	08 12 23.1	+0.8
	comp=Z,2.6nm,0.9s						
BSMT	Bassoo Peak	87.15	38	eP	P	08 12 23.5	+0.1
DLMT	Dillon	87.24	40	eP	P	08 12 24.8	+0.9
	comp=Z,5.1nm,1.0s						
EGAK	Eagle	87.35	15	eP	P	08 12 23.6	0.0
	comp=Z,3.0nm,0.8s						
REDW	Red Top Meadow	87.41	43	eP	P	08 12 25.7	+1.0
	comp=Z,8.9nm,1.1s						
COLD	Coldfoot	87.47	11	eP	P	08 12 24.6	+0.4
	comp=Z,3.5nm,0.7s						
SNOW	Snow King Moun	87.52	43	eP	P	08 12 26.3	+1.1
	comp=Z,7.0nm,1.0s						
CHMT	Chamberlain Mo	87.59	39	eP	P	08 12 25.6	+0.1
IMW	Indian Meadow	87.59	42	eP	P	08 12 26.9	+1.2
	comp=Z,6.1nm,1.0s						
MOOW	Moose Ponds	87.65	43	eP	P	08 12 26.7	+0.9
	comp=Z,6.6nm,1.5s						
LOHW	Long Hollow	87.68	43	eP	P	08 12 26.6	+0.6
	comp=Z,2.0nm,0.8s						
S22A	4UR Ranch, Cre	87.72	49	eP	P	08 12 27.2	+0.7
	comp=Z,7.4nm,1.5s						
O20A	White River Ci	87.72	47	eP	P	08 12 27.2	+0.9
	comp=Z,8.6nm,1.1s						
FLWY	Flagg Ranch	87.83	42	eP	P	08 12 28.1	+1.4
	comp=Z,6.5nm,1.1s						
BW06	Boulder Array	87.98	44	eP	P	08 12 27.8	+0.4
	comp=Z,5.0nm,1.1s						
PD31	Pinedale Array	87.98	44	eP	P	08 12 27.7	+0.2
PDAR	Pinedale Array	87.98	44	P	P	08 12 27.2	-0.3
	comp=Z,2.2nm,0.8s,baz=204,slow=3.3,SNR=14						
H17A	Grant Village	88.06	42	eP	P	08 12 29.9	+2.2
	comp=Z,5.6nm,1.1s						
CD2	Chengdu	88.09	303	P	P	08 12 27.4	-0.6
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
N23A	Red Feather La	89.63	47	eP	P	08 12 36.3	+1.1
	comp=Z,8.3nm,1.1s						
PHWY	Pilot Hill	90.13	46	eP	P	08 12 34.6	-2.9
	comp=Z,6.5nm,0.9s						
SNAA	Sanae	90.77	179	P	P	08 12 38.8	-0.9
SNAA	Sanae	90.77	179	eP	P	08 12 38.4	-1.2
	comp=Z,2μm,2.0s						
VNA3	Neumayer Olymp	90.95	177	P	P	08 12 40.0	-0.5
VNA2	Neumayer--Watz	91.38	177	P	P	08 12 41.8	-0.6
	baz=284,slow=31						
INK	Inuvik	92.03	16	P	P	08 12 44.4	-0.8
	comp=Z,1.4nm,0.9s,baz=226,slow=9.1,SNR=5.1						
INK	Inuvik	92.03	16	eP	P	08 12 44.5	-0.7
YKA	Yellowknife Ar	94.65	25	P	P	08 12 56.5	-0.7
	comp=Z,0.5nm,0.8s,baz=242,slow=4.4,SNR=11						
YKB5	Yellowknife Ar	94.65	25	eP	P	08 12 57.7	+0.4
FIA1	FINESS Array S	132.75	344	ePKPdf	PKPdf	08 18 47.3	+0.2
FINES	FINESS Array B	132.75	344	PKP	PKPdf	08 18 47.6	+0.5
	comp=Z,0.5nm,0.5s,baz=76,slow=5.9,SNR=2.9						
BR131	Keskin Array S	143.91	314	ePKPbc	PKPbc	08 19 07.7	-0.1
BRTR	Keskin Array B	143.91	314	PKP	PKPbc	08 19 07.7	-0.1
	comp=Z,1.2nm,0.5s,baz=87,slow=3.7,SNR=6.1						
BR231	Keskin MP Arra	144.44	315	ePKPdf	PKPdf	08 19 08.4	-0.8
CLL	Collm	145.07	346	⇑iP	PKPdf	08 19 10.5	+0.8
	comp=Z,8.0nm,0.7s						
CLL	Collm	145.07	346	ePKPdf	PKPdf	08 19 09.9	+0.2
GERES	GERESS Array B	147.18	344	PKPbc	PKPbc	08 19 16.5	-0.3
	comp=Z,1.2nm,0.5s,baz=8.5,slow=2.7,SNR=9.4						
GEA0	GERESS Array S	147.19	344	ePKPbc	PKPbc	08 19 16.7	0.0
LAST	Lasithi	151.81	313	ePKPbc	PKPbc	08 19 27.7	-0.5

IDC 06 08:23:50.8±2.8, 54°.45N×87°.11E, h0km, mb1 3.1/2, mb1mx2.9/47, mbtmp3.1/2, ML2.9/2, 5C-1D, Error ellipse: s-maj=23.2km s-min=17.2km az=59.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	ZALESOVO INFRA	1.43	251	i		08 30 30.0	
	baz=67,slow=323,SNR=1.9						
ZALV	Zalesovo Beam	1.43	250	Pg	Pn	08 24 15.8	-2.2
	4.6nm,0.3s,baz=69,slow=17,SNR=10.0						
ZALV				Lg	Lg	08 24 35.1	
	1.6nm,0.3s,baz=69,slow=28,SNR=6.7						
KURBB	Kurchatov Arra	6.48	237	Pn	Pn	08 25 28.6	+1.3
	0.2nm,0.3s,baz=54,slow=14,SNR=12						
KURBB				Sn	Sn	08 26 42.3	+0.3
	0.1nm,0.3s,baz=58,slow=12,SNR=4.6						
KURBB				Lg	Lg	08 27 20.6	
	0.1nm,0.3s,baz=48,slow=28,SNR=4.6						
KURBB	Kurchatov Arra	6.48	237	⇑Pn	Pn	08 25 28.7	+1.4
	1.8nm,0.5s						
KURBB				⇓Sn	Sn	08 26 40.8	-1.2
	2.1nm,0.5s						
KURBB				⇑Lg	Lg	08 27 13.1	
	4.6nm,0.7s						
MK31	Makanchi Array	8.25	204	⇑Pn	Pn	08 25 52.4	+0.8
	0.1nm,0.3s,baz=28,slow=14,SNR=7.7						
MK31				⇑Sn	Sn	08 27 21.0	-4.4
	0.4nm,0.6s						
MK31				⇑Lg	Lg	08 28 02.7	
	1.8nm,0.8s,baz=28,slow=31,SNR=3.6						
MKAR	Makanchi Array	8.25	204	Pn	Pn	08 25 52.3	+0.6
	0.2nm,0.3s,baz=26,slow=14,SNR=5.2						
MKAR				Sn	Sn	08 27 24.5	-1.0
	0.1nm,0.3s,baz=23,slow=27,SNR=3.8						
MKAR				Lg	Lg	08 28 10.5	
	0.0nm,0.3s,baz=29,slow=30,SNR=4.3						

JMA 06 08:29:24.6±0.1, 40°.02N×142°.32E, h47km±2km, M2.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	Tanohata	0.36	257	P	Pn	08 29 34.3	+0.2
JTH				S	Sn	08 29 41.0	+0.2
MIYJ	Miyakonagasawa	0.59	221	P	Pn	08 29 36.7	-0.1
MIYJ				S	Sn	08 29 45.0	-0.5
JANG	Nango	0.71	300	P	Pn	08 29 38.1	-0.3
JKZ	Kuzumaki	0.76	268	P	Pn	08 29 39.3	+0.2
JKZ				S	Sn	08 29 49.7	+0.1
JOM	Ohasama	0.96	236	P	Pn	08 29 42.0	+0.3
JOM				S	Sn	08 29 54.1	-0.2
OFUJ	Ofunato	1.06	208	P	Pn	08 29 43.2	+0.1
JMK	Ichinoseki	1.36	219	P	Pn	08 29 47.7	+0.5
JMK				S	Sn	08 30 04.3	+0.2

NIED ***06*** *08:30:00, 39°.70N×142°.20E, h44km, Mw3.8 Best double couple: M0=5.78000×10^14 NP1:φ=191.00000°, δ=22.00000°, λ=80.00000°. NP2:φ=22.00000°, δ=68.00000°, λ=94.00000°.*
ISCJB ***06*** *08:30:51.0±0.8, 39°.73N±0°.05×142°.3E±0°.1, h51km±6km, mb3.6/11, Error ellipse: s-maj=14.0km s-min=6.3km az=19.2*
JMA ***06*** *08:30:52.3±0.1, 39°.73N×142°.23E, h44km±1km, M3.9*
JMA Felt I J1.
IDC ***06*** *08:30:54.5±2.3, 39°.75N×142°.27E, h70km±20km, mb3.3/11, mb1 3.5/14, mb1mx3.4/45, mbtmp3.6/14, MS2.5/5, Ms1 2.5/5, ms1mx2.4/20, Error ellipse: s-maj=20.9km s-min=13.1km az=113.0*

ISC 06 08:30:52.2±1.2, 39°.72N±0°.05×142°.2E±0°.1, h46km±9km, n24, σ1=76/28, mb3.6/11, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	Miyakonagasawa	0.35	245	P	Pn	08 31 01.4	-0.1
MIYJ				S	Sn	08 31 07.7	-0.3
JTH	Tanohata	0.35	308	P	Pn	08 31 01.5	0.0
JTH				S	Sn	08 31 07.9	-0.2
JKZ	Kuzumaki	0.74	291	P	Pn	08 31 06.5	+0.1
JKZ				S	Sn	08 31 16.6	0.0
JOM	Ohasama	0.77	251	P	Pn	08 31 06.9	+0.2
JOM				S	Sn	08 31 17.6	+0.4
OFUJ	Ofunato	0.78	214	S	Sn	08 31 17.1	-0.3
JMK	Ichinoseki	1.10	226	P	Pn	08 31 11.4	+0.2
JMK				S	Sn	08 31 25.5	+0.3
ASAJ	Asahikawa	4.40	3	P	Pn	08 31 58.7	+2.3
	1.6nm,0.3s,baz=234,slow=7.7,SNR=5.3						
ASAJ				S	Sn	08 32 47.7	+1.4
	1.7nm,0.3s,baz=60,slow=20,SNR=2.9						
ASAJ				LR	LR	08 33 50.2	
	comp=Z,58nm,21.2s,baz=210,slow=40						
MAT	Matsushiro	4.49	226	P	Pn	08 32 01.0	+3.3
MAT				S	Sn	08 32 53.4	+4.8
MJAR	Matsushiro Arr	4.49	226	P	Pn	08 32 01.2	+3.5
	2.0nm,0.3s,baz=31,slow=13,SNR=23						
MJAR				LR	LR	08 34 02.4	
	comp=Z,41nm,19.7s,baz=65,slow=42						
USRK	Ussuriysk Ar.	8.84	304	P	Pn	08 33 00.8	+3.4
	0.3nm,0.3s,baz=101,slow=12,SNR=6.8						
JNU	Nakatsue	11.26	238	LR	LR	08 38 17.5	
	comp=Z,18nm,18.9s,baz=109,slow=39						
KSRS	Korea Array	11.43	263	P	Pn	08 33 38.6	+6.0
	0.4nm,0.3s,baz=76,slow=14,SNR=3.2						
KSRS				LR	LR	08 37 54.4	
	comp=Z,28nm,18.8s,baz=140,slow=36						
PETK	Petropavlovsk-	17.06	33	LR	LR	08 42 23.7	
	comp=Z,16nm,19.9s,baz=214,slow=40						
SONM	Songino Array	26.92	299	P	P	08 36 28.1	-1.0
	1.5nm,0.3s,baz=93,slow=7.2,SNR=4.7						
ZALV	Zalesovo Beam	40.63	310	P	P	08 38 26.7	-0.8
	0.9nm,0.4s,baz=52,slow=9.5,SNR=4.9						
MKAR	Makanchi Array	43.29	300	P	P	08 38 49.5	+0.2
	0.6nm,0.5s,baz=84,slow=11,SNR=5.5						
ILAR	Eielson Array	46.89	34	P	P	08 39 17.8	+0.2
	0.3nm,0.6s,baz=263,slow=5.5,SNR=5.2						
INK	Inuvik	51.71	28	P	P	08 39 55.1	+0.9
	0.5nm,0.7s,baz=331,slow=2.7,SNR=3.4						
WRA	Warramunga Arr	59.81	189	P	P	08 40 52.1	-0.7
	0.5nm,0.5s,baz=6.4,slow=7.0,SNR=9.2						
YKA	Yellowknife Ar	61.17	31	P	P	08 41 01.1	-0.5
	0.1nm,0.6s,baz=300,slow=6.3,SNR=3.3						
ASAR	Alice Springs	63.54	189	P	P	08 41 17.8	-0.1
	0.3nm,0.6s,baz=2.4,slow=5.3,SNR=4.5						
FINES	FINESS Array B	66.74	332	P	P	08 41 37.8	-0.5
	0.6nm,0.5s,baz=8.8,slow=14,SNR=4.2						
NOA	NORSAR Array B	71.96	337	P	P	08 42 10.7	+0.1
	0.5nm,0.6s,baz=28,slow=4.7,SNR=2.8						
NVAR	Mina Array Bea	72.88	54	P	P	08 42 14.3	-2.4
	0.3nm,0.5s,baz=318,slow=4.9,SNR=2.8						

IDC 06 08:44:51.1±12.0, 20°.21S×176°.27W, h174km±119km, mb3.4/5, mb1 3.7/6, mb1mx3.4/26, mbtmp4.0/6, Error ellipse: s-maj=50.1km s-min=26.1km az=172.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	Afiamalu	7.60	35	S	Sn	08 47 56.1	-8.6
	3.3nm,0.3s,baz=60,slow=20,SNR=3.5						
URZ	Urewera	18.88	196	P	P	08 48 57.5	-0.7
	0.6nm,0.3s,baz=121,slow=5.9,SNR=3.1						
RPZ	Rata Peaks	25.72	202	P	P	08 50 05.6	+0.3
	5.9nm,0.6s,baz=27,slow=9.0,SNR=4.6						
ASAR	Alice Springs	46.16	256	P	P	08 52 59.2	+0.6
	1.8nm,0.6s,baz=96,slow=8.2,SNR=32						
WRA	Warramunga Arr	46.25	261	P	P	08 52 58.8	-0.5
	0.4nm,0.3s,baz=95,slow=7.6,SNR=14						
NVAR	Mina Array Bea	79.71	43	P	P	08 56 40.4	+0.5
	0.3nm,0.6s,baz=224,slow=7.6,SNR=2.9						
ILAR	Eielson Array	87.68	12	P	P	08 57 19.3	-0.3
	0.3nm,0.7s,baz=236,slow=6.4,SNR=4.0						
BRTR	Keskin Array B	147.83	314	PKPbc	PKPbc	09 04 14.6	-1.3
	0.7nm,0.8s,baz=48,slow=2.1,SNR=2.9						
GERES	GERESS Array B	150.33	347	PKPbc	PKPbc	09 04 21.4	-0.4
	0.2nm,0.3s,baz=1.9,slow=4.0,SNR=4.1						

ISCJB ***06*** *08:51:46.9±1.0, 36°.49N±0°.05×28°.72E±0°.04, h7km±5km, Error ellipse: s-maj=9.0km s-min=5.1km az=18.7*
CSEM ***06*** *08:51:47.2±0.2, 36°.51N×28°.74E, h12km, ML2.5, Error ellipse: s-maj=5.2km s-min=2.7km az=16.0*
ISK ***06*** *08:51:47.1, 36°.52N×28°.71E, h11km, ML2.5*
DDA ***06*** *08:51:47.6, 36°.60N×28°.70E, h7km, Md3.0*

ISC 06 08:51:46.7±1.7, 36°.56N±0°.05×28°.76E±0°.03, h4km±15km, n25, σ0=59/42, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FETY	Fethiye	0.27	73	ePG	Pb	08 51 54.0	-0.1
FETY				eSG	Sb	08 51 59.0	-0.1
FETY	Fethiye	0.27	73	ePg	Pb	08 51 54.0	-0.1
FETY				eSg	Sb	08 51 59.0	-0.1
DALY	Dalyan (Mu¨la	0.27	342	ePG	Pb	08 51 53.7	-0.5
DALY				eSG	Sb	08 51 58.1	-1.1
DALY	Dalyan (Mu¨la	0.27	342	ePg	Pb	08 51 53.7	-0.5
DALY				eSg	Sb	08 51 58.1	-1.1
TURN	Turunc	0.34	338	iP	Pb	08 51 56.4	+1.1
TURN				iS	Sb	08 52 03.9	+2.9
YER	Yerkesik	0.69	327	ePG	Pb	08 52 00.9	-0.5
YER				eSG	Sb	08 52 11.2	-0.1
YER	Yerkesik	0.69	327	ePg	Pb	08 52 00.9	-0.5
YER				eSg	Sb	08 52 11.2	-0.1
AKAS	Kas	0.75	115	P	Pb	08 52 02.2	-0.2
AKAS				S	Sn	08 52 16.2	+0.1
AKAS	Kas	0.75	115	iP	Pb	08 52 02.2	-0.2
AKAS				iS	Sn	08 52 16.2	+0.1
GLHS	Glhisar (BURDU	0.84	44	ePG	Pb	08 52 03.9	0.0
GLHS	Glhisar (BURDU	0.84	44	ePg	Pb	08 52 03.9	0.0
GOLH	Golhisar	0.93	43	P	Pb	08 52 05.5	0.0
GOLH	

NIED ***06*** *09:00:00,37.°70N×138.°10E,h8km,Mw4.2 Best double couple: M₀1.89000×1015 NP1:φs217.00000°,δ33.00000°, λ136.00000°. NP2:φs347.00000°,δ67.00000°,λ65.00000°.*
IDC ***06*** *09:00:15.5±3.4,37.°62N×138.°00E,h20km±22km,mb3.9/17, mb1 4.1/18,mb1mx4.0/40,mbtmp4.0/18,MS3.1/8, Ms1 3.1/8,ms1mx2.8/47,Error ellipse: s-maj=17.9km s-min=11.6km az=80.0*
MOS ***06*** *09:00:15.9±1.1,37.°64N×138.°01E,h33km,mb4.3/25,Error ellipse: s-maj=11.9km s-min=7.7km az=99.2*
JMA ***06*** *09:00:15.1,37.°71N×138.°11E,h18km±1km,M4.2 Broadband fault plane solution: P waves. NP1: φs336.00000°,δ79.00000°,λ48.00000°. NP2: φs233.00000°,δ43.00000°,λ163.00000°. Principal axes: T Plg41.0000°, Azm207.0000°; N Plg41.0000°, Azm346.0000°; P Plg22.0000°, Azm96.0000°;*
JMA Felt III J1.
ISCJB ***06*** *09:00:15.1±0.4,37.°68N±0.°02×138.°11E±0.°03,h27km±3km, mb4.1/34,MS3.4/2 Error ellipse: s-maj=3.8km s-min=3.6km az=164.4*
NEIC ***06*** *09:00:18.3±0.7,37.°56N×138.°03E,h43km±7km,mb4.3/9, Error ellipse: s-maj=8.0km s-min=6.6km az=99.0*
NEIC Recorded [3 JMA] in Niigata.

ISC 06 09:00:14.1±1.2,37.°64N±0.°03×138.°11E±0.°04,h10km±7km, n78,σ1°32/92,mb4.2/34,7C-12D,Near west coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JSD	**Sado**	**0.41**	**17**	⇑P	**Pg**	**09 00 22.4**	**+0.2**
JSD				S	**Sg**	**09 00 27.3**	**-0.4**
JIZZ	**Izumozaki**	**0.49**	**103**	⇓P	**Pb**	**09 00 25.1**	**+0.3**
JIZZ				S	**Sb**	**09 00 32.9**	**+0.9**
JJN	**Nakama**	**0.54**	**175**	⇑P	**Pn**	**09 00 27.1**	**-0.7**
JJN				S	**Sn**	**09 00 36.0**	**-0.9**
JSZ	**Suzu**	**0.62**	**252**	⇓P	**Pn**	**09 00 27.4**	**-1.5**
JSZ				S	**Sn**	**09 00 36.7**	**-2.2**
JHK	**Hiroka**	**0.82**	**118**	⇓P	**Pb**	**09 00 30.2**	**-0.3**
JHK				S	**Sb**	**09 00 41.5**	**-0.1**
JHG	**Hegura jima**	**0.96**	**283**	⇓P	**Pn**	**09 00 33.0**	**-0.6**
JHG				S	**Sn**	**09 00 46.3**	**-1.1**
JNS	**Sasagawa**	**0.98**	**79**	⇓P	**Pg**	**09 00 32.4**	**-0.5**
JNS				S	**Sg**	**09 00 45.3**	**-0.3**
MAJO	**Matsushiro**	**1.10**	**176**	*c iP*	**Pn**	**09 00 35.4**	**-0.2**
MAJO	**Matsushiro**	**1.10**	**176**	*ePn*	**Pn**	**09 00 35.5**	**0.0**
MAJO				*eSn*	**Sg**	**09 00 48.9**	**-0.6**
MAT	**Matsushiro**	**1.10**	**176**	P	**Pn**	**09 00 35.4**	**-0.2**
MAT				S	**Sn**	**09 00 50.7**	**-0.1**
MAT	**Matsushiro**	**1.10**	**176**	P	**Pn**	**09 00 35.4**	**-0.2**
MAT				S	**Sn**	**09 00 50.6**	**-0.2**
MJAR	**Matsushiro Arr**	**1.10**	**176**	Pg	**Pn**	**09 00 36.0**	**+0.5**
	110nm,0.3s,baz=348,slow=16,SNR=393						
MJAR				Lg	Lg	09 00 50.9	
	216nm,0.3s,baz=352,slow=25,SNR=35						
MJAR				LR	LR	09 01 09.3	
	comp=Z,489nm,18.9s,baz=0.0,slow=48						
JAW	**Awa shima**	**1.21**	**48**	⇓P	**Pg**	**09 00 35.9**	**-1.5**
JAW				S	**Sg**	**09 00 52.3**	**-0.9**
JHJ	**Hachijo jima 2**	**4.71**	**163**	Pn	**Pn**	**09 01 28.8**	**+3.5**
	27nm,0.3s,baz=57,slow=7.1,SNR=6.6						
JHJ				LR	LR	09 03 41.2	
	comp=Z,231nm,18.6s,baz=262,slow=44						
JHJ2	**Mitsune**	**4.73**	**162**	*ePn*	**Pn**	**09 01 25.3**	**-0.2**
JHJ2				*eSn*	**Sn**	**09 02 21.8**	**+1.4**
ERM	**Erimo**	**5.85**	**40**	*c iP*	**Pn**	**09 01 43.3**	**+2.5**
ERM	**Erimo**	**5.85**	**40**	*ePn*	**Pn**	**09 01 43.4**	**+2.7**
	22nm,0.8s						
ERM				*eSn*	**Sn**	**09 02 48.8**	**+1.0**
ASAJ	**Asahikawa**	**7.31**	**26**	LR	LR	09 04 43.6	
	comp=Z,76nm,21.1s,baz=114,slow=36						
ASAJ	**Asahikawa**	**7.31**	**26**	*ePn*	**Pn**	**09 02 04.9**	**+4.1**
JNU	**Nakatsue**	**7.43**	**235**	LR	LR	09 04 56.9	
	comp=Z,132nm,18.5s,baz=301,slow=38						
USRK	**Ussuriysk Ar.**	**8.02**	**327**	Pn	**Pn**	**09 02 12.4**	**+1.8**
	baz=169,slow=16,SNR=2.7						
KSRS	**Korea Array**	**8.09**	**272**	Pn	**Pn**	**09 02 14.6**	**+3.0**
	1.2nm,0.3s,baz=85,slow=14,SNR=10						
KSRS				Sn	**Sn**	**09 03 45.9**	**+2.8**
	0.4nm,0.3s,baz=82,slow=24,SNR=4.9						
KSRS				LR	LR	09 05 00.3	
	comp=Z,159nm,19.2s,baz=143,slow=35						
KSAR	**Wonju Array Be**	**8.12**	**272**	P	**Pn**	**09 02 14.6**	**+2.6**
KSAR						09 03 45.9	
KSAR	**Wonju Array Be**	**8.12**	**272**	Pn	**Pn**	**09 02 14.6**	**+2.6**
KSAR				Sn	**Sn**	**09 03 45.9**	**+2.0**
JCJ	**Chichijima**	**11.06**	**161**	LR	LR	09 07 19.9	
	comp=Z,216nm,21.4s,baz=298,slow=38						
KLR	**Kul'dur**	**12.46**	**340**	LR	LR	09 06 56.5	
	comp=Z,28nm,21.7s,baz=174,slow=32						
SKR	**Severo-Kuril's**	**18.29**	**39**	*eP*	**P**	**09 04 29.8**	**+1.9**
ULN	**Ulaanbaatar**	**24.83**	**304**	*d iP*	**P**	**09 05 36.7**	**+0.1**
ULN				pmax	pmax		
	comp=Z,7.0nm,1.0s						
ULN	**Ulaanbaatar**	**24.83**	**304**	*eP*	**P**	**09 05 36.7**	**+0.1**
	comp=Z,7.5nm,0.9s						
YAK	**Yakutsk**	**24.97**	**351**	*eP*	**P**	**09 05 37.6**	**+0.2**
YAK				pmax	pmax		
	comp=Z,6.0nm,0.9s						
SONM	**Songino Array**	**25.26**	**304**	P	**P**	**09 05 40.7**	**+0.3**
	comp=Z,6.2nm,0.8s,baz=106,slow=9.3,SNR=28						
SEY	**Seymchan**	**26.78**	**14**	P	**P**	**09 05 53.4**	**-0.5**
	comp=Z,2.0nm,0.8s,baz=207,slow=7.2,SNR=6.1						
SEY	**Seymchan**	**26.78**	**14**	⇓*eP*	**P**	**09 05 55.6**	**+1.7**
TLY	**Talaya**	**27.95**	**311**	*eP*	**P**	**09 06 04.1**	**-0.4**
TLY				pmax	pmax		
	comp=Z,4.0nm,0.7s						
BILL	**Biiibino**	**34.24**	**18**	*eP*	**P**	**09 06 56.3**	**-3.4**
BILL				*e*PPP	PPP	09 08 27.3	
BILL				pmax	pmax		
	comp=Z,1.0nm,0.8s						
TIXI	**Tiksi**	**34.41**	**355**	⇓*eP*	**P**	**09 07 00.3**	**-0.8**
TIXI				pmax	pmax		
	comp=Z,5.0nm,1.2s						
ZALV	**Zalesovo Beam**	**39.55**	**312**	P	**P**	**09 07 44.1**	**-0.9**
	comp=Z,1.3nm,0.6s,baz=89,slow=8.0,SNR=3.6						
ZALV				PcP	**PcP**	**09 09 51.4**	**-0.9**
	comp=Z,0.6nm,0.3s,baz=122,slow=5.2,SNR=3.4						
MKAR	**Makanchi Array**	**41.55**	**301**	P	**P**	**09 08 00.9**	**-0.8**
	comp=Z,0.6nm,0.7s,baz=87,slow=9.8,SNR=4.0						
MKAR				PcP	**PcP**	**09 09 58.7**	**-0.2**
	comp=Z,0.7nm,0.8s,baz=86,slow=5.0,SNR=6.1						
KURK	**Kurchatov**	**43.48**	**307**	*deP*	**P**	**09 08 15.6**	**-1.6**
KURK				pmax	pmax		
	comp=Z,3.0nm,1.0s						
KURK	**Kurchatov**	**43.48**	**307**	*eP*	**P**	**09 08 17.0**	**-0.2**
	comp=Z,9.0nm,0.6s						
TKM2	**Tokmak 2**	**47.02**	**297**	*eP*	**P**	**09 08 44.6**	**-1.1**
TKM2				pmax	pmax		
	comp=Z,1.0nm,0.3s						
TKM2	**Tokmak 2**	**47.02**	**297**	*eP*	**P**	**09 08 44.6**	**-1.1**
	comp=Z,0.9nm,0.3s						
PMG	**Port Moresby**	**47.56**	**168**	⇑*eP*	**P**	**09 08 50.6**	**+0.7**
PMG				pmax	pmax		
	comp=Z,96nm,1.2s						
AAK	**Ala-Archa**	**47.87**	**297**	LR	LR	09 29 15.1	
	comp=Z,34nm,20.5s,baz=34,slow=36						
BRVK	**Borovoye**	**48.26**	**311**	⇑*eP*	**P**	**09 08 55.2**	**+0.2**
BRVK				pmax	pmax		
	comp=Z,2.0nm,0.9s						
COLD	**Coldfoot**	**48.91**	**29**	*eP*	**P**	**09 09 00.8**	**+1.0**
	comp=Z,2.1nm,0.6s						
ILAR	**Eielson Array**	**50.40**	**33**	P	**P**	**09 09 11.2**	**0.0**
	comp=Z,1.7nm,0.8s,baz=280,slow=6.7,SNR=24						
BMRM	**Bremner River**	**51.97**	**37**	*eP*	**P**	**09 09 24.0**	**+0.9**
	comp=Z,4.5nm,0.7s						
EGAK	**Eagle**	**52.83**	**32**	*eP*	**P**	**09 09 29.5**	**+0.2**
	comp=Z,1.4nm,0.6s						
ARU	**Arti**	**54.15**	**318**	*c iP*	**P**	**09 09 38.5**	**-0.6**
ARU						09 11 37.8	
ARU				S	**S**	**09 17 14.4**	**-1.3**
ARU				SS	**SKiKP**	**09 20 49.6**	**-1.2**
ARU				pmax	pmax		
	comp=Z,7.0nm,1.1s						
INK	**Inuvik**	**55.05**	**27**	P	**P**	**09 09 46.0**	**+0.6**
	comp=Z,3.9nm,0.8s,baz=307,slow=7.1,SNR=23						
INK	**Inuvik**	**55.05**	**27**	P	**P**	**09 09 46.0**	**+0.6**
INK				pmax	pmax		
	comp=Z,4.0nm,0.8s						
ABKAR	**Akbulak array**	**55.52**	**309**	*eP*	**P**	**09 09 48.6**	**-0.6**
	comp=Z,0.7nm,0.3s						
WRAB	**Tennant Creek**	**57.38**	**184**	⇓*eP*	**P**	**09 10 02.7**	**+0.1**
WRAB				pmax	pmax		
	comp=Z,16nm,1.0s						
WRAB	**Tennant Creek**	**57.38**	**184**	*eP*	**P**	**09 10 02.6**	**+0.1**
	comp=Z,5.2nm,0.8s						
WRA	**Warramunga Arr**	**57.38**	**184**	P	**P**	**09 10 02.8**	**+0.1**
	comp=Z,4.3nm,0.8s,baz=0.9,slow=7.2,SNR=27						
WRA	**Warramunga Arr**	**57.38**	**184**	P	**P**	**09 10 02.8**	**+0.1**
WRA				pmax	pmax		
	comp=Z,3.0nm,1.0s						
ASAR	**Alice Springs**	**61.11**	**184**	P	**P**	**09 10 28.4**	**0.0**
	comp=Z,1.3nm,0.8s,baz=5.4,slow=5.8,SNR=11						
ASAR	**Alice Springs**	**61.11**	**184**	P	**P**	**09 10 28.5**	**0.0**
ASAR				pmax	pmax		
	comp=Z,2.0nm,0.9s						
YKA	**Yellowknife Ar**	**64.59**	**29**	P	**P**	**09 10 50.9**	**-0.3**
	comp=Z,0.6nm,0.7s,baz=306,slow=6.9,SNR=14						
OBN	**Obninsk**	**66.01**	**322**	*eP*	**P**	**09 11 01.4**	**+0.9**
OBN				*e*		09 13 25.2	
OBN				pmax	pmax		
	comp=Z,3.0nm,0.8s						
FINES	**FINESS Array B**	**67.03**	**331**	P	**P**	**09 11 06.0**	**-0.9**
	comp=Z,1.6nm,0.7s,baz=57,slow=7.0,SNR=6.2						
FINES	**FINESS Array B**	**67.03**	**331**	*i P*	**P**	**09 11 06.5**	**-0.4**
FINES				pmax	pmax		
	comp=Z,2.0nm,0.7s						
KIV	**Kislovodsk**	**68.50**	**309**	*eP*	**P**	**09 11 17.8**	**+1.2**
KIV				pmax	pmax		
	comp=Z,5.0nm,0.9s						
STKA	**Stephens Creek**	**69.24**	**177**	P	**P**	**09 11 20.2**	**-0.8**
	comp=Z,1.0nm,0.7s,baz=316,slow=11,SNR=3.4						
YBH	**Yreka Blue Hor**	**72.03**	**51**	P	**P**	**09 11 39.7**	**+1.3**
	comp=Z,0.8nm,0.5s,baz=63,slow=2.3,SNR=4.5						
AKASG	**Malin Array Be**	**72.18**	**321**	P	**P**	**09 11 38.0**	**-0.9**
	comp=Z,1.2nm,0.5s,baz=50,slow=6.1,SNR=6.6						
AKASG				LR	LR	09 43 51.6	
	comp=Z,28nm,19.2s,baz=310,slow=36						
NB2	**NORSAR Subarra**	**72.58**	**336**	P	**P**	**09 11 40.5**	**-0.6**
	comp=Z,0.8nm,0.7s,baz=42,slow=6.2						
NOA	**NORSAR Array B**	**72.58**	**336**	P	**P**	**09 11 40.5**	**-0.6**
	comp=Z,1.4nm,0.8s,baz=41,slow=6.0,SNR=5.7						
NOA	**NORSAR Array B**	**72.58**	**336**	P	**P**	**09 11 40.6**	**-0.6**
NOA				pmax	pmax		
	comp=Z,2.0nm,0.8s						
HLID	**Hailey**	**75.86**	**46**	*eP*	**P**	**09 12 02.6**	**+1.8**
	comp=Z,0.8nm,0.8s						
NVAR	**Mina Array Bea**	**76.71**	**52**	P	**P**	**09 12 06.7**	**+1.0**
	comp=Z,1.2nm,0.7s,baz=293,slow=5.7,SNR=11						
PDAR	**Pinedale Array**	**79.09**	**44**	P	**P**	**09 12 19.2**	**+0.3**
	comp=Z,1.0nm,0.8s,baz=281,slow=2.3,SNR=6.3						
WUAZ	**Wupatki**	**82.83**	**50**	*eP*	**P**	**09 12 36.9**	**-2.0**
ANMO	**Albuquerque**	**86.18**	**48**	⇓*eP*	**P**	**09 12 57.4**	**+1.4**
ANMO				pmax	pmax		
	comp=Z,1.0nm,0.7s						
TXAR	**Lajitas Array**	**91.80**	**50**	P	**P**	**09 13 23.4**	**+0.8**
	comp=Z,0.7nm,0.7s,baz=304,slow=2.4,SNR=5.3						
SAML	**Samuel**	**145.56**	**39**	*e*PKPbc	**PKPdf**	**09 19 53.3**	**+0.2**
LPAZ	**La Paz**	**148.58**	**55**	PKPbc	**PKPdf**	**09 20 00.4**	**+1.6**
	comp=Z,1.6nm,0.8s,baz=34,slow=11,SNR=6.8						

IDC ***06*** *09:00:17.8±3.3,64.°63N×31.°64E,h0km,mb1 2.8/3, mb1mx2.7/41,mbtmp2.7/3,ML2.4/3,Error ellipse: s-maj=49.4km s-min=12.4km az=98.0*
CSEM ***06*** *09:00:19.0,64.°69N×30.°86E,h0km,ML1.8,Mining explosion.*
KOLA ***06*** *09:00:19.8,64.°74N×30.°22E,h0km*
HEL ***06*** *09:00:19.0±0.3,64.°69N×30.°86E,h0km,ML1.8,Explosion*

ISC 06 09:00:16.3±1.0,64.°74N±0.°03×31.°31E±0.°06,h0km,n15, σ0°76/25,Baltic States-Belarus-Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KU6	**Riekki**	**1.42**	**336**	*eP*	**Pb**	**09 00 44.2**	**+0.5**
KU6				*eS*	**Sb**	**09 01 02.0**	**-0.2**
KU6	**Riekki**	**1.42**	**336**	P	**Pb**	**09 00 44.1**	**+0.5**
KU6				S	**Sb**	**09 01 02.0**	**-0.2**
JOF	**Joensuu**	**1.83**	**180**	*eP*	**Pb**	**09 00 50.7**	**+0.1**
JOF				*eS*	**Sn**	**09 01 13.0**	**+0.1**
JOF				MSG		09 01 18.1	
	comp=Z,4.8nm,0.1s						
JOF	**Joensuu**	**1.83**	**180**	P	**Pb**	**09 00 50.7**	**+0.1**
JOF				S	**Sn**	**09 01 12.9**	**+0.1**
OUFX	**Oulainen**	**2.88**	**265**	*eP*	**Pn**	**09 01 03.5**	**+0.2**
OUFX				*e*SB	**Sn**	**09 01 38.1**	**-0.5**
OUFX	**Oulainen**	**2.88**	**265**	P	**Pn**	**09 01 03.5**	**+0.2**
OUFX				Sb	**Sn**	**09 01 38.0**	**-0.5**
APA0	**Apatity Array**	**2.96**	**13**	P	**Pb**	**09 01 09.2**	**-0.6**
APA0				S	**Sb**	**09 01 46.1**	**-0.3**
APA	**Apatity**	**2.96**	**16**	P	**Pb**	**09 01 09.6**	**-0.3**
APA				S	**Sb**	**09 01 46.9**	**+0.2**
KAF	**Kangasniemi**	**3.47**	**223**	*eS*	**Sn**	**09 01 53.1**	**0.0**
KAF				MSG		09 02 08.1	
	comp=Z,2.9nm,0.3s						
KAF	**Kangasniemi**	**3.47**	**223**	S	**Sn**	**09 01 53.1**	**0.0**
KEF	**Keuruu**	**3.88**	**231**	*e*SG	**Sb**	**09 02 13.7**	**+0.8**
KEF				MSG		09 02 16.3	
	comp=Z,1.8nm,0.2s						
KEF	**Keuruu**	**3.88**	**231**	Sg	**Sb**	**09 02 13.7**	**+0.8**
FINES	**FINESS Array B**	**4.08**	**218**	Pn	**Pn**	**09 01 20.3**	**+0.5**
	comp=Z,0.1nm,0.3s,baz=42,slow=12,SNR=3.2						
FINES				Sn	**Sb**	**09 02 16.5**	**-2.1**
	comp=Z,1.1nm,0.3s,baz=33,slow=26,SNR=10						
ARCES	**ARCESS Array B**	**5.32**	**337**	Pn	**Pn**	**09 01 38.5**	**+1.7**
	comp=Z,0.2nm,0.3s,baz=155,slow=13,SNR=24						
ARCES				Sn	**Sn**	**09 02 37.8**	**-0.9**
	comp=Z,0.2nm,0.3s,baz=155,slow=22,SNR=3.4						
NOA	**NORSAR Array B**	**9.87**	**257**	Pn	**Pn**	**09 02 38.3**	**-1.1**
	comp=Z,0.1nm,0.3s,baz=78,slow=13,SNR=3.5						

IDC ***06*** *09:00:16.5±5.8,16.°89N×98.°74W,h0km,mb3.8/3, mb1 3.8/7,mb1mx3.6/37,mbtmp3.6/7,ML3.4/4,MS2.9/3, Ms1 2.9/3,ms1mx2.5/48,Error ellipse: s-maj=106.6km s-min=19.8km az=17.0*
NEIC ***06*** *09:00:16.5±1.7,16.°51N×98.°93W,h15km±13km,mb3.7/3, MD4.0(MEX),Error ellipse: s-maj=17.4km s-min=7.5km az=200.0*
MEX ***06*** *09:00:19.5±0.6,16.°62N×98.°90W,h13km±5km,MD4.0*

ISC 06 09:00:17.3±1.2,16.°60N±0.°05×98.°90W±0.°03,h23km±11km, n47,σ1°56/80,mb3.8/3,Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PNIG	**Pinotepa**	**0.77**	**106**	*eP*	**Pb**	**09 00 31.8**	**-0.3**
PNIG				*eS*	**Sb**	**09 00 42.6**	**+0.6**
PNIG	**Pinotepa**	**0.77**	**106**	*eP*	**Pb**	**09 00 31.8**	**-0.3**
PNIG				*eS*	**Sb**	**09 00 42.6**	**+0.6**
ACX	**Acapulco**	**0.96**	**286**	*eP*	**Pb**	**09 00 35.0**	**-0.3**
ACX				*i S*	**Sb**	**09 00 46.7**	**-0.9**
ACX	**Acapulco**	**0.96**	**286**	*eP*	**Pb**	**09 00 35.0**	**-0.3**
ACX				*i S*	**Sb**	**09 00 46.7**	**-0.9**
ACP2	**Acapulco**	**0.99**	**286**	*eP*	**Pn**	**09 00 34.7**	**-1.0**
ACP2				*eS*	**Sb**	**09 00 47.5**	**-0.8**
TLIG	**Tlapa**	**1.01**	**18**	*eP*	**Pn**	**09 00 35.2**	**-1.0**
TLIG				*i S*	**Sb**	**09 00 47.2**	**-1.9**
CAIG	**El Cayaco**	**1.39**	**289**	*eP*	**Pn**	**09 00 40.4**	**-0.8**
CAIG				*i S*	**Sn**	**09 00 56.8**	**-2.1**
CAIG	**El Cayaco**	**1.39**	**289**	*eP*	**Pn**	**09 00 40.4**	**-0.8**
CAIG				*i S*	**Sn**	**09 00 56.8**	**-2.1**
MEIG	**Mezcala**	**1.49**	**332**	*eP*	**Pn**	**09 00 42.5**	**-0.2**
MEIG				*eS*	**Sn**	**09 00 59.4**	**-2.1**
MEIG	**Mezcala**	**1.49**	**332**	*eP*	**Pn**	**09 00 42.5**	**-0.2**
MEIG				*eS*	**Sn**	**09 00 59.4**	**-2.1**
VHO	**Vista Hermosa**	**2.12**	**77**	*eP*	**Pn**	**09 00 52.0**	**+0.4**
VHO				*eS*	**Sn**	**09 01 16.5**	**-0.9**
VHO	**Vista Hermosa**	**2.12**	**77**	*eP*	**Pn**	**09 00 52.0**	**+0.4**
VHO				*eS*	**Sn**	**09 01 16.5**	**-0.9**
ARIG	**Puente Sto Nin**	**2.17**	**321**	*eP*	**Pn**	**09 00 52.5**	**+0.5**
ARIG				*i S*	**Sn**	**09 01 17.2**	**-1.1**
TPIG	**Tehuac#an**	**2.33**	**39**	*eP*	**Pn**	**09 00 54.0**	**-0.3**
TPIG				*i S*	**Sn**	**09 01 20.8**	**-1.5**
TPIG	**Tehuac#an**	**2.33**	**39**	*eP*	**Pn**	**09 00 54.0**	**-0.3**
TPIG				*i S*	**Sn**	**09 01 20.8**	**-1.5**
MAVM	**Malinalco, Edo**	**2.41**	**346**	*eP*	**Pn**	**09 00 57.1**	**+1.6**
MAVM				*i S*	**Sn**	**09 01 23.0**	**-1.5**
MZVM		**2.59**	**353**	*eP*	**Pn**	**09 00 58.3**	**+0.5**
MZVM				*i S*	**Sn**	**09 01 28.7**	**+0.1**
VCVM	**Valle de Chalc**	**2.68**	**359**	*eP*	**Pn**	**09 01 00.3**	**+0.9**
VCVM				*i S*	**Sn**	**09 01 31.1**	**-0.1**
UNM	**Universidad Na**	**2.73**	**354**	*eP*	**Pn**	**09 00 59.8**	**-0.1**
UNM				*i S*	**Sn**	**09 01 31.9**	**-0.4**
UNM	**Universidad Na**	**2.73**	**354**	*eP*	**Pn**	**09 00 59.8**	**-0.1**
UNM				*i S*	**Sn**	**09 01 31.9**	**-0.4**
HUIG	**Huatulco**	**2.81**	**107**	*eP*	**Pn**	**09 01 01.3**	**+0.5**
HUIG				*e*S	**Sn**	**09 01 34.6**	**+0.6**
HUIG	**Huatulco**	**2.81**	**107**	*e*P	**Pn**	**09 01 01.3**	**+0.5**
HUIG				*e*S	**Sn**	**09 01 34.6**	**+0.6**
PBVM	**Pinon**	**2.83**	**356**	*eP*	**Pn**	**09 01 01.0**	**-0.1**
PBVM				*i S*	**Sn**	**09 01 33.9**	**-0.6**
PBVM	**Pinon**	**2.83**	**356**	*eP*	**Pn**	**09 01 01.0**	**-0.1**
PBVM				*i S*	**Sn**	**09 01 33.9**	**-0.6**
IIO	**Organos**	**2.98**	**3**	*eP*	**Pn**	**09 01 04.4**	**+0.9**
IIO				*i S*	**Sn**	**09 01 37.9**	**-0.8**
IIO	**Organos**	**2.98**	**3**	*eP*	**Pn**	**09 01 04.4**	**+0.9**
IIO				*i S*	**Sn**	**09 01 37.9**	**-0.8**
PTVM	**Pico Tres Padr**	**2.98**	**356**	*eP*	**Pn**	**09 01 04.1**	**+0.6**
PTVM				*i S*	**Sn**	**09 01 38.5**	**-0.1**
PTVM	**Pico Tres Padr**	**2.98**	**356**	*eP*	**Pn**	**09 01 04.1**	**+0.6**
PTVM				*i S*	**Sn**	**09 01 38.5**	**-0.1**
AZVM	**Cuida Lopez Ma**	**2.99**	**353**	*eP*	**Pn**	**09 01 04.4**	**+0.8**
AZVM				*i S*	**Sn**	**09 01 38.6**	**-0.3**
VTVM	**Tizayuca**	**3.15**	**2**	*eP*	**Pn**	**09 01 06.2**	**+0.4**
VTVM				*i S*	**Sn**	**09 01 42.2**	**-0.7**
ZUVM	**ZUMPANGO**	**3.21**	**357**	*eP*	**Pn**	**09 01 07.0**	**+0.3**
ZUVM				*i S*	**Sn**	**09 01 43.3**	**-1.1**
ATVM	**ATLACOMULCO**	**3.27**	**344**	*eP*	**Pn**	**09 01 08.7**	**+1.3**
ATVM				*i S*	**Sn**	**09 01 44.6**	**-1.2**
CMIG	**Matias Romero**	**3.87**	**82**	Pn	**Pn**	**09 01 15.6**	**+0.1**
	2.9nm,0.3s,baz=274,slow=11,SNR=11						
CMIG				Sn	**Sn**	**09 01 57.7**	**-2.6**
	16nm,0.3s,baz=314,slow=14,SNR=5.6						
CMIG				Lg	Lg	09 02 13.9	
	14nm,0.3s,baz=327,slow=10,SNR=5.2						
CMIG				LR	LR	09 02 56.6	
	comp=Z,252nm,18.1s,baz=224,slow=43						
TEIG	**Tepich**	**10.71**	**69**	Pn	**Pn**	**09 02 49.2**	**-0.1**
	0.3nm,0.3s,baz=270,slow=20,SNR=2.1						
TEIG				Sn	**Sn**	**09 04 41.3**	**-7.2**
	baz=270,slow=20						
TEIG	**Tepich**	**10.71**	**69**	*e*Pn	**Pn**	**09 02 51.9**	**+2.6**
TEIG				Sn	**Sn**	**09 04 41.3**	**-7.2**
LPIG	**La Paz**	**13.04**	**307**	LR	LR	09 07 55.0	
	comp=Z,60nm,21.9s,baz=32,slow=35						
TXAR	**Lajitas Array**	**13.41**	**342**	Pn	**Pn**	**09 03 27.6**	**+1.3**
	0.0nm,0.3s,baz=153,slow=8.1,SNR=3.0						
ABTX	**Abilene, Hawle**	**15.97**	**358**	*e*Pn	**P**	**09 04 04.2**	**+0.3**
MSTX	**Muleshoe**	**17.64**	**349**	*e*Pn	**P**	**09 04 23.6**	**+1.1**
	3.3nm,0.6s						
121A	**Cookes Peak, D**	**17.79**	**335**	*e*Pn	**P**	**09 04 26.7**	**+2.5**
V34A	**Guthrie**	**19.19**	**3**	*eP*	**Pn**	**09 04 41.7**	**+1.2**
	1.8nm,0.4s						
TUL1	**Leonard**	**19.43**	**8**	*eP*	**Pn**	**09 04 44.8**	**+1.5**
	3.5nm,0.6s						
ANMO	**Albuquerque**	**19.48**	**341**	P	**P**	**09 04 44.2**	**+1.4**
	0.1nm,0.3s,baz=159,slow=14,SNR=3.6						
TKL	**Tuckaleechee C**	**23.28**	**33**	LR	LR	09 16 40.8	
	comp=Z,20nm,18.9s,baz=34,slow=43						
PDAR	**Pinedale Array**	**27.62**	**343**	P	**P**	**09 06 04.5**	**+1.2**
	0.3nm,0.4s,baz=139,slow=9.8,SNR=3.9						
SCHQ	**Schefferville**	**45.43**	**26**	P	**P**	**09 08 33.8**	**-0.5**
	2.5nm,0.8s,baz=233,slow=12,SNR=4.5						
YKA	**Yellowknife Ar**	**47.15**	**350**	P	**P**	**09 08 47.3**	**-0.3**
	0.6nm,0.7s,baz=157,slow=7.3,SNR=15						

IDC 06 09:16:59.1±1.7,0.°37S×128.°25E,h0km,mb3.6/4, mb1 3.8/4,mb1mx3.5/39,mbtmp3.6/4,Error ellipse: s-maj=117.9km s-min=23.4km az=66.0,Halmahera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**20.34**	**163**	P	P	09 21 36.6	-0.6
	0.8nm,0.5s,baz=344,slow=11,SNR=25						
ASAR	**Alice Springs**	**23.80**	**167**	P	P	09 22 12.3	-1.4
	1.2nm,0.8s,baz=345,slow=12,SNR=12						
STKA	**Stephens Creek**	**33.78**	**159**	P	P	09 23 44.7	+1.9
	1.8nm,0.7s,baz=345,slow=7.8,SNR=5.5						
MKAR	**Makanchi Array**	**61.78**	**326**	P	P	09 27 19.6	-0.1
	0.2nm,0.4s,baz=118,slow=8.5,SNR=3

AFDM	Forest Hills D	1.40	85	ePn	Pn	09 20 46.6	-1.6
AFDM				eSn	Sg	09 21 08.4	+1.0
O03D	Paynes Creek	1.62	27	P	Pn	09 20 50.8	-0.4
baz=208							
CMB	Columbia Colle	2.04	113	ePn	Pn	09 20 56.1	-0.8
CMB				eSn	Sb	09 21 24.2	-0.8
N02D	Trinity Center	2.12	1	P	Pb	09 21 01.7	+0.8
baz=182							
SAO	San Andreas Ge	2.33	153	ePn	Pn	09 20 59.3	-1.6
M02C	Callahan	2.54	359	Pb	Pb	09 21 08.5	+0.4
baz=179							
WAKR	Walker	2.63	97	ePn	Pn	09 21 06.8	+1.7
YBH	Yreka Blue Hor	2.88	1	Pn	Pb	09 21 11.9	-2.0
1.8nm,0.3s,baz=189,slow=7.9,SNR=32							
YBH				Pg	Pg	09 21 17.3	-0.1
1.8nm,0.3s,baz=186,slow=12,SNR=33							
YBH	Yreka Blue Hor	2.88	1	ePn	Pn	09 21 08.4	-0.1
YBH				ePg	Pg	09 21 17.3	-0.1
YBH				eSn	Sn	09 21 44.3	+1.0
M04C	Macdoel	3.01	13	P	Pb	09 21 13.5	-2.7
baz=194							
MLAC	Mammoth, Mammo	3.33	110	P	Pn	09 21 17.4	+2.6
baz=292							
L02D	Cave Junction,	3.36	349	P	Pg	09 21 26.8	+0.1
baz=169							
NVAR	Mina Array Bea	3.52	95	Pn	Pn	09 21 18.5	+1.1
0.8nm,0.3s,baz=268,slow=15,SNR=19							
NVAR				Pg	Pb	09 21 26.5	+1.6
3.4nm,0.3s,baz=267,slow=18,SNR=42							
NV01	Mina Array Sit	3.52	95	ePn	Pn	09 21 18.1	+0.6
MOD	Modoc Plateau	3.58	31	ePn	Pn	09 21 17.9	-0.3
VES	Vestal, Richgr	4.20	135	P	Pn	09 21 26.8	+0.3
baz=316							
GRAC	Grapevine Rang	4.66	112	P	Pb	09 21 43.5	-0.6
baz=295							
ARVC	Arvin	4.87	139	P	Pn	09 21 35.2	-0.6
baz=321							
MPMC	Manual Prospec	5.04	122	P	Pb	09 21 49.8	-0.9
baz=305							
FURC	Furnace Creek,	5.25	115	P	Pb	09 21 55.5	+1.2
baz=298							
TPNV	Topopah Spring	5.49	108	P	Pb	09 22 02.0	+3.5
baz=292							
EDW2	Edwards Air Fo	5.51	135	P	Pn	09 21 44.2	-0.4
baz=317							
DUG	Dugway, Tooele	7.81	77	ePn	Pn	09 22 19.7	+3.4
3.7nm,1.0s							
PDAR	Pinedale Array	10.75	64	Pn	Pn	09 23 03.7	+7.1
0.0nm,0.3s,baz=246,slow=14,SNR=7.6							
TXAR	Lajitas Array	18.42	115	P	P	09 24 38.0	0.0
0.0nm,0.3s,baz=289,slow=8.3,SNR=3.1							

*NEIC **06** 09:25:44.4±0.6, 30°.60S×69°.34W, h10km, MD3.8(SJA), Error ellipse: s-maj=12.8km s-min=10.5km az=67.0*
NEIC Felt [III] in the San Jose de Jachal area.
*SJA **06** 09:25:47.8±0.5, 30°.24S×69°.28W, h5km±2km, ML4.0, MW3.6*
*IDC **06** 09:25:49.4±0.8, 30°.39S×69°.30W, h40km±5km, mb3.8/3, mb1 3.8/7, mb1mx3.5/33, mbtmp3.8/7, ML3.4/3, MS3.3/3, Ms1 3.3/3, ms1mx2.9/22, Error ellipse: s-maj=28.4km s-min=25.6km az=81.0*

ISC 06 09:25:49.4±0.9, 30°.30S±0°.07×69°.32W±0°.08, h41km±7km, n27, σ1§19/25, mb4.0/3, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RTLL	Cerro Villicun	1.25	145	i P	Pn	09 26 12.8	+2.2
RTLS	Leoncito	1.49	179	i P	Pn	09 26 18.1	+4.1
AVFE	Valle Fertil	1.65	103	i P	Pn	09 26 18.8	+2.8
AVFE				i S	Sn	09 26 41.9	+5.9
AVFE				IAML		09 26 43.4	
comp=Z,948nm,0.3s							
RTCV	Cerro Valdivia	1.69	157	i P	Pn	09 26 20.9	+4.3
LCO	Las Campanas	1.76	317	ePn	Pn	09 26 18.6	+1.0
LCO				eSn	Sn	09 26 40.8	+1.8
VCA	Vinchina	1.84	32	i P	Pn	09 26 21.6	+2.9
VCA				i S	Sn	09 26 46.2	+5.5
VCA				IAML		09 26 51.7	
comp=Z,4μm,0.9s							
AUSP	Uspallata	1.92	182	i P	Pn	09 26 25.0	+5.1
AUSP				i S	Sn	09 26 52.3	+9.5
ASAL	Salagasta	2.32	170	i P	Pn	09 26 29.7	+4.6
ASAL				i S	Sn	09 27 01.7	+9.1
ARCO	CERRO ARCO	2.55	173	i P	Pn	09 26 33.3	+4.9
ARCO				IAML		09 27 14.6	
comp=Z,520nm,0.4s							
ACAN	Cantantal	2.68	138	i P	Pn	09 26 34.8	+4.7
CYA	Choya	3.59	60	i P	Pn	09 26 46.6	+4.0
CYA				IAML		09 27 45.1	
comp=Z,152nm,0.4s							
LVC	Limon Verde	7.67	3	P	Pn	09 27 38.1	-0.8
comp=Z,20nm,0.3s,baz=193,slow=5.9,SNR=10.0							
LVC				S	Sn	09 29 04.2	-0.6
comp=Z,26nm,0.3s,baz=60,slow=20,SNR=3.1							
LVC				LR	LR	09 30 45.4	
comp=Z,591nm,21.8s,baz=188,slow=38							
LVC	Limon Verde	7.67	3	ePn	Pn	09 27 40.2	+1.2
LVC				S	Sn	09 29 04.2	-0.6
CPUP	Villa Florida	11.28	72	P	Pn	09 28 26.6	-1.5
comp=Z,0.1nm,0.3s,baz=53,slow=20,SNR=2.2							
LPAZ	La Paz	13.99	5	P	Pn	09 29 07.2	+1.5
comp=Z,0.2nm,0.3s,baz=225,slow=9.8,SNR=2.2							
SIV	San Ignacio	16.13	30	P	P	09 29 36.0	-0.1
comp=Z,0.1nm,0.3s,baz=298,slow=1.4,SNR=2.4							
NNA	Nana	19.52	337	LR	LR	09 37 00.0	
comp=Z,22nm,19.0s,baz=137,slow=34							
TXAR	Lajitas Array	67.74	328	P	P	09 36 43.5	+0.6
comp=Z,0.5nm,0.7s,baz=156,slow=9.4,SNR=3.2							
DBIC	Dimbokro	71.80	71	LR	LR	10 08 12.2	
comp=Z,34nm,18.8s,baz=126,slow=35							
BOSA	Boshof	79.72	117	P	P	09 37 53.5	+0.1
comp=Z,2.0nm,0.8s,baz=259,slow=5.2,SNR=3.0							
TORD	Torodi Ar. Bea	80.76	69	P	P	09 37 59.0	0.0
comp=Z,0.9nm,0.5s,baz=276,slow=6.4,SNR=18							
TORD				pP	pP	09 38 11.0	-0.3
comp=Z,1.5nm,0.7s,baz=262,slow=4.6,SNR=7.1							
ASAR	Alice Springs	121.89	205	PKP	PKPdf	09 44 38.8	-1.1
comp=Z,0.1nm,0.4s,baz=130,slow=1.5,SNR=4.9							
ASAR				pPKP	pPKPdf	09 44 51.0	-1.7
comp=Z,0.1nm,0.4s,baz=128,slow=1.4,SNR=1.3							
WRA	Warramunga Arr	125.10	207	PKP	PKPdf	09 44 45.7	-0.4
comp=Z,0.5nm,0.5s,baz=158,slow=1.7,SNR=15							
WRA				pPKP	pPKPdf	09 44 59.0	+0.1
comp=Z,0.3nm,0.4s,baz=160,slow=1.7,SNR=2.2							
KURBB	Kurchatov Arra	148.59	41	PKPbc	PKPbc	09 45 31.6	0.0
comp=Z,0.6nm,0.8s,baz=298,slow=3.6,SNR=4.3							
KURBB				pPKPbc	PKPab	09 45 44.3	+9.1
comp=Z,1.2nm,0.7s,baz=297,slow=3.7,SNR=5.9							
KURK	Kurchatov	148.59	40	PKPbc	PKPbc	09 45 31.6	0.0
KURK				pPKPbc	PKPab	09 45 44.3	+9.1
ZALV	Zalesovo Beam	149.88	31	PKPbc	PKPbc	09 45 34.4	-0.3
comp=Z,1.7nm,0.3s,baz=318,slow=2.9,SNR=3.6							
ZALV				pPKPbc	PKPab	09 45 47.6	+7.3
comp=Z,1.0nm,0.3s,baz=306,slow=3.5,SNR=1.6							
MKAR	Makanchi Array	152.56	45	PKPbc	PKPbc	09 45 40.9	-0.3
comp=Z,0.3nm,0.5s,baz=356,slow=1.6,SNR=3.9							
MKAR				PKPab	PKPab	09 45 51.8	0.0
comp=Z,0.6nm,0.5s,baz=298,slow=2.6,SNR=7.2							
MKAR				pPKPab	pPKPab	09 46 04.4	0.0
comp=Z,1.1nm,0.7s,baz=317,slow=3.9,SNR=6.6							

IDC 06 09:26:03.8±3.0, 53°.55N×87°.75E, h0km, mb1 3.2/2, mb1mx3.0/46, mbtmp3.2/2, ML3.1/2, 3C-3D, Error ellipse: s-maj=31.7km s-min=17.3km az=85.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	ZALESOVO INFRA	1.79	284	i		09 37 33.3	
baz=100,slow=328,SNR=23							
ZALV	Zalesovo Beam	1.79	284	Pn	Pn	09 26 35.3	-0.6
5.5nm,0.3s,baz=103,slow=14,SNR=33							
ZALV				Sn	Sb	09 27 00.4	+0.1
9.7nm,0.3s,baz=98,slow=29,SNR=17							
KURBB	Kurchatov Arra	6.39	246	Pn	Pn	09 27 39.7	+0.6
0.3nm,0.3s,baz=63,slow=14,SNR=13							
KURBB				Lg	Lg	09 29 26.9	
0.1nm,0.3s,baz=64,slow=33,SNR=9.6							
KURBB	Kurchatov Arra	6.39	246	⇓Pn	Pn	09 27 39.3	+0.1
1.9nm,0.4s							
KURBB				⇓Sn	Sn	09 28 51.8	-0.9
2.1nm,0.3s							
KURBB				⇑Lg	Lg	09 29 26.1	
5.6nm,0.8s							
MK31	Makanchi Array	7.61	210	⇑Pn	Pn	09 27 57.2	+1.2
0.1nm,0.3s,baz=30,slow=14,SNR=9.2							
MK31				⇓Sn	Sn	09 29 20.9	-2.0
1.5nm,1.0s							
MK31				⇑Lg	Lg	09 30 00.1	
1.1nm,0.7s,baz=35,slow=30,SNR=4.4							
MKAR	Makanchi Array	7.61	210	Pn	Pn	09 27 57.5	+1.6
0.4nm,0.3s,baz=31,slow=14,SNR=9.9							
MKAR				Sn	Sn	09 29 22.0	-0.8
0.1nm,0.3s,baz=25,slow=28,SNR=3.3							
MKAR				Lg	Lg	09 30 01.6	
0.1nm,0.3s,baz=26,slow=28,SNR=5.9							

*IDC **06** 09:29:19.5±0.5, 17°.91N×76°.69W, h0km, mb4.1/18, mb1 4.3/22, mb1mx4.1/54, mbtmp4.2/22, ML3.9/4, MS3.2/6, Ms1 3.3/6, ms1mx2.8/35, Error ellipse: s-maj=18.9km s-min=13.0km az=46.0*
*ISCJB **06** 09:29:21.0±0.5, 18°.07N±0°.02×76°.59W±0°.02, h13km±3km, mb4.1/60, MS3.3/4, Error ellipse: s-maj=4.1km s-min=3.0km az=35.9*
*NEIC **06** 09:29:21.6±1.2, 18°.06N×76°.60W, h5km±8km, mb4.2/45, Error ellipse: s-maj=5.6km s-min=3.3km az=199.0*
NEIC Felt [IV] at Gordon Town, Kingston and Mona; [III] at Constant Spring, Half Way Tree, Spanish Town and Stony Hill. Also felt at Port Antonio and Portmore.
*JSN **06** 09:29:22.5±0.3, 18°.06N×76°.65W, h11km±3km, MD4.3*

ISC 06 09:29:22.4±0.9, 18°.04N±0°.04×76°.63W±0°.03, h16km±5km, n281, σ1§35/292, mb4.2/60, MS3.5/4, 2C-2D, Jamaica region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GWJ	Greenwich	0.10	289	⇑i P	Pg	09 29 24.8	-1.1
STH	Stony Hill	0.17	282	i P	Pg	09 29 25.8	-1.0
STH				⇓i P	Pg	09 29 25.8	-1.0
YHJ	Yallahs	0.20	138	⇓i P	Pg	09 29 27.1	-0.1
CMJ	Castle Mountai	0.27	69	i P	Pg	09 29 28.1	-0.1
BNJ	Bonny Gate	0.41	313	i P	Pg	09 29 29.5	-1.2
PCJ	Portland Cotta	0.58	239	i P	Pg	09 29 32.9	-1.0
BBJ	Bamboo Saint A	0.69	299	i P	Pg	09 29 34.5	-1.4
CVJ	Coleyville	0.88	282	⇑i P	Pg	09 29 37.5	-1.9
CVJ				i S	Sg	09 29 49.3	-1.8
MTDJ	Mount Denham	0.88	282	ePg	Pg	09 29 37.5	-1.9
MTDJ				eSg	Sg	09 29 49.6	-1.4
MBJ	Montego Bay	1.22	287	i P	Pn	09 29 43.5	-1.4
GTBY	Guantanamo Bay	2.36	37	ePn	Pn	09 29 58.7	-1.9
GTBY				eSn	Sn	09 30 27.2	-2.1
PAPH	Port-au-Prince	4.14	83	ePn	Pn	09 30 25.3	+0.2
BANI	BANI	5.97	86	ePn	Pn	09 30 51.8	+1.5
GRTK	Grand Turk	6.22	55	ePn	Pn	09 30 53.2	-0.4
GRTK				eSn	Sn	09 32 01.5	-3.0
SDD	Santo Domingo	6.40	85	ePn	Pn	09 30 57.1	+1.1
MDTC	Monteria, Cord	9.26	174	eP	Pn	09 31 35.6	+0.3
CAPC	Capurgana	9.38	184	eP	Pn	09 31 37.8	+0.9
SJG	San Juan	9.97	88	Pn	Pn	09 31 45.9	+0.8
2.3nm,0.3s,baz=250,slow=19,SNR=7.1							
SJG				Sn	Sn	09 33 31.2	-5.5
3.3nm,0.3s,baz=315,slow=19,SNR=2.6							
SJG				LR	LR	09 36 07.5	
comp=Z,97nm,18.4s,baz=284,slow=41							
SJG	San Juan	9.97	88	ePn	Pn	09 31 45.6	+0.5
SJG				Sn	Sn	09 33 31.2	-5.5
CBYP	Canovanas	10.25	87	ePn	Pn	09 31 50.1	+1.2
HUMP	Col San Antoni	10.26	88	ePn	Pn	09 31 48.8	-0.2
OCAM	Ocana	10.26	161	eP	Pn	09 31 50.7	+1.4
MTP	Monte Pirata	10.54	88	ePn	Pn	09 31 52.4	-0.5
SDV	Santo Domingo	10.81	147	Pn	Pn	09 31 56.2	-0.6
7.6nm,0.3s,baz=328,slow=5.5,SNR=11							
SDV				Sn	Sn	09 33 51.8	-5.8
2.9nm,0.3s,baz=356,slow=19,SNR=4.9							
SDV	Santo Domingo	10.81	147	ePn	Pn	09 31 56.7	0.0
SDV				eSn	Sn	09 33 56.6	-1.0
SDV	Santo Domingo	10.81	147	eP	Pn	09 31 56.3	-0.5
GRMC	Gramalote, San	10.92	160	eP	Pn	09 31 56.8	-1.4
DWPF	Disney Wildern	10.95	337	ePn	Pn	09 31 56.6	-1.8
DBBC	Dabeiba	10.97	178	eP	Pn	09 32 01.0	+2.1
TGUH	Tegucigalpa,Un	10.97	250	ePn	Pn	09 32 00.4	+1.7
STVI	Saint Thomas	11.11	87	ePn	Pn	09 32 01.7	+1.1
JTS	Juntasabangare	11.15	227	ePn	Pn	09 32 02.5	+1.1
5.5nm,0.4s							
JTS				eSn	Sn	09 34 07.6	+1.8
TEIG	Tepich	11.22	283	Pn	Pn	09 32 01.1	-1.1
1.4nm,0.3s,baz=86,slow=23,SNR=13							
TEIG	Tepich	11.22	283	ePn	Pn	09 32 01.6	-0.6
TEIG				eSn	Sn	09 34 06.7	-0.7
BRRC	Barranca, Sant	11.24	165	eP	Pn	09 32 03.8	+1.4
PAMC	Pamplona, Colo	11.31	160	eP	Pn	09 32 05.0	+1.1
SOLC	Bahia Solano	11.77	184	eP	Pn	09 32 15.6	+5.9
HELC	Santa Helena	11.83	175	eP	Pn	09 32 13.4	+2.5
BARC	Barichara	11.87	163	eP	Pn	09 32 14.9	+3.6
NORC	Norcasia	12.52	172	eP	Pn	09 32 24.7	+4.6
RUSC	La Rusia	12.56	164	eP	Pn	09 32 24.0	+2.9
SABA	Saba	12.76	90	ePn	Pn	09 32 24.1	+0.8
ROSC	El Rosal	13.31	170	Pn	Pn	09 32 33.9	+2.6
0.6nm,0.3s,baz=90,slow=20,SNR=3.0							
ROSC				Sn	Sn	09 34 54.8	-4.4
0.3nm,0.3s,baz=38,slow=19,SNR=5.5							
ROSC				LR	LR	09 37 59.4	
comp=Z,70nm,20.7s,baz=135,slow=39							
ROSC	El Rosal	13.31	170	ePn	Pn	09 32 33.4	+2.1
ROSC				eSn	Sn	09 34 52.0	-7.3
GDHS	Morne Mazeau,	14.32	95	ePn	Pn	09 32 46.1	+1.4
PRAC	Prado	14.34	173	eP	Pn	09 32 47.3	+2.3
CRUC	La Cruz	16.38	181	eP	P	09 33 15.2	+0.3
OTAV	Otavalo	17.78	186	ePn	Pn	09 33 30.8	+0.9
7.9nm,1.1s							
OTAV				eSn	Sn	09 36 49.0	+0.9
BBSR	BB Station	17.87	35	ePn	Pn	09 33 30.5	+0.1
TKL	Tuckaleechee C	18.66	342	P	Pn	09 33 39.9	-0.1
0.2nm,0.3s,baz=175,slow=11,SNR=3.3							
Y46A	Houston	19.20	328	P	Pn	09 33 46.2	-0.4
baz=142							
Y42A	Garnett, Star	20.77	322	P	Pn	09 34 07.3	+2.1
baz=136							
439A	Center Grove,	20.79	311	P	Pn	09 34 07.5	+2.1
baz=124							
CCAR	Cane Creek	20.82	322	eP	Pn	09 34 05.5	-0.2
23nm,0.7s							
736A	Circle Diamond	21.63	304	P	P	09 34 13.9	+1.9
baz=116							
Y40A	Okolona	21.78	320	P	P	09 34 16.2	+2.6
baz=133,SNR=5.9							
X40A	Basin Creek Fa	21.84	322	P	P	09 34 16.3	+2.1
baz=134							
636A	Smothers Creek	21.85	305	P	P	09 34 15.9	+1.5
baz=117							
835A	Beeville	21.96	302	P	P	09 34 18.0	+2.4
baz=113							
W41B	Gary Mavity, V	22.00	324	P	P	09 34 17.5	+1.6
baz=137							
WHAR	Wooly Hollow	22.10	324	eP	P	09 34 19.7	+2.7
11nm,1.1s							
X301	Greenbrier Sit	22.13	324	eP	P	09 34 19.6	+2.3
12nm,1.1s							
X201	Greenbrier Sit	22.15	324	eP	P	09 34 20.6	+3.0
9.8nm,1.0s							
237A	Washetta, Mont	22.20	312	P	P	09 34 19.5	+1.4
baz=124							
O56A	Blue Knob Stat	22.21	356	P	P	09 34 19.4	+1.1
baz=175							
034A	Hebbronville	22.23	298	P	P	09 34 20.3	+1.9
baz=109							
934A	Benavides	22.27	299	P	P	09 34 19.8	+0.9
baz=111							
MIAR	Mount Ida	22.32	321	P	P	09 34 20.4	+0.9
baz=133							
MIAR	Mount Ida	22.32	321	eP	P	09 34 20.1	+0.6
5.7nm,0.9s							
834A	Tilden	22.49	300	P	P	09 34 21.9	+0.6
baz=112							
X39A	Fountain Ranch	22.63	320	P	P	09 34 23.5	+0.7
baz=132							
236A	Katherine and	22.71	311	P	P	09 34 25.1	+1.5
baz=123							
V40A	Witts Springs	22.78	324	P	P	09 34 26.8	+2.5
baz=137,SNR=7.2							
W39A	Magazine	22.90	322	P	P	09 34 26.7	+1.2
baz=134							
933A	Laredo	22.91	299	P	P	09 34 26.8	+1.1
baz=110							
136A	Ennis	22.97	313	P	P	09 34 27.4	+1.1
baz=124							
N54A	Moraine State	23.02	353	P	P	09 34 27.6	+0.9
baz=172							
X38A	Whitesboro	23.18	319	P	P	09 34 29.1	+0.7
baz=131							
U40A	Yellville	23.20	325	P	P	09 34 29.5	+0.9
baz=138							
534A	Blanco	23.20	305	P	P	09 34 29.0	+0.3
baz=116							
Y37A	Hugo	23.24	317	P	P	09 34 29.9	+0.9
baz=128							
W38A	Poteau	23.25	320	P	P	09 34 29.7	+0.5
baz=132							
833A	Chaparral WMA,	23.25	300	P	P	09 34 29.8	+0.6
baz=111							
V39A	Pettigrew	23.27	323	P	P	09 34 30.1	+0.7
baz=135							
WHTX	Lake Whitney,	23.37	310	eP	P	09 34 32.7	+2.4
4.2nm,0.7s							
434A	Burnet	23.39	307	P	P	09 34 31.1	+0.5
baz=118							
633A	Saathoff Ranch	23.51	303	P	P	09 34 31.9	0.0
baz=114,SNR=7.2							
U39A	Green Forest	23.56	324	P	P	09 34 32.8	+0.6
baz=136,SNR=11							
334A	Lometa	23.62	308	P	P	09 34 33.3	+0.5
baz=119							
V38A	Canehill	23.72	322	P	P	09 34 33.6	-0.2
baz=134,SNR=6.3							
HHAR	Hobbs	23.75	323	eP	P	09 34 35.0	+0.9
5.4nm,0.8s							
234A	Clairette	23.87	310	P	P	09 34 35.3	0.0
baz=120							
S40A	Lebanon	23.95	328	P	P	09 34 36.4	+0.5
baz=140							
Z35A	Perchaven, San	23.95	313	P	P	09 34 36.5	+0.5
baz=124							
T39A	Clever	23.97	325	P	P	09 34 37.0	+0.8
baz=138							
433A	Art	24.00	306	P	P	09 34 36.4	-0.1
baz=117,SNR=17							
SFIN	Lafayette	24.02	340	P	P	09 34 36.7	+0.1
baz=155							
X36A	Centrahoma	24.08	317	P	P	09 34 37.1	-0.1
baz=128							
Y35A	Marietta	24.14	315	P	P	09 34 38.1	+0.3
baz=126							
V37A	Hulbert	24.17	321	P	P	09 34 38.0	0.0
baz=132							
333A	Richland Sprin	24.17	307	P	P	09 34 38.2	0.0
baz=118,SNR=6.8							
W36A	Wetumka	24.36	318	P	P	09 34 40.2	+0.5
baz=129							
R40A	Maddies Statio	24.36	329	P	P	09 34 40.2	+0.4
baz=142							
X35A	Drake	24.39	316	P	P	09 34 40.2	+0.2
baz=127							
JCT	Junction City	24.43	305	P	P	09 34 40.8	+0.3
baz=115							
JCT	Junction City	24.43	305	eP	P	09 34 41.0	+0.5
6.6nm,0.9s							
S39A	Bolivar	24.44	327	P	P	09 34 40.6	+0.1
baz=139							
233A	Rising Star	24.44	309	P	P	09 34 40.1	-0.5
baz=119,SNR=6.0							
T38A	Diamond	24.48	324	P	P	09 34 41.3	+0.4
baz=136,SNR=6.3							
U37A	Salina	24.51	322	P	P	09 34 40.9	-0.2
baz=133,SNR=12							
TUL1	Leonard	24.58	320	P	P	09 34 41.8	0.0
baz=131,SNR=5.9							
TUL1	Leonard	24.58	320	eP	P	09 34 41.8	0.0
8.8nm,0.7s							
V36A	Jenks	24.59	320	P	P	09 34 41.8	-0.1
baz=131							
Y34A	Reagan Ranch,	24.66	314	P	P	09 34 42.9	+0.5
baz=125							
S38A	Stockton	24.70	326	P	P	09 34 43.6	+0.8
baz=138							
ZAIG	Zacatecas	24.74	285	eP	P	09 34 46.4	+2.7
5.0nm,0.9s							
133A	Hamilton Ranch	24.75	310	P	P	09 34 43.8	+0.4
baz=120							
R39A	Chumby, Stover	24.77	328	P	P	09 34 43.2	-0.2
baz=140							
W35A	Tecumseh	24.78	317	P	P	09 34 43.4	-0.1
baz=128							
Q40A	Laux Farm, Aux	24.83	330	P	P	09 34 44.2	+0.2
baz=143							
PTGA	Pitinga	24.84	137	P	P	09 34 43.1	-1.2
5.7nm,0.8s,baz=308,slow=9.1,SNR=8.6							
PTGA	Pitinga	24.84	137	eP	P	09 34 45.8	+1.5
6.3nm,0.9s							
U36A	Oologah	24.87	321	P	P	09 34 44.5	+0.2
baz=132							
T37A	Cheneyville 18	24.90	323	P	P	09 34 44.3	-0.3
baz=135,SNR=7.1							
HDIL	Hopedale	24.95	337	P	P	09 34 45.5	+0.5
baz=150							
Z33A	Whitaker Ranch	24.99	312	P	P	09 34 45.8	+0.3
baz=122,SNR=8.6							
X34A	Smith Ranch, M	25.08	315	P	P	09 34 46.6	+0.4
baz=126							
R38A	Fenwick Farm,	25.11	327	P	P	09 34 46.9	+0.3
baz=138							
P40A	Paris	25.24	331	P	P	09 34 48.1	+0.4
baz=144							
Y33A	Hilltop Ranch,	25.28	313	P	P	09 34 49.0	+0.9
baz=124							
ABTX	Abilene, Hawle	25.29	309	P	P	09 34 48.5	+0.3
baz=120							
ABTX	Abilene, Hawle	25.29	309	eP	P	09 34 48.8	+0.6
3.5nm,0.8s							
Q39A	Willow Grove F	25.30	329	P	P	09 34 48.4	+0.2
baz=141							
S37A	Fort Scott	25.30	325	P	P	09 34 48.4	+0.2
baz=136							
T36A	Boggs Farm, Ca	25.41	322	P	P	09 34 49.3	+0.1
baz=133							
U35A	Pawnee	25.46	320	P	P	09 34 49.8	0.0
baz=130							
X33A	Lawton	25.49	314	P	P	09 34 50.0	0.0
baz=125							
Q38A	Cooks Store, C	25.55	328	P	P	09 34 50.9	+0.3
baz=140							
O40A	La Belle	25.64	332	P	P	09 34 51.2	-0.1
baz=145							
T35A	Sooner Cattle	25.68	321	P	P	09 34 51

T32A	Huddler Ranch, baz=128	27.33 319	P	P	09 35 07.0 +0.3
R33A	Olander Ranch, baz=131	27.48 322	P	P	09 35 08.0 0.0
S32A	Newby Ranch, P baz=129	27.66 320	P	P	09 35 09.7 +0.1
P34A	Walnut Farm, R baz=135	27.67 325	P	P	09 35 09.9 +0.3
Q33A	Connelly Farm, baz=133	27.85 323	P	P	09 35 11.3 0.0
AMTX	Amarillo baz=121	27.89 312	P	P	09 35 11.8 +0.1
R32A	Long Quarter, baz=130	27.99 321	P	P	09 35 12.9 +0.3
MSTX	Muleshoe baz=118	28.23 309	P	P	09 35 15.0 +0.2
MSTX	Muleshoe 6.5nm,0.9s	28.23 309	eP	P	09 35 14.9 0.0
Q32A	Meitler Ranch, baz=131	28.27 322	P	P	09 35 15.8 +0.7
P32A	Huiting Farm, baz=132	28.71 323	P	P	09 35 18.9 -0.1
CBKS	Cedar Bluff baz=129	28.86 321	P	P	09 35 20.5 +0.2
O32A	Brockman Farm, baz=134	28.96 324	P	P	09 35 21.8 +0.6
MNTX	Cornudas Mount baz=111	29.31 303	P	P	09 35 25.0 +0.6
MNTX	Cornudas Mount 1.2nm,0.8s	29.31 303	eP	P	09 35 24.9 +0.6
O31A	Woolen Ranch, baz=132	29.48 323	P	P	09 35 25.9 +0.1
NNA	Nana comp=Z,19nm,20.9s,baz=72,slow=39	29.84 180	LR	LR	09 48 39.7
SAML	Samuel 2.9nm,0.8s	29.93 153	eP	P	09 35 30.6 +0.7
H36A	Jessenland, He baz=146	30.17 335	P	P	09 35 32.9 +1.1
L31A	Butterfield Fa baz=135	30.61 327	P	P	09 35 35.9 +0.1
H35A	Sunnyside Ranc baz=144	30.64 334	P	P	09 35 36.1 +0.1
T25A	Trinidad baz=120	30.93 314	P	P	09 35 39.9 +1.0
T25A	Trinidad 6.1nm,0.9s	30.93 314	eP	P	09 35 40.3 +1.4
ANMO	Albuquerque baz=115	31.39 308	P	P	09 35 43.8 +0.9
121A	Cookes Peak, D baz=110	31.51 303	P	P	09 35 44.7 +0.7
SDCO	Great Sand Dun baz=120	31.99 314	P	P	09 35 48.8 +0.5
SDCO	Great Sand Dun 2.0nm,1.0s	31.99 314	eP	P	09 35 49.4 +1.1
E34A	Wadena baz=146	32.26 336	P	P	09 35 51.2 +0.9
S22A	4UR Ranch, Cre baz=118	32.91 313	P	P	09 35 57.6 +1.2
S22A	4UR Ranch, Cre 2.1nm,0.9s	32.91 313	eP	P	09 35 58.8 +2.4
J27A	Elkhorn Farm, baz=132	33.04 325	P	P	09 35 57.1 -0.1
C34A	RKJ Ranch, Bem baz=147	33.11 337	P	P	09 35 58.1 +0.4
ISCO	Idaho Springs baz=122	33.13 317	P	P	09 35 58.5 +0.3
I27A	Quinn baz=132	33.61 326	P	P	09 36 02.5 +0.4
SMCO	Snowmass 7.7nm,1.3s	33.70 315	eP	P	09 36 04.3 +0.9
MVCO	Mesa Verde 29nm,1.8s	33.85 311	eP	P	09 36 05.5 +1.0
D30A	Buchanan baz=140	34.22 333	P	P	09 36 06.6 -0.7
PV01	Paradox Valley	34.31 312	eP	P	09 36 10.2 +1.7
C31A	Landman Farms, baz=143	34.32 335	P	P	09 36 08.6 +0.4
B32A	Ashes, Strandq baz=145	34.34 336	P	P	09 36 09.0 +0.7
G27A	Dupree baz=134,SNR=11	34.45 328	P	P	09 36 09.0 -0.3
I25A	Rochford baz=130	34.49 325	P	P	09 36 09.7 -0.2
PV05	Paradox Valley	34.66 312	eP	P	09 36 12.5 +1.0
RSSD	Black Hills baz=130	34.72 324	P	P	09 36 12.9 +0.9
G26A	Maurine baz=133	34.73 327	P	P	09 36 12.2 +0.4
PV10	Paradox Valley	34.75 312	eP	P	09 36 13.7 +1.4
F27A	Lemmon 2.1nm,0.7s,baz=357,slow=2.6,SNR=4.7	34.84 328	P	P	09 36 12.4 -0.4
PV09	Paradox Valley	34.87 312	eP	P	09 36 14.7 +1.3
X16A	Lo Mia Camp, P 3.7nm,1.0s	35.01 305	eP	P	09 36 16.6 +2.0
B30A	Myrvik Farm, E baz=142	35.09 335	P	P	09 36 14.8 0.0
LPAZ	La Paz 1.1nm,0.7s,baz=357,slow=2.6,SNR=4.7	35.13 166	P	P	09 36 14.6 -1.5
F26A	Lodgepole baz=134	35.15 328	P	P	09 36 15.4 0.0
WUAZ	Wupatki baz=110	35.33 306	P	P	09 36 18.3 +1.0
WUAZ	Wupatki 7.7nm,0.8s	35.33 306	eP	P	09 36 18.8 +1.5
E26A	Carlson Angus baz=134	35.48 329	P	P	09 36 18.2 0.0
ULM	Lac du Bonnet comp=Z,91nm,18.3s,baz=320,slow=37	35.64 339	LR	LR	09 51 30.1
E25A	Miller Ranch, baz=133	35.96 328	P	P	09 36 22.5 +0.1
SRU	San Rafael Swe 3.0nm,0.8s	36.11 313	eP	P	09 36 25.3 +1.3
P18A	Preston Nutter 4.3nm,1.0s	36.15 314	eP	P	09 36 25.6 +1.2
Q16A	Castle Valley 3.0nm,0.7s	36.49 312	eP	P	09 36 29.1 +1.9
TMUT	Trail Mountain 6.6nm,1.5s	36.67 312	eP	P	09 36 30.6 +1.7
MTPU	Mount Pierson 4.1nm,0.9s	36.86 310	eP	P	09 36 31.9 +1.3
KNB	Kanab 6.3nm,1.0s	36.95 308	eP	P	09 36 33.1 +2.0
SIV	San Ignacio 2.1nm,0.8s,baz=358,slow=9.4,SNR=4.2	37.13 155	P	P	09 36 31.5 -1.1
PDAR	Pinedale Array 0.6nm,0.6s,baz=110,slow=8.5,SNR=5.7	37.22 319	P	P	09 36 32.5 -0.9
PDAR		PcP	PcP	PcP	09 38 53.0 -0.1
LCMT	Little Creek M 3.0nm,1.0s	37.27 308	eP	P	09 36 35.6 +1.9
Y12C	Blythe baz=105	37.27 302	P	P	09 36 33.8 +0.2
JLU	Jordanelle 2.0nm,0.8s	37.41 314	eP	P	09 36 36.2 +1.1
SCHQ	Schefferville 1.9nm,0.7s,baz=222,slow=16,SNR=2.7	37.48 9	P	P	09 36 36.1 +0.9
SCHQ		PcP	PcP	PcP	09 38 53.4 0.0
A25A	Svangstu Barn baz=136	37.54 331	P	P	09 36 36.7 +1.0
NLU	North Lily Min 4.7nm,1.2s	37.56 313	eP	P	09 36 37.3 +1.0
DUG	Dugway, Tooele baz=115	38.17 313	P	P	09 36 42.7 +1.3
DUG	Dugway, Tooele 5.0nm,0.9s	38.17 313	eP	P	09 36 42.5 +1.1
RLMT	Red Lodge baz=124	38.31 322	P	P	09 36 42.6 0.0
REDW	Red Top Meadow 3.6nm,0.9s	38.34 319	eP	P	09 36 42.8 0.0
MOOW	Moose Ponds 1.8nm,0.8s	38.47 319	eP	P	09 36 43.7 -0.2
BGU	Big Grassy Mou 1.9nm,1.1s	38.63 314	eP	P	09 36 46.8 +1.5
GCMT	Greycliff	38.92 323	eP	P	09 36 48.4 +0.8
R11A	Troy Canyon, C baz=110	39.47 309	P	P	09 36 53.4 +1.0
R11A	Troy Canyon, C 3.0nm,1.1s	39.47 309	eP	P	09 36 54.0 +1.7
GSC	Goldstone, Bar baz=105	39.49 304	P	P	09 36 53.6 +1.1
TPNV	Topopah Spring baz=108	39.52 307	P	P	09 36 54.3 +1.5
TPNV	Topopah Spring 11nm,1.8s	39.52 307	eP	P	09 36 54.9 +2.1
FURC	Furnace Creek, baz=106	39.85 306	P	P	09 36 56.8 +1.5
BOZ	Bozeman (W)	39.99 321	P	P	09 36 56.6 +0.1
	baz=122				
ELK	Elko 3.4nm,0.9s	40.09 313	eP	P	09 36 58.4 +0.9
MPMC	Manual Prospec baz=106	40.23 305	P	P	09 36 59.4 +0.7
EGMT	Eagleton baz=126	40.26 325	P	P	09 36 59.0 +0.3
MCMT	McKenzie Canyo	40.31 319	eP	P	09 37 00.2 +0.8
EDW2	Edwards Air Fo baz=104	40.33 303	P	P	09 37 00.3 +0.9
HLID	Hailey baz=117	40.71 317	P	P	09 37 03.0 +0.5
ARVC	Arvin baz=103	41.05 303	P	P	09 37 06.5 +1.2
NV11	Mina Array Sit 17nm,2.0s	41.41 308	eP	P	09 37 09.7 +1.3
VES	Vestal, Richgr baz=104	41.42 304	P	P	09 37 09.1 +0.8
NV01	Mina Array Sit	41.52 308	eP	P	09 37 10.8 +1.4
NVAR	Mina Array Bea 2.1nm,0.8s,baz=117,slow=8.1,SNR=16	41.52 308	P	P	09 37 10.4 +1.0
NVAR		PcP	PcP	PcP	09 39 07.6 +0.8
WVOR	Wild Horse Val 2.9nm,0.8s	43.08 314	eP	P	09 37 23.5 +1.5
MOD	Modoc Plateau 2.6nm,0.8s	44.06 312	eP	P	09 37 31.5 +1.7
NEW	Newport baz=118	44.56 322	P	P	09 37 33.4 -0.2
O03D	Paynes Creek baz=106	44.65 309	P	P	09 37 34.7 +0.2
M04C	Macdoel baz=108	45.11 311	P	P	09 37 38.0 -0.2
J05D	Fort Rock, OR baz=110	45.17 314	P	P	09 37 39.1 +0.4
I04A	Tendick Farm, baz=115	46.15 314	P	P	09 37 46.8 +0.5
I03D	Drain, OR baz=108	46.76 314	P	P	09 37 51.6 +0.6
YKA	Yellowknife Ar 1.2nm,0.8s,baz=131,slow=8.8,SNR=29	51.62 339	P	P	09 38 27.2 -0.6
YKA		PcP	PcP	PcP	09 39 40.9 -0.5
RES	Resolute Bay 2.0nm,0.6s	57.53 354	eP	P	09 39 10.2 -0.4
INK	Inuvik 0.7nm,0.7s,baz=79,slow=9.2,SNR=3.3	61.38 339	P	P	09 39 38.6 +1.4
ILAR	Eielson Array comp=Z,38nm,18.4s,baz=170,slow=37	65.42 334	LR	LR	10 09 17.9
RND	Reindeer	66.07 332	eP	P	09 40 09.4 +1.0
DBIC	Dimbokro 3.8nm,0.7s,baz=245,slow=5.3,SNR=3.9	70.67 89	P	P	09 40 38.3 +0.3
SPITS	Spitsbergen Ar 17nm,1.1s,baz=203,slow=1.7,SNR=11	73.08 12	P	P	09 40 51.7 +0.3
NOA	NORSAR Array B 1.3nm,0.8s,baz=278,slow=5.8,SNR=3.4	73.36 31	P	P	09 40 54.2 +0.9
DAVOX	Davos/Dischmat comp=Z,18nm,20.5s,baz=267,slow=30	74.73 45	LR	LR	10 06 22.9
TORD	Torodi Ar. Bea 0.6nm,0.5s,baz=270,slow=6.2,SNR=6.9	75.10 81	P	P	09 41 04.0 -0.2
KEST	Kesra 3.9nm,0.8s,baz=308,slow=12,SNR=2.3	76.51 57	P	P	09 41 12.9 +0.8
GERES	GERESS Array B 0.5nm,0.6s,baz=276,slow=8.8,SNR=3.8	76.85 43	P	P	09 41 14.8 +1.0
ARCES	ARCESS Array B 2.6nm,0.6s,baz=280,slow=4.4,SNR=23	77.42 21	P	P	09 41 16.5 0.0
FINES	FINESS Array B 2.5nm,0.6s,baz=261,slow=3.7,SNR=11	80.25 28	P	P	09 41 32.2 +0.1
SEY	Seymchan 1.4nm,0.7s,baz=120,slow=4.6,SNR=5.1	90.67 340	P	P	09 42 24.9 +0.8
CD2	Chengdu	131.33 360	PKP	PKPdf	09 48 33.7 -0.9
WRA	Warramunga Arr 2.7nm,0.9s,baz=85,slow=3.0,SNR=18	150.67 261	PKPbc	PKPbc	09 49 12.7 -2.0
ASAR	Alice Springs 2.4nm,1.0s,baz=96,slow=2.3,SNR=14	150.96 124	PKPbc	PKPbc	09 49 13.7 -1.6

NIED ***06*** *09:40:00,39.°20N×144.°50E,h8km,Mw3.7 Best double couple: M0 3.80000×10^14 NP1:φs 356.00000°,δ27.00000°, λ-118.00000°. NP2:φs 207.00000°,δ67.00000°, λ-77.00000°.*
IDC ***06*** *09:40:11.7±0.9,39.°12N×144.°92E,h0km,mb3.6/6, mb1 3.9/9,mb1mx3.6/49,mbtmp3.7/9,ML3.4/3,MS2.6/5, Ms1 2.6/5,ms1mx2.3/46,Error ellipse: s-maj=28.8km s-min=18.8km az=111.0*
ISCJB ***06*** *09:40:13.0±0.7,39.°21N±0.°09×144.°72E±0.°07,h19km, mb3.8/6,MS3.0/1,Error ellipse: s-maj=13.0km s-min=7.7km az=172.9*
JMA ***06*** *09:40:16.6±0.3,39.°22N×144.°55E,h49km,M3.9*
ISC 06 09:40:15.0±1.0,39.°27N±0.°09×144.°67E±0.°09,h19km,n21, σ1°36/19,mb3.8/6,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	Miyakonagasawa	2.23	279	P	Pn	09 40 50.9	+0.1
MIYJ				S	Sn	09 41 16.2	-1.6
OFUJ	Ofunato	2.34	266	P	Pn	09 40 52.4	0.0
JOM	Ohasama	2.62	275	P	Pn	09 40 56.8	+0.5
JOM				S	Sn	09 41 26.7	-0.9
JANG	Nango	2.66	295	P	Pn	09 40 56.4	-0.5
JMK	Ichinoseki	2.70	264	P	Pn	09 40 57.6	+0.3
JYK	Kaneyama	3.37	265	P	Pn	09 41 07.2	+0.6
ASAJ	Asahikawa	5.08	343	Pn	Pn	09 41 30.6	+0.5
ASAJ	1.9nm,0.3s,baz=186,slow=15,SNR=7.3			Sn	Sn	09 42 25.3	-3.0
MJAR	2.3nm,0.3s,baz=3.3,slow=28,SNR=7.8 Matsushiro Arr	5.79	244	Pn	Pn	09 41 40.9	+1.1
MJAR	2.1nm,0.3s,baz=54,slow=10,SNR=15			LR	LR	09 44 12.2	
JHJ	comp=Z,35nm,20.4s,baz=80,slow=41 Hachijo jima 2	7.30	214	Sn	Sn	09 43 12.6	-10
USRK	7.9nm,0.3s,baz=309,slow=14,SNR=3.2 Ussuriysk Ar.	10.67	302	Pn	Pn	09 42 49.7	+2.9
JNU	0.6nm,0.3s,baz=100,slow=14,SNR=10 Nakatsue	12.71	245	LR	LR	09 48 30.1	
KSRS	comp=Z,23nm,20.2s,baz=330,slow=39 Korea Array	13.27	267	LR	LR	09 48 26.6	
KLR	comp=Z,17nm,20.6s,baz=40,slow=37 Kul'dur	13.57	321	LR	LR	09 48 46.1	
TIXI	comp=Z,22nm,19.2s,baz=127,slow=37 Tiksi	33.43	351	LR	LR	10 01 11.7	
WMQ	comp=Z,34nm,20.8s,baz=47,slow=38 Urumqi	42.16	295	eP	P	09 48 07.1	+0.8
ILAR	Eielson Array	46.23	34	P	P	09 48 38.5	0.0
KURBB	2.4nm,0.3s,baz=265,slow=6.4,SNR=14 Kurchatov Arra	46.68	307	P	P	09 48 43.8	+1.6
INK	0.5nm,0.6s,baz=81,slow=8.5,SNR=4.1 Inuvik	51.22	28	P	P	09 49 17.1	+0.4
WRA	1.0nm,0.8s,baz=306,slow=7.7,SNR=5.2 Warramunga Arr	59.69	191	P	P	09 50 16.5	-1.7
YKA	0.6nm,0.5s,baz=10.0,slow=7.2,SNR=7.3 Yellowknife Ar	60.58	32	P	P	09 50 23.3	-0.5
ASAR	0.2nm,0.7s,baz=300,slow=6.4,SNR=4.1 Alice Springs	63.41	191	P	P	09 50 42.8	-0.5
	0.3nm,0.8s,baz=16,slow=7.0,SNR=3.6						

NIED ***06*** *09:49:00,38.°30N×143.°90E,h5km,Mw3.4 Best double couple: M0 1.41000×10^14 NP1:φs 54.00000°,δ24.00000°, λ-25.00000°. NP2:φs 166.00000°,δ80.00000°, λ-112.00000°.*
JMA 06 09:49:24.0±0.1,38.°32N×143.°85E,h3km,M3.5,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	1.87	295	P	Pn	09 49 57.5	+0.6
JIO	Ouri	1.97	275	P	Pn	09 49 58.8	+0.5
JIO				S	Sn	09 50 24.2	+0.7
JMK	Ichinoseki	2.15	288	P	Pn	09 50 01.7	+0.9
JOM	Ohasama	2.30	301	S	Sb	09 50 33.4	-1.7
JYK	Kaneyama	2.80	283	P	Pn	09 50 11.1	+1.4
JYK				S	Sn	09 50 46.3	+2.4
JFT	Otama	2.89	255	P	Pn	09 50 12.1	+1.1
JFT				S	Sn	09 50 46.4	+0.2

CSEM ***06*** *09:54:01.9±0.2,43.°12N×18.°15E,h2km,ML2.5,Error ellipse: s-maj=3.9km s-min=3.3km az=67.0*
BEO ***06*** *09:54:02.8±0.3,43.°13N×18.°11E,h12km±3km,M2.3/8*
PDG ***06*** *09:54:02.1±0.2,43.°11N×18.°15E,h13km,MD2.6/2, ML2.5/10,Error ellipse: s-maj=0.4km s-min=0.5km az=0.0*
ISC 06 09:54:02.1±1.1,43.°12N±0.°02×18.°14E±0.°02,h6km±9km,

n52,σ0°85/91,15C-7D,Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BRY	Bratogost	0.36	127	⇑iPg	Pg	09 54 09.2	0.0
BRY				eSg	Sb	09 54 15.3	-1.8
BRY	Bratogost	0.36	127	⇑iPg	Pg	09 54 09.2	0.0
BRY				eSg	Sg	09 54 14.9	+0.9
STON	Ston	0.41	233	iPg	Pg	09 54 10.3	+0.2
STON				Sg	Sb	09 54 17.3	-0.9
STON	Ston	0.41	233	ePg	Pg	09 54 10.1	+0.1
STON	Ston	0.41	233	iPg	Pg	09 54 10.2	+0.2
STON				eSg	Sg	09 54 16.6	+1.2
TREB	Trebinje	0.43	159	eSg	Sg	09 54 17.1	+1.0
UPM	Unac-Piva	0.56	81	⇑iPg	Pg	09 54 12.8	-0.2
UPM				eSg	Sb	09 54 21.8	-1.1
UPM	Unac-Piva	0.56	81	⇑iPg	Pg	09 54 12.8	-0.2
UPM				eSg	Sg	09 54 21.1	+0.7
NKME	Niksic	0.69	120	⇑iPg	Pg	09 54 15.1	-0.3
NKME				eSg	Sb	09 54 26.2	-0.3
NKME	Niksic	0.69	120	⇑iPg	Pg	09 54 15.1	-0.3
NKME				eSg	Sb	09 54 26.2	-0.3
NKY	Niksic	0.70	116	⇓iPg	Pg	09 54 15.1	-0.4
NKY				eSg	Sb	09 54 26.5	-0.2
NKY	Niksic	0.70	116	⇓iPg	Pg	09 54 15.1	-0.4
NKY				eSg	Sb	09 54 26.5	-0.2
HCY	Herceg Novi	0.72	159	⇓iPg	Pg	09 54 15.7	-0.3
HCY				eSg	Sb	09 54 26.9	-0.4
HCY	Herceg Novi	0.72	159	⇓iPg	Pg	09 54 15.7	-0.3
HCY				eSg	Sg	09 54 25.6	+0.3
CEME	Cevo	0.81	135	⇑iPg	Pg	09 54 16.8	-0.8
CEME				eSg	Sb	09 54 30.1	+0.2
CEME	Cevo	0.81	135	⇑iPg	Pg	09 54 16.8	-0.8
CEME				eSg	Sb	09 54 30.1	+0.2
PLE	Pljevlja	0.94	77	⇓iPg	Pg	09 54 19.6	-0.5
PLE				eSg	Sb	09 54 34.4	+0.9
PLE	Pljevlja	0.94	77	⇓iPg	Pg	09 54 19.6	-0.5
PLE				eSg	Sb	09 54 34.4	+0.9
BUM	Brajici-Budva	0.99	146	ePg	Pg	09 54 20.2	-0.9
BUM				eSg	Sn	09 54 36.1	-0.9
BUM	Brajici-Budva	0.99	146	ePg	Pg	09 54 20.2	-0.9
BUM				eSg	Sn	09 54 36.1	-0.9
PDG	Podgorica	1.07	130	ePg	Pg	09 54 21.5	-1.1
PDG				eSg	Sn	09 54 38.3	-0.6
PDG	Podgorica	1.07	130	ePg	Pg	09 54 21.8	-0.9
PDG				eSg	Sg	09 54 36.2	-0.3
TTG	Podgorica	1.07	130	⇑iPg	Pg	09 54 21.6	-1.1
TTG				eSg	Sn	09 54 39.0	+0.1
BBLS	Lazići	1.18	51	ePg	Pg	09 54 24.4	-0.4
BBLS				eSg	Sb	09 54 40.9	+0.3
BBLS	Lazići	1.18	51	ePg	Pg	09 54 24.4	-0.4
BBLS				eSg	Sg	09 54 39.8	-0.3
DRME	Dracevica, Mon	1.21	140	⇑iPg	Pg	09 54 24.6	-0.7
DRME				eSg	Sn	09 54 43.8	+1.5
DRME	Dracevica, Mon	1.21	140	⇑iPg	Pg	09 54 24.6	-0.7
DRME				eSg	Sb	09 54 41.0	-0.3
BEY	Berane	1.31	100	⇑iPg	Pg	09 54 25.9	-1.3
BEY				eSg	Sn	09 54 46.8	+1.9
IVA	Berane	1.31	100	⇑iPg	Pg	09 54 25.9	-1.3
IVA				eSg	Sn	09 54 46.8	+1.9
SJES	Sjenica	1.35	83	ePg	Pb	09 54 28.3	+0.5
SJES				eSg	Sn	09 54 46.1	+0.2
ULC	Ulcinj	1.42	144	⇑iPg	Pn	09 54 27.6	-0.8
ULC				eSg	Sn	09 54 49.9	+2.5
ULC	Ulcinj	1.42	144	⇑iPg	Pn	09 54 27.6	-0.8
ULC				eSg	Sn	09 54 49.9	+2.5
PVY	Plav	1.44	111	⇓iPg	Pn	09 54 28.4	-0.4
PVY				eSg	Sn	09 54 50.3	+2.2
IVAS	Ivanjica	1.54	72	ePg	Pb	09 54 30.8	-0.2
IVAS				eSg	Sg	09 54 51.8	+0.3
IVAS	Ivanjica	1.54	72	ePg	Pb	09 54 30.8	-0.2
IVAS				eSg	Sg	09 54 51.8	+0.3
DIVS	Divibare	1.66	53	ePn	Pn	09 54 31.3	-0.6
DIVS				eSg	Sg	09 54 56.0	+0.5
DIVS	Divibare	1.66	53	ePn	Pn	09 54 31.3	-0.6
DIVS				eSn	Sn	09 54 53.6	0.0
DIVS				eSg	Sg	09 54 56.0	+0.5
TEKS	Tekeris	1.75	35	ePn	Pn	09 54 33.0	0.0
TEKS	Tekeris	1.75	35	ePn	Pn	09 54 32.8	-0.2
TEKS				eSn	Sn	09 54 55.7	+0.1
BLY	Banja Luka	1.77	337	ePg	Pg	09 54 36.0	0.0
BLY				eSg	Sg	09 54 59.2	+0.3
BLY	Banja Luka	1.77	337	ePn	Pn	09 54 33.9	+0.6
BLY	Banja Luka	1.77	337	ePg	Pg	09 54 36.0	0.0
GRUS	Gruza	2.02	67	ePn	Pn	09 54 35.9	-0.9
GRUS	Gruza	2.02	67	ePn	Pn	09 54 35.9	-0.9
SELS	Selova	2.18	86	ePn	Pn	09 54 39.0	0.0
SELS	Selova	2.18	86	ePn	Pn	09 54 39.0	0.0
UDBI	Udbina	2.22	310	ePn	Pb	09 54 41.9	-0.8
UDBI				Sn	Sg	09 55 12.3	-1.2
UDBI	Udbina	2.22	310	ePn	Pb	09 54 41.9	-0.8
BARS	Barje	2.71	95	ePn	Pn	09 54 46.9	+0.6
BARS	Barje	2.71	95	ePn	Pn	09 54 46.9	+0.6
ZAPS	Zavoj	3.29	86	ePn	Pn	09 54 55.0	+0.8
ZAPS	Zavoj	3.29	86	ePn	Pn	09 54 55.0	+0.8

ISCJB ***06*** *10:02:30.7±0.6,24.°26N±0.°05×122.°88E±0.°02,h75km±7km, Error ellipse: s-maj=9.1km s-min=3.3km az=175.1*
JMA ***06*** *10:02:30.5±0.1,24.°27N×122.°88E,h80km±2km,M2.0*
TAP ***06*** *10:02:30.7,24.°31N×122.°89E,h71km±1km,ML3.1,C*
ISC 06 10:02:31.0±1.4,24.°27N±0.°07×122.°89E±0.°03,h75km±10km, n28,σ0°74/53,Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JYNG	Yonagunijimaku	0.19	17	P	Pn	10 02 42.3	+0.1
JYNG				S	Sn	10 02 50.8	+0.4
YOJ	Yonaguni jima	0.22	31	P	Pn	10 02 42.5	+0.1
YOJ				eS	Sn	10 02 51.1	+0.4
IRIF	Iriomote-Funau	0.77	85	P	Pn	10 02 47.2	+0.1
IRIF				S	Sn	10 02 59.1	+0.1
HATJ	Hateruma jima	0.87	104	eS	Sn	10 03 01.7	+0.8
TWC	Suao baz=292	1.00	290	P	Pn	10 02 49.3	-0.5
TWC	baz=292			eS	Sn	10 03 02.4	-1.4
JKRS	Kuro-shima	1.02	92	P	Pn	10 02 50.7	+0.6
JKRS				S	Sn	10 03 04.8	+0.5
ENA	Nanau baz=275	1.06	279	eP	Pn	10 02 50.4	-0.1
ENA	baz=275			eS	Sn	10 03 04.9	-0.1
JIJ	Ishigaki jima	1.15	85	P	Pn	10 02 51.4	-0.2
JIJ				S	Sn	10 03 06.3	-0.8
TWD	Chiawan baz=249	1.19	261	eP	Pn	10 02 53.1	+0.9
TWD	baz=249			eS	Sn	10 03 07.4	-0.7
TWE	Neicheng baz=296	1.20	292	eP	Pn	10 02 51.7	-0.5
ENTT	Nioudou baz=291	1.26	287	eP	Pn	10 02 53.2	+0.2
ENTT	baz=291			S	Sn	10 03 09.4	-0.2
JISG	Ishigakijimahi	1.34	76	P	Pn	10 02 53.5	-0.5
JISG				eS	Sn	10 03 10.1	-1.2
NNS	Nan Shan baz=274	1.39	277	eP	Pn	10 02 55.2	+0.3
NNS	baz=274			eS	Sn	10 03 12.1	-0.7
ESL	Shilin baz=242	1.41	251	eP	Pn	10 02 54.8	-0.1
ESL	baz=242			eS	Sn	10 03 12.0	-0.9
NSK	Sanguang baz=274	1.45	286	eP	Pn	10 02 56.4	+0.8
NSK	baz=274			eS	Sn	10 03 13.6	-0.5
TWT	Tachien baz=266	1.56	270	eP	Pn	10 02 57.9	+0.8
TWT	baz=266			eS	Sn	10 03 17.0	+0.1
EHY	Hungye baz=249	1.62	242	eP	Pn	10 02 57.5	-0.3
EHY	baz=249			eS	Sn	10 03 17.1	-0.9
WDT	Danda baz=250	1.68	253	eP	Pn	10 02 59.0	+0.2
WDT	baz=250			eS	Sn	10 03 19.1	-0.9
JTJ	Tarama	1.69	77	P	Pn	10 02 58.8	+0.1

JTJ eS **Sn** **10 03 19.8 +0.1**
TWF1 Yuli 1.72 238 eP **Pn** **10 02 59.1 +0.1**
baz=229
TWF1 eS **Sn** **10 03 19.4 -0.9**
baz=229
NSTT Nanjuang 1.75 282 eP **Pn** **10 02 59.9 +0.4**
baz=279
NSTT eS **Sn** **10 03 21.5 +0.4**
baz=279
CHKT Chengkung 1.82 230 eP **Pn** **10 03 00.2 -0.1**
baz=221
CHKT eS **Sn** **10 03 21.0 -1.7**
baz=221
SMLT Sun Moon Lake 1.86 258 eP **Pn** **10 03 01.8 +0.8**
baz=255
SMLT eS **Sn** **10 03 23.5 -0.2**
baz=255
TYC Yuchr 1.89 259 eP **Pn** **10 03 01.8 +0.5**
baz=250
TYC eS **Sn** **10 03 24.4 +0.1**
baz=250
YUS Yu-Shan 1.93 247 eP **Pn** **10 03 03.5 +1.1**
baz=244
YUS eS **Sn** **10 03 25.3 -0.9**
baz=244
CHN5 Tsauling 2.13 252 eP **Pn** **10 03 05.9 +1.3**
baz=249
CHN5 eS **Sn** **10 03 30.8 +0.6**
baz=249
TWG Pinlang 2.20 229 eP **Pn** **10 03 05.2 -0.4**
baz=236
CHN4 Tsaushan 2.29 247 eP **Pn** **10 03 07.8 +1.1**
baz=244
CHN4 eS **Sn** **10 03 36.0 +2.0**
baz=244

IDC 06 10:18:11.2±2.5, 6°.98S×155°.91E, h0km, mb3.6/3, mb1 3.8/3, mb1mx3.5/21, mbtmp3.6/3, Error ellipse: s-maj=95.2km s-min=38.5km az=119.0, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**24.58**	**236**	P	P	10 23 33.6	+0.4
	0.3nm,0.4s,baz=61,slow=9.4,SNR=11						
ASAR	**Alice Springs**	**26.87**	**229**	P	P	10 23 53.9	-0.1
	0.3nm,0.3s,baz=60,slow=9.7,SNR=9.8						
ASAR				PcP	PcP	10 27 16.4	-0.4
	0.1nm,0.4s,baz=64,slow=2.9,SNR=4.9						
MKAR	**Makanchi Array**	**83.99**	**318**	P	P	10 30 45.0	+1.4
	0.6nm,0.7s,baz=118,slow=5.9,SNR=4.2						
TORD	**Torodi Ar. Bea**	**153.90**	**286**	PKPbc	PKPbc	10 38 12.2	-1.6
	0.4nm,0.9s,baz=107,slow=1.5,SNR=2.3						

*DDA **06** 10:27:00.2, 37°.20N×31°.68E, h7km, Md3.2*
*ISK **06** 10:27:01.4, 37°.21N×31°.92E, h14km, MD2.7*
*CSEM **06** 10:27:02.7±0.5, 37°.26N×31°.88E, h8km, MD2.7, Error ellipse: s-maj=9.9km s-min=7.7km az=37.0*
ISC 06 10:27:02.6±1.4, 37°.24N±0°.04×31°.86E±0°.04, h10km±12km, n14, σ0°82/23, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SUTC	**Sutluce-Ispart**	**0.73**	**289**	*e*PG	**Pb**	**10 27 17.1**	**-0.3**
SUTC				*e*SG	**Sb**	**10 27 28.3**	**+0.8**
SUTC	**Sutluce-Ispart**	**0.73**	**289**	*e*Pg	**Pb**	**10 27 17.1**	**-0.3**
SUTC				*e*Sg	**Sb**	**10 27 28.3**	**+0.8**
KONT	**Konya--Tatoy**	**0.80**	**29**	*e*PG	**Pg**	**10 27 17.5**	**-0.6**
KONT				*e*SG	**Sb**	**10 27 29.4**	**-0.2**
KONT	**Konya--Tatoy**	**0.80**	**29**	*e*Pg	**Pg**	**10 27 17.5**	**-0.6**
KONT				*e*Sg	**Sb**	**10 27 29.4**	**-0.2**
ERMK	**Ermenek**	**1.03**	**125**	P	**Pg**	**10 27 21.6**	**-0.9**
ERMK				S	**Sn**	**10 27 38.2**	**+0.2**
ERMK	**Ermenek**	**1.03**	**125**	*i* P	**Pg**	**10 27 21.6**	**-0.9**
ERMK				*i* S	**Sn**	**10 27 38.2**	**+0.2**
LADK	**Ladik-KONYA**	**1.03**	**22**	*e*PG	**Pg**	**10 27 21.9**	**-0.5**
LADK	**Ladik-KONYA**	**1.03**	**22**	*e*Pg	**Pg**	**10 27 22.0**	**-0.5**
KDHN	**Kadinhani**	**1.29**	**9**	P	**Pn**	**10 27 26.8**	**0.0**
KDHN				S	**Sg**	**10 27 44.8**	**+0.7**
KDHN	**Kadinhani**	**1.29**	**9**	*i* P	**Pn**	**10 27 26.8**	**0.0**
KDHN				*i* S	**Sg**	**10 27 44.8**	**+0.7**
KIZT	**Kizilcal**	**1.63**	**0**	*e*PN	**Pn**	**10 27 31.0**	**-0.5**
KIZT	**Kizilcal**	**1.63**	**0**	*e*Pn	**Pn**	**10 27 31.0**	**-0.5**
KERG	**Konya-Eregli**	**1.81**	**84**	P	**Pb**	**10 27 35.6**	**-0.3**
KERG	**Konya-Eregli**	**1.81**	**84**	*i* P	**Pb**	**10 27 35.6**	**-0.3**
KERG				*i* S	**Sg**	**10 28 03.4**	**+2.6**

*NIED **06** 10:29:00, 37°.80N×142°.20E, h38km, Mw3.7 Best double couple: M0 3.40000×10^14 NP1:φ±271.00000°, δ55.00000°, λ37.00000°. NP2:φ±157.00000°, δ61.00000°, λ138.00000°.*
*JMA **06** 10:29:12.6±0.2, 37°.79N×142°.18E, h32km±3km, M3.9*
*ISCJB **06** 10:29:14.0±1.5, 37°.87N±0°.06×142°.1E±0°.1, h30km, mb3.5/2, MS3.4/2, Error ellipse: s-maj=13.7km s-min=7.0km az=28.6*
*IDC **06** 10:29:14.5±1.5, 36°.92N×142°.34E, h0km, mb3.4/2, mb1 3.6/3, mb1mx3.3/34, mbtmp3.3/3, ML3.4/1, MS3.0/3, Ms1 3.0/3, ms1mx2.6/22, Error ellipse: s-maj=47.8km s-min=29.3km az=127.0*
ISC 06 10:29:11.6±1.8, 37°.77N±0°.06×142°.14E±0°.10, h30km, n18, σ1°49/20, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.93**	**318**	P	**Pb**	**10 29 29.7**	**+0.6**
JIO				S	**Sb**	**10 29 41.4**	**+0.4**
JMM	**Marumori**	**1.07**	**276**	P	**Pb**	**10 29 32.1**	**+0.6**
JMM				S	**Sb**	**10 29 45.9**	**+0.7**
JFK	**Kawauchi**	**1.08**	**249**	P	**Pb**	**10 29 32.2**	**+0.4**
JFK				S	**Sb**	**10 29 46.1**	**+0.5**
JOU	**Okura**	**1.31**	**298**	P	**Pb**	**10 29 36.0**	**+0.4**
JMK	**Ichinoseki**	**1.38**	**329**	P	**Pb**	**10 29 36.4**	**-0.4**
JFT	**Otama**	**1.45**	**261**	P	**Pb**	**10 29 38.4**	**+0.4**
JFT				S	**Sb**	**10 29 57.3**	**+1.2**
JYS	**Shirataka**	**1.70**	**286**	P	**Pb**	**10 29 42.1**	**-0.1**
JYK	**Kaneyama**	**1.81**	**310**	P	**Pb**	**10 29 42.8**	**-1.3**
JOM	**Ohasama**	**1.83**	**339**	P	**Pb**	**10 29 42.5**	**-1.8**
JFY	**Yanaizu**	**1.97**	**260**	S	**Sb**	**10 30 10.9**	**0.0**
JRG	**Rokugo**	**2.01**	**324**	P	**Pb**	**10 29 46.1**	**-1.3**
JYA	**Atsumi**	**2.08**	**294**	P	**Pb**	**10 29 47.0**	**-1.7**
MJAR	**Matsushiro Arr**	**3.37**	**250**	Pn	**Pb**	**10 30 07.8**	**-2.9**
	3.6nm,0.3s,baz=80,slow=14,SNR=19						
MJAR				LR	LR	10 31 44.7	
	comp=Z,59nm,19.8s,baz=80,slow=45						
MAT	**Matsushiro**	**3.37**	**250**	P	**Pb**	**10 30 08.1**	**-2.6**
MAT				S	**Sb**	**10 30 48.6**	**-2.6**
ILAR	**Eielson Array**	**48.56**	**33**	P	P	10 38 03.9	+12
	0.2nm,0.5s,baz=246,slow=6.8,SNR=3.4						
ARU	**Arti**	**56.19**	**318**	LR	LR	11 05 17.7	
	comp=Z,110nm,19.2s,baz=140,slow=38						
WRA	**Warramunga Arr**	**57.87**	**189**	P	**P**	**10 39 02.2**	**+1.6**
	0.4nm,0.6s,baz=6.0,slow=7.2,SNR=7.6						
ASAR	**Alice Springs**	**61.60**	**189**	LR	LR	11 06 31.8	
	comp=Z,62nm,18.8s,baz=233,slow=37						

*DJA **06** 10:33:16.9±0.5, 8°.5S±3°.3×10°.7E±°, h16km±5km, M4.5/19, mb4.5/2, MLv4.5/19*
*ISCJB **06** 10:33:18.5±1.7, 7°.92S±0°.07×107°.04E±0°.05, h33km±12km, mb3.7/5, Error ellipse: s-maj=14.0km s-min=5.6km az=30.9*
*IDC **06** 10:33:20.5±13.0, 7°.26S×107°.39E, h62km±108km, mb3.6/6, mb1 3.9/6, mb1mx3.5/29, mbtmp4.0/6, Error ellipse: s-maj=219.8km s-min=18.4km az=54.0*
ISC 06 10:33:18.9±1.5, 7°.8S±0°.2×107°.10E±0°.09, h58km±13km, n28, σ2°39/27, mb3.6/5, Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CNJI	**Cibinong**	**0.47**	**4**	P	**Pn**	**10 33 30.1**	**-0.3**
CNJI				S	**Sn**	**10 33 39.0**	**+0.3**
CISI	**Cisompet, Garu**	**0.74**	**73**	P	**Pn**	**10 33 32.8**	**-0.9**
CISI				S	**Sn**	**10 33 43.0**	**-1.4**
SKJI	**Sukabumi**	**0.94**	**325**	P	**Pn**	**10 33 36.5**	**+0.4**
SKJI				S	**Sn**	**10 33 50.3**	**+1.6**
LEM	**Lembang**	**1.08**	**29**	P	Pn	10 33 45.4	+7.3
	400nm,0.3s,baz=103,slow=4.5,SNR=96						
LEM				S	Sn	10 34 02.1	+10
	330nm,0.3s,baz=196,slow=19,SNR=12						
LEM	**Lembang**	**1.08**	**29**	P	Pn	10 33 44.9	+6.8
CMJI	**Cimerak**	**1.34**	**90**	P	**Pn**	**10 33 41.0**	**-0.4**
CMJI				S	**Sn**	**10 33 56.5**	**-1.7**
CGJI	**Cibinong**	**1.81**	**310**	P	**Pn**	**10 33 47.7**	**-0.1**
CGJI				S	**Sn**	**10 34 08.1**	**-1.6**
SBJI	**Serang**	**1.91**	**330**	P	**Pn**	**10 33 51.0**	**+1.9**
SMRI	**Semarang**	**3.39**	**78**	P	**Pn**	**10 34 12.4**	**+3.0**
UGM	**Wanagama**	**3.40**	**92**	P	**Pn**	**10 34 11.1**	**+1.6**
KASI	**Kota Agung**	**3.42**	**311**	P	**Pn**	**10 34 10.2**	**+0.4**
PCJI	**Pacitan**	**4.06**	**96**	P	**Pn**	**10 34 18.9**	**+0.3**
NGJI	**Ngawi**	**4.34**	**85**	P	**Pn**	**10 34 25.5**	**+3.0**
PWJI	**Pagerwojo**	**4.67**	**93**	P	**Pn**	**10 34 29.7**	**+2.8**
LHSI	**Lahat**	**5.30**	**318**	P	**Pn**	**10 34 37.4**	**+1.9**
	38nm,0.9s,0.5nm						
GMJI	**Gumukmas**	**6.30**	**95**	P	**Pn**	**10 34 51.8**	**+2.5**
ABJI	**Asem Bagus**	**7.07**	**91**	P	Pn	10 35 04.8	+4.9
FITZ	**Fitzroy Crossi**	**20.76**	**121**	P	**P**	**10 37 57.2**	**+2.0**
	3.4nm,0.7s,baz=281,slow=6.6,SNR=6.6						
FITZ				S	**S**	**10 41 36.2**	**-7.6**
	3.2nm,1.0s,baz=108,slow=19,SNR=4.2						
CMAR	**Chiang Mai Arr**	**27.28**	**343**	P	**P**	**10 38 55.5**	**-2.7**
	0.6nm,0.4s,baz=163,slow=6.6,SNR=4.0						
WRA	**Warramunga Arr**	**29.02**	**117**	P	**P**	**10 39 14.8**	**+1.1**
	1.2nm,0.9s,baz=291,slow=11,SNR=7.2						
ASAR	**Alice Springs**	**30.16**	**125**	P	**P**	**10 39 25.4**	**+1.5**
	0.5nm,0.8s,baz=301,slow=8.5,SNR=9.4						
H08S2	**Diego Garcia H**	**34.29**	**268**	T	T	11 16 58.5	
	baz=92,slow=76,SNR=5.1						
H08S3	**Diego Garcia H**	**34.30**	**268**	T	T	11 17 07.8	
	baz=92,slow=76,SNR=22						
H08S1	**Diego Carcia H**	**34.31**	**268**	T	T	11 17 08.5	
	baz=92,slow=76,SNR=32						
STKA	**Stephens Creek**	**40.05**	**132**	P	**P**	**10 40 50.8**	**+2.1**
	4.9nm,0.7s,baz=301,slow=5.2,SNR=14						
MKAR	**Makanchi Array**	**58.65**	**340**	P	**P**	**10 43 08.9**	**-1.4**
	0.3nm,0.4s,baz=145,slow=7.9,SNR=5.7						
YKA	**Yellowknife Ar**	**117.55**	**20**	PKP	**PKPdf**	**10 51 58.0**	**0.0**
	0.2nm,0.9s,baz=351,slow=2.7,SNR=4.0						
TXAR	**Lajitas Array**	**144.00**	**49**	PKP	PKPbc	10 52 47.9	+1.1
	0.2nm,0.4s,baz=263,slow=3.1,SNR=6.3						

*IDC **06** 10:48:11.8±0.6, 31°.20N×103°.65E, h0km, mb4.3/24, mb1 4.4/26, mb1mx4.3/46, mbtmp4.3/26, ML4.2/2, MS3.1/11, Ms1 3.2/11, ms1mx3.0/39, Error ellipse: s-maj=16.2km s-min=11.6km az=35.0*
*ISCJB **06** 10:48:12.8±0.2, 31°.25N±0°.02×103°.67E±0°.03, h16km, mb4.5/76, MS3.3/14, Error ellipse: s-maj=3.5km s-min=3.0km az=1.4*
*NEIC **06** 10:48:14.5±0.9, 31°.24N×103°.73E, h16km±5km, mb4.7/45, Error ellipse: s-maj=4.3km s-min=3.8km az=75.0*
*BJI **06** 10:48:14.7, 31°.26N×103°.59E, h15km, mb4.5/38, mB4.7/23, ML4.3/21, Ms4.1/45, Ms7 3.9/37*
*MOS **06** 10:48:15.1±0.8, 31°.18N×103°.74E, h36km, mb4.6/39, Error ellipse: s-maj=8.4km s-min=5.3km az=84.3*
ISC 06 10:48:14.8±0.3, 31°.23N±0°.02×103°.67E±0°.04, h16km, n186, σ2°07/218, mb4.6/76, MS3.3/14, 14C-4D, Sichuan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CD2	**Chengdu**	**0.33**	**167**	Pg	**Pg**	**10 48 20.6**	**-1.1**
CD2				Sg	**Sb**	**10 48 27.0**	**-0.4**
CD2				smax	smax		
	comp=N,50μm,0.6s						
CD2				smax	smax		
	comp=E,80μm,0.6s						
CD2	**Chengdu**	**0.33**	**167**	Pg	**Pg**	**10 48 20.6**	**-1.1**
CD2				Sg	**Sb**	**10 48 27.0**	**-0.4**
LZH	**Lanzhou**	**4.84**	**2**	*e*Pg	**Pg**	**10 49 46.4**	**-1.2**
LZH				Sn	**Sn**	**10 50 28.4**	**+5.4**
LZH				Sg	**Sg**	**10 50 49.1**	**-1.2**
LZH				smax	smax		
	comp=N,370nm,0.9s						
LZH				smax	smax		
	comp=E,310nm,0.8s						
LZH				LR	LR		
	comp=N,3μm,4.9s						
LZH				LR	LR		
	comp=E,2μm,5.5s						
LZH				LR	LR		
	comp=Z,3μm,6.4s						
ENH	**Enshi**	**5.10**	**99**	*e*Pn	**Pn**	**10 49 31.2**	**+0.7**
ENH				*e*Sn	**Sn**	**10 50 29.6**	**+0.5**
XAN	**Xi'an**	**5.24**	**56**	Pn	**Pn**	**10 49 31.6**	**-0.9**
XAN				Pg	**Pb**	**10 49 49.4**	**+3.4**
XAN				Sn	**Sn**	**10 50 26.9**	**-5.7**
XAN				Sg	**Sb**	**10 50 52.2**	**+3.5**
XAN				smax	smax		
	comp=Z,700nm,0.8s						
XAN				smax	smax		
	comp=Z,690nm,0.9s						
XAN				LR	LR		
	comp=Z,2μm,7.7s						
XAN				LR	LR		
	comp=Z,510nm,8.0s						
XAN				LR	LR		
	comp=Z,1μm,8.0s						
XAN	**Xi'an**	**5.24**	**56**	P	**Pn**	**10 49 31.6**	**-0.9**
XAN						10 50 26.9	
XAN	**Xi'an**	**5.24**	**56**	Pn	**Pn**	**10 49 31.6**	**-0.9**
XAN				Pg	**Pb**	**10 49 49.4**	**+3.4**
XAN				Sn	**Sn**	**10 50 26.9**	**-5.7**
XAN				Sg	**Sb**	**10 50 52.2**	**+3.5**
GYA	**Guiyang**	**5.43**	**150⇑**	*i*Pn	**Pn**	**10 49 35.1**	**-0.1**
GYA				Pg	**Pb**	**10 49 49.2**	**-0.2**
GYA				Sn	**Sn**	**10 50 37.7**	**+0.2**
GYA				Sg	**Sb**	**10 50 57.0**	**+2.6**
GYA				smax	smax		
	comp=Z,700nm,0.9s						
GYA				smax	smax		
	comp=Z,620nm,1.0s						
GYA				LR	LR		
	comp=Z,780nm,8.1s						
GYA				LR	LR		
	comp=Z,1μm,7.8s						
GYA				LR	LR		
	comp=Z,1μm,8.1s						
GYA	**Guiyang**	**5.43**	**150⇑**	*i*Pn	**Pn**	**10 49 35.1**	**-0.1**
GYA				Pg	**Pb**	**10 49 49.2**	**-0.2**
GYA				Sn	**Sn**	**10 50 37.7**	**+0.2**
GYA				Sg	**Sb**	**10 50 57.0**	**+2.6**
KMI	**Kunming**	**6.14**	**188**	Pn	**Pn**	**10 49 45.2**	**+0.1**
KMI				Sn	**Sn**	**10 51 02.6**	**+7.5**
KMI				smax	smax		
	comp=Z,100nm,1.3s						
KMI				smax	smax		
	comp=Z,86nm,1.5s						
KMI				LR	LR		
	comp=Z,1μm,8.5s						
KMI				LR	LR		
	comp=Z,2μm,10.7s						
KMI				LR	LR		
	comp=Z,850nm,9.6s						
KMI	**Kunming**	**6.14**	**188**	P	**Pn**	**10 49 45.2**	**+0.1**
KMI						10 51 02.6	
KMI	**Kunming**	**6.14**	**188**	Pn	**Pn**	**10 49 45.2**	**+0.1**
KMI				Sn	**Sn**	**10 51 02.6**	**+7.5**
GTA	**Gaotai**	**8.75**	**340**	⇑P	Pn	10 50 27.8	+7.1
GTA				pP		10 50 31.6	
GTA				sP		10 50 34.2	
GTA				pmax	pmax		
	comp=Z,7.0nm,1.0s						
GTA				pmax	pmax		
	comp=Z,33nm,5.7s						
GTA				LR	LR		
	comp=Z,520nm,10.0s						
GTA				LR	LR		
	comp=Z,450nm,7.1s						
GTA				LR	LR		
	comp=Z,410nm,11.4s						
WHN	**Wuhan**	**9.20**	**92**	⇓P	**Pn**	**10 50 28.8**	**+2.0**
WHN				pP		10 50 35.2	
WHN				LR	LR		
	comp=Z,2μm,8.3s						
WHN				LR	LR		
	comp=Z,3μm,6.2s						
WHN				LR	LR		
	comp=Z,3μm,6.8s						
LSA	**Lhasa**	**10.91**	**265**	*e*P	**Pn**	**10 50 52.2**	**+1.4**
LSA	**Lhasa**	**10.91**	**265**	*e*Pn	**Pn**	**10 50 52.2**	**+1.4**
HHC	**Hu-ho-hao-te**	**11.52**	**31**	*e*P	**Pn**	**10 50 58.8**	**+0.1**
HHC				S	**Sn**	**10 53 07.3**	**+0.2**
HHC				SS	**SnSn**	**10 53 23.4**	**+4.2**
HHC				pmax	pmax		
	comp=Z,27nm,0.7s						
HHC				pmax	pmax		
	comp=Z,67nm,3.6s						
HHC				LR	LR		
	comp=Z,680nm,8.4s						
HHC				LR	LR		
	comp=Z,750nm,9.4s						
HHC				LR	LR		
	comp=Z,700nm,8.0s						
SHL	**Shillong**	**11.81**	**244**	*e*P	**Pn**	**10 51 00.5**	**-2.3**
TIA	**Tai'an**	**12.25**	**62**	⇑P	Pn	10 51 13.4	+4.9
TIA				S	**Sn**	**10 53 27.3**	**+2.6**
TIA				pmax	pmax		
	comp=Z,20nm,0.8s						
TIA				LR	LR		
	comp=Z,250nm,4.2s						
TIA				LR	LR		
	comp=Z,350nm,10.1s						
TIA				LR	LR		
	comp=Z,280nm,8.3s						
NJ2	**Nanjing**	**12.96**	**82**	*e*P	**Pn**	**10 51 18.7**	**+0.4**
NJ2				pmax	pmax		
	comp=Z,9.0nm,0.7s						
NJ2				LR	LR		
	comp=Z,870nm,12.5s						
NJ2				LR	LR		
	comp=Z,880nm,10.3s						
NJ2				LR	LR		
	comp=Z,370nm,8.1s						
CMMT	**Chiang Mai**	**13.08**	**200**	P	**P**	**10 51 30.5**	**+0.2**
	comp=Z,9.7nm,1.3s						
CHTO	**Chiang Mai**	**13.08**	**200**	P	**P**	**10 51 30.6**	**+0.3**
	comp=Z,42nm,1.3s						
CHTO	**Chiang Mai**	**13.08**	**200**	*e*P	**Pn**	**10 51 20.3**	**+0.2**
CHTO				*e*		10 53 45.4	
CHTO	**Chiang Mai**	**13.08**	**200**	*e*Pn	**Pn**	**10 51 20.3**	**+0.2**
CHTO				*e*Sn	**Sn**	**10 53 45.4**	**0.0**
LAMP	**Lampang**	**13.17**	**197**	P	**P**	**10 51 31.5**	**+0.2**
	comp=Z,3.3nm,0.8s						
QIZ	**Qiongzhong**	**13.37**	**154**	P	**Pn**	**10 51 27.1**	**+3.2**
QIZ				S	**Sn**	**10 53 55.8**	**+3.5**
QIZ				LR	LR		
	comp=Z,190nm,7.5s						
QIZ				LR	LR		
	comp=Z,230nm,6.9s						
CMAR	**Chiang Mai Arr**	**13.42**	**200**	Pn	**Pn**	**10 51 25.0**	**+0.3**
	comp=Z,0.5nm,0.3s,baz=15,slow=11,SNR=11						
CMAR				LR	LR	10 56 06.7	
	comp=Z,21nm,21.1s,baz=10.0,slow=36						
BJI	**Beijing**	**13.43**	**46**	P	**Pn**	**10 51 26.1**	**+1.5**
BJI				pmax	pmax		
	comp=Z,6.0nm,1.6s						
BJI				LR	LR		
	comp=Z,470nm,11.9s						
BJI				LR	LR		
	comp=Z,440nm,10.7s						
CM01	**Chiang Mai Arr**	**13.45**	**200**	*e*Pn	**Pn**	**10 51 25.1**	**0.0**
UTTA	**Uttaradit**	**13.72**	**193**	P	**P**	**10 51 37.3**	**-0.1**
	comp=Z,3.5nm,0.8s						
LOEI	**Loei**	**13.84**	**190**	P	**P**	**10 51 38.0**	**-0.7**
	comp=Z,14nm,1.0s,comp=Z,223nm						
PANO	**Nakornpanom**	**14.05**	**176**	P	**P**	**10 51 37.1**	**-3.9**
	comp=Z,42nm,0.7s						
SKNT	**Sakolnakorn**	**14.20**	**179**	P	**P**	**10 51 43.1**	**+0.4**
	comp=Z,26nm,1.2s						
PBKT	**Sadao Pong**	**14.80**	**190**	P	**P**	**10 51 48.9**	**-0.5**
	comp=Z,35nm,0.8s						
CHAI	**Chaiyaphum**	**15.34**	**186**	P	**P**	**10 51 54.4**	**-0.9**
	comp=Z,10nm,0.7s,comp=Z,96nm						
GUN	**Gumba**	**15.83**	**262**	*e*P	**Pn**	**10 51 57.7**	**+0.3**
	comp=Z,61nm,0.8s						
PKIN	**Phulchoki**	**16.34**	**262**	*e*P	**Pn**	**10 52 01.1**	**-2.7**
	comp=Z,20nm,0.7s						
DMN	**Daman**	**16.57**	**262**	*e*P	**Pn**	**10 52 04.5**	**-2.3**
	comp=Z,74nm,0.9s						
SONM	**Songino Array**	**16.71**	**6**	Pn	**Pn**	**10 52 08.6**	**+0.3**
	comp=Z,0.6nm,0.3s,baz=187,slow=11,SNR=19						
SONA1	**Songino Array**	**16.72**	**6**	*e*Pn	**Pn**	**10 52 06.9**	**-1.6**
ULN	**Ulaanbaatar**	**16.81**	**8⇑**	*i*P	**Pn**	**10 52 09.9**	**+0.3**
ULN				pmax	pmax		
	comp=Z,17nm,1.2s						
ULN	**Ulaanbaatar**	**16.81**	**8**	*e*Pn	**Pn**	**10 52 09.5**	**-0.1**
	comp=Z,15nm,1.1s						
ULN				*e*Sn	**Sn**	**10 55 14.0**	**-2.0**
GKN	**Gorkha**	**16.86**	**264**	*e*P	**Pn**	**10 52 09.9**	**-0.5**
	comp=Z,89nm,0.7s						
NAYO	**Nakonayok**	**16.98**	**188**	P	**P**	**10 52 14.2**	**+0.7**
	comp=Z,9.4nm,1.1s,comp=Z,396nm						
KHLT	**Khaolaem Dam**	**17.01**	**197**	P	**P**	**10 52 19.1**	**+5.2**
	comp=Z,6.0nm,1.2s						
SSLB	**Suanglung**	**17.02**	**112**	*e*Pn	**Pn**	**10 52 11.2**	**-1.0**
	comp=Z,29nm,0.9s						
SSLB				*e*Sn	**Sn**	**10 55 23.4**	**+2.3**
SRAK	**Srakaew**	**17.20**	**185**	P	**Pn**	**10 52 13.5**	**-1.0**
	comp=Z,42nm,0.9s						
SRDT	**SRDT**	**17.32**	**195**	P	**P**	**10 52 18.0**	**+0.7**
WMQ	**Urumqi**	**17.81**	**319**	P	**P**	**10 52 22.4**	**-0.2**
WMQ				pP	pP	10 52 27.9	+0.8
WMQ				sP	sP	10 52 31.2	+2.0
WMQ				PP	**PnPn**	**10 52 38.4**	**+5.7**
WMQ				S	**Sn**	**10 55 30.2**	**-10**
WMQ				SS	**SnSn**	**10 56 05.3**	**+12**
WMQ				pmax	pmax		
	comp=Z,3.0nm,0.6s						
WMQ				LR	LR		
	comp=Z,170nm,8.6s						
WMQ				LR	LR		
	comp=Z,120nm,7.8s						
KOLN	**Koldanda**	**17.81**	**264**	*e*P	**Pn**	**10 52 19.1**	**-3.1**
	comp=Z,43nm,0.8s						
PYUN	**Piuthan**	**18.24**	**265**	*e*P	**Pn**	**10 52 25.0**	**-2.5**
	comp=Z,29nm,0.6s						
ZAK	**Zakamensk**	**19.13**	**359**	*e*P	**Pn**	**10 52 38.4**	**+0.3**
ZAK				pmax	pmax		
	comp=Z,7.0nm,0.9s						
TLY	**Talaya**	**20.43**	**360**	LR	LR	11 01 34.8	
	comp=Z,60nm,19.9s,baz=166,slow=39						
TLY	**Talaya**	**20.43**	**360**	*i* P	Pn	10 52 53.0	-0.4
TLY				pmax	pmax		
	comp=Z,8.0nm,0.8s						
MOY	**Mondy**	**20.51**	**355**	*e*P	Pn	10 52 53.8	-0.6
MOY				pmax	pmax		
	comp=Z,24nm,1.9s						
KS15	**Wonju Array Si**	**20.90**	**66**	*e*P	**P**	**10 52 53.2**	**-3.2**
KSAR	**Wonju Array Be**	**20.90**	**66**	P	**P**	**10 52 57.3**	**+0.9**
KSAR	**Wonju Array Be**	**20.90**	**66**	P	**P**	**10 52 57.3**	**+0.9**
KS01	**Wonju Array Si**	**20.92**	**66**	*e*P	**P**	**10 52 53.3**	**-3.3**
KS01				*e*Pn	Pn	10 52 59.7	+0.6
KSRS	**Korea Array**	**20.93**	**66**	P	**P**	**10 52 57.3**	**+0.5**
	comp=Z,13nm,0.8s,baz=258,slow=10,SNR=27						
KSRS				LR	LR	11 02 50.9	
	comp=Z,43nm,18.1s,baz=268,slow=42						
IRK	**Irkutsk**	**21.00**	**1**	*e*P	Pn	10 52 58.8	-1.2
IRK				pmax	pmax		
	comp=Z,98nm,1.0s						
CN2	**Changchun**	**21.27**	**48**	*e*P	**P**	**10 53 01.1**	**+0.7**
CN2				*es*P	sP	10 53 10.0	+3.0
CN2				*e*S	**S**	**10 56 50.6**	**-5.6**
CN2				pmax	pmax		
	comp=Z,20nm,0.6s						
CN2				pmax	pmax		
	comp=Z,200nm,3.0s						
CN2				LR	LR		
	comp=Z,200nm,11.0s						
CN2				LR	LR		
	comp=Z,100nm,11.0s						
CN2				LR	LR		
	comp=Z,200nm,12.0s						
MK01	**Makanchi Array**	**22.62**	**319**	*e*P	**P**	**10 53

KSH	Kashi	23.98	298	P	P	10 53 32.2	+3.5
KSH				eP	sP	10 53 37.4	+1.8
KSH				eS	pP	10 53 41.1	+7.6
KSH				S	S	10 57 46.6	+1.6
KSH				pmax	pmax		
	comp=Z,9.0nm,0.8s						
KSH				pmax	pmax		
	comp=Z,100nm,3.5s						
KSH				LR	LR		
	comp=Z,590nm,14.0s						
KSH				LR	LR		
	comp=Z,250nm,11.2s						
KSH				LR	LR		
	comp=Z,160nm,7.6s						
TKM2	Tokmak 2	25.14	306	eP	P	10 53 40.5	+1.2
TKM2				pmax	pmax		
	comp=Z,7.0nm,1.0s						
TKM2	Tokmak 2	25.14	306	eP	P	10 53 40.5	+1.2
	comp=Z,6.5nm,1.0s						
VLA	Vladivostok	25.30	54	eP	P	10 53 39.5	-0.9
USRK	Ussuriysk Ar.	25.73	52	P	P	10 53 45.6	+1.2
	comp=Z,5.0nm,0.8s,baz=257,slow=10,SNR=6.8						
FRU	Bishkek	25.80	305	eP	P	10 53 52.0	+6.9
AAK	Ala-Archa	25.82	304	P	P	10 53 45.1	-0.4
	comp=Z,2.5nm,0.7s,baz=166,slow=4.2,SNR=2.8						
AAK				LR	LR	11 04 44.7	
	comp=Z,116nm,18.1s,baz=145,slow=38						
AAK	Ala-Archa	25.82	304	d iP	P	10 53 48.5	+3.0
AAK				pmax	pmax		
	comp=Z,15nm,1.2s						
AAK	Ala-Archa	25.82	304	eP	P	10 53 45.6	+0.1
	comp=Z,18nm,1.6s						
ZALV	Zalesovo Beam	26.45	335	P	P	10 53 50.9	+0.1
	comp=Z,6.8nm,0.7s,baz=134,slow=8.5,SNR=23						
KURBB	Kurchatov Arra	26.91	323	P	P	10 53 55.0	0.0
	comp=Z,7.1nm,0.9s,baz=129,slow=9.2,SNR=50						
KURBB				PcP	PcP	10 57 16.1	-0.7
	comp=Z,1.3nm,0.7s,baz=120,slow=2.0,SNR=6.1						
KURK	Kurchatov	26.92	324	ceP	P	10 53 54.8	-0.3
KURK				pmax	pmax		
	comp=Z,10.0nm,0.9s						
KURK	Kurchatov	26.92	324	eP	P	10 53 55.0	-0.1
	comp=Z,8.5nm,0.9s						
KURK				PcP	PcP	10 57 16.1	-0.7
BOD	Bodaibo	27.52	12	eP	P	10 53 59.4	-1.0
BOD				pmax	pmax		
	comp=Z,4.0nm,1.1s						
KLR	Kul'dur	27.74	42	P	P	10 54 02.6	+0.2
	comp=Z,2.6nm,0.8s,baz=247,slow=6.8,SNR=8.0						
KLR	Kul'dur	27.74	42	⇓iP	P	10 54 02.2	-0.2
MJAR	Matsushiro Arr	29.05	70	P	P	10 54 14.2	-0.1
	comp=Z,0.9nm,0.6s,baz=274,slow=11,SNR=4.5						
MJAR				LR	LR	11 07 49.2	
	comp=Z,23nm,18.7s,baz=180,slow=40						
MYLDM	Lahad Datu	29.42	149	eP	P	10 54 18.6	+0.9
	comp=Z,23nm,1.2s						
SBUM	Sibu	29.75	163	eP	P	10 54 20.5	0.0
	comp=Z,7.8nm,0.8s						
BVAR	Borovoye Array	32.46	322	PcP	PcP	10 57 30.2	-0.8
	comp=Z,2.9nm,0.8s,baz=144,slow=2.8,SNR=12						
BRVK	Borovoye	32.53	322	⇑iP	P	10 54 44.9	+0.1
BRVK				pmax	pmax		
	comp=Z,2.0nm,0.7s						
ASAJ	Asahikawa	33.08	56	P	P	10 54 48.9	-0.8
	comp=Z,6.2nm,0.9s,baz=315,slow=20,SNR=2.7						
ERM	Erimo	33.20	60	⇑iP	P	10 54 48.4	-2.4
ERM				pmax	pmax		
	comp=Z,17nm,1.3s						
YAK	Yakutsk	35.12	21	iP	P	10 55 07.7	+0.6
YAK				pmax	pmax		
	comp=Z,13nm,0.7s						
YUK	Yuzh-Kuril'sk	35.40	57	iP	P	10 55 08.9	-0.9
ABKAR	Akbulak array	37.31	312	P	P	10 55 26.1	0.0
	comp=Z,0.6nm,0.3s						
GEYT	Alibeck	37.80	293	P	P	10 55 31.6	+1.2
	comp=Z,7.1nm,0.7s,baz=93,slow=5.2,SNR=9.4						
NRIK	Noril'sk	39.24	351	P	P	10 55 42.2	+0.1
	comp=Z,12nm,0.9s,baz=165,slow=8.4,SNR=11						
NRIK				LR	LR	11 13 21.5	
	comp=Z,31nm,18.8s,baz=68,slow=38						
ARU	Arti	40.10	322	c iP	P	10 55 49.1	-0.3
ARU						10 57 20.0	
ARU				S	S	11 01 55.1	+0.2
ARU				SS	SS	11 04 52.5	+0.2
ARU				pmax	pmax		
	comp=Z,9.0nm,1.0s						
ARU	Arti	40.10	322	eP	P	10 55 49.5	+0.1
	comp=Z,6.3nm,0.7s						
MA2	Magadan	42.19	34	eP	P	10 56 05.8	-0.7
TIXI	Tiksi	42.70	11	⇑iP	P	10 56 09.4	-1.1
TIXI				pmax	pmax		
	comp=Z,9.0nm,1.2s						
TIXI	Tiksi	42.70	11	eP	P	10 56 09.6	-0.9
	comp=Z,5.3nm,0.6s						
SKR	Severo-Kuril's	43.09	48	eP	P	10 56 13.7	-0.2
SEY	Seymchan	44.16	30	⇓iP	P	10 56 21.7	-0.7
PETK	Petropavlovsk-	44.36	44	LR	LR	11 16 46.9	
	comp=Z,30nm,18.4s,baz=277,slow=39						
GNI	Garni	47.92	298	⇑iP	P	10 56 54.2	+1.6
GNI				pmax	pmax		
	comp=Z,33nm,1.4s						
ZEI	Tsey	48.19	301	eP	P	10 56 54.6	-0.1
ZEI				pmax	pmax		
	comp=Z,8.0nm,0.9s						
KIV	Kislovodsk	48.93	303	iP	P	10 57 01.0	+0.7
KIV				pmax	pmax		
	comp=Z,12nm,1.1s						
KLMR	Klimovskoe	50.75	325	eP	P	10 57 12.0	-1.6
KLMR				e		10 58 28.0	
KLMR				pmax	pmax		
	comp=Z,7.0nm,0.8s						
BILL	Bilibino	51.22	25	ceP	P	10 57 16.2	-0.9
BILL				e		10 57 25.1	
BILL				pmax	pmax		
	comp=Z,5.0nm,0.7s						
BILL				MLR	MLR		
	comp=Z,44nm,14.0s						
BILL	Bilibino	51.22	25	eP	P	10 57 16.2	-0.9
	comp=Z,5.4nm,0.7s						
OBN	Obninsk	52.14	318	eP	P	10 57 21.6	-2.5
OBN				pmax	pmax		
	comp=Z,5.0nm,0.9s						
OBN				MLR	MLR		
	comp=Z,49nm,17.0s						
ANN	Anapa	52.55	305	eP	P	10 57 27.0	-0.4
ANN				eS	S	11 04 55.6	+2.0
ANN				pmax	pmax		
	comp=Z,121nm,1.6s						
FITZ	Fitzroy Crossi	53.40	154	eP	P	10 57 32.8	-1.1
	comp=Z,5.6nm,0.9s						
BRTR	Keskin Array B	56.36	299	P	P	10 57 55.0	-0.4
	comp=Z,1.7nm,0.9s,baz=79,slow=6.4,SNR=5.8						
BRTR	Keskin Array B	56.36	299	iP	P	10 57 54.2	-1.1
BRTR				pmax	pmax		
	comp=Z,2.0nm,0.9s						
BR231	Keskin MP Arra	56.97	300	eP	P	10 57 55.6	-4.1
ARCES	ARCESS Array B	56.99	336	P	P	10 57 58.4	-0.8
	comp=Z,5.6nm,0.9s,baz=91,slow=7.8,SNR=7.8						
ARCES				PcP	PcP	10 58 53.4	-0.8
	comp=Z,2.9nm,0.8s,baz=89,slow=4.4,SNR=9.0						
AKASG	Malin Array Be	57.03	313	P	P	10 57 58.7	-1.0
	comp=Z,0.4nm,0.3s,baz=64,slow=7.3,SNR=3.8						
AKASG	Malin Array Be	57.03	313	P	P	10 57 58.7	-1.0
AKASG				pmax	pmax		
	comp=Z,1.0nm,0.4s						
KIEV	Kiev	57.04	313	eP	P	10 58 00.6	+0.8
KIEV				pmax	pmax		
	comp=Z,2.0nm,0.7s						
FINES	FINESS Array B	57.25	326	P	P	10 58 00.4	-0.7
	comp=Z,1.7nm,0.7s,baz=76,slow=12,SNR=7.3						
FINES	FINESS Array B	57.25	326	iP	P	10 58 07.4	+6.3
FINES				pmax	pmax		
	comp=Z,2.0nm,0.8s						
WRAB	Tennant Creek	58.78	146	c iP	P	10 58 11.9	-0.5
WRAB				pmax	pmax		
	comp=Z,57nm,0.9s						
WRAB	Tennant Creek	58.78	146	eP	P	10 58 12.1	-0.2
	comp=Z,22nm,0.8s						
WRA	Warramunga Arr	58.79	146	P	P	10 58 11.8	-0.6
	comp=Z,15nm,0.9s,baz=338,slow=7.7,SNR=68						
WRA	Warramunga Arr	58.79	146	P	P	10 58 11.8	-0.6
WRA				pmax	pmax		
	comp=Z,14nm,0.9s						
WB2	Warramunga Arr	58.79	146	eP	P	10 58 12.2	-0.2
	comp=Z,21nm,0.8s						
AS31	Alice Springs	61.79	148	eP	P	10 58 32.7	-0.2
	comp=Z,1.2nm,0.8s						
ASAR	Alice Springs	61.79	148	P	P	10 58 32.6	-0.3
	comp=Z,3.5nm,0.8s,baz=342,slow=6.7,SNR=41						
AS01	Alice Springs	61.81	148	eP	P	10 58 32.3	-0.8
VYHS	Vyhne	64.12	313	eP	P	10 58 50.5	+2.3
VYHS	Vyhne	64.12	313	eP	P	10 58 50.5	+2.3
NB2	NORSAR Subarra	64.35	327	P	P	10 58 48.2	-1.3
	comp=Z,0.7nm,0.6s,baz=73,slow=6.9						
NOA	NORSAR Array B	64.35	327	P	P	10 58 48.6	-0.9
	comp=Z,2.1nm,0.9s,baz=73,slow=6.5,SNR=5.0						
TT01	Tatalina	67.14	29	eP	P	10 59 07.0	-0.4
GERES	GERESS Array B	67.19	314	P	P	10 59 07.4	-0.7
	comp=Z,0.2nm,0.3s,baz=54,slow=6.8,SNR=5.2						
GERES				LR	LR	11 28 24.5	
	comp=Z,17nm,19.6s,baz=49,slow=36						
COLD	Coldfoot	67.50	24	eP	P	10 59 09.7	+0.1
	comp=Z,9.3nm,1.0s						
MLY	Manley	68.32	26	eP	P	10 59 15.1	+0.2
	comp=Z,4.9nm,0.7s						
BPAW	Bear Paw Mtn.	68.65	27	eP	P	10 59 17.0	0.0
	comp=Z,5.2nm,0.9s						
PPLA	Purkeypile	68.73	28	eP	P	10 59 17.4	-0.2
	comp=Z,7.2nm,0.7s						
TRF	Thorofare Moun	69.23	28	eP	P	10 59 19.3	-1.5
	comp=Z,4.4nm,1.0s						
MDM	Murphy Dome	69.29	26	eP	P	10 59 21.0	+0.1
	comp=Z,9.5nm,0.7s						
COLA	College	69.47	26	eP	P	10 59 21.9	0.0
COLA				pmax	pmax		
	comp=Z,14nm,0.8s						
COLA	College	69.47	26	eP	P	10 59 21.9	0.0
	comp=Z,14nm,0.8s						
FYU	Fort Yukon	69.54	23	eP	P	10 59 23.4	+1.1
	comp=Z,5.5nm,0.9s						
WRH	Wood River Hil	69.58	26	eP	P	10 59 22.7	0.0
	comp=Z,2.4nm,0.8s						
CCB	Clear Creek Bu	69.60	26	eP	P	10 59 22.0	-0.8
	comp=Z,3.0nm,0.8s						
MCK	McKinley	69.63	27	eP	P	10 59 22.6	-0.4
MCK				pmax	pmax		
	comp=Z,4.0nm,0.8s						
MCK	McKinley	69.63	27	eP	P	10 59 22.6	-0.4
	comp=Z,4.1nm,0.8s						
RND	Reindeer	69.82	27	eP	P	10 59 23.3	-1.0
RND				pmax	pmax		
	comp=Z,7.0nm,1.0s						
RND	Reindeer	69.82	27	eP	P	10 59 23.3	-1.0
	comp=Z,6.9nm,1.0s						
IL1	Eielson Array	69.88	25	eP	P	10 59 22.8	-1.7
ILAR	Eielson Array	69.88	25	P	P	10 59 23.2	-1.3
	comp=Z,2.4nm,1.0s,baz=282,slow=6.2,SNR=21						
ILAR				LR	LR	11 31 09.8	
	comp=Z,42nm,18.9s,baz=111,slow=37						
ILB	Eielson Array	69.88	25	eP	P	10 59 23.7	-0.8
PMR	Palmer	70.61	29	eP	P	10 59 27.8	-1.2
PMR				pmax	pmax		
	comp=Z,11nm,0.8s						
PMR	Palmer	70.61	29	eP	P	10 59 27.8	-1.2
	comp=Z,11nm,0.8s						
SML	Sawmill	70.83	29	eP	P	10 59 30.2	-0.2
SML				pmax	pmax		
	comp=Z,15nm,0.8s						
SML	Sawmill	70.83	29	eP	P	10 59 30.2	-0.2
	comp=Z,15nm,0.8s						
KDAK	Kodiak Island	70.93	33	ceP	P	10 59 30.5	-0.5
SCM	Sheep Creek Mo	71.22	28	eP	P	10 59 33.3	+0.4
SCM				pmax	pmax		
	comp=Z,11nm,1.0s						
SCM	Sheep Creek Mo	71.22	28	eP	P	10 59 33.3	+0.4
	comp=Z,11nm,1.0s						
PAX	Paxson	71.36	27	eP	P	10 59 33.0	-0.7
PAX				pmax	pmax		
	comp=Z,6.0nm,1.2s						
PAX	Paxson	71.36	27	eP	P	10 59 33.0	-0.7
	comp=Z,6.1nm,1.2s						
DOT	Dot Lake	71.53	26	eP	P	10 59 33.6	-1.0
	comp=Z,10nm,0.8s						
EGAK	Eagle	71.94	24	eP	P	10 59 36.1	-0.9
	comp=Z,1.7nm,0.7s						
KLU	Klutina	71.98	28	eP	P	10 59 37.3	-0.1
	comp=Z,18nm,0.8s						
MENT	Mentasta	72.05	26	eP	P	10 59 37.5	-0.2
	comp=Z,20nm,2.0s						
INK	Inuvik	72.16	19	eP	P	10 59 37.6	-0.6
INK				pmax	pmax		
	comp=Z,8.0nm,0.7s						
INK	Inuvik	72.16	19	eP	P	10 59 37.6	-0.6
	comp=Z,8.2nm,0.7s						
STKA	Stephens Creek	72.32	147	P	P	10 59 39.2	-0.5
	comp=Z,3.0nm,0.7s,baz=331,slow=5.5,SNR=12						
EYAK	Cordova Ski Ar	72.56	29	eP	P	10 59 40.6	-0.2
	comp=Z,14nm,1.0s						
BMRM	Bremner River	72.80	28	eP	P	10 59 42.4	+0.1
	comp=Z,18nm,0.9s						
DAWY	Dawson	72.98	24	eP	P	10 59 42.8	-0.5
	comp=Z,4.0nm,0.8s						
RES	Resolute Bay	73.64	5	eP	P	10 59 47.0	+0.1
RES				pmax	pmax		
	comp=Z,4.0nm,0.9s						
RES	Resolute Bay	73.64	5	eP	P	10 59 47.0	+0.1
	comp=Z,4.1nm,0.9s						
BALM	Baldy	73.67	28	eP	P	10 59 47.6	+0.1
BALM				pmax	pmax		
	comp=Z,5.0nm,0.7s						
BALM	Baldy	73.67	28	eP	P	10 59 47.6	+0.1
	comp=Z,5.4nm,0.7s						
SKAG	Skagway	77.39	27	eP	P	11 00 09.3	+0.6
	comp=Z,13nm,0.9s						
YKW3	Yellowknife Ar	81.62	17	eP	P	11 00 31.4	-0.3
	comp=Z,2.9nm,0.8s						
YKA	Yellowknife Ar	81.68	17	P	P	11 00 31.3	-0.7
	comp=Z,2.6nm,0.7s,baz=330,slow=5.2,SNR=54						
YKB5	Yellowknife Ar	81.68	17	eP	P	11 00 31.0	-0.9
TOA0	Torodi Ar. Sit	93.24	287	eP	P	11 01 28.7	-0.4
TORD	Torodi Ar. Bea	93.24	287	P	P	11 01 27.9	-1.3
	comp=Z,1.3nm,0.9s,baz=62,slow=4.6,SNR=6.4						
ROSC	El Rosal	144.08	357	PKP	PKPab	11 07 48.5	+0.2
	comp=Z,7.0nm,0.4s,baz=314,slow=19,SNR=3.6						
OTAV	Otavalo	148.64	4	ePKPdf	PKPdf	11 07 57.2	-1.5
OTAV				ePKPbc	PKPbc	11 08 02.4	0.0
OTAV				ePKPab	PKPab	11 08 05.0	-0.8

IDC 06 10:48:44.3±40.0, 7°.27S×108°.72E, h0km, mb3.7/3, mb1 3.9/3, mb1mx3.4/47, mbtmp3.7/3, Error ellipse: s-maj=669.2km s-min=164.0km az=131.0, Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	27.85	119	P	P	10 54 35.0	-1.0
	0.1nm,0.3s,baz=294,slow=9.5,SNR=9.0						
ASAR	Alice Springs	29.15	127	P	P	10 54 47.9	+0.4
	0.7nm,0.5s,baz=302,slow=8.3,SNR=12						
STKA	Stephens Creek	39.20	133	P	P	10 56 14.8	+0.4
	0.5nm,0.3s,baz=319,slow=13,SNR=5.3						

JMA 06 11:00:52.5±0.2, 38°.27N×143°.84E, h4km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	1.88	296	P	Pn	11 01 26.0	+0.6
JIO	Ouri	1.97	276	P	Pn	11 01 27.2	+0.6
JIO				S	Sn	11 01 52.5	+0.8
JMK	Ichinoseki	2.16	289	P	Pn	11 01 30.1	+0.8
JOM	Ohasama	2.32	302	P	Pn	11 01 32.6	+1.1
JOM				S	Sn	11 02 01.8	+1.3
JMM	Marumori	2.44	261	P	Pn	11 01 33.1	0.0
JMM				S	Sn	11 02 03.3	0.0
JOU	Okura	2.50	273	P	Pn	11 01 35.4	+1.4
JOU				S	Sn	11 02 06.9	+2.0
JRG	Rokugo	2.75	295	P	Pn	11 01 39.1	+1.8
JANG	Nango	2.77	320	P	Pn	11 01 38.7	+1.1
JYK	Kaneyama	2.80	284	P	Pn	11 01 39.7	+1.6
JFT	Otama	2.87	256	P	Pn	11 01 40.4	+1.3
JFT				S	Sn	11 02 15.2	+1.1

*JMA **06** 11:03:02.0±0.2, 24°.38N×121°.68E, h65km±3km, M2.5*
*ISCJB **06** 11:03:03.5±0.4, 24°.44N±0°.02×121°.77E±0°.02, h59km±4km, Error ellipse: s-maj=4.7km s-min=2.5km az=144.5*
*TAP **06** 11:03:03.3, 24°.45N×121°.70E, h61km±1km, ML3.2, A*
ISC 06 11:03:04.0±1.2, 24°.43N±0°.03×121°.76E±0°.03, h56km±6km, n47, σ0=97/85, 1C-3D, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ENA	Nanau	0.02	280	P	Pn	11 03 12.5	+0.1
	baz=123						
ENA				S	Sn	11 03 19.1	+0.8
	baz=123						
TWC	Suao	0.20	24	⇓iP	Pn	11 03 13.3	+0.4
	baz=42						
TWC				S	Sn	11 03 20.6	+1.2
	baz=42						
ENTT	Nioudou	0.28	320	⇓iP	Pn	11 03 13.2	-0.3
	baz=327						
ENTT				iS	Sn	11 03 20.7	+0.3
	baz=327						
TWE	Neicheng	0.31	344	⇓iP	Pn	11 03 13.6	-0.1
	baz=355						
TWE				S	Sn	11 03 21.2	+0.5
	baz=355						
ILA	Ilan	0.34	358	P	Pn	11 03 14.2	+0.2
	baz=8.0						
ILA				eS	Sn	11 03 22.4	+1.2
	baz=8.0						
NNS	Nan Shan	0.35	273	P	Pn	11 03 14.0	-0.3
	baz=266						
NNS				S	Sn	11 03 21.6	-0.1
	baz=266						
TWD	Chiawan	0.38	204	P	Pn	11 03 13.4	-1.0
	baz=193						
TWD				S	Sn	11 03 21.1	-0.6
	baz=193						
NSK	Sanguang	0.44	304	P	Pn	11 03 14.2	-0.9
	baz=305						
NSK				S	Sn	11 03 22.1	-1.0
	baz=305						
EGS		0.45	20	P	Pn	11 03 16.0	+0.9
	baz=29						
EGS				S	Sn	11 03 24.2	+1.2
	baz=29						
HWA	Hwalien	0.47	198	eP	Pn	11 03 14.8	-0.5
	baz=189						
HWA				eS	Sn	11 03 24.4	+1.0
	baz=189						
WHF	Hehuan Shan	0.53	238	eS	Sn	11 03 24.9	-0.5
	baz=231						
TWT	Tachien	0.56	252	P	Pn	11 03 16.3	-0.2
	baz=247						
TWT				S	Sn	11 03 25.7	+0.2
	baz=247						
TWA	Mucha	0.58	344	eS	Sn	11 03 24.3	-1.3
	baz=349						
TWB1	Santiao Chiao	0.62	20	P	Pn	11 03 17.2	+0.2
	baz=25						
TWB1				S	Sn	11 03 27.2	+0.8
	baz=25						
NWF	Wu-fen Shan	0.64	2	P	Pn	11 03 16.9	-0.5
	baz=6.0						
NWF				S	Sn	11 03 26.4	-0.8
	baz=6.0						
ESL	Shilin	0.68	206	eP	Pn	11 03 16.0	-1.8
	baz=200						
ESL				eS	Sn	11 03 26.0	-1.7
	baz=200						
NSTT	Nanjuang	0.72	287	eP	Pn	11 03 18.4	+0.2
	baz=285						
NSTT				eS	Sn	11 03 27.8	-0.9
	baz=285						
TWS1	Kuangyinshan	0.74	335	P	Pn	11 03 17.4	-1.1
	baz=338						
TWS1				S	Sn	11 03 28.2	-1.0
	baz=338						
TWY	Chenhua	0.86	350	eP	Pn	11 03 19.6	-0.5
	baz=353						
TWY				eS	Sn	11 03 30.5	-1.3
	baz=353						
WDT	Danda	0.88	221	⇑iP	Pn	11 03 19.8	-0.8
	baz=216						
WDT				S	Sn	11 03 32.1	-0.6
	baz=216						
TWQ1	Liyutan	0.90	265	eS	Sn	11 03 33.4	+0.5
	baz=262						
SMLT	Sun Moon Lake	0.95	236	P	Pn	11 03 21.8	+0.4
	baz=231						
SMLT				S	Sn	11 03 34.6	+0.4
	baz=231						
TYC	Yuchr	0.97	238	P	Pn	11 03 21.6	+0.1
	baz=234						
TYC				S	Sn	11 03 34.7	+0.2
	baz=234						
JYNG	Yonagunijimaku	1.08	88	P	Pn	11 03 22.9	0.0
JYNG				eS	Sn	11 03 37.7	+0.7
WNT	Mingjian	1.12	241	eS	Sn	11 03 38.3	+0.3
	baz=238						
YOJ	Yonaguni jima	1.14	88	P	Pn	11 03 23.5	-0.2
YOJ				eS	Sn	11 03 38.8	+0.4
TWF1	Yuli	1.15	202	eP	Pn	11 03 23.6	-0.3
	baz=198						
TWF1				eS	Sn	11 03 35.8	-2.8
	baz=198						
YUS	Yu-Shan	1.19	219	eP	Pn	11 03 24.7	-0.2
	baz=215						
YUS				eS	Sn	11 03 40.3	0.0
	baz=215						
ALS	Alishan	1.26	224	eP	Pn	11 03 25.9	+0.3
	baz=220						
ALS				eS	Sn	11 03 43.1	+1.3
	baz=220						
CHN5	Tsauling	1.29	230	P	Pn	11 03 26.0	+0.2
	baz=227						
CHN5				S	Sn	11 03 43.1	+1.0
	baz=227						
CHKT	Chengkung	1.37	195	eS	Sn	11 03 43.2	-0.7
	baz=192						
ELDTW	Lidau	1.41	209	eP	Pn	11 03 26.7	-0.7
	baz=206						
ELDTW				eS	Sn	11 03 44.9	-0.1
	baz=206						
CHN4	Tsaushan	1.51	225	eP	Pn	11 03 29.2	+0.4
	baz=222						
CHN4				eS	Sn	11 03 48.9	+1.5
	baz=222						
CHY	Chiayi	1.53	233	eS	Sn	11 03 49.8	+1.9
	baz=230						
STYT	Tauyuan	1.56	216	eP	Pn	11 03 30.0	+0.6
	baz=213						
STYT				eS	Sn	11 03 50.1	+1.6
	baz=213						
WTP	Ta-pu	1.57	222	eP	Pn	11 03 31.0	+1.4
	baz=219						
WTP				eS	Sn	11 03 51.2	+2.2
	baz=219						
TWK	Hsinying	1.64	226	eS	Sn	11 03 52.0	+1.4
	baz=222						
CHN1	Nanshi	1.67	223	eP	Pn	11 03 31.0	0.0
	baz=220						
CHN1				S	Sn	11 03 53.0	+1.6
	baz=220						
TWG	Pinlang	1.72	202	eP	Pn	11 03 29.4	-2.2
	baz=199						
TWG				eS	Sn	11 03 50.3	-2.1
	baz=199						
SGST	Jiashian	1.72	219	eP	Pn	11 03 32.3	+0.7
	baz=216						
SGST				eS	Sn	11 03 54.1	+1.7
	baz=216						
IRIF	Iriomote-Funau	1.80	92	P	Pn	11 03 32.2	-0.4
IRIF				eS	Sn	11 03 54.4	+0.1
HATJ	Hateruma jima	1.90	101	eS	Sn	11 03 57.5	+0.6
JKRS	Kuro-shima	2.06	95	P	Pn	11 03 36.3	+0.1
JKRS				eS	Sn	11 04 01.4	+0.7
JIJ	Ishigaki jima	2.17	91	P	Pn	11 03 37.6	-0.1
JIJ				eS	Sn	11 04 02.5	-1.0
EAST	Anshuo	2.20	203	eP	Pn	11 03 38.7	+0.6
	baz=200						
EAST				eS	Sn	11 04 04.3	+0.1
	baz=200						
JISG	Ishigakijimahi	2.33	85	P	Pn	11 03 39.5	-0.4
JISG				eS	Sn	11 04 06.7	-0.6
JTJ	Tarama	2.69	85	eS	Sn	11 04 16.6	+0.5

*ISCJB **06** 11:20:43.7±0.5, 40°.94N±0°.04×40°.28E±0°.03, h0km, Error ellip

*DDA **06** 11:21:38.1, 40.°94N×40.°30E, h8km, Md2.6, Suspected Mining explosion.*

ISC 06 11:20:44.3±0.9, 40.°93N±0.°03×40.°30E±0.°02, h0km, n26, σ1°22/43, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MACK	Trabzon	0.41	272	P	Pg	11 20 52.8	+0.8
MACK				S	Sg	11 21 00.2	+2.9
MACK	Trabzon	0.41	272	*i* P	Pg	11 20 52.8	+0.8
MACK				*i* S	Sg	11 21 00.2	+2.9
KTUT	Trabzon	0.41	278	*e*Pg	Pg	11 20 53.2	+1.1
KTUT	Trabzon	0.41	278	*e*Pg	Pg	11 20 53.2	+1.1
BAYT	Ayd¯–ntepe-Bay	0.55	193	*e*PG	Pg	11 20 54.9	+0.1
BAYT				*e*SG	Sg	11 21 01.6	-0.4
BAYT	Ayd¯–ntepe-Bay	0.55	193	*e*Pg	Pg	11 20 54.9	+0.1
BAYT				*e*Sg	Sg	11 21 01.6	-0.4
GUMT	Gumushane	0.78	233	*e*PG	Pg	11 20 57.7	-1.6
GUMT	Gumushane	0.78	233	*e*Pg	Pg	11 20 57.7	-1.6
KOPT	Kop Dagi	0.92	171	P	Pg	11 21 02.3	+0.3
KOPT				S	Sg	11 21 15.9	+1.9
KOPT	Kop Dagi	0.92	171	*i* P	Pg	11 21 02.3	+0.3
KOPT				*i* S	Sg	11 21 15.9	+1.9
KELT	Kelkit	1.12	226	P	Pg	11 21 04.9	-0.8
KELT				S	Sg	11 21 20.0	-0.2
KELT	Kelkit	1.12	226	*i* P	Pg	11 21 04.9	-0.8
KELT				*i* S	Sg	11 21 20.0	-0.2
ESPY	Espiye-Giresun	1.19	270	*e*PG	Pg	11 21 05.4	-1.7
ESPY	Espiye-Giresun	1.19	270	*e*Pg	Pg	11 21 05.4	-1.8
DAGI	Agillar	1.23	83	*i* P	Pg	11 21 07.0	-0.8
DAGI				*i* S	Sg	11 21 24.4	+0.6
ARTV	Artvin	1.25	78	P	Pg	11 21 07.7	-0.7
ARTV				S	Sg	11 21 25.1	+0.5
ARTV	Artvin	1.25	78	*i* P	Pg	11 21 07.7	-0.7
ARTV				*i* S	Sg	11 21 25.1	+0.5
EZM	Erzurum	1.31	141	*e*PN	Pg	11 21 09.3	0.0
ERZM	Erzurum	1.31	141	P	Pg	11 21 09.2	-0.2
ERZM				S	Sb	11 21 28.4	+1.1
ERZM	Erzurum	1.31	141	*i* P	Pg	11 21 09.2	-0.2
ERZM				*i* S	Sb	11 21 28.4	+1.1
YEDI	Yedisu-Bingol	1.50	173	*e*PN	Pn	11 21 11.0	-1.7
YEDI	Yedisu-Bingol	1.50	173	*e*Pn	Pn	11 21 11.0	-1.7
GRSN	GIRESUNGRSN	1.54	270	P	Pn	11 21 12.4	-0.7
GRSN				S	Sg	11 21 32.0	-1.8
GRSN	GIRESUNGRSN	1.54	270	*i* P	Pn	11 21 12.4	-0.7
GRSN				*i* S	Sg	11 21 32.0	-1.8
SUSE	Susehri	1.75	246	P	Pn	11 21 16.1	0.0
SUSE				S	Sn	11 21 39.9	+0.6
SUSE	Susehri	1.75	246	*i* P	Pn	11 21 16.1	0.0
SUSE				*i* S	Sn	11 21 39.9	+0.6

*NIED **06** 11:21:00, 38.°30N×144.°60E, h11km, Mw3.5 Best double couple: M0:1.98000×10^14 NP1:φs:23.00000°, δ33.00000°, λ-91.00000°. NP2:φs:205.00000°, δ57.00000°, λ-89.00000°.*

*IDC **06** 11:21:43.0±1.1, 38.°09N×144.°93E, h0km, mb3.5/4, mb1 3.8/6, mb1mx3.4/45, mbtmp3.6/6, ML3.8/2, Error ellipse: s-maj=41.6km s-min=22.3km az=104.0*

*ISCJB **06** 11:21:45.6±0.7, 38.°31N±0.°05×144.°71E±0.°06, h29km, mb3.4/4, Error ellipse: s-maj=7.7km s-min=5.4km az=145.3*

*JMA **06** 11:21:47.1±0.3, 38.°28N×144.°62E, h42km, M4.0*

ISC 06 11:21:47.2±1.1, 38.°32N±0.°06×144.°68E±0.°08, h29km, n23, σ2°14/35, mb3.5/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	2.47	289	P	Pn	11 22 26.0	+0.5
OFUJ				*e*S	Sn	11 22 54.6	-0.1
MIYJ	Miyakonagasawa	2.56	300	P	Pn	11 22 27.2	+0.5
JIO	Ouri	2.62	274	P	Pn	11 22 27.5	0.0
JIO				S	Sn	11 22 57.2	-1.1
JMK	Ichinoseki	2.78	284	P	Pn	11 22 30.5	+0.8
JMK				*e*S	Sn	11 23 02.8	+0.5
JOM	Ohasama	2.88	295	P	Pn	11 22 32.0	+0.9
JOM				S	Sn	11 23 05.8	+1.0
JANG	Nango	3.20	311	P	Pn	11 22 35.3	-0.2
JYK	Kaneyama	3.44	281	P	Pn	11 22 39.8	+1.1
JYK				S	Sn	11 23 19.6	+1.2
JFT	Otama	3.52	258	P	Pn	11 22 41.0	+1.0
JFT				S	Sn	11 23 20.3	-0.4
JOT	Ohata	4.14	319	P	Pn	11 22 49.4	+1.0
JCH	Churui	4.41	347	*e*S	Sn	11 23 39.2	-3.2
JKB	Kayabe	4.53	323	P	Pn	11 22 54.9	+1.2
NEM2	Nemuro 2	5.11	9	P	Pn	11 22 59.9	-1.8
NEM2				*e*S	Sn	11 23 54.3	-5.3
JRY	Ryogami san	5.15	245	P	Pn	11 23 02.5	+0.1
JRY				*e*S	Sn	11 23 56.8	-4.1
MJAR	Matsushiro Arr	5.44	253	Pn	Pn	11 23 08.1	+1.7
	2.0nm,0.3s,baz=86,slow=16,SNR=18						
MJAR				Sn	Sn	11 24 08.6	+0.6
	0.4nm,0.3s,baz=14,slow=5.6,SNR=2.8						
MAT	Matsushiro	5.45	253	P	Pn	11 23 08.7	+2.3
MAT				S	Sn	11 24 09.9	+1.8
JOSM	Okushiri--Mats	5.48	315	P	Pn	11 23 08.0	+1.2
JTKR	Abashiri--Toko	5.68	354	P	Pn	11 23 09.1	-0.4
JTKR				*e*S	Sn	11 24 09.7	-4.0
ASAJ	Asahikawa	6.00	346	Pn	Pn	11 23 15.4	+1.4
	2.7nm,0.3s,baz=204,slow=16,SNR=35						
ASAJ				Sn	Sn	11 24 21.8	+0.1
	1.0nm,0.3s,baz=287,slow=20,SNR=4.4						
JHJ	Hachijo jima 2	6.54	219	Sn	Sn	11 24 28.7	-6.2
	5.4nm,0.3s,baz=58,slow=19,SNR=2.7						
SEY	Seymchan	25.09	8	P	P	11 27 10.9	+2.0
	0.9nm,0.5s,baz=255,slow=22,SNR=4.8						
WRA	Warramunga Arr	58.76	191	P	P	11 31 40.9	-1.6
	0.3nm,0.6s,baz=14,slow=7.4,SNR=6.1						
ASAR	Alice Springs	62.48	191	P	P	11 32 07.0	-0.8
	0.2nm,0.8s,baz=23,slow=10,SNR=5.8						
TXAR	Lajitas Array	87.28	54	P	P	11 34 32.4	+1.0
	0.2nm,0.8s,baz=329,slow=3.2,SNR=3.1						

*NIED **06** 11:26:00, 38.°20N×141.°70E, h59km, Mw3.7 Best double couple: M0:4.15000×10^14 NP1:φs:151.00000°, δ35.00000°, λ53.00000°. NP2:φs:14.00000°, δ62.00000°, λ113.00000°.*

*IDC **06** 11:26:12.9±2.0, 38.°12N×142.°09E, h0km, mb3.6/2, mb1 3.6/4, mb1mx3.3/38, mbtmp3.4/4, ML3.3/2, MS2.4/2, Ms1 2.4/2, ms1mx2.1/35, Error ellipse: s-maj=49.4km s-min=29.4km az=89.0*

*ISCJB **06** 11:26:18.4±1.1, 38.°16N±0.°05×141.°8E±0.°1, h50km±10km, mb3.6/2, Error ellipse: s-maj=17.0km s-min=5.8km az=25.6*

*JMA **06** 11:26:19.7±0.1, 38.°17N×141.°71E, h50km±1km, M3.7*

JMA Felt I J1.

ISC 06 11:26:18.7±1.9, 38.°14N±0.°05×141.°86E±0.°09, h37km±3km, n17, σ0°92/24, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.51	308	P	Pn	11 26 29.9	+0.5
JIO				S	Sn	11 26 36.8	-0.1
JMM	Marumori	0.89	252	P	Pn	11 26 34.2	-0.4
JMM				S	Sn	11 26 45.0	-1.3
OFUJ	Ofunato	0.95	351	P	Pn	11 26 36.0	+0.6
OFUJ				S	Sn	11 26 47.5	-0.2
JMK	Ichinoseki	0.95	328	P	Pn	11 26 35.9	+0.4
JMK				S	Sn	11 26 47.1	-0.7
JOU	Okura	0.97	284	P	Pn	11 26 35.6	-0.1
JOU				S	Sn	11 26 47.4	-0.9
JFK	Kawauchi	1.10	226	P	Pn	11 26 37.8	+0.2
JFK				S	Sn	11 26 50.8	-0.8
JFT	Otama	1.36	243	P	Pn	11 26 41.6	+0.5
JFT				S	Sn	11 26 57.6	-0.3
JOM	Ohasama	1.40	342	P	Pn	11 26 42.3	+0.7
JYK	Kaneyama	1.41	304	P	Pn	11 26 41.7	-0.1
JYS	Shiratake	1.42	274	P	Pn	11 26 41.9	0.0
MJAR	Matsushiro Arr	3.32	242	Pn	Pn	11 27 10.0	+1.9
	1.7nm,0.3s,baz=54,slow=10,SNR=14						
MJAR				LR	LR	11 28 49.1	
	comp=Z,36nm,18.4s,baz=80,slow=45						
MAT	Matsushiro	3.32	242	P	Pn	11 27 09.8	+1.7
MAT				S	Sn	11 27 47.9	+1.6
JHJ	Hachijo jima 2	5.29	199	Sn	Sn	11 28 33.3	-1.5
	8.7nm,0.3s,baz=49,slow=19,SNR=3.1						
ASAJ	Asahikawa	5.99	5	Pn	Pn	11 27 45.1	+0.4
	0.8nm,0.3s,baz=240,slow=13,SNR=6.8						
KSRS	Korea Array	11.05	271	LR	LR	11 32 48.7	
	comp=Z,25nm,18.7s,baz=0.0,slow=35						
MKAR	Makanchi Array	43.84	301	P	P	11 34 20.7	-0.3
	0.7nm,0.7s,baz=90,slow=9.0,SNR=4.6						
WRA	Warramunga Arr	58.21	188	P	P	11 36 08.7	-0.3
	0.4nm,0.5s,baz=5.9,slow=7.1,SNR=8.6						

*NIED **06** 11:52:00, 39.°60N×140.°50E, h5km, Mw3.5 Best double couple: M0:1.85000×10^14 NP1:φs:280.00000°, δ46.00000°, λ-3.00000°. NP2:φs:12.00000°, δ88.00000°, λ-136.00000°.*

JMA 06 11:52:14.2, 39.°56N×140.°45E, h9km±1km, M3.6, 4C-1D Broadband fault plane solution: P waves. NP1: φs:14.00000°, δ77.00000°, λ-162.00000°. **NP2:** φs:279.00000°, δ72.00000°, λ-14.00000°. **Principal axes:** T Plg3.0000°, Azm146.0000°; N Plg68.0000°, Azm49.0000°; P Plg22.0000°, Azm237.0000°; **Eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JYW	Yuwa	0.19	264	⇓P	Pg	11 52 18.6	+0.5
JYW				S	Sg	11 52 22.1	+1.4
JRG	Rokugo	0.22	139	⇑P	Pg	11 52 18.8	+0.2
JAH	Hinai	0.64	13	⇑P	Pg	11 52 26.8	+0.1
JAH				S	Sg	11 52 35.4	+0.3
JYK	Kaneyama	0.65	186	⇑P	Pg	11 52 26.2	-0.5
JYK				S	Sg	11 52 34.6	-0.5
JOM	Ohasama	0.66	97	⇑P	Pg	11 52 26.6	-0.3
JOM				S	Sg	11 52 35.2	-0.3
JMK	Ichinoseki	0.85	135	P	Pg	11 52 29.9	-0.7
JMK				S	Sg	11 52 40.9	-0.8
MAT	Matsushiro	3.49	211	P	Pn	11 53 09.9	+1.2
MAT				S	Sn	11 53 51.0	+0.8

ISC 06 12:02:49.3±1.3, 49.°10N±0.°04×20.°24E±0.°03, h1km±18km, n6, σ0°82/12, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NIE	Niedzica	0.32	7	*e*Pg	Pg	12 02 54.9	-0.5
NIE				*e*Sg	Sg	12 02 59.0	-0.7
LANS	Liptovska Anna	0.51	276	*e*PG	Pg	12 02 59.2	+0.1
LANS				*e*SG	Sg	12 03 06.6	+1.0
KECS	Kecovo	0.64	165	*e*PG	Pg	12 03 01.0	-0.6
KECS				*e*SG	Sg	12 03 09.4	-0.4
KECS				*e*LG	Lg	12 03 10.0	
CRVS	Cervenica-Dubn	0.83	103	*e*PG	Pg	12 03 04.6	-0.6
CRVS				*e*SG	Sg	12 03 16.1	+0.1
VYHS	Vyhne	1.11	237	*e*PN	Pn	12 03 12.4	+0.4
VYHS				*e*SN	Sb	12 03 25.3	-0.9
VYHS				*e*LG	Lg	12 03 29.4	
KOLS	Kolonicke sedl	1.35	96	*e*PN	Pg	12 03 15.9	+0.7
KOLS				*e*SN	Sg	12 03 33.8	+1.1
KOLS				*e*LG	Lg	12 03 37.0	

IDC 06 12:04:11.1±4.7, 14.°34S×69.°72W, h190km±82km, mb2.9/2, mb1 2.9/3, mb1mx2.8/24, mbtmp3.2/3, Error ellipse: s-maj=190.8km s-min=45.0km az=23.0, Peru-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LPAZ	La Paz	2.47	142	P	Pn	12 04 54.6	0.0
	0.4nm,0.3s,baz=322,slow=8.9,SNR=7.3						
LPAZ				S	Sn	12 05 29.1	+0.5
	0.1nm,0.3s,baz=98,slow=14,SNR=4.3						
TORD	Torodi Ar. Bea	75.80	72	P	P	12 15 36.9	+0.1
	0.6nm,0.9s,baz=235,slow=5.1,SNR=2.8						
YKA	Yellowknife Ar	84.21	341	P	P	12 16 20.7	-0.1
	0.1nm,0.5s,baz=135,slow=5.6,SNR=4.6						

*CSEM **06** 12:05:16.6±0.2, 40.°40N×34.°36E, h5km, MD2.7, Error ellipse: s-maj=4.3km s-min=3.6km az=5.0*

*ISK **06** 12:05:16.0, 40.°39N×34.°38E, h7km, MD2.7*

*DDA **06** 12:05:16.3, 40.°37N×34.°37E, h7km, Md3.0*

ISC 06 12:05:16.6±0.9, 40.°38N±0.°02×34.°37E±0.°02, h15km±9km, n37, σ0°49/59, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CORM	Corum	0.28	135	*e*PG	Pg	12 05 22.4	-0.3
CORM				*e*SG	Sg	12 05 27.0	+0.1
CORM	Corum	0.28	135	*e*Pg	Pg	12 05 22.4	-0.3
CORM				*e*Sg	Sg	12 05 27.0	+0.1
COAL	Corum-Alaca	0.49	105	P	Pg	12 05 26.1	-0.2
COAL				S	Sb	12 05 33.5	-0.5
COAL	Corum-Alaca	0.49	105	*i* P	Pg	12 05 26.1	-0.2
COAL				*i* S	Sb	12 05 33.5	-0.5
CANT	Cankiri	0.61	292	*e*PG	Pg	12 05 28.4	-0.2
CANT				*e*SG	Sb	12 05 37.5	0.0
TOS	Tosya	0.70	338	*e*PG	Pg	12 05 29.9	-0.5
TOS	Tosya	0.70	338	*e*Pg	Pg	12 05 29.9	-0.5
ELDT	Eldivan	0.73	279	P	Pb	12 05 31.0	0.0
ELDT				S	Sb	12 05 41.3	+0.4
ELDT	Eldivan	0.73	279	*i* P	Pb	12 05 31.0	0.0
ELDT				*i* S	Sb	12 05 41.3	+0.4
CDAG	Cicekdag	0.76	180	P	Pg	12 05 31.2	-0.1
CDAG				S	Sb	12 05 41.9	+0.3
CDAG	Cicekdag	0.76	180	*i* P	Pg	12 05 31.2	-0.1
CDAG				*i* S	Sb	12 05 41.9	+0.3
YOZ	Yozgat	1.04	135	*e*PG	Pg	12 05 36.5	-0.2
YOZ	Yozgat	1.04	135	*e*Pg	Pg	12 05 36.5	-0.2
BYBT	Boyabat	1.13	15	*e*PN	Pb	12 05 37.5	-0.2
BYBT	Boyabat	1.13	15	*e*Pn	Pb	12 05 37.5	-0.2
KAMT	Kaman	1.13	207	*e*PN	Pb	12 05 37.5	-0.3
KAMT	Kaman	1.13	207	*e*Pn	Pb	12 05 37.6	-0.3
HAVZ	Havza	1.24	56	P	Pb	12 05 39.5	-0.1
HAVZ				S	Sg	12 05 57.3	+0.8
HAVZ	Havza	1.24	56	*i* P	Pb	12 05 39.5	-0.1
HAVZ				*i* S	Sg	12 05 57.4	+0.8
BBAL	Bala	1.27	229	P	Pb	12 05 40.1	-0.2
BBAL				S	Sg	12 05 58.0	+0.3
BBAL	Bala	1.27	229	*i* P	Pb	12 05 40.1	-0.2
BBAL				*i* S	Sg	12 05 58.0	+0.3
LOD	Lodumlu	1.32	249	*e*PN	Pg	12 05 41.6	-0.5
LOD	Lodumlu	1.32	249	*e*Pn	Pg	12 05 41.6	-0.5
AFSR	Af¯ar-Bala (A	1.37	227	*e*PN	Pg	12 05 42.3	-0.6
AFSR	Af¯ar-Bala (A	1.37	227	*e*Pn	Pg	12 05 42.3	-0.6
SERE	Sereflikochisa	1.56	204	*e*PN	Pg	12 05 46.1	-0.5
SERE	Sereflikochisa	1.56	204	*e*Pn	Pg	12 05 46.1	-0.5
AVNS	Nevsehir-Avano	1.62	167	P	Pg	12 05 47.2	-0.4
AVNS	Nevsehir-Avano	1.62	167	*i* P	Pg	12 05 47.2	-0.4
AVNS				*i* S	Sg	12 06 08.4	-0.2
KKUL	Konya-Kulu	1.65	223	P	Pb	12 05 46.7	0.0
KKUL				S	Sg	12 06 10.3	+0.7
KKUL	Konya-Kulu	1.65	223	*i* P	Pb	12 05 46.7	0.0
KKUL				*i* S	Sg	12 06 10.3	+0.7
SAMS	Samsun-Alacam	1.69	54	P	Pg	12 05 48.4	-0.7
SAMS				S	Sg	12 06 11.7	+0.7
SAMS	Samsun-Alacam	1.69	54	*i* P	Pg	12 05 48.4	-0.7
SAMS				*i* S	Sg	12 06 11.7	+0.7
CUSAR	Sarkisla-SIVAS	1.73	123	P	Pb	12 05 48.2	0.0
CUSAR				S	Sg	12 06 13.6	+1.2
CUSAR	Sarkisla-SIVAS	1.73	123	*i* P	Pb	12 05 48.2	0.0
CUSAR				*i* S	Sg	12 06 13.6	+1.2
AKSY	AKSARAY - Alti	1.79	195	P	Pb	12 05 48.6	-0.6
AKSY				S	Sg	12 06 15.1	+0.8
AKSY	AKSARAY - Alti	1.79	195	*i* P	Pb	12 05 48.6	-0.6
AKSY				*i* S	Sg	12 06 15.1	+0.8

*NIED **06** 12:13:00, 29.°10N×129.°30E, h8km, Mw3.8 Best double couple: M0:5.39000×10^14 NP1:φs:95.00000°, δ45.00000°, λ-140.00000°. NP2:φs:335.00000°, δ63.00000°, λ-53.00000°.*

JMA 06 12:13:00.8±0.1, 29.°09N×129.°42E, h22km±4km, M3.4, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTAJ	Takarajima	0.20	288	P	Pb	12 13 06.1	-0.3
JTAJ				S	Sb	12 13 09.9	-0.4
JAM	Amami Oshima	0.70	166	P	Pb	12 13 13.4	-0.9
JAM				S	Sb	12 13 22.8	-0.6
JNN	Nakanoshima	0.85	28	P	Pb	12 13 16.6	-0.2
JNN				S	Sb	12 13 28.4	+0.6
JAMN	Amaminishikomi	0.87	194	P	Pb	12 13 17.1	-0.1
JAMN				*e*S	Sn	12 13 29.3	-0.4
JZK	Kikaishima	0.91	148	P	Pn	12 13 19.1	+0.8
JZK				*e*S	Sn	12 13 32.3	+1.5
JTK	Tokunoshima	1.36	198	P	Pn	12 13 24.5	0.0
JTK				*e*S	Sn	12 13 41.3	-0.6
JYAK	Yakushimahirau	1.49	39	P	Pn	12 13 26.1	-0.1
JYAK				*e*S	Sn	12 13 44.2	-0.7
JOKE	Okinoerabujima	1.88	204	P	Pn	12 13 32.2	+0.6
JTN	Tanegashima 3	2.06	41	P	Pn	12 13 34.9	+0.7
JTN				*e*S	Sn	12 14 00.2	+0.9
JIH	Iheya	2.42	212	P	Pn	12 13 40.1	+1.1
JIH				*e*S	Sn	12 14 08.3	+0.4

*IDC **06** 12:17:22.7±4.8, 35.°71N×141.°65E, h0km, mb3.7/3, mb1 3.6/5, mb1mx3.4/31, mbtmp3.6/5, ML3.4/2, MS2.8/5, Ms1 2.8/5, ms1mx2.5/46, Error ellipse: s-maj=88.7km s-min=36.6km az=91.0*

*ISCJB **06** 12:17:28.9±1.2, 35.°55N±0.°04×141.°1E±0.°1, h38km±8km, mb3.5/3, MS3.2/2, Error ellipse: s-maj=18.1km s-min=7.2km az=174.3*

*JMA **06** 12:17:29.3±0.1, 35.°56N×141.°03E, h36km±1km, M3.1*

ISC 06 12:17:29.0±1.8, 35.°54N±0.°05×141.°1E±0.°1, h29km±11km, n17, σ1°75/19, mb3.5/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	0.28	306	P	Pb	12 17 36.1	0.0
CHOJ				S	Sn	12 17 40.8	-1.6
BSO4	Boso 4	0.85	230	P	Pn	12 17 44.3	-0.6
BSO1	Boso 1	0.89	189	P	Pn	12 17 45.2	+0.2
BSO3	Boso 3	0.90	215	P	Pn	12 17 44.9	-0.5
BSO3				X		12 17 57.4	
JYT	Yasato	1.03	312	P	Pn	12 17 46.2	-1.3
JYT				*e*S	Sn	12 17 59.0	-1.9
JIM2	Oshima 3	1.62	240	P	Pn	12 17 54.2	-1.4
JIM2				*e*S	Sn	12 18 14.5	-1.1
JAG	Ashikaga	1.63	303	P	Pn	12 17 55.9	+0.2
JOD2	Odawara 2	1.70	261	P	Pn	12 17 56.4	-0.3
MJAR	Matsushiro Arr	2.58	294	Pn	Pn	12 18 09.7	+0.9
	5.0nm,0.3s,baz=93,slow=8.7,SNR=28						
MJAR				LR	LR	12 18 42.0	
	comp=Z,27nm,21.7s,baz=120,slow=28						
MAT	Matsushiro	2.58	294	P	Pn	12 18 09.6	+0.8
MAT				S	Sn	12 18 44.5	+5.3
JHJ	Hachijo jima 2	2.66	205	Pn	Pn	12 18 11.6	+1.7
	15nm,0.3s,baz=143,slow=20,SNR=3.6						
JHJ				Sn	Sn	12 18 40.4	-0.7
	48nm,0.3s,baz=239,slow=23,SNR=8.5						
KSRS	Korea Array	10.81	284	LR	LR	12 24 22.5	
	comp=Z,68nm,18.6s,baz=100,slow=38						
USRK	Ussuriysk Ar.	11.14	324	LR	LR	12 24 14.2	
	comp=Z,59nm,20.2s,baz=130,slow=37						
SONM	Songino Array	28.46	306	P	P	12 23 22.0	+0.6
	0.5nm,0.4s,baz=106,slow=9.1,SNR=2.9						
SONM				LR	LR	12 35 14.9	
	comp=Z,28nm,18.5s,baz=154,slow=37						
ZALV	Zalesovo Beam	42.77	314	P	P	12 25 22.8	-0.8
	0.6nm,0.4s,baz=101,slow=7.8,SNR=2.7						
MKAR	Makanchi Array	44.74	303	P	P	12 25 39.4	-0.2
	0.3nm,0.5s,baz=88,slow=9.7,SNR=3.6						
GERES	GERESS Array B	83.86	328	LR	LR	13 08 34.9	
	comp=Z,16nm,18.2s,baz=346,slow=37						

IDC 06 12:22:48.2±2.2, 6.°09S×130.°21E, h0km, mb4.3/1, mb1 3.9/3, mb1mx3.5/21, mbtmp3.7/3, ML3.8/3, Error ellipse: s-maj=97.2km s-min=26.9km az=77.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	Fitzroy Crossi	12.75	200	Pn	Pn	12 25 51.3	+0.3
	0.3nm,0.3s,baz=25,slow=11,SNR=21						
WRA	Warramunga Arr	14.35	164	Pn	Pn	12 26 12.9	+0.1
	0.6nm,0.3s,baz=347,slow=13,SNR=27						
WRA				Sn	Sn	12 28 41.2	-12
	0.9nm,0.3s,baz=329,slow=24,SNR=10.0						
ASAR	Alice Springs	17.84	169	P	Pn	12 26 57.8	-0.3
	0.2nm,0.3s,baz=338,slow=8.8,SNR=14						
MKAR	Makanchi Array	67.58	327	P	P	12 33 46.8	0.0
	1.7nm,0.5s,baz=123,slow=7.7,SNR=14						

MEX 06 12:56:42.1±0.3, 30.°70N×105.°43W, h7km±14km, MD4.0, Texas-Mexico border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CGIG		2.22	262	*e*P	Pn	12 57 16.4	-3.1
CGIG				*e*S	Sn	12 57 43.1	-4.3
121A	Cookes Peak, D	2.71	313	*i* P	Pn	12 57 23.7	-2.7
121A				*e*S	Sn	12 57 55.8	-3.7
319A	Douglas	3.37	282	*e*P	Pn	12 57 32.5	-2.8
319A				*i* S	Sn	12 58 11.2	-4.4

*SOME **06** 13:02:21.1, 44.°72N×82.°18E, h20km*

*NNC **06** 13:02:22.3±1.2, 44.°73N×82.°17E, h0km, mb3.0, mpv2.5, Error ellipse: s-maj=17.1km s-min=2.5km az=115.0*

*ISCJB **06** 13:02:23.0±1.3, 44.°70N±0.°06×82.°3E±0.°1, h10km, Error ellipse: s-maj=13.6km s-min=4.9km az=30.8*

ISC 06 13:02:20.5±1.9, 44.°69N±0.°06×82.°22E±0.°09, h10km, n9, σ0°92/18, 3C-4D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DJR	Jarkent	1.78	259	*e*P	Pb	13 02 53.3	+0.1
	4.7nm,0.2s						
DJR				*e*S	Sg	13 03 16.7	-0.9
	4.2nm,0.2s						
KTMS	Ketmen	1.83	228	*e*P	Pb	13 02 54.5	+0.4
	1.2nm,0.1s						
KTMS				*e*S	Sg	13 03 18.9	-0.4
	16nm,0.2s						
MK31	Makanchi Array	2.11	1	⇓P	Pb	13 02 58.8	+0.1
	1.7nm,0.3s,baz=182,slow=14,SNR=62						
MK31				⇑S	Sb	13 03 25.6	+0.6
	0.9nm,0.3s,baz=189,slow=32,SNR=16						
KAPS	Kapalarasan	2.12	287	⇓*i* P	Pb	13 02 58.7	-0.3
	1.6nm,0.1s						
KAPS				*e*S	Sb	13 03 25.6	+0.2
	3.3nm,0.2s						

mb3.7/3, Error ellipse: s-maj=6.6km s-min=4.2km az=33.2
*IDC **06** 13:12:33.2±1.4, 22°.44S×67°.29W, h147km±17km, mb3.8/3, mb1 3.8/5, mb1mx3.4/26, mbtmp4.1/5, Error ellipse: s-maj=29.8km s-min=15.9km az=116.0*
*GUC **06** 13:12:35.1±0.6, 22°.35S×68°.01W, h197km±6km, ML3.8*
*SJA **06** 13:12:37.2±0.9, 22°.48S×67°.43W, h100km, ML2.5, MW2.6*
ISC 06 13:12:33.9±0.8, **22°.39S**±0°.04×**67°.51W**±0°.04, **h161**km±7km, **n26**, σ1°**39**/46, **mb3.7**/3, **12C, Chile-Bolivia border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LVC	**Limon Verde**	**1.31**	**260**	*i* P	**Pn**	**13 13 03.5**	**+0.7**
LVC				*e*S	**Sn**	13 13 25.0	+0.1
LVC	**Limon Verde**	**1.31**	**260**	P	**Pn**	**13 13 03.7**	**+0.9**
	baz=75,slow=8.9						
LVC				S	**Sn**	**13 13 25.4**	**+0.4**
	1μm,0.3s,baz=246,slow=19,SNR=26						
PB09	**IPOC Station P**	**1.71**	**290**	⇑*i* P	**Pn**	**13 13 07.8**	**+1.2**
PB09				*i* S	**Sn**	**13 13 32.5**	**+0.8**
PB09				IAML		13 13 35.4	
	comp=N,619nm,0.2s						
YJA	**Yavi**	**1.86**	**84**	*i* P	**Pn**	**13 13 09.3**	**+0.7**
YJA				*e*S	**Sn**	**13 13 33.5**	**-1.7**
YJA				IAML		13 13 39.0	
	comp=Z,44nm,0.5s						
PB06	**IPOC Station P**	**1.93**	**260**	⇑*i* P	**Pn**	**13 13 09.2**	**+0.2**
PB06				*e*S	**Sn**	**13 13 35.9**	**-0.2**
HJA	**Humahuaca**	**2.11**	**113**	*i* P	**Pn**	**13 13 11.2**	**0.0**
HJA				*i* S	**Sn**	**13 13 38.0**	**-2.1**
HJA				IAML		13 13 45.9	
	comp=Z,28nm,0.6s						
PB01	**IPOC Station P**	**2.27**	**306**	⇑*i* P	**Pn**	**13 13 13.2**	**+0.3**
PB01				*i* S	**Sn**	**13 13 42.8**	**-0.2**
PB01				IAML		13 13 46.1	
	comp=E,350nm,0.4s						
PB07	**IPOC Station P**	**2.30**	**286**	⇑*i* P	**Pn**	**13 13 13.5**	**+0.2**
PB07				*i* S	**Sn**	**13 13 42.4**	**-1.3**
PB07				IAML		13 13 44.5	
	comp=N,308nm,0.3s						
PB04	**IPOC Station P**	**2.44**	**271**	⇑*i* P	**Pn**	**13 13 15.0**	**0.0**
PB04				*i* S	**Sn**	**13 13 44.7**	**-2.1**
PB08	**IPOC Station P**	**2.71**	**325**	⇑*i* P	**Pn**	**13 13 20.0**	**+1.6**
PB08				*i* S	**Sn**	**13 13 54.5**	**+1.6**
PB08				IAML		13 13 56.3	
	comp=N,247nm,0.5s						
AZAP	**Zapla**	**2.90**	**130**	*i* P	**Pn**	**13 13 21.3**	**+0.7**
AZAP				*e*S	**Sn**	**13 13 55.2**	**-1.7**
AZAP				*i* S	**Sn**	**13 13 56.0**	**-0.9**
AZAP				IAML		13 13 59.8	
	comp=Z,18nm,0.5s						
PATCX	**Punta Patache**	**2.91**	**302**	⇑*i* P	**Pn**	**13 13 20.4**	**-0.2**
PATCX				*i* S	**Sn**	**13 13 54.8**	**-2.0**
PATCX				IAML		13 14 04.0	
	comp=N,368nm,0.6s						
ANCH	**Antofagasta**	**2.96**	**244**	⇑*i* P	**Pn**	**13 13 21.7**	**+0.5**
ANCH				*i* S	**Sn**	**13 13 55.8**	**-2.1**
SLA	**San Lorenzo**	**2.97**	**142**	*i* P	**Pn**	**13 13 22.0**	**+0.6**
PB10	**IPOC Station P**	**3.02**	**248**	⇑*i* P	**Pn**	**13 13 21.6**	**-0.3**
PB10				*i* S	**Sn**	**13 13 56.6**	**-2.6**
PB10				IAML		13 13 58.9	
	comp=N,414nm,0.4s						
HMBC	**Humberstone**	**3.05**	**313**	⇑*i* P	**Pn**	**13 13 21.9**	**-0.6**
HMBC				*i* S	**Sn**	**13 13 58.1**	**-1.9**
HMBC				IAML		13 14 01.9	
	comp=N,313nm,0.2s						
PB11	**IPOC Station P**	**3.29**	**322**	⇑*i* P	**Pn**	**13 13 25.2**	**-0.3**
PB11				*e*S	**Sn**	**13 14 04.3**	**-1.3**
PSGC	**Pisagua**	**3.69**	**318**	⇑*i* P	**Pn**	**13 13 29.3**	**-1.3**
PSGC				*i* S	**Sn**	**13 14 12.0**	**-2.7**
MNMC	**Minye Minye**	**3.78**	**329**	*e*P	**Pn**	**13 13 32.2**	**+0.3**
MNMC				*i* S	**Sn**	**13 14 16.1**	**-0.8**
FSA	**Cafayete**	**3.96**	**160**	*i* P	**Pn**	**13 13 36.8**	**+2.7**
LPAZ	**La Paz**	**6.09**	**354**	P	**Pn**	**13 14 04.6**	**+2.0**
	comp=N,0.7nm,0.3s,baz=133,slow=5,0,SNR=11						
LPAZ				S	**Sn**	**13 15 12.6**	**+0.7**
	comp=N,0.1nm,0.3s,baz=66,slow=20,SNR=2.0						
SIV	**San Ignacio**	**8.80**	**45**	P	**Pn**	**13 14 35.2**	**-2.8**
	comp=N,2.9nm,0.3s,baz=253,slow=11,SNR=31						
TORD	**Torodi Ar. Bea**	**76.44**	**70**	P	**P**	**13 24 06.3**	**0.0**
	comp=N,3.8nm,0.6s,baz=252,slow=5.5,SNR=54						
BOSA	**Boshof**	**81.89**	**117**	P	**P**	**13 24 35.5**	**-0.4**
	comp=N,0.7nm,0.4s,baz=225,slow=4.3,SNR=3.1						
YKA	**Yellowknife Ar**	**92.45**	**340**	P	**P**	**13 25 27.1**	**+1.2**
	comp=N,0.3nm,0.8s,baz=131,slow=4.7,SNR=9.2						
WRA	**Warramunga Arr**	**132.82**	**209**	PKP	**PKPdf**	**13 31 31.8**	**+1.1**
	comp=N,0.3nm,0.5s,baz=148,slow=1.8,SNR=5.7						

*ISK **06** 13:18:25.1, 38°.73N×38°.83E, h11km, MD2.5*
*DDA **06** 13:18:26.6, 38°.73N×38°.91E, h7km, Md2.7*
*CSEM **06** 13:18:26.1±0.3, 38°.74N×38°.85E, h2km, MD2.7, Error ellipse: s-maj=7.2km s-min=6.7km az=140.0*
*ISCJB **06** 13:18:27.5±0.5, 38°.69N±0°.04×38°.96E±0°.04, h22km±10km, Error ellipse: s-maj=7.1km s-min=5.1km az=147.3*
ISC 06 13:18:26.4±1.0, **38°.72N**±0°.02×**38°.91E**±0°.03, **h18**km±4km, **n21**, σ1°**03**/34, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ELZG	**Elazig**	**0.23**	**166**	P	**Pb**	**13 18 31.9**	**0.0**
ELZG				S	**Sg**	**13 18 36.3**	**+0.6**
ELZG	**Elazig**	**0.23**	**166**	*i* P	**Pb**	**13 18 31.9**	**0.0**
ELZG				*i* S	**Sg**	**13 18 36.3**	**+0.6**
PTK	**Pertek**	**0.41**	**65**	*e*PG	**Pg**	**13 18 34.9**	**-0.2**
PTK				*e*SG	**Sb**	**13 18 41.9**	**+0.5**
PTK	**Pertek**	**0.41**	**65**	*e*Pg	**Pg**	**13 18 34.9**	**-0.2**
PTK				*e*Sg	**Sb**	**13 18 41.9**	**+0.5**
SVRC	**Sivrice-ELAZID**	**0.46**	**138**	*e*PG	**Pg**	**13 18 35.7**	**-0.1**
SVRC				*e*SG	**Sb**	**13 18 43.4**	**+0.7**
SVRC	**Sivrice-ELAZID**	**0.46**	**138**	*e*Pg	**Pg**	**13 18 35.7**	**-0.1**
SVRC				*e*Sg	**Sb**	**13 18 43.4**	**+0.7**
TNCL	**Tunceli-Merkez**	**0.63**	**51**	P	**Pg**	**13 18 38.3**	**-0.7**
TNCL				S	**Sb**	**13 18 48.1**	**+0.6**
TNCL	**Tunceli-Merkez**	**0.63**	**51**	*i* P	**Pg**	**13 18 38.3**	**-0.7**
TNCL				*i* S	**Sb**	**13 18 48.1**	**+0.6**
ILIC	**ilic-Erzincan**	**0.78**	**340**	*e*PG	**Pb**	**13 18 40.0**	**-1.6**
ILIC	**ilic-Erzincan**	**0.78**	**340**	*e*Pg	**Pb**	**13 18 40.0**	**-1.6**
AKCD	**Akcadag**	**0.88**	**242**	P	**Pb**	**13 18 43.3**	**-0.1**
AKCD	**Akcadag**	**0.88**	**242**	*i* P	**Pb**	**13 18 43.3**	**-0.1**
AKCD				*i* S	**Sn**	**13 18 56.8**	**+0.2**
ERZN	**Erzincan**	**1.07**	**36**	*e*PN	**Pb**	**13 18 46.6**	**+0.1**
EZC	**Erzincan**	**1.09**	**18**	*e*Pn	**Pb**	**13 18 46.7**	**-0.1**
DARE	**Darende-Malaty**	**1.13**	**263**	*e*PG	**Pn**	**13 18 45.9**	**-1.5**
DARE	**Darende-Malaty**	**1.13**	**263**	*e*Pg	**Pn**	**13 18 45.9**	**-1.5**
CUKAN	**kangal_SIVAS**	**1.27**	**298**	*i* P	**Pg**	**13 18 51.2**	**+0.1**
CUKAN				*i* S	**Sg**	**13 19 09.9**	**+2.1**
KELT	**Kelkit**	**1.45**	**10**	P	**Pb**	**13 18 53.6**	**+0.5**
KELT				S	**Sg**	**13 19 14.0**	**+0.5**
KELT	**Kelkit**	**1.45**	**10**	*i* P	**Pb**	**13 18 53.6**	**+0.5**
KELT				*i* S	**Sg**	**13 19 14.0**	**+0.5**
SUSE	**Susehri**	**1.59**	**340**	P	**Pg**	**13 18 56.9**	**-0.1**
SUSE	**Susehri**	**1.59**	**340**	*i* P	**Pg**	**13 18 56.9**	**-0.1**
SUSE				*i* S	**Sg**	**13 19 21.2**	**+3.5**

*IDC **06** 13:40:37.0±1.8, 21°.55S×168°.60E, h0km, mb4.0/8, mb1 4.2/9, mb1mx4.0/35, mbtmp4.0/9, ML4.1/1, MS3.5/6, Ms1 3.4/6, ms1mx3.0/36, Error ellipse: s-maj=69.4km s-min=19.2km az=151.0*
*ISCJB **06** 13:40:38.6±0.7, 21°.5S±0°.2×168°.62E±0°.09, h20km, mb4.0/8, MS3.3/5, Error ellipse: s-maj=22.9km s-min=10.1km az=160.2*
ISC 06 13:40:39.9±0.9, **21°.6S**±0°.2×**168°.6E**±0°.1, **h20**km, **n20**, σ0°**87**/16, **mb3.9**/8, **MS3.3**/5, **Loyalty Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.08**	**256**	Pn	**Pn**	**13 41 13.4**	**-0.4**
	60nm,0.3s,baz=84,slow=14,SNR=139						
DZM				Sn	**Sn**	**13 41 40.1**	**+0.8**
	144nm,0.3s,baz=119,slow=20,SNR=12						
URZ	**Urewera**	**18.18**	**158**	LR	LR	13 51 12.3	
	comp=Z,135nm,19.2s,baz=350,slow=35						
AFI	**Afiamalu**	**20.15**	**71**	LR	LR	13 51 00.6	
	comp=Z,53nm,21.4s,baz=226,slow=31						
RPZ	**Rata Peaks**	**22.18**	**175**	LR	LR	13 54 01.2	
	comp=Z,116nm,19.3s,baz=230,slow=36						
PMG	**Port Moresby**	**23.92**	**297**	LR	LR	13 53 34.8	
	comp=Z,76nm,19.1s,baz=176,slow=33						
STKA	**Stephens Creek**	**26.17**	**241**	P	**P**	**13 46 13.3**	**+0.2**
	1.6nm,0.8s,baz=55,slow=15,SNR=4.3						
STKA				LR	LR	13 56 00.6	
	comp=Z,172nm,19.4s,baz=144,slow=35						
WRA	**Warramunga Arr**	**32.06**	**267**	P	**P**	**13 47 04.9**	**-0.8**
	0.9nm,0.9s,baz=103,slow=7.8,SNR=8.2						
ASAR	**Alice Springs**	**32.07**	**260**	P	**P**	**13 47 05.7**	**-0.1**
	1.4nm,0.8s,baz=82,slow=9.3,SNR=14						
PETK	**Petropavlovsk-**	**74.96**	**353**	P	**P**	**13 52 19.3**	**0.0**
	8.5nm,1.0s,baz=120,slow=10,SNR=4.6						
CMAR	**Chiang Mai Arr**	**78.94**	**295**	P	**P**	**13 52 43.6**	**+1.1**
	2.1nm,0.8s,baz=136,slow=4.2,SNR=11						
SNAA	**Sanae**	**86.83**	**183**	P	**P**	**13 53 22.6**	**0.0**
VNA3	**Neumayer Olymp**	**87.44**	**181**	P	**P**	**13 53 25.7**	**+0.1**
VNA2	**Neumayer--Watz**	**87.72**	**181**	P	**P**	**13 53 27.1**	**+0.2**
	baz=213,slow=2.8						
SONM	**Songino Array**	**88.73**	**323**	P	**P**	**13 53 31.7**	**-0.3**
	0.4nm,0.3s,baz=152,slow=6.5,SNR=3.1						
PALK	**Pallekele**	**90.71**	**277**	LR	LR	14 37 57.7	
	comp=Z,28nm,18.1s,baz=206,slow=38						
NVAR	**Mina Array Bea**	**90.77**	**49**	P	**P**	**13 53 42.0**	**0.0**
	0.4nm,0.6s,baz=233,slow=7.5,SNR=4.5						
ILAR	**Eielson Array**	**92.61**	**17**	P	**P**	**13 53 51.1**	**+1.5**
	0.4nm,0.8s,baz=220,slow=6.8,SNR=3.7						
ARCES	**ARCESS Array B**	**127.15**	**345**	PKP	**PKPdf**	**13 59 41.5**	**-0.6**
	2.4nm,0.8s,baz=341,slow=2.6,SNR=6.1						
BRG	**Berggiesshubel**	**144.67**	**332**	*e*(P)	**PKPab**	**14 00 11.6**	**-2.0**
	4.0nm,1.0s						
GERES	**GERESS Array B**	**146.23**	**330**	PKPbc	**PKPbc**	**14 00 18.7**	**-0.3**
	1.9nm,0.7s,baz=46,slow=3.9,SNR=13						

IDC 06 13:44:30.5±1.3, **12°.47N**×**144°.00E**, **h0**km, **mb3.6**/5, **mb1 3.9**/5, **mb1mx3.6**/41, **mbtmp3.6**/5, **Error ellipse: s-maj=107.2km s-min=16.6km az=117.0, South of Mariana Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**1.39**	**37**	Pn	Pb	13 44 58.0	+0.5
	24nm,0.3s,baz=162,slow=24,SNR=13						
GUMO				Sn	Sn	13 45 16.6	+0.3
	131nm,0.3s,baz=19,slow=22,SNR=35						
H11S3	**WAKE ISLAND Hy**	**22.65**	**72**	T	T	14 13 14.6	
	baz=258,slow=75,SNR=3.1						
H11S1	**WAKE ISLAND Hy**	**22.67**	**72**	T	T	14 13 22.7	
	baz=258,slow=75,SNR=2.8						
H11S2	**WAKE ISLAND Hy**	**22.67**	**72**	T	T	14 13 22.0	
	baz=258,slow=75,SNR=4.1						
H11N1	**WAKE ISLAND Hy**	**23.12**	**69**	T	T	14 13 49.3	
	baz=255,slow=75,SNR=9.6						
H11N2	**WAKE ISLAND Hy**	**23.13**	**69**	T	T	14 13 50.5	
	baz=255,slow=75,SNR=8.5						
H11N3	**WAKE ISLAND Hy**	**23.14**	**69**	T	T	14 13 52.0	
	baz=255,slow=75,SNR=7.8						
WRA	**Warramunga Arr**	**33.59**	**197**	P	P	13 51 12.4	-0.2
	0.7nm,0.6s,baz=21,slow=9.8,SNR=17						
ASAR	**Alice Springs**	**37.25**	**195**	P	P	13 51 44.2	0.0
	0.2nm,0.6s,baz=17,slow=10,SNR=5.3						
ILAR	**Eielson Array**	**69.93**	**25**	P	P	13 55 42.5	-0.9
	0.2nm,0.6s,baz=258,slow=6.3,SNR=3.1						
YKA	**Yellowknife Ar**	**84.23**	**27**	P	P	13 57 03.3	-0.4
	0.2nm,0.4s,baz=285,slow=5.1,SNR=7.1						
NVAR	**Mina Array Bea**	**88.27**	**51**	P	P	13 57 25.9	+1.4
	0.6nm,0.6s,baz=268,slow=5.5,SNR=5.5						

*ISCJB **06** 13:44:45.8±1.4, 34°.10S±0°.05×72°.3W±0°.1, h23km±9km, mb3.6/2, Error ellipse: s-maj=14.8km s-min=7.2km az=11.8*
*GUC **06** 13:44:45.2±0.7, 34°.07S×72°.24W, h10km±2km, ML3.3*
*IDC **06** 13:44:50.2±6.4, 34°.28S×70°.81W, h34km±54km, mb3.4/2, mb1 3.7/4, mb1mx3.5/22, mbtmp3.6/4, ML3.5/2, MS2.9/2, Ms1 2.9/2, ms1mx2.8/11, Error ellipse: s-maj=60.2km s-min=31.8km az=81.0*
ISC 06 13:44:45.4±2.1, **34°.10S**±0°.05×**72°.3W**±0°.1, **h23**km±13km, **n23**, σ2°**13**/29, **5C, Near coast of central Chile**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHPI	**Pichilemu**	**0.39**	**138**	⇑*i* P	**Pb**	**13 44 53.0**	**-0.6**
CHPI				*i* S	**Sb**	**13 44 59.1**	**-0.1**
TALC	**Talca**	**1.41**	**157**	⇑*i* P	**Pn**	**13 45 10.1**	**+0.4**
TALC				*i* S	**Sb**	**13 45 29.2**	**+0.6**
ANTU	**Antumapu**	**1.50**	**70**	*e*P	**Pn**	**13 45 10.4**	**-0.5**
ANTU				*i* S	**Sn**	**13 45 29.2**	**-0.6**
ANTU				IAML		13 45 35.6	
	comp=N,793nm,0.9s						
ROC1	**El Roble**	**1.56**	**44**	*i* P	**Pb**	**13 45 13.2**	**-0.6**
ROC1				*i* S	**Sb**	**13 45 39.0**	**+5.8**
ROCH	**El Roble**	**1.57**	**44**	⇑*i* P	**Pn**	**13 45 10.6**	**-1.5**
ROCH				*i* S	**Sn**	**13 45 31.2**	**-0.6**
ROCH				IAML		13 45 39.9	
	comp=N,677nm,0.5s						
CLCH	**Cerro Calan**	**1.64**	**65**	⇑*i* P	**Pn**	**13 45 13.1**	**+0.2**
CLCH				*i* S	**Sn**	**13 45 33.2**	**-0.2**
CLCH				IAML		13 45 52.7	
	comp=N,1μm,0.6s						
PEL	**Peldehue**	**1.66**	**55**	⇑*i* P	**Pn**	**13 45 12.7**	**-0.5**
AAGR	**Agrelo**	**3.08**	**72**	*i* P	**Pb**	**13 45 37.8**	**-1.8**
AUSP	**Uspallata**	**3.09**	**54**	*i* P	**Pn**	**13 45 35.4**	**+2.4**
AUSP				*i* S	**Sb**	**13 46 18.4**	**+1.2**
ARCO	**CERRO ARCO**	**3.10**	**67**	*i* P	**Pb**	**13 45 37.2**	**-2.7**
ARCO				IAML		13 46 33.9	
	comp=Z,62nm,0.7s						
ASAL	**Salagasta**	**3.28**	**64**	*i* P	**Pb**	**13 45 39.3**	**-3.7**
RTLS	**Leoncito**	**3.42**	**49**	*i* P	**Pn**	**13 45 39.3**	**+1.6**
RTLS				*i* S	**Sb**	**13 46 25.2**	**-1.6**
RTCV	**Cerro Valdivia**	**3.88**	**56**	*i* P	**Pn**	**13 45 46.1**	**+2.4**
RTLL	**Cerro Villicun**	**4.26**	**51**	*i* P	**Pn**	**13 45 50.5**	**+1.6**
AMOG	**MOGNA**	**4.51**	**47**	*i* P	**Pn**	**13 45 52.9**	**+0.5**
ACAN	**Cantantal**	**4.67**	**68**	*i* P	**Pn**	**13 45 58.8**	**+4.3**
AGUA	**GUANDACOL**	**5.64**	**36**	*i* P	**Pn**	**13 46 06.1**	**-1.8**
PLCA	**Paso Flores**	**6.77**	**169**	Pn	**Pn**	**13 46 24.8**	**+1.4**
	comp=Z,0.3nm,0.3s,baz=351,slow=11,SNR=2.9						
PLCA				Lg	Lg	13 48 13.2	
	comp=Z,0.2nm,0.3s,baz=313,slow=22,SNR=2.8						
PLCA				LR	LR	13 49 24.1	
	comp=Z,127nm,19.7s,baz=330,slow=42						
CPUP	**Villa Florida**	**15.09**	**63**	LR	LR	13 53 30.6	
	comp=Z,42nm,19.1s,baz=238,slow=37						
LPAZ	**La Paz**	**18.13**	**13**	P	**P**	**13 48 58.9**	**+2.3**
	comp=Z,0.1nm,0.3s,baz=180,slow=8.0,SNR=5.1						
TXAR	**Lajitas Array**	**69.71**	**331**	P	P	13 56 02.2	+8.8
	comp=Z,0.3nm,0.7s,baz=155,slow=7.0,SNR=4.4						
TORD	**Torodi Ar. Bea**	**84.46**	**70**	P	**P**	**13 57 15.2**	**-1.4**
	comp=Z,0.9nm,0.8s,baz=239,slow=8,SNR=4.8						
ZALV	**Zalesovo Beam**	**154.44**	**32**	PKPbc	**PKPbc**	**14 04 43.2**	**-0.2**
	comp=Z,1.0nm,0.6s,baz=296,slow=4.9,SNR=4.7						

IDC 06 13:55:31.4±4.3, **3°.54S**×**99°.52E**, **h0**km, **mb3.3**/4, **mb1 3.6**/4, **mb1mx3.4**/47, **mbtmp3.3**/4, **MS3.0**/2, **Ms1 3.0**/2, **ms1mx2.5**/29, **Error ellipse: s-maj=160.5km s-min=24.2km az=58.0, Southwest of Sumatera**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PALK	**Pallekele**	**21.63**	**300**	LR	LR	14 06 47.8	
	comp=Z,28nm,19.2s,baz=293,slow=31						
CMAR	**Chiang Mai Arr**	**21.86**	**359**	P	P	14 00 25.6	-0.3
	0.4nm,0.4s,baz=198,slow=11,SNR=3.3						
H08S2	**Diego Garcia H**	**27.20**	**260**	T	T	14 30 42.4	
	baz=81,slow=75,SNR=15						
H08S3	**Diego Garcia H**	**27.20**	**260**	T	T	14 30 40.2	
	baz=81,slow=75,SNR=9.9						
H08S1	**Diego Garcia H**	**27.22**	**260**	T	T	14 30 35.2	
	baz=81,slow=75,SNR=12						
WRA	**Warramunga Arr**	**37.66**	**118**	P	P	14 02 48.3	-0.4
	0.4nm,0.6s,baz=282,slow=12,SNR=3.9						
ASAR	**Alice Springs**	**38.77**	**124**	P	P	14 02 58.1	+0.2
	0.1nm,0.4s,baz=301,slow=7.3,SNR=4.2						
MKAR	**Makanchi Array**	**52.37**	**345**	P	P	14 04 45.5	+0.1
	0.4nm,0.5s,baz=152,slow=7.8,SNR=4.6						
HNR	**Honiara**	**60.27**	**99**	LR	LR	14 33 26.2	
	comp=Z,12nm,18.2s,baz=181,slow=38						

*NIED **06** 13:57:00, 38°.30N×143°.80E, h5km, Mw4.0 Best double couple: M0 1.09000×10^15 NP1:φ=10.00000°, δ=33.00000°, λ=140.00000°. NP2:φ=245.00000°, δ=70.00000°, λ=64.00000°.*
*IDC **06** 13:57:15.1±0.7, 38°.05N×143°.99E, h0km, mb3.7/11, mb1 3.9/16, mb1mx3.8/57, mbtmp3.8/16, ML4.1/4, MS2.9/10, Ms1 2.9/10, ms1mx2.6/56, Error ellipse: s-maj=19.5km s-min=14.7km az=109.0*
*ISCJB **06** 13:57:17.3±1.6, 38°.14N±0°.03×143°.85E±0°.05, h29km±13km, mb3.7/12, MS3.2/6, Error ellipse: s-maj=6.4km s-min=5.6km az=179.3*
*JMA **06** 13:57:18.6±0.2, 38°.27N×143°.78E, h24km, M4.3*
ISC 06 13:57:18.9±2.9, **38°.17N**±0°.04×**143°.87E**±0°.05, **h24**km±22km, **n37**, σ1°**58**/43, **mb3.7**/12, **MS3.3**/6, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**1.95**	**298**	P	Pn	13 57 49.7	-0.7
OFUJ				*e*S	**Sn**	**13 58 12.9**	**-1.3**
JIO	**Ouri**	**2.01**	**279**	P	**Pn**	**13 57 50.5**	**-0.7**
JIO				*e*S	**Sn**	**13 58 13.3**	**-2.2**
JMK	**Ichinoseki**	**2.22**	**291**	P	**Pn**	**13 57 53.8**	**-0.3**
JMK				*e*S	**Sn**	**13 58 19.8**	**-1.0**
JOM	**Ohasama**	**2.40**	**304**	P	**Pn**	**13 57 56.9**	**+0.3**
JOM				*e*S	**Sn**	**13 58 24.2**	**-1.0**
JYK	**Kaneyama**	**2.85**	**286**	P	**Pn**	**13 58 03.4**	**+0.5**
JYK				S	**Sn**	**13 58 36.3**	**-0.2**
JANG	**Nango**	**2.86**	**321**	P	**Pn**	**13 58 02.8**	**-0.2**
JANG				S	**Sn**	**13 58 35.4**	**-1.3**
JOT	**Ohata**	**3.88**	**327**	P	**Pn**	**13 58 16.9**	**0.0**
JOT				*e*S	Sn	13 58 57.4	-4.2
JEM	**Erimo**	**3.88**	**352**	P	**Pn**	**13 58 15.9**	**-1.1**
JEM				S	**Sn**	**13 58 58.1**	**-3.6**
JNBK	**Urakawa-nobuka**	**4.20**	**349**	P	**Pn**	**13 58 20.7**	**-0.6**
JNBK				S	**Sn**	**13 59 07.4**	**-2.1**
BSO1	**Boso 1**	**4.21**	**215**	P	**Pn**	**13 58 19.0**	**-2.1**
BSO1				S	**Sn**	**13 59 05.6**	**-3.6**
JSR	**Shiriuchi**	**4.28**	**323**	P	**Pn**	**13 58 23.7**	**+1.2**
JSR				*e*S	**Sn**	**13 59 11.5**	**-0.1**
JKB	**Kayabe**	**4.31**	**330**	P	**Pn**	**13 58 23.3**	**+0.5**
JKB				*e*S	**Sn**	**13 59 10.4**	**-1.8**
JHU	**Hanno**	**4.34**	**239**	*e*S	**Sn**	**13 59 08.6**	**-4.5**
JCH	**Churui**	**4.46**	**355**	P	**Pn**	**13 58 23.3**	**-1.6**
JCH				*e*S	Sn	13 59 10.2	-5.7
JYO	**Yokosk**	**4.48**	**230**	P	**Pn**	**13 58 25.1**	**-0.1**
JYO				*e*S	**Sn**	**13 59 15.2**	**-1.3**
MJAR	**Matsushiro Arr**	**4.80**	**252**	Pn	**Pn**	**13 58 30.3**	**+0.7**
	5.4nm,0.3s,baz=69,slow=10.0,SNR=30						
MJAR				LR	LR	14 00 08.5	
	comp=Z,23nm,20.6s,baz=95,slow=36						
ASAJ	**Asahikawa**	**6.02**	**351**	Pn	**Pn**	**13 58 46.1**	**-0.3**
	3.1nm,0.3s,baz=203,slow=13,SNR=37						
ASAJ				Sn	**Sn**	**13 59 54.1**	**-0.3**
	1.7nm,0.3s,baz=285,slow=18,SNR=2.8						
JHJ	**Hachijo jima 2**	**6.04**	**215**	Pn	Pn	13 58 43.8	-2.8
	15nm,0.3s,baz=62,slow=22,SNR=5.3						
JHJ				Sn	Sn	13 59 47.7	-7.3
	17nm,0.3s,baz=87,slow=18,SNR=4.2						
JHJ				LR	LR	14 02 00.1	
	comp=Z,59nm,18.8s,baz=329,slow=48						
USRK	**Ussuriysk Ar.**	**10.79**	**308**	Pn	**Pn**	**13 59 54.6**	**+2.9**
	0.3nm,0.3s,baz=114,slow=14,SNR=4.3						
JCJ	**Chichijima**	**11.13**	**188**	Pn	Pn	13 59 53.1	-3.4
	4.1nm,0.3s,baz=293,slow=22,SNR=5.3						
JCJ				Sn	Sn	14 01 46.0	-14
	4.7nm,0.3s,baz=184,slow=16,SNR=4.1						
JNU	**Nakatsue**	**11.71**	**248**	LR	LR	14 05 19.2	
	comp=Z,14nm,19.6s,baz=294,slow=41						
KSRS	**Korea Array**	**12.64**	**272**	LR	LR	14 04 55.7	
	comp=Z,30nm,20.0s,baz=46,slow=36						
SEY	**Seymchan**	**25.33**	**9**	P	**P**	**14 02 44.6**	**+1.2**
	1.1nm,0.6s,baz=182,slow=9.5,SNR=5.0						
SONM	**Songino Array**	**28.81**	**302**	P	**P**	**14 03 17.2**	**+2.1**
	0.5nm,0.3s,baz=108,slow=9.3,SNR=2.9						
SONM				LR	LR	14 15 19.1	
	comp=Z,45nm,19.4s,baz=262,slow=37						
ZALV	**Zalesovo Beam**	**42.61**	**312**	P	**P**	**14 05 14.1**	**+1.3**
	0.4nm,0.4s,baz=78,slow=8.0,SNR=2.7						
ZALV				PcP	**PcP**	**14 07 04.5**	**-0.1**
	0.6nm,0.4s,baz=89,slow=4.5,SNR=2.7						
ZALV				LR	LR	14 23 39.6	
	comp=Z,34nm,19.2s,baz=70,slow=37						
NRIK	**Noril'sk**	**43.07**	**334**	LR	LR	14 24 02.6	
	comp=

WHF				S		Sg	13 58 52.4	0.0
	baz=239							
TWT	**Tachien**	**1.31**	**248**	*eP*		**Pg**	**13 58 37.7**	**+1.4**
	baz=246							
TWT				*eS*		**Sg**	**13 58 54.4**	**+1.2**
	baz=246							
NSTT	**Nanjuang**	**1.37**	**265**	P		**Pg**	**13 58 37.5**	**0.0**
	baz=264							
NSTT				*eS*		**Sb**	**13 58 53.6**	**-1.0**
	baz=264							
WDT	**Danda**	**1.59**	**232**	*eP*		**Pn**	**13 58 40.1**	**+0.2**
	baz=229							
TWQ1	**Liyutan**	**1.63**	**256**	*eP*		**Pg**	**13 58 42.3**	**-0.1**
	baz=254							
TWQ1				*eS*		**Sg**	**13 59 05.4**	**+2.0**
	baz=254							
SMLT	**Sun Moon Lake**	**1.70**	**240**	P		**Pb**	**13 58 42.8**	**+0.2**
	baz=237							
TWF1	**Yuli**	**1.78**	**219**	*eS*		**Sn**	**13 59 04.6**	**-0.2**
	baz=215							
ALS	**Alishan**	**1.98**	**232**	*eP*		**Pn**	**13 58 45.5**	**+0.3**
	baz=229							
ALS				*eS*		**Sb**	**13 59 12.1**	**-0.4**
	baz=229							
CHN5	**Tsauling**	**2.02**	**236**	*eP*		**Pb**	**13 58 48.0**	**-0.2**
	baz=233							
CHN5				*eS*		**Sb**	**13 59 12.2**	**-1.3**
	baz=233							
CHN4	**Tsaushan**	**2.23**	**232**	*eP*		**Pb**	**13 58 50.4**	**-1.3**
	baz=229							
CHN4				*eS*		**Sb**	**13 59 19.9**	**+0.5**
	baz=229							
WTP	**Ta-pu**	**2.29**	**229**	*eP*		**Pb**	**13 58 51.9**	**-0.7**
	baz=227							
WTP				*eS*		**Sb**	**13 59 21.6**	**+0.6**
	baz=227							

IDC 06 14:06:58.9±51.0, 16°.24S×174°.11W, h0km, mb3.8/3, mb1 3.9/3, mb1mx3.6/40, mbtmp3.8/3, Error ellipse: s-maj=966.7km s-min=181.4km az=79.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**43.03**	**241**	P	P	14 15 00.9	+0.5
	0.4nm,0.4s,baz=90,slow=10,SNR=2.8						
WRA	**Warramunga Arr**	**48.99**	**258**	P	P	14 15 47.6	-0.1
	0.4nm,0.4s,baz=94,slow=7.2,SNR=24						
ASAR	**Alice Springs**	**49.20**	**253**	P	P	14 15 48.8	-0.5
	1.0nm,0.5s,baz=91,slow=8.1,SNR=17						

*NIED **06** 14:14:00, 38°.20N×142°.50E, h44km, Mw4.0 Best double couple: M₀1.17000×10¹⁵ NP1:φs161.00000°, δ28.00000°, λ-70.00000°. NP2:φs318.00000°, δ64.00000°, λ-100.00000°.*
*ISCJB **06** 14:14:32.0±0.6, 38°.13N±0°.05×142°.60E±0°.06, h14km, mb3.7/10, MS2.7/1, Error ellipse: s-maj=7.1km s-min=6.4km az=22.9*
*JMA **06** 14:14:35.3±0.2, 38°.19N×142°.46E, h38km±3km, M3.9*
*IDC **06** 14:14:38.1±2.7, 38°.16N×142°.49E, h50km±25km, mb3.4/10, mb1 3.6/13, mb1mx3.5/45, mbtmp3.7/13, ML3.6/3, MS2.8/5, Ms1 2.8/5, ms1mx2.6/29, Error ellipse: s-maj=27.7km s-min=14.1km az=100.0*

ISC 06 14:14:33.0±0.7, 38°.14N±0°.05×142°.47E±0°.06, h14km, n26, σ1°38/25, mb3.7/10, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.93**	**290**	P	**Pn**	**14 14 52.1**	**+0.4**
JIO				S	**Sg**	**14 15 03.7**	**+0.4**
OFUJ	**Ofunato**	**1.13**	**326**	P	**Pb**	**14 14 54.3**	**0.0**
OFUJ				S	**Sb**	**14 15 07.8**	**-1.0**
JMK	**Ichinoseki**	**1.27**	**310**	P	**Pn**	**14 14 56.8**	**+0.5**
JMM	**Marumori**	**1.35**	**259**	P	**Pn**	**14 14 57.9**	**+0.4**
JMM				*eS*	**Sn**	**14 15 14.5**	**-0.7**
JOU	**Okura**	**1.44**	**279**	P	**Pb**	**14 15 00.0**	**+0.4**
JOM	**Ohasama**	**1.61**	**326**	P	**Pn**	**14 15 01.9**	**+0.8**
JFT	**Otama**	**1.80**	**250**	P	**Pb**	**14 15 05.4**	**-0.4**
JYK	**Kaneyama**	**1.83**	**296**	P	**Pb**	**14 15 05.5**	**-0.7**
MJAR	**Matsushiro Arr**	**3.75**	**246**	P	Pb	14 15 35.1	-3.9
	2.3nm,0.3s,baz=66,slow=12,SNR=17						
MAT	**Matsushiro**	**3.75**	**246**	P	Pn	14 15 34.6	+4.1
JHJ	**Hachijo jima 2**	**5.47**	**204**	P	**Pn**	**14 15 55.6**	**+1.6**
	25nm,0.3s,baz=87,slow=20,SNR=6.3						
JHJ				S	**Sn**	**14 16 53.6**	**-3.2**
	16nm,0.3s,baz=53,slow=20,SNR=3.9						
ASAJ	**Asahikawa**	**5.97**	**1**	P	**Pn**	**14 16 03.5**	**+2.5**
	0.9nm,0.3s,baz=198,slow=7.7,SNR=9.6						
ASAJ				S	**Sn**	**14 17 05.4**	**-3.7**
	1.9nm,0.3s,baz=177,slow=9.5,SNR=5.8						
ASAJ				LR	LR	14 18 52.1	
	comp=Z,101nm,21.3s,baz=186,slow=43						
USRK	**Ussuriysk Ar.**	**9.95**	**311**	P	Pn	14 17 02.9	+7.4
	0.3nm,0.3s,baz=133,slow=8.4,SNR=4.7						
USRK				LR	LR	14 20 38.0	
	comp=Z,35nm,18.2s,baz=204,slow=36						
KLR	**Kul'dur**	**13.51**	**329**	LR	LR	14 22 54.6	
	comp=Z,46nm,20.5s,baz=147,slow=37						
PETK	**Petropavlovsk-**	**18.31**	**30**	LR	LR	14 26 19.9	
	comp=Z,22nm,20.8s,baz=233,slow=38						
YAK	**Yakutsk**	**25.19**	**346**	LR	LR	14 30 37.3	
	comp=Z,23nm,19.5s,baz=152,slow=38						
SEY	**Seymchan**	**25.55**	**11**	P	**P**	**14 20 02.5**	**+1.5**
	0.7nm,0.5s,baz=194,slow=19,SNR=4.0						
ZALV	**Zalesovo Beam**	**41.80**	**311**	P	**P**	**14 22 22.0**	**+0.1**
	0.8nm,0.5s,baz=79,slow=7.7,SNR=4.2						
MKAR	**Makanchi Array**	**44.25**	**301**	P	**P**	**14 22 42.4**	**+0.5**
	0.7nm,0.8s,baz=87,slow=8.2,SNR=6.1						
ILAR	**Eielson Array**	**48.11**	**33**	P	**P**	**14 23 10.8**	**-1.1**
	0.2nm,0.5s,baz=265,slow=6.0,SNR=4.6						
WRA	**Warramunga Arr**	**58.28**	**189**	P	**P**	**14 24 27.5**	**+0.2**
	1.3nm,0.7s,baz=7.8,slow=7.2,SNR=18						
ASAR	**Alice Springs**	**62.01**	**189**	P	**P**	**14 24 53.5**	**+0.8**
	0.6nm,0.7s,baz=8.5,slow=5.5,SNR=13						
YKA	**Yellowknife Ar**	**62.43**	**31**	P	**P**	**14 24 55.6**	**+0.4**
	0.2nm,0.7s,baz=308,slow=7.0,SNR=5.6						
FINES	**FINESS Array B**	**68.22**	**332**	P	**P**	**14 25 32.5**	**-0.3**
	0.9nm,0.6s,baz=23,slow=10,SNR=3.8						
STKA	**Stephens Creek**	**69.67**	**181**	P	**P**	**14 25 42.1**	**+0.2**
	0.6nm,0.4s,baz=320,slow=7.9,SNR=5.7						
TXAR	**Lajitas Array**	**88.78**	**53**	P	**P**	**14 27 27.7**	**+1.0**
	0.2nm,0.5s,baz=297,slow=4.6,SNR=3.0						

*NIED **06** 14:15:00, 36°.90N×140°.70E, h8km, Mw3.8 Best double couple: M₀5.39000×10¹⁴ NP1:φs320.00000°, δ18.00000°, λ-102.00000°. NP2:φs153.00000°, δ73.00000°, λ-86.00000°.*
*IDC **06** 14:15:15.4±0.9, 36°.82N×140°.75E, h0km, mb3.7/6, mb1 4.0/7, mb1mx3.7/47, mbtmp3.7/7, ML3.8/1, Error ellipse: s-maj=24.2km s-min=21.5km az=165.0*
*ISCJB **06** 14:15:16.1±0.7, 36°.91N±0°.03×140°.73E±0°.06, h14km±5km, mb3.6/6, Error ellipse: s-maj=8.0km s-min=4.6km az=23.1*
*JMA **06** 14:15:16.7, 36°.94N×140°.65E, h7km±1km, M3.8*
JMA Felt II J1.

ISC 06 14:15:16.7±1.2, 36°.93N±0°.03×140°.69E±0°.04, h6km±8km, n16, σ0°57/23, mb3.6/6, 3C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.20**	**27**	⇑P	**Pg**	**14 15 20.9**	**+0.3**
JHO	**Hitachi**	**0.33**	**196**	⇑P	**Pg**	**14 15 23.1**	**0.0**
JHO				S	**Sg**	**14 15 27.7**	**+0.3**
JFK	**Kawauchi**	**0.46**	**19**	P	**Pg**	**14 15 25.6**	**0.0**
JFK				S	**Sg**	**14 15 31.9**	**+0.2**
JSB	**Shiboa**	**0.61**	**274**	⇑P	**Pg**	**14 15 28.8**	**+0.3**
JSB				S	**Sg**	**14 15 37.3**	**+0.8**
JFT	**Otama**	**0.65**	**335**	S	**Sg**	**14 15 37.7**	**0.0**
JYT	**Yasato**	**0.80**	**210**	P	**Pg**	**14 15 31.6**	**-0.5**
JYT				S	**Sg**	**14 15 42.3**	**-0.2**
JFY	**Yanaizu**	**0.92**	**302**	P	**Pg**	**14 15 33.9**	**-0.4**
JFY				S	**Sg**	**14 15 45.3**	**-0.9**
JMM	**Marumori**	**0.94**	**5**	P	**Pg**	**14 15 34.3**	**-0.4**
JMM				S	**Sg**	**14 15 46.4**	**-0.6**
MJAR	**Matsushiro Arr**	**2.03**	**260**	Pn	**Pn**	**14 15 51.2**	**-0.2**
	36nm,0.3s,baz=92,slow=16,SNR=93						
MJAR				Sn	**Sn**	**14 16 17.2**	**+0.2**
	44nm,0.3s,baz=101,slow=16,SNR=12						
SONM	**Songino Array**	**27.36**	**304**	P	**P**	**14 21 03.5**	**+0.8**
	0.8nm,0.6s,baz=99,slow=8.9,SNR=2.5						
MKAR	**Makanchi Array**	**43.68**	**302**	P	**P**	**14 23 22.6**	**+0.3**
	0.4nm,0.6s,baz=78,slow=11,SNR=2.6						
ILAR	**Eielson Array**	**49.90**	**32**	P	**P**	**14 24 10.6**	**0.0**
	0.5nm,0.7s,baz=275,slow=6.3,SNR=3.5						
WRA	**Warramunga Arr**	**56.88**	**187**	P	**P**	**14 25 01.0**	**-1.3**
	1.0nm,0.6s,baz=2.8,slow=7.5,SNR=8.0						
ASAR	**Alice Springs**	**60.61**	**187**	P	**P**	**14 25 27.8**	**-0.5**
	0.4nm,0.6s,baz=17,slow=13,SNR=5.2						
TXAR	**Lajitas Array**	**90.65**	**52**	P	**P**	**14 28 20.6**	**+0.2**
	0.2nm,0.6s,baz=317,slow=2.4,SNR=3.7						
LPAZ	**La Paz**	**147.25**	**59**	PKPbc	**PKPdf**	**14 35 00.7**	**+0.8**
	1.1nm,0.7s,baz=346,slow=1.3,SNR=4.2						

IDC 06 14:20:28.7±4.7, 21°.30S×170°.28E, h0km, mb3.7/3, mb1 3.9/4, mb1mx3.6/36, mbtmp3.8/4, ML3.8/1, MS2.8/2, Ms1 2.8/2, ms1mx2.6/24, Error ellipse: s-maj=130.1km s-min=67.4km az=167.0, Southeast of Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**3.65**	**257**	Pn	Pn	14 21 27.6	+1.1
	7.4nm,0.3s,baz=114,slow=11,SNR=171						
DZM				LR	LR	14 21 59.2	
	comp=Z,47nm,20.0s,baz=6.0,slow=25						
DZM				Sn	Sn	14 22 09.7	-0.6
	3.0nm,0.3s,baz=126,slow=17,SNR=3.8						
RPZ	**Rata Peaks**	**22.37**	**179**	LR	LR	14 33 00.2	
	comp=Z,78nm,18.7s,baz=340,slow=34						
STKA	**Stephens Creek**	**27.65**	**242**	P	P	14 26 17.1	-1.2
	1.5nm,0.7s,baz=83,slow=8.1,SNR=3.6						
WRA	**Warramunga Arr**	**33.62**	**266**	P	P	14 27 11.7	+0.5
	0.4nm,0.5s,baz=96,slow=8.5,SNR=6.2						
ASAR	**Alice Springs**	**33.64**	**259**	P	P	14 27 11.3	0.0
	0.8nm,0.7s,baz=77,slow=9.5,SNR=10						

*ISCJB **06** 14:27:55.4±0.6, 36°.25N±0°.05×71°.16E±0°.07, h50km, mb3.7/9, Error ellipse: s-maj=9.4km s-min=6.7km az=142.1*
*IDC **06** 14:27:58.2±3.5, 36°.21N×71°.25E, h66km±29km, mb3.6/9, mb1 3.7/14, mb1mx3.4/53, mbtmp3.9/14, ML3.9/5, Error ellipse: s-maj=24.7km s-min=21.5km az=7.0*
*NNC **06** 14:28:06.1±2.2, 36°.90N×70°.82E, h165km±17km, mb3.0, mpv4.0, Error ellipse: s-maj=20.4km s-min=9.9km az=167.0*

ISC 06 14:27:57.2±0.7, 36°.29N±0°.07×71°.09E±0°.06, h50km, n27, σ2°18/35, mb3.7/9, 9C-5D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**3.09**	**325**	⇓P	**Pn**	**14 28 47.1**	**+3.5**
	34nm,0.3s						
DZET				⇓S	**Sn**	**14 29 20.5**	**+1.1**
	254nm,0.5s						
SFK	**Sufi-Kurgan**	**4.18**	**26**	⇑P	**Pn**	**14 29 03.4**	**+4.7**
	7.2nm,0.4s						
SFK				⇓S	**Sn**	**14 29 49.9**	**+3.5**
	38nm,0.3s						
KSH	**Kashi**	**5.03**	**49**	Pn	**Pn**	**14 29 09.0**	**-1.3**
KSH				Sn	Sn	14 29 57.3	-10
KSH				smax	smax		
	comp=N,500nm,0.4s						
KSH				smax	smax		
	comp=E,240nm,0.4s						
MNAS	**Manas**	**6.29**	**10**	⇓P	**Pn**	**14 29 30.0**	**+2.4**
	comp=E,7.0nm,0.6s						
MNAS				⇑S	**Sn**	**14 30 35.2**	**-2.9**
	comp=E,13nm,0.4s						
KK31	**Karatay Array**	**6.82**	**356**	P	**Pn**	**14 29 36.7**	**+2.0**
	comp=E,3.6nm,0.3s,baz=188,slow=14,SNR=72						
KK31				⇑S	**Sn**	**14 30 46.7**	**-4.3**
	comp=E,6.8nm,0.3s,baz=190,slow=22,SNR=11						
AAK	**Ala-Archa**	**6.86**	**22**	P	**Pn**	**14 29 38.2**	**+2.8**
	comp=E,5.5nm,0.3s,baz=190,slow=8.5,SNR=42						
AAK				S	**Sn**	**14 30 51.4**	**-0.8**
	comp=E,2.0nm,0.3s,baz=356,slow=22,SNR=6.9						
AAK	**Ala-Archa**	**6.86**	**22**	⇑P	**Pn**	**14 29 37.4**	**+2.0**
	comp=E,12nm,0.6s						
AAK				⇑S	**Sn**	**14 30 49.4**	**-2.8**
	comp=E,20nm,1.1s						
SMLA	**Simla**	**7.22**	**134**	*eP*	**Pn**	**14 29 43.3**	**+3.2**
SMLA				*eS*	**Sn**	**14 30 58.6**	**-2.1**
TKM2	**Tokmak 2**	**7.48**	**26**	⇑P	**Pn**	**14 29 45.9**	**+1.9**
	comp=E,7.5nm,0.5s						
GEYT	**Alibeck**	**10.49**	**283**	P	**Pn**	**14 30 26.9**	**+1.9**
	comp=E,1.3nm,0.3s,baz=116,slow=13,SNR=12						
GEYT				S	**Sn**	**14 32 19.2**	**-1.9**
	comp=E,2.7nm,0.3s,baz=295,slow=26,SNR=8.1						
OTUK	**Ortayu**	**11.99**	**4**	⇑P	**Pn**	**14 30 44.0**	**-1.4**
	comp=E,1.7nm,0.8s						
KURBB	**Kurchatov Arra**	**15.30**	**18**	P	**Pn**	**14 31 30.5**	**+0.7**
	comp=E,0.2nm,0.3s,baz=210,slow=10,SNR=17						
AB31	**Akbulak array**	**15.31**	**331**	P	**Pn**	**14 31 28.7**	**-1.2**
	comp=E,0.8nm,0.3s,baz=137,slow=12,SNR=81						
AB31				⇑S	Sn	14 34 05.3	-13
	comp=E,2.0nm,0.5s,baz=145,slow=25,SNR=6.5						
BVAR	**Borovoye Array**	**16.75**	**359**	P	**Pn**	**14 31 48.9**	**+0.7**
	comp=E,0.2nm,0.3s,baz=191,slow=14,SNR=6.2						
AKTO	**Aktyubinsk**	**17.00**	**330**	P	**Pn**	**14 31 51.1**	**-0.2**
	comp=E,0.5nm,0.3s,baz=143,slow=13,SNR=9.2						
AKTO	**Aktyubinsk**	**17.00**	**330**	⇓P	**Pn**	**14 31 50.4**	**-1.0**
	comp=E,2.4nm,0.5s						
AKTO				⇑S	Sn	14 34 45.7	-14
	comp=E,3.9nm,0.8s						
ZALV	**Zalesovo Beam**	**20.08**	**24**	P	**P**	**14 32 24.9**	**-1.5**
	comp=E,6.3nm,0.4s,baz=208,slow=11,SNR=18						
GTA	**Gaotai**	**22.86**	**73**	*eP*	**P**	**14 32 56.9**	**+0.5**
GTA				pP	pP	14 33 01.5	-6.6
GTA				sP	sP	14 33 04.0	-10
GTA				pmax	pmax		
	comp=Z,3.0nm,1.1s						
FINES	**FINESS Array B**	**37.70**	**326**	P	**P**	**14 35 08.9**	**+1.4**
	comp=Z,0.4nm,0.3s,baz=122,slow=7.5,SNR=4.5						
ARCES	**ARCESS Array B**	**41.37**	**338**	P	**P**	**14 35 39.5**	**+1.5**
	comp=Z,5.0nm,1.0s,baz=116,slow=9.3,SNR=9.2						
NB2	**NORSAR Subarra**	**44.59**	**323**	P	**P**	**14 36 05.0**	**+0.8**
	comp=Z,0.7nm,0.5s,baz=96,slow=7.9						
NOA	**NORSAR Array B**	**44.59**	**323**	P	**P**	**14 36 05.3**	**+1.1**
	comp=Z,1.6nm,0.8s,baz=96,slow=7.8,SNR=6.7						
TORD	**Torodi Ar. Bea**	**65.78**	**269**	P	**P**	**14 38 36.9**	**-0.5**
	comp=Z,0.5nm,0.6s,baz=48,slow=5.3,SNR=9.5						
INK	**Inuvik**	**74.10**	**9**	P	**P**	**14 39 26.6**	**-1.1**
	comp=Z,0.6nm,0.5s,baz=319,slow=4.9,SNR=9.1						
YKA	**Yellowknife Ar**	**81.46**	**3**	P	**P**	**14 40 07.3**	**-1.3**
	comp=Z,0.4nm,0.5s,baz=352,slow=5.2,SNR=9.8						
WRA	**Warramunga Arr**	**81.82**	**122**	P	**P**	**14 40 10.2**	**-0.9**
	comp=Z,0.4nm,0.8s,baz=324,slow=4.8,SNR=4.6						
ASAR	**Alice Springs**	**84.07**	**125**	P	**P**	**14 40 21.1**	**-1.7**
	comp=Z,0.5nm,0.9s,baz=314,slow=4.7,SNR=4.1						

*NIED **06** 14:28:00, 38°.30N×144°.20E, h5km, Mw3.4 Best double couple: M₀1.36000×10¹⁴ NP1:φs200.00000°, δ21.00000°, λ-98.00000°. NP2:φs29.00000°, δ69.00000°, λ-87.00000°.*

JMA 06 14:28:52.5±0.2, 38°.26N×144°.18E, h38km, M3.7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.13**	**293**	P	Pn	14 29 27.0	+1.5
OFUJ				*eS*	Sn	14 29 52.9	+2.2
JIO	**Ouri**	**2.23**	**276**	P	Pn	14 29 28.3	+1.4
JIO				S	Sn	14 29 54.5	+1.3
JMK	**Ichinoseki**	**2.42**	**288**	P	Pn	14 29 31.2	+1.7
JMK				*eS*	Sn	14 29 59.9	+2.1
JTH	**Tanohata**	**2.46**	**314**	P	Pn	14 29 31.6	+1.5
JOM	**Ohasama**	**2.56**	**299**	P	Pn	14 29 33.1	+1.7
JMM	**Marumori**	**2.70**	**263**	P	Pn	14 29 34.8	+1.4
JMM				*eS*	Sn	14 30 05.7	+0.9
JFK	**Kawauchi**	**2.77**	**252**	P	Pn	14 29 35.0	+0.7
JFK				S	Sn	14 30 06.4	0.0
JOU	**Okura**	**2.77**	**273**	P	Pn	14 29 36.4	+2.1
JOU				*eS*	Sn	14 30 09.0	+2.5
JANG	**Nango**	**2.95**	**316**	P	Pn	14 29 38.1	+1.3
JRG	**Rokugo**	**2.99**	**293**	P	Pn	14 29 39.9	+2.5
JRG				*eS*	Sn	14 30 15.6	+3.6
JYK	**Kaneyama**	**3.06**	**284**	P	Pn	14 29 40.8	+2.4
JYK				*eS*	Sn	14 30 17.1	+3.3
JFT	**Otama**	**3.13**	**257**	P	Pn	14 29 41.6	+2.3
JFT				S	Sn	14 30 17.1	+1.7
JTM	**Tenmabayashi**	**3.49**	**317**	P	Pn	14 29 45.6	+1.5
JTM				*eS*	Sn	14 30 24.7	+0.6

*SOME **06** 14:28:57.2, 41°.63N×83°.42E, h10km*
*IDC **06** 14:29:01.7±3.8, 41°.84N×83°.17E, h0km, mb3.9/4, mb1 3.8/7, mb1mx3.5/48, mbtmp3.7/7, ML3.0/3, MS3.7/1, Ms1 3.7/1, ms1mx2.2/47, Error ellipse: s-maj=90.0km s-min=23.8km az=100.0*
*BJI **06** 14:29:04.9, 41°.87N×83°.19E, h9km, mb3.9/2, ML3.5/10*
*NNC **06** 14:29:08.0±2.5, 42°.13N×83°.14E, h5km±10km, mb4.0, mpv3.6, Error ellipse: s-maj=18.3km s-min=6.9km az=146.0*

ISC 06 14:29:02.8±1.1, 41°.86N±0°.07×83°.19E±0°.03, h10km, n35, σ2°51/50, mb3.8/4, 7C-7D, Southern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KTMS	**Ketmen**	**2.62**	**308**	*eP*	**Pb**	**14 29 49.5**	**-0.5**
KTMS	63nm,0.2s						
				eS	**Sg**	**14 30 27.4**	**+0.3**
	358nm,0.2s						
SHLS	**Shalkode**	**2.77**	**299**	*eP*	**Pb**	**14 29 52.5**	**0.0**
SHLS	84nm,0.3s						
				eS	**Sg**	**14 30 32.9**	**+1.2**
	570nm,0.8s						
PDGK	**Podgornoye**	**3.10**	**299**	⇑Pn	**Pb**	**14 29 55.5**	**-2.6**
	5.4nm,0.4s						
PDGK				⇑Pg	**Pg**	**14 30 01.7**	**-0.5**
	60nm,0.8s						
PDGK				⇑Lg	Lg	14 30 41.5	
	256nm,0.8s						
UZB	**Uzynbulak**	**3.34**	**294**	*eP*	**Pb**	**14 30 01.1**	**-1.1**
	14nm,0.4s						
UZB				*eS*	**Sg**	**14 30 47.1**	**-3.0**
	160nm,0.7s						
DJR	**Jarkent**	**3.51**	**316**	*eP*	**Pb**	**14 30 04.4**	**-0.6**
	72nm,0.3s						
DJR				*eS*	**Sg**	**14 30 53.0**	**-2.4**
	85nm,0.3s						
KPKS	**Kokpek**	**3.69**	**297**	*eP*	**Pb**	**14 30 06.3**	**-1.8**
	96nm,0.3s						
KPKS				*eS*	**Sb**	**14 30 55.8**	**+2.8**
	318nm,0.5s						
SATY	**Saty**	**3.74**	**290**	*eP*	**Pb**	**14 30 09.8**	**+0.9**
	82nm,0.5s						
SATY				*eS*	**Sg**	**14 31 02.5**	**-0.3**
	98nm,0.4s						
WMQ	**Urumqi**	**3.85**	**58**	Pg	**Pg**	**14 30 14.0**	**-2.5**
WMQ				Sg	**Sg**	**14 31 06.5**	**+0.2**
WMQ				smax	smax		
	comp=N,110nm,0.4s						
WMQ				smax	smax		
	comp=E,160nm,0.3s						
KURS	**Kuram**	**4.04**	**295**	*eP*	**Pg**	**14 30 16.7**	**-3.5**
	28nm,0.6s						
KURS				*eS*	**Sg**	**14 31 14.4**	**+1.9**
	70nm,1.4s						
MNBS	**Baschi**	**4.15**	**304**	*eP*	**Pb**	**14 30 16.6**	**+0.5**
	16nm,0.4s						
MNBS				*eS*	**Sg**	**14 31 13.8**	**-2.4**
	234nm,0.5s						
KAPS	**Kapalarasan**	**4.41**	**322**	*eP*	**Pg**	**14 30 23.8**	**-3.5**
	40nm,0.6s						
KAPS				*eS*	**Sg**	**14 31 26.0**	**+1.6**
	56nm,0.5s						
ARXS	**Arharly**	**4.58**	**303**	*eP*	**Pg**	**14 30 27.0**	**-3.5**
	26nm,0.3s						
ARXS				*eS*	**Sg**	**14 31 31.7**	**+1.9**
	120nm,0.6s						
TDK	**Taldyqorghan**	**4.69**	**314**	*eP*	**Pg**	**14 30 29.8**	**-2.8**
	54nm,0.2s						
TDK				*eS*	**Sg**	**14 31 37.2**	**+3.8**
	177nm,0.5s						
MDOK	**Medeo**	**4.72**	**288**	*eP*	**Pb**	**14 30 23.3**	**-2.5**
	23nm,0.5s						
MDOK				*eS*	**Sb**	**14 31 25.4**	**+2.7**
	71nm,0.8s						
TNSS	**Tian-Shan**	**4.77**	**286**	*eP*	**Pg**	**14 30 30.7**	**-3.5**
	29nm,0.3s						
TNSS				*eS*	**Sg**	**14 31 38.4**	**+2.4**
	56nm,0.5s						
KNDC	**Almaty**	**4.79**	**288**	⇑Lg	Lg	14 31 39.3	
	265nm,1.2s						
MK31	**Makanchi Array**	**4.97**	**353**	Pn	**Pn**	**14 30 19.4**	**+1.9**
	0.8nm,0.3s,baz=170,slow=13,SNR=193						
MK31				⇓Pg	**Pg**	**14 30 33.8**	**-4.2**
	21nm,0.6s,baz=165,slow=16,SNR=44						
MK31				⇓Lg	Lg	14 31 38.3	
	38nm,0.6s,baz=174,slow=30,SNR=4.2						
MKAR	**Makanchi Array**	**4.97**	**353**	Pn	**Pn**	**14 30 19.5**	**+2.0**
	0.9nm,0.3s,baz=23,slow=28,SNR=49						
MKAR				Pg	**Pg**	**14 30 33.7**	**-4.3**
	8.0nm,0.3s,baz=166,slow=16,SNR=60						
MKAR				Lg	Lg	14 31 36.0	
	6.3nm,0.3s,baz=173,slow=30,SNR=11						
CHKK	**Chushkaly**	**4.97**	**296**	*eP*	**Pb**	**14 30 31.4**	**+1.4**
	11nm,0.5s						
CHKK				*eS*	**Sg**	**14 31 39.3**	**-3.1**
	40nm,0.2s						
MAKZ	**Makanchi**	**5.02**	**350**	⇓Pn	**Pn**	**14 30 20.1**	**+2.0**
	1.1nm,0.3s						
MAKZ				⇓Pg	**Pg**	**14 30 34.9**	**-4.0**
	15nm,0.6s						
MAKZ				⇑Lg	Lg	14 31 38.3	
	48nm,0.8s						
KST	**Kastek**	**5.48**	**285**	*eP*	**Pb**	**14 30 39.4**	**+0.8**
	6.7nm,0.5s						
KST				*eS*	**Sg**	**14 31 53.2**	**-5.4**
	24nm,0.5s						
DGS	**Degeres**	**5.65**	**287**	*eP*	**Pg**	**14 30 46.7**	**-4.3**
	12nm,0.5s						
DGS				*eS*	**Sg**	**14 32 06.3**	**+2.2**
	34nm,0.5s						
TKM2	**Tokmak 2**	**5.72**	**283**	⇓Lg	Lg	14 32 07.4	
	28nm,0.8s						
AAK	**Ala-Archa**	**6.50**	**280**

baz=283
EAST Anshuo 0.96 299 *e*P **Pb 14 42 45.3 +0.1**
baz=309
ECL Taimali 1.00 312 *e*P **Pb 14 42 45.7 -0.2**
baz=322
TWG Pinlang 1.09 325 P **Pg 14 42 48.0 -0.1**
baz=315
TWG *e*S **Sn 14 43 03.0 +0.3**
baz=315
SCZT Fangliau 1.14 293 *e*P **Pn 14 42 48.7 +0.3**
baz=317
SSD Sandimen 1.32 308 *e*P **Pg 14 42 52.3 -0.1**
baz=332
ELDTW Lidau 1.43 332 *e*P **Pb 14 42 53.2 -0.2**
baz=339
TWF1 Yuli 1.48 344 *e*P **Pn 14 42 53.6 +0.5**
baz=3.0
TWM1 Shoushan 1.52 306 *e*P **Pg 14 42 56.2 -0.1**
baz=313
STYT Tauyuan 1.54 323 *e*P **Pb 14 42 55.0 -0.2**
baz=343
STYT *e*S **Sg 14 43 16.7 +0.1**
baz=343
SGST Jiashian 1.58 317 *e*P **Pb 14 42 56.2 +0.2**
baz=323
SGST *e*S **Sg 14 43 18.4 +0.5**
baz=323
EHY Hungye 1.62 346 *e*P **Pn 14 42 55.0 0.0**
baz=3.0
WTP Ta-pu 1.69 322 *e*P **Pb 14 42 57.9 +0.2**
baz=342
WTP *e*S **Sg 14 43 20.8 -0.5**
baz=342
CHN1 Nanshi 1.69 318 *e*P **Pb 14 42 57.8 0.0**
baz=324
CHN1 *e*S **Sg 14 43 21.4 -0.1**
baz=324
CHN4 Tsaushan 1.78 323 *e*P **Pb 14 42 59.1 -0.2**
baz=342
CHN4 *e*S **Sg 14 43 24.1 -0.2**
baz=342
ALS Alishan 1.81 331 *e*P **Pb 14 43 00.3 +0.4**
baz=337
ALS *e*S **Sg 14 43 24.2 -0.9**
baz=337
WDT Danda 1.91 343 *e*P **Pb 14 43 01.9 +0.2**
baz=3.0
CHN5 Tsauling 1.94 329 *e*P **Pb 14 43 02.1 0.0**
baz=345
SMLT Sun Moon Lake 2.10 338 *e*P **Pb 14 43 04.3 -0.6**
baz=357
TYC Yuchr 2.14 337 *e*P **Pb 14 43 04.7 -0.7**
baz=356
TWQ1 Liyutan 2.58 340 *e*P **Pn 14 43 10.2 +2.1**
baz=330
JYNG Yonagunijimaku 2.74 23 P **Pn 14 43 11.5 +1.0**
JYNG *e*S **Sn 14 43 42.6 -0.8**
YOJ Yonaguni jima 2.78 24 P **Pn 14 43 11.9 +1.0**
YOJ *e*S **Sn 14 43 45.2 +1.0**
HATJ Hateruma jima 2.84 41 P **Pn 14 43 12.0 +0.2**
HATJ *e*S **Sn 14 43 45.6 -0.2**
IRIF Iriomote-Funau 3.01 37 P **Pn 14 43 15.0 +0.9**
IRIF *e*S **Sn 14 43 50.2 +0.2**
JKRS Kuro-shima 3.10 42 P **Pn 14 43 16.5 +1.1**
JKRS *e*S **Sn 14 43 51.7 -0.5**
JIJ Ishigaki jima 3.28 42 P **Pn 14 43 18.3 +0.5**
JIJ *e*S **Sn 14 43 55.0 -1.5**
JISG Ishigakijimahi 3.54 41 P **Pn 14 43 22.0 +0.6**
JISG *e*S **Sn 14 44 02.8 -0.3**
JTJ Tarama 3.83 44 P **Pn 14 43 26.3 +0.9**
JTJ *e*S **Sn 14 44 09.2 -0.9**

*ISK **06** 14:45:46.4, 37°.02N×28°.20E, h28km, MD3.0*
*CSEM **06** 14:45:47.1±0.4, 37°.02N×28°.16E, h20km, MD3.0, Error ellipse: s-maj=14.2km s-min=8.3km az=38.0*
*ISCJB **06** 14:45:50.3±0.7, 37°.25N±0°.04×28°.23E±0°.06, h9km±9km, Error ellipse: s-maj=8.9km s-min=5.6km az=135.6*
*DDA **06** 14:45:50.5, 37°.24N×28°.20E, h7km, Md2.7*
ISC 06 14:45:48.1±1.1, 37°.06N±0°.04×28°.21E±0°.04, h20km±4km, n17, σ1º51/22, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.10**	**36**	*e*PG	**Pg**	**14 45 52.1**	**0.0**
YER				*e*SG	**Sg**	**14 45 56.2**	**+1.5**
YER	**Yerkesik**	**0.10**	**36**	*e*Pg	**Pg**	**14 45 52.1**	**0.0**
TURN	**Turunc**	**0.36**	**120**	*i* P	**Pn**	**14 45 59.3**	**+1.0**
TURN				*i* S	**Sn**	**14 46 07.1**	**+2.2**
DALY	**Dalyan (Mu¨la**	**0.43**	**124**	*e*PG	**Pg**	**14 45 56.5**	**-0.4**
DALY	**Dalyan (Mu¨la**	**0.43**	**124**	*e*Pg	**Pg**	**14 45 56.5**	**-0.5**
BDRM	**Kayabasi**	**0.61**	**271**	P	**Pn**	**14 46 03.2**	**+1.4**
BDRM	**Kayabasi**	**0.61**	**271**	*i* P	**Pn**	**14 46 03.2**	**+1.4**
BDRM				*i* S	**Sn**	**14 46 12.5**	**+1.3**
AYDN	**Tasoluk**	**0.66**	**336**	P	**Pb**	**14 46 00.2**	**-0.8**
AYDN				S	**Sg**	**14 46 07.5**	**-2.6**
AYDN	**Tasoluk**	**0.66**	**336**	*i* P	**Pb**	**14 46 00.2**	**-0.8**
AYDN				*i* S	**Sg**	**14 46 07.5**	**-2.6**
BODT	**Bodrum**	**0.72**	**271**	*e*PG	**Pb**	**14 46 00.8**	**-1.2**
BODT	**Bodrum**	**0.72**	**271**	*e*Pg	**Pb**	**14 46 00.8**	**-1.2**
FETY	**Fethiye**	**0.82**	**121**	*e*PG	**Pb**	**14 46 01.8**	**-1.9**
FETY	**Fethiye**	**0.82**	**121**	*e*Pg	**Pb**	**14 46 01.8**	**-1.9**
DNZL	**Cakiroluk**	**0.92**	**46**	P	**Pg**	**14 46 06.4**	**+0.3**
DNZL	**Cakiroluk**	**0.92**	**46**	*i* P	**Pg**	**14 46 06.4**	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**0.92**	**344**	*e*PG	**Pb**	**14 46 04.5**	**-1.1**
AYDB	**Zeytinkoy-Aydi**	**0.92**	**344**	*e*Pg	**Pb**	**14 46 04.5**	**-1.1**

*ISCJB **06** 15:01:51.8±0.7, 38°.58N±0°.04×28°.62E±0°.07, h8km±7km, Error ellipse: s-maj=10.1km s-min=5.8km az=24.7*
*DDA **06** 15:01:51.9, 38°.59N×28°.60E, h7km, Md2.6*
*CSEM **06** 15:01:52.1±0.1, 38°.58N×28°.62E, h2km, MD2.6, Error ellipse: s-maj=4.3km s-min=2.7km az=113.0*
*ISK **06** 15:01:52.5, 38°.50N×28°.63E, h5km, MD2.3*
ISC 06 15:01:51.3±1.1, 38°.62N±0°.04×28°.64E±0°.06, h5km±12km, n13, σ0º21/20, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KULA	**Kula-Manisa**	**0.11**	**173**	*e*PG	**Pg**	**15 01 53.6**	**+0.1**
KULA				*e*SG	**Sg**	**15 01 54.8**	**-0.3**
MANT	**Manisa**	**0.15**	**207**	P	**Sg**	**15 01 54.4**	**+0.1**
MANT				S	**Sg**	**15 01 56.4**	**0.0**
MANT	**Manisa**	**0.15**	**207**	*i* P	**Pg**	**15 01 54.4**	**+0.1**
MANT				*i* S	**Sg**	**15 01 56.4**	**0.0**
DEMI	**Demirci**	**0.42**	**8**	P	**Pb**	**15 02 01.5**	**+0.2**
DEMI				S	**Sb**	**15 02 07.8**	**-0.2**
DEMI	**Demirci**	**0.42**	**8**	*i* P	**Pb**	**15 02 01.5**	**+0.2**
DEMI				*i* S	**Sb**	**15 02 07.8**	**-0.2**
KHL	**Karahalli**	**0.75**	**113**	*e*PG	**Pb**	**15 02 07.1**	**+0.2**
KHL	**Karahalli**	**0.75**	**113**	*e*Pg	**Pb**	**15 02 07.1**	**+0.2**
GDZ	**Gediz**	**0.80**	**54**	P	**Pb**	**15 02 07.8**	**0.0**
GDZ	**Gediz**	**0.80**	**54**	*i* P	**Pb**	**15 02 07.8**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**0.90**	**222**	*e*PG	**Pg**	**15 02 08.6**	**+0.1**
AYDB				*e*SG	**Sg**	**15 02 19.8**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**0.90**	**222**	*e*Pg	**Pg**	**15 02 08.6**	**+0.1**
AYDB				*e*Sg	**Sg**	**15 02 19.8**	**-0.3**
DNZL	**Cakiroluk**	**0.98**	**161**	P	**Pb**	**15 02 10.9**	**+0.1**
DNZL	**Cakiroluk**	**0.98**	**161**	*i* P	**Pb**	**15 02 10.9**	**+0.1**

*IDC **06** 15:03:03.8±2.1, 28°.43S×73°.77W, h0km, mb3.7/1, mb1 3.8/2, mb1mx3.5/21, mbtmp3.8/2, ML4.8/1, Error ellipse: s-maj=133.0km s-min=60.6km az=133.0*
*NEIC **06** 15:03:11.0, 29°.31S×71°.41W, h72km, MG4.3(GUC), After GUC.*
NEIC Felt [III] at Coquimbo, La Higuera and La Serena; [II] at Alto del Carmen and Vicuna.
*GUC **06** 15:03:11.9±0.5, 29°.31S×71°.41W, h72km±16km, ML4.3*
ISC 06 15:03:07.5±2.3, 29°.21S±0°.04×71°.83W±0°.08, h3km±12km, n24, σ2º40/32, 1C-2D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LCO	**Las Campanas**	**1.01**	**79**	*e*P	**Pb**	**15 03 27.7**	**0.0**
LCO				*i* S	**Sb**	**15 03 39.8**	**-1.6**
LCO				IAML		15 03 40.2	
comp=E,23μm,0.4s							
LCO	**Las Campanas**	**1.01**	**79**	*e*Pn	**Pb**	**15 03 27.9**	**+0.2**
LCO				*e*Sn	**Sg**	**15 03 38.5**	**-1.4**
VACH	**Vallenar**	**1.13**	**56**	⇓*i*P	**Pg**	**15 03 30.0**	**+0.8**
VACH				*i* S	**Sg**	**15 03 43.5**	**-0.4**
TLL	**Tololo Astrono**	**1.30**	**137**	⇑*i*P	**Pb**	**15 03 31.5**	**-1.3**
TLL				*i* S	**Sb**	**15 03 46.2**	**-3.8**
TLL				IAML		15 03 51.5	
comp=E,11μm,0.5s							
CPCH	**Copiapo**	**2.26**	**36**	*e*P	**Pn**	**15 03 45.2**	**-0.5**
CPCH				*e*S	**Sn**	**15 04 10.9**	**-3.2**
AGUA	**GUANDACOL**	**2.93**	**96**	*i* P	**Pn**	**15 03 57.3**	**+2.3**
VCA	**Vinchina**	**3.21**	**82**	*i* P	**Pn**	**15 04 01.4**	**+2.4**
VCA				*i* S	**Sn**	**15 04 38.9**	**+1.1**
VCA				IAML		15 04 43.0	
comp=Z,490nm,0.7s							
AMOG	**MOGNA**	**3.37**	**122**	*i* P	**Pn**	**15 04 02.3**	**+1.3**
RTLS	**Leoncito**	**3.38**	**140**	*i* P	**Pn**	**15 04 02.7**	**+1.3**
RTLS				*i* S	**Sn**	**15 04 40.5**	**-1.6**
RTLL	**Cerro Villicun**	**3.59**	**127**	*i* P	**Pn**	**15 04 05.0**	**+0.9**
AUSP	**Uspallata**	**3.67**	**146**	*i* P	**Pn**	**15 04 06.5**	**+1.2**
ROC1	**El Roble**	**3.82**	**170**	*i* S	**Sn**	**15 04 49.7**	**-3.2**
RTCV	**Cerro Valdivia**	**3.88**	**134**	*i* P	**Pn**	**15 04 08.9**	**+0.9**
PEL	**Peldehue**	**4.04**	**166**	⇓*i*P	**Pn**	**15 04 09.7**	**-0.6**
ASAL	**Salagasta**	**4.24**	**143**	*i* P	**Pn**	**15 04 13.8**	**+0.8**
ARCO	**CERRO ARCO**	**4.39**	**146**	*i* P	**Pn**	**15 04 15.9**	**+0.7**
ARCO				IAML		15 05 32.9	
comp=Z,232nm,0.8s							
AAGR	**Agrelo**	**4.64**	**147**	*i* P	**Pn**	**15 04 19.2**	**+0.6**
ACAN	**Cantantal**	**5.03**	**129**	*i* P	**Pn**	**15 04 24.0**	**+0.2**
CYA	**Choya**	**5.34**	**83**	IAML		15 05 51.0	
comp=Z,31nm,0.5s							
LVC	**Limon Verde**	**7.08**	**22**	Pn	**Pn**	**15 04 51.2**	**-1.1**
comp=Z,15nm,0.3s,baz=221,slow=9.3,SNR=4.9							
LVC				Sn	**Sn**	**15 06 09.1**	**-4.4**
comp=Z,114nm,0.3s,baz=208,slow=19,SNR=3.8							
LVC	**Limon Verde**	**7.08**	**22**	*e*Pn	**Pn**	**15 04 51.7**	**-0.7**
LVC				*e*Sn	**Sn**	**15 06 07.7**	**-5.8**
TORD	**Torodi Ar. Bea**	**82.43**	**70**	P	**P**	**15 15 35.6**	**+4.1**
comp=Z,0.4nm,0.5s,baz=256,slow=5.0,SNR=5.1							
ZALV	**Zalesovo Beam**	**150.00**	**28**	PKPbc	**PKPdf**	**15 22 56.6**	**+2.6**
comp=Z,2.1nm,0.6s,baz=306,slow=3.6,SNR=8.4							
MKAR	**Makanchi Array**	**153.28**	**42**	PKPbc	**PKPdf**	**15 23 03.3**	**+4.1**
comp=Z,0.3nm,0.7s,baz=316,slow=4.0,SNR=2.2							

*IDC **06** 15:12:32.3±1.3, 37°.71N×15°.28E, h0km, mb3.5/6, mb1 3.6/8, mb1mx3.5/38, mbtmp3.5/8, ML3.7/2, MS3.3/18, Ms1 3.3/18, ms1mx3.0/37, Error ellipse: s-maj=28.8km s-min=12.9km az=136.0*
*LDG **06** 15:12:34.3±0.1, 37°.78N×14°.96E, h10km, Ml3.6/3, Error ellipse: s-maj=2.1km s-min=1.9km az=145.0*
*ISCJB **06** 15:12:35.3±0.2, 37°.80N±0°.02×14°.95E±0°.03, h32km±2km, mb3.4/6, MS3.3/12, Error ellipse: s-maj=3.9km s-min=2.2km az=30.0*
*ROM **06** 15:12:35.0±0.1, 37°.79N×14°.96E, h28km±1km, Ml4.2/34, Error ellipse: s-maj=1.6km s-min=1.1km az=114.0*
*CSEM **06** 15:12:35.5±0.1, 37°.80N×14°.89E, h20km, ML4.5/11, Error ellipse: s-maj=3.5km s-min=2.5km az=121.0*
*PDG **06** 15:12:35.3±0.5, 37°.80N×14°.94E, h22km, ML4.1/11, Error ellipse: s-maj=0.6km s-min=0.8km az=0.0*
*BEO **06** 15:12:37.1±1.9, 38°.02N×14°.55E, h15km, M4.0/8*
ISC 06 15:12:35.8±0.7, 37°.79N±0°.02×14°.94E±0°.02, h25km±4km, n179, σ1º51/225, mb3.5/6, MS3.3/12, 54C-22D, Sicily

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ESLN	**Serra La Nave**	**0.10**	**163**	⇓*i*Pg	**Pb**	**15 12 39.8**	**-0.9**
ESLN				Sg	**Sb**	**15 12 44.7**	**+0.7**
29μm,0.7s							
ESLN	**Serra La Nave**	**0.10**	**163**	⇓*i*Pg	**Pb**	**15 12 39.8**	**-0.9**
ESLN				Sg	**Sb**	**15 12 44.7**	**+0.7**
29μm,0.7s							
MNO	**Monte Soro**	**0.24**	**306**	⇓*e*Pg	**Pb**	**15 12 41.5**	**-0.7**
MNO				Sg	**Sb**	**15 12 46.4**	**-0.1**
27μm,1.0s							
MNO	**Monte Soro**	**0.24**	**306**	⇓*e*Pg	**Pb**	**15 12 41.5**	**-0.7**
MNO				Sg	**Sb**	**15 12 46.4**	**-0.1**
27μm,1.0s							
MUCR	**Ucria**	**0.26**	**349**	⇑*i*Pg	**Pb**	**15 12 41.4**	**-0.9**
MUCR				Sg	**Sb**	**15 12 46.6**	**-0.1**
MUCR	**Ucria**	**0.26**	**349**	⇑*i*Pg	**Pb**	**15 12 41.4**	**-0.9**
MUCR				Sg	**Sb**	**15 12 46.6**	**-0.1**
ECNV	**Catenanuova**	**0.27**	**223**	⇑*e*Pg	**Pb**	**15 12 42.5**	**+0.2**
29μm,0.6s							
ECNV	**Catenanuova**	**0.27**	**223**	⇑*e*Pg	**Pb**	**15 12 42.5**	**+0.2**
29μm,0.6s							
NOV	**Novara**	**0.28**	**34**	⇑*i*Pg	**Pb**	**15 12 41.8**	**-0.9**
NOV				Sg	**Sb**	**15 12 47.5**	**+0.2**
24μm,0.8s							
NOV	**Novara**	**0.28**	**34**	⇑*i*Pg	**Pb**	**15 12 41.8**	**-0.9**
NOV				Sg	**Sb**	**15 12 47.5**	**+0.2**
24μm,0.8s							
MMME	**Mongiuffi-Meli**	**0.29**	**60**	Pg	**Pb**	**15 12 42.0**	**-0.7**
MMME				Sg	**Sb**	**15 12 48.1**	**+0.6**
29μm,0.5s							
MMME	**Mongiuffi-Meli**	**0.29**	**60**	Pg	**Pb**	**15 12 42.0**	**-0.7**
MMME				Sg	**Sb**	**15 12 48.1**	**+0.6**
29μm,0.5s							
GALF	**Gagliano Caste**	**0.30**	**255**	⇑*e*Pg	**Pb**	**15 12 42.9**	**-0.1**
GALF				Sg	**Sn**	**15 12 49.5**	**-1.1**
40μm,0.7s							
GALF	**Gagliano Caste**	**0.30**	**255**	⇑*e*Pg	**Pb**	**15 12 42.9**	**-0.1**
MCSR	**Castroreale**	**0.37**	**42**	⇑*i*Pg	**Pb**	**15 12 43.0**	**-1.0**
MCSR				Sg	**Sb**	**15 12 49.8**	**+0.3**
MCSR	**Castroreale**	**0.37**	**42**	⇑*i*Pg	**Pb**	**15 12 43.0**	**-1.0**
MCSR				Sg	**Sb**	**15 12 49.8**	**+0.3**
CAGR	**Agira**	**0.39**	**244**	⇑*i*Pg	**Pb**	**15 12 44.8**	**+0.6**
35μm,0.7s							
CAGR	**Agira**	**0.39**	**244**	⇑*i*Pg	**Pb**	**15 12 44.8**	**+0.6**
35μm,0.7s							
HLNI	**Lentini**	**0.45**	**187**	Pg	**Pb**	**15 12 44.3**	**-0.8**
HLNI				Sg	**Sb**	**15 12 51.6**	**+0.2**
7μm,0.2s							
HLNI	**Lentini**	**0.45**	**187**	Pg	**Pb**	**15 12 44.3**	**-0.8**
HLNI				Sg	**Sb**	**15 12 51.6**	**+0.2**
7μm,0.2s							
MPNC	**Port Mandanici**	**0.48**	**43**	⇑*i*Pg	**Pb**	**15 12 45.1**	**-0.7**
MPNC				Sg	**Sb**	**15 12 53.2**	**+0.7**
18μm,0.5s							
MPNC	**Port Mandanici**	**0.48**	**43**	⇑*i*Pg	**Pb**	**15 12 45.1**	**-0.7**
MPNC				Sg	**Sb**	**15 12 53.2**	**+0.7**
18μm,0.5s							
HCRL	**Carlentini**	**0.51**	**172**	⇑*i*Pg	**Pb**	**15 12 45.5**	**-0.8**
HCRL				Sg	**Sb**	**15 12 53.7**	**+0.4**
32μm,0.6s							
HCRL	**Carlentini**	**0.51**	**172**	⇑*i*Pg	**Pb**	**15 12 45.5**	**-0.8**
HCRL				Sg	**Sb**	**15 12 53.7**	**+0.4**
32μm,0.6s							
VAE	**Valguarnera**	**0.52**	**233**	Pg	**Pn**	**15 12 47.9**	**+0.1**
97nm,0.3s,baz=58,slow=0.8,SNR=149							
VAE				LR	LR	15 13 20.3	
comp=Z,2μm,20.8s,baz=149,slow=62							
MILZ	**Milazzo**	**0.53**	**26**	⇑*i*Pg	**Pb**	**15 12 45.8**	**-0.8**
MILZ				Sg	**Sb**	**15 12 54.1**	**+0.2**
26μm,0.8s							
MILZ	**Milazzo**	**0.53**	**26**	⇑*i*Pg	**Pb**	**15 12 45.8**	**-0.8**
MILZ				Sg	**Sb**	**15 12 54.1**	**+0.2**
26μm,0.8s							
HAGA	**Augusta**	**0.53**	**161**	Pg	**Pb**	**15 12 45.8**	**-0.8**
HAGA				Sg	**Sb**	**15 12 54.1**	**+0.2**
13μm,0.6s							
HAGA	**Augusta**	**0.53**	**161**	Pg	**Pb**	**15 12 45.8**	**-0.8**
HAGA				Sg	**Sb**	**15 12 54.1**	**+0.2**
13μm,0.6s							
AGST	**Augusta-Monte**	**0.58**	**157**	Pg	**Pb**	**15 12 46.5**	**-0.9**
AGST				Sg	**Sb**	**15 12 55.8**	**+0.6**
19μm,0.8s							
AGST	**Augusta-Monte**	**0.58**	**157**	Pg	**Pb**	**15 12 46.5**	**-0.9**
AGST				Sg	**Sb**	**15 12 55.8**	**+0.6**
19μm,0.8s							
VPL	**Vulcano Piano**	**0.59**	**3**	Pg	**Pb**	**15 12 46.9**	**-0.7**
55μm,0.7s							
VPL	**Vulcano Piano**	**0.59**	**3**	Pg	**Pb**	**15 12 46.9**	**-0.7**
55μm,0.7s							
HVZN	**Vizzini**	**0.64**	**196**	⇑*i*Pg	**Pb**	**15 12 47.4**	**-1.0**
HVZN				Sg	**Sb**	**15 12 57.6**	**+0.7**
25μm,0.6s							
HVZN	**Vizzini**	**0.64**	**196**	⇑*i*Pg	**Pb**	**15 12 47.4**	**-1.0**
HVZN				Sg	**Sb**	**15 12 57.6**	**+0.7**
25μm,0.6s							
SSY	**Sortino**	**0.65**	**170**	Pg	**Pb**	**15 12 47.6**	**-0.9**
17μm,0.5s							
SSY	**Sortino**	**0.65**	**170**	Pg	**Pb**	**15 12 47.6**	**-0.9**
17μm,0.5s							
MSRU	**Castanea**	**0.65**	**44**	⇑*i*Pg	**Pb**	**15 12 47.8**	**-0.8**
12μm,0.8s							
MSRU	**Castanea**	**0.65**	**44**	⇑*i*Pg	**Pb**	**15 12 47.8**	**-0.8**
12μm,0.8s							
LLI	**Lipari**	**0.65**	**1**	⇓*i*Pg	**Pb**	**15 12 48.1**	**-0.5**
26μm,0.6s							
LLI	**Lipari**	**0.65**	**1**	⇓*i*Pg	**Pb**	**15 12 48.1**	**-0.5**
26μm,0.6s							
PLLN	**Pollina**	**0.66**	**288**	⇓*i*Pg	**Pb**	**15 12 48.3**	**-0.5**
17μm,0.6s							
PLLN	**Pollina**	**0.66**	**288**	⇓*i*Pg	**Pb**	**15 12 48.3**	**-0.5**
17μm,0.6s							
RESU	**Resuttano**	**0.71**	**259**	⇑*i*Pg	**Pn**	**15 12 50.7**	**+0.3**
8μm,0.7s							
RESU	**Resuttano**	**0.71**	**259**	⇑*i*Pg	**Pn**	**15 12 50.7**	**+0.3**
8μm,0.7s							
RAFF	**Raffo Rosso**	**0.73**	**219**	⇑*i*Pg	**Pb**	**15 12 49.4**	**-0.5**
12μm,0.8s							
RAFF	**Raffo Rosso**	**0.73**	**219**	⇑*i*Pg	**Pb**	**15 12 49.4**	**-0.5**
12μm,0.8s							
GIB	**Gibilmanna**	**0.75**	**286**	⇓*i*Pg	**Pb**	**15 12 49.7**	**-0.6**
24μm,0.6s							
GIB	**Gibilmanna**	**0.75**	**286**	⇓*i*Pg	**Pb**	**15 12 49.7**	**-0.6**
24μm,0.6s							
MSCL	**Scilla**	**0.80**	**57**	⇑*i*Pg	**Pb**	**15 12 50.2**	**-1.0**
8μm,0.7s							
MSCL	**Scilla**	**0.80**	**57**	⇑*i*Pg	**Pb**	**15 12 50.2**	**-1.0**
8μm,0.7s							
IFIL	**Filicudi I Eol**	**0.82**	**339**	Pg	**Pb**	**15 12 50.1**	**-1.4**
17μm,0.6s							
IFIL	**Filicudi I Eol**	**0.82**	**339**	Pg	**Pb**	**15 12 50.1**	**-1.4**
17μm,0.6s							
HMDC	**Modica**	**0.84**	**189**	⇑*i*Pg	**Pb**	**15 12 50.6**	**-1.2**
31μm,0.8s							
HMDC	**Modica**	**0.84**	**189**	⇑*i*Pg	**Pb**	**15 12 50.6**	**-1.2**
31μm,0.8s							
HAVL	**Avola**	**0.84**	**170**	Pg	**Pb**	**15 12 50.4**	**-1.4**
9μm,0.5s							
HAVL	**Avola**	**0.84**	**170**	Pg	**Pb**	**15 12 50.4**	**-1.4**
9μm,0.5s							
MPAZ	**Palizzi**	**0.86**	**79**	⇑*i*Pg	**Pb**	**15 12 51.8**	**-0.4**
4μm,0.6s							
MPAZ	**Palizzi**	**0.86**	**79**	⇑*i*Pg	**Pb**	**15 12 51.8**	**-0.4**
4μm,0.6s							
IACL	**Alicudi**	**0.87**	**328**	⇓*i*Pg	**Pb**	**15 12 51.1**	**-1.2**
11μm,0.7s							
IACL	**Alicudi**	**0.87**	**328**	⇓*i*Pg	**Pb**	**15 12 51.1**	**-1.2**
11μm,0.7s							
CEL	**Celeste**	**0.89**	**58**	⇑*i*Pg	**Pb**	**15 12 51.6**	**-1.0**
2μm,0.8s							
CEL	**Celeste**	**0.89**	**58**	⇑*i*Pg	**Pb**	**15 12 51.6**	**-1.0**
2μm,0.8s							
SOI	**Samo**	**0.93**	**72**	⇑*i*Pg	**Pb**	**15 12 52.4**	**-0.9**
3μm,0.6s							
SOI	**Samo**	**0.93**	**72**	⇑*i*Pg	**Pb**	**15 12 52.4**	**-0.9**
3μm,0.6s							
ALJA	**Alia**	**0.94**	**268**	⇑*i*Pg	**Pn**	**15 12 54.0**	**+0.5**
8μm,0.8s							
ALJA	**Alia**	**0.94**	**268**	⇑*i*Pg	**Pn**	**15 12 54.0**	**+0.5**
8μm,0.8s							
STR3	**STROMBOLI 3**	**1.03**	**13**	Pg	**Pn**	**15 12 54.0**	**-0.7**
STR3	**STROMBOLI 3**	**1.03**	**13**	Pg	**Pn**	**15 12 54.0**	**-0.7**
JOPP	**Joppolo**	**1.10**	**42**	Pg	**Pn**	**15 12 54.7**	**-1.1**
3μm,0.5s							
JOPP	**Joppolo**	**1.10**	**42**	Pg	**Pn**	**15 12 54.7**	**-1.1**
3μm,0.5s							
CORL	**Corleone**	**1.30**	**275**	Pg	**Pb**	**15 12 59.1**	**-0.5**
370nm,0.4s							
CORL	**Corleone**	**1.30**	**275**	Pg	**Pb**	**15 12 59.1**	**-0.5**
370nm,0.4s							
MPG	**Monte Pellegri**	**1.30**	**287**	Pg	**Pn**	**15 12 58.0**	**-0.5**
3μm,1.5s							
MPG	**Monte Pellegri**	**1.30**	**287**	Pg	**Pn**	**15 12 58.0**	**-0.5**
3μm,1.5s							
PLAC	**Placanica**	**1.35**	**60**	Pg	**Pn**	**15 12 59.8**	**+0.6**
2μm,0.9s							
PLAC	**Placanica**	**1.35**	**60**	Pg	**Pn**	**15 12 59.8**	**+0.6**
2μm,0.9s							
CLTB	**Caltabellotta**	**1.38**	**262**	Pg	**Pb**	**15 13 01.2**	**+0.1**
9μm,0.6s							
CLTB	**Caltabellotta**	**1.38**	**262**	Pg	**Pb**	**15 13 01.2**	**+0.1**
9μm,0.6s							
CAR1	**CAROLEI**	**1.77**	**34**	Pg	**Pn**	**15 13 03.9**	**-1.0**
2μm,0.6s							
CAR1	**CAROLEI**	**1.77**	**34**	Pg	**Pn**	**15 13 03.9**	**-1.0**
2μm,0.6s							
TAR1	**Taranto**	**3.28**	**33**	*i* Pn	**Pn**	**15 13 26.1**	**+0.4**
SG1	**Sgolgore (BA)**	**3.33**	**23**	*e*Pn	**Pn**	**15 13 26.5**	**+0.1**
SG1				Sn	**Sn**	**15 14 08.6**	**+3.4**
CDT	**Castel del Mon**	**3.44**	**17**	*e*Pn	**Pn**	**15 13 30.3**	**+2.3**
BAI	**Bari**	**3.64**	**24**	*e*Pn	**Pn**	**15 13 32.1**	**+1.6**
KEST	**Kesra**	**4.94**	**247**	Pn	**Pn**	**15 13 49.8**	**+1.3**
2.8nm,0.3s,baz=9.0,slow=3.2,SNR=25							
KEST				Sn	**Sn**	**15 14 46.7**	**+1.8**
1.5nm,0.3s,baz=8.2,slow=19,SNR=2.1							
ULC	**Ulcinj**	**5.32**	**37**	⇑*i*Pn	**Pn**	**15 13 55.0**	**+1.2**
ULC				*e*Sn	**Sn**	**15 14 55.6**	**+1.3**
ULC	**Ulcinj**	**5.32**	**37**	⇑*i*Pn	**Pn**	**15 13 55.0**	**+1.2**
ULC				*e*Sn	**Sn**	**15 14 55.6**	**+1.3**
HCY	**Herceg Novi**	**5.39**	**29**	⇓*i*Pn	**Pn**	**15 13 55.6**	**+0.9**
HCY				*e*Sn	**Sn**	**15 14 57.0**	**+1.1**
HCY	**Herceg Novi**	**5.39**	**29**	⇓*i*Pn	**Pn**	**15 13 55.6**	**+0.9**
HCY				*e*Sn	**Sn**	**15 14 57.0**	**+1.1**
BUM	**Brajici-Budva**	**5.43**	**33**	⇑*i*Pn	**Pn**	**15 13 56.9**	**+1.6**
BUM				*e*Sn	**Sn**	**15 14 57.5**	**+0.5**
**BU

TEKS	**Tekeris**	**7.59**	**26**	*e*Pn	**Pn**	**15 14 25.1**	**+0.3**
TEKS	**Tekeris**	**7.59**	**26**	*e*Pn	**Pn**	**15 14 25.1**	**+0.3**
BOJS	**Bojanci**	**7.71**	**2**	*i* Pn	**Pn**	**15 14 30.8**	**+4.4**
BOJS				*i* Sn	**Sn**	**15 16 01.2**	**+8.2**
VISS	**Visnje**	**8.01**	**360**	*i* Pn	**Pn**	**15 14 32.9**	**+2.3**
VISS				*i* Sn	**Sn**	**15 16 06.4**	**+6.1**
VISS	**Visnje**	**8.01**	**360**	*i* Pn	**Pn**	**15 14 32.9**	**+2.3**
ZAPS	**Zavoj**	**8.02**	**45**	*e*Pn	**Pn**	**15 14 33.0**	**+2.2**
ZAPS	**Zavoj**	**8.02**	**45**	*e*Pn	**Pn**	**15 14 33.0**	**+2.2**
SBF	**Sospel**	**8.31**	**319**	*e*Pn	**Pn**	**15 14 32.9**	**-1.9**
SBF				*e*Sn	**Sn**	**15 16 01.3**	**-6.6**
	4.3nm,0.3s						
SBF	**Sospel**	**8.31**	**319**	*e*Pn	**Pn**	**15 14 32.9**	**-1.9**
IDI	**Anoyia**	**8.39**	**104**	Sn	**Sn**	**15 16 04.9**	**-4.9**
	3.1nm,0.3s,baz=308,slow=17,SNR=8.0						
LMR	**La Mourre**	**8.47**	**313**	*e*Pn	**Pn**	**15 14 34.9**	**-2.0**
LMR	**La Mourre**	**8.47**	**313**	*e*Pn	**Pn**	**15 14 34.9**	**-2.0**
FRF	**La Foret Royal**	**8.54**	**315**	*e*Pn	**Pn**	**15 14 35.8**	**-2.0**
FRF	**La Foret Royal**	**8.54**	**315**	*e*Pn	**Pn**	**15 14 35.8**	**-2.0**
LGHD	**Ghdames**	**9.00**	**212**	*i* P	**Pn**	**15 14 45.4**	**+1.2**
	SNR=22						
MBDF	**Montbardon**	**9.26**	**321**	*e*Pn	**Pn**	**15 14 45.9**	**-2.0**
MBDF	**Montbardon**	**9.26**	**321**	*e*Pn	**Pn**	**15 14 45.9**	**-2.0**
SMRF	**Simiane la Rot**	**9.40**	**314**	*e*Pn	**Pn**	**15 14 47.8**	**-1.9**
SMRF	**Simiane la Rot**	**9.40**	**314**	*e*Pn	**Pn**	**15 14 47.8**	**-1.9**
DAVOX	**Davos/Dischmat**	**9.73**	**339**	LR	LR	15 19 04.6	
	comp=Z,160nm,21.4s,baz=82,slow=40						
LPG	**La Plagne**	**9.84**	**324**	*e*Pn	**Pn**	**15 14 53.7**	**-2.2**
LPG	**La Plagne**	**9.84**	**324**	*e*Pn	**Pn**	**15 14 53.7**	**-2.2**
ORIF	**Oris-en-Rattie**	**9.85**	**319**	*e*Pn	**Pn**	**15 14 53.8**	**-2.1**
LPL	**La Plagne**	**9.86**	**324**	*e*Pn	**Pn**	**15 14 54.2**	**-1.9**
LPL	**La Plagne**	**9.86**	**324**	*e*Pn	**Pn**	**15 14 54.2**	**-1.9**
VIVF	**Saint-Julien-I**	**10.45**	**316**	*e*Pn	**Pn**	**15 15 02.0**	**-2.1**
LASF	**Ste Croix**	**10.47**	**310**	*e*Pn	**Pn**	**15 15 02.2**	**-2.1**
LASF	**Ste Croix**	**10.47**	**310**	*e*Pn	**Pn**	**15 15 02.2**	**-2.1**
GERES	**GERESS Array B**	**11.09**	**356**	Pn	**Pn**	**15 15 14.6**	**+1.8**
	0.2nm,0.3s,baz=175,slow=15,SNR=3.5						
GERES				LR	LR	15 20 04.1	
	comp=Z,106nm,21.9s,baz=168,slow=40						
MTLF	**Montolieu**	**11.15**	**304**	*e*Pn	**Pn**	**15 15 11.7**	**-1.9**
MTLF	**Montolieu**	**11.15**	**304**	*e*Pn	**Pn**	**15 15 11.7**	**-1.9**
MLR	**Muntele Rosu**	**11.26**	**43**	LR	LR	15 20 56.3	
	comp=Z,34nm,19.6s,baz=244,slow=45						
VRAC	**Vranov**	**11.57**	**5**	LR	LR	15 20 37.2	
	comp=Z,165nm,18.3s,baz=194,slow=42						
BRG	**Berggiesshubel**	**13.10**	**357**	*e*(P)	P	15 15 55.3	+5.1
	4.7nm,1.0s						
ESDC	**Sonseca Array**	**14.87**	**283**	LR	LR	15 21 38.4	
	comp=Z,66nm,19.0s,baz=105,slow=36						
MDT	**Midelt**	**16.71**	**259**	LR	LR	15 23 57.7	
	comp=Z,89nm,20.0s,baz=355,slow=40						
HFS	**Hagfors**	**22.38**	**358**	P	**P**	**15 17 33.0**	**+1.0**
	2.9nm,0.8s,baz=157,slow=12,SNR=6.9						
HFS				LR	LR	15 27 33.4	
	comp=Z,59nm,21.1s,baz=164,slow=40						
OBN	**Obninsk**	**22.70**	**33**	LR	LR	15 27 39.9	
	comp=Z,42nm,18.0s,baz=284,slow=40						
NB2	**NORSAR Subarra**	**23.39**	**355**	P	**P**	**15 17 39.7**	**-2.8**
	comp=Z,4.6nm,1.1s,baz=171,slow=10						
NOA	**NORSAR Array B**	**23.39**	**355**	P	**P**	**15 17 44.1**	**+1.6**
	comp=Z,0.3nm,0.6s,baz=174,slow=9.0,SNR=3.4						
NOA				LR	LR	15 28 14.1	
	comp=Z,76nm,19.1s,baz=180,slow=40						
FINES	**FINESS Array B**	**24.68**	**13**	P	**P**	**15 17 54.1**	**-0.4**
	comp=Z,0.9nm,0.5s,baz=153,slow=21,SNR=6.5						
FINES				LR	LR	15 28 53.2	
	comp=Z,72nm,20.2s,baz=186,slow=40						
TORD	**Torodi Ar. Bea**	**27.24**	**209**	P	**P**	**15 18 18.5**	**+0.5**
	comp=Z,0.3nm,0.5s,baz=28,slow=7.9,SNR=3.1						
TORD				LR	LR	15 31 02.3	
	comp=Z,87nm,19.8s,baz=340,slow=41						
ARCES	**ARCESS Array B**	**32.31**	**7**	LR	LR	15 33 26.3	
	comp=Z,56nm,19.6s,baz=204,slow=39						
DBIC	**Dimbokro**	**35.82**	**215**	LR	LR	15 35 53.6	
	comp=Z,45nm,18.8s,baz=14,slow=39						
NRIK	**Noril'sk**	**49.12**	**27**	LR	LR	15 43 30.2	
	comp=Z,34nm,18.6s,baz=90,slow=38						
ZALV	**Zalesovo Beam**	**49.21**	**47**	LR	LR	15 44 34.2	
	comp=Z,42nm,20.4s,baz=252,slow=39						
MKAR	**Makanchi Array**	**49.23**	**57**	P	**P**	**15 21 21.9**	**-0.2**
	comp=Z,0.2nm,0.4s,baz=286,slow=7.1,SNR=7.9						
MKAR				LR	LR	15 45 08.2	
	comp=Z,24nm,20.7s,baz=280,slow=40						
BOSA	**Boshof**	**66.76**	**170**	LR	LR	15 52 05.5	
	comp=Z,50nm,19.8s,baz=338,slow=36						
YKA	**Yellowknife Ar**	**72.17**	**338**	P	**P**	**15 23 58.4**	**+0.4**
	comp=Z,0.2nm,0.7s,baz=40,slow=4.9,SNR=3.5						
KSRS	**Korea Array**	**82.92**	**48**	LR	LR	16 03 08.4	
	comp=Z,14nm,19.4s,baz=25,slow=37						

CSEM ***06*** *15:17:37.2, 37°.79N×14°.96E, h25km, ML3.2/17*
ROM 06 15:17:37.2±0.1, 37°.79N×14°.96E, h25km±1km, MI3.2/17, 2C-2D, Error ellipse: s-maj=1.5km s-min=0.9km az=106.0, Sicily

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ESLN	**Serra La Nave**	**0.10**	**173**	Pg	Pb	15 17 41.9	-0.2
ESLN				Sg	Sb	15 17 45.9	+0.6
	2μm,0.3s						
ESLN	**Serra La Nave**	**0.10**	**173**	Pg	Pb	15 17 41.9	-0.2
ESLN				Sg	Sb	15 17 45.9	+0.6
	2μm,0.3s						
MNO	**Monte Soro**	**0.26**	**305**	Pg	Pb	15 17 43.6	-0.2
MNO				Sg	Sb	15 17 48.7	+0.4
MNO	**Monte Soro**	**0.26**	**305**	Pg	Pb	15 17 43.6	-0.2
MNO				Sg	Sb	15 17 48.7	+0.4
MUCR	**Ucria**	**0.26**	**345**	Pg	Pb	15 17 43.4	-0.4
MUCR				Sg	Sb	15 17 48.5	+0.2
MUCR	**Ucria**	**0.26**	**345**	Pg	Pb	15 17 43.4	-0.4
MUCR				Sg	Sb	15 17 48.5	+0.2
ECNV	**Catenanuova**	**0.28**	**226**	Pg	Pn	15 17 44.9	-0.8
ECNV	**Catenanuova**	**0.28**	**226**	Pg	Pn	15 17 44.9	-0.8
MMME	**Mongiuffi-Meli**	**0.28**	**58**	Pg	Pb	15 17 44.1	+0.1
MMME				Sg	Sb	15 17 49.4	+0.8
MMME	**Mongiuffi-Meli**	**0.28**	**58**	Pg	Pb	15 17 44.1	+0.1
MMME				Sg	Sb	15 17 49.4	+0.8
NOV	**Novara**	**0.28**	**30**	Pg	Pb	15 17 43.8	-0.2
NOV				Sg	Sb	15 17 48.8	+0.2
NOV	**Novara**	**0.28**	**30**	Pg	Pb	15 17 43.8	-0.2
NOV				Sg	Sb	15 17 48.8	+0.2
GALF	**Gagliano Caste**	**0.32**	**256**	Pg	Pb	15 17 44.9	+0.3
GALF	**Gagliano Caste**	**0.32**	**256**	Pg	Pb	15 17 44.9	+0.3
MCSR	**Castroreale**	**0.36**	**40**	Pg	Pb	15 17 45.0	-0.2
MCSR				Sg	Sb	15 17 51.3	+0.6
MCSR	**Castroreale**	**0.36**	**40**	Pg	Pb	15 17 45.0	-0.2
MCSR				Sg	Sb	15 17 51.3	+0.6
HLNI	**Lentini**	**0.45**	**189**	Pg	Pb	15 17 46.3	-0.2
HLNI				Sg	Sb	15 17 53.6	+0.8
HLNI	**Lentini**	**0.45**	**189**	Pg	Pb	15 17 46.3	-0.2
HLNI				Sg	Sb	15 17 53.6	+0.8
HCRL	**Carlentini**	**0.51**	**174**	Pg	Pb	15 17 47.5	0.0
HCRL				Sg	Sb	15 17 54.8	+0.3
HCRL	**Carlentini**	**0.51**	**174**	Pg	Pb	15 17 47.5	0.0
HCRL				Sg	Sb	15 17 54.8	+0.3
HAGA	**Augusta**	**0.53**	**163**	⇓*i*Pg	Pb	15 17 47.8	0.0
HAGA				Sg	Sb	15 17 56.1	+1.1
	2μm,0.3s						
HAGA	**Augusta**	**0.53**	**163**	⇓*i*Pg	Pb	15 17 47.8	0.0
HAGA				Sg	Sb	15 17 56.1	+1.1
	2μm,0.3s						
MILZ	**Milazzo**	**0.53**	**24**	⇑*i*Pg	Pb	15 17 47.8	-0.1
MILZ				Sg	Sb	15 17 55.7	+0.6
	2μm,0.5s						
MILZ	**Milazzo**	**0.53**	**24**	⇑*i*Pg	Pb	15 17 47.8	-0.1
MILZ				Sg	Sb	15 17 55.7	+0.6
	2μm,0.5s						
HVZN	**Vizzini**	**0.64**	**198**	Pg	Pb	15 17 49.5	-0.3
HVZN				Sg	Sn	15 17 59.4	-0.7
	2μm,0.5s						
HVZN	**Vizzini**	**0.64**	**198**	Pg	Pb	15 17 49.5	-0.3
HVZN				Sg	Sn	15 17 59.4	-0.7
	2μm,0.5s						
MSRU	**Castanea**	**0.64**	**42**	Pg	Pb	15 17 49.8	0.0
MSRU				Sg	Sn	15 18 00.0	-0.2
	1μm,0.3s						
MSRU	**Castanea**	**0.64**	**42**	Pg	Pb	15 17 49.8	0.0
MSRU				Sg	Sn	15 18 00.0	-0.2
	1μm,0.3s						
LLI	**Lipari**	**0.66**	**359**	Pg	Pn	15 17 51.0	+0.1
	2μm,0.6s						
LLI	**Lipari**	**0.66**	**359**	Pg	Pn	15 17 51.0	+0.1
	2μm,0.6s						
PLLN	**Pollina**	**0.68**	**288**	Pg	Pb	15 17 50.2	-0.2
	2μm,0.7s						
PLLN	**Pollina**	**0.68**	**288**	Pg	Pb	15 17 50.2	-0.2
	2μm,0.7s						
RAFF	**Raffo Rosso**	**0.74**	**220**	Pg	Pb	15 17 51.6	+0.2
	1μm,0.4s						
RAFF	**Raffo Rosso**	**0.74**	**220**	Pg	Pb	15 17 51.6	+0.2
	1μm,0.4s						
GIB	**Gibilmanna**	**0.77**	**286**	Pg	Pn	15 17 52.3	-0.2
	9μm,0.6s						
GIB	**Gibilmanna**	**0.77**	**286**	Pg	Pn	15 17 52.3	-0.2
	9μm,0.6s						
MSCL	**Scilla**	**0.79**	**56**	Pg	Pb	15 17 52.4	0.0
	837nm,0.6s						
MSCL	**Scilla**	**0.79**	**56**	Pg	Pb	15 17 52.4	0.0
	837nm,0.6s						
MPAZ	**Palizzi**	**0.84**	**78**	Pg	Pn	15 17 54.0	+0.5
	229nm,0.3s						
MPAZ	**Palizzi**	**0.84**	**78**	Pg	Pn	15 17 54.0	+0.5
	229nm,0.3s						
CEL	**Celeste**	**0.88**	**57**	Pg	Pb	15 17 53.8	0.0
	997nm,0.6s						
CEL	**Celeste**	**0.88**	**57**	Pg	Pb	15 17 53.8	0.0
	997nm,0.6s						
SOI	**Samo**	**0.91**	**72**	Pg	Pn	15 17 54.4	0.0
	342nm,0.5s						
SOI	**Samo**	**0.91**	**72**	Pg	Pn	15 17 54.4	0.0
	342nm,0.5s						
ALJA	**Alia**	**0.96**	**268**	Pg	Pb	15 17 56.4	+1.2
	492nm,0.7s						
ALJA	**Alia**	**0.96**	**268**	Pg	Pb	15 17 56.4	+1.2
	492nm,0.7s						
JOPP	**Joppolo**	**1.09**	**41**	Pg	Pn	15 17 56.4	-0.6
	700nm,0.5s						
JOPP	**Joppolo**	**1.09**	**41**	Pg	Pn	15 17 56.4	-0.6
	700nm,0.5s						
SOLUN	**Solunto**	**1.17**	**285**	Pg	Pn	15 17 58.1	+0.1
	103nm,0.5s						
SOLUN	**Solunto**	**1.17**	**285**	Pg	Pn	15 17 58.1	+0.1
	103nm,0.5s						
CORL	**Corleone**	**1.31**	**275**	Pg	Pb	15 18 01.1	-0.2
	370nm,0.4s						
CORL	**Corleone**	**1.31**	**275**	Pg	Pb	15 18 01.1	-0.2
	370nm,0.4s						
PLAC	**Placanica**	**1.34**	**60**	Pg	Pb	15 18 01.9	+0.2
	113nm,0.4s						
PLAC	**Placanica**	**1.34**	**60**	Pg	Pb	15 18 01.9	+0.2
	113nm,0.4s						

CSEM ***06*** *15:18:30.8, 37°.79N×14°.95E, h25km, ML3.3/2*
ROM 06 15:18:30.8±0.1, 37°.79N×14°.95E, h25km±2km, MI3.3/2, 4C, Error ellipse: s-maj=1.7km s-min=1.1km az=117.0, Sicily

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ESLN	**Serra La Nave**	**0.10**	**170**	Pg	Pb	15 18 35.4	-0.3
ESLN				Sg	Sb	15 18 39.2	+0.2
ESLN	**Serra La Nave**	**0.10**	**170**	Pg	Pb	15 18 35.4	-0.3
ESLN				Sg	Sb	15 18 39.2	+0.2
MNO	**Monte Soro**	**0.25**	**304**	Pg	Pb	15 18 37.1	-0.2
MNO				Sg	Sb	15 18 42.1	+0.4
MNO	**Monte Soro**	**0.25**	**304**	Pg	Pb	15 18 37.1	-0.2
MNO				Sg	Sb	15 18 42.1	+0.4
MUCR	**Ucria**	**0.26**	**346**	Pg	Pb	15 18 36.9	-0.4
MUCR				Sg	Sb	15 18 42.1	+0.3
MUCR	**Ucria**	**0.26**	**346**	Pg	Pb	15 18 36.9	-0.4
MUCR				Sg	Sb	15 18 42.1	+0.3
ECNV	**Catenanuova**	**0.27**	**224**	Pg	Pn	15 18 38.8	-0.5
ECNV				Sg	Sb	15 18 42.9	+0.8
ECNV	**Catenanuova**	**0.27**	**224**	Pg	Pn	15 18 38.8	-0.5
ECNV				Sg	Sb	15 18 42.9	+0.9
NOV	**Novara**	**0.28**	**32**	⇑*i*Pg	Pb	15 18 37.4	-0.1
NOV				Sg	Sb	15 18 42.7	+0.6
NOV	**Novara**	**0.28**	**32**	⇑*i*Pg	Pb	15 18 37.4	-0.1
NOV				Sg	Sb	15 18 42.7	+0.6
MMME	**Mongiuffi-Meli**	**0.28**	**59**	Pg	Pb	15 18 37.7	+0.1
MMME				Sg	Sb	15 18 43.3	+1.1
MMME	**Mongiuffi-Meli**	**0.28**	**59**	Pg	Pb	15 18 37.7	+0.1
MMME				Sg	Sb	15 18 43.3	+1.1
GALF	**Gagliano Caste**	**0.32**	**255**	Pg	Pb	15 18 38.3	+0.2
GALF	**Gagliano Caste**	**0.32**	**255**	Pg	Pb	15 18 38.3	+0.2
MCSR	**Castroreale**	**0.36**	**41**	⇑*i*Pg	Pb	15 18 38.6	-0.2
MCSR				Sg	Sb	15 18 44.8	+0.6
MCSR	**Castroreale**	**0.36**	**41**	⇑*i*Pg	Pb	15 18 38.6	-0.2
MCSR				Sg	Sb	15 18 44.8	+0.6
CAGR	**Agira**	**0.40**	**245**	Pg	Pn	15 18 40.6	-0.4
CAGR	**Agira**	**0.40**	**245**	Pg	Pn	15 18 40.6	-0.4
HLNI	**Lentini**	**0.45**	**188**	Pg	Pb	15 18 40.0	-0.2
HLNI				Sg	Sb	15 18 47.0	+0.5
HLNI	**Lentini**	**0.45**	**188**	Pg	Pb	15 18 40.0	-0.2
HLNI				Sg	Sb	15 18 47.0	+0.5
MILZ	**Milazzo**	**0.53**	**25**	Pg	Pb	15 18 41.4	0.0
MILZ				Sg	Sb	15 18 49.3	+0.6
	2μm,0.4s						
MILZ	**Milazzo**	**0.53**	**25**	Pg	Pb	15 18 41.4	0.0
MILZ				Sg	Sb	15 18 49.3	+0.6
	2μm,0.4s						
HAGA	**Augusta**	**0.53**	**162**	Pg	Pb	15 18 41.3	-0.2
HAGA				Sg	Sb	15 18 49.6	+0.8
HAGA	**Augusta**	**0.53**	**162**	Pg	Pb	15 18 41.3	-0.2
HAGA				Sg	Sb	15 18 49.6	+0.8
VPL	**Vulcano Piano**	**0.58**	**2**	Pg	Pb	15 18 42.3	-0.2
VPL	**Vulcano Piano**	**0.58**	**2**	Pg	Pb	15 18 42.3	-0.2
HVZN	**Vizzini**	**0.64**	**197**	Pg	Pb	15 18 43.2	-0.2
HVZN				Sg	Sn	15 18 53.1	-0.7
HVZN	**Vizzini**	**0.64**	**197**	Pg	Pb	15 18 43.2	-0.2
HVZN				Sg	Sn	15 18 53.1	-0.7
MSRU	**Castanea**	**0.64**	**43**	Pg	Pb	15 18 43.6	+0.2
MSRU				Sg	Sn	15 18 53.7	-0.1
MSRU	**Castanea**	**0.64**	**43**	Pg	Pb	15 18 43.6	+0.2
MSRU				Sg	Sn	15 18 53.7	-0.1
SSY	**Sortino**	**0.65**	**172**	Pg	Pb	15 18 43.2	-0.3
SSY				Sg	Sb	15 18 52.9	+0.8
SSY	**Sortino**	**0.65**	**172**	Pg	Pb	15 18 43.2	-0.3
SSY				Sg	Sb	15 18 52.9	+0.8
PLLN	**Pollina**	**0.67**	**287**	Pg	Pb	15 18 44.3	+0.4
	1μm,0.6s						
PLLN	**Pollina**	**0.67**	**287**	Pg	Pb	15 18 44.3	+0.4
	1μm,0.6s						
RAFF	**Raffo Rosso**	**0.74**	**220**	Pg	Pb	15 18 45.1	+0.1
	907nm,0.6s						
RAFF	**Raffo Rosso**	**0.74**	**220**	Pg	Pb	15 18 45.1	+0.1
	907nm,0.6s						
MSCL	**Scilla**	**0.79**	**56**	Pg	Pn	15 18 46.3	-0.2
MSCL	**Scilla**	**0.79**	**56**	Pg	Pn	15 18 46.3	-0.2
MPAZ	**Palizzi**	**0.85**	**79**	Pg	Pn	15 18 47.8	+0.6
MPAZ	**Palizzi**	**0.85**	**79**	Pg	Pn	15 18 47.8	+0.6
JOPP	**Joppolo**	**1.09**	**42**	Pg	Pn	15 18 50.8	+0.2
JOPP	**Joppolo**	**1.09**	**42**	Pg	Pn	15 18 50.8	+0.2

IDC 06 15:33:14.4±61.0, 20°.11S×178°.58W, h0km, mb3.6/3, mb1 3.8/3, mb1mx3.5/24, mbtmp3.6/3, Error ellipse: s-maj=1119.0km s-min=167.8km az=82.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**37.47**	**244**	P	P	15 40 28.3	-1.7
	1.0nm,0.8s,baz=85,slow=12,SNR=3.6						
ASAR	**Alice Springs**	**44.08**	**256**	P	P	15 41 24.9	+0.2
	1.3nm,0.9s,baz=90,slow=6.9,SNR=8.5						
WRA	**Warramunga Arr**	**44.12**	**262**	P	P	15 41 25.7	+0.7
	0.3nm,0.6s,baz=92,slow=8.4,SNR=8.1						

CSEM ***06*** *15:38:26.1, 37°.80N×14°.96E, h30km, ML2.2/7*
ROM 06 15:38:26.1±0.2, 37°.80N×14°.96E, h30km±3km, MI2.2/7, Error ellipse: s-maj=1.7km s-min=1.2km az=91.0, Sicily

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ESLN	**Serra La Nave**	**0.10**	**175**	Pg	Pb	15 38 31.2	-0.5
	311nm,0.4s						
ESLN	**Serra La Nave**	**0.10**	**175**	Pg	Pb	15 38 31.2	-0.5
	311nm,0.4s						
MNO	**Monte Soro**	**0.25**	**303**	Pg	Pb	15 38 33.0	-0.2
MNO				Sg	Sb	15 38 38.0	0.0
	70nm,0.3s						
MNO	**Monte Soro**	**0.25**	**303**	Pg	Pb	15 38 33.0	-0.2
MNO				Sg	Sb	15 38 38.0	0.0
	70nm,0.3s						
MUCR	**Ucria**	**0.26**	**344**	Pg	Pb	15 38 32.7	-0.4
MUCR				Sg	Sb	15 38 37.7	-0.2
MUCR	**Ucria**	**0.26**	**344**	Pg	Pb	15 38 32.7	-0.4
MUCR				Sg	Sb	15 38 37.7	-0.2
MMME	**Mongiuffi-Meli**	**0.27**	**59**	Pg	Pb	15 38 33.3	+0.1
MMME				Sg	Sn	15 38 38.9	-0.4
MMME	**Mongiuffi-Meli**	**0.27**	**59**	Pg	Pb	15 38 33.3	+0.1
MMME				Sg	Sn	15 38 38.9	-0.4
NOV	**Novara**	**0.27**	**31**	Pg	Pb	15 38 33.2	0.0
NOV				Sg	Sb	15 38 37.8	-0.3
NOV	**Novara**	**0.27**	**31**	Pg	Pb	15 38 33.2	0.0
NOV				Sg	Sb	15 38 37.8	-0.3
ECNV	**Catenanuova**	**0.28**	**225**	Pg	Pn	15 38 34.6	+0.4
	296nm,0.8s						
ECNV	**Catenanuova**	**0.28**	**225**	Pg	Pn	15 38 34.6	+0.4
	296nm,0.8s						
GALF	**Gagliano Caste**	**0.33**	**255**	Pg	Pb	15 38 34.2	+0.2
GALF				Sg	Sn	15 38 40.8	+0.2
GALF	**Gagliano Caste**	**0.33**	**255**	Pg	Pb	15 38 34.2	+0.2
GALF				Sg	Sn	15 38 40.8	+0.2
MCSR	**Castroreale**	**0.35**	**40**	Pg	Pb	15 38 34.2	-0.2
MCSR				Sg	Sb	15 38 40.5	+0.5
MCSR	**Castroreale**	**0.35**	**40**	Pg	Pb	15 38 34.2	-0.2
MCSR				Sg	Sb	15 38 40.5	+0.5
HLNI	**Lentini**	**0.45**	**189**	Pg	Pb	15 38 35.7	-0.1
HLNI				Sg	Sb	15 38 42.9	+0.5
	96nm,0.2s						
HLNI	**Lentini**	**0.45**	**189**	Pg	Pb	15 38 35.7	-0.1
HLNI				Sg	Sb	15 38 42.9	+0.5
	96nm,0.2s						
MPNC	**Port Mandanici**	**0.47**	**41**	Pg	Pn	15 38 36.5	-0.3
MPNC				Sg	Sn	15 38 44.4	+0.4
	96nm,0.5s						
MPNC	**Port Mandanici**	**0.47**	**41**	Pg	Pn	15 38 36.5	-0.3
MPNC				Sg	Sn	15 38 44.4	+0.4
	96nm,0.5s						
HCRL	**Carlentini**	**0.52**	**174**	Pg	Pb	15 38 36.9	+0.1
HCRL				Sg	Sn	15 38 44.9	-0.3
	226nm,0.3s						
HCRL	**Carlentini**	**0.52**	**174**	Pg	Pb	15 38 36.9	+0.1
HCRL				Sg	Sn	15 38 44.9	-0.3
	226nm,0.3s						
MILZ	**Milazzo**	**0.52**	**24**	Pg	Pn	15 38 37.3	-0.2
MILZ	**Milazzo**	**0.52**	**24**	Pg	Pn	15 38 37.3	-0.2
HAGA	**Augusta**	**0.53**	**163**	Pg	Pb	15 38 37.0	0.0
HAGA				Sg	Sn	15 38 45.5	-0.1
	128nm,0.7s						
HAGA	**Augusta**	**0.53**	**163**	Pg	Pb	15 38 37.0	0.0
HAGA				Sg	Sn	15 38 45.5	-0.1
	128nm,0.7s						
MSRU	**Castanea**	**0.64**	**43**	Pg	Pn	15 38 39.4	+0.3
MSRU	**Castanea**	**0.64**	**43**	Pg	Pn	15 38 39.4	+0.3
SSY	**Sortino**	**0.65**	**172**	Pg	Pb	15 38 39.0	0.0
SSY				Sg	Sn	15 38 48.9	+0.4
	173nm,0.3s						
SSY	**Sortino**	**0.65**	**172**	Pg	Pb	15 38 39.0	0.0
SSY				Sg	Sn	15 38 48.9	+0.4
	173nm,0.3s						

CSEM ***06*** *15:38:37.8, 37°.80N×14°.97E, h27km, ML2.2/5*
ROM 06 15:38:37.8±0.3, 37°.80N×14°.97E, h27km±3km, MI2.2/5, Error ellipse: s-maj=1.9km s-min=1.4km az=120.0, Sicily

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ESLN	**Serra La Nave**	**0.10**	**176**	Pg	Pb	15 38 42.8	-0.1
ESLN				Sg	Sb	15 38 46.4	0.0
	311nm,0.4s						
ESLN	**Serra La Nave**	**0.10**	**176**	Pg	Pb	15 38 42.8	-0.1
ESLN				Sg	Sb	15 38 46.4	0.0
	311nm,0.4s						
MNO	**Monte Soro**	**0.25**	**303**	Pg	Pb	15 38 44.4	-0.1
MNO				Sg	Sb	15 38 49.4	+0.3
	70nm,0.3s						
MNO	**Monte Soro**	**0.25**	**303**	Pg	Pb	15 38 44.4	-0.1
MNO				Sg	Sb	15 38 49.4	+0.3
	70nm,0.3s						
MUCR	**Ucria**	**0.26**	**344**	Pg	Pb	15 38 43.9	-0.6
MUCR				Sg	Sb	15 38 49.1	+0.1
MUCR	**Ucria**	**0.26**	**344**	Pg	Pb	15 38 43.9	-0.6
MUCR				Sg	Sb	15 38 49.1	+0.1
MMME	**Mongiuffi-Meli**	**0.27**	**59**	Pg	Pb	15 38 44.7	+0.1
MMME				Sg	Sn	15 38 50.5	-0.

SZAC	**Souni**	**0.69**	**103**	P	Pg	15 58 11.3	+0.2

KRSC 06 16:08:59.1±4.2, 48°.95N×157°.09E, h6km±11km, ML3.6, East of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**1.85**	**340**	P	Pn	16 09 29.6	-1.8
SKR				*e*S	Sn	16 09 53.4	-1.7
PAU	**Pauzhetka**	**2.53**	**356**	S	Sb	16 10 16.0	-0.3
ASAK	**Asacha**	**3.48**	**8**	P	Pb	16 09 58.5	-2.7
RUS	**Russkaya**	**3.61**	**14**	*e*P	Pn	16 09 58.0	+2.5
DALK	**Dalny**	**4.22**	**14**	P	Pn	16 10 08.8	+4.8
UGLR	**Uglovaya**	**4.41**	**14**	P	Pn	16 10 11.4	+4.8
AVH	**Avacha**	**4.45**	**13**	*e*P	Pb	16 10 12.6	-5.1
SDLR	**Sedlovina**	**4.48**	**14**	P	Pn	16 10 10.9	+3.2
KRER	**Koryakskii**	**4.49**	**13**	P	Pn	16 10 11.7	+3.9
GNL	**Ganaly**	**4.79**	**6**	P	Pn	16 10 17.5	+5.7

*ISCJB **06** 16:11:38.4±0.5, 38°.46N±0°.03×31°.87E±0°.03, h4km±7km, Error ellipse: s-maj=5.5km s-min=4.3km az=30.8*
*DDA **06** 16:11:38.6, 38°.50N×31°.88E, h7km, Md2.6*
*CSEM **06** 16:11:38.5±0.2, 38°.45N×31°.86E, h5km, MD2.6, Error ellipse: s-maj=4.6km s-min=3.4km az=45.0*
*ISK **06** 16:11:38.0, 38°.44N×31°.88E, h5km, MD2.7*
ISC 06 16:11:38.6±0.9, 38°.46N±0°.03×31°.88E±0°.03, h10km±9km, n33, σ0°.40/45, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KDHN	**Kadinhani**	**0.20**	**73**	P	Pg	16 11 42.6	-0.1
KDHN				S	Sg	16 11 45.8	+0.2
KDHN	**Kadinhani**	**0.20**	**73**	*i* P	Pg	16 11 42.6	-0.1
KDHN				*i* S	Sg	16 11 45.8	+0.2
KIZT	**Kizilcal**	**0.42**	**0**	PG	Pg	16 11 46.9	+0.1
KIZT	**Kizilcal**	**0.42**	**0**	*i* Pg	Pg	16 11 46.9	+0.1
LADK	**Ladik-KONYA**	**0.47**	**124**	*e*PG	Pg	16 11 47.3	-0.4
LADK				*e*SG	Sg	16 11 54.4	+0.6
LADK	**Ladik-KONYA**	**0.47**	**124**	*e*Pg	Pg	16 11 47.3	-0.4
LADK				*e*Sg	Sg	16 11 54.4	+0.6
KONT	**Konya--Tatoy**	**0.64**	**143**	*e*PG	Pg	16 11 50.9	-0.1
KONT				*e*SG	Sg	16 11 59.3	-0.1
KONT	**Konya--Tatoy**	**0.64**	**143**	*e*Pg	Pg	16 11 50.9	-0.1
KONT				*e*Sg	Sg	16 11 59.3	-0.1
BOLV	**Bolvadin**	**0.77**	**290**	P	Pg	16 11 53.5	+0.1
BOLV				S	Sb	16 12 04.6	-0.1
BOLV	**Bolvadin**	**0.77**	**290**	*i* P	Pg	16 11 53.5	+0.1
BOLV				*i* S	Sb	16 12 04.6	-0.1
KMER	**Konya-Meram**	**0.80**	**151**	P	Pb	16 11 54.8	+0.2
KMER				S	Sb	16 12 05.9	+0.5
KMER	**Konya-Meram**	**0.80**	**151**	*i* P	Pb	16 11 54.8	+0.2
KMER				*i* S	Sb	16 12 05.9	+0.5
CHBY	**Cihanbeyli**	**0.80**	**81**	*e*PG	Pg	16 11 54.0	-0.1
CHBY				*e*SG	Sb	16 12 05.4	-0.3
CHBY	**Cihanbeyli**	**0.80**	**81**	*e*Pg	Pg	16 11 54.0	-0.1
CHBY				*e*Sg	Sb	16 12 05.4	-0.3
BAGO	**Egridir - ISPA**	**0.98**	**241**	*i* P	Pb	16 11 57.6	0.0
AUSIV	**SIVRIHISAR**	**1.01**	**345**	P	Pn	16 11 59.5	+0.6
AUSIV	**SIVRIHISAR**	**1.01**	**345**	*i* P	Pn	16 11 59.5	+0.6
SVRH	**Sivrihisar-ESK**	**1.02**	**344**	*e*PG	Pg	16 11 58.2	0.0
SVRH	**Sivrihisar-ESK**	**1.02**	**344**	*e*Pg	Pg	16 11 58.2	0.0
KKUL	**Konya-Kulu**	**1.08**	**49**	P	Pg	16 11 58.1	-1.2
KKUL	**Konya-Kulu**	**1.08**	**49**	*i* P	Pg	16 11 58.1	-1.2
SUTC	**Sutluce-Ispart**	**1.21**	**215**	*e*PN	Pb	16 12 00.9	-0.7
SUTC	**Sutluce-Ispart**	**1.21**	**215**	*e*Pn	Pb	16 12 00.9	-0.7
ISP	**Isparta**	**1.25**	**239**	*e*PN	Pn	16 12 02.1	-0.1
ISP	**Isparta**	**1.25**	**239**	*e*Pn	Pn	16 12 02.1	-0.1
ESKT	**Eskisehir**	**1.32**	**323**	*i* P	Pn	16 12 03.2	-0.1
SEYT	**Eskypehyr**	**1.32**	**323**	P	Pn	16 12 03.2	0.0
AFSR	**Af¨ar-Bala (A**	**1.35**	**43**	*e*PN	Pg	16 12 04.8	+0.3
AFSR	**Af¨ar-Bala (A**	**1.35**	**43**	*e*Pn	Pg	16 12 04.8	+0.3
SERE	**Sereflikochisa**	**1.41**	**69**	*e*PN	Pg	16 12 05.7	+0.2
SERE	**Sereflikochisa**	**1.41**	**69**	*e*Pn	Pg	16 12 05.7	+0.2
KAMT	**Kaman**	**1.69**	**57**	*e*PN	Pb	16 12 09.6	-0.3
KAMT	**Kaman**	**1.69**	**57**	*e*Pn	Pb	16 12 09.6	-0.3

*IDC **06** 16:20:24.0±7.6, 9°.46N×127°.37E, h50km±70km, mb3.6/6, mb1 3.8/7, mb1mx3.4/43, mbtmp3.9/7, ML4.2/1, Error ellipse: s-maj=66.5km s-min=19.4km az=66.0*
*MAN **06** 16:20:34, 8°.40N×126°.35E, h81km, mb4.5, ML3.4, MS3.2*
ISC 06 16:20:23.1±1.1, 9°.51N±0°.09×127°.2E±0°.2, h41km, n11, σ2°.90/12, mb3.8/6, 1D, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BIPH	**Bislig**	**1.53**	**211**	‖*e*P	Pn	16 20 47.2	-0.9
BUKP	**Musuan**	**2.63**	**232**	*e*P	Pn	16 20 59.0	-4.2
BUKP				*e*S	Sn	16 21 17.1	-17
MATI	**Mati**	**2.70**	**199**	*e*P	Pn	16 20 59.6	-4.5
DAV	**Davao City (W)**	**2.88**	**213**	P	Pn	16 21 09.4	+2.8
	33nm,0.3s,baz=57,slow=20,SNR=2.9						
DAV				S	Sn	16 21 43.5	+3.5
	52nm,0.3s,baz=256,slow=18,SNR=4.3						
PAGZ	**Pagadian**	**4.08**	**246**	*e*P	Pn	16 21 20.2	-2.8
FITZ	**Fitzroy Crossi**	**27.48**	**183**	P	P	16 26 06.5	+0.8
	1.2nm,0.6s,baz=7.4,slow=6.3,SNR=3.3						
WRA	**Warramunga Arr**	**30.11**	**166**	P	P	16 26 27.5	-1.6
	0.7nm,0.8s,baz=346,slow=9.2,SNR=4.7						
ASAR	**Alice Springs**	**33.63**	**169**	P	P	16 26 58.5	-1.5
	0.2nm,0.3s,baz=351,slow=6.9,SNR=15						
MKAR	**Makanchi Array**	**53.15**	**323**	P	P	16 29 37.1	+0.1
	0.8nm,0.7s,baz=139,slow=8.1,SNR=8.7						
BVAR	**Borovoye Array**	**62.78**	**325**	P	P	16 30 45.1	+0.8
	0.7nm,0.7s,baz=116,slow=10,SNR=4.5						
ARCES	**ARCESS Array B**	**85.20**	**340**	P	P	16 32 56.7	+1.7
	3.7nm,0.9s,baz=77,slow=5.6,SNR=3.6						

*BJI **06** 16:20:35.9, 32°.54N×40°.93W, h7km, mb5.1/16, mB5.6/15, Ms5.1/13, MS7 4.8/11*
*MOS **06** 16:20:38.2±1.0, 32°.37N×40°.15W, h10km, mb5.2/96, MS4.4/28, Error ellipse: s-maj=6.5km s-min=4.6km az=53.7*
*ISCJB **06** 16:20:38.4±0.1, 32°.36N±0°.03×40°.20W±0°.02, h13km, mb5.0/271, MS4.5/50, Error ellipse: s-maj=4.7km s-min=1.9km az=173.9*
*IDC **06** 16:20:38.1±0.3, 32°.38N×40°.17W, h0km, mb4.7/42, mb1 4.8/42, mb1mx4.7/47, mbtmp4.7/42, MS4.4/29, Ms1 4.4/29, ms1mx4.4/30, Error ellipse: s-maj=11.4km s-min=8.4km az=133.0*
*GCMT **06** 16:20:39.6±0.2, 32°.46N×40°.15W, h12km, MW5.3/117, Moment Tensor Solution. s55,c70; s117,c203; Duration: 1s1 Moment tensor: Scale 10^{17}Nm; M_{rr}-0.91±.01; $M_{\theta\theta}$0.09±.01; $M_{\phi\phi}$0.82±.01; $M_{r\theta}$0.42±.05; $M_{\theta\phi}$0.27±.01; $M_{\phi r}$-0.26±.04; Best double couple: $M_0$1.01900×10^{17} NP1:ϕ_s356.00000°, δ53.00000°, λ-119.00000°. NP2:ϕ_s219.00000°, δ45.00000°, λ-57.00000°. Principal axes: T 0.9180, Plg4.0000°, Azm106.0000°; N 0.2040, Plg23.0000°, Azm14.0000°; P -1.1210, Plg67.0000°, Azm206.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **06** 16:20:39.6±0.2, 32°.33N×40°.08W, h10km, mb5.2/184 Error ellipse: s-maj=5.5km s-min=3.4km az=173.0*
ISC 06 16:20:39.8±0.5, 32°.34N±0°.05×40°.18W±0°.04, h12km±2km, h11km: pP-P, n940, σ1°.41/993, mb5.1/277, MS4.6/52, 20C-16D, Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMOZ	**Porto Moniz, M**	**19.37**	**82**	*e*P	P	16 25 04.8	-0.8
PMOZ				*e*LR	LR	16 28 18.6	
	2μm,20.0s						
DRLN	**Deer Lake**	**21.31**	**328**	*e*P	P	16 25 24.5	-1.8
	122nm,0.9s						
LMN	**Caledonia Moun**	**23.28**	**313**	*e*P	P	16 25 45.9	-1.5
	94nm,1.4s						
ANWB	**Willy Bob**	**24.36**	**238**	P	P	16 25 55.6	-2.2
	130nm,1.1s						
GDHS	**Morne Mazeau,**	**25.28**	**236**	*e*P	P	16 26 06.5	+0.3
	158nm,1.1s						
PMAFR	**Mafra**	**25.88**	**67**	*e*LR	LR	16 32 30.0	
	745nm,20.0s						
PFVI	**Vila Bisbo**	**26.14**	**71**	*e*LR	LR	16 32 18.3	
	2μm,20.0s						
MORF	**Marmelete**	**26.28**	**70**	*e*P	P	16 26 14.6	-0.7
MORF				AMb	AMB	16 26 20.1	
	comp=Z,71nm,1.6s						
MORF				*e*S	S	16 30 48.0	+0.3
MORF	**Marmelete**	**26.28**	**70**	*e*P	P	16 26 14.2	-1.0
	comp=Z,78nm,1.7s						
MORF				*e*LR	LR	16 32 34.7	
	comp=Z,2μm,20.0s						
MORF	**Marmelete**	**26.28**	**70**	*e*P	P	16 26 14.5	-0.7
MORF				*e*S	S	16 30 48.0	+0.3
PNCL	**Nicolau / Gran**	**26.41**	**69**	*e*P	P	16 26 15.3	-1.0
PNCL				*e*LR	LR	16 32 18.7	
	comp=Z,799nm,24.0s						
PCAS	**Casmilo, Conde**	**26.60**	**64**	*e*LR	LR	16 32 58.9	
	comp=Z,1μm,20.0s						
MESJ	**Messejana**	**26.64**	**69**	*e*P	P	16 26 17.9	-0.6
MESJ				AMb	AMB	16 26 24.4	
	comp=Z,82nm,1.4s						
MESJ				*e*S	S	16 30 53.2	-0.1
MESJ	**Messejana**	**26.64**	**69**	*e*P	P	16 26 18.1	-0.3
	comp=Z,83nm,1.6s						
MESJ	**Messejana**	**26.64**	**69**	*e*P	P	16 26 17.8	-0.6
MESJ				*e*S	S	16 30 53.1	-0.1
PMTG	**Montargil**	**26.71**	**66**	*e*P	P	16 26 17.7	-1.3
	comp=Z,46nm,1.4s						
PMTG				*e*LR	LR	16 32 52.9	
	comp=Z,593nm,18.0s						
PCVE	**Castro Verde**	**26.78**	**70**	*e*P	P	16 26 18.7	-0.9
	comp=Z,70nm,1.8s						
PCVE				*e*LR	LR	16 32 13.9	
	comp=Z,2μm,20.0s						
EVO	**Evora**	**26.84**	**68**	*e*P	P	16 26 21.4	+1.2
	comp=Z,46nm,1.5s						
PBDV	**Barranco-do-Ve**	**26.86**	**70**	*e*P	P	16 26 20.3	-0.1
PBDV				*ep*P	sP	16 26 25.9	+0.5
PBDV				*e*LR	LR	16 32 40.7	
	comp=Z,2μm,20.0s						
PVAQ	**Vaqueiros**	**27.03**	**70**	*e*P	P	16 26 20.4	-1.5
PVAQ				*e*S	S	16 31 04.3	+4.9
PVAQ				*e*LR	LR	16 32 47.7	
	comp=Z,2μm,20.0s						
PESTR	**Estremoz**	**27.19**	**67**	*e*P	P	16 26 22.2	-1.2
	comp=Z,62nm,1.9s						
PESTR				*e*LR	LR	16 32 52.6	
	comp=Z,601nm,20.0s						
POLO	**Lamas de Olo**	**27.31**	**61**	*ep*P	pP	16 26 26.4	-1.7
POLO				*e*LR	LR	16 32 59.1	
	comp=Z,626nm,20.0s						
SJG	**San Juan**	**27.34**	**245**	P	P	16 26 26.4	+1.6
	comp=Z,7.1nm,0.3s,baz=64,slow=9.3,SNR=5.0						
SJG				LR	LR	16 35 04.1	
	comp=Z,610nm,21.0s,baz=66,slow=32						
SJG	**San Juan**	**27.34**	**245**	P	P	16 26 26.4	+1.6
SJG				pmax	pmax		
	comp=Z,8.0nm,0.5s						
SJG				MLR	MLR		
	comp=Z,611nm,21.0s						
MTE	**Manteigas**	**27.36**	**64**	*e*P	P	16 26 24.1	-0.9
MTE				*e*S	S	16 31 07.1	+2.3
MTE				*e*LR	LR	16 32 11.9	
	comp=Z,1μm,20.0s						
PMRV	**Marv??o**	**27.39**	**66**	*e*P	P	16 26 23.8	-1.3
PMRV				*e*S	S	16 31 03.0	-2.0
PMRV				*e*LR	LR	16 33 04.2	
	comp=Z,522nm,22.0s						
PBAR	**Barrancos**	**27.59**	**69**	*ep*P	pP	16 26 32.0	+1.5
PBAR				*e*LR	LR	16 32 32.1	
	comp=Z,2μm,22.0s						
MVO	**Moncorvo**	**27.85**	**62**	*e*P	P	16 26 28.8	-0.5
MVO				*e*S	S	16 31 18.0	+5.6
MVO				*e*LR	LR	16 32 55.1	
	comp=Z,1μm,18.0s						
PBRG	**Braganca**	**28.15**	**61**	*e*LR	LR	16 32 55.0	
	comp=Z,1μm,20.0s						
GRGR	**Grenville**	**28.17**	**229**	*e*P	P	16 26 31.5	-0.8
	comp=Z,188nm,0.9s						
ODNJ	**Ogdensburg**	**28.80**	**297**	*e*P	P	16 26 40.4	+2.8
	comp=Z,21nm,1.3s						
SCHQ	**Schefferville**	**29.32**	**328**	P	P	16 26 43.4	+1.3
	comp=Z,5.0nm,1.0s,baz=109,slow=9.4,SNR=4.4						
SCHQ				PcP	PcP	16 29 49.5	+1.1
	comp=Z,5.8nm,0.8s,baz=225,slow=3.3,SNR=3.8						
SCHQ				LR	LR	16 37 28.0	
	comp=Z,2μm,20.5s,baz=130,slow=34						
N59A	**State Game Lan**	**29.66**	**297**	P	P	16 26 45.1	-0.2
	baz=95						
KSPA	**Keystone Colle**	**29.72**	**298**	*e*P	P	16 26 47.4	+1.5
	comp=Z,29nm,1.3s						
PAB	**San Pablo**	**29.74**	**66**	*e*P	P	16 26 41.1	-5.1
PAB				pmax	pmax		
	comp=Z,29nm,1.6s						
PAB	**San Pablo**	**29.74**	**66**	*e*P	P	16 26 41.1	-5.1
	comp=Z,29nm,1.6s						
MDT	**Midelt**	**29.89**	**79**	P	P	16 26 48.7	+1.1
	comp=Z,5.3nm,1.0s,baz=278,slow=5.9,SNR=4.9						
MDT				LR	LR	16 35 52.5	
	comp=Z,3μm,21.6s,baz=302,slow=31						
ESDC	**Sonseca Array**	**30.05**	**66**	P	P	16 26 47.6	-1.2
	comp=Z,0.3nm,0.4s,baz=263,slow=10.0,SNR=6.1						
ESDC				PcP	PcP	16 29 51.1	+0.5
	comp=Z,0.4nm,0.4s,baz=248,slow=1.4,SNR=4.7						
ESDC				LR	LR	16 37 04.8	
	comp=Z,302nm,18.8s,baz=285,slow=33						
ES19	**SONSECA Array**	**30.10**	**66**	*e*P	P	16 26 46.8	-2.5
SDDR	**Presa de Saban**	**30.91**	**252**	*e*P	P	16 26 53.9	-2.7
	comp=Z,35nm,1.1s						
O56A	**Blue Knob Stat**	**31.74**	**295**	P	P	16 27 04.2	+0.4
	baz=92						
SADO	**Sadowa**	**32.59**	**304**	*e*P	P	16 27 12.3	+1.2
	comp=Z,62nm,1.8s						
M54A	**Oil Creek Stat**	**32.63**	**298**	P	P	16 27 11.8	+0.3
	baz=93						
N54A	**Moraine State**	**32.85**	**297**	P	P	16 27 13.7	+0.3
	baz=92						
KMSC	**Kings Mountain**	**34.17**	**286**	P	P	16 27 25.5	+0.5
	baz=83						
KMSC	**Kings Mountain**	**34.17**	**286**	*e*P	P	16 27 26.3	+1.3
	comp=Z,25nm,1.3s						
BORG	**Borgarnes**	**34.46**	**14**	P	P	16 27 28.3	+1.2
	comp=Z,17nm,0.8s,baz=273,slow=2.2,SNR=4.1						
ACSO	**Alum Creek Sta**	**35.12**	**295**	P	P	16 27 31.5	-1.7
	comp=Z,104nm,1.7s						
SFJD	**Kangerlussuaq**	**35.24**	**353**	P	P	16 27 34.8	+0.9
	comp=Z,3.1nm,0.6s,baz=150,slow=5.6,SNR=3.6						
TZTN	**Tazewell**	**35.79**	**289**	*e*P	P	16 27 39.5	+0.5
TKL	**Tuckaleechee C**	**36.08**	**288**	*e*P	P	16 27 42.5	+1.0
TKL				pmax	pmax		
	comp=Z,93nm,1.8s						
TKL	**Tuckaleechee C**	**36.08**	**288**	*e*P	P	16 27 42.5	+1.0
	comp=Z,92nm,1.8s						
FRB	**Frobisher Bay**	**36.09**	**339**	P	P	16 27 43.5	+2.4
	comp=Z,15nm,0.8s,baz=150,slow=7.7,SNR=7.7						
FRB	**Frobisher Bay**	**36.09**	**339**	P	P	16 27 43.6	+2.4
FRB				pmax	pmax		
	comp=Z,21nm,1.0s						
GOGA	**Godfrey**	**36.18**	**284**	*e*P	P	16 27 39.2	-3.1
GOGA				pmax	pmax		
	comp=Z,87nm,1.9s						
GOGA	**Godfrey**	**36.18**	**284**	*e*P	P	16 27 39.2	-3.1
	comp=Z,87nm,1.9s						
SDV	**Santo Domingo**	**36.60**	**237**	P	P	16 27 48.0	+1.7
	comp=Z,43nm,0.9s,baz=38,slow=6.3,SNR=19						
SDV	**Santo Domingo**	**36.60**	**237**	P	P	16 27 42.5	-3.8
	comp=Z,67nm,1.0s						
TIGA	**Tifton**	**36.68**	**280**	P	P	16 27 45.6	-1.0
	baz=77						
CPCT	**Cooper Cave**	**36.71**	**287**	*e*P	P	16 27 47.5	+0.6
	comp=Z,24nm,1.8s						
PTGA	**Pitinga**	**37.84**	**213**	P	P	16 27 57.5	+0.9
	comp=Z,33nm,0.7s,baz=32,slow=10,SNR=64						
PTGA	**Pitinga**	**37.84**	**213**	*e*P	P	16 27 57.4	+0.9
	comp=Z,215nm,1.7s						
SWET	**Sewanee**	**37.88**	**287**	*e*P	P	16 27 58.3	+1.4
	comp=Z,6.3nm,1.0s						
RCBR	**Riachuelo**	**38.17**	**173**	P	P	16 28 00.1	+0.8
	comp=Z,12nm,0.9s,baz=338,slow=9.5,SNR=3.0						
SFIN	**Lafayette**	**38.26**	**296**	P	P	16 28 00.2	+0.4
	baz=87						
SFIN	**Lafayette**	**38.26**	**296**	*e*P	P	16 27 58.8	-1.1
	comp=Z,40nm,1.1s						
LOMF	**Lomont**	**38.48**	**53**	PKP	P	16 28 02.2	+0.4
SENIN	**Lac Senin/Sane**	**38.72**	**55**	*e*P	P	16 28 04.6	+0.6
	comp=Z,39nm,1.7s						
ECH	**Echery**	**38.79**	**52**	PKP	P	16 28 04.4	+0.1
CBRI	**Barrientos, No**	**38.95**	**238**	*e*P	P	16 28 07.2	+1.0
WVT	**Waverly**	**39.27**	**289**	*e*P	P	16 28 07.3	-1.1
WVT				pmax	pmax		
	comp=Z,75nm,1.9s						
WVT	**Waverly**	**39.27**	**289**	*e*P	P	16 28 07.3	-1.1
	comp=Z,75nm,1.9s						
SCO	**Scoresbysund**	**39.50**	**10**	*i* P	P	16 28 10.2	+0.3
	comp=Z,7.6nm,0.8s						
SCO	**Scoresbysund**	**39.50**	**10**	*e*P	P	16 28 10.2	+0.3
SCO				pmax	pmax		
	comp=Z,8.0nm,0.8s						
Z48A	**Northport**	**39.54**	**285**	P	P	16 28 10.7	0.0
	baz=78						
BFO	**Black Forest**	**39.58**	**52**	*i* P	P	16 28 11.8	+0.9
BFO	**Black Forest**	**39.58**	**52**	*e*P	P	16 28 03.5	-7.4
	comp=Z,37nm,1.5s						
Y47A	**UCPARC, Winfie**	**39.67**	**286**	P	P	16 28 11.6	-0.3
	baz=78						
COWI	**Conover**	**39.73**	**305**	*e*P	P	16 28 10.3	-1.9
	comp=Z,21nm,1.1s						
COWI				*e*PcP	PcP	16 30 17.8	-0.7
HDIL	**Hopedale**	**39.92**	**296**	P	P	16 28 13.5	-0.3
	baz=86						
248A	**Dixon Mills**	**39.97**	**283**	P	P	16 28 14.0	-0.4
	baz=76						
Z47A	**Carrollton**	**40.00**	**285**	P	P	16 28 14.4	-0.1
	baz=78						
TUE	**Stuetta**	**40.14**	**55**	*e*P	P	16 28 11.6	-4.2
	comp=Z,59nm,1.7s						
348A	**Jackson**	**40.27**	**282**	P	P	16 28 16.2	-0.6
	baz=76						
147A	**Livingston**	**40.28**	**284**	P	P	16 28 17.2	+0.4
	baz=77						
SUMG	**Summit**	**40.31**	**1**	*i* P	P	16 28 16.2	-0.9
SUMG	**Summit**	**40.31**	**1**	*i* P	P	16 28 16.2	-0.9
SUMG	**Summit**	**40.31**	**1**	*e*P	P	16 28 16.0	-1.1
	comp=Z,57nm,1.4s						
MOTC	**Monteria, Cord**	**40.36**	**242**	*e*P	P	16 28 19.1	+1.4
448A	**Bay Minette**	**40.36**	**281**	P	P	16 28 18.4	+0.9
	baz=75						
RUSC	**La Rusia**	**40.42**	**236**	*e*P	P	16 28 17.8	-1.0
C39A	**Grand Marais**	**40.50**	**307**	P	P	16 28 18.3	-0.2
	baz=94						
Y46A	**Houston**	**40.50**	**286**	P	P	16 28 19.0	+0.3
	baz=78,SNR=8.9						
JFWS	**Jewell Farm**	**40.51**	**300**	*e*P	P	16 28 19.1	+0.4
JFWS				pmax	pmax		
	comp=Z,19nm,0.7s						
JFWS	**Jewell Farm**	**40.51**	**300**	*e*P	P	16 28 19.1	+0.4
	comp=Z,19nm,0.7s						
DAVA	**Damuels**	**40.54**	**53**	*i* pP	P	16 28 19.4	+0.4
	comp=Z,22nm,1.5s						
247A	**Quitman**	**40.70**	**283**	P	P	16 28 20.8	+0.5
	baz=76						
Z46A	**Louisville**	**40.71**	**285**	P	P	16 28 19.7	-0.8
	baz=77						
FUORN	**Ofenpass-Fuorn**	**40.77**	**54**	*e*P	P	16 28 20.6	-0.5
	comp=Z,41nm,1.6s						
347A	**Saraland**	**40.80**	**282**	P	P	16 28 21.9	+0.7
	baz=75						
OXF	**Oxford**	**40.82**	**287**	*e*P	P	16 28 21.3	-0.1
OXF				pmax	pmax		
	comp=Z,44nm,0.9s						
OXF	**Oxford**	**40.82**	**287**	*e*P	P	16 28 21.3	-0.1
	comp=Z,44nm,0.9s						
KEST	**Kesra**	**40.84**	**71**	P	P	16 28 20.9	-0.7
	comp=Z,6.8nm,0.8s,baz=282,slow=8.5,SNR=7.6						
KEST				LR	LR	16 42 31.6	
	comp=Z,512nm,21.6s,baz=228,slow=32						
KEST	**Kesra**	**40.84**	**71**	*e*P	P	16 28 20.7	-0.8
	comp=Z,60nm,1.4s						
146A	**Union**	**40.93**	**284**	P	P	16 28 22.0	-0.3
	baz=77						
447A	**Lucedale**	**41.05**	**281**	P	P	16 28 23.6	+0.4
	baz=75						
Y45A	**Yeager Farm, C**	**41.06**	**286**	P	P	16 28 22.8	-0.6
	baz=78						
FETA	**Feichten**	**41.11**	**54**	*ep*P	P	16 28 24.3	+0.5
	comp=Z,23nm,1.4s						
246A	**Jackson Lee, B**	**41.14**	**283**	P	P	16 28 24.6	+0.6
	baz=76						
PBMO	**Poplar Bluff**	**41.24**	**291**	*e*P	P	16 28 27.0	+2.3
	comp=Z,102nm,1.9s						
C38A	**Sawbill Land.**	**41.27**	**307**	P	P	16 28 24.6	-0.3
	baz=93						
Z45A	**Winona**	**41.29**	**285**	P	P	16 28 25.3	+0.1
	baz=77						
TAM	**Tamanrasset**	**41.35**	**91**	P	P	16 28 23.7	-2.4
TAM				*e*		16 30 27.3	
TAM				pmax	pmax		
	comp=Z,45nm,1.4s						
TAM	**Tamanrasset**	**41.35**	**91**	P	P	16 28 23.7	-2.4
	comp=Z,45nm,1.4s						
TAM				*e*PcP	PcP	16 30 27.2	+2.9
MOTA	**Moosalm**	**41.38**	**53**	*ep*P	P	16 28 26.2	+0.2
	comp=Z,18nm,1.3s						
EYMN	**Ely**	**41.43**	**308**	P	P	16 28 25.8	-0.4
	baz=93						
EYMN	**Ely**	**41.43**	**308**	P	P	16 28 19.6	-6.6
	comp=Z,16nm,1.0s						
EYMN				*e*PcP	PcP	16 30 23.1	-0.9
TIC	**Toumodi**	**41.52**	**120**	*e*P	P	16 28 28.6	+1.3
346A	**Big Creek Wild**	**41.57**	**282**	P	P	16 28 27.0	-0.5
	baz=75						
Y44A	**Strider, Charl**	**41.59**	**286**	P	P	16 28 27.3	-0.3
	baz=78						
DBIC	**Dimbokro**	**41.63**	**120**	P	P	16 28 27.9	-0.2
	comp=Z,13nm,0.8s,baz=307,slow=9.0,SNR=9.1						
DBIC				LR	LR	16 43 29.0	
	comp=Z,1μm,20.4s,baz=292,slow=33						
DBIC	**Dimbokro**	**41.63**	**120**	*e*P	P	16 28 27.1	-1.0
	comp=Z,18nm,0.9s

R40A	Maddies Statio	42.46	293	P	P	16 28 34.9 +0.2
	baz=82					
D36A	Goodland	42.53	306	P	P	16 28 34.9 -0.3
	baz=91					
E36A	McGregor	42.59	305	P	P	16 28 36.0 +0.3
	baz=90,SNR=11					
KONO	Kongsberg	42.59	35	*c iP*	P	16 28 35.6 +0.1
KONO				pmax	pmax	
	comp=Z,277nm,2.5s					
KONO	Kongsberg	42.59	35	*e*P	P	16 28 31.4 -4.0
	comp=Z,27nm,1.3s					
Z43A	Armstrong Fami	42.59	286	P	P	16 28 35.6 -0.2
	baz=77					
S40A	Lebanon	42.74	292	P	P	16 28 37.0 0.0
	baz=81					
F36A	Milaca	42.78	304	P	P	16 28 36.8 -0.4
	baz=89					
M38A	Pleasantville	42.79	298	P	P	16 28 36.8 -0.5
	baz=84					
444A	Pine Grove	42.81	282	P	P	16 28 37.1 -0.6
	baz=74					
T40A	Mansfield	42.83	292	P	P	16 28 37.9 +0.1
	baz=80					
143A	Socs Landing,	42.84	285	P	P	16 28 38.0 +0.2
	baz=76					
CCAR	Cane Creek	42.86	287	*e*P	P	16 28 36.6 -1.4
	comp=Z,391nm,1.9s					
CLL	Collm	42.87	48	*i* P	P	16 28 38.5 +0.6
	comp=Z,26nm,1.6s					
CLL				*i*		16 28 42.6
	comp=Z,17nm,1.2s					
CLL				*e*S	S	16 35 04.0 +1.8
	comp=N,300nm,14.3s					
CLL				*e*S	S	16 35 04.0 +1.8
	comp=E,400nm,15.1s					
CLL				*e*S	S	16 35 04.0 +1.8
	comp=Z,200nm,12.3s					
CLL				*e*SS	SnSn	16 38 24.0 -4.7
CLL				L	L	16 43 00.0
	comp=Z,1μm,22.0s					
CLL	Collm	42.87	48	*i* P	P	16 28 38.5 +0.6
CLL				*e*S	S	16 35 04.0 +1.8
CLL				pmax	pmax	
	comp=Z,26nm,1.6s					
N38A	Joes South For	42.88	297	P	P	16 28 38.3 +0.2
	baz=84					
Y42A	Garnett, Star	42.89	287	P	P	16 28 38.7 +0.4
	baz=77					
KBA	Koelnbreinsper	42.90	54	*i* pP	P	16 28 38.8 +0.4
	comp=Z,23nm,1.8s,SNR=8.6					
J37A	Redenius Farm,	42.90	301	P	P	16 28 38.1 -0.2
	baz=86					
B35A	Bob, Littlefor	42.94	308	P	P	16 28 38.2 -0.3
	baz=92,SNR=6.3					
G36A	St. Michael	42.95	303	P	P	16 28 39.0 +0.3
	baz=88					
W41B	Gary Mavity, V	42.98	289	P	P	16 28 38.6 -0.4
	baz=78,SNR=11					
WHAR	Wooly Hollow	42.99	289	*e*P	P	16 28 38.5 -0.6
	comp=Z,24nm,1.1s					
K37A	Belmond	43.00	300	P	P	16 28 38.5 -0.6
	baz=86					
X201	Greenbrier Sit	43.05	289	*e*P	P	16 28 38.6 -0.9
	comp=Z,26nm,1.0s					
R39A	Chumby, Stover	43.05	293	P	P	16 28 39.5 0.0
	baz=81,SNR=22					
X301	Greenbrier Sit	43.09	289	*e*P	P	16 28 40.2 +0.3
	comp=Z,20nm,0.9s					
C35A	Jirik Farms, M	43.09	307	P	P	16 28 40.0 +0.3
	baz=91					
KHC	Kasperske Hory	43.10	51	*e*P	P	16 28 37.5 -2.3
KHC				*ex*	x	16 28 48.7
KHC				*e*S	S	16 35 05.6 -0.1
KHC				AMS	AMS	16 46 30.0
	comp=Z,300nm,15.6s					
KHC	Kasperske Hory	43.10	51	*e*P	P	16 28 37.5 -2.3
KHC				*e*S	S	16 35 05.6 -0.1
KHC				MLR	MLR	
	comp=Z,300nm,15.6s					
KHC	Kasperske Hory	43.10	51	*e*P	P	16 28 37.7 -2.2
	comp=Z,7.8nm,1.4s					
H36A	Jessenland, He	43.10	302	P	P	16 28 40.0 +0.1
	baz=87					
AQU	L'Aquila	43.12	61	*e*P	P	16 28 37.7 -2.5
AQU				pmax	pmax	
	comp=Z,45nm,1.3s					
AQU	L'Aquila	43.12	61	*e*P	P	16 28 37.6 -2.5
	comp=Z,45nm,1.3s					
D35A	Remer	43.14	306	P	P	16 28 39.7 -0.4
	baz=90					
UALR	University of	43.14	288	*e*P	P	16 28 40.6 +0.4
	comp=Z,52nm,0.9s					
O38A	Galt	43.14	296	P	P	16 28 39.9 -0.3
	baz=83					
L37A	Phoenix Point,	43.14	299	P	P	16 28 39.2 -1.0
	baz=85					
Z42A	Norrel Spur, H	43.15	286	P	P	16 28 41.5 +1.1
	baz=76					
GEA0	GERESS Array S	43.17	51	*e*P	P	16 28 39.2 -1.3
GEC2	GERESS Array S	43.17	51	*e*P	P	16 28 37.8 -2.7
GEC2				pmax	pmax	
	comp=Z,40nm,1.8s					
GEC2	GERESS Array S	43.17	51	*e*P	P	16 28 37.8 -2.7
	comp=Z,40nm,1.8s					
GERES	GERESS Array B	43.17	51	P	P	16 28 40.6 +0.1
	comp=Z,1.8nm,0.7s,baz=262,slow=6.5,SNR=12					
GERES				LR	LR	16 43 24.8
	comp=Z,350nm,22.0s,baz=254,slow=32					
U40A	Yellville	43.23	290	P	P	16 28 41.1 +0.1
	baz=79,SNR=7.3					
P38A	Dawn	43.25	295	P	P	16 28 41.2 +0.1
	baz=82					
V40A	Witts Springs	43.31	290	P	P	16 28 41.8 0.0
	baz=79					
S39A	Bolivar	43.37	292	P	P	16 28 41.5 -0.7
	baz=80,SNR=8.3					
E35A	Pequot Lakes	43.38	305	P	P	16 28 41.7 -0.4
	baz=89					
Q38A	Cooks Store, C	43.41	294	P	P	16 28 42.3 0.0
	baz=82					
JAVS	Javornik	43.41	56	*i* P	P	16 28 42.9 +0.5
JAVS	Javornik	43.41	56	P	P	16 28 42.9 +0.5
BRG	Berggiesshubel	43.43	48	*e*P	P	16 28 42.9 +0.5
	comp=Z,20nm,1.5s					
BRG				*e*		16 30 26.9
	comp=Z,3.8nm,0.9s					
BRG				S	S	16 35 11.0 +0.6
BRG				SS	SS	16 38 30.0 +5.8
	comp=N,964nm,20.2s					
	comp=E,280nm,15.3s					
	comp=Z,1μm,23.8s					
BRG	Berggiesshubel	43.43	48	*e*P	P	16 28 42.9 +0.5
BRG				*e*		16 30 26.9
BRG				S	S	16 35 11.0 +0.6
BRG				pmax	pmax	
	comp=Z,20nm,1.5s					
BRG				MLR	MLR	
	comp=N,964nm,20.2s					
BRG				MLR	MLR	
	comp=E,280nm,15.3s					
BRG				MLR	MLR	
	comp=Z,1μm,23.8s					
M37A	Trindle Farm,	43.44	298	P	P	16 28 42.7 +0.1
	baz=84					
G35A	Watkins	43.47	303	P	P	16 28 42.9 +0.1
	baz=88					
J36A	Seneca 1, Swea	43.47	301	P	P	16 28 41.8 -1.1
	baz=86					
F35A	Swanville	43.51	304	P	P	16 28 43.2 +0.1
	baz=88					
T39A	Clever	43.53	291	P	P	16 28 43.4 -0.1
	baz=80,SNR=9.2					
B34A	Aery, Baudette	43.55	308	P	P	16 28 43.4 -0.1
	baz=91					
NAO01	NORSAR Array S	43.56	34	*e*P	P	16 28 39.8 -3.5
NBO00	NORSAR Array S	43.56	33	*e*P	P	16 28 39.9 -3.5
X40A	Basin Creek Fa	43.60	288	P	P	16 28 43.1 -0.9
	baz=77,SNR=6.2					
NBO02	NORSAR Array S	43.61	33	*e*P	P	16 28 40.9 -2.8
W40A	Ferguson Farm,	43.63	289	P	P	16 28 44.6 +0.4
	baz=78					
PRA	Prague	43.70	50	*e*P	P	16 28 40.9 -3.7
PRA				pmax	pmax	
	comp=Z,81nm,1.5s					
PRA	Prague	43.70	50	*e*P	P	16 28 40.9 -3.7
	comp=Z,80nm,1.5s					
U39A	Green Forest	43.73	291	P	P	16 28 44.8 -0.2
	baz=79,SNR=8.5					
OBKA	Obir	43.73	55	*i* P	P	16 28 43.2 -1.8
	comp=Z,33nm,2.1s,SNR=13					
H35A	Sunnyside Ranc	43.74	303	P	P	16 28 45.3 +0.3
	baz=87					
R38A	Fenwick Farm,	43.75	293	P	P	16 28 45.2 +0.1
	baz=81,SNR=7.2					
PRU	Pruhonice	43.76	50	*e*P	P	16 28 44.8 -0.3
PRU				*e*S	S	16 35 17.7 +2.4
PRU				AMS	AMS	16 45 40.0
	comp=Z,700nm,15.0s					
PRU	Pruhonice	43.76	50	*e*P	P	16 28 44.8 -0.3
PRU				*e*S	S	16 35 17.7 +2.4
PRU				MLR	MLR	
	comp=Z,700nm,15.0s					
NB2	NORSAR Subarra	43.77	33	P	P	16 28 44.3 -0.7
	comp=Z,19nm,1.2s,baz=255,slow=8.6					
NOA	NORSAR Array B	43.77	33	P	P	16 28 44.4 -0.7
	comp=Z,4.2nm,0.8s,baz=254,slow=8.0,SNR=17					
NOA				PcP	PcP	16 30 30.9 -0.6
	comp=Z,1.1nm,0.8s,baz=60,slow=2.6,SNR=5.1					
NOA				LR	LR	16 44 37.8
	comp=Z,178nm,18.6s,baz=250,slow=33					
PVCC	Panska Ves	43.81	49	*e*S	S	16 35 19.7 +3.8
PVCC				AMS	AMS	16 44 40.0
	comp=Z,1μm,17.9s					
NB201	NORSAR Array S	43.81	33	*e*P	P	16 28 45.2 -0.1
NC602	NORSAR Array S	43.84	34	*e*P	P	16 28 45.2 -0.4
S38A	Stockton	43.84	292	P	P	16 28 46.0 +0.1
	baz=80					
Z41A	Richland Creek	43.85	286	P	P	16 28 46.0 0.0
	baz=76					
P37A	Lathrop	43.88	295	P	P	16 28 46.2 +0.1
	baz=82					
NC303	NORSAR Array S	43.90	33	*e*P	P	16 28 45.4 -0.7
I35A	Creekview Farm	43.90	302	P	P	16 28 45.8 -0.6
	baz=86					
543A	St. Martinvill	43.91	281	P	P	16 28 45.8 -0.7
	baz=73					
E34A	Wadena	43.91	305	P	P	16 28 45.9 -0.5
	baz=89					
D34A	Park Rapids	43.92	306	P	P	16 28 46.0 -0.5
	baz=89					
GOPC	GO Pecny, Ondr	43.92	50	*e*P	P	16 28 48.2 +1.8
GOPC				*ex*	x	16 28 56.3
GOPC				*e*S	S	16 35 20.9 +3.3
GOPC				AMS	AMS	16 45 40.0
	comp=Z,600nm,16.2s					
GOPC	GO Pecny, Ondr	43.92	50	*e*P	P	16 28 48.2 +1.8
GOPC				*e*		16 28 56.3
GOPC				*e*S	S	16 35 20.9 +3.3
GOPC				MLR	MLR	
	comp=Z,600nm,16.2s					
342A	Flagon Creek P	43.94	283	P	P	16 28 46.9 +0.2
	baz=74					
VISS	Visnje	43.95	56	*e*P	P	16 28 45.6 -1.1
VISS	Visnje	43.95	56	*e*P	P	16 28 45.6 -1.1
V39A	Pettigrew	43.96	290	P	P	16 28 47.1 +0.1
	baz=78,SNR=11					
F34A	Alexandria	43.99	304	P	P	16 28 46.8 -0.2
	baz=88					
WLAR	White Oak Lake	44.00	287	*e*P	P	16 28 48.2 +1.0
	comp=Z,64nm,0.9s					
NC405	NORSAR Array S	44.02	33	*e*P	P	16 28 46.5 -0.6
A33A	Warroad	44.05	309	P	P	16 28 47.4 -0.1
	baz=91					
SOKA	Soboth	44.06	54	*i* P	P	16 28 47.1 -0.5
	comp=Z,16nm,1.6s,SNR=10					
Q37A	Longview Farm,	44.06	294	P	P	16 28 47.6 -0.1
	baz=81					
Y40A	Okolona	44.06	287	P	P	16 28 47.6 -0.1
	baz=77					
141A	Papa Simpson,	44.09	285	P	P	16 28 48.1 +0.1
	baz=75					
J35A	Milford	44.10	301	P	P	16 28 47.4 -0.6
	baz=85					
PERS	Pernice	44.12	54	*i* P	P	16 28 55.9 +7.8
PERS	Pernice	44.12	54	*i* P	P	16 28 55.8 +7.7
B33A	Robert and Kas	44.18	308	P	P	16 28 48.4 -0.1
	baz=90					
K35A	Storm Lake	44.18	300	P	P	16 28 48.3 -0.2
	baz=85					
N36A	Muff Farm, Cla	44.18	297	P	P	16 28 48.4 -0.2
	baz=83					
MIAR	Mount Ida	44.18	288	P	P	16 28 48.6 0.0
	baz=77					
MIAR	Mount Ida	44.18	288	*e*P	P	16 28 49.7 +1.0
MIAR				pmax	pmax	
	comp=Z,134nm,1.9s					
MIAR	Mount Ida	44.18	288	*e*P	P	16 28 49.6 +1.0
	comp=Z,134nm,1.9s					
442A	Mamou	44.20	282	P	P	16 28 49.2 +0.3
	baz=74					
W39A	Magazine	44.21	289	P	P	16 28 48.1 -0.8
	baz=78,SNR=7.7					
T38A	Diamond	44.25	292	P	P	16 28 48.0 -1.2
	baz=79,SNR=6.6					
241A	Mo Tay, Goldon	44.25	284	P	P	16 28 48.5 -0.7
	baz=75					
BOJS	Bojanci	44.25	56	*i* P	P	16 28 48.3 -0.8
BOJS	Bojanci	44.25	56	*i* P	P	16 28 48.3 -0.8
O36A	Bolckow	44.27	296	P	P	16 28 49.5 +0.2
	baz=82					
G34A	Benson	44.29	304	P	P	16 28 48.9 -0.5
	baz=87					
Z40A	Long Farm, Mag	44.34	286	P	P	16 28 50.2 +0.2
	baz=76					
TREC	Trest	44.36	51	AMS	AMS	16 47 20.0
	comp=Z,400nm,17.1s					
D33A	AnnSam, Waubun	44.36	306	P	P	16 28 50.2 +0.3
	baz=89					
DOBS	Dobrina	44.38	55	*i* P	P	16 28 50.9 +0.8
DOBS	Dobrina	44.38	55	*i* P	P	16 28 50.9 +0.8
ARSA	Arzberg	44.38	54	*i* P	P	16 28 49.9 -0.3
	comp=Z,18nm,1.4s,SNR=8.9					
ULM	Lac du Bonnet	44.40	311	P	P	16 28 49.2 -1.0
	comp=Z,7.4nm,0.8s,baz=111,slow=6.5,SNR=6.4					
ULM				PcP	PP	16 30 33.3 -0.3
	comp=Z,3.1nm,0.7s,baz=79,slow=6.9,SNR=3.1					
ULM				LR	LR	16 48 07.4
	comp=Z,565nm,18.3s,baz=84,slow=37					
ULM	Lac du Bonnet	44.40	311	P	P	16 28 49.3 -1.0
ULM						16 30 33.3
ULM				pmax	pmax	
	comp=Z,5.0nm,0.7s					
ULM				pmax	pmax	
	comp=Z,3.0nm,0.7s					
ULM				MLR	MLR	
	comp=Z,565nm,18.3s					
ULM	Lac du Bonnet	44.40	311	*e*P	P	16 28 48.8 -1.5
	comp=Z,24nm,1.3s					
ULM				PcP	PP	16 30 33.3 -0.3
H34A	Spellman Lake,	44.42	303	P	P	16 28 50.0 -0.5
	baz=86					
FCC	Fort Churchill	44.42	323	*e*P	P	16 28 48.8 -1.4
FCC				pmax	pmax	
	comp=Z,50nm,1.5s					
FCC	Fort Churchill	44.42	323	*e*P	P	16 28 48.8 -1.4
	comp=Z,50nm,1.5s					
U38A	Gravette	44.43	291	P	P	16 28 50.0 -0.7
	baz=79,SNR=8.7					
R37A	Teagarden Farm	44.44	294	P	P	16 28 50.4 -0.3
	baz=80					
TEIG	Tepich	44.45	266	P	P	16 28 55.2 +4.2
	comp=Z,7.7nm,1.0s,baz=272,slow=23,SNR=6.2					
TEIG	Tepich	44.45	266	P	P	16 28 50.2 -0.7
	comp=Z,21nm,1.3s					
542A	Morse	44.47	282	P	P	16 28 50.8 -0.2
	baz=73					
E33A	Westby DABS, E	44.49	305	P	P	16 28 50.5 -0.5
	baz=88					
I34A	Hadley	44.52	302	P	P	16 28 50.6 -0.7
	baz=86					
P36A	Good Intent, A	44.53	296	P	P	16 28 51.1 -0.3
	baz=82					
S37A	Fort Scott	44.54	293	P	P	16 28 50.9 -0.6
	baz=80,SNR=11					
V38A	Canehill	44.56	290	P	P	16 28 51.3 -0.5
	baz=78,SNR=9.5					
X39A	Fountain Ranch	44.62	288	P	P	16 28 52.7 +0.4
	baz=77,SNR=7.7					
140A	Cam and Jess,	44.63	285	P	P	16 28 52.9 +0.6
	baz=75					
341A	Kurthwood	44.64	283	P	P	16 28 53.1 +0.7
	baz=74					
M35A	Neola	44.65	298	P	P	16 28 52.4 0.0
	baz=83					
J34A	George	44.66	301	P	P	16 28 51.8 -0.6
	baz=85					
F33A	5 Mile Ranch,	44.72	304	P	P	16 28 53.3 +0.5
	baz=87					
T37A	Cheneyville 18	44.72	292	P	P	16 28 53.2 +0.2
	baz=79					
UPC	Upice	44.73	49	*e*P	P	16 28 52.0 -0.8
UPC				*ep*P	sP	16 28 58.2 +0.2
UPC				*e*S	S	16 35 32.2 +2.9
UPC				AMS	AMS	16 45 20.0
	comp=Z,1μm,17.4s					
UPC	Upice	44.73	49	*e*P	P	16 28 52.0 -0.8
UPC				*e*		16 28 58.2
UPC				*e*S	S	16 35 32.2 +2.9
UPC				MLR	MLR	
	comp=Z,1μm,17.4s					
Y39A	Lockesburg	44.74	287	P	P	16 28 53.7 +0.6
	baz=76					
A32A	Rocking H Ranc	44.78	309	P	P	16 28 53.9 +0.7
	baz=90					
B32A	Ashes, Strandq	44.81	308	P	P	16 28 53.7 +0.2
	baz=90					
K34A	Le Mars	44.81	300	P	P	16 28 53.8 +0.1
	baz=84					
W38A	Poteau	44.82	289	P	P	16 28 53.1 -0.7
	baz=77					
Q36A	Arnold C. Orve	44.83	295	P	P	16 28 53.4 -0.3
	baz=81					
G33A	Ortonville	44.85	304	P	P	16 28 53.9 0.0
	baz=86					
KSP	Ksiaz	44.92	48	*e*P	P	16 28 55.2 +0.9
KSP	Ksiaz	44.92	48	*e*P	P	16 28 55.3 +0.9
DPC	Dobruska-Polom	44.92	49	*e*P	P	16 28 55.1 +0.7
DPC				*e*S	S	16 35 36.6 +4.4
DPC				AMS	AMS	16 45 30.0
	comp=Z,800nm,17.9s					
DPC	Dobruska-Polom	44.92	49	*e*P	P	16 28 55.1 +0.7
DPC				*e*S	S	16 35 36.6 +4.4
DPC				MLR	MLR	
	comp=Z,800nm,17.9s					
240A	Hunter Patters	44.94	285	P	P	16 28 55.4 +0.6
	baz=75					
R36A	Gordon, Harris	44.96	294	P	P	16 28 54.4 -0.5
	baz=80					
O35A	Humboldt	44.97	297	P	P	16 28 54.2 -0.7
	baz=82					
Z39A	Irene McRaven,	44.98	286	P	P	16 28 55.0 0.0
	baz=76					
U37A	Salina	45.02	291	P	P	16 28 55.1 -0.2
	baz=78,SNR=20					
ECSD	EROS Data Cent	45.09	301	P	P	16 28 55.6 -0.3
	baz=85					
ECSD	EROS Data Cent	45.09	301	*e*P	P	16 28 52.3 -3.5
	comp=Z,52nm,1.6s					
ECSD				*e*PcP	PcP	16 30 34.4 -2.0
L34A	Svendsen Farm,	45.10	299	P	P	16 28 55.8 -0.1
	baz=83					
H33A	Prehn Over Nor	45.10	303	P	P	16 28 56.2 +0.2
	baz=86					
S36A	Lake Cedric, C	45.14	293	P	P	16 28 56.1 -0.2
	baz=79					
V37A	Hulbert	45.14	290	P	P	16 28 55.7 -0.7
	baz=78,SNR=6.5					
X38A	Whitesboro	45.16	289	P	P	16 28 56.8 +0.3
	baz=77,SNR=7.8					
P35A	Duane Minner,	45.16	296	P	P	16 28 56.1 -0.4
	baz=81					
I33A	Coleman	45.20	302	P	P	16 28 55.9 -0.8
	baz=85					
CUC	Castrocucco	45.21	64	P	P	16 28 55.6 -1.3
	comp=Z,63nm,1.6s					
KRLC	Kraliky	45.21	50	*e*P	P	16 28 58.0 +1.3
KRLC				*ep*P	sP	16 29 02.2 +0.3
KRLC	Kraliky	45.21	50	*e*P	P	16 28 58.0 +1.3
KRLC				*e*		16 29 02.2
E32A	Braaten, Kindr	45.22	306	P	P	16 28 56.7 -0.1
	baz=87					
A31A	Linda, St. Vin	45.24	309	P	P	16 28 56.9 0.0
	baz=90					
Y38A	Idabel	45.25	288	P	P	16 28 56.8 -0.4
	baz=76					
Q35A	Mercer Eighty,	45.28	295	P	P	16 28 57.0 -0.5
	baz=80					
139A	Bunkhouse Ranc	45.29	286	P	P	16 28 58.1 +0.6
	baz=75					
F32A	Veblen	45.30	305	P	P	16 28 56.9 -0.5
	baz=87					
M34A	Aspy Farms, Fr	45.31	298	P	P	16 28 58.1 +0.5
	baz=83					
N34A	Lincoln	45.34	297	P	P	16 28 57.7 -0.1
	baz=82					
J33A	Davis	45.38	301	P	P	16 28 57.9 -0.2
	baz=84					
ZST	Bratislava	45.43	52	*e*P	P	16 28 58.4 0.0
ZST				pmax	pmax	
	comp=Z,71nm,2.2s					
ZST	Bratislava	45.43	52	*e*P	P	16 28 58.4 0.0
440A	Kirbyville	45.46	283	P	P	16 28 59.6 +0.7
	baz=73					
K33A	Hardington	45.49	300	P	P	16 28 58.6 -0.4
	baz=83					
T36A	Boggs Farm, Ca	45.49	292	P	P	16 28 58.7 -0.3
	baz=79					
R35A	Emporia Munici	45.50	294	P	P	16 28 58.7 -0.5
	baz=80					
U36A	Oologah	45.51	291	P	P	16 28 58.8 -0.5
	baz=78					
239A	Gary	45.52	285	P	P	16 28 59.8 +0.3
	baz=74					
W37B	Quinton	45.54	289	P	P	16 28 58.9 -0.6
	baz=77					
B31A	Greenbush Farm	45.55	308	P	P	16 28 58.7 -0.7
	baz=89					
O34A	Beatrice	45.58	297	P	P	16 28 58.4 -1.4
	baz=81					
H32A	Carlson Farm,	45.61	303	P	P	16 28 59.0 -1.0
	baz=85					
X37A	Clayton	45.61	289	P	P	16 28 59.6 -0.4
	baz=76					
DAG	Danmarks Havn	45.62	7	*i* P	P	16 28 58.7 -0.8
	comp=Z,7.2nm,0.6s					
DAG	Danmarks Havn	45.62	7	*i* P	P	16 28 58.7 -0.8
DAG				pmax	pmax	
	comp=Z,5.0nm,0.6s					
C31A	Landman Farms,	45.62	307	P	P	16 28 59.0 -1.0
	baz=88					
Z38A	Mt. Pleasant	45.62	287	P	P	16 28 59.9 -0.3
	baz=75					
540A	Vidor	45.63	282	P	P	16 29 00.4 +0.1
	baz=73					
D31A	Mcclaflin, Tow	45.65	306	P	P	16 28 59.8 -0.4
	baz=87					
TUL1	Leonard	45.66	290	P	P	16 29 00.1 -0.3
	baz=78					
TUL1	Leonard	45.66	290	P	P	16 28 56.0 -4.5
	comp=Z,98nm,1.4s					
I32A	Karley and Nic	45.68	302	P	P	16 28 59.5 -1.0
	baz=84					
KSU1	Kansas State U	45.68	295	P	P	16 29 00.4 -0.2
	baz=80					
MORC	Moravsky Berou	45.70	50	*e*P	P	16 29 00.1 -0.5
MORC				pmax	pmax	
	comp=Z,38nm,1.1s					
MORC	Moravsky Berou	45.70	50	*e*P	P	16 29 00.1 -0.5
	comp=Z,38nm,1.1s					
S35A	Otter Creek Ra	45.71	293	P	P	16 29 00.1 -0.7
	baz=79					
L33A	Hoskins	45.74	299	P	P	16 29 00.4 -0.7
	baz=83					
NATX	Nacogdoches	45.75	285	P	P	16 29 01.8 +0.6
	baz=74					
M33A	Taylor Creek F	45.76	299	P	P	16 29 00.3 -0.9
	baz=82					
P34A	Walnut Farm, R	45.78	296	P	P	16 29 01.7 +0.4
	baz=81					
339A	Huntington	45.78	284	P	P	16 29 02.3 +0.8
	baz=74					
E31A	Nome	45.78	306	P	P	16 29 00.8 -0.5
	baz=87					
V36A	Jenks	45.80	290	P	P	16 29 01.0 -0.6
	baz=77					
138A	Matatall Enter	45.86	286	P	P	16 29 01.8 -0.3
	baz=75					
A30A	Hoffart Farm,	45.97	309	P	P	16 29 02.4 -0.4
	baz=89					
B30A	Myrvik Farm, E	46.00	308	P	P	16 29 03.0 0.0
	baz=88					

T35A	Sooner Cattle	46.01	292	P	P	16 29 02.5	-0.7
	baz=78						
J32A	Parkston	46.02	301	P	P	16 29 02.8	-0.4
	baz=84						
TIP	Timpagrande	46.06	65	eP	P	16 29 02.8	-0.8
	comp=Z,24nm,1.1s						
238A	Jacksonville	46.06	285	P	P	16 29 03.6	0.0
	baz=74						
N33A	J Bar K, Exete	46.06	297	P	P	16 29 03.3	-0.3
	baz=81						
F31A	Hecla	46.08	305	P	P	16 29 03.5	-0.1
	baz=86						
OKC	Ostrava-Krasne	46.09	50	eP	P	16 29 04.8	+1.2
OKC				epP	sP	16 29 08.7	-0.1
OKC				eS	S	16 35 50.9	+1.9
OKC				AMS	AMS	16 48 30.0	
	comp=Z,400nm,15.7s						
OKC	Ostrava-Krasne	46.09	50	eP	P	16 29 04.8	+1.2
OKC				e		16 29 08.7	
OKC				eS	S	16 35 50.9	+1.9
OKC				MLR	MLR		
	comp=Z,400nm,15.7s						
G31A	Conde	46.10	304	P	P	16 29 02.7	-1.1
	baz=85						
439A	Center Grove,	46.11	283	P	P	16 29 03.8	-0.3
	baz=73						
Z37A	Pogue Cattle C	46.16	287	P	P	16 29 05.1	+0.7
	baz=75						
W36A	Wetumka	46.17	290	P	P	16 29 04.0	-0.5
	baz=77						
O33A	Hebron	46.27	297	P	P	16 29 05.1	-0.2
	baz=81						
U35A	Pawnee	46.30	291	P	P	16 29 05.0	-0.5
	baz=78						
S34A	Willow Spring	46.33	293	P	P	16 29 05.2	-0.5
	baz=79						
H31A	Wolsey	46.36	303	P	P	16 29 05.7	-0.2
	baz=84						
I31A	Royce, Wessing	46.44	302	P	P	16 29 05.6	-0.9
	baz=84						
BGNE	Belgrade	46.49	298	P	P	16 29 06.0	-0.9
	baz=82						
V35A	Meyer Ranch, C	46.52	291	P	P	16 29 06.5	-0.7
	baz=77						
T34A	McClaskey Farm	46.52	292	P	P	16 29 06.2	-1.0
	baz=78						
SAML	Samuel	46.56	212	eP	P	16 29 05.3	-2.4
	comp=Z,50nm,1.1s						
VYHS	Vyhne	46.58	52	eP	P	16 29 07.3	-0.2
VYHS				pmax	pmax		
	comp=Z,44nm,2.5s						
VYHS	Vyhne	46.58	52	eP	P	16 29 07.3	-0.2
A29A	Manning Farm,	46.59	309	P	P	16 29 06.9	-0.7
	baz=88						
F30A	Leola	46.62	305	P	P	16 29 07.2	-0.7
	baz=85						
237A	Washetta, Mont	46.62	285	P	P	16 29 07.4	-0.7
	baz=74						
Q33A	Connelly Farm,	46.64	295	P	P	16 29 07.8	-0.4
	baz=80						
B29A	Wagenman Farm,	46.68	308	P	P	16 29 07.7	-0.7
	baz=88						
W35A	Tecumseh	46.68	290	P	P	16 29 08.1	-0.5
	baz=76						
N32A	Stulken Farm,	46.70	298	P	P	16 29 08.3	-0.3
	baz=81						
SUSD	Miller	46.70	303	P	P	16 29 08.0	-0.6
	baz=84						
438A	Sam Houston St	46.70	283	P	P	16 29 08.6	-0.2
	baz=73						
O32A	Brockman Farm,	46.76	297	P	P	16 29 08.3	-0.8
	baz=80						
G30A	Faulkton	46.77	304	P	P	16 29 08.0	-1.0
	baz=84						
Z36A	Blue Ridge	46.79	287	P	P	16 29 09.8	+0.4
	baz=75						
H10N2	ASCENSION HYDR	46.86	144	T	T	17 18 55.0	
	baz=330,slow=75,SNR=655						
H10N3	ASCENSION HYDR	46.86	144	T	T	17 18 55.4	
	baz=330,slow=75,SNR=610						
538A	Harpers Horsep	46.87	283	P	P	16 29 09.9	-0.1
	baz=72						
337A	Centerville	46.88	284	P	P	16 29 11.2	+1.1
	baz=73						
H10N1	ASCENSION HYDR	46.88	144	T	T	17 18 56.5	
	baz=330,slow=75,SNR=724						
MDND	Maddock	46.88	307	P	P	16 29 09.5	-0.4
	baz=87						
R33A	Olander Ranch,	46.88	294	P	P	16 29 09.7	-0.4
	baz=79						
L31A	Butterfield Fa	46.89	300	P	P	16 29 09.9	-0.2
	baz=82						
U34A	Anderson Ranch	46.92	292	P	P	16 29 09.0	-1.4
	baz=77						
U34A	Anderson Ranch	46.92	292	eP	P	16 29 09.9	-0.4
	comp=Z,26nm,0.8s						
D29A	Pettibone, Tap	46.92	306	P	P	16 29 10.0	-0.2
	baz=86						
X35A	Drake	46.94	289	P	P	16 29 10.4	-0.2
	baz=76						
LANS	Liptovska Anna	46.97	51	eP	P	16 29 13.3	+2.6
LANS	Liptovska Anna	46.97	51	eP	P	16 29 13.2	+2.6
E29A	Napoleon	46.99	306	P	P	16 29 10.6	-0.2
	baz=86						
V34A	Guthrie	47.04	291	P	P	16 29 09.9	-1.4
	baz=77						
V34A	Guthrie	47.04	291	eP	P	16 29 11.6	+0.3
	comp=Z,52nm,1.1s						
S33A	Kaszmaul Farm,	47.04	293	P	P	16 29 11.1	-0.2
	baz=78						
136A	Ennis	47.08	286	P	P	16 29 11.5	-0.1
	baz=74						
638A	Rosharon	47.08	282	P	P	16 29 12.2	+0.5
	baz=72						
I30A	Oacoma	47.10	302	P	P	16 29 10.2	-1.4
	baz=83						
M31A	Lambtecht Ranc	47.11	298	P	P	16 29 11.6	-0.3
	baz=81						
P32A	Huiting Farm,	47.12	296	P	P	16 29 11.7	-0.2
	baz=80						
Y35A	Marietta	47.12	288	P	P	16 29 09.4	-2.5
	baz=75						
OJC	Ojcow	47.15	49	eP	P	16 29 13.1	+1.1
OJC	Ojcow	47.15	49	eP	P	16 29 13.1	+1.1
N31A	Bailey Ranch,	47.18	298	P	P	16 29 10.4	-2.0
	baz=81						
F29A	Eureka	47.18	305	P	P	16 29 13.2	+0.9
	baz=85						
Q32A	Meitler Ranch,	47.20	295	P	P	16 29 11.7	-0.8
	baz=79						
236A	Katherine and	47.21	285	P	P	16 29 12.6	-0.1
	baz=74						
J30A	Dallas	47.22	301	P	P	16 29 10.0	-2.6
	baz=83						
437A	Phantom Ranch,	47.23	284	P	P	16 29 12.7	-0.1
	baz=73						
HKT	Hockley	47.24	283	eP	P	16 29 14.4	+1.6
HKT				pmax	pmax		
	comp=Z,80nm,1.9s						
HKT	Hockley	47.24	283	eP	P	16 29 14.4	+1.6
	comp=Z,80nm,1.9s						
A28A	Rude Farm, Bot	47.27	309	P	P	16 29 15.0	+2.1
	baz=87						
G29A	Hoven	47.31	304	P	P	16 29 13.1	-0.2
	baz=84						
PSZ	Piszkesteto	47.31	52	⇑iP	P	16 29 18.8	+5.5
T33A	Patterson Ranc	47.34	293	P	P	16 29 12.8	-0.8
	baz=78						
B28A	Dugan Ranch, T	47.35	308	P	P	16 29 12.8	-0.8
	baz=87						
U33A	Lingo Farm, Me	47.37	292	P	P	16 29 14.9	+1.0
	baz=77						
W34A	Bridge Creek,	47.38	290	P	P	16 29 11.4	-2.6
	baz=76						
C28A	Hausauer Farms	47.42	307	P	P	16 29 13.3	-0.8
	baz=86						
R32A	Long Quarter,	47.42	295	P	P	16 29 11.7	-2.6
	baz=79						
PDG	Podgorica	47.42	60	⇑iP	P	16 29 15.7	+1.5
NIE	Niedzica	47.50	50	eP	P	16 29 16.5	+1.7
NIE	Niedzica	47.50	50	eP	P	16 29 16.5	+1.7
O31A	Woolen Ranch,	47.57	297	P	P	16 29 14.0	-1.4
	baz=80						
H29A	Onida	47.58	303	P	P	16 29 16.9	+1.5
	baz=83						
D28A	Regan	47.58	307	P	P	16 29 13.9	-1.4
	baz=86						
X34A	Smith Ranch, M	47.58	289	P	P	16 29 16.0	+0.4
	baz=76						
537A	Green Hill Far	47.60	283	P	P	16 29 15.6	-0.1
	baz=72						
336A	Riesel	47.64	285	P	P	16 29 16.5	+0.5
	baz=73						
V33A	Lossen Ranch,	47.65	291	P	P	16 29 15.9	-0.2
	baz=76						
KECS	Kecovo	47.67	52	eP	P	16 29 18.1	+2.1
KECS				pmax	pmax		
	comp=Z,5.0nm,1.6s						
KECS	Kecovo	47.67	52	eP	P	16 29 18.1	+2.1
Y34A	Reagan Ranch,	47.68	288	P	P	16 29 14.4	-1.9
	baz=75						
I29A	Vivian Onida	47.71	302	P	P	16 29 16.8	+0.3
	baz=83						
E28A	Huff	47.71	306	P	P	16 29 16.2	-0.3
	baz=85						
H10S1	ASCENSION HYDR	47.74	145	T	T	17 20 21.4	
	baz=331,slow=75,SNR=642						
H10S3	ASCENSION HYDR	47.74	145	T	T	17 20 04.1	
	baz=331,slow=75,SNR=579						
S32A	Newby Ranch, P	47.74	294	P	P	16 29 16.6	-0.2
	baz=78						
H10S2	ASCENSION HYDR	47.76	145	T	T	17 20 06.3	
	baz=331,slow=75,SNR=677						
135A	Vickery Place,	47.77	286	P	P	16 29 16.9	-0.1
	baz=74						
436A	Wall Ranch, Ga	47.78	284	P	P	16 29 16.5	-0.7
	baz=72						
637A	Eagle Lake	47.81	282	P	P	16 29 18.5	+1.1
	baz=72						
F28A	McLaughlin	47.86	305	P	P	16 29 18.5	+0.9
	baz=84						
A27A	Ledoux Ranch,	47.91	309	P	P	16 29 17.1	-0.8
	baz=87						
W33A	Caddo, Fort Co	47.95	290	P	P	16 29 19.4	+1.0
	baz=76						
B27A	Peters Farms,	47.95	308	P	P	16 29 17.4	-0.8
	baz=86						
WHTX	Lake Whitney,	47.97	286	P	P	16 29 19.6	+1.0
	baz=73						
G28A	Parade	48.02	304	P	P	16 29 18.0	-0.9
	baz=83						
U32A	Winter Ranch,	48.08	292	P	P	16 29 19.8	+0.4
	baz=77						
737A	Port Lavaca	48.12	281	P	P	16 29 20.8	+1.1
	baz=71						
STHS	Stebnicka Huta	48.12	50	eP	P	16 29 20.6	+1.1
STHS				pmax	pmax		
	comp=Z,11nm,1.3s						
STHS	Stebnicka Huta	48.12	50	eP	P	16 29 20.6	+1.1
H28A	Mission Ridge	48.14	303	P	P	16 29 20.1	+0.3
	baz=83						
335A	Moody	48.15	285	P	P	16 29 21.0	+1.0
	baz=73						
C27A	Sayler Ranch,	48.17	307	P	P	16 29 19.7	-0.3
	baz=85						
OTAV	Otavalo	48.18	236	eP	P	16 29 22.4	+1.5
	comp=Z,80nm,1.3s						
536A	Bastrop	48.22	283	P	P	16 29 21.6	+1.1
	baz=72						
D27A	Center	48.23	307	P	P	16 29 20.8	+0.3
	baz=85						
V32A	Arapaho	48.27	291	P	P	16 29 20.7	-0.2
	baz=76						
CRVS	Cervenica-Dubn	48.29	51	eP	P	16 29 22.1	+1.2
CRVS	Cervenica-Dubn	48.29	51	eP	P	16 29 22.0	+1.2
134A	White-Moore Ra	48.31	287	P	P	16 29 21.1	-0.2
	baz=74						
E27A	Carson	48.33	306	P	P	16 29 20.3	-0.9
	baz=84						
Y33A	Hilltop Ranch,	48.37	289	P	P	16 29 21.5	-0.2
	baz=75						
636A	Smothers Creek	48.40	282	P	P	16 29 22.4	+0.5
	baz=71						
435B	Jarrell	48.43	284	P	P	16 29 23.2	+1.0
	baz=72						
A26A	Wade Farm, Ken	48.44	309	P	P	16 29 22.3	+0.3
	baz=86						
234A	Clairette	48.52	286	P	P	16 29 21.5	-1.4
	baz=73						
C26A	Wahner Farm, P	48.56	308	P	P	16 29 20.9	-2.1
	baz=85						
W32A	Sentinel	48.58	290	P	P	16 29 22.5	-0.8
	baz=76						
535A	Dale	48.65	283	P	P	16 29 20.8	-3.1
	baz=72						
SIRR	Siria	48.66	55	⇓iP	P	16 29 25.9	+2.2
BZS	Buzias	48.70	55	⇓iP	P	16 29 23.9	-0.1
OHR	Ohrid	48.77	61	⇑iP	P	16 29 25.9	+1.2
334A	Lometa	48.80	285	P	P	16 29 24.8	-0.2
	baz=73						
KOLS	Kolonicke sedl	48.82	51	eP	P	16 29 24.8	-0.1
KOLS				pmax	pmax		
	comp=Z,35nm,2.1s						
KOLS	Kolonicke sedl	48.82	51	eP	P	16 29 24.8	-0.1
UZH	Uzhgorod	48.86	51	eP	P	16 29 25.3	+0.1
UZH				iS	S	16 36 24.1	-4.3
UZH				e		16 36 38.7	
UZH				e		16 41 17.1	
UZH				MLR	MLR		
	comp=N,550nm,16.0s						
UZH				MLR	MLR		
	comp=E,300nm,16.0s						
UZH				MLR	MLR		
	comp=Z,200nm,16.0s						
D26A	Manning	48.86	306	P	P	16 29 26.8	+1.5
	baz=84						
MDVR	Moldovita	48.87	57	⇑iP	P	16 29 25.9	+0.5
H27A	Howes	48.90	303	P	P	16 29 27.1	+1.5
	baz=82						
E26A	Carlson Angus	48.94	306	P	P	16 29 25.0	-0.9
	baz=84						
I27A	Quinn	48.96	303	P	P	16 29 24.6	-1.5
	baz=82						
434A	Burnet	48.98	285	P	P	16 29 25.7	-0.8
	baz=72						
133A	Hamilton Ranch	48.98	287	P	P	16 29 26.2	-0.2
	baz=74						
635A	Leesville	49.02	283	P	P	16 29 25.4	-1.3
	baz=71						
J27A	Elkhorn Farm,	49.04	301	P	P	16 29 26.5	-0.4
	baz=81						
KWP	Kalwaria Pacla	49.06	50	eP	P	16 29 29.2	+2.5
KWP	Kalwaria Pacla	49.06	50	⇑iP	P	16 29 27.3	+0.6
KWP	Kalwaria Pacla	49.06	50	eP	P	16 29 29.2	+2.5
233A	Rising Star	49.14	286	P	P	16 29 26.8	-0.8
	baz=73						
A25A	Svangstu Ranch	49.14	309	P	P	16 29 27.7	+0.3
	baz=85						
G26A	Maurine	49.18	304	P	P	16 29 26.8	-0.9
	baz=82						
BIA	Bitola	49.18	61	eP	P	16 29 27.9	+0.1
735A	Kenedy	49.22	282	P	P	16 29 31.1	+2.9
	baz=71						
B25A	Knox Farm, Ray	49.23	308	P	P	16 29 27.8	-0.3
	baz=85						
DRGR		49.32	54	⇓iP	P	16 29 28.8	0.0
C25A	Freed Ranch, W	49.35	307	P	P	16 29 29.3	+0.3
	baz=84						
534A	Blanco	49.39	284	P	P	16 29 28.2	-1.4
	baz=72						
333A	Richland Sprin	49.41	285	P	P	16 29 28.9	-0.8
	baz=72						
835A	Beeville	49.43	281	P	P	16 29 30.3	+0.5
	baz=70						
OGNE	Ogallala	49.46	298	P	P	16 29 30.2	+0.2
	baz=79						
634A	China Grove, S	49.50	283	P	P	16 29 30.2	-0.1
	baz=71						
I26A	New Underwood	49.54	303	P	P	16 29 29.6	-0.9
	baz=81						
ABTX	Abilene, Hawle	49.56	287	P	P	16 29 30.1	-0.8
	baz=73						
E25A	Miller Ranch,	49.58	306	P	P	16 29 29.9	-0.9
	baz=83						
433A	Art	49.67	285	P	P	16 29 31.5	-0.2
	baz=72						
F25A	Bowman	49.69	305	P	P	16 29 30.2	-1.5
	baz=82						
G25A	Newell	49.76	304	P	P	16 29 33.7	+1.4
	baz=82						
533A	Kerrville	49.84	284	P	P	16 29 33.4	+0.4
	baz=71						
734A	La Parita Cree	49.84	282	P	P	16 29 34.0	+1.1
	baz=70						
LVV	L'vov	49.90	50	eP	P	16 29 33.5	+0.4
H25A	Fruitdale	49.97	303	P	P	16 29 35.9	+2.0
	baz=81						
RES	Resolute Bay	49.97	344	P	P	16 29 32.9	-0.4
	comp=Z,13nm,1.1s,baz=113,slow=5.7,SNR=16						
RES				PcP	PcP	16 30 53.0	-0.2
	comp=Z,3.9nm,0.8s,baz=126,slow=2.2,SNR=4.4						
RES	Resolute Bay	49.97	344	eP	P	16 29 33.3	0.0
RES						16 30 53.0	
RES				pmax	pmax		
	comp=Z,41nm,1.4s						
RES	Resolute Bay	49.97	344	eP	P	16 29 33.3	0.0
	comp=Z,41nm,1.4s						
RES				PcP	PcP	16 30 53.0	-0.2
834A	Tilden	50.08	281	P	P	16 29 36.5	+1.7
	baz=70						
035A	Encino	50.12	280	P	P	16 29 38.6	+3.5
	baz=69						
633A	Saathoff Ranch	50.15	283	P	P	16 29 36.4	+1.0
	baz=71						
I25A	Rochford	50.16	303	P	P	16 29 33.8	-1.7
	baz=81						
035Z	Hargill	50.26	279	P	P	16 29 33.7	-2.4
	baz=69						
KSCO	Kaye Shedlock'	50.30	296	P	P	16 29 34.9	-1.6
	baz=77						
JCT	Junction City	50.34	285	P	P	16 29 36.6	-0.2
	baz=72						
JCT	Junction City	50.34	285	eP	P	16 29 37.3	+0.5
JCT				pmax	pmax		
	comp=Z,31nm,1.0s						
JCT	Junction City	50.34	285	eP	P	16 29 37.3	+0.5
	comp=Z,31nm,1.0s						
AGG	Agios Georgios	50.34	64	eP	P	16 29 36.8	+0.1
AGG				pmax	pmax		
	comp=Z,91nm,1.4s						
AGG	Agios Georgios	50.34	64	eP	P	16 29 36.8	+0.1
	comp=Z,90nm,1.4s						
RSSD	Black Hills	50.36	303	P	P	16 29 37.6	+0.6
	baz=81						
733A	Divot King Ran	50.49	282	P	P	16 29 36.0	-1.9
	baz=70						
AMTX	Amarillo	50.57	291	P	P	16 29 38.2	-0.3
	baz=74						
AMTX	Amarillo	50.57	291	P	P	16 29 38.2	-0.3
	comp=Z,43nm,1.0s						
833A	Chaparral WMA,	50.71	282	P	P	16 29 37.7	-1.9
	baz=70						
BUR08	Bucovina Ar. S	50.90	52	eP	P	16 29 42.0	+1.1
FINES	FINESS Array B	50.90	35	P	P	16 29 40.1	-0.4
	comp=Z,4.1nm,0.6s,baz=260,slow=4.7,SNR=21						
FINES				LR	LR	16 47 39.7	
	comp=Z,502nm,21.9s,baz=248,slow=32						
FIA1	FINESS Array S	50.90	35	eP	P	16 29 39.5	-1.0
	comp=Z,22nm,1.1s						
BURAR	Bucovina Array	50.91	52	⇑iP	P	16 29 42.0	+1.0
VOIR		51.11	55	⇑iP	P	16 29 41.6	-0.9
VSU	Vasula	51.14	38	⇓eP	P	16 29 42.6	+0.2
VSU				pmax	pmax		
	comp=Z,51nm,1.0s						
832A	Faith Ranch, C	51.20	282	P	P	16 29 42.6	-0.7
	baz=70						
DOPR	Dopca	51.27	54	⇑iP	P	16 29 43.2	-0.3
LAO	LASA Array	51.48	306	P	P	16 29 42.5	-2.7
	baz=81						
ARCES	ARCESS Array B	51.62	24	P	P	16 29 44.2	-1.5
	comp=Z,6.1nm,0.7s,baz=327,slow=2.0,SNR=11						
ARCES				LR	LR	16 49 37.5	
	comp=Z,87nm,18.3s,baz=234,slow=34						
MSTX	Muleshoe	51.69	290	P	P	16 29 46.0	-1.0
	baz=73						
MSTX	Muleshoe	51.69	290	eP	P	16 29 47.6	+0.5
	comp=Z,51nm,1.3s						
MLR	Muntele Rosu	51.73	55	⇓iP	P	16 29 48.4	+1.3
SIV	San Ignacio	52.06	206	P	P	16 29 48.8	-0.9
	comp=Z,9.8nm,0.8s,baz=60,slow=8.0,SNR=10						
T25A	Trinidad	52.11	294	P	P	16 29 50.2	0.0
	baz=75,SNR=10						
T25A	Trinidad	52.11	294	eP	P	16 29 49.9	-0.3
	comp=Z,23nm,1.1s						
VRI	Vrincioaia	52.20	54	⇑iP	P	16 29 51.0	+0.5
Q24A	Divide	52.22	297	P	P	16 29 48.1	-3.0
	baz=76						
Q24A	Divide	52.22	297	eP	P	16 29 52.6	+1.4
	comp=Z,37nm,1.5s						
N23A	Red Feather La	52.37	299	P	P	16 29 50.9	-1.2
	baz=77						
N23A	Red Feather La	52.37	299	eP	P	16 29 52.8	+0.6
	comp=Z,40nm,1.4s						
ISCO	Idaho Springs	52.37	298	eP	P	16 29 52.4	+0.1
ISCO				pmax	pmax		
	comp=Z,47nm,1.8s						
ISCO	Idaho Springs	52.37	298	eP	P	16 29 52.4	+0.1
	comp=Z,47nm,1.8s						
K22A	Casper	52.41	301	P	P	16 29 50.1	-2.3
	baz=78						
SDCO	Great Sand Dun	52.79	295	eP	P	16 29 56.3	+1.0
	comp=Z,11nm,1.1s						
KIEV	Kiev	53.10	48	c iP	P	16 29 56.7	-0.3
KIEV				pmax	pmax		
	comp=Z,15nm,1.4s						
KIEV	Kiev	53.10	48	eP	P	16 29 56.8	-0.3
	comp=Z,29nm,1.3s						
AKASG	Malin Array Be	53.11	48	P	P	16 29 56.8	-0.3
	comp=Z,7.6nm,0.7s,baz=275,slow=6.7,SNR=16						
AKASG				LR	LR	16 50 58.5	
	comp=Z,609nm,18.1s,baz=270,slow=34						
AKASG	Malin Array Be	53.11	48	i P	P	16 29 57.0	-0.1
AKASG				pmax	pmax		
	comp=Z,8.0nm,0.7s						
CFR	Carcaliu	53.30	55	⇓iP	P	16 29 59.2	+0.6
KIS	Kishinev	53.43	53	eP	P	16 30 04.0	+4.5
KIS	Kishinev	53.43	53	ePcP	P	16 30 11.0	+11
KIS				LRM	MLR	16 50 17.0	
	comp=Z,300nm,18.0s						
KIS	Kishinev	53.43	53	eP	P	16 30 04.0	+4.5
KIS				e		16 30 11.0	
ATAH	Atahualpa	53.53	230	P	P	16 30 01.4	+0.3
	comp=Z,19nm,0.9s,baz=340,slow=3.9,SNR=11						
SMCO	Snowmass	53.54	297	eP	P	16 30 02.2	+1.2
	comp=Z,28nm,1.3s						
EGMT	Eagleton	53.64	309	P	P	16 29 59.5	-1.6
	baz=80						
EGMT	Eagleton	53.64	309	eP	P	16 30 01.5	+0.3
	comp=Z,56nm,1.4s						
TIRR	Tirgusor	53.64	56	⇓iP	P	16 29 57.3	-3.8
TIRR	Tirgusor	53.64	56	eP	P	16 30 00.3	-0.8
TIRR				pmax	pmax		
	comp=Z,34nm,1.2s						
TIRR	Tirgusor	53.64	56	eP	P	16 30 00.3	-0.8
	comp=Z,34nm,1.2s						
S22A	4UR Ranch, Cre	53.81	296	eP	P	16 30 04.2	+1.3
	comp=Z,18nm,1.1s						
RLMT	Red Lodge	53.85	305	P	P	16 30 01.7	-1.2
	baz=78						
RLMT	Red Lodge	53.85	305	eP	P	16 30 03.4	+0.5
	comp=Z,30nm,1.4s						
TXAR	Lajitas Array	53.88	285	P	P	16 30 03.2	0.0
	comp=Z,3.3nm,0.8s,baz=73,slow=15,SNR=5.1						
TXAR				PcP	PcP	16 31 08.3	-0.5
	comp=Z,2.4nm,0.8s,baz=64,slow=6.1,SNR=4.6						
TXAR				LR	LR	16 51 26.1	
	comp=Z,1μm,20.5s,baz=0.0,slow=34						
TXAR	Lajitas Array	53.88	285	P	P	16 30 03.3	0.0
TXAR						16 31 08.4	
TXAR				pmax	pmax		
	comp=Z,2.0nm,0.8s						
TXAR				pmax	pmax		
	comp=Z,2.0nm,0.8s						
TXAR				MLR	MLR		
	comp=Z,1μm,20.5s						
TX31	Lajitas Ar. Si	53.88	285	eP	P	16 30 03.8	+0.5
O20A	White River Ci	54.25	299	P	P	16 30 06.5	+0.6
	baz=75						
O20A	White River Ci	54.25	299	eP	P	16 30 06.5	+0.6
	comp=Z,38nm,1.4s						
APA	Apatity	54.31	27	⇓iP	P	16 30 07.6	+2.0
ANMO	Albuquerque	54.32	292	P	P	16 30 08.3	+1.8
	baz=72						
ANMO	Albuquerque	54.32	292	deP	P	16 30 07.4	+0.9
ANMO				pmax	pmax		
	comp=Z,23nm,2.5s						
ANMO	Albuquerque	54.32	292	eP	P	16 30 07.9	+1.5
	comp=Z,13nm,1.0s						
MNTX	Cornudas Mount	54.48	288	P	P	16 30 07.8	+0.3
	baz=71						
MNTX	Cornudas Mount	54.48	288	eP	P	16 30 07.8	+0.3

comp=Z,11nm,1.2s
BW06 Boulder Array 54.57 302 P P 16 30 08.2 -0.1
baz=76
BW06 Boulder Array 54.57 302 eP P 16 30 07.9 -0.4
PD31 Pinedale Array 54.57 302 eP P 16 30 07.9 -0.4
PDAR Pinedale Array 54.57 302 P P 16 30 07.5 -0.7
comp=Z,8.3nm,1.0s,baz=72,slow=9.5,SNR=40
PDAR LR LR 16 52 13.1
comp=Z,1µm,20.0s,baz=109,slow=35
LPM Los Pinos Moun 54.65 292 eP P 16 30 10.4 +1.6
BNM Barren Site 54.69 291 eP P 16 30 10.3 +1.0
YKA Yellowknife Ar 54.76 327 P P 16 30 08.1 -0.9
comp=Z,2.6nm,0.8s,baz=85,slow=7.3,SNR=43
YKA PcP **PcP 16 31 11.0 -0.4**
comp=Z,2.3nm,0.8s,baz=84,slow=4.6,SNR=8.6
YKB5 Yellowknife Ar 54.76 327 eP P 16 30 08.1 -0.8
YKW3 Yellowknife Ar 54.76 327 eP P 16 30 08.1 -0.8
H17A Grant Village 54.92 304 P P 16 30 12.4 +1.7
baz=77
H17A Grant Village 54.92 304 eP P 16 30 15.3 +4.5
comp=Z,17nm,1.4s
Y22D IRIS PASSCAL I 54.95 291 P P 16 30 12.3 +1.3
baz=72
LAZ Ladron 55.02 292 eP P 16 30 14.8 +3.2
PV01 Paradox Valley 55.03 297 eP P 16 30 14.7 +3.1
FLWY Flagg Ranch 55.07 304 eP P 16 30 12.1 +0.2
comp=Z,16nm,1.0s
LOHW Long Hollow 55.12 303 eP P 16 30 13.1 +0.9
comp=Z,17nm,1.3s
YMR Madison River 55.13 305 eP P 16 30 14.0 +1.8
comp=Z,74nm,1.3s
MOOW Moose Ponds 55.18 304 eP P 16 30 12.8 +0.1
comp=Z,21nm,1.8s
PV04 Paradox Valley 55.21 297 eP P 16 30 11.8 -1.1
MVCO Mesa Verde 55.23 295 P P 16 30 14.9 +1.7
baz=73
MVCO Mesa Verde 55.23 295 eP P 16 30 14.4 +1.2
comp=Z,119nm,1.8s
SNOW Snow King Moun 55.26 303 eP P 16 30 13.9 +0.7
comp=Z,35nm,1.1s
LPAZ La Paz 55.27 213 P P 16 30 14.3 +0.4
comp=Z,11nm,0.7s,baz=18,slow=6.7,SNR=42
LPAZ LR LR 16 52 20.5
comp=Z,619nm,19.8s,baz=6.0,slow=34
LPAZ La Paz 55.27 213 eP P 16 30 14.2 +0.4
comp=Z,62nm,1.4s
HRY Holter Researc 55.27 307 eP P 16 30 15.5 +2.3
IMW Indian Meadow 55.29 304 eP P 16 30 14.0 +0.5
comp=Z,24nm,1.1s
PV09 Paradox Valley 55.35 297 eP P 16 30 15.8 +1.7
REDW Red Top Meadow 55.35 303 eP P 16 30 14.1 +0.2
comp=Z,22nm,1.1s
BOZ Bozeman (W) 55.37 306 P P 16 30 12.7 -1.2
baz=77
BOZ Bozeman (W) 55.37 306 P P 16 30 10.8 -3.1
BOZ pmax pmax
comp=Z,16nm,1.5s
BOZ Bozeman (W) 55.37 306 P P 16 30 10.8 -3.1
comp=Z,16nm,1.5s
FXWY Fox Creek 55.41 304 eP P 16 30 14.5 +0.2
comp=Z,13nm,1.2s
QLMT Earthquake Lak 55.41 305 eP P 16 30 17.3 +3.0
PV05 Paradox Valley 55.44 297 eP P 16 30 17.6 +3.0
AHID Auburn Hatcher 55.67 303 eP P 16 30 18.6 +2.4
comp=Z,56nm,1.4s
P18A Preston Nutter 55.87 299 eP P 16 30 18.1 +0.3
comp=Z,63nm,1.5s
121A Cookes Peak, D 56.13 290 P P 16 30 19.6 +0.1
baz=70
121A Cookes Peak, D 56.13 290 eP P 16 30 20.1 +0.6
comp=Z,33nm,1.4s
WALA Waterton Lakes 56.16 311 eP P 16 30 18.9 -0.5
comp=Z,18nm,1.1s
CHMT Chamberlain Mo 56.18 308 eP P 16 30 22.5 +2.7
SRU San Rafael Swe 56.22 298 eP P 16 30 20.7 +0.5
SRU pmax pmax
comp=Z,17nm,1.0s
SRU San Rafael Swe 56.22 298 eP P 16 30 20.7 +0.5
comp=Z,17nm,1.0s
HWUT Hardware Ranch 56.30 301 eP P 16 30 20.9 +0.2
comp=Z,20nm,1.0s
MCMT McKenzie Canyo 56.40 305 eP P 16 30 22.9 +1.5
HPIG 56.40 283 eP P 16 30 22.6 +1.0
comp=Z,101nm,1.7s
YBMT Yellow Bay 56.48 309 eP P 16 30 23.2 +1.5
JLU Jordanelle 56.49 300 eP P 16 30 22.6 +0.4
comp=Z,27nm,1.1s
SWMT Swartz Lake 56.55 309 eP P 16 30 22.2 0.0
MSO Missoula 56.66 308 P P 16 30 20.8 -2.3
baz=76
MSO Missoula 56.66 308 eP P 16 30 24.6 +1.5
comp=Z,26nm,1.4s
JTMT Jette 56.68 309 eP P 16 30 24.6 +1.4
Q16A Castle Valley 56.76 298 eP P 16 30 24.7 +0.7
comp=Z,74nm,1.8s
W18A Petrified Fore 56.82 293 P P 16 30 23.9 -0.6
baz=71
OBN Obninsk 56.82 42d iP P 16 30 23.9 0.0
OBN e 16 30 26.4
OBN i 16 31 18.0
OBN pmax pmax
comp=Z,68nm,1.7s
OBN Obninsk 56.82 42 eP P 16 30 25.1 +1.2
comp=Z,31nm,0.9s
BSMT Bassoo Peak 56.99 309 eP P 16 30 25.5 0.0
HVU Hansel Valley 57.13 302 eP P 16 30 26.7 +0.1
HVU pmax pmax
comp=Z,9.0nm,1.0s
HVU Hansel Valley 57.13 302 eP P 16 30 26.6 +0.1
comp=Z,8.8nm,1.0s
NLU North Lily Min 57.13 300 eP P 16 30 27.4 +0.7
comp=Z,20nm,1.1s
X18A Snowflake 57.18 293 eP P 16 30 30.4 +3.3
comp=Z,12nm,0.8s
MOS Moscow 57.30 41 eP P 16 30 23.7 -3.6
KLMR Klimovskoe 57.43 35 eP P 16 30 25.2 -2.9
KLMR e 16 31 19.2
KLMR pmax pmax
comp=Z,25nm,1.2s
SIM Simferopol' 57.48 54 P P 16 30 22.9 -5.9
SIM eS **S 16 38 33.0 +7.1**
SIM MLR MLR
comp=N,100nm,13.0s
BGU Big Grassy Mou 57.55 301 eP P 16 30 29.8 +0.2
comp=N,14nm,1.0s
DUG Dugway, Tooele 57.60 300 P P 16 30 29.3 -0.6
baz=73
DUG Dugway, Tooele 57.60 300 eP P 16 30 30.2 +0.3
DUG pmax pmax
comp=Z,26nm,1.1s
DUG Dugway, Tooele 57.60 300 eP P 16 30 30.2 +0.3
comp=Z,26nm,1.1s
MSU Marysvale 57.63 298 eP P 16 30 31.5 +1.3
MSU Marysvale 57.63 298 eP P 16 30 31.5 +1.3
MTPU Mount Pierson 57.78 297 eP P 16 30 31.9 +0.5
comp=Z,10nm,1.0s
HLID Hailey 57.81 304 P P 16 30 30.7 -0.6
baz=74
HLID Hailey 57.81 304 eP P 16 30 32.0 +0.7
comp=Z,32nm,1.9s
BR231 Keskin MP Arra 57.94 60 eP P 16 30 35.1 +2.9
ANTO Ankara 57.95 60 eP P 16 30 33.6 +1.4
ANTO pmax pmax
comp=Z,27nm,1.1s
ANTO Ankara 57.95 60 eP P 16 30 33.6 +1.4
comp=Z,27nm,1.1s
WUAZ Wupatki 57.96 294 P P 16 30 32.5 0.0
baz=71
WUAZ Wupatki 57.96 294 eP P 16 30 33.8 +1.3
comp=Z,49nm,1.4s
U15A North Rim 58.37 296 eP P 16 30 37.0 +1.6
X16A Lo Mia Camp, P 58.38 293 eP P 16 30 37.0 +1.5
NEW Newport 58.41 310 P P 16 30 33.6 -1.7
baz=75
NEW Newport 58.41 310 eP P 16 30 34.9 -0.4
NEW pmax pmax
comp=Z,26nm,1.1s
NEW Newport 58.41 310 eP P 16 30 34.9 -0.4
comp=Z,26nm,1.1s
KNB Kanab 58.58 296 eP P 16 30 37.2 +0.4
KNB pmax pmax
comp=Z,24nm,1.4s
KNB Kanab 58.58 296 eP P 16 30 37.2 +0.4
comp=Z,24nm,1.4s
TUC Tucson 58.59 291 eP P 16 30 40.0 +3.2
TUC pmax pmax
comp=Z,10.0nm,1.1s
TUC Tucson 58.59 291 eP P 16 30 40.0 +3.2
comp=Z,10nm,1.1s
BR131 Keskin Array S 58.61 60 eP P 16 30 36.5 -0.4
BRTR Keskin Array B 58.61 60 P P 16 30 36.1 -0.9
comp=Z,9.8nm,0.8s,baz=262,slow=5.6,SNR=23
BRTR LR LR 16 55 02.2
comp=Z,91nm,19.5s,baz=284,slow=35
BRTR Keskin Array B 58.61 60ceP P 16 30 36.2 -0.8
BRTR pmax pmax
comp=Z,10.0nm,0.8s
LPSR Galich'ya Gora 58.70 45 eP P 16 30 36.8 -0.4
LPSR pmax pmax
comp=Z,30nm,1.3s
MFID Camas Ranch 58.84 304 eP P 16 30 39.1 +0.7
comp=Z,35nm,1.3s
PSUT Pine Spring 58.88 298 eP P 16 30 40.0 +1.1
comp=Z,26nm,1.0s
LCMT Little Creek M 58.90 297 eP P 16 30 39.7 +0.7
comp=Z,7.8nm,1.0s
PB11 IPOC Station P 58.99 213 eP P 16 30 38.1 -1.6
comp=Z,92nm,0.8s
VSR Storozhevoye 59.18 46 eP P 16 30 39.5 -1.0
VSR pmax pmax
comp=Z,30nm,1.5s
ELK Elko 59.21 301 P P 16 30 38.8 -2.4
ELK pmax pmax
comp=Z,11nm,1.5s
ELK Elko 59.21 301 P P 16 30 38.8 -2.4
comp=Z,11nm,1.5s
Y14A Wickenburg 59.76 293 eP P 16 30 46.4 +1.5
comp=Z,86nm,1.2s
ANN Anapa 59.79 54 eP P 16 30 42.0 -2.8
ANN e*PP **pP 16 30 44.7 -3.9**
ANN eS **S 16 38 51.2 -4.7**
ANN pmax pmax
comp=Z,338nm,23.9s
PB01 IPOC Station P 60.03 212 eP P 16 30 45.9 -0.9
comp=Z,27nm,0.9s
W13A Hualapai Mount 60.03 295 eP P 16 30 48.2 +1.2
R11A Troy Canyon, C 60.22 299 P P 16 30 48.1 -0.1
baz=71
R11A Troy Canyon, C 60.22 299 eP P 16 30 48.3 +0.1
comp=Z,16nm,1.3s
214A Organ Pipe Nat 60.32 291 eP P 16 30 48.2 -0.5
comp=Z,98nm,1.5s
HAWA Hanford 60.50 309 eP P 16 30 50.2 +0.6
comp=Z,33nm,1.4s
PDMCI Parker Dam,Lak 60.51 294 P P 16 30 49.0 -0.9
baz=69
SHPR Sheep Range 60.52 297 eP P 16 30 51.6 +1.4
comp=Z,41nm,1.9s
CPUP Villa Florida 60.59 198 P P 16 30 49.9 -0.5
comp=Z,17nm,1.1s,baz=2.9,slow=6.5,SNR=13
CPUP LR LR 16 57 31.9
comp=Z,111nm,18.0s,baz=14,slow=36
VRH Novokhopyorsk 60.73 46 eP P 16 30 51.4 +0.2
VRH pmax pmax
comp=Z,10.0nm,0.6s
113A Mohawk Valley, 60.77 292 eP P 16 30 53.1 +1.4
comp=Z,41nm,1.5s
Y12C Blythe 61.01 293 eP P 16 30 55.7 +2.3
comp=Z,34nm,1.5s
WVOR Wild Horse Val 61.10 304 eP P 16 30 54.3 +0.3
WVOR pmax pmax
comp=Z,19nm,1.1s
WVOR Wild Horse Val 61.10 304 eP P 16 30 54.3 +0.3
comp=Z,19nm,1.1s
LVC Limon Verde 61.16 210 P P 16 30 54.5 -0.3
comp=Z,82nm,0.7s,baz=23,slow=5.5,SNR=34
LVC Limon Verde 61.16 210 eP P 16 30 54.4 -0.3
comp=Z,22nm,0.8s
TPNV Topopah Spring 61.19 297 eP P 16 30 55.9 +1.1
TPNV pmax pmax
comp=Z,18nm,0.9s
TPNV Topopah Spring 61.19 297 eP P 16 30 55.9 +1.1
comp=Z,18nm,0.9s
SLBS Sierra La Lagu 61.24 281 eP P 16 30 56.8 +1.6
comp=Z,128nm,1.8s
IRM Iron Mountain 61.34 294 P P 16 30 57.0 +1.3
baz=69
LPIG La Paz 61.37 282 P P 16 30 57.5 +1.6
comp=Z,15nm,0.3s,baz=266,slow=3.5,SNR=4.6
GLA Glamis 61.50 293 eP P 16 30 58.8 +2.1
GLA pmax pmax
comp=Z,32nm,1.4s
GLA Glamis 61.50 293 eP P 16 30 58.8 +2.1
comp=Z,32nm,1.4s
GMRC Granite Mounta 61.51 295 P P 16 30 57.5 +0.6
baz=69
G06A Carlson Farm, 61.58 308 eP P 16 31 01.6 +4.5
comp=Z,86nm,2.0s
INK Inuvik 61.59 335 eP P 16 30 56.5 -0.1
INK pmax pmax
comp=Z,32nm,1.1s
INK Inuvik 61.59 335 eP P 16 30 56.5 -0.1
comp=Z,32nm,1.1s
FURC Furnace Creek, 61.82 297 P P 16 30 59.6 +0.8
baz=69
G05D Wamic, OR 62.04 308 P P 16 30 59.6 -0.5
baz=71
BELC Belle Mtn. Jos 62.06 294 P P 16 31 01.8 +1.2
baz=68
NV11 Mina Array Sit 62.09 300 eP P 16 31 00.5 -0.3
comp=Z,11nm,0.9s
GSC Goldstone, Bar 62.20 296 P P 16 31 02.7 +1.3
baz=68
GSC Goldstone, Bar 62.20 296 eP P 16 31 03.1 +1.6
GSC pmax pmax
comp=Z,14nm,1.0s
GSC Goldstone, Bar 62.20 296 eP P 16 31 03.1 +1.6
comp=Z,14nm,1.0s
NV01 Mina Array Sit 62.20 300 eP P 16 31 01.0 -0.7
NVAR Mina Array Bea 62.20 300 P P 16 31 01.2 -0.4
comp=Z,3.0nm,0.7s,baz=78,slow=6.2,SNR=26
NVAR LR LR 16 57 00.8
comp=Z,1µm,19.6s,baz=74,slow=35
I05D Terrebonne, OR 62.35 307 P P 16 31 02.3 0.0
baz=71
DAC Darwin (Calif) 62.44 297 eP P 16 31 04.5 +1.3
DAC pmax pmax
comp=Z,134nm,2.0s
DAC Darwin (Calif) 62.44 297 eP P 16 31 04.5 +1.3
comp=Z,134nm,2.0s
MPMC Manual Prospec 62.44 297 P P 16 31 04.4 +1.1
baz=68
MOD Modoc Plateau 62.45 304 eP P 16 31 04.0 +0.9
comp=Z,22nm,1.1s
TPFO Pinon Flats 62.55 294 P P 16 31 01.6 -2.3
baz=68
PFO Pinyon Flats O 62.56 294 eP P 16 31 05.5 +1.5
PFO pmax pmax
comp=Z,33nm,1.4s
PFO Pinyon Flats O 62.56 294 eP P 16 31 05.5 +1.5
comp=Z,33nm,1.4s
K05A Summer Lake 62.58 305 eP P 16 31 04.6 +0.6
comp=Z,144nm,1.9s
BBRC Big Bear Solar 62.67 295 P P 16 31 04.2 -0.7
baz=68
DLBC Dease Lake 63.00 324 eP P 16 31 09.8 +3.4
comp=Z,58nm,2.0s
NLWA Neilton Lookou 63.01 311 eP P 16 31 07.7 +1.1
comp=Z,23nm,1.0s
BAR Barrett 63.08 293 eP P 16 31 10.1 +2.8
comp=Z,46nm,1.7s
K04D Chiloquin, OR 63.21 305 P P 16 31 08.7 +0.5
baz=70
ISA Isabella, Lake 63.33 297 eP P 16 31 11.0 +2.0
ISA pmax pmax
comp=Z,27nm,1.2s
ISA Isabella, Lake 63.33 297 eP P 16 31 11.0 +2.0
comp=Z,27nm,1.2s
GOF Gofitskoye 63.49 52⇑eP P 16 31 11.9 +2.1
GOF pmax pmax
comp=Z,32nm,0.6s
MWC Mount Wilson 63.56 295 eP P 16 31 13.1 +2.4
MWC pmax pmax
comp=Z,54nm,1.6s
MWC Mount Wilson 63.56 295 eP P 16 31 13.1 +2.4
comp=Z,54nm,1.6s
KIV Kislovodsk 63.63 53 eP P 16 31 13.0 +2.1
KIV pmax pmax
comp=Z,15nm,1.0s
KIV Kislovodsk 63.63 53 eP P 16 31 13.0 +2.1
comp=Z,15nm,1.0s
KBZ Khabaz 63.85 53 P P 16 31 14.2 +2.0
comp=Z,9.9nm,1.1s,baz=300,slow=3.5,SNR=8.8
KBZ LR LR 16 59 33.9
comp=Z,145nm,18.2s,baz=298,slow=37
KBZ Khabaz 63.85 53 P P 16 31 14.2 +2.0
KBZ pmax pmax
comp=Z,12nm,1.1s
KBZ MLR MLR
comp=Z,145nm,18.2s
CMB Columbia Colle 63.88 300 eP P 16 31 13.3 +0.8
CMB pmax pmax
comp=Z,30nm,1.6s
CMB Columbia Colle 63.88 300 eP P 16 31 13.3 +0.8
comp=Z,30nm,1.6s
NEY Neytrino 63.90 54⇑eP P 16 31 13.4 +0.6
NEY pmax pmax
comp=Z,6.0nm,2.1s
HUMO Hull Mountain 64.05 305 eP P 16 31 12.6 -1.0
comp=Z,8.0nm,0.9s
YBH Yreka Blue Hor 64.19 304 P P 16 31 12.9 -1.7
comp=Z,3.1nm,0.9s,baz=132,slow=3.8,SNR=6.2
YBH Yreka Blue Hor 64.19 304 eP P 16 31 13.5 -1.1
YBH pmax pmax
comp=Z,19nm,1.7s
YBH Yreka Blue Hor 64.19 304 eP P 16 31 13.5 -1.1
comp=Z,19nm,1.7s
NCK Nalchik 64.41 53⇑eP P 16 31 17.0 +1.1
NCK pmax pmax
comp=Z,10.0nm,0.9s
PKM Mcpherson Peak 64.64 297 P P 16 31 18.9 +1.1
baz=67
ONI Oni 64.64 54 P P 16 31 19.0 +1.5
ONI Oni 64.64 54 P P 16 31 19.0 +1.5
ZEI Tsey 64.88 54 eP P 16 31 17.7 -1.5
ZEI eS **S 16 40 00.4 -0.1**
ZEI pmax pmax
comp=Z,41nm,0.9s
KHMM Horse Mountain 65.22 304 eP P 16 31 22.0 +0.6
comp=Z,64nm,1.8s
DAWY Dawson 65.26 331 eP P 16 31 21.5 +0.4
comp=Z,96nm,1.9s
GUDG Gudauri 65.39 54 P P 16 31 26.3 +3.7
HOPS Hopland Field 65.47 302 eP P 16 31 24.8 +1.9
comp=Z,72nm,1.4s
EGAK Eagle 65.67 333 eP P 16 31 23.8 +0.1
comp=Z,77nm,1.8s
TBLG Delisi 65.85 55 P P 16 31 25.3 0.0
TBLG Delisi 65.85 55 P P 16 31 25.3 0.0
DGRG David-gareji 66.39 55 P P 16 31 30.7 +1.8
DGRG David-gareji 66.39 55 P P 16 31 30.7 +1.8
FYU Fort Yukon 66.42 335 eP P 16 31 30.7 +2.2
comp=Z,59nm,1.7s
GNI Garni 66.46 56 iP P 16 31 31.2 +1.8
SNR=12
GNI Garni 66.46 56deP P 16 31 29.2 -0.2
GNI pmax pmax
comp=Z,110nm,1.2s
GNI Garni 66.46 56 P P 16 31 30.2 +0.8
SNR=11
GNI Garni 66.46 56 pP P 16 31 30.2 +0.8
SNR=11
GNI Garni 66.46 56 eP P 16 31 31.6 +2.1
comp=Z,91nm,1.3s
DOT Dot Lake 67.31 332 eP P 16 31 34.5 +0.3
comp=Z,54nm,1.2s
MENT Mentasta 67.50 331 eP P 16 31 36.1 +0.6
comp=Z,24nm,1.5s
BALM Baldy 67.78 329 eP P 16 31 38.0 +0.6
BALM pmax pmax
comp=Z,63nm,1.8s
BALM Baldy 67.78 329 eP P 16 31 38.0 +0.6
comp=Z,63nm,1.8s
COLD Coldfoot 67.82 337 eP P 16 31 38.3 +0.9
comp=Z,11nm,1.1s
IL1 Eielson Array 67.87 334 eP P 16 31 35.7 -2.1
ILAR Eielson Array 67.87 334 P P 16 31 37.8 0.0
comp=Z,4.3nm,1.1s,baz=52,slow=4.9,SNR=20
ILAR PcP **PcP 16 32 04.5 +0.2**
comp=Z,3.4nm,0.9s,baz=57,slow=3.6,SNR=5.3
ILAR LR LR 17 01 38.9
comp=Z,602nm,18.2s,baz=77,slow=36
ILB Eielson Array 67.87 334 eP P 16 31 38.3 +0.5
HDA Harding Lake 68.07 333 eP P 16 31 39.5 +0.5
comp=Z,55nm,1.5s
PAX Paxson 68.19 332 eP P 16 31 40.2 +0.3
PAX pmax pmax
comp=Z,25nm,1.3s
PAX Paxson 68.19 332 eP P 16 31 40.2 +0.3
comp=Z,25nm,1.3s
ARU Arti 68.21 36d iP P 16 31 39.1 -0.9
ARU 16 32 06.1
ARU S **S 16 40 41.0 +1.0**
ARU SS **SS 16 44 58.0 -4.1**
ARU pmax pmax
comp=Z,25nm,1.2s
ARU MLR MLR
comp=Z,402nm,19.0s
ARU Arti 68.21 36 eP P 16 31 39.1 -0.9
comp=Z,22nm,1.0s
CCB Clear Creek Bu 68.28 334 eP P 16 31 40.4 +0.2
comp=Z,9.0nm,0.8s
MDM Murphy Dome 68.28 334 eP P 16 31 40.9 +0.6
comp=Z,39nm,1.9s
WRH Wood River Hil 68.47 334 eP P 16 31 41.8 +0.3
comp=Z,25nm,1.2s
BMRM Bremner River 68.78 330 eP P 16 31 43.9 +0.3
comp=Z,73nm,1.8s
SVE Sverdlovsk 69.06 35⇓eP P 16 31 45.0 -0.3
SVE pmax pmax
comp=Z,35nm,1.4s
KLU Klutina 69.09 330 eP P 16 31 45.7 +0.2
comp=Z,13nm,0.8s
BWN Browne 69.14 334 eP P 16 31 46.4 +0.7
comp=Z,24nm,0.8s
MLY Manley 69.16 335 eP P 16 31 46.0 +0.1
comp=Z,7.4nm,1.2s
MCK McKinley 69.17 333 eP P 16 31 46.5 +0.6
MCK pmax pmax
comp=Z,64nm,1.6s
MCK McKinley 69.17 333 eP P 16 31 46.5 +0.6
comp=Z,64nm,1.6s
DIV Divide 69.20 330 eP P 16 31 45.8 -0.5
comp=Z,9.2nm,0.9s
RND Reindeer 69.30 333 eP P 16 31 47.3 +0.5
RND pmax pmax
comp=Z,25nm,1.3s
RND Reindeer 69.30 333 eP P 16 31 47.3 +0.5
comp=Z,25nm,1.3s
SCM Sheep Creek Mo 69.50 331 eP P 16 31 48.0 -0.1
SCM pmax pmax
comp=Z,14nm,0.5s
SCM Sheep Creek Mo 69.50 331 eP P 16 31 48.0 -0.1
comp=Z,14nm,0.5s
BPAW Bear Paw Mtn. 69.74 334 eP P 16 31 49.4 0.0
comp=Z,42nm,1.8s
TRF Thorofare Moun 69.83 333 eP P 16 31 50.5 +0.3
comp=Z,56nm,1.8s
SML Sawmill 69.92 331 eP P 16 31 51.0 +0.4
SML pmax pmax
comp=Z,18nm,0.9s
SML Sawmill 69.92 331 eP P 16 31 51.0 +0.4
comp=Z,18nm,0.9s
KTH Kantishna Hill 70.02 334 eP P 16 31 51.5 +0.3
comp=Z,24nm,1.2s
PMR Palmer 70.36 331 eP P 16 31 53.7 +0.5
PMR pmax pmax
comp=Z,176nm,2.0s
PMR Palmer 70.36 331 eP P 16 31 53.7 +0.5
comp=Z,176nm,2.0s
CAST Castle Rocks 70.53 334 eP P 16 31 53.8 -0.4
comp=Z,19nm,1.5s
AKTO Aktyubinsk 70.60 42 P P 16 31 54.6 -0.3
AKTO pmax pmax
comp=Z,43nm,1.0s
PPLA Purkeypile 70.86 333 eP P 16 31 56.6 +0.1
comp=Z,15nm,1.0s
RC01 Rabbit Creek A 70.88 331 eP P 16 31 57.2 +0.8
comp=Z,58nm,1.4s
NRIK Noril'sk 71.71 17 P P 16 32 02.2 +0.9
comp=Z,19nm,0.9s,baz=334,slow=2.1,SNR=22
SPU Mount Spurr 71.77 332 eP P 16 32 01.7 -0.1
AB31 Akbulak array 72.26 43 P P 16 32 04.9 0.0
AB31 pmax pmax
comp=Z,22nm,1.1s
ABKAR Akbulak array 72.26 43 eP P 16 32 04.9 0.0
RSO Redoubt South 72.46 331 eP P 16 32 06.7 +0.5
SVW2 Sparrevohn 73.21 333 eP P 16 32 10.4 0.0
comp=Z,60nm,2.0s

H09N1	TRISTAN DA CUN	73.80	157	T	T	17 52 39.9	
	SNR=5.9						
H09W1	TRISTAN DA CUN	73.81	157	T	T	17 52 56.8	
	SNR=8.4						
OHAK	Old Harbor	74.57	329	*e*P	P	16 32 19.1	+0.7
ZRNK	Zerenda	75.19	36	P	P	16 32 21.9	-0.2
ZRNK				pmax	pmax		
	comp=Z,20nm,1.1s						
TSUM	Tsumeb	75.36	124	*e*P	P	16 32 24.7	+1.1
	comp=Z,13nm,1.1s						
BRVK	Borovoye	75.77	36	*d i*P	P	16 32 25.0	-0.4
BRVK				pmax	pmax		
	comp=Z,24nm,1.7s						
BRVK	Borovoye	75.77	36	*e*P	P	16 32 25.3	-0.1
BVA0	Borovoye Array	75.84	36	*i* P	P	16 32 25.8	0.0
BVA0				pmax	pmax		
	comp=Z,15nm,0.9s						
BVAR	Borovoye Array	75.84	36	P	P	16 32 25.5	-0.3
	comp=Z,6.7nm,0.7s,baz=305,slow=5.2,SNR=36						
TIXI	Tiksi	76.01	4	P	P	16 32 27.3	+0.9
	comp=Z,11nm,1.0s,baz=14,slow=5.6,SNR=12						
TIXI	Tiksi	76.01	4	*d i*P	P	16 32 26.7	+0.3
TIXI				pmax	pmax		
	comp=Z,26nm,1.7s						
TIXI	Tiksi	76.01	4	*e*P	P	16 32 26.8	+0.3
GEYT	Alibeck	76.75	54	P	P	16 32 31.4	+0.1
	comp=Z,13nm,1.1s,baz=286,slow=11,SNR=9.0						
GEYT				LR	LR	17 05 27.9	
	comp=Z,100nm,20.9s,baz=265,slow=35						
PLCA	Paso Flores	77.94	203	P	P	16 32 38.0	+0.3
	comp=Z,11nm,0.9s,baz=38,slow=7.7,SNR=7.6						
PLCA				LR	LR	17 07 25.2	
	comp=Z,132nm,21.5s,baz=27,slow=36						
PLCA	Paso Flores	77.94	203	*e*P	P	16 32 38.4	+0.8
BILL	Biiibino	77.98	350	⇑*i*P	P	16 32 38.1	+0.5
BILL				*e*		16 32 46.9	
BILL				*e*		16 35 35.2	
BILL				pmax	pmax		
	comp=Z,14nm,1.1s						
BILL				MLR	MLR		
	comp=Z,136nm,17.0s						
BILL	Bilibino	77.98	350	*e*P	P	16 32 37.7	+0.1
SDPT	Sand Point	78.87	330	*e*P	P	16 32 43.3	+0.6
OTUK	Ortayu	79.67	39	P	P	16 32 46.0	-1.3
OTUK				pmax	pmax		
	comp=Z,17nm,0.9s						
KMBO	Kilima Mbogo	79.99	98	P	P	16 32 50.7	+0.9
	comp=Z,2.0nm,0.9s,baz=316,slow=3.8,SNR=4.6						
KMBO				LR	LR	17 08 49.8	
	comp=Z,453nm,18.5s,baz=278,slow=36						
NVS	Novosibirsk	80.53	29	*e*P	P	16 32 50.9	-0.8
NVS				pmax	pmax		
	comp=N,14nm,1.5s						
NVS				pmax	pmax		
	comp=E,11nm,1.5s						
NVS				pmax	pmax		
	comp=Z,45nm,1.5s						
LSZ	Lusaka	80.69	115	*e*P	P	16 32 53.0	-0.3
LSZ				pmax	pmax		
	comp=Z,35nm,1.2s						
LSZ	Lusaka	80.69	115	P	P	16 32 53.9	+0.6
LSZ				P	P	16 32 53.9	+0.6
LSZ	Lusaka	80.69	115	P	P	16 32 53.9	+0.6
LSZ	Lusaka	80.69	115	*e*P	P	16 32 53.0	-0.3
	comp=Z,34nm,1.2s						
KURK	Kurchatov	81.28	34	*e*P	P	16 32 55.2	-0.6
KURK				pmax	pmax		
	comp=Z,37nm,0.9s						
KURK	Kurchatov	81.28	34	*e*P	P	16 32 55.2	-0.6
	comp=Z,36nm,0.9s						
BANOM	Banah	81.64	65	*i* P	P	16 32 58.4	+0.2
	SNR=5.8						
BANOM	Banah	81.64	65	P	P	16 32 57.4	-0.8
BANOM				P	P	16 32 57.4	-0.8
BANOM	Banah	81.64	65	P	P	16 32 57.4	-0.8
FAQ	Al Faqa, Dubai	81.71	66	P	P	16 32 59.4	+0.8
KKAR	Karatay Array	81.75	44	*e*P	P	16 32 58.6	+0.1
KKAR	Karatay Array	81.75	44	*e*P	P	16 32 58.6	+0.1
ZALV	Zalesovo Beam	81.81	29	P	P	16 32 57.9	-0.7
	comp=Z,10nm,0.8s,baz=292,slow=7.8,SNR=33						
ZALV				LR	LR	17 08 31.0	
	comp=Z,92nm,18.4s,baz=250,slow=35						
UOSS	Minazif	82.08	66	*e*P	P	16 32 59.5	-1.0
HATD	Hatta, Dubai	82.08	66	*i* P	P	16 33 02.4	+1.8
	SNR=8.4						
ASHO	Ashiyiah	82.10	66	*i* P	P	16 33 01.7	+1.0
	SNR=6.1						
ASHO	Ashiyiah	82.10	66	P	P	16 33 00.1	-0.6
	SNR=7.0						
ASHO				P	P	16 33 00.1	-0.6
	SNR=7.0						
ASHO	Ashiyiah	82.10	66	pP	P	16 33 00.1	-0.6
	SNR=7.0						
ARQ	Araqi	83.17	67	P	P	16 33 04.8	-1.5
	SNR=6.7						
ARQ	Araqi	83.17	67	P	P	16 33 04.8	-1.5
	SNR=6.7						
MNAS	Manas	83.29	43	P	P	16 33 07.0	+0.2
MNAS				pmax	pmax		
	comp=Z,40nm,1.1s						
KRAR	Krasnoyarsk	83.34	24	⇑*e*P	P	16 33 06.7	+0.2
KRAR				pmax	pmax		
	comp=Z,20nm,1.2s						
EKS2	Erkin-Say	83.92	43	*e*P	P	16 33 10.6	+0.6
EKS2	Erkin-Say	83.92	43	*e*P	P	16 33 10.6	+0.6
BIDO	Bidbid	84.32	66	P	P	16 33 11.4	-0.7
	SNR=5.6						
BIDO				P	P	16 33 11.4	-0.7
	SNR=5.6						
BIDO	Bidbid	84.32	66	P	P	16 33 11.4	-0.7
	SNR=5.6						
AAK	Ala-Archa	84.35	42	*ce*P	P	16 33 12.9	+0.7
AAK				pmax	pmax		
	comp=Z,10.0nm,1.0s						
AAK	Ala-Archa	84.35	42	*e*P	P	16 33 12.9	+0.7
SMDO	Samad	84.51	66	P	P	16 33 11.0	-2.2
SMDO	Samad	84.51	66	P	P	16 33 11.0	-2.2
SEY	Seymchan	84.53	354	P	P	16 33 12.6	+0.2
	comp=Z,7.3nm,0.9s,baz=358,slow=1.4,SNR=17						
SEY	Seymchan	84.53	354	⇑*i*P	P	16 33 13.0	+0.6
TKM2	Tokmak 2	84.79	42	*e*P	P	16 33 15.0	+0.5
TKM2	Tokmak 2	84.79	42	*e*P	P	16 33 15.0	+0.5
SFK	Sufi-Kurgan	85.42	45	P	P	16 33 17.9	+0.2
SFK				pmax	pmax		
	comp=Z,33nm,1.3s						
MAKZ	Makanchi	85.56	36	*e*P	P	16 33 17.6	-0.4
MAKZ	Makanchi	85.56	36	*e*P	P	16 33 17.6	-0.4
YAK	Yakutsk	85.61	5	*e*P	P	16 33 16.1	-1.7
YAK				pmax	pmax		
	comp=Z,40nm,0.9s						
YAK				pmax	pmax		
	comp=N,18nm,1.2s						
YAK				pmax	pmax		
	comp=E,7.0nm,1.1s						
YAK	Yakutsk	85.61	5	*e*P	P	16 33 17.9	0.0
MK31	Makanchi Array	85.72	36	*i* P	P	16 33 17.9	-0.9
MK31				pmax	pmax		
	comp=Z,15nm,1.0s						
MK31	Makanchi Array	85.72	36	*e*P	P	16 33 18.4	-0.4
MKAR	Makanchi Array	85.72	36	P	P	16 33 17.8	-1.0
	comp=Z,9.4nm,1.0s,baz=313,slow=4.1,SNR=39						
MKAR				LR	LR	17 11 26.1	
	comp=Z,462nm,18.6s,baz=304,slow=36						
MKAR	Makanchi Array	85.72	36	*i* P	P	16 33 18.3	-0.5
MKAR				pmax	pmax		
	comp=Z,9.0nm,1.0s						
MKAR	Makanchi Array	85.72	36	*e*P	P	16 33 18.4	-0.4
MK01	Makanchi Array	85.75	36	*e*P	P	16 33 17.9	-1.0
BOSA	Boshof	86.80	127	P	P	16 33 24.7	+0.3
	comp=Z,5.3nm,1.0s,baz=67,slow=22,SNR=3.3						
BOSA				LR	LR	17 06 20.8	
	comp=Z,334nm,21.4s,baz=320,slow=32						
KSH	Kashi	87.20	44	P	P	16 33 27.5	+1.1
KSH				*e*pP	sP	16 33 32.0	+0.3
KSH				*es*P	pP	16 33 34.3	+4.0
KSH				*e*PP	PP	16 36 54.6	+5.0
KSH				S	S	16 44 06.0	-0.1
KSH				pmax	pmax		
	comp=Z,22nm,1.1s						
KSH				pmax	pmax		
	comp=Z,95nm,3.4s						
KSH				LR	LR		
	comp=Z,920nm,12.2s						
KSH				LR	LR		
	comp=Z,340nm,11.3s						
KSH				LR	LR		
	comp=Z,640nm,21.7s						
BOD	Bodaibo	87.60	13	*e*P	P	16 33 26.4	-1.3
BOD				pmax	pmax		
	comp=Z,32nm,1.6s						
MOY	Mondy	89.67	23	*e*P	P	16 33 37.8	0.0
IRK	Irkutsk	90.21	21	*e*P	P	16 33 39.2	-1.0
IRK				pmax	pmax		
	comp=Z,35nm,2.3s						
TLY	Talaya	90.51	22	*e*P	P	16 33 41.8	+0.2
TLY				*e*S	SKSac	16 44 09.3	-3.6
TLY				*e*		16 45 46.6	
TLY				pmax	pmax		
	comp=Z,11nm,1.4s						
TLY				MLR	MLR		
	comp=Z,108nm,17.0s						
WMQ	Urumqi	90.51	35	P	P	16 33 42.1	+0.3
WMQ				pP	pP	16 33 44.6	-1.1
WMQ				sP	sP	16 33 48.1	+1.0
WMQ				SKS	SKSac	16 44 06.6	-6.7
WMQ				S	S	16 44 36.0	-1.0
WMQ				sS	sS	16 44 42.5	-1.0
WMQ				SS	SS	16 50 39.1	+2.8
WMQ				pmax	pmax		
	comp=Z,5.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,52nm,4.2s						
WMQ				LR	LR		
	comp=Z,300nm,15.4s						
WMQ				LR	LR		
	comp=Z,170nm,18.4s						
ZAK	Zakamensk	91.52	22	*e*P	P	16 33 46.3	-0.1
ZAK				pmax	pmax		
	comp=Z,6.0nm,1.6s						
PETK	Petropavlovsk-	93.50	349	LR	LR	17 13 51.0	
	comp=Z,127nm,21.9s,baz=27,slow=34						
SONA1	Songino Array	94.73	22	*e*P	P	16 34 00.9	-0.4
SONM	Songino Array	94.74	22	P	P	16 34 01.3	0.0
	comp=Z,1.5nm,0.6s,baz=308,slow=4.2,SNR=7.6						
SONM				LR	LR	17 18 31.8	
	comp=Z,76nm,18.1s,baz=280,slow=37						
ULN	Ulaanbaatar	94.92	21	*d i*P	P	16 34 01.9	-0.3
ULN				pmax	pmax		
	comp=Z,7.0nm,1.1s						
ULN	Ulaanbaatar	94.92	21	*e*P	P	16 34 02.3	+0.1
GTA	Gaotai	99.54	30	P	Pdif	16 34 23.2	0.0
GTA				pP	pP	16 34 27.1	0.0
GTA				sP	sP	16 34 29.9	+1.4
GTA				PP	PP	16 38 28.7	+2.8
GTA				SKS	SKSac	16 44 59.9	-2.0
GTA				S	ScS	16 45 50.8	-5.3
GTA				sS	S	16 45 58.4	+2.3
GTA				SS	SS	16 52 44.1	-0.6
GTA				pmax	pmax		
	comp=Z,2.0nm,1.0s						
GTA				pmax	pmax		
	comp=Z,90nm,6.2s						
GTA				LR	LR		
	comp=Z,140nm,17.1s						
GTA				LR	LR		
	comp=Z,190nm,18.5s						
GTA				LR	LR		
	comp=Z,240nm,19.0s						
HHC	Hu-ho-hao-te	102.64	22	*e*P	Pdif	16 34 35.4	-1.5
HHC				PP	PP	16 38 49.6	+0.5
HHC				SKS	SKSac	16 45 13.8	-3.0
HHC				S	Sdif	16 46 16.0	-5.9
HHC				SS	SS	16 53 28.0	+0.6
HHC				pmax	pmax		
	comp=Z,30nm,1.4s						
HHC				pmax	pmax		
	comp=Z,72nm,7.3s						
HHC				LR	LR		
	comp=Z,190nm,17.7s						
HHC				LR	LR		
	comp=Z,190nm,17.7s						
HHC				LR	LR		
	comp=Z,220nm,17.9s						
MDJ	Mudanjiang	102.84	7	P	Pdif	16 34 37.6	0.0
MDJ				S	Sdif	16 46 21.3	-1.9
MDJ				SS	SS	16 53 29.4	-0.3
MDJ				pmax	pmax		
	comp=Z,5.0nm,1.0s						
MDJ				pmax	pmax		
	comp=Z,18nm,3.7s						
MDJ				LR	LR		
	comp=Z,58nm,22.2s						
MDJ				LR	LR		
	comp=Z,64nm,25.5s						
TAOE	Nuku Hiva Isla	103.08	268	*e*LR	LR	17 08 24.0	
	comp=Z,389nm,30.5s						
RKT	Rikitea	105.84	252	*e*LR	LR	17 09 46.7	
	comp=Z,330nm,36.8s						
CD2	Chengdu	108.42	32	Pdif	Pdif	16 35 00.0	-2.8
CD2				PP	PP	16 39 34.1	+2.0
CD2				S	Sdif	16 47 05.9	-4.5
CD2				SS	SS	16 54 44.4	-2.4
CD2				AMB	AMB		
	comp=Z,140nm,7.2s						
CD2				LR	LR		
	comp=Z,300nm,15.6s						
CD2				LR	LR		
	comp=Z,390nm,18.0s						
KMI	Kunming	112.79	36	Pdif	Pdif	16 35 25.2	+2.7
KMI				SS	SS	16 55 50.6	+4.7
KMI				LR	LR		
	comp=Z,200nm,21.6s						
KMI				LR	LR		
	comp=Z,77nm,22.5s						
KMI				LR	LR		
	comp=Z,200nm,27.3s						
GYA	Guiyang	113.54	32	*e*Pdif	Pdif	16 35 24.8	-0.9
GYA				PKP	PKiKP	16 39 17.0	-1.6
GYA				PP	PP	16 40 11.6	+2.6
GYA				AMB	AMB		
	comp=Z,130nm,7.8s						
PPT2	Papeete2	115.34	265	*e*SP	SP	16 49 59.9	-2.1
	comp=Z,77nm,26.8s						
PPT2				*e*SS	SS	16 56 26.0	+4.2
	comp=Z,117nm,28.5s						
PPT2	Papeete2	115.34	265	*e*LR	LR	17 14 05.1	
	comp=Z,579nm,29.0s						
CMAR	Chiang Mai Arr	116.10	44	PKP	PKPdf	16 39 23.2	-0.4
	comp=Z,0.9nm,0.7s,baz=303,slow=3.2						
SYO	Syowa Base	116.26	157	⇑*e*PP	PP	16 40 27.4	-1.0
VNDA	Vanda	133.66	186	PKP	PKPdf	16 39 55.9	+0.6
	comp=Z,2.2nm,0.8s,baz=165,slow=6.5,SNR=9.0						
KAPI	Kappang	146.96	39	PKPbc	PKPdf	16 40 21.9	+0.8
	comp=Z,13nm,0.4s,baz=112,slow=16,SNR=7.3						
WRA	Warramunga Arr	166.71	23	PKP	PKPdf	16 40 47.4	+1.5
	comp=Z,0.7nm,0.8s,baz=326,slow=1.1,SNR=6.3						
WRA				PKPab	PKPab	16 41 49.8	+1.4
	comp=Z,3.0nm,1.0s,baz=347,slow=4.5,SNR=8.3						
WRA				PP	PP	16 45 34.2	-0.9
	comp=Z,1.3nm,1.0s,baz=351,slow=6.6,SNR=5.0						
ASAR	Alice Springs	169.90	33	PKP	PKPdf	16 40 47.4	-0.6
	comp=Z,3.0nm,0.9s,baz=39,slow=0.7,SNR=26						
ASAR				PKPab	PKPab	16 42 01.7	-0.7
	comp=Z,3.6nm,0.9s,baz=331,slow=4.9,SNR=14						
STKA	Stephens Creek	178.43	287	PKPab	PKPab	16 42 39.0	
	comp=Z,2.3nm,0.9s,baz=29,slow=8.9,SNR=4.2						

IDC 06 16:27:19.2±1.2, 2°76S×139°39E, h0km, mb3.5/4, mb1 3.8/6, mb1mx3.6/32, mbtmp3.6/6, ML3.5/2, MS3.6/1, Ms1 3.6/1, ms1mx2.6/20, Error ellipse: s-maj=25.7km s-min=18.7km az=148.0, Near north coast of Irian Jaya

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
JAY	Jayapura	1.33	80	Pn		Pg	16 27 44.9	+0.2
	0.6nm,0.3s,baz=93,slow=22,SNR=17							
JAY					Sn	Sn	16 28 04.0	+0.5
	1.9nm,0.3s,baz=88,slow=23,SNR=30							
WRA	Warramunga Arr	17.78	196	P		P	16 31 30.2	+1.0
	0.1nm,0.3s,baz=18,slow=12,SNR=15							
CTA	Charters Tower	18.48	159	P		P	16 31 36.1	-0.8
	0.1nm,0.3s,baz=10,slow=11,SNR=1.9							
FITZ	Fitzroy Crossi	20.36	221	P		P	16 31 56.4	-1.0
	4.1nm,1.0s,baz=38,slow=15,SNR=2.9							
ASAR	Alice Springs	21.46	194	P		P	16 32 08.7	-0.7
	0.9nm,0.8s,baz=16,slow=11,SNR=12							
JCJ	Chichijima	29.80	5	LR		LR	16 42 48.8	
	comp=Z,94nm,18.6s,baz=120,slow=31							
H11N1	WAKE ISLAND Hy	35.04	49	T		T	17 11 24.3	
	baz=254							
H11N2	WAKE ISLAND Hy	35.06	49	T		T	17 11 35.9	
	baz=254							
H11N3	WAKE ISLAND Hy	35.06	49	T		T	17 11 34.6	
	baz=254							
MKAR	Makanchi Array	70.24	322	P		P	16 38 34.2	0.0
	0.3nm,0.7s,baz=111,slow=7.9,SNR=3.1							
VNDA	Vanda	75.68	175	P		P	16 39 06.8	+0.9
	0.6nm,0.6s,baz=326,slow=6.9,SNR=4.3							

*NIED **06** 16:30:00, 38°30N×141°80E, h29km, Mw3.5 Best double couple: M0 1.83000×10^14 NP1:φ=332.00000°, δ=68.00000°, λ=1.00000°. NP2:φ=242.00000°, δ=89.00000°, λ=158.00000°.*

JMA 06 16:30:47.0, 38°25N×141°78E, h57km±1km, M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.40	301	P		Pn	16 30 57.8	+0.2
JIO				S		Sn	16 31 05.4	+0.1
JMK	Ichinoseki	0.83	328	P		Pn	16 31 02.9	+0.2
JMK				S		Sn	16 31 14.3	+0.1
OFUJ	Ofunato	0.83	354	P		Pn	16 31 02.8	0.0
OFUJ				S		Sn	16 31 14.1	-0.2
JMM	Marumori	0.87	244	P		Pn	16 31 02.9	-0.3
JMM				S		Sn	16 31 14.7	-0.4
JOU	Okura	0.89	278	P		Pn	16 31 03.6	+0.2
JOU				S		Sn	16 31 15.8	+0.2
JFK	Kawauchi	1.14	219	P		Pn	16 31 06.6	-0.2
JFK				*e*S		Sn	16 31 21.2	-0.3
JYK	Kaneyama	1.30	301	P		Pn	16 31 09.2	+0.3
JYK				*e*S		Sn	16 31 26.1	+0.8
JFT	Otama	1.36	238	P		Pn	16 31 10.3	+0.6
JFT				S		Sn	16 31 27.0	+0.3

*IDC **06** 16:39:29.8±2.1, 38°22N×144°34E, h0km, mb3.9/3, mb1 3.9/4, mb1mx3.5/35, mbtmp3.7/4, ML3.5/1, MS2.5/2, Ms1 2.5/2, ms1mx2.2/37, Error ellipse: s-maj=46.8km s-min=31.2km az=64.0*

*JMA **06** 16:39:52.9±0.2, 37°82N×142°05E, h33km±2km, M3.3*

ISC 06 16:39:39.8±1.8, 37°58N±0°07×142°8E±0°1, h21km, n13, σ2°32/15, mb3.9/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	1.42	308	P		Pb	16 40 08.4	+2.9
JIO				S		Sn	16 40 19.1	-3.2
JFK	Kawauchi	1.52	262	P		Pb	16 40 11.1	+3.9
JFK				S		Sn	16 40 24.2	-0.7
JMM	Marumori	1.59	281	P		Pb	16 40 10.8	+2.4
JMM				S		Sn	16 40 23.5	-3.0
JMK	Ichinoseki	1.83	319	P		Pb	16 40 15.3	+2.7
JMK				*e*S		Sn	16 40 31.1	-1.4
JOU	Okura	1.83	296	P		Pb	16 40 14.6	+2.0
JFT	Otama	1.93	269	P		Pb	16 40 17.3	+3.1
JYS	Shirataka	2.23	288	P		Pb	16 40 20.6	+1.3
MJAR	Matsushiro Arr	3.79	255	Pn		Pb	16 40 47.9	+2.0
	1.9nm,0.3s,baz=89,slow=15,SNR=14							
MJAR				Sn		Sb	16 41 48.7	+17
	0.6nm,0.3s,baz=102,slow=16,SNR=5.6							
MJAR				LR		LR	16 43 01.9	
	comp=Z,50nm,20.6s,baz=70,slow=41							
MAT	Matsushiro	3.79	256	P		Pb	16 40 46.8	+0.9
MAT				S		Sn	16 41 20.8	-0.1
KSRS	Korea Array	11.79	274	LR		LR	16 47 06.2	
	comp=Z,21nm,18.7s,baz=94,slow=35							
MKAR	Makanchi Array	44.74	302	P		P	16 47 50.8	-0.8
	0.3nm,0.6s,baz=86,slow=7.4,SNR=2.7							
KURBB	Kurchatov Arra	46.52	308	P		P	16 48 02.9	-2.6
	1.0nm,0.2s,baz=88,slow=7.0,SNR=6.2							
WRA	Warramunga Arr	57.76	189	P		P	16 49 28.6	-0.8
	1.0nm,0.8s,baz=9.4,slow=7.1,SNR=9.2							

*LJU **06** 16:40:12.0, 46°39N×15°07E, h0km, ML0.2 Rockburst*

CSEM 06 16:40:12.0±99.0, 46°39N×15°07E, h0km, Mining explosion., Northwestern Balkan Peninsula

*ISCJB **06** 16:52:11.1±0.8, 20°28N±0°08×145°2E±0°2, h81km, mb3.8/7, Error ellipse: s-maj=30.7km s-min=9.6km az=166.7*

*IDC **06** 16:52:12.8±3.9, 20°29N×145°36E, h83km±35km, mb3.5/7, mb1 3.8/9, mb1mx3.5/34, mbtmp3.9/9, Error ellipse: s-maj=34.5km s-min=15.2km az=92.0*

ISC 06 16:52:12.6±0.8, 20°3N±0°1×145°4E±0°2, h81km, n10, σ1°14/11, mb3.8/7, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
JCJ	Chichijima	7.39	337	P		Pn	16 53 59.8	+2.0
	20nm,0.3s,baz=272,slow=21,SNR=26							
JCJ				S		Sn	16 55 18.0	-2.1
	15nm,0.3s,baz=278,slow=22,SNR=7.2							
MJAR	Matsushiro Arr	17.38	340	P		P	16 56 09.7	-0.4
	0.1nm,0.3s,baz=158,slow=7.9,SNR=2.8							
WRA	Warramunga Arr	41.40	196	P		P	16 59 51.0	-0.2
	3.2nm,0.5s,baz=15,slow=8.5,SNR=68							
ASAR	Alice Springs	45.08	195	P		P	17 00 20.9	+0.2
	1.2nm,0.3s,baz=13,slow=6.5,SNR=129							
STKA	Stephens Creek	51.98	184	P		P	17 01 13.2	-0.3
	0.9nm,0.5s,baz=346,slow=6.5,SNR=4.3							
ZALV	Zalesovo Beam	56.58	322	P		P	17 01 47.8	+1.0
	0.3nm,0.3s,baz=78,slow=7.8,SNR=3.1							
MKAR	Makanchi Array	57.16	313	P		P	17 01 50.4	-0.6
	0.2nm,0.5s,baz=90,slow=8.5,SNR=3.0							
YKA	Yellowknife Ar	76.75	28	P		P	17 03 54.4	-0.5
	0.5nm,0.5s,baz=290,slow=5.8,SNR=9.0							
NVAR	Mina Array Bea	82.42	52	P		P	17 04 26.7	+0.2
	0.5nm,0.5s,baz=279,slow=6.5,SNR=4.2							
LPAZ	La Paz	147.98	88	PKPbc		PKPbc	17 11 50.0	-0.3
	0.8nm,0.5s,baz=270,slow=6.1,SNR=3.0							

*CSEM **06** 16:53:49.2, 38°26N×15°12E, h9km, MD1.6/4*

ROM 06 16:53:49.2±0.1, 38°26N×15°12E, h9km±1km, Md1.6/4, Ml1.3/3, 2C, Error ellipse: s-maj=1.9km s-min=1.0km az=54.0, Sicily

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
MILZ	Milazzo	0.09	82	⇑*i*Pg		Pg	16 53 51.9	+0.4
MILZ				Sg		Sg	16 53 53.6	+0.5
	75nm,0.3s							
MILZ	Milazzo	0.09	82	⇑*i*Pg		Pg	16 53 51.9	+0.4
MILZ				Sg		Sg	16 53 53.6	+0.5
	75nm,0.3s							
VPL	Vulcano Piano	0.16	318	Pg		Pg	16 53 53.2	+0.5
VPL				Sg		Sg	16 53 56.4	+1.3
	290nm,0.4s							
VPL	Vulcano Piano	0.16	318	Pg		Pg	16 53 53.2	+0.5
VPL				Sg		Sg	16 53 56.4	+1.3
	290nm,0.4s							
MPNC	Port Mandanici	0.21	122	Pg		Pg	16 53 54.3	+0.7
MPNC				Sg		Sg	16 53 58.4	+1.8
	47nm,0.4s							
MPNC	Port Mandanici	0.21	122	Pg		Pg	16 53 54.3	+0.7
MPNC				Sg		Sg	16 53 58.4	+1.8
	47nm,0.4s							
MCSR	Castroreale	0.22	153	Pg		Pg	16 53 54.2	+0.5
MCSR				Sg		Sg	16 53 58.1	+1.3
MCSR	Castroreale	0.22	153	Pg		Pg	16 53 54.2	+0.5
MCSR				Sg		Sg	16 53 58.1	+1.3
NOV	Novara	0.23	177	Pg		Pg	16 53 54.9	+1.0
NOV				Sg		Sg	16 53 58.5	+1.4
	32nm,0.8s							
NOV	Novara	0.23	177	Pg		Pg	16 53 54.

ESLN	**Serra La Nave**	**0.10 176**	⇓*i*Pg		Pb	16 54 53.8	-0.2
ESLN			Sg		Sb	16 54 57.5	+0.1
2μm,0.7s							
ESLN	**Serra La Nave**	**0.10 176**	⇓*i*Pg		Pb	16 54 53.8	-0.2
ESLN			Sg		Sb	16 54 57.5	+0.1
2μm,0.7s							
MNO	**Monte Soro**	**0.26 303**	⇓*i*Pg		Pb	16 54 55.4	-0.3
MNO			Sg		Sb	16 55 00.3	+0.1
485nm,0.1s							
MNO	**Monte Soro**	**0.26 303**	⇓*i*Pg		Pb	16 54 55.4	-0.3
MNO			Sg		Sb	16 55 00.3	+0.1
485nm,0.1s							
MUCR	**Ucria**	**0.26 344**	⇑*i*Pg		Pb	16 54 55.2	-0.5
MUCR			Sg		Sb	16 55 00.3	+0.1
MUCR	**Ucria**	**0.26 344**	⇑*i*Pg		Pb	16 54 55.2	-0.5
MUCR			Sg		Sb	16 55 00.3	+0.1
MMME	**Mongiuffi-Meli**	**0.27 58**	⇑*i*Pg		Pb	16 54 56.0	+0.3
MMME			Sg		Sn	16 55 01.7	-1.0
2μm,0.6s							
MMME	**Mongiuffi-Meli**	**0.27 58**	⇑*i*Pg		Pb	16 54 56.0	+0.3
MMME			Sg		Sn	16 55 01.7	-1.0
2μm,0.6s							
NOV	**Novara**	**0.27 30**	⇑*i*Pg		Pb	16 54 55.8	0.0
NOV			Sg		Sb	16 55 01.1	+0.7
1μm,0.5s							
NOV	**Novara**	**0.27 30**	⇑*i*Pg		Pb	16 54 55.8	0.0
NOV			Sg		Sb	16 55 01.1	+0.7
1μm,0.5s							
ECNV	**Catenanuova**	**0.28 226**	Pg		Pb	16 54 56.5	+0.6
ECNV			Sg		Sb	16 55 00.6	+0.1
2μm,0.6s							
ECNV	**Catenanuova**	**0.28 226**	Pg		Pb	16 54 56.5	+0.6
ECNV			Sg		Sb	16 55 00.6	+0.1
2μm,0.6s							
GALF	**Gagliano Caste**	**0.33 256**	⇑*i*Pg		Pb	16 54 56.7	+0.2
GALF			Sg		Sn	16 55 03.3	-0.8
2μm,0.5s							
GALF	**Gagliano Caste**	**0.33 256**	⇑*i*Pg		Pb	16 54 56.7	+0.2
GALF			Sg		Sn	16 55 03.3	-0.8
2μm,0.5s							
MCSR	**Castroreale**	**0.35 40**	⇑*i*Pg		Pb	16 54 56.9	-0.1
MCSR			Sg		Sb	16 55 03.1	+0.7
MCSR	**Castroreale**	**0.35 40**	⇑*i*Pg		Pb	16 54 56.9	-0.1
MCSR			Sg		Sb	16 55 03.1	+0.7
CAGR	**Agira**	**0.41 245**	⇑*i*Pg		Pn	16 54 58.6	-0.6
2μm,0.7s							
CAGR	**Agira**	**0.41 245**	⇑*i*Pg		Pn	16 54 58.6	-0.6
2μm,0.7s							
HLNI	**Lentini**	**0.45 190**	Pg		Pb	16 54 58.1	-0.3
HLNI			Sg		Sb	16 55 05.4	+0.6
821nm,0.3s							
HLNI	**Lentini**	**0.45 190**	Pg		Pb	16 54 58.1	-0.3
HLNI			Sg		Sb	16 55 05.4	+0.6
821nm,0.3s							
MPNC	**Port Mandanici**	**0.47 41**	⇑*i*Pg		Pb	16 54 59.0	+0.3
MPNC			Sg		Sn	16 55 06.7	-0.8
2μm,0.5s							
MPNC	**Port Mandanici**	**0.47 41**	⇑*i*Pg		Pb	16 54 59.0	+0.3
MPNC			Sg		Sn	16 55 06.7	-0.8
2μm,0.5s							
HCRL	**Carlentini**	**0.51 174**	Pg		Pb	16 54 59.4	0.0
HCRL			Sg		Sn	16 55 07.6	-0.9
3μm,0.4s							
HCRL	**Carlentini**	**0.51 174**	Pg		Pb	16 54 59.4	0.0
HCRL			Sg		Sn	16 55 07.6	-0.9
3μm,0.4s							
MILZ	**Milazzo**	**0.52 24**	⇑*i*Pg		Pb	16 54 59.8	+0.2
MILZ			Sg		Sb	16 55 07.7	+0.9
1μm,0.6s							
MILZ	**Milazzo**	**0.52 24**	⇑*i*Pg		Pb	16 54 59.8	+0.2
MILZ			Sg		Sb	16 55 07.7	+0.9
1μm,0.6s							
HAGA	**Augusta**	**0.53 163**	Pg		Pb	16 54 59.7	0.0
HAGA			Sg		Sn	16 55 08.0	-1.0
833nm,0.3s							
HAGA	**Augusta**	**0.53 163**	Pg		Pb	16 54 59.7	0.0
HAGA			Sg		Sn	16 55 08.0	-1.0
833nm,0.3s							
VPL	**Vulcano Piano**	**0.58 1**	Pg		Pb	16 55 00.7	0.0
4μm,0.4s							
VPL	**Vulcano Piano**	**0.58 1**	Pg		Pb	16 55 00.7	0.0
4μm,0.4s							
MSRU	**Castanea**	**0.64 42**	Pg		Pb	16 55 01.5	0.0
638nm,0.5s							
MSRU	**Castanea**	**0.64 42**	Pg		Pb	16 55 01.5	0.0
638nm,0.5s							
SSY	**Sortino**	**0.64 172**	Pg		Pb	16 55 01.4	-0.3
2μm,0.3s							
SSY	**Sortino**	**0.64 172**	Pg		Pb	16 55 01.4	-0.3
2μm,0.3s							
HVZN	**Vizzini**	**0.65 198**	Pg		Pb	16 55 01.3	-0.4
HVZN			Sg		Sn	16 55 11.4	-0.6
2μm,0.8s							
HVZN	**Vizzini**	**0.65 198**	Pg		Pb	16 55 01.3	-0.4
HVZN			Sg		Sn	16 55 11.4	-0.6
2μm,0.8s							
LLI	**Lipari**	**0.65 359**	Pg		Pn	16 55 02.5	-0.1
2μm,0.6s							
LLI	**Lipari**	**0.65 359**	Pg		Pn	16 55 02.5	-0.1
2μm,0.6s							
PLLN	**Pollina**	**0.68 287**	Pg		Pb	16 55 02.0	-0.3
1μm,0.8s							
PLLN	**Pollina**	**0.68 287**	Pg		Pb	16 55 02.0	-0.3
1μm,0.8s							
RESU	**Resuttano**	**0.74 259**	Pg		Pn	16 55 04.4	+0.6
311nm,0.7s							
RESU	**Resuttano**	**0.74 259**	Pg		Pn	16 55 04.4	+0.6
311nm,0.7s							
RAFF	**Raffo Rosso**	**0.74 220**	Pg		Pb	16 55 03.3	-0.1
578nm,0.8s							
RAFF	**Raffo Rosso**	**0.74 220**	Pg		Pb	16 55 03.3	-0.1
578nm,0.8s							
GIB	**Gibilmanna**	**0.77 285**	Pg		Pb	16 55 03.7	-0.1
1μm,0.6s							
GIB	**Gibilmanna**	**0.77 285**	Pg		Pb	16 55 03.7	-0.1
1μm,0.6s							
MSCL	**Scilla**	**0.79 56**	Pg		Pb	16 55 04.2	+0.1
485nm,0.7s							
MSCL	**Scilla**	**0.79 56**	Pg		Pb	16 55 04.2	+0.1
485nm,0.7s							
IFIL	**Filicudi I Eol**	**0.83 338**	Pg		Pb	16 55 04.4	-0.4
996nm,0.4s							
IFIL	**Filicudi I Eol**	**0.83 338**	Pg		Pb	16 55 04.4	-0.4
996nm,0.4s							
MPAZ	**Palizzi**	**0.84 79**	Pg		Pn	16 55 05.4	+0.2
214nm,0.4s							
MPAZ	**Palizzi**	**0.84 79**	Pg		Pn	16 55 05.4	+0.2
214nm,0.4s							
IACL	**Alicudi**	**0.88 327**	Pg		Pb	16 55 05.0	-0.7
565nm,0.3s							
IACL	**Alicudi**	**0.88 327**	Pg		Pb	16 55 05.0	-0.7
565nm,0.3s							
ALJA	**Alia**	**0.96 268**	Pg		Pb	16 55 07.9	+0.8
310nm,0.6s							
ALJA	**Alia**	**0.96 268**	Pg		Pb	16 55 07.9	+0.8
310nm,0.6s							
JOPP	**Joppolo**	**1.09 41**	Pg		Pn	16 55 08.6	0.0
334nm,0.5s							
JOPP	**Joppolo**	**1.09 41**	Pg		Pn	16 55 08.6	0.0
334nm,0.5s							
FAVR	**Favara**	**1.16 243**	Pg		Pb	16 55 11.3	+0.9
180nm,0.7s							
FAVR	**Favara**	**1.16 243**	Pg		Pb	16 55 11.3	+0.9
180nm,0.7s							

*IDC **06** 17:03:08.2±1.8, 35°.94N×141°.32E, h0km, mb3.3/2, mb1 3.6/7, mb1mx3.4/41, mbtmp3.7/7, ML2.9/4, MS3.1/2, Ms1 3.1/2, ms1mx2.5/20, Error ellipse: s-maj=35.5km s-min=24.2km az=81.0*
*ISCJB **06** 17:03:09.3±0.9, 35°.96N±0°.04×141°.35E±0°.09, h26km, mb3.5/2, MS3.7/1, Error ellipse: s-maj=10.4km s-min=6.3km az=171.8*
*JMA **06** 17:03:12.0±0.1, 35°.91N×141°.12E, h32km±2km, M3.0*
ISC 06 17:03:11.6±1.1, 36°.00N±0°.05×141°.13E±0°.10, h26km, n12, σ1§52/15, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.37**	**217**	P	**Pb**	**17 03 19.4**	**-0.3**
CHOJ				S	**Sb**	**17 03 24.7**	**-0.5**
JHO	**Hitachi**	**0.76**	**324**	P	**Pn**	**17 03 27.2**	**+0.5**
JHO				S	**Sb**	**17 03 37.8**	**+1.5**
JYT	**Yasato**	**0.79**	**287**	P	**Pn**	**17 03 26.8**	**-0.3**
MJAR	**Matsushiro Arr**	**2.42**	**284**	Pn	**Pn**	**17 03 50.9**	**+1.3**
	1.4nm,0.3s,baz=101,slow=8.7,SNR=15						
MAT	**Matsushiro**	**2.42**	**284**	P	**Pn**	**17 03 52.1**	**+2.5**
MAT				S	**Sn**	**17 04 15.3**	**-3.1**
JHJ	**Hachijo jima 2**	**3.08**	**202**	Pn	**Pn**	**17 03 59.3**	**+0.8**
	7.4nm,0.3s,baz=89,slow=21,SNR=3.0						
JHJ				Sn	**Sn**	**17 04 35.9**	**+1.4**
	10nm,0.3s,baz=86,slow=23,SNR=2.8						
ASAJ	**Asahikawa 7**	**8.19**		Pn	**Pn**	**17 05 09.0**	**+0.3**
	0.2nm,0.3s,baz=274,slow=33,SNR=3.1						
JCJ	**Chichijima**	**8.92**	**174**	Pn	**Pn**	**17 05 17.6**	**-1.2**
	3.7nm,0.3s,baz=284,slow=22,SNR=3.6						
JNU	**Nakatsue**	**8.93**	**254**	Pn	**Pn**	**17 05 20.1**	**+1.2**
	0.1nm,0.3s,baz=233,slow=5.7,SNR=2.6						
JNU				LR	LR	17 08 58.4	
	comp=Z,29nm,19.8s,baz=146,slow=39						
AAK	**Ala-Archa**	**50.79**	**299**	LR	LR	17 34 39.0	
	comp=Z,74nm,19.1s,baz=230,slow=37						
WRA	**Warramunga Arr**	**56.00**	**188**	P	**P**	**17 12 47.5**	**-0.5**
	0.2nm,0.4s,baz=6.5,slow=7.7,SNR=6.8						
ASAR	**Alice Springs**	**59.73**	**188**	P	**P**	**17 13 15.2**	**+1.1**
	0.4nm,0.9s,baz=3.2,slow=6.3,SNR=4.6						

*IDC **06** 17:16:06.8±2.6, 37°.89N×144°.37E, h0km, mb3.8/2, mb1 4.0/3, mb1mx3.4/35, mbtmp3.7/3, ML3.6/1, Error ellipse: s-maj=53.0km s-min=37.7km az=44.0*
*ISCJB **06** 17:16:10.4±1.2, 37°.97N±0°.07×144°.09E±0°.09, h33km, mb3.8/2, Error ellipse: s-maj=10.7km s-min=9.8km az=165.9*
*JMA **06** 17:16:10.5±0.2, 38°.00N×144°.10E, h45km, M3.8*
ISC 06 17:16:12.2±1.6, 38°.02N±0°.08×144°.1E±0°.1, h35km, n19, σ1§49/16, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.20**	**299**	P	**Pn**	**17 16 45.5**	**-0.8**
JIO	**Ouri**	**2.23**	**282**	P	**Pn**	**17 16 45.9**	**-0.8**
JIO				*e*S	**Sn**	**17 17 11.5**	**-1.6**
JMK	**Ichinoseki**	**2.47**	**293**	P	**Pn**	**17 16 49.9**	**0.0**
JOM	**Ohasama**	**2.65**	**304**	P	**Pn**	**17 16 52.9**	**+0.4**
JFT	**Otama**	**3.05**	**262**	*e*S	**Sn**	**17 17 31.7**	**-1.5**
JYK	**Kaneyama**	**3.10**	**288**	P	**Pn**	**17 16 58.4**	**-0.1**
JYK				*e*S	**Sn**	**17 17 33.5**	**-0.8**
JANG	**Nango**	**3.11**	**320**	*e*S	**Sn**	**17 17 34.3**	**-0.3**
JAG	**Ashikaga**	**4.06**	**248**	P	**Pn**	**17 17 10.8**	**-1.0**
JNBK	**Urakawa-nobuka**	**4.38**	**346**	P	**Pn**	**17 17 16.1**	**-0.2**
JRY	**Ryogami san**	**4.64**	**246**	P	**Pn**	**17 17 18.8**	**-1.0**
MJAR	**Matsushiro Arr**	**4.95**	**254**	Pn	**Pn**	**17 17 24.4**	**+0.4**
	2.1nm,0.3s,baz=74,slow=8.8,SNR=9.8						
MJAR				Sn	**Sn**	**17 18 24.2**	**+4.1**
	0.5nm,0.3s,baz=78,slow=15,SNR=2.7						
H11N2	**WAKE ISLAND Hy**	**26.89**	**126**	T	T	17 48 32.8	
	baz=313,slow=76,SNR=5.2						
H11N1	**WAKE ISLAND Hy**	**26.90**	**126**	T	T	17 48 34.4	
	baz=313,slow=76,SNR=5.1						
H11N3	**WAKE ISLAND Hy**	**26.91**	**126**	T	T	17 48 34.2	
	baz=313,slow=76,SNR=7.7						
H11S1	**WAKE ISLAND Hy**	**27.67**	**128**	T	T	17 49 24.2	
	baz=314,slow=76,SNR=9.0						
H11S3	**WAKE ISLAND Hy**	**27.68**	**128**	T	T	17 49 28.0	
	baz=314,slow=76,SNR=6.5						
H11S2	**WAKE ISLAND Hy**	**27.69**	**128**	T	T	17 49 27.1	
	baz=314,slow=76,SNR=6.7						
MKAR	**Makanchi Array**	**45.43**	**302**	P	**P**	**17 24 28.9**	**+1.4**
	0.5nm,0.7s,baz=64,slow=12,SNR=4.8						
WRA	**Warramunga Arr**	**58.38**	**191**	P	**P**	**17 26 03.2**	**-0.9**
	1.3nm,0.6s,baz=12,slow=7.3,SNR=5.7						

IDC 06 17:53:44.3±8.2, 11°.80N×141°.36E, h211km±81km, mb3.5/11, mb1 3.6/11, mb1mx3.3/34, mbtmp4.1/11, MS3.1/2, Ms1 3.1/2, ms1mx2.7/32, Error ellipse: s-maj=32.8km s-min=15.2km az=85.0, Western Caroline Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCJ	**Chichijima**	**15.24**	**3**	LR	LR	18 01 21.1	
	comp=Z,46nm,19.6s,baz=134,slow=30						
KAPI	**Kappang**	**27.22**	**233**	LR	LR	18 09 39.4	
	comp=Z,59nm,20.3s,baz=182,slow=35						
WRA	**Warramunga Arr**	**32.29**	**192**	P	P	17 59 52.7	-0.7
	0.2nm,0.8s,baz=13,slow=9.6,SNR=2.9						
ASAR	**Alice Springs**	**35.99**	**192**	P	P	18 00 25.7	+0.4
	0.2nm,0.7s,baz=10,slow=12,SNR=3.5						
KLR	**Kul'dur**	**38.16**	**350**	P	P	18 00 42.8	-0.3
	2.2nm,0.7s,baz=162,slow=4.1,SNR=10						
SONM	**Songino Array**	**46.31**	**328**	P	P	18 01 50.3	+1.2
	0.8nm,0.4s,baz=134,slow=6.2,SNR=2.2						
YAK	**Yakutsk**	**50.86**	**353**	P	P	18 02 22.6	-0.6
	6.3nm,0.6s,baz=184,slow=2.1,SNR=6.0						
MKAR	**Makanchi Array**	**60.44**	**317**	P	P	18 03 31.8	+0.1
	0.4nm,0.4s,baz=95,slow=10,SNR=11						
ZALV	**Zalesovo Beam**	**61.12**	**326**	P	P	18 03 35.6	-0.5
	1.4nm,0.5s,baz=109,slow=6.8,SNR=5.8						
KURBB	**Kurchatov Arra**	**63.80**	**321**	P	P	18 03 53.7	-0.2
	3.4nm,0.7s,baz=104,slow=6.8,SNR=33						
BVAR	**Borovoye Array**	**69.22**	**322**	P	P	18 04 28.2	0.0
	1.8nm,0.5s,baz=100,slow=8.8,SNR=12						
ILAR	**Eielson Array**	**71.64**	**25**	P	P	18 04 42.2	-0.3
	0.2nm,0.6s,baz=248,slow=5.6,SNR=4.1						
YKA	**Yellowknife Ar**	**86.00**	**27**	P	P	18 06 01.9	+1.3
	0.4nm,0.5s,baz=287,slow=5.1,SNR=7.1						
FINES	**FINESS Array B**	**91.30**	**334**	P	P	18 06 24.8	-0.8
	1.4nm,0.3s,baz=68,slow=4.6,SNR=25						

JMA 06 18:00:37.9, 36°.84N×140°.59E, h8km±1km, M2.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.23**	**184**	P	Pg	18 00 42.6	+0.1
JHO				S	Sg	18 00 45.9	+0.3
ONAJ	**Iwakimizuishiy**	**0.31**	**33**	P	Pg	18 00 44.0	-0.1
JFK	**Kawauchi**	**0.57**	**23**	P	Pg	18 00 48.6	-0.4
JFK				S	Sg	18 00 56.5	0.0
MAT	**Matsushiro**	**1.94**	**262**	P	Pn	18 01 11.8	+0.6
MAT				S	Sb	18 01 37.2	-0.6

*ISCJB **06** 18:06:24.0±0.7, 34°.76S±0°.04×72°.13W±0°.08, h51km±5km, mb4.5/5, Error ellipse: s-maj=10.9km s-min=6.0km az=10.4*
*GUC **06** 18:06:25.5±0.6, 34°.74S×71°.85W, h46km±6km, ML4.1*
*NEIC **06** 18:06:27.1±1.1, 34°.64S×71°.86W, h49km±10km, mb4.5/1, Error ellipse: s-maj=20.5km s-min=8.8km az=81.0*
NEIC Felt [III] at Duao, Iloca, Molina and Talca and [II] at Curico, Linares, Longavi and Romeral.
*IDC **06** 18:06:28.1±4.0, 34°.71S×71°.75W, h58km±43km, mb3.2/3, mb1 3.6/5, mb1mx3.5/19, mbtmp3.6/5, ML4.1/2, Error ellipse: s-maj=42.4km s-min=32.3km az=97.0*
ISC 06 18:06:25.7±0.9, 34°.75S±0°.04×72°.11W±0°.09, h47km±7km, n32, σ1§33/44, mb3.8/5, 4C, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHPI	**Pichilemu**	**0.37**	**14**	⇑*i*P	**Pn**	**18 06 34.5**	**-0.7**
CHPI				*i*S	**Sn**	**18 06 41.4**	**-0.6**
TALC	**Talca**	**0.75**	**149**	⇑*i*P	**Pn**	**18 06 39.1**	**-0.8**
TALC				*i*S	**Sn**	**18 06 48.8**	**-1.5**
ANTU	**Antumapu**	**1.70**	**46**	*e*P	**Pn**	**18 06 52.2**	**-0.8**
ANTU				*i*S	**Sn**	**18 07 11.9**	**-1.6**
ANTU				IAML		18 07 15.6	
	comp=E,5μm,0.3s						
CLCH	**Cerro Calan**	**1.88**	**44**	⇑*i*P	**Pn**	**18 06 54.3**	**-1.1**
CLCH				*i*S	**Sn**	**18 07 16.4**	**-1.6**
CLCH				IAML		18 07 20.2	
	comp=E,3μm,0.2s						
ROC1	**El Roble**	**1.99**	**27**	*i*P	**Pn**	**18 06 55.9**	**-1.2**
ROC1				*i*S	**Sn**	**18 07 22.7**	**+1.7**
ROC1	**El Roble**	**1.99**	**27**	*e*Pn	**Pn**	**18 06 56.7**	**-0.5**
PEL	**Peldehue**	**2.00**	**37**	⇑*i*P	**Pn**	**18 06 56.4**	**-0.6**
PEL				*i*S	**Sn**	**18 07 20.1**	**-0.6**
PEL				IAML		18 07 26.2	
	comp=N,2μm,0.1s						
ROCH	**El Roble**	**2.00**	**27**	*e*P	**Pn**	**18 06 57.0**	**-0.2**
ROCH				*e*S	**Sn**	**18 07 21.4**	**+0.3**
ROCH				IAML		18 07 31.5	
	comp=N,2μm,0.4s						
AAGR	**Agrelo**	**3.19**	**60**	*i*P	**Pn**	**18 07 13.2**	**-0.3**
ARCO	**CERRO ARCO**	**3.26**	**55**	*i*P	**Pn**	**18 07 14.0**	**-0.4**
ARCO				IAML		18 08 04.3	
	comp=Z,94nm,0.5s						
AUSP	**Uspallata**	**3.40**	**43**	*i*P	**Pn**	**18 07 16.4**	**-0.1**
AUSP				*i*S	**Sn**	**18 07 58.7**	**+3.1**
ASAL	**Salagasta**	**3.48**	**53**	*i*P	**Pn**	**18 07 17.1**	**-0.3**
ASAL				*i*S	**Sn**	**18 07 59.8**	**+2.5**
RTLS	**Leoncito**	**3.77**	**39**	*i*P	**Pn**	**18 07 21.8**	**+0.2**
RTCV	**Cerro Valdivia**	**4.15**	**47**	*i*P	**Pn**	**18 07 26.4**	**-0.1**
RTCV				*i*S	**Sn**	**18 08 16.1**	**+2.2**
RTLL	**Cerro Villicun**	**4.58**	**43**	*i*P	**Pn**	**18 07 32.2**	**-0.2**
ACAN	**Cantantal**	**4.80**	**60**	*i*P	**Pn**	**18 07 35.1**	**-0.4**
AMOG	**MOGNA**	**4.87**	**40**	*i*P	**Pn**	**18 07 35.8**	**-0.7**
LCO	**Las Campanas**	**5.85**	**12**	*e*Pn	**Pn**	**18 07 49.4**	**-0.7**
AGUA	**GUANDACOL**	**6.08**	**31**	*i*P	**Pn**	**18 07 52.3**	**-0.9**
PLCA	**Paso Flores**	**6.09**	**169**	P	**Pn**	**18 07 55.5**	**+2.3**
	comp=Z,1.3nm,0.3s,baz=7.7,slow=8.9,SNR=7.7						
PLCA				Lg	Lg	18 09 33.8	
	comp=Z,0.2nm,0.3s,baz=106,slow=23,SNR=2.6						
PLCA	**Paso Flores**	**6.09**	**169**	*e*Pn	**Pn**	**18 07 55.1**	**+1.9**
TRQA	**Tornquist**	**8.80**	**115**	*e*Pn	**Pn**	**18 08 30.6**	**+0.3**
LVC	**Limon Verde**	**12.42**	**14**	*e*Pn	**Pn**	**18 09 19.2**	**-0.9**
PB01	**IPOC Station P**	**13.85**	**10**	*e*Pn	**Pn**	**18 09 38.7**	**-0.8**
PB11	**IPOC Station P**	**15.09**	**9**	*e*Pn	**Pn**	**18 09 54.4**	**-1.6**
LPAZ	**La Paz**	**18.73**	**12**	P	**Pn**	**18 10 42.3**	**+0.3**
	comp=Z,0.2nm,0.3s,baz=172,slow=7.1,SNR=3.9						
SIV	**San Ignacio**	**21.15**	**31**	P	**P**	**18 11 05.0**	**-1.9**
	comp=Z,2.1nm,0.8s,baz=216,slow=9.2,SNR=3.8						
BDFB	**Brasilia**	**28.81**	**55**	P	**P**	**18 12 19.6**	**0.0**
	comp=Z,4μm,0.4s,SNR=1.8						
PTGA	**Pitinga**	**35.70**	**21**	*e*P	**P**	**18 13 18.1**	**-1.6**
	comp=Z,10nm,1.6s						
LTX	**Lajitas**	**70.36**	**331**	*e*P	**P**	**18 17 36.6**	**+2.0**
TXAR	**Lajitas Array**	**70.36**	**331**	P	**P**	**18 17 36.6**	**+2.0**
	comp=Z,0.1nm,0.5s,baz=160,slow=7.6,SNR=3.7						
TXAR				pP	**pP**	**18 17 48.6**	**+0.5**
	comp=Z,0.3nm,0.5s,baz=157,slow=8.5,SNR=4.4						
TORD	**Torodi Ar. Bea**	**84.52**	**70**	P	**P**	**18 18 53.2**	**-0.8**
	comp=Z,0.8nm,0.9s,baz=245,slow=3.0,SNR=3.1						
TORD				pP	**pP**	**18 19 09.6**	**+1.8**
	comp=Z,0.7nm,0.9s,baz=233,slow=6.5,SNR=2.7						

*NIED **06** 18:11:00, 38°.20N×144°.10E, h5km, Mw4.7 Best double couple: M0 1.22000×10^16 NP1:φs31.00000°, δ19.00000°, λ-94.00000°. NP2:φs215.00000°, δ71.00000°, λ-89.00000°.*
*IDC **06** 18:11:25.4±0.4, 38°.05N×144°.29E, h0km, mb4.5/35, mb1 4.6/43, mb1mx4.6/53, mbtmp4.6/43, ML4.1/8, MS3.8/28, Ms1 3.8/28, ms1mx3.7/44, Error ellipse: s-maj=11.3km s-min=9.5km az=106.0*
*ISCJB **06** 18:11:26.2±0.8, 38°.15N±0°.02×144°.14E±0°.02, h13km±4km, mb4.8/232, MS4.1/47, Error ellipse: s-maj=3.6km s-min=2.1km az=169.6*
*NEIC **06** 18:11:27.5±1.6, 38°.06N×144°.20E, h12km±9km, mb5.0/154, Error ellipse: s-maj=4.1km s-min=2.5km az=142.0*
*GCMT **06** 18:11:27.5±0.4, 38°.21N×144°.19E, h12km, MW4.8/76, Moment Tensor Solution. s15,c16; s76,c109; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr-1.47±.05; Mθθ0.55±.06; Mφφ0.91±.05; Mrθ0.69±.23; Mrφ0.64±.04; Mθφ0.96±.23; Best double couple: M0 1.85800×10^16 NP1:φs216.00000°, δ65.00000°, λ-91.00000°. NP2: φs38.00000°, δ25.00000°, λ-89.00000°. Principal axes: T 1.8240, Plg20.0000°, Azm307.0000°; N 0.0630, Plg1.0000°, Azm216.0000°; P -1.8920, Plg70.0000°, Azm125.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*JMA **06** 18:11:28.2±0.2, 38°.17N×144°.13E, h42km, M4.8*
*MOS **06** 18:11:30.8±0.9, 38°.45N×144°.16E, h33km, mb4.9/78, Error ellipse: s-maj=7.0km s-min=4.4km az=106.9*
ISC 06 18:11:28.7±0.5, 38°.13N±0°.04×144°.29E±0°.03, h20km±2km, h20km:pP-P, n715, σ1§55/774, mb4.9/236, MS4.1/49, 16C-9D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.26**	**296**	P	**Pn**	**18 12 02.6**	**-2.3**
OFUJ				S	**Sn**	**18 12 27.9**	**-4.3**
JIO	**Ouri**	**2.33**	**279**	P	**Pn**	**18 12 03.5**	**-2.4**
JIO				S	**Sn**	**18 12 29.2**	**-4.8**
MIYJ	**Miyakonagasawa**	**2.41**	**308**	P	**Pn**	**18 12 04.4**	**-2.6**
MIYJ				S	**Sn**	**18 12 31.8**	**-4.1**
JMK	**Ichinoseki**	**2.54**	**290**	P	**Pn**	**18 12 06.7**	**-2.1**
JOM	**Ohasama**	**2.70**	**301**	P	**Pn**	**18 12 09.0**	**-1.9**
JOM				S	**Sn**	**18 12 40.2**	**-2.8**
JANG	**Nango**	**3.11**	**317**	P	**Pn**	**18 12 14.1**	**-2.5**
JANG				*e*S	**Sn**	**18 12 50.4**	**-2.8**
JYK	**Kaneyama**	**3.18**	**286**	P	**Pn**	**18 12 16.0**	**-1.6**
JYK				*e*S	**Sn**	**18 12 52.4**	**-2.5**
JFT	**Otama**	**3.19**	**260**	P	**Pn**	**18 12 16.2**	**-1.5**
JFT				S	**Sn**	**18 12 50.9**	**-4.2**
ERM	**Erimo**	**3.98**	**348**	*c i*P	**Pn**	**18 12 26.3**	**-2.2**
ERM				pmax	pmax		
	comp=Z,120nm,1.7s						
ERM	**Erimo**	**3.98**	**348**	*e*Pn	**Pn**	**18 12 27.2**	**-1.3**
ERM				*e*Sn	**Sn**	**18 13 10.2**	**-4.4**
JOT	**Ohata**	**4.10**	**324**	P	**Pn**	**18 12 28.5**	**-1.7**
BSO1	**Boso 1**	**4.37**	**219**	P	**Pn**	**18

KUR pmax pmax
comp=E,13nm,0.4s
KUR pmax pmax
comp=N,138nm,2.7s
KUR pmax pmax
comp=E,488nm,2.7s
KUR pmax pmax
comp=N,48nm,0.6s
KUR pmax pmax
comp=E,104nm,0.6s
VLA Vladivostok 10.66 302 *c i*P **Pn 18 14 00.4 +0.2**
MSHR Mys Shultsa 10.96 298⇓ *e*P **Pn 18 14 03.5 -0.8**
USRK Ussuriysk Ar. 11.07 307 Pn **Pn 18 14 06.2 +0.4**
comp=E,1.6nm,0.3s,baz=121,slow=12,SNR=37
USRK LR LR 18 18 07.6
comp=E,567nm,19.0s,baz=103,slow=36
CBIJ Chichi jima 11.14 190 *e*Pn **Pn 18 14 03.2 -3.7**
CBIJ *e*Sn Sn 18 15 59.8 -11
JCJ Chichijima 11.14 190 Pn **Pn 18 14 03.5 -3.3**
comp=E,11nm,0.3s,baz=78,slow=21,SNR=8.8
JCJ Sn Sn 18 15 59.8 -11
comp=E,20nm,0.3s,baz=317,slow=19,SNR=6.4
JNU Nakatsue 11.99 249 Pn **Pn 18 14 16.9 -1.7**
comp=E,0.6nm,0.3s,baz=198,slow=16,SNR=7.9
JNU LR LR 18 19 13.1
comp=E,385nm,20.4s,baz=101,slow=39
JNU Nakatsue 11.99 249 *e*Pn **Pn 18 14 14.3 -4.3**
HABR Khabarovsk 12.33 330 *c e*P **Pn 18 14 20.9 -2.0**
HABR *e*S **Sn 18 16 36.7 -2.9**
HABR pmax pmax
comp=N,25nm,1.4s
HABR pmax pmax
comp=E,31nm,1.4s
HABR pmax pmax
comp=Z,39nm,1.4s
HABR MLR MLR
comp=Z,156nm,13.0s
TYV Tymovskoe 12.79 355 *e*P **Pn 18 14 27.2 -2.0**
TYV pmax pmax
comp=Z,9.0nm,0.8s
TYV MLR MLR
comp=N,1μm,18.0s
TYV MLR MLR
comp=Z,1μm,14.0s
MDJ Mudanjiang 12.79 305 P **Pn 18 14 28.8 -0.5**
MDJ S **Sn 18 16 50.6 -0.5**
MDJ PcS **PcS 18 23 39.7 +0.9**
MDJ pmax pmax
comp=Z,91nm,1.2s
MDJ pmax pmax
comp=Z,170nm,4.5s
MDJ LR LR
comp=N,400nm,13.5s
MDJ LR LR
comp=E,700nm,17.1s
MDJ LR LR
comp=Z,1μm,15.3s
MDJ Mudanjiang 12.79 305 *e*Pn **Pn 18 14 28.2 -1.1**
KSRS Korea Array 12.96 272 Pn **Pn 18 14 32.4 +0.7**
comp=Z,0.7nm,0.3s,baz=79,slow=14,SNR=22
KSRS LR LR 18 19 04.6
comp=Z,300nm,21.9s,baz=72,slow=35
KS01 Wonju Array Si 12.98 272 *e*Pn **Pn 18 14 31.1 -0.9**
KS15 Wonju Array Si 13.00 272 *e*Pn **Pn 18 14 32.3 +0.1**
KSAR Wonju Array Be 13.00 272 P **Pn 18 14 32.4 +0.3**
KSAR Wonju Array Be 13.00 272 Pn **Pn 18 14 32.4 +0.3**
KLR Kul'dur 14.31 325 Pn **Pn 18 14 47.2 -2.8**
comp=Z,0.5nm,0.3s,baz=136,slow=13,SNR=17
KLR LR LR 18 21 35.1
comp=Z,552nm,18.0s,baz=142,slow=42
KLR Kul'dur 14.31 325⇑ *e*P **Pn 18 14 47.8 -2.3**
NKL Nikolayevsk 15.23 352 *e*P **Pn 18 15 00.5 -1.9**
NKL pmax pmax
comp=N,13nm,1.0s
NKL pmax pmax
comp=Z,22nm,1.0s
CN2 Changchun 15.31 298 *e*P **Pn 18 15 02.8 -0.7**
CN2 *es*P pP 18 15 13.8 +0.1
CN2 *e*S **Sn 18 17 50.6 -1.8**
CN2 pmax pmax
comp=Z,10.0nm,0.5s
CN2 pmax pmax
comp=Z,200nm,3.0s
CN2 LR LR
comp=N,500nm,14.0s
CN2 LR LR
comp=E,300nm,14.0s
CN2 LR LR
comp=Z,300nm,13.0s
SNY Shenyang 16.29 290 ⇓P **P 18 15 17.6 -1.5**
SNY S Sn 18 17 57.9 -18
SNY pmax pmax
comp=Z,17nm,0.6s
SNY pmax pmax
comp=Z,220nm,9.1s
SNY LR LR
comp=N,550nm,13.0s
SNY LR LR
comp=E,800nm,15.3s
SNY LR LR
comp=Z,960nm,15.9s
PEA0 Petropavlovsk- 17.63 27 *e*P **P 18 15 35.6 +1.8**
PEA0B Petropavlovsk- 17.63 27 *e*Pn **P 18 15 34.7 +0.8**
comp=Z,31nm,1.0s
PETK Petropavlovsk- 17.63 27 P **Pn 18 15 31.6 -1.3**
comp=Z,0.5nm,0.3s,baz=206,slow=11,SNR=9.9
PETK LR LR 18 23 50.4
comp=Z,103nm,18.6s,baz=220,slow=42
PEA1 Petropavlovsk- 17.64 27 *e*Pn **Pn 18 15 31.6 -1.4**
DL2 Dalian 17.75 280 P **Pn 18 15 32.4 -2.1**
DL2 *e*S **Sn 18 18 44.8 -6.8**
DL2 pmax pmax
comp=Z,71nm,1.1s
DL2 pmax pmax
comp=Z,250nm,4.2s
DL2 LR LR
comp=N,500nm,13.8s
DL2 LR LR
comp=E,600nm,14.2s
DL2 LR LR
comp=Z,680nm,14.2s
SSE Sheshan 20.24 257 P **P 18 16 01.3 -1.3**
SSE sP **sP 18 16 13.0 +2.3**
SSE S **S 18 19 46.9 -1.8**
SSE sS **sS 18 19 59.2 +1.5**
SSE pmax pmax
comp=Z,22nm,0.7s
SSE pmax pmax
comp=Z,66nm,4.0s
SSE LR LR
comp=N,210nm,25.2s
SSE LR LR
comp=E,250nm,25.2s
SSE LR LR
comp=Z,200nm,31.9s
HIA Hailar 20.85 310 *e*P **P 18 16 08.8 -0.4**
HIA Hailar 20.85 310 *e*P **P 18 16 08.8 -0.4**
NJ2 Nanjing 21.64 261 *e*P P 18 16 09.8 -7.9
NJ2 S Sn 18 20 30.8 +5.2
NJ2 pmax pmax
comp=Z,16nm,0.7s
NJ2 LR LR
comp=N,460nm,19.5s
NJ2 LR LR
comp=E,470nm,13.6s
NJ2 LR LR
comp=Z,600nm,15.2s
TIA Tai'an 21.70 273 ⇑P **P 18 16 16.9 -1.5**
TIA pP **sP 18 16 28.2 +1.6**
TIA S **S 18 20 07.8 -10**
TIA sS **sS 18 20 22.7 -4.0**
TIA SS SnSn 18 21 13.2 +31
TIA pmax pmax
comp=Z,20nm,0.7s
TIA pmax pmax
comp=Z,180nm,4.5s
TIA LR LR
comp=N,320nm,16.7s
TIA LR LR
comp=E,260nm,14.3s
TIA LR LR
comp=Z,330nm,17.8s
MA2 Magadan 21.87 9 *e*P **P 18 16 20.7 +0.8**
BJI Beijing 21.87 284 P **P 18 16 18.7 -1.4**
BJI pP **pP 18 16 25.7 -0.1**
BJI sP **sP 18 16 28.6 +0.3**
BJI S **S 18 20 14.2 -6.7**
BJI sS **sS 18 20 24.8 -5.1**
BJI pmax pmax
comp=Z,14nm,0.8s
BJI pmax pmax
comp=Z,130nm,3.7s
BJI LR LR
comp=N,380nm,14.5s
BJI LR LR
comp=E,650nm,15.8s
BJI LR LR
comp=Z,310nm,14.9s
BJT Baijiatuan 21.88 284 *e*P **P 18 16 18.8 -1.4**
BJT pmax pmax
comp=Z,26nm,1.0s
BJT Baijiatuan 21.88 284 *e*P **P 18 16 18.8 -1.4**
comp=Z,26nm,1.0s
GUMO Guam 24.44 179 LR LR 18 24 35.8
comp=Z,93nm,21.6s,baz=36,slow=32
SSLB Suanglung 24.50 241 *e*P **P 18 16 45.4 -1.3**
comp=Z,17nm,0.9s
TPUB Ta-pu 25.04 241 *e*P **P 18 16 51.0 -0.6**
comp=Z,23nm,0.8s
TWG Pinlang 25.06 239 *e*P **P 18 16 49.0 -2.8**
comp=Z,100nm,0.6s
TIY Taiyuan 25.07 279 *e*P **P 18 16 54.9 +3.1**
TIY S **S 18 21 18.3 +3.0**
TIY pmax pmax
comp=Z,170nm,3.6s
TIY LR LR
comp=N,340nm,13.4s
TIY LR LR
comp=E,320nm,13.0s
TIY LR LR
comp=Z,490nm,18.1s
SMY Shemya 25.28 45 *e*P **P 18 16 54.6 +1.1**
SMY pmax pmax
comp=Z,64nm,1.0s
SMY Shemya 25.28 45 *e*P **P 18 16 54.6 +1.1**
comp=Z,64nm,1.0s
HHC Hu-ho-hao-te 25.32 287 *e*P **P 18 16 53.8 -0.3**
HHC sP sP 18 17 08.2 +5.6
HHC PP **PnPn 18 17 30.8 +1.9**
HHC S **S 18 21 15.9 -3.4**
HHC sS sS 18 21 30.8 +1.6
HHC SS **SnSn 18 22 19.3 +8.4**
HHC pmax pmax
comp=Z,31nm,0.8s
HHC pmax pmax
comp=Z,160nm,4.0s
HHC LR LR
comp=N,780nm,12.4s
HHC LR LR
comp=E,810nm,12.9s
HHC LR LR
comp=Z,840nm,13.4s
SEY Seymchan 25.32 9 P **P 18 16 55.0 +1.2**
comp=Z,19nm,0.8s,baz=188,slow=7.3,SNR=63
CIT Chita 25.54 313 *e*P **P 18 16 56.0 +0.1**
CIT *e* 18 17 05.9
CIT *e* 18 17 13.6
CIT *e* 18 17 29.1
CIT *e* 18 17 39.7
CIT pmax pmax
comp=Z,66nm,1.2s
YAK Yakutsk 25.58 344 P **P 18 16 55.7 -0.4**
comp=Z,26nm,0.6s,baz=345,slow=1.1,SNR=14
YAK LR LR 18 27 27.1
comp=Z,134nm,20.4s,baz=156,slow=38
YAK Yakutsk 25.58 344 *e*P **P 18 16 55.9 -0.1**
YAK *e* 18 17 33.5
YAK *e*SS 18 22 32.5
YAK *e* 18 27 50.8
YAK pmax pmax
comp=Z,29nm,1.0s
YAK pmax pmax
comp=N,18nm,1.3s
YAK pmax pmax
comp=E,9.0nm,1.2s
YAK pmax pmax
comp=Z,47nm,2.0s
YAK pmax pmax
comp=N,37nm,1.5s
YAK pmax pmax
comp=E,33nm,1.6s
YAK MLR MLR
comp=Z,227nm,15.0s
YAK MLR MLR
comp=N,121nm,15.0s
YAK MLR MLR
comp=E,157nm,14.0s
YAK Yakutsk 25.58 344 *e*P **P 18 16 55.5 -0.6**
comp=E,38nm,0.7s
WHN Wuhan 25.77 262 ⇑P **P 18 16 58.7 +0.5**
WHN sP **sP 18 17 10.9 +4.3**
WHN S **S 18 21 30.6 +4.3**
WHN LR LR
comp=N,2μm,19.2s
WHN LR LR
comp=E,1μm,15.3s
WHN LR LR
comp=Z,1μm,14.2s
BTO Baotou 26.51 286 *e*P **P 18 17 02.0 -2.9**
H11N2 WAKE ISLAND Hy 26.86 127 T T 18 45 11.7
baz=318,slow=75,SNR=36
H11N1 WAKE ISLAND Hy 26.86 127 T T 18 45 06.7
baz=318,slow=75,SNR=22
H11N3 WAKE ISLAND Hy 26.87 127 T T 18 45 08.0
baz=318,slow=75,SNR=26
H11S1 WAKE ISLAND Hy 27.65 129 T T 18 46 10.7
baz=313,slow=74,SNR=4.4
H11S3 WAKE ISLAND Hy 27.65 129 T T 18 46 08.0
baz=313,slow=74,SNR=3.5
H11S2 WAKE ISLAND Hy 27.66 129 T T 18 46 09.2
baz=313
BOD Bodaibo 27.89 325 *e*P **P 18 17 16.8 -0.2**
BOD pmax pmax
comp=Z,37nm,0.7s
ULN Ulaanbaatar 28.67 302 *c i*P **P 18 17 25.7 +1.4**
ULN pmax pmax
comp=Z,13nm,1.2s
ULN Ulaanbaatar 28.67 302 *e*P **P 18 17 25.7 +1.4**
comp=Z,10nm,0.9s
XAN Xi'an 28.76 273 P **P 18 17 26.4 +1.3**
XAN pP sP 18 17 34.2 +0.6
XAN sP pP 18 17 38.1 +7.0
XAN S S 18 22 23.5 +10
XAN SS **ScP 18 24 16.5 +1.5**
XAN pmax pmax
comp=Z,8.0nm,0.5s
XAN pmax pmax
comp=Z,110nm,6.5s
XAN LR LR
comp=N,240nm,15.5s
XAN LR LR
comp=E,260nm,14.5s
XAN LR LR
comp=Z,310nm,14.5s
SONA1 Songino Array 29.11 302 *e*P **P 18 17 28.9 +0.8**
SONA0 Songino Array 29.11 302 *e*P **P 18 17 28.7 +0.6**
comp=Z,9.5nm,0.8s
SONM Songino Array 29.11 302 P **P 18 17 28.7 +0.6**
comp=Z,4.0nm,0.8s,baz=94,slow=9.4,SNR=20
SONM LR LR 18 29 18.5
comp=Z,199nm,20.7s,baz=82,slow=37
ENH Enshi 29.70 265 *e*P **P 18 17 33.7 +0.3**
comp=Z,40nm,0.9s
IRK Irkutsk 31.10 310 *e*P **P 18 17 46.2 +0.7**
IRK pmax pmax
comp=Z,16nm,1.2s
TLY Talaya 31.38 309 P **P 18 17 49.9 +1.8**
comp=Z,4.0nm,0.8s,baz=130,slow=7.4,SNR=6.7
TLY Talaya 31.38 309 *e*P **P 18 17 49.3 +1.3**
TLY *e* 18 18 59.3
TLY *e*S **S 18 22 58.1 +3.8**
TLY pmax pmax
comp=Z,15nm,1.4s
TLY MLR MLR
comp=Z,434nm,13.0s
TLY Talaya 31.38 309 *e*P **P 18 17 48.8 +0.8**
comp=Z,23nm,1.5s
ZAK Zakamensk 31.42 306 *e*P **P 18 17 49.0 +0.5**
ZAK pmax pmax
comp=Z,6.0nm,1.0s
LZH Lanzhou 32.14 279 *e*P **P 18 17 53.7 -1.3**
LZH pP pP 18 18 01.7 +0.6
LZH sP sP 18 18 05.7 +2.1
LZH PP **PnPn 18 19 00.0 -0.9**
LZH *e*S **S 18 23 07.1 +0.4**
LZH sS sS 18 23 28.5 +12
LZH SS **SnSn 18 24 58.3 +0.9**
LZH pmax pmax
comp=Z,30nm,1.0s
LZH pmax pmax
comp=Z,130nm,4.0s
LZH LR LR
comp=N,520nm,14.9s
LZH LR LR
comp=E,290nm,12.7s
LZH LR LR
comp=Z,470nm,16.5s
BILL Biilibino 32.35 15⇑ *e*P **P 18 17 56.5 +0.2**
BILL *e* 18 19 02.8
BILL *e*PPP PPP 18 19 11.5
BILL pmax pmax
comp=Z,12nm,1.0s
BILL MLR MLR
comp=Z,88nm,17.0s
BILL Bilibino 32.35 15 *e*P **P 18 17 56.1 -0.2**
comp=Z,11nm,1.0s
MOY Mondy 33.01 308 *e*P **P 18 18 05.5 +3.0**
GYA Guiyang 33.65 261⇑ *i*P **P 18 18 08.2 -0.1**
GYA pP sP 18 18 16.8 0.0
GYA PP **PnPn 18 19 21.4 +1.2**
GYA PcP **PcP 18 20 49.6 +1.5**
GYA S **S 18 23 27.2 -3.0**
GYA sS sS 18 23 42.0 +1.8
GYA ScP **ScP 18 24 31.8 +0.2**
GYA SS **SS 18 25 58.4 +2.7**
GYA Guiyang 33.65 261 ScS ScS 18 28 30.2 -2.9
GYA pmax pmax
comp=Z,20nm,0.8s
GYA pmax pmax
comp=Z,120nm,5.0s
GYA LR LR
comp=N,520nm,17.2s
GYA LR LR
comp=E,490nm,17.6s
GYA LR LR
comp=Z,540nm,17.8s
CD2 Chengdu 33.95 270 P **P 18 18 09.6 -1.2**
CD2 sP sP 18 18 22.0 +2.7
CD2 PP **PP 18 19 26.4 -1.3**
CD2 S **S 18 23 32.5 -2.2**
CD2 sS sS 18 23 47.4 +2.7
CD2 SS **SS 18 26 00.1 -1.5**
CD2 pmax pmax
comp=Z,20nm,0.8s
CD2 pmax pmax
comp=Z,140nm,5.3s
CD2 LR LR
comp=N,530nm,13.2s
CD2 LR LR
comp=Z,320nm,13.2s
GTA Gaotai 34.44 286 *e*P **P 18 18 17.5 +2.5**
GTA pP sP 18 18 28.6 +5.1
GTA sP pP 18 18 33.2 +12
GTA PcP **PcP 18 20 51.0 +0.8**
GTA S **S 18 23 44.0 +1.8**
GTA sS sS 18 24 03.5 +11
GTA SS **SnSn 18 25 59.1 +6.2**
GTA pmax pmax
comp=Z,6.0nm,0.9s
GTA pmax pmax
comp=Z,89nm,6.7s
GTA LR LR
comp=N,280nm,18.5s
GTA LR LR
comp=E,470nm,15.7s
GTA LR LR
comp=Z,540nm,16.6s
TIXI Tiksi 34.52 351 P **P 18 18 14.6 -0.4**
comp=Z,1.9nm,0.6s,baz=134,slow=8.5,SNR=4.6
TIXI Tiksi 34.52 351⇑ *e*P **P 18 18 14.7 -0.4**
TIXI pmax pmax
comp=Z,5.0nm,1.7s
TIXI Tiksi 34.52 351 *e*P **P 18 18 14.4 -0.6**
comp=Z,4.5nm,0.8s
KMI Kunming 37.38 262 P **P 18 18 40.9 +0.5**
KMI pP sP 18 18 49.4 +0.4
KMI sP pP 18 18 52.8 +6.3
KMI PP **PnPn 18 20 16.6 +10**
KMI S **S 18 24 26.2 -1.5**
KMI sS ScP 18 24 41.7 -3.6
KMI SS **SnSn 18 27 06.4 +1.8**
KMI pmax pmax
comp=Z,17nm,1.1s
KMI pmax pmax
comp=Z,47nm,3.4s
KMI LR LR
comp=N,140nm,12.5s
KMI LR LR
comp=E,230nm,11.6s
KMI LR LR
comp=Z,220nm,14.3s
KRAR Krasnoyarsk 38.28 315⇑ *e*P **P 18 18 48.9 +1.5**
KRAR pmax pmax
comp=Z,7.0nm,0.9s
MYLDM Lahad Datu 40.32 222 *e*P **P 18 19 06.4 +1.5**
comp=Z,39nm,1.4s
JAY Jayapura 40.57 186 P **P 18 19 07.1 +0.1**
comp=Z,1.6nm,0.9s,baz=272,slow=22,SNR=6.2
JAY Jayapura 40.57 186 P **P 18 19 06.8 -0.2**
comp=Z,117nm,0.3s,comp=Z,8μm
GENI Genyem 40.69 186 P **P 18 19 09.1 +1.2**
comp=Z,49nm,1.0s,comp=Z,3μm
NONG Nongkai 41.02 252 P **P 18 19 11.8 +1.2**
comp=Z,35nm,0.8s
SKNT Sakolnakorn 41.06 250 P **P 18 19 12.6 +1.6**
comp=Z,14nm,2.0s
LBMI Labuha 41.56 206 P **P 18 19 15.1 0.0**
comp=Z,25nm,1.0s
CRAI Chiangrai 41.85 257 P **P 18 19 18.4 +0.9**
comp=Z,189nm,1.4s
WMQ Urumqi 42.39 296 P **P 18 19 23.9 +2.2**
WMQ pP sP 18 19 34.2 +3.9
WMQ sP pP 18 19 36.1 +8.2
WMQ S **S 18 25 45.2 +3.1**
WMQ SS **SS 18 28 51.8 +0.7**
WMQ pmax pmax
comp=Z,8.0nm,0.6s
WMQ pmax pmax
comp=Z,29nm,3.6s
WMQ LR LR
comp=N,79nm,16.6s
WMQ LR LR
comp=E,48nm,35.8s
WMQ LR LR
comp=Z,54nm,37.6s
MRSI Marisa 42.73 214 P **P 18 19 25.2 +0.6**
comp=Z,29nm,1.0s,comp=Z,2μm
LOEI Loei 42.77 253 P **P 18 19 23.0 -2.0**
comp=Z,9.3nm,1.5s
ZAA1 Zalesovo Array 42.88 312 *e*P **P 18 19 26.6 +1.1**
ZAA1 *e*PcP **PcP 18 21 15.9 -0.2**
ZALV Zalesovo Beam 42.88 312 P **P 18 19 26.6 +1.1**
comp=Z,3.0nm,0.7s,baz=77,slow=6.5,SNR=13
ZALV PcP **PcP 18 21 15.9 -0.2**
comp=Z,4.6nm,0.6s,baz=101,slow=3.0,SNR=6.4
ZALV LR LR 18 37 57.6
comp=Z,169nm,19.2s,baz=72,slow=37
CMAI Chiengmai2 43.04 258 P **P 18 19 29.9 +2.5**
comp=Z,8.3nm,1.2s,comp=Z,2μm
UTTA Uttaradit 43.17 254 P **P 18 19 29.9 +1.7**
comp=Z,2.9nm,1.0s
CHAI Chaiyaphum 43.22 251 P **P 18 19 29.7 +1.1**
comp=Z,5.0nm,1.1s,comp=Z,51nm
NRIK Noril'sk 43.25 334 P **P 18 19 28.7 +0.4**
comp=Z,3.5nm,0.7s,baz=118,slow=11,SNR=4.4
NRIK LR LR 18 38 27.2
comp=Z,256nm,19.9s,baz=112,slow=37
NRIK Noril'sk 43.25 334 P **P 18 19 28.7 +0.4**
NRIK pmax pmax
comp=Z,2.0nm,0.5s
NRIK MLR MLR
comp=Z,256nm,20.0s
SANI Sanana 43.41 207 P **P 18 19 30.6 +0.5**
comp=Z,34nm,0.9s
PBKT Sadao Pong 43.57 253 P **P 18 19 32.4 +1.0**
comp=Z,14nm,1.2s
NVS Novosibirsk 43.75 313 *e*P **P 18 19 33.2 +0.7**
CMMT Chiang Mai 43.76 257 P **P 18 19 34.4 +1.4**

comp=Z,7,7nm,0.8s
CHTO Chiang Mai 43.77 257 P P 18 19 34.5 +1.5
comp=Z,24nm,1.7s
CHTO Chiang Mai 43.77 257 eP P 18 19 33.1 +0.1
CHTO e 18 21 19.3
CHTO pmax pmax
comp=Z,5.0nm,0.8s
CHTO Chiang Mai 43.77 257 eP P 18 19 33.1 +0.1
comp=Z,5.5nm,0.8s
CHTO ePP PcP 18 21 19.2 -0.4
CM01 Chiang Mai Arr 43.98 256 eP P 18 19 35.3 +0.5
CM01 ePcP PcP 18 21 20.9 +0.5
LSA Lhasa 44.38 276 P P 18 19 42.6 +4.2
LSA pmax pmax
comp=Z,3.0nm,1.0s
LSA Lhasa 44.38 276 eP P 18 19 39.0 +0.6
LSA pmax pmax
comp=Z,7.0nm,0.7s
LSA Lhasa 44.38 276 eP P 18 19 39.0 +0.6
comp=Z,6.6nm,0.7s
SRAK Srakaew 44.39 249 P P 18 19 36.3 -1.7
comp=Z,37nm,1.1s
OHAK Old Harbor 44.40 44 eP P 18 19 37.7 +0.1
comp=Z,37nm,1.5s
RSO Redoubt South 44.63 39 eP P 18 19 40.8 +1.1
NAYO Nakonayok 44.73 250 P P 18 19 43.0 +2.3
comp=Z,8.3nm,1.1s
KDAK Kodiak Island 44.76 43 i P P 18 19 40.8 +0.4
KDAK Kodiak Island 44.76 43 eP P 18 19 40.6 +0.2
comp=Z,31nm,0.8s
PPLA Purkeypile 44.96 35 eP P 18 19 43.9 +1.6
comp=Z,15nm,1.2s
SPU Mount Spurr 44.98 38 eP P 18 19 43.3 +1.1
SPU ePcP PcP 18 21 22.9 -0.3
CHBT CHBT 45.00 247 P P 18 19 44.8 +1.9
comp=Z,26nm,1.0s
CAST Castle Rocks 45.04 35 eP P 18 19 44.2 +1.5
comp=Z,22nm,1.7s
CAST ePP PP 18 21 28.4 +0.6
MK32 Makanchi Array 45.48 302 eP P 18 19 46.6 +0.1
MKAR Makanchi Array 45.48 302 P P 18 19 46.6 +0.1
comp=Z,4.0nm,0.7s,baz=83,slow=7.5,SNR=40
MKAR LR LR 18 39 17.1
comp=Z,145nm,22.0s,baz=59,slow=37
MKAR Makanchi Array 45.48 302 eP P 18 19 46.7 +0.2
BPAW Bear Paw Mtn. 45.56 34 eP P 18 19 48.0 +1.2
comp=Z,4.6nm,1.2s
KTH Kantishna Hill 45.56 35 eP P 18 19 47.8 +0.9
comp=Z,22nm,1.4s
MAKZ Makanchi 45.69 302 eP P 18 19 47.8 -0.3
MAKZ pmax pmax
comp=Z,11nm,0.9s
MAKZ Makanchi 45.69 302 eP P 18 19 47.8 -0.3
comp=Z,11nm,0.9s
MLY Manley 45.71 33 eP P 18 19 49.2 +1.2
comp=Z,16nm,1.4s
MLY ePcP PcP 18 21 26.2 +0.6
TRF Thorofare Moun 45.84 35 eP P 18 19 51.6 +2.4
comp=Z,13nm,1.4s
SBUM Sibu 46.06 227 eP P 18 19 51.5 +0.2
comp=Z,9.5nm,1.0s
COLD Coldfoot 46.09 29 eP P 18 19 51.6 +0.7
comp=Z,3.6nm,1.1s
RC01 Rabbit Creek A 46.10 38 eP P 18 19 51.5 +0.4
comp=Z,22nm,1.4s
BWN Browne 46.22 34 eP P 18 19 53.7 +1.7
comp=Z,72nm,1.4s
SEW Seward 46.28 39 eP P 18 19 52.4 -0.1
comp=Z,42nm,1.6s
PMR Palmer 46.38 37 eP P 18 19 53.2 -0.1
PMR pmax pmax
comp=Z,26nm,1.4s
PMR Palmer 46.38 37 eP P 18 19 53.2 -0.1
comp=Z,26nm,1.4s
MCK McKinley 46.45 34 eP P 18 19 54.1 +0.3
MCK pmax pmax
comp=Z,11nm,1.2s
MCK McKinley 46.45 34 eP P 18 19 54.1 +0.3
comp=Z,11nm,1.2s
RND Reindeer 46.49 35 eP P 18 19 53.9 -0.3
RND pmax pmax
comp=Z,15nm,1.1s
RND Reindeer 46.49 35 eP P 18 19 53.9 -0.3
comp=Z,15nm,1.1s
SML Sawmill 46.76 37 eP P 18 19 56.5 +0.2
SML pmax pmax
comp=Z,24nm,1.3s
SML Sawmill 46.76 37 eP P 18 19 56.5 +0.2
comp=Z,24nm,1.3s
MDM Murphy Dome 46.77 33 eP P 18 19 57.3 +1.0
comp=Z,24nm,1.3s
WRH Wood River Hil 46.83 33 eP P 18 19 57.2 +0.5
WRH ePcP PcP 18 21 29.1 -0.4
CCB Clear Creek Bu 46.95 33 eP P 18 19 58.3 +0.6
CCB ePcP PcP 18 21 27.2 -2.7
KURK Kurchatov 47.06 308 eP P 18 19 58.7 -0.1
KURK pmax pmax
comp=Z,19nm,0.6s
KURK Kurchatov 47.06 308 eP P 18 19 58.7 -0.1
comp=Z,19nm,0.6s
KURBB Kurchatov Arra 47.14 308 P P 18 19 59.2 -0.1
comp=Z,6.7nm,0.8s,baz=81,slow=7.9,SNR=60
SCM Sheep Creek Mo 47.23 37 eP P 18 20 00.8 +0.8
SCM pmax pmax
comp=Z,22nm,1.1s
SCM Sheep Creek Mo 47.23 37 eP P 18 20 00.8 +0.8
comp=Z,22nm,1.1s
IL1 Eielson Array 47.35 33 eP P 18 20 00.6 -0.2
ILAR Eielson Array 47.35 33 P P 18 20 00.6 -0.2
comp=Z,6.0nm,0.9s,baz=266,slow=6.1,SNR=51
ILAR PcP PcP 18 21 30.5 -0.8
comp=Z,1.5nm,0.8s,baz=283,slow=4.9,SNR=4.3
ILB Eielson Array 47.35 33 eP P 18 20 01.0 +0.2
SPSI Sidrap Palu 47.65 214 P P 18 20 02.6 -1.1
comp=Z,14nm,0.9s
KLU Klutina 47.92 37 eP P 18 20 06.5 +1.1
comp=Z,13nm,0.9s
KSM Kuching 47.97 229 eP P 18 20 06.8 +0.6
comp=Z,19nm,0.8s
FYU Fort Yukon 48.02 30 eP P 18 20 07.8 +1.8
comp=Z,24nm,1.2s
DIV Divide 48.02 38 eP P 18 20 07.3 +1.1
comp=Z,40nm,1.2s
PAX Paxson 48.03 35 eP P 18 20 07.3 +1.0
PAX e 18 21 34.7
PAX Paxson 48.03 35 eP P 18 20 07.3 +1.0
PAX ePcP PcP 18 21 34.7 +0.8
EYAK Cordova Ski Ar 48.09 39 eP P 18 20 07.4 +0.9
comp=Z,22nm,1.1s
KAPI Kappang 48.59 213 P P 18 20 11.3 +0.3
comp=Z,10nm,0.8s,baz=352,slow=5.6,SNR=8.4
KAPI Kappang 48.59 213 eP P 18 20 10.0 -1.0
comp=Z,11nm,0.8s
KAPI ePcP PcP 18 21 36.8 +0.3
BMRM Bremner River 48.60 38 eP P 18 20 12.2 +1.6
comp=Z,22nm,1.2s
BMRM ePcP PcP 18 21 36.8 +0.9
RAGM Ragged Mountai 48.63 39 eP P 18 20 12.4 +1.6
comp=Z,35nm,1.4s
MENT Mentasta 48.83 35 eP P 18 20 13.6 +1.2
comp=Z,15nm,1.0s
GUN Gumba 49.31 276 eP P 18 20 17.5 +0.6
comp=Z,62nm,0.7s
GUN Gumba 49.31 276 eP P 18 20 17.4 +0.6
comp=Z,57nm,0.7s
BBKI Banjar Baru 49.56 220 P P 18 20 18.0 -0.4
comp=Z,72nm,1.0s
BALM Baldy 49.69 38 eP P 18 20 19.4 +0.4
BALM pmax pmax
comp=Z,16nm,0.8s
BALM Baldy 49.69 38 eP P 18 20 19.4 +0.4
comp=Z,16nm,0.8s
EGAK Eagle 49.80 33 eP P 18 20 19.5 -0.1
comp=Z,8.9nm,1.3s
KKN Kakani 49.84 276 eP P 18 20 20.8 +0.1
comp=Z,42nm,0.6s
KKN Kakani 49.84 276 eP P 18 20 21.1 +0.4
comp=Z,42nm,0.6s
PKIN Phulchoki 49.85 276 eP P 18 20 20.7 -0.2
comp=Z,10nm,0.5s
PKIN Phulchoki 49.85 276 eP P 18 20 20.4 -0.5
comp=Z,10nm,0.5s
GKN Gorkha 50.24 277 eP P 18 20 24.0 +0.3
comp=Z,41nm,0.8s
GKN Gorkha 50.24 277 eP P 18 20 24.0 +0.3
comp=Z,45nm,0.8s

TKM2 Tokmak 2 51.12 298 eP P 18 20 31.2 +1.0
TKM2 pmax pmax
comp=Z,22nm,0.9s
TKM2 Tokmak 2 51.12 298 eP P 18 20 31.2 +1.0
comp=Z,22nm,0.9s
KOLN Koldanda 51.16 277 eP P 18 20 31.1 +0.4
comp=Z,12nm,0.5s
KOLN Koldanda 51.16 277 eP P 18 20 31.1 +0.4
comp=Z,12nm,0.5s
SOEI Soe 51.17 206 eP P 18 20 29.2 -1.5
comp=Z,41nm,0.9s
EDFI Ende, Flores 51.18 209 P P 18 20 29.6 -1.1
comp=Z,46nm,0.8s
PYUN Piuthan 51.48 278 eP P 18 20 34.2 +1.0
comp=Z,80nm,1.0s
PYUN Piuthan 51.48 278 eP P 18 20 34.2 +1.0
comp=Z,80nm,1.0s
BVAR Borovoye Array 51.53 312 P P 18 20 33.5 +0.6
comp=Z,1.9nm,0.7s,baz=81,slow=9.2,SNR=15
BRVK Borovoye 51.58 312 ceP P 18 20 33.9 +0.6
BRVK pmax pmax
comp=Z,8.0nm,1.2s
BRVK Borovoye 51.58 312 eP P 18 20 33.6 +0.4
comp=Z,5.4nm,0.7s
IPM Ipoh 51.66 241 eP P 18 20 33.6 -0.7
comp=Z,12nm,1.0s
FRU Bishkek 51.83 299 eP P 18 20 35.5 +0.2
AAK Ala-Archa 51.98 298 P P 18 20 37.2 +0.7
comp=Z,2.5nm,0.7s,baz=79,slow=4.0,SNR=5.9
AAK Ala-Archa 51.98 298 ||eP P 18 20 37.3 +0.7
AAK pmax pmax
comp=Z,12nm,1.1s
AAK Ala-Archa 51.98 298 eP P 18 20 36.9 +0.3
comp=Z,5.5nm,0.8s
KSH Kashi 52.04 294 eP P 18 20 42.1 +5.0
KSH epP sP 18 20 52.0 +6.2
KSH ePcP PcP **18 21 52.0 +2.9**
KSH S S **18 28 05.1 +5.3**
KSH pmax pmax
comp=Z,86nm,3.8s
KSH LR LR
comp=N,230nm,9.9s
KSH LR LR
comp=E,140nm,7.4s
KSH LR LR
comp=Z,290nm,14.4s
MTN Manton Dam 52.18 196 eP P 18 20 36.8 -1.2
comp=Z,66nm,0.8s
ZRNK Zerenda 52.36 312 eP P 18 20 39.6 +0.5
ZRNK pmax pmax
comp=Z,9.0nm,0.6s
ZRNK Zerenda 52.36 312 eP P 18 20 39.6 +0.5
comp=Z,8.7nm,0.6s
INK Inuvik 52.37 28 P P 18 20 39.8 +0.9
comp=Z,5.7nm,0.8s,baz=301,slow=6.3,SNR=31
INK Inuvik 52.37 28 eP P 18 20 39.3 +0.5
comp=Z,10nm,1.1s
EKS2 Erkin-Say 52.47 299 eP P 18 20 40.5 +0.3
EKS2 pmax pmax
comp=Z,4.0nm,0.8s
EKS2 Erkin-Say 52.47 299 eP P 18 20 40.5 +0.3
comp=Z,4.1nm,0.8s
TWSI Taliwang, Sumb 53.18 215 P P 18 20 43.6 -1.9
comp=Z,23nm,1.0s
SKAG Skagway 53.42 39 eP P 18 20 48.6 +1.8
comp=Z,12nm,1.0s
BKNI Bangkinang 54.69 237 P P 18 20 47.0 -10
PWJI Pagerwojo 55.00 220 P P 18 20 56.8 -1.9
SVE Sverdlovsk 55.84 319 ||i P P 18 21 05.0 +0.6
SVE pmax pmax
comp=Z,17nm,0.6s
SVE MLR MLR
comp=Z,726nm,16.0s
LEM Lembang 56.25 225 P P 18 21 12.9 +5.0
comp=Z,39nm,0.8s,baz=64,slow=7.3,SNR=11
DLBC Dease Lake 56.35 39 P P 18 21 09.8 +1.7
comp=Z,5.8nm,0.9s,baz=292,slow=6.4,SNR=9.6
DLBC Dease Lake 56.35 39 eP P 18 21 10.0 +1.9
comp=Z,7.7nm,0.9s
ARU Arti 57.05 319 P P 18 21 13.4 +0.3
comp=Z,6.5nm,0.7s,baz=71,slow=4.6,SNR=17
ARU Arti 57.05 319 c i P P 18 21 13.3 +0.3
ARU 18 22 09.1
ARU 18 23 20.9
ARU S S **18 29 07.7 +1.3**
ARU SS SS **18 32 55.7 +1.1**
ARU pmax pmax
comp=Z,17nm,1.1s
ARU MLR MLR
comp=Z,567nm,15.0s
ARU Arti 57.05 319 eP P 18 21 13.0 0.0
comp=Z,19nm,1.0s
WRAB Tennant Creek 58.50 191 d i P P 18 21 21.9 -1.6
WRAB pmax pmax
comp=Z,86nm,0.8s
WRAB Tennant Creek 58.50 191 eP P 18 21 22.3 -1.2
comp=Z,33nm,0.8s
WB2 Warramunga Arr 58.51 191 eP P 18 21 21.9 -1.6
comp=Z,36nm,0.9s
WR1 Warramunga Arr 58.51 191 eP P 18 21 22.2 -1.4
comp=Z,38nm,0.9s
WRA Warramunga Arr 58.51 191 P P 18 21 22.2 -1.4
comp=Z,24nm,0.8s,baz=11,slow=7.4,SNR=62
FITZ Fitzroy Crossi 58.61 201 P P 18 21 24.3 0.0
FITZ Fitzroy Crossi 58.61 201 eP P 18 21 23.6 -0.6
comp=Z,38nm,1.3s
ABKAR Abkulak array 58.98 310 eP P 18 21 26.4 -0.2
KBL Kabul 59.15 292 eP P 18 21 28.2 -0.1
KBL pmax pmax
comp=Z,13nm,1.1s
KBL Kabul 59.15 292 eP P 18 21 28.2 -0.1
comp=Z,13nm,1.1s
AKTO Aktyubinsk 59.64 312 P P 18 21 31.2 0.0
comp=Z,7.0nm,0.9s,baz=71,slow=8.5,SNR=19
AKTO LR LR 18 48 22.7
comp=Z,87nm,18.4s,baz=68,slow=37
HYB Hyderabad 60.50 270 i P P 18 21 36.5 -1.1
RES Resolute Bay 60.97 15 P P 18 21 39.8 -0.1
comp=Z,6.1nm,0.9s,baz=315,slow=7.1,SNR=17
RES Resolute Bay 60.97 15 eP P 18 21 39.6 -0.3
RES pmax pmax
comp=Z,9.0nm,1.0s
RES Resolute Bay 60.97 15 eP P 18 21 39.6 -0.3
comp=Z,8.5nm,1.0s
YKW3 Yellowknife Ar 61.67 31 eP P 18 21 44.6 -0.2
comp=Z,23nm,1.7s
YKA Yellowknife Ar 61.71 31 P P 18 21 45.2 +0.1
comp=Z,3.8nm,0.7s,baz=301,slow=6.7,SNR=69
YKA PcP PcP 18 22 26.3 +0.1
comp=Z,0.7nm,0.7s,baz=294,slow=4.3,SNR=6.1
YKB5 Yellowknife Ar 61.71 31 eP P 18 21 44.6 -0.4
YKB5 ePcP PcP 18 22 26.1 -0.1
AS01 Alice Springs 62.23 191 eP P 18 21 47.2 -1.7
AS01 ePcP PcP 18 22 28.9 +0.1
AS31 Alice Springs 62.23 191 eP P 18 21 47.5 -1.5
comp=Z,2.3nm,1.0s
ASAR Alice Springs 62.23 191 P P 18 21 47.9 -1.2
comp=Z,5.0nm,0.8s,baz=6.6,slow=7.2,SNR=84
TMCR Tamitsa 62.87 332 eP P 18 21 53.0 +0.2
TMCR pmax pmax
comp=Z,14nm,0.4s
ARA0 ARCESS Array S 63.77 340 eP P 18 21 58.4 -0.3
ARCES ARCESS Array B 63.77 340 P P 18 21 58.4 -0.3
comp=Z,2.6nm,0.8s,baz=49,slow=8.5,SNR=4.1
ARCES LR LR 18 52 31.9
comp=Z,77nm,21.2s,baz=51,slow=39
KLMR Klimovskoe 64.04 328 eP P 18 21 59.3 -1.3
KLMR e*PP sP **18 22 09.3 -0.1**
KLMR e 18 24 19.5
KLMR pmax pmax
comp=Z,5.0nm,0.8s
NLWA Neilton Lookou 64.29 49 eP P 18 22 04.5 +2.0
comp=Z,34nm,0.9s
PALK Pailekele 64.82 259 i P P 18 22 09.2 +2.7
B05A Bryant 64.90 47 P P 18 22 07.9 +1.5
baz=300
GEYT Alibeck 65.29 300 P P 18 22 09.0 -0.2
comp=Z,7.7nm,1.0s,baz=29,slow=3.4,SNR=15
GEYT LR LR 18 53 18.7
comp=Z,109nm,18.3s,baz=135,slow=38
LON Longmire 65.83 49 eP P 18 22 13.9 +1.3
LON pmax pmax
comp=Z,5.0nm,0.8s
LON Longmire 65.83 49 eP P 18 22 13.8 +1.3
comp=Z,4.9nm,0.8s
F04A Amboy 65.88 50 eP P 18 22 14.2 +1.4

comp=Z,33nm,0.8s
NLW Nelson Butte 66.01 47 P P 18 22 15.3 +1.4
ETW Entiat 66.26 47 eP P 18 22 16.6 +1.1
B08A Colville Reser 66.44 46 eP P 18 22 17.0 +0.5
comp=Z,22nm,1.4s
I03D Drain, OR 66.44 52 P P 18 22 18.7 +2.2
baz=301,SNR=5.9
EBG Ellensburg 66.48 48 P P 18 22 18.4 +1.6
TDH Tom, Dick, Har 66.59 50 P P 18 22 19.0 +1.4
H04A Detroit Lake 66.66 51 eP P 18 22 19.2 +1.3
comp=Z,33nm,0.8s
G05D Wamic, OR 66.90 50 P P 18 22 21.0 +1.6
baz=301
I04A Tendick Farm, 66.98 52 P P 18 22 21.2 +1.2
baz=301,SNR=9.5
L02D Cave Junction, 67.08 54 P P 18 22 22.1 +1.5
baz=301
G06A Carlson Farm, 67.31 50 eP P 18 22 22.9 +0.8
comp=Z,19nm,1.0s
C09A Chrisman Ranch 67.34 46 eP P 18 22 23.0 +0.8
comp=Z,20nm,0.8s
I05D Terrebonne, OR 67.35 51 P P 18 22 23.8 +1.4
baz=302
HAWA Hanford 67.36 48 eP P 18 22 23.2 +0.9
comp=Z,12nm,1.1s
D08A Wollman Farm, 67.36 47 eP P 18 22 23.0 +0.7
comp=Z,14nm,0.9s
VTHM Trough 67.38 50 P P 18 22 24.0 +1.4
KHMM Horse Mountain 67.66 55 eP P 18 22 25.8 +1.3
comp=Z,21nm,0.8s
NEW Newport 67.75 46 P P 18 22 25.7 +0.9
baz=303
NEW Newport 67.75 46 eP P 18 22 25.5 +0.7
NEW pmax pmax
comp=Z,19nm,1.0s
NEW Newport 67.75 46 eP P 18 22 25.5 +0.7
comp=Z,20nm,1.0s
YBH Yreka Blue Hor 67.86 54 eP P 18 22 27.0 +1.3
YBH pmax pmax
comp=Z,12nm,1.0s
YBH Yreka Blue Hor 67.86 54 eP P 18 22 26.9 +1.3
comp=Z,12nm,1.0s
M02C Callahan 67.95 54 P P 18 22 28.1 +1.9
baz=302
J05D Fort Rock, OR 67.97 52 P P 18 22 28.0 +1.6
baz=302,SNR=16
K04D Chiloquin, OR 68.00 53 P P 18 22 28.2 +1.6
baz=302
E09A Wood Farm, Sta 68.11 48 eP P 18 22 27.4 +0.4
comp=Z,19nm,1.1s
N02D Trinity Center 68.27 54 P P 18 22 29.9 +1.7
baz=302
VRH Novokhopyorsk 68.29 319 eP P 18 22 26.3 -1.7
VRH pmax pmax
comp=Z,5.0nm,0.4s
M04C Macdoel 68.39 53 P P 18 22 30.6 +1.6
baz=302,SNR=10
K05A Summer Lake 68.48 52 eP P 18 22 31.2 +1.5
comp=Z,47nm,0.9s
OBN Obninsk 68.57 324 LR LR 18 56 20.0
comp=Z,126nm,19.6s,baz=85,slow=39
OBN Obninsk 68.57 324 ||eP P 18 22 29.9 +0.2
OBN e 18 22 37.4
OBN e 18 22 48.9
OBN e 18 25 02.2
OBN ePPP PPP 18 26 39.8
OBN pmax pmax
comp=Z,25nm,1.7s
OBN MLR MLR
comp=Z,326nm,16.0s
FIA1 FINESS Array S 68.89 333 eP P 18 22 31.2 -0.4
FIA0 FINESS Array S 68.90 333 eP P 18 22 31.2 -0.4
FIA0 FINESS Array S 68.90 333 eP P 18 22 31.2 -0.4
FINES FINESS Array B 68.90 333 P P 18 22 31.2 -0.4
comp=Z,4.8nm,0.7s,baz=53,slow=7.4,SNR=16
FINES LR LR 18 54 55.3
comp=Z,196nm,20.3s,baz=45,slow=38
FINES FINESS Array B 68.90 333 i P P 18 22 31.6 0.0
FINES pmax pmax
comp=Z,5.0nm,0.7s
LPSR Galich'ya Gora 68.91 321 eP P 18 22 31.6 -0.3
LPSR pmax pmax
comp=Z,10.0nm,0.8s
F10A Beach Ranch, E 68.93 48 eP P 18 22 33.1 +0.8
comp=Z,4.8nm,0.9s
WALA Waterton Lakes 69.09 44 eP P 18 22 33.7 +0.5
comp=Z,15nm,0.8s
O03D Paynes Creek 69.21 55 P P 18 22 34.9 +0.8
baz=303
BSMT Bassoo Peak 69.28 45 eP P 18 22 35.6 +1.1
MOD Modoc Plateau 69.30 53 eP P 18 22 35.7 +1.0
comp=Z,13nm,0.8s
SUMG Summit 69.58 1 eP P 18 22 36.6 +0.4
SUMG pmax pmax
comp=Z,13nm,0.9s
SUMG Summit 69.58 1 eP P 18 22 36.6 +0.4
comp=Z,13nm,0.9s
VSR Storozhevoye 69.60 320 eP P 18 22 35.8 -0.4
VSR pmax pmax
comp=Z,6.0nm,0.8s
JTMT Jette 69.62 45 eP P 18 22 37.5 +0.9
STKA Stephens Creek 69.69 182 P P 18 22 36.0 -0.8
comp=Z,3.9nm,0.7s,baz=351,slow=6.3,SNR=15
STKA Stephens Creek 69.69 182 P P 18 22 36.0 -0.8
STKA pmax pmax
comp=Z,4.0nm,0.7s
STKA Stephens Creek 69.69 182 eP P 18 22 35.7 -1.1
comp=Z,5.7nm,1.8s
YBMT Yellow Bay 69.71 45 eP P 18 22 38.2 +1.1
SWMT Swartz Lake 69.92 45 eP P 18 22 39.1 +0.8
MSO Missoula 70.34 46 P P 18 22 41.5 +0.6
baz=305
MSO Missoula 70.34 46 eP P 18 22 41.3 +0.3
comp=Z,14nm,1.3s
AFDM Forest Hills D 70.48 56 eP P 18 22 43.1 +1.2
comp=Z,6.6nm,1.0s
VSU Vasula 70.65 330 ||eP P 18 22 42.2 -0.3
VSU pmax pmax
comp=Z,50nm,1.7s
CHMT Chamberlain Mo 70.67 45 eP P 18 22 43.2 +0.1
MFID Camas Ranch 71.19 49 eP P 18 22 46.9 +0.7
comp=Z,13nm,0.9s
CMB Columbia Colle 71.37 56 eP P 18 22 48.2 +0.8
CMB pmax pmax
comp=Z,15nm,0.9s
CMB Columbia Colle 71.37 56 eP P 18 22 48.2 +0.8
comp=Z,15nm,0.9s
WAKR Walker 71.73 55 eP P 18 22 51.1 +1.4
LRM Limekiln Ridge 71.76 46 eP P 18 22 50.8 +0.9
ZEI Tsey 71.85 310 eP P 18 22 47.3 -3.0
ZEI pmax pmax
comp=Z,9.0nm,0.6s
KVAR Kislovodsk Arr 71.89 312 LR LR 18 56 05.8
comp=Z,62nm,19.0s,slow=37
KIV Kislovodsk 71.90 312 eP P 18 22 51.9 +1.5
KIV pmax pmax
comp=Z,46nm,1.3s
KIV Kislovodsk 71.90 312 eP P 18 22 51.9 +1.5
comp=Z,46nm,1.3s
KBZ Khabaz 71.90 312 P P 18 22 51.2 +0.9
comp=Z,7.6nm,1.0s,baz=194,slow=4.8,SNR=9.3
KBZ LR LR 18 56 30.4
comp=Z,54nm,19.3s,baz=52,slow=38
EGMT Eagleton 71.93 43 P P 18 22 51.0 +0.5
baz=307
EGMT Eagleton 71.93 43 eP P 18 22 51.1 +0.5
comp=Z,15nm,1.0s
HLID Hailey 71.95 49 P P 18 22 52.0 +1.1
baz=306
HLID Hailey 71.95 49 eP P 18 22 52.0 +1.1
comp=Z,9.6nm,0.9s
DLMT Dillon 71.95 46 eP P 18 22 50.9 +0.1
comp=Z,46nm,1.0s
FCC Fort Churchill 71.99 28 eP P 18 22 50.4 -0.2
FCC pmax pmax
comp=Z,31nm,1.4s
FCC Fort Churchill 71.99 28 eP P 18 22 50.4 -0.2
comp=Z,31nm,1.4s
MCMT McKenzie Canyo 72.12 47 eP P 18 22 52.8 +0.8
BOZ Bozeman (W) 72.33 46 P P 18 22 54.0 +0.9
baz=307,SNR=12
NV01 Mina Array Sit 72.50 55 eP P 18 22 55.2 +0.9
NVAR Mina Array Bea 72.50 55 P P 18 22 55.6 +1.3
comp=Z,14nm,0.8s,baz=284,slow=6.5,SNR=95
NV11 Mina Array Sit 72.60 55 eP P 18 22 55.5 +0.7
comp=Z,13nm,1.1s

GNI	Garni	72.86	308	LR	LR	18 57 59.6	
	comp=Z,74nm,19.9s,baz=64,slow=38						
GNI	Garni	72.86	308	eP	P	18 22 58.3	+1.9
GNI				pmax	pmax		
	comp=Z,18nm,1.0s						
ELK	Elko	73.09	51	eP	P	18 22 58.7	+0.9
ELK				pmax	pmax		
	comp=Z,5.0nm,0.9s						
ELK	Elko	73.09	51	eP	P	18 22 58.7	+0.9
	comp=Z,4.7nm,0.9s						
VES	Vestal, Richgr	73.47	57	P	P	18 23 00.5	+0.6
	baz=305						
YFT	Old Faithful	73.50	46	eP	P	18 23 02.5	+2.4
	comp=Z,8.0nm,0.9s						
PKM	Mcpherson Peak	73.53	59	P	P	18 23 01.5	+1.0
	baz=305						
H17A	Grant Village	73.68	46	P	P	18 23 03.6	+2.3
	baz=306						
H17A	Grant Village	73.68	46	eP	P	18 23 03.6	+2.3
	comp=Z,15nm,0.8s						
CWC	Cottonwood Cre	73.79	56	P	P	18 23 02.8	+0.9
	baz=306						
FLWY	Flagg Ranch	73.80	46	eP	P	18 23 04.0	+2.1
	comp=Z,16nm,1.2s						
FXWY	Fox Creek	73.88	47	eP	P	18 23 03.6	+1.2
	comp=Z,9.3nm,0.9s						
GRAC	Grapevine Rang	73.94	56	P	P	18 23 03.8	+1.2
	baz=306,SNR=10.0						
RLMT	Red Lodge	73.97	45	P	P	18 23 03.9	+1.0
	baz=308,SNR=5.9						
RLMT	Red Lodge	73.97	45	eP	P	18 23 04.1	+1.2
	comp=Z,19nm,1.6s						
HVU	Hansel Valley	73.98	49	eP	P	18 23 03.7	+0.8
HVU				pmax	pmax		
	comp=Z,14nm,1.1s						
HVU	Hansel Valley	73.98	49	eP	P	18 23 03.7	+0.8
	comp=Z,14nm,1.1s						
MOOW	Moose Ponds	73.98	47	eP	P	18 23 04.3	+1.3
	comp=Z,45nm,1.9s						
NC204	NORSAR Array S	73.98	339	eP	P	18 23 02.0	-0.4
ISA	Isabella, Lake	73.98	57	P	P	18 23 03.3	+0.4
	baz=306						
NB2	NORSAR Subarra	74.04	338	P	P	18 23 02.1	-0.7
	comp=Z,3.9nm,0.8s,baz=36,slow=6.2						
NB200	NORSAR Array S	74.04	338	eP	P	18 23 02.3	-0.5
NOA	NORSAR Array B	74.04	338	P	P	18 23 02.3	-0.5
	comp=Z,3.9nm,0.8s,baz=38,slow=5.9,SNR=15						
NOA				LR	LR	18 59 24.8	
	comp=Z,56nm,20.9s,baz=35,slow=39						
ARVC	Arvin	74.06	58	P	P	18 23 04.5	+1.2
	baz=306						
NBO02	NORSAR Array S	74.14	338	eP	P	18 23 03.0	-0.3
LOHW	Long Hollow	74.14	47	eP	P	18 23 05.2	+1.3
	comp=Z,7.1nm,1.4s						
REDW	Red Top Meadow	74.15	47	eP	P	18 23 05.2	+1.2
	comp=Z,9.9nm,0.9s						
SCZ2	Santa Cruz Isl	74.17	59	P	P	18 23 05.5	+1.5
	baz=306						
R11A	Troy Canyon, C	74.29	54	P	P	18 23 05.8	+0.9
	baz=306,SNR=28						
R11A	Troy Canyon, C	74.29	54	eP	P	18 23 05.7	+0.9
	comp=Z,14nm,1.1s						
BGU	Big Grassy Mou	74.34	50	eP	P	18 23 06.3	+1.2
	comp=Z,9.1nm,1.4s						
MPMC	Manual Prospec	74.40	56	P	P	18 23 06.5	+1.0
	baz=306,SNR=19						
OSI	Osito Audit: C	74.42	58	P	P	18 23 06.8	+1.3
	baz=306						
FURC	Furnace Creek,	74.57	56	P	P	18 23 07.6	+1.4
	baz=306,SNR=7.3						
LRMC	Laurel Mtn Rad	74.61	57	P	P	18 23 07.4	+0.7
	baz=306,SNR=5.6						
LAO	LASA Array	74.64	42	P	P	18 23 07.5	+0.9
	baz=310,SNR=6.5						
SNCC	San Nicolas Is	74.68	60	P	P	18 23 07.4	+0.5
	baz=306						
TPNV	Topopah Spring	74.69	55	P	P	18 23 07.8	+0.6
	baz=306,SNR=16						
EDW2	Edwards Air Fo	74.76	58	P	P	18 23 08.6	+1.2
	baz=306,SNR=9.0						
A25A	Svangstu Ranch	74.79	39	P	P	18 23 07.9	+0.6
	baz=311						
HWUT	Hardware Ranch	74.80	49	eP	P	18 23 09.1	+1.3
	comp=Z,20nm,1.3s						
AKASG	Malin Array Be	74.81	323	P	P	18 23 06.7	-0.6
	comp=Z,3.7nm,0.7s,baz=42,slow=6.9,SNR=7.7						
AKASG				LR	LR	19 00 06.7	
	comp=Z,82nm,19.1s,baz=65,slow=39						
AKASG	Malin Array Be	74.81	323	i P	P	18 23 07.0	-0.3
AKASG				pmax	pmax		
	comp=Z,3.0nm,0.6s						
AKBB	Malin Array Si	74.81	323	eP	P	18 23 07.1	-0.2
AKBB				pmax	pmax		
	comp=Z,8.0nm,0.6s						
AKBB	Malin Array Si	74.81	323	eP	P	18 23 07.1	-0.2
	comp=Z,8.3nm,0.6s						
KIEV	Kiev	74.82	323	d iP	P	18 23 06.9	-0.5
KIEV				pmax	pmax		
	comp=Z,6.0nm,1.0s						
DUG	Dugway, Tooele	74.91	51	P	P	18 23 09.7	+1.4
	baz=307,SNR=16						
DUG	Dugway, Tooele	74.91	51	eP	P	18 23 09.3	+1.0
DUG				pmax	pmax		
	comp=Z,25nm,1.4s						
DUG	Dugway, Tooele	74.91	51	eP	P	18 23 09.3	+1.0
	comp=Z,25nm,1.4s						
BW06	Boulder Array	75.27	47	P	P	18 23 10.8	+0.4
	baz=308,SNR=5.3						
BW06	Boulder Array	75.27	47	eP	P	18 23 10.4	-0.1
PD31	Pinedale Array	75.27	47	eP	P	18 23 10.8	+0.3
PDAR	Pinedale Array	75.27	47	P	P	18 23 10.9	+0.4
	comp=Z,6.7nm,0.6s,baz=264,slow=2.0,SNR=80						
PSUT	Pine Spring	75.27	53	eP	P	18 23 11.5	+1.0
	comp=Z,15nm,1.3s						
GSC	Goldstone, Bar	75.30	57	P	P	18 23 11.2	+0.6
	baz=306,SNR=8.1						
GSC	Goldstone, Bar	75.30	57	eP	P	18 23 10.7	+0.1
GSC				pmax	pmax		
	comp=Z,11nm,1.0s						
GSC	Goldstone, Bar	75.30	57	eP	P	18 23 10.7	+0.1
	comp=Z,11nm,1.0s						
CIS	Catalina Islan	75.34	59	P	P	18 23 11.4	+0.6
	baz=306						
A26A	Wade Farm, Ken	75.35	39	P	P	18 23 10.8	+0.2
	baz=312						
BFSC	Mount Baldy Ra	75.36	58	P	P	18 23 12.1	+1.1
	baz=306						
JLU	Jordanelle	75.49	50	eP	P	18 23 12.6	+0.8
	comp=Z,10nm,1.2s						
SCI2	San Clemente I	75.50	59	P	P	18 23 12.0	+0.4
	baz=306						
NLU	North Lily Min	75.50	50	eP	P	18 23 13.0	+1.1
	comp=Z,5.6nm,0.9s						
A27A	Ledoux Ranch,	75.70	38	P	P	18 23 13.1	+0.5
	baz=312						
TUQ	Turquoise Moun	75.80	56	P	P	18 23 14.3	+0.8
	baz=307						
D25A	Fairfield	75.86	41	P	P	18 23 14.1	+0.6
	baz=311						
HEC	Hector,Ludlow	75.89	57	P	P	18 23 14.7	+0.7
	baz=307						
MURC	Murrieta	76.05	58	P	P	18 23 15.2	+0.3
	baz=307						
A28A	Rude Farm, Bot	76.20	38	P	P	18 23 15.8	+0.3
	baz=313						
E25A	Miller Ranch,	76.25	41	P	P	18 23 16.3	+0.6
	baz=311						
MSU	Marysvale	76.32	52	eP	P	18 23 17.9	+1.3
MSU	Marysvale	76.32	52	eP	P	18 23 17.9	+1.3
GMRC	Granite Mounta	76.36	57	P	P	18 23 17.8	+1.0
	baz=307						
C27A	Sayler Ranch,	76.41	39	P	P	18 23 17.1	+0.5
	baz=312						
TMUT	Trail Mountain	76.44	51	eP	P	18 23 18.4	+1.1
	comp=Z,5.2nm,0.9s						
B28A	Dugan Ranch, T	76.47	38	P	P	18 23 17.4	+0.5
	baz=313						
PFO	Pinyon Flats O	76.53	58	P	P	18 23 17.9	+0.2
	baz=307						
PFO	Pinyon Flats O	76.53	58	eP	P	18 23 18.3	+0.6
PFO				pmax	pmax		
	comp=Z,8.0nm,0.9s						
PFO	Pinyon Flats O	76.53	58	eP	P	18 23 18.3	+0.6
	comp=Z,7.8nm,0.9s						
TPFO	Pinon Flats	76.54	58	P	P	18 23 18.4	+0.7
	baz=307,SNR=5.9						
F25A	Bowman	76.60	42	P	P	18 23 18.2	+0.4
	baz=312						
BELC	Belle Mtn. Jos	76.61	57	P	P	18 23 18.6	+0.4
	baz=307						
MTPU	Mount Pierson	76.61	52	eP	P	18 23 19.8	+1.4
	comp=Z,6.9nm,0.9s						
P17A	Butcher Ranch,	76.61	50	eP	P	18 23 19.1	+1.0
	comp=Z,56nm,1.6s						
Q16A	Castle Valley	76.69	51	eP	P	18 23 20.1	+1.5
	comp=Z,27nm,1.6s						
A29A	Manning Farm,	76.69	37	P	P	18 23 18.7	+0.5
	baz=314,SNR=7.5						
E26A	Carlson Angus	76.75	41	P	P	18 23 19.3	+0.7
	baz=312						
D27A	Center	76.80	40	P	P	18 23 19.6	+0.7
	baz=312						
KNB	Kanab	76.84	53	eP	P	18 23 20.9	+1.5
KNB				pmax	pmax		
	comp=Z,28nm,1.3s						
KNB	Kanab	76.84	53	eP	P	18 23 20.9	+1.5
	comp=Z,28nm,1.3s						
SRU	San Rafael Swe	76.97	50	eP	P	18 23 21.0	+0.8
SRU				pmax	pmax		
	comp=Z,13nm,0.8s						
SRU	San Rafael Swe	76.97	50	eP	P	18 23 21.0	+0.8
	comp=Z,13nm,0.8s						
MONP2	Monument Peak	76.99	58	P	P	18 23 20.7	+0.3
	baz=307						
F26A	Lodgepole	77.06	41	P	P	18 23 20.6	+0.2
	baz=312						
K22A	Casper	77.07	46	P	P	18 23 20.9	+0.3
	baz=310						
K22A	Casper	77.07	46	eP	P	18 23 21.2	+0.6
	comp=Z,17nm,1.1s						
IRM	Iron Mountain	77.08	57	P	P	18 23 21.4	+0.8
	baz=307,SNR=6.9						
BC3	Big Chuckawall	77.17	57	P	P	18 23 21.8	+0.5
	baz=307						
ULM	Lac du Bonnet	77.32	35	P	P	18 23 21.5	-0.1
	comp=Z,7.5nm,0.8s,baz=301,slow=6.7,SNR=9.5						
ULM	Lac du Bonnet	77.32	35	eP	P	18 23 21.5	-0.1
	comp=Z,13nm,1.0s						
B30A	Myrvik Farm, E	77.45	37	P	P	18 23 22.6	+0.1
	baz=314,SNR=5.0						
G26A	Maurine	77.47	42	P	P	18 23 23.0	+0.3
	baz=312,SNR=5.3						
RSSD	Black Hills	77.48	43	P	P	18 23 23.2	+0.2
	baz=311						
RSSD	Black Hills	77.48	43	eP	P	18 23 23.2	+0.2
RSSD				pmax	pmax		
	comp=Z,10.0nm,1.0s						
RSSD	Black Hills	77.48	43	eP	P	18 23 23.1	+0.2
	comp=Z,9.9nm,1.0s						
U15A	North Rim	77.53	53	eP	P	18 23 24.8	+1.3
	comp=Z,41nm,1.8s						
PDMCI	Parker Dam,Lak	77.65	56	P	P	18 23 24.3	+0.5
	baz=308						
O20A	White River Ci	77.69	48	P	P	18 23 24.7	+0.5
	baz=310						
O20A	White River Ci	77.69	48	eP	P	18 23 25.0	+0.8
	comp=Z,13nm,1.0s						
I25A	Rochford	77.72	43	P	P	18 23 24.3	0.0
	baz=312,SNR=5.8						
Y12C	Blythe	77.73	57	P	P	18 23 24.9	+0.6
	baz=308						
Y12C	Blythe	77.73	57	eP	P	18 23 25.1	+0.8
	comp=Z,8.5nm,0.9s						
G27A	Dupree	77.76	41	P	P	18 23 24.4	+0.1
	baz=312						
B31A	Greenbush Farm	77.80	37	P	P	18 23 24.7	+0.4
	baz=315						
H26A	Fairpoint	77.83	42	P	P	18 23 24.9	+0.2
	baz=312						
GLA	Glamis	77.96	57	P	P	18 23 26.4	+0.8
	baz=308						
J25A	Sunshine Ranch	78.09	44	P	P	18 23 26.3	0.0
	baz=312						
I26A	New Underwood	78.18	43	P	P	18 23 27.1	+0.4
	baz=312						
H27A	Howes	78.19	42	P	P	18 23 27.2	+0.6
	baz=312						
PV09	Paradox Valley	78.20	50	eP	P	18 23 27.9	+0.8
PV10	Paradox Valley	78.33	50	eP	P	18 23 29.2	+1.4
B32A	Ashes, Strandq	78.34	36	P	P	18 23 27.2	-0.1
	baz=315						
A33A	Warroad	78.48	36	P	P	18 23 27.9	-0.3
	baz=316,SNR=7.8						
PV05	Paradox Valley	78.48	51	eP	P	18 23 29.5	+0.8
E30A	Jud	78.53	39	P	P	18 23 28.6	+0.1
	baz=314						
F29A	Eureka	78.53	40	P	P	18 23 28.7	+0.2
	baz=314						
N23A	Red Feather La	78.54	47	P	P	18 23 30.0	+1.0
	baz=311,SNR=8.5						
N23A	Red Feather La	78.54	47	eP	P	18 23 29.6	+0.6
	comp=Z,14nm,0.8s						
J26A	Sides Ranch, S	78.54	43	P	P	18 23 29.0	+0.3
	baz=312						
KWP	Kalwaria Pacla	78.55	326	eP	P	18 23 29.2	+0.7
KWP	Kalwaria Pacla	78.55	326	eP	P	18 23 29.2	+0.7
I27A	Quinn	78.58	42	P	P	18 23 29.3	+0.4
	baz=313						
Y14A	Wickenburg	78.61	56	eP	P	18 23 29.9	+0.6
	comp=Z,64nm,1.4s						
WUAZ	Wupatki	78.68	54	P	P	18 23 30.6	+0.8
	baz=309						
WUAZ	Wupatki	78.68	54	eP	P	18 23 30.8	+1.0
	comp=Z,34nm,1.3s						
PV01	Paradox Valley	78.77	50	eP	P	18 23 31.2	+1.0
BUR08	Bucovina Ar. S	78.83	323	eP	P	18 23 30.4	+0.2
113A	Mohawk Valley,	78.83	57	eP	P	18 23 31.1	+0.7
	comp=Z,6.6nm,1.1s						
I28A	Midland	79.10	42	P	P	18 23 31.9	+0.2
	baz=313,SNR=8.5						
B34A	Aery, Baudette	79.15	35	P	P	18 23 31.1	-0.8
	baz=317,SNR=5.6						
C33A	Trail	79.15	37	P	P	18 23 31.6	-0.3
	baz=316						
J27A	Elkhorn Farm,	79.16	43	P	P	18 23 32.2	+0.1
	baz=313						
KOLS	Kolonicke sedl	79.25	325	eP	P	18 23 33.0	+0.6
KOLS				pmax	pmax		
	comp=Z,3.0nm,1.4s						
KOLS	Kolonicke sedl	79.25	325	eP	P	18 23 33.0	+0.6
X16A	Lo Mia Camp, P	79.33	55	eP	P	18 23 34.2	+0.8
	comp=Z,11nm,0.8s						
OJC	Ojcow	79.38	327	eP	P	18 23 33.3	+0.2
OJC	Ojcow	79.38	327	eP	P	18 23 33.3	+0.2
MVCO	Mesa Verde	79.41	51	P	P	18 23 34.5	+0.7
	baz=310						
ISCO	Idaho Springs	79.44	47	P	P	18 23 34.4	+0.4
	baz=311						
ISCO	Idaho Springs	79.44	47	eP	P	18 23 34.8	+0.8
ISCO				pmax	pmax		
	comp=Z,4.0nm,0.8s						
ISCO	Idaho Springs	79.44	47	eP	P	18 23 34.8	+0.8
	comp=Z,3.7nm,0.8s						
I29A	Vivian Onida	79.53	42	P	P	18 23 34.5	+0.4
	baz=314						
C34A	RKJ Ranch, Bem	79.64	36	P	P	18 23 34.6	+0.1
	baz=317						
CRVS	Cervenica-Dubn	79.64	326	eP	P	18 23 35.0	+0.5
CRVS	Cervenica-Dubn	79.64	326	eP	P	18 23 35.0	+0.5
B35A	Bob, Littlefor	79.66	35	P	P	18 23 34.2	-0.4
	baz=317,SNR=6.7						
NIE	Niedzica	79.76	327	eP	P	18 23 36.2	+1.0
NIE	Niedzica	79.76	327	eP	P	18 23 36.2	+1.0
BR101	Keskin Array S	79.81	313	eP	P	18 23 36.4	+0.6
BRTR	Keskin Array B	79.81	313	P	P	18 23 36.4	+0.6
	comp=Z,2.7nm,1.0s,baz=101,slow=6.4,SNR=7.7						
BRTR				LR	LR	19 04 01.7	
	comp=Z,39nm,18.4s,baz=56,slow=40						
BRTR	Keskin Array B	79.81	313	i P	P	18 23 37.2	+1.4
BRTR				pmax	pmax		
	comp=Z,3.0nm,1.0s						
D34A	Park Rapids	79.91	37	P	P	18 23 35.8	-0.2
	baz=316						
E33A	Westby DABS, E	79.94	38	P	P	18 23 36.3	+0.1
	baz=316						
214A	Organ Pipe Nat	79.97	57	P	P	18 23 38.1	+1.4
	baz=309						
C35A	Jirik Farms, M	80.03	36	P	P	18 23 36.1	-0.6
	baz=317,SNR=7.4						
I30A	Oacoma	80.07	41	P	P	18 23 36.9	-0.1
	baz=314,SNR=7.0						
S22A	4UR Ranch, Cre	80.07	50	P	P	18 23 38.7	+1.2
	baz=311						
S22A	4UR Ranch, Cre	80.07	50	eP	P	18 23 38.6	+1.1
	comp=Z,5.2nm,0.8s						
BR231	Keskin MP Arra	80.23	313	eP	P	18 23 36.9	-1.1
F33A	5 Mile Ranch,	80.28	38	P	P	18 23 38.1	+0.1
	baz=316						
LANS	Liptovska Anna	80.33	327	eP	P	18 23 38.5	+0.2
LANS	Liptovska Anna	80.33	327	eP	P	18 23 38.5	+0.2
E34A	Wadena	80.34	37	P	P	18 23 38.1	-0.2
	baz=317						
OKC	Ostrava-Krasne	80.36	328	AMS	AMS	19 04 00.0	
	comp=Z,200nm,16.0s						
J30A	Dallas	80.44	42	P	P	18 23 38.9	-0.1
	baz=314						
D35A	Remer	80.45	36	P	P	18 23 38.2	-0.7
	baz=317						
C36A	Pine Crest Far	80.51	35	P	P	18 23 38.7	-0.6
	baz=318,SNR=5.6						
G33A	Ortonville	80.67	39	P	P	18 23 40.3	+0.2
	baz=316						
DPC	Dobruska-Polom	80.72	329	eP	P	18 23 39.4	-1.0
DPC	Dobruska-Polom	80.72	329	eP	P	18 23 39.4	-1.0
UPC	Upice	80.72	329	AMS	AMS	19 03 30.0	
	comp=Z,100nm,15.0s						
KRLC	Kraliky	80.75	329	eP	P	18 23 40.8	+0.3
KRLC	Kraliky	80.75	329	eP	P	18 23 40.8	+0.3
D36A	Goodland	80.79	36	P	P	18 23 40.2	-0.6
	baz=318						
C37A	Embarrass	80.83	35	P	P	18 23 40.5	-0.5
	baz=318						
SDCO	Great Sand Dun	80.86	49	P	P	18 23 42.1	+0.4
	baz=312						
SDCO	Great Sand Dun	80.86	49	eP	P	18 23 42.2	+0.5
	comp=Z,9.0nm,1.4s						
H33A	Prehn Over Nor	80.89	39	P	P	18 23 41.3	-0.1
	baz=316,SNR=5.3						
EYMN	Ely	80.97	34	P	P	18 23 41.7	0.0
	baz=319						
EYMN	Ely	80.97	34	eP	P	18 23 41.3	-0.4
	comp=Z,11nm,1.0s						
VYHS	Vyhne	81.09	327	eP	P	18 23 43.3	+0.9
VYHS				pmax	pmax		
	comp=Z,9.0nm,2.3s						
VYHS	Vyhne	81.09	327	eP	P	18 23 43.3	+0.9
D37A	Cotton	81.14	35	P	P	18 23 41.9	-0.7
	baz=318						
E36A	McGregor	81.23	36	P	P	18 23 42.5	-0.6
	baz=318						
C38A	Sawbill Land.	81.24	34	P	P	18 23 42.7	-0.5
	baz=319,SNR=8.6						
BRG	Berggiesshubel	81.25	331	eP	P	18 23 44.5	+1.4
	comp=Z,4.9nm,1.2s						
BRG	Berggiesshubel	81.25	331	eP	P	18 23 44.5	+1.4
BRG				pmax	pmax		
	comp=Z,5.0nm,1.2s						
CLL	Collm	81.26	331	i P	P	18 23 42.7	-0.4
	comp=Z,6.0nm,1.0s						
CLL				L	L	19 01 00.0	
	comp=Z,100nm,20.0s						
CLL	Collm	81.26	331	i P	P	18 23 42.7	-0.4
CLL				pmax	pmax		
	comp=Z,6.0nm,1.0s						
CLL	Collm	81.26	331	eP	P	18 23 42.4	-0.7
	comp=Z,5.6nm,0.7s						
PVCC	Panska Ves	81.28	330	AMS	AMS	19 03 20.0	
	comp=Z,100nm,17.2s						
I33A	Coleman	81.32	40	P	P	18 23 43.7	0.0
	baz=316						
L31A	Butterfield Fa	81.59	42	P	P	18 23 45.3	+0.1
	baz=315,SNR=5.6						
F36A	Milaca	81.59	37	P	P	18 23 44.8	-0.2
	baz=318						
ECSD	EROS Data Cent	81.63	40	P	P	18 23 45.5	+0.2
	baz=316						
ECSD	EROS Data Cent	81.63	40	eP	P	18 23 44.9	-0.5
	comp=Z,9.3nm,0.8s						
C39A	Grand Marais	81.67	34	P	P	18 23 44.9	-0.5
	baz=320						
GOPC	GO Pecny, Ondr	81.67	330	AMS	AMS	19 04 20.0	
	comp=Z,200nm,16.5s						
PRU	Pruhonice	81.71	330	eP	P	18 23 46.1	+0.5
PRU				AMS	AMS	19 04 20.0	
	comp=Z,200nm,13.7s						
PRU	Pruhonice	81.71	330	eP	P	18 23 46.1	+0.5
PRU				MLR	MLR		
	comp=Z,200nm,13.7s						
H35A	Sunnyside Ranc	81.82	38	P	P	18 23 46.7	+0.4
	baz=317,SNR=10						
TREC	Trest	81.88	329	AMS	AMS	19 04 30.0	
	comp=Z,200nm,14.9s						
T25A	Trinidad	81.92	49	P	P	18 23 47.5	+0.3
	baz=312,SNR=11						
T25A	Trinidad	81.92	49	eP	P	18 23 48.1	+0.9
	comp=Z,12nm,0.9s						
M31A	Lambtecht Ranc	82.10	43	P	P	18 23 47.5	-0.4
	baz=315						
ANMO	Albuquerque	82.13	52	P	P	18 23 48.8	+0.5
	baz=311						
ANMO	Albuquerque	82.13	52	d iP	P	18 23 49.3	+1.0
ANMO				pmax	pmax		
	comp=Z,9.0nm,1.2s						
ANMO	Albuquerque	82.13	52	eP	P	18 23 49.5	+1.2
	comp=Z,8.0nm,1.1s						
BGNE	Belgrade	82.50	42	P	P	18 23 49.5	-0.4
	baz=315						
BNM	Barren Site	82.55	52	eP	P	18 23 51.3	+0.7
319A	Douglas	82.66	56	eP	P	18 23 52.1	+1.1
	comp=Z,40nm,0.8s						
KHC	Kasperske Hory	82.78	330	eP	P	18 23 51.4	+0.2
KHC				ex	x	18 24 02.3	
KHC				AMS	AMS	19 04 50.0	
	comp=Z,200nm,13.4s						
KHC	Kasperske Hory	82.78	330	eP	P	18 23 51.4	+0.2
KHC				e		18 24 02.3	
KHC				MLR	MLR		
	comp=Z,200nm,13.4s						
KHC	Kasperske Hory	82.78	330	eP	P	18 23 50.8	-0.5
	comp=Z,1.6nm,0.9s						
CONA	Conrad Observa	82.80	328	i pP	P	18 23 52.5	+1.1
	comp=Z,6.2nm,1.0s						
121A	Cookes Peak, D	82.88	54	P	P	18 23 51.5	-0.7
	baz=311,SNR=5.9						
GERES	GERESS Array B	82.96	330	P	P	18 23 51.8	-0.5
	comp=Z,0.8nm,0.6s,baz=37,slow=5.2,SNR=7.2						
GERES				LR	LR	19 03 59.2	
	comp=Z,77nm,19.7s,baz=34,slow=38						
I37A	Lemond, Waseca	83.02	38	P	P	18 23 52.8	+0.3
	baz=318						
PPT	Papeete	83.11	119	LR	LR	18 54 00.3	
	comp=Z,87nm,20.1s,baz=354,slow=31						
PPT2	Papeete2	83.13	119	eLR	LR	18 49 44.3	
	comp=Z,170nm,24.8s						
CBKS	Cedar Bluff	83.46	45	P	P	18 23 55.0	0.0
	baz=315						
J37A	Redenius Farm,	83.47	38	P	P	18 23 54.7	-0.1
	baz=318						
ARSA	Arzberg	83.47	328	i P	P	18 23 53.4	-1.5
	comp=Z,2.7nm,1.2s						
I38A	Scanlan Farm,	83.51	37	P	P	18 23 54.7	-0.4
	baz=319						
P32A	Huiting Farm,	83.52	44	P	P	18 23 54.7	-0.5
	baz=315						
SCHQ	Schefferville	83.64	18	LR	LR	19 02 36.1	
	comp=Z,30nm,21.9s,baz=86,slow=37						
M35A	Neola	83.74	41	P	P	18 23 56.4	+0.1
	baz=317						
L36A	Harm Buss Farm	83.80	40	P	P	18 23 56.4	-0.2
	baz=317						
K37A	Belmond	83.83	39	P	P	18 23 56.5	-0.2
	baz=318						
J38A	Wedel Dairy, R	83.98

MNTX	Cornudas Mount	84.96	53	*e*P	P	18 24 02.8	+0.2
	comp=Z,26nm,1.9s						
BOJS	Bojanci	84.96	327	*i* P	P	18 24 02.0	-0.4
M38A	Pleasantville	85.05	40	P	P	18 24 02.5	-0.4
	baz=318						
WTTA	Wattenberg	85.05	330	*i* PcP	P	18 24 03.5	+0.5
	comp=Z,2.2nm,0.6s						
T32A	Huddler Ranch,	85.06	46	P	P	18 24 02.6	-0.5
	baz=315						
AMTX	Amarillo	85.07	49	P	P	18 24 03.5	+0.2
	baz=314						
O36A	Bolckow	85.09	41	P	P	18 24 02.1	-1.1
	baz=317						
MOTA	Moosalm	85.20	330	*i* P	P	18 24 03.6	-0.2
	comp=Z,7.0nm,1.0s						
RETA	Reutte	85.21	330	*i* PcP	P	18 24 04.2	+0.4
	comp=Z,14nm,1.2s						
S33A	Kaszmaul Farm,	85.29	45	P	P	18 24 04.3	+0.1
	baz=316						
P36A	Good Intent, A	85.34	42	P	P	18 24 04.0	-0.4
	baz=317						
BFO	Black Forest	85.44	332	*i* P	P	18 24 05.5	+0.7
BFO	Black Forest	85.44	332	*e*P	P	18 24 04.7	0.0
	comp=Z,23nm,1.4s						
Q35A	Mercer Eighty,	85.45	43	P	P	18 24 05.0	0.0
	baz=317						
S34A	Willow Spring	85.70	44	P	P	18 24 06.3	0.0
	baz=316						
DAVA	Damuels	85.72	331	*i* PcP	P	18 24 06.8	+0.4
	comp=Z,14nm,1.3s						
R35A	Emporia Munici	85.75	43	P	P	18 24 06.9	+0.4
	baz=317						
N39A	Derby Farms, D	85.80	40	P	P	18 24 07.0	+0.4
	baz=319						
P37A	Lathrop	85.81	41	P	P	18 24 06.4	-0.4
	baz=318						
O38A	Galt	85.87	41	P	P	18 24 06.8	-0.2
	baz=318						
V32A	Arapaho	86.03	47	P	P	18 24 08.7	+0.7
	baz=315						
FUORN	Ofenpass-Fuorn	86.12	330	*e*P	P	18 24 08.6	+0.2
	comp=Z,11nm,0.8s						
R36A	Gordon, Harris	86.13	43	P	P	18 24 08.6	+0.2
	baz=317						
T34A	McClaskey Farm	86.15	45	P	P	18 24 08.5	0.0
	baz=316						
S35A	Otter Creek Ra	86.15	44	P	P	18 24 08.9	+0.4
	baz=317						
P38A	Dawn	86.21	41	P	P	18 24 08.6	-0.1
	baz=318						
W32A	Sentinel	86.33	47	P	P	18 24 09.6	+0.1
	baz=315						
U34A	Anderson Ranch	86.37	45	P	P	18 24 09.5	-0.1
	baz=316						
U34A	Anderson Ranch	86.37	45	*e*P	P	18 24 09.7	+0.1
	comp=Z,22nm,1.0s						
V33A	Lossen Ranch,	86.39	46	P	P	18 24 09.5	-0.2
	baz=316						
R37A	Teagarden Farm	86.50	43	P	P	18 24 09.4	-0.7
	baz=317						
S36A	Lake Cedric, C	86.52	43	P	P	18 24 10.4	+0.1
	baz=317						
TUE	Stuetta	86.60	331	*e*P	P	18 24 09.0	-1.8
	comp=Z,5.1nm,1.0s						
Q38A	Cooks Store, C	86.66	41	P	P	18 24 10.4	-0.5
	baz=318						
O40A	La Belle	86.68	40	P	P	18 24 10.7	-0.4
	baz=319						
V34A	Guthrie	86.81	46	P	P	18 24 12.2	+0.4
	baz=316						
T36A	Boggs Farm, Ca	86.84	44	P	P	18 24 12.1	+0.3
	baz=317						
S37A	Fort Scott	86.90	43	P	P	18 24 11.9	-0.2
	baz=317						
Q39A	Willow Grove F	86.93	41	P	P	18 24 12.1	-0.1
	baz=318						
P40A	Paris	87.04	40	P	P	18 24 12.7	-0.1
	baz=319						
W34A	Bridge Creek,	87.10	46	P	P	18 24 13.6	+0.4
	baz=316						
R39A	Chumby, Stover	87.44	42	P	P	18 24 14.3	-0.5
	baz=318						
X34A	Smith Ranch, M	87.52	47	P	P	18 24 15.7	+0.5
	baz=316						
HDIL	Hopedale	87.62	38	P	P	18 24 15.7	+0.1
	baz=321						
TX31	Lajitas Ar. Si	87.64	54	*e*P	P	18 24 15.6	-0.4
LTX	Lajitas	87.64	54	*e*P	P	18 24 16.1	+0.1
LTX	Lajitas	87.64	54	*e*P	P	18 24 16.1	+0.1
TXAR	Lajitas Array	87.64	54	P	P	18 24 16.1	+0.1
	comp=Z,1.3nm,0.6s,baz=303,slow=3.4,SNR=13						
T38A	Diamond	87.72	43	P	P	18 24 15.8	-0.4
	baz=318						
V36A	Jenks	87.73	45	P	P	18 24 16.2	0.0
	baz=317						
U37A	Salina	87.74	44	P	P	18 24 15.6	-0.6
	baz=317						
S39A	Bolivar	87.76	42	P	P	18 24 15.6	-0.7
	baz=318						
R40A	Maddies Statio	87.86	41	P	P	18 24 16.1	-0.6
	baz=319						
W36A	Wetumka	88.05	46	P	P	18 24 17.6	-0.1
	baz=317						
V37A	Hulbert	88.11	44	P	P	18 24 18.0	0.0
	baz=317						
U38A	Gravette	88.11	44	P	P	18 24 18.2	+0.2
	baz=318						
X35A	Drake	88.16	47	P	P	18 24 18.5	+0.2
	baz=316						
T39A	Clever	88.22	43	P	P	18 24 18.0	-0.5
	baz=318						
S40A	Lebanon	88.26	42	P	P	18 24 18.0	-0.7
	baz=319						
133A	Hamilton Ranch	88.30	49	P	P	18 24 18.5	-0.5
	baz=315						
X36A	Centrahoma	88.39	46	P	P	18 24 19.5	+0.1
	baz=317						
W37B	Quinton	88.49	45	P	P	18 24 19.8	0.0
	baz=317						
U39A	Green Forest	88.64	43	P	P	18 24 19.9	-0.7
	baz=318						
V39A	Pettigrew	88.96	44	P	P	18 24 21.9	-0.2
	baz=318						
U40A	Yellville	89.00	43	P	P	18 24 21.8	-0.4
	baz=319						
W38A	Poteau	89.05	45	P	P	18 24 21.9	-0.5
	baz=318						
333A	Richland Sprin	89.17	50	P	P	18 24 23.2	+0.1
	baz=315						
X38A	Whitesboro	89.17	45	P	P	18 24 22.9	-0.1
	baz=318						
433A	Art	89.51	50	P	P	18 24 24.3	-0.4
	baz=315						
WHTX	Lake Whitney,	89.61	48	P	P	18 24 24.5	-0.6
	baz=316						
WHTX	Lake Whitney,	89.61	48	*e*P	P	18 24 25.3	+0.2
	comp=Z,14nm,0.8s						
334A	Lometa	89.61	49	P	P	18 24 25.4	+0.2
	baz=316						
X39A	Fountain Ranch	89.69	45	P	P	18 24 25.2	-0.3
	baz=318						
Z37A	Pogue Cattle C	89.80	47	P	P	18 24 26.1	+0.1
	baz=317						
MIAR	Mount Ida	89.96	44	P	P	18 24 26.8	+0.1
	baz=318						
MIAR	Mount Ida	89.96	44	*e*P	P	18 24 26.7	0.0
MIAR				pmax	pmax		
	comp=Z,9.0nm,0.8s						
MIAR	Mount Ida	89.96	44	*e*P	P	18 24 26.7	0.0
	comp=Z,8.9nm,0.8s						
PBMO	Poplar Bluff	89.96	41	*e*P	P	18 24 26.8	+0.1
	comp=Z,9.2nm,0.8s						
X201	Greenbrier Sit	90.06	43	*e*P	P	18 24 26.6	-0.6
	comp=Z,7.1nm,0.9s						
WHAR	Wooly Hollow	90.10	43	*e*P	P	18 24 27.5	+0.1
	comp=Z,8.9nm,0.8s						
Y39A	Lockesburg	90.12	45	P	P	18 24 27.5	0.0
	baz=318						
236A	Katherine and	90.14	48	P	P	18 24 27.7	+0.1
	baz=317						
W41B	Gary Mavity, V	90.21	43	P	P	18 24 27.6	-0.3
	baz=319						
534A	Blanco	90.40	50	P	P	18 24 28.7	-0.2
	baz=316						
X40A	Basin Creek Fa	90.41	44	P	P	18 24 28.6	-0.2
	baz=319						
438A	Sam Houston St	91.67	48	P	P	18 24 35.0	+0.2
	baz=317						
O56A	Blue Knob Stat	92.67	31	P	P	18 24 39.1	-0.1
	baz=328						
035A	Encino	92.82	52	P	P	18 24 39.8	-0.3
	baz=316						
KEST	Kesra	95.50	325	LR	LR	19 12 09.8	
	comp=Z,90nm,19.2s,baz=308,slow=38						
RKT	Rikitea	97.08	114	*e*LR	LR	18 56 10.0	
	comp=Z,127nm,27.8s						
ESDC	Sonseca Array	97.28	336	LR	LR	19 14 16.2	
	comp=Z,53nm,18.8s,baz=180,slow=39						
TOA1	Torodi Ar. Sit	118.11	318	*e*PKPdf	PKPdf	18 30 13.8	-1.0
TORD	Torodi Ar. Bea	118.12	318	PKP	PKPdf	18 30 13.8	-1.0
	comp=Z,0.8nm,0.6s,baz=9.0,slow=1.1,SNR=4.7						
MAW	Mawson	121.52	206	PKP	PKPdf	18 30 19.5	-0.1
	comp=Z,2.4nm,0.8s,baz=272,slow=5.8,SNR=3.1						
MAW	Mawson	121.52	206	*e*PKPdf	PKPdf	18 30 19.2	-0.4
SNAA	Sanae	142.45	196	PKP	PKPdf	18 30 54.8	-4.2
VNA2	Neumayer--Watz	143.99	195	PKP	PKPab	18 30 58.8	-0.1
	baz=179,slow=3.1						
LPAZ	La Paz	144.17	62	PKP	PKPbc	18 31 02.7	+0.4
	comp=Z,2.2nm,0.7s,baz=338,slow=4.0,SNR=6.4						
LPAZ	La Paz	144.17	62	*e*PKPdf	PKPbc	18 31 02.5	+0.1
VNA3	Neumayer Olymp	144.19	194	PKP	PKPab	18 30 59.2	-0.6
VNA1	Neumayer--Stat	144.38	195	PKP	PKPab	18 31 00.0	-0.3
PB11	IPOC Station P	145.37	68	*e*PKPdf	PKPdf	18 31 05.9	+0.2
PB01	IPOC Station P	146.29	69	*e*PKPdf	PKPdf	18 31 07.6	+0.5
LVC	Limon Verde	147.66	71	PKPbc	PKPdf	18 31 11.2	+1.4
	comp=Z,30nm,0.9s,baz=282,slow=5.6,SNR=7.8						
LVC	Limon Verde	147.66	71	*e*PKPdf	PKPdf	18 31 10.8	+1.1
LVC				*e*PKPdf	PKPdf	18 31 11.2	+1.4
SIV	San Ignacio	148.62	52	PKPbc	PKPbc	18 31 14.8	0.0
	comp=Z,12nm,0.8s,baz=275,slow=2.0,SNR=7.5						
PLCA	Paso Flores	153.07	107	PKPbc	PKPbc	18 31 24.9	+0.2
	comp=Z,2.5nm,1.0s,baz=244,slow=5.6,SNR=2.9						
CPUP	Villa Florida	158.32	63	PKPab	PKPab	18 31 58.8	-0.2
	comp=Z,1.5nm,0.7s,baz=98,slow=2.9,SNR=2.9						

MAN 06 18:12:20,16.′65N×119.′86E, h33km, mb4.3, ML3.1, MS2.9, 1C, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BOLP	Bolinao	0.28	169	*e*P	Pn	18 12 29.6	+2.0
BCPH	Baguio City Da	0.74	111	⇑*i*P	Pb	18 12 36.5	+1.8
BCPH				*i* S	Sb	18 12 45.6	+1.0
SCZP	Santa Cruz	0.87	177	*e*P	Pb	18 12 36.5	-0.2
ABRA	Dolores	1.28	39	*e*P	Pn	18 12 42.5	+0.9
APYP	Conner	1.79	48	*e*P	Pn	18 12 49.4	+0.8
BALP	Baler	1.88	119	*e*P	Pn	18 12 51.7	+1.9

NIED ***06*** *18:19:00, 38.′20N×144.′00E, h11km, Mw3.8 Best double couple: M₀5.24000×10¹⁴ NP1:*ϕ_s*39.00000°,* δ*26.00000°,* λ*-60.00000°. NP2:*ϕ_s*187.00000°,* δ*68.00000°,* λ*-104.00000°.*

IDC ***06*** *18:19:18.1±0.8, 37.′99N×144.′26E, h0km, mb3.7/8, mb1 3.9/13, mb1mx3.7/36, mbtmp3.7/13, ML3.6/4, MS3.1/1, Ms1 3.1/1, ms1mx2.5/43, Error ellipse: s-maj=25.3km s-min=15.1km az=123.0*

ISCJB ***06*** *18:19:21.0±0.6, 38.′12N±0.′05×144.′13E±0.′05, h33km, mb3.7/8, Error ellipse: s-maj=8.1km s-min=5.2km az=147.0*

JMA ***06*** *18:19:21.8±0.3, 38.′16N×144.′05E, h38km, M4.0*

ISC 06 18:19:23.2±0.8, 38.′18N±0.′06×144.′08E±0.′08, h35km, n31, σ1§52/35, mb3.8/8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	2.09	296	P	Pn	18 19 55.4	-0.3
JIO	Ouri	2.16	278	S	Sn	18 20 21.7	-0.6
JMK	Ichinoseki	2.37	290	P	Pn	18 19 59.5	0.0
JOM	Ohasama	2.53	302	P	Pn	18 20 01.9	+0.1
JANG	Nango	2.96	319	P	Pn	18 20 07.7	0.0
JYK	Kaneyama	3.01	285	P	Pn	18 20 09.1	+0.8
JFT	Otama	3.03	259	P	Pn	18 20 08.8	+0.1
JFT				*e*S	Sn	18 20 43.7	-0.1
JOT	Ohata	3.96	325	P	Pn	18 20 23.2	+1.8
JKB	Kayabe	4.38	329	P	Pn	18 20 27.9	+0.7
JKB				*e*S	Sn	18 21 14.7	-2.2
JCH	Churui	4.46	353	P	Pn	18 20 27.6	-0.7
JCH				S	Sn	18 21 16.4	-2.6
JRY	Ryogami san	4.67	244	P	Pn	18 20 30.4	-0.8
JRY				*e*S	Sn	18 21 20.8	-3.3
JOD2	Odawara 2	4.95	236	P	Pn	18 20 35.7	+0.6
JOD2				S	Sn	18 21 27.6	-3.6
MJAR	Matsushiro Arr	4.95	253	Pn	Pn	18 20 36.1	+1.0
	3.9nm,0.3s,baz=88,slow=15,SNR=34						
MJAR				Sn	Sn	18 21 33.0	+1.9
	1.1nm,0.3s,baz=44,slow=11,SNR=3.1						
MAT	Matsushiro	4.95	253	P	Pn	18 20 36.3	+1.2
MAT				S	Sn	18 21 33.4	+2.2
ASAJ	Asahikawa	6.04	350	Pn	Pn	18 20 50.0	0.0
	1.3nm,0.3s,baz=184,slow=12,SNR=21						
ASAJ				Sn	Sn	18 21 56.7	-1.1
	1.2nm,0.3s,baz=71,slow=28,SNR=3.2						
JHJ	Hachijo jima 2	6.14	216	Pn	Pn	18 20 49.7	-1.7
	12nm,0.3s,baz=50,slow=21,SNR=4.2						
JHJ				Sn	Sn	18 21 52.3	-8.1
	11nm,0.3s,baz=130,slow=23,SNR=2.5						
USRK	Ussuriysk Ar.	10.91	307	Pn	Pn	18 21 58.0	+1.3
	0.2nm,0.3s,baz=113,slow=14,SNR=4.3						
JCJ	Chichijima	11.17	189	Pn	Pn	18 21 53.8	-6.6
JCJ				Sn	Sn	18 23 50.0	-14
KSRS	Korea Array	12.80	272	Pn	Pn	18 22 24.5	+1.9
	0.1nm,0.3s,baz=180,slow=18,SNR=3.3						
KSRS				LR	LR	18 27 33.5	
	comp=Z,77nm,18.5s,baz=100,slow=38						
KLR	Kul'dur	14.17	325	Pn	Pn	18 22 39.8	-1.5
	0.1nm,0.3s,baz=222,slow=8.7,SNR=2.8						
SEY	Seymchan	25.30	9	P	P	18 24 48.1	+2.0
	1.9nm,0.7s,baz=190,slow=9.5,SNR=6.8						
ZALV	Zalesovo Beam	42.72	312	pP	pP	18 27 26.3	-0.6
	0.5nm,0.3s,baz=85,slow=8.0,SNR=2.9						
MKAR	Makanchi Array	45.31	302	pP	pP	18 27 45.0	-2.9
	0.5nm,0.5s,baz=79,slow=13,SNR=3.3						
KURBB	Kurchatov Arra	46.97	308	pP	pP	18 27 59.8	-1.1
	1.0nm,0.4s,baz=80,slow=8.3,SNR=8.1						
ILAR	Eielson Array	47.39	33	P	P	18 27 54.4	+0.8
	0.6nm,0.8s,baz=270,slow=4.5,SNR=5.2						
INK	Inuvik	52.40	28	P	P	18 28 32.3	+0.8
	0.5nm,0.8s,baz=332,slow=3.6,SNR=3.6						
WRA	Warramunga Arr	58.53	191	P	P	18 29 14.8	-1.3
	1.1nm,0.7s,baz=9.9,slow=7.1,SNR=13						
YKA	Yellowknife Ar	61.75	31	P	P	18 29 37.6	-0.1
	0.4nm,0.7s,baz=301,slow=6.6,SNR=6.1						
ASAR	Alice Springs	62.26	191	P	P	18 29 40.4	-1.2
	0.2nm,0.5s,baz=6.4,slow=7.1,SNR=7.9						
NVAR	Mina Array Bea	72.61	55	P	P	18 30 48.4	+1.1
	1.0nm,0.7s,baz=279,slow=7.6,SNR=7.6						
PDAR	Pinedale Array	75.35	47	P	P	18 31 03.9	+0.6
	0.7nm,0.6s,baz=345,slow=1.7,SNR=7.2						

ATH ***06*** *18:24:21.4, 35.′64N×26.′96E, h29km±5km, ML2.8/3, Error ellipse: s-maj=13.3km s-min=1.1km az=154.0*

ISCJB ***06*** *18:24:22.1±0.8, 35.′72N±0.′04×26.′88E±0.′04, h6km±8km, Error ellipse: s-maj=7.9km s-min=3.6km az=151.6*

CSEM ***06*** *18:24:22.0±0.2, 35.′72N×26.′86E, h2km, ML2.8, Error ellipse: s-maj=5.0km s-min=3.2km az=151.0*

ISK ***06*** *18:24:22.1, 35.′68N×26.′86E, h12km, MD3.0*

DDA ***06*** *18:24:28.6, 36.′02N×27.′55E, h7km, Md3.2*

ISC 06 18:24:21.1±1.4, 35.′71N±0.′03×26.′95E±0.′02, h10km±12km, n42, σ0§96/56, Crete

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KARP	Karpathos	0.24	134	*e*PG	Pb	18 24 28.5	+1.0
KARP				*e*SG	Sb	18 24 32.6	+3.2
KARP	Karpathos	0.24	134	P	Pb	18 24 27.4	-0.2
KARP	Karpathos	0.24	134	*e*Pg	Pb	18 24 28.5	+1.0
KARP				S	Sb	18 24 31.5	+2.1
KARP				*e*Sg	Sg	18 24 32.6	+3.2
KARP	Karpathos	0.24	134	P	Pb	18 24 27.4	-0.2
KARP				S	Sb	18 24 31.5	+2.1
KARP				AML	AML	18 24 32.0	
	comp=E,13348μm,0.2s						
KARP				AML	AML	18 24 32.0	
	comp=N,13414μm,0.2s						
ZKR	Zakros	0.85	225	P	Pg	18 24 37.5	0.0
ZKR				S	Sb	18 24 49.5	+0.2
ZKR	Zakros	0.85	225	P	Pg	18 24 37.5	0.0
ZKR				S	Sb	18 24 49.5	+0.2
ZKR				AML	AML	18 24 52.6	
	comp=N,831μm,0.4s						
ZKR				AML	AML	18 24 52.8	
	comp=E,1118μm,0.3s						
NIS1	Nisyros Isl.	0.91	12	*e*PG	Pn	18 24 40.9	+1.0
NIS1	Nisyros Isl.	0.91	12	*e*Pg	Pn	18 24 40.9	+1.0
ARG	Arkhangelos	1.08	62	P	Pn	18 24 43.2	+1.0
ARG				S	Sn	18 24 57.0	-0.2
NPS	Neapolis	1.18	248	P	Pn	18 24 43.6	-0.1
NPS				S	Sb	18 24 59.2	+0.3
NPS	Neapolis	1.18	248	P	Pn	18 24 43.6	-0.1
NPS				S	Sb	18 24 59.2	+0.3
NPS				AML	AML	18 25 02.4	
	comp=N,1066μm,0.2s						
NPS				AML	AML	18 25 02.7	
	comp=E,981μm,0.5s						
LAST	Lasithi	1.32	246	P	Pn	18 24 45.9	+0.2
LAST				S	Sb	18 25 03.0	-0.1
LAST	Lasithi	1.32	246	P	Pn	18 24 45.9	+0.2
BODT	Bodrum	1.38	12	*e*PN	Pg	18 24 48.4	+0.8
BODT	Bodrum	1.38	12	*e*Pn	Pg	18 24 48.4	+0.8
BDRM	Kayabasi	1.41	16	P	Pg	18 24 48.4	+0.2
BDRM				S	Sn	18 25 05.1	-0.3
BDRM	Kayabasi	1.41	16	*i* P	Pg	18 24 48.4	+0.2
BDRM				*i* S	Sn	18 25 05.0	-0.3
THR5	Thira Island,	1.48	299	*e*PN	Pb	18 24 48.5	-0.1
THR5				*e*SN	Sb	18 25 07.6	+0.2
THR5	Thira Island,	1.48	299	*e*Pn	Pb	18 24 48.5	-0.1
THR5				*e*Sn	Sb	18 25 07.6	+0.2
IDI	Anoyia	1.73	256	P	Pn	18 24 50.8	-0.5
IDI	Anoyia	1.73	256	P	Pn	18 24 50.8	-0.5
DALY	Dalyan (Mu¨la	1.76	51	*e*PN	Pg	18 24 54.8	-0.2
DALY	Dalyan (Mu¨la	1.76	51	*e*Pn	Pg	18 24 54.8	-0.2
TURN	Turunc	1.77	49	*i* P	Pn	18 24 47.6	-4.1
TURN				*i* S	Sn	18 25 04.3	-10
APE	Apeiranthos	1.77	320	*e*PN	Pn	18 24 52.6	+0.8
APE	Apeiranthos	1.77	320	*e*Pn	Pn	18 24 52.7	+0.8
YER	Yerkesik	1.78	37	*e*PN	Pb	18 24 54.2	+0.4
YER	Yerkesik	1.78	37	*e*Pn	Pb	18 24 54.2	+0.4
FETY	Fethiye	1.96	61	*e*PN	Pb	18 24 57.2	+0.3
FETY	Fethiye	1.96	61	*e*Pn	Pb	18 24 57.2	+0.3
AYDN	Tasoluk	2.08	21	P	Pg	18 25 00.4	-0.7
AYDN	Tasoluk	2.08	21	*i* P	Pg	18 25 00.4	-0.7
AKAS	Kas	2.21	76	P	Pb	18 24 59.7	-1.6
AKAS	Kas	2.21	76	*i* P	Pb	18 24 59.7	-1.6
AYDB	Zeytinkoy-Aydi	2.35	18	*e*PN	Pb	18 25 02.5	-1.2
AYDB	Zeytinkoy-Aydi	2.35	18	*e*Pn	Pb	18 25 02.5	-1.2
IMMV	Iera Moni Meta	2.43	265	P	Pn	18 25 01.5	+0.6
IMMV	Iera Moni Meta	2.43	265	P	Pn	18 25 01.5	+0.6
GOLH	Golhisar	2.60	53	P	Pb	18 25 06.0	-1.8
GOLH				S	Sb	18 25 40.4	+0.6
GOLH	Golhisar	2.60	53	*i* P	Pb	18 25 06.0	-1.8
GOLH				*i* S	Sb	18 25 40.4	+0.6
ELL	Elmali	2.60	66	*e*PN	Pb	18 25 06.7	-1.3
ELL	Elmali	2.60	66	*e*Pn	Pb	18 25 06.7	-1.3

KRNET ***06*** *18:26:52.3±0.1, 39.′45N×72.′02E, h10km, mb2.4*

NNC ***06*** *18:26:53.7±1.0, 39.′62N×72.′03E, h0km, mb2.9, mpv2.7, Error ellipse: s-maj=11.5km s-min=5.0km az=170.0*

ISC 06 18:26:51.9±1.7, 39.′43N±0.′08×72.′00E±0.′04, h3km±14km, n15, σ1§57/25, 23C-6D, Kyrgyzstan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BTK	Batken	1.10	305	⇑*i*P	Pb	18 27 13.7	0.0
BTK	baz=304			⇑*i*S	Sn	18 27 28.9	-1.2
OHH	Osh	1.24	29	⇑*i*P	Pg	18 27 15.8	+0.1
OHH	baz=28			⇑*i*S	Sn	18 27 32.9	-0.6
SFK	Sufi-Kurgan	1.29	63	⇓*i*P	Pb	18 27 16.6	-0.4
SFK	baz=63			⇓*i*S	Sn	18 27 34.3	-0.7
SFK	Sufi-Kurgan	1.29	63	⇑P	Pg	18 27 17.1	+0.5
SFK	3.2nm,0.3s			⇓S	Sb	18 27 33.2	-0.9
ARSB	Arslanbob	2.03	21	⇑*i*P	Pb	18 27 29.2	-0.3
ARSB	21nm,0.4s baz=21			⇑*e*S	Sb	18 27 55.5	+0.3
ARK	Arkit	2.36	359	⇑*i*P	Pb	18 27 33.9	-1.2
ARK	baz=359			⇑*i*S	Sb	18 28 04.0	-0.7
DZET	Dzherino	2.55	257	⇑Pg	Pg	18 27 40.0	-0.7
DZET	4.5nm,0.6s 22nm,0.6s			⇓Lg	Lg	18 28 18.3	
TOKL	Toktogul	2.59	14	⇑*e*P	Pb	18 27 36.4	-2.6
TOKL	baz=14			⇑*i*S	Sb	18 28 09.5	-1.7
AML	Almayashu	2.98	25	⇑*i*P	Pb	18 27 44.3	-1.6
AML	baz=25			⇑*i*S	Sb	18 28 22.6	-0.3
MNAS	Manas	3.07	7	⇑*e*P	Pn	18 27 43.4	+2.0
MNAS	baz=7.0			⇑*i*S	Sn	18 28 20.6	+1.8
MNAS	Manas	3.07	7	⇑Pg	Pb	18 27 45.6	-1.7
MNAS	0.9nm,0.4s 2.8nm,0.5s			⇑Lg	Lg	18 28 23.8	
UCH	Uchtor	3.38	34	⇑*i*P	Pb	18 27 50.3	-2.3
UCH	baz=34			⇑*i*S	Sb	18 28 31.5	-2.8
AAK	Ala-Archa	3.71	30	⇓Pg	Pb	18 27 59.4	+1.2
AAK	0.8nm,0.3s 5.1nm,0.6s			Lg	Lg	18 28 45.1	
KK31	Karatay Array	3.83	343	⇑Pg	Pb	18 28 02.2	+2.0
KK31	0.3nm,0.2s,baz=162,slow=14,SNR=7.7 1.3nm,0.3s			⇑Lg	Lg	18 28 51.6	
TKM2	Tokmak 2	4.42	37	⇑Pg	Pb	18 28 12.2	+2.1
TKM2	0.5nm,0.3s 2.9nm,0.6s			⇓Lg	Lg	18 29 08.9	

IDC 06 18:30:24.4±7.2, 3.′20S×133.′51E, h219km±70km, mb2.9/4, mb1 3.1/4, mb1mx2.8/34, mbtmp3.5/4, Error ellipse: s-maj=92.1km s-min=21.9km az=77.0, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	16.67	177	P	P	18 33 58.0	-6.5
	0.1nm,0.3s,baz=352,slow=13,SNR=6.6						
WRA				S	S	18 36 58.6	-9.0
	0.1nm,0.3s,baz=

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.29**	**287**	P	**Pn**	**18 49 49.6**	**-0.9**
OFUJ				S	**Sn**	**18 50 17.1**	**-0.6**
MIYJ	**Miyakonagasawa**	**2.36**	**300**	P	**Pn**	**18 49 50.4**	**-1.1**
MIYJ				S	**Sn**	**18 50 18.1**	**-1.5**
JIO	**Ouri**	**2.46**	**271**	P	**Pn**	**18 49 51.8**	**-1.0**
JIO				S	**Sn**	**18 50 20.4**	**-1.4**
JMK	**Ichinoseki**	**2.60**	**282**	P	**Pn**	**18 49 54.3**	**-0.5**
JMK				*e*S	**Sn**	**18 50 24.4**	**-1.0**
JOM	**Ohasama**	**2.69**	**294**	P	**Pn**	**18 49 55.4**	**-0.6**
JOM				*e*S	**Sn**	**18 50 27.1**	**-0.5**
JANG	**Nango**	**3.00**	**311**	P	**Pn**	**18 49 59.8**	**-0.5**
JANG				*e*S	**Sn**	**18 50 35.3**	**0.0**
JYK	**Kaneyama**	**3.26**	**280**	P	**Pn**	**18 50 03.6**	**-0.2**
JYK				*e*S	**Sn**	**18 50 42.4**	**+0.7**
JFT	**Otama**	**3.40**	**256**	P	**Pn**	**18 50 05.6**	**-0.2**
JFT				S	**Sn**	**18 50 44.7**	**-0.4**
JOT	**Ohata**	**3.95**	**319**	*e*S	**Sn**	**18 50 55.6**	**-3.1**
JCH	**Churui**	**4.26**	**349**	P	**Pn**	**18 50 15.6**	**-2.0**
JRY	**Ryogami san**	**5.06**	**243**	P	**Pn**	**18 50 27.6**	**-1.1**
MJAR	**Matsushiro Arr**	**5.33**	**251**	Pn	**Pn**	**18 50 32.5**	**+0.2**
	2.7nm,0.3s,baz=51,slow=9.2,SNR=28						
MJAR				Sn	**Sn**	**18 51 35.0**	**+2.3**
	0.3nm,0.3s,baz=80,slow=17,SNR=2.6						
MJAR				LR	LR	18 52 45.0	
	comp=Z,60nm,19.4s,baz=105,slow=40						
MAT	**Matsushiro**	**5.33**	**251**	P	**Pn**	**18 50 33.1**	**+0.7**
MAT				S	**Sn**	**18 51 34.8**	**+2.0**
JOD2	**Odawara 2**	**5.36**	**235**	*e*S	**Sn**	**18 51 28.9**	**-4.5**
JTKR	**Abashiri--Toko**	**5.55**	**356**	P	**Pn**	**18 50 32.8**	**-2.4**
JTKR				*e*S	**Sn**	**18 51 33.1**	**-4.9**
ASAJ	**Asahikawa**	**5.85**	**347**	Pn	**Pn**	**18 50 38.6**	**-0.8**
	0.9nm,0.3s,baz=139,slow=8.4,SNR=6.7						
ASAJ				Sn	**Sn**	**18 51 46.9**	**+1.4**
	0.6nm,0.3s,baz=310,slow=12,SNR=3.1						
JHJ	**Hachijo jima 2**	**6.53**	**217**	Pn	**Pn**	**18 50 46.2**	**-2.6**
	10nm,0.3s,baz=120,slow=22,SNR=3.6						
JHJ				Sn	**Sn**	**18 51 58.9**	**-3.5**
	10nm,0.3s,baz=143,slow=23,SNR=3.6						
USRK	**Ussuriysk Ar.**	**11.01**	**305**	Pn	**Pn**	**18 51 53.0**	**+2.8**
	0.1nm,0.3s,baz=102,slow=13,SNR=3.9						
KSRS	**Korea Array**	**13.11**	**271**	LR	LR	18 56 44.2	
	comp=Z,32nm,19.2s,baz=86,slow=34						
SEY	**Seymchan**	**25.00**	**9**	P	**P**	**18 54 36.3**	**+0.7**
	2.0nm,0.6s,baz=210,slow=7.2,SNR=9.3						
H11N2	**WAKE ISLAND Hy**	**26.92**	**127**	T	T	19 22 43.1	
	baz=320,slow=76,SNR=3.3						
H11N1	**WAKE ISLAND Hy**	**26.93**	**128**	T	T	19 22 47.9	
	baz=320						
H11N3	**WAKE ISLAND Hy**	**26.94**	**127**	T	T	19 22 53.2	
	baz=320,slow=76,SNR=4.0						
SONM	**Songino Array**	**29.08**	**301**	P	**P**	**18 55 15.0**	**+2.4**
	0.5nm,0.5s,baz=106,slow=11,SNR=2.4						
ZALV	**Zalesovo Beam**	**42.79**	**311**	P	**P**	**18 57 10.3**	**+0.8**
	0.8nm,0.4s,baz=76,slow=6.7,SNR=3.7						
MKAR	**Makanchi Array**	**45.45**	**301**	P	**P**	**18 57 31.7**	**+0.7**
	0.6nm,0.7s,baz=79,slow=9.3,SNR=6.3						
WRA	**Warramunga Arr**	**58.84**	**191**	P	**P**	**18 59 08.9**	**-1.7**
	0.6nm,0.7s,baz=9.4,slow=7.1,SNR=6.0						
ASAR	**Alice Springs**	**62.56**	**191**	P	**P**	**18 59 34.8**	**-1.2**
	0.3nm,0.8s,baz=6.6,slow=7.6,SNR=4.1						
FINES	**FINESS Array B**	**68.69**	**333**	P	**P**	**19 00 15.3**	**+0.3**
	0.8nm,0.7s,baz=72,slow=4.5,SNR=3.2						

*ISCJB **06** 18:50:07.9±0.7, 37.°75N±0.°04×26.°90E±0.°05, h7km±7km, Error ellipse: s-maj=8.5km s-min=4.5km az=42.6*
*DDA **06** 18:50:07.4, 37.°72N×26.°87E, h7km, Md2.6*
*ISK **06** 18:50:07.6, 37.°77N×26.°94E, h6km, MD2.7*
*CSEM **06** 18:50:08.3±0.2, 37.°76N×26.°94E, h10km, MD2.6, Error ellipse: s-maj=4.5km s-min=2.8km az=46.0*

ISC 06 18:50:07.9±1.3, 37.°77N±0.°03×26.°92E±0.°03, h12km±13km, n24, σ0°27/34, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GCAM	**G?zelcaml?**	**0.26**	**106**	P	**Pg**	**18 50 13.5**	**+0.2**
GCAM				S	**Sb**	**18 50 18.8**	**-0.1**
GCAM	**G?zelcaml?**	**0.26**	**106**	*i* P	**Pg**	**18 50 13.5**	**+0.2**
GCAM				*i* S	**Sb**	**18 50 18.8**	**-0.1**
DGB	**˜zmir**	**0.28**	**354**	*i* P	**Pg**	**18 50 13.5**	**-0.2**
DGB				*i* S	**Sb**	**18 50 19.1**	**-0.5**
ZEY	**˜zmir**	**0.57**	**325**	*i* P	**Pg**	**18 50 19.0**	**-0.1**
ZEY				*i* S	**Sb**	**18 50 27.5**	**-0.3**
BLCB	**Balcova**	**0.62**	**9**	*e*PG	**Pg**	**18 50 19.9**	**-0.1**
BLCB				*e*SG	**Sb**	**18 50 29.3**	**0.0**
BLCB	**Balcova**	**0.62**	**9**	*e*Pg	**Pg**	**18 50 19.9**	**-0.1**
BLCB				*e*Sg	**Sb**	**18 50 29.3**	**0.0**
URLA	**Izmir**	**0.64**	**337**	P	**Pb**	**18 50 20.9**	**-0.1**
URLA				S	**Sb**	**18 50 30.5**	**+0.6**
URLA	**Izmir**	**0.64**	**337**	*i* P	**Pb**	**18 50 20.9**	**-0.1**
URLA				*i* S	**Sb**	**18 50 30.5**	**+0.6**
AYDN	**Tasoluk**	**0.77**	**98**	P	**Pg**	**18 50 22.8**	**0.0**
AYDN				S	**Sb**	**18 50 34.1**	**+0.4**
AYDN	**Tasoluk**	**0.77**	**98**	*i* P	**Pg**	**18 50 22.8**	**0.0**
AYDN				*i* S	**Sb**	**18 50 34.1**	**+0.4**
BODT	**Bodrum**	**0.77**	**156**	*e*PG	**Pb**	**18 50 22.8**	**-0.4**
BODT	**Bodrum**	**0.77**	**156**	*e*Pg	**Pb**	**18 50 22.8**	**-0.4**
AYDB	**Zeytinkoy-Aydi**	**0.79**	**77**	*e*PG	**Pg**	**18 50 23.1**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**0.79**	**77**	*e*Pg	**Pg**	**18 50 23.2**	**0.0**
CHOS	**Chios island**	**0.92**	**312**	*e*PG	**Pb**	**18 50 25.9**	**+0.2**
CHOS	**Chios island**	**0.92**	**312**	*e*Pg	**Pb**	**18 50 25.9**	**+0.2**
YER	**Yerkesik**	**1.26**	**120**	*e*PN	**Pb**	**18 50 31.6**	**0.0**
YER	**Yerkesik**	**1.26**	**120**	*e*Pn	**Pb**	**18 50 31.6**	**0.0**
DKL	**Dikili**	**1.30**	**360**	*e*PN	**Pg**	**18 50 33.1**	**+0.2**
DKL	**Dikili**	**1.30**	**360**	*e*Pn	**Pg**	**18 50 33.1**	**+0.2**
APE	**Apeiranthos**	**1.31**	**238**	*e*PN	**Pg**	**18 50 33.1**	**+0.1**
APE	**Apeiranthos**	**1.31**	**238**	*e*Pn	**Pg**	**18 50 33.1**	**+0.1**
SIGR	**SIGRI**	**1.66**	**330**	*e*PN	**Pb**	**18 50 38.2**	**-0.2**
SIGR	**SIGRI**	**1.66**	**330**	*e*Pn	**Pb**	**18 50 38.2**	**-0.2**

*IDC **06** 18:56:26.3±2.8, 0.°25N×99.°13E, h0km, mb3.8/6, mb1 3.9/6, mb1mx3.5/51, mbtmp3.8/6, Error ellipse: s-maj=165.7km s-min=21.6km az=52.0*
*ISCJB **06** 18:56:43.3±0.5, 0.°66N±0.°09×99.°8E±0.°1, h150km, mb4.1/11, Error ellipse: s-maj=18.6km s-min=7.1km az=144.3*
*NEIC **06** 18:56:44.1±0.8, 0.°76N×99.°95E, h138km±7km, mb5.1/5, Error ellipse: s-maj=21.2km s-min=9.1km az=55.0*

ISC 06 18:56:44.1±0.7, 0.°74N±0.°08×99.°79E±0.°07, h150km, n29, σ2°14/29, mb4.0/11, 1C, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKNI	**Bangkinang**	**1.32**	**108**	*e*Pn	**Pn**	**18 57 12.2**	**+0.4**
PSI	**Prapat**	**2.23**	**337**	*e*Pn	**Pn**	**18 57 22.5**	**+0.4**
GSI	**Gunungsitoli**	**2.28**	**284**	*e*Pn	**Pn**	**18 57 23.3**	**+0.7**
GSI				*e*Sn	**Sn**	**18 57 46.5**	**-5.7**
IPM	**Ipoh**	**3.92**	**18**	*e*Pn	**Pn**	**18 57 39.6**	**-3.9**
KULM	**Kulim**	**4.61**	**11**	*e*Pn	**Pn**	**18 57 53.7**	**+1.3**
LHMI	**Lhok Sumawe**	**5.29**	**328**	*e*Pn	**Pn**	**18 57 60.0**	**-1.5**
MNAI	**Manna**	**5.97**	**148**	*e*Pn	**Pn**	**18 58 08.0**	**-2.5**
XMIS	**Christmas Isla**	**12.58**	**153**	*e*Pn	**Pn**	**18 59 36.9**	**-1.1**
WR1	**Warramunga Arr**	**39.61**	**123**	*e*P	**P**	**19 04 03.5**	**+2.1**
	29nm,1.8s						
WRA	**Warramunga Arr**	**39.61**	**123**	P	**P**	**19 04 03.5**	**+2.1**
	0.4nm,1.1s,baz=303,slow=8.6,SNR=5.0						
ASAR	**Alice Springs**	**41.07**	**128**	P	**P**	**19 04 12.7**	**-0.6**
	0.3nm,0.9s,baz=296,slow=7.7,SNR=3.6						
MANU	**Manus Island**	**47.65**	**93**	*e*P	**P**	**19 05 02.8**	**-3.0**
	196nm,1.8s						
MK01	**Makanchi Array**	**48.33**	**344**	*e*P	**P**	**19 05 11.3**	**+0.8**
MK31	**Makanchi Array**	**48.36**	**344**	*e*P	**P**	**19 05 12.6**	**+1.9**
MK32	**Makanchi Array**	**48.36**	**344**	*e*P	**P**	**19 05 12.1**	**+1.4**
MKAR	**Makanchi Array**	**48.36**	**344**	P	**P**	**19 05 12.1**	**+1.4**
	0.6nm,0.6s,baz=152,slow=8.2,SNR=6.8						
MKAR	**Makanchi Array**	**48.36**	**344**	*e*P	**P**	**19 05 12.6**	**+1.9**
ZAA0	**Zalesovo Array**	**54.46**	**349**	*e*P	**P**	**19 05 57.4**	**+1.5**
ZALV	**Zalesovo Beam**	**54.46**	**349**	P	**P**	**19 05 57.5**	**+1.6**
	1.1nm,0.5s,baz=170,slow=6.0,SNR=6.3						
ZAA1	**Zalesovo Array**	**54.46**	**349**	*e*P	**P**	**19 05 57.5**	**+1.6**
EIDS	**Eidsvold**	**55.93**	**122**	*e*P	**P**	**19 06 07.4**	**+0.5**
	40nm,1.7s						
VOSK	**Vostochnaya**	**57.11**	**340**	*e*P	**P**	**19 06 16.8**	**+2.0**
	6.0nm,1.8s						
ABKAR	**Akbulak array**	**59.16**	**331**	*e*P	**P**	**19 06 30.0**	**+0.9**
HNR	**Honiara**	**60.74**	**101**	*e*P	**P**	**19 06 39.7**	**-0.8**
	83nm,1.0s						
SYO	**Syowa Base**	**80.38**	**198⇑**	*e*P	P	19 08 44.0	+5.6
FIA0	**FINESS Array S**	**81.61**	**332**	*e*P	**P**	**19 08 47.1**	**+2.0**
FINES	**FINESS Array B**	**81.61**	**332**	P	**P**	**19 08 47.1**	**+2.0**
	1.6nm,0.9s,baz=82,slow=4.0,SNR=3.9						
ARA0	**ARCESS Array S**	**83.84**	**340**	*e*P	**P**	**19 08 58.5**	**+2.0**
ARCES	**ARCESS Array B**	**83.84**	**340**	P	**P**	**19 08 58.5**	**+2.0**
	2.0nm,0.8s,baz=103,slow=4.4,SNR=10						

*IDC **06** 19:04:41.9±2.9, 42.°98N×105.°04W, h0km, mb2.5/1, mb1 3.5/3, mb1mx3.2/52, mbtmp3.3/3, ML3.4/2, MS2.9/6, Ms1 2.9/6, ms1mx2.8/8, Error ellipse: s-maj=51.8km s-min=9.5km az=156.0*
*ISCJB **06** 19:04:44.1±0.5, 43.°61N±0.°05×105.°10W±0.°06, h0km, Error ellipse: s-maj=7.2km s-min=5.9km az=41.0*
*NEIC **06** 19:04:46.1±0.5, 43.°55N×105.°16W, h0km, ML3.3, Error ellipse: s-maj=7.5km s-min=6.1km az=168.0, Suspected Mining explosion.*
NEIC 84 km [52 miles] WSW of Newcastle.

ISC 06 19:04:45.1±0.9, 43.°56N±0.°05×105.°22W±0.°05, h0km, n34, σ1°50/26, Wyoming

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RSSD	**Black Hills**	**1.02**	**56**	*e*Pg	**Pb**	**19 05 05.9**	**0.0**
K22A	**Casper**	**1.32**	**227**	*e*Pn	**Pg**	**19 05 09.1**	**-1.3**
PHWY	**Pilot Hill**	**2.26**	**185**	*e*Pn	**Pn**	**19 05 24.2**	**+0.2**
BW06	**Boulder Array**	**3.27**	**258**	*e*Pn	**Pn**	**19 05 38.4**	**+0.5**
PDAR	**Pinedale Array**	**3.27**	**258**	Pn	**Pn**	**19 05 38.5**	**+0.5**
	4.0nm,0.3s,baz=79,slow=15,SNR=31						
PDAR				Lg	Lg	19 06 26.1	
	13nm,0.3s,baz=78,slow=34,SNR=13						
RLMT	**Red Lodge**	**3.30**	**300**	*e*Pn	**Pn**	**19 05 39.0**	**+0.6**
OGNE	**Ogallala**	**3.52**	**137**	*e*Pn	**Pn**	**19 05 43.8**	**+2.6**
ISCO	**Idaho Springs**	**3.77**	**185**	*e*Pn	**Pn**	**19 05 45.3**	**+0.5**
LOHW	**Long Hollow**	**3.92**	**273**	*e*Pn	**Pn**	**19 05 48.2**	**+1.5**
H17A	**Grant Village**	**3.96**	**284**	*e*Pn	**Pn**	**19 05 49.7**	**+2.3**
FLWY	**Flagg Ranch**	**4.00**	**279**	*e*Pn	**Pn**	**19 05 50.7**	**+2.8**
MOOW	**Moose Ponds**	**4.02**	**275**	*e*Pn	**Pn**	**19 05 49.1**	**+0.9**
SNOW	**Snow King Moun**	**4.03**	**271**	*e*Pn	Pn	19 05 52.3	+3.9
O20A	**White River Ci**	**4.10**	**215**	*e*Pn	**Pn**	**19 05 51.4**	**+2.1**
REDW	**Red Top Meadow**	**4.11**	**269**	*e*Pn	**Pn**	**19 05 51.2**	**+1.8**
IMW	**Indian Meadow**	**4.16**	**277**	*e*Pn	**Pn**	**19 05 52.1**	**+1.9**
AHID	**Auburn Hatcher**	**4.38**	**262**	*e*Pn	**Pn**	**19 05 53.8**	**+0.7**
SMCO	**Snowmass**	**4.57**	**197**	*e*Pn	**Pn**	**19 05 56.5**	**+0.5**
BOZ	**Bozeman (W)**	**5.04**	**297**	*e*Pn	**Pn**	**19 06 03.5**	**+1.4**
	7.1nm,0.6s						
HWUT	**Hardware Ranch**	**5.08**	**250**	*e*Pn	**Pn**	**19 06 03.2**	**+0.5**
	18nm,0.8s						
EGMT	**Eagleton**	**5.48**	**326**	*e*Pn	**Pn**	**19 06 08.9**	**+0.8**
	18nm,0.8s						
PV01	**Paradox Valley**	**5.98**	**206**	*e*Pn	**Pn**	**19 06 18.2**	**+3.0**
	4μm,0.9s						
ECSD	**EROS Data Cent**	**6.24**	**85**	*e*Pg	**Pg**	**19 06 43.7**	**-1.1**
	3.7nm,0.5s						
DUG	**Dugway, Tooele**	**6.59**	**242**	*e*Pn	**Pn**	**19 06 23.7**	**+0.3**
	3.6nm,0.8s						
ANMO	**Albuquerque**	**8.65**	**187**	LR	LR	19 10 13.0	
	comp=Z,34nm,21.3s,baz=74,slow=41						
I10CA	**LAC DU BONNET**	**9.15**	**40**	*i*		20 02 50.0	
	baz=224,slow=312,SNR=2.1						
ULM	**Lac du Bonnet**	**9.25**	**40**	Pn	**Pn**	**19 06 59.3**	**-0.5**
	0.8nm,0.3s,baz=232,slow=15,SNR=4.8						
ULM				Sn	**Sn**	**19 08 43.6**	**-0.9**
	0.3nm,0.3s,baz=211,slow=17,SNR=3.1						
I56US	**NEWPORT INFRAS**	**9.54**	**304**	*i*		20 05 10.0	
	baz=115,slow=324,SNR=3.1						
NVAR	**Mina Array Bea**	**11.14**	**247**	LR	LR	19 11 52.6	
	comp=Z,44nm,21.3s,baz=44,slow=39						
YBH	**Yreka Blue Hor**	**13.01**	**268**	LR	LR	19 13 20.0	
	comp=Z,102nm,19.4s,baz=106,slow=40						
PFO	**Pinyon Flats O**	**13.25**	**225**	LR	LR	19 12 46.5	
	comp=Z,56nm,20.8s,baz=86,slow=37						
TXAR	**Lajitas Array**	**14.25**	**175**	LR	LR	19 13 53.5	
	comp=Z,72nm,19.2s,baz=0.0,slow=40						
TKL	**Tuckaleechee C**	**18.27**	**108**	LR	LR	19 15 13.3	
	comp=Z,26nm,19.5s,baz=350,slow=35						
YKA	**Yellowknife Ar**	**19.75**	**347**	P	**Pn**	**19 09 17.8**	**+0.1**
	0.2nm,0.4s,baz=155,slow=14,SNR=5.4						

JMA 06 19:05:29.7±0.2, 37.°94N×144.°13E, h0km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.25**	**284**	P	Pn	19 06 09.1	+0.9
JIO				S	Sn	19 06 37.6	+1.0
JMM	**Marumori**	**2.64**	**269**	P	Pn	19 06 14.3	+0.8
JOM	**Ohasama**	**2.70**	**305**	S	Sn	19 06 50.0	+2.3
JOU	**Okura**	**2.77**	**280**	P	Pn	19 06 17.0	+1.7
JOU				*e*S	Sn	19 06 51.6	+2.2

*ISCJB **06** 19:09:07.9±1.0, 37.°67N±0.°05×144.°43E±0.°07, h33km, mb3.7/2, Error ellipse: s-maj=8.2km s-min=7.6km az=174.9*
*IDC **06** 19:09:10.0±7.0, 37.°63N×144.°53E, h40km±75km, mb3.4/2, mb1 3.5/4, mb1mx3.1/41, mbtmp3.4/4, ML3.0/2, Error ellipse: s-maj=57.2km s-min=19.0km az=124.0*
*JMA **06** 19:09:09.4±0.2, 37.°79N×144.°09E, h4km, M3.5*

ISC 06 19:09:10.0±1.5, 37.°67N±0.°07×144.°40E±0.°09, h35km, n13, σ1°11/20, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.53**	**289**	P	**Pn**	**19 09 48.6**	**0.0**
JIO				S	**Sn**	**19 10 17.1**	**-1.1**
JMK	**Ichinoseki**	**2.81**	**298**	P	**Pn**	**19 09 52.4**	**0.0**
JMM	**Marumori**	**2.87**	**275**	P	**Pn**	**19 09 52.8**	**-0.4**
JMM				S	**Sn**	**19 10 24.8**	**-1.6**
JOM	**Ohasama**	**3.03**	**307**	P	**Pn**	**19 09 55.8**	**+0.4**
JOM				S	**Sn**	**19 10 30.9**	**+0.5**
JOU	**Okura**	**3.03**	**284**	P	**Pn**	**19 09 56.2**	**+0.7**
JFT	**Otama**	**3.23**	**269**	P	**Pn**	**19 09 58.6**	**+0.4**
JFT				S	**Sn**	**19 10 35.4**	**-0.1**
JYK	**Kaneyama**	**3.42**	**293**	P	**Pn**	**19 10 01.3**	**+0.6**
JYK				*e*S	**Sn**	**19 10 40.5**	**+0.5**
JRG	**Rokugo**	**3.42**	**301**	*e*S	**Sn**	**19 10 40.2**	**+0.1**
JANG	**Nango**	**3.51**	**321**	*e*S	**Sn**	**19 10 40.8**	**-1.6**
MJAR	**Matsushiro Arr**	**5.08**	**259**	P	**Pn**	**19 10 25.2**	**+1.7**
	0.4nm,0.3s,baz=90,slow=16,SNR=4.2						
MJAR				S	**Sn**	**19 11 23.0**	**+2.0**
	0.4nm,0.3s,baz=7.1,slow=28,SNR=3.5						
ASAJ	**Asahikawa**	**6.58**	**349**	P	**Pn**	**19 10 44.3**	**+0.1**
	0.4nm,0.3s,baz=214,slow=7.6,SNR=6.0						
ASAJ				S	**Sn**	**19 12 00.1**	**+2.2**
	0.2nm,0.3s,baz=203,slow=33,SNR=2.5						
WRA	**Warramunga Arr**	**58.09**	**191**	P	**P**	**19 18 59.0**	**-0.8**
	0.8nm,0.6s,baz=11,slow=7.1,SNR=8.7						
ASAR	**Alice Springs**	**61.81**	**191**	P	**P**	**19 19 24.5**	**-0.8**
	0.2nm,0.5s,baz=6.1,slow=7.0,SNR=5.8						

*NIED **06** 19:20:00, 38.°10N×144.°10E, h5km, Mw3.7 Best double couple: M0=4.37000×10^14 NP1:φs=34.00000°, δ=19.00000°, λ=-37.00000°. NP2:φs=160.00000°, δ=78.00000°, λ=-106.00000°.*
*IDC **06** 19:20:51.9±1.0, 37.°99N×144.°25E, h0km, mb3.4/7, mb1 3.7/10, mb1mx3.5/49, mbtmp3.6/10, ML3.6/3, MS2.6/2, Ms1 2.6/2, ms1mx2.2/32, Error ellipse: s-maj=27.5km s-min=18.4km az=134.0*
*ISCJB **06** 19:20:54.9±0.7, 38.°10N±0.°04×144.°11E±0.°05, h33km, mb3.4/7, Error ellipse: s-maj=6.6km s-min=5.1km az=150.5*
*JMA **06** 19:20:54.5±0.2, 38.°12N×144.°09E, h33km, M3.6*

ISC 06 19:20:56.9±0.9, 38.°11N±0.°06×144.°10E±0.°07, h35km, n25, σ1°57/36, mb3.4/7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.14**	**298**	P	**Pn**	**19 21 29.3**	**-0.7**
JIO	**Ouri**	**2.19**	**280**	P	**Pn**	**19 21 29.8**	**-1.0**
JIO				S	**Sn**	**19 21 55.6**	**-1.1**
JMK	**Ichinoseki**	**2.41**	**291**	P	**Pn**	**19 21 33.3**	**-0.5**
JOM	**Ohasama**	**2.58**	**303**	P	**Pn**	**19 21 35.6**	**-0.5**
JOM				S	**Sn**	**19 22 06.3**	**0.0**
JMM	**Marumori**	**2.62**	**266**	P	**Pn**	**19 21 35.9**	**-0.8**
JMM				S	**Sn**	**19 22 06.2**	**-1.2**
JOU	**Okura**	**2.72**	**276**	P	**Pn**	**19 21 37.4**	**-0.6**
JOU				*e*S	**Sn**	**19 22 09.7**	**0.0**
JRG	**Rokugo**	**3.00**	**296**	P	**Pn**	**19 21 42.0**	**+0.1**
JRG				S	**Sn**	**19 22 17.7**	**+1.1**
JANG	**Nango**	**3.02**	**319**	S	**Sn**	**19 22 15.9**	**-1.2**
JFT	**Otama**	**3.04**	**260**	P	**Pn**	**19 21 42.2**	**-0.3**
JFT				S	**Sn**	**19 22 17.5**	**-0.1**
JYK	**Kaneyama**	**3.04**	**286**	P	**Pn**	**19 21 42.7**	**+0.2**
JYK				S	**Sn**	**19 22 18.7**	**+1.0**
JNBK	**Urakawa-nobuka**	**4.29**	**346**	P	**Pn**	**19 21 59.3**	**-0.3**
JNBK				S	**Sn**	**19 22 46.5**	**-1.8**
JCH	**Churui**	**4.53**	**353**	S	**Sn**	**19 22 49.8**	**-4.5**
JRY	**Ryogami san**	**4.65**	**245**	P	**Pn**	**19 22 03.6**	**-1.1**
JRY				*e*S	**Sn**	**19 22 55.2**	**-2.3**
MJAR	**Matsushiro Arr**	**4.95**	**253**	Pn	**Pn**	**19 22 09.3**	**+0.5**
	2.0nm,0.3s,baz=65,slow=8.7,SNR=22						
MJAR				Sn	**Sn**	**19 23 08.0**	**+3.2**
	baz=262,slow=9.2,SNR=1.9						
JHJ	**Hachijo jima 2**	**6.10**	**216**	Pn	**Pn**	**19 22 22.4**	**-2.0**
	7.5nm,0.3s,baz=91,slow=21,SNR=2.4						
ASAJ	**Asahikawa**	**6.10**	**350**	Pn	**Pn**	**19 22 25.1**	**+0.5**
	1.0nm,0.3s,baz=204,slow=18,SNR=8.0						
ASAJ				Sn	**Sn**	**19 23 35.0**	**+2.0**
	0.6nm,0.3s,baz=290,slow=24,SNR=2.6						
JNU	**Nakatsue**	**11.85**	**249**	LR	LR	19 28 47.4	
	comp=Z,40nm,18.2s,baz=307,slow=40						
KSRS	**Korea Array**	**12.82**	**272**	LR	LR	19 28 40.1	
	comp=Z,23nm,21.0s,baz=46,slow=36						
SEY	**Seymchan**	**25.36**	**9**	P	**P**	**19 26 21.5**	**+1.2**
	0.9nm,0.6s,baz=166,slow=11,SNR=4.2						
MKAR	**Makanchi Array**	**45.36**	**302**	P	**P**	**19 29 12.9**	**+1.2**
	0.3nm,0.9s,baz=74,slow=6.9,SNR=2.1						
MKAR				pP	**pP**	**19 29 18.8**	**-3.2**
	0.6nm,0.8s,baz=80,slow=8.8,SNR=4.3						
KURBB	**Kurchatov Arra**	**47.03**	**308**	P	**P**	**19 29 26.1**	**+1.5**
	0.3nm,0.8s,baz=84,slow=8.8,SNR=3.3						
KURBB				pP	**pP**	**19 29 33.0**	**-2.0**
	0.6nm,0.7s,baz=80,slow=8.1,SNR=6.1						
ILAR	**Eielson Array**	**47.44**	**33**	P	**P**	**19 29 27.9**	**+0.3**
	0.4nm,0.9s,baz=248,slow=7.2,SNR=4.3						
WRA	**Warramunga Arr**	**58.47**	**191**	P	**P**	**19 30 48.7**	**-0.6**
	0.7nm,0.8s,baz=12,slow=7.2,SNR=5.0						
YKA	**Yellowknife Ar**	**61.79**	**31**	P	**P**	**19 31 11.7**	**+0.1**
	0.1nm,0.5s,baz=265,slow=8.2,SNR=3.5						
NVAR	**Mina Array Bea**	**72.63**	**55**	P	**P**	**19 32 22.5**	**+1.4**
	0.4nm,0.6s,baz=290,slow=5.5,SNR=3.6						

*ISK **06** 19:22:48.8, 38.°16N×43.°81E, h8km, ML3.2*
*CSEM **06** 19:22:49.7±0.2, 38.°13N×43.°79E, h2km, MD3.2, Error ellipse: s-maj=6.1km s-min=4.7km az=88.0*
*NSSP **06** 19:22:49.6, 38.°23N×43.°77E, h7km, Ms3.1*
*DDA **06** 19:22:49.5, 38.°15N×43.°87E, h7km, Md3.2*
*TEH **06** 19:22:50.2, 38.°66N×43.°76E, h18km, ML3.1*
*ISN **06** 19:22:54.0±0.8, 37.°73N×43.°73E, h0km±3km, ML3.2*

ISC 06 19:22:49.9±1.2, 38.°16N±0.°02×43.°85E±0.°02, h3km±11km, n57, σ1°40/73, 3C, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TVAN	**Van**	**0.51**	**317**	P	**Pg**	**19 22 59.4**	**-0.3**
TVAN	**Van**	**0.51**	**317**	*i* P	**Pg**	**19 22 59.4**	**-0.3**
TVAN				*i* S	**Sb**	**19 23 09.1**	**-0.4**
VANB	**Van**	**0.57**	**320**	*e*PG	**Pg**	**19 22 59.2**	**-1.6**
VANB				*e*SG	**Sg**	**19 23 08.1**	**-0.1**
VANB	**Van**	**0.57**	**320**	*e*Pg	**Pg**	**19 22 59.2**	**-1.6**
VANB				*e*Sg	**Sg**	**19 23 08.1**	**-0.1**
HKR	**Hakkari**	**0.59**	**188**	*e*PG	**Pg**	**19 23 00.1**	**-1.1**
HKR	**Hakkari**	**0.59**	**188**	*e*Pg	**Pg**	**19 23 00.1**	**-1.1**
HAKT	**HAKKARI**	**0.61**	**191

PHWY	Pilot Hill	2.06 185	ePn	Pg	19 23 44.5	+0.7
BW06	Boulder Array	3.23 261	ePn	Pn	19 23 59.1	+2.4
PDAR	Pinedale Array	3.23 261	Pn	Pn	19 23 57.4	+0.8
	2.2nm,0.3s,baz=72,slow=17,SNR=36					
PDAR			Lg	Lg	19 24 42.4	
	3.4nm,0.3s,baz=83,slow=30,SNR=4.0					
RLMT	Red Lodge	3.40 303	ePn	Pn	19 23 59.1	+0.1
LAO	LASA Array	3.41 348	ePn	Pn	19 23 58.8	-0.1
ISCO	Idaho Springs	3.56 185	ePn	Pb	19 24 06.4	-2.1
LOHW	Long Hollow	3.92 276	ePn	Pb	19 24 12.5	-2.1
O20A	White River Ci	3.93 216	ePn	Pn	19 24 09.7	+3.5
H17A	Grant Village	4.00 287	ePn	Pn	19 24 09.4	+2.1
SNOW	Snow King Moun	4.03 273	ePn	Pn	19 24 11.0	+3.3
MOOW	Moose Ponds	4.03 278	ePn	Pn	19 24 08.5	+0.8
FLWY	Flagg Ranch	4.03 282	ePn	Pn	19 24 10.2	+2.5
REDW	Red Top Meadow	4.10 272	ePn	Pb	19 24 13.9	-3.8
IMW	Indian Meadow	4.18 279	ePn	Pn	19 24 12.9	+3.1
AHID	Auburn Hatcher	4.34 264	Pn	Pb	19 24 19.5	-2.3
HWUT	Hardware Ranch	5.00 252	ePn	Pn	19 24 22.4	+1.4
	5.5nm,0.7s					
BOZ	Bozeman (W)	5.12 299	ePn	Pn	19 24 23.4	+0.9
	6.0nm,0.8s					
EGMT	Eagleton	5.65 327	ePn	Pn	19 24 29.5	-0.2
	19nm,1.0s					
PV04	Paradox Valley	5.68 211	ePn	Pn	19 24 37.8	+7.5
I10CA	LAC DU BONNET	9.31 39	i		20 21 40.0	
	baz=225,slow=307,SNR=1.5					
ULM	Lac du Bonnet	9.41 40	Pn	Pn	19 25 20.6	-0.7
	0.6nm,0.3s,baz=229,slow=14,SNR=3.8					
ULM			Lg	Lg	19 28 00.1	
	0.3nm,0.3s,baz=339,slow=20,SNR=3.8					
I56US	NEWPORT INFRAS	9.65 305	i		20 20 00.0	
	baz=115,slow=323,SNR=0.6					
NVAR	Mina Array Bea	11.05 248	Pn	Pn	19 25 45.8	+1.8
	0.0nm,0.3s,baz=50,slow=15,SNR=2.2					
YKA	Yellowknife Ar	19.95 347	P	Pn	19 27 39.7	+0.3
	0.1nm,0.3s,baz=161,slow=11,SNR=3.8					

*CSEM **06** 19:28:49.8, 37°.79N×14°.96E, h26km, ML3.5/33*

ROM 06 19:28:49.8±0.1, 37°.79N×14°.96E, h26km±1km, MI3.5/33, 26C-12D, Error ellipse: s-maj=1.5km s-min=1.0km az=111.0, Sicily

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ESLN	Serra La Nave	0.10	175	⇓iPg	Pb	19 28 54.5	-0.3
ESLN				Sg	Sb	19 28 58.3	+0.1
	4μm,0.6s						
ESLN	Serra La Nave	0.10	175	⇓iPg	Pb	19 28 54.5	-0.3
ESLN				Sg	Sb	19 28 58.3	+0.1
	4μm,0.6s						
MNO	Monte Soro	0.25	303	⇓iPg	Pb	19 28 56.2	-0.2
MNO				Sg	Sb	19 29 00.9	-0.1
	2μm,0.4s						
MNO	Monte Soro	0.25	303	⇓iPg	Pb	19 28 56.2	-0.2
MNO				Sg	Sb	19 29 00.9	-0.1
	2μm,0.4s						
MUCR	Ucria	0.26	344	⇑iPg	Pb	19 28 55.9	-0.5
MUCR				Sg	Sb	19 29 00.9	0.0
MUCR	Ucria	0.26	344	⇑iPg	Pb	19 28 55.9	-0.5
MUCR				Sg	Sb	19 29 00.9	0.0
MMME	Mongiuffi-Meli	0.27	58	⇑iPg	Pb	19 28 56.7	+0.2
MMME				Sg	Sn	19 29 02.4	-1.2
	7μm,0.5s						
MMME	Mongiuffi-Meli	0.27	58	⇑iPg	Pb	19 28 56.7	+0.2
MMME				Sg	Sn	19 29 02.4	-1.2
	7μm,0.5s						
NOV	Novara	0.27	30	⇑iPg	Pb	19 28 56.5	-0.1
NOV				Sg	Sb	19 29 01.6	+0.4
	5μm,0.8s						
NOV	Novara	0.27	30	⇑iPg	Pb	19 28 56.5	-0.1
NOV				Sg	Sb	19 29 01.6	+0.4
	5μm,0.8s						
ECNV	Catenanuova	0.28	225	Pg	Pb	19 28 57.1	+0.5
ECNV				Sg	Sb	19 29 01.3	0.0
	5μm,0.6s						
ECNV	Catenanuova	0.28	225	Pg	Pb	19 28 57.1	+0.5
ECNV				Sg	Sb	19 29 01.3	0.0
	5μm,0.6s						
GALF	Gagliano Caste	0.33	255	⇑iPg	Pb	19 28 57.5	+0.2
GALF				Sg	Sn	19 29 03.9	-1.0
	6μm,0.7s						
GALF	Gagliano Caste	0.33	255	⇑iPg	Pb	19 28 57.5	+0.2
GALF				Sg	Sn	19 29 03.9	-1.0
	6μm,0.7s						
MCSR	Castroreale	0.35	40	⇑iPg	Pb	19 28 57.6	-0.2
MCSR				Sg	Sb	19 29 03.7	+0.5
MCSR	Castroreale	0.35	40	⇑iPg	Pb	19 28 57.6	-0.2
MCSR				Sg	Sb	19 29 03.7	+0.5
CAGR	Agira	0.41	245	⇑iPg	Pn	19 28 59.4	-0.6
	4μm,0.7s						
CAGR	Agira	0.41	245	⇑iPg	Pn	19 28 59.4	-0.6
	4μm,0.7s						
HLNI	Lentini	0.45	189	⇓iPg	Pb	19 28 59.0	-0.2
HLNI				Sg	Sb	19 29 06.0	+0.4
	1μm,0.4s						
HLNI	Lentini	0.45	189	⇓iPg	Pb	19 28 59.0	-0.2
HLNI				Sg	Sb	19 29 06.0	+0.4
	1μm,0.4s						
MPNC	Port Mandanici	0.47	41	⇑iPg	Pb	19 28 59.6	+0.1
MPNC				Sg	Sn	19 29 07.6	-0.7
	6μm,0.6s						
MPNC	Port Mandanici	0.47	41	⇑iPg	Pb	19 28 59.6	+0.1
MPNC				Sg	Sn	19 29 07.6	-0.7
	6μm,0.6s						
HCRL	Carlentini	0.51	174	⇓iPg	Pb	19 29 00.1	-0.1
HCRL				Sg	Sb	19 29 08.1	+0.8
	9μm,0.6s						
HCRL	Carlentini	0.51	174	⇓iPg	Pb	19 29 00.1	-0.1
HCRL				Sg	Sb	19 29 08.1	+0.8
	9μm,0.6s						
MILZ	Milazzo	0.52	24	⇑iPg	Pb	19 29 00.4	0.0
MILZ				Sg	Sb	19 29 08.3	+0.7
	5μm,0.9s						
MILZ	Milazzo	0.52	24	⇑iPg	Pb	19 29 00.4	0.0
MILZ				Sg	Sb	19 29 08.3	+0.7
	5μm,0.9s						
HAGA	Augusta	0.53	163	⇓iPg	Pb	19 29 00.4	-0.1
HAGA				Sg	Sb	19 29 08.8	+1.0
	4μm,0.8s						
HAGA	Augusta	0.53	163	⇓iPg	Pb	19 29 00.4	-0.1
HAGA				Sg	Sb	19 29 08.8	+1.0
	4μm,0.8s						
VPL	Vulcano Piano	0.58	2	⇓iPg	Pb	19 29 01.4	-0.1
VPL				Sg	Sn	19 29 10.9	-0.4
	8μm,0.5s						
VPL	Vulcano Piano	0.58	2	⇓iPg	Pb	19 29 01.4	-0.1
VPL				Sg	Sn	19 29 10.9	-0.4
	8μm,0.5s						
MSRU	Castanea	0.64	42	⇑iPg	Pb	19 29 02.4	0.0
MSRU				Sg	Sn	19 29 12.7	+0.2
	2μm,0.6s						
MSRU	Castanea	0.64	42	⇑iPg	Pb	19 29 02.4	0.0
MSRU				Sg	Sn	19 29 12.7	+0.2
	2μm,0.6s						
SSY	Sortino	0.64	172	Pg	Pb	19 29 02.1	-0.4
SSY				Sg	Sn	19 29 12.1	-0.6
	4μm,0.5s						
SSY	Sortino	0.64	172	Pg	Pb	19 29 02.1	-0.4
SSY				Sg	Sn	19 29 12.1	-0.6
	4μm,0.5s						
HVZN	Vizzini	0.65	198	⇑iPg	Pb	19 29 02.0	-0.5
HVZN				Sg	Sn	19 29 12.1	-0.7
	5μm,0.8s						
HVZN	Vizzini	0.65	198	⇑iPg	Pb	19 29 02.0	-0.5
HVZN				Sg	Sn	19 29 12.1	-0.7
	5μm,0.8s						
LLI	Lipari	0.65	359	Pg	Pb	19 29 02.1	-0.5
	5μm,0.7s						
LLI	Lipari	0.65	359	Pg	Pb	19 29 02.1	-0.5
	5μm,0.7s						
PLLN	Pollina	0.68	287	Pg	Pb	19 29 02.6	-0.5
	3μm,0.8s						
PLLN	Pollina	0.68	287	Pg	Pb	19 29 02.6	-0.5
	3μm,0.8s						
RESU	Resuttano	0.73	259	⇑iPg	Pn	19 29 05.2	+0.6
	892nm,0.7s						
RESU	Resuttano	0.73	259	⇑iPg	Pn	19 29 05.2	+0.6
	892nm,0.7s						
RAFF	Raffo Rosso	0.74	220	⇑iPg	Pb	19 29 04.1	0.0
	2μm,1.0s						
RAFF	Raffo Rosso	0.74	220	⇑iPg	Pb	19 29 04.1	0.0
	2μm,1.0s						
GIB	Gibilmanna	0.77	285	Pg	Pb	19 29 04.3	-0.3
	3μm,0.6s						
GIB	Gibilmanna	0.77	285	Pg	Pb	19 29 04.3	-0.3
	3μm,0.6s						
MSCL	Scilla	0.79	56	Pg	Pb	19 29 04.8	-0.1
	1μm,0.5s						
MSCL	Scilla	0.79	56	Pg	Pb	19 29 04.8	-0.1
	1μm,0.5s						
IFIL	Filicudi I Eol	0.83	338	Pg	Pb	19 29 04.5	-1.1
	2μm,0.6s						
IFIL	Filicudi I Eol	0.83	338	Pg	Pb	19 29 04.5	-1.1
	2μm,0.6s						
HAVL	Avola	0.84	171	Pg	Pb	19 29 05.0	-0.8
	2μm,0.4s						
HAVL	Avola	0.84	171	Pg	Pb	19 29 05.0	-0.8
	2μm,0.4s						
MPAZ	Palizzi	0.84	79	Pg	Pn	19 29 06.2	+0.2
	752nm,0.6s						
MPAZ	Palizzi	0.84	79	Pg	Pn	19 29 06.2	+0.2
	752nm,0.6s						
HMDC	Modica	0.85	190	Pg	Pb	19 29 05.2	-0.7
	6μm,0.9s						
HMDC	Modica	0.85	190	Pg	Pb	19 29 05.2	-0.7
	6μm,0.9s						
CEL	Celeste	0.87	57	Pg	Pn	19 29 06.4	-0.1
	462nm,0.8s						
CEL	Celeste	0.87	57	Pg	Pn	19 29 06.4	-0.1
	462nm,0.8s						
IACL	Alicudi	0.88	327	Pg	Pb	19 29 05.6	-0.8
	1μm,0.6s						
IACL	Alicudi	0.88	327	Pg	Pb	19 29 05.6	-0.8
	1μm,0.6s						
SOI	Samo	0.91	72	Pg	Pn	19 29 07.0	+0.1
	492nm,0.6s						
SOI	Samo	0.91	72	Pg	Pn	19 29 07.0	+0.1
	492nm,0.6s						
ALJA	Alia	0.96	268	Pg	Pb	19 29 08.7	+0.9
	1μm,0.9s						
ALJA	Alia	0.96	268	Pg	Pb	19 29 08.7	+0.9
	1μm,0.9s						
JOPP	Joppolo	1.09	42	Pg	Pn	19 29 09.3	-0.2
	1μm,0.5s						
JOPP	Joppolo	1.09	42	Pg	Pn	19 29 09.3	-0.2
	1μm,0.5s						
FAVR	Favara	1.16	243	⇑iPg	Pb	19 29 12.1	+1.0
	350nm,0.7s						
FAVR	Favara	1.16	243	⇑iPg	Pb	19 29 12.1	+1.0
	350nm,0.7s						
SOLUN	Solunto	1.17	285	Pg	Pn	19 29 10.5	0.0
	367nm,1.0s						
SOLUN	Solunto	1.17	285	Pg	Pn	19 29 10.5	0.0
	367nm,1.0s						
CORL	Corleone	1.32	275	Pg	Pb	19 29 13.9	0.0
	262nm,0.9s						
CORL	Corleone	1.32	275	Pg	Pb	19 29 13.9	0.0
	262nm,0.9s						
PLAC	Placanica	1.33	60	Pg	Pb	19 29 14.7	+0.5
	376nm,0.8s						
PLAC	Placanica	1.33	60	Pg	Pb	19 29 14.7	+0.5
	376nm,0.8s						

BJI 06 19:32:08.0, 32°.33N×104°.93E, h26km, ML3.5/10, Sichuan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CD2	Chengdu	1.73	216	Pn	Pn	19 32 35.3	-1.2
CD2				Pg	Pb	19 32 38.7	-0.5
CD2				Sn	Sb	19 33 00.6	+0.1
CD2				Sg	Sn	19 33 03.2	+5.4
CD2				smax	smax		
	comp=N,2μm,0.6s						
CD2				smax	smax		
	comp=E,1μm,0.6s						
XAN	Xi'an	3.76	62	Pg	Pb	19 33 14.8	+1.2
XAN				Sg	Sb	19 33 58.6	-0.1
XAN				smax	smax		
	comp=N,160nm,0.5s						
XAN				smax	smax		
	comp=E,120nm,0.6s						
LZH	Lanzhou	3.85	347	ePg	Pb	19 33 25.3	+10
LZH				Sg	Sn	19 33 49.2	-1.1
LZH				smax	smax		
	comp=N,210nm,1.0s						
LZH				smax	smax		
	comp=E,290nm,0.8s						
WMQ	Urumqi	17.73	315	eP	Pn	19 36 13.0	0.0
WMQ				pmax	pmax		
	comp=Z,8.0nm,0.9s						
WMQ				pmax	pmax		
	comp=Z,110nm,4.3s						

MAN 06 19:34:18, 17°.76N×120°.43E, h36km, mb3.7, ML2.4, MS1.9, 1D, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SIPP	Brgy, Tapao	0.17	9	⇓eP	Pn	19 34 27.0	-0.6
SIPP				eS	Sn	19 34 32.1	-4.6
ABRA	Dolores	0.29	112	eP	Pn	19 34 27.7	+1.7
ABRA				eS	Sn	19 34 35.0	+2.1
APYP	Conner	0.78	82	eP	Pn	19 34 33.9	+1.4
APYP				eS	Sn	19 34 45.2	+2.2

MEX 06 19:36:28.4±0.8, 17°.41N×101°.03W, h13km±9km, MD3.9, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZIIG	Zihuatanejo	0.46	295	iP	Pg	19 36 36.4	-1.1
ZIIG				eS	Sg	19 36 43.0	-0.6
CAIG	El Cayaco	0.81	116	iP	Pg	19 36 41.1	-3.1
CAIG				iS	Sg	19 36 51.7	-3.2
ARIG	Puente Sto Nin	1.08	37	eP	Pb	19 36 45.1	-3.9
ARIG				eS	Sb	19 36 58.3	-4.7
ACX	Acapulco	1.24	116	eP	Pn	19 36 47.8	-3.7
MEIG	Mezcala	1.44	69	eP	Pn	19 36 51.3	-3.0
MEIG				eS	Sn	19 37 08.4	-4.7
TLIG	Tlapa	2.36	86	eP	Pn	19 37 04.7	-2.2
TLIG				eS	Sn	19 37 32.0	-3.8

JMA 06 19:45:11.3±0.4, 36°.49N×141°.95E, h29km, M3.1, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	1.23	316	P	Pb	19 45 33.4	-0.5
JFT	Otama	1.65	309	S	Sb	19 46 00.4	-1.0
MAT	Matsushiro	3.02	272	P	Pn	19 46 00.1	+3.0
MAT				S	Sn	19 46 36.2	+3.9

*KRNET **06** 19:47:45.6±0.1, 39°.67N×73°.89E, h14km, mb2.6*
*NNC **06** 19:47:45.8±1.1, 39°.86N×74°.06E, h0km, mb2.9, mpv2.7,*
Error ellipse: s-maj=9.2km s-min=4.9km az=178.0

ISC 06 19:47:43.6±2.0, 39°.61N±0°.07×73°.95E±0°.05, h4km±11km, n18, σ1s71/34, 26C-12D, Tajikistan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFK	Sufi-Kurgan	0.53	319	⇓iP	Pg	19 47 54.8	+1.1
SFK	baz=320						
				⇓iS	Sg	19 48 01.3	+0.8
	baz=320						
SFK	Sufi-Kurgan	0.53	319	⇑P	Pg	19 47 54.6	+0.9
SFK	8.5nm,0.1s						
				⇓S	Sg	19 48 01.3	+0.8
	195nm,0.3s						
OHH	Osh	1.27	316	⇓iP	Pg	19 48 08.8	+0.8
OHH	baz=316						
				⇓iS	Sg	19 48 26.0	+1.5
	baz=316						
ARSB	Arslanbob	1.86	337	⇑eP	Pg	19 48 19.3	+0.1
ARSB	baz=337						
				⇑iS	Sg	19 48 43.4	+0.1
	baz=337						
NRN	Naryn	2.40	40	⇓eP	Pb	19 48 27.4	-0.1
NRN	baz=42						
				⇓iS	Sb	19 48 57.9	+0.4
	baz=42						
BTK	Batken	2.45	281	⇑eP	Pb	19 48 27.8	-0.4
BTK	baz=280						
				⇑eS	Sb	19 48 58.5	-0.3
	baz=280						
TOKL	Toktogul	2.46	341	⇑eP	Pb	19 48 28.2	-0.2
TOKL	baz=341						
				⇑iS	Sb	19 48 59.2	0.0
	baz=341						
AML	Almayashu	2.52	356	⇑iP	Pb	19 48 28.7	-0.9
AML	baz=356						
				⇑iS	Sb	19 48 59.4	-1.7
	baz=356						
UCH	Uchtor	2.65	9	⇑iP	Pb	19 48 30.2	-1.6
UCH	baz=10.0						
				⇑iS	Sb	19 49 03.8	-1.0
	baz=10.0						
ARK	Arkit	2.65	326	⇑eP	Pb	19 48 30.0	-1.7
ARK	baz=326						
				⇑eS	Sb	19 49 02.8	-1.8
	baz=326						
AAK	Ala-Archa	3.04	8	⇑iP	Pb	19 48 35.9	-2.5
AAK	baz=9.0						
				⇑iS	Sb	19 49 13.0	-3.0
	baz=9.0						
AAK	Ala-Archa	3.04	8	⇓Pg	Pb	19 48 36.9	-1.4
AAK	2.6nm,0.6s						
				⇑Lg	Lg	19 49 16.3	
	5.9nm,0.4s						
EKS2	Erkin-Say	3.05	358	⇑iP	Pb	19 48 35.8	-2.6
EKS2	baz=359						
				⇑iS	Sb	19 49 12.9	-3.1
	baz=359						
MNAS	Manas	3.07	340	⇑iP	Pn	19 48 35.5	+2.5
MNAS	baz=340						
				⇑iS	Sn	19 49 11.3	+1.1
	baz=340						
MNAS	Manas	3.07	340	⇓Pg	Pb	19 48 36.9	-1.9
MNAS	0.8nm,0.4s						
				⇑Lg	Lg	19 49 18.8	
	19nm,0.5s						
TKM2	Tokmak 2	3.53	20	⇑Pg	Pb	19 48 44.8	-1.9
TKM2	1.0nm,0.7s						
				⇑Lg	Lg	19 49 31.6	
	4.5nm,0.6s						
DZET	Dzherino	4.06	260	⇓Pn	Pb	19 48 52.8	-2.9
DZET	1.2nm,0.3s						
				⇑Sn	Sb	19 49 43.5	-1.6
DZET	4.8nm,0.5s						
				⇓Lg	Lg	19 49 59.8	
	18nm,0.8s						
KK31	Karatay Array	4.34	325	Pn	Pn	19 48 51.2	+1.0
KK31	0.3nm,0.5s,baz=192,slow=48,SNR=8.1						
				⇓Pg	Pg	19 49 05.1	-1.6
KK31	0.2nm,0.2s,baz=141,slow=16,SNR=5.0						
				⇑Sn	Sn	19 49 43.5	+2.2
KK31	0.8nm,0.4s,baz=142,slow=24,SNR=3.0						
				⇑Lg	Lg	19 50 00.6	
KK31	1.6nm,0.3s,baz=128,slow=28,SNR=4.8						

*NIED **06** 19:49:00, 38°.20N×144°.10E, h8km, Mw3.5 Best double couple: M0=2.24000×10^14 NP1:φs=52.00000°, δ30.00000°, λ-24.00000°. NP2:φs=162.00000°, δ78.00000°, λ-118.00000°.*

JMA 06 19:49:25.7±0.2, 38°.16N×144°.10E, h42km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	2.11	297	P	Pn	19 49 59.7	+1.2
OFUJ				eS	Sn	19 50 25.1	+1.5
JIO	Ouri	2.18	279	P	Pn	19 50 00.7	+1.2
JIO				S	Sn	19 50 26.1	+0.8
MIYJ	Miyakonagasawa	2.27	309	P	Pn	19 50 01.6	+0.9
JMK	Ichinoseki	2.39	290	P	Pn	19 50 04.0	+1.6
JOM	Ohasama	2.56	302	P	Pn	19 50 06.1	+1.5
JANG	Nango	2.98	319	P	Pn	19 50 12.0	+1.5
JYK	Kaneyama	3.03	286	P	Pn	19 50 13.3	+2.2
JFT	Otama	3.05	259	P	Pn	19 50 13.4	+2.0
JFT				S	Sn	19 50 48.0	+1.4
JOT	Ohata	3.98	325	eS	Sn	19 51 09.0	-0.7

*JMA **06** 19:51:31.9±0.2, 24°.34N×121°.95E, h42km±4km, M1.8*
*ISCJB **06** 19:51:32.1±0.6, 24°.36N±0°.02×122°.05E±0°.02, h13km±4km, Error ellipse: s-maj=3.3km s-min=2.5km az=156.7*
*TAP **06** 19:51:32.5, 24°.41N×121°.97E, h25km, ML3.0, D*

ISC 06 19:51:31.5±1.2, 24°.36N±0°.02×122°.03E±0°.03, h13km±10km, n37, σ0s52/66, 1C-2D, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ENA	Nanau	0.27	284	⇓iP	Pb	19 51 38.6	+0.4
ENA	baz=275						
				S	Sb	19 51 43.3	+0.6
	baz=275						
TWC	Suao	0.29	326	⇓iP	Pb	19 51 39.1	+0.4
TWC	baz=332						
				iS	Sb	19 51 43.7	+0.2
	baz=332						
TWE	Neicheng	0.48	317	P	Pb	19 51 41.7	-0.2
TWE	baz=319						
				S	Sb	19 51 48.6	-0.3
	baz=319						
TWD	Chiawan	0.48	234	P	Pb	19 51 42.1	+0.2
TWD	baz=226						
				S	Sb	19 51 50.4	+1.4
	baz=226						
EGS		0.49	350	P	Pb	19 51 42.3	+0.4
EGS	baz=356						
				S	Sb	19 51 49.0	0.0
	baz=356						
ENTT	Nioudou	0.50	303	P	Pb	19 51 42.0	-0.3
ENTT	baz=302						
				S	Sb	19 51 49.2	-0.3
	baz=302						
HWA	Hwalien	0.55	225	eP	Pb	19 51 43.9	+1.0
HWA	baz=217						
NNS	Nan Shan	0.60	277	P	Pg	19 51 43.5	+0.2
NNS	baz=273						
				eS	Sb	19 51 52.2	-0.2
	baz=273						
TWB1	Santiao Chiao	0.64	357	eS	Sb	19 51 53.8	+0.3
TWB1	baz=1.0						
NSK	Sanguang	0.69	297	⇑iP	Pg	19 51 44.7	-0.1
NSK	baz=295						
				S	Sg	19 51 53.6	-0.3
	baz=295						
WHF	Hehuan Shan	0.73	253	eS	Sb	19 51 56.8	+0.4
WHF	baz=247						
NWF	Wu-fen Shan	0.74	342	eP	Pb	19 51 46.9	+0.6
NWF	baz=345						
				eS	Sb	19 51 57.2	+0.8
	baz=345						
ESL	Shilin	0.77	225	eP	Pg	19 51 46.3	-0.1
ESL	baz=219						
				eS	Sb	19 51 58.2	+1.0
	baz=219						
TWT	Tachien	0.79	262	P	Pb	19 51 47.1	0.0
TWT	baz=258						
				S	Sb	19 51 57.9	+0.1
	baz=258						
JYNG	Yonagunijimaku	0.84	84	P	Pb	19 51 48.4	+0.4
JYNG				eS	Sn	19 52 00.8	-0.5
YOJ	Yonaguni jima	0.90	84	P	Pn	19 51 49.6	-0.3
YOJ				S	Sn	19 52 02.8	0.0
TWS1	Kuangyinshan	0.92	323	eP	Pg	19 51 49.2	-0.1
TWS1	baz=324						
				eS	Sb	19 52 02.2	+0.7
	baz=324						
NSTT	Nanjuang	0.97	286	P	Pg	19 51 50.1	-0.2
NSTT	baz=284						
				eS	Sg	19 52 02.9	-0.1
	baz=284						
TWY	Chenhua	0.99	337	eS	Sn	19 52 05.1	+0.1
TWY	baz=338						
EHY	Hungye	1.07	217	eP	Pb	19 51 51.9	0.0
EHY	baz=213						
				eS	Sn	19 52 06.9	-0.2
	baz=213						
SMLT	Sun Moon Lake	1.14	245	eP	Pb	19 51 52.9	-0.2
SMLT	baz=241						
				eS	Sg	19 52 08.3	+0.1
	baz=241						
TWQ1	Liyutan	1.15	269	eP	Pb	19 51 53.1	0.0
TWQ1	baz=266						
				eS	Sb	19 52 08.2	+0.2
	baz=266						
TYC	Yuchr	1.16	247	eP	Pb	19 51 52.6	-0.9
	baz=243						

TYC					*e*S		**Sb**	**19 52 08.4**	**-0.1**
	baz=243								
TWF1	**Yuli**	**1.21**	**214**		*e*P		**Pn**	**19 51 54.0**	**-0.2**
	baz=210								
TWF1					*e*S		**Sb**	**19 52 08.0**	**-1.9**
	baz=210								
YUS	**Yu-Shan**	**1.31**	**229**		*e*P		**Pn**	**19 51 55.7**	**-0.3**
	baz=225								
YUS					*e*S		**Sb**	**19 52 13.0**	**-0.3**
	baz=225								
ALS	**Alishan**	**1.41**	**233**		*e*P		**Pn**	**19 51 57.2**	**+0.1**
	baz=229								
ALS					*e*S		**Sg**	**19 52 16.5**	**-0.3**
	baz=229								
CHN5	**Tsauling**	**1.45**	**239**		*e*P		**Pb**	**19 51 58.9**	**+0.4**
	baz=235								
CHN5					*e*S		**Sg**	**19 52 18.4**	**+0.2**
	baz=235								
ELDTW	**Lidau**	**1.49**	**219**		*e*P		**Pn**	**19 51 58.5**	**+0.3**
	baz=215								
WGK	**Gukeng**	**1.50**	**244**		*e*S		**Sg**	**19 52 19.6**	**-0.2**
	baz=240								
IRIF	**Iriomote-Funau**	**1.55**	**91**		P		**Pn**	**19 51 58.8**	**-0.1**
IRIF					S		**Sn**	**19 52 18.6**	**-0.3**
CHN4	**Tsaushan**	**1.66**	**233**		*e*P		**Pb**	**19 52 02.1**	**+0.2**
	baz=230								
CHN4					*e*S		**Sb**	**19 52 23.0**	**+0.3**
	baz=230								
STYT	**Tauyuan**	**1.67**	**224**		*e*S		**Sb**	**19 52 23.7**	**+0.5**
	baz=221								
WTP	**Ta-pu**	**1.71**	**230**		*e*S		**Sb**	**19 52 25.3**	**+1.0**
	baz=226								
CHN1	**Nanshi**	**1.81**	**230**		*e*P		**Pb**	**19 52 04.6**	**+0.1**
	baz=227								
CHN1					*e*S		**Sb**	**19 52 27.7**	**+0.6**
	baz=227								
JKRS	**Kuro-shima**	**1.81**	**94**		P		**Pn**	**19 52 02.7**	**+0.3**
JKRS					S		**Sn**	**19 52 26.0**	**+0.7**
JIJ	**Ishigaki jima**	**1.93**	**90**		P		**Pn**	**19 52 03.9**	**-0.1**
JIJ					S		**Sn**	**19 52 27.6**	**-0.6**
JISG	**Ishigakijimahi**	**2.09**	**83**		P		**Pn**	**19 52 05.9**	**-0.4**
JISG					*e*S		**Sn**	**19 52 31.2**	**-1.0**

*CSEM **06** 20:01:19.6, 38.°27N×15.°13E, h9km, ML2.5/15*

ROM 06 20:01:19.6±0.1, 38.°27N×15.°13E, h9km, Ml2.5/15, 12C-4D, Error ellipse: s-maj=1.1km s-min=0.8km az=31.0, Sicily

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MILZ	**Milazzo**	**0.08**	**90**	⇑*i*Pg	Pg	20 01 22.2	+0.5
MILZ				Sg	Sg	20 01 24.0	+0.8
MILZ	**Milazzo**	**0.08**	**90**	⇑*i*Pg	Pg	20 01 22.2	+0.5
MILZ				Sg	Sg	20 01 24.0	+0.8
VPL	**Vulcano Piano**	**0.16**	**312**	⇑*i*Pg	Pg	20 01 23.3	+0.3
VPL				Sg	Sg	20 01 26.3	+1.0
	3μm,0.4s						
VPL	**Vulcano Piano**	**0.16**	**312**	⇑*i*Pg	Pg	20 01 23.3	+0.3
VPL				Sg	Sg	20 01 26.3	+1.0
	3μm,0.4s						
MPNC	**Port Mandanici**	**0.21**	**126**	⇑*i*Pg	Pg	20 01 24.9	+0.9
MPNC				Sg	Sg	20 01 28.4	+1.5
	2μm,0.6s						
MPNC	**Port Mandanici**	**0.21**	**126**	⇑*i*Pg	Pg	20 01 24.9	+0.9
MPNC				Sg	Sg	20 01 28.4	+1.5
	2μm,0.6s						
LLI	**Lipari**	**0.23**	**320**	Pg	Pg	20 01 25.1	+0.9
	2μm,0.8s						
LLI	**Lipari**	**0.23**	**320**	Pg	Pg	20 01 25.1	+0.9
	2μm,0.8s						
MCSR	**Castroreale**	**0.23**	**156**	Pg	Pg	20 01 24.9	+0.7
MCSR				Sg	Sg	20 01 28.5	+1.1
MCSR	**Castroreale**	**0.23**	**156**	Pg	Pg	20 01 24.9	+0.7
MCSR				Sg	Sg	20 01 28.5	+1.1
NOV	**Novara**	**0.24**	**179**	⇓*i*Pg	Pg	20 01 25.3	+0.8
NOV				Sg	Sg	20 01 29.3	+1.5
	388nm,0.5s						
NOV	**Novara**	**0.24**	**179**	⇓*i*Pg	Pg	20 01 25.3	+0.8
NOV				Sg	Sg	20 01 29.3	+1.5
	388nm,0.5s						
MSRU	**Castanea**	**0.30**	**92**	⇑*i*Pg	Pg	20 01 26.3	+0.8
MSRU				Sg	Sb	20 01 30.9	-1.3
	366nm,0.2s						
MSRU	**Castanea**	**0.30**	**92**	⇑*i*Pg	Pg	20 01 26.3	+0.8
MSRU				Sg	Sb	20 01 30.9	-1.3
	366nm,0.2s						
MUCR	**Ucria**	**0.31**	**222**	Pg	Pg	20 01 26.2	+0.5
MUCR				Sg	Sg	20 01 30.7	+0.9
MUCR	**Ucria**	**0.31**	**222**	Pg	Pg	20 01 26.2	+0.5
MUCR				Sg	Sg	20 01 30.7	+0.9
MMME	**Mongiuffi-Meli**	**0.35**	**164**	⇓*i*Pg	Pb	20 01 27.4	-0.7
MMME				Sg	Sb	20 01 33.1	-0.7
	413nm,0.3s						
MMME	**Mongiuffi-Meli**	**0.35**	**164**	⇓*i*Pg	Pb	20 01 27.4	-0.7
MMME				Sg	Sb	20 01 33.1	-0.7
	413nm,0.3s						
MNO	**Monte Soro**	**0.48**	**226**	Pg	Pb	20 01 29.8	-0.6
MNO				Sg	Sb	20 01 38.2	+0.5
	31μm,10.0s						
MNO	**Monte Soro**	**0.48**	**226**	Pg	Pb	20 01 29.8	-0.6
MNO				Sg	Sb	20 01 38.2	+0.5
	31μm,10.0s						
MSCL	**Scilla**	**0.52**	**94**	⇑*i*Pg	Pg	20 01 30.1	+0.4
MSCL				Sg	Sb	20 01 38.2	-0.4
	413nm,0.6s						
MSCL	**Scilla**	**0.52**	**94**	⇑*i*Pg	Pg	20 01 30.1	+0.4
MSCL				Sg	Sb	20 01 38.2	-0.4
	413nm,0.6s						
IFIL	**Filicudi I Eol**	**0.53**	**303**	⇑*i*Pg	Pg	20 01 30.1	+0.2
IFIL				Sg	Sb	20 01 38.3	-0.6
	318nm,0.5s						
IFIL	**Filicudi I Eol**	**0.53**	**303**	⇑*i*Pg	Pg	20 01 30.1	+0.2
IFIL				Sg	Sb	20 01 38.3	-0.6
	318nm,0.5s						
CEL	**Celeste**	**0.60**	**91**	Pg	Pg	20 01 31.5	+0.3
	120nm,0.5s						
CEL	**Celeste**	**0.60**	**91**	Pg	Pg	20 01 31.5	+0.3
	120nm,0.5s						
IACL	**Alicudi**	**0.66**	**293**	Pg	Pg	20 01 32.8	+0.4
	177nm,0.5s						
IACL	**Alicudi**	**0.66**	**293**	Pg	Pg	20 01 32.8	+0.4
	177nm,0.5s						
JOPP	**Joppolo**	**0.68**	**60**	Pg	Pg	20 01 33.0	+0.3
	242nm,0.7s						
JOPP	**Joppolo**	**0.68**	**60**	Pg	Pg	20 01 33.0	+0.3
	242nm,0.7s						
GALF	**Gagliano Caste**	**0.72**	**219**	Pg	Pb	20 01 34.7	+0.4
	97nm,0.6s						
GALF	**Gagliano Caste**	**0.72**	**219**	Pg	Pb	20 01 34.7	+0.4
	97nm,0.6s						
SOI	**Samo**	**0.75**	**105**	Pg	Pg	20 01 34.0	-0.1
	54nm,0.3s						
SOI	**Samo**	**0.75**	**105**	Pg	Pg	20 01 34.0	-0.1
	54nm,0.3s						
MPAZ	**Palizzi**	**0.76**	**115**	Pg	Pg	20 01 34.2	0.0
	106nm,0.6s						
MPAZ	**Palizzi**	**0.76**	**115**	Pg	Pg	20 01 34.2	0.0
	106nm,0.6s						
PLLN	**Pollina**	**0.83**	**251**	Pg	Pb	20 01 36.1	-0.1
	60nm,0.3s						
PLLN	**Pollina**	**0.83**	**251**	Pg	Pb	20 01 36.1	-0.1
	60nm,0.3s						
GIB	**Gibilmanna**	**0.92**	**252**	Pg	Pg	20 01 37.3	+0.1
	181nm,0.5s						
GIB	**Gibilmanna**	**0.92**	**252**	Pg	Pg	20 01 37.3	+0.1
	181nm,0.5s						
PLAC	**Placanica**	**1.04**	**80**	Pg	Pb	20 01 39.8	-0.1
PLAC	**Placanica**	**1.04**	**80**	Pg	Pb	20 01 39.8	-0.1

*CSEM **06** 20:01:44.9, 38.°27N×15.°13E, h9km, ML2.6/9*

ROM 06 20:01:44.9±0.1, 38.°27N×15.°13E, h9km±1km, Ml2.6/9, 6C, Error ellipse: s-maj=1.6km s-min=1.3km az=43.0, Sicily

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MILZ	**Milazzo**	**0.08**	**90**	⇑*i*Pg	Pg	20 01 47.5	+0.4
MILZ				Sg	Sg	20 01 49.2	+0.5
MILZ	**Milazzo**	**0.08**	**90**	⇑*i*Pg	Pg	20 01 47.5	+0.4
MILZ				Sg	Sg	20 01 49.2	+0.5
VPL	**Vulcano Piano**	**0.16**	**313**	Pg	Pg	20 01 48.8	+0.4
VPL				Sg	Sg	20 01 51.6	+0.8
	3μm,0.4s						
VPL	**Vulcano Piano**	**0.16**	**313**	Pg	Pg	20 01 48.8	+0.4
VPL				Sg	Sg	20 01 51.6	+0.8
	3μm,0.4s						
MPNC	**Port Mandanici**	**0.21**	**126**	⇑*i*Pg	Pg	20 01 50.2	+0.9
MPNC				Sg	Sg	20 01 53.7	+1.4
	2μm,0.6s						
MPNC	**Port Mandanici**	**0.21**	**126**	⇑*i*Pg	Pg	20 01 50.2	+0.9
MPNC				Sg	Sg	20 01 53.7	+1.4
	2μm,0.6s						
MCSR	**Castroreale**	**0.23**	**156**	Pg	Pg	20 01 50.2	+0.6
MCSR				Sg	Sg	20 01 54.1	+1.4
MCSR	**Castroreale**	**0.23**	**156**	Pg	Pg	20 01 50.2	+0.6
MCSR				Sg	Sg	20 01 54.1	+1.4
LLI	**Lipari**	**0.23**	**320**	Pg	Pg	20 01 51.6	+2.1
	2μm,0.8s						
LLI	**Lipari**	**0.23**	**320**	Pg	Pg	20 01 51.6	+2.1
	2μm,0.8s						
NOV	**Novara**	**0.24**	**179**	Pg	Pg	20 01 50.6	+0.8
NOV				Sg	Sg	20 01 54.8	+1.6
	388nm,0.5s						
NOV	**Novara**	**0.24**	**179**	Pg	Pg	20 01 50.6	+0.8
NOV				Sg	Sg	20 01 54.8	+1.6
	388nm,0.5s						
MSRU	**Castanea**	**0.30**	**91**	⇑*i*Pg	Pb	20 01 51.6	-0.8
MSRU				Sg	Sb	20 01 56.2	-1.2
	366nm,0.2s						
MSRU	**Castanea**	**0.30**	**91**	⇑*i*Pg	Pb	20 01 51.6	-0.8
MSRU				Sg	Sb	20 01 56.2	-1.2
	366nm,0.2s						
MUCR	**Ucria**	**0.31**	**222**	Pg	Pg	20 01 51.5	+0.5
MUCR				Sg	Sg	20 01 56.0	+0.9
MUCR	**Ucria**	**0.31**	**222**	Pg	Pg	20 01 51.5	+0.5
MUCR				Sg	Sg	20 01 56.0	+0.9
MMME	**Mongiuffi-Meli**	**0.35**	**164**	Pg	Pb	20 01 52.8	-0.5
MMME				Sg	Sb	20 01 59.1	+0.2
	413nm,0.3s						
MMME	**Mongiuffi-Meli**	**0.35**	**164**	Pg	Pb	20 01 52.8	-0.5
MMME				Sg	Sb	20 01 59.1	+0.2
	413nm,0.3s						
MNO	**Monte Soro**	**0.48**	**226**	Pg	Pb	20 01 55.9	+0.2
	31μm,10.0s						
MNO	**Monte Soro**	**0.48**	**226**	Pg	Pb	20 01 55.9	+0.2
	31μm,10.0s						
MSCL	**Scilla**	**0.52**	**94**	Pg	Pg	20 01 55.3	+0.3
	413nm,0.6s						
MSCL	**Scilla**	**0.52**	**94**	Pg	Pg	20 01 55.3	+0.3
	413nm,0.6s						
IFIL	**Filicudi I Eol**	**0.53**	**303**	Pg	Pg	20 01 55.7	+0.4
	318nm,0.5s						
IFIL	**Filicudi I Eol**	**0.53**	**303**	Pg	Pg	20 01 55.7	+0.4
	318nm,0.5s						
JOPP	**Joppolo**	**0.68**	**60**	Pg	Pg	20 01 58.2	+0.2
	242nm,0.7s						
JOPP	**Joppolo**	**0.68**	**60**	Pg	Pg	20 01 58.2	+0.2
	242nm,0.7s						

IDC 06 20:05:44.1±3.0, 14.°36N×57.°00E, h0km, mb3.6/5, mb1 3.7/5, mb1mx3.3/34, mbtmp3.6/5, Error ellipse: s-maj=86.6km s-min=39.5km az=66.0, Owen Fracture Zone region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GEYT	**Alibeck**	**23.50**	**2**	P	P	20 10 54.0	-1.7
	1.7nm,0.7s,baz=203,slow=11,SNR=5.8						
H08N2	**Diego Garcia H**	**24.80**	**145**	T	T	20 37 19.0	
	baz=325,slow=76,SNR=18						
H08N3	**Diego Garcia H**	**24.82**	**145**	T	T	20 37 18.9	
	baz=325,slow=76,SNR=13						
H08N1	**Diego Carcia H**	**24.83**	**145**	T	T	20 37 21.2	
	baz=325,slow=76,SNR=13						
MKAR	**Makanchi Array**	**38.64**	**28**	P	P	20 13 11.0	+1.7
	0.5nm,0.9s,baz=230,slow=12,SNR=2.8						
ZALV	**Zalesovo Beam**	**45.14**	**23**	P	P	20 14 01.4	-0.8
	0.2nm,0.3s,baz=213,slow=6.9,SNR=2.0						
FINES	**FINESS Array B**	**52.00**	**342**	P	P	20 14 56.0	+1.0
	0.8nm,0.8s,baz=139,slow=9.3,SNR=2.0						
WRA	**Warramunga Arr**	**83.33**	**112**	P	P	20 18 13.1	-0.5
	0.5nm,1.1s,baz=300,slow=3.9,SNR=1.8						

NNC 06 20:08:17.8±3.2, 38.°44N×72.°28E, h0km, mb3.6, mpv3.2, 10C-5D, Error ellipse: s-maj=33.3km s-min=10.1km az=152.0, Tajikistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFK	**Sufi-Kurgan**	**1.83**	**31**	⇓Pn	Pn	20 08 48.7	-2.0
	10nm,0.4s						
SFK				⇓Sn	Sg	20 09 17.0	+0.2
	48nm,0.4s						
DZET	**Dzherino**	**2.73**	**279**	⇑Pn	Pn	20 09 03.6	+0.7
	12nm,0.5s						
DZET				⇓Sn	Sn	20 09 37.7	+1.1
	98nm,0.7s						
MNAS	**Manas**	**4.04**	**2**	⇑Pn	Pn	20 09 22.0	+0.9
	3.0nm,0.3s						
MNAS				⇑Sn	Sn	20 10 08.7	-0.5
	4.3nm,0.4s						
AAK	**Ala-Archa**	**4.51**	**21**	⇑Pn	Pn	20 09 28.6	+1.0
	1.2nm,0.5s						
AAK				⇓Pg	Pg	20 09 42.0	-2.3
	2.5nm,0.5s						
AAK				⇑Sn	Sn	20 10 22.8	+2.0
	4.6nm,0.5s						
AAK				⇑Lg	Lg	20 10 41.2	
	3.0nm,0.5s						
KK31	**Karatay Array**	**4.84**	**345**	Pn	Pn	20 09 31.9	-0.1
	0.9nm,0.3s,baz=160,slow=12,SNR=24						
KK31				⇑Sn	Sn	20 10 28.1	-0.7
	1.6nm,0.4s,baz=152,slow=22						
TKM2	**Tokmak 2**	**5.13**	**28**	⇑Pg	Pb	20 09 51.8	+3.2
	0.8nm,0.6s						
TKM2				⇑Lg	Lg	20 10 58.0	
	3.2nm,0.9s						
AB31	**Akbulak array**	**13.98**	**325**	⇑Pn	Pn	20 11 34.5	-2.6
	0.8nm,0.8s,baz=145,slow=12,SNR=5.7						
AKTO	**Aktyubinsk**	**15.70**	**324**	⇓Pn	Pn	20 12 01.4	+1.3
	2.1nm,0.8s						

*ISCJB **06** 20:26:34.6±0.3, 21.°75S±0.°05×179.°38W±0.°07, h602km, mb4.6/53, Error ellipse: s-maj=8.5km s-min=6.3km az=11.9*

*NEIC **06** 20:26:34.9±1.1, 21.°67S×179.°31W, h593km±12km, mb4.9/32, Error ellipse: s-maj=14.0km s-min=10.1km az=92.0*

*IDC **06** 20:26:38.7±1.5, 21.°53S×179.°54W, h632km±17km, mb3.6/18, mb1 3.8/19, mb1mx3.6/42, mbtmp4.6/19, Error ellipse: s-maj=15.7km s-min=10.7km az=158.0*

ISC 06 20:26:35.2±0.4, 21.°69S±0.°07×179.°23W±0.°07, h602km, n111, σ1$50/121, mb4.6/54, 5C-1D, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSVF	**Nonsavu**	**4.70**	**326**	*e*P	**P**	**20 28 05.6**	**-0.6**
AFI	**Afiamalu**	**10.50**	**44**	S	**S**	**20 30 50.2**	**-7.0**
	2.7nm,0.3s,baz=3.4,slow=18,SNR=3.7						
DZM	**Mont Dzumac**	**13.31**	**266**	P	**P**	**20 29 29.3**	**+1.9**
	1.5nm,0.3s,baz=93,slow=21,SNR=13						
OUZ	**Omahuta**	**14.87**	**203**	*e*P	**P**	**20 29 42.5**	**+0.5**
URZ	**Urewera**	**16.81**	**190**	P	**P**	**20 29 58.9**	**-0.8**
	2.7nm,0.3s,baz=256,slow=2.9,SNR=15						
URZ				S	**S**	**20 32 40.8**	**-5.3**
	1.0nm,0.3s,baz=218,slow=23,SNR=7.9						
URZ	**Urewera**	**16.81**	**190**	*e*P	**P**	**20 29 57.1**	**-2.6**
	131nm,1.6s						
THZ	**Tophouse**	**21.08**	**197**	*e*P	**P**	**20 30 36.3**	**-2.1**
	119nm,1.7s						
KHZ	**Kahutara**	**21.54**	**195**	*e*P	**P**	**20 30 41.3**	**-1.1**
	119nm,1.7s						
LHI	**Lord Howe Isla**	**21.70**	**239**	*e*P	**P**	**20 30 40.3**	**-3.9**
	171nm,1.1s						
LTZ	**Lake Taylor**	**22.20**	**197**	*e*P	**P**	**20 30 46.7**	**-1.7**
	83nm,1.7s						
MQZ	**McQueen's Vall**	**22.97**	**195**	*e*P	**P**	**20 30 54.4**	**-0.7**
	176nm,1.9s						
WKZ	**Wanaka**	**25.02**	**200**	*e*P	**P**	**20 31 13.0**	**-0.4**
	236nm,1.9s						
MLZ	**Mavora Lakes**	**25.80**	**201**	*e*P	**P**	**20 31 21.2**	**+1.0**
	178nm,2.0s						
DCZ	**Deep Cove**	**26.21**	**202**	*e*P	**P**	**20 31 24.0**	**+0.2**
	114nm,2.0s						
WHZ	**Wether Hill Ro**	**26.32**	**200**	*e*P	**P**	**20 31 25.3**	**+0.6**
	91nm,1.8s						
EIDS	**Eidsvold**	**27.44**	**257**	*e*P	**P**	**20 31 34.5**	**-0.4**
	12nm,0.6s						
ARMA	**Armidale**	**27.52**	**246**	*e*P	**P**	**20 31 37.0**	**+1.3**
	72nm,1.7s						
CAN	**Canberra**	**30.90**	**237**	*e*P	**P**	**20 32 04.9**	**+0.3**
	67nm,1.8s						
CTA	**Charters Tower**	**32.25**	**266**	P	**P**	**20 32 16.0**	**-0.2**
	19nm,0.5s,baz=100,slow=12,SNR=15						
CTAO	**Charters Tower**	**32.25**	**266**	*e*P	**P**	**20 32 15.6**	**-0.6**
	117nm,0.7s						
PMG	**Port Moresby**	**34.52**	**285**	P	**P**	**20 32 34.7**	**-0.6**
	32nm,0.8s,baz=108,slow=4.6,SNR=8.1						
PMG	**Port Moresby**	**34.52**	**285**	*e*P	**P**	**20 32 34.8**	**-0.6**
	38nm,0.8s						
STKA	**Stephens Creek**	**36.25**	**245**	P	**P**	**20 32 49.7**	**+0.4**
	8.5nm,0.5s,baz=101,slow=6.3,SNR=51						
STKA				ScP	**S**	**20 37 50.2**	**+1.9**
	2.5nm,0.8s,baz=322,slow=3.3,SNR=4.8						
COEN	**Coen**	**36.54**	**276**	*e*P	**P**	**20 32 51.9**	**0.0**
	26nm,0.8s						
AS01	**Alice Springs**	**43.10**	**258**	*e*P	**P**	**20 33 43.6**	**-0.5**
AS01				*e*PcP	**PcP**	**20 35 20.1**	**+0.1**
AS31	**Alice Springs**	**43.14**	**258**	*e*P	**P**	**20 33 43.8**	**-0.6**
	14nm,1.2s						
ASAR	**Alice Springs**	**43.14**	**258**	P	**P**	**20 33 44.0**	**-0.5**
	20nm,0.5s,baz=97,slow=7.9,SNR=355						
ASAR				PcP	**PcP**	**20 35 20.2**	**0.0**
	1.6nm,0.7s,baz=107,slow=4.0,SNR=4.4						
ASAR				ScP	**ScP**	**20 38 17.6**	**+2.7**
	2.0nm,0.9s,baz=106,slow=4.3,SNR=8.1						
ASAR				S	**S**	**20 39 25.5**	**-3.2**
	3.4nm,0.8s,baz=95,slow=16,SNR=16						
WB2	**Warramunga Arr**	**43.30**	**264**	*e*P	**P**	**20 33 44.5**	**-1.3**
	30nm,0.8s						
WRA	**Warramunga Arr**	**43.31**	**264**	P	**P**	**20 33 44.7**	**-1.1**
	8.9nm,0.3s,baz=96,slow=7.7,SNR=396						
WRA				ScP	**ScP**	**20 38 17.6**	**+2.0**
	0.5nm,0.7s,baz=88,slow=4.0,SNR=5.5						
WRA				S	**S**	**20 39 26.0**	**-5.2**
	1.0nm,0.9s,baz=94,slow=14,SNR=4.8						
JAY	**Jayapura**	**43.36**	**290**	P	**P**	**20 33 45.6**	**-0.7**
	3.4nm,0.5s,baz=98,slow=23,SNR=18						
MTN	**Manton Dam**	**48.04**	**272**	*e*P	**P**	**20 34 20.7**	**-1.0**
	22nm,0.6s						
FITZ	**Fitzroy Crossi**	**51.75**	**264**	P	**P**	**20 34 48.2**	**-0.5**
	2.8nm,0.3s,baz=130,slow=9.0,SNR=50						
SOEI	**Soe**	**55.41**	**273**	*e*P	**P**	**20 35 15.6**	**+0.9**
	46nm,0.7s						
SBA	**Scott Base**	**56.61**	**184**	*e*P	**P**	**20 35 25.0**	**+3.3**
	10nm,1.0s						
VNDA	**Vanda**	**56.63**	**185**	P	**P**	**20 35 24.4**	**+2.6**
	1.1nm,0.5s,baz=6.2,slow=6.7,SNR=14						
VNDA	**Vanda**	**56.63**	**185**	*e*P	**P**	**20 35 24.4**	**+2.6**
	15nm,1.8s						
MJAR	**Matsushiro Arr**	**70.50**	**325**	P	**P**	**20 36 49.7**	**-0.9**
	5.4nm,0.8s,baz=161,slow=5.3,SNR=6.3						
KSM	**Kuching**	**72.45**	**279**	*e*P	**P**	**20 37 02.5**	**0.0**
	14nm,0.7s						
TPUB	**Ta-pu**	**73.67**	**304**	*e*P	**P**	**20 37 08.0**	**-1.2**
	28nm,0.8s						
SSLB	**Suanglung**	**73.69**	**304**	*e*P	**P**	**20 37 08.0**	**-1.3**
	12nm,0.7s						
PETK	**Petropavlovsk-**	**77.14**	**346**	P	**P**	**20 37 27.6**	**0.0**
	4.9nm,0.6s,baz=134,slow=6.4,SNR=5.2						
USRK	**Ussuriysk Ar.**	**79.31**	**327**	P	**P**	**20 37 39.9**	**+0.5**
	7.1nm,1.0s,baz=112,slow=5.4,SNR=6.0						
NJ2	**Nanjing**	**79.77**	**310**	*e*P	**P**	**20 37 43.0**	**+0.9**
NJ2				pmax	pmax		
	comp=Z,15nm,0.6s						
MDJ	**Mudanjiang**	**80.84**	**326**	P	**P**	**20 37 47.6**	**+0.2**
MDJ				pP	pP	20 39 53.1	-0.8
MDJ				sP	sP	20 40 51.8	-2.9
MDJ				S	**S**	**20 47 07.9**	**+0.8**
MDJ	**Mudanjiang**	**80.84**	**326**	sS	sS	20 50 49.7	-2.9
MDJ	**Mudanjiang**	**80.84**	**326**	SS	SS	20 52 38.3	-1.4
MDJ				pmax	pmax		
	comp=Z,11nm,1.4s						
MDJ				pmax	pmax		
	comp=Z,32nm,2.5s						
IPM	**Ipoh**	**82.15**	**278**	*e*P	**P**	**20 37 55.3**	**+0.5**
	comp=Z,13nm,0.8s						
CN2	**Changchun**	**82.55**	**323**	⇓P	**P**	**20 37 57.1**	**+1.0**
CN2				*es*P	sP	20 40 58.0	-6.0
CN2				*e*S	**S**	**20 47 25.0**	**+0.8**
CN2				pmax	pmax		
	comp=Z,20nm,0.8s						
CN2				pmax	pmax		
	comp=Z,200nm,4.0s						
NVAR	**Mina Array Bea**	**82.67**	**44**	P	**P**	**20 37 58.4**	**+1.2**
	comp=Z,2.0nm,1.0s,baz=222,slow=8.4,SNR=7.4						
KLR	**Kul'dur**	**82.98**	**330**	P	**P**	**20 37 58.5**	**+0.4**
	comp=Z,2.6nm,0.8s,baz=311,slow=5.6,SNR=9.6						
319A	**Douglas**	**85.28**	**54**	*e*P	**P**	**20 38 11.8**	**+1.8**
	comp=Z,6.8nm,0.9s						
ENH	**Enshi**	**85.77**	**305**	*e*P	**P**	**20 38 12.6**	**+0.3**
	comp=Z,11nm,0.9s						
BJI	**Beijing**	**85.94**	**316**	P	**P**	**20 38 13.3**	**+0.6**
BJI				pmax	pmax		
	comp=Z,5.0nm,0.8s						
SNAA	**Sanae**	**86.85**	**179**	P	**P**	**20 38 16.7**	**+0.1**
VNA3	**Neumayer Olymp**	**87.03**	**177**	P	**P**	**20 38 17.0**	**-0.4**
SEY	**Seymchan**	**87.28**	**347**	P	**P**	**20 38 17.9**	**-0.5**
	comp=Z,2.4nm,0.6s,baz=135,slow=7.3,SNR=10.0						
VNA2	**Neumayer--Watz**	**87.45**	**177**	P	**P**	**20 38 19.9**	**+0.5**
	baz=190,slow=3.1						
CAST	**Castle Rocks**	**87.47**	**12**	*e*P	**P**	**20 38 18.4**	**-1.0**
	comp=Z,6.5nm,0.5s						
TRF	**Thorofare Moun**	**87.85**	**13**	*e*P	**P**	**20 38 20.6**	**-0.8**
	comp=Z,5.5nm,0.8s						
XAN	**Xi'an**	**87.95**	**308**	P	**P**	**20 38 23.0**	**+0.6**
XAN				pmax	pmax		
	comp=Z,8.0nm,0.9s						
RND	**Reindeer**	**88.11**	**13**	*e*P	**P**	**20 38 22.3**

NOA	NORSAR Array B	140.01	352	SKPbc	SKPbc	20 47 35.0	-0.8
	comp=Z,0.9nm,0.8s,baz=14,slow=4.2,SNR=3.3						
AKASG	Malin Array Be	143.48	329	PKP	PKPab	20 45 00.1	-0.8
	comp=Z,6.1nm,0.6s,baz=42,slow=4.5,SNR=31						
AKBB	Malin Array Si	143.48	329	*e*PKPbc	PKPab	20 44 59.7	-1.2
KIEV	Kiev	143.49	329	*e*PKPbc	PKPab	20 44 59.8	-1.1
BSD	Bornholm Skovb	144.98	346	*i* P	PKPdf	20 45 04.6	+0.1
	comp=Z,8.9nm,0.9s						
EKA	Eskdalemuir Ar	146.28	4	PKPbc	PKPbc	20 45 08.4	-0.7
	comp=Z,1.1nm,0.7s,baz=351,slow=2.3,SNR=4.7						
BR131	Keskin Array S	146.76	310	*e*PKPdf	PKPbc	20 45 10.5	-0.6
BRTR	Keskin Array B	146.76	310	PKPbc	PKPbc	20 45 10.7	-0.4
	comp=Z,2.2nm,0.7s,baz=127,slow=4.1,SNR=11						
BR231	Keskin MP Arra	147.32	311	*e*PKPdf	PKPbc	20 45 11.3	-1.3
BUR08	Bucovina Ar. S	147.49	329	*e*PKPdf	PKPbc	20 45 13.2	+0.5
KOLS	Kolonicke sedl	147.88	333	*e*PKP	PKPbc	20 45 14.2	+0.7
KOLS				*e*		20 45 18.0	
STHS	Stebnicka Huta	147.92	335	*e*PKP	PKPbc	20 45 14.2	+0.6
STHS				*e*		20 45 18.4	
CRVS	Cervenica-Dubn	148.24	334	*e*PKP	PKPbc	20 45 14.9	+0.5
CRVS				*e*		20 45 20.1	
LANS	Liptovska Anna	148.83	336	*e*PKP	PKPbc	20 45 16.9	+1.0
DPC	Dobruska-Polom	148.89	341	⇑*i*PKP	PKPbc	20 45 16.4	+0.4
DPC				*e*PKPAB	PKPab	20 45 23.3	+0.8
CLL	Collm	148.94	345	*i* P	PKPbc	20 45 15.9	-0.1
	comp=Z,5.0nm,1.0s						
CLL				*i*		20 45 22.2	
	comp=Z,4.0nm,0.8s						
CLL	Collm	148.94	345	*e*PKPbc	PKPbc	20 45 16.1	0.0
KECS	Kecovo	148.97	334	*e*PKP	PKPbc	20 45 17.5	+1.3
KECS				*e*		20 45 23.1	
KRLC	Kraliky	148.99	340	⇑*i*PKP	PKPbc	20 45 16.7	+0.4
KRLC				*e*PKPAB	PKPab	20 45 23.3	+0.4
PVCC	Panska Ves	149.25	343	⇑*e*PKP	PKPbc	20 45 17.5	+0.7
PVCC				*e*PKPAB	PKPab	20 45 24.4	+0.5
VYHS	Vyhne	149.60	336	*e*PKP	PKPbc	20 45 18.0	+0.2
VYHS				*e*		20 45 25.8	
PRU	Pruhonice	149.74	342	⇑*e*PKP	PKPbc	20 45 18.4	+0.4
PRU				*e*PKPAB	PKPab	20 45 26.4	+0.4
KHC	Kasperske Hory	150.78	343	*e*PKPDF	PKPdf	20 45 14.8	+0.6
KHC				⇑*i*PKP	PKPbc	20 45 20.7	+0.2
KHC				*e*PKPAB	PKPab	20 45 30.8	+0.3
KHC				*ex*	x	20 47 17.2	
GERES	GERESS Array B	151.01	342	PKPbc	PKPbc	20 45 21.1	+0.1
	comp=Z,1.3nm,0.7s,baz=36,slow=2.5,SNR=10						
GEA0	GERESS Array S	151.02	342	*e*PKPbc	PKPbc	20 45 20.9	-0.2
GEA0				*e*PKPab	PKPab	20 45 31.0	-0.5
PERS	Pernice	152.52	338	*i* PKPbc	PKPab	20 45 37.9	-0.1
VISS	Visnje	153.34	338	*i* PKPbc	PKPab	20 45 41.0	-0.4
BOJS	Bojanci	153.45	337	*i* PKPbc	PKPab	20 45 41.8	0.0
JAVS	Javornik	153.53	339	*i* PKPbc	PKPab	20 45 41.6	-0.7
FUORN	Ofenpass-Fuorn	153.96	345	*e*PKPab	PKPab	20 45 44.4	+0.1

NIED ***06*** *20:40:00, 38.°70N×143.°10E, h17km, Mw3.8 Best double couple: M₀5.08000×10¹⁴ NP1:φs158.00000°, δ17.00000°, λ41.00000°. NP2:φs28.00000°, δ79.00000°, λ103.00000°.*
IDC ***06*** *20:40:26.7±0.9, 38.°52N×143.°51E, h0km, mb3.7/6, mb1 3.9/9, mb1mx3.6/38, mbtmp3.7/9, ML3.4/2, MS3.1/6, Ms1 3.1/6, ms1mx2.7/47, Error ellipse: s-maj=28.9km s-min=18.5km az=102.0*
JMA ***06*** *20:40:29.2±0.3, 38.°73N×143.°08E, h10km±4km, M3.7*
ISC 06 20:40:28.3±3.8, 38.°73N±0.°06×143.°12E±0.°07, h8km±24km, n26, σ1§46/28, mb3.8/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	1.18	288	P	Pb	20 40 51.1	+0.1
MIYJ	Miyakonagasawa	1.32	311	P	Pn	20 40 52.7	-0.4
MIYJ				*e*S	Sb	20 41 09.7	-0.7
JIO	Ouri	1.41	259	P	Pn	20 40 54.4	+0.1
JIO				*e*S	Sb	20 41 12.8	-0.3
JMK	Ichinoseki	1.50	279	P	Pn	20 40 56.0	+0.5
JMK				*e*S	Sn	20 41 15.1	-0.2
JOM	Ohasama	1.60	298	P	Pn	20 40 57.5	+0.5
JOM				S	Sb	20 41 18.6	0.0
JOU	Okura	1.96	260	P	Pn	20 40 27.7	+0.9
JMM	Marumori	2.02	246	P	Pn	20 41 03.1	+0.4
JMM				*e*S	Sn	20 41 28.2	+0.1
JRG	Rokugo	2.05	290	*e*S	Sb	20 41 32.1	+0.8
JANG	Nango	2.06	324	P	Pb	20 41 05.1	-0.9
JYK	Kaneyama	2.16	276	P	Pn	20 41 05.5	+0.8
JFT	Otama	2.50	242	P	Pn	20 41 10.0	+0.7
MJAR	Matsushiro Arr	4.46	242	Pn	Pn	20 41 37.9	+1.5
	1.4nm,0.3s,baz=54,slow=9.5,SNR=8.0						
MJAR				LR	LR	20 43 33.2	
	comp=Z,134nm,18.2s,baz=80,slow=40						
MAT	Matsushiro	4.46	242	P	Pn	20 41 37.3	+1.0
MAT				S	Sn	20 42 32.4	+3.9
ASAJ	Asahikawa	5.40	356	Pn	Pn	20 41 53.3	+4.1
	1.2nm,0.3s,baz=186,slow=11,SNR=7.3						
ASAJ				Sn	Sn	20 42 51.1	-0.4
	2.0nm,0.3s,baz=104,slow=32,SNR=3.5						
USRK	Ussuriysk Ar.	9.98	307	Pn	Pn	20 42 57.6	+5.6
	baz=120,slow=14,SNR=5.2						
JNU	Nakatsue	11.38	244	LR	LR	20 48 21.0	
	comp=Z,52nm,18.4s,baz=122,slow=41						
KSRS	Korea Array	12.04	269	LR	LR	20 47 36.1	
	comp=Z,49nm,19.1s,baz=140,slow=35						
KLR	Kul'dur	13.30	326	Pn	P	20 43 45.4	-1.8
	0.1nm,0.3s,baz=156,slow=9.5,SNR=4.5						
KLR				LR	LR	20 48 53.0	
	comp=Z,78nm,18.9s,baz=158,slow=37						
SEY	Seymchan	24.88	10	P	P	20 45 51.5	+0.3
	2.8nm,0.7s,baz=160,slow=6.8,SNR=8.8						
ZALV	Zalesovo Beam	41.80	311	LR	LR	21 06 25.2	
	comp=Z,33nm,20.0s,baz=72,slow=37						
MKAR	Makanchi Array	44.38	301	P	P	20 48 41.1	+1.8
	0.4nm,0.7s,baz=81,slow=12,SNR=3.6						
ILAR	Eielson Array	47.34	33	P	P	20 49 02.1	-0.2
	0.5nm,0.7s,baz=264,slow=6.7,SNR=6.2						
WRA	Warramunga Arr	58.94	190	P	P	20 50 26.6	-1.6
	1.1nm,0.6s,baz=7.3,slow=7.0,SNR=12						
ASAR	Alice Springs	62.66	190	P	P	20 50 52.5	-0.9
	0.5nm,0.7s,baz=10,slow=6.3,SNR=8.6						
DAVOX	Davos/Dischmat	85.16	330	LR	LR	21 36 22.2	
	comp=Z,20nm,19.5s,baz=274,slow=39						
TXAR	Lajitas Array	88.03	53	P	P	20 53 18.4	-1.1
	0.2nm,0.6s,baz=299,slow=3.4,SNR=3.7						

ISCJB ***06*** *20:48:17.2±1.2, 37.°14N±0.°08×144.°4E±0.°1, h33km, mb3.4/2, Error ellipse: s-maj=12.8km s-min=10.3km az=147.2*
JMA ***06*** *20:48:19.1±0.5, 37.°26N×144.°29E, h46km, M3.4*
IDC ***06*** *20:48:34.9±10.0, 34.°37N×141.°96E, h0km, mb3.3/2, mb1 3.4/3, mb1mx3.2/34, mbtmp3.2/3, ML3.0/1, Error ellipse: s-maj=300.4km s-min=29.9km az=53.0*
ISC 06 20:48:18.5±1.8, 37.°22N±0.°09×144.°4E±0.°1, h35km, n11, σ1§08/14, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	2.73	298	P	Pn	20 49 00.3	+0.4
JFK	Kawauchi	2.84	274	P	Pn	20 49 01.8	+0.4
JFK				*e*S	Sn	20 49 33.9	-0.4
OFUJ	Ofunato	2.86	311	P	Pn	20 49 01.8	+0.1
JMK	Ichinoseki	3.07	305	P	Pn	20 49 05.4	+0.9
JFT	Otama	3.27	277	P	Pn	20 49 09.1	+1.8
JOM	Ohasama	3.34	313	P	Pn	20 49 08.9	+0.7
JOM				S	Sn	20 49 46.0	-0.7
JRY	Ryogami san	4.60	257	P	Pn	20 49 25.9	+0.3
JRY				S	Sn	20 50 16.3	-1.6
JOD2	Odawara 2	4.74	247	P	Pn	20 49 28.2	+0.8
MJAR	Matsushiro Arr	5.03	264	Pn	Pn	20 49 33.3	+1.8
	1.1nm,0.3s,baz=87,slow=14,SNR=5.7						
MJAR				Sn	Sn	20 50 20.1	-8.3
	0.5nm,0.3s,baz=65,slow=14,SNR=2.9						
WRA	Warramunga Arr	57.64	191	P	P	20 58 04.3	-0.9
	0.3nm,0.5s,baz=10,slow=7.2,SNR=2.5						
ASAR	Alice Springs	61.36	191	P	P	20 58 31.1	+0.2
	0.1nm,0.5s,baz=7.8,slow=7.5,SNR=1.2						

IDC 06 20:53:28.4±3.1, 28.°43S×177.°47W, h0km, mb3.9/3, mb1 4.1/3, mb1mx3.8/19, mbtmp3.9/3, MS3.3/2, Ms1 3.3/2, ms1mx2.7/37, Error ellipse: s-maj=65.4km s-min=24.0km az=97.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	Raoul Island	0.91	206	Pn	Pn	20 53 48.0	-0.3
	205nm,0.3s,baz=196,slow=14,SNR=3.0						
RAO				Sn	Sn	20 54 03.9	+1.8
	617nm,0.3s,baz=124,slow=24,SNR=5.9						
DZM	Mont Dzumac	15.87	290	LR	LR	21 01 55.4	
	comp=Z,84nm,20.6s,baz=154,slow=32						
STKA	Stephens Creek	35.42	254	P	P	21 00 25.8	-0.4
	1.6nm,0.9s,baz=99,slow=13,SNR=4.0						
ASAR	Alice Springs	43.72	265	P	P	21 01 35.4	-0.2
	1.1nm,0.5s,baz=101,slow=6.8,SNR=29						
WRA	Warramunga Arr	44.53	270	P	P	21 01 42.0	-0.1
	0.9nm,0.5s,baz=110,slow=8.1,SNR=12						
ATAH	Atahualpa	94.55	101	LR	LR	21 41 44.6	
	comp=Z,14nm,19.1s,baz=226,slow=31						
FINES	FINESS Array B	143.45	341	PKhKP	PKPpre	21 12 59.8	
	0.7nm,0.6s,baz=129,slow=30,SNR=4.4						
MMAI	Mount Meron Ar	151.44	287	PKPbc	PKPbc	21 13 24.6	+0.1
	1.2nm,0.5s,baz=74,slow=8.8,SNR=5.3						

SJA ***06*** *21:26:52.4±0.3, 32.°94S×68.°82W, h504km±2km, ML3.6, MW3.4*
GUC ***06*** *21:27:02.4±0.4, 34.°23S×72.°25W, h28km±13km, ML2.8*
ISC 06 21:27:02.0±2.3, 34.°17S±0.°06×72.°2W±0.°1, h19km, n8, σ2§05/15, 2C, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHPI	Pichilemu	0.25	151	⇑*i*P	Pn	21 27 08.7	+0.9
CHPI				*i* S	Sn	21 27 13.0	+1.1
ROCH	El Roble	1.53	39	*e*P	Pg	21 27 29.5	-2.0
ROCH				IAML		21 27 55.9	
	comp=N,203nm,0.5s						
CLCH	Cerro Calan	1.55	60	*e*P	Pb	21 27 29.7	-0.4
CLCH				*i* S	Sg	21 27 50.7	-1.4
CLCH				IAML		21 27 57.7	
	comp=E,220nm,0.6s						
PEL	Peldehue	1.59	50	⇑*i*P	Pb	21 27 30.6	-0.3
PEL				*e*S	Sg	21 27 52.0	-1.5
PEL				IAML		21 27 57.1	
	comp=E,142nm,0.4s						
ARCO	CERRO ARCO	3.00	65	*i* P	Pb	21 27 53.7	-1.2
ARCO				*i* S	Sg	21 28 38.7	+0.3
ARCO				IAML		21 28 46.2	
	comp=Z,14nm,0.6s						
AUSP	Uspallata	3.02	51	*i* P	Pb	21 27 55.0	-0.4
AUSP				*i* S	Sg	21 28 41.6	+2.3
ASAL	Salagasta	3.19	61	*i* P	Pb	21 27 53.5	-4.6
ASAL				*i* S	Sb	21 28 38.8	+2.1
RTLS	Leoncito	3.37	46	*i* P	Pn	21 27 56.2	+2.3
RTLS				*i* S	Sb	21 28 43.4	+1.4

IDC 06 21:29:48.2±6.8, 0.°34N×127.°33E, h121km±39km, mb3.3/3, mb1 3.6/6, mb1mx3.3/41, mbtmp3.9/6, Error ellipse: s-maj=127.1km s-min=23.8km az=167.0, Halmahera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SIJI	Sorong	4.12	107	P	Pn	21 30 48.4	-0.9
	17nm,0.3s,baz=237,slow=0.6,SNR=1.2						
KAPI	Kappang	9.25	235	P	Pn	21 31 59.2	+0.7
	1.5nm,0.3s,baz=44,slow=3.8,SNR=5.1						
KAPI				S	Sn	21 33 41.5	+0.6
	1.9nm,0.3s,baz=214,slow=22,SNR=3.7						
FITZ	Fitzroy Crossi	18.40	185	P	Pn	21 33 55.0	-0.5
	0.3nm,0.3s,baz=19,slow=9.2,SNR=2.6						
WRA	Warramunga Arr	21.29	162	P	P	21 34 25.8	+0.5
	1.6nm,0.4s,baz=332,slow=12,SNR=10.0						
ASAR	Alice Springs	24.70	165	P	P	21 34 58.0	-0.2
	0.3nm,0.5s,baz=349,slow=7.6,SNR=3.2						
STKA	Stephens Creek	34.77	158	P	P	21 36 26.2	-0.9
	0.5nm,0.3s,baz=332,slow=8.8,SNR=1.7						

ISCJB ***06*** *21:30:41.9±1.1, 6.°50N±0.°05×73.°16W±0.°07, h162km±8km, mb3.5/1, Error ellipse: s-maj=13.0km s-min=6.5km az=28.8*
IDC ***06*** *21:30:42.2±6.8, 6.°44N×75.°99W, h136km±78km, mb3.3/1, mb1 3.4/2, mb1mx3.0/25, mbtmp3.5/2, Error ellipse: s-maj=143.1km s-min=32.3km az=81.0*
RSNC ***06*** *21:30:42.2±0.6, 6.°50N×73.°12W, h162km±3km, ML3.1*
ISC 06 21:30:40.4±1.1, 6.°52N±0.°06×73.°1W±0.°1, h172km±7km, n19, σ1§21/29, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BARC	Barichara	0.12	308	*i* P	Pn	21 31 03.7	+0.1
BARC				*i*		21 31 03.9	
	comp=Z,468nm,0.1s						
BARC				*e*S	Sn	21 31 20.2	-1.2
BTLC	Betulia, Santa	0.44	336	*e*P	Pn	21 31 04.6	+0.3
BTLC				*e*S	Sn	21 31 21.8	-1.0
GIRC	Giron, Santand	0.57	349	*e*P	Pn	21 31 04.9	+0.1
GIRC				*e*S	Sn	21 31 22.8	-0.9
RUSC	La Rusia	0.62	180	*e*P	Pn	21 31 06.0	+0.5
RUSC				*i*		21 31 06.5	
	comp=Z,105nm,0.1s						
RUSC				*e*S	Sn	21 31 24.1	-0.7
BRRC	Barranca, Sant	0.85	313	*e*P	Pn	21 31 06.6	+0.3
BRRC				*e*S	Sn	21 31 25.9	-0.4
BRRC				*i*		21 31 29.0	
	comp=Z,200nm,0.2s						
PAMC	Pamplona, Colo	0.90	25	*e*P	Pn	21 31 07.8	+0.6
PAMC				*e*S	Sn	21 31 27.7	-0.2
GRMC	Gramalote, San	1.23	13	*i* P	Pn	21 31 11.4	+2.0
GRMC				*e*S	Sn	21 31 34.4	+2.6
GRMC				*i*		21 31 35.2	
	comp=Z,66nm,0.4s						
CBRI	Barrientos, No	1.23	13	*e*P	Pn	21 31 10.1	+0.7
CBRI				*e*S	Sn	21 31 31.9	0.0
CBRI				*i*		21 31 33.3	
	comp=Z,76nm,0.4s						
OCAC	Ocana	1.73	352	*e*P	Pn	21 31 14.8	+0.7
OCAC				*e*S	Sn	21 31 40.4	-0.1
OCAC				*i*		21 31 44.0	
	comp=Z,94nm,0.4s						
NORC	Norcasia	2.01	242	*e*P	Pn	21 31 17.0	-0.1
NORC				*e*S	Sn	21 31 44.5	-1.0
ROSC	El Rosal	2.07	216	P	Pn	21 31 20.5	+2.3
	comp=Z,6.8nm,0.3s,baz=309,slow=6.2,SNR=9.8						
ROSC				S	Sn	21 31 50.3	+3.0
	comp=Z,15nm,0.3s,baz=144,slow=22,SNR=7.6						
ROSC	El Rosal	2.07	216	*e*P	Pn	21 31 19.0	+0.9
ROSC				*e*S	Sn	21 31 46.4	-1.0
ROSC				*i*		21 31 57.6	
	comp=Z,90nm,0.7s						
HELC	Santa Helena	2.45	263	*e*P	Pn	21 31 22.4	0.0
HELC				*e*S	Sn	21 31 54.9	-0.1
HELC				*i*		21 32 05.1	
	comp=Z,78nm,0.4s						
TOLC	Tolima	2.94	229	*e*P	Pn	21 31 29.3	+1.0
PRAC	Prado	3.31	213	*e*P	Pn	21 31 33.5	+0.8
PRAC				*e*S	Sn	21 32 12.9	-0.5
SJAC	San Juan de Ar	3.34	195	*e*P	Pn	21 31 33.1	+0.1
SJAC				*i*		21 32 16.5	
	comp=Z,56nm,0.4s						
YKA	Yellowknife Ar	63.56	340	P	P	21 40 52.0	-0.2
	comp=Z,0.4nm,0.5s,baz=132,slow=6.7,SNR=13						
ASAR	Alice Springs	148.96	234	PKPbc	PKPbc	21 50 07.8	-1.1
	comp=Z,0.5nm,0.5s,baz=121,slow=3.6,SNR=8.4						
WRA	Warramunga Arr	150.22	241	PKPbc	PKPbc	21 50 11.0	-1.0
	comp=Z,0.5nm,0.3s,baz=106,slow=3.1,SNR=19						

NIED ***06*** *21:31:00, 23.°20N×121.°60E, h29km, Mw4.4 Best double couple: M₀4.47000×10¹⁵ NP1:φs320.00000°, δ45.00000°, λ33.00000°. NP2:φs205.00000°, δ67.00000°, λ130.00000°.*
BJI ***06*** *21:31:47.5, 23.°24N×121.°40E, h6km, mb4.2/28, mB4.4/21, ML4.4/8, Ms4.3/29, Ms7 4.2/25*
JMA ***06*** *21:31:48.2±0.2, 23.°19N×121.°60E, h2km±2km, M4.2*
ISCJB ***06*** *21:31:49.8±0.3, 23.°16N±0.°01×121.°54E±0.°01, h24km±2km, mb4.3/46, MS3.7/17, Error ellipse: s-maj=2.5km s-min=2.0km az=149.5*
NEIC ***06*** *21:31:49.3±0.8, 23.°21N×121.°54E, h9km±5km, mb4.4/24, ML4.7(TAP), Error ellipse: s-maj=6.6km s-min=4.5km az=102.0*
NEIC Recorded [4 TAP] in Taitung and [3 TAP] in Hualien.
TAP ***06*** *21:31:50.7, 23.°23N×121.°43E, h23km, ML4.7, B*
IDC ***06*** *21:31:54.5±4.3, 23.°09N×121.°53E, h54km±41km, mb3.8/22, mb1 4.0/24, mb1mx3.8/48, mbtmp4.1/24, ML3.6/2, MS3.6/16, Ms1 3.6/16, ms1mx3.4/41, Error ellipse: s-maj=18.5km s-min=10.1km az=73.0*
ISC 06 21:31:51.6±0.7, 23.°17N±0.°02×121.°54E±0.°02, h25km±4km, n188, σ1§90/239, mb4.3/46, MS3.7/17, 38C-8D, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHKT	Chengkung	0.17	245	⇑*i*P	Pb	21 31 55.9	-1.1
	baz=191						
CHKT				*e*S	Sb	21 31 59.3	-1.3
	baz=191						
TWF1	Yuli	0.28	309	⇑*i*P	Pb	21 31 56.3	-2.1
	baz=311						
YULB	Yu-li	0.31	315	*e*Pg	Pb	21 31 56.4	-2.4
EHY	Hungye	0.39	329	⇑*i*P	Pb	21 31 57.6	-2.4
	baz=330						
ELDTW	Lidau	0.48	272	⇑*i*P	Pb	21 31 58.6	-3.0
	baz=264						
TTN	Taitung	0.55	221	⇓*i*P	Pb	21 32 02.0	-0.7
	baz=207						
TWG	Pinlang	0.55	231	⇓*i*P	Pb	21 32 00.6	-2.1
	baz=217						
TWG	Pinlang	0.55	231	*e*Pg	Pb	21 32 00.3	-2.5
TWG				*e*Sg	Sb	21 32 00.4	-10
YUS	Yu-Shan	0.62	300	⇑*i*P	Pb	21 32 01.5	-2.8
	baz=301						
ESL	Shilin	0.65	352	⇑P	Pb	21 32 01.7	-2.6
	baz=351						
ESF	Shoufeng Towns	0.69	358	*e*P	Pb	21 32 03.9	-1.2
	baz=354						
STYT	Tauyuan	0.72	269	⇑*i*P	Pb	21 32 02.8	-2.7
	baz=258						
STYT				S	Sb	21 32 11.3	-3.8
	baz=258						
ALS	Alishan	0.75	297	⇑*i*P	Pb	21 32 03.8	-2.5
	baz=296						
ECL	Taimali	0.79	223	⇓*i*P	Pb	21 32 03.7	-2.9
	baz=214						
HWA	Hwalien	0.80	4	*e*P	Pb	21 32 05.2	-1.8
	baz=359						
SSLB	Suanglung	0.81	319	*e*Pg	Pb	21 32 03.9	-3.3
TPUB	Ta-pu	0.84	279	*e*Pg	Pb	21 32 05.1	-2.5
TPUB				*e*Sg	Sb	21 32 16.6	-2.0
WTP	Ta-pu	0.85	275	⇑*i*P	Pb	21 32 05.6	-2.2
	baz=271						
SGST	Jiashian	0.88	264	⇑*i*P	Pb	21 32 06.4	-2.0
	baz=259						
SGST				S	Sb	21 32 17.4	-2.3
	baz=259						
CHN4	Tsaushan	0.89	282	⇑*i*P	Pb	21 32 06.2	-2.1
	baz=279						
CHN5	Tsauling	0.90	298	⇑*i*P	Pb	21 32 06.4	-2.1
	baz=298						
TWD	Chiawan	0.90	3	*e*P	Pb	21 32 06.1	-2.6
	baz=358						
TWD				*e*S	Sn	21 32 20.6	-0.4
	baz=358						
SMLT	Sun Moon Lake	0.92	321	⇑*i*P	Pb	21 32 06.3	-2.7
	baz=330						
SMLT				*e*S	Sb	21 32 19.4	-1.4
	baz=330						
CHN1	Nanshi	0.93	271	⇑*i*P	Pb	21 32 07.2	-1.9
	baz=267						
CHN1				S	Sb	21 32 18.9	-2.1
	baz=267						
SSD	Sandimen	0.94	243	*e*P	Pb	21 32 06.5	-2.8
	baz=232						
TYC	Yuchr	0.96	320	⇑*i*P	Pb	21 32 07.0	-2.6
	baz=332						
TYC				*e*S	Sb	21 32 19.9	-1.9
	baz=332						
TWK	Hsinying	0.97	276	⇑*i*P	Pb	21 32 07.7	-2.1
	baz=272						
TWK				S	Sb	21 32 20.6	-1.7
	baz=272						
NACB	Ninganchiao	1.00	3	*e*Pg	Pn	21 32 06.8	-3.2
WHF	Hehuan Shan	1.00	346	⇑*i*P	Pb	21 32 07.5	-3.0
	baz=3.0						
WHF				*e*S	Sb	21 32 20.0	-3.4
	baz=3.0						
TAW	Tawu	1.00	216	⇓*i*P	Pn	21 32 07.5	-2.6
	baz=207						
TAW				*e*S	Sb	21 32 19.9	-3.3
	baz=207						
EAST	Anshuo	1.01	219	⇓*i*P	Pn	21 32 07.6	-2.6
	baz=211						
WGK	Gukeng	1.03	300	⇑*i*P	Pn	21 32 08.9	-1.6
	baz=300						
WGK				*e*S	Sb	21 32 22.4	-1.6
	baz=300						
CHN2	Minshiung	1.04	290	⇑*i*P	Pn	21 32 09.3	-1.3
	baz=289						
CHN2				*e*S	Sb	21 32 22.7	-1.5
	baz=289						
WNT	Mingjian	1.05	312	⇑*i*P	Pn	21 32 09.4	-1.3
	baz=314						
WNT				S	Sb	21 32 22.8	-1.7
	baz=314						
SGLT	Jiouru	1.06	245	*e*P	Pn	21 32 10.1	-0.8
	baz=239						
CHY	Chiayi	1.07	288	⇑*i*P	Pn	21 32 09.7	-1.4
	baz=286						
CHY				S	Sb	21 32 23.1	-2.1
	baz=286						
CHN3	Shinhua	1.08	265	⇑*i*P	Pn	21 32 11.2	0.0
	baz=271						
CHN3				S	Sn	21 32 26.1	+0.7
	baz=271						
TWM1	Shoushan	1.08	251	⇑*e*P	Pn	21 32 11.2	-0.1
	baz=246						
TWM1				*e*S	Sn	21 32 27.2	+1.7
	baz=246						
TWT	Tachien	1.12	343	⇑*i*P	Pn	21 32 10.1	-1.9
	baz=335						
LAY	Lan-yu	1.13	179	⇑*i*P	Pn	21 32 10.2	-1.7
	baz=163						
LAY				*e*S	Sb	21 32 24.3	-2.5
	baz=163						
SCZT	Fangliau	1.16	227	*e*P	Pn	21 32 10.9	-1.4
	baz=214						
TAI1	Yung-k'ang	1.21	264	*e*P	Pn	21 32 12.8	-0.1
	baz=269						
TAI1				*e*S	Sn	21 32 28.4	-0.2
	baz=269						
CHN8	Yiju	1.23	278	⇑*i*P

	baz=6.0						
YHNB	Yeheng	1.50	354	*e*Pn	Pn	21 32 15.3	-1.7
NSK	Sanguang	1.50	354	⇑P	Pn	21 32 15.8	-1.3
	baz=12						
NSTT	Nanjuang	1.53	341	⇑P	Pn	21 32 17.1	-0.3
	baz=345						
TWE	Neicheng	1.54	4	*e*P	Pn	21 32 15.8	-1.8
	baz=9.0						
ILA	Ilan	1.60	7	*e*P	Pn	21 32 18.0	-0.3
	baz=12						
EGS		1.70	12	*e*P	Pn	21 32 19.2	-0.5
	baz=4.0						
HSN	Hsinchu	1.70	342	*e*P	Pb	21 32 21.1	-1.2
	baz=346						
WDGT	Dungji	1.73	273	⇑*i*P	Pn	21 32 18.4	-1.7
	baz=271						
WDGT				*e*S	Sn	21 32 38.6	-2.7
	baz=271						
TATO	Taipei	1.79	359	*e*Pn	Pn	21 32 19.7	-1.3
JYNG	Yonagunijimaku	1.81	45	P	Pn	21 32 21.0	-0.2
JYNG				*e*S	Sn	21 32 43.1	-0.3
TAP1	Taipei	1.86	360	*e*P	Pn	21 32 23.2	+1.3
	baz=19						
TAP	Taipei	1.86	359	*e*P	Pb	21 32 23.4	-1.5
	baz=19						
YOJ	Yonaguni jima	1.86	46	P	Pn	21 32 22.0	+0.1
YOJ				S	Sn	21 32 45.2	+0.5
YOJ	Yonaguni jima	1.86	46	⇓*e*P	Pn	21 32 21.5	-0.4
	baz=53						
YOJ				*e*S	Sn	21 32 43.6	-1.0
	baz=53						
YOJ	Yonaguni jima	1.86	46	*e*Pn	Pn	21 32 21.5	-0.4
PNG	Penghu	1.86	283	⇑P	Pn	21 32 20.0	-1.9
	baz=281						
PNG				*e*S	Sn	21 32 41.5	-3.2
	baz=281						
TWB1	Santiao Chiao	1.87	13	*e*P	Pn	21 32 22.1	0.0
	baz=5.0						
NWF	Wu-fen Shan	1.90	7	*e*P	Pn	21 32 22.2	-0.3
	baz=10.0						
TWS1	Kuangyinshan	1.92	357	*e*P	Pn	21 32 22.8	0.0
	baz=16						
TWY	Chenhua	2.09	2	*e*P	Pn	21 32 24.3	-0.8
	baz=5.0						
HATJ	Hateruma jima	2.26	67	P	Pn	21 32 27.2	-0.2
HATJ				S	Sn	21 32 54.7	+0.3
IRIF	Iriomote-Funau	2.32	60	P	Pn	21 32 28.3	+0.1
IRIF				*e*S	Sn	21 32 56.6	+0.7
PCYT	Pengchaiyu	2.49	11	*e*P	Pn	21 32 30.8	+0.2
	baz=13						
JKRS	Kuro-shima	2.50	64	P	Pn	21 32 30.8	+0.1
JKRS				*e*S	Sn	21 33 00.6	+0.2
JIJ	Ishigaki jima	2.67	63	P	Pn	21 32 32.5	-0.5
JIJ				S	Sn	21 33 03.5	-1.0
JISG	Ishigakijimahi	2.90	60	P	Pn	21 32 35.7	-0.5
JISG				S	Sn	21 33 09.1	-1.2
KNM	Kinmen	3.10	294	*e*P	Pn	21 32 38.8	-0.2
	baz=291						
QZH	Quanzhou	3.22	304	⇑*i*Pn	Pn	21 32 33.7	-6.9
QZH				Sn	Sn	21 33 07.4	-11
QZH				smax	smax		
	comp=N,1μm,1.0s						
QZH				smax	smax		
	comp=E,1μm,0.8s						
QZH				LR	LR		
	comp=Z,5μm,17.8s						
JTJ	Tarama	3.24	63	P	Pn	21 32 41.1	+0.2
JTJ				S	Sn	21 33 18.6	-0.2
JIRB	Irabujima	3.71	63	P	Pn	21 32 46.9	-0.5
JIRB				S	Sn	21 33 29.5	-0.8
JMJ	Miyako jima 2	3.80	64	P	Pn	21 32 48.8	+0.2
JMJ				S	Sn	21 33 32.8	+0.2
JMJ	Miyako jima 2	3.80	64	*e*P	Pn	21 32 48.1	-0.5
	baz=70						
JIKM	Ikemajima	3.81	62	P	Pn	21 32 48.4	-0.4
JIKM				*e*S	Sn	21 33 31.9	-0.9
JOGS	Gusukube	3.88	65	P	Pn	21 32 49.9	+0.3
JOGS				*e*S	Sn	21 33 35.5	+1.1
PIP	Pasuquin	4.90	190	⇓*e*P	Pn	21 33 03.5	-0.2
SGCP	Mt. Cagua	4.93	174	*e*P	Pn	21 33 04.7	+0.6
APYP	Conner	5.29	183	*e*P	Pn	21 33 10.9	+1.8
ABRA	Dolores	5.55	188	*e*P	Pn	21 33 13.9	+1.2
JKE	Kume jima 2	5.71	56	P	Pn	21 33 13.7	-1.2
JKE				*e*S	Sn	21 34 18.0	-1.6
JJT2	Tamagusuku 2	6.38	61	P	Pn	21 33 25.7	+1.7
BOLP	Bolinao	6.93	193	*e*P	Pn	21 33 33.6	+2.0
JIH	Iheya	6.98	55	*e*S	Sn	21 34 48.4	-2.5
JOW	Kunigami	7.12	58	P	Pn	21 33 31.9	-2.3
JOW	Kunigami	7.12	58	*e*P	Pn	21 33 33.5	-0.7
	baz=65						
JOW	Kunigami	7.12	58	*e*Pn	Pn	21 33 32.9	-1.2
BALP	Baler	7.39	180	*e*P	Pn	21 33 39.8	+1.8
JOKE	Okinoerabujima	7.61	55	P	Pn	21 33 38.1	-2.9
JAMN	Amaminishikomi	8.54	52	P	Pn	21 33 50.0	-3.7
JAM	Amami Oshima	8.95	53	P	Pn	21 33 57.1	-2.2
WHN	Wuhan	9.75	320	⇑P	Pn	21 34 08.4	-1.8
WHN				S	Sn	21 35 57.2	-1.7
WHN				LR	LR		
	comp=Z,3μm,14.7s						
KSAR	Wonju Array Be	15.23	20	P	Pn	21 35 27.2	+2.2
KSRS	Korea Array	15.26	20	P	Pn	21 35 27.2	+1.9
	0.2nm,0.3s,baz=201,slow=12,SNR=6.6						
KSRS				LR	LR	21 42 07.2	
	comp=Z,186nm,18.7s,baz=206,slow=40						
XAN	Xi'an	15.47	317	P	Pn	21 35 28.0	-0.3
XAN				S	Sn	21 38 22.0	+3.0
XAN				pmax	pmax		
	comp=Z,5.0nm,1.0s						
XAN				pmax	pmax		
	comp=Z,68nm,6.9s						
XAN				LR	LR		
	comp=N,520nm,13.5s						
XAN				LR	LR		
	comp=E,760nm,13.5s						
XAN				LR	LR		
	comp=Z,1μm,13.5s						
KMI	Kunming	17.27	280	P	Pn	21 35 51.4	0.0
KMI				pP	P	21 35 54.7	+2.0
KMI				S	Sn	21 39 00.3	-2.6
KMI				SS	SnSn	21 39 23.2	+6.9
KMI				pmax	pmax		
	comp=Z,9.0nm,0.5s						
KMI				pmax	pmax		
	comp=Z,100nm,6.0s						
KMI				LR	LR		
	comp=N,150nm,15.2s						
KMI				LR	LR		
	comp=E,560nm,13.5s						
KMI				LR	LR		
	comp=Z,650nm,14.7s						
BJI	Beijing	17.42	346	P	P	21 35 53.9	-0.1
BJI				S	Sn	21 39 07.7	+1.7
BJI				pmax	pmax		
	comp=Z,7.0nm,1.4s						
BJI				pmax	pmax		
	comp=Z,58nm,4.4s						
BJI				LR	LR		
	comp=N,180nm,14.4s						
BJI				LR	LR		
	comp=E,430nm,17.8s						
BJI				LR	LR		
	comp=Z,180nm,16.6s						
CD2	Chengdu	17.60	300	P	Pn	21 35 53.4	-1.9
CD2				sP	P	21 35 59.4	+3.3
CD2				PP	sP	21 36 09.5	+3.3
CD2				S	Sn	21 39 09.8	-0.9
CD2				SS	SnSn	21 39 30.4	+6.2
CD2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
CD2				LR	LR		
	comp=E,800nm,8.4s						
CD2				LR	LR		
	comp=Z,880nm,15.6s						
KKM	Kota Kinabalu	17.79	198	*e*Pn	P	21 35 59.9	+1.6
	11nm,0.8s						
MYLDM	Lahad Datu	18.13	190	*e*Pn	P	21 36 04.1	+2.1
	27nm,1.0s						
HHC	Hu-ho-hao-te	19.52	337	*e*P	Pn	21 36 22.0	+3.4
HHC				pP	sP	21 36 26.7	-0.6
HHC				S	Sn	21 39 58.1	+1.0
HHC				SS	SnSn	21 40 21.9	+10
HHC				pmax	pmax		
	comp=Z,43nm,0.8s						
HHC				pmax	pmax		
	comp=Z,68nm,3.7s						
HHC				LR	LR		
	comp=N,360nm,11.5s						
HHC				LR	LR		
	comp=E,580nm,10.5s						
HHC				LR	LR		
	comp=Z,550nm,11.5s						
MJAR	Matsushiro Arr	19.62	43	P	Pn	21 36 19.3	-0.5
	0.2nm,0.3s,baz=236,slow=8.7,SNR=5.7						
MJAR				LR	LR	21 45 19.2	
	comp=Z,27nm,18.8s,baz=225,slow=41						
LZH	Lanzhou	20.01	314	*e*P	P	21 36 21.7	-1.0
LZH				pP	Pn	21 36 24.8	+0.3
LZH				sP	pP	21 36 26.1	-3.5
LZH				PP	PnPn	21 36 40.5	+1.5
LZH				*e*S	S	21 39 54.2	-12
LZH				sS	Sn	21 40 05.0	-4.0
LZH				SS	SnSn	21 40 26.2	+2.6
LZH				pmax	pmax		
	comp=Z,18nm,1.0s						
LZH				pmax	pmax		
	comp=Z,120nm,4.3s						
LZH				LR	LR		
	comp=N,640nm,12.5s						
LZH				LR	LR		
	comp=E,780nm,11.0s						
LZH				LR	LR		
	comp=Z,990nm,13.2s						
CHTO	Chiang Mai	21.53	263	*e*P	P	21 36 40.0	+0.9
	9.2nm,1.1s						
CM01	Chiang Mai Arr	21.62	262	*e*P	P	21 36 40.4	+0.4
CMAR	Chiang Mai Arr	21.63	262	P	P	21 36 40.4	+0.3
	1.6nm,0.8s,baz=81,slow=7.7,SNR=6.3						
SBUM	Sibu	22.49	205	*e*P	P	21 36 49.7	+0.3
	5.7nm,0.7s						
USRK	Ussuriysk Ar.	22.67	20	P	P	21 36 52.5	+1.5
	2.3nm,0.8s,baz=213,slow=10,SNR=3.9						
GUMO	Guam	24.07	109	LR	LR	21 46 01.7	
	comp=Z,62nm,20.4s,baz=72,slow=35						
KSM	Kuching	24.17	208	*e*P	P	21 37 05.5	-0.5
	48nm,2.0s						
GTA	Gaotai	24.53	316	*e*P	P	21 37 13.7	+4.3
GTA				pP	pP	21 37 16.8	0.0
GTA				sP	sP	21 37 19.8	-0.1
GTA				S	S	21 41 35.8	+7.1
GTA				sS	sS	21 41 43.0	+2.1
GTA				SS	SnSn	21 42 36.4	+22
GTA				pmax	pmax		
	comp=Z,2.0nm,1.0s						
GTA				pmax	pmax		
	comp=Z,76nm,5.0s						
GTA				LR	LR		
	comp=N,350nm,14.3s						
GTA				LR	LR		
	comp=E,470nm,15.2s						
GTA				LR	LR		
	comp=Z,670nm,14.7s						
SHL	Shillong	27.09	281	*e*P	P	21 37 33.0	+0.2
IPM	Ipoh	27.17	230	*e*P	P	21 37 34.1	+0.8
	comp=Z,14nm,1.5s						
ULN	Ulaanbaatar	27.22	338	*e*P	P	21 37 33.3	-0.3
	comp=Z,4.3nm,1.0s						
KLR	Kul'dur	27.23	15	P	P	21 37 33.5	0.0
	comp=Z,1.7nm,0.7s,baz=337,slow=0.6,SNR=6.2						
SONM	Songino Array	27.42	338	P	P	21 37 35.9	+0.5
	comp=Z,0.6nm,0.4s,baz=155,slow=11,SNR=4.2						
SONM				LR	LR	21 49 57.2	
	comp=Z,300nm,18.4s,baz=132,slow=39						
SONA1	Songino Array	27.43	338	*e*P	P	21 37 35.0	-0.5
KAPI	Kappang	28.07	184	P	P	21 37 40.1	-1.2
	comp=Z,2.3nm,0.6s,baz=90,slow=16,SNR=2.3						
KAPI	Kappang	28.07	184	*e*P	P	21 37 42.6	+1.3
	comp=Z,3.3nm,1.1s						
LHMI	Lhok Sumawe	29.68	237	*e*P	P	21 37 56.9	+1.3
	comp=Z,97nm,1.2s						
PSI	Prapat	29.83	231	*e*P	P	21 37 56.5	-0.6
	comp=Z,9.6nm,1.2s						
TLY	Talaya	31.63	339	*e*P	P	21 38 11.1	-1.5
	comp=Z,6.9nm,1.6s						
WMQ	Urumqi	34.59	315	*e*P	P	21 38 40.0	+1.4
WMQ				S	S	21 44 04.5	-1.9
WMQ				SS	SnSn	21 46 17.2	-1.8
WMQ				ScS	ScS	21 48 56.5	-3.0
WMQ				LR	LR		
	comp=Z,110nm,11.8s						
WMQ				LR	LR		
	comp=Z,160nm,14.0s						
WMQ				LR	LR		
	comp=Z,63nm,12.8s						
MK01	Makanchi Array	39.27	317	*e*P	P	21 39 17.0	-1.3
MK31	Makanchi Array	39.29	317	*e*P	P	21 39 19.5	+1.1
MKAR	Makanchi Array	39.29	317	P	P	21 39 20.3	+1.9
	comp=Z,1.7nm,0.7s,baz=99,slow=9.1,SNR=25						
MKAR				LR	LR	21 55 55.1	
	comp=Z,41nm,19.0s,baz=110,slow=37						
MKAR	Makanchi Array	39.29	317	*e*P	P	21 39 19.5	+1.1
PETK	Petropavlovsk-	40.53	33	LR	LR	21 57 35.7	
	comp=Z,63nm,19.2s,baz=225,slow=38						
PMG	Port Moresby	40.95	139	LR	LR	21 55 48.1	
	comp=Z,88nm,18.4s,baz=246,slow=35						
PET	Petropavlovsk	40.97	34	*e*P	P	21 39 31.4	-0.8
	comp=Z,14nm,0.9s						
FITZ	Fitzroy Crossi	41.22	174	P	P	21 39 32.4	-2.2
	comp=Z,1.1nm,0.3s,baz=359,slow=10,SNR=9.2						
ZALV	Zalesovo Beam	41.27	328	P	P	21 39 34.0	-0.7
	comp=Z,2.4nm,0.5s,baz=123,slow=8.0,SNR=11						
ZALV				LR	LR	21 56 49.1	
	comp=Z,89nm,18.8s,baz=70,slow=36						
COEN	Coen	42.55	148	*e*P	P	21 39 46.4	+0.9
	comp=Z,57nm,1.6s						
TKM2	Tokmak 2	42.64	309	*e*P	P	21 39 46.2	-0.1
	comp=Z,3.4nm,1.0s						
COCO	West Island	42.66	217	*e*P	P	21 39 47.0	+0.5
	comp=Z,279nm,1.3s						
KURK	Kurchatov	43.07	321	*e*P	P	21 39 49.0	-0.4
	comp=Z,7.9nm,0.9s						
KURBB	Kurchatov Arra	43.09	321	P	P	21 39 49.5	-0.1
	comp=Z,2.2nm,0.8s,baz=112,slow=8.0,SNR=10.0						
AAK	Ala-Archa	43.38	308	*e*P	P	21 39 51.6	-0.6
	comp=Z,1.6nm,0.8s						
WRA	Warramunga Arr	44.64	163	P	P	21 40 00.1	-2.1
	comp=Z,2.4nm,0.5s,baz=344,slow=8.8,SNR=35						
KKAR	Karatay Array	46.34	308	*e*P	P	21 40 14.9	-0.8
KBL	Kabul	46.89	296	*e*P	P	21 40 20.3	0.0
	comp=Z,22nm,1.7s						
AS31	Alice Springs	48.09	165	*e*P	P	21 40 28.6	-0.7
	comp=Z,1.0nm,0.6s						
ASAR	Alice Springs	48.09	165	P	P	21 40 29.1	-0.3
	comp=Z,1.1nm,0.3s,baz=338,slow=6.9,SNR=27						
AS01	Alice Springs	48.09	165	*e*P	P	21 40 28.9	-0.6
TIXI	Tiksi	48.68	3	*e*P	P	21 40 32.9	-0.5
	comp=Z,2.2nm,0.8s						
BRVK	Borovoye	48.73	321	*e*P	P	21 40 33.8	-0.3
	comp=Z,4.1nm,1.0s						
CTA	Charters Tower	49.30	149	P	P	21 40 38.5	-0.2
	comp=Z,2.0nm,0.4s,baz=356,slow=7.9,SNR=4.2						
ZRNK	Zerenda	49.44	321	*e*P	P	21 40 38.5	-1.0
	comp=Z,14nm,1.8s						
NRIK	Noril'sk	50.46	345	P	P	21 40 47.5	+0.5
	comp=Z,2.6nm,0.5s,baz=127,slow=5.3,SNR=3.6						
NRIK				LR	LR	22 04 00.6	
	comp=Z,66nm,20.1s,baz=112,slow=38						
BILL	Bilibino	52.52	19	*e*P	P	21 41 02.3	-0.1
	comp=Z,3.9nm,0.9s						
ABKAR	Akbulak array	54.38	315	*e*P	P	21 41 17.8	+1.5
GEYT	Alibeck	55.59	301	P	P	21 41 25.4	+0.1
	comp=Z,2.3nm,0.8s,baz=50,slow=4.6,SNR=8.1						
GEYT				LR	LR	22 09 26.7	
	comp=Z,105nm,18.6s,baz=100,slow=40						
ARU	Arti	56.11	323	LR	LR	22 07 32.4	
	comp=Z,50nm,18.3s,baz=118,slow=38						
ARU	Arti	56.11	323	*e*P	P	21 41 28.3	-0.3
	comp=Z,8.4nm,1.1s						
BBOO	Buckleboo	57.37	165	*e*P	P	21 41 39.0	+1.1
	comp=Z,34nm,1.5s						
STKA	Stephens Creek	58.01	160	P	P	21 41 41.5	-0.9
	comp=Z,4.6nm,0.7s,baz=326,slow=6.8,SNR=14						
STKA	Stephens Creek	58.01	160	*e*P	P	21 41 41.5	-0.9
	comp=Z,1.0nm,0.7s						
GAMB	Gambell	59.21	28	*e*P	P	21 41 49.1	-1.3
	comp=Z,59nm,0.6s						
KBZ	Khabaz	66.36	309	P	P	21 42 38.5	+0.2
	comp=Z,3.8nm,0.9s,baz=8.7,slow=3.9,SNR=5.0						
CAST	Castle Rocks	67.94	29	*e*P	P	21 42 49.2	+1.1
MLY	Manley	68.30	27	*e*P	P	21 42 52.5	+2.2
MDM	Murphy Dome	69.36	27	*e*P	P	21 42 58.8	+1.9
RND	Reindeer	69.38	29	*e*P	P	21 42 57.5	+0.4
ILAR	Eielson Array	69.96	27	P	P	21 43 01.6	+1.0
	comp=Z,0.5nm,0.7s,baz=286,slow=8.4,SNR=5.9						
ILAR				LR	LR	22 18 22.0	
	comp=Z,23nm,19.2s,baz=297,slow=40						
ARCES	ARCESS Array B	70.59	338	LR	LR	22 17 03.2	
	comp=Z,40nm,18.3s,baz=69,slow=38						
FINES	FINESS Array B	72.48	330	P	P	21 43 14.0	-1.9
	comp=Z,2.4nm,0.7s,baz=44,slow=6.1,SNR=12						
FINES				LR	LR	22 17 27.3	
	comp=Z,64nm,19.7s,baz=104,slow=38						
BRTR	Keskin Array B	74.03	307	P	P	21 43 24.6	-1.1
	comp=Z,1.1nm,0.9s,baz=110,slow=7.1,SNR=3.9						
NB2	NORSAR Subarra	79.27	332	P	P	21 43 52.4	-2.3
	comp=Z,2.4nm,1.1s,baz=60,slow=5.3						
NOA	NORSAR Array B	79.27	332	P	P	21 43 54.4	-0.3
	comp=Z,1.2nm,0.7s,baz=58,slow=5.5,SNR=6.1						
NOA				LR	LR	22 23 01.4	
	comp=Z,62nm,19.0s,baz=60,slow=39						
DLBC	Dease Lake	79.65	30	LR	LR	22 18 42.9	
	comp=Z,21nm,19.1s,baz=27,slow=35						
YKA	Yellowknife Ar	83.77	23	P	P	21 44 17.6	-0.8
	comp=Z,0.6nm,0.7s,baz=315,slow=4.9,SNR=10						
GERES	GERESS Array B	83.83	321	P	P	21 44 18.1	-1.0
	comp=Z,0.7nm,0.7s,baz=60,slow=7.9,SNR=8.3						

NIED ***06*** *21:35:00, 38.°20N×144.°00E, h5km, Mw3.5 Best double couple: M0 1.80000×10^14 NP1:φs 200.00000°, δ42.00000°, λ-86.00000°. NP2:φs 15.00000°, δ48.00000°, λ-94.00000°.*

JMA 06 21:35:58.8±0.2, 38.°24N×144.°02E, h50km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	2.02	295	P	Pn	21 36 31.4	+1.0
JIO	Ouri	2.11	277	P	Pn	21 36 32.8	+1.2
JIO				S	Sn	21 36 57.4	+0.7
JMK	Ichinoseki	2.31	289	P	Pn	21 36 35.7	+1.4
JMK				*e*S	Sn	21 37 02.7	+1.2
JOM	Ohasama	2.46	301	P	Pn	21 36 38.1	+1.7
JOM				S	Sn	21 37 07.4	+2.1
JMM	Marumori	2.58	263	P	Pn	21 36 39.0	+1.0
JMM				S	Sn	21 37 08.4	+0.3
JFK	Kawauchi	2.64	252	P	Pn	21 36 39.4	+0.5
JANG	Nango	2.88	318	P	Pn	21 36 43.2	+1.0
JANG				*e*S	Sn	21 37 16.0	+0.3
JYK	Kaneyama	2.95	284	P	Pn	21 36 43.3	+0.2
JFT	Otama	3.00	257	P	Pn	21 36 45.9	+2.0
JFT				S	Sn	21 37 20.0	+1.4
JAG	Ashikaga	4.07	245	P	Pn	21 36 59.4	+0.9
JAG				S	Sn	21 37 45.4	+0.6
JRY	Ryogami san	4.65	243	P	Pn	21 37 07.7	+1.2
JRY				*e*S	Sn	21 37 57.8	-1.5

NEIC ***06*** *21:46:28.0±1.1, 25.°28S×177.°40W, h134km±10km, mb4.6/22, Error ellipse: s-maj=10.1km s-min=7.6km az=123.0*

IDC ***06*** *21:46:28.4±3.9, 25.°30S×177.°49W, h132km±35km, mb4.0/14, mb1 4.2/16, mb1mx4.0/37, mbtmp4.5/16, MS2.9/1, Ms1 2.9/1, ms1mx2.4/27, Error ellipse: s-maj=20.6km s-min=15.1km az=140.0*

ISCJB ***06*** *21:46:29.5±0.3, 25.°38S±0.°05×177.°50W±0.°08, h160km, mb4.4/36, Error ellipse: s-maj=10.8km s-min=6.8km az=8.7*

ISC 06 21:46:30.7±0.5, 25.°43S±0.°06×177.°4W±0.°1, h160km, n51, σ18.16/49, mb4.3/36, 1D, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	Raoul Island	3.83	186	S	Sn	21 48 14.9	+0.3
	139nm,0.3s,baz=87,slow=22,SNR=2.0						
RAO	Raoul Island	3.83	186	*e*Pn	Pn	21 47 27.7	-1.3
AFI	Afiamalu	12.63	26	P	Pn	21 49 20.5	-4.4
	4.5nm,0.3s,baz=81,slow=22,SNR=3.9						
AFI				S	Sn	21 51 26.8	-18
	7.2nm,0.3s,baz=44,slow=22,SNR=9.0						
URZ	Urewera	13.60	199	P	Pn	21 49 36.9	-0.2
	1.8nm,0.3s,baz=275,slow=4.5,SNR=8.8						
URZ				S	Sn	21 51 55.1	-13
	1.9nm,0.3s,baz=255,slow=23,SNR=9.6						
FUNA	Funafuti	17.11	349	*e*P	P	21 50 17.8	-1.8
	85nm,0.5s						
RPZ	Rata Peaks	20.52	204	P	P	21 50 52.7	-3.7
	5.8nm,0.8s,baz=86,slow=14,SNR=3.0						
RPZ				S	S	21 54 26.6	-11
	2.4nm,0.4s,baz=27,slow=19,SNR=1.7						
PPT	Papeete	27.04	79	LR	LR	22 02 08.1	
	comp=Z,21nm,18.0s,baz=181,slow=35						
EIDS	Eidsvold	28.41	263	*e*P	P	21 52 11.2	+0.9
	14nm,0.7s						
CTA	Charters Tower	33.83	272	P	P	21 52 59.2	+1.3
	9.1nm,0.8s,baz=104,slow=11,SNR=8.3						
CTAO	Charters Tower	33.83	272	*e*P	P	21 52 58.4	+0.4
	48nm,0.7s						
STKA	Stephens Creek	36.36	250	P	P	21 53 20.0	+0.6
	4.1nm,0.5s,baz=98,slow=12,SNR=25						
PMG	Port Moresby	37.19	289	P	P	21 53 27.3	+0.7
	13nm,0.7s,baz=158,slow=8.9,SNR=4.2						
PMG	Port Moresby	37.19	289	*e*P	P	21 53 26.1	-0.5
	9.8nm,0.6s						
ASAR	Alice Springs	44.10	262	P	P	21 54 23.5	+0.2
	4.9nm,0.7s,baz=91,slow=7.9,SNR=29						
WRAB	Tennant Creek	44.63	267	*e*P	P	21 54 27.6	+0.1
	3.0nm,0.6s						
WRA	Warramunga Arr	44.64	267	P	P	21 54 26.5	-1.0
	3.9nm,0.7s,baz=104,slow=7.9,SNR=26						
WRA				PcP	PcP	21 56 07.5	-0.1
	2.9nm,1.0s,baz=103,slow=3.8,SNR=6.1						
SBA	Scott Base	53.02	184	*e*P	P	21 55 33.2	+2.7
	11nm,1.1s						
FITZ	Fitzroy Crossi	53.04	266	P	P	21 55 31.3	-0.2
	3.6nm,0.8s,baz=132,slow=11,SNR=3.6						
VNDA	Vanda	53.08	186	P	P	21 55 33.2	+2.3
	1.9nm,0.8s,baz=18,slow=7.7,SNR=6.2						
GUMO	Guam	53.41	312	*e*P	P	21 55 33.5	-0.7
	57nm,0.9s						
CASY	Casey	59.78	206	*e*P	P	21 56 18.4	-0.1
	5.2nm,0.9s						
QSPA	South Pole Qui	64.67	180	*e*P	P	21 56 52.3	+1.1
	40nm,1.1s						
KKM	Kota Kinabalu	71.57	286	*e*P	P	21 57 35.5	+0.5
	1.5nm,0.4s						
KSM	Kuching	74.66	279	*e*P	P	21 57 52.2	-0.8
	4.4nm,1.0s						
MAW	Mawson	77.13	200	P	P	21 58 07.2	+1.2
	7.5nm,0.6s,baz=131,slow=7.0,SNR=7.7						
TATO	Taipei	77.43	306	*e*P	P	21 58 08.6	+0.2
	13nm,0.5s						
COCO	West Island	81.06	261	*e*P	P	21 58 29.4	+1.1
	253nm,0.6s						
PETK	Petropavlovsk-	81.14	345	P	P	21 58 29.2	+1.3
	2.4nm,0.6s,baz=111,slow=7.9,SNR=2.9						
SYO	Syowa Base	82.06	193	⇓*e*P	P	21

YAK	Yakutsk	96.85	338	eP		P	21 59 42.4 -0.4
	12nm,0.5s						
BVAR	Borovoye Array	123.12	318	PKP		PKPdf	22 05 07.5 -0.3
	1.0nm,0.8s,baz=49,slow=2.7,SNR=5.9						
ARCES	ARCESS Array B	133.84	349	PKP		PKPdf	22 05 28.3 +0.5
	5.7nm,1.1s,baz=349,slow=3.8,SNR=5.3						
NB2	NORSAR Subarra	143.91	353	PKP		PKPab	22 05 43.8 -0.2
	comp=Z,0.8nm,0.8s,baz=16,slow=3.2						
NOA	NORSAR Array B	143.91	353	PKP		PKPab	22 05 44.7 +0.7
	comp=Z,0.2nm,0.4s,baz=54,slow=1.9,SNR=4.3						
BRTR	Keskin Array B	150.35	306	PKPbc		PKPbc	22 06 03.1 -0.2
	comp=Z,1.5nm,0.7s,baz=135,slow=4.8,SNR=6.4						

IDC 06 21:51:05.3±1.2, 12°.42N×141°.80E, h0km, mb3.9/7, mb1 4.1/7, mb1mx3.7/47, mbtmp3.9/7, Error ellipse: s-maj=43.8km s-min=26.9km az=92.0, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	32.99	193	P	P	21 57 42.2	0.0
	1.9nm,0.7s,baz=13,slow=9.7,SNR=13						
MKAR	Makanchi Array	60.27	317	P	P	22 01 16.3	+0.5
	0.7nm,0.9s,baz=107,slow=6.5,SNR=3.7						
ZALV	Zalesovo Beam	60.85	325	P	P	22 01 19.5	0.0
	0.7nm,0.5s,baz=126,slow=7.3,SNR=3.3						
BVAR	Borovoye Array	69.00	322	P	P	22 02 13.0	+0.5
	2.0nm,0.6s,baz=106,slow=7.3,SNR=14						
ILAR	Eielson Array	70.90	25	P	P	22 02 23.9	-0.2
	0.5nm,0.6s,baz=254,slow=7.0,SNR=5.7						
YKA	Yellowknife Ar	85.26	27	P	P	22 03 44.5	+0.8
	0.2nm,0.8s,baz=290,slow=5.0,SNR=3.2						
FINES	FINESS Array B	90.93	334	P	P	22 04 08.9	-2.0
	1.0nm,0.7s,baz=86,slow=6.1,SNR=7.5						

*ISCJB **06** 21:58:20.2±0.4, 26°.55N±0°.04×103°.17E±0°.04, h10km, mb3.9/13, MS2.9/2, Error ellipse: s-maj=6.2km s-min=5.2km az=41.6*
*IDC **06** 21:58:21.4±0.8, 26°.80N×103°.32E, h0km, mb3.9/10, mb1 4.0/11, mb1mx3.7/48, mbtmp3.8/11, MS3.0/2, Ms1 3.0/2, ms1mx2.5/36, Error ellipse: s-maj=33.4km s-min=16.6km az=66.0*
*NEIC **06** 21:58:22.5±0.6, 26°.55N×103°.07E, h10km, mb4.1/2, Error ellipse: s-maj=14.4km s-min=9.6km az=93.0*
*BJI **06** 21:58:23.1, 26°.64N×102°.94E, h12km, mb4.2/2, ML3.7/11*
ISC 06 21:58:22.9±0.6, 26°.62N±0°.04×103°.02E±0°.05, h10km, n24, σ2§14/36, mb4.0/13, Yunnan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KMI	Kunming	1.51	190	Pg	Pn	21 58 49.8	-0.4
KMI				Sg	Sn	21 59 08.6	-1.5
KMI				smax	smax		
	comp=N,740nm,0.9s						
KMI				smax	smax		
	comp=E,1μm,0.7s						
KMI	Kunming	1.51	190	Pg	Pn	21 58 49.8	-0.4
KMI				Sg	Sn	21 59 08.6	-1.5
GYA	Guiyang	3.27	92	Pn	Pb	21 59 19.9	-1.3
GYA				Pg	Pn	21 59 21.1	+6.7
GYA				Sn	Sn	21 59 55.8	+2.3
GYA				Sg	Sb	22 00 04.2	+3.1
GYA				smax	smax		
	comp=N,150nm,0.8s						
GYA				smax	smax		
	comp=E,120nm,0.8s						
GYA	Guiyang	3.27	92	Pn	Pb	21 59 19.9	-1.3
GYA				Pg	Pn	21 59 21.1	+6.7
GYA				Sn	Sn	21 59 55.8	+2.3
GYA				Sg	Sb	22 00 04.2	+3.1
CD2	Chengdu	4.33	8	Pn	Pn	21 59 30.8	+2.0
CD2				Pg	Pg	21 59 43.4	-2.4
CD2				Sn	Sn	22 00 23.5	+4.1
CD2				Sg	Sg	22 00 39.7	-2.2
CD2				smax	smax		
	comp=E,240nm,0.8s						
CD2	Chengdu	4.33	8	Pn	Pn	21 59 30.8	+2.0
CD2				Pg	Pg	21 59 43.4	-2.4
CD2				Sn	Sn	22 00 23.5	+4.1
CD2				Sg	Sg	22 00 39.7	-2.2
ENH	Enshi	6.76	56	ePn	Pn	22 00 02.1	-0.2
	19nm,0.7s						
ENH				eSn	Sn	22 01 18.9	-0.4
CMAR	Chiang Mai Arr	8.95	206	Pn	Pn	22 00 37.1	+4.7
	baz=19,slow=11						
XAN	Xi'an	8.98	33	P	Pn	22 00 30.8	-2.0
LSA	Lhasa	10.91	289	ePn	Pn	22 01 01.3	+1.7
	2.9nm,0.7s						
WMQ	Urumqi	21.18	328	eP	P	22 03 06.8	-1.7
WMQ				pmax	pmax		
	comp=Z,6.0nm,0.8s						
SONM	Songino Array	21.34	6	P	P	22 03 09.5	-0.8
	1.1nm,0.8s,baz=194,slow=9.8,SNR=3.5						
ULN	Ulaanbaatar	21.45	7	eP	P	22 03 11.5	+0.1
	3.4nm,1.0s						
MKAR	Makanchi Array	25.96	326	P	P	22 03 57.1	+1.5
	0.4nm,0.5s,baz=139,slow=11,SNR=4.5						
MKAR				LR	LR	22 15 45.4	
	comp=Z,19nm,19.5s,baz=146,slow=40						
AAK	Ala-Archa	28.21	312	LR	LR	22 17 00.3	
	comp=Z,47nm,18.1s,baz=186,slow=40						
KURK	Kurchatov	30.43	329	eP	P	22 04 36.9	+1.5
	5.5nm,0.8s						
ZALV	Zalesovo Beam	30.44	339	P	P	22 04 34.8	-0.6
	1.1nm,0.7s,baz=141,slow=7.6,SNR=4.3						
GEYT	Alibeck	39.27	298	P	P	22 05 54.1	+2.2
	1.5nm,0.7s,baz=137,slow=7.3,SNR=4.9						
WRA	Warramunga Arr	55.37	144	P	P	22 07 57.0	-0.3
	1.9nm,0.7s,baz=332,slow=8.1,SNR=18						
ASAR	Alice Springs	58.23	146	P	P	22 08 17.9	+0.2
	1.4nm,0.7s,baz=326,slow=6.9,SNR=9.2						
FINES	FINESS Array B	60.79	328	P	P	22 08 33.3	-1.5
	1.6nm,0.9s,baz=40,slow=7.3,SNR=3.7						
ARCES	ARCESS Array B	60.97	337	P	P	22 08 34.0	-2.0
	2.3nm,0.8s,baz=94,slow=8.2,SNR=3.1						
INK	Inuvik	76.69	19	P	P	22 10 13.2	-0.6
	1.3nm,0.8s,baz=270,slow=3.0						
YKA	Yellowknife Ar	86.25	17	P	P	22 11 03.4	-1.0
	0.6nm,0.8s,baz=326,slow=4.8,SNR=7.9						

*NIED **06** 21:58:00, 43°.20N×146°.30E, h50km, Mw3.6 Best double couple: M0=2.78000×10^14 NP1:φ0=282.00000°, δ19.00000°, λ85.00000°. NP2:φ0=106.00000°, δ71.00000°, λ92.00000°.*
*IDC **06** 21:58:29.9±2.4, 43°.04N×146°.45E, h0km, mb3.5/5, mb1 3.7/6, mb1mx3.4/49, mbtmp3.5/6, ML3.1/1, Error ellipse: s-maj=68.7km s-min=25.6km az=153.0*
*JMA **06** 21:58:36.7±0.1, 43°.20N×146°.27E, h49km±1km, M3.5*
JMA Felt I J1.
*SKHL **06** 21:58:37.2±0.5, 43°.20N×146°.30E, h30km±1km, mb4.7/4*
ISC 06 21:58:34.0±1.6, 43°.10N±0°.08×146°.32E±0°.05, h25km±11km, n26, σ1§13/27, mb3.5/6, 3D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NEM2	Nemuro 2	0.50	303	P	Pn	21 58 46.9	+1.4
NEM2				eS	Sn	21 58 54.2	+0.9
SHO	Shikotan	0.86	26	↓iP	Pb	21 58 50.6	+0.3
SHO				AMB	AMB	21 58 50.8	
	410nm,0.3s						
SHO				i S	Sb	21 59 00.6	-0.8
SHO				A	A	21 59 03.1	
	830nm,0.3s						
SHO				A	A	21 59 03.1	
	2μm,0.3s						
YUK	Yuzh-Kuril'sk	1.00	341	↓iP	Pn	21 58 52.7	+0.3
YUK				AMB	AMB	21 58 53.8	
	60nm,0.3s						
YUK				AMB	AMB	21 58 53.8	
	150nm,0.3s						
YUK				AMB	AMB	21 58 53.8	
	710nm,0.3s						
YUK				i S	Sb	21 59 04.7	-0.6
YUK				A	A	21 59 08.2	
	740nm,0.3s						
YUK				A	A	21 59 08.2	
	2μm,0.3s						
JAK	Akkeshi	1.19	266	P	Pb	21 58 56.8	+0.9
JAK				eS	Sb	21 59 11.6	+0.8
JRA	Rausu	1.21	315	P	Pn	21 58 56.3	+1.0
JRA				eS	Sn	21 59 10.5	-0.4
JNK	Nakash	1.26	293	P	Pb	21 58 57.0	-0.1
JNK				eS	Sn	21 59 12.0	-0.2
JOB	Onbets	1.83	265	P	Pb	21 59 05.8	-1.0
JAR	Ashorobuto	1.87	277	P	Pb	21 59 06.3	-1.2
JTKR	Abashiri--Toko	1.96	297	P	Pb	21 59 07.7	-1.2
JTKR				eS	Sn	21 59 30.5	+1.2
KUR	Kuril'sk	2.41	27	↓iP	Pn	21 59 13.5	+1.7
KUR				AMB	AMB	21 59 14.7	
	60nm,0.3s						
KUR				i S	Sn	21 59 40.4	-0.1
KUR				A	A	21 59 41.8	
	60nm,0.2s						
KUR				A	A	21 59 41.8	
	150nm,0.2s						
ASAJ	Asahikawa	2.89	292	Sn	Sb	21 59 58.5	-1.2
YSS	Yuzh-Sakhalins	4.61	328	eP	Pn	21 59 45.0	+3.0
YSS				AMB	AMB	21 59 46.3	
	30nm,0.3s						
TYV	Tymovskoe	8.16	343	eP	Pn	22 00 34.7	+3.9
MJAR	Matsushiro Arr	9.04	226	Pn	Pn	22 00 42.0	-0.8
	0.2nm,0.3s,baz=31,slow=14,SNR=2.1						
SONM	Songino Array	28.17	294	P	P	22 04 24.3	-0.1
	0.3nm,0.3s,baz=65,slow=8.1,SNR=2.3						
H11N2	WAKE ISLAND Hy	29.02	137	T	T	22 35 24.2	
	baz=328,slow=76,SNR=180						
H11N1	WAKE ISLAND Hy	29.03	137	T	T	22 35 23.7	
	baz=328,slow=76,SNR=110						
H11N3	WAKE ISLAND Hy	29.04	137	T	T	22 35 24.1	
	baz=328,slow=76,SNR=80						
H11S1	WAKE ISLAND Hy	29.96	139	T	T	22 36 34.0	
	baz=330,slow=76,SNR=221						
H11S3	WAKE ISLAND Hy	29.97	139	T	T	22 36 30.3	
	baz=330,slow=76,SNR=102						
H11S2	WAKE ISLAND Hy	29.98	139	T	T	22 36 34.9	
	baz=330,slow=76,SNR=129						
ILAR	Eielson Array	42.38	36	P	P	22 06 25.4	-0.4
	0.2nm,0.4s,baz=273,slow=7.8,SNR=3.0						
MKAR	Makanchi Array	44.35	298	P	P	22 06 43.1	+1.1
	0.3nm,0.7s,baz=87,slow=7.4,SNR=2.3						
INK	Inuvik	47.27	30	P	P	22 07 04.0	-0.6
	0.7nm,0.4s,baz=273,slow=6.6,SNR=4.8						
YKA	Yellowknife Ar	56.68	33	P	P	22 08 14.4	-0.4
	0.4nm,0.7s,baz=299,slow=7.4,SNR=4.5						
NB2	NORSAR Subarra	69.99	339	P	P	22 09 41.6	-1.4
	comp=Z,0.8nm,0.5s,baz=32,slow=6.5						

*ISCJB **06** 22:06:41.7±0.5, 51°.46N±0°.03×16°.14E±0°.03, h0km, Error ellipse: s-maj=4.1km s-min=2.5km az=16.7*
*IPEC **06** 22:06:42.2±0.4, 51°.56N×16°.18E, h0km±1km, ML2.3/3, Error ellipse: s-maj=3.8km s-min=1.8km az=60.0*
*CSEM **06** 22:06:43.9±0.5, 51°.45N×16°.17E, h2km, ML3.3/7, Error ellipse: s-maj=7.0km s-min=5.4km az=158.0*
*WAR **06** 22:06:43.5, 51°.52N×16°.11E, h1km, Mw2.6*
*VIE **06** 22:06:47.1±0.9, 51°.22N×16°.14E, h0km, mb2.0/5, ml2.8/6, Error ellipse: s-maj=8.6km s-min=5.5km az=118.0, Suspected Mining induced.*
ISC 06 22:06:42.3±0.9, 51°.55N±0°.03×16°.10E±0°.02, h0km, n43, σ1§11/84, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	Ksiaz	0.71	170	ePG	Pg	22 06 56.4	+0.5
KSP				eSg	Sg	22 07 06.0	+0.9
KSP	Ksiaz	0.71	170	ePg	Pg	22 06 56.4	+0.5
KSP				eSg	Sg	22 07 06.0	+0.9
UPC	Upice	1.04	183	ePG	Pg	22 07 02.6	+0.4
UPC				eSG	Sg	22 07 15.7	+0.1
	comp=Z,79nm,0.3s						
DPC	Dobruska-Polom	1.20	173	ePG	Pg	22 07 05.3	0.0
DPC				eSG	Sg	22 07 20.3	-0.6
	comp=Z,40nm,0.3s						
PVCC	Panska Ves	1.41	224	ePG	Pb	22 07 09.6	+0.3
PVCC				eSG	Sn	22 07 28.5	+0.2
	comp=Z,155nm,0.2s						
BRG	Berggiesshubel	1.52	244	PN	Pn	22 07 10.5	-0.2
BRG				PG	Pg	22 07 12.3	+1.0
BRG				SG	Sn	22 07 32.3	+1.2
	59nm,0.4s						
KRLC	Kraliky	1.53	163	ePG	Pn	22 07 10.7	-0.2
KRLC				eSG	Sg	22 07 30.4	-1.1
GOPC	GO Pecny, Ondr	1.83	208	ePG	Pb	22 07 16.8	+0.1
GOPC				eSG	Sb	22 07 40.5	+0.3
	comp=Z,14nm,0.2s						
PRU	Pruhonice	1.85	213	ePG	Pb	22 07 16.9	0.0
PRU				eSG	Sb	22 07 40.7	+0.2
	comp=Z,41nm,0.4s						
CLL	Collm	1.96	264	i Pn	Pn	22 07 16.3	-0.4
	comp=Z,5.0nm,0.9s						
CLL				ePg	Pg	22 07 20.0	+0.3
CLL				i		22 07 23.6	
CLL				i Sg	Sg	22 07 46.5	+1.5
	comp=Z,13nm,0.4s						
MORC	Moravsky Berou	1.99	152	ePn	Pn	22 07 17.0	-0.2
MORC				eSg	Sb	22 07 44.3	-0.5
	comp=Z,25nm,0.3s						
OKC	Ostrava-Krasne	2.15	142	ePG	Pg	22 07 22.9	-0.5
OKC				eSG	Sb	22 07 49.6	+0.4
	comp=Z,25nm,0.5s						
VRAC	Vranov	2.26	172	ePn	Pn	22 07 20.8	-0.1
VRAC				eSg	Sb	22 07 52.9	+0.4
	comp=Z,21nm,0.4s						
KRUC	Moravsky	2.49	176	ePn	Pn	22 07 24.1	0.0
KRUC				eSg	Sb	22 08 00.5	+1.4
	comp=Z,12nm,0.3s						
NKC	Novy Kostel	2.66	242	ePN	Pn	22 07 27.0	+0.6
NKC				ePG	Pg	22 07 33.4	+0.2
NKC				eSG	Sg	22 08 09.0	+1.3
	comp=Z,41nm,0.3s						
OJC	Ojcow	2.69	118	ePg	Pg	22 07 33.3	-0.5
OJC				eSg	Sg	22 08 08.6	0.0
OJC	Ojcow	2.69	118	ePg	Pg	22 07 33.3	-0.5
OJC				eSg	Sg	22 08 08.6	0.0
OJC	Ojcow	2.69	118	ePg	Pg	22 07 33.3	-0.5
OJC				eSg	Sg	22 08 08.6	-0.1
KHC	Kasperske Hory	2.91	215	ePN	Pn	22 07 29.9	+0.1
KHC				ePG	Pb	22 07 35.6	+0.6
KHC				eSN	Sn	22 08 04.8	-0.7
KHC				eSG	Sg	22 08 13.6	-2.0
	comp=Z,7.3nm,0.3s						
SMOL	Smolenice	3.15	164	eSg	Sg	22 08 23.2	-0.3
SMOL	Smolenice	3.15	164	eSG	Sg	22 08 23.2	-0.3
LANS	Liptovska Anna	3.22	137	ePg	Pg	22 07 43.6	-0.5
LANS				eSg	Sg	22 08 25.5	-0.3
LANS	Liptovska Anna	3.22	137	ePG	Pg	22 07 43.5	-0.5
LANS				eSG	Sg	22 08 25.5	-0.3
ZST	Bratislava	3.41	169	eSg	Sg	22 08 30.5	-1.4
ZST	Bratislava	3.41	169	eSG	Sg	22 08 30.5	-1.4
ZST				eLG	Lg	22 08 37.4	
NIE	Niedzica	3.42	127	eP	Pg	22 07 47.2	-0.6
NIE				eS	Sg	22 08 32.2	0.0
NIE	Niedzica	3.42	127	eP	Pg	22 07 47.2	-0.6
NIE				eS	Sg	22 08 32.2	0.0
VYHS	Vyhne	3.53	149	ePg	Pg	22 07 48.7	-1.1
VYHS				eSg	Sg	22 08 36.3	+0.8
VYHS	Vyhne	3.53	149	e	Pn	22 07 38.0	-0.3
VYHS	Vyhne	3.53	149	ePG	Pg	22 07 48.7	-1.1
VYHS				eSG	Sg	22 08 36.3	+0.8
VYHS				eLG	Lg	22 08 39.2	
CONA	Conrad Observa	3.62	183	i Pn	Pn	22 07 40.9	+1.2
	comp=Z,0.4nm,0.1s						
CONA				eSg	Sg	22 08 36.6	-2.0
	comp=Z,12nm,0.3s						
CONA	Conrad Observa	3.62	183	Pn	Pn	22 07 40.9	+1.2
	comp=Z,0.4nm,0.1s						
CONA				Sg	Sg	22 08 36.6	-2.0
	comp=Z,12nm,0.3s						
BSD	Bornholm Skovb	3.65	349	i P	Pn	22 07 39.7	-0.2
BSD				i S	Sn	22 08 19.8	-3.7
BSD	Bornholm Skovb	3.65	349	i P	Pn	22 07 39.7	-0.2
MOA	Molln	3.89	199	i Pn	Pn	22 07 43.7	+0.4
	comp=Z,1.1nm,0.1s						
MOA				eSg	Sg	22 08 45.3	-1.7
	comp=Z,8.6nm,0.3s						
MOA	Molln	3.89	199	Pn	Pn	22 07 43.7	+0.4
	comp=Z,1.1nm,0.1s						
MOA				Sg	Sg	22 08 45.3	-1.7
	comp=Z,8.6nm,0.3s						
STHS	Stebnicka Huta	3.91	121	ePg	Pg	22 07 57.6	+0.4
STHS				eSg	Sg	22 08 50.7	+2.8
STHS	Stebnicka Huta	3.91	121	e	Pn	22 07 44.9	+1.3
STHS	Stebnicka Huta	3.91	121	ePG	Pg	22 07 57.6	+0.4
STHS				eSG	Sg	22 08 50.7	+2.8
STHS				eLG	Lg	22 09 02.1	
ARSA	Arzberg	4.32	185	ePn	Pn	22 07 50.5	+1.4
	comp=Z,0.7nm,0.2s						
ARSA				Sg	Sg	22 08 58.0	-2.8
	comp=Z,10.0nm,0.5s						
ARSA	Arzberg	4.32	185	Pn	Pn	22 07 50.5	+1.4
	comp=Z,0.7nm,0.2s						
ARSA				Sg	Sg	22 08 58.0	-2.8
	comp=Z,10.0nm,0.5s						
KBA	Koelnbreinsper	4.82	203	i Pn	Pn	22 07 56.9	+0.7
	comp=Z,0.8nm,0.2s						
KBA				eSg	Sg	22 09 16.3	-0.7
	comp=Z,3.5nm,0.4s						
KBA	Koelnbreinsper	4.82	203	Pn	Pn	22 07 56.9	+0.7
	comp=Z,0.8nm,0.2s						
KBA				Sg	Sg	22 09 16.3	-0.7
	comp=Z,3.5nm,0.4s						

JMA 06 22:29:40.4±0.2, 38°.92N×142°.47E, h30km±3km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.64	285	P	Pb	22 29 53.0	-0.2
MIYJ	Miyakonagasawa	0.83	323	P	Pn	22 29 55.3	-0.7
JMK	Ichinoseki	0.98	272	P	Pn	22 29 58.2	+0.2
JMK				S	Sb	22 30 11.1	-0.2
JIO	Ouri	0.99	242	P	Pn	22 29 58.0	-0.3
JOM	Ohasama	1.07	301	P	Pn	22 29 59.5	+0.2
JOM				S	Sn	22 30 13.1	-0.1
JKZ	Kuzumaki	1.38	321	P	Pn	22 30 04.5	+0.8
JKZ				S	Sn	22 30 21.0	0.0
JRG	Rokugo	1.50	289	P	Pb	22 30 06.8	-0.9
JRG				S	Sb	22 30 26.3	-0.1
JOU	Okura	1.52	249	P	Pn	22 30 06.7	+1.2
JANG	Nango	1.63	333	P	Pn	22 30 08.4	+1.4
JANG				S	Sn	22 30 28.1	+1.1
JYK	Kaneyama	1.65	271	P	Pb	22 30 08.7	-1.4
JYK				eS	Sb	22 30 30.0	-0.4
JMM	Marumori	1.69	232	P	Pb	22 30 10.2	-0.6
JMM	Marumori	1.69	232	S	Pb	22 30 10.1	-0.7
JYS	Shiratake	2.01	250	eS	Sb	22 30 39.5	-1.4

JMA 06 22:29:43.7, 37°.04N×140°.68E, h11km±1km, M2.3, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.11	57	P	Pg	22 29 46.6	-0.1
ONAJ				S	Sg	22 29 48.6	-0.2
JFK	Kawauchi	0.36	25	P	Pg	22 29 50.7	-0.2
JFK				S	Sg	22 29 55.7	-0.1
JHO	Hitachi	0.44	192	P	Pg	22 29 52.1	-0.2
JHO				S	Sg	22 29 58.1	0.0
JFT	Otama	0.55	330	P	Pg	22 29 54.6	+0.2
JFT				S	Sg	22 30 01.8	+0.1
JSB	Shiboa	0.61	264	S	Sg	22 30 04.1	+0.4
JMM	Marumori	0.83	6	P	Pg	22 29 58.9	-0.8
JFY	Yanaizu	0.86	295	P	Pg	22 30 00.1	-0.2
JFY				S	Sg	22 30 11.0	-0.5
JYT	Yasato	0.90	206	P	Pg	22 30 00.5	-0.5
JYT				S	Sg	22 30 12.1	-0.7

IDC 06 22:31:18.7±8.4, 31°.75S×179°.58W, h319km±93km, mb3.2/3, mb1 3.4/4, mb1mx3.1/36, mbtmp3.9/4, Error ellipse: s-maj=98.9km s-min=37.1km az=178.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	Urewera	7.04	202	P	Pn	22 33 02.7	+1.9
	0.5nm,0.3s,baz=285,slow=5.0,SNR=6.4						
URZ				S	S	22 34 21.1	-2.4
	1.7nm,0.3s,baz=253,slow=20,SNR=13						
STKA	Stephens Creek	32.88	259	P	P	22 37 25.3	+1.6
	2.1nm,0.4s,baz=104,slow=11,SNR=9.0						
ASAR	Alice Springs	41.71	269	P	P	22 38 36.9	-0.5
	0.5nm,0.6s,baz=105,slow=7.5,SNR=6.7						
WRA	Warramunga Arr	42.83	274	P	P	22 38 45.4	-0.9
	0.5nm,0.3s,baz=111,slow=8.1,SNR=17						
FINES	FINESS Array B	145.92	338	PKPbc	PKPdf	22 50 19.2	+0.4
	0.7nm,0.4s,baz=53,slow=2.8,SNR=13						

*IDC **06** 22:34:52.6±0.8, 7°.41S×153°.57E, h0km, mb4.3/17, mb1 4.5/20, mb1mx4.3/47, mbtmp4.3/20, ML4.3/2, MS3.5/13, Ms1 3.6/13, ms1mx3.2/40, Error ellipse: s-maj=23.8km s-min=14.4km az=121.0*
*ISCJB **06** 22:34:57.1±0.3, 7°.45S±0°.04×153°.44E±0°.05, h33km, mb4.7/58, MS3.6/12, Error ellipse: s-maj=6.9km s-min=6.0km az=38.2*
*NEIC **06** 22:34:60.0±0.8, 7°.46S×153°.40E, h44km±8km, mb4.8/31, Error ellipse: s-maj=6.9km s-min=5.9km az=108.0*
*DJA **06** 22:35:04.7±2.7, 8°.5±10°.×15°.3E±1°.8, h66km±18km, M5.0/13, mb4.7/13, mB5.3/4, MLv5.3/1, Mw(mB)4.8/4*
ISC 06 22:34:59.1±0.4, 7°.45S±0°.06×153°.46E±0°.06, h35km, n86, σ1§50/83, mb4.7/58, MS3.7/12, 1C, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RABL	Rabaul	3.48	338	ePn	Pn	22 35 48.4	-2.5
PMG	Port Moresby	6.54	252	Pn	Pn	22 36 33.7	+0.8
	5.8nm,0.3s,baz=75,slow=5.4,SNR=16						
PMG				Sn	Sn	22 37 51.0	+4.8
	5.3nm,0.3s,baz=64,slow=23,SNR=16						
PMG				LR	LR	22 38 57.3	
	comp=Z,249nm,19.3s,baz=90,slow=37						
HNR	Honiara	6.71	108	LR	LR	22 38 43.4	
	comp=Z,208nm,21.1s,baz=288,slow=35						
MANU	Manus Island	8.11	311	ePn	Pn	22 36 56.1	+1.7
CTA	Charters Tower	14.38	208	Pn	Pn	22 38 18.9	-1.4
	0.7nm,0.3s,baz=28,slow=14,SNR=6.0						
CTAO	Charters Tower	14.38	208	ePn	Pn	22 38 20.9	+0.6
PATS	Pohnpei	14.99	19	ePn	Pn	22 38 31.4	+2.9
	259nm,1.5s						
DZM	Mont Dzumac	19.18	141	P	P	22 39 18.8	-1.3
	1.1nm,0.3s,baz=256,slow=12,SNR=9.0						
DZM				LR	LR	22 45 33.3	
	comp=Z,335nm,18.5s,baz=295,slow=34						
KWAJ	Kwajalein Atol	21.43	41	eP	P	22 39 46.3	+1.9
	386nm,1.5s						
FAKI	Fak Fak	21.60	281	P	P	22 39 45.7	-0.5
	48nm,1.1s						
FAKI	Fak Fak	21.60	281	eP	P	22 39 46.6	+0.4
	35nm,0.9s						
WRAB	Tennant Creek	22.30	234	eP	P	22 39 52.9	-0.9
	27nm,0.8s						
WB2	Warramunga Arr	22.31	234	eP	P	22 39 53.0	-0.8
	31nm,0.9s						
WRA	Warramunga Arr	22.32	234	P	P	22 39 53.2	-0.7
	9.9nm,0.8s,baz=59,slow=11,SNR=47						
WRA				S	S	22 43 53.7	-3.8
	1.3nm,1.1s

FITZ	Fitzroy Crossi	29.08	246	eP	P	22 40 56.5	-0.2
DAV	Davao City (W)	31.33	297	LR	LR	22 54 34.6	
	comp=Z,27nm,18.6s,baz=54,slow=38						
KAPI	Kappang	33.59	272	P	P	22 41 35.4	-1.0
	2.6nm,0.2s,baz=251,slow=3.5,SNR=5.0						
KAPI	Kappang	33.59	272	eP	P	22 41 35.1	-1.4
	19nm,1.1s						
AFI	Afiamalu	34.73	104	eP	P	22 41 46.6	+0.2
	139nm,1.9s						
MYLDM	Lahad Datu	37.07	289	eP	P	22 42 05.9	-0.4
	15nm,1.1s						
BBKI	Banjar Baru	38.64	274	P	P	22 42 20.3	+0.7
	28nm,1.1s,2μm						
OXZ	Oxford	39.29	158	eP	P	22 42 24.2	-0.4
	61nm,1.5s						
PCJI	Pacitan	41.89	266	P	P	22 42 46.9	+0.4
	33nm,1.4s						
JOW	Kunigami	41.92	325	eP	P	22 42 46.4	-0.2
	53nm,1.3s						
SBUM	Sibu	42.31	282	eP	P	22 42 49.3	-0.7
	6.4nm,1.1s						
JHJ2	Mitsune	42.37	343	eP	P	22 42 51.0	+0.9
	3μm,2.0s						
TWG	Pinlang	43.70	314	eP	P	22 43 00.5	-0.6
	36nm,0.9s						
JOHN	Johnston Islan	43.78	56	eP	P	22 43 02.9	+1.1
	208nm,1.0s						
YULB	Yu-li	43.91	315	eP	P	22 43 02.5	-0.3
	18nm,1.4s						
KSM	Kuching	43.95	280	eP	P	22 43 02.1	-1.2
	11nm,1.1s						
TPUB	Ta-pu	44.32	314	eP	P	22 43 05.3	-0.7
	6.5nm,0.8s						
SSLB	Suanglung	44.40	315	eP	P	22 43 05.7	-1.0
	6.0nm,1.0s						
MJAR	Matsushiro Arr	46.04	343	LR	LR	23 01 22.7	
	comp=Z,16nm,19.6s,baz=200,slow=35						
WHN	Wuhan	53.22	317	⇑P	P	22 44 08.7	-5.6
ENH	Enshi	56.44	314	eP	P	22 44 37.2	-0.5
	7.8nm,0.7s						
CN2	Changchun	56.97	336	eP	P	22 44 45.9	+4.8
CN2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
XAN	Xi'an	58.99	317	P	P	22 44 55.0	-0.6
XAN				pP	pP	22 45 05.2	-1.0
XAN				pmax	pmax		
	comp=Z,6.0nm,0.9s						
KMI	Kunming	59.02	305	P	P	22 44 58.5	+2.3
KMI				S	S	22 53 00.8	-0.1
KMI				pmax	pmax		
	comp=Z,6.0nm,0.7s						
KMI				pmax	pmax		
	comp=Z,50nm,6.7s						
KMI				LR	LR		
	comp=N,59nm,18.3s						
KMI				LR	LR		
	comp=E,42nm,18.9s						
KMI				LR	LR		
	comp=Z,62nm,18.9s						
KLR	Kul'dur	59.55	344	P	P	22 44 57.2	-1.9
	comp=Z,1.3nm,0.4s,baz=216,slow=6.9,SNR=5.4						
CM01	Chiang Mai Arr	59.59	296	eP	P	22 44 59.9	0.0
CMAR	Chiang Mai Arr	59.61	296	P	P	22 45 00.2	0.0
	comp=Z,1.7nm,0.8s,baz=118,slow=5.4,SNR=11						
CHTO	Chiang Mai	59.74	297	eP	P	22 45 01.7	+0.7
	comp=Z,6.4nm,1.3s						
PETK	Petropavlovsk-	60.43	3	P	P	22 45 04.0	-1.0
	comp=Z,2.0nm,0.4s,baz=162,slow=6.0,SNR=2.9						
PETK				LR	LR	23 07 29.2	
	comp=Z,18nm,21.1s,baz=173,slow=32						
CD2	Chengdu	60.96	311	P	P	22 45 08.3	-0.9
CD2				pmax	pmax		
	comp=Z,2.0nm,0.6s						
HHC	Hu-ho-hao-te	61.57	325	eP	P	22 45 13.6	+0.4
HHC				sP	sP	22 45 31.4	+3.4
HHC				S	S	22 52 31.3	-62
HHC				sS	sS	22 52 52.5	-58
HHC				ScS	SKKSac	22 54 59.3	-3.0
HHC				pmax	pmax		
	comp=Z,90nm,1.2s						
HHC				pmax	pmax		
	comp=Z,220nm,6.7s						
HHC				LR	LR		
	comp=N,510nm,16.9s						
HHC				LR	LR		
	comp=E,500nm,16.7s						
HHC				LR	LR		
	comp=Z,550nm,16.7s						
LZH	Lanzhou	63.58	316	eP	P	22 45 30.5	+3.7
LZH				pP	sP	22 45 42.7	+1.1
LZH				sP	pP	22 45 48.3	+11
LZH				pmax	pmax		
	comp=Z,18nm,1.0s						
LZH				pmax	pmax		
	comp=Z,130nm,5.0s						
GTA	Gaotai	68.04	318	eP	P	22 46 03.2	+7.8
GTA				pP	sP	22 46 14.3	+4.0
GTA				sP	PcP	22 46 19.3	-2.1
GTA				pmax	pmax		
	comp=Z,2.0nm,0.8s						
ULN	Ulaanbaatar	68.58	328	eP	P	22 45 59.0	+0.4
	comp=Z,2.4nm,0.9s						
SONM	Songino Array	68.90	328	P	P	22 45 59.9	-0.7
	comp=Z,2.1nm,0.8s,baz=145,slow=6.4,SNR=7.9						
SONA1	Songino Array	68.91	328	eP	P	22 46 00.5	-0.2
SEY	Seymchan	70.18	359	P	P	22 46 07.8	-0.2
	comp=Z,0.6nm,0.2s,baz=348,slow=5.9,SNR=3.9						
LSA	Lhasa	70.28	305	eP	P	22 46 10.1	+0.2
	comp=Z,4.7nm,0.7s						
BILL	Bilibino	75.85	5	eP	P	22 46 41.4	0.0
	comp=Z,8.2nm,0.9s						
WMQ	Urumqi	78.12	318	eP	P	22 46 55.2	+0.3
TRF	Thorofare Moun	82.38	22	eP	P	22 47 18.5	+1.0
	comp=Z,0.4nm,0.6s						
MKAR	Makanchi Array	82.74	319	P	P	22 47 18.1	-1.4
	comp=Z,0.9nm,0.6s,baz=97,slow=6.7,SNR=7.5						
ZALV	Zalesovo Beam	83.71	326	P	P	22 47 22.6	-1.7
	comp=Z,0.9nm,0.5s,baz=122,slow=5.4,SNR=4.7						
IL1	Eielson Array	84.35	22	eP	P	22 47 25.4	-2.0
ILAR	Eielson Array	84.35	22	P	P	22 47 25.1	-2.3
	comp=Z,1.0nm,0.9s,baz=265,slow=5.1,SNR=6.6						
ILAR				LR	LR	23 19 12.0	
	comp=Z,54nm,21.9s,baz=235,slow=32						
DOT	Dot Lake	84.88	23	eP	P	22 47 30.1	+0.1
	comp=Z,7.4nm,0.8s						
KSH	Kashi	85.15	311	eP	P	22 47 33.6	+1.5
KSH	Kashi	85.15	311	S	S	22 57 58.1	-1.7
KSH				pmax	pmax		
	comp=Z,56nm,3.5s						
KSH				LR	LR		
	comp=N,150nm,7.4s						
KSH				LR	LR		
	comp=E,140nm,7.2s						
KSH				LR	LR		
	comp=Z,110nm,5.7s						
TKM2	Tokmak 2	86.23	314	eP	P	22 47 37.3	-0.3
	comp=Z,5.4nm,1.0s						
KURK	Kurchatov	86.25	322	P	P	22 47 36.1	-1.0
KURBB	Kurchatov Arra	86.28	322	P	P	22 47 36.1	-1.2
	comp=Z,0.4nm,0.2s,baz=294,slow=29,SNR=6.1						
EGAK	Eagle	86.52	23	eP	P	22 47 38.6	+0.5
	comp=Z,6.1nm,1.0s						
AAK	Ala-Archa	86.95	314	P	P	22 47 40.8	-0.3
	comp=Z,2.1nm,0.6s,baz=157,slow=7.2,SNR=6.6						
AAK	Ala-Archa	86.95	314	eP	P	22 47 42.8	+1.7
	comp=Z,6.5nm,1.0s						
EKS2	Erkin-Say	87.47	313	eP	P	22 47 44.4	+0.9
	comp=Z,7.5nm,1.2s						
KKAR	Karatay Array	89.92	313	eP	P	22 47 55.5	+0.6
INK	Inuvik	90.68	21	P	P	22 47 57.1	-0.6
	comp=Z,0.8nm,0.9s,baz=162,slow=2.8,SNR=4.2						
NVAR	Mina Array Bea	93.19	52	LR	LR	23 24 15.4	
	comp=Z,23nm,18.8s,baz=272,slow=32						
YKA	Yellowknife Ar	97.44	28	P	P	22 48 27.3	-1.7
	comp=Z,0.3nm,0.8s,baz=269,slow=4.6,SNR=5.7						
LPIG	La Paz	98.66	67	LR	LR	23 25 02.5	
	comp=Z,15nm,20.7s,baz=109,slow=30						
GERES	GERESS Array B	126.64	328	PKP	PKPdf	22 53 58.1	-0.9
	comp=Z,0.4nm,0.7s,baz=42,slow=1.6,SNR=3.4						

MEX 06 22:37:12.7±0.4, 16.65N×98.91W, h13km±4km, MD3.6, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
PNIG	Pinotepa	0.79	109	eP		Pg	22 37 25.7	-2.3
PNIG					i S	Sg	22 37 35.8	-2.6
TLIG	Tlapa	0.97	20	i P		Pg	22 37 28.3	-3.1
TLIG				eS		Sg	22 37 40.4	-3.6
CAIG	El Cayaco	1.36	287	eP		Pn	22 37 33.6	-3.9
CAIG				eS		Sn	22 37 50.5	-5.0
MEIG	Mezcala	1.44	332	eP		Pn	22 37 35.2	-3.5
MEIG				eS		Sn	22 37 52.9	-4.7
VHO	Vista Hermosa	2.12	78	eP		Pn	22 37 44.5	-3.6
VHO				i S		Sn	22 38 09.5	-5.0
ARIG	Puente Sto Nin	2.13	320	eP		Pn	22 37 45.7	-2.4
ARIG				eS		Sn	22 38 09.4	-5.0

NNC 06 22:37:50.0±1.6, 41.40N×83.63E, h0km, mb3.3, mpv2.9, Error ellipse: s-maj=11.5km s-min=6.9km az=144.0
SOME 06 22:38:00.0, 41.40N×83.07E, h5km

ISC 06 22:37:59.5±2.4, 41.54N±0.08×83.17E±0.09, h10km, n17, σ2.33/31, 5C-4D, Southern Xinjiang

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
KTMS	Ketmen	2.82	313	eP		Pb	22 38 53.0	+2.9
	6.3nm,0.3s							
KTMS				eS		Sg	22 39 31.1	+1.0
	24nm,0.2s							
PDGK	Podgornoye	3.26	304	⇓Pn		Pn	22 38 47.2	-3.4
	2.4nm,0.8s							
PDGK				⇑Pg		Pb	22 38 56.1	-1.3
	1.9nm,0.7s							
PDGK				⇑Sn		Sn	22 39 32.4	+3.0
	3.4nm,0.4s							
PDGK				⇓Lg		Lg	22 39 43.8	
	17nm,0.6s							
UZB	Uzynbulak	3.47	299	eP		Pb	22 39 04.0	+3.0
	1.9nm,0.6s							
UZB				eS		Sg	22 39 49.9	-0.9
	12nm,0.4s							
DJR	Jarkent	3.73	319	eP		Pg	22 39 11.5	+0.5
	4.3nm,0.2s							
DJR				eS		Sg	22 40 03.3	+3.9
	8.1nm,0.5s							
KPKS	Kokpek	3.83	302	eP		Pg	22 39 10.9	-2.0
	6.6nm,0.4s							
KPKS				eS		Sg	22 40 01.7	-0.9
	50nm,0.2s							
SATY	Saty	3.85	295	eP		Pg	22 39 11.3	-1.8
	6.8nm,0.3s							
SATY				eS		Sg	22 40 02.5	-0.5
	24nm,0.8s							
ZHN	Zhinishke	3.87	296	eP		Pg	22 39 11.9	-1.7
	2.4nm,0.4s							
ZHN				eS		Sg	22 40 04.0	+0.3
	5.7nm,0.2s							
KURS	Kuram	4.18	299	eP		Pb	22 39 13.5	+0.4
	6.4nm,0.7s							
KURS				eS		Sb	22 40 06.7	+3.1
	8.4nm,0.7s							
MNBS	Baschi	4.33	307	eP		Pb	22 39 18.5	+2.8
	2.0nm,0.4s							
MNBS				eS		Sg	22 40 15.0	-3.5
	14nm,0.3s							
KAPS	Kapalarasan	4.66	325	eP		Pb	22 39 26.6	+5.3
	2.8nm,0.5s							
KAPS				eS		Sg	22 40 29.4	+0.3
	3.0nm,0.3s							
ARXS	Arharly	4.75	306	eP		Pg	22 39 28.3	-2.1
	2.3nm,0.5s							
ARXS				eS		Sg	22 40 32.4	+0.5
	7.3nm,0.5s							
MDOK	Medeo	4.82	292	eP		Pb	22 39 27.7	+3.6
	3.4nm,1.2s							
MDOK				eS		Sg	22 40 30.4	-3.8
	2.9nm,0.9s							
TNSS	Tian-Shan	4.86	290	eP		Pg	22 39 30.3	-2.2
	3.4nm,1.1s							
TNSS				eS		Sg	22 40 35.3	-0.1
	2.4nm,0.7s							
CHKK	Chushkaly	5.11	299	eP		Pb	22 39 33.4	+4.5
	2.0nm,0.4s							
CHKK				eS		Sg	22 40 40.7	-2.7
	8.9nm,0.4s							
MK31	Makanchi Array	5.29	353	Pn		Pn	22 39 13.7	-4.8
	1.2nm,0.8s,baz=198,slow=11,SNR=7.6							
MK31				⇑Sn		Sn	22 40 18.1	-1.5
	1.9nm,0.8s							
MK31				⇑Lg		Lg	22 40 45.0	
	2.7nm,0.7s,baz=163,slow=32,SNR=4.9							
MAKZ	Makanchi	5.33	351	⇑Pn		Pn	22 39 13.5	-5.6
	2.0nm,0.9s							
MAKZ				⇓Sn		Sn	22 40 18.8	-1.8
	2.2nm,0.8s							
MAKZ				⇓Lg		Lg	22 40 45.1	
	5.3nm,1.2s							
DGS	Degeres	5.74	290	eP		Pg	22 39 47.4	-2.0
	1.2nm,0.5s							
DGS				eS		Sg	22 41 04.1	+0.5
	5.1nm,0.4s							

NIED 06 22:41:00, 36.70N×141.30E, h41km, Mw3.7 Best double couple: M0=3.43000×10^14 NP1:φs=221.00000°, δ=38.00000°, λ=-105.00000°. NP2:φs=60.00000°, δ=54.00000°, λ=-78.00000°.
NEIC 06 22:41:07.9±1.5, 35.70N×142.25E, h45km±11km, mb4.2/8, Error ellipse: s-maj=15.8km s-min=10.3km az=137.0
IDC 06 22:41:09.2±2.6, 36.90N×141.87E, h0km, mb3.8/4, mb1 3.8/6, mb1mx3.4/63, mbtmp3.8/6, ML3.5/2, MS2.9/5, Ms1 2.9/5, ms1mx2.5/40, Error ellipse: s-maj=58.8km s-min=28.6km az=75.0
JMA 06 22:41:16.8±0.1, 36.75N×141.35E, h41km±2km, M3.8

ISC 06 22:41:12.7±1.6, 36.68N±0.04×141.38E±0.06, h18km±6km, n34, σ1.93/36, mb4.0/11, MS3.5/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.63	312	P		Pn	22 41 28.4	+1.6
ONAJ				S		Sn	22 41 36.3	-0.2
JHO	Hitachi	0.66	264	P		Pn	22 41 29.4	+2.2
JHO				S		Sn	22 41 38.3	+1.2
JFK	Kawauchi	0.80	329	P		Pn	22 41 30.6	+1.5
JFK				S		Sn	22 41 40.2	-0.4
JFT	Otama	1.18	315	P		Pg	22 41 37.1	+1.5
JFT				S		Sg	22 41 51.2	+0.1
JMM	Marumori	1.27	339	P		Pg	22 41 37.2	-0.1
JMM				eS		Sb	22 41 52.3	+0.1
JFY	Yanaizu	1.52	299	P		Pg	22 41 42.3	+0.2
JFY				S		Sg	22 42 01.7	-0.3
JAG	Ashikaga	1.57	261	P		Pg	22 41 42.5	-0.5
JAG				S		Sb	22 42 01.2	+0.3
JKT	Katashina	1.72	273	P		Pg	22 41 45.1	-0.7
JKT				S		Sb	22 42 05.6	+0.5
JIO	Ouri	1.77	359	P		Pb	22 41 44.2	-0.5
JIO				S		Sn	22 42 04.7	+0.2
JOU	Okura	1.77	341	P		Pb	22 41 44.8	0.0
JOU				S		Sn	22 42 05.9	+1.2
MJAR	Matsushiro Arr	2.56	268	Pn		Pb	22 41 57.1	-1.0
	6.8nm,0.3s,baz=90,slow=15,SNR=49							
MJAR				Sn		Sb	22 42 29.3	+0.1
	8.6nm,0.3s,baz=355,slow=40,SNR=3.1							
MJAR				LR		LR	22 43 10.0	
	comp=Z,43nm,21.1s,baz=80,slow=41							
MAJO	Matsushiro	2.56	268	ePn		Pb	22 41 57.6	-0.5
MAT	Matsushiro	2.56	268	P		Pb	22 41 57.4	-0.7
MAT				S		Sb	22 42 28.5	-0.8
JHJ	Hachijo jima 2	3.79	201	Pn		Pn	22 42 14.2	+4.0
	9.3nm,0.3s,baz=147,slow=24,SNR=1.3							
JHJ				Sn		Sn	22 42 56.0	+1.7
	20nm,0.3s,baz=86,slow=21,SNR=2.2							
ERM	Erimo	5.50	14	ePn		Pn	22 42 38.7	+5.0
USRK	Ussuriysk Ar.	10.37	319	LR		LR	22 47 42.8	
	comp=Z,32nm,19.4s,baz=253,slow=38							
KSRS	Korea Array	10.78	278	Pn		Pn	22 43 53.8	+7.6
	0.2nm,0.3s,baz=76,slow=26,SNR=2.0							
KSAR	Wonju Array Be	10.81	278	Pn		Pn	22 43 53.8	+7.2
MDJ	Mudanjiang	11.95	315	ePn		Pn	22 44 11.6	+9.5
HIA	Hailar	20.14	315	P		Pn	22 45 50.4	+2.8
	7.0nm,0.5s							
GUMO	Guam	23.21	171	LR		LR	22 55 26.3	
	comp=Z,26nm,20.4s,baz=88,slow=37							
MA2	Magadan	23.70	12	eP		P	22 46 23.3	0.0
	6.1nm,0.5s							
ENH	Enshi	27.28	266	eP		P	22 46 53.8	-2.4
	4.2nm,0.4s							
BILL	Bilibino	34.37	16	eP		P	22 47 56.6	-1.7
	0.8nm,0.4s							
ZALV	Zalesovo Beam	42.13	313	P		P	22 49 04.7	+1.0
	1.0nm,0.5s,baz=108,slow=6.8,SNR=3.1							
LSA	Lhasa	42.22	276	eP		P	22 49 04.2	-1.1
	2.0nm,0.5s							
MKAR	Makanchi Array	44.28	302	P		P	22 49 22.0	+0.7
	0.8nm,0.9s,baz=87,slow=10,SNR=1.6							
KURK	Kurchatov	46.13	308	eP		P	22 49 36.2	+0.4
	1.0nm,0.5s							
PMG	Port Moresby	46.16	172	eP		P	22 49 19.5	-17
	5.2nm,0.4s							
KURBB	Kurchatov Arra	46.20	308	P		P	22 49 36.5	+0.2
	1.0nm,0.2s,baz=84,slow=7.8,SNR=4.5							
EKS2	Erkin-Say	51.13	299	P		P	22 50 14.4	-0.2
	0.8nm,0.6s							
WRA	Warramunga Arr	56.71	188	P		P	22 50 56.3	+1.0
	0.3nm,0.6s,baz=4.4,slow=7.1,SNR=2.4							
PFO	Pinyon Flats O	79.26	56	LR		LR	23 24 02.0	
	comp=Z,33nm,20.2s,baz=312,slow=33							
TXAR	Lajitas Array	90.36	52	LR		LR	23 31 46.5	
	comp=Z,19nm,19.8s,baz=0.0,slow=34							

NSSC 06 22:59:13.7±1.5, 33.82N×35.70E, h4km±15km, MD1.1, ML1.1
CSEM 06 22:59:14.8±0.2, 33.80N×35.77E, h2km, ML2.8, Error ellipse: s-maj=4.5km s-min=3.5km az=79.0
GRAL 06 22:59:15.3±0.3, 33.79N×35.80E, h0km±64km, MD2.8

ISC 06 22:59:13.8±0.9, 33.79N±0.03×35.77E±0.04, h18km±7km, n15, σ0.33/26, Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
BHL	Bhannes	0.15	320	eP		Pg	22 59 18.3	+0.2
BHL	Bhannes	0.15	320	eP		Pg	22 59 18.3	+0.2
DQRL	Deir Qamar	0.18	244	eP		Pb	22 59 19.0	+0.2
DQRL				eS		Sg	22 59 21.7	-0.1
DQRL	Deir Qamar	0.18	244	eP		Pb	22 59 19.0	+0.2
DQRL				eS		Sg	22 59 21.7	-0.1
RCY	Rachaya	0.30	169	eP		Pg	22 59 20.5	+0.1
RCY				eS		Sg	22 59 24.4	-0.5
BRBR	Barbar	0.41	158	eP		Pb	22 59 22.7	+0.1
BRBR				eS		Sb	22 59 28.6	0.0
BRBR				AML		AML	22 59 30.9	
	comp=E,12nm,0.6s							
BRBR				AML		AML	22 59 31.1	
	comp=N,30nm,0.8s							
BRBR	Barbar	0.41	158	eP		Pb	22 59 22.7	+0.1
BRBR				eS		Sb	22 59 28.6	0.0
	comp=N,30nm,0.8s							
HWQ	Hawqa	0.51	17	eP		Pb	22 59 24.4	0.0
HWQ	Hawqa	0.51	17	eP		Pb	22 59 24.4	0.0
TOTH	TOTAH	0.70	128	eP		Pn	22 59 28.6	-0.3
TOTH				eS		Sn	22 59 39.2	0.0
TOTH				AML		AML	22 59 50.9	
	comp=E,7.0nm,0.5s							
TOTH				AML		AML	22 59 59.9	
	comp=N,4.2nm,0.7s							
TOTH	TOTAH	0.70	128	eP		Pn	22 59 28.6	-0.3
TOTH				eS		Sn	22 59 39.2	0.0
	comp=N,4.0nm,0.7s							
ROOS	tl_alroos	1.32	73	eP		Pg	22 59 39.7	+0.4
ROOS				eS		Sg	22 59 56.1	-0.4
ROOS				AML		AML	23 00 04.3	
	comp=E,7.8nm,0.6s							
ROOS				AML		AML	23 00 10.3	
	comp=N,9.0nm,0.4s							
ROOS	tl_alroos	1.32	73	eP		Pg	22 59 39.7	+0.4
ROOS				eS		Sg	22 59 56.1	-0.4
ZALF	Zalf	1.57	123	eP		Pg	22 59 44.0	-0.1
ZALF				eS		Sg	23 00 05.2	+0.7
ZALF				AML		AML	23 00 10.8	
	comp=E,3.1nm,0.4s							
ZALF				AML		AML	23 00 12.2	
	comp=N,3.3nm,0.5s							
ZALF	Zalf	1.57	123	eP		Pg	22 59 44.0	-0.1
ZALF				eS		Sg	23 00 05.2	+0.7

SJA 06 23:06:52.3±0.6, 31.35S×67.49W, h16km±1km, ML3.5, MW3.7, San Juan Province

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
AVFE	Valle Fertil	0.69	2	i P		Pb	23 07 06.1	+0.1
AVFE				i S		Sb	23 07 16.3	+1.1
AVFE				IAML			23 07 17.1	
	comp=Z,5μm,0.3s							
RTLL	Cerro Villicun	0.84	271	i P		Pg	23 07 08.8	0.0
RTLL				i S		Sn	23 07 20.9	-0.8
SJA	San Juan	0.94	259	i P		Pg	23 07 10.5	0.0
SJA				i S		Sn	23 07 23.7	-0.1
SJA				IAML			23 07 28.8	
	comp=Z,448nm,0.2s							
ACAN	Cantantal	0.96	165	i P		Pg	23 07 10.7	-0.2
ACAN				i S		Sn	23 07 24.3	-0.1
RTCV	Cerro Valdivia	1.03	240	i P		Pn	23 07 12.2	+0.1
RTCV				i S		Sn	23 07 27.0	+0.6
RTLS	Leoncito	1.61	253	i P		Pb	23 07 22.1	+0.3
ASAL	Salagasta	1.69	222	i P		Pb	23 07 23.4	+0.4
ASAL				i S		Sg	23 07 46.6	-0.1
AUSP	Uspallata	1.84	241	i P		Pb	23 07 26.2	+0.5
ARCO	CERRO ARCO	1.93	219	i P		Pb	23 07 26.8	-0.4
ARCO				i S		Sb	23 07 52.3	+1.3
ARCO				IAML			23 07 56.4	
	comp=Z,390nm,0.8s							
AAGR	Agrelo	2.07	213	i P		Pb	23 07 29.1	-0.5
VCA	Vinchina	2.68	346	IAML			23 08 23.6	
	comp=Z,200nm,0.3s							
CYA	Choya	3.25	27	IAML			23 08 44.0	
	comp=Z,85nm,0.4s							

IDC 06 23:14:45.5±0.9, 28.69S×177.67W, h97km±6km, mb3.9/6, mb1 4.1/6, mb1mx3.7/41, mbtmp4.2/6, MS3.6/1, Ms1 3.5/1, ms1mx2.8/30, Error ellipse: s-maj=20.8km s-min=16.9km az=50.0
NEIC 06 23:14:45.5±1.0, 28.72S×177.67W, h100km±8km, mb4.3/4, Error ellipse: s-maj=16.3km s-min=13.1km az=84.0

ISC 06 23:14:45.8±0.7, 28.80S±0.08×177.7W±0.1, h100km, n30, σ1.50/25, mb4.2/9, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
RAO	Raoul Island	0.48	199	P		Pn	23 15 01.9	+0.5
	5μm,0.3s,baz=63,slow=3.8,SNR=102							
RAO				S		Sn	23 15 15.4	+2.2
	7μm,0.3s,baz=261,slow=24,SNR=23							
URZ	Urewera	10.37	203	P		Pn	23 17 05.7	-5.8
	0.7nm,0.3s,baz=273,slow=4.1,SNR=7.2							
URZ				S		Sn	23 19 01.5	-4.1
	5.5nm,0.3s,baz=132,slow=23,SNR=13							
MSVF	Nonsavu	11.67	340	ePn		Pn	23 17 28.5	-0.8
	17nm,1.0s							
RPZ	Rata Peaks	17.39	208	P		P	23 18 40.6	-1.3
	1.0nm,0.3s,baz=23,slow=22,SNR=2.3							
RPZ				S		Sn	23 21 39.0	-17
	0.4nm,0.3s,baz=334,slow=21,SNR=2.8							
PAE	Paea	28.08	73	eT		T	23 49 01.0	
	13nm,0.3s							
PPT2	Papeete2	28.12	73	eLR		LR	23 27 16.8	
	144nm,30.0s							
PPT2	Papeete2	28.12	73	eT		T	23 49 04.2	
	7.7nm

WRA Warramunga Arr 44.29 270 P P 23 22 46.0 +0.1
3.0nm,0.7s,baz=109,slow=7.9,SNR=14
WRA pP **pP** 23 23 07.9 -1.4
4.3nm,0.8s,baz=105,slow=8.0,SNR=9.8
CASY Casey 56.66 207 *eP* **P 23 24 18.3 +0.1**
0.7nm,0.9s
QSPA South Pole Qui 61.30 180 *eP* **P 23 24 52.2 +1.6**
19nm,1.1s
PLCA Paso Flores 83.43 133 P **P 23 27 03.6 +1.2**
6.1nm,0.9s,baz=250,slow=6.0,SNR=11
NVAR Mina Array Bea 86.91 43 P **P 23 27 17.9 -1.9**
0.4nm,0.5s,baz=232,slow=7.2,SNR=3.6
ARCES ARCESS Array B 137.08 348 PKP **PKPdf 23 33 56.2 0.0**
4.7nm,1.0s,baz=343,slow=3.8,SNR=5.3
H10S3 ASCENSION HYDR 139.07 154 T T 02 09 26.5
baz=205,slow=74,SNR=6.2
H10S2 ASCENSION HYDR 139.07 154 T T 02 09 33.3
baz=205,slow=74,SNR=6.1
H10S1 ASCENSION HYDR 139.08 154 T T 02 09 29.7
baz=205,slow=74,SNR=6.1
H10N3 ASCENSION HYDR 140.15 154 T T 02 11 19.0
baz=204,slow=75,SNR=5.1
H10N1 ASCENSION HYDR 140.15 154 T T 02 10 49.4
baz=204,slow=75,SNR=6.0
H10N2 ASCENSION HYDR 140.16 154 T T 02 11 02.5
baz=204,slow=75,SNR=6.4
FINES FINESS Array B 143.72 341 PKhKP PKPpre 23 34 03.8
1.8nm,0.9s,baz=63,slow=3.1,SNR=9.1
NB2 NORSAR Subarra 147.21 352 PKP **PKPdf 23 34 14.8 +0.3**
comp=Z,1.1nm,0.5s,baz=11,slow=2.9
NOA NORSAR Array B 147.21 352 PKPbc **PKPbc 23 34 16.6 -0.3**
comp=Z,0.4nm,0.5s,baz=59,slow=1.5,SNR=10
AKASG Malin Array Be 150.15 325 PKPbc **PKPbc 23 34 22.1 -2.5**
comp=Z,1.8nm,0.5s,baz=46,slow=3.3,SNR=6.3
AKASG pPKPbc **pPKPbc 23 34 52.0 0.0**
comp=Z,0.3nm,0.3s,baz=57,slow=3.2,SNR=1.4
BRTR Keskin Array B 152.00 301 PKPbc **PKPbc 23 34 29.7 +0.1**
comp=Z,0.8nm,0.5s,baz=145,slow=4.8,SNR=5.3

*ISCJB **06** 23:20:56.3±0.6, 26°.58N±0°.04×102°.95E±0°.07, h10km, mb3.6/6, Error ellipse: s-maj=9.2km s-min=5.5km az=5.3*
*IDC **06** 23:20:57.5±1.0, 26°.72N×103°.62E, h0km, mb3.6/6, mb1 3.8/7, mb1mx3.5/44, mbtmp3.6/7, ML4.0/1, Error ellipse: s-maj=46.0km s-min=19.4km az=73.0*
*BJI **06** 23:20:58.2, 26°.66N×102°.97E, h7km, ML3.4/11*
ISC 06 23:20:58.2±0.8, 26°.64N±0°.04×102°.95E±0°.06, h10km, n12, σ2°.08/17, mb3.6/6, Sichuan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KMI	**Kunming**	**1.52**	**187**	Pg	**Pn**	**23 21 25.3**	**-0.3**
KMI				Sg	**Sn**	**23 21 45.6**	**0.0**
KMI				smax	smax		
	comp=N,450nm,1.0s						
KMI				smax	smax		
	comp=E,600nm,0.9s						
GYA	**Guiyang**	**3.33**	**92**	Pn	**Pn**	**23 21 53.4**	**+2.9**
GYA				Pg	**Pg**	**23 22 02.1**	**0.0**
GYA				Sn	**Sn**	**23 22 30.9**	**+0.7**
GYA				Sg	**Sg**	**23 22 41.3**	**-4.0**
GYA				smax	smax		
	comp=N,110nm,0.8s						
GYA				smax	smax		
	comp=E,70nm,0.8s						
CD2	**Chengdu**	**4.32**	**9**	Pn	**Pn**	**23 22 05.5**	**+1.5**
CD2				Pg	**Pg**	**23 22 18.3**	**-2.6**
CD2				Sn	**Sn**	**23 22 54.9**	**+0.5**
CD2				Sg	**Sg**	**23 23 14.3**	**-2.6**
CD2				smax	smax		
	comp=N,150nm,1.0s						
CD2				smax	smax		
	comp=E,160nm,0.7s						
CMAR	**Chiang Mai Arr**	**8.94**	**205**	Pn	Pn	23 23 12.8	+5.3
	0.4nm,0.3s,baz=8.2,slow=13,SNR=2.3						
XAN	**Xi'an**	**9.00**	**34**	P	Pn	23 23 27.1	+19
WMQ	**Urumqi**	**21.14**	**328**	*eP*	**P**	**23 25 43.7**	**+0.4**
SONM	**Songino Array**	**21.33**	**6**	P	**P**	**23 25 45.7**	**+0.2**
	0.6nm,0.3s,baz=181,slow=13,SNR=2.8						
MKAR	**Makanchi Array**	**25.92**	**326**	P	**P**	**23 26 33.7**	**+3.3**
	0.7nm,0.7s,baz=153,slow=11,SNR=6.0						
ZALV	**Zalesovo Beam**	**30.40**	**339**	P	**P**	**23 27 12.7**	**+2.3**
	0.5nm,0.4s,baz=141,slow=9.6,SNR=4.0						
WRA	**Warramunga Arr**	**55.41**	**143**	P	**P**	**23 30 31.8**	**-1.1**
	0.4nm,0.3s,baz=329,slow=8.1,SNR=5.6						
ASAR	**Alice Springs**	**58.28**	**146**	P	**P**	**23 30 52.6**	**-0.7**
	0.8nm,0.8s,baz=330,slow=7.1,SNR=7.1						
YKA	**Yellowknife Ar**	**86.25**	**16**	P	**P**	**23 33 38.6**	**-1.2**
	0.2nm,0.5s,baz=329,slow=5.5,SNR=4.3						

*NIED **06** 23:24:00, 35°.50N×142°.00E, h14km, Mw4.1 Best double couple: M0=1.68000×10^15 NP1:φs=187.00000°, δ=34.00000°, λ=78.00000°. NP2:φs=22.00000°, δ=57.00000°, λ=98.00000°.*
*JMA **06** 23:24:49.8±0.3, 35°.51N×141°.96E, h39km±4km, M3.8*
*IDC **06** 23:24:49.0±0.8, 35°.51N×141°.74E, h0km, mb3.8/12, mb1 4.0/15, mb1mx3.8/41, mbtmp3.8/15, ML3.1/3, MS3.2/10, Ms1 3.2/10, ms1mx2.9/52, Error ellipse: s-maj=21.2km s-min=17.4km az=81.0*
*ISCJB **06** 23:24:50.5±0.5, 35°.45N±0°.04×141°.84E±0°.06, h25km, mb4.0/15, MS3.3/5, Error ellipse: s-maj=7.5km s-min=5.0km az=41.3*
*NEIC **06** 23:24:57.0±0.9, 35°.59N×141°.60E, h56km±7km, mb4.4/3, Error ellipse: s-maj=11.3km s-min=8.0km az=114.0*
ISC 06 23:24:52.7±0.7, 35°.45N±0°.05×141°.68E±0°.07, h25km, n35, σ0°.89/34, mb4.0/15, MS3.6/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.71**	**291**	P	**Pb**	**23 25 06.5**	**0.0**
CHOJ				*eS*	**Sn**	**23 25 18.8**	**+1.4**
BSO1	**Boso 1**	**0.97**	**216**	*eS*	**Sn**	**23 25 24.4**	**+1.3**
BSO3	**Boso 3**	**1.15**	**236**	P	**Pb**	**23 25 13.8**	**0.0**
JIM2	**Oshima 3**	**1.98**	**249**	P	**Pn**	**23 25 25.0**	**+0.3**
JIM2				S	**Sb**	**23 25 50.7**	**-1.6**
JAG	**Ashikaga**	**2.05**	**299**	P	**Pn**	**23 25 25.3**	**-0.3**
JOD2	**Odawara 2**	**2.12**	**266**	P	**Pn**	**23 25 26.9**	**+0.3**
JOD2				*eS*	**Sb**	**23 25 54.8**	**-1.6**
JFT	**Otama**	**2.33**	**333**	P	**Pn**	**23 25 28.6**	**-0.9**
JHJ2	**Mitsune**	**2.79**	**214**	*ePn*	**Pb**	**23 25 41.6**	**-0.2**
JHJ	**Hachijo jima 2**	**2.80**	**215**	Pn	**Pn**	**23 25 36.7**	**+0.8**
	30nm,0.3s,baz=263,slow=22,SNR=5.2						
JHJ				Sn	**Sn**	**23 26 09.0**	**+0.1**
	70nm,0.3s,baz=19,slow=23,SNR=8.8						
MJAR	**Matsushiro Arr**	**3.02**	**292**	Pn	**Pn**	**23 25 39.6**	**+0.7**
	5.7nm,0.3s,baz=92,slow=12,SNR=34						
MJAR				LR	LR	23 26 22.3	
	comp=Z,114nm,19.0s,baz=110,slow=31						
MAJO	**Matsushiro**	**3.02**	**292**	*ePn*	**Pn**	**23 25 40.3**	**+1.4**
ERM	**Erimo**	**6.66**	**10**	*ePn*	**Pn**	**23 26 30.4**	**+1.5**
ASAJ	**Asahikawa**	**8.69**	**4**	Pn	**Pn**	**23 26 58.2**	**+1.4**
	1.9nm,0.3s,baz=243,slow=22,SNR=4.3						
ASAJ				LR	LR	23 30 43.6	
	comp=Z,131nm,20.4s,baz=178,slow=41						
JNU	**Nakatsue**	**9.23**	**259**	LR	LR	23 30 39.6	
	comp=Z,77nm,20.6s,baz=324,slow=38						
KSRS	**Korea Array**	**11.26**	**284**	LR	LR	23 32 05.4	
	comp=Z,143nm,19.6s,baz=45,slow=38						
USRK	**Ussuriysk Ar.**	**11.48**	**323**	Pn	**Pn**	**23 27 34.8**	**-0.1**
	0.2nm,0.3s,baz=140,slow=13,SNR=4.2						
USRK				LR	LR	23 31 57.3	
	comp=Z,123nm,19.6s,baz=130,slow=37						
PETK	**Petropavlovsk-**	**20.97**	**28**	LR	LR	23 38 10.7	
	comp=Z,24nm,20.5s,baz=190,slow=38						
ENH	**Enshi**	**27.45**	**268**	*eP*	**P**	**23 30 37.3**	**+0.5**
	4.2nm,0.6s						
SONM	**Songino Array**	**28.87**	**306**	P	**P**	**23 30 49.8**	**+0.4**
	1.3nm,0.6s,baz=99,slow=8.4,SNR=5.9						
SONM				LR	LR	23 43 02.1	
	comp=Z,70nm,19.5s,baz=254,slow=38						
TLY	**Talaya**	**31.55**	**313**	P	**P**	**23 31 12.4**	**-0.5**
	3.2nm,0.7s,baz=282,slow=4.2,SNR=4.7						
ZALV	**Zalesovo Beam**	**43.15**	**314**	P	**P**	**23 32 51.0**	**0.0**
	2.8nm,0.8s,baz=95,slow=6.3,SNR=9.0						
NRIK	**Noril'sk**	**44.80**	**336**	LR	LR	23 54 14.1	
	comp=Z,65nm,18.7s,baz=84,slow=39						
MKAR	**Makanchi Array**	**45.16**	**303**	P	**P**	**23 33 07.7**	**+0.5**
	1.0nm,0.6s,baz=76,slow=10,SNR=7.0						
KURK	**Kurchatov**	**47.09**	**309**	*eP*	**P**	**23 33 21.9**	**-0.4**
	24nm,0.6s						
ILAR	**Eielson Array**	**50.73**	**32**	P	**P**	**23 33 49.6**	**-0.5**
	0.4nm,0.8s,baz=249,slow=5.9,SNR=4.7						
AAK	**Ala-Archa**	**51.44**	**300**	*eP*	**P**	**23 33 55.9**	**-0.1**
	1.2nm,0.4s						
WRA	**Warramunga Arr**	**55.52**	**188**	P	**P**	**23 34 25.1**	**-0.8**
	1.4nm,0.6s,baz=3.6,slow=7.5,SNR=11						
ASAR	**Alice Springs**	**59.25**	**188**	P	**P**	**23 34 53.7**	**+1.6**
	0.8nm,0.7s,baz=9.4,slow=7.7,SNR=3.9						
YKA	**Yellowknife Ar**	**65.08**	**30**	P	**P**	**23 35 30.4**	**-0.2**
	0.3nm,0.8s,baz=302,slow=6.9,SNR=5.7						
FINES	**FINESS Array B**	**70.32**	**333**	P	**P**	**23 36 03.3**	**-0.5**
	1.0nm,0.7s,baz=59,slow=5.4,SNR=3.0						
AKASG	**Malin Array Be**	**75.68**	**323**	LR	LR	00 12 37.2	
	comp=Z,27nm,18.9s,baz=285,slow=38						
NB2	**NORSAR Subarra**	**75.73**	**338**	P	**P**	**23 36 35.2**	**-0.7**
	comp=Z,0.5nm,0.6s,baz=39,slow=5.9						
NOA	**NORSAR Array B**	**75.73**	**338**	P	**P**	**23 36 35.1**	**-0.7**
	comp=Z,0.7nm,0.6s,baz=38,slow=5.8,SNR=4.0						
NOA				LR	LR	00 13 19.0	
	comp=Z,27nm,19.7s,baz=35,slow=38						
NVAR	**Mina Array Bea**	**75.77**	**53**	P	**P**	**23 36 37.7**	**+0.9**
	comp=Z,0.3nm,0.6s,baz=297,slow=6.9,SNR=2.7						
GERES	**GERESS Array B**	**84.17**	**328**	P	**P**	**23 37 21.0**	**-0.8**
	comp=Z,0.2nm,0.3s,baz=38,slow=6.8,SNR=3.5						

*SJA **06** 23:30:30.8±0.3, 21°.90S×68°.62W, h137km±2km, ML3.2, MW3.0*
*GUC **06** 23:30:33.5±0.6, 21°.94S×68°.57W, h129km±4km, ML4.4*
*IDC **06** 23:30:33.1±0.7, 21°.91S×68°.27W, h105km±7km, mb4.1/12, mb1 4.2/15, mb1mx4.0/28, mbtmp4.4/15, MS2.6/1, Ms1 2.6/1, ms1mx2.5/21, Error ellipse: s-maj=16.2km s-min=13.6km az=101.0*
*ISCJB **06** 23:30:33.6±0.2, 21°.98S±0°.02×68°.45W±0°.03, h123km±2km, mb4.7/61, Error ellipse: s-maj=5.3km s-min=3.3km az=153.3*
*NEIC **06** 23:30:34.2±0.3, 21°.93S×68°.29W, h113km±3km, mb4.5/46, Error ellipse: s-maj=5.0km s-min=3.4km az=81.0*
*SCB **06** 23:30:39.4±1.2, 21°.24S×67°.62W, h148km, Ml3.7/1, Error ellipse: s-maj=37.9km s-min=10.9km az=43.0*
ISC 06 23:30:34.1±0.6, 21°.94S±0°.03×68°.42W±0°.04, h115km±5km, n134, σ1°.19/151, mb4.6/61, 7C-4D, Chile-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB09	**IPOC Station P**	**0.78**	**280**	↓*iP*	**Pn**	**23 30 54.3**	**+0.6**
PB09				*i* S	**Sn**	**23 31 09.6**	**+1.0**
LVC	**Limon Verde**	**0.81**	**214**	*i P*	**Pn**	**23 30 53.5**	**-0.8**
LVC				*i* S	**Sn**	**23 31 10.0**	**+0.6**
LVC	**Limon Verde**	**0.81**	**214**	P	**Pn**	**23 30 54.2**	**-0.1**
	20μm,0.3s,baz=32,slow=7.4,SNR=8057						
LVC				S	**Sn**	**23 31 09.0**	**-0.4**
PB06	**IPOC Station P**	**1.31**	**234**	↑*iP*	**Pn**	**23 30 59.1**	**-0.1**
PB06				*i* S	**Sn**	**23 31 18.2**	**+0.1**
PB01	**IPOC Station P**	**1.33**	**312**	↓*iP*	**Pn**	**23 30 59.5**	**+0.1**
PB01				*i* S	**Sn**	**23 31 19.1**	**+0.6**
PB01				IAML		23 31 22.4	
	comp=E,6μm,0.8s						
PB01	**IPOC Station P**	**1.33**	**312**	*e*Pn	**Pn**	**23 31 00.1**	**+0.7**
PB07	**IPOC Station P**	**1.38**	**279**	↑*iP*	**Pn**	**23 30 59.9**	**0.0**
PB07				*i* S	**Sn**	**23 31 19.6**	**+0.1**
PB07				IAML		23 31 21.9	
	comp=E,9μm,0.5s						
PB04	**IPOC Station P**	**1.65**	**256**	↑*iP*	**Pn**	**23 31 02.6**	**-0.5**
PB04				*i* S	**Sn**	**23 31 24.9**	**-0.3**
PB04				IAML		23 31 25.5	
	comp=E,5μm,1.8s						
PB08	**IPOC Station P**	**1.92**	**339**	↓*iP*	**Pn**	**23 31 08.4**	**+1.7**
PB08				*i* S	**Sn**	**23 31 33.7**	**+2.3**
PB08				IAML		23 31 35.2	
	comp=E,3μm,0.7s						
PATCX	**Punta Patache**	**1.96**	**304**	↑*iP*	**Pn**	**23 31 06.8**	**-0.1**
PATCX				*i* S	**Sn**	**23 31 31.8**	**-0.2**
HMBC	**Humberstone**	**2.15**	**320**	↑*iP*	**Pn**	**23 31 08.9**	**-0.3**
HMBC				*e*S	**Sn**	**23 31 36.0**	**-0.2**
PB11	**IPOC Station P**	**2.46**	**332**	↑*iP*	**Pn**	**23 31 13.3**	**0.0**
PB11				*i* S	**Sn**	**23 31 44.1**	**+0.7**
PB11	**IPOC Station P**	**2.46**	**332**	*e*Pn	**Pn**	**23 31 13.7**	**+0.4**
PB10	**IPOC Station P**	**2.52**	**231**	*e*P	**Pn**	**23 31 13.3**	**-0.6**
PB10	**IPOC Station P**	**2.52**	**231**	*e*Pn	**Pn**	**23 31 15.4**	**+1.5**
MOCB	**Mochara**	**2.68**	**76**	*e*Pn	**Pn**	**23 31 18.5**	**+2.0**
YJA	**Yavi**	**2.71**	**96**	*i P*	**Pn**	**23 31 18.3**	**+1.5**
YJA				*i* S	**Sn**	**23 31 53.6**	**+4.0**
YJA				IAML		23 31 56.0	
	comp=Z,64nm,0.7s						
MNMC	**Minye Minye**	**3.00**	**338**	↑*iP*	**Pn**	**23 31 20.9**	**+0.3**
MNMC				*e*S	**Sn**	**23 31 57.1**	**+0.8**
HJA	**Humahuaca**	**3.06**	**115**	*i P*	**Pn**	**23 31 22.7**	**+1.4**
PB14	**IPOC Station P**	**3.23**	**214**	*e*P	**Pn**	**23 31 22.3**	**-1.3**
AZAP	**Zapla**	**3.84**	**127**	*i P*	**Pn**	**23 31 32.4**	**+0.9**
SLA	**San Lorenzo**	**3.85**	**136**	*i P*	**Pn**	**23 31 32.3**	**+0.5**
SLA				*i* S	**Sn**	**23 32 17.8**	**+1.4**
SLA				IAML		23 32 25.0	
	comp=Z,25nm,0.7s						
ASTB	**Santa Barbara**	**4.17**	**119**	*i P*	**Pn**	**23 31 36.7**	**0.8**
ALOL	**LOMAS DE OLMED**	**4.50**	**115**	*i P*	**Pn**	**23 31 40.4**	**+0.1**
FSA	**Cafayete**	**4.71**	**152**	*i P*	**Pn**	**23 31 43.2**	**-0.1**
FSA				IAML		23 32 21.4	
	comp=Z,6.5nm,0.5s						
BBOJ	**La Paz, Jacaqu**	**4.94**	**3**	*e*Pn	**Pn**	**23 31 49.0**	**+2.2**
BBOE	**La Paz, Chanca**	**5.12**	**5**	*e*Pn	**Pn**	**23 31 51.5**	**+2.4**
BBOD	**La Paz, Gloria**	**5.28**	**358**	*e*Pn	**Pn**	**23 31 53.4**	**+2.1**
BBOD				*e*Sn	**Sn**	**23 32 49.2**	**-2.0**
	comp=Z,66nm,0.8s						
AHML	**Horco Molle**	**5.58**	**150**	*i P*	**Pn**	**23 31 54.5**	**-0.4**
LPAZ	**La Paz**	**5.63**	**3**	P	**Pn**	**23 31 57.8**	**+1.7**
	comp=Z,2.5nm,0.3s,baz=146,slow=5.3,SNR=40						
LPAZ	**La Paz**	**5.63**	**3**	*e*Pn	**Pn**	**23 31 57.8**	**+1.7**
LPAZ				*e*Sn	**Sn**	**23 32 56.1**	**-3.8**
LPAZ	**La Paz**	**5.63**	**3**	*e*Pn	**Pn**	**23 31 58.4**	**+2.3**
BBOB	**La Paz, Bander**	**5.78**	**3**	*e*Pn	**Pn**	**23 31 59.3**	**+1.3**
VCA	**Vinchina**	**6.77**	**178**	*i P*	**Pn**	**23 32 09.6**	**-1.5**
CYA	**Choya**	**6.89**	**160**	IAML		23 32 34.4	
	comp=Z,8.3nm,0.5s						
LCO	**Las Campanas**	**7.34**	**196**	*e*Pn	**Pn**	**23 32 19.5**	**+0.7**
SIV	**San Ignacio**	**9.13**	**51**	P	**Pn**	**23 32 40.4**	**-2.6**
	comp=Z,14nm,0.3s,baz=254,slow=3.8,SNR=149						
SIV	**San Ignacio**	**9.13**	**51**	*e*Pn	Pn	23 32 39.4	-3.6
CPUP	**Villa Florida**	**11.03**	**116**	P	**Pn**	**23 33 06.5**	**-2.1**
	comp=Z,0.4nm,0.3s,baz=303,slow=9.5,SNR=4.1						
CPUP				LR	LR	23 37 24.8	
	comp=Z,30nm,18.6s,baz=272,slow=38						
CPUP	**Villa Florida**	**11.03**	**116**	*e*Pn	**Pn**	**23 33 08.6**	**0.0**
ROC1	**El Roble**	**11.23**	**191**	*e*Pn	**Pn**	**23 33 13.2**	**+1.7**
SAML	**Samuel**	**13.87**	**22**	*e*Pn	**Pn**	**23 33 45.5**	**-0.3**
TRQA	**Tornquist**	**17.00**	**162**	*e*Pn	**Pn**	**23 34 24.1**	**-0.7**
	comp=Z,27nm,1.0s						
PLCA	**Paso Flores**	**18.82**	**185**	P	**P**	**23 34 43.8**	**-1.1**
	comp=Z,0.6nm,0.3s,baz=25,slow=9.9,SNR=12						
PLCA	**Paso Flores**	**18.82**	**185**	*e*P	**P**	**23 34 44.0**	**-0.9**
	comp=Z,1.1nm,0.7s						
SPB	**Sao Paulo**	**19.43**	**99**	*e*P	**Pn**	**23 34 51.2**	**-2.6**
	comp=Z,66nm,2.0s						
BDFB	**Brasilia**	**20.30**	**76**	*e*P	**P**	**23 34 59.6**	**-1.6**
PTGA	**Pitinga**	**22.63**	**22**	P	**P**	**23 35 23.8**	**-1.8**
	comp=Z,3.4nm,0.3s,baz=210,slow=17,SNR=7.7						
PTGA	**Pitinga**	**22.63**	**22**	*e*P	**P**	**23 35 23.8**	**-1.8**
	comp=Z,4.4nm,0.7s						
CHRN	**Cochrane**	**25.47**	**187**	*e*P	**P**	**23 35 51.7**	**+0.3**
	comp=Z,10.0nm,0.9s						
ROSC	**El Rosal**	**27.23**	**347**	*e*P	**P**	**23 36 08.6**	**+0.6**
	comp=Z,3.7nm,0.6s						
PAYG	**Puerto Ayora**	**30.01**	**312**	*e*P	**P**	**23 36 32.0**	**-0.3**
	comp=Z,249nm,1.8s						
USHA	**Ushuaia**	**32.84**	**180**	P	**P**	**23 36 56.5**	**-0.1**
	comp=Z,49nm,1.0s,baz=335,slow=12,SNR=4.1						
RCBR	**Riachuelo**	**35.28**	**68**	P	**P**	**23 37 17.1**	**-1.2**
	comp=Z,11nm,0.9s,baz=223,slow=10,SNR=3.3						
BBGH	**Gun Hill**	**35.93**	**15**	*e*P	**P**	**23 37 24.1**	**+0.4**
	comp=Z,516nm,1.5s						
FDF	**Fort de France**	**37.14**	**12**	*e*P	**P**	**23 37 33.4**	**-0.5**
	comp=Z,53nm,1.1s						
MGAN	**Managua**	**38.12**	**331**	*e*P	**P**	**23 37 44.1**	**+1.9**
	comp=Z,0.2nm,0.7s						
SEUS	**St. Eustatius**	**39.55**	**8**	*e*P	**P**	**23 37 53.7**	**-0.4**
	comp=Z,74nm,0.8s						
SABA	**Saba**	**39.64**	**8**	*e*P	**P**	**23 37 55.0**	**+0.2**
	comp=Z,52nm,1.0s						
SJG	**San Juan**	**39.87**	**3**	*e*P	**P**	**23 37 55.4**	**-1.3**
	comp=Z,46nm,1.5s						
LRS	**Lares**	**40.01**	**2**	*e*P	**P**	**23 37 58.5**	**+0.6**
CBYP	**Canovanas**	**40.04**	**4**	*e*P	**P**	**23 37 58.4**	**+0.2**
	comp=Z,34nm,1.4s						
SMRT	**St. Maarten**	**40.09**	**8**	*e*P	**P**	**23 37 59.5**	**+0.9**
	comp=Z,17nm,0.8s						
SDD	**Santo Domingo**	**40.18**	**358**	*e*P	**P**	**23 38 00.2**	**+1.0**
	comp=Z,613nm,1.5s						
PAPH	**Port-au-Prince**	**40.39**	**354**	*e*P	**P**	**23 38 01.8**	**+0.8**
	comp=Z,49nm,0.6s						
ABVI	**Anegada Island**	**40.62**	**6**	*e*P	**P**	**23 38 02.5**	**-0.3**
	comp=Z,66nm,1.0s						
SDDR	**Presa de Saban**	**40.77**	**356**	*e*P	**P**	**23 38 03.1**	**-1.0**
	comp=Z,27nm,1.4s						
TLIG	**Tiapa**	**49.12**	**321**	*e*P	**P**	**23 39 11.4**	**+1.0**
	comp=Z,24nm,1.5s						
TRIS	**Tristan da Cun**	**50.43**	**121**	*e*P	**P**	**23 39 20.3**	**+0.3**
	comp=Z,977nm,1.9s						
ZAIG	**Zacatecas**	**55.51**	**321**	*e*P	**P**	**23 39 59.0**	**+1.2**
	comp=Z,4.4nm,1.1s						
RGRS	**Roger Stewart**	**55.69**	**348**	*e*P	**P**	**23 39 59.4**	**+0.9**
	comp=Z,379nm,0.8s						
CSU	**Charleston Sou**	**55.74**	**348**	*e*P	**P**	**23 39 59.7**	**+0.9**
KVTX	**Kingsville**	**56.85**	**329**	*e*P	**P**	**23 40 08.2**	**+1.4**
	comp=Z,44nm,0.7s						
SWET	**Sewanee**	**59.22**	**343**	*e*P	**P**	**23 40 23.6**	**+0.3**
	comp=Z,3.0nm,1.2s						
VNA3	**Neumayer Olymp**	**59.52**	**161**	P	**P**	**23 40 25.1**	**+0.1**
OXF	**Oxford**	**59.58**	**340**	*e*P	**P**	**23 40 26.7**	**+0.9**
	comp=Z,10.0nm,0.8s						
VNA1	**Neumayer--Stat**	**59.72**	**160**	P	**P**	**23 40 26.6**	**+0.4**
URVA	**University of**	**59.81**	**352**	*e*P	**P**	**23 40 27.7**	**+0.5**
VWCC	**Virginia Weste**	**59.87**	**349**	*e*P	**P**	**23 40 28.4**	**+0.7**
TZTN	**Tazewell**	**59.90**	**346**	*e*P	**P**	**23 40 27.8**	**-0.1**
	comp=Z,38nm,1.8s						
BLA	**Blacksburg**	**59.91**	**349**	*e*P	**P**	**23 40 28.6**	**+0.6**
	comp=Z,25nm,1.4s						
VNA2	**Neumayer--Watz**	**60.09**	**161**	P	**P**	**23 40 29.1**	**+0.2**
	baz=346,slow=20						
TXAR	**Lajitas Array**	**61.25**	**325**	P	**P**	**23 40 37.3**	**-0.1**
	comp=Z,0.6nm,0.9s,baz=130,slow=8.4,SNR=3.0						
SNAA	**Sanae**	**61.72**	**161**	P	**P**	**23 40 40.0**	**+0.1**
SNAA	**Sanae**	**61.72**	**161**	*e*P	**P**	**23 40 40.5**	**+0.6**
	comp=Z,566nm,0.8s						
MNTX	**Cornudas Mount**	**64.02**	**325**	*e*P	**P**	**23 40 55.6**	**+0.1**
	comp=Z,2.9nm,1.1s						
MSTX	**Muleshoe**	**64.50**	**329**	*e*P	**P**	**23 40 58.6**	**-0.3**
	comp=Z,7.6nm,1.0s						
319A	**Douglas**	**65.91**	**322**	*e*P	**P**	**23 41 08.3**	**+0.3**
	comp=Z,11nm,1.1s						
ANMO	**Albuquerque**	**67.11**	**327**	*e*P	**P**	**23 41 16.2**	**+0.6**
	comp=Z,2.5nm,0.8s						
TUC	**Tucson**	**67.46**	**322**	*e*P	**P**	**23 41 18.9**	**+1.1**
	comp=Z,3.9nm,1.1s						
QSPA	**South Pole Qui**	**68.25**	**180**	*e*P	**P**	**23 41 22.9**	**+0.5**
	comp=Z,15nm,0.3s						
DBIC	**Dimbokro**	**68.43**	**73**	P	**P**	**23 41 23.2**	**-0.9**
	comp=Z,11nm,0.9s,baz=221,slow=6.8,SNR=10						
SDCO	**Great Sand Dun**	**68.86**	**329**	*e*P	**P**	**23 41 28.1**	**+1.5**
	comp=Z,2.3nm,0.8s						
X16A	**Lo Mia Camp, P**	**69.38**	**323**	*e*P	**P**	**23 41 30.8**	**+1.0**
	comp=Z,4.4nm,1.0s						
MVCO	**Mesa Verde**	**69.91**	**327**	*e*P	**P**	**23 41 33.4**	**+0.4**
	comp=Z,3.7nm,0.6s						
Y14A	**Wickenburg**	**69.92**	**322**	*e*P	**P**	**23 41 34.1**	**+1.1**
	comp=Z,15nm,0.9s						
WUAZ	**Wupatki**	**70.15**	**324**	*e*P	**P**	**23 41 35.3**	**+0.8**
	comp=Z,6.9nm,0.9s						
U15A	**North Rim**	**71.33**	**324**	*e*P	**P**	**23 41 42.6**	**+0.9**
	comp=Z,5.5nm,0.9s						
KNB	**Kanab**	**72.05**	**324**	*e*P	**P**	**23 41 46.8**	**+0.8**
	comp=Z,13nm,1.0s						
Q16A	**Castle Valley**	**72.58**	**326**	*e*P	**P**	**23 41 49.9**	**+0.8**
	comp=Z,3.7nm,0.9s						
MSU	**Marysvale**	**72.80**	**325**	*e*P	**P**	**23 41 51.6**	**+1.2**
SHPR	**Sheep Range**	**72.98**	**322**	*e*P	**P**	**23 41 52.1**	**+0.6**
	comp=Z,2.5nm,0.9s						
TPNV	**Topopah Spring**	**73.92**	**322**	*e*P	**P**	**23 41 58.2**	**+1.2**
	comp=Z,6.0nm,1.1s						
JLU	**Jordanelle**	**73.98**	**327**	*e*P	**P**	**23 41 59.1**	**+1.7**
	comp=Z,3.0nm,0.7s						
DAC	**Darwin (Calif)**	**74.24**	**321**	*e*P	**P**	**23 42 00.1**	**+1.2**
	comp=Z,4.6nm,0.9s						
R11A	**Troy

JKZ	**Kuzumaki**	**1.10 314**	P		**Pb**	**23 43 35.2**	**-0.1**
JKZ			S		**Sb**	**23 43 49.2**	**0.0**
JANG	**Nango**	**1.32 331**	P		**Pn**	**23 43 37.7**	**-0.6**
JANG			S		**Sn**	**23 43 54.0**	**-1.4**
JRG	**Rokugo**	**1.34 278**	P		**Pb**	**23 43 39.3**	**-0.2**
MAT	**Matsushiro**	**4.23 232**	P		**Pn**	**23 44 22.0**	**+3.6**
MAT			S		**Sn**	**23 45 09.8**	**+2.6**
MJAR	**Matsushiro Arr**	**4.23 232**	P		**Pn**	**23 44 21.8**	**+3.5**
2.6nm,0.3s,baz=38,slow=12,SNR=29							
ASAJ	**Asahikawa**	**4.89 2**	P		**Pn**	**23 44 30.7**	**+3.2**
2.7nm,0.3s,baz=219,slow=14,SNR=5.0							
ASAJ			S		**Sn**	**23 45 25.5**	**+2.0**
1.7nm,0.3s,baz=31,slow=28,SNR=1.9							
ASAJ			LR		LR	23 46 31.3	
comp=Z,66nm,21.7s,baz=186,slow=39							
USRK	**Ussuriysk Ar.**	**9.20 306**	P		**Pn**	**23 45 30.6**	**+4.0**
0.4nm,0.3s,baz=112,slow=13,SNR=7.7							
USRK			LR		LR	23 48 55.2	
comp=Z,75nm,18.2s,baz=150,slow=36							
KSRS	**Korea Array**	**11.47 266**	LR		LR	23 49 51.2	
comp=Z,27nm,18.5s,baz=185,slow=34							
KLR	**Kul'dur**	**12.55 326**	P		**Pn**	**23 46 13.5**	**+1.1**
0.1nm,0.3s,baz=194,slow=14,SNR=3.4							
KLR			LR		LR	23 50 52.4	
comp=Z,48nm,19.6s,baz=160,slow=36							
PETK	**Petropavlovsk-**	**17.44 32**	P		**Pn**	**23 47 15.5**	**-1.4**
0.1nm,0.3s,baz=256,slow=6.0,SNR=3.8							
TLY	**Talaya**	**29.52 308**	LR		LR	00 03 18.5	
comp=Z,8.7nm,18.8s,baz=163,slow=41							
ZALV	**Zalesovo Beam**	**41.02 311**	P		**P**	**23 50 55.1**	**-1.5**
1.2nm,0.4s,baz=87,slow=8.8,SNR=5.0							
MKAR	**Makanchi Array**	**43.62 300**	P		**P**	**23 51 16.7**	**-1.2**
0.4nm,0.5s,baz=88,slow=11,SNR=4.6							
ILAR	**Eielson Array**	**47.26 33**	P		**P**	**23 51 45.7**	**-0.8**
0.4nm,0.6s,baz=260,slow=5.6,SNR=7.1							
WRA	**Warramunga Arr**	**59.33 189**	P		**P**	**23 53 13.7**	**-2.0**
1.1nm,0.4s,baz=7.2,slow=7.0,SNR=25							
ASAR	**Alice Springs**	**63.06 189**	P		**P**	**23 53 38.9**	**-2.0**
0.4nm,0.6s,baz=11,slow=7.0,SNR=4.8							
KVAR	**Kislovodsk Arr**	**70.03 311**	P		**P**	**23 54 25.4**	**-0.1**
7.3nm,1.1s,baz=91,slow=9.3,SNR=3.1							

ISCJB ***06*** *23:44:51.6±0.2, 45°.021N×0°.009×14°.98E±0°.01, h13km±1km, mb3.8/6, MS3.5/2, Error ellipse: s-maj=1.6km s-min=1.3km az=36.1*
CSEM ***06*** *23:44:52.2±0.1, 45°.00N×14°.97E, h5km, ML4.6/17, Error ellipse: s-maj=1.7km s-min=1.3km az=37.0*
NEIC ***06*** *23:44:52.3, 45°.00N×15°.03E, h9km, mb4.0/1, ML4.2(ZAG), After ZAG.*
NEIC Felt at Rijeka.
LDG ***06*** *23:44:52.0±0.1, 45°.09N×15°.13E, h2km, Ml4.2/25, Error ellipse: s-maj=2.3km s-min=1.5km az=21.0*
IDC ***06*** *23:44:52.1±0.9, 45°.09N×15°.15E, h0km, mb3.7/5, mb1 3.9/18, mb1mx3.8/55, mbtmp3.8/18, ML3.8/12, MS2.8/12, Ms1 2.8/12, ms1mx2.6/65, Error ellipse: s-maj=14.2km s-min=9.1km az=54.0*
PDG ***06*** *23:44:52.3±0.8, 45°.01N×14°.99E, h13km±1km, MD4.5/1, ML4.4/10, Error ellipse: s-maj=0.8km s-min=0.8km az=0.0*
ROM ***06*** *23:44:52.3±0.1, 44°.95N×15°.04E, h10km, Ml4.2/73, Error ellipse: s-maj=2.0km s-min=1.1km az=73.0*
PRU ***06*** *23:44:53.2, 45°.08N×15°.14E, h0km, M4.0*
BEO ***06*** *23:44:53.4±1.7, 45°.16N×15°.15E, h0km, M4.2/1*
VIE ***06*** *23:44:53.6±0.6, 45°.08N×15°.02E, h6km, mb3.8/19, ML4.2/20, Error ellipse: s-maj=4.4km s-min=3.6km az=147.0*
STR ***06*** *23:45:01.6±0.3, 45°.26N×14°.37E, h5km, Ml4.3, Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*

ISC 06 23:44:52.4±0.8, 45°.00N±0°.01×14°.98E±0°.02, h11km±6km, n622, σ1.9±50/805, mb3.8/6, 30C-45D, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NVLJ	**Novalja**	**0.45**	**190**	*i* Pg	**Pg**	**23 45 00.7**	**-0.5**
NVLJ				Sg	**Sg**	**23 45 07.6**	**+0.5**
NVLJ	**Novalja**	**0.45**	**190**	*i* Pg	**Pg**	**23 45 00.6**	**-0.5**
NVLJ				Sg	**Sg**	**23 45 07.5**	**+0.5**
RIY	**Rijeka**	**0.47**	**313**	⇑*i*Pg	**Pg**	**23 45 02.0**	**+0.3**
RIY				Sg	**Sb**	**23 45 10.0**	**+0.3**
UDBI	**Udbina**	**0.73**	**130**	*i* Pg	**Pg**	**23 45 05.6**	**-1.1**
UDBI				Sg	**Sg**	**23 45 15.8**	**-0.5**
UDBI	**Udbina**	**0.73**	**130**	*i* Pg	**Pg**	**23 45 05.5**	**-1.1**
UDBI				Sg	**Sg**	**23 45 15.7**	**-0.5**
VISS	**Visnje**	**0.81**	**353**	⇓*i*Pg	**Pg**	**23 45 07.5**	**-0.5**
VISS				*i* Sg	**Sb**	**23 45 19.8**	**+0.5**
VISS	**Visnje**	**0.81**	**353**	⇓*i*Pg	**Pg**	**23 45 07.5**	**-0.5**
VISS				*i* Sg	**Sb**	**23 45 19.8**	**+0.5**
1μm,0.2s							
CEY	**Cerknica**	**0.83**	**332**	⇓*i*Pg	**Pg**	**23 45 07.9**	**-0.6**
CEY				*e*Sg	**Sb**	**23 45 20.2**	**+0.2**
SKDS	**Skadanscina**	**0.87**	**309**	⇑*i*Pg	**Pg**	**23 45 08.7**	**-0.5**
SKDS				*e*Sg	**Sn**	**23 45 23.1**	**-0.1**
SKDS	**Skadanscina**	**0.87**	**309**	⇑*i*Pg	**Pg**	**23 45 08.7**	**-0.5**
SKDS				*e*Sg	**Sn**	**23 45 23.1**	**-0.1**
681nm,0.1s							
CRES	**Cresnjev**	**0.89**	**22**	⇓*i*Pg	**Pg**	**23 45 08.6**	**-1.0**
CRES				*e*Sg	**Sb**	**23 45 21.9**	**+0.2**
PDKS	**Podkum**	**1.06**	**1**	⇓*i*Pg	**Pg**	**23 45 12.2**	**-0.5**
PDKS				*i* Sg	**Sn**	**23 45 28.1**	**+0.2**
PDKS	**Podkum**	**1.06**	**1**	⇓*i*Pg	**Pg**	**23 45 12.2**	**-0.5**
PDKS				*i* Sg	**Sn**	**23 45 28.1**	**+0.2**
LJU	**Ljubljana**	**1.09**	**343**	*e*Pg	**Pb**	**23 45 12.7**	**-0.5**
LJU				*e*Sg	**Sn**	**23 45 29.5**	**+0.9**
LJU	**Ljubljana**	**1.09**	**343**	⇓*i*Pg	**Pb**	**23 45 12.6**	**-0.6**
LJU				*e*Sg	**Sn**	**23 45 28.2**	**-0.4**
ZAG	**Zagreb**	**1.09**	**40**	⇓*i*Pg	**Pg**	**23 45 13.1**	**-0.2**
ZAG				*e*Sg	**Sg**	**23 45 27.5**	**0.0**
ZAG	**Zagreb**	**1.09**	**40**	⇓*i*Pg	**Pg**	**23 45 13.1**	**-0.2**
ZAG				Sg	**Sn**	**23 45 27.8**	**-0.7**
SISC	**Sisak**	**1.09**	**64**	*i* Pg	**Pb**	**23 45 12.9**	**-0.3**
SISC				Sg	**Sb**	**23 45 25.8**	**-1.6**
SISC	**Sisak**	**1.09**	**64**	*i* Pg	**Pb**	**23 45 12.9**	**-0.3**
SISC				Sg	**Sb**	**23 45 25.8**	**-1.6**
TRI	**Trieste**	**1.11**	**310**	*e*Pn	**Pn**	**23 45 14.3**	**+0.5**
TRI				Sn	**Sn**	**23 45 30.7**	**+1.7**
TRI	**Trieste**	**1.11**	**310**	*e*Pn	**Pn**	**23 45 14.3**	**+0.5**
TRI				Sn	**Sn**	**23 45 30.7**	**+1.7**
PTJ	**Puntijarka**	**1.14**	**37**	⇓*i*Pg	**Pb**	**23 45 13.5**	**-0.6**
PTJ				Sg	**Sb**	**23 45 28.8**	**-0.2**
PTJ	**Puntijarka**	**1.14**	**37**	⇓*i*Pg	**Pb**	**23 45 13.5**	**-0.6**
PTJ				Sg	**Sb**	**23 45 28.8**	**-0.2**
MOZS	**Mozjanca**	**1.34**	**344**	⇓*i*Pg	**Pg**	**23 45 18.2**	**0.0**
MOZS				*i* Sg	**Sg**	**23 45 36.9**	**+1.2**
MOZS	**Mozjanca**	**1.34**	**344**	⇓*i*Pg	**Pg**	**23 45 18.2**	**0.0**
MOZS				*i* Sg	**Sg**	**23 45 36.9**	**+1.2**
766nm,0.2s							
SABO	**M.te Sabotino**	**1.38**	**316**	Pn	**Pn**	**23 45 17.6**	**+0.1**
SABO				Sn	**Sg**	**23 45 37.8**	**+1.1**
8μm,0.6s							
SABO	**M.te Sabotino**	**1.38**	**316**	Pn	**Pn**	**23 45 17.6**	**+0.1**
SABO				Sn	**Sg**	**23 45 37.8**	**+1.1**
8μm,0.6s							
OBKA	**Obir**	**1.54**	**349**	*e*Pg	**Pb**	**23 45 20.8**	**-0.1**
709nm,0.3s,SNR=1487							
OBKA				*e*Sg	**Sg**	**23 45 43.1**	**+1.3**
3μm,0.3s							
OBKA	**Obir**	**1.54**	**349**	Pg	**Pb**	**23 45 20.8**	**-0.1**
709nm,0.2s,SNR=1000							
OBKA				Sg	**Sg**	**23 45 43.1**	**+1.3**
3μm,0.3s							
BLY	**Banja Luka**	**1.59**	**98**	⇓*i*P	**Pn**	**23 45 20.7**	**+0.3**
BLY				S	**Sg**	**23 45 46.4**	**+2.9**
BLY	**Banja Luka**	**1.59**	**98**	⇑*i*Pn	**Pn**	**23 45 20.5**	**+0.1**
2μm,0.4s							
BLY	**Banja Luka**	**1.59**	**98**	⇑*i*Pn	**Pn**	**23 45 20.5**	**+0.1**
2μm,0.4s							
BLY				*e*Sn	**Sb**	**23 45 41.6**	**-0.2**
ROBS	**Robic**	**1.61**	**321**	*i* Pn	**Pb**	**23 45 22.3**	**+0.2**
ROBS	**Robic**	**1.61**	**321**	*i* Pn	**Pb**	**23 45 22.3**	**+0.2**
PERS	**Pernice**	**1.64**	**3**	*i* Pn	**Pb**	**23 45 21.8**	**-0.8**
comp=Z,885nm,0.3s							
PERS	**Pernice**	**1.64**	**3**	*i* Pn	**Pb**	**23 45 21.8**	**-0.8**
comp=Z,885nm,0.3s							
BISS	**Bistriski jare**	**1.65**	**4**	*i* Pn	**Pb**	**23 45 22.0**	**-0.8**
BISS	**Bistriski jare**	**1.65**	**4**	*i* Pn	**Pb**	**23 45 22.0**	**-0.8**
SOKA	**Soboth**	**1.68**	**1**	*e*Pn	**Pb**	**23 45 22.4**	**-0.8**
comp=Z,62nm,0.3s,SNR=476							
SOKA				*e*Pg	**Pg**	**23 45 24.2**	**-0.3**
comp=Z,220nm,0.3s							
SOKA				*e*Sg	**Sg**	**23 45 47.7**	**+1.4**
comp=Z,440nm,0.4s							
SOKA	**Soboth**	**1.68**	**1**	Pn	**Pb**	**23 45 22.4**	**-0.8**
comp=Z,62nm,0.3s,SNR=476							
VINO	**Villanova**	**1.73**	**317**	Pn	**Pb**	**23 45 23.8**	**-0.3**
VINO				Sn	**Sg**	**23 45 48.2**	**+0.2**
VINO	**Villanova**	**1.73**	**317**	Pn	**Pb**	**23 45 23.8**	**-0.3**
VINO				Sn	**Sg**	**23 45 48.2**	**+0.2**
AOI	**Ancona**	**1.76**	**215**	Pn	**Pn**	**23 45 23.4**	**+0.7**
AOI				Sn	**Sb**	**23 45 47.1**	**+0.5**
comp=Z,2μm,0.8s							
AOI	**Ancona**	**1.76**	**215**	Pn	**Pn**	**23 45 23.4**	**+0.7**
AOI				Sn	**Sb**	**23 45 47.1**	**+0.5**
comp=Z,2μm,0.8s							
SENI	**Senigallia**	**1.80**	**225**	Pn	**Pb**	**23 45 24.6**	**-0.7**
comp=Z,1μm,0.7s							
SENI	**Senigallia**	**1.80**	**225**	Pn	**Pb**	**23 45 24.6**	**-0.7**
comp=Z,1μm,0.7s							
PTCC	**Patocco-Chiusa**	**1.81**	**322**	Pn	**Pb**	**23 45 25.1**	**-0.4**
comp=Z,2μm,0.7s							
PTCC	**Patocco-Chiusa**	**1.81**	**322**	Pn	**Pb**	**23 45 25.1**	**-0.4**
comp=Z,2μm,0.7s							
ACOM	**Acomizza, Ital**	**1.85**	**327**	Pn	**Pb**	**23 45 26.3**	**-0.1**
comp=Z,9μm,1.0s							
ACOM	**Acomizza, Ital**	**1.85**	**327**	Pn	**Pb**	**23 45 26.3**	**-0.1**
comp=Z,9μm,1.0s							
PESA	**Pesaro**	**1.86**	**236**	Pn	**Pn**	**23 45 25.4**	**+1.3**
comp=Z,7μm,1.0s							
PESA	**Pesaro**	**1.86**	**236**	Pn	**Pn**	**23 45 25.4**	**+1.3**
comp=Z,7μm,1.0s							
MYKA	**Terra Mystica**	**1.88**	**331**	*e*Pg	**Pb**	**23 45 26.2**	**-0.4**
comp=Z,387nm,0.3s,SNR=288							
MYKA				Sg	**Sg**	**23 45 54.8**	**+2.1**
comp=Z,795nm,0.3s							
MYKA	**Terra Mystica**	**1.88**	**331**	Pg	**Pb**	**23 45 26.2**	**-0.4**
comp=Z,387nm,0.3s,SNR=288							
MYKA				Sg	**Sg**	**23 45 54.8**	**+2.1**
comp=Z,795nm,0.3s							
BEHE	**Becsehely**	**1.93**	**40**	*e*Pn	**Pn**	**23 45 25.2**	**+0.1**
BEHE				*e*Pb	**Pg**	**23 45 29.1**	**-0.4**
BEHE				*e*Sn	**Sb**	**23 45 52.6**	**+0.9**
BEHE	**Becsehely**	**1.93**	**40**	*e*Pn	**Pn**	**23 45 25.9**	**+0.8**
BEHE	**Becsehely**	**1.93**	**40**	*e*Pg	**Pg**	**23 45 29.1**	**-0.4**
BEHE				*e*Sn	**Sb**	**23 45 50.8**	**-0.9**
BLLA	**Bellaria**	**1.99**	**245**	Pn	**Pb**	**23 45 27.5**	**-1.0**
comp=Z,1μm,0.5s							
BLLA	**Bellaria**	**1.99**	**245**	Pn	**Pb**	**23 45 27.5**	**-1.0**
comp=Z,1μm,0.5s							
POLC	**Polcenigo**	**2.02**	**301**	Pn	**Pb**	**23 45 27.9**	**-1.1**
comp=Z,6μm,0.5s							
POLC	**Polcenigo**	**2.02**	**301**	Pn	**Pb**	**23 45 27.9**	**-1.1**
comp=Z,6μm,0.5s							
STAL	**STALIGIAL**	**2.03**	**309**	Pn	**Pn**	**23 45 27.8**	**+1.3**
comp=Z,3μm,0.3s							
STAL	**STALIGIAL**	**2.03**	**309**	Pn	**Pn**	**23 45 27.8**	**+1.3**
comp=Z,3μm,0.3s							
FSSB	**Fossombrone**	**2.05**	**231**	Pn	**Pn**	**23 45 27.5**	**+0.7**
comp=Z,2μm,0.4s							
FSSB	**Fossombrone**	**2.05**	**231**	Pn	**Pn**	**23 45 27.5**	**+0.7**
comp=Z,2μm,0.4s							
CING	**Cingoli**	**2.07**	**219**	Pn	**Pn**	**23 45 27.4**	**+0.3**
comp=Z,737nm,0.5s							
CING	**Cingoli**	**2.07**	**219**	Pn	**Pn**	**23 45 27.4**	**+0.3**
comp=Z,737nm,0.5s							
GUMA	**Gualdo di Mace**	**2.08**	**202**	Pn	**Pb**	**23 45 30.1**	**0.0**
comp=Z,3μm,0.5s							
GUMA	**Gualdo di Mace**	**2.08**	**202**	Pn	**Pb**	**23 45 30.1**	**0.0**
comp=Z,3μm,0.5s							
ARVD	**Arcevia**	**2.10**	**225**	Pn	**Pn**	**23 45 27.9**	**+0.5**
comp=Z,631nm,0.6s							
ARVD	**Arcevia**	**2.10**	**225**	Pn	**Pn**	**23 45 27.9**	**+0.5**
comp=Z,631nm,0.6s							
HVAR	**Hvar**	**2.11**	**149**	⇑*i*Pn	**Pn**	**23 45 28.9**	**+1.4**
HVAR				Sn	**Sb**	**23 45 55.7**	**-1.0**
HVAR	**Hvar**	**2.11**	**149**	⇑*i*Pn	**Pn**	**23 45 28.9**	**+1.4**
HVAR				Sn	**Sb**	**23 45 55.7**	**-1.0**
FRON	**Frontone**	**2.20**	**228**	Pn	**Pn**	**23 45 29.5**	**+0.7**
comp=Z,2μm,0.9s							
FRON	**Frontone**	**2.20**	**228**	Pn	**Pn**	**23 45 29.5**	**+0.7**
comp=Z,2μm,0.9s							
FVI	**Forni Avoltri**	**2.21**	**317**	Pn	**Pn**	**23 45 30.6**	**+1.5**
comp=Z,2μm,0.5s							
FVI	**Forni Avoltri**	**2.21**	**317**	Pn	**Pn**	**23 45 30.6**	**+1.5**
comp=Z,2μm,0.5s							
SSFR	**Montelago di S**	**2.22**	**226**	Pn	**Pn**	**23 45 29.6**	**+0.4**
comp=Z,1μm,0.7s							
SSFR	**Montelago di S**	**2.22**	**226**	Pn	**Pn**	**23 45 29.6**	**+0.4**
comp=Z,1μm,0.7s							
DOB	**Doboj**	**2.24**	**96**	*e*Pn	**Pn**	**23 45 29.5**	**+0.2**
DOB				*e*Sn	**Sn**	**23 45 57.7**	**+0.9**
OFFI	**Offida**	**2.27**	**205**	Pn	**Pn**	**23 45 30.8**	**+1.1**
comp=Z,5μm,0.9s							
OFFI	**Offida**	**2.27**	**205**	Pn	**Pn**	**23 45 30.8**	**+1.1**
comp=Z,5μm,0.9s							
ARSA	**Arzberg**	**2.28**	**9**	*e*Pn	**Pn**	**23 45 30.6**	**+0.7**
comp=Z,105nm,0.3s,SNR=150							
ARSA				*e*Sg	**Sg**	**23 46 04.6**	**-1.0**
comp=Z,202nm,0.5s							
ARSA	**Arzberg**	**2.28**	**9**	Pn	**Pn**	**23 45 30.6**	**+0.7**
comp=Z,105nm,0.3s,SNR=150							
ARSA				Sg	**Sg**	**23 46 04.6**	**-1.0**
comp=Z,202nm,0.5s							
SNTG	**Esanatoglia**	**2.28**	**221**	Pn	**Pn**	**23 45 30.3**	**+0.4**
comp=Z,985nm,0.7s							
SNTG	**Esanatoglia**	**2.28**	**221**	Pn	**Pn**	**23 45 30.3**	**+0.4**
comp=Z,985nm,0.7s							
PIEI	**Pieia**	**2.29**	**231**	Pn	**Pn**	**23 45 30.6**	**+0.6**
comp=Z,1μm,0.4s							
PIEI	**Pieia**	**2.29**	**231**	Pn	**Pn**	**23 45 30.6**	**+0.6**
comp=Z,1μm,0.4s							
CMPO	**Campotto Po**	**2.30**	**261**	Pn	**Pn**	**23 45 31.5**	**+1.4**
comp=Z,2μm,1.0s							
CMPO	**Campotto Po**	**2.30**	**261**	Pn	**Pn**	**23 45 31.5**	**+1.4**
comp=Z,2μm,1.0s							
TRTR	**Tortoreto Alta**	**2.33**	**200**	Pn	**Pb**	**23 45 32.6**	**-1.6**
comp=Z,3μm,0.6s							
TRTR	**Tortoreto Alta**	**2.33**	**200**	Pn	**Pb**	**23 45 32.6**	**-1.6**
comp=Z,3μm,0.6s							
ATPC	**Poggio Castell**	**2.37**	**231**	Pn	**Pn**	**23 45 31.9**	**+0.8**
comp=Z,2μm,0.5s							
ATPC	**Poggio Castell**	**2.37**	**231**	Pn	**Pn**	**23 45 31.9**	**+0.8**
comp=Z,2μm,0.5s							
TEOL	**Teolo**	**2.37**	**280**	Pn	**Pn**	**23 45 31.6**	**+0.5**
comp=Z,5μm,0.7s							
TEOL	**Teolo**	**2.37**	**280**	Pn	**Pn**	**23 45 31.6**	**+0.5**
comp=Z,5μm,0.7s							
KBA	**Koelnbreinsper**	**2.37**	**332**	*e*Pn	**Pb**	**23 45 33.4**	**-1.7**
comp=Z,199nm,0.6s,SNR=143							
KBA				*e*Sn	**Sn**	**23 46 00.8**	**+0.5**
comp=Z,208nm,0.5s							
KBA	**Koelnbreinsper**	**2.37**	**332**	Pn	**Pb**	**23 45 33.4**	**-1.7**
comp=Z,199nm,0.6s,SNR=143							
KBA				Sn	**Sn**	**23 46 00.8**	**+0.5**
comp=Z,208nm,0.5s							
PARC	**Parchiule**	**2.39**	**236**	Pn	**Pn**	**23 45 32.1**	**+0.7**
comp=Z,996nm,0.8s							
PARC	**Parchiule**	**2.39**	**236**	Pn	**Pn**	**23 45 32.1**	**+0.7**
comp=Z,996nm,0.8s							
FDMO	**Fiordimonte**	**2.39**	**215**	Pn	**Pn**	**23 45 31.4**	**-0.1**
comp=Z,1μm,1.2s							
FDMO	**Fiordimonte**	**2.39**	**215**	Pn	**Pn**	**23 45 31.4**	**-0.1**
comp=Z,1μm,1.2s							
IMOL	**Imola, Italy**	**2.40**	**256**	Pn	**Pn**	**23 45 33.3**	**+1.9**
comp=Z,151nm,0.6s							
IMOL	**Imola, Italy**	**2.40**	**256**	Pn	**Pn**	**23 45 33.3**	**+1.9**
comp=Z,151nm,0.6s							
CGRP	**Cima Grappa**	**2.40**	**293**	Pn	**Pn**	**23 45 32.7**	**+1.0**
comp=Z,3μm,0.7s							
CGRP	**Cima Grappa**	**2.40**	**293**	Pn	**Pn**	**23 45 32.7**	**+1.0**
comp=Z,3μm,0.7s							
AGOR	**Agordo**	**2.42**	**303**	Pn	**Pn**	**23 45 33.0**	**+1.1**
comp=Z,681nm,0.4s							
ABTA	**Abfaltersbach**	**2.45**	**316**	*e*Pn	**Pn**	**23 45 34.2**	**+1.9**
comp=Z,315nm,0.6s,SNR=161							
ABTA				*e*Sg	**Sg**	**23 46 13.3**	**+2.2**
comp=Z,2μm,0.7s							
ABTA	**Abfaltersbach**	**2.45**	**316**	Pn	**Pn**	**23 45 34.2**	**+1.9**
comp=Z,315nm,0.6s,SNR=161							
ABTA				Sg	**Sg**	**23 46 13.3**	**+2.2**
comp=Z,2μm,0.7s							
ATVO	**AVT- Monte Val**	**2.46**	**230**	Pn	**Pn**	**23 45 33.1**	**+0.7**
comp=Z,1μm,0.8s							
ATVO	**AVT- Monte Val**	**2.46**	**230**	Pn	**Pn**	**23 45 33.1**	**+0.7**
comp=Z,1μm,0.8s							
BADI	**Badiali**	**2.47**	**234**	Pn	**Pn**	**23 45 33.6**	**+1.1**
comp=Z,2μm,0.6s							
BADI	**Badiali**	**2.47**	**234**	Pn	**Pn**	**23 45 33.6**	**+1.1**
comp=Z,2μm,0.6s							
MURB	**Monte Urbino**	**2.48**	**226**	Pn	**Pn**	**23 45 33.5**	**+0.8**
comp=Z,3μm,0.5s							
MURB	**Monte Urbino**	**2.48**	**226**	Pn	**Pn**	**23 45 33.5**	**+0.8**
comp=Z,3μm,0.5s							
CESI	**CESI - Serrava**	**2.50**	**218**	Pn	**Pn**	**23 45 33.2**	**+0.3**
comp=Z,465nm,0.7s							
CESI	**CESI - Serrava**	**2.50**	**218**	Pn	**Pn**	**23 45 33.2**	**+0.3**
comp=Z,465nm,0.7s							
SFI	**Santa Sofia**	**2.50**	**245**	Pn	**Pn**	**23 45 33.7**	**+0.8**
comp=Z,1μm,1.0s							
SFI	**Santa Sofia**	**2.50**	**245**	Pn	**Pn**	**23 45 33.7**	**+0.8**
comp=Z,1μm,1.0s							
NRCA	**Norcia**	**2.55**	**212**	Pn	**Pn**	**23 45 33.7**	**0.0**
comp=Z,659nm,0.7s							
NRCA	**Norcia**	**2.55**	**212**	Pn	**Pn**	**23 45 33.7**	**0.0**
comp=Z,659nm,0.7s							
CRE	**Caprese Michel**	**2.58**	**239**	Pn	**Pn**	**23 45 35.5**	**+1.4**
comp=Z,975nm,1.0s							
CRE	**Caprese Michel**	**2.58**	**239**	Pn	**Pn**	**23 45 35.5**	**+1.4**
comp=Z,975nm,1.0s							
TERO	**Teramo**	**2.58**	**203**	Pn	**Pn**	**23 45 34.0**	**0.0**
comp=Z,505nm,0.5s							
TERO	**Teramo**	**2.58**	**203**	Pn	**Pn**	**23 45 34.0**	**0.0**
comp=Z,505nm,0.5s							
MTRZ	**Monterenzio**	**2.58**	**257**	Pn	**Pb**	**23 45 36.7**	**-1.9**
comp=Z,1μm,0.6s							
MTRZ	**Monterenzio**	**2.58**	**257**	Pn	**Pb**	**23 45 36.7**	**-1.9**
comp=Z,1μm,0.6s							
ASQU	**Asqua**	**2.58**	**243**	Pn	**Pn**	**23 45 35.3**	**+1.2**
comp=Z,867nm,0.7s							
ASQU	**Asqua**	**2.58**	**243**	Pn	**Pn**	**23 45 35.3**	**+1.2**
comp=Z,867nm,0.7s							
ATTE	**AVT- Monte Tez**	**2.61**	**227**	Pn	**Pn**	**23 45 36.0**	**+1.5**
comp=Z,974nm,1.1s							
ATTE	**AVT- Monte Tez**	**2.61**	**227**	Pn	**Pn**	**23 45 36.0**	**+1.5**
comp=Z,974nm,1.1s							
SMA1	**SAN MARTINO**	**2.65**	**207**	Pn	**Pn**	**23 45 35.2**	**+0.1**
comp=Z,1μm,0.7s							
SMA1	**SAN MARTINO**	**2.65**	**207**	Pn	**Pn**	**23 45 35.2**	**+0.1**
comp=Z,1μm,0.7s							
CAMP	**Campotosto**	**2.71**	**205**	Pn	**Pn**	**23 45 36.0**	**0.0**
comp=Z,130nm,0.4s							
CAMP	**Campotosto**	**2.71**	**205**	Pn	**Pn**	**23 45 36.0**	**0.0**
comp=Z,130nm,0.4s							
RM32	**Poggio Cancell**	**2.72**	**207**	Pn	**Pn**	**23 45 36.3**	**+0.2**
comp=Z,535nm,0.6s							
RM32	**Poggio Cancell**	**2.72**	**207**	Pn	**Pn**	**23 45 36.3**	**+0.2**
comp=Z,535nm,0.6s							
VCEL	**Villa Celiera**	**2.73**	**198**	Pn	**Pn**	**23 45 36.2**	**0.0**
comp=Z,777nm,0.5s							
VCEL	**Villa Celiera**	**2.73**	**198**	Pn	**Pn**	**23 45 36.2**	**0.0**
comp=Z,777nm,0.5s							
CAFI	**Castiglion Fio**	**2.74**	**233**	Pn	**Pn**	**23 45 37.0**	**+0.8**
comp=Z,853nm,1.0s							
CAFI	**Castiglion Fio**	**2.74**	**233**	Pn	**Pn**	**23 45 37.0**	**+0.8**
comp=Z,853nm,1.0s							
RM29	**Verrico (Monte**	**2.76**	**208**	Pn	**Pn**	**23 45 36.8**	**+0.2**
comp=Z,575nm,0.4s							
RM29	**Verrico (Monte**	**2.76**	**208**	Pn	**Pn**	**23 45 36.8**	**+0.2**
comp=Z,575nm,0.4s							
LNSS	**Leonessa**	**2.78**	**211**	Pn	**Pn**	**23 45 37.1**	**+0.2**
comp=Z,685nm,0.5s							
LNSS	**Leonessa**	**2.78**	**211**	Pn	**Pn**	**23 45 37.1**	**+0.2**
comp=Z,685nm,0.5s							
RM33	**Pellescritta (**	**2.80**	**208**	Pn	**Pn**	**23 45 37.4**	**+0.2**
comp=Z,615nm,0.7s							
RM33	**Pellescritta (**	**2

SGRT	San Giovanni R	3.29	170	Pn	Pn	23 45 43.3	-0.6
	comp=Z,607nm,0.8s						
SGRT	San Giovanni R	3.29	170	Pn	Pn	23 45 43.3	-0.6
	comp=Z,607nm,0.8s						
MABI	Malga Bissina	3.31	290	Pn	Pn	23 45 45.6	+1.4
	comp=Z,345nm,0.5s						
MABI	Malga Bissina	3.31	290	Pn	Pn	23 45 45.6	+1.4
	comp=Z,345nm,0.5s						
LATE	Laterza	3.31	225	Pn	Pn	23 45 45.2	+1.1
	comp=Z,762nm,1.1s						
LATE	Laterza	3.31	225	Pn	Pn	23 45 45.2	+1.1
	comp=Z,762nm,1.1s						
BRY	Bratogost	3.32	128	⇓i Pn	Pn	23 45 45.9	+1.6
BRY				eSn	Sn	23 46 25.3	+1.5
BRY	Bratogost	3.32	128	ePn	Pn	23 45 45.6	+1.3
BRY				eSn	Sn	23 46 25.3	+1.5
TREB	Trebinje	3.34	132	ePn	Pn	23 45 45.8	+1.3
TREB				eSn	Sn	23 46 25.2	+1.1
UPM	Unac-Piva	3.35	121	⇓i Pn	Pn	23 45 45.9	+1.1
UPM				eSn	Sn	23 46 26.2	+1.5
UPM	Unac-Piva	3.35	121	⇓i Pn	Pn	23 45 45.9	+1.1
UPM				eSn	Sn	23 46 26.2	+1.5
MSAG	Monte S. Angel	3.36	168	Pn	Pn	23 45 43.9	-0.9
	comp=Z,916nm,0.6s						
MSAG	Monte S. Angel	3.36	168	Pn	Pn	23 45 43.9	-0.9
	comp=Z,916nm,0.6s						
BBLS	Lazići	3.37	108	ePn	Pn	23 45 46.3	+1.4
BBLS	Lazići	3.37	108	⇑i Pn	Pn	23 45 45.5	+0.6
BBLS				eSn	Sn	23 46 25.8	+0.9
SARO	Sassorosso	3.37	258	P	Pn	23 45 45.9	+0.9
MS1	Monte Sant'Ang	3.37	168	ePn	Pn	23 45 46.9	+1.9
CERT	Cerreto	3.38	206	Pn	Pn	23 45 45.3	+0.2
	comp=Z,266nm,0.7s						
CERT	Cerreto	3.38	206	Pn	Pn	23 45 45.3	+0.2
	comp=Z,266nm,0.7s						
VLC	Villacollemand	3.39	257	ePn	Pn	23 45 45.2	+0.1
VLC	Villacollemand	3.39	257	ePn	Pn	23 45 45.2	+0.1
MAIM	Mastiano	3.39	253	P	Pn	23 45 45.3	+0.1
MTCE	Montecelio	3.39	209	Pn	Pn	23 45 45.0	-0.2
	comp=Z,234nm,0.8s						
MTCE	Montecelio	3.39	209	Pn	Pn	23 45 45.0	-0.2
	comp=Z,234nm,0.8s						
MIDA	Miranda	3.40	189	Pn	Pn	23 45 45.0	-0.4
	comp=Z,356nm,0.8s						
MIDA	Miranda	3.40	189	Pn	Pn	23 45 45.0	-0.4
	comp=Z,356nm,0.8s						
POFI	Posta Fibreno	3.41	196	Pn	Pn	23 45 45.2	-0.3
	comp=Z,274nm,0.9s						
POFI	Posta Fibreno	3.41	196	Pn	Pn	23 45 45.2	-0.3
	comp=Z,274nm,0.9s						
FGSL	Fruska Gora	3.43	86	ePn	Pn	23 45 46.3	+0.6
FRGS	Fruska Gora	3.43	86	ePn	Pn	23 45 46.3	+0.6
FRGS	Fruska Gora	3.43	86	ePn	Pn	23 45 46.4	+0.7
FRGS				eSn	Sn	23 46 27.1	+0.8
ZST	Bratislava	3.51	24	eSg	Sg	23 46 42.7	-2.5
ZST	Bratislava	3.51	24	e	Pn	23 45 46.2	-0.6
ZST	Bratislava	3.51	24	eSG	Sg	23 46 42.7	-2.5
ZST				eLG	Lg	23 46 50.0	
GRAM	Graiana	3.54	263	P	Pn	23 45 48.3	+1.1
MOTA	Moosalm	3.57	312	i Pn	Pn	23 45 50.7	+3.0
	comp=Z,60nm,0.3s,SNR=99						
MOTA				eSg	Sg	23 46 49.7	+2.8
	comp=Z,610nm,0.8s						
MOTA	Moosalm	3.57	312	Pn	Pn	23 45 50.7	+3.0
	comp=Z,60nm,0.3s,SNR=99						
MOTA				Sg	Sg	23 46 49.7	+2.8
	comp=Z,610nm,0.8s						
FETA	Feichten	3.58	306	i Pn	Pn	23 45 50.6	+2.7
	comp=Z,10nm,0.2s,SNR=17						
FETA				eSn	Sn	23 46 32.9	+2.6
	comp=Z,106nm,0.6s						
FETA				eSg	Sg	23 46 47.9	+0.5
	comp=Z,567nm,0.9s						
FETA	Feichten	3.58	306	Pn	Pn	23 45 50.6	+2.7
	comp=Z,10nm,0.2s,SNR=17						
FETA				Sn	Sn	23 46 32.9	+2.6
	comp=Z,106nm,0.6s						
FETA				Sg	Sg	23 46 47.9	+0.5
	comp=Z,567nm,0.9s						
PLE	Pljevlja	3.59	116	⇓i Pn	Pn	23 45 49.7	+1.7
PLE				eSn	Sn	23 46 31.6	+1.2
PLE	Pljevlja	3.59	116	⇓i Pn	Pn	23 45 49.7	+1.7
PLE				eSn	Sn	23 46 31.6	+1.2
HCY	Herceg Novi	3.61	134	⇓i Pn	Pn	23 45 49.3	+1.1
HCY				eSn	Sn	23 46 33.0	+2.3
HCY	Herceg Novi	3.61	134	⇓i Pn	Pn	23 45 49.2	+1.1
HCY				eSn	Sn	23 46 33.0	+2.3
SACR	S. Croce Del S	3.61	183	Pn	Pn	23 45 47.7	-0.5
	comp=Z,332nm,1.0s						
SACR	S. Croce Del S	3.61	183	Pn	Pn	23 45 47.7	-0.5
	comp=Z,332nm,1.0s						
MOCO	Biccari - m.te	3.63	178	Pn	Pn	23 45 48.2	-0.4
	comp=Z,1µm,1.9s						
NKY	Niksic	3.63	126	⇑i Pn	Pn	23 45 50.5	+1.9
NKY				eSn	Sn	23 46 33.0	+1.5
NKY	Niksic	3.63	126	⇑i Pn	Pn	23 45 50.5	+1.9
NKY				eSn	Sn	23 46 33.0	+1.5
NKME	Niksic	3.64	126	ePn	Pn	23 45 50.2	+1.6
NKME				eSn	Sn	23 46 33.0	+1.4
NKME	Niksic	3.64	126	ePn	Pn	23 45 50.2	+1.6
NKME				eSn	Sn	23 46 33.0	+1.4
DIVS	Divibare	3.70	102	P	Pn	23 45 49.6	+0.1
DIVS	Divibare	3.70	102	ePn	Pn	23 45 50.0	+0.5
DIVS	Divibare	3.70	102	P	Pn	23 45 49.6	+0.1
DIVS	Divibare	3.70	102	ePn	Pn	23 45 50.0	+0.5
DIVS				eSn	Sn	23 46 33.6	+0.6
CODM	Codolo	3.71	262	P	Pn	23 45 51.1	+1.6
BUD	Budapest	3.75	47	⇑ePn	Pn	23 45 50.4	+0.4
BUD				eSn	Sn	23 46 29.2	-4.9
BUD	Budapest	3.75	47	⇑ePn	Pn	23 45 50.4	+0.4
CEME	Cevo	3.77	129	⇑i Pn	Pn	23 45 51.8	+1.4
CEME				eSn	Sn	23 46 36.4	+1.8
CEME	Cevo	3.77	129	⇑i Pn	Pn	23 45 51.8	+1.4
CEME				eSn	Sn	23 46 36.4	+1.8
RETA	Reutte	3.84	312	i Pn	Pn	23 45 53.9	+2.5
	comp=Z,28nm,0.3s,SNR=28						
RETA				i Sn	Sn	23 46 40.4	+3.9
	comp=Z,106nm,0.4s						
RETA	Reutte	3.84	312	Pn	Pn	23 45 53.9	+2.5
	comp=Z,28nm,0.3s,SNR=28						
RETA				Sn	Sn	23 46 40.4	+3.9
	comp=Z,106nm,0.4s						
SMOL	Smolenice	3.90	25	eSg	Sg	23 46 54.4	-3.0
SMOL	Smolenice	3.90	25	e	Pn	23 45 52.0	-0.1
SMOL	Smolenice	3.90	25	eSG	Sg	23 46 54.4	-3.0
BUM	Brajici-Budva	3.92	132	⇑i Pn	Pn	23 45 53.9	+1.4
BUM				eSn	Sn	23 46 40.3	+1.8
BUM	Brajici-Budva	3.92	132	⇑i Pn	Pn	23 45 53.9	+1.4
BUM				eSn	Sn	23 46 40.3	+1.8
SC2M	Scurtabo	3.93	263	P	Pn	23 45 55.1	+2.5
GERES	GERESS Array B	3.94	348	Pn	Pn	23 45 53.9	+1.1
	comp=Z,15nm,0.3s,baz=166,slow=13,SNR=394						
GERES				Sn	Sn	23 46 38.9	-0.2
	comp=Z,21nm,0.3s,baz=171,slow=27,SNR=5.0						
GERES				Lg	Lg	23 46 57.7	
	comp=Z,14nm,0.3s,baz=163,slow=28,SNR=4.3						
GERES				LR	LR	23 47 48.7	
	comp=Z,102nm,19.1s,baz=168,slow=45						
TRUS	Trudelj	3.95	99	ePn	Pn	23 45 54.4	+1.5
TRUS	Trudelj	3.95	99	ePn	Pn	23 45 54.4	+1.5
DAVOX	Davos/Dischmat	3.98	298	Pn	Pn	23 45 56.1	+2.7
	comp=Z,37nm,0.3s,baz=122,slow=10.0,SNR=222						
DAVOX				Sn	Sn	23 46 43.5	+3.4
	comp=Z,17nm,0.3s,baz=138,slow=22,SNR=4.5						
DAVOX				Lg	Lg	23 47 01.2	
	comp=Z,25nm,0.3s,baz=354,slow=18,SNR=7.1						
DAVOX				LR	LR	23 47 51.0	
	comp=Z,113nm,20.1s,baz=120,slow=44						
IVAS	Ivanjica	3.98	109	ePn	Pn	23 45 54.7	+1.4
IVAS	Ivanjica	3.98	109	ePn	Pn	23 45 54.7	+1.4
SJES	Sjenica	4.00	114	ePn	Pn	23 45 55.3	+1.7
PDG	Podgorica	4.03	128	⇓i P	Pn	23 45 55.6	+1.6
PDG	Podgorica	4.03	128	P	Pn	23 45 55.5	+1.6
PDG	Podgorica	4.03	128	ePn	Pn	23 45 55.9	+2.0
PDG				eSn	Sn	23 46 42.0	+1.0
PDG	Podgorica	4.03	128	Pn	Pn	23 45 55.4	+1.6
PDG	Podgorica	4.03	128	⇑i Pn	Pn	23 45 55.2	+1.3
PDG	Podgorica	4.03	128	P	Pn	23 45 55.5	+1.6
PDG				eSn	Sn	23 46 42.5	+1.5
TTG	Podgorica	4.03	128	⇓i Pn	Pn	23 45 55.5	+1.6
TTG				eSn	Sn	23 46 42.5	+1.5
CDT	Castel del Mon	4.03	166	ePn	Pn	23 45 53.2	-0.8
BAI	Bari	4.14	160	ePn	Pn	23 45 55.6	+0.2
BEY	Berane	4.14	119	⇑i Pn	Pn	23 45 56.6	+1.1
BEY				eSn	Sn	23 46 45.5	+1.5
IVA	Berane	4.14	119	⇑i Pn	Pn	23 45 56.6	+1.1
IVA				eSn	Sn	23 46 45.5	+1.5
DRME	Dracevica, Mon	4.16	131	⇓i Pn	Pn	23 45 57.3	+1.6
DRME				eSn	Sn	23 46 45.6	+1.4
DRME	Dracevica, Mon	4.16	131	⇑i Pn	Pn	23 45 56.8	+1.1
DRME				eSn	Sn	23 46 45.6	+1.4
TUE	Stuetta	4.21	292	ePn	Pn	23 45 59.1	+2.5
TUE				eSn	Sn	23 46 46.7	+1.0
TUE	Stuetta	4.21	292	ePn	Pn	23 45 59.1	+2.5
TUE				eSn	Sn	23 46 46.7	+1.0
DAVA	Damuels	4.21	305	i Pn	Pn	23 45 59.2	+2.6
	comp=Z,18nm,0.3s,SNR=11						
DAVA				eSg	Sg	23 47 11.5	+3.8
	comp=Z,390nm,0.9s						
DAVA	Damuels	4.21	305	Pn	Pn	23 45 59.2	+2.6
	comp=Z,18nm,0.3s,SNR=11						
DAVA				Sg	Sg	23 47 11.5	+3.8
	comp=Z,390nm,0.9s						
KHC	Kasperske Hory	4.24	347	ePN	Pn	23 45 57.9	+1.1
KHC				ePG	Pb	23 46 09.5	+2.6
KHC				eSN	Sn	23 46 46.9	+0.6
KHC				eSG	Sg	23 47 05.5	-2.9
KHC				AMS	AMS	23 47 40.0	
	comp=Z,600nm,7.3s						
KHC	Kasperske Hory	4.24	347	ePn	Pn	23 45 57.9	+1.1
KHC	Kasperske Hory	4.24	347	ePn	Pn	23 45 57.9	+1.1
GRUS	Gruza	4.26	103	ePn	Pn	23 45 58.4	+1.3
GRUS	Gruza	4.26	103	ePn	Pn	23 45 58.4	+1.3
GRUS	Gruza	4.26	103	ePn	Pn	23 45 58.4	+1.3
TREC	Trest	4.31	4	ePN	Pn	23 45 58.7	+0.9
TREC				AMS	AMS	23 47 30.0	
	comp=Z,400nm,7.7s						
PVY	Plav	4.34	122	⇓i Pn	Pn	23 46 00.0	+1.7
PVY				eSn	Sn	23 46 50.0	+1.2
PVY	Plav	4.34	122	⇓i Pn	Pn	23 46 00.0	+1.7
PVY				eSn	Sn	23 46 50.0	+1.2
SG1	Sgolgore (BA)	4.34	163	ePn	Pn	23 45 57.7	-0.6
SG1				Sn	Sn	23 46 46.8	-2.1
ULC	Ulcinj	4.34	133	⇓i Pn	Pn	23 45 59.2	+0.9
ULC				eSn	Sn	23 46 50.5	+1.6
ULC	Ulcinj	4.34	133	⇓i Pn	Pn	23 45 59.2	+0.9
ULC				eSn	Sn	23 46 50.5	+1.6
VYHS	Vyhne	4.38	36	e	Pn	23 45 58.5	-0.3
VRAC	Vranov	4.45	14	Pn	Pn	23 46 00.2	+0.5
	comp=Z,7.2nm,0.3s,baz=199,slow=14,SNR=89						
VRAC				Sn	Sn	23 46 47.7	-3.7
	comp=Z,6.8nm,0.3s,baz=299,slow=17,SNR=4.6						
VRAC				Lg	Lg	23 47 08.0	
	comp=Z,2.8nm,0.3s,baz=249,slow=3.0,SNR=4.3						
VRAC				LR	LR	23 47 13.9	
	comp=Z,34nm,20.3s,baz=251,slow=33						
VRAC	Vranov	4.45	14	⇑i P	Pn	23 46 00.2	+0.5
PSZ	Piszkesteto	4.48	48	⇑i P	Pn	23 46 00.8	+0.6
PSZ	Piszkesteto	4.48	48	⇓ePn	Pn	23 45 59.5	-0.6
PSZ				epPn	pPn	23 46 02.3	-0.6
PSZ				eSn	Sn	23 46 50.9	-1.3
PSZ	Piszkesteto	4.48	48	ePn	Pn	23 45 59.6	-0.6
PSZ				eSn	Sn	23 46 50.9	-1.3
PSZ	Piszkesteto	4.48	48	ePn	Pn	23 45 59.6	-0.5
MATE	Matera	4.53	163	⇓i P	Pn	23 46 00.4	-0.4
BZS	Buzias	4.72	80	⇓i P	Pn	23 46 03.4	-0.1
BZS	Buzias	4.72	80	ePn	Pn	23 46 03.4	-0.1
BZS	Buzias	4.72	80	ePn	Pn	23 46 03.4	-0.1
SELS	Selova	4.77	110	ePn	Pn	23 46 05.0	+0.9
TAR1	Taranto	4.79	158	i Pn	Pn	23 46 04.7	+0.4
MDVR	Moldovita	4.79	90	⇓i P	Pn	23 46 05.0	+0.5
KUBS	Kucevo	4.81	95	ePn	Pn	23 46 03.8	-0.9
KUBS	Kucevo	4.81	95	ePn	Pn	23 46 03.8	-0.9
SIRR	Siria	4.86	73	⇓i P	Pn	23 46 06.6	+1.3
GOPC	GO Pecny, Ondr	4.92	359	ePN	Pn	23 46 06.9	+0.8
GOPC				eSN	Sn	23 47 01.6	-1.3
GOPC				AMS	AMS	23 47 50.0	
	comp=Z,400nm,8.0s						
PGF	Pioggiola	4.97	243	ePn	Pn	23 46 07.5	+0.5
PGF				eSn	Sn	23 47 03.5	-1.1
	comp=Z,24nm,0.4s						
PGF	Pioggiola	4.97	243	ePn	Pn	23 46 07.5	+0.5
PGF				eSn	Sn	23 47 03.5	-1.1
	comp=Z,12nm,0.4s						
PGF	Pioggiola	4.97	243	ePn	Pn	23 46 07.5	+0.5
PGF				eSn	Sn	23 47 03.5	-1.1
PRU	Pruhonice	5.00	357	ePN	Pn	23 46 07.9	+0.7
PRU				eSN	Sn	23 47 02.8	-2.1
PRU				eSG	Sg	23 47 29.8	-2.9
	comp=Z,62nm,0.6s						
PRU				AMS	AMS	23 48 00.0	
	comp=Z,300nm,8.1s						
BOVS	Bovan	5.02	103	ePn	Pn	23 46 08.4	+0.9
BOVS	Bovan	5.02	103	ePn	Pn	23 46 08.4	+0.9
CUC	Castrocucco	5.04	173	ePn	Pn	23 46 08.6	+0.6
	comp=Z,17nm,0.5s						
CUC	Castrocucco	5.04	173	ePn	Pn	23 46 08.6	+0.6
	comp=Z,17nm,0.5s						
MORC	Moravsky Berou	5.08	19	⇓i P	Pn	23 46 09.4	+0.9
MORC	Moravsky Berou	5.08	19	⇓i Pn	Pn	23 46 09.0	+0.5
MORC				eSn	Sn	23 47 04.2	-2.9
TIR	Tirane	5.11	134	i PN	Pn	23 46 09.4	+0.6
TIR	Tirane	5.11	134	⇓i P	Pn	23 46 09.7	+0.9
TIR	Tirane	5.11	134	ePn	Pn	23 46 09.9	+1.1
	comp=Z,59nm,0.4s						
TIR	Tirane	5.11	134	ePn	Pn	23 46 09.9	+1.1
	comp=Z,59nm,0.4s						
KECS	Kecovo	5.14	45	e	Pn	23 46 10.1	+0.9
KECS				eLG	Lg	23 48 04.4	
LANS	Liptovska Anna	5.16	35	e	Pn	23 46 10.6	+1.1
KRLC	Kraliky	5.22	13	ePN	Pn	23 46 11.4	+1.1
KRLC				eSN	Sn	23 47 08.2	-2.3
SPAK	Spaichingen-Ko	5.28	308	Pn	Pn	23 46 12.4	+1.3
OKC	Ostrava-Krasne	5.29	23	ePN	Pn	23 46 12.1	+0.8
GRFO	Grafenberg	5.34	333	ePn	Pn	23 46 12.6	+0.7
	comp=Z,64nm,0.6s						
GRFO				eSn	Sn	23 47 13.9	+0.6
GRFO	Grafenberg	5.34	333	ePn	Pn	23 46 12.7	+0.7
	comp=Z,64nm,0.6s						
GRFO				eSn	Sn	23 47 13.9	+0.6
BARS	Barje	5.40	111	ePn	Pn	23 46 14.2	+1.4
BARS	Barje	5.40	111	ePn	Pn	23 46 14.2	+1.4
DPC	Dobruska-Polom	5.43	9	ePN	Pn	23 46 13.6	+0.4
DPC				AMS	AMS	23 48 10.0	
	comp=Z,300nm,9.6s						
STU	Stuttgart	5.47	316	ePn	Pn	23 46 14.7	+1.0
	comp=Z,63nm,0.6s						
STU	Stuttgart	5.47	316	ePn	Pn	23 46 14.7	+1.0
	comp=Z,63nm,0.6s						
NKC	Novy Kostel	5.50	343	ePN	Pn	23 46 15.0	+0.8
NKC				eSN	Sn	23 47 15.8	-1.7
NKC				eSG	Sg	23 47 48.0	-1.0
	comp=Z,232nm,0.8s						
SBF	Sospel	5.52	261	ePn	Pn	23 46 15.4	+0.9
SBF				eSn	Sn	23 47 16.2	-1.7
	comp=Z,138nm,0.7s						
SBF	Sospel	5.52	261	ePn	Pn	23 46 15.4	+0.9
SBF	Sospel	5.52	261	ePn	Pn	23 46 15.4	+0.9
SBF				eSn	Sn	23 47 16.2	-1.7
PVCC	Panska Ves	5.54	357	ePN	Pn	23 46 15.0	+0.4
UPC	Upice	5.55	7	ePN	Pn	23 46 15.4	+0.6
UPC				AMS	AMS	23 48 10.0	
	comp=Z,400nm,8.4s						
LUCF	Luceram	5.58	261	Pn	Pn	23 46 18.0	+2.7
LUCF	Luceram	5.58	261	Pg	Pg	23 46 39.2	+0.1
LUCF	Luceram	5.58	261	Pn	Pn	23 46 18.0	+2.7
LUCF	Luceram	5.58	261	Pg	Pg	23 46 39.2	+0.1
SKO	Skopje	5.59	121	P	Pn	23 46 17.2	+1.8
SKO	Skopje	5.59	121	i Pn	Pn	23 46 17.2	+1.8
SKO	Skopje	5.59	121	i Pn	Pn	23 46 17.1	+1.7
FELD	Feldberg im Sc	5.61	303	Pn	Pn	23 46 17.2	+1.4
BFO	Black Forest	5.66	308	ePn	Pn	23 46 17.4	+1.1
	comp=Z,34nm,0.4s						
BFO				eSn	Sn	23 47 21.0	-0.2
BFO	Black Forest	5.66	308	ePn	Pn	23 46 17.4	+1.1
	comp=Z,34nm,0.4s						
BFO				eSn	Sn	23 47 21.0	-0.2
DRGR		5.69	69	⇓i P	Pn	23 46 18.3	+1.5
MVIF	Mont Vial	5.71	262	Pn	Pn	23 46 19.2	+2.0
MVIF	Mont Vial	5.71	262	Pg	Pg	23 46 41.9	+0.2
MVIF	Mont Vial	5.71	262	Pn	Pn	23 46 19.2	+2.0
MVIF	Mont Vial	5.71	262	Pg	Pg	23 46 41.9	+0.2
NIE	Niedzica	5.71	37	ePn	Pn	23 46 18.5	+1.4
BBS	Basel-Blauen	5.74	298	Pn	Pn	23 46 19.1	+1.7
BBS				Sn	Sn	23 47 23.0	-0.2
OHR	Ohrid	5.77	130	i Pn	Pn	23 46 19.6	+1.6
OHR	Ohrid	5.77	130	i Pn	Pn	23 46 19.5	+1.6
ZAPS	Zavoj	5.78	105	ePn	Pn	23 46 19.6	+1.6
LPG	La Plagne	5.83	278	ePn	Pn	23 46 18.9	0.0
LPG				eSn	Sn	23 47 23.2	-2.6
	comp=Z,81nm,0.5s						
LPG	La Plagne	5.83	278	ePn	Pn	23 46 18.9	0.0
LPG	La Plagne	5.83	278	ePn	Pn	23 46 18.9	0.0
LPG				eSn	Sn	23 47 23.2	-2.6
MBDF	Montbardon	5.84	270	ePn	Pn	23 46 17.9	-1.0
MBDF				eSn	Sn	23 47 23.7	-2.2
	comp=Z,68nm,0.5s						
MBDF	Montbardon	5.84	270	ePn	Pn	23 46 17.9	-1.0
MBDF	Montbardon	5.84	270	ePn	Pn	23 46 17.9	-1.0
MBDF				eSn	Sn	23 47 23.7	-2.2
LPL	La Plagne	5.84	278	ePn	Pn	23 46 18.8	-0.3
LPL				eSn	Sn	23 47 23.5	-2.6
	comp=Z,52nm,0.4s						
LPL	La Plagne	5.84	278	ePn	Pn	23 46 18.8	-0.3
LPL	La Plagne	5.84	278	ePn	Pn	23 46 18.8	-0.3
LPL				eSn	Sn	23 47 23.5	-2.6
SRE	Strehaia	5.86	90	⇓i P	Pn	23 46 21.4	+2.3
CRVS	Cervenica-Dubn	5.91	46	e	Pn	23 46 21.1	+1.4
CRVS	Cervenica-Dubn	5.91	46	eSG	Sg	23 48 06.4	+4.5
BRG	Berggiesshubel	5.92	354	PG	Pn	23 46 20.1	+0.3
BRG				SN	Sn	23 47 26.3	-1.2
BRG				SG	Sg	23 47 57.4	-4.7
	comp=Z,38nm,0.6s						
TIP	Timpagrande	5.97	167	⇓i P	Pn	23 46 21.4	+0.7
TIP	Timpagrande	5.97	167	P	Pn	23 46 21.2	+0.5
TIP	Timpagrande	5.97	167	P	Pn	23 46 21.2	+0.5
TIP	Timpagrande	5.97	167	ePn	Pn	23 46 21.7	+1.0
	comp=Z,12nm,0.4s						
TIP	Timpagrande	5.97	167	ePn	Pn	23 46 21.7	+1.0
	comp=Z,12nm,0.4s						
TRPA	Tarpa	6.08	56	⇓eSn	Pg	23 46 51.1	+2.4
BIA	Bitola	6.12	128	P	Pn	23 46 23.9	+1.2
BIA	Bitola	6.12	128	⇑i Pn	Pn	23 46 24.1	+1.4
BIA	Bitola	6.12	128	P	Pn	23 46 23.9	+1.2
MOF	Molkenrain	6.12	301	Pn	Pn	23 46 23.9	+1.1
MOF				Sn	Sn	23 47 33.4	+0.6
MOF	Molkenrain	6.12	301	Pn	Pn	23 46 23.9	+1.1
MOF				Sn	Sn	23 47 33.4	+0.6
LOMF	Lomont	6.13	295	Pn	Pn	23 46 24.7	+1.9
LOMF				Sn	Sn	23 47 33.8	+0.9
LOMF	Lomont	6.13	295	Pn	Pn	23 46 24.7	+1.9
LOMF				Sn	Sn	23 47 33.8	+0.9
STHS	Stebnicka Huta	6.14	42	e	Pn	23 46 25.0	+2.1
FRF	La Foret Royal	6.15	259	ePn	Pn	23 46 22.9	-0.2
FRF				eSn	Sn	23 47 31.4	-2.0
	comp=Z,33nm,0.5s						
FRF	La Foret Royal	6.15	259	ePn	Pn	23 46 22.9	-0.2
FRF	La Foret Royal	6.15	259	ePn	Pn	23 46 22.9	-0.2
FRF				eSn	Sn	23 47 31.4	-2.0
TOD	Tromm	6.23	320	Pn	Pn	23 46 24.7	+0.5
ECH	Echery	6.27	304	Pn	Pn	23 46 25.6	+0.9
ECH				Sn	Sn	23 47 36.2	-0.1
ECH	Echery	6.27	304	Pn	Pn	23 46 25.6	+0.9
ECH				Sn	Sn	23 47 36.2	-0.1
HINF	Hinteralfeld	6.28	299	ePn	Pn	23 46 24.0	-0.9
HINF				eSn	Sn	23 47 32.8	-3.8
	comp=Z,90nm,0.5s						
HINF	Hinteralfeld	6.28	299	ePn	Pn	23 46 24.0	-0.9
HINF	Hinteralfeld	6.28	299	ePn	Pn	23 46 24.0	-0.9
HINF				eSn	Sn	23 47 32.8	-3.8
CDF	Champ du Feu	6.30	306	ePn	Pn	23 46 24.1	-1.1
CDF				eSg	Sg	23 48 10.6	-3.8
	comp=Z,196nm,0.8s						
CDF	Champ du Feu	6.30	306	ePn	Pn	23 46 24.1	-1.1
CDF	Champ du Feu	6.30	306	ePn	Pn	23 46 24.1	-1.1
CDF				eSg	Sg	23 48 10.6	-3.8
FNA	Florina	6.31	130	P	Pn	23 46 26.3	+0.9
FNA	Florina	6.31	130	P	Pn	23 46 26.3	+0.9
LANF	Langenberg	6.32	312	Pn	Pn	23 46 25.6	+0.3
LANF	Langenberg	6.32	312	Pn	Pn	23 46 25.6	+0.3
LMR	La Mourre	6.32	258	ePn	Pn	23 46 24.8	-0.5
LMR				eSn	Sn	23 47 34.0

SRS	Serrai	7.41 119	P	Pn	23 46 41.6 +1.3
DSL	Palaion Diasel	7.42 140	P	Pn	23 46 40.5 -0.1
DSL	Palaion Diasel	7.42 140	P	Pn	23 46 40.5 -0.1
SOH	Sokhos	7.43 121	P	Pn	23 46 41.5 +0.8
SOH	Sokhos	7.43 121	P	Pn	23 46 41.5 +0.8
NVR	Nevrokopi	7.45 116	P	Pn	23 46 42.1 +1.2
NVR	Nevrokopi	7.45 116	P	Pn	23 46 42.1 +1.2
LKD2	Lefkada island	7.51 144	P	Pn	23 46 41.7 -0.1
LKD2	Lefkada island	7.51 144	P	Pn	23 46 41.7 -0.1
VAE	Valguarnera	7.53 183	Pn	Pn	23 46 46.1 +4.0
comp=Z,1.0nm,0.3s,baz=333,slow=4.5,SNR=3.7					
THL	Klokotos Trika	7.53 134	P	Pn	23 46 41.6 -0.4
THL	Klokotos Trika	7.53 134	P	Pn	23 46 41.6 -0.4
BURAR	Bucovina Array	7.56 66	⇓i P	Pn	23 46 44.5 +2.0
SFTF	Sexfontaines	7.56 299	ePn	Pn	23 46 42.8 +0.4
SFTF	Sexfontaines	7.56 299	ePn	Pn	23 46 42.8 +0.4
SFTF	Sexfontaines	7.56 299	ePn	Pn	23 46 42.8 +0.4
WLF	Walferdange	7.59 311	PN	Pn	23 46 46.3 +3.5
WLF	Walferdange	7.59 311	ePn	Pn	23 46 44.6 +1.8
comp=Z,13nm,0.6s					
WLF	Walferdange	7.59 311	ePn	Pn	23 46 44.6 +1.8
comp=Z,13nm,0.6s					
MEZF	Maizieres J'vi	7.66 301	ePn	Pn	23 46 42.8 -1.0
MEZF	Maizieres J'vi	7.66 301	ePn	Pn	23 46 42.8 -1.0
MEZF	Maizieres J'vi	7.66 301	ePn	Pn	23 46 42.8 -1.0
MLR	Muntele Rosu	7.76 83	Pn	Pn	23 46 46.5 +1.3
comp=Z,0.1nm,0.3s,baz=131,slow=20,SNR=7.8					
MLR			Lg	Lg	23 48 43.8
comp=Z,0.1nm,0.3s,baz=310,slow=13,SNR=3.1					
MLR	Muntele Rosu	7.76 83	⇑i P	Pn	23 46 46.8 +1.6
PLG	Polygyros	7.76 124	P	Pn	23 46 45.9 +0.6
PLG	Polygyros	7.76 124	P	Pn	23 46 45.9 +0.6
RZN	Rozhen	7.83 112	P	Pn	23 46 48.8 +2.5
PDO	Prodromos	7.90 142	P	Pn	23 46 46.7 -0.4
PDO	Prodromos	7.90 142	P	Pn	23 46 46.7 -0.4
EVR	Evrytania	7.93 138	P	Pn	23 46 48.1 +0.5
EVR	Evrytania	7.93 138	P	Pn	23 46 48.1 +0.5
SMF	Signal de Mont	7.95 286	ePn	Pn	23 46 47.2 -0.6
SMF			eSn	Sn	23 48 13.3 -4.4
comp=Z,56nm,0.6s					
SMF	Signal de Mont	7.95 286	ePn	Pn	23 46 47.2 -0.6
SMF	Signal de Mont	7.95 286	ePn	Pn	23 46 47.2 -0.6
SMF			eSn	Sn	23 48 13.3 -4.4
LASF	Ste Croix	8.00 267	ePn	Pn	23 46 48.2 -0.3
LASF			eSn	Sn	23 48 15.3 -3.6
comp=Z,33nm,0.9s					
LASF	Ste Croix	8.00 267	ePn	Pn	23 46 48.2 -0.3
LASF	Ste Croix	8.00 267	ePn	Pn	23 46 48.2 -0.3
LASF			eSn	Sn	23 48 15.3 -3.6
PLDF	La Plantade	8.04 281	Pn	Pn	23 46 50.5 +1.4
PLDF	La Plantade	8.04 281	Pn	Pn	23 46 50.5 +1.4
LOR	Lormes	8.05 290	ePn	Pn	23 46 48.3 -0.8
LOR			eSn	Sn	23 48 15.4 -4.7
comp=Z,31nm,0.3s					
LOR	Lormes	8.05 290	ePn	Pn	23 46 48.3 -0.8
LOR	Lormes	8.05 290	ePn	Pn	23 46 48.3 -0.8
LOR			eSn	Sn	23 48 15.4 -4.7
SZH	Strazhica	8.07 99	P	Pn	23 46 50.6 +1.2
AGG	Agios Georgios	8.10 135	P	Pn	23 46 49.2 -0.7
AGG	Agios Georgios	8.10 135	P	Pn	23 46 49.2 -0.7
OUR	Ouranopolis	8.11 122	P	Pn	23 46 50.8 +0.9
OUR	Ouranopolis	8.11 122	P	Pn	23 46 50.8 +0.9
KFL	Anninata	8.15 146	P	Pn	23 46 50.4 -0.1
KFL	Anninata	8.15 146	P	Pn	23 46 50.4 -0.1
ANX	Ano Chora	8.24 139	P	Pn	23 46 52.1 +0.3
ANX	Ano Chora	8.24 139	P	Pn	23 46 52.1 +0.3
MEM	Membach	8.24 316	PN	Pn	23 46 54.3 +2.6
MEM	Membach	8.24 316	Pn	Pn	23 46 54.3 +2.6
SSF	Saint Saulge	8.24 289	ePn	Pn	23 46 51.1 -0.7
SSF			eSn	Sn	23 48 20.3 -4.5
comp=Z,23nm,0.6s					
SSF	Saint Saulge	8.24 289	ePn	Pn	23 46 51.1 -0.7
SSF	Saint Saulge	8.24 289	ePn	Pn	23 46 51.1 -0.7
SSF			eSn	Sn	23 48 20.3 -4.5
LBL	Lubilhac	8.30 276	Pn	Pn	23 46 54.0 +1.4
LBL	Lubilhac	8.30 276	Pn	Pn	23 46 54.0 +1.4
AVF	Avril sur Loir	8.30 287	ePn	Pn	23 46 52.0 -0.6
AVF	Avril sur Loir	8.30 287	ePn	Pn	23 46 52.0 -0.6
AVF	Avril sur Loir	8.30 287	ePn	Pn	23 46 52.0 -0.6
VRI	Vrincioaia	8.31 80	⇓i P	Pn	23 46 52.8 +0.1
HGN	Heimansgroeve	8.37 317	ePn	Pn	23 46 56.9 +3.3
comp=Z,3.0nm,0.3s					
HGN			eSn	Sn	23 48 31.5 +3.5
AGO	Saint Agoulin	8.38 281	Pn	Pn	23 46 55.4 +1.7
AGO	Saint Agoulin	8.38 281	Pn	Pn	23 46 55.4 +1.7
SERG	Sergoula	8.45 139	P	Pn	23 46 55.3 +0.7
SERG	Sergoula	8.45 139	P	Pn	23 46 55.3 +0.7
PYM	Petit Puy Mans	8.46 279	Pn	Pn	23 46 56.6 +1.8
PYM	Petit Puy Mans	8.46 279	Pn	Pn	23 46 56.6 +1.8
BCLA	Clavier	8.48 313	PN	Pn	23 46 57.8 +2.9
BCLA	Clavier	8.48 313	Pn	Pn	23 46 57.8 +2.9
GIVF	Givet	8.55 310	ePn	Pn	23 46 54.5 -1.5
GIVF	Givet	8.55 310	ePn	Pn	23 46 54.5 -1.5
GIVF	Givet	8.55 310	ePn	Pn	23 46 54.5 -1.5
BGF	Bois d'Agland	8.62 285	ePn	Pn	23 46 56.3 -0.7
BGF			eSn	Sn	23 48 29.6 -4.5
comp=Z,35nm,0.4s					
BGF	Bois d'Agland	8.62 285	ePn	Pn	23 46 56.3 -0.7
BGF	Bois d'Agland	8.62 285	ePn	Pn	23 46 56.3 -0.7
BGF			eSn	Sn	23 48 29.6 -4.5
DOU	Dourbes	8.67 310	PN	Pn	23 47 00.7 +3.1
DOU	Dourbes	8.67 310	Pn	Pn	23 47 00.7 +3.1
HYF	Humbligny	8.86 289	ePn	Pn	23 46 59.4 -0.9
HYF			eSn	Sn	23 48 34.9 -5.2
HYF	Humbligny	8.86 289	ePn	Pn	23 46 59.4 -0.9
HYF	Humbligny	8.86 289	ePn	Pn	23 46 59.4 -0.9
HYF			eSn	Sn	23 48 34.9 -5.2
BAIF	Baives	8.87 309	ePn	Pn	23 46 58.8 -1.5
BAIF	Baives	8.87 309	ePn	Pn	23 46 58.8 -1.5
BAIF	Baives	8.87 309	ePn	Pn	23 46 58.8 -1.5
TCF	Toulx Ste Croi	9.04 283	ePn	Pn	23 47 01.9 -0.8
TCF			eSn	Sn	23 48 39.5 -4.9
comp=Z,34nm,0.7s					
TCF	Toulx Ste Croi	9.04 283	ePn	Pn	23 47 01.9 -0.8
TCF	Toulx Ste Croi	9.04 283	ePn	Pn	23 47 01.9 -0.8
TCF			eSn	Sn	23 48 39.5 -4.9
CAF	Calviac	9.16 274	ePn	Pn	23 47 04.0 -0.3
CAF	Calviac	9.16 274	ePn	Pn	23 47 04.0 -0.3
CAF	Calviac	9.16 274	ePn	Pn	23 47 04.0 -0.3
MTLF	Montolieu	9.32 264	ePn	Pn	23 47 05.8 -0.8
MTLF	Montolieu	9.32 264	ePn	Pn	23 47 05.8 -0.8
MTLF	Montolieu	9.32 264	ePn	Pn	23 47 05.8 -0.8
RJF	Les Rejaudoux	9.52 277	ePn	Pn	23 47 08.8 -0.5
RJF	Les Rejaudoux	9.52 277	ePn	Pn	23 47 08.8 -0.5
RJF	Les Rejaudoux	9.52 277	ePn	Pn	23 47 08.8 -0.5
LFF	La Frestale	10.09 275	ePn	Pn	23 47 16.5 -0.6
LFF	La Frestale	10.09 275	ePn	Pn	23 47 16.5 -0.6
LFF	La Frestale	10.09 275	ePn	Pn	23 47 16.5 -0.6
BSD	Bornholm Skovb	10.12 360	i P	Pn	23 47 17.0 -0.5
BSD	Bornholm Skovb	10.12 360	i P	Pn	23 47 17.0 -0.5
KEST	Kesra	10.21 207	Pn	Pn	23 47 22.6 +3.9
comp=Z,0.4nm,0.3s,baz=306,slow=7.2,SNR=6.1					
MFF	Saint Martin d	10.68 284	ePn	Pn	23 47 24.4 -0.8
MFF	Saint Martin d	10.68 284	ePn	Pn	23 47 24.4 -0.8
MFF	Saint Martin d	10.68 284	ePn	Pn	23 47 24.4 -0.8
EPF	Esparros	10.73 265	ePn	Pn	23 47 25.5 -0.4
EPF	Esparros	10.73 265	ePn	Pn	23 47 25.5 -0.4
EPF	Esparros	10.73 265	ePn	Pn	23 47 25.5 -0.4
LDF	La Druitiere	10.96 294	ePn	Pn	23 47 28.0 -0.9
LDF	La Druitiere	10.96 294	ePn	Pn	23 47 28.0 -0.9
LDF	La Druitiere	10.96 294	ePn	Pn	23 47 28.0 -0.9
FLN	La Foliniere	11.23 295	ePn	Pn	23 47 31.5 -1.1
FLN	La Foliniere	11.23 295	ePn	Pn	23 47 31.5 -1.1
FLN	La Foliniere	11.23 295	ePn	Pn	23 47 31.5 -1.1
GRR	Gorron	11.39 293	ePn	Pn	23 47 33.7 -1.1
GRR	Gorron	11.39 293	ePn	Pn	23 47 33.7 -1.1
GRR	Gorron	11.39 293	ePn	Pn	23 47 33.7 -1.1
ETSF	Etsaut	11.40 265	ePn	Pn	23 47 34.6 -0.5
ETSF	Etsaut	11.40 265	ePn	Pn	23 47 34.6 -0.5
ETSF	Etsaut	11.40 265	ePn	Pn	23 47 34.6 -0.5
SJPF	Ste Jean	11.81 267	ePn	Pn	23 47 40.1 -0.6
SJPF	Ste Jean	11.81 267	ePn	Pn	23 47 40.1 -0.6
SJPF	Ste Jean	11.81 267	ePn	Pn	23 47 40.1 -0.6
SGMF	Saint Gilles	12.48 291	ePn	Pn	23 47 48.7 -1.1
SGMF	Saint Gilles	12.48 291	ePn	Pn	23 47 48.7 -1.1
SGMF	Saint Gilles	12.48 291	ePn	Pn	23 47 48.7 -1.1
QUIF	Quistinic	12.84 290	ePn	Pn	23 47 53.6 -1.1
QUIF	Quistinic	12.84 290	ePn	Pn	23 47 53.6 -1.1
QUIF	Quistinic	12.84 290	ePn	Pn	23 47 53.6 -1.1
ROSF	Rostrenen	12.97 291	ePn	Pn	23 47 55.4 -1.0
ROSF	Rostrenen	12.97 291	ePn	Pn	23 47 55.4 -1.0
ROSF	Rostrenen	12.97 291	ePn	Pn	23 47 55.4 -1.0
ESDC	Sonseca Array	14.97 256	Pn	P	23 48 28.2 -1.2
comp=Z,0.2nm,0.3s,baz=61,slow=13,SNR=8.4					
HFS	Hagfors	15.18 358	Pn	Pn	23 48 26.6 +0.2
comp=Z,0.1nm,0.3s,baz=178,slow=8.7,SNR=3.1					
HFS			LR	LR	23 54 29.4
comp=Z,12nm,19.1s,baz=194,slow=38					
EKA	Eskdalemuir Ar	15.50 318	Pn	Pn	23 48 32.3 +1.6
baz=126,slow=14,SNR=7.2					
NB2	NORSAR Subarra	16.22 353	P	Pn	23 48 40.6 +0.6
comp=Z,1.6nm,0.8s,baz=170,slow=11					
NOA	NORSAR Array B	16.22 353	Pn	Pn	23 48 39.7 -0.3
comp=Z,0.1nm,0.3s,baz=168,slow=11,SNR=9.1					
NOA			LR	LR	23 55 55.2
comp=Z,28nm,18.5s,baz=200,slow=41					
OBN	Obninsk	17.09 46	LR	LR	23 55 22.4
comp=Z,35nm,20.5s,baz=272,slow=37					
FINES	FINESS Array B	17.71 18	P	Pn	23 48 58.1 -0.5
comp=Z,0.3nm,0.3s,baz=200,slow=9.2,SNR=15					
FINES			LR	LR	23 56 48.6
comp=Z,35nm,18.9s,baz=278,slow=41					
KVAR	Kislovodsk Arr	19.77 83	LR	LR	23 58 06.0
comp=Z,28nm,20.1s,baz=310,slow=40					
MMAI	Mount Meron Ar	19.82 120	P	P	23 49 23.4 +0.5
comp=Z,1.7nm,0.3s,baz=313,slow=10,SNR=14					
MMAI			LR	LR	23 57 39.1
comp=Z,33nm,19.8s,baz=205,slow=39					
KBZ	Khabaz	19.97 84	P	P	23 49 25.1 +0.7
comp=Z,0.1nm,0.3s,baz=288,slow=9.6,SNR=6.6					
KBZ			LR	LR	23 57 09.0
comp=Z,24nm,21.3s,baz=208,slow=37					
ASF	Jabal al Asfar	21.31 119	P	P	23 49 39.5 +0.3
comp=Z,3.1nm,0.8s,baz=255,slow=7.6,SNR=5.9					
EIL	Elat	21.97 127	P	P	23 49 46.0 -0.1
comp=Z,2.3nm,0.5s,baz=343,slow=11,SNR=4.0					
EIL	Elat	21.97 127	P	P	23 49 46.0 -0.1
KURK	Kurchatov	41.91 59	P	P	23 52 42.8 +0.3
comp=Z,2.7nm,0.8s					
KURK	Kurchatov	41.91 59	P	P	23 52 42.8 +0.3
comp=Z,2.7nm,0.8s					
ZALV	Zalesovo Beam	44.52 52	LR	LR	00 12 09.8
comp=Z,26nm,19.8s,baz=66,slow=37					
MKAR	Makanchi Array	45.57 63	P	P	23 53 11.5 -0.6
comp=Z,0.4nm,0.7s,baz=306,slow=5.2,SNR=2.4					
SCHQ	Schefferville	50.71 312	P	P	23 53 52.9 +1.2
comp=Z,3.1nm,0.7s,baz=50,slow=6.6,SNR=5.2					
YKA	Yellowknife Ar	65.52 337	P	P	23 55 35.5 +0.4
comp=Z,0.4nm,0.8s,baz=40,slow=5.7,SNR=7.2					
KSRS	Korea Array	78.07 49	LR	LR	00 34 24.1
comp=Z,47nm,21.1s,baz=251,slow=38					

IDC 06 23:52:30.4±2.9, 7°.11S×129°.57E, h97km±40km, mb3.4/1, mb1 3.8/5, mb1mx3.4/31, mbtmp4.0/5, Error ellipse: s-maj=61.9km s-min=21.6km az=96.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SIJI	Sorong	6.42	15	P	Pn	23 54 02.5	0.0
4.9nm,0.3s,baz=16,slow=2.3,SNR=1.0							
SIJI				S	Sn	23 55 06.9	-7.5
12nm,0.3s,baz=346,slow=5.6,SNR=1.6							
FITZ	Fitzroy Crossi	11.58	199	P	Pn	23 55 13.5	+0.8
0.8nm,0.3s,baz=24,slow=9.8,SNR=3.6							
FITZ				S	Sn	23 57 18.7	-1.3
0.3nm,0.3s,baz=177,slow=20,SNR=2.2							
WRA	Warramunga Arr	13.57	161	P	Pn	23 55 37.3	-1.7
0.8nm,0.3s,baz=344,slow=12,SNR=9.9							
WRA				S	Sn	23 57 59.3	-9.1
1.0nm,0.3s,baz=330,slow=22,SNR=16							
ASAR	Alice Springs	16.99	166	P	P	23 56 23.9	+1.4
0.4nm,0.3s,baz=337,slow=9.7,SNR=10.0							
ASAR				S	Sn	23 59 23.3	-7.6
0.3nm,0.3s,baz=0.7,slow=26,SNR=7.2							
MKAR	Makanchi Array	68.08	327	P	P	00 03 19.7	-0.1
0.5nm,0.6s,baz=121,slow=6.6,SNR=2.8							

*CSEM **06** 23:58:37.6, 38°.55N×23°.68E, h15km, ML1.2/5*

ATH 06 23:58:37.6, 38°.55N×23°.68E, h15km±5km, ML1.2/5, Error ellipse: s-maj=5.5km s-min=0.7km az=97.0, Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EREA	Eretria	0.23	124	P	Pg	23 58 43.0	+0.2
EREA				S	Sg	23 58 46.8	+0.5
EREA	Eretria	0.23	124	P	Pg	23 58 43.0	+0.2
EREA				S	Sg	23 58 46.8	+0.5
EREA				AML	AML	23 58 48.1	
comp=E,109μm,0.1s							
EREA				AML	AML	23 58 48.5	
comp=N,150μm,0.2s							
VIL2	Platees	0.47	224	P	Pg	23 58 45.8	-1.1
VIL2				S	Sb	23 58 54.4	+0.1
VILL	Villia	0.48	217	P	Pg	23 58 45.8	-1.4
VILL				S	Sb	23 58 54.4	-0.4
SMIA	Simia	0.50	312	P	Pg	23 58 47.0	-0.5
SMIA				S	Sg	23 58 54.5	+0.3
SMIA	Simia	0.50	312	P	Pg	23 58 47.0	-0.5
SMIA				S	Sg	23 58 54.5	+0.3
PTL	Penteli	0.52	164	P	Pg	23 58 48.0	+0.1
PTL				S	Sg	23 58 54.6	-0.2
PTL	Penteli	0.52	164	P	Pg	23 58 48.0	+0.1
PTL				S	Sg	23 58 54.6	-0.2
LKR	Lokris	0.55	281	P	Pn	23 58 50.0	-0.9
LKR				S	Sg	23 58 55.3	-0.4
LKR	Lokris	0.55	281	P	Pn	23 58 50.0	-0.8
LKR				S	Sg	23 58 55.4	-0.3
ATH	Athens Observa	0.58	177	P	Pb	23 58 49.2	-0.2
ATH				S	Sb	23 58 57.8	+0.4
ATHU	Athens Univers	0.59	172	P	Pn	23 58 50.8	-0.6
ATHU				S	Sg	23 58 55.7	-1.3
ATHU	Athens Univers	0.59	172	P	Pn	23 58 50.8	-0.7
ATHU				S	Sg	23 58 55.6	-1.3
AOS	Alonnisos	0.64	14	P	Pg	23 58 49.2	-1.0
AOS				S	Sb	23 58 59.5	+0.3
SKIA	Skiathos	0.64	345	P	Pg	23 58 50.1	-0.1
SKIA				S	Sg	23 58 58.7	0.0
SKIA	Skiathos	0.64	345	P	Pg	23 58 50.1	0.0
SKIA				S	Sg	23 58 58.7	0.0
SKIA				AML	AML	23 59 02.4	
comp=E,57μm,0.3s							
SKIA				AML	AML	23 59 02.5	
comp=N,29μm,0.2s							
PROD	Prodromos	0.68	245	P	Pg	23 58 49.2	-1.7
PROD				S	Sb	23 59 00.6	+0.2
PROD	Prodromos	0.68	245	P	Pg	23 58 49.2	-1.7
PROD				S	Sb	23 59 00.6	+0.2
VLY	Voula,Athens	0.70	173	P	Pb	23 58 51.6	+0.1
VLY				S	Sg	23 58 59.7	-0.9
VLY	Voula,Athens	0.70	173	P	Pb	23 58 51.6	+0.1
VLY				S	Sg	23 58 59.7	-0.9
LTK	Loutraki	0.77	227	P	Pg	23 58 52.6	0.0
LTK				S	Sn	23 59 04.9	-0.4
LTK	Loutraki	0.77	227	P	Pg	23 58 52.6	0.0
LTK				S	Sn	23 59 04.9	-0.4
NEO	Neokhori	0.84	335	P	Pg	23 58 53.2	-0.7
NEO				S	Sg	23 59 04.6	-0.3
NEO	Neokhori	0.84	335	P	Pg	23 58 53.2	-0.7
NEO				S	Sg	23 59 04.6	-0.3
NEO				AML	AML	23 59 07.8	
comp=E,36μm,0.3s							
NEO				AML	AML	23 59 08.4	
comp=N,60μm,0.3s							
XOR	Xorichti	0.90	335	P	Pn	23 58 56.1	+0.3
XOR				S	Sg	23 59 06.9	0.0
XOR	Xorichti	0.90	335	P	Pn	23 58 56.1	+0.3
XOR				S	Sg	23 59 06.9	0.0
XOR				AML	AML	23 59 11.3	
comp=E,16μm,0.4s							
XOR				AML	AML	23 59 11.4	
comp=N,22μm,0.5s							
DID	Didima	1.10	199	P	Pg	23 58 59.0	+0.2
DID				S	Sg	23 59 12.9	-0.3
DID	Didima	1.10	199	P	Pg	23 58 59.0	+0.2
DID				S	Sb	23 59 12.8	+0.3

*IDC **06** 23:58:42.4±1.0, 55°.17N×160°.62W, h0km, mb4.3/22, mb1 4.4/24, mb1mx4.2/53, mbtmp4.3/24, ML3.7/2, MS3.3/12, Ms1 3.3/12, ms1mx3.0/48, Error ellipse: s-maj=27.9km s-min=14.8km az=9.0*

*ISCJB **06** 23:58:46.3±0.2, 54°.97N±0°.03×160°.36W±0°.03, h38km, mb4.4/88, MS3.3/11, Error ellipse: s-maj=3.8km s-min=2.6km az=160.5*

*NEIC **06** 23:58:49.6±0.2, 55°.02N×160°.44W, h59km±2km, mb4.4/55, ML4.1(AEIC), Error ellipse: s-maj=3.7km s-min=1.9km az=158.0*

ISC 06 23:58:47.6±0.4, 55°.04N±0°.07×160°.38W±0°.04, h38km, n217, σ1§78/221, mb4.4/88, MS3.3/11, 6C-4D, Alaska Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SDPT	Sand Point	0.31	350	P	Pn	23 58 57.6	+1.7
SDPT				S	Sn	23 59 05.2	+2.5
VNWF	Veniaminof 8	1.20	22	P	Pn	23 59 11.1	+3.1
VNHG	Veniaminof 1	1.37	30	P	Pn	23 59 13.2	+3.0
VNNF	Veniaminof 3	1.38	26	P	Pn	23 59 13.6	+3.1
BALA	Baldy Mountain	1.39	277	P	Pn	23 59 13.2	+2.7
CHGN	Chignik	1.68	41	P	Pn	23 59 16.7	+2.2
FALS	False Pass	1.76	265	P	Pn	23 59 17.0	+1.5
FALS				S	Sn	23 59 40.4	+3.8
SSLN	Shishaldin Nor	2.10	265	P	Pn	23 59 22.6	+2.4
SSLS	Shishaldin Sou	2.12	262	P	Pn	23 59 22.6	+2.2
SSLS				S	Sn	23 59 49.6	+4.1
ANPB	Aniakchak Plen	2.12	33	P	Pn	23 59 23.1	+2.5
SSLW	Shishaldin Wes	2.18	264	P	Pn	23 59 23.6	+2.3
AZAC	Aniakchak	2.21	32	P	Pn	23 59 24.3	+2.5
ANNE	Aniakchak Nort	2.28	34	P	Pn	23 59 25.4	+2.6
WESN	West Dahl Nort	2.48	261	P	Pn	23 59 27.9	+2.5
WEBT	Westdahl Beart	2.57	262	P	Pn	23 59 29.3	+2.6
AKUT	Akutan	3.27	256	P	Pn	23 59 38.0	+1.9
AKGG	Akutan Green G	3.37	258	P	Pn	23 59 39.8	+2.2
AKRB	Akutan Reef Bi	3.43	257	P	Pn	23 59 40.7	+2.2
PLK1	Peulik 1	3.47	36	P	Pn	23 59 42.0	+3.0
PLK5	Peulik 5	3.54	32	P	Pn	23 59 44.5	+4.5
UNV	Unalaska Valle	3.77	254	P	Pn	23 59 44.1	+1.1
MTBL	Makushin Table	3.83	256	P	Pn	23 59 45.5	+1.6
MSW	Makushin Switc	3.90	256	P	Pn	23 59 46.1	+1.2
MGOD	Makushin Gods	3.99	254	P	Pn	23 59 46.8	+0.6
MSOM	Makushin Julie	4.03	255	P	Pn	23 59 48.0	+1.3
KELA	Mount Kelaz	4.26	35	P	Pn	23 59 52.5	+2.6
KABR	Katmai Barrier	4.30	42	P	Pn	23 59 52.9	+2.3
KVTA	Katmai Vly 10	4.36	38	P	Pn	23 59 54.0	+2.8
KAKN	Katmai Knife C	4.39	40	P	Pn	23 59 55.0	+3.4
OHAK	Old Harbor	4.53	58	P	Pn	23 59 54.1	+0.5
KAHC	Katmai Hardscr	4.67	37	P	Pn	23 59 59.0	+3.5
OKTU	Okmok Mt. Tuli	4.79	253	P	Pn	23 59 59.0	+1.8
KDAK	Kodiak Island	5.13	54	Pn	Pn	00 00 17.4	+16
4.1nm,0.3s,baz=198,slow=3.7,SNR=53							
KDAK				Lg	Lg	00 01 33.0	
7.8nm,0.3s,baz=331,slow=22,SNR=7.7							
KDAK	Kodiak Island	5.13	54	P	Pn	00 00 03.3	+1.6
FOSS	Fourpeaked Sta	5.25	41	P	Pn	00 00 06.5	+3.0
FOPK	Fourpeaked Vol	5.31	43	P	Pn	00 00 07.2	+2.9
NIKH	Nikolski High	5.41	251	ePn	Pn	00 00 07.5	+1.9
SVW2	Sparrevohn	6.58	21	ePn	Pn	00 00 24.3	+2.6
RSO	Redoubt South	6.79	34	ePn	Pn	00 00 28.5	+3.7
SPU	Mount Spurr	7.57	32	ePn	Pn	00 00 38.4	+3.2
SEW	Seward	7.76	45	ePn	Pn	00 00 40.3	+2.5
TT01	Tatalina	8.20	14	ePn	Pn	00 00 45.9	+2.0
TTA	Tatalina	8.22	14	ePn	Pn	00 00 46.7	+2.5
RC01	Rabbit Creek A	8.27	39	ePn	Pn	00 00 48.6	+3.7
MID	Middleton Isla	8.79	54	ePn	Pn	00 00 52.6	+0.7
PMR	Palmer	8.83	37	ePn	Pn	00 00 54.7	+2.3
PPLA	Purkeypile	8.93	25	ePn	Pn	00 00 57.7	+3.6
SML	Sawmill	9.26	38	ePn	Pn	00 01 01.7	+3.4
CAST	Castle Rocks	9.41	23	ePn	Pn	00 01 03.4	+3.0
EYAK	Cordova Ski Ar	9.55	49	ePn	Pn	00 01 04.8	+2.4
SCM	Sheep Creek Mo	9.64	40	ePn	Pn	00 01 05.0	+1.3
GSTR	Great Sitkin T	9.78	259	eSn	Sn	00 02 52.6	-1.4
KTH	Kantishna Hill	9.80	26	ePn	Pn	00 01 08.9	+3.2
DIV	Divide	9.84	46	ePn	Pn	00 01 09.0	+2.7
TRF	Thorofare Moun	9.88	27	ePn	Pn	00 01 10.7	+3.8
RAGM	Ragged Mountai	9.95	51	ePn	Pn	00 01 09.4	+1.6
KLU	Klutina	9.97	44	ePn	Pn	00 01 09.0	+0.8
RND	Reindeer	10.24	30	ePn	Pn	00 01 14.4	+2.6
BPAW	Bear Paw Mtn.	10.24	24	ePn	Pn	00 01 14.8	+2.9
BMRM	Bremner River	10.25	48	ePn	Pn	00 01 13.9	+1.9
MCK	McKinley	10.47	29	ePn	Pn	00 01 16.7	+1.8
BWN	Browne	10.68	27	ePn	Pn	00 01 21.4	+3.6
PAX	Paxson	11.03	38	ePn	Pn	00 01 23.8	+1.1
MLY	Manley	11.10	22	ePn	Pn	00 01 27.1	+3.5
TNA	Tin City	11.18	344	ePn	Pn	00 01 27.6	+3.0
BALM	Baldy	11.27	50

SPUT	South Promonto	34.08	94	eP		P	00 05 28.5 +0.2
	10nm,1.9s						
HWUT	Hardware Ranch	34.39	92	eP		P	00 05 30.5 -0.6
	10nm,2.0s						
ISA	Isabella, Lake	34.57	107	eP		P	00 05 32.5 0.0
	3.6nm,0.7s						
DAC	Darwin (Calif)	34.61	105	eP		P	00 05 32.9 -0.2
	4.9nm,1.4s						
BW06	Boulder Array	34.82	89	eP		P	00 05 34.5 -0.2
	1.9nm,0.8s						
PD31	Pinedale Array	34.82	89	eP		P	00 05 34.9 +0.1
FCC	Fort Churchill	35.06	56	eP		P	00 05 37.9 +1.5
	18nm,1.8s						
UWE	Uwekahuna	35.77	172	eP		P	00 05 43.1 +0.1
	186nm,1.1s						
SNCC	San Nicolas Is	35.80	110	eP		P	00 05 43.5 +0.4
	24nm,0.9s						
SHPR	Sheep Range	35.81	102	eP		P	00 05 44.9 +1.7
	9.7nm,1.9s						
HPO	Honuapo	36.08	172	eP		P	00 05 45.4 -0.1
MSU	Marysvale	36.10	97	eP		P	00 05 45.7 -0.1
TMUT	Trail Mountain	36.12	95	eP		P	00 05 46.8 +0.7
	6.6nm,1.5s						
P17A	Butcher Ranch,	36.27	94	eP		P	00 05 47.0 -0.2
	6.5nm,0.4s						
P17A				eScP		ScP	00 11 58.2 +3.5
Q16A	Castle Valley	36.40	95	eP		P	00 05 48.6 +0.3
	2.3nm,0.8s						
MTPU	Mount Pierson	36.42	97	eP		P	00 05 48.0 -0.7
	3.6nm,0.4s						
P18A	Preston Nutter	36.45	94	eP		P	00 05 50.0 +1.1
	29nm,0.3s						
LCMT	Little Creek M	36.53	100	eP		P	00 05 49.5 +0.1
	3.1nm,1.3s						
SRU	San Rafael Swe	36.64	95	eP		P	00 05 51.1 +0.7
	3.3nm,0.6s						
PKCU	Pink Cliffs	36.76	98	eP		P	00 05 52.3 +0.7
	13nm,1.3s						
KNB	Kanab	36.77	99	eP		P	00 05 52.5 +1.0
	6.9nm,1.5s						
RSSD	Black Hills	37.15	83	eP		P	00 05 54.8 0.0
	8.1nm,1.6s						
PFO	Pinyon Flats O	37.20	107	eP		P	00 05 56.2 +1.0
	9.3nm,1.5s						
MDND	Maddock	37.47	75	eP		P	00 05 57.7 +0.6
	12nm,0.7s						
U15A	North Rim	37.48	99	eP		P	00 05 57.3 -0.4
	2.6nm,0.8s						
ASAJ	Asahikawa	37.54	277	LR		LR	00 22 58.1
	comp=Z,21nm,18.5s,baz=202,slow=39						
SDCO	Great Sand Dun	40.45	92	eP		P	00 06 19.1 -3.4
	5.4nm,1.3s						
KLR	Kul'dur	40.56	291	LR		LR	00 23 18.1
	comp=Z,20nm,19.5s,baz=278,slow=36						
ECSD	EROS Data Cent	41.60	78	eP		P	00 06 32.6 +1.0
	14nm,2.0s						
EYMN	Ely	41.86	70	eP		P	00 06 33.9 +0.3
ANMO	Albuquerque	41.87	96	eP		P	00 06 32.7 -1.3
	10nm,1.9s						
LAZ	Ladron	41.87	97	eP		P	00 06 35.2 +1.1
LENM	Lemitar	42.13	97	eP		P	00 06 36.2 0.0
LPM	Los Pinos Moun	42.22	97	eP		P	00 06 37.1 +0.2
BNM	Barren Site	42.34	97	eP		P	00 06 39.3 +1.3
SPMN	Marine on St.	42.80	74	eP		P	00 06 42.0 +0.7
	3.7nm,0.8s						
CBKS	Cedar Bluff	43.04	86	eP		P	00 06 42.9 -0.5
	5.4nm,0.6s						
AMTX	Amarillo	44.65	92	eP		P	00 06 56.4 0.0
	11nm,1.4s						
MAJO	Matsushiro	45.04	272	eP		P	00 06 59.8 +0.4
	11nm,0.9s						
MJAR	Matsushiro Arr	45.04	272	P		P	00 06 58.1 -1.2
	1.0nm,0.4s,baz=36,slow=6.1,SNR=4.5						
MJB9	Matsu-Tunnel	45.04	272	eP		P	00 07 00.3 +0.9
	2.8nm,1.0s						
GDL2	Guadalupe Moun	45.06	97	eP		P	00 06 59.0 -0.6
JFWS	Jewell Farm	45.69	75	eP		P	00 07 05.0 +0.5
	39nm,1.9s						
DAG	Danmarks Havn	46.23	11	i P		P	00 07 07.9 -0.3
	5.9nm,0.8s						
DAG				i			00 08 26.8
NRIK	Noril'sk	46.54	333	P		P	00 07 10.2 -0.6
	2.8nm,0.5s,baz=67,slow=6.6,SNR=10						
NRIK				LR		LR	00 29 24.9
	comp=Z,36nm,18.7s,baz=101,slow=40						
ABTX	Abilene, Hawle	47.45	92	eP		P	00 07 18.6 +0.2
	5.3nm,1.0s						
TXAR	Lajitas Array	47.59	99	P		P	00 07 21.4 +1.8
	0.2nm,0.7s,baz=297,slow=4.0,SNR=2.7						
TXAR				LR		LR	00 25 35.9
	comp=Z,32nm,19.0s,baz=0.0,slow=34						
HDIL	Hopedale	47.80	77	eP		P	00 07 20.8 -0.1
	12nm,0.6s						
LPIG	La Paz	47.96	109	LR		LR	00 25 21.7
	comp=Z,45nm,20.8s,baz=235,slow=33						
SLM	Saint Louis	48.58	79	eP		P	00 07 26.6 -0.4
	14nm,0.6s						
TLY	Talaya	52.94	309	LR		LR	00 32 19.2
	comp=Z,18nm,19.1s,baz=253,slow=38						
SONA1	Songino Array	54.36	304	eP		P	00 08 10.0 -0.2
SONM	Songino Array	54.37	304	P		P	00 08 09.6 -0.7
	2.7nm,0.7s,baz=42,slow=7.6,SNR=8.0						
SONM				LR		LR	00 31 57.3
	comp=Z,84nm,20.9s,baz=247,slow=37						
ARCES	ARCESS Array B	55.65	357	P		P	00 08 18.0 -1.1
	3.2nm,0.7s,baz=29,slow=7.3,SNR=14						
HHC	Hu-ho-hao-te	56.79	295	eP		P	00 08 24.2 -3.6
HHC				sP		sP	00 08 42.9 -0.6
HHC				pmax		pmax	
	comp=Z,28nm,1.1s						
HHC				pmax		pmax	
	comp=Z,120nm,6.6s						
ZALV	Zalesovo Beam	58.87	321	P		P	00 08 41.6 -0.4
	comp=Z,0.4nm,0.5s,baz=29,slow=6.6,SNR=2.7						
ZALV				LR		LR	00 36 14.4
	comp=Z,45nm,18.1s,baz=74,slow=38						
FIA1	FINESS Array S	63.74	357	eP		P	00 09 13.8 -0.9
FINES	FINESS Array B	63.74	357	P		P	00 09 14.0 -0.8
	comp=Z,3.4nm,0.5s,baz=19,slow=7.5,SNR=88						
NB2	NORSAR Subarra	64.07	5	P		P	00 09 16.6 -0.4
	comp=Z,3.1nm,0.8s,baz=356,slow=6.5						
NOA	NORSAR Array B	64.07	5	P		P	00 09 16.4 -0.6
	comp=Z,2.1nm,0.8s,baz=355,slow=6.5,SNR=12						
LZH	Lanzhou	64.36	297	eP		P	00 09 19.9 +0.4
LZH				pP		sP	00 09 32.7 -2.6
LZH				sP		pP	00 09 39.5 +8.6
LZH				pmax		pmax	
	comp=Z,14nm,1.0s						
BVAR	Borovoye Array	64.41	329	P		P	00 09 18.9 -0.5
	comp=Z,4.4nm,0.6s,baz=38,slow=7.3,SNR=9.7						
BRVK	Borovoye	64.42	329	eP		P	00 09 18.7 -0.7
	comp=Z,4.7nm,0.8s						
ARU	Arti	64.45	337	P		P	00 09 18.7 -0.9
	comp=Z,3.3nm,0.5s,baz=31,slow=2.5						
ARU	Arti	64.45	337	eP		P	00 09 18.7 -0.9
	comp=Z,5.5nm,0.7s						
ZRNK	Zerenda	64.89	330	eP		P	00 09 22.1 -0.4
	comp=Z,7.6nm,1.0s						
MKAR	Makanchi Array	65.63	318	P		P	00 09 26.2 -1.1
	comp=Z,0.6nm,0.5s,baz=50,slow=5.9,SNR=7.6						
MKAR				LR		LR	00 38 36.7
	comp=Z,27nm,18.2s,baz=107,slow=37						
WMQ	Urumqi	65.88	313	eP		P	00 09 29.3 +0.2
CD2	Chengdu	68.44	293	P		P	00 09 43.5 -2.0
CD2				pmax		pmax	
	comp=Z,1.0nm,0.5s						
AKTO	Aktyubinsk	70.11	335	P		P	00 09 55.1 -0.4
	comp=Z,7.0nm,0.7s,baz=28,slow=6.6,SNR=22						
ABKAR	Abkulak array	70.71	333	eP		P	00 09 58.9 -0.3
AAK	Ala-Archa	72.09	321	P		P	00 10 07.7 -0.1
	comp=Z,0.8nm,0.3s,baz=169,slow=4.5,SNR=3.6						
KKAR	Karatay Array	73.09	324	eP		P	00 10 13.3 -0.2
KMI	Kunming	73.57	290	P		P	00 10 14.9 -2.0
KMI				pmax		pmax	
	comp=Z,18nm,0.5s						
AKASG	Malin Array Be	74.32	354	P		P	00 10 19.9 -0.7
	comp=Z,3.0nm,0.4s,baz=5.7,slow=5.5,SNR=10						
DPC	Dobruska-Polom	74.94	2	eP		P	00 10 24.9 +0.6
KRLC	Kraliky	75.22	2	eP		P	00 10 25.4 -0.5
VRAC	Vranov	75.99	2	||i P		P	00 10 30.7 +0.4
KHC	Kasperske Hory	76.07	4	eP		P	00 10 31.3 +0.5
KHC	Kasperske Hory	76.07	4	eP		P	00 10 31.6 +0.8
	comp=Z,2.8nm,1.5s						
GERES	GERESS Array B	76.36	4	P		P	00 10 32.5 0.0
	comp=Z,0.8nm,0.7s,baz=2.9,slow=5.3,SNR=8.7						
GEA0	GERESS Array S	76.37	4	eP		P	00 10 32.4 -0.1
CONA	Conrad Observa	77.35	3	i P		P	00 10 38.5 +0.5
	comp=Z,2.9nm,1.0s						
BUR08	Bucovina Ar. S	77.58	356	eP		P	00 10 39.6 +0.2
BURAR	Bucovina Array	77.60	356	||i P		P	00 10 39.5 0.0
ARSA	Arzberg	78.02	3	i P		P	00 10 42.4 +0.6
	comp=Z,2.9nm,1.1s						
KBA	Koelnbreinsper	78.11	4	i P		P	00 10 43.2 +0.7
	comp=Z,2.4nm,0.6s						
DRGR		78.50	358	⇑i P		P	00 10 45.0 +0.5
SOKA	Soboth	78.58	3	i P		P	00 10 45.3 +0.4
	comp=Z,1.8nm,0.5s						
OBKA	Obir	78.73	4	i P		P	00 10 46.0 +0.3
	comp=Z,3.3nm,0.5s						
DOPR	Dopca	79.24	356	||i P		P	00 10 49.5 +1.0
KVAR	Kislovodsk Arr	79.44	343	P		P	00 10 49.8 +0.1
	comp=Z,7.8nm,0.9s,baz=137,slow=4.7,SNR=3.7						
KBZ	Khabaz	79.63	343	P		P	00 10 50.5 0.0
	comp=Z,5.0nm,0.9s,baz=355,slow=3.1,SNR=8.0						
BZS	Buzias	79.70	359	⇑||i P		P	00 10 50.4 -0.5
ARR	Arges	79.87	356	⇑i P		P	00 10 51.7 -0.3
GUN	Gumba	79.88	305	eP		P	00 10 52.3 -0.3
CFR	Carcaliu	79.89	354	⇑i P		P	00 10 51.2 -0.7
KKN	Kakani	80.26	305	eP		P	00 10 54.1 -0.4
	comp=Z,5.3nm,0.3s						
GKN	Gorkha	80.38	306	eP		P	00 10 54.4 -0.7
	comp=Z,6.6nm,0.5s						
PKIN	Phulchoki	80.39	305	eP		P	00 10 54.4 -0.9
	comp=Z,8.2nm,0.6s						
DMN	Daman	80.50	305	eP		P	00 10 55.4 -0.5
	comp=Z,14nm,0.4s						
MDVR	Moldovita	80.53	358	⇑i P		P	00 10 55.3 -0.2
KOLN	Koldanda	81.06	306	eP		P	00 10 58.2 -0.6
	comp=Z,7.1nm,0.5s						
PYUN	Piuthan	81.07	307	eP		P	00 10 58.3 -0.5
	comp=Z,12nm,0.5s						
GEYT	Alibeck	81.70	330	P		P	00 11 02.1 +0.3
	comp=Z,4.0nm,0.8s,baz=330,slow=5.1,SNR=14						
PDG	Podgorica	82.90	0	⇑i P		P	00 11 05.3 -2.6
ESDC	Sonseca Array	83.52	18	P		P	00 11 11.8 +0.5
	comp=Z,2.2nm,0.7s,baz=342,slow=4.8,SNR=14						
MATE	Matera	84.64	2	||i P		P	00 11 17.4 +0.5
BRTR	Keskin Array B	84.84	349	P		P	00 11 18.2 +0.1
	comp=Z,2.0nm,0.9s,baz=29,slow=3.0,SNR=7.2						
BOSA	Boshof	153.28	349	PKPbc		PKPbc	00 18 40.5 -0.7
	comp=Z,4.4nm,1.0s,baz=108,slow=4.2,SNR=3.6						

MEX 07 00:04:48.0±0.3, 19°00N×103°39W, h52km±5km, MD3.6, Near coast of Michoacan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EZ5V		0.52	337	i P		Pn	00 04 58.4 -1.5
EZ5V				i S		Sn	00 05 06.6 -1.9
R15V		0.59	287	i P		Pn	00 04 59.1 -1.4
R15V				i S		Sn	00 05 07.6 -2.0
MMIG	Aquila	0.71	177	i P		Pn	00 05 00.5 -1.5
MMIG				i S		Sn	00 05 10.1 -2.0
ANIG	Ahuacatlan	2.31	333	eP		Pn	00 05 21.9 -1.7
ANIG				eS		Sn	00 05 48.8 -2.2

*JMA **07** 00:18:21.8±0.2, 34°.93N×141°.08E, h43km±3km, M2.9*
*IDC **07** 00:18:21.1±1.4, 34°.75N×140°.82E, h0km, mb3.6/3, mb1 3.9/3, mb1mx3.4/44, mbtmp3.6/3, ML2.6/1, MS2.4/2, Ms1 2.4/2, ms1mx2.1/38, Error ellipse: s-maj=41.8km s-min=21.4km az=104.0*
*ISCJB **07** 00:18:23.2±0.8, 34°.85N±0°.05×140°.94E±0°.08, h35km, mb3.6/3, Error ellipse: s-maj=9.4km s-min=6.1km az=155.2*

ISC 07 00:18:23.7±1.4, 34°90N±0°.05×141°00E±0°.09, h35km, n15, σ1§04/15, mb3.6/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	Boso 1	0.24	184	P		Pn	00 18 30.0 -0.3
BSO1				X			00 18 36.2
BSO3	Boso 3	0.41	257	P		Pn	00 18 32.5 -0.3
BSO3				X			00 18 40.9
BSO4	Boso 4	0.55	280	P		Pn	00 18 34.6 -0.3
BSO4				eX			00 18 43.9
KTR	Katsuura	0.61	294	eS		Sn	00 18 44.5 -0.1
CHOJ	Chosi	0.81	352	P		Pn	00 18 36.8 -1.8
JCN	Nagara	0.84	309	eS		Sn	00 18 50.3 +0.3
JIM2	Oshima 3	1.30	263	P		Pn	00 18 44.3 -1.1
JIM2				eS		Sn	00 18 59.8 -1.8
JHJ	Hachijo jima 2	2.04	210	Pn		Pn	00 18 55.0 -0.5
	39nm,0.3s,baz=73,slow=21,SNR=7.0						
JHJ				Sn		Sn	00 19 18.6 -1.2
	76nm,0.3s,baz=228,slow=23,SNR=9.5						
MJAR	Matsushiro Arr	2.80	307	Pn		Pn	00 19 06.1 +0.1
	1.0nm,0.3s,baz=123,slow=12,SNR=5.2						
MAT	Matsushiro	2.80	307	P		Pn	00 19 06.7 +0.7
MAT				S		Sn	00 19 38.6 0.0
JNU	Nakatsue	8.59	261	LR		LR	00 23 55.6
	comp=Z,40nm,18.6s,baz=125,slow=40						
KSRS	Korea Array	10.87	287	LR		LR	00 24 26.6
	comp=Z,11nm,21.0s,baz=70,slow=34						
ILAR	Eielson Array	51.48	31	P		P	00 27 29.7 +4.5
	0.2nm,0.5s,baz=275,slow=6.0,SNR=4.0						
WRA	Warramunga Arr	54.90	188	P		P	00 27 51.8 +0.9
	1.1nm,0.7s,baz=5.4,slow=7.7,SNR=6.9						
ASAR	Alice Springs	58.63	188	P		P	00 28 18.7 +1.4
	0.4nm,0.7s,baz=5.2,slow=7.6,SNR=4.2						

*ISCJB **07** 00:21:07.4±0.3, 31°.46N±0°.03×103°.89E±0°.04, h14km, mb4.0/25, MS3.5/7, Error ellipse: s-maj=4.8km s-min=3.9km az=167.7*
*IDC **07** 00:21:07.1±0.7, 31°.45N×103°.93E, h0km, mb4.0/20, mb1 4.1/22, mb1mx4.0/51, mbtmp4.0/22, ML3.4/1, MS3.3/6, Ms1 3.3/6, ms1mx2.9/39, Error ellipse: s-maj=20.8km s-min=13.5km az=53.0*
*NEIC **07** 00:21:09.8±1.4, 31°.49N×103°.87E, h15km±9km, mb4.2/6, Error ellipse: s-maj=7.6km s-min=6.6km az=69.0*
*BJI **07** 00:21:11.6, 31°.52N×103°.83E, h24km, mb4.3/12, mB4.6/6, ML4.2/25, Ms3.9/17, Ms7 3.6/13*

ISC 07 00:21:09.1±0.4, 31°60N±0°.03×103°94E±0°.04, h14km, n56, σ2§31/71, mb4.0/25, MS3.4/7, 1C, Sichuan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CD2	Chengdu	0.70	193	Pg		Pg	00 21 20.4 -2.4
CD2				Sg		Sg	00 21 29.2 -2.9
CD2				smax		smax	
	comp=N,19μm,0.6s						
CD2				smax		smax	
	comp=E,14μm,0.8s						
CD2	Chengdu	0.70	193	Pg		Pg	00 21 20.4 -2.4
CD2				Sg		Sg	00 21 29.2 -2.9
LZH	Lanzhou	4.48	359	ePn		Pb	00 22 22.7 -4.9
LZH				Pg		Pg	00 22 33.9 -1.0
LZH				Sn		Sb	00 23 17.4 -4.1
LZH				Sg		Sg	00 23 33.6 +0.7
LZH				smax		smax	
	comp=N,300nm,1.0s						
LZH				smax		smax	
	comp=E,280nm,0.7s						
LZH				LR		LR	
	comp=N,730nm,5.4s						
LZH				LR		LR	
	comp=E,2μm,7.1s						
LZH				LR		LR	
	comp=Z,440nm,8.3s						
LZH	Lanzhou	4.48	359	ePn		Pb	00 22 22.7 -4.9
LZH				Pg		Pg	00 22 33.9 -1.0
LZH				Sn		Sb	00 23 17.4 -4.1
LZH				Sg		Sg	00 23 33.6 +0.7
XAN	Xi'an	4.85	59	Pn		Pn	00 22 22.9 +1.2
XAN				Pg		Pg	00 22 38.5 -3.5
XAN				Sn		Sn	00 23 17.1 -0.5
XAN				Sg		Sg	00 23 43.1 -1.6
XAN				smax		smax	
	comp=N,1μm,0.6s						
XAN				smax		smax	
	comp=E,710nm,0.8s						
XAN				LR		LR	
	comp=N,520nm,7.9s						
XAN				LR		LR	
	comp=E,260nm,8.2s						
XAN				LR		LR	
	comp=Z,570nm,10.0s						
XAN	Xi'an	4.85	59	Pn		Pn	00 22 22.9 +1.2
XAN				Pg		Pg	00 22 38.5 -3.5
XAN				Sn		Sn	00 23 17.1 -0.5
XAN				Sg		Sg	00 23 43.1 -1.6
ENH	Enshi	4.94	104	ePn		Pn	00 22 25.4 +2.4
ENH				eSn		Sn	00 23 20.9 +0.9
GYA	Guiyang	5.65	154	Pn		Pn	00 22 32.9 +0.1
GYA				Pg		Pg	00 22 56.3 -1.0
GYA				Sn		Sn	00 23 45.4 +7.9
GYA				Sg		Sg	00 24 10.5 0.0
GYA				smax		smax	
	comp=N,300nm,0.6s						
GYA				smax		smax	
	comp=E,330nm,0.9s						
GYA	Guiyang	5.65	154	Pn		Pn	00 22 32.9 +0.1
GYA				Pg		Pg	00 22 56.3 -1.0
GYA				Sn		Sn	00 23 45.4 +7.9
GYA				Sg		Sg	00 24 10.5 0.0
KMI	Kunming	6.54	190	Pn		Pn	00 22 45.1 0.0
KMI				Sn		Sn	00 23 56.9 -2.7
KMI				smax		smax	
	comp=N,96nm,1.3s						
KMI				smax		smax	
	comp=E,100nm,1.4s						
KMI				LR		LR	
	comp=N,580nm,8.1s						
KMI				LR		LR	
	comp=E,1μm,10.2s						
KMI				LR		LR	
	comp=Z,300nm,11.6s						
KMI	Kunming	6.54	190	Pn		Pn	00 22 45.1 0.0
KMI				Sn		Sn	00 23 56.9 -2.7
GTA	Gaotai	8.49	338	eP		Pn	00 23 18.5 +6.7
GTA				pP		pP	00 23 21.7
GTA				sP		sP	00 23 24.9
GTA				S		Sn	00 24 59.4 +12
GTA				sS		sS	00 25 03.9
GTA				pmax		pmax	
	comp=Z,3.0nm,0.9s						
GTA				pmax		pmax	
	comp=Z,110nm,5.9s						
GTA				LR		LR	
	comp=N,310nm,14.3s						
GTA				LR		LR	
	comp=E,240nm,17.1s						
GTA				LR		LR	
	comp=Z,340nm,14.7s						
WHN	Wuhan	8.99	94	⇑eP		Pn	00 23 18.0 -0.5
WHN				S		Sn	00 24 55.6 -3.9
WHN				LR		LR	
	comp=N,1μm,9.4s						
WHN				LR		LR	
	comp=E,1μm,10.3s						
WHN				LR		LR	
	comp=Z,1μm,7.0s						
CMAR	Chiang Mai Arr	13.84	200	Pn		Pn	00 24 24.9 -0.1
	baz=15,slow=14						
GUN	Gumba	16.11	261	eP		Pn	00 24 52.7 -2.9
	comp=Z,39nm,0.7s						
SONM	Songino Array	16.32	6	Pn		P	00 25 00.7 -0.2
	comp=Z,0.1nm,0.3s,baz=160,slow=4.6,SNR=2.6						
PKIN	Phulchoki	16.62	261	eP		Pn	00 24 59.4 -2.6
	comp=Z,16nm,0.4s						
KKN	Kakani	16.65	262	eP		Pn	00 24 59.7 -2.7
	comp=Z,16nm,0.4s						
DMN	Daman	16.86	261	eP		Pn	00 25 02.7 -2.3
	comp=Z,19nm,0.7s						
GKN	Gorkha	17.13	263	eP		Pn	00 25 06.2 -2.2
	comp=Z,32nm,0.6s						
WMQ	Urumqi	17.69	318	eP		P	00 25 19.0 +3.1
WMQ				pmax		pmax	
	comp=Z,3.0nm,0.6s						
WMQ				pmax		pmax	
	comp=Z,60nm,4.1s						
WMQ				LR		LR	
	comp=Z,160nm,7.3s						
WMQ				LR		LR	
	comp=Z,290nm,4.0s						
KOLN	Koldanda	18.08	263	eP		Pn	00 25 17.3 -2.8
	comp=Z,17nm,0.6s						
PYUN	Piuthan	18.50	265	eP		P	00 25 22.8 -2.4
	comp=Z,29nm,0.5s						
KSAR	Wonju Array Be	20.55	67	P		Pn	00 25 49.7 +0.3
KSRS	Korea Array	20.58	67	P		Pn	00 25 49.7 -0.1
	comp=Z,6.5nm,0.8s,baz=255,slow=10.0,SNR=16						
MKAR	Makanchi Array	22.52	319	P		P	00 26 10.5 +2.1
	comp=Z,1.4nm,0.5s,baz=118,slow=12,SNR=13						
JNU	Nakatsue	22.79	79	LR		LR	00 36 05.7
	comp=Z,105nm,20.4s,baz=304,slow=39						
AAK	Ala-Archa	25.81	304	LR		LR	00 38 33.9
	comp=Z,116nm,19.2s,baz=88,slow=40						
ZALV	Zalesovo Beam	26.22	334	P		P	00 26 44.5 +1.2
	comp=Z,3.2nm,0.8s,baz=132,slow=10,SNR=10						
KURBB	Kurchatov Arra	26.76	323	P		P	00 26 49.7 +1.4
	comp=Z,1.7nm,0.6s,baz=127,slow=9.2,SNR=18						
KURK	Kurchatov	26.77	323	eP		P	00 26 49.8 +1.4
KLR	Kul'dur	27.31	42	P		P	00 26 55.6 +2.3
	comp=Z,0.9nm,0.8s,baz=249,slow=14,SNR=3.0						
KLR				LR		LR	00 37 17.7
	comp=Z,38nm,21.9s,baz=232,slow=35						
PSI	Prapat	29.03	190	LR		LR	00 39 06.5
	comp=Z,1μm,18.5s,slow=37						
BVAR	Borovoye Array	32.32	321	P		P	00 27 38.7 +1.1
	comp=Z,0.6nm,0.5s,baz=111,slow=8.0,SNR=3.5						
ABKAR	Abkulak array	37.24	311	eP		P	00 28 21.1 +0.9
	comp=Z,1.3nm,0.7s						
GEYT	Alibeck	37.87	293	P		P	00 28 27.0 +1.3
	comp=Z,1.2nm,0.6s,baz=98,slow=6.1,SNR=5.9						
NRIK	Noril'sk	38.92	351	P		P	00 28 35.6 +1.6
	comp=Z,1.8nm,0.6s,baz=165,slow=8.1,SNR=4.3						
ARU	Arti	39.96	322	eP		P	00 28 43.7 +0.9
	comp=Z,4.1nm,0.8s						
TIXI	Tiksi	42.30	11	P		P	00 29 02.8 +0.9
	comp=Z,0.6nm,0.4s,baz=238,slow=3.4,SNR=1.6						
PETK	Petropavlovsk-	43.93	44	LR		LR	00 48 59.8
	comp=Z,33nm,18.9s,baz=275,slow=38						
KBZ	Khabaz	48.80	303	P		P	00 29 56.0 +2.2
	comp=Z,2.8nm,0.9s,baz=63,slow=2.3,SNR=2.9						
KBZ				LR		LR	00 52 53.2
	comp=Z,38nm,18.2s,baz=222,slow=39						
ARCES	ARCESS Array B	56.75	336	P		P	00 30 53.0 +0.8
	comp=Z,4.6nm,0.9s,baz=69,slow=6.6,SNR=8.7						
FINES	FINESS Array B	57.08	326	P		P	00 30 55.0 +0.4
	comp=Z,2.4nm,0.6s,baz=78,slow=7.6,SNR=22						
WRA	Warramunga Arr	58.96	146	P		P	00 31 07.7 -0.6
	comp=Z,1.3nm,0.3s,baz=328,slow=9.0,SNR=16						
ASAR	Alice Springs	61.98	149	P		P	00 31 28.0 -0.9
	comp=Z,0.6nm,0.5s,baz=339,slow=6.8,SNR=9.6						
NB2	NORSAR Subarra	64.17	327	P		P	00 31 42.4 -0.6
	comp=Z,1.0nm,0.5s,baz=73,slow=6.9						
NOA	NORSAR Array B	64.17	327	P		P	00 31 42.5 -0.6
	comp=Z,1.0nm,0.6s,baz=76,slow=5.9,SNR=12			

TLL	Tololo Astrono	0.45	12	*i* P		Pn	00 29 28.1	+0.2
TLL				*i* S		Sn	00 29 39.3	+0.4
TLL				IAML			00 29 40.9	
	comp=N,10μm,0.8s							
LCO	Las Campanas	1.60	7	*e*Pn		Pn	00 29 41.6	+1.2
LCO				*e*Sn		Sn	00 30 00.5	-0.6
RTLS	Leoncito	1.83	131	*i* P		Pn	00 29 45.5	+2.2
VACH	Vallenar	2.03	4	⇓*i*P		Pn	00 29 46.9	+1.1
VACH				*i* S		Sn	00 30 12.2	+1.6
AUSP	Uspallata	2.08	141	*i* P		Pn	00 29 47.5	+0.9
AUSP				*i* S		Sn	00 30 13.7	+1.6
RTLL	Cerro Villicun	2.22	110	*i* P		Pn	00 29 49.7	+1.5
RTLL				*i* S		Sn	00 30 16.9	+1.9
SJA	San Juan	2.22	115	*i* P		Pn	00 29 49.6	+1.3
SJA				*i* S		Sn	00 30 16.5	+1.4
SJA				IAML			00 30 21.8	
	comp=Z,918nm,0.2s							
ROCH	El Roble	2.36	182	*i* P		Pn	00 29 51.3	+1.0
ROCH				*i* S		Sn	00 30 20.6	+1.9
ROCH				IAML			00 30 31.1	
	comp=N,2μm,0.5s							
PEL	Peldehue	2.54	176	*i* P		Pn	00 29 53.3	+0.8
PEL				*i* S		Sn	00 30 23.5	+0.8
ASAL	Salagasta	2.66	139	*i* P		Pn	00 29 54.5	+0.3
ARCO	CERRO ARCO	2.80	143	*i* P		Pn	00 29 56.0	-0.1
ARCO				*i* S		Sn	00 30 27.6	-1.5
ARCO				IAML			00 30 40.7	
	comp=Z,442nm,0.6s							
ANTU	Antumapu	2.96	175	*i* P		Pn	00 29 58.8	+0.6
ANTU				*i* S		Sn	00 30 33.4	+0.5
VCA	Vinchina	3.00	52	*i* P		Pn	00 30 02.8	+3.9
VCA				IAML			00 30 49.6	
	comp=Z,471nm,0.4s							
AAGR	Agrelo	3.04	145	*i* P		Pn	00 29 58.8	-0.5
AAGR				*i* S		Sn	00 30 32.8	-2.2
CPCH	Copiapo	3.27	9	*e*P		Pn	00 30 03.3	+0.9
CPCH				*i* S		Sn	00 30 41.5	+1.1
ACAN	Cantantal	3.59	119	*i* P		Pn	00 30 06.3	-0.3
CYA	Choya	4.95	65	IAML			00 31 26.0	
	comp=Z,54nm,0.3s							
LVC	Limon Verde	8.16	13	*e*Pn		Pn	00 31 08.0	-1.1
LVC				*e*Sn		Sn	00 32 36.9	-3.1
TRQA	Tornquist	10.47	138	*e*Pn		Pn	00 31 37.4	-2.9
	comp=Z,9.0nm,0.6s							
TRQA				*e*Sn		Sn	00 33 31.4	-4.2
NNA	Nana	19.32	342	*e*P		P	00 33 31.9	+0.7
	comp=Z,7.5nm,0.3s							
SAML	Samuel	22.72	20	*e*P		P	00 34 06.6	-0.9
	comp=Z,0.8nm,0.6s							
OXF	Oxford	67.08	343	*e*P		P	00 39 57.0	+0.5
	comp=Z,4.5nm,0.6s							
WMOK	Wichita Mounta	70.10	336	*e*P		P	00 40 16.5	+1.1
	comp=Z,2.7nm,0.8s							
ACSO	Alum Creek Sta	71.36	350	*e*P		P	00 40 23.2	+0.3
	comp=Z,4.3nm,0.3s							
SDCO	Great Sand Dun	75.29	332	*e*P		P	00 40 47.0	+0.6
	comp=Z,0.8nm,0.6s							
HWUT	Hardware Ranch	81.06	330	*e*P		P	00 41 18.8	+0.7
	comp=Z,1.0nm,0.6s							
WALA	Waterton Lakes	88.10	333	*e*P		P	00 41 53.9	+0.6
	comp=Z,0.4nm,0.4s							

NIED ***07*** *00:37:00,42.°90N×143.°80E,h116km,Mw3.9 Best double couple: M0=8.89000×10^14 NP1:φ=341.00000°, δ39.00000°,λ156.00000°. NP2:φ=90.00000°,δ75.00000°, λ53.00000°.*

ISCJB ***07*** *00:37:21.1±0.3,42.°88N±0.°03×143.°84E±0.°04, h124km±2km,mb4.1/24,Error ellipse: s-maj=6.2km s-min=4.0km az=142.2*

MOS ***07*** *00:37:21.3±1.0,42.°87N×143.°83E,h129km,mb4.2/15, Error ellipse: s-maj=11.8km s-min=7.7km az=84.8*

JMA ***07*** *00:37:22.5±0.1,42.°91N×143.°81E,h116km±1km,M3.8 Broadband fault plane solution: P waves. NP1: φ=90.00000°,δ64.00000°,λ49.00000°. NP2:φ=333.00000°, δ47.00000°,λ144.00000°. Principal axes: T Plg52.0000°, Azm311.0000°; N Plg36.0000°, Azm111.0000°; P Plg10.0000°, Azm208.0000°;*

JMA Felt I J1.

IDC ***07*** *00:37:22.4±1.5,42.°89N×143.°80E,h121km±10km, mb3.7/17,mb1 3.8/20,mb1mx3.7/39,mbtmp4.0/20,MS2.5/1, Ms1 2.5/1,ms1mx2.1/40 Error ellipse: s-maj=17.4km s-min=14.1km az=157.0*

ISC 07 00:37:21.9±0.6, 42.°89N±0.°05×143.°85E±0.°04, h118km±5km, n63, σ1°17/83, mb4.1/24, 8C-16D, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JOB	Onbets	0.02	336	⇑P		Pn	00 37 38.8	+0.7
JOB				*e*S		Sn	00 37 50.9	+0.6
JAR	Ashorobuto	0.41	352	⇑P		Pn	00 37 39.6	+0.4
JAR				*e*S		Sn	00 37 52.0	-0.3
JCH	Churui	0.45	233	⇑P		Pn	00 37 39.5	+0.1
JCH				*e*S		Sn	00 37 51.6	-0.9
JAK	Akkeshi	0.64	80	⇑P		Pn	00 37 40.9	+0.3
JAK				*e*S		Sn	00 37 54.8	+0.2
JNK	Nakash	0.95	42	⇓P		Pn	00 37 43.5	+0.2
JNK				*e*S		Sn	00 37 59.4	0.0
JEM	Erimo	1.01	211	P		Pn	00 37 44.4	+0.5
ERM	Erimo	1.01	211	*d* PN		Pn	00 37 45.3	+1.4
ERM				pmax	pmax			
	comp=Z,126nm,0.5s							
JNBK	Urakawa-nobuka	1.01	233	⇓P		Pn	00 37 44.1	+0.2
JNBK				*e*S		Sn	00 38 00.1	-0.4
JTKR	Abashiri--Toko	1.08	2	⇓P		Pn	00 37 45.2	+0.6
JTKR				*e*S		Sn	00 38 01.9	0.0
JBT2	Biratori 2	1.09	265	⇓P		Pn	00 37 44.9	+0.2
JMP	Maruseppu	1.17	343	⇓P		Pn	00 37 45.9	+0.3
JMP				*e*S		Sn	00 38 03.1	-0.5
JKK2	Kamakawa 2	1.27	321	⇓P		Pn	00 37 47.1	+0.5
JKK2				*e*S		Sn	00 38 05.1	-0.3
JRA	Rausu	1.40	41	⇓P		Pn	00 37 48.8	+0.7
JRA				*e*S		Sn	00 38 08.9	+0.9
NEM2	Nemuro 2	1.47	70	P		Pn	00 37 48.7	-0.1
NEM2				*e*S		Sn	00 38 08.0	-1.3
ASAJ	Asahikawa	1.53	324	P		Pn	00 37 50.0	+0.5
	comp=Z,32nm,0.3s,baz=150,slow=8.1,SNR=58							
ASAJ				S		Sn	00 38 11.2	+0.6
	comp=Z,16nm,0.3s,baz=102,slow=25,SNR=5.8							
JEW	Eniwo	1.76	269	P		Pn	00 37 52.9	+0.6
JEW				*e*S		Sn	00 38 15.7	+0.2
JHR	Hokuryu	1.77	300	P		Pn	00 37 53.5	+1.1
YUK	Yuzh-Kuril'sk	1.86	51	*d* PN		Pn	00 37 54.9	+1.3
YUK				*i* S		Sn	00 38 18.3	+0.6
YUK				pmax	pmax			
	comp=E,141nm,0.2s							
YUK				pmax	pmax			
	comp=Z,1μm,0.2s							
YUK				pmax	pmax			
	comp=N,115nm,0.1s							
YUK				smax	smax			
	comp=N,3μm,0.4s							
YUK				smax	smax			
	comp=E,5μm,0.4s							
SHO	Shikotan	2.39	65	*d* PN		Pn	00 38 00.4	+0.2
SHO				*i* S		Sn	00 38 27.7	-1.8
SHO				pmax	pmax			
	comp=N,87nm,0.3s							
SHO				pmax	pmax			
	comp=E,205nm,0.3s							
SHO				pmax	pmax			
	comp=Z,358nm,0.3s							
SHO				smax	smax			
	comp=N,2μm,0.5s							
SHO				smax	smax			
	comp=E,2μm,0.5s							
KUR	Kuril'sk	3.73	50	*c* *i* PN		Pn	00 38 20.2	+2.5
KUR				*e*S		Sn	00 39 04.4	+3.4
KUR				pmax	pmax			
	comp=Z,44nm,0.4s							
KUR				pmax	pmax			
	comp=N,28nm,0.2s							
KUR				pmax	pmax			
	comp=E,20nm,0.3s							
KUR				smax	smax			
	comp=E,73μm,0.4s							
KUR				smax	smax			
	comp=N,30nm,0.4s							
YSS	Yuzh-Sakhalins	4.14	350	*e*PN		Pn	00 38 24.0	+0.8
MJA0	Matsu Arr-Jizo	7.66	216	*e*PN		Pn	00 39 11.6	+0.7
MJA0				pmax	pmax			
	comp=Z,2.0nm,0.3s							
MAJO	Matsushiro	7.68	216	*d* *i* PN		Pn	00 39 10.5	-0.6
MAT	Matsushiro	7.68	216	P		Pn	00 39 10.5	-0.6
MAT				*e*S		Sn	00 40 37.6	+1.1
MJAR	Matsushiro Arr	7.68	216	P		Pn	00 39 11.0	-0.1
	comp=Z,2.0nm,0.3s,baz=33,slow=12,SNR=12							
MJAR				LR	LR		00 42 47.5	
	comp=Z,30nm,18.1s,baz=225,slow=42							
MJAR	Matsushiro Arr	7.68	216	PN		Pn	00 39 11.0	-0.1
MJAR				pmax	pmax			
	comp=Z,2.0nm,0.3s							
MJAR				MLR	MLR			
	comp=Z,30nm,18.1s							
KLR	Kul'dur	10.52	311	P		Pn	00 39 49.0	-0.4
	comp=Z,0.1nm,0.3s,baz=119,slow=16,SNR=5.2							
KLR	Kul'dur	10.52	311	PN		Pn	00 39 49.0	-0.4
PETK	Petropavlovsk-	13.78	37	P		Pn	00 40 31.3	-0.8
	comp=Z,0.3nm,0.3s,baz=203,slow=9.0,SNR=3.5							
SEY	Seymchan	20.69	11	P		P	00 41 50.9	-1.4
	comp=Z,2.8nm,0.5s,baz=192,slow=7.5,SNR=8.4							
SEY	Seymchan	20.69	11	⇓*e*P		P	00 41 50.5	-1.8
YAK	Yakutsk	20.94	341	*e*P		P	00 41 51.9	-3.0
YAK				pmax	pmax			
	comp=Z,10.0nm,0.5s							
ULN	Ulaanbaatar	26.15	294	⇓*e*P		P	00 42 45.8	+0.7
ULN				pmax	pmax			
	comp=Z,7.0nm,1.2s							
SONM	Songino Array	26.59	294	P		P	00 42 49.8	+0.7
	comp=Z,5.3nm,0.6s,baz=87,slow=8.9,SNR=19							
SONM	Songino Array	26.59	294	*e*P		P	00 42 50.3	+1.3
SONM				pmax	pmax			
	comp=Z,5.0nm,0.6s							
ZAK	Zakamensk	28.55	299	*e*P		P	00 43 07.0	+0.5
ZAK				pmax	pmax			
	comp=Z,4.0nm,1.3s							
ZALV	Zalesovo Beam	39.60	307	P		P	00 44 41.4	0.0
	comp=Z,2.1nm,0.5s,baz=86,slow=8.2,SNR=13							
ZALV				PcP		PcP	00 46 46.7	+0.6
	comp=Z,0.8nm,0.5s,baz=81,slow=4.5,SNR=3.7							
ZALV	Zalesovo Beam	39.60	307	*e*P		P	00 44 42.1	+0.7
ZALV				pmax	pmax			
	comp=Z,2.0nm,0.5s							
MKAR	Makanchi Array	42.84	297	P		P	00 45 08.2	+0.1
	comp=Z,1.6nm,0.5s,baz=82,slow=9.9,SNR=15							
ILAR	Eielson Array	43.60	36	P		P	00 45 14.7	+0.8
	comp=Z,0.4nm,0.5s,baz=262,slow=5.5,SNR=6.9							
BRVK	Borovoye	48.23	309	*de*P		P	00 45 50.9	+0.6
BRVK				pmax	pmax			
	comp=Z,6.0nm,1.0s							
SVE	Sverdlovsk	52.10	316	*e*P		P	00 46 20.0	+0.5
SVE				pmax	pmax			
	comp=Z,7.0nm,0.8s							
ARU	Arti	53.32	316	*c* *i* P		P	00 46 28.1	-0.3
ARU							00 48 26.7	
ARU				S		S	00 53 53.1	+2.5
ARU				SS		SS	00 57 26.0	-5.3
ARU				pmax	pmax			
	comp=Z,7.0nm,0.9s							
RES	Resolute Bay	56.47	16	P		P	00 46 50.6	-0.2
	comp=Z,2.9nm,0.6s,baz=317,slow=5.1,SNR=22							
YKA	Yellowknife Ar	57.84	33	P		P	00 47 01.0	+0.4
	comp=Z,2.0nm,0.6s,baz=308,slow=7.1,SNR=6.5							
ARCES	ARCESS Array B	59.20	339	P		P	00 47 09.9	0.0
	comp=Z,5.3nm,1.1s,baz=39,slow=7.8,SNR=4.2							
WRA	Warramunga Arr	63.13	190	P		P	00 47 36.1	-0.9
	comp=Z,0.3nm,0.7s,baz=7.0,slow=6.7,SNR=4.1							
FINES	FINESS Array B	64.52	332	P		P	00 47 45.3	-0.3
	comp=Z,6.5nm,0.5s,baz=47,slow=7.4,SNR=122							
OBN	Obninsk	64.56	323	*e*P		P	00 47 44.9	-1.1
OBN				*e*			00 50 06.9	
OBN				pmax	pmax			
	comp=Z,4.0nm,0.9s							
KIV	Kislovodsk	68.51	310	*e*P		P	00 48 12.8	+1.3
KIV				pmax	pmax			
	comp=Z,19nm,1.7s							
KBZ	Khabaz	68.54	310	P		P	00 48 11.9	+0.4
	comp=Z,2.3nm,0.8s,baz=82,slow=7.1,SNR=3.3							
NB2	NORSAR Subarra	69.51	338	P		P	00 48 17.0	-0.3
	comp=Z,2.4nm,0.5s,baz=33,slow=6.5							
NOA	NORSAR Array B	69.51	338	P		P	00 48 16.9	-0.4
	comp=Z,1.0nm,0.4s,baz=38,slow=5.0,SNR=24							
NVAR	Mina Array Bea	70.07	56	P		P	00 48 22.6	+1.2
	comp=Z,0.8nm,0.8s,baz=296,slow=7.4,SNR=4.4							
AKASG	Malin Array Be	70.81	322	P		P	00 48 24.5	-0.8
	comp=Z,0.9nm,0.4s,baz=41,slow=6.1,SNR=6.2							
AKASG	Malin Array Be	70.81	322	*ce*P		P	00 48 26.1	+0.8
AKASG				pmax	pmax			
	comp=Z,1.0nm,0.4s							
KIEV	Kiev	70.83	322	⇑*e*P		P	00 48 25.9	+0.5
KIEV				pmax	pmax			
	comp=Z,3.0nm,1.2s							
PDAR	Pinedale Array	72.29	48	P		P	00 48 35.5	+0.8
	comp=Z,0.6nm,0.5s,baz=222,slow=1.8,SNR=9.7							
BURAR	Bucovina Array	74.87	322	⇓*i*P		P	00 48 49.9	+0.4
BRTR	Keskin Array B	76.36	312	P		P	00 48 59.0	+0.8
	comp=Z,0.6nm,0.7s,baz=50,slow=12,SNR=2.8							
BRTR	Keskin Array B	76.36	312	P		P	00 48 59.0	+0.8
BRTR				pmax	pmax			
	comp=Z,1.0nm,0.7s							
BTMR	Bucharest-Geot	76.82	319	⇓*i*P		P	00 48 58.0	-2.4
TXAR	Lajitas Array	85.12	54	P		P	00 49 45.3	+0.4
	comp=Z,0.6nm,0.6s,baz=312,slow=3.5,SNR=7.4							

ISCJB ***07*** *00:39:07.8±0.7,37.°52N±0.°05×35.°59E±0.°04,h9km±6km, Error ellipse: s-maj=8.1km s-min=4.9km az=1.9*

CSEM ***07*** *00:39:07.6±0.2,37.°54N×35.°58E,h2km,MD2.7,Error ellipse: s-maj=4.5km s-min=3.8km az=173.0*

DDA ***07*** *00:39:07.3,37.°55N×35.°58E,h8km,Md2.6*

ISK ***07*** *00:39:07.6,37.°50N×35.°57E,h6km,MD2.7*

ISC 07 00:39:07.3±1.0, 37.°55N±0.°03×35.°58E±0.°03, h14km±8km, n29, σ0°37/38, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKO	Adana	0.14	232	*i* P		Pg	00 39 11.1	+0.2
AKO				*i* S		Sg	00 39 13.2	-0.1
KARA	Karaisali	0.51	236	*e*PG		Pg	00 39 17.2	-0.1
KARA				*e*SG		Sg	00 39 24.0	-0.1
KARA	Karaisali	0.51	236	*e*Pg		Pg	00 39 17.2	-0.1
KARA				*e*Sg		Sg	00 39 24.0	-0.1
CEYT	Ceyhan	0.55	166	*e*PG		Pg	00 39 18.3	+0.2
CEYT	Ceyhan	0.55	166	*e*Pg		Pg	00 39 18.3	+0.2
ANDN	Andirin	0.61	87	P		Pb	00 39 19.5	-0.3
ANDN	Andirin	0.61	87	*i* P		Pb	00 39 19.5	-0.3
GULE	Gulek	0.69	248	P		Pb	00 39 21.1	-0.2
GULE				S		Sb	00 39 30.7	-0.1
GULE	Gulek	0.69	248	*i* P		Pb	00 39 21.1	-0.2
GULE				*i* S		Sb	00 39 30.7	-0.1
YURE	YUREGIR	0.72	177	P		Pg	00 39 21.3	0.0
YURE				S		Sb	00 39 32.2	+0.8
YURE	YUREGIR	0.72	177	*i* P		Pg	00 39 21.3	0.0
YURE				*i* S		Sb	00 39 32.2	+0.8
KAMA	Osmaniye	0.94	112	*i* P		Pb	00 39 24.8	-0.5
HCB	Kahramanmara¯	1.07	100	*i* P		Pg	00 39 27.9	-0.1
MERS	Mersin	1.08	232	*e*PG		Pg	00 39 28.3	+0.1
MERS	Mersin	1.08	232	*e*Pg		Pg	00 39 28.3	+0.1
KERG	Konya-Eregli	1.17	264	P		Pb	00 39 29.0	-0.3
KERG				S		Sb	00 39 44.3	-0.1
KERG	Konya-Eregli	1.17	264	*i* P		Pb	00 39 29.0	-0.3
KERG				*i* S		Sb	00 39 44.3	-0.1
TAHT	Tahtakopru-Hat	1.26	157	*e*PN		Pb	00 39 30.9	0.0
TAHT	Tahtakopru-Hat	1.26	157	*e*Pn		Pb	00 39 30.9	0.0
GULA	Gulagac	1.33	307	*e*PN		Pg	00 39 33.9	+1.0
GULA	Gulagac	1.33	307	*e*Pn		Pg	00 39 33.9	+1.0
AVNS	Nevsehir-Avano	1.39	335	P		Pg	00 39 33.8	-0.1
AVNS	Nevsehir-Avano	1.39	335	*i* P		Pg	00 39 33.8	-0.1
YESY	Yesilyurt	1.48	280	*e*PN		Pg	00 39 35.8	+0.1
YESY	Yesilyurt	1.48	280	*e*Pn		Pg	00 39 35.8	+0.1
DARE	Darende-Malaty	1.82	55	*e*PN		Pb	00 39 40.1	-0.2
DARE	Darende-Malaty	1.82	55	*e*Pn		Pb	00 39 40.2	-0.2
IKL	Isikli	2.00	230	*e*PN		Pb	00 39 43.1	-0.4
IKL	Isikli	2.00	230	*e*Pn		Pb	00 39 43.1	-0.4

BKK ***07*** *00:41:02.7±7.2,20.°N±17.°×9.°5E±5.°8,h10km,M3.8/8, mb3.9/2,mB4.2/1,MLv3.7/8,Mw(mB)3.2/1*

ISC 07 00:40:52.6±1.2, 19.°9N±0.°1×95.°45E±0.°09, h15km, n18, σ1°03/17, Myanmar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MHMT	Maesarieng	2.88	125	P		Pg	00 41 48.9	+1.1
CMAI	Chiengmai2	3.39	88	P		Pg	00 41 57.6	+0.1
CHTO	Chiang Mai	3.46	107	P		Pg	00 41 57.6	-1.3
CMMT	Chiang Mai	3.46	107	P		Pg	00 41 57.8	-1.2
LAMP	Lampang	4.17	108	P		Pb	00 42 07.7	+2.0
SUKH	Sukhothai	4.61	120	P		Pb	00 42 13.2	0.0
CRAI	Chiangrai	4.65	85	P		Pb	00 42 14.4	+0.6
UTTA	Uttaradit	5.27	113	P		Pb	00 42 22.4	-2.1
	7.6nm,0.6s,198nm0.0nm							
LOEI	Loei	5.99	112	P		Pb	00 42 37.3	+0.6
PBKT	Sadao Pong	6.18	121	P		Pb	00 42 34.5	-5.5
SHL	Shillong	6.57	331	*e*SG		Sn	00 43 43.5	-0.2
GUN	Gumba	11.87	314	*e*P		Pn	00 43 42.3	+0.6
	21nm,0.2s							
PKIN	Phulchoki	11.99	312	*e*P		Pn	00 43 43.4	+0.1
	11nm,0.3s							
KKN	Kakani	12.20	312	*e*P		Pn	00 43 46.5	+0.4
	8.4nm,0.3s							
DMN	Daman	12.21	311	*e*P		Pn	00 43 46.3	0.0
	6.0nm,0.3s							
GKN	Gorkha	12.78	311	*e*P		Pn	00 43 54.0	0.0
	22nm,0.3s							
KOLN	Koldanda	13.40	308	*e*P		Pn	00 44 01.5	-1.0
	12nm,0.3s							
PYUN	Piuthan	14.03	308	*e*P		Pn	00 44 11.1	0.0
	7.8nm,0.3s							

ISCJB ***07*** *00:47:41.0±0.3,60.°01N±0.°03×153.°39W±0.°06, h149km±3km,mb3.8/1,Error ellipse: s-maj=5.9km s-min=3.6km az=33.1*

NEIC ***07*** *00:47:42.9,59.°98N×153.°39W,h144km,MG3.4(AEIC), After AEIC.*

IDC ***07*** *00:47:43.5±8.6,60.°28N×153.°49W,h134km±69km,mb3.5/1, mb1 3.6/4,mb1mx3.1/37,mbtmp3.9/4,Error ellipse: s-maj=70.3km s-min=36.3km az=25.0*

ISC 07 00:47:41.8±1.0, 60.°00N±0.°04×153.°37W±0.°05, h147km±6km, n97, σ0°66/105, Southern Alaska

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ILW	Iliamna West	0.13	64	P		Pn	00 48 01.7	-0.1
ILW				S		Sn	00 48 16.8	-0.2
INE	Iliamna NE	0.16	69	P		Pn	00 48 01.8	-0.1
INE				S		Sn	00 48 16.8	-0.3
OPT	Oil Point	0.36	169	P		Pn	00 48 02.5	+0.3
RDWB	Redoubt West	0.55	28	P		Pn	00 48 03.3	+0.1
RDWB				S		Sn	00 48 19.0	-0.7
NCT	North Crescent	0.60	21	P		Pn	00 48 03.7	+0.2
AUL	Augustine Lava	0.62	183	P		Pn	00 48 03.6	+0.1
AUL				S		Sn	00 48 19.8	-0.2
AUE	Augustine Isla	0.65	180	P		Pn	00 48 03.7	+0.1
RDJH	Redoubt Jeurge	0.65	25	P		Pn	00 48 04.1	+0.2
RDJH				S		Sn	00 48 20.5	-0.1
AUSE	Augustine SEas	0.66	181	P		Pn	00 48 03.7	0.0
AUI	Augustine Isla	0.67	183	P		Pn	00 48 03.9	+0.2
AUI				S		Sn	00 48 19.8	-0.7
HOM	Homer	0.94	111	P		Pn	00 48 06.3	+0.6
HOM				S		Sn	00 48 24.2	+0.3
MCNL	McNeil River	0.96	211	P		Pn	00 48 05.6	-0.3
CDD	Cape Douglas	1.08	188	P		Pn	00 48 07.0	-0.1
FOSS	Fourpeaked Sta	1.22	188	P		Pn	00 48 08.2	-0.1
FOPK	Fourpeaked Vol	1.25	183	P		Pn	00 48 08.2	-0.4
CKL	Chakachamna La	1.30	23	P		Pn	00 48 09.9	+0.8
SPCR	Spurr Chakacha	1.33	25	P		Pn	00 48 10.0	+0.6
SPCR				S		Sn	00 48 30.5	-0.1
SPWE	Spurr West	1.34	17	P		Pn	00 48 10.3	+0.8
SVW2	Sparrevohn	1.55	316	P		Pn	00 48 11.4	-0.2
KAHC	Katmai Hardscr	1.60	212	P		Pn	00 48 12.0	-0.3
SLKM	Skilak Lake	1.65	71	P		Pn	00 48 13.0	+0.3
STLK	Strandline Lak	1.68	26	P		Pn	00 48 13.8	+0.7
KAWH	Katmai	1.78	205	P		Pn	00 48 14.1	-0.2
KVTA	Katmai Vly 10	1.90	212	P		Pn	00 48 15.5	-0.1
KAKN	Katmai Knife C	1.92	208	P		Pn	00 48 15.7	-0.2
FIB	Fire Island	1.96	52	P		Pn	00 48 17.5	+1.3
SEW	Seward	1.97	85	P		Pn	00 48 16.7	+0.4
KELA	Mount Kelaz	1.99	219	P		Pn	00 48 16.4	-0.3
KABU	Katmai Buttres	2.00	210	P		Pn	00 48 16.9	+0.2
KABR	Katmai Barrier	2.05	204	P		Pn	00 48 17.0	-0.4
RC01	Rabbit Creek A	2.10	57	P		Pn	00 48 17.9	+0.1
ANCK	Angle Creek	2.12	212	P		Pn	00 48 18.3	+0.1
KDAK	Kodiak Island	2.26	169	P		Pn	00 48 33.6	+14
	11nm,0.3s,baz=5.6,slow=8.4,SNR=124							
KDAK				S		Sn	00 49 02.0	+13
	83nm,0.3s,baz=130,slow=22,SNR=84							
KDAK	Kodiak Island	2.26	169	P		Pn	00 48 18.6	-1.3
KDAK				P		Pn	00 48 33.6	+14
KDAK				S		Sn	00 49 02.0	+13
PMR	Palmer	2.62	51	P		Pn	00 48 23.8	-0.3
PLK2	Peulik 2	2.72	216	P		Pn	00 48 25.9	+0.5
PLK3	Peulik 3	2.77	214	P		Pn	00 48 26.5	+0.4
OHAK	Old Harbor	2.79	179	P		Pn	00 48 24.7	-1.6
PPLA	Purkeypile	2.96	11	P		Pn	00 48 29.8	+1.2
SML	Sawmill	3.06	51	P		Pn	00 48 29.2	-0.4
TT01	Tatalina	3.18	338	P		Pn	00 48 31.1	-0.1
TTA	Tatalina	3.20	338	P		Pn	00 48 31.3	-0.3
SCM	Sheep Creek Mo	3.47	55	P		Pn	00 48 34.6	-0.5
HUR	Hurricane	3.48	29	P		Pn	00 48 35.5	+0.4
CAST	Castle Rocks	3.48	10	P		Pn	00 48 35.8	+0.6
MID	Middleton Isla	3.61	96	P	

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ACX	**Acapulco**	**0.22**	**317**	*e*P	Pg	00 58 55.7	-1.0
ACX				*i* S	Sg	00 58 59.3	-0.5
ACP2	**Acapulco**	**0.24**	**313**	*e*P	Pg	00 58 56.9	-0.2
ACP2				*i* S	Sg	00 59 00.6	+0.2
CAIG	**El Cayaco**	**0.64**	**302**	*e*P	Pg	00 59 03.3	-1.3
CAIG				*e*S	Sg	00 59 11.9	-1.1
MEIG	**Mezcala**	**1.22**	**4**	*e*P	Pb	00 59 11.5	-4.1
MEIG				*i* S	Sg	00 59 26.5	-4.9
TLIG	**Tlapa**	**1.38**	**52**	*e*P	Pn	00 59 14.2	-3.8
TLIG				*e*S	Sb	00 59 31.8	-4.5
ARIG	**Puente Sto Nin**	**1.68**	**339**	*e*P	Pn	00 59 19.3	-2.8
ARIG				*e*S	Sn	00 59 39.9	-4.0

ISCJB ***07*** *01:01:09.8±0.8, 5°.49N±0°.09×127°.7E±0°.1, h53km, mb3.6/8, Error ellipse: s-maj=21.7km s-min=8.0km az=147.2*
IDC ***07*** *01:01:16.1±2.5, 5°.45N×127°.24E, h99km±23km, mb3.4/8, mb1 3.6/9, mb1mx3.4/31, mbtmp3.8/9, MS2.1/1, Ms1 2.1/1, ms1mx2.0/30, Error ellipse: s-maj=41.2km s-min=14.7km az=72.0*

ISC 07 01:01:11.7±0.9, 5°.5N±0°.1×127°.6E±0°.2, h53km, n11, σ1§90/11, mb3.8/8, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DAV	**Davao City (W)**	**2.58**	**308**	P	**Pn**	**01 01 53.1**	**+2.0**
	105nm,0.3s,baz=26,slow=1.9,SNR=7.8						
DAV				S	**Sn**	**01 02 21.2**	**0.0**
	116nm,0.3s,baz=259,slow=22,SNR=11						
BIPH	**Bislig**	**2.98**	**335**	*i* S	**Sn**	**01 02 31.6**	**+0.7**
JAY	**Jayapura**	**15.29**	**121**	LR	LR	01 11 49.9	
	comp=Z,7.0nm,18.3s,baz=181,slow=41						
FITZ	**Fitzroy Crossi**	**23.50**	**185**	P	**P**	**01 06 18.5**	**+1.4**
	3.2nm,1.0s,baz=19,slow=9.7,SNR=3.8						
WRA	**Warramunga Arr**	**26.10**	**166**	P	**P**	**01 06 40.3**	**-0.5**
	0.2nm,0.6s,baz=342,slow=10,SNR=5.7						
ASAR	**Alice Springs**	**29.60**	**168**	P	**P**	**01 07 12.4**	**+0.4**
	0.1nm,0.4s,baz=337,slow=7.1,SNR=4.2						
PETK	**Petropavlovsk-**	**53.49**	**22**	P	**P**	**01 10 29.3**	**+2.7**
	1.7nm,0.7s,baz=197,slow=4.5,SNR=2.7						
MKAR	**Makanchi Array**	**56.66**	**324**	P	**P**	**01 10 47.4**	**-2.2**
	1.3nm,0.4s,baz=116,slow=7.8,SNR=10						
ZALV	**Zalesovo Beam**	**59.46**	**332**	P	**P**	**01 11 07.0**	**-2.0**
	0.6nm,0.4s,baz=113,slow=9.6,SNR=3.0						
GEYT	**Alibeck**	**70.52**	**308**	P	**P**	**01 12 19.2**	**-2.1**
	0.6nm,0.4s,baz=87,slow=7.6,SNR=3.8						
ILAR	**Eielson Array**	**83.16**	**25**	P	**P**	**01 13 30.6**	**-1.2**
	0.3nm,0.6s,baz=253,slow=6.0,SNR=4.9						

OMAN ***07*** *01:01:53.5, 26°.93N×55°.84E, h12km*
TEH ***07*** *01:01:53.5, 26°.93N×55°.84E, h12km, ML2.9*
ISCJB ***07*** *01:01:55.0±0.5, 26°.98N±0°.03×55°.90E±0°.06, h14km, Error ellipse: s-maj=7.2km s-min=4.6km az=173.8*
CSEM ***07*** *01:01:54.7±0.2, 26°.93N×55°.90E, h2km, ML2.9, Error ellipse: s-maj=7.4km s-min=4.8km az=78.0*
DSN ***07*** *01:01:55.8±1.2, 26°.96N×56°.20E, h15km, ML2.8, Error ellipse: s-maj=37.0km s-min=7.8km az=86.0*

ISC 07 01:01:55.1±1.0, 26°.93N±0°.04×55°.92E±0°.08, h14km, n33, σ1§05/37, Southern Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GENO	**Geno**	**0.52**	**25**	*e*Pg	**Pg**	**01 02 04.4**	**-1.0**
GENO	**Geno**	**0.52**	**25**	*e*Pg	**Pg**	**01 02 04.4**	**-1.0**
IBND	**Bandar-abas**	**0.75**	**47**	*e*Pg	**Pb**	**01 02 10.1**	**+0.1**
IBND				*e*Sg	**Sn**	**01 02 21.5**	**-1.0**
IBND				*e*AMB	AMB	01 02 42.4	
	comp=Z,8μm,0.2s						
IBND	**Bandar-abas**	**0.75**	**47**	*e*Pg	**Pb**	**01 02 10.1**	**+0.1**
IBND				*e*Sg	**Sn**	**01 02 21.5**	**-1.0**
NIAN	**Nian**	**1.02**	**52**	*e*Pg	**Pb**	**01 02 14.3**	**-0.3**
NIAN	**Nian**	**1.02**	**52**	*e*Pg	**Pb**	**01 02 14.3**	**-0.3**
KHSK	**Kohestak**	**1.02**	**100**	*e*Pg	**Pb**	**01 02 14.7**	**+0.1**
KHSK	**Kohestak**	**1.02**	**100**	*e*Pg	**Pb**	**01 02 14.7**	**+0.1**
BANOM	**Banah**	**1.06**	**161**	*e*P	**Pb**	**01 02 14.7**	**-0.6**
	SNR=30						
BANOM				S	**Sn**	**01 02 30.3**	**+0.1**
BANOM	**Banah**	**1.06**	**161**	P	**Pb**	**01 02 14.7**	**-0.6**
	SNR=30						
BANOM	**Banah**	**1.06**	**161**	Pn	**Pb**	**01 02 15.2**	**-0.1**
BANOM				S	**Sn**	**01 02 30.3**	**+0.1**
BANOM	**Banah**	**1.06**	**161**	Pn	**Pb**	**01 02 15.2**	**-0.1**
BANOM	**Banah**	**1.06**	**161**	P	**Pb**	**01 02 15.2**	**-0.1**
HATD	**Hatta, Dubai**	**2.11**	**175**	*e*P	**Pb**	**01 02 32.2**	**-0.9**
	SNR=21						
HATD	**Hatta, Dubai**	**2.11**	**175**	P	**Pb**	**01 02 32.2**	**-0.9**
	SNR=21						
ASHO	**Ashiyiah**	**2.24**	**177**	*e*P	**Pn**	**01 02 33.4**	**+1.5**
	SNR=12						
ASHO	**Ashiyiah**	**2.24**	**177**	P	**Pn**	**01 02 33.2**	**+1.4**
	SNR=12						
ASHO	**Ashiyiah**	**2.24**	**177**	pPn	**Pn**	**01 02 33.2**	**+1.4**
	SNR=12						
ASHO	**Ashiyiah**	**2.24**	**177**	P	**Pn**	**01 02 33.2**	**+1.4**
	SNR=12						
IMEH	**Mehriz**	**4.59**	**346**	*e*Pn	**Pn**	**01 03 06.2**	**+1.9**
IMEH				*e*AMB	AMB	01 04 02.7	
	comp=Z,98nm,0.2s						
IMEH	**Mehriz**	**4.59**	**346**	*e*Pn	**Pn**	**01 03 06.2**	**+1.9**
IBAF	**Bafgh**	**4.65**	**356**	*e*AMB	AMB	01 03 06.9	
	comp=Z,76nm,0.2s						
IBAF				*e*Pn	**Pn**	**01 03 06.7**	**+1.6**
IBAF	**Bafgh**	**4.65**	**356**	*e*Pn	**Pn**	**01 03 06.7**	**+1.6**
ISAD	**Sadrabad**	**5.33**	**339**	*e*Pn	**Pn**	**01 03 16.4**	**+1.8**
ISAD				*e*AMB	AMB	01 04 21.1	
	comp=N,151nm,0.2s						
ISAD	**Sadrabad**	**5.33**	**339**	*e*Pn	**Pn**	**01 03 16.4**	**+1.8**
ICHK	**Chekchek**	**5.46**	**346**	*e*Pn	**Pn**	**01 03 16.8**	**+0.6**
ICHK				*e*AMB	AMB	01 04 25.9	
	comp=Z,70nm,0.2s						
ICHK	**Chekchek**	**5.46**	**346**	*e*Pn	**Pn**	**01 03 16.8**	**+0.6**
IRAM	**Ramesheh**	**5.76**	**328**	*e*Pn	**Pn**	**01 03 21.7**	**+1.3**
IRAM				*e*AMB	AMB	01 04 29.8	
	comp=Z,54nm,0.2s						
IRAM	**Ramesheh**	**5.76**	**328**	*e*Pn	**Pn**	**01 03 21.7**	**+1.3**
IZEF	**Zefreh**	**6.71**	**333**	*e*Pn	**Pn**	**01 03 33.6**	**+0.1**
IZEF				*e*AMB	AMB	01 04 53.7	
	comp=Z,20nm,0.2s						
IZEF	**Zefreh**	**6.71**	**333**	*e*Pn	**Pn**	**01 03 33.6**	**+0.1**
IPIR	**Pirpir**	**7.21**	**324**	*e*Pn	**Pn**	**01 03 40.8**	**+0.4**
IPIR				*e*AMB	AMB	01 05 03.7	
	comp=Z,59nm,0.3s						
IPIR	**Pirpir**	**7.21**	**324**	*e*Pn	**Pn**	**01 03 40.8**	**+0.4**

IDC ***07*** *01:13:13.3±0.8, 38°.54N×144°.35E, h0km, mb3.6/12, mb1 3.9/16, mb1mx3.8/39, mbtmp3.7/16, ML3.9/3, MS2.7/6, Ms1 2.7/6, ms1mx2.5/50, Error ellipse: s-maj=23.8km s-min=16.1km az=115.0*
ISCJB ***07*** *01:13:14.3±0.5, 38°.67N±0°.04×144°.18E±0°.04, h14km, mb3.8/16, MS3.2/2, Error ellipse: s-maj=5.9km s-min=4.2km az=149.8*
NEIC ***07*** *01:13:16.2±3.9, 38°.63N×144°.30E, h18km±23km, mb4.1/3, Error ellipse: s-maj=13.6km s-min=7.3km az=119.0*
JMA ***07*** *01:13:17.1±0.2, 38°.66N×144°.16E, h46km, M4.0*

ISC 07 01:13:15.7±0.7, 38°.67N±0°.05×144°.20E±0°.07, h14km, n48, σ1§35/56, mb3.8/16, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.02**	**283**	P	**Pn**	**01 13 49.4**	**+0.1**
OFUJ				*e*S	**Sn**	**01 14 13.2**	**-1.2**
JTH	**Tanohata**	**2.21**	**306**	P	**Pn**	**01 13 51.3**	**-0.7**
JTH				*e*S	**Sn**	**01 14 17.7**	**-1.5**
JIO	**Ouri**	**2.25**	**265**	P	**Pn**	**01 13 52.5**	**+0.1**
JIO				S	**Sn**	**01 14 18.8**	**-1.2**
JMK	**Ichinoseki**	**2.35**	**278**	P	**Pn**	**01 13 54.3**	**+0.5**
JMK				S	**Sn**	**01 14 21.4**	**-1.0**
JOM	**Ohasama**	**2.40**	**290**	P	**Pn**	**01 13 55.0**	**+0.4**
JOM				*e*S	**Sn**	**01 14 22.3**	**-1.5**
JANG	**Nango**	**2.69**	**310**	P	**Pn**	**01 13 57.5**	**-1.0**
JOU	**Okura**	**2.79**	**265**	P	**Pn**	**01 14 00.3**	**+0.3**
JOU				*e*S	**Sn**	**01 14 32.3**	**-1.2**
JMM	**Marumori**	**2.80**	**254**	P	**Pn**	**01 14 00.1**	**0.0**
JMM				*e*S	**Sn**	**01 14 31.3**	**-2.3**
JRG	**Rokugo**	**2.87**	**286**	P	**Pn**	**01 14 02.1**	**+1.0**
JFK	**Kawauchi**	**2.93**	**245**	P	**Pn**	**01 14 01.4**	**-0.5**
JFK				*e*S	**Sn**	**01 14 33.9**	**-3.0**
JYK	**Kaneyama**	**3.01**	**276**	P	**Pn**	**01 14 04.2**	**+1.2**
JYK				*e*S	**Sn**	**01 14 39.1**	**+0.2**
JTM	**Tenmabayashi**	**3.21**	**312**	P	**Pn**	**01 14 05.6**	**-0.1**
JTM				*e*S	**Sn**	**01 14 41.4**	**-2.4**
JFT	**Otama**	**3.26**	**251**	P	**Pn**	**01 14 06.8**	**+0.4**
JFT				*e*S	**Sn**	**01 14 43.4**	**-1.6**
ERM	**Erimo**	**3.44**	**347**	*e*Pn	**Pn**	**01 14 08.8**	**0.0**
JNBK	**Urakawa-nobuka**	**3.77**	**343**	P	**Pn**	**01 14 13.0**	**-0.4**
JNBK				*e*S	**Sn**	**01 14 55.0**	**-2.6**
JCH	**Churui**	**3.99**	**351**	P	**Pn**	**01 14 15.5**	**-0.9**
JCH				S	**Sn**	**01 14 59.3**	**-3.7**
JKB	**Kayabe**	**4.03**	**324**	P	**Pn**	**01 14 19.1**	**+2.2**
JRY	**Ryogami san**	**4.98**	**240**	P	**Pn**	**01 14 30.0**	**-0.1**
JRY				S	**Sn**	**01 15 24.2**	**-3.4**
MJAR	**Matsushiro Arr**	**5.21**	**248**	Pn	**Pn**	**01 14 35.0**	**+1.7**
	1.4nm,0.3s,baz=72,slow=14,SNR=4.7						
MAJO	**Matsushiro**	**5.21**	**248**	*e*Pn	**Pn**	**01 14 34.3**	**+1.0**
	22nm,0.6s						
MAT	**Matsushiro**	**5.21**	**248**	P	**Pn**	**01 14 35.1**	**+1.9**
ASAJ	**Asahikawa**	**5.58**	**348**	Pn	**Pn**	**01 14 37.9**	**-0.3**
	2.6nm,0.3s,baz=163,slow=14,SNR=4.1						
ASAJ				LR	LR	01 17 03.6	
	comp=Z,22nm,20.6s,baz=308,slow=40						
JHJ	**Hachijo jima 2**	**6.60**	**214**	Pn	**Pn**	**01 14 51.0**	**-1.2**
	22nm,0.3s,baz=358,slow=23,SNR=5.4						
USRK	**Ussuriysk Ar.**	**10.70**	**305**	Pn	**Pn**	**01 15 50.4**	**+1.9**
	0.2nm,0.3s,baz=78,slow=13,SNR=5.0						
CBIJ	**Chichi jima**	**11.66**	**189**	Pn	Pn	01 15 56.1	-5.6
JCJ	**Chichijima**	**11.66**	**189**	Pn	Pn	01 15 56.1	-5.6
	2.1nm,0.3s,baz=309,slow=22,SNR=6.1						
JNU	**Nakatsue**	**12.13**	**247**	LR	LR	01 20 57.7	
	comp=Z,24nm,20.3s,baz=130,slow=38						
KSRS	**Korea Array**	**12.89**	**270**	LR	LR	01 20 16.5	
	comp=Z,25nm,20.4s,baz=139,slow=32						
KLR	**Kul'dur**	**13.83**	**324**	LR	LR	01 22 22.9	
	comp=Z,15nm,19.2s,baz=186,slow=39						
SEY	**Seymchan**	**24.80**	**9**	P	**P**	**01 18 38.3**	**+1.4**
	3.1nm,0.7s,baz=174,slow=6.2,SNR=9.7						
SONM	**Songino Array**	**28.77**	**301**	LR	LR	01 30 15.3	
	comp=Z,24nm,18.1s,baz=84,slow=35						
ZALV	**Zalesovo Beam**	**42.48**	**311**	P	**P**	**01 21 10.5**	**+0.4**
	0.3nm,0.3s,baz=94,slow=6.7,SNR=2.7						
ZALV				PcP	**PcP**	**01 23 02.8**	**+0.1**
	0.3nm,0.3s,baz=108,slow=4.7,SNR=2.5						
CMAR	**Chiang Mai Arr**	**44.04**	**256**	P	**P**	**01 21 24.1**	**+0.9**
	0.4nm,0.3s,baz=72,slow=4.0,SNR=2.7						
MKAR	**Makanchi Array**	**45.14**	**301**	P	**P**	**01 21 32.7**	**+1.0**
	0.3nm,0.3s,baz=63,slow=9.9,SNR=3.1						
KURK	**Kurchatov**	**46.68**	**307**	*e*P	**P**	**01 21 43.8**	**+0.1**
	2.0nm,0.6s						
ILAR	**Eielson Array**	**46.93**	**33**	P	**P**	**01 21 45.6**	**+0.2**
	0.5nm,0.8s,baz=261,slow=8.4,SNR=4.1						
INK	**Inuvik**	**51.92**	**28**	P	**P**	**01 22 24.0**	**+0.6**
	0.8nm,0.6s,baz=301,slow=5.5,SNR=9.6						
EKS2	**Erkin-Say**	**52.15**	**298**	*e*P	**P**	**01 22 25.7**	**-0.1**
	1.6nm,0.7s						
ARU	**Arti**	**56.60**	**318**	*e*P	**P**	**01 22 58.1**	**+0.4**
	2.8nm,0.8s						
ABKAR	**Akbulak array**	**58.58**	**310**	*e*P	**P**	**01 23 12.1**	**+0.3**
	0.8nm,0.7s						
WRA	**Warramunga Arr**	**59.03**	**191**	P	**P**	**01 23 14.0**	**-1.2**
	1.5nm,0.8s,baz=14,slow=7.5,SNR=6.4						
YKA	**Yellowknife Ar**	**61.28**	**31**	P	**P**	**01 23 30.4**	**+0.3**
	0.1nm,0.6s,baz=296,slow=6.0,SNR=3.4						
ASAR	**Alice Springs**	**62.75**	**191**	P	**P**	**01 23 39.5**	**-1.0**
	0.3nm,0.7s,baz=9.7,slow=6.6,SNR=3.2						
GEYT	**Alibeck**	**64.97**	**299**	LR	LR	01 55 28.5	
	comp=Z,27nm,18.1s,baz=140,slow=39						
FINES	**FINESS Array B**	**68.38**	**333**	P	**P**	**01 24 17.0**	**+0.6**
	1.2nm,0.9s,baz=54,slow=3.6,SNR=3.9						
NOA	**NORSAR Array B**	**73.51**	**338**	P	**P**	**01 24 47.9**	**+0.3**
	0.5nm,0.7s,baz=32,slow=5.1,SNR=2.6						
TXAR	**Lajitas Array**	**87.38**	**54**	P	**P**	**01 26 02.8**	**+0.1**
	0.2nm,0.5s,baz=296,slow=2.8,SNR=5.0						
VNDA	**Vanda**	**116.43**	**176**	PKP	**PKPdf**	**01 31 56.2**	**-1.4**
	0.8nm,0.6s,baz=1.8,slow=3.0,SNR=4.9						

NEIC ***07*** *01:23:15.9, 43°.60S×172°.66E, h6km, ML4.0(WEL), After WEL.*
NEIC Felt strongly at Christchurch.

WEL 07 01:23:16.1±0.1, 43°.60S×172°.67E, h5km, ML4.0/24, 3C-3D, Error ellipse: s-maj=0.6km s-min=0.5km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRLZ	**Canterbury Las**	**0.04**	**309**	⇑*e*PG	Pg	01 23 16.9	-0.3
CRLZ				AML	AML	01 23 17.9	
CRLZ				AML	AML	01 23 18.4	
CRLZ	**Canterbury Las**	**0.04**	**309**	⇑Pg	Pg	01 23 17.0	-0.2
MQZ	**McQueen's Vall**	**0.11**	**184**	⇑*e*PG	Pg	01 23 18.5	+0.2
MQZ				SG	Sg	01 23 20.4	+0.5
MQZ				AML	AML	01 23 20.6	
MQZ				AML	AML	01 23 20.6	
MQZ	**McQueen's Vall**	**0.11**	**184**	Pg	Pg	01 23 18.4	+0.1
MQZ				*e*Pg	Pg	01 23 18.5	+0.2
MQZ				Sg	Sg	01 23 20.4	+0.5
OXZ	**Oxford**	**0.53**	**301**	PG	Pg	01 23 26.3	0.0
OXZ				SG	Sg	01 23 34.1	+0.9
OXZ	**Oxford**	**0.53**	**301**	Pg	Pg	01 23 26.3	0.0
OXZ				Sg	Sg	01 23 34.1	+0.9
LTZ	**Lake Taylor**	**0.87**	**340**	⇓P*	Pg	01 23 33.0	+0.3
LTZ				AML	AML	01 23 46.0	
LTZ				AML	AML	01 23 49.2	
LTZ	**Lake Taylor**	**0.87**	**340**	P*	Pg	01 23 33.0	+0.3
RPZ	**Rata Peaks**	**1.18**	**264**	P*	Pg	01 23 37.6	-1.0
RPZ				AML	AML	01 23 58.9	
RPZ				AML	AML	01 24 08.5	
RPZ	**Rata Peaks**	**1.18**	**264**	P*	Pg	01 23 37.6	-1.0
INZ	**Inchbonnie**	**1.25**	**314**	P*	Pg	01 23 38.9	-1.1
KHZ	**Kahutara**	**1.34**	**29**	PN	Pn	01 23 39.8	-1.6
KHZ	**Kahutara**	**1.34**	**29**	Pn	Pn	01 23 39.8	-1.6
WVZ	**Waitaha Valley**	**1.50**	**290**	⇓PN	Pn	01 23 42.8	-0.8
WVZ				AML	AML	01 24 09.7	
WVZ				AML	AML	01 24 10.8	
WVZ	**Waitaha Valley**	**1.50**	**290**	Pn	Pn	01 23 42.8	-0.8
THZ	**Tophouse**	**1.84**	**6**	PN	Pn	01 23 46.8	-1.6
THZ				AML	AML	01 24 12.9	
THZ				AML	AML	01 24 27.5	
THZ	**Tophouse**	**1.84**	**6**	Pn	Pn	01 23 46.8	-1.6
LBZ	**Lake Benmore**	**1.96**	**245**	PN	Pn	01 23 49.3	-0.6
LBZ				AML	AML	01 24 24.6	
LBZ				AML	AML	01 24 30.2	
LBZ	**Lake Benmore**	**1.96**	**245**	Pn	Pn	01 23 49.3	-0.6
DSZ	**Denniston Nort**	**1.96**	**341**	⇓PN	Pn	01 23 49.0	-0.9
DSZ				AML	AML	01 24 17.5	
DSZ				AML	AML	01 24 17.5	
DSZ				AML	AML	01 24 24.0	
DSZ				AML	AML	01 24 24.0	
DSZ	**Denniston Nort**	**1.96**	**341**	Pn	Pn	01 23 49.0	-0.9
ODZ	**Otahua Downs**	**2.05**	**224**	PN	Pn	01 23 49.6	-1.5
ODZ				AML	AML	01 24 23.6	
ODZ				AML	AML	01 24 23.7	
ODZ				AML	AML	01 24 23.7	
ODZ				AML	AML	01 24 23.7	
FOZ	**Fox Glacier**	**2.07**	**271**	PN	Pn	01 23 51.5	+0.1
FOZ				AML	AML	01 24 28.5	
FOZ				AML	AML	01 24 34.0	
FOZ	**Fox Glacier**	**2.07**	**271**	Pn	Pn	01 23 51.5	+0.1
BSWZ	**Blackbirch Sta**	**2.08**	**26**	PN	Pn	01 23 50.5	-1.1
BSWZ				AML	AML	01 24 32.0	
BSWZ				AML	AML	01 24 41.3	
BSWZ	**Blackbirch Sta**	**2.08**	**26**	Pn	Pn	01 23 50.5	-1.1
TUWZ	**Tuamarina**	**2.37**	**24**	PN	Pn	01 23 54.3	-1.2
TUWZ				AML	AML	01 24 43.5	
TUWZ				AML	AML	01 24 44.6	
TUWZ	**Tuamarina**	**2.37**	**24**	Pn	Pn	01 23 54.3	-1.2
NNZ	**Nelson**	**2.44**	**13**	PN	Pn	01 23 55.8	-0.7
NNZ				AML	AML	01 24 34.7	
NNZ				AML	AML	01 24 35.0	
NNZ	**Nelson**	**2.44**	**13**	Pn	Pn	01 23 55.8	-0.7
TCW	**Tory Channel**	**2.67**	**27**	PN	Pn	01 23 58.7	-0.9
TCW				AML	AML	01 24 49.9	
TCW				AML	AML	01 24 52.0	
TCW	**Tory Channel**	**2.67**	**27**	Pn	Pn	01 23 58.7	-0.9
HHSZ	**Highcliff Hill**	**2.72**	**212**	PN	Pn	01 23 58.7	-1.6
HHSZ	**Highcliff Hill**	**2.72**	**212**	Pn	Pn	01 23 58.7	-1.6
QRZ	**Quartz Range**	**2.77**	**358**	AML	AML	01 24 09.5	
QRZ				AML	AML	01 24 49.5	
JCZ	**Jackson Bay**	**2.85**	**259**	AML	AML	01 24 52.4	
JCZ				AML	AML	01 24 52.6	
EAZ	**Earnscleugh**	**2.91**	**235**	PN	Pn	01 24 02.0	-1.0
EAZ				AML	AML	01 24 53.5	
EAZ				AML	AML	01 24 53.6	
EAZ	**Earnscleugh**	**2.91**	**235**	Pn	Pn	01 24 02.0	-1.0
DUWZ	**D'Urville Isla**	**2.95**	**19**	AML	AML	01 25 00.6	
DUWZ				AML	AML	01 25 13.8	
CAW	**Cannon Point**	**3.06**	**36**	AML	AML	01 24 41.8	
CAW				AML	AML	01 24 42.3	
TUZ	**Tuapeka**	**3.19**	**221**	PN	Pn	01 24 05.5	-1.4
TUZ				AML	AML	01 25 03.5	
TUZ				AML	AML	01 25 13.4	
TUZ	**Tuapeka**	**3.19**	**221**	Pn	Pn	01 24 05.5	-1.4
MLZ	**Mavora Lakes**	**3.70**	**240**	PN	Pn	01 24 12.9	-1.0
MLZ				AML	AML	01 25 22.8	
MLZ				AML	AML	01 25 25.6	
MLZ	**Mavora Lakes**	**3.70**	**240**	Pn	Pn	01 24 12.9	-1.0
SYZ	**Scrubby Hill**	**3.86**	**219**	PN	Pn	01 24 14.9	-1.0
SYZ				AML	AML	01 25 28.2	
SYZ				AML	AML	01 25 29.2	
SYZ	**Scrubby Hill**	**3.86**	**219**	Pn	Pn	01 24 14.9	-1.0
WHZ	**Wether Hill Ro**	**4.07**	**234**	PN	Pn	01 24 17.1	-1.8
WHZ				AML	AML	01 25 37.1	
WHZ				AML	AML	01 25 37.4	
WHZ	**Wether Hill Ro**	**4.07**	**234**	Pn	Pn	01 24 17.1	-1.8
DCZ	**Deep Cove**	**4.36**	**243**	PN	Pn	01 24 22.0	-0.9
DCZ				AML	AML	01 25 38.2	
DCZ				AML	AML	01 25 39.8	
DCZ	**Deep Cove**	**4.36**	**243**	Pn	Pn	01 24 22.0	-0.9

CSEM ***07*** *01:32:28.6, 38°.67N×22°.87E, h8km, ML1.6/11*

ATH 07 01:32:28.6, 38°.67N×22°.87E, h8km±3km, ML1.6/11, Error ellipse: s-maj=3.6km s-min=0.7km az=95.0, Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LKR	**Lokris**	**0.10**	**102**	P	Pg	01 32 31.1	0.0
LKR				S	Sg	01 32 32.9	+0.1
LKR	**Lokris**	**0.10**	**102**	P	Pg	01 32 31.1	0.0
LKR				S	Sg	01 32 32.9	+0.1
LKR				AML	AML	01 32 33.8	
	comp=N,3965μm,0.1s						
LKR				AML	AML	01 32 33.9	
	comp=E,4240μm,0.1s						
SMIA	**Simia**	**0.34**	**52**	P	Pg	01 32 34.8	-0.5
SMIA				S	Sb	01 32 41.2	-1.2
SMIA	**Simia**	**0.34**	**52**	P	Pg	01 32 34.8	-0.4
SMIA				AML	AML	01 32 40.8	
	comp=E,407μm,0.3s						
SMIA				AML	AML	01 32 41.2	
	comp=N,397μm,0.2s						
SMIA				S	Sb	01 32 41.2	-1.2
DSF	**Desfina**	**0.38**	**226**	P	Pg	01 32 35.3	-0.7
DSF				S	Sg	01 32 42.1	+1.2
DSF	**Desfina**	**0.38**	**226**	P	Pg	01 32 35.3	-0.7
DSF				S	Sg	01 32 42.1	+1.1
DSF				AML	AML	01 32 42.9	
	comp=N,483μm,0.2s						
DSF				AML	AML	01 32 43.2	
	comp=E,401μm,0.3s						
PROD	**Prodromos**	**0.41**	**177**	P	Pg	01 32 35.5	-1.2
PROD				S	Sg	01 32 42.6	+0.5
PROD	**Prodromos**	**0.41**	**177**	P	Pg	01 32 35.5	-1.2
PROD				S	Sg	01 32 42.6	+0.5
PROD				AML	AML	01 32 44.8	
	comp=N,285μm,0.2s						
PROD				AML	AML	01 32 44.8	
	comp=E,347μm,0.2s						
AGG	**Agios Georgios**	**0.55**	**310**	P	Pg	01 32 39.8	+0.6
AGG				S	Sg	01 32 44.9	-1.5
AGG	**Agios Georgios**	**0.55**	**310**	P	Pg	01 32 39.8	+0.6
AGG				S	Sg	01 32 44.9	-1.6
AGG				AML	AML	01 32 50.5	
	comp=E,240μm,0.2s						
AGG				AML	AML	01 32 51.0	
	comp=N,167μm,0.3s						
VIL2	**Platees**	**0.56**	**146**	P	Pg	01 32 39.8	+0.4
VIL2				S	Sb	01 32 49.1	+0.4
VIL2				AML	AML	01 32 52.5	
	comp=N,79μm,0.2s						
VIL2				AML	AML	01 32 53.1	
	comp=E,75μm,0.3s						
VILL	**Villia**	**0.61**	**146**	P	Pg	01 32 39.8	-0.7
VILL				S	Sg	01 32 49.1	+0.5
KALE	**Kalithea**	**0.64**	**244**	P	Pg	01 32 40.3	-0.7
KALE				S	Sg	01 32 49.0	-0.3
KALE	**Kalithea**	**0.64**	**244**	P	Pg	01 32 40.3	-0.6
KALE				S	Sg	01 32 49.0	-0.3
KALE				AML	AML	01 32 52.0	
	comp=E,61μm,0.3s						
KALE				AML	AML	01 32

DID			S	Sg	01 33 07.0	-0.2
KRND	**KRANIDI**	**1.31 170**	P	Pn	01 32 51.8	-1.3
KRND	**KRANIDI**	**1.31 170**	P	Pn	01 32 51.9	-1.3

*ATH **07** 01:35:43.6, 40°.36N×21°.32E, h26km, ML3.9/23, Error ellipse: s-maj=1.0km s-min=0.5km az=307.0*
*ISCJB **07** 01:35:44.5±0.2, 40°.382N±0°.009×21°.30E±0°.01, h25km±2km, mb4.0/23, MS3.4/12, Error ellipse: s-maj=1.8km s-min=1.3km az=142.8*
*PDG **07** 01:35:44.0±0.5, 40°.37N×21°.31E, h19km, MD4.2/1, ML4.1/10, Error ellipse: s-maj=0.4km s-min=0.6km az=0.0*
*THE **07** 01:35:44.9, 40°.37N×21°.34E, h14km±1km, ML4.0/26, Error ellipse: s-maj=1.4km s-min=0.8km az=296.0*
*CSEM **07** 01:35:44.4±0.1, 40°.37N×21°.32E, h12km, mb4.1/18, Error ellipse: s-maj=2.0km s-min=1.4km az=54.0*
*TIR **07** 01:35:44.0, 40°.34N×21°.36E, h7km, ML3.7*
*MOS **07** 01:35:45.1±0.9, 40°.38N×21°.30E, h33km, mb4.2/19, Error ellipse: s-maj=5.4km s-min=3.7km az=90.0*
*BEO **07** 01:35:45.3±0.6, 40°.36N×21°.38E, h20km±4km, M4.1/1*
*NEIC **07** 01:35:45.0, 40°.36N×21°.35E, h14km, mb4.1/6, ML4.0(THE), After THE.*
*IDC **07** 01:35:46.5±1.7, 40°.36N×21°.30E, h38km±14km, mb3.8/14, mb1 3.9/24, mb1mx3.8/51, mbtmp3.9/24, ML3.7/10, MS3.3/19, Ms1 3.3/19, ms1mx3.1/66, Error ellipse: s-maj=16.0km s-min=10.6km az=20.0*
*PRU **07** 01:35:48.0, 40°.68N×21°.24E, h0km, M4.1*
*SOF **07** 01:35:52.4, 40°.65N×22°.02E, h15km, MD3.8*
ISC 07 01:35:44.8±0.5, 40°.36N±0°.01×21°.33E±0°.01, h19km±1km, **n611**, σ1**s23**/797, **mb4.0**/23, **MS3.4**/12, **24C-43D**, **Greece**

Code	Station Name	Δ°	AZ°	Phase Op	ID ISC	Time h m s	Res ISC
PENT	**Pentalofos**	**0.22**	**223**	P	**Pb**	**01 35 49.3**	**-0.4**
PENT				S	**Sb**	**01 35 53.4**	**+0.5**
PENT	**Pentalofos**	**0.22**	**223**	P	**Pb**	**01 35 49.4**	**-0.3**
PENT				S	**Sb**	**01 35 53.1**	**+0.2**
PENT	**Pentalofos**	**0.22**	**223**	P	**Pb**	**01 35 49.4**	**-0.3**
PENT				S	**Sb**	**01 35 53.1**	**+0.2**
PENT				AML	AML	01 35 55.4	
	comp=E,95451μm,0.5s						
PENT				AML	AML	01 35 57.4	
	comp=N,91400μm,0.4s						
NEST	**Nestorio**	**0.22**	**286**	P	**Pb**	**01 35 49.4**	**-0.5**
NEST				S	**Sb**	**01 35 53.4**	**+0.1**
NEST	**Nestorio**	**0.22**	**286**	P	**Pb**	**01 35 49.4**	**-0.5**
NEST				S	**Sb**	**01 35 53.4**	**+0.1**
NEST	**Nestorio**	**0.22**	**286**	P	**Pb**	**01 35 49.2**	**-0.7**
NEST				S	**Sg**	**01 35 53.5**	**-0.5**
NEST				AML	AML	01 35 54.1	
NEST				AML	AML	01 35 54.2	
KZN	**Kozani**	**0.34**	**98**	P	**Pg**	**01 35 52.1**	**0.0**
KZN				S	**Sb**	**01 35 58.0**	**+0.6**
KZN	**Kozani**	**0.34**	**98**	P	**Pg**	**01 35 52.1**	**0.0**
KZN	**Kozani**	**0.34**	**98**	P	**Pg**	**01 35 52.1**	**0.0**
KZN				S	**Sb**	**01 35 58.0**	**+0.6**
KZN	**Kozani**	**0.34**	**98**	P	**Pg**	**01 35 52.1**	**0.0**
KPRO	**Kipourio**	**0.40**	**176**	P	**Pg**	**01 35 52.0**	**-1.1**
KPRO				S	**Sg**	**01 35 58.6**	**-0.2**
KPRO	**Kipourio**	**0.40**	**176**	P	**Pg**	**01 35 52.0**	**-1.1**
KPRO				S	**Sg**	**01 35 58.6**	**-0.2**
KPRO	**Kipourio**	**0.40**	**176**	P	**Pg**	**01 35 51.6**	**-1.5**
KPRO				S	**Sg**	**01 35 59.0**	**+0.2**
KPRO				AML	AML	01 36 06.5	
	comp=E,46167μm,0.6s						
KPRO				AML	AML	01 36 06.8	
	comp=N,62561μm,0.6s						
FNA	**Florina**	**0.43**	**5**	P	**Pg**	**01 35 53.0**	**-0.7**
FNA				S	**Sg**	**01 35 59.4**	**-0.3**
FNA	**Florina**	**0.43**	**5**	P	**Pg**	**01 35 53.0**	**-0.7**
FNA				S	**Sg**	**01 35 59.4**	**-0.3**
FNA	**Florina**	**0.43**	**5**	P	**Pg**	**01 35 53.0**	**-0.7**
FNA				S	**Sg**	**01 35 59.4**	**-0.3**
FNA	**Florina**	**0.43**	**5**	P	**Pg**	**01 35 53.3**	**-0.4**
FNA				S	**Sb**	**01 36 00.3**	**+0.3**
FNA				AML	AML	01 36 00.6	
FNA				AML	AML	01 36 02.0	
FNA	**Florina**	**0.43**	**5**	P	**Pg**	**01 35 53.0**	**-0.7**
FNA				S	**Sg**	**01 35 59.4**	**-0.3**
MEV	**Metsovon**	**0.57**	**188**	P	**Pg**	**01 35 55.0**	**-1.3**
MEV	**Metsovon**	**0.57**	**188**	P	**Pg**	**01 35 55.7**	**-0.6**
MEV	**Metsovon**	**0.57**	**188**	P	**Pg**	**01 35 55.7**	**-0.6**
MEV	**Metsovon**	**0.57**	**188**	P	**Pg**	**01 35 55.0**	**-1.3**
KTI	**Kastanea**	**0.60**	**86**	P	**Pg**	**01 35 56.5**	**-0.3**
KTI	**Kastanea**	**0.60**	**86**	P	**Pg**	**01 35 56.5**	**-0.3**
BIA	**Bitola**	**0.66**	**360**	P	**Pb**	**01 35 56.6**	**-1.1**
BIA				S	**Sg**	**01 36 07.7**	**+0.8**
BIA	**Bitola**	**0.66**	**360**	*i* Pg	**Pb**	**01 35 56.6**	**-1.1**
BIA				*i* Sg	**Sg**	**01 36 07.9**	**+1.1**
BIA	**Bitola**	**0.66**	**360**	P	**Pb**	**01 35 56.6**	**-1.1**
BIA				S	**Sg**	**01 36 07.7**	**+0.8**
BIA	**Bitola**	**0.66**	**360**	P	**Pb**	**01 35 56.6**	**-1.1**
JAN	**Janina**	**0.79**	**208**	P	**Pb**	**01 35 58.4**	**-1.5**
JAN				S	**Sb**	**01 36 10.3**	**+0.1**
JAN	**Janina**	**0.79**	**208**	P	**Pb**	**01 35 58.4**	**-1.5**
JAN	**Janina**	**0.79**	**208**	P	**Pb**	**01 35 58.4**	**-1.5**
JAN				S	**Sb**	**01 36 10.3**	**+0.1**
JAN	**Janina**	**0.79**	**208**	S	**Sg**	**01 36 10.6**	**-0.2**
JAN				AML	AML	01 36 14.3	
	comp=E,16202μm,1.0s						
JAN	**Janina**	**0.79**	**208**	P	**Pb**	**01 35 58.4**	**-1.5**
OHR	**Ohrid**	**0.86**	**332**	*i* Pg	**Pb**	**01 35 59.9**	**-1.3**
OHR				*i* Sg	**Sn**	**01 36 14.0**	**0.0**
OHR	**Ohrid**	**0.86**	**332**	*i* Pg	**Pb**	**01 35 59.8**	**-1.3**
OHR				*i* Sg	**Sn**	**01 36 13.9**	**0.0**
LIT	**Litokhoron**	**0.92**	**106**	P	**Pb**	**01 36 01.4**	**-0.8**
LIT				S	**Sn**	**01 36 15.9**	**+0.4**
LIT	**Litokhoron**	**0.92**	**106**	P	**Pb**	**01 36 01.4**	**-0.8**
LIT	**Litokhoron**	**0.92**	**106**	P	**Pb**	**01 36 01.6**	**-0.6**
LIT				S	**Sn**	**01 36 15.9**	**+0.4**
LIT	**Litokhoron**	**0.92**	**106**	P	**Pb**	**01 36 01.6**	**-0.6**
LIT				S	**Sn**	**01 36 15.9**	**+0.4**
LIT				AML	AML	01 36 18.9	
	comp=N,32912μm,0.5s						
LIT				AML	AML	01 36 18.9	
	comp=E,36365μm,0.5s						
LIT	**Litokhoron**	**0.92**	**106**	P	**Pb**	**01 36 01.4**	**-0.8**
THL	**Klokotos Trika**	**0.95**	**146**	P	**Pb**	**01 36 01.4**	**-1.2**
THL				S	**Sn**	**01 36 17.4**	**+1.4**
THL	**Klokotos Trika**	**0.95**	**146**	P	**Pb**	**01 36 01.4**	**-1.2**
THL				S	**Sn**	**01 36 16.9**	**+0.9**
GRG	**Griva**	**1.01**	**53**	P	**Pb**	**01 36 03.2**	**-0.5**
GRG				S	**Sn**	**01 36 18.2**	**+0.5**
GRG	**Griva**	**1.01**	**53**	P	**Pb**	**01 36 03.2**	**-0.5**
GRG				S	**Sn**	**01 36 18.2**	**+0.5**
GRG	**Griva**	**1.01**	**53**	P	**Pb**	**01 36 03.2**	**-0.5**
GRG				S	**Sg**	**01 36 17.7**	**-0.1**
GRG	**Griva**	**1.01**	**53**	P	**Pb**	**01 36 03.2**	**-0.5**
GRG				S	**Sg**	**01 36 17.7**	**-0.1**
GRG				AML	AML	01 36 22.9	
	comp=N,11526μm,0.5s						
GRG				AML	AML	01 36 24.8	
	comp=E,10612μm,0.6s						
GRG	**Griva**	**1.01**	**53**	P	**Pb**	**01 36 03.2**	**-0.5**
GRG				S	**Sn**	**01 36 18.2**	**+0.5**
SGD	**Sagiada**	**1.12**	**229**	P	**Pn**	**01 36 04.6**	**-0.8**
SGD	**Sagiada**	**1.12**	**229**	P	**Pn**	**01 36 04.6**	**-0.8**
SGD	**Sagiada**	**1.12**	**229**	P	**Pn**	**01 36 04.3**	**-1.1**
IGT	**Igoumenitsa**	**1.12**	**223**	P	**Pn**	**01 36 04.7**	**-0.8**
IGT				S	**Sg**	**01 36 22.1**	**+0.8**
IGT	**Igoumenitsa**	**1.12**	**223**	P	**Pn**	**01 36 04.7**	**-0.8**
IGT				S	**Sg**	**01 36 22.1**	**+0.8**
IGT	**Igoumenitsa**	**1.12**	**223**	P	**Pn**	**01 36 04.7**	**-0.8**
IGT				S	**Sg**	**01 36 21.5**	**+0.2**
IGT	**Igoumenitsa**	**1.12**	**223**	P	**Pn**	**01 36 04.3**	**-1.2**
IGT				S	**Sg**	**01 36 21.5**	**+0.2**
IGT				AML	AML	01 36 25.3	
	comp=N,9678μm,0.8s						
IGT				AML	AML	01 36 28.8	
	comp=E,6539μm,0.5s						
IGT	**Igoumenitsa**	**1.12**	**223**	P	**Pn**	**01 36 04.7**	**-0.8**
IGT				S	**Sg**	**01 36 22.1**	**+0.8**
DSL	**Palaion Diasel**	**1.23**	**189**	P	**Pn**	**01 36 07.2**	**+0.2**
DSL				S	**Sn**	**01 36 24.0**	**+0.9**
DSL	**Palaion Diasel**	**1.23**	**189**	P	**Pn**	**01 36 07.2**	**+0.2**
DSL				S	**Sn**	**01 36 24.0**	**+0.9**
DSL	**Palaion Diasel**	**1.23**	**189**	P	**Pn**	**01 36 06.9**	**-0.1**
DSL				AML	AML	01 36 32.6	
	comp=E,10571μm,0.7s						
DSL				AML	AML	01 36 37.0	
	comp=N,9867μm,1.2s						
DSL	**Palaion Diasel**	**1.23**	**189**	P	**Pn**	**01 36 07.2**	**+0.2**
THE	**Thessaloniki**	**1.28**	**77**	P	**Pn**	**01 36 07.5**	**-0.1**
THE				S	**Sb**	**01 36 25.1**	**+0.9**
THE	**Thessaloniki**	**1.28**	**77**	P	**Pn**	**01 36 07.5**	**-0.1**
THE				S	**Sb**	**01 36 25.1**	**+0.9**
THE	**Thessaloniki**	**1.28**	**77**	P	**Pn**	**01 36 07.5**	**-0.1**
THE				S	**Sb**	**01 36 25.1**	**+0.9**
THE	**Thessaloniki**	**1.28**	**77**	P	**Pn**	**01 36 07.3**	**-0.3**
THE				S	**Sb**	**01 36 25.1**	**+0.9**
THE				AML	AML	01 36 25.6	
	comp=N,2760μm,0.5s						
THE				AML	AML	01 36 36.7	
	comp=E,2145μm,0.8s						
THE	**Thessaloniki**	**1.28**	**77**	P	**Pn**	**01 36 07.5**	**-0.1**
THE				S	**Sb**	**01 36 25.1**	**+0.9**
KEK	**Kerkira**	**1.34**	**242**	P	**Pb**	**01 36 09.2**	**-0.1**
KEK				S	**Sb**	**01 36 26.4**	**+0.4**
KEK	**Kerkira**	**1.34**	**242**	P	**Pb**	**01 36 09.2**	**-0.1**
KEK				S	**Sb**	**01 36 26.4**	**+0.4**
KEK	**Kerkira**	**1.34**	**242**	P	**Pb**	**01 36 09.6**	**+0.3**
KEK				S	**Sg**	**01 36 28.9**	**+0.7**
VAY	**Valandovo**	**1.35**	**44**	P	**Pn**	**01 36 08.7**	**+0.1**
VAY				S	**Sb**	**01 36 26.8**	**+0.5**
VAY	**Valandovo**	**1.35**	**44**	*i* Pg	**Pn**	**01 36 08.7**	**+0.1**
VAY				*i* Sg	**Sb**	**01 36 27.1**	**+0.9**
VAY	**Valandovo**	**1.35**	**44**	*e*Pg	**Pb**	**01 36 09.1**	**-0.3**
VAY	**Valandovo**	**1.35**	**44**	P	**Pn**	**01 36 08.7**	**+0.1**
VAY				S	**Sb**	**01 36 26.8**	**+0.5**
VAY	**Valandovo**	**1.35**	**44**	P	**Pn**	**01 36 08.7**	**+0.1**
VAY	**Valandovo**	**1.35**	**44**	*e*Pg	**Pb**	**01 36 09.1**	**-0.3**
VAY				S	**Sb**	**01 36 26.8**	**+0.5**
VAY				*i* Sg	**Sb**	**01 36 27.1**	**+0.9**
VAY	**Valandovo**	**1.35**	**44**	P	**Pn**	**01 36 08.7**	**+0.1**
VAY				S	**Sb**	**01 36 26.8**	**+0.5**
HORT	**Hortiatis**	**1.37**	**79**	P	**Pn**	**01 36 08.9**	**-0.1**
HORT				S	**Sn**	**01 36 26.5**	**-0.1**
HORT	**Hortiatis**	**1.37**	**79**	P	**Pn**	**01 36 08.9**	**-0.1**
HORT				S	**Sn**	**01 36 26.5**	**-0.1**
HORT	**Hortiatis**	**1.37**	**79**	P	**Pn**	**01 36 08.7**	**-0.3**
HORT				S	**Sb**	**01 36 27.6**	**+0.6**
HORT				AML	AML	01 36 32.4	
	comp=N,4440μm,0.4s						
HORT				AML	AML	01 36 34.1	
	comp=E,3131μm,0.4s						
HORT	**Hortiatis**	**1.37**	**79**	P	**Pn**	**01 36 08.9**	**-0.1**
KNT	**Kendrikon**	**1.44**	**55**	P	**Pn**	**01 36 09.9**	**+0.1**
KNT				S	**Sn**	**01 36 28.7**	**+0.5**
KNT	**Kendrikon**	**1.44**	**55**	P	**Pn**	**01 36 09.9**	**+0.1**
KNT				S	**Sn**	**01 36 28.7**	**+0.5**
KNT	**Kendrikon**	**1.44**	**55**	P	**Pn**	**01 36 09.9**	**+0.1**
KNT				S	**Sn**	**01 36 28.7**	**+0.5**
KNT	**Kendrikon**	**1.44**	**55**	P	**Pn**	**01 36 09.9**	**+0.1**
KNT				S	**Sg**	**01 36 30.8**	**-0.5**
KNT				AML	AML	01 36 37.0	
	comp=N,2732μm,0.3s						
KNT				AML	AML	01 36 37.6	
	comp=E,2404μm,0.9s						
KNT	**Kendrikon**	**1.44**	**55**	P	**Pn**	**01 36 09.9**	**+0.1**
KNT				S	**Sn**	**01 36 28.7**	**+0.5**
EVR	**Evrytania**	**1.48**	**165**	P	**Pn**	**01 36 11.1**	**+0.6**
EVR				S	**Sb**	**01 36 30.5**	**+0.3**
EVR	**Evrytania**	**1.48**	**165**	P	**Pn**	**01 36 11.1**	**+0.6**
EVR				S	**Sb**	**01 36 30.5**	**+0.3**
EVR	**Evrytania**	**1.48**	**165**	P	**Pn**	**01 36 11.2**	**+0.6**
EVR				S	**Sn**	**01 36 29.6**	**+0.2**
EVR				AML	AML	01 36 43.2	
	comp=N,5953μm,0.6s						
EVR	**Evrytania**	**1.48**	**165**	P	**Pn**	**01 36 11.2**	**+0.7**
EVR				S	**Sb**	**01 36 30.5**	**+0.3**
TIR	**Tirane**	**1.49**	**312**	*i* PN	**Pb**	**01 36 11.7**	**-0.1**
TIR				*i* SN	**Sg**	**01 36 35.6**	**+2.7**
TIR	**Tirane**	**1.49**	**312**	‖*i*P	**Pb**	**01 36 11.8**	**-0.1**
TIR	**Tirane**	**1.49**	**312**	*e*Pg	**Pb**	**01 36 12.0**	**+0.2**
TIR				*e*Sg	**Sg**	**01 36 33.4**	**+0.5**
TIR	**Tirane**	**1.49**	**312**	*e*P	**Pb**	**01 36 11.5**	**-0.3**
TIR				*e*		01 36 31.2	
TIR	**Tirane**	**1.49**	**312**	*e*P	**Pb**	**01 36 11.5**	**-0.3**
TIR	**Tirane**	**1.49**	**312**	*e*Pg	**Pb**	**01 36 12.0**	**+0.2**
TIR				*e*S	**Sb**	**01 36 31.2**	**+0.8**
TIR				*e*Sg	**Sg**	**01 36 33.4**	**+0.5**
TIR	**Tirane**	**1.49**	**312**	P	**Pg**	**01 36 12.6**	**-0.9**
TIR	**Tirane**	**1.49**	**312**	*e*Pn	**Pb**	**01 36 11.5**	**-0.3**
TIR				*e*Sn	**Sb**	**01 36 31.2**	**+0.8**
AGG	**Agios Georgios**	**1.54**	**150**	P	**Pn**	**01 36 11.5**	**+0.3**
AGG				S	**Sb**	**01 36 32.5**	**+0.7**
AGG	**Agios Georgios**	**1.54**	**150**	P	**Pn**	**01 36 11.5**	**+0.3**
AGG	**Agios Georgios**	**1.54**	**150**	P	**Pn**	**01 36 11.8**	**+0.6**
AGG				S	**Sb**	**01 36 32.5**	**+0.7**
AGG	**Agios Georgios**	**1.54**	**150**	P	**Pn**	**01 36 11.8**	**+0.6**
AGG				S	**Sb**	**01 36 33.1**	**+1.4**
AGG				AML	AML	01 36 42.9	
	comp=N,21948μm,0.4s						
AGG				AML	AML	01 36 44.0	
	comp=E,23479μm,0.8s						
AGG	**Agios Georgios**	**1.54**	**150**	P	**Pn**	**01 36 11.5**	**+0.3**
FYTO	**Fytoko, Volos**	**1.56**	**127**	P	**Pn**	**01 36 11.7**	**+0.3**
FYTO				S	**Sb**	**01 36 32.4**	**+0.1**
FYTO	**Fytoko, Volos**	**1.56**	**127**	P	**Pn**	**01 36 11.8**	**+0.3**
FYTO				S	**Sb**	**01 36 32.4**	**+0.1**
FYTO	**Fytoko, Volos**	**1.56**	**127**	P	**Pn**	**01 36 11.8**	**+0.4**
FYTO	**Fytoko, Volos**	**1.56**	**127**	P	**Pn**	**01 36 11.8**	**+0.4**
FYTO				S	**Sb**	**01 36 32.4**	**+0.1**
SOH	**Sokhos**	**1.61**	**73**	P	**Pn**	**01 36 12.5**	**+0.3**
SOH	**Sokhos**	**1.61**	**73**	P	**Pn**	**01 36 12.8**	**+0.6**
SOH	**Sokhos**	**1.61**	**73**	P	**Pn**	**01 36 12.6**	**+0.3**
SOH				S	**Sb**	**01 36 33.6**	**-0.3**
SOH	**Sokhos**	**1.61**	**73**	P	**Pn**	**01 36 12.6**	**+0.4**
SOH				S	**Sb**	**01 36 33.6**	**-0.3**
SOH	**Sokhos**	**1.61**	**73**	P	**Pn**	**01 36 12.8**	**+0.6**
PLG	**Polygyros**	**1.62**	**89**	P	**Pn**	**01 36 12.7**	**+0.4**
PLG				S	**Sn**	**01 36 33.0**	**+0.4**
PLG	**Polygyros**	**1.62**	**89**	P	**Pn**	**01 36 12.7**	**+0.4**
PLG				S	**Sn**	**01 36 33.0**	**+0.4**
PLG	**Polygyros**	**1.62**	**89**	P	**Pn**	**01 36 12.7**	**+0.4**
PLG				S	**Sb**	**01 36 33.8**	**-0.2**
PLG	**Polygyros**	**1.62**	**89**	P	**Pn**	**01 36 12.5**	**+0.2**
PLG				S	**Sb**	**01 36 33.8**	**-0.2**
PLG				AML	AML	01 36 38.0	
	comp=E,3061μm,0.6s						
PLG				AML	AML	01 36 44.1	
	comp=N,993μm,1.5s						
PLG	**Polygyros**	**1.62**	**89**	P	**Pn**	**01 36 12.7**	**+0.4**
PLG				S	**Sn**	**01 36 33.0**	**+0.4**
SKO	**Skopje**	**1.62**	**3**	P	**Pn**	**01 36 12.9**	**+0.6**
SKO				S	**Sn**	**01 36 33.1**	**+0.5**
SKO	**Skopje**	**1.62**	**3**	*i* Pn	**Pn**	**01 36 13.0**	**+0.7**
SKO	**Skopje**	**1.62**	**3**	P	**Pn**	**01 36 12.9**	**+0.6**
SKO				S	**Sn**	**01 36 33.1**	**+0.5**
SKO	**Skopje**	**1.62**	**3**	P	**Pn**	**01 36 12.9**	**+0.6**
SKO				S	**Sn**	**01 36 33.1**	**+0.5**
SKO	**Skopje**	**1.62**	**3**	P	**Pn**	**01 36 12.9**	**+0.6**
SKO				S	**Sn**	**01 36 33.1**	**+0.5**
LKD2	**Lefkada island**	**1.65**	**199**	P	**Pb**	**01 36 14.6**	**+0.1**
LKD2	**Lefkada island**	**1.65**	**199**	P	**Pb**	**01 36 14.6**	**+0.1**
LKD2	**Lefkada island**	**1.65**	**199**	P	**Pg**	**01 36 16.3**	**-0.2**
LKD2	**Lefkada island**	**1.65**	**199**	P	**Pb**	**01 36 14.6**	**+0.1**
XOR	**Xorichti**	**1.74**	**124**	P	**Pn**	**01 36 14.2**	**+0.3**
XOR				S	**Sn**	**01 36 36.4**	**+0.8**
XOR	**Xorichti**	**1.74**	**124**	P	**Pn**	**01 36 14.3**	**+0.3**
XOR				S	**Sn**	**01 36 36.7**	**+1.0**
XOR	**Xorichti**	**1.74**	**124**	P	**Pn**	**01 36 14.3**	**+0.3**
XOR				S	**Sn**	**01 36 36.7**	**+1.0**
XOR				AML	AML	01 36 48.2	
	comp=N,9311μm,0.7s						
XOR				AML	AML	01 36 49.9	
	comp=E,5285μm,0.8s						
XOR	**Xorichti**	**1.74**	**124**	P	**Pn**	**01 36 14.2**	**+0.3**
PDO	**Prodromos**	**1.76**	**184**	P	**Pb**	**01 36 16.7**	**+0.3**
PDO	**Prodromos**	**1.76**	**184**	P	**Pb**	**01 36 16.7**	**+0.3**
NEO	**Neokhori**	**1.79**	**125**	P	**Pn**	**01 36 14.9**	**+0.2**
NEO	**Neokhori**	**1.79**	**125**	P	**Pn**	**01 36 14.9**	**+0.2**
NEO				S	**Sn**	**01 36 38.2**	**+1.2**
NEO	**Neokhori**	**1.79**	**125**	P	**Pn**	**01 36 15.8**	**+1.1**
NEO				S	**Sn**	**01 36 38.2**	**+1.2**
NEO				AML	AML	01 36 50.7	
	comp=E,9329μm,0.8s						
NEO				AML	AML	01 36 55.3	
	comp=N,11814μm,0.7s						
NEO	**Neokhori**	**1.79**	**125**	P	**Pn**	**01 36 14.9**	**+0.2**
ANX	**Ano Chora**	**1.82**	**165**	P	**Pn**	**01 36 16.3**	**+1.2**
ANX	**Ano Chora**	**1.82**	**165**	P	**Pn**	**01 36 16.3**	**+1.2**
PAIG	**Paliouri**	**1.85**	**103**	P	**Pn**	**01 36 15.3**	**-0.2**
PAIG	**Paliouri**	**1.85**	**103**	P	**Pn**	**01 36 15.3**	**-0.2**
PAIG	**Paliouri**	**1.85**	**103**	P	**Pn**	**01 36 15.3**	**-0.2**
PAIG				S	**Sn**	**01 36 39.8**	**+1.5**
PAIG	**Paliouri**	**1.85**	**103**	P	**Pn**	**01 36 14.9**	**-0.5**
PAIG				S	**Sn**	**01 36 39.8**	**+1.5**
PAIG				AML	AML	01 36 47.6	
	comp=N,1926μm,1.1s						
PAIG				AML	AML	01 36 49.2	
	comp=E,2036μm,0.5s						
PAIG	**Paliouri**	**1.85**	**103**	P	**Pn**	**01 36 15.3**	**-0.2**
SRS	**Serrai**	**1.88**	**65**	P	**Pn**	**01 36 15.7**	**-0.2**
SRS	**Serrai**	**1.88**	**65**	P	**Pn**	**01 36 15.7**	**-0.2**
SRS	**Serrai**	**1.88**	**65**	P	**Pn**	**01 36 15.7**	**-0.2**
SRS				S	**Sn**	**01 36 40.4**	**+1.3**
SRS	**Serrai**	**1.88**	**65**	P	**Pn**	**01 36 15.5**	**-0.4**
SRS				S	**Sn**	**01 36 40.4**	**+1.3**
SRS	**Serrai**	**1.88**	**65**	P	**Pn**	**01 36 15.7**	**-0.2**
KKB	**Krupnik**	**2.01**	**41**	P	**Pn**	**01 36 18.4**	**+0.7**
OUR	**Ouranopolis**	**2.03**	**90**	P	**Pn**	**01 36 18.3**	**+0.4**
OUR	**Ouranopolis**	**2.03**	**90**	P	**Pn**	**01 36 18.3**	**+0.4**
OUR	**Ouranopolis**	**2.03**	**90**	P	**Pn**	**01 36 18.3**	**+0.4**
OUR				S	**Sb**	**01 36 44.8**	**-1.0**
OUR	**Ouranopolis**	**2.03**	**90**	P	**Pn**	**01 36 18.6**	**+0.8**
OUR				S	**Sb**	**01 36 44.8**	**-1.0**
OUR				AML	AML	01 36 48.6	
	comp=E,2280μm,0.5s						
OUR				AML	AML	01 36 55.9	
	comp=N,3618μm,0.9s						
OUR	**Ouranopolis**	**2.03**	**90**	P	**Pn**	**01 36 18.3**	**+0.4**
SKIA	**Skiathos**	**2.03**	**125**	P	**Pn**	**01 36 18.0**	**+0.1**
SKIA	**Skiathos**	**2.03**	**125**	P	**Pn**	**01 36 18.3**	**+0.4**
SKIA	**Skiathos**	**2.03**	**125**	P	**Pn**	**01 36 18.3**	**+0.4**
KALE	**Kalithea**	**2.06**	**162**	P	**Pn**	**01 36 19.1**	**+0.7**
KALE	**Kalithea**	**2.06**	**162**	P	**Pn**	**01 36 19.1**	**+0.7**
KALE	**Kalithea**	**2.06**	**162**	P	**Pn**	**01 36 19.1**	**+0.7**
SMIA	**Simia**	**2.07**	**135**	P	**Pn**	**01 36 18.9**	**+0.4**
SMIA	**Simia**	**2.07**	**135**	P	**Pn**	**01 36 18.9**	**+0.4**
SMIA	**Simia**	**2.07**	**135**	P	**Pn**	**01 36 19.3**	**+0.8**
LKR	**Lokris**	**2.14**	**142**	P	**Pn**	**01 36 19.9**	**+0.5**
LKR	**Lokris**	**2.14**	**142**	P	**Pn**	**01 36 19.9**	**+0.5**
LKR				S	**Sn**	**01 36 46.6**	**+1.2**
LKR	**Lokris**	**2.14**	**142**	P	**Pn**	**01 36 20.0**	**+0.6**
LKR				S	**Sn**	**01 36 46.6**	**+1.2**
LKR				AML	AML	01 36 53.5	
	comp=E,1650μm,0.8s						
LKR				AML	AML	01 37 03.8	
	comp=N,1744μm,1.1s						
LKR	**Lokris**	**2.14**	**142**	P	**Pn**	**01 36 19.9**	**+0.5**
DSF	**Desfina**	**2.15**	**154**	P	**Pn**	**01 36 20.0**	**+0.3**
DSF	**Desfina**	**2.15**	**154**	P	**Pn**	**01 36 20.0**	**+0.3**
DSF	**Desfina**	**2.15**	**154**	P	**Pn**	**01 36 20.0**	**+0.3**
AXS	**Araxos**	**2.16**	**179**	P	**Pb**	**01 36 22.4**	**-0.8**
AXS	**Araxos**	**2.16**	**179**	P	**Pb**	**01 36 22.4**	**-0.8**
NVR	**Nevrokopi**	**2.16**	**62**	P	**Pn**	**01 36 19.9**	**+0.1**
NVR	**Nevrokopi**	**2.16**	**62**	P	**Pn**	**01 36 19.9**	**+0.1**
NVR				S	**Sn**	**01 36 47.4**	**+1.3**
NVR	**Nevrokopi**	**2.16**	**62**	P	**Pn**	**01 36 19.9**	**+0.1**
LAKA	**Lakka**	**2.17**	**166**	P	**Pn**	**01 36 21.0**	**+1.1**
LAKA	**Lakka**	**2.17**	**166**	P	**Pn**	**01 36 21.0**	**+1.1**
LAKA	**Lakka**	**2.17**	**166**	P	**Pn**	**01 36 21.0**	**+1.1**
MMB	**Musomiste**	**2.19**	**55**	*i* P	**Pn**	**01 36 20.5**	**+0.3**
VLS	**Valsamata**	**2.25**	**195**	P	**Pn**	**01 36 21.8**	**+0.8**
VLS	**Valsamata**	**2.25**	**195**	P	**Pn**	**01 36 21.8**	**+0.8**
VLS	**Valsamata**	**2.25**	**195**	P	**Pn**	**01 36 21.8**	**+0.8**
VLS	**Valsamata**	**2.25**	**195**	P	**Pn**	**01 36 21.8**	**+0.8**
ULC	**Ulcinj**	**2.25**	**316**	*e*Pn	**Pn**	**01 36 22.0**	**+1.0**
ULC				*e*Sn	**Sn**	**01 36 50.0**	**+1.7**
ULC	**Ulcinj**	**2.25**	**316**	*e*Pn	**Pn**	**01 36 22.0**

LIA				S	Sn	01 37 04.1	-2.3
LIA	**Limnos Island**	2.99	98	P	Pn	01 36 31.7	+0.6
NKME	**Niksic**	3.00	324	*e*Pn	Pn	01 36 32.2	+0.9
NKME				*e*Sn	Sn	01 37 07.8	+1.1
ATH	**Athens Observa**	3.02	141	P	Pn	01 36 32.3	+0.8
ATH				S	Sn	01 37 09.3	+2.2
ATH	**Athens Observa**	3.02	141	P	Pn	01 36 32.3	+0.8
ATH	**Athens Observa**	3.02	141	P	Pn	01 36 32.3	+0.8
ATH				S	Sn	01 37 09.3	+2.2
ATH	**Athens Observa**	3.02	141	P	Pn	01 36 32.3	+0.8
NKY	**Niksic**	3.02	325⇑	*i*Pn	Pn	01 36 32.2	+0.6
NKY				*e*Sn	Sn	01 37 08.4	+1.1
PTL	**Penteli**	3.03	139	P	Pn	01 36 32.4	+0.7
PTL	**Penteli**	3.03	139	P	Pn	01 36 32.3	+0.6
PTL				S	Sn	01 37 09.2	+1.7
PTL	**Penteli**	3.03	139	P	Pn	01 36 32.3	+0.6
PTL				S	Sn	01 37 09.2	+1.7
PTL				AML	AML	01 37 13.1	
	comp=E,977μm,0.5s						
PTL				AML	AML	01 37 13.3	
	comp=N,872μm,0.7s						
PTL	**Penteli**	3.03	139	P	Pn	01 36 32.4	+0.6
ATHU	**Athens Univers**	3.05	141	P	Pn	01 36 32.6	+0.6
ATHU				S	Sn	01 37 09.4	+1.4
ATHU	**Athens Univers**	3.05	141	P	Pn	01 36 32.6	+0.6
ATHU				S	Sn	01 37 09.4	+1.4
ATHU	**Athens Univers**	3.05	141	P	Pn	01 36 32.8	+0.8
ATHU				S	Sn	01 37 10.2	+2.1
ATHU				AML	AML	01 37 13.7	
	comp=E,542μm,0.9s						
ATHU				AML	AML	01 37 14.0	
	comp=N,630μm,0.7s						
ATHU	**Athens Univers**	3.05	141	P	Pn	01 36 32.6	+0.6
PGB	**Panagyurishte**	3.06	43	P	Pn	01 36 33.9	+1.8
ZAPS	**Zavoj**	3.08	18	*i*Pn	Pn	01 36 33.6	+1.3
SJES	**Sjenica**	3.08	341	*e*Pn	Pn	01 36 33.8	+1.4
PLD	**Plovdiv**	3.09	54	P	Pn	01 36 33.7	+1.3
VLX	**Vlachokerasia**	3.09	164	P	Pn	01 36 34.6	+2.0
VLX	**Vlachokerasia**	3.09	164	P	Pn	01 36 34.6	+2.0
VLX	**Vlachokerasia**	3.09	164	P	Pn	01 36 35.1	+2.5
TAR1	**Taranto**	3.09	274	*e*Pn	Pn	01 36 32.9	+0.4
VLY	**Voula,Athens**	3.15	142	P	Pn	01 36 34.0	+0.7
VLY	**Voula,Athens**	3.15	142	P	Pn	01 36 34.0	+0.7
VLY				S	Sn	01 37 10.0	-0.4
VLY	**Voula,Athens**	3.15	142	P	Pn	01 36 34.0	+0.7
VLY				S	Sn	01 37 10.0	-0.4
VLY				AML	AML	01 37 17.0	
	comp=N,2979μm,0.7s						
VLY				AML	AML	01 37 21.5	
	comp=E,1454μm,0.6s						
VLY	**Voula,Athens**	3.15	142	P	Pn	01 36 34.0	+0.7
ITM	**Ithomi**	3.20	171	P	Pn	01 36 37.2	+3.1
ITM	**Ithomi**	3.20	171	P	Pn	01 36 37.2	+3.1
ITM	**Ithomi**	3.20	171	P	Pb	01 36 38.6	-2.5
ITM	**Ithomi**	3.20	171	P	Pn	01 36 37.2	+3.1
SMTH	**Samothraki Isl**	3.21	87	P	Pn	01 36 34.0	-0.2
SMTH	**Samothraki Isl**	3.21	87	P	Pn	01 36 34.2	+0.1
SMTH	**Samothraki Isl**	3.21	87	P	Pn	01 36 34.2	+0.1
SMTH	**Samothraki Isl**	3.21	87	P	Pn	01 36 34.0	-0.2
DID	**Didima**	3.21	152	P	Pn	01 36 34.4	+0.2
DID	**Didima**	3.21	152	P	Pn	01 36 34.4	+0.2
DID	**Didima**	3.21	152	P	Pn	01 36 34.4	+0.2
TREB	**Trebinje**	3.25	317	*e*Pn	Pn	01 36 34.9	+0.2
NOCI	**Noci**	3.28	279	P	Pn	01 36 35.1	0.0
NOCI	**Noci**	3.28	279	P	Pn	01 36 35.1	0.0
BOVS	**Bovan**	3.29	5⇓	*i*Pn	Pn	01 36 35.9	+0.6
BOVS				*e*Sn	Sn	01 37 13.3	-0.5
BOVS	**Bovan**	3.29	5⇓	*i*Pn	Pn	01 36 35.9	+0.6
BOVS				*e*Sn	Sn	01 37 13.3	-0.5
KRND	**KRANIDI**	3.29	154	P	Pn	01 36 35.9	+0.6
KRND	**KRANIDI**	3.29	154	P	Pn	01 36 35.9	+0.6
KRND	**KRANIDI**	3.29	154	P	Pn	01 36 36.1	+0.9
BRY	**Bratogost**	3.29	321⇓	*i*Pn	Pn	01 36 36.3	+0.8
BRY				*e*Sn	Sn	01 37 15.0	+0.8
BRY	**Bratogost**	3.29	321⇓	*i*Pn	Pn	01 36 38.3	+0.8
BRY				*e*Sn	Sn	01 37 15.0	+0.8
PLE	**Pljevlja**	3.31	335⇑	*i*Pn	Pn	01 36 36.2	+0.6
PLE				*e*Sn	Sn	01 37 15.6	+1.1
PLE	**Pljevlja**	3.31	335⇑	*i*Pn	Pn	01 36 36.2	+0.6
PLE				*e*Sn	Sn	01 37 15.6	+1.1
IVAS	**Ivanjica**	3.34	345	*e*Pn	Pn	01 36 36.4	+0.4
IVAS				*e*Sn	Sn	01 37 15.2	+0.1
IVAS	**Ivanjica**	3.34	345	*e*Pn	Pn	01 36 36.4	+0.4
IVAS				*e*Sn	Sn	01 37 15.2	+0.1
KDZ	**Kurdzhali**	3.35	66	P	Pn	01 36 35.6	-0.5
UPM	**Unac-Piva**	3.38	328⇑	*i*Pn	Pn	01 36 37.8	+1.2
UPM				*e*Sn	Sn	01 37 16.6	+0.4
UPM	**Unac-Piva**	3.38	328⇑	*i*Pn	Pn	01 36 37.8	+1.2
UPM				*e*Sn	Sn	01 37 16.6	+0.4
BAI	**Bari**	3.46	284	*e*Pn	Pn	01 36 38.0	+0.4
BAI				Sn	Sn	01 37 17.0	-1.1
PYL	**PYLOS**	3.47	175	P	Pn	01 36 39.4	+1.7
PYL	**PYLOS**	3.47	175	P	Pn	01 36 39.4	+1.7
PYL	**PYLOS**	3.47	175	P	Pn	01 36 39.6	+1.9
MPEP	**Malo Peshtene**	3.50	30	P	Pn	01 36 39.1	+1.0
BOLS	**Boljevac**	3.50	7	*i*Pn	Pn	01 36 37.3	-0.9
BOLS				*e*Sn	Sn	01 37 18.0	-1.1
BOLS	**Boljevac**	3.50	7	*i*Pn	Pn	01 36 37.3	-0.9
BOLS				*e*Sn	Sn	01 37 18.0	-1.1
MATE	**Matera**	3.54	276⇓	*i*P	Pn	01 36 38.8	+0.1
GRUS	**Gruza**	3.56	353⇓	*i*Pn	Pn	01 36 40.0	+1.0
GRUS				*e*Sn	Sn	01 37 20.4	-0.1
GRUS	**Gruza**	3.56	353⇓	*i*Pn	Pn	01 36 40.0	+1.0
GRUS				*e*Sn	Sn	01 37 20.4	-0.1
SG1	**Sgolgore (BA)**	3.58	279	*e*Pn	Pn	01 36 39.5	+0.3
SG1				Sn	Sn	01 37 21.6	+0.7
ALN	**Alexandroupoli**	3.63	80	P	Pn	01 36 40.0	+0.1
ALN				S	Sn	01 37 21.0	-1.2
ALN	**Alexandroupoli**	3.63	80	P	Pn	01 36 40.0	+0.1
ALN				S	Sn	01 37 21.0	-1.2
ALN	**Alexandroupoli**	3.63	80	P	Pn	01 36 39.4	-0.5
ALN				S	Sn	01 37 21.0	-1.2
ALN	**Alexandroupoli**	3.63	80	P	Pn	01 36 39.4	-0.5
ALN	**Alexandroupoli**	3.63	80	P	Pn	01 36 40.0	+0.1
ALN				S	Sn	01 37 21.0	-1.2
BOZC	**Bozcaada**	3.66	97	*i*P	Pn	01 36 41.7	+1.4
BOZC				*i*S	Sn	01 37 21.0	-1.9
SIGR	**SIGRI**	3.67	107	P	Pn	01 36 42.3	+1.9
SIGR	**SIGRI**	3.67	107	P	Pn	01 36 42.4	+1.9
ENEZ	**Enez**	3.69	83	P	Pn	01 36 41.1	+0.3
STON	**Ston**	3.71	314	*e*Pn	Pn	01 36 41.0	+0.1
STON				Sn	Sn	01 37 23.1	-1.0
STON	**Ston**	3.71	314	*e*Pn	Pn	01 36 41.9	+1.0
STON	**Ston**	3.71	314	*e*Pn	Pn	01 36 41.9	+1.0
STON				Sn	Sn	01 37 23.0	-1.0
TIP	**Timpagrande**	3.71	253⇑	*i*P	Pn	01 36 41.8	+0.6
TIP	**Timpagrande**	3.71	253	P	Pn	01 36 41.5	+0.4
TIP				S	Sn	01 37 23.5	-0.9
TIP	**Timpagrande**	3.71	253	*e*Pn	Pn	01 36 41.6	+0.4
TIP	**Timpagrande**	3.71	253	P	Pn	01 36 41.5	+0.4
TIP	**Timpagrande**	3.71	253	*e*Pn	Pn	01 36 41.6	+0.4
TIP				*e*Pg	Pg	01 36 53.6	-2.3
TIP				S	Sn	01 37 23.5	-0.9
TIP				*e*Sn	Sb	01 37 25.4	-9.1
BBLS	**Lazići**	3.79	338	*e*Pn	Pn	01 36 43.2	+1.0
BBLS	**Lazići**	3.79	338	*e*Pn	Pn	01 36 43.2	+1.0
VLI	**Veliai**	3.84	160	P	Pn	01 36 44.1	+1.2
VLI	**Veliai**	3.84	160	P	Pn	01 36 44.1	+1.2
VLI				S	Sn	01 37 29.0	+1.5
VLI	**Veliai**	3.84	160	P	Pn	01 36 41.8	-1.1
VLI				S	Sn	01 37 28.9	+1.5
VLI	**Veliai**	3.84	160	P	Pn	01 36 44.1	+1.2
EZN	**Ezine**	3.87	96	P	Pn	01 36 44.4	+1.2
EZN	**Ezine**	3.87	96	P	Pn	01 36 44.4	+1.2
EZN	**Ezine**	3.87	96	P	Pn	01 36 44.4	+1.2
EZN	**Ezine**	3.87	96	P	Pn	01 36 44.4	+1.2
DIVS	**Divibare**	3.87	346	P	Pn	01 36 43.2	-0.1
DIVS	**Divibare**	3.87	346⇓	*i*Pn	Pn	01 36 43.8	+0.5
DIVS	**Divibare**	3.87	346	P	Pn	01 36 43.2	-0.1
DIVS	**Divibare**	3.87	346⇓	*i*Pn	Pn	01 36 43.8	+0.5
CDT	**Castel del Mon**	3.91	282	*e*Pn	Pn	01 36 44.5	+0.7
CDT				Sn	Sn	01 37 28.2	-1.0
TRUS	**Trudelj**	3.93	350	*i*Pn	Pn	01 36 44.7	+0.7
TRUS	**Trudelj**	3.93	350	*i*Pn	Pn	01 36 44.7	+0.7
PRK	**Paraskevi**	3.96	105	P	Pn	01 36 46.0	+1.5
PRK	**Paraskevi**	3.96	105	P	Pn	01 36 46.0	+1.5
PRK	**Paraskevi**	3.96	105	P	Pn	01 36 46.0	+1.5
PRK	**Paraskevi**	3.96	105	P	Pn	01 36 46.2	+1.7
PRK	**Paraskevi**	3.96	105	P	Pn	01 36 46.0	+1.5
KUBS	**Kucevo**	4.06	3	*e*Pn	Pn	01 36 44.6	-1.3
KUBS				*e*Sn	Sn	01 37 32.1	-0.8
KUBS	**Kucevo**	4.06	3	*e*Pn	Pn	01 36 44.6	-1.3
KUBS				*e*Sn	Sn	01 37 32.1	-0.8
KESN	**Edirne-Kesan**	4.10	82	P	Pn	01 36 46.8	+0.1
KESN				S	Sn	01 37 32.8	-1.5
KESN	**Edirne-Kesan**	4.10	82	*i*P	Pn	01 36 46.8	+0.1
KESN				*i*S	Sn	01 37 32.8	-1.5
CHOS	**Chios island**	4.16	117	P	Pn	01 36 49.4	+2.2
CHOS	**Chios island**	4.16	117	P	Pn	01 36 49.4	+2.2
CUC	**Castrocucco**	4.24	267	*e*Pn	Pn	01 36 49.8	+1.4
CUC				*e*Sn	Sn	01 37 36.7	-0.7
CUC	**Castrocucco**	4.24	267	*e*Pn	Pn	01 36 49.8	+1.4
CUC				*e*Sn	Sn	01 37 36.7	-0.7
AYVA	**Ayvalik**	4.26	102	P	Pn	01 36 50.6	+2.1
AYVA	**Ayvalik**	4.26	102	*i*P	Pn	01 36 50.6	+2.1
MS1	**Monte Sant'Ang**	4.29	290	*e*Pn	Pn	01 36 49.5	+0.4
MS1				Sn	Sn	01 37 36.7	-2.0
KYTH	**Kithira**	4.30	161	P	Pn	01 36 51.2	+2.0
KYTH	**Kithira**	4.30	161	P	Pn	01 36 51.2	+2.0
EDRB	**Edirne**	4.35	68	P	Pn	01 36 51.1	+1.2
EDRB	**Edirne**	4.35	68	P	Pn	01 36 51.1	+1.2
EDRB	**Edirne**	4.35	68	P	Pn	01 36 51.1	+1.2
TEKS	**Tekeris**	4.40	343	*e*Pn	Pn	01 36 51.0	+0.5
TEKS	**Tekeris**	4.40	343	*e*Pn	Pn	01 36 51.0	+0.5
MDVR	**Moldovita**	4.43	4⇓	*i*P	Pn	01 36 50.8	-0.2
SZH	**Strazhica**	4.50	48	P	Pn	01 36 53.3	+1.3
SRE	**Strehaia**	4.52	17⇑	*i*P	Pn	01 36 52.4	+0.2
APE	**Apeiranthos**	4.64	134⇑	*e*P	Pn	01 36 54.7	+0.8
APE	**Apeiranthos**	4.64	134	*e*P	Pn	01 36 54.7	+0.8
APE	**Apeiranthos**	4.64	134	P	Pn	01 36 55.0	+1.1
BLJ	**Bljeljina**	4.68	342	*e*Pn	Pn	01 36 54.2	-0.1
CEL	**Celeste**	4.71	245	*e*Pn	Pn	01 36 55.4	+0.6
CEL				*e*Sn	Sn	01 37 47.7	-1.2
CEL	**Celeste**	4.71	245	*e*Pn	Pn	01 36 55.4	+0.6
CEL				*e*Sn	Sn	01 37 47.7	-1.2
BALY	**Balya**	4.87	95	P	Pn	01 36 58.7	+1.7
BALY	**Balya**	4.87	95	*i*P	Pn	01 36 58.7	+1.7
HUMR	**Humele**	4.97	32⇓	*i*P	Pn	01 36 59.0	+0.7
BZS	**Buzias**	5.26	2⇑	*i*Pn	Pn	01 37 01.8	-0.6
BZS	**Buzias**	5.26	2	*e*Pn	Pn	01 37 01.9	-0.5
BZS	**Buzias**	5.26	2	*e*Pn	Pn	01 37 01.9	-0.5
IMMV	**Iera Moni Meta**	5.32	156	P	Pn	01 37 02.7	-0.4
IMMV	**Iera Moni Meta**	5.32	156	P	Pn	01 37 02.7	-0.4
BLY	**Banja Luka**	5.35	326⇑	*i*P	Pn	01 37 04.3	+0.7
BLY	**Banja Luka**	5.35	326	*e*Pn	Pn	01 37 04.5	+0.9
BLY	**Banja Luka**	5.35	326	*e*Pn	Pn	01 37 04.5	+0.9
VAM	**Vamos**	5.43	154	P	Pn	01 37 06.5	+1.7
DURS	**Dursunbey**	5.54	96	P	Pn	01 37 07.9	+1.6
DURS	**Dursunbey**	5.54	96	*i*P	Pn	01 37 07.9	+1.6
VOIR		5.77	27⇑	*i*P	Pn	01 37 10.5	+1.1
IDI	**Anoyia**	5.79	150	Pn	Pn	01 37 10.9	+1.2
	comp=E,0.7nm,0.3s,baz=306,slow=17,SNR=5.6						
IDI				Sn	Sn	01 38 16.3	+0.8
	comp=E,5.3nm,0.3s,baz=261,slow=22,SNR=6.7						
IDI	**Anoyia**	5.79	150⇑	*i*P	Pn	01 37 10.8	+1.2
IDI	**Anoyia**	5.79	150	P	Pn	01 37 10.1	+0.4
IDI	**Anoyia**	5.79	150	P	Pn	01 37 10.1	+0.4
DEMI	**Demirci**	5.84	101	P	Pn	01 37 13.1	+2.6
DEMI	**Demirci**	5.84	101	*i*P	Pn	01 37 13.1	+2.6
UDBI	**Udbina**	5.86	317	*i*Pn	Pn	01 37 11.7	+1.1
UDBI				Sn	Sn	01 38 13.6	-3.7
UDBI	**Udbina**	5.86	317	*i*Pn	Pn	01 37 11.7	+1.1
SIRR	**Siria**	5.92	2⇓	*i*P	Pn	01 37 12.6	+1.3
SIVA	**Sivas**	6.00	152	P	Pn	01 37 15.6	+3.1
VAE	**Valguarnera**	6.11	244	Pn	Pn	01 37 19.3	+5.2
	comp=E,0.6nm,0.3s,baz=96,slow=18,SNR=3.8						
ISR	**Istrita**	6.11	37⇑	*i*P	Pn	01 37 15.6	+1.5
LAST	**Lasithi**	6.14	146⇓	*i*P	Pn	01 37 15.4	+0.9
LAST	**Lasithi**	6.14	146	P	Pn	01 37 14.5	0.0
LAST	**Lasithi**	6.14	146	P	Pn	01 37 14.5	0.0
MLR	**Muntele Rosu**	6.15	32	Pn	Pn	01 37 16.4	+1.7
	comp=E,0.7nm,0.3s,baz=279,slow=13,SNR=43						
MLR				Sn	Sn	01 38 25.9	+1.4
	baz=184,slow=19						
MLR				Lg	Lg	01 39 06.4	
	baz=248,slow=19,SNR=2.2						
MLR				LR	LR	01 40 14.2	
	comp=E,152nm,18.6s,baz=214,slow=44						
MLR	**Muntele Rosu**	6.15	32⇓	*i*P	Pn	01 37 16.4	+1.7
AQU	**L'Aquila**	6.29	291	*e*P	Pn	01 37 17.6	+1.1
AQU				*e*		01 38 30.1	
AQU				pmax	pmax		
	comp=Z,87nm,0.9s						
AQU	**L'Aquila**	6.29	291	*e*P	Pn	01 37 17.6	+1.1
	comp=Z,87nm,0.9s						
AQU				*e*S	Sn	01 38 30.1	+2.2
AQU	**L'Aquila**	6.29	291	*e*Pn	Pn	01 37 17.6	+1.1
	comp=Z,88nm,0.9s						
AQU				*e*Sn	Sn	01 38 30.1	+2.2
NVLJ	**Novalja**	6.36	313	*e*Pn	Pn	01 37 17.4	0.0
NVLJ				Sn	Sn	01 38 26.5	-3.1
NVLJ	**Novalja**	6.36	313	*e*Pn	Pn	01 37 17.4	0.0
DRGR		6.51	8⇓	*i*P	Pn	01 37 20.3	+0.7
HARR	**Harsova**	6.52	46⇓	*i*P	Pn	01 37 21.2	+1.6
CJR	**Cluj-Napoca**	6.57	14⇑	*i*P	Pn	01 37 21.5	+1.2
TIRR	**Tirgusor**	6.65	50	*e*P	Pn	01 37 22.3	+0.9
TIRR				pmax	pmax		
	comp=Z,8.0nm,0.6s						
TIRR	**Tirgusor**	6.65	50	*e*P	Pn	01 37 22.3	+0.9
	comp=Z,8.0nm,0.6s						
TIRR	**Tirgusor**	6.65	50	*e*Pn	Pn	01 37 22.3	+0.9
	comp=Z,8.0nm,0.6s						
PLOR	**Plostina**	6.73	34⇑	*i*P	Pn	01 37 24.6	+2.0
VRI	**Vrincioaia**	6.78	34⇓	*i*P	Pn	01 37 25.4	+2.2
BOJS	**Bojanci**	6.81	321	*e*Pn	Pn	01 37 23.1	-0.5
BOJS	**Bojanci**	6.81	321	*e*Pn	Pn	01 37 23.1	-0.5
PETR	**Petresti**	6.89	37⇓	*i*P	Pn	01 37 27.3	+2.7
CFR	**Carcaliu**	6.95	44⇓	*i*P	Pn	01 37 26.7	+1.2
BEHE	**Becsehely**	6.95	333⇓	*e*Pn	Pn	01 37 28.2	+2.6
BEHE	**Becsehely**	6.95	333	*e*Pn	Pn	01 37 27.0	+1.4
CRES	**Cresnjev**	6.95	324	*e*Pn	Pn	01 37 25.1	-0.5
TESR	**Tescani**	7.27	30⇑	*i*P	Pn	01 37 31.2	+1.3
BUD	**Budapest**	7.32	348⇑	*e*Pn	Pn	01 37 30.3	-0.3
BUD	**Budapest**	7.32	348	*e*Sn	Sn	01 38 55.1	+2.1
BUD	**Budapest**	7.32	348⇑	*e*Pn	Pn	01 37 30.3	-0.3
TLCR		7.32	46⇓	*i*P	Pn	01 37 31.7	+1.1
CSKK	**Cs‡kako**	7.35	343⇓	*e*Pn	Pn	01 37 32.2	+1.2
CSKK	**Cs‡kako**	7.35	343	*e*Sn	Sn	01 38 53.8	0.0
CSKK	**Cs‡kako**	7.35	343⇓	*e*Pn	Pn	01 37 32.2	+1.2
CEY	**Cerknica**	7.38	319	*e*Pn	Pn	01 37 30.2	-1.3
SKDS	**Skadanscina**	7.46	316	*i*Pn	Pn	01 37 31.4	-1.2
SKDS				*e*Sn	Sn	01 38 52.4	-4.3
SKDS	**Skadanscina**	7.46	316	*i*Pn	Pn	01 37 31.4	-1.2
PSZ	**Piszkesteto**	7.63	353⇓	*i*P	Pn	01 37 35.2	+0.2
PSZ	**Piszkesteto**	7.63	353⇓	*e*Pn	Pn	01 37 35.4	+0.5
PSZ	**Piszkesteto**	7.63	353	*e*Sn	Sn	01 38 57.9	-3.0
PSZ	**Piszkesteto**	7.63	353	*e*P	Pn	01 37 35.2	+0.2
PSZ				*e*		01 38 59.1	
PSZ				pmax	pmax		
	comp=Z,143nm,0.8s						
PSZ	**Piszkesteto**	7.63	353	*e*P	Pn	01 37 35.2	+0.2
	comp=Z,143nm,0.8s						
PSZ	**Piszkesteto**	7.63	353	*e*Pn	Pn	01 37 35.2	+0.2
	comp=Z,143nm,0.8s						
PSZ				*e*Sn	Sn	01 38 59.1	-1.8
TRI	**Trieste**	7.70	316	*e*P	Pn	01 37 36.2	+0.4
TRI				*e*		01 39 00.8	
TRI				pmax	pmax		
	comp=Z,15nm,0.6s						
TRI	**Trieste**	7.70	316	*e*P	Pn	01 37 36.2	+0.4
	comp=Z,15nm,0.6s						
TRI	**Trieste**	7.70	316	*e*Pn	Pn	01 37 36.1	+0.4
	comp=Z,15nm,0.6s						
TRI				*e*Sn	Sn	01 39 00.8	-1.7
BURAR	**Bucovina Array**	7.78	20⇓	*i*P	Pn	01 37 39.5	+2.5
SOKA	**Soboth**	7.80	326	*e*Pn	Pn	01 37 37.5	+0.2
	comp=Z,14nm,0.5s,SNR=14						
SOKA				*i*Sn	Sn	01 39 01.7	-3.4
	comp=Z,9.6nm,0.6s						
SOKA	**Soboth**	7.80	326	Pn	Pn	01 37 37.5	+0.2
	comp=Z,14nm,0.5s,SNR=14						
TRPA	**Tarpa**	7.82	6	*e*Pn	Pn	01 37 39.6	+2.1
TRPA	**Tarpa**	7.82	6	*e*Pn	Pn	01 37 39.6	+2.1
OBKA	**Obir**	7.88	324	*e*Pn	Pn	01 37 39.5	+1.1
	comp=Z,14nm,0.6s						
OBKA	**Obir**	7.88	324	Pn	Pn	01 37 39.5	+1.1
	comp=Z,14nm,0.6s						
ARSA	**Arzberg**	8.07	331	*i*Pn	Pn	01 37 41.6	+0.7
	comp=Z,7.5nm,0.4s,SNR=7.4						
ARSA	**Arzberg**	8.07	331	Pn	Pn	01 37 41.6	+0.7
	comp=Z,7.5nm,0.4s,SNR=7.4						
SOP	**Sopron**	8.09	336⇓	*e*Pn	Pn	01 37 43.1	+1.9
SOP	**Sopron**	8.09	336⇓	*e*Pn	Pn	01 37 43.1	+1.9
KECS	**Kecovo**	8.15	356	*e*P	Pn	01 37 43.9	+1.9
KECS				*e*		01 39 09.9	
KECS	**Kecovo**	8.15	356	*e*P	Pn	01 37 43.9	+1.9
KECS	**Kecovo**	8.15	356	*e*PN	Pn	01 37 43.9	+1.9
KECS				*e*SN	Sn	01 39 09.9	-3.6
KECS				*e*LG	Lg	01 39 23.6	
UZH	**Uzhgorod**	8.30	4	*e*P	Pn	01 37 45.1	+1.0
UZH	**Uzhgorod**	8.30	4	*e*P	Pn	01 37 45.1	+1.0
VYHS	**Vyhne**	8.33	348	*e*P	Pn	01 37 46.1	+1.6
VYHS				*e*		01 39 14.1	
VYHS	**Vyhne**	8.33	348	*e*P	Pn	01 37 46.1	+1.6
VYHS	**Vyhne**	8.33	348	*e*PN	Pn	01 37 46.1	+1.6
VYHS				*e*SN	Sn	01 39 14.1	-3.9
VYHS				*e*LG	Lg	01 39 15.1	
CONA	**Conrad Observa**	8.53	334	*i*Pn	Pn	01 37 48.6	+1.3
	comp=Z,1.5nm,0.3s						
CONA	**Conrad Observa**	8.53	334	Pn	Pn	01 37 48.6	+1.3
	comp=Z,1.5nm,0.3s						
CRVS	**Cervenica-Dubn**	8.55	1	*e*P	Pn	01 37 48.9	+1.5
CRVS				*e*		01 39 18.0	
CRVS	**Cervenica-Dubn**	8.55	1	*e*P	Pn	01 37 48.9	+1.5
CRVS	**Cervenica-Dubn**	8.55	1	*e*PN	Pn	01 37 48.9	+1.5
CRVS				*e*SN	Sn	01 39 18.0	-5.3
KIS	**Kishinev**	8.57	37	*e*P	Pn	01 38 06.0	+18
KIS				LRM	MLR	01 42 00.0	
	comp=Z,300nm,14.0s						
KOLS	**Kolonicke sedl**	8.60	4	*e*P	Pn	01 37 50.2	+2.0
KOLS				MLR	MLR		
	comp=Z,100nm,2.1s						
KOLS	**Kolonicke sedl**	8.60	4	*e*P	Pn	01 37 50.2	+2.0
	comp=Z,100nm,2.1s						
KOLS	**Kolonicke sedl**	8.60	4	*e*PN	Pn	01 37 50.2	+2.0
KOLS				*e*LG	Lg	01 40 42.4	
KOLS				*e*		02 14 16.3	
SMOL	**Smolenice**	8.62	342	*e*P	Pn	01 37 50.0	+1.6

comp=Z,1.0nm,0.3s
AKASG **Malin Array Be** 11.72 25 P Pn 01 38 31.0 +0.1
comp=Z,1.0nm,0.3s
BFO **Black Forest** 12.24 315 eP Pn 01 38 38.7 +0.7
BFO e 01 40 46.2
BFO pmax pmax
comp=Z,5.0nm,1.0s
BFO **Black Forest** 12.24 315 eP Pn 01 38 38.7 +0.7
comp=Z,5.0nm,1.0s
BFO **Black Forest** 12.24 315 ePn Pn 01 38 38.7 +0.7
comp=Z,5.5nm,1.0s
BFO eSn Sn 01 40 46.2 -7.7
MMAI **Mount Meron Ar** 13.45 119 Pn Pn 01 38 57.1 +2.4
comp=Z,0.6nm,0.3s,baz=307,slow=11,SNR=4.1
MMAI LR LR 01 45 11.4
comp=Z,71nm,19.8s,baz=335,slow=42
WLF **Walferdange** 14.19 316 eP Pn 01 39 06.3 +1.8
WLF **Walferdange** 14.19 316 eP Pn 01 39 06.3 +1.8
WLF **Walferdange** 14.19 316 ePn Pn 01 39 06.3 +1.8
KIV **Kislovodsk** 16.23 70 eP P 01 39 33.7 -1.1
KIV pmax pmax
comp=Z,13nm,1.4s
KIV **Kislovodsk** 16.23 70 eP P 01 39 33.7 -1.1
comp=Z,13nm,1.4s
KBZ **Khabaz** 16.36 71 Pn Pn 01 39 33.5 +0.2
comp=Z,0.1nm,0.3s,baz=270,slow=8.1,SNR=1.9
VSR **Storozhevoye** 16.47 43 eP Pn 01 39 33.4 -1.2
VSR pmax pmax
comp=Z,7.0nm,0.9s
LPSR **Galich'ya Gora** 17.17 39 eP Pn 01 39 41.9 -1.5
LPSR pmax pmax
comp=Z,5.0nm,0.7s
VRH **Novokhopyorsk** 17.82 46 eP P 01 39 52.9 +0.7
VRH pmax pmax
comp=Z,3.0nm,1.0s
VRH **Novokhopyorsk** 17.82 46 eP P 01 39 52.9 +0.7
comp=Z,3.0nm,1.0s
GNI **Garni** 17.87 83 LR LR 01 48 02.2
comp=Z,40nm,18.4s,baz=266,slow=41
GNI **Garni** 17.87 83⇓ eP P 01 39 54.4 +1.5
GNI pmax pmax
comp=Z,43nm,2.4s
GNI **Garni** 17.87 83 ePn Pn 01 39 52.0 -0.3
GNI **Garni** 17.87 83 eP P 01 39 54.4 +1.5
comp=Z,43nm,2.4s
GNI **Garni** 17.87 83 ePn Pn 01 39 52.0 -0.3
OBN **Obninsk** 17.91 29 LR LR 01 47 25.8
comp=Z,155nm,19.0s,baz=254,slow=39
OBN **Obninsk** 17.91 29⇓ eP P 01 39 54.3 +1.2
OBN pmax pmax
comp=Z,26nm,1.6s
OBN MLR MLR
comp=Z,196nm,17.0s
OBN **Obninsk** 17.91 29 eP P 01 39 54.3 +1.2
comp=Z,196nm,17.0s
ESDC **Sonseca Array** 19.37 276 P P 01 40 09.6 +0.2
comp=Z,0.1nm,0.3s,baz=80,slow=12,SNR=5.5
HFS **Hagfors** 20.37 349 P P 01 40 18.6 -1.4
comp=Z,1.5nm,0.4s,baz=166,slow=11,SNR=26
HFS LR LR 01 49 41.2
comp=Z,73nm,18.1s,baz=164,slow=41
KONO **Kongsberg** 20.68 343 eP P 01 40 24.3 +1.0
KONO pmax pmax
comp=Z,44nm,1.1s
KONO **Kongsberg** 20.68 343 eP P 01 40 24.3 +1.0
comp=Z,44nm,1.1s
FINES **FINESS Array B** 21.32 6 P P 01 40 28.8 -1.4
comp=Z,2.3nm,0.6s,baz=172,slow=12,SNR=13
FINES LR LR 01 49 23.2
comp=Z,144nm,18.9s,baz=186,slow=38
NB2 **NORSAR Subarra** 21.63 347 P P 01 40 32.1 -1.5
comp=Z,9.0nm,1.0s,baz=161,slow=11
NB2 **NORSAR Subarra** 21.63 347 P P 01 40 32.1 -1.5
comp=Z,9.0nm,1.0s,SNR=5.7
NOA **NORSAR Array B** 21.63 347 P P 01 40 32.2 -1.5
comp=Z,5.1nm,0.7s,baz=161,slow=11,SNR=17
NOA LR LR 01 51 07.3
comp=Z,22nm,18.5s,baz=160,slow=43
TAM **Tamanrasset** 22.03 222 eP P 01 40 39.1 +0.8
TAM pmax pmax
comp=Z,6.0nm,1.1s
TAM **Tamanrasset** 22.03 222 eP P 01 40 39.1 +0.8
comp=Z,5.6nm,1.1s
TAM **Tamanrasset** 22.03 222 eP P 01 40 39.1 +0.8
comp=Z,5.6nm,1.1s
EKA **Eskdalemuir Ar** 22.07 321 P P 01 40 37.2 -1.2
comp=Z,9.6nm,0.6s,baz=119,slow=10,SNR=34
ESK **Eskdalemuir** 22.09 321 eP P 01 40 39.2 +0.7
ESK pmax pmax
comp=Z,11nm,0.6s
ESK **Eskdalemuir** 22.09 321 eP P 01 40 39.2 +0.7
comp=Z,11nm,0.6s
ESK **Eskdalemuir** 22.09 321 eP P 01 40 39.2 +0.7
comp=Z,11nm,0.6s
KLMR **Klimovskoe** 23.39 23 eP P 01 40 49.5 -2.6
KLMR pmax pmax
comp=Z,9.0nm,1.1s
ABKAR **Akbulak array** 28.54 59 eP P 01 41 39.5 +0.5
comp=Z,0.4nm,0.5s
ABKAR **Akbulak array** 28.54 59 eP P 01 41 39.5 +0.5
comp=Z,0.5nm,0.5s
ARU **Arti** 29.04 44 LR LR 01 55 50.4
comp=Z,23nm,18.0s,baz=272,slow=42
ARCES **ARCESS Array B** 29.33 3 P P 01 41 43.6 -2.3
comp=Z,1.9nm,0.8s,baz=191,slow=11,SNR=17
BRVK **Borovoye** 35.20 52⇓ eP P 01 42 37.7 +0.3
BRVK pmax pmax
comp=Z,1.0nm,1.0s
BRVK **Borovoye** 35.20 52 eP P 01 42 37.7 +0.3
comp=Z,1.0nm,1.0s
EKS2 **Erkin-Say** 38.82 69 eP P 01 43 09.6 +1.1
EKS2 pmax pmax
comp=Z,2.0nm,0.8s
EKS2 **Erkin-Say** 38.82 69 eP P 01 43 09.6 +1.1
comp=Z,2.2nm,0.8s
EKS2 **Erkin-Say** 38.82 69 eP P 01 43 09.6 +1.1
comp=Z,2.2nm,0.8s
DBIC **Dimbokro** 40.92 222 LR LR 02 01 53.2
comp=Z,42nm,18.0s,baz=78,slow=38
MKAR **Makanchi Array** 43.65 60 P P 01 43 46.8 -1.3
comp=Z,0.9nm,0.7s,baz=280,slow=6.4,SNR=6.4
MKAR **Makanchi Array** 43.65 60 iP P 01 43 47.0 -1.0
MKAR pmax pmax
comp=Z,1.0nm,0.7s
MKAR **Makanchi Array** 43.65 60 iP P 01 43 47.0 -1.0
comp=Z,1.0nm,0.7s
ZALV **Zalesovo Beam** 43.79 50 P P 01 43 47.6 -1.4
comp=Z,0.9nm,0.4s,baz=278,slow=8.9,SNR=6.1
SFJD **Kangerlussuaq** 46.67 329 LR LR 02 05 14.1
comp=Z,40nm,18.1s,baz=84,slow=38
TLY **Talaya** 55.36 49 LR LR 02 10 53.7
comp=Z,48nm,19.5s,baz=300,slow=38
SCHQ **Schefferville** 57.30 317 P P 01 45 30.0 -1.0
comp=Z,4.1nm,0.9s,baz=47,slow=4.9,SNR=5.7
SCHQ **Schefferville** 57.30 317 P P 01 45 30.0 -1.0
TIXI **Tiksi** 57.40 21⇓ eP P 01 45 34.0 +2.6
TIXI pmax pmax
comp=Z,1.0nm,1.0s
TIXI **Tiksi** 57.40 21 eP P 01 45 34.0 +2.6
comp=Z,1.0nm,1.0s
BOSA **Boshof** 68.71 176 LR LR 02 20 07.1
comp=Z,39nm,18.3s,baz=312,slow=39
BILL **Bilibino** 68.76 13 eP P 01 46 48.1 +1.2
BILL e 01 47 12.4
BILL e 01 49 19.6
BILL pmax pmax
comp=Z,2.0nm,1.2s
BILL **Bilibino** 68.76 13 eP P 01 46 48.1 +1.2
comp=Z,2.0nm,1.2s
BILL **Bilibino** 68.76 13 ePcP PcP 01 47 12.4 +0.9
SADO **Sadowa** 69.28 312 LR LR 02 19 23.9
comp=Z,21nm,18.1s,baz=76,slow=38
YKA **Yellowknife Ar** 71.56 340 P P 01 47 03.1 -1.0
comp=Z,0.3nm,0.8s,baz=35,slow=5.1,SNR=7.2
ULM **Lac du Bonnet** 74.32 324 P P 01 47 20.4 -0.3
comp=Z,4.5nm,0.9s,baz=63,slow=6.9,SNR=4.6
ILAR **Eielson Array** 74.80 355 P P 01 47 23.3 0.0
comp=Z,0.4nm,0.6s,baz=2.9,slow=5.5,SNR=6.0
ILAR **Eielson Array** 74.80 355 P P 01 47 23.3 0.0
ILAR pmax pmax
comp=Z,1.0nm,0.8s
ILAR **Eielson Array** 74.80 355 P P 01 47 23.3 0.0
comp=Z,1.0nm,0.8s
DOT **Dot Lake** 75.69 353 eP P 01 47 28.1 -0.3
comp=Z,8.9nm,1.3s
DOT **Dot Lake** 75.69 353 eP P 01 47 28.1 -0.3
comp=Z,8.9nm,1.3s
MCK **McKinley** 75.97 356 eP P 01 47 29.5 -0.5
MCK pmax pmax
comp=Z,3.0nm,0.8s
MCK **McKinley** 75.97 356 eP P 01 47 29.5 -0.5
comp=Z,2.6nm,0.8s
MCK **McKinley** 75.97 356 eP P 01 47 29.5 -0.5
comp=Z,2.6nm,0.8s
KSAR **Wonju Array Be** 77.46 51 P P 01 47 38.2 -0.6
KSAR **Wonju Array Be** 77.46 51 P P 01 47 38.2 -0.6
KSAR **Wonju Array Be** 77.46 51 P P 01 47 38.2 -0.6
KSRS **Korea Array** 77.47 51 P P 01 47 38.2 -0.7
comp=Z,0.6nm,0.3s,baz=307,slow=5.0,SNR=3.6
PETK **Petropavlovsk-** 79.56 25 LR LR 02 27 56.0
comp=Z,34nm,18.0s,baz=284,slow=39
PDAR **Pinedale Array** 86.10 326 P P 01 48 23.7 -0.9
comp=Z,0.2nm,0.5s,baz=29,slow=6.2,SNR=3.7
PDAR LR LR 02 30 20.1
comp=Z,22nm,19.0s,baz=50,slow=38
NVAR **Mina Array Bea** 93.33 329 LR LR 02 32 32.9
comp=Z,48nm,18.3s,baz=348,slow=36
TXAR **Lajitas Array** 93.92 314 P P 01 49 01.4 0.0
comp=Z,0.8nm,0.8s,baz=57,slow=5.3,SNR=12

*ISCJB **07** 01:41:26.7±0.4, 3°.84N±0°.06×124°.2E±0°.1, h339km, mb3.6/19, Error ellipse: s-maj=15.0km s-min=7.2km az=159.6*
*IDC **07** 01:41:30.2±2.3, 3°.79N×124°.29E, h361km±24km, mb3.4/19, mb1 3.5/19, mb1mx3.4/49, mbtmp4.1/19, Error ellipse: s-maj=23.4km s-min=9.2km az=72.0*
*DJA **07** 01:41:32.0±0.7, 3°N±9°×12°4E±°, h368km±10km, M4.6/8, mb4.6/8, mB5.2/4, MLv4.5/5, Mw(mB)4.6/4*
ISC 07 01:41:27.9±0.5, **3.76N**±0°.07×**124°.20E**±0°.10, **h339**km, **n27,** σ2°**04/34, mb3.7**/19, **Celebes Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MRSI	**Marisa**	**3.96**	**215**	P	**Pn**	**01 42 40.7**	**+4.8**
LBMI	**Labuha**	**5.47**	**143**	P	**Pn**	**01 42 56.0**	**+3.6**
	210nm,0.4s,5μm3.2nm						
LBMI				S	**S**	**01 43 58.3**	**-2.3**
	210nm,0.4s,5μm3.2nm						
SANI	**Sanana**	**6.04**	**163**	P	**Pn**	**01 43 01.4**	**+2.5**
	85nm,0.6s,3μm0.9nm						
TTSI	**Tana Toraja**	**8.05**	**213**	P	**Pn**	**01 43 23.7**	**+1.1**
	12nm,0.4s,0.1nm						
FAKI	**Fak Fak**	**10.42**	**129**	P	**P**	**01 43 54.7**	**+2.1**
	89nm,0.7s						
CBJI	**Citeko**	**20.06**	**240**	P	**P**	**01 45 35.2**	**-2.1**
FITZ	**Fitzroy Crossi**	**21.77**	**176**	P	**P**	**01 45 53.3**	**+0.4**
	2.5nm,0.3s,baz=356,slow=6.8,SNR=36						
WRA	**Warramunga Arr**	**25.57**	**157**	P	**P**	**01 46 27.0**	**-0.3**
	0.7nm,0.3s,baz=336,slow=10,SNR=28						
WRA				PcP	**PcP**	**01 49 48.1**	**-0.3**
	0.8nm,0.5s,baz=334,slow=2.2,SNR=8.0						
WRA				S	**S**	**01 50 24.6**	**-5.1**
	1.1nm,0.8s,baz=331,slow=17,SNR=5.1						
ASAR	**Alice Springs**	**28.85**	**161**	P	**P**	**01 46 57.5**	**+1.2**
	0.2nm,0.3s,baz=342,slow=6.9,SNR=6.6						
ASAR				PcP	**PcP**	**01 49 56.1**	**-0.3**
	0.4nm,0.6s,baz=353,slow=2.5,SNR=5.3						
ASAR				S	**S**	**01 51 16.5**	**-4.6**
	1.5nm,0.9s,baz=348,slow=22,SNR=9.3						
ASAR				ScP	**ScP**	**01 53 02.1**	**-3.0**
	0.3nm,0.5s,baz=354,slow=2.8,SNR=4.2						
MJAR	**Matsushiro Arr**	**35.09**	**20**	P	**P**	**01 47 49.4**	**-0.7**
	0.8nm,0.3s,baz=196,slow=9.2,SNR=3.9						
STKA	**Stephens Creek**	**39.11**	**156**	P	**P**	**01 48 25.1**	**+1.4**
	1.5nm,0.4s,baz=352,slow=7.7,SNR=3.7						
SONM	**Songino Array**	**46.51**	**344**	P	**P**	**01 49 22.4**	**-0.1**
	3.1nm,0.4s,baz=120,slow=7.7,SNR=44						
MKAR	**Makanchi Array**	**56.12**	**326**	P	**P**	**01 50 34.1**	**+1.1**
MKAR				PcP	**PcP**	**01 51 26.0**	**-0.5**
	1.3nm,0.7s,baz=118,slow=4.6,SNR=5.5						
PETK	**Petropavlovsk-**	**56.39**	**24**	P	**P**	**01 50 34.9**	**+0.1**
	1.3nm,0.7s,baz=190,slow=5.1,SNR=7.0						
ZALV	**Zalesovo Beam**	**59.45**	**334**	P	**P**	**01 50 55.3**	**-0.5**
	0.7nm,0.5s,baz=132,slow=6.6,SNR=5.4						
KURBB	**Kurchatov Arra**	**60.38**	**328**	P	**P**	**01 51 03.0**	**+0.8**
	5.3nm,0.7s,baz=127,slow=6.3,SNR=58						
BVAR	**Borovoye Array**	**65.94**	**328**	P	**P**	**01 51 38.8**	**+0.5**
	1.8nm,0.7s,baz=130,slow=8.0,SNR=12						
GEYT	**Alibeck**	**68.92**	**309**	P	**P**	**01 51 58.2**	**+1.0**
	1.1nm,0.5s,baz=98,slow=3.0,SNR=4.5						
AKTO	**Aktyubinsk**	**72.08**	**322**	P	**P**	**01 52 16.1**	**+0.2**
	3.8nm,0.7s,baz=104,slow=9.6,SNR=10						
VNDA	**Vanda**	**83.78**	**172**	P	**P**	**01 53 19.4**	**+0.3**
	0.6nm,0.5s,baz=337,slow=7.7,SNR=4.5						
ILAR	**Eielson Array**	**86.16**	**25**	P	**P**	**01 53 30.8**	**-0.4**
	0.2nm,0.4s,baz=269,slow=5.3,SNR=2.8						
BRTR	**Keskin Array B**	**88.06**	**310**	P	**P**	**01 53 40.2**	**-0.8**
	0.6nm,0.8s,baz=94,slow=4.3,SNR=4.1						
ARCES	**ARCESS Array B**	**89.55**	**340**	P	**P**	**01 53 46.3**	**-0.8**
	2.2nm,0.9s,baz=82,slow=6.5,SNR=3.9						
FINES	**FINESS Array B**	**90.61**	**332**	P	**P**	**01 53 50.7**	**-1.4**
	1.0nm,0.5s,baz=57,slow=5.3,SNR=14						
NOA	**NORSAR Array B**	**97.63**	**333**	P	**P**	**01 54 22.8**	**-1.5**
	0.5nm,0.6s,baz=66,slow=4.8,SNR=3.1						
YKA	**Yellowknife Ar**	**100.51**	**24**	P	**Pdif**	**01 54 38.1**	**+1.2**
	0.1nm,0.4s,baz=267,slow=2.2,SNR=3.0						
TXAR	**Lajitas Array**	**123.56**	**51**	PKP	**PKPdf**	**01 59 46.4**	**+0.2**
	0.1nm,0.3s,baz=270,slow=0.9,SNR=4.0						

*ISCJB **07** 01:47:15.0±0.3, 23°.04N±0°.02×94°.91E±0°.02, h174km±3km, mb4.6/122, Error ellipse: s-maj=3.3km s-min=2.8km az=13.0*
*MOS **07** 01:47:15.2±0.8, 23°.11N×95°.07E, h179km, mb4.7/36, Error ellipse: s-maj=9.5km s-min=4.2km az=121.5*
*NEIC **07** 01:47:15.7±0.6, 23°.08N×94°.97E, h165km±5km, mb4.7/71, Error ellipse: s-maj=4.7km s-min=3.0km az=51.0*
*IDC **07** 01:47:16.6±0.6, 23°.09N×95°.03E, h174km±5km, mb4.2/37, mb1 4.3/38, mb1mx4.1/68, mbtmp4.6/38, MS3.2/7, Ms1 3.2/7, ms1mx2.8/58, Error ellipse: s-maj=10.2km s-min=6.3km az=51.0*
*BKK **07** 01:47:31.0±5.7, 22°N±36°×9°E±3°3, h79km±75km, M4.1/7, mb4.3/5, mB4.3/5, MLv4.4/7, Mw(mB)3.5/5*
ISC 07 01:47:16.4±0.4, **23°.09N**±0°.03×**94°.87E**±0°.03, **h172**km±3km, **h172**km:**pP-P, n324,** σ1°**92/386, mb4.6**/123, **26C-16D, Myanmar-India border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHL	**Shillong**	**3.67**	**313**	iP	**Pn**	**01 48 12.0**	**-1.2**
SHL				iS	**Sn**	**01 48 52.5**	**-5.1**
SHL				IAML		01 48 55.1	
	comp=E,2μm,0.4s						
SHL				IAML		01 48 55.8	
	comp=N,2μm,0.1s						
CMAI	**Chiengmai2**	**5.00**	**128**	P	**Pn**	**01 48 28.3**	**-2.1**
MHMT	**Maesarieng**	**5.67**	**149**	P	**Pn**	**01 48 36.9**	**-2.1**
CHTO	**Chiang Mai**	**5.71**	**137**	P	**Pn**	**01 48 37.2**	**-2.4**
CHTO	**Chiang Mai**	**5.71**	**137**	P	**Pn**	**01 48 37.1**	**-2.6**
CHTO	**Chiang Mai**	**5.71**	**137**	eP	**Pn**	**01 48 37.0**	**-2.6**
CHTO	**Chiang Mai**	**5.71**	**137**	ePn	**Pn**	**01 48 37.0**	**-2.6**
CMMT	**Chiang Mai**	**5.72**	**137**	P	**Pn**	**01 48 37.1**	**-2.6**
CRAI	**Chiangrai**	**5.86**	**118**	P	**Pn**	**01 48 39.9**	**-1.6**
CM31	**Chiang Mai Arr**	**5.98**	**140**	ePn	**Pn**	**01 48 41.4**	**-1.8**
CMAR	**Chiang Mai Arr**	**5.98**	**140**	P	**Pn**	**01 48 40.5**	**-2.7**
	baz=317,slow=13						
CM01	**Chiang Mai Arr**	**6.02**	**140**	ePn	**Pn**	**01 48 40.8**	**-2.9**
LAMP	**Lampang**	**6.37**	**135**	P	**Pn**	**01 48 46.2**	**-2.0**
	comp=N,49nm,0.9s,comp=N,361nmcomp=N,0.2nm						
LAMP	**Lampang**	**6.37**	**135**	P	**Pn**	**01 48 46.4**	**-1.8**
SUKH	**Sukhothai**	**7.15**	**140**	P	**Pn**	**01 48 56.6**	**-1.9**
	comp=N,38nm,1.0s,comp=N,396nmcomp=N,0.1nm						
SUKH	**Sukhothai**	**7.15**	**140**	P	**Pn**	**01 48 56.7**	**-1.8**
LSA	**Lhasa**	**7.38**	**334**	Pn	**Pn**	**01 49 01.8**	**-0.1**
LSA				Sn	**Sn**	**01 50 21.6**	**-3.4**
LSA				smax	smax		
	comp=N,180nm,0.8s						
LSA				smax	smax		
	comp=E,330nm,0.8s						
LSA	**Lhasa**	**7.38**	**334**	eP	**Pn**	**01 49 01.3**	**-0.6**
LSA				e		01 50 22.9	
LSA				pmax	pmax		
	comp=Z,34nm,0.3s						
LSA	**Lhasa**	**7.38**	**334**	ePn	**Pn**	**01 49 01.3**	**-0.6**
	comp=Z,34nm,0.3s						
LSA				eSn	**Sn**	**01 50 22.9**	**-2.1**
KMI	**Kunming**	**7.47**	**73**	P	**Pn**	**01 49 04.1**	**+1.1**
KMI				S	**Sn**	**01 50 28.7**	**+1.6**
KMI				pmax	pmax		
	comp=Z,25nm,1.0s						
KMI				pmax	pmax		
	comp=Z,60nm,3.3s						
KMI				LR	LR		
	comp=N,290nm,6.6s						
KMI				LR	LR		
	comp=E,100nm,5.7s						
KMI				LR	LR		
	comp=Z,100nm,6.4s						
UTTA	**Uttaradit**	**7.53**	**134**	P	**Pn**	**01 49 01.8**	**-1.8**
	comp=Z,22nm,0.5s,comp=Z,295nmcomp=Z,0.1nm						
UTTA	**Uttaradit**	**7.53**	**134**	P	**Pn**	**01 49 01.9**	**-1.7**
UMPA	**Umpang Tak**	**7.81**	**151**	P	**Pn**	**01 49 07.8**	**+0.4**
UMPA	**Umpang Tak**	**7.81**	**151**	P	**Pn**	**01 49 08.0**	**+0.6**
BOK	**Bokaro**	**8.28**	**277**	eP	**Pn**	**01 49 14.2**	**+0.8**
BOK				eS	**Sn**	**01 50 42.1**	**-3.8**
PBKT	**Sadao Pong**	**8.66**	**137**	P	**Pn**	**01 49 18.2**	**-0.3**
BWNR	**Bhubaneshwar**	**8.87**	**253**	eP	**Pn**	**01 49 21.3**	**+0.1**
BWNR				eS	**Sn**	**01 50 54.1**	**-6.0**
BWNR				IAML		01 50 56.5	
	comp=N,907nm,0.9s						
BWNR				IAML		01 50 56.7	
	comp=E,577nm,0.3s						
KHLT	**Khaolaem Dam**	**8.97**	**156**	P	**Pn**	**01 49 22.1**	**-0.5**
	comp=E,16nm,1.1s,comp=E,271nm						
GUN	**Gumba**	**9.43**	**302**	eP	**Pn**	**01 49 28.3**	**-0.6**
	comp=E,198nm,0.4s						
PKIN	**Phulchoki**	**9.66**	**299**	eP	**Pn**	**01 49 31.6**	**-0.2**
	comp=E,136nm,0.4s						
CHAI	**Chaiyaphum**	**9.81**	**136**	P	**Pn**	**01 49 32.6**	**-1.0**
KKN	**Kakani**	**9.84**	**300**	eP	**Pn**	**01 49 34.1**	**-0.1**
DMN	**Daman**	**9.90**	**299**	eP	**Pn**	**01 49 34.9**	**-0.1**
	comp=E,47nm,0.4s						
DGPR	**DIGLIPUR**	**10.03**	**191**	eP	**Pn**	**01 49 34.0**	**-2.5**
DGPR				eS	Sn	01 51 15.8	-12
GKN	**Gorkha**	**10.45**	**300**	eP	**Pn**	**01 49 41.4**	**-0.7**
	comp=E,241nm,0.4s						
CHLP	**Challavanipeta**	**11.09**	**248**	ePn	**Pn**	**01 49 51.0**	**+0.7**
CHLP				IAmb	IAmb	01 49 52.1	
	comp=Z,145nm,0.6s						
CHLP				Sn	Sn	01 51 43.8	-10
CD2	**Chengdu**	**11.11**	**44**	P	**Pn**	**01 49 50.3**	**-0.2**
CD2				sP	sP	01 50 34.6	
CD2				S	**Sn**	**01 51 52.3**	**-1.5**
CD2				pmax	pmax		
	comp=Z,30nm,0.7s						
CD2				pmax	pmax		
	comp=Z,110nm,5.4s						
CD2				LR	LR		
	comp=E,250nm,4.2s						
CD2				LR	LR		
	comp=Z,200nm,7.2s						
KOLN	**Koldanda**	**11.19**	**297**	eP	**Pn**	**01 49 51.0**	**-0.8**
	comp=Z,142nm,0.6s						
GYA	**Guiyang**	**11.23**	**70**	P	**Pn**	**01 49 51.8**	**-0.4**
GYA				sP	sP	01 50 35.0	
GYA				S	**Sn**	**01 51 52.4**	**-4.6**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
PBA	**Port Blair**	**11.55**	**190**	eP	Pn	01 49 54.7	-1.6
PYUN	**Piuthan**	**11.82**	**297**	eP	**Pn**	**01 49 58.7**	**-1.2**
	comp=Z,102nm,0.6s						
VIS	**Vishakhapatnam**	**12.06**	**246**	eP	**Pn**	**01 50 04.2**	**+1.3**
PVM	**Polavaram**	**13.72**	**247**	ePn	**P**	**01 50 26.1**	**-0.9**
PVM				IAmb	IAmb	01 50 29.4	
	comp=Z,32nm,0.6s						
PVM				Sn	Sn	01 52 47.5	-9.1
NGP	**Nagpur**	**14.78**	**266**	eP	**P**	**01 50 40.7**	**+2.0**
NGP				IAmb	IAmb	01 50 43.9	
	comp=Z,35nm,0.9s						
NGP				ex	x	01 53 13.7	
ENH	**Enshi**	**14.89**	**58**	eP	**Pn**	**01 50 36.6**	**-1.9**
	comp=Z,29nm,0.5s						
LZH	**Lanzhou**	**15.11**	**29**	eP	**Pn**	**01 50 40.9**	**-0.4**
LZH				sP	sP	01 51 28.8	-4.3
LZH				eS	**Sn**	**01 53 24.0**	**-5.9**
LZH				pmax	pmax		
	comp=Z,88nm,1.0s						
LZH				pmax	pmax		
	comp=Z,260nm,4.0s						
RPR	**Rampur**	**15.14**	**257**	ePn	**P**	**01 50 44.7**	**+2.0**
RPR				IAmb	IAmb	01 50 45.9	
	comp=Z,15nm,0.6s						
RPR				Sn	**Sn**	**01 53 20.9**	**-10**
ADKI	**Addanki**	**15.78**	**245**	ePn	**P**	**01 50 53.2**	**+3.4**
ADKI				IAmb	IAmb	01 50 56.7	
	comp=Z,27nm,0.7s						
ADKI				Sn	**S**	**01 53 35.6**	**-10**
SRSP	**Sriramsagar**	**15.97**	**258**	ePn	**P**	**01 50 55.5**	**+3.5**
SRSP				IAmb	IAmb	01 50 59.2	
	comp=Z,10nm,0.6s						
SRSP				Sn	**S**	**01 53 39.3**	**-10**
NJS	**Nagarjunasagar**	**16.01**	**249**	ePn	**Pn**	**01 50 52.5**	**+0.2**
NJS				IAmb	IAmb	01 50 55.2	
	comp=Z,32nm,1.7s						
NJS				Sn	**S**	**01 53 43.8**	**-6.2**
BHPL	**Bhopal**	**16.04**	**274**	eP	**P**	**01 50 53.3**	**+0.6**
BHPL				IAmb	IAmb	01 50 58.2	
	comp=Z,26nm,0.6s						
HYB	**Hyderabad**	**16.31**	**253**	iP	**P**	**01 50 56.0**	**+0.3**
HYB				eS	**Sn**	**01 53 59.0**	**+0.4**
HYBB	**Hyderabad (bro**	**16.31**	**253**	ePn	**Pn**	**01 50 56.4**	**+0.5**
HYBB				IAmb	IAmb	01 51 04.3	
	comp=Z,11nm,0.9s						
HYBB				Sn	**S**	**01 53 47.2**	**-9.3**
XAN	**Xi'an**	**16.46**	**45**	P	**P**	**01 50 56.2**	**-1.0**
XAN				sP	sP	01 52 11.0	+23
XAN				S	**S**	**01 53 56.1**	**-3.4**
XAN				pmax	pmax		
	comp=Z,100nm,0.7s						
SRLM	**Srisailam**	**16.57**	**248**	ePn	**P**	**01 50 59.2**	**+0.7**
SRLM				IAmb	IAmb	01 51 06.7	
	comp=Z,15nm,0.5s						
SRLM				Sn	**S**	**01 53 55.6**	**-6.7**
GTA	**Gaotai**	**16.80**	**13**	eP	**P**	**01 51 00.5**	**-0.5**
GTA				sP	sP	01 51 49.3	-2.6
GTA				S	**S**	**01 54 01.6**	**-5.7**
GTA				pmax	pmax		
	comp=Z,7.0nm,1.3s						
GTA				pmax	pmax		
	comp=Z,87nm,5.0s						
GTA				LR	LR		
	comp=N,65nm,14.3s						
GTA				LR	LR		
	comp=E,75nm,14.3s						
GTA				LR	LR		
	comp=Z,110nm,16.6s						
RCLA	**Racherla**	**16.82**	**246**	ePn	**Pn**	**01 51 02.8**	**+0.7**
RCLA				IAmb	IAmb	01 51 03.7	
	comp=Z,5.9nm,0.8s						
RCLA				Sn	**S**	**01 53 59.8**	**-8.0**
SKHT	**Srikalahasti**	**17.11**	**240**	ePn	**Pn**	**01 51 07.4**	**+1.9**
SKHT				IAmb	IAmb	01 51 13.8	
	comp=Z,21nm,0.8s						
SKHT				Sn	S	01 54 02.8	-11
SMLA	**Simla**	**17.66**	**301**	eP	**Pn**	**01 51 12.9**	**+1.1**
KLRI	**Killari**	**17.81**	**257**	ePn	**Pn**	**01 51 13.7**	**-0.1**
KLRI				IAmb	IAmb	01 51 23.7	
	comp=Z,19nm,0.5s						
KLRI				Sn	**S**	**01 54 23.3**	**-5.0**
LHMI	**Lhok Sumawe**	**17.87**	**173**	eP	**P**	**01 51 12.8**	**+0.1**
	comp=Z,207nm,1.2s						
URV	**Uravakonda**	**18.50**	**247**	eP	**P**	**01 51 12.9**	**-6.7**
KULM	**Kulim**	**18.56**	**162**	eP	**P**	**01 51 21.4**	**+1.1**
	comp=Z,16nm,0.8s						
DHRM	**DHARAMSHALA**	**18.78**	**303**	eP	**Pn**	**01 51 24.7**	**-0.6**
WHN	**Wuhan**	**18.89**	**63**	↑↑P	**Pn**	**01 51 26.4**	**0.0**
WHN				sP	**sP**	**01 52 18.1**	**+3.3**
WHN				S	**S**	**01 54 52.2**	**+2.8**
KCSI	**Kotacane, Aceh**	**19.66**	**171**	P	**P**	**01 51 33.3**	**+1.1**
	comp=Z,63nm,0.8s,comp=Z,1μm						
TSI	**Tuntungan**	**19.80**	**169**	P	**Pn**	**01 51 36.5**	**-0.7**
	comp=Z,490nm,0.7s						
PSI	**Prapat**	**20.55**	**168**	eP	**P**	**01 51 43.0**	**+1.2**
PSI				pmax	pmax		
	comp=Z,47nm,0.8s	

PALK	**Pallekele**	20.81	223	*e*P		**P**	01 51 45.2 +0.7
PALK				S		**S**	01 55 30.7 +3.5
PALK				pmax		pmax	
	comp=Z,28nm,1.0s						
PALK	**Pallekele**	20.81	223	*e*P		**P**	01 51 45.2 +0.7
	comp=Z,28nm,1.0s						
PALK				S		**S**	01 55 30.7 +3.5
WMQ	**Urumqi**	21.51	346⇑	*i*P		**P**	01 51 53.0 +1.3
WMQ				PP		**pP**	01 52 26.8 +5.1
WMQ				S		**S**	01 55 37.4 -1.7
WMQ				PcP		**PcP**	01 55 50.7 +3.5
WMQ				pmax		pmax	
	comp=Z,10.0nm,1.1s						
WMQ				pmax		pmax	
	comp=Z,92nm,6.8s						
GSI	**Gunungsitoli**	21.82	173	P		**P**	01 51 55.4 +0.3
	comp=Z,111nm,0.7s						
GSI	**Gunungsitoli**	21.82	173	*e*P		**P**	01 51 55.6 +0.5
	comp=Z,78nm,0.5s						
HHC	**Hu-ho-hao-te**	22.61	35	*e*P		**P**	01 52 03.2 +0.6
HHC				pP		pP	01 52 37.2 +3.4
HHC				sP		PP	01 52 58.9 +1.1
HHC				S		**S**	01 55 53.9 -3.3
HHC				pmax		pmax	
	comp=Z,55nm,0.7s						
HHC				pmax		pmax	
	comp=Z,210nm,4.0s						
MNSI	**Mandailing Nat**	22.63	168	P		**P**	01 52 01.9 -1.0
	comp=Z,42nm,0.6s						
MYKOM	**Kota Tinggi**	22.90	156	*e*P		**P**	01 52 04.3 -1.0
	comp=Z,18nm,1.0s						
KSH	**Kashi**	22.92	320	P		**P**	01 52 07.3 +1.8
KSH				*e*pP		pP	01 52 42.2 +5.0
KSH				*e*sP		PP	01 53 02.7 +1.4
KSH				S		**S**	01 56 01.3 -1.0
KSH				SS		**SnSn**	01 57 03.6 +7.2
KSH				pmax		pmax	
	comp=Z,47nm,0.7s						
KSH				pmax		pmax	
	comp=Z,68nm,0.6s						
KSH				LR		LR	
	comp=N,820nm,13.9s						
KSH				LR		LR	
	comp=E,270nm,10.1s						
KSH				LR		LR	
	comp=Z,110nm,5.6s						
NJ2	**Nanjing**	23.02	62	*e*P		**P**	01 52 06.4 +0.1
NJ2				pmax		pmax	
	comp=Z,15nm,0.5s						
PBSI	**Pulau Batu**	23.25	171	P		**P**	01 52 10.0 +1.5
	comp=Z,224nm,0.8s						
TIA	**Tai'an**	23.28	51	⇑P		**P**	01 52 09.5 +0.8
TIA				pmax		pmax	
	comp=Z,40nm,0.9s						
TPUB	**Ta-pu**	23.68	84	*e*P		**P**	01 52 13.1 +0.7
	comp=Z,124nm,0.3s						
PDGK	**Podgornoye**	23.86	331	P		**P**	01 52 15.9 +2.1
PDGK				pmax		pmax	
	comp=Z,22nm,0.6s						
TWG	**Pinlang**	24.12	85	*e*P		**P**	01 52 17.3 +0.8
	comp=Z,114nm,0.5s						
YULB	**Yu-li**	24.28	84	*e*P		**P**	01 52 19.6 +1.6
	comp=Z,16nm,0.7s						
YHNB	**Yeheng**	24.28	81	*e*P		**P**	01 52 18.4 +0.4
	comp=Z,61nm,1.7s						
NACB	**Ninganchiao**	24.50	82	*e*P		**P**	01 52 19.6 -0.3
	comp=Z,25nm,0.7s						
BJI	**Beijing**	24.70	42	P		**P**	01 52 22.0 +0.5
BJI				sP		**pP**	01 52 55.2 -1.0
BJI				S		**S**	01 56 31.2 +0.7
BJI				pmax		pmax	
	comp=Z,11nm,0.7s						
SFK	**Sufi-Kurgan**	24.72	318	P		**P**	01 52 24.1 +2.1
SFK				pmax		pmax	
	comp=Z,44nm,0.8s						
KBL	**Kabul**	25.27	303	*e*P		**P**	01 52 28.5 +1.5
KBL				pmax		pmax	
	comp=Z,12nm,0.8s						
KBL	**Kabul**	25.27	303	*e*P		**P**	01 52 28.4 +1.5
	comp=Z,12nm,0.8s						
TKM2	**Tokmak 2**	25.43	326	P		**P**	01 52 28.9 +0.6
TKM2				pmax		pmax	
	comp=Z,10.0nm,0.6s						
TKM2	**Tokmak 2**	25.43	326	*e*P		**P**	01 52 29.7 +1.4
	comp=Z,13nm,0.6s						
MK01	**Makanchi Array**	25.71	340	*e*P		**P**	01 52 31.9 +1.3
MK31	**Makanchi Array**	25.73	340	*e*P		**P**	01 52 32.3 +1.5
MK31				pmax		pmax	
	comp=Z,8.0nm,0.5s						
MK31	**Makanchi Array**	25.73	340	*e*P		**P**	01 52 32.5 +1.7
MKAR	**Makanchi Array**	25.73	340	P		**P**	01 52 31.9 +1.1
	comp=Z,13nm,0.4s,baz=149,slow=9.6,SNR=140						
MKAR				ScP		**ScP**	01 59 20.0 +0.6
	comp=Z,1.0nm,0.8s,baz=144,slow=5.2,SNR=4.0						
MKAR				LR		LR	02 03 25.3
	comp=Z,42nm,19.7s,baz=212,slow=38						
MKAR	**Makanchi Array**	25.73	340	*c*e*P		**P**	01 52 32.4 +1.7
MKAR				pmax		pmax	
	comp=Z,13nm,0.4s						
MKAR	**Makanchi Array**	25.73	340	*e*P		**P**	01 52 32.5 +1.7
MKAR				ScP		**ScP**	01 59 20.0 +0.6
AAK	**Ala-Archa**	25.81	324	P		**P**	01 52 34.1 +2.3
	comp=Z,4.7nm,0.6s,baz=127,slow=5.8,SNR=11						
AAK	**Ala-Archa**	25.81	324⇓	*e*P		**P**	01 52 33.4 +1.6
AAK				pmax		pmax	
	comp=Z,31nm,1.2s						
AAK	**Ala-Archa**	25.81	324	*e*P		**P**	01 52 34.1 +2.3
	comp=Z,11nm,1.0s						
MAKZ	**Makanchi**	25.84	339	P		**P**	01 52 33.1 +1.3
MAKZ				pmax		pmax	
	comp=Z,26nm,1.3s						
MAKZ	**Makanchi**	25.84	339	*e*P		**P**	01 52 33.5 +1.7
	comp=Z,12nm,0.7s						
FRU	**Bishkek**	25.88	324	*e*P		**P**	01 52 33.5 +1.3
KSM	**Kuching**	26.20	143	*e*P		**P**	01 52 35.4 +0.1
	comp=Z,13nm,1.1s						
EKS2	**Erkin-Say**	26.23	323	*e*P		**P**	01 52 38.7 +3.3
EKS2				pmax		pmax	
	comp=Z,3.0nm,0.8s						
EKS2	**Erkin-Say**	26.23	323	*e*P		**P**	01 52 38.7 +3.3
	comp=Z,3.2nm,0.8s						
SONM	**Songino Array**	26.36	18	P		**P**	01 52 36.0 -0.5
	comp=Z,1.4nm,0.5s,baz=200,slow=8.8,SNR=7.1						
SONM				ScP		**ScP**	01 59 21.6 +0.3
	comp=Z,0.9nm,0.8s,baz=189,slow=3.8,SNR=4.1						
SONA1	**Songino Array**	26.37	18	*e*P		**P**	01 52 36.7 0.0
SONA1				*e*pP		pP	01 53 20.6 +8.6
SONA1				*e*ScP		**ScP**	01 59 21.3 -0.1
SBUM	**Sibu**	26.53	138	*e*P		**P**	01 52 37.5 -0.7
ULN	**Ulaanbaatar**	26.57	19⇑	*e*P		**P**	01 52 37.2 -1.3
ULN				pmax		pmax	
	comp=Z,4.0nm,1.4s						
ULN	**Ulaanbaatar**	26.57	19	*e*P		**P**	01 52 38.0 -0.4
	comp=Z,1.9nm,0.5s						
KKM	**Kota Kinabalu**	26.66	126	*e*P		**P**	01 52 38.8 -0.7
	comp=Z,17nm,1.2s						
ZAK	**Zakamensk**	28.02	12	*e*P		**P**	01 52 50.8 -0.5
ZAK				pmax		pmax	
	comp=Z,3.0nm,1.0s						
KKAR	**Karatay Array**	28.37	321	*e*P		**P**	01 52 56.0 +1.6
KKAR	**Karatay Array**	28.37	321	*e*P		**P**	01 52 56.0 +1.6
MYLDM	**Lahad Datu**	28.94	124	*e*P		**P**	01 52 59.0 -0.6
	comp=Z,16nm,0.7s						
TLY	**Talaya**	29.34	11	*e*P		**P**	01 53 03.2 +0.4
TLY				pmax		pmax	
	comp=Z,4.0nm,0.9s						
TLY	**Talaya**	29.34	11	*e*P		**P**	01 53 03.1 +0.4
	comp=Z,4.1nm,0.9s						
KURBB	**Kurchatov Arra**	30.29	339	P		**P**	01 53 12.1 +1.0
	comp=Z,15nm,0.7s,baz=152,slow=8.1,SNR=98						
KURBB				pP		**pP**	01 53 48.9 +1.8
	comp=Z,2.8nm,0.7s,baz=158,slow=8.1,SNR=2.5						
KURBB				S		**S**	01 57 59.0 +0.8
	comp=Z,0.6nm,0.8s,baz=149,slow=17,SNR=3.1						
KURBB				ScP		**ScP**	01 59 34.5 +1.1
	comp=Z,5.3nm,0.8s,baz=154,slow=2.9,SNR=29						
KURK	**Kurchatov**	30.34	339	*e*P		**P**	01 53 12.4 +0.8
KURK				*PP		**pP**	01 53 48.9 +1.4
KURK				S		**S**	01 57 59.0 0.0
KURK				pmax		pmax	
	comp=Z,35nm,0.7s						
KURK	**Kurchatov**	30.34	339	*e*P		**P**	01 53 12.4 +0.8
	comp=Z,36nm,0.7s						
KURK				pP		**pP**	01 53 48.9 +1.4
KURK				S		**S**	01 57 59.0 0.0
KURK				ScP		**ScP**	01 59 34.5 +1.0
INCN	**Inchon**	30.79	55	*e*P		**P**	01 53 14.5 -1.3
	comp=Z,33nm,1.3s						
OTUK	**Ortayu**	30.84	330	P		**P**	01 53 17.4 +1.3
OTUK				pmax		pmax	
	comp=Z,19nm,0.4s						
KSAR	**Wonju Array Be**	31.72	56	P		**P**	01 53 21.5 -2.5
KSAR	**Wonju Array Be**	31.72	56	P		**P**	01 53 21.4 -2.5
KSAR				ScP		**ScP**	01 59 36.7 -1.8
ZAA0	**Zalesovo Array**	31.73	349	*e*P		**P**	01 53 24.6 +0.9
ZAA0				*e*S		**S**	01 58 23.3 +2.7
ZALV	**Zalesovo Beam**	31.73	349	P		**P**	01 53 24.5 +0.7
	comp=Z,5.0nm,0.4s,baz=169,slow=8.5,SNR=37						
ZALV				S		**S**	01 58 22.1 +1.5
	comp=Z,1.0nm,0.7s,baz=172,slow=13,SNR=4.6						
ZALV				ScP		**ScP**	01 59 37.8 -0.4
	comp=Z,1.5nm,0.7s,baz=168,slow=0.9,SNR=4.4						
KSRS	**Korea Array**	31.75	56	P		**P**	01 53 21.4 -2.8
	comp=Z,0.8nm,0.5s,baz=256,slow=9.9,SNR=2.5						
KSRS				ScP		**ScP**	01 59 36.7 -1.8
	comp=Z,1.2nm,0.4s,baz=186,slow=6.6,SNR=4.1						
CN2	**Changchun**	32.55	43	*e*P		**P**	01 53 33.0 +2.0
NVS	**Novosibirsk**	32.88	348	*e*P		**P**	01 53 34.4 +0.6
NVS				*e*S		**S**	01 58 39.4 +1.1
NVS				pmax		pmax	
	comp=N,17nm,0.4s						
NVS				pmax		pmax	
	comp=E,12nm,0.4s						
NVS				pmax		pmax	
	comp=Z,21nm,0.4s						
NVS				smax		smax	
	comp=N,17nm,1.1s						
NVS				smax		smax	
	comp=E,18nm,1.1s						
JNU	**Nakatsue**	33.16	64	P		**P**	01 53 36.5 -0.1
	comp=E,4.1nm,0.5s,baz=276,slow=9.2,SNR=4.1						
GEYT	**Alibeck**	34.70	304	P		**P**	01 53 52.2 +2.4
	comp=E,4.9nm,0.8s,baz=139,slow=7.0,SNR=8.7						
GEYT				ScP		**ScP**	01 59 50.1 +1.2
	comp=E,1.5nm,0.6s,baz=258,slow=2.7,SNR=5.7						
BVAR	**Borovoye Array**	35.21	334	P		**P**	01 53 55.1 +1.2
	comp=E,4.8nm,0.4s,baz=145,slow=11,SNR=38						
BVAR				pP		**pP**	01 54 32.5 +2.1
	comp=E,2.1nm,0.7s,baz=143,slow=11,SNR=2.5						
BVAR				ScP		**ScP**	01 59 51.3 +0.9
	baz=114,slow=3.5						
BRVK	**Borovoye**	35.28	334	*d*i P		**P**	01 53 55.6 +1.1
BRVK				pmax		pmax	
	comp=Z,13nm,1.2s						
BRVK	**Borovoye**	35.28	334	*e*P		**P**	01 53 55.2 +0.7
	comp=Z,12nm,1.0s						
ZRNK	**Zerenda**	35.72	333	P		**P**	01 53 59.0 +0.7
ZRNK				pmax		pmax	
	comp=Z,8.0nm,0.4s						
ZRNK	**Zerenda**	35.72	333	*e*P		**P**	01 53 59.5 +1.2
	comp=Z,18nm,0.4s						
LUWI	**Luwuk**	36.24	128	*e*P		**P**	01 54 02.3 -0.8
	comp=Z,51nm,1.0s						
USRK	**Ussuriysk Ar.**	36.96	46	P		**P**	01 54 08.6 -0.3
	comp=Z,0.8nm,0.5s,baz=264,slow=9.9,SNR=4.4						
USRK				pP		**pP**	01 54 43.9 -1.7
	comp=Z,3.1nm,0.8s,baz=247,slow=8.0,SNR=5.0						
KAPI	**Kappang**	37.03	136	*e*P		**P**	01 54 08.3 -1.5
	comp=Z,7.5nm,1.0s						
AB31	**Akbulak array**	37.88	322	P		**P**	01 54 17.9 +1.4
AB31				pmax		pmax	
	comp=Z,3.0nm,0.4s						
ABKAR	**Akbulak array**	37.88	322	*e*P		**P**	01 54 18.0 +1.5
INU	**Inuyama**	38.49	62	*e*P		**P**	01 54 21.4 -0.5
	comp=Z,56nm,1.8s						
KLR	**Kul'dur**	38.98	39	P		**P**	01 54 24.9 -0.9
	comp=Z,1.3nm,0.6s,baz=259,slow=10,SNR=4.1						
KLR				ScP		**ScP**	02 00 04.1 -0.6
	comp=Z,0.9nm,0.6s,baz=272,slow=5.9,SNR=3.4						
AKTO	**Aktyubinsk**	39.55	323	P		**P**	01 54 31.9 +1.4
	comp=Z,5.8nm,0.4s,baz=115,slow=7.3,SNR=14						
AKTO				ScP		**ScP**	02 00 07.3 +0.4
	baz=103,slow=3.2						
MJB9	**Matsu-Tunnel**	39.60	60	*e*P		**P**	01 54 29.2 -1.9
	comp=Z,3.0nm,0.6s						
MAJO	**Matsushiro**	39.60	60⇓	*e*P		**P**	01 54 28.3 -2.8
MAJO				pmax		pmax	
	comp=Z,67nm,0.7s						
MAJO	**Matsushiro**	39.60	60	*e*P		**P**	01 54 28.5 -2.6
	comp=Z,12nm,0.6s						
MJAR	**Matsushiro Arr**	39.60	60	P		**P**	01 54 29.0 -2.1
	comp=Z,4.6nm,0.7s,baz=269,slow=11,SNR=10						
JHJ2	**Mitsune**	40.63	66	*e*P		**P**	01 54 38.9 -0.6
	comp=Z,855nm,1.3s						
SVE	**Sverdlovsk**	41.90	332⇑	*e*P		**P**	01 54 51.2 +1.6
SVE				pmax		pmax	
	comp=Z,49nm,0.6s						
ARU	**Arti**	42.56	331	P		**P**	01 54 56.1 +1.1
	comp=Z,30nm,0.4s,baz=110,slow=5.1,SNR=38						
ARU				pP		**pP**	01 55 34.2 +1.7
	comp=Z,5.1nm,0.7s,baz=62,slow=2.0,SNR=1.5						
ARU				LR		LR	02 14 30.1
	comp=Z,47nm,19.4s,baz=110,slow=38						
ARU	**Arti**	42.56	331	*e*P		**P**	01 54 56.0 +1.1
ARU				*PP		**pP**	01 55 34.2 +1.7
ARU				pmax		pmax	
	comp=Z,36nm,0.4s						
ARU	**Arti**	42.56	331	*e*P		**P**	01 54 56.0 +1.1
	comp=Z,36nm,0.4s						
ARU				pP		**pP**	01 55 34.2 +1.7
BATI	**Baumata**	43.47	136	P		**P**	01 55 00.9 -1.9
	comp=Z,17nm,0.3s						
SOEI	**Soe**	43.52	135	*e*P		**P**	01 55 02.0 -1.3
	comp=Z,60nm,0.8s						
FAKI	**Fak Fak**	44.68	120	*e*P		**P**	01 55 12.1 -0.4
	comp=Z,40nm,0.9s						
GNI	**Garni**	45.33	304	*e*P		**P**	01 55 19.0 +1.5
GNI				pmax		pmax	
	comp=Z,9.0nm,1.1s						
GNI	**Garni**	45.33	304	*e*P		**P**	01 55 19.0 +1.5
	comp=Z,9.4nm,1.1s						
YAK	**Yakutsk**	45.55	22	*e*P		**P**	01 55 17.9 -0.6
YAK				pmax		pmax	
	comp=Z,11nm,0.5s						
ZEI	**Tsey**	46.30	308	*e*P		**P**	01 55 26.4 +1.4
ZEI				*e*			01 56 04.8
ZEI				pmax		pmax	
	comp=Z,16nm,0.6s						
NCK	**Nalchik**	46.63	309⇓	*e*P		**P**	01 55 28.8 +1.4
NCK				pmax		pmax	
	comp=Z,3.0nm,0.2s						
KVAR	**Kislovodsk Arr**	47.34	309	LR		LR	02 18 48.2
	comp=Z,16nm,18.6s,slow=40						
KIV	**Kislovodsk**	47.35	309	*e*P		**P**	01 55 32.8 -0.2
KIV				pmax		pmax	
	comp=Z,15nm,0.9s						
KIV	**Kislovodsk**	47.35	309	*e*P		**P**	01 55 32.8 -0.2
	comp=Z,15nm,0.9s						
DAMY	**Dhamar**	48.32	269	*e*P		**P**	01 55 40.8 -0.3
	comp=Z,6.7nm,0.6s						
VRH	**Novokhopyorsk**	49.41	318	*e*P		**P**	01 55 48.6 +0.1
VRH				pmax		pmax	
	comp=Z,10.0nm,0.6s						
MBWA	**Marble Bar**	50.22	149	*e*P		**P**	01 55 54.2 -0.7
	comp=Z,23nm,0.7s						
FITZ	**Fitzroy Crossi**	50.80	141	P		**P**	01 55 59.3 0.0
	comp=Z,9.4nm,0.3s,baz=336,slow=7.2,SNR=131						
FITZ	**Fitzroy Crossi**	50.80	141	*e*P		**P**	01 55 59.3 0.0
	comp=Z,31nm,1.0s						
VSR	**Storozhevoye**	50.98	318	*e*P		**P**	01 56 00.0 -0.3
VSR				pmax		pmax	
	comp=Z,5.0nm,0.6s						
LPSR	**Galich'ya Gora**	51.42	320	*e*P		**P**	01 56 03.6 +0.1
LPSR				pmax		pmax	
	comp=Z,10.0nm,0.7s						
TIXI	**Tiksi**	52.29	13⇑	*e*P		**P**	01 56 08.6 -1.1
TIXI				pmax		pmax	
	comp=Z,2.0nm,0.8s						
TIXI	**Tiksi**	52.29	13	*e*P		**P**	01 56 08.8 -0.9
	comp=Z,3.8nm,0.6s						
MMAI	**Mount Meron Ar**	52.80	295	LR		LR	02 21 26.1
	comp=Z,18nm,18.6s,baz=180,slow=39						
OBN	**Obninsk**	53.33	322	*d*i P		**P**	01 56 17.7 +0.2
OBN				*e*			01 57 22.5
OBN				*e*			01 58 18.6
OBN				pmax		pmax	
	comp=Z,10.0nm,0.4s						
OBN	**Obninsk**	53.33	322	*e*P		**P**	01 56 18.4 +0.9
	comp=Z,13nm,0.9s						
KLMR	**Klimovskoe**	53.39	330	*e*P		**P**	01 56 17.0 -0.9
KLMR				*e*PP		**pP**	01 56 57.7 +0.6
KLMR				pmax		pmax	
	comp=Z,7.0nm,0.6s						
BR131	**Keskin Array S**	53.84	303	*e*P		**P**	01 56 22.4 +0.7
BRTR	**Keskin Array B**	53.84	303	P		**P**	01 56 22.1 +0.3
	comp=Z,1.1nm,0.6s,baz=79,slow=7.5,SNR=7.8						
BRTR	**Keskin Array B**	53.84	303	*c*e*P*		**P**	01 56 22.6 +0.9
BRTR				pmax		pmax	
	comp=Z,1.0nm,0.6s						
CSS	**Mathiatis**	54.34	297	*e*P		**P**	01 56 25.7 +0.4
	comp=Z,4.0nm,1.1s						
ANTO	**Ankara**	54.48	303	*e*P		**P**	01 56 27.7 +1.4
ANTO				pmax		pmax	
	comp=Z,6.0nm,0.6s						
ANTO	**Ankara**	54.48	303	*e*P		**P**	01 56 27.7 +1.4
	comp=Z,6.1nm,0.6s						
BR231	**Keskin MP Arra**	54.50	303	*e*P		**P**	01 56 27.0 +0.5
AKASG	**Malin Array Be**	57.15	316	P		**P**	01 56 44.5 -0.5
	comp=Z,3.6nm,0.4s,baz=80,slow=6.6,SNR=16						
AKASG				pP		**pP**	01 57 26.3 +1.7
	comp=Z,2.1nm,0.6s,baz=81,slow=6.6,SNR=2.5						
AKASG				LR		LR	02 25 21.0
	comp=Z,20nm,20.4s,baz=105,slow=40						
AKBB	**Malin Array Si**	57.15	316	*e*P		**P**	01 56 44.8 -0.2
AKBB				pmax		pmax	
	comp=Z,9.0nm,0.4s						
AKBB	**Malin Array Si**	57.15	316	*e*P		**P**	01 56 44.8 -0.2
	comp=Z,8.9nm,0.4s						
KIEV	**Kiev**	57.16	316	*d*e*P*		**P**	01 56 44.5 -0.5
KIEV				pmax		pmax	
	comp=Z,5.0nm,0.5s						
KIEV	**Kiev**	57.16	316	*e*P		**P**	01 56 44.8 -0.2
	comp=Z,7.9nm,0.5s						
AK11	**Malin Array Si**	57.18	316	*e*P		**P**	01 56 44.8 -0.4
PUL	**Pulkovo**	57.55	327⇑	*e*P		**P**	01 56 49.4 +1.8
WRA	**Warramunga Arr**	57.56	135	P		**P**	01 56 48.1 -0.1
	comp=Z,39nm,0.6s,baz=323,slow=7.5,SNR=531						
WRA				PcP		**PcP**	01 57 38.9 -0.8
	comp=Z,2.4nm,0.5s,baz=331,slow=3.7,SNR=3.0						
WRAB	**Tennant Creek**	57.56	135	*c i*P		**P**	01 56 48.1 -0.1
WRAB				pmax		pmax	
	comp=Z,93nm,0.6s						
WRAB	**Tennant Creek**	57.56	135	*e*P		**P**	01 56 47.8 -0.4
	comp=Z,46nm,0.6s						
WB2	**Warramunga Arr**	57.56	135	*e*P		**P**	01 56 48.4 +0.1
	comp=Z,48nm,0.6s						
CFR	**Carcaliu**	57.79	310⇑	*i*P		**P**	01 56 50.0 +0.5
CFR	**Carcaliu**	57.79	310	⇑P		**P**	01 56 50.0 +0.5
VRI	**Vrincioaia**	58.76	311⇑	*i*P		**P**	01 56 57.6 +1.3
VRI	**Vrincioaia**	58.76	311	⇑P		**P**	01 56 57.6 +1.3
TESR	**Tescani**	58.80	311⇓	*i*P		**P**	01 56 57.0 +0.5
PLOR	**Plostina**	58.82	311⇑	*i*P		**P**	01 56 57.6 +0.9
PLOR	**Plostina**	58.82	311	⇑P		**P**	01 56 57.6 +0.9
VSU	**Vasula**	59.20	325	*d i*P		**P**	01 56 59.2 +0.2
VSU				pmax		pmax	
	comp=Z,33nm,0.6s						
KARP	**Karpathos**	59.30	299	*e*P		**P**	01 57 00.3 +0.1
	comp=Z,28nm,1.0s						
MLR	**Muntele Rosu**	59.33	310⇑	*i*P		**P**	01 57 01.5 +1.2
MLR	**Muntele Rosu**	59.33	310	⇑P		**P**	01 57 01.5 +1.2
MLR	**Muntele Rosu**	59.33	310	*e*P		**P**	01 57 01.3 +1.0
	comp=Z,13nm,0.7s						
NWAO	**Narrogin (SRO)**	59.66	158	P		**P**	01 57 01.9 -0.6
	comp=Z,35nm,0.7s,baz=267,slow=2.6,SNR=25						
NWAO	**Narrogin (SRO)**	59.66	158	*e*P		**P**	01 57 02.7 +0.3
NWAO				pmax		pmax	
	comp=Z,101nm,0.7s						
NWAO	**Narrogin (SRO)**	59.66	158	*e*P		**P**	01 57 02.7 +0.3
	comp=Z,101nm,0.7s						
DOPR	**Dopca**	59.69	311⇑	*i*P		**P**	01 57 03.4 +0.7
BURAR	**Bucovina Array**	59.75	313⇓	*i*P		**P**	01 57 03.4 +0.3
BURAR	**Bucovina Array**	59.75	313	⇓P		**P**	01 57 03.4 +0.3
BUR08	**Bucovina Ar. S**	59.76	313	*e*P		**P**	01 57 03.0 -0.2
FIA1	**FINESS Array S**	59.86	329	*e*P		**P**	01 57 04.2 +0.6
	comp=Z,5.2nm,0.7s						
FINES	**FINESS Array B**	59.86	329	P		**P**	01 57 03.9 +0.4
	comp=Z,4.8nm,0.7s,baz=97,slow=7.3,SNR=23						
COEN	**Coen**	59.93	123	*e*P		**P**	01 57 04.2 -0.4
	comp=Z,4.9nm,0.7s						
VOIR		59.96	310⇑	*i*P		**P**	01 57 05.1 +0.5
VOIR		59.96	310	⇑P		**P**	01 57 05.1 +0.5
AS31	**Alice Springs**	59.99	138	*e*P		**P**	01 57 05.3 +0.3
	comp=Z,16nm,0.5s						
ASAR	**Alice Springs**	59.99	138	P		**P**	01 57 05.2 +0.2
	comp=Z,35nm,0.5s,baz=321,slow=6.9,SNR=297						
AS01	**Alice Springs**	60.02	138	*e*P		**P**	01 57 05.0 -0.1
PMG	**Port Moresby**	60.50	116	P		**P**	01 57 08.9 +0.4
	comp=Z,10nm,0.5s,baz=283,slow=1.6,SNR=3.9						
PMG	**Port Moresby**	60.50	116⇓	*e*P		**P**	01 57 06.9 -1.7
PMG				pmax		pmax	
	comp=Z,64nm,1.0s						
PMG	**Port Moresby**	60.50	116	*e*P		**P**	01 57 08.6 0.0
	comp=Z,13nm,0.7s						
SUW	**Suwalki**	60.95	320	*e*P		**P**	01 57 11.1 +0.1
SUW	**Suwalki**	60.95	320	*e*P		**P**	01 57 11.1 +0.1
KMBO	**Kilima Mbogo**	60.95	255	*e*P		**P**	01 57 12.0 0.0
KMBO				pmax		pmax	
	comp=Z,19nm,1.9s						
KMBO	**Kilima Mbogo**	60.95	255	*e*P		**P**	01 57 12.0 0.0
	comp=Z,19nm,1.9s						
IDI	**Anoyia**	61.17	299	P		**P**	01 57 13.6 +0.6
	comp=Z,3.8nm,0.3s,baz=334,slow=8.9,SNR=7.4						
KWP	**Kalwaria Pacla**	61.33	315	*e*P		**P**	01 57 14.3 +0.7
KWP	**Kalwaria Pacla**	61.33	315⇓	*i*P		**P**

NB2	**NORSAR Subarra**	67.03 328	P		**P**	01 57 50.0 -0.6
	comp=Z,5.4nm,0.9s,baz=84,slow=6.5					
NOA	**NORSAR Array B**	67.03 328	P		**P**	01 57 50.3 -0.3
	comp=Z,2.9nm,0.7s,baz=85,slow=6.3,SNR=16					
GEC2	**GERESS Array S**	67.28 315	*e*P		**P**	01 57 53.2 +0.7
GEC2			pmax	pmax		
	comp=Z,5.0nm,0.7s					
GEC2	**GERESS Array S**	67.28 315	*e*P		**P**	01 57 53.2 +0.7
	comp=Z,5.0nm,0.7s					
GERES	**GERESS Array B**	67.28 315	P		**P**	01 57 52.9 +0.3
	comp=Z,4.5nm,0.6s,baz=72,slow=6.1,SNR=47					
GEA0	**GERESS Array S**	67.28 315	*e*P		**P**	01 57 52.7 +0.2
KHC	**Kasperske Hory**	67.31 315	*e*P		**P**	01 57 53.1 +0.4
KHC			*e*pP		**pP**	01 58 33.8 +0.2
KHC	**Kasperske Hory**	67.31 315	*e*P		**P**	01 57 53.1 +0.4
KHC			*e*			01 58 33.8
JAVS	**Javornik**	67.55 312	*i*P		**P**	01 57 54.0 -0.2
NKC	**Novy Kostel**	67.85 317	*e*P		**P**	01 57 56.6 +0.6
NKC	**Novy Kostel**	67.85 317	*e*P		**P**	01 57 56.6 +0.6
BBOO	**Buckleboo**	68.09 143	*e*P		**P**	01 57 57.3 -0.3
	comp=Z,38nm,0.7s					
AQU	**L'Aquila**	68.71 308	*e*P		**P**	01 58 01.5 0.0
AQU			pmax	pmax		
	comp=Z,6.0nm,0.9s					
AQU	**L'Aquila**	68.71 308	*e*P		**P**	01 58 01.5 0.0
	comp=Z,5.8nm,0.9s					
DAVOX	**Davos/Dischmat**	70.21 313	P		**P**	01 58 10.8 0.0
	comp=Z,4.8nm,0.5s,baz=97,slow=3.9,SNR=14					
STKA	**Stephens Creek**	70.61 139	P		**P**	01 58 12.8 -0.2
	comp=Z,8.0nm,0.5s,baz=336,slow=5.1,SNR=25					
STKA	**Stephens Creek**	70.61 139	*e*P		**P**	01 58 13.1 0.0
STKA			pmax	pmax		
	comp=Z,4.0nm,1.1s					
STKA	**Stephens Creek**	70.61 139	*e*P		**P**	01 58 13.1 0.0
	comp=Z,4.4nm,1.1s					
WLF	**Walferdange**	71.95 317	P		**P**	01 58 22.2 +1.3
	comp=Z,6.9nm,0.9s					
WLF	**Walferdange**	71.95 317	*e*P		**P**	01 58 21.7 +0.7
WLF			pmax	pmax		
	comp=Z,11nm,0.9s					
WLF	**Walferdange**	71.95 317	*e*P		**P**	01 58 21.6 +0.7
	comp=Z,11nm,0.9s					
SENIN	**Lac Senin/Sane**	72.04 313	*e*P		**P**	01 58 22.4 +0.6
	comp=Z,4.6nm,0.9s					
KEST	**Kesra**	73.42 302	P		**P**	01 58 30.8 +0.8
	comp=Z,7.7nm,1.0s,baz=67,slow=15,SNR=5.7					
LSZ	**Lusaka**	75.54 246	*e*P		**P**	01 58 42.6 +0.1
LSZ			pmax	pmax		
	comp=Z,10.0nm,0.6s					
LSZ	**Lusaka**	75.54 246	*e*P		**P**	01 58 42.6 +0.1
	comp=Z,9.6nm,0.6s					
ESK	**Eskdalemuir**	75.75 324	*e*P		**P**	01 58 42.9 0.0
ESK			pmax	pmax		
	comp=Z,8.0nm,0.8s					
ESK	**Eskdalemuir**	75.75 324	*e*P		**P**	01 58 42.9 0.0
	comp=Z,8.1nm,0.8s					
CAN	**Canberra**	77.48 137	*e*P		**P**	01 58 53.2 +0.3
CAN			pmax	pmax		
	comp=Z,9.0nm,0.6s					
CAN	**Canberra**	77.48 137	*e*P		**P**	01 58 53.2 +0.3
	comp=Z,9.0nm,0.6s					
MATP	**Matopo**	77.82 242	P		**P**	01 58 55.3 +0.1
	comp=Z,14nm,0.7s,baz=67,slow=5.1,SNR=29					
MDM	**Murphy Dome**	79.89 23	*e*P		**P**	01 59 05.8 +0.2
	comp=Z,3.7nm,0.7s					
ILAR	**Eielson Array**	80.47 23	P		**P**	01 59 06.6 -2.1
	comp=Z,0.5nm,0.6s,baz=294,slow=5.1,SNR=7.2					
TAM	**Tamanrasset**	80.80 291	*e*P		**P**	01 59 12.1 +0.6
TAM			pmax	pmax		
	comp=Z,3.0nm,0.9s					
TAM	**Tamanrasset**	80.80 291	*e*P		**P**	01 59 12.1 +0.6
	comp=Z,2.6nm,0.9s					
ES19	**SONSECA Array**	81.96 310	*e*P		**P**	01 59 17.5 +0.3
ESDC	**Sonseca Array**	82.02 310	P		**P**	01 59 17.8 +0.3
	comp=Z,1.5nm,0.8s,baz=54,slow=5.9,SNR=7.1					
INK	**Inuvik**	82.26 16	P		**P**	01 59 17.5 -0.6
	baz=338,slow=3.2					
INK	**Inuvik**	82.26 16	*e*P		**P**	01 59 17.8 -0.2
INK	**Inuvik**	82.26 16	*e*P		**P**	01 59 17.8 -0.2
LBTB	**Lobatse**	82.43 239	P		**P**	01 59 20.6 +0.8
	comp=Z,16nm,0.7s,baz=84,slow=4.6,SNR=29					
LBTB	**Lobatse**	82.43 239	*e*P		**P**	01 59 20.8 +1.0
LBTB			pmax	pmax		
	comp=Z,16nm,0.7s					
LBTB	**Lobatse**	82.43 239	*e*P		**P**	01 59 20.8 +1.0
	comp=Z,16nm,0.7s					
BOSA	**Boshof**	84.47 236	P		**P**	01 59 30.4 +0.2
	comp=Z,22nm,0.7s,baz=64,slow=3.2,SNR=56					
BOSA	**Boshof**	84.47 236	*e*P		**P**	01 59 30.5 +0.3
BOSA			pmax	pmax		
	comp=Z,21nm,0.6s					
BOSA	**Boshof**	84.47 236	*e*P		**P**	01 59 30.5 +0.3
	comp=Z,21nm,0.6s					
TSUM	**Tsumeb**	86.33 247	*e*P		**P**	01 59 40.0 +0.5
	comp=Z,4.2nm,1.0s					
YKA	**Yellowknife Ar**	91.54 13	P		**P**	02 00 02.1 -1.0
	comp=Z,0.4nm,0.9s,baz=340,slow=5.3,SNR=3.8					
TXAR	**Lajitas Array**	124.91 20	PKP		**PKPdf**	02 05 56.0 -0.5
	comp=Z,0.5nm,0.7s,baz=149,slow=1.3,SNR=8.3					
CPUP	**Villa Florida**	154.56 257	PKPab		**PKPab**	02 07 12.3 -0.2
	comp=Z,2.4nm,0.9s,baz=67,slow=6.2,SNR=5.5					

*IDC **07** 01:48:34.0±1.1, 10°.00N×124°.96E, h0km, mb4.0/9, mb1 4.1/9, mb1mx3.7/56, mbtmp4.0/9, MS2.8/2, Ms1 2.8/2, ms1mx2.3/57, Error ellipse: s-maj=124.9km s-min=16.7km az=66.0*

*MAN **07** 01:48:37, 9°.63N×122°.43E, h18km, mb4.5, ML3.3, MS3.2*

MAN INTENSITY III - BARANGAY LINAWON CAUAYAN NEGROS OCCIDENTAL; INTENSITY II - BARANGAY BASAK CAUAYAN NEGROS OCCIDENTAL.

*NEIC **07** 01:48:40.4±1.3, 9°.56N×124°.18E, h35km, mb4.3/1, Error ellipse: s-maj=171.0km s-min=13.4km az=64.0*

ISC 07 01:48:38.1±1.1, 9°.61N±0°.04×122°.36E±0°.07, h39km±5km, n26, σ1§55/20, mb4.1/12, 1C-5D, Negros

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUIM	**Jordan**	1.04	12	*e*P	Pn	01 48 54.5	-1.7
GUIM				*e*S	**Sn**	**01 49 08.0**	**-1.4**
JAP	**San Jose, Anti**	1.20	340	⇓*i*P	**Pn**	**01 48 58.1**	**-0.3**
JAP				*i*S	Sn	01 49 25.2	+12
TBP	**Tagbilaran**	1.48	87	⇓*e*P	**Pn**	**01 49 01.9**	**-0.4**
LLP	**Lapu-Lapu**	1.73	66	⇓*e*P	**Pn**	**01 49 05.0**	**-0.6**
LLP				*e*S	**Sn**	**01 49 26.5**	**-0.1**
IPIL	**Ipil**	1.82	173	*e*P	**Pn**	**01 49 06.4**	**-0.5**
IPIL				*e*S	**Sn**	**01 49 26.8**	**-2.0**
RCP	**Roxas**	1.98	11	⇑*e*P	**Pn**	**01 49 09.6**	**+0.5**
RCP				*e*S	**Sn**	**01 49 34.7**	**+2.0**
PAGZ	**Pagadian**	2.02	150	*e*P	**Pn**	**01 49 11.2**	**+1.5**
PAGZ				*e*S	**Sn**	**01 49 35.3**	**+1.6**
OCLP	**Ormoc**	2.64	57	*e*P	**Pn**	**01 49 17.9**	**-0.2**
PLP	**Palo**	3.00	59	⇓*e*P	**Pn**	**01 49 22.9**	**-0.3**
PLP				*e*S	**Sn**	**01 49 57.3**	**-0.7**
CTBH	**Cotabato--PC H**	3.02	142	⇓*i*P	**Pn**	**01 49 24.6**	**+1.2**
BUKP	**Musuan**	3.17	123	*e*P	**Pn**	**01 49 27.4**	**+1.8**
JNU	**Nakatsue**	24.68	17	LR	LR	02 03 21.5	
	comp=Z,29nm,20.3s,baz=121,slow=38						
KSRS	**Korea Array**	28.18	9	LR	LR	02 04 35.5	
	comp=Z,14nm,21.7s,baz=170,slow=35						
WRA	**Warramunga Arr**	31.64	158	P	P	01 54 54.4	-3.4
	0.7nm,0.7s,baz=338,slow=9.6,SNR=6.1						
ASAR	**Alice Springs**	34.94	161	P	**P**	**01 55 24.6**	**-1.9**
	1.7nm,0.6s,baz=345,slow=7.2,SNR=26						
STKA	**Stephens Creek**	45.17	157	P	**P**	**01 56 49.2**	**-2.0**
	2.6nm,0.8s,baz=358,slow=5.7,SNR=5.5						
MKAR	**Makanchi Array**	50.28	325	P	P	01 57 41.2	+10
	1.3nm,0.9s,baz=104,slow=9.1,SNR=3.8						
KURBB	**Kurchatov Arra**	54.48	327	P	P	01 58 11.6	+10
	1.6nm,0.7s,baz=131,slow=6.2,SNR=7.4						
KURK	**Kurchatov**	54.48	327	*e*P	P	01 58 11.5	+10
	10nm,1.0s						
BVAR	**Borovoye Array**	60.06	327	P	P	01 58 51.2	+10
	1.0nm,0.8s,baz=92,slow=9.0,SNR=3.8						
BRVK	**Borovoye**	60.13	327	*e*P	P	01 58 51.4	+10
	2.2nm,0.8s						
NRIK	**Noril'sk**	63.74	347	P	**P**	**01 59 08.6**	**+3.0**
	2.9nm,0.5s,baz=118,slow=6.0,SNR=4.2						
BRTR	**Keskin Array B**	82.96	309	P	P	02 01 10.1	+10
	0.5nm,0.8s,baz=142,slow=6.2,SNR=3.6						
AKASG	**Malin Array Be**	84.63	320	P	P	02 01 14.9	+7.3
	0.5nm,0.3s,baz=74,slow=3.3,SNR=2.5						
FINES	**FINESS Array B**	84.63	331	P	P	02 01 16.6	+9.2
	0.3nm,0.4s,baz=76,slow=5.9,SNR=3.7						
PLCA	**Paso Flores**	146.95	162	PKPbc	**PKPdf**	**02 08 15.7**	**+0.7**
	1.8nm,0.8s,baz=191,slow=5.2,SNR=3.1						

*NIED **07** 01:53:00, 40°.20N×143°.10E, h5km, Mw3.6 Best double couple: M0 3.27000×10^14 NP1:φs 112.00000°, δ48.00000°, λ-56.00000°. NP2:φs 246.00000°, δ52.00000°, λ-122.00000°.*

JMA 07 01:53:03.2±0.3, 40°.23N×143°.10E, h0km±3km, M3.7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	0.99	253	P	Pb	01 53 22.8	-0.5
JTH				*e*S	Sb	01 53 36.5	-0.4
MIYJ	**Miyakonagasawa**	1.18	237	P	Pg	01 53 25.5	-0.3
MIYJ				*e*S	Sg	01 53 41.5	+0.4
JANG	**Nango**	1.22	277	P	Pg	01 53 26.6	0.0
JANG				*e*S	Sg	01 53 42.3	-0.1
JKZ	**Kuzumaki**	1.38	260	P	Pg	01 53 29.3	-0.3
JOM	**Ohasama**	1.58	242	P	Pn	01 53 32.5	0.0
OFUJ	**Ofunato**	1.59	224	P	Pb	01 53 33.1	-0.4
OFUJ				*e*S	Sb	01 53 54.1	-0.1
JTM	**Tenmabayashi**	1.65	290	P	Pn	01 53 33.3	-0.1
JTM				*e*S	Sb	01 53 55.8	+0.1
JEM	**Erimo**	1.79	1	P	Pn	01 53 35.9	+0.6
JAH	**Hinai**	1.89	270	P	Pb	01 53 37.9	-0.6
JAH				*e*S	Sb	01 54 02.2	-0.4
JMK	**Ichinoseki**	1.93	229	P	Pn	01 53 38.3	+1.0
JMK				*e*S	Sn	01 54 03.0	+0.7
JOT	**Ohata**	1.94	307	P	Pn	01 53 38.0	+0.6
JOT				*e*S	Sb	01 54 03.4	-0.7

*NNC **07** 01:57:05.3±1.3, 39°.69N×72°.05E, h0km, mb2.9, mpv2.7, Error ellipse: s-maj=15.6km s-min=6.7km az=172.0*

*KRNET **07** 01:57:07.5±0.1, 39°.58N×72°.38E, h20km, mb2.5*

ISC 07 01:57:07.2±1.7, 39°.48N±0°.09×72°.37E±0°.04, h2km±13km, n12, σ1§43/17, 11C-10D, Kyrgyzstan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFK	**Sufi-Kurgan**	1.02	58	⇑*e*P	**Pg**	**01 57 26.7**	**-0.1**
SFK	baz=62			⇑*e*S	**Sg**	**01 57 40.7**	**+0.6**
SFK	**Sufi-Kurgan**	1.02	58	⇑P	**Pb**	**01 57 27.4**	**-0.4**
SFK	1.9nm,0.3s			⇓S	**Sn**	**01 57 44.0**	**+0.1**
BTK	**Batken**	1.33	296	⇓*e*P	**Pg**	**01 57 32.3**	**-0.3**
BTK	baz=292			⇓*e*S	**Sg**	**01 57 51.6**	**+1.8**
ARSB	**Arslanbob**	1.90	14	⇑*e*P	**Pn**	**01 57 40.9**	**+0.1**
ARSB	baz=14			⇑*e*S	**Sb**	**01 58 06.2**	**-0.7**
ARK	**Arkit**	2.33	353	⇓*e*P	**Pn**	**01 57 47.2**	**+0.4**
ARK	baz=352			⇓*e*S	**Sn**	**01 58 16.1**	**0.0**
TOKL	**Toktogul**	2.48	9	⇓*e*P	**Pn**	**01 57 49.4**	**+0.6**
TOKL	baz=9.0			⇓*e*S	**Sn**	**01 58 19.9**	**+0.1**
AML	**Almayashu**	2.83	20	⇑*i*P	**Pb**	**01 57 55.8**	**-2.9**
DZET	baz=21 **Dzherino**	2.84	257	⇓Pg	**Pn**	**01 57 53.7**	**0.0**
DZET	2.9nm,0.4s			⇓Lg	Lg	01 58 29.7	
MNAS	**Manas**	3.00	2	⇑Pg	**Pn**	**01 57 57.6**	**+1.6**
MNAS	2.3nm,0.7s			⇑Lg	Lg	01 58 34.0	
UCH	**Uchtor**	3.19	30	⇑*i*P	**Pn**	**01 58 00.9**	**+2.1**
AAK	baz=31 **Ala-Archa**	3.53	26	⇑Lg	Lg	01 58 55.1	
KK31	2.7nm,0.6s **Karatay Array**	3.88	339	⇑Pg	**Pn**	**01 58 10.4**	**+2.5**
KK31	1.0nm,0.6s,baz=151,slow=15,SNR=7.6			⇓Lg	Lg	01 59 01.6	
	0.6nm,0.4s,baz=140,slow=30,SNR=7.7						

*IDC **07** 02:02:48.8±1.3, 36°.92N×141°.62E, h0km, mb3.5/5, mb1 3.6/6, mb1mx3.3/71, mbtmp3.4/6, ML2.8/1, Error ellipse: s-maj=31.1km s-min=26.9km az=102.0*

*JMA **07** 02:02:52.9±0.2, 37°.01N×141°.50E, h43km±2km, M3.4*

ISC 07 02:02:50.2±2.0, 37°.04N±0°.06×141°.60E±0°.07, h8km±11km, n19, σ0§88/20, mb3.5/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	0.64	276	P	**Pb**	**02 03 04.4**	**+0.7**
ONAJ				S	**Sb**	**02 03 12.8**	**-0.1**
JFK	**Kawauchi**	0.66	300	P	**Pb**	**02 03 04.8**	**+0.7**
JFK				S	**Sb**	**02 03 13.4**	**-0.1**
JHO	**Hitachi**	0.93	243	P	**Pg**	**02 03 08.2**	**+0.1**
JHO				S	**Sg**	**02 03 18.7**	**-1.5**
JMM	**Marumori**	1.04	322	P	**Pn**	**02 03 10.9**	**-0.2**
JMM				S	**Sg**	**02 03 23.9**	**+0.1**
JFT	**Otama**	1.11	296	P	**Pn**	**02 03 12.5**	**+0.4**
JFT				S	**Sb**	**02 03 26.3**	**-0.1**
JIO	**Ouri**	1.43	352	P	**Pn**	**02 03 16.6**	**+0.2**
JIO				S	**Sb**	**02 03 33.5**	**-1.8**
MJAR	**Matsushiro Arr**	2.77	261	Pn	**Pn**	**02 03 35.7**	**+0.8**
	1.5nm,0.3s,baz=84,slow=16,SNR=5.7						
MAT	**Matsushiro**	2.77	261	P	**Pn**	**02 03 35.7**	**+0.8**
MAT				S	**Sn**	**02 04 07.2**	**-1.3**
H11N2	**WAKE ISLAND Hy**	28.02	121	T	T	02 38 04.7	
	baz=314,slow=75,SNR=42						
H11N1	**WAKE ISLAND Hy**	28.03	121	T	T	02 38 14.9	
	baz=314,slow=75,SNR=41						
H11N3	**WAKE ISLAND Hy**	28.04	121	T	T	02 37 58.3	
	baz=314,slow=75,SNR=40						
H11S1	**WAKE ISLAND Hy**	28.74	123	T	T	02 39 00.2	
	baz=316,slow=76,SNR=44						
H11S3	**WAKE ISLAND Hy**	28.74	123	T	T	02 38 50.4	
	baz=316,slow=76,SNR=41						
H11S2	**WAKE ISLAND Hy**	28.75	123	T	T	02 38 51.6	
	baz=316,slow=76,SNR=48						
MKAR	**Makanchi Array**	44.24	302	P	**P**	**02 11 00.1**	**+0.1**
	0.3nm,0.6s,baz=87,slow=9.5,SNR=2.3						
KURBB	**Kurchatov Arra**	46.11	308	P	**P**	**02 11 14.6**	**-0.1**
	0.4nm,0.4s,baz=80,slow=7.8,SNR=6.0						
ILAR	**Eielson Array**	49.41	32	P	**P**	**02 11 41.1**	**+1.0**
	0.2nm,0.6s,baz=270,slow=7.2,SNR=3.8						
WRA	**Warramunga Arr**	57.09	188	P	**P**	**02 12 35.9**	**-1.1**
	0.5nm,1.0s,baz=5.1,slow=7.4,SNR=3.9						
FINES	**FINESS Array B**	68.88	332	P	**P**	**02 13 55.4**	**+0.4**
	1.3nm,0.8s,baz=48,slow=8.5,SNR=3.2						

MEX 07 02:07:29.1±0.4, 17°.25N×100°.86W, h12km±4km, MD3.5, Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CAIG	**El Cayaco**	0.60	109	*e*P	Pg	02 07 39.1	-1.7
CAIG				*e*S	Sg	02 07 47.4	-1.2
ZIIG	**Zihuatanejo**	0.68	302	*i*P	Pg	02 07 40.7	-1.7
ZIIG				*e*S	Sg	02 07 49.5	-1.9
ARIG	**Puente Sto Nin**	1.14	25	*e*P	Pb	02 07 47.1	-3.6
ARIG				*e*S	Sb	02 08 00.7	-4.8
MEIG	**Mezcala**	1.36	60	*e*P	Pn	02 07 51.0	-3.0
MEIG				*e*S	Sb	02 08 07.0	-4.9
YAIG	**Yautepec**	2.34	46	*i*P	Pn	02 08 04.5	-3.0
YAIG				*e*S	Sn	02 08 32.2	-4.1

*IDC **07** 02:09:13.6±3.1, 36°.16N×142°.32E, h0km, mb3.7/3, mb1 3.7/4, mb1mx3.3/55, mbtmp3.6/4, ML3.3/1, MS2.6/1, Ms1 2.6/1, ms1mx2.1/52, Error ellipse: s-maj=86.8km s-min=29.5km az=58.0*

*JMA **07** 02:09:17.3±0.4, 36°.32N×142°.12E, h66km, M2.9*

ISC 07 02:09:17.7±1.6, 36°.23N±0°.07×142°.2E±0°.1, h23km, n17, σ0§94/14, mb3.8/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	1.34	287	P	**Pn**	**02 09 39.4**	**-1.5**
BSO1	**Boso 1**	1.85	212	P	**Pn**	**02 09 47.6**	**+0.1**
BSO1				*e*S	**Sb**	**02 10 12.3**	**-0.6**
BSO4	**Boso 4**	1.94	231	P	**Pn**	**02 09 49.6**	**+0.5**
BSO4				*e*S	**Sb**	**02 10 15.4**	**-0.5**
BSO3	**Boso 3**	1.96	224	P	**Pn**	**02 09 49.5**	**+0.2**
BSO3				*e*S	**Sb**	**02 10 15.4**	**-1.1**
JRY	**Ryogami san**	2.65	266	P	**Pn**	**02 09 58.0**	**-1.0**
MJAR	**Matsushiro Arr**	3.20	277	Pn	**Pn**	**02 10 07.0**	**+0.4**
	3.0nm,0.3s,baz=100,slow=8.7,SNR=12						
MAT	**Matsushiro**	3.21	277	P	**Pn**	**02 10 06.9**	**+0.3**
MAT				*e*S	**Sn**	**02 10 45.6**	**+1.5**
KSRS	**Korea Array**	11.48	280	LR	LR	02 16 18.7	
	comp=Z,28nm,19.3s,baz=98,slow=36						
H11N2	**WAKE ISLAND Hy**	27.22	120	T	T	02 43 00.4	
	baz=314,slow=75						
H11N1	**WAKE ISLAND Hy**	27.23	121	T	T	02 43 08.6	
	baz=314						
H11N3	**WAKE ISLAND Hy**	27.24	121	T	T	02 42 51.4	
	baz=314,slow=75						
H11S1	**WAKE ISLAND Hy**	27.92	123	T	T	02 44 20.9	
	baz=315						
H11S3	**WAKE ISLAND Hy**	27.92	123	T	T	02 44 20.9	
	baz=315						
H11S2	**WAKE ISLAND Hy**	27.94	123	T	T	02 44 17.5	
	baz=315						
SONM	**Songino Array**	28.73	305	P	**P**	**02 15 13.7**	**+0.3**
	1.5nm,0.9s,baz=106,slow=7.3,SNR=2.4						
MKAR	**Makanchi Array**	45.05	303	P	**P**	**02 17 32.5**	**+0.9**
	0.7nm,0.6s,baz=79,slow=8.2,SNR=4.8						
WRA	**Warramunga Arr**	56.36	189	P	**P**	**02 18 56.0**	**-1.0**
	0.3nm,0.7s,baz=4.9,slow=7.1,SNR=2.8						

*ISCJB **07** 02:10:19.5±0.7, 28°.1N±0°.1×139°.5E±0°.2, h507km, mb3.2/8, Error ellipse: s-maj=20.7km s-min=16.0km az=161.7*

*IDC **07** 02:10:19.6±1.0, 28°.13N×139°.36E, h489km±11km, mb2.9/8, mb1 3.1/9, mb1mx2.8/51, mbtmp3.8/9, Error ellipse: s-maj=25.5km s-min=13.6km az=101.0*

ISC 07 02:10:20.7±0.8, 28°.1N±0°.1×139°.5E±0°.2, h507km, n10, σ1§19/11, mb3.2/8, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCJ	**Chichijima**	2.56	111	P	**P**	**02 11 29.6**	**+0.1**
JCJ	baz=294,slow=20			S	**S**	**02 12 22.9**	**-2.4**
	33nm,0.3s,baz=282,slow=23,SNR=9.5						
WRA	**Warramunga Arr**	47.97	187	P	**P**	**02 18 13.6**	**+0.5**
	1.2nm,0.4s,baz=2.3,slow=7.7,SNR=31						
MKAR	**Makanchi Array**	48.04	309	P	**P**	**02 18 12.8**	**-0.5**
	0.4nm,0.4s,baz=89,slow=9.4,SNR=6.1						
ASAR	**Alice Springs**	51.70	187	P	**P**	**02 18 41.2**	**+0.8**
	0.5nm,0.5s,baz=1.9,slow=6.0,SNR=11						
ILAR	**Eielson Array**	58.03	29	P	**P**	**02 19 24.1**	**-0.1**
	0.4nm,0.7s,baz=262,slow=4.5,SNR=4.5						
INK	**Inuvik**	63.16	25	P	**P**	**02 19 58.3**	**+0.3**
	0.2nm,0.4s,baz=276,slow=7.5,SNR=4.6						
YKA	**Yellowknife Ar**	72.42	28	P	**P**	**02 20 55.1**	**+0.4**
	0.4nm,0.6s,baz=299,slow=6.1,SNR=8.4						
FINES	**FINESS Array B**	76.04	333	P	**P**	**02 21 14.7**	**-0.6**
	0.5nm,0.3s,baz=67,slow=4.7,SNR=14						
NVAR	**Mina Array Bea**	81.78	51	P	**P**	**02 21 48.2**	**+1.6**
	0.6nm,0.7s,baz=298,slow=5.8,SNR=3.0						
TORD	**Torodi Ar. Bea**	122.16	309	PKP	**PKPdf**	**02 28 17.1**	**-1.1**
	0.1nm,0.4s,baz=90,slow=2.0,SNR=2.8						

*ISCJB **07** 02:13:02.1±0.4, 51°.55N±0°.02×16°.19E±0°.02, h0km, mb2.9/2, MS2.5/1, Error ellipse: s-maj=3.0km s-min=1.9km az=16.3*

*CSEM **07** 02:13:04.3±0.2, 51°.53N×16°.13E, h2km, ML3.0, Error ellipse: s-maj=4.7km s-min=2.6km az=18.0*

*IDC **07** 02:13:05.2±0.7, 51°.55N×15°.95E, h0km, mb3.1/2, mb1 3.3/9, mb1mx3.2/50, mbtmp3.2/9, ML2.7/6, MS2.6/1, Ms1 2.6/1, ms1mx1.8/22, Error ellipse: s-maj=15.7km s-min=8.1km az=109.0*

*WAR **07** 02:13:05.5, 51°.53N×16°.16E, h1km, Mw2.7*

*BGR **07** 02:13:05.2±0.4, 51°.52N×16°.17E, h1km, ML3.0/16, Error ellipse: s-maj=5.6km s-min=2.2km az=15.0*

*VIE **07** 02:13:07.1±1.0, 51°.34N×16°.12E, h0km, mb2.5/5, ml2.9/5, Error ellipse: s-maj=7.0km s-min=5.7km az=64.0, Suspected Mining induced.*

ISC 07 02:13:03.4±0.6, 51°.57N±0°.03×16°.16E±0°.02, h0km, n88, σ1§26/167, 9D, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	0.73	173	*i*Pg	**Pb**	**02 13 18.4**	**-0.6**
KSP				*i*Sg	**Sg**	**02 13 27.6**	**+0.8**
KSP	**Ksiaz**	0.73	173	Pg	**Pb**	**02 13 18.4**	**-0.6**
KSP				*i*Sg	**Sg**	**02 13 27.6**	**+0.8**
KSP	**Ksiaz**	0.73	173	*e*Pg	**Pb**	**02 13 18.4**	**-0.6**
KSP				*e*Sg	**Sg**	**02 13 28.2**	**+1.4**
KSP	**Ksiaz**	0.73	173	*i*Pgd	**Pb**	**02 13 18.4**	**-0.6**
KSP				*i*Sg	**Sg**	**02 13 27.6**	**+0.8**
UPC	**Upice**	1.07	185	⇓*i*PG	**Pb**	**02 13 24.5**	**-0.2**
UPC				*e*SG	**Sg**	**02 13 38.1**	**+0.6**
	comp=Z,99nm,0.5s						
DPC	**Dobruska-Polom**	1.22	175	⇓*i*PG	**Pb**	**02 13 27.2**	**-0.2**
DPC				*e*SG	**Sg**	**02 13 42.7**	**+0.1**
	comp=Z,68nm,0.2s						
DPC	**Dobruska-Polom**	1.22	175	Pg	**Pg**	**02 13 27.1**	**+0.4**
DPC				Sg	**Sg**	**02 13 43.1**	**+0.5**
DPC	**Dobruska-Polom**	1.22	175	*e*Pg	**Pg**	**02 13 27.1**	**+0.4**
DPC				*e*Sg	**Sg**	**02 13 43.1**	**+0.5**
PVCC	**Panska Ves**	1.45	225	⇓*e*PG	**Pb**	**02 13 31.4**	**+0.3**
PVCC				*e*SG	Sn	**02 13 51.4**	**+1.0**
	comp=Z,121nm,0.2s						
KRLC	**Kraliky**	1.55	165	⇓*i*PG	**Pn**	**02 13 32.4**	**+0.2**
KRLC	

OJC	**Ojcow**	**2.67 119**	*e*Pg	**Pg**	**02 13 54.1**	**-0.5**
OJC			*e*Sg	**Sg**	**02 14 28.7**	**-0.4**
OJC	**Ojcow**	**2.67 119**	*e*Pg	**Pg**	**02 13 54.5**	**0.0**
OJC			*e*Sg	**Sg**	**02 14 29.8**	**+0.7**
WERD	**Werda**	**2.68 247**	Pn	**Pn**	**02 13 48.7**	**+0.9**
WERD	**Werda**	**2.68 247**	*e*Pn	**Pn**	**02 13 48.7**	**+0.9**
WERD			*e*Pg	**Pg**	**02 13 54.6**	**0.0**
WERD			*e*Sg	**Sg**	**02 14 28.9**	**-0.4**
NKC	**Novy Kostel**	**2.70 242‖**	*e*PN	**Pn**	**02 13 49.4**	**+1.4**
NKC			*e*PG	**Pg**	**02 13 55.2**	**+0.1**
NKC			*e*SG	**Sg**	**02 14 32.5**	**+2.4**
	comp=Z,62nm,0.3s					
KHC	**Kasperske Hory**	**2.95 215‖**	*e*PN	**Pn**	**02 13 52.1**	**+0.7**
KHC			*e*PG	**Pg**	**02 13 58.4**	**-1.4**
KHC			*e*SN	**Sn**	**02 14 27.6**	**+0.1**
KHC			*e*SG	**Sg**	**02 14 37.4**	**-0.5**
	comp=Z,16nm,0.5s					
MOX	**Moxa**	**3.01 254**	Pn	**Pn**	**02 13 52.8**	**+0.6**
MOX			Sg	**Sg**	**02 14 41.8**	**+1.9**
MOX	**Moxa**	**3.01 254**	*e*Pn	**Pn**	**02 13 52.8**	**+0.6**
MOX			*e*Sg	**Sg**	**02 14 41.8**	**+1.9**
MANZ	**Manzenberg**	**3.02 240**	Pn	**Pn**	**02 13 53.5**	**+1.1**
MANZ	**Manzenberg**	**3.02 240**	*e*Pn	**Pn**	**02 13 53.5**	**+1.1**
MANZ			*e*Pg	**Pg**	**02 14 02.4**	**+1.3**
MANZ			*e*Sg	**Sg**	**02 14 40.7**	**+0.5**
ROTZ	**Rotzenmuhle**	**3.09 236**	Pn	**Pn**	**02 13 54.3**	**+0.9**
ROTZ			Sg	**Sg**	**02 14 41.7**	**-0.9**
ROTZ	**Rotzenmuhle**	**3.09 236**	*e*Pn	**Pn**	**02 13 54.3**	**+0.9**
ROTZ			*e*Sg	**Sg**	**02 14 41.7**	**-0.9**
GEC2	**GERESS Array S**	**3.15 211**	Pn	**Pn**	**02 13 54.8**	**+0.5**
GEC2	**GERESS Array S**	**3.15 211**	*e*Pn	**Pn**	**02 13 54.8**	**+0.5**
GEC2			*e*Pg	**Pb**	**02 14 02.1**	**+1.8**
GEC2			*e*Sg	**Sg**	**02 14 42.4**	**-2.1**
GERES	**GERESS Array B**	**3.15 211**	Pn	**Pn**	**02 13 55.3**	**+1.1**
	comp=Z,1.0nm,0.3s,baz=27,slow=12,SNR=28					
GERES			Pg	**Pb**	**02 14 01.6**	**+1.3**
	comp=Z,3.0nm,0.3s,baz=25,slow=15,SNR=34					
GERES			Lg	Lg	02 14 40.2	
	comp=Z,3.1nm,0.3s,baz=24,slow=25,SNR=6.3					
SMOL	**Smolenice**	**3.17 164**	*e*Pg	**Pg**	**02 14 05.6**	**+1.6**
SMOL			*e*Sg	**Sg**	**02 14 45.8**	**+0.8**
SMOL	**Smolenice**	**3.17 164**	*e*PG	**Pg**	**02 14 05.6**	**+1.6**
SMOL			*e*SG	**Sg**	**02 14 45.8**	**+0.8**
WET	**Wettzell**	**3.21 222**	Pn	**Pn**	**02 13 53.4**	**-1.6**
WET	**Wettzell**	**3.21 222**	*e*Pn	**Pn**	**02 13 53.4**	**-1.6**
LANS	**Liptovska Anna**	**3.22 137**	*e*Pg	**Pg**	**02 14 04.9**	**-0.1**
LANS			*e*Sg	**Sg**	**02 14 47.8**	**+1.1**
LANS	**Liptovska Anna**	**3.22 137**	*e*PG	**Pg**	**02 14 04.9**	**-0.1**
LANS			*e*SG	**Sg**	**02 14 47.8**	**+1.1**
NIE	**Niedzica**	**3.41 128**	*e*P	**Pg**	**02 14 08.6**	**-0.1**
NIE			*e*S	**Sg**	**02 14 54.0**	**+1.2**
NIE	**Niedzica**	**3.41 128**	*e*P	**Pg**	**02 14 08.6**	**-0.1**
NIE			*e*S	**Sg**	**02 14 54.0**	**+1.2**
ZST	**Bratislava**	**3.43 169**	*e*Pg	**Pb**	**02 14 06.2**	**+1.3**
ZST			*e*Sg	**Sg**	**02 14 51.1**	**-2.4**
ZST	**Bratislava**	**3.43 169**	*e*PG	**Pb**	**02 14 06.2**	**+1.3**
ZST			*e*SG	**Sg**	**02 14 51.1**	**-2.4**
ZST			*e*LG	Lg	02 14 56.3	
VYHS	**Vyhne**	**3.53 150**	*e*Pg	**Pg**	**02 14 12.4**	**+1.5**
VYHS			*e*Sg	**Sg**	**02 14 57.2**	**+0.6**
VYHS	**Vyhne**	**3.53 150**	*e*PG	**Pg**	**02 14 12.4**	**+1.5**
VYHS			*e*SG	**Sg**	**02 14 57.2**	**+0.6**
VYHS			*e*LG	Lg	02 15 10.8	
CLZ	**Clausthal**	**3.61 277**	Pn	**Pn**	**02 14 01.8**	**+1.3**
CLZ			Sg	**Sg**	**02 14 58.8**	**-0.4**
CLZ	**Clausthal**	**3.61 277**	*e*Pn	**Pn**	**02 14 01.8**	**+1.3**
CLZ			*e*Sg	**Sg**	**02 14 58.8**	**-0.4**
BSD	**Bornholm Skovb**	**3.63 349**	*i* P	**Pn**	**02 14 01.1**	**+0.4**
BSD			*i* S	**Sn**	**02 14 43.3**	**-0.9**
BSD	**Bornholm Skovb**	**3.63 349**	*i* P	**Pn**	**02 14 01.1**	**+0.4**
BSD			*i* S	**Sn**	**02 14 43.3**	**-0.9**
CONA	**Conrad Observa**	**3.65 183**	*i* Pn	**Pn**	**02 14 02.3**	**+1.2**
	comp=Z,4.5nm,0.3s					
CONA			*e*Sg	**Sg**	**02 14 59.2**	**-1.3**
	comp=Z,8.6nm,0.3s					
CONA	**Conrad Observa**	**3.65 183**	Pn	**Pn**	**02 14 02.3**	**+1.2**
	comp=Z,4.5nm,0.3s					
CONA			Sg	**Sg**	**02 14 59.2**	**-1.3**
	comp=Z,8.6nm,0.3s					
GRA1	**Grafenberg Arr**	**3.66 241**	Pn	**Pn**	**02 14 02.6**	**+1.4**
GRA1			Sg	**Sg**	**02 15 00.8**	**-0.1**
GRF	**Grafenberg Arr**	**3.66 241**	*e*Pn	**Pn**	**02 14 02.6**	**+1.4**
GRF			*e*Sg	**Sg**	**02 15 00.8**	**-0.1**
STHS	**Stebnicka Huta**	**3.90 122**	*e*Pg	**Pg**	**02 14 20.8**	**+2.8**
STHS			*e*Sg	**Sg**	**02 15 12.3**	**+3.8**
STHS	**Stebnicka Huta**	**3.90 122**	*e*PG	**Pg**	**02 14 20.8**	**+2.8**
STHS			*e*SG	**Sg**	**02 15 12.3**	**+3.8**
STHS			*e*LG	Lg	02 15 16.8	
MOA	**Molln**	**3.92 199**	*i* Pn	**Pn**	**02 14 05.8**	**+1.0**
	comp=Z,2.6nm,0.3s					
MOA			*e*Sg	**Sg**	**02 15 08.6**	**-0.6**
	comp=Z,9.9nm,0.5s					
MOA	**Molln**	**3.92 199**	Pn	**Pn**	**02 14 05.8**	**+1.0**
	comp=Z,2.6nm,0.3s					
MOA			Sg	**Sg**	**02 15 08.6**	**-0.6**
	comp=Z,9.9nm,0.5s					
KECS	**Kecovo**	**4.16 136**	*e*Pg	**Pg**	**02 14 24.4**	**+1.3**
KECS			*e*Sg	**Sg**	**02 15 16.8**	**-0.2**
KECS	**Kecovo**	**4.16 136**	*e*PG	**Pg**	**02 14 24.4**	**+1.3**
KECS			*e*SG	**Sg**	**02 15 16.8**	**-0.2**
KECS			*e*LG	Lg	02 15 29.2	
CRVS	**Cervenica-Dubn**	**4.33 126**	*e*Pg	**Pg**	**02 14 28.3**	**+2.1**
CRVS	**Cervenica-Dubn**	**4.33 126**	*e*PG	**Pg**	**02 14 28.3**	**+2.1**
ARSA	**Arzberg**	**4.34 186**	*i* Pn	**Pn**	**02 14 10.4**	**-0.2**
	comp=Z,1.4nm,0.2s					
ARSA			Sg	**Sg**	**02 15 21.7**	**-1.0**
	comp=Z,17nm,0.8s					
ARSA	**Arzberg**	**4.34 186**	Pn	**Pn**	**02 14 10.4**	**-0.2**
	comp=Z,1.4nm,0.2s					
ARSA			Sg	**Sg**	**02 15 21.7**	**-1.0**
	comp=Z,17nm,0.8s					
KOLS	**Kolonicke sedl**	**4.73 122**	*e*Pg	**Pg**	**02 14 34.7**	**+0.8**
KOLS	**Kolonicke sedl**	**4.73 122**	*e*PG	**Pg**	**02 14 34.7**	**+0.8**
KOLS			*e*SG	**Sg**	**02 15 38.7**	**+3.6**
KOLS			*e*LG	Lg	02 15 54.9	
DAVOX	**Davos/Dischmat**	**6.31 223**	Pn	**Pn**	**02 14 39.3**	**+1.5**
	comp=Z,0.2nm,0.3s,baz=8.1,slow=7.1,SNR=3.5					
DAVOX			Lg	Lg	02 16 24.0	
	comp=Z,0.3nm,0.3s,baz=266,slow=19,SNR=3.5					
AKASG	**Malin Array Be**	**8.27 91**	Pn	**Pn**	**02 15 04.7**	**+0.3**
	comp=Z,1.3nm,0.3s,baz=282,slow=12,SNR=3.3					
AKASG			Sn	**Sn**	**02 16 33.1**	**-5.3**
	comp=Z,1.8nm,0.3s,baz=265,slow=26,SNR=7.4					
AKASG			Lg	Lg	02 17 30.5	
	baz=279,slow=26,SNR=2.5					
HFS	**Hagfors**	**8.70 352**	Pn	**Pn**	**02 15 09.3**	**-1.0**
	comp=Z,0.1nm,0.3s,baz=173,slow=13,SNR=3.2					
FINES	**FINESS Array B**	**11.30 25**	Pn	**Pn**	**02 15 44.8**	**-1.1**
	comp=Z,0.1nm,0.3s,baz=213,slow=12,SNR=7.6					
FINES			Sn	Sn	02 17 42.5	-10
	comp=Z,0.1nm,0.3s,baz=223,slow=20,SNR=2.4					
EKA	**Eskdalemuir Ar**	**12.11 296**	Pn	**Pn**	**02 15 53.7**	**-3.2**
	baz=104,slow=13,SNR=2.6					
ARCES	**ARCESS Array B**	**18.56 10**	Pn	**P**	**02 17 19.1**	**-2.3**
	comp=Z,0.1nm,0.3s,baz=196,slow=13,SNR=2.8					
ARU	**Arti**	**25.09 62**	LR	LR	02 28 33.6	
	comp=Z,13nm,18.9s,baz=64,slow=37					
TORD	**Torodi Ar. Bea**	**40.06 202**	P	**P**	**02 20 40.6**	**+0.3**
	comp=Z,0.3nm,1.0s,baz=14,slow=7.7,SNR=2.4					
YKA	**Yellowknife Ar**	**59.82 336**	P	**P**	**02 23 11.0**	**+1.2**
	comp=Z,0.1nm,0.6s,baz=33,slow=6.4,SNR=4.1					

NIED ***07*** *02:14:00.39°.60N×142°.60E, h41km, Mw3.8 Best double couple: M0=5.43000×10^14 NP1:φ=266.00000°, δ18.00000°, λ150.00000°. NP2:φ=24.00000°, δ81.00000°, λ74.00000°.*
IDC ***07*** *02:14:25.3±1.2, 39°.35N×143°.16E, h0km, mb3.3/4, mb1 3.6/6, mb1mx3.4/47, mbtmp3.3/6, ML3.3/2, MS2.5/1, Ms1 2.5/1, ms1mx2.1/27, Error ellipse: s-maj=36.9km s-min=22.6km az=117.0*
ISCJB ***07*** *02:14:28.3±1.0, 39°.59N±0°.04×142°.77E±0°.06, h23km±7km, mb3.4/4, Error ellipse: s-maj=8.2km s-min=5.2km az=27.5*
JMA ***07*** *02:14:30.1±0.1, 39°.59N×142°.65E, h31km±2km, M3.9*
ISC 07 02:14:28.5±1.8, 39°.57N±0°.04×142°.73E±0°.06, h17km±10km, n29, σ0°96/34, mb3.5/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**0.71**	**271**	P	**Pg**	**02 14 42.5**	**+0.2**
MIYJ				S	**Sg**	**02 14 50.9**	**-0.8**
JTH	**Tanohata**	**0.77**	**299**	P	**Pb**	**02 14 43.3**	**0.0**
JTH				S	**Sb**	**02 14 53.5**	**+0.1**
OFUJ	**Ofunato**	**0.96**	**240**	P	**Pb**	**02 14 46.7**	**+0.1**
OFUJ				S	**Sb**	**02 14 58.9**	**-0.1**
JOM	**Ohasama**	**1.12**	**266**	P	**Pn**	**02 14 49.1**	**-0.2**
JKZ	**Kuzumaki**	**1.16**	**291**	P	**Pn**	**02 14 49.8**	**-0.1**
JKZ				*e*S	**Sb**	**02 15 03.9**	**-0.9**
JANG	**Nango**	**1.23**	**311**	P	**Pn**	**02 14 49.8**	**-1.1**
JMK	**Ichinoseki**	**1.33**	**243**	P	**Pn**	**02 14 52.3**	**+0.1**
JMK				S	**Sn**	**02 15 09.0**	**-0.4**
JIO	**Ouri**	**1.55**	**225**	P	**Pn**	**02 14 55.4**	**+0.2**
JIO				S	**Sn**	**02 15 14.4**	**-0.5**
JRG	**Rokugo**	**1.63**	**265**	P	**Pb**	**02 14 57.8**	**-0.3**
JRG				S	**Sb**	**02 15 18.6**	**+0.2**
JAH	**Hinai**	**1.73**	**292**	P	**Pn**	**02 14 58.5**	**+0.8**
JAH				S	**Sn**	**02 15 19.6**	**+0.3**
JTM	**Tenmabayashi**	**1.76**	**314**	P	**Pn**	**02 14 58.3**	**+0.1**
JTM				S	**Sn**	**02 15 19.5**	**-0.7**
JYK	**Kaneyama**	**1.95**	**251**	P	**Pn**	**02 15 02.2**	**+1.4**
JOT	**Ohata**	**2.22**	**325**	P	**Pn**	**02 15 05.4**	**+0.9**
JEM	**Erimo**	**2.47**	**7**	P	**Pn**	**02 15 07.5**	**-0.3**
JKB	**Kayabe**	**2.65**	**331**	P	**Pn**	**02 15 11.7**	**+1.3**
JKB				*e*S	**Sn**	**02 15 42.0**	**-0.1**
JNBK	**Urakawa-nobuka**	**2.71**	**0**	P	**Pn**	**02 15 12.9**	**+1.7**
JCH	**Churui**	**3.08**	**9**	P	**Pn**	**02 15 16.2**	**-0.1**
ASAJ	**Asahikawa**	**4.55**	**359**	Pn	**Pn**	**02 15 38.0**	**+1.5**
	1.3nm,0.3s,baz=180,slow=19,SNR=2.1						
ASAJ				Sn	**Sn**	**02 16 27.6**	**-1.2**
	1.0nm,0.3s,baz=168,slow=19,SNR=2.8						
ASAJ				LR	LR	02 17 51.3	
	comp=Z,50nm,18.3s,baz=347,slow=43						
MJAR	**Matsushiro Arr**	**4.68**	**231**	Pn	**Pn**	**02 15 39.7**	**+1.4**
	1.0nm,0.3s,baz=41,slow=12,SNR=7.8						
H11N2	**WAKE ISLAND Hy 28.69**	**127**		T	T	02 50 58.4	
	baz=319,slow=76,SNR=192						
H11N1	**WAKE ISLAND Hy 28.70**	**127**		T	T	02 51 04.0	
	baz=319,slow=76,SNR=174						
H11N3	**WAKE ISLAND Hy 28.70**	**127**		T	T	02 50 58.1	
	baz=319,slow=76,SNR=184						
H11S1	**WAKE ISLAND Hy 29.49**	**128**		T	T	02 52 04.0	
	baz=320,slow=76,SNR=41						
H11S3	**WAKE ISLAND Hy 29.50**	**129**		T	T	02 52 04.9	
	baz=320,slow=76,SNR=26						
H11S2	**WAKE ISLAND Hy 29.51**	**128**		T	T	02 52 08.7	
	baz=320,slow=76,SNR=30						
MKAR	**Makanchi Array**	**43.70**	**300**	P	**P**	**02 22 34.8**	**+2.4**
	0.3nm,0.4s,baz=80,slow=7.4,SNR=3.5						
ILAR	**Eielson Array**	**46.81**	**34**	P	**P**	**02 22 56.5**	**-0.2**
	0.4nm,0.7s,baz=266,slow=5.6,SNR=5.1						
WRA	**Warramunga Arr**	**59.72**	**189**	P	**P**	**02 24 30.3**	**-1.8**
	0.6nm,1.0s,baz=6.4,slow=6.9,SNR=3.1						
YKA	**Yellowknife Ar**	**61.10**	**31**	P	**P**	**02 24 40.7**	**-0.4**
	0.1nm,0.5s,baz=301,slow=6.3,SNR=5.2						

KRSC 07 02:48:11.6±0.7, 54°.64N×162°.58E, h34km±11km, ML3.5, Near east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MKZ	**Mys Kozlova**	**0.50**	**261**	*i* P	Pn	02 48 22.9	+0.7
MKZ				*i* S	Sn	02 48 29.7	0.0
KBG	**Krutoberegovo**	**1.62**	**3**	*e*P	Pb	02 48 39.7	-1.1
KBG				*e*S	Sb	02 48 59.4	-1.5
ZLN	**Zelenaya**	**1.71**	**324**	*e*P	Pb	02 48 41.0	-1.4
ZLN				*e*S	Sb	02 49 02.2	-1.4
LGNR	**Loginova**	**1.80**	**324**	*e*P	Pb	02 48 42.6	-1.5
LGNR				*e*S	Sb	02 49 05.2	-1.2
CIRR	**Tsirk**	**1.81**	**326**	*e*P	Pb	02 48 42.4	-1.7
CIRR				*e*S	Sb	02 49 04.4	-2.1
KII	**Karymskiy**	**1.93**	**253**	*e*P	Pb	02 48 44.6	-1.5
KII				*e*S	Sn	02 49 07.1	+2.0
KRSR	**Krestovskiy**	**1.95**	**325**	*e*P	Pn	02 48 44.0	+1.7
KRSR				*e*S	Sn	02 49 07.4	+1.7
KLY	**Klyuchi**	**2.00**	**328**	*e*P	Pn	02 48 44.2	+1.3
KLY				*e*S	Sn	02 49 08.0	+1.3
BKI	**Bering**	**2.04**	**73**	*e*S	Sb	02 49 10.4	-2.5
SMKR	**Semkarok**	**2.04**	**343**	*e*P	Pn	02 48 45.8	+2.2
SMKR				*e*S	Sb	02 49 10.8	-2.3
BDR	**Baidarnaya**	**2.08**	**339**	*e*P	Pb	02 48 47.3	-1.4
BDR				*e*S	Sb	02 49 12.0	-2.2
SRKR	**Sorokina**	**2.17**	**339**	*e*P	Pn	02 48 47.7	+2.4
NLC	**Nalytchevo**	**2.41**	**234**	P	Pb	02 48 51.8	-2.4
NLC				S	Sb	02 49 21.0	-2.6
ESO	**Esso**	**2.56**	**302**	*e*P	Pb	02 48 53.9	-2.9
ESO				*e*S	Sb	02 49 25.7	-2.2
SDLR	**Sedlovina**	**2.57**	**239**	*i* P	Pb	02 48 54.0	-3.1
SDLR				*e*S	Sn	02 49 23.7	+2.7
SMAR	**Somma**	**2.62**	**240**	*i* P	Pn	02 48 54.8	+3.1
KRER	**Koryakskii**	**2.63**	**241**	*i* P	Pb	02 48 55.3	-2.7
KRER				*e*S	Sn	02 49 25.2	+2.7
UGLR	**Uglovaya**	**2.64**	**239**	*i* P	Pb	02 48 55.1	-3.1
UGLR				*e*S	Sn	02 49 25.6	+2.9
KRX	**Arik**	**2.65**	**243**	*i* P	Pb	02 48 55.3	-3.1
KRX				S	Sb	02 49 27.2	-3.3
AVH	**Avacha**	**2.65**	**240**	*i* P	Pb	02 48 55.6	-2.8
AVH				*e*S	Sn	02 49 26.7	+3.8
DALK	**Dalny**	**2.78**	**236**	*e*P	Pn	02 48 56.7	+3.1
DALK				*e*S	Sn	02 49 28.6	+2.7
PET	**Petropavlovsk**	**2.83**	**237**	P	Pn	02 48 57.0	+2.7
PET				S	Sn	02 49 30.0	+2.8
GNL	**Ganaly**	**2.88**	**253**	*i* P	Pb	02 48 59.0	-3.3
GNL				*e*S	Sb	02 49 33.3	-3.9
KRMR	**Karymshinskiy**	**3.20**	**237**	*e*P	Pn	02 49 03.4	+4.0
KRMR				*e*S	Sb	02 49 42.1	-4.1
RUS	**Russkaya**	**3.28**	**229**	*e*P	Pn	02 49 03.8	+3.3

IDC ***07*** *02:56:53.1±1.8, 38°.40N×142°.46E, h0km, mb3.8/5, mb1 3.8/7, mb1mx3.5/43, mbtmp3.7/7, ML2.6/2, MS2.7/3, Ms1 2.7/3, ms1mx2.3/56, Error ellipse: s-maj=48.0km s-min=26.8km az=79.0*
NEIC ***07*** *02:56:58.8±1.0, 38°.39N×142°.28E, h35km, mb4.2/1, Error ellipse: s-maj=21.8km s-min=11.9km az=113.0*
ISCJB ***07*** *02:57:00.5±1.1, 38°.30N±0°.05×141°.9E±0°.1, h55km±7km, mb3.8/7, MS3.1/1, Error ellipse: s-maj=16.8km s-min=6.0km az=18.1*
NIED ***07*** *02:57:00, 38°.30N×141°.90E, h53km, Mw4.2 Best double couple: M0=1.89000×10^15 NP1:φ=68.00000°, δ25.00000°, λ-106.00000°. NP2:φ=265.00000°, δ66.00000°, λ-83.00000°.*
JMA ***07*** *02:57:01.4±0.1, 38°.31N×141°.87E, h46km±1km, M3.7*
ISC 07 02:57:00.3±2.1, 38°.29N±0°.06×142°.0E±0°.1, h41km±17km, n31, σ1°01/30, mb3.8/7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.53**	**289**	P	**Pn**	**02 57 11.7**	**+0.2**
JIO				S	**Sn**	**02 57 18.9**	**-0.5**
OFUJ	**Ofunato**	**0.83**	**342**	P	**Pn**	**02 57 16.0**	**+0.4**
OFUJ				S	**Sn**	**02 57 26.3**	**-0.4**
JMK	**Ichinoseki**	**0.90**	**318**	P	**Pn**	**02 57 16.9**	**+0.4**
JMK				S	**Sn**	**02 57 28.0**	**-0.3**
JMM	**Marumori**	**1.03**	**247**	P	**Pn**	**02 57 18.1**	**-0.2**
JMM				*e*S	**Sn**	**02 57 30.5**	**-1.1**
JOU	**Okura**	**1.05**	**275**	P	**Pn**	**02 57 18.7**	**+0.1**
JOU				*e*S	**Sn**	**02 57 31.5**	**-0.5**
JFK	**Kawauchi**	**1.27**	**224**	P	**Pn**	**02 57 21.7**	**0.0**
JFK				*e*S	**Sn**	**02 57 36.0**	**-1.6**
JOM	**Ohasama**	**1.31**	**336**	P	**Pn**	**02 57 22.8**	**+0.7**
JYK	**Kaneyama**	**1.43**	**297**	P	**Pn**	**02 57 24.0**	**+0.3**
JFT	**Otama**	**1.52**	**240**	P	**Pn**	**02 57 25.6**	**+0.6**
JYS	**Shirataka**	**1.52**	**268**	P	**Pn**	**02 57 25.2**	**+0.2**
JRG	**Rokugo**	**1.54**	**317**	P	**Pn**	**02 57 26.0**	**+0.8**
MJAR	**Matsushiro Arr**	**3.48**	**241**	Pn	**Pn**	**02 57 53.8**	**+1.9**
	1.6nm,0.3s,baz=58,slow=9.8,SNR=12						
MJAR				LR	LR	02 59 27.5	
	comp=Z,54nm,20.5s,baz=90,slow=40						
MAJO	**Matsushiro**	**3.48**	**241**	*e*Pn	**Pn**	**02 57 54.3**	**+2.4**
MAT	**Matsushiro**	**3.48**	**241**	P	**Pn**	**02 57 55.0**	**+3.0**
MAT				*e*S	**Sn**	**02 58 32.4**	**+0.5**
USRK	**Ussuriysk Ar.**	**9.57**	**311**	Pn	**Pn**	**02 59 16.2**	**+0.8**
	0.1nm,0.3s,baz=117,slow=14,SNR=3.3						
KLR	**Kul'dur**	**13.19**	**329**	LR	LR	03 04 42.0	
	comp=Z,22nm,19.8s,baz=178,slow=35						
H11N2	**WAKE ISLAND Hy 28.42**	**124**		T	T	03 33 06.7	
	baz=316,slow=75,SNR=90						
H11N1	**WAKE ISLAND Hy 28.43**	**124**		T	T	03 33 08.3	
	baz=316,slow=75,SNR=134						
H11N3	**WAKE ISLAND Hy 28.44**	**124**		T	T	03 33 08.5	
	baz=316,slow=75,SNR=102						
H11S1	**WAKE ISLAND Hy 29.18**	**126**		T	T	03 34 03.5	
	baz=318,slow=76,SNR=44						
H11S3	**WAKE ISLAND Hy 29.18**	**126**		T	T	03 34 03.4	
	baz=318,slow=76,SNR=68						
H11S2	**WAKE ISLAND Hy 29.20**	**126**		T	T	03 34 03.9	
	baz=318,slow=76,SNR=45						
ZALV	**Zalesovo Beam**	**41.42**	**311**	P	**P**	**03 04 42.1**	**-0.5**
	1.0nm,0.5s,baz=79,slow=7.8,SNR=3.3						
MKAR	**Makanchi Array**	**43.85**	**301**	P	**P**	**03 05 02.6**	**+0.1**
	0.5nm,0.6s,baz=90,slow=9.0,SNR=4.3						
KURK	**Kurchatov**	**45.53**	**307**	*e*P	**P**	**03 05 15.4**	**-0.3**
	4.8nm,0.8s						
TKM2	**Tokmak 2**	**49.45**	**298**	*e*P	**P**	**03 05 46.6**	**+0.1**
	1.2nm,0.5s						
WRA	**Warramunga Arr**	**58.36**	**188**	P	**P**	**03 06 51.3**	**-0.2**
	0.2nm,0.4s,baz=5.9,slow=7.3,SNR=5.9						
FINES	**FINESS Array B**	**67.92**	**332**	P	**P**	**03 07 54.1**	**-0.3**
	1.4nm,0.8s,baz=47,slow=11,SNR=3.5						
GNI	**Garni**	**71.33**	**307**	LR	LR	03 42 03.8	
	comp=Z,10nm,19.4s,baz=242,slow=38						
NB2	**NORSAR Subarra**	**73.21**	**337**	P	**P**	**03 08 26.7**	**0.0**
	comp=Z,1.0nm,0.8s,baz=39,slow=6.2						
NOA	**NORSAR Array B**	**73.21**	**337**	P	**P**	**03 08 26.0**	**-0.7**
	comp=Z,0.7nm,0.8s,baz=39,slow=5.9,SNR=3.8						

IDC ***07*** *02:59:14.5±0.6, 21°.43N×144°.16E, h0km, mb3.9/16, mb1 4.1/18, mb1mx3.9/45, mbtmp3.9/18, ML3.8/2, MS3.3/12, Ms1 3.3/12, ms1mx3.1/46, Error ellipse: s-maj=23.4km s-min=14.3km az=90.0*
ISCJB ***07*** *02:59:18.1±0.4, 21°.41N±0°.05×143°.86E±0°.10, h33km, mb4.0/27, MS3.3/10, Error ellipse: s-maj=13.4km s-min=6.4km az=170.6*
NEIC ***07*** *02:59:20.9±2.1, 21°.41N×143°.87E, h45km±18km, mb4.3/11, Error ellipse: s-maj=16.5km s-min=10.1km az=103.0*
ISC 07 02:59:19.3±0.6, 21°.38N±0°.08×144°.0E±0°.1, h33km, n47, σ1°19/37, mb4.0/27, MS3.3/10, Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**5.92**	**344**	Pn	**Pn**	**03 00 45.2**	**+0.5**
CBIJ				Sn	**Sn**	**03 01 51.9**	**+0.5**
JCJ	**Chichijima**	**5.92**	**344**	Pn	**Pn**	**03 00 45.2**	**+0.5**
	3.3nm,0.3s,baz=127,slow=20,SNR=4.5						
JCJ				Sn	**Sn**	**03 01 51.9**	**+0.5**
	5.5nm,0.3s,baz=287,slow=19,SNR=4.2						
MJAR	**Matsushiro Arr**	**15.92**	**343**	Pn	**Pn**	**03 02 60.0**	**-0.9**
	0.3nm,0.3s,baz=162,slow=10,SNR=3.1						
MJAR				LR	LR	03 08 38.2	
	comp=Z,111nm,19.2s,baz=180,slow=36						
JNU	**Nakatsue**	**16.48**	**318**	LR	LR	03 08 14.7	
	comp=Z,70nm,21.8s,baz=117,slow=33						
KSRS	**Korea Array**	**21.20**	**323**	P	**P**	**03 04 03.7**	**+1.6**
	2.4nm,0.7s,baz=144,slow=8.7,SNR=6.6						
KSRS				LR	LR	03 11 21.3	
	comp=Z,58nm,19.3s,baz=162,slow=34						
KSAR	**Wonju Array Be**	**21.22**	**322**	P	**P**	**03 04 03.7**	**+1.4**
H11N1	**WAKE ISLAND Hy 21.54**	**90**		T	T	03 26 03.9	
	baz=278,slow=75,SNR=65						
H11N2	**WAKE ISLAND Hy 21.54**	**90**		T	T	03 26 03.8	
	baz=278,slow=75,SNR=45						
H11N3	**WAKE ISLAND Hy 21.55**	**90**		T	T	03 26 05.1	
	baz=278,slow=75,SNR=61						
H11S3	**WAKE ISLAND Hy 21.55**	**94**		T	T	03 26 08.3	
	baz=282,slow=75,SNR=79						
H11S1	**WAKE ISLAND Hy 21.57**	**94**		T	T	03 26 07.1	
	baz=282,slow=75,SNR=56						
H11S2	**WAKE ISLAND Hy 21.57**	**94**		T	T	03 26 07.8	
	baz=282,slow=75,SNR=61						
JAY	**Jayapura**	**23.96**	**188**	P	**P**	**03 04 32.3**	**+1.4**

IMRD	Marand	0.58	42	*e*Pg		Pg	03 06 21.0	-1.7
ITBZ	Tabriz	0.74	93	*e*Pg		Pg	03 06 25.4	-0.3
ITBZ				*e*AMB		AMB	03 06 26.6	
	comp=Z,3μm,0.0s							
ITBZ				*e*Sg		Sb	03 06 35.8	-0.1
ITBZ	Tabriz	0.74	93	*e*Pg		Pg	03 06 25.4	-0.3
ITBZ				*e*Sg		Sb	03 06 35.8	-0.1
IHRS	Heris	1.45	88	*e*Pn		Pg	03 06 38.4	-0.6
IHRS				*e*AMB		AMB	03 06 59.8	
	comp=Z,2μm,0.1s							
IHRS	Heris	1.45	88	*e*Pn		Pg	03 06 38.4	-0.6
IBST	Bostanabad	1.45	113	*e*Pn		Pb	03 06 38.2	+0.2
IBST				*e*AMB		AMB	03 06 39.1	
	comp=Z,566nm,0.1s							
IBST	Bostanabad	1.45	113	*e*Pn		Pb	03 06 38.2	+0.2
GNI	Garni	1.90	349	⇑*i*P		Pb	03 06 45.1	-0.6
GNI				⇑*i*S		Sb	03 07 09.4	+0.1
GNI	Garni	1.90	349	⇑P		Pb	03 06 45.1	-0.6
GNI				S		Sb	03 07 09.4	+0.1
VADZ	Vardenis	1.94	12	*e*P		Pg	03 06 48.0	-0.4
VADZ				⇓S		Sg	03 07 16.0	+2.5
VADZ	Vardenis	1.94	12	P		Pg	03 06 48.0	-0.4
VADZ				S		Sg	03 07 16.0	+2.5

*DDA **07** 03:21:39.6, 37.°17N×28.°65E, h27km, MI3.4*
*IDC **07** 03:21:39.6±1.2, 37.°08N×28.°74E, h0km, mb3.3/2, mb1 3.4/8, mb1mx3.2/48, mbtmp3.4/8, ML3.2/6, MS2.4/1, Ms1 2.5/1, ms1mx1.8/32, Error ellipse: s-maj=20.0km s-min=18.2km az=139.0*
*ATH **07** 03:21:39.7, 37.°26N×28.°64E, h11km±2km, ML3.0/2, Error ellipse: s-maj=2.6km s-min=1.2km az=89.0*
*ISCJB **07** 03:21:40.6±0.4, 37.°22N±0.°02×28.°64E±0.°02, h2km±3km, mb3.2/2, MS2.3/1, Error ellipse: s-maj=2.9km s-min=2.4km az=167.0*
*CSEM **07** 03:21:40.9±0.1, 37.°19N×28.°65E, h2km, ML3.0, Error ellipse: s-maj=2.7km s-min=2.5km az=167.0*
*ISK **07** 03:21:40.4, 37.°18N×28.°63E, h7km, ML3.1*
*THE **07** 03:21:41.2, 37.°17N×28.°60E, h0km±1km, ML3.0/3, Error ellipse: s-maj=1.5km s-min=1.0km az=35.0*
ISC 07 03:21:40.9±1.0, 37.°20N±0.°02×28.°65E±0.°02, h6km±8km, n142, σ1§07/177, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	Yerkesik	0.30	258	*e*PG	Pg	03 21 46.6	-0.2
YER				*e*SG	Sg	03 21 51.1	+0.3
YER	Yerkesik	0.30	258	P	Pg	03 21 46.2	-0.6
YER				S	Sg	03 21 51.1	+0.3
YER	Yerkesik	0.30	258	P	Pg	03 21 46.2	-0.6
YER	Yerkesik	0.30	258	*e*Pg	Pg	03 21 46.6	-0.2
YER				S	Sg	03 21 51.1	+0.3
TURN	Turunc	0.33	187	*i*P	Pb	03 21 49.7	+0.5
TURN				*i*S	Sb	03 21 58.4	+3.7
DALY	Dalyan (Mu¨la	0.38	180	*e*PG	Pg	03 21 47.5	-0.8
DALY	Dalyan (Mu¨la	0.38	180	*e*Pg	Pg	03 21 47.5	-0.8
DNZL	Cakiroluk	0.58	33	P	Pg	03 21 51.6	-0.6
DNZL				S	Sg	03 22 00.9	+1.1
DNZL	Cakiroluk	0.58	33	*i*P	Pg	03 21 51.6	-0.6
DNZL				*i*S	Sg	03 22 00.9	+1.1
DENT	Denizli	0.63	29	*e*PG	Pg	03 21 52.9	-0.2
DENT	Denizli	0.63	29	*e*Pg	Pg	03 21 52.9	-0.2
FETY	Fethiye	0.66	148	*e*PG	Pg	03 21 53.0	-0.6
FETY	Fethiye	0.66	148	P	Pg	03 21 52.8	-0.8
FETY				S	Sb	03 22 05.1	+0.8
FETY	Fethiye	0.66	148	*e*Pg	Pg	03 21 53.0	-0.6
GLHS	Glhisar (BURDU	0.68	93	*e*PG	Pb	03 21 54.5	-0.8
GLHS				*e*SG	Sb	03 22 04.4	-0.6
GLHS	Glhisar (BURDU	0.68	93	*e*Pg	Pb	03 21 54.5	-0.8
GLHS				*e*Sg	Sb	03 22 04.4	-0.6
GOLH	Golhisar	0.73	87	P	Pg	03 21 54.4	-0.5
GOLH				S	Sb	03 22 06.3	-0.1
GOLH	Golhisar	0.73	87	*i*P	Pg	03 21 54.4	-0.5
GOLH				*i*S	Sb	03 22 06.3	-0.1
AYDN	Tasoluk	0.77	307	P	Pg	03 21 55.4	-0.3
AYDN				S	Sg	03 22 06.6	+0.9
AYDN	Tasoluk	0.77	307	*i*P	Pg	03 21 55.4	-0.3
AYDN				*i*S	Sg	03 22 06.6	+0.9
AYDB	Zeytinkoy-Aydi	0.96	321	*e*PG	Pg	03 21 59.1	-0.3
AYDB	Zeytinkoy-Aydi	0.96	321	*e*Pg	Pg	03 21 59.1	-0.3
BDRM	Kayabasi	0.97	263	P	Pg	03 21 58.7	-0.9
BDRM				S	Sb	03 22 14.6	+1.2
BDRM	Kayabasi	0.97	263	*i*P	Pg	03 21 58.7	-0.9
BDRM				*i*S	Sb	03 22 14.6	+1.2
ARG	Arkhangelos	1.07	203	P	Pg	03 22 00.0	-1.4
ARG				S	Sn	03 22 17.0	-0.6
ARG	Arkhangelos	1.07	203	P	Pg	03 22 00.0	-1.4
ARG				S	Sn	03 22 17.3	-0.3
BODT	Bodrum	1.08	263	*e*PG	Pg	03 22 01.1	-0.6
BODT				*e*SG	Sb	03 22 16.7	+0.3
BODT	Bodrum	1.08	263	P	Pg	03 22 00.5	-1.1
BODT				S	Sb	03 22 17.3	+0.9
BODT	Bodrum	1.08	263	P	Pg	03 22 00.5	-1.1
BODT	Bodrum	1.08	263	*e*Pg	Pg	03 22 01.1	-0.6
BODT				*e*Sg	Sb	03 22 16.7	+0.3
BODT				S	Sb	03 22 17.3	+0.9
ELL	Elmali	1.10	114	*e*PN	Pb	03 22 02.4	-0.1
ELL	Elmali	1.10	114	*e*Pn	Pb	03 22 02.4	-0.1
AKAS	Kas	1.23	141	P	Pb	03 22 04.6	-0.1
AKAS	Kas	1.23	141	*i*P	Pb	03 22 04.6	-0.1
AKAS				*i*S	Sn	03 22 24.7	+2.8
GCAM	G?zelcaml?	1.23	294	P	Pg	03 22 04.2	-0.4
GCAM				S	Sg	03 22 20.5	-0.1
GCAM	G?zelcaml?	1.23	294	*i*P	Pg	03 22 04.2	-0.4
GCAM				*i*S	Sg	03 22 20.5	-0.1
KSL	Kastellorizon	1.29	144	P	Pg	03 22 04.8	-0.8
KSL				S	Sn	03 22 24.2	+1.2
KSL	Kastellorizon	1.29	144	P	Pb	03 22 05.3	-0.3
KSL				S	Sn	03 22 23.4	+0.4
KSL				AML	AML	03 22 27.8	
	comp=E,1257μm,0.9s						
KSL				AML	AML	03 22 28.9	
	comp=N,747μm,0.6s						
MANT	Manisa	1.29	357	P	Pg	03 22 04.8	-0.9
MANT				S	Sb	03 22 23.4	+0.6
MANT	Manisa	1.29	357	*i*P	Pg	03 22 04.8	-0.9
MANT				*i*S	Sb	03 22 23.4	+0.6
KULA	Kula-Manisa	1.31	0	*e*PN	Pg	03 22 05.4	-0.8
KULA	Kula-Manisa	1.31	0	P	Pg	03 22 05.2	-1.0
KULA				S	Sn	03 22 24.8	+0.9
KULA	Kula-Manisa	1.31	0	P	Pg	03 22 05.2	-1.0
KULA				S	Sn	03 22 24.8	+0.9
KHL	Karahalli	1.32	31	*e*PN	Pg	03 22 06.1	-0.2
KHL	Karahalli	1.32	31	*e*Pn	Pg	03 22 06.1	-0.2
NIS1	Nisyros Isl.	1.32	244	*e*PN	Pg	03 22 05.3	-0.9
NIS1	Nisyros Isl.	1.32	244	P	Pg	03 22 05.2	-1.1
NIS1	Nisyros Isl.	1.32	244	P	Pg	03 22 05.2	-1.1
NIS1	Nisyros Isl.	1.32	244	P	Pg	03 22 05.6	-0.7
KHAL	Karahalli	1.35	29	P	Pg	03 22 04.9	-1.9
KHAL	Karahalli	1.35	29	*i*P	Pg	03 22 04.9	-1.9
KORT	Korkueli	1.37	98	P	Pb	03 22 08.0	+0.8
KORT	Korkueli	1.37	98	*i*P	Pb	03 22 08.0	+0.8
SMG	Samos	1.53	290	P	Pn	03 22 07.9	-1.0
SMG				S	Sn	03 22 29.3	+0.2
SMG	Samos	1.53	290	P	Pn	03 22 07.9	-1.0
SMG				S	Sn	03 22 29.3	+0.2
SMG	Samos	1.53	290	P	Pn	03 22 07.9	-1.0
BCK	Bucak	1.57	80	*e*PN	Pn	03 22 09.7	+0.3
BCK	Bucak	1.57	80	*e*Pn	Pn	03 22 09.7	+0.3
ISP	Isparta	1.61	67	*e*PN	Pn	03 22 10.5	+0.4
ISP	Isparta	1.61	67	P	Pn	03 22 10.7	+0.6
ISP	Isparta	1.61	67	*e*Pn	Pn	03 22 10.5	+0.4
IZM	Izmir	1.63	318	*e*PN	Pn	03 22 09.7	-0.5
IZM	Izmir	1.63	318	*e*Pn	Pn	03 22 09.7	-0.5
ANTB	Antalya	1.63	100	*e*PN	Pn	03 22 10.4	+0.2
ANTB	Antalya	1.63	100	*e*Pn	Pn	03 22 10.4	+0.2
DGB	˙zmir	1.64	302	*i*P	Pn	03 22 09.6	-0.7
BLCB	Balcova	1.74	313	*e*PN	Pn	03 22 12.1	+0.4
BLCB	Balcova	1.74	313	*e*Pn	Pn	03 22 12.1	+0.4
AKHS	Akhisar	1.80	339	P	Pn	03 22 11.8	-0.8
AKHS	Akhisar	1.80	339	*i*P	Pn	03 22 11.8	-0.8
AKS	Akhisar	1.80	339	*e*PN	Pn	03 22 13.3	+0.6
AKS	Akhisar	1.80	339	*e*Pn	Pn	03 22 13.3	+0.6
DEMI	Demirci	1.84	2	P	Pn	03 22 13.0	-0.2
DEMI	Demirci	1.84	2	*i*P	Pn	03 22 13.0	-0.2
BAGO	Egridir - ISPA	1.87	64	*i*P	Pn	03 22 14.3	+0.7
SUTC	Sutluce-Ispart	1.89	81	*e*PN	Pn	03 22 14.4	+0.4
SUTC	Sutluce-Ispart	1.89	81	*e*Pn	Pn	03 22 14.4	+0.4
ZEY	˙zmir	2.00	302	*i*P	Pn	03 22 13.5	-1.8
GDZ	Gediz	2.00	19	P	Pn	03 22 15.6	+0.2
GDZ	Gediz	2.00	19	*i*P	Pn	03 22 15.6	+0.2
KARP	Karpathos	2.04	217	*e*PN	Pn	03 22 16.1	+0.2
KARP	Karpathos	2.04	217	*e*Pn	Pn	03 22 16.1	+0.2
KARP	Karpathos	2.04	217	P	Pn	03 22 16.8	+0.9
KARP				S	Sb	03 22 43.6	-0.5
KARP	Karpathos	2.04	217	P	Pn	03 22 16.8	+0.9
KARP				S	Sb	03 22 43.6	-0.5
KARP				AML	AML	03 22 46.8	
	comp=E,422μm,0.4s						
KARP				AML	AML	03 22 48.1	
	comp=N,588μm,0.4s						
DKL	Dikili	2.32	324	*e*PN	Pn	03 22 20.1	+0.5
DKL	Dikili	2.32	324	*e*Pn	Pn	03 22 20.2	+0.5
TVSB	Tavsanli	2.34	16	*e*PN	Pn	03 22 21.3	+1.3
TVSB	Tavsanli	2.34	16	*e*Pn	Pn	03 22 21.3	+1.3
CHOS	Chios island	2.37	301	*e*PN	Pn	03 22 20.8	+0.3
CHOS	Chios island	2.37	301	*e*Pn	Pn	03 22 20.8	+0.3
CHOS	Chios island	2.37	301	P	Pn	03 22 22.1	+1.6
CHOS	Chios island	2.37	301	P	Pn	03 22 22.1	+1.6
DURS	Dursunbey	2.40	357	P	Pn	03 22 20.6	-0.3
DURS	Dursunbey	2.40	357	*i*P	Pn	03 22 20.6	-0.3
APE	Apeiranthos	2.50	268	P	Pn	03 22 21.6	-0.6
APE	Apeiranthos	2.50	268	P	Pn	03 22 21.6	-0.6
BALB	Balikesir	2.51	346	*e*PN	Pn	03 22 23.0	+0.7
BALB	Balikesir	2.51	346	*e*Pn	Pn	03 22 23.0	+0.7
BALY	Balya	2.66	343	P	Pn	03 22 24.2	-0.3
BALY	Balya	2.66	343	*i*P	Pn	03 22 24.2	-0.3
SIGR	SIGRI	2.98	313	*e*PN	Pn	03 22 29.7	+0.9
SIGR	SIGRI	2.98	313	*e*Pn	Pn	03 22 29.7	+0.9
KIZT	Kizilcal	3.05	56	*e*PN	Pn	03 22 31.1	+1.2
KIZT	Kizilcal	3.05	56	*e*Pn	Pn	03 22 31.1	+1.2
KCTX	Karacabey (Bur	3.07	356	*e*PN	Pn	03 22 31.4	+1.3
KCTX	Karacabey (Bur	3.07	356	*e*Pn	Pn	03 22 31.4	+1.3
NPS	Neapolis	3.12	233	P	Pn	03 22 32.2	+1.4
NPS	Neapolis	3.12	233	P	Pn	03 22 32.2	+1.4
SVRH	Sivrihisar-ESK	3.19	44	*e*PN	Pn	03 22 33.1	+1.4
SVRH	Sivrihisar-ESK	3.19	44	*e*Pn	Pn	03 22 33.1	+1.4
IZI	Iznik	3.20	11	*e*PN	Pn	03 22 32.6	+0.7
IZI	Iznik	3.20	11	*e*Pn	Pn	03 22 32.6	+0.7
EDC	Edincik	3.20	349	*e*PN	Pn	03 22 33.4	+1.5
EDC	Edincik	3.20	349	*e*Pn	Pn	03 22 33.4	+1.5
LAST	Lasithi	3.27	233	P	Pn	03 22 35.7	+2.8
LAST	Lasithi	3.27	233	P	Pn	03 22 35.7	+2.8
ADVT	Abdulvahap	3.34	14	*e*PN	Pn	03 22 35.1	+1.4
ADVT	Abdulvahap	3.34	14	*e*Pn	Pn	03 22 35.1	+1.4
MRMT	Marmara Adasi	3.50	347	*e*PN	Pn	03 22 37.4	+1.4
MRMT	Marmara Adasi	3.50	347	*e*Pn	Pn	03 22 37.4	+1.4
GULT	Gulveren	3.54	24	*e*PN	Pn	03 22 38.0	+1.4
GULT	Gulveren	3.54	24	*e*Pn	Pn	03 22 38.0	+1.4
IDI	Anoyia	3.59	239	Pn	Pn	03 22 38.5	+1.3
	comp=N,3.1nm,0.3s,baz=336,slow=9.8,SNR=18						
IDI				Sn	Sn	03 23 22.7	+2.8
	comp=N,2.8nm,0.3s,baz=276,slow=19,SNR=4.1						
IDI	Anoyia	3.59	239	P	Pn	03 22 38.8	+1.6
IDI	Anoyia	3.59	239	P	Pn	03 22 38.8	+1.6
GELI	Tayfur-Gelibol	3.62	333	*e*PN	Pn	03 22 39.1	+1.5
GELI	Tayfur-Gelibol	3.62	333	*e*Pn	Pn	03 22 39.1	+1.5
RKY	Sarkoy-Tekirda	3.67	342	*e*PN	Pn	03 22 39.7	+1.4
RKY	Sarkoy-Tekirda	3.67	342	*e*Pn	Pn	03 22 39.7	+1.4
LIA	Limnos Island	3.83	315	P	Pn	03 22 40.7	+0.3
SMTH	Samothraki Isl	4.08	324	P	Pn	03 22 43.3	-0.6
SMTH	Samothraki Isl	4.08	324	P	Pn	03 22 43.3	-0.6
ALN	Alexandroupoli	4.21	332	*e*PN	Pn	03 22 47.5	+1.8
ALN	Alexandroupoli	4.21	332	*e*Pn	Pn	03 22 47.5	+1.8
BRTR	Keskin Array B	4.66	56	Pn	Pn	03 22 53.0	+1.1
	comp=N,0.7nm,0.3s,baz=238,slow=16,SNR=17						
BRTR				Sn	Sn	03 23 47.7	+1.3
	comp=N,0.3nm,0.3s,baz=238,slow=25,SNR=4.8						
MMAI	Mount Meron Ar	6.93	125	Pn	Pn	03 23 22.2	-0.9
	comp=N,1.7nm,0.3s,baz=308,slow=13,SNR=7.1						
MMAI				Sn	Sn	03 24 38.7	-3.7
	comp=N,1.4nm,0.3s,baz=307,slow=26,SNR=3.9						
MLR	Muntele Rosu	8.53	347	Pn		03 23 48.5	+3.4
	comp=N,0.0nm,0.3s,baz=151,slow=19,SNR=3.2						
EIL	Elat	9.17	143	Pn	Pn	03 23 51.9	-1.9
	comp=N,0.3nm,0.3s,baz=338,slow=5.4,SNR=2.8						
EIL				Sn	Sn	03 25 24.1	-13
	comp=N,0.1nm,0.3s,baz=280,slow=18,SNR=2.1						
VAE	Valguarnera	11.34	276	Pn	Pn	03 24 25.1	+1.5
	comp=N,1.1nm,0.3s,baz=81,slow=11,SNR=3.7						
FINES	FINESS Array B	24.32	357	P	P	03 26 59.1	-0.1
	comp=N,0.7nm,0.7s,baz=163,slow=10,SNR=2.5						
NOA	NORSAR Array B	26.28	341	LR	LR	03 37 58.2	
	comp=N,8.1nm,18.8s,baz=50,slow=37						
TORD	Torodi Ar. Bea	33.96	232	P	P	03 28 23.5	-1.8
	comp=N,0.2nm,0.5s,baz=37,slow=8.9,SNR=6.3						

*NIED **07** 03:21:00, 28.°70N×129.°60E, h20km, Mw4.2 Best double couple: M0=2.22000×10^15 NP1:φ=102.00000°, δ=23.00000°, λ=-136.00000°. NP2:φ=331.00000°, δ=74.00000°, λ=-73.00000°.*
*IDC **07** 03:21:46.4±0.6, 28.°61N×129.°37E, h0km, mb3.8/12, mb1 4.0/16, mb1mx3.8/66, mbtmp3.9/16, ML3.6/3, MS3.2/7, Ms1 3.2/7, ms1mx2.9/40, Error ellipse: s-maj=21.7km s-min=14.2km az=84.0*
*ISCJB **07** 03:21:49.4±0.4, 28.°66N±0.°02×129.°63E±0.°04, h31km±3km, mb3.9/15, MS3.2/4, Error ellipse: s-maj=6.2km s-min=3.2km az=25.8*
*JMA **07** 03:21:50.0±0.1, 28.°67N×129.°59E, h17km±4km, M3.9*
JMA Felt I J1.
*NEIC **07** 03:21:52.3±0.8, 28.°60N×129.°60E, h41km±8km, mb4.2/3, Error ellipse: s-maj=10.1km s-min=7.3km az=118.0*
NEIC Recorded [1 JMA] on Amami-oshima and Kikaiga-shima.
ISC 07 03:21:49.8±0.5, 28.°65N±0.°03×129.°62E±0.°04, h20km±3km, n52, σ1§38/55, mb4.1/15, MS3.2/4, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAM	Amami Oshima	0.24	183	P	Pb	03 21 55.3	-0.5
JAM				S	Sb	03 21 59.5	-0.3
JZK	Kikaishima	0.46	137	P	Pb	03 21 59.5	+0.4
JZK				S	Sn	03 22 07.5	-1.3
JAMN	Amaminishikomi	0.56	224	P	Pb	03 22 01.0	-0.1
JAMN				S	Sb	03 22 09.2	+0.5
JTAJ	Takarajima	0.62	324	P	Pb	03 22 01.8	-0.2
JTAJ				S	Sb	03 22 10.2	-0.1
JTK	Tokunoshima	1.04	215	P	Pn	03 22 08.2	-1.1
JTK				S	Sn	03 22 22.9	-0.4
JNN	Nakanoshima	1.21	11	P	Pn	03 22 09.8	-1.8
JNN				*e*S	Sn	03 22 25.2	-2.1
JOKE	Okinoerabujima	1.58	216	P	Pn	03 22 17.1	+0.4
JOKE				*e*S	Sn	03 22 37.1	+0.5
JYAK	Yakushimahirau	1.76	26	P	Pn	03 22 17.3	-1.9
JKC	Kuchinoerabu	1.87	15	P	Pn	03 22 19.2	-1.5
JKC				S	Sn	03 22 41.2	-2.5
JOW	Kunigami	2.17	214	P	Pn	03 22 26.0	+1.2
JOW				*e*S	Sn	03 22 50.7	-0.4
JOW	Kunigami	2.17	214	*e*Pn	Pn	03 22 25.9	+1.1
JIH	Iheya	2.17	223	*e*S	Sn	03 22 49.7	-1.5
JTN	Tanegashima 3	2.32	30	P	Pn	03 22 28.0	+1.1
JNTH	Nagotoyohara	2.55	214	P	Pn	03 22 31.5	+1.4
JNTH				*e*S	Sn	03 23 00.4	-0.1
JAGN	Aguni-jima	2.94	226	P	Pn	03 22 36.3	+0.9
JAGN				S	Sn	03 23 09.9	-0.3
JJT2	Tamagusuku 2	3.00	214	P	Pn	03 22 37.9	+1.6
JKE	Kume jima 2	3.42	228	P	Pn	03 22 42.8	+0.8
JKE				*e*S	Sn	03 23 21.4	-0.5
JNU	Nakatsue	4.59	13	Pn	Pn	03 22 59.6	+1.5
	4.4nm,0.3s,baz=222,slow=5.3,SNR=33						
JNU				Sn	Sn	03 23 54.1	+3.4
	1.0nm,0.3s,baz=165,slow=19,SNR=2.0						
JNU				LR	LR	03 25 06.9	
	comp=Z,244nm,18.2s,baz=125,slow=43						
YHNB	Yeheng	8.37	244	*e*Pn	Pn	03 23 50.8	+0.7
	6.5nm,0.6s						
KSAR	Wonju Array Be	8.89	351	Pn	Pn	03 24 00.2	+3.2
KSRS	Korea Array	8.89	351	Pn	Pn	03 24 00.2	+3.1
	0.2nm,0.3s,baz=172,slow=14,SNR=5.5						
KSRS				LR	LR	03 27 39.4	
	comp=Z,134nm,18.5s,baz=165,slow=40						
MAJO	Matsushiro	10.69	40	*e*Pn	Pn	03 24 24.1	+2.3
	8.6nm,0.8s						
MJAR	Matsushiro Arr	10.69	40	Pn	Pn	03 24 22.6	+0.8
	0.4nm,0.3s,baz=231,slow=15,SNR=5.7						
MJAR				LR	LR	03 28 47.7	
	comp=Z,65nm,19.8s,baz=220,slow=39						
CBIJ	Chichi jima	11.23	95	*e*Pn	Pn	03 24 28.4	-0.8
JCJ	Chichijima	11.23	95	Pn	Pn	03 24 29.1	0.0
	baz=270,slow=20						
ASAJ	Asahikawa	18.60	30	P	Pn	03 26 07.8	+1.7
	0.3nm,0.3s,baz=189,slow=8.9,SNR=5.9						
PETK	Petropavlovsk-	32.00	32	LR	LR	03 42 04.7	
	comp=Z,46nm,18.1s,baz=241,slow=38						
YAK	Yakutsk	33.38	0	LR	LR	03 44 00.1	
	comp=Z,36nm,19.5s,baz=188,slow=40						
H11N2	WAKE ISLAND Hy	35.03	96	T	T	04 05 36.5	
	baz=290,slow=75,SNR=8.2						
H11N1	WAKE ISLAND Hy	35.03	96	T	T	04 05 35.0	
	baz=290,slow=75,SNR=6.9						
H11N3	WAKE ISLAND Hy	35.04	96	T	T	04 05 35.8	
	baz=290,slow=75,SNR=7.1						
H11S3	WAKE ISLAND Hy	35.32	98	T	T	04 05 58.0	
	baz=291,slow=75						
H11S1	WAKE ISLAND Hy	35.33	98	T	T	04 05 58.7	
	baz=291						
H11S2	WAKE ISLAND Hy	35.34	98	T	T	04 05 58.0	
	baz=291,slow=75						
MKAR	Makanchi Array	40.90	310	P	P	03 29 29.8	-0.8
	0.2nm,0.5s,baz=100,slow=8.9,SNR=2.4						
PMG	Port Moresby	41.45	153	LR	LR	03 43 23.1	
	comp=Z,34nm,20.7s,baz=326,slow=31						
TIXI	Tiksi	43.05	360	LR	LR	03 50 03.1	
	comp=Z,36nm,19.1s,baz=7.0,slow=39						
KURK	Kurchatov	43.96	315	P	P	03 29 54.0	-1.3
KURBB	Kurchatov Arra	44.00	314	P	P	03 29 54.0	-1.7
	0.3nm,0.3s,baz=99,slow=8.8,SNR=2.6						
TKM2	Tokmak 2	45.34	303	*e*P	P	03 30 06.7	0.0
	1.4nm,0.6s						
FITZ	Fitzroy Crossi	46.64	185	P	P	03 30 16.5	-0.4
	2.5nm,0.6s,baz=359,slow=13,SNR=5.2						
WRA	Warramunga Arr	48.52	174	P	P	03 30 30.9	-0.6
	1.2nm,0.5s,baz=354,slow=8.3,SNR=14						
BVAR	Borovoye Array	49.33	317	P	P	03 30 36.6	-0.8
	0.5nm,0.4s,baz=91,slow=9.4,SNR=3.3						
BRVK	Borovoye	49.39	317	*e*P	P	03 30 38.2	+0.3
	1.4nm,0.6s						
ASAR	Alice Springs	52.18	175	P	P	03 30 59.0	-0.2
	1.3nm,0.5s,baz=6.9,slow=14,SNR=22						
STKA	Stephens Creek	61.26	168	P	P	03 32 03.4	-0.1
	1.5nm,0.7s,baz=334,slow=10,SNR=3.5						
ILAR	Eielson Array	61.73	29	P	P	03 32 07.7	+1.3
	0.4nm,0.7s,baz=289,slow=7.4,SNR=6.5						
DOT	Dot Lake	63.12	30	*e*P	P	03 32 16.9	+1.1
	4.2nm,0.7s						
INK	Inuvik	66.19	24	P	P	03 32 37.3	+1.7
	0.7nm,0.6s,baz=309,slow=8.2,SNR=5.6						
FINES	FINESS Array B	71.37	330	P	P	03 33 06.2	-1.8
	1.5nm,0.9s,baz=62,slow=4.5,SNR=11						
YKA	Yellowknife Ar	75.82	26	P	P	03 33 34.2	+0.1
	0.5nm,0.8s,baz=301,slow=5.4,SNR=7.9						
BRTR	Keskin Array B	76.53	308	P	P	03 33 37.7	-1.1
	3.3nm,1.2s,baz=107,slow=3.5,SNR=4.9						

*IDC **07** 03:38:59.5±2.0, 46.°31N×153.°44E, h0km, mb4.1/14, mb1 4.1/17, mb1mx3.8/57, mbtmp4.0/17, ML2.9/3, MS3.1/4, Ms1 3.1/4, ms1mx2.6/44, Error ellipse: s-maj=50.3km s-min=20.9km az=168.0*
*ISCJB **07** 03:39:02.1±0.7, 46.°43N±0.°07×153.°35E±0.°10, h24km, mb4.0/21, MS3.5/2, Error ellipse: s-maj=13.7km s-min=3.9km az=139.0*
*NEIC **07** 03:39:03.6±3.0, 46.°36N×153.°44E, h24km±19km, mb4.4/3, Error ellipse: s-maj=24.1km s-min=9.0km az=152.0*
*MOS **07** 03:39:03.7±1.1, 46.°62N×153.°36E, h30km, mb4.4/12, Error ellipse: s-maj=13.5km s-min=9.7km az=80.1*
*SKHL **07** 03:39:05.4±0.3, 46.°50N×153.°40E, h52km±5km, mb5.1/7, mbv5.4/3, msh4.7/2*
ISC 07 03:39:04.1±1.0, 46.°4N±0.°1×153.°34E±0.°09, h24km, n83, σ1§79/85, mb4.2/21, 4C-2D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUR	Kuril'sk	4.01	254	*c*i*P*N	Pn	03 40 07.6	+3.6
KU

JMP	Maruseppu	7.46 255	P	Pn	03 40 54.3	+2.9
JAR	Ashorobuto	7.49 249	P	Pn	03 40 53.6	+1.8
JAR			eS	Sn	03 42 16.3	+0.3
JOB	Onbets	7.64 246	P	Pn	03 40 54.2	+0.3
JKK2	Kamakawa 2	7.92 255	P	Pn	03 41 01.0	+3.3
JKA	Kamikawa-asahi	7.93 257	eP	Pn	03 40 58.0	+0.2
ASAJ	Asahikawa	7.93 257	Pn	Pn	03 40 58.0	+0.2
	comp=E,0.4nm,0.3s,baz=94,slow=14,SNR=1.8					
ASAJ			LR	LR	03 43 48.7	
	comp=E,44nm,21.7s,baz=268,slow=36					
UGL	Uglegorsk	8.04 293	eP	Pn	03 41 02.5	+3.1
JCH	Churui	8.09 245	P	Pn	03 41 00.5	+0.5
JCH			eS	Sn	03 42 26.8	-3.9
TYV	Tymovskoe	8.34 306	eP	Pn	03 41 05.5	+2.0
TYV			AMB	AMB	03 41 06.7	
	comp=E,30nm,0.4s					
JNB	Noboribetsu	9.65 250	eS	Sn	03 43 09.0	0.0
JKB	Kayabe	9.95 247	P	Pn	03 41 25.3	-0.1
JKB			eS	Sn	03 43 09.7	-6.5
NKL	Nikolayevsk	10.58 314	eP	Pn	03 41 34.0	0.0
JOSM	Okushiri--Mats	10.86 251	P	Pn	03 41 38.6	+0.7
HABR	Khabarovsk	12.55 286	ePN	Pn	03 41 55.1	-5.9
HABR			pmax	pmax		
	comp=N,8.0nm,0.8s					
HABR			pmax	pmax		
	comp=Z,11nm,1.6s					
HABR			pmax	pmax		
	comp=E,22nm,1.6s					
HABR			MLR	MLR		
	comp=Z,22nm,17.0s					
HABR	Khabarovsk	12.55 286	eP	Pn	03 41 55.1	-5.9
HABR			AMB	AMB	03 41 55.9	
	comp=Z,10.0nm,1.6s					
HABR			AMS	AMS	03 46 45.0	
	comp=Z,20nm,17.0s					
KLR	Kul'dur	14.76 289	LR	LR	03 48 28.3	
	comp=Z,24nm,18.1s,baz=120,slow=38					
USRK	Ussuriysk Ar.	15.19 269	Pn	Pn	03 42 35.9	-1.0
	comp=Z,0.1nm,0.3s,baz=75,slow=11,SNR=2.0					
KROS	Kirovskiy	18.52 305	eP	Pn	03 43 20.4	+1.6
BILL	Bilibino	22.66 13	⇓eP	P	03 44 03.5	+0.3
BILL			pmax	pmax		
	comp=Z,2.0nm,1.1s					
BILL	Bilibino	22.66 13	eP	P	03 44 03.5	+0.3
BOD	Bodaibo	26.31 310	eP	P	03 44 36.7	-0.9
BOD			pmax	pmax		
	comp=Z,3.0nm,1.3s					
BOD	Bodaibo	26.31 310	eP	P	03 44 36.7	-0.9
H11N2	WAKE ISLAND Hy 28.87 153		T	T	04 16 39.2	
	baz=340,slow=76,SNR=4.1					
H11N1	WAKE ISLAND Hy 28.89 153		T	T	04 16 39.2	
	baz=340,slow=76,SNR=4.4					
H11N3	WAKE ISLAND Hy 28.89 153		T	T	04 16 39.2	
	baz=340,slow=76,SNR=3.7					
H11S1	WAKE ISLAND Hy 29.99 154		T	T	04 18 05.1	
	baz=341,slow=76,SNR=6.5					
H11S3	WAKE ISLAND Hy 29.97 154		T	T	04 18 05.2	
	baz=341,slow=76,SNR=5.3					
H11S2	WAKE ISLAND Hy 29.98 154		T	T	04 18 05.1	
	baz=341,slow=76,SNR=7.7					
ZALV	Zalesovo Beam	42.92 306	P	P	03 46 59.5	-1.0
	comp=Z,1.0nm,0.4s,baz=55,slow=6.5,SNR=5.7					
ZALV	Zalesovo Beam	42.92 306	eP	P	03 46 59.9	-0.7
ZALV			pmax	pmax		
	comp=Z,1.0nm,0.4s					
MKAR	Makanchi Array	47.23 298	P	P	03 47 34.9	0.0
	comp=Z,2.0nm,0.7s,baz=69,slow=7.8,SNR=14					
MKAR			LR	LR	04 07 48.5	
	comp=Z,19nm,19.4s,baz=9.5,slow=36					
MKAR	Makanchi Array	47.23 298	eP	P	03 47 35.2	+0.3
MKAR			pmax	pmax		
	comp=Z,2.0nm,0.7s					
MKAR	Makanchi Array	47.23 298	eP	P	03 47 35.2	+0.3
KURK	Kurchatov	47.67 304	P	P	03 47 38.6	+0.4
KURK			pmax	pmax		
	comp=Z,1.0nm,0.4s					
KURK	Kurchatov	47.67 304	P	P	03 47 38.5	+0.4
KURK	Kurchatov	47.67 304	eP	P	03 47 38.6	+0.4
KURBB	Kurchatov Arra	47.76 304	P	P	03 47 38.5	-0.4
	comp=Z,1.9nm,0.6s,baz=70,slow=8.4,SNR=11					
SIJI	Sorong	50.96 209	LR	LR	04 06 49.6	
	comp=Z,152nm,20.9s,baz=358,slow=33					
YKA	Yellowknife Ar	51.08 37	P	P	03 48 04.2	+0.1
	comp=Z,0.2nm,0.7s,baz=294,slow=6.7,SNR=4.3					
RES	Resolute Bay	51.08 18	P	P	03 48 07.6	+3.7
	comp=Z,0.4nm,0.5s,baz=337,slow=1.0,SNR=5.4					
BVAR	Borovoye Array	51.18 310	P	P	03 48 05.1	+0.1
	comp=Z,0.6nm,0.3s,baz=47,slow=6.9,SNR=4.7					
AAK	Ala-Archa	54.12 297⇑	eP	P	03 48 26.8	-0.3
AAK			pmax	pmax		
	comp=Z,4.0nm,0.8s					
AAK	Ala-Archa	54.12 297	eP	P	03 48 28.2	+1.1
	comp=Z,1.6nm,0.6s					
AAK	Ala-Archa	54.12 297	eP	P	03 48 26.8	-0.3
ARU	Arti	55.35 318	P	P	03 48 35.1	-0.5
	comp=Z,2.5nm,0.3s,baz=56,slow=7.5,SNR=5.4					
ARU	Arti	55.35 318	d iP	P	03 48 35.8	+0.2
ARU			S	S	03 56 13.6	-4.5
ARU			pmax	pmax		
	comp=Z,4.0nm,0.8s					
ARU	Arti	55.35 318	eP	P	03 48 35.8	+0.2
	comp=Z,4.2nm,0.6s					
ARU	Arti	55.35 318	eP	P	03 48 35.8	+0.2
ARCES	ARCESS Array B	58.20 341	P	P	03 48 56.0	+0.3
	comp=Z,2.2nm,0.8s,baz=40,slow=8.5,SNR=6.4					
ARCES	ARCESS Array B	58.20 341	eP	P	03 48 56.6	+1.0
ARCES			pmax	pmax		
	comp=Z,2.0nm,0.8s					
ARCES	ARCESS Array B	58.20 341	eP	P	03 48 56.6	+1.0
ABKAR	Akbulak array	58.75 310	eP	P	03 48 59.9	+0.1
	comp=Z,1.9nm,0.6s					
AKTO	Aktyubinsk	59.05 312	P	P	03 49 03.1	+1.2
	comp=Z,0.5nm,0.5s,baz=25,slow=7.7,SNR=4.4					
FINES	FINESS Array B	64.39 335	P	P	03 49 37.5	-0.1
	comp=Z,4.5nm,0.6s,baz=34,slow=7.6,SNR=52					
FINES	FINESS Array B	64.39 335	eP	P	03 49 37.6	0.0
FINES			pmax	pmax		
	comp=Z,5.0nm,0.6s					
FINES	FINESS Array B	64.39 335	eP	P	03 49 37.6	0.0
OBN	Obninsk	65.66 326	eP	P	03 49 45.1	-0.8
OBN			pmax	pmax		
	comp=Z,3.0nm,0.9s					
OBN	Obninsk	65.66 326	eP	P	03 49 45.1	-0.8
NB2	NORSAR Subarra	68.57 341	P	P	03 50 04.6	+0.2
	comp=Z,0.8nm,0.5s,baz=30,slow=6.5					
NOA	NORSAR Array B	68.57 341	P	P	03 50 04.7	+0.3
	comp=Z,0.9nm,0.6s,baz=28,slow=6.4,SNR=8.4					
HFS	Hagfors	68.80 340	P	P	03 50 05.8	0.0
	comp=Z,1.9nm,0.4s,baz=46,slow=4.7,SNR=25					
AKASG	Malin Array Be	71.89 326	P	P	03 50 24.7	-0.1
	comp=Z,2.2nm,0.5s,baz=33,slow=6.0,SNR=11					
AKASG	Malin Array Be	71.89 326	eP	P	03 50 25.0	+0.2
AKASG			pmax	pmax		
	comp=Z,2.0nm,0.5s					
EKA	Eskdalemuir Ar	76.68 346	P	P	03 50 52.7	+0.1
	comp=Z,0.3nm,0.3s,baz=21,slow=5.0,SNR=5.9					
CLL	Collm	76.81 336	i P	P	03 50 53.8	+0.3
CLL	Collm	76.81 336	i P	P	03 50 53.8	+0.3
CLL	Collm	76.81 336	i P	P	03 50 53.8	+0.3
TXAR	Lajitas Array	77.50 61	P	P	03 50 56.8	-1.1
	comp=Z,0.2nm,0.7s,baz=316,slow=3.8,SNR=2.9					

WEL 07 03:56:55.1±0.6, 37°.81S×175°.95E, h166km±5km, ML3.5/5, 2C-2D, Error ellipse: s-maj=5.4km s-min=4.2km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	Urewera	1.02	117	PN	Pn	03 57 21.6	+0.1
URZ				SN	Sn	03 57 41.3	-0.7
URZ				AML	AML	03 57 42.0	
MRHZ	Matea Rd	1.09	160	PN	Pn	03 57 22.6	+0.4
MWZ	Matawai	1.35	113	⇓PN	Pn	03 57 24.9	+0.3
MWZ				AML	AML	03 57 48.1	
MWZ				AML	AML	03 57 49.9	
BKZ	Black Stump Fm	1.42	163	⇑PN	Pn	03 57 25.1	-0.1
BKZ				AML	AML	03 57 49.0	
NMHZ	Naumai	1.46	153	PN	Pn	03 57 26.3	+0.8
HAZ	Te Kaha	1.46	89	PN	Pn	03 57 25.5	+0.1
SNGZ	Shannon Statio	1.47	132	PN	Pn	03 57 25.7	+0.2
SNGZ				SN	Sn	03 57 48.0	-1.1
MOVZ	Moawhango	1.61	185	PN	Pn	03 57 27.0	0.0
WHHZ	Waihua	1.62	142	PN	Pn	03 57 27.5	+0.3
TWGZ	Tauwhareparae	1.65	104	PN	Pn	03 57 27.5	0.0
KWHZ	Kaweka Forest	1.66	167	PN	Pn	03 57 27.5	0.0
ARHZ	Aropaoanui	1.67	151	PN	Pn	03 57 27.7	+0.1
BHHZ	Black Hill Sta	1.68	177	PN	Pn	03 57 27.6	-0.3
PKGZ	Pakihiroa	1.69	93	PN	Pn	03 57 27.5	-0.4
RIGZ	Rimuhau	1.69	123	PN	Pn	03 57 27.9	0.0
MCHZ	McNeill Hill	1.74	160	PN	Pn	03 57 28.6	+0.2
KNZ	Kokohu	1.82	132	PN	Pn	03 57 28.6	-0.6
KRHZ	Kereru	1.86	170	PN	Pn	03 57 29.3	-0.4
WMGZ	Waiomatatini S	1.96	91	PN	Pn	03 57 29.8	-0.9
WAZ	Wanganui	2.09	201	PN	Pn	03 57 31.9	-0.2
KAHZ	Kahuranaki	2.11	160	PN	Pn	03 57 31.9	-0.6
TSZ	Takapari Road	2.25	180	PN	Pn	03 57 31.9	-2.2
WPHZ	Waipukurau	2.29	170	PN	Pn	03 57 33.4	-1.1
PXZ	Pawanui	2.33	162	PN	Pn	03 57 33.9	-1.1
PXZ				AML	AML	03 58 07.0	
PXZ				AML	AML	03 58 18.1	
DVHZ	Dannevirke	2.50	176	PN	Pn	03 57 35.3	-1.6
PRHZ	Porangahau	2.52	168	PN	Pn	03 57 35.8	-1.4
POWZ	Post Office Ro	2.59	183	PN	Pn	03 57 36.5	-1.5
ANWZ	Angora Road	2.68	171	PN	Pn	03 57 37.8	-1.3
PRWZ	Pori Road	2.75	180	PN	Pn	03 57 38.4	-1.6
MRZ	Mangatainoka R	2.87	186	⇑PN	Pn	03 57 39.4	-2.1
BFZ	Birch Farm	2.88	175	PN	Pn	03 57 39.5	-2.2
TIWZ	Tintock	2.97	181	PN	Pn	03 57 40.5	-2.2
TIWZ				AML	AML	03 58 17.5	
OGWZ	Otaki Gorge	3.07	191	PN	Pn	03 57 42.0	-1.9
HOWZ	Holdsworth Sta	3.10	186	PN	Pn	03 57 41.9	-2.5
KIW	Kapiti Island	3.15	194	PN	Pn	03 57 42.7	-2.3
TMWZ	Te Maipa	3.30	181	PN	Pn	03 57 44.2	-2.6
MTW	Mount Morrison	3.37	186	PN	Pn	03 57 44.6	-3.0
DUWZ	D'Urville Isla	3.38	207	PN	Pn	03 57 45.8	-2.1
TRWZ	Traveller	3.59	183	PN	Pn	03 57 47.5	-3.1
PAWZ	Paruwai Farm	3.59	186	PN	Pn	03 57 47.4	-3.2
TCW	Tory Channel	3.64	200	PN	Pn	03 57 48.5	-2.5
MSWZ	Moikau Station	3.65	188	⇓PN	Pn	03 57 47.9	-3.3
PLWZ	Palliser	3.80	188	PN	Pn	03 57 49.6	-3.6
TUWZ	Tuamarina	3.94	203	PN	Pn	03 57 52.1	-2.8
KHZ	Kahutara	4.96	201	PN	Pn	03 58 04.6	-3.5

IDC 07 04:01:02.7±1.0, 37°.20N×144°.39E, h0km, mb3.6/5, mb1 3.8/6, mb1mx3.5/42, mbtmp3.6/6, ML3.6/1, MS2.6/3, Ms1 2.6/3, ms1mx2.2/35, Error ellipse: s-maj=38.9km s-min=21.1km az=110.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	5.00	264	Pn	Pn	04 02 19.8	+0.8
	2.4nm,0.3s,baz=87,slow=15,SNR=20						
MJAR				Sn	Sn	04 03 13.0	-4.5
	1.0nm,0.3s,baz=94,slow=26,SNR=6.7						
MJAR				LR	LR	04 04 21.8	
	comp=Z,68nm,20.3s,baz=85,slow=40						
MAT	Matsushiro	5.00	264	P	Pn	04 02 19.9	+0.9
MAT				S	Sn	04 03 12.9	-4.6
KSRS	Korea Array	13.12	276	LR	LR	04 08 33.9	
	comp=Z,20nm,21.7s,baz=9.5,slow=34						
KLR	Kul'dur	15.13	327	LR	LR	04 09 57.8	
	comp=Z,31nm,19.6s,baz=68,slow=35						
ILAR	Eielson Array	48.08	32	P	P	04 09 43.4	-0.3
	0.7nm,0.8s,baz=265,slow=7.0,SNR=7.9						
INK	Inuvik	53.15	27	P	P	04 10 22.5	+0.7
	0.4nm,0.5s,baz=294,slow=5.3,SNR=5.6						
WRA	Warramunga Arr	57.62	191	P	P	04 10 54.7	+0.2
	0.5nm,0.7s,baz=8.7,slow=7.2,SNR=3.8						
ASAR	Alice Springs	61.34	191	P	P	04 11 19.9	-0.3
	0.5nm,0.9s,baz=24,slow=7.1,SNR=3.4						
FINES	FINESS Array B	69.76	333	P	P	04 12 13.6	-0.7
	1.1nm,1.0s,baz=47,slow=10,SNR=2.6						

MEX 07 04:03:58.0±0.4, 16°.65N×98°.89W, h9km±5km, MD3.6, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PNIG	Pinotepa	0.77	109	eP	Pg	04 04 11.1	-1.8
PNIG				eS	Sg	04 04 21.3	-1.7
TLIG	Tlapa	0.96	19	eP	Pg	04 04 13.8	-2.8
TLIG				eS	Sg	04 04 26.6	-2.5
CAIG	El Cayaco	1.38	287	eP	Pn	04 04 20.1	-3.3
CAIG				eS	Sb	04 04 36.5	-5.2
VHO	Vista Hermosa	2.11	78	eP	Pn	04 04 30.8	-2.9
VHO				i S	Sn	04 04 55.7	-4.4

*IDC **07** 04:05:30.5±0.6, 9°.37N×125°.66E, h0km, mb4.0/15, mb1 4.2/15, mb1mx4.0/38, mbtmp4.0/15, MS3.5/12, Ms1 3.5/12, ms1mx3.2/41, Error ellipse: s-maj=39.7km s-min=13.2km az=86.0*

*MAN **07** 04:05:34, 9°.46N×125°.94E, h14km, mb4.9, ML3.9, MS3.9*

MAN INTENSITY III - CARRASCAL AND CANTILAN SURIGAO DEL SUR; INTENSITY II - CARMEN AND MADRID SURIGAO DEL SUR; INTENSITY I - CORTEZ SURIGAO DEL SUR; SOCORRO SURIGAO DEL SUR.

*ISCJB **07** 04:05:36.3±1.0, 9°.40N±0°.04×125°.90E±0°.09, h55km±10km, mb4. 1/22, MS3.5/10, Error ellipse: s-maj=15.3km s-min=5.9km az=170.0*

*NEIC **07** 04:05:38.0±1.4, 9°.37N×125°.73E, h56km±13km, mb4.5/7, Error ellipse: s-maj=17.7km s-min=7.6km az=85.0*

NEIC Felt [III PIVS] at Cantilan and Carrascal, [II PIVS] at Carmen and Madrid and [I PIVS] at Cortes and Socorro.

ISC 07 04:05:36.9±1.5, 9°.41N±0°.04×125°.89E±0°.09, h44km±15km, n53, σ2°.07/43, mb4.2/22, MS3.5/10, 2C-5D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CGP	Cagayan de Oro	1.51	231	⇓eP	Pn	04 05 59.7	-1.8
CGP				i S	Sn	04 06 20.5	+0.5
BUKP	Musuan	1.73	208	eP	Pn	04 06 04.2	-0.3
BUKP				eS	Sn	04 06 28.4	+3.0
PLP	Palo	1.96	333	⇓eP	Pn	04 06 06.2	-1.5
PLP				eS	Sn	04 06 28.4	-2.8
TBP	Tagbilaran	2.02	278	⇓eP	Pn	04 06 07.9	-0.6
OCLP	Ormoc	2.06	322	eP	Pn	04 06 10.1	+1.1
OCLP				eS	Sn	04 06 34.1	+0.5
LLP	Lapu-Lapu	2.10	296	⇓eP	Pn	04 06 11.1	+1.5
LLP				eS	Sn	04 06 40.0	+5.5
DMPH	Davao City--Mi	2.34	189	eS	Pn	04 06 09.0	-3.9
DAV	Davao City (W)	2.34	188	Pn	Pn	04 06 13.8	+0.8
	84nm,0.3s,baz=62,slow=7.3,SNR=4.3						
DAV				Lg	Lg	04 06 44.8	
	83nm,0.3s,baz=174,slow=22,SNR=4.8						
MATI	Mati	2.47	171	eP	Pn	04 06 15.0	+0.3
CTBH	Cotabato--PC H	2.71	217	⇓iP	Pn	04 06 18.5	+0.5
PAGZ	Pagadian	2.92	238	eP	Pn	04 06 22.0	+1.1
GUIM	Jordan	3.47	291	eP	Pn	04 06 32.1	+3.8
RCP	Roxas	3.76	305	⇑eP	Pn	04 06 34.9	+2.5
JAP	San Jose, Anti	4.10	289	⇑eP	Pn	04 06 27.6	-10
JAP				eS	Sn	04 07 15.5	-8.4
KAPI	Kappang	15.58	203	LR	LR	04 15 42.5	
	comp=Z,116nm,19.9s,baz=45,slow=40						
GUMO	Guam	19.05	76	LR	LR	04 17 22.2	
	comp=Z,84nm,18.8s,baz=206,slow=37						
JNU	Nakatsue	24.05	10	LR	LR	04 19 32.7	
	comp=Z,66nm,19.5s,baz=118,slow=35						
FITZ	Fitzroy Crossi	27.34	181	P	P	04 11 17.7	-0.2
	3.7nm,1.0s,baz=10,slow=12,SNR=3.4						
CMAR	Chiang Mai Arr	27.62	292	LR	LR	04 22 18.7	
	comp=Z,97nm,19.6s,baz=110,slow=37						
KSAR	Wonju Array Be	27.97	3	P	P	04 11 23.8	+0.4
KSRS	Korea Array	27.98	3	P	P	04 11 23.8	+0.3
	1.9nm,0.9s,baz=186,slow=11,SNR=6.4						
KSRS				LR	LR	04 22 26.6	
	comp=Z,74nm,21.3s,baz=189,slow=36						
MJAR	Matsushiro Arr	29.24	21	P	P	04 11 33.5	-1.3
	0.5nm,0.3s,baz=197,slow=7.6,SNR=3.5						
MJAR				LR	LR	04 22 29.6	
	comp=Z,105nm,19.7s,baz=205,slow=35						
WRAB	Tennant Creek	30.32	164	eP	P	04 11 44.4	-0.1
	6.7nm,1.2s						
WRA	Warramunga Arr	30.33	164	P	P	04 11 43.6	-0.9
	0.8nm,0.6s,baz=342,slow=8.2,SNR=10						
WRA				LR	LR	04 25 19.3	
	comp=Z,95nm,19.4s,baz=175,slow=39						
ASAR	Alice Springs	33.79	167	P	P	04 12 14.2	-0.7
	0.4nm,0.3s,baz=349,slow=7.4,SNR=9.1						
USRK	Ussuriysk Ar.	35.06	8	P	P	04 12 26.2	+0.6
	5.4nm,0.9s,baz=184,slow=7.3,SNR=8.3						
KLR	Kul'dur	40.00	6	P	P	04 13 08.7	+1.4
	2.0nm,0.6s,baz=237,slow=1.6,SNR=4.2						
H11S3	WAKE ISLAND Hy 40.53	73		T	T	04 56 06.4	
	baz=262,slow=74,SNR=170						
H11S1	WAKE ISLAND Hy 40.54	73		T	T	04 56 07.8	
	baz=262,slow=74,SNR=118						
H11S2	WAKE ISLAND Hy 40.55	73		T	T	04 56 09.1	
	baz=262,slow=74,SNR=176						
H11N1	WAKE ISLAND Hy 40.89	71		T	T	04 56 39.1	
	baz=265,slow=74,SNR=82						
H11N2	WAKE ISLAND Hy 40.90	71		T	T	04 56 35.0	
	baz=265,slow=74,SNR=60						
H11N3	WAKE ISLAND Hy 40.91	71		T	T	04 56 43.5	
	baz=265,slow=74,SNR=59						
STKA	Stephens Creek	43.72	161	P	P	04 13 38.2	+0.3
	2.5nm,0.5s,baz=343,slow=5.6,SNR=4.9						
PETK	Petropavlovsk-	50.57	24	P	P	04 14 32.6	+1.5
	2.9nm,0.5s,baz=187,slow=3.6,SNR=3.7						
MKAR	Makanchi Array	52.48	323	P	P	04 14 45.0	-0.5
	0.6nm,0.6s,baz=122,slow=7.1,SNR=4.3						
MKAR				LR	LR	04 36 32.9	
	comp=Z,56nm,20.5s,baz=125,slow=36						
EKS2	Erkin-Say	56.18	316	eP	P	04 15 11.2	-1.3
	3.9nm,1.0s						
TIXI	Tiksi	62.22	1	LR	LR	04 42 40.1	
	comp=Z,66nm,21.9s,baz=230,slow=36						
ABKAR	Akbulak array	67.28	320	eP	P	04 16 26.3	-0.7
KBZ	Khabaz	78.51	313	LR	LR	04 57 31.4	
	comp=Z,37nm,18.0s,baz=68,slow=40						
BPAW	Bear Paw Mtn.	78.59	26	eP	P	04 17 33.9	+0.1
	0.7nm,1.0s						
MCK	McKinley	79.49	27	eP	P	04 17 38.9	+0.2
	14nm,1.6s						
ILAR	Eielson Array	80.38	26	P	P	04 17 44.0	+0.6
	0.5nm,0.8s,baz=247,slow=5.2,SNR=4.8						
DAWY	Dawson	83.68	26	eP	P	04 18 01.0	+0.1
	12nm,1.7s						
ARCES	ARCESS Array B	84.87	340	P	P	04 18 05.6	-1.1
	2.6nm,1.0s,baz=79,slow=6.7,SNR=5.5						
INK	Inuvik	85.22	22	eP	P	04 18 08.1	-0.4
	6.5nm,1.4s						
FINES	FINESS Array B	86.47	332	P	P	04 18 13.9	-0.9
	0.6nm,0.4s,baz=58,slow=4.7,SNR=13						
VNDA	Vanda	89.13	173	P	P	04 18 27.7	+0.6
	0.9nm,0.7s,baz=5.9,slow=3.9,SNR=3.5						
RES	Resolute Bay	92.41	10	eP	P	04 18 43.8	+1.3
	1.7nm,0.9s						
NOA	NORSAR Array B	93.36	334	LR	LR	05 03 57.8	
	comp=Z,40nm,21.6s,baz=45,slow=38						
YKA	Yellowknife Ar	94.69	24	P	P	04 18 53.6	+0.4
	0.5nm,0.8s,baz=296,slow=4.4,SNR=6.3						
YBH	Yreka Blue Hor	99.31	45	LR	LR	05 02 42.4	
	comp=Z,19nm,18.3s,baz=256,slow=34						
TORD	Torodi Ar. Bea	120.23	291	PKP	PKPdf	04 24 23.5	-0.7
	0.7nm,1.1s,baz=14,slow=2.5,SNR=3.6						

*SOME **07** 04:23:19.9, 40°.07N×77°.87E, h10km*

*KRNET **07** 04:23:21.5±0.1, 40°.04N×77°.68E, mb3.0*

*NNC **07** 04:23:22.6±1.6, 40°.22N×77°.85E, h0km, mb3.2, mpv2.9, Error ellipse: s-maj=12.3km s-min=5.8km az=167.0*

ISC 07 04:23:25.5±3.7, 40°.3N±0°.1×77°.93E±0°.05, h5km±22km, n22, σ1°.45/39, 17C-10D, Kyrgyzstan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NRN	Naryn	1.83	307	⇑eP	Pn	04 23 56.6	-1.3
NRN	baz=317			⇑eS	Sb	04 24 22.7	-0.2
	baz=317						
KDJ	Kajisay	1.88	343	⇑eP	Pb	04 24 00.2	-0.2
KDJ	baz=350			⇑eS	Sg	04 24 28.7	+2.8
	baz=350						
ANVS	Anan'yevo	2.45	356	⇓eP	Pb	04 24 09.7	-0.5
ANVS	baz=360			⇓eS	Sg	04 24 44.2	-0.1
	baz=360						
BOOM	Boomskoye usch	2.62	326	⇓eP	Pn	04 24 09.9	+1.2
BOOM	baz=332			⇓eS	Sb	04 24 44.6	-1.0
	baz=332						
TNSS	Tian-Shan	2.80	345	⇓iP	Pb	04 24 16.6	+0.3
TNSS	28nm,0.6s			⇑iS	Sg	04 24 56.9	+1.3
	10nm,0.7s						
IZV	Izvestkoviy	2.87	340	eP	Pb	04 24 16.8	-0.6
IZV	13nm,0.4s			eS	Sg	04 24 58.0	+0.2
	29nm,0.8s						
MDOK	Medeo	2.90	347	eP	Pb	04 24 16.4	-1.4
MDOK	9.3nm,0.7s			⇑iS	Sg	04 24 57.4	-1.3
	30nm,0.6s						
KOTS	Kotyrbulak	2.96	348	eP	Pb	04 24 20.1	+1.3
KOTS				eS	Sg	04 25 03.6	+3.0
KST	Kastek	3.08	332	eP	Pb	04 24 17.8	-3.1
KST	2.7nm,0.5s			⇑iS	Sb	04 25 00.2	+1.5
	17nm,0.5s						
TKM2	Tokmak 2	3.12	327	⇑Pg	Pb	04 24 20.9	-0.6
TKM2	1.5nm,0.3s			⇓Lg	Lg	04 25 04.7	
	24nm,0.9s						
KURS	Kuram	3.15	3	⇑eP	Pb	04 24 22.8	+0.7
KURS	15nm,0.6s			⇓eS	Sg	04 25 08.2	+1.4
	9.0nm,0.6s						
PDGK	Podgornoye	3.21	21	⇑eP	Pb	04 24 20.0	-2.9
PDGK	baz=22			⇑eS	Sb	04 25 03.1	+0.9
	baz=22						
PDGK	Podgornoye	3.21	21	⇑Pg	Pb	04 24 23.7	+0.8
PDGK	2.8nm,0.4s			⇑Lg	Lg	04 25 07.8	
	22nm,0.7s						
DGS	Degeres	3.32	332	eP	Pb	04 24 24.2	-0.7
DGS	4.1nm,0.4s			eS	Sg	04 25 10.8	-1.4
	12nm,0.6s	

Plg49.0000°, Azm188.0000°; N Plg37.0000°, Azm39.0000°; P Plg15.0000°, Azm297.0000°;
JMA Felt IV J1.
MOS ***07*** *04:34:56.0±1.0, 37°.71N×139°.86E, h33km, mb4.9/73 Error ellipse: s-maj=7.0km s-min=4.4km az=83.1*
NEIC ***07*** *04:34:59.0±0.3, 37°.69N×139°.77E, h45km±3km, mb4.8/164, Error ellipse: s-maj=3.3km s-min=2.4km az=135.0*
NEIC Recorded [4 JMA] in Fukushima.
ISC 07 04:34:55.2±0.8, 37°.71N±0°.02×139°.92E±0°.02, h18km±3km, n664, σ1♀28/689, mb4.8/209, MS3.8/26, 12C-21D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase Op	ID ISC	Time h m s	Res ISC
JFY	**Yanaizu**	**0.35**	**209**	⇑P	**Pg**	**04 35 01.4**	**-1.2**
JFY				S	**Sg**	**04 35 06.4**	**-1.1**
JFT	**Otama**	**0.39**	**120**	⇓P	**Pg**	**04 35 01.6**	**-1.6**
JFT				S	**Sg**	**04 35 06.8**	**-1.8**
JNS	**Sasagawa**	**0.49**	**283**	P	**Pg**	**04 35 03.4**	**-1.6**
JNS				S	**Sg**	**04 35 09.9**	**-1.8**
JYS	**Shiratake**	**0.52**	**13**	⇑P	**Pg**	**04 35 03.4**	**-2.3**
JYS				S	**Sg**	**04 35 10.3**	**-2.5**
JMM	**Marumori**	**0.71**	**77**	⇓P	**Pg**	**04 35 06.9**	**-2.3**
JMM				S	**Sg**	**04 35 15.9**	**-2.8**
JFK	**Kawauchi**	**0.83**	**114**	⇓P	**Pg**	**04 35 09.5**	**-2.0**
JFK				S	**Sg**	**04 35 20.4**	**-2.2**
JHK	**Hiroka**	**0.85**	**237**	⇑P	**Pg**	**04 35 10.2**	**-1.6**
JHK				S	**Sg**	**04 35 21.5**	**-1.6**
JOU	**Okura**	**0.88**	**42**	⇑P	**Pg**	**04 35 10.1**	**-2.3**
JOU				S	**Sg**	**04 35 21.0**	**-3.0**
JYA	**Atsumi**	**0.90**	**350**	⇓P	**Pg**	**04 35 10.3**	**-2.4**
JYA				S	**Sg**	**04 35 21.8**	**-2.7**
JAW	**Awa shima**	**0.91**	**325**	⇓P	**Pg**	**04 35 10.9**	**-2.1**
JAW				S	**Sb**	**04 35 23.3**	**-0.9**
JIZZ	**Izumozaki**	**0.97**	**260**	⇓P	**Pb**	**04 35 13.4**	**-0.1**
JIZZ				S	**Sn**	**04 35 28.0**	**+0.8**
MJAR	**Matsushiro Arr**	**1.79**	**230**	Pg	**Pn**	**04 35 25.5**	**+0.3**
	271nm,0.3s,baz=38,slow=12,SNR=825						
MJAR				Lg	Lg	04 35 50.3	
	476nm,0.3s,baz=25,slow=29,SNR=21						
MJAR				LR	LR	04 36 11.1	
	comp=Z,1μm,18.0s,baz=25,slow=44						
MAJO	**Matsushiro**	**1.80**	**230**	*c iP*	**Pn**	**04 35 25.6**	**+0.4**
MAJO	**Matsushiro**	**1.80**	**230**	*e*Pn	**Pn**	**04 35 25.8**	**+0.6**
MAJO				*e*Sn	**Sn**	**04 35 45.4**	**-2.2**
MJB9	**Matsu-Tunnel**	**1.80**	**230**	*e*Pn	**Pn**	**04 35 25.9**	**+0.6**
INU	**Inuyama**	**3.32**	**226**	*e*Pn	**Pn**	**04 35 47.8**	**+1.6**
JHJ	**Hachijo jima 2**	**4.58**	**181**	Pn	**Pn**	**04 36 03.5**	**0.0**
	74nm,0.3s,baz=20,slow=11,SNR=11						
JHJ				Sn	**Sn**	**04 36 57.3**	**+1.0**
	26nm,0.3s,baz=66,slow=19,SNR=4.1						
JHJ2	**Mitsune**	**4.59**	**181**	*e*Pn	**Pn**	**04 36 04.9**	**+1.2**
ERM	**Erimo**	**4.97**	**29**	*ce*P	**Pn**	**04 36 11.7**	**+2.9**
ERM				pmax	pmax		
	comp=Z,78nm,1.2s						
ERM	**Erimo**	**4.97**	**29**	*e*Pn	**Pn**	**04 36 11.3**	**+2.5**
	comp=Z,69nm,0.8s						
ASAJ	**Asahikawa**	**6.71**	**17**	Pn	**Pn**	**04 36 34.5**	**+1.8**
	comp=Z,1.0nm,0.3s,baz=246,slow=12,SNR=6.0						
ASAJ				LR	LR	04 39 21.8	
	comp=Z,362nm,18.6s,baz=162,slow=40						
ASAJ	**Asahikawa**	**6.71**	**17**	*e*Pn	**Pn**	**04 36 35.4**	**+2.6**
YUK	**Yuzh-Kuril'sk**	**7.76**	**34**	P	**Pn**	**04 36 51.0**	**+3.9**
YUK				*e*S	**Sn**	**04 38 19.9**	**+5.5**
YUK				pmax	pmax		
	comp=E,80nm,0.6s						
YUK				pmax	pmax		
	comp=Z,146nm,0.6s						
YUK				pmax	pmax		
	comp=N,64nm,0.3s						
YUK				MLR	MLR		
	comp=Z,1μm,14.0s						
SHO	**Shikotan**	**8.08**	**38**	*e*P	**Pn**	**04 36 51.8**	**+0.3**
SHO				*e*S	**Sn**	**04 38 21.4**	**-1.0**
SHO				pmax	pmax		
	comp=Z,44nm,0.8s						
VLA	**Vladivostok**	**8.17**	**314**	⇑P	**Pn**	**04 36 57.0**	**+4.3**
VLA				*e*S	**Sn**	**04 38 29.6**	**+5.1**
VLA				pmax	pmax		
	comp=Z,11nm,1.0s						
JNU	**Nakatsue**	**8.68**	**241**	Pn	**Pn**	**04 37 00.9**	**+1.1**
	comp=Z,0.6nm,0.3s,baz=39,slow=10,SNR=6.3						
USRK	**Ussuriysk Ar.**	**8.83**	**320**	Pn	**Pn**	**04 37 01.4**	**-0.4**
	comp=Z,0.9nm,0.3s,baz=133,slow=13,SNR=9.6						
USRK				LR	LR	04 40 07.9	
	comp=Z,365nm,21.0s,baz=147,slow=36						
YSS	**Yuzh-Sakhalins**	**9.47**	**12**	*e*P	**Pn**	**04 37 11.4**	**+0.8**
YSS				MLR	MLR		
	comp=N,1μm,16.0s						
YSS				MLR	MLR		
	comp=Z,1μm,16.0s						
YSS				MLR	MLR		
	comp=E,600nm,14.0s						
KSRS	**Korea Array**	**9.53**	**272**	Pn	**Pn**	**04 37 13.8**	**+2.5**
	comp=E,4.6nm,0.3s,baz=80,slow=14,SNR=26						
KSRS				Sn	**Sn**	**04 38 59.9**	**+2.0**
	comp=E,0.9nm,0.3s,baz=77,slow=23,SNR=4.3						
KSRS				LR	LR	04 40 24.8	
	comp=E,212nm,21.8s,baz=88,slow=35						
KS01	**Wonju Array Si**	**9.55**	**272**	*e*Pn	**Pn**	**04 37 12.5**	**+0.8**
KS15	**Wonju Array Si**	**9.56**	**272**	*e*Pn	**Pn**	**04 37 13.3**	**+1.5**
KSAR	**Wonju Array Be**	**9.56**	**272**	P	**Pn**	**04 37 13.8**	**+2.0**
KSAR						04 38 59.9	
KSAR	**Wonju Array Be**	**9.56**	**272**	Pn	**Pn**	**04 37 13.8**	**+2.0**
KSAR				Sn	**Sn**	**04 38 59.9**	**+1.2**
KUR	**Kuril'sk**	**9.59**	**36**	⇑*iP*	**Pn**	**04 37 12.7**	**+0.5**
KUR				*e*S	**Sn**	**04 38 57.9**	**-1.6**
KUR				pmax	pmax		
	comp=Z,58nm,0.6s						
MDJ	**Mudanjiang**	**10.39**	**315**	P	Pn	04 37 27.7	+4.4
MDJ				pmax	pmax		
	comp=Z,31nm,0.9s						
MDJ				pmax	pmax		
	comp=Z,66nm,3.7s						
MDJ				LR	LR		
	comp=N,440nm,11.2s						
MDJ				LR	LR		
	comp=E,190nm,10.2s						
MDJ				LR	LR		
	comp=Z,280nm,11.5s						
MDJ	**Mudanjiang**	**10.39**	**315**	*e*Pn	**Pn**	**04 37 23.9**	**+0.7**
	comp=Z,13nm,0.8s						
CBIJ	**Chichi jima**	**10.76**	**169**	*e*Pn	**Pn**	**04 37 26.2**	**-2.1**
JCJ	**Chichijima**	**10.76**	**169**	Pn	**Pn**	**04 37 25.0**	**-3.2**
	comp=Z,7.9nm,0.3s,baz=67,slow=10,SNR=5.3						
JCJ				LR	LR	04 41 49.3	
	comp=Z,193nm,19.5s,baz=142,slow=39						
HABR	**Khabarovsk**	**11.33**	**343**	*de*P	**Pn**	**04 37 35.3**	**-0.7**
HABR				*e*S	**Sn**	**04 39 41.2**	**-0.8**
HABR				pmax	pmax		
	comp=Z,10.0nm,1.3s						
HABR				pmax	pmax		
	comp=N,35nm,1.4s						
HABR				pmax	pmax		
	comp=E,25nm,1.4s						
HABR				pmax	pmax		
	comp=Z,37nm,1.4s						
HABR				MLR	MLR		
	comp=Z,223nm,12.0s						
CN2	**Changchun**	**12.54**	**304**	*e*P	**Pn**	**04 37 55.5**	**+2.9**
CN2				*es*P		04 38 11.1	
CN2				*e*S	**Sn**	**04 40 13.2**	**+1.5**
CN2				pmax	pmax		
	comp=Z,10.0nm,1.0s						
CN2				LR	LR		
	comp=N,800nm,11.0s						
CN2				LR	LR		
	comp=E,500nm,11.0s						
CN2				LR	LR		
	comp=Z,400nm,12.0s						
KLR	**Kul'dur**	**12.94**	**335**	Pn	**Pn**	**04 38 00.5**	**+2.4**
	comp=Z,0.2nm,0.3s,baz=140,slow=12,SNR=34						
KLR				LR	LR	04 42 46.1	
	comp=Z,264nm,19.2s,baz=150,slow=37						
TYV	**Tymovskoe**	**13.29**	**8**	*e*P	**Pn**	**04 38 06.0**	**+3.2**
TYV				pmax	pmax		
	comp=Z,13nm,0.8s						
TYV				MLR	MLR		
	comp=N,500nm,14.0s						
TYV				MLR	MLR		
	comp=Z,600nm,14.0s						
DL2	**Dalian**	**14.41**	**280**	P	**P**	**04 38 28.2**	**+3.2**
DL2				*e*S	**S**	**04 41 13.7**	**-3.5**
DL2				pmax	pmax		
	comp=Z,30nm,0.9s						
DL2				LR	LR		
	comp=N,440nm,11.5s						
DL2				LR	LR		
	comp=Z,350nm,16.2s						
BJI	**Beijing**	**18.62**	**285**	P	**P**	**04 39 11.4**	**-0.2**
BJI				S	**Sn**	**04 42 41.3**	**+1.7**
BJI				pmax	pmax		
	comp=Z,6.0nm,1.2s						
BJI				pmax	pmax		
	comp=Z,130nm,7.1s						
BJI				LR	LR		
	comp=N,270nm,13.1s						
BJI				LR	LR		
	comp=E,120nm,11.5s						
BJI				LR	LR		
	comp=Z,70nm,11.5s						
PETK	**Petropavlovsk-**	**19.74**	**33**	P	**Pn**	**04 39 24.3**	**-0.9**
	comp=Z,0.2nm,0.3s,baz=195,slow=13,SNR=4.4						
PETK				LR	LR	04 46 30.0	
	comp=Z,99nm,21.3s,baz=222,slow=35						
SSLB	**Suanglung**	**21.35**	**235**	*e*P	**P**	**04 39 41.8**	**+0.3**
	comp=Z,5.3nm,0.7s						
YULB	**Yu-li**	**21.41**	**233**	*e*P	**P**	**04 39 42.4**	**+0.4**
	comp=Z,6.9nm,0.6s						
TPUB	**Ta-pu**	**21.90**	**234**	*e*P	**P**	**04 39 46.9**	**-0.5**
	comp=Z,20nm,1.2s						
HHC	**Hu-ho-hao-te**	**22.13**	**287**	*e*P	**P**	**04 39 49.5**	**-0.3**
HHC				pP	sP	04 40 01.5	+4.1
HHC				sP	pP	04 40 07.2	+12
HHC				S	**S**	**04 43 45.9**	**-7.0**
HHC				pmax	pmax		
	comp=Z,56nm,0.8s						
HHC				pmax	pmax		
	comp=Z,240nm,4.1s						
HHC				LR	LR		
	comp=N,730nm,11.3s						
HHC				LR	LR		
	comp=E,860nm,11.2s						
HHC				LR	LR		
	comp=Z,910nm,12.3s						
MA2	**Magadan**	**22.97**	**14**	*e*P	**P**	**04 39 58.1**	**-0.2**
MA2				pmax	pmax		
	comp=Z,114nm,0.9s						
MA2	**Magadan**	**22.97**	**14**	*e*P	**P**	**04 39 58.1**	**-0.2**
	comp=Z,114nm,0.9s						
YAK	**Yakutsk**	**25.16**	**349**	LR	LR	04 49 39.6	
	comp=Z,94nm,18.9s,baz=188,slow=35						
YAK	**Yakutsk**	**25.16**	**349**	*e*P	**P**	**04 40 20.1**	**+1.1**
YAK				*e**PP	sP	04 40 30.4	+3.5
YAK				*e*		04 40 54.2	
YAK				*e*PPP	PPP	04 41 03.5	
YAK				*e*		04 43 55.0	
YAK				*e*S	**S**	**04 44 44.1**	**+1.2**
YAK				*e*SS	**SnSn**	**04 45 36.9**	**+3.6**
YAK				*e*SSS	SSS	04 45 52.4	
YAK				pmax	pmax		
	comp=Z,13nm,0.8s						
YAK				pmax	pmax		
	comp=N,7.0nm,1.0s						
YAK				pmax	pmax		
	comp=Z,115nm,3.3s						
YAK				pmax	pmax		
	comp=N,55nm,4.4s						
YAK				pmax	pmax		
	comp=E,37nm,3.5s						
YAK				smax	smax		
	comp=N,17nm,1.5s						
YAK				smax	smax		
	comp=E,21nm,1.7s						
YAK				MLR	MLR		
	comp=Z,214nm,14.0s						
YAK				MLR	MLR		
	comp=N,133nm,15.0s						
ULN	**Ulaanbaatar**	**25.99**	**304**	*de*P	**P**	**04 40 28.5**	**+1.6**
ULN				pmax	pmax		
	comp=Z,14nm,1.7s						
ULN	**Ulaanbaatar**	**25.99**	**304**	*e*P	**P**	**04 40 27.2**	**+0.3**
	comp=Z,7.4nm,0.9s						
BOD	**Bodaibo**	**26.32**	**328**	*e*P	**P**	**04 40 29.1**	**-0.5**
BOD				pmax	pmax		
	comp=Z,6.0nm,1.7s						
SEY	**Seymchan**	**26.38**	**13**	P	**P**	**04 40 32.8**	**+2.7**
	comp=Z,4.8nm,0.8s,baz=206,slow=8.2,SNR=12						
SEY	**Seymchan**	**26.38**	**13**	⇓*eP*	**P**	**04 40 33.2**	**+3.1**
SONA1	**Songino Array**	**26.41**	**303**	*e*P	**P**	**04 40 31.1**	**+0.4**
SONM	**Songino Array**	**26.42**	**303**	P	**P**	**04 40 31.5**	**+0.8**
	comp=Z,1.8nm,0.5s,baz=101,slow=7.9,SNR=4.1						
SONM				LR	LR	04 50 37.4	
	comp=Z,85nm,18.8s,baz=107,slow=36						
LZH	**Lanzhou**	**28.79**	**278**	*e*P	**P**	**04 40 50.9**	**-1.2**
LZH				pP	sP	04 41 03.4	+3.4
LZH				sP	pP	04 41 08.0	+10
LZH				pmax	pmax		
	comp=Z,14nm,1.0s						
LZH				pmax	pmax		
	comp=Z,56nm,4.5s						
LZH				LR	LR		
	comp=N,310nm,13.6s						
LZH				LR	LR		
	comp=E,390nm,14.9s						
LZH				LR	LR		
	comp=Z,370nm,15.7s						
ZAK	**Zakamensk**	**28.91**	**308**	*e*P	**P**	**04 40 53.2**	**+0.2**
ZAK				pmax	pmax		
	comp=Z,2.0nm,1.0s						
TLY	**Talaya**	**28.99**	**311**	LR	LR	04 51 30.9	
	comp=Z,56nm,20.2s,baz=110,slow=34						
TLY	**Talaya**	**28.99**	**311**	*e*P	**P**	**04 40 53.0**	**-0.6**
TLY				pmax	pmax		
	comp=Z,2.0nm,0.6s						
TLY				MLR	MLR		
	comp=Z,156nm,16.0s						
H11N2	**WAKE ISLAND Hy 29.52**	**120**		T	T	05 11 08.8	
	baz=313,slow=75,SNR=136						
H11N1	**WAKE ISLAND Hy 29.53**	**120**		T	T	05 11 10.0	
	baz=313,slow=75,SNR=87						
H11N3	**WAKE ISLAND Hy 29.54**	**120**		T	T	05 11 10.8	
	baz=313,slow=75,SNR=57						
GYA	**Guiyang**	**30.18**	**258**	⇑*iP*	**P**	**04 41 05.2**	**+0.7**
GYA				pP	sP	04 41 17.0	+4.6
GYA				PP	**PnPn**	**04 42 04.6**	**+2.6**
GYA				PcP	**PcP**	**04 44 06.3**	**+0.9**
GYA				S	**S**	**04 46 00.8**	**-2.1**
GYA				sS	sS	04 46 38.4	+26
GYA				SS	**SnSn**	**04 47 28.0**	**-8.5**
GYA	**Guiyang**	**30.18**	**258**	ScS	ScS	04 51 38.2	-4.4
GYA				pmax	pmax		
	comp=Z,20nm,0.9s						
GYA				pmax	pmax		
	comp=Z,120nm,6.4s						
GYA				LR	LR		
	comp=N,4μm,15.5s						
GYA				LR	LR		
	comp=E,9μm,17.4s						
GYA				LR	LR		
	comp=Z,13μm,17.7s						
H11S1	**WAKE ISLAND Hy 30.23**	**122**		T	T	05 12 01.0	
	baz=314,slow=76,SNR=225						
H11S3	**WAKE ISLAND Hy 30.23**	**122**		T	T	05 12 01.4	
	baz=314,slow=76,SNR=92						
H11S2	**WAKE ISLAND Hy 30.24**	**122**		T	T	05 12 01.3	
	baz=314,slow=76,SNR=97						
CD2	**Chengdu**	**30.49**	**268**	P	**P**	**04 41 05.4**	**-1.8**
CD2				sP	sP	04 41 22.3	+7.3
CD2				PP	**PP**	**04 42 14.3**	**-1.7**
CD2				S	**S**	**04 46 03.3**	**-4.4**
CD2				sS	sS	04 46 23.3	+6.4
CD2				SS	**SS**	**04 48 14.2**	**-3.5**
CD2				pmax	pmax		
	comp=Z,10.0nm,0.6s						
CD2				pmax	pmax		
	comp=Z,150nm,4.8s						
CD2				LR	LR		
	comp=N,330nm,14.4s						
CD2				LR	LR		
	comp=Z,270nm,13.8s						
GTA	**Gaotai**	**31.23**	**286**	*e*P	**P**	**04 41 12.6**	**-1.1**
GTA				pP	sP	04 41 24.8	+3.2
GTA				sP	pP	04 41 30.0	+11
GTA				PcP	**PcP**	**04 44 08.2**	**+0.2**
GTA				S	**S**	**04 46 13.9**	**-5.3**
GTA				sS	sS	04 46 35.2	+6.7
GTA				SS	**SnSn**	**04 48 02.2**	**+0.4**
GTA				pmax	pmax		
	comp=Z,3.0nm,1.0s						
GTA				pmax	pmax		
	comp=Z,27nm,4.5s						
GTA				LR	LR		
	comp=N,180nm,14.3s						
GTA				LR	LR		
	comp=E,120nm,13.8s						
GTA				LR	LR		
	comp=Z,180nm,14.7s						
QIZ	**Qiongzhong**	**32.15**	**243**	P	**P**	**04 41 21.8**	**+0.1**
QIZ				S	**S**	**04 46 31.8**	**-1.8**
QIZ				LR	LR		
	comp=N,110nm,20.1s						
QIZ				LR	LR		
	comp=E,110nm,16.2s						
BILL	**Biiibino**	**33.73**	**18**	⇓*eP*	**P**	**04 41 37.3**	**+2.2**
BILL				*e*		04 41 44.7	
BILL				pmax	pmax		
	comp=Z,6.0nm,1.7s						
BILL				MLR	MLR		
	comp=Z,203nm,23.0s						
KMI	**Kunming**	**33.90**	**259**	P	**P**	**04 41 39.2**	**+1.9**
KMI				pP	sP	04 41 44.4	-0.8
KMI				sP	pP	04 41 47.7	+4.8
KMI				pmax	pmax		
	comp=Z,8.0nm,0.9s						
KMI				pmax	pmax		
	comp=Z,75nm,4.6s						
KMI				LR	LR		
	comp=N,190nm,12.9s						
KMI				LR	LR		
	comp=E,140nm,15.6s						
KMI				LR	LR		
	comp=Z,150nm,15.9s						
TIXI	**Tiksi**	**34.48**	**354**	⇑*eP*	**P**	**04 41 41.4**	**-0.1**
TIXI				pmax	pmax		
	comp=Z,10.0nm,1.5s						
WMQ	**Urumqi**	**39.47**	**296**	*e*P	**P**	**04 42 26.1**	**+1.7**
WMQ				PcP	**PcP**	**04 44 32.6**	**+0.6**
WMQ				S	**S**	**04 48 29.8**	**+4.2**
WMQ				SS	**SS**	**04 51 14.7**	**-5.2**
WMQ	**Urumqi**	**39.47**	**296**	ScS	ScS	04 52 32.5	+0.7
WMQ				LR	LR		
	comp=N,96nm,15.8s						
WMQ				LR	LR		
	comp=E,50nm,39.6s						
WMQ				LR	LR		
	comp=Z,32nm,27.4s						
JAY	**Jayapura**	**40.03**	**179**	P	**P**	**04 42 29.0**	**-0.2**
	comp=Z,1.2nm,0.7s,baz=270,slow=20,SNR=4.3						
CMAR	**Chiang Mai Arr**	**40.53**	**253**	LR	LR	05 00 01.5	
	comp=Z,42nm,20.0s,baz=52,slow=37						
ZAA0	**Zalesovo Array**	**40.58**	**312**	*e*P	**P**	**04 42 33.9**	**+0.5**
ZALV	**Zalesovo Beam**	**40.58**	**312**	P	**P**	**04 42 32.2**	**-1.1**
	comp=Z,2.8nm,0.7s,baz=93,slow=6.5,SNR=7.4						
ZALV				PcP	**PcP**	**04 44 34.2**	**-1.1**
	comp=Z,1.1nm,0.5s,baz=90,slow=2.9,SNR=3.3						
TNA	**Tin City**	**40.86**	**30**	*e*P	**P**	**04 42 36.2**	**+0.7**
	comp=Z,13nm,1.0s						
NRIK	**Noril'sk**	**42.16**	**335**	LR	LR	04 59 26.6	
	comp=Z,78nm,20.2s,baz=124,slow=35						
MK01	**Makanchi Array**	**42.75**	**301**	*e*P	**P**	**04 42 51.0**	**-0.2**
MK31	**Makanchi Array**	**42.75**	**301**	*e*P	**P**	**04 42 50.7**	**-0.6**
MK31	**Makanchi Array**	**42.75**	**301**	*e*P	**P**	**04 42 50.7**	**-0.6**
MKAR	**Makanchi Array**	**42.75**	**301**	P	**P**	**04 42 50.9**	**-0.4**
	comp=Z,3.4nm,0.8s,baz=92,slow=9.7,SNR=18						
MKAR				LR	LR	05 00 22.6	
	comp=Z,73nm,18.3s,baz=90,slow=36						
MKAR	**Makanchi Array**	**42.75**	**301**	*i* P	**P**	**04 42 51.4**	**+0.1**
MKAR				pmax	pmax		
	comp=Z,3.0nm,0.8s						
MKAR	**Makanchi Array**	**42.75**	**301**	*e*P	**P**	**04 42 50.7**	**-0.6**
KURK	**Kurchatov**	**44.58**	**307**	*e*P	**P**	**04 43 04.5**	**-1.4**
KURK				pmax	pmax		
	comp=Z,66nm,1.2s						
KURK	**Kurchatov**	**44.58**	**307**	*e*P	**P**	**04 43 04.5**	**-1.4**
	comp=Z,66nm,1.2s						
TT01	**Tatalina**	**45.55**	**35**	*e*P	**P**	**04 43 14.5**	**+1.1**
TTA	**Tatalina**	**45.55**	**35**	*e*P	**P**	**04 43 14.3**	**+0.7**
TTA				pmax	pmax		
	comp=Z,5.0nm,1.0s						
TTA	**Tatalina**	**45.55**	**35**	*e*P	**P**	**04 43 14.3**	**+0.7**
	comp=Z,4.7nm,1.0s						
SVW2	**Sparrevohn**	**45.71**	**38**	*e*P	**P**	**04 43 16.2**	**+1.4**
	comp=Z,12nm,1.2s						
KAPI	**Kappang**	**46.47**	**208**	P	**P**	**04 43 20.7**	**-0.5**
	comp=Z,18nm,0.8s,baz=340,slow=4.3,SNR=16						
KAPI	**Kappang**	**46.47**	**208**	*e*P	**P**	**04 43 20.9**	**-0.2**
	comp=Z,25nm,0.9s						
OHAK	**Old Harbor**	**47.07**	**43**	*e*P	**P**	**04 43 25.0**	**-0.5**
	comp=Z,11nm,0.8s						
RSO	**Redoubt South**	**47.12**	**39**	*e*P	**P**	**04 43 27.2**	**+1.2**
PPLA	**Purkeypile**	**47.30**	**35**	*e*P	**P**	**04 43 28.7**	**+1.3**
	comp=Z,15nm,1.1s						
CAST	**Castle Rocks**	**47.34**	**35**	*e*P	**P**	**04 43 28.5**	**+0.9**
	comp=Z,8.3nm,1.0s						
KDAK	**Kodiak Island**	**47.40**	**42**	P	P	04 43 42.0	+14
	comp=Z,15nm,0.7s,baz=282,slow=1.9,SNR=13						
KDAK	**Kodiak Island**	**47.40**	**42**	*i* P	**P**	**04 43 28.0**	**0.0**
KDAK	**Kodiak Island**	**47.40**	**42**	*e*P	**P**	**04 43 28.4**	**+0.4**
	comp=Z,15nm,0.8s						
SPU	**Mount Spurr**	**47.42**	**38**	*e*P	**P**	**04 43 29.7**	**+1.4**
BPAW	**Bear Paw Mtn.**	**47.82**	**34**	*e*P	**P**	**04 43 32.2**	**+0.9**
	comp=Z,24nm,1.8s						
KTH	**Kantishna Hill**	**47.86**	**34**	*e*P	**P**	**04 43 32.5**	**+0.9**
	comp=Z,14nm,1.0s						
MLY	**Manley**	**47.91**	**32**	*e*P	**P**	**04 43 33.2**	**+1.2**
	comp=Z,9.7nm,1.0s						
COLD	**Coldfoot**	**48.15**	**29**	*e*P	**P**	**04 43 34.7**	**+1.0**
	comp=Z,6.0nm,0.8s						
KULM	**Kulim**	**48.15**	**238**	*e*P	**P**	**04 43 33.5**	**-0.9**
	comp=Z,6.8nm,0.9s						
TRF	**Thorofare Moun**	**48.15**	**34**	*e*P	**P**	**04 43 34.9**	**+0.9**
	comp=Z,14nm,1.3s						
TKM2	**Tokmak 2**	**48.26**	**297**	*e*P	**P**	**04 43 35.8**	**+0.6**
TKM2				pmax	pmax		
	comp=Z,56nm,1.8s						
TKM2	**Tokmak 2**	**48.26**	**297**	*e*P	**P**	**04 43 35.8**	**+0.6**
	comp=Z,56nm,1.8s						
BWN	**Browne**	**48.48**	**33**	*e*P	**P**	**04 43 38.5**	**+2.1**
	comp=Z,41nm,1.1s						
RC01	**Rabbit Creek A**	**48.55**	**38**	*e*P	**P**	**04 43 37.2**	**+0.3**
	comp=Z,15nm,0.9s						
MCK	**McKinley**	**48.74**	**34**	*e*P	**P**	**04 43 39.1**	**+0.7**
MCK				pmax	pmax		
	comp=Z,8.0nm,1.0s						
MCK	**McKinley**	**48.74**	**34**	*e*P	**P**	**04 43 39.1**	**+0.7**
	comp=Z,8.2nm,1.0s						
SEW	**Seward**	**48.78**	**39**	*e*P	**P**	**04 43 39.1**	**+0.4**
	comp=Z,14nm,1.0s						
RND	**Reindeer**	**48.79**	**34**	*e*P	**P**	**04 43 39.3**	**+0.5**
RND				pmax	pmax		
	comp=Z,14nm,1.2s						
RND	**Reindeer**	**48.79**	**34**	*e*P	**P**	**04 43 39.3**	**+0.5**
	comp=Z,14nm,1.2s						
PMR	**Palmer**	**48.80**	**37**	*e*P	**P**	**04 43 39.0**	**+0.2**
PMR				pmax	pmax		
	comp=Z,10.0nm,1.0s						
PMR	**Palmer**	**48.80**	**37**	*e*P	**P**	**04 43 39.0**	**+0.2**
	comp=Z,9.9nm,1.0s						
FRU	**Bishkek**	**48.97**	**298**	*e*P	**P**	**04 43 42.0**	**+1.5**
FRU				pmax	pmax		
	comp=Z,40nm,2.0s						
MDM	**Murphy Dome**	**48.98**	**32**	*e*P	**P**	**04 43 40.7**	**+0.5**
	comp=Z,13nm,0.9s						
KSH	**Kashi**	**49.04**	**293**	P	**P**	**04 43 45.5**	**+4.3**
KSH				*e*pP	sP	04 43 57.8	+8.6
KSH				*es*P	pP	04 44 03.1	+16
KSH			

COLA pmax pmax
comp=Z,6.0nm,1.5s
SML Sawmill 49.16 37 *eP* **P 04 43 42.4 +0.8**
SML pmax pmax
comp=Z,15nm,1.1s
SML Sawmill 49.16 37 *eP* **P 04 43 42.4 +0.8**
comp=Z,15nm,1.1s
CCB Clear Creek Bu 49.18 33 *eP* **P 04 43 42.1 +0.4**
comp=Z,2.7nm,0.9s
BRVK Borovoye 49.29 312↓*eP* **P 04 43 44.2 +1.5**
BRVK pmax pmax
comp=Z,24nm,2.5s
BRVK Borovoye 49.29 312 *eP* **P 04 43 42.6 -0.1**
comp=Z,7.3nm,0.9s
IL1 Eielson Array 49.56 33 *eP* **P 04 43 44.2 -0.4**
ILAR Eielson Array 49.56 33 P **P 04 43 44.7 +0.1**
comp=Z,4.9nm,0.8s,baz=274,slow=6.5,SNR=50
ILAR LR LR 05 05 38.9
comp=Z,39nm,20.2s,baz=302,slow=37
ILB Eielson Array 49.56 33 *eP* **P 04 43 45.0 +0.3**
EKS2 Erkin-Say 49.62 298 *eP* **P 04 43 45.4 -0.1**
EKS2 pmax pmax
comp=Z,4.0nm,0.9s
EKS2 Erkin-Say 49.62 298 *eP* **P 04 43 45.4 -0.1**
comp=Z,4.4nm,0.9s
SCM Sheep Creek Mo 49.63 36 *eP* **P 04 43 46.1 +0.8**
SCM pmax pmax
comp=Z,19nm,1.1s
SCM Sheep Creek Mo 49.63 36 *eP* **P 04 43 46.1 +0.8**
comp=Z,19nm,1.1s
ZRNK Zerenda 50.07 312 *eP* **P 04 43 49.1 +0.5**
ZRNK pmax pmax
comp=Z,23nm,1.0s
ZRNK Zerenda 50.07 312 *eP* **P 04 43 49.1 +0.5**
comp=Z,23nm,1.0s
FYU Fort Yukon 50.12 30 *eP* **P 04 43 49.9 +1.1**
comp=Z,23nm,1.1s
KLU Klutina 50.34 37 *eP* **P 04 43 51.4 +0.8**
comp=Z,11nm,1.0s
PAX Paxson 50.36 35 *eP* **P 04 43 51.5 +0.7**
PAX pmax pmax
comp=Z,4.0nm,0.8s
PAX Paxson 50.36 35 *eP* **P 04 43 51.5 +0.7**
comp=Z,4.0nm,0.8s
DIV Divide 50.46 37 *eP* **P 04 43 52.8 +1.3**
comp=Z,14nm,0.9s
EYAK Cordova Ski Ar 50.55 38 *eP* **P 04 43 53.3 +1.2**
comp=Z,15nm,1.0s
DOT Dot Lake 50.91 34 *eP* **P 04 43 54.1 -0.8**
comp=Z,9.0nm,0.9s
BMRM Bremner River 51.05 37 *eP* **P 04 43 56.6 +0.7**
comp=Z,15nm,0.9s
RAGM Ragged Mountai 51.10 38 *eP* **P 04 43 57.5 +1.1**
comp=Z,11nm,1.0s
MENT Mentasta 51.16 35 *eP* **P 04 43 58.3 +1.6**
comp=Z,18nm,1.1s
COEN Coen 51.48 176 *eP* **P 04 43 59.3 -0.3**
comp=Z,7.6nm,0.6s
KKAR Karatay Array 51.75 299 *eP* **P 04 44 01.3 -0.2**
KKAR pmax pmax
comp=Z,12nm,1.0s
KKAR Karatay Array 51.75 299 *eP* **P 04 44 01.3 -0.2**
comp=Z,12nm,1.0s
EGAK Eagle 52.00 32 *eP* **P 04 44 03.4 +0.4**
comp=Z,6.5nm,0.9s
BALM Baldy 52.12 37 *eP* **P 04 44 04.9 +0.9**
BALM pmax pmax
comp=Z,7.0nm,0.9s
BALM Baldy 52.12 37 *eP* **P 04 44 04.9 +0.9**
comp=Z,7.1nm,0.9s
DAWY Dawson 52.88 33 *eP* **P 04 44 09.7 +0.1**
comp=Z,3.5nm,1.1s
SVE Sverdlovsk 53.85 318 *eP* **P 04 44 19.2 +2.5**
INK Inuvik 54.33 27 P **P 04 44 20.5 +0.5**
comp=Z,7.1nm,0.9s,baz=300,slow=6.1,SNR=32
INK Inuvik 54.33 27 *eP* **P 04 44 20.6 +0.5**
INK pmax pmax
comp=Z,21nm,1.5s
INK Inuvik 54.33 27 *eP* **P 04 44 20.6 +0.6**
comp=Z,21nm,1.5s
ARU Arti 55.06 318*c iP* **P 04 44 24.8 -0.7**
ARU 04 45 24.2
ARU S **S 04 52 05.6 -1.3**
ARU SS **SS 04 55 44.8 -5.4**
ARU pmax pmax
comp=Z,15nm,1.7s
ARU Arti 55.06 318 *eP* **P 04 44 25.3 -0.3**
comp=Z,10.0nm,1.1s
ABKAR Akbulak array 56.59 309 *eP* **P 04 44 36.1 -0.5**
FITZ Fitzroy Crossi 57.12 196 P **P 04 44 41.3 +0.7**
comp=Z,4.3nm,0.7s,baz=42,slow=4.8,SNR=4.8
FITZ Fitzroy Crossi 57.12 196 *eP* **P 04 44 40.9 +0.4**
comp=Z,4.8nm,0.7s
WRAB Tennant Creek 57.57 186*c iP* **P 04 44 43.0 -0.8**
WRAB pmax pmax
comp=Z,59nm,2.5s
WRAB Tennant Creek 57.57 186 *eP* **P 04 44 43.1 -0.7**
comp=Z,13nm,0.9s
WB2 Warramunga Arr 57.58 186 *eP* **P 04 44 43.1 -0.8**
comp=Z,12nm,0.8s
WRA Warramunga Arr 57.58 186 P **P 04 44 43.1 -0.8**
comp=Z,14nm,0.7s,baz=2.9,slow=7.6,SNR=76
DLBC Dease Lake 58.83 38 P **P 04 44 53.6 +1.4**
comp=Z,2.2nm,0.8s,baz=276,slow=6.7,SNR=5.3
DLBC Dease Lake 58.83 38 *eP* **P 04 44 54.5 +2.2**
comp=Z,12nm,1.4s
AS01 Alice Springs 61.30 186 *eP* **P 04 45 08.9 -0.6**
AS31 Alice Springs 61.31 186 *eP* **P 04 45 08.8 -0.8**
comp=Z,1.6nm,0.6s
ASAR Alice Springs 61.31 186 P **P 04 45 09.2 -0.4**
comp=Z,5.2nm,0.8s,baz=12,slow=6.6,SNR=26
RES Resolute Bay 62.24 14 P **P 04 45 14.6 -0.6**
comp=Z,7.4nm,0.8s,baz=317,slow=6.0,SNR=24
RES Resolute Bay 62.24 14 *eP* **P 04 45 14.7 -0.5**
RES pmax pmax
comp=Z,9.0nm,1.0s
RES Resolute Bay 62.24 14 *eP* **P 04 45 14.7 -0.5**
comp=Z,9.4nm,1.0s
KLMR Klimovskoe 62.55 327 *eP* **P 04 45 17.5 +0.1**
KLMR pmax pmax
comp=Z,15nm,1.4s
ARCES ARCESS Array B 62.94 339 P **P 04 45 19.4 -0.6**
comp=Z,2.4nm,0.8s,baz=50,slow=7.4,SNR=8.9
ARCES LR LR 05 16 05.3
comp=Z,65nm,18.2s,baz=58,slow=39
EIDS Eidsvold 63.62 169 *eP* **P 04 45 25.0 +0.1**
comp=Z,5.8nm,0.8s
YKW3 Yellowknife Ar 63.78 30 *eP* **P 04 45 25.5 -0.1**
comp=Z,10nm,1.5s
YKA Yellowknife Ar 63.82 30 P **P 04 45 25.7 -0.1**
comp=Z,2.4nm,0.7s,baz=303,slow=6.7,SNR=48
YKA PcP **PcP 04 46 02.1 +0.5**
comp=Z,1.0nm,0.8s,baz=303,slow=3.8,SNR=6.8
YKB5 Yellowknife Ar 63.82 30 *eP* **P 04 45 25.1 -0.7**
DAG Danmarks Havn 65.00 355 *i P* **P 04 45 32.5 -0.9**
comp=Z,8.6nm,0.8s
DAG Danmarks Havn 65.00 355 *i P* **P 04 45 32.5 -0.9**
DAG pmax pmax
comp=Z,6.0nm,0.8s
OBN Obninsk 66.84 323 *eP* **P 04 45 45.5 0.0**
OBN *e* 04 46 11.3
OBN pmax pmax
comp=Z,15nm,0.5s
OBN MLR MLR
comp=Z,39nm,15.0s
NLWA Neilton Lookou 67.13 47 *eP* **P 04 45 48.9 +1.3**
comp=Z,32nm,1.0s
FIA1 FINESS Array S 67.66 332 *eP* **P 04 45 50.5 -0.1**
comp=Z,63nm,1.9s
FINES FINESS Array B 67.66 332 P **P 04 45 49.8 -0.8**
comp=Z,5.3nm,0.8s,baz=39,slow=7.8,SNR=19
FINES FINESS Array B 67.66 332 *i P* **P 04 45 50.0 -0.6**
FINES pmax pmax
comp=Z,5.0nm,0.8s
B05A Bryant 67.70 46 P **P 04 45 51.7 +0.6**
baz=302
LON Longmire 68.67 47 *eP* **P 04 45 58.0 +0.7**
LON pmax pmax
comp=Z,7.0nm,1.1s
LON Longmire 68.67 47 *eP* **P 04 45 58.0 +0.7**
comp=Z,6.6nm,1.1s
F04A Amboy 68.75 48 *eP* **P 04 45 58.8 +1.0**
comp=Z,16nm,0.8s
NLW Nelson Butte 68.79 45 P **P 04 45 59.1 +0.9**
ETW Entiat 69.05 46 P **P 04 46 00.7 +0.9**
B08A Colville Reser 69.20 45 *eP* **P 04 46 00.9 +0.3**
comp=Z,9.4nm,1.0s
STKA Stephens Creek 69.25 178 P **P 04 46 00.8 +0.1**
comp=Z,5.6nm,1.0s,baz=339,slow=8.1,SNR=6.8
STKA Stephens Creek 69.25 178 P **P 04 46 00.9 +0.1**
STKA pmax pmax
comp=Z,4.0nm,0.8s
I03D Drain, OR 69.40 50 P **P 04 46 03.0 +1.2**
baz=303
TDH Tom, Dick, Har 69.47 48 P **P 04 46 03.7 +1.2**
KBZ Khabaz 69.56 310 P **P 04 46 03.0 +0.3**
comp=Z,2.3nm,0.8s,baz=85,slow=6.6,SNR=3.3
KIV Kislovodsk 69.56 310 *eP* **P 04 46 03.0 0.0**
KIV pmax pmax
comp=Z,9.0nm,0.6s
KIV Kislovodsk 69.56 310 *eP* **P 04 46 03.0 0.0**
comp=Z,8.5nm,0.6s
H04A Detroit Lake 69.57 49 *eP* **P 04 46 03.6 +0.6**
comp=Z,18nm,0.8s
G05D Wamic, OR 69.78 48 P **P 04 46 05.2 +1.0**
baz=304
I04A Tendick Farm, 69.92 50 P **P 04 46 05.9 +0.8**
baz=303,SNR=7.0
SUMG Summit 70.00 359 *i P* **P 04 46 05.8 +0.2**
comp=Z,15nm,1.0s
SUMG Summit 70.00 359 *i P* **P 04 46 05.8 +0.2**
SUMG pmax pmax
comp=Z,15nm,1.0s
SUMG Summit 70.00 359 *eP* **P 04 46 05.9 +0.4**
comp=Z,18nm,1.1s
L02D Cave Junction, 70.08 52 P **P 04 46 06.8 +0.7**
baz=303,SNR=5.2
C09A Chrisman Ranch 70.10 45 *eP* **P 04 46 06.9 +0.8**
comp=Z,17nm,0.8s
D08A Wollman Farm, 70.15 45 *eP* **P 04 46 07.4 +0.9**
comp=Z,9.3nm,1.0s
HUMO Hull Mountain 70.23 51 *eP* **P 04 46 07.2 +0.2**
comp=Z,15nm,1.6s
BBOO Buckleboo 70.25 183 *eP* **P 04 46 06.7 -0.2**
comp=Z,7.7nm,0.7s
VTHM Trough 70.26 48 P **P 04 46 08.3 +1.2**
I05D Terrebonne, OR 70.26 49 P **P 04 46 08.3 +1.0**
baz=304
NEW Newport 70.47 44 P **P 04 46 09.3 +0.8**
baz=305,SNR=16
NEW Newport 70.47 44 *eP* **P 04 46 09.1 +0.7**
NEW pmax pmax
comp=Z,12nm,0.8s
NEW Newport 70.47 44 *eP* **P 04 46 09.1 +0.7**
comp=Z,12nm,0.8s
KHMM Horse Mountain 70.70 53 *eP* **P 04 46 12.1 +2.0**
comp=Z,23nm,1.2s
YBH Yreka Blue Hor 70.87 52 *eP* **P 04 46 12.8 +1.8**
YBH pmax pmax
comp=Z,8.0nm,0.9s
YBH Yreka Blue Hor 70.87 52 *eP* **P 04 46 12.8 +1.8**
comp=Z,8.1nm,0.9s
E09A Wood Farm, Sta 70.90 46 *eP* **P 04 46 11.4 +0.4**
comp=Z,20nm,1.1s
J05D Fort Rock, OR 70.91 50 P **P 04 46 12.9 +1.6**
baz=304,SNR=7.8
M02C Callahan 70.97 52 P **P 04 46 12.5 +0.9**
baz=304,SNR=7.0
N02D Trinity Center 71.29 52 P **P 04 46 14.7 +1.1**
baz=304
M04C Macdoel 71.38 51 P **P 04 46 15.1 +0.9**
baz=304,SNR=13
K05A Summer Lake 71.43 50 P **P 04 46 16.1 +1.6**
F10A Beach Ranch, E 71.73 46 *eP* **P 04 46 16.7 +0.5**
comp=Z,11nm,1.4s
WALA Waterton Lakes 71.73 42 *eP* **P 04 46 14.9 -1.2**
comp=Z,9.1nm,1.0s
BSMT Bassoo Peak 71.98 43 P **P 04 46 18.6 +0.9**
O03D Paynes Creek 72.24 53 P **P 04 46 19.8 +0.4**
baz=305
MOD Modoc Plateau 72.26 51 *eP* **P 04 46 20.4 +0.9**
comp=Z,6.0nm,0.8s
JTMT Jette 72.32 43 *eP* **P 04 46 20.8 +1.1**
BMO Blue Mountains 72.34 47 *eP* **P 04 46 20.4 +0.6**
BMO pmax pmax
comp=Z,10.0nm,1.0s
BMO Blue Mountains 72.34 47 *eP* **P 04 46 20.4 +0.6**
comp=Z,10.0nm,1.0s
YBMT Yellow Bay 72.39 43 *eP* **P 04 46 20.8 +0.6**
SWMT Swartz Lake 72.61 43 *eP* **P 04 46 22.3 +0.9**
NC405 NORSAR Array S 72.88 336 *eP* **P 04 46 22.6 -0.1**
WVOR Wild Horse Val 72.97 49 *eP* **P 04 46 24.4 +0.8**
WVOR pmax pmax
comp=Z,11nm,1.0s
WVOR Wild Horse Val 72.97 49 *eP* **P 04 46 24.4 +0.8**
comp=Z,11nm,1.0s
AKASG Malin Array Be 73.03 322 P **P 04 46 22.5 -1.2**
comp=Z,1.3nm,0.5s,baz=46,slow=6.9,SNR=8.0
AKASG LR LR 05 19 24.8
comp=Z,47nm,18.0s,baz=90,slow=37
AKASG Malin Array Be 73.03 322 P **P 04 46 22.5 -1.2**
AKASG pmax pmax
comp=Z,2.0nm,0.5s
AKASG MLR MLR
comp=Z,47nm,18.0s
KIEV Kiev 73.04 322↓*eP* **P 04 46 22.9 -0.8**
KIEV pmax pmax
comp=Z,4.0nm,1.1s
KIEV Kiev 73.04 322 *eP* **P 04 46 23.1 -0.7**
comp=Z,28nm,1.8s
MSO Missoula 73.06 44 P **P 04 46 24.2 +0.1**
baz=307,SNR=5.7
MSO Missoula 73.06 44 *eP* **P 04 46 24.5 +0.4**
comp=Z,7.1nm,0.9s
NC204 NORSAR Array S 73.06 337 *eP* **P 04 46 23.3 -0.4**
NB201 NORSAR Array S 73.06 337 *eP* **P 04 46 24.9 +1.1**
NB2 NORSAR Subarra 73.10 337 P **P 04 46 23.2 -0.8**
comp=Z,7.5nm,1.0s,baz=39,slow=6.2
NOA NORSAR Array B 73.10 337 P **P 04 46 23.1 -0.9**
comp=Z,4.3nm,0.9s,baz=43,slow=5.5,SNR=15
NOA LR LR 05 21 37.8
comp=Z,69nm,18.3s,baz=40,slow=38
NBO02 NORSAR Array S 73.20 337 *eP* **P 04 46 24.4 -0.2**
CHMT Chamberlain Mo 73.38 43 *eP* **P 04 46 26.2 +0.1**
AFDM Forest Hills D 73.54 53 *eP* **P 04 46 27.9 +1.0**
comp=Z,10nm,1.4s
FCC Fort Churchill 73.92 26 *eP* **P 04 46 28.3 -0.5**
FCC pmax pmax
comp=Z,8.0nm,1.1s
FCC Fort Churchill 73.92 26 *eP* **P 04 46 28.3 -0.5**
comp=Z,8.3nm,1.1s
MFID Camas Ranch 74.05 47 *eP* **P 04 46 31.1 +1.1**
comp=Z,15nm,1.1s
HRY Holter Researc 74.27 43 *eP* **P 04 46 32.3 +1.0**
CMB Columbia Colle 74.44 54 *eP* **P 04 46 33.3 +1.0**
CMB pmax pmax
comp=Z,8.0nm,0.9s
CMB Columbia Colle 74.44 54 *eP* **P 04 46 33.3 +1.0**
comp=Z,8.4nm,0.9s
LRM Limekiln Ridge 74.49 44 *eP* **P 04 46 33.6 +0.9**
EGMT Eagleton 74.54 41 P **P 04 46 33.2 +0.4**
baz=310,SNR=15
EGMT Eagleton 74.54 41 *eP* **P 04 46 33.4 +0.6**
comp=Z,17nm,0.8s
DLMT Dillon 74.69 44 *eP* **P 04 46 34.8 +1.0**
comp=Z,20nm,0.9s
HLID Hailey 74.78 46 P **P 04 46 35.1 +0.8**
baz=308,SNR=19
HLID Hailey 74.78 46 *eP* **P 04 46 35.3 +1.0**
comp=Z,7.3nm,0.9s
BOZ Bozeman (W) 75.05 44 P **P 04 46 36.4 +0.5**
baz=309,SNR=24
BOZ Bozeman (W) 75.05 44 *eP* **P 04 46 36.3 +0.5**
BOZ pmax pmax
comp=Z,14nm,1.0s
BOZ Bozeman (W) 75.05 44 *eP* **P 04 46 36.3 +0.5**
comp=Z,14nm,1.0s
NV01 Mina Array Sit 75.53 53 *eP* **P 04 46 39.8 +1.0**
NVAR Mina Array Bea 75.53 53 P **P 04 46 40.0 +1.2**
comp=Z,6.9nm,0.7s,baz=297,slow=5.8,SNR=42
NV11 Mina Array Sit 75.62 52 *eP* **P 04 46 40.0 +0.8**
comp=Z,4.7nm,0.8s
QLMT Earthquake Lak 75.67 44 *eP* **P 04 46 40.9 +1.4**
ELK Elko 76.02 49 *eP* **P 04 46 42.5 +0.9**
ELK pmax pmax
comp=Z,4.0nm,0.6s
ELK Elko 76.02 49 *eP* **P 04 46 42.5 +0.9**
comp=Z,3.7nm,0.6s
GCMT Greycliff 76.02 43 *eP* **P 04 46 42.5 +1.1**
YFT Old Faithful 76.24 44 *eP* **P 04 46 45.5 +2.7**
comp=Z,10nm,0.9s
BSD Bornholm Skovb 76.28 331 *i P* **P 04 46 41.3 -1.1**
comp=Z,20nm,1.3s
BSD Bornholm Skovb 76.28 331 *eP* **P 04 46 41.3 -1.1**
BSD pmax pmax
comp=Z,20nm,1.3s
LKWY Lake 76.41 44 *eP* **P 04 46 45.7 +2.0**
LKWY pmax pmax
comp=Z,17nm,1.1s
LKWY Lake 76.41 44 *eP* **P 04 46 45.7 +2.0**
comp=Z,17nm,1.1s
H17A Grant Village 76.42 44 P **P 04 46 46.1 +2.3**
baz=310,SNR=20
H17A Grant Village 76.42 44 *eP* **P 04 46 46.6 +2.8**
comp=Z,20nm,0.9s
IMW Indian Meadow 76.54 45 *eP* **P 04 46 46.3 +1.8**
comp=Z,10nm,0.8s
FLWY Flagg Ranch 76.55 44 *eP* **P 04 46 46.3 +1.8**
comp=Z,18nm,1.2s
VES Vestal, Richgr 76.58 55 P **P 04 46 44.5 0.0**
baz=307,SNR=5.4
RLMT Red Lodge 76.67 43 P **P 04 46 45.7 +0.6**
baz=310,SNR=12
RLMT Red Lodge 76.67 43 *eP* **P 04 46 46.2 +1.1**
comp=Z,8.4nm,0.8s
PKM Mcpherson Peak 76.67 56 P **P 04 46 46.0 +0.8**
baz=307
MOOW Moose Ponds 76.74 45 *eP* **P 04 46 47.1 +1.5**
comp=Z,11nm,1.2s
HVU Hansel Valley 76.83 47 *eP* **P 04 46 47.4 +1.4**
HVU pmax pmax
comp=Z,12nm,0.8s
HVU Hansel Valley 76.83 47 *eP* **P 04 46 47.4 +1.4**
comp=Z,12nm,0.8s
KWP Kalwaria Pacla 76.88 324↓*iP* **P 04 46 46.5 +0.5**
KWP Kalwaria Pacla 76.88 324↓↓P **P 04 46 46.5 +0.5**
LOHW Long Hollow 76.91 45 *eP* **P 04 46 47.2 +0.7**
comp=Z,4.7nm,1.1s
SNOW Snow King Moun 76.92 45 *eP* **P 04 46 48.0 +1.3**
comp=Z,8.7nm,1.0s
REDW Red Top Meadow 76.93 45 *eP* **P 04 46 47.5 +0.8**
comp=Z,8.0nm,1.0s
GRAC Grapevine Rang 76.99 53 P **P 04 46 48.1 +1.2**
baz=308,SNR=5.3
BUR08 Bucovina Ar. S 77.03 321 *eP* **P 04 46 46.7 -0.2**
BURAR Bucovina Array 77.04 321↓*iP* **P 04 46 46.6 -0.4**
BURAR Bucovina Array 77.04 321↓↓P **P 04 46 46.6 -0.4**
AHID Auburn Hatcher 77.17 46 *eP* **P 04 46 48.4 +0.4**
comp=Z,6.8nm,0.8s
ARVC Arvin 77.17 56 P **P 04 46 48.6 +0.7**
baz=307
BGU Big Grassy Mou 77.22 48 *eP* **P 04 46 49.1 +0.9**
comp=Z,5.9nm,1.0s
LAO LASA Array 77.23 40 P **P 04 46 48.9 +0.8**
baz=312,SNR=12
LAO LASA Array 77.23 40 *eP* **P 04 46 49.0 +0.8**
comp=Z,19nm,1.1s
A25A Svangstu Ranch 77.25 37 P **P 04 46 48.4 +0.3**
baz=314
R11A Troy Canyon, C 77.28 51 P **P 04 46 49.4 +0.8**
baz=308,SNR=23
R11A Troy Canyon, C 77.28 51 *eP* **P 04 46 49.7 +1.0**
comp=Z,16nm,1.3s
DAC Darwin (Calif) 77.28 54 *eP* **P 04 46 49.3 +0.6**
DAC pmax pmax
comp=Z,5.0nm,0.8s
DAC Darwin (Calif) 77.28 54 *eP* **P 04 46 49.3 +0.6**
comp=Z,4.9nm,0.8s
MPMC Manual Prospec 77.48 54 P **P 04 46 50.5 +0.7**
baz=308,SNR=11
BRTR Keskin Array B 77.51 311 P **P 04 46 49.6 -0.3**
comp=Z,1.9nm,0.8s,baz=93,slow=4.9,SNR=7.8
BRTR Keskin Array B 77.51 311 *i P* **P 04 46 50.9 +1.0**
BRTR pmax pmax
comp=Z,2.0nm,0.8s
FURC Furnace Creek, 77.63 53 P **P 04 46 51.4 +1.0**
baz=308,SNR=13
HWUT Hardware Ranch 77.64 47 *eP* **P 04 46 51.8 +1.1**
comp=Z,10nm,0.9s
STHS Stebnicka Huta 77.72 324 *eP* **P 04 46 51.5 +0.8**
STHS pmax pmax
comp=Z,2.0nm,0.9s
STHS Stebnicka Huta 77.72 324 *eP* **P 04 46 51.5 +0.8**
TPNV Topopah Spring 77.72 53 P **P 04 46 51.9 +0.7**
baz=308,SNR=22
TPNV Topopah Spring 77.72 53 *eP* **P 04 46 52.2 +1.1**
TPNV pmax pmax
comp=Z,20nm,1.1s
TPNV Topopah Spring 77.72 53 *eP* **P 04 46 52.2 +1.1**
comp=Z,20nm,1.1s
A26A Wade Farm, Ken 77.79 37 P **P 04 46 51.8 +0.7**
baz=314,SNR=6.0
DUG Dugway, Tooele 77.81 48 P **P 04 46 52.3 +0.8**
baz=309,SNR=18
DUG Dugway, Tooele 77.81 48 *eP* **P 04 46 52.9 +1.4**
DUG pmax pmax
comp=Z,11nm,0.8s
DUG Dugway, Tooele 77.81 48 *eP* **P 04 46 52.9 +1.4**
comp=Z,11nm,0.8s
SNCC San Nicolas Is 77.84 57 P **P 04 46 51.9 +0.2**
baz=307
EDW2 Edwards Air Fo 77.87 55 P **P 04 46 52.3 +0.4**
baz=308,SNR=5.6
BR231 Keskin MP Arra 77.95 311 *eP* **P 04 46 51.0 -1.3**
CRVS Cervenica-Dubn 77.98 324 *eP* **P 04 46 53.7 +1.6**
CRVS Cervenica-Dubn 77.98 324 *eP* **P 04 46 53.7 +1.6**
C25A Freed Ranch, W 78.02 38 P **P 04 46 52.6 +0.1**
baz=314
BW06 Boulder Array 78.03 45 P **P 04 46 53.2 +0.4**
baz=311,SNR=14
BW06 Boulder Array 78.03 45 *eP* **P 04 46 53.3 +0.4**
comp=Z,8.7nm,0.9s
PD31 Pinedale Array 78.03 45 *eP* **P 04 46 53.3 +0.4**
PDAR Pinedale Array 78.03 45 P **P 04 46 53.2 +0.4**
comp=Z,7.2nm,0.8s,baz=268,slow=2.1,SNR=60
TCUT Toone Canyon 78.05 47 *eP* **P 04 46 54.5 +1.6**
comp=Z,17nm,0.8s
DOPR Dopca 78.06 320↓↓*iP* **P 04 46 53.8 +1.1**
A27A Ledoux Ranch, 78.12 36 P **P 04 46 53.1 +0.2**
baz=315
PSUT Pine Spring 78.23 50 *eP* **P 04 46 54.7 +0.7**
comp=Z,9.9nm,1.2s
JLU Jordanele 78.35 47 *eP* **P 04 46 55.5 +0.9**
comp=Z,10nm,1.4s
D25A Fairfield 78.38 38 P **P 04 46 54.6 +0.1**
baz=314
GSC Goldstone, Bar 78.38 54 P **P 04 46 55.3 +0.6**
baz=308
GSC Goldstone, Bar 78.38 54 *eP* **P 04 46 55.4 +0.6**
GSC pmax pmax
comp=Z,8.0nm,1.0s
GSC Goldstone, Bar 78.38 54 *eP* **P 04 46 55.4 +0.7**
comp=Z,7.7nm,1.0s
NLU North Lily Min 78.40 48 *eP* **P 04 46 55.5 +0.6**
comp=Z,8.6nm,0.9s
BFSC Mount Baldy Ra 78.48 56 P **P 04 46 55.8 +0.5**
baz=308,SNR=5.0
C26A Wahner Farm, P 78.51 37 P **P 04 46 55.4 +0.3**
baz=315
A28A Rude Farm, Bot 78.61 36 P **P 04 46 55.8 +0.1**
baz=316,SNR=7.9
SHPR Sheep Range 78.68 53 *eP* **P 04 46 57.7 +1.2**
comp=Z,9.3nm,0.9s
E25A Miller Ranch, 78.79 39 P **P 04 46 56.4 -0.3**
baz=314,SNR=5.5
ARR Arges 78.86 319↓*iP* **P 04 46 58.0 +0.9**
TUQ Turquoise Moun 78.86 54 P **P 04 46 57.7 +0.2**
baz=309
C27A Sayler Ranch, 78.87 37 P **P 04 46 57.0 -0.1**
baz=315
B28A Dugan Ranch, T 78.89 36 P **P 04 46 57.5 +0.3**
baz=316,SNR=6.0
D26A Manning 78.90 38 P **P 04 46 56.9 -0.4**
baz=314
HEC Hector,Ludlow 78.97 54 P **P 04 46 58.3 +0.3**
baz=308,SNR=5.5
A29A Manning Farm, 79.07 35 P **P 04 46 58.3 +0.1**
baz=316,SNR=9.2
MORC Moravsky Berou 79.14 326 *eP* **P 04 46 58.9 +0.4**
MORC pmax pmax
comp=Z,34nm,1.3s
MORC Moravsky Berou 79.14 326 *eP* **P 04 46 58.9 +0.4**
comp=Z,34nm,1.3s
F25A Bowman 79.16 39 P **P 04 46 58.8 0.0**
baz=314
DPC Dobruska-Polom 79.25 327 *eP* **P 04 46 59.7 +0.5**
DPC Dobruska-Polom 79.25 327 *eP* **P 04 46 59.7 +0.5**
KRLC Kraliky 79.25 327 *eP* **P 04 46 59.1 -0.1**
KRLC Kraliky 79.25 327 *eP* **P 04 46 59.1 -0.1**
MSU Marysvale 79.26 49 *eP* **P 04 47 01.2 +1.5**
MSU Marysvale 79.26 49 *eP* **P 04 47 01.2 +1.5**

E26A	Carlson Angus	79.28	39	P		P	04 46 59.9 +0.5
	baz=314						
D27A	Center	79.29	38	P		P	04 46 60.0 +0.5
	baz=315						
TMUT	Trail Mountain	79.33	48	eP		P	04 47 01.5 +1.3
	comp=Z,15nm,1.4s						
B29A	Wagenman Farm,	79.35	36	P		P	04 47 00.2 +0.5
	baz=316						
PSZ	Piszkesteto	79.41	324	eP		P	04 47 00.0 -0.1
PSZ				pmax		pmax	
	comp=Z,7.0nm,1.0s						
PSZ	Piszkesteto	79.41	324	eP		P	04 46 60.0 -0.1
	comp=Z,7.3nm,1.0s						
GMRC	Granite Mounta	79.44	54	P		P	04 47 01.3 +0.8
	baz=309,SNR=6.5						
A30A	Hoffart Farm,	79.48	35	P		P	04 47 00.7 +0.3
	baz=317,SNR=11						
VYHS	Vyhne	79.49	325	eP		P	04 47 01.1 +0.6
VYHS				pmax		pmax	
	comp=Z,5.0nm,1.5s						
VYHS	Vyhne	79.49	325	eP		P	04 47 01.1 +0.6
P17A	Butcher Ranch,	79.50	48	eP		P	04 47 02.5 +1.6
	comp=Z,17nm,1.0s						
MTPU	Mount Pierson	79.55	50	eP		P	04 47 03.3 +1.8
	comp=Z,24nm,1.6s						
LCMT	Little Creek M	79.56	51	eP		P	04 47 02.6 +1.4
	comp=Z,7.7nm,1.0s						
ULM	Lac du Bonnet	79.59	33	P		P	04 47 00.2 -0.7
	comp=Z,6.7nm,0.7s,baz=308,slow=6.3,SNR=7.3						
ULM	Lac du Bonnet	79.59	33	eP		P	04 47 00.9 0.0
	comp=Z,9.2nm,0.8s						
Q16A	Castle Valley	79.60	49	eP		P	04 47 03.0 +1.5
	comp=Z,21nm,1.5s						
F26A	Lodgepole	79.61	39	P		P	04 47 01.6 +0.4
	baz=314						
PFO	Pinyon Flats O	79.65	56	P		P	04 47 01.8 +0.1
	baz=309						
PFO	Pinyon Flats O	79.65	56	eP		P	04 47 02.6 +0.8
PFO				pmax		pmax	
	comp=Z,9.0nm,1.0s						
PFO	Pinyon Flats O	79.65	56	eP		P	04 47 02.6 +0.8
	comp=Z,9.3nm,1.0s						
TPFO	Pinon Flats	79.65	56	P		P	04 47 02.4 +0.6
	baz=309,SNR=5.6						
MDND	Maddock	79.68	36	P		P	04 47 01.7 +0.2
	baz=316						
MDND	Maddock	79.68	36	eP		P	04 47 02.2 +0.7
	comp=Z,19nm,1.0s						
P18A	Preston Nutter	79.68	48	eP		P	04 47 03.5 +1.4
	comp=Z,15nm,0.3s						
G25A	Newell	79.69	40	P		P	04 47 01.3 -0.4
	baz=314						
D28A	Regan	79.69	37	P		P	04 47 01.3 -0.3
	baz=316						
BELC	Belle Mtn. Jos	79.71	55	P		P	04 47 02.1 0.0
	baz=309						
E27A	Carson	79.75	38	P		P	04 47 02.5 +0.5
	baz=315,SNR=14						
K22A	Casper	79.79	43	P		P	04 47 02.8 +0.4
	baz=313,SNR=5.8						
K22A	Casper	79.79	43	eP		P	04 47 03.0 +0.6
	comp=Z,7.6nm,0.8s						
KNB	Kanab	79.82	51	eP		P	04 47 04.2 +1.5
KNB				pmax		pmax	
	comp=Z,10.0nm,1.1s						
KNB	Kanab	79.82	51	eP		P	04 47 04.2 +1.5
	comp=Z,10nm,1.1s						
B30A	Myrvik Farm, E	79.83	35	P		P	04 47 02.3 0.0
	baz=317,SNR=16						
SRU	San Rafael Swe	79.86	48	eP		P	04 47 03.9 +1.0
SRU				pmax		pmax	
	comp=Z,14nm,0.8s						
SRU	San Rafael Swe	79.86	48	eP		P	04 47 03.9 +1.0
	comp=Z,14nm,0.8s						
BRG	Berggiesshubel	79.86	329	eP		P	04 47 00.1 -2.3
	comp=Z,4.5nm,1.1s						
BRG	Berggiesshubel	79.86	329	eP		P	04 47 00.1 -2.3
BRG				pmax		pmax	
	comp=Z,5.0nm,1.1s						
PVCC	Panska Ves	79.86	328	eP		P	04 47 02.7 +0.3
PVCC	Panska Ves	79.86	328	eP		P	04 47 02.7 +0.3
CLL	Collm	79.91	329	i P		P	04 47 02.2 -0.4
	comp=Z,8.0nm,1.2s						
CLL				L		L	05 22 00.0
	comp=Z,100nm,18.3s						
CLL	Collm	79.91	329	i P		P	04 47 02.2 -0.4
CLL				pmax		pmax	
	comp=Z,8.0nm,1.2s						
CLL	Collm	79.91	329	eP		P	04 47 02.2 -0.4
	comp=Z,7.0nm,1.0s						
H25A	Fruitdale	79.99	40	P		P	04 47 03.8 +0.4
	baz=314,SNR=5.6						
G26A	Maurine	80.03	39	P		P	04 47 04.0 +0.5
	baz=315,SNR=13						
E28A	Huff	80.07	38	P		P	04 47 04.3 +0.6
	baz=316						
RSSD	Black Hills	80.11	41	P		P	04 47 04.1 -0.1
	baz=314						
RSSD	Black Hills	80.11	41	eP		P	04 47 04.7 +0.5
RSSD				pmax		pmax	
	comp=Z,7.0nm,0.8s						
RSSD	Black Hills	80.11	41	eP		P	04 47 04.7 +0.5
	comp=Z,6.9nm,0.8s						
MONP2	Monument Peak	80.12	56	P		P	04 47 04.4 0.0
	baz=309,SNR=5.1						
B31A	Greenbush Farm	80.16	35	P		P	04 47 03.8 -0.3
	baz=317						
IRM	Iron Mountain	80.16	54	P		P	04 47 04.6 +0.2
	baz=309,SNR=5.1						
D29A	Pettibone, Tap	80.25	37	P		P	04 47 04.6 0.0
	baz=316						
BC3	Big Chuckawall	80.28	55	P		P	04 47 05.7 +0.6
	baz=309,SNR=5.6						
PRU	Pruhonice	80.28	328	eP		P	04 47 04.5 -0.2
PRU	Pruhonice	80.28	328	eP		P	04 47 04.5 -0.2
C30A	Mose, Pekin	80.30	36	P		P	04 47 04.9 0.0
	baz=317						
G27A	Dupree	80.31	39	P		P	04 47 05.3 +0.3
	baz=315,SNR=6.7						
A32A	Rocking H Ranc	80.31	34	P		P	04 47 04.8 0.0
	baz=318						
I25A	Rochford	80.34	41	P		P	04 47 05.6 +0.2
	baz=314,SNR=7.3						
W13A	Hualapai Mount	80.37	53	eP		P	04 47 07.0 +1.2
H26A	Fairpoint	80.42	40	P		P	04 47 06.4 +0.8
	baz=315,SNR=6.6						
IKP	In-Ko-Pah, Jac	80.47	56	P		P	04 47 07.0 +0.8
	baz=309						
O20A	White River Ci	80.51	46	P		P	04 47 07.0 +0.6
	baz=312						
O20A	White River Ci	80.51	46	eP		P	04 47 07.3 +0.9
	comp=Z,8.2nm,0.9s						
U15A	North Rim	80.52	51	eP		P	04 47 08.4 +1.7
E29A	Napoleon	80.58	37	P		P	04 47 06.5 +0.1
	baz=316						
C31A	Landman Farms,	80.58	35	P		P	04 47 06.5 +0.1
	baz=317,SNR=6.5						
D30A	Buchanan	80.61	36	P		P	04 47 06.4 -0.2
	baz=317,SNR=9.8						
B32A	Ashes, Strandq	80.68	34	P		P	04 47 06.5 -0.4
	baz=318,SNR=5.9						
PDMCI	Parker Dam,Lak	80.71	54	P		P	04 47 08.3 +1.0
	baz=310,SNR=9.4						
MDVR	Moldovita	80.75	321	‖ i P		P	04 47 06.0 -1.4
H27A	Howes	80.76	40	P		P	04 47 07.9 +0.4
	baz=315,SNR=12						
A33A	Warroad	80.78	33	P		P	04 47 07.1 -0.3
	baz=319,SNR=6.9						
I26A	New Underwood	80.78	41	P		P	04 47 08.4 +0.8
	baz=315,SNR=7.6						
Y12C	Blythe	80.82	54	P		P	04 47 09.1 +1.2
	baz=310,SNR=5.4						
Y12C	Blythe	80.82	54	eP		P	04 47 09.2 +1.4
	comp=Z,11nm,0.8s						
E30A	Jud	80.98	37	P		P	04 47 08.8 +0.3
	baz=317						
F29A	Eureka	81.02	38	P		P	04 47 09.2 +0.4
	baz=316,SNR=5.6						
G28A	Parade	81.03	39	P		P	04 47 09.6 +0.7
	baz=316						
GLA	Glamis	81.06	55	P		P	04 47 09.9 +0.6
	baz=309						
PV09	Paradox Valley	81.08	48	eP		P	04 47 10.9 +1.4
D31A	Mcclaflin, Tow	81.13	36	P		P	04 47 09.1 -0.2
	baz=318						
I27A	Quinn	81.17	40	P		P	04 47 10.5 +0.8
	baz=315,SNR=13						
J26A	Sides Ranch, S	81.17	41	P		P	04 47 10.4 +0.7
	baz=314,SNR=7.9						
PV10	Paradox Valley	81.21	48	eP		P	04 47 11.7 +1.4
H28A	Mission Ridge	81.26	39	P		P	04 47 10.9 +0.8
	baz=316						
PV04	Paradox Valley	81.28	48	eP		P	04 47 11.7 +1.2
N23A	Red Feather La	81.30	44	P		P	04 47 11.2 +0.5
	baz=313,SNR=7.6						
N23A	Red Feather La	81.30	44	eP		P	04 47 11.8 +1.2
	comp=Z,17nm,1.1s						
KHC	Kasperske Hory	81.34	328	eP		P	04 47 10.2 -0.2
KHC				epP		PcP	04 47 23.9 +7.3
KHC	Kasperske Hory	81.34	328	eP		P	04 47 10.2 -0.2
KHC				e			04 47 23.9
KHC	Kasperske Hory	81.34	328	eP		P	04 47 09.2 -1.2
	comp=Z,2.3nm,1.0s						
PV05	Paradox Valley	81.38	48	eP		P	04 47 12.6 +1.5
D32A	Dogwood Acres,	81.39	35	P		P	04 47 10.6 -0.1
	baz=318						
F30A	Leola	81.41	37	P		P	04 47 10.8 0.0
	baz=317						
E31A	Nome	81.42	36	P		P	04 47 11.1 +0.2
	baz=317,SNR=7.2						
G29A	Hoven	81.43	38	P		P	04 47 11.3 +0.3
	baz=316						
B34A	Aery, Baudette	81.44	33	P		P	04 47 10.2 -0.7
	baz=319						
C33A	Trail	81.49	34	P		P	04 47 10.5 -0.7
	baz=319						
GEC2	GERESS Array S	81.50	327	eP		P	04 47 11.2 -0.2
GEC2				pmax		pmax	
	comp=Z,19nm,1.9s						
GEC2	GERESS Array S	81.50	327	eP		P	04 47 11.2 -0.2
	comp=Z,19nm,1.9s						
GERES	GERESS Array B	81.50	327	P		P	04 47 10.6 -0.8
	comp=Z,1.5nm,0.8s,baz=36,slow=5.4,SNR=11						
GERES				LR		LR	05 24 59.2
	comp=Z,32nm,20.7s,baz=30,slow=37						
GEA0	GERESS Array S	81.51	327	eP		P	04 47 10.8 -0.7
PV01	Paradox Valley	81.65	48	eP		P	04 47 13.4 +0.8
I28A	Midland	81.67	40	P		P	04 47 12.7 +0.4
	baz=316,SNR=10						
Y14A	Wickenburg	81.67	53	eP		P	04 47 13.2 +0.7
WUAZ	Wupatki	81.68	51	P		P	04 47 13.2 +0.6
	baz=311,SNR=7.3						
WUAZ	Wupatki	81.68	51	eP		P	04 47 13.9 +1.2
	comp=Z,11nm,1.0s						
H29A	Onida	81.70	39	P		P	04 47 12.4 0.0
	baz=316,SNR=6.5						
F31A	Hecla	81.76	37	P		P	04 47 12.4 -0.2
	baz=317						
J27A	Elkhorn Farm,	81.77	41	P		P	04 47 13.1 +0.2
	baz=315,SNR=7.9						
G30A	Faulkton	81.86	38	P		P	04 47 13.6 +0.3
	baz=317,SNR=11						
GRFO	Grafenberg	81.89	329	eP		P	04 47 13.8 +0.5
GRFO				pmax		pmax	
	comp=Z,40nm,1.5s						
GRFO	Grafenberg	81.89	329	eP		P	04 47 13.8 +0.5
	comp=Z,40nm,1.5s						
ARSA	Arzberg	81.91	325	i P		P	04 47 13.4 0.0
	comp=Z,3.0nm,0.7s						
113A	Mohawk Valley,	81.93	55	eP		P	04 47 14.8 +1.0
	comp=Z,5.4nm,1.0s						
B35A	Bob, Littlefor	81.94	33	P		P	04 47 13.3 -0.2
	baz=320,SNR=6.1						
C34A	RKJ Ranch, Bem	81.96	34	P		P	04 47 13.3 -0.4
	baz=319						
MOA	Molln	82.02	326	i P		P	04 47 13.4 -0.6
	comp=Z,3.0nm,1.1s						
I29A	Vivian Onida	82.09	39	P		P	04 47 14.8 +0.3
	baz=316,SNR=6.6						
ISCO	Idaho Springs	82.23	45	P		P	04 47 16.2 +0.6
	baz=313,SNR=7.3						
ISCO	Idaho Springs	82.23	45	eP		P	04 47 16.9 +1.3
ISCO				pmax		pmax	
	comp=Z,4.0nm,0.8s						
ISCO	Idaho Springs	82.23	45	eP		P	04 47 16.9 +1.3
	comp=Z,3.9nm,0.8s						
G31A	Conde	82.24	37	P		P	04 47 15.3 +0.1
	baz=317						
D34A	Park Rapids	82.26	34	P		P	04 47 15.0 -0.3
	baz=319,SNR=5.7						
F32A	Veblen	82.28	36	P		P	04 47 15.3 -0.1
	baz=318						
MVCO	Mesa Verde	82.31	49	P		P	04 47 16.5 +0.5
	baz=312,SNR=6.8						
MVCO	Mesa Verde	82.31	49	eP		P	04 47 17.2 +1.2
	comp=Z,18nm,1.4s						
E33A	Westby DABS, E	82.33	35	P		P	04 47 15.5 -0.1
	baz=319,SNR=7.3						
C35A	Jirik Farms, M	82.33	33	P		P	04 47 15.2 -0.4
	baz=320						
SUSD	Miller	82.45	38	P		P	04 47 16.7 +0.4
	baz=317						
G32A	Webster	82.56	37	P		P	04 47 17.0 +0.1
	baz=318						
SOKA	Soboth	82.56	325	i P		P	04 47 17.0 +0.1
	comp=Z,9.9nm,1.1s						
I30A	Oacoma	82.60	39	P		P	04 47 17.4 +0.2
	baz=317						
F33A	5 Mile Ranch,	82.69	36	P		P	04 47 17.7 +0.1
	baz=318						
C36A	Pine Crest Far	82.78	33	P		P	04 47 16.8 -1.2
	baz=321						
S22A	4UR Ranch, Cre	82.93	47	P		P	04 47 20.6 +1.2
	baz=313						
S22A	4UR Ranch, Cre	82.93	47	eP		P	04 47 21.0 +1.6
	comp=Z,8.9nm,1.0s						
J30A	Dallas	83.00	39	P		P	04 47 19.2 0.0
	baz=317,SNR=6.2						
E35A	Pequot Lakes	83.01	34	P		P	04 47 18.2 -1.1
	baz=320						
214A	Organ Pipe Nat	83.07	55	P		P	04 47 20.3 +0.4
	baz=310						
214A	Organ Pipe Nat	83.07	55	eP		P	04 47 20.2 +0.4
	comp=Z,36nm,1.3s						
C37A	Embarrass	83.08	32	P		P	04 47 18.9 -0.6
	baz=321						
G33A	Ortonville	83.11	36	P		P	04 47 19.9 +0.2
	baz=318						
H32A	Carlson Farm,	83.15	37	P		P	04 47 20.2 +0.2
	baz=318						
EYMN	Ely	83.20	32	P		P	04 47 19.9 -0.3
	baz=322,SNR=5.8						
EYMN	Ely	83.20	32	eP		P	04 47 20.1 -0.1
	comp=Z,8.0nm,0.8s						
H33A	Prehn Over Nor	83.35	37	P		P	04 47 21.0 0.0
	baz=318						
K30A	Basset	83.41	40	P		P	04 47 21.5 +0.1
	baz=317,SNR=5.6						
D37A	Cotton	83.42	33	P		P	04 47 20.9 -0.4
	baz=321						
G34A	Benson	83.45	36	P		P	04 47 21.8 +0.3
	baz=319						
C38A	Sawbill Land.	83.48	32	P		P	04 47 21.2 -0.4
	baz=322,SNR=8.6						
E36A	McGregor	83.56	34	P		P	04 47 21.7 -0.3
	baz=320						
SDCO	Great Sand Dun	83.70	46	P		P	04 47 23.8 +0.5
	baz=314,SNR=8.3						
SDCO	Great Sand Dun	83.70	46	eP		P	04 47 24.5 +1.2
	comp=Z,4.7nm,1.0s						
RETA	Reute	83.80	328	i P		P	04 47 23.4 0.0
	comp=Z,8.0nm,0.9s						
K31A	O'Neill	83.88	39	P		P	04 47 23.9 +0.1
	baz=317						
ECSD	EROS Data Cent	84.11	37	P		P	04 47 24.9 -0.1
	baz=318,SNR=8.5						
ECSD	EROS Data Cent	84.11	37	eP		P	04 47 24.8 -0.1
	comp=Z,14nm,1.1s						
BFO	Black Forest	84.13	330	i P		P	04 47 25.2 +0.3
BFO	Black Forest	84.13	330	eP		P	04 47 23.8 -1.1
	comp=Z,33nm,1.7s						
TUC	Tucson	84.14	53	P		P	04 47 26.0 +0.6
	baz=311						
TUC	Tucson	84.14	53	eP		P	04 47 26.4 +1.0
TUC				pmax		pmax	
	comp=Z,5.0nm,0.9s						
TUC	Tucson	84.14	53	eP		P	04 47 26.4 +1.0
	comp=Z,5.5nm,0.9s						
L31A	Butterfield Fa	84.17	40	P		P	04 47 25.6 +0.3
	baz=317,SNR=11						
H35A	Sunnyside Ranc	84.23	36	P		P	04 47 25.6 +0.1
	baz=320,SNR=10						
DAVA	Damuels	84.33	328	i P		P	04 47 26.0 -0.2
	comp=Z,7.8nm,0.8s						
FUORN	Ofenpass-Fuorn	84.69	328	eP		P	04 47 28.2 +0.1
	comp=Z,36nm,1.6s						
M31A	Lambtecht Ranc	84.70	40	P		P	04 47 27.7 -0.3
	baz=317						
DAVOX	Davos/Dischmat	84.73	328	LR		LR	05 28 31.7
	comp=Z,46nm,18.4s,baz=62,slow=38						
T25A	Trinidad	84.74	46	P		P	04 47 29.0 +0.5
	baz=314,SNR=9.1						
T25A	Trinidad	84.74	46	eP		P	04 47 29.6 +1.0
	comp=Z,11nm,0.9s						
J34A	George	84.77	37	P		P	04 47 28.5 +0.3
	baz=319						
ANMO	Albuquerque	85.06	49	P		P	04 47 30.9 +0.8
	comp=Z,5.9nm,1.1s,baz=308,slow=4.8,SNR=14						
ANMO	Albuquerque	85.06	49	P		P	04 47 31.1 +1.0
	baz=313						
ANMO	Albuquerque	85.06	49	deP		P	04 47 31.5 +1.4
ANMO				pmax		pmax	
	comp=Z,13nm,1.7s						
ANMO	Albuquerque	85.06	49	eP		P	04 47 31.5 +1.4
	comp=Z,9.1nm,1.1s						
BGNE	Belgrade	85.08	40	P		P	04 47 29.5 -0.4
	baz=318						
BGNE	Belgrade	85.08	40	eP		P	04 47 30.1 +0.2
	comp=Z,37nm,0.9s						
K34A	Le Mars	85.15	38	P		P	04 47 29.6 -0.5
	baz=319						
O31A	Woolen Ranch,	85.39	41	P		P	04 47 31.2 -0.2
	baz=317						
I37A	Lemond, Waseca	85.42	35	P		P	04 47 31.6 +0.2
	baz=320,SNR=8.1						
J36A	Seneca 1, Swea	85.50	36	P		P	04 47 31.9 0.0
	baz=320						
PMOR	Pomariorio Ree	85.54	113	eT		T	06 20 56.9
	comp=Z,2.6nm,0.3s						
L34A	Svendsen Farm,	85.55	38	P		P	04 47 32.2 0.0
	baz=319						
COWI	Conover	85.65	32	eP		P	04 47 32.5 -0.1
	comp=Z,8.9nm,0.9s						
319A	Douglas	85.72	53	eP		P	04 47 34.5 +1.1
121A	Cookes Peak, D	85.88	52	P		P	04 47 35.5 +1.2
	baz=313						
121A	Cookes Peak, D	85.88	52	eP		P	04 47 35.1 +0.9
	comp=Z,4.5nm,0.8s						
I38A	Scanlan Farm,	85.89	35	P		P	04 47 33.3 -0.5
	baz=321						
J37A	Redenius Farm,	85.89	36	P		P	04 47 33.8 -0.1
	baz=320						
K36A	Gilmore City	85.98	37	P		P	04 47 34.4 +0.1
	baz=320						
PPT	Papeete	86.00	116	LR		LR	05 17 07.3
	comp=Z,26nm,21.3s,baz=240,slow=30						
PPT2	Papeete2	86.02	116	eLR		LR	05 14 30.5
	comp=Z,50nm,24.2s						
P32A	Huiting Farm,	86.16	41	P		P	04 47 34.9 -0.4
	baz=318,SNR=8.2						
M35A	Neola	86.26	38	P		P	04 47 35.7 0.0
	baz=319						
K37A	Belmond	86.27	36	P		P	04 47 35.8 0.0
	baz=320						
N34A	Lincoln	86.33	39	P		P	04 47 35.6 -0.5
	baz=319						
J38A	Wedel Dairy, R	86.38	35	P		P	04 47 36.0 -0.2
	baz=321						
Q32A	Meitler Ranch,	86.64	42	P		P	04 47 37.1 -0.6
	baz=318,SNR=5.3						
L37A	Phoenix Point,	86.70	37	P		P	04 47 37.7 -0.1
	baz=320						
M36A	Felix, Anita	86.71	38	P		P	04 47 38.0 +0.1
	baz=320						
O34A	Beatrice	86.73	40	P		P	04 47 37.4 -0.6
	baz=319						
N35A	Tabor	86.75	39	P		P	04 47 38.6 +0.4
	baz=319						
P33A	Williams Farm,	86.77	41	P		P	04 47 38.0 -0.3
	baz=318						
R32A	Long Quarter,	86.98	42	P		P	04 47 38.3 -1.0
	baz=318						
Q33A	Connelly Farm,	87.02	41	P		P	04 47 39.4 -0.1
	baz=318,SNR=8.7						
L38A	Oak Wood Farm,	87.07	36	P		P	04 47 39.5 -0.1
	baz=321						
M37A	Trindle Farm,	87.11	38	P		P	04 47 40.3 +0.4
	baz=320						
P34A	Walnut Farm, R	87.14	40	P		P	04 47 40.0 -0.1
	baz=319,SNR=7.3						
R33A	Olander Ranch,	87.45	42	P		P	04 47 41.6 -0.1
	baz=318						
M38A	Pleasantville	87.51	37	P		P	04 47 42.0 +0.2
	baz=321						
Q34A	Chapman	87.54	41	P		P	04 47 41.9 -0.1
	baz=318,SNR=7.0						
P35A	Duane Minner,	87.56	40	P		P	04 47 42.0 -0.1
	baz=319						
KSU1	Kansas State U	87.58	41	P		P	04 47 41.9 -0.3
	baz=319,SNR=5.6						
KSU1	Kansas State U	87.58	41	eP		P	04 47 42.4 +0.2
	comp=Z,17nm,0.8s						
O36A	Bolckow	87.64	39	P		P	04 47 42.7 +0.3
	baz=320						
T32A	Huddler Ranch,	87.78	43	P		P	04 47 43.9 +0.7
	baz=317						
R34A	Isabella, Hill	87.85	41	P		P	04 47 44.1 +0.6
	baz=318						
P36A	Good Intent, A	87.90	39	P		P	04 47 43.8 +0.1
	baz=320						
MNTX	Cornudas Mount	87.94	51	P		P	04 47 43.6 -0.4
	baz=314						
MNTX	Cornudas Mount	87.94	51	eP		P	04 47 43.9 -0.1
	comp=Z,2.9nm,1.1s						
S33A	Kaszmaul Farm,	87.97	42	P		P	04 47 44.5 +0.4
	baz=318						
N38A	Joes South For	87.98	37	P		P	04 47 44.3 +0.2
	baz=321						
Q35A	Mercer Eighty,	88.06	40	P		P	04 47 43.8 -0.7
	baz=319						
P37A	Lathrop	88.36	39	P		P	04 47 45.6 -0.3
	baz=320						
S34A	Willow Spring	88.36	42	P		P	04 47 45.6 -0.4
	baz=318						
S35A	Otter Creek Ra	88.79	41	P		P	04 47 48.2 +0.2
	baz=319,SNR=5.6						
W32A	Sentinel	89.11	45	P		P	04 47 50.0 +0.4
	baz=317						
O40A	La Belle	89.15	37	P		P	04 47 49.6 0.0
	baz=322						
Q38A	Cooks Store, C	89.20	39	P		P	04 47 49.8 -0.1
	baz=321						
T35A	Sooner Cattle	89.27	42	P		P	04 47 50.2 0.0
	baz=319						
T36A	Boggs Farm, Ca	89.49	41	P		P	04 47 51.6 +0.3
	baz=319						
S37A	Fort Scott	89.51	40	P		P	04 47 51.5 +0.2
	baz=320						
P40A	Paris	89.53	38	P		P	04 47 51.5 +0.1
	baz=322,SNR=5.3						
R38A	Fenwick Farm,	89.65	40	P		P	04 47 51.1 -0.8
	baz=320						
VAE	Valguarnera	89.85	320	LR		LR	05 30 15.2
	comp=Z,24nm,18.6s,baz=353,slow=37						
Q40A	Laux Farm, Aux	89.94	38	P		P	04 47 53.5 +0.2
	baz=322						
V35A	Meyer Ranch, C	89.96	43	P		P	04 47 53.5 +0.1
	baz=319						
S38A	Stockton	90.08	40	P		P	04 47 53.6 -0.4
	baz=320						
S39A	Bolivar	90.33	39	P		P	04 47 54.7 -0.4
	baz=321						
T38A	Diamond	90.34	40	P		P	04 47 55.4 +0.1
	baz=320						
R40A	Maddies Statio	90.39	38	P		P	04 47 55.3 -0.1
	baz=321						
W35A	Tecumseh	90.39	43	P		P	04 47 55.9 +0.4
	baz=319						
TUL1	Leonard	90.41	42	P		P	04 47 55.9 +0.4
	baz=319						
TX31	Lajitas Ar. Si	90.64	51	eP		P	04 47 57.7 +0.8
TXAR	Lajitas Array	90.64	51	P		P	04 47 57.3 +0.4
	comp=Z,3.3nm,0.8s,baz=294,slow=3.5,SNR=47						

X36A	**Centrahoma**	**91.11**	**43**	P	**P**	**04 47 59.4**	**+0.6**
	baz=319,SNR=5.3						
133A	**Hamilton Ranch**	**91.13**	**46**	P	**P**	**04 47 59.6**	**+0.6**
	baz=318						
V38A	**Canehill**	**91.17**	**41**	P	**P**	**04 47 59.2**	**+0.1**
	baz=320						
W37B	**Quinton**	**91.18**	**42**	P	**P**	**04 47 59.3**	**+0.2**
	baz=320						
U39A	**Green Forest**	**91.25**	**40**	P	**P**	**04 47 59.4**	**-0.1**
	baz=321						
Z35A	**Perchaven, San**	**91.54**	**45**	P	**P**	**04 48 00.9**	**0.0**
	baz=318						
233A	**Rising Star**	**91.57**	**47**	P	**P**	**04 48 01.0**	**-0.1**
	baz=318,SNR=7.4						
V39A	**Pettigrew**	**91.59**	**41**	P	**P**	**04 48 00.9**	**-0.2**
	baz=320						
U40A	**Yellville**	**91.59**	**40**	P	**P**	**04 48 00.9**	**-0.1**
	baz=321,SNR=6.0						
Y36A	**Durant**	**91.65**	**44**	P	**P**	**04 48 01.9**	**+0.6**
	baz=319						
W38A	**Poteau**	**91.72**	**42**	P	**P**	**04 48 02.2**	**+0.5**
	baz=320						
X38A	**Whitesboro**	**91.86**	**42**	P	**P**	**04 48 02.6**	**+0.3**
	baz=320						
234A	**Clairette**	**92.02**	**46**	P	**P**	**04 48 03.8**	**+0.7**
	baz=318						
333A	**Richland Sprin**	**92.03**	**47**	P	**P**	**04 48 03.9**	**+0.7**
	baz=317,SNR=9.4						
Z36A	**Blue Ridge**	**92.04**	**44**	P	**P**	**04 48 03.5**	**+0.4**
	baz=319						
JCT	**Junction City**	**92.17**	**48**	P	**P**	**04 48 04.1**	**+0.3**
	baz=317						
JCT	**Junction City**	**92.17**	**48**	*e*P	**P**	**04 48 04.4**	**+0.5**
JCT				pmax	pmax		
	comp=Z,5.0nm,0.8s						
JCT	**Junction City**	**92.17**	**48**	*e*P	**P**	**04 48 04.3**	**+0.5**
	comp=Z,5.2nm,0.8s						
X39A	**Fountain Ranch**	**92.36**	**42**	P	**P**	**04 48 05.4**	**+0.7**
	baz=320						
433A	**Art**	**92.39**	**48**	P	**P**	**04 48 05.3**	**+0.4**
	baz=317						
334A	**Lometa**	**92.46**	**47**	P	**P**	**04 48 05.4**	**+0.2**
	baz=318,SNR=5.2						
PBMO	**Poplar Bluff**	**92.48**	**38**	*e*P	**P**	**04 48 05.5**	**+0.4**
	comp=Z,12nm,1.2s						
MIAR	**Mount Ida**	**92.62**	**42**	P	**P**	**04 48 05.8**	**0.0**
	baz=321,SNR=6.8						
MIAR	**Mount Ida**	**92.62**	**42**	*e*P	**P**	**04 48 06.5**	**+0.7**
MIAR				pmax	pmax		
	comp=Z,7.0nm,0.8s						
MIAR	**Mount Ida**	**92.62**	**42**	*e*P	**P**	**04 48 06.5**	**+0.7**
	comp=Z,6.6nm,0.8s						
Y39A	**Lockesburg**	**92.81**	**42**	P	**P**	**04 48 07.3**	**+0.6**
	baz=320						
434A	**Burnet**	**92.82**	**47**	P	**P**	**04 48 06.7**	**-0.2**
	baz=318						
534A	**Blanco**	**93.28**	**48**	P	**P**	**04 48 09.3**	**+0.4**
	baz=318						
633A	**Saathoff Ranch**	**93.28**	**49**	P	**P**	**04 48 09.3**	**+0.3**
	baz=317						
TORD	**Torodi Ar. Bea**	**116.01**	**314**	PKP	**PKPdf**	**04 53 35.9**	**-1.6**
	comp=Z,0.2nm,0.5s,baz=27,slow=1.7,SNR=5.2						
VNA2	**Neumayer--Watz**	**142.62**	**197**	PKP	PKPpre	04 54 21.5	
	baz=119,slow=3.1						
VNA3	**Neumayer Olymp**	**142.90**	**196**	PKP	PKPpre	04 54 22.2	
SAML	**Samuel**	**144.57**	**42**	*e*PKPdf	**PKPab**	**04 54 29.3**	**-0.2**
LPAZ	**La Paz**	**147.35**	**57**	PKPbc	**PKPdf**	**04 54 37.5**	**+1.0**
	comp=Z,2.8nm,0.4s,baz=348,slow=3.8,SNR=13						
LVC	**Limon Verde**	**151.03**	**67**	*e*PKPbc	**PKPbc**	**04 54 48.7**	**+1.0**
LCO	**Las Campanas**	**153.09**	**80**	*e*PKPbc	**PKPbc**	**04 54 52.2**	**+0.2**
PLCA	**Paso Flores**	**156.26**	**107**	PKPab	**PKPab**	**04 55 17.6**	**+0.9**
	comp=Z,4.1nm,1.0s,baz=249,slow=2.6,SNR=4.1						

IDC 07 04:38:36.0±1.4, 3°.59S×142°.22E, h0km, mb3.7/4, mb1 4.0/5, mb1mx3.7/35, mbtmp3.7/5, ML3.6/1, MS3.6/3, Ms1 3.6/3, ms1mx2.8/32, Error ellipse: s-maj=38.3km s-min=22.9km az=102.0, Near north coast of New Guinea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAY	**Jayapura**	**1.86**	**305**	Pn	Pn	04 39 09.1	0.0
	1.3nm,0.3s,baz=93,slow=22,SNR=19						
JAY				Sn	Sn	04 39 29.0	-4.3
	1.6nm,0.3s,baz=93,slow=23,SNR=5.9						
GUMO	**Guam**	**17.27**	**9**	LR	LR	04 49 19.5	
	comp=Z,74nm,18.2s,baz=50,slow=37						
WRA	**Warramunga Arr**	**17.98**	**205**	P	Pn	04 42 46.0	-1.5
	0.2nm,0.3s,baz=29,slow=12,SNR=9.3						
ASAR	**Alice Springs**	**21.52**	**201**	P	P	04 43 27.7	+0.9
	0.6nm,0.6s,baz=27,slow=8.9,SNR=9.9						
FITZ	**Fitzroy Crossi**	**21.72**	**227**	P	P	04 43 28.7	-0.3
	2.5nm,0.8s,baz=56,slow=9.4,SNR=2.4						
PSI	**Prapat**	**43.74**	**278**	LR	LR	05 06 58.0	
	comp=Z,659nm,20.4s,slow=39						
MKAR	**Makanchi Array**	**72.64**	**321**	P	P	04 50 06.0	+0.4
	1.1nm,0.7s,baz=121,slow=7.2,SNR=8.1						
ILAR	**Eielson Array**	**85.19**	**24**	P	P	04 51 13.7	-0.3
	1.5nm,0.8s,baz=259,slow=5.3,SNR=18						
AKTO	**Aktyubinsk**	**89.05**	**320**	LR	LR	05 30 17.3	
	comp=Z,12nm,21.4s,baz=148,slow=35						

*ISCJB **07** 04:42:34.8±0.7, 37°.73N±0°.03×26°.88E±0°.05, h11km±5km, Error ellipse: s-maj=7.2km s-min=4.2km az=143.4*
*ISK **07** 04:42:34.8, 37°.77N×26°.96E, h22km, MD2.7*
*DDA **07** 04:42:35.6, 37°.76N×26°.93E, h8km, Md2.7*
*CSEM **07** 04:42:35.1±0.3, 37°.73N×26°.91E, h15km, MD2.7, Error ellipse: s-maj=8.4km s-min=5.5km az=68.0*

ISC 07 04:42:34.9±1.1, 37°.74N±0°.03×26°.88E±0°.03, h21km±2km, n28, σ0°70/42, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GCAM	**G?zelcaml?**	**0.29**	**97**	P	**Pb**	**04 42 41.2**	**-0.2**
GCAM				S	**Sb**	**04 42 46.4**	**+0.5**
GCAM	**G?zelcaml?**	**0.29**	**97**	*i* P	**Pb**	**04 42 41.2**	**-0.2**
GCAM				*i* S	**Sb**	**04 42 46.4**	**+0.5**
DGB	**˜zmir**	**0.32**	**1**	*i* P	**Pb**	**04 42 41.5**	**-0.4**
DGB				*i* S	**Sb**	**04 42 46.7**	**+0.1**
ZEY	**˜zmir**	**0.58**	**330**	*i* P	**Pb**	**04 42 46.0**	**-0.6**
ZEY				*i* S	**Sn**	**04 42 55.5**	**-1.3**
URLA	**Izmir**	**0.66**	**341**	P	**Pn**	**04 42 48.5**	**-0.6**
URLA				S	**Sn**	**04 42 59.3**	**+0.4**
URLA	**Izmir**	**0.66**	**341**	*i* P	**Pn**	**04 42 48.5**	**-0.6**
URLA				*i* S	**Sn**	**04 42 59.3**	**+0.4**
BLCB	**Balcova**	**0.66**	**11**	*e*PG	**Pb**	**04 42 47.7**	**-0.2**
BLCB				*e*SG	**Sb**	**04 42 57.0**	**+0.3**
BLCB	**Balcova**	**0.66**	**11**	*e*Pg	**Pb**	**04 42 47.7**	**-0.2**
BLCB				*e*Sg	**Sb**	**04 42 57.0**	**+0.3**
IZM	**Izmir**	**0.73**	**25**	*e*PG	**Pb**	**04 42 48.5**	**-0.5**
IZM	**Izmir**	**0.73**	**25**	*e*Pg	**Pb**	**04 42 48.5**	**-0.5**
BODT	**Bodrum**	**0.76**	**153**	*e*PG	**Pn**	**04 42 50.1**	**-0.3**
BODT	**Bodrum**	**0.76**	**153**	*e*Pg	**Pn**	**04 42 50.1**	**-0.3**
AYDN	**Tasoluk**	**0.80**	**95**	P	**Pb**	**04 42 50.1**	**0.0**
AYDN				S	**Sb**	**04 43 01.3**	**+0.8**
AYDN	**Tasoluk**	**0.80**	**95**	*i* P	**Pb**	**04 42 50.1**	**0.0**
AYDN				*i* S	**Sb**	**04 43 01.3**	**+0.8**
BDRM	**Kayabasi**	**0.81**	**146**	P	**Pb**	**04 42 50.0**	**-0.3**
BDRM				S	**Sn**	**04 43 01.7**	**-0.7**
BDRM	**Kayabasi**	**0.81**	**146**	*i* P	**Pb**	**04 42 50.0**	**-0.3**
BDRM				*i* S	**Sn**	**04 43 01.7**	**-0.7**
AYDB	**Zeytinkoy-Aydi**	**0.83**	**75**	*e*PG	**Pb**	**04 42 50.4**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**0.83**	**75**	*e*Pg	**Pb**	**04 42 50.4**	**-0.3**
APE	**Apeiranthos**	**1.26**	**239**	*e*PN	**Pb**	**04 42 58.8**	**+0.8**
APE	**Apeiranthos**	**1.26**	**239**	*e*Pn	**Pb**	**04 42 58.8**	**+0.8**
YER	**Yerkesik**	**1.27**	**118**	*e*PN	**Pn**	**04 42 56.9**	**-0.6**
YER	**Yerkesik**	**1.27**	**118**	*e*Pn	**Pn**	**04 42 56.9**	**-0.6**
DKL	**Dikili**	**1.33**	**1**	*e*PN	**Pn**	**04 42 58.5**	**+0.2**
DKL	**Dikili**	**1.33**	**1**	*e*Pn	**Pn**	**04 42 58.5**	**+0.2**
MANT	**Manisa**	**1.53**	**60**	P	**Pb**	**04 43 04.5**	**+1.9**
MANT				S	**Sb**	**04 43 22.4**	**+0.8**
MANT	**Manisa**	**1.53**	**60**	*i* P	**Pb**	**04 43 04.5**	**+1.9**
MANT				*i* S	**Sb**	**04 43 22.4**	**+0.8**
KULA	**Kula-Manisa**	**1.61**	**61**	*e*PN	**Pn**	**04 43 01.4**	**-0.7**
KULA	**Kula-Manisa**	**1.61**	**61**	*e*Pn	**Pn**	**04 43 01.4**	**-0.7**

*ISCJB **07** 04:47:54.7±0.6, 6°.82N±0°.04×73°.08W±0°.05, h157km±5km, Error ellipse: s-maj=9.3km s-min=4.2km az=37.6*
*FUNV **07** 04:47:55.8, 6°.77N×73°.13W, h165km, MW2.8*
*RSNC **07** 04:47:57.4±0.5, 6°.79N×73°.12W, h141km±3km, ML2.8*

ISC 07 04:47:54.8±1.4, 6°.81N±0°.04×73°.08W±0°.05, h157km±8km, n26, σ0°99/43, 1C-3D, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BTLC	**Betulia, Santa**	**0.22**	**301**	*e*P	**Pn**	**04 48 16.6**	**+0.3**
BTLC				*e*S	**Sn**	**04 48 31.2**	**-1.4**
BARC	**Barichara**	**0.23**	**206**	*i* P	**Pn**	**04 48 16.5**	**+0.1**
BARC				*e*S	**Sn**	**04 48 31.1**	**-1.7**
GIRC	**Giron, Santand**	**0.29**	**338**	*e*P	**Pn**	**04 48 16.5**	**+0.1**
GIRC				*e*S	**Sn**	**04 48 31.1**	**-1.8**
PAMC	**Pamplona, Colo**	**0.65**	**35**	*e*P	**Pn**	**04 48 19.5**	**+1.1**
PAMC				*e*S	**Sn**	**04 48 36.0**	**-0.4**
BRRC	**Barranca, Sant**	**0.69**	**296**	⇑*i*P	**Pn**	**04 48 18.4**	**+0.3**
BRRC				*e*S	**Sn**	**04 48 35.0**	**-0.9**
BRRC				*i*		04 48 39.7	
	comp=Z,125nm,0.1s						
RUSC	**La Rusia**	**0.91**	**180**	*e*P	**Pn**	**04 48 20.6**	**+0.4**
RUSC				*i*		04 48 21.8	
	comp=Z,52nm,0.2s						
RUSC				*e*S	**Sn**	**04 48 38.9**	**-0.6**
GRMC	**Gramalote, San**	**0.95**	**17**	*i* P	**Pn**	**04 48 22.4**	**+2.3**
GRMC				*e*S	**Sn**	**04 48 41.5**	**+2.1**
GRMC				*i*		04 48 42.8	
	comp=Z,78nm,0.4s						
CBRI	**Barrientos, No**	**0.95**	**17**	*e*P	**Pn**	**04 48 21.1**	**+1.0**
CBRI				*e*S	**Sn**	**04 48 39.5**	**0.0**
CBRI				*i*		04 48 41.1	
	comp=Z,78nm,0.4s						
CAPV	**Capacho**	**1.30**	**36**	⇓*i*P	**Pn**	**04 48 24.6**	**+1.4**
CAPV				*e*S	**Sn**	**04 48 45.8**	**+0.8**
OCAC	**Ocana**	**1.44**	**351**	*e*P	**Pn**	**04 48 25.2**	**+0.7**
OCAC				*e*S	**Sn**	**04 48 46.9**	**-0.5**
OCAC				*i*		04 48 51.5	
	comp=Z,76nm,0.3s						
NORC	**Norcasia**	**2.17**	**235**	*e*P	**Pn**	**04 48 33.3**	**+0.9**
NORC				*e*S	**Sn**	**04 49 01.0**	**-0.3**
HELC	**Santa Helena**	**2.51**	**256**	*e*P	**Pn**	**04 48 37.9**	**+1.1**
HELC				*e*S	**Sn**	**04 49 09.2**	**+0.1**
HELC				*i*		04 49 15.0	
	comp=Z,38nm,0.3s						
VIGV	**El Vigia**	**2.64**	**40**	⇓*e*P	**Pn**	**04 48 39.1**	**+1.1**
VIGV				*e*S	**Sn**	**04 49 11.1**	**-0.5**
SOCV	**Socops**	**2.65**	**56**	⇓*e*P	**Pn**	**04 48 38.9**	**+0.8**
SOCV				*e*S	**Sn**	**04 49 11.2**	**-0.5**
VILC	**Villavicencio,**	**2.75**	**193**	*e*P	**Pn**	**04 48 40.4**	**+0.9**
VILC				*e*S	**Sn**	**04 49 13.9**	**-0.1**
VILC				*i*		04 49 24.4	
	comp=Z,23nm,0.4s						
PRAC	**Prado**	**3.56**	**210**	*e*P	**Pn**	**04 48 50.2**	**+0.6**
PRAC				*e*S	**Sn**	**04 49 32.3**	**0.0**
ELOV	**Elorza**	**3.58**	**87**	*e*P	**Pn**	**04 48 50.9**	**+1.1**
VIRV	**Villa del Rosa**	**3.73**	**10**	*e*P	**Pn**	**04 48 51.9**	**+0.1**
VIRV				*e*S	**Sn**	**04 49 34.2**	**-2.1**
SANV	**Sanarito**	**4.41**	**52**	*e*P	**Pn**	**04 49 00.9**	**+0.1**
CURV	**Curarigua**	**4.44**	**44**	*e*P	**Pn**	**04 49 01.4**	**+0.4**
DABV	**Dabajuro**	**4.75**	**30**	*e*P	**Pn**	**04 49 05.6**	**+0.5**
TEPV	**Terepaima**	**4.96**	**51**	*e*P	**Pn**	**04 49 08.4**	**+0.4**
BAUV	**El Baul**	**5.42**	**67**	*e*P	**Pn**	**04 49 13.3**	**-0.6**
MAPV	**Macapo**	**5.47**	**56**	*e*P	**Pn**	**04 49 14.8**	**+0.1**
MONV	**Montecano**	**5.97**	**31**	*e*P	**Pn**	**04 49 20.8**	**-0.4**
CUPV	**Cœpira**	**7.90**	**65**	*e*P	**Pn**	**04 49 46.1**	**-0.9**

*ISCJB **07** 04:50:59.0±0.3, 30°.69N±0°.03×105°.72W±0°.02, h10km, mb3.6/4, Error ellipse: s-maj=3.7km s-min=2.7km az=180.0*
*IDC **07** 04:50:59.1±0.7, 30°.76N×105°.69W, h0km, mb4.0/4, mb1 3.9/11, mb1mx3.8/38, mbtmp3.7/11, ML3.7/7, MS2.7/2, Ms1 2.7/2, ms1mx2.4/49, Error ellipse: s-maj=21.0km s-min=8.4km az=43.0*
*NEIC **07** 04:51:00.9±0.4, 30°.64N×105°.73W, h10km, mb3.9/7, MD4.1(MEX), Error ellipse: s-maj=5.8km s-min=3.8km az=5.0*
NEIC Felt [II] at Ciudad Juarez. Felt at El Paso, Texas.
*MEX **07** 04:51:01.6±0.6, 30°.70N×105°.59W, h10km, MD4.1*

ISC 07 04:51:00.3±0.5, 30°.67N±0°.03×105°.80W±0°.02, h10km, n92, σ2°.40/121, mb3.7/4, Texas-Mexico border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MNTX	**Cornudas Mount**	**1.09**	**19**	*e*Pg	**Pb**	**04 51 18.4**	**-2.8**
MNTX				*e*Sg	**Sg**	**04 51 31.9**	**-3.5**
CGIG		**1.90**	**261**	*e*P	**Pb**	**04 51 34.0**	**-1.3**
CGIG				*e*S	**Sb**	**04 51 58.9**	**-0.2**
CGIG		**1.90**	**261**	*e*P	**Pb**	**04 51 34.0**	**-1.3**
CGIG				*e*S	**Sb**	**04 51 58.9**	**-0.2**
GDL2	**Guadalupe Moun**	**1.96**	**38**	*e*Pn	**Pn**	**04 51 33.3**	**-0.5**
TX31	**Lajitas Ar. Si**	**2.28**	**125**	*e*Pn	**Pn**	**04 51 38.4**	**+0.3**
TXAR	**Lajitas Array**	**2.28**	**125**	Pn	**Pn**	**04 51 37.9**	**-0.2**
	45nm,0.3s,baz=299,slow=12,SNR=526						
TXAR				Pg	**Pb**	**04 51 41.6**	**0.0**
	57nm,0.3s,baz=313,slow=18,SNR=239						
TXAR				Lg	Lg	04 52 11.1	
	239nm,0.3s,baz=309,slow=29,SNR=13						
CLNB	**Carlsbad**	**2.29**	**45**	*e*Pn	**Pn**	**04 51 39.1**	**+0.9**
121A	**Cookes Peak, D**	**2.52**	**318**	*e*P	**Pn**	**04 51 40.9**	**-0.5**
121A				*e*S	**Sn**	**04 52 12.1**	**-0.2**
121A	**Cookes Peak, D**	**2.52**	**318**	*e*Pn	**Pn**	**04 51 41.0**	**-0.5**
121A				*e*Sg	**Sg**	**04 52 20.1**	**-1.1**
319A	**Douglas**	**3.07**	**284**	*e*P	**Pn**	**04 51 49.2**	**+0.2**
319A				*e*S	**Sn**	**04 52 28.1**	**+2.2**
319A	**Douglas**	**3.07**	**284**	*e*Pn	**Pn**	**04 51 49.4**	**+0.3**
Y22D	**IRIS PASSCAL I**	**3.53**	**345**	*e*Pn	**Pn**	**04 51 55.0**	**-0.3**
Y22D				*e*Pg	**Pg**	**04 52 06.5**	**-1.4**
BNM	**Barren Site**	**3.54**	**349**	*e*Pn	**Pn**	**04 51 55.2**	**-0.4**
LPM	**Los Pinos Moun**	**3.70**	**349**	*e*Pn	**Pn**	**04 51 57.1**	**-0.6**
HPIG		**3.72**	**178**	*e*P	**Pn**	**04 51 57.4**	**-0.6**
HPIG				*i* S	**Sn**	**04 52 41.4**	**-0.7**
HPIG		**3.72**	**178**	*e*Pn	**Pn**	**04 51 58.6**	**+0.5**
HPIG				*i* S	**Sn**	**04 52 41.4**	**-0.7**
LAZ	**Ladron**	**3.89**	**343**	*e*Pn	**Pn**	**04 52 00.3**	**-0.1**
MSTX	**Muleshoe**	**4.17**	**37**	*e*Pn	**Pn**	**04 52 04.1**	**0.0**
MSTX				*e*Sg	**Sb**	**04 53 07.1**	**+2.6**
ANMO	**Albuquerque**	**4.30**	**353**	Pn	**Pn**	**04 52 05.8**	**-0.2**
	1.9nm,0.3s,baz=172,slow=14,SNR=28						
ANMO				Pg	**Pb**	**04 52 16.1**	**-0.1**
	3.7nm,0.3s,baz=170,slow=17,SNR=34						
ANMO				Lg	Lg	04 53 11.2	
	26nm,0.3s,baz=252,slow=16,SNR=8.6						
ANMO	**Albuquerque**	**4.30**	**353**	*e*P	**Pn**	**04 52 05.0**	**-1.0**
ANMO				*e*S	**Sn**	**04 52 54.2**	**-2.2**
ANMO	**Albuquerque**	**4.30**	**353**	*e*Pn	**Pn**	**04 52 06.3**	**+0.2**
ANMO				*e*Pg	**Pb**	**04 52 16.9**	**+0.7**
ANMO				*e*Pg	**Pg**	**04 52 20.1**	**-2.7**
ANMO				*e*Sg	**Sb**	**04 53 12.1**	**+3.8**
TUC	**Tucson**	**4.56**	**292**	*e*Pn	**Pn**	**04 52 09.9**	**+0.4**
TUC				*e*Pg	**Pg**	**04 52 26.1**	**-1.6**
TUC				*e*S	**Sn**	**04 53 05.4**	**+2.8**
TUC				*e*Sg	**Sg**	**04 53 24.4**	**-2.5**
HSIG		**4.76**	**251**	*e*P	**Pn**	**04 52 13.6**	**+1.4**
HSIG				*e*S	**Sn**	**04 53 09.8**	**+2.2**
HSIG		**4.76**	**251**	*e*P	**Pn**	**04 52 13.6**	**+1.4**
HSIG				*e*Pg	**Pg**	**04 52 30.0**	**-1.6**
HSIG				*e*S	**Sn**	**04 53 09.8**	**+2.2**
JCT	**Junction City**	**5.17**	**91**	*e*Pn	**Pn**	**04 52 18.2**	**+0.3**
AMTX	**Amarillo**	**5.45**	**38**	*e*Pn	**Pn**	**04 52 22.4**	**+0.7**
AMTX				*e*Pg	**Pb**	**04 52 38.4**	**+2.7**
AMTX				*e*Sg	**Sb**	**04 53 47.0**	**+5.9**
W18A	**Petrified Fore**	**5.54**	**324**	*e*Pn	**Pn**	**04 52 24.3**	**+1.4**
W18A				*e*Pg	**Pb**	**04 52 41.6**	**+4.4**
W18A				*e*Sg	**Sg**	**04 53 56.5**	**-1.7**
ABTX	**Abilene, Hawle**	**5.60**	**68**	*e*Pn	**Pn**	**04 52 23.9**	**+0.1**
ABTX				*e*Pg	**Pb**	**04 52 40.0**	**+1.8**
ABTX				*e*Sg	**Sg**	**04 53 52.1**	**-8.1**
214A	**Organ Pipe Nat**	**6.14**	**284**	*e*P	**Pn**	**04 52 31.8**	**+0.7**
214A				*i* S	**Sn**	**04 53 44.2**	**+2.8**
214A	**Organ Pipe Nat**	**6.14**	**284**	*e*Pn	**Pn**	**04 52 31.6**	**+0.5**
	117nm,0.9s						
214A				*e*Pg	**Pg**	**04 52 54.2**	**-3.7**
214A				*e*Sg	**Sg**	**04 54 16.6**	**-0.7**
SRIG	**Santa Rosalia**	**6.55**	**241**	*e*Pn	**Pn**	**04 52 38.7**	**+1.9**
WUAZ	**Wupatki**	**6.73**	**317**	*e*Pn	**Pn**	**04 52 40.5**	**+1.2**
	33nm,0.6s						
WUAZ				*e*Pg	**Pg**	**04 53 06.1**	**-3.1**
WUAZ				*e*Sg	**Sg**	**04 54 30.1**	**-6.2**
MVCO	**Mesa Verde**	**6.90**	**342**	*e*Pn	**Pn**	**04 52 43.4**	**+1.7**
MVCO				*e*Pg	Pg	04 53 07.2	-5.3
MVCO				*e*Sg	**Sg**	**04 54 37.8**	**-4.1**
Y14A	**Wickenburg**	**6.92**	**300**	*e*Pn	**Pn**	**04 52 42.1**	**+0.3**
SDCO	**Great Sand Dun**	**7.07**	**2**	*e*Pn	**Pn**	**04 52 45.0**	**+0.9**
	15nm,0.7s						
SDCO				*e*Pg	Pb	04 53 08.1	+4.8
SDCO				*e*Sg	**Sb**	**04 54 36.3**	**+8.5**
113A	**Mohawk Valley,**	**7.10**	**289**	*e*Pn	**Pn**	**04 52 45.1**	**+0.8**
S22A	**4UR Ranch, Cre**	**7.11**	**353**	*e*Pn	Pn	04 52 50.0	+5.2
WMOK	**Wichita Mounta**	**7.17**	**54**	*e*Pn	**Pn**	**04 52 43.8**	**-1.5**
WMOK				*e*Pg	**Pb**	**04 53 07.2**	**+2.2**
WMOK				*e*Sg	Sb	04 54 39.5	+8.9
WHTX	**Lake Whitney,**	**7.26**	**77**	*e*Pn	**Pn**	**04 52 46.4**	**-0.1**
	106nm,0.6s						
WHTX				*e*Pg	Pb	04 53 11.8	+5.4
WHTX				*e*Sn	**Sn**	**04 54 08.6**	**-0.4**
WHTX				*e*Sg	**Sg**	**04 54 47.3**	**-6.0**
PV01	**Paradox Valley**	**7.79**	**344**	*e*Pn	**Pn**	**04 52 55.3**	**+1.3**
PV01				*e*Pg	Pb	04 53 22.1	+6.4
PV01				*e*Sg	**Sg**	**04 55 03.6**	**-6.8**
Y12C	**Blythe**	**8.01**	**295**	*e*Pn	**Pn**	**04 52 58.4**	**+1.7**
Y12C				*e*Lg	Lg	04 55 14.5	
GLA	**Glamis**	**8.04**	**290**	*e*Pn	**Pn**	**04 52 58.5**	**+1.3**
W13A	**Hualapai Mount**	**8.11**	**305**	*e*Pn	**Pn**	**04 53 01.7**	**+3.3**
PV04	**Paradox Valley**	**8.12**	**342**	*e*Pn	**Pn**	**04 52 59.9**	**+1.5**
PV04				*e*Pg	Pg	04 53 29.6	-6.2
PV04				*e*Sg	**Sg**	**04 55 13.8**	**-7.2**
W34A	**Bridge Creek,**	**8.14**	**54**	*e*Pn	**Pn**	**04 52 59.5**	**+1.0**
W34A				*e*Pg	Pb	04 53 26.7	+5.3
W34A				*e*Sg	Sb	04 55 05.7	+7.3
PV10	**Paradox Valley**	**8.14**	**342**	*e*Pn	**Pn**	**04 53 01.1**	**+2.3**
PV10				*e*Pg	Pb	04 53 27.4	+5.8
PV09	**Paradox Valley**	**8.28**	**342**	*e*Pn	**Pn**	**04 53 02.2**	**+1.4**
Q24A	**Divide**	**8.29**	**4**	*e*Pg	Pb	04 53 31.5	+7.3
SMCO	**Snowmass**	**8.55**	**354**	*e*Pn	Pn	04 53 13.2	+8.7
V34A	**Guthrie**	**8.64**	**51**	*e*Pn	**Pn**	**04 53 05.9**	**+0.5**
V34A				*e*Lg	Lg	04 55 32.1	
HKT	**Hockley**	**8.65**	**92**	*e*Pn	**Pn**	**04 53 04.5**	**-1.0**
HKT				*e*Lg	Lg	04 55 31.4	
KSCO	**Kaye Shedlock'**	**8.72**	**17**	*e*Pn	**Pn**	**04 53 08.6**	**+2.0**
KSCO				*e*Lg	Lg	04 55 27.9	
LCMT	**Little Creek M**	**8.85**	**318**	*e*Pn	Pn	04 53 15.3	+6.9
U34A	**Anderson Ranch**	**8.98**	**48**	*e*Pn	**Pn**	**04 53 10.1**	**+0.1**
MTPU	**Mount Pierson**	**9.05**	**326**	*e*Pn	**Pn**	**04 53 13.9**	**+2.6**
ISCO	**Idaho Springs**	**9.11**	**1**	*e*Pn	**Pn**	**04 53 15.5**	**+3.3**
ISCO				*e*Lg	Lg	04 55 41.8	
PFO	**Pinyon Flats O**	**9.50**	**291**	Pn	**Pn**	**04 53 18.9**	**+1.6**
	0.3nm,0.3s,baz=96,slow=17,SNR=3.3						
PFO				Lg	Lg	04 56 03.2	
	0.2nm,0.3s,baz=3.8,slow=15,SNR=4.7						
PFO				LR	LR	04 57 19.0	
	comp=Z,57nm,21.6s,baz=354,slow=40						
CBKS	**Cedar Bluff**	**9.53**	**30**	*e*Pn	**Pn**	**04 53 19.9**	**+2.2**
CBKS				*e*Lg	Lg	04 55 56.3	
NATX	**Nacogdoches**	**9.60**	**81**	*e*Pn	**Pn**	**04 53 18.4**	**-0.2**
O20A	**White River Ci**	**9.65**	**349**	*e*Pn	**Pn**	**04 53 20.8**	**+1.3**
TUL1	**Leonard**	**9.87**	**55**	*e*Pn	**Pn**	**04 53 22.8**	**+0.5**
TUL1				*e*Lg	Lg	04 56 06.5	
GSC	**Goldstone, Bar**	**10.33**	**299**	*e*Pn	Pn	04 53 33.8	+5.1
TPNV	**Topopah Spring**	**10.71**	**309**	*e*Pn	Pn	04 53 42.0	+8.1
MIAR	**Mount Ida**	**11.01**	**66**	*e*Pn	Pn	04 53 42.3	+4.4
R11A	**Troy Canyon, C**	**11.12**	**316**	*e*Pn	Pn	04 53 49.6	+10
WLAR	**White Oak Lake**	**11.16**	**71**	*e*Pn	Pn	04 53 47.9	+7.9
HHAR	**Hobbs**	**11.37**	**57**	*e*Pn	**Pn**	**04 53 40.9**	**-1.9**
HWUT	**Hardware Ranch**	**11.87**	**339**	*e*Pn	**Pn**

TWY	**Chenhua**	**1.02 302**	*e*P	**Pn**	**04 57 55.5**	**+0.4**
	baz=294					
TWY			*e*S	**Sn**	**04 58 12.1**	**0.0**
	baz=294					
TWD	**Chiawan**	**1.09 234**	*e*P	**Pn**	**04 57 55.6**	**-0.1**
	baz=228					
TWD			*e*S	**Sn**	**04 58 12.8**	**-0.4**
	baz=228					
NSK	**Sanguang**	**1.09 267** ⇓	*i*P	**Pn**	**04 57 56.2**	**+0.4**
	baz=271					
NSK			S	**Sn**	**04 58 12.9**	**-0.5**
	baz=271					
TWS1	**Kuangyinshan**	**1.09 290**	*e*P	**Pn**	**04 57 56.0**	**+0.2**
	baz=283					
TWS1			*e*S	**Sn**	**04 58 12.7**	**-0.6**
	baz=283					
NNS	**Nan Shan**	**1.11 255** ⇓	*i*P	**Pn**	**04 57 56.6**	**+0.5**
	baz=249					
NNS			*e*S	**Sn**	**04 58 13.7**	**-0.2**
	baz=249					
IRIF	**Iriomote-Funau**	**1.14 110**	P	**Pn**	**04 57 56.7**	**+0.4**
IRIF			S	**Sn**	**04 58 14.4**	**+0.2**
HWA	**Hwalien**	**1.15 229**	*e*P	**Pn**	**04 57 56.2**	**-0.1**
	baz=220					
HWA			*e*S	**Sn**	**04 58 14.0**	**-0.3**
	baz=220					
WHF	**Hehuan Shan**	**1.31 244** ⇓	*i*P	**Pn**	**04 57 58.9**	**+0.3**
	baz=242					
WHF			*e*S	**Sn**	**04 58 17.8**	**-0.4**
	baz=242					
HATJ	**Hateruma jima**	**1.32 120**	P	**Pn**	**04 57 59.1**	**+0.9**
HATJ			*e*S	**Sn**	**04 58 18.3**	**+0.7**
TWT	**Tachien**	**1.34 250** ⇓	*i*P	**Pn**	**04 57 59.7**	**+1.1**
	baz=242					
TWT			S	**Sn**	**04 58 18.7**	**+0.3**
	baz=242					
ESL	**Shilin**	**1.37 228** ⇓	P	**Pn**	**04 57 58.4**	**-0.4**
	baz=221					
ESL			*e*S	**Sn**	**04 58 17.7**	**-0.9**
	baz=221					
JKRS	**Kuro-shima**	**1.42 110**	P	**Pn**	**04 58 00.2**	**+1.0**
JKRS			S	**Sn**	**04 58 20.2**	**+0.8**
NSTT	**Nanjuang**	**1.42 266** ⇓	P	**Pn**	**04 57 59.6**	**+0.3**
	baz=265					
NSTT			*e*S	**Sn**	**04 58 18.8**	**-0.7**
	baz=265					
HSN	**Hsinchu**	**1.44 273**	P	**Pn**	**04 57 59.7**	**+0.2**
	baz=265					
HSN			*e*S	**Sn**	**04 58 18.8**	**-1.1**
	baz=265					
JIJ	**Ishigaki jima**	**1.49 104**	P	**Pn**	**04 58 00.6**	**+0.5**
JIJ			S	**Sn**	**04 58 20.6**	**-0.4**
JISG	**Ishigakijimahi**	**1.61 95**	P	**Pn**	**04 58 02.2**	**+0.8**
JISG			S	**Sn**	**04 58 23.0**	**-0.3**
WDT	**Danda**	**1.62 233** ⇓	*i*P	**Pn**	**04 58 02.2**	**+0.3**
	baz=227					
WDT			*e*S	**Sn**	**04 58 23.4**	**-0.8**
	baz=227					
EHY	**Hungye**	**1.66 223**	*e*P	**Pn**	**04 58 01.3**	**-0.8**
	baz=217					
EHY			*e*S	**Sn**	**04 58 22.8**	**-1.7**
	baz=217					
NSY	**Sanyi**	**1.66 259**	*e*P	**Pn**	**04 58 03.2**	**+1.1**
	baz=258					
NSY			*e*S	**Sn**	**04 58 25.1**	**+0.5**
	baz=258					
TWQ1	**Liyutan**	**1.67 257**	P	**Pn**	**04 58 02.8**	**+0.6**
	baz=255					
TWQ1			*e*S	**Sn**	**04 58 24.7**	**0.0**
	baz=255					
SMLT	**Sun Moon Lake**	**1.73 241**	*e*P	**Pn**	**04 58 04.2**	**+1.2**
	baz=236					
SMLT			*e*S	**Sn**	**04 58 26.9**	**+0.8**
	baz=236					
TYC	**Yuchr**	**1.75 242**	P	**Pn**	**04 58 04.3**	**+1.1**
	baz=243					
TYC			*e*S	**Sn**	**04 58 27.5**	**+1.0**
	baz=243					
TWF1	**Yuli**	**1.79 220**	*e*P	**Pn**	**04 58 03.2**	**-0.4**
	baz=226					
TWF1			*e*S	**Sn**	**04 58 26.0**	**-1.3**
	baz=226					
TCU	**Taichung**	**1.81 252**	*e*P	**Pn**	**04 58 04.8**	**+1.0**
	baz=250					
TCU			*e*S	**Sn**	**04 58 28.0**	**+0.4**
	baz=250					
WNT	**Mingjian**	**1.91 244**	*e*P	**Pn**	**04 58 06.4**	**+1.4**
	baz=242					
YUS	**Yu-Shan**	**1.92 230**	*e*P	**Pn**	**04 58 06.2**	**+0.5**
	baz=223					
YUS			*e*S	**Sn**	**04 58 30.6**	**-0.2**
	baz=223					
CHKT	**Chengkung**	**1.96 214**	P	**Pn**	**04 58 05.5**	**-0.2**
	baz=208					
CHKT			*e*S	**Sn**	**04 58 29.2**	**-1.7**
	baz=208					
JTJ	**Tarama**	**1.96 92**	P	**Pn**	**04 58 06.5**	**+0.9**
JTJ			S	**Sn**	**04 58 31.0**	**+0.1**
ALS	**Alishan**	**2.01 233**	P	**Pn**	**04 58 07.9**	**+1.3**
	baz=226					
ALS			*e*S	**Sn**	**04 58 33.7**	**+1.1**
	baz=226					
CHN5	**Tsauling**	**2.05 237**	*e*P	**Pn**	**04 58 08.0**	**+1.1**
	baz=245					
CHN5			*e*S	**Sn**	**04 58 33.8**	**+0.6**
	baz=245					
ELDTW	**Lidau**	**2.08 223** ⇓	P	**Pn**	**04 58 07.1**	**-0.2**
	baz=220					
ELDTW			*e*S	**Sn**	**04 58 32.7**	**-1.2**
	baz=220					
WGK	**Gukeng**	**2.10 241**	*e*P	**Pn**	**04 58 08.8**	**+1.4**
	baz=248					
WGK			*e*S	**Sn**	**04 58 35.3**	**+1.4**
	baz=248					
CHN2	**Minshiung**	**2.24 238**	*e*P	**Pn**	**04 58 10.4**	**+1.1**
	baz=246					
WTCT	**Ta-ch'eng**	**2.25 248**	*e*P	**Pn**	**04 58 09.5**	**+0.2**
	baz=246					
WTCT			*e*S	**Sn**	**04 58 36.9**	**-0.4**
	baz=246					
CHN4	**Tsaushan**	**2.26 233**	P	**Pn**	**04 58 10.6**	**+1.2**
	baz=232					
CHN4			*e*S	**Sn**	**04 58 37.9**	**+0.2**
	baz=232					
STYT	**Tauyuan**	**2.27 227**	*e*P	**Pn**	**04 58 11.5**	**+1.9**
	baz=225					
STYT			*e*S	**Sn**	**04 58 38.5**	**+0.6**
	baz=225					
CHY	**Chiayi**	**2.30 238**	*e*P	**Pn**	**04 58 10.8**	**+0.9**
	baz=245					
CHY			*e*S	**Sn**	**04 58 38.2**	**-0.4**
	baz=245					
TWG	**Pinlang**	**2.34 216**	*e*P	**Pn**	**04 58 10.1**	**-0.4**
	baz=219					
TWG			*e*S	**Sn**	**04 58 37.8**	**-1.7**
	baz=219					
TWK	**Hsinying**	**2.39 233**	*e*P	**Pn**	**04 58 11.7**	**+0.5**
	baz=231					
TWK			*e*S	**Sn**	**04 58 40.8**	**+0.1**
	baz=231					
WSF	**Szhu**	**2.39 243**	*e*P	**Pn**	**04 58 11.5**	**+0.4**
	baz=242					
WSF			*e*S	**Sn**	**04 58 40.4**	**-0.2**
	baz=242					
CHN1	**Nanshi**	**2.41 231**	*e*P	**Pn**	**04 58 12.8**	**+1.4**
	baz=229					
CHN1			*e*S	**Sn**	**04 58 41.8**	**+0.7**
	baz=229					
SGST	**Jiashian**	**2.44 228**	*e*P	**Pn**	**04 58 13.6**	**+1.9**
	baz=227					
SGST			*e*S	**Sn**	**04 58 42.4**	**+0.6**
	baz=227					
JIKM	**Ikemajima**	**2.46 85**	P	**Pn**	**04 58 13.0**	**+1.1**
JIKM			S	**Sn**	**04 58 42.8**	**+0.7**
SSD	**Sandimen**	**2.65 222**	*e*P	**Pn**	**04 58 15.9**	**+1.4**
	baz=221					
SSD			*e*S	**Sn**	**04 58 47.1**	**+0.5**
	baz=221					
EAST	**Anshuo**	**2.81 214**	*e*P	**Pn**	**04 58 16.8**	**+0.1**
	baz=210					
LAY	**Lan-yu**	**2.83 199**	*e*P	**Pn**	**04 58 16.3**	**-0.6**
	baz=191					
LAY			*e*S	**Sn**	**04 58 48.7**	**-2.3**
	baz=191					
SCZT	**Fangliau**	**2.94 217**	*e*P	**Pn**	**04 58 19.6**	**+1.4**
	baz=226					
SCZT			*e*S	**Sn**	**04 58 54.2**	**+0.7**
	baz=226					
PNG	**Penghu**	**2.97 248**	*e*P	**Pn**	**04 58 18.2**	**-0.4**
	baz=246					
PNG			*e*S	**Sn**	**04 58 51.6**	**-2.5**
	baz=246					
WDGT	**Dungji**	**3.02 242**	*e*P	**Pn**	**04 58 19.2**	**-0.2**
	baz=233					
WDGT			*e*S	**Sn**	**04 58 53.2**	**-2.1**
	baz=233					
KNM	**Kinmen**	**3.76 266**	*e*P	**Pn**	**04 58 30.4**	**+1.3**
	baz=265					
KNM			*e*S	**Sn**	**04 59 12.5**	**-0.3**
	baz=265					
JNTH	**Nagotoyohara**	**5.25 69**	P	**Pn**	**04 58 48.1**	**-0.8**
JOW	**Kunigami**	**5.57 67**	P	**Pn**	**04 58 52.2**	**-1.0**
JOW			*e*S	**Sn**	**04 59 52.9**	**-3.2**
KSRS	**Korea Array**	**13.49 19**	P	**P**	**05 00 44.1**	**+0.3**
	0.4nm,0.3s,baz=195,slow=12,SNR=7.1					
WRA	**Warramunga Arr**	**45.86 164**	P	**P**	**05 05 42.9**	**+0.1**
	0.7nm,0.7s,baz=347,slow=8.8,SNR=8.0					
ASAR	**Alice Springs**	**49.35 166**	P	**P**	**05 06 11.2**	**+1.4**
	0.1nm,0.4s,baz=347,slow=7.6,SNR=3.5					
YKA	**Yellowknife Ar**	**81.98 23**	P	**P**	**05 09 37.4**	**-1.2**
	0.1nm,0.6s,baz=307,slow=5.1,SNR=4.5					

*ISCJB **07** 05:08:34.8±0.7, 10°.40N±0°.04×73°.18W±0°.04, h111km±8km, Error ellipse: s-maj=8.5km s-min=4.1km az=38.5*
*RSNC **07** 05:08:36.6±0.5, 10°.41N×73°.30W, h24km±7km, ML3.3*
*FUNV **07** 05:08:37.1, 10°.38N×73°.23W, h105km, MW3.4*

ISC 07 05:08:35.0±1.6, 10°.42N±0°.05×73°.21W±0°.06, h114km±14km, n28, σ1§09/43, 3C, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VIRV	**Villa del Rosa**	**0.80**	**84** ⇑	*i*P	**Pn**	**05 08 55.4**	**+0.8**
VIRV				*e*S	**Sn**	**05 09 09.7**	**+0.4**
URIC	**Uribia, Colomb**	**1.75**	**43**	*e*P	**Pn**	**05 09 05.3**	**+0.2**
URIC				*e*S	**Sn**	**05 09 27.7**	**-0.2**
URIC				*i*		05 09 28.7	
	comp=Z,143nm,0.4s						
OCAC	**Ocana**	**2.17**	**183**	*e*P	**Pn**	**05 09 10.7**	**+0.2**
OCAC				*e*S	**Sn**	**05 09 36.5**	**-1.2**
OCAC				*i*		05 09 41.0	
	comp=Z,238nm,0.5s						
VIGV	**El Vigia**	**2.40**	**131** ⇑	*i*P	**Pn**	**05 09 14.4**	**+1.1**
VIGV				*e*S	**Sn**	**05 09 42.4**	**-0.4**
DABV	**Dabajuro**	**2.58**	**79**	*e*P	**Pn**	**05 09 16.5**	**+0.9**
DABV				*e*S	**Sn**	**05 09 47.2**	**+0.4**
CAPV	**Capacho**	**2.69**	**161** ⇑	*e*P	**Pn**	**05 09 17.9**	**+0.7**
CAPV				*e*S	**Sn**	**05 09 47.5**	**-2.3**
GRMC	**Gramalote, San**	**2.71**	**171**	*e*P	**Pn**	**05 09 15.5**	**-2.1**
GRMC				*i*		05 09 49.7	
	comp=Z,205nm,0.4s						
CBRI	**Barrientos, No**	**2.72**	**171**	*e*P	**Pn**	**05 09 18.2**	**+0.6**
CBRI				*e*S	**Sn**	**05 09 50.5**	**+0.2**
CBRI				*i*		05 09 55.1	
	comp=Z,197nm,0.4s						
MOTC	**Monteria, Cord**	**2.92**	**236**	*e*P	**Pn**	**05 09 19.3**	**-0.7**
MOTC				*e*S	**Sn**	**05 09 53.3**	**-1.5**
PAMC	**Pamplona, Colo**	**3.10**	**171**	*e*P	**Pn**	**05 09 23.4**	**+0.4**
PAMC				*e*S	**Sn**	**05 10 00.4**	**+0.6**
SOCV	**Socops**	**3.15**	**132**	*e*P	**Pn**	**05 09 23.7**	**+0.6**
SOCV				*e*S	**Sn**	**05 09 58.0**	**-2.3**
CURV	**Curarigua**	**3.22**	**97**	*e*P	**Pn**	**05 09 24.9**	**+0.7**
CURV				*e*S	**Sn**	**05 10 00.7**	**-1.5**
GIRC	**Giron, Santand**	**3.32**	**180**	*e*P	**Pn**	**05 09 26.8**	**+1.3**
BRRC	**Barranca, Sant**	**3.33**	**189**	*e*P	**Pn**	**05 09 26.0**	**+0.5**
BRRC				*e*S	**Sn**	**05 10 04.7**	**+0.2**
BRRC				*i*		05 10 12.2	
	comp=Z,57nm,0.6s						
SIQV	**Siquisique**	**3.35**	**86**	*e*P	**Pn**	**05 09 26.2**	**+0.3**
SIQV				*e*S	**Sn**	**05 10 03.3**	**-1.9**
BTLC	**Betulia, Santa**	**3.48**	**181**	*e*P	**Pn**	**05 09 28.9**	**+1.2**
MONV	**Montecano**	**3.53**	**64**	*e*P	**Pn**	**05 09 28.6**	**+0.4**
MONV				*e*S	**Sn**	**05 10 07.6**	**-1.6**
SANV	**Sanarito**	**3.73**	**104**	*e*P	**Pn**	**05 09 31.9**	**+0.9**
BARC	**Barichara**	**3.80**	**180**	*e*P	**Pn**	**05 09 33.0**	**+1.0**
BARC				*e*S	**Sn**	**05 10 17.1**	**+0.9**
BARC				*i*		05 10 20.9	
	comp=Z,92nm,0.4s						
TEPV	**Terepaima**	**3.98**	**96**	*e*P	**Pn**	**05 09 35.1**	**+0.8**
JACV	**Jacura**	**4.36**	**81**	*e*P	**Pn**	**05 09 40.9**	**+1.6**
RUSC	**La Rusia**	**4.50**	**178**	*e*P	**Pn**	**05 09 42.6**	**+1.0**
RUSC				*i*		05 11 01.7	
	comp=Z,12nm,0.5s						
MAPV	**Macapo**	**4.72**	**97**	*e*P	**Pn**	**05 09 44.9**	**+0.8**
ELOV	**Elorza**	**5.01**	**132**	*e*P	**Pn**	**05 09 48.9**	**+0.8**
TURV	**Turiamo**	**5.28**	**89**	*e*P	**Pn**	**05 09 52.9**	**+1.2**
BAUV	**El Baul**	**5.30**	**106**	*e*P	**Pn**	**05 09 51.7**	**-0.3**
BIRV	**Birongo**	**6.83**	**89**	*e*P	**Pn**	**05 10 13.2**	**+0.5**
CUPV	**Cœpira**	**7.32**	**92**	*e*P	**Pn**	**05 10 19.7**	**+0.4**

*NIED **07** 05:16:00, 36°.80N×138°.70E, h8km, Mw3.9 Best double couple: M0 7.15000×10^14 NP1:φs342.00000°, δ81.00000°, λ2.00000°. NP2:φs252.00000°, δ88.00000°, λ171.00000°.*
*ISCJB **07** 05:16:36.1±0.6, 36°.85N±0°.03×138°.65E±0°.04, h5km±5km, mb3.6/7, MS2.7/4, Error ellipse: s-maj=6.9km s-min=4.4km az=135.2*
*IDC **07** 05:16:37.0±0.8, 36°.85N×138°.60E, h0km, mb3.7/7, mb1 3.9/11, mb1mx3.6/74, mbtmp3.7/11, ML3.4/3, MS2.8/6, Ms1 2.8/6, ms1mx2.6/46, Error ellipse: s-maj=24.0km s-min=7.2km az=126.0*
*JMA **07** 05:16:36.6±0.2, 36°.83N×138°.68E, h2km±3km, M3.7 Broadband fault plane solution: P waves. NP1: φs77.00000°, δ69.00000°, λ-141.00000°. NP2: φs331.00000°, δ54.00000°, λ-27.00000°. Principal axes: T Plg9.0000°, Azm201.0000°; N Plg47.0000°, Azm101.0000°; P Plg42.0000°, Azm299.0000°;*
JMA Felt II J1.

ISC 07 05:16:37.0±1.3, 36°.84N±0°.04×138°.67E±0°.04, h0km±9km, n23, σ0§95/25, mb3.6/7, MS2.6/4, 3C-1D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JGK	**Kuni**	**0.28**	**184** ⇑	P	**Pg**	**05 16 42.2**	**-0.1**
JGK				S	**Sg**	**05 16 46.3**	**+0.4**
MJAR	**Matsushiro Arr**	**0.47**	**231**	Pg	**Pg**	**05 16 45.3**	**-0.7**
	246nm,0.3s,baz=48,slow=20,SNR=611						
MJAR				Lg	Lg	05 16 51.2	
	398nm,0.3s,baz=18,slow=25,SNR=40						
MAT	**Matsushiro**	**0.47**	**231**	P	**Pg**	**05 16 45.5**	**-0.5**
MAT				S	**Sg**	**05 16 51.7**	**-0.5**
MAT	**Matsushiro**	**0.47**	**231**	P	**Pg**	**05 16 45.5**	**-0.5**
MAT				S	**Sg**	**05 16 51.6**	**-0.6**
JKT	**Katashina**	**0.47**	**99** ⇓	P	**Pg**	**05 16 45.5**	**-0.6**
JKT				S	**Sg**	**05 16 51.8**	**-0.4**
JHK	**Hiroka**	**0.49**	**34** ⇑	P	**Pg**	**05 16 46.0**	**-0.5**
JHK				S	**Sg**	**05 16 52.7**	**-0.2**
JNG	**Nsakai**	**0.63**	**227** ⇑	P	**Pg**	**05 16 48.4**	**-0.6**
JNG				S	**Sg**	**05 16 56.6**	**-0.5**
JHJ	**Hachijo jima 2**	**3.82**	**166**	Pn	**Pn**	**05 17 38.5**	**+1.4**
	13nm,0.3s,baz=81,slow=19,SNR=2.8						
JHJ				Sn	**Sn**	**05 18 20.8**	**-1.9**
	3.1nm,0.3s,baz=286,slow=20,SNR=1.8						
ASAJ	**Asahikawa**	**7.86**	**21**	LR	LR	05 21 41.0	
	comp=Z,87nm,20.6s,baz=174,slow=39						
KSRS	**Korea Array**	**8.60**	**277**	Pn	**Pn**	**05 18 43.8**	**+1.1**
	0.7nm,0.3s,baz=91,slow=14,SNR=5.2						
KSRS				LR	LR	05 21 53.9	
	comp=Z,88nm,19.0s,baz=98,slow=37						
USRK	**Ussuriysk Ar.**	**8.94**	**327**	Pn	**Pn**	**05 18 46.6**	**-0.6**
	0.1nm,0.3s,baz=145,slow=13,SNR=2.8						
KLR	**Kul'dur**	**13.37**	**340**	Pn	**Pn**	**05 19 49.5**	**+1.6**
	0.1nm,0.3s,baz=144,slow=12,SNR=3.7						
PETK	**Petropavlovsk-**	**21.01**	**33**	LR	LR	05 29 19.9	
	comp=Z,18nm,18.2s,baz=304,slow=36						
YAK	**Yakutsk**	**25.83**	**350**	LR	LR	05 32 14.9	
	comp=Z,24nm,19.9s,baz=86,slow=36						
TLY	**Talaya**	**28.81**	**312**	LR	LR	05 33 04.4	
	comp=Z,12nm,18.9s,baz=134,slow=34						
MKAR	**Makanchi Array**	**42.35**	**302**	LR	LR	05 42 35.2	
	comp=Z,19nm,20.1s,baz=114,slow=37						
KURBB	**Kurchatov Arra**	**44.38**	**308**	P	**P**	**05 24 48.2**	**-0.8**
	0.5nm,0.6s,baz=85,slow=8.3,SNR=4.2						
ILAR	**Eielson Array**	**50.83**	**32**	P	**P**	**05 25 39.5**	**+0.5**
	0.6nm,0.9s,baz=282,slow=6.3,SNR=3.3						
NOA	**NORSAR Array B**	**73.50**	**336**	P	**P**	**05 28 09.3**	**-1.8**
	0.8nm,0.7s,baz=39,slow=6.0,SNR=3.3						
NVAR	**Mina Array Bea**	**76.85**	**52**	P	**P**	**05 28 32.0**	**+0.8**
	0.5nm,0.5s,baz=283,slow=4.5,SNR=4.2						
PDAR	**Pinedale Array**	**79.35**	**44**	P	**P**	**05 28 44.8**	**-0.1**
	0.4nm,0.9s,baz=294,slow=4.8,SNR=3.4						
GERES	**GERESS Array B**	**81.69**	**327**	P	**P**	**05 28 57.8**	**+0.6**
	0.3nm,0.6s,baz=14,slow=6.2,SNR=3.7						
TXAR	**Lajitas Array**	**91.97**	**51**	P	**P**	**05 29 47.2**	**-0.7**
	0.4nm,0.9s,baz=263,slow=3.5,SNR=2.6						

*IDC **07** 05:16:48.2±1.3, 3°.42S×145°.35E, h0km, mb3.9/5, mb1 4.2/7, mb1mx3.8/41, mbtmp4.0/7, ML4.0/1, MS3.2/4, Ms1 3.2/4, ms1mx2.8/28, Error ellipse: s-maj=39.4km s-min=21.9km az=102.0*
*ISCJB **07** 05:16:50.1±1.0, 3°.5S±0°.1×145°.4E±0°.2, h23km, mb3.9/5, MS3.1/3, Error ellipse: s-maj=26.2km s-min=15.5km az=175.7*

ISC 07 05:16:51.4±1.1, 3°.5S±0°.1×145°.5E±0°.2, h23km, n11, σ1§01/8, mb4.0/5, MS3.1/3, Near north coast of New Guinea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**6.14**	**164**	Pn	**Pn**	**05 18 21.1**	**+0.4**
	1.3nm,0.3s,baz=322,slow=17,SNR=3.2						
HNR	**Honiara**	**15.55**	**113**	LR	LR	05 26 48.9	
	comp=Z,45nm,18.3s,baz=265,slow=38						
WRA	**Warramunga Arr**	**19.65**	**213**	P	**P**	**05 21 18.4**	**-0.5**
	0.5nm,0.3s,baz=30,slow=11,SNR=38						
ASAR	**Alice Springs**	**22.98**	**208**	P	**P**	**05 21 54.9**	**+0.2**
	4.0nm,0.9s,baz=34,slow=11,SNR=24						
ASAR				LR	LR	05 31 53.4	
	comp=Z,84nm,18.3s,baz=105,slow=39						
FITZ	**Fitzroy Crossi**	**24.27**	**232**	P	**P**	**05 22 06.3**	**-0.8**
	3.0nm,0.7s,baz=40,slow=12,SNR=7.0						
KAPI	**Kappang**	**25.69**	**266**	LR	LR	05 32 52.7	
	comp=Z,51nm,20.2s,baz=238,slow=38						
KSRS	**Korea Array**	**43.86**	**340**	LR	LR	05 40 40.4	
	comp=Z,23nm,19.5s,baz=140,slow=33						
CMAR	**Chiang Mai Arr**	**50.73**	**297**	P	**P**	**05 25 50.8**	**+0.9**
	0.7nm,0.3s,baz=110,slow=7.0,SNR=4.4						
ILAR	**Eielson Array**	**83.77**	**23**	P	**P**	**05 29 18.6**	**+0.1**
	0.6nm,0.7s,baz=250,slow=4.7,SNR=7.7						
BVAR	**Borovoye Array**	**83.83**	**324**	P	**P**	**05 29 19.3**	**+0.2**
	0.6nm,0.7s,baz=101,slow=4.7,SNR=3.3						
ESDC	**Sonseca Array**	**134.55**	**327**	PKP	**PKPdf**	**05 36 06.6**	**-1.8**
	0.5nm,0.6s,baz=66,slow=3.5,SNR=3.4						

*ISCJB **07** 05:23:31.2±0.4, 17°.75S±0°.04×122°.99E±0°.05, h10km, mb3.8/3, Error ellipse: s-maj=6.7km s-min=5.3km az=4.3*
*IDC **07** 05:23:31.7±1.2, 17°.80S×122°.84E, h0km, mb3.9/3, mb1 4.4/8, mb1mx3.9/43, mbtmp4.3/8, ML4.3/3, Error ellipse: s-maj=36.1km s-min=22.3km az=43.0*
*NEIC **07** 05:23:36.0, 17°.74S×122°.88E, h10km, mb4.4/3, ML4.0(AUST), After AUST.*
*AUST **07** 05:23:36.1±1.6, 17°.75S×122°.89E, h10km, Error ellipse: s-maj=2.9km s-min=0.9km az=317.0*

ISC 07 05:23:32.8±0.8, 17°.83S±0°.06×123°.02E±0°.07, h10km, n28, σ1§12/27, mb4.0/3, Western Australia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**2.51**	**97**	Pn	**Pb**	**05 24 17.4**	**-0.6**
	47nm,0.3s,baz=288,slow=9.1,SNR=2703						
FITZ				Sn	**Sn**	**05 24 45.6**	**+1.3**
	33nm,0.3s,baz=74,slow=18,SNR=11						
FITZ	**Fitzroy Crossi**	**2.51**	**97**	P	**Pb**	**05 24 17.4**	**-0.6**
	baz=2.6,SNR=302						
MBWA	**Marble Bar**	**4.54**	**223**	*e*Pn	Pn	05 24 44.3	+2.8
BATI	**Baumata**	**7.61**	**5**	Pn	**Pn**	**05 25 22.4**	**-1.4**
	baz=232,slow=19						
BATI				Sn	**Sn**	**05 26 50.5**	**+0.3**
	baz=253,slow=19						
SOEI	**Soe**	**8.12**	**9**	*e*Pn	**Pn**	**05 25 30.3**	**-0.6**
SOEI				*e*Sn	**Sn**	**05 27 03.3**	**+0.4**
WRKA	**Warakurna**	**8.69**	**146**	P	Pn	05 25 43.1	+4.4
	baz=8.9,SNR=34						
MTN	**Manton Dam**	**9.26**	**59**	P	**Pn**	**05 25 47.2**	**+0.7**
	baz=9.3,SNR=51						
GIRL	**Giralia**	**9.54**	**238**	P	Pn	05 25 53.0	+2.8
	baz=9.5,SNR=4.3						
KDU	**Kakadu**	**10.46**	**62**	P	**Pn**	**05 26 03.5**	**+0.6**
	baz=10,SNR=10						
WRA	**Warramunga Arr**	**10.92**	**103**	Pn	**Pn**	**05 26 09.8**	**+0.6**
	2.6nm,0.3s,baz=282,slow=14,SNR=101						
WRA				Sn	Sn	05 28 03.0	-8.6
	2.5nm,0.3s,baz=281,slow=25,SNR=7.7						
WRA				Lg	Lg	05 29 21.1	
	baz=290,slow=29,SNR=3.1						
WRAB	**Tennant Creek**	**10.93**	**103**	*e*Pn	**Pn**	**05 26 10.4**	**+1.1**
	11nm,0.5s						
WRAB				*e*Sn	Sn	05 28 05.3	-6.4
ASAR	**Alice Springs**	**11.72**	**122**	Pn	Pn	05 26 23.4	+3.2
	1.1nm,0.3s,baz=304,slow=12,SNR=44						
ASAR				Sn	**Sn**	**05 28 28.1**	**-3.1**
	2.4nm,0.3s,baz=304,slow=24,SNR=7.4						
BLDU	**Ballidu**	**13.96**	**203**	P	**Pn**	**05 26 50.6**	**-0.2**
	baz=14,SNR=17						
KLBR	**Kellerberrin**	**14.51**	**198**	P	**Pn**	**05 26 58.0**	**-0.2**
	baz=15,SNR=11						
QIS	**Mount Isa**	**15.90**	**102**	P	**Pn**	**05 27 17.4**	**+0.6**
	baz=16,SNR=5.0						
NWAO	**Narrogin (SRO)**	**15.91**	**198**	Pn	**Pn**	**05 27 15.4**	**-1.4**
	1.5nm,0.3s,baz=259,slow=12,SNR=14						
NWAO				Sn	Sn	05 29 59.9	-13
	1.4nm,0.3s,baz=101,slow=16,SNR=4.6						
NWAO	**Narrogin (SRO)**	**15.91**	**198**	P	**Pn**	**05 27 15.6**	**-1.3**
	baz=16,SNR=10						
NWAO	**Narrogin (SRO)**	**15.91**	**198**	*e*P	**Pn**	**05 27 15.4**	**-1.4**
	110nm,0.9s						
NWAO				Sn	Sn	05 29 59.9	-13
BBOO	**Buckleboo**	**18.98**	**144**	*e*P	**Pn**	**05 27 57.6**	**+2.4**
	15nm,1.1s						
COEN	**Coen**	**19.76**	**82**	*e*P	**Pn**	**05 28 04.0**	**-0.7**
	14nm,0.8s						
MTSU	**Mount Surprise**	**20.26**	**94**	P	Pn	05 28 12.1	+1.5
	baz=20,SNR=7.5						
KSAR	**Wonju Array Be**	**55.17**	**5**	P	**P**	**05 33 05.7**	**+0.2**
KSRS	**Korea Array**	**55.18**	**5**	P	**P**	**05 33 05.7**	**+0.1**
	1.1nm,0.6s,baz=182,slow=6.7,SNR=3.9		

mpv3.6,3C-6D,Error ellipse: s-maj=13.0km s-min=7.0km az=159.0,Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino** 22nm,0.5s	**2.60**	**320**	⇑P	Pn	05 46 12.9	-0.5
DZET	47nm,0.4s			⇓S	Sn	05 46 46.7	+0.7
SFK	**Sufi-Kurgan** 5.1nm,0.5s	**3.75**	**31**	⇓P	Pn	05 46 28.8	+0.7
SFK	16nm,0.3s			⇓S	Sn	05 47 12.8	+0.5
MNAS	**Manas** 1.9nm,0.4s	**5.77**	**11**	⇓P	Pn	05 46 54.3	-0.5
MNAS	6.4nm,0.4s			⇓S	Sn	05 47 59.9	-0.2
KK31	**Karatay Array** 3.2nm,0.4s,baz=178,slow=12,SNR=42	**6.28**	**357**	P	Pn	05 47 01.0	-0.4
KK31	3.3nm,0.4s,baz=183,slow=22,SNR=14			S	Sn	05 48 13.0	+1.0
AAK	**Ala-Archa** 2.2nm,0.5s	**6.40**	**24**	⇑P	Pn	05 47 03.6	+0.5
AAK	8.4nm,0.8s			⇑S	Sn	05 48 15.9	+0.7
AB31	**Akbulak array** 0.5nm,0.6s,baz=164,slow=11,SNR=18	**14.79**	**331**	⇓P	P	05 48 54.0	-1.0

*ISCJB **07** 05:48:45.8±0.2,2°.86N±0°.02×128°.59E±0°.04,h250km, mb4.5/86,Error ellipse: s-maj=5.7km s-min=3.5km az=0.6*
*IDC **07** 05:48:45.0±1.3,2°.88N×128°.67E,h229km±12km,mb4.0/24, mb1 4.1/25,mb1mx3.9/39,mbtmp4.6/25,Error ellipse: s-maj=18.1km s-min=7.3km az=88.0*
*NEIC **07** 05:48:45.3±0.9,2°.91N×128°.60E,h229km±9km,mb4.7/62, Error ellipse: s-maj=7.9km s-min=4.0km az=76.0*
*DJA **07** 05:48:50.1±0.6,3°N±8°×12°9E±°,h181km±10km,M4.6/12, mb4.6/12,mB5.2/6,MLv4.6/8,Mw(mB)4.6/6*
ISC 07 05:48:47.3±0.3,2.79N±0°.04×128°.56E±0°.06,h250km,n132, σ1**40**/143,**mb4.5**/84,**1D,Halmahera**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LBMI	**Labuha**	**3.57**	**197**	P	**Pn**	**05 49 43.6**	**-2.6**
SWI	**Sorong**	**4.52**	**143**	P	**Pn**	**05 49 54.9**	**-2.5**
SANI	**Sanana** 683nm,0.8s,10μm2.6nm	**5.45**	**208**	P	**Pn**	**05 50 07.4**	**-1.3**
NLAI	**Namlea** 152nm,0.6s,3μm0.6nm	**6.17**	**194**	P	**Pn**	**05 50 17.0**	**-0.6**
FAKI	**Fak Fak** 30nm,0.8s,0.1nm	**6.76**	**147**	P	**Pn**	**05 50 24.5**	**-0.6**
FAKI	**Fak Fak**	**6.76**	**147**	*e*Pn	**Pn**	**05 50 25.0**	**-0.1**
LUWI	**Luwuk** 255nm,0.7s,6μm1.0nm	**6.93**	**237**	P	**Pn**	**05 50 29.3**	**+2.2**
LUWI	**Luwuk**	**6.93**	**237**	*e*Pn	**Pn**	**05 50 25.8**	**-1.3**
MRSI	**Marisa** 54nm,0.7s,1μm0.2nm	**7.00**	**251**	P	**Pn**	**05 50 26.8**	**-1.3**
TTSI	**Tana Toraja** 54nm,0.5s,1μm	**10.49**	**237**	P	**Pn**	**05 51 10.9**	**-1.2**
SPSI	**Sidrap Palu** 37nm,0.6s	**11.05**	**233**	P	**Pn**	**05 51 19.1**	**-0.1**
KAPI	**Kappang** 2.8nm,0.3s,baz=30,slow=6.9,SNR=7.2	**11.73**	**229**	P	**P**	**05 51 28.7**	**-2.3**
KAPI	1.0nm,0.3s,baz=133,slow=18,SNR=4.3			S	**S**	**05 53 36.5**	**-2.2**
BSSI	**Bau Bau, Buton** 38nm,1.0s	**11.99**	**222**	P	**P**	**05 51 34.3**	**+0.4**
GENI	**Genyem** 96nm,1.0s,2μm	**12.78**	**115**	P	**P**	**05 51 45.0**	**+2.3**
SOEI	**Soe**	**13.18**	**199**	*e*Pn	**P**	**05 51 46.7**	**-0.5**
JAY	**Jayapura**	**13.23**	**113**	P	**P**	**05 51 50.0**	**+2.2**
EDFI	**Ende, Flores**	**13.36**	**211**	P	P	05 51 55.5	+6.3
MTN	**Manton Dam** 22nm,0.4s	**15.74**	**171**	*e*P	**Pn**	**05 52 15.3**	**-1.2**
JAGI	**Jajag, Banyuwa** 149nm,1.8s	**18.21**	**232**	*e*P	**Pn**	**05 52 44.9**	**-0.7**
FITZ	**Fitzroy Crossi** 8.7nm,0.5s,baz=30,slow=8.4,SNR=40	**20.96**	**188**	P	**P**	**05 53 11.2**	**-0.4**
FITZ	**Fitzroy Crossi** 44nm,1.6s	**20.96**	**188**	*e*P	**P**	**05 53 11.3**	**-0.3**
TWG	**Pinlang** 51nm,0.6s	**21.19**	**341**	*e*P	**P**	**05 53 09.9**	**-4.0**
YULB	**Yu-li** 5.7nm,0.8s	**21.65**	**342**	*e*P	**P**	**05 53 14.6**	**-3.6**
TPUB	**Ta-pu** 20nm,0.7s	**21.79**	**340**	*e*P	**P**	**05 53 16.6**	**-2.9**
COEN	**Coen** 54nm,2.0s	**22.07**	**139**	*e*P	**P**	**05 53 22.1**	**0.0**
SSLB	**Suanglung** 13nm,0.8s	**22.13**	**341**	*e*P	**P**	**05 53 20.0**	**-2.6**
PMG	**Port Moresby** 19nm,1.0s	**22.14**	**123**	*e*P	**P**	**05 53 21.9**	**-1.0**
YOJ	**Yonaguni jima** 50nm,1.0s	**22.20**	**347**	*e*P	**P**	**05 53 22.7**	**-0.5**
YHNB	**Yeheng** 25nm,0.8s	**22.83**	**343**	*e*P	**P**	**05 53 27.8**	**-1.2**
WRAB	**Tennant Creek** 24nm,1.5s	**23.29**	**166**	*e*P	**P**	**05 53 33.1**	**-0.1**
WRA	**Warramunga Arr** 8.2nm,0.3s,baz=341,slow=10,SNR=169	**23.29**	**166**	P	**P**	**05 53 33.1**	**-0.2**
WRA	0.6nm,0.7s,baz=342,slow=2.5,SNR=4.8			ScP	**ScP**	**06 00 28.8**	**+1.5**
WB2	**Warramunga Arr** 20nm,1.3s	**23.30**	**166**	*e*P	**P**	**05 53 33.2**	**-0.1**
MBWA	**Marble Bar** 119nm,1.8s	**25.32**	**200**	*e*P	**P**	**05 53 51.9**	**+0.3**
AS31	**Alice Springs** 7.6nm,0.3s	**26.81**	**169**	*e*P	**P**	**05 54 04.9**	**0.0**
ASAR	**Alice Springs** 4.0nm,0.4s,baz=353,slow=8.4,SNR=103	**26.81**	**169**	P	**P**	**05 54 04.8**	**0.0**
ASAR	2.6nm,0.8s,baz=345,slow=10,SNR=2.3			pP	**pP**	**05 54 51.7**	**-2.1**
ASAR	1.4nm,0.4s,baz=358,slow=2.4,SNR=7.6			PcP	**PcP**	**05 57 21.5**	**+0.6**
ASAR	1.0nm,0.7s,baz=349,slow=2.8,SNR=7.4			ScP	**ScP**	**06 00 39.0**	**+1.8**
AS01	**Alice Springs**	**26.82**	**169**	*e*P	**P**	**05 54 04.7**	**-0.2**
JCJ	**Chichijima** 40nm,0.6s,baz=259,slow=18,SNR=5.9	**27.46**	**27**	P	**P**	**05 54 08.6**	**-2.1**
CBIJ	**Chichi jima** 157nm,1.2s	**27.46**	**27**	*e*P	**P**	**05 54 08.9**	**-1.7**
JNU	**Nakatsue** 4.4nm,0.5s,baz=202,slow=1.9,SNR=8.0	**30.25**	**4**	P	**P**	**05 54 33.7**	**-1.5**
JNU	**Nakatsue** 19nm,1.1s	**30.25**	**4**	*e*P	**P**	**05 54 33.8**	**-1.5**
NJ2	**Nanjing**	**30.51**	**344**	*e*P	P	05 54 31.6	-5.8
NJ2	comp=Z,22nm,0.5s			pmax	pmax		
WHN	**Wuhan**	**30.70**	**335**	⇓P	**P**	**05 54 39.6**	**+0.4**
GYA	**Guiyang**	**31.54**	**320**	*e*P	**P**	**05 54 48.2**	**+1.4**
GYA				pP	pP	05 55 33.6	-2.9
GYA				sP	PP	05 55 59.0	-4.7
GYA				PP	**sP**	**05 56 03.4**	**-2.0**
GYA				PcP	**PcP**	**05 57 35.2**	**+2.1**
GYA				S	**S**	**05 59 40.8**	**+4.1**
GYA				sS	sS	06 00 58.6	-7.4
GYA	comp=Z,10.0nm,0.8s			pmax	pmax		
CMAR	**Chiang Mai Arr** comp=Z,4.3nm,0.3s,baz=115,slow=7.3,SNR=8.5	**32.92**	**300**	P	**P**	**05 54 59.6**	**+1.0**
CMAR	comp=Z,0.8nm,0.3s,baz=160,slow=2.9,SNR=6.2			ScP	**ScP**	**06 01 00.2**	**+3.0**
CHTO	**Chiang Mai** comp=Z,4.4nm,0.7s	**33.07**	**301**	*e*P	**P**	**05 55 01.0**	**+1.0**
INU	**Inuyama** comp=Z,21nm,0.5s	**33.33**	**13**	*e*P	**P**	**05 55 00.2**	**-1.8**
KS15	**Wonju Array Si**	**34.49**	**359**	*e*P	**P**	**05 55 11.5**	**-0.3**
KSAR	**Wonju Array Be**	**34.49**	**359**	P	**P**	**05 55 11.2**	**-0.7**
KSRS	**Korea Array** comp=Z,6.1nm,0.5s,baz=176,slow=9.6,SNR=22	**34.50**	**359**	P	**P**	**05 55 11.2**	**-0.8**
KS01	**Wonju Array Si**	**34.52**	**359**	*e*P	**P**	**05 55 11.2**	**-0.9**
MJAR	**Matsushiro Arr** comp=Z,12nm,0.7s,baz=186,slow=9.4,SNR=27	**34.75**	**14**	P	**P**	**05 55 11.6**	**-2.5**
MAJO	**Matsushiro** comp=Z,19nm,0.6s	**34.75**	**14**	*e*P	**P**	**05 55 12.0**	**-2.1**
MAT	**Matsushiro**	**34.75**	**14**	P	**P**	**05 55 11.5**	**-2.6**
MJB9	**Matsu-Tunnel** comp=Z,4.8nm,0.6s	**34.75**	**14**	*e*P	**P**	**05 55 12.0**	**-2.1**
XAN	**Xi'an**	**36.09**	**332**	P	P	05 55 19.0	-6.6
XAN	comp=Z,8.0nm,0.8s			pmax	pmax		
BBOO	**Buckleboo** comp=Z,25nm,0.4s	**36.11**	**169**	*e*P	**P**	**05 55 26.4**	**+0.6**
STKA	**Stephens Creek** comp=Z,7.0nm,0.4s,baz=338,slow=7.7,SNR=32	**36.63**	**161**	P	**P**	**05 55 30.3**	**+0.1**
STKA				ScP	**ScP**	**06 01 12.7**	**+2.4**
STKA	**Stephens Creek** comp=Z,1.0nm,0.5s,baz=354,slow=9.2,SNR=3.6	**36.63**	**161**	*e*P	**P**	**05 55 30.6**	**+0.4**
STKA	comp=Z,1.8nm,0.5s			ScP	**ScP**	**06 01 12.7**	**+2.4**
NWAO	**Narrogin (SRO)** comp=Z,84nm,0.9s	**37.11**	**196**	*e*P	**P**	**05 55 35.0**	**+0.8**
BJI	**Beijing**	**38.74**	**345**	P	**P**	**05 55 46.3**	**-1.3**
BJI	comp=Z,21nm,0.7s			pmax	pmax		
BJI	comp=Z,140nm,5.1s			pmax	pmax		
ARMA	**Armidale** comp=Z,22nm,1.4s	**39.70**	**148**	*e*P	**P**	**05 55 56.6**	**+0.8**
LZH	**Lanzhou**	**40.24**	**328**	*e*P	**P**	**05 56 01.2**	**+0.9**
LZH				pP	pP	05 56 47.3	-4.6
LZH				sP	sP	05 57 12.8	-7.6
LZH	comp=Z,23nm,1.0s			pmax	pmax		
LZH	comp=Z,120nm,4.0s			pmax	pmax		
HHC	**Hu-ho-hao-te**	**40.88**	**340**	*e*P	**P**	**05 56 05.8**	**+0.5**
HHC				pP	pP	05 56 53.2	-3.8
HHC				sP	sP	05 57 18.7	-6.8
HHC				S	**S**	**06 02 00.2**	**+2.5**
HHC	comp=Z,48nm,0.9s			pmax	pmax		
HHC	comp=Z,320nm,5.3s			pmax	pmax		
CN2	**Changchun**	**40.93**	**357**	*e*P	P	05 56 09.4	+3.9
USRK	**Ussuriysk Ar.** comp=Z,3.8nm,0.5s,baz=195,slow=7.5,SNR=15	**41.35**	**4**	P	**P**	**05 56 08.1**	**-0.8**
ASAJ	**Asahikawa** comp=Z,5.3nm,0.3s,baz=179,slow=14,SNR=4.9	**42.99**	**15**	P	**P**	**05 56 21.7**	**-0.4**
ASAJ	**Asahikawa** comp=Z,63nm,1.8s	**42.99**	**15**	*e*P	**P**	**05 56 21.9**	**-0.2**
GTA	**Gaotai**	**44.84**	**328**	*e*P	**P**	**05 56 37.4**	**+0.3**
GTA				pP	pP	05 57 24.9	-4.9
GTA				sP	sP	05 57 49.7	-8.3
GTA	comp=Z,8.0nm,1.0s			pmax	pmax		
KLR	**Kul'dur** comp=Z,1.7nm,0.5s,baz=216,slow=5.2,SNR=8.9	**46.35**	**3**	P	**P**	**05 56 47.3**	**-1.2**
ULN	**Ulaanbaatar** comp=Z,5.2nm,0.7s	**48.59**	**341**	*e*P	**P**	**05 57 06.0**	**+0.1**
SONM	**Songino Array** comp=Z,1.4nm,0.5s,baz=152,slow=6.7,SNR=3.6	**48.78**	**340**	P	**P**	**05 57 06.5**	**-0.8**
SONA1	**Songino Array**	**48.79**	**340**	*e*P	**P**	**05 57 06.8**	**-0.6**
WMQ	**Urumqi**	**54.54**	**324**	*e*P	**P**	**05 57 49.9**	**0.0**
PEA0	**Petropavlovsk-**	**55.63**	**21**	*e*P	**P**	**05 57 57.6**	**+0.2**
PEA0B	**Petropavlovsk-** comp=Z,28nm,1.3s	**55.63**	**21**	*e*P	**P**	**05 57 57.4**	**0.0**
PETK	**Petropavlovsk-** comp=Z,3.7nm,0.7s,baz=178,slow=4.2,SNR=6.4	**55.63**	**21**	P	**P**	**05 57 57.0**	**-0.4**
YAK	**Yakutsk** comp=Z,16nm,0.4s,baz=198,slow=2.4,SNR=3.8	**59.10**	**1**	P	**P**	**05 58 21.0**	**-0.3**
MK01	**Makanchi Array**	**59.35**	**325**	*e*P	**P**	**05 58 22.9**	**-0.5**
MK31	**Makanchi Array**	**59.37**	**325**	*e*P	**P**	**05 58 23.3**	**-0.2**
MKAR	**Makanchi Array** comp=Z,2.2nm,0.4s,baz=112,slow=8.6,SNR=24	**59.37**	**325**	P	**P**	**05 58 23.2**	**-0.4**
MKAR				PcP	**PcP**	**05 59 08.9**	**+0.3**
MKAR	comp=Z,0.6nm,0.7s,baz=122,slow=5.2,SNR=2.2			ScP	**ScP**	**06 02 46.7**	**+1.4**
MKAR	comp=Z,0.8nm,0.9s,baz=134,slow=4.2,SNR=3.6			ScP	**ScP**	**06 02 46.7**	**+1.4**
MAKZ	**Makanchi** comp=Z,4.4nm,0.6s	**59.56**	**325**	*e*P	**P**	**05 58 24.4**	**-0.5**
WHZ	**Wether Hill Ro** comp=Z,102nm,1.8s	**59.70**	**149**	*e*P	**P**	**05 58 26.6**	**+0.8**
THZ	**Tophouse** comp=Z,84nm,1.6s	**59.85**	**143**	*e*P	**P**	**05 58 27.1**	**+0.2**
LBZ	**Lake Benmore** comp=Z,184nm,2.0s	**59.89**	**147**	*e*P	**P**	**05 58 28.1**	**+1.0**
RPZ	**Rata Peaks** comp=Z,57nm,1.2s	**59.95**	**146**	*e*P	**P**	**05 58 28.5**	**+1.0**
KSH	**Kashi**	**60.00**	**315**	*e*P	**P**	**05 58 29.6**	**+1.5**
KSH				*e*pP	pP	05 59 21.5	-2.5
KSH				*e*sP	sP	05 59 45.5	-5.8
KSH				*e*PP	**PP**	**06 00 45.9**	**+2.3**
KSH				S	**S**	**06 06 21.9**	**+1.2**
KSH	comp=Z,120nm,5.2s			pmax	pmax		
KSH	comp=N,260nm,10.5s			LR	LR		
KSH	comp=E,92nm,8.4s			LR	LR		
OXZ	**Oxford** comp=E,170nm,2.0s	**60.27**	**145**	*e*P	**P**	**05 58 30.1**	**+0.4**
KHZ	**Kahutara** comp=E,66nm,1.4s	**60.61**	**143**	*e*P	**P**	**05 58 32.1**	**+0.2**
URZ	**Urewera** comp=E,174nm,1.7s	**60.62**	**137**	*e*P	**P**	**05 58 31.7**	**-0.4**
BKZ	**Black Stump Fm** comp=E,46nm,1.4s	**60.67**	**139**	*e*P	**P**	**05 58 32.7**	**+0.2**
MQZ	**McQueen's Vall** comp=E,158nm,1.5s	**60.86**	**145**	*e*P	**P**	**05 58 35.4**	**+1.8**
TKM2	**Tokmak 2** comp=E,7.8nm,1.5s	**61.66**	**318**	*e*P	**P**	**05 58 39.0**	**-0.3**
ZALV	**Zalesovo Beam** comp=E,1.6nm,0.4s,baz=116,slow=6.8,SNR=6.1	**62.25**	**332**	P	**P**	**05 58 41.1**	**-1.6**
MCQ	**Macquarie Isla**	**62.40**	**161**	*e*P	**P**	**05 58 45.2**	**+1.6**
SEY	**Seymchan** comp=E,1.7nm,0.4s,baz=232,slow=16,SNR=6.0	**62.55**	**12**	P	**P**	**05 58 44.9**	**+0.5**
EKS2	**Erkin-Say** comp=E,2.0nm,0.8s	**62.77**	**317**	*e*P	**P**	**05 58 46.6**	**0.0**
TIXI	**Tiksi** comp=E,3.3nm,0.4s,baz=176,slow=4.3,SNR=9.0	**68.76**	**0**	P	**P**	**05 59 22.9**	**-1.0**
TIXI	**Tiksi** comp=E,4.4nm,0.8s	**68.76**	**0**	*e*P	**P**	**05 59 22.6**	**-1.3**
BRVK	**Borovoye** comp=E,4.3nm,0.6s	**69.17**	**327**	*e*P	**P**	**05 59 26.4**	**-0.4**
ZRNK	**Zerenda** comp=E,5.0nm,0.8s	**69.83**	**326**	*e*P	**P**	**05 59 30.0**	**-0.9**
CASY	**Casey** comp=E,9.0nm,0.6s	**70.12**	**188**	*e*P	**P**	**05 59 33.2**	**+0.9**
AKUT	**Akutan** comp=E,367nm,1.8s	**73.66**	**34**	*e*P	**P**	**05 59 54.2**	**+0.7**
ABKAR	**Akbulak array**	**74.03**	**321**	*e*P	**P**	**05 59 55.2**	**-0.6**
SDPT	**Sand Point** comp=E,83nm,1.4s	**76.95**	**34**	*e*P	**P**	**06 00 12.1**	**-0.1**
TT01	**Tatalina**	**80.90**	**27**	*e*P	**P**	**06 00 34.5**	**+0.9**
TTA	**Tatalina** comp=E,10.0nm,1.8s	**80.91**	**27**	*e*P	**P**	**06 00 34.2**	**+0.6**
OHAK	**Old Harbor** comp=E,10nm,1.1s	**81.25**	**33**	*e*P	**P**	**06 00 36.2**	**+0.8**
KDAK	**Kodiak Island** comp=E,37nm,1.7s	**81.71**	**32**	*e*P	**P**	**06 00 38.6**	**+0.9**
VNDA	**Vanda** comp=E,1.3nm,0.4s,baz=329,slow=5.5,SNR=11	**82.28**	**173**	P	**P**	**06 00 41.1**	**+0.7**
VNDA	**Vanda** comp=E,15nm,2.0s	**82.28**	**173**	*e*P	**P**	**06 00 41.1**	**+0.7**
PPLA	**Purkeypile** comp=E,23nm,1.7s	**82.63**	**27**	*e*P	**P**	**06 00 43.4**	**+0.7**
CAST	**Castle Rocks** comp=E,8.0nm,1.5s	**82.75**	**26**	*e*P	**P**	**06 00 44.2**	**+1.1**
KTH	**Kantishna Hill** comp=E,15nm,1.8s	**83.28**	**26**	*e*P	**P**	**06 00 46.4**	**+0.5**
RC01	**Rabbit Creek A** comp=E,4.4nm,0.8s	**83.55**	**29**	*e*P	**P**	**06 00 47.1**	**-0.1**
MLY	**Manley** comp=E,6.4nm,1.6s	**83.55**	**25**	*e*P	**P**	**06 00 47.3**	**0.0**
PMR	**Palmer** comp=E,4.6nm,1.0s	**83.89**	**28**	*e*P	**P**	**06 00 48.8**	**-0.1**
COLD	**Coldfoot** comp=E,2.2nm,0.9s	**84.04**	**23**	*e*P	**P**	**06 00 50.7**	**+1.1**
MCK	**McKinley** comp=E,22nm,2.0s	**84.19**	**26**	*e*P	**P**	**06 00 50.6**	**+0.2**
RND	**Reindeer** comp=E,8.1nm,1.5s	**84.19**	**27**	*e*P	**P**	**06 00 50.5**	**-0.1**
SML	**Sawmill** comp=E,5.5nm,0.7s	**84.29**	**28**	*e*P	**P**	**06 00 51.6**	**+0.6**
SCM	**Sheep Creek Mo** comp=E,9.7nm,1.1s	**84.77**	**28**	*e*P	**P**	**06 00 54.5**	**+1.1**
ILAR	**Eielson Array** comp=E,0.3nm,0.4s,baz=254,slow=4.5,SNR=7.6	**85.16**	**25**	P	**P**	**06 00 53.9**	**-1.4**
KLU	**Klutina** comp=E,8.0nm,1.4s	**85.42**	**29**	*e*P	**P**	**06 00 58.3**	**+1.6**
DAWY	**Dawson**	**88.41**	**26**	*e*P	**P**	**06 01 10.7**	**-0.2**
OBN	**Obninsk** comp=E,34nm,0.4s	**88.87**	**325**	*e*P	**P**	**06 01 15.0**	**+1.8**
ARCES	**ARCESS Array B** comp=E,2.5nm,1.0s,baz=84,slow=5.8,SNR=10	**91.95**	**340**	P	**P**	**06 01 25.6**	**-1.6**
FINES	**FINESS Array B** comp=E,1.3nm,0.9s,baz=40,slow=2.9,SNR=3.3	**93.52**	**332**	P	**P**	**06 01 32.6**	**-1.9**
RES	**Resolute Bay**	**98.40**	**11**	*e*P	Pdif	06 01 56.3	-0.1
YKA	**Yellowknife Ar** comp=E,0.2nm,0.7s,baz=299,slow=4.5,SNR=3.4	**99.58**	**25**	P	**Pdif**	**06 02 01.6**	**-0.4**
SLBS	**Sierra La Lagu**	**117.33**	**62**	*e*PKPdf	**PKPdf**	**06 07 01.6**	**-2.4**
TORD	**Torodi Ar. Bea**	**124.95**	**288**	PKP	**PKPdf**	**06 07 18.7**	**0.0**
LCO	**Las Campanas** comp=E,0.2nm,0.3s,baz=82,slow=1.8,SNR=7.1	**148.13**	**147**	*e*PKPbc	**PKPab**	**06 08 05.7**	**-2.4**

*NIED **07** 05:49:00,38°.30N×143°.90E,h5km,Mw3.6 Best double couple: M0:2.40000×10^14 NP1:φ0=14.00000°,δ33.00000°, λ-100.00000°. NP2:φ0=206.00000°,δ57.00000°, λ-84.00000°.*
JMA 07 05:49:01.9±0.2,38°.28N×143°.89E,h25km,M3.8,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**1.91**	**295**	P	Pn	05 49 33.7	+0.8
OFUJ				*e*S	Sb	05 49 57.9	-1.6
JIO	**Ouri**	**2.00**	**276**	P	Pn	05 49 35.2	+1.1
JIO				S	Sn	05 49 59.5	+1.1
JMK	**Ichinoseki**	**2.20**	**289**	P	Pn	05 49 38.4	+1.6
JOM	**Ohasama**	**2.35**	**301**	S	Sn	05 50 09.4	+2.4
JMM	**Marumori**	**2.48**	**261**	P	Pn	05 49 41.7	+1.0
JMM				S	Sn	05 50 11.0	+0.9
JOU	**Okura**	**2.54**	**273**	P	Pn	05 49 43.3	+1.8
JRG	**Rokugo**	**2.78**	**295**	P	Pn	05 49 46.6	+1.8
JRG				*e*S	Sn	05 50 20.0	+2.5
JYK	**Kaneyama**	**2.84**	**284**	P	Pn	05 49 47.7	+2.1
JYK				*e*S	Sn	05 50 21.4	+2.4
JFT	**Otama**	**2.91**	**256**	P	Pn	05 49 49.0	+2.4
JFT				*e*S	Sn	05 50 22.8	+2.0
JTM	**Tenmabayashi**	**3.32**	**320**	*e*S	Sn	05 50 30.2	-0.7

JMA 07 05:54:47.9±0.1,38°.46N×141°.83E,h55km±1km,M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.38**	**269**	P	Pn	05 54 58.1	-0.1
JIO				S	Sn	05 55 05.4	-0.2
OFUJ	**Ofunato**	**0.63**	**349**	P	Pn	05 55 00.9	-0.1
OFUJ				S	Sn	05 55 10.3	-0.3
JMK	**Ichinoseki**	**0.69**	**316**	P	Pn	05 55 01.9	+0.2
JMK				S	Sn	05 55 11.9	+0.2
JOU	**Okura**	**0.92**	**264**	P	Pn	05 55 04.8	+0.1
JOU				S	Sn	05 55 17.3	+0.2
JMM	**Marumori**	**1.01**	**234**	P	Pn	05 55 05.6	-0.3
JMM				S	Sn	05 55 18.6	-0.5
JOM	**Ohasama**	**1.09**	**338**	P	Pn	05 55 07.3	+0.3
JOM				S	Sn	05 55 21.5	+0.3
JYK	**Kaneyama**	**1.24**	**292**	P	Pn	05 55 09.3	+0.4
JYK				S	Sn	05 55 25.3	+0.7
JFK	**Kawauchi**	**1.33**	**215**	P	Pn	05 55 10.2	0.0
JFK				S	Sn	05 55 25.7	-1.1

*ISCJB **07** 06:06:51.9±0.2,6°.23S±0°.03×146°.65E±0°.04,h10km, mb4.8/72,MS3.7/16,Error ellipse: s-maj=6.1km s-min=4.1km az=177.2*
*IDC **07** 06:06:51.2±0.5,6°.19S×146°.69E,h0km,mb4.5/16, mb1 4.6/20,mb1mx4.5/34,mbtmp4.5/20,ML4.4/3,MS3.7/19, Ms1 3.7/19,ms1mx3.4/38,Error ellipse: s-maj=21.4km s-min=10.3km az=83.0*
*NEIC **07** 06:07:00.4±0.6,6°.34S×146°.54E,h66km±6km,mb4.8/48, Error ellipse: s-maj=5.9km s-min=4.6km az=95.0*
*DJA **07** 06:07:04.7±0.9,7°S±8°×14°7E±°,h10km,M4.9/12,mB5.3/1, mb4.7/12,MLv5.0/3,Mw(mB)4.7/1*
ISC 07 06:06:53.1±0.3,6°.21S±0°.04×146°.62E±0°.06,h10km,n139, σ1**22**/132,**mb4.8**/69,**MS3.7**/16,**1D,Eastern New Guinea region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby** 44nm,0.3s,baz=32,slow=5.7,SNR=69	**3.23**	**170**	Pn	**Pn**	**06 07 44.7**	**+0.8**
PMG	258nm,0.3s,baz=355,slow=12,SNR=101			Pg	**Pb**	**06 07 51.3**	**+0.7**
PMG	88nm,0.3s,baz=264,slow=20,SNR=6.5			Sn	**Sn**	**06 08 21.5**	**-0.9**
PMG	149nm,0.3s,baz=97,slow=14,SNR=3.3			Lg	Lg	06 08 36.0	
PMG	comp=Z,1μm,21.6s,baz=38,slow=49			LR	LR	06 09 29.3	
MANU	**Manus Island**	**4.20**	**10**	*e*Pn	**Pb**	**06 08 05.4**	**-1.8**
RABL	**Rabaul**	**5.88**	**70**	*e*Pn	Pn	06 08 26.8	+6.4
JAY	**Jayapura** 0.1nm,0.3s,baz=270,slow=20,SNR=3.7	**6.94**	**302**	Pn	Pn	06 08 41.1	+6.0
JAY	**Jayapura**	**6.94**	**302**	P	Pn	06 08 41.8	+6.8
GENI	**Genyem** 96nm,0.8s,2μm0.6nm	**7.36**	**299**	P	**Pb**	**06 08 57.9**	**-3.2**
COEN	**Coen**	**8.41**	**203**	*e*Pn	**Pn**	**06 08 56.1**	**+0.8**
COEN				*e*Sn	**Sn**	**06 10 26.9**	**-3.5**
HNR	**Honiara** 7.2nm,0.3s,baz=217,slow=15,SNR=1.8	**13.59**	**104**	Pn	**Pn**	**06 10 05.3**	**-0.8**
HNR	comp=Z,133nm,18.1s,baz=273,slow=36			LR	LR	06 14 51.7	
HNR	**Honiara**	**13.59**	**104**	*e*Pn	**P**	**06 10 13.6**	**-1.6**
CTA	**Charters Tower** 1.7nm,0.3s,baz=359,slow=14,SNR=17	**13.80**	**181**	Pn	**Pn**	**06 10 08.4**	**-0.6**
CTAO	**Charters Tower**	**13.80**	**181**	*e*Pn	**Pn**	**06 10 11.2**	**+2.2**
SWI	**Sorong**	**16.22**	**289**	P	**P**	**06 10 44.2**	**-0.2**
MTN	**Manton Dam** 30nm,0.9s	**16.63**	**245**	*e*Pn	**P**	**06 10 48.1**	**-0.9**
BNDI	**Bandanaira** 217nm,1.4s	**16.72**	**275**	P	P	06 10 59.8	+10
WRAB	**Tennant Creek** 26nm,0.9s	**18.12**	**220**	*e*P	**Pn**	**06 11 04.9**	**-0.3**
WB2	**Warramunga Arr** 21nm,0.8s	**18.12**	**220**	*e*P	**P**	**06 11 05.0**	**-0.6**
WRA	**Warramunga Arr** 0.7nm,0.3s,baz=45,slow=12,SNR=56	**18.13**	**220**	P	**P**	**06 11 05.0**	**-0.6**
WRA	baz=43,slow=19,SNR=4.9			S	**Sn**	**06 14 27.9**	**+0.1**
WRA	0.2nm,0.3s,baz=25,slow=1.9,SNR=6.7			PcP	**PcP**	**06 15 38.5**	**-0.7**
WRA	comp=Z,421nm,18.3s,baz=65,slow=40			LR	LR	06 19 01.4	
EIDS	**Eidsvold** 12nm,0.8s	**19.53**	**168**	*e*P	**Pn**	**06 11 22.0**	**-0.2**
NLAI	**Namlea** 34nm,0.8s	**19.67**	**278**	P	Pn	06 11 35.1	+11
GUMO	**Guam** comp=Z,152nm,19.0s,baz=140,slow=35	**19.74**	**355**	LR	LR	06 18 20.8	
SANI	**Sanana** 26nm,0.6s	**20.98**	**280**	P	Pn	06 11 47.5	+8.1
AS01	**Alice Springs**	**21.21**	**214**	*e*P	**P**	**06 11 40.6**	**+1.4**
AS31	**Alice Springs** 7.8nm,0.5s	**21.23**

KHZ	**Kahutara**	43.23	151	*e*P		**P**	**06 14 54.7**	**+0.1**
	147nm,1.8s							
MJAR	**Matsushiro Arr**	43.25	350	P		**P**	**06 14 54.5**	**-0.3**
	1.1nm,0.5s,baz=181,slow=9.0,SNR=4.3							
MJAR				LR	LR		06 33 02.8	
	comp=Z,22nm,18.1s,baz=220,slow=36							
MLZ	**Mavora Lakes**	43.26	158	*e*P		**P**	**06 14 55.5**	**+0.6**
	53nm,1.4s							
LBZ	**Lake Benmore**	43.26	155	*e*P		**P**	**06 14 55.0**	**+0.1**
	84nm,1.6s							
BFZ	**Birch Farm**	43.37	147	*e*P		**P**	**06 14 55.9**	**+0.2**
	120nm,1.4s							
MQZ	**McQueen's Vall**	43.80	153	*e*P		**P**	**06 14 59.0**	**-0.2**
	167nm,1.6s							
KSRS	**Korea Array**	46.81	340	P		**P**	**06 15 23.8**	**+0.7**
	13nm,0.9s,baz=158,slow=8.9,SNR=39							
KSRS				LR	LR		06 32 07.6	
	comp=Z,82nm,20.6s,baz=156,slow=32							
KS15	**Wonju Array Si**	46.81	339	*e*P		**P**	**06 15 24.1**	**+1.0**
KSAR	**Wonju Array Be**	46.81	339	P		**P**	**06 15 23.8**	**+0.7**
KS01	**Wonju Array Si**	46.84	340	*e*P		**P**	**06 15 23.4**	**0.0**
SKNT	**Sakolnakorn**	48.02	299	P		**P**	**06 15 34.2**	**+1.2**
	41nm,0.7s,3μm							
NONG	**Nongkai**	49.21	300	P		**P**	**06 15 43.1**	**+1.1**
	48nm,1.1s,10μm							
GYA	**Guiyang**	50.53	312	*e*P		**P**	**06 15 54.8**	**+2.6**
GYA				pmax	pmax			
	comp=Z,10.0nm,1.0s							
LOEI	**Loei**	50.61	299	P		**P**	**06 15 51.4**	**-1.3**
	comp=Z,21nm,0.7s,comp=Z,1μm							
UTTA	**Uttaradit**	51.32	298	P		**P**	**06 15 59.7**	**+1.6**
	comp=Z,11nm,0.7s,comp=Z,102nm							
NANT	**Nan**	51.62	300	P		**P**	**06 16 01.9**	**+1.6**
	comp=Z,15nm,0.7s,comp=Z,168nm							
USRK	**Ussuriysk Ar.**	51.88	347	P		**P**	**06 16 01.8**	**+0.1**
	comp=Z,3.7nm,0.8s,baz=164,slow=7.5,SNR=9.3							
LAMP	**Lampang**	52.44	299	P		**P**	**06 16 08.6**	**+2.2**
KMI	**Kunming**	52.82	308	P		**P**	**06 16 10.9**	**+1.5**
KMI				pmax	pmax			
	comp=Z,11nm,1.0s							
KMI				LR	LR			
	comp=Z,34nm,24.0s							
CM01	**Chiang Mai Arr**	52.98	298	*e*P		**P**	**06 16 12.3**	**+1.9**
CMAR	**Chiang Mai Arr**	53.01	299	P		**P**	**06 16 12.4**	**+1.8**
	comp=Z,16nm,0.7s,baz=123,slow=6.0,SNR=47							
CHTO	**Chiang Mai**	53.15	299	*e*P		**P**	**06 16 13.2**	**+1.5**
	comp=Z,10nm,0.8s							
CN2	**Changchun**	53.33	341	*e*P		P	06 16 18.0	+5.5
XAN	**Xi'an**	53.60	321	P		**P**	**06 16 13.8**	**-1.0**
XAN				pP		sP	06 16 28.2	+9.0
XAN				pmax	pmax			
	comp=Z,9.0nm,0.9s							
BJI	**Beijing**	53.90	331	P		**P**	**06 16 16.4**	**-0.3**
BJI				pmax	pmax			
	comp=Z,7.0nm,0.8s							
CD2	**Chengdu**	55.15	315	P		**P**	**06 16 27.0**	**+0.9**
CD2				pmax	pmax			
	comp=Z,2.0nm,0.5s							
HHC	**Hu-ho-hao-te**	56.81	329	*e*P		**P**	**06 16 42.5**	**+4.6**
HHC				pP		sP	06 16 58.4	+16
HHC				sP		pP	06 17 05.4	+24
HHC				S		**S**	**06 24 30.7**	**-0.6**
HHC				ScS		**ScS**	**06 26 22.5**	**-5.1**
HHC				pmax	pmax			
	comp=Z,33nm,1.1s							
HHC				pmax	pmax			
	comp=Z,150nm,6.9s							
HHC				LR	LR			
	comp=N,500nm,16.5s							
HHC				LR	LR			
	comp=E,530nm,16.4s							
HHC				LR	LR			
	comp=Z,560nm,16.1s							
PETK	**Petropavlovsk-**	59.83	8	P		**P**	**06 16 58.9**	**+0.2**
	comp=Z,2.9nm,0.6s,baz=161,slow=7.1,SNR=4.1							
PETK				LR	LR		06 38 31.9	
	comp=Z,91nm,21.7s,baz=192,slow=32							
GTA	**Gaotai**	62.66	321	*e*P		**P**	**06 17 18.8**	**+0.5**
GTA				pP		sP	06 17 30.0	+7.3
GTA				sP		pP	06 17 34.6	+13
GTA				pmax	pmax			
	comp=Z,7.0nm,1.0s							
ULN	**Ulaanbaatar**	64.11	332	*e*P		**P**	**06 17 28.1**	**+0.3**
	comp=Z,2.7nm,0.7s							
KKN	**Kakani**	68.12	303	*e*P		**P**	**06 17 54.8**	**+0.8**
GKN	**Gorkha**	68.72	303	*e*P		**P**	**06 17 58.8**	**+1.1**
	comp=Z,22nm,0.8s							
KOLN	**Koldanda**	69.52	303	*e*P		**P**	**06 18 03.7**	**+1.0**
	comp=Z,20nm,0.7s							
PYUN	**Piuthan**	70.13	303	*e*P		**P**	**06 18 06.5**	**0.0**
	comp=Z,33nm,0.7s							
VNDA	**Vanda**	71.73	177	P		**P**	**06 18 14.6**	**-0.5**
	comp=Z,1.1nm,0.6s,baz=324,slow=5.1,SNR=7.1							
VNDA				LR	LR		06 46 52.6	
	comp=Z,63nm,19.7s,baz=354,slow=34							
VNDA	**Vanda**	71.73	177	*e*P		**P**	**06 18 14.7**	**-0.3**
	comp=Z,9.8nm,1.5s							
WMQ	**Urumqi**	72.70	320	*e*P		**P**	**06 18 24.8**	**+3.3**
BILL	**Bilibino**	75.36	8	*e*P		**P**	**06 18 37.4**	**+0.9**
	comp=Z,7.4nm,1.2s							
MK01	**Makanchi Array**	77.40	321	*e*P		**P**	**06 18 48.1**	**-0.5**
MK31	**Makanchi Array**	77.41	321	*e*P		**P**	**06 18 48.5**	**-0.1**
MKAR	**Makanchi Array**	77.41	321	P		**P**	**06 18 47.5**	**-1.1**
	comp=Z,1.1nm,0.5s,baz=98,slow=7.7,SNR=10.0							
MKAR	**Makanchi Array**	77.41	321	*e*P		**P**	**06 18 48.4**	**-0.2**
MAKZ	**Makanchi**	77.62	321	*e*P		**P**	**06 18 49.9**	**+0.1**
	comp=Z,7.2nm,1.4s							
TIXI	**Tiksi**	78.58	354	*e*P		**P**	**06 18 53.6**	**-0.9**
	comp=Z,3.6nm,0.9s							
ZAA0	**Zalesovo Array**	78.98	328	*e*P		**P**	**06 18 55.4**	**-1.7**
ZALV	**Zalesovo Beam**	78.98	328	P		**P**	**06 18 55.8**	**-1.4**
	comp=Z,1.9nm,0.4s,baz=101,slow=6.3,SNR=6.3							
ZALV				LR	LR		06 53 11.8	
	comp=Z,31nm,21.6s,baz=78,slow=35							
OHAK	**Old Harbor**	79.66	29	*e*P		**P**	**06 19 01.6**	**+0.9**
	comp=Z,42nm,1.7s							
AAK	**Ala-Archa**	81.21	315	*e*P		**P**	**06 19 09.6**	**-0.1**
	comp=Z,4.2nm,1.3s							
MAW	**Mawson**	81.91	203	LR	LR		06 54 23.5	
	comp=Z,35nm,18.6s,baz=318,slow=35							
PPLA	**Purkeypile**	82.88	24	*e*P		**P**	**06 19 18.6**	**+0.6**
	comp=Z,32nm,2.0s							
RC01	**Rabbit Creek A**	83.07	26	*e*P		**P**	**06 19 19.1**	**+0.4**
	comp=Z,24nm,1.6s							
CAST	**Castle Rocks**	83.17	23	*e*P		**P**	**06 19 20.4**	**+1.1**
	comp=Z,6.5nm,1.2s							
PMR	**Palmer**	83.56	26	*e*P		**P**	**06 19 22.0**	**+0.8**
	comp=Z,9.7nm,1.4s							
KTH	**Kantishna Hill**	83.69	24	*e*P		**P**	**06 19 22.1**	**+0.1**
	comp=Z,11nm,1.5s							
TRF	**Thorofare Moun**	83.90	24	*e*P		**P**	**06 19 24.0**	**+0.8**
	comp=Z,4.4nm,1.0s							
BPAW	**Bear Paw Mtn.**	83.92	23	*e*P		**P**	**06 19 23.9**	**+0.7**
	comp=Z,8.4nm,1.4s							
SML	**Sawmill**	83.99	26	*e*P		**P**	**06 19 24.2**	**+0.7**
	comp=Z,7.9nm,0.9s							
SCM	**Sheep Creek Mo**	84.44	26	*e*P		**P**	**06 19 26.4**	**+0.6**
	comp=Z,12nm,1.2s							
MLY	**Manley**	84.45	22	*e*P		**P**	**06 19 26.6**	**+0.7**
	comp=Z,5.0nm,0.7s							
RND	**Reindeer**	84.46	24	*e*P		**P**	**06 19 25.8**	**-0.1**
	comp=Z,5.7nm,0.7s							
MCK	**McKinley**	84.57	24	*e*P		**P**	**06 19 26.5**	**+0.1**
	comp=Z,14nm,1.2s							
KLU	**Klutina**	84.92	26	*e*P		**P**	**06 19 29.9**	**+1.6**
	comp=Z,6.3nm,0.9s							
WRH	**Wood River Hil**	85.22	23	*e*P		**P**	**06 19 29.5**	**-0.2**
	comp=Z,7.9nm,1.0s							
NRIK	**Noril'sk**	85.35	342	P		**P**	**06 19 29.4**	**-0.7**
	comp=Z,2.2nm,0.6s,baz=113,slow=4.2,SNR=5.9							
NRIK				LR	LR		06 57 58.4	
	comp=Z,26nm,19.6s,baz=112,slow=36							
CCB	**Clear Creek Bu**	85.41	23	*e*P		**P**	**06 19 30.0**	**-0.5**
	comp=Z,8.0nm,1.1s							
COLD	**Coldfoot**	85.66	20	*e*P		**P**	**06 19 33.2**	**+1.5**
	comp=Z,3.7nm,1.0s							
PAX	**Paxson**	85.68	25	*e*P		**P**	**06 19 33.0**	**+0.9**
	comp=Z,7.1nm,1.5s							
IL1	**Eielson Array**	85.82	23	*e*P		**P**	**06 19 31.9**	**-0.8**
ILAR	**Eielson Array**	85.82	23	P		**P**	**06 19 31.3**	**-1.3**
	comp=Z,4.3nm,0.7s,baz=254,slow=5.0,SNR=35							
ILAR				LR	LR		06 54 42.5	
	comp=Z,40nm,19.7s,baz=277,slow=34							
ILB	**Eielson Array**	85.82	23	*e*P		**P**	**06 19 32.2**	**-0.4**
BALM	**Baldy**	86.36	27	*e*P		**P**	**06 19 36.8**	**+1.3**
	comp=Z,15nm,1.3s							
EGAK	**Eagle**	88.11	24	*e*P		**P**	**06 19 44.6**	**+0.8**
	comp=Z,6.4nm,0.9s							
DAWY	**Dawson**	88.62	25	*e*P		**P**	**06 19 47.0**	**+0.7**
	comp=Z,8.1nm,1.0s							
SYO	**Syowa Base**	90.27	200	⇓*e*X		P	06 19 47.0	-6.9
INK	**Inuvik**	91.98	21	*e*P		**P**	**06 20 01.6**	**-0.1**
	comp=Z,4.6nm,1.1s							
NVAR	**Mina Array Bea**	97.79	52	LR	LR		07 01 04.1	
	comp=Z,33nm,18.2s,baz=222,slow=33							
PFO	**Pinyon Flats O**	99.16	57	*e*P		**Pdif**	**06 20 34.4**	**-1.1**
	comp=Z,14nm,1.7s							
YKA	**Yellowknife Ar**	99.53	28	P		**Pdif**	**06 20 34.6**	**-1.6**
	comp=Z,0.6nm,1.0s,baz=269,slow=5.4,SNR=6.8							
PLCA	**Paso Flores**	122.16	147	PKP		**PKPdf**	**06 25 48.3**	**-0.5**
	comp=Z,2.1nm,0.7s,baz=334,slow=3.3,SNR=5.6							
PLCA	**Paso Flores**	122.16	147	*e*PKPdf		**PKPdf**	**06 25 48.8**	**0.0**
WCI	**Wyandotte Cave**	122.57	48	*e*PKPdf		**PKPdf**	**06 25 48.7**	**-0.8**
LPAZ	**La Paz**	138.99	123	PKP		**PKPdf**	**06 26 21.7**	**-0.2**
	comp=Z,1.1nm,0.7s,baz=24,slow=5.9,SNR=4.1							
CPUP	**Villa Florida**	140.18	145	PKP		**PKPdf**	**06 26 23.9**	**+0.8**
	comp=Z,2.0nm,0.8s,baz=314,slow=4.0,SNR=3.8							
TORD	**Torodi Ar. Bea**	144.77	284	PKP		PKPbc	06 26 30.6	+0.2
	comp=Z,21nm,0.9s,baz=82,slow=3.6,SNR=98							
LRS	**Lares**	145.24	67	*e*PKPdf		**PKPbc**	**06 26 31.2**	**-0.7**
SJG	**San Juan**	145.92	67	*e*PKPdf		**PKPbc**	**06 26 33.9**	**-0.1**
CBYP	**Canovanas**	146.15	66	*e*PKPdf		**PKPbc**	**06 26 34.2**	**-0.5**
HUMP	**Col San Antoni**	146.19	67	*e*PKPdf		**PKPbc**	**06 26 34.7**	**-0.1**
MTP	**Monte Pirata**	146.47	66	*e*PKPdf		**PKPbc**	**06 26 35.5**	**-0.1**
STVI	**Saint Thomas**	146.94	66	*e*PKPbc		**PKPbc**	**06 26 37.1**	**+0.2**
ROSA	**Rosais**	147.30	353	*e*PKPbc		**PKPbc**	**06 26 37.8**	**+0.4**
ABVI	**Anegada Island**	147.39	65	*e*PKPdf		**PKPdf**	**06 26 35.4**	**-0.3**
SMRT	**St. Maarten**	148.73	65	*e*PKPbc		**PKPbc**	**06 26 41.6**	**-0.2**
KIC	**Kosan Boka**	151.53	272	*e*PKIKP		**PKPbc**	**06 26 48.9**	**+0.2**
	comp=Z,213nm,2.1s							
DBIC	**Dimbokro**	151.65	273	PKPbc		**PKPbc**	**06 26 49.2**	**+0.2**
	comp=Z,5.2nm,0.5s,baz=90,slow=4.1,SNR=16							
DBIC	**Dimbokro**	151.65	273	*e*PKPbc		**PKPbc**	**06 26 49.4**	**+0.4**
SVB	**Belmont**	151.67	74	*e*PKPbc		**PKPbc**	**06 26 47.5**	**-1.5**
LIC	**Lamto**	151.81	272	*e*PKIKP		**PKPbc**	**06 26 49.4**	**0.0**
	comp=Z,71nm,1.6s							
TIC	**Toumodi**	151.81	272	*e*PKIKP		**PKPbc**	**06 26 49.4**	**0.0**
PTGA	**Pitinga**	152.58	104	*e*PKPbc		**PKPbc**	**06 26 51.0**	**-0.1**

*ISCJB **07** 06:16:32.9±0.4, 40°.17N±0°.02×27°.36E±0°.03, h0km, Error ellipse: s-maj=3.7km s-min=2.9km az=35.5*
*ISK **07** 06:16:32.8, 40°.18N×27°.37E, h12km, MD2.7*
*CSEM **07** 06:16:33.1±0.2, 40°.19N×27°.38E, h1km, MD2.7, Error ellipse: s-maj=4.7km s-min=3.3km az=39.0, Suspected Mining explosion.*
*DDA **07** 06:16:33.7, 40°.18N×27°.38E, h7km, Md2.5, Suspected Mining explosion.*
ISC 07 06:16:32.3±0.8, 40°.20N±0°.02×27°.36E±0°.02, h0km, n46, σ0§81/60, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KNL	**Bal¨–kesir**	0.15	60	*i* P		**Pg**	**06 16 37.0**	**+1.8**
KNL				*i* S		**Sg**	**06 16 39.9**	**+2.8**
KRBG	**Karabiga-Canak**	0.20	347	*e*PG		**Pg**	**06 16 37.8**	**+1.6**
KRBG	**Karabiga-Canak**	0.20	347	*e*Pg		**Pg**	**06 16 37.8**	**+1.6**
GONE	**Gonen-Balikesi**	0.29	120	*e*PG		**Pg**	**06 16 38.9**	**+1.0**
GONE	**Gonen-Balikesi**	0.29	120	*e*Pg		**Pg**	**06 16 38.9**	**+1.0**
EDC	**Edincik**	0.42	68	*e*PG		**Pb**	**06 16 41.5**	**-1.0**
EDC	**Edincik**	0.42	68	*e*Pg		**Pb**	**06 16 41.5**	**-1.0**
MRMT	**Marmara Adasi**	0.45	24	*e*PG		**Pb**	**06 16 42.3**	**-0.8**
MRMT				*e*SG		**Sb**	**06 16 49.3**	**-1.1**
MRMT	**Marmara Adasi**	0.45	24	*e*Pg		**Pb**	**06 16 42.3**	**-0.8**
MRMT				*e*Sg		**Sb**	**06 16 49.3**	**-1.1**
LPK	**Lapseki**	0.49	291	*e*PG		**Pb**	**06 16 43.1**	**-0.7**
LPK				*e*SG		**Sb**	**06 16 50.7**	**-0.8**
LPK	**Lapseki**	0.49	291	*e*Pg		**Pb**	**06 16 43.1**	**-0.7**
LPK				*e*Sg		**Sb**	**06 16 50.7**	**-0.8**
BALY	**Balya**	0.50	156	P		**Pb**	**06 16 43.4**	**-0.5**
BALY				S		**Sb**	**06 16 50.3**	**-1.4**
BALY	**Balya**	0.50	156	*i* P		**Pb**	**06 16 43.4**	**-0.5**
BALY				*i* S		**Sb**	**06 16 50.3**	**-1.4**
RKY	**Sarkoy-Tekirda**	0.51	344	*e*PG		**Pb**	**06 16 43.7**	**-0.5**
RKY	**Sarkoy-Tekirda**	0.51	344	*e*Pg		**Pb**	**06 16 43.7**	**-0.5**
SART	**Tekirdag**	0.51	345	P		**Pg**	**06 16 42.4**	**+0.3**
SART				S		**Sb**	**06 16 51.9**	**-0.4**
SART	**Tekirdag**	0.51	345	*i* P		**Pg**	**06 16 42.4**	**+0.3**
SART				*i* S		**Sb**	**06 16 51.9**	**-0.4**
BALB	**Balikesir**	0.68	144	*e*PG		**Pb**	**06 16 46.4**	**-0.7**
BALB	**Balikesir**	0.68	144	*e*Pg		**Pb**	**06 16 46.4**	**-0.7**
GELI	**Tayfur-Gelibol**	0.71	287	*e*PG		**Pb**	**06 16 47.2**	**-0.3**
GELI	**Tayfur-Gelibol**	0.71	287	*e*Pg		**Pb**	**06 16 47.2**	**-0.3**
KCTX	**Karacabey (Bur**	0.77	84	*e*PG		**Pb**	**06 16 48.0**	**-0.6**
KCTX	**Karacabey (Bur**	0.77	84	*e*Pg		**Pb**	**06 16 48.0**	**-0.6**
KESN	**Edirne-Kesan**	0.81	321	P		**Pn**	**06 16 50.7**	**-0.7**
KESN				S		**Sb**	**06 17 01.0**	**-0.3**
KESN	**Edirne-Kesan**	0.81	321	*i* P		**Pn**	**06 16 50.7**	**-0.7**
KESN				*i* S		**Sb**	**06 17 01.0**	**-0.3**
EZN	**Ezine**	0.88	245	*e*PG		**Pb**	**06 16 49.9**	**-0.5**
EZN	**Ezine**	0.88	245	*e*Pg		**Pb**	**06 16 49.9**	**-0.5**
DURS	**Dursunbey**	1.04	124	P		**Pb**	**06 16 53.3**	**0.0**
DURS				S		**Sb**	**06 17 07.2**	**-0.3**
DURS	**Dursunbey**	1.04	124	*i* P		**Pb**	**06 16 53.3**	**0.0**
DURS				*i* S		**Sb**	**06 17 07.2**	**-0.3**
BOZC	**Bozcaada**	1.06	251	*i* P		**Pn**	**06 16 54.2**	**-0.2**
BOZC				*i* S		**Sb**	**06 17 07.3**	**-0.7**
ORLT	**Orhaneli**	1.19	97	*e*PN		**Pb**	**06 16 55.5**	**-0.3**
ORLT	**Orhaneli**	1.19	97	*e*Pn		**Pb**	**06 16 55.5**	**-0.3**
ARMT	**Armutlu**	1.21	72	*e*PN		**Pn**	**06 16 56.2**	**-0.3**
ARMT	**Armutlu**	1.21	72	*e*Pn		**Pn**	**06 16 56.2**	**-0.3**
ALN	**Alexandroupoli**	1.22	305	*e*PN		**Pb**	**06 16 56.2**	**-0.1**
ALN	**Alexandroupoli**	1.22	305	*e*Pn		**Pb**	**06 16 56.2**	**-0.1**
CTKS	**Kestanelik-??a**	1.36	40	*e*PN		**Pg**	**06 16 57.9**	**-0.4**
CTKS	**Kestanelik-??a**	1.36	40	*e*Pn		**Pg**	**06 16 57.9**	**-0.4**
CTYL	**Yalikoy Yolu**	1.46	29	*e*PN		**Pn**	**06 16 59.5**	**-0.4**
CTYL	**Yalikoy Yolu**	1.46	29	*e*Pn		**Pn**	**06 16 59.5**	**-0.4**
SIGR	**SIGRI**	1.52	230	*e*PN		**Pn**	**06 17 00.6**	**-0.1**
SIGR	**SIGRI**	1.52	230	*e*Pn		**Pn**	**06 17 00.6**	**-0.1**
IZI	**Iznik**	1.62	84	*e*PN		**Pn**	**06 17 01.9**	**-0.4**
IZI	**Iznik**	1.62	84	*e*Pn		**Pn**	**06 17 01.9**	**-0.4**
TVSB	**Tavsanli**	1.78	114	*e*PN		**Pn**	**06 17 04.1**	**-0.4**
TVSB	**Tavsanli**	1.78	114	*e*Pn		**Pn**	**06 17 04.1**	**-0.4**

*NIED **07** 06:21:00, 37°.70N×141°.70E, h35km, Mw3.7 Best double couple: M=4.30000×10^14 NP1:φ=197.00000°, δ51.00000°, λ137.00000°. NP2:φ=318.00000°, δ58.00000°, λ48.00000°.*
*IDC **07** 06:21:33.4±1.3, 38°.10N×142°.25E, h0km, mb3.6/2, mb1 3.8/4, mb1mx3.4/42, mbtmp3.7/4, ML3.6/2, Error ellipse: s-maj=97.4km s-min=53.1km az=180.0*
*ISCJB **07** 06:21:42.3±0.9, 37°.71N±0°.04×141°.82E±0°.09, h56km±11km, mb3.7/2, Error ellipse: s-maj=12.1km s-min=5.7km az=14.2*
*JMA **07** 06:21:43.4, 37°.73N×141°.74E, h51km±2km, M3.7*
JMA Felt I J1.
ISC 07 06:21:42.3±2.3, 37°.70N±0°.04×141°.91E±0°.09, h37km±3km, n17, σ1§25/31, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	0.87	330	P		**Pn**	**06 21 58.4**	**+0.3**
JIO				S		**Sn**	**06 22 08.8**	**-0.8**
JFK	**Kawauchi**	0.88	248	P		**Pn**	**06 21 58.3**	**0.0**
JFK				S		**Sn**	**06 22 09.0**	**-0.9**
JMM	**Marumori**	0.90	281	P		**Pn**	**06 21 58.1**	**-0.3**
JMM				S		**Sn**	**06 22 08.5**	**-1.7**
ONAJ	**Iwakimizuishiy**	1.06	236	P		**Pn**	**06 22 00.9**	**+0.2**
ONAJ				S		**Sn**	**06 22 13.9**	**-0.4**
JOU	**Okura**	1.19	305	P		**Pn**	**06 22 02.1**	**-0.3**
JOU				S		**Sn**	**06 22 16.4**	**-0.9**
JFT	**Otama**	1.26	262	P		**Pn**	**06 22 03.7**	**+0.3**
JFT				S		**Sn**	**06 22 18.4**	**-0.6**
JMK	**Ichinoseki**	1.36	337	P		**Pn**	**06 22 05.5**	**+0.7**
JMK				S		**Sn**	**06 22 21.2**	**-0.4**
JYS	**Shirataka**	1.54	290	P		**Pn**	**06 22 07.3**	**0.0**
JYS				S		**Sn**	**06 22 25.4**	**-0.7**
JYK	**Kaneyama**	1.72	316	P		**Pn**	**06 22 10.0**	**+0.3**
JYK				S		**Sn**	**06 22 29.6**	**-0.9**
JFY	**Yanaizu**	1.77	261	P		**Pn**	**06 22 10.8**	**+0.4**
JFY				*e*S		**Sn**	**06 22 31.3**	**-0.4**
JOM	**Ohasama**	1.84	345	P		**Pn**	**06 22 12.3**	**+1.0**
JOM				*e*S		**Sn**	**06 22 33.8**	**+0.5**
JYA	**Atsumi**	1.95	298	P		**Pn**	**06 22 13.1**	**+0.3**
JYA				S		**Sn**	**06 22 36.0**	**0.0**
MJAR	**Matsushiro Arr**	3.17	250	Pn		**Pn**	**06 22 30.2**	**+0.6**
	3.5nm,0.3s,baz=58,slow=11,SNR=15							
MAT	**Matsushiro**	3.17	250	P		**Pn**	**06 22 30.9**	**+1.2**
MAT				S		**Sn**	**06 23 11.1**	**+4.8**
JHJ	**Hachijo jima 2**	4.88	201	Pn		**Pn**	**06 22 54.2**	**+1.0**
	11nm,0.3s,baz=232,slow=19,SNR=3.9							
JHJ				Sn		**Sn**	**06 23 46.0**	**-2.5**
	20nm,0.3s,baz=111,slow=23,SNR=6.5							
WRA	**Warramunga Arr**	57.77	188	P		**P**	**06 31 28.9**	**-0.9**
	0.6nm,0.5s,baz=5.7,slow=7.1,SNR=16							
ASAR	**Alice Springs**	61.50	188	P		**P**	**06 31 55.4**	**0.0**
	0.3nm,0.8s,baz=9.7,slow=6.6,SNR=2.6							

*SOME **07** 06:22:48.3, 44°.67N×82°.35E, h25km*
*NNC **07** 06:22:50.5±0.8, 44°.73N×82°.13E, h0km, mb3.2, mpv2.8, Error ellipse: s-maj=11.1km s-min=1.8km az=115.0*
ISC 07 06:22:46.3±1.8, 44°.69N±0°.05×82°.27E±0°.10, h1km±19km, n10, σ0§58/20, 3C-5B, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DJR	**Jarkent**	1.81	259	*e*P		**Pg**	**06 23 21.0**	**0.0**
	4.9nm,0.2s							
DJR				*e*S		**Sg**	**06 23 44.6**	**+0.1**
	9.0nm,0.3s							
KTMS	**Ketmen**	1.86	229	*e*P		**Pg**	**06 23 22.3**	**+0.3**
	1.9nm,0.1s							
KTMS				*e*S		**Sg**	**06 23 46.8**	**+0.6**
	19nm,0.5s							
MK31	**Makanchi Array**	2.10	0	⇓P		**Pg**	**06 23 26.8**	**+0.3**
	6.5nm,0.3s,baz=182,slow=14,SNR=74							
MK31				⇓S		**Sg**	**06 23 54.3**	**+0.5**
	4.3nm,0.4s,baz=184,slow=27,SNR=15							
MAKZ	**Makanchi**	2.13	355	⇑P		**Pg**	**06 23 26.5**	**-0.5**
	4.1nm,0.5s							
MAKZ				⇑S		**Sg**	**06 23 54.4**	**-0.2**
	4.3nm,0.6s							
KAPS	**Kapalarasan**	2.15	287	⇓*i*P		**Pb**	**06 23 26.5**	**+0.4**
	1.9nm,0.1s							
KAPS				⇓*i*S		**Sb**	**06 23 53.3**	**0.0**
	7.7nm,0.3s							
SHLS	**Shalkode**	2.31	229	*e*P		**Pg**	**06 23 30.3**	**-0.3**
	4.9nm,0.3s							
SHLS				*e*S		**Sg**	**06 24 00.1**	**-0.4**
	16nm,0.4s							
PDGK	**Podgornoye**	2.43	237	⇓P		**Pb**	**06 23 30.6**	**-0.1**
	0.9nm,0.4s							
PDGK				⇑S		**Sb**	**06 24 01.9**	**+0.6**
	7.3nm,0.6s							
UZB	**Uzynbulak**	2.81	238	*e*P		**Pb**	**06 23 37.0**	**-0.4**
	1.8nm,0.4s							
UZB				*e*S		**Sb**	**06 24 12.8**	**+0.4**
	3.2nm,0.3s							
MNBS	**Baschi**	2.84	259	*e*P		**Pb**	**06 23 37.0**	**-1.0**
	1.3nm,1.0s							
MNBS				*e*S		**Sb**	**06 24 12.0**	**-1.2**
	18nm,0.9s							
ARXS	**Arharly**	3.22	263	*e*P		**Pb**	**06 23 44.5**	**+0.2**
	1.5nm,1.3s							
ARXS				*e*S		**Sb**	**06 24 24.9**	**+0.8**
	7.5nm,0.4s							

*NEIC **07** 06:30:33.6±0.7, 20°.72S×168°.39E, h10km, mb4.4/3, Error ellipse: s-maj=18.8km s-min=15.0km az=149.0*
*ISCJB **07** 06:30:34.9±0.8, 20°.8S±0°.1×168°.4E±0°.1, h30km, mb

ALFO	**Alfred**	**1.14**	**322**	Pg	**Pn**	**06 45 30.5**	**-0.3**
ALFO				Sg	**Sb**	**06 45 45.4**	**+0.1**
MOQ	**Mont Orford**	**1.30**	**63**	PG	**Pn**	**06 45 33.5**	**+0.5**
MOQ				SG	**Sb**	**06 45 50.1**	**+0.1**
MOQ				Trac		06 45 55.2	
	comp=Z,23nm,0.1s						
MOQ	**Mont Orford**	**1.30**	**63**	Pg	**Pn**	**06 45 33.5**	**+0.5**
MOQ				Sg	**Sb**	**06 45 50.1**	**+0.1**
ORIO	**Orleans, Innes**	**1.35**	**303**	PG	**Pn**	**06 45 34.5**	**+0.7**
ORIO				SG	**Sn**	**06 45 51.7**	**+0.4**
ORIO				Trac		06 45 58.2	
	comp=Z,10nm,0.1s						
ORIO	**Orleans, Innes**	**1.35**	**303**	Pg	**Pn**	**06 45 34.5**	**+0.7**
ORIO				Sg	**Sn**	**06 45 51.7**	**+0.4**
ACCN	**Adirondack Com**	**1.36**	**173**	*e*P	**Pn**	**06 45 34.5**	**+0.7**
ORHO	**Orleans, Herit**	**1.37**	**302**	PG	**Pn**	**06 45 35.0**	**+1.0**
ORHO				SG	**Sn**	**06 45 53.0**	**+1.3**
ORHO				Trac		06 46 05.8	
	comp=Z,342nm,0.2s						
ORHO	**Orleans, Herit**	**1.37**	**302**	Pg	**Pn**	**06 45 35.0**	**+1.0**
ORHO				Sg	**Sn**	**06 45 53.0**	**+1.3**
OTT	**Ottawa**	**1.45**	**298**	PN	**Pn**	**06 45 35.9**	**+0.8**
OTT				PN	**Pb**	**06 45 36.0**	**-0.2**
OTT				SN	**Sn**	**06 45 54.7**	**+1.0**
OTT				SN	**Sb**	**06 45 55.0**	**+0.6**
OTT				Trac		06 45 58.7	
	comp=Z,15nm,0.1s						
OTT				Trac		06 46 00.1	
	comp=Z,23nm,0.1s						
OTT	**Ottawa**	**1.45**	**298**	Pn	**Pn**	**06 45 35.9**	**+0.8**
OTT				*e*		06 45 54.7	
WCNY	**West Carthage**	**1.47**	**240**	*e*P	**Pn**	**06 45 36.5**	**+1.1**
GAC	**Glen Almond**	**1.48**	**311**	PN	**Pn**	**06 45 36.4**	**+0.9**
GAC				PN	**Pb**	**06 45 36.5**	**-0.2**
GAC				SN	**Sn**	**06 45 55.4**	**+0.9**
GAC				SN	**Sb**	**06 45 55.8**	**+0.5**
GAC				Trac		06 45 59.0	
	comp=Z,27nm,0.2s						
GAC				Trac		06 46 00.7	
	comp=Z,20nm,0.2s						
GAC	**Glen Almond**	**1.48**	**311**	Pn	**Pn**	**06 45 36.4**	**+0.9**
GAC				Sn	**Sn**	**06 45 55.4**	**+0.9**
LBNH	**Lisbon**	**1.49**	**109**	PG	**Pb**	**06 45 37.5**	**+0.6**
LBNH				SG	**Sn**	**06 45 54.0**	**-0.6**
LBNH				Trac		06 45 58.4	
	comp=Z,21nm,0.1s						
TRQ	**Mont Tremblant**	**1.56**	**343**	PN	**Pn**	**06 45 36.4**	**-0.3**
TRQ				SN	**Sn**	**06 45 57.1**	**+0.6**
TRQ				Trac		06 45 59.4	
	comp=Z,34nm,0.1s						
KGNO	**Kingston**	**1.93**	**256**	SN	**Sn**	**06 46 06.0**	**+0.5**
KGNO				SN	**Sb**	**06 46 06.9**	**-1.3**
KGNO				LG	Lg	06 46 10.4	
KGNO				Trac		06 46 14.3	
	comp=Z,13nm,0.1s						
TRY	**Troy**	**2.01**	**175**	*e*P	**Pn**	**06 45 43.6**	**+0.9**
HCNY	**Howe Caverns**	**2.07**	**190**	*e*P	**Pn**	**06 45 44.3**	**+0.7**
DPQ	**Saint Jean**	**2.10**	**21**	PN	**Pn**	**06 45 45.3**	**+1.3**
DPQ				SN	**Sn**	**06 46 09.6**	**-0.1**
DPQ				LG	Lg	06 46 13.9	
DPQ				Trac		06 46 14.9	
	comp=Z,14nm,0.1s						
PLVO	**Plevna**	**2.29**	**279**	PN	**Pn**	**06 45 47.3**	**+0.7**
PLVO				SN	**Sn**	**06 46 13.7**	**-0.6**
PLVO				LG	Lg	06 46 22.3	
PLVO				Trac		06 46 23.1	
	comp=Z,15nm,0.1s						
GRQ	**Grand Remous**	**2.33**	**324**	PN	**Pn**	**06 45 48.0**	**+0.8**
GRQ				SN	**Sn**	**06 46 15.6**	**+0.2**
GRQ				LG	Lg	06 46 22.5	
GRQ				Trac		06 46 24.4	
	comp=Z,9.7nm,0.1s						
PECO	**Prince Edward**	**2.37**	**251**	PN	**Pn**	**06 45 48.5**	**+0.8**
PECO				SN	**Sn**	**06 46 15.6**	**-0.7**
PECO				LG	Lg	06 46 23.6	
PECO				Trac		06 46 25.7	
	comp=Z,16nm,0.1s						
PEMO	**Pembroke**	**2.55**	**293**	PN	**Pn**	**06 45 51.2**	**+1.0**
PEMO				SN	**Sn**	**06 46 21.0**	**+0.1**
PEMO				LG	Lg	06 46 29.5	
PEMO				Trac		06 46 31.3	
	comp=Z,3.8nm,0.1s						
DELO	**Deloro Mine**	**2.67**	**267**	PN	**Pn**	**06 45 52.8**	**+0.9**
DELO				SN	**Sn**	**06 46 23.2**	**-0.5**
DELO				Trac		06 46 33.4	
	comp=Z,7.6nm,0.1s						
DELO				LG	Lg	06 46 34.0	
CRLO	**Chalk River**	**2.78**	**299**	PN	**Pn**	**06 45 54.5**	**+1.1**
CRLO				SN	**Sn**	**06 46 26.0**	**-0.6**
CRLO				LG	Lg	06 46 35.6	
CRLO				Trac		06 46 39.6	
	comp=Z,4.3nm,0.1s						
BANO	**Bancroft**	**2.88**	**277**	PN	**Pn**	**06 45 55.3**	**+0.5**
BANO				SN	**Sn**	**06 46 28.1**	**-1.0**
BANO				LG	Lg	06 46 40.8	
BANO				Trac		06 46 41.4	
	comp=Z,5.1nm,0.1s						
BCLQ	**Boischatel**	**2.90**	**40**	PN	**Pn**	**06 45 54.8**	**-0.3**
BCLQ				SN	**Sn**	**06 46 28.6**	**-0.8**
BCLQ				LG	Lg	06 46 39.2	
BCLQ				Trac		06 46 47.2	
	comp=Z,4.7nm,0.1s						
PKME	**Peaks-Kenny Pk**	**3.31**	**79**	*e*Pg	**Pb**	**06 46 09.9**	**+2.1**
PKME				*e*Sg	**Sg**	**06 46 55.4**	**-0.4**
DAQ	**Lac Daran**	**3.71**	**29**	PN	**Pn**	**06 46 06.8**	**+0.5**
DAQ				SN	**Sn**	**06 46 47.8**	**-1.8**
DAQ				LG	Lg	06 47 03.2	
DAQ				Trac		06 47 05.5	
	comp=Z,2.4nm,0.1s						
SADO	**Sadowa**	**3.74**	**272**	PN	**Pn**	**06 46 06.3**	**-0.3**
SADO				SN	**Sn**	**06 46 48.5**	**-1.7**
SADO				LG	Lg	06 47 06.2	
SADO				Trac		06 47 11.3	
	comp=Z,7.5nm,0.2s						
LMQ	**La Malbaie**	**3.75**	**40**	PN	**Pn**	**06 46 07.2**	**+0.5**
LMQ				Trac		06 47 07.8	
	comp=Z,4.1nm,0.1s						

ISCJB ***07*** *06:57:30.0±0.9, 33°.93S±0°.03×72°.38W±0°.04, h26km±6km, mb5.0/153, MS4.3/12, Error ellipse: s-maj=5.4km s-min=4.2km az=26.7*

GUC ***07*** *06:57:31.1±0.5, 34°.02S×72°.32W, h42km±2km, ML4.7*

GCMT ***07*** *06:57:31.0±0.4, 33°.98S×72°.82W, h29km±1km, MW5.0/62, Moment Tensor Solution. s33,c38; s62,c76; Duration: 0 Moment tensor: Scale 10¹⁶Nm; M_rr2.67±.19; M_θθ-0.28±.11; M_φφ-2.38±.14; M_rθ-0.50±.14; M_θφ-0.62±.08; M_φr-2.18±.20; Best double couple: M_o3.43700×10¹⁶ NP1:φs194.00000°, δ65.00000°, λ89.00000°. NP2: φs17.00000°, δ25.00000°, λ93.00000°. Principal axes: T 3.4980, Plg70.0000°, Azm101.0000°; N -0.1160, Plg1.0000°, Azm194.0000°; P -3.3770, Plg20.0000°, Azm285.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

NEIC ***07*** *06:57:31.0, 34°.02S×72°.32W, h42km, mb5.0/141, After GUC.*

NEIC Felt [II] at Curico, Duao, Iloca, Licanten, Navidad, Paredones, Pichilemu, Rancagua, San Bernardo and Santiago. Also felt at Colina, Quilpue and San Antonio.

MOS ***07*** *06:57:32.0±1.1, 33°.79S×72°.15W, h37km, mb5.1/43, Error ellipse: s-maj=17.3km s-min=7.6km az=100.1*

IDC ***07*** *06:57:32.4±4.4, 33°.86S×72°.19W, h33km±32km, mb4.5/18, mb1 4.6/21, mb1mx4.5/27, mbtmp4.7/21, ML4.5/3, MS4.1/12, Ms1 4.1/12, ms1mx3.9/28, Error ellipse: s-maj=22.6km s-min=12.5km az=83.0*

BJI ***07*** *06:57:33.5, 33°.80S×72°.10W, h36km, mB5.0/8, Ms5.3/7, Ms7 5.2/4*

ISC 07 06:57:31.0±1.2,**33°.95S**±0°.04×**72°.45W**±0°.05,**h24**km±8km, **n612**,σ1§**11**/638,**mb5.1**/153,**MS4.3**/12,**3C-1D, Off coast of central Chile**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHPI	**Pichilemu**	**0.58**	**140**	*i* P	**Pb**	**06 57 40.4**	**-2.0**
CHPI				*i* S	**Sb**	**06 57 48.5**	**-1.8**
ROC1	**El Roble**	**1.54**	**51**	*i* P	**Pn**	**06 57 57.7**	**+0.5**
ROC1				*i* S	**Sb**	**06 58 22.5**	**+4.2**
ROC1	**El Roble**	**1.54**	**51**	*e*Pn	**Pn**	**06 57 56.0**	**-1.2**
ROCH	**El Roble**	**1.55**	**51**	*i* P	**Pn**	**06 57 55.8**	**-1.5**
ROCH				*i* S	**Sn**	**06 58 15.9**	**-0.8**
ROCH				IAML		06 58 25.3	
	comp=N,13μm,0.7s						
ANTU	**Antumapu**	**1.56**	**76**	*i* P	**Pn**	**06 57 55.6**	**-1.7**
ANTU				*e*		06 57 55.9	
ANTU				*i* S	**Sn**	**06 58 14.3**	**-2.5**
ANTU				IAML		06 58 19.4	
	comp=N,22μm,0.1s						
PEL	**Peldehue**	**1.68**	**62**	*i* P	**Pn**	**06 57 57.8**	**-1.1**
PEL				*i* S	**Sn**	**06 58 17.8**	**-2.0**
PEL				IAML		06 58 28.9	
	comp=E,15μm,1.2s						
CLCH	**Cerro Calan**	**1.69**	**71**	*i* P	**Pn**	**06 57 57.5**	**-1.5**
CLCH				*i* S	**Sn**	**06 58 17.7**	**-2.3**
CLCH				IAML		06 58 37.6	
	comp=E,15μm,1.0s						
COCH	**Cobquecura**	**2.19**	**187**	*i* P	**Pn**	**06 58 04.8**	**-1.1**
COCH				*i* S	**Sn**	**06 58 30.2**	**-2.1**
AUSP	**Uspallata**	**3.10**	**57**	*i* P	**Pn**	**06 58 20.0**	**+1.4**
ARCO	**CERRO ARCO**	**3.15**	**70**	*i* P	**Pn**	**06 58 21.3**	**+2.1**
ARCO				*i* S	**Sb**	**06 59 04.5**	**+0.2**
ARCO				IAML		06 59 14.1	
	comp=Z,666nm,0.3s						
AAGR	**Agrelo**	**3.15**	**75**	*i* P	**Pn**	**06 58 21.8**	**+2.6**
AVIZ	**Vizcacheras**	**3.31**	**83**	*i* P	**Pn**	**06 58 24.7**	**+3.2**
ASAL	**Salagasta**	**3.32**	**67**	*i* P	**Pn**	**06 58 23.5**	**+2.0**
ASAL				*i* S	**Sb**	**06 59 08.2**	**-1.0**
RTLS	**Leoncito**	**3.41**	**52**	*i* P	**Pn**	**06 58 24.0**	**+1.0**
RTCV	**Cerro Valdivia**	**3.89**	**59**	*i* P	**Pn**	**06 58 30.9**	**+1.5**
SJA	**San Juan**	**4.07**	**55**	*i* P	**Pn**	**06 58 33.0**	**+1.1**
SJA				*i* S	**Sn**	**06 59 24.0**	**+5.3**
RTLL	**Cerro Villicun**	**4.25**	**53**	*i* P	**Pn**	**06 58 35.4**	**+1.1**
ACAN	**Cantantal**	**4.72**	**71**	*i* P	**Pn**	**06 58 43.9**	**+3.1**
LCO	**Las Campanas**	**5.14**	**17**	*e*Pn	**Pn**	**06 58 44.2**	**-2.5**
LCO				*e*Sn	**Sn**	**06 59 42.8**	**-2.7**
AVFE	**Valle Fertil**	**5.35**	**54**	*i* P	**Pn**	**06 58 50.8**	**+1.3**
AVFE				IAML		07 00 18.0	
	comp=Z,235nm,0.6s						
AGUA	**GUANDACOL**	**5.58**	**38**	*i* P	**Pn**	**06 58 52.4**	**-0.3**
VCA	**Vinchina**	**6.34**	**36**	*i* P	**Pn**	**06 59 02.2**	**-0.9**
VCA				IAML		07 01 05.3	
	comp=Z,345nm,0.6s						
PLCA	**Paso Flores**	**6.94**	**168**	Pn	**Pn**	**06 59 11.8**	**+0.6**
	comp=Z,2.0nm,0.3s,baz=360,slow=12,SNR=21						
PLCA				LR	LR	07 01 48.6	
	comp=Z,818nm,19.3s,baz=12,slow=37						
TRQA	**Tornquist**	**9.42**	**119**	*e*Pn	**Pn**	**06 59 46.2**	**+0.9**
PB10	**IPOC Station P**	**10.53**	**10**	*e*Pn	**Pn**	**06 59 58.2**	**-2.2**
LPA	**La Plata**	**12.03**	**99**	*e*P	Pn	07 00 15.0	-5.9
LPA				sP		07 00 32.0	
LPA				PCP	**PcP**	**07 06 04.0**	**-1.5**
PB01	**IPOC Station P**	**13.12**	**12**	*e*Pn	**Pn**	**07 00 36.4**	**+0.4**
CHRN	**Cochrane**	**13.29**	**180**	*e*Pn	**Pn**	**07 00 40.3**	**+2.3**
CPUP	**Villa Florida**	**15.12**	**64**	Pn	**Pn**	**07 01 00.2**	**-2.8**
	comp=Z,0.2nm,0.3s,baz=254,slow=12,SNR=5.0						
CPUP				Lg	Lg	07 05 10.4	
	comp=Z,0.2nm,0.3s,baz=168,slow=9.3,SNR=3.1						
CPUP				LR	LR	07 07 12.8	
	comp=Z,1μm,21.3s,baz=240,slow=39						
CPUP	**Villa Florida**	**15.12**	**64**	*e*Pn	**Pn**	**07 01 02.4**	**-0.6**
CPUP				Lg	Lg	07 05 10.4	
LPAZ	**La Paz**	**18.01**	**14**	P	**Pn**	**07 01 40.1**	**-0.3**
	comp=Z,1.7nm,0.3s,baz=186,slow=5.9,SNR=84						
LPAZ	**La Paz**	**18.01**	**14**	*e*P	**Pn**	**07 01 39.9**	**-0.5**
LPAZ				pmax	pmax		
	comp=Z,55nm,0.9s						
LPAZ	**La Paz**	**18.01**	**14**	*e*Pn	**Pn**	**07 01 39.9**	**-0.5**
	comp=Z,55nm,0.9s						
EFI	**East Falkland**	**20.55**	**154**	*e*P	**P**	**07 02 06.6**	**-1.1**
EFI				pmax	pmax		
	comp=Z,132nm,1.3s						
EFI	**East Falkland**	**20.55**	**154**	*e*P	**P**	**07 02 06.6**	**-1.1**
	comp=Z,132nm,1.3s						
SIV	**San Ignacio**	**20.61**	**33**	P	**P**	**07 02 06.9**	**-1.7**
	comp=Z,27nm,0.8s,baz=223,slow=10,SNR=68						
SIV				LR	LR	07 11 27.8	
	comp=Z,1μm,18.4s,baz=232,slow=41						
USHA	**Ushuaia**	**21.07**	**174**	P	**P**	**07 02 14.2**	**+1.1**
	comp=Z,114nm,0.9s,baz=319,slow=6.0,SNR=6.7						
NNA	**Nana**	**22.23**	**349**	P	**P**	**07 02 26.5**	**+0.6**
	comp=Z,17nm,0.5s,baz=142,slow=8.2,SNR=4.7						
SPB	**Sao Paulo**	**24.18**	**71**	*e*P	**P**	**07 02 44.8**	**-0.8**
	comp=Z,68nm,0.9s						
HOPE	**Hope Point**	**32.35**	**140**	*e*P	**P**	**07 03 58.5**	**+0.3**
	comp=Z,2μm,2.0s						
OTAV	**Otavalo**	**34.47**	**349**	*e*P	**P**	**07 04 17.1**	**-0.5**
	comp=Z,8.9nm,1.1s						
PTGA	**Pitinga**	**35.06**	**22**	P	**P**	**07 04 19.9**	**-2.2**
	comp=Z,19nm,1.0s,baz=196,slow=9.3,SNR=25						
PTGA	**Pitinga**	**35.06**	**22**	*e*P	**P**	**07 04 20.9**	**-1.2**
	comp=Z,45nm,1.3s						
SDV	**Santo Domingo**	**42.63**	**3**	P	**P**	**07 05 24.7**	**-1.1**
	comp=Z,5.5nm,0.4s,baz=121,slow=12,SNR=3.2						
GRGR	**Grenville**	**46.96**	**15**	*e*P	**P**	**07 05 58.8**	**-1.3**
	comp=Z,140nm,1.3s						
SVB	**Belmont**	**48.15**	**15**	*e*P	**P**	**07 06 08.9**	**-0.4**
	comp=Z,65nm,0.7s						
VNA3	**Neumayer Olymp**	**49.53**	**158**	P	**P**	**07 06 20.1**	**+0.8**
FDF	**Fort de France**	**49.59**	**14**	*e*P	**P**	**07 06 19.2**	**-1.2**
FDF				pmax	pmax		
	comp=Z,70nm,1.1s						
FDF	**Fort de France**	**49.59**	**14**	*e*P	**P**	**07 06 19.2**	**-1.2**
	comp=Z,70nm,1.1s						
VNA2	**Neumayer--Watz**	**50.19**	**157**	P	**P**	**07 06 25.1**	**+0.8**
	baz=296,slow=9.2						
SNAA	**Sanae**	**51.76**	**158**	P	**P**	**07 06 36.6**	**+0.4**
SNAA	**Sanae**	**51.76**	**158**	*e*P	**P**	**07 06 36.0**	**-0.2**
SNAA				pmax	pmax		
	comp=Z,2μm,1.1s						
SNAA	**Sanae**	**51.76**	**158**	*e*P	**P**	**07 06 36.8**	**+0.6**
	comp=Z,3μm,1.3s						
SABA	**Saba**	**52.03**	**11**	*e*P	**P**	**07 06 38.4**	**-0.2**
	comp=Z,123nm,0.8s						
BANI	**BANI**	**52.09**	**3**	*e*P	**P**	**07 06 39.2**	**0.0**
SJG	**San Juan**	**52.12**	**8**	P	**P**	**07 06 37.3**	**-1.9**
	comp=Z,21nm,0.7s,baz=252,slow=5.2,SNR=12						
SJG	**San Juan**	**52.12**	**8**	*e*P	**P**	**07 06 38.0**	**-1.3**
	comp=Z,22nm,0.8s						
LRS	**Lares**	**52.22**	**7**	*e*P	**P**	**07 06 38.6**	**-1.5**
CBYP	**Canovanas**	**52.31**	**8**	*e*P	**P**	**07 06 39.0**	**-1.7**
	comp=Z,36nm,0.9s						
ANWB	**Willy Bob**	**52.33**	**13**	*e*P	**P**	**07 06 38.2**	**-2.6**
	comp=Z,62nm,0.8s						
SMRT	**St. Maarten**	**52.48**	**11**	*e*P	**P**	**07 06 40.3**	**-1.7**
	comp=Z,22nm,0.8s						
GTBY	**Guantanamo Bay**	**53.63**	**357**	*e*P	**P**	**07 06 50.7**	**+0.3**
	comp=Z,39nm,1.0s						
TEIG	**Tepich**	**55.95**	**342**	P	**P**	**07 07 07.3**	**+0.2**
	comp=Z,7.9nm,0.7s,baz=89,slow=23,SNR=14						
TEIG	**Tepich**	**55.95**	**342**	*e*P	**P**	**07 07 07.4**	**+0.2**
	comp=Z,10nm,0.8s						
QSPA	**South Pole Qui**	**56.29**	**180**	*e*P	**P**	**07 07 10.4**	**+1.0**
NVL	**N'lazarevskaya**	**56.50**	**157**	*e*P	**P**	**07 07 11.1**	**+0.5**
SBA	**Scott Base**	**63.06**	**192**	*e*P	**P**	**07 07 58.0**	**+2.4**
SBA				pmax	pmax		
	comp=Z,23nm,1.6s						
SBA	**Scott Base**	**63.06**	**192**	*e*P	**P**	**07 07 58.0**	**+2.4**
	comp=Z,23nm,1.6s						
VNDA	**Vanda**	**64.08**	**191**	P	**P**	**07 08 04.3**	**+1.9**
	comp=Z,2.2nm,0.8s,baz=108,slow=6.3,SNR=7.9						
VNDA	**Vanda**	**64.08**	**191**	*e*P	**P**	**07 08 04.7**	**+2.3**
VNDA				pmax	pmax		
	comp=Z,17nm,1.7s						
VNDA	**Vanda**	**64.08**	**191**	*e*P	**P**	**07 08 04.7**	**+2.3**
	comp=Z,17nm,1.7s						
035A	**Encino**	**65.26**	**335**	P	**P**	**07 08 12.8**	**+2.1**
	baz=157						
034A	**Hebbronville**	**65.58**	**334**	P	**P**	**07 08 14.3**	**+1.6**
	baz=156						
TIGA	**Tifton**	**65.88**	**350**	P	**P**	**07 08 14.5**	**0.0**
	baz=170						
TIGA	**Tifton**	**65.88**	**350**	*e*P	**P**	**07 08 14.6**	**0.0**
	comp=Z,28nm,0.9s						
SYO	**Syowa Base**	**66.04**	**159**†	*e*P	**P**	**07 08 13.0**	**-2.2**
SYO	**Syowa Base**	**66.04**	**159**†	*e*X	**P**	**07 08 18.8**	**+3.6**
834A	**Tilden**	**66.51**	**335**	P	**P**	**07 08 20.7**	**+2.0**
	baz=156,SNR=8.4						
TAOE	**Nuku Hiva Isla**	**66.62**	**275**	*e*LR	LR	07 28 36.2	
	comp=Z,206nm,24.4s						
347A	**Saraland**	**66.75**	**345**	P	**P**	**07 08 20.8**	**+0.7**
	baz=165						
736A	**Circle Diamond**	**66.76**	**337**	P	**P**	**07 08 22.2**	**+2.0**
	baz=158,SNR=5.3						
735A	**Kenedy**	**66.92**	**336**	P	**P**	**07 08 22.5**	**+1.3**
	baz=157						
346A	**Big Creek Wild**	**66.94**	**344**	P	**P**	**07 08 22.3**	**+1.0**
	baz=165						
833A	**Chaparral WMA,**	**66.99**	**334**	P	**P**	**07 08 23.1**	**+1.4**
	baz=156						
NHSC	**New Hope**	**67.10**	**353**	*e*P	**P**	**07 08 22.3**	**0.0**
	comp=Z,293nm,1.6s						
832A	**Faith Ranch, C**	**67.16**	**334**	P	**P**	**07 08 24.1**	**+1.2**
	baz=155,SNR=7.3						
734A	**La Parita Cree**	**67.17**	**335**	P	**P**	**07 08 24.3**	**+1.5**
	baz=157						
636A	**Smothers Creek**	**67.24**	**337**	P	**P**	**07 08 25.2**	**+1.9**
	baz=158,SNR=11						
248A	**Dixon Mills**	**67.25**	**346**	P	**P**	**07 08 23.8**	**+0.5**
	baz=166						
HKT	**Hockley**	**67.29**	**338**	*e*P	**P**	**07 08 23.7**	**+0.2**
HKT				pmax	pmax		
	comp=Z,11nm,1.2s						
HKT	**Hockley**	**67.29**	**338**	*e*P	**P**	**07 08 23.7**	**+0.2**
	comp=Z,11nm,1.2s						
344A	**Westbrook Farm**	**67.30**	**343**	P	**P**	**07 08 25.1**	**+1.5**
	baz=164						
733A	**Divot King Ran**	**67.31**	**335**	P	**P**	**07 08 24.9**	**+1.2**
	baz=156						
247A	**Quitman**	**67.39**	**345**	P	**P**	**07 08 25.3**	**+1.1**
	baz=166						
635A	**Leesville**	**67.39**	**336**	P	**P**	**07 08 25.2**	**+1.0**
	baz=157						
SLBS	**Sierra La Lagu**	**67.51**	**323**	*e*P	**P**	**07 08 27.0**	**+1.8**
	comp=Z,58nm,1.9s						
342A	**Flagon Creek P**	**67.62**	**342**	P	**P**	**07 08 27.3**	**+1.6**
	baz=162						
GOGA	**Godfrey**	**67.80**	**350**	*e*P	**P**	**07 08 26.5**	**-0.2**
GOGA				pmax	pmax		
	comp=Z,14nm,0.9s						
GOGA	**Godfrey**	**67.80**	**350**	*e*P	**P**	**07 08 26.5**	**-0.2**
	comp=Z,14nm,0.9s						
341A	**Kurthwood**	**67.81**	**341**	P	**P**	**07 08 28.2**	**+1.4**
	baz=162						
244A	**Avery, Jackson**	**67.85**	**343**	P	**P**	**07 08 28.3**	**+1.2**
	baz=164,SNR=7.4						
535A	**Dale**	**67.92**	**337**	P	**P**	**07 08 28.7**	**+1.1**
	baz=158,SNR=5.5						
633A	**Saathoff Ranch**	**67.94**	**335**	P	**P**	**07 08 28.8**	**+1.0**
	baz=156,SNR=9.8						
VBMS	**Vicksburg**	**67.98**	**344**	P	**P**	**07 08 28.7**	**+0.8**
	baz=164						
VBMS	**Vicksburg**	**67.98**	**344**	*e*P	**P**	**07 08 29.1**	**+1.2**
	comp=Z,25nm,0.8s						
LRAL	**Lakeview Retre**	**68.02**	**347**	*e*P	**P**	**07 08 27.9**	**-0.2**
	comp=Z,30nm,1.5s						
146A	**Union**	**68.05**	**345**	P	**P**	**07 08 29.6**	**+1.3**
	baz=165,SNR=5.6						
340A	**Bronson**	**68.09**	**340**	P	**P**	**07 08 29.9**	**+1.3**
	baz=161						
339A	**Huntington**	**68.20**	**340**	P	**P**	**07 08 30.3**	**+1.0**
	baz=160						
145A	**Houston Renfro**	**68.21**	**344**	P	**P**	**07 08 30.6**	**+1.3**
	baz=164						
534A	**Blanco**	**68.22**	**336**	P	**P**	**07 08 30.1**	**+0.6**
	baz=157						
242A	**Grayson**	**68.23**	**342**	P	**P**	**07 08 30.9**	**+1.4**
	baz=162,SNR=9.0						
HPIG		**68.26**	**328**	*e*P	**P**	**07 08 31.4**	**+1.4**
	comp=Z,11nm,0.8s						
Z47A	**Carrollton**	**68.39**	**346**	P	**P**	**07 08 31.0**	**+0.6**
	baz=166,SNR=6.2						
533A	**Kerrville**	**68.45**	**335**	P	**P**	**07 08 31.8**	**+0.8**
	baz=156,SNR=16						
Z48A	**Northport**	**68.46**	**346**	P	**P**	**07 08 31.0**	**+0.2**
	baz=166						
Z46A	**Louisville**	**68.56**	**345**	P	**P**	**07 08 32.7**	**+1.1**
	baz=165,SNR=14						
337A	**Centerville**	**68.58**	**339**	P	**P**	**07 08 33.5**	**+1.8**
	baz=159						
NATX	**Nacogdoches**	**68.63**	**340**	P	**P**	**07 08 33.1**	**+1.1**
	baz=160						
NATX	**Nacogdoches**	**68.63**	**340**	*e*P	**P**	**07 08 33.4**	**+1.4**
	comp=Z,35nm,0.8s						
143A	**Socs Landing,**	**68.66**	**343**	P	**P**	**07 08 33.4**	**+1.3**
	baz=163,SNR=5.6						
434A	**Burnet**	**68.87**	**336**	P	**P**	**07 08 34.4**	**+0.8**
	baz=157,SNR=12						
Z45A	**Winona**	**68.90**	**345**	P	**P**	**07 08 34.6**	**+1.0**
	baz=165						
336A	**Riesel**	**68.94**	**338**	P	**P**	**07 08 35.0**	**+1.1**
	baz=158,SNR=8.5						
141A	**Papa Simpson,**	**68.94**	**342**	P	**P**	**07 08 34.6**	**+0.7**
	baz=162						
Z44A	**Pea Ridge, Bel**	**68.97**	**344**	P	**P**	**07 08 35.2**	**+1.1**
	baz=164						
Y47A	**UCPARC, Winfie**	**69.03**	**346**	P	**P**	**07 08 34.8**	**+0.4**
	baz=166,SNR=13						
JCT	**Junction City**	**69.09**	**335**	P	**P**	**07 08 35.9**	**+1.0**
	baz=156,SNR=15						
JCT	**Junction City**	**69.09**	**335**	*e*P	**P**	**07 08 36.0**	**+1.0**
JCT				pmax	pmax		
	comp=Z,23nm,0.8s						
JCT	**Junction City**	**69.09**	**335**	*e*P	**P**	**07 08 36.0**	**+1.0**
	comp=Z,23nm,0.8s						
433A	**Art**	**69.10**	**336**	P	**P**	**07 08 35.7**	**+0.8**
	baz=156,SNR=22						
140A	**Cam and Jess,**	**69.16**	**341**	P	**P**	**07 08 36.6**	**+1.4**
	baz=161						
237A	**Washetta, Mont**	**69.19**	**339**	P	**P**	**07 08 36.5**	**+1.1**
	baz=159						
Y46A	**Houston**	**69.21**	**345**	P	**P**	**07 08 35.9**	**+0.4**
	baz=165,SNR=8.2						
KMSC	**Kings Mountain**	**69.23**	**352**	P	**P**

133A	Hamilton Ranch	70.73 337	P	P	07 08 45.6	+0.6
	baz=157,SNR=5.7					
UALR	University of	70.86 343	eP	P	07 08 46.0	+0.4
	comp=Z,12nm,1.0s					
Z35A	Perchaven, San	70.87 338	P	P	07 08 46.3	+0.5
	baz=158,SNR=5.2					
TZTN	Tazewell	70.89 351	eP	P	07 08 45.1	-0.7
	comp=Z,75nm,1.8s					
MIAR	Mount Ida	70.96 342	P	P	07 08 46.7	+0.4
	baz=162,SNR=6.0					
MIAR	Mount Ida	70.96 342	eP	P	07 08 46.6	+0.4
MIAR			pmax	pmax		
	comp=Z,16nm,1.1s					
MIAR	Mount Ida	70.96 342	eP	P	07 08 46.6	+0.4
	comp=Z,16nm,1.1s					
Y37A	Hugo	70.98 340	P	P	07 08 47.4	+1.0
	baz=160					
ABTX	Abilene, Hawle	70.99 336	P	P	07 08 46.9	+0.4
	baz=156					
ABTX	Abilene, Hawle	70.99 336	eP	P	07 08 47.4	+0.8
	comp=Z,26nm,0.7s					
X39A	Fountain Ranch	71.07 341	P	P	07 08 47.8	+0.9
	baz=161					
Y36A	Durant	71.11 339	P	P	07 08 47.9	+0.8
	baz=159					
Z34A	Collier Ranch,	71.11 338	P	P	07 08 47.7	+0.4
	baz=158					
WVT	Waverly	71.18 347	eP	P	07 08 47.4	-0.2
WVT			pmax	pmax		
	comp=Z,53nm,0.7s					
WVT	Waverly	71.18 347	eP	P	07 08 47.4	-0.2
	comp=Z,53nm,0.7s					
W41B	Gary Mavity, V	71.22 343	P	P	07 08 48.1	+0.3
	baz=163,SNR=5.4					
Z33A	Whitaker Ranch	71.31 337	P	P	07 08 49.0	+0.6
	baz=157,SNR=8.6					
X301	Greenbrier Sit	71.32 343	eP	P	07 08 49.0	+0.6
	comp=Z,26nm,0.8s					
Y35A	Marietta	71.34 339	P	P	07 08 49.1	+0.6
	baz=159					
WHAR	Wooly Hollow	71.34 343	eP	P	07 08 49.0	+0.4
	comp=Z,82nm,1.8s					
X201	Greenbrier Sit	71.36 343	eP	P	07 08 48.8	+0.1
	comp=Z,34nm,0.9s					
X38A	Whitesboro	71.41 341	P	P	07 08 49.7	+0.7
	baz=160					
W40A	Ferguson Farm,	71.44 342	P	P	07 08 50.1	+0.9
	baz=162					
Y34A	Reagan Ranch,	71.61 338	P	P	07 08 50.7	+0.5
	baz=158					
W39A	Magazine	71.63 342	P	P	07 08 50.9	+0.6
	baz=161,SNR=16					
X36A	Centrahoma	71.75 339	P	P	07 08 51.1	0.0
	baz=159,SNR=9.2					
X35A	Drake	71.78 339	P	P	07 08 51.5	+0.3
	baz=159					
Y33A	Hilltop Ranch,	71.93 337	P	P	07 08 52.6	+0.4
	baz=157,SNR=6.8					
V40A	Witts Springs	71.96 343	P	P	07 08 52.5	+0.2
	baz=162					
W37B	Quinton	72.02 340	P	P	07 08 53.2	+0.6
	baz=160					
V39A	Pettigrew	72.20 342	P	P	07 08 54.3	+0.5
	baz=162,SNR=9.3					
X34A	Smith Ranch, M	72.22 338	P	P	07 08 54.4	+0.5
	baz=158,SNR=5.2					
W36A	Wetumka	72.24 340	P	P	07 08 54.0	0.0
	baz=159					
MNTX	Cornudas Mount	72.30 331	P	P	07 08 54.7	+0.3
	baz=152,SNR=33					
MNTX	Cornudas Mount	72.30 331	eP	P	07 08 54.4	0.0
	comp=Z,14nm,0.7s					
PBMO	Poplar Bluff	72.34 345	eP	P	07 08 54.7	+0.2
	comp=Z,16nm,0.9s					
V38A	Canehill	72.42 341	P	P	07 08 55.1	0.0
	baz=161					
W35A	Tecumseh	72.45 339	P	P	07 08 54.9	-0.3
	baz=159					
U40A	Yellville	72.49 343	P	P	07 08 55.6	+0.1
	baz=162,SNR=12					
V37A	Hulbert	72.64 341	P	P	07 08 56.7	+0.4
	baz=160					
WMOK	Wichita Mounta	72.65 338	eP	P	07 08 56.6	+0.1
WMOK			pmax	pmax		
	comp=Z,11nm,0.9s					
WMOK	Wichita Mounta	72.65 338	eP	P	07 08 56.6	+0.1
	comp=Z,11nm,0.9s					
U39A	Green Forest	72.67 342	P	P	07 08 56.6	0.0
	baz=162,SNR=7.8					
HHAR	Hobbs	72.69 342	eP	P	07 08 56.9	+0.2
	comp=Z,14nm,0.8s					
W34A	Bridge Creek,	72.79 338	P	P	07 08 57.8	+0.5
	baz=158					
W34A	Bridge Creek,	72.79 338	eP	P	07 08 57.8	+0.5
	comp=Z,74nm,1.8s					
TUL1	Leonard	72.84 340	P	P	07 08 57.7	+0.1
	baz=160,SNR=6.8					
TUL1	Leonard	72.84 340	eP	P	07 08 57.7	+0.1
	comp=Z,19nm,0.8s					
W33A	Caddo, Fort Co	72.93 338	P	P	07 08 59.1	+1.0
	baz=158,SNR=7.5					
USIN	University of	72.94 347	eP	P	07 08 57.6	-0.5
	comp=Z,29nm,0.9s					
WCI	Wyandotte Cave	72.96 349	eP	P	07 08 56.9	-1.3
WCI			pmax	pmax		
	comp=Z,35nm,0.8s					
WCI	Wyandotte Cave	72.96 349	eP	P	07 08 56.9	-1.3
	comp=Z,35nm,0.8s					
SIUC	Southern Illin	72.99 346	eP	P	07 08 58.3	0.0
	comp=Z,22nm,0.8s					
V35A	Meyer Ranch, C	73.00 339	P	P	07 08 58.7	+0.2
	baz=159,SNR=5.9					
U37A	Salina	73.12 341	P	P	07 08 59.3	+0.1
	baz=160					
W32A	Sentinel	73.15 337	P	P	07 08 59.8	+0.4
	baz=157,SNR=20					
T40A	Mansfield	73.17 343	P	P	07 08 59.5	0.0
	baz=163					
T39A	Clever	73.25 343	P	P	07 09 00.2	+0.2
	baz=162,SNR=5.8					
V34A	Guthrie	73.27 339	P	P	07 09 00.3	+0.2
	baz=158					
V34A	Guthrie	73.27 339	eP	P	07 09 00.5	+0.3
	comp=Z,33nm,1.1s					
MSTX	Muleshoe	73.31 334	P	P	07 09 01.1	+0.6
	baz=154,SNR=9.4					
MSTX	Muleshoe	73.31 334	eP	P	07 09 01.0	+0.4
	comp=Z,25nm,0.8s					
MAW	Mawson	73.33 164	P	P	07 09 00.8	+0.7
	comp=Z,11nm,0.7s,baz=218,slow=8.1,SNR=9.8					
MAW			LR	LR	07 43 39.7	
	comp=Z,210nm,18.3s,baz=226,slow=38					
MAW	Mawson	73.33 164	eP	P	07 09 01.1	+1.0
MAW			pmax	pmax		
	comp=Z,3.0nm,0.9s					
MAW	Mawson	73.33 164	eP	P	07 09 01.1	+1.0
	comp=Z,3.0nm,0.9s					
V33A	Lossen Ranch,	73.49 338	P	P	07 09 01.8	+0.4
	baz=158					
T38A	Diamond	73.50 342	P	P	07 09 01.6	+0.2
	baz=161,SNR=6.4					
U35A	Pawnee	73.54 340	P	P	07 09 02.1	+0.5
	baz=159					
S40A	Lebanon	73.59 344	P	P	07 09 02.3	+0.4
	baz=163,SNR=8.7					
V32A	Arapaho	73.63 338	P	P	07 09 02.8	+0.5
	baz=157					
319A	Douglas	73.67 328	eP	P	07 09 04.6	+1.9
	comp=Z,14nm,0.9s					
T37A	Cheneyville 18	73.74 341	P	P	07 09 02.8	0.0
	baz=161,SNR=7.0					
U34A	Anderson Ranch	73.83 339	eP	P	07 09 04.0	+0.5
	comp=Z,33nm,1.0s					
S39A	Bolivar	73.88 343	P	P	07 09 03.6	0.0
	baz=162,SNR=6.3					
BLO	Bloomington	73.91 349	eP	P	07 09 03.2	-0.6
BLO			pmax	pmax		
	comp=Z,12nm,0.8s					
BLO	Bloomington	73.91 349	eP	P	07 09 03.2	-0.6
	comp=Z,12nm,0.8s					
T36A	Boggs Farm, Ca	73.94 341	P	P	07 09 03.9	-0.1
	baz=160					
S38A	Stockton	73.96 342	P	P	07 09 04.1	0.0
	baz=162,SNR=10					
T35A	Sooner Cattle	73.98 340	P	P	07 09 04.7	+0.4
	baz=159,SNR=5.4					
121A	Cookes Peak, D	74.02 329	P	P	07 09 06.5	+1.7
	baz=150					
121A	Cookes Peak, D	74.02 329	eP	P	07 09 06.1	+1.3
	comp=Z,20nm,0.8s					
R40A	Maddies Statio	74.19 344	P	P	07 09 05.5	+0.1
	baz=163,SNR=8.9					
U32A	Winter Ranch,	74.23 338	P	P	07 09 06.0	+0.3
	baz=157					
T34A	McClaskey Farm	74.28 340	P	P	07 09 06.5	+0.5
	baz=159					
S37A	Fort Scott	74.32 342	P	P	07 09 06.1	-0.1
	baz=161					
R39A	Chumby, Stover	74.40 343	P	P	07 09 06.5	-0.1
	baz=162					
ACSO	Alum Creek Sta	74.45 352	eP	P	07 09 06.5	-0.4
	comp=Z,24nm,0.6s					
R38A	Fenwick Farm,	74.49 343	P	P	07 09 06.8	-0.3
	baz=162					
S36A	Lake Cedric, C	74.49 341	P	P	07 09 07.4	+0.2
	baz=160					
N59A	State Game Lan	74.56 357	P	P	07 09 08.2	+0.6
	baz=177					
T33A	Patterson Ranc	74.64 339	P	P	07 09 08.8	+0.7
	baz=158					
S35A	Otter Creek Ra	74.65 341	P	P	07 09 08.5	+0.4
	baz=160					
Q40A	Laux Farm, Aux	74.82 344	P	P	07 09 09.3	+0.2
	baz=163,SNR=7.5					
N54A	Moraine State	74.87 354	P	P	07 09 09.2	-0.1
	baz=173					
BNM	Barren Site	74.95 331	eP	P	07 09 12.4	+2.1
LIC	Lamto	75.08 72	eP	P	07 09 10.2	-1.0
	comp=Z,43nm,1.3s					
LPM	Los Pinos Moun	75.09 331	eP	P	07 09 12.6	+1.6
TUC	Tucson	75.14 327	P	P	07 09 12.6	+1.4
	baz=148					
TUC	Tucson	75.14 327	eP	P	07 09 12.6	+1.4
TUC			pmax	pmax		
	comp=Z,7.0nm,1.0s					
TUC	Tucson	75.14 327	eP	P	07 09 12.6	+1.4
	comp=Z,7.3nm,1.0s					
Q38A	Cooks Store, C	75.15 343	P	P	07 09 11.1	+0.1
	baz=162					
SUR	Sutherland	75.15 119	eP	P	07 09 12.5	+0.8
	comp=Z,190nm,1.9s					
R35A	Emporia Munici	75.22 341	P	P	07 09 12.0	+0.6
	baz=160					
Q37A	Longview Farm,	75.28 342	P	P	07 09 11.5	-0.3
	baz=161					
P40A	Paris	75.33 344	P	P	07 09 12.0	0.0
	baz=163,SNR=9.7					
TIC	Toumodi	75.34 71	eP	P	07 09 11.5	-1.2
LAZ	Ladron	75.37 331	eP	P	07 09 13.5	+0.9
M54A	Oil Creek Stat	75.38 354	P	P	07 09 12.0	-0.3
	baz=174					
KIC	Kosan Boka	75.39 72	eP	P	07 09 12.3	-0.7
	comp=Z,44nm,0.8s					
P39B	Salisbury	75.45 344	P	P	07 09 13.0	+0.3
	baz=163					
DBIC	Dimbokro	75.49 72	P	P	07 09 12.8	-0.7
	comp=Z,15nm,0.7s,baz=201,slow=4.9,SNR=23					
DBIC			LR	LR	07 41 11.0	
	comp=Z,105nm,18.2s,baz=200,slow=35					
DBIC	Dimbokro	75.49 72	eP	P	07 09 13.3	-0.2
	comp=Z,17nm,0.8s					
ANMO	Albuquerque	75.57 332	P	P	07 09 14.9	+1.1
	baz=151					
ANMO	Albuquerque	75.57 332	i P	P	07 09 15.0	+1.2
ANMO			pmax	pmax		
	comp=Z,6.0nm,1.0s					
ANMO	Albuquerque	75.57 332	eP	P	07 09 14.5	+0.7
	comp=Z,10nm,1.1s					
HDIL	Hopedale	75.75 347	P	P	07 09 14.2	-0.1
	baz=166					
HDIL	Hopedale	75.75 347	eP	P	07 09 14.3	-0.1
	comp=Z,35nm,1.2s					
P38A	Dawn	75.76 343	P	P	07 09 14.3	-0.1
	baz=162					
214A	Organ Pipe Nat	75.78 325	P	P	07 09 16.5	+1.7
	baz=146					
214A	Organ Pipe Nat	75.78 325	eP	P	07 09 16.3	+1.5
	comp=Z,38nm,0.8s					
214A			e		07 09 24.4	
O40A	La Belle	75.86 345	P	P	07 09 14.7	-0.3
	baz=163					
P36A	Good Intent, A	76.17 342	P	P	07 09 16.3	-0.5
	baz=161					
P35A	Duane Minner,	76.30 341	P	P	07 09 17.6	+0.1
	baz=160					
Q33A	Connelly Farm,	76.30 340	P	P	07 09 18.4	+0.8
	baz=158					
RAR	Rarotonga	76.34 254	LR	LR	07 35 22.3	
	comp=Z,100nm,21.5s,baz=88,slow=30					
Q32A	Meitler Ranch,	76.50 339	P	P	07 09 19.3	+0.5
	baz=158,SNR=6.4					
P34A	Walnut Farm, R	76.53 341	P	P	07 09 19.4	+0.6
	baz=159					
AAM	Ann Arbor	76.57 351	eP	P	07 09 17.2	-1.8
AAM			pmax	pmax		
	comp=Z,18nm,0.4s					
AAM	Ann Arbor	76.57 351	eP	P	07 09 17.2	-1.8
	comp=Z,18nm,0.4s					
O36A	Bolckow	76.59 342	P	P	07 09 18.9	-0.3
	baz=161					
CBKS	Cedar Bluff	76.69 338	P	P	07 09 20.9	+1.0
	baz=157					
CBKS	Cedar Bluff	76.69 338	eP	P	07 09 20.7	+0.9
CBKS			pmax	pmax		
	comp=Z,17nm,0.8s					
CBKS	Cedar Bluff	76.69 338	eP	P	07 09 20.7	+0.9
	comp=Z,17nm,0.8s					
N39A	Derby Farms, D	76.72 345	P	P	07 09 19.8	-0.1
	baz=163,SNR=6.4					
T25A	Trinidad	76.74 334	P	P	07 09 21.6	+1.2
	baz=153,SNR=12					
T25A	Trinidad	76.74 334	eP	P	07 09 21.7	+1.3
	comp=Z,24nm,0.8s					
N38A	Joes South For	76.80 344	P	P	07 09 20.5	+0.1
	baz=162					
N37A	Lee Faris, Mou	77.00 343	P	P	07 09 21.5	0.0
	baz=162					
P32A	Huiting Farm,	77.10 340	P	P	07 09 22.7	+0.5
	baz=158					
O33A	Hebron	77.23 340	P	P	07 09 23.2	+0.3
	baz=159					
N36A	Muff Farm, Cla	77.24 343	P	P	07 09 22.8	0.0
	baz=161					
M38A	Pleasantville	77.39 344	P	P	07 09 23.5	-0.1
	baz=162,SNR=5.1					
N35A	Tabor	77.45 342	P	P	07 09 23.8	-0.2
	baz=160,SNR=5.1					
Y14A	Wickenburg	77.52 326	eP	P	07 09 26.2	+1.6
	comp=Z,30nm,0.7s					
M37A	Trindle Farm,	77.58 344	P	P	07 09 25.0	+0.3
	baz=162,SNR=5.2					
O32A	Brockman Farm,	77.60 340	P	P	07 09 25.3	+0.4
	baz=158					
SDCO	Great Sand Dun	77.67 334	P	P	07 09 26.6	+0.9
	baz=152,SNR=8.2					
SDCO	Great Sand Dun	77.67 334	eP	P	07 09 27.0	+1.3
	comp=Z,5.9nm,0.8s					
KSCO	Kaye Shedlock'	77.80 336	P	P	07 09 27.8	+1.6
	baz=155					
KSCO	Kaye Shedlock'	77.80 336	eP	P	07 09 27.6	+1.4
	comp=Z,18nm,0.8s					
M36A	Felix, Anita	77.80 343	P	P	07 09 26.1	+0.1
	baz=161					
O31A	Woolen Ranch,	77.80 339	P	P	07 09 26.9	+0.9
	baz=157					
WUAZ	Wupatki	78.11 328	eP	P	07 09 30.0	+2.0
	comp=Z,13nm,0.9s					
S22A	4UR Ranch, Cre	78.17 333	P	P	07 09 29.9	+1.5
	baz=151					
S22A	4UR Ranch, Cre	78.17 333	eP	P	07 09 30.0	+1.5
	comp=Z,4.7nm,0.8s					
L37A	Phoenix Point,	78.19 344	P	P	07 09 28.2	+0.1
	baz=162					
JFWS	Jewell Farm	78.21 347	eP	P	07 09 28.2	0.0
JFWS			pmax	pmax		
	comp=Z,16nm,0.8s					
JFWS	Jewell Farm	78.21 347	eP	P	07 09 28.2	0.0
	comp=Z,16nm,0.8s					
LONY	Lake Ozonia	78.22 358	eP	P	07 09 29.1	+0.9
	comp=Z,11nm,1.1s					
MVCO	Mesa Verde	78.35 331	eP	P	07 09 30.8	+1.3
	comp=Z,9.3nm,0.8s					
EMMW	East Machias	78.42 4	eP	P	07 09 30.4	+1.2
	comp=Z,45nm,1.1s					
BC3	Big Chuckawall	78.44 325	P	P	07 09 31.5	+1.7
	baz=145					
L35A	Bielow Farm, R	78.61 343	P	P	07 09 30.6	+0.2
	baz=161					
Q24A	Divide	78.62 335	P	P	07 09 32.2	+1.2
	baz=153,SNR=5.7					
Q24A	Divide	78.62 335	eP	P	07 09 32.4	+1.4
	comp=Z,14nm,0.8s					
IRM	Iron Mountain	78.70 325	P	P	07 09 32.8	+1.7
	baz=145					
M31A	Lambtecht Ranc	78.80 340	P	P	07 09 31.9	+0.4
	baz=158					
K36A	Gilmore City	78.84 344	P	P	07 09 31.8	+0.1
	baz=162					
W13A	Hualapai Mount	78.88 326	eP	P	07 09 34.3	+1.9
	comp=Z,7.7nm,0.7s					
TPFO	Pinon Flats	78.89 324	P	P	07 09 33.6	+1.2
	baz=144,SNR=5.9					
PFO	Pinyon Flats O	78.89 324	P	P	07 09 33.8	+1.5
	baz=144					
PFO	Pinyon Flats O	78.89 324	eP	P	07 09 34.5	+2.2
PFO			pmax	pmax		
	comp=Z,10.0nm,0.8s					
PFO	Pinyon Flats O	78.89 324	eP	P	07 09 34.5	+2.2
	comp=Z,10nm,0.8s					
PV01	Paradox Valley	79.18 332	eP	P	07 09 35.4	+1.4
MURC	Murrieta	79.25 323	P	P	07 09 35.0	+0.8
	baz=144					
U15A	North Rim	79.27 328	eP	P	07 09 37.1	+2.5
K34A	Le Mars	79.28 342	P	P	07 09 34.1	0.0
	baz=160					
GMRC	Granite Mounta	79.45 325	P	P	07 09 37.2	+1.8
	baz=145					
SMCO	Snowmass	79.48 333	eP	P	07 09 37.4	+1.6
	comp=Z,14nm,0.8s					
ISCO	Idaho Springs	79.53 335	P	P	07 09 36.9	+0.9
	baz=152,SNR=6.1					
ISCO	Idaho Springs	79.53 335	eP	P	07 09 37.2	+1.3
ISCO			pmax	pmax		
	comp=Z,6.0nm,0.9s					
ISCO	Idaho Springs	79.53 335	eP	P	07 09 37.2	+1.3
	comp=Z,5.7nm,0.9s					
L31A	Butterfield Fa	79.53 340	P	P	07 09 36.0	+0.5
	baz=158					
PV04	Paradox Valley	79.54 332	eP	P	07 09 37.1	+1.2
PV04			e		07 09 45.2	
TSUM	Tsumeb	79.56 106	eP	P	07 09 36.9	+0.4
	comp=Z,12nm,1.0s					
PV10	Paradox Valley	79.58 332	eP	P	07 09 37.2	+1.1
I38A	Scanlan Farm,	79.71 346	P	P	07 09 35.9	-0.4
	baz=163,SNR=6.3					
PV09	Paradox Valley	79.72 332	eP	P	07 09 38.8	+1.8
LMN	Caledonia Moun	79.73 5	eP	P	07 09 37.1	+0.7
	comp=Z,19nm,1.0s					
TRQ	Mont Tremblant	79.82 359	eP	P	07 09 37.0	0.0
I37A	Lemond, Waseca	79.91 345	P	P	07 09 37.4	-0.1
	baz=162,SNR=5.9					
K31A	O'Neill	79.92 341	P	P	07 09 38.4	+0.7
	baz=158,SNR=5.6					
BFSC	Mount Baldy Ra	79.99 323	P	P	07 09 39.0	+0.7
	baz=143					
KNB	Kanab	80.00 328	eP	P	07 09 40.4	+2.0
KNB			pmax	pmax		
	comp=Z,18nm,0.8s					
KNB	Kanab	80.00 328	eP	P	07 09 40.4	+2.0
	comp=Z,18nm,0.8s					
CASY	Casey	80.06 181	eP	P	07 09 39.5	+1.3
	comp=Z,31nm,1.6s					
J33A	Davis	80.10 342	P	P	07 09 38.5	0.0
	baz=160,SNR=5.6					
LCMT	Little Creek M	80.18 328	eP	P	07 09 41.4	+2.1
	comp=Z,5.8nm,1.0s					
K30A	Basset	80.21 340	P	P	07 09 40.2	+1.0
	baz=157					
H37A	Dierke Farm, C	80.35 345	P	P	07 09 39.9	+0.1
	baz=163					
J32A	Parkston	80.37 342	P	P	07 09 40.0	0.0
	baz=159					
ECSD	EROS Data Cent	80.40 342	P	P	07 09 40.1	0.0
	baz=160,SNR=13					
ECSD	EROS Data Cent	80.40 342	eP	P	07 09 40.2	0.0
	comp=Z,16nm,0.8s					
BOSA	Boshof	80.40 118	P	P	07 09 39.9	-1.0
	comp=Z,8.3nm,0.9s,baz=221,slow=3.1,SNR=11					
BOSA			LR	LR	07 42 06.4	
	comp=Z,65nm,18.2s,baz=226,slow=33					
BOSA	Boshof	80.40 118	eP	P	07 09 40.7	-0.2
BOSA			pmax	pmax		
	comp=Z,23nm,1.1s					
BOSA	Boshof	80.40 118	eP	P	07 09 40.7	-0.2
	comp=Z,23nm,1.1s					
GSC	Goldstone, Bar	80.42 325	P	P	07 09 41.6	+1.1
	baz=144					
GSC	Goldstone, Bar	80.42 325	eP	P	07 09 43.0	+2.4
GSC			pmax	pmax		
	comp=Z,7.0nm,0.7s					
GSC	Goldstone, Bar	80.42 325	eP	P	07 09 43.0	+2.4
	comp=Z,7.4nm,0.7s					
H36A	Jessenland, He	80.56 345	P	P	07 09 41.4	+0.4
	baz=162					
MTPU	Mount Pierson	80.58 329	eP	P	07 09 41.0	-0.8
N23A	Red Feather La	80.62 335	P	P	07 09 43.1	+1.4
	baz=152					
N23A	Red Feather La	80.62 335	eP	P	07 09 43.1	+1.4
	comp=Z,7.8nm,1.0s					
SHPR	Sheep Range	80.62 326	eP	P	07 09 43.8	+2.0
	comp=Z,11nm,0.8s					
J30A	Dallas	80.78 340	P	P	07 09 42.5	+0.3
	baz=158					
O20A	White River Ci	80.79 333	P	P	07 09 43.2	+0.7
	baz=150					
O20A	White River Ci	80.79 333	eP	P	07 09 43.6	+1.1
	comp=Z,9.6nm,1.0s					
SRU	San Rafael Swe	80.80 331	eP	P	07 09 43.6	+1.0
SRU			pmax	pmax		
	comp=Z,8.0nm,0.8s					
SRU	San Rafael Swe	80.80 331	eP	P	07 09 43.6	+1.0
	comp=Z,7.5nm,0.8s					
H35A	Sunnyside Ranc	80.88 344	P	P	07 09 42.6	-0.1
	baz=161,SNR=5.8					
Q16A	Castle Valley	80.90 330	eP	P	07 09 44.7	+1.5
	comp=Z,9.0nm,0.9s					
SPMN	Marine on St.	80.94 346	P	P	07 09 42.6	-0.4
	baz=163					
SPMN	Marine on St.	80.94 346	eP	P	07 09 42.5	-0.4
	comp=Z,10.0nm,0.6s					
MSU	Marysvale	80.98 329	eP	P	07 09 45.3	+1.7
MSU	Marysvale	80.98 329	eP	P	07 09 45.3	+1.7
COWI	Conover	81.09 348	eP	P	07 09 44.3	+0.5
	comp=Z,11nm,1.2s					
P18A	Preston Nutter	81.13 331	eP	P	07 09 46.0	+1.4
	comp=Z,32nm,1.4s					
LMQ	La Malbaie	81.15 1	eP	P	07 09 44.8	+0.7
	comp=Z,17nm,1.1s					
P17A	Butcher Ranch,	81.20 331	eP	P	07 09 46.9	+2.2
	comp=Z,9.8nm,1.1s					
TMUT	Trail Mountain	81.24 331	eP	P	07 09 46.9	+1.8
	comp=Z,7.1nm,0.8s					
I30A	Oacoma	81.30 341	P	P	07 09 45.0	+0.1
	baz=158					
H33A	Prehn Over Nor	81.32 343	P	P	07 09 45.3	+0.2
	baz=160					
H32A	Carlson Farm,	81.33 342	P	P	07 09 45.0	0.0
	baz=159					
TPNV	Topopah Spring	81.49 326	P	P	07 09 47.9	+1.5
	baz=144					
TPNV	Topopah Spring	81.49 326	eP	P	07 09 48.5	+2.1
TPNV			pmax	pmax		
	comp=Z,8.0nm,0.7s					
TPNV	Topopah Spring	81.49 326	eP	P	07 09 48.5	+2.1
	comp=Z,7.8nm,0.7s					
DAC	Darwin (Calif)	81.59 325	eP	P	07 09 48.7	+1.8
DAC			pmax	pmax		
	comp=Z,11nm,0.8s					
DAC	Darwin (Calif)	81.59 325	eP	P	07 09 48.6	+1.8
	comp=Z,10nm,0.8s					
I29A	Vivian Onida	81.65 340	P	P	07 09 47.0	+0.2
	baz=157					
SUSD	Miller	81.67 341	P	P	07 09 47.0	+0.1
	baz=158					
F36A	Milaca	81.70 345	P	P	07 09 46.5	-0.5
	baz=162,SNR=7.0					
PSUT	Pine Spring	81.71 328	eP	P	07 09 49.3	+1.8
	comp=Z,7.9nm,0.8s					
F35A	Swanville	81.92 345	P	P	07 09 48.4	+0.3
	baz=162					
NLU	North Lily Min	82.15 330	eP	P	07 09 51.2	+1.4
	comp=Z,24nm,1.7s					
H29A	Onida	82.18 340	P	P	07 09 49.9	+0.3

	baz=157					
I27A	Quinn	82.20 339	P	P	07 09 50.5	+0.7
	baz=156					
E36A	McGregor	82.27 346	P	P	07 09 49.8	-0.2
	baz=163,SNR=5.5					
F33A	5 Mile Ranch,	82.30 343	P	P	07 09 50.0	-0.2
	baz=160					
R11A	Troy Canyon, C	82.33 327	P	P	07 09 51.0	+0.3
	baz=145,SNR=13					
R11A	Troy Canyon, C	82.33 327	eP	P	07 09 52.0	+1.2
	comp=Z,9.5nm,0.9s					
G30A	Faulkton	82.35 341	P	P	07 09 51.0	+0.5
	baz=158					
K22A	Casper	82.37 335	P	P	07 09 51.5	+0.7
	baz=152					
K22A	Casper	82.37 335	eP	P	07 09 51.8	+1.0
	comp=Z,19nm,1.2s					
I26A	New Underwood	82.41 338	P	P	07 09 51.7	+0.8
	baz=155					
JLU	Jordanelle	82.44 331	eP	P	07 09 52.6	+1.2
	comp=Z,6.7nm,0.8s					
E35A	Pequot Lakes	82.55 345	P	P	07 09 51.5	+0.1
	baz=162					
G29A	Hoven	82.62 341	P	P	07 09 52.1	+0.2
	baz=157,SNR=5.3					
LBTB	Lobatse	82.64 115	eP	P	07 09 52.7	-0.1
LBTB			pmax	pmax		
	comp=Z,13nm,0.8s					
LBTB	Lobatse	82.64 115	eP	P	07 09 52.7	-0.1
	comp=Z,13nm,0.8s					
DUG	Dugway, Tooele	82.66 330	P	P	07 09 52.9	+0.5
	baz=147,SNR=17					
DUG	Dugway, Tooele	82.66 330	eP	P	07 09 53.7	+1.4
DUG			pmax	pmax		
	comp=Z,17nm,1.2s					
DUG	Dugway, Tooele	82.66 330	eP	P	07 09 53.7	+1.4
	comp=Z,17nm,1.2s					
I25A	Rochford	82.67 338	P	P	07 09 52.8	+0.4
	baz=154					
D37A	Cotton	82.71 346	P	P	07 09 52.3	0.0
	baz=163					
H27A	Howes	82.72 339	P	P	07 09 52.6	+0.2
	baz=156,SNR=6.4					
G28A	Parade	82.79 340	P	P	07 09 53.3	+0.5
	baz=156					
F31A	Hecla	82.80 342	P	P	07 09 53.1	+0.4
	baz=159					
RSSD	Black Hills	82.86 338	P	P	07 09 53.8	+0.5
	baz=154					
RSSD	Black Hills	82.86 338	eP	P	07 09 54.0	+0.6
RSSD			pmax	pmax		
	comp=Z,8.0nm,0.9s					
RSSD	Black Hills	82.86 338	eP	P	07 09 54.0	+0.6
	comp=Z,8.1nm,0.9s					
TCUT	Toone Canyon	82.86 331	eP	P	07 09 55.1	+1.6
	comp=Z,20nm,1.2s					
C39A	Grand Marais	82.93 348	P	P	07 09 53.1	-0.3
	baz=165					
D35A	Remer	82.97 345	P	P	07 09 53.7	+0.1
	baz=162					
F30A	Leola	82.97 342	P	P	07 09 53.8	+0.1
	baz=158,SNR=5.1					
C38A	Sawbill Land.	83.03 347	P	P	07 09 53.1	-0.8
	baz=164,SNR=6.0					
H25A	Fruitdale	83.17 338	P	P	07 09 55.8	+1.0
	baz=154					
F29A	Eureka	83.19 341	P	P	07 09 55.1	+0.3
	baz=157,SNR=6.6					
C37A	Embarrass	83.21 347	P	P	07 09 54.7	-0.2
	baz=164					
EYMN	Ely	83.29 347	P	P	07 09 55.1	-0.2
	baz=164					
EYMN	Ely	83.29 347	eP	P	07 09 54.5	-0.7
	comp=Z,40nm,1.8s					
HWUT	Hardware Ranch	83.34 332	eP	P	07 09 56.7	+0.8
	comp=Z,8.2nm,0.8s					
E31A	Nome	83.36 343	P	P	07 09 55.7	+0.1
	baz=159					
G27A	Dupree	83.36 340	P	P	07 09 55.9	+0.2
	baz=156,SNR=5.0					
BGU	Big Grassy Mou	83.36 330	eP	P	07 09 56.4	+0.5
	comp=Z,16nm,1.4s					
C36A	Pine Crest Far	83.37 346	P	P	07 09 55.7	+0.1
	baz=163					
D33A	AnnSam, Waubun	83.42 344	P	P	07 09 56.0	0.0
	baz=161					
SPUT	South Promonto	83.44 331	eP	P	07 09 57.5	+1.1
	comp=Z,12nm,0.8s					
G26A	Maurine	83.47 339	P	P	07 09 56.5	+0.2
	baz=155,SNR=5.6					
C35A	Jirik Farms, M	83.54 346	P	P	07 09 56.7	+0.1
	baz=162					
BW06	Boulder Array	83.56 333	P	P	07 09 57.6	+0.5
	baz=150					
BW06	Boulder Array	83.56 333	eP	P	07 09 58.0	+0.9
	comp=Z,10nm,0.6s					
E30A	Jud	83.56 342	P	P	07 09 56.9	+0.2
	baz=158					
PD31	Pinedale Array	83.56 333	eP	P	07 09 58.4	+1.3
PDAR	Pinedale Array	83.56 333	P	P	07 09 56.8	-0.3
	comp=Z,1.0nm,0.8s,baz=132,slow=4.2,SNR=8.4					
PDAR			LR	LR	07 43 46.4	
	comp=Z,119nm,18.1s,baz=142,slow=33					
NV11	Mina Array Sit	83.58 326	eP	P	07 09 59.2	+2.0
	comp=Z,3.6nm,1.0s					
NV01	Mina Array Sit	83.65 325	eP	P	07 09 59.2	+1.6
NVAR	Mina Array Bea	83.65 325	P	P	07 09 59.0	+1.4
	comp=Z,2.4nm,0.7s,baz=154,slow=6.2,SNR=14					
NVAR			LR	LR	07 40 02.3	
	comp=Z,58nm,21.6s,baz=160,slow=30					
D31A	Mcclaflin, Tow	83.77 343	P	P	07 09 57.9	+0.2
	baz=159					
E29A	Napoleon	83.81 342	P	P	07 09 58.3	+0.3
	baz=158					
DRLN	Deer Lake	83.90 10	eP	P	07 09 58.2	-0.1
	comp=Z,71nm,1.4s					
HVU	Hansel Valley	83.97 331	eP	P	07 09 59.8	+0.7
HVU			pmax	pmax		
	comp=Z,10.0nm,0.8s					
HVU	Hansel Valley	83.97 331	eP	P	07 09 59.8	+0.7
	comp=Z,10nm,0.8s					
C33A	Trail	83.98 344	P	P	07 09 59.0	+0.2
	baz=161					
F26A	Lodgepole	84.00 339	P	P	07 09 59.6	+0.6
	baz=155					
D30A	Buchanan	84.09 342	P	P	07 09 59.1	-0.2
	baz=158					
B35A	Bob, Littlefor	84.12 346	P	P	07 09 58.9	-0.5
	baz=162,SNR=6.4					
ELK	Elko	84.14 329	eP	P	07 10 01.2	+1.1
ELK			pmax	pmax		
	comp=Z,7.0nm,0.8s					
ELK	Elko	84.14 329	eP	P	07 10 01.2	+1.1
	comp=Z,6.5nm,0.8s					
E27A	Carson	84.21 340	P	P	07 09 60.0	-0.1
	baz=156					
B34A	Aery, Baudette	84.43 345	P	P	07 10 00.8	-0.2
	baz=162					
C31A	Landman Farms,	84.47 343	P	P	07 10 01.3	0.0
	baz=159,SNR=6.3					
E26A	Carlson Angus	84.50 340	P	P	07 10 01.5	-0.1
	baz=155					
TOA0	Torodi Ar. Sit	84.52 70	eP	P	07 10 01.9	-0.4
	comp=Z,24nm,0.8s					
TORD	Torodi Ar. Bea	84.52 70	P	P	07 10 01.6	-0.7
	comp=Z,14nm,0.7s,baz=251,slow=3.9,SNR=83					
TORD			LR	LR	07 47 11.7	
	comp=Z,103nm,18.1s,baz=225,slow=35					
REDW	Red Top Meadow	84.56 333	eP	P	07 10 02.5	+0.4
	comp=Z,219nm,0.6s					
C30A	Mose, Pekin	84.57 343	P	P	07 10 02.3	+0.5
	baz=158,SNR=7.5					
SNOW	Snow King Moun	84.61 333	eP	P	07 10 02.3	-0.1
	comp=Z,4.5nm,0.8s					
LOHW	Long Hollow	84.68 333	eP	P	07 10 03.4	+0.7
	comp=Z,52nm,0.5s					
B32A	Ashes, Strandq	84.76 344	P	P	07 10 02.5	-0.2
	baz=160,SNR=9.3					
MOOW	Moose Ponds	84.85 333	eP	P	07 10 05.4	+1.8
	comp=Z,14nm,0.4s					
MDND	Maddock	84.99 342	P	P	07 10 04.1	+0.2
	baz=158					
MDND	Maddock	84.99 342	eP	P	07 10 04.5	+0.6
	comp=Z,44nm,0.8s					
D26A	Manning	85.00 340	P	P	07 10 04.6	+0.6
	baz=155					
B31A	Greenbush Farm	85.04 343	P	P	07 10 03.8	-0.3
	baz=159					
IMW	Indian Meadow	85.05 333	eP	P	07 10 05.5	+0.8
	comp=Z,36nm,0.4s					
FLWY	Flagg Ranch	85.12 333	eP	P	07 10 06.0	+1.0
	comp=Z,12nm,0.6s					
B30A	Myrvik Farm, E	85.23 343	P	P	07 10 05.3	+0.3
	baz=159,SNR=13					
H17A	Grant Village	85.34 334	eP	P	07 10 07.0	+0.9
	comp=Z,2.6nm,0.7s					
C27A	Sayler Ranch,	85.37 341	P	P	07 10 06.3	+0.5
	baz=156					
D25A	Fairfield	85.37 339	P	P	07 10 06.3	+0.4
	baz=155					
RLMT	Red Lodge	85.49 335	P	P	07 10 06.9	+0.1
	baz=150,SNR=6.5					
RLMT	Red Lodge	85.49 335	eP	P	07 10 06.8	+0.1
	comp=Z,7.8nm,0.8s					
B29A	Wagenman Farm,	85.50 342	P	P	07 10 06.8	+0.4
	baz=158					
C26A	Wahner Farm, P	85.63 340	P	P	07 10 07.1	-0.1
	baz=156					
A30A	Hoffart Farm,	85.68 343	P	P	07 10 07.2	-0.1
	baz=159					
YMR	Madison River	85.72 334	eP	P	07 10 09.4	+1.5
	comp=Z,14nm,0.7s					
B28A	Dugan Ranch, T	85.74 342	P	P	07 10 07.8	+0.2
	baz=157					
LAO	LASA Array	85.84 337	P	P	07 10 08.8	+0.5
	baz=152					
LAO	LASA Array	85.84 337	eP	P	07 10 08.4	+0.1
	comp=Z,16nm,1.0s					
A29A	Manning Farm,	85.89 343	P	P	07 10 08.9	+0.5
	baz=158					
HLID	Hailey	86.12 331	eP	P	07 10 11.3	+1.4
	comp=Z,7.7nm,1.0s					
GCMT	Greycliff	86.21 335	eP	P	07 10 11.1	+0.9
ULM	Lac du Bonnet	86.36 345	P	P	07 10 10.2	-0.3
	comp=Z,2.9nm,0.6s,baz=169,slow=6.3,SNR=5.2					
ULM	Lac du Bonnet	86.36 345	eP	P	07 10 10.3	-0.3
	comp=Z,9.9nm,0.9s					
MCMT	McKenzie Canyo	86.56 332	eP	P	07 10 13.4	+1.3
BOZ	Bozeman (W)	86.80 334	P	P	07 10 13.4	+0.3
	baz=148					
BOZ	Bozeman (W)	86.80 334	eP	P	07 10 12.7	-0.4
BOZ			pmax	pmax		
	comp=Z,3.0nm,1.3s					
BOZ	Bozeman (W)	86.80 334	eP	P	07 10 12.7	-0.4
	comp=Z,2.6nm,1.3s					
DLMT	Dillon	86.92 333	eP	P	07 10 14.8	+1.1
	comp=Z,10nm,1.3s					
WVOR	Wild Horse Val	87.00 328	eP	P	07 10 15.8	+1.6
WVOR			pmax	pmax		
	comp=Z,7.0nm,1.2s					
WVOR	Wild Horse Val	87.00 328	eP	P	07 10 15.8	+1.6
	comp=Z,7.3nm,1.2s					
LRM	Limekiln Ridge	87.25 333	eP	P	07 10 16.3	+0.9
MOD	Modoc Plateau	87.33 326	eP	P	07 10 17.2	+1.4
	comp=Z,7.0nm,0.8s					
EGMT	Eagleton	88.17 336	eP	P	07 10 20.0	+0.4
	comp=Z,9.4nm,1.2s					
K05A	Summer Lake	88.25 327	eP	P	07 10 22.1	+1.8
	comp=Z,12nm,0.8s					
YBH	Yreka Blue Hor	88.33 325	eP	P	07 10 20.9	+0.4
YBH			pmax	pmax		
	comp=Z,7.0nm,0.8s					
YBH	Yreka Blue Hor	88.33 325	eP	P	07 10 20.9	+0.4
	comp=Z,6.6nm,0.8s					
SCHQ	Schefferville	88.55 3	P	P	07 10 20.6	-0.5
	comp=Z,1.9nm,0.5s,baz=183,slow=7.8,SNR=6.9					
SCHQ	Schefferville	88.55 3	eP	P	07 10 20.4	-0.7
	comp=Z,29nm,1.6s					
J05D	Fort Rock, OR	88.84 327	P	P	07 10 24.2	+1.2
	baz=141					
AFI	Afiamalu	89.89 253	LR	LR	07 41 21.3	
	comp=Z,102nm,19.5s,baz=160,slow=29					
TAM	Tamanrasset	93.11 65	eP	P	07 10 43.7	+0.4
TAM			pmax	pmax		
	comp=Z,5.0nm,0.9s					
TAM	Tamanrasset	93.11 65	eP	P	07 10 43.7	+0.4
	comp=Z,4.9nm,0.9s					
ESDC	Sonseca Array	96.79 46	P	P	07 10 59.4	-0.2
	comp=Z,0.5nm,0.5s,baz=242,slow=3.9,SNR=4.6					
YKA	Yellowknife Ar	101.90 341	P	Pdif	07 11 20.4	-1.3
	comp=Z,0.2nm,0.8s,baz=144,slow=4.7,SNR=7.5					
GERES	GERESS Array B	112.36 45	PKiKP	PKiKP	07 16 03.5	-1.1
	comp=Z,0.7nm,0.6s,baz=204,slow=1.3,SNR=6.2					
TTA	Tatalina	116.85 329	ePKIKP	PKPdf	07 16 12.6	-0.1
TTA	Tatalina	116.85 329	ePKPdf	PKPdf	07 16 12.6	-0.1
AS01	Alice Springs	117.44 207	ePKPdf	PKPdf	07 16 14.6	-0.6
ASAR	Alice Springs	117.46 207	PKP	PKPdf	07 16 13.1	-2.1
	comp=Z,0.4nm,0.7s,baz=162,slow=0.8,SNR=4.6					
AKUT	Akutan	118.54 318	ePKPdf	PKPdf	07 16 19.1	+3.1
WB2	Warramunga Arr	120.63 210	ePKPdf	PKPdf	07 16 20.7	-0.6
WRA	Warramunga Arr	120.64 210	PKP	PKPdf	07 16 20.1	-1.2
	comp=Z,0.8nm,0.5s,baz=161,slow=1.7,SNR=20					
BR231	Keskin MP Arra	121.52 61	ePKPdf	PKPdf	07 16 22.7	+0.3
BR131	Keskin Array S	122.11 61	ePKPdf	PKPdf	07 16 23.7	+0.1
BRTR	Keskin Array B	122.11 61	PKP	PKPdf	07 16 23.4	-0.2
	comp=Z,2.4nm,0.7s,baz=193,slow=2.5,SNR=14					
AK11	Malin Array Si	122.37 48	ePKPdf	PKPdf	07 16 22.5	-1.1
KIEV	Kiev	122.40 48	i PKIKP	PKPdf	07 16 22.0	-1.6
KIEV	Kiev	122.40 48	ePKPdf	PKPdf	07 16 22.8	-0.8
AKASG	Malin Array Be	122.41 48	PKP	PKPdf	07 16 21.7	-1.9
	comp=Z,2.7nm,0.7s,baz=264,slow=2.5,SNR=9.1					
AKASG	Malin Array Be	122.41 48	PKIKP	PKPdf	07 16 21.7	-1.9
AKASG			pmax	pmax		
	comp=Z,2.0nm,0.7s					
VSU	Vasula	122.86 38	i PKIKP	PKPdf	07 16 23.8	-0.4
VSU			pmax	pmax		
	comp=Z,65nm,2.5s					
FINES	FINESS Array B	123.14 35	PKP	PKPdf	07 16 24.4	-0.3
	comp=Z,1.2nm,0.9s,baz=355,slow=7.0,SNR=3.6					
ARCES	ARCESS Array B	124.11 25	PKP	PKPdf	07 16 25.1	-1.3
	comp=Z,1.0nm,0.7s,baz=260,slow=3.6,SNR=4.5					
ARCES	ARCESS Array B	124.11 25	PKIKP	PKPdf	07 16 25.1	-1.3
ARCES			pmax	pmax		
	comp=Z,2.0nm,0.9s					
OBN	Obninsk	127.64 43	ePKIKP	PKPdf	07 16 32.4	-1.0
OBN			e		07 18 31.1	
OBN			pmax	pmax		
	comp=Z,7.0nm,0.9s					
KLMR	Klimovskoe	129.57 36	ePKIKP	PKPdf	07 16 35.4	-1.6
KLMR			e		07 16 45.0	
KLMR			pmax	pmax		
	comp=Z,19nm,1.4s					
NEY	Neytrino	129.63 59	i PKIKP	PKPdf	07 16 37.2	-0.7
KIV	Kislovodsk	129.76 58	i PKIKP	PKPdf	07 16 36.6	-1.4
ZEI	Tsey	130.38 60	i PKIKP	PKPdf	07 16 36.9	-2.5
ZEI			pmax	pmax		
	comp=Z,20nm,1.3s					
BILL	Bilibino	132.64 334	i PKIKP	PKPdf	07 16 43.4	+0.8
BILL			e		07 19 07.7	
BILL			pmax	pmax		
	comp=Z,4.0nm,1.7s					
BILL			MLR	MLR		
	comp=Z,79nm,22.0s					
SEY	Seymchan	139.82 330	i PKIKP	PKPdf	07 16 56.1	0.0
ARU	Arti	139.93 41	i PKIKP	PKPdf	07 16 56.6	+0.1
ARU					07 19 48.5	
ARU			MLR	MLR		
	comp=Z,112nm,21.0s					
GEYT	Alibeck	140.15 70	PKP	PKPdf	07 16 57.2	-0.3
	comp=Z,3.0nm,0.6s,baz=252,slow=3.0,SNR=5.2					
TIXI	Tiksi	140.58 350	i PKIKP	PKPdf	07 16 56.5	-0.7
AB31	Akbulak array	141.92 52	i PKHKP	PKPpre	07 16 54.8	
AB31			pmax	pmax		
	comp=Z,3.0nm,0.6s					
ZRNK	Zerenda	146.72 43	PKP2	PKPdf	07 17 08.6	+0.1
ZRNK			pmax	pmax		
	comp=Z,25nm,0.8s					
ZRNK	Zerenda	146.72 43	ePKPdf	PKPdf	07 17 09.1	+0.6
BRVK	Borovoye	147.41 43	d iPKP2	PKPbc	07 17 12.3	+0.1
BRVK	Borovoye	147.41 43	ePKPdf	PKPdf	07 17 10.3	+0.6
BRVK			ePKPbc	PKPbc	07 17 13.1	+0.9
BVA0	Borovoye Array	147.48 43	i PKIKP	PKPdf	07 17 10.2	+0.4
BVA0			pmax	pmax		
	comp=Z,14nm,0.7s					
PSI	Prapat	147.98 164	ePKP2	PKPbc	07 17 14.3	-0.8
PSI	Prapat	147.98 164	ePKPdf	PKPbc	07 17 14.3	-0.8
YAK	Yakutsk	148.57 340	ePKP2	PKPbc	07 17 14.8	-0.2
YAK			pmax	pmax		
	comp=Z,21nm,0.9s					
YAK			pmax	pmax		
	comp=N,5.0nm,1.0s					
YAK			pmax	pmax		
	comp=Z,25nm,0.8s					
YAK	Yakutsk	148.57 340	ePKPbc	PKPbc	07 17 15.3	+0.3
HYB	Hyderabad	149.26 115	i P	PKPbc	07 17 18.0	-0.1
NKL	Nikolayevsk	149.66 319	i PKP2	PKPbc	07 17 18.1	+0.2
NKL			pmax	pmax		
	comp=Z,30nm,0.8s					
KKAR	Karatay Array	149.82 61	ePKP2	PKPbc	07 17 18.6	-0.2
KKAR	Karatay Array	149.82 61	ePKPbc	PKPbc	07 17 18.6	-0.2
OTUK	Ortayu	150.16 51	PKP2	PKPbc	07 17 19.4	0.0
OTUK			pmax	pmax		
	comp=Z,19nm,0.7s					
YSS	Yuzh-Sakhalins	150.49 307	ePKIKP	PKPab	07 17 28.0	+1.1
KULM	Kulim	150.77 166	ePKPbc	PKPbc	07 17 21.2	-0.7
MNAS	Manas	151.34 62	PKIKP	PKPbc	07 17 21.3	-1.3
MNAS			pmax	pmax		
	comp=Z,12nm,0.9s					
SFK	Sufi-Kurgan	152.25 67	PKIKP	PKPbc	07 17 24.8	-0.1
SFK			pmax	pmax		
	comp=Z,21nm,0.7s					
EKS2	Erkin-Say	152.26 62	ePKIKP	PKPdf	07 17 19.0	+1.1
EKS2			e		07 17 25.4	
EKS2			e		07 17 34.2	
EKS2	Erkin-Say	152.26 62	ePKPdf	PKPdf	07 17 19.0	+1.1
EKS2			ePKPbc	PKiKP	07 17 25.4	+0.5
EKS2			ePKPab	PKPab	07 17 34.2	-0.4
AAK	Ala-Archa	152.78 62	ePKIKP	PKPdf	07 17 19.6	+0.9
AAK			e		07 17 26.5	
AAK	Ala-Archa	152.78 62	ePKPdf	PKPdf	07 17 19.6	+0.9
AAK			ePKPbc	PKiKP	07 17 26.5	+0.5
FRU	Bishkek	152.85 61	ePKIKP	PKPbc	07 17 24.0	-1.8
NVS	Novosibirsk	153.08 32	ePKIKP	PKPbc	07 17 25.9	+0.1
TKM2	Tokmak 2	153.55 61	ePKIKP	PKPdf	07 17 20.8	+0.9
TKM2			e		07 17 27.6	
TKM2	Tokmak 2	153.55 61	ePKPdf	PKPdf	07 17 20.8	+0.9
TKM2			ePKPbc	PKPbc	07 17 27.6	0.0
KSH	Kashi	154.17 68	ePKPbc	PKPdf	07 17 21.3	+0.5
KSH			epPKP	PKiKP	07 17 32.3	+3.3
KSH			PKS	PKSdf	07 20 54.3	-0.8
KSH			SKS	SKSdf	07 24 23.4	-2.7
KSH			AMB	AMB		
	comp=Z,63nm,4.2s					
KSH			LR	LR		
	comp=Z,130nm,6.4s					
KSH			LR	LR		
	comp=Z,77nm,6.3s					
KSH			LR	LR		
	comp=Z,140nm,5.4s					
ZALV	Zalesovo Beam	154.37 32	PKP	PKPdf	07 17 20.1	-0.3
	comp=Z,2.0nm,0.7s,baz=280,slow=1.9,SNR=8.7					
ZALV			PKPbc	PKPbc	07 17 28.8	+0.1
	comp=Z,11nm,0.6s,baz=292,slow=3.3,SNR=33					
BOD	Bodaibo	155.73 352	ePKIKP	PKPdf	07 17 30.4	+8.3
BOD			e		07 17 47.4	
BOD			pmax	pmax		
	comp=Z,10.0nm,1.4s					
PDGK	Podgornoye	156.26 58	PKP2	PKPab	07 17 50.3	-1.1
PDGK			pmax	pmax		
	comp=Z,15nm,0.9s					
MK31	Makanchi Array	156.99 49	ePKIKP	PKPdf	07 17 24.6	+0.4
MK31	Makanchi Array	156.99 49	ePKPdf	PKPdf	07 17 24.6	+0.4
MK31			ePKPab	PKPab	07 17 53.8	-0.7
MKAR	Makanchi Array	156.99 49	PKP	PKPdf	07 17 23.1	-1.1
	comp=Z,1.3nm,0.8s,baz=232,slow=1.4,SNR=7.9					
MKAR			PKPab	PKPab	07 17 53.6	-0.9
	comp=Z,4.1nm,0.6s,baz=278,slow=4.1,SNR=4.1					
MKAR	Makanchi Array	156.99 49	ePKPdf	PKPdf	07 17 24.6	+0.4
MKAR			ePKPab	PKPab	07 17 53.9	-0.6
MK01	Makanchi Array	157.00 49	ePKPdf	PKPdf	07 17 22.9	-1.3
MK01			ePKPab	PKPab	07 17 53.9	-0.6
MDJ	Mudanjiang	159.94 309	PKP	PKPdf	07 17 29.1	+1.4
WMQ	Urumqi	161.71 52	ePKP	PKPdf	07 17 29.1	-0.7
TLY	Talaya	162.05 8	ePKP2	PKPab	07 18 17.5	+1.3
TLY			pmax	pmax		
	comp=Z,4.0nm,0.8s					
TLY	Talaya	162.05 8	ePKPab	PKPab	07 18 17.4	+1.2
CMAR	Chiang Mai Arr	162.76 151	PKP	PKPdf	07 17 30.6	-0.9
	comp=Z,1.5nm,0.3s,baz=242,slow=3.8,SNR=6.2					
CN2	Changchun	162.97 311	ePKP	PKPdf	07 17 30.5	-0.4
ZAK	Zakamensk	163.28 10	ePKP2	PKPab	07 18 21.3	-0.4
ZAK			pmax	pmax		
	comp=Z,3.0nm,1.2s					
SONA1	Songino Array	166.09 3	ePKPab	PKPab	07 18 34.1	-0.1
ULN	Ulaanbaatar	166.09 1	ePKP2	PKPab	07 18 34.2	0.0
ULN	Ulaanbaatar	166.09 1	ePKPab	PKPab	07 18 34.2	0.0
SONM	Songino Array	166.10 3	PKPab	PKPab	07 18 34.7	+0.5
	comp=Z,2.4nm,0.9s,baz=345,slow=5.4,SNR=5.3					
KMI	Kunming	170.26 153	PKP	PKPdf	07 17 35.4	-2.0
BJI	Beijing	170.81 314	PKP	PKPdf	07 17 38.3	+1.4
BJI			LR	LR		
	comp=Z,98nm,20.5s					
BJI			LR	LR		
	comp=Z,59nm,15.8s					
GTA	Gaotai	171.74 47	ePKP	PKPdf	07 17 38.8	+1.2
GTA			pPKP	pPKPdf	07 17 46.6	+0.8
GTA			sPKP		07 17 49.9	
GTA			PKPab	PKPab	07 19 00.0	+0.4
GTA			PP	PP	07 22 54.3	+3.7
GTA			SKS	SKSdf	07 24 37.7	-1.8
GTA			SKKS	SKKSac	07 29 36.0	+0.1
GTA			SS	SS	07 43 55.4	-1.6
GTA			AMB	AMB		
	comp=Z,100nm,6.4s					
GTA			LR	LR		
	comp=Z,120nm,21.9s					
GTA			LR	LR		
	comp=Z,170nm,22.3s					
GTA			LR	LR		
	comp=Z,92nm,21.4s					
HHC	Hu-ho-hao-te	172.41 336	ePKP	PKPdf	07 17 36.1	-1.7
HHC			PP	PP	07 22 54.2	+1.0
HHC			SS	SS	07 44 00.9	-1.4
HHC			AMB	AMB		
	comp=Z,62nm,9.1s					
HHC			LR	LR		
	comp=Z,130nm,19.8s					
HHC			LR	LR		
	comp=Z,120nm,21.0s					
GYA	Guiyang	172.50 174	PKP	PKPdf	07 17 38.0	-0.3
GYA			PKPab	PKPab	07 19 05.4	+2.4
GYA			PKS	PKSdf	07 21 09.8	-1.0
GYA			PP	PP	07 22 56.4	+3.1
GYA			AMB	AMB		
	comp=Z,120nm,8.2s					
CD2	Chengdu	175.59 132	PKP	PKPdf	07 17 38.9	-0.3
LZH	Lanzhou	176.29 54	ePKP	PKPdf	07 17 40.5	+1.2
LZH			pPKP	pPKPdf	07 17 50.5	+3.0
LZH			sPKP		07 17 53.6	

*IGIL **07** 07:15:28.7, 40.34N$_K$ 14.27W, h10^{km}, ML2.6*
*MDD **07** 07:15:31.0± 1.6, 40.32N$_K$ 13.85W, h0^{km}, mb4.5/10, Error ellipse: s-maj=14.8km s-min=10.2km az=86.0, PRXIMO*
*INMG **07** 07:15:33.4± 0.8, 40.36N$_K$ 14.24W, h10^{km}, ML2.7, Error ellipse: s-maj=4.4km s-min=2.5km az=89.0*
*CSEM **07** 07:15:34.5± 0.3, 40.31N$_K$ 13.49W, h10^{km}, ML3.3/34, Error ellipse: s-maj=5.8km s-min=4.0km az=87.0*

ISC 07 07:15:29.8± 2.7, 40.33N± 0.04 13.8W± 0.1, h10^{km}, n101,
σ 19 63/188, 1C, North Atlantic Ocean

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMAFR	Mafra	3.77	110	ePn	Pn	07 16 29.5	+1.6
PMAFR				eSn	Sn	07 17 12.5	+0.3
PMAFR				A	A	07 17 18.2	
	19nm,0.5s						
PMA

	9.8nm,0.2s							
PTOM	**Tomar**	**4.22**	**98**	Pn	**Pn**	**07 16 36.0**	**+1.9**	
PTOM				*e*Sn	**Sn**	**07 17 22.4**	**-1.0**	
	20nm,0.2s							
EMAZ	**Mazaricos**	**4.48**	**53**	Pn	**Pn**	**07 16 38.9**	**+1.2**	
	2.7nm,0.1s,SNR=7.9							
EMAZ				Sn	**Sn**	**07 17 27.1**	**-2.7**	
	4.7nm,0.1s,SNR=7.9							
EMAZ	**Mazaricos**	**4.48**	**53**	Pn	**Pn**	**07 16 38.9**	**+1.2**	
	2.7nm,0.1s,SNR=7.9							
PMTG	**Montargil**	**4.50**	**104**	*e*Pn	**Pn**	**07 16 39.4**	**+1.5**	
PMTG				*e*Sn	**Sn**	**07 17 29.6**	**-0.7**	
PMTG				A	A	07 17 33.5		
	4.5nm,0.2s							
PMTG	**Montargil**	**4.50**	**104**	*e*Pn	**Pn**	**07 16 39.4**	**+1.5**	
PMTG				*e*Sn	**Sn**	**07 17 29.6**	**-0.7**	
	4.5nm,0.2s							
PGAV	**Gavieira, Arco**	**4.50**	**67**	*e*Pn	**Pn**	**07 16 39.8**	**+1.7**	
PGAV				*e*Sn	**Sn**	**07 17 29.1**	**-1.4**	
PGAV				A	A	07 17 33.6		
	8.3nm,0.1s							
PGAV	**Gavieira, Arco**	**4.50**	**67**	*e*Pn	**Pn**	**07 16 39.8**	**+1.7**	
PGAV				*e*Sn	**Sn**	**07 17 29.1**	**-1.4**	
	8.3nm,0.1s							
PVIS	**Viseu**	**4.54**	**83**	*e*Pn	**Pn**	**07 16 40.7**	**+2.2**	
PVIS				*e*Sn	**Sn**	**07 17 30.3**	**-1.0**	
PVIS				A	A	07 17 36.8		
	14nm,0.1s							
PVIS	**Viseu**	**4.54**	**83**	Pn	**Pn**	**07 16 40.7**	**+2.2**	
PVIS				Sn	**Sn**	**07 17 30.3**	**-1.0**	
	6.8nm,0.1s							
PVIS	**Viseu**	**4.54**	**83**	Pn	**Pn**	**07 16 40.7**	**+2.2**	
PVIS				*e*Sn	**Sn**	**07 17 30.3**	**-1.0**	
	14nm,0.1s							
PCAB	**Cabril**	**4.60**	**71**	*e*Pn	**Pn**	**07 16 41.4**	**+2.0**	
PCAB				*e*Sn	**Sn**	**07 17 31.3**	**-1.5**	
PCAB				A	A	07 17 35.5		
	19nm,0.1s							
PCAB	**Cabril**	**4.60**	**71**	Pn	**Pn**	**07 16 41.4**	**+2.0**	
PCAB				Sn	**Sn**	**07 17 31.3**	**-1.5**	
	9.4nm,0.1s							
PCAB	**Cabril**	**4.60**	**71**	Pn	**Pn**	**07 16 41.4**	**+2.0**	
PCAB				*e*Sn	**Sn**	**07 17 31.3**	**-1.5**	
	19nm,0.1s							
ELOB	**Lobios**	**4.62**	**69**	Pn	**Pn**	**07 16 41.5**	**+1.8**	
	3.1nm,0.1s,SNR=27							
ELOB				Sn	**Sn**	**07 17 32.7**	**-0.7**	
	3.5nm,0.2s,SNR=8.1							
ELOB	**Lobios**	**4.62**	**69**	Pn	**Pn**	**07 16 41.5**	**+1.8**	
	3.1nm,0.1s,SNR=27							
ELOB				Sn	**Sn**	**07 17 32.7**	**-0.7**	
	3.5nm,0.2s,SNR=8.1							
PNCL	**Nicolau / Gran**	**4.67**	**117**	*e*Pn	**Pn**	**07 16 41.6**	**+1.3**	
PNCL				*e*Sn	**Sn**	**07 17 33.9**	**-0.6**	
PNCL				A	A	07 17 44.1		
	4.3nm,0.8s							
PNCL	**Nicolau / Gran**	**4.67**	**117**	*e*Pn	**Pn**	**07 16 41.6**	**+1.3**	
PNCL				*e*Sn	**Sn**	**07 17 33.9**	**-0.6**	
	4.3nm,0.8s							
POLO	**Lamas de Olo**	**4.69**	**75**	*e*Pn	**Pn**	**07 16 42.0**	**+1.3**	
POLO				*e*Sn	**Sn**	**07 17 33.9**	**-1.3**	
POLO				A	A	07 17 43.6		
	1.7nm,0.2s							
POLO	**Lamas de Olo**	**4.69**	**75**	*e*Pn	**Pn**	**07 16 42.0**	**+1.3**	
POLO				*e*Sn	**Sn**	**07 17 33.9**	**-1.3**	
	1.7nm,0.2s							
MTE	**Manteigas**	**4.80**	**87**	*e*Sn	**Sn**	**07 17 36.3**	**-1.5**	
MTE	**Manteigas**	**4.80**	**87**	Sn	**Sn**	**07 17 36.3**	**-1.5**	
MTE	**Manteigas**	**4.80**	**87**	Sn	**Sn**	**07 17 36.3**	**-1.5**	
EVO	**Evora**	**4.84**	**110**	*e*Pn	**Pn**	**07 16 44.7**	**+2.0**	
EVO				*e*Sn	**Sn**	**07 17 38.5**	**-0.3**	
EVO				A	A	07 17 43.0		
	7.1nm,0.1s							
EVO	**Evora**	**4.84**	**110**	Pn	**Pn**	**07 16 44.7**	**+2.0**	
EVO				Sn	**Sn**	**07 17 38.5**	**-0.3**	
	7.1nm,0.1s							
EVO	**Evora**	**4.84**	**110**	Pn	**Pn**	**07 16 44.7**	**+2.0**	
EVO				*e*Sn	**Sn**	**07 17 38.5**	**-0.3**	
	7.1nm,0.1s							
PTEO	**Sao Teotonio**	**4.85**	**123**	*e*Pn	**Pn**	**07 16 43.4**	**+0.6**	
PTEO				*e*Sn	**Sn**	**07 17 37.3**	**-1.7**	
PTEO				A	A	07 17 40.8		
	8.4nm,1.0s							
PTEO	**Sao Teotonio**	**4.85**	**123**	Pn	**Pn**	**07 16 43.4**	**+0.6**	
PTEO				Sn	**Sn**	**07 17 37.3**	**-1.7**	
	4.2nm,1.0s							
PTEO	**Sao Teotonio**	**4.85**	**123**	Pn	**Pn**	**07 16 43.4**	**+0.6**	
PTEO				*e*Sn	**Sn**	**07 17 37.3**	**-1.7**	
	8.4nm,1.0s							
PCBR	**Castelo Branco**	**4.89**	**94**	*e*Sn	**Sn**	**07 17 39.1**	**-0.9**	
PCBR				A	A	07 17 43.6		
	11nm,0.3s							
PCBR	**Castelo Branco**	**4.89**	**94**	Sn	**Sn**	**07 17 39.1**	**-0.9**	
	5.6nm,0.3s							
PCBR	**Castelo Branco**	**4.89**	**94**	*e*Sn	**Sn**	**07 17 39.1**	**-0.9**	
	11nm,0.3s							
EAGO	**Agolada(Pontev**	**4.96**	**58**	Pn	**Pn**	**07 16 45.3**	**+1.0**	
	2.3nm,0.1s,SNR=7.9							
EAGO				Sn	**Sn**	**07 17 39.7**	**-2.1**	
	3.4nm,0.1s,SNR=7.9							
EAGO	**Agolada(Pontev**	**4.96**	**58**	Pn	**Pn**	**07 16 45.3**	**+1.0**	
	2.3nm,0.1s,SNR=7.9							
EAGO				Sn	**Sn**	**07 17 39.7**	**-2.1**	
	3.4nm,0.1s,SNR=7.9							
MESJ	**Messejana**	**5.02**	**118**	*e*P	**Pn**	**07 16 46.3**	**+1.2**	
MESJ				*e*S	**Sn**	**07 17 43.2**	**+0.1**	
MESJ				AML	AML	07 17 46.0		
	comp=N,7.8nm,0.3s							
MESJ	**Messejana**	**5.02**	**118**	*e*Pn	**Pn**	**07 16 46.3**	**+1.2**	
MESJ				*e*Sn	**Sn**	**07 17 41.8**	**-1.3**	
MESJ				A	A	07 17 47.0		
	comp=N,2.7nm,0.2s							
MESJ	**Messejana**	**5.02**	**118**	Pn	**Pn**	**07 16 46.3**	**+1.2**	
MESJ				Sn	**Sn**	**07 17 41.8**	**-1.3**	
	comp=N,2.7nm,0.2s							
MESJ	**Messejana**	**5.02**	**118**	Pn	**Pn**	**07 16 46.3**	**+1.2**	
MESJ				*e*Sn	**Sn**	**07 17 41.8**	**-1.3**	
	comp=N,2.7nm,0.2s							
PMRV	**Marv??o**	**5.03**	**98**	*e*Pn	**Pn**	**07 16 46.7**	**+1.4**	
PMRV				*e*Sn	**Sn**	**07 17 42.0**	**-1.5**	
PMRV				A	A	07 17 49.9		
	comp=N,5.4nm,0.7s							
PMRV	**Marv??o**	**5.03**	**98**	Pn	**Pn**	**07 16 46.7**	**+1.4**	
PMRV				Sn	**Sn**	**07 17 42.0**	**-1.5**	
	comp=N,5.4nm,0.7s							
PMRV	**Marv??o**	**5.03**	**98**	Pn	**Pn**	**07 16 46.7**	**+1.4**	
PMRV				*e*Sn	**Sn**	**07 17 42.0**	**-1.5**	
	comp=N,5.4nm,0.7s							
PESTR	**Estremoz**	**5.03**	**105**	*e*Pn	**Pn**	**07 16 46.8**	**+1.5**	
PESTR				*e*Sn	**Sn**	**07 17 41.8**	**-1.7**	
PESTR				A	A	07 17 46.0		
	comp=N,3.6nm,0.3s							
PESTR	**Estremoz**	**5.03**	**105**	*e*Pn	**Pn**	**07 16 46.8**	**+1.5**	
PESTR				*e*Sn	**Sn**	**07 17 41.8**	**-1.7**	
	comp=N,3.6nm,0.3s							
MORF	**Marmelete**	**5.04**	**125**	*e*P	**Pn**	**07 16 45.7**	**+0.2**	
MORF	**Marmelete**	**5.04**	**125**	*e*Pn	**Pn**	**07 16 45.7**	**+0.2**	
MORF				*e*Sn	**Sn**	**07 17 41.8**	**-2.0**	
MORF				A	A	07 17 46.6		
	comp=N,5.5nm,0.1s							
MORF	**Marmelete**	**5.04**	**125**	Pn	**Pn**	**07 16 45.7**	**+0.2**	
MORF				Sn	**Sn**	**07 17 41.8**	**-2.0**	
	comp=N,5.5nm,0.1s							
MORF	**Marmelete**	**5.04**	**125**	Pn	**Pn**	**07 16 45.7**	**+0.2**	
MORF				*e*Sn	**Sn**	**07 17 41.8**	**-2.0**	
	comp=N,5.5nm,0.1s							
PFVI	**Vila Bisbo**	**5.04**	**128**	*e*Pn	**Pn**	**07 16 45.5**	**+0.1**	
PFVI				*e*Sn	**Sn**	**07 17 40.7**	**-3.1**	
PFVI				A	A	07 17 49.4		
	comp=N,8.9nm,1.0s							
PFVI	**Vila Bisbo**	**5.04**	**128**	Pn	**Pn**	**07 16 45.5**	**+0.1**	
	comp=N,4.0nm,0.1s,SNR=11							
PFVI				Sn	**Sn**	**07 17 41.7**	**-2.1**	
	comp=N,3.7nm,0.1s,SNR=7.9							
PFVI	**Vila Bisbo**	**5.04**	**128**	Pn	**Pn**	**07 16 45.5**	**+0.1**	
	comp=N,4.0nm,0.1s,SNR=11							
PFVI				Sn	**Sn**	**07 17 41.7**	**-2.1**	
	comp=N,3.7nm,0.1s,SNR=7.9							
PBEJ	**Beja**	**5.17**	**114**	*e*Sn	**Sn**	**07 17 47.1**	**+0.3**	
PBEJ	**Beja**	**5.17**	**114**	Sn	**Sn**	**07 17 47.1**	**+0.3**	
PBEJ	**Beja**	**5.17**	**114**	Sn	**Sn**	**07 17 47.1**	**+0.3**	
MVO	**Moncorvo**	**5.23**	**79**	*e*Sn	**Sn**	**07 17 45.5**	**-2.9**	
MVO				A	A	07 17 52.3		
	comp=N,9.5nm,0.3s							
MVO	**Moncorvo**	**5.23**	**79**	Pn	**Pn**	**07 16 49.0**	**+0.9**	
	comp=N,1.0nm,0.1s,SNR=7.9							
MVO				Sn	**Sn**	**07 17 47.5**	**-0.9**	
	comp=N,2.2nm,0.1s,SNR=7.9							
MVO	**Moncorvo**	**5.23**	**79**	Pn	**Pn**	**07 16 49.0**	**+0.9**	
	comp=N,1.0nm,0.1s,SNR=7.9							
MVO				Sn	**Sn**	**07 17 47.5**	**-0.9**	
	comp=N,2.2nm,0.1s,SNR=7.9							
PCVE	**Castro Verde**	**5.25**	**119**	*e*Pn	**Pn**	**07 16 49.5**	**+1.2**	
PCVE				*e*Sn	**Sn**	**07 17 47.1**	**-1.8**	
PCVE				A	A	07 17 52.4		
	comp=N,3.1nm,0.4s							
PCVE	**Castro Verde**	**5.25**	**119**	Pn	**Pn**	**07 16 49.5**	**+1.2**	
PCVE				Sn	**Sn**	**07 17 47.1**	**-1.8**	
	comp=N,3.1nm,0.4s							
PCVE	**Castro Verde**	**5.25**	**119**	Pn	**Pn**	**07 16 49.5**	**+1.2**	
PCVE				*e*Sn	**Sn**	**07 17 47.1**	**-1.8**	
	comp=N,3.1nm,0.4s							
EBAD	**Badajoz**	**5.49**	**104**	Pn	**Pn**	**07 16 53.1**	**+1.5**	
	comp=N,2.7nm,0.1s,SNR=15							
EBAD				Sn	**Sn**	**07 17 53.2**	**-1.6**	
	comp=N,4.5nm,0.1s,SNR=12							
EBAD	**Badajoz**	**5.49**	**104**	Pn	**Pn**	**07 16 53.1**	**+1.5**	
	comp=N,2.7nm,0.1s,SNR=15							
EBAD				Sn	**Sn**	**07 17 53.2**	**-1.6**	
	comp=N,4.5nm,0.1s,SNR=12							
PBDV	**Barranco-do-Ve**	**5.54**	**122**	*e*Pn	**Pn**	**07 16 53.7**	**+1.4**	
PBDV				*e*Sn	**Sn**	**07 17 54.2**	**-1.8**	
PBDV				A	A	07 18 01.3		
	comp=N,3.6nm,0.5s							
PBDV	**Barranco-do-Ve**	**5.54**	**122**	Pn	**Pn**	**07 16 53.7**	**+1.4**	
PBDV				Sn	**Sn**	**07 17 54.2**	**-1.8**	
	comp=N,3.6nm,0.5s							
PBDV	**Barranco-do-Ve**	**5.54**	**122**	Pn	**Pn**	**07 16 53.7**	**+1.4**	
PBDV				*e*Sn	**Sn**	**07 17 54.2**	**-1.8**	
	comp=N,3.6nm,0.5s							
PBRG	**Braganca**	**5.55**	**72**	*e*Pn	**Pn**	**07 16 54.3**	**+1.8**	
PBRG				*e*Sn	**Sn**	**07 17 54.3**	**-2.1**	
PBRG				A	A	07 18 02.6		
	comp=N,5.2nm,0.4s							
PBRG	**Braganca**	**5.55**	**72**	Pn	**Pn**	**07 16 54.3**	**+1.8**	
PBRG				Sn	**Sn**	**07 17 54.3**	**-2.1**	
	comp=N,2.6nm,0.4s							
PBRG	**Braganca**	**5.55**	**72**	Pn	**Pn**	**07 16 54.3**	**+1.8**	
PBRG				*e*Sn	**Sn**	**07 17 54.3**	**-2.1**	
	comp=N,5.2nm,0.4s							
ECAL	**Calabor**	**5.59**	**71**	Pn	**Pn**	**07 16 54.6**	**+1.6**	
	comp=N,1.5nm,0.1s,SNR=6.8							
ECAL				Sn	**Sn**	**07 17 55.1**	**-2.2**	
	comp=N,3.0nm,0.1s,SNR=5.6							
ECAL	**Calabor**	**5.59**	**71**	Pn	**Pn**	**07 16 54.6**	**+1.6**	
	comp=N,1.5nm,0.1s,SNR=6.8							
ECAL				Sn	**Sn**	**07 17 55.1**	**-2.2**	
	comp=N,3.0nm,0.1s,SNR=5.6							
PVAQ	**Vaqueiros**	**5.59**	**120**	*e*Pn	**Pn**	**07 16 54.3**	**+1.4**	
PVAQ				*e*Sn	**Sn**	**07 17 55.6**	**-1.6**	
PVAQ				A	A	07 18 03.7		
	comp=N,2.7nm,0.3s							
PVAQ	**Vaqueiros**	**5.59**	**120**	Pn	**Pn**	**07 16 54.3**	**+1.4**	
PVAQ				Sn	**Sn**	**07 17 55.6**	**-1.6**	
	comp=N,2.7nm,0.3s							
PVAQ	**Vaqueiros**	**5.59**	**120**	Pn	**Pn**	**07 16 54.3**	**+1.4**	
PVAQ				*e*Sn	**Sn**	**07 17 55.6**	**-1.6**	
	comp=N,2.7nm,0.3s							
EGRO	**El Granado**	**5.68**	**117**	Pn	**Pn**	**07 16 56.0**	**+1.9**	
	comp=N,1.7nm,0.2s,SNR=11							
EGRO				Sn	**Sn**	**07 17 59.2**	**-0.1**	
	comp=N,0.6nm,0.1s,SNR=7.9							
EGRO	**El Granado**	**5.68**	**117**	Pn	**Pn**	**07 16 56.0**	**+1.9**	
	comp=N,1.7nm,0.2s,SNR=11							
EGRO				Sn	**Sn**	**07 17 59.2**	**-0.1**	
	comp=N,0.6nm,0.1s,SNR=7.9							
PBAR	**Barrancos**	**5.69**	**110**	*e*Pn	**Pn**	**07 16 56.1**	**+1.8**	
PBAR				*e*Sn	**Sn**	**07 17 58.1**	**-1.5**	
PBAR	**Barrancos**	**5.69**	**110**	Pn	**Pn**	**07 16 56.1**	**+1.8**	
PBAR				Sn	**Sn**	**07 17 58.1**	**-1.5**	
PBAR	**Barrancos**	**5.69**	**110**	Pn	**Pn**	**07 16 56.1**	**+1.8**	
PBAR				Sn	**Sn**	**07 17 58.1**	**-1.5**	
EPON	**Pontenova**	**5.82**	**57**	Pn	**Pn**	**07 16 57.5**	**+1.4**	
	comp=N,0.6nm,0.1s,SNR=7.4							
EPON				Sn	**Sn**	**07 18 00.6**	**-2.2**	
	comp=N,1.2nm,0.1s,SNR=7.9							
EPON	**Pontenova**	**5.82**	**57**	Pn	**Pn**	**07 16 57.5**	**+1.4**	
	comp=N,0.6nm,0.1s,SNR=7.4							
EPON				Sn	**Sn**	**07 18 00.6**	**-2.2**	
	comp=N,1.2nm,0.1s,SNR=7.9							
EPLA	**Plasencia**	**5.94**	**90**	Pn	**Pn**	**07 16 59.6**	**+1.9**	
	comp=N,0.8nm,0.1s,SNR=7.9							
EPLA				Sn	**Sn**	**07 18 04.5**	**-1.3**	
	comp=N,2.0nm,0.1s,SNR=7.9							
EPLA	**Plasencia**	**5.94**	**90**	Pn	**Pn**	**07 16 59.6**	**+1.9**	
	comp=N,0.8nm,0.1s,SNR=7.9							
EPLA				Sn	**Sn**	**07 18 04.5**	**-1.3**	
	comp=N,2.0nm,0.1s,SNR=7.9							
EMIN	**Mina Concepcio**	**6.13**	**112**	Pn	**Pn**	**07 17 02.2**	**+1.9**	
	comp=N,0.6nm,0.1s,SNR=11							
EMIN				Sn	**Sn**	**07 18 09.6**	**-0.8**	
	comp=N,0.4nm,0.2s,SNR=7.9							
EMIN	**Mina Concepcio**	**6.13**	**112**	Pn	**Pn**	**07 17 02.2**	**+1.9**	
	comp=N,0.6nm,0.1s,SNR=11							
EMIN				Sn	**Sn**	**07 18 09.6**	**-0.8**	
	comp=N,0.4nm,0.2s,SNR=7.9							
ECAB	**El Cabril**	**6.91**	**106**	Pn	**Pn**	**07 17 12.7**	**+1.7**	
	comp=N,0.6nm,0.1s,SNR=10							
ECAB				Sn	**Sn**	**07 18 26.7**	**-3.0**	
	comp=N,0.3nm,0.1s,SNR=7.9							
ECAB	**El Cabril**	**6.91**	**106**	Pn	**Pn**	**07 17 12.7**	**+1.7**	
	comp=N,0.6nm,0.1s,SNR=10							
ECAB				Sn	**Sn**	**07 18 26.7**	**-3.0**	
	comp=N,0.3nm,0.1s,SNR=7.9							
EARI	**Arriondas**	**7.09**	**62**	Pn	**Pn**	**07 17 16.0**	**+2.4**	
	comp=N,1.0nm,0.2s,SNR=14							
EARI				Sn	**Sn**	**07 18 33.1**	**-1.0**	
	comp=N,0.2nm,0.2s,SNR=7.9							
EARI	**Arriondas**	**7.09**	**62**	Pn	**Pn**	**07 17 16.0**	**+2.4**	
	comp=N,1.0nm,0.2s,SNR=14							
EARI				Sn	**Sn**	**07 18 33.1**	**-1.0**	
	comp=N,0.2nm,0.2s,SNR=7.9							
ESPR	**Espera**	**7.13**	**116**	Pn	**Pn**	**07 17 17.1**	**+3.0**	
	comp=N,1.0nm,0.1s,SNR=7.9							
ESPR	**Espera**	**7.13**	**116**	Pn	**Pn**	**07 17 17.1**	**+3.0**	
	comp=N,1.0nm,0.1s,SNR=7.9							
GUD	**Guadarrama**	**7.38**	**84**	Pn	**Pn**	**07 17 19.1**	**+1.5**	
	comp=N,0.4nm,0.2s,SNR=7.9							
GUD				Sn	**Sn**	**07 18 39.5**	**-2.0**	
	comp=N,0.0nm,0.2s,SNR=7.9							
GUD	**Guadarrama**	**7.38**	**84**	Pn	**Pn**	**07 17 19.1**	**+1.5**	
	comp=N,0.4nm,0.2s,SNR=7.9							
GUD				Sn	**Sn**	**07 18 39.5**	**-2.0**	
	SNR=7.9							
EADA	**Adamuz**	**7.49**	**104**	Pn	**Pn**	**07 17 20.3**	**+1.2**	
	comp=N,4.0nm,0.1s,SNR=29							
EADA				Sn	**Sn**	**07 18 40.7**	**-3.4**	
	comp=N,0.4nm,0.1s,SNR=7.9							
EADA	**Adamuz**	**7.49**	**104**	Pn	**Pn**	**07 17 20.3**	**+1.2**	
	comp=N,4.0nm,0.1s,SNR=29							
EADA				Sn	**Sn**	**07 18 40.7**	**-3.4**	
	comp=N,0.4nm,0.1s,SNR=7.9							
ESDC	**Sonseca Array**	**7.60**	**92**	Pn	**Pn**	**07 17 22.5**	**+1.9**	
	comp=N,1.1nm,0.1s,baz=276,slow=13,SNR=10							
ESDC				Sn	**Sn**	**07 18 44.2**	**-2.6**	
	comp=N,0.3nm,0.3s,baz=273,slow=23,SNR=4.6							
ESDC	**Sonseca Array**	**7.60**	**92**	Pn	**Pn**	**07 17 22.5**	**+1.9**	
	comp=N,1.1nm,0.1s,slow=13,SNR=10							
ESDC				Sn	**Sn**	**07 18 44.2**	**-2.6**	
	comp=N,0.3nm,0.3s,slow=23,SNR=4.6							

IDC 07 07:33:14.8±2.0, 18°.78S×167°.30E, h0km, mb3.7/3, mb1 3.9/4, mb1mx3.7/26, mbtmp3.6/4, ML3.2/1, Error ellipse: s-maj=52.7km s-min=33.8km az=127.0, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**3.37**	**194**	Pn	Pn	07 34 08.5	-0.4
	2.4nm,0.3s,baz=11,slow=5.5,SNR=20						
DZM				Sn	Sn	07 34 45.6	-4.1
	4.8nm,0.3s,baz=124,slow=22,SNR=9.1						
WRA	**Warramunga Arr**	**31.09**	**262**	P	P	07 39 35.0	-0.2
	0.3nm,0.7s,baz=89,slow=8.5,SNR=2.9						
ASAR	**Alice Springs**	**31.46**	**255**	P	P	07 39 38.5	+0.1
	1.3nm,0.8s,baz=84,slow=8.7,SNR=14						
ILAR	**Eielson Array**	**90.35**	**18**	P	P	07 46 17.4	0.0
	0.4nm,0.6s,baz=228,slow=5.1,SNR=5.2						

*CSEM **07** 07:44:05.5, 40°.72N×30°.40E, h9km, MD2.6*

ISK 07 07:44:05.5, 40°.72N×30°.40E, h9km, MD2.6, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GULT	**Gulveren**	**0.30**	**163**	*e*PG	Pb	07 44 12.5	-0.5
GULT				*e*SG	Sg	07 44 16.2	+0.8
GULT	**Gulveren**	**0.30**	**163**	*e*Pg	Pb	07 44 12.5	-0.5
GULT				*e*Sg	Sg	07 44 16.2	+0.8
HRT	**Hereke**	**0.57**	**281**	*e*PG	Pg	07 44 16.7	+0.2
HRT	**Hereke**	**0.57**	**281**	*e*Pg	Pg	07 44 16.7	+0.2
MDUB	**Mudurnu**	**0.65**	**112**	*e*PG	Pg	07 44 18.3	+0.1
MDUB	**Mudurnu**	**0.65**	**112**	*e*Pg	Pg	07 44 18.3	+0.1
IZI	**Iznik**	**0.80**	**242**	*e*PG	Pb	07 44 21.5	-0.1
IZI	**Iznik**	**0.80**	**242**	*e*Pg	Pb	07 44 21.5	-0.1
KLYT	**Kilyos**	**1.16**	**298**	*e*PN	Pn	07 44 28.0	+0.1
KLYT	**Kilyos**	**1.16**	**298**	*e*Pn	Pn	07 44 28.0	+0.1
ARMT	**Armutlu**	**1.18**	**263**	*e*PN	Pn	07 44 28.5	+0.3
ARMT	**Armutlu**	**1.18**	**263**	*e*Pn	Pn	07 44 28.5	+0.3
TVSB	**Tavsanli**	**1.46**	**210**	*e*PN	Pb	07 44 32.6	-0.2
TVSB	**Tavsanli**	**1.46**	**210**	*e*Pn	Pb	07 44 32.6	-0.2
CTKS	**Kestanelik-??a**	**1.52**	**291**	*e*PN	Pn	07 44 33.4	+0.5
CTKS	**Kestanelik-??a**	**1.52**	**291**	*e*Pn	Pn	07 44 33.4	+0.5

*ISK **07** 07:44:58.9, 38°.35N×25°.28E, h10km, MD2.8*
*ISCJB **07** 07:44:59.6±0.8, 38°.37N±0°.03×25°.32E±0°.03, h10km±7km, Error ellipse: s-maj=5.2km s-min=3.4km az=160.4*
*ATH **07** 07:44:59.6, 38°.38N×25°.37E, h39km±3km, ML2.2/6, Error ellipse: s-maj=3.2km s-min=1.0km az=63.0*
*CSEM **07** 07:44:59.5±0.2, 38°.36N×25°.29E, h10km, ML2.2, Error ellipse: s-maj=5.9km s-min=3.4km az=163.0*

ISC 07 07:44:59.6±1.0, 38°.37N±0°.03×25°.30E±0°.02, h14km±10km, n48, σ0°93/67, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOS	**Chios island**	**0.59**	**88**	*e*PG	**Pb**	**07 45 11.7**	**-0.1**
CHOS				*e*SG	**Sg**	**07 45 19.8**	**+0.6**
CHOS	**Chios island**	**0.59**	**88**	P	**Pb**	**07 45 11.8**	**-0.1**
CHOS				*e*Sg	**Sg**	**07 45 19.8**	**+0.6**
CHOS				S	**Sb**	**07 45 21.0**	**+0.8**
CHOS	**Chios island**	**0.59**	**88**	P	**Pb**	**07 45 11.8**	**-0.1**
CHOS				S	**Sb**	**07 45 21.0**	**+0.8**
CHOS				AML	AML	07 45 21.1	
	comp=N,411μm,0.2s						
CHOS				AML	AML	07 45 23.9	
	comp=E,503μm,0.2s						
SIGR	**SIGRI**	**0.95**	**27**	*e*PG	**Pg**	**07 45 17.9**	**-0.1**
SIGR	**SIGRI**	**0.95**	**27**	P	**Pg**	**07 45 16.3**	**-1.7**
SIGR	**SIGRI**	**0.95**	**27**	*e*Pg	**Pg**	**07 45 17.9**	**-0.1**
SIGR	**SIGRI**	**0.95**	**27**	P	**Pg**	**07 45 16.3**	**-1.7**
SIGR				S	**Sg**	**07 45 28.2**	**-2.2**
SIGR				AML	AML	07 45 31.6	
	comp=E,201μm,0.3s						
SIGR				AML	AML	07 45 32.3	
	comp=N,325μm,0.3s						
EREA	**Eretria**	**1.07**	**273**	P	**Pb**	**07 45 20.3**	**+0.3**
EREA				S	**Sn**	**07 45 35.2**	**+0.2**
EREA	**Eretria**	**1.07**	**273**	P	**Pb**	**07 45 20.3**	**+0.3**
EREA				S	**Sn**	**07 45 35.2**	**+0.2**
EREA				AML	AML	07 45 37.0	
	comp=E,210μm,0.4s						
EREA				AML	AML	07 45 37.8	
	comp=N,277μm,0.4s						
PRK	**Paraskevi**	**1.16**	**41**	P	**Pg**	**07 45 22.2**	**+0.2**
PRK				S	**Sb**	**07 45 37.1**	**+0.6**
PRK	**Paraskevi**	**1.16**	**41**	P	**Pg**	**07 45 22.2**	**+0.2**
PRK				S	**Sb**	**07 45 37.1**	**+0.6**
PRK				AML	AML	07 45 40.2	
	comp=N,236μm,0.4s						
PRK				AML	AML	07 45 46.4	
	comp=E,260μm,0.6s						
PTL	**Penteli**	**1.17**	**255**	P	**Pb**	**07 45 20.8**	**-0.9**
PTL				S	**Sb**	**07 45 36.6**	**-0.1**
PTL	**Penteli**	**1.17**	**255**	P	**Pb**	**07 45 20.8**	**-0.9**
PTL				S	**Sb**	**07 45 36.

ISC 07 08:20:21.8±0.8, 38°.02N±0°.07×143°.22E±0°.08, h18km, n21, σ1§19/23, mb3.5/9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	1.54	287	P	Pn	08 20 48.2	-0.1
JIO				eS	Sn	08 21 05.5	-2.3
OFUJ	Ofunato	1.61	312	P	Pn	08 20 49.5	+0.1
JMM	Marumori	1.92	266	P	Pn	08 20 52.9	-0.8
JOU	Okura	2.04	281	P	Pn	08 20 55.2	-0.1
JOM	Ohasama	2.09	315	eS	Sn	08 21 19.3	-2.3
JYK	Kaneyama	2.42	293	P	Pn	08 21 00.2	-0.3
JRG	Rokugo	2.45	305	P	Pn	08 21 00.6	-0.3
JRY	Ryogami san	3.99	241	P	Pn	08 21 22.4	+0.3
MJAR	Matsushiro Arr	4.26	251	Pn	Pn	08 21 27.5	+1.7
	1.3nm,0.3s,baz=90,slow=15,SNR=9.8						
MAT	Matsushiro	4.26	251	P	Pn	08 21 27.7	+1.9
MAT				eS	Sn	08 22 14.6	-0.5
JHJ	Hachijo jima 2	5.63	211	Pn	Pn	08 21 42.8	-1.8
	7.5nm,0.3s,baz=73,slow=19,SNR=4.3						
USRK	Ussuriysk Ar.	10.48	310	Pn	Pn	08 22 55.1	+4.0
	0.1nm,0.3s,baz=121,slow=15,SNR=2.0						
SEY	Seymchan	25.57	10	P	P	08 25 49.7	+0.3
	1.5nm,0.5s,baz=205,slow=8.2,SNR=5.2						
MKAR	Makanchi Array	44.82	302	P	P	08 28 36.9	+2.2
	0.4nm,0.6s,baz=97,slow=9.9,SNR=4.3						
ILAR	Eielson Array	47.90	33	P	P	08 28 58.3	-0.2
	0.3nm,0.6s,baz=254,slow=6.2,SNR=4.2						
WRA	Warramunga Arr	58.25	190	P	P	08 30 15.3	+0.1
	1.2nm,0.6s,baz=7.8,slow=7.1,SNR=19						
WRA				PcP	PcP	08 31 07.0	+0.6
	0.5nm,0.6s,baz=5.2,slow=4.1,SNR=5.9						
ASAR	Alice Springs	61.98	190	P	P	08 30 39.6	-1.1
	0.5nm,0.8s,baz=11,slow=6.7,SNR=6.1						
YKA	Yellowknife Ar	62.23	31	P	P	08 30 41.9	-0.2
	0.2nm,0.6s,baz=302,slow=5.9,SNR=5.4						
FINES	FINESS Array B	68.61	333	P	P	08 31 23.4	+0.1
	0.8nm,0.7s,baz=44,slow=11,SNR=4.0						
NOA	NORSAR Array B	73.83	338	P	P	08 31 55.1	+0.1
	0.2nm,0.4s,baz=30,slow=2.6,SNR=2.9						
PDAR	Pinedale Array	75.95	46	P	P	08 32 07.8	-0.1
	0.2nm,0.6s,baz=270,slow=0.9,SNR=3.5						

ISCJB 07 08:31:29.5±0.5, 39°.08N±0°.03×27°.55E±0°.04, h0km, Error ellipse: s-maj=4.0km s-min=3.7km az=177.4
CSEM 07 08:31:29.7±0.2, 39°.09N×27°.55E, h1km, MD2.7, Error ellipse: s-maj=4.9km s-min=4.3km az=67.0, Suspected Mining explosion.
DDA 07 08:31:29.8, 39°.12N×27°.57E, h7km, Md2.6, Suspected Mining explosion.
ISK 07 08:31:30.0, 39°.04N×27°.61E, h13km, MD2.7

ISC 07 08:31:29.2±0.8, 39°.12N±0°.02×27°.59E±0°.03, h0km, n32, σ0§45/48, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKHS	Akhisar	0.29	143	P	Pg	08 31 35.1	+0.3
AKHS				S	Sb	08 31 42.2	-0.6
AKHS	Akhisar	0.29	143	i P	Pg	08 31 35.1	+0.3
AKHS				i S	Sb	08 31 42.2	-0.6
AKS	Akhisar	0.29	143	ePG	Pg	08 31 35.2	+0.4
AKS	Akhisar	0.29	143	ePg	Pg	08 31 35.2	+0.4
BALY	Balya	0.62	2	P	Pg	08 31 41.0	-0.2
BALY				S	Sb	08 31 52.4	0.0
BALY	Balya	0.62	2	i P	Pg	08 31 41.0	-0.2
BALY				i S	Sb	08 31 52.4	0.0
IZM	Izmir	0.76	200	ePG	Pg	08 31 43.7	0.0
IZM	Izmir	0.76	200	ePg	Pg	08 31 43.7	0.0
DURS	Dursunbey	0.84	54	P	Pg	08 31 45.9	+0.6
DURS				S	Sn	08 32 00.6	-1.0
DURS	Dursunbey	0.84	54	i P	Pg	08 31 45.9	+0.6
DURS				i S	Sn	08 32 00.6	-1.0
BLCB	Balcova	0.84	211	ePG	Pg	08 31 45.8	+0.5
BLCB				eSG	Sg	08 31 57.1	+0.8
BLCB	Balcova	0.84	211	ePg	Pg	08 31 45.8	+0.5
BLCB				eSg	Sg	08 31 57.1	+0.8
DEMI	Demirci	0.88	94	P	Pb	08 31 48.0	+0.6
DEMI				S	Sb	08 31 59.4	-0.4
DEMI	Demirci	0.88	94	i P	Pb	08 31 48.0	+0.6
DEMI				i S	Sb	08 31 59.4	-0.4
MANT	Manisa	0.98	129	P	Pb	08 31 49.3	+0.1
MANT				S	Sn	08 32 04.4	-0.7
MANT	Manisa	0.98	129	i P	Pb	08 31 49.3	+0.1
MANT				i S	Sn	08 32 04.5	-0.7
KULA	Kula-Manisa	1.03	125	ePG	Pg	08 31 49.2	+0.3
KULA				eSG	Sg	08 32 02.9	+0.6
KULA	Kula-Manisa	1.03	125	ePg	Pg	08 31 49.2	+0.3
KULA				eSg	Sg	08 32 02.9	+0.6
AYDB	Zeytinkoy-Aydi	1.19	168	ePN	Pg	08 31 52.1	+0.1
AYDB				eSN	Sg	08 32 07.7	+0.3
AYDB	Zeytinkoy-Aydi	1.19	168	ePn	Pg	08 31 52.1	+0.1
AYDB				eSn	Sg	08 32 07.7	+0.3
SIGR	SIGRI	1.35	275	ePN	Pn	08 31 55.2	-0.1
SIGR	SIGRI	1.35	275	ePn	Pn	08 31 55.2	-0.1
CHOS	Chios island	1.40	239	ePN	Pg	08 31 56.0	-0.1
CHOS	Chios island	1.40	239	ePn	Pg	08 31 56.0	-0.1
LPK	Lapseki	1.41	333	ePN	Pb	08 31 56.6	+0.2
LPK	Lapseki	1.41	333	ePn	Pb	08 31 56.6	+0.2
TVSB	Tavsanli	1.49	76	ePN	Pn	08 31 57.1	-0.2
TVSB	Tavsanli	1.49	76	ePn	Pn	08 31 57.2	-0.2
GELI	Tayfur-Gelibol	1.54	327	ePN	Pg	08 31 59.3	+0.5
GELI	Tayfur-Gelibol	1.54	327	ePn	Pg	08 31 59.3	+0.5
RKY	Sarkoy-Tekirda	1.60	349	ePN	Pg	08 32 00.1	+0.1
RKY	Sarkoy-Tekirda	1.60	349	ePn	Pg	08 32 00.0	+0.1

CSEM 07 08:32:36.8±0.5, 36°.49N×21°.33E, h2km, ML2.6, Error ellipse: s-maj=9.5km s-min=5.8km az=31.0
ATH 07 08:32:36.7, 36°.49N×21°.31E, h21km±1km, ML2.6/7, Error ellipse: s-maj=3.2km s-min=1.3km az=39.0
THE 07 08:32:36.6, 36°.48N×21°.30E, h0km±4km, ML2.8/5, Error ellipse: s-maj=5.2km s-min=1.6km az=212.0

ISC 07 08:32:36.8±1.7, 36°.52N±0°.06×21°.31E±0°.04, h1km±10km, n66, σ0§84/85, Southern Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PYL	PYLOS	0.51	42	P	Pg	08 32 46.9	+0.3
PYL				S	Sg	08 32 54.5	+1.2
PYL	PYLOS	0.51	42	P	Pg	08 32 46.5	-0.1
PYL				S	Sg	08 32 54.5	+1.2
PYL	PYLOS	0.51	42	P	Pg	08 32 46.5	-0.1
PYL				S	Sb	08 32 56.8	+0.2
PYL				AML	AML	08 32 59.1	
	comp=N,1209μm,0.3s						
PYL				AML	AML	08 32 59.5	
	comp=E,1192μm,0.3s						
ITM	Ithomi	0.83	36	P	Pg	08 32 52.7	+0.1
ITM				S	Sb	08 33 06.3	+0.7
ITM	Ithomi	0.83	36	P	Pg	08 32 52.7	+0.1
ITM				S	Sb	08 33 05.3	-0.3
ITM	Ithomi	0.83	36	P	Pg	08 32 52.5	-0.1
ITM				S	Sb	08 33 05.3	-0.3
ITM				AML	AML	08 33 09.9	
	comp=E,739μm,0.4s						
ITM				AML	AML	08 33 10.1	
	comp=N,799μm,0.4s						
AMT	Artemida-Makis	1.06	17	P	Pg	08 32 57.8	+0.6
AMT				S	Sn	08 33 14.3	-0.1
AMT	Artemida-Makis	1.06	17	P	Pb	08 32 58.1	+0.1
AMT				S	Sg	08 33 10.6	-0.4
AMT	Artemida-Makis	1.06	17	P	Pb	08 32 58.1	+0.1
AMT				S	Sg	08 33 10.6	-0.4
AMT				AML	AML	08 33 24.9	
	comp=E,689μm,0.5s						
AMT				AML	AML	08 33 25.7	
	comp=N,922μm,0.5s						
VLX	Vlachokerasia	1.21	45	P	Pg	08 33 00.1	+0.1
VLX				S	Sn	08 33 18.0	0.0
VLX	Vlachokerasia	1.21	45	P	Pg	08 33 00.4	+0.4
VLX				S	Sb	08 33 17.5	+0.8
VLX	Vlachokerasia	1.21	45	P	Pg	08 33 00.4	+0.4
VLX				S	Sb	08 33 17.5	+0.8
VLX				AML	AML	08 33 19.4	
	comp=E,524μm,0.5s						
VLX				AML	AML	08 33 19.5	
	comp=N,679μm,0.6s						
ZKS	Zakynthos	1.25	341	P	Pg	08 33 00.1	-0.7
ZKS				S	Sn	08 33 19.4	+0.4
ZKS	Zakynthos	1.25	341	P	Pg	08 33 00.1	-0.7
ZKS				S	Sn	08 33 19.4	+0.4
ZKS	Zakynthos	1.25	341	P	Pg	08 32 58.9	-1.9
ZKS				S	Sn	08 33 19.4	+0.4
ZKS				AML	AML	08 33 31.4	
	comp=N,587μm,0.4s						
ZKS				AML	AML	08 33 31.6	
	comp=E,783μm,0.6s						
VLI	Veliai	1.32	81	P	Pg	08 33 02.0	-0.1
VLI	Veliai	1.32	81	P	Pg	08 33 02.0	-0.1
VLI				S	Sn	08 33 21.6	+0.9
VLI	Veliai	1.32	81	P	Pg	08 33 01.3	-0.9
VLI				S	Sn	08 33 21.6	+0.9
VLI				AML	AML	08 33 29.6	
	comp=N,294μm,1.1s						
VLI				AML	AML	08 33 40.2	
	comp=E,261μm,1.0s						
KYTH	Kithira	1.42	100	P	Pn	08 33 03.6	-0.2
KYTH	Kithira	1.42	100	P	Pn	08 33 03.6	-0.2
KYTH	Kithira	1.42	100	P	Pn	08 33 03.6	-0.2
DRO	Drossia	1.47	12	P	Pn	08 33 04.6	+0.1
DRO	Drossia	1.47	12	P	Pn	08 33 04.6	+0.1
DRO	Drossia	1.47	12	P	Pn	08 33 04.8	+0.3
RLS	Riolos of Patr	1.54	5	P	Pb	08 33 06.1	-0.1
KFL	Anninata	1.65	345	P	Pb	08 33 08.2	+0.3
KFL	Anninata	1.65	345	P	Pb	08 33 08.2	+0.3
KLV	Kalavryta, Ach	1.67	23	P	Pn	08 33 06.6	-0.6
KLV	Kalavryta, Ach	1.67	23	P	Pn	08 33 06.6	-0.6
KLV				S	Sn	08 33 28.1	-1.2
KLV	Kalavryta, Ach	1.67	23	P	Pn	08 33 06.2	-1.0
KLV				S	Sn	08 33 28.1	-1.2
KLV				AML	AML	08 33 43.0	
	comp=E,114μm,0.6s						
KLV				AML	AML	08 33 52.2	
	comp=N,120μm,0.9s						
AXS	Araxos	1.68	2	P	Pn	08 33 07.4	+0.1
AXS	Araxos	1.68	2	P	Pn	08 33 07.4	+0.1
KRND	KRANIDI	1.71	59	P	Pb	08 33 09.0	0.0
KRND	KRANIDI	1.71	59	P	Pb	08 33 09.0	0.0
ANKY	Antikythira Is	1.73	111	P	Pb	08 33 08.2	+0.2
ANKY	Antikythira Is	1.73	111	P	Pn	08 33 08.2	+0.2
VLS	Valsamata	1.76	341	P	Pn	08 33 07.5	-0.9
LAKA	Lakka	1.80	17	P	Pn	08 33 08.9	-0.1
LAKA	Lakka	1.80	17	P	Pn	08 33 08.9	-0.1
LAKA	Lakka	1.80	17	P	Pn	08 33 08.9	-0.1
DID	Didima	1.83	57	P	Pn	08 33 07.9	-1.5
DID	Didima	1.83	57	P	Pn	08 33 07.9	-1.5
DID	Didima	1.83	57	P	Pn	08 33 06.6	-2.9
KALE	Kalithea	1.98	19	P	Pn	08 33 12.6	+1.0
KALE	Kalithea	1.98	19	P	Pn	08 33 12.6	+1.0
SERG	Sergoula	1.99	17	P	Pn	08 33 12.2	+0.6
LTK	Loutraki	2.00	41	P	Pn	08 33 11.8	0.0
LTK	Loutraki	2.00	41	P	Pn	08 33 11.8	0.0
PDO	Prodromos	2.08	357	P	Pb	08 33 14.4	-1.0
PDO	Prodromos	2.08	357	P	Pb	08 33 14.4	-1.0
DSF	Desfina	2.13	27	P	Pn	08 33 12.3	-1.2
DSF	Desfina	2.13	27	P	Pn	08 33 12.3	-1.2
LKD2	Lefkada island	2.33	347	P	Pn	08 33 17.1	+0.8
LKD2	Lefkada island	2.33	347	P	Pn	08 33 17.1	+0.8
VLY	Voula,Athens	2.39	55	P	Pn	08 33 15.0	-2.1
VLY	Voula,Athens	2.39	55	P	Pn	08 33 15.0	-2.1
DSL	Palaion Diasel	2.62	356	P	Pn	08 33 20.4	+0.1
DSL	Palaion Diasel	2.62	356	P	Pn	08 33 20.4	+0.1
AGG	Agios Georgios	2.63	18	P	Pn	08 33 20.7	+0.3
AGG	Agios Georgios	2.63	18	P	Pn	08 33 20.7	+0.3
XOR	Xorichti	3.21	27	P	Pn	08 33 27.4	-1.0
XOR	Xorichti	3.21	27	P	Pn	08 33 27.4	-1.0
KPRO	Kipourio	3.44	1	P	Pn	08 33 32.9	+1.4
KPRO	Kipourio	3.44	1	P	Pn	08 33 32.9	+1.4
NEST	Nestorio	3.90	357	P	Pn	08 33 38.6	+0.7
NEST	Nestorio	3.90	357	P	Pn	08 33 38.6	+0.7

ISCJB 07 08:33:02.1±0.6, 24°.77N±0°.05×122°.52E±0°.02, h6km±5km, Error ellipse: s-maj=9.0km s-min=2.8km az=11.5
JMA 07 08:33:03.0±0.1, 24°.70N×122°.50E, h13km±3km, M1.8
TAP 07 08:33:04.1, 24°.71N×122°.42E, h30km±1km, ML2.8, D

ISC 07 08:33:02.3±1.1, 24°.76N±0°.06×122°.51E±0°.02, h13km±9km, n22, σ0§58/33, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JYNG	Yonagunijimaku	0.50	128	P	Pg	08 33 12.4	+0.2
JYNG				S	Sg	08 33 19.2	+0.3
EGS		0.53	279	eP	Pb	08 33 14.2	+0.7
	baz=283						
TWB1	Santiao Chiao	0.53	297	eP	Pb	08 33 13.9	+0.4
	baz=318						
YOJ	Yonaguni jima	0.55	123	P	Pg	08 33 13.2	+0.2
YOJ				S	Sg	08 33 20.2	-0.1
TWC	Suao	0.62	256	P	Pg	08 33 14.5	+0.1
	baz=266						
TWC				S	Sg	08 33 22.4	-0.3
	baz=266						
NWF	Wu-fen Shan	0.73	295	eP	Pg	08 33 16.9	+0.4
	baz=311						
NWF				eS	Sg	08 33 24.8	-1.3
	baz=311						
TWE	Neicheng	0.77	267	P	Pg	08 33 17.5	+0.3
	baz=270						
TWE				eS	Sg	08 33 27.0	-0.3
	baz=270						
ENA	Nanau	0.78	245	eP	Pg	08 33 17.4	0.0
	baz=252						
ENA				eS	Sg	08 33 27.4	-0.1
	baz=252						
ENTT	Nioudou	0.87	262	eP	Pg	08 33 19.2	+0.1
	baz=256						
ENTT				eS	Sg	08 33 29.9	-0.6
	baz=256						
TWY	Chenhua	0.97	302	eP	Pn	08 33 21.9	+0.3
	baz=317						
NSK	Sanguang	1.05	266	eP	Pb	08 33 22.4	0.0
	baz=267						
NSK				eS	Sb	08 33 35.3	-0.8
	baz=267						
TWD	Chiawan	1.07	231	eP	Pg	08 33 23.6	+0.6
	baz=233						
NNS	Nan Shan	1.08	253	eP	Pb	08 33 23.0	0.0
	baz=253						
IRIF	Iriomote-Funau	1.19	111	P	Pb	08 33 25.2	+0.5
IRIF				S	Sb	08 33 38.3	-1.7
WHF	Hehuan Shan	1.29	242	eP	Pb	08 33 27.1	+0.4
	baz=240						
WHF				eS	Sn	08 33 44.1	+0.3
	baz=240						
TWT	Tachien	1.32	248	eP	Pb	08 33 27.8	+0.8
	baz=247						
TWT				eS	Sn	08 33 44.9	+0.8
	baz=247						
HATJ	Hateruma jima	1.38	121	S	Sn	08 33 44.7	-0.6
NSTT	Nanjuang	1.38	265	eP	Pb	08 33 28.2	+0.3
	baz=280						
JKRS	Kuro-shima	1.46	111	S	Sb	08 33 47.9	0.0
JIJ	Ishigaki jima	1.54	105	S	Sn	08 33 49.4	+0.1
WDT	Danda	1.61	232	eP	Pb	08 33 32.0	-0.1
	baz=218						
CHN5	Tsauling	2.04	236	eP	Pb	08 33 38.8	-0.5
	baz=220						

ISCJB 07 08:33:50.0±0.5, 39°.05N×0°.03×28°.03E±0°.04, h0km, Error ellipse: s-maj=4.2km s-min=3.7km az=10.6
ISK 07 08:33:49.4, 39°.06N×28°.06E, h13km, MD2.5
CSEM 07 08:33:50.1±0.3, 39°.05N×28°.03E, h1km, MD2.5, Error ellipse: s-maj=6.3km s-min=5.3km az=108.0, Suspected Mining explosion.
DDA 07 08:33:50.5, 39°.03N×28°.05E, h7km, Md2.5, Suspected Mining explosion.

ISC 07 08:33:49.6±0.9, 39°.05N±0°.02×28°.11E±0°.03, h0km, n22, σ0§51/36, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKHS	Akhisar	0.29	233	P	Pg	08 33 55.3	+0.2
AKHS				S	Sg	08 33 59.7	+1.0
AKHS	Akhisar	0.29	233	i P	Pg	08 33 55.3	+0.2
AKHS				i S	Sg	08 33 59.7	+1.0
AKS	Akhisar	0.29	233	ePG	Pg	08 33 55.3	+0.2
AKS	Akhisar	0.29	233	ePg	Pg	08 33 55.3	+0.2
DEMI	Demirci	0.48	91	P	Pb	08 34 01.2	+0.3
DEMI				S	Sb	08 34 08.0	-0.5
DEMI	Demirci	0.48	91	i P	Pb	08 34 01.2	+0.3
DEMI				i S	Sb	08 34 08.0	-0.5
DURS	Dursunbey	0.62	28	P	Pb	08 34 02.9	-0.4
DURS				S	Sb	08 34 13.5	+0.9
DURS	Dursunbey	0.62	28	i P	Pb	08 34 02.9	-0.4
DURS				i S	Sb	08 34 13.5	+0.9
MANT	Manisa	0.66	148	P	Pb	08 34 04.3	+0.1
MANT				S	Sb	08 34 13.2	-0.9
MANT	Manisa	0.66	148	i P	Pb	08 34 04.3	+0.1
MANT				i S	Sb	08 34 13.2	-0.9
KULA	Kula-Manisa	0.69	141	ePG	Pb	08 34 03.9	-0.7
KULA				eSG	Sb	08 34 14.2	-0.5
KULA	Kula-Manisa	0.69	141	ePg	Pb	08 34 03.9	-0.7
KULA				eSg	Sb	08 34 14.2	-0.5
BALY	Balya	0.78	331	P	Pb	08 34 05.5	-0.6
BALY				S	Sg	08 34 14.6	-0.1
BALY	Balya	0.78	331	i P	Pb	08 34 05.5	-0.6
BALY				i S	Sg	08 34 14.6	-0.1
IZM	Izmir	0.93	225	ePG	Pg	08 34 07.3	-0.1
IZM	Izmir	0.93	225	ePg	Pg	08 34 07.3	-0.1
BLCB	Balcova	1.07	232	ePG	Pg	08 34 09.8	-0.2
BLCB	Balcova	1.07	232	ePg	Pg	08 34 09.8	-0.2
AYDB	Zeytinkoy-Aydi	1.12	189	ePN	Pg	08 34 11.2	+0.2
AYDB				eSN	Sb	08 34 27.2	+0.2
AYDB	Zeytinkoy-Aydi	1.12	189	ePn	Pg	08 34 11.2	+0.2
AYDB				eSn	Sb	08 34 27.2	+0.2
ORLT	Orhaneli	1.17	31	ePN	Pg	08 34 12.1	+0.2
ORLT	Orhaneli	1.17	31	ePn	Pg	08 34 12.1	+0.2

NIED 07 08:35:00, 24°.40N×121°.90E, h5km, Mw4.2 Best double couple: M0=1.95000×10^15 NP1:φ=286.00000°, δ=43.00000°, λ=-21.00000°. NP2:φ=32.00000°, δ=76.00000°, λ=-131.00000°.
ISCJB 07 08:35:32.3±0.3, 24°.48N±0°.01×122°.07E±0°.01, h1km±2km, mb3.9/15, MS3.2/9, Error ellipse: s-maj=2.4km s-min=1.7km az=155.4
NEIC 07 08:35:32.9±1.0, 24°.37N×121°.99E, h1km±8km, mb4.2/4, Error ellipse: s-maj=9.6km s-min=6.6km az=151.0
NEIC Felt at Hsinchu.
BJI 07 08:35:32.6, 24°.54N×121°.97E, h6km, mb4.3/15, mB4.4/9, ML4.1/8, Ms4.1/17, Ms7 4.0/12
JMA 07 08:35:33.0±0.1, 24°.42N×121°.95E, h12km, M4.2
TAP 07 08:35:33.4, 24°.47N×121°.97E, h13km, ML4.5, B
IDC 07 08:35:47.3±5.1, 24°.44N×122°.07E, h132km±49km, mb3.5/11, mb1 3.6/12, mb1mx3.4/42, mbtmp3.9/12, MS3.2/13, Ms1 3.3/13, ms1mx3.1/41, Error ellipse: s-maj=22.9km s-min=14.3km az=73.0

ISC 07 08:35:33.0±1.1, 24°.44N±0°.02×122°.03E±0°.02, h2km±7km, n130, σ1§41/182, mb3.9/15, MS3.2/9, 17C-16D, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWC	Suao	0.24	316	⇓iP	Pg	08 35 37.6	-0.1
	baz=326						
ENA	Nanau	0.27	268	⇑iP	Pg	08 35 38.0	-0.1
	baz=259						
EHP	Heping Village	0.29	245	⇓P	Pg	08 35 39.7	+1.0
	baz=232						
EHP				eS	Sg	08 35 43.6	+1.1
	baz=232						
EGS		0.42	347	⇓iP	Pg	08 35 41.5	+0.4
	baz=349						
ILA	Ilan	0.42	322	⇓iP	Pg	08 35 41.3	+0.2
	baz=319						
ILA				S	Sg	08 35 46.7	+0.1
	baz=319						
TWE	Neicheng	0.44	310	⇓iP	Pg	08 35 41.2	-0.2
	baz=318						
TWE				S	Sg	08 35 45.8	-1.4
	baz=318						
ENTT	Nioudou	0.47	296	⇓iP	Pg	08 35 41.8	-0.3
	baz=295						
NACB	Ninganchiao	0.48	237	ePg	Pg	08 35 41.9	-0.3
NACB				eSg	Sg	08 35 48.4	0.0
TWD	Chiawan	0.53	228	⇑iP	Pg	08 35 43.4	+0.1
	baz=227						
TWD				S	Sg	08 35 50.5	+0.3
	baz=227						
TWB1	Santiao Chiao	0.57	356	⇓iP	Pg	08 35 44.2	+0.2
	baz=353						
TWB1				i S	Sg	08 35 51.5	+0.1
	baz=353						
HWA	Hwalien	0.60	221	⇑eP	Pb	08 35 45.8	-0.5
	baz=221						
NNS	Nan Shan	0.60	271	⇑iP	Pg	08 35 44.1	-0.4
	baz=267						
YHNB	Yeheng	0.64	291	ePg	Pg	08 35 44.7	-0.7
YHNB				eSg	Sg	08 35 51.8	-1.9
NSK	Sanguang	0.66	291	⇓iP	Pg	08 35 45.4	-0.3
	baz=296						
NSK				eS	Sg	08 35 51.3	-3.0
	baz=296						
NWF	Wu-fen Shan	0.67	340	⇓iP	Pg	08 35 46.4	+0.4
	baz=332						
NWF				i S	Sg	08 35 55.0	+0.2
	baz=332						
TATO	Taipei	0.73	317	ePg	Pg	08 35 46.7	-0.3
TATO				eSg	Sg	08 35 56.0	-0.6
ESF	Shoufeng Towns	0.74	221	eP	Pb	08 35 47.9	-0.8
	baz=222						
TAP1	Taipei	0.76	322	⇓iP	Pg	08 35 48.0	+0.4
	baz=315						
TAP1				S	Sg	08 35 56.9	-0.5
	baz=315						
WHF	Hehuan Shan	0.76	248	⇑iP	Pg	08 35 47.4	-0.3
	baz=244						
WHF				eS	Sg	08 35 56.9	-0.5
	baz=244						
TAP	Taipei	0.77	322	P	Pg	08 35 48.0	+0.2
	baz=315						
TAP				S	Sg	08 35 57.2	-0.6
	baz=315						
TWT	Tachien	0.80	257	⇑iP	Pg	08 35 48.4	0.0
	baz=254						
TWT				eS	Sg	08 35 58.3	-0.6
	baz=254						
ESL	Shilin	0.83	222	⇑P	Pg	08 35 48.7	-0.2
	baz=223						
ESL				eS	Sb	08 36 00.7	-1.0
	baz=223						
JYNG	Yonagunijimaku	0.83	89	P	Pb	08 35 50.1	-0.1
JYNG				S	Sg	08 36 01.2	+1.4
TWS1	Kuangyinshan	0.87	320	⇓iP	Pb	08 35 50.5	-0.3
	baz=321						
TWS1				eS	Sb	08 36 02.7	-0.2
	baz=321						
YOJ	Yonaguni jima	0.89	88	P	Pb	08 35 51.1	-0.1
YOJ				S	Sb	08 36 03.6	0.0
YOJ	Yonaguni jima	0.89	88	⇓iP	Pb	08 35 51.3	0.0
	baz=90						
YOJ				i S	Sb	08 36 03.5	-0.1
	baz=90						
YOJ	Yonaguni jima	0.89	88	ePg	Pg	08 35 50.9	+0.8
YOJ				eSn	Sn	08 36 06.2	+0.1
TWY	Chenhua	0.92	335	⇓iP	Pg	08 35 51.1	+0.3
	baz=336						
TWY				eS	Sg

YULB	Yu-li	1.24 213	ePn		Pg	08 35 55.9	-0.9
YULB			eSn		Sn	08 36 16.8	+2.1
TCU	Taichung	1.27 257	⇑iP		Pn	08 35 58.0	+0.2
	baz=263						
TCU			eS		Sn	08 36 16.0	+0.5
	baz=263						
TWF1	Yuli	1.27 212	eP		Pg	08 35 56.1	-1.3
	baz=225						
WNT	Mingjian	1.35 246	eP		Pb	08 35 59.6	+0.5
	baz=258						
WNT			eS		Sn	08 36 18.3	+0.9
	baz=258						
YUS	Yu-Shan	1.37 227	⇑iP		Pg	08 35 58.8	-0.4
	baz=227						
YUS			eS		Sn	08 36 18.1	-0.4
	baz=227						
ALS	Alishan	1.45 231	⇓P		Pg	08 36 00.8	-0.2
	baz=230						
ALS			eS		Sn	08 36 21.2	+0.8
	baz=230						
CHKT	Chengkung	1.47 205	eP		Pn	08 35 59.1	-1.4
	baz=184						
CHN5	Tsauling	1.49 236	eP		Pg	08 36 01.7	0.0
	baz=237						
CHN5			eS		Sn	08 36 23.1	+1.9
	baz=237						
WGK	Gukeng	1.54 241	eP		Pg	08 36 02.5	-0.1
	baz=242						
WGK			eS		Sg	08 36 25.3	+2.8
	baz=242						
IRIF	Iriomote-Funau	1.55 93	P		Pn	08 36 00.5	-1.2
IRIF			S		Sn	08 36 20.3	-2.1
ELDTW	Lidau	1.55 217	eP		Pn	08 36 01.4	-0.4
	baz=203						
HATJ	Hateruma jima	1.66 103	P		Pn	08 36 03.0	-0.2
HATJ			S		Sn	08 36 25.6	+0.5
CHN2	Minshiung	1.69 238	⇓iP		Pg	08 36 04.9	-0.4
	baz=240						
CHN2			eS		Sg	08 36 29.0	+1.8
	baz=240						
WTCT	Ta-ch'eng	1.70 251	eP		Pb	08 36 04.6	-0.4
	baz=250						
CHN4	Tsaushan	1.70 231	P		Pb	08 36 05.0	-0.1
	baz=233						
CHN4			eS		Sg	08 36 29.0	+1.2
	baz=233						
TPUB	Ta-pu	1.71 229	ePn		Pb	08 36 04.5	-0.7
TPUB			eSn		Sg	08 36 28.6	+0.5
STYT	Tauyuan	1.72 223	eP		Pn	08 36 04.1	0.0
	baz=223						
CHY	Chiayi	1.74 238	P		Pb	08 36 05.1	-0.7
	baz=239						
CHY			eS		Sg	08 36 28.9	-0.1
	baz=239						
WTP	Ta-pu	1.76 228	eP		Pb	08 36 05.6	-0.5
	baz=228						
JKRS	Kuro-shima	1.81 96	P		Pn	08 36 04.8	-0.5
JKRS			S		Sn	08 36 27.8	-1.0
TWK	Hsinying	1.83 231	eP		Pb	08 36 07.2	-0.1
	baz=233						
TWK			eS		Sg	08 36 32.8	+0.8
	baz=233						
TWG	Pinlang	1.83 209	eP		Pn	08 36 04.3	-1.3
	baz=193						
TWG	Pinlang	1.83 209	ePn		Pn	08 36 03.7	-1.9
WSF	Szhu	1.84 245	eP		Pb	08 36 07.0	-0.4
	baz=256						
WSF			eS		Sg	08 36 31.9	-0.2
	baz=256						
CHN1	Nanshi	1.86 228	eP		Pb	08 36 07.4	-0.4
	baz=231						
CHN1			eS		Sg	08 36 33.3	+0.6
	baz=231						
SGST	Jiashian	1.89 225	⇑P		Pb	08 36 07.3	-1.0
	baz=226						
SGST			eS		Sg	08 36 33.6	-0.3
	baz=226						
JIJ	Ishigaki jima	1.93 92	P		Pn	08 36 05.5	-1.3
JIJ			S		Sn	08 36 29.6	-2.0
CHN8	Yiju	1.99 237	eP		Pb	08 36 09.5	-0.5
	baz=225						
CHN8			eS		Sb	08 36 35.7	+0.5
	baz=225						
CHN3	Shinhua	2.04 229	eP		Pn	08 36 09.4	+0.9
	baz=230						
JISG	Ishigakijimahi	2.08 85	P		Pn	08 36 07.7	-1.2
JISG			S		Sn	08 36 33.8	-1.6
SCLT	Jiali	2.10 234	eP		Pb	08 36 11.1	-0.8
	baz=237						
SCLT			eS		Sb	08 36 38.5	+0.1
	baz=237						
SSD	Sandimen	2.12 218	eP		Pb	08 36 10.8	-1.3
	baz=231						
SSD			eS		Sg	08 36 40.2	-0.9
	baz=231						
TAI1	Yung-k'ang	2.16 230	eP		Pb	08 36 12.3	-0.5
	baz=231						
TWM1	Shoushan	2.18 223	eP		Pb	08 36 13.9	+0.6
	baz=224						
SGLT	Jiouru	2.21 220	eP		Pb	08 36 13.2	-0.6
	baz=221						
EAST	Anshuo	2.31 208	eP		Pn	08 36 12.2	-0.1
	baz=195						
TAW	Tawu	2.32 207	eP		Pb	08 36 14.1	-1.5
	baz=208						
PNG	Penghu	2.43 250	eP		Pn	08 36 13.0	-0.7
	baz=250						
LAY	Lan-yu	2.43 191	eP		Pn	08 36 11.4	-2.3
	baz=188						
SCZT	Fangliau	2.43 213	eP		Pb	08 36 15.9	-1.6
	baz=214						
JTJ	Tarama	2.44 85	P		Pn	08 36 13.5	-0.4
JTJ			S		Sn	08 36 42.5	-1.8
WDGT	Dungji	2.47 242	eP		Pn	08 36 14.4	+0.1
	baz=243						
TWP	Hsiaoliuchiu	2.58 217	eP		Pb	08 36 18.7	-1.4
	baz=219						
HEN	Hengchun	2.70 206	eP		Pn	08 36 17.5	0.0
	baz=190						
TWK1	Hengchun	2.73 205	eP		Pn	08 36 18.4	+0.6
	baz=189						
TWK1			eS		Sn	08 36 52.3	+0.9
	baz=189						
TSEB	Hengchuen, Pin	2.73 203	eP		Pn	08 36 18.9	+1.0
	baz=190						
JIRB	Irabujima	2.88 82	P		Pn	08 36 19.7	-0.3
JIRB			S		Sn	08 36 53.6	-1.7
JIKM	Ikemajima	2.96 80	P		Pn	08 36 21.0	-0.1
JIKM			S		Sn	08 36 56.7	-0.6
JMJ	Miyako jima 2	2.99 82	P		Pn	08 36 20.7	-0.8
JMJ			S		Sn	08 36 57.1	-0.8
JOGS	Gusukube	3.09 83	P		Pn	08 36 22.7	-0.1
JOGS			S		Sn	08 36 59.9	-0.4
QZH	Quanzhou	3.17 280	Pn		Pn	08 36 17.9	-6.1
QZH			Sn		Sn	08 36 53.4	-9.0
QZH			smax		smax		
	comp=N,2μm,0.8s						
QZH			smax		smax		
	comp=E,800nm,0.6s						
QZH			LR		LR		
	comp=N,2μm,9.9s						
QZH			LR		LR		
	comp=E,2μm,12.8s						
QZH			LR		LR		
	comp=Z,2μm,10.1s						
KNM	Kinmen	3.28 270	eP		Pn	08 36 25.7	+0.2
	baz=269						
JKE	Kume jima 2	4.69 65	P		Pn	08 36 45.9	+1.0
JAGN	Aguni-jima	5.17 64	P		Pn	08 36 53.8	+2.3
JNTH	Nagotoyohara	5.80 68	P		Pn	08 37 01.1	+1.0
JIH	Iheya	5.94 63	P		Pn	08 37 04.0	+1.9
JOW	Kunigami	6.12 66	P		Pn	08 37 05.2	+0.7
JOW	Kunigami	6.12 66	ePn		Pn	08 37 05.0	+0.5
	14nm,1.0s						
JOKE	Okinoerabujima	6.57 62	P		Pn	08 37 11.2	+0.5
JTK	Tokunoshima	7.06 60	P		Pn	08 37 18.1	+0.7
JAMN	Amaminishikomi	7.44 58	P		Pn	08 37 24.1	+1.4
JAM	Amami Oshima	7.86 58	P		Pn	08 37 28.8	+0.4
WHN	Wuhan	9.14 313	⇑P		Pn	08 37 51.0	+5.1
WHN			S		Sn	08 39 32.0	+2.6
WHN			LR		LR		
	comp=N,1μm,6.5s						
WHN			LR		LR		
	comp=E,760nm,10.2s						
WHN			LR		LR		
	comp=Z,1μm,11.2s						
JNU	Nakatsue	11.62 40	LR		LR	08 43 23.4	
	comp=Z,96nm,19.1s,baz=304,slow=39						
JNU	Nakatsue	11.62 40	ePn		Pn	08 38 21.3	+1.3
KSRS	Korea Array	13.92 20	P		P	08 38 60.0	+0.2
	0.3nm,0.3s,baz=203,slow=12,SNR=18						
KSRS			LR		LR	08 44 49.1	
	comp=Z,118nm,18.3s,baz=206,slow=39						
BJI	Beijing	16.32 344	P		Pn	08 39 22.5	-0.8
BJI			S		Sn	08 42 29.6	+4.7
BJI			pmax		pmax		
	comp=Z,3.0nm,0.7s						
BJI			LR		LR		
	comp=N,200nm,12.6s						
BJI			LR		LR		
	comp=E,100nm,4.8s						
CD2	Chengdu	17.42 296	P		Pn	08 39 35.9	-1.4
CD2			sP		sP	08 39 40.3	+0.8
CD2			PP		PnPn	08 39 51.9	+4.5
CD2			S		Sn	08 42 51.3	-0.4
CD2			SS		SnSn	08 43 11.7	+6.6
CD2			pmax		pmax		
	comp=Z,20nm,1.2s						
CD2			LR		LR		
	comp=E,360nm,9.0s						
CD2			LR		LR		
	comp=Z,420nm,12.0s						
KMI	Kunming	17.54 276	P		P	08 39 40.4	+0.2
KMI			pP		sP	08 39 45.2	+4.2
KMI			pmax		pmax		
	comp=Z,16nm,0.5s						
KMI			LR		LR		
	comp=N,180nm,8.0s						
KMI			LR		LR		
	comp=E,320nm,9.6s						
KMI			LR		LR		
	comp=Z,340nm,10.4s						
DAV	Davao City (W)	17.60 168	LR		LR	08 46 39.4	
	comp=Z,35nm,20.4s,baz=202,slow=37						
MJAR	Matsushiro Arr	18.41 45	LR		LR	08 47 37.8	
	comp=Z,54nm,21.7s,baz=270,slow=39						
HHC	Hu-ho-hao-te	18.57 334	eP		Pn	08 39 52.6	+1.2
HHC			S		Sn	08 43 19.3	-0.2
HHC			pmax		pmax		
	comp=Z,51nm,0.6s						
HHC			pmax		pmax		
	comp=Z,300nm,3.6s						
HHC			LR		LR		
	comp=N,780nm,10.9s						
HHC			LR		LR		
	comp=E,620nm,9.2s						
HHC			LR		LR		
	comp=Z,630nm,8.6s						
CN2	Changchun	19.52 7	eP		Pn	08 40 05.4	+2.6
CMAR	Chiang Mai Arr	22.29 259	P		P	08 40 34.9	+3.1
	1.1nm,0.3s,baz=53,slow=8.8,SNR=5.9						
CMAR			LR		LR	08 48 43.4	
	comp=Z,28nm,18.9s,baz=330,slow=35						
ASAJ	Asahikawa	25.84 35	LR		LR	08 52 20.9	
	comp=Z,54nm,18.6s,baz=266,slow=38						
KLR	Kul'dur	25.90 15	P		P	08 41 07.5	+1.2
	0.5nm,0.4s,baz=212,slow=18,SNR=4.8						
KLR			LR		LR	08 51 19.9	
	comp=Z,65nm,19.2s,baz=201,slow=36						
SONM	Songino Array	26.45 336	P		P	08 41 11.8	+0.3
	1.4nm,0.6s,baz=145,slow=5.3,SNR=5.8						
SONM			LR		LR	08 53 51.5	
	comp=Z,50nm,18.7s,baz=140,slow=41						
TLY	Talaya	30.64 337	LR		LR	08 55 41.0	
	comp=Z,71nm,18.3s,baz=146,slow=39						
WMQ	Urumqi	34.04 313	eP		P	08 42 17.0	-1.7
WMQ			LR		LR		
	comp=N,94nm,7.4s						
WMQ			LR		LR		
	comp=E,85nm,7.4s						
MKAR	Makanchi Array	38.70 315	P		P	08 42 56.3	-2.1
	0.5nm,0.5s,baz=106,slow=8.7,SNR=4.3						
MKAR			LR		LR	09 00 34.6	
	comp=Z,29nm,18.9s,baz=116,slow=38						
ZALV	Zalesovo Beam	40.46 327	P		P	08 43 11.2	-1.6
	0.6nm,0.3s,baz=134,slow=10,SNR=2.5						
AAK	Ala-Archa	42.97 307	LR		LR	09 02 33.5	
	comp=Z,44nm,19.1s,baz=96,slow=37						
COEN	Coen	43.39 149	eP		P	08 43 37.0	-0.2
	6.2nm,1.0s						
WRAB	Tennant Creek	45.70 164	eP		P	08 43 54.1	-1.6
	3.8nm,0.8s						
WRA	Warramunga Arr	45.71 164	P		P	08 43 54.6	-1.1
	1.2nm,0.6s,baz=346,slow=8.9,SNR=11						
ASAR	Alice Springs	49.18 166	P		P	08 44 22.2	-0.6
	0.5nm,0.6s,baz=344,slow=9.4,SNR=9.2						
ABKAR	Akbulak array	53.82 314	eP		P	08 44 56.7	-0.5
	0.7nm,0.4s						
GEYT	Alibeck	55.34 300	P		P	08 45 08.7	+0.1
	1.3nm,0.4s,baz=100,slow=16,SNR=3.6						
GEYT			LR		LR	09 12 58.3	
	comp=Z,36nm,19.0s,baz=195,slow=40						
FINES	FINESS Array B	71.62 330	P		P	08 46 54.6	-1.1
	1.3nm,0.7s,baz=56,slow=5.7,SNR=8.2						
FINES			LR		LR	09 21 38.8	
	comp=Z,58nm,19.7s,baz=116,slow=38						
INK	Inuvik	72.70 22	eP		P	08 47 04.7	+2.6
	1.4nm,1.0s						
BRTR	Keskin Array B	73.65 307	P		P	08 47 07.5	-0.9
	1.0nm,0.9s,baz=137,slow=4.5,SNR=4.1						
YKA	Yellowknife Ar	82.44 23	P		P	08 47 53.9	-2.7
	0.5nm,0.6s,baz=312,slow=5.0,SNR=11						

*ISCJB **07** 08:49:25.3±0.2,23°.41S±0°.05×179°.90W±0°.06,h532km, mb4.5/60,Error ellipse: s-maj=7.8km s-min=5.2km az=42.0*

*IDC **07** 08:49:26.2±1.5,23°.37S×179°.83W,h540km±15km, mb3.6/10,mb1 3.8/12,mb1mx3.4/37,mbtmp4.4/12,Error ellipse: s-maj=21.3km s-min=13.1km az=159.0*

*NEIC **07** 08:49:27.0±0.7,23°.43S×179°.87W,h542km±8km,mb4.7/53, Error ellipse: s-maj=7.3km s-min=5.5km az=122.0*

ISC 07 08:49:26.1±0.5,23°.42S±0°.09×179°.85W±0°.08,h532km, n93,σ1°11/94,mb4.6/59,1D,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MSVF	Nonsavu	5.99	340	eP	P	08 51 05.6	+1.7
DZM	Mont Dzumac	12.72	273	P	P	08 52 13.1	+0.8
	0.5nm,0.3s,baz=90,slow=16,SNR=3.5						
URZ	Urewera	15.02	189	P	P	08 52 36.1	+0.3
	1.3nm,0.3s,baz=37,slow=10,SNR=5.5						
URZ	Urewera	15.02	189	eP	P	08 52 36.5	+0.7
	108nm,1.4s						
BKZ	Black Stump Fm	16.01	190	eP	P	08 52 45.0	-1.1
	118nm,1.9s						
THZ	Tophouse	19.27	197	eP	P	08 53 17.2	+0.9
	176nm,1.9s						
KHZ	Kahutara	19.73	195	eP	P	08 53 20.3	-0.1
	157nm,1.6s						
LTZ	Lake Taylor	20.39	197	eP	P	08 53 26.0	-0.4
	37nm,1.0s						
OXZ	Oxford	20.96	197	eP	P	08 53 30.7	-0.8
	72nm,1.5s						
RPZ	Rata Peaks	21.59	198	P	P	08 53 37.6	+0.4
	6.8nm,0.5s,baz=311,slow=2.8,SNR=9.2						
RPZ	Rata Peaks	21.59	198	eP	P	08 53 36.8	-0.4
	227nm,2.0s						
FOZ	Fox Glacier	21.80	201	eP	P	08 53 39.4	+0.3
	255nm,1.9s						
LBZ	Lake Benmore	22.46	199	eP	P	08 53 44.8	-0.2
	96nm,1.7s						
WKZ	Wanaka	23.22	200	eP	P	08 53 51.3	-0.5
	293nm,2.0s						
MLZ	Mavora Lakes	23.99	201	eP	P	08 54 00.7	+2.0
	88nm,1.6s						
DCZ	Deep Cove	24.41	203	eP	P	08 54 02.3	0.0
	51nm,1.4s						
WHZ	Wether Hill Ro	24.51	201	eP	P	08 54 04.6	+1.4
	30nm,0.8s						
ARMA	Armidale	26.33	248	eP	P	08 54 21.4	+1.7
	21nm,1.3s						
EIDS	Eidsvold	26.53	260	eP	P	08 54 22.4	+1.0
	18nm,1.1s						
CAN	Canberra	29.51	239	eP	P	08 54 48.5	+1.2
	11nm,0.6s						
CTAO	Charters Tower	31.62	269	eP	P	08 55 06.3	+0.7
	200nm,0.6s						
TAU	Tasmania Unive	33.37	226	eP	P	08 55 20.9	+0.8
	65nm,1.6s						
PMG	Port Moresby	34.47	288	eP	P	08 55 30.3	+0.5
	13nm,0.6s,baz=120,slow=4.6,SNR=7.5						
PMG	Port Moresby	34.47	288	eP	P	08 55 29.9	+0.1
	14nm,0.6s						
STKA	Stephens Creek	35.03	247	P	P	08 55 33.9	-0.5
	10nm,0.6s,baz=94,slow=11,SNR=36						
STKA	Stephens Creek	35.03	247	eP	P	08 55 35.1	+0.8
	2.2nm,0.7s						
COEN	Coen	36.18	278	eP	P	08 55 44.2	+0.2
	39nm,1.9s						
BBOO	Buckdeboo	39.77	246	eP	P	08 56 12.5	-0.5
	35nm,1.4s						
AS01	Alice Springs	42.21	260	eP	P	08 56 32.2	-0.4
AS31	Alice Springs	42.25	260	eP	P	08 56 33.0	0.0
	5.8nm,0.5s						
ASAR	Alice Springs	42.26	260	P	P	08 56 32.9	-0.1
	16nm,0.8s,baz=95,slow=7.3,SNR=209						
ASAR			ScP		ScP	09 01 14.6	-0.1
	1.6nm,0.9s,baz=111,slow=4.1,SNR=6.9						
ASAR			S		S	09 02 13.2	-2.0
	0.7nm,0.8s,baz=104,slow=12,SNR=6.6						
WB2	Warramunga Arr	42.57	266	eP	P	08 56 34.8	-0.7
	18nm,0.6s						
WRAB	Tennant Creek	42.58	266	eP	P	08 56 34.7	-0.7
	14nm,0.8s						
WRA	Warramunga Arr	42.58	266	P	P	08 56 34.9	-0.6
	10nm,0.3s,baz=92,slow=8.5,SNR=346						
WRA			ScP		ScP	09 01 15.6	-0.4
	0.9nm,0.6s,baz=96,slow=3.7,SNR=11						
JAY	Jayapura	43.46	293	P	P	08 56 42.2	-0.3
	0.7nm,0.5s,baz=86,slow=23,SNR=4.1						
MTN	Manton Dam	47.56	274	eP	P	08 57 12.9	-0.9
	41nm,1.5s						
FITZ	Fitzroy Crossi	51.01	265	eP	P	08 57 39.4	+0.2
	56nm,1.8s						
SOEI	Soe	54.95	274	eP	P	08 58 08.4	+1.0
	25nm,0.8s						
NWAO	Narrogin (SRO)	55.56	245	eP	P	08 58 11.1	-0.3
	179nm,1.5s						
MBWA	Marble Bar	55.60	260	eP	P	08 58 11.0	-0.7
	130nm,1.8s						
CASY	Casey	60.60	206	eP	P	08 58 44.4	-0.4
	42nm,1.9s						
QSPA	South Pole Qui	66.66	180	eP	P	08 59 24.6	+0.9
NJ2	Nanjing	80.45	311	eP	P	09 00 45.2	+2.6
NJ2			pmax		pmax		
	comp=Z,13nm,0.5s						
SLBS	Sierra La Lagu	82.44	60	eP	P	09 00 53.4	+0.3
	comp=Z,47nm,1.8s						
OHAK	Old Harbor	83.38	14	eP	P	09 00 56.3	-0.5
	comp=Z,27nm,1.6s						
DAC	Darwin (Calif)	83.52	46	eP	P	09 00 59.7	+1.3
	comp=Z,3.3nm,1.0s						
CN2	Changchun	83.59	324	eP	P	09 01 01.3	+3.0
YBH	Yreka Blue Hor	83.62	39	eP	P	09 00 59.3	+0.7
	comp=Z,8.2nm,1.4s						
HUMO	Hull Mountain	84.03	38	eP	P	09 01 00.7	+0.2
	comp=Z,30nm,1.9s						
NV01	Mina Array Sit	84.31	44	eP	P	09 01 02.5	+0.2
NVAR	Mina Array Bea	84.31	44	P	P	09 01 01.4	-0.9
	comp=Z,0.9nm,0.7s,baz=226,slow=7.5,SNR=6.4						
TPNV	Topopah Spring	84.79	46	eP	P	09 01 05.5	+0.8
	comp=Z,15nm,1.9s						
TUC	Tucson	86.11	52	eP	P	09 01 10.9	-0.1
	comp=Z,2.9nm,0.8s						
GYA	Guiyang	86.62	301	P	P	09 01 13.8	+0.2
GYA				pP	pP	09 03 15.0	+5.0
GYA				sP	sP	09 04 08.6	+4.7
GYA				PP	PP	09 04 49.8	+4.1
GYA				SKS	SKSac	09 10 47.2	-2.6
GYA				S	S	09 11 04.0	-2.4
GYA	Guiyang	86.62	301	sS	sS	09 14 37.4	+3.5
GYA			pmax		pmax		
	comp=Z,10.0nm,0.8s						
GYA			pmax		pmax		
	comp=Z,90nm,5.4s						
BJI	Beijing	86.78	316	P	P	09 01 12.3	-1.5
BJI			pmax		pmax		
	comp=Z,7.0nm,0.8s						
TT01	Tatalina	88.08	11	eP	P	09 01 19.0	-0.4
MTPU	Mount Pierson	88.10	47	eP	P	09 01 21.3	+0.8
	comp=Z,4.7nm,1.0s						
PMR	Palmer	88.25	14	eP	P	09 01 19.3	-0.8
	comp=Z,5.0nm,1.0s						
PLCA	Paso Flores	88.50	134	eP	P	09 01 22.6	+0.5
	comp=Z,63nm,2.0s						
MFID	Camas Ranch	88.70	41	eP	P	09 01 23.2	+0.3
	comp=Z,3.9nm,1.0s						
KMI	Kunming	89.17	298	P	P	09 01 24.6	-1.0
KMI			pmax		pmax		
	comp=Z,11nm,1.0s						
Q16A	Castle Valley	89.23	47	eP	P	09 01 26.2	+0.6
	comp=Z,18nm,1.9s						
CAST	Castle Rocks	89.27	12	eP	P	09 01 23.9	-1.0
	comp=Z,5.2nm,0.5s						
TMUT	Trail Mountain	89.41	46	eP	P	09 01 27.4	+0.9
	comp=Z,4.4nm,0.7s						
TRF	Thorofare Moun	89.65	13	eP	P	09 01 25.6	-1.3
	comp=Z,4.3nm,0.9s						
HVU	Hansel Valley	89.69	44	eP	P	09 01 27.9	+0.4
	comp=Z,4.8nm,1.1s						
SRU	San Rafael Swe	89.77	47	eP	P	09 01 28.4	+0.3
	comp=Z,3.8nm,0.8s						
MNTX	Cornudas Mount	89.82	55	eP	P	09 01 28.6	+0.4
	comp=Z,1.6nm,0.6s						
TX31	Lajitas Ar. Si	90.06	58	eP	P	09 01 30.0	+0.5
TXAR	Lajitas Array	90.06	58	P	P	09 01 28.9	-0.6
	comp=Z,1.5nm,0.7s,baz=211,slow=6.6,SNR=24						
HHC	Hu-ho-hao-te	90.18	315	eP	P	09 01 30.9	+1.1
HHC				pP	pP	09 03 30.9	+3.7
HHC				sP	sP	09 04 23.3	+2.6
HHC	Hu-ho-hao-te	90.18	315	S	S	09 11 36.8	-1.6
HHC			pmax		pmax		
	comp=Z,65nm,1.3s						
HHC			pmax		pmax		
	comp=Z,210nm,7.4s						
TCUT	Toone Canyon	90.22	45	eP	P	09 01 30.7	+0.5
	comp=Z,6.9nm,0.9s						
HWUT	Hardware Ranch	90.37	44	eP	P	09 01 30.5	-0.3
	comp=Z,2.5nm,0.8s						
ANMO	Albuquerque	90.55	52	eP	P	09 01 32.0	+0.2
	comp=Z,2.7nm,1.3s						
CD2	Chengdu	90.93	303	P	P	09 01 32.9	-0.5
CD2			pmax		pmax		
	comp=Z,10.0nm,0.6s						
CCB	Clear Creek Bu	91.23	13	eP	P	09 01 32.4	-1.5
	comp=Z,10nm,1.9s						
ILAR	Eielson Array	91.53	13	P	P	09 01 34.0	-1.3
	comp=Z,0.2nm,0.5s,baz=207,slow=5.1,SNR=4.2						
BW06	Boulder Array	92.25	44	eP	P	09 01 38.9	-0.5
PDAR	Pinedale Array	92.25	44	P	P	09 01 38.6	-0.8
	comp=Z,0.7nm,0.6s,baz=224,slow=4.1,SNR=7.0						
INK	Inuvik	97.53	16	eP	Pdif	09 02 01.0	-1.4
	comp=Z,8.9nm,1.8s						
ARCES	ARCESS Array B	131.44	348	PKP	PKPdf	09 07 35.8	-1.6
	comp=Z,1.8nm,0.8s,baz=68,slow=2.3,SNR=8.9						
FINES	FINESS Array B	138.03	342	PKP	PKPdf	09 07 47.8	-2.0
	comp=Z,0.3nm,0.4s,baz=63,slow=0.9,SNR=3.6						
FINES				SKPbc	SKPbc	09 10 32.0	-1.9
	comp=Z,0.8nm,0.5s,baz=45,slow=5.7,SNR=5.5						
NB2	NORSAR Subarra	141.63	351	PKP	PKPpre	09 07 50.7	
	comp=Z,0.7nm,0.6s,baz=18,slow=3.1						
NOA	NORSAR Array B	141.63	351	PKhKP	PKPpre	09 07 50.8	
	comp=Z,0.9nm,0.6s,baz=16,slow=4.7,SNR=5.4						
HFS	Hagfors	142.10	349	PKhKP	PKPpre	09 07 52.1	
	comp=Z,3.4nm,0.3s,baz=66,slow=3.7,SNR=52						
KONO	Kongsberg	143.19	352	ePKPpre	PKPpre	09 07 55.7	
AK11	Malin Array Si	144.69	328	ePKPdf	PKPdf	09 08 01.8	-0.2
BR231	Keskin MP Arra	147.98	308	ePKPbc	PKPbc	09 08 10.9	-1.0
EKA	Eskdalemuir Ar	148.03	4	PKPbc	PKPdf	09 08 08.6	+1.1
	comp=Z,0.8nm,0.4s,baz=348,slow=2.6,SNR=9.2						
BUR08	Bucovina Ar. S	148.64	327	ePKPbc	PKPbc	09 08 13.6	+0.3
CLL	Collm	150.44	344	⇓iP	PKPbc	09 08

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.29**	**55**	*e*PG	**Pg**	**08 55 24.6**	**+0.3**
YER				*e*SG	**Sg**	**08 55 27.2**	**-0.9**
YER	**Yerkesik**	**0.29**	**55**	*e*Pg	**Pg**	**08 55 24.6**	**+0.3**
YER				*e*Sg	**Sg**	**08 55 27.2**	**-0.9**
TURN	**Turunc**	**0.51**	**100**	*i* P	**Pb**	**08 55 31.0**	**+0.6**
TURN				*i* S	**Sb**	**08 55 39.5**	**+1.2**
BODT	**Bodrum**	**0.54**	**280**	*e*PG	**Pn**	**08 55 33.9**	**+0.2**
BODT	**Bodrum**	**0.54**	**280**	*e*Pg	**Pn**	**08 55 33.9**	**+0.2**
DALY	**Dalyan (Mu¨la**	**0.56**	**105**	*e*PG	**Pg**	**08 55 28.6**	**-0.8**
DALY	**Dalyan (Mu¨la**	**0.56**	**105**	*e*Pg	**Pg**	**08 55 28.6**	**-0.8**
AYDN	**Tasoluk**	**0.70**	**353**	P	**Pg**	**08 55 32.0**	**0.0**
AYDN				S	**Sg**	**08 55 39.7**	**-1.4**
AYDN	**Tasoluk**	**0.70**	**353**	*i* P	**Pg**	**08 55 32.0**	**0.0**
AYDN				*i* S	**Sg**	**08 55 39.6**	**-1.4**
AYDB	**Zeytinkoy-Aydi**	**0.98**	**356**	*e*PG	**Pg**	**08 55 37.4**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**0.98**	**356**	*e*Pg	**Pg**	**08 55 37.4**	**0.0**

KRSC 07 08:55:21.2±2.2, 48°.61N×155°.22E, h72km±27km, ML3.6, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**2.15**	**15**	*e*P	Pn	08 55 57.1	+2.2
SKR				S	Sn	08 56 22.6	+2.0
PAU	**Pauzhetka**	**3.04**	**19**	S	Sn	08 56 45.4	+3.4
ASAK	**Asacha**	**4.14**	**23**	P	Pn	08 56 26.4	+4.4
RUS	**Russkaya**	**4.36**	**28**	*e*P	Pn	08 56 26.7	+1.8
UGLR	**Uglovaya**	**5.14**	**25**	P	Pn	08 56 38.9	+3.3
AVH	**Avacha**	**5.16**	**24**	P	Pn	08 56 40.3	+4.4
SDLR	**Sedlovina**	**5.21**	**25**	P	Pn	08 56 39.3	+2.6
KRX	**Arik**	**5.22**	**23**	P	Pn	08 56 40.0	+3.2
GNL	**Ganaly**	**5.37**	**18**	P	Pn	08 56 41.5	+2.7

IDC 07 09:08:02.2±1.1, 2°.86S×139°.37E, h0km, mb3.6/4, mb1 3.9/5, mb1mx3.6/33, mbtmp3.7/5, ML3.9/1, MS3.4/2, Ms1 3.4/2, ms1mx2.6/26, Error ellipse: s-maj=20.4km s-min=11.5km az=137.0, Near north coast of Irian Jaya

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAY	**Jayapura**	**1.38**	**76**	Pn	Pg	09 08 27.9	-0.8
	1.9nm,0.3s,baz=255,slow=20,SNR=43						
JAY				Lg	Lg	09 08 46.8	
	6.2nm,0.3s,baz=89,slow=24,SNR=18						
WRA	**Warramunga Arr**	**17.68**	**196**	P	Pn	09 12 10.2	+0.1
	0.4nm,0.3s,baz=18,slow=12,SNR=21						
WRA				S	Sn	09 15 18.6	-9.1
	0.1nm,0.3s,baz=12,slow=23,SNR=4.7						
FITZ	**Fitzroy Crossi**	**20.26**	**221**	P	Pn	09 12 40.9	-0.5
	2.1nm,0.5s,baz=35,slow=16,SNR=4.0						
FITZ				LR	LR	09 20 43.5	
	comp=Z,91nm,18.5s,baz=42,slow=38						
ASAR	**Alice Springs**	**21.35**	**194**	P	P	09 12 51.9	+0.7
	1.1nm,0.5s,baz=20,slow=11,SNR=19						
ASAR				S	S	09 16 49.5	+0.2
	0.7nm,0.8s,baz=6.3,slow=28,SNR=4.1						
ASAR				LR	LR	09 21 43.4	
	comp=Z,108nm,21.2s,baz=322,slow=38						
MKAR	**Makanchi Array**	**70.31**	**322**	P	P	09 19 17.6	-0.1
	0.4nm,0.7s,baz=110,slow=7.6,SNR=3.6						
ILAR	**Eielson Array**	**85.70**	**24**	P	P	09 20 43.0	+0.2
	0.4nm,0.8s,baz=270,slow=4.6,SNR=4.3						

*DDA **07** 09:26:26.6, 36°.79N×34°.56E, h7km, Md2.5, Suspected Mining explosion.*
*ISCJB **07** 09:26:28.6±0.8, 36°.88N±0°.05×34°.60E±0°.05, h0km, Error ellipse: s-maj=7.0km s-min=5.0km az=155.6*
*CSEM **07** 09:26:28.7±0.5, 36°.94N×34°.59E, h1km, MD2.2, Error ellipse: s-maj=13.8km s-min=9.7km az=127.0, Suspected Mining explosion.*
*ISK **07** 09:26:28.1, 36°.99N×34°.54E, h5km, MD2.2*
ISC 07 09:26:28.6±0.9, 36°.97N±0°.04×34°.55E±0°.04, h0km, n15, σ0°.73/22, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MERS	**Mersin**	**0.11**	**194**	*e*PG	**Pg**	**09 26 31.1**	**+0.4**
MERS	**Mersin**	**0.11**	**194**	*e*Pg	**Pg**	**09 26 31.1**	**+0.4**
DED	**Mersin**	**0.20**	**93**	*i* P	**Pg**	**09 26 32.1**	**-0.3**
DED				*i* S	**Sg**	**09 26 35.5**	**+0.6**
GULE	**Gulek**	**0.36**	**30**	P	**Pb**	**09 26 36.9**	**-1.1**
GULE				S	**Sb**	**09 26 44.9**	**+0.6**
GULE	**Gulek**	**0.36**	**30**	*i* P	**Pb**	**09 26 36.9**	**-1.1**
GULE				*i* S	**Sb**	**09 26 44.9**	**+0.6**
KARA	**Karaisali**	**0.49**	**54**	*e*PG	**Pg**	**09 26 38.3**	**+0.2**
KARA				*e*SG	**Sg**	**09 26 45.5**	**+1.1**
KARA	**Karaisali**	**0.49**	**54**	*e*Pg	**Pg**	**09 26 38.3**	**+0.2**
KARA				*e*Sg	**Sg**	**09 26 45.6**	**+1.1**
KERG	**Konya-Eregli**	**0.56**	**322**	P	**Pb**	**09 26 40.7**	**-0.7**
KERG				S	**Sb**	**09 26 51.0**	**+1.0**
KERG	**Konya-Eregli**	**0.56**	**322**	*i* P	**Pb**	**09 26 40.7**	**-0.7**
KERG				*i* S	**Sb**	**09 26 51.0**	**+1.0**
IKL	**Isikli**	**1.01**	**224**	*e*PG	**Pg**	**09 26 47.7**	**-0.4**
IKL	**Isikli**	**1.01**	**224**	*e*Pg	**Pg**	**09 26 47.7**	**-0.4**
NIG	**Nigde**	**1.14**	**2**	*e*PN	**Pg**	**09 26 50.2**	**-0.2**
NIG	**Nigde**	**1.14**	**2**	*e*Pn	**Pg**	**09 26 50.2**	**-0.2**
TAHT	**Tahtakopru-Hat**	**1.44**	**114**	*e*PN	**Pn**	**09 26 55.7**	**-0.3**
TAHT	**Tahtakopru-Hat**	**1.44**	**114**	*e*Pn	**Pn**	**09 26 55.7**	**-0.3**

DJA 07 09:35:43.3±0.5, 3°.S±5°.×12°.0E±°, h10km, M4.1/7, mB5.2/1, mb4.7/1, MLv3.8/7, Mw(mB)4.5/1, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TTSI	**Tana Toraja**	**0.63**	**224**	P	Pg	09 35 53.3	-2.3
SPSI	**Sidrap Palu**	**1.45**	**200**	P	Pn	09 36 09.7	+0.1
SPSI				S	Sn	09 36 26.8	-1.9
LUWI	**Luwuk**	**2.94**	**59**	P	Pg	09 36 47.9	+8.1
MRSI	**Marisa**	**3.48**	**29**	P	Pn	09 36 38.7	+1.2
BSSI	**Bau Bau, Buton**	**3.54**	**176**	P	Pn	09 36 39.5	+1.2
NLAI	**Namlea**	**6.86**	**96**	P	Pn	09 37 20.7	-3.4

MEX 07 09:39:20.7±0.7, 16°.67N×98°.88W, h7km±8km, MD3.5, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PNIG	**Pinotepa**	**0.77**	**111**	*e*P	Pg	09 39 34.1	-1.4
PNIG				*e*S	Sg	09 39 44.3	-1.2
TLIG	**Tlapa**	**0.94**	**18**	*e*P	Pg	09 39 36.6	-2.1
TLIG				*e*S	Sg	09 39 48.4	-2.5
CAIG	**El Cayaco**	**1.39**	**286**	*e*P	Pn	09 39 42.0	-4.5
CAIG				*e*S	Sb	09 40 00.5	-4.4
MEIG	**Mezcala**	**1.44**	**330**	*e*P	Pn	09 39 44.4	-2.9
MEIG				*e*S	Sb	09 40 01.7	-4.8
ARIG	**Puente Sto Nin**	**2.13**	**319**	*i* P	Pn	09 39 52.9	-3.9
ARIG				*i* S	Sn	09 40 19.2	-4.4
YAIG	**Yautepec**	**2.19**	**355**	*i* P	Pn	09 39 55.0	-2.7
YAIG				*i* S	Sn	09 40 21.2	-3.9

*NIED **07** 09:43:00, 39°.80N×142°.20E, h35km, Mw3.3 Best double couple: M₀1.06000×10¹⁴ NP1:φs258.00000°, δ35.00000°, λ-101.00000°. NP2:φs91.00000°, δ56.00000°, λ-83.00000°.*
JMA 07 09:43:43.2±0.1, 39°.84N×142°.22E, h30km±1km, M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**0.29**	**290**	P	Pb	09 43 50.6	+0.1
JTH				*e*S	Sb	09 43 55.4	-0.1
MIYJ	**Miyakonagasawa**	**0.41**	**230**	P	Pb	09 43 51.9	-0.3
MIYJ				S	Sb	09 43 57.7	-0.6
JKZ	**Kuzumaki**	**0.70**	**282**	P	Pb	09 43 56.6	-0.4
JKZ				S	Sb	09 44 05.6	-0.7
JANG	**Nango**	**0.76**	**315**	P	Pn	09 43 56.8	-1.1
JANG				S	Sb	09 44 06.6	-1.4
JOM	**Ohasama**	**0.80**	**243**	P	Pn	09 43 58.2	-0.3
JOM				S	Sb	09 44 08.6	-0.6
OFUJ	**Ofunato**	**0.87**	**210**	P	Pn	09 43 58.8	-0.6
OFUJ				S	Sn	09 44 10.1	-1.0
JMK	**Ichinoseki**	**1.18**	**221**	P	Pn	09 44 03.7	+0.1
JAH	**Hinai**	**1.27**	**286**	P	Pn	09 44 05.4	+0.6
JAH				S	Sb	09 44 22.3	0.0
JTM	**Tenmabayashi**	**1.29**	**317**	P	Pn	09 44 05.4	+0.2
JTM				S	Sn	09 44 21.6	+0.1
JRG	**Rokugo**	**1.30**	**251**	P	Pb	09 44 06.4	-0.7
JIO	**Ouri**	**1.54**	**206**	P	Pn	09 44 08.8	+0.2
JYK	**Kaneyama**	**1.71**	**238**	P	Pn	09 44 12.1	+1.1
JYK				*e*S	Sn	09 44 33.2	+1.4
JOT	**Ohata**	**1.78**	**330**	P	Pn	09 44 12.4	+0.5
JKB	**Kayabe**	**2.23**	**337**	P	Pn	09 44 18.8	+0.7
JKB				S	Sn	09 44 45.1	+0.4

*IDC **07** 09:44:47.1±1.7, 28°.19N×54°.04E, h0km, mb3.1/3, mb1 3.4/4, mb1mx3.2/50, mbtmp3.3/4, ML3.6/1, Error ellipse: s-maj=55.8km s-min=32.2km az=40.0*
*ISCJB **07** 09:44:50.2±0.8, 28°.22N±0°.07×54°.07E±0°.06, h24km, mb3.2/2, Error ellipse: s-maj=9.9km s-min=7.2km az=20.6*
*CSEM **07** 09:44:52.1±0.9, 28°.29N×54°.07E, h20km, ML2.7, Error ellipse: s-maj=29.3km s-min=18.4km az=20.0*
*TEH **07** 09:45:03.0, 29°.32N×53°.97E, h4km, ML2.7*
ISC 07 09:44:52.1±0.9, 28°.25N±0°.07×54°.00E±0°.05, h24km, n16, σ1°.48/19, Southern Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GHIR	**Ghir-Karzin**	**0.90**	**272**	*e*Sg	**Sb**	**09 45 21.5**	**+0.8**
ISRV	**Sarvestan**	**1.37**	**325**	*e*Pg	**Pn**	**09 45 16.6**	**+0.5**
ISRV				*e*AMB	AMB	09 45 43.3	
	comp=Z,3μm,0.2s						
ISRV	**Sarvestan**	**1.37**	**325**	*e*Pg	**Pn**	**09 45 16.6**	**+0.5**
BNDS	**Bandar-Abbas**	**2.10**	**113**	*e*Pn	**Pn**	**09 45 26.1**	**+0.2**
BNDS				*e*Sg	**Sb**	**09 45 58.8**	**+3.5**
IKAZ	**Kazeroun**	**2.43**	**309**	*e*Pn	**Pb**	**09 45 36.2**	**+0.8**
IKAZ				*e*AMB	AMB	09 46 18.8	
	comp=Z,1μm,0.2s						
IKAZ	**Kazeroun**	**2.43**	**309**	*e*Pn	**Pb**	**09 45 36.2**	**+0.8**
KRBR	**Kerman**	**2.97**	**54**	*e*Pn	**Pn**	**09 45 37.3**	**-0.7**
KRBR				*e*Sg	**Sb**	**09 46 21.4**	**+1.0**
IBAF	**Bafgh**	**3.59**	**22**	*e*Pn	**Pn**	**09 45 46.2**	**-0.3**
IBAF				*e*AMB	AMB	09 46 49.5	
	comp=Z,241nm,0.3s						
IBAF	**Bafgh**	**3.59**	**22**	*e*Pn	**Pn**	**09 45 46.2**	**-0.3**
ICHK	**Chekchek**	**4.00**	**5**	*e*Pn	**Pn**	**09 45 50.4**	**-1.7**
ICHK				*e*AMB	AMB	09 46 09.2	
	comp=Z,162nm,0.1s						
ICHK	**Chekchek**	**4.00**	**5**	*e*Pn	**Pn**	**09 45 50.4**	**-1.7**
IGAR	**Gharneh**	**4.47**	**338**	*e*Pn	**Pn**	**09 45 58.1**	**-0.6**
IGAR				*e*AMB	AMB	09 45 59.6	
	comp=Z,165nm,0.1s						
IGAR				*e*Sg	**Sn**	**09 46 51.8**	**+1.7**
WSAR	**Wadi Sarin**	**6.50**	**139**	Pn	**Pn**	**09 46 24.6**	**-1.8**
	comp=Z,1.2nm,0.3s,baz=331,slow=11,SNR=9.0						
BRTR	**Keskin Array B**	**20.35**	**309**	P	**P**	**09 49 27.8**	**+0.8**
	comp=Z,0.4nm,0.5s,baz=122,slow=12,SNR=2.7						
TORD	**Torodi Ar. Bea**	**50.81**	**264**	P	**P**	**09 53 49.3**	**-1.7**
	comp=Z,0.2nm,0.7s,baz=65,slow=8.3,SNR=3.5						
YKA	**Yellowknife Ar**	**89.11**	**355**	P	**P**	**09 57 43.5**	**-1.6**
	comp=Z,0.1nm,0.8s,baz=6.7,slow=4.9,SNR=4.4						

PRE 07 09:53:19.8±1.6, 28°.61S×20°.47E, h5km, ML3.5, South Africa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KEIM	**Keimoes**	**0.45**	**102**	*e*P	Pg	09 53 27.7	-0.7
KEIM				*e*S	Sg	09 53 34.6	+0.2
KEIM				AML	AML	09 53 39.2	
	comp=Z,646nm,0.3s						
UPI	**Upington**	**0.73**	**71**	*e*P	Pb	09 53 34.8	-0.3
UPI				*e*S	Sb	09 53 44.5	-0.9
UPI				AML	AML	09 53 46.1	
	comp=Z,1μm,0.7s						
KOMG	**Komaggas**	**2.87**	**245**	*e*P	Pn	09 54 08.0	+1.8
KOMG				*e*S	Sn	09 54 40.8	-0.4
KOMG				AML	AML	09 54 49.9	
	comp=Z,296nm,0.4s						
SWZ	**Schweizer**	**4.53**	**73**	*e*P	Pn	09 54 30.1	+0.9
SWZ				*e*S	Sn	09 55 19.9	-2.5
SWZ				AML	AML	09 55 45.5	
	comp=Z,230nm,0.8s						

*ISCJB **07** 09:57:29.2±0.5, 24°.90N±0°.04×122°.78E±0°.02, h134km, 4km, Error ellipse: s-maj=6.1km s-min=2.7km az=167.6*
*TAP **07** 09:57:30.0, 24°.96N×122°.75E, h130km±1km, ML3.8, C*
*JMA **07** 09:57:30.1±0.2, 24°.86N×122°.74E, h131km±2km, M2.8*
ISC 07 09:57:28.9±1.4, 24°.91N±0°.05×122°.77E±0°.03, h140km±8km, n54, σ1°.00/91, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JYNG	**Yonagunijimaku**	**0.49**	**161**	P	**Pn**	**09 57 49.2**	**+0.2**
JYNG				S	**Sn**	**09 58 04.0**	**-0.3**
YOJ	**Yonaguni jima**	**0.50**	**154**	P	**Pn**	**09 57 49.2**	**+0.1**
YOJ				S	**Sn**	**09 58 03.9**	**-0.5**
TWB1	**Santiao Chiao**	**0.72**	**278**	*e*P	**Pn**	**09 57 51.3**	**+1.0**
TWB1				*e*S	**Sn**	**09 58 06.4**	**-0.3**
	baz=274						
EGS		**0.77**	**265**	*e*P	**Pn**	**09 57 52.4**	**+1.6**
	baz=253						
TWC	**Suao**	**0.89**	**250**	*e*P	**Pn**	**09 57 51.6**	**-0.1**
TWC				*e*S	**Sn**	**09 58 08.4**	**-0.7**
	baz=240						
NWF	**Wu-fen Shan**	**0.91**	**280**	*e*P	**Pn**	**09 57 52.6**	**+0.6**
NWF				*e*S	**Sn**	**09 58 08.9**	**-0.7**
	baz=277						
PCYT	**Pengchaiyu**	**0.95**	**318**	*e*P	**Pn**	**09 57 53.0**	**+0.7**
PCYT				*e*S	**Sn**	**09 58 08.9**	**-1.2**
	baz=318						
TWE	**Neicheng**	**1.02**	**259**	*e*P	**Pn**	**09 57 53.1**	**+0.3**
TWE				*e*S	**Sn**	**09 58 10.0**	**-1.1**
	baz=251						
IRIF	**Iriomote-Funau**	**1.05**	**123**	P	**Pn**	**09 57 53.6**	**+0.5**
IRIF				S	**Sn**	**09 58 10.6**	**-0.9**
ENA	**Nanau**	**1.05**	**243**	*e*P	**Pn**	**09 57 53.8**	**+0.6**
ENA				*e*S	**Sn**	**09 58 11.0**	**-0.6**
	baz=234						
TWY	**Chenhua**	**1.12**	**289**	*e*P	**Pn**	**09 57 54.5**	**+0.7**
	baz=287						
ENTT	**Nioudou**	**1.13**	**256**	P	**Pn**	**09 57 54.7**	**+0.8**
	baz=259						
TWS1	**Kuangyinshan**	**1.24**	**279**	*e*P	**Pn**	**09 57 55.9**	**+0.9**
TWS1				*e*S	**Sn**	**09 58 15.1**	**+0.2**
	baz=277						
HATJ	**Hateruma jima**	**1.27**	**132**	P	**Pn**	**09 57 56.3**	**+1.0**
HATJ				S	**Sn**	**09 58 15.4**	**0.0**
NSK	**Sanguang**	**1.31**	**260**	P	**Pn**	**09 57 56.4**	**+0.7**
NSK				*e*S	**Sn**	**09 58 15.5**	**-0.6**
	baz=257						
JKRS	**Kuro-shima**	**1.31**	**121**	P	**Pn**	**09 57 56.9**	**+1.2**
JKRS				S	**Sn**	**09 58 16.4**	**+0.3**
TWD	**Chiawan**	**1.35**	**232**	*e*P	**Pn**	**09 57 56.0**	**-0.1**
TWD				*e*S	**Sn**	**09 58 15.5**	**-1.4**
	baz=226						
NNS	**Nan Shan**	**1.36**	**250**	*e*P	**Pn**	**09 57 57.1**	**+0.8**
NNS				*e*S	**Sn**	**09 58 16.6**	**-0.6**
	baz=241						
JIJ	**Ishigaki jima**	**1.36**	**113**	P	**Pn**	**09 57 56.9**	**+0.7**
JIJ				S	**Sn**	**09 58 16.4**	**-0.6**
HWA	**Hwalien**	**1.42**	**229**	*e*P	**Pn**	**09 57 55.3**	**-1.4**
HWA				*e*S	**Sn**	**09 58 16.9**	**-1.1**
	baz=221						
JISG	**Ishigakijimahi**	**1.44**	**103**	P	**Pn**	**09 57 57.7**	**+0.7**
JISG				S	**Sn**	**09 58 18.1**	**-0.3**
WHF	**Hehuan Shan**	**1.57**	**241**	*e*P	**Pn**	**09 57 59.6**	**+0.7**
WHF				*e*S	**Sn**	**09 58 21.0**	**-0.8**
	baz=233						
TWT	**Tachien**	**1.59**	**246**	P	**Pn**	**09 58 00.4**	**+1.5**
TWT				*e*S	**Sn**	**09 58 21.7**	**-0.2**
	baz=239						
NSTT	**Nanjuang**	**1.63**	**260**	*e*P	**Pn**	**09 57 59.7**	**+0.6**
	baz=258						
NSTT				*e*S	**Sn**	**09 58 21.5**	**-0.8**
	baz=258						
ESL	**Shilin**	**1.64**	**228**	*e*P	**Pn**	**09 57 58.3**	**-0.9**
	baz=221						
ESL				*e*S	**Sn**	**09 58 21.0**	**-1.4**
	baz=221						
JTJ	**Tarama**	**1.78**	**98**	P	**Pn**	**09 58 02.1**	**+1.4**
JTJ				S	**Sn**	**09 58 24.8**	**-0.3**
WDT	**Danda**	**1.89**	**233**	*e*P	**Pn**	**09 58 03.1**	**+0.7**
	baz=226						
WDT				*e*S	**Sn**	**09 58 27.0**	**-1.0**
	baz=226						
NSY	**Sanyi**	**1.90**	**255**	*e*P	**Pn**	**09 58 03.3**	**+1.1**
	baz=253						
TWQ1	**Liyutan**	**1.90**	**253**	*e*P	**Pn**	**09 58 03.2**	**+0.9**
	baz=251						
EHY	**Hungye**	**1.93**	**224**	*e*P	**Pn**	**09 58 02.8**	**+0.2**
	baz=229						
SMLT	**Sun Moon Lake**	**1.99**	**239**	*e*P	**Pn**	**09 58 05.0**	**+1.6**
	baz=233						
SMLT				*e*S	**Sn**	**09 58 30.7**	**+0.8**
	baz=233						
TYC	**Yuchr**	**2.02**	**240**	*e*P	**Pn**	**09 58 05.0**	**+1.5**
	baz=235						
TYC				*e*S	**Sn**	**09 58 31.3**	**+1.2**
	baz=235						
TWF1	**Yuli**	**2.06**	**221**	*e*P	**Pn**	**09 58 04.6**	**+0.5**
	baz=227						
TWF1				*e*S	**Sn**	**09 58 29.4**	**-1.7**
	baz=227						
JIRB	**Irabujima**	**2.18**	**92**	P	**Pn**	**09 58 07.4**	**+1.8**
JIRB				S	**Sn**	**09 58 33.9**	**+0.2**
YUS	**Yu-Shan**	**2.19**	**230**	*e*P	**Pn**	**09 58 07.7**	**+1.6**
	baz=221						
YUS				*e*S	**Sn**	**09 58 33.6**	**-1.1**
	baz=221						
CHKT	**Chengkung**	**2.22**	**216**	*e*P	**Pn**	**09 58 06.3**	**+0.2**
	baz=209						
CHKT				*e*S	**Sn**	**09 58 33.3**	**-1.3**
	baz=209						
JIKM	**Ikemajima**	**2.25**	**89**	P	**Pn**	**09 58 07.8**	**+1.4**
JIKM				S	**Sn**	**09 58 35.9**	**+0.7**
ALS	**Alishan**	**2.28**	**233**	*e*P	**Pn**	**09 58 08.8**	**+1.8**
	baz=225						
ALS				*e*S	**Sn**	**09 58 37.4**	**+1.1**
	baz=225						
CHN5	**Tsauling**	**2.32**	**236**	*e*P	**Pn**	**09 58 08.7**	**+1.3**
	baz=243						
CHN5				*e*S	**Sn**	**09 58 38.4**	**+1.5**
	baz=243						
ELDTW	**Lidau**	**2.35**	**223**	*e*P	**Pn**	**09 58 08.1**	**+0.3**
	baz=221						
ELDTW				*e*S	**Sn**	**09 58 36.1**	**-1.5**
	baz=221						
JOGS	**Gusukube**	**2.40**	**93**	P	**Pn**	**09 58 09.6**	**+1.4**
JOGS				S	**Sn**	**09 58 39.6**	**+1.1**
CHN4	**Tsaushan**	**2.53**	**232**	*e*P	**Pn**	**09 58 11.3**	**+1.4**
	baz=240						
CHN4				*e*S	**Sn**	**09 58 42.8**	**+1.4**
	baz=240						
WTP	**Ta-pu**	**2.58**	**230**	*e*P	**Pn**	**09 58 11.7**	**+1.1**
	baz=229						
TWG	**Pinlang**	**2.60**	**217**	*e*P	**Pn**	**09 58 09.9**	**-0.9**
	baz=220						
TWG				*e*S	**Sn**	**09 58 41.6**	**-1.5**
	baz=220						
CHN1	**Nanshi**	**2.68**	**230**	*e*P	**Pn**	**09 58 12.0**	**+0.2**
	baz=229						
CHN1				*e*S	**Sn**	**09 58 45.4**	**+0.6**
	baz=229						
JKE	**Kume jima 2**	**3.89**	**68**	P	**Pn**	**09 58 27.9**	**+0.6**
JAGN	**Aguni-jima**	**4.36**	**67**	P	**Pn**	**09 58 33.8**	**+0.2**
JJT2	**Tamagusuku 2**	**4.66**	**74**	P	**Pn**	**09 58 36.9**	**-0.7**
JNTH	**Nagotoyohara**	**5.00**	**70**	P	**Pn**	**09 58 41.6**	**-0.5**
JIH	**Iheya**	**5.13**	**65**	P	**Pn**	**09 58 43.3**	**-0.5**
JOW	**Kunigami**	**5.31**	**68**	P	**Pn**	**09 58 45.3**	**-1.0**
JOKE	**Okinoerabujima**	**5.75**	**64**	P	**Pn**	**09 58 50.8**	**-1.4**
JTK	**Tokunoshima**	**6.24**	**61**	P	**Pn**	**09 58 57.2**	**-1.4**
JAMN	**Amaminishikomi**	**6.62**	**59**	P	Pn	09 59 01.7	-2.1

MEX 07 10:01:51.7±0.3, 17°.99N×100°.50W, h58km±5km, MD3.5, Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ARIG	**Puente Sto Nin**	**0.32**	**27**	*i* P	Pn	10 02 00.4	-1.5
ARIG				*i* S	Sn	10 02 07.4	-1.8
MEIG	**Mezcala**	**0.84**	**94**	*e*P	Pn	10 02 06.6	-1.1
MEIG				*e*S	Sn	10 02 17.7	-1.8
CAIG	**El Cayaco**	**0.97**	**167**	*e*P	Pn	10 02 07.7	-1.5
CAIG				*e*S	Sn	10 02 20.3	-1.9
ZIIG	**Zihuatanejo**	**0.99**	**247**	*e*P	Pn	10 02 08.1	-1.5
ZIIG				*e*S	Sn	10 02 21.8	-1.0
YAIG	**Yautepec**	**1.61**	**57**	*i* P	Pn	10 02 16.8	-1.2
YAIG				*i* S	Sn	10 02 36.1	-1.8
TLIG	**Tlapa**	**1.89**	**103**	*e*P	Pn	10 02 20.6	-1.2
TLIG				*e*S	Sn	10 02 43.1	-1.6

*NIED **07** 10:04:00, 38°.50N×142°.20E, h59km, Mw4.3 Best double couple: M₀3.42000×10¹⁵ NP1:φs18.00000°, δ35.00000°, λ-26.00000°. NP2:φs130.00000°, δ75.00000°, λ-123.00000°.*
JMA 07 10:04:49.1±0.1, 38°.46N×142°.21E, h28km±2km, M3.8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.68**	**270**	P	Pb	10 05 02.0	-0.3
JIO				S	Sb	10 05 10.6	-0.8
OFUJ	**Ofunato**	**0.75**	**326**	P	Pb	10 05 03.2	-0.4
OFUJ				S	Sb	10 05 13.0	-0.5
JMK	**Ichinoseki**	**0.92**	**303**	P	Pn	10 05 05.9	-0.2
JMK				S	Sb	10 05 18.1	-0.1
MIYJ	**Miyakonagasawa**	**1.16**	**345**	P	Pn	10 05 08.9	-0.5
MIYJ				S	Sn	10 05 23.3	-1.0
JOU	**Okura**	**1.22**	**266**	P	Pb	10 05 10.9	-0.6
JOU				S	Sn	10 05 26.3	+0.4
JOM	**Ohasama**	**1.24**	**325**	P	Pn	10 05 10.9	+0.3
JOM				S	Sn	10 05 26.7	+0.4
JMM	**Marumori**	**1.27**	**242**	P	Pn	10 05 10.6	-0.3
JFK	**Kawauchi**	**1.52**	**224**	P	Pn	10 05 13.6	-0.8
JFK				S	Sn	10 05 31.2	-2.1
JYK	**Kaneyama**	**1.52**	**288**	P	Pn	10 05 15.1	+0.7
JRG	**Rokugo**	**1.54**	**308**	P	Pn	10

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FETY	**Fethiye**	**0.30**	**56**	*e*Pg	**Pg**	**10 07 48.9**	**-0.3**
FETY				*e*SG	**Sg**	**10 07 53.6**	**+0.5**
FETY	**Fethiye**	**0.30**	**56**	*e*Pg	**Pg**	**10 07 48.9**	**-0.3**
FETY				*e*Sg	**Sg**	**10 07 53.6**	**+0.5**
DALY	**Dalyan (Mu¨la**	**0.36**	**344**	*e*PG	**Pg**	**10 07 50.1**	**-0.3**
DALY				*e*SG	**Sg**	**10 07 55.7**	**+0.6**
DALY	**Dalyan (Mu¨la**	**0.36**	**344**	*e*Pg	**Pg**	**10 07 50.1**	**-0.3**
DALY				*e*Sg	**Sg**	**10 07 55.7**	**+0.6**
TURN	**Turunc**	**0.43**	**341**	*i* P	**Pb**	**10 07 53.4**	**0.0**
TURN				*i* S	**Sb**	**10 08 01.4**	**+1.2**
AKAS	**Kas**	**0.71**	**109**	P	**Pg**	**10 07 56.8**	**-0.2**
AKAS				S	**Sb**	**10 08 08.9**	**+0.5**
AKAS	**Kas**	**0.71**	**109**	*i* P	**Pg**	**10 07 56.8**	**-0.2**
AKAS				*i* S	**Sb**	**10 08 08.8**	**+0.5**
YER	**Yerkesik**	**0.77**	**329**	*e*PG	**Pg**	**10 07 58.1**	**-0.1**
YER	**Yerkesik**	**0.77**	**329**	*e*Pg	**Pg**	**10 07 58.1**	**-0.1**
GLHS	**Glhisar (BURDU**	**0.90**	**40**	*e*PG	**Pg**	**10 08 00.7**	**0.0**
GLHS	**Glhisar (BURDU**	**0.90**	**40**	*e*Pg	**Pg**	**10 08 00.6**	**0.0**
ELL	**Elmali**	**0.95**	**73**	*e*PG	**Pg**	**10 08 01.4**	**-0.3**
ELL	**Elmali**	**0.95**	**73**	*e*Pg	**Pg**	**10 08 01.4**	**-0.3**
GOLH	**Golhisar**	**0.99**	**39**	P	**Pg**	**10 08 01.5**	**-0.9**
GOLH				S	**Sb**	**10 08 16.0**	**-0.6**
GOLH	**Golhisar**	**0.99**	**39**	*i* P	**Pg**	**10 08 01.5**	**-0.9**
GOLH				*i* S	**Sb**	**10 08 16.0**	**-0.6**
BDRM	**Kayabasi**	**1.22**	**300**	P	**Pg**	**10 08 06.7**	**-0.1**
BDRM				S	**Sn**	**10 08 23.8**	**-0.3**
BDRM	**Kayabasi**	**1.22**	**300**	*i* P	**Pg**	**10 08 06.7**	**-0.1**
BDRM				*i* S	**Sn**	**10 08 23.8**	**-0.3**
DNZL	**Cakiroluk**	**1.24**	**10**	P	**Pn**	**10 08 07.4**	**-0.1**
DNZL				S	**Sn**	**10 08 25.7**	**+1.0**
DNZL	**Cakiroluk**	**1.24**	**10**	*i* P	**Pn**	**10 08 07.4**	**-0.1**
DNZL				*i* S	**Sn**	**10 08 25.7**	**+1.0**
BODT	**Bodrum**	**1.32**	**297**	*e*PN	**Pn**	**10 08 08.3**	**-0.1**
BODT	**Bodrum**	**1.32**	**297**	*e*Pn	**Pn**	**10 08 08.3**	**-0.1**
AYDN	**Tasoluk**	**1.39**	**329**	P	**Pn**	**10 08 08.4**	**-1.1**
AYDN				S	**Sb**	**10 08 28.0**	**0.0**
AYDN	**Tasoluk**	**1.39**	**329**	*i* P	**Pn**	**10 08 08.4**	**-1.1**
AYDN				*i* S	**Sb**	**10 08 27.9**	**0.0**

IDC 07 10:11:05.1±6.5, 31°.34S×179°.65W, h360km±69km, mb2.9/3, mb1 3.1/4, mb1mx2.9/27, mbtmp3.8/4, Error ellipse: s-maj=75.9km s-min=31.4km az=2.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**7.40**	**200**	P	P	10 12 53.3	-0.2
URZ	1.1nm,0.3s,baz=274,slow=4.2,SNR=23			S	S	10 14 18.3	-1.3
STKA	5.1nm,0.3s,baz=198,slow=22,SNR=14 **Stephens Creek**	**32.89**	**259**	P	P	10 17 08.0	+1.1
ASAR	1.8nm,0.8s,baz=99,slow=11,SNR=5.2 **Alice Springs**	**41.66**	**269**	P	P	10 18 19.6	-0.3
ASAR	0.4nm,0.7s,baz=106,slow=7.3,SNR=5.4			PcP	PcP	10 20 08.7	-0.4
WRA	0.3nm,0.5s,baz=112,slow=4.1,SNR=5.1 **Warramunga Arr**	**42.73**	**274**	P	P	10 18 27.4	-1.1
FINES	0.4nm,0.3s,baz=111,slow=8.1,SNR=5.1 **FINESS Array B**	**145.51**	**338**	PKPbc	PKPdf	10 30 00.2	+0.3
NB2	3.4nm,0.6s,baz=41,slow=3.7,SNR=40 **NORSAR Subarra**	**149.44**	**350**	PKP	PKPbc	10 30 10.9	-0.5
NOA	comp=Z,0.7nm,0.5s,baz=18,slow=2.6 **NORSAR Array B**	**149.44**	**350**	PKPbc	PKPbc	10 30 11.2	-0.3
HFS	comp=Z,0.8nm,0.5s,baz=17,slow=4.2,SNR=5.2 **Hagfors**	**149.85**	**347**	PKPbc	PKPbc	10 30 11.5	-0.9
	comp=Z,0.8nm,0.5s,baz=64,slow=3.4,SNR=6.2						

MEX 07 10:14:33.2±0.4, 17°.88N×103°.20W, h5km, MD3.7, Near coast of Michoacan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MMIG	**Aquila**	**0.43**	**341**	*e*P	Pg	10 14 40.9	-0.7
MMIG				*e*S	Sg	10 14 47.4	+0.1
R15V		**1.49**	**330**	*e*P	Pn	10 14 56.9	-3.8
R15V				*e*S	Sn	10 15 15.9	-4.6
EZ5V		**1.64**	**346**	*e*P	Pn	10 14 59.6	-3.4
EZ5V				*e*S	Sn	10 15 20.0	-4.6
ZIIG	**Zihuatanejo**	**1.67**	**99**	*e*P	Pn	10 14 58.8	-4.3
ZIIG				*i* S	Sn	10 15 20.0	-4.9
ARIG	**Puente Sto Nin**	**2.74**	**81**	*e*P	Pn	10 15 15.2	-2.7
ARIG				*i* S	Sn	10 15 47.5	-3.9

*ISCJB **07** 10:15:01.0±0.4, 37°.95N±0°.03×31°.00E±0°.03, h0km, Error ellipse: s-maj=4.6km s-min=3.1km az=158.5*
*DDA **07** 10:15:00.8, 37°.94N×30°.98E, h7km, Md2.4, Suspected Mining explosion.*
*CSEM **07** 10:15:01.0±0.2, 37°.96N×30°.99E, h1km, MD2.7, Error ellipse: s-maj=4.9km s-min=3.2km az=147.0, Suspected Mining explosion.*
*ISK **07** 10:15:01.2, 37°.92N×30°.96E, h8km, MD2.7*
ISC 07 10:15:01.1±0.8, 37°.99N±0°.03×30°.97E±0°.02, h0km, n27, σ0°50/42, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BAGO	**Egridir - ISPA**	**0.15**	**270**	*i* P	**Pg**	**10 15 04.1**	**+0.2**
BAGO				*i* S	**Sg**	**10 15 06.9**	**+1.1**
ISP	**Isparta**	**0.40**	**245**	*e*PG	**Pg**	**10 15 08.8**	**+0.2**
ISP				*e*SG	**Sg**	**10 15 14.2**	**+0.4**
ISP	**Isparta**	**0.40**	**245**	*e*Pg	**Pg**	**10 15 08.8**	**+0.2**
ISP				*e*Sg	**Sg**	**10 15 14.2**	**+0.4**
SUTC	**Sutluce-Ispart**	**0.51**	**178**	*e*PG	**Pg**	**10 15 10.3**	**-0.6**
SUTC	**Sutluce-Ispart**	**0.51**	**178**	*e*Pg	**Pg**	**10 15 10.3**	**-0.6**
BCK	**Bucak**	**0.61**	**210**	*e*PG	**Pg**	**10 15 12.5**	**-0.3**
BCK	**Bucak**	**0.61**	**210**	*e*Pg	**Pg**	**10 15 12.5**	**-0.3**
BOLV	**Bolvadin**	**0.73**	**359**	P	**Pb**	**10 15 16.6**	**-0.1**
BOLV				S	**Sb**	**10 15 27.4**	**+0.1**
BOLV	**Bolvadin**	**0.73**	**359**	*i* P	**Pb**	**10 15 16.6**	**-0.1**
BOLV				*i* S	**Sb**	**10 15 27.4**	**+0.1**
KDHN	**Kadinhani**	**1.04**	**59**	P	**Pg**	**10 15 21.3**	**+0.2**
KDHN				S	**Sb**	**10 15 36.2**	**-0.2**
KDHN	**Kadinhani**	**1.04**	**59**	*i* P	**Pg**	**10 15 21.3**	**+0.2**
KDHN				*i* S	**Sb**	**10 15 36.2**	**-0.2**
KONT	**Konya--Tatoy**	**1.10**	**92**	*e*PN	**Pb**	**10 15 22.7**	**-0.3**
KONT	**Konya--Tatoy**	**1.10**	**92**	*e*Pn	**Pb**	**10 15 22.7**	**-0.3**
KORT	**Korkueli**	**1.11**	**207**	P	**Pg**	**10 15 22.3**	**0.0**
KORT				S	**Sb**	**10 15 37.7**	**-0.5**
KORT	**Korkueli**	**1.11**	**207**	*i* P	**Pg**	**10 15 22.3**	**0.0**
KORT				*i* S	**Sb**	**10 15 37.7**	**-0.5**
LADK	**Ladik-KONYA**	**1.12**	**79**	*e*PN	**Pb**	**10 15 23.5**	**+0.2**
LADK	**Ladik-KONYA**	**1.12**	**79**	*e*Pn	**Pb**	**10 15 23.5**	**+0.2**
KMER	**Konya-Meram**	**1.13**	**101**	P	**Pg**	**10 15 22.2**	**-0.4**
KMER				S	**Sg**	**10 15 37.4**	**+0.1**
KMER	**Konya-Meram**	**1.13**	**101**	*i* P	**Pg**	**10 15 22.2**	**-0.4**
KMER				*i* S	**Sg**	**10 15 37.4**	**+0.1**
KIZT	**Kizilcal**	**1.14**	**38**	*e*PN	**Pn**	**10 15 24.7**	**+0.3**
KIZT	**Kizilcal**	**1.14**	**38**	*e*Pn	**Pn**	**10 15 24.7**	**+0.3**
KHAL	**Karahalli**	**1.23**	**288**	P	**Pg**	**10 15 23.0**	**-1.6**
KHAL				S	**Sb**	**10 15 41.6**	**-0.1**
KHAL	**Karahalli**	**1.23**	**288**	*i* P	**Pg**	**10 15 23.0**	**-1.6**
KHAL				*i* S	**Sb**	**10 15 41.6**	**-0.1**
GOLH	**Golhisar**	**1.35**	**237**	P	**Pg**	**10 15 26.6**	**-0.4**
GOLH				S	**Sb**	**10 15 45.4**	**+0.2**
GOLH	**Golhisar**	**1.35**	**237**	*i* P	**Pg**	**10 15 26.6**	**-0.4**
GOLH				*i* S	**Sb**	**10 15 45.4**	**+0.2**
CHBY	**Cihanbeyli**	**1.62**	**68**	*e*PN	**Pn**	**10 15 31.2**	**+0.2**
CHBY	**Cihanbeyli**	**1.62**	**68**	*e*Pn	**Pn**	**10 15 31.2**	**+0.2**

*ISCJB **07** 10:26:20.4±0.3, 18°.14N±0°.04×146°.62E±0°.08, h66km, mb4.2/33, Error ellipse: s-maj=11.2km s-min=5.4km az=178.2*
*IDC **07** 10:26:21.3±2.8, 18°.09N×146°.79E, h61km±25km, mb4.0/23, mb1 4.1/26, mb1mx3.9/55, mbtmp4.3/26, ML4.3/3, MS3.1/7, Ms1 3.2/7, ms1mx2.7/47, Error ellipse: s-maj=21.2km s-min=10.7km az=92.0*
*NEIC **07** 10:26:22.9±1.0, 18°.06N×146°.72E, h76km±9km, mb4.3/9, Error ellipse: s-maj=10.6km s-min=5.6km az=91.0*
ISC 07 10:26:22.0±0.5, 18°.11N±0°.06×146°.7E±0°.1, h66km, n45, σ0°85/49, mb4.3/33, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**4.83**	**202**	P	**Pn**	**10 27 32.5**	**+0.2**
	18nm,0.3s,baz=126,slow=2.0,SNR=13						
GUMO				S	**Sn**	**10 28 27.8**	**+0.8**
	26nm,0.3s,baz=315,slow=17,SNR=4.0						
CBIJ	**Chichi jima**	**9.87**	**336**	P	**Pn**	**10 28 43.0**	**+1.9**
CBIJ				S	**Sn**	**10 30 28.5**	**-1.9**
JCJ	**Chichijima**	**9.87**	**336**	P	**Pn**	**10 28 43.0**	**+1.9**
	3.6nm,0.3s,baz=285,slow=20,SNR=4.3						
JCJ				S	**Sn**	**10 30 28.5**	**-1.9**
	2.8nm,0.3s,baz=30,slow=20,SNR=3.4						
MJAR	**Matsushiro Arr**	**19.83**	**339**	P	**P**	**10 30 48.0**	**+0.5**
	0.4nm,0.3s,baz=184,slow=7.4,SNR=6.1						
KSRS	**Korea Array**	**25.36**	**323**	P	**P**	**10 31 42.9**	**-0.1**
	1.2nm,0.6s,baz=143,slow=9.1,SNR=10						
KSAR	**Wonju Array Be**	**25.37**	**323**	P	**P**	**10 31 42.9**	**-0.2**
ASAJ	**Asahikawa**	**26.16**	**353**	LR	LR	10 41 27.7	
	comp=Z,18nm,21.6s,baz=300,slow=35						
USRK	**Ussuriysk Ar.**	**28.80**	**338**	P	**P**	**10 32 13.0**	**-0.7**
	1.6nm,0.7s,baz=159,slow=9.3,SNR=3.1						
KLR	**Kul'dur**	**33.31**	**342**	P	**P**	**10 32 53.5**	**+0.1**
	4.3nm,0.5s,baz=148,slow=14						
KLR				PcP	**PcP**	**10 35 34.9**	**+0.8**
	1.9nm,0.6s,baz=162,slow=1.6,SNR=5.2						
PETK	**Petropavlovsk-**	**35.96**	**11**	LR	LR	10 48 26.1	
	comp=Z,18nm,18.6s,baz=154,slow=37						
WRA	**Warramunga Arr**	**39.72**	**198**	P	**P**	**10 33 46.8**	**-1.4**
	1.2nm,0.4s,baz=22,slow=8.3,SNR=22						
WRA				PcP	**PcP**	**10 35 54.0**	**+0.3**
	1.7nm,0.6s,baz=17,slow=3.5,SNR=14						
FITZ	**Fitzroy Crossi**	**41.53**	**211**	P	**P**	**10 34 02.7**	**-0.4**
	1.2nm,0.3s,baz=350,slow=5.0,SNR=11						
ASAR	**Alice Springs**	**43.37**	**197**	P	**P**	**10 34 17.4**	**-0.6**
	0.8nm,0.5s,baz=13,slow=7.3,SNR=21						
ASAR				PcP	**PcP**	**10 36 06.5**	**+0.7**
	1.0nm,0.6s,baz=26,slow=3.1,SNR=8.2						
SONM	**Songino Array**	**44.20**	**321**	P	**P**	**10 34 24.2**	**-0.4**
	0.8nm,0.6s,baz=134,slow=6.6,SNR=5.7						
SONM				PcP	**PcP**	**10 36 08.8**	**+0.4**
	0.6nm,0.5s,baz=151,slow=2.6,SNR=3.8						
DZM	**Mont Dzumac**	**44.36**	**153**	LR	LR	10 50 51.6	
	comp=Z,67nm,21.8s,baz=267,slow=33						
CMAR	**Chiang Mai Arr**	**45.25**	**278**	LR	LR	10 53 38.7	
	comp=Z,11nm,19.2s,baz=145,slow=36						
TLY	**Talaya**	**47.59**	**325**	LR	LR	10 55 02.3	
	comp=Z,19nm,19.9s,baz=137,slow=36						
STKA	**Stephens Creek**	**49.95**	**186**	P	**P**	**10 35 08.6**	**-0.7**
	0.8nm,0.4s,baz=351,slow=6.7,SNR=4.3						
BBOO	**Buckleboo**	**51.65**	**191**	*e*P	**P**	**10 35 21.5**	**-0.6**
	20nm,0.6s						
TIXI	**Tiksi**	**54.56**	**353**	P	**P**	**10 35 42.3**	**-0.7**
	2.3nm,0.5s,baz=108,slow=4.0,SNR=6.3						
ZALV	**Zalesovo Beam**	**59.06**	**323**	P	**P**	**10 36 15.1**	**-0.1**
	1.0nm,0.4s,baz=108,slow=9.3,SNR=4.4						
ZALV				LR	LR	11 02 06.4	
	comp=Z,27nm,18.5s,baz=40,slow=36						
MKAR	**Makanchi Array**	**59.56**	**314**	P	**P**	**10 36 19.8**	**+1.0**
	0.9nm,0.5s,baz=93,slow=8.5,SNR=11						
MKAR				PcP	**PcP**	**10 37 05.5**	**-0.1**
	0.4nm,0.4s,baz=87,slow=6.2,SNR=3.7						
BPAW	**Bear Paw Mtn.**	**61.85**	**26**	*e*P	**P**	**10 36 34.4**	**+0.3**
	1.3nm,1.0s						
TRF	**Thorofare Moun**	**61.96**	**27**	*e*P	**P**	**10 36 34.6**	**-0.4**
	11nm,1.6s						
KURK	**Kurchatov**	**62.35**	**318**	P	**P**	**10 36 38.0**	**+0.4**
KURBB	**Kurchatov Arra**	**62.40**	**318**	P	**P**	**10 36 38.0**	**+0.1**
	4.4nm,0.6s,baz=96,slow=7.3,SNR=47						
NRIK	**Noril'sk**	**62.49**	**340**	P	**P**	**10 36 39.0**	**+0.8**
	3.3nm,0.5s,baz=113,slow=5.3,SNR=5.3						
ILAR	**Eielson Array**	**63.75**	**26**	P	**P**	**10 36 45.5**	**-1.1**
	1.8nm,0.8s,baz=254,slow=4.8,SNR=17						
ILAR				PcP	**PcP**	**10 37 21.6**	**-0.5**
	0.6nm,0.6s,baz=276,slow=4.1,SNR=4.6						
EGAK	**Eagle**	**66.16**	**26**	*e*P	**P**	**10 37 03.1**	**+0.8**
	8.8nm,1.6s						
BRVK	**Borovoye**	**67.60**	**321**	*e*P	**P**	**10 37 12.2**	**+0.5**
	2.3nm,0.6s						
INK	**Inuvik**	**69.53**	**23**	P	**P**	**10 37 22.9**	**-0.5**
	3.4nm,1.0s,baz=265,slow=5.5,SNR=16						
ABKAR	**Akbulak array**	**74.42**	**317**	*e*P	**P**	**10 37 52.5**	**-0.5**
	0.9nm,0.3s						
YKA	**Yellowknife Ar**	**78.05**	**28**	P	**P**	**10 38 13.3**	**0.0**
	2.3nm,0.6s,baz=285,slow=5.5,SNR=62						
SPITS	**Spitsbergen Ar**	**79.90**	**351**	P	**P**	**10 38 23.8**	**+0.6**
	1.3nm,0.5s,baz=108,slow=5.5,SNR=11						
NVAR	**Mina Array Bea**	**82.74**	**52**	P	**P**	**10 38 40.1**	**+0.8**
	2.2nm,0.6s,baz=269,slow=5.8,SNR=23						
ARCES	**ARCESS Array B**	**83.34**	**342**	P	**P**	**10 38 42.1**	**+0.7**
	5.2nm,0.6s,baz=71,slow=8.1,SNR=22						
ELK	**Elko**	**84.28**	**49**	*e*P	**P**	**10 38 46.6**	**-0.6**
	1.6nm,0.7s						
FLWY	**Flagg Ranch**	**86.28**	**45**	*e*P	**P**	**10 38 57.1**	**0.0**
	2.5nm,0.6s						
HWUT	**Hardware Ranch**	**86.59**	**47**	*e*P	**P**	**10 38 59.2**	**+0.6**
	1.9nm,0.8s						
PDAR	**Pinedale Array**	**87.55**	**46**	P	**P**	**10 39 01.9**	**-1.4**
	0.3nm,0.4s,baz=74,slow=1.4,SNR=6.3						
PDAR				LR	LR	11 12 52.4	
	comp=Z,25nm,19.4s,baz=139,slow=32						
FINES	**FINESS Array B**	**87.81**	**336**	P	**P**	**10 39 02.8**	**-1.0**
	1.7nm,0.3s,baz=64,slow=4.5,SNR=35						
PV01	**Paradox Valley**	**90.03**	**50**	*e*P	**P**	**10 39 15.4**	**+0.4**
	272nm,1.2s						
HFS	**Hagfors**	**93.28**	**338**	P	**P**	**10 39 28.4**	**-0.9**
	0.8nm,0.5s,baz=132,slow=2.2,SNR=7.0						
BRTR	**Keskin Array B**	**95.21**	**315**	P	**P**	**10 39 38.9**	**+0.1**
	0.6nm,0.5s,baz=86,slow=17,SNR=5.6						
TORD	**Torodi Ar. Bea**	**133.57**	**310**	PKP	**PKPdf**	**10 45 32.7**	**+0.7**
	0.2nm,0.5s,baz=72,slow=1.4,SNR=5.1						

*SCB **07** 10:33:32.4±1.1, 14°.92S×75°.20W, h59km, Ml4.4/1, Error ellipse: s-maj=85.2km s-min=23.3km az=6.0*
*ISCJB **07** 10:33:43.2±0.2, 15°.13S±0°.04×74°.22W±0°.05, h64km, mb5.0/134, Error ellipse: s-maj=8.5km s-min=4.6km az=146.9*
*GCMT **07** 10:33:45.1±0.5, 15°.48S×74°.42W, h37km±3km, MW4.9/67, Moment Tensor Solution. s18,c19; s67,c84; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-0.53±.20; $M_{\theta\theta}$-1.34±.12; $M_{\phi\phi}$1.87±.19; $M_{r\theta}$-1.26±.16; $M_{\theta\phi}$1.66±.12; $M_{\phi r}$0.70±.22; Best double couple: $M_0$2.74500×10^{16} NP1:ϕ_s162.00000°, δ71.00000°, λ-155.00000°. NP2: ϕ_s63.00000°, δ66.00000°, λ-21.00000°. Principal axes: T 2.5830, Plg3.0000°, Azm292.0000°; N 0.3300, Plg59.0000°, Azm197.0000°; P -2.9070, Plg31.0000°, Azm24.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **07** 10:33:45.2±0.2, 15°.10S×74°.23W, mb5.0/120 Error ellipse: s-maj=7.2km s-min=3.6km az=54.0*
NEIC Felt [IV] at Acari and Yauca and [II] at Nazca.
*BJI **07** 10:33:45.3, 15°.10S×74°.20W, h60km, mB5.2/12, Ms5.4/7, Ms7 5.1/6*
*MOS **07** 10:33:46.1±1.2, 15°.08S×74°.34W, h83km, mb4.9/18, Error ellipse: s-maj=15.9km s-min=6.5km az=120.9*
*IDC **07** 10:33:46.6±1.8, 15°.25S×74°.30W, h81km±16km, mb4.3/14, mb1 4.5/18, mb1mx4.4/31, mbtmp4.6/18, MS3.6/4, Ms1 3.6/4, ms1mx3.3/21, Error ellipse: s-maj=22.0km s-min=11.9km az=52.0*
ISC 07 10:33:45.3±0.5, 15°.36S±0°.06×74°.52W±0°.07, h73km±3km, h72km: pP-P, n553, σ1°24/572, mb5.0/134, 10C-3D, Near coast of Peru

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ARE	**Arequipa**	**3.12**	**111**	⇑*i* P	**Pn**	**10 34 33.4**	**+0.9**
ARE				*i* S	**Sn**	**10 35 11.9**	**+3.2**
ARE	**Arequipa**	**3.12**	**111**	⇑*i* P	**Pn**	**10 34 33.4**	**+0.9**
ARE				*i* S	**Sn**	**10 35 11.9**	**+3.2**
NNA	**Nana**	**4.04**	**326**	P	**Pn**	**10 34 45.2**	**+0.3**
	39nm,0.3s,baz=167,slow=12,SNR=46						
NNA				S	**Sn**	**10 35 35.2**	**+4.1**
	1μm,0.3s,baz=237,slow=24,SNR=11						
NNA	**Nana**	**4.04**	**326**	*i* P	**Pn**	**10 34 45.9**	**+1.0**
NNA	**Nana**	**4.04**	**326**	*e*Pn	**Pn**	**10 34 44.7**	**-0.2**
NNA				*e*Sn	**Sn**	**10 35 35.1**	**+4.1**
BBOD	**La Paz, Gloria**	**5.84**	**103**	⇑*i*Pn	**Pn**	**10 35 11.9**	**+2.1**
BBOB	**La Paz, Bander**	**6.20**	**98**	⇑*i*Pn	**Pn**	**10 35 16.7**	**+1.9**
BBOB				⇑*i*Sn	Sn	10 36 32.1	+7.5
	86nm,0.5s						
LPAZ	**La Paz**	**6.22**	**99**	P	**Pn**	**10 35 15.6**	**+0.4**
	7.1nm,0.3s,baz=282,slow=5.9,SNR=166						
LPAZ	**La Paz**	**6.22**	**99**	*e*P	**Pn**	**10 35 17.4**	**+2.2**
LPAZ	**La Paz**	**6.22**	**99**	⇑*i*Pn	**Pn**	**10 35 16.6**	**+1.4**
BBOJ	**La Paz, Jacaqu**	**6.29**	**106**	⇑*i*Pn	**Pn**	**10 35 18.0**	**+2.0**
BBOE	**La Paz, Chanca**	**6.45**	**104**	⇑*i*Pn	**Pn**	**10 35 20.6**	**+2.4**
PB01	**IPOC Station P**	**7.40**	**140**	*e*Pn	**Pn**	**10 35 30.7**	**-0.2**
PB01				*e*Sn	**Sn**	**10 36 47.9**	**-5.6**
PB10	**IPOC Station P**	**8.93**	**156**	*e*Pn	**Pn**	**10 35 52.4**	**+0.8**
LVC	**Limon Verde**	**8.95**	**144**	P	**Pn**	**10 35 53.3**	**+1.0**
	732nm,0.3s,baz=345,slow=9.6,SNR=89						
LVC				S	**Sn**	**10 37 29.2**	**-2.5**
	713nm,0.3s,baz=83,slow=20,SNR=4.2						
LVC	**Limon Verde**	**8.95**	**144**	*e*Pn	**Pn**	**10 35 53.1**	**+0.8**
LVC				*e*Sn	**Sn**	**10 37 28.2**	**-3.5**
ATAH	**Atahualpa**	**9.01**	**335**	P	**Pn**	**10 35 55.5**	**+2.3**
	1.0nm,0.3s,baz=135,slow=7.1,SNR=4.9						
ATAH				S	**Sn**	**10 37 38.1**	**+4.7**
	6.7nm,0.3s,baz=149,slow=12,SNR=2.6						
SIV	**San Ignacio**	**12.97**	**95**	P	**Pn**	**10 36 42.3**	**-4.5**
	1.5nm,0.3s,baz=279,slow=14,SNR=21						
LCO	**Las Campanas**	**14.04**	**166**	*e*Pn	**Pn**	**10 37 02.6**	**+1.6**
OTAV	**Otavalo**	**15.98**	**346**	*e*P	**P**	**10 37 28.9**	**+0.5**
OTAV				*e*P	pP	10 37 33.9	-9.2
CMBC	**Cumbal**	**16.52**	**348**	*e*P	**P**	**10 37 37.0**	**+2.4**
FLOC	**Florencia**	**16.87**	**356**	*e*P	**Pn**	**10 37 33.7**	**-3.3**
CRUC	**La Cruz**	**16.99**	**352**	*e*P	**P**	**10 37 42.0**	**+2.4**
POPC	**Popayan, Colom**	**17.91**	**353**	*e*P	**P**	**10 37 49.9**	**+0.2**
BETC	**Betania**	**17.95**	**357**	*e*P	**P**	**10 37 51.0**	**+1.1**
SJAC	**San Juan de Ar**	**18.52**	**2**	*e*P	**Pn**	**10 37 58.4**	**+1.2**
GRGC	**Isla de Gorgon**	**18.60**	**349**	*e*P	P	10 37 45.2	-12
PRAC	**Prado**	**18.96**	**359**	*e*P	**Pn**	**10 38 03.1**	**+0.8**
CPUP	**Villa Florida**	**19.40**	**127**	P	**P**	**10 38 05.3**	**-0.3**
	0.2nm,0.3s,baz=308,slow=11,SNR=14						
CPUP	**Villa Florida**	**19.40**	**127**	*e*P	**P**	**10 38 06.9**	**+1.3**
CPUP	**Villa Florida**	**19.40**	**127**	*e*P	**P**	**10 38 06.9**	**+1.3**
ROSC	**El Rosal**	**20.07**	**1**	P	**Pn**	**10 38 16.1**	**+0.3**
	1.1nm,0.3s,baz=170,slow=4.6,SNR=14						
ROSC	**El Rosal**	**20.07**	**1**	*e*P	**Pn**	**10 38 18.9**	**+3.1**
	80nm,0.8s						
PTGA	**Pitinga**	**20.44**	**46**	P	**P**	**10 38 15.4**	**-1.6**
	26nm,0.8s,baz=232,slow=12,SNR=30						
PTGA	**Pitinga**	**20.44**	**46**	*e*P	**P**	**10 38 15.4**	**-1.6**
	41nm,0.6s						
GUYC	**Guyana, Colomb**	**20.47**	**358**	*e*P	Pn	10 38 18.9	-1.7
GUYC				*e*P	Pn	10 38 18.9	-1.7
NORC	**Norcasia**	**20.79**	**359**	*e*P	Pn	10 38 20.8	-3.1
RUSC	**La Rusia**	**21.16**	**4**	*e*P	**P**	**10 38 25.3**	**0.0**
HELC	**Santa Helena**	**21.44**	**357**	*e*P	**P**	**10 38 28.8**	**+0.7**
HELC				*e*P	**P**	**10 38 28.8**	**+0.7**
HELC				*e*P	**P**	**10 38 28.8**	**+0.7**
BARC	**Barichara**	**21.85**	**4**	*e*P	**P**	**10 38 33.3**	**+0.9**
BTLC	**Betulia, Santa**	**22.17**	**3**	*e*P	**P**	**10 38 35.9**	**+0.1**
DBBC	**Dabeiba**	**22.30**	**356**	*e*P	**P**	**10 38 37.5**	**+0.5**
GIRC	**Giron, Santand**	**22.33**	**3**	*e*P	**P**	**10 38 36.1**	**-1.3**
BRRC	**Barranca, Sant**	**22.34**	**2**	*e*P	**P**	**10 38 39.0**	**+1.7**
BRRC				*e*P	**P**	**10 38 41.1**	**+3.7**
CBRI	**Barrientos, No**	**22.99**	**4**	*e*P	**P**	**10 38 43.9**	**-0.4**
GRMC	**Gramalote, San**	**22.99**	**4**	*e*P	**P**	**10 38 45.6**	**+1.2**
MOTC	**Monteria, Cord**	**24.01**	**357**	*e*P	**P**	**10 38 53.7**	**+0.2**
SDV	**Santo Domingo**	**24.40**	**9**	P	**P**	**10 38 57.0**	**-0.2**
	59nm,0.8s,baz=197,slow=7.9,SNR=21						
SDV	**Santo Domingo**	**24.40**	**9**	*e*P	**P**	**10 38 56.4**	**-0.9**
	88nm,0.9s						
PLCA	**Paso Flores**	**25.51**	**173**	P	**P**	**10 39 08.9**	**+1.8**
	1.6nm,0.7s,baz=5.5,slow=8.2,SNR=5.0						
PLCA				LR	LR	10 47 37.3	
	comp=Z,69nm,19.8s,baz=19,slow=32						
SPB	**Sao

SWET	Sewanee	51.45 348	eP	P	10 42 42.3	-1.0
	comp=Z,7.9nm,0.8s					
TKL	Tuckaleechee C	51.49 350	eP	P	10 42 43.0	-0.6
TKL			pmax	pmax		
	comp=Z,16nm,1.0s					
TKL	Tuckaleechee C	51.49 350	eP	P	10 42 43.0	-0.6
	comp=Z,16nm,1.0s					
OXF	Oxford	51.58 344	eP	P	10 42 43.3	-0.9
OXF			pmax	pmax		
	comp=Z,30nm,0.9s					
OXF	Oxford	51.58 344	eP	P	10 42 43.3	-0.9
	comp=Z,30nm,0.9s					
433A	Art	51.58 333	P	P	10 42 44.6	+0.2
	baz=149,SNR=7.3					
Z40A	Long Farm, Mag	51.60 340	P	P	10 42 45.3	+0.9
	baz=156					
236A	Katherine and	51.60 336	P	P	10 42 45.3	+0.9
	baz=152					
Y42A	Garnett, Star	51.62 342	P	P	10 42 45.1	+0.6
	baz=158					
JCT	Junction City	51.67 332	P	P	10 42 45.7	+0.7
	baz=148					
334A	Lometa	51.71 334	P	P	10 42 45.3	0.0
	baz=150					
HPIG		51.79 324	eP	P	10 42 47.5	+1.4
HPIG			esP	sP	10 43 15.9	+3.1
137A	Heron Place, G	51.84 337	P	P	10 42 46.4	+0.2
	baz=153					
WLAR	White Oak Lake	51.90 340	eP	P	10 42 47.7	+1.1
	comp=Z,66nm,0.8s					
Y41A	Eaglette Beard	51.91 341	P	P	10 42 47.1	+0.4
	baz=157					
333A	Richland Sprin	52.03 333	P	P	10 42 47.8	+0.2
	baz=149					
Z38A	Mt. Pleasant	52.14 338	P	P	10 42 48.6	+0.2
	baz=154					
Y40A	Okolona	52.25 340	P	P	10 42 49.4	+0.3
	baz=156					
234A	Clairette	52.25 335	P	P	10 42 49.6	+0.3
	baz=150,SNR=6.4					
TZTN	Tazewell	52.32 351	eP	P	10 42 48.6	-1.1
	comp=Z,13nm,0.8s					
Y39A	Lockesburg	52.45 339	P	P	10 42 50.7	0.0
	baz=156,SNR=5.1					
X40A	Basin Creek Fa	52.54 341	P	P	10 42 51.5	+0.2
	baz=157					
233A	Rising Star	52.59 334	P	P	10 42 52.1	+0.3
	baz=150,SNR=5.7					
TXAR	Lajitas Array	52.60 328	P	P	10 42 52.5	+0.5
	comp=Z,4.7nm,0.7s,baz=150,slow=8.8,SNR=62					
TX31	Lajitas Ar. Si	52.60 328	eP	P	10 42 52.6	+0.6
UALR	University of	52.66 342	eP	P	10 42 52.2	0.0
	comp=Z,23nm,0.9s					
Z36A	Blue Ridge	52.69 337	P	P	10 42 52.1	-0.4
	baz=153					
134A	White-Moore Ra	52.73 335	P	P	10 42 53.1	+0.3
	baz=151,SNR=8.3					
WVT	Waverly	52.73 346	eP	P	10 42 51.3	-1.5
WVT			pmax	pmax		
	comp=Z,12nm,0.9s					
WVT	Waverly	52.73 346	eP	P	10 42 51.3	-1.5
	comp=Z,12nm,0.9s					
MIAR	Mount Ida	52.84 340	P	P	10 42 53.5	0.0
	baz=156,SNR=9.9					
MIAR	Mount Ida	52.84 340	eP	P	10 42 53.1	-0.4
MIAR			pmax	pmax		
	comp=Z,11nm,0.8s					
MIAR	Mount Ida	52.84 340	eP	P	10 42 53.1	-0.4
	comp=Z,10nm,0.8s					
X39A	Fountain Ranch	52.98 340	P	P	10 42 54.5	-0.1
	baz=156,SNR=7.8					
W41A	Tony Mavity, V	53.00 342	P	P	10 42 54.4	-0.3
	baz=158,SNR=11					
W41B	Gary Mavity, V	53.00 342	P	P	10 42 54.5	-0.2
	baz=158,SNR=11					
Y37A	Hugo	53.02 338	P	P	10 42 56.0	+1.0
	baz=154					
Z35A	Perchaven, San	53.06 336	P	P	10 42 55.9	+0.7
	baz=152					
133A	Hamilton Ranch	53.10 334	P	P	10 42 56.0	+0.4
	baz=150,SNR=11					
X301	Greenbrier Sit	53.10 342	eP	P	10 42 55.0	-0.4
	comp=Z,21nm,0.9s					
WHAR	Wooly Hollow	53.12 342	eP	P	10 42 55.1	-0.5
	comp=Z,24nm,0.8s					
X201	Greenbrier Sit	53.14 342	eP	P	10 42 55.8	+0.1
	comp=Z,28nm,0.8s					
Y36A	Durant	53.20 337	P	P	10 42 56.9	+0.7
	baz=153					
W40A	Ferguson Farm,	53.27 341	P	P	10 42 57.5	+0.8
	baz=157,SNR=14					
X38A	Whitesboro	53.37 339	P	P	10 42 58.2	+0.8
	baz=155,SNR=9.5					
ABTX	Abilene, Hawle	53.43 334	P	P	10 42 58.4	+0.5
	baz=149,SNR=8.4					
ABTX	Abilene, Hawle	53.43 334	eP	P	10 42 58.2	+0.3
	comp=Z,61nm,1.5s					
ABTX			epP	sP	10 43 17.6	-7.1
ABTX			esP	pP	10 43 26.4	+10
X37A	Clayton	53.48 339	P	P	10 42 58.8	+0.5
	baz=154,SNR=5.3					
Y35A	Marietta	53.49 337	P	P	10 42 59.3	+0.9
	baz=152,SNR=5.5					
W39A	Magazine	53.50 340	P	P	10 42 58.8	+0.4
	baz=156,SNR=8.2					
W38A	Poteau	53.63 340	P	P	10 43 00.1	+0.8
	baz=155,SNR=6.5					
Z33A	Whitaker Ranch	53.63 335	P	P	10 42 59.8	+0.4
	baz=150,SNR=15					
V40A	Witts Springs	53.76 342	P	P	10 42 59.9	-0.4
	baz=158,SNR=21					
Y34A	Reagan Ranch,	53.81 336	P	P	10 43 01.2	+0.5
	baz=152,SNR=8.0					
X35A	Drake	53.90 337	P	P	10 43 01.4	+0.1
	baz=152					
PBMO	Poplar Bluff	53.99 344	eP	P	10 43 01.0	-0.9
	comp=Z,28nm,0.8s					
W37B	Quinton	54.00 339	P	P	10 43 02.6	+0.5
	baz=154,SNR=6.0					
V39A	Pettigrew	54.05 341	P	P	10 43 02.3	-0.1
	baz=157,SNR=26					
Y33A	Hilltop Ranch,	54.20 335	P	P	10 43 03.8	+0.2
	baz=151					
U40A	Yellville	54.28 342	P	P	10 43 03.6	-0.4
	baz=158,SNR=22					
W36A	Wetumka	54.28 338	P	P	10 43 03.6	-0.5
	baz=154,SNR=7.4					
V38A	Canehill	54.31 340	P	P	10 43 04.0	-0.3
	baz=156,SNR=16					
X34A	Smith Ranch, M	54.41 336	P	P	10 43 05.5	+0.5
	baz=152,SNR=13					
WCI	Wyandotte Cave	54.44 349	eP	P	10 43 03.6	-1.6
WCI			pmax	pmax		
	comp=Z,76nm,1.0s					
WCI	Wyandotte Cave	54.44 349	eP	P	10 43 03.6	-1.6
	comp=Z,76nm,1.0s					
USIN	University of	54.46 347	eP	P	10 43 04.4	-0.9
	comp=Z,59nm,0.8s					
U39A	Green Forest	54.49 341	P	P	10 43 05.4	-0.2
	baz=157,SNR=17					
SDMD	Soldier's Deli	54.53 358	eP	P	10 43 05.6	-0.2
	comp=Z,18nm,0.8s					
W35A	Tecumseh	54.53 338	P	P	10 43 05.5	-0.4
	baz=153,SNR=6.8					
HHAR	Hobbs	54.55 341	eP	P	10 43 05.7	-0.3
	comp=Z,22nm,0.9s					
SIUC	Southern Illin	54.57 346	eP	P	10 43 05.2	-0.9
	comp=Z,51nm,0.7s					
V37A	Hulbert	54.58 339	P	P	10 43 06.2	0.0
	baz=155,SNR=6.9					
V36A	Jenks	54.76 339	P	P	10 43 07.5	-0.1
	baz=154,SNR=19					
TUL1	Leonard	54.82 339	P	P	10 43 07.9	-0.1
	baz=154,SNR=15					
TUL1	Leonard	54.82 339	eP	P	10 43 07.7	-0.3
	comp=Z,35nm,0.8s					
U38A	Gravette	54.83 340	P	P	10 43 08.0	-0.1
	baz=156,SNR=11					
WMOK	Wichita Mounta	54.90 336	eP	P	10 43 08.2	-0.4
WMOK			pmax	pmax		
	comp=Z,8.0nm,1.1s					
WMOK	Wichita Mounta	54.90 336	eP	P	10 43 08.2	-0.4
	comp=Z,7.5nm,1.1s					
T40A	Mansfield	54.91 342	P	P	10 43 07.9	-0.7
	baz=158,SNR=9.7					
U37A	Salina	55.04 340	P	P	10 43 09.5	-0.1
	baz=155,SNR=8.6					
T39A	Clever	55.05 342	P	P	10 43 09.3	-0.4
	baz=157,SNR=7.4					
V35A	Meyer Ranch, C	55.06 338	P	P	10 43 09.3	-0.5
	baz=153,SNR=5.4					
W33A	Caddo, Fort Co	55.14 336	P	P	10 43 11.4	+1.1
	baz=151,SNR=12					
U36A	Oologah	55.24 339	P	P	10 43 10.8	-0.1
	baz=154					
OLIL	Olney	55.29 347	eP	P	10 43 10.3	-1.0
	comp=Z,45nm,0.8s					
S40A	Lebanon	55.33 343	P	P	10 43 10.8	-0.8
	baz=158,SNR=17					
T38A	Diamond	55.35 341	P	P	10 43 11.5	-0.3
	baz=156,SNR=18					
MNTX	Cornudas Mount	55.37 328	P	P	10 43 12.2	+0.1
	baz=143,SNR=6.2					
MNTX	Cornudas Mount	55.37 328	eP	P	10 43 12.2	+0.1
MNTX			esP	sP	10 43 39.9	+1.0
V34A	Guthrie	55.38 337	P	P	10 43 11.6	-0.4
	baz=152,SNR=7.1					
V34A	Guthrie	55.38 337	eP	P	10 43 11.4	-0.6
	comp=Z,22nm,0.9s					
BLO	Bloomington	55.40 349	eP	P	10 43 10.5	-1.6
BLO			pmax	pmax		
	comp=Z,17nm,0.6s					
BLO	Bloomington	55.40 349	eP	P	10 43 10.5	-1.6
	comp=Z,16nm,0.6s					
W32A	Sentinel	55.42 335	P	P	10 43 12.4	+0.1
	baz=150,SNR=20					
O56A	Blue Knob Stat	55.47 356	P	P	10 43 12.7	+0.1
	baz=175					
U35A	Pawnee	55.57 338	P	P	10 43 13.3	-0.1
	baz=153,SNR=16					
T37A	Cheneyville 18	55.63 340	P	P	10 43 13.6	-0.1
	baz=156,SNR=19					
S39A	Bolivar	55.65 342	P	P	10 43 13.4	-0.5
	baz=158,SNR=26					
V33A	Lossen Ranch,	55.66 337	P	P	10 43 14.1	0.0
	baz=152,SNR=6.0					
LUPA	Lehigh Univers	55.68 359	eP	P	10 43 14.4	+0.3
	comp=Z,16nm,0.9s					
S38A	Stockton	55.77 341	P	P	10 43 14.1	-0.7
	baz=157,SNR=16					
SSPA	Standing Stone	55.80 357	eP	P	10 43 15.0	+0.1
	comp=Z,62nm,1.8s					
ACSO	Alum Creek Sta	55.86 352	eP	P	10 43 14.4	-1.0
	comp=Z,30nm,0.8s					
T36A	Boggs Farm, Ca	55.89 339	P	P	10 43 15.4	-0.3
	baz=154,SNR=12					
R40A	Maddies Statio	55.91 343	P	P	10 43 14.8	-0.9
	baz=159,SNR=14					
MSTX	Muleshoe	55.95 332	P	P	10 43 16.4	0.0
	baz=146,SNR=6.1					
MSTX	Muleshoe	55.95 332	eP	P	10 43 16.3	0.0
	comp=Z,16nm,1.3s					
T35A	Sooner Cattle	55.98 339	P	P	10 43 16.3	0.0
	baz=154,SNR=13					
N59A	State Game Lan	56.00 359	P	P	10 43 16.9	+0.5
	baz=178,SNR=7.2					
U33A	Lingo Farm, Me	56.13 337	P	P	10 43 17.0	-0.4
	baz=152,SNR=6.0					
R39A	Chumby, Stover	56.15 342	P	P	10 43 16.6	-0.8
	baz=158,SNR=6.2					
S37A	Fort Scott	56.18 341	P	P	10 43 17.5	-0.2
	baz=156,SNR=22					
N54A	Moraine State	56.26 355	P	P	10 43 17.8	-0.5
	baz=173					
R38A	Fenwick Farm,	56.29 342	P	P	10 43 18.0	-0.5
	baz=157,SNR=18					
T34A	McClaskey Farm	56.31 338	P	P	10 43 18.8	+0.1
	baz=153,SNR=17					
S36A	Lake Cedric, C	56.40 340	P	P	10 43 19.0	-0.3
	baz=155,SNR=18					
YLE	Yale	56.41 1	eP	P	10 43 18.4	-0.8
	comp=Z,51nm,0.9s					
Q40A	Laux Farm, Aux	56.51 344	P	P	10 43 19.4	-0.6
	baz=159,SNR=5.5					
S35A	Otter Creek Ra	56.60 339	P	P	10 43 20.6	-0.1
	baz=154,SNR=13					
SFIN	Lafayette	56.67 349	eP	P	10 43 19.5	-1.6
	comp=Z,16nm,0.8s					
R37A	Teagarden Farm	56.69 341	P	P	10 43 20.8	-0.5
	baz=156,SNR=12					
T33A	Patterson Ranc	56.75 337	P	P	10 43 21.9	+0.1
	baz=152,SNR=6.9					
M54A	Oil Creek Stat	56.78 355	P	P	10 43 21.6	-0.3
	baz=174					
Q39A	Willow Grove F	56.81 343	P	P	10 43 21.3	-0.9
	baz=158,SNR=12					
R36A	Gordon, Harris	56.91 340	P	P	10 43 22.5	-0.4
	baz=155,SNR=6.0					
Q38A	Cooks Store, C	56.91 342	P	P	10 43 22.6	-0.2
	baz=158,SNR=42					
ALLY	Alegheny Colle	56.96 355	eP	P	10 43 22.3	-0.9
	comp=Z,120nm,1.9s					
P40A	Paris	57.00 344	P	P	10 43 22.4	-1.1
	baz=159,SNR=8.6					
Q37A	Longview Farm,	57.09 342	P	P	10 43 23.5	-0.7
	baz=157,SNR=5.3					
T32A	Huddler Ranch,	57.09 337	P	P	10 43 24.7	+0.5
	baz=151,SNR=8.5					
S33A	Kaszmaul Farm,	57.12 338	P	P	10 43 24.5	+0.1
	baz=152,SNR=15					
R35A	Emporia Munici	57.14 340	P	P	10 43 24.6	0.0
	baz=154,SNR=6.4					
P39B	Salisbury	57.16 343	P	P	10 43 23.7	-0.9
	baz=159					
319A	Douglas	57.21 325	eP	P	10 43 26.6	+1.3
	comp=Z,17nm,1.0s					
121A	Cookes Peak, D	57.28 327	P	P	10 43 26.6	+0.8
	baz=141,SNR=6.6					
121A	Cookes Peak, D	57.28 327	eP	P	10 43 26.6	+0.8
	comp=Z,22nm,1.4s					
HDIL	Hopedale	57.30 347	P	P	10 43 23.9	-1.6
	baz=163					
HDIL	Hopedale	57.30 347	eP	P	10 43 24.1	-1.5
	comp=Z,20nm,0.8s					
R34A	Isabella, Hill	57.48 339	P	P	10 43 26.8	-0.1
	baz=153,SNR=13					
Q36A	Arnold C. Orve	57.48 341	P	P	10 43 26.3	-0.6
	baz=156,SNR=6.2					
O40A	La Belle	57.51 344	P	P	10 43 25.9	-1.2
	baz=160					
S32A	Newby Ranch, P	57.55 337	P	P	10 43 27.7	+0.2
	baz=151,SNR=6.4					
Q35A	Mercer Eighty,	57.57 340	P	P	10 43 27.2	-0.3
	baz=155,SNR=8.8					
P37A	Lathrop	57.71 342	P	P	10 43 28.0	-0.5
	baz=157,SNR=7.4					
R33A	Olander Ranch,	57.74 338	P	P	10 43 28.8	0.0
	baz=153,SNR=5.1					
TRY	Troy	57.81 1	eP	P	10 43 28.9	-0.2
	comp=Z,36nm,0.8s					
O39A	Kirksville	57.81 344	P	P	10 43 28.7	-0.5
	baz=159					
MMNY	Mt. Morris Dam	57.89 357	eP	P	10 43 29.8	+0.1
	comp=Z,46nm,0.9s					
Q34A	Chapman	57.93 339	P	P	10 43 29.7	-0.3
	baz=154,SNR=11					
O38A	Galt	57.95 343	P	P	10 43 29.6	-0.5
	baz=158					
KSU1	Kansas State U	57.98 340	P	P	10 43 29.9	-0.5
	baz=154,SNR=6.4					
KSU1	Kansas State U	57.98 340	eP	P	10 43 29.9	-0.5
	comp=Z,17nm,0.9s					
P36A	Good Intent, A	58.00 341	P	P	10 43 30.0	-0.5
	baz=156					
LPM	Los Pinos Moun	58.08 329	eP	P	10 43 32.8	+1.3
R32A	Long Quarter,	58.11 338	P	P	10 43 31.5	+0.1
	baz=152,SNR=11					
P35A	Duane Minner,	58.17 341	P	P	10 43 31.3	-0.5
	baz=155,SNR=11					
O37A	Wolven Farm, M	58.18 342	P	P	10 43 31.2	-0.6
	baz=157,SNR=9.3					
Q33A	Connelly Farm,	58.31 339	P	P	10 43 32.6	-0.1
	baz=153					
N39A	Derby Farms, D	58.39 344	P	P	10 43 32.3	-0.9
	baz=159					
LAZ	Ladron	58.41 328	eP	P	10 43 35.2	+1.4
P34A	Walnut Farm, R	58.45 340	P	P	10 43 33.6	-0.2
	baz=154,SNR=12					
ANMO	Albuquerque	58.50 329	P	P	10 43 35.3	+0.9
	baz=143					
ANMO	Albuquerque	58.50 329	||eP	P	10 43 35.3	+0.9
ANMO			pmax	pmax		
	comp=Z,7.0nm,1.1s					
ANMO	Albuquerque	58.50 329	eP	P	10 43 35.0	+0.6
	comp=Z,7.0nm,1.1s					
ANMO			epP	pP	10 43 50.7	-2.5
N38A	Joes South For	58.51 343	P	P	10 43 33.4	-0.6
	baz=158					
Q32A	Meitler Ranch,	58.56 338	P	P	10 43 34.4	-0.1
	baz=152,SNR=7.4					
N37A	Lee Faris, Mou	58.75 343	P	P	10 43 35.2	-0.5
	baz=157,SNR=7.9					
TUC	Tucson	58.76 324	P	P	10 43 37.2	+1.1
	baz=138					
TUC	Tucson	58.76 324	eP	P	10 43 37.3	+1.2
TUC			e*SP	sP	10 44 04.3	+1.3
TUC	Tucson	58.76 324	eP	P	10 43 37.3	+1.2
TUC			esP	sP	10 44 04.3	+1.3
CBKS	Cedar Bluff	58.83 337	P	P	10 43 36.5	0.0
	baz=151,SNR=15					
CBKS	Cedar Bluff	58.83 337	eP	P	10 43 36.4	0.0
CBKS			pmax	pmax		
	comp=Z,42nm,1.0s					
CBKS	Cedar Bluff	58.83 337	eP	P	10 43 36.4	0.0
	comp=Z,42nm,1.0s					
O34A	Beatrice	58.99 340	P	P	10 43 37.1	-0.2
	baz=154					
N36A	Muff Farm, Cla	59.02 342	P	P	10 43 37.2	-0.4
	baz=156,SNR=10					
M38A	Pleasantville	59.08 344	P	P	10 43 37.2	-0.8
	baz=158					
MDV	Middlebury	59.08 1	eP	P	10 43 38.3	+0.4
P32A	Huiting Farm,	59.13 338	P	P	10 43 38.3	-0.1
	baz=152,SNR=5.1					
O33A	Hebron	59.18 340	P	P	10 43 38.4	-0.4
	baz=154,SNR=14					
N35A	Tabor	59.27 341	P	P	10 43 38.9	-0.4
	baz=156,SNR=6.0					
M37A	Trindle Farm,	59.30 343	P	P	10 43 39.3	-0.2
	baz=158,SNR=8.4					
T25A	Trinidad	59.33 332	P	P	10 43 40.8	+0.7
	baz=146,SNR=14					
T25A	Trinidad	59.33 332	eP	P	10 43 40.8	+0.7
	comp=Z,18nm,1.1s					
N34A	Lincoln	59.52 341	P	P	10 43 40.6	-0.5
	baz=155,SNR=6.9					
M36A	Felix, Anita	59.56 342	P	P	10 43 41.0	-0.3
	baz=157					
O32A	Brockman Farm,	59.59 339	P	P	10 43 41.5	-0.1
	baz=153,SNR=6.7					
214A	Organ Pipe Nat	59.67 322	P	P	10 43 43.4	+1.1
	baz=136					
L38A	Oak Wood Farm,	59.69 344	P	P	10 43 41.4	-0.8
	baz=159					
LONY	Lake Ozonia	59.69 360	eP	P	10 43 42.0	-0.2
	comp=Z,10nm,0.8s					
M35A	Neola	59.84 342	P	P	10 43 43.0	-0.2
	baz=156,SNR=5.2					
FRNY	Flat Rock	59.91 1	eP	P	10 43 43.8	+0.2
	comp=Z,21nm,0.9s					
SADO	Sadowa	59.99 356	eP	P	10 43 43.0	-1.1
	comp=Z,17nm,0.9s					
KSCO	Kaye Shedlock'	60.14 335	P	P	10 43 46.1	+0.6
	baz=148,SNR=9.0					
KSCO	Kaye Shedlock'	60.14 335	eP	P	10 43 45.5	0.0
	comp=Z,30nm,1.1s					
M34A	Aspy Farms, Fr	60.15 341	P	P	10 43 45.1	-0.2
	baz=155,SNR=5.4					
W18A	Petrified Fore	60.30 327	P	P	10 43 47.8	+1.0
	baz=140,SNR=7.6					
W18A	Petrified Fore	60.30 327	eP	P	10 43 48.3	+1.5
	comp=Z,21nm,1.3s					
SDCO	Great Sand Dun	60.32 332	P	P	10 43 47.8	+0.8
	baz=145,SNR=50					
SDCO	Great Sand Dun	60.32 332	eP	P	10 43 47.6	+0.7
	comp=Z,24nm,1.0s					
L35A	Bielow Farm, R	60.39 342	P	P	10 43 46.6	-0.4
	baz=156					
M33A	Taylor Creek F	60.40 341	P	P	10 43 46.7	-0.4
	baz=154,SNR=7.0					
L34A	Svendsen Farm,	60.50 341	P	P	10 43 47.4	-0.3
	baz=155,SNR=9.9					
K36A	Gilmore City	60.55 343	P	P	10 43 48.0	-0.2
	baz=158,SNR=6.6					
BGNE	Belgrade	60.57 340	P	P	10 43 48.3	+0.1
	baz=153,SNR=6.8					
BGNE	Belgrade	60.57 340	eP	P	10 43 48.3	+0.1
	comp=Z,65nm,0.8s					
M31A	Lambtecht Ranc	60.79 339	P	P	10 43 50.3	+0.5
	baz=152,SNR=6.3					
K35A	Storm Lake	60.85 343	P	P	10 43 50.0	-0.1
	baz=157					
S22A	4UR Ranch, Cre	60.93 331	P	P	10 43 52.2	+1.0
	baz=144,SNR=8.9					
S22A	4UR Ranch, Cre	60.93 331	eP	P	10 43 51.4	+0.2
	comp=Z,6.8nm,0.9s					
L33A	Hoskins	60.96 341	P	P	10 43 50.8	-0.1
	baz=154					
L32A	Elgin	61.06 340	P	P	10 43 51.7	+0.1
	baz=154					
K34A	Le Mars	61.08 342	P	P	10 43 51.3	-0.4
	baz=156					
Q24A	Divide	61.16 333	P	P	10 43 53.6	+0.9
	baz=146,SNR=5.5					
Q24A	Divide	61.16 333	eP	P	10 43 52.6	-0.1
	comp=Z,16nm,1.0s					
Y14A	Wickenburg	61.21 324	eP	P	10 43 54.3	+1.5
	comp=Z,22nm,0.8s					
TRQ	Mont Tremblant	61.29 360	eP	P	10 43 53.0	-0.2
MVCO	Mesa Verde	61.30 329	P	P	10 43 54.4	+0.8
	baz=142,SNR=6.1					
MVCO	Mesa Verde	61.30 329	eP	P	10 43 54.0	+0.5
	comp=Z,7.8nm,1.0s					
I38A	Scanlan Farm,	61.31 345	P	P	10 43 52.4	-0.8
	baz=160,SNR=7.9					
WUAZ	Wupatki	61.48 326	P	P	10 43 55.7	+1.0
	baz=138,SNR=6.1					
WUAZ	Wupatki	61.48 326	eP	P	10 43 55.0	+0.3
	comp=Z,12nm,1.0s					
L31A	Butterfield Fa	61.48 340	P	P	10 43 54.8	+0.3
	baz=153,SNR=12					
I37A	Lemond, Waseca	61.55 345	P	P	10 43 54.2	-0.6
	baz=159					
OGNE	Ogallala	61.56 337	P	P	10 43 55.4	+0.4
	baz=149					
OGNE	Ogallala	61.56 337	eP	P	10 43 55.7	+0.7
	comp=Z,39nm,0.9s					
K32A	Verdigre	61.63 341	P	P	10 43 55.5	+0.1
	baz=154					
K31A	O'Neill	61.86 340	P	P	10 43 56.9	0.0
	baz=153,SNR=12					
J33A	Davis	61.91 342	P	P	10 43 56.8	-0.5
	baz=155					
H37A	Dierke Farm, C	61.96 345	P	P	10 43 57.3	-0.3
	baz=160					
ISCO	Idaho Springs	62.06 333	P	P	10 43 59.3	+0.6
	baz=145,SNR=14					
ISCO	Idaho Springs	62.06 333	eP	P	10 43 59.1	+0.4
ISCO			pmax	pmax		
	comp=Z,9.0nm,1.0s					
ISCO	Idaho Springs	62.06 333	eP	P	10 43 59.1	+0.4
	comp=Z,8.9nm,1.0s					
PV01	Paradox Valley	62.07 330	eP	P	10 43 59.8	+1.1
SMCO	Snowmass	62.15 332	eP	P	10 44 00.5	+1.0
	comp=Z,9.7nm,0.8s					
ECSD	EROS Data Cent	62.19 342	P	P	10 43 58.5	-0.6
	baz=155,SNR=21					
ECSD	EROS Data Cent	62.19 342	eP	P	10 43 58.5	-0.6
	comp=Z,15nm,0.9s					
K30A	Basset	62.19 339	P	P	10 43 59.5	+0.3
	baz=152,SNR=6.4					
H36A	Jessenland, He	62.22 344	P	P	10 43 58.8	-0.5
	baz=158,SNR=7.2					
PV10	Paradox Valley	62.48 330	eP	P	10 44 01.9	+0.4
SPMN	Marine on St.	62.54 346	P	P	10 44 00.7	-0.7
	baz=160,SNR=7.8					
SPMN	Marine on St.	62.54 346	eP	P	10 44 00.8	-0.7
	comp=Z,19nm,0.9s					
H35A	Sunnyside Ranc	62.57 344	P	P	10 44 01.1	-0.5
	baz=158,SNR=14					
COWI	Conover	62.58 349	eP	P	10 44 00.7	-1.0
	comp=Z,5.6nm,0.8s					
PV09	Paradox Valley	62.62 330	eP	P	10 44 03.4	+0.9
I32A	Karley and Nic	62.71 342	P	P	10 44 02.4	-0.2
	baz=155					
J30A	Dallas	62.73 340	P	P	10 44 02.5	-0.2
	baz=152,SNR=16					
H34A	Spellman Lake,	62.80 343	P	P	10 44 03.0	-0.1
	baz=156,SNR=7.7					
G35A	Watkins	62.96 344	P	P	10 44 04.0	-0.2
	baz=158					
PFO	Pinyon Flats O	63.01 321	eP	P	10 44 06.5	+1.5
PFO			e*SP	sP	10 44 31.3	-0.7
PFO	Pinyon Flats O	63.01 321	eP	P	10 44 06.5	+1.5

PFO esP sP 10 44 31.3 -0.7
I31A Royce, Wessing 63.04 341 P P 10 44 05.1 +0.3
baz=154
H33A Prehn Over Nor 63.09 342 P P 10 44 05.0 -0.1
baz=156,SNR=6.2
N23A Red Feather La 63.10 334 P P 10 44 05.8 +0.2
baz=145
N23A Red Feather La 63.10 334 eP P 10 44 05.9 +0.3
comp=Z,8.2nm,1.0s
H32A Carlson Farm, 63.13 342 P P 10 44 05.2 -0.2
baz=155,SNR=8.6
I30A Oacoma 63.23 340 P P 10 44 06.0 0.0
baz=153
PHWY Pilot Hill 63.23 334 eP P 10 44 06.5 0.0
comp=Z,7.1nm,0.7s
F36A Milaca 63.31 345 P P 10 44 06.2 -0.3
baz=159,SNR=12
KNB Kanab 63.37 326 eP P 10 44 08.4 +1.1
KNB pmax pmax
comp=Z,11nm,0.9s
KNB Kanab 63.37 326 eP P 10 44 08.4 +1.1
comp=Z,11nm,0.9s
O20A White River Ci 63.50 332 P P 10 44 08.7 +0.5
baz=143,SNR=15
O20A White River Ci 63.50 332 eP P 10 44 08.6 +0.5
comp=Z,17nm,0.9s
J27A Elkhorn Farm, 63.54 338 P P 10 44 09.0 +0.8
baz=150,SNR=13
SUSD Miller 63.55 341 P P 10 44 07.9 -0.3
baz=153
F35A Swanville 63.58 344 P P 10 44 08.1 -0.2
baz=158,SNR=7.0
LCMT Little Creek M 63.60 326 eP P 10 44 10.3 +1.5
comp=Z,4.1nm,0.9s
I29A Vivian Onida 63.62 339 P P 10 44 08.2 -0.4
baz=152,SNR=5.3
F34A Alexandria 63.70 344 P P 10 44 09.3 +0.2
baz=157
SRU San Rafael Swe 63.78 329 eP P 10 44 11.2 +1.2
SRU pmax pmax
comp=Z,14nm,1.1s
SRU San Rafael Swe 63.78 329 eP P 10 44 11.2 +1.2
comp=Z,14nm,1.1s
G32A Webster 63.83 342 P P 10 44 09.8 -0.2
baz=155
E36A McGregor 63.86 346 P P 10 44 10.1 -0.1
baz=160,SNR=13
Q16A Castle Valley 63.95 329 eP P 10 44 12.5 +1.3
comp=Z,8.9nm,1.0s
J26A Sides Ranch, S 63.99 337 P P 10 44 12.2 +1.0
baz=149,SNR=6.1
P18A Preston Nutter 64.05 330 eP P 10 44 13.3 +1.4
comp=Z,5.8nm,0.8s
H29A Onida 64.12 340 P P 10 44 11.6 -0.3
baz=152
MSU Marysvale 64.16 328 eP P 10 44 14.3 +1.8
MSU Marysvale 64.16 328 eP P 10 44 14.3 +1.8
P17A Butcher Ranch, 64.17 329 eP P 10 44 13.3 +0.8
comp=Z,15nm,0.8s
E35A Pequot Lakes 64.18 345 P P 10 44 12.2 0.0
baz=158
G30A Faulkton 64.22 341 P P 10 44 12.4 -0.1
baz=153,SNR=15
TMUT Trail Mountain 64.26 329 eP P 10 44 14.3 +1.0
comp=Z,5.5nm,0.8s
I27A Quinn 64.27 338 P P 10 44 13.4 +0.5
baz=150,SNR=12
D37A Cotton 64.28 347 P P 10 44 12.7 -0.1
baz=160,SNR=7.6
SHPR Sheep Range 64.28 324 eP P 10 44 15.3 +2.0
comp=Z,6.2nm,1.1s
SHPR esP sP 10 44 40.7 +0.2
E34A Wadena 64.34 344 P P 10 44 13.4 +0.1
baz=158,SNR=5.1
C39A Grand Marais 64.42 348 P P 10 44 13.2 -0.5
baz=163,SNR=12
E33A Westby DABS, E 64.55 344 P P 10 44 14.3 -0.4
baz=157
C38A Sawbill Land. 64.56 348 P P 10 44 13.9 -0.8
baz=162,SNR=5.9
F31A Hecla 64.60 342 P P 10 44 14.9 -0.2
baz=154,SNR=11
C37A Embarrass 64.76 347 P P 10 44 15.6 -0.4
baz=161,SNR=8.6
K22A Casper 64.80 334 P P 10 44 17.4 +0.8
baz=145,SNR=12
K22A Casper 64.80 334 eP P 10 44 17.2 +0.6
comp=Z,19nm,0.8s
F30A Leola 64.82 341 P P 10 44 16.4 -0.1
baz=153
EYMN Ely 64.82 347 P P 10 44 15.7 -0.7
baz=162,SNR=8.6
EYMN Ely 64.82 347 eP P 10 44 15.8 -0.6
comp=Z,13nm,1.1s
I25A Rochford 64.84 337 P P 10 44 17.8 +1.0
baz=148,SNR=42
C36A Pine Crest Far 64.93 346 P P 10 44 16.6 -0.5
baz=160,SNR=7.8
RSSD Black Hills 65.04 337 P P 10 44 18.3 +0.1
baz=148
RSSD Black Hills 65.04 337 eP P 10 44 18.5 +0.4
RSSD pmax pmax
comp=Z,24nm,1.5s
RSSD Black Hills 65.04 337 eP P 10 44 18.5 +0.4
comp=Z,24nm,1.5s
NLU North Lily Min 65.20 329 eP P 10 44 20.9 +1.6
comp=Z,7.8nm,1.1s
TPNV Topopah Spring 65.21 324 P P 10 44 21.0 +1.6
baz=135
TPNV Topopah Spring 65.21 324 eP P 10 44 21.6 +2.2
TPNV pmax pmax
comp=Z,5.0nm,0.9s
TPNV Topopah Spring 65.21 324 eP P 10 44 21.6 +2.2
comp=Z,5.2nm,0.9s
FURC Furnace Creek, 65.23 323 P P 10 44 20.9 +1.7
baz=134,SNR=6.4
H25A Fruitdale 65.30 338 P P 10 44 20.1 +0.4
baz=149,SNR=12
MPMC Manual Prospec 65.31 323 P P 10 44 21.0 +0.9
baz=133
G27A Dupree 65.36 339 P P 10 44 20.2 +0.2
baz=150
E30A Jud 65.38 342 P P 10 44 20.3 +0.2
baz=154,SNR=5.2
JLU Jordanelle 65.38 330 eP P 10 44 21.8 +1.3
comp=Z,15nm,0.9s
D32A Dogwood Acres, 65.41 343 P P 10 44 20.2 0.0
baz=156
G26A Maurine 65.52 339 P P 10 44 20.8 -0.3
baz=150,SNR=10
D31A Mcclaflin, Tow 65.53 343 P P 10 44 21.1 +0.2
baz=155
C33A Trail 65.65 344 P P 10 44 21.6 -0.2
baz=157
E29A Napoleon 65.67 341 P P 10 44 22.4 +0.4
baz=153
B35A Bob, Littlefor 65.70 346 P P 10 44 21.6 -0.5
baz=159,SNR=10
DUG Dugway, Tooele 65.75 329 P P 10 44 24.3 +1.6
baz=139,SNR=30
DUG Dugway, Tooele 65.75 329 eP P 10 44 24.4 +1.6
DUG pmax pmax
comp=Z,21nm,0.9s
DUG Dugway, Tooele 65.75 329 eP P 10 44 24.4 +1.6
comp=Z,21nm,0.9s
TCUT Toone Canyon 65.76 330 eP P 10 44 24.4 +1.4
comp=Z,26nm,1.0s
R11A Troy Canyon, C 65.84 326 P P 10 44 25.2 +1.7
baz=136,SNR=10
R11A Troy Canyon, C 65.84 326 eP P 10 44 25.3 +1.9
comp=Z,5.2nm,1.0s
D30A Buchanan 65.88 342 P P 10 44 23.5 +0.3
baz=154,SNR=15
E28A Huff 66.00 341 P P 10 44 24.8 +0.8
baz=152,SNR=7.3
F26A Lodgepole 66.03 339 P P 10 44 24.4 +0.1
baz=150,SNR=7.9
B34A Aery, Baudette 66.04 345 P P 10 44 23.6 -0.7
baz=158,SNR=8.7
B33A Robert and Kas 66.07 345 P P 10 44 24.4 -0.1
baz=157
E27A Carson 66.16 340 P P 10 44 25.4 +0.3
baz=151,SNR=5.5
BW06 Boulder Array 66.20 332 P P 10 44 25.6 0.0
baz=142,SNR=9.6
BW06 Boulder Array 66.20 332 eP P 10 44 25.7 0.0
PD31 Pinedale Array 66.20 332 eP P 10 44 26.0 +0.3
PDAR Pinedale Array 66.20 332 P P 10 44 25.7 0.0
comp=Z,4.1nm,1.0s,baz=140,slow=5.8,SNR=26
C31A Landman Farms, 66.21 343 P P 10 44 25.2 -0.1
baz=155,SNR=11
HWUT Hardware Ranch 66.21 330 eP P 10 44 26.4 +0.7
comp=Z,15nm,0.9s
C30A Mose, Pekin 66.34 343 P P 10 44 26.5 +0.3
baz=154,SNR=10.0
BGU Big Grassy Mou 66.41 329 eP P 10 44 28.2 +1.2
comp=Z,7.7nm,0.9s
SPUT South Promonto 66.41 330 eP P 10 44 28.2 +1.2
comp=Z,21nm,1.3s
B32A Ashes, Strandq 66.43 344 P P 10 44 26.6 -0.1
baz=156,SNR=6.8
E26A Carlson Angus 66.50 339 P P 10 44 27.5 +0.2
baz=150,SNR=6.8
A33A Warroad 66.64 345 P P 10 44 27.9 -0.1
baz=158,SNR=11
MDND Maddock 66.80 342 P P 10 44 29.8 +0.6
baz=153,SNR=6.1
MDND Maddock 66.80 342 eP P 10 44 29.4 +0.3
comp=Z,115nm,1.4s
E25A Miller Ranch, 66.85 339 P P 10 44 30.1 +0.5
baz=149
AHID Auburn Hatcher 66.89 332 eP P 10 44 30.9 +0.8
comp=Z,12nm,0.9s
HVU Hansel Valley 66.93 330 eP P 10 44 31.3 +1.0
HVU pmax pmax
comp=Z,14nm,0.8s
HVU Hansel Valley 66.93 330 eP P 10 44 31.3 +1.0
comp=Z,14nm,0.8s
B30A Myrvik Farm, E 66.97 343 P P 10 44 30.3 +0.1
baz=155,SNR=8.2
REDW Red Top Meadow 67.25 332 eP P 10 44 33.3 +1.0
comp=Z,18nm,1.4s
B29A Wagenman Farm, 67.28 342 P P 10 44 32.6 +0.5
baz=154,SNR=11
SNOW Snow King Moun 67.28 332 eP P 10 44 33.3 +0.7
comp=Z,5.2nm,0.7s
NV11 Mina Array Sit 67.33 324 eP P 10 44 34.8 +1.9
LOHW Long Hollow 67.33 332 eP P 10 44 33.5 +0.6
comp=Z,6.0nm,0.8s
D25A Fairfield 67.38 339 P P 10 44 33.9 +1.0
baz=149,SNR=6.8
ELK Elko 67.39 328 eP P 10 44 34.8 +1.4
ELK pmax pmax
comp=Z,6.0nm,1.0s
ELK Elko 67.39 328 eP P 10 44 34.8 +1.4
comp=Z,5.7nm,1.0s
NV01 Mina Array Sit 67.41 324 eP P 10 44 34.4 +0.9
NVAR Mina Array Bea 67.41 324 P P 10 44 35.2 +1.7
comp=Z,3.1nm,1.0s,baz=143,slow=6.5,SNR=15
MOOW Moose Ponds 67.50 332 eP P 10 44 34.8 +0.8
comp=Z,6.5nm,1.0s
C26A Wahner Farm, P 67.56 340 P P 10 44 34.1 +0.2
baz=151
VNA3 Neumayer Olymp 67.56 162 P sP 10 45 03.1 +2.1
B28A Dugan Ranch, T 67.56 342 P P 10 44 34.0 +0.1
baz=153
A29A Manning Farm, 67.66 343 P P 10 44 34.5 0.0
baz=154,SNR=12
IMW Indian Meadow 67.71 332 eP P 10 44 36.5 +1.2
comp=Z,9.8nm,0.9s
FLWY Flagg Ranch 67.75 333 eP P 10 44 36.7 +1.2
comp=Z,29nm,0.8s
VNA1 Neumayer--Stat 67.81 161 P sP 10 45 08.4 +5.9
H17A Grant Village 67.94 333 P P 10 44 37.8 +1.1
baz=142
H17A Grant Village 67.94 333 eP P 10 44 38.4 +1.7
comp=Z,4.8nm,1.0s
A28A Rude Farm, Bot 67.95 342 P P 10 44 36.7 +0.3
baz=153
RLMT Red Lodge 67.96 334 P P 10 44 37.4 +0.6
baz=143,SNR=15
RLMT Red Lodge 67.96 334 eP P 10 44 37.4 +0.6
comp=Z,16nm,1.1s
ULM Lac du Bonnet 67.98 345 P P 10 44 35.8 -0.7
comp=Z,11nm,0.8s,baz=163,slow=5.4,SNR=10
ULM LR LR 11 17 35.1
comp=Z,33nm,18.1s,baz=201,slow=39
LKWY Lake 68.00 333 eP P 10 44 38.8 +1.7
LKWY pmax pmax
comp=Z,15nm,0.9s
LKWY Lake 68.00 333 eP P 10 44 38.8 +1.7
comp=Z,15nm,0.9s
LAO LASA Array 68.03 337 P P 10 44 37.3 +0.3
baz=146,SNR=9.9
LAO LASA Array 68.03 337 eP P 10 44 37.1 +0.1
comp=Z,12nm,1.0s
YFT Old Faithful 68.10 333 eP P 10 44 40.7 +3.0
comp=Z,9.2nm,1.0s
VNA2 Neumayer--Watz 68.17 161 P sP 10 45 06.9 +2.1
baz=298,slow=8.6
YMR Madison River 68.33 333 eP P 10 44 41.0 +1.9
comp=Z,14nm,0.9s
HLID Hailey 69.07 330 P P 10 44 44.9 +1.2
baz=138,SNR=18
HLID Hailey 69.07 330 eP P 10 44 45.1 +1.5
comp=Z,7.5nm,0.9s
MCMT McKenzie Canyo 69.29 332 eP P 10 44 46.5 +1.4
BOZ Bozeman (W) 69.39 333 P P 10 44 46.0 +0.5
baz=141,SNR=16
BOZ Bozeman (W) 69.39 333 eP P 10 44 45.8 +0.2
BOZ pmax pmax
comp=Z,8.0nm,1.1s
BOZ Bozeman (W) 69.39 333 eP P 10 44 45.8 +0.2
comp=Z,8.5nm,1.1s
DLMT Dillon 69.59 332 eP P 10 44 47.7 +0.9
comp=Z,9.5nm,1.1s
MFID Camas Ranch 69.65 329 eP P 10 44 48.6 +1.4
comp=Z,24nm,0.9s
SNAA Sanae 69.78 161 P pP 10 45 07.8 +1.0
SNAA Sanae 69.78 161 eP P 10 44 52.2 +4.6
SNAA Sanae 69.78 161 eP P 10 44 51.4 +3.8
SNAA epP pP 10 45 08.1 +1.2
ORV Oroville 70.01 323 eP P 10 44 51.7 +2.4
ORV pmax pmax
comp=Z,15nm,0.9s
ORV Oroville 70.01 323 eP P 10 44 51.7 +2.4
comp=Z,15nm,0.9s
SCHQ Schefferville 70.22 5 P P 10 44 49.0 -1.3
comp=Z,8.2nm,0.9s,baz=174,slow=5.4,SNR=6.9
SCHQ Schefferville 70.22 5 eP P 10 44 50.2 -0.1
EGMT Eagleton 70.50 336 P P 10 44 52.8 +0.6
baz=144,SNR=6.4
EGMT Eagleton 70.50 336 eP P 10 44 52.9 +0.7
comp=Z,8.8nm,1.0s
MOD Modoc Plateau 70.91 326 eP P 10 44 56.5 +1.5
comp=Z,9.8nm,1.0s
MSO Missoula 71.32 333 P P 10 44 58.7 +1.4
baz=139
MSO Missoula 71.32 333 eP P 10 44 59.1 +1.8
comp=Z,19nm,1.4s
BMO Blue Mountains 71.42 329 eP P 10 44 58.9 +1.0
comp=Z,15nm,1.5s
M04C Macdoel 71.68 325 P P 10 45 00.8 +1.2
baz=131
M02C Callahan 71.99 324 P P 10 45 02.2 +0.8
baz=130
LIC Lamto 72.08 78 eP P 10 45 00.1 -2.3
comp=Z,60nm,1.7s
YBH Yreka Blue Hor 72.13 324 eP P 10 45 02.8 +0.6
YBH pmax pmax
comp=Z,5.0nm,1.0s
YBH Yreka Blue Hor 72.13 324 eP P 10 45 02.8 +0.6
comp=Z,5.1nm,1.0s
F10A Beach Ranch, E 72.20 330 eP P 10 45 04.2 +1.6
comp=Z,8.1nm,0.8s
TIC Toumodi 72.22 78 eP P 10 45 01.3 -2.0
J05D Fort Rock, OR 72.35 326 P P 10 45 05.3 +1.7
baz=132
DBIC Dimbokro 72.39 78 P P 10 45 01.7 -2.5
comp=Z,7.8nm,0.9s,baz=242,slow=5.6,SNR=7.4
DBIC LR LR 11 14 42.7
comp=Z,77nm,20.2s,baz=232,slow=34
KIC Kosan Boka 72.40 78 eP P 10 45 03.5 -0.8
comp=Z,27nm,0.9s
BSMT Bassoo Peak 72.47 333 eP P 10 45 06.0 +1.7
WALA Waterton Lakes 73.01 334 eP P 10 45 08.6 +1.2
I05D Terrebonne, OR 73.12 327 P P 10 45 09.8 +1.8
baz=132
F04A Amboy 74.76 328 eP P 10 45 19.1 +1.6
comp=Z,17nm,0.9s
FCC Fort Churchill 75.58 350 eP P 10 45 21.8 0.0
FCC Fort Churchill 75.58 350 eP P 10 45 21.8 0.0
TORD Torodi Ar. Bea 80.54 74 P P 10 45 50.0 -0.4
comp=Z,11nm,0.8s,baz=258,slow=5.2,SNR=50
TORD LR LR 11 19 55.5
comp=Z,63nm,21.2s,baz=175,slow=34
YKA Yellowknife Ar 83.71 342 P P 10 46 05.5 -0.3
comp=Z,2.8nm,0.9s,baz=139,slow=5.2,SNR=46
SYO Syowa Base 84.06 161 epP pP 10 46 24.7 -2.8
ESDC Sonseca Array 85.39 47 P P 10 46 14.7 -0.3
comp=Z,3.8nm,0.9s,baz=253,slow=5.5,SNR=10
ES19 SONSECA Array 85.44 47 eP P 10 46 15.4 +0.2
TAM Tamanrasset 86.99 66 eP P 10 46 25.0 +1.7
TAM Tamanrasset 86.99 66 eP P 10 46 25.0 +1.7
SUMG Summit 90.92 10 eP P 10 46 41.6 +0.6
SUMG Summit 90.92 10 eP P 10 46 41.6 +0.6
INK Inuvik 93.42 341 P P 10 46 51.5 -0.7
comp=Z,1.5nm,0.8s,baz=104,slow=4.7,SNR=9.3
ILAR Eielson Array 96.47 336 P P 10 47 05.4 -0.8
comp=Z,0.3nm,0.8s,baz=151,slow=3.2,SNR=4.2
ILAR PP PP 10 50 58.5 -2.7
comp=Z,0.5nm,0.8s,baz=118,slow=5.9,SNR=4.3
GERES GERESS Array B 100.25 42 P Pdif 10 47 23.5 -0.1
comp=Z,0.3nm,0.6s,baz=213,slow=4.6,SNR=3.7
OBN Obninsk 114.52 36 ePKIKP PKPdf 10 52 22.6 +5.8
OBN e 10 53 18.9
OBN pmax pmax
comp=Z,3.0nm,0.9s
OBN MLR MLR
comp=Z,51nm,22.0s
KIV Kislovodsk 120.04 48 ePKIKP PKPdf 10 52 30.3 +2.3
GNI Garni 122.04 52 iPKIKP PKPdf 10 52 34.2 +2.2
ABKAR Akbulak array 129.91 38 ePKPdf PKPdf 10 52 47.2 +0.7
ASAR Alice Springs 132.28 216 PKP PKPdf 10 52 52.6 +0.7
comp=Z,0.6nm,0.7s,baz=120,slow=1.8,SNR=5.7
BRVK Borovoye 133.29 29 iPKIKP PKPdf 10 52 55.8 +3.0
WRA Warramunga Arr 134.88 220 PKP PKPdf 10 52 57.5 +0.7
comp=Z,0.6nm,0.5s,baz=133,slow=2.0,SNR=9.2
ZALV Zalesovo Beam 138.24 18 PKP PKPdf 10 53 03.0 +1.1
comp=Z,6.3nm,0.9s,baz=299,slow=3.1,SNR=15
KURK Kurchatov 138.62 26 PKIKP PKPdf 10 53 04.4 +1.6
KURK Kurchatov 138.62 26 PKP PKPdf 10 53 04.3 +1.6
KURBB Kurchatov Arra 138.65 26 PKP PKPdf 10 53 04.3 +1.5
comp=Z,1.0nm,0.6s,baz=307,slow=2.7,SNR=8.1
MKAR Makanchi Array 143.19 27 PKP PKPdf 10 53 09.1 -2.1
comp=Z,1.1nm,0.7s,baz=340,slow=2.5,SNR=8.9
KSH Kashi 144.72 41 ePKP PKPdf 10 53 14.5 +0.2
KSH PKS PKSdf 10 56 48.7 -1.2
KSH AMB AMB
comp=Z,32nm,3.5s
KSH LR LR
comp=Z,440nm,12.0s
KSH LR LR
comp=Z,200nm,10.1s
KSH LR LR
comp=Z,89nm,6.9s
ZAK Zakamensk 145.03 2 ePKIKP PKPab 10 53 12.9 -1.0
ZAK pmax pmax
comp=Z,9.0nm,1.1s
CN2 Changchun 146.94 333 ePKPbc PKPdf 10 53 14.9 -2.8
SONM Songino Array 147.61 359 PKPbc PKPbc 10 53 21.4 -0.2
comp=Z,7.5nm,0.8s,baz=288,slow=0.4,SNR=30
WMQ Urumqi 147.84 25 ePKPbc PKPdf 10 53 19.4 +0.1
KSRS Korea Array 150.34 322 PKPbc PKPbc 10 53 29.1 +0.4
comp=Z,4.1nm,1.0s,baz=32,slow=1.7,SNR=14
KSAR Wonju Array Be 150.37 322 PKIKP PKPbc 10 53 29.1 +0.3
KSAR Wonju Array Be 150.37 322 PKPbc PKPbc 10 53 29.1 +0.3
HHC Hu-ho-hao-te 154.06 349 ePKPbc PKPdf 10 53 25.5 -3.5
HHC PP PP 10 57 25.2 +0.7
HHC SS SS 11 16 52.6 -3.9
HHC AMB AMB
comp=Z,40nm,9.6s
HHC LR LR
comp=Z,100nm,21.0s
HHC LR LR
comp=Z,98nm,21.0s
HHC LR LR
comp=Z,100nm,21.4s
CD2 Chengdu 164.44 6 PKP PKPdf 10 53 40.6 -0.7
GYA Guiyang 168.90 354 ePKP PKPdf 10 53 44.0 -0.9
GYA sPKP 10 54 04.6
GYA PKPab PKPab 10 54 56.2 +0.5
GYA PKS PKSdf 10 57 15.0 -2.6
GYA PP PP 10 58 46.5 +2.7
GYA AMB AMB
comp=Z,120nm,8.2s
KMI Kunming 169.96 14 PKP PKPdf 10 53 43.1 -2.6

NIED ***07*** *10:41:00, 39°.10N×142°.40E, h26km, Mw3.3 Best double couple: M0 1.18000×10^14 NP1:φs72.00000°, δ20.00000°, λ-31.00000°. NP2:φs192.00000°, δ80.00000°, λ-107.00000°.*
ISCJB ***07*** *10:41:54.6±1.2, 39°.13N±0°.04×142°.3E±0°.1, h41km±12km, mb3.6/3, Error ellipse: s-maj=15.4km s-min=6.1km az=10.8*
JMA ***07*** *10:41:54.1±0.1, 39°.12N×142°.36E, h36km±2km, M3.6*
IDC ***07*** *10:41:57.4±1.8, 39°.59N×141°.28E, h0km, mb3.7/3, mb1 3.7/5, mb1mx3.3/54, mbtmp3.5/5, ML2.9/2, Error ellipse: s-maj=49.4km s-min=24.9km az=86.0*

ISC 07 10:41:54.6±1.9, 39°.11N±0°.04×142°.24E±0°.10, h25km±12km, n17, σ1§06/25, mb3.8/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.45	267	P	Pn	10 42 05.2	-0.2
OFUJ				S	Sn	10 42 12.7	+0.1
MIYJ	Miyakonagasawa	0.57	325	P	Pb	10 42 06.0	0.0
MIYJ				S	Sb	10 42 14.2	+0.5
JMK	Ichinoseki	0.81	259	P	Pn	10 42 10.6	+0.2
JMK				S	Sn	10 42 22.4	+0.8
JOM	Ohasama	0.82	297	P	Pn	10 42 10.6	+0.1
JOM				S	Sn	10 42 22.7	+0.8
JIO	Ouri	0.95	227	P	Pb	10 42 12.0	-0.4
JIO				S	Sn	10 42 24.6	-0.5
JKZ	Kuzumaki	1.12	322	P	Pn	10 42 14.8	0.0
JKZ				S	Sb	10 42 29.6	0.0
JRG	Rokugo	1.28	284	P	Pb	10 42 17.9	-0.1
JANG	Nango	1.38	336	P	Pn	10 42 18.0	-0.3
JANG				S	Sn	10 42 36.1	+0.3
JOU	Okura	1.44	239	P	Pb	10 42 20.1	-0.6
JYK	Kaneyama	1.48	263	P	Pb	10 42 20.7	-0.6
JMM	Marumori	1.68	223	P	Pn	10 42 22.6	+0.2
JMM				eS	Sb	10 42 44.6	-0.9
MAT	Matsushiro	4.09	233	P	Pn	10 42 58.5	+2.9
MAT				eS	Sn	10 43 41.3	-1.3
MJAR	Matsushiro Arr	4.09	233	Pn	Pn	10 42 58.3	+2.8
	1.0nm,0.3s,baz=40,slow=11,SNR=9.8						
ASAJ	Asahikawa	5.01	3	Pn	Pn	10 43 08.8	+0.7
	0.4nm,0.3s,baz=235,slow=16,SNR=3.7						
MKAR	Makanchi Array	43.60	300	P	P	10 49 56.5	-0.1
	0.6nm,0.9s,baz=90,slow=9.7,SNR=3.6						
KURBB	Kurchatov Arra	45.27	306	P	P	10 50 08.8	-1.0
	0.5nm,0.4s,baz=80,slow=8.5,SNR=4.2						
WRA	Warramunga Arr	59.20	189	P	P	10 52 03.0	+9.4
	1.0nm,0.8s,baz=6.8,slow=7.0,SNR=11						

NIED ***07*** *10:47:00, 36°.70N×143°.90E, h5km, Mw3.7 Best double couple: M0 3.59000×10^14 NP1:φs20.00000°, δ23.00000°, λ-84.00000°. NP2:φs193.00000°, δ67.00000°, λ-93.00000°.*
IDC ***07*** *10:47:12.1±1.0, 36°.48N×144°.16E, h0km, mb3.6/10, mb1 3.8/13, mb1mx3.6/66, mbtmp3.7/13, ML3.6/3, MS2.4/4, Ms1 2.4/4, ms1mx2.2/33, Error ellipse: s-maj=25.6km s-min=19.5km az=141.0*
ISCJB ***07*** *10:47:15.4±0.6, 36°.48N±0°.07×143°.96E±0°.06, h33km, mb3.6/10, Error ellipse: s-maj=10.8km s-min=6.5km az=168.1*
JMA ***07*** *10:47:16.5±0.3, 36°.69N×143°.90E, h57km, M3.9*

ISC 07 10:47:17.5±0.8, 36°.62N±0°.07×143°.97E±0°.08, h35km, n23, σ1§71/25, mb3.6/10, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	2.59	288	P	Pn	10 47 56.1	-0.9
JFK				S	Sn	10 48 25.3	-1.9
ONAJ	Iwakimizuishiy	2.59	282	P	Pn	10 47 56.4	-0.6
ONAJ				S	Sn	10 48 25.9	-1.4
CHOJ	Chosi	2.68	251	P	Pn	10 47 57.9	-0.3
JHO	Hitachi	2.74	271	P	Pn	10 47 58.5	-0.5
JAG	Ashikaga	3.65	268	P	Pn	10 48 10.9	-0.6
MJAR	Matsushiro Arr	4.64	271	Pn	Pn	10 48 25.7	+0.6
	3.7nm,0.3s,baz=89,slow=15,SNR=35						
MJAR				LR	LR	10 50 23.1	

comp=Z,36nm,20.4s,baz=115,slow=40
MAT Matsushiro 4.64 271 P **Pn 10 48 26.1 +0.9**
MAT S **Sn 10 49 18.7 +0.9**
JHJ Hachijo jima 2 4.91 226 Pn **Pn 10 48 27.1 -1.7**
13nm,0.3s,baz=87,slow=22,SNR=5.4
JHJ Sn **Sn 10 49 21.1 -3.3**
23nm,0.3s,baz=47,slow=21,SNR=5.3
ASAJ Asahikawa 7.56 352 Pn **Pn 10 49 03.8 -1.4**
0.6nm,0.3s,baz=205,slow=16,SNR=7.5
ASAJ Sn **Sn 10 50 24.6 -5.0**
0.4nm,0.3s,baz=135,slow=19,SNR=2.7
JNU Nakatsue 11.31 256 LR LR 10 54 39.8
comp=Z,33nm,18.6s,baz=127,slow=39
KSRS Korea Array 12.85 278 LR LR 10 54 52.5
comp=Z,10nm,21.3s,baz=109,slow=35
KLR Kul'dur 15.43 329 LR LR 10 57 17.5
comp=Z,19nm,21.0s,baz=139,slow=39
MKAR Makanchi Array 46.07 303 P **P 10 55 39.8 +1.9**
0.6nm,0.8s,baz=85,slow=8.8,SNR=3.6
KURBB Kurchatov Arra 47.87 309 P **P 10 55 53.2 +1.4**
0.9nm,0.7s,baz=82,slow=7.6,SNR=7.2
ILAR Eielson Array 48.74 32 P **P 10 55 58.6 +0.2**
0.3nm,0.5s,baz=266,slow=6.1,SNR=3.4
BVAR Borovoye Array 52.36 313 P **P 10 56 27.1 +1.2**
0.4nm,0.4s,baz=59,slow=5.6,SNR=2.9
INK Inuvik 53.81 27 P **P 10 56 36.4 +0.1**
0.3nm,0.4s,baz=298,slow=5.7,SNR=4.2
WRA Warramunga Arr 56.99 191 P **P 10 56 58.1 -1.6**
0.6nm,0.6s,baz=10,slow=7.1,SNR=6.6
YKA Yellowknife Ar 63.12 31 P **P 10 57 41.0 -0.3**
0.1nm,0.8s,baz=295,slow=5.5,SNR=3.2
NVAR Mina Array Bea 73.58 54 P **P 10 58 48.4 +1.0**
0.3nm,0.6s,baz=305,slow=6.5,SNR=3.8
NB2 NORSAR Subarra 75.34 338 P **P 10 58 58.2 +1.3**
comp=Z,0.4nm,0.5s,baz=39,slow=6.2
NOA NORSAR Array B 75.34 339 P **P 10 58 58.3 +1.3**
comp=Z,0.7nm,0.7s,baz=39,slow=5.7,SNR=4.1
AKASG Malin Array Be 75.86 323 P **P 10 59 00.9 +0.9**
comp=Z,0.2nm,0.3s,baz=42,slow=6.3,SNR=4.5

*IDC **07** 11:11:22.9±0.7,32°.02S×57°.32E, h0km, mb4.1/12, mb1 4.3/13, mb1mx4.1/36, mbtmp4.2/13, ML4.3/1, MS3.5/10, Ms1 3.5/10, ms1mx3.2/30, Error ellipse: s-maj=27.3km s-min=16.6km az=26.0*
*ISCJB **07** 11:11:23.1±0.4, 31°.94S±0°.08×57°.3E±0°.1, h11km, mb4.4/18, MS3.5/9, Error ellipse: s-maj=14.4km s-min=10.9km az=151.6*
*NEIC **07** 11:11:24.6±0.3, 31°.91S×57°.34E, h10km, mb4.4/4, Error ellipse: s-maj=12.9km s-min=9.6km az=61.0*
ISC 07 11:11:24.9±0.5, 31°.83S±0°.08×57°.2E±0°.1, h11km, n45, σ1§52/30, mb4.2/18, MS3.6/9, 1D, Southwest Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MRIV	**Mauritius Mete**	**11.48**	**1**	*e*Pn	**Pn**	**11 14 08.1**	**-0.8**
OPO	**Ambohidratompo**	**16.02**	**323**	Pn	**Pn**	**11 15 11.8**	**+1.4**
1.2nm,0.3s,baz=173,slow=9.3,SNR=8.7							
OPO				Sn	**Sn**	**11 18 02.3**	**-5.8**
0.8nm,0.3s,baz=274,slow=16,SNR=5.4							
OPO				LR	LR	11 20 27.4	
comp=Z,122nm,18.2s,baz=180,slow=34							
BOSA	**Boshof**	**27.77**	**268**	P	**P**	**11 17 13.9**	**0.0**
4.2nm,0.9s,baz=98,slow=14,SNR=3.1							
BOSA				LR	LR	11 25 44.8	
comp=Z,48nm,22.0s,baz=158,slow=31							
H08S1	**Diego Garcia H**	**27.93**	**34**	T	T	11 46 31.9	
baz=207,slow=76,SNR=85							
H08S2	**Diego Garcia H**	**27.94**	**34**	T	T	11 46 29.2	
baz=207,slow=76,SNR=56							
H08S3	**Diego Garcia H**	**27.95**	**34**	T	T	11 46 35.1	
baz=207,slow=76,SNR=10							
H08N3	**Diego Garcia H**	**28.42**	**30**	T	T	11 47 09.9	
baz=204,slow=76,SNR=8.4							
H08N1	**Diego Garcia H**	**28.43**	**30**	T	T	11 47 11.4	
baz=204,slow=76,SNR=10							
H08N2	**Diego Garcia H**	**28.45**	**30**	T	T	11 47 11.2	
baz=204,slow=76,SNR=10.0							
LSZ	**Lusaka**	**31.18**	**295**	P	**P**	**11 17 45.6**	**+1.4**
1.9nm,0.6s,baz=120,slow=13,SNR=4.8							
MAW	**Mawson**	**35.97**	**176**	LR	LR	11 29 09.5	
comp=Z,108nm,21.3s,baz=285,slow=30							
SYO	**Syowa Base**	**38.57**	**190**	‖*e*P	**P**	**11 18 47.3**	**0.0**
H01W2	**Cape Leeuwin H**	**47.07**	**110**	T	T	12 10 11.0	
baz=257,slow=75,SNR=36							
H01W3	**Cape Leeuwin H**	**47.08**	**110**	T	T	12 10 11.4	
baz=257,slow=75,SNR=37							
H01W1	**Cape Leeuwin H**	**47.09**	**110**	T	T	12 10 12.3	
baz=257,slow=75,SNR=44							
SNAA	**Sanae**	**50.79**	**201**	*e*P	**P**	**11 20 24.5**	**-0.3**
350nm,0.9s							
QSPA	**South Pole Qui**	**58.34**	**180**	*e*P	**P**	**11 21 19.5**	**-0.3**
95nm,1.3s							
VNDA	**Vanda**	**62.26**	**166**	P	**P**	**11 21 44.8**	**-1.5**
1.5nm,0.8s,baz=285,slow=7.5,SNR=4.0							
VNDA				LR	LR	11 46 48.6	
comp=Z,68nm,18.5s,baz=227,slow=34							
CMAR	**Chiang Mai Arr**	**64.02**	**45**	P	**P**	**11 21 58.6**	**-0.1**
5.3nm,0.7s,baz=230,slow=7.4,SNR=20							
CMAR				LR	LR	11 48 06.2	
comp=Z,40nm,18.1s,baz=232,slow=34							
ASAR	**Alice Springs**	**67.07**	**104**	P	**P**	**11 22 18.0**	**-0.6**
1.3nm,0.7s,baz=238,slow=5.7,SNR=16							
WRA	**Warramunga Arr**	**69.10**	**101**	P	**P**	**11 22 30.3**	**-1.1**
1.8nm,0.8s,baz=240,slow=5.1,SNR=9.5							
WRAB	**Tennant Creek**	**69.11**	**101**	*e*P	**P**	**11 22 31.2**	**-0.2**
24nm,1.9s							
GEYT	**Alibeck**	**69.40**	**1**	LR	LR	11 49 22.5	
comp=Z,22nm,19.7s,baz=250,slow=33							
TORD	**Torodi Ar. Bea**	**69.48**	**301**	P	**P**	**11 22 34.5**	**+0.8**
1.6nm,0.8s,baz=128,slow=5.4,SNR=8.8							
TORD				LR	LR	11 52 48.4	
comp=Z,67nm,18.1s,baz=150,slow=36							
STKA	**Stephens Creek**	**69.69**	**115**	P	**P**	**11 22 33.9**	**-0.9**
1.3nm,0.6s,baz=259,slow=5.3,SNR=5.3							
BRTR	**Keskin Array B**	**74.48**	**341**	P	**P**	**11 23 04.5**	**+1.2**
1.9nm,0.8s,baz=154,slow=7.6,SNR=7.8							
BRTR				LR	LR	11 52 54.0	
comp=Z,13nm,20.3s,baz=126,slow=33							
KKAR	**Karatay Array**	**75.55**	**10**	P	**P**	**11 23 10.0**	**+0.8**
1.8nm,0.7s							
KBZ	**Khabaz**	**76.33**	**349**	LR	LR	11 56 03.6	
comp=Z,18nm,20.2s,baz=192,slow=35							
ABKAR	**Akbulak array**	**80.76**	**2**	*e*P	**P**	**11 23 38.5**	**+0.7**
1.2nm,0.6s							
MKAR	**Makanchi Array**	**81.46**	**17**	P	**P**	**11 23 42.4**	**+0.7**
0.7nm,0.7s,baz=193,slow=4.9,SNR=5.9							
BRVK	**Borovoye**	**85.29**	**8**	*e*P	**P**	**11 24 03.0**	**+1.7**
4.3nm,1.1s							
AKASG	**Malin Array Be**	**85.82**	**343**	P	**P**	**11 24 03.6**	**-0.4**
0.8nm,0.6s,baz=166,slow=4.7,SNR=2.6							
ZALV	**Zalesovo Beam**	**88.70**	**16**	P	**P**	**11 24 20.1**	**+2.3**
0.4nm,0.3s,baz=347,slow=4.4,SNR=3.7							
PLCA	**Paso Flores**	**93.17**	**217**	LR	LR	11 59 04.1	
comp=Z,31nm,18.2s,baz=170,slow=31							
INK	**Inuvik**	**142.95**	**7**	PKP	**PKPdf**	**11 30 55.1**	**-2.5**
0.9nm,0.9s,baz=29,slow=8.4,SNR=3.9							
PPLA	**Purkeypile**	**143.72**	**22**	*e*PKPdf	PKPbc	11 30 57.9	+1.0
ILAR	**Eielson Array**	**143.81**	**17**	PKhKP	PKPpre	11 30 55.9	
0.4nm,0.7s,baz=306,slow=4.9,SNR=6.0							
TRF	**Thorofare Moun**	**143.90**	**21**	*e*PKPdf	PKPbc	11 30 57.9	+0.4
EGAK	**Eagle**	**145.11**	**14**	*e*PKPdf	**PKPab**	**11 31 01.2**	**+0.1**
PAX	**Paxson**	**145.65**	**18**	*e*PKPbc	**PKPab**	**11 31 03.9**	**+0.6**
FCC	**Fort Churchill**	**146.84**	**333**	*e*PKPbc	**PKPbc**	**11 31 06.8**	**+0.4**
YKA	**Yellowknife Ar**	**148.87**	**353**	PKPbc	**PKPbc**	**11 31 12.0**	**+0.2**
2.7nm,0.8s,baz=5.0,slow=2.5,SNR=55							
COWI	**Conover**	**150.47**	**309**	*e*PKPbc	**PKPbc**	**11 31 17.1**	**+0.7**
EYMN	**Ely**	**151.37**	**313**	*e*PKPbc	**PKPbc**	**11 31 18.9**	**+0.5**
ULM	**Lac du Bonnet**	**152.85**	**321**	PKPbc	**PKPbc**	**11 31 21.4**	**-0.2**
4.5nm,0.8s,baz=29,slow=2.0,SNR=5.3							

*NIED **07** 11:24:00, 36°.70N×141°.20E, h5km, Mw4.0 Best double couple: M0 1.33000×10^15 NP1:φs343.00000°, δ51.00000°, λ-159.00000°. NP2:φs240.00000°, δ74.00000°, λ-41.00000°.*
*ISCJB **07** 11:24:48.1±0.9, 36°.66N±0°.03×141°.26E±0°.04, h4km±5km, mb4.1/22, MS3.4/3, Error ellipse: s-maj=5.6km s-min=4.1km az=22.5*
*IDC **07** 11:24:49.8±0.6, 36°.61N×141°.10E, h0km, mb3.9/16, mb1 4.1/22, mb1mx4.0/39, mbtmp4.0/22, ML3.6/4, MS2.9/7, Ms1 2.9/7, ms1mx2.7/43, Error ellipse: s-maj=14.8km s-min=12.9km az=163.0*
*JMA **07** 11:24:51.0±0.1, 36°.72N×141°.11E, h24km±1km, M4.2*

JMA Felt II J1.
*NEIC **07** 11:24:54.9±0.5, 36°.61N×141°.12E, h35km, mb4.7/6, Error ellipse: s-maj=9.6km s-min=8.2km az=105.0*
NEIC Recorded [2 JMA] in Fukushima, Ibaraki and Tochigi.
ISC 07 11:24:49.6±1.6, 36°.63N±0°.04×141°.12E±0°.05, h1km±10km, n49, σ2§03/57, mb4.2/22, MS3.6/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.44**	**268**	P	**Pb**	**11 24 59.8**	**-0.4**
JHO				S	**Sb**	**11 25 06.6**	**-0.7**
ONAJ	**Iwakimizuishiy**	**0.54**	**332**	P	**Pg**	**11 25 00.1**	**+0.1**
ONAJ				S	**Sg**	**11 25 07.2**	**+0.2**
JFK	**Kawauchi**	**0.77**	**345**	P	**Pg**	**11 25 03.7**	**-0.6**
JFK				*e*S	**Sg**	**11 25 13.4**	**-0.9**
JYT	**Yasato**	**0.84**	**242**	P	**Pb**	**11 25 07.0**	**0.0**
JYT				S	**Sn**	**11 25 19.6**	**-2.0**
JSB	**Shiboa**	**1.02**	**290**	P	**Pn**	**11 25 10.0**	**-1.1**
JSB				S	**Sn**	**11 25 24.1**	**-1.9**
JFT	**Otama**	**1.09**	**325**	P	**Pb**	**11 25 09.8**	**-1.4**
JMM	**Marumori**	**1.27**	**348**	P	**Pn**	**11 25 11.7**	**-2.7**
JFY	**Yanaizu**	**1.37**	**305**	S	**Sn**	**11 25 32.7**	**-2.0**
MJAR	**Matsushiro Arr**	**2.34**	**269**	Pn	**Pn**	**11 25 29.5**	**+0.3**
17nm,0.3s,baz=86,slow=15,SNR=44							
MJAR				Lg	Lg	11 26 02.0	
72nm,0.3s,baz=82,slow=30,SNR=14							
MJAR				LR	LR	11 26 05.4	
comp=Z,45nm,20.6s,baz=85,slow=33							
MAJO	**Matsushiro**	**2.34**	**269**	*e*Pn	**Pn**	**11 25 30.0**	**+0.7**
MAJO				*e*Sn	**Sb**	**11 26 01.3**	**-0.7**
MAT	**Matsushiro**	**2.34**	**269**	P	**Pn**	**11 25 29.5**	**+0.2**
MAT				S	**Sb**	**11 26 01.8**	**-0.3**
JHJ2	**Mitsune**	**3.66**	**197**	*e*Pn	**Pn**	**11 25 49.7**	**+2.3**
JHJ2				*e*Sn	**Sn**	**11 26 31.9**	**+0.7**
JHJ	**Hachijo jima 2**	**3.67**	**198**	Pn	**Pn**	**11 25 48.8**	**+1.4**
24nm,0.3s,baz=91,slow=20,SNR=8.1							
JHJ				Sn	**Sn**	**11 26 33.4**	**+2.2**
34nm,0.3s,baz=64,slow=23,SNR=6.0							
ERM	**Erimo**	**5.61**	**16**	*e*Pn	**Pn**	**11 26 14.4**	**+0.3**
ERM				*e*Sn	**Sn**	**11 27 16.9**	**-2.3**
ASAJ	**Asahikawa**	**7.57**	**8**	Pn	**Pn**	**11 26 40.9**	**-0.1**
1.1nm,0.3s,baz=201,slow=22,SNR=8.1							
ASAJ	**Asahikawa**	**7.57**	**8**	Pn	**Pn**	**11 26 40.9**	**-0.1**
ASAJ				*e*Sn	**Sn**	**11 28 07.6**	**+0.2**
JNU	**Nakatsue**	**9.11**	**250**	LR	LR	11 30 52.5	
comp=Z,134nm,18.0s,baz=108,slow=40							
CBIJ	**Chichi jima**	**9.54**	**174**	Pn	**Pn**	**11 27 07.4**	**-0.8**
CBIJ				Sn	**Sn**	**11 28 48.0**	**-8.1**
JCJ	**Chichijima**	**9.54**	**174**	Pn	**Pn**	**11 27 07.4**	**-0.8**
9.0nm,0.3s,baz=86,slow=23,SNR=7.8							
JCJ				Sn	**Sn**	**11 28 48.0**	**-8.1**
baz=270,slow=20							
USRK	**Ussuriysk Ar.**	**10.27**	**320**	Pn	**Pn**	**11 27 19.8**	**+1.7**
baz=128,slow=13,SNR=2.7							
KSRS	**Korea Array**	**10.58**	**278**	Pn	**Pn**	**11 27 24.9**	**+2.6**
0.2nm,0.3s,baz=91,slow=15,SNR=4.3							
KSRS				LR	LR	11 31 38.0	
comp=Z,13nm,18.6s,baz=80,slow=38							
KSAR	**Wonju Array Be**	**10.61**	**278**	Pn	**Pn**	**11 27 24.9**	**+2.2**
MDJ	**Mudanjiang**	**11.84**	**316**	*e*Pn	**Pn**	**11 27 40.8**	**+1.3**
KLR	**Kul'dur**	**14.33**	**344**	LR	LR	11 33 20.3	
comp=Z,61nm,19.3s,baz=141,slow=36							
ENH	**Enshi**	**27.06**	**266**	*e*P	**P**	**11 30 33.4**	**-0.2**
8.6nm,0.8s							
ULN	**Ulaanbaatar**	**27.39**	**305**	*e*P	**P**	**11 30 39.1**	**+2.5**
4.9nm,0.2s							
SONM	**Songino Array**	**27.82**	**305**	P	**P**	**11 30 42.4**	**+2.0**
4.4nm,0.8s,baz=95,slow=8.3,SNR=6.2							
ZALV	**Zalesovo Beam**	**42.02**	**313**	P	**P**	**11 32 41.9**	**-0.4**
3.9nm,0.6s,baz=92,slow=6.5,SNR=12							
MKAR	**Makanchi Array**	**44.13**	**302**	P	**P**	**11 32 58.9**	**-0.7**
2.2nm,0.6s,baz=86,slow=8.6,SNR=21							
KURK	**Kurchatov**	**46.00**	**308**	*e*P	**P**	**11 33 16.3**	**+2.0**
24nm,0.9s							
TKM2	**Tokmak 2**	**49.62**	**299**	*e*P	**P**	**11 33 42.3**	**-0.4**
5.1nm,1.2s							
ILAR	**Eielson Array**	**49.97**	**32**	P	**P**	**11 33 44.9**	**0.0**
0.8nm,0.9s,baz=270,slow=5.4,SNR=4.4							
INK	**Inuvik**	**54.86**	**27**	P	**P**	**11 34 20.4**	**-0.6**
0.9nm,0.9s,baz=305,slow=9.9,SNR=4.4							
WRAB	**Tennant Creek**	**56.61**	**188**	*e*P	**P**	**11 34 34.0**	**-0.2**
83nm,2.5s							
WRA	**Warramunga Arr**	**56.62**	**188**	P	**P**	**11 34 33.9**	**-0.3**
2.4nm,0.6s,baz=5.2,slow=7.5,SNR=44							
ABKAR	**Akbulak array**	**58.02**	**310**	P	**P**	**11 34 44.7**	**+0.8**
2.1nm,0.5s							
ASAR	**Alice Springs**	**60.35**	**188**	P	**P**	**11 35 00.3**	**+0.1**
1.0nm,0.8s,baz=11,slow=9.6,SNR=14							
YKA	**Yellowknife Ar**	**64.28**	**30**	P	**P**	**11 35 26.0**	**-0.1**
0.2nm,0.7s,baz=298,slow=6.5,SNR=4.3							
FINES	**FINESS Array B**	**69.06**	**332**	P	**P**	**11 35 55.8**	**-0.9**
1.5nm,0.7s,baz=79,slow=9.9,SNR=5.7							
FINES				LR	LR	12 10 35.4	
comp=Z,30nm,18.2s,baz=177,slow=40							
KBZ	**Khabaz**	**70.99**	**311**	P	**P**	**11 36 09.5**	**+0.7**
3.2nm,0.8s,baz=33,slow=5.3,SNR=5.6							
NB2	**NORSAR Subarra**	**74.47**	**337**	P	P	11 36 33.0	+3.7
comp=Z,0.8nm,0.8s,baz=38,slow=5.9							
NOA	**NORSAR Array B**	**74.47**	**337**	P	**P**	**11 36 30.9**	**+1.6**
comp=Z,1.1nm,0.7s,baz=38,slow=5.9,SNR=5.0							
AKASG	**Malin Array Be**	**74.47**	**322**	P	**P**	**11 36 29.6**	**+0.2**
comp=Z,0.6nm,0.4s,baz=48,slow=6.1,SNR=4.5							
NVAR	**Mina Array Bea**	**75.42**	**53**	P	**P**	**11 36 37.5**	**+2.1**
comp=Z,0.7nm,0.8s,baz=296,slow=6.3,SNR=5.5							
PDAR	**Pinedale Array**	**78.12**	**45**	P	**P**	**11 36 51.6**	**+1.0**
comp=Z,0.4nm,0.7s,baz=226,slow=7.3,SNR=3.9							
MLR	**Muntele Rosu**	**79.54**	**320**	LR	LR	12 13 37.7	
comp=Z,7.7nm,20.6s,baz=176,slow=37							
VRAC	**Vranov**	**81.33**	**327**	LR	LR	12 16 46.5	
comp=Z,26nm,18.3s,baz=136,slow=38							
GERES	**GERESS Array B**	**82.93**	**328**	P	**P**	**11 37 17.1**	**+0.9**
comp=Z,0.3nm,0.4s,baz=347,slow=5.5,SNR=3.7							
TXAR	**Lajitas Array**	**90.56**	**52**	P	**P**	**11 37 54.9**	**+1.1**
comp=Z,0.3nm,0.8s,baz=270,slow=3.6,SNR=3.1							

*NIED **07** 11:32:00, 38°.10N×141°.60E, h71km, Mw3.7 Best double couple: M0 3.64000×10^14 NP1:φs50.00000°, δ33.00000°, λ116.00000°. NP2:φs201.00000°, δ61.00000°, λ74.00000°.*
*ISCJB **07** 11:32:27.3±0.7, 38°.13N±0°.03×141°.67E±0°.08, h68km±6km, mb3.1/4, Error ellipse: s-maj=10.7km s-min=5.1km az=13.4*
*IDC **07** 11:32:28.3±2.3, 38°.17N×141°.59E, h59km±25km, mb2.9/4, mb1 3.3/7, mb1mx3.1/36, mbtmp3.3/7, ML3.2/3, Error ellipse: s-maj=33.1km s-min=15.3km az=104.0*
*JMA **07** 11:32:29.1, 38°.15N×141°.55E, h61km±1km, M3.5*
JMA Felt I J1.
ISC 07 11:32:28.4±1.1, 38°.15N±0°.04×141°.66E±0°.08, h57km±9km, n20, σ1§23/34, mb3.2/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.39**	**322**	P	**Pn**	**11 32 39.8**	**+0.8**
JIO				S	**Sn**	**11 32 47.2**	**+0.5**
JMM	**Marumori**	**0.74**	**248**	P	**Pn**	**11 32 42.8**	**-0.2**
JMM				S	**Sn**	**11 32 52.9**	**-0.7**
JOU	**Okura**	**0.81**	**286**	P	**Pn**	**11 32 43.9**	**0.0**
JOU				S	**Sn**	**11 32 54.8**	**-0.5**
JMK	**Ichinoseki**	**0.87**	**337**	P	**Pn**	**11 32 45.2**	**+0.5**
JMK				S	**Sn**	**11 32 57.2**	**+0.6**
JFK	**Kawauchi**	**1.00**	**219**	P	**Pn**	**11 32 46.5**	**+0.1**
JFK				S	**Sn**	**11 32 59.5**	**-0.1**
JFT	**Otama**	**1.22**	**239**	P	**Pn**	**11 32 49.6**	**+0.3**
JFT				S	**Sn**	**11 33 04.4**	**-0.5**
JYS	**Shiratake**	**1.26**	**274**	P	**Pn**	**11 32 49.9**	**+0.1**
JYS				S	**Sn**	**11 33 05.6**	**-0.1**
JYK	**Kaneyama**	**1.27**	**307**	P	**Pn**	**11 32 50.2**	**+0.2**
JYK				S	**Sn**	**11 33 06.1**	**0.0**
JOM	**Ohasama**	**1.35**	**348**	P	**Pn**	**11 32 51.9**	**+0.8**
JOM				S	**Sn**	**11 33 08.7**	**+0.7**
JRG	**Rokugo**	**1.48**	**328**	P	**Pn**	**11 32 53.6**	**+0.8**
JRG				S	**Sn**	**11 33 12.5**	**+1.4**
JYA	**Atsumi**	**1.59**	**287**	P	**Pn**	**11 32 54.2**	**-0.1**
JYA				S	**Sn**	**11 33 13.8**	**0.0**
JFY	**Yanaizu**	**1.71**	**245**	P	**Pn**	**11 32 56.7**	**+0.7**
JFY				S	**Sn**	**11 33 17.3**	**+0.4**
MJAR	**Matsushiro Arr**	**3.18**	**241**	P	**Pn**	**11 33 16.0**	**0.0**
1.1nm,0.3s,baz=52,slow=11,SNR=13							
MAT	**Matsushiro**	**3.18**	**241**	P	**Pn**	**11 33 17.7**	**+1.7**
MAT				S	**Sn**	**11 33 58.4**	**+5.6**
JHJ	**Hachijo jima 2**	**5.25**	**197**	P	**Pn**	**11 33 44.1**	**-0.2**
5.9nm,0.3s,baz=72,slow=20,SNR=2.4							
JHJ				S	**Sn**	**11 34 43.8**	**+0.3**
12nm,0.3s,baz=258,slow=20,SNR=3.1							
ASAJ	**Asahikawa**	**6.00**	**6**	P	**Pn**	**11 33 53.2**	**-1.4**
0.6nm,0.3s,baz=209,slow=18,SNR=7.2							
MKAR	**Makanchi Array**	**43.70**	**301**	P	**P**	**11 40 26.7**	**-0.9**
0.1nm,0.3s,baz=82,slow=10.0,SNR=3.5							
ILAR	**Eielson Array**	**48.45**	**33**	P	**P**	**11 41 04.6**	**-0.1**
0.2nm,0.7s,baz=276,slow=5.7,SNR=3.8							
WRA	**Warramunga Arr**	**58.19**	**188**	P	**P**	**11 42 15.8**	**-0.8**
0.4nm,0.9s,baz=5.1,slow=6.9,SNR=4.1							
YKA	**Yellowknife Ar**	**62.75**	**30**	P	**P**	**11 42 47.3**	**+0.1**
0.1nm,0.6s,baz=304,slow=6.6,SNR=3.1							

*DDA **07** 11:35:12.8, 40°.56N×37°.03E, h7km, Md2.8, Suspected Mining explosion.*
*ISCJB **07** 11:35:13.1±0.4, 40°.57N±0°.03×37°.06E±0°.03, h0km, Error ellipse: s-maj=4.1km s-min=2.9km az=2.4*
*ISK **07** 11:35:13.6, 40°.52N×37°.04E, h13km, MD2.8*
*CSEM **07** 11:35:13.2±0.1, 40°.55N×37°.04E, h1km, MD2.8, Error ellipse: s-maj=3.5km s-min=2.4km az=176.0, Suspected Mining explosion.*
ISC 07 11:35:13.2±0.8, 40°.56N±0°.03×37°.05E±0°.02, h0km, n37, σ0§71/55, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ERBA	**Erbaa**	**0.26**	**299**	P	**Pg**	**11 35 18.3**	**+0.2**
ERBA				S	**Sg**	**11 35 22.3**	**+0.9**
ERBA	**Erbaa**	**0.26**	**299**	*i* P	**Pg**	**11 35 18.3**	**+0.2**
ERBA				*i* S	**Sg**	**11 35 22.3**	**+0.9**
RSDY	**Resadiye-TOKAT**	**0.27**	**127**	*e*PG	**Pg**	**11 35 19.2**	**+0.9**
RSDY				*e*SG	**Sg**	**11 35 23.6**	**+1.8**
RSDY	**Resadiye-TOKAT**	**0.27**	**127**	*e*Pg	**Pg**	**11 35 19.2**	**+0.9**
RSDY				*e*Sg	**Sg**	**11 35 23.6**	**+1.8**
TOKT	**Tokat**	**0.45**	**239**	*e*PG	**Pg**	**11 35 22.6**	**+0.8**
TOKT	**Tokat**	**0.45**	**239**	*e*Pg	**Pg**	**11 35 22.6**	**+0.8**
SVSK	**Karacayir**	**0.64**	**183**	*e*PG	**Pg**	**11 35 25.6**	**+0.1**
SVSK	**Karacayir**	**0.64**	**183**	*e*Pg	**Pg**	**11 35 25.6**	**+0.1**
ORDU	**Ordu-Boztepe**	**0.75**	**55**	P	**Pg**	**11 35 27.8**	**+0.2**
ORDU				S	**Sg**	**11 35 38.2**	**+0.8**
ORDU	**Ordu-Boztepe**	**0.75**	**55**	*i* P	**Pg**	**11 35 27.8**	**+0.2**
ORDU				*i* S	**Sg**	**11 35 38.2**	**+0.8**
CUZAR	**Zara_SIVAS**	**0.87**	**140**	P	**Pg**	**11 35 29.6**	**-0.2**
CUZAR				S	**Sb**	**11 35 42.5**	**-0.9**
CUZAR	**Zara_SIVAS**	**0.87**	**140**	*i* P	**Pg**	**11 35 29.6**	**-0.2**
CUZAR				*i* S	**Sb**	**11 35 42.5**	**-0.9**
KVT	**Kavak**	**0.92**	**305**	*e*PG	**Pb**	**11 35 32.2**	**0.0**
KVT	**Kavak**	**0.92**	**305**	*e*Pg	**Pb**	**11 35 32.2**	**0.0**
SUSE	**Susehri**	**0.95**	**111**	P	**Pg**	**11 35 31.7**	**+0.3**
SUSE				S	**Sb**	**11 35 45.4**	**-0.4**
SUSE	**Susehri**	**0.95**	**111**	*i* P	**Pg**	**11 35 31.7**	**+0.3**
SUSE				*i* S	**Sb**	**11 35 45.4**	**-0.4**
GRSN	**GIRESUNGRSN**	**1.00**	**68**	P	**Pg**	**11 35 32.0**	**-0.3**
GRSN				S	**Sg**	**11 35 46.0**	**+0.7**
GRSN	**GIRESUNGRSN**	**1.00**	**68**	*i* P	**Pg**	**11 35 32.0**	**-0.3**
GRSN				*i* S	**Sg**	**11 35 46.0**	**+0.7**
CUKAN	**kangal_SIVAS**	**1.28**	**165**	*i* P	**Pg**	**11 35 37.0**	**-0.8**
CUKAN				*i* S	**Sn**	**11 35 57.2**	**+0.8**
CUSAR	**Sarkisla-SIVAS**	**1.29**	**209**	P	**Pg**	**11 35 37.7**	**-0.3**
CUSAR				S	**Sg**	**11 35 55.3**	**+0.5**
CUSAR	**Sarkisla-SIVAS**	**1.29**	**209**	*i* P	**Pg**	**11 35 37.7**	**-0.3**
CUSAR				*i* S	**Sg**	**11 35 55.3**	**+0.5**
ESPY	**Espiye-Giresun**	**1.33**	**74**	*e*PN	**Pg**	**11 35 38.5**	**-0.1**
ESPY	**Espiye-Giresun**	**1.33**	**74**	*e*Pn	**Pg**	**11 35 38.5**	**-0.1**
COAL	**Corum-Alaca**	**1.60**	**260**	P	**Pn**	**11 35 42.5**	**-0.4**
COAL	**Corum-Alaca**	**1.60**	**260**	*i* P	**Pn**	**11 35 42.5**	**-0.4**
COAL				*i* S	**Sg**	**11 36 06.6**	**+1.9**
YOZ	**Yozgat**	**1.61**	**236**	*e*PN	**Pn**	**11 35 42.2**	**-0.8**
YOZ	**Yozgat**	**1.61**	**236**	*e*Pn	**Pn**	**11 35 42.2**	**-0.8**
KELT	**Kelkit**	**1.74**	**103**	P	**Pn**	**11 35 45.1**	**+0.3**
KELT				S	**Sn**	**11

MNSI Mandailing Nat 38.24 54 P **P 12 11 19.3 +2.7**
KMBO Kilima Mbogo 38.52 301 *e*P **P 12 11 21.1 +1.9**
KMBO Kilima Mbogo 38.52 301 *e*P **P 12 11 21.1 +1.9**
13nm,1.0s
BKNI Bangkinang 39.04 56 P P 12 11 29.3 +6.0
BKNI Bangkinang 39.04 56 *e*P **P 12 11 24.0 +0.8**
104nm,0.4s
LSZ Lusaka 39.66 275 P **P 12 11 29.6 +0.9**
6.4nm,0.8s,baz=118,slow=9.2,SNR=11
LSZ LR LR 12 26 10.3
comp=Z,498nm,18.7s,baz=121,slow=34
LSZ Lusaka 39.66 275 *e*P **P 12 11 29.4 +0.8**
LSZ pmax pmax
comp=Z,30nm,1.3s
LSZ Lusaka 39.66 275 *e*P **P 12 11 29.4 +0.8**
comp=Z,30nm,1.3s
BOSA Boshof 39.70 254 P **P 12 11 29.1 +0.2**
comp=Z,3.1nm,0.8s,baz=86,slow=4.2,SNR=4.0
BOSA LR LR 12 25 17.5
comp=Z,850nm,18.1s,baz=97,slow=32
BOSA Boshof 39.70 254 P **P 12 11 29.1 +0.2**
BOSA pmax pmax
comp=Z,5.0nm,0.9s
LBTB Lobatse 39.76 259 P **P 12 11 30.1 +0.7**
comp=Z,4.4nm,1.0s,baz=128,slow=17,SNR=3.0
LBTB LR LR 12 25 25.6
comp=Z,614nm,19.1s,baz=108,slow=32
H01W2 Cape Leeuwin H 40.17 116 T T 12 54 04.9
baz=270,slow=75,SNR=26
H01W3 Cape Leeuwin H 40.17 116 T T 12 54 05.0
baz=270,slow=75
H01W1 Cape Leeuwin H 40.18 116 T T 12 54 05.8
baz=270,slow=75,SNR=23
HYB Hyderabad 42.06 13 *i*P **P 12 11 49.0 +0.8**
KULM Kulim 42.09 50 *e*P **P 12 11 49.6 +1.1**
comp=Z,29nm,1.3s
NWAO Narrogin (SRO) 42.70 113 P **P 12 11 52.8 -0.5**
comp=Z,8.9nm,0.9s,baz=67,slow=3.3,SNR=3.1
NWAO Narrogin (SRO) 42.70 113 P **P 12 11 52.8 -0.5**
NWAO pmax pmax
comp=Z,6.0nm,1.1s
SUR Sutherland 43.36 248 P **P 12 12 00.0 +1.1**
comp=Z,0.6nm,0.9s,baz=319,slow=9.3,SNR=2.7
ATD Arta Tunnel 43.78 321 LR LR 12 28 57.1
comp=Z,57nm,18.3s,baz=162,slow=34
MAW Mawson 43.86 184 P **P 12 12 02.4 +0.2**
comp=Z,4.6nm,0.7s,baz=75,slow=14,SNR=3.8
MAW LR LR 12 26 29.8
comp=Z,230nm,19.7s,baz=356,slow=31
MAW Mawson 43.86 184 *e*P **P 12 12 03.1 +0.9**
MAW pmax pmax
comp=Z,9.0nm,1.5s
MAW Mawson 43.86 184 *e*P **P 12 12 03.1 +0.9**
comp=Z,9.2nm,1.5s
WSAR Wadi Sarin 48.05 347 P **P 12 12 35.0 -0.8**
comp=Z,3.7nm,0.9s,baz=176,slow=7.5,SNR=4.4
SYO Syowa Base 48.51 194⇑ *e*P **P 12 12 38.2 -0.6**
SYO Syowa Base 48.51 194⇑ *e*pP pP 12 12 42.2 +0.3
PLAI Plampang 48.53 80 P P 12 12 46.8 +7.1
SBUM Sibu 49.20 64 *e*P **P 12 12 45.8 +1.1**
comp=Z,27nm,1.3s
CM01 Chiang Mai Arr 51.03 37 *e*P **P 12 12 57.8 -0.8**
CMAR Chiang Mai Arr 51.05 37 P **P 12 12 58.4 -0.4**
comp=Z,2.1nm,0.7s,baz=232,slow=6.3,SNR=12
CHTO Chiang Mai 51.34 37 *e*P **P 12 13 00.3 -0.6**
CHTO pmax pmax
comp=Z,14nm,1.4s
CHTO Chiang Mai 51.34 37 *e*P **P 12 13 00.3 -0.6**
comp=Z,14nm,1.4s
KAPI Kappang 51.92 77 *e*P **P 12 13 04.2 -1.2**
comp=Z,17nm,1.2s
KOLN Koldanda 53.20 16 *e*P **P 12 13 14.4 -0.4**
comp=Z,38nm,0.8s
PYUN Piuthan 53.37 15 *e*P **P 12 13 15.9 -0.2**
comp=Z,45nm,0.9s
DMN Daman 53.44 17 *e*P **P 12 13 16.5 -0.2**
comp=Z,44nm,1.0s
PKIN Phulchoki 53.49 18 *e*P **P 12 13 16.3 -0.7**
comp=Z,15nm,0.8s
KKN Kakani 53.66 18 *e*P **P 12 13 17.7 -0.5**
SHL Shillong 53.81 25 *e*P **P 12 13 19.5 +0.2**
GUN Gumba 53.94 18 *e*P **P 12 13 20.4 0.0**
comp=Z,56nm,0.8s
MYLDM Lahad Datu 55.91 65 *e*P **P 12 13 33.3 -1.2**
comp=Z,31nm,1.1s
LUWI Luwuk 56.41 74 *e*P **P 12 13 38.6 +0.4**
comp=Z,25nm,0.9s
NVL N'lazarevskaya 57.09 199 *e*P **P 12 13 44.5 +2.3**
QIZ Qiongzhong 58.13 46 P **P 12 13 50.7 +0.6**
QIZ LR LR
comp=Z,150nm,18.1s
QIZ LR LR
comp=Z,140nm,16.2s
KMI Kunming 58.49 36 P **P 12 13 53.6 +0.7**
KMI pP sP 12 14 01.1 +3.8
KMI sP pP 12 14 03.9 +7.8
KMI SS SS 12 25 53.4 +3.8
KMI pmax pmax
comp=Z,12nm,0.9s
KMI pmax pmax
comp=Z,130nm,3.9s
KMI LR LR
comp=Z,310nm,15.6s
KMI LR LR
comp=Z,190nm,18.0s
KMI LR LR
comp=Z,320nm,18.0s
ASAR Alice Springs 58.51 104 P **P 12 13 51.6 -1.4**
comp=Z,10nm,0.7s,baz=253,slow=6.0,SNR=80
ASAR PcP **PcP 12 14 42.4 -1.1**
comp=Z,3.9nm,0.8s,baz=256,slow=3.8,SNR=8.7
AS31 Alice Springs 58.52 104 *e*P **P 12 13 51.5 -1.5**
comp=Z,3.4nm,0.7s
AS01 Alice Springs 58.56 104 *e*P **P 12 13 52.1 -1.2**
MTN Manton Dam 59.21 91 *e*P **P 12 13 57.4 -0.4**
comp=Z,17nm,0.9s
WRA Warramunga Arr 59.90 100 P **P 12 14 01.6 -1.0**
comp=Z,14nm,0.8s,baz=254,slow=6.9,SNR=56
WB2 Warramunga Arr 59.91 100 *e*P **P 12 14 01.7 -1.0**
comp=Z,17nm,0.9s
WRAB Tennant Creek 59.91 100 *c i*P **P 12 14 02.1 -0.6**
WRAB pmax pmax
comp=Z,33nm,0.6s
WRAB Tennant Creek 59.91 100 *e*P **P 12 14 01.8 -0.9**
comp=Z,18nm,0.8s
GYA Guiyang 61.70 38 P **P 12 14 17.0 +2.2**
GYA PP **PP 12 16 35.6 +4.7**
GYA ScP **ScP 12 18 58.4 +0.4**
GYA S **S 12 22 39.0 +1.3**
GYA SS **SS 12 26 43.2 +3.4**
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,120nm,5.8s
GYA LR LR
comp=Z,520nm,18.2s
GYA LR LR
comp=Z,490nm,18.6s
GYA LR LR
comp=Z,540nm,19.0s
SNAA Sanae 61.90 200⇑ *i*P **P 12 14 16.8 +1.4**
SNAA pmax pmax
comp=Z,441nm,1.0s
SNAA Sanae 61.90 200 *e*P **P 12 14 16.3 +0.9**
comp=Z,482nm,0.9s
GEYT Alibeck 62.45 350 P **P 12 14 18.8 -0.6**
comp=Z,1.8nm,0.7s,baz=4.6,slow=38,SNR=2.7
GEYT LR LR 12 38 09.2
comp=Z,134nm,21.6s,baz=155,slow=33
STKA Stephens Creek 63.24 115 P **P 12 14 23.9 -1.2**
comp=Z,3.6nm,0.8s,baz=266,slow=8.7,SNR=7.1
STKA Stephens Creek 63.24 115 *e*P **P 12 14 24.1 -0.9**
STKA Stephens Creek 63.24 115 *e*P **P 12 14 24.2 -0.9**
comp=Z,1.8nm,1.1s
VNA2 Neumayer--Watz 63.27 201 P **P 12 14 24.9 +0.3**
baz=94,slow=8.7
KSH Kashi 63.42 6 P **P 12 14 22.9 -3.1**
KSH *es*P pP 12 14 29.5 +0.3
KSH *e*PP **PP 12 16 42.6 -3.2**
KSH *e*ScP 12 19 00.9
KSH S S 12 22 49.0 -10
KSH ScS **SKSac 12 24 09.2 -10**
KSH pmax pmax
comp=Z,100nm,2.5s
KSH LR LR
comp=Z,770nm,11.4s
KSH LR LR
comp=Z,290nm,9.8s
KSH LR LR
comp=Z,250nm,15.9s
CD2 Chengdu 63.70 33 P **P 12 14 27.9 0.0**
CD2 PP **PP 12 16 48.3 0.0**
CD2 S **S 12 23 04.2 +1.6**
CD2 sS sS 12 23 09.7 +1.8
CD2 SS **SS 12 27 13.7 +2.8**
CD2 pmax pmax
comp=Z,20nm,0.5s
CD2 pmax pmax
comp=Z,80nm,3.9s
CD2 LR LR
comp=Z,220nm,13.2s
CD2 LR LR
comp=Z,230nm,10.2s
SFK Sufi-Kurgan 63.74 4 P **P 12 14 29.7 +1.5**
VNA3 Neumayer Olymp 64.03 201 P **P 12 14 30.7 +1.1**
SWI Sorong 64.05 79 P **P 12 14 32.1 +1.6**
MNAS Manas 66.16 3 P **P 12 14 44.3 +0.5**
QSPA South Pole Qui 66.18 180 *e*P **P 12 14 43.9 +0.1**
comp=Z,44nm,1.1s
ENH Enshi 66.22 37 *e*P **P 12 14 42.1 -2.2**
comp=Z,25nm,1.5s
EKS2 Erkin-Say 66.39 4 *e*P **P 12 14 45.0 -0.3**
EKS2 Erkin-Say 66.39 4 *e*P **P 12 14 45.0 -0.3**
comp=Z,9.3nm,1.0s
AAK Ala-Archa 66.41 4 P **P 12 14 45.1 -0.3**
comp=Z,1.2nm,0.4s,baz=185,slow=7.8,SNR=9.7
AAK Ala-Archa 66.41 4⇑ *i*P **P 12 14 45.8 +0.4**
AAK pmax pmax
comp=Z,43nm,1.5s
AAK Ala-Archa 66.41 4 *e*P **P 12 14 45.4 0.0**
comp=Z,16nm,1.3s
FRU Bishkek 66.61 4 *e*P **P 12 14 45.0 -1.6**
FRU pmax pmax
comp=Z,125nm,2.8s
KKAR Karatay Array 66.72 1 *e*P **P 12 14 47.6 +0.4**
KKAR Karatay Array 66.72 1 *e*P **P 12 14 47.6 +0.4**
TKM2 Tokmak 2 66.77 5 *e*P **P 12 14 47.5 -0.3**
TKM2 Tokmak 2 66.77 5 *e*P **P 12 14 47.6 -0.3**
comp=Z,10nm,1.0s
VNDA Vanda 67.33 166 P **P 12 14 50.7 0.0**
comp=Z,4.4nm,1.0s,baz=272,slow=7.6,SNR=11
VNDA Vanda 67.33 166 *e*P **P 12 14 51.2 +0.5**
VNDA pmax pmax
comp=Z,19nm,1.4s
VNDA Vanda 67.33 166 *e*P **P 12 14 51.2 +0.5**
comp=Z,19nm,1.4s
PDGK Podgornoye 67.57 8 P **P 12 14 52.5 0.0**
GNI Garni 67.78 340 P **P 12 14 54.6 +0.4**
comp=Z,4.6nm,0.4s,baz=4.0,slow=5.6,SNR=6.6
GNI Garni 67.78 340 *c i*P **P 12 14 55.7 +1.5**
GNI pmax pmax
comp=Z,32nm,1.1s
LZH Lanzhou 68.00 30 *e*P **P 12 14 59.7 +4.0**
LZH pP sP 12 15 04.6 +4.5
LZH sP pP 12 15 07.5 +8.6
LZH pmax pmax
comp=Z,12nm,1.0s
SBA Scott Base 68.31 167 *e*P **P 12 14 56.8 -0.1**
SBA pmax pmax
comp=Z,50nm,1.9s
SBA Scott Base 68.31 167 *e*P **P 12 14 56.8 -0.1**
comp=Z,50nm,1.9s
XAN Xi'an 68.82 35 P **P 12 14 59.2 -1.5**
XAN pP sP 12 15 05.6 +0.4
XAN pmax pmax
comp=Z,8.0nm,0.7s
XAN pmax pmax
comp=Z,50nm,5.1s
XAN LR LR
comp=Z,160nm,17.7s
XAN LR LR
comp=Z,220nm,19.5s
XAN LR LR
comp=Z,270nm,18.6s
GTA Gaotai 69.13 25 *e*P **P 12 15 02.6 0.0**
GTA pP sP 12 15 07.7 +0.6
GTA sP pP 12 15 11.2 +5.3
GTA S **S 12 24 09.2 +0.9**
GTA sS sS 12 24 19.8 +6.1
GTA SS **SS 12 28 37.6 +2.5**
GTA pmax pmax
comp=Z,5.0nm,1.1s
GTA pmax pmax
comp=Z,75nm,5.0s
GTA LR LR
comp=Z,210nm,21.9s
GTA LR LR
comp=Z,210nm,20.4s
GTA LR LR
comp=Z,240nm,18.5s
WHN Wuhan 69.22 41 ⇑P **P 12 15 05.3 +2.1**
WMQ Urumqi 69.49 14 P **P 12 15 05.2 +0.5**
WMQ pP sP 12 15 10.8 +1.7
WMQ sP pP 12 15 16.3 +8.4
WMQ S **S 12 24 10.4 -1.8**
WMQ ScS **SKSac 12 25 00.3 -4.7**
WMQ pmax pmax
comp=Z,7.0nm,1.6s
WMQ pmax pmax
comp=Z,30nm,3.6s
WMQ LR LR
comp=Z,91nm,16.2s
WMQ LR LR
comp=Z,59nm,20.2s
WMQ LR LR
comp=Z,68nm,22.2s
ZEI Tsey 70.44 340 *e*P **P 12 15 09.4 -1.3**
ZEI pmax pmax
comp=Z,17nm,0.9s
NEY Neytrino 71.23 340⇑ *i*P **P 12 15 15.5 +0.1**
NEY pmax pmax
comp=Z,1.0nm,0.8s
MAKZ Makanchi 71.33 9 *e*P **P 12 15 15.2 -0.6**
MAKZ pmax pmax
comp=Z,10.0nm,1.3s
MAKZ Makanchi 71.33 9 *e*P **P 12 15 15.2 -0.6**
comp=Z,9.8nm,1.3s
MK01 Makanchi Array 71.34 9 *e*P **P 12 15 15.1 -0.7**
MK31 Makanchi Array 71.36 9 *e*P **P 12 15 15.0 -1.0**
MK31 Makanchi Array 71.36 9 *e*P **P 12 15 15.0 -1.0**
MKAR Makanchi Array 71.36 9 P **P 12 15 14.9 -1.1**
comp=Z,6.1nm,0.8s,baz=194,slow=6.1,SNR=40
MKAR Makanchi Array 71.36 9 *c e*P **P 12 15 14.8 -1.2**
MKAR pmax pmax
comp=Z,6.0nm,0.7s
BR131 Keskin Array S 71.60 332 *e*P **P 12 15 17.8 +0.1**
BRTR Keskin Array B 71.60 332 P **P 12 15 17.8 +0.1**
comp=Z,4.7nm,0.8s,baz=148,slow=7.3,SNR=21
BRTR Keskin Array B 71.60 332 *c e*P **P 12 15 18.1 +0.4**
BRTR pmax pmax
comp=Z,5.0nm,0.8s
KBZ Khabaz 71.60 340 P **P 12 15 18.1 +0.6**
comp=Z,5.9nm,0.8s,baz=164,slow=7.6,SNR=9.2
KVAR Kislovodsk Arr 71.87 340 P **P 12 15 19.2 -0.1**
comp=Z,12nm,0.9s,baz=7.0,slow=3.4,SNR=4.4
KIV Kislovodsk 71.87 340 *i*P **P 12 15 19.8 +0.6**
KIV pmax pmax
comp=Z,16nm,1.7s
BR231 Keskin MP Arra 72.07 331 *e*P **P 12 15 18.8 -1.7**
GOF Gofitskoye 72.76 341⇑ *e*P **P 12 15 23.9 -0.5**
ABKAR Akbulak array 73.35 354 *e*P **P 12 15 27.3 -0.4**
ANN Anapa 74.38 337 *e*P **P 12 15 35.1 +1.2**
ANN pmax pmax
comp=Z,53nm,1.3s
KURBB Kurchatov Arra 74.67 6 P **P 12 15 34.9 -0.6**
comp=Z,4.0nm,0.8s,baz=202,slow=6.4,SNR=16
AKTO Aktyubinsk 74.73 352 P **P 12 15 35.3 -0.5**
comp=Z,6.2nm,0.8s,baz=186,slow=3.2,SNR=18
KURK Kurchatov 74.77 6 P **P 12 15 34.9 -1.1**
KURK pmax pmax
comp=Z,3.0nm,0.8s
KURK Kurchatov 74.77 6 *e*P **P 12 15 35.9 -0.1**
HHC Hu-ho-hao-te 75.43 32 *e*P **P 12 15 41.0 +0.8**
HHC pP sP 12 15 45.7 +1.0
HHC sP pP 12 15 48.1 +4.6
HHC S **S 12 25 20.2 -0.2**
HHC pmax pmax
comp=Z,71nm,1.2s
HHC pmax pmax
comp=Z,350nm,7.0s
HHC LR LR
comp=Z,230nm,17.0s
HHC LR LR
comp=Z,260nm,17.4s
HHC LR LR
comp=Z,310nm,17.0s
TOA0 Torodi Ar. Sit 75.71 292 *e*P **P 12 15 42.0 -0.2**
TORD Torodi Ar. Bea 75.71 292 P **P 12 15 42.1 -0.2**
comp=Z,4.0nm,1.2s,baz=133,slow=5.4,SNR=11
ZRNK Zerenda 76.56 360 *e*P **P 12 15 45.7 -0.5**
ZRNK Zerenda 76.56 360 *e*P **P 12 15 45.8 -0.5**
comp=Z,17nm,1.5s
BVAR Borovoye Array 76.64 1 P **P 12 15 45.8 -1.0**
comp=Z,3.4nm,0.8s,baz=161,slow=6.3,SNR=16
BRVK Borovoye 76.67 1⇑ *i*P **P 12 15 46.6 -0.3**
BRVK pmax pmax
comp=Z,12nm,2.5s
BJI Beijing 77.14 35 P **P 12 15 48.6 -1.2**
BJI S **S 12 25 42.0 +3.1**
BJI pmax pmax
comp=Z,7.0nm,1.5s
BJI pmax pmax
comp=Z,95nm,7.0s
BJI LR LR
comp=Z,160nm,25.3s
BJI LR LR
comp=Z,200nm,26.8s
BJI LR LR
comp=Z,310nm,24.6s
TIRR Tirgusor 77.71 331⇓ *i*P **P 12 15 53.2 +0.3**
TIRR Tirgusor 77.71 331⇓ P **P 12 15 53.2 +0.3**
TIRR Tirgusor 77.71 331 *e*P **P 12 15 49.9 -2.9**
comp=Z,18nm,0.9s
CFR Carcaliu 78.40 332⇑ *i*P **P 12 15 57.2 +0.5**
CFR Carcaliu 78.40 332⇑ P **P 12 15 57.2 +0.5**
DBIC Dimbokro 78.47 283 P **P 12 15 58.0 +0.2**
comp=Z,4.1nm,1.0s,baz=14,slow=14,SNR=2.2
DBIC Dimbokro 78.47 283 P **P 12 15 58.0 +0.2**
DBIC pmax pmax
comp=Z,4.0nm,1.0s
VRH Novokhopyorsk 78.69 343 *e*P **P 12 15 56.8 -1.4**
VRH pmax pmax
comp=Z,8.0nm,0.4s
ZALV Zalesovo Beam 78.70 9 P **P 12 15 57.1 -1.1**
comp=Z,7.0nm,0.8s,baz=199,slow=4.8,SNR=24
ISR Istrita 79.06 331⇑ *i*P **P 12 16 01.8 +1.4**
ISR Istrita 79.06 331⇑ P **P 12 16 01.8 +1.4**
ULN Ulaanbaatar 79.08 25⇑ *i*P **P 12 16 00.0 -0.6**
ULN pmax pmax
comp=Z,8.0nm,1.7s
ULN Ulaanbaatar 79.08 25 *e*P **P 12 15 60.0 -0.6**
comp=Z,17nm,1.4s
NVS Novosibirsk 79.35 8 *e*P **P 12 16 01.1 -0.6**
NVS pmax pmax
comp=Z,41nm,2.0s
NVS pmax pmax
comp=N,21nm,1.5s
VSR Storozhevoye 79.43 341 *e*P **P 12 16 01.5 -0.7**
VSR pmax pmax
comp=Z,20nm,1.2s
VRI Vrincioaia 79.55 331⇑ *i*P **P 12 16 04.0 +0.9**
VRI Vrincioaia 79.55 331⇑ P **P 12 16 04.0 +0.9**
PLOR Plostina 79.58 331⇑ *i*P **P 12 16 04.0 +0.8**
PLOR Plostina 79.58 331⇑ P **P 12 16 04.0 +0.8**
MLR Muntele Rosu 79.61 331 P **P 12 16 03.7 +0.2**
comp=Z,2.7nm,0.8s,baz=182,slow=3.3,SNR=15
TIP Timpagrande 79.77 321⇑ *i*P **P 12 16 05.3 +0.8**
ZAK Zakamensk 79.84 21 *e*P **P 12 16 02.2 -2.4**
ZAK pmax pmax
comp=Z,3.0nm,2.0s
VOIR 79.98 330⇑ *i*P **P 12 16 05.5 0.0**
VOIR 79.98 330⇑ P **P 12 16 05.5 0.0**
ARR Arges 80.11 330⇑ *i*P **P 12 16 06.2 0.0**
ARU Arti 80.58 354 P **P 12 16 07.9 -0.4**
comp=Z,1.7nm,0.4s,baz=147,slow=3.9,SNR=8.1
ARU Arti 80.58 354 *d i*P **P 12 16 08.1 -0.2**
ARU 12 19 07.0
ARU S **S 12 26 17.0 +2.0**
ARU SS **SS 12 31 25.3 -2.9**
ARU pmax pmax
comp=Z,22nm,1.7s
ARU Arti 80.58 354 *e*P **P 12 16 08.2 -0.2**
comp=Z,16nm,1.2s
LPSR Galich'ya Gora 80.72 342 *e*P **P 12 16 07.7 -1.5**
LPSR pmax pmax
comp=Z,10.0nm,0.6s
SVE Sverdlovsk 80.79 355 *e*P **P 12 16 09.2 -0.2**
SVE pmax pmax
comp=Z,29nm,1.9s
MDVR Moldovita 81.07 328⇑ *i*P **P 12 16 11.4 +0.1**
TLY Talaya 81.07 21 P **P 12 16 10.6 -0.5**
comp=Z,0.6nm,0.3s,baz=17,slow=17,SNR=2.4
TLY Talaya 81.07 21 *e*P **P 12 16 11.3 +0.2**
TLY pmax pmax
comp=Z,5.0nm,1.1s
TLY MLR MLR
comp=Z,92nm,20.0s
TLY Talaya 81.07 21 *e*P **P 12 16 10.2 -0.9**
comp=Z,12nm,1.5s
DEV Deva 81.31 329⇓ *i*P **P 12 16 13.9 +1.4**
DEV Deva 81.31 329⇓ P **P 12 16 13.9 +1.4**
BURAR Bucovina Array 81.56 332⇑ *i*P **P 12 16 15.3 +1.4**
BURAR Bucovina Array 81.56 332⇑ P **P 12 16 15.3 +1.4**
BUR08 Bucovina Ar. S 81.59 332 *e*P **P 12 16 13.8 -0.3**
BZS Buzias 81.72 328⇑ *i*P **P 12 16 15.2 +0.5**
BZS Buzias 81.72 328⇑ P **P 12 16 15.2 +0.5**
DRGR 82.07 330⇑ *i*P **P 12 16 17.1 +0.5**
DRGR 82.07 330⇑ P **P 12 16 17.1 +0.5**
KRAR Krasnoyarsk 82.10 13 P **P 12 16 16.9 +0.5**
KEST Kesra 82.13 315 P **P 12 16 17.9 +0.7**
comp=Z,6.1nm,0.9s,baz=292,slow=5.5,SNR=4.9
KSAR Wonju Array Be 82.16 43 P **P 12 16 16.1 -1.1**
KSAR Wonju Array Be 82.16 43 P **P 12 16 16.1 -1.1**
KS01 Wonju Array Si 82.18 43 *e*P **P 12 16 15.2 -2.0**
KSRS Korea Array 82.19 43 P **P 12 16 16.1 -1.2**
comp=Z,2.4nm,0.7s,baz=236,slow=5.5,SNR=14
AKASG Malin Array Be 82.35 336 P **P 12 16 17.2 -0.6**
comp=Z,8.0nm,0.8s,baz=138,slow=4.4,SNR=21
AKASG LR LR 12 52 50.4
comp=Z,24nm,18.9s,baz=165,slow=36
AKBB Malin Array Si 82.35 336 *e*P **P 12 16 17.3 -0.5**
AKBB pmax pmax
comp=Z,17nm,0.9s
AKBB Malin Array Si 82.35 336 *e*P **P 12 16 17.3 -0.5**
comp=Z,17nm,0.9s
KIEV Kiev 82.35 336⇑ *i*P **P 12 16 17.7 -0.1**
KIEV pmax pmax
comp=Z,18nm,1.0s
KIEV Kiev 82.35 336 *e*P **P 12 16 17.2 -0.6**
comp=Z,15nm,0.9s
AK11 Malin Array Si 82.36 336 *e*P **P 12 16 17.4 -0.4**
OBN Obninsk 83.60 342 P **P 12 16 24.3 +0.1**
comp=Z,12nm,0.4s,baz=139,slow=15,SNR=4.3
OBN Obninsk 83.60 342⇑ *i*P **P 12 16 24.6 +0.4**
OBN pmax pmax
comp=Z,40nm,2.5s
OBN MLR MLR
comp=Z,79nm,21.0s
UZH Uzhgorod 83.62 331 *e*P **P 12 16 25.3 +0.8**
LVV L'vov 83.75 332 *e*P **P 12 16 24.6 -0.5**
KOLS Kolonicke sedl 83.85 331 *e*P **P 12 16 26.4 +0.7**
KOLS pmax pmax
comp=Z,15nm,1.4s
KOLS Kolonicke sedl 83.85 331 *e*P **P 12 16 26.4 +0.7**
MOS Moscow 83.85 343 *e*P **P 12 16 24.1 -1.4**
CRVS Cervenica-Dubn 84.19 330 *e*P **P 12 16 27.9 +0.5**
CRVS Cervenica-Dubn 84.19 330 *e*P **P 12 16 27.9 +0.5**
KECS Kecovo 84.33 330 *e*P **P 12 16 28.1 0.0**
KECS pmax pmax
comp=Z,3.0nm,0.8s
KECS Kecovo 84.33 330 *e*P **P 12 16 28.1 0.0**
STHS Stebnicka Huta 84.67 331 *e*P **P 12 16 30.1 +0.3**
STHS pmax pmax
comp=Z,4.0nm,0.9s
STHS Stebnicka Huta 84.67 331 *e*P **P 12 16 30.1 +0.3**
CN2 Changchun 84.73 37 *e*P **P 12 16 31.6 +1.3**
NIE Niedzica 85.09 330 *e*P **P 12 16 32.6 +0.6**
NIE Niedzica 85.09 330 *e*P **P 12 16 32.6 +0.6**
VYHS Vyhne 85.11 329 *e*P **P 12 16 32.3 +0.2**
VYHS *e* 12 16 38.6
VYHS pmax pmax
comp=Z,6.0nm,1.1s
VYHS Vyhne 85.11 329 *e*P **P 12 16 32.3 +0.2**
VYHS *e* 12 16 38.6
LANS Liptovska Anna 85.28 330 *e*P **P 12 16 33.8 +0.9**

LANS	Liptovska Anna	85.28 330	eP		P	12 16 33.8	+0.9
GROS	Grobnik	85.35 326	i P		P	12 16 33.3	-0.2
ZST	Bratislava	85.73 328	eP		P	12 16 34.3	-0.8
ZST	Bratislava	85.73 328	eP		P	12 16 34.3	-0.8
MOZS	Mozjanca	85.79 325	i P		P	12 16 35.5	0.0
ARSA	Arzberg	85.87 327	i P		P	12 16 36.0	+0.1
	comp=Z,9.2nm,1.0s,SNR=6.4						
OJC	Ojcow	85.89 331	eP		P	12 16 36.0	+0.1
OJC	Ojcow	85.89 331	eP		P	12 16 36.0	+0.1
CONA	Conrad Observa	86.16 327	i P		P	12 16 37.1	-0.3
	comp=Z,10nm,0.9s,SNR=8.8						
OKC	Ostrava-Krasne	86.38 330	eP		P	12 16 38.5	+0.2
OKC	Ostrava-Krasne	86.38 330	eP		P	12 16 38.5	+0.2
MORC	Moravsky Berou	86.61 329	⇑i P		P	12 16 39.4	-0.1
MORC	Moravsky Berou	86.61 329	⇑P		P	12 16 39.4	-0.1
MORC	Moravsky Berou	86.61 329	eP		P	12 16 39.5	0.0
	comp=Z,45nm,1.1s						
VRAC	Vranov	86.74 329	P		P	12 16 40.1	0.0
	comp=Z,3.9nm,0.3s,baz=112,slow=6.4,SNR=6.0						
MOA	Molln	86.91 326	i P		P	12 16 40.8	-0.2
	comp=Z,16nm,1.0s,SNR=8.4						
ABTA	Abfaltersbach	87.10 325	i P		P	12 16 42.1	0.0
	comp=Z,11nm,0.9s,SNR=7.3						
KRLC	Kraliky	87.18 329	eP		P	12 16 42.5	+0.2
KRLC			epP		sP	12 16 48.8	+2.0
KRLC	Kraliky	87.18 329	eP		P	12 16 42.5	+0.2
KRLC			e			12 16 48.8	
SUW	Suwalki	87.26 335	eP		P	12 16 43.2	+0.7
SUW	Suwalki	87.26 335	eP		P	12 16 43.2	+0.7
TREC	Trest	87.26 328	eP		P	12 16 42.8	+0.1
TREC	Trest	87.26 328	eP		P	12 16 42.8	+0.1
DPC	Dobruska-Polom	87.58 329	eP		P	12 16 44.6	+0.4
DPC	Dobruska-Polom	87.58 329	eP		P	12 16 44.6	+0.4
UPC	Upice	87.83 329	eP		P	12 16 46.0	+0.6
UPC	Upice	87.83 329	eP		P	12 16 46.0	+0.6
GEA0	GERESS Array S	87.84 327	eP		P	12 16 44.6	-1.0
GEC2	GERESS Array S	87.84 327	eP		P	12 16 45.0	-0.6
GEC2				pmax	pmax		
	comp=Z,5.0nm,1.0s						
GEC2	GERESS Array S	87.84 327	eP		P	12 16 45.0	-0.6
	comp=Z,5.1nm,1.0s						
GERES	GERESS Array B	87.84 327	P		P	12 16 44.6	-1.0
	comp=Z,2.0nm,0.8s,baz=134,slow=5.8,SNR=17						
WTTA	Wattenberg	87.89 325	i P		P	12 16 45.8	-0.1
	comp=Z,11nm,1.1s						
KLMR	Klimovskoe	87.91 346	eP		P	12 16 43.2	-2.2
KLMR			e			12 20 08.5	
KLMR				pmax	pmax		
	comp=Z,41nm,1.4s						
KSP	Ksiaz	87.93 330	eP		P	12 16 47.3	+1.5
KSP	Ksiaz	87.93 330	eP		P	12 16 47.3	+1.5
GOPC	GO Pecny, Ondr	88.02 328	eP		P	12 16 46.4	+0.1
GOPC			epP		sP	12 16 53.2	+2.4
GOPC	GO Pecny, Ondr	88.02 328	eP		P	12 16 46.4	+0.1
GOPC			e			12 16 53.2	
KHC	Kasperske Hory	88.09 327	eP		P	12 16 46.0	-0.7
KHC			epP		sP	12 16 52.5	+1.3
KHC	Kasperske Hory	88.09 327	eP		P	12 16 46.0	-0.7
KHC			e			12 16 52.5	
KHC	Kasperske Hory	88.09 327	eP		P	12 16 46.2	-0.5
	comp=Z,4.1nm,1.0s						
PRU	Pruhonice	88.19 328	eP		P	12 16 47.5	+0.5
PRU			epP		sP	12 16 53.8	+2.2
PRU	Pruhonice	88.19 328	eP		P	12 16 47.5	+0.5
PRU			e			12 16 53.8	
FETA	Feichten	88.22 324	i P		P	12 16 48.1	+0.6
	comp=Z,18nm,1.0s,SNR=9.2						
FUORN	Ofenpass-Fuorn	88.22 324	eP		P	12 16 48.1	+0.5
	comp=Z,18nm,1.0s						
MOTA	Moosalm	88.22 325	i P		P	12 16 47.4	-0.1
	comp=Z,14nm,1.0s,SNR=6.7						
MJAR	Matsushiro Arr	88.44 49	P		P	12 16 48.1	-0.5
	comp=Z,0.4nm,0.5s,baz=163,slow=8.9,SNR=3.0						
RETA	Reutte	88.49 325	i P		P	12 16 48.8	+0.1
	comp=Z,11nm,1.0s,SNR=5.3						
DAVOX	Davos/Dischmat	88.53 324	P		P	12 16 49.4	+0.4
	comp=Z,16nm,0.8s,baz=113,slow=15,SNR=21						
TUE	Stuetta	88.63 323	eP		P	12 16 49.0	-0.5
	comp=Z,14nm,0.9s						
USRK	Ussuriysk Ar.	88.70 40	P		P	12 16 48.7	-0.9
	comp=Z,1.4nm,0.8s,baz=250,slow=7.5,SNR=3.5						
DAVA	Damuels	88.84 324	i P		P	12 16 50.5	+0.1
	comp=Z,28nm,0.9s,SNR=9.5						
BRG	Berggiesshubel	89.06 329	eP		P	12 16 52.0	+0.9
	comp=Z,29nm,1.8s						
BRG	Berggiesshubel	89.06 329	eP		P	12 16 52.0	+0.9
BRG				pmax	pmax		
	comp=Z,29nm,1.8s						
BOD	Bodaibo	89.55 22	eP		P	12 16 48.3	-5.0
BOD				pmax	pmax		
	comp=Z,4.0nm,1.5s						
GRFO	Grafenberg	89.64 327	eP		P	12 16 54.4	+0.5
GRFO				pmax	pmax		
	comp=Z,20nm,0.9s						
GRFO	Grafenberg	89.64 327	eP		P	12 16 54.4	+0.5
	comp=Z,20nm,0.9s						
SENIN	Lac Senin/Sane	89.70 322	eP		P	12 16 53.6	-0.9
	comp=Z,6.5nm,0.9s						
CLL	Collm	89.79 328	⇓i P		P	12 16 54.9	+0.3
	comp=Z,9.0nm,1.0s						
CLL			i			12 17 01.5	
	comp=Z,6.0nm,1.0s						
CLL	Collm	89.79 328	⇓i P		P	12 16 54.9	+0.3
CLL				pmax	pmax		
	comp=Z,9.0nm,1.0s						
CLL	Collm	89.79 328	eP		P	12 16 55.2	+0.7
	comp=Z,12nm,1.1s						
BFO	Black Forest	90.30 324	ceP		P	12 16 57.9	+0.8
KLR	Kul'dur	91.51 36	P		P	12 17 01.1	-1.5
	comp=Z,2.3nm,0.8s,baz=280,slow=6.5,SNR=8.3						
FINES	FINESS Array B	91.95 341	P		P	12 17 03.0	-1.4
	comp=Z,2.1nm,0.8s,baz=150,slow=4.2,SNR=7.2						
FINES			LR		LR	12 59 10.0	
	comp=Z,50nm,19.0s,baz=175,slow=36						
FINES	FINESS Array B	91.95 341	ceP		P	12 17 04.0	-0.4
FINES				pmax	pmax		
	comp=Z,2.0nm,0.8s						
ES19	SONSECA Array	93.09 312	eP		P	12 17 10.1	-0.2
ESDC	Sonseca Array	93.12 312	P		P	12 17 10.1	-0.3
	comp=Z,1.2nm,0.7s,baz=105,slow=3.7,SNR=7.6						
ILAR	Eielson Array	132.89 20	PKP		PKPdf	12 23 10.0	-0.9
	comp=Z,0.2nm,0.8s,baz=307,slow=6.3,SNR=3.7						
INK	Inuvik	133.46 12	PKP		PKPdf	12 23 11.0	-0.8
	comp=Z,1.2nm,0.9s,baz=329,slow=2.6,SNR=6.1						
YKA	Yellowknife Ar	141.37 3	PKhKP		PKPpre	12 23 20.1	
	comp=Z,0.5nm,0.7s,baz=343,slow=3.8,SNR=12						
YKA			PP		PP	12 26 27.5	-1.3
	comp=Z,0.6nm,0.9s,baz=351,slow=5.9,SNR=6.9						
N59A	State Game Lan	146.36 309	P		PKPdf	12 23 36.3	+0.2
	baz=70						
O56A	Blue Knob Stat	148.58 309	P		PKPbc	12 23 43.2	-0.3
	baz=68						
M54A	Oil Creek Stat	148.86 312	P		PKPbc	12 23 44.5	+0.4
	baz=65						
BLA	Blacksburg	150.99 304	ePKIKP		PKPbc	12 23 49.8	+0.3
BLA			e			12 23 56.8	
BLA	Blacksburg	150.99 304	ePKPbc		PKPbc	12 23 49.8	+0.3
BLA			ePKPab		PKPab	12 23 56.8	-0.1
C39A	Grand Marais	151.15 331	P		PKPbc	12 23 48.3	-1.1
	baz=41						
ULM	Lac du Bonnet	151.34 340	PKP		PKPdf	12 23 43.3	-0.5
	comp=Z,1.6nm,0.6s,baz=152,slow=0.9,SNR=2.7						
ULM			PKPbc		PKPbc	12 23 48.6	-1.2
	comp=Z,13nm,0.9s,baz=18,slow=3.3,SNR=12						
EYMN	Ely	151.64 332	P		PKPbc	12 23 50.2	-0.4
	baz=39						
EYMN	Ely	151.64 332	ePKPbc		PKPbc	12 23 50.3	-0.3
EYMN			ePKPab		PKPab	12 23 56.8	-2.4
ACSO	Alum Creek Sta	151.68 312	ePKPbc		PKPbc	12 23 50.7	-0.2
ACSO			ePKPab		PKPab	12 23 59.4	-0.2
C38A	Sawbill Land.	151.73 332	P		PKPbc	12 23 49.8	-1.0
	baz=39						
COWI	Conover	151.93 327	ePKPbc		PKPbc	12 23 50.9	-0.4
C37A	Embarrass	152.10 333	P		PKPbc	12 23 51.1	-0.5
	baz=38						
B35A	Bob, Littlefor	152.21 335	P		PKPbc	12 23 51.2	-0.6
	baz=34						
A33A	Warroad	152.32 338	P		PKPbc	12 23 51.6	-0.5
	baz=31						
C36A	Pine Crest Far	152.35 334	P		PKPbc	12 23 51.3	-0.9
	baz=37						
B34A	Aery, Baudette	152.45 337	P		PKPbc	12 23 51.6	-0.8
	baz=33						
D37A	Cotton	152.65 332	P		PKPbc	12 23 52.0	-0.9
	baz=38						
A32A	Rocking H Ranc	152.71 339	P		PKPbc	12 23 52.0	-0.9
	baz=29						
C35A	Jirik Farms, M	152.85 335	P		PKPbc	12 23 52.0	-1.3
	baz=35						
D36A	Goodland	152.95 333	P		PKPbc	12 23 53.1	-0.4
	baz=37						
B32A	Ashes, Strandq	153.18 339	P		PKPbc	12 23 53.1	-0.9
	baz=29						
A30A	Hoffart Farm,	153.23 342	P		PKPbc	12 23 53.2	-0.9
	baz=25						
D35A	Remer	153.38 334	P		PKPbc	12 23 53.5	-1.0
	baz=35						
A29A	Manning Farm,	153.50 343	P		PKPbc	12 23 54.3	-0.5
	baz=24						
E36A	McGregor	153.51 333	P		PKPbc	12 23 54.0	-0.8
	baz=37						
B30A	Myrvik Farm, E	153.68 341	P		PKPbc	12 23 54.4	-0.7
	baz=26						
I38A	Scanlan Farm,	154.98 328	P		PKPab	12 24 13.3	-0.1
	baz=42						
I37A	Lemond, Waseca	155.51 329	P		PKPab	12 24 16.0	+0.3
	baz=40						
LAO	LASA Array	157.03 352	P		PKPab	12 24 22.5	+0.3
	baz=10.0						
N39A	Derby Farms, D	157.31 322	P		PKPab	12 24 23.9	+0.4
	baz=47						
M38A	Pleasantville	157.31 324	P		PKPab	12 24 23.6	+0.1
	baz=45						
Y47A	UCPARC, Winfie	157.80 302	P		PKPab	12 24 25.8	-0.1
	baz=69						
BOZ	Bozeman (W)	158.33 2	P		PKPab	12 24 27.8	-0.1
	baz=357						
P39B	Salisbury	158.37 320	P		PKPab	12 24 29.0	+0.8
	baz=49						
Y46A	Houston	158.59 302	P		PKPab	12 24 28.9	-0.4
	baz=68						
P38A	Dawn	158.73 321	P		PKPab	12 24 29.6	-0.1
	baz=47						
R40A	Maddies Statio	158.83 317	P		PKPab	12 24 30.2	0.0
	baz=52						
RLMT	Red Lodge	158.84 357	P		PKPab	12 24 30.2	0.0
	baz=3.1						
I25A	Rochford	159.19 346	P		PKPab	12 24 32.5	+0.7
	baz=18						
Q38A	Cooks Store, C	159.22 320	P		PKPab	12 24 31.9	+0.1
	baz=48						
S40A	Lebanon	159.39 316	P		PKPab	12 24 33.0	+0.3
	baz=53						
H17A	Grant Village	159.60 360	P		PKPab	12 24 35.0	+1.5
	baz=360						
H17A	Grant Village	159.60 360	ePKPdf		PKPdf	12 23 52.3	-3.1
H17A			ePKPab		PKPab	12 24 35.0	+1.5
M04C	Macdoel	159.89 25	P		PKPab	12 24 34.8	0.0
	baz=329						
V40A	Witts Springs	160.62 312	P		PKPab	12 24 37.1	-1.0
	baz=57						
S37A	Fort Scott	160.73 319	P		PKPab	12 24 38.0	-0.4
	baz=48						
U39A	Green Forest	160.73 314	P		PKPab	12 24 38.4	-0.2
	baz=54						
T38A	Diamond	160.86 317	P		PKPab	12 24 39.1	0.0
	baz=51						
T37A	Cheneyville 18	161.20 318	P		PKPab	12 24 40.4	-0.2
	baz=50						
PDAR	Pinedale Array	161.20 358	PKP		PKPdf	12 23 56.7	-0.5
	comp=Z,0.7nm,0.8s,baz=104,slow=1.9,SNR=6.1						
PDAR			PKPab		PKPab	12 24 39.7	-0.9
	comp=Z,1.0nm,0.8s,baz=63,slow=2.2,SNR=4.3						
U38A	Gravette	161.29 315	P		PKPab	12 24 40.7	-0.3
	baz=52						
MIAR	Mount Ida	161.80 309	P		PKPab	12 24 43.4	+0.1
	baz=59						
X39A	Fountain Ranch	162.20 310	P		PKPab	12 24 45.7	+0.6
	baz=58						
T34A	McClaskey Farm	162.61 322	P		PKPab	12 24 46.2	-0.5
	baz=45						
W37B	Quinton	162.75 314	P		PKPab	12 24 45.8	-1.6
	baz=53						
O20A	White River Ci	163.73 354	P		PKPab	12 24 51.5	-0.1
	baz=7.4						
NVAR	Mina Array Bea	164.13 23	PKPab		PKPab	12 24 53.4	-0.2
	comp=Z,1.9nm,0.8s,baz=296,slow=4.2,SNR=12						
X35A	Drake	164.20 314	P		PKPab	12 24 53.7	-0.1
	baz=52						
MPMC	Manual Prospec	166.53 25	P		PKPab	12 25 04.1	0.0
	baz=332						
233A	Rising Star	166.91 311	P		PKPab	12 25 06.2	+0.3
	baz=54						
434A	Burnet	167.09 305	P		PKPab	12 25 06.7	0.0
	baz=60						
635A	Leesville	167.32 298	P		PKPab	12 25 08.6	+0.8
	baz=67						
333A	Richland Sprin	167.36 308	P		PKPab	12 25 08.7	+0.8
	baz=57						
MNTX	Cornudas Mount	171.00 330	P		PKPab	12 25 23.4	-0.4
	baz=31						
TXAR	Lajitas Array	171.80 312	PKPab		PKPab	12 25 27.9	+0.2
	comp=Z,1.4nm,0.8s,baz=56,slow=4.3,SNR=13						

NIED ***07*** *12:05:00,38°.70N×144°.10E,h5km,Mw3.5 Best double couple: M₀2.00000×10¹⁴ NP1:φs187.00000°,δ42.00000°, λ-106.00000°. NP2:φs28.00000°,δ50.00000°, λ-76.00000°.*

JMA 07 12:05:41.2±0.2,38°.66N×144°.13E,h36km,M3.7,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	1.97	283	P	Pn	12 06 13.6	+1.6
OFUJ				eS	Sn	12 06 37.1	+1.7
MIYJ	Miyakonagasawa	2.02	298	P	Pn	12 06 13.8	+1.1
MIYJ				S	Sn	12 06 37.4	+0.8
JTH	Tanohata	2.17	307	eS	Sn	12 06 42.5	+2.0
JMK	Ichinoseki	2.29	278	P	Pn	12 06 18.2	+1.8
JMK				S	Sn	12 06 45.2	+1.8
JOM	Ohasama	2.35	291	P	Pn	12 06 19.0	+1.7
JOM				S	Sn	12 06 47.1	+2.2
MAT	Matsushiro	5.16	248	P	Pn	12 06 58.6	+2.8
MAT				S	Sn	12 08 00.7	+6.6

IDC 07 12:08:41.2±19.0,24°.60S×68°.50E,h0km,mb3.6/3, mb1 3.8/3,mb1mx3.4/45,mbtmp3.6/3,Error ellipse: s-maj=618.6km s-min=44.2km az=52.0,Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08S1	Diego Garcia H	17.28	13	T	T	12 29 23.3	
	baz=189						
H08S2	Diego Garcia H	17.29	13	T	T	12 29 25.3	
	baz=189						
H08S3	Diego Garcia H	17.30	13	T	T	12 29 26.9	
	baz=189						
ASAR	Alice Springs	59.16	104	P	P	12 18 44.3	0.0
	0.5nm,0.7s,baz=252,slow=6.4,SNR=7.9						
WRA	Warramunga Arr	60.61	100	P	P	12 18 54.0	-0.2
	0.6nm,0.8s,baz=256,slow=6.7,SNR=4.5						
MKAR	Makanchi Array	72.14	10	P	P	12 20 07.5	+0.1
	0.4nm,0.6s,baz=212,slow=5.6,SNR=4.0						

IDC 07 12:10:50.1±2.8,54°.09N×87°.32E,h0km,mb1 3.5/4, mb1mx3.2/57,mbtmp3.6/4,ML2.9/4,Error ellipse: s-maj=28.0km s-min=16.6km az=61.0,Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	ZALESOVO INFRA	1.48	265	i		12 20 00.5	
	baz=82,slow=325,SNR=2.8						
ZALV	Zalesovo Beam	1.48	265	Pg	Pn	12 11 15.8	-2.3
	5.6nm,0.3s,baz=84,slow=16,SNR=41						
ZALV				Lg	Lg	12 11 37.0	
	3.9nm,0.3s,baz=80,slow=26,SNR=7.2						
KURBB	Kurchatov Arra	6.41	241	Pn	Pn	12 12 26.4	+0.7
	0.2nm,0.3s,baz=55,slow=14,SNR=2.1						
MKAR	Makanchi Array	7.98	206	Pn	Pn	12 12 48.2	+0.9
	0.2nm,0.3s,baz=26,slow=14,SNR=7.5						
BVAR	Boroveye Array	10.13	271	Pn	Pn	12 13 16.5	-0.2
	0.3nm,0.3s,baz=77,slow=14,SNR=3.7						
ARU	Arti	16.51	290	Pn	Pn	12 14 39.9	-2.9
	0.0nm,0.3s,baz=106,slow=20,SNR=4.3						

IDC 07 12:18:45.9±7.1,24°.79S×68°.20E,h0km,mb4.0/3, mb1 4.2/3,mb1mx3.6/38,mbtmp4.0/3,MS3.4/2,Ms1 3.5/2, ms1mx2.9/40,Error ellipse: s-maj=236.8km s-min=38.6km az=51.0,Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08S1	Diego Carcia H	17.53	14	T	T	12 39 29.0	
	baz=191,slow=76,SNR=73						
H08S2	Diego Garcia H	17.54	14	T	T	12 39 27.4	
	baz=191,slow=76,SNR=77						
H08S3	Diego Garcia H	17.55	14	T	T	12 39 34.3	
	baz=191,slow=76,SNR=80						
BOSA	Boshof	38.40	255	LR	LR	12 37 57.9	
	comp=Z,68nm,20.9s,baz=106,slow=30						
CMAR	Chiang Mai Arr	52.39	38	LR	LR	12 46 09.3	
	comp=Z,34nm,20.0s,baz=310,slow=31						
ASAR	Alice Springs	59.38	104	P	P	12 28 50.6	+0.2
	1.3nm,0.6s,baz=251,slow=6.1,SNR=22						
WRA	Warramunga Arr	60.84	100	P	P	12 29 00.2	-0.3
	2.2nm,0.9s,baz=256,slow=6.8,SNR=8.6						
MKAR	Makanchi Array	72.38	10	P	P	12 30 13.6	+0.1
	1.0nm,0.8s,baz=199,slow=6.8,SNR=7.2						
YKA	Yellowknife Ar	142.26	2	PKP	PKPdf	12 38 19.0	-0.7
	0.1nm,0.8s,baz=341,slow=2.6,SNR=2.5						

ISCJB ***07*** *12:23:59.8±0.5,10°.67N±0°.03×62°.48W±0°.03,h82km±7km, Error ellipse: s-maj=6.2km s-min=3.8km az=142.8*
TRN ***07*** *12:24:01.7,10°.73N×62°.46W,h67km,MD3.5*
FUNV ***07*** *12:24:02.3,10°.62N×62°.39W,h31km,MW3.0*

ISC 07 12:24:00.0±1.3,10°.66N±0°.04×62°.47W±0°.03,h86km±10km, n26,σ1°.27/44,2D,Near coast of Venezuela

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUNV	Guanoco	0.68	224	⇓i P	Pn	12 24 17.1	+1.1
GUNV				eS	Sn	12 24 26.6	-1.3
TCE	Chacachacare	0.70	87	eP	Pn	12 24 17.1	+0.8
TCE				eS	Sn	12 24 27.0	-1.4
CRUV	Carupano	0.76	272	⇓i P	Pn	12 24 17.0	+0.2
CRUV				eS	Sn	12 24 28.5	-0.8
TRN	Trinidad (W)	1.05	90	eP	Pn	12 24 21.0	+1.0
TRN				eS	Sn	12 24 34.5	-0.5
TPP	Pointe-a-Pierr	1.05	109	i P	Pn	12 24 21.9	+1.8
TPP				eS	Sn	12 24 34.9	-0.3
TBH	Brigand Hill	1.39	97	eP	Pn	12 24 26.2	+2.0
TBH				eS	Sn	12 24 42.9	+0.5
GRGR	Grenville	1.67	28	eP	Pn	12 24 27.8	0.0
GRGR				eS	Sn	12 24 47.8	-1.2
GRGR				eS	Sn	12 24 48.2	-0.7
GRW	Mount Saint Ca	1.69	28	eP	Pn	12 24 28.3	+0.1
GRW				eS	Sn	12 24 47.9	-1.7
GRHS	Sauteurs	1.76	27	eP	Pn	12 24 29.4	+0.4
GRHS				eS	Sn	12 24 49.6	-1.3
GRSS	Sisters	1.83	27	eP	Pn	12 24 30.3	+0.3
GRSS				eS	Sn	12 24 52.0	-0.7
TOSP	Speyside	2.00	71	eP	Pn	12 24 32.9	+0.7
TOSP				eS	Sn	12 24 56.4	-0.2
GURV	El Guri	2.94	192	eP	Pn	12 24 45.6	+0.9
GURV				eS	Sn	12 25 17.7	-1.5
MCLT	Moule a Chique	3.38	26	eP	Pn	12 24 50.9	+0.2
MCLT				eS	Sn	12 25 28.3	-1.6
BIRV	Birongo	3.74	268	eP	Pn	12 24 58.2	+2.6
BIRV				eS	Sn	12 25 39.4	+0.8
MERV	Las Mercedes	4.02	250	eP	Pn	12 25 00.6	+1.2
MERV				eS	Sn	12 25 44.7	-0.7
BIM	Bigot	4.07	19	eP	Pn	12 25 01.3	+1.2
TRMF	Trois Ilets	4.10	20	eP	Pn	12 25 01.2	+0.8
LPMF	Morne Lapointe	4.16	20	eP	Pn	12 25 02.5	+1.2
MVM	Montagne Vaucl	4.17	21	eP	Pn	12 25 02.8	+1.4
FDF	Fort de France	4.25	17	eP	Pn	12 25 03.3	+0.8
PML	Morne Lenard	4.29	17	eP	Pn	12 25 04.2	+1.2
GBMF	Grand Be	4.31	17	eP	Pn	12 25 04.2	+0.8
PCM	Pelee Case Pet	4.31	16	eP	Pn	12 25 04.1	+0.8
BAMF	Morne Balai	4.33	17	eP	Pn	12 25 04.5	+0.9
LUEV	Luepa	4.88	168	eP	Pn	12 25 11.5	+0.2
LUEV				eS	Sn	12 26 03.5	-3.1
BAUV	El Baul	5.75	253	eP	Pn	12 25 23.8	+0.9
BAUV				eS	Sn	12 26 25.1	-2.5

IDC ***07*** *12:43:12.9±0.8,15°.94S×171°.92W,h0km,mb4.1/11, mb1 4.3/12,mb1mx4.0/48,mbtmp4.1/12,ML4.0/1,MS3.2/6, Ms1 3.2/6,ms1mx2.9/43,Error ellipse: s-maj=34.7km s-min=15.3km az=130.0*
ISCJB ***07*** *12:43:17.3±0.6,15°.91S±0°.08×172°.0W±0°.1,h41km, mb4.1/15,MS3.4/4,Error ellipse: s-maj=18.1km s-min=8.3km az=27.6*
NEIC ***07*** *12:43:18.3±0.5,15°.88S×171°.98W,h35km,mb4.1/2,Error ellipse: s-maj=18.4km s-min=8.7km az=136.0*

ISC 07 12:43:18.7±0.8,15°.9S±0°.1×172°.0W±0°.2,h41km,n31, σ0°.83/19,mb4.1/15,MS3.5/4,Samoa Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	Afiamalu	1.96	5	Pn	Pn	12 43 47.9	-1.7
	57nm,0.3s,baz=180,slow=4.3,SNR=207						
AFI				Sn	Sn	12 44 13.8	+0.7
	296nm,0.3s,baz=195,slow=23,SNR=25						
AFI				LR	LR	12 44 25.4	
	comp=Z,62nm,19.0s,baz=200,slow=36						
RAR	Rarotonga	12.72	116	LR	LR	12 49 24.5	
	comp=Z,83nm,19.0s,baz=228,slow=29						
DZM	Mont Dzumac	21.31	250	LR	LR	12 55 06.8	
	comp=Z,247nm,19.3s,baz=235,slow=34						
PPT	Papeete	21.51	98	LR	LR	12 53 40.4	
	comp=Z,48nm,21.4s,baz=272,slow=29						
PPT2	Papeete2	21.51	98	eLR	LR	12 52 45.7	
	145nm,26.0s						
URZ	Urewera	24.28	201	P	P	12 48 31.6	-0.6
	12nm,0.8s,baz=25,slow=17,SNR=3.3						
HNR	Honiara	28.12	280	LR	LR	12 58 36.9	
	comp=Z,113nm,20.0s,baz=161,slow=33						
HNR	Honiara	28.12	280	P	P	12 49 07.0	-0.1
	34nm,0.6s						
TAOE	Nuku Hiva Isla	31.83	81	eLR	LR	12 57 14.9	
	70nm,26.0s						
H11S2	WAKE ISLAND Hy	40.09	328	T	T	13 33 27.7	
	baz=143						
H11S3	WAKE ISLAND Hy	40.10	328	T	T	13 33 26.6	
	baz=143						
H11S1	WAKE ISLAND Hy	40.11	328	T	T	13 33 07.5	
	baz=143						
H11N3	WAKE ISLAND Hy	41.02	329	T	T	13 34 08.5	
	baz=148,slow=75						
H11N1	WAKE ISLAND Hy	41.02	329	T	T	13 34 23.8	
	baz=148						
H11N2	WAKE ISLA

NIED ***07*** *12:47:00,33.°90N×134.°70E,h35km,Mw4.1 Best double couple: M₀1.87000×10¹⁵ NP1:φs142.00000°,δ26.00000°, λ148.00000°. NP2:φs261.00000°,δ77.00000°,λ68.00000°.*
ISCJB ***07*** *12:47:37.4±0.4,33.°85N±0.°04×134.°69E±0.°03,h42km±5km, mb3.6/7,MS3.3/3,Error ellipse: s-maj=6.4km s-min=4.1km az=161.2*
IDC ***07*** *12:47:38.3±0.8,33.°78N×134.°70E,h34km±6km,mb3.5/7, mb1 3.8/12,mb1mx3.5/51,mbtmp3.8/12,ML3.6/5,MS3.3/3, Ms1 3.3/3,ms1mx2.8/34,Error ellipse: s-maj=19.3km s-min=15.6km az=138.0*
JMA ***07*** *12:47:38.1,33.°86N×134.°69E,h39km±1km,M4.0 Broadband fault plane solution: P waves. NP1: φs289.00000°,δ59.00000°,λ89.00000°. NP2: φs111.00000°,δ31.00000°,λ92.00000°. Principal axes: T Plg76.0000°, Azm196.0000°; N Plg1.0000°, Azm290.0000°; P Plg14.0000°, Azm20.0000°;*
JMA Felt III J1.

ISC 07 12:47:38.5±0.7,33.°86N±0.°05×134.°69E±0.°03,h35km±2km, n34,σ0°78/38,mb3.6/7,MS3.3/3,3C-5D,Shikoku

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAI	**Aioi**	**0.21**	**251**	⇑P	**Pb**	**12 47 45.1**	**-0.3**
JAI				S	**Sb**	**12 47 50.0**	**0.0**
JWM	**Minabe**	**0.55**	**91**	⇑P	**Pb**	**12 47 49.3**	**-0.7**
JWM				S	**Sb**	**12 47 57.4**	**-0.6**
JAJ2	**Tsuna**	**0.58**	**16**	⇓P	**Pn**	**12 47 50.0**	**-0.2**
JAJ2				S	**Sb**	**12 47 58.2**	**-0.5**
JMN	**Monobe**	**0.69**	**259**	⇓P	**Pn**	**12 47 51.2**	**-0.6**
JMN				S	**Sn**	**12 48 00.8**	**-0.5**
JJS	**Sakaide**	**0.81**	**309**	⇓P	**Pn**	**12 47 52.8**	**-0.6**
JJS				S	**Sn**	**12 48 03.3**	**-1.0**
JWY	**Kouya**	**0.83**	**64**	P	**Pn**	**12 47 53.3**	**-0.5**
JWY				S	**Sn**	**12 48 04.5**	**-0.4**
JWZ	**Kozaga**	**0.92**	**111**	⇑P	**Pn**	**12 47 54.1**	**-0.8**
JKS	**Kasai**	**1.13**	**7**	⇓P	**Pn**	**12 47 57.0**	**-0.8**
JKS				S	**Sn**	**12 48 10.8**	**-1.3**
JHE	**Heguri**	**1.14**	**46**	P	**Pn**	**12 47 57.3**	**-0.7**
JHE				S	**Sn**	**12 48 11.9**	**-0.6**
JAD	**Aida**	**1.16**	**338**	⇓P	**Pn**	**12 47 57.2**	**-1.1**
JAD				S	**Sn**	**12 48 11.2**	**-1.7**
JNU	**Nakatsue**	**3.27**	**258**	Pn	**Pn**	**12 48 27.6**	**+0.3**
	9.6nm,0.3s,baz=39,slow=7.0,SNR=138						
JNU				Sn	**Sn**	**12 49 04.5**	**-0.4**
	8.9nm,0.3s,baz=341,slow=21,SNR=4.2						
MAT	**Matsushiro**	**3.93**	**46**	P	**Pn**	**12 48 36.8**	**+0.4**
MAT				S	**Sn**	**12 49 21.0**	**-0.3**
MJAR	**Matsushiro Arr**	**3.93**	**46**	Pn	**Pn**	**12 48 37.1**	**+0.7**
	11nm,0.3s,baz=240,slow=14,SNR=122						
MJAR				Sn	**Sn**	**12 49 21.8**	**+0.5**
	5.0nm,0.3s,baz=217,slow=12,SNR=4.7						
JHJ	**Hachijo jima 2**	**4.32**	**98**	Pn	**Pn**	**12 48 41.1**	**-0.6**
	8.9nm,0.3s,baz=90,slow=20,SNR=3.1						
KSRS	**Korea Array**	**6.57**	**305**	Pn	**Pn**	**12 49 12.8**	**+0.2**
	0.2nm,0.3s,baz=121,slow=15,SNR=3.7						
USRK	**Ussuriysk Ar.**	**10.54**	**349**	Pn	Pn	12 50 11.2	+4.3
	0.4nm,0.3s,baz=164,slow=13,SNR=9.7						
KLR	**Kul'dur**	**15.51**	**353**	Pn	**Pn**	**12 51 16.4**	**+1.9**
	0.3nm,0.3s,baz=159,slow=8.9,SNR=18						
PETK	**Petropavlovsk-**	**25.28**	**33**	P	**P**	**12 53 01.3**	**-0.1**
	2.7nm,0.8s,baz=274,slow=4.3,SNR=4.1						
DAV	**Davao City (W)**	**27.96**	**200**	LR	LR	13 04 30.7	
	comp=Z,23nm,18.6s,baz=351,slow=36						
H11N2	**WAKE ISLAND Hy**	**31.86**	**108**	T	T	13 27 53.3	
	baz=307,slow=74						
H11N1	**WAKE ISLAND Hy**	**31.86**	**108**	T	T	13 27 58.0	
	baz=307,slow=74						
H11N3	**WAKE ISLAND Hy**	**31.88**	**108**	T	T	13 27 59.8	
	baz=307						
H11S3	**WAKE ISLAND Hy**	**32.38**	**110**	T	T	13 28 38.4	
	baz=307						
H11S1	**WAKE ISLAND Hy**	**32.38**	**110**	T	T	13 28 20.7	
	baz=307,slow=74						
H11S2	**WAKE ISLAND Hy**	**32.39**	**110**	T	T	13 28 08.7	
	baz=307,slow=74						
MKAR	**Makanchi Array**	**41.25**	**304**	P	**P**	**12 55 20.6**	**+0.4**
	0.2nm,0.4s,baz=94,slow=12,SNR=3.4						
MKAR				pP	**pP**	**12 55 30.1**	**-0.2**
	0.5nm,0.6s,baz=93,slow=11,SNR=5.7						
WRA	**Warramunga Arr**	**53.50**	**180**	P	**P**	**12 56 54.9**	**-0.7**
	4.4nm,0.8s,baz=355,slow=7.7,SNR=49						
ILAR	**Eielson Array**	**55.07**	**31**	P	**P**	**12 57 06.9**	**+0.4**
	0.3nm,0.7s,baz=272,slow=9.2,SNR=4.6						
ASAR	**Alice Springs**	**57.21**	**181**	P	**P**	**12 57 21.5**	**-0.8**
	1.3nm,0.8s,baz=11,slow=13,SNR=21						
STKA	**Stephens Creek**	**65.71**	**174**	LR	LR	13 25 01.6	
	comp=Z,65nm,19.8s,baz=207,slow=34						
FINES	**FINESS Array B**	**68.98**	**331**	pP	pP	12 58 49.8	-0.8
	0.8nm,0.6s,baz=69,slow=6.3,SNR=3.2						
YKA	**Yellowknife Ar**	**69.23**	**28**	P	**P**	**12 58 42.9**	**+1.4**
	0.2nm,0.8s,baz=297,slow=5.5,SNR=3.3						
YKA				pP	**pP**	**12 58 52.3**	**+0.2**
	0.7nm,0.9s,baz=302,slow=5.7,SNR=8.5						
NOA	**NORSAR Array B**	**74.86**	**335**	LR	LR	13 34 12.5	
	comp=Z,14nm,18.9s,baz=195,slow=37						
BRTR	**Keskin Array B**	**76.70**	**309**	P	**P**	**12 59 25.8**	**-0.4**
	0.3nm,0.5s,baz=97,slow=9.0,SNR=2.9						
BRTR				pP	**pP**	**12 59 37.2**	**+0.1**
	1.2nm,1.0s,baz=81,slow=7.6,SNR=3.6						

IDC 07 12:55:25.6±8.5,6.°68S×129.°93E,h172km±89km,mb3.3/1, mb1 3.2/5,mb1mx3.0/38,mbtmp3.7/5,Error ellipse: s-maj=76.5km s-min=26.1km az=40.0,Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SIJI	**Sorong**	**5.92**	**13**	S	Sn	12 57 47.9	-11
	14nm,0.3s,baz=356,slow=17,SNR=3.2						
BATI	**Baumata**	**7.12**	**240**	P	Pn	12 57 08.3	+1.0
	baz=38,slow=20						
BATI				S	Sn	12 58 28.0	+0.5
	baz=270,slow=20						
FITZ	**Fitzroy Crossi**	**12.10**	**200**	P	Pn	12 58 12.2	-0.3
	0.1nm,0.3s,baz=28,slow=15,SNR=10.0						
FITZ				S	Sn	13 00 19.9	-7.0
	0.4nm,0.3s,baz=151,slow=19,SNR=4.9						
WRA	**Warramunga Arr**	**13.87**	**162**	P	Pn	12 58 33.2	-1.8
	0.7nm,0.3s,baz=338,slow=13,SNR=27						
WRA				S	Sn	13 00 59.5	-10
	0.9nm,0.3s,baz=332,slow=23,SNR=12						
ASAR	**Alice Springs**	**17.32**	**168**	P	Pn	12 59 17.2	0.0
	0.3nm,0.3s,baz=342,slow=10.0,SNR=28						
MKAR	**Makanchi Array**	**67.92**	**327**	P	P	13 06 05.6	-0.1
	0.4nm,0.5s,baz=133,slow=8.3,SNR=6.8						

ISCJB ***07*** *12:55:41.8±0.6,37.°23N±0.°03×28.°26E±0.°05,h0km,Error ellipse: s-maj=5.7km s-min=4.3km az=174.3*
DDA ***07*** *12:55:41.5,37.°24N×28.°24E,h7km,Md2.8,Suspected Mining explosion.*
CSEM ***07*** *12:55:41.8±0.3,37.°22N×28.°29E,h2km,MD2.5,Error ellipse: s-maj=6.6km s-min=5.4km az=97.0,Suspected Mining explosion.*
ISK ***07*** *12:55:41.8,37.°12N×28.°26E,h13km,MD2.5*

ISC 07 12:55:42.1±0.9,37.°25N±0.°03×28.°28E±0.°03,h0km,n18, σ0°60/28,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.11**	**178**	*e*PG	**Pg**	**12 55 43.9**	**-0.4**
YER				*e*SG	**Sg**	**12 55 46.2**	**+0.5**
YER	**Yerkesik**	**0.11**	**178**	*e*Pg	**Pg**	**12 55 43.9**	**-0.4**
YER				*e*Sg	**Sg**	**12 55 46.2**	**+0.5**
AYDN	**Tasoluk**	**0.52**	**323**	P	**Pg**	**12 55 51.2**	**-1.0**
AYDN				S	**Sg**	**12 55 58.9**	**0.0**
AYDN	**Tasoluk**	**0.52**	**323**	*i* P	**Pg**	**12 55 51.2**	**-1.0**
AYDN				*i* S	**Sg**	**12 55 58.9**	**0.0**
DALY	**Dalyan (Mu¨la**	**0.52**	**145**	*e*PG	**Pg**	**12 55 51.0**	**-1.2**
DALY	**Dalyan (Mu¨la**	**0.52**	**145**	*e*Pg	**Pg**	**12 55 51.0**	**-1.2**
BDRM	**Kayabasi**	**0.69**	**255**	P	**Pg**	**12 55 54.8**	**-0.6**
BDRM				S	**Sg**	**12 56 04.5**	**+0.2**
BDRM	**Kayabasi**	**0.69**	**255**	*i* P	**Pg**	**12 55 54.8**	**-0.6**
BDRM				*i* S	**Sg**	**12 56 04.5**	**+0.2**
DNZL	**Cakiroluk**	**0.76**	**54**	P	**Pg**	**12 55 56.2**	**-0.4**
DNZL	**Cakiroluk**	**0.76**	**54**	*i* P	**Pg**	**12 55 56.1**	**-0.4**
DNZL				*i* S	**Sn**	**12 56 12.1**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**0.76**	**336**	*e*PG	**Pb**	**12 55 59.0**	**+0.6**
AYDB				*e*SG	**Sn**	**12 56 11.7**	**-1.0**
AYDB	**Zeytinkoy-Aydi**	**0.76**	**336**	*e*Pg	**Pb**	**12 55 59.0**	**+0.6**
BODT	**Bodrum**	**0.80**	**257**	*e*PG	**Pg**	**12 55 57.0**	**-0.4**
BODT	**Bodrum**	**0.80**	**257**	*e*Pg	**Pg**	**12 55 57.0**	**-0.4**
MANT	**Manisa**	**1.26**	**10**	P	**Pg**	**12 56 06.1**	**-0.2**
MANT				S	**Sb**	**12 56 24.1**	**+0.2**
MANT	**Manisa**	**1.26**	**10**	*i* P	**Pg**	**12 56 06.1**	**-0.2**
MANT				*i* S	**Sb**	**12 56 24.1**	**+0.2**
KULA	**Kula-Manisa**	**1.30**	**13**	*e*Pn	**Pn**	**12 56 08.0**	**+0.3**
KULA	**Kula-Manisa**	**1.30**	**13**	*e*Pn	**Pn**	**12 56 08.0**	**+0.3**

NIED ***07*** *13:00:00,33.°90N×134.°70E,h41km,Mw3.6 Best double couple: M₀3.20000×10¹⁴ NP1:φs122.00000°,δ30.00000°, λ87.00000°. NP2:φs306.00000°,δ60.00000°,λ92.00000°.*
IDC ***07*** *13:00:21.9±1.3,33.°68N×134.°79E,h0km,mb3.6/2, mb1 3.8/5,mb1mx3.4/45,mbtmp3.6/5,ML3.2/3,MS3.2/1, Ms1 3.2/1,ms1mx2.3/45,Error ellipse: s-maj=40.6km s-min=23.7km az=120.0*
ISCJB ***07*** *13:00:25.3±0.5,33.°87N±0.°04×134.°68E±0.°04,h43km±7km, mb3.7/2,Error ellipse: s-maj=7.1km s-min=4.7km az=162.0*
JMA ***07*** *13:00:26.1,33.°86N×134.°68E,h38km±1km,M3.6 Broadband fault plane solution: P waves. NP1: φs308.00000°,δ50.00000°,λ105.00000°. NP2: φs106.00000°,δ42.00000°,λ73.00000°. Principal axes: T Plg78.0000°, Azm278.0000°; N Plg11.0000°, Azm119.0000°; P Plg4.0000°, Azm28.0000°;*
JMA Felt II J1.

ISC 07 13:00:25.8±1.1,33.°88N±0.°05×134.°68E±0.°03,h33km±4km, n18,σ0°81/27,1C-9D,Shikoku

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAI	**Aioi**	**0.21**	**246**	⇓P	**Pn**	**13 00 33.0**	**+0.9**
JAI				S	**Sb**	**13 00 37.8**	**+0.8**
JWM	**Minabe**	**0.56**	**92**	⇓P	**Pb**	**13 00 37.3**	**-0.1**
JWM				S	**Sb**	**13 00 45.2**	**-0.2**
JAJ2	**Tsuna**	**0.57**	**18**	⇓P	**Pn**	**13 00 38.0**	**+0.4**
JAJ2				S	**Sb**	**13 00 46.1**	**+0.6**
JMN	**Monobe**	**0.68**	**258**	⇓P	**Pn**	**13 00 39.1**	**-0.1**
JMN				S	**Sb**	**13 00 48.6**	**0.0**
JJS	**Sakaide**	**0.80**	**309**	⇓P	**Pn**	**13 00 40.7**	**0.0**
JJS				S	**Sn**	**13 00 51.2**	**-0.2**
JWY	**Kouya**	**0.83**	**66**	⇓P	**Pn**	**13 00 41.2**	**-0.1**
JWY				S	**Sn**	**13 00 52.3**	**-0.2**
JWZ	**Kozaga**	**0.93**	**111**	⇑P	**Pn**	**13 00 42.1**	**-0.5**
JKS	**Kasai**	**1.11**	**7**	⇓P	**Pn**	**13 00 44.9**	**-0.2**
JKS				S	**Sn**	**13 00 58.6**	**-0.7**
JHE	**Heguri**	**1.14**	**47**	⇓P	**Pn**	**13 00 45.2**	**-0.3**
JHE				S	**Sn**	**13 00 59.7**	**-0.3**
JAD	**Aida**	**1.14**	**339**	⇓P	**Pn**	**13 00 45.1**	**-0.4**
JAD				S	**Sn**	**13 00 59.1**	**-0.9**
JNU	**Nakatsue**	**3.26**	**258**	Pn	**Pn**	**13 01 15.3**	**+0.7**
	3.1nm,0.3s,baz=176,slow=19,SNR=46						
JNU				Sn	**Sn**	**13 01 50.3**	**-2.1**
	2.0nm,0.3s,baz=242,slow=21,SNR=5.5						
MAT	**Matsushiro**	**3.93**	**46**	P	**Pn**	**13 01 24.7**	**+0.9**
MAT				S	**Sn**	**13 02 08.7**	**-0.1**
MJAR	**Matsushiro Arr**	**3.93**	**46**	Pn	**Pn**	**13 01 25.0**	**+1.2**
	4.0nm,0.3s,baz=213,slow=15,SNR=56						
KSRS	**Korea Array**	**6.55**	**305**	Pn	Pb	13 02 10.8	-8.2
	0.1nm,0.3s,baz=122,slow=14,SNR=2.4						
JCJ	**Chichijima**	**9.36**	**134**	LR	LR	13 05 08.7	
	comp=Z,141nm,19.7s,baz=109,slow=31						
KLR	**Kul'dur**	**15.50**	**353**	Pn	**P**	**13 04 04.6**	**-1.2**
	0.1nm,0.3s,baz=164,slow=7.4,SNR=6.8						
WRA	**Warramunga Arr**	**53.52**	**180**	P	**P**	**13 09 42.8**	**-0.5**
	1.0nm,0.5s,baz=356,slow=7.9,SNR=18						
ILAR	**Eielson Array**	**55.06**	**31**	P	**P**	**13 09 55.6**	**+1.6**
	0.3nm,0.8s,baz=288,slow=7.5,SNR=4.0						

BKK ***07*** *13:01:37.4±1.3,22.°N±33.°×10.°4E±2.°5,h10km,M4.8/4, mB5.1/4,mb4.7/4,MLv5.0/4,Mw(mB)4.4/4*
ISCJB ***07*** *13:01:57.5±0.4,20.°83N±0.°03×103.°31E±0.°03,h10km, mb3.9/8,MS2.7/1,Error ellipse: s-maj=4.6km s-min=4.4km az=44.2*
IDC ***07*** *13:01:57.7±0.9,20.°68N×103.°27E,h0km,mb3.9/7, mb1 3.9/8,mb1mx3.6/45,mbtmp3.8/8,ML3.3/1,MS2.7/2, Ms1 2.8/2,ms1mx2.5/46,Error ellipse: s-maj=21.3km s-min=16.8km az=62.0*
PLV ***07*** *13:01:57.1±0.8,20.°80N×103.°19E,h2km±4km,ML3.8*
NEIC ***07*** *13:01:59.3±0.6,20.°97N×103.°68E,h10km,mb4.1/1,Error ellipse: s-maj=17.7km s-min=10.4km az=55.0*

ISC 07 13:01:58.0±0.6,20.°84N±0.°03×103.°19E±0.°03,h10km,n34, σ1°88/40,mb3.9/8,1C,Laos

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DBV	**Dienbien**	**0.57**	**344**	*e*Pg	**Pg**	**13 02 08.8**	**-0.4**
DBV				*e*Sg	**Sg**	**13 02 16.8**	**0.0**
DBV				AML	AML	13 02 18.8	
	comp=E,5μm,0.3s						
DBV				AML	AML	13 02 18.8	
	comp=N,7μm,0.3s						
TGV	**Tuan Giao**	**0.78**	**16**	*e*Pg	**Pb**	**13 02 13.3**	**-0.4**
TGV				*e*Sg	**Sg**	**13 02 24.0**	**+0.8**
TGV				AML	AML	13 02 29.1	
	comp=E,2μm,0.5s						
TGV				AML	AML	13 02 30.0	
	comp=N,2μm,0.6s						
MLVB	**It Ong**	**1.20**	**358**	*e*Pg	**Pn**	**13 02 17.8**	**-3.1**
MLVB				AML	AML	13 02 39.2	
	comp=E,1μm,0.5s						
MLVB				AML	AML	13 02 39.3	
	comp=N,2μm,0.5s						
TTVN	**Tram Tau**	**1.26**	**60**	*e*Pg	**Pg**	**13 02 21.9**	**-0.4**
TTVN				AML	AML	13 02 44.1	
	comp=N,2μm,0.5s						
TTVN				AML	AML	13 02 45.1	
	comp=E,1μm,0.5s						
SPV	**Sa-pa**	**1.61**	**22**	*e*Pg	**Pg**	**13 02 28.8**	**-0.1**
HBVN	**Hoa-Binh**	**2.02**	**90**	*e*Pn	**Pn**	**13 02 31.9**	**-0.3**
HBVN				AML	AML	13 03 10.3	
	comp=N,4μm,0.3s						
HBVN				AML	AML	13 03 12.2	
	comp=E,2μm,0.3s						
VTVB	**Vinh Tuy**	**2.12**	**48**	*e*Pg	**Pg**	**13 02 37.9**	**-0.8**
CCVB	**Con Cuong**	**2.38**	**138**	*e*Pn	**Pn**	**13 02 36.5**	**-0.7**
HGVB	**Ha Giang**	**2.60**	**40**	*e*Pg	**Pg**	**13 02 47.6**	**-0.2**
HGVB				AML	AML	13 03 25.3	
	comp=N,289nm,0.8s						
HGVB				AML	AML	13 03 28.5	
	comp=E,236nm,0.6s						
BCVB	**Bac Can**	**2.62**	**66**	*e*Pg	**Pg**	**13 02 48.0**	**-0.3**
THV	**Thanh Hoa**	**2.62**	**112**	*e*Pn	**Pn**	**13 02 40.0**	**-0.4**
CRAI	**Chiangrai**	**2.71**	**258**	P	**Pn**	**13 02 39.2**	**-2.5**
CRAI				S	**Sb**	**13 03 19.9**	**0.0**
VIVB	**Vinh**	**3.21**	**132**	*e*Pg	**Pg**	**13 02 58.4**	**-1.1**
PLV	**Phu-Lien**	**3.22**	**90**	*e*Pn	**Pn**	**13 02 48.6**	**0.0**
CBVB	**Cao Bang**	**3.33**	**57**	*e*Pg	**Pg**	**13 03 00.7**	**-1.1**
LSVB	**Lang Son stati**	**3.47**	**72**	*e*Pn	**Pn**	**13 02 52.3**	**+0.3**
LSVB				AML	AML	13 03 56.0	
	comp=E,175nm,0.6s						
LSVB				AML	AML	13 03 58.1	
	comp=N,325nm,0.6s						
CMAI	**Chiengmai2**	**3.99**	**258**	P	**Pn**	**13 02 59.4**	**-0.1**
	comp=N,63nm,0.7s,comp=N,1μmcomp=N,0.6nm						
CMAI				S	**Sb**	**13 03 59.6**	**+2.6**
	comp=N,63nm,0.7s,comp=N,1μmcomp=N,0.6nm						
LAMP	**Lampang**	**4.07**	**236**	P	**Pn**	**13 03 03.1**	**+2.8**
	comp=N,23nm,0.7s,comp=N,604nmcomp=N,0.2nm						
LAMP				S	**Sg**	**13 04 03.8**	**-4.9**
	comp=N,23nm,0.7s,comp=N,604nmcomp=N,0.2nm						
CMMT	**Chiang Mai**	**4.47**	**244**	P	**Pn**	**13 03 08.0**	**+2.1**
CMMT				S	**Sg**	**13 04 20.5**	**-1.2**
CHTO	**Chiang Mai**	**4.48**	**244**	P	**Pn**	**13 03 08.2**	**+2.2**
	comp=N,180nm,0.9s,comp=N,6μmcomp=N,2.0nm						
CHTO				S	**Sg**	**13 04 20.6**	**-1.2**
	comp=N,180nm,0.9s,comp=N,6μmcomp=N,2.0nm						
CHTO	**Chiang Mai**	**4.48**	**244**	*e*Pn	**Pb**	**13 03 14.2**	**-2.6**
CMAR	**Chiang Mai Arr**	**4.65**	**240**	Pn	**Pn**	**13 03 10.0**	**+1.6**
	comp=N,0.3nm,0.3s,baz=46,slow=12,SNR=3.4						
CMAR				Pg	**Pb**	**13 03 21.9**	**+2.2**
	comp=N,1.6nm,0.3s,baz=59,slow=16,SNR=10						
CMAR				Lg	Lg	13 04 24.7	
	comp=N,1.3nm,0.3s,baz=206,slow=29,SNR=8.9						
CMAR				LR	LR	13 04 42.4	
	comp=N,62nm,18.7s,baz=20,slow=36						
LSA	**Lhasa**	**14.01**	**311**	P	**P**	**13 05 21.7**	**-3.5**
KSRS	**Korea Array**	**27.10**	**47**	LR	LR	13 17 55.4	
	comp=N,21nm,18.3s,baz=170,slow=35						
MKAR	**Makanchi Array**	**30.98**	**332**	P	**P**	**13 08 18.2**	**+2.7**
	comp=N,0.5nm,0.4s,baz=128,slow=12,SNR=8.7						
KURBB	**Kurchatov Arra**	**35.50**	**333**	P	**P**	**13 08 57.5**	**+2.6**
	comp=N,1.4nm,0.9s,baz=144,slow=8.8,SNR=9.5						
KURK	**Kurchatov**	**35.53**	**333**	⇑Lg	Lg	13 09 01.5	
	comp=N,6.8nm,1.4s						
KURK	**Kurchatov**	**35.53**	**333**	P	**P**	**13 08 57.5**	**+2.4**
ZALV	**Zalesovo Beam**	**35.91**	**341**	P	**P**	**13 09 00.7**	**+2.4**
	comp=N,3.0nm,0.8s,baz=150,slow=8.1,SNR=9.3						
BVAR	**Borovoye Array**	**40.82**	**330**	P	**P**	**13 09 42.3**	**+2.6**
	comp=N,2.1nm,0.9s,baz=126,slow=7.5,SNR=8.1						
ABKAR	**Akbulak array**	**44.48**	**320**	*e*P	**P**	**13 10 10.3**	**+0.9**
	comp=N,2.0nm,0.7s						
WRA	**Warramunga Arr**	**50.71**	**141**	P	**P**	**13 10 57.9**	**-0.3**
	comp=N,0.8nm,0.5s,baz=331,slow=8.0,SNR=11						
ASAR	**Alice Springs**	**53.40**	**144**	P	**P**	**13 11 18.4**	**+0.2**
	comp=N,0.4nm,0.9s,baz=325,slow=7.8,SNR=3.9						
STKA	**Stephens Creek**	**64.04**	**144**	P	**P**	**13 12 32.3**	**+0.2**
	comp=N,1.8nm,0.9s,baz=332,slow=15,SNR=3.1						

CSEM ***07*** *13:04:34.9±0.3,37.°26N×28.°33E,h1km,MD2.7,Error ellipse: s-maj=6.2km s-min=4.5km az=114.0,Suspected Mining explosion.*
ISK ***07*** *13:04:34.0,37.°25N×28.°36E,h6km,MD2.7*
ISCJB ***07*** *13:04:35.4±0.6,37.°26N±0.°03×28.°28E±0.°05,h0km,Error ellipse: s-maj=5.4km s-min=4.2km az=171.1*
DDA ***07*** *13:04:35.6,37.°30N×28.°29E,h7km,Md2.4,Suspected Mining explosion.*

ISC 07 13:04:34.7±0.9,37.°27N±0.°03×28.°32E±0.°04,h0km,n15, σ0°71/25,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.14**	**193**	*e*PG	**Pg**	**13 04 37.1**	**-0.2**
YER				*e*SG	**Sg**	**13 04 39.5**	**+0.4**
YER	**Yerkesik**	**0.14**	**193**	*e*Pg	**Pg**	**13 04 37.1**	**-0.2**
YER				*e*Sg	**Sg**	**13 04 39.5**	**+0.4**
TURN	**Turunc**	**0.46**	**150**	*i* P	**Pb**	**13 04 45.0**	**-0.6**
TURN				*i* S	**Sb**	**13 04 55.2**	**+2.4**
AYDN	**Tasoluk**	**0.53**	**318**	P	**Pg**	**13 04 45.1**	**+0.4**
AYDN				S	**Sg**	**13 04 52.2**	**+0.6**
AYDN	**Tasoluk**	**0.53**	**318**	*i* P	**Pg**	**13 04 45.1**	**+0.4**
AYDN				*i* S	**Sg**	**13 04 52.2**	**+0.6**
DNZL	**Cakiroluk**	**0.71**	**54**	P	**Pb**	**13 04 49.7**	**-0.4**
DNZL	**Cakiroluk**	**0.71**	**54**	*i* P	**Pb**	**13 04 49.7**	**-0.4**
DNZL				*i* S	**Sn**	**13 05 02.7**	**-1.3**
BDRM	**Kayabasi**	**0.73**	**254**	P	**Pg**	**13 04 48.8**	**+0.1**
BDRM				S	**Sb**	**13 05 00.6**	**-0.2**
BDRM	**Kayabasi**	**0.73**	**254**	*i* P	**Pg**	**13 04 48.8**	**+0.1**
BDRM				*i* S	**Sb**	**13 05 00.6**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**0.76**	**333**	*e*PG	**Pg**	**13 04 49.7**	**+0.5**
AYDB				*e*SG	**Sb**	**13 05 01.2**	**-0.5**
AYDB	**Zeytinkoy-Aydi**	**0.76**	**333**	*e*Pg	**Pg**	**13 04 49.7**	**+0.5**
AYDB				*e*Sg	**Sb**	**13 05 01.2**	**-0.5**
BODT	**Bodrum**	**0.83**	**256**	*e*PG	**Pg**	**13 04 51.0**	**+0.4**
BODT	**Bodrum**	**0.83**	**256**	*e*Pg	**Pg**	**13 04 51.0**	**+0.4**
KULA	**Kula-Manisa**	**1.27**	**12**	*e*PN	**Pb**	**13 04 59.4**	**-0.2**
KULA	**Kula-Manisa**	**1.27**	**12**	*e*Pn	**Pb**	**13 04 59.4**	**-0.2**

ISCJB ***07*** *13:08:28.6±0.4,35.°25N±0.°02×92.°36W±0.°02,h7km±3km, Error ellipse: s-maj=3.2km s-min=2.5km az=137.2*
NEIC ***07*** *13:08:29.0,35.°25N×92.°38W,h6km,MN3.1(CERI),After CERI.*
NEIC Felt [II] at Conway and Greenbrier. Also felt at Benton, Damascus, Harrison and Mountain Veiw.

ISC 07 13:08:28.7±0.8,35.°24N±0.°02×92.°38W±0.°02,h9km±5km, n63,σ1°20/87,Arkansas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
X301	**Greenbrier Sit**	**0.01**	**255**	*e*Pg	**Pg**	**13 08 30.2**	**-0.1**
X201	**Greenbrier Sit**	**0.05**	**18**	*e*Pg	**Pg**	**13 08 30.7**	**+0.2**
WHAR	**Wooly Hollow**	**0.09**	**58**	*e*Pg	**Pg**	**13 08 31.0**	**0.0**
W41B	**Gary Mavity, V**	**0.13**	**122**	P	**Pg**	**13 08 31.4**	**-0.2**
	baz=306						
W41B				S	**Sg**	**13 08 33.4**	**-0.2**
	baz=306						
UALR	**University of**	**0.47**	**176**	*e*Pg	**Pg**	**13 08 38.1**	**+0.3**
W40A	**Ferguson Farm,**	**0.56**	**265**	P	**Pg**	**13 08 39.8**	**+0.2**
	baz=84						
W40A				S	**Sg**	**13 08 47.5**	**+0.5**
	baz=84						
V40A	**Witts Springs**	**0.67**	**327**	P	**Pg**	**13 08 41.3**	**-0.3**
	baz=147						
V40A				S	**Sg**	**13 08 50.5**	**+0.2**
	baz=147						
X40A	**Basin Creek Fa**	**0.84**	**206**	P	**Pg**	**13 08 44.7**	**-0.1**
	baz=26						
W39A	**Magazine**	**1.15**	**268**	P	**Pg**	**13 08 50.5**	**-0.3**

T38A	Diamond	2.37	320	P		Pn	13 09 09.1 +1.3
	baz=139						
EBZ	Ebenezer Churc	2.48	91	*e*Pn		Pn	13 09 10.0 +0.6
W37B	Quinton	2.50	269	P		Pb	13 09 12.4 -1.3
	baz=87						
U37A	Salina	2.51	298	P		Pn	13 09 11.1 +1.5
	baz=117						
U37A				Sb		Sb	13 09 46.1 +1.2
	baz=117						
X37A	Clayton	2.54	256	Pb		Pb	13 09 14.3 -0.2
	baz=74						
OXF	Oxford	2.55	106	*e*Pn		Pn	13 09 09.7 -0.6
OXF				*e*Sn		Sn	13 09 40.1 -1.4
S39A	Bolivar	2.56	343	P		Pn	13 09 11.8 +1.4
	baz=162						
141A	Papa Simpson,	2.67	190	P		Pn	13 09 12.1 +0.2
	baz=9.2						
T37A	Cheneyville 18	2.78	313	P		Pn	13 09 15.2 +1.8
	baz=132						
TUL1	Leonard	2.86	284	P		Pn	13 09 16.0 +1.5
	baz=102						
TUL1	Leonard	2.86	284	*e*Pn		Pn	13 09 13.2 -1.3
TUL1				*e*Sn		Sn	13 09 49.6 +0.6
U36A	Oologah	2.95	294	P		Pn	13 09 17.1 +1.2
	baz=112						
V36A	Jenks	2.95	282	P		Pn	13 09 17.5 +1.7
	baz=99						
R40A	Maddies Statio	3.04	2	P		Pn	13 09 18.3 +1.2
	baz=182						
R39A	Chumby, Stover	3.11	350	P		Pn	13 09 19.5 +1.5
	baz=170						
R38A	Fenwick Farm,	3.18	338	P		Pn	13 09 20.6 +1.6
	baz=157						
T36A	Boggs Farm, Ca	3.36	304	P		Pn	13 09 22.7 +1.3
	baz=122						
S36A	Lake Cedric, C	3.58	315	P		Pn	13 09 25.8 +1.4
	baz=133						
V35A	Meyer Ranch, C	3.67	279	P		Pn	13 09 27.2 +1.5
	baz=97						
T35A	Sooner Cattle	3.74	298	P		Pn	13 09 27.7 +1.1
	baz=115						
Q40A	Laux Farm, Aux	3.75	4	P		Pn	13 09 28.1 +1.3
	baz=184						
WVT	Waverly	3.81	75	*e*Pn		Pn	13 09 28.0 +0.4
V34A	Guthrie	4.23	280	Pn		Pn	13 09 32.5 -0.8
V34A				*e*Sn		Sn	13 10 22.8 -0.1
U34A	Anderson Ranch	4.35	287	*e*Pg		Pg	13 09 51.5 -0.6
U34A				*e*Sg		Sg	13 10 44.1 -4.3
W34A	Bridge Creek,	4.41	271	*e*Pn		Pn	13 09 36.0 +0.1
W34A				*e*Sg		Sg	13 10 47.0 -3.4
LRAL	Lakeview Retre	4.98	115	*e*Pn		Pn	13 09 42.8 -0.8
LRAL				*e*Sn		Sn	13 10 40.9 -0.5
WMOK	Wichita Mounta	5.28	266	*e*Pn		Pn	13 09 48.7 +0.9
WMOK				*e*Sg		Sg	13 11 14.0 -4.1
KSCO	Kaye Shedlock'	9.00	298	*e*Pn		Pn	13 10 34.8 -4.3

*ISCJB **07** 13:09:02.0±0.4,38°.85N±0°.02×27°.83E±0°.03, h0km, Error ellipse: s-maj=3.8km s-min=2.9km az=9.9*
*ISK **07** 13:09:01.0,38°.82N×27°.82E, h5km, MD2.7*
*DDA **07** 13:09:02.0,38°.86N×27°.85E, h5km, Md2.5, Suspected Mining explosion.*
*CSEM **07** 13:09:02.1±0.1,38°.84N×27°.83E, h2km, MD2.5, Error ellipse: s-maj=3.1km s-min=2.5km az=102.0, Suspected Mining explosion.*

ISC 07 13:09:02.2±0.9, 38°.86N±0°.02×27°.81E±0°.03, h0km, n37, σ0°45/53, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKHS	Akhisar	0.02	13	P	Pg	13 09 02.2	-0.4
AKHS				S	Sg	13 09 03.0	+0.1
AKHS	Akhisar	0.02	13	*i* P	Pg	13 09 02.2	-0.4
AKHS				*i* S	Sg	13 09 03.0	+0.1
AKS	Akhisar	0.02	11	*e*PG	Pg	13 09 02.2	-0.4
AKS	Akhisar	0.02	11	*e*Pg	Pg	13 09 02.2	-0.4
IZM	Izmir	0.63	223	*e*PG	Pg	13 09 14.0	-0.2
IZM	Izmir	0.63	223	*e*Pg	Pg	13 09 14.0	-0.2
MANT	Manisa	0.69	122	P	Pg	13 09 14.9	-0.6
MANT				S	Sg	13 09 24.9	+0.5
MANT	Manisa	0.69	122	*i* P	Pg	13 09 14.8	-0.6
MANT				*i* S	Sg	13 09 24.9	+0.5
DEMI	Demirci	0.73	75	P	Pg	13 09 15.5	-0.7
DEMI				S	Sg	13 09 26.5	+0.8
DEMI	Demirci	0.73	75	*i* P	Pg	13 09 15.5	-0.7
DEMI				*i* S	Sg	13 09 26.5	+0.8
KULA	Kula-Manisa	0.75	117	*e*PG	Pg	13 09 16.1	-0.5
KULA	Kula-Manisa	0.75	117	*e*Pg	Pg	13 09 16.1	-0.5
BLCB	Balcova	0.76	232	*e*PG	Pg	13 09 16.6	-0.2
BLCB				*e*SG	Sb	13 09 28.2	-1.0
BLCB	Balcova	0.76	232	*e*Pg	Pg	13 09 16.6	-0.2
BLCB				*e*Sg	Sb	13 09 28.2	-1.0
BALY	Balya	0.89	351	P	Pg	13 09 19.1	-0.2
BALY				S	Sb	13 09 32.7	-0.4
BALY	Balya	0.89	351	*i* P	Pg	13 09 19.1	-0.2
BALY				*i* S	Sb	13 09 32.7	-0.4
DURS	Dursunbey	0.91	35	P	Pg	13 09 19.2	-0.3
DURS	Dursunbey	0.91	35	*i* P	Pg	13 09 19.2	-0.3
DURS				*i* S	Sb	13 09 34.1	+0.6
AYDB	Zeytinkoy-Aydi	0.91	176	*e*PG	Pg	13 09 19.4	-0.3
AYDB				*e*SG	Sg	13 09 31.9	+0.5
AYDB	Zeytinkoy-Aydi	0.91	176	*e*Pg	Pg	13 09 19.4	-0.3
AYDB				*e*Sg	Sg	13 09 31.9	+0.5
DGB	¯zmir	1.08	222	*i* P	Pg	13 09 23.1	+0.2
DGB				*i* S	Sn	13 09 40.4	+0.2
AYDN	Tasoluk	1.20	177	P	Pg	13 09 24.9	-0.2
AYDN				S	Sb	13 09 41.3	-0.5
AYDN	Tasoluk	1.20	177	*i* P	Pg	13 09 24.9	-0.2
AYDN				*i* S	Sb	13 09 41.3	-0.5
TVSB	Tavsanli	1.42	65	*e*PN	Pg	13 09 29.2	-0.1
TVSB	Tavsanli	1.42	65	*e*Pn	Pg	13 09 29.2	-0.1
KCTX	Karacabey (Bur	1.47	17	*e*PN	Pn	13 09 30.0	0.0
KCTX	Karacabey (Bur	1.47	17	*e*Pn	Pn	13 09 30.0	0.0
SIGR	SIGRI	1.56	284	*e*PN	Pn	13 09 31.2	0.0
SIGR	SIGRI	1.56	284	*e*Pn	Pn	13 09 31.2	0.0
GELI	Tayfur-Gelibol	1.85	327	*e*PN	Pn	13 09 35.8	+0.6
GELI	Tayfur-Gelibol	1.85	327	*e*Pn	Pn	13 09 35.8	+0.6
ARMT	Armutlu	1.89	25	*e*PN	Pn	13 09 35.8	+0.1
ARMT	Armutlu	1.89	25	*e*Pn	Pn	13 09 35.8	+0.1
RKY	Sarkoy-Tekirda	1.89	345	*e*PN	Pn	13 09 36.1	+0.3
RKY	Sarkoy-Tekirda	1.89	345	*e*Pn	Pn	13 09 36.1	+0.3
IZI	Iznik	1.96	41	*e*PN	Pn	13 09 37.1	+0.4
IZI	Iznik	1.96	41	*e*Pn	Pn	13 09 37.1	+0.4

*CSEM **07** 13:09:42.3, 46°.35N×6°.95E, h2km, ML0.9/5*

ZUR 07 13:09:42.3, 46°.35N×6°.95E, h2km, ML0.9/5, 6C-6D, Switzerland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AIGLE	Aigle	0.01	156	⇑*i*Pg	Pg	13 09 42.9	+0.1
AIGLE				*i* Sg	Sg	13 09 43.3	+0.2
AIGLE	Aigle	0.01	156	⇑*i*Pg	Pg	13 09 42.9	+0.1
AIGLE				*i* Sg	Sg	13 09 43.3	+0.2
NOV2	NOV2	0.06	293	⇓*i*Pg	Pg	13 09 43.8	+0.4
NOV2	NOV2	0.06	293	⇓*i*Pg	Pg	13 09 43.8	+0.4
SMUR	Muraz-Reservoi	0.07	195	*e*Sg	Sg	13 09 44.3	-0.5
SMUR	Muraz-Reservoi	0.07	195	*e*Sg	Sg	13 09 44.3	-0.5
NOV3	NOV3	0.08	356	*i* Sg	Sg	13 09 44.5	-0.6
NOV3	NOV3	0.08	356	⇑*i*Pg	Pg	13 09 45.8	+1.8
NOV3	NOV3	0.08	356	*i* Sg	Sg	13 09 44.5	-0.6
NOV3	NOV3	0.08	356	⇑*i*Pg	Pg	13 09 45.8	+1.8
NOV1	NOV1	0.10	293	⇓*i*Pg	Pg	13 09 45.2	+0.9
	88nm,0.3s						
NOV1	NOV1	0.10	293	⇓*i*Pg	Pg	13 09 45.2	+0.9
	88nm,0.3s						
GRYON	Gryon	0.15	131	*i* Sg	Sg	13 09 45.5	-1.7
	13nm,0.2s						
GRYON	Gryon	0.15	131	⇓*i*Pg	Pg	13 09 47.6	+2.4
	13nm,0.2s						
GRYON	Gryon	0.15	131	*i* Sg	Sg	13 09 45.5	-1.7
	13nm,0.2s						
GRYON	Gryon	0.15	131	⇓*i*Pg	Pg	13 09 47.6	+2.4
	13nm,0.2s						
SALAN	Lac Salanfe	0.21	175	*e*Pg	Pg	13 09 46.5	+0.2
	8.9nm,0.2s						
SALAN				*i* Sg	Sg	13 09 49.4	+0.4
	8.9nm,0.2s						
SALAN	Lac Salanfe	0.21	175	*e*Pg	Pg	13 09 46.5	+0.2
	8.9nm,0.2s						
SALAN				*i* Sg	Sg	13 09 49.4	+0.4
	8.9nm,0.2s						
SENIN	Lac Senin/Sane	0.24	87	*e*Pg	Pg	13 09 47.0	0.0
	45nm,0.2s						
SENIN				*e*Sg	Sg	13 09 51.0	+0.8
	45nm,0.2s						
SENIN	Lac Senin/Sane	0.24	87	*e*Pg	Pg	13 09 47.0	0.0
	45nm,0.2s						
SENIN				*e*Sg	Sg	13 09 51.0	+0.8
	45nm,0.2s						
EMV	Vieux Emosson	0.29	187	⇑*i*Pg	Pg	13 09 48.0	+0.1
	27nm,0.3s						
EMV				*e*Sg	Sg	13 09 51.9	+0.3
	27nm,0.3s						
EMV	Vieux Emosson	0.29	187	⇑*i*Pg	Pg	13 09 48.0	+0.1
	27nm,0.3s						
EMV				*e*Sg	Sg	13 09 51.9	+0.3
	27nm,0.3s						

*ISCJB **07** 13:10:48.7±1.3, 33°.95S±0°.04×72°.54W±0°.07, h23km±10km, mb4.3/5, MS3.9/1, Error ellipse: s-maj=10.4km s-min=6.4km az=16.9*
*GUC **07** 13:10:48.5±0.7, 33°.91S×72°.46W, h20km±9km, ML4.3*
*NEIC **07** 13:10:48.0, 33°.91S×72°.45W, h20km, mb4.2/1, ML4.3(GUC), After GUC.*
NEIC Felt [III] at Navidad and [II] at Pichilemu and Santiago.
*IDC **07** 13:10:51.5±6.2, 34°.01S×72°.27W, h33km±46km, mb4.3/4, mb1 4.3/6, mb1mx3.9/23, mbtmp4.4/6, ML4.2/2, MS3.6/2, Ms1 3.6/2, ms1mx3.1/20, Error ellipse: s-maj=39.1km s-min=25.3km az=83.0*

ISC 07 13:10:48.6±0.8, 33°.92S±0°.04×72°.54W±0°.08, h20km±5km, n42, σ1°84/50, mb4.3/5, 4C-2D, Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHPI	Pichilemu	0.64	137	⇓*i*P	Pb	13 10 59.8	-1.4
CHPI				*i* S	Sb	13 11 08.7	-1.0
ROC1	El Roble	1.58	54	*i* P	Pb	13 11 17.5	+0.1
ROC1				*i* S	Sg	13 11 41.4	+1.5
ROCH	El Roble	1.59	54	⇓*i*P	Pn	13 11 15.1	-0.8
ANTU	Antumapu	1.62	78	⇑*i*P	Pn	13 11 15.6	-0.6
ANTU				*i* S	Sn	13 11 35.6	-1.0
ANTU				IAML		13 11 39.6	
	comp=E,9μm,0.5s						
TALC	Talca	1.65	153	⇑*i*P	Pn	13 11 17.0	+0.5
TALC				*i* S	Sn	13 11 37.9	+0.8
PEL	Peldehue	1.73	64	⇑*i*P	Pn	13 11 17.5	-0.2
PEL				*i* S	Sn	13 11 39.4	+0.2
PEL				IAML		13 11 46.9	
	comp=E,4μm,0.5s						
CLCH	Cerro Calan	1.75	73	⇑*i*P	Pn	13 11 17.4	-0.5
CLCH				*i* S	Sn	13 11 39.8	+0.1
CLCH				IAML		13 11 53.9	
	comp=E,5μm,0.7s						
CCHI	Chillan	2.70	172	*e*P	Pn	13 11 32.4	+1.5
AUSP	Uspallata	3.14	58	*i* P	Pn	13 11 40.2	+2.9
ARCO	CERRO ARCO	3.20	71	*i* P	Pb	13 11 41.7	-3.2
ARCO				IAML		13 12 34.4	
	comp=Z,389nm,0.8s						
AAGR	Agrelo	3.21	76	*i* P	Pb	13 11 42.5	-2.5
ASAL	Salagasta	3.37	68	*i* P	Pn	13 11 44.0	+3.7
AVIZ	Vizcacheras	3.38	83	*i* P	Pb	13 11 45.8	-2.1
RTLS	Leoncito	3.45	53	*i* P	Pn	13 11 43.9	+2.3
RTCV	Cerro Valdivia	3.94	60	*i* P	Pn	13 11 50.8	+2.7
RTLL	Cerro Villicun	4.29	54	*i* P	Pn	13 11 54.9	+2.0
AMOG	MOGNA	4.53	50	*i* P	Pn	13 11 57.6	+1.4
ACAN	Cantantal	4.78	71	*i* P	Pn	13 12 03.7	+4.1
LCO	Las Campanas	5.14	18	*e*Pn	Pn	13 12 03.2	-1.6
	comp=Z,67nm,0.6s						
LCO				*e*Sn	Sn	13 13 01.4	-2.3
AVFE	Valle Fertil	5.39	54	*i* P	Pn	13 12 09.8	+1.7
AVFE				IAML		13 13 28.9	
	comp=Z,112nm,0.6s						
AGUA	GUANDACOL	5.61	39	*i* P	Pn	13 12 10.4	-0.6
VCA	Vinchina	6.36	37	IAML		13 14 25.2	
	comp=Z,117nm,0.6s						
PLCA	Paso Flores	6.98	167	Pn	Pn	13 12 31.1	+1.3
	comp=Z,1.0nm,0.3s,baz=359,slow=8.6,SNR=10						
PLCA				Lg	Lg	13 14 22.9	
	comp=Z,0.3nm,0.3s,baz=318,slow=14,SNR=1.7						
TRQA	Tornquist	9.50	119	Pn	Pn	13 13 07.2	+2.9
	comp=Z,18nm,1.0s						
LVC	Limon Verde	11.71	17	Pn	Pn	13 13 31.4	-3.6
	comp=Z,14nm,0.3s,baz=137,slow=19,SNR=3.1						
LVC				Lg	Lg	13 16 18.0	
	comp=Z,11nm,0.3s,baz=5.5,slow=20,SNR=3.9						
LVC	Limon Verde	11.71	17	*e*Pn	Pn	13 13 31.3	-3.6
	comp=Z,5.3nm,0.6s						
CPUP	Villa Florida	15.17	64	Pn	P	13 14 26.0	-0.7
	comp=Z,0.1nm,0.3s,baz=237,slow=9.9,SNR=3.3						
CPUP				Lg	Lg	13 18 12.7	
	comp=Z,0.1nm,0.3s,baz=179,slow=18,SNR=2.8						
CPUP				LR	LR	13 20 58.8	
	comp=Z,170nm,21.7s,baz=248,slow=40						
LPAZ	La Paz	18.00	14	P	P	13 14 59.4	+0.6
	comp=Z,0.4nm,0.3s,baz=189,slow=7.8,SNR=18						
USHA	Ushuaia	21.10	173	P	P	13 15 30.7	-1.0
	comp=Z,112nm,1.1s,baz=297,slow=9.0,SNR=3.0						
SAML	Samuel	26.30	21	*e*P	P	13 16 20.1	-3.0
	comp=Z,5.1nm,0.8s						
TXAR	Lajitas Array	69.47	331	P	P	13 21 58.1	+2.4
	comp=Z,0.7nm,0.6s,baz=155,slow=7.2,SNR=11						
MAW	Mawson	73.37	164	LR	LR	13 53 29.2	
	comp=Z,64nm,20.7s,baz=245,slow=35						
DBIC	Dimbokro	75.55	72	P	P	13 22 32.3	+0.2
	comp=Z,1.9nm,0.6s,baz=234,slow=7.9,SNR=4.7						
TORD	Torodi Ar. Bea	84.57	70	P	P	13 23 21.1	+0.2
	comp=Z,2.7nm,0.7s,baz=257,slow=4.0,SNR=18						
TORD				pP	sP	13 23 29.2	-0.5
	comp=Z,3.8nm,0.8s,baz=255,slow=4.3,SNR=14						
WRA	Warramunga Arr	120.62	210	PKP	PKPdf	13 29 39.7	+0.1
	comp=Z,0.4nm,0.9s,baz=152,slow=1.8,SNR=4.8						
BRTR	Keskin Array B	122.16	61	PKP	PKPdf	13 29 42.9	+0.9
	comp=Z,0.6nm,0.8s,baz=101,slow=1.5,SNR=3.2						
AKASG	Malin Array Be	122.44	48	PKP	PKPdf	13 29 42.0	+0.1
	comp=Z,0.3nm,0.3s,baz=284,slow=1.6,SNR=3.1						
BVAR	Borovoye Array	147.51	43	PKPbc	PKPbc	13 30 30.3	-0.5
	comp=Z,1.2nm,0.4s,baz=244,slow=6.3,SNR=2.6						
KURBB	Kurchatov Arra	153.10	43	PKPbc	PKPbc	13 30 44.9	+0.6
	comp=Z,1.3nm,0.7s,baz=300,slow=3.0,SNR=9.6						
KURBB				PKPab	PKPab	13 30 54.3	-1.6
	comp=Z,1.6nm,0.5s,baz=304,slow=2.8,SNR=8.4						
KURK	Kurchatov	153.10	43	PKPbc	PKPbc	13 30 44.9	+0.6
KURK				PKPab	PKPab	13 30 54.3	-1.7
ZALV	Zalesovo Beam	154.38	32	PKPbc	PKPbc	13 30 48.1	+1.1
	comp=Z,2.0nm,0.6s,baz=286,slow=3.6,SNR=9.3						
ZALV				pPKPbc	pPKPbc	13 30 57.0	+3.3
	comp=Z,3.3nm,0.6s,baz=307,slow=2.8,SNR=10						
MKAR	Makanchi Array	157.03	48	PKPab	PKPab	13 31 13.4	+0.5
	comp=Z,0.8nm,0.6s,baz=296,slow=4.6,SNR=6.9						

*CSEM **07** 13:11:11.8±0.2, 33°.73N×36°.78E, h10km, ML0.1, Error ellipse: s-maj=5.2km s-min=3.8km az=97.0*

NSSC 07 13:11:12.5±2.2, 33°.74N×36°.67E, h14km±11km, ML0.1, Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TOTH	TOTAH	0.43	208	*e*P	Pg	13 11 21.1	0.0
TOTH				*i* S	Sb	13 11 28.4	+0.2
TOTH				AML	AML	13 11 30.0	
	comp=N,0.2nm,0.0s						
TOTH				AML	AML	13 11 31.8	
	comp=E,0.2nm,0.0s						
TOTH	TOTAH	0.43	208	*e*P	Pg	13 11 21.0	0.0
TOTH				*i* S	Sb	13 11 28.3	+0.1
TOTH				AML	AML	13 11 29.9	
	comp=N,4.5nm,0.1s						
TOTH				AML	AML	13 11 31.8	
	comp=E,2.3nm,0.1s						
TOTH	TOTAH	0.43	208	*e*P	Pg	13 11 21.0	0.0
TOTH				*i* S	Sb	13 11 28.3	+0.1
	comp=E,2.0nm,0.1s						
ROOS	tl_alroos	0.67	50	*e*P	Pg	13 11 24.5	-1.1
ROOS				*i* S	Sb	13 11 36.4	+1.0
ROOS				*e*S	Sb	13 11 36.4	+1.0
ROOS				AML	AML	13 11 44.5	
	comp=N,0.8nm,0.0s						
ROOS				AML	AML	13 11 46.6	
	comp=E,3.1nm,0.0s						
ROOS	tl_alroos	0.67	50	*e*P	Pg	13 11 24.5	-1.1
ROOS				*e*S	Sb	13 11 36.3	+1.0
BRBR	Barbar	0.68	242	*e*P	Pb	13 11 26.9	+0.6
BRBR				*i* S	Sn	13 11 37.7	-0.8
BRBR				AML	AML	13 11 44.5	
	comp=N,0.1nm,0.0s						
BRBR				AML	AML	13 11 46.5	
	comp=E,0.3nm,0.1s						
BRBR	Barbar	0.68	242	*e*P	Pb	13 11 26.9	+0.6
BRBR				*i* S	Sn	13 11 37.7	-0.9
HAWK	Haweek	0.81	344	*e*P	Pg	13 11 27.6	-0.6
HAWK				*i* S	Sg	13 11 39.1	+0.2
HAWK				AML	AML	13 11 46.5	
	comp=E,0.7nm,0.7s						
HAWK				AML	AML	13 11 47.2	
	comp=N,0.7nm,0.4s						
HAWK	Haweek	0.81	344	*e*P	Pg	13 11 27.6	-0.6
HAWK				*i* S	Sg	13 11 39.1	+0.2
ZALF	Zalf	0.99	145	*e*P	Pb	13 11 29.2	-2.3
ZALF				*i* S	Sb	13 11 42.7	-1.6
ZALF				AML	AML	13 11 45.6	
	comp=E,2.9nm,0.1s						
ZALF				AML	AML	13 11 47.0	
	comp=N,0.1nm,0.0s						
ZALF	Zalf	0.99	145	*e*P	Pb	13 11 29.2	-2.2
ZALF				*i* S	Sb	13 11 42.7	-1.7
	comp=N,3.0nm,0.1s						
SALA	Sala	1.03	177	*e*P	Pb	13 11 30.9	-1.3
SALA				*i* S	Sb	13 11 45.2	-0.4
SALA				AML	AML	13 11 49.9	
	comp=E,0.1nm,0.1s						
SALA				AML	AML	13 11 50.2	
	comp=N,0.1nm,0.0s						
SALA	Sala	1.03	177	*e*P	Pb	13 11 30.9	-1.3
SALA				*i* S	Sb	13 11 45.2	-0.4
SALA				AML	AML	13 11 49.9	
	comp=E,0.0nm,0.0s						
SALA				AML	AML	13 11 50.1	
	comp=N,0.1nm,0.0s						
SALA	Sala	1.03	177	*e*P	Pb	13 11 31.0	-1.2
SALA				*i* S	Sb	13 11 45.2	-0.4

*IDC **07** 13:28:29.3±0.9, 56°.25S×26°.71W, h0km, mb4.2/4, mb1 4.3/4, mb1mx4.0/20, mbtmp4.1/4, Error ellipse: s-maj=45.8km s-min=28.2km az=87.0*
*ISCJB **07** 13:28:41.0±0.9, 56°.25S±0°.1×26°.8W±0°.2, h100km, mb4.1/4, Error ellipse: s-maj=19.6km s-min=8.2km az=36.8*
*NEIC **07** 13:28:46.4±2.4, 56°.28S×27°.21W, h139km±21km, mb4.5/1, Error ellipse: s-maj=26.4km s-min=13.8km az=67.0*

ISC 07 13:28:42.2±0.8, 56°.2S±0°.1×26°.7W±0°.1, h100km, n21, σ1°53/16, mb4.2/4, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HOPE	Hope Point	5.92	285	Pn	Pn	13 30 07.8	+0.6
HOPE				*e*Sn	Sn	13 31 14.6	+1.1
VNA1	Neumayer--Stat	16.53	158	P	P	13 32 29.1	+0.6
VNA3	Neumayer Olymp	16.74	161	P	Pn	13 32 29.4	-0.8
VNA2	Neumayer--Watz	16.93	158	P	P	13 32 34.4	+1.5
	baz=319,slow=14						
SNAA	Sanae	18.48	156	P	Pn	13 32 54.9	+3.7
SNAA	Sanae	18.48	156	*e*P	Pn	13 32 53.4	+2.2
PMSA	Palmer Station	19.98	229	*e*P	P	13 33 05.5	-0.7
	20nm,1.0s						
QSPA	South Pole Qui	34.02	180	*e*P	P	13 35 15.1	-1.1
VNDA	Vanda	46.41	183	P	P	13 36 57.6	-0.3
	1.1nm,0.6s,baz=159,slow=11,SNR=13						
H10S2	ASCENSION HYDR	48.09	16	T	T	14 30 06.9	
	baz=189,slow=75,SNR=5.5						
H10S3	ASCENSION HYDR	48.10	16	T	T	14 30 09.4	
	baz=189,slow=75,SNR=6.0						
H10S1	ASCENSION HYDR	48.11	16	T	T	14 30 12.3	
	baz=189,slow=75,SNR=9.8						
H10N1	ASCENSION HYDR	49.21	16	T	T	14 31 32.3	
	baz=199						
H10N3	ASCENSION HYDR	49.21	16	T	T	14 31 35.2	
	baz=199,slow=74						
H10N2	ASCENSION HYDR	49.23	16	T	T	14 31 34.2	
	baz=199,slow=74						
LPAZ	La Paz	50.69	305	P	P	13 37 31.8	-0.3
	1.5nm,0.4s,baz=158,slow=5.4,SNR=6.3						
TORD	Torodi Ar. Bea	73.08	29	P	P	13 40 02.1	+0.9
	2.4nm,0.7s,baz=196,slow=6.5,SNR=13						
ASAR	Alice Springs	98.74	162	P	P	13 42 08.7	-1.7
	0.8nm,1.1s,baz=182,slow=5.7,SNR=5.3						
FINES	FINESS Array B	124.42	28	PKP	PKPdf	13 47 27.2	-0.7
	0.4nm,0.5s,baz=272,slow=4.0,SNR=4.2						
YKA	Yellowknife Ar	136.48	318	PKP	PKPdf	13 47 50.0	-0.7
	0.2nm,0.6s,baz=122,slow=2.7,SNR=5.7						
ILAR	Eielson Array	150.43	311	PKPbc	PKPbc	13 48 20.1	-0.3
	0.4nm,0.6s,baz=123,slow=3.3,SNR=6.9						

JMA 07 13:32:26.0±0.1, 38°.65N×144°.15E, h35km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	1.98	283	P	Pn	13 32 58.6	+1.5
OFUJ				S	Sn	13 33 22.2	+1.5
JTH	Tanohata	2.19	307	P	Pn	13 33 01.0	+1.1
JTH				S	Sn	13 33 27.5	+1.7
JIO	Ouri	2.21	266	P	Pn	13 33 01.5	+1.4
JIO				S	Sn	13 33 27.9	+1.8
JMK	Ichinoseki	2.31	278	P	Pn	13 33 03.4	+1.9
JOM	Ohasama	2.37	291	P	Pn	13 33 04.2	+1.8
JOM				S	Sn	13 33 32.3	+2.0
JANG	Nango	2.67	311	P	Pn	13 33 08.0	+1.5
JANG				*e*S	Sn	13 33 39.3	+1.7
JOU	Okura	2.75	265	P	Pn	13 33 09.7	+2.1
JOU				*e*S	Sn	13 33 41.5	+1.9
JMM	Marumori	2.76	255	P

SERE	**Sereflikochisa**	**1.66 236**	*e*PN	**Pn**	**13 46 32.5**	**0.0**
SERE	**Sereflikochisa**	**1.66 236**	*e*Pn	**Pn**	**13 46 32.5**	**0.0**
ILGA	**Ilgaz**	**1.69 314**	P	**Pb**	**13 46 33.8**	**-0.3**
ILGA			S	**Sg**	**13 46 57.5**	**+1.2**
ILGA	**Ilgaz**	**1.69 314**	*i* P	**Pb**	**13 46 33.8**	**-0.3**
ILGA			*i* S	**Sg**	**13 46 57.5**	**+1.2**

*IDC **07** 13:47:56.4±0.8, 36°.70N×142°.39E, h0km, mb3.6/10, mb1 3.8/13, mb1mx3.7/33, mbtmp3.6/13, ML3.7/3, Error ellipse: s-maj=25.9km s-min=16.9km az=115.0*
*NIED **07** 13:48:00, 36°.80N×142°.10E, h8km, Mw3.6 Best double couple: M≈3.13000×10¹⁴ NP1:φs=333.00000°, δ30.00000°, λ-101.00000°. NP2:φs=166.00000°, δ61.00000°, λ-84.00000°.*
*JMA **07** 13:48:00.3±0.5, 36°.82N×142°.10E, h39km, M3.6*
ISC 07 13:47:58.8±0.7, 36°.79N±0°.06×142°.03E±0°.06, h19km, n27, σ1=26/21, mb3.6/10, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**1.03 288**		P	**Pg**	**13 48 19.1**	**+0.3**
JFK	**Kawauchi**	**1.08 302**		P	**Pg**	**13 48 20.2**	**+0.4**
JHO	**Hitachi**	**1.19 262**		P	**Pg**	**13 48 21.5**	**-0.2**
JMM	**Marumori**	**1.45 318**		P	**Pb**	**13 48 25.0**	**-0.2**
JFT	**Otama**	**1.53 299**		P	**Pg**	**13 48 27.1**	**-1.2**
JIO	**Ouri**	**1.74 342**		P	**Pb**	**13 48 29.0**	**-1.2**
JOU	**Okura**	**1.91 326**		P	**Pb**	**13 48 31.9**	**-1.1**
MJAR	**Matsushiro Arr**	**3.08 266**		Pn	Pb	13 48 49.4	-3.6
	9.5nm,0.3s,baz=78,slow=7.7,SNR=104						
MJAR				Sn	**Sb**	**13 49 33.3**	**+3.2**
	baz=223,slow=45,SNR=2.9						
MAT	**Matsushiro**	**3.08 266**		P	**Pb**	**13 48 50.0**	**-3.0**
MAT				S	**Sb**	**13 49 31.0**	**+0.8**
JHJ	**Hachijo jima 2**	**4.10 207**		Pn	**Pn**	**13 49 00.8**	**+0.3**
	10nm,0.3s,baz=60,slow=20,SNR=3.6						
JHJ				Sn	**Sn**	**13 49 48.5**	**+0.6**
	20nm,0.3s,baz=72,slow=20,SNR=4.1						
ASAJ	**Asahikawa**	**7.33**	**3**	Pn	**Pn**	**13 49 44.0**	**-0.8**
	1.0nm,0.3s,baz=228,slow=15,SNR=11						
SEY	**Seymchan**	**26.93**	**10**	P	**P**	**13 53 40.1**	**+1.5**
	1.1nm,0.6s,baz=263,slow=23,SNR=5.0						
H11N2	**WAKE ISLAND Hy 27.60**	**121**		T	T	14 22 23.4	
	baz=314,slow=75,SNR=30						
H11N1	**WAKE ISLAND Hy 27.61**	**121**		T	T	14 22 37.4	
	baz=314,slow=75,SNR=18						
H11N3	**WAKE ISLAND Hy 27.62**	**121**		T	T	14 22 30.7	
	baz=314,slow=75,SNR=18						
H11S1	**WAKE ISLAND Hy 28.32**	**123**		T	T	14 23 24.0	
	baz=320						
H11S3	**WAKE ISLAND Hy 28.32**	**123**		T	T	14 23 27.4	
	baz=320						
H11S2	**WAKE ISLAND Hy 28.33**	**123**		T	T	14 23 18.6	
	baz=320						
ZALV	**Zalesovo Beam**	**42.44**	**313**	P	P	13 55 55.1	+3.0
	0.5nm,0.5s,baz=70,slow=9.5,SNR=2.5						
MKAR	**Makanchi Array**	**44.66**	**302**	P	P	13 56 13.8	+3.6
	0.3nm,0.6s,baz=82,slow=10,SNR=3.1						
ILAR	**Eielson Array**	**49.44**	**32**	P	**P**	**13 56 46.4**	**-0.8**
	0.8nm,0.9s,baz=263,slow=6.3,SNR=6.6						
WRA	**Warramunga Arr**	**56.89**	**189**	P	**P**	**13 57 42.2**	**-0.3**
	0.4nm,0.5s,baz=7.1,slow=7.2,SNR=10						
ASAR	**Alice Springs**	**60.62**	**189**	P	**P**	**13 58 08.9**	**+0.5**
	0.4nm,0.8s,baz=5.0,slow=7.1,SNR=5.6						
YKA	**Yellowknife Ar**	**63.77**	**30**	P	**P**	**13 58 28.8**	**-0.2**
	0.3nm,0.6s,baz=288,slow=8.4,SNR=5.0						
NVAR	**Mina Array Bea**	**74.74**	**53**	P	**P**	**13 59 38.3**	**+0.5**
	0.5nm,0.9s,baz=317,slow=5.2,SNR=3.5						
PDAR	**Pinedale Array**	**77.48**	**46**	P	**P**	**13 59 53.4**	**+0.1**
	0.2nm,0.4s,baz=297,slow=5.9,SNR=3.4						
TXAR	**Lajitas Array**	**89.88**	**53**	P	**P**	**14 00 57.2**	**+0.4**
	0.3nm,0.6s,baz=297,slow=3.8,SNR=4.6						

IDC 07 13:49:26.5±2.7, 2°.92N×128°.16E, h0km, mb3.2/3, mb1 3.4/3, mb1mx3.3/23, mbtmp3.2/3, Error ellipse: s-maj=205.8km s-min=26.7km az=68.0, Halmahera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**23.52 165**		P	P	13 54 38.1	-0.3
	0.1nm,0.4s,baz=345,slow=11,SNR=3.1						
ASAR	**Alice Springs**	**27.02 168**		P	P	13 55 10.7	+0.2
	0.2nm,0.7s,baz=349,slow=8.8,SNR=4.3						
MKAR	**Makanchi Array**	**59.03 325**		P	P	13 59 28.3	0.0
	0.3nm,0.4s,baz=116,slow=8.5,SNR=6.5						

GUC 07 13:53:33.0±0.8, 23°.92S×68°.73W, h125km±16km, ML3.9, 2C-3D, Northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB06	**IPOC Station P**	**1.44 327**		*i* P	Pn	13 54 00.8	+0.5
PB06				*i* S	Sn	13 54 22.3	+1.4
PB06				IAML		13 54 24.1	
	comp=E,1μm,0.4s						
ANCH	**Antofagasta**	**1.56 278**		*e*P	Pn	13 54 01.9	+0.5
ANCH				*i* S	Sn	13 54 24.2	+1.2
PB14	**IPOC Station P**	**1.68 245**		⇑*i*P	Pn	13 54 02.6	-0.6
PB14				*i* S	Sn	13 54 25.7	-0.5
PB10	**IPOC Station P**	**1.72 283**		*e*P	Pn	13 54 04.2	+0.9
PB10				*i* S	Sn	13 54 27.4	+0.9
PB10				IAML		13 54 30.9	
	comp=N,1μm,0.7s						
PB04	**IPOC Station P**	**2.05 320**		⇑*i*P	Pn	13 54 08.2	+0.6
PB04				*i* S	Sn	13 54 35.2	+1.3
PB09	**IPOC Station P**	**2.17 347**		⇓*i*P	Pn	13 54 10.1	+1.1
PB09				*i* S	Sn	13 54 37.9	+1.3
PB09				IAML		13 54 44.8	
	comp=N,1μm,0.5s						
PB07	**IPOC Station P**	**2.43 334**		⇓*i*P	Pn	13 54 12.8	+0.4
PB07				*i* S	Sn	13 54 43.7	+1.2
PB01	**IPOC Station P**	**2.95 346**		⇓*i*P	Pn	13 54 19.1	+0.1
PB01				*e*S	Sn	13 54 55.6	+1.3
PB01				IAML		13 54 56.8	
	comp=N,332nm,0.2s						

*NIED **07** 14:25:00, 38°.40N×142°.00E, h68km, Mw3.9 Best double couple: M≈7.09000×10¹⁴ NP1:φs=129.00000°, δ46.00000°, λ179.00000°. NP2:φs=220.00000°, δ89.00000°, λ44.00000°.*
*ISCJB **07** 14:25:40.9±1.1, 38°.35N±0°.04×142°.1E±0°.1, h44km±11km, mb3.7/6, MS2.8/1, Error ellipse: s-maj=15.0km s-min=6.2km az=17.2*
*IDC **07** 14:25:41.0±5.8, 38°.20N×142°.30E, h33km±46km, mb3.4/6, mb1 3.7/11, mb1mx3.5/39, mbtmp3.7/11, ML3.1/5, MS2.5/3, Ms1 2.5/3, ms1mx2.3/28, Error ellipse: s-maj=35.2km s-min=16.8km az=107.0*
*JMA **07** 14:25:42.2±0.1, 38°.39N×141°.98E, h47km±1km, M4.0*
JMA Felt II J1.
ISC 07 14:25:40.0±1.8, 38°.27N±0°.04×142°.04E±0°.08, h26km±13km, n26, σ1=11/25, mb3.8/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.57 289**		P	**Pn**	**14 25 53.3**	**+0.8**
JIO				S	**Sn**	**14 26 01.0**	**-0.1**
OFUJ	**Ofunato**	**0.86 340**		P	**Pn**	**14 25 56.3**	**-0.2**
OFUJ				S	**Sb**	**14 26 06.4**	**-1.0**
JMK	**Ichinoseki**	**0.94 317**		P	**Pn**	**14 25 57.6**	**+0.1**
JMK				S	**Sb**	**14 26 08.8**	**-0.8**
JMM	**Marumori**	**1.06 248**		P	**Pn**	**14 26 00.5**	**+1.3**
JMM				S	**Sn**	**14 26 13.8**	**+0.6**
JOU	**Okura**	**1.09 275**		P	**Pb**	**14 26 00.7**	**+0.6**
JOU				S	**Sn**	**14 26 14.1**	**+0.3**
JFK	**Kawauchi**	**1.29 226**		P	**Pb**	**14 26 04.4**	**+0.8**
JFK				S	**Sb**	**14 26 20.6**	**+0.8**
JOM	**Ohasama**	**1.33 334**		P	**Pn**	**14 26 03.1**	**+0.1**
JOM				S	**Sn**	**14 26 19.1**	**-0.8**
MJAR	**Matsushiro Arr**	**3.50 242**		Pn	Pb	14 26 36.7	-4.6
	2.2nm,0.3s,baz=58,slow=10,SNR=30						
MJAR				LR	LR	14 27 53.7	
	comp=Z,18nm,19.2s,baz=80,slow=36						
MAT	**Matsushiro**	**3.50 242**		P	Pb	14 26 37.0	-4.3
MAT				S	**Sb**	**14 27 19.9**	**-3.6**
JHJ	**Hachijo jima 2**	**5.46 200**		Pn	**Pn**	**14 26 58.9**	**-0.7**
	9.4nm,0.3s,baz=30,slow=16,SNR=2.1						
JHJ				Sn	**Sn**	**14 28 01.0**	**-0.6**
	9.6nm,0.3s,baz=53,slow=20,SNR=3.8						
ASAJ	**Asahikawa**	**5.86**	**4**	Pn	**Pn**	**14 27 05.1**	**0.0**
	0.5nm,0.3s,baz=185,slow=17,SNR=7.1						

USRK	**Ussuriysk Ar.**	**9.61 311**		Pn	**Pn**	**14 27 58.5**	**+1.9**
	0.2nm,0.3s,baz=115,slow=16,SNR=3.3						
KSRS	**Korea Array**	**11.19 270**		Pn	Pn	14 28 24.0	+5.8
	0.1nm,0.3s,baz=75,slow=15,SNR=3.2						
KSRS				LR	LR	14 32 08.1	
	comp=Z,36nm,18.4s,baz=42,slow=34						
H11N2	**WAKE ISLAND Hy 28.39**	**124**		T	T	15 01 48.1	
	baz=316,slow=76,SNR=202						
H11N1	**WAKE ISLAND Hy 28.39**	**124**		T	T	15 01 56.6	
	baz=316,slow=76,SNR=119						
H11N3	**WAKE ISLAND Hy 28.40**	**124**		T	T	15 01 53.2	
	baz=316,slow=76,SNR=109						
H11S1	**WAKE ISLAND Hy 29.14**	**126**		T	T	15 02 44.5	
	baz=318,slow=76,SNR=89						
H11S3	**WAKE ISLAND Hy 29.14**	**126**		T	T	15 02 44.6	
	baz=318,slow=76,SNR=96						
H11S2	**WAKE ISLAND Hy 29.16**	**126**		T	T	15 02 45.3	
	baz=318,slow=76,SNR=68						
TLY	**Talaya**	**29.92 309**		LR	LR	14 43 54.1	
	comp=Z,22nm,20.5s,baz=145,slow=36						
MKAR	**Makanchi Array**	**43.90 301**		P	**P**	**14 33 45.3**	**+1.0**
	0.3nm,0.5s,baz=83,slow=10,SNR=4.9						
ILAR	**Eielson Array**	**48.19**	**33**	P	**P**	**14 34 17.7**	**-0.1**
	0.4nm,0.8s,baz=235,slow=4.1,SNR=4.4						
WRA	**Warramunga Arr**	**58.35 189**		P	**P**	**14 35 32.5**	**-0.5**
	1.2nm,0.5s,baz=6.6,slow=7.2,SNR=29						
ASAR	**Alice Springs**	**62.08 188**		P	**P**	**14 35 58.2**	**-0.3**
	0.5nm,0.6s,baz=6.8,slow=5.5,SNR=12						
PDAR	**Pinedale Array**	**76.45**	**46**	P	**P**	**14 37 27.0**	**-0.7**
	0.4nm,0.5s,baz=296,slow=2.5,SNR=4.0						
TXAR	**Lajitas Array**	**88.98**	**53**	P	**P**	**14 38 33.0**	**+0.2**
	0.4nm,0.5s,baz=266,slow=2.5,SNR=5.5						

*ISCJB **07** 14:29:47.5±0.4, 24°.01N±0°.03×122°.42E±0°.02, h17km±5km, Error ellipse: s-maj=5.2km s-min=2.6km az=162.4*
*JMA **07** 14:29:47.0±0.2, 24°.01N×122°.43E, h11km, M2.1*
*TAP **07** 14:29:48.3, 24°.05N×122°.41E, h33km±1km, ML2.8, D*
ISC 07 14:29:46.8±1.2, 24°.00N±0°.04×122°.42E±0°.02, h13km±10km, n35, σ0=78/60, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JYNG	**Yonagunijimaku**	**0.65**	**47**	P	**Pg**	**14 29 59.6**	**0.0**
JYNG				S	**Sg**	**14 30 07.4**	**-0.9**
YOJ	**Yonaguni jima**	**0.71**	**50**	P	**Pg**	**14 30 00.5**	**-0.1**
YOJ				S	**Sg**	**14 30 09.0**	**-0.9**
HWA	**Hwalien**	**0.75 268**		*e*P	**Pn**	**14 30 04.0**	**+0.9**
	baz=252						
ENA	**Nanau**	**0.75 304**		*e*P	**Pb**	**14 30 02.2**	**+0.4**
	baz=310						
ENA				*e*S	**Sb**	**14 30 11.2**	**-0.7**
	baz=310						
TWD	**Chiawan**	**0.76 276**		P	**Pb**	**14 30 02.2**	**+0.3**
	baz=273						
TWC	**Suao**	**0.80 319**		*e*P	**Pb**	**14 30 01.8**	**-0.7**
	baz=318						
TWC				*e*S	**Sb**	**14 30 11.2**	**-2.0**
	baz=318						
ESL	**Shilin**	**0.92 258**		*e*P	**Pb**	**14 30 03.9**	**-0.8**
	baz=247						
ESL				*e*S	**Sb**	**14 30 15.3**	**-1.5**
	baz=247						
EGS		**0.95 332**		*e*P	**Pb**	**14 30 04.4**	**-0.7**
	baz=320						
EGS				*e*S	**Sb**	**14 30 17.5**	**-0.1**
	baz=320						
TWE	**Neicheng**	**0.99 316**		*e*P	**Pb**	**14 30 06.4**	**+0.6**
	baz=315						
TWE				*e*S	**Sb**	**14 30 18.1**	**-0.7**
	baz=315						
ENTT	**Nioudou**	**1.00 309**		*e*P	**Pb**	**14 30 06.5**	**+0.4**
	baz=294						
ENTT				*e*S	**Sb**	**14 30 18.1**	**-1.1**
	baz=294						
NNS	**Nan Shan**	**1.05 295**		P	**Pb**	**14 30 07.4**	**+0.5**
	baz=282						
NNS				*e*S	**Sb**	**14 30 20.6**	**-0.1**
	baz=282						
WHF	**Hehuan Shan**	**1.06 278**		*e*P	**Pb**	**14 30 07.2**	**-0.1**
	baz=264						
TWB1	**Santiao Chiao**	**1.07 339**		*e*P	**Pb**	**14 30 06.9**	**-0.4**
	baz=338						
EHY	**Hungye**	**1.12 244**		*e*P	**Pb**	**14 30 07.7**	**-0.3**
	baz=255						
EHY				*e*S	**Sb**	**14 30 22.6**	**0.0**
	baz=255						
TWT	**Tachien**	**1.16 283**		*e*P	**Pb**	**14 30 09.8**	**+0.9**
	baz=269						
NSK	**Sanguang**	**1.18 305**		*e*P	**Pn**	**14 30 09.3**	**+0.3**
	baz=290						
WDT	**Danda**	**1.20 258**		*e*P	**Pn**	**14 30 08.8**	**-0.8**
	baz=255						
WDT				*e*S	**Sb**	**14 30 24.7**	**-0.5**
	baz=255						
NWF	**Wu-fen Shan**	**1.21 331**		*e*P	**Pg**	**14 30 11.8**	**+1.6**
	baz=330						
NWF				*e*S	**Sb**	**14 30 25.1**	**-0.1**
	baz=330						
TWF1	**Yuli**	**1.22 238**		*e*P	**Pn**	**14 30 09.1**	**-0.4**
	baz=225						
TWF1				*e*S	**Sb**	**14 30 25.0**	**-0.3**
	baz=225						
IRIF	**Iriomote-Funau**	**1.24**	**74**	P	**Pn**	**14 30 10.2**	**+0.3**
IRIF				S	**Sb**	**14 30 26.4**	**+0.4**
HATJ	**Hateruma jima**	**1.27**	**87**	P	**Pb**	**14 30 10.9**	**+0.3**
SMLT	**Sun Moon Lake**	**1.40 265**		*e*P	**Pn**	**14 30 13.0**	**+0.9**
	baz=262						
TYC	**Yuchr**	**1.43 266**		*e*P	**Pn**	**14 30 12.8**	**+0.3**
	baz=263						
NSTT	**Nanjuang**	**1.44 296**		*e*P	**Pn**	**14 30 12.9**	**+0.3**
	baz=293						
NSTT				*e*S	**Sb**	**14 30 32.0**	**+0.3**
	baz=293						
YUS	**Yu-Shan**	**1.44 249**		*e*P	**Pn**	**14 30 13.0**	**-0.1**
	baz=246						
YUS				*e*S	**Sn**	**14 30 30.4**	**-1.7**
	baz=246						
JKRS	**Kuro-shima**	**1.47**	**81**	P	**Pb**	**14 30 14.5**	**+0.5**
JKRS				S	**Sb**	**14 30 33.4**	**+0.8**
ELDTW	**Lidau**	**1.52 238**		*e*P	**Pn**	**14 30 12.6**	**-1.3**
	baz=236						
TWQ1	**Liyutan**	**1.54 283**		*e*P	**Pn**	**14 30 14.9**	**+0.8**
	baz=280						
TWQ1				*e*S	**Sn**	**14 30 33.9**	**0.0**
	baz=280						
ALS	**Alishan**	**1.56 252**		*e*P	**Pn**	**14 30 15.1**	**+0.6**
	baz=249						
ALS				*e*S	**Sn**	**14 30 33.8**	**-0.9**
	baz=249						
JIJ	**Ishigaki jima**	**1.61**	**77**	P	**Pn**	**14 30 15.2**	**+0.2**
JIJ				S	**Sn**	**14 30 35.4**	**-0.3**
CHN5	**Tsauling**	**1.65 256**		*e*P	**Pn**	**14 30 16.7**	**+1.2**
	baz=244						
CHN5				*e*S	**Sn**	**14 30 36.5**	**-0.1**
	baz=244						
STYT	**Tauyuan**	**1.74 242**		*e*P	**Pn**	**14 30 17.4**	**+0.6**
	baz=230						
STYT				*e*S	**Sn**	**14 30 39.2**	**+0.3**
	baz=230						
CHN4	**Tsaushan**	**1.80 249**		*e*P	**Pn**	**14 30 18.6**	**+1.0**
	baz=247						
CHN4				*e*S	**Sn**	**14 30 41.4**	**+1.2**
	baz=247						
JISG	**Ishigakijimahi**	**1.82**	**71**	P	**Pn**	**14 30 18.0**	**+0.2**
JISG				S	**Sn**	**14 30 40.2**	**-0.5**
WTP	**Ta-pu**	**1.82 246**		*e*P	**Pn**	**14 30 19.1**	**+1.2**
	baz=243						
WTP				*e*S	**Sn**	**14 30 41.4**	**+0.6**
	baz=243						

*NIED **07** 14:31:00, 35°.70N×140°.90E, h11km, Mw3.6 Best double couple: M≈2.99000×10¹⁴ NP1:φs=172.00000°, δ42.00000°, λ-100.00000°. NP2:φs=5.00000°, δ48.00000°, λ-81.00000°.*
*IDC **07** 14:31:01.0±1.8, 35°.71N×141°.03E, h0km, mb3.4/2, mb1 3.6/6, mb1mx3.4/36, mbtmp3.7/6, ML3.5/4, Error ellipse: s-maj=46.2km s-min=25.1km az=76.0*
*ISCJB **07** 14:31:02.4±1.2, 35°.72N±0°.04×141°.1E±0°.1, h26km±7km, mb3.6/2, Error ellipse: s-maj=16.0km s-min=5.7km az=174.9*
*JMA **07** 14:31:04.2±0.1, 35°.73N×140°.92E, h13km±1km, M3.8*
JMA Felt II J1.
ISC 07 14:31:03.3±1.2, 35°.72N±0°.04×140°.92E±0°.09, h17km±5km, n20, σ0=66/19, 3C-2D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.05 252**		⇓P	**Pg**	**14 31 06.5**	**+0.1**
CHOJ				S	**Sg**	**14 31 08.3**	**-0.2**
JCN	**Nagara**	**0.66 243**		⇑P	**Pn**	**14 31 17.8**	**0.0**
JYT	**Yasato**	**0.78 311**		⇑P	**Pg**	**14 31 18.4**	**-0.1**
JYT				S	**Sg**	**14 31 29.0**	**+0.3**
BSO4	**Boso 4**	**0.87 213**		⇓P	**Pn**	**14 31 21.2**	**+0.6**
JHO	**Hitachi**	**0.93 342**		P	**Pn**	**14 31 21.9**	**+0.3**
JHO				S	**Sn**	**14 31 34.2**	**-0.4**
BSO2	**Boso 2**	**0.97 188**		S	**Sn**	**14 31 34.9**	**-0.3**
BSO3	**Boso 3**	**0.97 200**		⇑P	**Pg**	**14 31 22.2**	**+0.1**
MJAR	**Matsushiro Arr**	**2.34 291**		Pn	**Pn**	**14 31 41.4**	**+0.4**
	5.4nm,0.3s,baz=100,slow=9.1,SNR=64						
MAT	**Matsushiro**	**2.34 291**		P	**Pn**	**14 31 42.0**	**+1.0**
MAT				S	**Sg**	**14 32 17.7**	**-1.0**
JHJ	**Hachijo jima 2**	**2.76 200**		Pn	**Pn**	**14 31 47.8**	**+1.1**
	12nm,0.3s,baz=53,slow=15,SNR=3.8						
JHJ				Sn	**Sn**	**14 32 18.9**	**-0.7**
	15nm,0.3s,baz=90,slow=20,SNR=3.2						
ASAJ	**Asahikawa**	**8.49**	**8**	Pn	**Pn**	**14 33 05.4**	**+0.1**
	0.5nm,0.3s,baz=261,slow=34,SNR=3.0						
JCJ	**Chichijima**	**8.66 172**		Pn	**Pn**	**14 33 06.8**	**-1.0**
	2.0nm,0.3s,baz=270,slow=20,SNR=2.7						
H11N2	**WAKE ISLAND Hy 27.85**	**118**		T	T	15 05 51.5	
	baz=311,slow=75,SNR=218						
H11N1	**WAKE ISLAND Hy 27.86**	**118**		T	T	15 05 49.2	
	baz=311,slow=75,SNR=164						
H11N3	**WAKE ISLAND Hy 27.87**	**118**		T	T	15 05 53.1	
	baz=311,slow=75,SNR=186						
H11S1	**WAKE ISLAND Hy 28.51**	**120**		T	T	15 06 36.5	
	baz=312,slow=76,SNR=328						
H11S3	**WAKE ISLAND Hy 28.51**	**120**		T	T	15 06 37.2	
	baz=312,slow=76,SNR=290						
H11S2	**WAKE ISLAND Hy 28.53**	**120**		T	T	15 06 38.5	
	baz=312,slow=76,SNR=254						
WRA	**Warramunga Arr**	**55.71 187**		P	**P**	**14 40 38.6**	**-0.2**
	1.0nm,0.8s,baz=5.1,slow=7.4,SNR=8.4						
ASAR	**Alice Springs**	**59.43 187**		P	**P**	**14 41 06.1**	**+1.0**
	0.2nm,0.6s,baz=14,slow=12,SNR=5.0						

JMA 07 14:32:32.8, 24°.40N×123°.47E, h15km±3km, Southwestern Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IRIF	**Iriomote-Funau**	**0.25 105**		P	Pg	14 32 38.0	-0.2
IRIF				S	Sg	14 32 42.3	+0.5
YOJ	**Yonaguni jima**	**0.42 278**		P	Pg	14 32 41.3	0.0
YOJ				S	Sg	14 32 47.3	+0.2
HATJ	**Hateruma jima**	**0.46 138**		S	Sg	14 32 48.0	-0.2
JYNG	**Yonagunijimaku**	**0.48 276**		P	Pg	14 32 42.1	-0.3
JYNG				S	Sg	14 32 48.8	-0.1
JKRS	**Kuro-shima**	**0.52 108**		P	Pg	14 32 42.9	-0.2
JKRS				S	Sb	14 32 50.7	-0.2
JIJ	**Ishigaki jima**	**0.61**	**93**	P	Pg	14 32 44.4	-0.5
JIJ				S	Sg	14 32 53.1	0.0
JISG	**Ishigakijimahi**	**0.79**	**76**	P	Pg	14 32 48.0	-0.1

TAP 07 14:32:38.6, 23°.81N×121°.57E, h7km, ML2.8, 4C-1D, C, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ESF	**Shoufeng Towns**	**0.08 318**		*e*P	Pg	14 32 41.6	+1.1
ESF	baz=320			*e*S	Sg	14 32 43.5	+1.5
ESL	**Shilin**	**0.12 272**		⇑*i*P	Pg	14 32 41.5	+0.3
ESL	baz=271			*e*S	Sg	14 32 43.5	+0.5
HWA	**Hwalien**	**0.17**	**12**	*e*P	Pg	14 32 43.3	+1.2
HWA	baz=16			*e*S	Sg	14 32 46.8	+2.4
TWD	**Chiawan**	**0.27**	**6**	⇑P	Pg	14 32 44.5	+0.6
TWD	baz=354			S	Sg	14 32 48.7	+1.1
EHY	**Hungye**	**0.38 217**		*e*P	Pg	14 32 45.9	0.0
WDT	**Danda**	**0.40 262**		⇑P	Pg	14 32 47.1	+0.6
WDT	baz=261			S	Sg	14 32 52.9	+1.1
WHF	**Hehuan Shan**	**0.43 321**		⇑*i*P	Pg	14 32 47.8	+0.7
WHF	baz=309			*e*S	Sg	14 32 53.6	+0.8
TWF1	**Yuli**	**0.52 208**		*e*P	Pg	14 32 48.7	+0.1
TWF1	baz=222			*e*S	Sg	14 32 56.1	+0.7
TWT	**Tachien**	**0.57 321**		*e*P	Pb	14 32 50.9	-0.2
TWT	baz=310			*e*S	Sb	14 32 58.4	-1.0
SMLT	**Sun Moon Lake**	**0.61 277**		*e*P	Pb	14 32 51.3	-0.5
SMLT	baz=276			S	Sb	14 33 00.1	-0.5
ENA	**Nanau**	**0.64**	**15**	*e*P	Pg	14 32 51.3	+0.5
ENA	baz=4.0			*e*S	Sb	14 33 01.2	0.0
YUS	**Yu-Shan**	**0.65 241**		P	Pb	14 32 52.3	-0.2
YUS	baz=240			*e*S	Sb	14 33 01.0	-1.0
NNS	**Nan Shan**	**0.65 344**		*e*P	Pb	14 32 52.0	-0.5
NNS	baz=345			*e*S	Sg	14 33 00.5	+0.8
TYC	**Yuchr**	**0.66 278**		⇓*i*P	Pb	14 32 51.9	-0.5
TYC	baz=277			S	Sb	14 33 00.9	-0.8
CHKT	**Chengkung**	**0.73 195**		*e*P	Pn	14 32 54.6	-0.8
ALS	**Alishan**	**0.76 247**		P	Pb	14 32 54.4	0.0
ALS	baz=246			S	Sb	14 33 04.6	-0.4
ELDTW	**Lidau**	**0.80 219**		*e*P	Pg	14 32 53.6	-0.3
WNT	**Mingjian**	**0.81 275**		*e*P	Pn	14 32 56.0	-0.5
WNT	baz=280			*e*S	Sn	14 33 08.7	-0.1
ENTT	**Nioudou**	**0.83**	**0**	*e*P	Pb	14 32 55.1	-0.2
ENTT	baz=1.0			*e*S	Sb	14 33 07.6	+0.9
TWC	**Suao**	**0.84**	**18**	*e*P	Pb	14 32 55.4	-0.1
CHN5	**Tsauling**	**0.84 256**		P	Pn	14 32 56.3	-0.7
CHN5	baz=246			*e*S	Sn	14 33 08.9	-0.8
TCU	**Taichung**	**0.88 293**		*e*P	Pn	14 32 57.7	+0.2
NSK	**Sangu

STYT			*e*S	Sb	14 33 12.1	+0.8
	baz=222					
CHN4	**Tsaushan**	**1.00 243**	*e*P	Pn	14 32 58.8	-0.3
	baz=243					
CHN4			S	Sn	14 33 13.1	-0.4
	baz=243					
WTP	**Ta-pu**	**1.04 237**	*e*P	Pn	14 32 59.4	-0.3
	baz=244					
WTP			*e*S	Sb	14 33 13.6	+0.7
	baz=244					
TWG	**Pinlang**	**1.08 205**	*e*P	Pg	14 32 58.7	-0.7
	baz=206					
CHN1	**Nanshi**	**1.14 237**	*e*P	Pn	14 33 01.1	+0.1
	baz=237					
CHN1			*e*S	Sn	14 33 18.1	+1.2
	baz=237					
SGST	**Jiashian**	**1.16 231**	*e*P	Pn	14 33 02.0	+0.7
	baz=232					
SGST			*e*S	Sn	14 33 18.9	+1.5
	baz=232					
SSD	**Sandimen**	**1.36 219**	*e*P	Pb	14 33 04.6	+0.1
	baz=212					
EAST	**Anshuo**	**1.57 205**	*e*P	Pb	14 33 07.6	-0.4
	baz=195					
SCZT	**Fangliau**	**1.68 212**	*e*P	Pn	14 33 08.4	0.0
	baz=213					

DDA ***07*** *14:39:16.9, 37.°50N×34.°79E, h7km, Md3.0*
ISK ***07*** *14:39:16.3, 37.°47N×34.°78E, h2km, MD2.8*
CSEM ***07*** *14:39:17.3±0.2, 37.°48N×34.°78E, h5km, MD3.0, Error ellipse: s-maj=4.5km s-min=3.8km az=56.0*
ISC 07 14:39:17.5±1.0, 37.°48N±0.°03×34.°77E±0.°03, h9km±8km, n27, σ1§06/39, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GULE	**Gulek**	**0.19**	**179**	P	**Pg**	**14 39 20.7**	**-0.9**
GULE				S	**Sg**	**14 39 26.2**	**+1.9**
GULE	**Gulek**	**0.19**	**179**	*i* P	**Pg**	**14 39 20.7**	**-0.9**
GULE				*i* S	**Sg**	**14 39 26.2**	**+1.9**
KARA	**Karaisali**	**0.31**	**133**	*e*PG	**Pg**	**14 39 23.3**	**-0.4**
KARA				*e*SG	**Sg**	**14 39 28.5**	**+0.6**
KARA	**Karaisali**	**0.31**	**133**	*e*Pg	**Pg**	**14 39 23.3**	**-0.4**
KARA				*e*Sg	**Sg**	**14 39 28.5**	**+0.6**
DED	**Mersin**	**0.51**	**177**	*i* P	**Pg**	**14 39 26.2**	**-1.3**
DED				*i* S	**Sb**	**14 39 35.1**	**-1.2**
KERG	**Konya-Eregli**	**0.52**	**263**	P	**Pg**	**14 39 27.0**	**-0.6**
KERG				S	**Sb**	**14 39 35.7**	**-0.9**
KERG	**Konya-Eregli**	**0.52**	**263**	*i* P	**Pg**	**14 39 27.1**	**-0.6**
KERG				*i* S	**Sb**	**14 39 35.7**	**-0.9**
AKO	**Adana**	**0.54**	**91**	*i* P	**Pg**	**14 39 26.5**	**-1.5**
AKO				*i* S	**Sg**	**14 39 34.3**	**-0.7**
MERS	**Mersin**	**0.64**	**198**	*e*PG	**Pg**	**14 39 29.6**	**-0.3**
MERS	**Mersin**	**0.64**	**198**	*e*Pg	**Pg**	**14 39 29.6**	**-0.3**
NIG	**Nigde**	**0.65**	**349**	*e*PG	**Pg**	**14 39 29.8**	**-0.3**
NIG	**Nigde**	**0.65**	**349**	*e*Pg	**Pg**	**14 39 29.8**	**-0.3**
CEYT	**Ceyhan**	**0.91**	**120**	*e*PG	**Pg**	**14 39 34.4**	**-0.6**
CEYT	**Ceyhan**	**0.91**	**120**	*e*Pg	**Pg**	**14 39 34.4**	**-0.6**
YURE	**YUREGIR**	**0.95**	**133**	P	**Pb**	**14 39 36.2**	**+0.1**
YURE	**YUREGIR**	**0.95**	**133**	*i* P	**Pb**	**14 39 36.2**	**+0.1**
YURE				*i* S	**Sn**	**14 39 52.3**	**+1.5**
KRTS	**Karatas**	**1.02**	**152**	*e*PG	**Pg**	**14 39 36.8**	**-0.3**
KRTS	**Karatas**	**1.02**	**152**	*e*Pg	**Pg**	**14 39 36.8**	**-0.3**
KIZK	**Mersin**	**1.11**	**207**	*i* P	Pg	14 39 34.3	-4.6
KIZK				*i* S	**Sn**	**14 39 54.8**	**0.0**
ANDN	**Andirin**	**1.26**	**85**	P	**Pg**	**14 39 40.5**	**-1.2**
ANDN	**Andirin**	**1.26**	**85**	*i* P	**Pg**	**14 39 40.5**	**-1.2**
ANDN				*i* S	**Sn**	**14 40 02.1**	**+3.5**
AVNS	**Nevsehir-Avano**	**1.33**	**3**	P	**Pb**	**14 39 42.7**	**-0.1**
AVNS				S	**Sn**	**14 40 01.2**	**+0.8**
AVNS	**Nevsehir-Avano**	**1.33**	**3**	*i* P	**Pb**	**14 39 42.7**	**-0.1**
AVNS				*i* S	**Sn**	**14 40 01.2**	**+0.8**
IKL	**Isikli**	**1.51**	**216**	*e*PN	**Pb**	**14 39 45.2**	**-0.6**
IKL	**Isikli**	**1.51**	**216**	*e*Pn	**Pb**	**14 39 45.2**	**-0.6**
TAHT	**Tahtakopru-Hat**	**1.58**	**134**	*e*PN	**Pb**	**14 39 46.3**	**-0.6**
TAHT	**Tahtakopru-Hat**	**1.58**	**134**	*e*Pn	**Pb**	**14 39 46.3**	**-0.6**

ISK ***07*** *14:49:49.0, 37.°25N×28.°19E, h5km, MD2.5*
ISCJB ***07*** *14:49:50.2±0.5, 37.°23N±0.°03×28.°19E±0.°03, h0km, Error ellipse: s-maj=4.9km s-min=3.5km az=17.3*
DDA ***07*** *14:49:50.1, 37.°25N×28.°14E, h7km, Md2.8, Suspected Mining explosion.*
CSEM ***07*** *14:49:50.4±0.3, 37.°24N×28.°19E, h2km, MD2.8, Error ellipse: s-maj=6.9km s-min=4.7km az=8.0, Suspected Mining explosion.*
ISC 07 14:49:49.1±0.9, 37.°26N±0.°03×28.°11E±0.°03, h0km, n19, σ1§12/33, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.19**	**130**	*e*PG	**Pg**	**14 49 52.2**	**-0.4**
YER				*e*SG	**Sg**	**14 49 54.7**	**-0.4**
YER	**Yerkesik**	**0.19**	**130**	*e*Pg	**Pg**	**14 49 52.2**	**-0.4**
YER				*e*Sg	**Sg**	**14 49 54.7**	**-0.4**
AYDN	**Tasoluk**	**0.44**	**336**	P	**Pb**	**14 49 59.5**	**-0.3**
AYDN				S	**Sb**	**14 50 06.8**	**-0.2**
AYDN	**Tasoluk**	**0.44**	**336**	*i* P	**Pb**	**14 49 59.5**	**-0.3**
AYDN				*i* S	**Sb**	**14 50 06.8**	**-0.2**
TURN	**Turunc**	**0.55**	**134**	*i* P	**Pg**	**14 49 58.4**	**-1.3**
TURN				*i* S	**Sg**	**14 50 05.7**	**-1.1**
BDRM	**Kayabasi**	**0.56**	**250**	P	**Pb**	**14 50 02.1**	**+0.3**
BDRM				S	**Sb**	**14 50 11.1**	**+0.7**
BDRM	**Kayabasi**	**0.56**	**250**	*i* P	**Pb**	**14 50 02.1**	**+0.3**
BDRM				*i* S	**Sb**	**14 50 11.1**	**+0.7**
BODT	**Bodrum**	**0.66**	**253**	*e*PG	**Pb**	**14 50 03.7**	**+0.2**
BODT				*e*SG	**Sn**	**14 50 15.6**	**-1.3**
BODT	**Bodrum**	**0.66**	**253**	*e*Pg	**Pb**	**14 50 03.7**	**+0.2**
BODT				*e*Sg	**Sn**	**14 50 15.6**	**-1.3**
DNZL	**Cakiroluk**	**0.86**	**60**	P	**Pg**	**14 50 05.7**	**0.0**
DNZL				S	**Sb**	**14 50 18.5**	**-0.9**
DNZL	**Cakiroluk**	**0.86**	**60**	*i* P	**Pg**	**14 50 05.7**	**0.0**
DNZL				*i* S	**Sb**	**14 50 18.4**	**-0.9**
FETY	**Fethiye**	**1.00**	**128**	*e*PG	**Pb**	**14 50 08.6**	**-0.7**
FETY	**Fethiye**	**1.00**	**128**	*e*Pg	**Pb**	**14 50 08.6**	**-0.7**
GOLH	**Golhisar**	**1.16**	**91**	P	**Pg**	**14 50 10.9**	**-0.5**
GOLH	**Golhisar**	**1.16**	**91**	*i* P	**Pg**	**14 50 10.8**	**-0.5**
GOLH				*i* S	**Sn**	**14 50 31.4**	**+2.1**
AKAS	**Kas**	**1.58**	**130**	P	**Pg**	**14 50 19.4**	**0.0**
AKAS	**Kas**	**1.58**	**130**	*i* P	**Pg**	**14 50 19.4**	**0.0**
AKAS				*i* S	**Sg**	**14 50 44.1**	**+4.2**
KORT	**Korkueli**	**1.81**	**97**	P	**Pg**	**14 50 23.6**	**-0.2**
KORT	**Korkueli**	**1.81**	**97**	*i* P	**Pg**	**14 50 23.6**	**-0.2**
KORT				*i* S	**Sg**	**14 50 49.4**	**+2.0**

ISCJB ***07*** *15:12:49.5±0.5, 39.°63N±0.°02×38.°72E±0.°03, h5km±6km, Error ellipse: s-maj=4.3km s-min=3.8km az=137.4*
DDA ***07*** *15:12:49.2, 39.°62N×38.°74E, h7km, Md2.9*
CSEM ***07*** *15:12:49.4±0.2, 39.°63N×38.°69E, h5km, MD2.6, Error ellipse: s-maj=4.3km s-min=3.2km az=68.0*
ISK ***07*** *15:12:49.1, 39.°62N×38.°68E, h5km, MD2.6*
ISC 07 15:12:48.7±1.0, 39.°64N±0.°02×38.°70E±0.°03, h10km±8km, n24, σ0§53/44, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ILIC	**ilic-Erzincan**	**0.21**	**208**	*e*PG	**Pg**	**15 12 52.9**	**-0.3**
ILIC				*e*SG	**Sg**	**15 12 56.3**	**0.0**
ILIC	**ilic-Erzincan**	**0.21**	**208**	*e*Pg	**Pg**	**15 12 52.9**	**-0.3**
ILIC				*e*Sg	**Sg**	**15 12 56.3**	**0.0**
REFA	**Refahiye_ERZ¨**	**0.25**	**168**	P	**Pb**	**15 12 55.0**	**-0.4**
REFA				S	**Sb**	**15 12 59.8**	**-0.1**
REFA	**Refahiye_ERZ¨**	**0.25**	**168**	*i* P	**Pb**	**15 12 55.0**	**-0.4**
REFA				*i* S	**Sb**	**15 12 59.8**	**-0.1**
KEMA	**Kemaliye**	**0.40**	**203**	P	**Pg**	**15 12 56.9**	**+0.2**
KEMA				S	**Sg**	**15 13 02.7**	**+0.6**
KEMA	**Kemaliye**	**0.40**	**203**	*i* P	**Pg**	**15 12 56.9**	**+0.2**
KEMA				*i* S	**Sg**	**15 13 02.7**	**+0.6**
KELT	**Kelkit**	**0.67**	**40**	P	**Pg**	**15 13 01.7**	**0.0**
KELT				S	**Sb**	**15 13 11.8**	**-0.1**
KELT	**Kelkit**	**0.67**	**40**	*i* P	**Pg**	**15 13 01.7**	**0.0**
KELT				*i* S	**Sb**	**15 13 11.8**	**-0.1**
SUSE	**Susehri**	**0.68**	**326**	P	**Pb**	**15 13 02.6**	**-0.2**
SUSE				S	**Sn**	**15 13 14.1**	**-1.3**
SUSE	**Susehri**	**0.68**	**326**	*i* P	**Pb**	**15 13 02.6**	**-0.2**
SUSE				*i* S	**Sn**	**15 13 14.1**	**-1.3**
CUZAR	**Zara_SIVAS**	**0.76**	**289**	P	**Pb**	**15 13 03.6**	**-0.4**
CUZAR				S	**Sn**	**15 13 17.4**	**+0.3**
CUZAR	**Zara_SIVAS**	**0.76**	**289**	*i* P	**Pb**	**15 13 03.6**	**-0.4**
CUZAR				*i* S	**Sn**	**15 13 17.4**	**+0.3**
ERZN	**Erzincan**	**0.79**	**94**	*e*PG	**Pb**	**15 13 04.9**	**+0.3**
ERZN				*e*SG	**Sb**	**15 13 16.0**	**+0.5**
TNCL	**Tunceli-Merkez**	**0.84**	**128**	P	**Pb**	**15 13 06.0**	**+0.5**
TNCL				S	**Sb**	**15 13 16.9**	**+0.1**
TNCL	**Tunceli-Merkez**	**0.84**	**128**	*i* P	**Pb**	**15 13 06.0**	**+0.5**
TNCL				*i* S	**Sb**	**15 13 16.9**	**+0.1**
PTK	**Pertek**	**0.92**	**144**	*e*PG	**Pn**	**15 13 07.7**	**-0.2**
PTK				*e*SG	**Sn**	**15 13 20.6**	**-0.7**
PTK	**Pertek**	**0.92**	**144**	*e*Pg	**Pn**	**15 13 07.7**	**-0.2**
PTK				*e*Sg	**Sn**	**15 13 20.6**	**-0.7**
CUKAN	**kangal_SIVAS**	**1.00**	**252**	*i* P	**Pg**	**15 13 07.8**	**-0.2**
CUKAN				*i* S	**Sn**	**15 13 24.6**	**+1.4**
ELZG	**Elazig**	**1.16**	**169**	P	**Pn**	**15 13 11.1**	**-0.1**
ELZG				S	**Sg**	**15 13 26.6**	**+0.4**
ELZG	**Elazig**	**1.16**	**169**	*i* P	**Pn**	**15 13 11.1**	**-0.1**
ELZG				*i* S	**Sg**	**15 13 26.6**	**+0.4**
SVSK	**Karacayir**	**1.34**	**282**	*e*PN	**Pg**	**15 13 15.3**	**+0.9**
SVSK	**Karacayir**	**1.34**	**282**	*e*Pn	**Pg**	**15 13 15.3**	**+0.9**
DARE	**Darende-Malaty**	**1.43**	**222**	*e*PN	**Pg**	**15 13 15.9**	**-0.2**
DARE	**Darende-Malaty**	**1.43**	**222**	*e*Pn	**Pg**	**15 13 15.9**	**-0.2**

ISCJB ***07*** *15:15:22.6±0.4, 40.°34N±0.°03×27.°87E±0.°03, h0km, Error ellipse: s-maj=4.3km s-min=2.9km az=29.6*
DDA ***07*** *15:15:22.9, 40.°34N×27.°87E, h7km, Md2.6, Suspected Mining explosion.*
CSEM ***07*** *15:15:22.6±0.1, 40.°34N×27.°88E, h1km, MD2.7, Error ellipse: s-maj=4.2km s-min=2.9km az=23.0*
ISK ***07*** *15:15:22.2, 40.°32N×27.°85E, h5km, MD2.7*
ISC 07 15:15:22.4±0.8, 40.°31N±0.°02×27.°88E±0.°02, h0km, n39, σ0§55/52, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EDC	**Edincik**	**0.04**	**334**	*e*PG	**Pg**	**15 15 23.6**	**+0.5**
EDC				*e*SG	**Sg**	**15 15 24.7**	**+1.1**
EDC	**Edincik**	**0.04**	**334**	*e*Pg	**Pg**	**15 15 23.7**	**+0.5**
EDC				*e*Sg	**Sg**	**15 15 24.7**	**+1.1**
BNT	**Bandirma**	**0.05**	**34**	*e*PG	**Pg**	**15 15 23.8**	**+0.4**
BNT	**Bandirma**	**0.05**	**34**	*e*Pg	**Pg**	**15 15 23.8**	**+0.4**
GONE	**Gonen-Balikesi**	**0.31**	**210**	*e*PG	**Pg**	**15 15 28.3**	**0.0**
GONE	**Gonen-Balikesi**	**0.31**	**210**	*e*Pg	**Pg**	**15 15 28.3**	**0.0**
MRMT	**Marmara Adasi**	**0.36**	**323**	*e*PG	**Pg**	**15 15 29.7**	**+0.3**
MRMT	**Marmara Adasi**	**0.36**	**323**	*e*Pg	**Pg**	**15 15 29.7**	**+0.3**
KCTX	**Karacabey (Bur**	**0.36**	**98**	*e*PG	**Pg**	**15 15 30.3**	**+0.9**
KCTX				*e*SG	**Sb**	**15 15 36.6**	**-1.5**
KCTX	**Karacabey (Bur**	**0.36**	**98**	*e*Pg	**Pg**	**15 15 30.3**	**+0.9**
KCTX				*e*Sg	**Sb**	**15 15 36.6**	**-1.5**
KRBG	**Karabiga-Canak**	**0.46**	**280**	*e*PG	**Pg**	**15 15 31.3**	**+0.1**
KRBG	**Karabiga-Canak**	**0.46**	**280**	*e*Pg	**Pg**	**15 15 31.3**	**+0.1**
BALY	**Balya**	**0.61**	**200**	P	**Pg**	**15 15 34.5**	**+0.4**
BALY				S	**Sb**	**15 15 45.4**	**+0.3**
BALY	**Balya**	**0.61**	**200**	*i* P	**Pg**	**15 15 34.5**	**+0.4**
BALY				*i* S	**Sb**	**15 15 45.4**	**+0.3**
SART	**Tekirdag**	**0.65**	**305**	P	**Pg**	**15 15 35.1**	**+0.1**
SART				S	**Sg**	**15 15 44.3**	**+0.8**
SART	**Tekirdag**	**0.65**	**305**	*i* P	**Pg**	**15 15 35.1**	**+0.1**
SART				*i* S	**Sg**	**15 15 44.4**	**+0.8**
RKY	**Sarkoy-Tekirda**	**0.66**	**305**	*e*PG	**Pg**	**15 15 35.1**	**+0.2**
RKY	**Sarkoy-Tekirda**	**0.66**	**305**	*e*Pg	**Pg**	**15 15 35.2**	**+0.2**
ARMT	**Armutlu**	**0.79**	**71**	*e*PG	**Pg**	**15 15 37.7**	**+0.2**
ARMT	**Armutlu**	**0.79**	**71**	*e*Pg	**Pg**	**15 15 37.7**	**+0.2**
DURS	**Dursunbey**	**0.84**	**147**	P	**Pb**	**15 15 39.7**	**-0.4**
DURS				S	**Sb**	**15 15 52.7**	**+0.7**
DURS	**Dursunbey**	**0.84**	**147**	*i* P	**Pb**	**15 15 39.7**	**-0.4**
DURS				*i* S	**Sb**	**15 15 52.6**	**+0.7**
LPK	**Lapseki**	**0.86**	**274**	*e*PG	**Pg**	**15 15 38.7**	**-0.2**
LPK	**Lapseki**	**0.86**	**274**	*e*Pg	**Pg**	**15 15 38.7**	**-0.2**
IGD	**Bursa**	**1.01**	**92**	*i* P	**Pg**	**15 15 42.0**	**+0.2**
IGD				*i* S	**Sb**	**15 15 57.1**	**+0.5**
CTKS	**Kestanelik-??a**	**1.03**	**27**	*e*PG	**Pg**	**15 15 42.5**	**+0.2**
CTKS	**Kestanelik-??a**	**1.03**	**27**	*e*Pg	**Pg**	**15 15 42.5**	**+0.2**
KESN	**Edirne-Kesan**	**1.05**	**300**	P	**Pg**	**15 15 42.9**	**+0.3**
KESN				S	**Sb**	**15 15 58.0**	**-0.2**
KESN	**Edirne-Kesan**	**1.05**	**300**	*i* P	**Pg**	**15 15 42.9**	**+0.3**
KESN				*i* S	**Sb**	**15 15 58.0**	**-0.2**
GELI	**Tayfur-Gelibol**	**1.08**	**275**	*e*PG	**Pg**	**15 15 43.0**	**-0.1**
GELI	**Tayfur-Gelibol**	**1.08**	**275**	*e*Pg	**Pg**	**15 15 43.1**	**-0.1**
CTYL	**Yalikoy Yolu**	**1.20**	**15**	*e*PN	**Pg**	**15 15 45.2**	**-0.2**
CTYL	**Yalikoy Yolu**	**1.20**	**15**	*e*Pn	**Pg**	**15 15 45.2**	**-0.2**
IZI	**Iznik**	**1.22**	**88**	*e*PN	**Pg**	**15 15 45.7**	**0.0**
IZI	**Iznik**	**1.22**	**88**	*e*Pn	**Pg**	**15 15 45.7**	**0.0**
TVSB	**Tavsanli**	**1.49**	**125**	*e*PN	**Pn**	**15 15 50.1**	**-0.5**
TVSB	**Tavsanli**	**1.49**	**125**	*e*Pn	**Pn**	**15 15 50.1**	**-0.5**
ALN	**Alexandroupoli**	**1.52**	**293**	*e*PN	**Pn**	**15 15 50.3**	**-0.5**
ALN	**Alexandroupoli**	**1.52**	**293**	*e*Pn	**Pn**	**15 15 50.3**	**-0.5**

ISK ***07*** *15:23:55.0, 37.°10N×28.°32E, h25km, MD2.5*
CSEM ***07*** *15:23:56.6±0.3, 36.°99N×28.°24E, h8km, MD2.5, Error ellipse: s-maj=7.4km s-min=4.3km az=18.0*
DDA ***07*** *15:23:56.5, 36.°99N×28.°20E, h7km, Md2.7*
ISC 07 15:23:56.1±1.1, 36.°98N±0.°03×28.°21E±0.°02, h6km±9km, n19, σ1§48/36, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.17**	**20**	*e*PG	**Pg**	**15 23 59.7**	**+0.2**
YER				*e*SG	**Sg**	**15 24 02.8**	**+1.0**
YER	**Yerkesik**	**0.17**	**20**	*e*Pg	**Pg**	**15 23 59.7**	**+0.2**
YER				*e*Sg	**Sg**	**15 24 02.8**	**+1.0**
TURN	**Turunc**	**0.33**	**108**	*i* P	**Pg**	**15 24 00.3**	**-2.3**
TURN				*i* S	**Sg**	**15 24 03.7**	**-3.2**
BDRM	**Kayabasi**	**0.62**	**279**	P	**Pg**	**15 24 08.2**	**+0.2**
BDRM				S	**Sb**	**15 24 18.7**	**+0.4**
BDRM	**Kayabasi**	**0.62**	**279**	*i* P	**Pg**	**15 24 08.2**	**+0.2**
BDRM				*i* S	**Sb**	**15 24 18.7**	**+0.4**
BODT	**Bodrum**	**0.72**	**277**	*e*PG	**Pb**	**15 24 11.0**	**-0.1**
BODT				*e*SG	**Sn**	**15 24 22.8**	**-1.6**
BODT	**Bodrum**	**0.72**	**277**	*e*Pg	**Pb**	**15 24 11.0**	**-0.1**
BODT				*e*Sg	**Sn**	**15 24 22.8**	**-1.6**
AYDN	**Tasoluk**	**0.73**	**339**	P	**Pb**	**15 24 10.5**	**-0.8**
AYDN				S	**Sb**	**15 24 20.6**	**-1.1**
AYDN	**Tasoluk**	**0.73**	**339**	*i* P	**Pb**	**15 24 10.5**	**-0.8**
AYDN				*i* S	**Sb**	**15 24 20.6**	**-1.1**
FETY	**Fethiye**	**0.78**	**115**	*e*PG	**Pg**	**15 24 10.2**	**-0.8**
FETY				*e*SG	**Sb**	**15 24 22.1**	**-0.9**
FETY	**Fethiye**	**0.78**	**115**	*e*Pg	**Pg**	**15 24 10.2**	**-0.8**
FETY				*e*Sg	**Sb**	**15 24 22.1**	**-0.9**
DNZL	**Cakiroluk**	**0.98**	**43**	P	**Pb**	**15 24 14.6**	**-1.0**
DNZL	**Cakiroluk**	**0.98**	**43**	*i* P	**Pb**	**15 24 14.6**	**-1.0**
DNZL				*i* S	**Sn**	**15 24 32.9**	**+2.0**
GCAM	**G?zelcaml?**	**1.06**	**313**	P	**Pg**	**15 24 16.3**	**-0.2**
GCAM				S	**Sn**	**15 24 31.8**	**-0.9**
GCAM	**G?zelcaml?**	**1.06**	**313**	*i* P	**Pg**	**15 24 16.3**	**-0.2**
GCAM				*i* S	**Sn**	**15 24 31.8**	**-0.9**
GOLH	**Golhisar**	**1.11**	**76**	P	**Pn**	**15 24 19.0**	**+0.6**
GOLH	**Golhisar**	**1.11**	**76**	*i* P	**Pn**	**15 24 19.0**	**+0.6**
GOLH				*i* S	**Sn**	**15 24 36.6**	**+2.5**
AKAS	**Kas**	**1.35**	**123**	P	**Pg**	**15 24 22.2**	**+0.3**
AKAS				S	**Sg**	**15 24 43.0**	**+3.6**
AKAS	**Kas**	**1.35**	**123**	*i* P	**Pg**	**15 24 22.2**	**+0.3**
AKAS				*i* S	**Sg**	**15 24 43.0**	**+3.6**

GII 07 15:26:22.6±0.3, 29.°03N×31.°97E, h50km, MD3.5/4, Egypt

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KRMI	**Paran Flat**	**2.63**	**65**	Pn	Pn	15 27 03.7	+1.1
MBRI	**Mt Berech**	**2.68**	**73**	Pn	Pn	15 27 04.5	+1.2
EIL	**Elat**	**2.68**	**76**	Pn	Pn	15 27 04.2	+0.9
MBH	**Mount Berech**	**2.68**	**73**	Pn	Pn	15 27 05.0	+1.7
KZIT	**Kziot**	**2.81**	**48**	Pn	Pn	15 27 06.8	+1.7
KZIT				Sn	Sn	15 27 40.9	+3.1
HRFI	**Mount Harif**	**2.85**	**69**	Pn	Pn	15 27 06.9	+1.2
RMNI	**Mount Ramon**	**2.88**	**57**	Pn	Pn	15 27 07.0	+0.9
PRNI	**Paran**	**2.95**	**63**	Pn	Pn	15 27 08.5	+1.5
REVI	**Revivim**	**3.11**	**49**	Pn	Pn	15 27 10.7	+1.5
ZFRI	**Zfri**	**3.17**	**61**	Pn	Pn	15 27 11.9	+1.9
ZFRI				Sn	Sn	15 27 49.8	+3.2
AMAZ	**Amatzia**	**3.56**	**45**	Pn	Pn	15 27 16.7	+1.3
AMAZ				Sn	Sn	15 27 57.8	+1.5
MZDA	**Masada**	**3.71**	**51**	Pn	Pn	15 27 18.0	+0.6
DSI	**Dead Sea**	**3.88**	**49**	Pn	Pn	15 27 20.2	+0.4
SLTI	**Sal'it**	**4.15**	**39**	Pn	Pn	15 27 24.4	+1.0
SLTI				Sn	Sn	15 28 12.3	+1.6
HMDT	**Nahal Hemdat**	**4.44**	**43**	Pn	Pn	15 27 29.1	+1.7
HMDT				Sn	Sn	15 28 19.6	+1.9
MMLI	**Mount Malkishu**	**4.51**	**40**	Pn	Pn	15 27 29.2	+0.8
MMLI				Sn	Sn	15 28 21.7	+2.1
MMA1	**Mount Meron ar**	**4.95**	**36**	Pn	Pn	15 27 34.9	+0.5
MMA1				Sn	Sn	15 28 32.9	+2.5
KSDI	**Kefar Szold**	**5.21**	**36**	Pn	Pn	15 27 38.7	+0.7

ISCJB ***07*** *15:28:42.6±0.5, 23.°18S±0.°07×66.°77W±0.°05, h222km, Error ellipse: s-maj=10.5km s-min=4.5km az=29.0*
SJA ***07*** *15:28:43.3±0.4, 23.°19S×66.°58W, h222km±7km, ML2.2, MW2.6*
GUC ***07*** *15:28:45.4±0.4, 22.°98S×67.°35W, h260km±8km, ML4.1*
ISC 07 15:28:42.2±1.3, 23.°15S±0.°07×66.°70W±0.°06, h222km, n15, σ1§30/22, 8C, Jujuy Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HJA	**Humahuaca**	**1.19**	**93**	*i* P	**Pn**	**15 29 17.3**	**+1.3**
HJA				IAML		15 29 44.1	
	comp=Z,25nm,0.6s						
YJA	**Yavi**	**1.46**	**49**	*i* P	**Pn**	**15 29 19.5**	**+1.3**
YJA				IAML		15 29 48.6	
	comp=Z,6.8nm,0.5s						
AZAP	**Zapla**	**1.84**	**126**	*i* P	**Pn**	**15 29 21.8**	**+0.6**
AZAP				*i* S	**S**	**15 29 50.3**	**-1.1**
AZAP				IAML		15 29 52.8	
	comp=Z,18nm,0.5s						
SLA	**San Lorenzo**	**1.91**	**145**	*i* P	**Pn**	**15 29 22.4**	**+0.7**
ASTB	**Santa Barbara**	**2.21**	**112**	*i* P	**Pn**	**15 29 25.3**	**+0.6**
ALOL	**LOMAS DE OLMED**	**2.58**	**105**	*i* P	**Pn**	**15 29 28.5**	**+0.1**
PB06	**IPOC Station P**	**2.68**	**279**	⇑*i* P	**Pn**	**15 29 31.1**	**+1.4**
PB06				*i* S	**S**	**15 30 06.2**	**-0.4**
PB06				AML	AML	15 30 09.9	
	comp=E,212nm,0.3s						
PB09	**IPOC Station P**	**2.71**	**299**	⇑*i* P	Pn	15 29 32.0	+2.0
PB09				*i* S	**S**	**15 30 07.0**	**-0.1**
PB09				AML	AML	15 30 10.4	
	comp=E,447nm,0.5s						
FSA	**Cafayete**	**3.02**	**168**	*i* P	**Pn**	**15 29 34.5**	**+1.1**
FSA				IAML		15 30 15.3	
	comp=Z,2.9nm,0.6s						
PB07	**IPOC Station P**	**3.27**	**295**	⇑*i* P	**Pn**	**15 29 37.6**	**+1.2**
PB07				*i* S	**S**	**15 30 17.1**	**-1.5**
PB07				AML	AML	15 30 18.3	
	comp=N,406nm,0.3s						
PB04	**IPOC Station P**	**3.29**	**284**	⇑*i* P	**Pn**	**15 29 37.7**	**+1.2**
PB04				*i* S	**S**	**15 30 17.4**	**-1.5**
PB04				AML	AML	15 30 21.6	
	comp=N,205nm,0.2s						
PB04				AML	AML	15 30 22.4	
	comp=E,172nm,0.4s						
PB10	**IPOC Station P**	**3.56**	**263**	⇑*i* P	**Pn**	**15 29 40.8**	**+1.2**
PB10				*i* S	**S**	**15 30 22.6**	**-1.8**
PB10				AML	AML	15 30 29.1	
	comp=E,385nm,0.3s						
PB08	**IPOC Station P**	**3.76**	**322**	⇑*i* P	Pn	15 29 44.7	+2.3
PB08				*i* S	**S**	**15 30 29.9**	**+0.4**
PB08				AML	AML	15 30 34.4	
	comp=E,58nm,0.4s						
PATCX	**Punta Patache**	**3.95**	**305**	⇑*i* P	**Pn**	**15 29 45.3**	**+0.9**
PATCX				*i* S	**S**	**15 30 30.7**	**-2.5**
PATCX				AML	AML	15 30 37.0	
	comp=E,143nm,0.2s						
PB11	**IPOC Station P**	**4.35**	**320**	⇑*i* P	**Pn**	**15 29 49.9**	**+0.5**
PB11				*e*S	**S**	**15 30 40.4**	**-1.7**

IDC ***07*** *15:54:12.3±1.7, 9.°24S×113.°66E, h0km, mb3.5/4, mb1 3.8/5,

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.72**	**170**	*i* Pg	**Pb**	**16 07 55.8**	**-0.5**
KSP				*e*Sg	**Sg**	**16 08 04.5**	**+0.5**
KSP				*e*		16 08 07.7	
KSP	**Ksiaz**	**0.72**	**170**	Pg	**Pb**	**16 07 55.8**	**-0.5**
KSP				*e*Sg	**Sg**	**16 08 04.5**	**+0.5**
KSP	**Ksiaz**	**0.72**	**170**	*e*Pg	**Pb**	**16 07 55.8**	**-0.5**
KSP				*e*Sg	**Sg**	**16 08 04.9**	**+0.9**
KSP	**Ksiaz**	**0.72**	**170**	*i* Pgd	**Pb**	**16 07 55.8**	**-0.5**
KSP				*e*Sg	**Sg**	**16 08 04.5**	**+0.5**
KSP				*e*		16 08 07.7	
UPC	**Upice**	**1.05**	**183**	⇓*i*PG	**Pb**	**16 08 01.8**	**-0.1**
UPC				*e*SG	**Sg**	**16 08 14.9**	**+0.4**
	comp=Z,669nm,0.8s						
DPC	**Dobruska-Polom**	**1.21**	**173**	⇓*i*PG	**Pb**	**16 08 04.6**	**-0.2**
DPC				*e*SG	**Sg**	**16 08 19.5**	**-0.3**
	comp=Z,162nm,0.5s						
DPC	**Dobruska-Polom**	**1.21**	**173**	Pg	**Pb**	**16 08 04.5**	**-0.2**
DPC				Sg	**Sg**	**16 08 20.1**	**+0.3**
DPC	**Dobruska-Polom**	**1.21**	**173**	*e*Pg	**Pb**	**16 08 04.5**	**-0.3**
DPC				*e*Sg	**Sg**	**16 08 20.1**	**+0.3**
PVCC	**Panska Ves**	**1.41**	**224**	⇓*i*PG	**Pb**	**16 08 08.5**	**+0.5**
PVCC				*e*SG	**Sn**	**16 08 27.7**	**+0.7**
	comp=Z,685nm,0.6s						
BRG	**Berggiesshubel**	**1.51**	**244**	PN	**Pn**	**16 08 09.4**	**+0.1**
BRG				PG	**Pg**	**16 08 11.5**	**+1.6**
BRG				SG	**Sn**	**16 08 31.4**	**+1.7**
	332nm,0.4s						
BRG	**Berggiesshubel**	**1.51**	**244**	Pn	**Pb**	**16 08 09.7**	**-0.2**
BRG				Sg	**Sn**	**16 08 31.4**	**+1.7**
BRG	**Berggiesshubel**	**1.51**	**244**	*e*Pn	**Pb**	**16 08 09.7**	**-0.2**
BRG				*e*Sg	**Sn**	**16 08 31.4**	**+1.7**
KRLC	**Kraliky**	**1.54**	**163**	⇓*i*PG	**Pn**	**16 08 10.0**	**+0.3**
KRLC				*e*SG	**Sg**	**16 08 30.1**	**-0.3**
FBE	**Freiberg**	**1.83**	**251**	Pn	**Pb**	**16 08 14.5**	**-0.8**
FBE				Sg	**Sg**	**16 08 40.7**	**+0.9**
FBE	**Freiberg**	**1.83**	**251**	*e*Pn	**Pb**	**16 08 14.5**	**-0.8**
FBE				*e*Sg	**Sg**	**16 08 40.7**	**+0.9**
GOPC	**GO Pecny, Ondr**	**1.84**	**207**	⇓*e*PN	**Pn**	**16 08 14.2**	**+0.5**
GOPC				*e*PG	**Pg**	**16 08 16.0**	**-0.1**
PRU	**Pruhonice**	**1.85**	**213**	⇓*e*PN	**Pn**	**16 08 14.3**	**+0.4**
PRU				*e*PG	**Pg**	**16 08 16.2**	**-0.1**
PRU				*e*SG	**Sb**	**16 08 39.6**	**+0.4**
	comp=Z,154nm,0.6s						
CLL	**Collm**	**1.95**	**264**	*i* Pn	**Pn**	**16 08 16.0**	**+0.7**
	comp=Z,19nm,0.4s						
CLL				*i* Pg	**Pg**	**16 08 18.7**	**+0.4**
CLL				*i*		16 08 23.5	
CLL				*i* Sg	**Sg**	**16 08 45.0**	**+1.5**
	comp=Z,77nm,0.7s						
CLL	**Collm**	**1.95**	**264**	Pn	**Pn**	**16 08 15.8**	**+0.5**
CLL				Sg	**Sg**	**16 08 44.7**	**+1.2**
CLL	**Collm**	**1.95**	**264**	*e*Pn	**Pn**	**16 08 15.8**	**+0.5**
CLL				*e*Sg	**Sg**	**16 08 44.7**	**+1.2**
RAC	**Raciborz**	**1.98**	**137**	*e*Pg	**Pg**	**16 08 18.9**	**0.0**
RAC				*e*Sg	**Sg**	**16 08 45.0**	**+0.4**
MORC	**Moravsky Berou**	**2.00**	**152**	⇓*i*P	**Pn**	**16 08 16.3**	**+0.3**
MORC	**Moravsky Berou**	**2.00**	**152**	S	**Sb**	**16 08 43.5**	**-0.2**
MORC	**Moravsky Berou**	**2.00**	**152**	Pn	**Pn**	**16 08 16.4**	**+0.3**
MORC				Sg	**Sb**	**16 08 43.8**	**+0.1**
MORC	**Moravsky Berou**	**2.00**	**152**	*e*Pn	**Pn**	**16 08 16.4**	**+0.3**
MORC				*e*Sg	**Sb**	**16 08 43.8**	**+0.1**
OKC	**Ostrava-Krasne**	**2.16**	**142**	⇓*e*PG	**Pg**	**16 08 22.2**	**0.0**
OKC				*e*SG	**Sg**	**16 08 49.2**	**-0.9**
	comp=Z,139nm,0.5s						
OKC	**Ostrava-Krasne**	**2.16**	**142**	Pn	**Pn**	**16 08 17.9**	**-0.2**
OKC				Sg	**Sg**	**16 08 49.3**	**-0.9**
OKC	**Ostrava-Krasne**	**2.16**	**142**	*e*Pn	**Pn**	**16 08 17.9**	**-0.2**
OKC				*e*Sg	**Sg**	**16 08 49.3**	**-0.9**
VRAC	**Vranov**	**2.27**	**172**	Pn	**Pn**	**16 08 20.4**	**+0.8**
	comp=Z,5.7nm,0.3s,baz=337,slow=14,SNR=30						
VRAC				Lg	Lg	16 08 52.3	
	comp=Z,9.4nm,0.3s,baz=252,slow=20,SNR=4.5						
VRAC	**Vranov**	**2.27**	**172**	⇓*i*P	**Pn**	**16 08 20.1**	**+0.4**
VRAC	**Vranov**	**2.27**	**172**	S	**Sg**	**16 08 53.1**	**-0.6**
VRAC	**Vranov**	**2.27**	**172**	*e*Pn	**Pn**	**16 08 20.5**	**+0.8**
VRAC				*e*Sg	**Sg**	**16 08 52.8**	**-0.9**
TREC	**Trest**	**2.29**	**190**	⇓*e*PN	**Pn**	**16 08 20.9**	**+0.9**
TREC				*e*PG	**Pb**	**16 08 23.5**	**+0.4**
TREC				*e*SG	**Sb**	**16 08 53.1**	**+1.1**
TANN	**Tannenbergstha**	**2.56**	**245**	Pn	**Pn**	**16 08 25.0**	**+1.2**
TANN				Sg	**Sg**	**16 09 02.8**	**-0.4**
TANN	**Tannenbergstha**	**2.56**	**245**	*e*Pn	**Pn**	**16 08 25.0**	**+1.2**
TANN				*e*Sg	**Sg**	**16 09 02.8**	**-0.4**
WERD	**Werda**	**2.64**	**247**	Pn	**Pn**	**16 08 25.9**	**+1.2**
WERD				Sg	**Sg**	**16 09 06.4**	**+0.9**
WERD	**Werda**	**2.64**	**247**	*e*Pn	**Pn**	**16 08 25.9**	**+1.2**
WERD				*e*Sg	**Sg**	**16 09 06.4**	**+0.9**
NKC	**Novy Kostel**	**2.66**	**242**	⇓*e*PN	**Pn**	**16 08 26.5**	**+1.5**
NKC				*e*PG	**Pg**	**16 08 32.1**	**+0.2**
NKC				*e*SG	**Sg**	**16 09 07.9**	**+1.6**
	comp=Z,127nm,0.3s						
OJC	**Ojcow**	**2.70**	**118**	*e*Pn	**Pn**	**16 08 24.6**	**-0.9**
OJC				*e*Pg	**Pg**	**16 08 33.3**	**+0.7**
OJC				*e*Sg	**Sg**	**16 09 09.2**	**+1.7**
OJC	**Ojcow**	**2.70**	**118**	Pn	**Pn**	**16 08 24.7**	**-0.9**
OJC	**Ojcow**	**2.70**	**118**	*e*Pn	**Pn**	**16 08 24.7**	**-0.9**
OJC				*e*Sg	**Sg**	**16 09 09.2**	**+1.7**
OJC	**Ojcow**	**2.70**	**118**	*e*Pn	**Pn**	**16 08 24.6**	**-0.9**
OJC				*e*Pg	**Pg**	**16 08 33.3**	**+0.7**
OJC				*e*Sg	**Sg**	**16 09 09.2**	**+1.7**
KHC	**Kasperske Hory**	**2.91**	**215**	⇓*e*PN	**Pn**	**16 08 28.9**	**+0.4**
KHC				*e*PG	**Pg**	**16 08 35.5**	**-1.2**
KHC				*e*SN	**Sn**	**16 09 04.3**	**+0.1**
KHC				*e*SG	**Sg**	**16 09 13.4**	**-0.9**
	comp=Z,71nm,0.4s						
MOX	**Moxa**	**2.97**	**254**	Pn	**Pn**	**16 08 30.4**	**+1.2**
MOX				Sg	**Sg**	**16 09 16.3**	**+0.1**
MOX	**Moxa**	**2.97**	**254**	*e*Pn	**Pn**	**16 08 30.4**	**+1.2**
MOX				*e*Sg	**Sg**	**16 09 16.3**	**+0.1**
MANZ	**Manzenberg**	**2.98**	**240**	Pn	**Pn**	**16 08 30.7**	**+1.3**
MANZ				Sg	**Sg**	**16 09 16.8**	**+0.3**
MANZ	**Manzenberg**	**2.98**	**240**	*e*Pn	**Pn**	**16 08 30.7**	**+1.3**
MANZ				*e*Sg	**Sg**	**16 09 16.8**	**+0.3**
ROTZ	**Rotzenmuhle**	**3.05**	**236**	Pn	**Pn**	**16 08 31.4**	**+1.0**
ROTZ				Sg	**Sg**	**16 09 18.6**	**-0.3**
ROTZ	**Rotzenmuhle**	**3.05**	**236**	*e*Pn	**Pn**	**16 08 31.4**	**+1.0**
ROTZ				*e*Sg	**Sg**	**16 09 18.6**	**-0.3**
GEC2	**GERESS Array S**	**3.11**	**211**	Pn	**Pn**	**16 08 32.3**	**+1.0**
GEC2				Sg	**Sg**	**16 09 20.3**	**-0.6**
GEC2	**GERESS Array S**	**3.11**	**211**	*e*Pn	**Pn**	**16 08 32.3**	**+1.0**
GEC2				*e*Sg	**Sg**	**16 09 20.3**	**-0.6**
GERES	**GERESS Array B**	**3.11**	**211**	Pn	**Pn**	**16 08 32.1**	**+0.8**
	comp=Z,5.6nm,0.3s,baz=32,slow=13,SNR=85						
GERES				Pg	**Pb**	**16 08 38.8**	**+1.6**
	comp=Z,12nm,0.3s,baz=31,slow=18,SNR=45						
GERES				Lg	Lg	16 09 18.6	
	comp=Z,11nm,0.3s,baz=31,slow=25,SNR=6.8						
SMOL	**Smolenice**	**3.16**	**164**	*e*Pg	**Pg**	**16 08 42.4**	**+1.0**
SMOL				*e*Sg	**Sg**	**16 09 23.6**	**+1.2**
SMOL	**Smolenice**	**3.16**	**164**	*e*PG	**Pg**	**16 08 42.4**	**+1.0**
SMOL				*e*SG	**Sg**	**16 09 23.6**	**+1.2**
WET	**Wettzell**	**3.17**	**222**	Pn	**Pn**	**16 08 33.0**	**+0.9**
WET				Sg	**Sg**	**16 09 21.8**	**-0.9**
WET	**Wettzell**	**3.17**	**222**	*e*Pn	**Pn**	**16 08 33.0**	**+0.9**
WET				*e*Sg	**Sg**	**16 09 21.8**	**-0.9**
LANS	**Liptovska Anna**	**3.23**	**137**	*e*Pg	**Pg**	**16 08 42.1**	**-0.7**
LANS				*e*Sg	**Sg**	**16 09 25.0**	**+0.3**
LANS	**Liptovska Anna**	**3.23**	**137**	*e*	**Pn**	**16 08 34.0**	**+1.1**
LANS	**Liptovska Anna**	**3.23**	**137**	*e*PG	**Pg**	**16 08 42.1**	**-0.7**
LANS				*e*SG	**Sg**	**16 09 25.0**	**+0.3**
ZST	**Bratislava**	**3.42**	**169**	*e*Pg	**Pg**	**16 08 46.3**	**-0.2**
ZST				*e*Sg	**Sg**	**16 09 29.1**	**-1.7**
ZST	**Bratislava**	**3.42**	**169**	*e*PG	**Pg**	**16 08 46.3**	**-0.2**
ZST				*e*SG	**Sg**	**16 09 29.0**	**-1.7**
ZST				*e*LG	Lg	16 09 32.8	
NIE	**Niedzica**	**3.43**	**127**	*e*Pn	**Pn**	**16 08 37.0**	**+1.3**
NIE				*e*Pg	**Pg**	**16 08 46.8**	**+0.2**
NIE				*e*Sg	**Sg**	**16 09 32.4**	**+1.3**
NIE	**Niedzica**	**3.43**	**127**	*e*Pn	**Pn**	**16 08 37.0**	**+1.3**
NIE	**Niedzica**	**3.43**	**127**	*e*Pn	**Pn**	**16 08 37.0**	**+1.3**
NIE				*e*Pg	**Pg**	**16 08 46.8**	**+0.2**
NIE				*e*Sg	**Sg**	**16 09 32.4**	**+1.3**
VYHS	**Vyhne**	**3.53**	**149**	*e*Pg	**Pg**	**16 08 48.9**	**+0.3**
VYHS	**Vyhne**	**3.53**	**149**	*e*	**Pn**	**16 08 37.6**	**+0.5**
VYHS	**Vyhne**	**3.53**	**149**	*e*PG	**Pg**	**16 08 48.9**	**+0.3**
VYHS				*e*LG	Lg	16 09 47.7	
CLZ	**Clausthal**	**3.57**	**277**	Pn	**Pn**	**16 08 39.8**	**+2.2**
CLZ				Sg	**Sg**	**16 09 37.0**	**+1.4**
CLZ	**Clausthal**	**3.57**	**277**	*e*Pn	**Pn**	**16 08 39.8**	**+2.2**
CLZ				*e*Sg	**Sg**	**16 09 37.0**	**+1.4**
GRA1	**Grafenberg Arr**	**3.62**	**241**	Pn	**Pn**	**16 08 38.7**	**+0.5**
GRA1				Sg	**Sg**	**16 09 37.1**	**0.0**
GRF	**Grafenberg Arr**	**3.62**	**241**	*e*Pn	**Pn**	**16 08 38.7**	**+0.5**
GRF				*e*Sg	**Sg**	**16 09 37.1**	**0.0**
CONA	**Conrad Observa**	**3.63**	**182**	*i* Pn	**Pn**	**16 08 39.6**	**+1.2**
	comp=Z,3.4nm,0.2s,SNR=11						
CONA				*e*Sg	**Sg**	**16 09 36.9**	**-0.6**
	comp=Z,51nm,0.3s						
CONA	**Conrad Observa**	**3.63**	**182**	Pn	**Pn**	**16 08 39.6**	**+1.2**
	comp=Z,3.4nm,0.2s,SNR=11						
CONA				Sg	**Sg**	**16 09 36.9**	**-0.6**
	comp=Z,51nm,0.3s						
BSD	**Bornholm Skovb**	**3.64**	**349**	*i* P	**Pn**	**16 08 39.5**	**+1.1**
BSD				*e*S	**Sn**	**16 09 20.0**	**-2.1**
BSD	**Bornholm Skovb**	**3.64**	**349**	*i* P	**Pn**	**16 08 39.5**	**+1.1**
BSD				*e*S	**Sn**	**16 09 19.9**	**-2.1**
	comp=Z,1.7nm,0.7s,SNR=50						
MOA	**Molln**	**3.89**	**198**	*i* Pn	**Pn**	**16 08 43.0**	**+1.0**
	comp=Z,11nm,0.4s,SNR=16						
MOA				*e*Sg	**Sg**	**16 09 45.3**	**-0.5**
	comp=Z,78nm,0.6s						
MOA	**Molln**	**3.89**	**198**	Pn	**Pn**	**16 08 43.0**	**+1.0**
	comp=Z,11nm,0.4s,SNR=16						
MOA				Sg	**Sg**	**16 09 45.3**	**-0.5**
	comp=Z,78nm,0.6s						
STHS	**Stebnicka Huta**	**3.92**	**121**	*e*Pg	**Pg**	**16 08 57.6**	**+1.6**
STHS				*e*Sg	**Sg**	**16 09 50.6**	**+3.8**
STHS	**Stebnicka Huta**	**3.92**	**121**	*e*	**Pn**	**16 08 43.4**	**+1.0**
STHS	**Stebnicka Huta**	**3.92**	**121**	*e*PG	**Pg**	**16 08 57.6**	**+1.6**
STHS				*e*SG	**Sg**	**16 09 50.6**	**+3.8**
STHS				*e*LG	Lg	16 09 56.0	
KECS	**Kecovo**	**4.18**	**136**	*e*Pg	**Pg**	**16 09 01.0**	**+0.1**
KECS				*e*Sg	**Sg**	**16 09 54.5**	**-0.5**
KECS	**Kecovo**	**4.18**	**136**	*e*	**Pn**	**16 08 45.7**	**-0.2**
KECS	**Kecovo**	**4.18**	**136**	*e*PG	**Pg**	**16 09 01.0**	**+0.1**
KECS				*e*SG	**Sg**	**16 09 54.5**	**-0.5**
KECS				*e*LG	Lg	16 10 08.0	
ARSA	**Arzberg**	**4.32**	**185**	*i* Pn	**Pn**	**16 08 49.5**	**+1.6**
	comp=Z,3.5nm,0.2s,SNR=7.4						
ARSA				*e*Sg	**Sg**	**16 09 57.6**	**-2.1**
	comp=Z,62nm,0.7s						
ARSA	**Arzberg**	**4.32**	**185**	Pn	**Pn**	**16 08 49.5**	**+1.6**
	comp=Z,3.5nm,0.2s,SNR=7.4						
ARSA				Sg	**Sg**	**16 09 57.6**	**-2.1**
	comp=Z,62nm,0.7s						
CRVS	**Cervenica-Dubn**	**4.35**	**125**	*e*Pg	**Pg**	**16 09 05.5**	**+1.3**
CRVS				*e*Sg	**Sg**	**16 10 02.3**	**+1.8**
CRVS	**Cervenica-Dubn**	**4.35**	**125**	*e*	**Pn**	**16 08 49.4**	**+1.2**
CRVS	**Cervenica-Dubn**	**4.35**	**125**	*e*PG	**Pg**	**16 09 05.5**	**+1.3**
CRVS				*e*SG	**Sg**	**16 10 02.3**	**+1.8**
PSZ	**Piszkesteto**	**4.39**	**144**	⇑*i*P	**Pn**	**16 08 50.1**	**+1.2**
KWP	**Kalwaria Pacla**	**4.63**	**112**	⇑*i*P	**Pg**	**16 09 07.5**	**-2.1**
KOLS	**Kolonicke sedl**	**4.75**	**121**	*e*Pg	**Pg**	**16 09 13.8**	**+1.9**
KOLS	**Kolonicke sedl**	**4.75**	**121**	*e*	**Pn**	**16 08 54.1**	**+0.3**
KOLS	**Kolonicke sedl**	**4.75**	**121**	*e*PG	**Pg**	**16 09 13.8**	**+1.9**
KOLS				*e*LG	Lg	16 10 44.3	
BLEU	**Blekinge**	**4.77**	**358**	P	**Pn**	**16 08 55.2**	**+1.3**
BLEU				S	**Sn**	**16 09 47.4**	**-2.4**
BLEU	**Blekinge**	**4.77**	**358**	P	**Pn**	**16 08 55.2**	**+1.3**
BLEU				S	**Sn**	**16 09 47.4**	**-2.4**
KBA	**Koelnbreinsper**	**4.82**	**203**	*i* Pn	**Pn**	**16 08 56.3**	**+1.4**
	comp=Z,12nm,0.5s,SNR=13						
KBA				Sg	**Sg**	**16 10 14.0**	**-1.8**
	comp=Z,20nm,0.5s						
KBA	**Koelnbreinsper**	**4.82**	**203**	Pn	**Pn**	**16 08 56.3**	**+1.4**
	comp=Z,12nm,0.5s,SNR=13						
KBA				Sg	**Sg**	**16 10 14.0**	**-1.8**
	comp=Z,20nm,0.5s						
BJUU	**Bjuv**	**4.88**	**339**	P	**Pn**	**16 08 55.5**	**0.0**
BJUU	**Bjuv**	**4.88**	**339**	P	**Pn**	**16 08 55.5**	**0.0**
WTTA	**Wattenberg**	**5.18**	**216**	*i* Pn	**Pn**	**16 09 01.5**	**+1.6**
	comp=Z,2.1nm,0.2s						
WTTA				*e*Sg	**Sg**	**16 10 28.0**	**+0.6**
	comp=Z,5.4nm,0.3s						
WTTA	**Wattenberg**	**5.18**	**216**	Pn	**Pn**	**16 09 01.5**	**+1.6**
	comp=Z,2.1nm,0.2s						
WTTA				Sg	**Sg**	**16 10 28.0**	**+0.6**
	comp=Z,5.4nm,0.3s						
MOTA	**Moosalm**	**5.32**	**220**	*i* Pn	**Pn**	**16 09 02.3**	**+0.6**
	comp=Z,7.3nm,0.4s,SNR=12						
MOTA				Sg	**Sg**	**16 10 28.6**	**-3.1**
	comp=Z,25nm,0.8s						
MOTA	**Moosalm**	**5.32**	**220**	Pn	**Pn**	**16 09 02.3**	**+0.6**
	comp=Z,7.3nm,0.4s,SNR=12						
MOTA				Sg	**Sg**	**16 10 28.6**	**-3.1**
	comp=Z,25nm,0.8s						
RETA	**Reutte**	**5.35**	**223**	*i* Pn	**Pn**	**16 09 02.6**	**+0.6**
	comp=Z,2.8nm,0.2s						
RETA	**Reutte**	**5.35**	**223**	Pn	**Pn**	**16 09 02.6**	**+0.6**
	comp=Z,2.8nm,0.2s						
ABTA	**Abfaltersbach**	**5.35**	**207**	*i* Pn	**Pn**	**16 09 03.5**	**+1.4**
	comp=Z,5.6nm,0.5s,SNR=8.1						
ABTA	**Abfaltersbach**	**5.35**	**207**	Pn	**Pn**	**16 09 03.5**	**+1.4**
	comp=Z,5.6nm,0.5s,SNR=8.1						
VXJU	**Vaexsjoe**	**5.42**	**353**	P	**Pn**	**16 09 04.1**	**+1.2**
VXJU	**Vaexsjoe**	**5.42**	**353**	P	**Pn**	**16 09 04.1**	**+1.2**
OSKU	**Oskarshamn**	**5.66**	**0**	P	**Pn**	**16 09 07.7**	**+1.6**
OSKU	**Oskarshamn**	**5.66**	**0**	P	**Pn**	**16 09 07.7**	**+1.6**
FETA	**Feichten**	**5.73**	**220**	*i* Pn	**Pn**	**16 09 08.7**	**+1.3**
	comp=Z,0.6nm,0.2s						
FETA	**Feichten**	**5.73**	**220**	Pn	**Pn**	**16 09 08.7**	**+1.3**
	comp=Z,0.6nm,0.2s						
BYXU	**Byxelkrok**	**5.78**	**5**	P	**Pn**	**16 09 09.4**	**+1.6**
BYXU	**Byxelkrok**	**5.78**	**5**	P	**Pn**	**16 09 09.4**	**+1.6**
FABU	**Falkenberg**	**5.81**	**341**	P	**Pn**	**16 09 08.6**	**+0.4**
FABU	**Falkenberg**	**5.81**	**341**	P	**Pn**	**16 09 08.6**	**+0.4**
DAVA	**Damuels**	**5.88**	**226**	*i* Pn	**Pn**	**16 09 09.8**	**+0.3**
	comp=Z,3.3nm,0.3s						
DAVA	**Damuels**	**5.88**	**226**	Pn	**Pn**	**16 09 09.8**	**+0.3**
	comp=Z,3.3nm,0.3s						
GNOU	**Gnosjoe**	**5.91**	**348**	P	**Pn**	**16 09 10.5**	**+0.8**
GNOU	**Gnosjoe**	**5.91**	**348**	P	**Pn**	**16 09 10.5**	**+0.8**
EKSU	**Eksjoe**	**6.05**	**356**	P	**Pn**	**16 09 12.9**	**+1.3**
EKSU	**Eksjoe**	**6.05**	**356**	P	**Pn**	**16 09 12.9**	**+1.3**
VSTU	**Vaestervik**	**6.13**	**2**	P	**Pn**	**16 09 14.1**	**+1.5**
VSTU	**Vaestervik**	**6.13**	**2**	P	**Pn**	**16 09 14.1**	**+1.5**
DAVOX	**Davos/Dischmat**	**6.28**	**223**	Pn	**Pn**	**16 09 16.2**	**+1.3**
	comp=Z,1.0nm,0.3s,baz=115,slow=23,SNR=9.4						
DAVOX				Lg	Lg	16 11 01.3	
	comp=Z,1.2nm,0.3s,baz=343,slow=19,SNR=3.8						
BORU	**Boraas**	**6.39**	**344**	P	**Pn**	**16 09 17.4**	**+1.1**
BORU	**Boraas**	**6.39**	**344**	P	**Pn**	**16 09 17.4**	**+1.1**
DRGR		**6.44**	**135**	⇑*i*P	**Pn**	**16 09 17.7**	**+0.7**
CDF	**Champ du Feu**	**6.50**	**245**	*e*Pn	**Pn**	**16 09 15.5**	**-2.3**
CDF				*e*Sg	**Sg**	**16 11 05.6**	**-3.9**
	comp=Z,76nm,0.9s						
CDF	**Champ du Feu**	**6.50**	**245**	*e*Pn	**Pn**	**16 09 15.5**	**-2.3**
LNKU	**Linkoeping**	**6.70**	**357**	P	**Pn**	**16 09 21.7**	**+1.3**
LNKU	**Linkoeping**	**6.70**	**357**	P	**Pn**	**16 09 21.7**	**+1.3**
FKPU	**Falk**	**6.76**	**349**	P	**Pn**	**16 09 22.8**	**+1.5**
FKPU	**Falk**	**6.76**	**349**	P	**Pn**	**16 09 22.8**	**+1.5**
VIKU	**Vikbolandet**	**6.97**	**3**	P	**Pn**	**16 09 25.4**	**+1.2**
VIKU	**Vikbolandet**	**6.97**	**3**	P	**Pn**	**16 09 25.4**	**+1.2**
HINF	**Hinteralfeld**	**7.06**	**242**	*e*Pn	**Pn**	**16 09 23.7**	**-1.8**
HINF				*e*Sg	**Sg**	**16 11 22.9**	**-4.7**
	comp=Z,33nm,0.8s						
HINF	**Hinteralfeld**	**7.06**	**242**	*e*Pn	**Pn**	**16 09 23.7**	**-1.8**
BURAR	**Bucovina Array**	**7.12**	**120**	⇓*i*P	**Pn**	**16 09 27.3**	**+1.0**
HAU	**Haudompre**	**7.24**	**244**	*e*Pn	**Pn**	**16 09 26.3**	**-1.6**
HAU				*e*Sg	**Sg**	**16 11 28.6**	**-4.6**
	comp=Z,61nm,1.1s						
HAU	**Haudompre**	**7.24**	**244**	*e*Pn	**Pn**	**16 09 26.3**	**-1.6**
GIVF	**Givet**	**7.29**	**263**	*e*Pn	**Pn**	**16 09 27.1**	**-1.4**
GIVF				*e*Sg	**Sg**	**16 11 30.7**	**-4.1**
	comp=Z,91nm,1.2s						
GIVF	**Givet**	**7.29**	**263**	*e*Pn	**Pn**	**16 09 27.1**	**-1.4**
PAGF	**Fort de Pagny**	**7.32**	**250**	*e*Pn	**Pn**	**16 09 27.3**	**-1.7**
PAGF				*e*Sg	**Sg**	**16 11 31.1**	**-4.7**
	comp=Z,16nm,1.0s						
PAGF	**Fort de Pagny**	**7.32**	**250**	*e*Pn	**Pn**	**16 09 27.3**	**-1.7**
BAIF	**Baives**	**7.68**	**263**	*e*Pn	**Pn**	**16 09 32.5**	**-1.4**
BAIF				*e*Sg	**Sg**	**16 11 42.8**	**-4.6**
	comp=Z,27nm,1.0s						
BAIF	**Baives**	**7.68**	**263**	*e*Pn	**Pn**	**16 09 32.5**	**-1.4**
MEZF	**Maizieres J'vi**	**7.74**	**251**	*e*Pn	**Pn**	**16 09 33.1**	**-1.6**
MEZF				*e*Sg	**Sg**	**16 11 44.2**	**-5.1**
	comp=Z,15nm,0.8s						
MEZF	**Maizieres J'vi**	**7.74**	**251**	*e*Pn	**Pn**	**16 09 33.1**	**-1.6**
SFTF	**Sexfontaines**	**7.89**	**249**	*e*Pn	**Pn**	**16 09 35.2**	**-1.6**
SFTF				*e*Sg	**Sg**	**16 11 48.9**	**-5.1**
	comp=Z,18nm,0.7s						
SFTF	**Sexfontaines**	**7.89**	**249**	*e*Pn	**Pn**	**16 09 35.2**	**-1.6**
CABF	**La Chapelle**	**8.22**	**237**	*e*Pn	**Pn**	**16 09 39.6**	**-1.8**
CABF				*e*Sg	**Sg**	**16 11 58.9**	**-5.8**
	comp=Z,66nm,1.1s						
CABF	**La Chapelle**	**8.22**	**237**	*e*Pn	**Pn**	**16 09 39.6**	**-1.8**
AKASG	**Malin Array Be**	**8.31**	**91**	Pn	**Pn**	**16 09 42.1**	**-0.4**
	comp=Z,2.9nm,0.3s,baz=281,slow=12,SNR=5.2						
AKASG				Sn	**Sn**	**16 11 12.8**	**-4.1**
	comp=Z,1.5nm,0.3s,baz=275,slow=22,SNR=4.0						
LPL	**La Plagne**	**8.66**	**229**	*e*Pn	**Pn**	**16 09 45.7**	**-1.9**
LPL				*e*Sg	**Sg**	**16 12 12.5**	**-6.3**
	comp=Z,54nm,1.6s						
LPL	**La Plagne**	**8.66**	**229**	*e*Pn	**Pn**	**16 09 45.7**	**-1.9**
LPG	**La Plagne**	**8.66**	**229**	*e*Pn	**Pn**	**16 09 46.1**	**-1.6**
LPG				*e*Sg	**Sg**	**16 12 12.4**	**-6.6**
	comp=Z,46nm,1.4s						
LPG	**La Plagne**	**8.66**	**229**	*e*Pn	**Pn**	**16 09 46.1**	**-1.6**
HFS	**Hagfors**	**8.71**	**352**	Pn	**Pn**	**16 09 48.8**	**+0.8**
	comp=Z,0.2nm,0.3s,baz=174,slow=16,SNR=11						
HFS				Sn	**Sn**	**16 11 23.3**	**-3.5**
	comp=Z,0.4nm,0.3s,baz=172,slow=23,SNR=4.4						
HFS				Lg	Lg	16 12 23.8	
	comp=Z,0.2nm,0.3s,baz=170,slow=25,SNR=3.6						
LOR	**Lormes**	**9.05**	**247**	*e*Pn	**Pn**	**16 09 51.4**	**-1.4**
LOR				*e*Sg	Sn	16 12 25.3	+50
	comp=Z,34nm,1.2s						
LOR	**Lormes**	**9.05**	**247**	*e*Pn	**Pn**	**16 09 51.4**	**-1.4**
MBDF	**Montbardon**	**9.24**	**226**	*e*Pn	**Pn**	**16 09 53.2**	**-2.3**
MBDF				*e*Sg	Sn	16 12 30.5	+50
	comp=Z,7.8nm,0.9s						
MBDF	**Montbardon**	**9.24**	**226**	*e*Pn	**Pn**	**16 09 53.2**	**-2.3**
SSF	**Saint Saulge**	**9.37**	**246**	*e*Pn	**Pn**	**16 09 55.5**	**-1.6**
SSF				*e*Sg	Sn	16 12 35.0	+52
	comp=Z,11nm,0.8s						
SSF	**Saint Saulge**	**9.37**	**246**	*e*Pn	**Pn**	**16 09 55.5**	**-1.6**
SMF	**Signal de Mont**	**9.41**	**243**	*e

comp=Z,154nm,0.4s
CLL Collm 1.98 262 Pn **Pn 16 10 39.1 -0.1**
CLL Sg **Sg 16 11 08.5 +0.4**
CLL Collm 1.98 262 *e*Pn **Pn 16 10 39.1 -0.1**
CLL *e*Sg **Sg 16 11 08.5 +0.5**
RAC Raciborz 2.02 139 *e*Pg **Pg 16 10 43.0 -0.3**
RAC *e*Sg **Sg 16 11 08.9 -0.6**
MORC Moravsky Berou 2.06 154 Pn **Pn 16 10 40.2 -0.2**
MORC Sg **Sb 16 11 09.5 +0.6**
MORC Moravsky Berou 2.06 154 *e*Pn **Pn 16 10 40.2 -0.2**
MORC *e*Sg **Sb 16 11 09.5 +0.6**
OKC Ostrava-Krasne 2.20 144⇓ *e*PG **Pg 16 10 46.1 -0.6**
OKC *e*SG **Sb 16 11 13.0 +0.1**
comp=Z,94nm,0.5s
OKC Ostrava-Krasne 2.20 144 Pg **Pb 16 10 45.3 +0.1**
OKC Sg **Sb 16 11 13.1 +0.1**
OKC Ostrava-Krasne 2.20 144 *e*Pg **Pb 16 10 45.3 +0.1**
OKC *e*Sg **Sb 16 11 13.1 +0.1**
VRAC Vranov 2.34 173 Pn **Pn 16 10 45.0 +0.8**
comp=Z,3.6nm,0.3s,baz=348,slow=16,SNR=8.4
VRAC Pg **Pg 16 10 49.4 +0.1**
comp=Z,6.8nm,0.3s,baz=357,slow=16,SNR=4.5
VRAC Lg Lg 16 11 17.7
comp=Z,20nm,0.3s,baz=86,slow=17,SNR=8.1
VRAC Vranov 2.34 173 *e*Pn **Pn 16 10 44.8 +0.6**
VRAC *e*Sg **Sb 16 11 17.3 +0.4**
TREC Trest 2.37 190⇓ *e*PN **Pn 16 10 44.9 +0.3**
TREC *e*PG **Pb 16 10 48.5 +0.5**
TREC *e*SG **Sb 16 11 18.1 +0.3**
comp=Z,65nm,0.3s
TANN Tannenbergstha 2.61 244 Pn **Pn 16 10 48.5 +0.5**
TANN Sg **Sg 16 11 28.1 -0.3**
TANN Tannenbergstha 2.61 244 *e*Pn **Pn 16 10 48.5 +0.5**
TANN *e*Sg **Sg 16 11 28.1 -0.3**
WERD Werda 2.69 245 Pn **Pn 16 10 49.4 +0.4**
WERD Sg **Sg 16 11 29.8 -0.9**
WERD Werda 2.69 245 *e*Pn **Pn 16 10 49.4 +0.4**
WERD *e*Sg **Sg 16 11 29.8 -0.9**
NKC Novy Kostel 2.71 241⇓ *e*PN **Pn 16 10 50.0 +0.6**
NKC *e*PG **Pg 16 11 56.0 -0.5**
NKC *e*SG **Sg 16 11 32.1 +0.5**
comp=Z,226nm,0.4s
OJC Ojcow 2.72 120 *e*Pn **Pn 16 10 48.5 -0.9**
OJC *e*Pg **Pg 16 10 57.4 +0.9**
OJC *e*Sg **Sg 16 11 33.0 +1.3**
OJC Ojcow 2.72 120 *e*Pn **Pn 16 10 48.5 -0.9**
OJC Ojcow 2.72 120 *e*Pg **Pg 16 10 57.4 +0.9**
OJC Sg **Sg 16 11 32.1 +0.4**
OJC Ojcow 2.72 120 *e*Pg **Pg 16 10 55.6 -1.0**
OJC *e*Sg **Sg 16 11 32.1 +0.4**
OJC Ojcow 2.72 120 *e*Pn **Pn 16 10 48.5 -0.9**
OJC *e*Pg **Pg 16 10 57.4 +0.9**
OJC *e*Sg **Sg 16 11 33.0 +1.3**
KHC Kasperske Hory 2.98 214 *e*PN **Pn 16 10 52.9 -0.2**
KHC *e*PG **Pb 16 10 59.2 +0.7**
KHC *e*SN **Sn 16 11 28.9 -0.7**
KHC *e*SG **Sg 16 11 38.3 -2.0**
comp=Z,52nm,0.5s
MOX Moxa 3.01 253 Pg **Pg 16 11 01.7 -0.4**
MOX Sg **Sg 16 11 40.4 -0.7**
MOX Moxa 3.01 253 *e*Pg **Pg 16 11 01.7 -0.4**
MOX *e*Sg **Sg 16 11 40.4 -0.7**
MANZ Manzenberg 3.03 239 Pn **Pn 16 10 54.5 +0.7**
MANZ Sg **Sg 16 11 40.9 -1.0**
MANZ Manzenberg 3.03 239 *e*Pn **Pn 16 10 54.5 +0.7**
MANZ *e*Sg **Sg 16 11 40.9 -1.0**
ROTZ Rotzenmuhle 3.11 235 Pn **Pn 16 10 55.5 +0.7**
ROTZ Sg **Sg 16 11 43.2 -1.2**
ROTZ Rotzenmuhle 3.11 235 *e*Pn **Pn 16 10 55.5 +0.7**
ROTZ *e*Sg **Sg 16 11 43.2 -1.2**
GEC2 GERESS Array S 3.19 210 Pn **Pn 16 10 56.7 +0.7**
GEC2 Sg **Sb 16 11 43.3 +1.8**
GEC2 GERESS Array S 3.19 210 *e*Pn **Pn 16 10 56.7 +0.7**
GEC2 *e*Sg **Sb 16 11 43.3 +1.8**
GERES GERESS Array B 3.19 210 Pn **Pn 16 10 56.9 +0.9**
comp=Z,2.4nm,0.3s,baz=30,slow=13,SNR=4.9
GERES Pg **Pb 16 11 02.9 +0.8**
comp=Z,6.5nm,0.3s,baz=37,slow=16,SNR=7.6
GERES Lg Lg 16 11 45.2
comp=Z,19nm,0.3s,baz=32,slow=29,SNR=10.0
SMOL Smolenice 3.23 164 *e*Pg **Pg 16 11 05.7 -0.6**
SMOL *e*Sg **Sg 16 11 47.7 -0.4**
SMOL Smolenice 3.23 164 *e*PG **Pg 16 11 05.7 -0.6**
SMOL *e*SG **Sg 16 11 47.7 -0.4**
WET Wettzell 3.24 221 Pn **Pn 16 10 57.0 +0.4**
WET Sg **Sb 16 11 45.3 +2.4**
WET Wettzell 3.24 221 *e*Pn **Pn 16 10 57.0 +0.4**
WET *e*Sg **Sb 16 11 45.3 +2.4**
LANS Liptovska Anna 3.27 138 *e*Pg **Pg 16 11 06.5 -0.7**
LANS *e*Sg **Sg 16 11 47.7 -1.9**
LANS Liptovska Anna 3.27 138 *e*PG **Pg 16 11 06.5 -0.7**
LANS *e*SG **Sg 16 11 47.7 -1.9**
NIE Niedzica 3.46 128 *e*P **Pg 16 11 10.1 -0.7**
NIE *e*S **Sg 16 11 55.8 +0.2**
NIE Niedzica 3.46 128 *e*P **Pg 16 11 10.1 -0.7**
NIE *e*S **Sg 16 11 55.8 +0.2**
ZST Bratislava 3.49 169 *e*Sg **Sb 16 11 52.8 +2.8**
ZST Bratislava 3.49 169 *e*SG **Sb 16 11 52.8 +2.8**
ZST *e*LG Lg 16 11 59.9
BSD Bornholm Skovb 3.57 349 *i* P **Pn 16 11 02.2 +1.1**
BSD *e*S **Sn 16 11 40.2 -3.7**
CLZ Clausthal 3.58 276 Pn **Pn 16 11 02.8 +1.5**
CLZ Sg **Sg 16 11 59.4 -0.2**
CLZ Clausthal 3.58 276 *e*Pn **Pn 16 11 02.8 +1.5**
CLZ *e*Sg **Sg 16 11 59.4 -0.2**
VYHS Vyhne 3.59 150 *e*Pn **Pn 16 11 01.0 -0.4**
VYHS Vyhne 3.59 150 *e*PN **Pn 16 11 01.0 -0.4**
VYHS *e*PG **Pg 16 11 13.9 +0.7**
VYHS *e*SG **Sb 16 11 55.2 +2.3**
VYHS *e*LG Lg 16 12 10.7
GRA1 Grafenberg Arr 3.67 240 Pn **Pn 16 11 03.3 +0.8**
GRA1 Sg **Sg 16 12 02.6 +0.2**
GRF Grafenberg Arr 3.67 240 *e*Pn **Pn 16 11 03.3 +0.8**
GRF *e*Sg **Sg 16 12 02.6 +0.2**
CONA Conrad Observa 3.71 183 *i* Pn **Pn 16 11 04.1 +1.0**
comp=Z,6.7nm,0.4s
CONA *e*Sg **Sb 16 11 58.5 +2.2**
comp=Z,56nm,0.6s
CONA Conrad Observa 3.71 183 Pn **Pn 16 11 04.1 +1.0**
comp=Z,6.7nm,0.4s
CONA Sg **Sb 16 11 58.5 +2.2**
comp=Z,56nm,0.6s
STHS Stebnicka Huta 3.94 122 *e*Pg **Pg 16 11 22.0 +2.0**
STHS Stebnicka Huta 3.94 122 *e*PG **Pg 16 11 22.0 +2.0**
MOA Molln 3.97 198 *i* Pn **Pn 16 11 07.1 +0.5**
comp=Z,14nm,0.3s
MOA *e*Sg **Sg 16 12 10.0 -1.9**
comp=Z,56nm,0.6s
MOA Molln 3.97 198 Pn **Pn 16 11 07.1 +0.5**
comp=Z,14nm,0.3s
MOA Sg **Sg 16 12 10.0 -1.9**
comp=Z,56nm,0.6s
KECS Kecovo 4.22 137 *e*Pg **Pg 16 11 25.6 +0.3**
KECS Kecovo 4.22 137 *e*PG **Pg 16 11 25.6 +0.3**
KECS *e*LG Lg 16 12 28.8
CRVS Cervenica-Dubn 4.37 126 *e*Pg **Pg 16 11 30.0 +1.7**
CRVS Cervenica-Dubn 4.37 126 *e*PG **Pg 16 11 30.0 +1.7**
KBA Koelnbreinsper 4.90 203 *i* Pn **Pn 16 11 20.2 +0.6**
comp=Z,14nm,0.4s
KBA Sg **Sg 16 12 40.7 -1.2**
comp=Z,16nm,0.5s
KBA Koelnbreinsper 4.90 203 Pn **Pn 16 11 20.2 +0.6**
comp=Z,14nm,0.4s
KBA Sg **Sg 16 12 40.7 -1.2**
comp=Z,16nm,0.5s
DAVOX Davos/Dischmat 6.34 223 Lg Lg 16 13 24.8
comp=Z,0.8nm,0.3s,baz=220,slow=18,SNR=3.2
AKASG Malin Array Be 8.29 91 Pn **Pn 16 12 07.0 +1.2**
comp=Z,0.6nm,0.3s,baz=279,slow=12,SNR=5.2
FINES FINESS Array B 11.25 25 Pn **Pn 16 12 45.5 -0.9**
comp=Z,0.5nm,0.3s,baz=210,slow=11,SNR=4.4
EKA Eskdalemuir Ar 12.07 295 Pn **Pn 16 12 54.4 -3.2**
baz=104,slow=13,SNR=3.7
ARCES ARCESS Array B 18.51 10 Pn **P 16 14 20.2 -1.8**
comp=Z,0.1nm,0.3s,baz=186,slow=13,SNR=4.2
ARU Arti 25.07 62 LR LR 16 26 47.4
comp=Z,26nm,18.1s,baz=195,slow=40
YKA Yellowknife Ar 59.76 336 P **P 16 20 12.1 +1.5**
comp=Z,0.3nm,0.6s,baz=30,slow=6.7,SNR=6.5

*ISCJB **07** 16:14:51.4±0.5, 6°.64S±0°.04×130°.32E±0°.06, h150km,*
mb3.9/7, Error ellipse: s-maj=8.9km s-min=5.7km
az=179.9
*IDC **07** 16:14:53.7±2.5, 6°.49S×129°.95E, h141km±25km, mb3.7/8,*
mb1 3.8/12, mb1mx3.6/38, mbtmp4.2/12, MS3.2/1,
Ms1 3.1/1, ms1mx2.4/31, Error ellipse: s-maj=26.8km
s-min=13.2km az=74.0
*DJA **07** 16:14:55.2±0.3, 6°.5±3°.×13°.0E±°., h162km±8km, M4.5/9,*
mB5.7/2, mb4.3/9, MLv4.6/5, Mw(mB)5.3/2
ISC 07 16:14:52.3±0.6, 6°.62S±0°.05×130°.39E±0°.07, h150km, n35,
σ2°.64/40, mb3.8/7, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SAUI	**Saumlaki**	**1.63**	**146**	P	Pn	16 15 30.1	+6.9
BNDI	**Bandanaira**	**2.14**	**347**	P	**Pn**	**16 15 31.0**	**+1.9**
BNDI				S	**Sn**	**16 16 00.0**	**+2.6**
MSAI	**Masohi**	**3.56**	**336**	P	**Pn**	**16 15 48.2**	**+1.3**
FAKI	**Fak Fak**	**4.12**	**27**	P	**Pn**	**16 15 55.8**	**+1.7**
FAKI				S	**Sn**	**16 16 40.7**	**-1.5**
NLAI	**Namlea**	**4.69**	**316**	P	**Pn**	**16 16 03.7**	**+2.0**
SIJI	**Sorong**	**5.78**	**9**	P	**Pn**	**16 16 17.1**	**+0.9**
	24nm,0.3s,baz=357,slow=2.3,SNR=3.3						
SIJI				S	**Sn**	**16 17 15.8**	**-5.9**
	6.7nm,0.3s,baz=269,slow=23,SNR=11						
SWI	**Sorong**	**5.78**	**9**	P	**Pn**	**16 16 17.1**	**+0.9**
	24nm,0.5s,5μm						
SWI				S	**Sn**	**16 17 15.4**	**-6.4**
	24nm,0.5s,5μm						
SANI	**Sanana**	**6.31**	**316**	P	**Pn**	**16 16 26.7**	**+3.4**
	35nm,0.9s						
LBMI	**Labuha**	**6.61**	**334**	P	**Pn**	**16 16 27.5**	**+0.4**
	31nm,1.0s						
SPSI	**Sidrap Palu**	**10.90**	**283**	P	**Pn**	**16 17 25.6**	**+1.3**
MRSI	**Marisa**	**10.99**	**310**	P	**Pn**	**16 17 25.9**	**+0.4**
JAY	**Jayapura**	**11.06**	**69**	P	**P**	**16 17 34.2**	**-0.7**
	0.1nm,0.3s,baz=88,slow=23,SNR=5.5						
FITZ	**Fitzroy Crossi**	**12.32**	**202**	P	**Pn**	**16 17 43.2**	**+0.4**
	1.0nm,0.3s,baz=24,slow=10,SNR=26						
FITZ				S	**Sn**	**16 19 50.8**	**-8.2**
	2.2nm,0.3s,baz=49,slow=20,SNR=3.8						
PLAI	**Plampang**	**12.69**	**259**	P	**Pn**	**16 17 45.7**	**-1.9**
	30nm,0.8s						
TWSI	**Taliwang, Sumb**	**13.55**	**260**	P	**Pn**	**16 17 56.3**	**-2.3**
	16nm,0.9s						
WRA	**Warramunga Arr**	**13.79**	**164**	P	**Pn**	**16 18 02.6**	**+1.0**
	1.0nm,0.3s,baz=339,slow=13,SNR=34						
WRA				S	**Sn**	**16 20 30.6**	**-3.8**
	8.5nm,0.3s,baz=346,slow=22,SNR=14						
BBKI	**Banjar Baru**	**15.80**	**281**	P	**P**	**16 18 28.5**	**+1.0**
ASAR	**Alice Springs**	**17.28**	**169**	P	**Pn**	**16 18 48.7**	**+4.0**
	2.0nm,0.3s,baz=348,slow=11,SNR=205						
ASAR				S	**S**	**16 21 55.9**	**-0.5**
	1.5nm,0.3s,baz=353,slow=27,SNR=8.0						
CTA	**Charters Tower**	**20.40**	**133**	P	Pn	16 19 24.1	+2.6
	6.2nm,0.6s,baz=330,slow=8.1,SNR=9.9						
STKA	**Stephens Creek**	**27.22**	**159**	P	**P**	**16 20 26.2**	**+4.0**
	3.5nm,0.7s,baz=326,slow=9.0,SNR=8.4						
STKA				LR	LR	16 31 39.9	
	comp=Z,55nm,20.9s,baz=202,slow=37						
CMAR	**Chiang Mai Arr**	**39.79**	**309**	P	**P**	**16 22 10.1**	**-0.9**
	1.3nm,0.6s,baz=141,slow=7.2,SNR=7.0						
MJAR	**Matsushiro Arr**	**43.56**	**9**	P	**P**	**16 22 41.7**	**+0.4**
	1.3nm,0.7s,baz=176,slow=8.9,SNR=4.8						
KSRS	**Korea Array**	**43.91**	**357**	P	**P**	**16 22 44.9**	**+0.8**
	0.5nm,0.6s,baz=173,slow=8.0,SNR=4.4						
GUN	**Gumba**	**55.00**	**311**	*e*P	**P**	**16 24 07.9**	**-0.9**
	24nm,0.6s						
PKIN	**Phulchoki**	**55.19**	**310**	*e*P	**P**	**16 24 08.7**	**-1.4**
	5.4nm,0.6s						
KKN	**Kakani**	**55.39**	**310**	*e*P	**P**	**16 24 10.4**	**-1.0**
	10.0nm,0.6s						
DMN	**Daman**	**55.43**	**310**	*e*P	**P**	**16 24 11.0**	**-0.8**
GKN	**Gorkha**	**55.98**	**310**	*e*P	**P**	**16 24 14.6**	**-1.0**
	16nm,0.5s						
KOLN	**Koldanda**	**56.66**	**309**	*e*P	**P**	**16 24 19.8**	**-0.7**
	12nm,0.7s						
PYUN	**Piuthan**	**57.29**	**309**	*e*P	**P**	**16 24 24.5**	**-0.4**
	32nm,0.8s						
SONM	**Songino Array**	**58.21**	**341**	P	**P**	**16 24 31.9**	**+1.1**
	0.6nm,0.5s,baz=157,slow=5.9,SNR=2.8						
MKAR	**Makanchi Array**	**68.12**	**327**	P	**P**	**16 25 36.6**	**+0.5**
	5.4nm,0.5s,baz=120,slow=8.1,SNR=82						
ZALV	**Zalesovo Beam**	**71.42**	**334**	P	**P**	**16 25 55.5**	**-0.5**
	1.1nm,0.5s,baz=130,slow=6.5,SNR=5.8						
TORD	**Torodi Ar. Bea**	**129.12**	**282**	PKP	**PKPdf**	**16 33 44.8**	**+1.2**
	0.1nm,0.3s,baz=90,slow=1.4,SNR=3.2						
CPUP	**Villa Florida**	**146.40**	**167**	PKPbc	**PKPab**	**16 34 20.4**	**+3.0**
	2.0nm,0.7s,baz=178,slow=6.1,SNR=3.4						

*IDC **07** 16:23:00.9±1.8, 23°.08S×179°.13W, h380km±17km,*
mb3.6/16, mb1 3.8/18, mb1mx3.6/35, mbtmp4.4/18, Error
ellipse: s-maj=15.0km s-min=12.1km az=119.0
*ISCJB **07** 16:23:04.5±0.6, 23°.07S±0°.08×179°.3W±0°.1, h426km,*
mb3.8/16, Error ellipse: s-maj=14.6km s-min=10.5km
az=18.3
ISC 07 16:23:04.7±0.5, 23°.09S±0°.10×179°.0W±0°.1, h426km, n41,
σ1°.72/45, mb3.9/16, 4C-5D, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	**11.42**	**38**	P	**P**	**16 25 34.6**	**-3.1**
	2.2nm,0.3s,baz=162,slow=12,SNR=3.5						
AFI				S	S	16 27 34.2	-10
	7.4nm,0.3s,baz=52,slow=19,SNR=7.3						
DZM	**Mont Dzumac**	**13.48**	**272**	P	**P**	**16 26 00.4**	**+0.4**
	1.0nm,0.3s,baz=65,slow=22,SNR=7.0						
URZ	**Urewera**	**15.48**	**192**	P	**P**	**16 26 19.0**	**-2.3**
	5.7nm,0.3s,baz=257,slow=2.9,SNR=25						
URZ				S	**S**	**16 29 04.5**	**+0.5**
	4.9nm,0.3s,baz=71,slow=23,SNR=21						
RPZ	**Rata Peaks**	**22.14**	**199**	P	**P**	**16 27 25.9**	**-0.9**
	8.2nm,0.5s,baz=27,slow=4.5,SNR=9.5						
CTA	**Charters Tower**	**32.39**	**269**	P	**P**	**16 28 56.3**	**-1.2**
	6.5nm,0.8s,baz=94,slow=11,SNR=5.9						
PMG	**Port Moresby**	**35.11**	**287**	P	**P**	**16 29 19.7**	**-0.9**
	12nm,1.0s,baz=124,slow=4.9,SNR=5.6						
STKA	**Stephens Creek**	**35.87**	**247**	P	**P**	**16 29 27.0**	**+0.2**
	1.1nm,0.6s,baz=90,slow=11,SNR=3.6						
ASAR	**Alice Springs**	**43.07**	**260**	P	**P**	**16 30 23.9**	**-1.6**
	1.8nm,0.9s,baz=98,slow=6.4,SNR=12						
ASAR				PcP	**PcP**	**16 32 06.8**	**+0.3**
	0.8nm,0.8s,baz=89,slow=5.2,SNR=5.8						
ASAR				ScP	**ScP**	**16 35 21.2**	**+4.8**
	0.4nm,0.7s,baz=104,slow=4.7,SNR=5.6						
WRA	**Warramunga Arr**	**43.38**	**265**	P	**P**	**16 30 25.8**	**-2.1**
	0.7nm,0.3s,baz=90,slow=5.9,SNR=63						
WRA				ScP	**ScP**	**16 35 22.6**	**+4.9**
	1.1nm,0.7s,baz=98,slow=3.7,SNR=11						
VNDA	**Vanda**	**55.26**	**185**	P	**P**	**16 31 56.4**	**+1.0**
	1.3nm,0.5s,baz=4.9,slow=8.3,SNR=14						
MJAR	**Matsushiro Arr**	**71.75**	**325**	P	**P**	**16 33 41.9**	**-0.5**
	2.9nm,0.8s,baz=160,slow=6.3,SNR=7.0						
KSRS	**Korea Array**	**78.22**	**319**	P	**P**	**16 34 19.9**	**+1.1**
	0.9nm,0.7s,baz=131,slow=5.9,SNR=5.7						
PETK	**Petropavlovsk-**	**78.53**	**346**	P	**P**	**16 34 21.2**	**+1.1**
	7.9nm,0.7s,baz=149,slow=4.2,SNR=11						
USRK	**Ussurisk Ar.**	**80.59**	**327**	P	**P**	**16 34 32.9**	**+1.6**
	1.7nm,0.6s,baz=114,slow=6.4,SNR=5.5						
NVAR	**Mina Array Bea**	**83.54**	**44**	P	**P**	**16 34 48.6**	**+1.7**
	2.6nm,1.0s,baz=225,slow=8.5,SNR=13						
TXAR	**Lajitas Array**	**89.23**	**58**	P	**P**	**16 35 16.5**	**+2.2**
	1.3nm,0.8s,baz=206,slow=6.8,SNR=15						
CMAR	**Chiang Mai Arr**	**90.10**	**290**	P	**P**	**16 35 20.4**	**+2.0**
	3.1nm,0.8s,baz=138,slow=3.2,SNR=19						
ILAR	**Eielson Array**	**91.04**	**13**	P	**P**	**16 35 21.6**	**-0.1**
	0.7nm,0.7s,baz=222,slow=5.8,SNR=6.1						
PDAR	**Pinedale Array**	**91.48**	**44**	P	**P**	**16 35 24.9**	**+0.5**
	1.2nm,0.8s,baz=214,slow=5.0,SNR=8.0						
ZALV	**Zalesovo Beam**	**111.91**	**321**	PKiKP	**PKiKP**	**16 40 49.2**	**-0.6**
	0.6nm,0.5s,baz=282,slow=1.6,SNR=3.8						
MKAR	**Makanchi Array**	**112.28**	**313**	PKiKP	**PKiKP**	**16 40 50.5**	**-0.2**
	0.6nm,0.6s,baz=92,slow=0.7,SNR=7.9						
GEYT	**Alibeck**	**129.34**	**301**	PKP	**PKPdf**	**16 41 24.1**	**+0.3**
	2.3nm,0.8s,baz=147,slow=3.0,SNR=4.3						
ARCES	**ARCESS Array B**	**131.28**	**349**	PKP	**PKPdf**	**16 41 26.1**	**-0.4**
	2.7nm,0.7s,baz=2.8,slow=2.7,SNR=11						
FINES	**FINESS Array B**	**137.97**	**342**	PKhKP	PKPpre	16 41 28.3	
	0.6nm,0.8s,baz=50,slow=3.0,SNR=4.0						
FINES				SKPbc	**SKiKP**	**16 44 35.6**	**-0.5**
	0.5nm,0.7s,baz=48,slow=2.1,SNR=5.1						
NB2	**NORSAR Subarra**	**141.42**	**352**	PKP	**PKPdf**	**16 41 40.4**	**-5.1**
	comp=Z,1.0nm,0.6s,baz=10,slow=3.2						
NOA	**NORSAR Array B**	**141.42**	**352**	PKhKP	PKPpre	16 41 40.4	
	comp=Z,0.9nm,0.8s,baz=2.2,slow=2.3,SNR=9.1						
AKASG	**Malin Array Be**	**144.77**	**329**	PKP	**PKPdf**	**16 41 51.1**	**-0.5**
	comp=Z,1.5nm,0.4s,baz=39,slow=3.7,SNR=12						
BRTR	**Keskin Array B**	**147.80**	**309**	PKPbc	**PKPbc**	**16 42 00.8**	**0.0**
	comp=Z,2.3nm,0.6s,baz=123,slow=3.8,SNR=11						
TESR	**Tescani**	**148.79**	**325**⇓	*i*P	**PKPbc**	**16 42 03.1**	**+0.2**
BURAR	**Bucovina Array**	**148.79**	**328**⇑	*i*P	**PKPbc**	**16 42 05.0**	**+2.0**
HARR	**Harsova**	**149.19**	**321**⇓	*i*P	**PKPbc**	**16 42 03.1**	**-0.8**
MLR	**Muntele Rosu**	**149.82**	**324**⇑	*i*P	**PKPbc**	**16 42 05.7**	**+0.1**
CJR	**Cluj-Napoca**	**150.22**	**328**⇓	*i*P	**PKPbc**	**16 42 07.1**	**+0.7**
CLL	**Collm**	**150.33**	**345**	*i* P	**PKPbc**	**16 42 06.9**	**+0.5**
	comp=Z,15nm,0.9s						
CLL				*i*		16 42 15.1	
VOIR		**150.34**	**325**⇓	*i*P	**PKPbc**	**16 42 07.4**	**+0.7**
MORC	**Moravsky Berou**	**150.36**	**338**⇑	*i*P	**PKPbc**	**16 42 07.2**	**+0.6**
BRG	**Berggiesshubel**	**150.49**	**343**	*i* PKP	**PKPbc**	**16 42 07.3**	**+0.5**
	comp=Z,8.5nm,0.6s						
BRG				*i*		16 42 16.1	
	comp=Z,6.8nm,1.1s						
DRGR		**150.59**	**329**⇑	*i*P	**PKPbc**	**16 42 07.2**	**-0.1**
BZS	**Buzias**	**151.96**	**328**⇓	*i*P	**PKPbc**	**16 42 10.7**	**+0.4**
GERES	**GERESS Array B**	**152.40**	**342**	PKPbc	**PKPbc**	**16 42 11.2**	**-0.1**
	comp=Z,1.4nm,0.8s,baz=5.2,slow=1.1,SNR=6.4						
TORD	**Torodi Ar. Bea**	**170.09**	**184**	PKP	**PKPdf**	**16 42 23.1**	**-0.1**
	comp=Z,0.3nm,0.8s,baz=207,slow=2.9,SNR=3.8						
TORD				PKPab	**PKPab**	**16 43 40.5**	**-0.6**
	comp=Z,0.7nm,0.6s,baz=167,slow=3.8,SNR=4.0						

*IDC **07** 16:25:36.2±1.2, 13°.83N×92°.81E, h0km, mb3.5/5,*
mb1 3.6/6, mb1mx3.3/40, mbtmp3.4/6, ML3.5/1, MS3.1/2,
Ms1 3.1/2, ms1mx2.5/22, Error ellipse: s-maj=47.1km
s-min=21.6km az=49.0
*ISCJB **07** 16:25:38.9±1.0, 13°.9N±0°.2×92°.9E±0°.2, h32km, mb3.5/5,*
MS3.1/2, Error ellipse: s-maj=24.8km s-min=18.7km
az=43.8
ISC 07 16:25:41.1±1.3, 13°.9N±0°.2×92°.9E±0°.2, h32km, n7, σ0°.81/6,
mb3.5/5, Andaman Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CMAR	**Chiang Mai Arr**	**7.43**	**51**	Pn	**Pn**	**16 27 27.7**	**+0.4**
	0.2nm,0.3s,baz=236,slow=15,SNR=4.7						
CMAR				Sn	Sn	16 28 37.8	-13
	0.2nm,0.3s,baz=237,slow=21,SNR=3.1						
MKAR	**Makanchi Array**	**34.01**	**347**	P	**P**	**16 32 21.4**	**-0.7**
	0.4nm,0.7s,baz=158,slow=7.8,SNR=4.6						
KSRS	**Korea Array**	**39.04**	**47**	LR	LR	16 50 09.3	
	comp=Z,10.0nm,18.0s,baz=200,slow=38						
WRA	**Warramunga Arr**	**52.86**	**129**	P	**P**	**16 34 53.9**	**-0.3**
	0.5nm,0.9s,baz=315,slow=8.2,SNR=6.3						
ASAR	**Alice Springs**	**54.79**	**133**	P	**P**	**16 35 08.3**	**0.0**
	0.2nm,0.5s,baz=308,slow=6.9,SNR=8.0						
BRTR	**Keskin Array B**	**57.66**	**308**	P	**P**	**16 35 29.8**	**+1.0**
	0.5nm,0.8s,baz=103,slow=5.3,SNR=3.5						
FINES	**FINESS Array B**	**66.87**	**331**	P	**P**	**16 36 29.4**	**-0.5**
	0.3nm,0.5s,baz=154,slow=36,SNR=5.6						
FINES				LR	LR	17 08 30.8	
	comp=Z,35nm,18.7s,baz=211,slow=38						

JMA 07 16:28:10.3, 36°.93N×140°.68E, h5km±1km, M2.8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.20**	**29**	P	Pg	16 28 14.3	+0.1
ONAJ				*e*S	Sg	16 28 17.3	+0.5
JHO	**Hitachi**	**0.33**	**196**	P	Pg	16 28 16.7	0.0
JHO				S	Sg	16 28 21.2	+0.1
JFK	**Kawauchi**	**0.46**	**20**	P	Pg	16 28 19.2	0.0
JFK				S	Sg	16 28 25.6	+0.3
JFT	**Otama**	**0.65**	**335**	P	Pg	16 28 23.0	+0.2
JFT				S	Sg	16 28 31.7	+0.5
JMM	**Marumori**	**0.94**	**5**	P	Pg	16 28 27.8	-0.5
JMM				S	Sg	16 28 40.3	-0.2
MAT	**Matsushiro**	**2.02**	**260**	P	Pn	16 28 46.0	+0.9
MAT				S	Sb	16 29 13.1	0.0

*SJA **07** 16:31:56.9±0.8, 32°.64S×71°.40W, h27km±7km, ML2.8,*
MW3.2
*GUC **07** 16:31:58.0±0.4, 32°.79S×71°.12W, h49km±5km, ML3.2*
ISC 07 16:31:52.5±2.3, 32°.86S±0°.07×71°.7W±0°.1, h25km, n17,
σ2°.14/27, 6C, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ROC1	**El Roble**	**0.59**	**101**	*i* P	**Pn**	**16 32 07.4**	**+1.8**
ROC1				*i* S	**Sn**	**16 32 15.0**	**+0.4**
ROCH	**El Roble**	**0.60**	**101**⇑	*i*P	**Pb**	**16 32 06.7**	**+2.2**
ROCH				⇑*i*P	**Pn**	**16 32 07.5**	**+1.9**
ROCH				*i* S	**Sb**	**16 32 13.8**	**+1.1**
ROCH				*i* S	**Sn**	**16 32 14.1**	**-0.5**
ROCH				AML	AML	16 32 14.9	
	comp=N,2μm,0.1s						
PEL	**Peldehue**	**0.91**	**108**⇑	*i*P	**Pb**	**16 32 10.2**	**+0.6**
PEL				⇑*i*P	**Pb**	**16 32 10.2**	**+0.6**
PEL				*i* S	**Sb**	**16 32 19.1**	**-2.1**
PEL				*i* S	**Sb**	**16 32 19.1**	**-2.1**
PEL				AML	AML	16 32 20.1	
	comp=E,2μm,0.2s						
CLCH	**Cerro Calan**	**1.12**	**119**⇑	*i*P	**Pn**	**16 32 13.0**	**+0.4**
CLCH				*e*S	**

GUC 07 16:47:16.6±0.9, 16°.19S×72°.50W, h160km±32km, ML4.8, 6C-2D, Near coast of Peru

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB12	**IPOC Station P**	**3.18**	**140⇑**	*i* P	Pn	16 48 07.4	+0.6
PB12				*i* S	Sn	16 48 46.2	+0.5
PB13	**IPOC Station P**	**3.57**	**127⇑**	*i* P	Pn	16 48 14.3	+2.1
PB13				*i* S	Sn	16 48 56.9	+1.5
MNMC	**Minye Minye**	**4.03**	**137⇑**	*i* P	Pn	16 48 18.7	+1.0
MNMC				*i* S	Sn	16 49 06.5	+1.1
MNMC				AML	AML	16 49 14.1	
	comp=N,178nm,0.2s						
PSGC	**Pisagua**	**4.08**	**147⇑**	*i* P	Pn	16 48 19.2	+0.9
PSGC				*i* S	Sn	16 49 06.6	+0.3
PSGC				AML	AML	16 49 09.3	
	comp=E,150nm,0.4s						
PB11	**IPOC Station P**	**4.47**	**143⇓**	*i* P	Pn	16 48 24.4	+1.1
PB11				*i* S	Sn	16 49 16.0	+0.6
PB11				AML	AML	16 49 19.1	
	comp=E,558nm,0.1s						
HMBC	**Humberstone**	**4.76**	**149⇑**	*i* P	Pn	16 48 28.2	+0.9
HMBC				*i* S	Sn	16 49 22.7	+0.3
HMBC				AML	AML	16 49 29.2	
	comp=N,126nm,0.2s						
PB08	**IPOC Station P**	**5.06**	**142⇓**	*i* P	Pn	16 48 33.2	+1.9
PB08				*i* S	Sn	16 49 30.6	+0.9
PB08				AML	AML	16 49 32.6	
	comp=N,71nm,0.2s						
PB01	**IPOC Station P**	**5.61**	**150⇑**	*i* P	Pn	16 48 38.8	+0.5
PB01				*i* S	Sn	16 49 42.5	+0.1
PB01				AML	AML	16 49 45.8	
	comp=E,118nm,0.3s						
PB07	**IPOC Station P**	**6.04**	**156**	*e*P	Pn	16 48 45.8	+1.7
PB07				*e*S	Sn	16 49 51.5	-1.2
PB09	**IPOC Station P**	**6.37**	**152**	*i* S	Sn	16 50 02.3	+1.7
PB04	**IPOC Station P**	**6.50**	**160**	*e*P	Pn	16 48 51.5	+1.3
PB04				*e*S	Sn	16 50 04.5	+0.7
PB04				AML	AML	16 50 07.3	
	comp=E,82nm,0.5s						
PB10	**IPOC Station P**	**7.51**	**166**	*i* S	Sn	16 50 27.6	-0.1

*CRAAG **07** 16:58:53.7, 36°.83N×2°.70E, Ml3.1*
*ISCJB **07** 16:58:54.5±0.7, 37°.03N±0°.04×2°.71E±0°.07, h14km, Error ellipse: s-maj=8.4km s-min=5.1km az=170.2*
*CSEM **07** 16:58:55.2±0.3, 36°.92N×2°.86E, h20km, mb3.7, Error ellipse: s-maj=9.2km s-min=5.4km az=90.0*
*MDD **07** 16:58:56.0±0.6, 36°.92N×2°.86E, h20km±19km, mb3.7/4, Error ellipse: s-maj=25.0km s-min=8.3km az=108.0, PRXIMO*

ISC 07 16:58:54.2±1.0, 36°.97N±0°.05×2°.76E±0°.04, h14km, n30, σ1$50/39, Northern Algeria

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ABA	**Alger-Bouzarea**	**0.28**	**126**	P	**Pb**	**16 59 00.6**	**-0.3**
ABA	**Alger-Bouzarea**	**0.28**	**126**	Pg	**Pb**	**16 59 00.6**	**-0.3**
ABA	**Alger-Bouzarea**	**0.28**	**126**	P	**Pb**	**16 59 00.6**	**-0.3**
EMHD	**Djebel Mahouad**	**0.78**	**168**	P	**Pb**	**16 59 09.0**	**-0.6**
EMHD	**Djebel Mahouad**	**0.78**	**168**	Pg	**Pb**	**16 59 09.0**	**-0.6**
EMHD	**Djebel Mahouad**	**0.78**	**168**	P	**Pb**	**16 59 09.0**	**-0.6**
EBNR	**Beni Rached**	**1.19**	**236**	P	**Pg**	**16 59 17.2**	**+0.1**
EBNR	**Beni Rached**	**1.19**	**236**	P	**Pg**	**16 59 17.2**	**+0.1**
ECHA	**Ech Chlef**	**1.38**	**234**	P	**Pb**	**16 59 19.7**	**-0.1**
ECHA	**Ech Chlef**	**1.38**	**234**	P	**Pb**	**16 59 19.7**	**-0.1**
ECHF	**Ech Chlef**	**1.40**	**235**	Pn	**Pb**	**16 59 19.7**	**-0.3**
ECHF	**Ech Chlef**	**1.40**	**235**	Pn	**Pb**	**16 59 19.7**	**-0.3**
ATAF	**Djebel Tarf**	**1.64**	**131**	P	Pn	16 59 13.7	-9.0
ATAF	**Djebel Tarf**	**1.64**	**131**	Pn	Pn	16 59 13.7	-9.0
ATAF	**Djebel Tarf**	**1.64**	**131**	Pn	Pn	16 59 13.7	-9.0
EANR	**'Ain N'Sour**	**1.68**	**233**	P	**Pb**	**16 59 24.6**	**-0.2**
EANR	**'Ain N'Sour**	**1.68**	**233**	Pn	**Pb**	**16 59 24.6**	**-0.2**
EANR	**'Ain N'Sour**	**1.68**	**233**	P	**Pb**	**16 59 24.6**	**-0.2**
EIBI	**Ibiza**	**2.34**	**332**	Pn	**Pn**	**16 59 33.8**	**+1.6**
	18nm,0.8s,SNR=10						
EIBI				Sn	**Sn**	**17 00 00.1**	**-0.7**
	28nm,0.7s,SNR=6.9						
EIBI	**Ibiza**	**2.34**	**332**	Pn	**Pn**	**16 59 33.8**	**+1.6**
	18nm,0.8s,SNR=10						
EIBI				Sn	**Sn**	**17 00 00.1**	**-0.7**
	28nm,0.7s,SNR=6.9						
ETOS	**Mallorca**	**2.80**	**1**	Pn	**Pn**	**16 59 40.3**	**+1.8**
	20nm,0.9s,SNR=8.0						
ETOS				Sn	**Sn**	**17 00 10.9**	**-1.2**
	0.6nm,0.1s,SNR=6.3						
ETOS	**Mallorca**	**2.80**	**1**	Pn	**Pn**	**16 59 40.3**	**+1.8**
	20nm,0.9s,SNR=8.0						
ETOS				Sn	**Sn**	**17 00 10.9**	**-1.2**
	0.6nm,0.1s,SNR=6.3						
ETOB	**Tobarra**	**3.80**	**298**	Pn	**Pn**	**16 59 54.1**	**+1.8**
	4.5nm,0.8s,SNR=12						
ETOB				Sn	**Sn**	**17 00 35.1**	**-1.7**
	0.6nm,0.2s,SNR=7.9						
ETOB	**Tobarra**	**3.80**	**298**	Pn	**Pn**	**16 59 54.1**	**+1.8**
	4.5nm,0.8s,SNR=12						
ETOB				Sn	**Sn**	**17 00 35.1**	**-1.7**
	0.6nm,0.2s,SNR=7.9						
EMOS	**Mosqueruela**	**4.23**	**324**	Pn	**Pn**	**17 00 00.1**	**+1.8**
	7.6nm,0.9s,SNR=10.0						
EMOS				Sn	**Sn**	**17 00 46.1**	**-1.5**
	0.8nm,0.2s,SNR=7.9						
EMOS	**Mosqueruela**	**4.23**	**324**	Pn	**Pn**	**17 00 00.1**	**+1.8**
	7.6nm,0.9s,SNR=10.0						
EMOS				Sn	**Sn**	**17 00 46.1**	**-1.5**
	0.8nm,0.2s,SNR=7.9						
EPOB	**Poblet**	**4.57**	**344**	Pn	**Pn**	**17 00 05.0**	**+2.0**
	0.2nm,0.2s,SNR=4.0						
EPOB				Sn	**Sn**	**17 00 52.8**	**-3.1**
	0.2nm,0.2s,SNR=7.9						
EPOB	**Poblet**	**4.57**	**344**	Pn	**Pn**	**17 00 04.9**	**+2.0**
	0.2nm,0.2s,SNR=4.0						
EPOB				Sn	**Sn**	**17 00 52.8**	**-3.1**
	0.2nm,0.2s,SNR=7.9						
EQES	**Quesada**	**4.71**	**282**	Pn	**Pn**	**17 00 06.7**	**+1.7**
	0.3nm,0.2s,SNR=5.0						
EQES				Sn	**Sn**	**17 00 57.5**	**-2.0**
	0.1nm,0.2s,SNR=4.0						
EQES	**Quesada**	**4.71**	**282**	Pn	**Pn**	**17 00 06.7**	**+1.7**
	0.3nm,0.2s,SNR=5.0						
EQES				Sn	**Sn**	**17 00 57.5**	**-2.0**
	0.1nm,0.2s,SNR=4.0						

*IDC **07** 16:59:33.3±0.7, 38°.09N×144°.23E, h0km, mb4.0/20, mb1 4.2/27, mb1mx4.0/52, mbtmp4.1/27, ML3.8/6, MS3.1/9, Ms1 3.1/9, ms1mx2.9/48, Error ellipse: s-maj=16.6km s-min=14.0km az=125.0*
*MOS **07** 16:59:36.4±1.2, 38°.25N×144°.23E, h33km, mb4.3/25, Error ellipse: s-maj=9.7km s-min=6.3km az=106.9*
*JMA **07** 16:59:36.9±0.2, 38°.19N×144°.07E, h40km, M4.4*
*NEIC **07** 16:59:38.7±0.4, 38°.15N×144°.10E, h35km, mb4.6/10, Error ellipse: s-maj=8.3km s-min=5.2km az=145.0*

ISC 07 16:59:36.3±2.1, 38°.21N±0°.06×144°.17E±0°.06, h17km±13km, n127, σ1$24/144, mb4.3/41, MS3.6/6, 3C-3D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.14**	**295**	P	**Pn**	**17 00 10.6**	**-0.6**
OFUJ				S	**Sn**	**17 00 35.6**	**-1.8**
JIO	**Ouri**	**2.23**	**277**	P	**Pn**	**17 00 11.6**	**-0.8**
JIO				S	**Sn**	**17 00 37.0**	**-2.5**
JMK	**Ichinoseki**	**2.43**	**289**	P	**Pn**	**17 00 14.8**	**-0.3**
JTH	**Tanohata**	**2.49**	**315**	P	**Pn**	**17 00 15.6**	**-0.4**
JOM	**Ohasama**	**2.58**	**300**	P	**Pn**	**17 00 16.8**	**-0.4**
JOM				S	**Sn**	**17 00 47.1**	**-1.0**
JMM	**Marumori**	**2.69**	**264**	P	**Pn**	**17 00 17.7**	**-1.0**
JMM				S	**Sn**	**17 00 47.7**	**-3.1**
JFK	**Kawauchi**	**2.74**	**253**	P	**Pn**	**17 00 18.0**	**-1.5**
JFK				S	**Sn**	**17 00 48.3**	**-3.9**
JOU	**Okura**	**2.76**	**274**	P	**Pn**	**17 00 19.8**	**+0.1**
JOU				S	**Sn**	**17 00 51.4**	**-1.3**
JANG	**Nango**	**2.99**	**317**	P	**Pn**	**17 00 22.7**	**-0.1**
JRG	**Rokugo**	**3.00**	**294**	P	**Pn**	**17 00 23.5**	**+0.4**
JYK	**Kaneyama**	**3.07**	**285**	P	**Pn**	**17 00 24.3**	**+0.4**
JFT	**Otama**	**3.11**	**258**	P	**Pn**	**17 00 24.4**	**-0.1**
JFT				S	**Sn**	**17 00 59.4**	**-1.8**
ERM	**Erimo**	**3.88**	**349**	*e*P	**Pn**	**17 00 35.2**	**+0.1**
ERM	**Erimo**	**3.88**	**349**	*e*Pn	**Pn**	**17 00 34.7**	**-0.4**
ERM				*e*Sn	**Sn**	**17 01 16.7**	**-3.6**
JOT	**Ohata**	**3.98**	**324**	P	**Pn**	**17 00 37.6**	**+1.1**
JNBK	**Urakawa-nobuka**	**4.21**	**346**	P	**Pn**	**17 00 39.6**	**0.0**
MJAR	**Matsushiro Arr**	**5.03**	**253**	Pn	**Pn**	**17 00 51.2**	**+0.3**
	5.0nm,0.3s,baz=78,slow=14,SNR=65						
MJAR				Sn	**Sn**	**17 01 48.3**	**-0.3**
	3.4nm,0.3s,baz=116,slow=23,SNR=4.8						
MJAR				LR	LR	17 03 05.4	
	comp=Z,291nm,19.9s,baz=85,slow=42						
MAJO	**Matsushiro**	**5.03**	**253**	*d* P	**Pn**	**17 00 51.3**	**+0.4**
MAJO	**Matsushiro**	**5.03**	**253**	*e*Pn	**Pn**	**17 00 51.2**	**+0.3**
MAJO				*e*Sn	**Sn**	**17 01 48.0**	**-0.6**
MAT	**Matsushiro**	**5.03**	**253**	P	**Pn**	**17 00 51.3**	**+0.4**
MAT				S	**Sn**	**17 01 49.6**	**+1.0**
MJB9	**Matsu-Tunnel**	**5.03**	**253**	*e*Pn	**Pn**	**17 00 51.6**	**+0.7**
YUK	**Yuzh-Kuril'sk**	**5.96**	**12⇑**	*i* P	**Pn**	**17 01 01.5**	**-2.2**
YUK				*i* S	Sn	17 02 06.0	-5.5
YUK				pmax	pmax		
	comp=Z,126nm,0.7s						
YUK				pmax	pmax		
	comp=E,30nm,0.1s						
YUK				pmax	pmax		
	comp=N,53nm,0.2s						
SHO	**Shikotan**	**6.01**	**19⇓**	*i* P	**Pn**	**17 01 01.3**	**-3.0**
SHO				*i* S	Sn	17 02 05.2	-7.4
SHO				pmax	pmax		
	comp=Z,72nm,0.6s						
SHO				pmax	pmax		
	comp=N,33nm,0.5s						
SHO				pmax	pmax		
	comp=E,18nm,0.4s						
ASAJ	**Asahikawa**	**6.02**	**349**	Pn	**Pn**	**17 01 04.5**	**-0.1**
	comp=E,5.0nm,0.3s,baz=207,slow=16,SNR=56						
ASAJ				Sn	**Sn**	**17 02 13.4**	**+0.3**
	comp=E,2.0nm,0.3s,baz=288,slow=20,SNR=5.1						
ASAJ				LR	LR	17 04 16.3	
	comp=E,111nm,18.6s,baz=118,slow=46						
ASAJ	**Asahikawa**	**6.02**	**349**	*e*Pn	**Pn**	**17 01 04.7**	**+0.1**
ASAJ				*e*Sn	**Sn**	**17 02 14.5**	**+1.5**
JHJ2	**Mitsune**	**6.19**	**216**	*e*Pn	Pn	17 01 02.8	-4.0
JHJ	**Hachijo jima 2**	**6.20**	**216**	Pn	**Pn**	**17 01 05.0**	**-2.0**
	comp=E,28nm,0.3s,baz=354,slow=21,SNR=8.6						
JHJ				Sn	Sn	17 02 10.3	-7.2
	comp=E,18nm,0.3s,baz=343,slow=19,SNR=5.9						
JHJ				LR	LR	17 03 48.7	
	comp=E,69nm,18.3s,baz=82,slow=42						
INU	**Inuyama**	**6.41**	**246**	*e*Pn	**Pn**	**17 01 09.3**	**-0.5**
KUR	**Kuril'sk**	**7.55**	**20**	*e*P	**Pn**	**17 01 24.7**	**-0.7**
KUR				*e*S	**Sn**	**17 02 45.9**	**-4.6**
KUR				pmax	pmax		
	comp=Z,42nm,0.6s						
KUR				pmax	pmax		
	comp=N,24nm,0.2s						
KUR				pmax	pmax		
	comp=E,25nm,0.2s						
VLA	**Vladivostok**	**10.54**	**302**	*e*P	**Pn**	**17 02 06.5**	**+0.1**
VLA				pmax	pmax		
	comp=Z,21nm,1.1s						
USRK	**Ussuriysk Ar.**	**10.95**	**307**	Pn	**Pn**	**17 02 13.6**	**+1.5**
	comp=Z,0.4nm,0.3s,baz=112,slow=14,SNR=15						
USRK				LR	LR	17 06 11.8	
	comp=Z,166nm,19.7s,baz=116,slow=36						
JNU	**Nakatsue**	**11.94**	**249**	Pn	**Pn**	**17 02 24.9**	**-0.8**
	comp=Z,0.2nm,0.3s,baz=186,slow=3.6,SNR=4.9						
JNU				LR	LR	17 07 27.0	
	comp=Z,193nm,18.0s,baz=120,slow=40						
JNU	**Nakatsue**	**11.94**	**249**	*e*Pn	**Pn**	**17 02 23.3**	**-2.3**
MDJ	**Mudanjiang**	**12.67**	**305**	*e*Pn	**Pn**	**17 02 35.5**	**-0.1**
KSRS	**Korea Array**	**12.87**	**272**	Pn	**Pn**	**17 02 40.0**	**+1.7**
	comp=Z,0.2nm,0.3s,baz=88,slow=13,SNR=14						
KSRS				LR	LR	17 07 28.5	
	comp=Z,146nm,18.0s,baz=79,slow=37						
KSRS	**Korea Array**	**12.87**	**272**	P	**Pn**	**17 02 40.0**	**+1.7**
KSRS				MLR	MLR		
	comp=Z,147nm,18.0s						
KS01	**Wonju Array Si**	**12.89**	**272**	*e*Pn	**Pn**	**17 02 37.2**	**-1.3**
KS15	**Wonju Array Si**	**12.90**	**272**	*e*Pn	**Pn**	**17 02 37.4**	**-1.4**
KSAR	**Wonju Array Be**	**12.90**	**272**	P	**Pn**	**17 02 40.0**	**+1.2**
KSAR	**Wonju Array Be**	**12.90**	**272**	Pn	**Pn**	**17 02 40.0**	**+1.2**
KLR	**Kul'dur**	**14.19**	**325**	Pn	**Pn**	**17 02 57.1**	**+0.7**
	comp=Z,0.2nm,0.3s,baz=133,slow=12,SNR=3.9						
KLR				LR	LR	17 08 21.9	
	comp=Z,46nm,21.4s,baz=136,slow=37						
CN2	**Changchun**	**15.19**	**298**	*e*P	**Pn**	**17 03 10.4**	**+0.5**
PETK	**Petropavlovsk-**	**17.61**	**28**	LR	LR	17 12 46.0	
	comp=Z,24nm,18.3s,baz=174,slow=45						
DL2	**Dalian**	**17.64**	**279**	P	**Pn**	**17 03 41.1**	**0.0**
DL2				pmax	pmax		
	comp=Z,32nm,0.9s						
TIA	**Tai'an**	**21.61**	**273**	⇑P	**P**	**17 04 28.8**	**+3.5**
TIA				pmax	pmax		
	comp=Z,20nm,0.9s						
BJI	**Beijing**	**21.76**	**284**	P	**P**	**17 04 24.7**	**-2.2**
BJI				S	**S**	**17 08 28.8**	**+1.8**
BJI				pmax	pmax		
	comp=Z,6.0nm,0.6s						
BJI				LR	LR		
	comp=N,120nm,14.9s						
BJI				LR	LR		
	comp=E,180nm,16.6s						
BJI				LR	LR		
	comp=Z,96nm,16.6s						
HHC	**Hu-ho-hao-te**	**25.21**	**286**	*e*P	**P**	**17 05 01.8**	**+0.7**
HHC				pP	sP	17 05 07.4	-1.0
HHC				sP	pP	17 05 10.6	+4.3
HHC				S	**S**	**17 09 23.5**	**-2.3**
HHC				pmax	pmax		
	comp=Z,38nm,0.9s						
HHC				pmax	pmax		
	comp=Z,530nm,4.2s						
HHC				LR	LR		
	comp=N,810nm,12.4s						
HHC				LR	LR		
	comp=E,1μm,13.6s						
HHC				LR	LR		
	comp=Z,1μm,13.7s						
SEY	**Seymchan**	**25.26**	**9**	P	**P**	**17 05 02.9**	**+1.7**
	comp=Z,4.2nm,0.7s,baz=191,slow=7.3,SNR=16						
SEY	**Seymchan**	**25.26**	**9⇑**	*i* P	**P**	**17 05 01.6**	**+0.4**
YAK	**Yakutsk**	**25.48**	**344**	P	**P**	**17 05 03.5**	**+0.4**
	comp=Z,4.8nm,0.4s,baz=334,slow=3.9,SNR=6.4						
YAK	**Yakutsk**	**25.48**	**344**	*e*P	**P**	**17 05 03.0**	**-0.1**
YAK				*i* *PP	sP	17 05 15.6	+5.1
YAK				*e*		17 05 40.1	
YAK				*e*S	**S**	**17 09 26.8**	**-2.5**
YAK				*e*SS	**SnSn**	**17 10 24.3**	**+2.1**
YAK				*e*		17 15 58.5	
YAK				pmax	pmax		
	comp=Z,12nm,0.9s						
YAK				pmax	pmax		
	comp=N,8.0nm,1.3s						
YAK				pmax	pmax		
	comp=Z,80nm,4.0s						
YAK				pmax	pmax		
	comp=N,31nm,2.3s						
YAK				pmax	pmax		
	comp=E,32nm,3.3s						
YAK				smax	smax		
	comp=N,41nm,3.6s						
YAK				smax	smax		
	comp=E,43nm,3.8s						
YAK	**Yakutsk**	**25.48**	**344**	*e*P	**P**	**17 05 02.1**	**-1.0**
	comp=E,14nm,0.9s						
BOD	**Bodaibo**	**27.77**	**325**	*e*P	**P**	**17 05 24.1**	**+0.2**
BOD				pmax	pmax		
	comp=Z,7.0nm,0.7s						
ULN	**Ulaanbaatar**	**28.55**	**302**	*i* P	**P**	**17 05 30.7**	**-0.5**
ULN				pmax	pmax		
	comp=Z,6.0nm,1.7s						
ULN	**Ulaanbaatar**	**28.55**	**302**	*e*P	**P**	**17 05 32.0**	**+0.8**
	comp=Z,2.5nm,0.8s						
XAN	**Xi'an**	**28.66**	**273**	P	P	17 05 35.9	+3.7
XAN				pP	sP	17 05 42.1	+2.5
XAN				pmax	pmax		
	comp=Z,5.0nm,0.8s						
XAN				pmax	pmax		
	comp=Z,62nm,7.0s						
SONA1	**Songino Array**	**28.99**	**302**	*e*P	**P**	**17 05 35.6**	**+0.5**
SONM	**Songino Array**	**28.99**	**302**	P	**P**	**17 05 36.3**	**+1.2**
	comp=Z,1.8nm,0.8s,baz=89,slow=7.9,SNR=9.1						
SONM				LR	LR	17 17 42.3	
	comp=Z,70nm,18.3s,baz=65,slow=37						
ENH	**Enshi**	**29.61**	**265**	*e*P	**P**	**17 05 40.5**	**-0.1**
	comp=Z,7.1nm,0.7s						
ZAK	**Zakamensk**	**31.30**	**306**	*e*P	**P**	**17 05 56.1**	**+0.7**
ZAK				pmax	pmax		
	comp=Z,2.0nm,1.3s						
CD2	**Chengdu**	**33.86**	**270**	P	**P**	**17 06 17.1**	**-0.9**
CD2				pmax	pmax		
	comp=Z,2.0nm,0.6s						
GTA	**Gaotai**	**34.32**	**286**	*e*P	**P**	**17 06 23.7**	**+1.7**
GTA				pP	sP	17 06 33.5	+4.1
GTA				sP	pP	17 06 37.5	+10
GTA				S	**S**	**17 11 49.1**	**+0.4**
GTA				sS	sS	17 12 05.7	+8.3
GTA				SS	**SnSn**	**17 14 00.0**	**+1.7**
GTA				pmax	pmax		
	comp=Z,4.0nm,1.0s						
GTA				pmax	pmax		
	comp=Z,110nm,7.4s						
GTA				LR	LR		
	comp=N,77nm,15.7s						
GTA				LR	LR		
	comp=E,140nm,16.2s						
GTA				LR	LR		
	comp=Z,190nm,16.6s						
TIXI	**Tiksi**	**34.42**	**351**	P	**P**	**17 06 22.1**	**-0.2**
	comp=Z,0.5nm,0.6s,baz=135,slow=6.2,SNR=5.7						
TIXI	**Tiksi**	**34.42**	**351**	*i* P	P	17 06 19.3	-3.0
TIXI				pmax	pmax		
	comp=Z,2.0nm,1.0s						
KMI	**Kunming**	**37.30**	**262**	P	**P**	**17 06 49.4**	**+1.7**
KMI				pP	sP	17 06 56.0	+0.9
KMI				sP	pP	17 06 59.3	+6.3
KMI				pmax	pmax		
	comp=Z,9.0nm,1.6s						
KMI				pmax	pmax		
	comp=Z,48nm,4.5s						
KMI				LR	LR		
	comp=Z,110nm,18.0s						
WMQ	**Urumqi**	**42.27**	**296**	*e*P	**P**	**17 07 30.2**	**+1.4**
WMQ				sS	S	17 14 01.3	+13
WMQ				LR	LR		
	comp=N,21nm,19.2s						
WMQ				LR	LR		
	comp=E,29nm,28.8s						
WMQ				LR	LR		
	comp=Z,11nm,21.0s						
ZAA0	**Zalesovo Array**	**42.76**	**311**	*e*P	**P**	**17 07 32.6**	**+0.2**
ZALV	**Zalesovo Beam**	**42.76**	**311**	P	**P**	**17 07 33.1**	**+0.7**
	comp=Z,1.1nm,0.7s,baz=76,slow=6.3,SNR=6.6						
ZALV				PcP	**PcP**	**17 09 23.7**	**0.0**
	comp=Z,1.2nm,0.6s,baz=98,slow=3.2,SNR=4.4						
MK01	**Makanchi Array**	**45.36**	**302**	*e*P	**P**	**17 07 53.5**	**0.0**
MK31	**Makanchi Array**	**45.36**	**302**	*e*P	**P**	**17 07 53.9**	**+0.4**
MK31	**Makanchi Array**	**45.36**	**302**	*e*P	**P**	**17 07 53.9**	**+0.4**
MKAR	**Makanchi Array**	**45.36**	**302**	P	**P**	**17 07 54.2**	**+0.8**
	comp=Z,2.5nm,0.7s,baz=85,slow=9.5,SNR=32						
MKAR	**Makanchi Array**	**45.36**	**302**	*e*P	**P**	**17 07 54.0**	**+0.5**
MAKZ	**Makanchi**	**45.57**	**302**	*e*P	**P**	**17 07 55.3**	**+0.2**
MAKZ				pmax	pmax		
	comp=Z,4.0nm,1.0s						
MAKZ	**Makanchi**	**45.57**	**302**	*e*P	**P**	**17 07 55.3**	**+0.2**
	comp=Z,3.6nm,1.0s						
KURK	**Kurchatov**	**46.94**	**308**	P	**P**	**17 08 06.7**	**+0.9**
KURK				pmax	pmax		
	comp=Z,3.0nm,0.7s						
KURK	**Kurchatov**	**46.94**	**308**	*e*P	**P**	**17 08 04.9**	**-0.9**
	comp=Z,8.2nm,0.8s						
KURBB	**Kurchatov Arra**	**47.02**	**308**	P	**P**	**17 08 06.7**	**+0.3**
	comp=Z,2.6nm,0.7s,baz=81,slow=8.0,SNR=28						
IL1	**Eielson Array**	**47.33**	**33**	*e*P	**P**	**17 08 08.9**	**+0.2**
ILAR	**Eielson Array**	**47.33**	**33**	P	**P**	**17 08 08.6**	**-0.1**
	comp=Z,1.1nm,1.0s,baz=278,slow=6.3,SNR=7.2						
KSM	**Kuching**	**47.95**	**229**	*e*P	**P**	**17 08 12.8**	**-1.2**
	comp=Z,8.7nm,0.8s						
GUN	**Gumba**	**49.21**	**276**	*e*P	**P**	**17 08 24.9**	**+0.8**
	comp=Z,21nm,0.7s						
KKN	**Kakani**	**49.74**	**276**	*e*P	**P**	**17 08 28.8**	**+0.8**
DMN	**Daman**	**49.96**	**276**	*e*P	**P**	**17 08 30.1**	**+0.4**
GKN	**Gorkha**	**50.14**	**277**	*e*P	**P**	**17 08 31.7**	**+0.7**
	comp=Z,35nm,1.2s						
TKM2	**Tokmak 2**	**51.00**	**298**	*e*P	**P**	**17 08 37.1**	**-0.2**
TKM2				pmax	pmax		
	comp=Z,9.0nm,0.8s						
TKM2	**Tokmak 2**	**51.00**	**298**	*e*P	**P**	**17 08 37.1**	**-0.2**
	comp=Z,9.4nm,0.8s						
KOLN	**Koldanda**	**51.06**	**277**	*e*P	**P**	**17 08 38.6**	**+0.6**
	comp=Z,12nm,1.1s						
PYUN	**Piuthan**	**51.38**	**278**	*e*P	**P**	**17 08 41.6**	**+1.2**
BRVK	**Borovoye**	**51.46**	**312**	*i* P	**P**	**17 08 40.2**	**-0.2**
BRVK				pmax	pmax		
	comp=Z,4.0nm,1.7s						
AAK	**Ala-Archa**	**51.86**	**298**	*e*P	**P**	**17 08 44.1**	**+0.4**
AAK				pmax	pmax		
	comp=Z,4.0nm,1.0s						
ZRNK	**Zerenda**	**52.23**	**312**	*e*P	**P**	**17 08 46.7**	**+0.6**
ZRNK				pmax	pmax		
	comp=Z,3.0nm,0.8s						
ZRNK	**Zerenda**	**52.23**	**312**	*e*P	**P**	**17 08 46.7**	**+0.6**
	comp=Z,3.3nm,0.8s						
INK	**Inuvik**	**52.34**	**28**	P	**P**	**17 08 47.4**	**+0.7**
	comp=Z,0.5nm,0.3s,baz=271,slow=4.5,SNR=3.6						
ARU	**Arti**	**56.93**	**319**	*d* P	**P**	**17 09 20.8**	**+0.6**
ARU						17 11 21.7	
ARU				S	**S**	**17 17 14.1**	**+1.0**
ARU				SS	**SS**	**17 21 00.5**	**-0.4**
ARU				pmax	pmax		
	comp=Z,17nm,1.7s						
ARU	**Arti**	**56.93**	**319**	*e*P	**P**	**17 09 20.8**	**+0.6**
	comp=Z,8.3nm,0.9s						
WRA	**Warramunga Arr**	**58.57**	**191**	P	**P**	**17 09 30.5**	**-1.5**
	comp=Z,2.8nm,0.9s,baz=8.9,slow=7.0,SNR=10						
ABKAR	**Akbulak array**	**58.85**	**310**	*e*P	**P**	**17 09 34.0**	**+0.2**
YKA	**Yellowknife Ar**	**61.69**	**31**	P	**P**	**17 09 51.8**	**-1.2**
	comp=Z,0.8nm,0.9s,baz=299,slow=6.8,SNR=8.0						
ASAR	**Alice Springs**	**62.29**	**191**	P	**P**	**17 09 56.4**	**-1.1**
	comp=Z,0.6nm,0.8s,baz=14

*JMA **07** 17:11:33.7±0.2, 37.°09N×142.°30E, h6km±3km, M3.5*
ISC 07 17:11:32.0±1.8, 37.°10N±0.°09×142.°5E±0.°1, h9km, n10, σ1§92/13, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.35**	**282**	P	**Pn**	**17 11 55.8**	**-1.3**
JMM	**Marumori**	**1.58**	**299**	P	**Pn**	**17 11 59.7**	**-0.5**
JMM				S	**Sn**	**17 12 18.5**	**-2.3**
JHO	**Hitachi**	**1.65**	**253**	P	**Pn**	**17 12 00.6**	**-0.6**
JHO				S	**Sn**	**17 12 19.8**	**-2.7**
JFT	**Otama**	**1.80**	**284**	P	**Pn**	**17 12 03.2**	**-0.1**
MJAR	**Matsushiro Arr**	**3.51**	**262**	Pn	**Pn**	**17 12 28.7**	**+1.9**
	2.2nm,0.3s,baz=90,slow=16,SNR=6.9						
MJAR				Sn	**Sn**	**17 13 10.4**	**+1.8**
	0.9nm,0.3s,baz=105,slow=20,SNR=4.3						
MAT	**Matsushiro**	**3.51**	**262**	P	**Pn**	**17 12 28.4**	**+1.5**
MAT				S	**Sn**	**17 13 09.9**	**+1.3**
JHJ	**Hachijo jima 2**	**4.56**	**210**	Sn	**Sn**	**17 13 31.2**	**-3.2**
	8.2nm,0.3s,baz=255,slow=20,SNR=2.5						
ASAJ	**Asahikawa**	**7.01**	**0**	Pn	Pn	17 13 18.8	+3.9
	0.3nm,0.3s,baz=169,slow=16,SNR=3.7						
MKAR	**Makanchi Array**	**44.84**	**302**	P	**P**	**17 19 46.6**	**+0.2**
	0.3nm,0.7s,baz=90,slow=9.1,SNR=3.3						
ASAR	**Alice Springs**	**60.98**	**189**	P	**P**	**17 21 46.7**	**+1.0**
	0.3nm,0.8s,baz=14,slow=5.8,SNR=3.3						

*CRAAG **07** 17:12:47.9, 36.°93N×2.°70E, MI3.6*
*ISCJB **07** 17:12:48.9±0.6, 36.°99N±0.°04×2.°64E±0.°05, h14km, Error ellipse: s-maj=6.4km s-min=4.9km az=158.9*
*CSEM **07** 17:12:49.0±0.3, 36.°94N×2.°66E, h2km, mb3.9, Error ellipse: s-maj=8.7km s-min=7.3km az=55.0*
*MDD **07** 17:12:50.3±0.6, 36.°89N×2.°82E, h20km±19km, mb3.9/3, Error ellipse: s-maj=23.2km s-min=8.0km az=111.0, PRXIMO*
ISC 07 17:12:48.7±0.9, 36.°88N±0.°04×2.°73E±0.°03, h14km, n34, σ1§42/41, Northern Algeria

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ABA	**Alger-Bouzarea**	**0.26**	**107**	P	**Pb**	**17 12 54.9**	**-0.2**
ABA	**Alger-Bouzarea**	**0.26**	**107**	Pg	**Pb**	**17 12 54.9**	**-0.2**
ABA	**Alger-Bouzarea**	**0.26**	**107**	P	**Pb**	**17 12 54.9**	**-0.2**
EMHD	**Djebel Mahouad**	**0.70**	**165**	P	**Pb**	**17 13 03.4**	**+0.7**
EMHD	**Djebel Mahouad**	**0.70**	**165**	Pg	**Pb**	**17 13 03.4**	**+0.7**
EMHD	**Djebel Mahouad**	**0.70**	**165**	P	**Pb**	**17 13 03.4**	**+0.7**
EBNR	**Beni Rached**	**1.13**	**239**	P	**Pg**	**17 13 11.0**	**+0.6**
EBNR	**Beni Rached**	**1.13**	**239**	P	**Pg**	**17 13 11.0**	**+0.6**
ECHA	**Ech Chlef**	**1.31**	**237**	P	**Pn**	**17 13 12.0**	**-0.6**
ECHA	**Ech Chlef**	**1.31**	**237**	P	**Pn**	**17 13 12.0**	**-0.6**
ECHF	**Ech Chlef**	**1.33**	**238**	Pn	**Pn**	**17 13 12.0**	**-0.8**
ATAF	**Djebel Tarf**	**1.60**	**128**	P	**Pg**	**17 13 21.0**	**+1.5**
ATAF	**Djebel Tarf**	**1.60**	**128**	Pn	**Pg**	**17 13 21.0**	**+1.5**
ATAF	**Djebel Tarf**	**1.60**	**128**	Pn	**Pg**	**17 13 21.0**	**+1.5**
EANR	**'Ain N'Sour**	**1.61**	**235**	P	**Pb**	**17 13 18.7**	**+0.6**
EANR	**'Ain N'Sour**	**1.61**	**235**	Pn	**Pb**	**17 13 18.7**	**+0.6**
EANR	**'Ain N'Sour**	**1.61**	**235**	P	**Pb**	**17 13 18.7**	**+0.6**
ETRT	**Tiaret**	**1.88**	**218**	P	**Pn**	**17 13 19.3**	**-1.2**
ETRT	**Tiaret**	**1.88**	**218**	Pn	**Pn**	**17 13 19.3**	**-1.2**
ETRT	**Tiaret**	**1.88**	**218**	P	**Pn**	**17 13 19.3**	**-1.2**
EIBI	**Ibiza**	**2.41**	**333**	Pn	**Pn**	**17 13 28.1**	**+0.4**
	31nm,0.9s,SNR=10						
EIBI				Sn	**Sn**	**17 13 54.7**	**-2.3**
	7.5nm,0.2s,SNR=7.9						
EIBI	**Ibiza**	**2.41**	**333**	Pn	**Pn**	**17 13 28.1**	**+0.4**
	31nm,0.9s,SNR=10						
ETOS	**Mallorca**	**2.89**	**1**	Pn	**Pn**	**17 13 34.6**	**+0.3**
	11nm,0.5s,SNR=10						
ETOS				Sn	**Sn**	**17 14 05.8**	**-3.0**
	1.3nm,0.2s,SNR=7.9						
ETOS	**Mallorca**	**2.89**	**1**	Pn	**Pn**	**17 13 34.6**	**+0.3**
	11nm,0.5s,SNR=10						
EMUR	**La Murta**	**3.31**	**288**	Pn	**Pn**	**17 13 41.2**	**+1.2**
	0.4nm,0.2s,SNR=7.9						
EMUR				Sn	**Sn**	**17 14 18.0**	**-1.1**
	0.7nm,0.2s,SNR=7.9						
EMUR	**La Murta**	**3.31**	**288**	Pn	**Pn**	**17 13 41.2**	**+1.2**
	0.4nm,0.2s,SNR=7.9						
EMUR				Sn	**Sn**	**17 14 18.0**	**-1.1**
	0.7nm,0.2s,SNR=7.9						
ETOB	**Tobarra**	**3.82**	**299**	Pn	**Pn**	**17 13 48.8**	**+1.6**
	1.0nm,0.2s,SNR=5.9						
ETOB				Sn	**Sn**	**17 14 30.1**	**-1.8**
	4.0nm,0.4s,SNR=7.1						
ETOB	**Tobarra**	**3.82**	**299**	Pn	**Pn**	**17 13 48.8**	**+1.6**
	1.0nm,0.2s,SNR=5.9						
EMOS	**Mosqueruela**	**4.29**	**325**	Pn	**Pn**	**17 13 54.5**	**+0.8**
	12nm,0.9s,SNR=16						
EMOS				Sn	**Sn**	**17 14 40.1**	**-3.5**
	1.1nm,0.2s,SNR=7.9						
EMOS	**Mosqueruela**	**4.29**	**325**	Pn	**Pn**	**17 13 54.5**	**+0.8**
	12nm,0.9s,SNR=16						
EQES	**Quesada**	**4.71**	**283**	Pn	**Pn**	**17 14 01.8**	**+2.3**
	0.5nm,0.2s,SNR=7.9						
EQES				Sn	**Sn**	**17 14 51.4**	**-2.6**
	0.5nm,0.2s,SNR=7.9						
EQES	**Quesada**	**4.71**	**283**	Pn	**Pn**	**17 14 01.8**	**+2.3**
	0.5nm,0.2s,SNR=7.9						
CFON	**Fontmartina**	**4.88**	**357**	Pn	**Pn**	**17 14 02.4**	**+0.6**
	0.8nm,0.2s,SNR=7.9						
CFON	**Fontmartina**	**4.88**	**357**	Pn	**Pn**	**17 14 02.4**	**+0.6**
	0.8nm,0.2s,SNR=7.9						

*IDC **07** 17:13:11.0±0.7, 38.°34N×144.°63E, h0km, mb4.0/19, mb1 4.1/23, mb1mx4.0/47, mbtmp4.0/23, ML4.0/3, MS3.0/13, Ms1 3.0/13, ms1mx2.8/54, Error ellipse: s-maj=16.9km s-min=14.2km az=133.0*
*ISCJB **07** 17:13:14.2±0.3, 38.°46N±0.°03×144.°43E±0.°03, h29km, mb4.2/50, MS3.3/7, Error ellipse: s-maj=5.1km s-min=2.9km az=164.7*
*JMA **07** 17:13:14.6±0.2, 38.°45N×144.°41E, h41km, M4.6*
*MOS **07** 17:13:15.6±1.1, 38.°70N×144.°49E, h33km, mb4.3/24, Error ellipse: s-maj=10.1km s-min=6.7km az=95.1*
*NEIC **07** 17:13:16.5±1.8, 38.°40N×144.°54E, h34km±13km, mb4.4/24, Error ellipse: s-maj=8.0km s-min=5.2km az=143.0*
ISC 07 17:13:15.8±0.6, 38.°50N±0.°05×144.°53E±0.°05, h29km, n131, σ1§48/148, mb4.3/50, MS3.3/9, 5C-1D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.31**	**286**	P	**Pn**	**17 13 50.4**	**-1.4**
OFUJ				S	**Sn**	**17 14 17.2**	**-2.1**
JIO	**Ouri**	**2.49**	**270**	S	**Sn**	**17 14 20.4**	**-3.4**
JTH	**Tanohata**	**2.52**	**306**	P	**Pn**	**17 13 53.2**	**-1.6**
JMK	**Ichinoseki**	**2.63**	**281**	P	**Pn**	**17 13 55.0**	**-1.2**
JMK				S	**Sn**	**17 14 25.3**	**-1.8**
JOM	**Ohasama**	**2.70**	**292**	P	**Pn**	**17 13 56.4**	**-0.9**
JOM				S	**Sn**	**17 14 27.3**	**-1.7**
JANG	**Nango**	**2.99**	**310**	P	**Pn**	**17 14 00.0**	**-1.3**
JMM	**Marumori**	**3.01**	**259**	P	**Pn**	**17 13 59.6**	**-1.9**
JMM				S	**Sn**	**17 14 32.9**	**-3.6**
JOU	**Okura**	**3.04**	**269**	P	**Pn**	**17 14 01.0**	**-0.9**
JOU				S	**Sn**	**17 14 35.0**	**-2.3**
JFK	**Kawauchi**	**3.10**	**250**	P	**Pn**	**17 14 00.5**	**-2.3**
JYK	**Kaneyama**	**3.29**	**279**	P	**Pn**	**17 14 04.5**	**-0.8**
JYK				S	**Sn**	**17 14 42.2**	**-1.2**
JFT	**Otama**	**3.45**	**255**	P	**Pn**	**17 14 06.8**	**-0.8**
JFT				S	**Sn**	**17 14 45.2**	**-2.3**
JTM	**Tenmabayashi**	**3.52**	**312**	P	**Pn**	**17 14 07.5**	**-0.9**
JTM				S	**Sn**	**17 14 46.5**	**-2.5**
ERM	**Erimo**	**3.67**	**344**	*e*P	**Pn**	**17 14 10.1**	**-0.4**
ERM	**Erimo**	**3.67**	**344**	*e*Pn	**Pn**	**17 14 10.8**	**+0.2**
ERM				*e*Sn	Sn	17 14 45.1	-7.6
JNBK	**Urakawa-nobuka**	**4.01**	**341**	P	**Pn**	**17 14 14.9**	**-0.4**
JNBK				S	**Sn**	**17 14 59.1**	**-2.2**
JKB	**Kayabe**	**4.32**	**323**	P	**Pn**	**17 14 20.2**	**+0.8**
MJAR	**Matsushiro Arr**	**5.39**	**251**	Pn	**Pn**	**17 14 34.0**	**-0.2**
	3.6nm,0.3s,baz=184,slow=8.5,SNR=16						
MJAR				Sn	**Sn**	**17 15 36.0**	**+0.8**
	1.0nm,0.3s,baz=298,slow=23,SNR=2.7						
MJAR				LR	LR	17 16 56.5	
	comp=Z,140nm,19.6s,baz=85,slow=42						
MAJO	**Matsushiro**	**5.39**	**251**	*e*P	**Pn**	**17 14 33.7**	**-0.5**
MAJO	**Matsushiro**	**5.39**	**251**	*e*Pn	**Pn**	**17 14 33.8**	**-0.4**
MAT	**Matsushiro**	**5.39**	**251**	P	**Pn**	**17 14 33.8**	**-0.4**
MAT				S	**Sn**	**17 15 33.8**	**-1.5**
MJB9	**Matsu-Tunnel**	**5.39**	**251**	*e*Pn	**Pn**	**17 14 34.2**	**0.0**
YUK	**Yuzh-Kuril'sk**	**5.62**	**10**	⇑*i*P	**Pn**	**17 14 34.8**	**-2.6**
YUK				*i* S	**Sn**	**17 15 36.1**	**-4.9**
YUK				pmax	pmax		
	comp=E,76nm,0.5s						
YUK				pmax	pmax		
	comp=Z,114nm,0.5s						
YUK				pmax	pmax		
	comp=N,49nm,0.1s						
SHO	**Shikotan**	**5.64**	**17**	⇑*i*P	Pn	17 14 34.0	-3.6
SHO				*i* S	Sn	17 15 34.7	-6.7
SHO				pmax	pmax		
	comp=N,64nm,0.7s						
SHO				pmax	pmax		
	comp=E,49nm,0.7s						
SHO				pmax	pmax		
	comp=Z,148nm,0.7s						
ASAJ	**Asahikawa**	**5.80**	**346**	Pn	**Pn**	**17 14 39.1**	**-0.7**
	comp=Z,2.7nm,0.3s,baz=186,slow=16,SNR=36						
ASAJ				Sn	**Sn**	**17 15 42.0**	**-3.3**
	comp=Z,0.9nm,0.3s,baz=252,slow=20,SNR=4.4						
ASAJ				LR	LR	17 16 43.2	
	comp=Z,88nm,21.4s,baz=191,slow=36						
JHJ2	**Mitsune**	**6.59**	**217**	*e*Pn	**Pn**	**17 14 49.0**	**-1.7**
JHJ2				*e*Sn	Sn	17 15 56.3	-8.6
JHJ	**Hachijo jima 2**	**6.60**	**217**	Pn	**Pn**	**17 14 49.0**	**-1.9**
	comp=Z,16nm,0.3s,baz=73,slow=17,SNR=5.2						
JHJ				Sn	Sn	17 15 56.0	-9.2
	comp=Z,19nm,0.3s,baz=76,slow=19,SNR=3.8						
JHJ				LR	LR	17 17 14.9	
	comp=Z,36nm,21.5s,baz=356,slow=37						
INU	**Inuyama**	**6.79**	**245**	*e*Pn	**Pn**	**17 14 53.4**	**0.0**
KUR	**Kuril'sk**	**7.18**	**19**	⇑*i*P	**Pn**	**17 14 56.2**	**-2.5**
KUR				*i* S	Sn	17 16 13.4	-5.8
KUR				pmax	pmax		
	comp=Z,31nm,0.4s						
KUR				pmax	pmax		
	comp=E,20nm,0.2s						
KUR				pmax	pmax		
	comp=N,28nm,0.1s						
USRK	**Ussuriysk Ar.**	**11.01**	**305**	Pn	**Pn**	**17 15 52.4**	**+1.2**
	comp=N,0.3nm,0.3s,baz=113,slow=11,SNR=5.5						
USRK				LR	LR	17 19 53.5	
	comp=N,131nm,19.0s,baz=134,slow=36						
JNU	**Nakatsue**	**12.30**	**248**	LR	LR	17 21 06.8	
	comp=N,103nm,19.8s,baz=122,slow=39						
KSRS	**Korea Array**	**13.14**	**271**	Pn	Pn	17 16 23.9	+3.5
	comp=N,0.1nm,0.3s,baz=85,slow=14,SNR=3.1						
KSRS				LR	LR	17 21 05.3	
	comp=N,85nm,19.5s,baz=60,slow=36						
KSAR	**Wonju Array Be**	**13.18**	**271**	P	Pn	17 16 23.9	+3.0
KSAR	**Wonju Array Be**	**13.18**	**271**	Pn	Pn	17 16 23.9	+3.0
KLR	**Kul'dur**	**14.12**	**324**	LR	LR	17 22 09.1	
	comp=N,55nm,20.6s,baz=148,slow=38						
KLR	**Kul'dur**	**14.12**	**324**	*e*P	**Pn**	**17 16 31.7**	**-2.0**
CN2	**Changchun**	**15.31**	**296**	*e*P	**Pn**	**17 16 50.7**	**+1.0**
PEA0	**Petropavlovsk-**	**17.22**	**28**	*e*Pn	**P**	**17 17 14.9**	**-0.4**
PETK	**Petropavlovsk-**	**17.22**	**28**	P	**P**	**17 17 16.7**	**+1.4**
	comp=N,0.2nm,0.3s,baz=206,slow=9.9,SNR=5.7						
PETK				LR	LR	17 23 55.4	
	comp=N,14nm,21.8s,baz=259,slow=37						
PEA1	**Petropavlovsk-**	**17.22**	**28**	*e*Pn	**P**	**17 17 16.7**	**+1.4**
BJI	**Beijing**	**21.97**	**283**	P	**P**	**17 18 06.7**	**-0.5**
BJI				pmax	pmax		
	comp=Z,4.0nm,0.7s						
GUMO	**Guam**	**24.81**	**179**	LR	LR	17 28 17.4	
	comp=Z,16nm,19.0s,baz=134,slow=37						
SEY	**Seymchan**	**24.93**	**9**	P	**P**	**17 18 38.0**	**+1.8**
	comp=Z,13nm,0.7s,baz=190,slow=8.4,SNR=44						
SEY	**Seymchan**	**24.93**	**9**	*i* P	**P**	**17 18 36.9**	**+0.8**
YAK	**Yakutsk**	**25.27**	**344**	P	**P**	**17 18 40.1**	**+0.9**
	comp=Z,9.8nm,0.6s,baz=224,slow=2.9,SNR=9.1						
YAK				LR	LR	17 30 13.7	
	comp=Z,29nm,18.4s,baz=163,slow=40						
YAK	**Yakutsk**	**25.27**	**344**	*e*P	**P**	**17 18 39.2**	**0.0**
YAK				*e**PP	**sP**	**17 18 53.4**	**+2.2**
YAK				*e*		17 19 19.8	
YAK				*e*		17 22 10.2	
YAK				*e*S	**S**	**17 23 01.3**	**-1.6**
YAK				*e*SS	**SnSn**	**17 24 02.5**	**+7.4**
YAK				*e*		17 29 33.2	
YAK				pmax	pmax		
	comp=Z,10.0nm,0.9s						
YAK				pmax	pmax		
	comp=N,6.0nm,1.1s						
YAK				pmax	pmax		
	comp=Z,50nm,3.5s						
YAK				pmax	pmax		
	comp=N,72nm,4.9s						
YAK				pmax	pmax		
	comp=E,30nm,3.0s						
YAK				smax	smax		
	comp=N,38nm,3.0s						
YAK				smax	smax		
	comp=E,45nm,3.5s						
YAK	**Yakutsk**	**25.27**	**344**	*e*P	**P**	**17 18 39.3**	**0.0**
	comp=E,11nm,0.7s						
HHC	**Hu-ho-hao-te**	**25.40**	**286**	*e*P	**P**	**17 18 41.0**	**+0.3**
HHC				pP	pP	17 18 50.3	+1.2
HHC				sP	sP	17 18 54.4	+1.7
HHC				S	**S**	**17 23 02.8**	**-2.8**
HHC				pmax	pmax		
	comp=Z,40nm,0.7s						
HHC				pmax	pmax		
	comp=Z,240nm,4.0s						
HHC				LR	LR		
	comp=N,360nm,12.5s						
HHC				LR	LR		
	comp=E,400nm,13.2s						
HHC				LR	LR		
	comp=Z,420nm,12.7s						
BOD	**Bodaibo**	**27.70**	**324**	*e*P	**P**	**17 19 01.1**	**-0.1**
BOD				pmax	pmax		
	comp=Z,3.0nm,1.7s						
SONA1	**Songino Array**	**29.08**	**301**	*e*P	**P**	**17 19 13.7**	**0.0**
SONA0	**Songino Array**	**29.08**	**301**	*e*P	**P**	**17 19 15.8**	**+2.1**
	comp=Z,11nm,2.0s						
SONM	**Songino Array**	**29.08**	**301**	P	**P**	**17 19 15.8**	**+2.1**
	comp=Z,0.6nm,0.7s,baz=94,slow=7.3,SNR=3.2						
SONM				LR	LR	17 31 16.0	
	comp=Z,56nm,20.3s,baz=86,slow=37						
ENH	**Enshi**	**29.92**	**265**	*e*P	**P**	**17 19 23.0**	**+1.8**
	comp=Z,5.2nm,0.8s						
CD2	**Chengdu**	**34.14**	**270**	P	**P**	**17 19 57.5**	**-0.8**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
TIXI	**Tiksi**	**34.18**	**351**	*i* P	**P**	**17 19 56.1**	**-1.9**
TIXI				pmax	pmax		
	comp=Z,1.0nm,0.8s						
TIXI	**Tiksi**	**34.18**	**351**	*e*P	**P**	**17 19 57.2**	**-0.8**
	comp=Z,1.7nm,0.8s						
GTA	**Gaotai**	**34.52**	**286**	*e*P	**P**	**17 20 04.1**	**+2.6**
GTA				pP	sP	17 20 14.7	+1.1
GTA				sP	pP	17 20 18.5	+8.4
GTA				PcP	**PcP**	**17 22 37.3**	**+1.2**
GTA				S	**S**	**17 25 30.7**	**+2.2**
GTA				sS	sS	17 25 46.1	+3.5
GTA				SS	**SnSn**	**17 27 42.2**	**+1.6**
GTA				pmax	pmax		
	comp=Z,2.0nm,1.1s						
GTA				pmax	pmax		
	comp=Z,90nm,6.7s						
GTA				LR	LR		
	comp=N,77nm,17.6s						
GTA				LR	LR		
	comp=E,140nm,17.6s						
GTA				LR	LR		
	comp=Z,110nm,17.6s						
KMI	**Kunming**	**37.62**	**262**	P	**P**	**17 20 27.0**	**-1.3**
KMI				pP	pP	17 20 37.4	+0.5
KMI				sP	sP	17 20 41.2	+0.8
KMI				pmax	pmax		
	comp=Z,11nm,0.9s						
KMI				pmax	pmax		
	comp=Z,83nm,5.5s						
KMI				LR	LR		
	comp=N,48nm,9.9s						
KMI				LR	LR		
	comp=E,72nm,12.2s						
KMI				LR	LR		
	comp=Z,83nm,26.2s						
WMQ	**Urumqi**	**42.40**	**296**	*e*P	**P**	**17 21 10.0**	**+2.4**
WMQ				S	**S**	**17 27 24.9**	**-2.4**
WMQ				sS	sS	17 27 40.2	-1.4
WMQ				LR	LR		
	comp=E,17nm,39.8s						
WMQ				LR	LR		
	comp=Z,16nm,31.8s						
ZAA1	**Zalesovo Array**	**42.78**	**311**	*e*P	**P**	**17 21 10.8**	**+0.3**
ZAA1				*e*PcP	**PcP**	**17 23 01.7**	**+0.3**
ZALV	**Zalesovo Beam**	**42.78**	**311**	P	**P**	**17 21 10.8**	**+0.3**
	comp=Z,0.4nm,0.5s,baz=88,slow=5.5,SNR=3.5						
ZALV				PcP	**PcP**	**17 23 01.7**	**+0.3**
	comp=Z,1.7nm,0.6s,baz=96,slow=3.3,SNR=7.9						
NRIK	**Noril'sk**	**43.00**	**334**	LR	LR	17 39 56.3	
	comp=Z,60nm,21.7s,baz=112,slow=37						
KDAK	**Kodiak Island**	**44.36**	**43**	*i* P	**P**	**17 21 23.1**	**0.0**
KDAK	**Kodiak Island**	**44.36**	**43**	*e*P	**P**	**17 21 22.6**	**-0.5**
	comp=Z,12nm,0.9s						
MLY	**Manley**	**45.30**	**33**	*e*P	**P**	**17 21 31.5**	**+0.9**
	comp=Z,17nm,2.0s						
MK01	**Makanchi Array**	**45.45**	**301**	*e*P	**P**	**17 21 32.5**	**+0.5**
MK31	**Makanchi Array**	**45.45**	**301**	*e*P	**P**	**17 21 31.8**	**-0.2**
MK31	**Makanchi Array**	**45.45**	**301**	*e*P	**P**	**17 21 31.8**	**-0.2**
MK32	**Makanchi Array**	**45.45**	**301**	*e*P	**P**	**17 21 32.3**	**+0.3**
MKAR	**Makanchi Array**	**45.45**	**301**	P	**P**	**17 21 32.3**	**+0.3**
	comp=Z,1.3nm,0.9s,baz=78,slow=9.3,SNR=8.9						
MKAR				LR	LR	17 41 03.5	
	comp=Z,34nm,20.8s,baz=54,slow=37						
MKAR	**Makanchi Array**	**45.45**	**301**	*e*P	**P**	**17 21 32.7**	**+0.7**
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.9s						
MKAR	**Makanchi Array**	**45.45**	**301**	*e*P	**P**	**17 21 31.8**	**-0.2**
IL1	**Eielson Array**	**46.93**	**33**	*e*P	**P**	**17 21 43.3**	**-0.1**
ILAR	**Eielson Array**	**46.93**	**33**	P	**P**	**17 21 43.3**	**-0.1**
	comp=Z,1.8nm,0.9s,baz=260,slow=6.3,SNR=16						
ILB	**Eielson Array**	**46.93**	**33**	*e*P	**P**	**17 21 43.3**	**-0.1**
KURK	**Kurchatov**	**46.99**	**307**	*e*P	**P**	**17 21 44.5**	**+0.5**
KURK				pmax	pmax		
	comp=Z,3.0nm,0.8s						
KURK	**Kurchatov**	**46.99**	**307**	*e*P	**P**	**17 21 44.5**	**+0.5**
	comp=Z,3.4nm,0.8s						
BVAR	**Borovoye Array**	**51.42**	**312**	P	**P**	**17 22 18.8**	**+0.8**
	comp=Z,1.4nm,0.7s,baz=58,slow=8.7,SNR=10						
BVAR				PcP	**PcP**	**17 23 32.4**	**+0.3**
	comp=Z,0.8nm,0.6s,baz=58,slow=3.8,SNR=3.9						
BRVK	**Borovoye**	**51.48**	**312**	*i* P	**P**	**17 22 17.3**	**-1.0**
BRVK				pmax	pmax		
	comp=Z,7.0nm,2.5s						
BRVK	**Borovoye**	**51.48**	**312**	*e*P	**P**	**17 22 18.9**	**+0.6**
	comp=Z,2.2nm,0.8s						
INK	**Inuvik**	**51.95**	**28**	P	**P**	**17 22 22.2**	**+0.6**
	comp=Z,1.4nm,0.6s,baz=286,slow=5.0,SNR=10.0						
INK	**Inuvik**	**51.95**	**28**	P	**P**	**17 22 22.2**	**+0.6**
INK				pmax	pmax		
	comp=Z,2.0nm,0.8s						
INK	**Inuvik**	**51.95**	**28**	*e*P	**P**	**17 22 22.4**	**+0.8**
	comp=Z,4.1nm,1.1s						
ZRNK	**Zerenda**	**52.25**	**312**	*e*P	**P**	**17 22 24.6**	**+0.5**
ZRNK				pmax	pmax		
	comp=Z,3.0nm,0.9s						
ZRNK	**Zerenda**	**52.25**	**312**	*e*P	**P**	**17 22 24.6**	**+0.5**
	comp=Z,2.8nm,0.9s						
ARU	**Arti**	**56.90**	**319**	*d i*P	**P**	**17 22 57.5**	**-0.2**
ARU						17 25 00.8	
ARU				S	**S**	**17 30 49.9**	**+0.5**
ARU				SS	**SS**	**17 34 36.5**	**-0.8**
ARU				pmax	pmax		
	comp=Z,6.0nm,1.2s						
ABKAR	**Akbulak array**	**58.88**	**310**	*e*P	**P**	**17 23 12.2**	**+0.5**
WR1	**Warramunga Arr**	**58.91**	**191**	*e*P	**P**	**17 23 10.3**	**-1.9**
	comp=Z,32nm,1.9s						
WRA	**Warramunga Arr**	**58.91**	**191**	P	**P**	**17 23 10.3**	**-1.9**
	comp=Z,1.7nm,0.7s,baz=12,slow=7.5,SNR=13						
AKTO	**Aktyubinsk**	**59.53**	**312**	P	**P**	**17 23 18.5**	**+2.2**
	comp=Z,1.5nm,0.6s,baz=102,slow=11,SNR=7.0						
YKA	**Yellowknife Ar**	**61.29**	**31**	P	**P**	**17 23 28.1**	**0.0**
	comp=Z,1.0nm,0.7s,baz=300,slow=6.5,SNR=16						
YKB5	**Yellowknife Ar**	**61.29**	**31**	*e*P	**P**	**17 23 27.2**	**-0.8**
ASAR	**Alice Springs**	**62.63**	**191**	P	**P**	**17 23 36.1**	**-1.4**
	comp=Z,0.6nm,0.8s,baz=8.9,slow=6.6,SNR=6.8						
KLMR	**Klimovskoe**	**63.83**	**328**	*e*P	P	17 23 41.1	-3.9
KLMR				*e*		17 24 18.4	
KLMR				pmax	pmax		
	comp=Z,6.0nm,1.2s						
GEYT	**Alibeck**	**65.27**	**300**	P	**P**	**17 23 55.8**	**+0.8**
	comp=Z,1.0nm,0.7s,baz=18,slow=5.2,SNR=3.7						
NEW	**Newport**	**67.35**	**46**	*e*P	**P**	**17 24 08.9**	**+0.8**
NEW				pmax	pmax		
	comp=Z,5.0nm,0.9s						
NEW	**Newport**	**67.35**	**46**	*e*P	**P**	**17 24 08.9**	**+0.8**
	comp=Z,4.7nm,0.9s						
FIA0	**FINESS Array S**	**68.65**	**333**	*e*P	**P**	**17 24 16.3**	**+0.4**
FIA0	**FINESS Array S**	**68.65**	**333**	*e*P	**P**	**17 24 16.2**	**+0.4**
FINES	**FINESS Array B**	**68.65**	**333**	P	**P**	**17 24 16.2**	**+0.4**
	comp=Z,2.1nm,0.7s,baz=29,slow=8.7,SNR=8.8						
FINES	**FINESS Array B**	**68.65**	**333**	*i* P	**P**	**17 24 16.5**	**+0.6**
FINES				pmax	pmax		
	comp=Z,2.0nm,0.7s						
LRM	**Limekiln Ridge**	**71.37**	**46**	*e*P	**P**	**17 24 34.0**	**+0.8**
EGMT	**Eagleton**	**71.53**	**43**	*e*P	**P**	**17 24 34.8**	**+0.9**
	comp=Z,4.3nm,0.8s						
NV01	**Mina Array Sit**	**72.13**	**55**	*e*P	**P**	**17 24 38.7**	**+0.8**
NVAR	**Mina Array Bea**	**72.13**	**55**	P	**P**	**17 24 39.0**	**+1.0**
	comp=Z,1.8nm,0.8s,baz=283,slow=6.2,SNR=14						
H17A

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TTSI	**Tana Toraja**	**1.14**	**245**	P	**Pn**	**17 14 14.8**	**+0.7**
SPSI	**Sidrap Palu**	**1.77**	**218**	P	**Pn**	**17 14 22.0**	**-0.6**
KAPI	**Kappang**	**2.67**	**204**	Pn	**Pn**	**17 14 34.8**	**-0.3**
	3.0nm,0.3s,baz=27,slow=6.2,SNR=18						
KAPI				Lg	Lg	17 15 13.9	
	2.6nm,0.3s,baz=194,slow=21,SNR=13						
KAPI				LR	LR	17 15 14.8	
	comp=Z,70nm,18.2s,baz=24,slow=30						
WRA	**Warramunga Arr**	**21.72**	**144**	P	**P**	**17 18 41.7**	**+0.3**
	0.6nm,0.8s,baz=321,slow=11,SNR=5.1						
ASAR	**Alice Springs**	**24.49**	**150**	P	**P**	**17 19 08.8**	**-0.1**
	0.3nm,0.7s,baz=338,slow=11,SNR=7.4						
ASAR				PcP	**PcP**	**17 22 46.3**	**-0.2**
	0.3nm,0.7s,baz=328,slow=1.5,SNR=5.9						
STKA	**Stephens Creek**	**35.10**	**148**	P	**P**	**17 20 43.4**	**+0.7**
	1.3nm,0.6s,baz=333,slow=6.8,SNR=5.7						
JHJ	**Hachijo jima 2**	**39.74**	**25**	LR	LR	17 38 14.5	
	comp=Z,51nm,18.7s,baz=7.5,slow=37						
MKAR	**Makanchi Array**	**59.71**	**330**	P	**P**	**17 23 53.0**	**-0.6**
	0.3nm,0.6s,baz=137,slow=8.5,SNR=3.8						

*ISK **07** 17:16:10.4, 37.°51N×36.°47E, h8km, MD2.9*
*ISCJB **07** 17:16:11.4±0.5, 37.°54N±0.°03×36.°48E±0.°03, h7km±4km, Error ellipse: s-maj=5.0km s-min=3.5km az=8.2*
*DDA **07** 17:16:11.3, 37.°52N×36.°50E, h9km, Md2.9*
*CSEM **07** 17:16:11.5±0.2, 37.°56N×36.°46E, h8km, MD2.9, Error ellipse: s-maj=6.6km s-min=4.7km az=167.0*

ISC 07 17:16:11.5±0.8, 37.°53N±0.°03×36.°48E±0.°02, h11km±6km, n34, σ0.82/55, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ANDN	**Andirin**	**0.12**	**295**	P	**Pg**	**17 16 14.3**	**-0.3**
ANDN				S	**Sg**	**17 16 17.4**	**+0.6**
ANDN	**Andirin**	**0.12**	**295**	*i* P	**Pg**	**17 16 14.3**	**-0.3**
ANDN				*i* S	**Sg**	**17 16 17.4**	**+0.6**
KMRS	**Kahramanmaras**	**0.34**	**94**	*e*PG	**Pg**	**17 16 17.8**	**-0.4**
KMRS				*e*SG	**Sg**	**17 16 23.0**	**+0.2**
KMRS	**Kahramanmaras**	**0.34**	**94**	*e*Pg	**Pg**	**17 16 17.8**	**-0.4**
KMRS				*e*Sg	**Sg**	**17 16 23.0**	**+0.2**
KAMA	**Osmaniye**	**0.38**	**156**	*i* P	**Pg**	**17 16 18.5**	**-0.5**
KAMA				*i* S	**Sg**	**17 16 23.9**	**-0.1**
HCB	**Kahramanmara¯**	**0.39**	**119**	*i* P	**Pg**	**17 16 18.9**	**-0.3**
HCB				*i* S	**Sg**	**17 16 24.5**	**+0.1**
AKO	**Adana**	**0.82**	**265**	*i* P	**Pg**	**17 16 25.9**	**-1.5**
AKO				*i* S	**Sn**	**17 16 40.1**	**-1.1**
GZT	**Gaziantep**	**0.88**	**101**	*i* P	**Pg**	**17 16 27.9**	**-0.6**
GZT				*i* S	**Sn**	**17 16 42.9**	**+0.1**
KUZU	**Kuzuini**	**0.89**	**148**	P	**Pg**	**17 16 28.7**	**0.0**
KUZU				S	**Sn**	**17 16 42.7**	**-0.3**
KUZU	**Kuzuini**	**0.89**	**148**	*i* P	**Pg**	**17 16 28.7**	**0.0**
KUZU				*i* S	**Sn**	**17 16 42.7**	**-0.3**
KARA	**Karaisali**	**1.17**	**257**	*e*PN	**Pb**	**17 16 33.1**	**-0.6**
KARA				*e*SN	**Sg**	**17 16 48.9**	**-0.2**
KARA	**Karaisali**	**1.17**	**257**	*e*Pn	**Pb**	**17 16 33.1**	**-0.6**
KARA				*e*Sn	**Sg**	**17 16 48.9**	**-0.2**
TAHT	**Tahtakopru-Hat**	**1.18**	**192**	*e*PN	**Pb**	**17 16 32.9**	**-1.0**
TAHT				*e*SN	**Sg**	**17 16 49.2**	**-0.2**
TAHT	**Tahtakopru-Hat**	**1.18**	**192**	*e*Pn	**Pb**	**17 16 32.9**	**-1.0**
TAHT				*e*Sn	**Sg**	**17 16 49.2**	**-0.2**
DARE	**Darende-Malaty**	**1.31**	**37**	*e*PN	**Pn**	**17 16 35.5**	**-0.3**
DARE				*e*SN	**Sg**	**17 16 54.1**	**+0.5**
DARE	**Darende-Malaty**	**1.31**	**37**	*e*Pn	**Pn**	**17 16 35.5**	**-0.3**
DARE				*e*Sn	**Sg**	**17 16 54.1**	**+0.5**
AKCD	**Akcadag**	**1.37**	**56**	P	**Pn**	**17 16 37.0**	**+0.2**
AKCD	**Akcadag**	**1.37**	**56**	*i* P	**Pn**	**17 16 37.0**	**+0.2**
GULE	**Gulek**	**1.38**	**260**	P	**Pn**	**17 16 36.9**	**0.0**
GULE	**Gulek**	**1.38**	**260**	*i* P	**Pn**	**17 16 36.9**	**0.0**
GULE				*i* S	**Sg**	**17 17 00.4**	**+4.5**
YAYL	**Yayladag**	**1.52**	**191**	P	**Pg**	**17 16 41.5**	**+0.8**
YAYL				S	**Sg**	**17 17 00.7**	**+0.2**
YAYL	**Yayladag**	**1.52**	**191**	*i* P	**Pg**	**17 16 41.5**	**+0.8**
YAYL				*i* S	**Sg**	**17 17 00.7**	**+0.2**
NIG	**Nigde**	**1.59**	**292**	*e*PN	**Pn**	**17 16 40.3**	**+0.5**
NIG	**Nigde**	**1.59**	**292**	*e*Pn	**Pn**	**17 16 40.3**	**+0.5**
SURC	**SANLIURFA_SURC**	**1.82**	**110**	P	**Pb**	**17 16 45.0**	**+0.1**
SURC	**SANLIURFA_SURC**	**1.82**	**110**	*i* P	**Pb**	**17 16 45.0**	**+0.1**
KERG	**Konya-Eregli**	**1.88**	**267**	P	**Pn**	**17 16 44.2**	**+0.6**
KERG				S	**Sb**	**17 17 09.6**	**+0.2**
KERG	**Konya-Eregli**	**1.88**	**267**	*i* P	**Pn**	**17 16 44.2**	**+0.6**
KERG				*i* S	**Sb**	**17 17 09.6**	**+0.2**
SVRC	**Sivrice-ELAZID**	**2.39**	**68**	*e*PN	**Pn**	**17 16 51.5**	**+0.8**
SVRC	**Sivrice-ELAZID**	**2.39**	**68**	*e*Pn	**Pn**	**17 16 51.5**	**+0.8**
PTK	**Pertek**	**2.67**	**58**	*e*PN	**Pn**	**17 16 55.0**	**+0.4**
PTK	**Pertek**	**2.67**	**58**	*e*Pn	**Pn**	**17 16 55.0**	**+0.4**
MAZI	**Mazidag**	**3.16**	**90**	*e*PN	**Pn**	**17 17 01.9**	**+0.7**
MAZI	**Mazidag**	**3.16**	**90**	*e*Pn	**Pn**	**17 17 01.9**	**+0.7**

*NIED **07** 17:17:00, 36.°30N×141.°00E, h26km, Mw3.5 Best double couple: M0 2.13000×10^14 NP1:φs133.00000°, δ9.00000°, λ-1.00000°. NP2:φs224.00000°, δ90.00000°, λ-99.00000°.*
*IDC **07** 17:17:05.7±1.1, 36.°25N×141.°03E, h0km, mb3.5/6, mb1 3.6/8, mb1mx3.4/46, mbtmp3.5/8, ML3.3/2, Error ellipse: s-maj=25.1km s-min=21.6km az=78.0*
*ISCJB **07** 17:17:08.5±1.2, 36.°33N±0.°06×141.°05E±0.°07, h32km±6km, mb3.4/6, Error ellipse: s-maj=10.9km s-min=7.1km az=136.2*
*JMA **07** 17:17:09.8±0.1, 36.°32N×140.°95E, h41km±1km, M3.7*
JMA Felt I J1.

ISC 07 17:17:09.3±1.1, 36.°37N±0.°08×140.°98E±0.°09, h21km±5km, n14, σ0.94/21, mb3.4/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.41**	**306**	P	**Pn**	**17 17 19.4**	**-0.5**
JHO				S	**Sn**	**17 17 25.7**	**-1.2**
JYT	**Yasato**	**0.65**	**257**	P	**Pb**	**17 17 22.3**	**+0.3**
JYT				S	**Sb**	**17 17 30.6**	**-0.1**
ONAJ	**Iwakimizuishiy**	**0.74**	**349**	P	**Pb**	**17 17 24.0**	**+0.4**
ONAJ				S	**Sb**	**17 17 33.8**	**+0.5**
JFK	**Kawauchi**	**0.99**	**355**	P	**Pb**	**17 17 27.5**	**-0.4**
JFK				*e*S	**Sb**	**17 17 39.7**	**-0.9**
JAG	**Ashikaga**	**1.23**	**273**	P	**Pn**	**17 17 31.0**	**-0.3**
JAG				*e*S	**Sn**	**17 17 45.4**	**-1.8**
MJAR	**Matsushiro Arr**	**2.24**	**275**	Pn	**Pn**	**17 17 45.8**	**+0.6**
	6.4nm,0.3s,baz=108,slow=9.0,SNR=22						
MJAR				Sn	**Sn**	**17 18 13.2**	**+1.1**
	22nm,0.3s,baz=96,slow=27,SNR=19						
MAT	**Matsushiro**	**2.24**	**275**	P	**Pn**	**17 17 46.7**	**+1.5**
MAT				S	**Sn**	**17 18 12.8**	**+0.6**
ASAJ	**Asahikawa**	**7.83**	**9**	Pn	**Pn**	**17 19 02.9**	**+1.0**
	0.4nm,0.3s,baz=209,slow=10,SNR=4.1						
ZALV	**Zalesovo Beam**	**42.10**	**313**	P	**P**	**17 24 59.9**	**+0.3**
	1.3nm,0.7s,baz=97,slow=7.9,SNR=5.8						
MKAR	**Makanchi Array**	**44.17**	**303**	P	**P**	**17 25 17.0**	**+0.5**
	0.4nm,0.7s,baz=91,slow=7.9,SNR=3.8						
ILAR	**Eielson Array**	**50.24**	**32**	P	**P**	**17 26 04.1**	**+0.6**
	0.3nm,0.8s,baz=264,slow=6.3,SNR=3.0						
WRA	**Warramunga Arr**	**56.36**	**188**	P	**P**	**17 26 47.7**	**-1.2**
	0.2nm,0.4s,baz=5.4,slow=7.4,SNR=6.1						
ASAR	**Alice Springs**	**60.09**	**187**	P	**P**	**17 27 13.9**	**-1.0**
	0.2nm,0.8s,baz=16,slow=8.1,SNR=4.4						
AKASG	**Malin Array Be**	**74.60**	**322**	P	**P**	**17 28 46.5**	**-0.1**
	0.2nm,0.3s,baz=50,slow=6.2,SNR=3.2						

JMA 07 17:18:40.6±0.1, 35.°35N×139.°10E, h18km±1km, M2.7, 2C-2D Broadband fault plane solution: P waves. NP1:φs23.00000°, δ54.00000°, λ62.00000°. NP2: φs246.00000°, δ45.00000°, λ123.00000°. Principal axes: T Plg67.0000°, Azm235.0000°; N Plg22.0000°, Azm41.0000°; P Plg5.0000°, Azm133.0000°; Near south coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JOD2	**Odawara 2**	**0.09**	**186**	⇑P	Pg	17 18 43.9	-0.3
JOD2				S	Sg	17 18 46.7	+0.1
KTJJ	**Kamata 2**	**0.42**	**184**	P	Pg	17 18 48.5	-0.8
KTJJ				*i* S	Sg	17 18 54.4	-0.8
JYN	**Shimob**	**0.48**	**288**	⇓P	Pg	17 18 49.9	-0.4
JRY	**Ryogami san**	**0.69**	**346**	⇓P	Pb	17 18 53.3	-0.7
JRY				S	Sb	17 19 02.5	-0.7
SHZ3	**Shizuoka 3**	**0.78**	**249**	⇑P	Pb	17 18 55.4	-0.3
SHZ3				S	Sg	17 19 06.5	+0.2
MAT	**Matsushiro**	**1.39**	**329**	P	Pn	17 19 05.0	-0.2
MAT				S	Sb	17 19 23.4	-0.2

GCMT 07 17:21:52.0±0.3, 40.°05S×15.°81W, h17km, MW5.0/88, Moment Tensor Solution. s20,c23; s88,c108; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr=3.33±.19; Mθθ0.63±.12; Mφφ2.70±.14; Mrθ-1.51±.39; Mθφ-0.87±.07; Mφr0.14±.33; **Best double couple:** M0 3.46600×10^16 **NP1:**φs141.00000°, δ54.00000°, λ-112.00000°. **NP2:**φs356.00000°, δ42.00000°, λ-63.00000°. **Principal axes:** T 3.0890, Plg6.0000°, Azm247.0000°; N 0.7530, Plg18.0000°, Azm155.0000°; P -3.8440, Plg71.0000°, Azm356.0000°; **nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s. Tristan da Cunha region**

KRSC 07 17:28:08.7±2.6, 49.°42N×157.°22E, h16km±36km, ML3.8, East of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**1.45**	**331**	*e*P	Pn	17 28 31.9	-2.4
SKR				*e*S	Sn	17 28 48.5	-4.5
PAU	**Pauzhetka**	**2.07**	**353**	*e*P	Pn	17 28 43.7	+0.9
PAU				*e*S	Sb	17 29 09.9	-1.4
ASAK	**Asacha**	**3.00**	**8**	*e*P	Pb	17 28 58.8	-3.0
RUS	**Russkaya**	**3.13**	**15**	*e*P	Pn	17 29 00.2	+2.8
RUS				*e*S	Sb	17 29 38.4	-3.4
MTVR	**Mutnovka**	**3.13**	**11**	*e*P	Pb	17 29 01.0	-3.1
KRMR	**Karymshinskiy**	**3.46**	**9**	*e*P	Pn	17 29 05.8	+3.8
PET	**Petropavlovsk**	**3.72**	**13**	*e*P	Pn	17 29 09.5	+4.0
PET				*e*S	Sb	17 29 54.4	-4.5
DALK	**Dalny**	**3.74**	**14**	*e*P	Pn	17 29 09.3	+3.5
DALK				*e*S	Sb	17 29 55.2	-4.4
UGLR	**Uglovaya**	**3.93**	**14**	*e*P	Pn	17 29 12.3	+3.8
UGLR				*e*S	Sb	17 30 00.5	-4.5
AVH	**Avacha**	**3.97**	**13**	*e*P	Pn	17 29 13.1	+4.1
AVH				*e*S	Sb	17 30 01.0	-5.1
SMAR	**Somma**	**3.98**	**14**	*e*P	Pn	17 29 13.6	+4.4
KOK	**Koryaka**	**3.98**	**12**	*e*P	Pn	17 29 13.7	+4.5
NLC	**Nalytchevo**	**3.99**	**19**	*e*S	Sn	17 29 59.3	+3.7
SDLR	**Sedlovina**	**4.00**	**14**	*e*P	Pn	17 29 12.7	+3.2
SDLR				*e*S	Sn	17 30 01.0	+4.8
KRER	**Koryakskii**	**4.01**	**13**	*e*P	Pn	17 29 13.7	+4.0
KRER				*e*S	Sn	17 30 01.3	+4.9
KRX	**Arik**	**4.05**	**12**	*e*P	Pn	17 29 14.1	+4.0
GNL	**Ganaly**	**4.31**	**6**	*e*P	Pn	17 29 17.2	+3.5
MKZ	**Mys Kozlova**	**5.85**	**27**	*e*P	Pn	17 29 37.7	+3.0

*IDC **07** 17:32:01.2±0.6, 37.°39N×143.°72E, h0km, mb4.0/25, mb1 4.2/31, mb1mx4.1/51, mbtmp4.1/31, ML3.9/5, MS3.4/19, Ms1 3.4/19, ms1mx3.2/57, Error ellipse: s-maj=14.6km s-min=12.3km az=123.0*
*JMA **07** 17:32:04.3±0.2, 37.°48N×143.°53E, h41km, M4.2*
*MOS **07** 17:32:04.3±1.3, 37.°59N×143.°75E, h33km, mb4.4/26, Error ellipse: s-maj=9.6km s-min=6.4km az=101.9*
*NEIC **07** 17:32:06.2±0.2, 37.°31N×143.°74E, h35km, mb4.5/24, Error ellipse: s-maj=5.9km s-min=4.3km az=142.0*

ISC 07 17:32:01.4±1.2, 37.°47N±0.°05×143.°70E±0.°05, h2km±7km, n163, σ1.78/162, mb4.4/54, MS3.5/21, 2D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.10**	**299**	P	**Pn**	**17 32 36.5**	**-1.0**
JIO				S	**Sn**	**17 33 00.2**	**-4.0**
JFK	**Kawauchi**	**2.25**	**268**	P	**Pn**	**17 32 38.5**	**-1.2**
JFK				S	**Sn**	**17 33 03.3**	**-4.8**
OFUJ	**Ofunato**	**2.27**	**316**	P	**Pn**	**17 32 38.5**	**-1.3**
OFUJ				S	**Sn**	**17 33 04.0**	**-4.3**
JMM	**Marumori**	**2.34**	**281**	P	**Pn**	**17 32 39.5**	**-1.3**
JMM				S	**Sn**	**17 33 05.9**	**-4.3**
ONAJ	**Iwakimizuishiy**	**2.35**	**262**	P	**Pn**	**17 32 40.0**	**-0.9**
ONAJ				S	**Sn**	**17 33 05.6**	**-4.7**
JOU	**Okura**	**2.56**	**291**	P	**Pn**	**17 32 43.5**	**-0.4**
JFT	**Otama**	**2.68**	**272**	P	**Pn**	**17 32 45.7**	**+0.2**
JFT				S	**Sn**	**17 33 15.0**	**-3.5**
JOM	**Ohasama**	**2.75**	**317**	P	**Pn**	**17 32 47.0**	**+0.5**
JOM				S	**Sn**	**17 33 16.9**	**-3.4**
CHOJ	**Chosi**	**2.89**	**233**	P	**Pn**	**17 32 47.5**	**-0.9**
JYK	**Kaneyama**	**3.00**	**300**	P	**Pn**	**17 32 49.5**	**-0.4**
JAG	**Ashikaga**	**3.56**	**254**	P	**Pn**	**17 32 57.4**	**-0.2**
JAG				S	**Sn**	**17 33 37.0**	**-3.2**
JRY	**Ryogami san**	**4.12**	**251**	P	**Pn**	**17 33 04.6**	**-0.7**
JOD2	**Odawara 2**	**4.33**	**241**	P	**Pn**	**17 33 07.2**	**-1.0**
MJAR	**Matsushiro Arr**	**4.49**	**260**	Pn	**Pn**	**17 33 11.2**	**+0.8**
	13nm,0.3s,baz=90,slow=15,SNR=94						
MJAR				Sn	**Sn**	**17 34 00.0**	**-3.3**
	2.7nm,0.3s,baz=95,slow=26,SNR=4.8						
MJAR				LR	LR	17 35 05.6	
	comp=Z,223nm,21.2s,baz=80,slow=41						
MAJO	**Matsushiro**	**4.50**	**260**	*d* iP	**Pn**	**17 33 11.4**	**+0.9**
MAJO	**Matsushiro**	**4.50**	**260**	*e*Pn	**Pn**	**17 33 11.7**	**+1.2**
MAT	**Matsushiro**	**4.50**	**260**	P	**Pn**	**17 33 11.6**	**+1.1**
MAT				S	**Sn**	**17 34 01.1**	**-2.2**
MJB9	**Matsu-Tunnel**	**4.50**	**260**	*e*Pn	**Pn**	**17 33 11.7**	**+1.2**
ERM	**Erimo**	**4.56**	**355**	*e*P	**Pn**	**17 33 09.8**	**-1.5**
ERM	**Erimo**	**4.56**	**355**	*e*Pn	**Pn**	**17 33 10.3**	**-1.0**
ERM				*e*Sn	**Sn**	**17 33 59.7**	**-5.1**
JHJ2	**Mitsune**	**5.39**	**217**	*e*Pn	**Pn**	**17 33 21.9**	**-0.8**
JHJ2				*e*Sn	Sn	17 34 17.6	-7.7
JHJ	**Hachijo jima 2**	**5.40**	**218**	Pn	**Pn**	**17 33 21.5**	**-1.3**
	36nm,0.3s,baz=45,slow=19,SNR=12						
JHJ				Sn	Sn	17 34 18.1	-7.4
	35nm,0.3s,baz=302,slow=22,SNR=6.5						
INU	**Inuyama**	**5.79**	**251**	*e*Pn	**Pn**	**17 33 29.5**	**+1.2**
ASAJ	**Asahikawa**	**6.69**	**353**	Pn	**Pn**	**17 33 40.0**	**-0.6**
	6.3nm,0.3s,baz=177,slow=9.6,SNR=42						
ASAJ				Sn	**Sn**	**17 34 51.5**	**-5.8**
	6.3nm,0.3s,baz=198,slow=20,SNR=4.9						
ASAJ	**Asahikawa**	**6.69**	**353**	P	**Pn**	**17 33 40.0**	**-0.6**
ASAJ						17 34 51.5	
ASAJ				pmax	pmax		
	comp=Z,6.0nm,0.3s						
ASAJ				smax	smax		
	comp=N,6.0nm,0.3s						
ASAJ	**Asahikawa**	**6.69**	**353**	*e*Pn	**Pn**	**17 33 40.1**	**-0.4**
ASAJ				*e*Sn	**Sn**	**17 34 55.2**	**-2.1**
YUK	**Yuzh-Kuril'sk**	**6.76**	**13**	*e*P	**Pn**	**17 33 39.7**	**-1.8**
YUK				*i* S	Sn	17 34 50.0	-8.9
YUK				pmax	pmax		
	comp=N,97nm,0.8s						
YUK				pmax	pmax		
	comp=E,107nm,0.8s						
YUK				pmax	pmax		
	comp=Z,196nm,0.8s						
SHO	**Shikotan**	**6.82**	**19**	*e*P	**Pn**	**17 33 39.8**	**-2.5**
SHO				*i* S	Sn	17 34 50.4	-10
SHO				pmax	pmax		
	comp=Z,57nm,0.6s						
SHO				pmax	pmax		
	comp=N,30nm,0.7s						
KUR	**Kuril'sk**	**8.36**	**21**	*e*P	**Pn**	**17 34 02.1**	**-1.4**
KUR				*i* S	Sn	17 35 28.5	-10
KUR				pmax	pmax		
	comp=Z,44nm,0.7s						
KUR				pmax	pmax		
	comp=N,18nm,0.1s						
KUR				pmax	pmax		
	comp=E,33nm,0.4s						
CBIJ	**Chichi jima**	**10.43**	**188**	*e*Pn	**Pn**	**17 34 29.1**	**-2.8**
CBIJ				*e*Sn	Sn	17 36 11.7	-18
USRK	**Ussuriysk Ar.**	**11.12**	**311**	Pn	**Pn**	**17 34 42.2**	**+0.8**
	comp=E,0.2nm,0.3s,baz=116,slow=13,SNR=12						
USRK				LR	LR	17 38 44.9	
	comp=E,203nm,20.1s,baz=130,slow=36						
JNU	**Nakatsue**	**11.34**	**251**	Pn	**Pn**	**17 34 45.3**	**+0.9**
	comp=E,0.2nm,0.3s,baz=93,slow=4.6,SNR=3.3						
JNU	**Nakatsue**	**11.34**	**251**	*e*Pn	**Pn**	**17 34 45.6**	**+1.2**
KSRS	**Korea Array**	**12.54**	**275**	Pn	**Pn**	**17 35 03.7**	**+3.0**
	comp=E,0.2nm,0.3s,baz=86,slow=14,SNR=14						
KSRS				LR	LR	17 39 38.5	
	comp=E,93nm,19.5s,baz=60,slow=36						
KS15	**Wonju Array Si**	**12.57**	**275**	*e*Pn	Pn	17 35 04.5	+3.3
KSAR	**Wonju Array Be**	**12.57**	**275**	P	**Pn**	**17 35 03.7**	**+2.5**
KSAR	**Wonju Array Be**	**12.57**	**275**	Pn	**Pn**	**17 35 03.7**	**+2.5**
KLR	**Kul'dur**	**14.60**	**327**	Pn	**Pn**	**17 35 27.2**	**-1.6**
	comp=E,0.4nm,0.3s,baz=136,slow=11,SNR=25						
KLR				LR	LR	17 40 47.4	
	comp=E,119nm,21.1s,baz=144,slow=36						
CN2	**Changchun**	**15.22**	**300**	*e*P	**P**	**17 35 41.0**	**-1.4**
NKL	**Nikolayevsk**	**15.82**	**353**	*e*P	**P**	**17 35 52.0**	**+3.1**
BJI	**Beijing**	**21.59**	**285**	P	**P**	**17 36 53.9**	**+1.6**
BJI				S	**S**	**17 40 53.0**	**+0.9**
BJI				pmax	pmax		
	comp=Z,7.0nm,0.6s						
BJI				pmax	pmax		
	comp=Z,79nm,3.3s						
BJI				LR	LR		
	comp=N,130nm,13.7s						
BJI				LR	LR		
	comp=E,86nm,19.7s						
BJI				LR	LR		
	comp=Z,61nm,25.1s						
SSLB	**Suanglung**	**23.78**	**241**	*e*P	**P**	**17 37 12.4**	**-3.0**
	comp=Z,7.4nm,1.0s						
TPUB	**Ta-pu**	**24.32**	**241**	*e*P	**P**	**17 37 19.6**	**-0.9**
	comp=Z,12nm,0.8s						
HHC	**Hu-ho-hao-te**	**25.07**	**288**	*e*P	**P**	**17 37 27.8**	**+0.6**
HHC				pP	sP	17 37 35.1	+6.9
HHC				sP	pP	17 37 38.7	+11
HHC				S	**S**	**17 41 48.5**	**-3.9**
HHC				pmax	pmax		
	comp=Z,22nm,0.7s						
HHC				pmax	pmax		
	comp=Z,330nm,4.1s						
HHC				LR	LR		
	comp=N,430nm,12.8s						
HHC				LR	LR		
	comp=E,550nm,12.6s						
HHC				LR	LR		
	comp=Z,530nm,12.2s						
SEY	**Seymchan**	**26.04**	**9**	P	**P**	**17 37 37.4**	**+1.8**
	comp=Z,2.0nm,0.6s,baz=352,slow=22,SNR=8.5						
SEY	**Seymchan**	**26.04**	**9**	*e*P	**P**	**17 37 36.5**	**+0.9**
YAK	**Yakutsk**	**26.08**	**345**	P	**P**	**17 37 35.9**	**-0.1**
	comp=Z,3.0nm,0.3s,baz=119,slow=0.3,SNR=4.5						
YAK				LR	LR	17 48 24.8	
	comp=Z,17nm,18.4s,baz=129,slow=38						
YAK	**Yakutsk**	**26.08**	**345**	*e*P	**P**	**17 37 36.3**	**+0.3**
YAK				*e**PP	sP	17 37 51.3	+14
YAK				*e*		17 38 16.4	
YAK				*e*		17 41 00.8	
YAK				*e*S	**S**	**17 42 05.3**	**-2.4**
YAK				pmax	pmax		
	comp=Z,6.0nm,0.9s						
YAK				pmax	pmax		
	comp=Z,60nm,3.4s						
YAK				pmax	pmax		
	comp=N,59nm,5.8s						
YAK				pmax	pmax		
	comp=E,31nm,2.9s						
YAK				smax	smax		
	comp=N,41nm,2.8s						
YAK				smax	smax		
	comp=E,22nm,2.8s						
YAK	**Yakutsk**	**26.08**	**345**	*e*P	**P**	**17 37 36.0**	**0.0**
	comp=E,11nm,0.8s						
YAK				*e*ScS	ScS	17 48 24.8	-8.5
H11N2	**WAKE ISLAND Hy**	**26.85**	**125**	T	T	18 05 46.1	
	baz=317,slow=75,SNR=26						
H11N1	**WAKE ISLAND Hy**	**26.86**	**125**	T	T	18 05 52.4	
	baz=317,slow=75,SNR=26						
H11N3	**WAKE ISLAND Hy**	**26.87**	**125**	T	T	18 05 56.2	
	baz=317,slow=75,SNR=20						
H11S1	**WAKE ISLAND Hy**	**27.61**	**127**	T	T	18 06 48.0	
	baz=318,slow=76,SNR=25						
H11S3	**WAKE ISLAND Hy**	**27.61**	**127**	T	T	18 06 48.1	
	baz=318,slow=76,SNR=26						
H11S2	**WAKE ISLAND Hy**	**27.63**	**127**	T	T	18 06 46.6	
	baz=318,slow=76,SNR=22						
BOD	**Bodaibo**	**28.16**	**326**	*e*P	P	17 37 59.9	+5.1
BOD				pmax	pmax		
	comp=Z,7.0nm,1.3s						
XAN	**Xi'an**	**28.34**	**274**	P	P	17 38 08.1	+11
XAN				pP	sP	17 38 15.5	+18
XAN				pmax	pmax		
	comp=Z,9.0nm,0.7s						
ULN	**Ulaanbaatar**	**28.64**	**303**	*e*P	**P**	**17 37 59.8**	**+0.5**
ULN				pmax	pmax		
	comp=Z,2.0nm,0.9s						
ULN	**Ulaanbaatar**	**28.64**	**303**	*e*P	**P**	**17 38 02.1**	**+2.8**
	comp=Z,5.2nm,0.9s						
SONA1	**Songino Array**	**29.07**	**303**	*e*P	**P**	**17 38 05.4**	**+2.3**
SONA0	**Songino Array**	**29.07**	**303**	*e*P	**P**	**17 38 05.5**	**+2.3**
	comp=Z,11nm,1.6s						
SONM	**Songino Array**	**29.07**	**303**	P	**P**	**17 38 05.5**	**+2.3**
	comp=Z,0.7nm,0.5s,baz=99,slow=10,SNR=6.2						
SONM				LR	LR	17 50 01.0	
	comp=Z,58nm,18.6s,baz=347,slow=37						
ENH	**Enshi**	**29.19**	**266**	*e*P	**P**	**17 38 06.8**	**+2.6**
	comp=Z,7.2nm,0.8s						
TLY	**Talaya**	**31.44**	**310**	LR	LR	17 51 39.2	
	comp=Z,87nm,18.0s,baz=110,slow=37						
ZAK	**Zakamensk**	**31.45**	**307**	*e*P	**P**	**17 38 26.9**	**+2.8**
CD2	**Chengdu**	**33.50**	**271**	P	**P**	**17 38 41.2**	**-1.0**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
GTA	**Gaotai**	**34.18**	**287**	*e*P	P	17 38 51.6	+3.4
GTA

MAKZ pmax pmax
comp=Z,8.0nm,1.2s
MAKZ Makanchi 45.64 302 *eP* **P 17 40 22.2 -1.0**
comp=Z,7.8nm,1.2s
MLY Manley 46.51 32 *eP* **P 17 40 31.4 +1.6**
comp=Z,4.1nm,0.9s
PMG Port Moresby 46.74 175 LR LR 17 59 44.0
comp=Z,31nm,20.6s,baz=176,slow=36
KURK Kurchatov 47.10 308 *eP* **P 17 40 34.7 +0.2**
KURK pmax pmax
comp=Z,14nm,0.8s
KURK Kurchatov 47.10 308 *eP* **P 17 40 34.7 +0.2**
comp=Z,14nm,0.8s
KURK *eP* **pP 17 40 35.1 -0.1**
KURBB Kurchatov Arra 47.17 308 P **P 17 40 35.1 +0.1**
comp=Z,2.1nm,0.7s,baz=81,slow=7.8,SNR=22
MDM Murphy Dome 47.57 32 *eP* **P 17 40 39.5 +1.5**
comp=Z,8.8nm,1.0s
WRH Wood River Hil 47.63 33 *eP* **P 17 40 39.6 +1.1**
comp=Z,3.0nm,0.9s
IL1 Eielson Array 48.14 33 *eP* **P 17 40 42.9 +0.5**
ILAR Eielson Array 48.14 33 P **P 17 40 43.1 +0.7**
comp=Z,2.6nm,0.7s,baz=265,slow=6.6,SNR=32
ILB Eielson Array 48.14 33 *eP* **P 17 40 42.6 +0.2**
HNR Honiara 49.08 159 LR LR 18 01 18.0
comp=Z,47nm,18.6s,baz=270,slow=36
TKM2 Tokmak 2 51.02 299 *eP* **P 17 41 05.6 +0.6**
TKM2 pmax pmax
comp=Z,4.0nm,0.7s
TKM2 Tokmak 2 51.02 299 *eP* **P 17 41 05.6 +0.6**
comp=Z,3.7nm,0.7s
MTN Manton Dam 51.42 196 *eP* **P 17 41 07.2 -0.7**
comp=Z,12nm,0.8s
BVAR Borovoye Array 51.63 312 P **P 17 41 09.3 +0.2**
comp=Z,0.9nm,0.5s,baz=81,slow=8.9,SNR=5.4
AAK Ala-Archa 51.89 299 *eP* **P 17 41 10.2 -1.2**
AAK pmax pmax
comp=Z,3.0nm,1.2s
ZRNK Zerenda 52.46 313 *eP* **P 17 41 15.8 +0.5**
ZRNK pmax pmax
comp=Z,8.0nm,1.1s
ZRNK Zerenda 52.46 313 *eP* **P 17 41 15.8 +0.5**
comp=Z,7.7nm,1.1s
INK Inuvik 53.16 27 P **P 17 41 21.2 +1.1**
comp=Z,1.0nm,0.5s,baz=308,slow=6.5,SNR=10
INK Inuvik 53.16 27 *eP* **P 17 41 20.7 +0.5**
comp=Z,2.9nm,0.8s
DLBC Dease Lake 57.15 39 P **P 17 41 51.0 +1.7**
comp=Z,1.4nm,0.8s,baz=288,slow=6.2,SNR=5.2
DLBC Dease Lake 57.15 39 *eP* **P 17 41 51.6 +2.3**
comp=Z,14nm,1.8s
ARU Arti 57.24 319 P **P 17 41 51.2 +1.3**
comp=Z,1.8nm,0.4s,baz=100,slow=8.7,SNR=4.5
ARU Arti 57.24 319*d i*P 17 42 01.0 +11
ARU S S 17 50 02.7 +16
ARU pmax pmax
comp=Z,9.0nm,1.2s
ARU Arti 57.24 319 *eP* **P 17 41 51.0 +1.2**
comp=Z,4.9nm,0.8s
CTA Charters Tower 57.30 177 LR LR 18 03 23.6
comp=Z,220nm,20.5s,baz=322,slow=33
WB2 Warramunga Arr 57.78 190 *eP* **P 17 41 52.8 -1.2**
comp=Z,7.4nm,0.8s
WR1 Warramunga Arr 57.78 190 *eP* **P 17 41 53.0 -1.1**
comp=Z,7.9nm,0.8s
WRA Warramunga Arr 57.78 190 P **P 17 41 53.0 -1.0**
comp=Z,6.3nm,0.7s,baz=10,slow=7.3,SNR=72
WRA Warramunga Arr 57.78 190 P **P 17 41 53.0 -1.0**
WRA pmax pmax
comp=Z,6.0nm,0.7s
ABKAR Akbulak array 59.05 311 *eP* **P 17 42 02.7 +0.1**
AKTO Aktyubinsk 59.73 312 LR LR 18 10 42.8
comp=Z,15nm,20.2s,baz=89,slow=39
AS01 Alice Springs 61.50 190 *eP* **P 17 42 18.9 -0.7**
AS31 Alice Springs 61.51 190 *eP* **P 17 42 19.0 -0.7**
comp=Z,1.1nm,0.8s
ASAR Alice Springs 61.51 190 P **P 17 42 19.0 -0.7**
comp=Z,4.1nm,0.9s,baz=5.6,slow=7.5,SNR=51
YKA Yellowknife Ar 62.50 31 P **P 17 42 26.2 +0.3**
comp=Z,0.9nm,0.8s,baz=304,slow=6.8,SNR=12
YKB5 Yellowknife Ar 62.50 31 *eP* **P 17 42 26.2 +0.2**
ARA0 ARCESS Array S 64.22 340 *eP* **P 17 42 37.8 +0.6**
ARCES ARCESS Array B 64.22 340 P **P 17 42 37.8 +0.5**
comp=Z,1.1nm,0.7s,baz=50,slow=7.2,SNR=3.4
GEYT Alibeck 65.21 300 P **P 17 42 44.6 +0.4**
comp=Z,0.8nm,0.5s,baz=348,slow=6.5,SNR=3.0
OBN Obninsk 68.83 324 *eP* **P 17 43 07.8 +0.9**
OBN *e* 17 45 41.5
OBN pmax pmax
comp=Z,4.0nm,0.8s
OBN MLR MLR
comp=Z,34nm,17.0s
STKA Stephens Creek 69.02 182 P **P 17 43 07.8 -0.4**
comp=Z,1.6nm,0.5s,baz=346,slow=7.4,SNR=7.5
STKA Stephens Creek 69.02 182 *eP* **P 17 43 07.9 -0.3**
STKA pmax pmax
comp=Z,7.0nm,2.0s
STKA Stephens Creek 69.02 182 *eP* **P 17 43 07.9 -0.3**
comp=Z,6.6nm,2.0s
FIA0 FINESS Array S 69.27 333 *eP* **P 17 43 10.0 +0.5**
FIA0 FINESS Array S 69.27 333 *eP* **P 17 43 10.0 +0.5**
FINES FINESS Array B 69.27 333 P **P 17 43 10.0 +0.5**
comp=Z,2.5nm,0.8s,baz=48,slow=8.5,SNR=9.9
FINES FINESS Array B 69.27 333 *i* P **P 17 43 09.0 -0.5**
FINES pmax pmax
comp=Z,3.0nm,0.8s
KIV Kislovodsk 71.99 312 *eP* **P 17 43 27.5 +1.0**
KIV pmax pmax
comp=Z,30nm,1.4s
KIV Kislovodsk 71.99 312 *eP* **P 17 43 27.5 +1.0**
comp=Z,30nm,1.4s
FCC Fort Churchill 72.78 27 *eP* **P 17 43 30.9 +0.1**
FCC pmax pmax
comp=Z,3.0nm,0.6s
FCC Fort Churchill 72.78 27 *eP* **P 17 43 30.9 +0.1**
comp=Z,2.9nm,0.6s
NV01 Mina Array Sit 73.26 54 *eP* **P 17 43 35.1 +0.7**
NVAR Mina Array Bea 73.26 54 P **P 17 43 35.7 +1.4**
comp=Z,0.2nm,0.4s,baz=305,slow=6.5,SNR=3.2
HFS Hagfors 74.43 337 LR LR 18 20 56.4
comp=Z,63nm,19.4s,slow=39
NB2 NORSAR Subarra 74.47 338 P **P 17 43 41.2 +0.3**
comp=Z,1.1nm,0.7s,baz=38,slow=6.2
NB200 NORSAR Array S 74.47 338 *eP* **P 17 43 40.9 +0.1**
NOA NORSAR Array B 74.47 338 P **P 17 43 40.9 +0.1**
comp=Z,0.6nm,0.6s,baz=40,slow=5.9,SNR=5.3
NOA LR LR 18 19 14.9
comp=Z,27nm,21.6s,baz=205,slow=38
AKASG Malin Array Be 75.06 323 P **P 17 43 44.3 0.0**
comp=Z,0.8nm,0.5s,baz=46,slow=5.9,SNR=4.6
AKASG LR LR 18 18 39.0
comp=Z,33nm,21.9s,baz=70,slow=37
PD31 Pinedale Array 76.05 47 *eP* **P 17 43 50.9 +0.4**
PDAR Pinedale Array 76.05 47 P **P 17 43 50.9 +0.4**
comp=Z,0.7nm,0.8s,baz=282,slow=4.5,SNR=5.5
MTPU Mount Pierson 77.37 52 *eP* **P 17 43 58.0 -0.3**
comp=Z,9.8nm,1.2s
STHS Stebnicka Huta 79.64 326 *eP* **P 17 44 09.7 -0.4**
STHS Stebnicka Huta 79.64 326 *eP* **P 17 44 09.7 -0.4**
VYHS Vyhne 81.39 326 *eP* **P 17 44 18.2 -1.3**
VYHS Vyhne 81.39 326 *eP* **P 17 44 18.2 -1.3**
CLL Collm 81.61 331 *e*(P) **P 17 44 19.0 -1.6**
CLL Collm 81.61 331 *eP* **P 17 44 19.0 -1.6**
KHC Kasperske Hory 83.11 330 *eP* **P 17 44 29.0 +0.4**
KHC *ep*P PcP 17 44 40.5 +7.3
KHC Kasperske Hory 83.11 330 *eP* **P 17 44 29.0 +0.4**
KHC *e* 17 44 40.5
PPT Papeete 83.21 118 LR LR 18 13 14.2
comp=Z,56nm,21.1s,baz=133,slow=30
GERES GERESS Array B 83.28 329 P **P 17 44 29.5 -0.1**
comp=Z,0.4nm,0.5s,baz=33,slow=7.9,SNR=4.8
GERES GERESS Array B 83.28 329 P **P 17 44 29.5 -0.1**
GERES pmax pmax
comp=Z,1.0nm,0.6s
LTX Lajitas 88.40 54 *eP* **P 17 44 55.3 +0.1**
LTX Lajitas 88.40 54 *eP* **P 17 44 55.3 +0.1**
TXAR Lajitas Array 88.40 54 P **P 17 44 55.3 +0.1**
comp=Z,0.8nm,0.9s,baz=318,slow=1.7,SNR=6.2

*CSEM **07** 17:44:25.1,39.°69N×39.°77E, h5km, MD2.7*
ISK 07 17:44:25.1,39.°69N×39.°77E, h5km, MD2.7, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ERZN	**Erzincan**	**0.11**	**198**	*e*PG	Pg	17 44 28.1	+0.7
ERZN				*e*SG	Sg	17 44 29.8	+0.8
EZC	**Erzincan**	**0.32**	**281**	*e*Pg	Pg	17 44 28.1	-3.4
EZC				*e*Sg	Sg	17 44 29.8	-6.0
BAYT	**Ayd¨–ntepe-Bay**	**0.76**	**22**	*e*PG	Pg	17 44 40.0	+0.3
BAYT	**Ayd¨–ntepe-Bay**	**0.76**	**22**	*e*Pg	Pg	17 44 40.1	+0.4
PTK	**Pertek**	**0.85**	**200**	*e*PG	Pg	17 44 41.8	+0.4
PTK	**Pertek**	**0.85**	**200**	*e*Pg	Pg	17 44 41.8	+0.4
ILIC	**ilic-Erzincan**	**0.96**	**256**	*e*PG	Pb	17 44 43.9	-0.3
ILIC	**ilic-Erzincan**	**0.96**	**256**	*e*Pg	Pb	17 44 43.9	-0.3
EZM	**Erzurum**	**1.25**	**80**	*e*PN	Pn	17 44 49.5	+0.1
SVRC	**Sivrice-ELAZID**	**1.36**	**195**	*e*PN	Pg	17 44 51.7	+0.6
SVRC	**Sivrice-ELAZID**	**1.36**	**195**	*e*Pn	Pg	17 44 51.7	+0.6

MEX 07 17:45:17.5±0.3, 16.°80N×100.°13W, h5km, MD3.5, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ACP2	**Acapulco**	**0.25**	**72**	*i* P	Pg	17 45 22.1	-0.2
ACP2				*i* S	Sg	17 45 25.6	0.0
ACX	**Acapulco**	**0.27**	**75**	*e*P	Pg	17 45 20.3	-2.6
ACX				*e*S	Sg	17 45 23.8	-2.7
CAIG	**El Cayaco**	**0.28**	**333**	*i* P	Pg	17 45 22.6	-0.4
CAIG				*i* S	Sg	17 45 26.6	0.0
MEIG	**Mezcala**	**1.22**	**24**	*e*P	Pg	17 45 38.0	-3.0
MEIG				*e*S	Sg	17 45 53.7	-3.2
ARIG	**Puente Sto Nin**	**1.49**	**352**	*e*P	Pn	17 45 41.9	-3.0
ARIG				*e*S	Sn	17 45 59.9	-5.0
ZIIG	**Zihuatanejo**	**1.51**	**302**	*e*P	Pn	17 45 41.7	-3.4
ZIIG				*e*S	Sn	17 46 00.5	-4.7
YAIG	**Yautepec**	**2.29**	**26**	*e*P	Pn	17 45 52.0	-4.1
YAIG				*e*S	Sn	17 46 20.8	-4.0

*CSEM **07** 17:46:27.3, 40.°79N×28.°01E, h3km, MD2.8*
ISK 07 17:46:27.3, 40.°79N×28.°01E, h3km, MD2.8, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MRMT	**Marmara Adasi**	**0.36**	**240**	*e*PG	Pb	17 46 35.6	-0.8
MRMT	**Marmara Adasi**	**0.36**	**240**	*e*Pg	Pb	17 46 35.6	-0.8
EDC	**Edincik**	**0.45**	**194**	*e*PG	Pg	17 46 36.9	+0.9
EDC	**Edincik**	**0.45**	**194**	*e*Pg	Pg	17 46 36.9	+0.9
SLVT	**Silivri**	**0.47**	**19**	*e*PG	Pg	17 46 37.2	+0.9
SLVT				*e*SG	Sb	17 46 44.5	-1.1
SLVT	**Silivri**	**0.47**	**19**	*e*Pg	Pg	17 46 37.2	+0.9
SLVT				*e*Sg	Sb	17 46 44.5	-1.1
KCTX	**Karacabey (Bur**	**0.58**	**153**	*e*PG	Pb	17 46 39.5	-0.7
KCTX	**Karacabey (Bur**	**0.58**	**153**	*e*Pg	Pb	17 46 39.5	-0.7
CTKS	**Kestanelik-??a**	**0.59**	**40**	*e*PG	Pb	17 46 39.5	-0.7
CTKS	**Kestanelik-??a**	**0.59**	**40**	*e*Pg	Pb	17 46 39.5	-0.7
RKY	**Sarkoy-Tekirda**	**0.64**	**261**	*e*PG	Pb	17 46 40.5	-0.7
RKY	**Sarkoy-Tekirda**	**0.64**	**261**	*e*Pg	Pb	17 46 40.5	-0.6
KRBG	**Karabiga-Canak**	**0.67**	**234**	*e*PG	Pg	17 46 40.7	+0.6
KRBG				*e*SG	Sb	17 46 51.0	-0.2
KRBG	**Karabiga-Canak**	**0.67**	**234**	*e*Pg	Pg	17 46 40.7	+0.6
KRBG				*e*Sg	Sb	17 46 51.0	-0.2
ARMT	**Armutlu**	**0.69**	**108**	*e*PG	Pb	17 46 42.3	+0.4
ARMT	**Armutlu**	**0.69**	**108**	*e*Pg	Pb	17 46 42.3	+0.4
BGKT	**Bogazkoy**	**0.70**	**56**	*e*PG	Pb	17 46 41.6	-0.6
BGKT	**Bogazkoy**	**0.70**	**56**	*e*Pg	Pb	17 46 41.6	-0.6
CTYL	**Yalikoy Yolu**	**0.72**	**17**	*e*PG	Pb	17 46 42.1	-0.4
CTYL	**Yalikoy Yolu**	**0.72**	**17**	*e*Pg	Pb	17 46 42.1	-0.4
GONE	**Gonen-Balikesi**	**0.78**	**198**	*e*PG	Pg	17 46 42.8	+0.6
GONE	**Gonen-Balikesi**	**0.78**	**198**	*e*Pg	Pg	17 46 42.8	+0.6
MDNY	**Mudanya-Bursa**	**0.79**	**122**	*e*PG	Pb	17 46 43.1	-0.5
MDNY	**Mudanya-Bursa**	**0.79**	**122**	*e*Pg	Pb	17 46 43.1	-0.5
KLYT	**Kilyos**	**0.91**	**59**	*e*PG	Pb	17 46 45.6	-0.1
KLYT	**Kilyos**	**0.91**	**59**	*e*Pg	Pb	17 46 45.7	0.0
GELI	**Tayfur-Gelibol**	**1.23**	**252**	*e*PN	Pn	17 46 51.7	+0.3
GELI	**Tayfur-Gelibol**	**1.23**	**252**	*e*Pn	Pn	17 46 51.7	+0.3
SILT	**Sile**	**1.29**	**73**	*e*PN	Pn	17 46 52.8	+0.5
SILT	**Sile**	**1.29**	**73**	*e*Pn	Pn	17 46 52.8	+0.6
EDRB	**Edirne**	**1.42**	**319**	*e*PN	Pg	17 46 55.0	+0.3
EDRB	**Edirne**	**1.42**	**319**	*e*Pn	Pg	17 46 55.0	+0.4
ALN	**Alexandroupoli**	**1.49**	**275**	*e*PN	Pg	17 46 56.1	+0.2
ALN	**Alexandroupoli**	**1.49**	**275**	*e*Pn	Pg	17 46 56.1	+0.2
TVSB	**Tavsanli**	**1.74**	**140**	*e*PN	Pb	17 46 59.3	-0.6
TVSB	**Tavsanli**	**1.74**	**140**	*e*Pn	Pb	17 46 59.3	-0.6

*DDA **07** 18:00:48.5, 36.°91N×28.°15E, h24km, Md3.5*
*IDC **07** 18:00:48.8±0.6, 37.°03N×28.°26E, h0km, mb4.0/16, mb1 4.0/22, mb1mx3.9/44, mbtmp4.0/22, ML3.8/6, MS3.0/5, Ms1 3.0/5, ms1mx2.7/39, Error ellipse: s-maj=14.3km s-min=12.7km az=119.0*
*ISCJB **07** 18:00:49.2±0.4, 36.°98N±0.°01×28.°23E±0.°01, h10km±2km, mb4.2/25, MS3.1/3, Error ellipse: s-maj=2.5km s-min=1.9km az=13.8*
*CSEM **07** 18:00:49.9±0.1, 36.°98N×28.°22E, h5km, mb4.7/7, Error ellipse: s-maj=2.6km s-min=2.1km az=15.0*
*ATH **07** 18:00:49.5, 37.°00N×28.°21E, h22km±1km, ML3.7/11, Error ellipse: s-maj=2.1km s-min=1.1km az=255.0*
*ISK **07** 18:00:49.0, 37.°02N×28.°17E, h5km, ML4.0*
*NEIC **07** 18:00:50.2, 36.°97N×28.°25E, h1km, mb4.5/13, ML4.0(THE), After THE.*
*THE **07** 18:00:50.3, 36.°98N×28.°20E, h0km±1km, ML4.0/4, Error ellipse: s-maj=1.6km s-min=1.1km az=302.0*
*NIC **07** 18:00:52.0±0.5, 36.°16N×27.°66E, h27km, mb4.6, ML4.3*
*HLW **07** 18:00:59.9, 36.°16N×28.°68E, h12km±17km, Md3.8, Ml3.8*
ISC 07 18:00:49.6±0.8, 36.°95N±0.°02×28.°22E±0.°01, h6km±5km, n453, σ1§50/514, mb4.1/25, MS3.1/3, 6C-2D, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.19**	**15**	*e*PG	**Pg**	**18 00 52.6**	**-0.9**
YER				*e*SG	**Sg**	**18 00 55.5**	**-0.6**
YER	**Yerkesik**	**0.19**	**15**	P	**Pg**	**18 00 53.0**	**-0.5**
YER				S	**Sg**	**18 00 55.9**	**-0.2**
YER	**Yerkesik**	**0.19**	**15**	*e*Pg	**Pg**	**18 00 52.6**	**-0.9**
YER	**Yerkesik**	**0.19**	**15**	P	**Pg**	**18 00 53.0**	**-0.5**
YER				*e*Sg	**Sg**	**18 00 55.5**	**-0.6**
TURN	**Turunc**	**0.32**	**104**	*i* P	**Pg**	**18 00 53.6**	**-2.1**
TURN				*i* S	**Sg**	**18 00 57.4**	**-2.5**
DALY	**Dalyan (Mu¨la**	**0.37**	**111**	*e*PG	**Pg**	**18 00 56.5**	**-0.3**
DALY	**Dalyan (Mu¨la**	**0.37**	**111**	*e*Pg	**Pg**	**18 00 56.5**	**-0.3**
BDRM	**Kayabasi**	**0.63**	**281**	P	**Pg**	**18 01 01.4**	**-0.4**
BDRM	**Kayabasi**	**0.63**	**281**	*i* P	**Pg**	**18 01 01.4**	**-0.4**
BDRM				*i* S	**Sn**	**18 01 15.8**	**+0.2**
ARG	**Arkhangelos**	**0.73**	**186**	P	**Pg**	**18 01 03.5**	**-0.2**
ARG				S	**Sb**	**18 01 16.8**	**+1.7**
ARG	**Arkhangelos**	**0.73**	**186**	P	**Pg**	**18 01 03.5**	**-0.2**
ARG				S	**Sb**	**18 01 15.6**	**+0.5**
ARG	**Arkhangelos**	**0.73**	**186**	P	**Pg**	**18 01 03.5**	**-0.2**
ARG				S	**Sb**	**18 01 15.7**	**+0.6**
BODT	**Bodrum**	**0.74**	**279**	*e*PG	**Pg**	**18 01 02.9**	**-0.9**
BODT	**Bodrum**	**0.74**	**279**	P	**Pg**	**18 01 03.4**	**-0.4**
BODT				S	**Sb**	**18 01 15.7**	**+0.5**
BODT	**Bodrum**	**0.74**	**279**	P	**Pg**	**18 01 03.4**	**-0.4**
BODT				S	**Sb**	**18 01 15.7**	**+0.5**
BODT	**Bodrum**	**0.74**	**279**	*e*Pg	**Pg**	**18 01 03.3**	**-0.5**
FETY	**Fethiye**	**0.76**	**114**	*e*PG	**Pg**	**18 01 04.5**	**+0.4**
FETY	**Fethiye**	**0.76**	**114**	P	**Pg**	**18 01 04.0**	**-0.2**
FETY				S	**Sg**	**18 01 14.6**	**+0.6**
FETY	**Fethiye**	**0.76**	**114**	P	**Pg**	**18 01 04.0**	**-0.2**
FETY	**Fethiye**	**0.76**	**114**	*e*Pg	**Pg**	**18 01 04.6**	**+0.4**
FETY				S	**Sg**	**18 01 14.6**	**+0.6**
FETY	**Fethiye**	**0.76**	**114**	*e*Pg	**Pg**	**18 01 03.4**	**-0.8**
FETY				*e*Sg	**Sg**	**18 01 14.6**	**+0.6**
AYDN	**Tasoluk**	**0.76**	**339**	P	**Pg**	**18 01 03.8**	**-0.4**
AYDN				S	**Sn**	**18 01 17.5**	**-1.3**
AYDN	**Tasoluk**	**0.76**	**339**	*i* P	**Pg**	**18 01 03.8**	**-0.4**
AYDN				*i* S	**Sn**	**18 01 17.5**	**-1.3**
NIS1	**Nisyros Isl.**	**0.91**	**248**	*e*PG	**Pg**	**18 01 06.8**	**-0.2**
NIS1	**Nisyros Isl.**	**0.91**	**248**	P	**Pb**	**18 01 07.6**	**-0.1**
NIS1				S	**Sn**	**18 01 22.6**	**+0.3**
NIS1	**Nisyros Isl.**	**0.91**	**248**	*e*Pg	**Pg**	**18 01 06.8**	**-0.2**
NIS1	**Nisyros Isl.**	**0.91**	**248**	P	**Pb**	**18 01 07.6**	**-0.1**
NIS1				S	**Sb**	**18 01 20.5**	**+0.4**
NIS1	**Nisyros Isl.**	**0.91**	**248**	P	**Pb**	**18 01 08.3**	**+0.6**
NIS1				S	**Sb**	**18 01 20.5**	**+0.4**
NIS1				AML	AML	18 01 26.2	
	comp=N,23085μm,0.4s						
NIS1				AML	AML	18 01 27.6	
	comp=E,25955μm,0.4s						
NIS1	**Nisyros Isl.**	**0.91**	**248**	*e*Pg	**Pb**	**18 01 07.6**	**-0.1**
NIS1				*e*Sn	**Sn**	**18 01 22.6**	**+0.3**
NISR	**Nisiros**	**0.94**	**249**	P	**Pb**	**18 01 08.1**	**-0.2**
NISR	**Nisiros**	**0.94**	**249**	P	**Pb**	**18 01 08.1**	**-0.2**
NISR				S	**Sb**	**18 01 21.1**	**+0.1**
NISR	**Nisiros**	**0.94**	**249**	P	**Pb**	**18 01 08.1**	**-0.2**
NISR				S	**Sb**	**18 01 21.1**	**+0.1**
NISR				AML	AML	18 01 27.3	
	comp=N,8089μm,0.3s						
NISR				AML	AML	18 01 29.8	
	comp=E,15649μm,0.6s						
NISR	**Nisiros**	**0.94**	**249**	*e*Pg	**Pb**	**18 01 08.1**	**-0.2**
DNZL	**Cakiroluk**	**0.99**	**41**	P	**Pg**	**18 01 07.8**	**-0.8**
DNZL	**Cakiroluk**	**0.99**	**41**	*i* P	**Pg**	**18 01 07.8**	**-0.8**
DNZL				*i* S	**Sn**	**18 01 28.2**	**+3.6**
AYDB	**Zeytinkoy-Aydi**	**1.03**	**345**	*e*PG	**Pg**	**18 01 08.1**	**-1.3**
AYDB	**Zeytinkoy-Aydi**	**1.03**	**345**	*e*Pg	**Pg**	**18 01 08.1**	**-1.3**
DENT	**Denizli**	**1.03**	**39**	*e*PG	**Pg**	**18 01 07.8**	**-1.6**
DENT	**Denizli**	**1.03**	**39**	*e*Pg	**Pg**	**18 01 07.8**	**-1.6**
GLHS	**Glhisar (BURDU**	**1.04**	**78**	*e*PG	**Pb**	**18 01 09.9**	**-0.1**
GLHS	**Glhisar (BURDU**	**1.04**	**78**	*e*Pg	**Pb**	**18 01 10.0**	**-0.1**
GCAM	**G?zelcaml?**	**1.09**	**314**	P	**Pg**	**18 01 10.2**	**-0.3**
GCAM	**G?zelcaml?**	**1.09**	**314**	*i* P	**Pg**	**18 01 10.2**	**-0.3**
GCAM				*i* S	**Sn**	**18 01 29.3**	**+2.5**
GOLH	**Golhisar**	**1.11**	**75**	P	**Pg**	**18 01 11.1**	**+0.2**
GOLH	**Golhisar**	**1.11**	**75**	*i* P	**Pg**	**18 01 11.1**	**+0.2**
GOLH				*i* S	**Sn**	**18 01 35.1**	**+7.6**
AKAS	**Kas**	**1.32**	**122**	P	**Pn**	**18 01 14.9**	**+0.2**
AKAS	**Kas**	**1.32**	**122**	*i* P	**Pn**	**18 01 14.9**	**+0.2**
AKAS				*i* S	**Sn**	**18 01 39.4**	**+6.6**
SMG	**Samos**	**1.34**	**305**	P	**Pn**	**18 01 14.0**	**-0.9**
SMG				S	**Sn**	**18 01 32.7**	**-0.3**
SMG	**Samos**	**1.34**	**305**	P	**Pn**	**18 01 14.3**	**-0.6**
SMG				S	**Sg**	**18 01 31.3**	**-1.4**
SMG	**Samos**	**1.34**	**305**	P	**Pn**	**18 01 14.3**	**-0.6**
SMG				S	**Sg**	**18 01 31.3**	**-1.4**
SMG				AML	AML	18 01 36.2	
	comp=E,6802μm,0.5s						
SMG				AML	AML	18 01 36.4	
	comp=N,6265μm,0.4s						
SMG	**Samos**	**1.34**	**305**	P	**Pn**	**18 01 14.0**	**-0.9**
SMG				S	**Sn**	**18 01 32.7**	**-0.3**
KSL	**Kastellorizon**	**1.35**	**126**	P	**Pg**	**18 01 16.0**	**+0.4**
KSL				S	**Sn**	**18 01 35.3**	**+2.0**
KSL	**Kastellorizon**	**1.35**	**126**	P	**Pg**	**18 01 16.7**	**+1.2**
KSL				AML	AML	18 01 41.6	
	comp=E,3876μm,0.6s						
KSL				AML	AML	18 01 43.5	
	comp=N,3174μm,0.7s						
KSL	**Kastellorizon**	**1.35**	**126**	*e*Pn	**Pg**	**18 01 16.0**	**+0.4**
KSL				*e*Sn	**Sn**	**18 01 35.3**	**+2.0**
ELL	**Elmali**	**1.37**	**98**	*e*PN	**Pg**	**18 01 16.2**	**+0.4**
ELL	**Elmali**	**1.37**	**98**	*e*Pn	**Pg**	**18 01 16.2**	**+0.4**
DGB	**¨zmir**	**1.53**	**316**	*i* P	**Pn**	**18 01 16.4**	**-1.1**
DGB				*i* S	**Sg**	**18 01 43.0**	**+4.1**
MANT	**Manisa**	**1.56**	**10**	P	**Pn**	**18 01 17.6**	**-0.5**
MANT				S	**Sg**	**18 01 42.2**	**+2.3**
MANT	**Manisa**	**1.56**	**10**	*i* P	**Pn**	**18 01 17.6**	**-0.5**
MANT				*i* S	**Sg**	**18 01 42.1**	**+2.3**
KULA	**Kula-Manisa**	**1.60**	**12**	*e*PN	**Pn**	**18 01 18.3**	**-0.2**
KULA	**Kula-Manisa**	**1.60**	**12**	P	**Pn**	**18 01 17.8**	**-0.7**
KULA	**Kula-Manisa**	**1.60**	**12**	P	**Pn**	**18 01 17.8**	**-0.7**
KULA	**Kula-Manisa**	**1.60**	**12**	*e*Pn	**Pn**	**18 01 18.3**	**-0.2**
KULA	**Kula-Manisa**	**1.60**	**12**	P	**Pn**	**18 01 17.8**	**-0.7**
IZM	**Izmir**	**1.64**	**333**	*e*PN	**Pn**	**18 01 18.6**	**-0.4**
IZM	**Izmir**	**1.64**	**333**	*e*Pn	**Pn**	**18 01 18.6**	**-0.4**
KARP	**Karpathos**	**1.64**	**212**	*e*PN	**Pn**	**18 01 19.7**	**+0.7**
KARP	**Karpathos**	**1.64**	**212**	P	**Pn**	**18 01 19.5**	**+0.5**
KARP	**Karpathos**	**1.64**	**212**	*e*Pn	**Pn**	**18 01 19.7**	**+0.7**
KARP				*e*Sn	**Sn**	**18 01 39.1**	**-1.4**
KARP				S	**Sn**	**18 01 40.7**	**+0.2**
KARP	**Karpathos**	**1.64**	**212**	P	**Pn**	**18 01 19.4**	**+0.3**
KARP				S	**Sn**	**18 01 40.7**	**+0.2**
KARP				AML	AML	18 01 45.0	
	comp=E,3696μm,0.5s						
KARP				AML	AML	18 01 47.8	
	comp=N,3137μm,0.4s						
KARP	**Karpathos**	**1.64**	**212**	*e*Pn	**Pn**	**18 01 19.2**	**+0.2**
KARP				*e*Sn	**Sn**	**18 01 39.1**	**-1.4**
KORT	**Korkueli**	**1.71**	**88**	P	**Pb**	**18 01 21.9**	**+0.4**
KORT	**Korkueli**	**1.71**	**88**	*i* P	**Pb**	**18 01 21.9**	**+0.4**
KORT				*i* S	Sg	18 01 54.3	+10
BLCB	**Balcova**	**1.71**	**327**	*e*PN	**Pn**	**18 01 18.5**	**-1.5**
BLCB	**Balcova**	**1.71**	**327**	*e*Pn	**Pn**	**18 01 18.5**	**-1.5**
KHL	**Karahalli**	**1.72**	**37**	*e*PN	**Pn**	**18 01 19.4**	**-0.7**
KHL	**Karahalli**	**1.72**	**37**	*e*Pn	**Pn**	**18 01 19.4**	**-0.7**
KHAL	**Karahalli**	**1.74**	**35**	P	**Pn**	**18 01 20.0**	**-0.5**
KHAL				S	**Sg**	**18 01 47.2**	**+1.6**
KHAL	**Karahalli**	**1.74**	**35**	*i* P	**Pn**	**18 01 20.0**	**-0.5**
KHAL				*i* S	**Sg**	**18 01 47.2**	**+1.6**
ZEY	**¨zmir**	**1.88**	**314**	*i* P	**Pn**	**18 01 21.5**	**-0.7**
ZEY				*i* S	**Sg**	**18 01 56.2**	**+6.3**
URLA	**Izmir**	**1.91**	**318**	P	**Pn**	**18 01 21.5**	**-1.2**
URLA	**Izmir**	**1.91**	**318**	*i* P	**Pn**	**18 01 21.5**	**-1.2**
URLA				*i* S	**Sg**	**18 01 57.9**	**+6.9**
ANTB	**Antalya**	**1.95**	**91**	*e*PN	**Pb**	**18 01 24.5**	**-1.0**
ANTB	**Antalya**	**1.95**	**91**	*e

BALB Balikesir 2.70 354 *e*PN **Pn 18 01 33.4 -0.1**
BALB Balikesir 2.70 354 *e*Pn **Pn 18 01 33.4 -0.1**
NPS Neapolis 2.70 232 P **Pn 18 01 34.0 +0.4**
NPS Neapolis 2.70 232 P **Pn 18 01 34.0 +0.4**
NPS Neapolis 2.70 232 P **Pn 18 01 34.4 +0.8**
NPS AML AML 18 02 10.2
comp=N,884µm,0.4s
NPS AML AML 18 02 12.0
comp=E,758µm,0.5s
NPS Neapolis 2.70 232 P **Pn 18 01 34.0 +0.4**
PRK Paraskevi 2.76 327 P **Pn 18 01 34.1 -0.3**
PRK Paraskevi 2.76 327 P **Pn 18 01 34.2 -0.2**
PRK Paraskevi 2.76 327 P **Pn 18 01 34.1 -0.2**
PRK AML AML 18 02 25.8
comp=E,3815µm,0.8s
PRK AML AML 18 02 27.2
comp=N,2455µm,0.7s
PRK Paraskevi 2.76 327 P **Pn 18 01 34.1 -0.2**
LAST Lasithi 2.85 232 P **Pn 18 01 36.2 +0.5**
LAST Lasithi 2.85 232 P **Pn 18 01 36.2 +0.5**
LAST Lasithi 2.85 232 P **Pn 18 01 36.1 +0.5**
LAST Lasithi 2.85 232 *e*Pn **Pn 18 01 36.1 +0.5**
SIGR SIGRI 2.93 321 *e*PN **Pn 18 01 36.5 -0.2**
SIGR SIGRI 2.93 321 P **Pn 18 01 36.3 -0.4**
SIGR SIGRI 2.93 321 *e*Pn **Pn 18 01 36.5 -0.2**
SIGR SIGRI 2.93 321 *e*Pn **Pn 18 01 36.3 -0.4**
GONE Gonen-Balikesi 3.12 352 *e*PN **Pn 18 01 39.4 0.0**
GONE Gonen-Balikesi 3.12 352 *e*Pn **Pn 18 01 39.4 0.0**
IDI Anoyia 3.17 239 Pn **Pn 18 01 41.2 +1.2**
comp=N,8.5nm,0.3s,baz=59,slow=14,SNR=43
IDI Sn **Sn 18 02 18.2 +0.1**
comp=N,9.3nm,0.3s,baz=34,slow=14,SNR=6.7
IDI Anoyia 3.17 239 P **Pn 18 01 40.5 +0.5**
IDI Anoyia 3.17 239 P **Pn 18 01 40.5 +0.5**
IDI Anoyia 3.17 239 *e*Pn **Pn 18 01 40.8 +0.8**
IDI *e*Sn **Sn 18 02 18.2 +0.1**
IDI Anoyia 3.17 239 P **Pn 18 01 40.3 +0.3**
IDI AML AML 18 02 22.8
comp=N,366µm,0.8s
IDI AML AML 18 02 25.7
comp=E,294µm,0.6s
IDI Anoyia 3.17 239 *e*Pn **Pn 18 01 40.8 +0.8**
IDI *e*Sn **Sn 18 02 18.2 +0.1**
EZN Ezine 3.24 333 *e*PN **Pn 18 01 40.2 -0.7**
EZN Ezine 3.24 333 P **Pn 18 01 40.4 -0.5**
EZN Ezine 3.24 333 P **Pn 18 01 40.4 -0.5**
EZN Ezine 3.24 333 *e*Pn **Pn 18 01 40.4 -0.5**
KCTX Karacabey (Bur 3.31 2 *e*PN **Pn 18 01 41.1 -0.9**
KCTX Karacabey (Bur 3.31 2 *e*Pn **Pn 18 01 41.1 -0.9**
GAZI Gazipasa 3.37 101 P **Pn 18 01 43.2 +0.4**
GAZI Gazipasa 3.37 101 *i* P **Pn 18 01 43.2 +0.4**
SIVA Sivas 3.37 236 P **Pn 18 01 45.7 +3.0**
SIVA Sivas 3.37 236 P **Pn 18 01 45.7 +3.0**
IGD Bursa 3.40 13 *i* P **Pg 18 01 52.6 -2.1**
EDC Edincik 3.41 355 *e*PN **Pn 18 01 42.9 -0.4**
EDC Edincik 3.41 355 *e*Pn **Pn 18 01 42.9 -0.4**
KONT Konya--Tatoy 3.44 72 *e*PN **Pn 18 01 45.1 +1.4**
KONT Konya--Tatoy 3.44 72 *e*Pn **Pn 18 01 45.2 +1.4**
MDNY Mudanya-Bursa 3.46 8 *e*PN **Pn 18 01 44.2 +0.4**
MDNY Mudanya-Bursa 3.46 8 *e*Pn **Pn 18 01 44.3 +0.4**
KIZT Kizilcal 3.48 55 *e*PN **Pn 18 01 45.3 +1.0**
KIZT Kizilcal 3.48 55 *e*Pn **Pn 18 01 45.3 +1.0**
CAVI Cavuskoy 3.49 21 *e*PN **Pn 18 01 44.8 +0.4**
CAVI Cavuskoy 3.49 21 *e*Pn **Pn 18 01 44.8 +0.4**
KRBG Karabiga-Canak 3.52 348 *e*PN **Pn 18 01 44.0 -0.7**
KRBG Karabiga-Canak 3.52 348 *e*Pn **Pn 18 01 44.0 -0.7**
LADK Ladik-KONYA 3.52 68 *e*PN **Pn 18 01 46.4 +1.5**
LADK Ladik-KONYA 3.52 68 *e*Pn **Pn 18 01 46.4 +1.5**
IZI Iznik 3.52 16 *e*PN **Pn 18 01 45.3 +0.4**
IZI Iznik 3.52 16 *e*Pn **Pn 18 01 45.3 +0.4**
SVRH Sivrihisar-ESK 3.60 45 *e*PN **Pn 18 01 47.8 +1.7**
SVRH Sivrihisar-ESK 3.60 45 *e*Pn **Pn 18 01 47.8 +1.7**
LPK Lapseki 3.60 342 *e*PN **Pn 18 01 46.0 0.0**
LPK Lapseki 3.60 342 *e*Pn **Pn 18 01 46.0 0.0**
PTL Penteli 3.63 289 P **Pn 18 01 47.0 +0.6**
PTL Penteli 3.63 289 P **Pn 18 01 47.0 +0.6**
PTL Penteli 3.63 289 P **Pn 18 01 47.0 +0.6**
PTL Penteli 3.63 289 *e*Pn **Pn 18 01 47.0 +0.6**
VLY Voula,Athens 3.64 286 P **Pn 18 01 47.0 +0.5**
VLY Voula,Athens 3.64 286 P **Pn 18 01 47.0 +0.5**
VLY Voula,Athens 3.64 286 P **Pn 18 01 47.3 +0.9**
ARMT Armutlu 3.65 8 *e*PN **Pn 18 01 47.8 +1.2**
ARMT Armutlu 3.65 8 *e*Pn **Pn 18 01 47.8 +1.2**
ADVT Abdulvahap 3.68 18 *e*PN **Pn 18 01 47.5 +0.5**
ADVT Abdulvahap 3.68 18 *e*Pn **Pn 18 01 47.5 +0.5**
MRMT Marmara Adasi 3.68 353 *e*PN **Pn 18 01 46.4 -0.7**
MRMT Marmara Adasi 3.68 353 *e*Pn **Pn 18 01 46.4 -0.7**
GELI Tayfur-Gelibol 3.71 339 *e*PN **Pn 18 01 47.5 +0.1**
GELI Tayfur-Gelibol 3.71 339 *e*Pn **Pn 18 01 47.5 +0.1**
EREA Eretria 3.71 295 P **Pn 18 01 48.0 +0.6**
EREA Eretria 3.71 295 P **Pn 18 01 48.0 +0.6**
IMMV Iera Moni Meta 3.74 248 P **Pn 18 01 48.4 +0.6**
IMMV Iera Moni Meta 3.74 248 P **Pn 18 01 48.4 +0.6**
ERMK Ermenek 3.78 93 P **Pn 18 01 52.3 +3.8**
ERMK Ermenek 3.78 93 *i* P **Pn 18 01 52.3 +3.8**
LIA Limnos Island 3.79 322 P **Pn 18 01 48.6 +0.1**
LIA Limnos Island 3.79 322 P **Pn 18 01 48.6 +0.1**
LIA Limnos Island 3.79 322 P **Pn 18 01 48.6 +0.1**
RKY Sarkoy-Tekirda 3.82 348 *e*PN **Pn 18 01 48.6 -0.4**
RKY Sarkoy-Tekirda 3.82 348 *e*Pn **Pn 18 01 48.6 -0.4**
AKMC Akamas 3.84 119 P **Pn 18 01 49.9 +0.6**
baz=287
AKMC Akamas 3.84 119 P **Pn 18 01 49.9 +0.6**
GULT Gulveren 3.91 27 *e*PN **Pn 18 01 51.5 +1.2**
GULT Gulveren 3.91 27 *e*Pn **Pn 18 01 51.5 +1.2**
GVD Gavdhos 3.96 239 *e*Pn **Pn 18 01 53.8 +2.9**
GVD Gavdhos 3.96 239 *e*Pn **Pn 18 01 53.8 +2.9**
ALFC Alefka 3.97 115 P **Pn 18 01 51.5 +0.4**
baz=285
ALFC S **Sn 18 02 38.8 +0.8**
ALFC Alefka 3.97 115 P **Pn 18 01 51.5 +0.4**
ALFC S **Sn 18 02 38.8 +0.8**
DID Didima 4.02 279 P **Pn 18 01 52.2 +0.5**
DID Didima 4.02 279 P **Pn 18 01 52.2 +0.5**
DID Didima 4.02 279 *e*Pn **Pn 18 01 52.2 +0.5**
HRT Hereke 4.03 16 *e*PN **Pn 18 01 52.9 +1.0**
HRT Hereke 4.03 16 *e*Pn **Pn 18 01 52.9 +1.0**
AOS Alonnisos 4.08 304 *e*PN **Pn 18 01 53.3 +0.8**
AOS Alonnisos 4.08 304 *e*Pn **Pn 18 01 53.3 +0.8**
VILL Villia 4.09 289 P **Pn 18 01 53.3 +0.7**
VILL Villia 4.09 289 P **Pn 18 01 53.3 +0.7**
SMTH Samothraki Isl 4.10 330 P **Pn 18 01 52.5 -0.3**
SMTH Samothraki Isl 4.10 330 P **Pn 18 01 52.5 -0.3**
SMTH Samothraki Isl 4.10 330 P **Pn 18 01 51.9 -0.9**
SMTH Samothraki Isl 4.10 330 *e*Pn **Pn 18 01 52.5 -0.3**
ENEZ Enez 4.11 338 *e*PN **Pn 18 01 52.9 -0.1**
ENEZ Enez 4.11 338 P **Pn 18 01 53.0 +0.1**
ENEZ Enez 4.11 338 *e*Pn **Pn 18 01 52.9 -0.1**
ISK Istanbul-Kandi 4.16 9 *e*PN **Pn 18 01 54.5 +0.9**
ISK Istanbul-Kandi 4.16 9 *e*Pn **Pn 18 01 54.5 +0.9**
AKDN Akdeniz- K¨–br 4.18 112 *e*PN **Pn 18 01 56.4 +2.5**
AKDN Akdeniz- K¨–br 4.18 112 *e*Pn **Pn 18 01 56.4 +2.5**
LEF Lefka 4.20 114 *e*PN **Pn 18 01 54.2 +0.1**
LEF Lefka 4.20 114 *e*Pn **Pn 18 01 54.2 +0.1**
MDUB Mudurnu 4.22 33 *e*PN **Pn 18 01 56.1 +1.6**
MDUB Mudurnu 4.22 33 *e*Pn **Pn 18 01 56.1 +1.6**
KYTH Kithira 4.22 262 P **Pn 18 01 57.2 +2.7**
KYTH Kithira 4.22 262 P **Pn 18 01 57.2 +2.7**
VLI Veliai 4.25 268 P **Pn 18 01 56.9 +2.1**
VLI Veliai 4.25 268 P **Pn 18 01 56.9 +2.1**
BGKT Bogazkoy 4.25 6 *e*PN **Pn 18 01 55.5 +0.7**
BGKT Bogazkoy 4.25 6 *e*Pn **Pn 18 01 55.5 +0.7**
CTKS Kestanelik-??a 4.29 3 *e*PN **Pn 18 01 55.4 +0.1**
CTKS Kestanelik-??a 4.29 3 *e*Pn **Pn 18 01 55.4 +0.1**
ALN Alexandroupoli 4.29 337 *e*PN **Pn 18 01 55.4 0.0**
ALN Alexandroupoli 4.29 337 P **Pn 18 01 55.0 -0.4**
ALN Alexandroupoli 4.29 337 P **Pn 18 01 55.0 -0.4**
ALN Alexandroupoli 4.29 337 *e*Pn **Pn 18 01 55.4 0.0**
ALN Alexandroupoli 4.29 337 P **Pn 18 01 55.0 -0.4**
LTK Loutraki 4.32 286 P **Pn 18 01 56.5 +0.7**
LTK Loutraki 4.32 286 P **Pn 18 01 56.5 +0.7**
LTK Loutraki 4.32 286 *e*Pn **Pn 18 01 56.5 +0.7**
SILT Sile 4.34 14 *e*PN **Pn 18 01 56.9 +0.8**
SILT Sile 4.34 14 *e*Pn **Pn 18 01 56.9 +0.8**
KLYT Kilyos 4.35 8 *e*PN **Pn 18 01 57.5 +1.3**
KLYT Kilyos 4.35 8 *e*Pn **Pn 18 01 57.5 +1.3**
SZAC Souni 4.37 119 P **Pn 18 01 57.0 +0.4**
baz=289
SZAC S **Sn 18 02 48.3 +0.4**
SZAC Souni 4.37 119 P **Pn 18 01 57.0 +0.4**

SZAC S **Sn 18 02 48.3 +0.4**
MAMC Mammari 4.42 112 P **Pn 18 01 59.1 +1.9**
baz=283
MAMC Mammari 4.42 112 P **Pn 18 01 59.1 +1.9**
IKL Isikli 4.45 98 *e*PN **Pn 18 02 00.2 +2.6**
IKL Isikli 4.45 98 *e*Pn **Pn 18 02 00.2 +2.6**
CTYL Yalikoy Yolu 4.52 1 *e*PN **Pn 18 01 59.4 +0.8**
CTYL Yalikoy Yolu 4.52 1 *e*Pn **Pn 18 01 59.4 +0.8**
AFSR Af´ar-Bala (A 4.56 55 *e*PN **Pn 18 02 00.9 +1.7**
AFSR Af´ar-Bala (A 4.56 55 *e*Pn **Pn 18 02 00.9 +1.7**
CSS Mathiatis 4.59 114 P **Pn 18 02 01.5 +1.9**
baz=286
CSS S **Sn 18 02 56.1 +2.8**
CSS Mathiatis 4.59 114 P **Pn 18 02 00.3 +0.6**
CSS Mathiatis 4.59 114 *e*Pn **Pn 18 02 00.2 +0.6**
CSS S **Sn 18 02 56.1 +2.8**
CSS Mathiatis 4.59 114 *e*Pn **Pn 18 02 00.2 +0.6**
BR231 Keskin MP Arra 4.60 50 *e*PN **Pn 18 02 01.9 +2.2**
BR231 Keskin MP Arra 4.60 50 *e*Pn **Pn 18 02 01.9 +2.2**
LFK Lefkose 4.61 110 *e*PN **Pn 18 02 02.3 +2.4**
LFK Lefkose 4.61 110 *e*Pn **Pn 18 02 02.3 +2.4**
ANTO Ankara 4.62 50 *e*PN **Pn 18 02 01.8 +1.7**
ANTO Ankara 4.62 50 *e*Pn **Pn 18 02 01.8 +1.7**
KAVA Kavala 4.97 326 P **Pn 18 02 04.6 -0.1**
KAVA Kavala 4.97 326 P **Pn 18 02 04.6 -0.1**
KAVA Kavala 4.97 326 *e*Pn **Pn 18 02 04.6 -0.1**
EDRB Edirne 5.02 347 *e*PN **Pn 18 02 05.8 +0.3**
EDRB Edirne 5.02 347 *e*Pn **Pn 18 02 05.8 +0.3**
MERS Mersin 5.05 89 *e*PN **Pn 18 02 08.6 +2.7**
MERS Mersin 5.05 89 *e*Pn **Pn 18 02 08.6 +2.7**
BR101 Keskin Array S 5.08 55 *e*Pn **Pn 18 02 07.6 +1.2**
BR101 *e*Sn **Sn 18 03 07.2 +1.7**
BR101 Keskin Array S 5.08 55 *e*Pn **Pn 18 02 07.6 +1.2**
BR101 *e*Sn **Sn 18 03 07.2 +1.7**
BR131 Keskin Array S 5.08 55 *e*Pn **Pn 18 02 08.2 +1.8**
BR131 Keskin Array S 5.08 55 *e*Pn **Pn 18 02 08.2 +1.8**
BRTR Keskin Array B 5.08 55 Pn **Pn 18 02 07.6 +1.2**
comp=E,5.2nm,0.3s,baz=242,slow=17,SNR=169
BRTR Sn **Sn 18 03 07.3 +1.8**
comp=E,0.8nm,0.3s,baz=229,slow=28,SNR=6.7
AGG Agios Georgios 5.09 296 *e*PN **Pn 18 02 07.7 +1.2**
AGG Agios Georgios 5.09 296 *e*Pn **Pn 18 02 07.7 +1.2**
AGG Agios Georgios 5.09 296 *e*Pn **Pn 18 02 07.7 +1.2**
PHNC Paralimni 5.09 111 P **Pn 18 02 09.2 +2.7**
baz=284
PHNC Paralimni 5.09 111 P **Pn 18 02 09.2 +2.7**
KDZ Kurdzhali 5.17 336 P **Pn 18 02 07.4 -0.2**
HORT Hortiatis 5.41 314 *e*PN **Pn 18 02 11.1 +0.2**
HORT Hortiatis 5.41 314 *e*Pn **Pn 18 02 11.1 +0.2**
KARA Karaisali 5.47 85 *e*PN **Pn 18 02 14.4 +2.8**
KARA Karaisali 5.47 85 *e*Pn **Pn 18 02 14.4 +2.8**
DIM Dimitrovgrad 5.50 339 P **Pn 18 02 11.7 -0.3**
MMB Musomiste 5.80 324 P **Pn 18 02 16.1 -0.1**
PLD Plovdiv 5.82 333 P **Pn 18 02 16.7 +0.2**
KNT Kendrikon 5.90 317 *e*PN **Pn 18 02 18.8 +1.2**
KNT Kendrikon 5.90 317 *e*Pn **Pn 18 02 18.8 +1.2**
HMAT Matruh 5.91 189 AMP 18 03 00.0
comp=N,90µm,0.9s,logA/T=5.0,baz=196
CORM Corum 5.97 55 *e*PN **Pn 18 02 20.8 +2.2**
CORM Corum 5.97 55 *e*Pn **Pn 18 02 20.8 +2.2**
VAY Valandovo 6.19 317 *e*PN **Pn 18 02 22.0 +0.5**
VAY Valandovo 6.19 317 *e*Pn **Pn 18 02 22.0 +0.5**
ARNB Al Arnab 6.34 98 *e*P **Pn 18 02 20.3 -3.4**
ARNB *e*S Sn 18 03 14.3 -22
TAHT Tahtakopru-Hat 6.43 93 *e*PN **Pn 18 02 27.9 +3.2**
DQRL Deir Qamar 6.82 116 *e*P **Pn 18 02 29.1 -1.2**
DQRL Deir Qamar 6.82 116 *e*P **Pn 18 02 29.1 -1.2**
HWQ Hawqa 6.83 111 *e*P **Pn 18 02 30.9 +0.4**
HWQ Hawqa 6.83 111 *e*P **Pn 18 02 30.9 +0.4**
BIDA Albida 6.84 104 *e*P **Pn 18 02 29.8 -0.8**
BIDA *e*S Sn 18 03 30.1 -19
MMAI Mount Meron Ar 7.08 122 Pn **Pn 18 02 32.9 -0.9**
comp=N,9.8nm,0.3s,baz=298,slow=12,SNR=49
MMAI Sn **Sn 18 03 50.8 -3.8**
comp=N,14nm,0.3s,baz=303,slow=24,SNR=8.5
HAWK Haweek 7.08 108 *e*P **Pn 18 02 33.8 -0.1**
HAWK *e*S Sn 18 03 38.6 -16
RCY Rachaya 7.12 117 *e*P **Pn 18 02 34.3 -0.1**
RCY Rachaya 7.12 117 *e*P **Pn 18 02 34.3 -0.1**
MPEP Malo Peshtene 7.26 333 P **Pn 18 02 36.3 +0.1**
TIRR Tirgusor 7.50 1 ⇑*i* P **Pn 18 02 39.8 +0.3**
TIRR Tirgusor 7.50 1 *e*Pn **Pn 18 02 39.6 +0.1**
TIRR Tirgusor 7.50 1 *e*Pn **Pn 18 02 39.6 +0.1**
HNAT Natroun 7.57 164 P **Pn 18 02 38.3 -2.1**
baz=165
KOT Kottamia 7.62 156 P **Pn 18 02 38.6 -2.6**
baz=156
BARS Barje 7.65 322 *e*Pn **Pn 18 02 42.7 +1.1**
HHAG Hagoal 7.69 154 P **Pn 18 02 39.8 -2.4**
baz=154
TIR Tirane 7.84 307 *e*Pn **Pn 18 02 47.2 +3.1**
GLL Jalalah 7.91 157 S Sn 18 04 01.2 -14
baz=157
SUZ Suez 8.07 150 P **Pn 18 02 45.7 -1.6**
baz=149
SUZ Suez 8.07 150 P **Pn 18 02 45.7 -1.6**
ZAF Zafarana 8.46 153 P **Pn 18 02 50.8 -1.9**
baz=153
HNKL Nakhl 8.49 144 P **Pn 18 02 51.5 -1.7**
baz=142
HNKL Nakhl 8.49 144 P **Pn 18 02 51.5 -1.7**
ASF Jabal al Asfar 8.59 121 Pn **Pn 18 02 56.7 +2.0**
comp=N,1.1nm,0.3s,baz=106,slow=22,SNR=5.1
ASF Sn **Sn 18 04 29.3 -2.7**
comp=N,0.5nm,0.3s,baz=306,slow=19,SNR=2.7
MLR Muntele Rosu 8.71 349 Pn **Pn 18 02 56.7 +0.6**
comp=N,0.1nm,0.3s,baz=200,slow=7.9,SNR=11
MLR LR LR 18 06 54.8
comp=N,48nm,18.3s,baz=142,slow=42
MLR Muntele Rosu 8.71 349 ⇑*i* P **Pn 18 02 57.1 +1.0**
PLOR Plostina 8.97 353 ⇑*i* P **Pn 18 03 00.2 +0.5**
EIL Elat 9.18 140 Pn **Pn 18 03 01.9 -0.6**
comp=N,3.0nm,0.3s,baz=0.3,slow=2.1,SNR=28
EIL Sn **Sn 18 04 40.0 -6.3**
comp=N,3.7nm,0.3s,baz=56,slow=18,SNR=9.2
EIL Elat 9.18 140 *e*Pn **Pn 18 03 02.0 -0.6**
MDVR Moldovita 9.24 330 ⇑*i* P **Pn 18 03 03.5 0.0**
TIP Timpagrande 9.31 287 *e*Pn **Pn 18 03 06.7 +2.3**
TIP Timpagrande 9.31 287 *e*Pn **Pn 18 03 06.7 +2.3**
NUB 9.56 144 P **Pn 18 03 06.5 -1.3**
baz=143
TESR Tescani 9.63 353 ⇑*i* P **Pn 18 03 09.0 +0.3**
HDHB Dhahab 9.81 145 P **Pn 18 03 09.4 -1.7**
baz=144
HDHB Dhahab 9.81 145 P **Pn 18 03 09.4 -1.7**
BZS Buzias 9.98 332 ⇓*i* P **Pn 18 03 13.2 -0.3**
TEKS Tekeris 10.05 322 *e*Pn **Pn 18 03 12.8 -1.7**
CUC Castrocucco 10.19 291 *e*Pn **Pn 18 03 18.3 +1.9**
CUC Castrocucco 10.19 291 *e*Pn **Pn 18 03 18.3 +1.9**
DRGR 10.65 339 ⇑*i* P **Pn 18 03 23.9 +1.1**
BURAR Bucovina Array 10.89 349 ⇓*i* P **Pn 18 03 28.3 +2.3**
BUR08 Bucovina Ar. S 10.92 349 *e*Pn **Pn 18 03 26.6 +0.2**
BUR08 Bucovina Ar. S 10.92 349 *e*Pn **Pn 18 03 26.6 +0.2**
VRAC Vranov 14.96 329 LR LR 18 11 21.4
comp=N,61nm,18.4s,baz=192,slow=42
KBA Koelnbreinsper 14.97 317 *i* P **P 18 04 29.9 +2.4**
comp=N,6.2nm,0.8s
KBA Koelnbreinsper 14.97 317 P **P 18 04 29.9 +2.4**
comp=N,6.2nm,0.8s
KEST Kesra 15.26 271 *e*Pn **P 18 04 30.4 -0.3**
comp=N,17nm,1.4s
KRLC Kraliky 15.50 331 *e*P **P 18 04 34.9 +1.7**
DPC Dobruska-Polom 15.90 331 *e*P **Pn 18 04 33.8 -0.1**
DPC *e*pP **pP 18 04 38.9 -0.4**
GEA0 GERESS Array S 15.92 323 *e*Pn **P 18 04 38.5 +0.6**
GEC2 GERESS Array S 15.92 323 *e*Pn **P 18 04 39.7 +1.8**
comp=N,4.2nm,1.0s
GERES GERESS Array B 15.92 323 Pn **P 18 04 39.8 +1.8**
comp=N,0.1nm,0.3s,baz=130,slow=11,SNR=14
KHC Kasperske Hory 16.18 323 *e*P **P 18 04 41.2 +0.5**
KHC Kasperske Hory 16.18 323 *e*Pn **P 18 04 41.3 +0.6**
comp=N,1.2nm,0.9s
MOTA Moosalm 16.37 315 *i* P **P 18 04 47.0 +4.0**
comp=N,4.4nm,0.9s
FETA Feichten 16.41 313 *i* P **P 18 04 48.4 +4.9**
comp=N,7.8nm,1.0s
RETA Reutte 16.64 315 *e*P **P 18 04 50.7 +4.8**
comp=N,5.8nm,1.4s
CLL Collm 17.98 328 *e*Pn **P 18 05 02.7 +2.1**
comp=N,5.4nm,1.0s
CLL Collm 17.98 328 *e*Pn **P 18 05 02.7 +2.1**
comp=N,5.4nm,1.0s
SENIN Lac Senin/Sane 18.20 308 *e*Pn **P 18 05 05.3 +2.0**

comp=N,5.8nm,0.6s
SENIN Lac Senin/Sane 18.20 308 *e*Pn **P 18 05 05.3 +2.0**
comp=N,5.8nm,0.6s
STU Stuttgart 18.22 316 *e*Pn **P 18 05 06.2 +2.9**
comp=N,10.0nm,0.5s
RGN Rugen 20.37 335 *e*P **P 18 05 23.8 -2.9**
comp=N,120nm,1.0s
FIA0 FINESS Array S 24.55 358 *e*P **P 18 06 09.7 -0.2**
FIA0 FINESS Array S 24.55 358 *e*P **P 18 06 09.7 -0.2**
FINES FINESS Array B 24.55 358 P **P 18 06 09.7 -0.2**
comp=N,4.8nm,0.7s,baz=160,slow=9.9,SNR=21
FIA1 FINESS Array S 24.56 358 *e*P **P 18 06 09.1 -0.8**
FIA1 FINESS Array S 24.56 358 *e*P **P 18 06 09.1 -0.8**
HFS Hagfors 25.00 343 P **P 18 06 13.3 -0.6**
comp=N,1.8nm,0.7s,baz=128,slow=11,SNR=8.3
AKTO Aktyubinsk 25.21 48 P **P 18 06 15.1 -0.9**
comp=N,1.3nm,0.5s,baz=238,slow=11,SNR=5.6
ES19 SONSECA Array 25.28 286 *e*P **P 18 06 16.7 0.0**
ES19 SONSECA Array 25.28 286 *e*P **P 18 06 16.7 0.0**
ESDC Sonseca Array 25.33 286 P **P 18 06 17.4 +0.2**
comp=N,3.2nm,0.8s,baz=76,slow=9.2,SNR=15
ABKAR Abkulak array 26.02 52 *e*P **P 18 06 22.5 -0.8**
ABKAR Abkulak array 26.02 52 *e*P **P 18 06 22.5 -0.8**
NB200 NORSAR Array S 26.40 341 *e*P **P 18 06 27.0 +0.3**
NB200 NORSAR Array S 26.40 341 *e*P **P 18 06 27.0 +0.3**
NOA NORSAR Array B 26.40 341 P **P 18 06 27.0 +0.3**
comp=N,0.8nm,0.9s,baz=144,slow=8.8,SNR=4.1
UOSS Minazif 26.71 109 *e*P **P 18 06 29.1 -0.7**
comp=N,0.5nm,1.0s
UOSS Minazif 26.71 109 *e*P **P 18 06 29.1 -0.7**
comp=N,0.5nm,1.0s
ZRNK Zerenda 32.48 47 *e*P **P 18 07 19.8 -0.9**
comp=N,1.4nm,0.8s
ZRNK Zerenda 32.48 47 *e*P **P 18 07 19.8 -0.9**
comp=N,1.4nm,0.8s
ARA0 ARCESS Array S 32.68 358 *e*P **P 18 07 21.5 -0.7**
ARA0 ARCESS Array S 32.68 358 *e*P **P 18 07 21.6 -0.7**
ARCES ARCESS Array B 32.68 358 P **P 18 07 21.5 -0.7**
comp=N,1.5nm,0.9s,baz=184,slow=9.6,SNR=6.6
TOA1 Torodi Ar. Sit 33.54 232 *e*P **P 18 07 30.0 -0.2**
comp=N,27nm,1.9s
TOA1 Torodi Ar. Sit 33.54 232 *e*P **P 18 07 30.0 -0.2**
comp=N,27nm,1.9s
TOA0 Torodi Ar. Sit 33.54 232 *e*P **P 18 07 29.8 -0.4**
comp=N,22nm,1.8s
TOA0 Torodi Ar. Sit 33.54 232 *e*P **P 18 07 29.8 -0.4**
comp=N,22nm,1.8s
TORD Torodi Ar. Bea 33.54 232 P **P 18 07 30.0 -0.2**
comp=N,1.2nm,0.5s,baz=34,slow=8.8,SNR=18
JMIC Jan Mayen 39.11 342 LR LR 18 26 47.1
comp=N,18nm,18.6s,baz=114,slow=40
BORG Borgarnes 40.22 330 LR LR 18 26 56.0
comp=N,24nm,18.9s,baz=75,slow=39
MK31 Makanchi Array 40.72 59 *e*P **P 18 08 30.1 -1.0**
MK31 Makanchi Array 40.72 59 *e*P **P 18 08 30.1 -1.0**
MK32 Makanchi Array 40.72 59 *e*P **P 18 08 30.1 -0.9**
MK32 Makanchi Array 40.72 59 *e*P **P 18 08 30.1 -0.9**
MKAR Makanchi Array 40.72 59 P **P 18 08 30.1 -0.9**
comp=N,1.0nm,0.8s,baz=279,slow=6.4,SNR=9.4
MK01 Makanchi Array 40.73 59 *e*P **P 18 08 30.2 -0.9**
MK01 Makanchi Array 40.73 59 *e*P **P 18 08 30.2 -0.9**
SPA0 Spitsbergen Ar 41.64 356 *e*P **P 18 08 36.8 -1.4**
SPA0 Spitsbergen Ar 41.64 356 *e*P **P 18 08 36.8 -1.4**
ZAA0 Zalesovo Array 41.97 48 *e*P **P 18 08 40.1 -1.1**
ZAA0 Zalesovo Array 41.97 48 *e*P **P 18 08 40.1 -1.1**
ZALV Zalesovo Beam 41.97 48 P **P 18 08 40.3 -0.9**
comp=N,0.7nm,0.5s,baz=267,slow=8.9,SNR=4.4
ZAA1 Zalesovo Array 41.97 48 *e*P **P 18 08 40.3 -0.9**
ZAA1 Zalesovo Array 41.97 48 *e*P **P 18 08 40.3 -0.9**
CMLA Cha da Macela 42.23 288 *e*P **P 18 08 42.6 -0.9**
CMLA Cha da Macela 42.23 288 *e*P **P 18 08 42.6 -0.9**
KBS Kingsbay 42.62 355 *e*P **P 18 08 45.8 -0.3**
comp=N,52nm,1.6s
KBS Kingsbay 42.62 355 *e*P **P 18 08 45.8 -0.3**
comp=N,52nm,1.6s
ROSA Rosais 44.02 290 *e*P **P 18 08 54.8 -3.2**
comp=N,365nm,1.5s
SFJD Kangerlussuaq 52.32 331 LR LR 18 33 14.2
comp=N,23nm,19.3s,baz=147,slow=37
PALK Pallekele 55.99 108 *e*P **P 18 10 29.0 -0.2**
comp=N,39nm,1.3s
PALK Pallekele 55.99 108 *e*P **P 18 10 29.1 -0.2**
comp=N,39nm,1.3s
SONA0 Songino Array 56.43 52 *e*P **P 18 10 32.5 +0.4**
comp=N,4.9nm,1.6s
SONA0 Songino Array 56.43 52 *e*P **P 18 10 32.5 +0.4**
comp=N,4.9nm,1.6s
SONM Songino Array 56.43 52 P **P 18 10 32.5 +0.4**
comp=N,0.7nm,0.5s,baz=292,slow=8.5,SNR=10
SONA1 Songino Array 56.44 52 *e*P **P 18 10 31.6 -0.5**
SONA1 Songino Array 56.44 52 *e*P **P 18 10 31.6 -0.5**
MATP Matopo 57.06 180 P **P 18 10 38.3 +1.6**
comp=N,4.0nm,0.7s,baz=0.9,slow=10,SNR=9.1
LBTB Lobatse 61.68 183 *e*P **P 18 11 10.5 +2.0**
comp=N,7.7nm,0.8s
LBTB Lobatse 61.68 183 *e*P **P 18 11 10.5 +2.0**
comp=N,7.7nm,0.8s
CM31 Chiang Mai Arr 63.93 86 *e*P **P 18 11 22.9 -0.9**
CM31 Chiang Mai Arr 63.93 86 *e*P **P 18 11 22.9 -0.9**
CMAR Chiang Mai Arr 63.93 86 P **P 18 11 22.6 -1.2**
comp=N,0.5nm,0.7s,baz=304,slow=7.2,SNR=4.2
BOSA Boshof 65.28 183 P **P 18 11 33.6 +1.3**
comp=N,5.3nm,0.9s,baz=0.0,slow=8.1,SNR=5.5
USRK Ussuriysk Ar. 73.82 47 P **P 18 12 24.5 -0.4**
comp=N,1.6nm,0.6s,baz=320,slow=5.3,SNR=7.3
KS15 Wonju Array Si 75.21 54 *e*P **P 18 12 32.4 -0.7**
KS15 Wonju Array Si 75.21 54 *e*P **P 18 12 32.4 -0.7**
KSAR Wonju Array Be 75.21 54 P **P 18 12 32.9 -0.2**
KSAR Wonju Array Be 75.21 54 P **P 18 12 32.9 -0.2**
KSRS Korea Array 75.23 54 P **P 18 12 32.9 -0.3**
comp=N,2.3nm,0.7s,baz=306,slow=4.5,SNR=14
YKA Yellowknife Ar 76.48 343 P **P 18 12 38.2 -1.7**
comp=N,0.3nm,0.9s,baz=30,slow=5.0,SNR=3.4

ISCJB ***07*** *18:10:30.8±0.3, 17°.94S±0°.08×178°.53W±0°.06, h579km, mb4.3/78, Error ellipse: s-maj=11.8km s-min=5.1km az=148.8*
NEIC ***07*** *18:10:30.5±1.0, 17°.86S×178°.51W, h563km±12km, mb4.3/62, Error ellipse: s-maj=16.4km s-min=6.0km az=152.0*
IDC ***07*** *18:10:30.8±1.7, 17°.89S×178°.48W, h562km±21km, mb3.6/12, mb1 3.9/14, mb1mx3.7/23, mbtmp4.5/14, Error ellipse: s-maj=18.6km s-min=11.9km az=144.0*
ISC 07 18:10:31.6±0.5, 18°.0S±0°.1×178°.40W±0°.09, h579km, n104, σ1§10/106, mb4.3/78, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**7.55**	**58**	P	**P**	**18 12 24.3**	**-1.8**
	8.9nm,0.3s,baz=243,slow=3.3,SNR=10						
AFI	**Afiamalu**	**7.55**	**58**	*e*P	**P**	**18 12 24.0**	**-2.2**
DZM	**Mont Dzumac**	**14.81**	**252**	P	**P**	**18 13 38.9**	**+0.2**
	1.5nm,0.3s,baz=86,slow=17,SNR=15						
URZ	**Urewera**	**20.57**

1.4nm,0.7s,baz=90,slow=3.4,SNR=3.4
AS01 Alice Springs 44.73 254 *eP* **P 18 17 54.1 -0.6**
AS01 *ePcP* **PcP 18 19 23.4 -0.9**
AS31 Alice Springs 44.78 254 *eP* **P 18 17 54.6 -0.3**
26nm,0.6s
ASAR Alice Springs 44.78 254 P **P 18 17 54.4 -0.6**
96nm,0.7s,baz=88,slow=8.5,SNR=931
ASAR PcP **PcP 18 19 24.2 -0.2**
1.9nm,0.6s,baz=90,slow=5.1,SNR=4.9
MTN Manton Dam 48.81 269 *eP* **P 18 18 24.1 -1.2**
26nm,0.7s
SOEI Soe 56.08 270 *eP* **P 18 19 18.3 +0.9**
53nm,0.8s
VNDA Vanda 60.36 185 P **P 18 19 46.3 +1.3**
1.0nm,0.7s,baz=348,slow=7.8,SNR=5.9
KAPI Kappang 61.71 274 *eP* **P 18 19 53.5 -1.4**
16nm,1.4s
JAGI Jajag, Banyuwa 66.05 269 *eP* **P 18 20 20.3 -2.2**
24nm,0.7s
MJAR Matsushiro Arr 67.98 323 P **P 18 20 33.5 -0.3**
1.5nm,0.7s,baz=156,slow=6.1,SNR=5.5
QSPA South Pole Qui 72.06 180 *eP* **P 18 20 57.1 -0.6**
KSM Kuching 72.70 277 *eP* **P 18 21 02.1 -0.1**
29nm,0.9s
PETK Petropavlovsk- 73.76 345 P **P 18 21 07.6 +0.3**
2.3nm,0.8s,baz=187,slow=3.8,SNR=2.8
KSRS Korea Array 74.77 318 P **P 18 21 14.2 +0.9**
0.4nm,0.7s,baz=134,slow=6.8,SNR=3.3
AFDM Forest Hills D 78.03 42 *eP* **P 18 21 31.7 +0.4**
7.7nm,1.0s
WAKR Walker 78.78 43 *eP* **P 18 21 36.5 +1.1**
DAC Darwin (Calif) 78.80 46 *eP* **P 18 21 35.1 -0.5**
10nm,1.5s
NV01 Mina Array Sit 79.48 44 *eP* **P 18 21 39.8 +0.6**
NVAR Mina Array Bea 79.48 44 P **P 18 21 40.1 +0.9**
4.1nm,0.7s,baz=225,slow=8.7,SNR=28
NV11 Mina Array Sit 79.58 44 *eP* **P 18 21 40.2 +0.6**
8.4nm,1.0s
TPNV Topopah Spring 80.07 46 *eP* **P 18 21 42.8 +0.5**
5.0nm,0.9s
CN2 Changchun 80.09 322 *eP* **P 18 21 44.3 +2.3**
TCBU Trout Butte 80.11 37 *eP* **P 18 21 45.2 +2.9**
MOD Modoc Plateau 80.14 40 *eP* **P 18 21 42.1 -0.4**
9.3nm,0.7s
K05A Summer Lake 80.26 39 *eP* **P 18 21 43.8 +0.7**
13nm,0.9s
SHPR Sheep Range 80.59 47 *eP* **P 18 21 43.6 -1.4**
Y14A Wickenburg 80.86 50 *eP* **P 18 21 46.4 +0.1**
18nm,1.0s
WVOR Wild Horse Val 81.46 40 *eP* **P 18 21 50.0 +0.8**
14nm,1.0s
TUC Tucson 81.74 52 *eP* **P 18 21 52.1 +1.2**
10.0nm,1.1s
LCMT Little Creek M 82.18 47 *eP* **P 18 21 54.1 +1.0**
6.6nm,0.9s
X16A Lo Mia Camp, P 82.23 50 *eP* **P 18 21 54.9 +1.4**
8.6nm,1.0s
ARUT Antelope Range 82.42 46 *eP* **P 18 21 51.1 -3.2**
TT01 Tatalina 82.53 10 *eP* **P 18 21 54.2 +0.2**
TTA Tatalina 82.55 10 *eP* **P 18 21 54.4 +0.2**
4.6nm,1.0s
U15A North Rim 82.57 48 *eP* **P 18 21 56.4 +1.2**
12nm,0.8s
ELK Elko 82.71 43 *eP* **P 18 21 55.6 -0.2**
4.8nm,1.0s
WUAZ Wupatki 82.79 49 *eP* **P 18 21 54.5 -1.7**
8.4nm,0.9s
BMRM Bremner River 83.24 16 *eP* **P 18 21 57.4 -0.2**
19nm,1.4s
SCM Sheep Creek Mo 83.31 14 *eP* **P 18 21 57.1 -0.9**
12nm,0.9s
MTPU Mount Pierson 83.42 47 *eP* **P 18 22 01.1 +1.6**
7.7nm,1.0s
CAST Castle Rocks 83.71 12 *eP* **P 18 21 57.9 -2.0**
6.5nm,0.8s
MFID Camas Ranch 83.73 41 *eP* **P 18 22 01.1 +0.5**
7.2nm,1.0s
BALM Baldy 83.90 17 *eP* **P 18 22 00.4 -0.6**
5.6nm,0.8s
KTH Kantishna Hill 84.06 12 *eP* **P 18 21 59.5 -2.2**
4.9nm,0.9s
TRF Thorofare Moun 84.09 12 *eP* **P 18 22 01.0 -1.0**
10nm,0.9s
F10A Beach Ranch, E 84.26 38 *eP* **P 18 22 03.0 -0.1**
10nm,0.9s
ENH Enshi 84.33 304 *eP* **P 18 22 03.9 +0.1**
9.7nm,0.9s
RND Reindeer 84.35 13 *eP* **P 18 22 02.1 -1.0**
11nm,1.0s
MCK McKinley 84.62 13 *eP* **P 18 22 02.9 -1.5**
4.7nm,0.9s
TMUT Trail Mountain 84.69 46 *eP* **P 18 22 06.8 +1.1**
6.4nm,1.0s
HLID Hailey 84.69 41 *eP* **P 18 22 06.1 +0.8**
SRU San Rafael Swe 85.07 46 *eP* **P 18 22 08.0 +0.6**
4.4nm,0.9s
WRH Wood River Hil 85.45 13 *eP* **P 18 22 07.0 -1.3**
6.8nm,1.1s
NEW Newport 85.57 36 *eP* **P 18 22 09.2 -0.1**
HDA Harding Lake 85.64 13 *eP* **P 18 22 08.2 -1.1**
11nm,1.5s
CCB Clear Creek Bu 85.66 13 *eP* **P 18 22 08.2 -1.1**
9.7nm,1.3s
MDM Murphy Dome 85.85 12 *eP* **P 18 22 08.9 -1.3**
6.4nm,1.1s
IL1 Eielson Array 85.97 13 *eP* **P 18 22 09.6 -1.2**
ILAR Eielson Array 85.97 13 P **P 18 22 09.9 -0.8**
1.5nm,0.7s,baz=227,slow=5.8,SNR=12
TXAR Lajitas Array 86.03 58 P **P 18 22 13.9 +1.8**
8.4nm,0.9s,baz=219,slow=5.8,SNR=9.1
ANMO Albuquerque 86.14 52 *eP* **P 18 22 13.0 +0.4**
3.4nm,1.0s
MCMT McKenzie Canyo 86.30 40 *eP* **P 18 22 13.8 +0.7**
BSMT Bassoo Peak 86.68 37 *eP* **P 18 22 14.8 +0.1**
REDW Red Top Meadow 86.84 42 *eP* **P 18 22 16.7 +0.9**
8.0nm,1.0s
SNOW Snow King Moun 86.95 42 *eP* **P 18 22 17.3 +1.0**
8.7nm,1.0s
IMW Indian Meadow 87.04 42 *eP* **P 18 22 17.7 +1.0**
7.1nm,0.8s
S22A 4UR Ranch, Cre 87.06 49 *eP* **P 18 22 18.0 +1.1**
5.3nm,1.2s
CHMT Chamberlain Mo 87.09 39 *eP* **P 18 22 16.5 -0.3**
MOOW Moose Ponds 87.09 42 *eP* **P 18 22 17.2 +0.3**
2.5nm,0.9s
FLWY Flagg Ranch 87.28 42 *eP* **P 18 22 18.4 +0.7**
6.5nm,0.9s
HHC Hu-ho-hao-te 87.34 314 *eP* **P 18 22 18.7 +0.8**
HHC pmax pmax
comp=Z,20nm,0.7s
HHC pmax pmax
comp=Z,130nm,3.9s
YMR Madison River 87.39 41 *eP* **P 18 22 20.1 +1.9**
comp=Z,8.4nm,0.4s
BW06 Boulder Array 87.41 43 *eP* **P 18 22 18.5 +0.1**
PD31 Pinedale Array 87.41 43 *eP* **P 18 22 18.5 +0.1**
PDAR Pinedale Array 87.41 43 P **P 18 22 18.6 +0.2**
comp=Z,2.8nm,0.7s,baz=216,slow=3.0,SNR=30
COLD Coldfoot 87.49 11 *eP* **P 18 22 18.0 +0.1**
comp=Z,4.1nm,1.0s
H17A Grant Village 87.51 42 *eP* **P 18 22 20.8 +2.0**
comp=Z,5.0nm,0.8s
SDCO Great Sand Dun 88.01 49 *eP* **P 18 22 21.6 +0.3**
comp=Z,9.4nm,1.4s
RLMT Red Lodge 88.67 41 *eP* **P 18 22 25.1 +0.8**
comp=Z,4.9nm,1.1s
CM01 Chiang Mai Arr 88.89 290 *eP* **P 18 22 26.5 +1.0**
CD2 Chengdu 89.12 303 P **P 18 22 25.5 -0.9**
CD2 pmax pmax
comp=Z,3.0nm,0.7s
RSSD Black Hills 91.62 44 *eP* **P 18 22 37.3 -0.6**
comp=Z,3.0nm,0.8s
INK Inuvik 91.96 15 *eP* **P 18 22 37.0 -1.5**
comp=Z,3.5nm,0.9s
YKA Yellowknife Ar 94.40 25 P **P 18 22 49.0 -0.8**
comp=Z,1.0nm,0.9s,baz=242,slow=4.5,SNR=9.5
BRTR Keskin Array B 144.85 315 PKP PKPbc 18 29 04.1 -0.3
comp=Z,1.6nm,0.9s,baz=48,slow=2.1,SNR=6.1
BR231 Keskin MP Arra 145.37 315 *ePKPdf* **PKPdf 18 29 03.6 -1.0**
GERES GERESS Array B 147.69 345 PKPbc **PKPbc 18 29 12.4 +0.5**
comp=Z,0.3nm,0.5s,baz=32,slow=3.9,SNR=2.9

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*ISCJB **07** 18:39:58.7±0.6, 33°.45S±0°.06×70°.51W±0°.06, h104km±4km, mb3.5/2, Error ellipse: s-maj=10.6km s-min=6.8km az=152.9*

*SJA **07** 18:39:58.9±0.6, 33°.35S×70°.49W, h103km±3km, ML3.7, MW3.6*
*GUC **07** 18:39:59.5±0.5, 33°.45S×70°.67W, h103km±3km, ML4.5*
*IDC **07** 18:40:01.3±6.7, 33°.57S×70°.37W, h119km±59km, mb3.3/2, mb1 3.6/3, mb1mx3.3/27, mbtmp3.6/3, Error ellipse: s-maj=120.1km s-min=43.2km az=67.0*
ISC 07 18:39:59.5±0.9,**33°.44S**±0°.07×**70°.51W**±0°.05,**h99**km±6km, **n24**, σ0**°44**/33,**2C-2D, Chile-Argentina border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CLCH	**Cerro Calan**	**0.04**	**332**	↓*iP*	**Pn**	**18 40 13.4**	**0.0**
CLCH				*i* S	**Sn**	**18 40 24.2**	**+0.4**
CLCH				IAML		18 40 24.7	
comp=E,30μm,0.7s							
ANTU	**Antumapu**	**0.17**	**217**	↑*iP*	**Pn**	**18 40 13.4**	**-0.2**
ANTU				*i* S	**Sn**	**18 40 24.3**	**+0.2**
RCDM	**Rinconada Maip**	**0.25**	**258**	*eP*	**Pn**	**18 40 13.7**	**-0.1**
RCDM				*eS*	**Sn**	**18 40 23.7**	**-0.9**
RCDM				IAML		18 40 24.5	
comp=E,69μm,0.2s							
PEL	**Peldehue**	**0.33**	**333**	↓↓*iP*	**Pn**	**18 40 14.1**	**-0.1**
PEL				*i* S	**Sn**	**18 40 25.3**	**+0.1**
PEL				IAML		18 40 26.0	
comp=N,20μm,0.5s							
ROC1	**El Roble**	**0.62**	**317**	*iP*	**Pn**	**18 40 16.7**	**+0.2**
ROC1				*i* S	**Sn**	**18 40 29.6**	**+0.4**
ROCH	**El Roble**	**0.62**	**318**	↑*iP*	**Pn**	**18 40 16.2**	**-0.3**
ROCH				*i* S	**Sn**	**18 40 29.0**	**-0.1**
ROCH				IAML		18 40 30.8	
comp=N,20μm,0.2s							
ARCO	**CERRO ARCO**	**1.45**	**66**	*iP*	**Pn**	**18 40 25.2**	**0.0**
ARCO				*i* S	**Sn**	**18 40 44.8**	**0.0**
ARCO				IAML		18 40 47.7	
comp=Z,1μm,0.4s							
AAGR	**Agrelo**	**1.45**	**77**	*iP*	**Pn**	**18 40 25.7**	**+0.5**
AAGR				*i* S	**Sn**	**18 40 45.4**	**+0.6**
AUSP	**Uspallata**	**1.54**	**38**	*iP*	**Pn**	**18 40 26.6**	**+0.2**
ASAL	**Salagasta**	**1.64**	**60**	*iP*	**Pn**	**18 40 27.7**	**+0.2**
RTLS	**Leoncito**	**1.93**	**32**	*iP*	**Pn**	**18 40 31.6**	**+0.2**
RTLS				*i* S	**Sn**	**18 40 55.3**	**-0.3**
RTCV	**Cerro Valdivia**	**2.29**	**47**	*iP*	**Pn**	**18 40 35.6**	**-0.2**
RTCV				*i* S	**Sn**	**18 41 03.0**	**-0.7**
SJA	**San Juan**	**2.52**	**41**	*iP*	**Pn**	**18 40 38.7**	**-0.2**
SJA				IAML		18 41 11.7	
comp=Z,184nm,0.3s							
RTLL	**Cerro Villicun**	**2.72**	**40**	*iP*	**Pn**	**18 40 41.3**	**-0.2**
AMOG	**MOGNA**	**3.02**	**35**	*iP*	**Pn**	**18 40 45.3**	**-0.3**
ACAN	**Cantantal**	**3.03**	**68**	*iP*	**Pn**	**18 40 45.1**	**-0.5**
AVFE	**Valle Fertil**	**3.79**	**44**	IAML		18 41 39.0	
comp=Z,132nm,0.4s							
AGUA	**GUANDACOL**	**4.30**	**24**	*iP*	**Pn**	**18 41 02.4**	**-0.4**
VCA	**Vinchina**	**5.08**	**24**	*iP*	**Pn**	**18 41 13.4**	**-0.2**
VCA				IAML		18 42 22.9	
comp=Z,69nm,0.3s							
PLCA	**Paso Flores**	**7.28**	**180**	P	**Pn**	**18 41 43.3**	**0.0**
comp=Z,0.3nm,0.3s,baz=27,slow=14,SNR=6.3							
TXAR	**Lajitas Array**	**69.88**	**329**	P	**P**	**18 51 00.1**	**+0.4**
comp=Z,0.4nm,0.6s,baz=156,slow=7.8,SNR=5.0							
NVAR	**Mina Array Bea**	**84.16**	**324**	P	**P**	**18 52 20.6**	**+0.9**
comp=Z,0.5nm,0.6s,baz=145,slow=4.9,SNR=3.7							
WRA	**Warramunga Arr**	**121.86**	**208**	PKP	**PKPdf**	**18 58 41.4**	**-1.2**
comp=Z,0.3nm,0.8s,baz=165,slow=1.3,SNR=4.2							
ZALV	**Zalesovo Beam**	**153.06**	**33**	PKPbc	**PKPbc**	**18 59 44.3**	**-0.5**
comp=Z,1.1nm,0.5s,baz=298,slow=3.2,SNR=6.1							

MEX 07 18:59:24.0±0.4,**17°.70N**×**101°.50W**,**h41**km±4km,**MD3.7, Near coast of Guerrero**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZIIG	**Zihuatanejo**	**0.10**	**159**	*iP*	Pn	18 59 29.3	-1.4
ZIIG				*eS*	Sn	18 59 33.8	-1.6
ARIG	**Puente Sto Nin**	**1.24**	**62**	*eP*	Pn	18 59 43.4	-1.5
ARIG				*eS*	Sn	18 59 58.3	-2.2
CAIG	**El Cayaco**	**1.35**	**119**	*eP*	Pn	18 59 45.0	-1.3
CAIG				*eS*	Sn	19 00 00.8	-2.2
MEIG	**Mezcala**	**1.81**	**83**	*eP*	Pn	18 59 52.2	-0.6
MEIG				*eS*	Sn	19 00 12.3	-2.2
MOIG	**Morelia**	**1.99**	**9**	*iP*	Pn	18 59 54.0	-1.4
MOIG				*i* S	Sn	19 00 17.5	-1.7
YAIG	**Yautepec**	**2.59**	**63**	*iP*	Pn	19 00 02.7	-0.9
YAIG				*eS*	Sn	19 00 31.7	-2.1
TLIG	**Tlapa**	**2.80**	**92**	*eP*	Pn	19 00 06.5	0.0
TLIG				*i* S	Sn	19 00 36.9	-2.2

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*IDC **07** 19:02:40.1±6.2, 35°.71N×142°.04E, h0km, mb3.4/2, mb1 3.5/3, mb1mx3.1/40, mbtmp3.2/3, ML2.6/1, Error ellipse: s-maj=149.4km s-min=38.4km az=43.0*
*JMA **07** 19:02:47.7±0.2, 35°.23N×141°.26E, h23km±4km, M2.3*
*ISCJB **07** 19:02:48.1±1.2, 35°.20N±0°.09×141°.2E±0°.1, h48km, mb3.5/2, Error ellipse: s-maj=17.5km s-min=10.3km az=146.7*
ISC 07 19:02:49.4±1.6,**35°.20N**±0°.07×**141°.2E**±0°.1,**h48**km,**n9**, σ1**°49**/10,**Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.59**	**328**	P	**Pn**	**19 02 59.2**	**-2.4**
BSO1	**Boso 1**	**0.59**	**201**	P	**Pn**	**19 02 59.5**	**-1.6**
BSO3	**Boso 3**	**0.72**	**236**	P	**Pn**	**19 03 02.0**	**-1.1**
BSO3				*eX*		19 03 11.2	
BSO4	**Boso 4**	**0.77**	**254**	P	**Pn**	**19 03 03.0**	**-0.8**
JCN	**Nagara**	**0.87**	**284**	P	**Pn**	**19 03 05.2**	**-0.1**
JCN				*eS*	**Sn**	**19 03 15.9**	**-1.1**
JYT	**Yasato**	**1.33**	**321**	P	**Pn**	**19 03 11.6**	**+0.1**
MJAR	**Matsushiro Arr**	**2.80**	**299**	Pn	**Pn**	**19 03 31.7**	**0.0**
0.8nm,0.3s,baz=100,slow=14,SNR=9.5							
WRA	**Warramunga Arr**	**55.23**	**188**	P	**P**	**19 12 19.2**	**+1.6**
0.2nm,0.4s,baz=4.3,slow=7.3,SNR=9.2							
ASAR	**Alice Springs**	**58.96**	**188**	P	**P**	**19 12 45.2**	**+1.2**
0.3nm,0.8s,baz=1.2,slow=6.8,SNR=4.0							

DJA 07 19:12:09.9±1.5,**1°.S**±5°.×**9°.8E**±°,**h14**km±15km,**M3.6**/8, **MLv3.6**/8,**Southern Sumatera**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MNSI	**Mandailing Nat**	**1.91**	**38**	P	Pn	19 12 42.0	-0.1
MNSI				S	Sn	19 13 06.4	+0.4
PDSI	**Padang**	**2.07**	**95**	P	Pn	19 12 44.8	+0.5
GSI	**Gunungsitoli**	**2.17**	**338**	P	Pn	19 12 45.6	-0.1
SBSI	**Sibolga**	**2.31**	**12**	P	Pn	19 12 48.6	+1.1
BKNI	**Bangkinang**	**2.84**	**69**	P	Pn	19 12 54.9	+0.1
BKNI				S	Sn	19 13 13.1	-16
SDSI	**Sungai Dareh**	**3.04**	**94**	P	Pn	19 12 56.3	-1.2
SDSI				S	Sn	19 13 13.1	-21

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*IDC **07** 19:13:32.7±7.7, 28°.84S×67°.75W, h118km±64km, mb3.3/1, mb1 3.4/2, mb1mx3.1/28, mbtmp3.9/2, Error ellipse: s-maj=64.0km s-min=48.2km az=138.0*
*SJA **07** 19:13:32.8±0.6, 28°.86S×67°.48W, h132km±3km, ML3.4, MW3.4*
*ISCJB **07** 19:13:33.1±0.5, 28°.82S±0°.05×67°.49W±0°.07, h129km, mb3.2/1, Error ellipse: s-maj=9.2km s-min=6.1km az=33.0*
ISC 07 19:13:33.8±0.9,**28°.81S**±0°.06×**67°.52W**±0°.06,**h129**km,**n19**, σ0**°74**/23,**La Rioja Province**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VCA	**Vinchina**	**0.61**	**277**	*iP*	**Pn**	**19 13 53.9**	**+0.3**
VCA				*i* S	**Sn**	**19 14 09.2**	**+0.6**
VCA				IAML		19 14 11.3	
comp=Z,1μm,0.6s							
AGUA	**GUANDACOL**	**1.09**	**231**	*iP*	**Pn**	**19 13 57.5**	**-0.1**
AGUA				*i* S	**Sn**	**19 14 15.6**	**0.0**
CYA	**Choya**	**1.55**	**77**	*iP*	**Pn**	**19 14 02.4**	**-0.1**
CYA				*i* S	**Sn**	**19 14 24.1**	**-0.2**
CYA				IAML		19 14 25.3	
comp=Z,111nm,0.5s							
AVFE	**Valle Fertil**	**1.84**	**178**	*iP*	**Pn**	**19 14 05.3**	**-0.6**
AVFE				IAML		19 14 34.7	
comp=Z,83nm,0.4s							
AMOG	**MOGNA**	**2.29**	**202**	*iP*	**Pn**	**19 14 10.9**	**-0.4**
RTLL	**Cerro Villicun**	**2.65**	**198**	*iP*	**Pn**	**19 14 15.5**	**-0.4**
AHML	**Horco Molle**	**2.79**	**44**	*iP*	**Pn**	**19 14 18.1**	**+0.2**
RTCV	**Cerro Valdivia**	**3.17**	**196**	*iP*	**Pn**	**19 14 22.4**	**-0.3**
RTLS	**Leoncito**	**3.35**	**207**	*iP*	**Pn**	**19 14 25.2**	**-0.1**
AUSP	**Uspallata**	**3.77**	**205**	*iP*	**Pn**	**19 14 30.3**	**-0.4**
MRA	**San Martin**	**3.92**	**157**	*iP*	**Pn**	**19 14 31.9**	**-0.6**
ASAL	**Salagasta**	**3.94**	**196**	*iP*	**Pn**	**19 14 32.3**	**-0.5**
ARCO	**CERRO ARCO**	**4.20**	**196**	*iP*	**Pn**	**19 14 36.6**	**+0.2**
ARCO				IAML		19 15 02.3	
comp=Z,167nm,0.1s							
LVC	**Limon Verde**	**6.30**	**348**	P	**Pn**	**19 15 04.7**	**0.0**
comp=Z,55nm,0.3s,baz=179,slow=11,SNR=23							
LVC				S	**Sn**	**19 16 13.3**	**-2.3**
comp=Z,23nm,0.3s,baz=131,slow=19,SNR=3.8							
TORD	**Torodi Ar. Bea**	**78.75**	**68**	P	**P**	**19 25 23.2**	**+0.7**
comp=Z,0.4nm,0.6s,baz=254,slow=6.9,SNR=3.0							
ASAR	**Alice Springs**	**123.90**	**204**	PKP	**PKPdf**	**19 32 16.6**	**-0.6**
comp=Z,0.1nm,0.4s,baz=138,slow=1.9,SNR=5.2							
WRA	**Warramunga Arr**	**127.14**	**206**	PKP	**PKPdf**	**19 32 22.7**	**-0.8**
comp=Z,0.2nm,0.4s,baz=157,slow=1.9,SNR=8.0							
ZALV	**Zalesovo Beam**	**147.79**	**31**	PKPbc	**PKPbc**	**19 33 04.2**	**+1.2**
comp=Z,0.4nm,0.3s,baz=300,slow=6.5,SNR=3.2							
MKAR	**Makanchi Array**	**150.40**	**44**	PKPbc	**PKPbc**	**19 33 10.5**	**+0.6**
comp=Z,0.4nm,0.8s,baz=298,slow=3.1,SNR=2.7							

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*ISCJB **07** 19:33:32.8±0.4, 15°.84S±0°.05×70°.52W±0°.06, h227km±6km, mb3.7/10, Error ellipse: s-maj=9.5km s-min=7.5km az=159.9*
*SCB **07** 19:33:32.9±0.4, 15°.48S×70°.03W, h200km, Ml4.0/1, Error ellipse: s-maj=17.0km s-min=10.5km az=46.0*
*IDC **07** 19:33:33.6±0.8, 15°.29S×70°.21W, h198km±8km, mb3.6/10, mb1 3.8/13, mb1mx3.6/39, mbtmp4.1/13, Error ellipse: s-maj=23.1km s-min=10.9km az=30.0*
*GUC **07** 19:33:35.4±0.5, 16°.20S×70°.64W, h245km±6km, ML5.1*
ISC 07 19:33:33.2±0.7,**15°.72S**±0°.06×**70°.47W**±0°.06,**h210**km±7km, **n33**, σ1**°79**/46,**mb3.8**/10,**8C, Southern Peru**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BBOD	**La Paz, Gloria**	**2.02**	**117**	*ePn*	**Pn**	**19 34 14.3**	**+1.2**
BBOD				*eSn*	**S**	**19 34 44.7**	**+0.9**
470nm,0.6s							
BBOB	**La Paz, Bander**	**2.29**	**101**	*ePn*	**Pn**	**19 34 16.1**	**+0.2**
LPAZ	**La Paz**	**2.32**	**104**	P	**Pn**	**19 34 16.9**	**+0.6**
64nm,0.3s,baz=324,slow=7.8,SNR=1335							
LPAZ				S	**S**	**19 34 47.6**	**-1.9**
19nm,0.3s,baz=174,slow=24,SNR=42							
LPAZ	**La Paz**	**2.32**	**104**	*ePn*	**Pn**	**19 34 16.6**	**+0.2**
LPAZ				*eSn*	**S**	**19 34 47.6**	**-1.9**
BBOJ	**La Paz, Jacaqu**	**2.52**	**120**	↑*iPn*	**Pn**	**19 34 19.9**	**+1.5**
BBOJ				*eSn*	**S**	**19 34 54.2**	**+1.0**
BBOE	**La Paz, Chanca**	**2.62**	**115**	*ePn*	**Pn**	**19 34 20.9**	**+1.3**
ARCH	**Arica**	**2.76**	**177**	↑*iP*	**Pn**	**19 34 21.5**	**+0.9**
ARCH				*eS*	**S**	**19 34 55.6**	**-1.7**
PB13	**IPOC Station P**	**2.76**	**161**	↑*iP*	**Pn**	**19 34 23.2**	**+2.0**
PB13				*i* S	**S**	**19 35 00.3**	**+2.0**
PB12	**IPOC Station P**	**2.88**	**177**	↑*iP*	**Pn**	**19 34 22.5**	**+0.5**
PB12				*i* S	**S**	**19 34 58.5**	**-1.4**
MNMC	**Minye Minye**	**3.49**	**166**	↑*iP*	**Pn**	**19 34 30.2**	**+0.8**
MNMC				*eS*	**S**	**19 35 11.8**	**-1.4**
MNMC				AML	AML	19 35 16.4	
comp=N,2μm,0.8s							
PSGC	**Pisagua**	**3.87**	**175**	↑*iP*	**Pn**	**19 34 33.6**	**-0.2**
PSGC				*eS*	**S**	**19 35 17.8**	**-3.3**
PSGC				AML	AML	19 35 22.2	
comp=E,567nm,0.3s							
PB11	**IPOC Station P**	**4.09**	**169**	↑*iP*	**Pn**	**19 34 36.8**	**+0.2**
PB11				*i* S	**S**	**19 35 23.4**	**-2.8**
PB08	**IPOC Station P**	**4.57**	**164**	↑*iP*	**Pn**	**19 34 43.6**	**+0.9**
PB08				*i* S	**S**	**19 35 35.3**	**-2.0**
PB08				AML	AML	19 35 39.5	
comp=N,689nm,0.6s							
LVC	**Limon Verde**	**7.01**	**168**	P	**Pn**	**19 35 14.3**	**+0.4**
comp=N,209nm,0.3s,baz=3.2,slow=9.4,SNR=27							
LVC				S	**S**	**19 36 29.7**	**-4.3**
comp=N,441nm,0.3s,baz=249,slow=23,SNR=11							
NNA	**Nana**	**7.22**	**300**	P	**Pn**	**19 35 16.6**	**+0.2**
comp=N,1.0nm,0.3s,baz=201,slow=17,SNR=2.6							
NNA				S	**S**	**19 36 38.0**	**-0.4**
comp=N,1.5nm,0.3s,baz=228,slow=16,SNR=3.0							
PTGA	**Pitinga**	**18.15**	**36**	P	**P**	**19 37 25.8**	**-4.3**
comp=N,0.4nm,0.3s,baz=17,slow=19,SNR=2.3							
PLCA	**Paso Flores**	**24.92**	**180**	P	**P**	**19 38 41.9**	**+4.8**
comp=N,4.8nm,1.1s,baz=274,slow=8.8,SNR=2.8							
TEIG	**Tepich**	**39.78**	**333**	P	**P**	**19 40 45.3**	**-0.7**
comp=N,2.1nm,0.6s,baz=270,slow=20							
CMIG	**Matias Romero**	**40.53**	**323**	P	**P**	**19 40 50.3**	**-1.8**
comp=N,1.5nm,0.7s,baz=156,slow=10.0,SNR=2.8							
TXAR	**Lajitas Array**	**55.08**	**324**	P	**P**	**19 42 44.5**	**+0.8**
comp=N,0.6nm,0.6s,baz=151,slow=8.7,SNR=9.5							
PDAR	**Pinedale Array**	**68.39**	**330**	P	**P**	**19 44 12.9**	**+0.4**
comp=N,0.3nm,0.5s,baz=116,slow=6.7,SNR=5.2							
ULM	**Lac du Bonnet**	**69.39**	**343**	P	**P**	**19 44 17.2**	**-0.9**
comp=N,3.3nm,0.5s,baz=178,slow=5.2,SNR=3.7							
NVAR	**Mina Array Bea**	**70.06**	**322**	P	**P**	**19 44 24.6**	**+1.9**
comp=N,0.5nm,0.6s,baz=146,slow=8.3,SNR=4.1							
TORD	**Torodi Ar. Bea**	**76.91**	**72**	P	**P**	**19 45 00.9**	**-2.0**
comp=N,1.9nm,0.8s,baz=268,slow=4.8,SNR=9.3							
ESDC	**Sonseca Array**	**82.81**	**46**	P	**P**	**19 45 33.5**	**-0.6**
comp=N,0.7nm,0.8s,baz=282,slow=6.2,SNR=3.5							
YKA	**Yellowknife Ar**	**85.27**	**341**	P	**P**	**19 45 46.4**	**+0.5**
comp=N,3.0nm,0.7s,baz=135,slow=5.1,SNR=62							
ASAR	**Alice Springs**	**134.17**	**212**	PKP	**PKPdf**	**19 52 27.9**	**+1.2**
comp=N,0.4nm,0.6s,baz=121,slow=2.1,SNR=4.5							
WRA	**Warramunga Arr**	**136.98**	**215**	PKP	**PKPdf**	**19 52 32.5**	**+0.6**
comp=N,0.4nm,0.4s,baz=148,slow=1.6,SNR=7.2							
ZALV	**Zalesovo Beam**	**137.25**	**21**	PKP	**PKPdf**	**19 52 32.8**	**+1.5**
comp=N,1.7nm,0.7s,baz=293,slow=2.5,SNR=7.7							
USRK	**Ussuriysk Ar.**	**145.82**	**331**	PKPbc	**PKPbc**	**19 52 48.3**	**+0.5**
comp=N,2.6nm,0.7s,baz=70,slow=2.3,SNR=9.2							
MJAR	**Matsushiro Arr**	**147.15**	**315**	PKPbc	**PKPab**	**19 52 53.6**	**-0.5**
comp=N,3.1nm,0.5s,baz=94,slow=1.9,SNR=12							
SONM	**Songino Array**	**147.87**	**4**	PKPbc	**PKPbc**	**19 52 54.9**	**+1.2**
comp=N,2.7nm,0.6s,baz=326,slow=1.9,SNR=26							
KSRS	**Korea Array**	**152.91**	**327**	PKPbc	**PKPbc**	**19 53 06.8**	**+1.0**
comp=N,0.7nm,0.6s,baz=20,slow=2.6,SNR=4.4							

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*NIED **07** 19:40:00, 22°.30N×123°.70E, h20km, Mw4.4 Best double couple: M0 3.83000×10^15 NP1:φ=67.00000°, δ=69.00000°, λ=-177.00000°. NP2:φ=335.00000°, δ=87.00000°, λ=-21.00000°.*
*ISCJB **07** 19:40:23.0±1.0, 22°.32N±0°.02×123°.90E±0°.03, h15km±6km, mb

NACB				*e*Sn	Sn	19 41 34.4	-9.2
JIKM	**Ikemajima**	**2.91**	**25**	P	**Pn**	**19 41 10.1**	**-0.8**
JIKM				S	**Sn**	**19 41 43.2**	**-1.8**
SSLB	**Suanglung**	**3.11**	**299**	*e*Pn	**Pn**	**19 41 11.1**	**-2.7**
SSLB				*e*Sn	Sn	19 41 43.6	-6.6
TPUB	**Ta-pu**	**3.20**	**289**	*e*Pn	**Pn**	**19 41 13.3**	**-1.6**
YHNB	**Yeheng**	**3.33**	**316**	*e*Pn	**Pn**	**19 41 15.0**	**-1.9**
TATO	**Taipei**	**3.49**	**321**	*e*Pn	**Pn**	**19 41 18.0**	**-0.9**
SGCP	**Mt. Cagua**	**4.38**	**204**	*e*P	**Pn**	**19 41 29.4**	**-1.7**
JKE	**Kume jima 2**	**4.81**	**32**	P	**Pn**	**19 41 34.9**	**-2.2**
JKE				*e*S	**Sn**	**19 42 27.6**	**-4.4**
APYP	**Conner**	**5.06**	**210**	*e*P	**Pn**	**19 41 38.2**	**-2.3**
JJT2	**Tamagusuku 2**	**5.20**	**42**	P	**Pn**	**19 41 41.0**	**-1.5**
JJT2				*e*S	**Sn**	**19 42 37.9**	**-3.8**
JAGN	**Aguni-jima**	**5.26**	**35**	P	**Pn**	**19 41 41.1**	**-2.2**
JAGN				*e*S	**Sn**	**19 42 39.8**	**-3.2**
SIPP	**Brgy, Tapao**	**5.41**	**217⇑**	*e*P	**Pn**	**19 41 44.8**	**-0.6**
QZH	**Quanzhou**	**5.56**	**300⇓**	*i*/Pn	Pn	19 41 40.4	-7.0
QZH				Sn	Sn	19 42 38.6	-12
QZH				smax	smax		
	comp=N,220nm,0.5s						
QZH				smax	smax		
	comp=E,140nm,1.0s						
QZH				LR	LR		
	comp=N,520nm,8.8s						
QZH				LR	LR		
	comp=E,300nm,12.1s						
QZH				LR	LR		
	comp=Z,410nm,12.7s						
JNTH	**Nagotoyohara**	**5.65**	**41**	P	**Pn**	**19 41 46.7**	**-1.9**
JNTH				*e*S	**Sn**	**19 42 47.4**	**-5.2**
JIH	**Iheya**	**6.00**	**37**	P	**Pn**	**19 41 51.3**	**-2.2**
JIH				*e*S	Sn	19 42 55.2	-6.2
JOW	**Kunigami**	**6.03**	**40**	P	**Pn**	**19 41 51.8**	**-2.1**
JOW				S	**Sn**	**19 42 56.4**	**-5.7**
JOW	**Kunigami**	**6.03**	**40**	*e*Pn	**Pn**	**19 41 52.0**	**-1.9**
JOKE	**Okinoerabujima**	**6.60**	**39**	P	**Pn**	**19 41 58.9**	**-2.8**
BCPH	**Baguio City Da**	**6.65**	**209⇓**	*e*P	**Pn**	**19 42 04.6**	**+2.0**
BALP	**Baler**	**6.86**	**199**	*e*P	**Pn**	**19 42 04.7**	**-0.7**
BOLP	**Bolinao**	**6.97**	**213**	*e*P	**Pn**	**19 42 05.5**	**-1.3**
JTK	**Tokunoshima**	**7.14**	**39**	P	Pn	19 42 06.1	-3.0
JTK				*e*S	Sn	19 43 21.2	-8.2
JMZ	**Minamidaito 2**	**7.55**	**61**	P	Pn	19 42 11.6	-3.2
JMZ				*e*S	Sn	19 43 29.5	-10
TGY	**Tagaytay City**	**8.61**	**200**	Pn	**Pn**	**19 42 28.1**	**-1.2**
	comp=Z,72nm,0.3s,baz=79,slow=1.5,SNR=8.5						
TGY				Sn	**Sn**	**19 44 03.9**	**-1.7**
	comp=Z,114nm,0.3s,baz=184,slow=9.8,SNR=3.0						
TGY				LR	LR	19 45 53.2	
	comp=Z,55nm,19.3s,baz=108,slow=39						
JNU	**Nakatsue**	**12.44**	**28**	Pn	**Pn**	**19 43 19.1**	**-2.6**
	comp=Z,1.1nm,0.3s,baz=254,slow=4.6,SNR=10						
JNU	**Nakatsue**	**12.44**	**28**	*e*Pn	**Pn**	**19 43 19.4**	**-2.3**
ENH	**Enshi**	**15.18**	**305**	*e*Pn	**Pn**	**19 43 55.0**	**-4.1**
KS15	**Wonju Array Si**	**15.50**	**12**	*e*Pn	**Pn**	**19 44 03.1**	**0.0**
KSAR	**Wonju Array Be**	**15.50**	**12**	Pn	**Pn**	**19 44 02.7**	**-0.5**
KSRS	**Korea Array**	**15.52**	**12**	Pn	**Pn**	**19 44 02.7**	**-0.7**
	comp=Z,1.2nm,0.3s,baz=192,slow=13,SNR=51						
KSRS				LR	LR	19 49 54.3	
	comp=Z,49nm,18.9s,baz=195,slow=37						
KS01	**Wonju Array Si**	**15.54**	**12**	*e*Pn	**Pn**	**19 44 00.8**	**-2.9**
JWT	**Wachi**	**16.39**	**35**	P	P	19 44 21.3	+4.0
DL2	**Dalian**	**16.69**	**354**	P	**Pn**	**19 44 19.2**	**+0.8**
DL2				pmax	pmax		
	comp=Z,16nm,0.9s						
INU	**Inuyama**	**17.34**	**38**	*e*Pn	**P**	**19 44 30.6**	**+2.8**
	comp=Z,39nm,0.6s						
HMMJ	**Hamamatsu 2**	**17.42**	**41**	P	P	19 44 34.4	+5.8
JYZW	**Yoshizawa**	**17.52**	**41**	P	P	19 44 34.4	+4.7
XAN	**Xi'an**	**17.64**	**315**	P	**P**	**19 44 34.5**	**+3.3**
JGF	**Kuroka**	**17.72**	**39**	P	P	19 44 36.1	+4.1
KKM	**Kota Kinabalu**	**17.77**	**206**	*e*Pn	**P**	**19 44 33.0**	**+0.3**
	comp=Z,54nm,1.7s						
MYLDM	**Lahad Datu**	**17.78**	**198**	*e*Pn	**P**	**19 44 34.6**	**+1.9**
	comp=Z,29nm,1.3s						
SHZ3	**Shizuoka 3**	**17.86**	**41**	P	P	19 44 39.4	+5.8
JOD2	**Odawara 2**	**18.53**	**42**	P	Pn	19 44 50.6	+9.4
MAJO	**Matsushiro**	**18.87**	**38**	*e*P	**Pn**	**19 44 47.0**	**+1.7**
	comp=Z,25nm,0.8s						
MAT	**Matsushiro**	**18.87**	**38**	P	**Pn**	**19 44 47.0**	**+1.7**
MAT	**Matsushiro**	**18.87**	**38**	P	Pn	19 44 49.0	+3.7
MJAR	**Matsushiro Arr**	**18.87**	**38**	P	**Pn**	**19 44 46.7**	**+1.4**
	comp=Z,1.2nm,0.3s,baz=230,slow=9.3,SNR=52						
MJB9	**Matsu-Tunnel**	**18.87**	**38**	*e*P	**Pn**	**19 44 47.0**	**+1.7**
	comp=Z,6.3nm,0.8s						
BJI	**Beijing**	**18.89**	**341**	P	**P**	**19 44 44.9**	**+0.1**
BJI				S	**S**	**19 48 17.2**	**-0.7**
BJI				pmax	pmax		
	comp=Z,7.0nm,0.8s						
BJI				pmax	pmax		
	comp=Z,110nm,3.8s						
BJI				LR	LR		
	comp=N,110nm,17.0s						
BJI				LR	LR		
	comp=E,260nm,20.2s						
BJI				LR	LR		
	comp=Z,44nm,24.1s						
KMI	**Kunming**	**19.59**	**282**	P	**Pn**	**19 44 54.4**	**+0.1**
KMI				*s*P	*s*P	19 45 03.0	-0.5
KMI				S	S	19 48 25.9	-7.0
KMI				pmax	pmax		
	comp=Z,6.0nm,1.4s						
KMI				pmax	pmax		
	comp=Z,130nm,4.8s						
KMI				LR	LR		
	comp=N,180nm,16.1s						
KMI				LR	LR		
	comp=E,81nm,15.1s						
KMI				LR	LR		
	comp=Z,83nm,15.6s						
CD2	**Chengdu**	**19.95**	**300**	P	**P**	**19 44 56.7**	**+0.2**
CD2				*s*P	*p*P	19 45 05.6	+1.9
CD2				PP	**PnPn**	**19 45 17.9**	**+5.2**
CD2				S	**S**	**19 48 38.4**	**-1.3**
CD2				*s*S	*s*S	19 48 49.0	-2.2
CD2				SS	**SnSn**	**19 49 00.2**	**+3.7**
CD2				pmax	pmax		
	comp=Z,20nm,0.6s						
CD2				pmax	pmax		
	comp=Z,110nm,4.1s						
CD2				LR	LR		
	comp=N,250nm,7.8s						
CD2				LR	LR		
	comp=Z,210nm,7.2s						
HHC	**Hu-ho-hao-te**	**21.26**	**333**	*e*P	**P**	**19 45 12.7**	**+2.0**
HHC				pP	pP	19 45 18.2	+0.3
HHC				*s*P	*s*P	19 45 21.4	+0.1
HHC				S	**S**	**19 49 03.0**	**-2.7**
HHC				pmax	pmax		
	comp=Z,32nm,0.7s						
HHC				pmax	pmax		
	comp=Z,230nm,4.2s						
HHC				LR	LR		
	comp=N,800nm,13.0s						
HHC				LR	LR		
	comp=E,700nm,12.5s						
HHC				LR	LR		
	comp=Z,870nm,13.1s						
CN2	**Changchun**	**21.51**	**3**	*e*P	**P**	**19 45 16.0**	**+2.8**
MRSI	**Marisa**	**21.75**	**185**	P	**P**	**19 45 15.9**	**-0.1**
LZH	**Lanzhou**	**22.22**	**313**	*e*P	**P**	**19 45 22.4**	**+1.3**
LZH				pP	pP	19 45 29.0	+0.6
LZH				*s*P	*s*P	19 45 31.3	-0.5
LZH				pmax	pmax		
	comp=Z,18nm,1.0s						
SBUM	**Sibu**	**22.75**	**212**	*e*P	**P**	**19 45 25.3**	**-1.4**
	comp=Z,43nm,1.7s						
USRK	**Ussuriysk Ar.**	**22.86**	**15**	P	**P**	**19 45 28.9**	**+1.2**
	comp=Z,6.0nm,0.8s,baz=195,slow=8.9,SNR=14						
LBMI	**Labuha**	**23.04**	**171**	P	**P**	**19 45 30.7**	**+1.0**
CMAR	**Chiang Mai Arr**	**23.70**	**265**	P	**P**	**19 45 35.4**	**-0.9**
	comp=Z,1.4nm,0.7s,baz=73,slow=8.0,SNR=10.0						
KSM	**Kuching**	**24.55**	**214**	*e*P	**P**	**19 45 43.1**	**-1.0**
	comp=Z,22nm,1.5s						
TTSI	**Tana Toraja**	**25.48**	**190**	P	**P**	**19 45 56.6**	**+4.1**
	comp=Z,21nm,0.9s						
ASAJ	**Asahikawa**	**26.69**	**31**	P	**P**	**19 46 04.8**	**+1.5**
	comp=Z,6.3nm,0.8s,baz=122,slow=1.9,SNR=9.7						
ASAJ	**Asahikawa**	**26.69**	**31**	*e*P	**P**	**19 46 05.9**	**+2.6**
	comp=Z,62nm,1.5s						
GTA	**Gaotai**	**26.70**	**315**	*e*P	**P**	**19 46 04.0**	**+0.4**
GTA				pP	pP	19 46 08.1	-3.3
GTA				*s*P	*s*P	19 46 10.8	-3.9
GTA				S	**S**	**19 50 36.6**	**-1.1**
GTA				*s*S	*s*S	19 50 43.0	-7.5
GTA				SS	**SnSn**	**19 51 48.3**	**+6.4**
GTA				pmax	pmax		
	comp=Z,2.0nm,1.0s						
GTA				pmax	pmax		
	comp=Z,61nm,6.4s						
GTA				LR	LR		
	comp=N,100nm,15.7s						
GTA				LR	LR		
	comp=E,150nm,15.2s						
GTA				LR	LR		
	comp=Z,110nm,15.7s						
BBKI	**Banjar Baru**	**27.07**	**200**	P	**P**	**19 46 10.0**	**+3.0**
	comp=Z,56nm,0.9s						
KAPI	**Kappang**	**27.43**	**189**	*e*P	**P**	**19 46 10.1**	**0.0**
	comp=Z,8.4nm,1.3s						
KLR	**Kul'dur**	**27.61**	**11**	P	**P**	**19 46 11.9**	**+0.4**
	comp=Z,6.6nm,0.9s,baz=222,slow=6.7,SNR=23						
ULN	**Ulaanbaatar**	**28.89**	**336**	*e*P	**P**	**19 46 22.5**	**-0.6**
	comp=Z,3.3nm,1.1s						
SONA0	**Songino Array**	**29.12**	**335**	*e*P	**P**	**19 46 25.3**	**+0.2**
	comp=Z,7.7nm,1.2s						
SONM	**Songino Array**	**29.12**	**335**	P	**P**	**19 46 25.3**	**+0.2**
	comp=Z,2.5nm,0.7s,baz=147,slow=9.6,SNR=23						
SONM				LR	LR	19 59 10.2	
	comp=Z,54nm,19.4s,baz=85,slow=39						
SONA1	**Songino Array**	**29.12**	**335**	*e*P	**P**	**19 46 25.2**	**+0.1**
MANU	**Manus Island**	**33.29**	**134**	*e*P	P	19 47 05.2	+3.2
	comp=Z,39nm,0.6s						
GUN	**Gumba**	**34.80**	**287**	*e*P	**P**	**19 47 15.6**	**+0.1**
PKIN	**Phulchoki**	**35.23**	**287**	*e*P	**P**	**19 47 18.6**	**-0.5**
KKN	**Kakani**	**35.33**	**287**	*e*P	**P**	**19 47 19.6**	**-0.3**
GKN	**Gorkha**	**35.90**	**287**	*e*P	**P**	**19 47 24.3**	**-0.4**
	comp=Z,4.8nm,0.5s						
WMQ	**Urumqi**	**36.78**	**314**	*e*P	**P**	**19 47 32.7**	**+0.8**
WMQ				LR	LR		
	comp=N,24nm,22.8s						
KOLN	**Koldanda**	**36.82**	**287**	*e*P	**P**	**19 47 32.7**	**+0.1**
	comp=N,7.9nm,0.7s						
PYUN	**Piuthan**	**37.36**	**287**	*e*P	**P**	**19 47 37.3**	**+0.1**
YAK	**Yakutsk**	**39.93**	**4**	*e*P	**P**	**19 47 59.4**	**+1.4**
	comp=N,8.4nm,0.9s						
MK01	**Makanchi Array**	**41.43**	**316**	*e*P	**P**	**19 48 10.8**	**+0.1**
MK31	**Makanchi Array**	**41.45**	**316**	*e*P	**P**	**19 48 11.0**	**+0.1**
MK32	**Makanchi Array**	**41.45**	**316**	*e*P	**P**	**19 48 11.4**	**+0.5**
MKAR	**Makanchi Array**	**41.45**	**316**	P	**P**	**19 48 11.4**	**+0.5**
	comp=N,4.2nm,0.9s,baz=104,slow=10,SNR=24						
MKAR				LR	LR	20 06 26.2	
	comp=N,27nm,18.7s,baz=96,slow=38						
MKAR	**Makanchi Array**	**41.45**	**316**	*e*P	**P**	**19 48 11.1**	**+0.2**
MAKZ	**Makanchi**	**41.65**	**316**	*e*P	**P**	**19 48 13.1**	**+0.5**
	comp=N,9.5nm,1.3s						
WR1	**Warramunga Arr**	**43.18**	**166**	*e*P	**P**	**19 48 24.4**	**-0.8**
	comp=N,31nm,1.8s						
WRA	**Warramunga Arr**	**43.18**	**166**	P	**P**	**19 48 24.4**	**-0.8**
	comp=N,1.8nm,0.8s,baz=346,slow=9.0,SNR=13						
ZAA0	**Zalesovo Array**	**43.20**	**327**	*e*P	**P**	**19 48 24.1**	**-0.9**
ZALV	**Zalesovo Beam**	**43.20**	**327**	P	**P**	**19 48 24.4**	**-0.6**
	comp=N,3.7nm,0.8s,baz=105,slow=7.3,SNR=12						
ZALV				LR	LR	20 09 10.5	
	comp=N,29nm,18.1s,baz=70,slow=40						
ZAA1	**Zalesovo Array**	**43.21**	**327**	*e*P	**P**	**19 48 24.4**	**-0.6**
TKM2	**Tokmak 2**	**44.91**	**309**	*e*P	**P**	**19 48 39.8**	**+0.6**
	comp=N,4.0nm,0.9s						
KURK	**Kurchatov**	**45.16**	**320**	*e*P	**P**	**19 48 39.9**	**-0.8**
	comp=N,2.7nm,0.8s						
AS31	**Alice Springs**	**46.69**	**167**	*e*P	**P**	**19 48 54.2**	**+1.2**
	comp=N,3.8nm,1.6s						
ASAR	**Alice Springs**	**46.69**	**167**	P	**P**	**19 48 52.6**	**-0.4**
	comp=N,0.9nm,0.7s,baz=352,slow=7.7,SNR=14						
ASAR				LR	LR	20 13 29.6	
	comp=N,24nm,18.0s,baz=272,slow=43						
TIXI	**Tiksi**	**49.48**	**2**	*e*P	**P**	**19 49 16.0**	**+2.0**
	comp=N,4.0nm,1.1s						
ZRNK	**Zerenda**	**51.52**	**321**	*e*P	**P**	**19 49 29.4**	**-0.3**
	comp=N,3.5nm,1.0s						
STKA	**Stephens Creek**	**56.44**	**162**	P	**P**	**19 50 04.4**	**-1.5**
	comp=N,0.6nm,0.5s,baz=50,slow=18,SNR=2.5						
STKA	**Stephens Creek**	**56.44**	**162**	*e*P	**P**	**19 50 04.8**	**-1.1**
	comp=N,4.5nm,1.8s						
ABKAR	**Akbulak array**	**56.56**	**315**	*e*P	**P**	**19 50 06.3**	**-0.3**
GEYT	**Alibeck**	**57.93**	**302**	P	**P**	**19 50 16.2**	**-0.3**
	comp=N,2.4nm,0.9s,baz=66,slow=3.6,SNR=7.1						
GNI	**Garni**	**67.95**	**306**	LR	LR	20 28 18.2	
	comp=N,6.7nm,18.6s,baz=132,slow=42						
KBZ	**Khabaz**	**68.63**	**310**	P	**P**	**19 51 27.4**	**+0.2**
	comp=N,3.4nm,0.9s,baz=64,slow=6.1,SNR=4.7						
KVAR	**Kislovodsk Arr**	**68.73**	**310**	LR	LR	20 25 02.0	
	comp=N,31nm,19.5s,slow=39						
ILAR	**Eielson Array**	**69.75**	**27**	P	**P**	**19 51 33.9**	**0.0**
	comp=N,0.3nm,0.6s,baz=280,slow=5.4,SNR=3.2						
ILB	**Eielson Array**	**69.75**	**27**	*e*P	**P**	**19 51 35.1**	**+1.2**
FIA0	**FINESS Array S**	**74.35**	**330**	*e*P	**P**	**19 52 00.5**	**-0.9**
FINES	**FINESS Array B**	**74.35**	**330**	P	**P**	**19 52 00.5**	**-0.9**
	comp=N,1.1nm,0.9s,baz=56,slow=5.2,SNR=3.3						
AKASG	**Malin Array Be**	**75.95**	**319**	P	**P**	**19 52 09.5**	**-1.3**
	comp=N,0.2nm,0.4s,baz=49,slow=2.8,SNR=4.1						
NB2	**NORSAR Subarra**	**81.07**	**333**	P	**P**	**19 52 37.7**	**-1.3**
	comp=Z,1.9nm,1.1s,baz=61,slow=5.6						
NB200	**NORSAR Array S**	**81.07**	**333**	*e*P	**P**	**19 52 37.8**	**-1.1**
NOA	**NORSAR Array B**	**81.07**	**333**	P	**P**	**19 52 37.8**	**-1.1**
	comp=Z,0.9nm,0.8s,baz=63,slow=5.3,SNR=3.7						
YKA	**Yellowknife Ar**	**83.73**	**23**	P	**P**	**19 52 55.0**	**+2.2**
	comp=Z,0.4nm,0.8s,baz=306,slow=5.4,SNR=3.1						
YKA	**Yellowknife Ar**	**83.73**	**23**	P	**P**	**19 52 55.0**	**+2.2**

IDC 07 19:54:23.4±5.8, 9.40N×126.30E, h0km, mb3.7/3, mb1 3.9/3, mb1mx3.4/50, mbtmp3.6/3, MS3.2/1, Ms1 3.2/1, ms1mx2.4/40, Error ellipse: s-maj=406.5km s-min=36.4km az=89.0, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**30.21**	**165**	P	P	20 00 35.9	0.0
	0.8nm,1.1s,baz=344,slow=7.3,SNR=6.7						
ASAR	**Alice Springs**	**33.69**	**167**	P	P	20 01 06.3	-0.1
	0.2nm,0.3s,baz=347,slow=7.1,SNR=11						
PALK	**Pallekele**	**45.14**	**271**	LR	LR	20 22 48.3	
	comp=Z,30nm,20.2s,baz=114,slow=38						
YKA	**Yellowknife Ar**	**94.54**	**24**	P	P	20 07 45.6	-0.1
	0.3nm,0.5s,baz=299,slow=3.9,SNR=4.7						

NIED ***07*** *19:56:00, 36.20N×141.80E, h17km, Mw4.1 Best double couple: M0=1.76000×10^15 NP1:φ=214.00000°, δ=23.00000°, λ=97.00000°. NP2:φ=26.00000°, δ=67.00000°, λ=87.00000°.*

IDC ***07*** *19:56:23.0±0.6, 36.12N×141.77E, h0km, mb4.1/22, mb1 4.2/28, mb1mx4.0/65, mbtmp4.1/28, ML3.7/5, MS3.5/13, Ms1 3.5/13, ms1mx3.2/46, Error ellipse: s-maj=16.4km s-min=11.9km az=101.0*

ISCJB ***07*** *19:56:24.0±0.3, 36.15N±0.03×141.92E±0.04, h23km, mb4.3/49, MS3.7/12, Error ellipse: s-maj=5.4km s-min=4.0km az=43.1*

MOS ***07*** *19:56:25.5±1.0, 36.19N×141.92E, h33km, mb4.5/24, Error ellipse: s-maj=10.0km s-min=6.2km az=114.3*

JMA ***07*** *19:56:26.3±0.3, 36.18N×141.76E, h55km±5km, M3.9*

NEIC ***07*** *19:56:28.8±0.7, 36.13N×141.69E, h40km±6km, mb4.6/19, Error ellipse: s-maj=5.8km s-min=4.9km az=92.0*

ISC 07 19:56:25.7±0.5, 36.12N±0.05×141.93E±0.05, h23km, n145, σ1§59/148, mb4.3/49, MS3.6/13, 5C-4D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.96**	**244**	P	**Pb**	**19 56 42.4**	**-1.3**
CHOJ				S	**Sn**	**19 56 55.3**	**-1.5**
JHO	**Hitachi**	**1.20**	**294**	P	**Pn**	**19 56 44.8**	**-2.3**
JFK	**Kawauchi**	**1.50**	**326**	P	**Pn**	**19 56 49.8**	**-1.5**
BSO1	**Boso 1**	**1.66**	**208**	P	**Pn**	**19 56 53.3**	**+0.4**
BSO1				X		19 57 13.9	
BSO3	**Boso 3**	**1.75**	**222**	P	**Pn**	**19 56 54.6**	**+0.2**
JFT	**Otama**	**1.89**	**318**	P	**Pn**	**19 56 56.0**	**-0.6**
JMM	**Marumori**	**1.96**	**333**	P	**Pn**	**19 56 56.5**	**-1.1**
JAG	**Ashikaga**	**2.02**	**279**	P	**Pn**	**19 56 56.7**	**-1.7**
JFY	**Yanaizu**	**2.20**	**306**	P	**Pn**	**19 57 00.5**	**-0.3**
JKT	**Katashina**	**2.25**	**287**	P	**Pn**	**19 57 01.0**	**-0.6**
MJAR	**Matsushiro Arr**	**3.03**	**279**	Pn	**Pn**	**19 57 11.8**	**-0.5**
	22nm,0.3s,baz=90,slow=9.4,SNR=602						
MJAR				LR	LR	19 58 25.4	
	comp=Z,383nm,19.3s,baz=130,slow=43						
MAJO	**Matsushiro**	**3.03**	**279**	*c i*P	**Pn**	**19 57 12.3**	**0.0**
MAJO	**Matsushiro**	**3.03**	**279**	*e*Pn	**Pn**	**19 57 12.1**	**-0.2**
MAT	**Matsushiro**	**3.03**	**279**	P	**Pn**	**19 57 11.9**	**-0.4**
MAT				S	**Sn**	**19 57 49.8**	**+1.9**
MJB9	**Matsu-Tunnel**	**3.04**	**279**	*e*Pn	**Pn**	**19 57 12.0**	**-0.4**
JHJ2	**Mitsune**	**3.47**	**211**	*e*Pn	**Pn**	**19 57 18.5**	**+0.1**
JHJ2				*e*Sn	**Sn**	**19 57 55.3**	**-3.4**
JHJ	**Hachijo jima 2**	**3.48**	**211**	Pn	**Pn**	**19 57 18.2**	**-0.2**
	65nm,0.3s,baz=96,slow=2.5,SNR=17						
JHJ				Sn	**Sn**	**19 57 55.5**	**-3.4**
	152nm,0.3s,baz=201,slow=22,SNR=10.0						
INU	**Inuyama**	**4.07**	**260**	*e*Pn	**Pn**	**19 57 26.8**	**+0.3**
ERM	**Erimo**	**5.96**	**9**	P	**Pn**	**19 57 50.7**	**-1.8**
ERM	**Erimo**	**5.96**	**9**	*e*Pn	**Pn**	**19 57 50.3**	**-2.1**
ERM				*e*Sn	**Sn**	**19 58 57.9**	**-2.1**
ASAJ	**Asahikawa**	**8.00**	**3**	Pn	**Pn**	**19 58 19.6**	**-0.9**
	2.7nm,0.3s,baz=210,slow=16,SNR=19						
ASAJ				Sn	**Sn**	**19 59 43.4**	**-6.8**
	baz=183,slow=19,SNR=1.8						
ASAJ				LR	LR	20 01 48.2	
	comp=Z,147nm,20.6s,baz=179,slow=41						
ASAJ	**Asahikawa**	**8.00**	**3**	*e*Pn	**Pn**	**19 58 19.1**	**-1.4**
ASAJ				*e*Sn	**Sn**	**19 59 43.4**	**-6.8**
YUK	**Yuzh-Kuril'sk**	**8.46**	**20**	*i* P	**Pn**	**19 58 27.6**	**+0.9**
SHO	**Shikotan**	**8.60**	**24**	*e*P	**Pn**	**19 58 28.7**	**0.0**
SHO				*i* S	Sn	19 59 56.3	-8.7
CBIJ	**Chichi jima**	**9.00**	**179**	*e*Pn	**Pn**	**19 58 31.2**	**-3.1**
CBIJ				*e*Sn	Sn	20 00 04.7	-10
JNU	**Nakatsue**	**9.58**	**255**	Pn	**Pn**	**19 58 40.9**	**-1.4**
	0.1nm,0.3s,baz=123,slow=15,SNR=2.5						
JNU	**Nakatsue**	**9.58**	**255**	*e*Pn	**Pn**	**19 58 42.8**	**+0.5**
MSHR	**Mys Shultsa**	**10.54**	**311⇓**	*e*P	**Pn**	**19 58 55.5**	**+0.3**
USRK	**Ussuriysk Ar.**	**11.08**	**320**	Pn	**Pn**	**19 59 03.4**	**+0.8**
	0.4nm,0.3s,baz=138,slow=14,SNR=6.4						
USRK				LR	LR	20 03 07.1	
	comp=Z,264nm,18.9s,baz=41,slow=37						
KSRS	**Korea Array**	**11.31**	**281**	Pn	**Pn**	**19 59 08.9**	**+3.1**
	0.1nm,0.3s,baz=91,slow=14,SNR=15						
KSRS				LR	LR	20 03 29.3	
	comp=Z,146nm,18.2s,baz=77,slow=38						
KSRS	**Korea Array**	**11.31**	**281**	P	**Pn**	**19 59 09.0**	**+3.1**
KSRS				MLR	MLR		
	comp=Z,146nm,18.2s						
KS15	**Wonju Array Si**	**11.34**	**281**	*e*Pn	**Pn**	**19 59 08.9**	**+2.7**
KSAR	**Wonju Array Be**	**11.34**	**281**	P	**Pn**	**19 59 09.0**	**+2.7**
KSAR	**Wonju Array Be**	**11.34**	**281**	Pn	**Pn**	**19 59 08.9**	**+2.7**
CN2	**Changchun**	**14.77**	**306**	*e*P	**Pn**	**19 59 53.8**	**+0.8**
KLR	**Kul'dur**	**15.07**	**334**	Pn	**Pn**	**19 59 55.4**	**-1.7**
	comp=Z,0.2nm,0.3s,baz=136,slow=14,SNR=4.5						
KLR				LR	LR	20 05 44.8	
	comp=Z,123nm,18.9s,baz=146,slow=37						
BJI	**Beijing**	**20.62**	**289**	P	**P**	**20 01 02.9**	**-0.4**
BJI				pmax	pmax		
	comp=Z,4.0nm,1.0s						
BJI				pmax	pmax		
	comp=Z,110nm,4.4s						
BJI				LR	LR		
	comp=N,84nm,15.4s						
BJI				LR	LR		
	comp=E,100nm,12.4s						
BJI				LR	LR		
	comp=Z,68nm,22.0s						
HHC	**Hu-ho-hao-te**	**24.16**	**290**	*e*P	**P**	**20 01 39.2**	**-1.1**
HHC				pP	pP	20 01 45.2	-1.9
HHC				*s*P	*s*P	20 01 48.1	-1.9
HHC				S	**S**	**20 05 52.2**	**-4.9**
HHC				pmax	pmax		
	comp=Z,33nm,0.9s						
HHC				pmax	pmax		
	comp=Z,230nm,3.9s						
HHC				LR	LR		
	comp=N,720nm,12.4s						
HHC				LR	LR		
	comp=E,650nm,12.8s						
HHC				LR	LR		
	comp=Z,740nm,12.7s						
XAN	**Xi'an**	**27.02**	**275**	P	**P**	**20 02 04.6**	**-1.5**
XAN				pP	pP	20 02 10.4	-2.6
XAN				pmax	pmax		
	comp=Z,8.0nm,0.6s						
YAK	**Yakutsk**	**27.05**	**347**	P	**P**	**20 02 06.2**	**+0.3**
	comp=Z,10.0nm,0.5s,baz=168,slow=2.5,SNR=12						
YAK	**Yakutsk**	**27.05**	**347**	*e*P	**P**	**20 02 06.2**	**+0.3**
YAK				pmax	pmax		
	comp=Z,17nm,0.9s						
YAK				pmax	pmax		
	comp=N,12nm,1.1s						
YAK	**Yakutsk**	**27.05**	**347**	*e*P	**P**	**20 02 06.0**	**0.0**
	comp=N,18nm,0.8s						
H11N2	**WAKE ISLAND Hy**	**27.33**	**120**	T	T	20 30 50.1	
	baz=312,slow=75,SNR=22						
H11N1	**WAKE ISLAND Hy**	**27.34**	**120**	T	T	20 30 52.0	

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WMQ	**Urumqi**	**41.62**	**298**	P	**P**	**20 04 13.6**	**+1.5**
WMQ				pP	pP	20 04 18.9	-0.2
WMQ				sP	sP	20 04 24.2	+2.3
WMQ				PP	**PnPn**	**20 05 58.4**	**+5.2**
WMQ				SS	SS	20 13 33.9	+1.5
WMQ	comp=Z,7.0nm,1.0s			pmax	pmax		
WMQ	comp=Z,58nm,4.8s			pmax	pmax		
WMQ	comp=E,17nm,26.6s			LR	LR		
WMQ	comp=Z,10.0nm,31.8s			LR	LR		
CM01	**Chiang Mai Arr**	**41.69**	**257** *eP*	**P**	**P**	**20 04 11.9**	**-0.9**
ZAA1	**Zalesovo Array**	**42.84**	**313** *eP*	**P**	**P**	**20 04 21.9**	**+0.2**
ZALV	**Zalesovo Beam**	**42.84**	**313**	P	**P**	**20 04 21.9**	**+0.2**
ZALV	comp=Z,4.1nm,0.6s,baz=95,slow=6.6,SNR=20			LR	LR	20 22 55.7	
NVS	**Novosibirsk**	**43.77**	**314** *eP*	**P**	**P**	**20 04 28.6**	**-0.6**
MK01	**Makanchi Array**	**44.95**	**303** *eP*	**P**	**P**	**20 04 38.4**	**-0.5**
MK31	**Makanchi Array**	**44.96**	**303** *eP*	**P**	**P**	**20 04 39.1**	**+0.2**
MK31	**Makanchi Array**	**44.96**	**303** *eP*	**P**	**P**	**20 04 39.1**	**+0.2**
MK32	**Makanchi Array**	**44.96**	**303** *eP*	**P**	**P**	**20 04 38.8**	**-0.1**
MKAR	**Makanchi Array**	**44.96**	**303**	P	**P**	**20 04 38.8**	**-0.1**
MKAR	comp=Z,2.3nm,0.6s,baz=86,slow=9.1,SNR=23			LR	LR	20 24 11.5	
MKAR	**Makanchi Array**	**44.96**	**303** *eP*	**P**	**P**	**20 04 39.1**	**+0.2**
MKAR	**Makanchi Array**	**44.96**	**303** *eP*	**P**	**P**	**20 04 39.1**	**+0.2**
MAKZ	**Makanchi**	**45.17**	**303** *eP*	**P**	**P**	**20 04 40.1**	**-0.5**
MAKZ	comp=Z,4.0nm,0.8s			pmax	pmax		
MAKZ	**Makanchi**	**45.17**	**303** *eP*	**P**	**P**	**20 04 40.1**	**-0.5**
MAKZ	comp=Z,3.6nm,0.8s			pmax	pmax		
KAPI	**Kappang**	**45.90**	**212**	P	**P**	**20 04 47.1**	**+0.6**
KAPI	**Kappang**	**45.90**	**212** *eP*	**P**	**P**	**20 04 48.0**	**+1.5**
KURK	**Kurchatov**	**46.82**	**309** *eP*	**P**	**P**	**20 04 52.9**	**-0.6**
KURK	comp=Z,8.0nm,0.5s			pmax	pmax		
KURK	**Kurchatov**	**46.82**	**309** *eP*	**P**	**P**	**20 04 52.9**	**-0.6**
GUN	**Gumba**	**47.66**	**277** *eP*	**P**	**P**	**20 05 01.3**	**+0.5**
PKIN	**Phulchoki**	**48.19**	**277** *eP*	**P**	**P**	**20 05 04.5**	**-0.3**
KKN	**Kakani**	**48.20**	**277** *eP*	**P**	**P**	**20 05 04.8**	**0.0**
MLY	**Manley**	**48.40**	**32** *eP*	**P**	**P**	**20 05 08.2**	**+2.5**
GKN	**Gorkha**	**48.62**	**277** *eP*	**P**	**P**	**20 05 08.0**	**0.0**
MDM	**Murphy Dome**	**49.47**	**32** *eP*	**P**	**P**	**20 05 15.7**	**+1.9**
KOLN	**Koldanda**	**49.55**	**278** *eP*	**P**	**P**	**20 05 14.6**	**-0.6**
PYUN	**Piuthan**	**49.90**	**278** *eP*	**P**	**P**	**20 05 17.9**	**+0.1**
ILAR	**Eielson Array**	**50.04**	**32** P	**P**	**P**	**20 05 19.7**	**+1.6**
ILB	**Eielson Array**	**50.04**	**32** *eP*	**P**	**P**	**20 05 19.3**	**+1.1**
TKM2	**Tokmak 2**	**50.43**	**299** *eP*	**P**	**P**	**20 05 22.3**	**+0.7**
TKM2	comp=Z,5.0nm,0.6s			pmax	pmax		
TKM2	**Tokmak 2**	**50.43**	**299** *eP*	**P**	**P**	**20 05 22.3**	**+0.7**
AAK	**Ala-Archa**	**51.29**	**299** LR	LR	LR	20 28 32.7	
AAK	**Ala-Archa**	**51.29**	**299** *jP*		**P**	**20 05 28.7**	**+0.6**
AAK	comp=Z,5.0nm,0.6s			pmax	pmax		
AAK	**Ala-Archa**	**51.29**	**299** *eP*	**P**	**P**	**20 05 27.8**	**-0.3**
BRVK	**Borovoye**	**51.55**	**313** *dP*		**P**	**20 05 30.3**	**+0.7**
BRVK	comp=Z,8.0nm,2.5s			pmax	pmax		
BRVK	**Borovoye**	**51.55**	**313** *eP*	**P**	**P**	**20 05 29.6**	**0.0**
MENT	**Mentasta**	**51.55**	**34** *eP*	**P**	**P**	**20 05 28.1**	**-1.5**
ZRNK	**Zerenda**	**52.33**	**313** *eP*	**P**	**P**	**20 05 35.3**	**-0.2**
ZRNK	comp=Z,4.0nm,0.8s			pmax	pmax		
ZRNK	**Zerenda**	**52.33**	**313** *eP*	**P**	**P**	**20 05 35.3**	**-0.2**
KKAR	**Karatay Array**	**53.94**	**301** *eP*	**P**	**P**	**20 05 47.7**	**+0.2**
KKAR	**Karatay Array**	**53.94**	**301** *eP*	**P**	**P**	**20 05 47.7**	**+0.2**
INK	**Inuvik**	**55.01**	**27** P	**P**	**P**	**20 05 56.5**	**+1.7**
FITZ	**Fitzroy Crossi**	**56.09**	**199** P	**P**	**P**	**20 06 03.9**	**+0.8**
FITZ	**Fitzroy Crossi**	**56.09**	**199** *eP*	**P**	**P**	**20 06 04.1**	**+1.0**
WRAB	**Tennant Creek**	**56.21**	**189** P	**P**	**P**	**20 06 04.0**	**0.0**
WRAB	comp=Z,12nm,1.1s			pmax	pmax		
WR1	**Warramunga Arr**	**56.22**	**189** *eP*	**P**	**P**	**20 06 04.0**	**0.0**
WRA	**Warramunga Arr**	**56.22**	**189** P	**P**	**P**	**20 06 04.0**	**-0.1**
ARU	**Arti**	**57.32**	**319** *cP*		**P**	**20 06 11.4**	**-0.1**
ARU						20 08 17.0	
ARU				S	**S**	**20 14 06.8**	**+0.5**
ARU				SS	**SS**	**20 17 56.4**	**+1.3**
ARU	comp=Z,8.0nm,1.2s			pmax	pmax		
ARU	**Arti**	**57.32**	**319** *eP*	**P**	**P**	**20 06 10.3**	**-1.1**
ABKAR	**Akbulak array**	**58.84**	**311** *eP*	**P**	**P**	**20 06 21.7**	**-0.6**
AKTO	**Aktyubinsk**	**59.59**	**312** LR	LR	LR	20 33 14.3	
AS31	**Alice Springs**	**59.95**	**189** *eP*	**P**	**P**	**20 06 30.0**	**-0.1**
ASAR	**Alice Springs**	**59.95**	**189** P	**P**	**P**	**20 06 30.4**	**+0.2**
YKA	**Yellowknife Ar**	**64.39**	**30** P	**P**	**P**	**20 07 00.7**	**+1.3**
YKB5	**Yellowknife Ar**	**64.39**	**30** *eP*	**P**	**P**	**20 07 00.2**	**+0.8**
GEYT	**Alibeck**	**64.64**	**300** P	**P**	**P**	**20 07 01.8**	**+0.2**
ARA0	**ARCESS Array S**	**64.99**	**340** *eP*	**P**	**P**	**20 07 04.0**	**+0.6**
ARCES	**ARCESS Array B**	**64.99**	**340** P	**P**	**P**	**20 07 03.9**	**+0.6**
ARCES	comp=Z,1.5nm,0.8s,baz=62,slow=8.4,SNR=6.4			LR	LR	20 39 36.3	
ARCES	**ARCESS Array B**	**64.99**	**340** P	**P**	**P**	**20 07 04.0**	**+0.6**
STKA	**Stephens Creek**	**67.65**	**180** LR	LR	LR	20 36 53.9	
FIA0	**FINESS Array S**	**69.81**	**333** *eP*	**P**	**P**	**20 07 34.1**	**+0.2**
FIA0	**FINESS Array S**	**69.81**	**333** *eP*	**P**	**P**	**20 07 34.1**	**+0.2**
FINES	**FINESS Array B**	**69.81**	**333** P	**P**	**P**	**20 07 34.1**	**+0.2**
NB2	**NORSAR Subarra**	**75.18**	**338** P	**P**	**P**	**20 08 06.1**	**+0.1**
NB200	**NORSAR Array S**	**75.18**	**338** *eP*	**P**	**P**	**20 08 06.4**	**+0.4**
NOA	**NORSAR Array B**	**75.18**	**338** P	**P**	**P**	**20 08 06.4**	**+0.4**
NV01	**Mina Array Sit**	**75.20**	**53** *eP*	**P**	**P**	**20 08 09.0**	**+2.3**
NVAR	**Mina Array Bea**	**75.20**	**53** P	**P**	**P**	**20 08 08.6**	**+1.9**
AKASG	**Malin Array Be**	**75.27**	**323** P	**P**	**P**	**20 08 06.6**	**0.0**
KIEV	**Kiev**	**75.28**	**323** *jP*		**P**	**20 08 06.1**	**-0.6**
KIEV	comp=Z,3.0nm,1.0s			pmax	pmax		
BR101	**Keskin Array S**	**79.76**	**312** *eP*	**P**	**P**	**20 08 32.5**	**+0.3**
BRTR	**Keskin Array B**	**79.77**	**312** P	**P**	**P**	**20 08 32.5**	**+0.3**
BRTR	**Keskin Array B**	**79.77**	**312** *cP*		**P**	**20 08 33.0**	**+0.9**
BRTR	comp=Z,1.0nm,0.8s			pmax	pmax		
BR231	**Keskin MP Arra**	**80.21**	**312** *eP*	**P**	**P**	**20 08 33.2**	**-1.3**
GERES	**GERESS Array B**	**83.70**	**329** P	**P**	**P**	**20 08 52.8**	**+0.1**
MSTX	**Muleshoe**	**87.77**	**49** *eP*	**P**	**P**	**20 09 14.8**	**+1.6**
LTX	**Lajitas**	**90.35**	**53** *eP*	**P**	**P**	**20 09 27.9**	**+2.6**
LTX	**Lajitas**	**90.35**	**53** *eP*	**P**	**P**	**20 09 27.9**	**+2.6**
TXAR	**Lajitas Array**	**90.35**	**53** P	**P**	**P**	**20 09 27.9**	**+2.5**
LPAZ	**La Paz**	**146.78**	**61** PKPbc	**PKPbc**	**P**	**20 16 08.1**	**+1.0**
	comp=Z,1.4nm,0.6s,baz=39,slow=4.0,SNR=6.6						
ILB	**Eielson Array**	**47.82**	**33** *eP*	**P**	**P**	**20 11 36.7**	**+1.3**
KKN	**Kakani**	**47.88**	**274** *eP*	**P**	**P**	**20 11 36.4**	**-0.2**
PKIN	**Phulchoki**	**47.89**	**274** *eP*	**P**	**P**	**20 11 37.6**	**+0.9**
DMN	**Daman**	**48.10**	**274** *eP*	**P**	**P**	**20 11 38.5**	**+0.2**
GKN	**Gorkha**	**48.28**	**275** *eP*	**P**	**P**	**20 11 39.8**	**+0.2**
TKM2	**Tokmak 2**	**49.12**	**297** *eP*	**P**	**P**	**20 11 46.5**	**+0.6**
KOLN	**Koldanda**	**49.19**	**275** *eP*	**P**	**P**	**20 11 47.6**	**+0.9**
PYUN	**Piuthan**	**49.51**	**276** *eP*	**P**	**P**	**20 11 49.9**	**+0.8**
BRVK	**Borovoye**	**49.71**	**311** *eP*	**P**	**P**	**20 11 49.9**	**-0.1**
ZRNK	**Zerenda**	**50.49**	**311** *eP*	**P**	**P**	**20 11 55.6**	**-0.2**
KKAR	**Karatay Array**	**52.56**	**299** *eP*	**P**	**P**	**20 12 11.3**	**-0.2**
INK	**Inuvik**	**52.66**	**28** P	**P**	**P**	**20 12 13.9**	**+2.1**
ARU	**Arti**	**55.28**	**318** *eP*	**P**	**P**	**20 12 30.9**	**-0.2**
ABKAR	**Akbulak array**	**57.08**	**309** *eP*	**P**	**P**	**20 12 43.5**	**-0.5**
WR1	**Warramunga Arr**	**58.86**	**188** *eP*	**P**	**P**	**20 12 57.0**	**+0.4**
WRA	**Warramunga Arr**	**58.86**	**188** P	**P**	**P**	**20 12 57.0**	**+0.4**
WRA	comp=Z,2.6nm,0.4s,baz=6.2,slow=6.8,SNR=115			pP	**pP**	**20 13 15.9**	**-0.1**
AS31	**Alice Springs**	**62.59**	**188** *eP*	**P**	**P**	**20 13 22.7**	**+0.8**
ASAR	**Alice Springs**	**62.59**	**188** P	**P**	**P**	**20 13 22.5**	**+0.5**
GEYT	**Alibeck**	**63.30**	**298** P	**P**	**P**	**20 13 26.2**	**-0.6**
FIA0	**FINESS Array S**	**67.42**	**332** *eP*	**P**	**P**	**20 13 52.9**	**+0.1**
FINES	**FINESS Array B**	**67.42**	**332** P	**P**	**P**	**20 13 52.9**	**+0.1**
FINES	comp=Z,1.4nm,0.8s,baz=37,slow=7.5,SNR=6.1			pP	**pP**	**20 14 13.2**	**+0.6**
NB200	**NORSAR Array S**	**72.69**	**337** *eP*	**P**	**P**	**20 14 25.6**	**+0.4**
NOA	**NORSAR Array B**	**72.69**	**337** P	**P**	**P**	**20 14 25.6**	**+0.4**
LPAZ	**La Paz**	**145.47**	**58** PKPbc	**PKPdf**	**P**	**20 22 36.3**	**0.0**
	comp=Z,1.2nm,0.7s,baz=0.0,slow=10,SNR=4.0						

NIED ***07*** *20:03:00,38°.80N×141°.70E,h77km,Mw4.0 Best double couple: M₀1.20000×10¹⁵ NP1:φ₀=81.00000°,δ84.00000°, λ175.00000°. NP2:φ₀=171.00000°,δ85.00000°,λ6.00000°.*

ISCJB ***07*** *20:03:04.3±0.5,38°.80N±0°.03×141°.97E±0°.06,h82km±2km, mb4.1/30,Error ellipse: s-maj=7.8km s-min=4.7km az=20.8*

IDC ***07*** *20:03:06.3±0.8,38°.80N×141°.73E,h74km±7km,mb3.8/15, mb1 3.9/20,mb1mx3.6/67,mbtmp4.1/20,Error ellipse: s-maj=16.4km s-min=11.2km az=102.0*

NEIC ***07*** *20:03:06.5±0.6,38°.79N×141°.88E,h83km±6km,mb4.4/11, Error ellipse: s-maj=8.2km s-min=5.5km az=118.0*

NEIC Felt at Sendai. Recorded [2 JMA] in Iwate.

JMA ***07*** *20:03:07.2±0.1,38°.81N×141°.70E,h78km±1km,M4.1 Broadband fault plane solution: P waves. NP1: φ₀=157.00000°,δ84.00000°,λ-43.00000°. NP2: φ₀=252.00000°,δ48.00000°,λ-172.00000°. Principal axes: T Plg24.0000°, Azm212.0000°; N Plg47.0000°, Azm331.0000°; P Plg33.0000°, Azm105.0000°;*

JMA Felt II J1.

ISC 07 20:03:05.8±0.6,38°.80N±0°.04×141°.86E±0°.07,h76km±5km, n87,σ1§63/97,mb4.2/30,2C-5D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.31**	**332**	↑P	**Pn**	**20 03 19.2**	**+1.5**
OFUJ				S	**Sn**	**20 03 27.7**	**+1.2**
JMK	**Ichinoseki**	**0.52**	**287**	↓P	**Pn**	**20 03 19.8**	**+0.5**
JMK				S	**Sn**	**20 03 29.1**	**-0.2**
JIO	**Ouri**	**0.53**	**229**	↓P	**Pn**	**20 03 20.4**	**+1.0**
JIO				S	**Sn**	**20 03 29.9**	**+0.5**
JOM	**Ohasama**	**0.80**	**327**	↓P	**Pn**	**20 03 23.1**	**+0.8**
JOM				S	**Sn**	**20 03 34.8**	**+0.3**
JOU	**Okura**	**1.03**	**245**	↑P	**Pn**	**20 03 25.6**	**+0.6**
JOU				S	**Sn**	**20 03 39.5**	**+0.1**
JRG	**Rokugo**	**1.12**	**302**	↓P	**Pn**	**20 03 26.4**	**+0.3**
JRG				S	**Sn**	**20 03 41.1**	**-0.2**
JYK	**Kaneyama**	**1.18**	**276**	↓P	**Pn**	**20 03 26.9**	**+0.1**
JMM	**Marumori**	**1.26**	**222**	P	**Pn**	**20 03 28.1**	**+0.3**
JMM				*e*S	**Sn**	**20 03 43.7**	**-0.6**
ERM	**Erimo**	**3.36**	**17**	*e*Pn	**Pn**	**20 03 56.1**	**+0.2**
ERM				*e*Sn	**Sn**	**20 04 32.1**	**-2.5**
MAJO	**Matsushiro**	**3.67**	**233**	*e*Pn	**Pn**	**20 04 02.0**	**+1.8**
MAT	**Matsushiro**	**3.67**	**233**	P	**Pn**	**20 04 02.2**	**+1.9**
MAT				*e*S	**Sn**	**20 04 45.6**	**+3.2**
MJAR	**Matsushiro Arr**	**3.67**	**233**	P	**Pn**	**20 04 01.3**	**+1.1**
MJAR	14nm,0.3s,baz=40,slow=12,SNR=143			S	**Sn**	**20 04 48.3**	**+5.9**
MJB9	**Matsu-Tunnel**	**3.67**	**233**	*e*Pn	**Pn**	**20 04 01.7**	**+1.4**
INU	**Inuyama**	**5.18**	**230**	*e*Pn	**Pn**	**20 04 22.3**	**+1.4**
ASAJ	**Asahikawa**	**5.34**	**6**	P	**Pn**	**20 04 23.2**	**+0.3**
ASAJ	14nm,0.3s,baz=220,slow=9.0,SNR=118			S	**Sn**	**20 05 19.3**	**-3.7**
JHJ2	**Mitsune**	**5.92**	**197**	*e*Pn	**Pn**	**20 04 29.9**	**-0.9**
JHJ2				*e*Sn	**Sn**	**20 05 33.1**	**-4.1**
JHJ	**Hachijo jima 2**	**5.92**	**197**	P	**Pn**	**20 04 30.5**	**-0.4**
JHJ	30nm,0.3s,baz=89,slow=22,SNR=12			S	**Sn**	**20 05 31.4**	**-5.9**
USRK	**Ussuriysk Ar.**	**9.16**	**309**	P	**Pn**	**20 05 16.4**	**+1.4**
KSRS	**Korea Array**	**11.06**	**267**	P	**Pn**	**20 05 44.1**	**+3.1**
KS01	**Wonju Array Si**	**11.08**	**267**	*e*Pn	**Pn**	**20 05 45.3**	**+4.0**
KS15	**Wonju Array Si**	**11.09**	**267**	*e*Pn	**Pn**	**20 05 44.6**	**+3.1**
KSAR	**Wonju Array Be**	**11.09**	**267**	P	**Pn**	**20 05 44.1**	**+2.6**
CBIJ	**Chichi jima**	**11.68**	**179**	*e*Pn	**Pn**	**20 05 47.3**	**-2.2**
CBIJ				*e*Sn	Sn	20 07 44.3	-14
JCJ	**Chichijima**	**11.68**	**179**	P	**Pn**	**20 05 46.9**	**-2.7**
JCJ	7.1nm,0.3s,baz=104,slow=22,SNR=7.3			S	Sn	20 07 47.6	-10
KLR	**Kul'dur**	**12.70**	**328**	P	**Pn**	**20 05 59.8**	**-3.5**
CN2	**Changchun**	**13.30**	**297**	*e*P	P	20 06 29.0	+11
PETK	**Petropavlovsk-**	**17.99**	**32**	P	**P**	**20 07 09.6**	**-0.6**
PEA1	**Petropavlovsk-**	**18.00**	**32**	*e*P	**P**	**20 07 09.6**	**-0.6**
BJI	**Beijing**	**19.86**	**282**	P	**P**	**20 07 31.2**	**+0.5**
BJI				pmax	pmax		
HHC	**Hu-ho-hao-te**	**23.30**	**285**	*e*P	**P**	**20 08 05.7**	**-1.5**
HHC				pP	pP	20 08 26.9	+3.5
HHC				sP	sP	20 08 39.6	+6.8
HHC				S	**S**	**20 12 10.6**	**-3.2**
HHC				pmax	pmax		
HHC				pmax	pmax		
HHC				LR	LR		
HHC				LR	LR		
HHC				LR	LR		
YAK	**Yakutsk**	**24.43**	**346**	P	**P**	**20 08 16.9**	**-0.1**
YAK	**Yakutsk**	**24.43**	**346**	*e*P	**P**	**20 08 16.2**	**-0.8**
SEY	**Seymchan**	**24.99**	**11**	P	**P**	**20 08 23.4**	**+1.3**
ULN	**Ulaanbaatar**	**26.70**	**301**	*e*P	**P**	**20 08 37.5**	**-0.4**
XAN	**Xi'an**	**26.84**	**270**	P	**P**	**20 08 39.7**	**+0.5**
XAN				pmax	pmax		
SONA1	**Songino Array**	**27.13**	**301**	*e*P	**P**	**20 08 41.4**	**-0.4**
SONA0	**Songino Array**	**27.13**	**301**	*e*P	**P**	**20 08 41.2**	**-0.6**
SONM	**Songino Array**	**27.13**	**301**	P	**P**	**20 08 41.2**	**-0.6**
ENH	**Enshi**	**27.88**	**262**	*e*P	**P**	**20 08 46.6**	**-2.0**
H11N2	**WAKE ISLAND Hy**	**28.80**	**124**	T	T	20 39 33.4	
H11N1	**WAKE ISLAND Hy**	**28.81**	**124**	T	T	20 39 32.9	
H11N3	**WAKE ISLAND Hy**	**28.82**	**124**	T	T	20 39 34.4	
H11S1	**WAKE ISLAND Hy**	**29.57**	**126**	T	T	20 40 32.5	
H11S3	**WAKE ISLAND Hy**	**29.57**	**126**	T	T	20 40 31.5	
H11S2	**WAKE ISLAND Hy**	**29.59**	**126**	T	T	20 40 32.6	
CD2	**Chengdu**	**32.06**	**268**	P	**P**	**20 09 23.7**	**-1.8**
CD2				pmax	pmax		
TIXI	**Tiksi**	**33.58**	**353**	P	**P**	**20 09 38.2**	**0.0**
KMI	**Kunming**	**35.61**	**259**	P	**P**	**20 09 57.0**	**+0.5**
KMI				pmax	pmax		
WMQ	**Urumqi**	**40.38**	**295**	P	**P**	**20 10 37.2**	**+0.9**
WMQ				sS	sS	20 17 21.8	+12
WMQ				pmax	pmax		
WMQ				pmax	pmax		
ZAA0	**Zalesovo Array**	**41.00**	**311**	*e*P	**P**	**20 10 40.5**	**-0.7**
ZAA1	**Zalesovo Array**	**41.00**	**311**	*e*P	**P**	**20 10 41.0**	**-0.2**
ZALV	**Zalesovo Beam**	**41.00**	**311**	P	**P**	**20 10 41.0**	**-0.2**
CM31	**Chiang Mai Arr**	**42.31**	**254**	*e*P	**P**	**20 10 52.2**	**-0.1**
CMAR	**Chiang Mai Arr**	**42.31**	**254**	P	**P**	**20 10 51.9**	**-0.4**
MK01	**Makanchi Array**	**43.50**	**301**	*e*P	**P**	**20 11 01.6**	**0.0**
MK31	**Makanchi Array**	**43.50**	**301**	*e*P	**P**	**20 11 01.4**	**-0.2**
MK32	**Makanchi Array**	**43.50**	**301**	*e*P	**P**	**20 11 01.6**	**0.0**
MKAR	**Makanchi Array**	**43.50**	**301**	P	**P**	**20 11 01.6**	**0.0**
MAKZ	**Makanchi**	**43.71**	**301**	*e*P	**P**	**20 11 03.3**	**0.0**
KURK	**Kurchatov**	**45.14**	**307**	*e*P	**P**	**20 11 14.3**	**-0.2**
KURBB	**Kurchatov Arra**	**45.21**	**307**	P	**P**	**20 11 15.0**	**-0.1**
GUN	**Gumba**	**47.35**	**274**	*e*P	**P**	**20 11 32.3**	**-0.4**
ILAR	**Eielson Array**	**47.82**	**33**	P	**P**	**20 11 37.1**	**+1.8**
ILAR				pP	**pP**	**20 11 54.0**	**-0.1**

ISCJB ***07*** *20:06:11.0±0.2,43°.75N±0°.02×105°.31W±0°.02,h0km, mb4.3/1,MS2.8/1,Error ellipse: s-maj=3.5km s-min=2.3km az=167.4*

IDC ***07*** *20:06:10.9±2.2,43°.84N×105°.54W,h0km,mb4.1/1, mb1 3.8/4,mb1mx3.4/52,mbtmp3.6/4,ML3.5/3,MS2.7/2, Ms1 2.7/2,ms1mx2.2/50,Error ellipse: s-maj=67.4km s-min=12.0km az=144.0*

NEIC ***07*** *20:06:13.3±0.9,43°.79N×105°.24W,h13km±8km,ML3.4, Error ellipse: s-maj=3.6km s-min=2.9km az=47.0, Suspected Mining explosion.*

NEIC 60 km [37 miles] SSE of Gillette.

ISC 07 20:06:11.4±0.7,43°.82N±0°.03×105°.20W±0°.03,h0km,n78, σ1§02/86,Wyoming

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RSSD	**Black Hills**	**0.89**	**70**	P	**Pb**	**20 06 29.6**	**-0.4**
RSSD	baz=250			S	**Sg**	**20 06 40.3**	**+0.1**
RSSD	**Black Hills**	**0.89**	**70**	*e*Pg	**Pb**	**20 06 30.0**	**+0.1**
I25A	**Rochford**	**1.08**	**79**	P	**Pb**	**20 06 33.0**	**-0.1**
I25A	baz=259,SNR=365			Sn	**Sn**	**20 06 49.7**	**-0.1**
J25A	**Sunshine Ranch**	**1.10**	**112**	P	**Pb**	**20 06 33.3**	**-0.1**
J25A	baz=292			Sn	**Sn**	**20 06 51.7**	**+1.5**
H25A	**Fruitdale**	**1.40**	**55**	P	**Pb**	**20 06 39.0**	**+0.5**
H25A	baz=235,SNR=36			Sn	**Sn**	**20 06 58.0**	**+0.4**
K22A	**Casper**	**1.52**	**220**	*e*Pn	**Pn**	**20 06 37.4**	**-2.6**
J26A	**Sides Ranch, S**	**1.62**	**107**	P	**Pb**	**20 06 42.3**	**0.0**
J26A	baz=288			S	**Sg**	**20 07 06.1**	**+2.5**
I26A	**New Underwood**	**1.71**	**82**	P	**Pg**	**20 06 44.2**	**+0.2**
G25A	**Newell**	**1.88**	**42**	P	**Pg**	**20 06 47.3**	**0.0**
H26A	**Fairpoint**	**1.92**	**65**	P	**Pg**	**20 06 48.2**	**+0.1**
I27A	**Quinn**	**2.29**	**83**	P	**Pb**	**20 06 53.2**	**-0.4**
G26A	**Maurine**	**2.37**	**51**	P	**Pb**	**20 06 54.3**	**-0.7**
G26A	baz=232,SNR=58			Sb	**Sg**	**20 07 27.4**	**-0.2**
J27A	**Elkhorn Farm,**	**2.39**	**103**	P	**Pb**	**20 06 54.3**	**-1.1**
J27A	baz=284,SNR=26			Sb	**Sg**	**20 07 28.5**	**+0.3**
F25A	**Bowman**	**2.44**	**30**	P	**Pb**	**20 06 54.9**	**-1.3**
F25A	baz=211,SNR=45			Sb	**Sg**	**20 07 29.6**	**-0.3**
PHWY	**Pilot Hill**	**2.52**	**184**	*e*Pn	**Pn**	**20 06 53.5**	**-0.4**
F26A	**Lodgepole**	**2.71**	**41**	P	**Pn**	**20 06 58.3**	**+1.9**
G27A	**Dupree**	**2.81**	**55**	P	**Pn**	**20 06 59.6**	**+2.0**
LAO	**LASA Array**	**2.96**	**346**	S	**Sb**	**20 07 41.6**	**-0.2**
N23A	**Red Feather La**	**2.97**	**191**	*e*Pn	**Pn**	**20 07 00.0**	**-0.1**
RLMT	**Red Lodge**	**3.19**	**296**	*e*Pn	**Pn**	**20 07 03.0**	**0.0**
PD31	**Pinedale Array**	**3.35**	**253**	*e*Pn	**Pn**	**20 07 04.9**	**-0.3**
PD31				*e*Sn	**Sn**	**20 07 49.0**	**+3.2**
PDAR	**Pinedale Array**	**3.35**	**253**	Pn	**Pn**	**20 07 05.0**	**-0.3**
PDAR	7.2nm,0.3s,baz=75,slow=14,SNR=32			Sn	**Sn**	**20 07 49.0**	**+3.2**
BW06	**Boulder Array**	**3.35**	**253**	*e*Pn	**Pn**	**20 07 04.9**	**-0.3**
E27A	**Carson**	**3.67**	**43**	P	**Pn**	**20 07 12.3**	**+3.0**
YMP	**Mirror Lake Pl**	**3.68**	**286**	*e*Pn	**Pn**	**20 07 09.9**	**+0.1**
YTP	**The Promontory**	**3.71**	**281**	*e*Pn	**Pn**	**20 07 10.8**	**+0.7**
OGNE	**Ogallala**	**3.71**	**140**	*e*Pb	**Pg**	**20 07 21.1**	**-1.3**
OGNE				*e*Lg	Lg	20 08 14.1	
GCMT	**Greycliff**	**3.74**	**303**	*e*Pn	**Pn**	**20 07 10.8**	**+0.2**
CRMT	**Chrome Mountai**	**3.89**	**297**	*e*Pb	**Pb**	**20 07 21.8**	**+0.8**
H17A	**Grant Village**	**3.92**	**280**	*e*Pn	**Pn**	**20 07 13.8**	**+0.8**
LOHW	**Long Hollow**	**3.92**	**269**	*e*Pn	**Pn**	**20 07 13.1**	**0.0**
FLWY	**Flagg Ranch**	**3.98**	**276**	*e*Pn	**Pn**	**20 07 13.5**	**-0.4**
MOOW	**Moose Ponds**	**4.02**	**271**	*e*Pn	**Pn**	**20 07 14.5**	**+0.1**
ISCO	**Idaho Springs**	**4.03**	**185**	*e*Pn	**Pn**	**20 07 15.2**	**+0.5**
SNOW	**Snow King Moun**	**4.05**	**267**	*e*Pn	**Pn**	**20 07 15.2**	**+0.4**
MSMT	**Mission Creek**	**4.09**	**298**	*e*Pn	**Pn**	**20 07 16.7**	**+1.3**
YFT	**Old Faithful**	**4.11**	**281**	*e*Pn	**Pn**	**20 07 16.4**	**+0.8**
REDW	**Red Top Meadow**	**4.13**	**266**	*e*Pn	**Pn**	**20 07 16.8**	**+0.8**
IMW	**Indian Meadow**	**4.15**	**273**	*e*Pn	**Pn**	**20 07 16.6**	**+0.3**
FXWY	**Fox Creek**	**4.23**	**270**	*e*Pn	**Pn**	**20 07 17.8**	**+0.5**
O20A	**White River Ci**	**4.32**	**213**	*e*Pn	**Pn**	**20 07 17.8**	**-0.8**
AHID	**Auburn Hatcher**	**4.43**	**258**	*e*Pn	**Pn**	**20 07 19.4**	**-0.7**
QLMT	**Earthquake Lak**	**4.58**	**285**	*e*Pn	**Pn**	**20 07 23.0**	**+0.8**
TPMT	**Tepee Creek**	**4.73**	**283**	*e*Sn	**Sn**	**20 08 17.8**	**-2.2**
SMCO	**Snowmass**	**4.82**	**197**	*e*Pn	**Pn**	**20 07 25.4**	**-0.2**
Q24A	**Divide**	**4.85**	**180**	*e*Pn	**Pn**	**20 07 24.9**	**-1.0**
BEI	**Bear River Ran**	**5.12**	**253**	*e*Pb	**Pb**	**20 07 41.3**	**-0.6**
KSCO	**Kaye Shedlock'**	**5.18**	**157**	*e*Pn	**Pn**	**20 07 30.1**	**-0.1**
EGMT	**Eagleton**	**5.27**	**325**	*e*Pn	**Pn**	**20 07 31.5**	**+0.1**
HRY	**Holter Researc**	**5.50**	**304**	*e*Pn	**Pn**	**20 07 35.0**	**+0.4**
DLMT	**Dillon**	**5.50**	**289**	*e*Pn	**Pn**	**20 07 35.8**	**+1.0**
LRM

TMUT	Trail Mountain	6.38	227	ePn	Pn	20 07 47.0 +0.1
CHMT	Chamberlain Mo	6.46	301	ePn	Pn	20 07 48.0 +0.1
BGU	Big Grassy Mou	6.48	246	ePn	Pn	20 07 48.0 -0.1
Q16A	Castle Valley	6.64	225	ePn	Pn	20 07 50.1 -0.4
T25A	Trinidad	6.70	175	ePn	Pn	20 07 51.3 0.0
DUG	Dugway, Tooele	6.73	240	ePn	Pn	20 07 51.1 -0.5
SWMT	Swartz Lake	7.18	304	ePn	Pn	20 07 57.8 0.0
MMU	Miners Mountai	7.26	221	ePn	Pn	20 07 58.3 -0.7
MSU	Marysvale	7.47	227	ePn	Pn	20 08 01.5 -0.3
ULM	Lac du Bonnet	9.05	41	Pn	Pn	20 08 22.8 -0.4
	1.5nm,0.3s,baz=228,slow=11,SNR=7.7					
ULM				Pg		20 08 55.2
	1.8nm,0.3s,baz=231,slow=17,SNR=4.8					
ULM				Lg	Lg	20 10 52.5
	0.8nm,0.3s,baz=240,slow=8.1,SNR=2.9					
I56US	NEWPORT INFRAS	9.41	302	i		21 00 10.0
	baz=115,slow=319,SNR=1.5					
BBB	Bella Bella	17.41	307	LR	LR	20 18 01.3
	comp=Z,14nm,21.1s,baz=132,slow=41					
YKA	Yellowknife Ar	19.50	347	P	P	20 10 39.8 0.0
	0.1nm,0.3s,baz=154,slow=11,SNR=5.1					
LPIG	La Paz	20.11	194	LR	LR	20 18 57.2
	comp=Z,46nm,21.3s,baz=212,slow=38					
ARCES	ARCESS Array B	61.33	18	P	P	20 16 27.2 -1.0
	2.1nm,0.9s,baz=316,slow=6.3,SNR=3.9					

*SOME **07** 20:14:13.4, 43°.58N×83°.05E, h15km*
*NNC **07** 20:14:22.2±4.5, 43°.87N×82°.56E, h10km±19km, mb2.8, mpv2.5, Error ellipse: s-maj=40.0km s-min=9.5km az=129.0*

ISC 07 20:14:14.8±2.1, 43°.67N±0°.08×82°.98E±0°.08, h10km, n19, σ2§44/35, 6C-7D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KTMS	Ketmen	1.92	264	eP	Pg	20 14 51.3	-0.3
	14nm,0.2s						
KTMS				eS	Sg	20 15 18.4	+1.9
	60nm,0.2s						
DJR	Jarkent	2.39	287	eP	Pg	20 14 59.5	-1.1
	10nm,0.2s						
DJR				eS	Sg	20 15 32.6	+0.9
	64nm,0.4s						
PDGK	Podgornoye	2.56	264	⇑Pn	Pb	20 15 00.5	-0.3
	2.3nm,0.4s						
PDGK				⇑Lg	Lg	20 15 34.4	
	15nm,0.4s						
KAPS	Kapalarasan	3.05	303	⇓iP	Pb	20 15 07.5	-1.8
	3.1nm,0.2s						
KAPS				⇓iS	Sb	20 15 46.8	+0.2
	11nm,0.6s						
KPKS	Kokpek	3.13	268	eP	Pb	20 15 11.1	+0.6
	3.6nm,0.1s						
KPKS				eS	Sg	20 15 52.6	-2.6
	23nm,0.7s						
MK31	Makanchi Array	3.16	351	Pn	Pb	20 15 08.3	-2.7
	0.2nm,0.3s,baz=189,slow=12,SNR=43						
MK31				⇑Pg	Pg	20 15 15.1	-0.3
	0.4nm,0.2s,baz=164,slow=17,SNR=16						
MK31				⇓Lg	Lg	20 15 54.4	
	1.7nm,0.3s,baz=171,slow=25,SNR=4.6						
MAKZ	Makanchi	3.22	348	⇓Pn	Pb	20 15 09.2	-2.8
	1.1nm,0.7s						
MAKZ				⇓Pg	Pg	20 15 17.3	+0.9
	2.3nm,0.6s						
MAKZ				⇑Lg	Lg	20 15 57.0	
	4.6nm,0.6s						
MNBS	Baschi	3.33	279	eP	Pb	20 15 13.6	-0.5
	1.3nm,0.3s						
MNBS				eS	Sb	20 15 57.0	+2.3
	35nm,0.5s						
SATY	Saty	3.39	261	⇓iP	Pb	20 15 13.4	-1.6
	8.8nm,0.5s						
SATY				⇑iS	Sb	20 15 56.8	+0.5
	33nm,0.3s						
KURS	Kuram	3.50	269	eP	Pb	20 15 18.6	+1.8
	5.3nm,0.9s						
KURS				eS	Sg	20 16 05.8	-1.4
	5.1nm,0.7s						
ARXS	Arharly	3.76	280	eP	Pb	20 15 20.9	-0.4
	4.3nm,0.3s						
ARXS				eS	Sb	20 16 09.9	+2.9
	9.5nm,0.3s						
ZSN	Zaisan	3.91	14	eP	Pg	20 15 28.6	-1.0
	2.9nm,0.3s						
ZSN				⇓iS	Sg	20 16 23.1	+2.9
	6.7nm,0.4s						
KOTS	Kotyrbulak	4.29	266	eP	Pb	20 15 32.0	+1.5
KOTS				eS	Sg	20 16 28.5	-4.1
CHKK	Chushkaly	4.33	275	eP	Pb	20 15 32.6	+1.6
	2.1nm,0.5s						
CHKK				eS	Sg	20 16 29.8	-4.2
	21nm,0.2s						
MDOK	Medeo	4.35	265	eP	Pg	20 15 35.4	-2.7
	1.8nm,0.5s						
MDOK				eS	Sg	20 16 34.6	+0.1
	4.9nm,0.4s						
TNSS	Tian-Shan	4.45	264	eP	Pg	20 15 36.5	-3.4
	1.6nm,0.2s						
TNSS				eS	Sg	20 16 36.6	-1.0
	6.4nm,0.4s						
KUU	Kurty	4.81	275	eP	Pb	20 15 40.0	+0.8
	2.5nm,0.5s						
KUU				eS	Sb	20 16 42.8	+5.6
	7.3nm,0.5s						
DGS	Degeres	5.26	268	eP	Pb	20 15 48.0	+1.1
	0.9nm,0.3s						
DGS				eS	Sb	20 16 56.1	+5.9
	4.6nm,0.2s						
KURK	Kurchatov	7.65	339	⇑Lg	Lg	20 18 18.4	
	5.5nm,0.8s						

RSPR 07 20:26:17.7, 18°.76N×68°.74W, h108km±4km, MD3.7/10, 8C-3D, Mona Passage

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DR12	Loma Pena Alta	0.61	273	⇑eP	Pn	20 26 34.8	-0.3
DR12				eS	Sn	20 26 47.6	-0.6
IDE	Isla Desecheo	1.26	107	⇓eP	Pn	20 26 41.8	+0.3
LSP	Las Mesas	1.68	110	⇓eP	Pn	20 26 46.9	+0.3
CRPR	Cabo Rojo, PR	1.72	116	⇑eP	Pn	20 26 45.8	-1.2
AOPR	Arecibo Observ	1.93	102	⇑eP	Pn	20 26 50.2	+0.5
GBPR	Guanica, Bosqu	1.93	114	⇑eP	Pn	20 26 49.4	-0.3
GBPR	Guanica, Bosqu	1.93	114	eS	Sn	20 27 14.4	+0.3
OBIP	Obispado Ponce	2.15	109	⇓eP	Pn	20 26 51.7	-0.8
OBIP	Obispado Ponce	2.15	109	eS	Sn	20 27 19.4	+0.2
SJG	San Juan	2.54	104	⇑eP	Pn	20 26 57.1	-0.5
CBYP	Canovanas	2.78	100	⇑eP	Pn	20 27 00.2	-0.5
CBYP	Canovanas	2.78	100	eS	Sn	20 27 34.3	+0.3
HUMP	Col San Antoni	2.81	102	⇑eP	Pn	20 27 00.7	-0.4
HUMP	Col San Antoni	2.81	102	eS	Sn	20 27 34.5	-0.1
MTP	Monte Pirata	3.10	102	eS	Sn	20 27 41.1	-0.3
MTP	Monte Pirata	3.10	102	⇑eP	Pn	20 27 05.5	+0.6

IDC 07 20:30:09.9±4.8, 28°.76S×176°.17W, h0km, mb3.6/3, mb1 3.8/3, mb1mx3.5/25, mbtmp3.6/3, Error ellipse: s-maj=183.5km s-min=75.5km az=157.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	Stephens Creek	36.43	254	P	P	20 37 17.2	+0.8
	1.2nm,0.9s,baz=108,slow=9.6,SNR=3.3						
ASAR	Alice Springs	44.82	264	P	P	20 38 25.0	-1.0
	0.2nm,0.4s,baz=106,slow=7.9,SNR=11						
WRA	Warramunga Arr	45.67	270	P	P	20 38 32.5	-0.2
	0.4nm,0.3s,baz=110,slow=6.2,SNR=17						
FINES	FINESS Array B	144.12	342	PKP	PKPdf	20 49 47.5	+0.5
	0.5nm,0.6s,baz=35,slow=5.1,SNR=8.2						

DDA 07 20:48:15.4, 38°.50N×27°.37E, h5km, Md1.8, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DGB	˜zmir	0.58	221	eP	Pg	20 48 27.0	+0.3
DGB				iS	Sg	20 48 35.0	+0.8
ZEY	˜zmir	0.72	250	iP	Pb	20 48 30.9	+0.3
ZEY				iS	Sb	20 48 40.3	-0.5

*ISCJB **07** 20:48:28.5±0.4, 6°.41N±0°.07×94°.07E±0°.07, h33km, mb4.2/23, Error ellipse: s-maj=13.1km s-min=6.0km az=139.3*
*NEIC **07** 20:48:35.0±0.9, 6°.35N×94°.17E, h82km±9km, mb4.5/12, Error ellipse: s-maj=11.0km s-min=6.5km az=68.0*
*IDC **07** 20:48:35.9±8.2, 6°.40N×94°.16E, h86km±73km, mb3.5/11, mb1 3.7/12, mb1mx3.5/59, mbtmp3.8/12, ML3.8/1, Error ellipse: s-maj=50.7km s-min=15.1km az=52.0*

ISC 07 20:48:30.9±0.6, 6°.46N±0°.09×94°.03E±0°.10, h35km, n48, σ1§25/45, mb4.2/23, Nicobar Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LHMI	Lhok Sumawe	3.15	113	eP	Pn	20 49 20.9	+2.9
PSI	Prapat	6.08	126	eP	Pn	20 50 01.7	+3.2
GSI	Gunungsitoli	6.22	145	ePn	Pn	20 50 00.7	+0.3
KULM	Kulim	6.69	100	ePn	Pn	20 50 07.5	+0.8
BKNI	Bangkinang	9.28	131	ePn	Pn	20 50 43.5	+1.2
MYKOM	Kota Tinggi	10.84	115	ePn	Pn	20 51 05.8	+2.2
CMAR	Chiang Mai Arr	12.85	21	P	P	20 51 37.0	-4.6
	0.2nm,0.3s,baz=230,slow=15,SNR=5.5						
KSM	Kuching	16.97	106	ePn	Pn	20 52 23.7	-2.1
	3.4nm,1.0s						
COCO	West Island	18.74	171	eP	P	20 52 45.5	-1.3
	585nm,1.6s						
CISI	Cisompet, Garu	19.57	135	eP	P	20 52 49.6	-6.4
	71nm,1.2s						
LSA	Lhasa	23.27	354	eP	P	20 53 37.5	+1.5
	17nm,1.7s						
H08S3	Diego Garcia H	25.65	237	T	T	21 20 28.6	
	baz=58,slow=76,SNR=30						
H08S2	Diego Garcia H	25.65	237	T	T	21 20 30.8	
	baz=58,slow=76,SNR=35						
H08S1	Diego Carcia H	25.66	237	T	T	21 20 32.7	
	baz=58,slow=76,SNR=32						
ENH	Enshi	27.79	30	eP	P	20 54 15.5	-1.3
	6.6nm,1.2s						
SSLB	Suanglung	31.08	53	eP	P	20 54 46.3	+0.3
	22nm,1.9s						
EKS2	Erkin-Say	40.26	337	eP	P	20 56 06.8	+2.1
	9.8nm,1.9s						
MK01	Makanchi Array	41.41	348	eP	P	20 56 14.3	+0.4
MK31	Makanchi Array	41.44	348	eP	P	20 56 14.7	+0.5
MK32	Makanchi Array	41.44	348	eP	P	20 56 13.9	-0.3
MKAR	Makanchi Array	41.44	348	P	P	20 56 13.9	-0.3
	1.5nm,0.6s,baz=170,slow=8.6,SNR=19						
MKAR	Makanchi Array	41.44	348	eP	P	20 56 14.7	+0.5
MAKZ	Makanchi	41.52	348	eP	P	20 56 14.8	0.0
	2.7nm,0.6s						
KKAR	Karatay Array	41.97	334	eP	P	20 56 18.9	+0.3
SONA0	Songino Array	42.56	12	eP	P	20 56 22.2	-1.2
	38nm,0.8s						
SONM	Songino Array	42.56	12	P	P	20 56 22.2	-1.2
	0.5nm,0.4s,baz=192,slow=8.4,SNR=7.3						
SONA1	Songino Array	42.57	12	eP	P	20 56 22.9	-0.6
INCN	Inchon	42.80	39	eP	P	20 56 23.7	-1.7
	202nm,1.5s						
GEYT	Alibeck	45.18	319	P	P	20 56 45.5	+1.0
	0.7nm,0.3s,baz=142,slow=7.2,SNR=3.0						
KURBB	Kurchatov Arra	45.88	346	P	P	20 56 50.9	+1.1
	1.4nm,0.6s,baz=171,slow=7.0,SNR=24						
KURK	Kurchatov	45.95	346	eP	P	20 56 50.9	+0.6
WR1	Warramunga Arr	47.55	124	eP	P	20 57 01.5	-1.9
WRA	Warramunga Arr	47.55	124	P	P	20 57 01.5	-1.9
	0.8nm,0.4s,baz=306,slow=8.6,SNR=34						
WRA				pP	sP	20 57 18.8	+0.9
	1.0nm,0.6s,baz=306,slow=8.6,SNR=4.6						
AS31	Alice Springs	49.11	129	eP	P	20 57 14.5	-0.8
	0.8nm,0.9s						
ASAR	Alice Springs	49.11	129	P	P	20 57 14.2	-1.2
	0.6nm,0.6s,baz=303,slow=7.7,SNR=14						
ASAR				pP	sP	20 57 31.9	+1.9
	0.7nm,0.5s,baz=302,slow=8.0,SNR=5.2						
DAMY	Dhamar	49.38	284	eP	P	20 57 18.2	+0.3
	38nm,1.9s						
BVAR	Borovoye Array	50.28	342	P	P	20 57 24.2	+0.4
	0.2nm,0.3s,baz=142,slow=7.3,SNR=3.8						
ZRNK	Zerenda	50.67	341	eP	P	20 57 27.6	+0.9
	3.0nm,1.4s						
ABKAR	Akbulak array	51.41	332	eP	P	20 57 33.0	+0.6
BR101	Keskin Array S	63.27	311	eP	P	20 58 55.6	-0.9
BRTR	Keskin Array B	63.27	311	P	P	20 58 55.6	-0.9
	0.4nm,0.7s,baz=132,slow=7.1,SNR=2.9						
TIR	Tirane	73.88	311	eP	P	21 00 01.9	-0.6
	16nm,1.1s						
FIA0	FINESS Array S	73.90	332	eP	P	21 00 02.4	+0.2
FIA1	FINESS Array S	73.90	332	eP	P	21 00 01.6	-0.5
	26nm,1.8s						
FINES	FINESS Array B	73.90	332	P	P	21 00 02.4	+0.2
	1.8nm,0.4s,baz=94,slow=4.7,SNR=42						
ARA0	ARCESS Array S	76.55	340	eP	P	21 00 17.6	+0.3
ARCES	ARCESS Array B	76.55	340	P	P	21 00 17.6	+0.3
	2.0nm,0.8s,baz=94,slow=6.5,SNR=9.4						
GERES	GERESS Array B	78.80	318	P	P	21 00 30.7	+0.4
	0.4nm,0.5s,baz=90,slow=5.3,SNR=4.6						

WEL 07 20:49:56.3±0.2, 43°.54S×172°.82E, h7km, ML3.6/13, 2C-2D, Error ellipse: s-maj=2.0km s-min=0.8km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRLZ	Canterbury Las	0.14	256	⇑PG	Pg	20 49 59.4	+0.1
CRLZ				SG	Sg	20 50 01.8	+0.4
CRLZ				AML	AML	20 50 02.0	
MQZ	McQueen's Vall	0.20	216	⇑PG	Pg	20 50 00.6	+0.2
MQZ				SG	Sg	20 50 03.9	+0.7
MQZ				AML	AML	20 50 04.1	
OXZ	Oxford	0.61	290	⇓P*	Pg	20 50 07.8	-0.1
LTZ	Lake Taylor	0.86	332	⇓P*	Pg	20 50 12.9	+0.1
LTZ				S*	Sb	20 50 24.8	-0.4
LTZ				AML	AML	20 50 25.7	
KHZ	Kahutara	1.24	25	P*	Pn	20 50 18.6	-1.4
RPZ	Rata Peaks	1.29	262	P*	Pn	20 50 19.4	-1.3
RPZ				AML	AML	20 50 41.0	
RPZ				AML	AML	20 50 43.2	
INZ	Inchbonnie	1.29	309	P*	Pn	20 50 19.2	-1.5
WVZ	Waitaha Valley	1.59	286	PN	Pn	20 50 23.8	-0.9
WVZ				AML	AML	20 50 60.0	
THZ	Tophouse	1.78	2	PN	Pn	20 50 26.1	-1.3
THZ				AML	AML	20 50 53.2	
THZ				AML	AML	20 50 59.6	
DSZ	Denniston Nort	1.94	337	PN	Pn	20 50 29.0	-0.6
DSZ				AML	AML	20 51 02.6	
DSZ				AML	AML	20 51 08.0	
BSWZ	Blackbirch Sta	1.98	24	PN	Pn	20 50 29.1	-1.1
LBZ	Lake Benmore	2.08	245	PN	Pn	20 50 30.8	-0.7
LBZ				AML	AML	20 51 05.4	
LBZ				AML	AML	20 53 01.5	
ODZ	Otahua Downs	2.17	225	PN	Pn	20 50 31.4	-1.3
ODZ				AML	AML	20 51 08.4	
ODZ				AML	AML	20 51 08.4	
ODZ				AML	AML	20 51 14.6	
ODZ				AML	AML	20 51 14.6	
FOZ	Fox Glacier	2.18	269	PN	Pn	20 50 33.4	+0.5
FOZ				AML	AML	20 51 01.7	
TUWZ	Tuamarina	2.27	22	PN	Pn	20 50 32.3	-1.8
NNZ	Nelson	2.36	10	PN	Pn	20 50 34.7	-0.6
TCW	Tory Channel	2.57	25	PN	Pn	20 50 36.4	-1.8
CAW	Cannon Point	2.95	35	PN	Pn	20 50 41.8	-1.7
EAZ	Earnscleugh	3.03	235	PN	Pn	20 50 43.6	-1.0
EAZ				AML	AML	20 51 32.3	
EAZ				AML	AML	20 51 37.9	
EAZ				AML	AML	20 52 19.9	
TUZ	Tuapeka	3.31	222	PN	Pn	20 50 47.7	-0.7
TUZ				AML	AML	20 51 46.4	
TUZ				AML	AML	20 51 47.4	
MLZ	Mavora Lakes	3.83	240	PN	Pn	20 50 54.2	-1.3
BFZ	Birch Farm	3.83	43	AML	AML	20 53 25.3	
BFZ				AML	AML	20 56 09.0	

*NIED **07** 20:52:00, 40°.20N×142°.40E, h41km, Mw5.7 Best double couple: M0=4.55000×10^17 NP1:φs=178.00000°, δ22.00000°, λ66.00000°. NP2:φs=25.00000°, δ70.00000°, λ100.00000°.*
*BJI **07** 20:52:13.2, 40°.09N×142°.70E, h16km, mb5.3/83, mB5.5/68, Ms5.6/96, Ms7 5.5/89*
*MOS **07** 20:52:19.5±1.3, 40°.37N×142°.37E, h33km, mb5.6/105, MS5.3/85, Error ellipse: s-maj=9.0km s-min=5.7km az=91.3*
*NEIC **07** 20:52:20.8±0.1, 40°.24N×142°.24E, h35km, mb5.5/227, ME5.3, MS5.2/298, MW5.7, Error ellipse: s-maj=3.2km s-min=2.2km az=152.0, Moment Tensor Solution. s60 Moment tensor: Scale 10^17Nm; Mrr2.32; Mθθ0.73; Mφφ-3.06; Mrθ1.60; Mrφ0.07; Mθφ2.53; Best double couple: M0=4.10000×10^17 NP1:φs=153.00000°, δ29.00000°, λ43.00000°. NP2:φs=24.00000°, δ71.00000°, λ112.00000°. Principal axes: T 4.0300, Plg59.0000°, Azm324.0000°; N 0.0900, Plg20.0000°, Azm196.0000°; P -4.1200, Plg23.0000°, Azm97.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from CMT mechanism.*
NEIC Recorded [4 JMA] in Iwate.
*GCMT **07** 20:52:20.8±0.1, 40°.24N×142°.53E, h42km, MW5.8/122, Moment Tensor Solution. s121, c239; s122, c340; Duration: 1§8 Moment tensor: Scale 10^17Nm; Mrr3.85±.05; Mθθ0.09±.03; Mφφ-3.94±.04; Mrθ1.32±.04; Mrφ-0.84±.03; Mθφ3.16±.05; Best double couple: M0=5.25300×10^17 NP1:φs=19.00000°, δ65.00000°, λ97.00000°. NP2:φs=183.00000°, δ25.00000°, λ76.00000°. Principal axes: T 5.1590, Plg69.0000°, Azm302.0000°; N 0.1900, Plg6.0000°, Azm196.0000°; P -5.3470, Plg20.0000°, Azm104.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*
*JMA **07** 20:52:20.3±0.1, 40°.24N×142°.50E, h34km±1km, M5.7*
JMA Felt IV J1.
*ISCJB **07** 20:52:21.0±0.3, 40°.28N±0°.02×142°.34E±0°.02, h48km±2km, mb5.4/352, MS5.3/408, Error ellipse: s-maj=3.1km s-min=2.1km az=149.6*
*IDC **07** 20:52:22.7±0.5, 40°.26N×142°.33E, h54km±4km, mb4.8/40, mb1 4.9/46, mb1mx4.9/55, mbtmp5.1/46, MS5.3/38, Ms1 5.3/38, ms1mx5.1/46, Error ellipse: s-maj=9.0km s-min=7.2km az=89.0*

ISC 07 20:52:20.8±0.2, 40°.26N±0°.03×142°.45E±0°.03, h39km±2km, h39km: pP-P, n1300, σ1§78/1321, mb5.4/373, MS5.3/423, 125C-42D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	Tanohata	0.55	234	⇓P	Pn	20 52 31.9	-0.3
JTH				S	Sn	20 52 40.3	0.0
JANG	Nango	0.72	279	⇓P	Pn	20 52 34.5	0.0
JANG				S	Sn	20 52 44.7	+0.3
MIYJ	Miyakonagasawa	0.84	215	⇓P	Pn	20 52 35.7	-0.4
MIYJ				S	Sn	20 52 47.3	+0.1
JKZ	Kuzumaki	0.90	252	⇓P	Pn	20 52 37.3	+0.3
JKZ				S	Sn	20 52 50.3	+1.5
JTM	Tenmabayashi	1.17	297	⇓P	Pn	20 52 41.4	+0.7
JOM	Ohasama	1.19	229	⇓P	Pn	20 52 41.6	+0.7
JOM				eS	Sn	20 52 57.5	+1.7
JAH	Hinai	1.39	268	⇓P	Pn	20 52 44.9	+1.2
JAH				S	Sn	20 53 03.6	+2.9
ERM	Erimo	1.83	17	c iP	Pn	20 52 51.3	+1.5
ERM	Erimo	1.83	17	ePn	Pn	20 52 51.8	+2.0
ASAJ	Asahikawa	3.85	2	P	Pn	20 53 19.2	+1.6
	27nm,0.3s,baz=202,slow=16,SNR=92						
ASAJ				S	Sn	20 54 05.2	+3.6
	57nm,0.3s,baz=113,slow=16,SNR=4.5						
ASAJ				LR	LR	20 55 18.0	
	comp=Z,68μm,21.6s,baz=198,slow=45						
ASAJ	Asahikawa	3.85	2	ePn	Pn	20 53 19.5	+1.9
ASAJ				eSn	Sn	20 53 59.4	-2.2
ASAJ				S	Sn	20 54 05.2	+3.6
YUK	Yuzh-Kuril'sk	4.55	33	⇑iP	Pn	20 53 26.9	-0.1
YUK				i S	Sn	20 54 17.1	-1.4
YUK				pmax	pmax		
	comp=E,251nm,0.2s						
YUK				pmax	pmax		
	comp=Z,1μm,0.2s						
YUK				pmax	pmax		
	comp=N,163nm,0.1s						
YUK				MLR	MLR		
	comp=N,31μm,20.0s						
YUK				MLR	MLR		
	comp=E,22μm,20.0s						
YUK				MLR	MLR		
	comp=Z,28μm,20.0s						
MAJO	Matsushiro	4.99	223	c iP	Pn	20 53 36.2	+3.1
MAJO	Matsushiro	4.99	223	ePn	Pn	20 53 35.9	+2.7
MAT	Matsushiro	4.99	223	P	Pn	20 53 35.9	+2.8
MAT				S	Sn	20 54 32.5	+3.0
MJAR	Matsushiro Arr	4.99	223	P	Pn	20 53 36.0	+2.9
	comp=Z,97nm,0.3s,baz=30,slow=13,SNR=1023						
MJAR				S	Sn	20 54 40.6	+11
	comp=Z,30nm,0.3s,baz=26,slow=18,SNR=4.8						
MJAR				LR	LR	20 55 46.4	
	comp=Z,40μm,20.9s,baz=40,slow=41						
MJB9	Matsu-Tunnel	4.99	223	ePn	Pn	20 53 35.7	+2.5
KUR	Kuril'sk	6.37	37	d iP	Pn	20 53 51.7	-0.4
KUR				i S	Sn	20 55 02.1	-1.4
KUR				pmax	pmax		
	comp=E,69nm,0.5s						
KUR				pmax	pmax		
	comp=Z,212nm,1.1s						
KUR				pmax	pmax		
	comp=N,135nm,1.0s						
KUR				pmax	pmax		
	comp=Z,2μm,3.5s						
KUR				pmax	pmax		
	comp=N,5μm,4.6s						
KUR				pmax	pmax		
	comp=E,2μm,4.6s						
INU	Inuyama	6.52	223	ePn	Pn	20 53 55.8	+1.6
YSS	Yuzh-Sakhalins	6.69	2	⇑eP	Pn	20 53 58.5	+2.0
YSS				eS	Sn	20 55 11.5	+0.1
YSS				pmax	pmax		
	comp=Z,140nm,0.7s						
YSS				MLR	MLR		
	comp=Z,21μm,16.0s						
YSS				MLR	MLR		
	comp=N,15μm,18.0s						
JHJ2	Mitsune	7.44	197	ePn	Pn	20 54 06.7	-0.1
JHJ	Hachijo jima 2	7.44	198	P	Pn	20 54 06.8	0.0
	comp=N,183nm,0.3s,baz=350,slow=16,SNR=28						
JHJ				S	Sn	20 55 23.7	-6.2
	baz=69,slow=23,SNR=4.3						
VLA	Vladivostok	8.40	293	⇑iP	Pn	20 54 22.1	+2.2
USRK	Ussuriysk Ar.	8.70	300	P	Pn	20 54 26.6	+2.6
	comp=N,7.6nm,0.3s,baz=108,slow=14,SNR=66						
USRK				S	Sn	20 56 05.3	+4.6
	baz=120,slow=14,SNR=1.6						
USRK				LR	LR	20 57 44.0	
	comp=N,36μm,19.0s,baz=123,slow=37						
MSHR	Mys Shultsa	8.79	289	⇑iP	Pn	20 54 27.8	+2.5
UGL	Uglegorsk	8.82	358	eP	Pn	20 54 30.0	+4.4
UGL				S	Sn	20 56 07.0	+3.4
UGL				pmax	pmax		
	comp=Z,196nm,1.1s						
UGL				pmax	pmax		
	comp=N,2μm,5.0s						
UGL				pmax	pmax		
	comp=Z,2μm,5.0s						
UGL				smax	smax		
	comp=N,4μm,7.0s						
UGL				smax	smax		
	comp=E,2μm,7.0s						
UGL				MLR	MLR		
	comp=N,25μm,21.0s						
UGL				MLR	MLR		
	comp=E,14μm,21.0s						
UGL				MLR	MLR		
	comp=Z,8μm,21.0s						
HABR	Khabarovsk	9.76	330	eP	Pn	20 54 37.0	-1.6
HABR				e		20 56 26.2	
HABR				pmax	pmax		
	comp=Z,143nm,2.5s						
HABR				pmax	pmax		
	comp=N,102nm,2.5s						
HABR				pmax	pmax		
	comp=E,47nm,2.

MDJ				LR	LR	
	comp=Z,8μm,16.7s					
MDJ				LR	LR	
	comp=Z,23μm,18.9s					
MDJ				LR	LR	
	comp=Z,32μm,18.9s					
MDJ	**Mudanjiang**	**10.45**	**299**	*e*Pn	**Pn**	**20 54 51.0 +3.1**
TYV	**Tymovskoe**	**10.60**	**1**	*e*P	**Pn**	**20 54 52.2 +2.2**
TYV				pmax	pmax	
	comp=N,101nm,1.0s					
TYV				pmax	pmax	
	comp=Z,154nm,1.0s					
TYV				pmax	pmax	
	comp=Z,2μm,8.0s					
TYV				MLR	MLR	
	comp=N,26μm,20.0s					
TYV				MLR	MLR	
	comp=Z,26μm,20.0s					
KSRS	**Korea Array**	**11.66**	**261**	P	**Pn**	**20 55 07.3 +2.7**
	comp=Z,1.0nm,0.3s,baz=70,slow=12,SNR=40					
KSRS				S	**Sn**	**20 57 21.6 +8.1**
	comp=Z,0.8nm,0.3s,baz=73,slow=24,SNR=3.4					
KSRS				LR	LR	20 59 21.6
	comp=Z,28μm,18.5s,baz=79,slow=36					
KS01	**Wonju Array Si**	**11.68**	**261**	*e*Pn	**Pn**	**20 55 06.3 +1.5**
JNU	**Nakatsue**	**11.70**	**236**	P	**Pn**	**20 55 05.7 +0.5**
	comp=Z,3.1nm,0.3s,baz=44,slow=4.1,SNR=23					
JNU				LR	LR	21 00 10.8
	comp=Z,17μm,18.5s,baz=46,slow=40					
JNU	**Nakatsue**	**11.70**	**236**	*e*Pn	**Pn**	**20 55 06.1 +0.9**
KS15	**Wonju Array Si**	**11.70**	**261**	*e*Pn	**Pn**	**20 55 08.2 +3.1**
KS15				*e*Sn	**Sn**	**20 57 17.1 +2.8**
KSAR	**Wonju Array Be**	**11.70**	**261**	P	**Pn**	**20 55 07.4 +2.3**
KSAR				S	**Sn**	**20 57 21.6 +7.3**
KSAR	**Wonju Array Be**	**11.70**	**261**	P	**Pn**	**20 55 07.3 +2.3**
KSAR				S	**Sn**	**20 57 21.6 +7.3**
KLR	**Kul'dur**	**11.75**	**323**	P	**Pn**	**20 55 06.1 +0.4**
	comp=Z,0.5nm,0.3s,baz=133,slow=13,SNR=32					
KLR				LR	LR	20 59 53.4
	comp=Z,26μm,18.2s,baz=138,slow=38					
INCN	**Inchon**	**12.63**	**262**	Pn	**Pn**	**20 55 22.1 +4.2**
	SNR=11					
INCN	**Inchon**	**12.63**	**262**	*e*Pn	**Pn**	**20 55 20.0 +2.1**
NKL	**Nikolayevsk**	**12.95**	**355**	*i* P	**Pn**	**20 55 22.0 -0.1**
NKL				*e*S	**Sn**	**20 57 44.0 -0.7**
NKL				pmax	pmax	
	comp=N,1μm,4.0s					
NKL				pmax	pmax	
	comp=Z,2μm,4.0s					
NKL				smax	smax	
	comp=E,2μm,10.0s					
NKL				MLR	MLR	
	comp=E,6μm,15.0s					
NKL				MLR	MLR	
	comp=N,5μm,15.0s					
NKL				MLR	MLR	
	comp=Z,6μm,18.0s					
CN2	**Changchun**	**13.12**	**291⇓**	*e*P	**Pn**	**20 55 26.0 +1.5**
CN2				*e*sP	P	20 55 35.4 +1.5
CN2				*e*S	**Sn**	**20 57 52.4 +3.4**
CN2				pmax	pmax	
	comp=Z,60nm,1.2s					
CN2				pmax	pmax	
	comp=Z,3μm,9.0s					
CN2				LR	LR	
	comp=Z,10μm,18.0s					
CN2				LR	LR	
	comp=Z,15μm,18.0s					
CN2				LR	LR	
	comp=Z,16μm,19.0s					
CBIJ	**Chichi jima**	**13.13**	**181**	*e*Pn	**Pn**	**20 55 21.5 -3.3**
CBIJ				*e*Sn	Sn	20 57 37.5 -12
JCJ	**Chichijima**	**13.13**	**181**	P	**Pn**	**20 55 21.5 -3.3**
	comp=Z,24nm,0.3s,baz=5.1,slow=22,SNR=19					
JCJ				S	Sn	20 57 37.5 -12
JCJ				LR	LR	21 01 38.9
	comp=Z,5μm,21.1s,baz=352,slow=42					
OKH	**Okha**	**13.30**	**1**	*e*P	**Pn**	**20 55 24.2 -2.6**
OKH				*e*S	**Sn**	**20 57 45.8 -7.4**
OKH				pmax	pmax	
	comp=Z,1μm,10.0s					
OKH				smax	smax	
	comp=N,2μm,6.0s					
OKH				smax	smax	
	comp=Z,17μm,20.0s					
SKR	**Severo-Kuril's**	**14.14**	**38**	*e*P	Pn	20 55 30.5 -7.8
SKR				S	**Sn**	**20 58 12.6 -1.1**
SKR				pmax	pmax	
	comp=N,40nm,0.6s					
SKR				pmax	pmax	
	comp=E,30nm,0.6s					
SKR				pmax	pmax	
	comp=Z,40nm,0.6s					
SKR				MLR	MLR	
	comp=N,5μm,18.0s					
SKR				MLR	MLR	
	comp=E,5μm,18.0s					
SKR				MLR	MLR	
	comp=Z,6μm,18.0s					
SNY	**Shenyang**	**14.33**	**282**	⇑P	**Pn**	**20 55 42.1 +1.2**
SNY				S	**S**	**20 58 29.6 -7.8**
SNY				pmax	pmax	
	comp=Z,76nm,2.5s					
SNY				pmax	pmax	
	comp=Z,1μm,5.3s					
SNY				LR	LR	
	comp=Z,5μm,16.5s					
SNY				LR	LR	
	comp=Z,17μm,18.8s					
SNY				LR	LR	
	comp=Z,28μm,20.1s					
DL2	**Dalian**	**16.11**	**272⇑**	*i*P	**Pn**	**20 56 05.0 +0.7**
DL2				S	**Sn**	**20 59 02.3 +0.6**
DL2				pmax	pmax	
	comp=Z,60nm,1.0s					
DL2				pmax	pmax	
	comp=Z,2μm,5.5s					
DL2				LR	LR	
	comp=Z,10μm,19.2s					
DL2				LR	LR	
	comp=Z,12μm,26.1s					
PETK	**Petropavlovsk-**	**16.52**	**34**	P	**Pn**	**20 56 07.2 -2.3**
	comp=Z,0.5nm,0.3s,baz=241,slow=6.8,SNR=8.9					
PETK				LR	LR	21 03 02.9
	comp=Z,4μm,18.0s,baz=219,slow=39					
PEA1	**Petropavlovsk-**	**16.53**	**34**	*e*Pn	**Pn**	**20 56 07.2 -2.4**
PET	**Petropavlovsk**	**16.88**	**35**	*e*P	**Pn**	**20 56 13.9 0.0**
PET				*e*S	**S**	**20 59 26.6 -2.9**
PET				pmax	pmax	
	comp=Z,700nm,13.1s					
PET				pmax	pmax	
	comp=Z,900nm,8.9s					
PET				pmax	pmax	
	comp=Z,47nm,1.1s					
PET				MLR	MLR	
	comp=Z,7μm,19.0s					
PET				MLR	MLR	
	comp=Z,8μm,18.0s					
PET	**Petropavlovsk**	**16.88**	**35**	*e*Pn	**Pn**	**20 56 12.9 -1.0**
	comp=Z,41nm,1.0s					
HIA	**Hailar**	**18.41**	**307**	*e*P	**P**	**20 56 30.1 -2.4**
HIA				pmax	pmax	
	comp=Z,59nm,0.9s					
HIA	**Hailar**	**18.41**	**307**	*e*P	**P**	**20 56 30.1 -2.4**
	comp=Z,60nm,0.9s					
SSE	**Sheshan**	**19.50**	**249**	⇑P	**P**	**20 56 43.1 -1.5**
SSE				PP	**PnPn**	**20 56 59.5 -0.4**
SSE				S	**S**	**21 00 19.1 -3.7**
SSE				sS	**Sn**	**21 00 28.5 +4.5**
SSE				pmax	pmax	
	comp=Z,34nm,0.8s					
SSE				pmax	pmax	
	comp=Z,340nm,3.5s					
SSE				LR	LR	
	comp=Z,3μm,21.0s					
SSE				LR	LR	
	comp=Z,4μm,21.0s					
SSE				LR	LR	
	comp=Z,6μm,23.5s					
MA2	**Magadan**	**20.03**	**12**	*i* P	Pn	20 56 52.3 +0.2
BJI	**Beijing**	**20.06**	**278**	P	**P**	**20 56 48.8 -1.8**
BJI				pP	Pn	20 56 56.1 +3.5
BJI				sP	**pP**	**20 56 59.2 -1.3**
BJI				S	**S**	**21 00 28.1 -5.8**
BJI				sS	**sS**	**21 00 44.6 -5.0**
BJI				pmax	pmax	
	comp=Z,96nm,1.7s					
BJI				pmax	pmax	
	comp=Z,1μm,3.5s					
BJI				LR	LR	
	comp=Z,3μm,14.8s					
BJI				LR	LR	
	comp=Z,12μm,19.0s					
BJI				LR	LR	
	comp=Z,10μm,22.6s					
BJT	**Baijiatuau**	**20.07**	**278**	*e*P	**P**	**20 56 48.6 -2.1**
BJT				pmax	pmax	
	comp=Z,156nm,1.0s					
BJT	**Baijiatuau**	**20.07**	**278**	*e*P	**P**	**20 56 48.6 -2.1**
	comp=Z,156nm,1.0s					
CLNS	**Chul'man**	**20.15**	**331**	*e*P	**P**	**20 56 50.2 -1.3**
CLNS				*e**PP	**pP**	**20 57 02.8 +1.4**
CLNS				*e*		20 57 09.2
CLNS				*e*S	**S**	**21 00 36.2 +0.8**
CLNS				*e*		21 01 02.2
CLNS				*e*SS	SnSn	21 01 15.8 +22
CLNS				pmax	pmax	
	comp=Z,115nm,1.0s					
CLNS				pmax	pmax	
	comp=N,104nm,1.4s					
CLNS				pmax	pmax	
	comp=E,37nm,1.0s					
CLNS				pmax	pmax	
	comp=Z,105nm,1.1s					
CLNS				pmax	pmax	
	comp=E,72nm,1.2s					
CLNS				pmax	pmax	
	comp=N,144nm,1.2s					
CLNS				smax	smax	
	comp=N,2μm,10.4s					
CLNS				smax	smax	
	comp=E,1μm,11.8s					
CLNS				MLR	MLR	
	comp=Z,13μm,17.0s					
CLNS				MLR	MLR	
	comp=N,9μm,16.0s					
CLNS				MLR	MLR	
	comp=E,6μm,18.0s					
NJ2	**Nanjing**	**20.69**	**254**	*e*P	**P**	**20 56 55.6 -1.9**
NJ2				S	**S**	**21 00 44.0 -2.5**
NJ2				pmax	pmax	
	comp=E,48nm,1.5s					
NJ2				pmax	pmax	
	comp=E,290nm,3.8s					
NJ2				LR	LR	
	comp=E,8μm,14.6s					
NJ2				LR	LR	
	comp=E,12μm,17.3s					
NJ2				LR	LR	
	comp=E,13μm,19.5s					
YOJ	**Yonaguni jima**	**22.68**	**232**	*e*P	**P**	**20 57 17.7 -1.1**
YOJ				pmax	pmax	
	comp=Z,79nm,0.9s					
YOJ				MLR	MLR	
	comp=Z,6μm,21.0s					
YOJ	**Yonaguni jima**	**22.68**	**232**	*e*P	**P**	**20 57 17.7 -1.1**
	comp=Z,79nm,0.9s					
YOJ				LR	LR	
	comp=Z,6μm,21.0s					
CIT	**Chita**	**23.05**	**310**	*e*P	**P**	**20 57 19.8 -2.8**
CIT				*e*		20 57 37.1
CIT				*e*		20 57 46.4
CIT				*e*S	**S**	**21 01 29.0 -1.6**
CIT				pmax	pmax	
	comp=Z,470nm,1.8s					
YAK	**Yakutsk**	**23.14**	**345**	P	**P**	**20 57 20.8 -2.4**
	comp=Z,155nm,0.7s,baz=4.9,slow=3.1,SNR=32					
YAK				S	**S**	**21 01 23.5 -8.1**
	comp=Z,13nm,0.4s,baz=242,slow=0.9,SNR=3.0					
YAK				LR	LR	21 07 03.5
	comp=Z,3μm,19.3s,baz=160,slow=38					
YAK	**Yakutsk**	**23.14**	**345**	*e*P	**P**	**20 57 20.9 -2.4**
YAK				*e**PP	**pP**	**20 57 34.1 +0.7**
YAK				*e*S	**S**	**21 01 27.4 -4.2**
YAK				pmax	pmax	
	comp=Z,161nm,0.9s					
YAK				pmax	pmax	
	comp=N,110nm,1.1s					
YAK				pmax	pmax	
	comp=E,25nm,1.1s					
YAK				smax	smax	
	comp=N,1μm,2.3s					
YAK				smax	smax	
	comp=E,1μm,2.5s					
YAK	**Yakutsk**	**23.14**	**345**	*e*P	**P**	**20 57 19.7 -3.5**
	comp=E,164nm,0.7s					
YAK				*e*S	**S**	**21 01 24.1 -7.5**
TATO	**Taipei**	**23.24**	**235**	P	**P**	**20 57 23.8 -0.8**
	SNR=7.5					
TATO	**Taipei**	**23.24**	**235**	*e*P	**P**	**20 57 22.6 -1.9**
	comp=E,275nm,1.4s					
TATO				LR	LR	
	comp=Z,11μm,18.0s					
HHC	**Hu-ho-hao-te**	**23.42**	**282**	*e*P	**P**	**20 57 23.8 -2.6**
HHC				pP	pP	20 57 30.9 -5.8
HHC				sP	sP	20 57 34.4 -7.1
HHC				PP	**PnPn**	**20 57 56.6 +3.1**
HHC				S	**S**	**21 01 29.9 -6.9**
HHC				pmax	pmax	
	comp=Z,50nm,0.7s					
HHC				pmax	pmax	
	comp=Z,820nm,4.5s					
HHC				LR	LR	
	comp=Z,4μm,12.9s					
HHC				LR	LR	
	comp=Z,13μm,12.8s					
HHC				LR	LR	
	comp=Z,15μm,12.4s					
TIY	**Taiyuan**	**23.42**	**273**	*e*P	**P**	**20 57 23.4 -2.9**
TIY				S	**S**	**21 01 34.2 -2.6**
TIY				pmax	pmax	
	comp=Z,660nm,7.1s					
TIY				LR	LR	
	comp=Z,4μm,17.7s					
TIY				LR	LR	
	comp=Z,4μm,15.9s					
TIY				LR	LR	
	comp=Z,7μm,28.0s					
SEY	**Seymchan**	**23.47**	**11**	P	**P**	**20 57 26.0 -0.6**
	comp=Z,27nm,0.7s,baz=194,slow=7.1,SNR=56					
SEY				S	**S**	**21 01 29.8 -7.3**
	comp=Z,8.4nm,1.1s,baz=128,slow=23,SNR=1.4					
SEY	**Seymchan**	**23.47**	**11⇑**	*i*P	**P**	**20 57 27.3 +0.8**
YHNB	**Yeheng**	**23.53**	**235**	*e*P	**P**	**20 57 24.8 -2.7**
	comp=Z,90nm,0.7s					
YHNB				LR	LR	
	comp=Z,10μm,20.0s					
NACB	**Ninganchiao**	**23.75**	**234**	*e*P	**P**	**20 57 26.2 -3.3**
	comp=Z,45nm,0.9s					
NACB				LR	LR	
	comp=Z,4μm,20.0s					
SSLB	**Suanglung**	**24.43**	**234**	*e*P	**P**	**20 57 32.0 -3.9**
	comp=Z,39nm,0.7s					
SSLB				LR	LR	
	comp=Z,9μm,18.0s					
YULB	**Yu-li**	**24.51**	**233**	*e*P	**P**	**20 57 32.7 -3.8**
	comp=Z,46nm,0.8s					
YULB				LR	LR	
	comp=Z,3μm,22.0s					
BTO	**Baotou**	**24.61**	**281**	*e*P	**P**	**20 57 34.1 -3.4**
WHN	**Wuhan**	**24.78**	**256**	⇑P	**P**	**20 57 38.3 -0.6**
WHN				pP	**pP**	**20 57 44.2 -5.5**
WHN				S	**S**	**21 01 56.0 -2.7**
WHN				pmax	pmax	
	comp=Z,990nm,1.5s					
WHN				LR	LR	
	comp=Z,15μm,16.0s					
WHN				LR	LR	
	comp=Z,23μm,15.5s					
WHN				LR	LR	
	comp=Z,38μm,18.2s					
SMY	**Shemya**	**24.88**	**49**	*e*P	**P**	**20 57 38.6 -1.0**
SMY				pmax	pmax	
	comp=Z,240nm,1.3s					
SMY	**Shemya**	**24.88**	**49**	*e*P	**P**	**20 57 38.6 -1.0**
	comp=Z,239nm,1.3s					
TPUB	**Ta-pu**	**24.99**	**234**	*e*P	**P**	**20 57 36.9 -4.0**
	comp=Z,81nm,0.9s					
TPUB				LR	LR	
	comp=Z,8μm,18.0s					
TWG	**Pinlang**	**25.08**	**233**	*e*P	**P**	**20 57 40.5 -1.1**
	comp=Z,611nm,1.1s					
TWG				LR	LR	
	comp=Z,13μm,22.0s					
QZH	**Quanzhou**	**25.13**	**240⇑**	*i*P	**P**	**20 57 36.9 -5.2**
QZH				S	**S**	**21 01 56.3 -8.0**
QZH				pmax	pmax	
	comp=Z,420nm,1.4s					
QZH				pmax	pmax	
	comp=Z,4μm,3.0s					
QZH				LR	LR	
	comp=Z,5μm,14.8s					
QZH				LR	LR	
	comp=Z,5μm,14.0s					
QZH				LR	LR	
	comp=Z,10μm,20.8s					
BOD	**Bodaibo**	**25.32**	**323**	*e*P	**P**	**20 57 42.7 -0.9**
BOD				pmax	pmax	
	comp=Z,124nm,1.2s					
ULN	**Ulaanbaatar**	**26.36**	**299***c*	*i*P	**P**	**20 57 52.9 -0.4**
ULN				pmax	pmax	
	comp=Z,45nm,1.2s					
ULN	**Ulaanbaatar**	**26.36**	**299**	P	**P**	**20 57 53.2 -0.1**
	SNR=25					
ULN	**Ulaanbaatar**	**26.36**	**299**	*e*P	**P**	**20 57 52.6 -0.8**
	comp=Z,130nm,1.6s					
ULN				LR	LR	
	comp=Z,17μm,18.0s					
GUMO	**Guam**	**26.66**	**175**	LR	LR	21 07 22.6
	comp=Z,4μm,21.7s,baz=18,slow=34					
SONA1	**Songino Array**	**26.80**	**298**	*e*P	**P**	**20 57 56.1 -1.2**
SONA0	**Songino Array**	**26.80**	**298**	*e*P	**P**	**20 57 57.1 -0.2**
	comp=Z,91nm,1.3s					
SONM	**Songino Array**	**26.80**	**298**	P	**P**	**20 57 57.1 -0.2**
	comp=Z,34nm,0.8s,baz=103,slow=8.4,SNR=71					
SONM				LR	LR	21 09 09.5
	comp=Z,17μm,18.8s,baz=95,slow=38					
XAN	**Xi'an**	**27.32**	**268**	P	**P**	**20 58 00.2 -1.8**
XAN				pP	pP	20 58 08.3 -4.5
XAN				sP	sP	20 58 12.3 -5.2
XAN				PP	**PnPn**	**20 58 52.4 +5.5**
XAN				S	**S**	**21 02 44.8 +5.8**
XAN				pmax	pmax	
	comp=Z,39nm,1.3s					
XAN				pmax	pmax	
	comp=Z,800nm,6.9s					
XAN				LR	LR	
	comp=Z,8μm,17.7s					
XAN				LR	LR	
	comp=Z,8μm,16.7s					
ENH	**Enshi**	**28.55**	**260**	*e*P	**P**	**20 58 11.8 -1.1**
	comp=Z,64nm,0.8s					
ENH				LR	LR	
	comp=Z,11μm,18.0s					
IRK	**Irkutsk**	**28.65**	**308**	*e*P	**P**	**20 58 11.8 -1.8**
IRK				pmax	pmax	
	comp=Z,184nm,2.6s					
TLY	**Talaya**	**28.95**	**306**	P	**P**	**20 58 16.1 -0.2**
	comp=Z,17nm,0.8s,baz=106,slow=8.9,SNR=21					
TLY				LR	LR	21 10 38.0
	comp=Z,11μm,18.2s,baz=100,slow=38					
TLY	**Talaya**	**28.95**	**306***c*	*i*P	**P**	**20 58 16.3 +0.1**
TLY				*e*		20 59 28.8
TLY				*e*S	**S**	**21 03 04.3 +0.1**
TLY				*e*		21 03 20.2
TLY				*e*SS	**SnSn**	**21 04 31.4 +2.5**
TLY				*e*SSS	SSS	21 04 57.0
TLY				pmax	pmax	
	comp=Z,63nm,1.4s					
TLY				MLR	MLR	
	comp=Z,9μm,16.0s					
ZAK	**Zakamensk**	**29.03**	**304**	*e*P	**P**	**20 58 16.3 -0.8**
ZAK				pmax	pmax	
	comp=Z,64nm,1.4s					
H11N2	**WAKE ISLAND Hy**	**29.28**	**127**	T	T	21 29 06.5
	baz=318,slow=75					
H11N1	**WAKE ISLAND Hy**	**29.29**	**127**	T	T	21 29 07.2
	baz=318,slow=75,SNR=9776					
H11N3	**WAKE ISLAND Hy**	**29.30**	**127**	T	T	21 29 07.9
	baz=318,slow=75					
HKC	**Hong Kong Obse**	**29.88**	**242**	P	**P**	**20 58 26.0 +1.3**
GZH	**Guangzhou**	**29.92**	**244**	P	P	20 58 20.0 -5.0
GZH				S	S	21 03 10.9 -8.9
GZH				pmax	pmax	
	comp=Z,2μm,3.8s					
H11S1	**WAKE ISLAND Hy**	**30.10**	**129**	T	T	21 30 15.1
	baz=320,slow=76,SNR=1711					
H11S3	**WAKE ISLAND Hy**	**30.10**	**129**	T	T	21 30 14.3
	baz=320,slow=76,SNR=1263					
H11S2	**WAKE ISLAND Hy**	**30.11**	**129**	T	T	21 30 15.4
	baz=320,slow=76,SNR=1275					
MCO	**Taipa Grande**	**30.42**	**242**	P	**P**	**20 58 30.0 +0.5**
LZH	**Lanzhou**	**30.47**	**275**	*e*P	**P**	**20 58 29.4 -0.6**
LZH				pP	pP	20 58 38.5 -2.4
LZH				sP	sP	20 58 43.8 -1.8
LZH				PP	**PnPn**	**20 59 29.6 +0.1**
LZH				*e*S	**S**	**21 03 29.0 +0.4**
LZH				sS	sS	21 03 38.2 -8.5
LZH				SS	**SnSn**	**21 05 06.0 -0.5**
LZH				pmax	pmax	
	comp=Z,110nm,1.3s					
LZH				pmax	pmax	
	comp=Z,410nm,4.9s					
LZH				LR	LR	
	comp=Z,4μm,17.0s					
LZH				LR	LR	
	comp=Z,2μm,14.0s					
LZH				LR	LR	
	comp=Z,9μm,18.1s					
MOY	**Mondy**	**30.59**	**306**	*e*P	**P**	**20 58 31.6 +0.8**
MOY				pmax	pmax	
	comp=Z,190nm,3.6s					
BILL	**Bilibino**	**30.71**	**17**	*d*P	P	20 58 37.6 +6.0
BILL				*i*		20 59 32.3
BILL				*i* S	**S**	**21 03 28.5 -2.9**
BILL				pmax	pmax	
	comp=Z,104nm,1.7s					
BILL				MLR	MLR	
	comp=Z,7μm,20.0s					
BILL	**Bilibino**	**30.71**	**17**	PFAKE		20 58 40.0 +8.4
BILL				LR	LR	
	comp=Z,7μm,21.0s					
TIXI	**Tiksi**	**32.20**	**352**	P	**P**	**20 58 43.8 -0.8**
	comp=Z,5.9nm,0.9s,baz=147,slow=8.6,SNR=17					
TIXI				LR	LR	21 14 14.5
	comp=Z,4μm,18.4s,baz=162,slow=41					
TIXI	**Tiksi**	**32.20**	**352***c*	*i*P	**P**	**20 58 44.0 -0.6**
TIXI				pmax	pmax	
	comp=Z,24nm,1.7s					
TIXI	**Tiksi**	**32.20**	**352**	*e*P	**P**	**20 58 43.2 -1.4**
	comp=Z,23nm,0.9s					
GTA	**Gaotai**	**32.52**	**283**	⇑P	**P**	**20 58 47.8 -0.2**
GTA				pP	pP	20 58 54.3 -4.6
GTA				sP	sP	20 58 57.8 -5.8
GTA				PP	**PnPn**	**20 59 56.9 +0.9**
GTA				PcP	**PcP**	**21 01 35.8 +1.8**
GTA				S	**S**	**21 04 02.9 +2.4**
GTA				sS	sS	21 04 15.8 -2.8
GTA				ScP	**ScP**	**21 05 15.5 +0.8**
GTA				PcS	**PcS**	**21 05 18.2 -1.0**
GTA				SS	**SnSn**	**21 06 03.8 +7.6**
GTA				ScS	**ScS**	**21 09 12.0 -2.2**
GTA				pmax	pmax	
	comp=Z,36nm,1.5s					
GTA				pmax	pmax	
	comp=Z,750nm,6.2s					
GTA				LR	LR	
	comp=Z,5μm,20.0s					
GTA				LR	LR	
	comp=Z,13μm,17.6s					
GTA				LR	LR	
	comp=Z,16μm,18.5s					
CD2	**Chengdu**	**32.60**	**266**	P	**P**	**20 58 47.1 -1.6**
CD2				sP	pP	20 58 57.4 -2.2
CD2				PP	**PP**	**21 00 00.9 -1.8**
CD2				S	**S**	**21 03 56.0 -5.8**
CD2				sS	sS	21 04 13.0 -6.9
CD2				pmax	pmax	
	comp=Z,70nm,0.6s					
CD2				pmax	pmax	
	comp=Z,740nm,7.8s					
CD2				LR	LR	
	comp=Z,7μm,19.2s					
CD2				LR	LR	
	comp=Z,6μm,20.4s					
GYA	**Guiyang**	**32.67**	**256**	P	**P**	**20 58 52.8 +3.4**
GYA				pP	pP	20 58 59.3 -1.0
GYA				PP	**PP**	**21 00 01.4 -2.2**

GYA PcP **PcP** **21 01 37.8 +3.2**
GYA S **S** **21 04 05.0 +1.9**
GYA ScP **ScP** **21 05 19.5 +4.1**
GYA SS **SnSn** **21 06 02.4 +2.2**
GYA ScS **ScS** **21 09 17.2 +1.9**
GYA pmax pmax
comp=Z,40nm,1.0s
GYA pmax pmax
comp=Z,160nm,6.2s
GYA LR LR
comp=Z,9μm,18.2s
GYA LR LR
comp=Z,7μm,18.6s
GYA LR LR
comp=Z,9μm,19.0s
QIZ Qiongzhong 35.06 243 P **P** **20 59 11.0 +0.9**
QIZ S **S** **21 04 41.4 +1.4**
QIZ pmax pmax
comp=Z,21nm,2.0s
QIZ LR LR
comp=Z,1μm,17.2s
QIZ LR LR
comp=Z,2μm,13.7s
GAMB Gambell 35.56 33 *e*P **P** **20 59 14.2 +0.3**
comp=Z,46nm,1.7s
GAMB LR LR
comp=Z,3μm,22.0s
KRAR Krasnoyarsk 35.77 313*c i*P **P** **20 59 16.4 +0.6**
KRAR pmax pmax
comp=Z,183nm,1.4s
PATS Pohnpei 36.19 153 PFAKE 20 59 30.0 +10
PATS LR LR
comp=Z,5μm,20.0s
DAV Davao City (W) 36.34 209 LR LR 21 17 22.4
comp=Z,2μm,18.1s,baz=36,slow=41
KMI Kunming 36.34 258 P **P** **20 59 21.3 0.0**
KMI pP pP 20 59 29.8 -2.5
KMI sP sP 20 59 33.2 -3.8
KMI PP **PP** **21 00 45.6 +1.2**
KMI S S 21 04 50.4 -10
KMI pmax pmax
comp=Z,64nm,1.7s
KMI pmax pmax
comp=Z,1μm,5.2s
KMI LR LR
comp=Z,8μm,17.2s
KMI LR LR
comp=Z,8μm,18.7s
KMI LR LR
comp=Z,12μm,18.0s
CTBH Cotabato--PC H 36.71 211⇑*i*P **P** **20 59 25.3 +1.1**
AKUT Akutan 36.96 50 PFAKE 20 59 40.0 +14
AKUT LR LR
comp=Z,3μm,22.0s
TNA Tin City 37.66 31 *e*P **P** **20 59 33.6 +1.9**
comp=Z,30nm,0.9s
TNA LR LR
comp=Z,4μm,22.0s
FALS False Pass 38.33 49 PFAKE 20 59 50.0 +12
FALS LR LR
comp=Z,3μm,20.0s
KWAJ Kwajalein Atol 38.52 138 PFAKE 20 59 50.0 +11
KWAJ LR LR
comp=Z,4μm,21.0s
PANO Nakornpanom 39.96 246 P **P** **20 59 52.5 +1.0**
comp=Z,53nm,1.9s
SDPT Sand Point 40.01 48 PFAKE 21 00 00.0 +8.5
SDPT LR LR
comp=Z,2μm,20.0s
WMQ Urumqi 40.20 294⇑*i*P **P** **20 59 53.7 +0.4**
WMQ pP pP 21 00 01.0 -3.4
WMQ sP sP 21 00 06.0 -3.1
WMQ PcS **PcS** **21 05 50.5 +3.2**
WMQ pmax pmax
comp=Z,54nm,1.0s
WMQ pmax pmax
comp=Z,910nm,4.2s
WMQ LR LR
comp=Z,1μm,15.6s
WMQ LR LR
comp=Z,1μm,18.6s
WMQ LR LR
comp=Z,2μm,25.8s
NONG Nongkai 40.38 248 P **P** **20 59 55.4 +0.4**
comp=Z,90nm,1.2s
ZAA1 Zalesovo Array 40.41 310 *e*P **P** **20 59 54.5 -0.3**
ZALV Zalesovo Beam 40.41 310 P **P** **20 59 54.5 -0.3**
comp=Z,51nm,0.7s,baz=88,slow=7.1,SNR=77
ZALV LR LR 21 17 31.1
comp=Z,11μm,18.9s,baz=82,slow=37
ZALV Zalesovo Beam 40.41 310 *i* P **P** **20 59 54.7 -0.2**
ZALV pmax pmax
comp=Z,51nm,0.7s
SKNT Sakolnakorn 40.52 246 P **P** **20 59 56.5 +0.3**
comp=Z,154nm,1.1s,comp=Z,4μm
NRIK Noril'sk 40.71 334 P **P** **20 59 56.8 -0.4**
comp=Z,12nm,0.6s,baz=114,slow=6.6,SNR=28
NRIK LR LR 21 17 55.1
comp=Z,13μm,19.5s,baz=106,slow=38
CRAI Chiangrai 41.00 254 P **P** **21 00 00.6 +0.4**
comp=Z,648nm,0.8s
MYLDM Lahad Datu 41.04 218⇑P **P** **21 00 03.2 +2.8**
MYLDM Lahad Datu 41.04 218 *e*P **P** **21 00 02.1 +1.7**
comp=Z,263nm,1.2s
NVS Novosibirsk 41.26 311⇑*i*P **P** **21 00 02.1 +0.2**
NVS *e* 21 01 57.4
NVS *e*S **S** **21 06 13.2 +0.3**
NVS pmax pmax
comp=Z,226nm,2.3s
NVS pmax pmax
comp=E,116nm,2.1s
NVS smax smax
comp=E,55nm,1.9s
SDKM Sandakan 41.27 220⇑P **P** **21 00 03.8 +1.5**
KKM Kota Kinabalu 41.41 222⇓P **P** **21 00 05.4 +1.8**
KKM Kota Kinabalu 41.41 222 *e*P **P** **21 00 04.2 +0.6**
comp=E,90nm,1.2s
KKM LR LR
comp=Z,2μm,20.0s
KHON Khomkaen 41.76 247 P **P** **21 00 06.7 +0.3**
comp=Z,53nm,0.9s,comp=Z,386nm
LOEI Loei 42.09 250 P **P** **21 00 06.5 -2.6**
comp=Z,142nm,0.9s,comp=Z,10μm
TSM Tawau 42.11 218⇓P **P** **21 00 10.6 +1.4**
CMAI Chiengmai2 42.16 254 P **P** **21 00 10.9 +1.1**
comp=Z,68nm,1.6s,comp=Z,8μm
SWI Sorong 42.18 197 P **P** **21 00 10.3 +0.5**
comp=Z,81nm,1.1s,comp=Z,1μm
TT01 Tatalina 42.33 37 *e*P **P** **21 00 11.9 +1.4**
TTA Tatalina 42.33 37 *e*P **P** **21 00 12.0 +1.3**
TTA pmax pmax
comp=Z,30nm,1.2s
TTA Tatalina 42.33 37 *e*P **P** **21 00 12.0 +1.3**
comp=Z,30nm,1.3s
TTA LR LR
comp=Z,2μm,22.0s
MANU Manus Island 42.34 173 PFAKE 21 00 20.0 +8.9
MANU LR LR
comp=Z,1μm,21.0s
UTTA Uttaradit 42.45 251 P **P** **21 00 12.4 +0.4**
comp=Z,22nm,1.1s,comp=Z,173nm
SVW2 Sparrevohn 42.49 39 *e*P **P** **21 00 13.6 +1.7**
comp=Z,20nm,1.1s
JAY Jayapura 42.60 183 P **P** **21 00 12.0 -1.2**
comp=Z,2.7nm,0.9s,baz=271,slow=20,SNR=5.9
JAY Jayapura 42.60 183 P **P** **21 00 15.1 +1.9**
comp=Z,38nm,1.5s,comp=Z,661nm
JAY Jayapura 42.60 183 P **P** **21 00 12.0 -1.2**
LAMP Lampang 42.62 252 P **P** **21 00 14.5 +1.1**
comp=Z,21nm,1.1s,comp=Z,183nm
CHAI Chaiyaphum 42.65 247 P **P** **21 00 13.6 0.0**
comp=Z,38nm,1.0s,comp=Z,330nm
GENI Genyem 42.70 183 P **P** **21 00 15.3 +1.3**
comp=Z,128nm,1.1s,comp=Z,2μm
LSA Lhasa 42.81 272 P **P** **21 00 16.2 +0.8**
LSA pmax pmax
comp=Z,43nm,2.0s
LSA LR LR
comp=Z,2μm,20.3s
LSA LR LR
comp=Z,4μm,19.5s
LSA LR LR
comp=Z,9μm,20.3s
LSA Lhasa 42.81 272 *e*P **P** **21 00 16.2 +0.8**
LSA pmax pmax
comp=Z,42nm,0.7s
LSA MLR MLR
comp=Z,9μm,20.0s
LSA Lhasa 42.81 272 *e*P **P** **21 00 16.2 +0.8**
comp=Z,42nm,0.7s
LSA LR LR
comp=Z,9μm,20.0s
PBKT Sadao Pong 42.92 249 P **P** **21 00 15.9 +0.1**
comp=Z,118nm,1.0s,comp=Z,2μm
LBMI Labuha 42.93 202 P **P** **21 00 16.5 +0.6**
comp=Z,125nm,1.1s,comp=Z,2μm
CMMT Chiang Mai 42.93 253 P **P** **21 00 16.1 +0.2**
comp=Z,60nm,1.5s,comp=Z,1μm
CHTO Chiang Mai 42.94 253 P **P** **21 00 16.2 +0.2**
comp=Z,268nm,1.6s,comp=Z,7μm
CHTO Chiang Mai 42.94 253 *e*P **P** **21 00 15.6 -0.4**
CHTO pmax pmax
comp=Z,110nm,1.4s
CHTO Chiang Mai 42.94 253 P **P** **21 00 16.8 +0.8**
SNR=19
CHTO Chiang Mai 42.94 253 P **P** **21 00 16.8 +0.8**
SNR=19
CHTO Chiang Mai 42.94 253 *e*P **P** **21 00 15.6 -0.4**
comp=Z,110nm,1.4s
CHTO LR LR
comp=Z,2μm,22.0s
CM31 Chiang Mai Arr 43.16 253 *e*P **P** **21 00 18.3 +0.5**
CMAR Chiang Mai Arr 43.16 253 P **P** **21 00 17.9 +0.1**
comp=Z,9.4nm,0.9s,baz=39,slow=8.1,SNR=34
MK01 Makanchi Array 43.16 299 *e*P **P** **21 00 16.5 -1.1**
MK31 Makanchi Array 43.16 299 *e*P **P** **21 00 17.0 -0.6**
MK31 Makanchi Array 43.16 299 *e*P **P** **21 00 16.9 -0.6**
MK32 Makanchi Array 43.16 299 *e*P **P** **21 00 17.6 +0.1**
MK32 *e*S **S** **21 06 35.8 -5.5**
MKAR Makanchi Array 43.16 299 P **P** **21 00 17.6 +0.1**
comp=Z,43nm,0.8s,baz=84,slow=9.8,SNR=96
MKAR S **S** **21 06 35.8 -5.5**
comp=Z,1.0nm,0.9s,baz=322,slow=27,SNR=2.0
MKAR LR LR 21 19 07.5
comp=Z,8μm,20.0s,baz=78,slow=37
CM01 Chiang Mai Arr 43.17 253 *e*P **P** **21 00 18.0 +0.1**
SUKH Sukhothai 43.28 251 P **P** **21 00 19.4 +0.6**
comp=Z,19nm,1.1s,comp=Z,157nm
MAKZ Makanchi 43.37 300 *e*P **P** **21 00 18.9 -0.3**
MAKZ pmax pmax
comp=Z,63nm,0.8s
MAKZ MLR MLR
comp=Z,11μm,19.0s
MAKZ Makanchi 43.37 300 *e*P **P** **21 00 18.9 -0.3**
comp=Z,63nm,0.8s
MAKZ LR LR
comp=Z,11μm,19.0s
MRSI Marisa 43.78 210 P **P** **21 00 23.5 +0.8**
comp=Z,224nm,1.4s,comp=Z,3μm
OHAK Old Harbor 43.87 45 *e*P **P** **21 00 23.6 +0.6**
comp=Z,65nm,1.1s
RSO Redoubt South 43.90 40 *e*P **P** **21 00 24.4 +1.0**
FAKI Fak Fak 43.98 195 P **P** **21 00 26.0 +1.7**
comp=Z,122nm,1.7s,comp=Z,2μm
FAKI Fak Fak 43.98 195 PFAKE 21 00 40.0 +16
FAKI LR LR
comp=Z,3μm,20.0s
MHMT Maesarieng 44.08 253 P **P** **21 00 26.2 +1.0**
comp=Z,36nm,1.5s,comp=Z,758nm
PPLA Purkeypile 44.08 37 *e*P **P** **21 00 27.3 +2.4**
comp=Z,67nm,1.1s
CAST Castle Rocks 44.12 36 *e*P **P** **21 00 27.1 +2.1**
comp=Z,58nm,1.3s
KDAK Kodiak Island 44.19 44 P 21 00 41.4 +16
comp=Z,22nm,0.8s,baz=335,slow=2.1,SNR=14
KDAK Kodiak Island 44.19 44 *e*P **P** **21 00 26.7 +1.1**
KDAK pmax pmax
comp=Z,51nm,1.0s
KDAK Kodiak Island 44.19 44 *e*P **P** **21 00 26.1 +0.6**
KDAK LR LR
comp=Z,4μm,22.0s
NAYO Nakonayok 44.20 246 P **P** **21 00 26.9 +0.8**
comp=Z,51nm,1.6s,comp=Z,4μm
SPU Mount Spurr 44.20 39 *e*P **P** **21 00 26.8 +1.1**
SHL Shillong 44.33 267⇑*i*P **P** **21 00 28.0 +0.7**
SHL *e*S **S** **21 07 00.0 +1.0**
CHBT CHBT 44.59 244 P **P** **21 00 30.0 +0.8**
comp=Z,219nm,1.3s,comp=Z,3μm
BPAW Bear Paw Mtn. 44.60 35 *e*P **P** **21 00 30.6 +1.8**
comp=Z,27nm,1.0s
BPAW LR LR
comp=Z,3μm,22.0s
KTH Kantishna Hill 44.64 36 *e*P **P** **21 00 31.2 +2.0**
comp=Z,96nm,1.2s
KURK Kurchatov 44.64 306 P **P** **21 00 29.8 +0.5**
KURK S **S** **21 07 00.0 -2.6**
KURK pmax pmax
comp=Z,133nm,0.9s
KURK smax smax
comp=N,1.0nm,0.7s
KURK Kurchatov 44.64 306 *e*P **P** **21 00 29.1 -0.2**
comp=N,239nm,1.0s
KURK LR LR
comp=Z,4μm,18.0s
MLY Manley 44.70 34 *e*P **P** **21 00 31.6 +1.9**
comp=Z,45nm,1.2s
MLY LR LR
comp=Z,2μm,22.0s
KURBB Kurchatov Arra 44.72 306 P **P** **21 00 29.8 -0.1**
comp=Z,133nm,0.9s,baz=80,slow=8.7,SNR=214
KURBB S **S** **21 06 60.0 -3.8**
comp=Z,0.6nm,0.7s,baz=89,slow=15,SNR=2.8
SANI Sanana 44.72 204 P **P** **21 00 33.1 +2.9**
comp=Z,124nm,1.2s,comp=Z,2μm
LUWI Luwuk 44.86 209 P **P** **21 00 31.8 +0.5**
LUWI Luwuk 44.86 209 *e*P **P** **21 00 28.3 -3.1**
comp=Z,129nm,0.9s
TRF Thorofare Moun 44.93 36 *e*P **P** **21 00 33.4 +1.8**
comp=Z,24nm,1.0s
TRF LR LR
comp=Z,2μm,18.0s
COLD Coldfoot 44.95 31 *e*P **P** **21 00 32.9 +1.3**
comp=Z,28nm,1.0s
COLD LR LR
comp=Z,2μm,20.0s
RABL Rabaul 45.13 166 PFAKE 21 00 50.0 +17
RABL LR LR
comp=Z,1μm,21.0s
MSAI Masohi 45.13 199 P **P** **21 00 36.1 +2.6**
BWN Browne 45.27 35 *e*P **P** **21 00 36.8 +2.7**
comp=Z,661nm,1.7s
BWN LR LR
comp=Z,3μm,21.0s
RC01 Rabbit Creek A 45.33 39 *e*P **P** **21 00 35.1 +0.5**
comp=Z,27nm,0.8s
BTM Bintulu 45.44 223⇑P **P** **21 00 36.8 +0.8**
NLAI Namlea 45.52 202 P **P** **21 00 38.0 +1.4**
MCK McKinley 45.52 36 *e*P **P** **21 00 37.3 +1.1**
MCK pmax pmax
comp=Z,34nm,1.0s
MCK MLR MLR
comp=Z,2μm,22.0s
MCK McKinley 45.52 36 *e*P **P** **21 00 37.3 +1.1**
comp=Z,34nm,1.0s
MCK LR LR
comp=Z,2μm,22.0s
SEW Seward 45.56 41 PFAKE 21 00 50.0 +14
SEW LR LR
comp=Z,3μm,22.0s
RND Reindeer 45.58 36 *e*P **P** **21 00 37.3 +0.7**
RND pmax pmax
comp=Z,71nm,1.2s
RND MLR MLR
comp=Z,2μm,18.0s
RND Reindeer 45.58 36 *e*P **P** **21 00 37.3 +0.7**
comp=Z,71nm,1.2s
RND LR LR
comp=Z,2μm,18.0s
PMR Palmer 45.58 39 *e*P **P** **21 00 37.3 +0.8**
PMR pmax pmax
comp=Z,26nm,1.0s
PMR MLR MLR
comp=Z,2μm,21.0s
PMR Palmer 45.58 39 *e*P **P** **21 00 37.3 +0.8**
comp=Z,26nm,1.0s
PMR LR LR
comp=Z,2μm,21.0s
SRDT SRDT 45.73 248 P **P** **21 00 39.9 +1.6**
comp=Z,206nm,1.9s,comp=Z,4μm
MDM Murphy Dome 45.77 34 *e*P **P** **21 00 39.8 +1.7**
comp=Z,37nm,0.9s
KHLT Khaolaem Dam 45.80 249 P **P** **21 00 41.0 +2.1**
comp=Z,25nm,2.4s,comp=Z,585nm
WRH Wood River Hil 45.85 34 *e*P **P** **21 00 40.4 +1.7**
comp=Z,29nm,1.0s
COLA College 45.94 34 *i* P **P** **21 00 41.8 +2.5**
COLA pmax pmax
comp=Z,26nm,1.1s
SML Sawmill 45.94 38 *e*P **P** **21 00 40.8 +1.3**
SML pmax pmax
comp=Z,42nm,1.0s
SML MLR MLR
comp=Z,2μm,21.0s
SML Sawmill 45.94 38 *e*P **P** **21 00 40.8 +1.3**
comp=Z,42nm,1.0s
SML LR LR
comp=Z,2μm,21.0s
CCB Clear Creek Bu 45.97 34 *e*P **P** **21 00 40.8 +1.2**
comp=Z,29nm,1.3s
PHET Kaeng Krachan 46.35 246 P **P** **21 00 44.9 +1.7**
comp=Z,27nm,0.9s,comp=Z,262nm
HDA Harding Lake 46.35 34 *e*P **P** **21 00 43.7 +1.1**
comp=Z,31nm,1.0s
HDA LR LR
comp=Z,2μm,22.0s
IL1 Eielson Array 46.35 34 *e*P **P** **21 00 42.9 +0.2**
ILAR Eielson Array 46.35 34 P **P** **21 00 43.9 +1.2**
comp=Z,9.7nm,0.7s,baz=265,slow=6.3,SNR=62
ILAR LR LR 21 20 57.6
comp=Z,2μm,21.8s,baz=279,slow=37
ILAR Eielson Array 46.35 34 P **P** **21 00 43.9 +1.2**
ILAR pmax pmax
comp=Z,9.0nm,0.7s
ILAR MLR MLR
comp=Z,2μm,21.8s
ILB Eielson Array 46.35 34 *e*P **P** **21 00 43.3 +0.6**
SCM Sheep Creek Mo 46.41 38 PFAKE 21 01 00.0 +17
SCM LR LR
comp=Z,2μm,21.0s
SBUM Sibu 46.53 224⇓P **P** **21 00 46.0 +1.4**
SBUM Sibu 46.53 224 *e*P **P** **21 00 44.4 -0.2**
comp=Z,32nm,1.1s
FYU Fort Yukon 46.92 31 *e*P **P** **21 00 49.4 +2.3**
comp=Z,300nm,1.5s
KLU Klutina 47.12 38 *e*P **P** **21 00 50.4 +1.6**
comp=Z,75nm,1.3s
KLU LR LR
comp=Z,2μm,19.0s
PAX Paxson 47.14 36 *e*P **P** **21 00 50.0 +1.0**
PAX pmax pmax
comp=Z,20nm,1.0s
PAX MLR MLR
comp=Z,2μm,19.0s
PAX Paxson 47.14 36 *e*P **P** **21 00 50.0 +1.0**
comp=Z,20nm,1.0s
PAX LR LR
comp=Z,2μm,19.0s
DIV Divide 47.24 39 *e*P **P** **21 00 51.7 +2.0**
comp=Z,46nm,1.0s
DIV LR LR
comp=Z,4μm,22.0s
EYAK Cordova Ski Ar 47.33 40 *e*P **P** **21 00 51.6 +1.3**
comp=Z,37nm,1.0s
EYAK LR LR
comp=Z,4μm,22.0s
JOHN Johnston Islan 47.58 105 PFAKE 21 01 10.0 +17
JOHN LR LR
comp=Z,6μm,21.0s
TARA Tarawa 47.59 137 PFAKE 21 01 10.0 +17
TARA LR LR
comp=Z,4μm,20.0s
DOT Dot Lake 47.69 35 *e*P **P** **21 00 53.6 +0.5**
comp=Z,42nm,1.0s
GUN Gumba 47.71 273 *e*P **P** **21 00 54.6 +0.5**
comp=Z,341nm,0.7s
AAA Alma-Ata 47.82 296 *i* P **P** **21 00 55.5 +1.1**
AAA *i* S **S** **21 07 51.4 +2.9**
AAA pmax pmax
comp=Z,2μm,2.2s
AAA smax smax
comp=E,500nm,4.5s
AAA MLR MLR
comp=Z,10μm,11.0s
BMRM Bremner River 47.83 39 *e*P **P** **21 00 55.7 +1.5**
comp=Z,54nm,1.0s
BMRM LR LR
comp=Z,2μm,22.0s
RAGM Ragged Mountai 47.88 40 *e*P **P** **21 00 56.7 +2.0**
comp=Z,57nm,1.1s
MENT Mentasta 47.94 36 *e*P **P** **21 00 57.0 +2.0**
comp=Z,30nm,0.9s
MENT LR LR
comp=Z,2μm,21.0s
KKN Kakani 48.23 274 *e*P **P** **21 00 58.3 +0.3**
comp=Z,344nm,0.9s
PKIN Phulchoki 48.25 273 *e*P **P** **21 00 57.9 -0.3**
comp=Z,67nm,0.7s
KSM Kuching 48.38 225⇑P **P** **21 01 00.5 +1.6**
KSM Kuching 48.38 225 *e*P **P** **21 00 59.4 +0.5**
comp=Z,77nm,1.2s
DMN Daman 48.45 273 *e*P **P** **21 01 00.1 +0.3**
comp=Z,415nm,1.2s
GKN Gorkha 48.61 274 *e*P **P** **21 01 01.0 +0.1**
comp=Z,458nm,1.1s
EGAK Eagle 48.79 34 *e*P **P** **21 01 02.6 +1.1**
comp=Z,32nm,0.9s
EGAK LR LR
comp=Z,1μm,20.0s
TKM2 Tokmak 2 48.87 296 *e*P **P** **21 01 03.1 +0.4**
TKM2 pmax pmax
comp=Z,87nm,0.9s
TKM2 MLR MLR
comp=Z,8μm,21.0s
TKM2 Tokmak 2 48.87 296 *e*P **P** **21 01 03.1 +0.4**
comp=Z,87nm,0.9s
TKM2 LR LR
comp=Z,8μm,21.0s
BALM Baldy 48.90 39 *e*P **P** **21 01 04.0 +1.5**
BALM pmax pmax
comp=Z,72nm,1.5s
BALM MLR MLR
comp=Z,2μm,22.0s
BALM Baldy 48.90 39 *e*P **P** **21 01 04.0 +1.5**
comp=Z,72nm,1.5s
BALM LR LR
comp=Z,2μm,22.0s
STKI Sintang 48.94 223 P **P** **21 01 03.9 +0.7**
comp=Z,39nm,1.0s,comp=Z,9μm
BVAR Borovoye Array 49.05 310 P **P** **21 01 04.0 +0.3**
comp=Z,26nm,0.4s,baz=77,slow=8.5,SNR=217
BVAR Borovoye Array 49.05 310 P **P** **21 01 04.0 +0.3**
BVAR pmax pmax
comp=Z,26nm,0.4s
BRVK Borovoye 49.10 311*c i*P **P** **21 01 04.4 +0.3**
BRVK pmax pmax
comp=Z,70nm,1.0s
BRVK Borovoye 49.10 311 *e*P **P** **21 01 04.1 0.0**
comp=Z,69nm,1.0s
BRVK LR LR
comp=Z,9μm,18.0s
KOLN Koldanda 49.52 274 *e*P **P** **21 01 08.3 +0.4**
comp=Z,81nm,0.5s
KTGM Kuala Trenggan 49.54 236⇓P **P** **21 01 09.1 +1.3**
FRU Bishkek 49.57 297⇑*i*P **P** **21 01 06.0 -1.9**
FRU *e*S **S** **21 08 11.0 -2.2**
FRU pmax pmax
comp=Z,620nm,2.8s
FRU smax smax
comp=E,300nm,2.7s
PMG Port Moresby 49.61 174 LR LR 21 19 22.5
comp=E,654nm,21.6s,baz=345,slow=33
KAPI Kappang 49.65 210 P **P** **21 01 09.0 +0.4**
comp=E,53nm,1.2s,baz=29,slow=4.9,SNR=54
KAPI S **S** **21 08 13.5 -1.1**
comp=E,1.0nm,0.6s,baz=285,slow=20,SNR=12
KAPI LR LR 21 21 47.2
comp=E,629nm,21.2s,baz=348,slow=36
KAPI Kappang 49.65 210 *e*P **P** **21 01 08.8 +0.2**
comp=E,134nm,1.2s
KAPI *e*S **S** **21 08 13.5 -1.1**
DAWY Dawson 49.67 34 *e*P **P** **21 01 09.8 +1.4**
comp=E,72nm,2.0s
SURT Suratani 49.71 243 P **P** **21 01 11.5 +2.3**
comp=E,24nm,1.3s
AAK Ala-Archa 49.73 296 P **P** **21 01 09.4 +0.2**
comp=E,11nm,0.3s,baz=94,slow=3.7,SNR=36
AAK Ala-Archa 49.73 296 *e*P **P** **21 01 09.1 -0.1**
comp=E,42nm,1.0s
AAK LR LR
comp=Z,7μm,22.0s

PYUN Piuthan 49.82 275 *e*P **P 21 01 10.6 +0.4**
comp=Z,575nm,1.1s
ZRNK Zerenda 49.87 311 *e*P **P 21 01 10.1 +0.1**
ZRNK pmax pmax
comp=Z,82nm,0.8s
ZRNK MLR MLR
comp=Z,7μm,19.0s
ZRNK Zerenda 49.87 311 *e*P **P 21 01 10.1 +0.1**
comp=Z,82nm,0.8s
ZRNK LR LR
comp=Z,7μm,19.0s
KSH Kashi 49.89 292 P **P 21 01 14.8 +4.3**
KSH *e*pP pP 21 01 22.2 +0.4
KSH *e*sP sP 21 01 25.6 -0.8
KSH *e*PcP **PcP 21 02 34.0 +3.5**
KSH *e*PP **PP 21 03 11.1 +5.8**
KSH PcS **PcS 21 06 31.1 +3.6**
KSH S **S 21 08 22.3 +4.4**
KSH ScS **ScS 21 11 02.4 +3.7**
KSH SS **SS 21 11 51.9 +1.3**
KSH pmax pmax
comp=Z,48nm,1.2s
KSH pmax pmax
comp=Z,870nm,4.4s
KSH LR LR
comp=Z,5μm,15.6s
KSH LR LR
comp=Z,5μm,15.6s
KSH LR LR
comp=Z,10μm,17.7s
TRTT Trang 49.92 242 P **P 21 01 12.2 +1.5**
comp=Z,145nm,0.9s,comp=Z,2μm
EKS2 Erkin-Say 50.21 297 *e*P **P 21 01 12.8 0.0**
EKS2 pmax pmax
comp=Z,37nm,0.8s
EKS2 MLR MLR
comp=Z,6μm,22.0s
EKS2 Erkin-Say 50.21 297 *e*P **P 21 01 12.8 0.0**
comp=Z,37nm,0.8s
EKS2 LR LR
comp=Z,6μm,22.0s
INK Inuvik 51.16 28 P **P 21 01 20.5 +1.1**
comp=Z,13nm,0.7s,baz=295,slow=6.6,SNR=67
INK LR LR 21 25 32.1
comp=Z,2μm,19.5s,baz=279,slow=39
INK Inuvik 51.16 28 *e*P **P 21 01 20.1 +0.6**
KULM Kulim 51.17 238 ⇓P **P 21 01 21.2 +1.0**
KULM Kulim 51.17 238 *e*P **P 21 01 20.6 +0.4**
comp=Z,52nm,0.8s
KULM LR LR
comp=Z,1μm,20.0s
MYKOM Kota Tinggi 51.85 232 ⇑P **P 21 01 27.0 +1.7**
MYKOM Kota Tinggi 51.85 232 *e*P **P 21 01 25.7 +0.5**
comp=Z,87nm,1.4s
MYKOM LR LR
comp=Z,2μm,22.0s
BWNR Bhubaneshwar 51.91 265 *e*P **P 21 01 25.1 -0.5**
BWNR IAmb IAmb 21 01 25.9
comp=Z,268nm,2.2s
KGM Kluang 51.99 233 ⇑P **P 21 01 27.5 +1.2**
HNR Honiara 52.03 158 PFAKE 21 01 40.0 +14
HNR LR LR
comp=Z,4μm,22.0s
FRIM Kepong 52.10 236 ⇓P **P 21 01 27.7 +0.6**
KKAR Karatay Array 52.26 298 *e*P **P 21 01 27.5 -0.6**
KKAR Karatay Array 52.26 298 *e*P **P 21 01 27.5 -0.6**
SOEI Soe 52.53 203 *e*P **P 21 01 28.8 -1.6**
comp=Z,243nm,1.0s
SOEI LR LR
comp=Z,2μm,21.0s
SKAG Skagway 52.67 40 *e*P **P 21 01 32.2 +1.3**
comp=Z,33nm,1.1s
SKAG LR LR
comp=Z,2μm,21.0s
SMLA Simla 52.73 282 *e*P **P 21 01 31.5 -0.2**
SMLA IAmb IAmb 21 01 35.4
comp=Z,114nm,0.7s
SVE Sverdlovsk 53.30 317 *d i*P **P 21 01 36.1 +0.6**
SVE *e* 21 03 37.3
SVE *e*S **S 21 08 58.0 -6.0**
SVE pmax pmax
comp=Z,155nm,1.0s
SVE MLR MLR
comp=Z,14μm,16.0s
SVE MLR MLR
comp=N,4μm,18.0s
SVE MLR MLR
comp=E,10μm,16.0s
MTN Manton Dam 53.87 194 *e*P **P 21 01 39.8 -0.3**
comp=E,207nm,1.3s
MTN LR LR
comp=Z,800nm,22.0s
COEN Coen 53.94 179 *e*P **P 21 01 40.9 +0.3**
comp=Z,95nm,1.5s
COEN LR LR
comp=Z,1μm,21.0s
PSI Prapat 54.16 238 *e*P **P 21 01 42.2 -0.3**
PSI pmax pmax
comp=Z,45nm,1.0s
PSI MLR MLR
comp=Z,1μm,19.0s
PSI Prapat 54.16 238 *e*P **P 21 01 42.2 -0.3**
comp=Z,45nm,1.0s
PSI LR LR
comp=Z,1μm,19.0s
CHLP Challavanipeta 54.29 264 *e*P **P 21 01 43.5 +0.3**
CHLP IAmb IAmb 21 01 47.3
comp=Z,75nm,1.3s
CHLP *e*S **S 21 09 18.5 +0.2**
CHLP IVMs_BB IVMs_BB 21 27 07.8
comp=Z,758nm,22.9s
ARU Arti 54.51 317 P **P 21 01 44.4 +0.1**
comp=Z,75nm,0.8s,baz=69,slow=3.0,SNR=84
ARU S **S 21 09 18.8 -1.6**
comp=Z,0.5nm,0.3s,baz=90,slow=20,SNR=1.8
ARU Arti 54.51 317 *e*P **P 21 01 44.5 +0.1**
ARU *e*S **S 21 09 18.8 -1.6**
ARU pmax pmax
comp=Z,135nm,1.0s
ARU MLR MLR
comp=Z,10μm,18.0s
ARU Arti 54.51 317 *e*P **P 21 01 44.5 +0.1**
comp=Z,135nm,1.0s
ARU *e*S **S 21 09 18.8 -1.6**
ARU LR LR
comp=Z,10μm,18.0s
BKNI Bangkinang 54.72 234 *e*P **P 21 01 46.8 +0.5**
comp=Z,248nm,1.0s
BKNI LR LR
comp=Z,1μm,19.0s
JAGI Jajag, Banyuwa 55.09 215 *e*P **P 21 01 48.0 -0.9**
comp=Z,41nm,1.1s
CRAG Craig 55.15 44 PFAKE 21 02 00.0 +11
CRAG LR LR
comp=Z,1μm,20.0s
WRAK Wrangell Islan 55.20 42 PFAKE 21 02 00.0 +11
WRAK LR LR
comp=Z,1μm,19.0s
DLBC Dease Lake 55.61 40 P **P 21 01 54.9 +2.6**
comp=Z,5.7nm,0.8s,baz=283,slow=7.7,SNR=14
DLBC Dease Lake 55.61 40 *e*P **P 21 01 54.9 +2.6**
comp=Z,41nm,1.2s
DLBC LR LR
comp=Z,1μm,19.0s
GSI Gunungsitoli 56.17 238 *e*P **P 21 01 56.5 -0.3**
comp=Z,365nm,1.5s
ABKAR Akbulak array 56.51 309 *e*P **P 21 01 58.6 -0.3**
NGP Nagpur 56.58 270 *e*P **P 21 01 58.8 -1.0**
NGP IAmb IAmb 21 02 01.6
comp=Z,38nm,0.8s
LEM Lembang 56.79 223 P P 21 02 06.3 +4.9
comp=Z,35nm,0.7s,baz=78,slow=7.2,SNR=15
PVM Polavaram 56.89 265 *e*P **P 21 02 01.7 -0.2**
PVM IAmb IAmb 21 02 02.8
comp=Z,193nm,1.9s
PVM *e*S **S 21 09 52.7 -0.3**
PVM IVMs_BB IVMs_BB 21 28 03.9
comp=Z,798nm,21.0s
KBL Kabul 57.06 289 *e*P **P 21 02 02.6 -0.6**
KBL pmax pmax
comp=Z,158nm,0.9s
KBL MLR MLR
comp=Z,5μm,19.0s
KBL Kabul 57.06 289 *e*P **P 21 02 02.6 -0.6**
comp=Z,158nm,0.9s
KBL LR LR
comp=Z,5μm,19.0s
HOPEN Hopen 57.11 346 *e*P **P 21 02 04.6 +1.9**
HOPEN IAmb IAmb 21 02 21.8
comp=Z,64nm,0.7s
HOPEN *e* 21 05 41.1
HOPEN *e*S **S 21 09 56.9 +2.4**
AKTO Aktyubinsk 57.15 311 P **P 21 02 03.3 0.0**
comp=Z,60nm,0.9s,baz=72,slow=7.8,SNR=100
AKTO S **S 21 09 52.5 -3.2**
comp=Z,0.6nm,0.5s,baz=96,slow=10,SNR=2.1
CISI Cisompet, Garu 57.30 222 PFAKE 21 02 20.0 +15
CISI LR LR
comp=Z,1μm,21.0s
SPA0 Spitsbergen Ar 57.52 349 *e*P **P 21 02 04.5 -1.1**
SPA0 *e*S **S 21 10 03.7 +3.8**
KBS Kingsbay 57.62 350 *e*P **P 21 02 06.5 +0.2**
KBS *e* 21 10 17.2
KBS IAMs_20 IAMs_20 21 29 15.4
comp=Z,2μm,20.2s
KBS Kingsbay 57.62 350 *e*P **P 21 02 08.4 +2.1**
KBS pmax pmax
comp=Z,132nm,1.6s
KBS MLR MLR
comp=Z,2μm,20.0s
KBS Kingsbay 57.62 350 *e*P **P 21 02 08.4 +2.1**
comp=Z,132nm,1.6s
KBS LR LR
comp=Z,2μm,20.0s
RPR Rampur 57.72 268 *e*P **P 21 02 07.6 -0.2**
RPR IAmb IAmb 21 02 09.2
comp=Z,78nm,1.1s
RPR *e*S **S 21 10 03.1 -0.8**
RPR IVMs_BB IVMs_BB 21 28 10.3
comp=Z,578nm,17.1s
SRSP Sriramsagar 58.40 269 *e*P **P 21 02 11.7 -0.9**
SRSP IAmb IAmb 21 02 13.8
comp=Z,116nm,1.1s
SRSP *e*S **S 21 10 11.3 -1.6**
SRSP IVMs_BB IVMs_BB 21 31 46.1
comp=Z,689nm,17.8s
ADKI Addanki 59.00 265 *e*P **P 21 02 17.0 +0.3**
ADKI IAmb IAmb 21 02 17.8
comp=Z,170nm,1.9s
ADKI *e*S **S 21 10 21.0 +0.4**
ADKI IVMs_BB IVMs_BB 21 29 05.0
comp=Z,971nm,18.3s
NJS Nagarjunasagar 59.08 266 *e*P **P 21 02 16.8 -0.5**
NJS IAmb IAmb 21 02 17.7
comp=Z,111nm,1.8s
NJS *e*S **S 21 10 20.9 -0.7**
NJS IVMs_BB IVMs_BB 21 30 26.1
comp=Z,530nm,22.5s
HYB Hyderabad 59.13 267 *i* P **P 21 02 17.5 -0.2**
comp=Z,50nm,1.0s
HYB *e*sP **sP 21 02 34.5 +0.7**
HYBB Hyderabad (bro 59.13 267 *e*P **P 21 02 17.3 -0.4**
HYBB IAmb IAmb 21 02 18.0
comp=Z,178nm,1.8s
HYBB *e*S **S 21 10 20.9 -1.6**
HYBB IVMs_BB IVMs_BB 21 34 37.7
comp=Z,449nm,16.9s
RES Resolute Bay 59.28 15 P **P 21 02 17.9 0.0**
comp=Z,9.7nm,0.7s,baz=312,slow=6.5,SNR=46
RES Resolute Bay 59.28 15 *e*P **P 21 02 17.8 0.0**
comp=Z,36nm,0.8s
RES LR LR
comp=Z,2μm,20.0s
LVZ Lovozero 59.51 335 *d i*P **P 21 02 20.7 +1.1**
LVZ pmax pmax
comp=Z,40nm,0.8s
LVZ Lovozero 59.51 335 *e*P **P 21 02 19.3 -0.3**
comp=Z,40nm,0.7s
LVZ LR LR
comp=Z,3μm,18.0s
SRLM Srisailam 59.67 266 *e*P **P 21 02 20.9 -0.5**
SRLM IAmb IAmb 21 02 21.6
comp=Z,68nm,1.6s
SRLM *e*S **S 21 10 28.2 -1.1**
SRLM IVMs_BB IVMs_BB 21 29 49.1
comp=Z,596nm,24.8s
RCLA Racherla 60.01 265 *e*P **P 21 02 23.6 -0.1**
RCLA IAmb IAmb 21 02 24.2
comp=Z,175nm,1.9s
RCLA *e*S **S 21 10 33.6 -0.2**
RCLA IVMs_BB IVMs_BB 21 29 56.8
comp=Z,866nm,22.9s
FITZ Fitzroy Crossi 60.14 198 *e*P **P 21 02 24.8 +0.5**
CTAO Charters Tower 60.14 176 *e*P **P 21 02 24.4 0.0**
CTAO pmax pmax
comp=Z,290nm,1.5s
CTAO Charters Tower 60.14 176 *e*P **P 21 02 24.2 -0.2**
comp=Z,293nm,1.5s
WB8 Warramunga Arr 60.23 189 PFAKE 21 02 40.0 +15
WB8 LR LR
comp=Z,1μm,19.0s
KLRI Killari 60.24 269 *e*P **P 21 02 24.3 -1.0**
KLRI IAmb IAmb 21 02 26.1
comp=Z,158nm,1.2s
KLRI *e*S **S 21 10 34.0 -2.8**
KLRI IVMs_BB IVMs_BB 21 30 58.4
comp=Z,940nm,16.4s
TMCR Tamitsa 60.32 331 *e*P **P 21 02 24.8 -0.3**
TMCR pmax pmax
comp=Z,89nm,1.0s
WRAB Tennant Creek 60.36 189 ⇑ *i*P **P 21 02 25.1 -0.7**
WRAB pmax pmax
comp=Z,181nm,1.1s
WRAB Tennant Creek 60.36 189 *e*P **P 21 02 25.2 -0.6**
comp=Z,79nm,1.1s
WB2 Warramunga Arr 60.37 189 *e*P **P 21 02 25.3 -0.6**
comp=Z,85nm,1.1s
WR1 Warramunga Arr 60.37 189 *e*P **P 21 02 25.1 -0.8**
comp=Z,86nm,1.1s
WR1 *e*S **S 21 10 33.7 -4.2**
WR1 *e*P'P'ab P'P'ab 21 32 10.0 +7.7
WRA Warramunga Arr 60.37 189 P **P 21 02 25.1 -0.8**
comp=Z,45nm,1.0s,baz=5.5,slow=7.0,SNR=118
WRA S **S 21 10 33.7 -4.2**
comp=Z,7.3nm,1.3s,baz=3.1,slow=12,SNR=11
WRA LR LR 21 28 08.6
comp=Z,1μm,21.9s,baz=15,slow=36
WRA PKP2bc 21 31 57.7
comp=Z,0.7nm,0.8s,baz=196,slow=1.9,SNR=5.3
WRA PKP2ab 21 32 10.0
comp=Z,3.8nm,1.0s,baz=202,slow=2.4,SNR=7.5
SKHT Srikalahasti 60.49 263 *e*P **P 21 02 26.9 -0.1**
SKHT IAmb IAmb 21 02 29.1
comp=Z,46nm,0.9s
SKHT *e*S **S 21 10 41.0 +1.2**
SKHT IVMs_BB IVMs_BB 21 30 43.5
comp=Z,660nm,21.7s
YKW3 Yellowknife Ar 60.59 31 *e*P **P 21 02 27.9 +0.9**
comp=Z,13nm,0.8s
YKA Yellowknife Ar 60.62 31 P **P 21 02 27.5 +0.3**
comp=Z,3.3nm,0.6s,baz=299,slow=6.4,SNR=53
YKA pP **sP 21 02 42.8 -0.6**
comp=Z,10nm,0.7s,baz=300,slow=6.5,SNR=15
YKA PKPPKP **P'P'df 21 31 49.5 -3.6**
comp=Z,0.6nm,0.9s,baz=138,slow=1.8,SNR=6.5
YKB5 Yellowknife Ar 60.62 31 *e*P **P 21 02 27.4 +0.2**
KEV Kevo 60.72 339 *e*P **P 21 02 28.2 +0.4**
KEV pmax pmax
comp=Z,41nm,0.9s
KEV MLR MLR
comp=Z,3μm,22.0s
KEV Kevo 60.72 339 *e*P **P 21 02 28.2 +0.4**
comp=Z,41nm,0.9s
KEV LR LR
comp=Z,3μm,22.0s
HAMF Hammerfest 61.05 340 *e*P **P 21 02 30.1 +0.2**
HAMF *e* 21 11 00.1
HAMF IAMs_20 IAMs_20 21 34 18.5
comp=Z,3μm,17.3s
ARA0 ARCESS Array S 61.27 339 *e*P **P 21 02 31.8 +0.2**
ARCES ARCESS Array B 61.27 339 P **P 21 02 31.8 +0.2**
comp=Z,17nm,0.9s,baz=47,slow=5.0,SNR=20
ARCES LR LR 21 35 01.3
comp=Z,2μm,18.8s,baz=50,slow=42
ARE0 ARCESS Array S 61.27 339 *e*P **P 21 02 32.5 +1.0**
ARE0 ARCESS Array S 61.27 339 PFAKE 21 02 40.0 +8.4
ARE0 LR LR
comp=Z,2μm,18.0s
KLMR Klimovskoe 61.48 327 *e*P **P 21 02 33.4 +0.4**
KLMR *e* 21 04 48.6
KLMR pmax pmax
comp=Z,90nm,1.1s
POO Poona 62.08 271 ⇓ *i*P **P 21 02 36.0 -1.8**
comp=Z,13nm,1.2s
KTK1 Kautokeino 62.23 339 *e*P **P 21 02 38.4 +0.4**
DAG Danmarks Havn 62.63 355 ⇑ *i*P **P 21 02 40.4 -0.2**
comp=Z,28nm,1.0s
DAG *i* 21 02 54.2
DAG Danmarks Havn 62.63 355 ⇑ *i*P **P 21 02 40.4 -0.2**
DAG *i* 21 02 54.2
DAG pmax pmax
comp=Z,28nm,1.0s
TRO Tromso 62.93 341 *e*P **P 21 02 42.2 -0.4**
TRO IAmb IAmb 21 02 58.1
comp=Z,504nm,2.2s
TRO *e*S **S 21 11 15.0 +5.7**
TRO IAMs_20 IAMs_20 21 34 44.4
comp=Z,3μm,18.7s
GEYT Alibeck 63.01 298 P **P 21 02 43.8 +0.1**
comp=Z,53nm,0.9s,baz=31,slow=3.5,SNR=70
GEYT LR LR 21 32 00.7
comp=Z,2μm,19.3s,baz=20,slow=38
PGC Sidney 63.54 48 PFAKE 21 03 00.0 +13
PGC LR LR
comp=Z,1μm,22.0s
PALK Pallekele 63.87 257 PFAKE 21 03 00.0 +10
PALK LR LR
comp=Z,2μm,20.0s
NLWA Neilton Lookou 63.97 49 PFAKE 21 03 00.0 +10
NLWA LR LR
comp=Z,2μm,22.0s
AS01 Alice Springs 64.09 189 *e*P **P 21 02 50.7 -0.1**
AS31 Alice Springs 64.09 189 *e*P **P 21 02 51.0 +0.1**
comp=Z,43nm,1.8s
ASAR Alice Springs 64.09 189 P **P 21 02 50.6 -0.2**
comp=Z,24nm,1.0s,baz=6.7,slow=5.0,SNR=116
ASAR LR LR 21 30 23.1
comp=Z,2μm,21.9s,baz=10.0,slow=36
ASAR PKP2bc 21 31 48.0
comp=Z,0.4nm,0.8s,baz=297,slow=0.3,SNR=4.1
ASAR PKP2ab 21 32 00.1
comp=Z,0.8nm,0.9s,baz=186,slow=3.1,SNR=4.7
ASAR Alice Springs 64.09 189 P **P 21 02 50.7 -0.2**
ASAR pmax pmax
comp=Z,25nm,1.0s
ASAR MLR MLR
comp=Z,2μm,21.9s
E03A Lebam 64.59 50 PFAKE 21 03 10.0 +16
E03A LR LR
comp=Z,1μm,22.0s
MBWA Marble Bar 64.67 204 *e*P **P 21 02 54.6 0.0**
comp=Z,212nm,1.5s
KULLO Kullorsuaq 64.69 6 ⇑ *i*P **P 21 02 53.8 -0.3**
KULLO *i* 21 03 08.6
comp=Z,2μm,19.0s
KULLO Kullorsuaq 64.69 6 ⇑ *i*P **P 21 02 53.8 -0.3**
KULLO *i* 21 03 08.6
KULLO MLR MLR
comp=Z,2μm,19.0s
B06A Marblemount 64.72 47 PFAKE 21 03 10.0 +15
B06A LR LR
comp=Z,1μm,22.0s
F03A Seaside 64.92 50 PFAKE 21 03 10.0 +14
F03A LR LR
comp=Z,1μm,21.0s
STEI Steigen 65.09 341 *e*P **P 21 02 57.2 +0.4**
MOS Moscow 65.15 323 *e*P **P 21 02 56.0 -1.4**
MOS *e* 21 03 28.1
MOS *e* 21 05 19.1
MOS *e*S **S 21 11 35.0 -2.2**
MOS *e* 21 12 43.1
MOS pmax pmax
comp=Z,168nm,1.9s
MOS pmax pmax
comp=Z,600nm,2.3s
MOS MLR MLR
comp=N,4μm,16.0s
MOS MLR MLR
comp=E,4μm,16.0s
MOS MLR MLR
comp=Z,6μm,16.0s
D05A Enumclaw 65.16 48 *e*P **P 21 03 00.7 +3.1**
comp=Z,82nm,1.3s
LOF Lofoten 65.37 341 *e*P **P 21 02 58.2 -0.4**
LON Longmire 65.50 49 PFAKE 21 03 10.0 +10
LON LR LR
comp=Z,800nm,21.0s
F04A Amboy 65.59 50 PFAKE 21 03 10.0 +10
F04A LR LR
comp=Z,700nm,22.0s
VRH Novokhopyorsk 65.75 317 *e*P **P 21 03 00.7 -0.6**
VRH *e* 21 05 22.5
VRH *e*S **S 21 11 41.2 -3.4**
VRH pmax pmax
comp=Z,110nm,0.9s
VRH smax smax
comp=N,690nm,4.6s
VRH MLR MLR
comp=Z,10μm,17.0s
EIDS Eidsvold 65.79 171 *e*P **P 21 03 02.5 +0.8**
comp=Z,48nm,1.3s
EIDS LR LR
comp=Z,2μm,21.0s
PUL Pulkovo 65.84 329 *e*P **P 21 03 03.9 +2.1**
PUL pmax pmax
comp=Z,84nm,1.1s
TRD Trivandrum 65.88 260 ⇓ *e*P **P 21 03 02.6 -0.1**
TRD *ex* x 21 13 00.6
DZM Mont Dzumac 65.92 156 P **P 21 03 04.7 +1.8**
comp=Z,21nm,1.1s,baz=61,slow=7.7,SNR=5.2
B08A Colville Reser 66.00 46 *e*P **P 21 03 04.4 +1.3**
comp=Z,46nm,1.3s
B08A LR LR
comp=Z,1μm,22.0s
OBN Obninsk 66.01 323 P **P 21 03 03.0 +0.1**
comp=Z,119nm,1.2s,baz=40,slow=3.3,SNR=17
OBN Obninsk 66.01 323 *c i*P **P 21 03 03.0 +0.1**
OBN *e* 21 03 16.7
OBN *e* 21 03 33.0
OBN *e*PPP PPP 21 07 02.8
OBN *e*S **S 21 11 47.3 -0.4**
OBN *e*SS **SS 21 16 08.9 +6.4**
OBN pmax pmax
comp=Z,166nm,1.7s
OBN MLR MLR
comp=Z,6μm,16.0s
OBN Obninsk 66.01 323 *e*P **P 21 03 03.0 +0.1**
comp=Z,145nm,1.3s
OBN LR LR
comp=Z,5μm,18.0s
I03D Drain, OR 66.27 52 P **P 21 03 06.5 +1.6**
baz=304
FIA1 FINESS Array S 66.34 332 *e*P **P 21 03 04.5 -0.5**
FIA0 FINESS Array S 66.34 332 *e*P **P 21 03 04.9 -0.1**
FIA0 FINESS Array S 66.34 332 *e*P **P 21 03 04.9 -0.1**
FINES FINESS Array B 66.34 332 P **P 21 03 04.9 -0.1**
comp=Z,41nm,0.7s,baz=46,slow=8.2,SNR=148
FINES LR LR 21 34 22.9
comp=Z,7μm,19.4s,baz=41,slow=38
LPSR Galich'ya Gora 66.36 320 *e*P **P 21 03 05.1 -0.1**
LPSR *e* 21 05 28.2
LPSR *e*S **S 21 11 45.9 -6.1**
LPSR pmax pmax
comp=Z,130nm,1.0s
LPSR smax smax
comp=N,400nm,8.0s
LPSR MLR MLR
comp=Z,3μm,15.0s
H04A Detroit Lake 66.42 51 *e*P **P 21 03 07.9 +2.0**
comp=Z,48nm,1.1s
MSVF Nonsavu 66.54 143 PFAKE 21 03 20.0 +13
MSVF LR LR
comp=Z,2μm,19.0s
MOR8 Moi Rana 66.62 340 ⇑ *i*P **P 21 03 05.5 -1.3**
MOR8 IAmb IAmb 21 03 07.0
comp=Z,43nm,0.8s
E07A Sunnyside 66.72 48 PFAKE 21 03 20.0 +12
E07A LR LR
comp=Z,1μm,22.0s
I04A Tendick Farm, 66.78 52 P **P 21 03 09.3 +1.1**
baz=304
STOK Stokkvaagen 66.87 340 *e*P **P 21 03 08.8 +0.6**
C09A Chrisman Ranch 66.91 46 *e*P **P 21 03 10.5 +1.6**
comp=Z,32nm,0.9s
D08A Wollman Farm, 66.97 47 *e*P **P 21 03 10.5 +1.2**
comp=Z,50nm,1.3s
D08A LR LR
comp=Z,800nm,22.0s

HAWA	**Hanford**	67.00	48	*e*P		**P**	**21 03 13.0 +3.5**
	comp=Z,42nm,1.3s						
HAWA				LR		LR	
	comp=Z,900nm,22.0s						
G06A	**Carlson Farm,**	67.02	50	*e*P		**P**	**21 03 12.0 +2.3**
	comp=Z,54nm,1.5s						
G06A				LR		LR	
	comp=Z,2μm,22.0s						
VSR	**Storozhevoye**	67.05	318	*e*P		**P**	**21 03 09.2 -0.5**
VSR				*e*S		**S**	**21 11 56.4 -4.0**
VSR				*e*SS		**SS**	**21 16 15.2 -3.7**
VSR				pmax		pmax	
	comp=Z,50nm,0.6s						
VSR				smax		smax	
	comp=E,350nm,2.9s						
VSR				MLR		MLR	
	comp=Z,7μm,18.0s						
JMIC	**Jan Mayen**	67.11	350	*e*P		**P**	**21 03 11.6 +1.9**
JMIC				*e*PP		**PP**	**21 05 40.8 +3.5**
JMIC				*e*S		**S**	**21 12 00.3 -0.3**
JMIC				IAMs_20		IAMs_20	21 34 09.0
	comp=Z,700nm,19.3s						
HUMO	**Hull Mountain**	67.11	53	*e*P		**P**	**21 03 13.2 +2.8**
	comp=Z,64nm,1.8s						
I05D	**Terrebonne, OR**	67.11	51	P		**P**	**21 03 12.0 +1.7**
	baz=304						
NEW	**Newport**	67.27	45	P		**P**	**21 03 12.3 +1.0**
	baz=306						
NEW	**Newport**	67.27	45	*e*P		**P**	**21 03 12.9 +1.6**
NEW				pmax		pmax	
	comp=Z,93nm,1.6s						
NEW	**Newport**	67.27	45	*e*P		**P**	**21 03 12.9 +1.6**
	comp=Z,93nm,1.6s						
NEW				LR		LR	
	comp=Z,1μm,22.0s						
SUMG	**Summit**	67.46	0⇑	*i*P		**P**	**21 03 13.4 +0.9**
SUMG				*i* S		**S**	**21 12 05.4 -0.2**
SUMG	**Summit**	67.46	0⇑	*i*P		**P**	**21 03 13.4 +0.9**
SUMG				*i* S		**S**	**21 12 05.4 -0.2**
SUMG	**Summit**	67.46	0	*e*P		**P**	**21 03 13.0 +0.5**
	comp=Z,117nm,1.2s						
SUMG				LR		LR	
	comp=Z,2μm,20.0s						
KHMM	**Horse Mountain**	67.61	55	*e*P		**P**	**21 03 15.3 +1.7**
	comp=Z,37nm,1.2s						
E09A	**Wood Farm, Sta**	67.72	47	*e*P		**P**	**21 03 15.3 +1.3**
	comp=Z,129nm,1.6s						
E09A				LR		LR	
	comp=Z,900nm,20.0s						
YBH	**Yreka Blue Hor**	67.76	54	*e*P		**P**	**21 03 17.0 +2.5**
YBH				pmax		pmax	
	comp=Z,25nm,1.1s						
YBH	**Yreka Blue Hor**	67.76	54	*e*P		**P**	**21 03 14.4 -0.1**
	comp=Z,24nm,1.1s						
J05D	**Fort Rock, OR**	67.77	52	P		**P**	**21 03 16.4 +1.8**
	baz=305						
M02C	**Callahan**	67.86	54	P		**P**	**21 03 17.4 +2.3**
	baz=305						
G08A	**Pilot Rock**	67.96	49	*e*P		**P**	**21 03 15.4 -0.3**
	comp=Z,16nm,1.6s						
VSU	**Vasula**	68.09	329*c*	*i*P		**P**	**21 03 16.6 +0.5**
VSU				pmax		pmax	
	comp=Z,240nm,1.7s						
M04C	**Macdoel**	68.26	53	P		**P**	**21 03 19.4 +1.7**
	baz=305						
K05A	**Summer Lake**	68.30	52	*e*P		**P**	**21 03 20.5 +2.5**
	comp=Z,49nm,0.9s						
WALA	**Waterton Lakes**	68.52	43	*e*P		**P**	**21 03 20.5 +1.3**
	comp=Z,51nm,1.2s						
WALA				LR		LR	
	comp=Z,1μm,22.0s						
F10A	**Beach Ranch, E**	68.55	47	*e*P		**P**	**21 03 21.5 +2.1**
F10A				LR		LR	
	comp=Z,1μm,21.0s						
NSS	**Namsos**	68.55	339	*e*P		**P**	**21 03 18.8 -0.1**
GOF	**Gofitskoye**	68.56	311⇑	*i*P		**P**	**21 03 20.1 +0.8**
GOF				pmax		pmax	
	comp=Z,154nm,0.9s						
BSMT	**Bassoo Peak**	68.78	45	*e*P		**P**	**21 03 22.6 +1.6**
BLMT	**Blacktail Moun**	68.91	44	*e*P		**P**	**21 03 23.9 +2.1**
SCO	**Scoresbysund**	68.99	354	*i*P		**P**	**21 03 21.3 -0.2**
SCO				*i*			21 03 35.9
SCO				*i* S		**S**	**21 12 24.0 +1.0**
SCO	**Scoresbysund**	68.99	354	*i*P		**P**	**21 03 21.3 -0.2**
SCO				*i*			21 03 35.9
SCO				*i* S		**S**	**21 12 24.0 +1.0**
HOPS	**Hopland Field**	69.09	56	PFAKE			21 03 40.0 +17
HOPS				LR		LR	
	comp=Z,2μm,20.0s						
JTMT	**Jette**	69.12	45	*e*P		**P**	**21 03 24.5 +1.6**
MOD	**Modoc Plateau**	69.13	52	*e*P		**P**	**21 03 24.9 +1.7**
	comp=Z,22nm,1.2s						
O03D	**Paynes Creek**	69.14	55	P		**P**	**21 03 24.9 +1.8**
	baz=306						
NCK	**Nalchik**	69.16	310*c*	*i*P		**P**	**21 03 23.5 +0.4**
NCK				pmax		pmax	
	comp=Z,65nm,1.2s						
BMO	**Blue Mountains**	69.17	48	PFAKE			21 03 40.0 +17
BMO				LR		LR	
	comp=Z,1μm,22.0s						
YBMT	**Yellow Bay**	69.19	44	*e*P		**P**	**21 03 25.1 +1.7**
GUDG	**Gudauri**	69.24	308	P		**P**	**21 03 25.3 +1.4**
ZEI	**Tsey**	69.39	309	*e*P		**P**	**21 03 21.1 -3.7**
ZEI				pmax		pmax	
	comp=Z,114nm,0.8s						
KVAR	**Kislovodsk Arr**	69.41	311	P		**P**	**21 03 26.1 +1.3**
	comp=Z,118nm,1.0s,baz=23,slow=1.1,SNR=51						
SWMT	**Swartz Lake**	69.41	45	*e*P		**P**	**21 03 25.9 +1.2**
KIV	**Kislovodsk**	69.42	311	*i*P		**P**	**21 03 25.7 +0.9**
	SNR=53						
KIV	**Kislovodsk**	69.42	311	*e*P		**P**	**21 03 25.5 +0.7**
KIV				pmax		pmax	
	comp=Z,140nm,0.8s						
KIV				MLR		MLR	
	comp=Z,6μm,19.0s						
KIV	**Kislovodsk**	69.42	311	*e*P		**P**	**21 03 25.4 +0.7**
	comp=Z,140nm,0.8s						
KIV				LR		LR	
	comp=Z,6μm,19.0s						
KBZ	**Khabaz**	69.43	310	P		**P**	**21 03 25.6 +0.9**
	comp=Z,42nm,0.9s,baz=47,slow=5.2,SNR=49						
KBZ				LR		LR	21 36 34.7
	comp=Z,3μm,19.7s,baz=40,slow=38						
TBLG	**Delisi**	69.51	308	P		**P**	**21 03 26.1 +0.8**
TBLG	**Delisi**	69.51	308	P		**P**	**21 03 26.1 +0.8**
MCCM	**Marconi Confer**	69.71	57	PFAKE			21 03 40.0 +13
MCCM				LR		LR	
	comp=Z,1μm,22.0s						
ORV	**Oroville**	69.76	55	*e*P		**P**	**21 03 28.0 +1.1**
ORV				pmax		pmax	
	comp=Z,29nm,1.1s						
ORV	**Oroville**	69.76	55	*e*P		**P**	**21 03 28.0 +1.1**
	comp=Z,29nm,1.1s						
ONI	**Oni**	69.77	309	P		**P**	**21 03 28.0 +1.0**
ONI	**Oni**	69.77	309	P		**P**	**21 03 28.0 +1.0**
NEY	**Neytrino**	69.81	310*c*	*i*P		**P**	**21 03 28.6 +1.2**
NEY				pmax		pmax	
	comp=Z,6.0nm,0.9s						
WVOR	**Wild Horse Val**	69.82	51	*e*P		**P**	**21 03 29.0 +1.6**
WVOR				pmax		pmax	
	comp=Z,45nm,1.4s						
WVOR				MLR		MLR	
	comp=Z,900nm,22.0s						
WVOR	**Wild Horse Val**	69.82	51	*e*P		**P**	**21 03 29.0 +1.6**
	comp=Z,45nm,1.4s						
WVOR				LR		LR	
	comp=Z,900nm,22.0s						
MSO	**Missoula**	69.86	45	P		**P**	**21 03 28.2 +0.7**
	baz=308						
MSO	**Missoula**	69.86	45	*e*P		**P**	**21 03 28.1 +0.6**
	comp=Z,70nm,1.4s						
MSO				LR		LR	
	comp=Z,800nm,22.0s						
TBLU	**Trondheim**	70.03	339	*e*P		**P**	**21 03 27.4 -0.7**
TBLU				IAMs_20		IAMs_20	21 38 02.7
	comp=Z,4μm,22.9s						
IZAR	**Zarasai**	70.13	327	*e*P		**P**	**21 03 28.6 -0.2**
IZAR				IAmb		IAmb	21 03 31.4
	comp=Z,16nm,0.9s						
CHMT	**Chamberlain Mo**	70.18	45	*e*P		**P**	**21 03 30.2 +0.7**
IDID	**Didziasalis**	70.22	327	*e*P		**P**	**21 03 29.1 -0.2**
IDID				IAmb		IAmb	21 03 33.1
	comp=Z,32nm,0.9s						
MICGM	**Minsk**	70.28	326⇓	*e*P		**P**	**21 03 32.0 +2.2**
MICGM				PM			21 03 33.0
	comp=Z,0.2nm,1.0s						
MICGM				*e*PcP		**pP**	**21 03 44.0 +2.5**
MICGM				*e*S		**S**	**21 12 44.0 +5.3**
MICGM				*e*PS		**PnS**	**21 13 08.0 -1.1**
MICGM				*e*LR		LR	21 30 10.0
MICGM				LRM		MLR	21 37 02.0
	comp=Z,7.4nm,18.0s						
MNK	**Minsk**	70.28	326⇓	*e*P		**P**	**21 03 32.0 +2.2**
MNK				*e*			21 03 44.0
MNK				*e*S		**S**	**21 12 44.0 +5.3**
MNK				*e*PS		**PnS**	**21 13 08.0 -1.1**
MNK				pmax		pmax	
	comp=Z,240nm,1.0s						
MNK				MLR		MLR	
	comp=Z,7μm,18.0s						
ILULI	**Ilulissat**	70.38	5⇑	*i*P		**P**	**21 03 30.3 +0.2**
	comp=Z,3μm,25.0s						
ILULI	**Ilulissat**	70.38	5⇑	*i*P		**P**	**21 03 30.3 +0.2**
ILULI				MLR		MLR	
	comp=Z,3μm,25.0s						
GNI	**Garni**	70.44	306	*i* P		**P**	**21 03 32.3 +1.1**
	SNR=19						
GNI	**Garni**	70.44	306*c*	*i*P		**P**	**21 03 32.9 +1.7**
GNI				pmax		pmax	
	comp=Z,272nm,1.2s						
GNI	**Garni**	70.44	306	P		**P**	**21 03 33.0 +1.7**
	SNR=18						
GNI	**Garni**	70.44	306	P		**P**	**21 03 33.0 +1.7**
	SNR=18						
GNI	**Garni**	70.44	306	*e*P		**P**	**21 03 32.1 +0.9**
	comp=Z,208nm,1.6s						
GNI				LR		LR	
	comp=Z,4μm,19.0s						
AFDM	**Forest Hills D**	70.45	55	*e*P		**P**	**21 03 32.9 +1.7**
	comp=Z,21nm,1.3s						
AFDM				LR		LR	
	comp=Z,1μm,20.0s						
AKH	**Akhalkalaki**	70.45	308⇑	*i*P		**P**	**21 03 32.7 +1.4**
AKH	**Akhalkalaki**	70.45	308	P		**P**	**21 03 32.6 +1.3**
AKH	**Akhalkalaki**	70.45	308	P		**P**	**21 03 32.6 +1.3**
BGD	**Bogdanovka**	70.47	308	P		**P**	**21 03 32.8 +1.4**
NACGM	**Naroch**	70.48	326	*e*P		**P**	**21 03 30.0 -1.0**
NACGM				*e*P		**P**	**21 03 30.0 -1.0**
NACGM				PM			21 03 34.0
	comp=Z,0.3nm,1.0s						
NACGM				*e*PP		**PP**	**21 06 08.0 +1.2**
NACGM				*e*S		**S**	**21 12 41.0 0.0**
NACGM				*e*PS		**PnS**	**21 13 03.0 -8.7**
NACGM				*e*LQ		LQ	21 28 18.0
NACGM				*e*LR		LR	21 31 38.0
NACGM				LRM		MLR	21 36 42.0
	comp=Z,8.3nm,20.0s						
CHVG	**Ch'k'valeri**	70.51	310⇓	*i*P		**P**	**21 03 32.7 +1.3**
FCC	**Fort Churchill**	70.76	27	*e*P		**P**	**21 03 32.7 +0.1**
FCC				pmax		pmax	
	comp=Z,52nm,1.4s						
FCC				MLR		MLR	
	comp=Z,1μm,20.0s						
FCC	**Fort Churchill**	70.76	27	*e*P		**P**	**21 03 32.7 +0.1**
	comp=Z,52nm,1.4s						
FCC				LR		LR	
	comp=Z,1μm,20.0s						
ARMA	**Armidale**	70.84	172	*e*P		**P**	**21 03 34.2 +0.7**
	comp=Z,48nm,1.1s						
ARMA				LR		LR	
	comp=Z,1μm,21.0s						
MFID	**Camas Ranch**	70.88	49	*e*P		**P**	**21 03 34.9 +1.1**
	comp=Z,65nm,1.5s						
MFID				LR		LR	
	comp=Z,700nm,20.0s						
BANOM	**Banah**	70.96	288	*i* P		**P**	**21 03 34.8 +0.4**
	SNR=28						
BANOM	**Banah**	70.96	288	P		**P**	**21 03 35.7 +1.2**
	SNR=13						
BANOM	**Banah**	70.96	288	P		**P**	**21 03 35.7 +1.2**
	SNR=13						
BIDO	**Bidbid**	71.03	285	P		**P**	**21 03 37.0 +2.1**
	SNR=6.3						
BIDO	**Bidbid**	71.03	285	P		**P**	**21 03 37.0 +2.1**
	SNR=6.3						
HRY	**Holter Researc**	71.07	44	*e*P		**P**	**21 03 36.6 +1.7**
LRM	**Limekiln Ridge**	71.29	45	*e*P		**P**	**21 03 37.6 +1.1**
MOL	**Molde**	71.31	340	*i* P		**P**	**21 03 36.6 +0.8**
MOL				IAmb		IAmb	21 03 51.6
	comp=Z,74nm,1.3s						
MOL				IAMs_20		IAMs_20	21 31 56.2
	comp=Z,5μm,32.3s						
NC405	**NORSAR Array S**	71.32	337	*e*P		**P**	**21 03 36.0 0.0**
EGMT	**Eagleton**	71.33	42	P		**P**	**21 03 37.2 +0.8**
	baz=310						
EGMT	**Eagleton**	71.33	42	*e*P		**P**	**21 03 37.3 +0.8**
	comp=Z,87nm,1.1s						
EGMT				LR		LR	
	comp=Z,1μm,22.0s						
NC303	**NORSAR Array S**	71.33	337	*e*P		**P**	**21 03 36.2 +0.2**
SOC	**Sochi**	71.36	312*c*	*i*P		**P**	**21 03 36.6 +0.1**
SOC				*e**PP		**pP**	**21 03 45.1 -3.2**
SOC				*e*			21 06 14.4
SOC				*e*PPP		PPP	21 07 57.5
SOC				*e*S		**S**	**21 12 52.6 +1.1**
SOC				*e**SS		**SKiKP**	**21 13 13.4 +0.2**
SOC				pmax		pmax	
	comp=Z,97nm,1.2s						
SOC				MLR		MLR	
	comp=Z,3μm,18.0s						
CMB	**Columbia Colle**	71.36	56	*e*P		**P**	**21 03 38.3 +1.6**
CMB				pmax		pmax	
	comp=Z,30nm,1.4s						
CMB				MLR		MLR	
	comp=Z,2μm,22.0s						
CMB	**Columbia Colle**	71.36	56	*e*P		**P**	**21 03 38.2 +1.6**
	comp=Z,30nm,1.4s						
CMB				LR		LR	
	comp=Z,2μm,22.0s						
SMDO	**Samad**	71.37	285	P		**P**	**21 03 38.0 +0.9**
	SNR=9.2						
SMDO	**Samad**	71.37	285	P		**P**	**21 03 38.0 +0.9**
	SNR=9.2						
NC204	**NORSAR Array S**	71.47	338	*e*P		**P**	**21 03 36.7 -0.3**
NB201	**NORSAR Array S**	71.49	337	*e*P		**P**	**21 03 37.1 0.0**
DLMT	**Dillon**	71.50	46	*e*P		**P**	**21 03 38.0 +0.4**
	comp=Z,65nm,1.0s						
NB2	**NORSAR Subarra**	71.53	337	P		**P**	**21 03 37.3 0.0**
	comp=Z,58nm,1.0s,baz=38,slow=6.2						
NB2	**NORSAR Subarra**	71.53	337	P		**P**	**21 03 37.3 0.0**
	baz=38,slow=6.2						
NB200	**NORSAR Array S**	71.53	337	*e*P		**P**	**21 03 37.2 0.0**
NOA	**NORSAR Array B**	71.53	337	P		**P**	**21 03 37.2 0.0**
	comp=Z,30nm,0.8s,baz=38,slow=6.0,SNR=125						
NOA				LR		LR	21 37 57.8
	comp=Z,3μm,21.2s,baz=35,slow=38						
HLID	**Hailey**	71.60	48	P		**P**	**21 03 40.0 +1.8**
	baz=308						
HLID	**Hailey**	71.60	48	*e*P		**P**	**21 03 40.2 +1.9**
	comp=Z,28nm,1.4s						
HLID				LR		LR	
	comp=Z,800nm,21.0s						
UOSS	**Minazif**	71.61	287	*e*P		**P**	**21 03 38.0 -0.3**
	comp=Z,6.5nm,0.9s						
UOSS				LR		LR	
	comp=Z,2μm,21.0s						
NBO02	**NORSAR Array S**	71.62	337	*e*P		**P**	**21 03 37.7 -0.1**
NBO00	**NORSAR Array S**	71.66	337	*e*P		**P**	**21 03 38.0 -0.1**
NC602	**NORSAR Array S**	71.67	337	*e*P		**P**	**21 03 38.0 -0.1**
WAKR	**Walker**	71.68	55	*e*P		**P**	**21 03 39.9 +1.1**
MCMT	**McKenzie Canyo**	71.70	46	*e*P		**P**	**21 03 38.1 -0.8**
HATD	**Hatta, Dubai**	71.73	287	*i* P		**P**	**21 03 39.4 +0.3**
	SNR=48						
NAO01	**NORSAR Array S**	71.78	337	*e*P		**P**	**21 03 38.8 0.0**
STKA	**Stephens Creek**	71.78	181	P		**P**	**21 03 39.1 +0.2**
	comp=Z,4.0nm,0.7s,baz=331,slow=7.8,SNR=10						
STKA				LR		LR	21 32 32.5
	comp=Z,658nm,21.7s,baz=14,slow=34						
STKA	**Stephens Creek**	71.78	181	*e*P		P	21 03 44.0 +5.0
STKA				pmax		pmax	
	comp=Z,4.0nm,1.1s						
STKA	**Stephens Creek**	71.78	181	*e*P		**P**	**21 03 39.5 +0.5**
	comp=Z,4.1nm,1.1s						
AKN	**Aaknes**	71.78	340	*e*P		**P**	**21 03 39.5 +0.8**
AKN				*e*PP		**PP**	**21 06 19.1 +1.4**
AKN				*e*			21 08 03.3
BOZ	**Bozeman (W)**	71.85	45	P		**P**	**21 03 40.8 +1.1**
	baz=309						
BOZ	**Bozeman (W)**	71.85	45	PFAKE			21 03 50.0 +10
BOZ				LR		LR	
	comp=Z,1μm,21.0s						
ASHO	**Ashiyiah**	71.87	287	*i* P		**P**	**21 03 40.1 +0.1**
	SNR=48						
ASHO	**Ashiyiah**	71.87	287	P		**P**	**21 03 40.7 +0.7**
	SNR=30						
ASHO	**Ashiyiah**	71.87	287	P		**P**	**21 03 40.7 +0.7**
	SNR=30						
ANN	**Anapa**	71.88	314*c*	*i*P		**P**	**21 03 39.4 -0.2**
ANN				*e*			21 03 58.2
ANN				*e*			21 06 16.0
ANN				*e*PPP		PPP	21 08 06.9
ANN				*e*S		**S**	**21 12 55.9 -1.6**
ANN				*e*SS		**SS**	**21 17 41.3 +7.8**
ANN				pmax		pmax	
	comp=N,12nm,1.5s						
ANN				pmax		pmax	
	comp=Z,104nm,1.5s						
ANN				pmax		pmax	
	comp=E,19nm,1.5s						
ANN				MLR		MLR	
	comp=E,2μm,19.0s						
ANN				MLR		MLR	
	comp=N,7μm,19.0s						
ANN				MLR		MLR	
	comp=Z,3μm,19.0s						
NAZ	**Nazwa, Dubai**	71.98	288	*i* P		**P**	**21 03 40.6 0.0**
	SNR=12						
FAQ	**Al Faqa, Dubai**	72.17	288	*i* P		**P**	**21 03 41.6 -0.1**
	SNR=29						
AKASG	**Malin Array Be**	72.25	322	P		**P**	**21 03 41.6 -0.1**
	comp=Z,38nm,0.8s,baz=44,slow=6.6,SNR=83						
AKASG				LR		LR	21 38 41.3
	comp=Z,3μm,19.6s,baz=30,slow=38						
AKBB	**Malin Array Si**	72.25	322	*e*P		**P**	**21 03 41.3 -0.4**
AKBB				pmax		pmax	
	comp=Z,62nm,0.9s						
AKBB				MLR		MLR	
	comp=Z,4μm,18.0s						
AKBB	**Malin Array Si**	72.25	322	*e*P		**P**	**21 03 41.3 -0.4**
	comp=Z,62nm,0.9s						
AKBB				LR		LR	
	comp=Z,4μm,18.0s						
KIEV	**Kiev**	72.26	322	*e*P		**P**	**21 03 41.7 -0.1**
KIEV				pmax		pmax	
	comp=Z,67nm,1.0s						
KIEV				MLR		MLR	
	comp=Z,3μm,21.0s						
KIEV	**Kiev**	72.26	322	*e*P		**P**	**21 03 41.7 -0.1**
	comp=Z,67nm,1.0s						
KIEV				LR		LR	
	comp=Z,3μm,21.0s						
AK11	**Malin Array Si**	72.29	322	*e*P		**P**	**21 03 41.4 -0.5**
ARQ	**Araqi**	72.33	286	P		**P**	**21 03 43.7 +1.0**
	SNR=17						
ARQ	**Araqi**	72.33	286	P		**P**	**21 03 43.7 +1.0**
	SNR=17						
NV01	**Mina Array Sit**	72.43	54	*e*P		**P**	**21 03 44.8 +1.5**
NVAR	**Mina Array Bea**	72.43	54	P		**P**	**21 03 45.4 +2.0**
	comp=Z,4.2nm,1.0s,baz=290,slow=4.4,SNR=12						
NVAR				pP		**sP**	**21 03 58.9 -0.8**
	comp=Z,10nm,0.9s,baz=290,slow=5.6,SNR=14						
NVAR				LR		LR	21 31 58.7
	comp=Z,659nm,21.0s,baz=297,slow=33						
QLMT	**Earthquake Lak**	72.48	46	*e*P		**P**	**21 03 44.8 +1.3**
NV11	**Mina Array Sit**	72.52	54	*e*P		**P**	**21 03 45.5 +1.7**
	comp=Z,44nm,1.5s						
OSL	**Oslo**	72.56	337	*e*P		**P**	**21 03 44.3 +0.9**
OSL				IAMs_20		IAMs_20	21 37 58.6
	comp=Z,8μm,26.5s						
SFJD	**Kangerlussuaq**	72.60	5	*i* P		**P**	**21 03 41.8 -1.7**
	comp=Z,3μm,23.0s						
SFJD	**Kangerlussuaq**	72.60	5	*e*P		**P**	**21 03 44.1 +0.6**
SFJD				pmax		pmax	
	comp=Z,65nm,1.2s						
SFJD	**Kangerlussuaq**	72.60	5	*e*P		**P**	**21 03 43.8 +0.2**
	comp=Z,65nm,1.3s						
SFJD				LR		LR	
	comp=Z,4μm,22.0s						
SUW	**Suwalki**	72.61	327	*e*P		**P**	**21 03 43.5 -0.3**
SUW				LMZ		LR	21 37 37.5
	comp=Z,5μm,19.8s						
SUW	**Suwalki**	72.61	327⇑	*e*P		**P**	**21 03 43.5 -0.3**
SUW				MLR		MLR	
	comp=Z,5μm,19.8s						
FOO	**Floro**	72.78	340	*e*P		**P**	**21 03 44.5 -0.2**
FOO				*e*PP		**PP**	**21 06 21.8 -4.4**
FOO				*e*			21 08 16.9
FOO				IAMs_20		IAMs_20	21 39 31.7
	comp=Z,2μm,16.7s						
GCMT	**Greycliff**	72.81	44	*e*P		**P**	**21 03 46.8 +1.4**
YMR	**Madison River**	72.83	46	*e*P		**P**	**21 03 45.5 -0.2**
	comp=Z,148nm,1.8s						
YMR				LR		LR	
	comp=Z,800nm,19.0s						
HYA	**Hoyanger**	72.84	339	*e*P		**P**	**21 03 45.4 +0.3**
ELK	**Elko**	72.87	51	*e*P		**P**	**21 03 47.4 +1.5**
ELK				pmax		pmax	
	comp=Z,16nm,1.1s						
ELK				MLR		MLR	
	comp=Z,800nm,22.0s						
ELK	**Elko**	72.87	51	*e*P		**P**	**21 03 47.4 +1.5**
	comp=Z,16nm,1.1s						
ELK				LR		LR	
	comp=Z,800nm,22.0s						
YFT	**Old Faithful**	73.05	46	*e*P		**P**	**21 03 48.5 +1.5**
	comp=Z,67nm,1.3s						
KONO	**Kongsberg**	73.12	337	*e*P		**P**	**21 03 45.7 -1.1**
KONO				*e*PP		**PP**	**21 06 26.9 -2.3**
KONO				*e*S		**SKiKP**	**21 13 15.1 -0.3**
KONO				IAMs_20		IAMs_20	21 38 16.7
	comp=Z,4μm,21.8s						
KONO	**Kongsberg**	73.12	337	*e*P		**P**	**21 03 47.0 +0.2**
KONO				pmax		pmax	
	comp=Z,37nm,1.2s						
KONO				MLR		MLR	
	comp=Z,4μm,21.0s						
KONO	**Kongsberg**	73.12	337	*e*P		**P**	**21 03 47.0 +0.2**
	comp=Z,37nm,1.2s						
KONO				LR		LR	
	comp=Z,4μm,21.0s						
H17A	**Grant Village**	73.22	46	P		**P**	**21 03 50.8 +2.7**
	baz=310						
H17A	**Grant Village**	73.22	46	*e*P		**P**	**21 03 50.7 +2.7**
	comp=Z,118nm,1.5s						
SUE	**Sulen**	73.31	340	*e*P		**P**	**21 03 48.3 +0.5**
SUE				IAMs_20		IAMs_20	21 39 46.2
	comp=Z,3μm,17.7s						
IMW	**Indian Meadow**	73.34	46	*e*P		**P**	**21 03 51.1 +2.4**
	comp=Z,63nm,1.4s						
IMW				LR		LR	
	comp=Z,700nm,22.0s						
FLWY	**Flagg Ranch**	73.36	46	*e*P		**P**	**21 03 52.0 +3.3**
	comp=Z,100nm,1.5s						
FLWY				LR		LR	
	comp=Z,500nm,20.0s						
KLNR	**Kaliningrad**	73.38	329	*e*P		**P**	**21 03 50.8 +2.5**
KLNR				pmax		pmax	
	comp=Z,51nm,0.8s						
FXWY	**Fox Creek**	73.46	47	*e*P		**P**	**21 03 51.1 +1.7**
	comp=Z,90nm,1.6s						
FXWY				LR		LR	
	comp=Z,600nm,21.0s						
RLMT	**Red Lodge**	73.46	45	P	

comp=Z,38nm,1.3s
SNOW LR LR
comp=Z,800nm,21.0s
REDW Red Top Meadow 73.74 47 *e*P **P 21 03 52.5 +1.5**
comp=Z,103nm,1.5s
REDW LR LR
comp=Z,900nm,22.0s
ODD1 Odda 73.77 339 *e*P **P 21 03 51.6 +1.0**
AHID Auburn Hatcher 73.98 47 *e*P **P 21 03 53.8 +1.4**
comp=Z,50nm,1.5s
AHID LR LR
comp=Z,1μm,22.0s
LAO LASA Array 74.02 42 P **P 21 03 53.6 +1.2**
baz=312
A25A Svangstu Ranch 74.03 39 P **P 21 03 53.2 +0.8**
baz=314
BGU Big Grassy Mou 74.06 50 PFAKE 21 04 10.0 +17
BGU LR LR
comp=Z,600nm,21.0s
SPUT South Promonto 74.15 49 PFAKE 21 04 10.0 +17
SPUT LR LR
comp=Z,600nm,20.0s
R11A Troy Canyon, C 74.16 53 P **P 21 03 54.9 +1.5**
baz=309
R11A Troy Canyon, C 74.16 53 *e*P **P 21 03 55.0 +1.5**
comp=Z,87nm,1.8s
R11A LR LR
comp=Z,700nm,20.0s
DAC Darwin (Calif) 74.20 56 *e*P **P 21 03 54.8 +1.0**
DAC pmax pmax
comp=Z,63nm,2.0s
DAC Darwin (Calif) 74.20 56 *e*P **P 21 03 54.8 +1.0**
comp=Z,63nm,2.0s
BLS5 Blasjo 74.22 338 *e*P **P 21 03 54.7 +1.4**
BLS5 *i* 21 08 18.7
BLS5 *e* 21 13 50.6
BLS5 IAMs_20 IAMs_20 21 39 35.8
comp=Z,3μm,18.1s
MPMC Manual Prospec 74.40 56 P **P 21 03 56.2 +1.3**
baz=309
HWUT Hardware Ranch 74.47 48 PFAKE 21 04 10.0 +15
HWUT LR LR
comp=Z,800nm,22.0s
BORG Borgarnes 74.55 353 *e*P **P 21 03 56.9 +1.9**
BORG pmax pmax
comp=Z,180nm,1.6s
BORG Borgarnes 74.55 353 *e*P **P 21 03 56.9 +1.9**
comp=Z,181nm,1.6s
A26A Wade Farm, Ken 74.57 38 P **P 21 03 56.5 +1.0**
baz=314
HOMB Homborsund 74.58 337 *e*P **P 21 03 55.8 +0.6**
HOMB IAmb IAmb 21 04 09.4
comp=Z,49nm,0.2s
HOMB *e* 21 08 27.5
HOMB *e*S **S 21 13 30.7 +3.1**
HOMB IAMs_20 IAMs_20 21 38 59.5
comp=Z,4μm,20.4s
TPNV Topopah Spring 74.63 55 P **P 21 03 57.1 +0.9**
baz=309
TPNV Topopah Spring 74.63 55 *e*P **P 21 03 57.9 +1.7**
TPNV pmax pmax
comp=Z,36nm,1.1s
TPNV MLR MLR
comp=Z,1μm,22.0s
TPNV Topopah Spring 74.63 55 *e*P **P 21 03 57.9 +1.7**
comp=Z,36nm,1.1s
TPNV LR LR
comp=Z,1μm,22.0s
DUG Dugway, Tooele 74.65 50 PFAKE 21 04 10.0 +14
DUG LR LR
comp=Z,900nm,20.0s
EDW2 Edwards Air Fo 74.81 57 P **P 21 03 58.4 +1.2**
baz=309
BW06 Boulder Array 74.84 47 P **P 21 03 58.0 +0.6**
baz=311
BW06 Boulder Array 74.84 47 *e*P **P 21 03 57.5 0.0**
BW06 LR LR
comp=Z,1μm,22.0s
PD31 Pinedale Array 74.84 47 *e*P **P 21 03 58.0 +0.6**
PDAR Pinedale Array 74.84 47 P **P 21 03 58.4 +0.9**
comp=Z,1.8nm,0.6s,baz=261,slow=1.8,SNR=25
STAV Stavanger 74.84 338 *e*P **P 21 03 56.8 0.0**
STAV *i* 21 08 30.8
STAV IAMs_20 IAMs_20 21 39 53.9
comp=Z,4μm,19.3s
SNART Snartemo 74.91 337 *e*P **P 21 03 58.0 +0.8**
KIS Kishinev 74.97 320 *e*P **P 21 03 57.0 -0.8**
KIS Kishinev 74.97 320 *e*PcP **PcP 21 04 10.0 -1.4**
KIS Kishinev 74.97 320 *e*PP PP 21 06 47.0 +1.8
KIS Kishinev 74.97 320 *e*PS 21 13 58.0
KIS *e*SS SS 21 18 04.0 -16
KIS *e*SSS SSS 21 21 38.0
KIS *e*L L 21 28 00.0
KIS LRM MLR 21 40 00.0
comp=Z,6μm,18.0s
KIS Kishinev 74.97 320 *e*P **P 21 03 57.0 -0.8**
KIS *e* 21 04 07.0
KIS *e* 21 04 10.0
KIS *e* 21 06 47.0
KIS *e*PPP PPP 21 08 33.0
KIS *e*S **S 21 13 30.0 -2.4**
KIS *e*PS **PnS 21 13 58.0 -13**
KIS *e* 21 14 24.0
KIS *e*SSS SSS 21 21 38.0
KIS MLR MLR
comp=Z,5μm,17.0s
KIS MLR MLR
comp=N,3μm,18.0s
KIS MLR MLR
comp=E,2μm,17.0s
KIS MLR MLR
comp=Z,6μm,18.0s
BSD Bornholm Skovb 74.99 332⇑ *i*P **P 21 03 57.6 -0.1**
comp=Z,62nm,1.2s
BSD *i* 21 04 10.6
comp=Z,5μm,19.0s
BSD Bornholm Skovb 74.99 332⇑ *i*P **P 21 03 57.6 -0.1**
BSD *i* 21 04 10.6
BSD pmax pmax
comp=Z,62nm,1.2s
BSD MLR MLR
comp=Z,5μm,19.0s
PASC Pasadena Art C 75.13 58 PFAKE 21 04 10.0 +11
PASC LR LR
comp=Z,2μm,22.0s
MWC Mount Wilson 75.18 58 PFAKE 21 04 10.0 +11
MWC LR LR
comp=Z,2μm,22.0s
JLU Jordanelle 75.19 49 PFAKE 21 04 10.0 +11
JLU LR LR
comp=Z,700nm,21.0s
BEL Belsk 75.19 327 *e*P **P 21 03 60.0 +1.0**
BEL LMZ LR 21 39 16.2
comp=Z,5μm,21.1s
BEL Belsk 75.19 327⇑ *e*P **P 21 03 59.9 +1.0**
BEL MLR MLR
comp=Z,5μm,21.1s
NLU North Lily Min 75.24 50 PFAKE 21 04 10.0 +10
NLU LR LR
comp=Z,1μm,22.0s
LVV L'vov 75.25 324 *d i*P **P 21 03 59.6 +0.2**
LVV *e* 21 04 12.4
LVV *e*S **S 21 13 30.0 -5.4**
LVV *e* 21 14 00.0
LVV MLR MLR
comp=N,2μm,16.0s
LVV MLR MLR
comp=E,4μm,16.0s
LVV MLR MLR
comp=Z,4μm,16.0s
GSC Goldstone, Bar 75.31 56 P **P 21 04 01.1 +1.0**
baz=309
GSC Goldstone, Bar 75.31 56 *e*P **P 21 04 01.3 +1.2**
GSC pmax pmax
comp=Z,20nm,1.3s
GSC Goldstone, Bar 75.31 56 *e*P **P 21 04 01.3 +1.2**
comp=Z,20nm,1.3s
COP Copenhagen 75.41 333⇑ *i*P **P 21 04 01.1 +1.0**
comp=Z,44nm,0.9s
COP *i* 21 04 13.3
COP *i*S **S 21 13 36.7 -0.2**
comp=Z,3μm,20.0s
COP Copenhagen 75.41 333⇑ *i*P **P 21 04 01.1 +1.0**
COP *i* 21 04 13.3
COP *i*S **S 21 13 36.7 -0.2**
COP pmax pmax
comp=Z,44nm,0.9s
COP MLR MLR
comp=Z,3μm,20.0s
IAS Iasi 75.45 320⇓ *i*P **P 21 04 02.6 +2.1**
MPU Maple Canyon 75.46 50 PFAKE 21 04 10.0 +9.0
MPU LR LR
comp=Z,900nm,21.0s
SHPR Sheep Range 75.58 54 *e*P **P 21 04 04.0 +2.2**
comp=Z,33nm,1.2s
SFNV Sufian 75.60 306 *e*P **P 21 04 02.6 +0.9**
B28A Dugan Ranch, T 75.67 38 P **P 21 04 02.2 +0.4**
baz=316
A29A Manning Farm, 75.85 37 P **P 21 04 03.5 +0.6**
baz=316
MUD Monsted U'grnd 75.86 335⇑ *i*P **P 21 04 02.8 +0.1**
comp=Z,3μm,20.0s
MUD Monsted U'grnd 75.86 335⇑ *i*P **P 21 04 02.8 +0.1**
MUD MLR MLR
comp=Z,3μm,20.0s
HEC Hector,Ludlow 75.91 56 P **P 21 04 04.9 +1.4**
baz=310
PRAR RASCA 75.98 321⇓ *i*P **P 21 04 04.2 +0.6**
KWP Kalwaria Pacla 75.98 324 *e*P **P 21 04 04.5 +0.9**
KWP *e*S **SKSac 21 14 08.9 -2.1**
KWP LMZ LR 21 40 34.8
comp=Z,7μm,16.2s
KWP Kalwaria Pacla 75.98 324⇓ *i*P **P 21 04 04.8 +1.2**
KWP Kalwaria Pacla 75.98 324⇑ *e*P **P 21 04 04.5 +0.9**
KWP *e*S **SKSac 21 14 08.9 -2.1**
KWP MLR MLR
comp=Z,7μm,16.2s
RGN Rugen 76.00 332 PFAKE 21 04 20.0 +16
RGN LR LR
comp=Z,6μm,19.0s
CCUT Cedar City 76.02 53 PFAKE 21 04 20.0 +16
CCUT LR LR
comp=Z,900nm,21.0s
E26A Carlson Angus 76.06 40 P **P 21 04 04.8 +0.7**
baz=315
TLCR 76.22 318⇑ *i*P **P 21 04 06.0 +1.1**
A30A Hoffart Farm, 76.27 36 P **P 21 04 05.9 +0.7**
baz=317
BUR08 Bucovina Ar. S 76.27 322 *e*P **P 21 04 05.7 +0.4**
BURAR Bucovina Array 76.28 322⇓ *i*P **P 21 04 06.4 +1.0**
P17A Butcher Ranch, 76.33 50 PFAKE 21 04 20.0 +14
P17A LR LR
comp=Z,1μm,22.0s
GMRC Granite Mounta 76.36 56 P **P 21 04 07.7 +1.5**
baz=310
ULM Lac du Bonnet 76.37 34 P **P 21 04 05.7 0.0**
comp=Z,5.4nm,0.6s,baz=309,slow=5.2,SNR=6.7
ULM LR LR 21 39 57.5
comp=Z,453nm,18.9s,baz=325,slow=37
ULM Lac du Bonnet 76.37 34 *e*P **P 21 04 06.0 +0.2**
ULM pmax pmax
comp=Z,67nm,1.7s
ULM Lac du Bonnet 76.37 34 *e*P **P 21 04 05.4 -0.3**
comp=Z,67nm,1.7s
TESR Tescani 76.38 320⇑ *i*P **P 21 04 06.5 +0.7**
MTPU Mount Pierson 76.41 52 *e*P **P 21 04 08.7 +2.0**
MTPU comp=Z,127nm,1.9s
MTPU LR LR
comp=Z,700nm,20.0s
LCMT Little Creek M 76.44 53 *e*P **P 21 04 07.8 +1.3**
comp=Z,62nm,1.5s
LCMT LR LR
comp=Z,900nm,21.0s
MDND Maddock 76.45 38 P **P 21 04 06.8 +0.5**
baz=316
MDND Maddock 76.45 38 *e*P **P 21 04 09.0 +2.7**
comp=Z,371nm,1.8s
MDND LR LR
comp=Z,1μm,22.0s
NWAO Narrogin (SRO) 76.47 202 *e*P **P 21 04 05.4 -0.9**
NWAO pmax pmax
comp=Z,273nm,1.3s
NWAO Narrogin (SRO) 76.47 202 *e*P **P 21 04 05.4 -0.9**
comp=Z,273nm,1.3s
CFR Carcaliu 76.57 318⇑ *i*P **P 21 04 07.4 +0.5**
K22A Casper 76.59 45 *e*P **P 21 04 08.4 +1.1**
comp=Z,64nm,1.2s
K22A LR LR
comp=Z,800nm,22.0s
PFO Pinyon Flats O 76.60 57 *e*P **P 21 04 09.7 +2.2**
PFO pmax pmax
comp=Z,53nm,1.8s
PFO MLR MLR
comp=Z,2μm,22.0s
PFO Pinyon Flats O 76.60 57 *e*P **P 21 04 09.7 +2.2**
comp=Z,53nm,1.8s
PFO LR LR
comp=Z,2μm,22.0s
B30A Myrvik Farm, E 76.61 37 P **P 21 04 07.4 +0.3**
baz=317
PETR Petresti 76.64 319⇓ *i*P **P 21 04 09.6 +2.3**
KOLS Kolonicke sedl 76.69 324 *e*P **P 21 04 08.1 +0.5**
KOLS pmax pmax
comp=Z,276nm,3.2s
KOLS Kolonicke sedl 76.69 324 *e*P **P 21 04 08.1 +0.5**
KOLS *e*PP **PP 21 06 58.0 -1.7**
KOLS *e*S **SKSac 21 14 16.1 -0.1**
KOLS *e*L L 21 41 06.4
KNB Kanab 76.69 53 *e*P **P 21 04 09.9 +1.8**
KNB Kanab 76.69 53 *e*P **P 21 04 09.9 +1.8**
SRU San Rafael Swe 76.70 50 PFAKE 21 04 20.0 +12
SRU LR LR
comp=Z,900nm,22.0s
ODBI Odobesti 76.70 319⇓ *i*P **P 21 04 10.1 +2.4**
PKCU Pink Cliffs 76.73 52 *e*P **P 21 04 08.1 -0.3**
comp=Z,81nm,1.6s
STHS Stebnicka Huta 76.78 325 *e*P **P 21 04 09.0 +0.9**
STHS pmax pmax
comp=Z,16nm,0.9s
STHS Stebnicka Huta 76.78 325 *e*P **P 21 04 09.0 +0.9**
VRI Vrincioaia 76.79 320⇑ *i*P **P 21 04 10.5 +2.3**
OJC Ojcow 76.81 326 *e*P **P 21 04 09.1 +0.9**
OJC *e*S **SKSac 21 14 16.5 -0.6**
OJC LMZ LR 21 40 38.7
comp=Z,6μm,19.5s
OJC Ojcow 76.81 326⇑ *e*P **P 21 04 09.1 +0.9**
OJC *e*S **SKSac 21 14 16.5 -0.6**
OJC MLR MLR
comp=Z,6μm,19.5s
OJC Ojcow 76.81 326 *e*P **P 21 04 08.8 +0.5**
comp=Z,101nm,1.2s
G26A Maurine 76.81 41 P **P 21 04 09.2 +0.8**
baz=315
PLOR Plostina 76.84 320⇑ *i*P **P 21 04 10.9 +2.4**
E28A Huff 76.85 39 P **P 21 04 09.5 +1.0**
baz=316
RSSD Black Hills 76.90 43 P **P 21 04 09.4 +0.3**
baz=314
RSSD Black Hills 76.90 43 *e*P **P 21 04 09.9 +0.8**
RSSD pmax pmax
comp=Z,66nm,1.3s
RSSD Black Hills 76.90 43 *e*P **P 21 04 10.4 +1.3**
comp=Z,66nm,1.3s
RSSD LR LR
comp=Z,800nm,21.0s
UZH Uzhgorod 76.90 324 *e*P **P 21 04 06.7 -2.0**
UZH *e* 21 04 19.5
UZH *e* 21 07 01.9
UZH *e* 21 08 51.7
UZH *i*S **S 21 13 48.5 -5.1**
UZH *i* 21 14 16.3
UZH *e* 21 14 26.7
UZH MLR MLR
comp=N,8μm,15.0s
UZH MLR MLR
comp=E,6μm,15.0s
TIRR Tirgusor 76.93 318⇑ *i*P **P 21 04 10.3 +1.3**
TIRR Tirgusor 76.93 318 PFAKE 21 04 20.0 +11
TIRR LR LR
comp=Z,7μm,18.0s
GRER 77.01 319⇑ *i*P **P 21 04 12.4 +2.9**
HARR Harsova 77.01 318⇓ *i*P **P 21 04 10.4 +0.9**
BMR Baia Mare 77.05 323⇑ *i*P **P 21 04 12.0 +2.4**
BAR Barrett 77.05 58 PFAKE 21 04 20.0 +10
BAR LR LR
comp=Z,1μm,22.0s
CRVS Cervenica-Dubn 77.07 325 *e*P **P 21 04 10.5 +0.8**
CRVS Cervenica-Dubn 77.07 325 *e*P **P 21 04 10.5 +0.8**
CRVS *e* 21 04 31.8
ARCR ARCALIA 77.07 322⇑ *i*P **P 21 04 12.0 +2.2**
C30A Mose, Pekin 77.08 37 P **P 21 04 12.0 +2.1**
baz=317
G27A Dupree 77.09 41 P **P 21 04 11.9 +1.9**
baz=315
IRM Iron Mountain 77.09 56 P **P 21 04 11.3 +1.2**
baz=310
I25A Rochford 77.13 43 P **P 21 04 10.9 +0.5**
baz=314
TRPA Tarpa 77.15 323⇑ *e*P **P 21 04 11.2 +1.0**
NIE Niedzica 77.20 325 *e*P **P 21 04 11.7 +1.2**
NIE *e*S **SKSac 21 14 22.1 +2.1**
NIE LMZ LR 21 40 55.4
comp=Z,3μm,18.8s
NIE Niedzica 77.20 325⇑ *e*P **P 21 04 11.7 +1.2**
NIE *e*S **SKSac 21 14 22.1 +2.1**
NIE MLR MLR
comp=Z,3μm,18.8s
W13A Hualapai Mount 77.28 55 *e*P **P 21 04 12.3 +0.9**
comp=Z,10nm,0.9s
BR101 Keskin Array S 77.32 312 *e*P **P 21 04 11.8 +0.4**
BR131 Keskin Array S 77.32 312 *e*P **P 21 04 11.8 +0.3**
BRTR Keskin Array B 77.32 312 P **P 21 04 11.8 +0.3**
comp=Z,14nm,1.0s,baz=58,slow=2.9,SNR=46
BRTR LR LR 21 43 41.8
comp=Z,1μm,19.9s,baz=46,slow=40
O20A White River Ci 77.33 48 *e*P **P 21 04 11.8 +0.2**
comp=Z,62nm,1.4s
O20A LR LR
comp=Z,900nm,22.0s
PGOR Pogoanele 77.34 319⇑ *i*P **P 21 04 13.4 +2.1**
AMRR Amara 77.37 318⇑ *i*P **P 21 04 13.4 +1.9**
U15A North Rim 77.40 53 *e*P **P 21 04 13.3 +1.1**
comp=Z,71nm,1.4s
U15A LR LR
comp=Z,1μm,22.0s
ISR Istrita 77.41 319⇑ *i*P **P 21 04 13.4 +1.6**
MLR Muntele Rosu 77.44 320⇑ *i*P **P 21 04 13.8 +1.7**
MLR Muntele Rosu 77.44 320 *e*P **P 21 04 12.6 +0.6**
MLR pmax pmax
comp=Z,170nm,1.9s
MLR Muntele Rosu 77.44 320 *e*P **P 21 04 12.6 +0.6**
comp=Z,173nm,1.9s
MLR LR LR
comp=Z,5μm,18.0s
A33A Warroad 77.56 35 P **P 21 04 12.6 +0.1**
baz=319
DRWC Darouich 77.59 308 *e*P **P 21 04 13.9 +1.0**
RAC Raciborz 77.59 327 *e*P **P 21 04 13.3 +0.7**
RAC MLR MLR
comp=Z,7μm,20.0s
CJR Cluj-Napoca 77.70 322⇑ *i*P **P 21 04 14.5 +1.2**
ANTO Ankara 77.70 312 *e*P **P 21 04 14.5 +1.0**
ANTO pmax pmax
comp=Z,58nm,0.9s
ANTO Ankara 77.70 312 *e*P **P 21 04 14.2 +0.7**
comp=Z,58nm,0.8s
ANTO LR LR
comp=Z,2μm,20.0s
SECR 77.71 319⇑ *i*P **P 21 04 15.3 +1.9**
BR231 Keskin MP Arra 77.73 312 *e*P **P 21 04 12.1 -1.7**
Y12C Blythe 77.75 56 *e*P **P 21 04 15.3 +1.6**
comp=Z,26nm,1.0s
Y12C LR LR
comp=Z,1μm,21.0s
LANS Liptovska Anna 77.76 326 *e*P **P 21 04 14.1 +0.5**
LANS *e* 21 04 29.6
LANS Liptovska Anna 77.76 326 *e*P **P 21 04 14.1 +0.5**
LANS *e* 21 04 29.5
KSP Ksiaz 77.78 328 *e*P **P 21 04 14.6 +0.9**
KSP *e*S **SKSac 21 14 27.8 +3.7**
KSP LMZ LR 21 41 17.5
comp=Z,5μm,19.5s
KSP Ksiaz 77.78 328⇑ *e*P **P 21 04 14.6 +0.9**
KSP *e*S **SKSac 21 14 27.8 +3.7**
KSP MLR MLR
comp=Z,5μm,19.5s
OKC Ostrava-Krasne 77.80 327⇑ *i*P **P 21 04 14.6 +0.8**
OKC *e*pP **pP 21 04 28.6 +2.9**
OKC *e*S **S 21 14 02.7 -0.6**
OKC *e*x x 21 14 32.4
OKC AMS AMS 21 41 10.0
comp=Z,5μm,18.7s
OKC Ostrava-Krasne 77.80 327⇑ *i*P **P 21 04 14.6 +0.8**
OKC *e* 21 04 28.6
OKC *e*S **S 21 14 02.7 -0.6**
OKC *e* 21 14 32.4
OKC MLR MLR
comp=Z,5μm,18.7s
KECS Kecovo 77.81 325 *e*P **P 21 04 14.3 +0.4**
KECS pmax pmax
comp=Z,7.0nm,1.0s
KECS Kecovo 77.81 325 *e*P **P 21 04 14.2 +0.4**
KECS *e*PP **PP 21 07 07.7 -1.4**
PV09 Paradox Valley 77.92 50 *e*P **P 21 04 15.7 +0.7**
VOIR 77.92 320⇓ *i*P **P 21 04 16.0 +1.3**
J26A Sides Ranch, S 77.96 43 P **P 21 04 16.0 +1.0**
baz=315
GLA Glamis 78.00 57 PFAKE 21 04 30.0 +15
GLA LR LR
comp=Z,2μm,22.0s
DRGR 78.06 322⇓ *i*P **P 21 04 17.2 +1.8**
MORC Moravsky Berou 78.10 327⇑ *i*P **P 21 04 16.5 +1.0**
MORC Moravsky Berou 78.10 327 *e*P **P 21 04 16.3 +0.8**
MORC pmax pmax
comp=Z,120nm,0.9s
MORC Moravsky Berou 78.10 327 *e*P **P 21 04 16.0 +0.5**
comp=Z,123nm,0.9s
MORC LR LR
comp=Z,22μm,19.0s
N23A Red Feather La 78.10 46 *e*P **P 21 04 18.2 +2.3**
comp=Z,59nm,1.2s
N23A LR LR
comp=Z,800nm,22.0s
DPC Dobruska-Polom 78.15 328⇑ *i*P **P 21 04 16.6 +0.8**
DPC *e*pP **pP 21 04 28.1 +0.4**
DPC *e*S **S 21 14 07.7 +0.5**
DPC AMS AMS 21 41 20.0
comp=Z,4μm,19.5s
DPC Dobruska-Polom 78.15 328⇑ *i*P **P 21 04 16.6 +0.8**
DPC *e* 21 04 28.1
DPC *e*S **S 21 14 07.7 +0.5**
DPC MLR MLR
comp=Z,4μm,19.5s
UPC Upice 78.16 328⇑ *i*P **P 21 04 16.6 +0.8**
UPC *e*pP **pP 21 04 29.9 +2.2**
UPC *e*S **S 21 14 07.3 +0.1**
UPC AMS AMS 21 41 20.0
comp=Z,5μm,17.4s
UPC Upice 78.16 328⇑ *i*P **P 21 04 16.6 +0.8**
UPC *e* 21 04 29.9
UPC *e*S **S 21 14 07.3 +0.1**
UPC MLR MLR
comp=Z,5μm,17.4s
ARR Arges 78.18 320⇓ *i*P **P 21 04 18.0 +2.0**
KRLC Kraliky 78.18 328⇑ *i*P **P 21 04 16.7 +0.8**
KRLC *e*pP **sP 21 04 31.1 -1.2**
KRLC Kraliky 78.18 328⇑ *i*P **P 21 04 16.7 +0.8**
KRLC *e* 21 04 31.1
PV05 Paradox Valley 78.22 50 *e*P **P 21 04 18.2 +1.6**
I28A Midland 78.45 41 P **P 21 04 18.5 +1.0**
baz=316
PSZ Piszkesteto 78.50 325⇓ *i*P **P 21 04 19.0 +1.2**
PSZ Piszkesteto 78.50 325⇑ *e*P **P 21 04 18.8 +1.0**
PSZ Piszkesteto 78.50 325 *e*P **P 21 04 18.2 +0.4**
PSZ pmax pmax
comp=Z,107nm,1.5s
PSZ MLR MLR
comp=Z,6μm,20.0s
PSZ Piszkesteto 78.50 325 *e*P **P 21 04 18.2 +0.4**
comp=Z,107nm,1.5s
PSZ LR LR
comp=Z,6μm,20.0s
VYHS Vyhne 78.53 326 *e*P **P 21 04 18.6 +0.7**
VYHS *e* 21 04 32.4
VYHS *e*S **S 21 14 17.4 +6.2**
VYHS pmax pmax
comp=Z,312nm,3.6s
VYHS MLR MLR
comp=Z,2μm,21.5s
VYHS Vyhne 78.53 326 *e*P **P 21 04 18.6 +0.7**
VYHS *e* 21 04 32.4
VYHS *e*S **S 21 14 17.4 +6.2**
VYHS *e*L L 21 41 24.6
LOT Lotru 78.54 321⇓ *i*P **P 21 04 20.6 +2.5**

WUAZ **Wupatki** 78.56 53 *e*P P 21 04 20.5 +2.0
comp=Z,40nm,1.0s
WUAZ LR LR
comp=Z,1μm,22.0s
Y14A **Wickenburg** 78.58 55 *e*P P 21 04 20.1 +1.6
comp=Z,100nm,1.1s
HUMR **Humele** 78.61 320⇓ *i*P P 21 04 19.1 +0.7
DEV **Deva** 78.63 322⇑ *i*P P 21 04 19.5 +1.0
BRG **Berggiesshubel** 78.69 330 *e*P P 21 04 18.9 +0.2
comp=Z,24nm,1.1s
BRG PP PP 21 07 11.0 -5.3
BRG S S 21 14 11.0 -1.8
BRG SS SS 21 19 04.0 -12
comp=N,2μm,15.7s
comp=E,2μm,20.6s
comp=Z,3μm,16.7s
BRG **Berggiesshubel** 78.69 330 *e*P P 21 04 18.9 +0.2
BRG S S 21 14 11.0 -1.8
BRG pmax pmax
comp=Z,24nm,1.1s
BRG MLR MLR
comp=N,2μm,15.7s
BRG MLR MLR
comp=E,2μm,20.6s
BRG MLR MLR
comp=Z,3μm,16.7s
CLL **Collm** 78.70 330⇑ *i*P P 21 04 18.6 -0.1
comp=Z,41nm,1.2s
CLL *e*Plp 21 04 20.0
CLL *i* 21 04 32.6
CLL *e*PPlp 21 07 17.0
CLL *i* 21 07 30.5
CLL *e*S S 21 14 09.0 -3.9
comp=N,100nm,15.9s
CLL *e*S S 21 14 09.0 -3.9
comp=E,1μm,36.7s
CLL *e*SP SPn 21 14 55.0 +2.2
CLL L L 21 41 00.0
comp=Z,2μm,21.6s
CLL Lmax 21 42 00.0
CLL **Collm** 78.70 330⇑ *i*P P 21 04 18.6 -0.1
CLL *i* 21 04 32.6
CLL *e*S S 21 14 09.0 -3.9
CLL pmax pmax
comp=Z,41nm,1.2s
CLL MLR MLR
comp=Z,2μm,21.6s
CLL **Collm** 78.70 330 *e*P P 21 04 18.5 -0.2
comp=Z,31nm,0.9s
CLL LR LR
comp=Z,2μm,22.0s
SMCO **Snowmass** 78.70 48 *e*P P 21 04 20.5 +1.0
comp=Z,62nm,1.4s
SMCO LR LR
comp=Z,800nm,20.0s
PVCC **Panska Ves** 78.71 329⇑ *i*P P 21 04 19.7 +0.9
PVCC *e*pP pP 21 04 32.6 +1.9
PVCC AMS AMS 21 42 00.0
comp=Z,5μm,18.1s
PVCC **Panska Ves** 78.71 329⇑ *i*P P 21 04 19.7 +0.9
PVCC *e* 21 04 32.6
PVCC MLR MLR
comp=Z,5μm,18.1s
B35A **Bob, Littlefor** 78.72 34 P P 21 04 19.1 +0.1
baz=320
ROOS **tl_alroos** 78.81 305 *e*P P 21 04 20.2 +0.4
VRAC **Vranov** 78.85 327⇑ *i*P P 21 04 20.7 +1.1
113A **Mohawk Valley,** 78.86 57 *e*P P 21 04 21.1 +1.2
comp=Z,28nm,1.3s
113A LR LR
comp=Z,2μm,22.0s
ISK **Istanbul-Kandi** 78.95 315 P P 21 04 34.6 +14
ISCO **Idaho Springs** 79.04 47 P P 21 04 22.2 +1.0
baz=314
ISCO **Idaho Springs** 79.04 47 *e*P P 21 04 23.2 +2.0
ISCO pmax pmax
comp=Z,92nm,1.5s
ISCO **Idaho Springs** 79.04 47 *e*P P 21 04 23.2 +2.0
comp=Z,92nm,1.5s
ISCO LR LR
comp=Z,1μm,22.0s
SZH **Strazhica** 79.04 318 P P 21 04 30.7 +10
GOPC **GO Pecny, Ondr** 79.11 329⇑ *e*P P 21 04 21.7 +0.7
GOPC *e*PP PP 21 07 19.9 0.0
GOPC *e*S S 21 14 17.6 +0.2
GOPC *e*XS ScS 21 14 40.5 +0.2
GOPC AMS AMS 21 42 00.0
comp=Z,5μm,19.3s
GOPC **GO Pecny, Ondr** 79.11 329 *e*P P 21 04 21.7 +0.7
GOPC *e* 21 07 19.9
GOPC *e*S S 21 14 17.6 +0.2
GOPC *e* 21 14 40.5
GOPC MLR MLR
comp=Z,5μm,19.3s
C35A **Jirik Farms, M** 79.12 35 P P 21 04 21.2 +0.1
baz=320
PRU **Pruhonice** 79.15 329⇑ *i*P P 21 04 22.1 +0.9
PRU *e*pP pP 21 04 32.1 -1.0
PRU *e*S S 21 14 16.8 -1.0
PRU *e*XS ScS 21 14 40.1 -0.5
PRU AMS AMS 21 42 00.0
comp=Z,5μm,18.0s
PRU **Pruhonice** 79.15 329⇑ *i*P P 21 04 22.1 +0.9
PRU *e* 21 04 32.1
PRU *e*S S 21 14 16.8 -1.0
PRU *e* 21 14 40.1
PRU MLR MLR
comp=Z,5μm,18.0s
MVCO **Mesa Verde** 79.15 50 P P 21 04 22.7 +0.9
baz=313
MVCO **Mesa Verde** 79.15 50 *e*P P 21 04 23.4 +1.6
comp=Z,37nm,1.0s
MVCO LR LR
comp=Z,700nm,19.0s
BUD **Budapest** 79.21 325⇑ *e*P P 21 04 22.2 +0.6
X16A **Lo Mia Camp, P** 79.24 54 *e*P P 21 04 24.3 +2.0
comp=Z,27nm,1.1s
TREC **Trest** 79.32 328⇑ *i*P P 21 04 22.9 +0.7
TREC *e*pP pP 21 04 32.7 -1.4
TREC AMS AMS 21 42 10.0
comp=Z,4μm,18.8s
TREC **Trest** 79.32 328⇑ *i*P P 21 04 22.9 +0.7
TREC *e* 21 04 32.7
TREC MLR MLR
comp=Z,4μm,18.8s
BZS **Buzias** 79.44 322⇑ *i*P P 21 04 23.2 +0.3
C36A **Pine Crest Far** 79.57 34 P P 21 04 23.4 -0.2
baz=320
ZALF **Zalf** 79.61 304 *e*P P 21 04 24.9 +0.8
EDRB **Edirne** 79.64 317 P P 21 04 24.8 +0.8
EDRB **Edirne** 79.64 317 P P 21 04 24.8 +0.8
CSKK **Cs˙ˇkako** 79.64 325⇑ *e*P P 21 04 24.7 +0.8
S22A **4UR Ranch, Cre** 79.76 49 *e*P P 21 04 27.9 +2.7
comp=Z,51nm,1.3s
S22A LR LR
comp=Z,900nm,21.0s
NKC **Novy Kostel** 79.77 330⇑ *i*P P 21 04 25.3 +0.7
NKC *e*S S 21 14 20.5 -3.9
NKC AMS AMS 21 40 30.0
comp=Z,3μm,23.7s
NKC **Novy Kostel** 79.77 330⇑ *i*P P 21 04 25.3 +0.7
NKC *e*S S 21 14 20.5 -3.9
NKC MLR MLR
comp=Z,3μm,23.7s
W18A **Petrified Fore** 79.82 52 PFAKE 21 04 40.0 +15
W18A LR LR
comp=Z,1μm,22.0s
C37A **Embarrass** 79.87 34 P P 21 04 25.2 0.0
baz=321
Q24A **Divide** 79.88 47 PFAKE 21 04 40.0 +14
Q24A LR LR
comp=Z,900nm,21.0s
EYMN **Ely** 80.00 33 P P 21 04 26.0 +0.1
baz=321
EYMN **Ely** 80.00 33 *e*P P 21 04 26.1 +0.1
comp=Z,34nm,1.3s
EYMN LR LR
comp=Z,700nm,21.0s
214A **Organ Pipe Nat** 80.01 57 P P 21 04 26.8 +0.6
baz=312
MDVR **Moldovita** 80.01 322⇑ *i*P P 21 04 26.4 +0.3
MPEP **Malo Peshtene** 80.08 319 P P 21 04 26.8 +0.4
X18A **Snowflake** 80.09 53 *e*P P 21 04 27.8 +0.9
comp=Z,53nm,1.4s
X18A LR LR
comp=Z,1μm,22.0s
SALA **Sala** 80.12 305 *e*P P 21 04 27.7 +0.6
SOP **Sopron** 80.13 326⇑ *e*P P 21 04 27.7 +1.1
OGNE **Ogallala** 80.18 44 PFAKE 21 04 40.0 +13
OGNE LR LR
comp=Z,600nm,19.0s
KHC **Kasperske Hory** 80.21 329⇑ *i*P P 21 04 27.7 +0.6
KHC *e*pP pP 21 04 39.1 +0.1
KHC *e*S S 21 14 28.0 -1.2
KHC *e*x x 21 14 55.3
KHC AMS AMS 21 42 30.0
comp=Z,6μm,19.0s
KHC **Kasperske Hory** 80.21 329 *e*P P 21 04 27.7 +0.6
KHC pmax pmax
comp=Z,13nm,1.0s
KHC **Kasperske Hory** 80.21 329 *e*P P 21 04 27.7 +0.6
comp=Z,13nm,1.0s
KHC LR LR
comp=Z,2μm,19.0s
CONA **Conrad Observa** 80.23 327 *i*P P 21 04 28.4 +1.2
comp=Z,38nm,1.1s,SNR=21
C38A **Sawbill Land.** 80.27 34 P P 21 04 27.1 -0.2
baz=322
E36A **McGregor** 80.34 35 P P 21 04 27.9 +0.1
baz=320
WTSB **Winterswijk** 80.37 334 *e*P P 21 04 27.9 +0.1
comp=Z,229nm,2.5s
WTSB *e*pP pP 21 04 42.0 +2.3
ESK **Eskdalemuir** 80.38 341 *e*P P 21 04 28.1 +0.3
ESK pmax pmax
comp=Z,26nm,0.9s
ESK MLR MLR
comp=Z,3μm,19.0s
ESK **Eskdalemuir** 80.38 341 *e*P P 21 04 28.1 +0.3
comp=Z,26nm,0.9s
ESK LR LR
comp=Z,3μm,19.0s
GEC2 **GERESS Array S** 80.39 328 *e*P P 21 04 28.1 0.0
GEC2 pmax pmax
comp=Z,78nm,1.8s
GEC2 MLR MLR
comp=Z,4μm,21.0s
GEC2 **GERESS Array S** 80.39 328 *e*P P 21 04 28.1 0.0
comp=Z,78nm,1.8s
GEC2 LR LR
comp=Z,4μm,21.0s
GERES **GERESS Array B** 80.39 328 P P 21 04 28.2 +0.1
comp=Z,7.1nm,0.8s,baz=34,slow=5.3,SNR=34
GERES LR LR 21 43 15.5
comp=Z,4μm,20.0s,baz=33,slow=38
ISP **Isparta** 80.40 312⇑ *i*P P 21 04 29.2 +0.9
ISP **Isparta** 80.40 312 P P 21 04 26.9 -1.4
ISP **Isparta** 80.40 312 *e*P P 21 04 26.9 -1.4
ISP MLR MLR
comp=Z,1μm,20.0s
ISP **Isparta** 80.40 312 *e*P P 21 04 26.9 -1.4
ISP LR LR
comp=Z,1μm,20.0s
GEA0 **GERESS Array S** 80.40 328 *e*P P 21 04 27.9 -0.2
PGB **Panagyurishte** 80.45 319 P P 21 04 29.0 +0.5
KDZ **Kurdzhali** 80.47 317 P P 21 04 29.7 +1.2
SDCO **Great Sand Dun** 80.52 48 *e*P P 21 04 31.3 +2.0
comp=Z,62nm,1.8s
SDCO LR LR
comp=Z,1μm,21.0s
TCHB **Talchebab** 80.63 305 *e*P P 21 04 30.4 +0.8
GRFO **Grafenberg** 80.68 330 *e*P P 21 04 30.0 +0.5
GRFO pmax pmax
comp=Z,51nm,1.0s
GRFO MLR MLR
comp=Z,2μm,22.0s
GRFO **Grafenberg** 80.68 330 *e*P P 21 04 30.0 +0.5
comp=Z,52nm,1.0s
GRFO LR LR
comp=Z,2μm,22.0s
ALN **Alexandroupoli** 80.68 317 P P 21 04 30.1 +0.4
ALN **Alexandroupoli** 80.68 317 P P 21 04 30.1 +0.4
ALN **Alexandroupoli** 80.68 317 P P 21 04 30.1 +0.4
CSS **Mathiatis** 80.71 308 P P 21 04 30.1 +0.1
CSS **Mathiatis** 80.71 308 *e*P P 21 04 29.8 -0.1
comp=Z,21nm,1.4s
CSS LR LR
comp=Z,300nm,22.0s
ENEZ **Enez** 80.74 316 P P 21 04 30.4 +0.4
ECSD **EROS Data Cent** 80.89 39 P P 21 04 30.6 -0.1
baz=319
ECSD **EROS Data Cent** 80.89 39 *e*P P 21 04 31.3 +0.5
comp=Z,107nm,1.9s
ECSD LR LR
comp=Z,1μm,19.0s
ARSA **Arzberg** 80.91 327 *i*P P 21 04 31.7 +0.9
comp=Z,20nm,1.2s,SNR=12
MOA **Molln** 80.95 328 *i*P P 21 04 31.7 +0.6
comp=Z,21nm,1.7s,SNR=7.4
KULA **Kula-Manisa** 80.96 313 P P 21 04 31.4 +0.1
KULA **Kula-Manisa** 80.96 313 P P 21 04 31.4 +0.1
BEHE **Becsehely** 80.98 325⇑ *e*P P 21 04 31.6 +0.5
TUC **Tucson** 81.06 55 P P 21 04 32.8 +0.8
baz=312
TUC **Tucson** 81.06 55 *e*P P 21 04 32.7 +0.8
TUC pmax pmax
comp=Z,27nm,1.3s
TUC MLR MLR
comp=Z,1μm,21.0s
TUC **Tucson** 81.06 55 *e*P P 21 04 32.7 +0.8
comp=Z,27nm,1.3s
TUC LR LR
comp=Z,1μm,21.0s
KSCO **Kaye Shedlock'** 81.24 46 *e*P P 21 04 34.3 +1.5
comp=Z,107nm,1.4s
KSCO LR LR
comp=Z,1μm,21.0s
SMTH **Samothraki Isl** 81.26 317 P P 21 04 32.5 -0.3
SMTH **Samothraki Isl** 81.26 317 *e*P P 21 04 32.5 -0.3
EZN **Ezine** 81.30 316 P P 21 04 33.2 +0.2
EZN **Ezine** 81.30 316 *e*P P 21 04 33.2 +0.2
EZN **Ezine** 81.30 316 *e*P P 21 04 33.2 +0.2
DIVS **Divibare** 81.34 322 P P 21 04 33.2 0.0
MMB **Musomiste** 81.38 318 P P 21 04 34.0 +0.6
KAVA **Kavala** 81.41 317 P P 21 04 34.2 +0.7
KAVA **Kavala** 81.41 317 *e*P P 21 04 34.2 +0.7
NVR **Nevrokopi** 81.49 318 P P 21 04 34.5 +0.5
NVR **Nevrokopi** 81.49 318 P P 21 04 34.5 +0.5
KKB **Krupnik** 81.50 319 P P 21 04 34.5 +0.5
SPMN **Marine on St.** 81.54 36 PFAKE 21 04 50.0 +16
SPMN LR LR
comp=Z,1μm,21.0s
PERS **Pernice** 81.56 326⇑ *e*P P 21 04 34.8 +0.5
PERS *e* 21 14 42.4
PERS *e* 21 15 08.9
SOKA **Soboth** 81.56 326 *i*P P 21 04 34.9 +0.6
comp=Z,52nm,1.1s,SNR=45
T25A **Trinidad** 81.57 48 P P 21 04 35.4 +0.7
baz=315
T25A **Trinidad** 81.57 48 *e*P P 21 04 35.8 +1.1
comp=Z,81nm,1.3s
T25A LR LR
comp=Z,700nm,19.0s
HGN **Heimansgroeve** 81.68 334 *e*P P 21 04 34.7 -0.1
comp=Z,249nm,2.6s
HGN *e*pP pP 21 04 48.6 +1.9
HGN *e*S S 21 14 36.0 -8.2
BEBN **Eben Emael** 81.74 334 P P 21 04 35.1 +0.1
PRK **Paraskevi** 81.75 315 P P 21 04 35.0 -0.3
PRK **Paraskevi** 81.75 315 P P 21 04 35.0 -0.3
PRK **Paraskevi** 81.75 315 P P 21 04 35.0 -0.3
MEM **Membach** 81.79 334 P P 21 04 35.9 +0.5
comp=Z,15nm,1.2s
SRS **Serrai** 81.80 318 P P 21 04 35.8 +0.2
SRS **Serrai** 81.80 318 *e*P P 21 04 35.8 +0.2
SRS **Serrai** 81.80 318 *e*P P 21 04 35.8 +0.2
LIA **Limnos Island** 81.86 316 P P 21 04 35.9 0.0
LIA **Limnos Island** 81.86 316 P P 21 04 35.9 0.0
BGNE **Belgrade** 81.86 41 *e*P P 21 04 34.6 -1.3
comp=Z,390nm,1.9s
BGNE LR LR
comp=Z,2μm,22.0s
LAZ **Ladron** 81.88 52 *e*P P 21 04 38.7 +2.3
OBKA **Obir** 81.90 327 *i*P P 21 04 36.4 +0.2
comp=Z,14nm,0.8s,SNR=9.8
ANMO **Albuquerque** 81.91 51 P P 21 04 37.7 +1.2
baz=314
ANMO **Albuquerque** 81.91 51 *c i*P P 21 04 38.7 +2.2
ANMO pmax pmax
comp=Z,18nm,1.7s
ANMO **Albuquerque** 81.91 51 *e*P P 21 04 37.7 +1.2
comp=Z,45nm,1.3s
ANMO LR LR
comp=Z,1μm,22.0s
SISC **Sisak** 81.93 325 P P 21 04 37.0 +0.8
KBA **Koelnbreinsper** 81.95 328 *i*P P 21 04 36.9 +0.4
comp=Z,22nm,0.8s,SNR=18
SIGR **SIGRI** 82.00 315 P P 21 04 36.8 +0.1
SIGR **SIGRI** 82.00 315 *e*P P 21 04 36.8 +0.1
SCHQ **Schefferville** 82.02 17 P P 21 04 36.7 +0.2
comp=Z,5.5nm,0.6s,baz=336,slow=7.2,SNR=5.4
SCHQ pP sP 21 04 51.7 -1.2
comp=Z,26nm,1.0s,baz=351,slow=6.4,SNR=11
SCHQ LR LR 21 42 42.9
comp=Z,2μm,21.9s,baz=342,slow=37
SCHQ **Schefferville** 82.02 17 *e*P P 21 04 36.1 -0.4
comp=Z,28nm,0.9s
SCHQ LR LR
comp=Z,2μm,22.0s
FETY **Fethiye** 82.05 312 P P 21 04 36.6 -0.4
FETY **Fethiye** 82.05 312 *e*P P 21 04 36.6 -0.4
KSL **Kastellorizon** 82.10 311 P P 21 04 36.9 -0.3
KSL **Kastellorizon** 82.10 311 *e*P P 21 04 36.9 -0.3
KNT **Kendrikon** 82.12 318 P P 21 04 37.6 +0.3
KNT **Kendrikon** 82.12 318 P P 21 04 37.6 +0.3
KNT **Kendrikon** 82.12 318 P P 21 04 37.6 +0.3
BLY **Banja Luka** 82.13 324⇓ *i*P P 21 04 38.7 +1.4
SOH **Sokhos** 82.14 318 P P 21 04 37.2 -0.2
SOH **Sokhos** 82.14 318 *e*P P 21 04 37.2 -0.2
SOH **Sokhos** 82.14 318 *e*P P 21 04 37.2 -0.2
YER **Yerkesik** 82.15 313 P P 21 04 37.6 0.0
YER **Yerkesik** 82.15 313 *e*P P 21 04 37.6 0.0
YER **Yerkesik** 82.15 313 *e*P P 21 04 37.6 0.0
VAY **Valandovo** 82.17 319 P P 21 04 38.0 +0.5
VAY **Valandovo** 82.17 319⇑ *i*P P 21 04 38.1 +0.5
VAY **Valandovo** 82.17 319 *e*P P 21 04 38.0 +0.5
VAY **Valandovo** 82.17 319 *e*P P 21 04 38.0 +0.5
OUR **Ouranopolis** 82.17 317 P P 21 04 37.8 +0.3
OUR **Ouranopolis** 82.17 317 *e*P P 21 04 37.8 +0.3
OUR **Ouranopolis** 82.17 317 *e*P P 21 04 37.8 +0.3
MYKA **Terra Mystica** 82.18 327 *i*P P 21 04 37.4 -0.2
comp=Z,45nm,1.7s,SNR=16
BCLA **Clavier** 82.19 334 P P 21 04 37.5 +0.1
comp=Z,27nm,2.2s
STU **Stuttgart** 82.19 331 *e*P P 21 04 37.5 0.0
STU pmax pmax
comp=Z,169nm,1.8s
STU MLR MLR
comp=Z,2μm,18.0s
STU **Stuttgart** 82.19 331 *e*P P 21 04 37.5 0.0
comp=Z,169nm,1.8s
STU LR LR
comp=Z,2μm,18.0s
Y22D **IRIS PASSCAL I** 82.23 52 PFAKE 21 04 50.0 +12
Y22D LR LR
comp=Z,2μm,22.0s
SKO **Skopje** 82.24 320 P P 21 04 38.9 +1.0
SKO **Skopje** 82.24 320⇑ *i*P P 21 04 39.0 +1.0
SKO **Skopje** 82.24 320 *e*P P 21 04 38.9 +1.0
SKO **Skopje** 82.24 320 *e*P P 21 04 38.9 +1.0
LJU **Ljubljana** 82.28 326⇑ *e*P P 21 04 38.0 -0.1
BNM **Barren Site** 82.35 51 *e*P P 21 04 40.2 +1.3
BOJS **Bojanci** 82.39 326⇑ *e*P P 21 04 38.6 0.0
comp=Z,584nm,3.8s
PLG **Polygyros** 82.42 318 P P 21 04 38.9 0.0
PLG **Polygyros** 82.42 318 P P 21 04 38.9 0.0
PLG **Polygyros** 82.42 318 P P 21 04 38.9 0.0
HORT **Hortiatis** 82.43 318 P P 21 04 38.6 -0.4
HORT **Hortiatis** 82.43 318 P P 21 04 38.6 -0.4
COWI **Conover** 82.44 33 *e*P P 21 04 40.2 +1.2
comp=Z,22nm,1.3s
COWI LR LR
comp=Z,800nm,20.0s
THE **Thessaloniki** 82.47 318 P P 21 04 38.7 -0.4
THE **Thessaloniki** 82.47 318 *e*P P 21 04 38.7 -0.4
THE **Thessaloniki** 82.47 318 *e*P P 21 04 38.7 -0.4
CHOS **Chios island** 82.48 315 P P 21 04 39.5 +0.2
CHOS **Chios island** 82.48 315 P P 21 04 39.5 +0.2
WTTA **Wattenberg** 82.49 329 *i*P P 21 04 39.9 +0.6
comp=Z,38nm,1.6s,SNR=8.5
GRG **Griva** 82.52 319 P P 21 04 39.5 +0.1
GRG **Griva** 82.52 319 *e*P P 21 04 39.5 +0.1
GRG **Griva** 82.52 319 *e*P P 21 04 39.5 +0.1
LANF **Langenberg** 82.53 332 *e*P P 21 04 39.3 0.0
WLF **Walferdange** 82.54 333 P P 21 04 40.4 +1.1
comp=Z,44nm,2.5s
WLF **Walferdange** 82.54 333 PFAKE 21 04 50.0 +11
WLF LR LR
comp=Z,4μm,20.0s
SMG **Samos** 82.54 314 P P 21 04 39.8 +0.2
SMG **Samos** 82.54 314 P P 21 04 39.8 +0.2
ABTA **Abfaltersbach** 82.55 328 *i*P P 21 04 39.2 -0.4
comp=Z,16nm,1.1s,SNR=7.9
JAVS **Javornik** 82.59 326⇑ *i*P P 21 04 39.2 -0.6
PAIG **Paliouri** 82.63 317 P P 21 04 39.7 -0.2
PAIG **Paliouri** 82.63 317 *e*P P 21 04 39.7 -0.2
PAIG **Paliouri** 82.63 317 *e*P P 21 04 39.7 -0.2
319A **Douglas** 82.63 55 *e*P P 21 04 40.5 +0.2
comp=Z,54nm,1.0s
319A LR LR
comp=Z,1μm,22.0s
MOTA **Moosalm** 82.63 329 *i*P P 21 04 40.2 +0.1
comp=Z,40nm,1.0s,SNR=26
RETA **Reutte** 82.65 329 *i*P P 21 04 40.7 +0.6
comp=Z,47nm,1.3s,SNR=19
DOU **Dourbes** 82.70 334 P P 21 04 41.0 +0.9
comp=Z,17nm,2.1s
BODT **Bodrum** 82.74 313 P P 21 04 40.9 +0.3
BODT **Bodrum** 82.74 313 *e*P P 21 04 40.9 +0.3
121A **Cookes Peak, D** 82.77 53 P P 21 04 42.1 +1.0
baz=314
TRI **Trieste** 82.87 327 *e*P P 21 04 39.8 -1.3
TRI pmax pmax
comp=Z,37nm,1.0s
TRI MLR MLR
comp=Z,4μm,19.0s
TRI **Trieste** 82.87 327 *e*P P 21 04 39.8 -1.3
comp=Z,37nm,1.0s
TRI LR LR
comp=Z,4μm,19.0s
BFO **Black Forest** 82.88 331 *i*P P 21 04 41.8 +0.6
BFO **Black Forest** 82.88 331 *e*P P 21 04 41.0 -0.2
comp=Z,107nm,1.7s
BFO LR LR
comp=Z,2μm,18.0s
UDBI **Udbina** 82.94 325 P P 21 04 40.8 -0.8
CBKS **Cedar Bluff** 82.94 44 PFAKE 21 04 50.0 +8.3
CBKS LR LR
comp=Z,600nm,21.0s
PDG **Podgorica** 82.96 321⇓ *i*P P 21 04 42.1 +0.5
PDG **Podgorica** 82.96 321 P P 21 04 41.8 +0.2
TTG **Podgorica** 82.96 321 P P 21 04 41.8 +0.2
TTG **Podgorica** 82.96 321 P P 21 04 41.8 +0.2
FETA **Feichten** 83.05 329 *i*P P 21 04 42.7 +0.5
comp=Z,27nm,1.2s,SNR=14
DSB **Dublin** 83.05 342 PFAKE 21 04 50.0 +8.1
DSB LR LR
comp=Z,2μm,20.0s
AOS **Alonnisos** 83.08 317 P P 21 04 42.2 -0.1
AOS **Alonnisos** 83.08 317 *e*P P 21 04 42.2 -0.1
LIT **Litokhoron** 83.11 318 P P 21 04 42.1 -0.4
LIT **Litokhoron** 83.11 318 *e*P P 21 04 42.1 -0.4
LIT **Litokhoron** 83.11 318 *e*P P 21 04 42.1 -0.4
DAVA **Damuels** 83.16 330 *i*P P 21 04 43.1 +0.3
comp=Z,34nm,1.3s,SNR=9.8
FNA **Florina** 83.17 319 P P 21 04 42.5 -0.3
FNA **Florina** 83.17 319 P P 21 04 42.5 -0.3
FNA **Florina** 83.17 319 P P 21 04 42.5 -0.3
OHR **Ohrid** 83.21 320⇑ *i*P P 21 04 43.0 0.0
XOR **Xorichti** 83.29 317 P P 21 04 42.9 -0.6
XOR **Xorichti** 83.29 317 P P 21 04 42.9 -0.6
SKIA **Skiathos** 83.30 317 P P 21 04 43.1 -0.4
NVLJ **Novalja** 83.30 325 P P 21 04 41.8 -1.5
NEO **Neokhori** 83.32 317 P P 21 04 43.0 -0.6
NEO **Neokhori** 83.32 317 P P 21 04 43.0 -0.6
KZN **Kozani** 83.33 319 P P 21 04 43.1 -0.6
KZN **Kozani** 83.33 319 P P 21 04 43.1 -0.6
KZN **Kozani** 83.33 319 P P 21 04 43.1 -0.6
STON **Ston** 83.35 323 P P 21 04 42.8 -0.8
FYTO **Fytoko, Volos** 83.39 317 P P 21 04 43.7 -0.2
FYTO **Fytoko, Volos** 83.39 317 *e*P P 21 04 43.7 -0.2
ECH **Echery** 83.40 332⇑ *e*P P 21 04 43.9 0.0
TIR **Tirane** 83.49 320⇓ *i*P P 21 04 45.7 +1.3

TIR Tirane 83.49 320 *eP* **P 21 04 46.3 +1.9**
TIR pmax pmax
comp=Z,59nm,0.8s
TIR Tirane 83.49 320 *eP* **P 21 04 44.5 +0.1**
comp=Z,59nm,0.8s
TIR LR LR
comp=Z,4µm,22.0s
FUORN Ofenpass-Fuorn 83.56 329 *eP* **P 21 04 44.6 -0.4**
comp=Z,247nm,1.7s
FUORN LR LR
comp=Z,3µm,18.0s
NEST Nestorio 83.61 319 P **P 21 04 45.1 0.0**
SMIA Simia 83.64 317 P **P 21 04 44.8 -0.5**
MOF Molkenrain 83.72 332⇑ *eP* **P 21 04 45.6 0.0**
APE Apeiranthos 83.72 314⇑ *iP* **P 21 04 44.7 -1.0**
THL Klokotos Trika 83.75 318 P **P 21 04 44.5 -1.3**
KPRO Kipourio 83.80 319 P **P 21 04 45.3 -0.8**
Q33A Connelly Farm, 83.81 43 P **P 21 04 46.4 +0.3**
baz=318
SCIA State Center 83.91 38 PFAKE 21 05 00.0 +13
SCIA LR LR
comp=Z,1µm,21.0s
PTL Penteli 83.91 316 P **P 21 04 45.5 -1.1**
PTL Penteli 83.91 316 *eP* **P 21 04 45.5 -1.1**
KARP Karpathos 83.91 312 P **P 21 04 47.0 +0.3**
KARP Karpathos 83.91 312 *eP* **P 21 04 44.8 -1.9**
comp=Z,50nm,1.3s
KARP LR LR
comp=Z,600nm,19.0s
LKR Lokris 83.92 317 P **P 21 04 45.7 -1.0**
LKR Lokris 83.92 317 P **P 21 04 45.7 -1.0**
AGG Agios Georgios 84.00 317 P **P 21 04 45.8 -1.3**
AGG Agios Georgios 84.00 317 *eP* **P 21 04 46.4 -0.7**
AGG Agios Georgios 84.00 317 *eP* **P 21 04 45.8 -1.3**
AGG LR LR
comp=Z,10µm,18.0s
ATHU Athens Univers 84.01 316 P **P 21 04 45.9 -1.2**
ATHU Athens Univers 84.01 316 *eP* **P 21 04 45.9 -1.2**
TUE Stuetta 84.04 330 *eP* **P 21 04 47.1 -0.3**
comp=Z,40nm,1.1s
TUE LR LR
comp=Z,3µm,19.0s
ATH Athens Observa 84.05 316 P **P 21 04 46.0 -1.3**
ATH Athens Observa 84.05 316 P **P 21 04 46.0 -1.3**
ATH Athens Observa 84.05 316 P **P 21 04 46.0 -1.3**
VLY Voula,Athens 84.09 316 P **P 21 04 46.3 -1.2**
VLY Voula,Athens 84.09 316 *eP* **P 21 04 46.3 -1.2**
VILL Villia 84.12 316 P **P 21 04 46.4 -1.3**
LOMF Lomont 84.25 331 *eP* **P 21 04 48.6 +0.3**
SANT Santorini 84.27 314 PFAKE 21 05 00.0 +11
SANT LR LR
comp=Z,2µm,19.0s
JAN Janina 84.28 319 P **P 21 04 48.7 +0.2**
JAN Janina 84.28 319 P **P 21 04 48.7 +0.2**
JAN Janina 84.28 319 P **P 21 04 48.7 +0.2**
Q34A Chapman 84.33 42 P **P 21 04 49.0 +0.2**
baz=319
EVR Evrytania 84.35 318 P **P 21 04 48.3 -0.6**
EVR Evrytania 84.35 318 P **P 21 04 48.3 -0.6**
DSF Desfina 84.35 317 P **P 21 04 47.4 -1.5**
DSF Desfina 84.35 317 *eP* **P 21 04 47.4 -1.5**
KSU1 Kansas State U 84.37 42 *eP* **P 21 04 50.5 +1.6**
KSU1 LR LR
comp=Z,2µm,22.0s
LTK Loutraki 84.41 316 P **P 21 04 47.5 -1.7**
LTK Loutraki 84.41 316 *eP* **P 21 04 47.5 -1.7**
O36A Bolckow 84.42 40 P **P 21 04 49.1 -0.1**
baz=320
JFWS Jewell Farm 84.49 36 PFAKE 21 05 00.0 +11
JFWS LR LR
comp=Z,1µm,19.0s
ANX Ano Chora 84.53 317 P **P 21 04 49.3 -0.6**
DSL Palaion Diasel 84.55 318 P **P 21 04 49.7 -0.2**
DSL Palaion Diasel 84.55 318 *eP* **P 21 04 49.7 -0.2**
THAL Thalero 84.56 316 P **P 21 04 48.2 -1.7**
KALE Kalithea 84.57 317 P **P 21 04 49.0 -1.0**
KALE Kalithea 84.57 317 *eP* **P 21 04 49.0 -1.0**
T32A Huddler Ranch, 84.58 45 P **P 21 04 50.7 +0.6**
baz=318
SGD Sagiada 84.62 319 P **P 21 04 50.1 -0.1**
IGT Igoumenitsa 84.63 319 P **P 21 04 50.0 -0.3**
IGT Igoumenitsa 84.63 319 *eP* **P 21 04 50.0 -0.3**
IGT Igoumenitsa 84.63 319 *eP* **P 21 04 50.0 -0.3**
AMTX Amarillo 84.72 48 PFAKE 21 05 00.0 +9.1
AMTX LR LR
comp=Z,700nm,20.0s
MSTX Muleshoe 84.75 49 *eP* **P 21 04 51.7 +0.6**
comp=Z,47nm,1.1s
MSTX LR LR
comp=Z,700nm,20.0s
PMOR Pomariorio Ree 84.75 115 *eT* T 22 38 26.0
comp=Z,74nm,0.2s
ZKR Zakros 84.76 312 P **P 21 04 51.0 0.0**
ZKR Zakros 84.76 312 *eP* **P 21 04 51.0 0.0**
LAKA Lakka 84.76 317 P **P 21 04 50.5 -0.5**
LAKA Lakka 84.76 317 *eP* **P 21 04 50.5 -0.5**
KEK Kerkira 84.77 319 P **P 21 04 50.8 -0.1**
KEK Kerkira 84.77 319 P **P 21 04 50.8 -0.1**
MNTX Cornudas Mount 84.81 52 P **P 21 04 52.1 +0.8**
baz=315
MNTX Cornudas Mount 84.81 52 *eP* **P 21 04 52.5 +1.2**
comp=Z,41nm,1.3s
KLV Kalavryta, Ach 84.82 317 P **P 21 04 50.2 -1.1**
KLV Kalavryta, Ach 84.82 317 *eP* **P 21 04 50.2 -1.1**
Q35A Mercer Eighty, 84.84 42 P **P 21 04 51.4 +0.1**
baz=319
PDO Prodromos 84.91 318 P **P 21 04 51.3 -0.3**
SENIN Lac Senin/Sane 84.91 331 *eP* **P 21 04 51.6 -0.2**
comp=Z,199nm,2.0s
SENIN LR LR
comp=Z,2µm,19.0s
DYA Yadsworthy 84.98 339 PFAKE 21 05 00.0 +8.2
DYA LR LR
comp=Z,2µm,20.0s
LKD2 Lefkada island 85.03 318 P **P 21 04 51.9 -0.4**
LKD2 Lefkada island 85.03 318 P **P 21 04 51.9 -0.4**
DRO Drossia 85.12 317 P **P 21 04 52.6 -0.1**
LAST Lasithi 85.14 313⇑ *iP* **P 21 04 53.5 +0.5**
LAST Lasithi 85.14 313 P **P 21 04 53.2 +0.2**
LAST Lasithi 85.14 313 *eP* **P 21 04 53.3 +0.3**
comp=Z,99nm,0.9s
LAST LR LR
comp=Z,2µm,19.0s
RLS Riolos of Patr 85.17 317 P **P 21 04 52.9 0.0**
RLS Riolos of Patr 85.17 317 P **P 21 04 52.9 0.0**
VLX Vlachokerasia 85.20 316 P **P 21 04 52.3 -1.0**
VLX Vlachokerasia 85.20 316 *eP* **P 21 04 52.3 -1.0**
IDI Anoyia 85.38 313 PFAKE 21 05 10.0 +16
IDI LR LR
comp=Z,1µm,21.0s
PPT Papeete 85.38 117 LR LR 21 35 47.3
comp=Z,3µm,21.8s,baz=285,slow=30
PPT2 Papeete2 85.39 117 *eS* **S 21 15 19.9 -2.7**
comp=Z,1µm,26.5s
PPT2 *eSS* **SS 21 20 59.2 +0.5**
comp=Z,472nm,26.2s
PPT2 Papeete2 85.39 117 *eLR* LR 21 31 52.4
comp=Z,7µm,22.5s,baz=316
PPT2 Papeete2 85.39 117 *eT* T 22 39 12.9
comp=Z,54nm,0.3s
AMT Artemida-Makis 85.44 317 P **P 21 04 53.1 -1.2**
PAE Paea 85.44 118 *eT* T 22 39 15.7
comp=Z,6.1nm,0.3s
P38A Dawn 85.51 40 P **P 21 04 55.1 +0.5**
baz=321
TIAR Tiarei 85.53 117 *eT* T 22 39 22.2
comp=Z,12nm,0.2s
VLC Villacollemand 85.53 328 PFAKE 21 05 10.0 +15
VLC LR LR
comp=Z,2µm,21.0s
VLS Valsamata 85.53 318 P **P 21 04 54.3 -0.5**
VLS Valsamata 85.53 318 P **P 21 04 54.3 -0.5**
VLS Valsamata 85.53 318 P **P 21 04 54.3 -0.5**
MATE Matera 85.55 322⇑ *iP* **P 21 04 55.0 +0.2**
ITM Ithomi 85.58 316 P **P 21 04 54.0 -1.1**
ITM Ithomi 85.58 316 P **P 21 04 54.0 -1.1**
SIVA Sivas 85.62 313⇓ *iP* **P 21 04 56.5 +1.3**
SIVA Sivas 85.62 313 P **P 21 04 55.0 -0.2**
SIVA Sivas 85.62 313 P **P 21 04 55.0 -0.2**
T34A McClaskey Farm 85.62 44 P **P 21 04 56.3 +1.0**
baz=319
AQU L'Aquila 85.71 325 *eP* **P 21 04 56.3 +0.6**
AQU pmax pmax
comp=Z,200nm,1.8s
AQU L'Aquila 85.71 325 *eP* **P 21 04 56.2 +0.6**
comp=Z,202nm,1.8s
AQU LR LR
comp=Z,4µm,19.0s
TVO Taravao 85.75 117 *eT* T 22 39 39.0
comp=Z,2.0nm,0.3s
IMMV Iera Moni Meta 85.75 314 P **P 21 04 55.8 -0.1**
ANKY Antikythira Is 85.83 315 P **P 21 04 55.9 -0.4**
ANKY Antikythira Is 85.83 315 *eP* **P 21 04 55.9 -0.4**
R37A Teagarden Farm 85.87 42 P **P 21 04 56.9 +0.5**
baz=320
U34A Anderson Ranch 85.87 44 *eP* **P 21 04 58.2 +1.7**
comp=Z,314nm,1.9s
U34A LR LR
comp=Z,600nm,20.0s
PYL PYLOS 85.89 316 P **P 21 04 55.1 -1.5**
PYL PYLOS 85.89 316 *eP* **P 21 04 55.1 -1.5**
W32A Sentinel 85.92 46 P **P 21 04 57.8 +1.0**
baz=318
O40A La Belle 85.93 39 P **P 21 04 57.5 +0.7**
baz=322
T35A Sooner Cattle 86.06 43 P **P 21 04 57.7 +0.3**
baz=319
GVD Gavdhos 86.15 313 P **P 21 04 57.5 -0.4**
GVD Gavdhos 86.15 313 *eP* **P 21 04 57.5 -0.4**
TAOE Nuku Hiva Isla 86.19 105 *eS* **S 21 15 32.4 +1.7**
comp=Z,566nm,24.7s
TAOE Nuku Hiva Isla 86.19 105 *eLR* LR 21 32 09.2
comp=Z,5µm,21.2s,baz=312
TAOE Nuku Hiva Isla 86.19 105 *eT* T 22 40 18.1
comp=Z,158nm,0.3s
BNI Bardonecchia 86.25 330 PFAKE 21 05 10.0 +12
BNI LR LR
comp=Z,3µm,21.0s
S37A Fort Scott 86.29 42 P **P 21 04 59.0 +0.5**
baz=320
GDM Grand'Maison 86.33 331⇑ *eP* **P 21 04 59.3 +0.5**
V34A Guthrie 86.33 45 *eP* **P 21 05 00.4 +1.6**
comp=Z,84nm,1.4s
V34A LR LR
comp=Z,600nm,20.0s
U35A Pawnee 86.35 44 P **P 21 04 59.8 +0.9**
baz=319
R38A Fenwick Farm, 86.43 41 P **P 21 04 58.9 -0.3**
baz=321
GRN Grenoble 86.44 331⇑ *eP* **P 21 05 00.1 +0.9**
WMOK Wichita Mounta 86.46 46 *eP* **P 21 05 01.8 +2.3**
WMOK pmax pmax
comp=Z,98nm,2.0s
WMOK MLR MLR
comp=Z,700nm,21.0s
WMOK Wichita Mounta 86.46 46 *eP* **P 21 05 01.8 +2.3**
comp=Z,98nm,2.0s
WMOK LR LR
comp=Z,700nm,21.0s
CUC Castrocucco 86.48 322 *eP* **P 21 04 57.1 -2.4**
comp=Z,25nm,1.5s
CUC LR LR
comp=Z,3µm,20.0s
PLDF La Plantade 86.58 333⇑ *eP* **P 21 05 00.6 +0.7**
MEH Mehetia 86.62 117 *eT* T 22 40 44.5
comp=Z,190nm,0.2s
W34A Bridge Creek, 86.64 45 *eP* **P 21 05 02.0 +1.7**
comp=Z,161nm,1.8s
W34A LR LR
comp=Z,800nm,19.0s
TIP Timpagrande 86.67 321⇓ *iP* **P 21 05 01.5 +1.0**
TIP Timpagrande 86.67 321 P **P 21 05 00.4 -0.1**
TIP Timpagrande 86.67 321 *eP* **P 21 05 00.4 -0.1**
TIP LR LR
comp=Z,4µm,22.0s
AGO Saint Agoulin 86.68 333⇑ *eP* **P 21 05 01.1 +0.8**
DAMY Dhamar 86.72 286 *eP* **P 21 05 02.1 +0.7**
comp=Z,58nm,1.2s
DAMY LR LR
comp=Z,2µm,20.0s
R39A Chumby, Stover 86.77 40 P **P 21 05 01.0 +0.1**
baz=321
HDIL Hopedale 86.80 37 PFAKE 21 05 10.0 +9.0
HDIL LR LR
comp=Z,1µm,20.0s
SSB Saint Sauveur 86.85 332 *eP* **P 21 05 01.5 +0.3**
SSB pmax pmax
comp=Z,93nm,1.8s
SSB MLR MLR
comp=Z,2µm,20.0s
SSB Saint Sauveur 86.85 332 *eP* **P 21 05 01.5 +0.3**
comp=Z,92nm,1.8s
SSB LR LR
comp=Z,2µm,20.0s
PYM Petit Puy Mans 86.99 333⇑ *eP* **P 21 05 02.7 +0.8**
S39A Bolivar 87.11 41 P **P 21 05 02.5 0.0**
baz=321
T38A Diamond 87.12 42 P **P 21 05 03.1 +0.5**
baz=320
R40A Maddies Statio 87.17 40 P **P 21 05 02.5 -0.3**
baz=322
U37A Salina 87.18 43 P **P 21 05 02.5 -0.4**
baz=320
TUL1 Leonard 87.20 44 P **P 21 05 04.0 +1.0**
baz=320
TUL1 Leonard 87.20 44 *eP* **P 21 05 03.4 +0.4**
comp=Z,132nm,1.9s
TUL1 LR LR
comp=Z,1µm,20.0s
LBL Lubilhac 87.35 332 *eP* **P 21 05 05.4 +1.7**
OXZ Oxford 87.39 159 PFAKE 21 05 20.0 +17
OXZ LR LR
comp=Z,4µm,19.0s
SLBS Sierra La Lagu 87.43 61 *eP* **P 21 05 03.3 -1.1**
comp=Z,69nm,1.8s
SADO Sadowa 87.47 28 PFAKE 21 05 20.0 +16
SADO LR LR
comp=Z,2µm,22.0s
TX31 Lajitas Ar. Si 87.52 53 *eP* **P 21 05 05.0 +0.2**
LTX Lajitas 87.53 53 *eP* **P 21 05 05.2 +0.4**
LTX Lajitas 87.53 53 *eP* **P 21 05 05.2 +0.4**
LTX *e*PKKPbc **PKKPbc 21 22 52.0 +0.1**
TXAR Lajitas Array 87.53 53 P **P 21 05 05.2 +0.4**
comp=Z,1.0nm,0.5s,baz=300,slow=3.6,SNR=14
TXAR pP **pP 21 05 19.9 +3.0**
comp=Z,11nm,1.0s,baz=290,slow=3.1,SNR=18
TXAR PKKPbc **PKKPbc 21 22 52.0 +0.1**
comp=Z,0.3nm,0.6s,baz=116,slow=4.1,SNR=4.3
ABTX Abilene, Hawle 87.53 48 *eP* **P 21 05 05.4 +0.7**
comp=Z,55nm,1.3s
ABTX LR LR
comp=Z,800nm,21.0s
S40A Lebanon 87.59 41 P **P 21 05 04.9 0.0**
baz=321
TRQ Mont Tremblant 87.77 25 *eP* **P 21 05 05.3 -0.3**
CEL Celeste 87.81 321 PFAKE 21 05 20.0 +14
CEL LR LR
comp=Z,3µm,20.0s
AAM Ann Arbor 87.82 32 PFAKE 21 05 20.0 +14
AAM LR LR
comp=Z,900nm,20.0s
LMQ La Malbaie 87.84 22 PFAKE 21 05 20.0 +14
LMQ LR LR
comp=Z,1µm,20.0s
HHAR Hobbs 87.88 42 *eP* **P 21 05 06.3 0.0**
comp=Z,28nm,1.1s
HHAR LR LR
comp=Z,2µm,22.0s
SLM Saint Louis 87.88 39 PFAKE 21 05 20.0 +14
SLM LR LR
comp=Z,1µm,21.0s
SFIN Lafayette 87.93 36 PFAKE 21 05 20.0 +14
SFIN LR LR
comp=Z,1µm,22.0s
V38A Canehill 87.96 43 P **P 21 05 06.9 +0.3**
baz=320
HPIG 87.97 56 *eP* **P 21 05 06.7 -0.4**
comp=Z,20nm,1.0s
HPIG *e*PcP **PcP 21 05 12.5 +3.6**
U39A Green Forest 88.04 42 P **P 21 05 07.2 +0.1**
baz=321
U40A Yellville 88.38 42 P **P 21 05 09.1 +0.4**
baz=321
OLIL Olney 88.81 37 PFAKE 21 05 20.0 +9.4
OLIL LR LR
comp=Z,900nm,21.0s
333A Richland Sprin 88.86 49 P **P 21 05 10.8 -0.2**
baz=318
JCT Junction City 89.01 50 *eP* **P 21 05 11.8 +0.1**
JCT *e*PP **pP 21 05 19.2 -4.7**
JCT Junction City 89.01 50 *eP* **P 21 05 11.8 +0.1**
JCT LR LR
comp=Z,1µm,21.0s
SIUC Southern Illin 89.10 38 PFAKE 21 05 20.0 +8.0
SIUC LR LR
comp=Z,1µm,22.0s
DRLN Deer Lake 89.14 13 PFAKE 21 05 20.0 +8.1
DRLN LR LR
comp=Z,2µm,20.0s
X39A Fountain Ranch 89.15 44 P **P 21 05 13.1 +0.7**
baz=320
BLO Bloomington 89.17 36 PFAKE 21 05 20.0 +7.7
BLO LR LR
comp=Z,1µm,22.0s
LONY Lake Ozonia 89.18 25 *eP* **P 21 05 13.1 +0.8**
comp=Z,12nm,0.9s
WHTX Lake Whitney, 89.24 47 PFAKE 21 05 30.0 +17
WHTX LR LR
comp=Z,900nm,19.0s
PBMO Poplar Bluff 89.26 40 PFAKE 21 05 30.0 +17
PBMO LR LR
comp=Z,800nm,22.0s
FRNY Flat Rock 89.31 25 PFAKE 21 05 30.0 +17
FRNY LR LR
comp=Z,1µm,20.0s
MIAR Mount Ida 89.41 43 P **P 21 05 14.1 +0.7**
baz=321
MIAR Mount Ida 89.41 43 *eP* **P 21 05 14.4 +0.9**
MIAR pmax pmax
comp=Z,200nm,1.9s
MIAR Mount Ida 89.41 43 *eP* **P 21 05 14.4 +0.9**
comp=Z,203nm,1.9s
MIAR LR LR
comp=Z,2µm,22.0s
ERPA Erie 89.43 30 *eP* **P 21 05 14.3 +0.9**
comp=Z,50nm,1.0s
ERPA LR LR
comp=Z,1µm,22.0s
X201 Greenbrier Sit 89.46 42 *eP* **P 21 05 14.0 +0.2**
comp=Z,65nm,1.3s
X201 LR LR
comp=Z,2µm,22.0s
X301 Greenbrier Sit 89.48 42 *eP* **P 21 05 15.8 +2.0**
comp=Z,37nm,1.1s
X301 LR LR
comp=Z,2µm,22.0s
WHAR Wooly Hollow 89.50 42 *eP* **P 21 05 14.2 +0.3**
comp=Z,194nm,1.8s
WHAR LR LR
comp=Z,1µm,22.0s
W41A Tony Mavity, V 89.61 42 P **P 21 05 14.4 0.0**
baz=322
USIN University of 89.63 37 PFAKE 21 05 30.0 +16
USIN LR LR
comp=Z,800nm,20.0s
CLTB Caltabellotta 89.63 322 PFAKE 21 05 30.0 +15
CLTB LR LR
comp=Z,4µm,18.0s
ALLY Alegheny Colle 89.77 30 PFAKE 21 05 30.0 +15
ALLY LR LR
comp=Z,1µm,21.0s
VSL Villasalto 89.80 326 PFAKE 21 05 30.0 +15
VSL LR LR
comp=Z,3µm,18.0s
ACSO Alum Creek Sta 89.83 33 PFAKE 21 05 30.0 +15
ACSO LR LR
comp=Z,1µm,20.0s
UALR University of 89.87 42 *eP* **P 21 05 16.5 +0.8**
comp=Z,24nm,0.8s
UALR LR LR
comp=Z,2µm,21.0s
PVMO Portageville 89.90 40 PFAKE 21 05 30.0 +14
PVMO LR LR
comp=Z,800nm,21.0s
WCI Wyandotte Cave 90.04 36 PFAKE 21 05 30.0 +14
WCI LR LR
comp=Z,1µm,20.0s
534A Blanco 90.11 49 P **P 21 05 17.6 +0.7**
baz=318
633A Saathoff Ranch 90.13 50 P **P 21 05 17.8 +0.8**
baz=318
PKME Peaks-Kenny Pk 90.22 22 *eP* **P 21 05 18.6 +1.5**
comp=Z,35nm,1.0s
WLAR White Oak Lake 90.31 43 PFAKE 21 05 30.0 +12
WLAR LR LR
comp=Z,2µm,21.0s
WDD Wied Dalam 90.37 320 PFAKE 21 05 30.0 +12
WDD LR LR
comp=Z,2µm,21.0s
ACCN Adirondack Com 90.58 25 *eP* **P 21 05 17.9 -1.0**
comp=Z,24nm,1.1s
ACCN LR LR
comp=Z,1µm,21.0s
HNH Hanover 90.74 24 PFAKE 21 05 30.0 +10
HNH LR LR
comp=Z,2µm,22.0s
WVL Waterville 90.75 22 PFAKE 21 05 30.0 +10
WVL LR LR
comp=Z,2µm,19.0s
MET Memphis--Engin 90.81 40 PFAKE 21 05 30.0 +10
MET LR LR
comp=Z,700nm,21.0s
LMN Caledonia Moun 90.86 19 PFAKE 21 05 30.0 +10
LMN LR LR
comp=Z,1µm,20.0s
NATX Nacogdoches 90.96 46 PFAKE 21 05 30.0 +9.2
NATX LR LR
comp=Z,1µm,22.0s
WVT Waverly 91.03 39 PFAKE 21 05 30.0 +9.0
WVT LR LR
comp=Z,1µm,20.0s
FFD Franklin Falls 91.15 24 PFAKE 21 05 30.0 +8.6
FFD LR LR
comp=Z,2µm,22.0s
TRY Troy 91.16 26 PFAKE 21 05 30.0 +8.5
TRY LR LR
comp=Z,2µm,22.0s
EMMW East Machias 91.24 21 PFAKE 21 05 30.0 +8.2
EMMW LR LR
comp=Z,2µm,20.0s
KSPA Keystone Colle 91.48 28 PFAKE 21 05 40.0 +17
KSPA LR LR
comp=Z,1µm,21.0s
SSPA Standing Stone 91.51 30 PFAKE 21 05 40.0 +17
SSPA LR LR
comp=Z,1µm,21.0s
OXF Oxford 91.56 41 PFAKE 21 05 40.0 +16
OXF LR LR
comp=Z,800nm,21.0s
MCWV Mont Chateau 91.59 31 PFAKE 21 05 40.0 +16
MCWV LR LR
comp=Z,600nm,19.0s
HKT Hockley 91.69 48 *eP* **P 21 05 24.9 +0.8**
HKT pmax pmax
comp=Z,34nm,1.6s
HKT Hockley 91.69 48 *eP* **P 21 05 24.9 +0.8**
comp=Z,34nm,1.6s
HKT LR LR
comp=Z,1µm,19.0s
QUA2 Belchertown 92.00 25 PFAKE 21 05 40.0 +15
QUA2 LR LR
comp=Z,1µm,22.0s
HRV Adam Dziewonsk 92.05 24 PFAKE 21 05 40.0 +14
HRV LR LR
comp=Z,1µm,22.0s
WES Weston 92.23 24 PFAKE 21 05 40.0 +14
WES LR LR
comp=Z,2µm,22.0s
ODNJ Ogdensburg 92.31 27 PFAKE 21 05 40.0 +13
ODNJ LR LR
comp=Z,900nm,20.0s
BRYW Bryant College 92.58 25 PFAKE 21 05 40.0 +12
BRYW LR LR
comp=Z,3µm,22.0s
PAL Palisades 92.62 27 PFAKE 21 05 40.0 +12
PAL LR LR
comp=Z,1µm,20.0s
TZTN Tazewell 92.66 35 PFAKE 21 05 40.0 +11
TZTN LR LR
comp=Z,1µm,21.0s
YLE Yale 92.67 26 PFAKE 21 05 40.0 +12
YLE LR LR
comp=Z,2µm,20.0s
SWET Sewanee 92.67 38 PFAKE 21 05 40.0 +11
SWET LR LR
comp=Z,300nm,19.0s

BRNJ Basking Ridge 92.68 27 PFAKE 21 05 40.0 +11
BRNJ LR LR
comp=Z,1μm,21.0s
VBMS Vicksburg 92.82 43 PFAKE 21 05 40.0 +11
VBMS LR LR
comp=Z,1μm,22.0s
ZAIG Zacatecas 92.90 57 *e*P **P 21 05 30.9 +0.6**
comp=Z,9.3nm,1.0s
ZAIG LR LR
comp=Z,1μm,20.0s
KEST Kesra 92.93 323 P **P 21 05 30.5 +0.6**
comp=Z,4.6nm,0.9s,baz=341,slow=5.7,SNR=4.2
KEST LR LR 21 53 36.5
comp=Z,3μm,18.1s,baz=342,slow=40
CPCT Cooper Cave 93.13 37 PFAKE 21 05 40.0 +9.2
CPCT LR LR
comp=Z,600nm,20.0s
TKL Tuckaleechee C 93.30 36 PFAKE 21 05 40.0 +8.4
TKL LR LR
comp=Z,900nm,21.0s
BLA Blacksburg 93.45 33 PFAKE 21 05 40.0 +7.8
BLA LR LR
comp=Z,1μm,20.0s
CBN Corbin Frederi 93.82 30 PFAKE 21 05 50.0 +16
CBN LR LR
comp=Z,900nm,22.0s
LRAL Lakeview Retre 93.94 40 PFAKE 21 05 50.0 +15
LRAL LR LR
comp=Z,1μm,20.0s
FURI Furi 94.65 286 PFAKE 21 05 50.0 +12
FURI LR LR
comp=Z,1μm,20.0s
ES19 SONSECA Array 94.69 335 *e*P **P 21 05 37.5 -0.5**
ESDC Sonseca Array 94.74 335 P **P 21 05 37.6 -0.6**
comp=Z,1.7nm,0.7s,baz=16,slow=4.3,SNR=12
ESDC LR 21 53 43.8
comp=Z,2μm,18.7s,baz=30,slow=39
ESLA Sonseca Array 94.74 335 PFAKE 21 05 50.0 +12
ESLA LR LR
comp=Z,2μm,19.0s
KMSC Kings Mountain 94.81 35 PFAKE 21 05 50.0 +12
KMSC LR LR
comp=Z,1μm,20.0s
PAB San Pablo 94.98 335 PFAKE 21 05 50.0 +11
PAB LR LR
comp=Z,3μm,20.0s
MTE Manteigas 95.19 337 PFAKE 21 05 50.0 +10
MTE LR LR
comp=Z,2μm,19.0s
GOGA Godfrey 95.31 37 PFAKE 21 05 50.0 +9.2
GOGA LR LR
comp=Z,700nm,20.0s
BRAL Brewton 95.42 41 PFAKE 21 05 50.0 +8.7
BRAL LR LR
comp=Z,800nm,20.0s
TIGA Tifton 96.89 38 PFAKE 21 06 00.0 +12
TIGA LR LR
comp=Z,1μm,19.0s
NHSC New Hope 97.05 35 PFAKE 21 06 00.0 +11
NHSC LR LR
comp=Z,1μm,20.0s
UNM Universidad Na 97.56 57 PFAKE 21 06 00.0 +8.4
UNM LR LR
comp=Z,1μm,21.0s
PFVI Vila Bisbo 98.59 337 PFAKE 21 06 10.0 +14
PFVI LR LR
comp=Z,2μm,20.0s
RKT Rikitea 99.23 112 *e*SS SS 21 24 14.8 -2.4
comp=Z,739nm,31.2s
RKT Rikitea 99.23 112 *e*LR LR 21 38 08.8
comp=Z,3μm,23.2s,baz=308
TLIG Tlapa 99.25 58 PFAKE 21 06 10.0 +11
TLIG LR LR
comp=Z,800nm,22.0s
DWPF Disney Wildern 100.69 39 PFAKE 21 06 20.0 +15
DWPF LR LR
comp=Z,1μm,20.0s
KMBO Kilima Mbogo 102.30 279 PFAKE 21 06 20.0 +7.3
KMBO LR LR
comp=Z,900nm,22.0s
BBSR BB Station 103.49 23 PFAKE 21 06 30.0 +13
BBSR LR LR
comp=Z,700nm,21.0s
TEIG Tepich 103.52 48 PFAKE 21 06 30.0 +12
TEIG LR LR
comp=Z,600nm,21.0s
TAM Tamanrasset 105.54 319 PFAKE 21 10 50.0
TAM LR LR
comp=Z,1μm,20.0s
TGUH Tegucigalpa,Un 108.95 52 PFAKE 21 11 00.0
TGUH LR LR
comp=Z,900nm,22.0s
GTBY Guantanamo Bay 110.65 38 PFAKE 21 11 00.0
GTBY LR LR
comp=Z,900nm,20.0s
MTDJ Mount Denham 110.93 41 PFAKE 21 11 00.0
MTDJ LR LR
comp=Z,800nm,20.0s
GRTK Grand Turk 111.04 33 PFAKE 21 11 00.0
GRTK LR LR
comp=Z,1μm,20.0s
PAPH Port-au-Prince 113.16 36 PFAKE 21 11 10.0
PAPH LR LR
comp=Z,800nm,21.0s
SDDR Presa de Saban 113.21 35 PFAKE 21 11 10.0
SDDR LR LR
comp=Z,1μm,20.0s
HDC Heredia 114.03 52 PFAKE 21 11 10.0 +14
HDC LR LR
comp=Z,500nm,20.0s
SDD Santo Domingo 114.27 34 PFAKE 21 11 10.0 +14
SDD LR LR
comp=Z,700nm,20.0s
AGP Aguadilla 115.45 31 PFAKE 21 11 10.0 +11
AGP LR LR
comp=Z,1μm,22.0s
CBYP Canovanas 116.08 30 PFAKE 21 11 10.0 +10
CBYP LR LR
comp=Z,900nm,21.0s
HUMP Col San Antoni 116.20 30 PFAKE 21 11 10.0 +10
HUMP LR LR
comp=Z,700nm,20.0s
SMRT St. Maarten 117.31 27 PFAKE 21 11 10.0 +7.6
SMRT LR LR
comp=Z,1μm,22.0s
SABA Saba 117.64 28 PFAKE 21 11 20.0 +17
SABA LR LR
comp=Z,1μm,22.0s
SEUS St. Eustatius 117.86 28 PFAKE 21 11 20.0 +17
SEUS LR LR
comp=Z,1μm,22.0s
ANWB Willy Bob 118.11 26 PFAKE 21 11 20.0 +16
ANWB LR LR
comp=Z,900nm,22.0s
VNDA Vanda 118.12 175 PKP **PKPdf 21 11 01.8 -0.3**
comp=Z,0.7nm,0.8s,baz=341,slow=1.0,SNR=3.3
FDF Fort de France 121.05 27 PFAKE 21 11 20.0 +10
FDF LR LR
comp=Z,500nm,20.0s
SDV Santo Domingo 122.33 40 PFAKE 21 11 20.0 +7.6
SDV LR LR
comp=Z,600nm,20.0s
MAW Mawson 122.79 207 PKP **PKPdf 21 11 10.9 -0.3**
comp=Z,4.2nm,0.9s,baz=298,slow=5.7,SNR=3.7
GRGR Grenville 123.28 29 PFAKE 21 11 30.0 +16
GRGR LR LR
comp=Z,700nm,22.0s
DBIC Dimbokro 124.43 319 PKP **PKPdf 21 11 15.0 -1.1**
comp=Z,3.2nm,0.9s,baz=124,slow=7.1,SNR=4.1
OTAV Otavalo 125.15 53 PFAKE 21 11 30.0 +12
OTAV LR LR
comp=Z,500nm,19.0s
LBTB Lobatse 125.75 266 *e*PKIKP **PKPdf 21 11 19.0 +0.6**
LBTB Lobatse 125.75 266 *e*PKPdf **PKPdf 21 11 19.0 +0.6**
QSPA South Pole Qui 130.00 180 *e*PKPdf **PKPdf 21 11 24.9 -0.3**
ATAH Atahualpa 130.84 59 PKP **PKPdf 21 11 27.8 -1.0**
comp=Z,1.6nm,0.4s,baz=310,slow=6.3,SNR=2.3
NNA Nana 135.43 62 PFAKE 21 11 50.0 +13
NNA LR LR
comp=Z,600nm,20.0s
SAML Samuel 141.37 43 PFAKE 21 12 00.0 +12
SAML LR LR
comp=Z,300nm,22.0s
ASCN Ascension 141.72 321 PFAKE 21 12 00.0 +11
ASCN LR LR
comp=Z,1μm,20.0s

SNAA Sanae 144.06 198 PKP **PKPab 21 11 48.9 +0.3**
SNAA Sanae 144.06 198 *e*PKIKP **PKPab 21 11 48.4 -0.2**
SNAA Sanae 144.06 198 *e*PKPdf **PKPab 21 11 48.4 -0.2**
LPAZ La Paz 144.31 57 PKP PKPbc 21 11 52.6 +0.5
comp=Z,3.3nm,0.8s,baz=7.8,slow=6.9,SNR=7.5
LPAZ La Paz 144.31 57 *e*PKPdf PKPbc 21 11 52.7 +0.6
VNA2 Neumayer--Watz 145.64 197 PKP **PKPbc 21 11 54.2 +0.2**
baz=83,slow=0.6
RCBR Riachuelo 145.69 357 PKPbc **PKPdf 21 11 55.5 0.0**
comp=Z,17nm,0.9s,baz=335,slow=2.2,SNR=6.5
RCBR Riachuelo 145.69 357 *e*PKPdf **PKPdf 21 11 55.9 +0.3**
PB11 IPOC Station P 145.78 63 *e*PKPdf **PKPab 21 11 56.9 +0.3**
PB11 LR LR
comp=Z,1μm,18.0s
VNA3 Neumayer Olymp 145.89 196 PKP **PKPbc 21 11 54.6 -0.2**
VNA1 Neumayer--Stat 146.04 197 PKP **PKPbc 21 11 55.3 +0.2**
PB01 IPOC Station P 146.77 64 *e*PKPdf **PKPbc 21 11 59.1 +0.1**
LVC Limon Verde 148.20 66 PKPbc **PKPdf 21 12 01.2 +1.3**
comp=Z,22nm,0.8s,baz=4.9,slow=10,SNR=4.9
LVC Limon Verde 148.20 66 *e*PKPdf **PKPdf 21 12 01.2 +1.3**
LVC *e*PKPbc **PKPbc 21 12 03.9 +0.7**
SIV San Ignacio 148.33 47 PKPbc **PKPdf 21 12 00.8 +1.0**
comp=Z,8.4nm,0.7s,baz=286,slow=1.0,SNR=16
LCO Las Campanas 150.67 78 *e*PKPbc **PKPbc 21 12 09.2 +0.1**
ROC1 El Roble 152.29 85 *e*PKPbc **PKPbc 21 12 12.7 0.0**
PLCA Paso Flores 154.98 102 PKPbc **PKPbc 21 12 17.4 -0.6**
comp=Z,2.6nm,0.9s,baz=220,slow=4.7,SNR=2.8
PLCA Paso Flores 154.98 102 *e*PKPbc **PKPbc 21 12 18.4 +0.4**

MEX 07 20:56:09.1±0.7, 16°.65N×98°.88W, h15km±7km, MD3.5,
Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PNIG	**Pinotepa**	**0.77**	**109**	*i* P	Pg	20 56 21.7	-2.4
PNIG				*e*S	Sg	20 56 31.4	-2.9
TLIG	**Tlapa**	**0.95**	**18**	*i* P	Pb	20 56 24.5	-3.0
TLIG				*e*S	Sb	20 56 35.6	-4.4
CAIG	**El Cayaco**	**1.38**	**287**	*e*P	Pn	20 56 29.9	-4.0
CAIG				*e*S	Sn	20 56 46.9	-5.0
MEIG	**Mezcala**	**1.45**	**331**	*e*P	Pn	20 56 31.7	-3.2
MEIG				*e*S	Sn	20 56 49.3	-4.4
ARIG	**Puente Sto Nin**	**2.14**	**319**	*i* P	Pn	20 56 42.1	-2.3
ARIG				*e*S	Sn	20 57 06.9	-3.8
YAIG	**Yautepec**	**2.21**	**355**	*e*P	Pn	20 56 42.9	-2.5
YAIG				*i* S	Sn	20 57 08.8	-3.7
ZIIG	**Zihuatanejo**	**2.64**	**291**	*i* P	Pn	20 56 51.5	+0.2
ZIIG				*i* S	Sn	20 57 19.0	-4.1

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*ISCJB **07** 21:03:10.5±0.3, 6°.82N±0°.03×73°.04W±0°.03, h165km±2km, mb3.7/9, Error ellipse: s-maj=6.7km s-min=3.1km az=41.8*
*FUNV **07** 21:03:10.6, 6°.69N×73°.20W, h166km, MW4.2*
*IDC **07** 21:03:11.7±0.6, 6°.78N×72°.97W, h164km±6km, mb3.5/9, mb1 3.8/14, mb1mx3.6/38, mbtmp4.1/14, Error ellipse: s-maj=14.7km s-min=7.5km az=124.0*
*RSNC **07** 21:03:12.8±0.6, 6°.77N×73°.11W, h152km±3km, ML4.2*
ISC 07 21:03:11.6±0.6, 6°.79N±0°.04×73°.03W±0°.04, h164km±4km, n48, σ1°34/77, mb3.6/9, 4C-2D, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BARC	**Barichara**	**0.25**	**217**	*i* P	**Pn**	**21 03 33.2**	**-0.8**
BARC				*e*S	**Sn**	**21 03 49.0**	**-2.1**
BARC				*i*		21 03 51.4	
	comp=Z,5μm,0.4s						
BTLC	**Betulia, Santa**	**0.26**	**298**	*e*P	**Pn**	**21 03 33.4**	**-0.6**
BTLC				*e*S	**Sn**	**21 03 49.2**	**-1.9**
GIRC	**Giron, Santand**	**0.33**	**331**	*i* P	**Pn**	**21 03 33.3**	**-0.8**
GIRC				*e*S	**Sn**	**21 03 48.9**	**-2.4**
PAMC	**Pamplona, Colo**	**0.64**	**31**	⇓*i* P	**Pn**	**21 03 36.0**	**+0.2**
PAMC				*e*S	**Sn**	**21 03 53.6**	**-0.8**
BRRC	**Barranca, Sant**	**0.74**	**295**	⇑*i* P	**Pn**	**21 03 35.1**	**-0.7**
BRRC				*e*S	**Sn**	**21 03 52.5**	**-1.9**
BRRC				*i*		21 03 55.0	
	comp=Z,2μm,0.1s						
RUSC	**La Rusia**	**0.90**	**183**	⇓*i* P	**Pn**	**21 03 37.1**	**-0.4**
RUSC				*e*S	**Sn**	**21 03 55.8**	**-1.6**
RUSC				*i*		21 03 57.2	
	comp=Z,2μm,0.4s						
CBRI	**Barrientos, No**	**0.95**	**14**	*i* P	**Pn**	**21 03 37.8**	**+0.2**
CBRI				*e*S	**Sn**	**21 03 56.7**	**-0.8**
CBRI				*i*		21 04 01.8	
	comp=Z,1μm,0.4s						
GRMC	**Gramalote, San**	**0.95**	**14**	*i* P	**Pn**	**21 03 39.0**	**+1.5**
GRMC				*i*		21 03 40.6	
	comp=Z,2μm,0.4s						
GRMC				*e*S	**Sn**	**21 03 59.1**	**+1.7**
GUEC	**Guerrero, Nort**	**1.04**	**6**	*e*P	**Pn**	**21 03 38.3**	**-0.1**
CAPV	**Capacho**	**1.28**	**34**	⇑*i* P	**Pn**	**21 03 41.1**	**+0.7**
CAPV				*e*S	**Sn**	**21 04 02.5**	**-0.1**
OCAC	**Ocana**	**1.47**	**349**	*e*P	**Pn**	**21 04 41.7**	**-0.3**
OCAC				*e*S	**Sn**	**21 04 04.9**	**-0.7**
OCAC				*i*		21 04 11.1	
	comp=Z,2μm,0.5s						
NORC	**Norcasia**	**2.19**	**236**	*e*P	**Pn**	**21 03 49.0**	**-0.9**
NORC				*e*S	**Sn**	**21 04 17.1**	**-2.4**
ROSC	**El Rosal**	**2.32**	**213**	P	**Pn**	**21 03 52.8**	**+1.0**
ROSC				S	**Sn**	**21 04 22.9**	**+0.2**
	comp=Z,245nm,0.3s,baz=338,slow=19,SNR=11						
HELC	**Santa Helena**	**2.55**	**257**	*e*P	**Pn**	**21 03 54.0**	**-0.3**
HELC				*i*		21 04 31.6	
	comp=Z,703nm,0.3s						
SOCV	**Socops**	**2.62**	**55**	⇑*i* P	**Pn**	**21 03 55.4**	**+0.5**
SOCV				*e*S	**Sn**	**21 04 27.9**	**-0.5**
VIGV	**El Vigia**	**2.62**	**39**	*e*P	**Pn**	**21 03 55.5**	**+0.6**
VIGV				*e*S	**Sn**	**21 04 28.6**	**0.0**
VILC	**Villavicencio,**	**2.74**	**194**	*e*P	**Pn**	**21 03 56.0**	**-0.5**
VILC				*e*S	**Sn**	**21 04 30.8**	**-0.6**
VILC				*i*		21 04 41.2	
	comp=Z,738nm,0.5s						
GUYC	**Guyana, Colomb**	**2.81**	**237**	*e*P	**Pn**	**21 03 57.3**	**-0.4**
GUYC				*i*		21 04 44.2	
	comp=Z,2μm,0.5s						
SDV	**Santo Domingo**	**3.16**	**49**	P	**Pn**	**21 04 02.5**	**+0.8**
	comp=Z,64nm,0.3s,baz=232,slow=9.6,SNR=110						
SDV				S	**Sn**	**21 04 39.7**	**-1.0**
	comp=Z,60nm,0.3s,baz=254,slow=22,SNR=14						
SDV	**Santo Domingo**	**3.16**	**49**	*e*P	**Pn**	**21 04 02.3**	**+0.6**
SDV				*i*		21 04 03.8	
	comp=Z,204nm,0.5s						
TOLC	**Tolima**	**3.16**	**226**	*e*P	**Pn**	**21 04 01.9**	**+0.1**
TOLC				*e*S	**Sn**	**21 04 40.1**	**-0.7**
DBBC	**Dabeiba**	**3.16**	**274**	*e*P	**Pn**	**21 04 01.1**	**-0.5**
DBBC				*e*S	**Sn**	**21 04 37.9**	**-2.6**
PRAC	**Prado**	**3.57**	**211**	*e*P	**Pn**	**21 04 06.4**	**-0.4**
PRAC				*e*S	**Sn**	**21 04 48.6**	**-1.2**
SJAC	**San Juan de Ar**	**3.61**	**195**	*e*P	**Pn**	**21 04 06.7**	**-0.7**
SJAC				*i*		21 05 01.1	
	comp=Z,2μm,0.4s						
VIRV	**Villa del Rosa**	**3.74**	**10**	*e*P	**Pn**	**21 04 08.0**	**-0.9**
VIRV				*e*S	**Sn**	**21 04 50.6**	**-3.0**
SANV	**Sanarito**	**4.39**	**52**	*e*P	**Pn**	**21 04 17.3**	**-0.1**
SANV				*e*S	**Sn**	**21 05 06.6**	**-2.1**
CURV	**Curarigua**	**4.41**	**43**	*e*P	**Pn**	**21 04 17.8**	**+0.1**
CURV				*e*S	**Sn**	**21 05 06.8**	**-2.5**
BETC	**Betania**	**4.74**	**211**	*e*P	**Pn**	**21 04 21.1**	**-0.8**
DABV	**Dabajuro**	**4.74**	**30**	*e*P	**Pn**	**21 04 22.1**	**+0.3**
DABV				*e*S	**Sn**	**21 05 14.5**	**-2.3**
TEPV	**Terepaima**	**4.94**	**50**	*e*P	**Pn**	**21 04 24.4**	**0.0**
TEPV				*e*S	**Sn**	**21 05 19.1**	**-2.4**
BAUV	**El Baul**	**5.39**	**66**	⇑*i* P	**Pn**	**21 04 29.1**	**-1.3**
BAUV				*e*S	**Sn**	**21 05 29.4**	**-2.6**
MAPV	**Macapo**	**5.44**	**56**	*e*P	**Pn**	**21 04 30.9**	**-0.2**
MAPV				*e*S	**Sn**	**21 05 30.1**	**-3.3**
MONV	**Montecano**	**5.95**	**30**	*e*P	**Pn**	**21 04 37.1**	**-0.7**
MONV				*e*S	**Sn**	**21 05 41.3**	**-4.2**
SJG	**San Juan**	**13.10**	**30**	P	**Pn**	**21 06 11.5**	**-0.1**
	comp=Z,0.9nm,0.3s,baz=192,slow=19,SNR=2.7						
PTGA	**Pitinga**	**15.03**	**119**	P	**P**	**21 06 36.1**	**-1.1**
	comp=Z,0.3nm,0.3s,baz=352,slow=21,SNR=1.5						
TEIG	**Tepich**	**19.92**	**314**	P	**P**	**21 07 32.3**	**+1.5**
	comp=Z,0.9nm,0.3s,baz=91,slow=23,SNR=9.5						
LPAZ	**La Paz**	**23.44**	**168**	P	**P**	**21 08 07.0**	**+0.1**
	comp=Z,2.0nm,0.8s,baz=340,slow=11,SNR=7.3						
LPAZ				pP	**pP**	**21 08 39.5**	**+1.4**
	comp=Z,4.0nm,0.8s,baz=338,slow=13,SNR=7.8						
SIV	**San Ignacio**	**25.55**	**152**	pP	pP	21 08 58.6	-0.7
	comp=Z,1.8nm,0.6s,baz=335,slow=6.4,SNR=3.8						
TXAR	**Lajitas Array**	**36.55**	**312**	P	**P**	**21 10 02.8**	**+1.0**
	comp=Z,0.9nm,0.6s,baz=125,slow=9.2,SNR=6.0						
TXAR				pP	**pP**	**21 10 37.7**	**+0.9**
	comp=Z,0.8nm,0.9s,baz=102,slow=8.4,SNR=2.7						
ULM	**Lac du Bonnet**	**47.34**	**340**	P	**P**	**21 11 28.7**	**0.0**
	comp=Z,4.3nm,0.5s,baz=126,slow=5.0,SNR=4.6						
PDAR	**Pinedale Array**	**48.15**	**324**	P	**P**	**21 11 35.8**	**+0.4**
	comp=Z,0.6nm,0.5s,baz=114,slow=10.0,SNR=3.9						
SCHQ	**Schefferville**	**48.16**	**5**	P	**P**	**21 11 35.4**	**+0.3**
	comp=Z,3.7nm,0.5s,baz=189,slow=8.3,SNR=4.2						
NVAR	**Mina Array Bea**	**51.56**	**315**	P	**P**	**21 12 02.2**	**+1.0**
	comp=Z,0.2nm,0.4s,baz=114,slow=9.0,SNR=2.6						
YKA	**Yellowknife Ar**	**63.32**	**340**	P	**P**	**21 13 23.2**	**+0.5**
	comp=Z,2.0nm,0.5s,baz=132,slow=6.6,SNR=46						
YKA				pP	**pP**	**21 14 02.0**	**+0.6**
	comp=Z,0.6nm,0.5s,baz=129,slow=6.9,SNR=3.0						
INK	**Inuvik**	**73.08**	**340**	P	**P**	**21 14 23.6**	**+0.2**
	comp=Z,0.8nm,0.7s,baz=91,slow=3.8,SNR=5.2						
ILAR	**Eielson Array**	**77.03**	**335**	P	**P**	**21 14 44.8**	**-1.3**
	comp=Z,0.4nm,0.8s,baz=101,slow=3.8,SNR=3.8						
ASAR	**Alice Springs**	**149.16**	**234**	PKPbc	**PKPbc**	**21 22 41.2**	**-0.3**
	comp=Z,2.1nm,0.7s,baz=119,slow=3.5,SNR=30						
WRA	**Warramunga Arr**	**150.40**	**241**	PKPbc	**PKPbc**	**21 22 44.3**	**-0.3**
	comp=Z,2.6nm,0.8s,baz=107,slow=2.6,SNR=32						

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*ISCJB **07** 21:07:37.6±0.5, 36°.18N±0°.04×70°.78E±0°.06, h35km, mb3.8/10, Error ellipse: s-maj=7.4km s-min=5.2km az=143.7*
*IDC **07** 21:07:41.4±3.3, 36°.31N×71°.03E, h53km±28km, mb3.7/12, mb1 3.9/17, mb1mx3.5/58, mbtmp4.0/17, ML4.0/5, Error ellipse: s-maj=25.6km s-min=17.6km az=10.0*
*NNC **07** 21:07:44.6±3.3, 36°.54N×70°.57E, h23km±21km, mb4.3, mpv4.0, Error ellipse: s-maj=26.2km s-min=21.2km az=32.0*
ISC 07 21:07:39.5±0.7, 36°.19N±0°.08×70°.84E±0°.07, h35km, n33, σ1°72/36, mb3.9/10, 7C-3D, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**3.06**	**329**	Pn	**Pn**	**21 08 26.9**	**+1.3**
DZET				⇑Pg	Pn	21 08 32.5	+6.9
DZET				⇑Lg	Lg	21 09 10.7	
	210nm,0.3s						
SFK	**Sufi-Kurgan**	**4.36**	**28**	⇓Pn	Pn	21 08 47.8	+4.3
	9.5nm,0.3s						
SFK				⇑Sn	**Sn**	**21 09 36.3**	**+3.2**
	16nm,0.3s						
MNAS	**Manas**	**6.42**	**11**	⇑Pn	**Pn**	**21 09 14.0**	**+2.3**
	3.9nm,0.4s						
MNAS				⇓Sn	**Sn**	**21 10 23.0**	**-0.8**
	18nm,0.4s						
KK31	**Karatay Array**	**6.91**	**358**	⇓Pn	**Pn**	**21 09 19.9**	**+1.6**
	4.2nm,0.3s,baz=176,slow=12						
KK31				⇑Sn	**Sn**	**21 10 34.6**	**-1.0**
	9.9nm,0.4s,baz=186,slow=22						
KK31				Lg	Lg	21 11 12.4	
AAK	**Ala-Archa**	**7.03**	**23**	P	**Pn**	**21 09 21.0**	**+1.0**
	4.0nm,0.3s,baz=180,slow=5.7,SNR=27						
AAK	**Ala-Archa**	**7.03**	**23**	⇑Pn	**Pn**	**21 09 22.5**	**+2.4**
	4.7nm,0.3s						
TKM2	**Tokmak 2**	**7.66**	**27**	⇑Pn	**Pn**	**21 09 30.6**	**+1.8**
	7.0nm,0.6s						
GEYT	**Alibeck**	**10.31**	**283**	P	**Pn**	**21 10 06.6**	**+1.6**
	1.1nm,0.3s,baz=106,slow=9.9,SNR=9.7						
GEYT				S	**Sn**	**21 11 58.4**	**-1.0**
	1.7nm,0.3s,baz=337,slow=7.1,SNR=5.9						
PYUN	**Piuthan**	**13.07**	**125**	*e*P	**Pn**	**21 10 44.0**	**+1.1**
	39nm,0.3s						
MK31	**Makanchi Array**	**13.62**	**35**	Pn	**Pn**	**21 10 52.4**	**+2.3**
	2.7nm,0.9s,baz=224,slow=15,SNR=9.5						
MKAR	**Makanchi Array**	**13.62**	**35**	P	**Pn**	**21 10 49.8**	**-0.3**
	0.2nm,0.3s,baz=224,slow=15,SNR=12						
KOLN	**Koldanda**	**13.69**	**124**	*e*P	**Pn**	**21 10 52.2**	**+0.8**
	7.1nm,0.2s						
GKN	**Gorkha**	**14.25**	**121**	*e*P	**Pn**	**21 10 58.7**	**-0.3**
	13nm,0.3s						
DMN	**Daman**	**14.82**	**121**	*e*P	**Pn**	**21 11 06.9**	**+0.1**
	14nm,0.5s						
KKN	**Kakani**	**14.83**	**120**	*e*P	**Pn**	**21 11 06.6**	**-0.3**
	13nm,0.4s						
PKIN	**Phulchoki**	**15.04**	**121**	*e*P	**Pn**	**21 11 09.5**	**-0.3**
	7.4nm,0.3s						
GUN	**Gumba**	**15.18**	**119**	*e*P	**Pn**	**21 11 10.8**	**-0.9**
	13nm,0.5s						
KURBB	**Kurchatov Arra**	**15.46**	**19**	P	**Pn**	**21 11 10.1**	**-4.6**
	0.0nm,0.3s,baz=258,slow=22,SNR=3.2						
BVAR	**Borovoye Array**	**16.84**	**359**	P	**Pn**	**21 11 30.8**	**-1.5**
	0.6nm,0.3s,baz=167,slow=11,SNR=10						
AKTO	**Aktyubinsk**	**16.98**	**331**	P	**Pn**	**21 11 33.4**	**-0.8**
	1.3nm,0.3s,baz=129,slow=8.6,SNR=16						
ZALV	**Zalesovo Beam**	**20.25**	**24**	P	**P**	**21 12 09.5**	**-2.1**
	9.3nm,0.3s,baz=214,slow=10,SNR=52						
GNI	**Garni**	**20.87**	**289**	P	**P**	**21 12 22.0**	**+3.4**
	5.2nm,0.6s,baz=238,slow=2.4,SNR=4.9						
ARU	**Arti**	**21.88**	**342**	P	**P**	**21 12 28.6**	**-0.6**
	2.6nm,0.6s,baz=101,slow=5.5,SNR=5.2						
KVAR	**Kislovodsk Arr**	**22.81**	**299**	P	**P**	**21 12 42.1**	**+2.8**
	4.9nm,0.8s,baz=98,slow=11,SNR=3.1						
BRTR	**Keskin Array B**	**29.40**	**288**	P	**P**	**21 13 41.0**	**+1.2**
	0.8nm,0.7s,baz=98,slow=8.6,SNR=5.9						
AKASG	**Malin Array Be**	**33.04**	**309**	P	**P**	**21 14 09.9**	**-1.5**
	0.4nm,0.3s,baz=82,slow=7.5,SNR=5.8						
FINES	**FINESS Array B**	**37.67**	**326**	P	**P**	**21 14 51.2**	**+0.2**
	1.6nm,0.7s,baz=123,slow=9.5,SNR=16						
ARCES	**ARCESS Array B**	**41.38**	**338**	P	**P**	**21 15 21.7**	**-0.2**
	1.4nm,0.6s,baz=104,slow=7.6,SNR=11						
NB2	**NORSAR Subarra**	**44.55**	**323**	P	**P**	**21 15 47.4**	**-0.3**
	comp=Z,1.0nm,0.5s,baz=96,slow=7.9						
NOA	**NORSAR Array B**	**44.55**	**323**	P	**P**	**21 15 47.1**	**-0.6**
	comp=Z,1.1nm,0.5s,baz=97,slow=7.9,SNR=9.7						
YKA	**Yellowknife Ar**	**81.56**	**3**	P	**P**	**21 19 52.7**	**-0.5**
	comp=Z,1.5nm,0.5s,baz=350,slow=5.4,SNR=31						
WRA	**Warramunga Arr**	**81.94**	**122**	P	**P**	**21 19 55.2**	**-0.6**
	comp=Z,0.2nm,0.5s,baz=327,slow=4.9,SNR=2.6						
ASAR	**Alice Springs**	**84.19**	**125**	P	**P**	**21 20 06.5**	**-0.8**
	comp=Z,0.4nm,0.8s,baz=307,slow=5.8,SNR=5.8						

NNC 07 21:21:26.1±4.0, 37°.89N×71°.81E, h0km, mb3.7, mpv3.1, 6C-3D, Error ellipse: s-maj=35.4km s-min=10.8km az=162.0, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFK	**Sufi-Kurgan**	**2.50**	**31**	⇑P	Pn	21 22 08.0	-0.3
	6.7nm,0.3s						
SFK				⇓S	Sb	21 22 42.4	-1.0
	4.8nm,0.4s						
DZET	**Dzherino**	**2.52**	**292**	⇓S	Sn	21 22 41.7	+1.8
	6.6nm,0.3s						
MNAS	**Manas**	**4.62**	**6**	⇑P	Pn	21 22 36.4	-0.9
	1.8nm,0.3s						
MNAS				⇑S	Sn	21 23 32.6	+0.8
	4.4nm,0.5s						
AAK	**Ala-Archa**	**5.17**	**23**	⇑P	Pn	21 22 42.8	-2.0
	1.0nm,0.3s						
AAK				⇑S	Sn	21 23 44.4	-0.8
	1.4nm,0.7s						
KK31	**Karatay Array**	**5.30**	**350**	⇑P	Pn	21 22 46.1	-0.5
	0.1nm,0.1s,baz=158,slow=11						
KK31				⇓S	Sn	21 23 48.5	+0.1
	2.7nm,0.4s,baz=171,slow=24						

JMA 07 21:22:00.0±0.2, 35°.73N×140°.87E, h13km±1km, M3.5, 2C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.03**	**199**	⇓P	Pg	21 22 02.2	-0.1
CHOJ				S	Sg	21 22 03.9	0.0
JCN	**Nagara**	**0.63**	**240**	⇑P	Pb	21 22 13.0	+0.2
JCN				S	Sn	21 22 23.0	-1.5
JYT	**Yasato**	**0.74**	**312**	⇑P	Pg	21 22 13.5	-0.9
JYT				S	Sg	21 22 23.7	-0.4

couple: $M_0$1.86000×10^15 NP1:ϕ_s218.00000°, δ33.00000°, λ105.00000°. NP2:ϕ_s20.00000°, δ58.00000°, λ80.00000°.
*IDC **07** 21:24:01.8±2.0, 37.°33N×141.°60E, h53km±17km, mb3.6/18, mb1 3.8/25, mb1mx3.7/42, mbtmp3.9/25, ML3.6/6, Error ellipse: s-maj=17.7km s-min=13.8km az=102.0*

ISC 07 21:23:58.5±1.8, 37.°25N±0.°05×141.°73E±0.°07, h29km±12km, n41, σ1.9±33/50, mb4.0/18, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.69**	**280**	P	**Pn**	**21 24 12.4**	**0.0**
JFK				S	**Sb**	**21 24 20.5**	**-0.8**
ONAJ	**Iwakimizuishiy**	**0.76**	**259**	P	**Pn**	**21 24 13.7**	**+0.4**
ONAJ				S	**Sb**	**21 24 22.7**	**-0.5**
JMM	**Marumori**	**0.96**	**310**	P	**Pn**	**21 24 15.8**	**-0.3**
JHO	**Hitachi**	**1.13**	**236**	P	**Pn**	**21 24 18.9**	**+0.6**
JHO				S	**Sn**	**21 24 32.2**	**-0.6**
JFT	**Otama**	**1.14**	**284**	P	**Pb**	**21 24 19.2**	**-0.4**
JFT				S	**Sn**	**21 24 31.9**	**-1.3**
JIO	**Ouri**	**1.24**	**346**	P	**Pn**	**21 24 19.9**	**0.0**
JIO				S	**Sn**	**21 24 33.4**	**-2.2**
JOU	**Okura**	**1.40**	**323**	P	**Pn**	**21 24 22.2**	**+0.1**
MJAR	**Matsushiro Arr**	**2.91**	**257**	P	**Pn**	**21 24 44.5**	**+1.6**
	14nm,0.3s,baz=134,slow=8.7,SNR=27						
MJAR				S	**Sb**	**21 25 23.3**	**-1.5**
	14nm,0.3s,baz=14,slow=14,SNR=4.7						
JHJ	**Hachijo jima 2**	**4.42**	**202**	P	**Pn**	**21 25 05.7**	**+2.1**
	34nm,0.3s,baz=150,slow=23,SNR=14						
JHJ				S	**Sn**	**21 25 53.9**	**-0.2**
	90nm,0.3s,baz=342,slow=19,SNR=9.6						
ASAJ	**Asahikawa**	**6.89**	**5**	P	**Pn**	**21 25 38.0**	**+0.5**
	1.4nm,0.3s,baz=208,slow=11,SNR=15						
ASAJ				S	**Sn**	**21 26 53.9**	**-1.1**
	0.6nm,0.3s,baz=288,slow=18,SNR=2.8						
JNU	**Nakatsue**	**9.79**	**248**	P	**Pn**	**21 26 19.8**	**+2.4**
	0.5nm,0.3s,baz=117,slow=5.6,SNR=11						
JCJ	**Chichijima**	**10.13**	**178**	P	**Pn**	**21 26 22.3**	**+0.3**
	5.3nm,0.3s,baz=97,slow=24,SNR=12						
JCJ				S	**Sn**	**21 28 08.7**	**-6.0**
USRK	**Ussuriysk Ar.**	**10.13**	**316**	P	**Pn**	**21 26 22.7**	**+0.6**
	0.2nm,0.3s,baz=125,slow=15,SNR=3.7						
KSRS	**Korea Array**	**10.99**	**275**	P	**Pn**	**21 26 36.8**	**+3.0**
	0.2nm,0.3s,baz=87,slow=13,SNR=16						
KLR	**Kul'dur**	**13.99**	**332**	P	**Pn**	**21 27 16.2**	**+1.5**
	0.1nm,0.3s,baz=132,slow=14,SNR=8.4						
SONM	**Songino Array**	**27.87**	**304**	P	**P**	**21 29 45.0**	**-0.8**
	1.8nm,0.6s,baz=102,slow=9.2,SNR=15						
CMAR	**Chiang Mai Arr**	**41.79**	**255**	P	**P**	**21 31 45.7**	**0.0**
	0.6nm,0.6s,baz=44,slow=7.9,SNR=4.2						
ZALV	**Zalesovo Beam**	**41.95**	**312**	P	**P**	**21 31 46.6**	**0.0**
	1.4nm,0.4s,baz=87,slow=7.6,SNR=10						
MKAR	**Makanchi Array**	**44.22**	**302**	P	**P**	**21 32 05.0**	**0.0**
	2.6nm,0.6s,baz=88,slow=10.0,SNR=31						
KURBB	**Kurchatov Arra**	**46.07**	**308**	P	**P**	**21 32 19.2**	**-0.4**
	5.7nm,0.5s,baz=81,slow=7.6,SNR=56						
GUN	**Gumba**	**47.38**	**276**	*eP*	**P**	**21 32 31.2**	**+0.6**
	14nm,0.5s						
KKN	**Kakani**	**47.91**	**276**	*eP*	**P**	**21 32 34.5**	**-0.1**
	9.2nm,0.6s						
PKIN	**Phulchoki**	**47.91**	**275**	*eP*	**P**	**21 32 34.6**	**0.0**
DMN	**Daman**	**48.13**	**276**	*eP*	**P**	**21 32 36.3**	**0.0**
GKN	**Gorkha**	**48.33**	**276**	*eP*	**P**	**21 32 37.7**	**0.0**
	19nm,0.9s						
ILAR	**Eielson Array**	**49.18**	**32**	P	**P**	**21 32 44.8**	**+1.3**
	0.4nm,0.8s,baz=270,slow=6.6,SNR=5.6						
KOLN	**Koldanda**	**49.25**	**277**	*eP*	**P**	**21 32 45.0**	**+0.1**
	1.4nm,0.2s						
PYUN	**Piuthan**	**49.59**	**277**	*eP*	**P**	**21 32 48.1**	**+0.6**
INK	**Inuvik**	**54.08**	**27**	P	**P**	**21 33 20.0**	**-0.1**
	0.7nm,0.8s,baz=264,slow=4.4,SNR=2.6						
WRA	**Warramunga Arr**	**57.31**	**188**	P	**P**	**21 33 44.7**	**+0.9**
	0.8nm,0.4s,baz=6.1,slow=7.2,SNR=30						
ASAR	**Alice Springs**	**61.04**	**188**	P	**P**	**21 34 10.5**	**+0.9**
	0.4nm,0.7s,baz=357,slow=4.7,SNR=5.1						
YKA	**Yellowknife Ar**	**63.49**	**30**	P	**P**	**21 34 25.9**	**+0.4**
	0.2nm,0.5s,baz=296,slow=6.4,SNR=3.5						
ARCES	**ARCESS Array B**	**63.88**	**339**	P	**P**	**21 34 27.4**	**-0.7**
	2.1nm,0.9s,baz=46,slow=7.7,SNR=3.3						
GEYT	**Alibeck**	**63.95**	**299**	P	**P**	**21 34 28.0**	**-1.0**
	0.7nm,0.4s,baz=76,slow=6.1,SNR=3.1						
FINES	**FINESS Array B**	**68.74**	**332**	P	**P**	**21 34 58.7**	**-0.5**
	1.3nm,0.7s,baz=37,slow=8.6,SNR=9.0						
KBZ	**Khabaz**	**70.95**	**311**	P	**P**	**21 35 12.8**	**-0.4**
	2.6nm,0.9s,baz=169,slow=5.2,SNR=3.1						
NB2	**NORSAR Subarra**	**74.08**	**337**	P	**P**	**21 35 31.4**	**-0.2**
	comp=Z,3.4nm,1.2s,baz=39,slow=6.2						
NOA	**NORSAR Array B**	**74.08**	**337**	P	**P**	**21 35 31.1**	**-0.4**
	comp=Z,0.8nm,0.8s,baz=40,slow=5.8,SNR=4.0						
AKASG	**Malin Array Be**	**74.28**	**322**	P	**P**	**21 35 32.6**	**-0.2**
	comp=Z,0.3nm,0.3s,baz=35,slow=4.4,SNR=4.3						
GERES	**GERESS Array B**	**82.66**	**328**	P	**P**	**21 36 19.1**	**-0.2**
	comp=Z,0.4nm,0.6s,baz=25,slow=5.4,SNR=3.8						
TXAR	**Lajitas Array**	**89.79**	**53**	P	**P**	**21 36 55.9**	**+1.2**
	comp=Z,0.2nm,0.5s,baz=270,slow=1.8,SNR=3.0						

IDC 07 21:39:19.4±5.6, 5.°48S×151.°75E, h69km±49km, mb3.6/7, mb1 3.9/8, mb1mx3.5/43, mbtmp4.0/8, ML2.2/1, Error ellipse: s-maj=55.6km s-min=27.3km az=121.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**6.00**	**229**	P	Pn	21 40 47.2	+1.5
	3.5nm,0.3s,baz=50,slow=10,SNR=8.3						
PMG				S	Sn	21 41 52.0	-1.0
	3.5nm,0.3s,baz=85,slow=8.9,SNR=3.0						
WRA	**Warramunga Arr**	**22.22**	**228**	P	P	21 44 10.5	0.0
	3.6nm,0.6s,baz=53,slow=9.9,SNR=38						
ASAR	**Alice Springs**	**24.95**	**222**	P	P	21 44 36.9	+0.3
	3.1nm,0.7s,baz=60,slow=8.6,SNR=61						
FITZ	**Fitzroy Crossi**	**28.42**	**242**	P	P	21 45 08.2	+0.4
	1.4nm,0.4s,baz=61,slow=10.0,SNR=10						
SONM	**Songino Array**	**66.35**	**328**	P	P	21 50 01.7	+0.8
	0.5nm,0.5s,baz=147,slow=6.7,SNR=3.6						
ZALV	**Zalesovo Beam**	**81.14**	**327**	P	P	21 51 26.5	-0.8
	0.5nm,0.4s,baz=115,slow=6.8,SNR=2.9						
ILAR	**Eielson Array**	**83.18**	**22**	P	P	21 51 37.2	-0.6
	0.4nm,0.6s,baz=248,slow=4.8,SNR=3.7						
YKA	**Yellowknife Ar**	**96.51**	**28**	P	P	21 52 40.9	-0.1
	0.1nm,0.5s,baz=265,slow=5.1,SNR=3.3						

*IDC **07** 21:41:09.3±26.0, 21.°00S×172.°85W, h0km, mb4.0/4, mb1 4.1/4, mb1mx3.6/47, mbtmp4.0/4, Error ellipse: s-maj=494.3km s-min=160.3km az=75.0*
*ISCJB **07** 21:41:10.5±0.9, 21.°8S±0.°1×172.°5W±0.°2, h33km, mb4.2/10, Error ellipse: s-maj=26.1km s-min=12.4km az=37.8*
*NEIC **07** 21:41:10.4±3.1, 21.°77S×172.°41W, h21km±22km, mb4.3/5, Error ellipse: s-maj=19.0km s-min=8.9km az=127.0*

ISC 07 21:41:12.3±1.0, 21.°8S±0.°1×172.°4W±0.°2, h35km, n14, σ0.9±70/14, mb4.2/10, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**7.84**	**5**	*e*Pn	**Pn**	**21 43 03.3**	**-0.7**
RAO	**Raoul Island**	**8.95**	**213**	*e*Pn	**Pn**	**21 43 18.7**	**-0.5**
HNR	**Honiara**	**29.24**	**290**	*eP*	**P**	**21 47 12.4**	**+1.3**
	38nm,0.5s						
CTA	**Charters Tower**	**38.55**	**265**	P	**P**	**21 48 32.2**	**+0.2**
	2.5nm,0.3s,baz=85,slow=11,SNR=7.5						
CTAO	**Charters Tower**	**38.55**	**265**	*eP*	**P**	**21 48 32.0**	**+0.1**
PMG	**Port Moresby**	**40.70**	**281**	*eP*	**P**	**21 48 48.2**	**-1.6**
	7.5nm,0.8s						
STKA	**Stephens Creek**	**41.99**	**246**	P	**P**	**21 49 00.4**	**+0.2**
	0.5nm,0.4s,baz=84,slow=9.3,SNR=4.1						
ASAR	**Alice Springs**	**49.30**	**257**	P	**P**	**21 49 58.5**	**+0.3**
	0.5nm,0.3s,baz=93,slow=7.4,SNR=11						
WRAB	**Tennant Creek**	**49.57**	**262**	*eP*	**P**	**21 50 00.3**	**0.0**
	1.3nm,0.6s						
WRA	**Warramunga Arr**	**49.58**	**262**	P	**P**	**21 50 00.6**	**+0.2**
	0.5nm,0.3s,baz=94,slow=8.3,SNR=17						
ANMO	**Albuquerque**	**84.22**	**49**	*eP*	**P**	**21 53 40.5**	**0.0**
	0.6nm,0.6s						
BMRM	**Bremner River**	**85.46**	**13**	*eP*	**P**	**21 53 46.1**	**+0.1**
	0.9nm,0.5s						
MA2	**Magadan**	**86.48**	**342**	*eP*	**P**	**21 53 51.5**	**+0.5**
WALA	**Waterton Lakes**	**87.61**	**34**	*eP*	**P**	**21 53 57.2**	**+0.3**
	1.7nm,0.8s						

IDC 07 21:42:01.5±3.0, 2.°64N×128.°79E, h0km, mb4.0/3, mb1 4.2/3, mb1mx3.5/43, mbtmp4.0/3, Error ellipse: s-maj=310.0km s-min=23.7km az=66.0, Halmahera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**23.09**	**167**	P	P	21 47 08.2	-0.9
	0.7nm,0.4s,baz=348,slow=10,SNR=5.2						
STKA	**Stephens Creek**	**36.42**	**161**	P	P	21 49 08.4	+0.4
	2.5nm,0.4s,baz=346,slow=8.3,SNR=16						
MKAR	**Makanchi Array**	**59.62**	**325**	P	P	21 52 07.5	0.0
	1.1nm,0.5s,baz=119,slow=7.9,SNR=18						

MEX 07 21:54:27.9±0.4, 16.°65N×98.°27W, h19km±11km, MD3.5, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PNIG	**Pinotepa**	**0.29**	**151**	*i* P	Pg	21 54 33.1	-1.3
PNIG				*e*S	Sb	21 54 37.8	-0.9
TLIG	**Tlapa**	**0.95**	**343**	*eP*	Pb	21 54 43.0	-2.9
TLIG				*e*S	Sb	21 54 54.7	-3.5
VHO	**Vista Hermosa**	**1.53**	**74**	*eP*	Pg	21 55 01.7	+4.2
VHO				*e*S	Sg	21 55 19.5	+1.9
MEIG	**Mezcala**	**1.81**	**315**	*eP*	Pn	21 54 55.6	-2.6
MEIG				*e*S	Sn	21 55 16.0	-4.6
CAIG	**El Cayaco**	**1.95**	**282**	*eP*	Pn	21 54 57.1	-2.9
CAIG				*e*S	Sn	21 55 19.9	-4.1
YAIG	**Yautepec**	**2.33**	**341**	*eP*	Pn	21 55 02.2	-3.2
YAIG				*i* S	Sn	21 55 29.8	-3.8
ARIG	**Puente Sto Nin**	**2.56**	**310**	*eP*	Pn	21 55 06.2	-2.2
ARIG				*e*S	Sn	21 55 35.8	-3.4

JMA 07 21:57:24.4±0.2, 37.°09N×141.°57E, h37km±2km, M3.7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.62**	**271**	P	Pn	21 57 36.2	-0.6
ONAJ				S	Sn	21 57 45.0	-0.5
JFK	**Kawauchi**	**0.62**	**297**	P	Pn	21 57 36.6	-0.3
JFK				S	Sn	21 57 45.5	0.0
JMM	**Marumori**	**0.99**	**322**	P	Pn	21 57 42.0	+0.3
JMM				S	Sn	21 57 55.1	+0.6
JFT	**Otama**	**1.07**	**294**	P	Pn	21 57 44.1	+1.2
JFT				S	Sn	21 57 56.9	+0.4
JIO	**Ouri**	**1.37**	**353**	P	Pn	21 57 47.3	+0.3
JIO				S	Sn	21 58 04.0	+0.1
JOU	**Okura**	**1.46**	**331**	P	Pn	21 57 49.5	+1.3
MAT	**Matsushiro**	**2.75**	**260**	P	Pn	21 58 08.2	+2.2
MAT				S	Sn	21 58 44.3	+6.3

*GUC **07** 22:03:43.2±0.6, 34.°30S×72.°06W, h22km±3km, ML3.5*
*ISCJB **07** 22:03:44.7±0.7, 34.°35S±0.°05×71.°94W±0.°10, h17km±6km, Error ellipse: s-maj=13.8km s-min=7.1km az=16.8*

ISC 07 22:03:44.4±1.2, 34.°38S±0.°06×72.°0W±0.°2, h20km±6km, n18, σ1.9±73/24, 3C, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHPI	**Pichilemu**	**0.02**	**219**	⇑*iP*	**Pg**	**22 03 47.5**	**-0.3**
CHPI				*i* S	**Sg**	**22 03 50.6**	**+0.4**
TALC	**Talca**	**1.06**	**164**	⇑*iP*	**Pb**	**22 04 03.4**	**-0.8**
TALC				*i* S	**Sb**	**22 04 18.4**	**+0.8**
ANTU	**Antumapu**	**1.38**	**55**	*eP*	**Pn**	**22 04 07.2**	**-1.5**
ANTU				*e*S	**Sn**	**22 04 25.5**	**-1.0**
ANTU				IAML		22 04 31.3	
	comp=E,2μm,0.3s						
CLCH	**Cerro Calan**	**1.55**	**51**	⇑*iP*	**Pn**	**22 04 10.2**	**-0.9**
CLCH				*i* S	**Sn**	**22 04 30.5**	**-0.2**
CLCH				IAML		22 04 35.6	
	comp=E,1μm,1.1s						
ROC1	**El Roble**	**1.61**	**30**	*i* P	**Pb**	**22 04 14.4**	**+0.7**
ROC1				*i* S	**Sn**	**22 04 33.2**	**+0.8**
ROCH	**El Roble**	**1.62**	**30**	*eP*	**Pn**	**22 04 10.2**	**-1.9**
ROCH				*i* S	**Sn**	**22 04 31.6**	**-0.9**
ROCH				IAML		22 04 40.7	
	comp=N,727nm,0.3s						
PEL	**Peldehue**	**1.64**	**42**	*eP*	**Pn**	**22 04 11.3**	**-0.9**
PEL				*i* S	**Sn**	**22 04 31.8**	**-1.0**
PEL				IAML		22 04 39.7	
	comp=E,792nm,0.3s						
AAGR	**Agrelo**	**2.93**	**65**	*i* P	**Pb**	**22 04 36.1**	**0.0**
ARCO	**CERRO ARCO**	**2.97**	**60**	*i* P	**Pb**	**22 04 35.8**	**-1.1**
ARCO				IAML		22 05 25.9	
	comp=Z,43nm,0.5s						
AUSP	**Uspallata**	**3.06**	**46**	*i* P	**Pn**	**22 04 35.5**	**+3.5**
ASAL	**Salagasta**	**3.18**	**57**	*i* P	**Pb**	**22 04 38.1**	**-2.2**
RTLS	**Leoncito**	**3.42**	**42**	*i* P	**Pn**	**22 04 39.5**	**+2.5**
RTCV	**Cerro Valdivia**	**3.83**	**50**	*i* P	**Pn**	**22 04 45.6**	**+3.3**
RTLL	**Cerro Villicun**	**4.24**	**45**	*i* P	**Pn**	**22 04 50.4**	**+2.4**
AMOG	**MOGNA**	**4.52**	**42**	*i* P	**Pn**	**22 04 52.7**	**+0.9**
ACAN	**Cantantal**	**4.53**	**64**	*i* P	Pn	22 04 57.1	+5.1
AVFE	**Valle Fertil**	**5.33**	**47**	*i* P	**Pn**	**22 05 05.2**	**+2.2**
AVFE				IAML		22 06 17.2	
	comp=Z,14nm,0.3s						
AGUA	**GUANDACOL**	**5.71**	**32**	*i* P	**Pn**	**22 05 08.1**	**-0.2**

*CSEM **07** 22:03:52.7, 45.°69N×26.°43E, h161km, MD3.6/2*

BUC 07 22:03:52.7±0.7, 45.°69N×26.°43E, h161km±6km, MD3.6/2, 24C-30D, Error ellipse: s-maj=4.7km s-min=3.4km az=131.0, Romania

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLOR	**Plostina**	**0.22**	**44**	⇑*iP*	Pn	22 04 14.2	-0.2
PLOR	**Plostina**	**0.22**	**44**	⇑*iP*	Pn	22 04 14.2	-0.2
PLOR				*i* S	Sn	22 04 29.9	-1.1
PLOR	**Plostina**	**0.22**	**44**	⇑*iP*	Pn	22 04 14.2	-0.2
PLOR				*i* S	Sn	22 04 29.9	-1.1
VRI	**Vrincioaia**	**0.27**	**50**	⇓*iP*	Pn	22 04 14.6	+0.1
VRI	**Vrincioaia**	**0.27**	**50**	⇓*iP*	Pn	22 04 14.6	+0.1
VRI				*i* S	Sn	22 04 30.1	-1.1
VRI	**Vrincioaia**	**0.27**	**50**	⇓*iP*	Pn	22 04 14.6	+0.1
VRI				*i* S	Sn	22 04 30.1	-1.1
MLR	**Muntele Rosu**	**0.39**	**240**	⇑*iP*	Pn	22 04 15.1	+0.1
MLR	**Muntele Rosu**	**0.39**	**240**	⇑*iP*	Pn	22 04 15.1	+0.1
MLR				*i* S	Sn	22 04 31.7	-0.3
MLR	**Muntele Rosu**	**0.39**	**240**	⇑*iP*	Pn	22 04 15.1	+0.1
MLR				*i* S	Sn	22 04 31.7	-0.3
ODBI	**Odobesti**	**0.45**	**81**	⇑*iP*	Pn	22 04 15.6	+0.6
ODBI	**Odobesti**	**0.45**	**81**	⇑*iP*	Pn	22 04 15.6	+0.6
ODBI				*i* S	Sn	22 04 31.9	-0.2
ODBI	**Odobesti**	**0.45**	**81**	⇑*iP*	Pn	22 04 15.6	+0.6
ODBI				*i* S	Sn	22 04 31.9	-0.2
GRER		**0.49**	**129**	S	Sn	22 04 32.1	-0.4
GRER		**0.49**	**129**	*i* S	Sn	22 04 32.1	-0.4
GRER		**0.49**	**129**	*i* S	Sn	22 04 32.1	-0.4
PETR	**Petresti**	**0.56**	**87**	⇑*iP*	Pn	22 04 16.0	+0.5
PETR	**Petresti**	**0.56**	**87**	⇑*iP*	Pn	22 04 16.0	+0.5
PETR				*i* S	Sn	22 04 32.2	-0.8
PETR	**Petresti**	**0.56**	**87**	⇑*iP*	Pn	22 04 16.0	+0.5
PETR				*i* S	Sn	22 04 32.2	-0.8
ISR	**Istrita**	**0.58**	**172**	S	Sn	22 04 33.3	-0.1
ISR	**Istrita**	**0.58**	**172**	*i* S	Sn	22 04 33.3	-0.1
ISR	**Istrita**	**0.58**	**172**	*i* S	Sn	22 04 33.3	-0.1
SECR		**0.70**	**201**	S	Sn	22 04 34.1	-0.4
SECR		**0.70**	**201**	*i* S	Sn	22 04 34.1	-0.4
SECR		**0.70**	**201**	*i* S	Sn	22 04 34.1	-0.4
TESR	**Tescani**	**0.83**	**11**	⇑*iP*	Pn	22 04 17.3	+0.1
TESR	**Tescani**	**0.83**	**11**	⇑*iP*	Pn	22 04 17.3	+0.1
TESR				*i* S	Sn	22 04 34.5	-1.7
TESR	**Tescani**	**0.83**	**11**	⇑*iP*	Pn	22 04 17.3	+0.1
TESR				*i* S	Sn	22 04 34.5	-1.7
PGOR	**Pogoanele**	**0.88**	**153**	⇓*iP*	Pn	22 04 18.0	+0.4
PGOR	**Pogoanele**	**0.88**	**153**	⇓*iP*	Pn	22 04 18.0	+0.4
PGOR				*i* S	Sn	22 04 35.8	-0.7
PGOR	**Pogoanele**	**0.88**	**153**	⇓*iP*	Pn	22 04 18.0	+0.4
PGOR				*i* S	Sn	22 04 35.8	-0.7
VOIR		**1.00**	**256**	⇓*iP*	Pn	22 04 18.9	+0.3
VOIR		**1.00**	**256**	⇓*iP*	Pn	22 04 18.9	+0.3
VOIR				*i* S	Sn	22 04 37.3	-1.1
VOIR		**1.00**	**256**	⇓*iP*	Pn	22 04 18.9	+0.3
VOIR				*i* S	Sn	22 04 37.3	-1.1
SULR		**1.02**	**187**	⇓*iP*	Pn	22 04 19.0	+0.3
SULR		**1.02**	**187**	⇓*iP*	Pn	22 04 19.0	+0.3
SULR				*i* S	Sn	22 04 38.0	-0.5
SULR		**1.02**	**187**	⇓*iP*	Pn	22 04 19.0	+0.3
SULR				*i* S	Sn	22 04 38.0	-0.5
GIUM	**Giurgiulesti**	**1.27**	**99**	⇓*iP*	Pn	22 04 21.1	+0.3
GIUM	**Giurgiulesti**	**1.27**	**99**	⇓*iP*	Pn	22 04 21.1	+0.3
GIUM				*i* S	Sn	22 04 41.0	-1.3
GIUM	**Giurgiulesti**	**1.27**	**99**	⇓*iP*	Pn	22 04 21.1	+0.3
GIUM				*i* S	Sn	22 04 41.0	-1.3
ARR	**Arges**	**1.30**	**256**	⇓*iP*	Pn	22 04 22.8	+1.6
ARR	**Arges**	**1.30**	**256**	⇓*iP*	Pn	22 04 22.8	+1.6
ARR				*i* S	Sn	22 04 42.7	-0.4
ARR	**Arges**	**1.30**	**256**	⇓*iP*	Pn	22 04 22.8	+1.6
ARR				*i* S	Sn	22 04 42.7	-0.4
CFR	**Carcaliu**	**1.31**	**113**	⇓*iP*	Pn	22 04 20.8	-0.4
CFR	**Carcaliu**	**1.31**	**113**	⇓*iP*	Pn	22 04 20.8	-0.4
CFR				*i* S	Sn	22 04 41.0	-2.0
CFR	**Carcaliu**	**1.31**	**113**	⇓*iP*	Pn	22 04 20.8	-0.4
CFR				*i* S	Sn	22 04 41.0	-2.0
BUC1	**Bucharest**	**1.37**	**192**	S	Sn	22 04 42.9	-1.3
BUC1	**Bucharest**	**1.37**	**192**	*i* S	Sn	22 04 42.9	-1.3
BUC1	**Bucharest**	**1.37**	**192**	*i* S	Sn	22 04 42.9	-1.3
HARR	**Harsova**	**1.46**	**133**	⇓*iP*	Pn	22 04 22.5	-0.2
HARR	**Harsova**	**1.46**	**133**	⇓*iP*	Pn	22 04 22.5	-0.2
HARR	**Harsova**	**1.46**	**133**	⇓*iP*	Pn	22 04 22.5	-0.2
LEOM	**Leova**	**1.49**	**58**	⇑*iP*	Pn	22 04 23.4	+0.5
LEOM	**Leova**	**1.49**	**58**	⇑*iP*	Pn	22 04 23.4	+0.5
LEOM				*i* S	Sn	22 04 45.0	-1.2
LEOM	**Leova**	**1.49**	**58**	⇑*iP*	Pn	22 04 23.4	+0.5
LEOM				*i* S	Sn	22 04 45.0	-1.2
HUMR	**Humele**	**1.55**	**222**	⇓*iP*	Pn	22 04 23.8	+0.2
HUMR	**Humele**	**1.55**	**222**	⇓*iP*	Pn	22 04 23.8	+0.2
HUMR				*i* S	Sn	22 04 46.5	-0.8
HUMR	**Humele**	**1.55**	**222**	⇓*iP*	Pn	22 04 23.8	+0.2
HUMR				*i* S	Sn	22 04 46.5	-0.8
TLCR		**1.75**	**106**	⇑*iP*	Pn	22 04 25.6	-0.1
TLCR		**1.75**	**106**	⇑*iP*	Pn	22 04 25.6	-0.1
TLCR				*i* S	Sn	22 04 49.2	-1.9
TLCR		**1.75**	**106**	⇑*iP*	Pn	22 04 25.6	-0.1
TLCR				*i* S	Sn	22 04 49.2	-1.9
TIRR	**Tirgusor**	**1.87**	**131**	⇓*iP*	Pn	22 04 26.8	-0.2
TIRR	**Tirgusor**	**1.87**	**131**	⇓*iP*	Pn	22 04 26.8	-0.2
TIRR				*i* S	Sn	22 04 50.8	-2.6
TIRR	**Tirgusor**	**1.87**	**131**	⇓*iP*	Pn	22 04 26.8	-0.2
TIRR				*i* S	Sn	22 04 50.8	-2.6
MILM	**Milestii Mici**	**2.06**	**53**	⇑*iP*	Pn	22 04 29.6	+0.5
MILM	**Milestii Mici**	**2.06**	**53**	⇑*iP*	Pn	22 04 29.6	+0.5
MILM				*i* S	Sn	22 04 55.3	-1.9
MILM	**Milestii Mici**	**2.06**	**53**	⇑*iP*	Pn	22 04 29.6	+0.5
MILM				*i* S	Sn	22 04 55.3	-1.9

GUC 07 22:08:20.8±0.7, 21.°04S×69.°08W, h116km±3km, ML3.7, 7C-6D, Northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB01	**IPOC Station P**	**0.38**	**270**	⇑*iP*	Pn	22 08 38.1	+0.4
PB01				*i* S	Sn	22 08 51.0	+0.5
PB01				IAML		22 08 51.9	
	comp=N,3μm,0.3s						
PB09	**IPOC Station P**	**0.77**	**191**	⇑*iP*	Pn	22 08 40.9	+0.5
PB09				*i* S	Sn	22 08 56.5	+1.2
PB08	**IPOC Station P**	**0.90**	**356**	⇑*iP*	Pn	22 08 42.5	+0.5
PB08				*i* S	Sn	22 08 58.8	+1.0
PB07	**IPOC Station P**	**1.01**	**228**	⇑*iP*	Pn	22 08 43.6	+0.8
PB07				*i* S	Sn	22 09 00.5	+1.1
PB07				IAML		22 09 01.3	
	comp=N,2μm,0.1s						
PATCX	**Punta Patache**	**1.03**	**282**	⇑*iP*	Pn	22 08 44.2	+1.4
PATCX				*i* S	Sn	22 09 01.5	+2.0
PATCX				IAML		22 09 03.3	
	comp=E,3μm,0.3s						
HMBC	**Humberstone**	**1.07**	**315**	⇓*iP*	Pn	22 08 44.2	+0.9
HMBC				*i* S	Sn	22 09 01.6	+1.2
HMBC				IAML		22 09 02.5	
	comp=N,2μm,0.1s						
PB11	**IPOC Station P**	**1.39**

CBIJ Chichi jima 10.08 172 *e*Pn **Pn 22 13 35.1 +3.0**
KSRS Korea Array 10.19 276 Pn Pn 22 13 38.2 +4.8
0.4nm,0.3s,baz=93,slow=13,SNR=23
KSRS LR LR 22 17 14.0
comp=Z,163nm,19.4s,baz=350,slow=36
KS15 Wonju Array Si 10.22 276 *e*Pn **Pn 22 13 36.2 +2.3**
KSAR Wonju Array Be 10.22 276 P Pn 22 13 38.3 +4.4
KSAR Wonju Array Be 10.22 276 Pn Pn 22 13 38.2 +4.3
TYV Tymovskoe 13.80 5 *e*P **Pn 22 14 23.0 +0.1**
SKR Severo-Kuril's 17.47 34 *i* P Pn 22 15 06.4 -4.5
BJI Beijing 19.38 286 P **P 22 15 32.6 -0.5**
BJI pmax pmax
comp=Z,6.0nm,1.0s
PEA0 Petropavlovsk- 19.90 31 *e*P **P 22 15 40.0 +1.2**
PET Petropavlovsk 20.24 33 *e*P Pn 22 15 44.1 -0.3
PET pmax pmax
comp=Z,23nm,1.3s
PET Petropavlovsk 20.24 33 *e*P **P 22 15 44.1 +1.6**
comp=Z,23nm,1.3s
SSLB Suanglung 21.54 237 *e*P **P 22 15 58.4 +1.6**
comp=Z,13nm,1.6s
TPUB Ta-pu 22.09 237 *e*P **P 22 16 02.9 +0.2**
comp=Z,6.8nm,0.9s
TWG Pinlang 22.13 235 *e*P **P 22 16 03.3 +0.2**
comp=Z,62nm,1.4s
HHC Hu-ho-hao-te 22.90 288 *e*P **P 22 16 11.2 -0.1**
HHC pP sP 22 16 23.1 +8.4
HHC sP pP 22 16 29.0 +15
HHC S S 22 20 13.1 -8.3
HHC pmax pmax
comp=Z,23nm,0.8s
HHC pmax pmax
comp=Z,250nm,3.9s
HHC LR LR
comp=N,830nm,12.8s
HHC LR LR
comp=E,920nm,11.6s
HHC LR LR
comp=Z,960nm,12.2s
MA2 Magadan 23.39 13 *e*P **P 22 16 16.5 +0.6**
MA2 pmax pmax
comp=Z,28nm,0.6s
MA2 Magadan 23.39 13 *e*P **P 22 16 16.5 +0.6**
comp=Z,28nm,0.6s
YAK Yakutsk 25.86 348 *e*P **P 22 16 39.6 +0.9**
YAK pmax pmax
comp=Z,11nm,0.5s
YAK Yakutsk 25.86 348 *e*P **P 22 16 39.6 +0.9**
comp=Z,11nm,0.5s
ENH Enshi 26.77 264 *e*P **P 22 16 47.8 +0.3**
comp=Z,4.3nm,0.6s
SEY Seymchan 26.81 12 P **P 22 16 46.9 -0.6**
comp=Z,2.1nm,0.7s,baz=201,slow=9.0,SNR=8.2
SEY Seymchan 26.81 12 *i* P **P 22 16 47.6 +0.2**
ULN Ulaanbaatar 26.83 304 *i* P **P 22 16 47.9 0.0**
ULN pmax pmax
comp=Z,2.0nm,1.0s
ULN Ulaanbaatar 26.83 304 *e*P **P 22 16 48.5 +0.6**
comp=Z,2.6nm,0.7s
BOD Bodaibo 27.15 328 *e*P **P 22 16 50.6 +0.1**
BOD pmax pmax
comp=Z,3.0nm,2.6s
SONA1 Songino Array 27.25 304 *e*P **P 22 16 51.8 0.0**
SONM Songino Array 27.26 304 P **P 22 16 51.1 -0.7**
comp=Z,1.9nm,0.7s,baz=103,slow=9.1,SNR=9.5
SONM PcP **PcP 22 20 11.7 +0.2**
comp=Z,0.6nm,0.6s,baz=4.3,slow=5.9,SNR=4.1
H11N2 WAKE ISLAND Hy 28.69 120 T T 22 46 45.2
baz=313,slow=75,SNR=161
H11N1 WAKE ISLAND Hy 28.70 120 T T 22 46 48.5
baz=313,slow=75,SNR=206
H11N3 WAKE ISLAND Hy 28.71 120 T T 22 46 46.6
baz=313,slow=75,SNR=162
H11S1 WAKE ISLAND Hy 29.39 122 T T 22 47 47.4
baz=314,slow=76,SNR=75
H11S3 WAKE ISLAND Hy 29.39 122 T T 22 47 46.2
baz=314,slow=76,SNR=64
H11S2 WAKE ISLAND Hy 29.41 122 T T 22 47 46.7
baz=314,slow=76,SNR=39
TLY Talaya 29.84 311 *e*P **P 22 17 15.0 +0.4**
TLY pmax pmax
comp=Z,4.0nm,0.7s
TLY Talaya 29.84 311 *e*P **P 22 17 15.0 +0.4**
comp=Z,4.1nm,0.7s
CD2 Chengdu 31.10 270 P **P 22 17 24.6 -1.4**
CD2 pmax pmax
comp=Z,1.0nm,0.6s
GTA Gaotai 31.99 287 *e*P P 22 17 39.1 +5.3
GTA pP sP 22 17 45.2 +7.9
GTA sP pP 22 17 48.4 +12
GTA pmax pmax
comp=Z,2.0nm,0.9s
DAV Davao City (W) 32.94 208 *e*P **P 22 17 41.8 -0.3**
comp=Z,376nm,1.2s
BILL Bilibino 34.10 17 *e*P P 22 17 46.7 -5.0
BILL *e*PPP PPP 22 19 12.3
BILL pmax pmax
comp=Z,1.0nm,1.0s
KMI Kunming 34.41 261 P **P 22 17 55.3 +0.1**
KMI pmax pmax
comp=Z,10.0nm,1.0s
TIXI Tiksi 35.13 354 P **P 22 17 59.2 -1.3**
comp=Z,1.3nm,0.3s,baz=146,slow=3.4,SNR=6.2
TIXI Tiksi 35.13 354 *i* P **P 22 17 59.3 -1.3**
TIXI pmax pmax
comp=Z,2.0nm,1.0s
TIXI Tiksi 35.13 354 *e*P **P 22 18 00.1 -0.5**
comp=Z,2.0nm,0.8s
KKM Kota Kinabalu 38.16 222 *e*P **P 22 18 27.8 +0.7**
comp=Z,18nm,1.1s
GAMB Gambell 38.94 31 *e*P **P 22 18 33.5 +0.6**
comp=Z,21nm,1.9s
MANU Manus Island 39.46 169 *e*P **P 22 18 37.5 -0.4**
comp=Z,82nm,1.8s
WMQ Urumqi 40.29 297 *e*P **P 22 18 44.6 0.0**
WMQ pmax pmax
comp=Z,4.0nm,0.6s
WMQ pmax pmax
comp=Z,110nm,5.4s
CM31 Chiang Mai Arr 40.97 255 *e*P **P 22 18 50.1 -0.3**
CM01 Chiang Mai Arr 40.98 255 *e*P **P 22 18 51.0 +0.5**
TNA Tin City 41.05 30 *e*P **P 22 18 51.3 +0.7**
comp=Z,4.2nm,0.8s
ZALV Zalesovo Beam 41.43 312 P **P 22 18 53.7 -0.1**
comp=Z,2.5nm,0.5s,baz=101,slow=7.4,SNR=12
ZALV PcP **PcP 22 20 51.2 -0.4**
comp=Z,0.6nm,0.4s,baz=95,slow=3.4,SNR=4.1
SDPT Sand Point 43.14 46 *e*P **P 22 19 09.0 +1.3**
comp=Z,56nm,1.2s
SBUM Sibu 43.33 224 *e*P **P 22 19 09.4 -0.2**
comp=Z,17nm,1.9s
MK01 Makanchi Array 43.58 302 *e*P **P 22 19 11.7 +0.2**
MK31 Makanchi Array 43.58 302 *e*P **P 22 19 12.0 +0.5**
MK31 Makanchi Array 43.58 302 *e*P **P 22 19 12.0 +0.5**
MKAR Makanchi Array 43.58 302 P **P 22 19 11.7 +0.1**
comp=Z,0.9nm,0.5s,baz=82,slow=9.6,SNR=14
MKAR PcP **PcP 22 20 58.8 -0.2**
comp=Z,0.5nm,0.8s,baz=101,slow=2.9,SNR=2.9
MKAR Makanchi Array 43.58 302 *e*P **P 22 19 12.0 +0.5**
MKAR 22 20 58.8
MKAR Makanchi Array 43.58 302 *e*P **P 22 19 12.0 +0.5**
MKAR PcP **PcP 22 20 58.8 -0.2**
MAKZ Makanchi 43.79 302 *e*P **P 22 19 13.1 -0.1**
MAKZ pmax pmax
comp=Z,2.0nm,0.8s
MAKZ Makanchi 43.79 302 *e*P **P 22 19 13.1 -0.1**
comp=Z,1.6nm,0.8s
KSM Kuching 45.21 225 *e*P **P 22 19 25.6 +0.9**
comp=Z,6.1nm,0.8s
KURK Kurchatov 45.42 308 *e*P **P 22 19 25.9 -0.2**
KURK pmax pmax
comp=Z,20nm,0.8s
KURK Kurchatov 45.42 308 *e*P **P 22 19 25.9 -0.2**
comp=Z,20nm,0.8s
TT01 Tatalina 45.67 35 *e*P **P 22 19 28.5 +0.7**
SVW2 Sparrevohn 45.80 37 *e*P **P 22 19 29.4 +0.5**
comp=Z,6.3nm,1.1s
KAPI Kappang 46.26 210 *e*P **P 22 19 33.7 +0.8**
comp=Z,20nm,0.9s
GUN Gumba 46.58 275 *e*P **P 22 19 36.0 +0.1**
comp=Z,6.2nm,0.4s
KKN Kakani 47.11 275 *e*P **P 22 19 39.5 -0.4**
PKIN Phulchoki 47.11 275 *e*P **P 22 19 38.2 -1.8**
KDAK Kodiak Island 47.41 42 P P 22 19 56.1 +15
comp=Z,6.0nm,0.8s,baz=286,slow=6.3,SNR=6.1
KDAK Kodiak Island 47.41 42 *c e*P **P 22 19 42.0 +0.5**
KDAK Kodiak Island 47.41 42 *e*P **P 22 19 42.1 +0.5**
comp=Z,14nm,1.3s
CAST Castle Rocks 47.47 34 *e*P **P 22 19 43.2 +1.2**
comp=Z,4.4nm,1.2s
SPU Mount Spurr 47.51 37 *e*P **P 22 19 43.3 +1.0**
GKN Gorkha 47.52 276 *e*P **P 22 19 43.0 -0.1**
comp=Z,13nm,0.7s
HOM Homer 47.78 39 *e*P **P 22 19 45.2 +0.8**
comp=Z,131nm,1.0s
KTH Kantishna Hill 47.99 34 *e*P **P 22 19 46.7 +0.6**
comp=Z,4.6nm,1.0s
MLY Manley 48.07 32 *e*P **P 22 19 46.7 0.0**
comp=Z,3.0nm,0.8s
JOHN Johnston Islan 48.20 101 *e*P **P 22 19 48.0 -0.2**
comp=Z,375nm,1.4s
KOLN Koldanda 48.45 276 *e*P **P 22 19 48.8 -1.5**
BWN Browne 48.63 33 *e*P **P 22 19 52.2 +1.2**
comp=Z,17nm,1.2s
RC01 Rabbit Creek A 48.63 37 *e*P **P 22 19 51.9 +0.8**
comp=Z,5.5nm,0.8s
PYUN Piuthan 48.79 277 *e*P **P 22 19 53.3 +0.4**
SEW Seward 48.85 39 *e*P **P 22 19 52.9 +0.3**
comp=Z,16nm,1.0s
MYKOM Kota Tinggi 48.86 233 *e*P **P 22 19 53.6 +0.4**
comp=Z,8.9nm,1.2s
PMR Palmer 48.89 37 *e*P **P 22 19 53.3 +0.3**
PMR pmax pmax
comp=Z,3.0nm,0.9s
PMR Palmer 48.89 37 *e*P **P 22 19 53.2 +0.3**
comp=Z,3.3nm,0.9s
RND Reindeer 48.92 34 *e*P **P 22 19 53.9 +0.6**
RND pmax pmax
comp=Z,7.0nm,1.2s
RND Reindeer 48.92 34 *e*P **P 22 19 53.9 +0.6**
comp=Z,6.8nm,1.2s
TKM2 Tokmak 2 49.08 298 *e*P **P 22 19 55.2 +0.2**
TKM2 pmax pmax
comp=Z,3.0nm,0.7s
TKM2 Tokmak 2 49.08 298 *e*P **P 22 19 55.1 +0.2**
comp=Z,3.0nm,0.7s
SOEI Soe 49.12 202 *e*P **P 22 19 55.5 +0.1**
comp=Z,25nm,1.1s
MDM Murphy Dome 49.14 32 *e*P **P 22 19 55.1 +0.2**
comp=Z,10nm,1.3s
WRH Wood River Hil 49.22 33 *e*P **P 22 19 56.3 +0.9**
comp=Z,3.4nm,0.8s
SML Sawmill 49.26 36 *e*P **P 22 19 56.9 +1.1**
SML pmax pmax
comp=Z,5.0nm,0.8s
SML Sawmill 49.26 36 *e*P **P 22 19 56.9 +1.1**
comp=Z,4.7nm,0.8s
IL1 Eielson Array 49.72 32 *e*P **P 22 19 59.0 -0.3**
ILAR Eielson Array 49.72 32 P **P 22 19 59.3 0.0**
comp=Z,1.8nm,0.7s,baz=271,slow=6.1,SNR=22
ILB Eielson Array 49.72 32 *e*P **P 22 19 59.6 +0.3**
SCM Sheep Creek Mo 49.73 36 *e*P **P 22 20 00.4 +0.9**
SCM pmax pmax
comp=Z,32nm,2.0s
SCM Sheep Creek Mo 49.73 36 *e*P **P 22 20 00.4 +0.9**
comp=Z,32nm,2.0s
AAK Ala-Archa 49.94 298 *e*P **P 22 20 02.6 +1.1**
AAK pmax pmax
comp=Z,2.0nm,0.8s
AAK Ala-Archa 49.94 298 *e*P **P 22 20 01.1 -0.4**
comp=Z,1.7nm,0.6s
BRVK Borovoye 50.14 312 *i* P **P 22 20 02.1 -0.6**
BRVK pmax pmax
comp=Z,5.0nm,1.0s
BRVK Borovoye 50.14 312 *e*P **P 22 20 02.8 +0.1**
comp=Z,4.7nm,0.9s
FYU Fort Yukon 50.31 30 *e*P **P 22 20 04.4 +0.7**
comp=Z,11nm,1.2s
KLU Klutina 50.43 37 *e*P **P 22 20 05.0 +0.1**
comp=Z,18nm,2.0s
EKS2 Erkin-Say 50.44 298 *e*P **P 22 20 04.7 -0.5**
EKS2 pmax pmax
comp=Z,7.0nm,1.6s
EKS2 Erkin-Say 50.44 298 *e*P **P 22 20 04.7 -0.5**
comp=Z,6.8nm,1.6s
PAX Paxson 50.48 35 *e*P **P 22 20 05.9 +0.7**
PAX pmax pmax
comp=Z,8.0nm,1.6s
PAX Paxson 50.48 35 *e*P **P 22 20 05.9 +0.7**
comp=Z,7.5nm,1.6s
MTN Manton Dam 50.51 192 *e*P **P 22 20 06.5 +0.7**
comp=Z,12nm,1.1s
DIV Divide 50.55 37 *e*P **P 22 20 06.0 +0.3**
comp=Z,6.6nm,1.1s
ZRNK Zerenda 50.92 312 *e*P **P 22 20 08.9 +0.3**
ZRNK pmax pmax
comp=Z,5.0nm,0.8s
ZRNK Zerenda 50.92 312 *e*P **P 22 20 08.9 +0.3**
comp=Z,4.6nm,0.8s
DOT Dot Lake 51.05 34 *e*P **P 22 20 09.8 +0.4**
comp=Z,30nm,1.7s
MENT Mentasta 51.28 35 *e*P **P 22 20 12.8 +1.6**
comp=Z,3.0nm,0.8s
PSI Prapat 51.35 238 *e*P **P 22 20 13.3 +0.9**
PSI pmax pmax
comp=Z,7.0nm,0.9s
PSI Prapat 51.35 238 *e*P **P 22 20 13.3 +0.9**
comp=Z,7.2nm,0.9s
BKNI Bangkinang 51.78 234 *e*P **P 22 20 15.1 -0.3**
comp=Z,48nm,0.4s
KKAR Karatay Array 52.58 300 *e*P **P 22 20 20.9 -0.2**
KKAR Karatay Array 52.58 300 *e*P **P 22 20 20.9 -0.2**
GSI Gunungsitoli 53.36 238 *e*P **P 22 20 26.6 -0.5**
comp=Z,72nm,1.7s
YKU2 Yakutat 53.82 38 *e*P **P 22 20 30.7 +0.8**
comp=Z,661nm,1.2s
INK Inuvik 54.56 27 *e*P **P 22 20 36.1 +0.9**
INK pmax pmax
comp=Z,10.0nm,1.8s
INK Inuvik 54.56 27 *e*P **P 22 20 36.1 +0.9**
comp=Z,10nm,1.8s
ARU Arti 55.91 318 *c i*P **P 22 20 45.8 +0.7**
ARU 22 22 56.1
ARU S **S 22 28 34.3 +1.5**
ARU SS **SS 22 32 15.3 -2.7**
ARU pmax pmax
comp=Z,8.0nm,2.5s
SKAG Skagway 55.97 38 *e*P **P 22 20 46.5 +1.0**
comp=Z,20nm,1.6s
HLK Haleakala 56.58 88 *e*P **P 22 20 50.4 -0.4**
comp=Z,345nm,1.3s
KBL Kabul 56.85 291 *e*P **P 22 20 51.9 -0.6**
KBL pmax pmax
comp=Z,4.0nm,1.0s
KBL Kabul 56.85 291 *e*P **P 22 20 51.9 -0.6**
comp=Z,4.1nm,1.0s
WRA Waramunga Arr 57.08 187 P **P 22 20 52.6 -1.2**
comp=Z,2.0nm,0.5s,baz=4.0,slow=7.4,SNR=65
WRA PcP **PcP 22 21 48.7 +0.1**
comp=Z,1.5nm,0.7s,baz=1.6,slow=4.7,SNR=6.6
KKH Kailua Kona 57.34 89 *e*P **P 22 20 56.0 +0.2**
KKH Kailua Kona 57.34 89 *e*P **P 22 20 56.0 +0.2**
ABKAR Akbulak array 57.44 310 *e*P **P 22 20 56.4 +0.2**
XMIS Christmas Isla 57.66 222 *e*P **P 22 20 58.6 +0.5**
comp=Z,279nm,1.9s
FUNA Funafuti 57.98 133 *e*P **P 22 21 00.6 +0.3**
comp=Z,182nm,1.4s
ASAR Alice Springs 60.81 187 P **P 22 21 19.0 -0.7**
comp=Z,0.8nm,0.8s,baz=16,slow=15,SNR=12
ASAR Alice Springs 60.81 187 P **P 22 21 19.0 -0.7**
ASAR pmax pmax
comp=Z,1.0nm,0.8s
RES Resolute Bay 62.65 14 *e*P **P 22 21 31.5 0.0**
RES pmax pmax
comp=Z,2.0nm,0.8s
RES Resolute Bay 62.65 14 *e*P **P 22 21 31.5 0.0**
comp=Z,2.1nm,0.8s
GEYT Alibeck 63.29 299 P **P 22 21 36.6 +0.3**
comp=Z,1.5nm,0.8s,baz=48,slow=2.2,SNR=4.3
ARCES ARCESS Array B 63.71 339 P **P 22 21 38.1 -0.5**
comp=Z,4.5nm,1.0s,baz=33,slow=7.3,SNR=5.7
YKA Yellowknife Ar 64.01 30 P **P 22 21 40.4 -0.2**
comp=Z,1.0nm,0.9s,baz=296,slow=6.2,SNR=10
OBN Obninsk 67.68 323 *e*P P 22 21 58.4 -6.0
OBN *e* 22 22 04.6
OBN *e* 22 22 29.8
OBN pmax pmax
comp=Z,3.0nm,0.8s
OBN MLR MLR
comp=Z,81nm,17.0s
FIA1 FINESS Array S 68.46 332 *e*P **P 22 22 09.0 -0.2**
FINES FINESS Array B 68.46 332 P **P 22 22 09.4 +0.1**
comp=Z,2.3nm,0.7s,baz=60,slow=6.9,SNR=13
STKA Stephens Creek 68.65 179 P **P 22 22 09.5 -1.1**
comp=Z,1.3nm,0.7s,baz=340,slow=5.1,SNR=3.0
SUMG Summit 70.59 360 *e*P **P 22 22 23.5 +0.8**
SUMG pmax pmax
comp=Z,10.0nm,0.9s
SUMG Summit 70.59 360 *e*P **P 22 22 23.5 +0.8**
comp=Z,9.8nm,0.9s
AKASG Malin Array Be 73.87 322 P **P 22 22 41.3 -0.9**
comp=Z,0.7nm,0.4s,baz=47,slow=5.9,SNR=7.9
NB2 NORSAR Subarra 73.88 337 P **P 22 22 42.1 0.0**
comp=Z,1.0nm,0.8s,baz=42,slow=6.2
NOA NORSAR Array B 73.88 337 P **P 22 22 41.7 -0.4**
comp=Z,1.5nm,0.7s,baz=40,slow=5.9,SNR=7.6
KIEV Kiev 73.88 322 *e*P **P 22 22 41.7 -0.5**
KIEV pmax pmax
comp=Z,2.0nm,0.8s
LRM Limekiln Ridge 74.48 44 *e*P **P 22 22 46.6 +0.4**
DLMT Dillon 74.68 44 *e*P **P 22 22 47.6 +0.4**
comp=Z,4.9nm,0.6s
NV01 Mina Array Sit 75.39 53 *e*P **P 22 22 51.2 -0.3**
NVAR Mina Array Bea 75.39 53 P **P 22 22 51.4 -0.1**
comp=Z,1.2nm,0.6s,baz=281,slow=5.3,SNR=7.0
BW06 Boulder Array 78.01 45 *e*P **P 22 23 05.6 -0.6**
PDAR Pinedale Array 78.01 45 P **P 22 23 06.6 +0.3**
comp=Z,1.0nm,0.5s,baz=248,slow=2.1,SNR=12
BRTR Keskin Array B 78.36 311 P **P 22 23 08.2 +0.1**
comp=Z,0.5nm,0.8s,baz=20,slow=2.8,SNR=4.0
BR231 Keskin MP Arra 78.80 312 *e*P **P 22 23 09.1 -1.5**
P18A Preston Nutter 79.61 48 *e*P **P 22 23 17.2 +1.9**
comp=Z,5.9nm,1.2s
DPC Dobruska-Polom 80.07 328 *e*P P 22 23 20.5 +3.3
DPC Dobruska-Polom 80.07 328 *e*P P 22 23 20.5 +3.3
BRG Berggiesshubel 80.68 329 *e*P **P 22 23 21.4 +1.0**
comp=Z,6.7nm,1.1s
BRG Berggiesshubel 80.68 329 *e*P **P 22 23 21.4 +1.0**
BRG pmax pmax
comp=Z,7.0nm,1.2s
CLL Collm 80.73 330 *i* P **P 22 23 21.6 +1.0**
comp=Z,4.0nm,1.0s
CLL L L 23 12 00.0
comp=Z,100nm,21.3s
CLL Collm 80.73 330 *i* P **P 22 23 21.6 +1.0**
CLL pmax pmax
comp=Z,4.0nm,1.0s
KHC Kasperske Hory 82.16 328 *e*P **P 22 23 29.5 +1.2**
KHC Kasperske Hory 82.16 328 *e*P **P 22 23 29.5 +1.2**
GERES GERESS Array B 82.33 328 P **P 22 23 29.2 -0.1**
comp=Z,0.5nm,0.4s,baz=38,slow=6.8,SNR=6.2
SCHQ Schefferville 85.40 16 P **P 22 23 44.8 0.0**
comp=Z,3.8nm,0.8s,baz=33,slow=2.7,SNR=4.6
TX31 Lajitas Ar. Si 90.52 52 *e*P **P 22 24 09.2 -0.7**
TXAR Lajitas Array 90.52 52 P **P 22 24 10.3 +0.4**
comp=Z,1.0nm,0.6s,baz=299,slow=3.0,SNR=17
KEST Kesra 94.60 322 LR LR 23 12 03.9
comp=Z,244nm,19.8s,baz=202,slow=39
LPAZ La Paz 147.14 59 PKPbc **PKPbc 22 30 51.8 -0.1**
comp=Z,3.6nm,0.6s,baz=310,slow=2.3,SNR=15

*IDC **07** 22:20:49.0±2.1, 38°.04N×143°.06E, h0km, mb3.4/2, mb1 3.6/5, mb1mx3.3/41, mbtmp3.6/5, ML3.1/3, Error ellipse: s-maj=51.1km s-min=23.5km az=91.0*
*JMA **07** 22:20:53.9±0.1, 38°.01N×142°.61E, h39km±2km, M3.7*
ISC 07 22:20:52.2±3.2, 38°.07N±0°.05×142°.62E±0°.09, h10km±17km, n13, σ1s27/21, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.07**	**292**	P	**Pb**	**22 21 13.0**	**+0.2**
JIO				*e*S	**Sg**	**22 21 26.4**	**-0.3**
OFUJ	**Ofunato**	**1.25**	**324**	P	**Pn**	**22 21 16.1**	**+0.3**
OFUJ				S	**Sb**	**22 21 31.7**	**-0.5**
JMK	**Ichinoseki**	**1.41**	**309**	P	**Pn**	**22 21 18.4**	**+0.5**
JMM	**Marumori**	**1.46**	**263**	P	**Pn**	**22 21 18.1**	**-0.5**
JMM				S	**Sn**	**22 21 35.8**	**-1.9**
JFK	**Kawauchi**	**1.55**	**244**	P	**Pn**	**22 21 19.2**	**-0.7**
JOU	**Okura**	**1.57**	**282**	P	**Pn**	**22 21 20.8**	**+0.7**
JOU				S	**Sn**	**22 21 40.8**	**+0.3**
MIYJ	**Miyakonagasawa**	**1.63**	**338**	P	**Pn**	**22 21 21.4**	**+0.4**
MIYJ				*e*S	**Sn**	**22 21 42.1**	**+0.1**
JOM	**Ohasama**	**1.74**	**324**	P	**Pn**	**22 21 23.9**	**+1.3**
JOM				*e*S	**Sn**	**22 21 45.1**	**+0.3**
MJAR	**Matsushiro Arr**	**3.83**	**248**	Pn	**Pn**	**22 21 53.9**	**+2.7**
0.7nm,0.3s,baz=70,slow=10,SNR=7.8							
MJAR				Sn	**Sn**	**22 22 39.3**	**+2.9**
0.4nm,0.3s,baz=73,slow=18,SNR=2.7							
JHJ	**Hachijo jima 2**	**5.45**	**206**	Pn	**Pn**	**22 22 14.1**	**+0.5**
4.3nm,0.3s,baz=60,slow=20,SNR=2.0							
JHJ				Sn	Sn	22 23 06.2	-10
9.5nm,0.3s,baz=90,slow=20,SNR=2.7							
ASAJ	**Asahikawa**	**6.04**	**360**	Pn	**Pn**	**22 22 21.2**	**-0.4**
0.3nm,0.3s,baz=212,slow=19,SNR=2.9							
ASAJ				Sn	**Sn**	**22 23 32.1**	**+1.3**
0.2nm,0.3s,baz=252,slow=20,SNR=1.9							
MKAR	**Makanchi Array**	**44.39**	**301**	P	**P**	**22 29 02.7**	**-0.1**
0.2nm,0.5s,baz=94,slow=9.0,SNR=4.2							
WRA	**Warramunga Arr**	**58.22**	**189**	P	**P**	**22 30 45.2**	**-1.5**
0.7nm,1.1s,baz=9.5,slow=7.5,SNR=3.2							

MEX 07 22:24:07.9±0.7, 16°.88N×95°.06W, h153km±18km, MD3.7, Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HUIG	**Huatulco**	**1.49**	**222**	*i* P	Pn	22 24 35.8	-1.8
HUIG				*e*S	Sn	22 24 58.6	-1.7
VHO	**Vista Hermosa**	**1.61**	**277**	*e*P	Pn	22 24 38.5	-0.5
VHO				*e*S	Sn	22 25 00.5	-2.4
PCIG		**2.12**	**123**	*e*P	Pn	22 24 44.0	-0.6
PCIG				*e*S	Sn	22 25 10.4	-2.4
TPIG	**Tehuac#an**	**2.67**	**305**	*e*P	Pn	22 24 50.5	-1.0
TPIG				*i* S	Sn	22 25 23.2	-1.9
YAIG	**Yautepec**	**4.29**	**298**	*i* P	Pn	22 25 10.3	-1.9
YAIG				*i* S	Sn	22 25 59.4	-2.8

WEL 07 22:26:21.7±0.3, 37°.88S×176°.04E, h162km±3km, ML3.7/7, 7C-1D, Error ellipse: s-maj=3.6km s-min=2.7km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**0.93**	**114**	PN	Pn	22 26 47.4	+0.4
URZ				SN	Sn	22 27 06.7	+0.2
URZ				AML	AML	22 27 08.3	
MRHZ	**Matea Rd**	**0.99**	**163**	PN	Pn	22 26 48.2	+0.6
MRHZ				SN	Sn	22 27 07.9	+0.2
MWZ	**Matawai**	**1.26**	**111**	PN	Pn	22 26 50.2	+0.3
MWZ				AML	AML	22 27 13.0	
MWZ				AML	AML	22 27 14.0	
BKZ	**Black Stump Fm**	**1.33**	**165**	⇑PN	Pn	22 26 50.5	-0.1
BKZ				SN	Sn	22 27 12.2	-0.7
BKZ				AML	AML	22 27 12.8	
SNGZ	**Shannon Statio**	**1.36**	**132**	⇑PN	Pn	22 26 51.2	+0.3
SNGZ				SN	Sn	22 27 13.0	-0.4
HAZ	**Te Kaha**	**1.39**	**85**	PN	Pn	22 26 50.9	-0.2
HAZ				SN	Sn	22 27 13.0	-0.6
WNVZ	**Wahianoa**	**1.48**	**193**	PN	Pn	22 26 52.5	+0.3
WHHZ	**Waihua**	**1.52**	**142**	PN	Pn	22 26 52.5	+0.1
WHHZ				SN	Sn	22 27 15.8	-0.3
MOVZ	**Moawhango**	**1.54**	**188**	PN	Pn	22 26 52.4	-0.3
TWGZ	**Tauwhareparae**	**1.56**	**101**	⇑PN	Pn	22 26 53.2	+0.3
KWHZ	**Kaweka Forest**	**1.57**	**169**	PN	Pn	22 26 52.9	0.0
ARHZ	**Aropaoanui**	**1.57**	**152**	PN	Pn	22 26 53.1	+0.2
ARHZ				SN	Sn	22 27 16.8	-0.2
RIGZ	**Rimuhau**	**1.59**	**122**	PN	Pn	22 26 53.2	+0.1
BHHZ	**Black Hill Sta**	**1.60**	**179**	PN	Pn	22 26 52.9	-0.4
MCHZ	**McNeill Hill**	**1.64**	**162**	PN	Pn	22 26 54.0	+0.3
PUZ	**Puketiti**	**1.77**	**97**	⇑PN	Pn	22 26 54.5	-0.5
PUZ				AML	AML	22 27 34.4	
KRHZ	**Kereru**	**1.78**	**172**	PN	Pn	22 26 54.7	-0.4
WMGZ	**Waiomatatini S**	**1.88**	**89**	PN	Pn	22 26 55.9	-0.4
MHGZ	**Mahia Peninsul**	**1.94**	**131**	PN	Pn	22 26 56.4	-0.4
KAHZ	**Kahuranaki**	**2.02**	**161**	⇑PN	Pn	22 26 57.3	-0.5
PNHZ	**Pukenui**	**2.03**	**176**	PN	Pn	22 26 56.9	-1.0
TSZ	**Takapari Road**	**2.17**	**182**	⇑PN	Pn	22 26 58.3	-1.3
WPHZ	**Waipukurau**	**2.20**	**172**	PN	Pn	22 26 58.7	-1.2
PXZ	**Pawanui**	**2.24**	**164**	⇑PN	Pn	22 26 59.0	-1.2
DVHZ	**Dannevirke**	**2.41**	**178**	PN	Pn	22 27 00.6	-1.8
PRHZ	**Porangahau**	**2.42**	**169**	PN	Pn	22 27 01.0	-1.5
ANWZ	**Angora Road**	**2.59**	**173**	⇓PN	Pn	22 27 02.9	-1.6
PRWZ	**Pori Road**	**2.67**	**181**	PN	Pn	22 27 03.5	-1.9
MRZ	**Mangatainoka R**	**2.80**	**187**	PN	Pn	22 27 04.4	-2.6

BFZ	**Birch Farm**	**2.80 177**	PN	Pn	22 27 04.6	-2.4
OGWZ	**Otaki Gorge**	**3.00 193**	PN	Pn	22 27 07.0	-2.5
KIW	**Kapiti Island**	**3.10 196**	PN	Pn	22 27 07.7	-3.0
CAW	**Cannon Point**	**3.31 193**	PN	Pn	22 27 10.2	-3.1
CAW			AML	AML	22 27 50.5	
TRWZ	**Traveller**	**3.52 184**	PN	Pn	22 27 12.4	-3.7
MSWZ	**Moikau Station**	**3.58 190**	PN	Pn	22 27 12.9	-3.9
MSWZ			AML	AML	22 27 56.1	
MSWZ			AML	AML	22 27 56.7	
TCW	**Tory Channel**	**3.59 202**	AML	AML	22 27 57.5	
TCW			AML	AML	22 27 58.0	
PLWZ	**Palliser**	**3.73 189**	PN	Pn	22 27 14.7	-4.1
NNZ	**Nelson**	**3.91 211**	SN	Sn	22 28 02.7	-4.7
KHZ	**Kahutara**	**4.92 202**	PN	Pn	22 27 29.8	-4.3

*ISCJB **07** 22:29:51.0±0.5, 23°.70N±0°.06×142°.3E±0°.1, h50km, mb3.9/17, Error ellipse: s-maj=19.5km s-min=8.5km az=176.2*
*IDC **07** 22:29:51.8±2.5, 23°.70N×142°.40E, h42km±22km, mb3.7/17, mb1 3.9/20, mb1mx3.7/46, mbtmp3.9/20, ML3.7/3, Error ellipse: s-maj=23.1km s-min=13.2km az=95.0*
ISC 07 22:29:52.5±0.7, 23°.71N±0°.08×142°.4E±0°.2, h50km, n21, σ0§66/21, mb4.0/16, Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCJ	**Chichijima**	**3.38**	**356**	P	**Pn**	**22 30 43.6**	**+0.8**
	14nm,0.3s,baz=333,slow=22,SNR=35						
JCJ				S	**Sn**	**22 31 21.2**	**-0.5**
	19nm,0.3s,baz=295,slow=23,SNR=11						
MJAR	**Matsushiro Arr**	**13.30**	**345**	P	**Pn**	**22 32 57.4**	**-1.2**
	0.2nm,0.3s,baz=161,slow=11,SNR=3.2						
KSRS	**Korea Array**	**18.50**	**321**	P	**Pn**	**22 34 05.2**	**+0.1**
	0.2nm,0.3s,baz=123,slow=13,SNR=3.5						
KLR	**Kul'dur**	**26.82**	**344**	P	**P**	**22 35 28.4**	**+0.4**
	0.9nm,0.5s,baz=160,slow=12,SNR=6.2						
WRA	**Warramunga Arr**	**44.09**	**191**	P	**P**	**22 37 55.5**	**-0.4**
	1.9nm,0.3s,baz=8.0,slow=7.9,SNR=52						
ASAR	**Alice Springs**	**47.81**	**191**	P	**P**	**22 38 25.2**	**0.0**
	0.9nm,0.5s,baz=18,slow=11,SNR=14						
ZALV	**Zalesovo Beam**	**52.21**	**321**	P	**P**	**22 38 57.3**	**-0.9**
	0.4nm,0.5s,baz=90,slow=7.4,SNR=2.3						
MKAR	**Makanchi Array**	**52.83**	**312**	P	**P**	**22 39 02.9**	**-0.1**
	0.5nm,0.4s,baz=88,slow=9.4,SNR=11						
STKA	**Stephens Creek**	**55.27**	**181**	P	**P**	**22 39 20.3**	**-0.5**
	0.9nm,0.3s,baz=342,slow=9.6,SNR=4.8						
ILAR	**Eielson Array**	**60.59**	**28**	P	**P**	**22 39 57.0**	**-0.7**
	0.9nm,0.6s,baz=255,slow=5.5,SNR=10						
INK	**Inuvik**	**66.02**	**24**	P	**P**	**22 40 34.0**	**+0.4**
	0.7nm,0.4s,baz=304,slow=4.7,SNR=9.7						
YKA	**Yellowknife Ar**	**75.02**	**28**	P	**P**	**22 41 28.6**	**+0.2**
	1.2nm,0.6s,baz=292,slow=5.7,SNR=19						
ARCES	**ARCESS Array B**	**76.80**	**341**	P	**P**	**22 41 39.3**	**+0.7**
	1.4nm,0.7s,baz=71,slow=9.1,SNR=8.4						
KBZ	**Khabaz**	**80.48**	**314**	P	**P**	**22 42 00.7**	**+1.5**
	1.9nm,0.7s,baz=77,slow=9.2,SNR=4.0						
FINES	**FINESS Array B**	**81.07**	**334**	P	**P**	**22 42 02.1**	**+0.1**
	1.8nm,0.5s,baz=66,slow=5.3,SNR=39						
NVAR	**Mina Array Bea**	**82.45**	**51**	P	**P**	**22 42 10.4**	**+0.3**
	0.9nm,0.7s,baz=267,slow=3.6,SNR=3.0						
PDAR	**Pinedale Array**	**86.47**	**45**	P	**P**	**22 42 30.6**	**+0.3**
	0.2nm,0.6s,baz=252,slow=0.9,SNR=3.0						
NB2	**NORSAR Subarra**	**86.83**	**338**	P	**P**	**22 42 30.9**	**-0.5**
	comp=Z,0.4nm,0.6s,baz=45,slow=5.1						
NOA	**NORSAR Array B**	**86.83**	**338**	P	**P**	**22 42 31.4**	**0.0**
	comp=Z,0.8nm,0.8s,baz=32,slow=3.2,SNR=4.3						
BRTR	**Keskin Array B**	**88.46**	**313**	P	**P**	**22 42 39.6**	**-0.2**
	comp=Z,0.5nm,0.6s,baz=60,slow=3.4,SNR=3.9						
TXAR	**Lajitas Array**	**97.45**	**54**	P	Pdif	22 43 22.8	+1.3
	comp=Z,0.1nm,0.5s,baz=284,slow=3.6,SNR=3.5						

IDC 07 22:30:15.4±9.4, 25°.47S×179°.88E, h491km±114km, mb3.1/3, mb1 3.5/4, mb1mx3.0/26, mbtmp4.1/4, Error ellipse: s-maj=83.5km s-min=29.7km az=10.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**12.96**	**190**	P	P	22 33 04.0	-0.1
	1.7nm,0.3s,baz=317,slow=19,SNR=6.8						
URZ				S	S	22 35 22.7	-0.4
	0.4nm,0.3s,baz=35,slow=18,SNR=3.6						
ASAR	**Alice Springs**	**41.69**	**262**	P	P	22 37 20.9	+0.2
	1.7nm,0.6s,baz=92,slow=8.0,SNR=32						
WRA	**Warramunga Arr**	**42.21**	**268**	P	P	22 37 24.4	-0.4
	2.0nm,0.6s,baz=104,slow=8.0,SNR=37						
TXAR	**Lajitas Array**	**91.35**	**58**	P	P	22 42 28.8	+0.2
	0.3nm,0.8s,baz=254,slow=6.5,SNR=4.2						
NB2	**NORSAR Subarra**	**143.61**	**351**	PKP	PKPbc	22 48 52.4	+0.5
	comp=Z,0.6nm,0.8s,baz=24,slow=3.5						
NOA	**NORSAR Array B**	**143.61**	**351**	PKP	PKPbc	22 48 52.3	+0.3
	comp=Z,0.9nm,0.7s,baz=16,slow=4.7,SNR=4.8						

JMA 07 22:31:35.0±0.2, 28°.16N×127°.71E, h136km±4km, M3.1, Northwest of Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JOKE	**Okinoerabujima**	**1.10**	**136**	P	Pn	22 31 59.5	+0.1
JOKE				S	Sn	22 32 18.4	+0.4
JIH	**Iheya**	**1.14**	**168**	P	Pn	22 32 00.3	+0.5
JIH				*e*S	Sn	22 32 19.3	+0.6
JTK	**Tokunoshima**	**1.16**	**108**	P	Pn	22 32 00.2	+0.3
JTK				S	Sn	22 32 19.0	+0.1
JAMN	**Amaminishikomi**	**1.30**	**86**	P	Pn	22 32 01.4	+0.1
JAMN				S	Sn	22 32 21.7	+0.4
JOW	**Kunigami**	**1.42**	**159**	P	Pn	22 32 02.9	+0.3
JOW				*e*S	Sn	22 32 22.8	-0.8
JAGN	**Aguni-jima**	**1.62**	**195**	P	Pn	22 32 05.2	+0.3
JAGN				*e*S	Sn	22 32 27.9	+0.3
JTAJ	**Takarajima**	**1.64**	**53**	P	Pn	22 32 05.5	+0.4
JNTH	**Nagotoyohara**	**1.66**	**170**	P	Pn	22 32 05.6	+0.3
JNTH				S	Sn	22 32 27.9	-0.5
JAM	**Amami Oshima**	**1.69**	**81**	P	Pn	22 32 05.8	+0.2
JAM				S	Sn	22 32 29.6	+0.6
JZK	**Kikaishima**	**2.00**	**85**	P	Pn	22 32 10.3	+1.0
JZK				*e*S	Sn	22 32 36.6	+1.0
JKE	**Kume jima 2**	**2.00**	**204**	P	Pn	22 32 09.4	0.0
JKE				S	Sn	22 32 35.2	-0.5
JJT2	**Tamagusuku 2**	**2.01**	**179**	P	Pn	22 32 10.0	+0.5
JNN	**Nakanoshima**	**2.53**	**48**	P	Pn	22 32 15.7	-0.1
JYAK	**Yakushimahirau**	**3.21**	**49**	P	Pn	22 32 24.6	+0.1
JTN	**Tanegashima 3**	**3.78**	**48**	P	Pn	22 32 32.0	0.0
JTN				*e*S	Sn	22 33 15.2	-1.0
JMZ	**Minamidaito 2**	**3.91**	**126**	P	Pn	22 32 32.7	-0.9
JMZ				*e*S	Sn	22 33 14.6	-4.5

*IDC **07** 22:44:34.7±1.5, 51°.35N×176°.70W, h0km, mb3.3/5, mb1 3.8/5, mb1mx3.4/41, mbtmp3.4/5, Error ellipse: s-maj=75.4km s-min=27.4km az=140.0*
*ISCJB **07** 22:44:40.2±0.7, 51°.40N±0°.07×176°.57W±0°.06, h47km, mb3.3/4, Error ellipse: s-maj=10.2km s-min=5.2km az=172.6*
*NEIC **07** 22:44:40.4, 51°.40N×176°.58W, h24km, ML3.5(AEIC), After AEIC.*
ISC 07 22:44:41.8±1.0, 51°.5N±0°.1×176°.63W±0°.04, h47km, n31, σ0§88/28, mb3.4/4, Andreanof Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ETKA	**Kagalaska Isla**	**0.39**	**21**	P	**Pn**	**22 44 50.8**	**-0.8**
ETKA				S	**Sn**	**22 44 57.8**	**-0.7**
ADAG	**Mount Adagdak**	**0.48**	**2**	P	**Pn**	**22 44 52.8**	**+0.1**
KIRH	**Kanaga Island**	**0.50**	**325**	P	**Pn**	**22 44 52.6**	**-0.2**
KIKV	**Kanaga Island**	**0.51**	**319**	P	**Pn**	**22 44 52.6**	**-0.3**
KICM	**Kanaga Island**	**0.55**	**320**	P	**Pn**	**22 44 53.4**	**-0.1**
GSCK	**Great Sitkin C**	**0.59**	**29**	P	**Pn**	**22 44 53.4**	**-0.7**
GSTD	**Great Sitkin T**	**0.64**	**28**	P	**Pn**	**22 44 54.0**	**-0.6**
GSTD				S	**Sn**	**22 45 04.3**	**+0.4**
GSMY	**Great Sitkin M**	**0.65**	**33**	P	**Pn**	**22 44 54.0**	**-0.8**
TAPA	**Tanaga Point A**	**0.80**	**294**	P	**Pn**	**22 44 56.3**	**-0.5**
TAFL	**Tanaga Flats**	**0.83**	**289**	P	**Pn**	**22 44 56.6**	**-0.6**
TAFP	**Tanaga Falls P**	**0.93**	**296**	P	**Pn**	**22 44 58.3**	**-0.2**
TAFP				S	**Sn**	**22 45 12.0**	**+1.2**
TASE	**Tanaga Southea**	**0.94**	**292**	P	**Pn**	**22 44 58.5**	**-0.1**
TANO	**Tanaga North**	**1.02**	**295**	P	**Pn**	**22 44 60.0**	**+0.3**
GAEA	**Gareloi East**	**1.35**	**283**	P	**Pn**	**22 45 04.3**	**+0.2**
GALAA	**Gareloi Lava P**	**1.36**	**282**	P	**Pn**	**22 45 04.6**	**+0.3**
KOWE	**Korovin West**	**1.71**	**59**	P	**Pn**	**22 45 09.7**	**+0.5**
KOKL	**Mount Kliuchef**	**1.72**	**60**	P	**Pn**	**22 45 09.0**	**-0.2**
KOKL				S	**Sn**	**22 45 33.2**	**+3.2**
KOFP	**Korovin Flat P**	**1.75**	**63**	P	**Pn**	**22 45 09.3**	**-0.4**
KOSE	**Korovin Southe**	**1.81**	**61**	P	**Pn**	**22 45 10.1**	**-0.4**
KDAK	**Kodiak Island**	**15.22**	**56**	Pn	P	22 48 25.9	+8.4
	0.2nm,0.3s,baz=287,slow=11,SNR=3.0						
ILAR	**Eielson Array**	**20.31**	**38**	P	**P**	**22 49 14.6**	**+1.2**
	0.6nm,0.6s,baz=242,slow=8.6,SNR=13						
YKA	**Yellowknife Ar**	**34.16**	**47**	P	**P**	**22 51 21.0**	**-0.9**
	0.1nm,0.6s,baz=266,slow=9.8,SNR=3.3						
H11N2	**WAKE ISLAND Hy**	**34.25**	**208**	T	T	23 27 42.8	
	baz=18,slow=76,SNR=77						
H11N3	**WAKE ISLAND Hy**	**34.25**	**208**	T	T	23 27 43.5	
	baz=18,slow=76,SNR=62						
H11N1	**WAKE ISLAND Hy**	**34.26**	**208**	T	T	23 27 43.0	
	baz=18,slow=76,SNR=72						
H11S1	**WAKE ISLAND Hy**	**35.46**	**208**	T	T	23 29 16.8	
	baz=18,slow=76,SNR=25						
H11S2	**WAKE ISLAND Hy**	**35.48**	**208**	T	T	23 29 16.6	
	baz=18,slow=76,SNR=23						
H11S3	**WAKE ISLAND Hy**	**35.48**	**208**	T	T	23 29 15.5	
	baz=18,slow=76,SNR=15						
PDAR	**Pinedale Array**	**44.98**	**74**	P	**P**	**22 52 52.9**	**+0.5**
	0.3nm,0.4s,baz=304,slow=2.1,SNR=4.7						
TXAR	**Lajitas Array**	**57.29**	**83**	P	**P**	**22 54 24.3**	**-0.4**
	0.2nm,0.6s,baz=318,slow=4.4,SNR=4.5						
WRA	**Warramunga Arr**	**83.06**	**226**	P	**P**	**22 57 01.3**	**-0.8**
	0.3nm,0.5s,baz=34,slow=5.8,SNR=2.6						

*ISCJB **07** 22:45:34.1±0.3, 39°.51N±0°.03×143°.44E±0°.05, h11km, mb4.5/90, MS4.1/13, Error ellipse: s-maj=6.1km s-min=3.9km az=32.2*
*JMA **07** 22:45:35.3±0.3, 39°.49N×143°.50E, h23km±5km, M4.3*
*MOS **07** 22:45:38.1±1.2, 39°.60N×143°.30E, h33km, mb4.5/31, Error ellipse: s-maj=9.1km s-min=5.8km az=105.8*
*IDC **07** 22:45:39.8±2.1, 39°.43N×143°.36E, h42km±19km, mb3.7/19, mb1 3.9/25, mb1mx3.9/38, mbtmp4.0/25, ML3.5/6, MS3.8/13, Ms1 3.8/13, ms1mx3.5/38, Error ellipse: s-maj=17.2km s-min=13.9km az=109.0*
*NEIC **07** 22:45:51.8±0.7, 39°.61N×141°.78E, h83km±7km, mb4.6/53, Error ellipse: s-maj=7.5km s-min=4.8km az=139.0*
ISC 07 22:45:35.6±0.5, 39°.54N±0°.05×143°.45E±0°.05, h11km, n198, σ1§16/148, mb4.5/90, MS4.0/13, 8C-4D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**1.26**	**272**	P	**Pb**	**22 45 58.4**	**-1.0**
MIYJ				*e*S	**Sn**	**22 46 16.1**	**+0.1**
JTH	**Tanohata**	**1.28**	**289**	P	**Pn**	**22 45 58.8**	**-0.7**
JTH				S	**Sn**	**22 46 16.8**	**+0.1**
OFUJ	**Ofunato**	**1.45**	**252**	P	**Pn**	**22 46 01.0**	**-0.8**
JOM	**Ohasama**	**1.67**	**269**	P	**Pn**	**22 46 04.7**	**-0.1**
JKZ	**Kuzumaki**	**1.69**	**286**	P	**Pn**	**22 46 05.0**	**-0.2**
JKZ				*e*S	**Sb**	**22 46 26.5**	**-1.6**
JANG	**Nango**	**1.70**	**300**	P	**Pn**	**22 46 04.3**	**-1.0**
JMK	**Ichinoseki**	**1.82**	**252**	P	**Pn**	**22 46 06.5**	**-0.4**
JRG	**Rokugo**	**2.18**	**267**	P	**Pn**	**22 46 12.1**	**+0.3**
ERM	**Erimo**	**2.49**	**355**	*c iP*	**Pb**	**22 46 19.9**	**-0.4**
ERM	**Erimo**	**2.49**	**355**	*e*Pn	Pg	22 46 31.9	+8.6
JNBK	**Urakawa-nobuka**	**2.79**	**349**	P	**Pn**	**22 46 21.7**	**+1.5**
JNBK				*e*S	**Sn**	**22 46 55.0**	**+1.1**
ASAJ	**Asahikawa**	**4.62**	**352**	P	**Pn**	**22 46 46.7**	**+1.3**
	3.2nm,0.3s,baz=211,slow=8.7,SNR=27						
ASAJ				S	**Sn**	**22 47 39.9**	**+0.9**
	2.8nm,0.3s,baz=280,slow=33,SNR=2.7						
ASAJ				LR	LR	22 48 32.8	
	comp=Z,244nm,20.8s,baz=146,slow=37						
YUK	**Yuzh-Kuril'sk**	**4.84**	**21**	⇓*iP*	**Pn**	**22 46 49.0**	**+0.6**
YUK				*i* S	**Sn**	**22 47 41.5**	**-3.0**
YUK				pmax	pmax		
	comp=N,86nm,0.2s						
YUK				pmax	pmax		
	comp=E,33nm,0.2s						
YUK				pmax	pmax		
	comp=Z,182nm,0.2s						
SHO	**Shikotan**	**5.02**	**29**	⇑*iP*	**Pn**	**22 46 50.0**	**-0.8**
SHO				*i* S	Sn	22 47 43.9	-4.8
SHO				pmax	pmax		
	comp=N,27nm,0.6s						
SHO				pmax	pmax		
	comp=Z,69nm,0.6s						
MJAR	**Matsushiro Arr**	**5.10**	**236**	P	**Pn**	**22 46 53.0**	**+1.0**
	comp=Z,5.2nm,0.3s,baz=44,slow=12,SNR=77						
MJAR				LR	LR	22 49 03.1	
	comp=Z,630nm,18.4s,baz=35,slow=41						
MJAR	**Matsushiro Arr**	**5.10**	**236**	P	**Pn**	**22 46 53.0**	**+1.0**
MJAR				pmax	pmax		
	comp=Z,5.0nm,0.3s						
MJAR				MLR	MLR		
	comp=Z,630nm,18.4s						
MAJO	**Matsushiro**	**5.10**	**236**	*c iP*	**Pn**	**22 46 53.2**	**+1.2**
MAJO	**Matsushiro**	**5.10**	**236**	*e*Pn	**Pn**	**22 46 53.1**	**+1.1**
MAT	**Matsushiro**	**5.10**	**236**	P	**Pn**	**22 46 53.0**	**+1.0**
MAT				S	Sb	22 47 57.9	-8.3
MJB9	**Matsu-Tunnel**	**5.10**	**236**	*e*Pn	**Pn**	**22 46 53.2**	**+1.1**
KUR	**Kuril'sk**	**6.57**	**28**	*e*P	**Pn**	**22 47 13.0**	**+0.9**
KUR				*i* S	**Sn**	**22 48 22.9**	**-4.0**
KUR				pmax	pmax		
	comp=Z,66nm,0.5s						
INU	**Inuyama**	**6.60**	**233**	*e*Pn	**Pn**	**22 47 12.9**	**+0.2**
JHJ2	**Mitsune**	**7.05**	**206**	*e*Pn	Pn	22 47 26.2	+7.5
JHJ	**Hachijo jima 2**	**7.05**	**206**	P	**Pn**	**22 47 17.9**	**-0.9**
	comp=Z,10nm,0.3s,baz=320,slow=22,SNR=5.1						
JHJ				S	Sn	22 48 30.3	-8.7
	comp=Z,8.0nm,0.3s,baz=72,slow=22,SNR=3.3						
USRK	**Ussuriysk Ar.**	**9.73**	**302**	P	**Pn**	**22 47 58.0**	**+2.5**
	comp=Z,0.5nm,0.3s,baz=97,slow=14,SNR=11						
USRK				LR	LR	22 51 40.9	
	comp=Z,723nm,18.4s,baz=127,slow=37						
MSHR	**Mys Shultsa**	**9.77**	**292**	P	**Pn**	**22 47 54.9**	**-1.1**
MDJ	**Mudanjiang**	**11.47**	**301**	P	**Pn**	**22 48 21.1**	**+1.7**
MDJ				pmax	pmax		
	comp=Z,7.0nm,1.0s						
MDJ				pmax	pmax		
	comp=Z,110nm,7.4s						
MDJ				LR	LR		
	comp=N,220nm,12.1s						
MDJ				LR	LR		
	comp=E,640nm,15.8s						
MDJ				LR	LR		
	comp=Z,830nm,15.8s						
JNU	**Nakatsue**	**11.98**	**242**	P	**Pn**	**22 48 25.9**	**-0.5**
	comp=Z,0.2nm,0.3s,baz=78,slow=6.3,SNR=2.1						
JNU				LR	LR	22 53 30.2	
	comp=Z,720nm,18.4s,baz=66,slow=40						
KSRS	**Korea Array**	**12.34**	**265**	P	**Pn**	**22 48 33.0**	**+1.8**
	comp=Z,0.3nm,0.3s,baz=82,slow=13,SNR=9.3						
KSRS				LR	LR	22 52 57.5	
	comp=Z,439nm,18.3s,baz=74,slow=36						
KSRS	**Korea Array**	**12.34**	**265**	P	**Pn**	**22 48 33.0**	**+1.8**
KSRS				MLR	MLR		
	comp=Z,439nm,18.3s						
KS15	**Wonju Array Si**	**12.37**	**265**	*e*Pn	Pn	22 48 27.4	-4.3
JCJ	**Chichijima**	**12.45**	**185**	P	Pn	22 48 29.6	-3.3
KLR	**Kul'dur**	**12.79**	**323**	P	**Pn**	**22 48 36.7**	**-0.6**
	comp=Z,0.1nm,0.3s,baz=139,slow=11,SNR=4.0						
KLR				LR	LR	22 53 43.0	
	comp=Z,426nm,19.8s,baz=83,slow=38						
NKL	**Nikolayevsk**	**13.75**	**353**	*e*P	**Pn**	**22 48 51.0**	**+0.7**
PETK	**Petropavlovsk-**	**16.72**	**31**	LR	LR	22 57 08.0	
	comp=Z,106nm,18.6s,baz=134,slow=41						
BJI	**Beijing**	**20.94**	**280**	P	**P**	**22 50 15.0**	**-3.3**
BJI				S	S	22 53 55.5	-16
BJI				pmax	pmax		
	comp=Z,10.0nm,1.4s						
BJI				pmax	pmax		
	comp=Z,120nm,6.6s						
BJI				LR	LR		
	comp=N,190nm,12.4s						
BJI				LR	LR		
	comp=E,520nm,15.9s						
BJI				LR	LR		
	comp=Z,290nm,17.6s						
TIA	**Tai'an**	**21.02**	**269**	⇑P	**P**	**22 50 19.0**	**-0.2**
TIA				pmax	pmax		
	comp=Z,20nm,0.9s						
YHNB	**Yeheng**	**23.77**	**238**	*e*P	**P**	**22 50 47.6**	**-0.6**
	comp=Z,2.9nm,0.4s						
SEY	**Seymchan**	**24.04**	**10**	P	**P**	**22 50 51.6**	**+1.2**
	comp=Z,6.4nm,0.7s,baz=192,slow=8.0,SNR=18						
YAK	**Yakutsk**	**24.04**	**344**	LR	LR	23 00 48.3	
	comp=Z,92nm,20.9s,baz=136,slow=38						
YAK	**Yakutsk**	**24.04**	**344**	*e*P	**P**	**22 50 49.2**	**-1.2**
YAK				pmax	pmax		
	comp=Z,20nm,1.1s						
YAK				pmax	pmax		
	comp=N,10.0nm,1.2s						
HHC	**Hu-ho-hao-te**	**24.32**	**283**	*e*P	**P**	**22 50 49.8**	**-3.6**
HHC				pP	sP	22 51 07.8	+10
HHC				sP	pP	22 51 16.2	+19
HHC				S	S	22 54 50.8	-22
HHC				pmax	pmax		
	comp=Z,32nm,0.8s						
HHC				pmax	pmax		
	comp=Z,230nm,4.0s						
HHC				LR	LR		
	comp=N,530nm,12.8s						
HHC				LR	LR		
	comp=E,490nm,12.8s						
HHC				LR	LR		
	comp=Z,520nm,12.7s						
SSLB	**Suanglung**	**24.66**	**237**	*e*P	**P**	**22 50 54.5**	**-2.0**
	comp=Z,15nm,1.3s						
YULB	**Yu-li**	**24.72**	**236**	*e*P	**P**	**22 50 56.2**	**-0.8**
	comp=Z,6.6nm,1.0s						
SMY	**Shemya**	**24.79**	**48**	*e*P	P	22 51 14.3	+17
	comp=Z,167nm,1.3s						
TPUB	**Ta-pu**	**25.21**	**237**	*e*P	**P**	**22 51 01.1**	**-0.3**
	comp=Z,9.4nm,1.0s						
TWG	**Pinlang**	**25.27**	**235**	*e*P	**P**	**22 51 01.6**	**-0.3**
	comp=Z,124nm,1.5s						
WHN	**Wuhan**	**25.37**	**258**	⇓P	**P**	**22 51 02.5**	**-0.3**
WHN				pmax	pmax		
	comp=Z,110nm,1.5s						
BOD	**Bodaibo**	**26.36**	**324**	*e*P	**P**	**22 51 11.6**	**0.0**
BOD				pmax	pmax		
	comp=Z,10.0nm,1.3s						
ULN	**Ulaanbaatar**	**27.39**	**300**	*c iP*	**P**	**22 51 21.7**	**+0.6**
ULN				pmax	pmax		
	comp=Z,13nm,1.2s						
ULN	**Ulaanbaatar**	**27.39**	**300**	*e*P	**P**	**22 51 21.4**	**+0.3**
	comp=Z,18nm,1.4s						
SONA1	**Songino Array**	**27.82**	**300**	*e*P	**P**	**22 51 24.7**	**-0.3**
SONM	**Songino Array**	**27.83**	**300**	P	**P**	**22 51 25.5**	**+0.5**
	comp=Z,3.4nm,0.9s,baz=105,slow=7.6,SNR=15						
SONM				LR	LR	23 03 05.2	
	comp=Z,496nm,18.6s,baz=96,slow=38						
H11N2	**WAKE ISLAND Hy**	**28.23**	**128**	T	T	23 21 05.5	
	SNR=115						
H11S1	**WAKE ISLAND Hy**	**29.04**	**129**	T	T	23 22 06.4	
	baz=321,slow=76,SNR=0.5						
H11S3	**WAKE ISLAND Hy**	**29.05**	**130**	T	T	23 22 02.2	
	baz=321,slow=76,SNR=0.2						
H11S2	**WAKE ISLAND Hy**	**29.06**	**130**	T	T	23 22 04.2	
	baz=321,slow=76,SNR=12						
ENH	**Enshi**	**29.20**	**262**	*e*P	**P**	**22 51 35.5**	**-1.8**
	comp=Z,6.7nm,0.6s						
TLY	**Talaya**	**30.00**	**307**	LR	LR	23 04 36.2	
	comp=Z,203nm,18.0s,baz=78,slow=38						
TLY	**Talaya**	**30.00**	**307**	*e*P	**P**	**22 51 46.5**	**+2.4**
TLY				pmax	pmax		
	comp=Z,9.0nm,0.9s						
TLY				MLR	MLR		
	comp=Z,215nm,16.0s						
TLY	**Talaya**	**30.00**	**307**	*e*P	**P**	**22 51 43.0**	**-1.1**
	comp=Z,3.5nm,0.9s						
ZAK	**Zakamensk**	**30.07**	**305**	*e*P	**P**	**22 51 42.8**	**-2.1**
ZAK				pmax	pmax		
	comp=Z,6.0nm,1.4s						
BILL	**Bilibino**	**31.18**	**16**	*e*P	P	22 51 59.7	+5.4
BILL				*e*		22 52 05.6	
BILL				pmax	pmax		
	comp=Z,2.0nm,1.0s						
BILL	**Bilibino**	**31.18**	**16**	*e*P	P	22 52 04.7	+10
	comp=Z,2.9nm,0.9s						
LZH	**Lanzhou**	**31.30**	**276**	*e*P	**P**	**22 51 53.7**	**-2.3**
LZH				pP	sP	22 52 12.8	+12
LZH				sP	pP	22 52 20.9	+22
LZH				pmax	pmax		
	comp=Z,23nm,1.0s						
LZH				pmax	pmax		
	comp=Z,79nm,4.3s						
LZH				LR	LR		
	comp=N,350nm,15.0s						
LZH				LR	LR		
	comp=E,670nm,15.6s						
LZH				LR	LR		
	comp=Z,510nm,15.8s						
MOY	**Mondy**	**31.64**	**307**	*e*P	**P**	**22 51 59.6**	**+0.9**
TIXI	**Tiksi**	**33.02**	**352**	*e*P	P	22 52 18.1	+7.7
TIXI				pmax	pmax		
	comp=Z,2.0nm,0.8s						
TIXI	**Tiksi**	**33.02**	**352**	*e*P	P	22 52 18.1	+7.6
	comp=Z,2.0nm,0.8s						
CD2	**Chengdu**	**33.33**	**267**	P	P	22 52 09.9	-3.7
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
GTA	**Gaotai**	**33.43**	**284**	*e*P	**P**	**22 52 14.9**	**+0.3**
GTA				pP	sP	22 52 22.3	+3.0
GTA				sP	pP	22 52 25.4	+7.5
GTA				S	S	22 57 25.7	-10
GTA				sS	sS	22 57 40.2	-1.2
GTA				SS	SnSn	22 59 20.9	-16
GTA				pmax	pmax		
	comp=Z,7.0nm,1.1s						
GTA				pmax	pmax		
	comp=Z,100nm,6.4s						
GTA				LR	LR		
	comp=N,140nm,18.1s						

comp=Z,8.0nm,1.1s
MAKZ Makanchi 44.40 300 *e*P **P 22 53 46.1 -0.1**
comp=Z,7.6nm,1.1s
HOM Homer 44.55 41 *e*P P 22 54 02.2 +15
comp=Z,117nm,0.9s
LUWI Luwuk 44.61 210 *e*P P 22 53 52.1 +4.1
comp=Z,47nm,1.0s
MLY Manley 44.88 33 *e*P P 22 54 03.6 +14
comp=Z,2.6nm,1.0s
TRF Thorofare Moun 45.07 36 *e*P P 22 54 04.8 +13
comp=Z,19nm,1.8s
SEW Seward 45.62 40 *e*P P 22 54 09.8 +14
comp=Z,18nm,1.0s
MDM Murphy Dome 45.95 33 *e*P P 22 54 11.6 +13
comp=Z,3.0nm,0.9s
WRH Wood River Hil 46.02 34 *e*P P 22 54 12.1 +13
comp=Z,2.8nm,1.0s
SML Sawmill 46.03 38 *e*P P 22 54 12.5 +14
comp=Z,31nm,1.9s
CCB Clear Creek Bu 46.14 34 *e*P P 22 54 13.0 +13
comp=Z,2.7nm,1.0s
SCM Sheep Creek Mo 46.51 38 *e*P P 22 54 16.2 +13
comp=Z,23nm,1.7s
IL1 Eielson Array 46.53 34 *e*P P 22 54 15.6 +13
ILAR Eielson Array 46.53 34 P **P 22 54 04.2 +1.5**
comp=Z,1.2nm,0.7s,baz=266,slow=6.8,SNR=18
ILB Eielson Array 46.53 34 *e*P P 22 54 16.6 +14
SBUM Sibu 46.56 226 *e*P **P 22 54 04.5 +1.0**
comp=Z,9.5nm,1.6s
JOHN Johnston Islan 46.64 105 *e*P P 22 54 21.3 +17
comp=Z,225nm,1.0s
FYU Fort Yukon 47.15 31 *e*P P 22 54 21.2 +14
comp=Z,21nm,1.4s
KLU Klutina 47.21 38 *e*P P 22 54 21.7 +13
comp=Z,3.7nm,0.7s
PAX Paxson 47.27 36 *e*P P 22 54 21.9 +13
PAX pmax pmax
comp=Z,9.0nm,1.7s
PAX Paxson 47.27 36 *e*P P 22 54 21.9 +13
comp=Z,9.3nm,1.7s
DIV Divide 47.32 39 *e*P P 22 54 23.0 +14
comp=Z,12nm,1.3s
EYAK Cordova Ski Ar 47.40 39 *e*P P 22 54 24.1 +14
comp=Z,20nm,1.4s
RAGM Ragged Mountai 47.95 39 *e*P P 22 54 27.2 +13
comp=Z,20nm,1.4s
MENT Mentasta 48.07 36 *e*P P 22 54 28.2 +13
comp=Z,13nm,1.8s
KSM Kuching 48.43 227 *e*P **P 22 54 19.0 +0.9**
comp=Z,4.4nm,1.1s
GUN Gumba 48.53 275 *e*P **P 22 54 19.0 -0.2**
comp=Z,20nm,0.5s
EGAK Eagle 48.97 33 *e*P P 22 54 34.7 +13
comp=Z,4.3nm,1.2s
KKN Kakani 49.05 275 *e*P **P 22 54 23.1 +0.1**
comp=Z,35nm,0.9s
PKIN Phulchoki 49.06 274 *e*P **P 22 54 23.0 -0.2**
DMN Daman 49.27 275 *e*P **P 22 54 24.4 -0.4**
comp=Z,6.6nm,0.2s
GKN Gorkha 49.44 275 *e*P **P 22 54 26.3 +0.3**
comp=Z,10nm,0.5s
TKM2 Tokmak 2 49.88 297 *e*P **P 22 54 28.4 -0.8**
TKM2 pmax pmax
comp=Z,17nm,1.3s
TKM2 Tokmak 2 49.88 297 *e*P **P 22 54 28.4 -0.8**
comp=Z,17nm,1.3s
BRVK Borovoye 50.16 311 ⇑*i*P **P 22 54 31.5 +0.6**
BRVK pmax pmax
comp=Z,4.0nm,0.9s
BRVK Borovoye 50.16 311 *e*P **P 22 54 31.0 +0.1**
comp=Z,4.2nm,0.7s
KOLN Koldanda 50.35 276 *e*P **P 22 54 33.1 +0.1**
comp=Z,4.2nm,0.3s
FRU Bishkek 50.58 297 *e*P **P 22 54 33.0 -1.3**
PYUN Piuthan 50.66 276 *e*P **P 22 54 35.8 +0.5**
AAK Ala-Archa 50.74 297 ⇑P **P 22 54 36.5 +0.8**
AAK pmax pmax
comp=Z,9.0nm,1.7s
AAK Ala-Archa 50.74 297 *e*P **P 22 54 34.1 -1.6**
comp=Z,7.8nm,1.5s
ZRNK Zerenda 50.93 311 *e*P **P 22 54 37.3 +0.6**
ZRNK pmax pmax
comp=Z,6.0nm,0.9s
ZRNK Zerenda 50.93 311 *e*P **P 22 54 37.3 +0.6**
comp=Z,5.8nm,0.9s
EKS2 Erkin-Say 51.22 297 *e*P **P 22 54 39.1 -0.1**
EKS2 pmax pmax
comp=Z,4.0nm,1.1s
EKS2 Erkin-Say 51.22 297 *e*P **P 22 54 39.1 -0.1**
comp=Z,3.5nm,1.1s
INK Inuvik 51.43 28 P **P 22 54 41.3 +1.1**
comp=Z,0.8nm,0.5s,baz=301,slow=14,SNR=5.9
INK Inuvik 51.43 28 *e*P P 22 54 53.0 +13
comp=Z,5.1nm,1.4s
MYKOM Kota Tinggi 52.03 234 *e*P **P 22 54 45.2 -0.2**
comp=Z,6.0nm,1.0s
HON Honolulu 52.74 92 *e*P P 22 55 07.0 +16
comp=Z,267nm,1.0s
KKAR Karatay Array 53.28 299 *e*P **P 22 54 54.3 -0.1**
KKAR Karatay Array 53.28 299 *e*P **P 22 54 54.2 -0.1**
SVE Sverdlovsk 54.35 318 *e*P **P 22 55 02.6 +0.6**
SVE pmax pmax
comp=Z,15nm,1.3s
SVE MLR MLR
comp=Z,383nm,14.0s
PSI Prapat 54.44 239 *e*P **P 22 55 03.7 +0.4**
PSI pmax pmax
comp=Z,38nm,2.0s
PSI Prapat 54.44 239 *e*P **P 22 55 03.7 +0.4**
comp=Z,38nm,2.0s
JAGI Jajag, Banyuwa 54.94 216 *e*P **P 22 55 09.7 +3.0**
comp=Z,34nm,1.3s
ARU Arti 55.56 318*c i*P **P 22 55 11.1 +0.4**
ARU 22 56 09.8
ARU 22 57 16.3
ARU PPP PPP 22 58 28.9
ARU S S 23 02 50.0 -5.9
ARU pmax pmax
comp=Z,14nm,1.2s
ARU MLR MLR
comp=Z,350nm,16.0s
ARU Arti 55.56 318 *e*P **P 22 55 11.1 +0.4**
comp=Z,12nm,1.1s
ABKAR Akbulak array 57.57 310 *e*P **P 22 55 25.5 +0.4**
WRA Warramunga Arr 59.78 190 P **P 22 55 39.4 -1.3**
comp=Z,0.7nm,0.7s,baz=7.5,slow=6.9,SNR=11
WRA Warramunga Arr 59.78 190 *i*P P 22 55 47.4 +6.7
WRA pmax pmax
comp=Z,2.0nm,0.8s
YKA Yellowknife Ar 60.84 31 P **P 22 55 47.4 -0.2**
comp=Z,0.5nm,0.8s,baz=300,slow=6.5,SNR=7.1
ARCES ARCESS Array B 62.22 339 P **P 22 55 56.3 -0.5**
comp=Z,2.5nm,0.8s,baz=59,slow=8.7,SNR=2.9
KLMR Klimovskoe 62.50 328 *e*P **P 22 55 57.4 -1.4**
KLMR *e* 22 56 38.8
KLMR pmax pmax
comp=Z,12nm,1.5s
ASAR Alice Springs 63.50 190 P **P 22 56 04.8 -1.1**
comp=Z,0.4nm,0.8s,baz=121,slow=29,SNR=3.2
GEYT Alibeck 64.03 299 P **P 22 56 08.6 -0.8**
comp=Z,1.4nm,0.8s,baz=66,slow=5.0,SNR=4.6
OBN Obninsk 67.05 323 *e*P **P 22 56 29.3 +0.8**
OBN *e* 22 56 58.2
OBN *e* 22 58 59.5
OBN pmax pmax
comp=Z,3.0nm,0.9s
FINES FINESS Array B 67.34 332 P **P 22 56 30.7 +0.4**
comp=Z,2.3nm,0.7s,baz=39,slow=7.3,SNR=12
KIV Kislovodsk 70.47 311 *e*P **P 22 56 50.7 +0.5**
KIV pmax pmax
comp=Z,14nm,1.0s
KIV Kislovodsk 70.47 311 *e*P **P 22 56 50.6 +0.5**
comp=Z,14nm,1.0s
NVAR Mina Array Bea 72.22 55 P **P 22 57 01.3 +0.2**
comp=Z,1.1nm,0.7s,baz=295,slow=7.3,SNR=5.0
NC204 NORSAR Array S 72.43 338 *e*P P 22 57 05.3 +3.6
NB2 NORSAR Subarra 72.49 338 P **P 22 57 02.3 +0.3**
comp=Z,1.3nm,0.7s,baz=36,slow=6.2
NOA NORSAR Array B 72.49 338 P **P 22 57 02.4 +0.4**
comp=Z,2.7nm,0.8s,baz=38,slow=5.9,SNR=9.5
NOA LR LR 23 34 35.8
comp=Z,52nm,18.7s,baz=215,slow=40
NBO02 NORSAR Array S 72.58 338 *e*P **P 22 57 03.4 +0.8**
ANN Anapa 72.94 314 *e*P **P 22 57 06.4 +1.5**
ANN pmax pmax
comp=Z,24nm,1.2s
AKASG Malin Array Be 73.29 323 P **P 22 57 05.6 -1.2**
comp=Z,0.5nm,0.4s,baz=45,slow=6.9,SNR=7.4
AKASG Malin Array Be 73.29 323 *i*P **P 22 57 06.6 -0.2**
AKASG pmax pmax
comp=Z,1.0nm,0.4s
KIEV Kiev 73.30 323*d i*P **P 22 57 07.3 +0.4**
KIEV pmax pmax
comp=Z,8.0nm,1.7s
PDAR Pinedale Array 74.78 47 P **P 22 57 17.2 +1.1**
comp=Z,0.4nm,0.6s,baz=253,slow=1.5,SNR=5.2
BUR08 Bucovina Ar. S 77.31 322 *e*P **P 22 57 31.2 +1.0**
KOLS Kolonicke sedl 77.72 325 *e*P **P 22 57 33.8 +1.4**
KOLS Kolonicke sedl 77.72 325 *e*P **P 22 57 33.8 +1.4**
STHS Stebnicka Huta 77.82 326 *e*P **P 22 57 34.3 +1.4**
STHS Stebnicka Huta 77.82 326 *e*P **P 22 57 34.3 +1.4**
BRTR Keskin Array B 78.38 312 P **P 22 57 36.3 0.0**
comp=Z,1.1nm,1.0s,baz=76,slow=5.2,SNR=6.0
BRTR Keskin Array B 78.38 312 *i*P **P 22 57 37.0 +0.7**
BRTR pmax pmax
comp=Z,1.0nm,1.1s
BR231 Keskin MP Arra 78.79 313 *e*P **P 22 57 37.7 -0.8**
DPC Dobruska-Polom 79.17 329 *e*P **P 22 57 41.7 +1.3**
DPC Dobruska-Polom 79.17 329 *e*P **P 22 57 41.7 +1.3**
KRLC Kraliky 79.20 328 *e*P **P 22 57 41.5 +0.9**
KRLC Kraliky 79.20 328 *e*P **P 22 57 41.5 +0.9**
PSZ Piszkesteto 79.53 325 *e*P **P 22 57 42.1 -0.3**
PSZ pmax pmax
comp=Z,1.0nm,0.7s
PSZ Piszkesteto 79.53 325 *e*P **P 22 57 42.1 -0.3**
comp=Z,1.1nm,0.7s
CLL Collm 79.71 331 *i* (P) **P 22 57 43.9 +0.7**
CLL Collm 79.71 331 *i*P **P 22 57 43.9 +0.7**
PRU Pruhonice 80.17 329 *e*P **P 22 57 46.8 +1.1**
PRU Pruhonice 80.17 329 *e*P **P 22 57 46.8 +1.1**
TREC Trest 80.34 328 *e*P **P 22 57 48.0 +1.3**
TREC Trest 80.34 328 *e*P **P 22 57 48.0 +1.3**
KHC Kasperske Hory 81.23 329 *e*P **P 22 57 52.5 +1.0**
KHC Kasperske Hory 81.23 329 *e*P **P 22 57 52.5 +1.0**
GERES GERESS Array B 81.41 329 P **P 22 57 53.0 +0.5**
comp=Z,0.5nm,0.7s,baz=50,slow=5.2,SNR=3.3
GERES GERESS Array B 81.41 329 P **P 22 57 53.0 +0.5**
GERES pmax pmax
comp=Z,1.0nm,0.7s
ANMO Albuquerque 81.77 51*d i*P P 22 58 01.3 +6.5
ANMO pmax pmax
comp=Z,5.0nm,2.5s
TXAR Lajitas Array 87.34 54 P **P 22 58 23.6 +0.6**
comp=Z,0.4nm,0.8s,baz=257,slow=3.3,SNR=3.6

NIED ***07*** *23:18:00, 37.°40N×142.°70E, h8km, Mw4.5 Best double couple: M0 6.01000×10^15 NP1:φ=203.00000°, δ=29.00000°, λ=-135.00000°. NP2:φ=72.00000°, δ=70.00000°, λ=-69.00000°.*
ISCJB ***07*** *23:18:21.2±0.9, 37.°38N±0.°02×142.°65E±0.°02, h0km±5km, mb4.9/163, MS4.0/26, Error ellipse: s-maj=3.6km s-min=2.8km az=153.4*
IDC ***07*** *23:18:22.9±0.5, 37.°42N×142.°61E, h0km, mb4.6/32, mb1 4.7/40, mb1mx4.6/53, mbtmp4.6/40, ML4.0/6, MS3.7/20, Ms1 3.7/20, ms1mx3.5/47, Error ellipse: s-maj=13.0km s-min=11.4km az=140.0*
JMA ***07*** *23:18:24.0±0.3, 37.°37N×142.°68E, h34km, M4.5*
JMA Felt I J1.
NEIC ***07*** *23:18:24.6±1.2, 37.°39N×142.°62E, h11km±7km, mb4.8/98, Error ellipse: s-maj=3.0km s-min=2.1km az=132.0*
NEIC Recorded [1 JMA] in Miyagi.
MOS ***07*** *23:18:28.1±0.9, 37.°72N×142.°51E, h33km, mb4.9/63, Error ellipse: s-maj=6.8km s-min=4.0km az=108.2*
ISC 07 23:18:25.1±0.5, 37.°42N±0.°03×142.°71E±0.°04, h17km±2km, h16km:pP-P,n417,σ1§42/462,mb4.8/167,MS4.0/28, 30C-44D,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.46**	**269**	P	**Pn**	**Sn**	**23 18 48.1**	**-2.6**
JFK				*e*S	**Sn**	**Sn**	**23 19 07.1**	**-2.4**
JIO	**Ouri**	**1.49**	**314**	P	**Pn**	**Sn**	**23 18 49.0**	**-2.2**
JIO				S	**Sn**	**Sn**	**23 19 08.5**	**-1.7**
ONAJ	**Iwakimizuishiy**	**1.55**	**259**	P	**Pn**	**Sn**	**23 18 49.5**	**-2.6**
JMM	**Marumori**	**1.58**	**287**	P	**Pn**	**Sn**	**23 18 50.3**	**-2.1**
JMM				S	**Sn**	**Sn**	**23 19 11.2**	**-1.3**
JOU	**Okura**	**1.87**	**301**	P	**Pn**	**Sn**	**23 18 55.2**	**-1.2**
JOU				*e*S	**Sn**	**Sn**	**23 19 18.2**	**-1.5**
JFT	**Otama**	**1.89**	**274**	P	**Pn**	**Sn**	**23 18 55.3**	**-1.3**
JFT				*e*S	**Sn**	**Sn**	**23 19 18.1**	**-1.9**
JMK	**Ichinoseki**	**1.93**	**323**	P	**Pn**	**Sn**	**23 18 56.3**	**-0.9**
JOM	**Ohasama**	**2.33**	**332**	P	**Pn**	**Sn**	**23 19 02.1**	**-0.7**
JYK	**Kaneyama**	**2.38**	**310**	P	**Pn**	**Sn**	**23 19 00.8**	**-2.6**
JNS	**Sasagawa**	**2.72**	**280**	P	**Pn**	**Sn**	**23 19 08.0**	**0.0**
JAG	**Ashikaga**	**2.79**	**250**	P	**Pn**	**Sn**	**23 19 08.0**	**-1.0**
JAW	**Awa shima**	**2.92**	**292**	P	**Pn**	**Sn**	**23 19 11.7**	**+0.9**
BSO1	**Boso 1**	**3.09**	**207**	P	**Pn**	**Sn**	**23 19 12.3**	**-0.3**
BSO1				S	**Sn**	**Sn**	**23 19 50.4**	**+1.5**
JANG	**Nango**	**3.10**	**343**	P	**Pn**	**Sn**	**23 19 11.8**	**-1.4**
JANG				*e*S	**Sn**	**Sn**	**23 19 52.5**	**+2.6**
MJAR	**Matsushiro Arr**	**3.70**	**258**	Pn	**Pn**	**Pn**	**23 19 21.4**	**-0.2**
	12nm,0.3s,baz=80,slow=14,SNR=55							
MJAR				Sn	**Sn**	**Sn**	**23 20 05.9**	**+1.0**
	12nm,0.3s,baz=338,slow=27,SNR=5.8							
MJAR				LR	LR	LR	23 21 05.6	
	comp=Z,275nm,18.0s,baz=45,slow=45							
MAJO	**Matsushiro**	**3.71**	**258**	⇑*i*P		**Pn**	**23 19 24.1**	**+2.5**
MAJO	**Matsushiro**	**3.71**	**258**	*e*Pn		**Pn**	**23 19 21.8**	**+0.2**
MAT	**Matsushiro**	**3.71**	**258**	P		**Pn**	**23 19 21.8**	**+0.2**
MAT				*e*S		**Sn**	**23 20 05.4**	**+0.5**
MJB9	**Matsu-Tunnel**	**3.71**	**258**	*e*Pn		**Pn**	**23 19 22.0**	**+0.3**
ERM	**Erimo**	**4.61**	**4**	⇓*i*P		**Pn**	**23 19 32.8**	**-1.2**
ERM	**Erimo**	**4.61**	**4**	*e*Pn		**Pn**	**23 19 33.0**	**-0.9**
JHJ2	**Mitsune**	**4.90**	**210**	*e*Pn		**Pn**	**23 19 37.1**	**-0.9**
JHJ2				*e*Sn		**Sn**	**23 20 32.9**	**-1.4**
JHJ	**Hachijo jima 2**	**4.91**	**210**	Pn		**Pn**	**23 19 36.3**	**-1.8**
	72nm,0.3s,baz=332,slow=20,SNR=16							
JHJ				Sn		**Sn**	**23 20 30.5**	**-4.0**
	133nm,0.3s,baz=84,slow=23,SNR=10							
JHJ				LR		LR	23 21 32.4	
	comp=Z,303nm,18.1s,baz=13,slow=39							
INU	**Inuyama**	**5.03**	**248**	*e*Pn		**Pn**	**23 19 39.7**	**-0.1**
ASAJ	**Asahikawa**	**6.70**	**359**	Pn		**Pn**	**23 20 02.0**	**-0.6**
	12nm,0.3s,baz=223,slow=8.9,SNR=60							
ASAJ				Sn		**Sn**	**23 21 13.0**	**-5.5**
	baz=352,slow=15,SNR=2.2							
ASAJ				LR		LR	23 23 10.2	
	comp=Z,815nm,19.3s,baz=166,slow=43							
ASAJ	**Asahikawa**	**6.70**	**359**	*e*Pn		**Pn**	**23 20 01.7**	**-1.0**
ASAJ				Sn		**Sn**	**23 21 13.0**	**-5.5**
YUK	**Yuzh-Kuril'sk**	**7.03**	**19**	*e*P		**Pn**	**23 20 06.0**	**-1.3**
YUK				*e*S		**Sn**	**23 21 21.5**	**-5.3**
YUK				pmax		pmax		
	comp=Z,143nm,0.6s							
YUK				pmax		pmax		
	comp=N,59nm,0.7s							
YUK				pmax		pmax		
	comp=E,99nm,0.5s							
SHO	**Shikotan**	**7.17**	**25**	*e*P		**Pn**	**23 20 06.4**	**-2.7**
SHO				*i* S		**Sn**	**23 21 22.6**	**-7.6**
SHO				pmax		pmax		
	comp=Z,57nm,0.5s							
SHO				pmax		pmax		
	comp=N,33nm,0.6s							
SHO				pmax		pmax		
	comp=E,46nm,0.4s							
KUR	**Kuril'sk**	**8.72**	**25**	*e*P		**Pn**	**23 20 30.6**	**+0.2**
KUR				*i* S		**Sn**	**23 22 04.0**	**-4.3**
KUR				pmax		pmax		
	comp=Z,37nm,0.8s							
KUR				pmax		pmax		
	comp=E,28nm,0.7s							
KUR				pmax		pmax		
	comp=N,36nm,0.6s							
YSS	**Yuzh-Sakhalins**	**9.53**	**0**	*e*P		**Pn**	**23 20 41.7**	**+0.2**
YSS				MLR		MLR		
	comp=Z,900nm,10.0s							
VLA	**Vladivostok**	**10.04**	**308**	⇓*e*P		**Pn**	**23 20 50.3**	**+1.8**
MSHR	**Mys Shultsa**	**10.25**	**304**	⇑*i*P		**Pn**	**23 20 52.4**	**+1.0**
CBIJ	**Chichi jima**	**10.30**	**183**	*e*Pn		**Pn**	**23 20 50.1**	**-2.0**
CBIJ				Sn		Sn	23 22 35.3	-12
JCJ	**Chichijima**	**10.30**	**183**	Pn		**Pn**	**23 20 48.6**	**-3.6**
	comp=Z,21nm,0.3s,baz=265,slow=23,SNR=16							
JCJ				Sn		Sn	23 22 35.3	-12
	comp=Z,8.6nm,0.3s,baz=303,slow=20,SNR=3.8							
JCJ				LR		LR	23 29 23.1	
	comp=Z,38nm,18.3s,baz=342,slow=64							
JNU	**Nakatsue**	**10.57**	**250**	Pn		**Pn**	**23 20 55.8**	**-0.1**
	comp=Z,0.3nm,0.3s,baz=55,slow=7.1,SNR=12							
JNU	**Nakatsue**	**10.57**	**250**	*e*Pn		**Pn**	**23 20 55.4**	**-0.5**
USRK	**Ussuriysk Ar.**	**10.57**	**313**	Pn		**Pn**	**23 20 55.8**	**0.0**
	comp=Z,0.7nm,0.3s,baz=119,slow=14,SNR=10.0							
USRK				LR		LR	23 24 32.6	
	comp=Z,586nm,19.0s,baz=131,slow=35							
KSRS	**Korea Array**	**11.76**	**275**	Pn		**Pn**	**23 21 12.8**	**+0.8**
	comp=Z,0.6nm,0.3s,baz=94,slow=13,SNR=24							
KSRS				LR		LR	23 25 10.3	
	comp=Z,279nm,20.0s,baz=82,slow=35							
KS01	**Wonju Array Si**	**11.78**	**275**	*e*Pn		**Pn**	**23 21 13.0**	**+0.7**
KS15	**Wonju Array Si**	**11.79**	**275**	*e*Pn		**Pn**	**23 21 12.7**	**+0.2**
KSAR	**Wonju Array Be**	**11.79**	**275**	P		**Pn**	**23 21 12.8**	**+0.3**
KSAR	**Wonju Array Be**	**11.79**	**275**	Pn		**Pn**	**23 21 12.8**	**+0.3**
MDJ	**Mudanjiang**	**12.23**	**310**	P		**Pn**	**23 21 22.5**	**+4.0**
MDJ				S		**Sn**	**23 23 35.4**	**+1.0**
MDJ				PcP		**PcP**	**23 27 00.7**	**-0.2**
MDJ				ScP		**ScP**	**23 30 31.2**	**-1.8**
MDJ				PcS		**PcS**	**23 30 35.5**	**+0.6**
MDJ	**Mudanjiang**	**12.23**	**310**	ScS		ScS	23 34 08.0	-0.9
MDJ				pmax		pmax		
	comp=Z,26nm,0.9s							
MDJ				pmax		pmax		
	comp=Z,150nm,6.5s							
MDJ				LR		LR		
	comp=N,470nm,13.3s							
MDJ				LR		LR		
	comp=E,360nm,15.7s							
MDJ				LR		LR		
	comp=Z,690nm,15.7s							
MDJ	**Mudanjiang**	**12.23**	**310**	*e*Pn		**Pn**	**23 21 19.2**	**+0.7**
	comp=Z,21nm,0.8s							
HABR	**Khabarovsk**	**12.38**	**336**	*c e*P		**Pn**	**23 21 18.6**	**-1.9**
HABR				*e*S		**Sn**	**23 23 34.2**	**-3.9**
HABR				pmax		pmax		
	comp=E,21nm,1.0s							
HABR				pmax		pmax		
	comp=N,18nm,1.0s							
HABR				pmax		pmax		
	comp=Z,32nm,1.0s							
HABR				MLR		MLR		
	comp=Z,433nm,13.0s							
KLR	**Kul'dur**	**14.23**	**330**	Pn		**Pn**	**23 21 43.2**	**-2.6**
	comp=Z,0.3nm,0.3s,baz=128,slow=13,SNR=16							
KLR				LR		LR	23 27 10.9	
	comp=Z,328nm,19.2s,baz=139,slow=37							
NKL	**Nikolayevsk**	**15.80**	**356**	*e*P		**Pn**	**23 22 05.2**	**-1.4**
NKL				pmax		pmax		
	comp=Z,60nm,1.5s							
NKL				MLR		MLR		
	comp=Z,500nm,15.0s							
PETK	**Petropavlovsk-**	**18.85**	**29**	P		**P**	**23 22 43.0**	**-1.2**
	comp=Z,0.1nm,0.3s,baz=204,slow=3.2,SNR=2.6							
PETK	**Petropavlovsk-**	**18.85**	**29**	P		**P**	**23 22 43.0**	**-1.2**
PET	**Petropavlovsk**	**19.16**	**30**	*e*P		**Pn**	**23 22 49.6**	**+1.2**
PET				pmax		pmax		
	comp=Z,24nm,1.2s							
PET	**Petropavlovsk**	**19.16**	**30**	*e*P		**Pn**	**23 22 49.6**	**+1.2**
	comp=Z,24nm,1.2s							
TIA	**Tai'an**	**20.50**	**274**	*e*P		**P**	**23 23 00.2**	**-2.1**
TIA				pmax		pmax		
	comp=Z,10.0nm,0.9s							
BJI	**Beijing**	**20.84**	**285**	P		**P**	**23 23 03.7**	**-2.2**
BJI				pP		**sP**	**23 23 12.0**	**-0.9**
BJI				sP		pP	23 23 18.3	+7.6
BJI				S		Sn	23 27 01.9	-1.4
BJI				pmax		pmax		
	comp=Z,11nm,0.7s							
BJI				pmax		pmax		
	comp=Z,88nm,4.1s							
BJI				LR		LR		
	comp=N,160nm,10.7s							
BJI				LR		LR		
	comp=E,260nm,12.8s							
BJI				LR		LR		
	comp=Z,89nm,16.9s							
BJT	**Baijiatuau**	**20.84**	**285**	*e*P		**P**	**23 23 04.2**	**-1.8**
BJT				pmax		pmax		
	comp=Z,14nm,0.6s							
BJT	**Baijiatuau**	**20.84**	**285**	*e*P		**P**	**23 23 04.2**	**-1.8**
	comp=Z,14nm,0.6s							
TATO	**Taipei**	**21.92**	**242**	*e*P		**P**	**23 23 17.4**	**-0.3**
	comp=Z,68nm,1.5s							
YHNB	**Yeheng**	**22.20**	**241**	*e*P		**P**	**23 23 20.1**	**-0.6**
	comp=Z,12nm,1.0s							
NACB	**Ninganchiao**	**22.36**	**240**	*e*P		**P**	**23 23 22.3**	**-0.1**
	comp=Z,13nm,1.0s							
CLNS	**Chul'man**	**22.77**	**334**	*e*P		**P**	**23 23 25.0**	**-1.5**
CLNS				pmax		pmax		
	comp=Z,23nm,0.9s							
CLNS				pmax		pmax		
	comp=N,19nm,0.9s							
CLNS				pmax		pmax		
	comp=E,9.0nm,0.9s							
MA2	**Magadan**	**22.78**	**11**	*e*P		**P**	**23 23 26.8**	**+0.3**
MA2				pmax		pmax		
	comp=Z,53nm,0.7s							
MA2	**Magadan**	**22.78**	**11**	*e*P		**P**	**23 23 26.8**	**+0.3**
	comp=Z,53nm,0.7s							
SSLB	**Suanglung**	**23.06**	**240**	*e*P		**P**	**23 23 29.1**	**-0.7**
	comp=Z,6.8nm,0.9s							
YULB	**Yu-li**	**23.09**	**239**	*e*P		**P**	**23 23 30.2**	**+0.1**
	comp=Z,33nm,1.9s							
TPUB	**Ta-pu**	**23.60**	**240**	*e*P		**P**	**23 23 33.4**	**-1.8**
	comp=Z,18nm,1.2s							
GUMO	**Guam**	**23.81**	**175**	LR		LR	23 32 40.0	
	comp=Z,67nm,20.7s,baz=100,slow=36							
HHC	**Hu-ho-hao-te**	**24.33**	**288**	*e*P		**P**	**23 23 41.3**	**-0.8**
HHC				pP		sP	23 23 51.4	+2.1
HHC				sP		pP	23 23 54.7	+7.5
HHC				S		**S**	**23 27 54.8**	**-5.8**
HHC				pmax		pmax		
	comp=Z,34nm,0.8s							
HHC				pmax		pmax		
	comp=Z,140nm,3.9s							
HHC				LR		LR		
	comp=N,680nm,13.1s							
HHC				LR		LR		
	comp=E,680nm,12.4s							
HHC				LR		LR		
	comp=Z,770nm,12.7s							
CIT	**Chita**	**25.13**	**315**	*e*P		**P**	**23 23 49.8**	**+0.7**
CIT				*e*			23 23 55.7	
YAK	**Yakutsk**	**25.94**	**346**	P		**P**	**23 23 55.2**	**-1.0**
	comp=Z,43nm,0.7s,baz=137,slow=0.5,SNR=20							
YAK				LR		LR	23 35 36.9	
	comp=Z,188nm,18.4s,baz=187,slow=40							
YAK	**Yakutsk**	**25.94**	**346**	*e*P		**P**	**23 23 56.0**	**-0.2**
YAK				*e**PP		**sP**	**23 24 05.6**	**+2.1**
YAK				*e*			23 24 39.2	
YAK				*e*PPP		PPP	23 24 48.3	
YAK				*e*SS			23 29 43.7	
YAK				pmax		pmax		
	comp=E,5.0nm,0.8s							
YAK				pmax		pmax		
	comp=Z,52nm,0.8s							
YAK				pmax		pmax		
	comp=N,26nm,1.8s							
YAK				pmax		pmax		
	comp=Z,22nm,1.0s							
YAK				MLR		MLR		
	comp=Z,505nm,13.0s							
YAK				MLR		MLR		
	comp=E,209nm,11.0s							
YAK				MLR		MLR		
	comp=N,367nm,12.0s							
YAK	**Yakutsk**	**25.94**	**346**	*e*P		**P**	**23 23 55.2**	**-1.0**
	comp=N,60nm,0.8s							
SEY	**Seymchan**	**26.23**	**10**	P		**P**	**23 24 00.1**	**+1.3**
	comp=N,17nm,0.8s,baz=193,slow=6.9,SNR=44							
SEY	**Seymchan**	**26.23**	**10**	⇓*i*P		**P**	**23 24 00.5**	**+1.6**
H11N2	**WAKE ISLAND Hy**	**27.48**	**123**	T		T	23 52 57.1	
	baz=315,slow=75,SNR=979							
H11N1	**WAKE ISLAND Hy**	**27.48**	**123**	T		T	23 52 58.2	
	baz=315,slow=75,SNR=695							
H11N3	**WAKE ISLAND Hy**	**27.49**	**123**	T		T	23 52 57.5	
	baz=315,slow=75,SNR=680							
XAN	**Xi'an**	**27.55**	**273**	P		**P**	**23 24 09.7**	**-1.4**
XAN				pP		sP	23 24 18.2	-0.2
XAN				S		**S**	**23 29 00.7**	**+9.0**
XAN				pmax		pmax		
	comp=Z,11nm,0.9s							
XAN				LR		LR		
	comp=N,200nm,15.8s							
XAN				LR		LR		

comp=Z,240nm,13.0s
BOD Bodaibo 27.77 327 *e*P P 23 24 12.2 -0.6
BOD pmax pmax
comp=Z,21nm,0.9s
ULN Ulaanbaatar 28.00 303⇑ *i*P P 23 24 15.6 +0.4
ULN pmax pmax
comp=Z,29nm,1.7s
ULN Ulaanbaatar 28.00 303 *e*P P 23 24 15.1 -0.1
comp=Z,12nm,0.8s
H11S1 WAKE ISLAND Hy 28.22 125 T T 23 53 53.1
baz=317,slow=76,SNR=394
H11S3 WAKE ISLAND Hy 28.22 125 T T 23 53 53.2
baz=317,slow=76,SNR=418
H11S2 WAKE ISLAND Hy 28.23 125 T T 23 53 55.9
baz=317,slow=76,SNR=372
ENH Enshi 28.39 265 *e*P P 23 24 18.2 -0.5
comp=Z,44nm,0.9s
SONA1 Songino Array 28.43 303 *e*P P 23 24 18.6 -0.4
SONM Songino Array 28.43 303 P **P 23 24 18.9 -0.1**
comp=Z,25nm,0.8s,baz=96,slow=8.5,SNR=81
SONM LR LR 23 35 55.7
comp=Z,167nm,19.4s,baz=301,slow=37
ZAK Zakamensk 30.85 308 *e*P P 23 24 39.6 -0.7
ZAK pmax pmax
comp=Z,13nm,1.0s
TLY Talaya 30.87 310 P **P 23 24 40.1 -0.3**
comp=Z,4.8nm,0.8s,baz=120,slow=8.4,SNR=8.6
TLY Talaya 30.87 310 *e*P P 23 24 40.7 +0.3
TLY *e* 23 25 47.9
TLY *e*S **S 23 29 47.5 +4.1**
TLY *e*SS **ScP 23 31 16.3 -2.5**
TLY pmax pmax
comp=Z,11nm,1.4s
TLY MLR MLR
comp=Z,152nm,9.0s
TLY Talaya 30.87 310 *e*P P 23 24 40.8 +0.4
comp=Z,6.8nm,0.9s
LZH Lanzhou 31.02 280 *e*P P 23 24 43.3 +1.2
LZH pP sP 23 24 53.3 +3.9
LZH sP pP 23 24 57.5 +10
LZH *e*S **S 23 29 42.0 -4.4**
LZH sS sS 23 29 56.0 +1.1
LZH SS **SnSn 23 31 29.0 +1.9**
LZH pmax pmax
comp=Z,16nm,1.0s
LZH pmax pmax
comp=Z,110nm,4.3s
LZH LR LR
comp=N,300nm,11.7s
LZH LR LR
comp=E,260nm,12.0s
LZH LR LR
comp=Z,380nm,13.3s
GYA Guiyang 32.30 261 *e*P P 23 24 53.8 +0.4
GYA pP sP 23 25 04.2 +3.6
GYA PP **PnPn 23 26 02.0 +2.2**
GYA PcP **PcP 23 27 42.8 +1.5**
GYA S **S 23 30 05.4 -1.1**
GYA sS sS 23 30 20.6 +5.6
GYA ScP **ScP 23 31 22.9 -1.3**
GYA SS **SnSn 23 31 59.0 +0.6**
GYA pmax pmax
comp=Z,20nm,0.9s
GYA pmax pmax
comp=Z,120nm,5.2s
GYA LR LR
comp=N,520nm,17.8s
GYA LR LR
comp=E,490nm,17.6s
GYA LR LR
comp=Z,500nm,18.0s
MOY Mondy 32.49 310 *e*P P 23 24 54.6 -0.1
CD2 Chengdu 32.70 270 P **P 23 24 55.5 -1.3**
CD2 sP sP 23 25 08.8 +4.7
CD2 PP **PP 23 26 09.5 -1.2**
CD2 S **S 23 30 09.8 -2.7**
CD2 sS sS 23 30 25.6 +4.5
CD2 SS **SS 23 32 31.4 -1.8**
CD2 pmax pmax
comp=Z,20nm,0.7s
CD2 pmax pmax
comp=Z,100nm,7.2s
CD2 LR LR
comp=N,370nm,14.4s
CD2 LR LR
comp=Z,230nm,9.8s
BILL Bilibino 33.38 16*d* *i*P P 23 25 02.5 +0.3
BILL *e* 23 25 20.9
BILL *e* 23 26 11.9
BILL pmax pmax
comp=Z,18nm,1.7s
BILL MLR MLR
comp=Z,119nm,18.0s
BILL Bilibino 33.38 16 *e*P P 23 25 02.8 +0.6
comp=Z,16nm,1.3s
GTA Gaotai 33.44 287 *e*P P 23 25 03.0 -0.2
GTA pP sP 23 25 12.4 +1.9
GTA sP pP 23 25 16.7 +8.3
GTA S **S 23 30 21.8 -2.2**
GTA sS sS 23 30 37.2 +4.7
GTA SS **SnSn 23 32 24.6 -1.1**
GTA pmax pmax
comp=Z,8.0nm,1.0s
GTA pmax pmax
comp=Z,75nm,6.2s
GTA LR LR
comp=N,200nm,19.0s
GTA LR LR
comp=E,230nm,18.5s
GTA LR LR
comp=Z,190nm,18.5s
DAV Davao City (W) 33.98 212 *e*P P 23 25 08.0 0.0
comp=Z,182nm,0.4s
TIXI Tiksi 35.04 352 P **P 23 25 15.9 -0.6**
comp=Z,2.7nm,0.7s,baz=134,slow=2.1,SNR=6.4
TIXI Tiksi 35.04 352⇑ *i*P P 23 25 16.1 -0.4
TIXI pmax pmax
comp=Z,9.0nm,1.7s
TIXI Tiksi 35.04 352 *e*P P 23 25 16.2 -0.3
comp=Z,3.4nm,0.8s
KMI Kunming 36.04 262 P **P 23 25 26.6 +0.7**
KMI pP sP 23 25 33.9 +0.7
KMI sP pP 23 25 36.7 +5.6
KMI S **S 23 31 02.7 -1.7**
KMI pmax pmax
comp=Z,10.0nm,0.5s
KMI pmax pmax
comp=Z,100nm,4.5s
KMI LR LR
comp=N,270nm,15.9s
KMI LR LR
comp=E,180nm,16.9s
KMI LR LR
comp=Z,240nm,14.1s
KWAJ Kwajalein Atol 36.32 135 *e*P P 23 25 28.0 -0.1
KWAJ Kwajalein Atol 36.32 135 *e*P P 23 25 28.0 -0.1
comp=Z,146nm,1.0s
MYLDM Lahad Datu 38.96 220 *e*P P 23 25 50.1 -0.4
comp=Z,30nm,1.1s
MANU Manus Island 39.50 173 *e*P P 23 25 54.9 0.0
comp=Z,106nm,1.8s
TNA Tin City 40.02 29 *e*P P 23 25 59.8 +1.1
comp=Z,5.1nm,0.8s
FALS False Pass 40.09 46 *e*P P 23 26 00.5 +1.1
comp=Z,54nm,1.1s
WMQ Urumqi 41.59 297 P **P 23 26 13.7 +1.6**
WMQ pP sP 23 26 21.1 +1.7
WMQ sP pP 23 26 28.4 +11
WMQ PcP **PcP 23 28 07.2 -1.8**
WMQ S **S 23 32 29.0 +1.5**
WMQ sS sS 23 32 50.4 +14
WMQ pmax pmax
comp=Z,13nm,0.8s
WMQ pmax pmax
comp=Z,67nm,5.4s
WMQ LR LR
comp=N,64nm,31.8s
WMQ LR LR
comp=E,60nm,31.8s
WMQ LR LR
comp=Z,49nm,26.6s
SDPT Sand Point 41.80 46 *e*P P 23 26 14.5 +1.0
comp=Z,41nm,1.0s
CHTO Chiang Mai 42.38 256 *e*P P 23 26 18.3 -0.5
CHTO pmax pmax
comp=Z,14nm,1.8s
CHTO Chiang Mai 42.38 256 *e*P P 23 26 18.3 -0.5
comp=Z,14nm,1.8s
ZALV Zalesovo Beam 42.42 312 P **P 23 26 18.7 0.0**
comp=Z,23nm,0.8s,baz=89,slow=7.0,SNR=89
ZALV PcP **PcP 23 28 10.9 -0.6**
comp=Z,2.7nm,0.7s,baz=111,slow=3.2,SNR=4.0
LUWI Luwuk 42.48 210 *e*P P 23 26 19.6 0.0
comp=Z,31nm,0.8s
LSA Lhasa 43.20 275 *e*P P 23 26 25.3 -0.6
LSA pmax pmax
comp=Z,8.0nm,0.8s
LSA Lhasa 43.20 275 *e*P P 23 26 25.3 -0.6
comp=Z,7.7nm,0.8s
NVS Novosibirsk 43.33 313 *e*P P 23 26 25.8 -0.1
NVS pmax pmax
comp=Z,19nm,0.9s
NVS pmax pmax
comp=N,4.0nm,0.8s
NVS pmax pmax
comp=E,12nm,0.9s
NRIK Noril'sk 43.36 335 P **P 23 26 26.0 0.0**
comp=E,4.0nm,0.4s,baz=111,slow=7.7,SNR=17
NRIK LR LR 23 45 25.4
comp=E,218nm,18.8s,baz=272,slow=38
SHL Shillong 44.44 270 *e*P P 23 26 37.0 +1.5
TT01 Tatalina 44.51 35 *e*P P 23 26 36.6 +1.2
SVW2 Sparrevohn 44.59 38 *e*P P 23 26 36.8 +0.7
comp=E,3.7nm,0.7s
SBUM Sibu 44.66 226 *e*P P 23 26 37.5 +0.3
comp=E,5.2nm,0.7s
MK01 Makanchi Array 44.79 302 *e*P P 23 26 37.5 -0.4
MK31 Makanchi Array 44.79 302 *e*P P 23 26 37.8 -0.1
MK31 Makanchi Array 44.79 302 *e*P P 23 26 37.8 -0.1
MKAR Makanchi Array 44.79 302 P **P 23 26 37.5 -0.3**
comp=E,6.4nm,0.7s,baz=87,slow=9.3,SNR=51
MKAR Makanchi Array 44.79 302 *e*P P 23 26 37.8 -0.1
MAKZ Makanchi 45.00 302 *e*P P 23 26 39.4 -0.2
MAKZ pmax pmax
comp=Z,8.0nm,0.8s
MAKZ Makanchi 45.00 302 *e*P P 23 26 39.4 -0.2
comp=Z,8.0nm,0.8s
TARA Tarawa 45.41 135 *e*P P 23 26 43.7 +0.6
comp=Z,308nm,1.6s
RSO Redoubt South 45.96 38 *e*P P 23 26 48.2 +1.0
KDAK Kodiak Island 46.13 42 P P 23 27 03.9 +16
comp=Z,6.5nm,0.7s,baz=274,slow=4.7,SNR=9.2
KDAK Kodiak Island 46.13 42 *ce*P P 23 26 48.9 +0.7
KDAK Kodiak Island 46.13 42 *e*P P 23 26 49.8 +1.6
comp=Z,31nm,1.4s
SPU Mount Spurr 46.30 37 *e*P P 23 26 51.7 +2.0
CAST Castle Rocks 46.33 34 *e*P P 23 26 52.0 +2.2
comp=Z,3.8nm,0.8s
KURK Kurchatov 46.51 308 *e*P P 23 26 50.7 -0.6
KURK pmax pmax
comp=Z,91nm,0.8s
KURK Kurchatov 46.51 308 *e*P P 23 26 50.7 -0.6
comp=Z,91nm,0.8s
KSM Kuching 46.56 228 *e*P P 23 26 51.8 -0.3
comp=Z,5.1nm,0.8s
KURBB Kurchatov Arra 46.58 308 P **P 23 26 51.5 -0.4**
comp=Z,42nm,0.8s,baz=83,slow=8.3,SNR=182
JOHN Johnston Islan 46.69 103 *e*P P 23 26 53.2 0.0
comp=Z,493nm,1.4s
PMG Port Moresby 46.76 174 ⇑P **P 23 26 56.9 +3.3**
PMG pmax pmax
comp=Z,76nm,1.7s
PMG Port Moresby 46.76 174 *e*P P 23 26 54.1 +0.5
comp=Z,17nm,1.0s
BPAW Bear Paw Mtn. 46.84 33 *e*P P 23 26 54.8 +0.9
comp=Z,2.4nm,0.8s
KTH Kantishna Hill 46.85 34 *e*P P 23 26 54.9 +0.9
comp=Z,6.1nm,0.8s
MLY Manley 46.98 32 *e*P P 23 26 56.2 +1.3
comp=Z,5.4nm,0.9s
TRF Thorofare Moun 47.14 34 *e*P P 23 26 57.1 +0.8
comp=Z,4.1nm,0.8s
KAPI Kappang 47.32 212 *e*P P 23 26 57.8 -0.2
comp=Z,3.2nm,0.6s
RC01 Rabbit Creek A 47.43 38 *e*P P 23 26 59.4 +1.0
comp=Z,6.9nm,1.0s
BWN Browne 47.51 33 *e*P P 23 27 00.7 +1.7
comp=Z,20nm,1.0s
SEW Seward 47.62 39 *e*P P 23 27 00.5 +0.6
comp=Z,15nm,1.0s
PMR Palmer 47.70 37 *e*P P 23 27 01.4 +0.9
PMR pmax pmax
comp=Z,10.0nm,1.3s
PMR Palmer 47.70 37 *e*P P 23 27 01.4 +0.9
comp=Z,10.0nm,1.3s
MCK McKinley 47.74 34 *e*P P 23 27 01.4 +0.6
MCK pmax pmax
comp=Z,5.0nm,1.0s
MCK McKinley 47.74 34 *e*P P 23 27 01.4 +0.6
comp=Z,5.3nm,1.0s
RND Reindeer 47.78 34 *e*P P 23 27 02.2 +1.0
RND pmax pmax
comp=Z,7.0nm,0.9s
RND Reindeer 47.78 34 *e*P P 23 27 02.2 +1.0
comp=Z,6.8nm,0.9s
MDM Murphy Dome 48.04 32 *e*P P 23 27 05.0 +1.9
comp=Z,9.6nm,0.8s
SML Sawmill 48.07 37 *e*P P 23 27 04.8 +1.3
SML pmax pmax
comp=Z,7.0nm,0.8s
SML Sawmill 48.07 37 *e*P P 23 27 04.8 +1.3
comp=Z,7.1nm,0.8s
WRH Wood River Hil 48.11 33 *e*P P 23 27 04.9 +1.3
comp=Z,21nm,1.9s
GUN Gumba 48.14 276 *e*P P 23 27 04.6 -0.2
comp=Z,28nm,0.5s
CCB Clear Creek Bu 48.23 33 *e*P P 23 27 05.3 +0.8
comp=Z,8.9nm,1.8s
SCM Sheep Creek Mo 48.55 36 *e*P P 23 27 07.8 +0.7
SCM pmax pmax
comp=Z,9.0nm,1.0s
SCM Sheep Creek Mo 48.55 36 *e*P P 23 27 07.8 +0.7
comp=Z,9.2nm,1.0s
HDA Harding Lake 48.60 33 *e*P P 23 27 08.7 +1.2
comp=Z,6.6nm,0.9s
IL1 Eielson Array 48.62 33 *e*P P 23 27 06.6 -1.0
ILAR Eielson Array 48.62 33 P **P 23 27 08.1 +0.5**
comp=Z,4.6nm,0.7s,baz=266,slow=6.5,SNR=58
ILB Eielson Array 48.62 33 *e*P P 23 27 08.4 +0.8
KKN Kakani 48.67 276 *e*P P 23 27 08.7 0.0
comp=Z,39nm,0.7s
PKIN Phulchoki 48.67 276 *e*P P 23 27 08.1 -0.7
comp=Z,11nm,0.8s
GKN Gorkha 49.08 277 *e*P P 23 27 11.6 -0.2
comp=Z,31nm,0.7s
KLU Klutina 49.24 37 *e*P P 23 27 14.0 +1.5
comp=Z,16nm,1.5s
MID Middleton Isla 49.25 40 *e*P P 23 27 13.8 +1.4
MID pmax pmax
comp=Z,103nm,0.9s
MID Middleton Isla 49.25 40 *e*P P 23 27 13.8 +1.4
comp=Z,103nm,0.9s
FYU Fort Yukon 49.26 30 *e*P P 23 27 13.5 +1.0
comp=Z,14nm,1.2s
PAX Paxson 49.34 35 *e*P P 23 27 14.4 +1.2
PAX pmax pmax
comp=Z,3.0nm,1.0s
PAX Paxson 49.34 35 *e*P P 23 27 14.4 +1.2
comp=Z,2.9nm,1.0s
DIV Divide 49.35 37 *e*P P 23 27 14.7 +1.4
comp=Z,12nm,1.1s
EYAK Cordova Ski Ar 49.42 38 *e*P P 23 27 14.3 +0.6
comp=Z,8.7nm,0.7s
DOT Dot Lake 49.91 34 *e*P P 23 27 18.4 +0.8
comp=Z,7.9nm,0.7s
BMRM Bremner River 49.93 37 *e*P P 23 27 19.6 +1.9
comp=Z,49nm,2.0s
RAGM Ragged Mountai 49.97 38 *e*P P 23 27 19.1 +1.1
comp=Z,9.1nm,1.0s
KOLN Koldanda 50.01 277 *e*P P 23 27 18.7 -0.3
comp=Z,16nm,0.7s
MENT Mentasta 50.13 35 *e*P P 23 27 20.7 +1.5
comp=Z,7.1nm,1.0s
MYKOM Kota Tinggi 50.32 235 *e*P P 23 27 20.6 -0.5
comp=Z,8.1nm,1.2s
PYUN Piuthan 50.34 278 *e*P P 23 27 21.4 -0.1
comp=Z,55nm,0.9s
TKM2 Tokmak 2 50.35 298 *e*P P 23 27 21.9 +0.5
TKM2 pmax pmax
comp=Z,20nm,0.8s
TKM2 Tokmak 2 50.35 298 *e*P P 23 27 21.9 +0.5
comp=Z,20nm,0.8s
BALM Baldy 51.01 37 *e*P P 23 27 27.2 +1.2
BALM pmax pmax
comp=Z,4.0nm,0.8s
BALM Baldy 51.01 37 *e*P P 23 27 27.2 +1.2
comp=Z,4.0nm,0.8s
FRU Bishkek 51.07 299 *e*P P 23 27 25.0 -1.6
EGAK Eagle 51.07 32 *e*P P 23 27 27.9 +1.8
comp=Z,6.8nm,1.3s
BVAR Borovoye Array 51.08 312 P **P 23 27 26.3 -0.1**
comp=Z,7.9nm,0.8s,baz=77,slow=7.9,SNR=40
BVAR PcP **PcP 23 28 42.7 +0.6**
comp=Z,2.4nm,0.7s,baz=81,slow=4.5,SNR=2.5
COEN Coen 51.10 179 *e*P P 23 27 27.1 +0.2
comp=Z,38nm,1.4s
BRVK Borovoye 51.13 312*d* *i*P P 23 27 26.8 0.0
BRVK pmax pmax
comp=Z,10.0nm,0.7s
BRVK Borovoye 51.13 312 *e*P P 23 27 26.9 +0.1
comp=Z,11nm,0.7s
MTN Manton Dam 51.16 195 *e*P P 23 27 27.5 +0.2
comp=Z,12nm,0.8s
KSH Kashi 51.19 294 P **P 23 27 32.0 +4.4**
KSH *es*P sP 23 27 46.2 +11
KSH *e*PcP **PcP 23 28 47.1 +4.2**
KSH PcS **PcS 23 32 46.0 +5.3**
KSH S **S 23 34 47.8 +2.5**
KSH ScS **ScS 23 37 19.6 +2.0**
KSH pmax pmax
comp=Z,12nm,1.0s
KSH pmax pmax
comp=Z,83nm,4.4s
KSH LR LR
comp=N,130nm,11.8s
KSH LR LR
comp=E,200nm,10.9s
KSH LR LR
comp=Z,280nm,12.3s
AAK Ala-Archa 51.22 298⇑ *i*P P 23 27 28.4 +0.6
AAK pmax pmax
comp=Z,13nm,0.8s
AAK Ala-Archa 51.22 298 *e*P P 23 27 28.2 +0.3
comp=Z,8.1nm,0.9s
EKS2 Erkin-Say 51.71 299 *e*P P 23 27 31.4 -0.1
EKS2 pmax pmax
comp=Z,6.0nm,0.8s
EKS2 Erkin-Say 51.71 299 *e*P P 23 27 31.4 -0.1
comp=Z,6.2nm,0.8s
ZRNK Zerenda 51.91 312 *e*P P 23 27 32.1 -0.5
ZRNK pmax pmax
comp=Z,13nm,0.8s
ZRNK Zerenda 51.91 312 *e*P P 23 27 32.1 -0.5
comp=Z,13nm,0.8s
DAWY Dawson 51.92 33 *e*P P 23 27 32.8 +0.1
comp=Z,3.3nm,1.0s
YKU2 Yakutat 52.59 39 *e*P P 23 27 39.1 +1.6
comp=Z,1μm,1.4s
PSI Prapat 52.88 240 *e*P P 23 27 40.3 -0.1
PSI pmax pmax
comp=Z,6.0nm,0.7s
PSI Prapat 52.88 240 *e*P P 23 27 40.2 -0.1
comp=Z,6.3nm,0.7s
INK Inuvik 53.58 27 P **P 23 27 45.8 +1.1**
comp=Z,2.8nm,0.7s,baz=290,slow=6.3,SNR=20
KKAR Karatay Array 53.83 300 *e*P P 23 27 47.1 +0.1
KKAR Karatay Array 53.83 300 *e*P P 23 27 47.1 +0.1
SKAG Skagway 54.76 38 *e*P P 23 27 54.6 +1.1
comp=Z,9.3nm,0.9s
GSI Gunungsitoli 54.88 240 *e*P P 23 27 55.1 +0.2
comp=Z,28nm,1.0s
CISI Cisompet, Garu 55.36 224 *e*P P 23 27 58.4 0.0
comp=Z,33nm,0.6s
SVE Sverdlovsk 55.54 319*c* *i*P P 23 27 59.4 +0.2
SVE pmax pmax
comp=Z,39nm,0.9s
SVE MLR MLR
comp=Z,344nm,16.0s
MNAI Manna 55.62 231 *e*P P 23 27 59.9 -0.4
comp=Z,217nm,1.1s
KKH Kailua Kona 55.74 91 *e*P P 23 28 02.1 +1.0
KKH Kailua Kona 55.74 91 *e*P P 23 28 02.0 +1.0
UWE Uwekahuna 56.45 90 *e*P P 23 28 05.5 -0.8
comp=Z,373nm,1.5s
ARU Arti 56.76 319*d* *i*P P 23 28 07.8 -0.1
ARU 23 29 05.6
ARU 23 30 10.9
ARU S **S 23 35 58.9 -0.9**
ARU pmax pmax
comp=Z,51nm,1.7s
ARU MLR MLR
comp=Z,271nm,18.0s
ARU Arti 56.76 319 *e*P P 23 28 07.4 -0.5
comp=Z,31nm,1.0s
FUNA Funafuti 57.04 135 *e*P P 23 28 09.7 -0.6
comp=Z,134nm,1.4s
WRAB Tennant Creek 57.58 189⇓ *i*P P 23 28 14.4 +0.4
WRAB pmax pmax
comp=Z,47nm,1.0s
WRAB Tennant Creek 57.58 189 *e*P P 23 28 13.6 -0.4
comp=Z,31nm,0.8s
WB2 Warramunga Arr 57.59 189 *e*P P 23 28 14.2 +0.1
comp=Z,32nm,0.9s
WRA Warramunga Arr 57.59 189 P **P 23 28 13.8 -0.3**
comp=Z,15nm,0.8s,baz=8.0,slow=7.3,SNR=112
DLBC Dease Lake 57.69 38 P **P 23 28 16.4 +1.9**
comp=Z,2.9nm,0.8s,baz=296,slow=7.2,SNR=8.2
DLBC Dease Lake 57.69 38 *e*P P 23 28 15.9 +1.3
comp=Z,7.5nm,1.3s
KBL Kabul 58.24 291 *e*P P 23 28 18.6 -0.3
KBL pmax pmax
comp=Z,8.0nm,0.8s
KBL Kabul 58.24 291 *e*P P 23 28 18.6 -0.3
comp=Z,8.3nm,0.8s
ABKAR Akbulak array 58.48 310 *e*P P 23 28 19.7 -0.4
XMIS Christmas Isla 58.96 224 *e*P P 23 28 23.5 -0.3
comp=Z,164nm,1.5s
AKTO Aktyubinsk 59.19 312 P **P 23 28 24.6 -0.4**
comp=Z,5.4nm,0.8s,baz=72,slow=12,SNR=16
AKTO PcP **PcP 23 29 13.5 +0.2**
comp=Z,3.3nm,0.8s,baz=64,slow=7.3,SNR=3.5
AS01 Alice Springs 61.31 189 *e*P P 23 28 39.7 0.0
AS31 Alice Springs 61.31 189 *e*P P 23 28 40.2 +0.4
comp=Z,3.0nm,0.8s
ASAR Alice Springs 61.32 189 P **P 23 28 40.0 +0.2**
comp=Z,5.2nm,0.8s,baz=12,slow=6.3,SNR=44
RES Resolute Bay 61.97 15 P **P 23 28 44.1 +0.5**
comp=Z,8.6nm,0.8s,baz=308,slow=6.8,SNR=35
RES Resolute Bay 61.97 15 *e*P P 23 28 44.1 +0.5
comp=Z,13nm,0.9s
TMCR Tamitsa 62.90 332 *e*P P 23 28 50.5 +0.5
TMCR pmax pmax
comp=Z,16nm,0.6s
YKA Yellowknife Ar 62.96 31 P **P 23 28 50.8 +0.5**
comp=Z,1.2nm,0.7s,baz=302,slow=6.7,SNR=23
ARCES ARCESS Array B 64.00 340 P **P 23 28 57.7 +0.5**
comp=Z,3.7nm,0.7s,baz=47,slow=7.5,SNR=7.3
ARCES LR LR 23 59 27.2
comp=Z,35nm,18.9s,baz=34,slow=38
GEYT Alibeck 64.55 299 P **P 23 29 01.4 +0.1**
comp=Z,6.7nm,0.8s,baz=29,slow=3.4,SNR=23
DAG Danmarks Havn 65.48 355⇓ *i*P P 23 29 06.6 -0.1
comp=Z,8.0nm,0.9s
DAG Danmarks Havn 65.48 355⇓ *i*P P 23 29 06.6 -0.1
DAG pmax pmax
comp=Z,7.0nm,0.9s
MOS Moscow 67.56 324 *e*P P 23 29 20.9 +0.6
MOS *e* 23 29 49.4
MOS pmax pmax
comp=Z,32nm,1.2s
VRH Novokhopyorsk 67.99 318 *e*P P 23 29 21.6 -1.5
VRH *e**PP **pP 23 29 26.7 -1.9**
VRH pmax pmax
comp=Z,10.0nm,0.7s
OBN Obninsk 68.41 324*ce*P P 23 29 25.9 +0.3
OBN *e* 23 29 54.4
OBN pmax pmax
comp=Z,31nm,1.7s
OBN MLR MLR
comp=Z,95nm,15.0s
OBN Obninsk 68.41 324 *e*P P 23 29 25.2 -0.4
comp=Z,14nm,0.8s
LPSR Galich'ya Gora 68.67 321 *e*P P 23 29 26.9 -0.4
LPSR *e**PP **pP 23 29 32.9 +0.1**
LPSR pmax pmax
comp=Z,10.0nm,0.9s
STKA Stephens Creek 68.94 181 P **P 23 29 29.6 +0.4**
comp=Z,1.2nm,0.7s,baz=5.0,slow=12,SNR=2.9
FIA1 FINESS Array S 68.95 333 *e*P P 23 29 29.1 +0.2

FINES FINESS Array B 68.95 333 P **P 23 29 29.4 +0.4**
comp=Z,18nm,0.8s,baz=53,slow=7.6,SNR=77
FINES PP **PP 23 31 58.2 -2.5**
comp=Z,2.5nm,0.9s,baz=36,slow=7.4,SNR=3.6
FINES LR LR 00 03 59.6
comp=Z,75nm,19.3s,baz=44,slow=40
VSR Storozhevoye 69.32 319 *eP* **P 23 29 31.0 -0.4**
VSR *e*PP **pP 23 29 37.2 +0.3**
VSR pmax pmax
comp=Z,10.0nm,0.9s
SUMG Summit 70.30 0⇓*iP* **P 23 29 38.7 +1.1**
comp=Z,12nm,0.9s
SUMG Summit 70.30 0⇓*iP* **P 23 29 38.7 +1.1**
SUMG pmax pmax
comp=Z,12nm,0.9s
SUMG Summit 70.30 0 *eP* **P 23 29 38.6 +1.1**
comp=Z,9.4nm,0.6s
GOF Gofitskoye 70.61 312⇓*iP* **P 23 29 39.9 +0.5**
GOF pmax pmax
comp=Z,36nm,0.9s
VSU Vasula 70.64 330⇑*iP* **P 23 29 39.5 +0.1**
VSU pmax pmax
comp=Z,39nm,1.0s
NCK Nalchik 71.14 311 *eP* **P 23 29 43.2 +0.4**
GUDG Gudauri 71.18 309 P **P 23 29 44.6 +1.4**
ZEI Tsey 71.35 310 *eP* **P 23 29 42.3 -2.0**
ZEI pmax pmax
comp=Z,19nm,0.9s
TBLG Delisi 71.42 309 P **P 23 29 44.9 +0.4**
TBLG Delisi 71.42 309 P **P 23 29 44.9 +0.4**
KIV Kislovodsk 71.43 311 *eP* **P 23 29 45.6 +1.0**
KIV pmax pmax
comp=Z,35nm,0.9s
KIV Kislovodsk 71.43 311 *eP* **P 23 29 45.6 +1.0**
comp=Z,35nm,0.9s
KBZ Khabaz 71.43 311 P **P 23 29 45.5 +1.1**
comp=Z,13nm,0.8s,baz=61,slow=3.2,SNR=22
ONI Oni 71.73 310 P **P 23 29 47.2 +0.8**
ONI Oni 71.73 310 P **P 23 29 47.2 +0.8**
NEY Neytrino 71.81 311⇑*iP* **P 23 29 48.8 +1.8**
SCO Scoresbysund 71.83 355 *iP* **P 23 29 47.6 +1.2**
SCO Scoresbysund 71.83 355 *iP* **P 23 29 47.6 +1.2**
GNI Garni 72.30 307⇑*iP* **P 23 29 51.8 +1.8**
GNI pmax pmax
comp=Z,61nm,1.7s
GNI Garni 72.30 307 *eP* **P 23 29 51.5 +1.5**
comp=Z,12nm,0.9s
BGD Bogdanovka 72.39 309 P **P 23 29 51.7 +1.2**
LRM Limekiln Ridge 73.15 45 *eP* **P 23 29 56.5 +1.5**
BOZ Bozeman (W) 73.72 45 *eP* **P 23 29 58.8 +0.5**
BOZ pmax pmax
comp=Z,2.0nm,0.9s
BOZ Bozeman (W) 73.72 45 *eP* **P 23 29 58.8 +0.5**
comp=Z,1.8nm,0.9s
NV01 Mina Array Sit 73.93 54 *eP* **P 23 30 01.2 +1.4**
NVAR Mina Array Bea 73.93 54 P **P 23 30 01.6 +1.8**
comp=Z,1.9nm,0.9s,baz=285,slow=7.0,SNR=8.3
ANN Anapa 74.00 314 *eP* **P 23 29 59.3 -0.4**
ANN *e*S **S 23 39 30.2 -1.1**
ANN pmax pmax
comp=Z,28nm,1.5s
NC405 NORSAR Array S 74.02 338 *eP* **P 23 29 59.3 -0.3**
NC303 NORSAR Array S 74.04 338 *eP* **P 23 30 00.4 +0.7**
NC204 NORSAR Array S 74.18 338 *eP* **P 23 30 01.1 +0.6**
NB201 NORSAR Array S 74.20 338 *eP* **P 23 30 01.3 +0.7**
NB2 NORSAR Subarra 74.23 338 P **P 23 30 00.8 0.0**
comp=Z,10nm,0.8s,baz=38,slow=5.9
NOA NORSAR Array B 74.23 338 P **P 23 30 01.1 +0.3**
comp=Z,6.9nm,0.7s,baz=38,slow=5.8,SNR=44
NOA LR LR 00 05 18.2
comp=Z,50nm,18.8s,baz=50,slow=38
NBO02 NORSAR Array S 74.33 338 *eP* **P 23 30 01.7 +0.4**
NBO00 NORSAR Array S 74.37 338 *eP* **P 23 30 02.2 +0.6**
NAO01 NORSAR Array S 74.48 338 *eP* **P 23 30 02.7 +0.5**
AKASG Malin Array Be 74.62 323 P **P 23 30 03.1 -0.1**
comp=Z,3.9nm,0.5s,baz=45,slow=6.4,SNR=27
AKASG LR LR 00 05 28.9
comp=Z,98nm,18.6s,baz=80,slow=38
AKBB Malin Array Si 74.62 323 *eP* **P 23 30 03.5 +0.3**
AKBB Malin Array Si 74.62 323 *eP* **P 23 30 03.5 +0.3**
KIEV Kiev 74.64 323⇑*iP* **P 23 30 03.4 +0.1**
KIEV pmax pmax
comp=Z,21nm,1.0s
KIEV Kiev 74.64 323 *eP* **P 23 30 03.0 -0.2**
comp=Z,22nm,1.1s
AK11 Malin Array Si 74.67 323 *eP* **P 23 30 03.6 +0.2**
H17A Grant Village 75.07 45 *eP* **P 23 30 07.7 +1.4**
comp=Z,4.3nm,0.8s
SUW Suwalki 75.12 328 *eP* **P 23 30 06.5 +0.5**
SUW Suwalki 75.12 328 *eP* **P 23 30 06.5 +0.5**
FXWY Fox Creek 75.28 46 *eP* **P 23 30 08.5 +1.0**
comp=Z,2.7nm,1.0s
R11A Troy Canyon, C 75.71 53 *eP* **P 23 30 10.4 +0.4**
comp=Z,2.7nm,1.1s
BW06 Boulder Array 76.66 46 *eP* **P 23 30 16.0 +0.7**
PD31 Pinedale Array 76.66 46 *eP* **P 23 30 16.5 +1.1**
PDAR Pinedale Array 76.66 46 P **P 23 30 16.1 +0.8**
comp=Z,1.1nm,0.6s,baz=255,slow=1.9,SNR=14
SHPR Sheep Range 77.08 54 *eP* **P 23 30 18.0 +0.2**
comp=Z,4.4nm,1.1s
IAS Iasi 77.77 321⇓*iP* **P 23 30 21.5 +0.3**
IAS Iasi 77.77 321⇓P **P 23 30 21.5 +0.3**
LEOM Leova 77.91 320⇓*iP* **P 23 30 23.0 +1.0**
LEOM Leova 77.91 320⇓P **P 23 30 23.0 +1.0**
PRAR RASCA 78.33 322⇑*iP* **P 23 30 25.1 +0.8**
KWP Kalwaria Pacla 78.42 325 *eP* **P 23 30 25.5 +0.8**
KWP Kalwaria Pacla 78.42 325⇓*iP* **P 23 30 25.7 +0.9**
KWP Kalwaria Pacla 78.42 325⇓P **P 23 30 25.7 +0.9**
GIRR Girov 78.47 321⇑*iP* **P 23 30 25.8 +0.7**
BUR08 Bucovina Ar. S 78.64 322 *eP* **P 23 30 26.9 +0.8**
BURAR Bucovina Array 78.65 322⇑*iP* **P 23 30 26.7 +0.5**
BURAR Bucovina Array 78.65 322⇑P **P 23 30 26.7 +0.5**
TESR Tescani 78.70 321⇓*iP* P 23 30 21.1 -5.2
VRI Vrincioaia 79.10 320⇑*iP* **P 23 30 30.2 +1.6**
VRI Vrincioaia 79.10 320⇑P **P 23 30 30.2 +1.6**
KOLS Kolonicke sedl 79.11 325 *eP* **P 23 30 29.3 +0.7**
KOLS pmax pmax
comp=Z,6.0nm,1.1s
KOLS Kolonicke sedl 79.11 325 *eP* **P 23 30 29.3 +0.7**
PLOR Plostina 79.15 320⇓*iP* **P 23 30 29.3 +0.4**
PLOR Plostina 79.15 320⇓P **P 23 30 29.3 +0.4**
STHS Stebnicka Huta 79.23 325 *eP* **P 23 30 30.7 +1.4**
STHS pmax pmax
comp=Z,5.0nm,0.9s
STHS Stebnicka Huta 79.23 325 *eP* **P 23 30 30.7 +1.4**
OJC Ojcow 79.29 327 *eP* **P 23 30 30.2 +0.7**
OJC Ojcow 79.29 327 *eP* **P 23 30 30.2 +0.7**
OJC Ojcow 79.29 327 *eP* **P 23 30 29.8 +0.3**
comp=Z,19nm,1.0s
BR131 Keskin Array S 79.37 312 *eP* **P 23 30 30.9 +0.6**
BRTR Keskin Array B 79.37 312 P **P 23 30 30.9 +0.6**
comp=Z,3.7nm,1.0s,baz=104,slow=5.2,SNR=17
BRTR PP **PP 23 33 31.4 +1.6**
comp=Z,0.8nm,0.9s,baz=57,slow=4.6,SNR=3.9
BRTR LR LR 00 10 20.7
comp=Z,25nm,18.5s,baz=14,slow=39
BMR Baia Mare 79.44 323⇑*iP* **P 23 30 31.8 +1.4**
BMR Baia Mare 79.44 323⇑P **P 23 30 31.8 +1.4**
ARCR ARCALIA 79.44 322⇓*iP* **P 23 30 32.2 +1.8**
CRVS Cervenica-Dubn 79.51 325 *eP* **P 23 30 31.8 +1.0**
CRVS Cervenica-Dubn 79.51 325 *eP* **P 23 30 31.8 +1.0**
NIE Niedzica 79.66 326 *eP* **P 23 30 32.5 +0.9**
NIE Niedzica 79.66 326 *eP* **P 23 30 32.5 +0.9**
MLR Muntele Rosu 79.75 320⇓*iP* **P 23 30 33.4 +1.1**
MLR Muntele Rosu 79.75 320⇓P **P 23 30 33.4 +1.1**
MLR Muntele Rosu 79.75 320 *eP* **P 23 30 32.2 -0.1**
ANTO Ankara 79.77 313 *eP* **P 23 30 32.1 -0.3**
ANTO pmax pmax
comp=Z,11nm,0.8s
ANTO Ankara 79.77 313 *eP* **P 23 30 32.1 -0.3**
comp=Z,11nm,0.8s
BR231 Keskin MP Arra 79.80 313 *eP* **P 23 30 31.6 -1.0**
CJR Cluj-Napoca 80.07 322⇓*iP* **P 23 30 35.1 +1.2**
CJR Cluj-Napoca 80.07 322⇓P **P 23 30 35.1 +1.2**
LANS Liptovska Anna 80.22 326 *eP* P 23 30 29.8 -4.9
LANS *e* 23 30 37.3
LANS Liptovska Anna 80.22 326 *eP* P 23 30 29.8 -4.9
LANS *e* 23 30 37.3
VOIR 80.25 321⇓*iP* **P 23 30 36.5 +1.6**
VOIR 80.25 321⇓P **P 23 30 36.5 +1.6**
KECS Kecovo 80.26 325 *eP* **P 23 30 35.5 +0.7**
KECS pmax pmax
comp=Z,2.0nm,0.9s
KECS Kecovo 80.26 325 *eP* **P 23 30 35.5 +0.7**

OKC Ostrava-Krasne 80.29 327⇓*eP* **P 23 30 35.7 +0.7**
OKC Ostrava-Krasne 80.29 327 *eP* **P 23 30 35.7 +0.7**
DRGR 80.44 323⇓*iP* **P 23 30 35.6 -0.3**
DRGR 80.44 323⇓P **P 23 30 35.6 -0.3**
ARR Arges 80.50 321⇑*iP* **P 23 30 38.1 +1.8**
MORC Moravsky Berou 80.60 328⇑*iP* **P 23 30 37.8 +1.1**
MORC Moravsky Berou 80.60 328⇑P **P 23 30 37.8 +1.1**
MORC Moravsky Berou 80.60 328 *eP* **P 23 30 37.0 +0.4**
comp=Z,33nm,1.0s
DPC Dobruska-Polom 80.68 328⇓*iP* **P 23 30 37.7 +0.6**
DPC Dobruska-Polom 80.68 328⇓P **P 23 30 37.7 +0.6**
KRLC Kraliky 80.69 328⇓*iP* **P 23 30 37.9 +0.7**
KRLC Kraliky 80.69 328⇓P **P 23 30 37.9 +0.7**
PSZ Piszkesteto 80.94 325⇓*iP* **P 23 30 39.4 +0.8**
PSZ Piszkesteto 80.94 325⇓P **P 23 30 39.4 +0.8**
PSZ Piszkesteto 80.94 325 *eP* **P 23 30 38.8 +0.3**
comp=Z,12nm,0.9s
VYHS Vyhne 80.99 326 *eP* **P 23 30 39.9 +1.1**
VYHS pmax pmax
comp=Z,4.0nm,1.1s
VYHS Vyhne 80.99 326 *eP* **P 23 30 39.9 +1.1**
BRG Berggiesshubel 81.24 330 *eP* **P 23 30 40.5 +0.5**
comp=Z,4.0nm,0.9s
BRG Berggiesshubel 81.24 330 *eP* **P 23 30 40.5 +0.5**
BRG pmax pmax
comp=Z,4.0nm,0.9s
PVCC Panska Ves 81.26 329⇓*eP* **P 23 30 41.3 +1.2**
PVCC Panska Ves 81.26 329 *eP* **P 23 30 41.3 +1.2**
CLL Collm 81.27 331 *iP* **P 23 30 40.8 +0.6**
comp=Z,8.0nm,0.9s
CLL L L 00 09 00.0
comp=Z,100nm,18.1s
CLL Collm 81.27 331 *iP* **P 23 30 40.8 +0.6**
CLL pmax pmax
comp=Z,8.0nm,0.9s
CLL Collm 81.27 331 *eP* **P 23 30 40.8 +0.6**
comp=Z,7.8nm,0.8s
VRAC Vranov 81.36 328⇑*iP* **P 23 30 41.5 +0.8**
VRAC Vranov 81.36 328⇑P **P 23 30 41.5 +0.8**
SMOL Smolenice 81.60 327 *eP* **P 23 30 43.6 +1.6**
SMOL Smolenice 81.60 327 *eP* **P 23 30 43.6 +1.6**
PRU Pruhonice 81.69 329⇓*iP* **P 23 30 43.2 +0.8**
PRU Pruhonice 81.69 329 *iP* **P 23 30 43.2 +0.8**
BZS Buzias 81.81 323⇓*iP* **P 23 30 43.6 +0.5**
BZS Buzias 81.81 323⇓P **P 23 30 43.6 +0.5**
TREC Trest 81.83 328⇓*iP* **P 23 30 44.2 +1.0**
TREC Trest 81.83 328 *iP* **P 23 30 44.2 +1.0**
MDVR Moldovita 82.37 322⇑*iP* **P 23 30 46.7 +0.5**
CSS Mathiatis 82.64 309 *eP* **P 23 30 47.4 -0.3**
CONA Conrad Observa 82.72 327 *i*pP **P 23 30 48.9 +0.9**
comp=Z,14nm,1.9s
KHC Kasperske Hory 82.75 329⇓*iP* **P 23 30 48.6 +0.6**
KHC *e*pP **sP 23 30 54.9 -0.8**
KHC Kasperske Hory 82.75 329 *eP* **P 23 30 48.7 +0.6**
KHC pmax pmax
comp=Z,3.0nm,0.9s
KHC Kasperske Hory 82.75 329 *eP* **P 23 30 48.6 +0.6**
comp=Z,2.6nm,0.9s
GEC2 GERESS Array S 82.92 329 *eP* **P 23 30 49.6 +0.6**
GEC2 GERESS Array S 82.92 329 *eP* **P 23 30 49.6 +0.6**
GERES GERESS Array B 82.92 329 P **P 23 30 49.2 +0.1**
comp=Z,2.1nm,0.8s,baz=35,slow=4.9,SNR=15
GERES PP **PP 23 33 58.3 -0.5**
comp=Z,0.6nm,0.7s,baz=40,slow=8.7,SNR=4.0
GERES LR LR 00 10 11.4
comp=Z,53nm,20.0s,baz=50,slow=38
GEA0 GERESS Array S 82.93 329 *eP* **P 23 30 49.1 +0.1**
ARSA Arzberg 83.39 327 *iP* **P 23 30 50.8 -0.6**
comp=Z,5.2nm,1.3s
ANMO Albuquerque 83.55 51 *ceP* **P 23 30 55.0 +2.3**
ANMO pmax pmax
comp=Z,5.0nm,1.7s
ANMO Albuquerque 83.55 51 *eP* **P 23 30 52.5 -0.1**
comp=Z,11nm,1.8s
SOKA Soboth 84.05 327 *iP* **P 23 30 55.0 +0.1**
comp=Z,9.0nm,1.1s
SCHQ Schefferville 84.68 17 P **P 23 30 58.5 +0.7**
comp=Z,4.1nm,0.9s,baz=265,slow=5.4,SNR=4.1
SCHQ LR LR 00 09 47.9
comp=Z,48nm,21.4s,baz=62,slow=36
MOTA Moosalm 85.18 329 *iP* **P 23 31 00.7 +0.1**
comp=Z,5.4nm,1.1s
RETA Reutte 85.20 330 *iP*cP **P 23 31 01.0 +0.4**
comp=Z,7.4nm,0.9s
PDG Podgorica 85.31 322⇓*iP* **P 23 31 01.7 +0.6**
BFO Black Forest 85.47 331 *eP* **P 23 31 02.3 +0.4**
BFO Black Forest 85.47 331 *eP* **P 23 31 02.2 +0.4**
FETA Feichten 85.59 329 *iP*cP **P 23 31 02.9 +0.2**
comp=Z,4.2nm,0.9s
DAVA Damuels 85.72 330 *iP*cP **P 23 31 03.4 +0.1**
comp=Z,11nm,0.9s
FUORN Ofenpass-Fuorn 86.10 329 *eP* **P 23 31 05.8 +0.4**
TIP Timpagrande 89.00 321⇑*iP* **P 23 31 19.0 -0.2**
TX31 Lajitas Ar. Si 89.07 53 *eP* **P 23 31 20.4 +0.7**
TXAR Lajitas Array 89.07 53 P **P 23 31 20.5 +0.8**
comp=Z,1.1nm,0.7s,baz=292,slow=3.1,SNR=16
LMQ La Malbaie 90.41 22 *eP* **P 23 31 25.0 -0.5**
KEST Kesra 95.34 324 LR LR 00 19 27.6
comp=Z,113nm,19.6s,baz=248,slow=38
ES19 SONSECA Array 97.35 335 *eP* **P 23 31 57.2 -0.4**
ESDC Sonseca Array 97.40 335 P **P 23 31 57.8 0.0**
comp=Z,0.6nm,0.8s,baz=8.5,slow=3.9,SNR=4.5
ESDC LR LR 00 20 05.4
comp=Z,49nm,19.5s,baz=0.0,slow=38
LPAZ La Paz 145.61 61 PKPbc **PKPab 23 38 04.5 +0.2**
comp=Z,2.0nm,0.8s,baz=260,slow=2.5,SNR=8.2

DDA 07 23:28:26.7, 40°.58N×27°.49E, h7km, Md2.7, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SART	**Tekirdag**	**0.26**	**295**	*iP*	Pg	23 28 32.3	+0.4
SART				*i*S	Sg	23 28 36.4	+1.0
KNL	**Bal¨–kesir**	**0.31**	**175**	*iP*	Pg	23 28 32.9	+0.1
KNL				*i*S	Sg	23 28 37.7	+0.8
KESN	**Edirne-Kesan**	**0.66**	**292**	*iP*	Pb	23 28 41.3	+0.4
KESN				*i*S	Sg	23 28 47.7	-0.5
DURS	**Dursunbey**	**1.24**	**142**	*iP*	Pg	23 28 50.0	-0.5
DURS				*i*S	Sn	23 29 07.6	+0.1
BOZC	**Bozcaada**	**1.32**	**237**	*iP*	Pn	23 28 51.6	0.0
BOZC				*i*S	Sb	23 29 08.4	-0.7

*IDC **07** 23:31:25.9±1.9, 19°.38S×167°.96E, h0km, mb4.0/3, mb1 4.3/4, mb1mx3.8/29, mbtmp4.1/4, ML4.0/1, MS3.4/1, Ms1 3.4/1, ms1mx2.8/26, Error ellipse: s-maj=63.1km s-min=29.2km az=136.0*
*ISCJB **07** 23:31:27.7±0.6, 19°.43S±0°.08×168°.0E±0°.1, h26km, mb4.5/9, MS3.2/1, Error ellipse: s-maj=16.6km s-min=8.1km az=31.7*
*NEIC **07** 23:31:28.9±2.4, 19°.46S×168°.03E, h22km±18km, mb4.6/6, Error ellipse: s-maj=13.4km s-min=8.0km az=134.0*
ISC 07 23:31:29.3±0.8, 19°.48S±0°.10×168°.0E±0°.1, h26km, n15, σ0§64/15, mb4.5/9, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.98**	**210**	Pn	**Pn**	**23 32 15.2**	**+0.2**
	22nm,0.3s,baz=86,slow=9.2,SNR=152						
DZM				Sn	**Sn**	**23 32 49.1**	**-0.8**
	30nm,0.3s,baz=71,slow=20,SNR=8.0						
HNR	**Honiara**	**12.68**	**321**	*e*Pn	**Pn**	**23 34 28.1**	**0.0**
	26nm,0.6s						
FUNA	**Funafuti**	**15.35**	**46**	*e*Pn	**Pn**	**23 35 03.9**	**-0.4**
	48nm,0.7s						
EIDS	**Eidsvold**	**16.73**	**246**	*e*Pn	**Pn**	**23 35 22.0**	**+0.1**
	2.4nm,0.9s						
AFI	**Afiamalu**	**20.11**	**77**	LR	LR	23 42 08.4	
	comp=Z,105nm,19.1s,baz=134,slow=32						
WRA	**Warramunga Arr**	**31.69**	**263**	P	**P**	**23 37 50.6**	**-0.5**
	1.2nm,0.7s,baz=94,slow=8.2,SNR=18						
ASAR	**Alice Springs**	**31.96**	**256**	P	**P**	**23 37 54.0**	**+0.5**
	5.5nm,0.6s,baz=86,slow=8.8,SNR=49						
COCO	**West Island**	**68.47**	**264**	*e*P	**P**	**23 42 30.2**	**+0.4**
	397nm,0.6s						
QSPA	**South Pole Qui**	**70.58**	**180**	*e*P	**P**	**23 42 42.6**	**+0.5**
	4.6nm,0.9s						
KULM	**Kulim**	**70.67**	**283**	*e*P	**P**	**23 42 43.0**	**-0.4**
	4.9nm,0.9s						
MCK	**McKinley**	**89.42**	**18**	*e*P	**P**	**23 44 23.8**	**+0.4**
	1.1nm,0.4s						
ILAR	**Eielson Array**	**90.80**	**18**	P	**P**	**23 44 29.9**	**+0.2**
	0.4nm,0.9s,baz=237,slow=6.1,SNR=4.1						

NEW Newport 94.69 40 *e*P **P 23 44 46.9 -1.3**
0.7nm,0.5s
WALA Waterton Lakes 96.96 40 *e*P **P 23 44 59.1 +0.4**
1.3nm,0.8s
YKA Yellowknife Ar 101.40 28 P **Pdif 23 45 18.9 +0.9**
0.2nm,0.8s,baz=259,slow=4.8,SNR=3.0

DDA 07 23:31:34.8, 37°.29N×27°.99E, h7km, Md2.5, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AYDN	**Tasoluk**	**0.38**	**347**	*iP*	Pg	23 31 41.4	-0.8
AYDN				*i*S	Sg	23 31 45.5	-1.7
BDRM	**Kayabasi**	**0.49**	**243**	*iP*	Pg	23 31 44.5	+0.3
BDRM				*i*S	Sg	23 31 51.5	+0.9
GCAM	**G?zelcaml?**	**0.73**	**304**	*iP*	Pb	23 31 49.6	-0.1
GCAM				*i*S	Sb	23 31 59.8	-0.1

SGS 07 23:34:28.9, 25°.44N×37°.63E, h13km, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LNY09	**LNY09**	**0.05**	**140**	S	Sg	23 34 33.4	+0.2
LNY09				P	Pg	23 34 31.5	+0.1
LNY09	**LNY09**	**0.05**	**140**	S	Sg	23 34 33.3	+0.2
LNY09				P	Pg	23 34 31.5	+0.1
LNY04	**LNY04**	**0.17**	**174**	S	Sg	23 34 36.3	+0.8
LNY04				P	Pg	23 34 33.3	+0.4
LNY11	**LNY11**	**0.18**	**133**	S	Sg	23 34 36.4	+0.5
LNY11				P	Pg	23 34 33.3	+0.2
LNY11	**LNY11**	**0.18**	**133**	S	Sg	23 34 36.4	+0.4
LNY11				P	Pg	23 34 33.3	+0.2
LNY12	**LNY12**	**0.21**	**142**	S	Sg	23 34 37.5	+0.7
LNY12				P	Pg	23 34 33.9	+0.3
LNY12	**LNY12**	**0.21**	**142**	S	Sg	23 34 37.5	+0.7
LNY12				P	Pg	23 34 33.9	+0.3
LNY03	**LNY03**	**0.21**	**106**	S	Sg	23 34 36.9	+0.1
LNY03				P	Pg	23 34 33.6	0.0
LNY03	**LNY03**	**0.21**	**106**	S	Sg	23 34 36.6	-0.2
LNY03				P	Pg	23 34 33.6	0.0
LNY10	**LNY10**	**0.27**	**128**	S	Sg	23 34 39.3	+0.8
LNY10				P	Pg	23 34 35.0	+0.4
LNY07	**LNY07**	**0.31**	**189**	S	Sg	23 34 40.4	+0.8
LNY07				P	Pg	23 34 35.5	+0.1
LNY05	**LNY05**	**0.40**	**171**	S	Sb	23 34 43.1	-0.8
LNY05				P	Pg	23 34 37.1	+0.3

*NIED **07** 23:48:00, 39°.30N×142°.30E, h47km, Mw3.9 Best double couple: M0 8.88000×10^14 NP1:φ§194.00000°, δ14.00000°, λ79.00000°. NP2:φ§25.00000°, δ76.00000°, λ93.00000°.*
*ISCJB **07** 23:48:42.0±0.8, 39°.29N±0°.04×142°.25E±0°.08, h46km, mb3.6/5, Error ellipse: s-maj=9.2km s-min=5.2km az=17.8*
*JMA **07** 23:48:42.2±0.1, 39°.28N×142°.24E, h42km±1km, M3.4*
JMA Felt I J1.
*IDC **07** 23:48:46.7±2.0, 39°.22N×142°.12E, h85km±18km, mb3.4/5, mb1 3.5/9, mb1mx3.2/47, mbtmp3.8/9, MS3.1/1, Ms1 3.1/1, ms1mx2.4/22, Error ellipse: s-maj=29.6km s-min=13.8km az=101.0*
ISC 07 23:48:42.9±1.0, 39°.23N±0°.05×142°.24E±0°.09, h46km, n24, σ2§28/26, mb3.6/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.47**	**251**	P	**Pn**	**23 48 52.8**	**-0.7**
OFUJ				S	**Sn**	**23 49 00.2**	**-0.8**
MIYJ	**Miyakonagasawa**	**0.47**	**317**	P	**Pn**	**23 48 52.2**	**-1.4**
MIYJ				S	**Sn**	**23 48 59.3**	**-1.9**
JTH	**Tanohata**	**0.76**	**338**	P	**Pn**	**23 48 55.8**	**-1.5**
JTH				S	**Sn**	**23 49 05.6**	**-2.2**
JOM	**Ohasama**	**0.77**	**288**	P	**Pn**	**23 48 56.7**	**-0.7**
JOM				S	**Sn**	**23 49 07.3**	**-0.7**
JMK	**Ichinoseki**	**0.84**	**251**	P	**Pn**	**23 48 57.9**	**-0.4**
JMK				S	**Sn**	**23 49 09.1**	**-0.5**
JKZ	**Kuzumaki**	**1.03**	**317**	P	**Pn**	**23 49 00.3**	**-0.6**
JIO	**Ouri**	**1.04**	**222**	P	**Pn**	**23 49 00.6**	**-0.4**
JIO				S	**Sn**	**23 49 14.0**	**-0.4**
MJAR	**Matsushiro Arr**	**4.17**	**231**	P	**Pn**	**23 49 47.4**	**+3.4**
	1.8nm,0.3s,baz=36,slow=12,SNR=32						
MAT	**Matsushiro**	**4.17**	**231**	P	**Pn**	**23 49 46.9**	**+2.9**
MAT				S	**Sn**	**23 50 34.9**	**+3.5**
ASAJ	**Asahikawa**	**4.89**	**3**	P	**Pn**	**23 49 56.9**	**+3.1**
	2.0nm,0.3s,baz=219,slow=7.2,SNR=10						
ASAJ				S	**Sn**	**23 50 54.1**	**+5.1**
	1.1nm,0.3s,baz=29,slow=19,SNR=3.8						
JHJ	**Hachijo jima 2**	**6.42**	**199**	P	**Pn**	**23 50 18.0**	**+3.2**
	11nm,0.3s,baz=72,slow=19,SNR=2.8						
JHJ				S	**Sn**	**23 51 22.6**	**-4.1**
	5.6nm,0.3s,baz=41,slow=17,SNR=2.0						
USRK	**Ussuriysk Ar.**	**9.13**	**306**	P	**Pn**	**23 50 54.4**	**+2.5**
	0.3nm,0.3s,baz=111,slow=14,SNR=5.8						
JNU	**Nakatsue**	**11.02**	**240**	LR	LR	23 55 09.6	
	comp=Z,99nm,20.0s,baz=296,slow=35						
H11N2	**WAKE ISLAND Hy 28.80**	**125**		T	T	00 25 03.7	
	baz=318,slow=76,SNR=407						
H11N1	**WAKE ISLAND Hy 28.81**	**125**		T	T	00 25 01.6	
	baz=318,slow=76,SNR=459						
H11N3	**WAKE ISLAND Hy 28.82**	**125**		T	T	00 25 05.9	
	baz=318,slow=76,SNR=416						
H11S1	**WAKE ISLAND Hy 29.59**	**127**		T	T	00 25 59.0	
	baz=319,slow=76,SNR=33						
H11S3	**WAKE ISLAND Hy 29.59**	**127**		T	T	00 25 59.3	
	baz=319,slow=76,SNR=30						
H11S2	**WAKE ISLAND Hy 29.61**	**127**		T	T	00 26 17.1	
	baz=319,slow=76,SNR=24						
ZALV	**Zalesovo Beam**	**40.95**	**311**	P	**P**	**23 56 20.3**	**-0.4**
	1.0nm,0.5s,baz=93,slow=8.6,SNR=4.3						
MKAR	**Makanchi Array**	**43.54**	**300**	P	**P**	**23 56 41.3**	**-0.6**
	1.0nm,0.8s,baz=86,slow=8.1,SNR=8.2						
ILAR	**Eielson Array**	**47.30**	**33**	P	**P**	**23 57 12.2**	**+0.8**
	0.2nm,0.6s,baz=273,slow=6.1,SNR=4.2						
WRA	**Warramunga Arr**	**59.33**	**189**	P	**P**	**23 58 39.3**	**-0.8**
	0.3nm,0.7s,baz=7.2,slow=6.9,SNR=6.9						
FINES	**FINESS Array B**	**67.18**	**332**	P	**P**	**23 59 30.4**	**-1.2**
	1.2nm,0.7s,baz=38,slow=9.6,SNR=7.2						

*PDG **07** 23:54:32.7±0.6, 37°.17N×20°.77E, h16km±1km, ML3.7/10, Error ellipse: s-maj=1.4km s-min=1.5km az=0.0*
*CSEM **07** 23:54:32.6±0.2, 37°.13N×20°.77E, h10km, ML3.3, Error ellipse: s-maj=5.8km s-min=2.7km az=35.0*
*THE **07** 23:54:33.0, 37°.14N×20°.83E, h0km±4km, ML3.5/5, Error ellipse: s-maj=4.7km s-min=1.1km az=223.0*
*ATH **07** 23:54:33.1, 37°.16N×20°.86E, h20km±1km, ML3.3/17, Error ellipse: s-maj=2.7km s-min=0.8km az=47.0*
*IDC **07** 23:54:35.7±1.9, 37°.11N×20°.91E, h46km±22km, mb3.3/7, mb1 3.5/13, mb1mx3.4/37, mbtmp3.5/13, ML3.3/6, MS2.2/2, Ms1 2.2/2, ms1mx2.0/22, Error ellipse: s-maj=30.5km s-min=20.7km az=13.0*
ISC 07 23:54:31.7±1.3, 37°.12N±0°.03×20°.77E±0°.03, h13km±8km, n271, σ1§33/320, mb3.6/7, 16C-21D, Ionian Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZKS	**Zakynthos**	**0.57**	**1**	P	**Pb**	**23 54 44.2**	**+0.6**
ZKS				S	**Sg**	**23 54 50.6**	**+0.1**
ZKS	**Zakynthos**	**0.57**	**1**	P	**Pb**	**23 54 44.2**	**+0.6**
ZKS				S	**Sb**	**23 54 52.1**	**+0.4**
ZKS	**Zakynthos**	**0.57**	**1**	P	**Pb**	**23 54 44.6**	**+1.0**
ZKS				S	**Sb**	**23 54 52.1**	**+0.4**
ZKS				AML	AML	23 54 56.2	
	comp=N,19683μm,0.5s						
ZKS				AML	AML	23 54 59.9	
	comp=E,25325μm,0.6s						
PYL	**PYLOS**	**0.81**	**106**	P	**Pb**	**23 54 47.4**	**-0.2**
PYL				S	**Sb**	**23 54 58.7**	**+0.2**
PYL	**PYLOS**	**0.81**	**106**	P	**Pb**	**23 54 47.4**	**-0.2**
PYL				S	**Sb**

AMT				AML	AML	23 55 07.5
	comp=E,12748µm,0.3s					
AMT				AML	AML	23 55 11.6
	comp=N,19949µm,0.6s					
ITM	**Ithomi**	**0.93**	**86**	P	**Pg**	**23 54 49.1 -0.5**
ITM				S	**Sb**	**23 55 02.4 +0.6**
ITM	**Ithomi**	**0.93**	**86**	P	**Pg**	**23 54 49.1 -0.5**
ITM				S	**Sb**	**23 55 01.9 +0.1**
ITM	**Ithomi**	**0.93**	**86**	P	**Pg**	**23 54 48.9 -0.7**
ITM				S	**Sb**	**23 55 01.9 +0.1**
ITM				AML	AML	23 55 07.8
	comp=N,4033µm,0.5s					
ITM				AML	AML	23 55 12.6
	comp=E,3054µm,0.6s					
KFL	**Anninata**	**0.98**	**1**	P	**Pb**	**23 54 50.9 +0.3**
KFL	**Anninata**	**0.98**	**1**	P	**Pb**	**23 54 50.9 +0.3**
KFL				S	**Sn**	**23 55 05.1 +0.1**
KFL	**Anninata**	**0.98**	**1**	P	**Pg**	**23 54 50.7 0.0**
KFL				S	**Sn**	**23 55 05.1 +0.1**
VLS	**Valsamata**	**1.06**	**352**	P	**Pb**	**23 54 52.1 +0.2**
VLS				S	**Sn**	**23 55 08.4 +1.5**
VLS	**Valsamata**	**1.06**	**352**	P	**Pg**	**23 54 52.3 +0.1**
VLS				S	**Sn**	**23 55 06.8 -0.1**
RLS	**Riolos of Patr**	**1.08**	**30**	P	**Pg**	**23 54 52.4 -0.2**
RLS				S	**Sn**	**23 55 07.9 +0.4**
RLS	**Riolos of Patr**	**1.08**	**30**	P	**Pg**	**23 54 52.5 -0.2**
RLS				S	**Sn**	**23 55 07.9 +0.4**
RLS	**Riolos of Patr**	**1.08**	**30**	AML	AML	23 55 14.0
	comp=E,2854µm,0.5s					
RLS				AML	AML	23 55 14.0
	comp=N,2675µm,0.5s					
DRO	**Drossia**	**1.11**	**42**	P	**Pb**	**23 54 52.8 0.0**
DRO	**Drossia**	**1.11**	**42**	P	**Pb**	**23 54 52.8 0.0**
DRO	**Drossia**	**1.11**	**42**	P	**Pb**	**23 54 52.8 0.0**
DRO				AML	AML	23 55 15.9
	comp=E,9375µm,0.5s					
DRO				AML	AML	23 55 17.2
	comp=N,8535µm,0.4s					
AXS	**Araxos**	**1.17**	**24**	P	**Pg**	**23 54 54.3 0.0**
AXS	**Araxos**	**1.17**	**24**	P	**Pg**	**23 54 54.4 +0.1**
AXS	**Araxos**	**1.17**	**24**	P	**Pg**	**23 54 54.4 +0.1**
TRIP	**Tripoli**	**1.26**	**71**	P	**Pg**	**23 54 55.8 -0.2**
TRIP	**Tripoli**	**1.26**	**71**	P	**Pg**	**23 54 55.9 -0.2**
VLX	**Vlachokerasia**	**1.31**	**79**	P	**Pn**	**23 54 55.8 +0.1**
VLX	**Vlachokerasia**	**1.31**	**79**	P	**Pn**	**23 54 55.8 +0.1**
VLX	**Vlachokerasia**	**1.31**	**79**	P	**Pn**	**23 54 55.4 -0.4**
VLX				AML	AML	23 55 21.5
	comp=E,2695µm,0.5s					
VLX				AML	AML	23 55 24.2
	comp=N,2222µm,0.5s					
KLV	**Kalavryta, Ach**	**1.43**	**50**	P	**Pb**	**23 54 58.2 -0.1**
KLV	**Kalavryta, Ach**	**1.43**	**50**	P	**Pb**	**23 54 58.2 -0.1**
KLV	**Kalavryta, Ach**	**1.43**	**50**	P	**Pn**	**23 54 57.5 +0.1**
KLV				AML	AML	23 55 28.6
	comp=E,832µm,0.7s					
KLV				AML	AML	23 55 29.5
	comp=N,1063µm,0.6s					
LAKA	**Lakka**	**1.47**	**40**	P	**Pb**	**23 54 59.3 +0.4**
LAKA	**Lakka**	**1.47**	**40**	P	**Pb**	**23 54 59.1 +0.2**
LAKA	**Lakka**	**1.47**	**40**	P	**Pb**	**23 54 59.1 +0.2**
PDO	**Prodromos**	**1.51**	**12**	P	**Pb**	**23 54 59.8 +0.3**
PDO	**Prodromos**	**1.51**	**12**	P	**Pb**	**23 54 59.8 +0.3**
PDO	**Prodromos**	**1.51**	**12**	P	**Pb**	**23 54 59.6 0.0**
EFP	**Efpalio**	**1.58**	**34**	P	**Pg**	**23 55 02.4 +0.3**
EFP	**Efpalio**	**1.58**	**34**	P	**Pg**	**23 55 02.4 +0.3**
PVO	**Paravola**	**1.61**	**22**	P	**Pb**	**23 55 01.1 -0.1**
PVO				S	**Sg**	**23 55 22.5 -0.9**
PVO	**Paravola**	**1.61**	**22**	P	**Pb**	**23 55 01.1 -0.1**
PVO				S	**Sg**	**23 55 22.6 -0.9**
LKD2	**Lefkada island**	**1.67**	**357**	P	**Pb**	**23 55 02.9 +0.7**
LKD2	**Lefkada island**	**1.67**	**357**	P	**Pb**	**23 55 02.6 +0.4**
LKD2	**Lefkada island**	**1.67**	**357**	P	**Pb**	**23 55 02.6 +0.4**
KALE	**Kalithea**	**1.67**	**40**	P	**Pg**	**23 55 03.3 -0.4**
KALE	**Kalithea**	**1.67**	**40**	P	**Pg**	**23 55 03.3 -0.4**
KALE	**Kalithea**	**1.67**	**40**	P	**Pg**	**23 55 03.6 -0.1**
KALE				AML	AML	23 55 34.1
	comp=N,1503µm,0.5s					
KALE				AML	AML	23 55 34.6
	comp=E,1890µm,0.4s					
ANX	**Ano Chora**	**1.73**	**31**	P	**Pb**	**23 55 03.5 +0.1**
ANX	**Ano Chora**	**1.73**	**31**	P	**Pb**	**23 55 03.4 +0.1**
THAL	**Thalero**	**1.76**	**58**	P	**Pb**	**23 55 04.1 +0.3**
THAL	**Thalero**	**1.76**	**58**	P	**Pb**	**23 55 04.1 +0.3**
THAL	**Thalero**	**1.76**	**58**	P	**Pb**	**23 55 04.4 +0.6**
THAL				AML	AML	23 55 41.6
	comp=N,3443µm,0.6s					
THAL				AML	AML	23 55 44.9
	comp=E,4283µm,0.6s					
VLI	**Veliai**	**1.78**	**102**	P	**Pb**	**23 55 04.7 +0.5**
VLI	**Veliai**	**1.78**	**102**	P	**Pb**	**23 55 04.7 +0.5**
VLI	**Veliai**	**1.78**	**102**	P	**Pg**	**23 55 05.6 -0.3**
VLI				S	**Sg**	**23 55 28.8 -0.3**
VLI				AML	AML	23 55 39.3
	comp=N,959µm,1.0s					
VLI				AML	AML	23 55 43.4
	comp=E,852µm,0.5s					
DSF	**Desfina**	**1.90**	**47**	P	**Pb**	**23 55 06.0 -0.2**
DSF	**Desfina**	**1.90**	**47**	P	**Pb**	**23 55 06.0 -0.2**
DSF	**Desfina**	**1.90**	**47**	P	**Pb**	**23 55 06.7 +0.6**
KRND	**KRANIDI**	**1.92**	**82**	P	**Pb**	**23 55 05.3 -1.2**
KRND	**KRANIDI**	**1.92**	**82**	P	**Pb**	**23 55 05.3 -1.2**
KRND	**KRANIDI**	**1.92**	**82**	P	**Pn**	**23 55 04.3 +0.3**
LTK	**Loutraki**	**1.96**	**62**	P	**Pb**	**23 55 06.2 -1.1**
LTK	**Loutraki**	**1.96**	**62**	P	**Pb**	**23 55 06.2 -1.1**
LTK	**Loutraki**	**1.96**	**62**	P	**Pb**	**23 55 06.2 -1.1**
EVR	**Evrytania**	**1.97**	**24**	P	**Pb**	**23 55 08.2 +0.7**
EVR	**Evrytania**	**1.97**	**24**	P	**Pb**	**23 55 07.8 +0.4**
EVR	**Evrytania**	**1.97**	**24**	P	**Pb**	**23 55 07.8 +0.4**
EVR				AML	AML	23 55 42.1
	comp=N,1101µm,1.1s					
DID	**Didima**	**2.00**	**78**	P	**Pn**	**23 55 06.2 +0.9**
DID	**Didima**	**2.00**	**78**	P	**Pn**	**23 55 06.2 +0.9**
DID	**Didima**	**2.00**	**78**	P	**Pn**	**23 55 05.4 +0.1**
DID				AML	AML	23 55 47.5
	comp=N,874µm,0.6s					
DID				AML	AML	23 55 50.6
	comp=E,840µm,0.6s					
KYTH	**Kithira**	**2.02**	**114**	P	**Pb**	**23 55 08.0 -0.3**
KYTH	**Kithira**	**2.02**	**114**	P	**Pb**	**23 55 08.0 -0.3**
KYTH	**Kithira**	**2.02**	**114**	P	**Pb**	**23 55 08.9 +0.6**
DSL	**Palaion Diasel**	**2.02**	**7**	P	**Pb**	**23 55 08.1 -0.2**
DSL	**Palaion Diasel**	**2.02**	**7**	P	**Pb**	**23 55 08.1 -0.2**
DSL	**Palaion Diasel**	**2.02**	**7**	P	**Pb**	**23 55 08.7 +0.4**
DSL				AML	AML	23 55 50.6
	comp=N,1007µm,0.7s					
DSL				AML	AML	23 55 52.7
	comp=E,1005µm,0.6s					
PROD	**Prodromos**	**2.04**	**56**	P	**Pn**	**23 55 05.9 +0.2**
PROD	**Prodromos**	**2.04**	**56**	P	**Pn**	**23 55 05.9 +0.2**
AGG	**Agios Georgios**	**2.26**	**33**	P	**Pb**	**23 55 11.6 -0.8**
AGG	**Agios Georgios**	**2.26**	**33**	P	**Pb**	**23 55 11.6 -0.8**
AGG	**Agios Georgios**	**2.26**	**33**	P	**Pb**	**23 55 12.6 +0.2**
AGG				AML	AML	23 55 54.0
	comp=N,954µm,0.5s					
AGG				AML	AML	23 55 58.4
	comp=E,1458µm,0.7s					
VIL2	**Platees**	**2.26**	**61**	P	**Pn**	**23 55 09.4 +0.7**
VILL	**Villia**	**2.27**	**62**	P	**Pn**	**23 55 10.0 +1.1**
VILL	**Villia**	**2.27**	**62**	P	**Pn**	**23 55 10.0 +1.1**
LKR	**Lokris**	**2.33**	**48**	P	**Pn**	**23 55 11.4 +1.7**
LKR	**Lokris**	**2.33**	**48**	P	**Pn**	**23 55 10.9 +1.2**
LKR	**Lokris**	**2.33**	**48**	P	**Pn**	**23 55 10.9 +1.2**
LKR				AML	AML	23 55 52.5
	comp=E,436µm,0.5s					
LKR				AML	AML	23 55 52.7
	comp=N,324µm,0.6s					
ANKY	**Antikythira Is**	**2.39**	**121**	P	**Pn**	**23 55 11.5 +0.9**
ANKY	**Antikythira Is**	**2.39**	**121**	P	**Pn**	**23 55 11.5 +0.9**
IGT	**Igoumenitsa**	**2.43**	**352**	P	**Pn**	**23 55 12.8 +1.7**
IGT	**Igoumenitsa**	**2.43**	**352**	P	**Pn**	**23 55 12.8 +1.7**
VLY	**Voula,Athens**	**2.51**	**72**	P	**Pn**	**23 55 12.8 +0.6**
VLY	**Voula,Athens**	**2.51**	**72**	P	**Pn**	**23 55 12.8 +0.6**
VLY	**Voula,Athens**	**2.51**	**72**	P	**Pn**	**23 55 11.5 -0.7**
SGD	**Sagiada**	**2.52**	**351**	P	**Pn**	**23 55 14.3 +2.0**
SGD	**Sagiada**	**2.52**	**351**	P	**Pn**	**23 55 14.3 +2.0**
JAN	**Janina**	**2.53**	**1**	P	**Pb**	**23 55 15.2 -1.8**
JAN	**Janina**	**2.53**	**1**	P	**Pb**	**23 55 15.2 -1.8**
JAN	**Janina**	**2.53**	**1**	AML	AML	23 56 08.1
	comp=E,294µm,0.9s					
ATHU	**Athens Univers**	**2.54**	**70**	P	**Pn**	**23 55 13.0 +0.4**
ATHU	**Athens Univers**	**2.54**	**70**	P	**Pn**	**23 55 13.0 +0.4**
SMIA	**Simia**	**2.60**	**47**	P	**Pn**	**23 55 15.5 +1.9**
SMIA	**Simia**	**2.60**	**47**	P	**Pn**	**23 55 15.4 +1.9**
SMIA	**Simia**	**2.60**	**47**	P	**Pn**	**23 55 15.4 +1.9**
PTL	**Penteli**	**2.63**	**68**	P	**Pn**	**23 55 12.8 -1.0**
PTL	**Penteli**	**2.63**	**68**	P	**Pn**	**23 55 12.8 -1.0**
THL	**Klokotos Trika**	**2.63**	**21**	P	**Pn**	**23 55 16.2 +2.4**
THL	**Klokotos Trika**	**2.63**	**21**	P	**Pn**	**23 55 16.2 +2.4**
MEV	**Metsovon**	**2.68**	**8**	P	**Pb**	**23 55 18.1 -1.5**
MEV	**Metsovon**	**2.68**	**8**	P	**Pb**	**23 55 18.1 -1.5**
MEV	**Metsovon**	**2.68**	**8**	P	**Pb**	**23 55 19.1 -0.6**
KEK	**Kerkira**	**2.70**	**344**	P	**Pn**	**23 55 16.6 +1.9**
KEK	**Kerkira**	**2.70**	**344**	P	**Pn**	**23 55 16.6 +1.9**
EREA	**Eretria**	**2.82**	**62**	P	**Pn**	**23 55 17.6 +1.1**
EREA	**Eretria**	**2.82**	**62**	P	**Pn**	**23 55 17.6 +1.1**
EREA	**Eretria**	**2.82**	**62**	P	**Pn**	**23 55 16.8 +0.3**
FYTO	**Fytoko, Volos**	**2.85**	**36**	P	**Pn**	**23 55 18.7 +1.9**
FYTO	**Fytoko, Volos**	**2.85**	**36**	P	**Pn**	**23 55 18.7 +1.9**
KPRO	**Kipourio**	**2.87**	**9**	P	**Pb**	**23 55 20.3 -2.4**
KPRO	**Kipourio**	**2.87**	**9**	P	**Pb**	**23 55 20.3 -2.4**
KPRO	**Kipourio**	**2.87**	**9**	P	**Pb**	**23 55 21.3 -1.4**
NEO	**Neokhori**	**2.91**	**41**	P	**Pn**	**23 55 19.4 +1.6**
NEO	**Neokhori**	**2.91**	**41**	P	**Pn**	**23 55 19.1 +1.3**
NEO	**Neokhori**	**2.91**	**41**	P	**Pn**	**23 55 19.1 +1.3**
XOR	**Xorichti**	**2.94**	**40**	P	**Pn**	**23 55 19.6 +1.5**
XOR	**Xorichti**	**2.94**	**40**	P	**Pn**	**23 55 19.6 +1.5**
XOR	**Xorichti**	**2.94**	**40**	P	**Pn**	**23 55 19.1 +0.9**
MHLO	**Agia Marina, M**	**2.94**	**97**	P	**Pn**	**23 55 19.5 +1.4**
MHLO	**Agia Marina, M**	**2.94**	**97**	P	**Pn**	**23 55 19.5 +1.4**
MHLO	**Agia Marina, M**	**2.94**	**97**	P	**Pn**	**23 55 18.6 +0.4**
SKIA	**Skiathos**	**2.95**	**45**	P	**Pn**	**23 55 19.9 +1.7**
SKIA	**Skiathos**	**2.95**	**45**	P	**Pn**	**23 55 19.7 +1.5**
SKIA	**Skiathos**	**2.95**	**45**	P	**Pn**	**23 55 19.7 +1.5**
SERI	**Serifos**	**2.97**	**88**	P	**Pn**	**23 55 19.3 +0.8**
SERI	**Serifos**	**2.97**	**88**	P	**Pn**	**23 55 19.3 +0.8**
IMMV	**Iera Moni Meta**	**3.08**	**122**	P	**Pn**	**23 55 21.2 +1.2**
IMMV	**Iera Moni Meta**	**3.08**	**122**	P	**Pn**	**23 55 21.2 +1.2**
PENT	**Pentalofos**	**3.08**	**5**	P	**Pb**	**23 55 23.5 -2.9**
PENT	**Pentalofos**	**3.08**	**5**	P	**Pb**	**23 55 23.5 -2.9**
AOS	**Alonnisos**	**3.19**	**49**	P	**Pn**	**23 55 23.0 +1.5**
AOS	**Alonnisos**	**3.19**	**49**	P	**Pn**	**23 55 22.5 +1.0**
AOS	**Alonnisos**	**3.19**	**49**	P	**Pn**	**23 55 22.5 +1.0**
LIT	**Litokhoron**	**3.26**	**24**	P	**Pn**	**23 55 24.2 +1.6**
LIT	**Litokhoron**	**3.26**	**24**	P	**Pn**	**23 55 23.7 +1.1**
LIT	**Litokhoron**	**3.26**	**24**	P	**Pn**	**23 55 23.7 +1.1**
KZN	**Kozani**	**3.27**	**14**	P	**Pn**	**23 55 25.0 +2.2**
KZN	**Kozani**	**3.27**	**14**	P	**Pn**	**23 55 25.0 +2.2**
NEST	**Nestorio**	**3.29**	**4**	P	**Pn**	**23 55 26.2 +3.1**
NEST	**Nestorio**	**3.29**	**4**	P	**Pn**	**23 55 26.2 +3.1**
NEST	**Nestorio**	**3.29**	**4**	P	**Pb**	**23 55 26.9 -3.1**
KTI	**Kastanea**	**3.43**	**17**	P	**Pn**	**23 55 27.5 +2.5**
KTI	**Kastanea**	**3.43**	**17**	P	**Pn**	**23 55 27.5 +2.5**
PAIG	**Paliouri**	**3.61**	**38**	P	**Pn**	**23 55 28.2 +0.9**
PAIG	**Paliouri**	**3.61**	**38**	P	**Pn**	**23 55 28.2 +0.9**
FNA	**Florina**	**3.69**	**7**	P	**Pn**	**23 55 30.4 +2.0**
FNA	**Florina**	**3.69**	**7**	P	**Pn**	**23 55 29.8 +1.4**
FNA	**Florina**	**3.69**	**7**	P	**Pn**	**23 55 29.8 +1.4**
TIP	**Timpagrande**	**3.77**	**304**	↓↓*i*P	**Pn**	**23 55 32.5 +2.9**
TIP	**Timpagrande**	**3.77**	**304**	S	**Sn**	**23 56 15.5 +1.7**
TIP	**Timpagrande**	**3.77**	**304**	P	**Pn**	**23 55 32.4 +2.9**
TIP	**Timpagrande**	**3.77**	**304**	P	**Pn**	**23 55 32.4 +2.9**
IDI	**Anoyia**	**3.80**	**118**	P	**Pn**	**23 55 30.5 +0.5**
	comp=E,0.3nm,0.3s,baz=264,slow=21,SNR=4.8					
IDI				S	**Sn**	**23 56 11.0 -3.6**
	comp=E,1.5nm,0.3s,baz=301,slow=21,SNR=5.6					
IDI				LR	LR	23 56 52.9
	comp=E,27nm,21.3s,baz=252,slow=37					
IDI	**Anoyia**	**3.80**	**118**	⇑*i*P	**Pn**	**23 55 30.7 +0.7**
IDI	**Anoyia**	**3.80**	**118**	S	**Sn**	**23 56 16.3 +1.7**
IDI	**Anoyia**	**3.80**	**118**	P	**Pn**	**23 55 32.6 +2.6**
IDI	**Anoyia**	**3.80**	**118**	P	**Pn**	**23 55 32.6 +2.6**
APE	**Apeiranthos**	**3.81**	**89**	↓↓*i*P	**Pn**	**23 55 30.8 +0.7**
APE	**Apeiranthos**	**3.81**	**89**	S	**Sn**	**23 56 14.6 -0.1**
APE	**Apeiranthos**	**3.81**	**89**	P	**Pn**	**23 55 30.9 +0.8**
APE	**Apeiranthos**	**3.81**	**89**	P	**Pn**	**23 55 30.9 +0.8**
PLG	**Polygyros**	**3.86**	**32**	P	**Pn**	**23 55 31.8 +1.0**
PLG	**Polygyros**	**3.86**	**32**	P	**Pn**	**23 55 31.8 +1.0**
THE	**Thessaloniki**	**3.90**	**25**	P	**Pn**	**23 55 32.4 +1.1**
THE	**Thessaloniki**	**3.90**	**25**	P	**Pn**	**23 55 32.4 +1.1**
BIA	**Bitola**	**3.91**	**6**	*e*Pn	**Pn**	**23 55 33.5 +1.9**
BIA	**Bitola**	**3.91**	**6**	*e*Pn	**Pn**	**23 55 33.4 +1.9**
HORT	**Hortiatis**	**3.92**	**27**	P	**Pn**	**23 55 32.3 +0.7**
HORT	**Hortiatis**	**3.92**	**27**	P	**Pn**	**23 55 32.3 +0.7**
OHR	**Ohrid**	**3.98**	**0**	*i* Pn	**Pn**	**23 55 34.7 +2.2**
OHR	**Ohrid**	**3.98**	**0**	*i* Pn	**Pn**	**23 55 34.6 +2.2**
GRG	**Griva**	**4.03**	**18**	P	**Pn**	**23 55 34.4 +1.2**
GRG	**Griva**	**4.03**	**18**	P	**Pn**	**23 55 34.4 +1.2**
OUR	**Ouranopolis**	**4.07**	**37**	P	**Pn**	**23 55 34.5 +0.9**
OUR	**Ouranopolis**	**4.07**	**37**	P	**Pn**	**23 55 34.5 +0.9**
OUR	**Ouranopolis**	**4.07**	**37**	P	**Pn**	**23 55 33.0 -0.6**
SOH	**Sokhos**	**4.21**	**28**	P	**Pn**	**23 55 37.2 +1.7**
SOH	**Sokhos**	**4.21**	**28**	P	**Pn**	**23 55 37.2 +1.7**
SOH	**Sokhos**	**4.21**	**28**	P	**Pn**	**23 55 36.2 +0.6**
TIR	**Tirane**	**4.28**	**351**	⇑*i*P	**Pn**	**23 55 38.0 +1.5**
LAST	**Lasithi**	**4.28**	**116**	↓↓*i*P	**Pn**	**23 55 37.9 +1.2**
LAST	**Lasithi**	**4.28**	**116**	S	**Sn**	**23 56 28.3 +1.8**
TAR1	**Taranto**	**4.35**	**322**	*e*Pn	**Pn**	**23 55 39.5 +2.0**
KNT	**Kendrikon**	**4.36**	**22**	P	**Pn**	**23 55 39.3 +1.7**
KNT	**Kendrikon**	**4.36**	**22**	P	**Pn**	**23 55 39.3 +1.7**
KNT	**Kendrikon**	**4.36**	**22**	P	**Pn**	**23 55 37.9 +0.3**
VAY	**Valandovo**	**4.42**	**18**	*i* Pn	**Pn**	**23 55 39.8 +1.3**
VAY	**Valandovo**	**4.42**	**18**	*i* Pn	**Pn**	**23 55 39.7 +1.3**
SRS	**Serrai**	**4.55**	**28**	P	**Pn**	**23 55 41.6 +1.3**
SRS	**Serrai**	**4.55**	**28**	P	**Pn**	**23 55 41.6 +1.3**
SRS	**Serrai**	**4.55**	**28**	P	**Pn**	**23 55 39.7 -0.5**
MATE	**Matera**	**4.74**	**319**	⇑*i*P	**Pn**	**23 55 44.8 +2.0**
MATE	**Matera**	**4.74**	**319**	S	**Sn**	**23 56 36.1 -1.4**
NVR	**Nevrokopi**	**4.86**	**29**	P	**Pn**	**23 55 45.7 +1.2**
NVR	**Nevrokopi**	**4.86**	**29**	P	**Pn**	**23 55 45.7 +1.2**
SKO	**Skopje**	**4.87**	**6**	*i* Pn	**Pn**	**23 55 45.9 +1.3**
SKO	**Skopje**	**4.87**	**6**	*i* Pn	**Pn**	**23 55 45.9 +1.3**
SG1	**Sgolgore (BA)**	**4.89**	**321**	*i* Pn	**Pn**	**23 55 46.8 +1.9**
SG1				Sn	**Sn**	**23 56 40.5 -0.9**
ULC	**Ulcinj**	**4.97**	**347**	↓↓*i*Pn	**Pn**	**23 55 47.1 +1.0**
ULC				*e*Sn	**Sn**	**23 56 44.5 +1.0**
ULC	**Ulcinj**	**4.97**	**347**	↓↓*i*Pn	**Pn**	**23 55 47.1 +1.0**
ULC				*e*Sn	**Sn**	**23 56 44.5 +1.0**
BAI	**Bari**	**5.00**	**324**	*i* Pn	**Pn**	**23 55 48.0 +1.7**
MMB	**Musomiste**	**5.01**	**26**	P	**Pn**	**23 55 47.5 +0.9**
KKB	**Krupnik**	**5.06**	**20**	P	**Pn**	**23 55 48.4 +1.1**
VAE	**Valguarnera**	**5.08**	**276**	P	**Pn**	**23 55 51.5 +3.9**
	comp=E,2.6nm,0.3s,baz=161,slow=17,SNR=7.1					
VAE				S	**Sn**	**23 56 45.5 -0.7**
	comp=E,2.0nm,0.3s,baz=185,slow=16,SNR=2.3					
DRME	**Dracevica, Mon**	**5.20**	**347**	↓↓*i*Pn	**Pn**	**23 55 50.2 +1.0**
DRME				*e*Sn	**Sn**	**23 56 49.7 +0.7**
DRME	**Dracevica, Mon**	**5.20**	**347**	↓↓*i*Pn	**Pn**	**23 55 50.2 +1.0**
DRME				*e*Sn	**Sn**	**23 56 49.7 +0.7**
CDT	**Castel del Mon**	**5.28**	**320**	*e*Pn	**Pn**	**23 55 52.1 +1.9**
BUM	**Brajici-Budva**	**5.37**	**345**	⇑*i*Pn	**Pn**	**23 55 52.3 +0.8**
BUM				*e*Sn	**Sn**	**23 56 53.8 +0.6**
BUM	**Brajici-Budva**	**5.37**	**345**	⇑*i*Pn	**Pn**	**23 55 52.3 +0.8**
BUM				*e*Sn	**Sn**	**23 56 53.8 +0.6**
PDG	**Podgorica**	**5.43**	**348**	↓↓*i*P	**Pn**	**23 55 53.0 +0.8**
PDG	**Podgorica**	**5.43**	**348**	S	**Sn**	**23 56 54.0 -0.5**
PDG	**Podgorica**	**5.43**	**348**	⇑*i*Pn	**Pn**	**23 55 52.3 +0.1**
PDG				*e*Sn	**Sn**	**23 56 54.5 0.0**
TTG	**Podgorica**	**5.43**	**348**	⇑*i*Pn	**Pn**	**23 55 52.3 +0.1**
TTG				*e*Sn	**Sn**	**23 56 54.5 0.0**
RZN	**Rozhen**	**5.49**	**33**	P	**Pn**	**23 55 54.6 +1.3**
PVY	**Plav**	**5.50**	**354**	↓↓*i*Pn	**Pn**	**23 55 55.2 +1.8**
PVY				*e*Sn	**Sn**	**23 56 57.0 +0.5**
PVY	**Plav**	**5.50**	**354**	↓↓*i*Pn	**Pn**	**23 55 55.2 +1.8**
PVY				*e*Sn	**Sn**	**23 56 57.0 +0.5**
HCY	**Herceg Novi**	**5.60**	**342**	↓↓*i*Pn	**Pn**	**23 55 55.3 +0.7**
HCY				*e*Sn	**Sn**	**23 56 59.5 +0.7**
HCY	**Herceg Novi**	**5.60**	**342**	↓↓*i*Pn	**Pn**	**23 55 55.3 +0.7**
HCY				*e*Sn	**Sn**	**23 56 59.5 +0.7**
CEME	**Cevo**	**5.60**	**346**	↓↓*i*Pn	**Pn**	**23 55 55.1 +0.4**
CEME				*e*Sn	**Sn**	**23 56 59.2 +0.3**
CEME	**Cevo**	**5.60**	**346**	↓↓*i*Pn	**Pn**	**23 55 55.1 +0.4**
CEME				*e*Sn	**Sn**	**23 56 59.2 +0.3**
BEY	**Berane**	**5.78**	**354**	↓↓*i*Pn	**Pn**	**23 55 58.8 +1.6**
BEY				*e*Sn	**Sn**	**23 57 03.8 +0.4**
IVA	**Berane**	**5.78**	**354**	↓↓*i*Pn	**Pn**	**23 55 58.8 +1.6**
IVA				*e*Sn	**Sn**	**23 57 03.8 +0.4**
NKME	**Niksic**	**5.81**	**347**	⇑*i*Pn	**Pn**	**23 55 58.6 +1.1**
NKME				*e*Sn	**Sn**	**23 57 05.2 +1.2**
NKME	**Niksic**	**5.81**	**347**	⇑*i*Pn	**Pn**	**23 55 58.6 +1.1**
NKME				*e*Sn	**Sn**	**23 57 05.2 +1.2**
NKY	**Niksic**	**5.84**	**347**	↓↓*i*Pn	**Pn**	**23 55 59.5 +1.4**
NKY				*e*Sn	**Sn**	**23 57 05.0 0.0**
NKY	**Niksic**	**5.84**	**347**	↓↓*i*Pn	**Pn**	**23 55 59.5 +1.4**
NKY				*e*Sn	**Sn**	**23 57 05.0 0.0**
TREB	**Trebinje**	**5.89**	**342**	⇑*i*Pn	**Pn**	**23 55 58.5 -0.1**
MS1	**Monte Sant'Ang**	**5.91**	**322**	*e*Pn	**Pn**	**23 56 00.4 +1.5**
BRY	**Bratogost**	**6.02**	**344**	↓↓*i*Pn	**Pn**	**23 56 01.6 +1.1**
BRY				*e*Sn	**Sn**	**23 57 09.1 -0.3**
BRY	**Bratogost**	**6.02**	**344**	↓↓*i*Pn	**Pn**	**23 56 01.6 +1.1**
BRY				*e*Sn	**Sn**	**23 57 09.1 -0.3**
STON	**Ston**	**6.21**	**339**	*e*Pn	**Pn**	**23 56 02.7 -0.3**
STON				Sn	**Sn**	**23 57 09.4 -4.3**
STON	**Ston**	**6.21**	**339**	*e*Pn	**Pn**	**23 56 02.6 -0.3**
UPM	**Unac-Piva**	**6.24**	**347**	⇑*i*Pn	**Pn**	**23 56 04.7 +1.1**
UPM				*e*Sn	**Sn**	**23 57 14.2 -0.6**
UPM	**Unac-Piva**	**6.24**	**347**	⇑*i*Pn	**Pn**	**23 56 04.7 +1.1**
UPM				*e*Sn	**Sn**	**23 57 14.2 -0.6**
DIVS	**Divibare**	**6.99**	**355**	P	**Pn**	**23 56 13.5 -0.3**
DIVS	**Divibare**	**6.99**	**355**	P	**Pn**	**23 56 13.5 -0.3**
TEKS	**Tekeris**	**7.48**	**353**	⇑*i*Pn	**Pn**	**23 56 20.1 -0.3**
UDBI	**Udbina**	**8.31**	**334**	*e*Pn	**Pn**	**23 56 33.3 +1.4**
UDBI				Sn	**Sn**	**23 58 00.8 -4.8**
UDBI	**Udbina**	**8.31**	**334**	*e*Pn	**Pn**	**23 56 33.3 +1.4**
BZS	**Buzias**	**8.51**	**4**	⇑*i*P	**Pn**	**23 56 33.9 -0.7**
NVLJ	**Novalja**	**8.67**	**331**	*i* Pn	**Pn**	**23 56 37.3 +0.6**
NVLJ				Sn	**Sn**	**23 58 08.7 -5.6**
NVLJ	**Novalja**	**8.67**	**331**	*i* Pn	**Pn**	**23 56 37.3 +0.6**
ARR	**Arges**	**8.73**	**18**	↓↓*i*P	**Pn**	**23 56 38.8 +1.1**
VOIR		**8.91**	**20**	⇑*i*P	**Pn**	**23 56 40.8 +0.7**
MLR	**Muntele Rosu**	**9.22**	**23**	P	**Pn**	**23 56 46.9 +2.4**
	comp=E,0.1nm,0.3s,baz=220,slow=14,SNR=4.0					
MLR				LR	LR	00 00 46.2
	comp=E,19nm,18.6s,baz=45,slow=40					
KEST	**Kesra**	**9.31**	**265**	P	**Pn**	**23 56 48.6 +2.9**
	comp=E,0.4nm,0.3s,baz=35,slow=8.3,SNR=12					
KEST				S	**Sn**	**23 58 25.4 -4.9**
	comp=E,0.1nm,0.3s,baz=326,slow=15,SNR=2.4					
CRES	**Cresnjev**	**9.56**	**337**

Error ellipse: s-maj=6.2km s-min=4.7km az=135.0
*ISCJB **08** 00:09:19.3±0.2,20°.34S±0°.04×178°.34W±0°.05,h587km, mb4.6/74,Error ellipse: s-maj=7.0km s-min=5.0km az=37.4*
*MOS **08** 00:09:19.0±1.9,19°.25S×178°.73W,h524km,mb4.4/6, Error ellipse: s-maj=11.5km s-min=10.7km az=39.8*
ISC 08 00:09:20.4±0.3,20°.38S±0°.06×178°.28W±0°.06,h587km, n269,σ1‡32/289,mb4.7/74,32C-20D,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
MSVF	**Nonsavu**	**4.36**	**307**	*eP*	**P**	**P**	**00 10 43.2**	**-4.4**
MSVF	**Nonsavu**	**4.36**	**307**	*eP*	**P**	**P**	**00 10 43.2**	**-4.4**
RAO	**Raoul Island**	**8.84**	**178**	*eP*	**P**	**P**	**00 11 25.4**	**-1.9**
RAO	**Raoul Island**	**8.84**	**178**	*eP*	**P**	**P**	**00 11 25.4**	**-1.9**
AFI	**Afiamalu**	**8.94**	**45**	P	P	P	00 11 22.0	-6.6
	7.9nm,0.3s,baz=150,slow=0.3,SNR=9.7							
AFI				S	S	S	00 12 58.9	-15
	8.4nm,0.3s,baz=262,slow=20,SNR=8.7							
AFI	**Afiamalu**	**8.94**	**45**	*eP*	P	P	00 11 21.6	-7.0
AFI				*eS*	S	S	00 12 58.5	-15
AFI	**Afiamalu**	**8.94**	**45**	*eP*	P	P	00 11 21.6	-7.0
AFI				*eS*	S	S	00 12 58.5	-15
DZM	**Mont Dzumac**	**14.35**	**261**	P	**P**	**P**	**00 12 21.3**	**-1.6**
	2.5nm,0.3s,baz=102,slow=13,SNR=18							
URZ	**Urewera**	**18.26**	**192**	P	**P**	**P**	**00 12 56.2**	**-2.5**
	3.7nm,0.3s,baz=237,slow=4.4,SNR=3.4							
URZ	**Urewera**	**18.26**	**192**	*eP*	**P**	**P**	**00 13 00.1**	**+1.3**
	263nm,1.8s							
THZ	**Tophouse**	**22.59**	**197**	*eP*	**P**	**P**	**00 13 38.9**	**+1.1**
	151nm,1.9s							
KHZ	**Kahutara**	**23.03**	**196**	*eP*	**P**	**P**	**00 13 42.4**	**+0.9**
	64nm,1.3s							
LHI	**Lord Howe Isla**	**23.15**	**237**	*eP*	**P**	**P**	**00 13 43.6**	**+0.7**
	190nm,1.4s							
TARA	**Tarawa**	**23.25**	**337**	*eP*	**P**	**P**	**00 13 39.8**	**-4.1**
	73nm,0.8s							
HNR	**Honiara**	**23.66**	**294**	*eP*	**P**	**P**	**00 13 45.0**	**-2.5**
HNR				pmax	pmax			
	comp=Z,96nm,1.0s							
HNR	**Honiara**	**23.66**	**294**	*eP*	**P**	**P**	**00 13 45.0**	**-2.5**
	comp=Z,96nm,1.0s							
LTZ	**Lake Taylor**	**23.71**	**197**	*eP*	**P**	**P**	**00 13 49.2**	**+1.5**
	comp=Z,56nm,1.2s							
OXZ	**Oxford**	**24.28**	**197**	*eP*	**P**	**P**	**00 13 54.0**	**+1.4**
	comp=Z,79nm,1.5s							
RPZ	**Rata Peaks**	**24.92**	**199**	P	**P**	**P**	**00 13 58.3**	**0.0**
	comp=Z,12nm,0.7s,baz=37,slow=4.4,SNR=3.2							
RPZ	**Rata Peaks**	**24.92**	**199**	*eP*	**P**	**P**	**00 13 58.6**	**+0.2**
	comp=Z,156nm,1.8s							
PPT	**Papeete**	**27.27**	**89**	P	**P**	**P**	**00 14 18.4**	**-0.9**
	comp=Z,34nm,0.7s,baz=16,slow=8.6,SNR=4.4							
PPT	**Papeete**	**27.27**	**89**	*eP*	**P**	**P**	**00 14 17.0**	**-2.3**
PPT	**Papeete**	**27.27**	**89**	*eP*	**P**	**P**	**00 14 16.9**	**-2.3**
WHZ	**Wether Hill Ro**	**27.86**	**201**	*eP*	**P**	**P**	**00 14 25.4**	**+1.4**
	comp=Z,93nm,1.8s							
PYZ	**Puysegur Point**	**28.53**	**202**	*eP*	**P**	**P**	**00 14 30.7**	**+0.9**
	comp=Z,201nm,1.5s							
EIDS	**Eidsvold**	**28.63**	**254**	*eP*	**P**	**P**	**00 14 30.2**	**-0.8**
	comp=Z,12nm,0.6s							
ARMA	**Armidale**	**28.89**	**244**	*eP*	**P**	**P**	**00 14 33.9**	**+0.6**
	comp=Z,14nm,0.6s							
XMAS	**Kiritimati**	**30.23**	**45**	*eP*	P	P	00 14 40.1	-4.8
	comp=Z,157nm,1.3s							
RABL	**Rabaul**	**32.96**	**295**	*eP*	**P**	**P**	**00 15 06.0**	**-2.2**
	comp=Z,37nm,0.8s							
CTA	**Charters Tower**	**33.24**	**264**	P	**P**	**P**	**00 15 10.1**	**-0.5**
	comp=Z,33nm,0.6s,baz=92,slow=11,SNR=15							
CTAO	**Charters Tower**	**33.24**	**264**	*eP*	**P**	**P**	**00 15 10.0**	**-0.5**
CTAO	**Charters Tower**	**33.24**	**264**	*eP*	**P**	**P**	**00 15 10.0**	**-0.5**
	comp=Z,246nm,0.8s							
PMG	**Port Moresby**	**35.06**	**283**	*cePcP*	**P**	**P**	**00 15 24.6**	**-1.1**
PMG				pmax	pmax			
	comp=Z,108nm,0.9s							
PMG	**Port Moresby**	**35.06**	**283**	*eP*	**P**	**P**	**00 15 25.1**	**-0.6**
	comp=Z,33nm,0.9s							
COEN	**Coen**	**37.31**	**274**	*eP*	**P**	**P**	**00 15 43.6**	**-0.7**
	comp=Z,23nm,0.9s							
STKA	**Stephens Creek**	**37.61**	**244**	P	**P**	**P**	**00 15 46.4**	**-0.1**
	comp=Z,8.5nm,0.7s,baz=89,slow=11,SNR=23							
STKA	**Stephens Creek**	**37.61**	**244**	*eP*	**P**	**P**	**00 15 46.7**	**+0.3**
STKA				pmax	pmax			
	comp=Z,2.0nm,0.8s							
STKA	**Stephens Creek**	**37.61**	**244**	*eP*	**P**	**P**	**00 15 46.7**	**+0.3**
	comp=Z,2.1nm,0.8s							
MANU	**Manus Island**	**38.16**	**294**	*eP*	**P**	**P**	**00 15 48.4**	**-2.7**
	comp=Z,23nm,1.0s							
BBOO	**Buckleboo**	**42.37**	**243**	*eP*	**P**	**P**	**00 16 24.1**	**-0.3**
	comp=Z,15nm,0.8s							
JAY	**Jayapura**	**43.76**	**289**	P	**P**	**P**	**00 16 35.3**	**-0.1**
	comp=Z,6.2nm,0.6s,baz=100,slow=24,SNR=42							
AS01	**Alice Springs**	**44.25**	**257**	*eP*	**P**	**P**	**00 16 38.0**	**-1.1**
AS31	**Alice Springs**	**44.29**	**257**	*eP*	**P**	**P**	**00 16 39.0**	**-0.4**
	comp=Z,10nm,0.6s							
ASAR	**Alice Springs**	**44.29**	**257**	P	**P**	**P**	**00 16 39.0**	**-0.5**
	comp=Z,33nm,0.6s,baz=99,slow=7.6,SNR=547							
ASAR				PcP	**PcP**	**PcP**	**00 18 10.8**	**+0.1**
	comp=Z,3.9nm,0.7s,baz=97,slow=4.2,SNR=6.9							
ASAR				ScP	**ScP**	**ScP**	**00 21 12.9**	**+5.6**
	comp=Z,1.3nm,0.6s,baz=104,slow=4.6,SNR=6.5							
ASAR				S	**S**	**S**	**00 22 32.1**	**+0.3**
	comp=Z,1.6nm,0.7s,baz=94,slow=15,SNR=11							
WB2	**Warramunga Arr**	**44.35**	**262**	*eP*	**P**	**P**	**00 16 38.9**	**-1.0**
	comp=Z,25nm,0.7s							
WRAB	**Tennant Creek**	**44.35**	**262**	*d iP*	**P**	**P**	**00 16 38.7**	**-1.2**
WRAB				pmax	pmax			
	comp=Z,51nm,1.0s							
WRAB	**Tennant Creek**	**44.35**	**262**	*eP*	**P**	**P**	**00 16 39.0**	**-0.9**
	comp=Z,37nm,1.1s							
WRA	**Warramunga Arr**	**44.36**	**262**	P	**P**	**P**	**00 16 38.8**	**-1.2**
	comp=Z,23nm,0.6s,baz=97,slow=7.7,SNR=84							
WRA				ScP	**ScP**	**ScP**	**00 21 13.5**	**+5.9**
	comp=Z,1.1nm,0.9s,baz=92,slow=4.6,SNR=3.8							
WRA				S	**S**	**S**	**00 22 32.1**	**-0.7**
	comp=Z,1.7nm,1.0s,baz=97,slow=13,SNR=4.6							
PTCN	**Pitcairn Islan**	**44.51**	**105**	*eP*	**P**	**P**	**00 16 39.7**	**-1.3**
	comp=Z,433nm,1.0s							
KKH	**Kailua Kona**	**45.37**	**30**	*eP*	**P**	**P**	**00 16 44.5**	**-3.0**
KKH	**Kailua Kona**	**45.37**	**30**	*eP*	**P**	**P**	**00 16 44.5**	**-3.0**
MTN	**Manton Dam**	**48.90**	**271**	*eP*	**P**	**P**	**00 17 13.4**	**-0.8**
	comp=Z,62nm,0.6s							
GUMO	**Guam**	**49.52**	**310**	P	**P**	**P**	**00 17 18.3**	**-0.3**
	comp=Z,81nm,0.7s,baz=0.7,slow=14,SNR=4.5							
FITZ	**Fitzroy Crossi**	**52.79**	**262**	*eP*	**P**	**P**	**00 17 42.4**	**+0.1**
	comp=Z,13nm,0.7s							
SIJI	**Sorong**	**52.95**	**285**	P	**P**	**P**	**00 17 43.5**	**-0.1**
	comp=Z,71nm,0.3s							
SOEI	**Soe**	**56.24**	**272**	*eP*	**P**	**P**	**00 18 07.2**	**+0.6**
	comp=Z,102nm,0.6s							
SBA	**Scott Base**	**57.98**	**184**	*eP*	**P**	**P**	**00 18 19.3**	**+2.1**
SBA				pmax	pmax			
	comp=Z,12nm,1.0s							
SBA	**Scott Base**	**57.98**	**184**	*eP*	**P**	**P**	**00 18 19.3**	**+2.1**
	comp=Z,12nm,1.0s							
VNDA	**Vanda**	**58.01**	**185**	P	**P**	**P**	**00 18 18.8**	**+1.4**
	comp=Z,3.8nm,0.6s,baz=356,slow=7.7,SNR=41							
VNDA	**Vanda**	**58.01**	**185**	*eP*	**P**	**P**	**00 18 18.9**	**+1.5**
VNDA				pmax	pmax			
	comp=Z,4.0nm,0.6s							
QSPA	**South Pole Qui**	**69.69**	**180**	*eP*	**P**	**P**	**00 19 32.4**	**+0.6**
	comp=Z,65nm,0.7s							
MJAR	**Matsushiro Arr**	**69.96**	**324**	P	**P**	**P**	**00 19 32.9**	**-0.8**
	comp=Z,4.7nm,0.5s,baz=155,slow=6.2,SNR=23							
MAJO	**Matsushiro**	**69.96**	**324**	*eP*	**P**	**P**	**00 19 32.7**	**-1.1**
MAJO				pmax	pmax			
	comp=Z,26nm,1.5s							
MAJO	**Matsushiro**	**69.96**	**324**	*eP*	**P**	**P**	**00 19 32.7**	**-1.1**
	comp=Z,26nm,1.5s							
MAT	**Matsushiro**	**69.96**	**324**	P	**P**	**P**	**00 19 33.1**	**-0.6**
MJB9	**Matsu-Tunnel**	**69.96**	**324**	*eP*	**P**	**P**	**00 19 32.9**	**-0.9**
	comp=Z,7.0nm,1.5s							
JNU	**Nakatsue**	**72.01**	**317**	P	**P**	**P**	**00 19 46.2**	**+0.4**
	comp=Z,5.4nm,1.0s,baz=84,slow=9.7,SNR=3.7							
KSM	**Kuching**	**73.14**	**278**	*eP*	**P**	**P**	**00 19 52.8**	**0.0**
	comp=Z,32nm,1.6s							
ASAJ	**Asahikawa**	**73.50**	**332**	P	**P**	**P**	**00 19 55.4**	**+1.4**
	comp=Z,16nm,0.6s,baz=201,slow=4.8,SNR=13							
PETK	**Petropavlovsk-**	**76.08**	**345**	P	**P**	**P**	**00 20 07.9**	**-0.4**
	comp=Z,15nm,0.6s,baz=176,slow=3.2,SNR=23							
KSRS	**Korea Array**	**76.62**	**319**	P	**P**	**P**	**00 20 12.4**	**+0.9**
	comp=Z,3.0nm,0.6s,baz=126,slow=5.9,SNR=19							
KSAR	**Wonju Array Be**	**76.64**	**319**	P	**P**	**P**	**00 20 12.5**	**+0.8**
KSAR	**Wonju Array Be**	**76.64**	**319**	P	**P**	**P**	**00 20 12.4**	**+0.8**
KS01	**Wonju Array Si**	**76.66**	**319**	*eP*	**P**	**P**	**00 20 12.3**	**+0.5**
CHGN	**Chignik**	**78.20**	**11**	*eP*	**P**	**P**	**00 20 18.8**	**-0.8**
USRK	**Ussuriysk Ar.**	**78.72**	**326**	P	**P**	**P**	**00 20 23.7**	**+1.0**
	comp=Z,8.9nm,0.7s,baz=104,slow=3.8,SNR=28							
NJ2	**Nanjing**	**79.60**	**310**	*eP*	**P**	**P**	**00 20 28.2**	**+0.5**
NJ2				pmax	pmax			
	comp=Z,12nm,0.5s							
HABR	**Khabarovsk**	**80.21**	**331**	*eP*	**P**	**P**	**00 20 29.3**	**-1.1**
HABR				*e*			00 20 34.4	
HABR				*e*			00 23 39.7	
HABR				*eS*	**S**	**S**	**00 29 52.4**	**+4.5**
HABR				*e*			00 30 07.0	
HABR				pmax	pmax			
	comp=N,3.0nm,0.9s							
HABR				pmax	pmax			
	comp=E,12nm,0.9s							
HABR				pmax	pmax			
	comp=Z,5.0nm,0.9s							
HABR				MLR	MLR			
	comp=Z,109nm,18.0s							
MDJ	**Mudanjiang**	**80.27**	**325**	P	**P**	**P**	**00 20 32.0**	**+1.1**
MDJ				pmax	pmax			
	comp=Z,14nm,0.8s							
MDJ				pmax	pmax			
	comp=Z,110nm,6.4s							
YBH	**Yreka Blue Hor**	**80.36**	**39**	P	**P**	**P**	**00 20 32.6**	**+1.1**
	comp=Z,1.8nm,0.9s,baz=298,slow=3.4,SNR=3.6							
NVAR	**Mina Array Bea**	**81.11**	**43**	P	**P**	**P**	**00 20 35.5**	**-0.1**
	comp=Z,0.7nm,0.7s,baz=220,slow=5.3,SNR=3.8							
NKL	**Nikolayevsk**	**81.38**	**336**	*eP*	**P**	**P**	**00 20 36.4**	**+0.1**
CN2	**Changchun**	**82.04**	**323**	*eP*	**P**	**P**	**00 20 41.2**	**+1.2**
CN2				pmax	pmax			
	comp=Z,10.0nm,0.8s							
KLR	**Kul'dur**	**82.29**	**330**	P	**P**	**P**	**00 20 41.6**	**+0.6**
	comp=Z,3.1nm,0.6s,baz=103,slow=6.1,SNR=12							
TUC	**Tucson**	**83.11**	**52**	*eP*	**P**	**P**	**00 20 44.4**	**-1.3**
TUC	**Tucson**	**83.11**	**52**	*eP*	**P**	**P**	**00 20 44.4**	**-1.3**
RSO	**Redoubt South**	**83.17**	**12**	*eP*	**P**	**P**	**00 20 45.3**	**-0.2**
KULM	**Kulim**	**83.50**	**278**	*eP*	**P**	**P**	**00 20 48.7**	**+0.7**
SPU	**Mount Spurr**	**83.97**	**12**	*eP*	**P**	**P**	**00 20 48.4**	**-0.8**
GAMB	**Gambell**	**84.03**	**3**	*eP*	**P**	**P**	**00 20 49.9**	**+0.5**
RC01	**Rabbit Creek A**	**84.38**	**13**	*eP*	**P**	**P**	**00 20 51.6**	**+0.5**
TT01	**Tatalina**	**84.84**	**10**	*eP*	**P**	**P**	**00 20 52.9**	**-0.5**
TTA	**Tatalina**	**84.87**	**10**	*eP*	**P**	**P**	**00 20 53.7**	**+0.1**
TTA	**Tatalina**	**84.87**	**10**	*eP*	**P**	**P**	**00 20 53.7**	**+0.1**
PMR	**Palmer**	**84.96**	**14**	*eP*	**P**	**P**	**00 20 53.5**	**-0.4**
PMR	**Palmer**	**84.96**	**14**	*eP*	**P**	**P**	**00 20 53.5**	**-0.4**
BMRM	**Bremner River**	**85.49**	**16**	*eP*	**P**	**P**	**00 20 57.4**	**+0.7**
SCM	**Sheep Creek Mo**	**85.58**	**14**	*eP*	**P**	**P**	**00 20 56.8**	**-0.3**
SCM	**Sheep Creek Mo**	**85.58**	**14**	*eP*	**P**	**P**	**00 20 56.8**	**-0.3**
KLU	**Klutina**	**85.61**	**15**	*eP*	**P**	**P**	**00 20 57.8**	**+0.6**
BJI	**Beijing**	**85.62**	**316**	P	**P**	**P**	**00 20 58.6**	**+0.9**
BJI				pmax	pmax			
	comp=Z,12nm,0.6s							
BJI				pmax	pmax			
	comp=Z,160nm,6.8s							
ENH	**Enshi**	**85.75**	**304**	*eP*	**P**	**P**	**00 20 58.4**	**-0.2**
	comp=Z,5.4nm,0.6s							
ENH				*ePcP*	**PcP**	**PcP**	**00 21 00.5**	**+0.1**
BALM	**Baldy**	**86.14**	**17**	*eP*	**P**	**P**	**00 21 00.0**	**+0.2**
BALM	**Baldy**	**86.14**	**17**	*eP*	**P**	**P**	**00 21 00.0**	**+0.2**
SEY	**Seymchan**	**86.20**	**347**	P	**P**	**P**	**00 20 59.9**	**+0.1**
	comp=Z,14nm,0.6s,baz=148,slow=6.3,SNR=54							
SEY	**Seymchan**	**86.20**	**347**	*i P*	**P**	**P**	**00 20 59.2**	**-0.6**
GYA	**Guiyang**	**86.36**	**300**	*eP*	**P**	**P**	**00 21 02.4**	**+0.7**
GYA				pP	pP		00 23 00.8	-7.1
GYA				PP	**PP**		**00 24 35.0**	**+0.6**
GYA				SKS	**SKSac**		**00 30 36.4**	**+3.5**
GYA				S	**ScS**		**00 30 52.7**	**-2.2**
GYA				sS	sS		00 34 20.2	-14
GYA				pmax	pmax			
	comp=Z,20nm,1.0s							
TRF	**Thorofare Moun**	**86.38**	**12**	*eP*	**P**	**P**	**00 20 59.9**	**-1.1**
RND	**Reindeer**	**86.64**	**13**	*eP*	**P**	**P**	**00 21 01.5**	**-0.5**
RND	**Reindeer**	**86.64**	**13**	*eP*	**P**	**P**	**00 21 01.5**	**-0.5**
SYO	**Syowa Base**	**86.79**	**193⇑**	*eP*	**P**	**P**	**00 21 00.6**	**-2.1**
SYO	**Syowa Base**	**86.79**	**193⇓**	*ePcP*	**P**	**P**	**00 21 03.4**	**+0.7**
BPAW	**Bear Paw Mtn.**	**86.83**	**12**	*eP*	**P**	**P**	**00 21 03.2**	**+0.3**
MNTX	**Cornudas Mount**	**86.89**	**55**	*eP*	**P**	**P**	**00 21 05.3**	**+1.4**
MCK	**McKinley**	**86.91**	**13**	*eP*	**P**	**P**	**00 21 03.4**	**+0.2**
MCK	**McKinley**	**86.91**	**13**	*eP*	**P**	**P**	**00 21 03.4**	**+0.2**
TX31	**Lajitas Ar. Si**	**87.21**	**57**	*eP*	**P**	**P**	**00 21 06.2**	**+0.6**
TXAR	**Lajitas Array**	**87.21**	**57**	P	**P**	**P**	**00 21 06.8**	**+1.2**
	comp=Z,1.7nm,0.8s,baz=217,slow=7.1,SNR=25							
MENT	**Mentasta**	**87.39**	**15**	*eP*	**P**	**P**	**00 21 04.9**	**-0.6**
MLY	**Manley**	**87.72**	**11**	*eP*	**P**	**P**	**00 21 05.8**	**-1.2**
WRH	**Wood River Hil**	**87.74**	**13**	*eP*	**P**	**P**	**00 21 06.0**	**-1.1**
XAN	**Xi'an**	**87.85**	**307**	P	**P**	**P**	**00 21 09.2**	**+0.8**
XAN				pmax	pmax			
	comp=Z,16nm,0.8s							
CCB	**Clear Creek Bu**	**87.95**	**13**	*eP*	**P**	**P**	**00 21 06.8**	**-1.3**
MDM	**Murphy Dome**	**88.14**	**12**	*eP*	**P**	**P**	**00 21 07.9**	**-1.1**
COLA	**College**	**88.14**	**12**	*eP*	**P**	**P**	**00 21 06.5**	**-2.4**
COLA				pmax	pmax			
	comp=Z,8.0nm,0.9s							
ILAR	**Eielson Array**	**88.25**	**13**	P	**P**	**P**	**00 21 08.1**	**-1.4**
	comp=Z,1.3nm,0.4s,baz=215,slow=5.3,SNR=27							
ILB	**Eielson Array**	**88.25**	**13**	*eP*	**P**	**P**	**00 21 08.4**	**-1.1**
IL1	**Eielson Array**	**88.25**	**13**	*eP*	**P**	**P**	**00 21 08.3**	**-1.2**
BILL	**Bilibino**	**88.89**	**354**	*i P*	**P**	**P**	**00 21 12.1**	**-0.2**
BILL				pmax	pmax			
	comp=Z,3.0nm,0.9s							
BILL	**Bilibino**	**88.89**	**354**	*eP*	**P**	**P**	**00 21 11.7**	**-0.7**
	comp=Z,1.8nm,0.6s							
PDAR	**Pinedale Array**	**89.05**	**43**	P	**P**	**P**	**00 21 14.3**	**+0.3**
	comp=Z,0.5nm,0.6s,baz=220,slow=2.8,SNR=5.9							
KMI	**Kunming**	**89.06**	**297**	P	**P**	**P**	**00 21 14.3**	**-0.2**
KMI				pmax	pmax			
	comp=Z,10.0nm,0.5s							
KMI				pmax	pmax			
	comp=Z,160nm,6.9s							
HHC	**Hu-ho-hao-te**	**89.08**	**314**	*eP*	**P**	**P**	**00 21 14.5**	**+0.5**
HHC				pP	pP		00 23 14.0	-7.2
HHC				sP	sP		00 24 07.5	-12
HHC				S	**S**		**00 31 16.5**	**+2.6**
HHC				pmax	pmax			
	comp=Z,41nm,1.2s							
HHC				pmax	pmax			
	comp=Z,240nm,7.5s							
EGAK	**Eagle**	**89.55**	**15**	*eP*	**P**	**P**	**00 21 15.7**	**+0.2**
COLD	**Coldfoot**	**89.80**	**11**	*eP*	**P**	**P**	**00 21 17.1**	**+0.4**
CMAR	**Chiang Mai Arr**	**89.83**	**290**	P	**P**	**P**	**00 21 19.5**	**+1.6**
	comp=Z,4.7nm,0.7s,baz=113,slow=2.6,SNR=19							
CHTO	**Chiang Mai**	**89.96**	**290**	*eP*	**P**	**P**	**00 21 20.0**	**+1.5**
CHTO	**Chiang Mai**	**89.96**	**290**	*eP*	**P**	**P**	**00 21 20.0**	**+1.5**
CD2	**Chengdu**	**90.50**	**303**	P	**P**	**P**	**00 21 21.0**	**+0.2**
CD2				pmax	pmax			
	comp=Z,10.0nm,0.5s							
YAK	**Yakutsk**	**91.90**	**338**	*i P*	**P**	**P**	**00 21 26.4**	**0.0**
YAK				pmax	pmax			
	comp=Z,10.0nm,0.8s							
LZH	**Lanzhou**	**92.49**	**308**	*eP*	**P**	**P**	**00 21 28.8**	**-1.2**
LZH				pP	pP		00 23 33.2	-4.4
LZH				sP	sP		00 24 23.4	-13
LZH				pmax	pmax			
	comp=Z,18nm,1.0s							
INK	**Inuvik**	**94.22**	**15**	P	**P**	**P**	**00 21 35.6**	**-1.2**
	comp=Z,1.2nm,0.8s,baz=225,slow=4.7,SNR=4.9							
ULN	**Ulaanbaatar**	**95.10**	**319**	*i P*	**P**	**P**	**00 21 41.0**	**-0.5**
ULN				pmax	pmax			
	comp=Z,1.0nm,0.7s							
ULN	**Ulaanbaatar**	**95.10**	**319**	*eP*	**P**	**P**	**00 21 41.6**	**+0.1**
SONM	**Songino Array**	**95.49**	**319**	P	**P**	**P**	**00 21 43.5**	**+0.2**
	comp=Z,0.8nm,0.7s,baz=120,slow=4.5,SNR=2.5							
YKA	**Yellowknife Ar**	**96.51**	**25**	P	**P**	**P**	**00 21 47.3**	**0.0**
	comp=Z,0.1nm,0.6s,baz=237,slow=4.5,SNR=4.3							
YKA				PP	**PP**	**PP**	**00 25 55.4**	**+3.5**
	comp=Z,0.1nm,0.8s,baz=234,slow=8.3,SNR=3.8							
GTA	**Gaotai**	**96.69**	**309**	*eP*	**P**	**P**	**00 21 50.2**	**+1.3**
GTA				pmax	pmax			
	comp=Z,4.0nm,0.8s							
TLY	**Talaya**	**98.64**	**322**	*eP*	Pdif	Pdif	00 21 56.4	-0.7
TLY				pmax	pmax			
	comp=Z,2.0nm,0.8s							
WMQ	**Urumqi**	**106.65**	**311**	Pdif	**Pdif**	**Pdif**	**00 22 34.3**	**+1.3**
MKAR	**Makanchi Array**	**110.92**	**313**	PKiKP	**PKiKP**	**PKiKP**	**00 26 46.9**	**-0.7**
	comp=Z,0.7nm,0.6s,baz=70,slow=0.5,SNR=8.3							
KURK	**Kurchatov**	**113.73**	**317**	PKIKP	**PKiKP**	**PKiKP**	**00 26 51.7**	**-1.0**
KURK							00 28 02.3	
KURK	**Kurchatov**	**113.73**	**317**	PKiKP	**PKiKP**	**PKiKP**	**00 26 51.7**	**-1.0**
KURK				PP	**PP**	**PP**	**00 28 02.3**	**+5.1**
KURBB	**Kurchatov Arra**	**113.78**	**317**	PKiKP	**PKiKP**	**PKiKP**	**00 26 51.7**	**-1.1**
	comp=Z,0.9nm,0.7s,baz=99,slow=1.8,SNR=11							
KURBB				PP	**PP**	**PP**	**00 28 02.3**	**+4.7**
	comp=Z,0.2nm,0.7s,baz=89,slow=6.8,SNR=4.8							
KSH	**Kashi**	**114.60**	**305**	*ePKP*	PKPdf	PKPdf	00 26 53.2	-1.8
KSH				*esPKP*			00 29 52.4	
KSH				PKS	**PKSdf**	**PKSdf**	**00 30 28.6**	**-3.2**
KSH				SKS	**SKSdf**	**SKSdf**	**00 33 12.7**	**+0.6**
KSH				AMB	AMB	AMB		
	comp=Z,58nm,4.0s							
BVAR	**Borovoye Array**	**118.82**	**320**	PKP	**PKPdf**	**PKPdf**	**00 27 01.8**	**-0.7**
	comp=Z,2.0nm,0.5s,baz=185,slow=0.7,SNR=9.1							
GEYT	**Alibeck**	**128.50**	**303**	PKhKP	PKPpre	PKPpre	00 27 10.7	
	comp=Z,0.6nm,0.6s,baz=270,slow=4.4,SNR=3.2							
GEYT				PKP	**PKPdf**	**PKPdf**	**00 27 22.2**	**+0.7**
	comp=Z,1.5nm,0.7s,baz=203,slow=1.1,SNR=5.3							
GEYT				PP	**PP**	**PP**	**00 29 35.5**	**-1.0**
	comp=Z,0.3nm,0.3s,baz=49,slow=2.7,SNR=4.4							
ARCES	**ARCESS Array B**	**128.75**	**350**	PKP	**PKPdf**	**PKPdf**	**00 27 20.2**	**-0.8**
	comp=Z,2.8nm,0.8s,baz=348,slow=5.4,SNR=9.4							
FINES	**FINESS Array B**	**135.58**	**344**	PKhKP	PKPpre	PKPpre	00 27 23.8	
	comp=Z,0.6nm,0.8s,baz=288,slow=1.2,SNR=4.1							
FINES				PKP	**PKPdf**	**PKPdf**	**00 27 35.1**	**+1.0**
	comp=Z,1.7nm,0.7s,baz=80,slow=4.0,SNR=12							
FINES				SKPbc	**SKPab**	**SKPab**	**00 30 15.2**	**-1.5**
	comp=Z,0.8nm,0.5s,baz=44,slow=2.9,SNR=11							
FINES	**FINESS Array B**	**135.58**	**344**	*c iPKIKP*	**PKPdf**	**PKPdf**	**00 27 35.9**	**+1.8**
FINES				pmax	pmax			
	comp=Z,2.0nm,0.7s							
NB2	**NORSAR Subarra**	**138.83**	**353**	PKP	PKPpre	PKPpre	00 27 31.1	
	comp=Z,1.0nm,0.7s,baz=16,slow=3.2							
NOA	**NORSAR Array B**	**138.83**	**353**	PKhKP	PKPpre	PKPpre	00 27 31.5	
	comp=Z,0.8nm,0.6s,baz=15,slow=4.5,SNR=4.7							
NOA				PKP	**PKPdf**	**PKPdf**	**00 27 40.0**	**-0.2**
	comp=Z,0.3nm,0.6s,baz=14,slow=4.1,SNR=2.9							
NOA				SKPbc	**SKiKP**	**SKiKP**	**00 30 24.7**	**+1.2**
	comp=Z,1.7nm,0.9s,baz=14,slow=4.4,SNR=4.2							
KONO	**Kongsberg**	**140.36**	**354**	*i PKIKP*	**PKPdf**	**PKPdf**	**00 27 44.9**	**+2.0**
KONO				pmax	pmax			
	comp=Z,102nm,1.7s							
SUW	**Suwalki**	**142.63**	**339**	*ePKP*	**PKPdf**	**PKPdf**	**00 27 45.3**	**-1.8**
SUW	**Suwalki**	**142.63**	**339**	*ePKHKP*	**PKPdf**	**PKPdf**	**00 27 45.3**	**-1.8**
AKASG	**Malin Array Be**	**142.78**	**331**	PKhKP	PKPpre	PKPpre	00 27 44.0	
	comp=Z,7.5nm,0.7s,baz=43,slow=4.4,SNR=90							

KHC			*e*PKPAB	**PKPab**	**00 28 13.0**	**+0.3**
KHC	**Kasperske Hory**	**149.78 344**	⇓*e*PKIKP	**PKPdf**	**00 28 00.2**	**+0.9**
KHC			*e*		00 28 05.0	
KHC			*e*		00 28 13.2	
KHC	**Kasperske Hory**	**149.78 344**	⇓*e*PKP	**PKPdf**	**00 28 00.2**	**+0.9**
KHC			*e*PKPbc	**PKPbc**	**00 28 05.0**	**+0.2**
KHC			*e*PKPab	**PKPab**	**00 28 13.2**	**+0.5**
SNF	**Seneffe**	**149.86 357**	PKPbc	**PKPbc**	**00 28 05.1**	**+0.3**
BZS	**Buzias**	**149.97 332**	⇑*i*P	**PKPbc**	**00 28 05.3**	**0.0**
BZS	**Buzias**	**149.97 332**	⇑PKHKP	**PKPbc**	**00 28 05.3**	**0.0**
GERES	**GERESS Array B**	**150.01 344**	PKPbc	**PKPbc**	**00 28 05.5**	**+0.1**
	comp=Z,1.3nm,0.6s,baz=40,slow=2.3,SNR=12					
CONA	**Conrad Observa**	**150.23 341**	*i* PKIKP	**PKPbc**	**00 28 06.3**	**+0.4**
	comp=Z,4.6nm,0.9s					
DOU	**Dourbes**	**150.26 356**	PKPbc	**PKPbc**	**00 28 06.1**	**+0.3**
MDVR	**Moldovita**	**150.56 330**	⇑*i*P	**PKPbc**	**00 28 06.7**	**0.0**
MOA	**Molln**	**150.77 343**	*i* PKPbc	**PKPbc**	**00 28 07.0**	**-0.1**
	comp=Z,1.0nm,0.5s					
SOKA	**Soboth**	**151.60 341**	*i* PKPbc	**PKPbc**	**00 28 08.4**	**-0.7**
	comp=Z,1.9nm,0.7s					
PERS	**Pernice**	**151.61 340**	*i* PKPbc	**PKPbc**	**00 28 08.2**	**-0.9**
PERS			*i*		00 28 20.9	
ABTA	**Abfaltersbach**	**152.26 344**	*i* PKPbc	**PKPbc**	**00 28 09.9**	**-0.7**
	comp=Z,4.0nm,0.6s					
VISS	**Visnje**	**152.44 340**	*i* PKPbc	**PKPbc**	**00 28 10.5**	**-0.4**
VISS			*i*		00 28 23.3	
BLY	**Banja Luka**	**152.52 336**	⇓*i*P	**PKPab**	**00 28 24.4**	**0.0**
BOJS	**Bojanci**	**152.57 339**	*i* PKPbc	**PKPbc**	**00 28 11.3**	**+0.2**
BOJS			*i*		00 28 24.2	
BOJS			*i*		00 29 04.4	
JAVS	**Javornik**	**152.60 341**	*i* PKPbc	**PKPbc**	**00 28 10.8**	**-0.5**
JAVS			*i*		00 28 23.8	
JAVS			*i*		00 29 03.7	
LAST	**Lasithi**	**154.42 310**	⇑*i*P	**PKPab**	**00 28 33.5**	**+0.5**
KEST	**Kesra**	**163.30 338**	PKPab	**PKPab**	**00 29 12.1**	**+0.6**
	comp=Z,2.4nm,0.6s,baz=93,slow=3.3,SNR=5.7					

WEL 08 00:10:59.6±0.1, 38°.36S×177°.16E, h42km±2km, ML3.5/6, 5C-19D, Error ellipse: s-maj=0.8km s-min=0.8km az=0.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**0.11**	**339**	PN	Pn	00 11 05.8	-0.7
URZ				SN	Sn	00 11 10.8	-0.5
URZ				AML	AML	00 11 11.6	
RAGZ	**Rawiri**	**0.24**	**124**	PN	Pn	00 11 06.7	-0.8
RAGZ				SN	Sn	00 11 12.9	-0.2
MWZ	**Matawai**	**0.29**	**84**	PN	Pn	00 11 06.8	-1.1
MWZ				SN	Sn	00 11 12.6	-1.3
MWZ				AML	AML	00 11 16.7	
MUGZ	**Murupara**	**0.33**	**250**	⇓PN	Pn	00 11 08.0	-0.3
EDRZ	**Edgecumbe**	**0.42**	**308**	PN	Pn	00 11 09.2	-0.3
SNGZ	**Shannon Statio**	**0.44**	**162**	⇑PN	Pn	00 11 09.4	-0.3
SNGZ				SN	Sn	00 11 17.6	+0.8
RRRZ	**Republican Roa**	**0.51**	**273**	⇓PN	Pn	00 11 10.4	-0.2
TARZ	**Mount Tarawera**	**0.53**	**284**	⇓PN	Pn	00 11 11.0	+0.1
MARZ	**Manawahe**	**0.54**	**314**	PN	Pn	00 11 10.6	-0.4
TKGZ	**Te Karaka**	**0.55**	**98**	⇓PN	Pn	00 11 11.1	+0.1
RAHZ	**Arahi**	**0.56**	**186**	⇓PN	Pn	00 11 11.0	-0.2
RIGZ	**Rimuhau**	**0.58**	**126**	⇓PN	Pn	00 11 11.4	-0.1
RIGZ				SN	Sn	00 11 22.4	+2.3
PRRZ	**Plateau Road**	**0.62**	**257**	⇓PN	Pn	00 11 11.6	-0.4
HLRZ	**Highlands Stat**	**0.65**	**280**	⇑PN	Pn	00 11 12.5	+0.1
TWGZ	**Tauwhareparae**	**0.67**	**74**	⇓PN	Pn	00 11 12.8	+0.1
ALRZ	**Allen Road**	**0.67**	**253**	⇓PN	Pn	00 11 12.4	-0.3
HRRZ	**Handcock Road**	**0.69**	**268**	⇓PN	Pn	00 11 12.7	-0.3
OPRZ	**Ohinepanea**	**0.71**	**317**	⇓PN	Pn	00 11 12.4	-0.7
WHHZ	**Waihua**	**0.71**	**175**	⇓PN	Pn	00 11 13.7	+0.4
MRHZ	**Matea Rd**	**0.75**	**231**	PN	Pn	00 11 13.3	-0.5
KNZ	**Kokohu**	**0.77**	**149**	⇓PN	Pn	00 11 13.2	-0.8
KNZ				AML	AML	00 11 29.8	
KNZ				AML	AML	00 11 35.6	
HAZ	**Te Kaha**	**0.78**	**39**	PN	Pn	00 11 12.3	-1.9
NMHZ	**Naumai**	**0.78**	**201**	⇓PN	Pn	00 11 14.4	+0.1
PRGZ	**Paritu Road**	**0.79**	**135**	PN	Pn	00 11 13.6	-0.8
KARZ	**Kaharoa**	**0.80**	**295**	⇓PN	Pn	00 11 13.9	-0.5
WPRZ	**Whakapapatarin**	**0.80**	**258**	PN	Pn	00 11 14.2	-0.3
CNGZ	**Carnagh Statio**	**0.83**	**99**	PN	Pn	00 11 15.1	+0.3
PKGZ	**Pakihiroa**	**0.86**	**57**	PN	Pn	00 11 15.1	-0.2
ARHZ	**Aropaoanui**	**0.91**	**188**	PN	Pn	00 11 16.3	+0.4
PUZ	**Puketiti**	**0.91**	**72**	PN	Pn	00 11 15.3	-0.7
PUZ				AML	AML	00 11 40.0	
PUZ				AML	AML	00 11 46.4	
BKZ	**Black Stump Fm**	**0.96**	**213**	⇓PN	Pn	00 11 16.0	-0.6
BKZ				AML	AML	00 11 35.4	
BKZ				AML	AML	00 11 35.7	
MHGZ	**Mahia Peninsul**	**0.98**	**144**	PN	Pn	00 11 16.0	-0.9
KUTZ	**Kaahu Road**	**1.06**	**263**	⇓PN	Pn	00 11 17.7	-0.3
RITZ	**Rihia Road**	**1.19**	**239**	⇑PN	Pn	00 11 19.7	-0.1
KATZ	**Kakaramea**	**1.30**	**242**	PN	Pn	00 11 21.3	-0.2
KRVZ	**Karewarewa**	**1.40**	**238**	PN	Pn	00 11 22.3	-0.4
BHHZ	**Black Hill Sta**	**1.41**	**217**	PN	Pn	00 11 22.4	-0.5
KRHZ	**Kereru**	**1.42**	**206**	PN	Pn	00 11 22.7	-0.2
WTVZ	**West Tongariro**	**1.44**	**238**	⇑PN	Pn	00 11 23.1	-0.2
KAHZ	**Kahuranaki**	**1.45**	**189**	PN	Pn	00 11 22.7	-0.6
TOZ	**Tahuroa Road**	**1.46**	**295**	⇓PN	Pn	00 11 22.7	-0.6
MOVZ	**Moawhango**	**1.51**	**226**	PN	Pn	00 11 23.6	-0.7
WNVZ	**Wahianoa**	**1.55**	**231**	⇓PN	Pn	00 11 24.4	-0.5
PXZ	**Pawanui**	**1.68**	**188**	⇑PN	Pn	00 11 24.8	-1.7
PXZ				SN	Sn	00 11 45.8	-1.0
PXZ				AML	AML	00 11 47.5	
PNHZ	**Pukenui**	**1.72**	**206**	PN	Pn	00 11 26.3	-0.7
PNHZ				SN	Sn	00 11 47.2	-0.6
PRHZ	**Porangahau**	**1.94**	**192**	PN	Pn	00 11 28.3	-1.8
WAZ	**Wanganui**	**2.19**	**230**	PN	Pn	00 11 33.9	+0.4

*NIED **08** 00:23:00, 36°.40N×140°.90E, h35km, Mw3.5 Best double couple: M₀1.78000×10¹⁴ NP1:φ=267.00000°, δ33.00000°, λ173.00000°. NP2:φ=3.00000°, δ86.00000°, λ57.00000°.*
*IDC **08** 00:23:03.1±2.0, 36°.33N×141°.05E, h0km, mb3.4/3, mb1 3.4/5, mb1mx3.2/47, mbtmp3.4/5, ML3.2/2, MS3.0/1, Ms1 3.0/1, ms1mx2.3/33, Error ellipse: s-maj=44.1km s-min=23.9km az=61.0*
*ISCJB **08** 00:23:06.1±1.0, 36°.33N±0°.05×140°.94E±0°.07, h29km±6km, mb3.4/3, MS3.0/1, Error ellipse: s-maj=9.8km s-min=7.2km az=29.5*
*JMA **08** 00:23:07.2±0.1, 36°.36N×140°.88E, h37km±1km, M3.5*
JMA Felt I J1.
ISC 08 00:23:05.6±1.6, 36°.33N±0°.05×140°.83E±0°.06, h13km±10km, n19, σ0°82/20, mb3.5/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.35**	**323**	P	**Pn**	**00 23 15.5**	**-0.8**
JYT	**Yasato**	**0.53**	**259**	P	**Pn**	**00 23 18.7**	**0.0**
JYT				S	**Sn**	**00 23 26.3**	**-1.1**
ONAJ	**Iwakimizuishiy**	**0.77**	**358**	P	**Pg**	**00 23 20.9**	**+0.4**
ONAJ				S	**Sg**	**00 23 30.2**	**-0.4**
JSB	**Shiboa**	**0.97**	**311**	P	**Pn**	**00 23 25.4**	**+0.5**
JSB				S	**Sn**	**00 23 38.4**	**-0.1**
JFK	**Kawauchi**	**1.03**	**2**	P	**Pb**	**00 23 28.4**	**-0.9**
JAG	**Ashikaga**	**1.12**	**275**	P	**Pg**	**00 23 27.3**	**+0.2**
JAG				S	**Sb**	**00 23 41.1**	**0.0**
JFT	**Otama**	**1.25**	**342**	P	**Pb**	**00 23 29.4**	**+0.4**
JFT				S	**Sb**	**00 23 44.9**	**-0.1**
MJAR	**Matsushiro Arr**	**2.12**	**276**	Pn	**Pn**	**00 23 42.5**	**+1.8**
	3.7nm,0.3s,baz=98,slow=9.0,SNR=29						
MJAR				Sn	**Sb**	**00 24 09.7**	**-0.5**
	9.8nm,0.3s,baz=108,slow=9.2,SNR=10						
MAT	**Matsushiro**	**2.13**	**276**	P	**Pb**	**00 23 42.9**	**-1.0**
MAT				S	**Sn**	**00 24 07.1**	**+0.1**
JHJ	**Hachijo jima 2**	**3.32**	**195**	Pn	**Pn**	**00 23 57.5**	**+0.4**
	10nm,0.3s,baz=40,slow=15,SNR=3.1						
H11N2	**WAKE ISLAND Hy**	**28.20**	**119**	T	T	00 58 26.0	
	baz=312,slow=75,SNR=12						
H11N1	**WAKE ISLAND Hy**	**28.21**	**119**	T	T	00 58 45.9	
	baz=312,slow=75,SNR=16						
H11N3	**WAKE ISLAND Hy**	**28.22**	**119**	T	T	00 58 26.9	
	baz=312,slow=75,SNR=11						
H11S1	**WAKE ISLAND Hy**	**28.89**	**121**	T	T	00 59 11.2	
	baz=314,slow=76,SNR=41						
H11S3	**WAKE ISLAND Hy**	**28.89**	**121**	T	T	00 59 13.3	
	baz=314,slow=76,SNR=30						
H11S2	**WAKE ISLAND Hy**	**28.90**	**121**	T	T	00 59 14.3	
	baz=314,slow=76,SNR=30						
ZALV	**Zalesovo Beam**	**42.05**	**313**	P	**P**	**00 30 56.6**	**+0.1**
	0.4nm,0.4s,baz=104,slow=6.1,SNR=2.6						
ZALV				LR	LR	00 51 01.5	
	comp=Z,17nm,18.7s,baz=257,slow=40						
MKAR	**Makanchi Array**	**44.10**	**303**	P	**P**	**00 31 14.7**	**+1.4**
	0.2nm,0.5s,baz=74,slow=7.8,SNR=2.9						
WRA	**Warramunga Arr**	**56.30**	**187**	P	**P**	**00 32 45.4**	**-0.6**
	0.5nm,0.8s,baz=4.6,slow=7.2,SNR=3.8						

IDC 08 00:26:41.0±5.2, 37°.91N×144°.85E, h0km, mb3.1/3, mb1 3.2/4, mb1mx3.1/42, mbtmp3.1/4, ML3.2/1, Error ellipse: s-maj=137.5km s-min=35.0km az=158.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**5.47**	**258**	Pn	Pn	00 28 02.6	-1.2
	0.8nm,0.3s,baz=88,slow=14,SNR=6.6						
MKAR	**Makanchi Array**	**45.97**	**302**	P	P	00 35 06.3	+0.5
	0.1nm,0.7s,baz=63,slow=6.6,SNR=2.9						
YKA	**Yellowknife Ar**	**61.66**	**31**	P	P	00 37 00.1	-0.1
	0.0nm,0.5s,baz=305,slow=8.5,SNR=3.7						
FINES	**FINESS Array B**	**69.29**	**333**	P	P	00 37 49.2	-0.4
	0.4nm,0.8s,baz=72,slow=6.2,SNR=3.4						

*IDC **08** 00:29:20.2±1.2, 16°.90S×174°.10W, h0km, mb4.2/9, mb1 4.6/9, mb1mx4.2/33, mbtmp4.2/9, MS3.4/1, Ms1 3.4/1, ms1mx2.7/29, Error ellipse: s-maj=61.6km s-min=19.2km az=148.0*
*ISCJB **08** 00:29:23.9±0.3, 16°.88S±0°.07×174°.06W±0°.08, h35km, mb4.8/40, MS3.9/2, Error ellipse: s-maj=13.5km s-min=5.9km az=43.6*
*NEIC **08** 00:29:25.7±0.2, 16°.85S×174°.07W, h35km, mb4.8/24, Error ellipse: s-maj=10.6km s-min=4.9km az=132.0*
ISC 08 00:29:25.7±0.5, 16°.80S±0°.09×174°.08W±0°.09, h35km, n77, σ1°24/75, mb4.8/40, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**3.64**	**38**	Pn	Pn	00 30 14.0	-5.6
	5.8nm,0.3s,baz=80,slow=7.7,SNR=6.6						
AFI				Sn	**Sn**	**00 31 01.2**	**-0.2**
	4.7nm,0.3s,baz=173,slow=7.6,SNR=2.8						
AFI	**Afiamalu**	**3.64**	**38**	*e*Pn	**Pn**	**00 30 18.9**	**-0.7**
AFI				Sn	**Sn**	**00 31 01.2**	**-0.2**
RAO	**Raoul Island**	**12.88**	**195**	*e*Pn	**Pn**	**00 32 26.9**	**+0.5**
XMAS	**Kiritimati**	**24.91**	**43**	*e*P	**P**	**00 34 46.4**	**+0.8**
	82nm,0.9s						
SNZO	**South Karori**	**26.27**	**199**	*e*P	**P**	**00 34 56.7**	**-0.9**
	191nm,1.4s						
HNR	**Honiara**	**26.31**	**283**	LR	LR	00 43 11.7	
	comp=Z,86nm,19.0s,baz=105,slow=32						
HNR	**Honiara**	**26.31**	**283**	*e*P	**P**	**00 34 58.9**	**+0.5**
	105nm,0.9s						
PYZ	**Puysegur Point**	**33.37**	**205**	*e*P	**P**	**00 36 01.0**	**+0.3**
	123nm,1.2s						
TAOE	**Nuku Hiva Isla**	**33.97**	**81**	*e*P	**P**	**00 36 05.8**	**-0.5**
	293nm,1.6s						
ARMA	**Armidale**	**34.07**	**240**	*e*P	**P**	**00 36 07.0**	**0.0**
	44nm,1.6s						
KKH	**Kailua Kona**	**40.35**	**27**	*e*P	**P**	**00 37 00.7**	**+0.5**
POHA	**Pohakuloa**	**40.65**	**27**	*e*P	**P**	**00 37 03.0**	**+0.1**
	376nm,1.8s						
H11N3	**WAKE ISLAND Hy**	**40.82**	**332**	T	T	01 20 42.7	
	baz=151,slow=76,SNR=294						
H11N1	**WAKE ISLAND Hy**	**40.82**	**332**	T	T	01 20 40.5	
	baz=151,slow=76,SNR=194						
H11N2	**WAKE ISLAND Hy**	**40.84**	**332**	T	T	01 20 44.1	
	baz=151,slow=76,SNR=235						
KEKH	**Kekaha**	**41.04**	**21**	*e*P	**P**	**00 37 07.2**	**+1.4**
	424nm,1.6s						
KIP	**Kipapa**	**41.13**	**23**	*e*P	**P**	**00 37 07.1**	**+0.5**
	134nm,1.1s						
TAU	**Tasmania Unive**	**41.85**	**223**	*e*P	**P**	**00 37 13.2**	**+0.8**
	96nm,1.6s						
STKA	**Stephens Creek**	**42.78**	**241**	P	**P**	**00 37 19.3**	**-0.8**
	10nm,1.0s,baz=73,slow=6.9,SNR=8.9						
STKA	**Stephens Creek**	**42.78**	**241**	*e*P	**P**	**00 37 19.6**	**-0.5**
	3.7nm,1.2s						
WRA	**Warramunga Arr**	**48.90**	**258**	P	**P**	**00 38 07.5**	**-1.1**
	2.4nm,0.9s,baz=97,slow=7.1,SNR=16						
AS01	**Alice Springs**	**49.02**	**253**	*e*P	**P**	**00 38 08.1**	**-1.4**
AS31	**Alice Springs**	**49.06**	**253**	*e*P	**P**	**00 38 08.7**	**-1.2**
	3.7nm,0.8s						
ASAR	**Alice Springs**	**49.06**	**253**	P	**P**	**00 38 08.8**	**-1.1**
	13nm,0.7s,baz=86,slow=8.5,SNR=131						
GUMO	**Guam**	**50.56**	**304**	*e*P	**P**	**00 38 22.1**	**+1.0**
	5.5nm,0.4s						
NV01	**Mina Array Sit**	**75.81**	**42**	*e*P	**P**	**00 41 08.9**	**+0.4**
NVAR	**Mina Array Bea**	**75.81**	**42**	P	**P**	**00 41 09.1**	**+0.6**
	1.1nm,0.8s,baz=201,slow=7.8,SNR=6.8						
NV11	**Mina Array Sit**	**75.90**	**42**	*e*P	**P**	**00 41 09.7**	**+0.7**
	7.8nm,1.4s						
KSRS	**Korea Array**	**76.70**	**316**	P	**P**	**00 41 14.3**	**+1.0**
	0.5nm,0.4s,baz=131,slow=5.6,SNR=5.4						
KSAR	**Wonju Array Be**	**76.72**	**316**	P	**P**	**00 41 14.3**	**+0.9**
NJ2	**Nanjing**	**80.49**	**308**	*e*P	**P**	**00 41 34.8**	**+0.5**
NJ2				pmax	pmax		
	comp=Z,15nm,0.5s						
TT01	**Tatalina**	**80.70**	**8**	*e*P	**P**	**00 41 36.1**	**+1.3**
TTA	**Tatalina**	**80.73**	**8**	*e*P	**P**	**00 41 36.3**	**+1.2**
	comp=Z,13nm,1.4s						
HLID	**Hailey**	**81.12**	**39**	*e*P	**P**	**00 41 36.5**	**-1.3**
	comp=Z,2.7nm,0.9s						
TX31	**Lajitas Ar. Si**	**81.93**	**56**	*e*P	**P**	**00 41 40.3**	**-2.0**
TXAR	**Lajitas Array**	**81.93**	**56**	P	**P**	**00 41 43.1**	**+0.8**
	comp=Z,1.7nm,1.2s,baz=223,slow=4.8,SNR=6.1						
TRF	**Thorofare Moun**	**82.12**	**11**	*e*P	**P**	**00 41 42.8**	**+0.2**
	comp=Z,9.3nm,1.2s						
TNA	**Tin City**	**82.25**	**3**	*e*P	**P**	**00 41 42.4**	**-0.4**
	comp=Z,9.3nm,1.4s						
RND	**Reindeer**	**82.33**	**11**	*e*P	**P**	**00 41 43.5**	**0.0**
	comp=Z,4.6nm,0.8s						
MCK	**McKinley**	**82.62**	**11**	*e*P	**P**	**00 41 45.1**	**+0.2**
	comp=Z,7.9nm,0.9s						
MCMT	**McKenzie Canyo**	**82.75**	**39**	*e*P	**P**	**00 41 46.3**	**0.0**
REDW	**Red Top Meadow**	**83.22**	**41**	*e*P	**P**	**00 41 47.9**	**-0.9**
	comp=Z,8.2nm,1.4s						
WRH	**Wood River Hil**	**83.45**	**11**	*e*P	**P**	**00 41 50.0**	**+0.8**
	comp=Z,9.7nm,1.1s						
MLY	**Manley**	**83.50**	**10**	*e*P	**P**	**00 41 49.4**	**-0.1**
	comp=Z,6.5nm,1.3s						
CCB	**Clear Creek Bu**	**83.66**	**11**	*e*P	**P**	**00 41 50.4**	**+0.2**
	comp=Z,8.4nm,1.2s						
SEY	**Seymchan**	**83.70**	**345**	P	**P**	**00 41 50.5**	**0.0**
	comp=Z,0.7nm,0.3s,baz=173,slow=23,SNR=3.6						
BW06	**Boulder Array**	**83.74**	**42**	*e*P	**P**	**00 41 50.8**	**-0.7**
PD31	**Pinedale Array**	**83.74**	**42**	*e*P	**P**	**00 41 51.9**	**+0.4**
PDAR	**Pinedale Array**	**83.74**	**42**	P	**P**	**00 41 51.3**	**-0.2**
	comp=Z,0.8nm,0.6s,baz=208,slow=4.5,SNR=11						
MDM	**Murphy Dome**	**83.87**	**11**	*e*P	**P**	**00 41 51.5**	**+0.2**
	comp=Z,7.1nm,1.1s						
ILAR	**Eielson Array**	**83.94**	**11**	P	**P**	**00 41 51.6**	**-0.1**
	comp=Z,2.7nm,1.1s,baz=207,slow=5.8,SNR=11						
IL1	**Eielson Array**	**83.94**	**11**	*e*P	**P**	**00 41 51.8**	**+0.1**
COLD	**Coldfoot**	**85.62**	**9**	*e*P	**P**	**00 42 00.5**	**+0.4**
	comp=Z,4.7nm,1.2s						
GYA	**Guiyang**	**88.12**	**298**	P	**P**	**00 42 14.0**	**+0.6**
GYA				pP	sP	00 42 33.4	+4.9
GYA				PP	**PP**	**00 45 44.8**	**+4.0**
GYA	**Guiyang**	**88.12**	**298**	SKS	**SKSac**	**00 52 34.3**	**-5.5**
GYA	**Guiyang**	**88.12**	**298**	S	**S**	**00 52 52.0**	**-3.5**
GYA				pmax	pmax		
	comp=Z,10.0nm,1.0s						
HHC	**Hu-ho-hao-te**	**89.50**	**313**	*e*P	**P**	**00 42 21.2**	**+1.7**
HHC				pP	sP	00 42 38.3	+3.6
HHC				sP	pP	00 42 45.2	+15
HHC	**Hu-ho-hao-te**	**89.50**	**313**	S	**S**	**00 53 06.2**	**-1.6**
HHC				pmax	pmax		
	comp=Z,30nm,1.3s						
HHC				pmax	pmax		
	comp=Z,120nm,7.8s						
HHC				LR	LR		
	comp=N,100nm,17.5s						
HHC				LR	LR		
	comp=E,120nm,17.4s						
HHC				LR	LR		
	comp=Z,120nm,17.7s						
KMI	**Kunming**	**91.04**	**296**	P	**P**	**00 42 26.4**	**-0.8**
KMI				pmax	pmax		
	comp=Z,17nm,0.6s						
KMI				pmax	pmax		
	comp=Z,80nm,4.6s						
CD2	**Chengdu**	**91.98**	**302**	P	**P**	**00 42 30.2**	**-1.0**
CD2				pmax	pmax		
	comp=Z,3.0nm,0.5s						
LZH	**Lanzhou**	**93.53**	**307**	*e*P	**P**	**00 42 37.5**	**-0.9**
LZH				pP	sP	00 42 54.9	+1.4
LZH				sP	pP	00 43 01.4	+12
LZH				pmax	pmax		
	comp=Z,15nm,1.0s						
WMQ	**Urumqi**	**107.30**	**311**	Pdif	**Pdif**	**00 43 36.8**	**-3.1**
CLL	**Collm**	**145.12**	**352**	*i* P	**PKPbc**	**00 48 58.6**	**-0.3**
	comp=Z,4.0nm,0.9s						
KOLS	**Kolonicke sedl**	**145.29**	**341**	*e*PKP	**PKPbc**	**00 48 59.6**	**+0.1**
BRG	**Berggiesshubel**	**145.41**	**351**	*e*PKP	**PKPab**	**00 49 00.5**	**+0.5**
	comp=Z,12nm,1.5s						
UPC	**Upice**	**145.41**	**349**	*e*PKP	**PKPab**	**00 49 00.9**	**+0.8**
DPC	**Dobruska-Polom**	**145.50**	**348**	*e*PKP	**PKPab**	**00 49 01.4**	**+0.9**
CRVS	**Cervenica-Dubn**	**145.57**	**342**	*e*PKP	**PKPab**	**00 49 01.8**	**+1.1**
OKC	**Ostrava-Krasne**	**145.60**	**346**	*e*PKP	**PKPbc**	**00 49 00.5**	**+0.1**
PVCC	**Panska Ves**	**145.65**	**350**	*e*PKP	**PKPab**	**00 49 01.6**	**+0.7**
KRLC	**Kraliky**	**145.67**	**348**	*e*PKP	**PKPab**	**00 49 01.7**	**+0.6**
LANS	**Liptovska Anna**	**145.91**	**344**	*e*PKP	**PKPab**	**00 49 02.1**	**+0.1**
PRU	**Pruhonice**	**146.17**	**350**	*e*PKP	**PKPab**	**00 49 03.2**	**+0.3**
VYHS	**Vyhne**	**146.67**	**344**	*e*PKP	**PKPab**	**00 49 04.5**	**-0.4**
BRTR	**Keskin Array B**	**146.81**	**319**	PKPbc	**PKPbc**	**00 49 05.2**	**+0.5**
	comp=Z,1.9nm,0.9s,baz=29,slow=1.4,SNR=10						
KHC	**Kasperske Hory**	**147.16**	**351**	*e*PKP	**PKPab**	**00 49 06.5**	**-0.3**
GERES	**GERESS Array B**	**147.42**	**350**	PKPbc	**PKPbc**	**00 49 06.2**	**+0.2**
	comp=Z,0.9nm,0.8s,baz=3.3,slow=4.7,SNR=7.0						

*JMA **08** 00:31:25.2±0.1, 36°.39N×141°.61E, h65km±3km, M3.2*
*IDC **08** 00:31:27.4±6.0, 36°.25N×141°.65E, h51km±46km, mb3.0/3, mb1 3.3/5, mb1mx3.0/49, mbtmp3.3/5, ML3.2/2, Error ellipse: s-maj=48.5km s-min=13.4km az=64.0*
ISC 08 00:31:21.1±2.7, 36°.31N±0°.07×141°.8E±0°.1, h5km±17km, n14, σ1°04/17, mb3.5/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.97**	**232**	P	**Pn**	**00 31 42.8**	**+1.4**
CHOJ				S	**Sn**	**00 31 55.8**	**+0.2**
JHO	**Hitachi**	**1.03**	**287**	P	**Pb**	**00 31 41.6**	**+0.2**
JHO				S	**Sb**	**00 31 54.5**	**-0.8**
ONAJ	**Iwakimizuishiy**	**1.12**	**315**	P	**Pb**	**00 31 42.9**	**-0.1**
ONAJ				*e*S	**Sg**	**00 31 56.5**	**-0.7**
JCN	**Nagara**	**1.57**	**236**	P	**Pn**	**00 31 49.0**	**-0.6**
BSO3	**Boso 3**	**1.84**	**215**	P	**Pb**	**00 31 55.1**	**+0.1**
MJAR	**Matsushiro Arr**	**2.90**	**276**	P	**Pn**	**00 32 09.7**	**+1.8**
	2.3nm,0.3s,baz=108,slow=9.0,SNR=29						
MJAR				S	**Sn**	**00 32 41.9**	**-1.4**
	2.2nm,0.3s,baz=227,slow=20,SNR=6.1						
MAT	**Matsushiro**	**2.90**	**276**	P	**Pn**	**00 32 09.8**	**+1.8**
MAT				S	**Sn**	**00 32 44.0**	**+0.7**
JHJ	**Hachijo jima 2**	**3.59**	**208**	P	**Pn**	**00 32 18.3**	**+0.9**
	11nm,0.3s,baz=332,slow=23,SNR=6.2						
JHJ				S	**Sn**	**00 32 59.9**	**-0.3**
	36nm,0.3s,baz=248,slow=23,SNR=7.4						
H11N2	**WAKE ISLAND Hy**	**27.52**	**120**	T	T	01 06 05.4	
	baz=294						
H11N1	**WAKE ISLAND Hy**	**27.52**	**120**	T	T	01 07 09.9	
	baz=294						
H11N3	**WAKE ISLAND Hy**	**27.54**	**120**	T	T	01 06 37.4	
	baz=294						
MKAR	**Makanchi Array**	**44.76**	**303**	P	**P**	**00 39 35.5**	**0.0**
	0.2nm,0.7s,baz=74,slow=11,SNR=2.2						
WRA	**Warramunga Arr**	**56.39**	**188**	P	**P**	**00 41 03.1**	**-0.4**
	0.5nm,1.0s,baz=6.7,slow=7.1,SNR=3.4						
ASAR	**Alice Springs**	**60.12**	**188**	P	**P**	**00 41 28.8**	**-0.7**
	0.3nm,0.8s,baz=21,slow=7.6,SNR=3.3						

**IDC 08 00:40:25.1±2.0, 53°.61N×88°.08E, h0km, mb3.7/1, mb1 4.0/4, mb1mx3.4/47, mbtmp3.9/4, ML3.5/3, MS3.3/3, Ms1 3.3/3, ms1mx2.5/51, 3C-3D, Error ellipse: s-maj=19.7km s

0.3nm,0.5s,baz=221,slow=3.6,SNR=3.5

*ISCJB **08** 00:46:26.6±0.6,36°.92N±0°.03×140°.75E±0°.05,h17km±4km, mb3.8/9, Error ellipse: s-maj=7.2km s-min=4.4km az=19.6*
*IDC **08** 00:46:26.5±0.9,36°.85N×140°.59E,h0km,mb3.8/7, mb1 3.9/8,mb1mx3.5/51,mbtmp3.8/8,ML3.3/1, Error ellipse: s-maj=20.0km s-min=16.1km az=171.0*
*JMA **08** 00:46:27.4,36°.94N×140°.63E,h9km±1km,M3.5*
JMA Felt I J1.
*NEIC **08** 00:46:32.6±2.1,36°.87N×140°.44E,h42km±18km,mb4.2/2, Error ellipse: s-maj=21.1km s-min=14.3km az=96.0*
ISC 08 00:46:27.3±1.1,36°.94N±0°.03×140°.63E±0°.04,h5km±8km, n29,σ0°.83/32,mb4.0/9,7C,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.22**	**40**	⇑P	**Pg**	**00 46 31.7**	**+0.2**
ONAJ				S	**Sg**	**00 46 34.8**	**+0.4**
JHO	**Hitachi**	**0.33**	**188**	⇑P	**Pg**	**00 46 33.8**	**+0.2**
JHO				S	**Sg**	**00 46 38.4**	**+0.5**
JFK	**Kawauchi**	**0.47**	**25**	⇑P	**Pg**	**00 46 36.2**	**-0.2**
JSB	**Shiboa**	**0.56**	**274**	⇑P	**Pb**	**00 46 39.1**	**-0.6**
JSB				S	**Sb**	**00 46 47.2**	**-0.9**
JFT	**Otama**	**0.63**	**339**	⇑P	**Pg**	**00 46 39.5**	**+0.2**
JFT				S	**Sg**	**00 46 47.9**	**+0.5**
JYT	**Yasato**	**0.79**	**206**	⇑P	**Pg**	**00 46 42.2**	**-0.2**
JYT				S	**Sg**	**00 46 53.2**	**+0.6**
JFY	**Yanaizu**	**0.87**	**303**	P	**Pb**	**00 46 44.8**	**-0.1**
JFY				S	**Sg**	**00 46 55.4**	**+0.1**
JMM	**Marumori**	**0.94**	**8**	⇑P	**Pg**	**00 46 44.4**	**-0.9**
JMM				S	**Sg**	**00 46 56.7**	**-0.8**
MJAR	**Matsushiro Arr**	**1.98**	**259**	Pn	**Pn**	**00 47 01.8**	**+0.3**
	14nm,0.3s,baz=79,slow=17,SNR=59						
MJAR				Lg	Lg	00 47 28.5	
	26nm,0.3s,baz=86,slow=27,SNR=20						
MAJO	**Matsushiro**	**1.98**	**259**	*e*Pn	**Pn**	**00 47 02.0**	**+0.5**
MAJO				*e*Sg	**Sb**	**00 47 28.9**	**+0.1**
MAT	**Matsushiro**	**1.98**	**259**	P	**Pn**	**00 47 02.1**	**+0.6**
MAT				S	**Sb**	**00 47 28.5**	**-0.3**
JHJ	**Hachijo jima 2**	**3.87**	**191**	Pn	**Pn**	**00 47 26.0**	**-1.4**
	6.7nm,0.3s,baz=146,slow=23,SNR=4.5						
MDJ	**Mudanjiang**	**11.34**	**316**	*e*Pn	**Pn**	**00 49 10.3**	**+0.4**
ENH	**Enshi**	**26.70**	**265**	*e*P	**P**	**00 52 06.6**	**-0.8**
	3.9nm,0.7s						
H11N2	**WAKE ISLAND Hy**	**28.64**	**120**	T	T	01 22 11.8	
	baz=313,slow=75,SNR=26						
H11N1	**WAKE ISLAND Hy**	**28.65**	**120**	T	T	01 22 12.4	
	baz=313,slow=75,SNR=26						
H11N3	**WAKE ISLAND Hy**	**28.66**	**120**	T	T	01 22 13.2	
	baz=313,slow=75,SNR=26						
H11S1	**WAKE ISLAND Hy**	**29.34**	**122**	T	T	01 23 03.1	
	baz=314,slow=76,SNR=72						
H11S3	**WAKE ISLAND Hy**	**29.34**	**122**	T	T	01 23 02.3	
	baz=314,slow=76,SNR=76						
H11S2	**WAKE ISLAND Hy**	**29.36**	**122**	T	T	01 23 03.5	
	baz=314,slow=76,SNR=38						
MKAR	**Makanchi Array**	**43.64**	**302**	P	**P**	**00 54 31.6**	**-1.1**
	0.7nm,0.7s,baz=88,slow=8.6,SNR=4.5						
KURK	**Kurchatov**	**45.50**	**308**	P	**P**	**00 54 48.2**	**+0.9**
KURBB	**Kurchatov Arra**	**45.56**	**308**	P	**P**	**00 54 48.2**	**+0.3**
	0.7nm,0.2s,baz=83,slow=8.3,SNR=4.6						
COLA	**College**	**49.50**	**32**	*e*P	**P**	**00 55 18.8**	**+0.5**
	1.8nm,0.5s						
BVAR	**Borovoye Array**	**50.17**	**312**	P	**P**	**00 55 23.1**	**-0.5**
	0.4nm,0.5s,baz=73,slow=6.3,SNR=3.0						
WRA	**Warramunga Arr**	**56.88**	**187**	P	**P**	**00 56 11.5**	**-1.7**
	1.4nm,0.9s,baz=3.9,slow=7.1,SNR=9.7						
ASAR	**Alice Springs**	**60.61**	**187**	P	**P**	**00 56 38.6**	**-0.4**
	0.8nm,0.9s,baz=11,slow=7.0,SNR=5.3						
FINES	**FINESS Array B**	**68.61**	**332**	P	**P**	**00 57 30.4**	**-0.4**
	0.8nm,0.7s,baz=47,slow=8.4,SNR=4.8						
PDAR	**Pinedale Array**	**78.18**	**45**	P	**P**	**00 58 30.5**	**+2.5**
	0.1nm,0.5s,baz=330,slow=5.2,SNR=2.2						

*IDC **08** 00:52:02.5±2.8,7°.06S×155°.83E,h0km,mb3.8/4, mb1 3.9/4,mb1mx3.6/34,mbtmp3.8/4,Error ellipse: s-maj=98.7km s-min=31.5km az=117.0*
*NEIC **08** 00:52:02.5±1.1,7°.27S×156°.24E,h10km,mb4.4/5,Error ellipse: s-maj=32.0km s-min=10.5km az=114.0*
*ISCJB **08** 00:52:05.5±2.2,7°.3S±0°.2×156°.2E±0°.4,h44km,mb4.3/10, Error ellipse: s-maj=59.2km s-min=15.9km az=23.3*
ISC 08 00:52:07.6±2.2,7°.3S±0°.2×156°.2E±0°.4,h44km,n16, σ0°.44/13,mb4.2/10,Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**23.56**	**332**	*e*P	**P**	**00 57 13.6**	**-0.6**
	75nm,0.8s						
WRAB	**Tennant Creek**	**24.63**	**237**	*e*P	**P**	**00 57 24.0**	**-0.1**
	11nm,1.5s						
WRA	**Warramunga Arr**	**24.64**	**237**	P	**P**	**00 57 24.1**	**-0.2**
	0.5nm,0.4s,baz=63,slow=9.4,SNR=11						
ASAR	**Alice Springs**	**26.89**	**230**	P	**P**	**00 57 43.9**	**-0.7**
	0.3nm,0.4s,baz=56,slow=9.9,SNR=6.5						
H11S3	**WAKE ISLAND Hy**	**27.62**	**22**	T	T	01 26 15.7	
	baz=202,slow=76,SNR=38						
H11S2	**WAKE ISLAND Hy**	**27.62**	**22**	T	T	01 26 11.5	
	baz=202,slow=76,SNR=41						
H11S1	**WAKE ISLAND Hy**	**27.63**	**22**	T	T	01 26 04.9	
	baz=202,slow=76,SNR=31						
ENH	**Enshi**	**58.28**	**312**	*e*P	**P**	**01 01 58.6**	**+0.5**
COCO	**West Island**	**58.60**	**260**	*e*P	**P**	**01 02 00.8**	**+0.2**
	211nm,0.7s						
BJT	**Baijiatuan**	**59.79**	**325**	*e*P	**P**	**01 02 08.1**	**-0.2**
LSA	**Lhasa**	**72.39**	**304**	*e*P	**P**	**01 03 30.7**	**+0.7**
	2.2nm,0.6s						
TLY	**Talaya**	**73.89**	**329**	*e*P	**P**	**01 03 37.6**	**-0.2**
	2.3nm,0.6s						
BILL	**Bilibino**	**75.46**	**4**	*e*P	**P**	**01 03 46.7**	**+0.1**
	1.1nm,0.3s						
MKAR	**Makanchi Array**	**84.38**	**318**	P	**P**	**01 04 35.1**	**-0.2**
	0.9nm,0.7s,baz=103,slow=5.4,SNR=7.3						
ZALV	**Zalesovo Beam**	**85.06**	**326**	P	**P**	**01 04 38.3**	**-0.2**
	0.2nm,0.3s,baz=128,slow=5.5,SNR=2.9						
GERES	**GERESS Array B**	**127.88**	**329**	PKP	**PKPdf**	**01 11 09.1**	**+0.3**
	0.1nm,0.3s,baz=60,slow=5.8,SNR=2.6						

*CSEM **08** 00:54:30.6,39°.36N×20°.83E,h13km,ML1.3/3*
*THE **08** 00:55:53.0,36°.41N×25°.39E,h3km±1km,ML1.4/2,Error ellipse: s-maj=1.4km s-min=0.4km az=252.0*
ATH 08 00:54:30.6,39°.36N×20°.83E,h13km±6km,ML1.3/3,Error ellipse: s-maj=6.5km s-min=0.8km az=299.0, Greece-Albania border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAN	**Janina**	**0.30**	**4**	P	Pg	00 54 36.2	-0.5
JAN				S	Sb	00 54 42.3	-0.4
JAN	**Janina**	**0.30**	**4**	AML	AML	00 54 43.6	
	comp=E,145μm,0.2s						
DSL	**Palaion Diasel**	**0.31**	**137**	P	Pg	00 54 36.2	-0.7
DSL				S	Sb	00 54 42.5	-0.5
DSL	**Palaion Diasel**	**0.31**	**137**	P	Pg	00 54 36.2	-0.7
DSL				AML	AML	00 54 42.2	
	comp=N,361μm,0.3s						
DSL				S	Sb	00 54 42.5	-0.6
DSL				AML	AML	00 54 43.0	
	comp=E,280μm,0.3s						
IGT	**Igoumenitsa**	**0.42**	**294**	P	Pg	00 54 38.6	-0.3
IGT				S	Sb	00 54 45.5	-0.7
IGT	**Igoumenitsa**	**0.42**	**294**	P	Pg	00 54 38.6	-0.4
IGT				S	Sb	00 54 45.5	-0.6
IGT				AML	AML	00 54 46.6	
	comp=N,41μm,0.4s						
IGT				AML	AML	00 54 48.0	
	comp=E,94μm,0.3s						
LKD2	**Lefkada island**	**0.59**	**193**	P	Pg	00 54 42.1	0.0
LKD2				S	Sg	00 54 50.1	+0.3
LKD2	**Lefkada island**	**0.59**	**193**	P	Pg	00 54 42.1	0.0
LKD2				S	Sg	00 54 50.1	+0.2
KPRO	**Kipourio**	**0.72**	**35**	P	Pb	00 54 45.1	-0.1
KPRO				S	Sb	00 54 54.8	-0.2
KPRO	**Kipourio**	**0.72**	**35**	P	Pb	00 54 45.1	0.0
KPRO				S	Sb	00 54 54.8	-0.2
PDO	**Prodromos**	**0.81**	**160**	P	Pg	00 54 46.2	-0.1
PDO				S	Sg	00 54 56.8	-0.1
PDO	**Prodromos**	**0.81**	**160**	P	Pg	00 54 46.2	-0.1
PDO				S	Sg	00 54 56.9	0.0
PENT	**Pentalofos**	**0.87**	**16**	P	Pg	00 54 46.9	-0.5
PENT				S	Sg	00 54 58.6	-0.2
PENT	**Pentalofos**	**0.87**	**16**	P	Pg	00 54 46.9	-0.6
PENT				S	Sg	00 54 58.6	-0.2
KEK	**Kerkira**	**0.87**	**294**	P	Pg	00 54 47.2	-0.2
PVO	**Paravola**	**0.92**	**143**	P	Pg	00 54 48.3	-0.1
PVO	**Paravola**	**0.92**	**143**	P	Pg	00 54 48.3	-0.1
THL	**Klokotos Trika**	**0.94**	**77**	P	Pg	00 54 48.5	-0.3
ANX	**Ano Chora**	**1.15**	**132**	P	Pg	00 54 52.6	-0.1
VLS	**Valsamata**	**1.20**	**189**	P	Pg	00 54 53.8	+0.2
AGG	**Agios Georgios**	**1.22**	**106**	P	Pn	00 54 53.2	-0.2
AGG	**Agios Georgios**	**1.22**	**106**	P	Pn	00 54 53.2	-0.2
THR5	**Thira Island,**	**4.63**	**128**	P	Pb	00 55 54.0	+2.3
THR5	**Thira Island,**	**4.63**	**128**	P	Pb	00 55 54.0	+2.3
CMBO	**Columbo, Santo**	**4.63**	**127**	P	Pb	00 55 54.8	+3.1
CMBO	**Columbo, Santo**	**4.63**	**127**	P	Pb	00 55 54.8	+3.1
THR2	**Thira island,**	**4.66**	**127**	P	Pb	00 55 54.4	+2.1
THR2	**Thira island,**	**4.66**	**127**	P	Pb	00 55 54.4	+2.1
THR3	**Thira Island,**	**4.67**	**128**	P	Pb	00 55 53.7	+1.4
THR3	**Thira Island,**	**4.67**	**128**	P	Pb	00 55 53.7	+1.4
THR7	**Fira-Santorini**	**4.67**	**127**	P	Pb	00 55 54.2	+1.7
THR7	**Fira-Santorini**	**4.67**	**127**	P	Pb	00 55 54.2	+1.7
THR6	**Thira Island,**	**4.70**	**128**	P	Pb	00 55 54.5	+1.6
THR6	**Thira Island,**	**4.70**	**128**	P	Pb	00 55 54.5	+1.6
SANT	**Santorini**	**4.73**	**128**	P	Pb	00 55 54.6	+1.2
SANT	**Santorini**	**4.73**	**128**	P	Pb	00 55 54.6	+1.2

JMA 08 00:58:10.1±0.1,35°.78N×140°.90E,h13km±1km,M3.2, 1C-1D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.08**	**204**	⇓P	Pg	00 58 12.7	-0.2
CHOJ				S	Sg	00 58 14.6	-0.3
JCN	**Nagara**	**0.67**	**238**	⇑P	Pb	00 58 24.1	+0.4
JCN				*e*S	Sn	00 58 34.5	-1.2
JYT	**Yasato**	**0.73**	**308**	P	Pg	00 58 23.4	-0.8
JYT				*e*S	Sg	00 58 33.7	-0.1
BSO3	**Boso 3**	**1.03**	**198**	P	Pb	00 58 29.2	-0.4
MAT	**Matsushiro**	**2.31**	**290**	P	Pn	00 58 47.3	-0.6
MAT				*e*S	Sb	00 59 18.2	-1.8

IDC 08 01:09:06.8±1.5,4°.39S×122°.67E,h0km,mb3.3/2, mb1 3.6/4,mb1mx3.3/33,mbtmp3.4/4,ML3.3/2,MS2.2/1, Ms1 2.2/1,ms1mx2.1/22,Error ellipse: s-maj=35.9km s-min=24.4km az=41.0,Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAPI	**Kappang**	**2.98**	**258**	Pn	Pn	01 09 55.6	+0.3
	11nm,0.3s,baz=88,slow=7.7,SNR=32						
KAPI				Sn	Sn	01 10 32.5	+0.8
	7.0nm,0.3s,baz=82,slow=23,SNR=10						
KAPI				LR	LR	01 10 54.8	
	comp=Z,39nm,19.9s,baz=99,slow=36						
WRA	**Warramunga Arr**	**19.19**	**145**	P	P	01 13 32.3	+0.1
	0.1nm,0.3s,baz=315,slow=13,SNR=5.2						
ASAR	**Alice Springs**	**22.02**	**152**	P	P	01 14 03.0	0.0
	0.3nm,0.6s,baz=328,slow=11,SNR=6.2						
ZALV	**Zalesovo Beam**	**66.17**	**337**	P	P	01 19 56.0	-0.1
	0.4nm,0.4s,baz=145,slow=5.3,SNR=2.4						

MEX 08 01:15:03.6±0.5,16°.65N×98°.84W,h16km±5km,MD3.6, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PNIG	**Pinotepa**	**0.73**	**110**	*i* P	Pg	01 15 15.3	-2.6
PNIG				*e*S	Sg	01 15 24.9	-2.7
TLIG	**Tlapa**	**0.95**	**16**	*e*P	Pb	01 15 18.7	-3.0
TLIG				*e*S	Sb	01 15 29.9	-4.3
CAIG	**El Cayaco**	**1.42**	**286**	*e*P	Pn	01 15 25.1	-3.7
CAIG				*e*S	Sn	01 15 41.8	-5.4
MEIG	**Mezcala**	**1.47**	**330**	*e*P	Pn	01 15 26.3	-3.3
MEIG				*e*S	Sn	01 15 43.9	-4.8
ARIG	**Puente Sto Nin**	**2.17**	**319**	*i* P	Pn	01 15 36.7	-2.5
ARIG				*i* S	Sn	01 16 01.8	-3.9
YAIG	**Yautepec**	**2.21**	**354**	*e*P	Pn	01 15 36.9	-3.0
YAIG				*i* S	Sn	01 16 03.2	-3.8

IDC 08 01:20:28.2±2.1,2°.79N×125°.97E,h0km,mb3.2/3, mb1 3.4/3,mb1mx3.2/37,mbtmp3.2/3,Error ellipse: s-maj=193.4km s-min=25.6km az=65.0,Talaud Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**24.04**	**160**	P	P	01 25 45.0	-0.2
	0.2nm,0.8s,baz=339,slow=11,SNR=4.6						
ASAR	**Alice Springs**	**27.41**	**164**	P	P	01 26 16.4	+0.6
	0.1nm,0.5s,baz=354,slow=8.3,SNR=4.7						
MKAR	**Makanchi Array**	**57.90**	**326**	P	P	01 30 21.8	-0.4
	0.4nm,0.6s,baz=142,slow=7.3,SNR=5.1						

*IDC **08** 01:21:34.7±1.9,13°.37N×91°.31W,h0km,mb3.7/5, mb1 4.1/9,mb1mx3.8/45,mbtmp3.9/9,ML3.6/4,MS2.4/1, Ms1 2.4/1,ms1mx2.3/39,Error ellipse: s-maj=38.3km s-min=26.3km az=31.0*
*ISCJB **08** 01:21:38.2±1.2,13°.51N±0°.08×91°.47W±0°.08,h28km, mb3.7/5,Error ellipse: s-maj=12.4km s-min=10.6km az=20.8*
*MEX **08** 01:21:41.2±0.8,13°.43N×91°.84W,h15km,MD3.8*
ISC 08 01:21:39.0±1.3,13°.4N±0°.1×91°.54W±0°.08,h28km,n13, σ1°.97/18,mb3.7/5,Near coast of Guatemala

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THIG		**1.63**	**334**	*i* P	**Pn**	**01 22 04.7**	**-1.2**
THIG				*i* S	**Sn**	**01 22 23.3**	**-2.7**
PCIG		**2.79**	**325**	*e*P	**Pn**	**01 22 20.5**	**-1.3**
PCIG				*i* S	**Sn**	**01 22 50.4**	**-4.2**
CCIG	**Comitan**	**2.90**	**349**	*e*P	**Pn**	**01 22 24.2**	**+0.8**
CCIG				*e*S	**Sn**	**01 22 56.0**	**-1.4**
CMIG	**Matias Romero**	**4.87**	**319**	Pn	**Pn**	**01 22 50.8**	**+0.4**
	1.9nm,0.3s,baz=118,slow=9.7,SNR=13						
CMIG				Sn	**Sn**	**01 23 48.0**	**+2.1**
	2.3nm,0.3s,baz=106,slow=19,SNR=6.1						
TEIG	**Tepich**	**7.45**	**24**	Pn	**Pn**	**01 23 25.7**	**-0.2**
	4.2nm,0.3s,baz=268,slow=24,SNR=38						
TEIG				Sn	**Sn**	**01 24 50.5**	**+1.0**
TEIG				LR	LR	01 26 00.1	
	comp=Z,29nm,19.1s,baz=185,slow=36						
ROSC	**El Rosal**	**19.01**	**115**	P	**P**	**01 25 56.4**	**-2.7**
	0.7nm,0.3s,baz=190,slow=19,SNR=3.0						
H06E1	**SOCORRO T-PHASE**	**19.37**	**288**	T	T	01 45 52.0	
	SNR=24						
TXAR	**Lajitas Array**	**19.42**	**327**	P	**Pn**	**01 26 05.5**	**+1.0**
	0.1nm,0.3s,baz=151,slow=8.9,SNR=32						
TKL	**Tuckaleechee C**	**23.22**	**16**	P	**P**	**01 26 43.3**	**-0.5**
	3.2nm,0.6s,baz=177,slow=11,SNR=9.2						
ANMO	**Albuquerque**	**25.32**	**330**	P	**P**	**01 27 06.0**	**+2.3**
	1.2nm,0.6s,baz=151,slow=10,SNR=5.9						
PDAR	**Pinedale Array**	**33.13**	**335**	P	**P**	**01 28 13.6**	**+0.6**
	0.2nm,0.4s,baz=155,slow=11,SNR=2.8						
NVAR	**Mina Array Bea**	**34.40**	**321**	P	**P**	**01 28 26.7**	**+2.6**
	1.1nm,0.7s,baz=141,slow=7.1,SNR=6.0						
YKA	**Yellowknife Ar**	**51.69**	**347**	P	**P**	**01 30 42.4**	**-0.8**
	0.3nm,0.3s,baz=152,slow=7.6,SNR=16						
YKA				PcP	**PcP**	**01 31 56.9**	**+0.5**
	0.3nm,0.8s,baz=152,slow=3.4,SNR=4.7						

*ISCJB **08** 01:29:45.7±0.4,67°.17N±0°.02×20°.71E±0°.07,h0km,Error ellipse: s-maj=4.2km s-min=2.8km az=15.4*
*NAO **08** 01:29:46.9±0.8,67°.16N×20°.81E,ML2.6*
*UPP **08** 01:29:46.6±0.1,67°.18N×20°.65E,h0km,ML2.3,Explosion*
*CSEM **08** 01:29:46.8±0.2,67°.19N×20°.72E,h2km,ML2.3,Error ellipse: s-maj=4.4km s-min=3.2km az=102.0,Mining explosion.*
*IDC **08** 01:29:47.4±0.9,67°.16N×20°.82E,h0km,mb1 3.0/4, mb1mx2.8/43,mbtmp2.9/4,ML2.7/4,Error ellipse: s-maj=13.9km s-min=7.3km az=117.0*
*HEL **08** 01:29:47.3±0.0,67°.18N×20°.65E,h1km,ML2.3, ML2.3(UPP),Suspected explosion*
*BER **08** 01:29:48.4±3.0,67°.19N×20°.47E,h0km,ML2.3,Suspected explosion*
ISC 08 01:29:46.2±0.7,67°.16N±0°.02×20°.64E±0°.02,h0km,n82, σ1°.05/121,Sweden

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MASU	**Masugnsbyn**	**0.61**	**60**	P	**Pg**	**01 29 58.0**	**+0.2**
MASU				S	**Sg**	**01 30 05.8**	**+0.2**
MASU	**Masugnsbyn**	**0.61**	**60**	*i* P	**Pg**	**01 29 58.0**	**+0.2**
MASU				*i* S	**Sg**	**01 30 05.8**	**+0.2**
MASU	**Masugnsbyn**	**0.61**	**60**	P	**Pg**	**01 29 58.0**	**+0.2**
MASU				S	**Sg**	**01 30 05.8**	**+0.2**
KUA	**Kurravaara**	**0.81**	**352**	P	**Pg**	**01 30 01.2**	**-0.4**
KUA	**Kurravaara**	**0.81**	**352**	*i* P	**Pg**	**01 30 01.2**	**-0.4**
KUA	**Kurravaara**	**0.81**	**352**	P	**Pg**	**01 30 01.2**	**-0.4**
SALU	**Saltoluokta**	**0.85**	**286**	P	**Pg**	**01 30 02.9**	**+0.4**
SALU	**Saltoluokta**	**0.85**	**286**	*i* P	**Pg**	**01 30 02.9**	**+0.4**
SALU	**Saltoluokta**	**0.85**	**286**	P	**Pg**	**01 30 02.9**	**+0.4**
ERTU	**Ertsjaerv**	**0.87**	**134**	P	**Pg**	**01 30 02.8**	**0.0**
ERTU	**Ertsjaerv**	**0.87**	**134**	*i* P	**Pg**	**01 30 02.8**	**0.0**
ERTU	**Ertsjaerv**	**0.87**	**134**	P	**Pg**	**01 30 02.8**	**0.0**
NIKU	**Nikkaluokta**	**0.94**	**320**	P	**Pg**	**01 30 04.0**	**-0.1**
NIKU	**Nikkaluokta**	**0.94**	**320**	*e*P	**Pg**	**01 30 04.0**	**-0.1**
NIKU	**Nikkaluokta**	**0.94**	**320**	P	**Pg**	**01 30 04.0**	**-0.1**
PAJU	**Pajala**	**0.98**	**97**	P	**Pg**	**01 30 04.6**	**-0.3**
PAJU	**Pajala**	**0.98**	**97**	*e*P	**Pg**	**01 30 04.6**	**-0.3**
PAJU	**Pajala**	**0.98**	**97**	P	**Pg**	**01 30 04.6**	**-0.3**
HARU	**Harads**	**1.01**	**172**	P	**Pg**	**01 30 05.6**	**+0.1**
HARU	**Harads**	**1.01**	**172**	*e*P	**Pg**	**01 30 05.6**	**+0.1**
HARU	**Harads**	**1.01**	**172**	P	**Pg**	**01 30 05.6**	**+0.1**
LANU	**Lannavaara**	**1.03**	**30**	P	**Pg**	**01 30 05.3**	**-0.7**
LANU	**Lannavaara**	**1.03**	**30**	*e*P	**Pg**	**01 30 05.2**	**-0.7**
LANU				*e*S	**Sg**	**01 30 18.6**	**-0.7**
LANU	**Lannavaara**	**1.03**	**30**	P	**Pg**	**01 30 05.3**	**-0.7**
LANU				S	**Sg**	**01 30 18.5**	**-0.7**
HEF	**Hetta**	**1.70**	**41**	*e*P	**Pn**	**01 30 16.9**	**-0.3**
HEF				*e*S	**Sn**	**01 30 38.7**	**-0.8**
HEF				MSG		01 30 42.4	
	comp=Z,19nm,0.2s						
HEF	**Hetta**	**1.70**	**41**	P	**Pn**	**01 30 16.8**	**-0.3**
HEF				S	**Sn**	**01 30 38.7**	**-0.8**
TOF	**Tornio**	**1.83**	**125**	*e*P	**Pn**	**01 30 19.8**	**+1.0**
TOF				*e*S	**Sn**	**01 30 43.3**	**+0.7**
TOF	**Tornio**	**1.83**	**125**	P	**Pn**	**01 30 19.8**	**+1.0**
TOF				S	**Sn**	**01 30 43.3**	**+0.7**
KIF	**Kilpisjarvi**	**1.85**	**2**	Pn	**Pb**	**01 30 20.2**	**-0.7**
KIF				Lg	Lg	01 30 45.5	
KIF	**Kilpisjarvi**	**1.85**	**2**	Pn	**Pb**	**01 30 20.2**	**-0.7**
KIF				Lg	Lg	01 30 45.5	
KIF	**Kilpisjarvi**	**1.85**	**2**	*e*P	**Pb**	**01 30 20.3**	**-0.6**
KIF				*e*S	**Sg**	**01 30 44.8**	**-0.8**
KIF				MSG		01 30 47.7	
	comp=Z,31nm,0.1s						
KIF	**Kilpisjarvi**	**1.85**	**2**	Pn	**Pb**	**01 30 20.2**	**-0.7**
	SNR=50						
KIF				S	**Sg**	**01 30 44.8**	**-0.8**
KIF				Lg	Lg	01 30 45.5	
LILU	**Lilltraesk**	**1.91**	**190**	P	**Pn**	**01 30 21.0**	**+1.1**
LILU	**Lilltraesk**	**1.91**	**190**	*e*P	**Pn**	**01 30 21.0**	**+1.1**
LILU	**Lilltraesk**	**1.91**	**190**	P	**Pn**	**01 30 21.0**	**+1.1**
KTK1	**Kautokeino**	**2.10**	**27**	*e*P	**Pb**	**01 30 24.1**	**-1.0**
KTK1				*e*Sg	**Sb**	**01 30 51.9**	**+0.2**
KTK1				IAML		01 30 53.8	
	comp=Z,48nm,0.4s						
KTK1	**Kautokeino**	**2.10**	**27**	*e*P	**Pb**	**01 30 24.1**	**-1.0**
	SNR=50						
KTK1				*e*Sg	**Sb**	**01 30 51.8**	**+0.2**
	SNR=90						
RNF	**Rovaniemi**	**2.19**	**102**	*e*PB	**Pn**	**01 30 25.4**	**+1.6**
RNF				*e*SB	**Sb**	**01 30 53.9**	**-0.5**
RNF	**Rovaniemi**	**2.19**	**102**	Pb	**Pn**	**01 30 25.4**	**+1.6**
RNF				Sb	**Sb**	**01 30 53.9**	**-0.5**
SGF	**Sodankyl**	**2.30**	**80**	*e*PG	**Pb**	**01 30 29.0**	**+0.4**
SGF				*e*SG	**Sg**	**01 30 59.3**	**-0.8**
SGF	**Sodankyl**	**2.30**	**80**	Pg	**Pb**	**01 30 28.9**	**+0.4**
SGF				Sg	**Sg**	**01 30 59.2**	**-0.8**
TRO	**Tromso**	**2.56**	**347**	*e*P	**Pn**	**01 30 30.1**	**+1.2**
TRO				*e*Sg	**Sb**	**01 31 04.2**	**-0.7**
TRO				IAML		01 31 07.8	
	comp=Z,37nm,0.4s						
TRO	**Tromso**	**2.56**	**347**	*e*P	**Pn**	**01 30 30.1**	**+1.2**
	SNR=50						
TRO				*e*Sg	**Sb**	**01 31 04.2**	**-0.7**
	SNR=90						
BURU	**Burvik**	**2.61**	**173**	P	**Pn**	**01 30 31.2**	**+1.7**
BURU	**Burvik**	**2.61**	**173**	*e*P	**Pn**	**01 30 31.3**	**+1.7**
BURU				*e*S	**Sn**	**01 31 02.4**	**+0.6**
BURU	**Burvik**	**2.61**	**173**	P	**Pn**	**01 30 31.2**	**+1.7**
BURU				S	**Sn**	**01 31 02.4**	**+0.6**
MOR8	**Moi Rana**	**2.66**	**251**	*e*Sg	**Sn**	**01 31 05.0**	**+1.8**
MOR8				IAML		01 31 07.2	
	comp=Z,25nm,0.3s						
OUL	**Oulu**	**2.99**	**132**	*e*P	**Pn**	**01 30 36.1**	**+1.4**
OUL				*e*SG	**Sb**	**01 31 18.7**	**+1.6**
OUL	**Oulu**	**2.99**	**132**	P	**Pn**	**01 30 36.1**	**+1.4**
ARA0	**ARCESS Array S**	**2.99**	**35**	Pn	**Pn**	**01 30 35.7**	**+0.9**
	baz=210,slow=16	

comp=Z,0.5nm,0.3s,baz=343,slow=22,SNR=9.6
FINES Lg Lg 01 33 00.8
comp=Z,0.8nm,0.3s,baz=335,slow=32,SNR=9.2
NB2 NORSAR Subarra 7.39 218 Pn **Pn 01 31 35.7 +0.5**
NB2 NORSAR Subarra 7.39 218 Pn **Pn 01 31 35.7 +0.5**
NB2 NORSAR Subarra 7.39 218 Pn **Pn 01 31 35.7 +0.5**
SNR=50
NOA NORSAR Array B 7.39 218 Pn **Pn 01 31 36.4 +1.1**
comp=Z,0.2nm,0.3s,baz=28,slow=11,SNR=9.6
NOA Sn **Sn 01 32 55.7 -4.0**
comp=Z,0.4nm,0.3s,baz=31,slow=7.8,SNR=6.3
NOA Lg Lg 01 33 37.5
comp=Z,0.6nm,0.3s,baz=251,slow=12,SNR=4.7
HFS Hagfors 7.70 207 Pn **Pn 01 31 39.1 -0.2**
baz=21,slow=12
HFS Sn **Sn 01 33 04.1 -3.0**
baz=30,slow=28
HFS Lg Lg 01 33 43.9
baz=28,slow=37
HFS Hagfors 7.70 207 Pn **Pn 01 31 39.5 +0.1**
comp=Z,0.4nm,0.3s,baz=21,slow=13,SNR=19
HFS Sn **Sn 01 33 05.3 -1.8**
comp=Z,0.6nm,0.3s,baz=29,slow=22,SNR=8.5
HFS Lg Lg 01 33 45.3
comp=Z,0.3nm,0.3s,baz=37,slow=32,SNR=5.5
HFS Hagfors 7.70 207 Pn **Pn 01 31 39.1 -0.2**
baz=21,slow=12
HFS Sn **Sn 01 33 04.1 -3.0**
baz=30,slow=28
HFS Lg Lg 01 33 43.9
baz=28,slow=37
HFS Hagfors 7.70 207 Pn **Pn 01 31 39.1 -0.2**
SNR=50

MEX 08 01:33:11.0±0.5, 18°.12N×98°.26W, h60km±6km, MD3.5, Central Mexico

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HMTT	**Tlapaneco**	**0.42**	**222**	*e*P	Pn	01 33 21.3	-1.1
HMTT				*e*S	Sn	01 33 28.8	-1.8
TLIG	**Tlapa**	**0.62**	**208**	*i* P	Pn	01 33 23.0	-1.6
TLIG				*i* S	Sn	01 33 32.4	-1.9
TPIG	**Tehuac#an**	**0.91**	**70**	*e*P	Pn	01 33 26.7	-1.4
TPIG				*e*S	Sn	01 33 38.6	-2.0
PPM	**Popocatepetl**	**1.01**	**340**	*e*P	Pn	01 33 28.4	-1.3
PPM				*e*S	Sn	01 33 41.6	-1.8
YAIG	**Yautepec**	**1.07**	**314**	*e*P	Pn	01 33 28.4	-1.7
YAIG				*e*S	Sn	01 33 41.8	-2.4
MEIG	**Mezcala**	**1.31**	**262**	*i* P	Pn	01 33 32.2	-1.0
MEIG				*e*S	Sn	01 33 48.1	-1.7
IIO	**Organos**	**1.53**	**343**	*e*P	Pn	01 33 37.5	+1.0
IIO				*i* S	Sn	01 33 55.4	-0.2
PNIG	**Pinotepa**	**1.72**	**176**	*e*P	Pn	01 33 38.0	-0.7
PNIG				*i* S	Sn	01 33 57.3	-2.3
ARIG	**Puente Sto Nin**	**1.99**	**275**	*e*P	Pn	01 33 40.2	-2.2
ARIG				*e*S	Sn	01 34 03.5	-2.7

JMA 08 01:33:42.1±0.2, 38°.19N×143°.86E, h9km, M3.7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.99**	**278**	P	Pn	01 34 17.0	+1.1
JIO				S	Sn	01 34 41.8	+0.8
JMM	**Marumori**	**2.44**	**263**	P	Pn	01 34 22.6	+0.5
JMM				S	Sn	01 34 52.3	+0.2
JOU	**Okura**	**2.52**	**275**	S	Sn	01 34 56.1	+2.0
JRG	**Rokugo**	**2.79**	**297**	P	Pn	01 34 28.4	+1.4
JRG				S	Sn	01 35 03.1	+2.3
JYK	**Kaneyama**	**2.84**	**286**	P	Pn	01 34 29.1	+1.5
JFT	**Otama**	**2.87**	**258**	P	Pn	01 34 29.3	+1.3
JFT				S	Sn	01 35 04.2	+1.5

*IDC **08** 01:37:07.2±1.3, 16°.65S×173°.03W, h0km, mb3.8/8, mb1 4.1/9, mb1mx3.8/43, mbtmp3.8/9, ML3.4/1, MS3.2/2, Ms1 3.2/2, ms1mx2.8/27, Error ellipse: s-maj=63.9km s-min=20.0km az=142.0*
*NEIC **08** 01:37:09.0±1.0, 16°.50S×173°.12W, h10km, mb4.0/2, Error ellipse: s-maj=49.7km s-min=14.6km az=142.0*
*ISCJB **08** 01:37:10.3±0.8, 16°.5S±0°.2×173°.2W±0°.2, h32km, mb3.8/10, MS3.5/1, Error ellipse: s-maj=39.3km s-min=10.6km az=38.6*
ISC 08 01:37:12.1±1.2, 16°.5S±0°.2×173°.1W±0°.3, h32km, n16, σ1§27/16, mb3.8/10, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**2.91**	**26**	P	Pn	**01 37 53.9**	**-2.4**
4.6nm,0.3s,baz=358,slow=6.1,SNR=5.1							
AFI				Sn	**Sn**	**01 38 31.5**	**+1.3**
27nm,0.3s,baz=139,slow=16,SNR=7.2							
AFI				LR	LR	01 39 08.5	
comp=Z,182nm,18.9s,baz=234,slow=41							
HNR	**Honiara**	**27.16**	**282**	LR	LR	01 52 11.5	
comp=Z,115nm,19.6s,baz=112,slow=33							
WRA	**Warramunga Arr**	**49.86**	**258**	P	**P**	**01 46 01.6**	**-1.2**
0.6nm,0.7s,baz=96,slow=7.4,SNR=5.1							
ASAR	**Alice Springs**	**50.03**	**253**	P	**P**	**01 46 03.5**	**-0.6**
3.4nm,0.9s,baz=87,slow=8.7,SNR=22							
NVAR	**Mina Array Bea**	**74.98**	**42**	P	**P**	**01 48 50.5**	**-0.2**
1.1nm,0.9s,baz=230,slow=8.2,SNR=4.4							
HLID	**Hailey**	**80.33**	**39**	*e*P	**P**	**01 49 20.4**	**+0.1**
1.3nm,0.9s							
TXAR	**Lajitas Array**	**81.01**	**56**	P	**P**	**01 49 23.9**	**-0.3**
0.9nm,1.0s,baz=224,slow=6.5,SNR=8.1							
PDAR	**Pinedale Array**	**82.92**	**42**	P	**P**	**01 49 33.8**	**-0.4**
0.7nm,0.8s,baz=211,slow=2.6,SNR=6.3							
BOZ	**Bozeman (W)**	**83.13**	**38**	*e*P	**P**	**01 49 34.8**	**-0.2**
1.0nm,0.8s							
ILAR	**Eielson Array**	**83.50**	**11**	P	**P**	**01 49 37.9**	**+1.6**
0.4nm,0.7s,baz=230,slow=7.8,SNR=4.5							
INK	**Inuvik**	**89.30**	**14**	P	**P**	**01 50 05.0**	**+0.4**
0.6nm,0.8s,baz=226,slow=8.1,SNR=3.4							
YKA	**Yellowknife Ar**	**91.02**	**23**	P	**P**	**01 50 13.4**	**+0.6**
0.2nm,0.8s,baz=230,slow=4.6,SNR=3.8							
DPC	**Dobruska-Polom**	**145.42**	**349**	*e*PKP	**PKPab**	**01 56 49.7**	**+2.7**
KHC	**Kasperske Hory**	**147.03**	**352**	*e*PKP	**PKPab**	**01 56 54.1**	**+0.9**
BRTR	**Keskin Array B**	**147.20**	**320**	PKPbc	**PKPab**	**01 56 54.6**	**+0.3**
1.6nm,0.9s,baz=145,slow=2.4,SNR=10.0							
GERES	**GERESS Array B**	**147.30**	**352**	PKPbc	**PKPab**	**01 56 54.1**	**-0.2**
0.2nm,0.3s,baz=46,slow=2.8,SNR=2.7							

JMA 08 01:41:35.6±0.4, 37°.92N×142°.63E, h18km±4km, M3.7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.14**	**298**	P	Pn	01 41 56.1	-0.6
OFUJ	**Ofunato**	**1.38**	**327**	P	Pn	01 41 59.3	-0.7
JMM	**Marumori**	**1.45**	**268**	P	Pn	01 42 01.1	+0.1
JFK	**Kawauchi**	**1.50**	**249**	P	Pn	01 42 01.9	+0.3
JMK	**Ichinoseki**	**1.51**	**313**	P	Pn	01 42 02.2	+0.4
JOU	**Okura**	**1.61**	**287**	P	Pb	01 42 04.2	-0.6
MIYJ	**Miyakonagasawa**	**1.77**	**339**	P	Pn	01 42 05.8	+0.5
JOM	**Ohasama**	**1.87**	**326**	P	Pn	01 42 07.7	+1.0
JYK	**Kaneyama**	**2.04**	**300**	P	Pn	01 42 09.9	+0.8

*ISCJB **08** 01:43:42.7±0.4, 24°.52N±0°.02×122°.11E±0°.02, h6km±3km, Error ellipse: s-maj=3.2km s-min=2.2km az=160.3*
*TAP **08** 01:43:43.4, 24°.53N×122°.00E, h9km, ML3.7, D*
*JMA **08** 01:43:43.3±0.1, 24°.49N×122°.04E, h25km, M3.4*
ISC 08 01:43:42.6±1.0, 24°.53N±0°.02×122°.09E±0°.02, h11km±8km, n55, σ0§71/93, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWC	**Suao**	**0.23**	**291**	*i* P	**Pg**	**01 43 47.6**	**0.0**
baz=302							
TWC				*i* S	**Sg**	**01 43 50.2**	**-0.6**
baz=302							
ENA	**Nanau**	**0.33**	**253**	*i* P	**Pg**	**01 43 49.6**	**+0.3**
baz=245							
ENA				*i* S	**Sg**	**01 43 53.2**	**-0.5**
baz=245							
EGS		**0.35**	**336**	P	**Pb**	**01 43 50.5**	**-0.4**
baz=351							
EGS				*e*S	**Sb**	**01 43 55.9**	**-0.5**
baz=351							
EHP	**Heping Village**	**0.38**	**236**	S	**Sg**	**01 43 55.7**	**+0.4**
baz=225							
ILA	**Ilan**	**0.39**	**308**	P	**Pb**	**01 43 51.2**	**-0.4**
baz=316							
ILA				S	**Sg**	**01 43 56.4**	**+0.7**
baz=316							
TWE	**Neicheng**	**0.43**	**297**	P	**Pg**	**01 43 51.4**	**+0.2**
baz=303							
TWE				*e*S	**Sg**	**01 43 56.6**	**-0.2**
baz=303							
ENTT	**Nioudou**	**0.49**	**284**	P	**Pg**	**01 43 52.3**	**+0.1**
baz=285							
ENTT				*e*S	**Sg**	**01 43 59.1**	**+0.3**
baz=285							
TWB1	**Santiao Chiao**	**0.49**	**349**	P	**Pb**	**01 43 53.2**	**-0.1**
baz=359							
TWB1				S	**Sb**	**01 44 00.5**	**0.0**
baz=359							
NWF	**Wu-fen Shan**	**0.61**	**333**	P	**Pb**	**01 43 55.9**	**+0.5**
baz=339							
NWF				S	**Sb**	**01 44 04.0**	**0.0**
baz=339							
TWD	**Chiawan**	**0.63**	**226**	P	**Pg**	**01 43 55.2**	**+0.2**
baz=218							
TWD				*e*S	**Sg**	**01 44 03.2**	**0.0**
baz=218							
NNS	**Nan Shan**	**0.66**	**263**	P	**Pg**	**01 43 55.3**	**-0.2**
baz=260							
NNS				S	**Sg**	**01 44 04.6**	**+0.5**
baz=260							
NSK	**Sanguang**	**0.68**	**283**	P	**Pg**	**01 43 56.1**	**+0.3**
baz=284							
NSK				S	**Sg**	**01 44 04.4**	**-0.5**
baz=284							
HWA	**Hwalien**	**0.70**	**219**	*e*P	**Pb**	**01 43 57.0**	**+0.1**
baz=212							
HWA				*e*S	**Sb**	**01 44 07.1**	**+0.6**
baz=212							
TAP1	**Taipei**	**0.73**	**315**	*e*P	**Pn**	**01 43 59.0**	**+0.2**
baz=319							
TAP	**Taipei**	**0.74**	**314**	*e*P	**Pb**	**01 43 58.1**	**+0.6**
baz=319							
TAP				*e*S	**Sb**	**01 44 07.4**	**-0.2**
baz=319							
JYNG	**Yonagunijimaku**	**0.78**	**95**	P	**Pb**	**01 43 58.5**	**+0.3**
JYNG				S	**Sb**	**01 44 09.7**	**+0.8**
TWS1	**Kuangyinshan**	**0.84**	**313**	*e*P	**Pn**	**01 43 59.9**	**-0.4**
baz=317							
WHF	**Hehuan Shan**	**0.84**	**243**	P	**Pg**	**01 43 58.7**	**-0.3**
baz=239							
WHF				*e*S	**Sg**	**01 44 09.9**	**-0.1**
baz=239							
YOJ	**Yonaguni jima**	**0.84**	**94**	P	**Pb**	**01 43 59.5**	**+0.2**
YOJ				S	**Sb**	**01 44 11.0**	**+0.4**
TWY	**Chenhua**	**0.87**	**329**	P	**Pn**	**01 44 00.6**	**-0.2**
baz=334							
TWY				*e*S	**Sb**	**01 44 11.9**	**+0.5**
baz=334							
TWT	**Tachien**	**0.88**	**252**	P	**Pb**	**01 44 00.0**	**+0.1**
baz=249							
TWT				*e*S	**Sg**	**01 44 11.4**	**+0.3**
baz=249							
ESL	**Shilin**	**0.93**	**220**	*e*P	**Pn**	**01 44 01.4**	**-0.2**
baz=215							
ESL				*e*S	**Sg**	**01 44 12.5**	**-0.1**
baz=215							
NSTT	**Nanjuang**	**1.00**	**276**	*e*P	**Pn**	**01 44 02.7**	**+0.1**
baz=276							
NSTT				*e*S	**Sg**	**01 44 15.4**	**+0.6**
baz=276							
HSN	**Hsinchu**	**1.05**	**285**	*e*P	**Pn**	**01 44 03.4**	**+0.1**
baz=288							
PCYT	**Pengchaiyu**	**1.10**	**359**	*e*P	**Pn**	**01 44 03.9**	**-0.1**
baz=3.0							
WDT	**Danda**	**1.16**	**229**	*e*P	**Pg**	**01 44 05.6**	**+0.6**
baz=225							
WDT				*e*S	**Sb**	**01 44 20.1**	**0.0**
baz=225							
TWQ1	**Liyutan**	**1.21**	**262**	*e*P	**Pg**	**01 44 07.0**	**+1.0**
baz=260							
TWQ1				*e*S	**Sg**	**01 44 23.1**	**+1.4**
baz=260							
NSY	**Sanyi**	**1.22**	**265**	*e*P	**Pg**	**01 44 07.2**	**+1.2**
baz=264							
EHY	**Hungye**	**1.23**	**215**	*e*P	**Pg**	**01 44 06.8**	**+0.4**
baz=210							
EHY				*e*S	**Sg**	**01 44 23.7**	**+1.3**
baz=210							
SMLT	**Sun Moon Lake**	**1.26**	**240**	*e*P	**Pg**	**01 44 07.4**	**+0.5**
baz=237							
SMLT				*e*S	**Sn**	**01 44 23.0**	**-0.3**
baz=237							
TYC	**Yuchr**	**1.28**	**241**	*e*P	**Pb**	**01 44 07.2**	**+0.4**
baz=238							
TYC				*e*S	**Sb**	**01 44 22.6**	**-0.7**
baz=238							
TCU	**Taichung**	**1.34**	**254**	*e*P	**Pg**	**01 44 09.1**	**+0.7**
baz=252							
TWF1	**Yuli**	**1.38**	**212**	*e*P	**Pn**	**01 44 07.6**	**-0.2**
baz=208							
TWF1				*e*S	**Sg**	**01 44 27.2**	**+0.3**
baz=208							
YUS	**Yu-Shan**	**1.47**	**225**	*e*P	**Pg**	**01 44 11.0**	**+0.2**
baz=222							
IRIF	**Iriomote-Funau**	**1.51**	**97**	P	**Pn**	**01 44 08.7**	**-0.8**
IRIF				*e*S	**Sn**	**01 44 29.2**	**0.0**
ALS	**Alishan**	**1.55**	**230**	*e*P	**Pg**	**01 44 12.7**	**+0.3**
baz=226							
HATJ	**Hateruma jima**	**1.63**	**106**	P	**Pn**	**01 44 11.5**	**+0.2**
HATJ				*e*S	**Sn**	**01 44 32.3**	**0.0**
ELDTW	**Lidau**	**1.65**	**217**	*e*P	**Pb**	**01 44 12.8**	**-0.4**
baz=213							
ELDTW				*e*S	**Sb**	**01 44 34.4**	**+0.3**
baz=213							
JKRS	**Kuro-shima**	**1.77**	**99**	P	**Pn**	**01 44 13.2**	**0.0**
JKRS				S	**Sn**	**01 44 35.6**	**-0.2**
CHN4	**Tsaushan**	**1.80**	**230**	*e*P	**Pb**	**01 44 16.4**	**+0.8**
baz=227							
STYT	**Tauyuan**	**1.82**	**222**	*e*P	**Pb**	**01 44 16.2**	**+0.2**
baz=219							
STYT				*e*S	**Sb**	**01 44 39.2**	**+0.3**
baz=219							
CHY	**Chiayi**	**1.83**	**236**	*e*P	**Pb**	**01 44 16.1**	**-0.1**
baz=234							
WTP	**Ta-pu**	**1.86**	**227**	*e*P	**Pb**	**01 44 17.0**	**+0.4**
baz=224							
JIJ	**Ishigaki jima**	**1.88**	**94**	P	**Pn**	**01 44 14.1**	**-0.6**
JIJ				*e*S	**Sn**	**01 44 36.3**	**-2.0**
TWG	**Pinlang**	**1.94**	**209**	*e*P	**Pn**	**01 44 16.4**	**+1.0**
baz=206							
CHN1	**Nanshi**	**1.96**	**227**	*e*P	**Pb**	**01 44 18.6**	**+0.3**
baz=225							
SGST	**Jiashian**	**1.99**	**224**	*e*P	**Pb**	**01 44 18.7**	**-0.2**
baz=221							
JISG	**Ishigakijimahi**	**2.02**	**88**	P	**Pn**	**01 44 16.1**	**-0.6**
JISG				S	**Sn**	**01 44 41.7**	**-0.2**
SSD	**Sandimen**	**2.22**	**217**	*e*P	**Pb**	**01 44 22.2**	**-0.6**
baz=215							
JTJ	**Tarama**	**2.38**	**87**	P	**Pn**	**01 44 22.0**	**+0.4**
JTJ				S	**Sn**	**01 44 49.3**	**-1.5**
EAST	**Anshuo**	**2.42**	**208**	*e*P	**Pb**	**01 44 25.5**	**-0.7**
baz=206							
EAST				*e*S	**Sn**	**01 44 52.1**	**+0.4**
baz=206							
PNG	**Penghu**	**2.51**	**248**	*e*P	**Pb**	**01 44 25.7**	**-1.9**
baz=246							
PNG				*e*S	**Sn**	**01 44 55.5**	**+1.7**
baz=246							
SCZT	**Fangliau**	**2.53**	**212**	*e*P	**Pb**	**01 44 27.1**	**-1.0**
baz=210							
SCZT				*e*S	**Sb**	**01 44 57.2**	**-2.1**
baz=210							
WDGT	**Dungji**	**2.56**	**241**	*e*P	**Pb**	**01 44 27.1**	**-1.4**
baz=239							
WDGT				*e*S	**Sb**	**01 44 57.7**	**-2.2**
baz=239							
JIRB	**Irabujima**	**2.82**	**83**	P	**Pn**	**01 44 28.3**	**+0.7**

*ISCJB **08** 01:48:04.7±0.5, 0°.68N±0°.03×124°.55E±0°.03, h153km±5km, mb4.5/64, Error ellipse: s-maj=6.3km s-min=4.9km az=136.4*
*DJA **08** 01:48:05.8±0.9, 1°.N±8°.×12°.5E±°., h154km±26km, M4.7/6, mB5.2/1, mb4.5/2, MLv4.8/6, Mw(mB)4.6/1*
*NEIC **08** 01:48:06.4±0.5, 0°.66N×124°.52E, h157km±5km, mb4.5/38, Error ellipse: s-maj=5.1km s-min=3.3km az=58.0*
*IDC **08** 01:48:07.0±2.0, 0°.65N×124°.38E, h155km±18km, mb4.1/21, mb1 4.1/23, mb1mx3.9/46, mbtmp4.5/23, Error ellipse: s-maj=18.7km s-min=8.7km az=86.0*
ISC 08 01:48:06.2±0.7, 0°.64N±0°.05×124°.53E±0°.06, h153km±7km, n107, σ1§09/120, mb4.5/64, 1C, Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LUWI	**Luwuk**	**2.43**	**227**	P	Pn	01 48 49.9	+3.4
LUWI	**Luwuk**	**2.43**	**227**	*e*Pn	**Pn**	**01 48 48.3**	**+1.8**
LUWI				*e*Sn	**Sn**	**01 49 15.6**	**-2.1**
MRSI	**Marisa**	**2.60**	**266**	P	**Pn**	**01 48 48.5**	**-0.1**
SANI	**Sanana**	**3.04**	**151**	P	**Pn**	**01 48 53.6**	**-0.6**
LBMI	**Labuha**	**3.23**	**113**	P	**Pn**	**01 48 55.2**	**-1.4**
NLAI	**Namlea**	**4.63**	**146**	P	**Pn**	**01 49 13.8**	**-1.0**
MSAI	**Masohi**	**5.91**	**132**	P	**Pn**	**01 49 30.4**	**-1.4**
TTSI	**Tana Toraja**	**5.97**	**232**	P	**Pn**	**01 49 32.3**	**-0.2**
35nm,0.8s,3μm							
KAPI	**Kappang**	**7.37**	**220**	P	**Pn**	**01 49 52.7**	**+1.5**
0.7nm,0.3s,baz=20,slow=8.1,SNR=6.4							
KAPI				S	**Sn**	**01 51 14.4**	**+0.6**
5.1nm,0.3s,baz=135,slow=17,SNR=7.6							
KAPI	**Kappang**	**7.37**	**220**	*e*Pn	**Pn**	**01 49 52.0**	**+0.8**
KAPI				S	**Sn**	**01 51 14.4**	**+0.6**
MYLDM	**Lahad Datu**	**7.53**	**307**	*e*Pn	**Pn**	**01 49 52.5**	**-0.9**
BSSI	**Bau Bau, Buton**	**7.85**	**211**	P	**Pn**	**01 49 58.9**	**+1.2**
FAKI	**Fak Fak**	**8.48**	**115**	*e*Pn	**Pn**	**01 50 04.2**	**-1.9**
FAKI				*e*Sn	Sn	01 51 32.9	-7.7
KKM	**Kota Kinabalu**	**9.89**	**303**	*e*Pn	**Pn**	**01 50 24.9**	**+0.1**
SOEI	**Soe**	**10.33**	**181**	*e*Pn	**Pn**	**01 50 32.2**	**+1.5**
BATI	**Baumata**	**10.81**	**185**	P	**P**	**01 50 43.7**	**-1.8**
SAUI	**Saumlaki**	**10.90**	**142**	*e*Pn	**Pn**	**01 50 39.3**	**+1.2**
SBUM	**Sibu**	**12.44**	**278**	*e*Pn	**Pn**	**01 50 58.2**	**0.0**
JAGI	**Jajag, Banyuwa**	**13.74**	**229**	*e*Pn	**Pn**	**01 51 14.1**	**-0.8**
FITZ	**Fitzroy Crossi**	**18.65**	**177**	P	**P**	**01 52 13.0**	**+0.5**
3.0nm,0.3s,baz=13,slow=8.8,SNR=64							
FITZ	**Fitzroy Crossi**	**18.65**	**177**	*e*P	**P**	**01 52 12.8**	**+0.3**
26nm,1.0s							
MYKOM	**Kota Tinggi**	**20.71**	**273**	*e*P	**P**	**01 52 34.7**	**0.0**
13nm,1.4s							
XMIS	**Christmas Isla**	**21.79**	**239**	*e*P	**P**	**01 52 45.0**	**-1.3**
314nm,1.9s							
MBWA	**Marble Bar**	**22.17**	**192**	*e*P	**P**	**01 52 48.9**	**-1.1**
9.6nm,0.6s							
TWG	**Pinlang**	**22.30**	**352**	*e*P	**P**	**01 52 50.7**	**-0.6**
34nm,0.6s							
WRAB	**Tennant Creek**	**22.60**	**155**	*e*P	**P**	**01 52 53.8**	**-0.4**
30nm,0.8s							
WRA	**Warramunga Arr**	**22.60**	**155**	P	**P**	**01 52 53.5**	**-0.6**
28nm,0.7s,baz=332,slow=9.9,SNR=130							
WRA				PcP	**PcP**	**01 56 43.1**	**+1.0**
0.3nm,0.5s,baz=321,slow=2.3,SNR=5.4							
WB2	**Warramunga Arr**	**22.61**	**155**	*e*P	**P**	**01 52 54.3**	**+0.1**
33nm,0.6s							
YULB	**Yu-li**	**22.84**	**352**	*e*P	**P**	**01 52 56.1**	**-0.2**
5.2nm,0.9s							
TPUB	**Ta-pu**	**22.84**	**351**	*e*P	**P**	**01 52 55.5**	**-0.8**
19nm,0.9s							
MANU	**Manus Island**	**22.98**	**97**	*e*P	**P**	**01 52 58.0**	**+0.2**
29nm,1.1s							
COEN	**Coen**	**23.48**	**129**	*e*P	**P**	**01 53 01.8**	**-0.5**
3.3nm,0.5s							
YHNB	**Yeheng**	**24.09**	**353**	*e*P	**P**	**01 53 07.9**	**+0.1**
36nm,1.8s							
KULM	**Kulim**	**24.29**	**281**	*e*P	**P**	**01 53 09.0**	**-0.7**
13nm,1.3s							
TATO	**Taipei**	**24.37**	**353**	*e*P	**P**	**01 53 09.7**	**-0.5**
64nm,1.4s							
PMG	**Port Moresby**	**24.64**	**114**	*e*P	**P**	**01 53 13.0**	**+0.1**
9.0nm,0.8s							
PSI	**Prapat**	**25.69**	**275**	*e*P	**P**	**01 53 21.0**	**-1.5**
6.1nm,0.9s							
AS31	**Alice Springs**	**25.82**	**160**	*e*P	**P**	**01 53 23.6**	**+0.1**
2.1nm,0.8s							
ASAR	**Alice Springs**	**25.82**	**160**	P	**P**	**01 53 24.3**	**+0.8**
2.8nm,0.5s,baz=335,slow=12,SNR=55							
ASAR				PcP	**PcP**	**01 56 50.1**	**+1.1**
1.2nm,0.5s,baz=346,slow=2.1,SNR=11							
ASAR				ScP	**ScP**	**02 00 15.0**	**+0.5**
0.4nm,0.6s,baz=343,slow=2.6,SNR=4.4							
AS01	**Alice Springs**	**25.83**	**160**	*e*P	**P**	**01 53 24.0**	**+0.5**
LHMI	**Lhok Sumawe**	**27.92**	**280**	*e*P	**P**	**01 53 41.8**	**-0.5**
79nm,0.9s							
GYA	**Guiyang**	**30.90**	**328**	*e*P	**P**	**01 54 11.0**	**+2.3**
GYA				pP	pP	01 54 46.8	+5.8
GYA				sP	sP	01 55 07.4	+8.8
GYA				PP	**PP**	**01 55 20.0**	**-1.6**
GYA				PcP	**PcP**	**01 57 02.6**	**+0.8**
GYA				S	**S**	**01 59 02.3**	**+0.5**
GYA				sS	sS	02 00 06.2	+7.6
GYA				ScP	**ScP**	**02 00 27.8**	**-2.7**
GYA				PcS	**PcS**	**02 00 45.0**	**-1.2**
GYA	**Guiyang**	**30.90**	**328**	ScS	ScS	02 04 23.2	-4.6
GYA				pmax	pmax		
comp=Z,10.0nm,1.0s							
CHTO	**Chiang Mai**	**30.93**	**307**	*e*P	**P**	**01 54 08.6**	**-0.2**
comp=Z,22nm,2.0s							
NJ2	**Nanjing**	**31.70**	**351**	*e*P	**P**	**01 54 14.7**	**-0.8**
NJ2				pmax	pmax		
comp=Z,30nm,0.5s							
KMI	**Kunming**	**32.19**	**321**	P	**P**	**01 54 22.7**	**+2.6**
KMI				pmax	pmax		
comp=Z,21nm,0.5s							
KMI				pmax	pmax		
comp=Z,150nm,5.3s							
KMI				LR	LR		
comp=N,95nm,5.6s							
KMI				LR	LR		
comp=E,100nm,5.6s							
KMI				LR	LR		
comp=Z,95nm,7.0s							
ENH	**Enshi**	**32.76**	**335**	*e*P	**P**	**01 54 24.1**	**-0.7**
comp=Z,11nm,0.6s							
JNU	**Nakatsue**	**32.86**	**10**	P	**P**	**01 54 26.0**	**+0.4**
comp=Z,12nm,0.9s,baz=193,slow=4.7,SNR=9.2							
JNU	**Nakatsue**	**32.86**	**10**	*e*P	**P**	**01 54 25.4**	**-0.3**
comp=Z,16nm,1.0s							
NWAO	**Narrogin (SRO)**	**34.09**	**191**	*e*P	**P**	**01 54 35.6**	**-0.6**
comp=Z,165nm,1.4s							
PATS	**Pohnpei**	**34.25**	**79**	*e*P	**P**	**01 54 37.7**	**-0.2**
comp=Z,228nm,1.5s							
CD2	**Chengdu**	**35.98**	**329**	P	**P**	**01 54 52.0**	**-0.5**
CD2				pmax	pmax		
comp=Z,5.0nm,0.6s							
STKA	**Stephens Creek**	**36.15**	**155**	P	**P**	**01 54 54.8**	**+0.9**
comp=Z,5.2nm,0.5s,baz=332,slow=8.6,SNR=21							
STKA	**Stephens Creek**	**36.15**	**155**	*e*P	**P**	**01 54 52.9**	**-1.0**
comp=Z,1.4nm,0.6s							
MAJO	**Matsushiro**	**37.91**	**18**	*e*P	**P**	**01 55 07.9**	**-0.8**
comp=Z,17nm,0.8s							
MAT	**Matsushiro**	**37.91**	**18**	P	**P**	**01 55 08.5**	**-0.2**
**MJ

KOLN	Koldanda	47.58	308	eP		P	01 56 27.3 +0.3
	comp=Z,10.0nm,0.5s						
PYUN	Piuthan	48.21	308	eP		P	01 56 32.6 +0.7
	comp=Z,14nm,0.4s						
HIA	Hailar	48.62	356	eP		P	01 56 33.9 -0.5
	comp=Z,9.3nm,0.9s						
KLR	Kul'dur	48.80	6	P		P	01 56 36.4 +0.7
	comp=Z,5.9nm,0.5s,baz=193,slow=5.7,SNR=23						
ULN	Ulaanbaatar	49.43	345	eP		P	01 56 40.2 -0.6
	comp=Z,7.4nm,1.5s						
SONM	Songino Array	49.58	344	P		P	01 56 41.1 -0.7
	comp=Z,1.9nm,0.7s,baz=151,slow=7.4,SNR=4.1						
SONA1	Songino Array	49.59	344	eP		P	01 56 41.0 -0.9
TLY	Talaya	53.82	344	eP		P	01 57 12.8 -0.4
	comp=Z,2.2nm,0.7s						
WMQ	Urumqi	54.06	328	P		P	01 57 16.7 +1.6
WMQ				pmax	pmax		
	comp=Z,3.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,23nm,4.4s						
WMQ				LR	LR		
	comp=N,37nm,34.6s						
FUNA	Funafuti	55.22	101	eP		P	01 57 22.9 -1.0
	comp=N,512nm,1.8s						
KSH	Kashi	58.74	317	eP		P	01 57 51.0 +2.6
KSH				ePP		PcP	01 58 31.7 -4.8
KSH				eSP		sP	01 58 51.5 +11
KSH				PcS		PcS	02 02 38.7 +0.2
KSH				S		S	02 05 40.7 -0.9
KSH				ScS		ScS	02 07 20.1 -3.4
KSH				pmax	pmax		
	comp=Z,40nm,3.7s						
KSH				LR	LR		
	comp=N,86nm,4.7s						
KSH				LR	LR		
	comp=E,51nm,4.9s						
MK01	Makanchi Array	58.87	327	eP		P	01 57 48.5 -0.5
MK31	Makanchi Array	58.89	327	eP		P	01 57 49.0 -0.1
MKAR	Makanchi Array	58.89	327	P		P	01 57 48.8 -0.3
	comp=E,2.4nm,0.4s,baz=125,slow=7.9,SNR=35						
MKAR				PcP		PcP	01 58 37.1 +0.2
	comp=E,0.6nm,0.5s,baz=114,slow=5.9,SNR=3.6						
MAKZ	Makanchi	59.07	327	eP		P	01 57 49.8 -0.6
	comp=E,2.7nm,0.5s						
PEA0	Petropavlovsk-	59.10	23	eP		P	01 57 50.3 -0.1
PETK	Petropavlovsk-	59.10	23	P		P	01 57 52.3 +1.9
	comp=E,3.7nm,0.6s,baz=209,slow=3.2,SNR=6.7						
TKM2	Tokmak 2	60.66	321	eP		P	01 58 00.9 -0.6
	comp=E,17nm,1.8s						
AAK	Ala-Archa	61.22	320	eP		P	01 58 06.2 +0.9
	comp=E,1.4nm,0.4s						
YAK	Yakutsk	61.36	3	P		P	01 58 07.4 +1.8
	comp=E,23nm,0.5s,baz=12,slow=2.5,SNR=7.5						
YAK	Yakutsk	61.36	3	eP		P	01 58 05.3 -0.2
	comp=E,28nm,0.6s						
ZAA0	Zalesovo Array	62.38	335	eP		P	01 58 11.2 -1.4
ZALV	Zalesovo Beam	62.38	335	P		P	01 58 11.2 -1.4
	comp=E,1.0nm,0.4s,baz=126,slow=4.7,SNR=6.5						
ZALV				PcP		pP	01 58 49.0 +0.3
	comp=E,0.2nm,0.3s,baz=114,slow=30,SNR=2.1						
KURK	Kurchatov	63.20	329	eP		P	01 58 17.6 -0.5
	comp=E,9.0nm,0.4s						
SEY	Seymchan	65.53	14	P		P	01 58 35.6 +2.7
	comp=E,0.8nm,0.4s,baz=30,slow=19,SNR=5.1						
ZRNK	Zerenda	69.44	328	eP		P	01 58 57.0 -0.7
	comp=E,4.5nm,0.4s						
TIXI	Tiksi	70.95	1	P		P	01 59 06.4 -0.1
	comp=E,4.8nm,0.3s,baz=167,slow=6.3,SNR=11						
TIXI	Tiksi	70.95	1	eP		P	01 59 06.2 -0.3
	comp=E,5.0nm,0.5s						
GEYT	Alibeck	71.15	310	P		P	01 59 08.2 -0.3
	comp=E,1.3nm,0.7s,baz=325,slow=4.4,SNR=3.7						
NRIK	Noril'sk	72.91	347	P		P	01 59 18.5 +0.3
	comp=E,2.9nm,0.4s,baz=129,slow=6.6,SNR=3.9						
ABKAR	Abkulak array	73.17	322	eP		P	01 59 19.6 -0.6
MAW	Mawson	80.12	200	P		P	02 00 00.1 +1.3
	comp=E,2.5nm,0.5s,baz=75,slow=8.4,SNR=5.5						
VNDA	Vanda	80.67	172	P		P	02 00 02.4 +0.8
	comp=E,0.7nm,0.5s,baz=325,slow=6.5,SNR=7.9						
SYO	Syowa Base	88.77	201	eP		P	02 00 46.4 +4.2
BRTR	Keskin Array B	90.29	310	P		P	02 00 49.2 -1.0
	comp=E,0.5nm,0.8s,baz=87,slow=2.7,SNR=3.1						
ARCES	ARCESS Array B	92.57	340	P		P	02 00 59.7 -0.2
	comp=E,3.4nm,1.0s,baz=79,slow=6.3,SNR=6.4						
FINES	FINESS Array B	93.49	332	P		P	02 01 03.7 -0.6
	comp=E,0.8nm,0.7s,baz=35,slow=4.7,SNR=6.8						
YKA	Yellowknife Ar	103.20	24	Pdiff		Pdif	02 01 49.5 +1.5
	comp=E,0.1nm,0.6s,baz=125,slow=8.4,SNR=4.5						

NIED ***08*** *01:54:00, 38°.00N×143°.80E, h5km, Mw3.8 Best double couple: M0=5.06000×10^14 NP1:φs=18.00000°, δ=30.00000°, λ=-67.00000°. NP2:φs=172.00000°, δ=63.00000°, λ=-103.00000°.*

IDC ***08*** *01:54:15.8±0.7, 37°.90N×144°.03E, h0km, mb3.8/15, mb1 3.9/19, mb1mx3.8/40, mbtmp3.8/19, ML3.8/3, MS2.7/3, Ms1 2.7/3, ms1mx2.4/37, Error ellipse: s-maj=20.4km s-min=16.3km az=117.0*

ISCJB ***08*** *01:54:19.3±0.5, 37°.96N±0°.04×143°.83E±0°.04, h33km, mb3.8/20, MS4.3/1, Error ellipse: s-maj=6.4km s-min=4.4km az=167.1*

NEIC ***08*** *01:54:19.7±2.5, 37°.93N×143°.99E, h25km±17km, mb4.3/5, Error ellipse: s-maj=11.3km s-min=6.3km az=124.0*

JMA ***08*** *01:54:20.0±0.2, 38°.02N×143°.77E, h50km, M4.0*

ISC 08 01:54:21.5±0.7, 37°.97N±0°.06×143°.82E±0°.07, h35km, n42, σ1§17/46, mb3.8/20, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	2.01	285	P	Pn	01 54 51.8	-1.0
JIO				S	Sn	01 55 15.0	-1.7
OFUJ	Ofunato	2.02	304	P	Pn	01 54 51.9	-1.1
JMK	Ichinoseki	2.27	296	P	Pn	01 54 55.3	-1.1
JMK				eS	Sn	01 55 22.2	-0.9
JMM	Marumori	2.40	268	P	Pn	01 54 57.3	-0.9
JMM				eS	Sn	01 55 25.0	-1.4
JOM	Ohasama	2.48	308	P	Pn	01 54 58.8	-0.6
JOM				eS	Sn	01 55 27.3	-1.2
JFT	Otama	2.80	262	P	Pn	01 55 03.5	-0.3
JFT				S	Sn	01 55 35.7	-0.7
JYK	Kaneyama	2.88	290	P	Pn	01 55 03.3	-1.6
JYK				S	Sn	01 55 38.3	0.0
JANG	Nango	3.00	324	P	Pn	01 55 05.4	-1.0
JANG				eS	Sn	01 55 38.3	-2.8
JAG	Ashikaga	3.82	247	P	Pn	01 55 16.9	-0.8
JAG				eS	Sn	01 56 01.1	-0.3
ERM	Erimo	4.07	353	ePn	Pn	01 55 20.5	-0.7
JRY	Ryogami san	4.40	245	P	Pn	01 55 24.9	-0.8
JRY				eS	Sn	01 56 13.5	-2.2
MJAR	Matsushiro Arr	4.70	254	Pn	Pn	01 55 30.8	+0.9
	3.8nm,0.3s,baz=92,slow=16,SNR=26						
MJAR				LR	LR	01 57 42.2	
	comp=Z,54nm,19.7s,baz=65,slow=43						
MAJO	Matsushiro	4.70	254	ePn	Pn	01 55 30.6	+0.7
ASAJ	Asahikawa	6.21	352	Pn	Pn	01 55 49.7	-0.9
	2.1nm,0.3s,baz=195,slow=13,SNR=14						
USRK	Ussuriysk Ar.	10.88	309	Pn	Pn	01 56 57.0	+2.4
	0.1nm,0.3s,baz=101,slow=15,SNR=3.6						
JNU	Nakatsue	11.60	249	LR	LR	02 01 55.9	
	comp=Z,48nm,19.9s,baz=120,slow=39						
KSRS	Korea Array	12.61	273	Pn	Pn	01 57 20.7	+2.5
	0.4nm,0.3s,baz=83,slow=14,SNR=5.0						
KSRS				LR	LR	02 01 47.6	
	comp=Z,38nm,18.8s,baz=65,slow=35						
KSAR	Wonju Array Be	12.64	272	Pn	Pn	01 57 20.7	+2.1
SEY	Seymchan	25.53	9	P	P	01 59 47.2	+0.8
	1.3nm,0.5s,baz=149,slow=5.0,SNR=6.3						
H11N2	WAKE ISLAND Hy	27.06	126	T	T	02 28 17.2	
	baz=329						
H11N1	WAKE ISLAND Hy	27.07	126	T	T	02 28 19.3	
	baz=329,SNR=4.2						
H11N3	WAKE ISLAND Hy	27.07	126	T	T	02 28 17.4	
	baz=329						
ZALV	Zalesovo Beam	42.71	312	P	P	02 02 15.4	+0.6
	0.2nm,0.3s,baz=92,slow=10,SNR=2.7						
MKAR	Makanchi Array	45.25	302	P	P	02 02 36.6	+1.3
	0.4nm,0.7s,baz=83,slow=10,SNR=4.3						
ILAR	Eielson Array	47.67	33	P	P	02 02 53.8	-0.3
	1.1nm,0.7s,baz=264,slow=6.5,SNR=16						
DIV	Divide	48.37	38	eP	P	02 02 59.7	+0.2
	1.6nm,0.4s						
DOT	Dot Lake	48.96	34	eP	P	02 03 03.4	-0.6
	1.4nm,0.5s						
TKM2	Tokmak 2	50.87	298	eP	P	02 03 20.3	+1.2
	3.2nm,0.9s						
INK	Inuvik	52.67	28	P	P	02 03 30.8	-1.0
	0.4nm,0.4s,baz=311,slow=6.3,SNR=5.3						
WRAB	Tennant Creek	58.28	190	eP	P	02 04 11.6	-1.0
	2.5nm,0.6s						
WRA	Warramunga Arr	58.29	190	P	P	02 04 11.8	-0.9
	2.8nm,0.7s,baz=12,slow=7.2,SNR=23						
ABKAR	Akbulak array	58.80	310	eP	P	02 04 16.2	+0.2
	0.4nm,0.5s						
ASAR	Alice Springs	62.02	190	P	P	02 04 37.8	-0.4
	0.8nm,0.7s,baz=14,slow=7.2,SNR=8.7						
YKA	Yellowknife Ar	62.03	31	P	P	02 04 37.7	-0.1
	0.4nm,0.7s,baz=302,slow=6.6,SNR=9.4						
GEYT	Alibeck	65.05	300	P	P	02 04 59.2	+0.9
	0.6nm,0.4s,baz=51,slow=5.7,SNR=2.6						
FINES	FINESS Array B	68.87	333	P	P	02 05 22.4	+0.3
	1.6nm,1.0s,baz=46,slow=6.1,SNR=4.0						
NOA	NORSAR Array B	74.05	338	P	P	02 05 53.2	-0.2
	0.5nm,0.8s,baz=30,slow=4.0,SNR=3.1						
AKASG	Malin Array Be	74.71	323	P	P	02 05 57.6	+0.3
	0.6nm,0.5s,baz=44,slow=6.0,SNR=4.3						
PDAR	Pinedale Array	75.64	47	P	P	02 06 03.0	-0.1
	0.2nm,0.4s,baz=250,slow=3.0,SNR=4.8						
RAR	Rarotonga	79.18	128	LR	LR	02 33 28.4	
	comp=Z,133nm,19.9s,baz=126,slow=30						
BRTR	Keskin Array B	79.65	313	P	P	02 06 24.8	-0.7
	0.8nm,1.1s,baz=36,slow=6.2,SNR=3.2						
TXAR	Lajitas Array	88.03	54	P	P	02 07 08.2	-0.2
	0.2nm,0.7s,baz=318,slow=1.7,SNR=2.7						

IDC ***08*** *02:55:47.8±1.2, 35°.85N×141°.73E, h0km, mb3.4/4, mb1 3.7/5, mb1mx3.4/36, mbtmp3.5/5, ML3.3/1, MS2.8/1, Ms1 2.8/1, ms1mx2.1/31, Error ellipse: s-maj=44.9km s-min=23.2km az=95.0*

ISCJB ***08*** *02:55:49.5±0.8, 35°.89N±0°.05×141°.85E±0°.07, h26km, mb3.5/4, Error ellipse: s-maj=9.2km s-min=6.5km az=28.0*

JMA ***08*** *02:55:51.1±0.2, 35°.89N×141°.76E, h51km±3km, M3.3*

ISC 08 02:55:51.7±1.1, 35°.91N±0°.07×141°.71E±0°.09, h26km, n21, σ0§76/17, mb3.5/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	0.72	254	P	Pb	02 56 05.6	-0.1
CHOJ				S	Sn	02 56 16.6	+0.2
JHO	Hitachi	1.16	307	P	Pn	02 56 11.7	-0.5
BSO1	Boso 1	1.39	206	P	Pn	02 56 14.4	-0.5
BSO3	Boso 3	1.48	222	P	Pn	02 56 15.8	-0.6
JFK	Kawauchi	1.60	335	P	Pn	02 56 18.3	0.0
JFK				eS	Sn	02 56 36.7	-1.5
JAG	Ashikaga	1.90	286	P	Pn	02 56 22.3	-0.1
JFT	Otama	1.95	326	P	Pn	02 56 24.3	+1.2
JMM	Marumori	2.08	340	P	Pn	02 56 25.8	+0.8
JOD2	Odawara 2	2.23	254	P	Pn	02 56 26.9	-0.1
JOD2				eS	Sn	02 56 54.5	+0.7
ASAJ	Asahikawa	8.22	4	Pn	Pn	02 57 48.7	-0.5
	0.4nm,0.3s,baz=222,slow=16,SNR=2.6						
JNU	Nakatsue	9.36	256	LR	LR	03 02 25.8	
	comp=Z,54nm,18.4s,baz=119,slow=42						
H11N2	WAKE ISLAND Hy	27.38	119	T	T	03 30 45.7	
	baz=311,slow=75,SNR=10.0						
H11N1	WAKE ISLAND Hy	27.39	119	T	T	03 30 46.3	
	baz=311,slow=75,SNR=10						
H11N3	WAKE ISLAND Hy	27.40	119	T	T	03 30 56.3	
	baz=311,slow=75,SNR=11						
H11S1	WAKE ISLAND Hy	28.06	122	T	T	03 31 23.0	
	baz=313,slow=75,SNR=12						
H11S3	WAKE ISLAND Hy	28.06	122	T	T	03 31 31.7	
	baz=313,slow=75,SNR=9.2						
H11S2	WAKE ISLAND Hy	28.07	122	T	T	03 31 34.2	
	baz=313,slow=75,SNR=7.0						
MKAR	Makanchi Array	44.92	303	P	P	03 04 04.6	+0.4
	0.3nm,0.7s,baz=81,slow=10,SNR=3.4						
ILAR	Eielson Array	50.32	32	P	P	03 04 46.1	+0.4
	0.4nm,0.8s,baz=249,slow=6.5,SNR=6.2						
WRA	Warramunga Arr	55.99	188	P	P	03 05 26.8	-1.2
	0.7nm,0.7s,baz=4.9,slow=7.3,SNR=7.8						
ASAR	Alice Springs	59.71	188	P	P	03 05 54.6	+0.5
	0.3nm,0.8s,baz=23,slow=12,SNR=4.9						

IDC ***08*** *03:02:34.8±1.7, 34°.94N×142°.93E, h0km, mb3.3/3, mb1 3.5/8, mb1mx3.3/49, mbtmp3.5/8, ML3.1/5, Error ellipse: s-maj=39.5km s-min=19.7km az=71.0*

ISCJB ***08*** *03:02:36.7±0.9, 35°.02N±0°.06×142°.98E±0°.07, h33km, mb3.5/3, Error ellipse: s-maj=8.9km s-min=7.4km az=42.2*

JMA ***08*** *03:02:39.0±0.5, 34°.91N×142°.75E, h79km, M3.0*

ISC 08 03:02:38.2±1.3, 34°.85N±0°.07×142°.99E±0°.10, h35km, n19, σ1§98/20, mb3.6/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	Boso 1	1.67	264	P	Pn	03 03 04.1	-0.3
BSO1				eS	Sn	03 03 24.0	-0.3
CHOJ	Chosi	1.94	297	P	Pn	03 03 08.2	-0.4
BSO3	Boso 3	2.04	269	P	Pn	03 03 09.2	-0.6
BSO3				eS	Sn	03 03 33.6	-0.2
BSO4	Boso 4	2.18	274	P	Pn	03 03 12.2	+0.3
JHJ	Hachijo jima 2	3.17	238	Pn	Pn	03 03 24.9	-0.7
	17nm,0.3s,baz=24,slow=20,SNR=11						
JHJ				Sn	Sn	03 03 57.6	-4.6
	27nm,0.3s,baz=114,slow=22,SNR=5.9						
MJAR	Matsushiro Arr	4.24	295	Pn	Pn	03 03 40.3	0.0
	1.1nm,0.3s,baz=114,slow=8.7,SNR=7.8						
MJAR				Sn	Sn	03 04 28.3	-0.3
	0.8nm,0.3s,baz=115,slow=16,SNR=3.8						
MAT	Matsushiro	4.24	295	P	Pn	03 03 40.6	+0.3
MAT				S	Sn	03 04 27.2	-1.4
ASAJ	Asahikawa	9.26	358	Pn	Pn	03 04 47.9	-1.3
	0.4nm,0.3s,baz=184,slow=19,SNR=3.0						
ASAJ				Sn	Sn	03 06 29.4	-2.7
	0.3nm,0.3s,baz=52,slow=19,SNR=2.9						
USRK	Ussuriysk Ar.	12.61	321	Pn	Pn	03 05 32.3	-2.7
	0.2nm,0.3s,baz=141,slow=43,SNR=2.1						
USRK				Sn	Sn	03 07 57.5	+3.4
	0.5nm,0.3s,baz=184,slow=23,SNR=5.2						
KLR	Kul'dur	16.59	333	Pn	Pn	03 06 26.9	-1.0
	0.1nm,0.3s,baz=57,slow=17,SNR=2.2						
H11N2	WAKE ISLAND Hy	25.95	119	T	T	03 35 19.4	
	baz=306						
H11N1	WAKE ISLAND Hy	25.96	119	T	T	03 35 20.0	
	baz=306						
H11N3	WAKE ISLAND Hy	25.97	119	T	T	03 35 20.6	
	baz=306						
H11S1	WAKE ISLAND Hy	26.62	122	T	T	03 36 09.1	
	baz=314,slow=74,SNR=6.3						
H11S3	WAKE ISLAND Hy	26.62	122	T	T	03 36 09.1	
	baz=314,slow=74,SNR=6.2						
H11S2	WAKE ISLAND Hy	26.63	122	T	T	03 36 10.5	
	baz=314						
MKAR	Makanchi Array	46.38	304	P	P	03 11 02.0	+0.9
	0.3nm,0.7s,baz=76,slow=6.1,SNR=2.5						
WRA	Warramunga Arr	55.10	190	P	P	03 12 09.5	+2.6
	0.6nm,0.7s,baz=8.9,slow=7.4,SNR=5.2						
ASAR	Alice Springs	58.83	190	P	P	03 12 35.6	+2.4
	0.4nm,0.8s,baz=17,slow=12,SNR=4.4						

IDC 08 03:08:29.3±3.6, 26°.43S×66°.11E, h0km, mb3.6/5, mb1 3.7/5, mb1mx3.4/43, mbtmp3.6/5, Error ellipse: s-maj=136.0km s-min=29.0km az=43.0, Indian Ocean Triple Junction

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08S1	Diego Carcia H	19.63	19	T	T	03 29 32.3	
	baz=191,slow=76,SNR=17						
H08S2	Diego Garcia H	19.64	19	T	T	03 29 25.8	
	baz=191,slow=76,SNR=14						
H08S3	Diego Garcia H	19.65	19	T	T	03 29 30.3	
	baz=191,slow=76,SNR=17						
ASAR	Alice Springs	60.83	104	P	P	03 18 44.5	+0.8
	0.4nm,0.6s,baz=252,slow=5.9,SNR=7.3						
WRA	Warramunga Arr	62.42	100	P	P	03 18 53.3	-1.2
	0.7nm,0.9s,baz=268,slow=5.7,SNR=4.6						
BRTR	Keskin Array B	72.44	334	P	P	03 19 57.4	-0.2
	0.3nm,0.7s,baz=134,slow=6.2,SNR=2.7						
MKAR	Makanchi Array	74.33	11	P	P	03 20 07.8	-0.7
	0.3nm,0.8s,baz=190,slow=4.4,SNR=2.6						
ZALV	Zalesovo Beam	81.66	11	P	P	03 20 50.2	+1.3
	0.2nm,0.3s,baz=243,slow=0.3,SNR=2.7						

IDC ***08*** *03:10:17.9±1.3, 37°.69N×144°.11E, h0km, mb3.3/3, mb1 3.6/6, mb1mx3.4/45, mbtmp3.4/6, ML3.1/3, MS3.2/1, Ms1 3.2/1, ms1mx2.3/21, Error ellipse: s-maj=31.9km s-min=22.9km az=130.0*

ISCJB ***08*** *03:10:22.4±1.2, 37°.85N±0°.05×143°.83E±0°.08, h49km±15km, mb3.4/3, MS3.2/1, Error ellipse: s-maj=11.2km s-min=7.9km az=34.4*

JMA ***08*** *03:10:22.3±0.2, 37°.87N×143°.79E, h39km, M3.4*

ISC 08 03:10:23.4±2.0, 37°.9N±0°.1×143°.9E±0°.2, h38km±9km, n19, σ1§04/28, mb3.5/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	2.06	288	P	Pn	03 10 55.0	-0.5
JIO				S	Sn	03 11 19.2	-0.7
OFUJ	Ofunato	2.10	306	P	Pn	03 10 55.6	-0.5
JMK	Ichinoseki	2.34	299	P	Pn	03 10 59.1	-0.2
JMK				S	Sn	03 11 27.0	+0.3
JFK	Kawauchi	2.41	259	P	Pn	03 10 59.1	-1.3
JFK				S	Sn	03 11 26.5	-2.2
JMM	Marumori	2.42	271	P	Pn	03 11 00.0	-0.4
JMM				S	Sn	03 11 27.2	-1.5
JOU	Okura	2.56	282	P	Pn	03 11 02.8	+0.4
JOM	Ohasama	2.57	310	P	Pn	03 11 02.7	+0.2
JOM				S	Sn	03 11 32.7	+0.2
JFT	Otama	2.81	264	P	Pn	03 11 05.9	+0.1
JFT				S	Sn	03 11 37.9	-0.5
JYK	Kaneyama	2.94	292	P	Pn	03 11 07.8	+0.2
JYK				eS	Sn	03 11 42.0	+0.4
JRG	Rokugo	2.95	302	P	Pn	03 11 08.2	+0.5
JRG				S	Sn	03 11 42.7	+0.8
JANG	Nango	3.10	325	P	Pn	03 11 10.0	+0.2
JANG				S	Sn	03 11 44.0	-1.6
MJAR	Matsushiro Arr	4.69	255	Pn	Pn	03 11 32.7	+1.0
	1.1nm,0.3s,baz=78,slow=14,SNR=18						
MJAR				Sn	Sn	03 12 27.4	+2.6
	0.6nm,0.3s,baz=70,slow=23,SNR=4.2						
MAT	Matsushiro	4.69	256	P	Pn	03 11 32.8	+1.1
MAT				eS	Sn	03 12 26.1	+1.3
ASAJ	Asahikawa	6.33	352	Pn	Pn	03 11 54.5	+0.4
	0.6nm,0.3s,baz=199,slow=19,SNR=6.6						
USRK	Ussuriysk Ar.	10.97	309	Pn	Pn	03 13 00.9	+3.2
	0.2nm,0.3s,baz=147,slow=40,SNR=3.2						
ILAR	Eielson Array	47.76	33	P	P	03 18 56.7	+0.4
	0.4nm,0.9s,baz=270,slow=7.2,SNR=5.4						
ARU	Arti	57.03	319	LR	LR	03 47 29.3	
	comp=Z,20nm,18.3s,baz=282,slow=39						
WRA	Warramunga Arr	58.18	191	P	P	03 20 12.5	-1.1
	0.4nm,0.8s,baz=9.1,slow=7.0,SNR=4.8						
YKA	Yellowknife Ar	62.12	31	P	P	03 20 40.3	+0.2
	0.1nm,0.7s,baz=303,slow=6.1,SNR=3.1						

IDC 08 03:12:56.3±3.6, 35°.88N×140°.92E, h0km, mb3.3/2, mb1 3.3/3, mb1mx3.1/42, mbtmp3.1/3, ML2.6/1, Error ellipse: s-maj=98.8km s-min=31.6km az=54.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	2.29	288	Pn	Pn	03 13 35.3	-0.1
	1.8nm,0.3s,baz=110,slow=8.8,SNR=13						
MAT	Matsushiro	2.29	288	P	Pn	03 13 35.3	-0.1
H11N2	WAKE ISLAND Hy	27.93	118	T	T	03 48 15.1	
	baz=319						
H11N1	WAKE ISLAND Hy	27.93	118	T	T	03 48 22.7	
	baz=319						
H11N3	WAKE ISLAND Hy	27.94	118	T	T	03 48 12.2	
	baz=319						
MKAR	Makanchi Array	44.41	303	P	P	03 21 08.4	-0.3
	0.2nm,0.4s,baz=99,slow=8.9,SNR=1.8						
WRA	Warramunga Arr	55.86	187	P	P	03 22 35.7	0.0
	0.5nm,1.0s,baz=4.8,slow=7.3,SNR=5.2						

IDC 08 03:19:17.6±4.2, 19°.78S×178°.44W, h0km, mb3.9/4, mb1 4.1/4, mb1mx3.7/20, mbtmp3.9/4, Error ellipse: s-maj=177.4km s-min=35.9km az=141.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	Stephens Creek	37.74	243	P	P	03 26 35.3	0.0
	1.8nm,0.7s,baz=73,slow=11,SNR=4.1						
ASAR	Alice Springs	44.29	256	P	P	03 27 29.1	-0.4
	1.8nm,0.5s,baz=96,slow=8.1,SNR=35						
WRA	Warramunga Arr	44.30	261	P	P	03 27 29.7	+0.1
	0.4nm,0.3s,baz=96,slow=7.7,SNR=36						
ILAR	Eielson Array	87.70	13	P	P	03 32 07.7	0.0
	0.3nm,0.6s,baz=228,slow=5.2,SNR=5.0						

MEX 08 03:42:10.9±0.7, 16°.65N×98°.86W, h9km±8km, MD3.7, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PNIG	Pinotepa	0.75	110	eP	Pg	03 42 23.6	-1.8
PNIG				i S	Sg	03 42 33.6	-1.5
TLIG	Tlapa	0.95	17	i P	Pg	03 42 26.6	-2.6
TLIG				eS	Sg	03 42 38.6	-3.1
CAIG	El Cayaco	1.40	287	eP	Pn	03 42 32.2	-4.5
CAIG				eS	Sn	03 42 50.7	-4.6
MEIG	Mezcala	1.46	330	eP	Pn	03 42 34.3	-3.3
MEIG				eS	Sn	03 42 51.6	-5.3
ARIG	Puente Sto Nin	2.15	319	eP	Pn	03 42 44.5	-2.5
ARIG				i S	Sn	03 43 09.0	-4.9
YAIG	Yautepec	2.21	355	eP	Pn	03 42 44.4	-3.5
YAIG				eS	Sn	03 43 11.6	-3.8

GCMT ***08*** *03:47:44.0±0.2, 55°.69S×124°.83W, h25km±1km, MW5.1/93, Moment Tensor Solution. s54,c69; s93,c133

comp=Z,96nm,18.6s,baz=198,slow=32
H01W1 Cape Leeuwin H 76.27 226 T T 05 24 54.5
baz=149,slow=76,SNR=70
H01W2 Cape Leeuwin H 76.27 226 T T 05 25 01.4
baz=149,slow=76,SNR=55
H01W3 Cape Leeuwin H 76.29 226 T T 05 25 04.5
baz=149,slow=76,SNR=66
ASAR Alice Springs 76.68 247 P P 03 59 34.8 +0.1
1.1nm,0.8s,baz=149,slow=6.5,SNR=9.1
ASAR LR LR 04 27 52.0
comp=Z,112nm,21.5s,baz=136,slow=31
WRA Warramunga Arr 79.54 250 P P 03 59 50.8 +0.2
2.1nm,0.9s,baz=144,slow=5.0,SNR=12
TXAR Lajitas Array 87.35 18 P P 04 00 29.7 -0.7
0.2nm,0.7s,baz=189,slow=7.3,SNR=4.5
TXAR LR LR 04 30 43.2
comp=Z,30nm,21.8s,baz=0.0,slow=30
PFO Pinyon Flats O 90.06 7 LR LR 04 31 37.7
comp=Z,69nm,19.2s,baz=128,slow=29
BOSA Boshof 91.39 154 LR LR 04 37 38.2
comp=Z,112nm,19.4s,baz=194,slow=33
H11S2 WAKE ISLAND Hy 94.14 298 T T 05 44 42.9
baz=146
H11S3 WAKE ISLAND Hy 94.15 297 T T 05 44 42.6
baz=146
H11S1 WAKE ISLAND Hy 94.15 298 T T 05 44 45.4
baz=146
H10N3 ASCENSION HYDR 94.31 111 T T 05 47 30.3
baz=206,slow=75,SNR=8.9
H10N1 ASCENSION HYDR 94.31 111 T T 05 47 31.7
baz=206,slow=75,SNR=9.5
H10N2 ASCENSION HYDR 94.32 111 T T 05 47 30.2
baz=206,slow=75,SNR=9.0
NVAR Mina Array Bea 94.75 5 P P 04 01 04.9 0.0
0.3nm,0.6s,baz=196,slow=9.4,SNR=2.5
NVAR LR LR 04 33 10.7
comp=Z,80nm,22.0s,baz=207,slow=29
H11N3 WAKE ISLAND Hy 95.08 298 T T 05 45 49.8
baz=147
H11N1 WAKE ISLAND Hy 95.08 298 T T 05 45 54.6
baz=147
H11N2 WAKE ISLAND Hy 95.10 298 T T 05 45 54.9
baz=147
PDAR Pinedale Array 99.74 11 LR LR 04 37 53.7
comp=Z,69nm,19.8s,baz=208,slow=30

*MOS **08** 04:05:33.8±0.7,53°.33N×153°.66E,h512km,mb3.8/2,Error ellipse: s-maj=16.1km s-min=11.8km az=56.4*
*ISCJB **08** 04:05:34.1±0.4,53°.48N±0°.07×153°.48E±0°.08,h491km, mb3.2/13,Error ellipse: s-maj=9.8km s-min=6.2km az=175.4*
*IDC **08** 04:05:34.7±0.7,53°.37N×153°.50E,h506km±8km,mb2.8/13, mb1 3.0/16,mb1mx2.9/40,mbtmp3.7/16,Error ellipse: s-maj=14.7km s-min=12.8km az=159.0*
*KRSC **08** 04:05:35.5±1.8,53°.19N×154°.22E,h503km±25km,ML4.7*
ISC 08 04:05:34.0±0.7,53°.35N±0°.09×153°.72E±0°.07,h491km,n60, σ2§09/66,mb3.2/13,Sea of Okhotsk

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
APC	**Apacha**	**2.12**	**100**	*i* P	P	04 06 41.6	+2.9
APC	**Apacha**	**2.12**	**100**	P	P	04 06 41.6	+2.9
PETK	**Petropavlovsk-**	**2.41**	**94**	P	**P**	**04 06 43.1**	**+2.7**
	7.4nm,0.3s,baz=264,slow=3.0,SNR=145						
PETK				S	**S**	**04 07 39.1**	**+4.6**
	baz=232,slow=41,SNR=1.6						
GNL	**Ganaly**	**2.55**	**80**	*i* P	P	04 06 44.4	+3.1
GNL	**Ganaly**	**2.55**	**80**	P	P	04 06 44.4	+3.1
KRMR	**Karymshinskiy**	**2.71**	**99**	*eP*	**P**	**04 06 44.8**	**+2.6**
ASAK	**Asacha**	**2.71**	**109**	*eP*	**P**	**04 06 44.8**	**+2.4**
MTVR	**Mutnovka**	**2.84**	**106**	P	**P**	**04 06 44.2**	**+1.0**
KRX	**Arik**	**2.96**	**88**	*eP*	**P**	**04 06 46.8**	**+2.8**
PET	**Petropavlovsk**	**2.99**	**94**	*eP*	**P**	**04 06 46.3**	**+2.3**
PET	**Petropavlovsk**	**2.99**	**94**	*eP*	**P**	**04 06 45.9**	**+1.9**
PET				pmax	pmax		
	comp=Z,48nm,0.7s						
AVH	**Avacha**	**3.01**	**90**	*eP*	**P**	**04 06 47.0**	**+2.7**
AVH	**Avacha**	**3.01**	**90**	P	**P**	**04 06 47.0**	**+2.7**
KRER	**Koryakskii**	**3.02**	**89**	*i* P	**P**	**04 06 47.1**	**+2.6**
DALK	**Dalny**	**3.05**	**94**	*eP*	**P**	**04 06 46.2**	**+1.8**
RUS	**Russkaya**	**3.05**	**106**	*i* P	**P**	**04 06 45.7**	**+1.3**
RUS				S	**S**	**04 07 40.5**	**-1.4**
RUS	**Russkaya**	**3.05**	**106**	P	**P**	**04 06 45.7**	**+1.3**
RUS				S	**S**	**04 07 40.5**	**-1.4**
SMAR	**Somma**	**3.05**	**90**	*i* P	**P**	**04 06 47.4**	**+2.7**
SMAR	**Somma**	**3.05**	**90**	P	**P**	**04 06 47.4**	**+2.7**
SKR	**Severo-Kuril's**	**3.05**	**150**	*eP*	**P**	**04 06 46.4**	**+1.8**
UGLR	**Uglovaya**	**3.07**	**91**	*i* P	**P**	**04 06 47.5**	**+2.8**
SDLR	**Sedlovina**	**3.10**	**89**	*i* P	**P**	**04 06 47.2**	**+2.2**
SDLR	**Sedlovina**	**3.10**	**89**	P	**P**	**04 06 47.2**	**+2.2**
NLC	**Nalytchevo**	**3.38**	**91**	*eP*	**P**	**04 06 48.9**	**+2.1**
NLC				S	**S**	**04 07 46.6**	**+0.3**
NLC	**Nalytchevo**	**3.38**	**91**	P	**P**	**04 06 48.9**	**+2.1**
NLC				S	**S**	**04 07 46.6**	**+0.3**
SPN	**Mys Shipunski**	**3.80**	**91**	*eP*	**P**	**04 06 50.8**	**+0.8**
SPN				*eS*	**S**	**04 07 49.2**	**-2.9**
SPN	**Mys Shipunski**	**3.80**	**91**	P	**P**	**04 06 50.8**	**+0.8**
SPN				S	**S**	**04 07 49.2**	**-2.9**
ESO	**Esso**	**3.88**	**46**	*eP*	P	04 06 54.6	+4.0
ESO	**Esso**	**3.88**	**46**	P	P	04 06 54.6	+4.0
TUMD	**Tumrok D**	**4.33**	**62**	*i* P	**P**	**04 06 57.2**	**+2.8**
TUMD				*eS*	**S**	**04 08 00.5**	**+0.3**
LGNR	**Loginova**	**4.88**	**53**	P	**P**	**04 07 02.1**	**+2.6**
LGNR	**Loginova**	**4.88**	**53**	P	**P**	**04 07 02.1**	**+2.6**
MKZ	**Mys Kozlova**	**4.88**	**72**	*eP*	**P**	**04 06 59.0**	**-0.2**
MKZ				*eS*	**S**	**04 08 05.7**	**-3.2**
MKZ	**Mys Kozlova**	**4.88**	**72**	P	**P**	**04 06 59.0**	**-0.2**
MKZ				S	**S**	**04 08 05.7**	**-3.2**
KRSR	**Krestovskiy**	**4.89**	**51**	P	**P**	**04 07 02.0**	**+2.6**
KRSR	**Krestovskiy**	**4.89**	**51**	P	**P**	**04 07 02.0**	**+2.6**
BDR	**Baidarnaya**	**5.39**	**50**	*eP*	**P**	**04 07 06.2**	**+2.3**
SRKR	**Sorokina**	**5.42**	**49**	P	**P**	**04 07 06.7**	**+2.5**
SRKR	**Sorokina**	**5.42**	**49**	P	**P**	**04 07 06.7**	**+2.5**
SMKR	**Semkarok**	**5.52**	**51**	P	**P**	**04 07 07.6**	**+2.5**
SMKR	**Semkarok**	**5.52**	**51**	P	**P**	**04 07 07.6**	**+2.5**
KBG	**Krutoberegovo**	**5.96**	**57**	S	**S**	**04 08 26.8**	**-0.5**
BKI	**Bering**	**7.41**	**71**	*eP*	**P**	**04 07 26.2**	**+2.4**
BKI				*eS*	**S**	**04 08 54.3**	**+0.3**
BKI	**Bering**	**7.41**	**71**	P	**P**	**04 07 26.2**	**+2.4**
BKI				S	**S**	**04 08 54.3**	**+0.3**
NKL	**Nikolayevsk**	**7.83**	**274**	*eP*	**P**	**04 07 30.0**	**+1.9**
SEY	**Seymchan**	**9.64**	**356**	P	**P**	**04 07 48.6**	**+1.6**
	comp=Z,0.2nm,0.3s,baz=128,slow=4.7,SNR=3.9						
KLR	**Kul'dur**	**14.33**	**262**	P	**P**	**04 08 37.8**	**+0.7**
	comp=Z,0.4nm,0.3s,baz=60,slow=9.0,SNR=7.4						
ILAR	**Eielson Array**	**31.36**	**45**	P	**P**	**04 11 13.5**	**+0.5**
	comp=Z,0.5nm,0.8s,baz=259,slow=7.3,SNR=7.2						
INK	**Inuvik**	**36.00**	**37**	P	**P**	**04 11 52.9**	**+0.8**
	comp=Z,0.5nm,0.3s,baz=301,slow=9.8,SNR=8.3						
ZALV	**Zalesovo Beam**	**39.36**	**300**	P	**P**	**04 12 19.3**	**-0.6**
	comp=Z,0.3nm,0.3s,baz=52,slow=9.3,SNR=2.9						
MKAR	**Makanchi Array**	**44.54**	**292**	P	**P**	**04 13 00.1**	**-0.9**
	comp=Z,0.8nm,0.4s,baz=61,slow=6.6,SNR=10.0						
YKA	**Yellowknife Ar**	**45.52**	**41**	P	**P**	**04 13 08.3**	**+0.2**
	comp=Z,0.2nm,0.5s,baz=303,slow=7.4,SNR=6.4						
ARCES	**ARCESS Array B**	**51.77**	**339**	P	**P**	**04 13 53.1**	**-1.5**
	comp=Z,1.6nm,0.8s,baz=36,slow=7.8,SNR=3.8						
FINES	**FINESS Array B**	**58.27**	**333**	P	**P**	**04 14 38.8**	**-1.4**
	comp=Z,0.4nm,0.4s,baz=32,slow=9.2,SNR=12						
PDAR	**Pinedale Array**	**60.67**	**57**	P	**P**	**04 14 57.4**	**+0.5**
	comp=Z,0.2nm,0.3s,baz=316,slow=5.0,SNR=2.9						
NOA	**NORSAR Array B**	**62.12**	**340**	P	**P**	**04 15 03.8**	**-2.1**
	comp=Z,0.6nm,0.7s,baz=23,slow=7.0,SNR=2.7						
AKASG	**Malin Array Be**	**66.31**	**325**	P	**P**	**04 15 31.1**	**-1.6**
	comp=Z,0.6nm,0.4s,baz=28,slow=6.3,SNR=3.7						
TXAR	**Lajitas Array**	**73.39**	**62**	P	**P**	**04 16 19.2**	**+0.3**
	comp=Z,0.2nm,0.5s,baz=307,slow=5.5,SNR=5.0						
WRA	**Warramunga Arr**	**74.89**	**199**	P	**P**	**04 16 22.6**	**-1.2**
	comp=Z,0.5nm,0.7s,baz=16,slow=6.0,SNR=5.1						
ASAR	**Alice Springs**	**78.60**	**198**	P	**P**	**04 16 43.4**	**-0.7**
	comp=Z,0.7nm,0.6s,baz=12,slow=5.3,SNR=12						

JMA 08 04:08:46.4,36°.86N×140°.62E,h7km±1km,M2.7,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.25**	**189**	P	Pg	04 08 51.4	0.0
ONAJ	**Iwakimizuishiy**	**0.28**	**31**	P	Pg	04 08 51.9	-0.1
ONAJ				S	Sg	04 08 56.0	+0.3
JFK	**Kawauchi**	**0.55**	**22**	P	Pg	04 08 56.5	-0.4
JFT	**Otama**	**0.69**	**341**	P	Pg	04 08 59.7	-0.1
JFT				S	Sg	04 09 09.1	+0.2
JMM	**Marumori**	**1.01**	**8**	P	Pg	04 09 05.5	-0.4
JMM				S	Sg	04 09 18.4	-0.6
MAT	**Matsushiro**	**1.96**	**261**	P	Pn	04 09 20.9	+0.8
MAT				S	Sb	04 09 47.1	-0.1

JMA 08 04:21:40.3±0.2,38°.23N×144°.52E,h42km,M3.6,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.39**	**292**	P	Pn	04 22 18.1	+1.2
MIYJ	**Miyakonagasawa**	**2.50**	**303**	P	Pn	04 22 19.4	+1.0
JIO	**Ouri**	**2.50**	**276**	P	Pn	04 22 20.2	+1.7
JIO				S	Sn	04 22 49.1	+1.3
JMK	**Ichinoseki**	**2.69**	**287**	P	Pn	04 22 22.7	+1.7
JMK				*eS*	Sn	04 22 54.6	+2.4
JOM	**Ohasama**	**2.81**	**297**	P	Pn	04 22 24.3	+1.6
JANG	**Nango**	**3.17**	**313**	P	Pn	04 22 29.0	+1.4
JYK	**Kaneyama**	**3.33**	**283**	P	Pn	04 22 32.3	+2.4
JYK				S	Sn	04 23 10.9	+2.7
JFT	**Otama**	**3.39**	**259**	P	Pn	04 22 33.0	+2.4
JFT				S	Sn	04 23 12.1	+2.5
JHO	**Hitachi**	**3.54**	**244**	P	Pn	04 22 33.3	+0.6
JHO				S	Sn	04 23 14.4	+1.1
JYT	**Yasato**	**3.99**	**241**	P	Pn	04 22 39.8	+0.9
JYT				*eS*	Sn	04 23 25.2	+0.8
JAG	**Ashikaga**	**4.42**	**248**	P	Pn	04 22 46.4	+1.5
JAG				S	Sn	04 23 36.4	+1.3
JCH	**Churui**	**4.47**	**349**	P	Pn	04 22 45.3	-0.2
JCH				S	Sn	04 23 33.6	-2.5
JKB	**Kayabe**	**4.53**	**325**	P	Pn	04 22 49.4	+3.1

*ISCJB **08** 04:29:53.4±0.5,60°.87S±0°.09×23°.8W±0°.2,h10km, mb4.4/16,MS3.7/11,Error ellipse: s-maj=15.9km s-min=10.0km az=141.4*
*NEIC **08** 04:30:00.6±2.9,60°.75S×23°.93W,h48km±25km,mb4.6/5, Error ellipse: s-maj=11.1km s-min=8.5km az=46.0*
*GCMT **08** 04:30:00.6±0.4,60°.73S×23°.13W,h48km±1km,MW5.3/69, Moment Tensor Solution. s21,c25; s69,c79; Duration: 1s1 Moment tensor: Scale 10^{17}Nm; M_{rr}0.45±.04; $M_{\theta\theta}$0.14±.04; $M_{\phi\phi}$-0.58±.05; $M_{r\theta}$0.15±.02; $M_{r\phi}$0.96±.04; $M_{\theta\phi}$-0.07±.02; Best double couple: $M_0$1.04400×10^{17} NP1:ϕ_s101.00000°,δ84.00000°,λ13.00000°. NP2: ϕ_s10.00000°,δ77.00000°,λ174.00000°. Principal axes: T 0.8260, Plg13.0000°, Azm326.0000°; N 0.4370, Plg76.0000°, Azm126.0000°; P -1.2620, Plg5.0000°, Azm235.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*IDC **08** 04:30:01.6±5.3,60°.74S×23°.85W,h55km±47km,mb4.2/12, mb1 4.3/13,mb1mx4.1/22,mbtmp4.4/13,ML5.7/1,MS3.6/12, Ms1 3.6/12,ms1mx3.6/19 Error ellipse: s-maj=18.8km s-min=17.6km az=4.0*
ISC 08 04:29:55.2±0.5,60°.80S±0°.09×23°.6W±0°.1,h10km,n50, σ1§48/41,mb4.5/16,MS3.7/11,South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VNA1	**Neumayer--Stat**	**11.68**	**154**	P	**Pn**	**04 32 39.8**	**-1.9**
VNA3	**Neumayer Olymp**	**11.88**	**158**	P	**Pn**	**04 32 41.8**	**-2.6**
VNA2	**Neumayer--Watz**	**12.08**	**154**	P	Pn	04 32 42.6	-4.5
	baz=310,slow=15						
SNAA	**Sanae**	**13.64**	**152**	P	**Pn**	**04 33 06.1**	**-2.3**
SNAA	**Sanae**	**13.64**	**152**	*ePn*	**Pn**	**04 33 06.0**	**-2.5**
	3μm,0.7s						
PMSA	**Palmer Station**	**18.67**	**240**	P	**Pn**	**04 34 15.7**	**+2.5**
	2.6nm,0.3s,baz=95,slow=7.7,SNR=20						
PMSA				LR	LR	04 40 52.9	
	comp=Z,50nm,19.3s,baz=103,slow=35						
H09W1	**TRISTAN DA CUN**	**24.77**	**22**	T	T	05 01 02.5	
QSPA	**South Pole Qui**	**29.44**	**180**	*eP*	**P**	**04 36 00.1**	**+1.3**
	36nm,1.1s						
TRQA	**Tornquist**	**33.02**	**296**	*eP*	**P**	**04 36 29.0**	**-1.3**
	11nm,0.8s						
PLCA	**Paso Flores**	**34.82**	**284**	P	**P**	**04 36 44.4**	**-1.6**
	6.1nm,0.9s,baz=158,slow=6.3,SNR=8.6						
PLCA				ScP	**ScP**	**04 43 09.6**	**+5.6**
	6.1nm,1.2s,baz=328,slow=5.8,SNR=3.1						
PLCA				LR	LR	04 49 12.7	
	comp=Z,55nm,21.0s,baz=172,slow=33						
MAW	**Mawson**	**35.27**	**139**	LR	LR	04 49 33.2	
	comp=Z,153nm,20.6s,baz=240,slow=33						
CPUP	**Villa Florida**	**41.36**	**311**	P	**P**	**04 37 40.3**	**-0.8**
	1.9nm,0.9s,baz=149,slow=6.2,SNR=4.0						
CPUP				LR	LR	04 56 34.3	
	comp=Z,26nm,18.9s,baz=125,slow=39						
VNDA	**Vanda**	**41.89**	**182**	P	**P**	**04 37 46.6**	**+1.7**
	1.4nm,0.8s,baz=175,slow=7.0,SNR=7.8						
VNDA				LR	LR	04 54 52.5	
	comp=Z,92nm,18.1s,baz=186,slow=36						
BOSA	**Boshof**	**45.67**	**68**	P	**P**	**04 38 17.2**	**+1.2**
	10nm,0.9s,baz=212,slow=7.0,SNR=11						
BOSA				LR	LR	04 52 33.6	
	comp=Z,69nm,18.9s,baz=191,slow=30						
LBTB	**Lobatse**	**48.92**	**66**	P	**P**	**04 38 42.0**	**+0.7**
	11nm,1.1s,baz=200,slow=2.2,SNR=6.9						
LVC	**Limon Verde**	**49.31**	**300**	P	**P**	**04 38 44.3**	**-0.4**
	9.2nm,0.6s,baz=162,slow=5.1,SNR=3.8						
LVC	**Limon Verde**	**49.31**	**300**	*eP*	**P**	**04 38 43.2**	**-1.4**
	4.5nm,0.8s						
H10S2	**ASCENSION HYDR**	**52.16**	**11**	T	T	05 35 34.4	
	baz=186,slow=75,SNR=5.1						
H10S3	**ASCENSION HYDR**	**52.17**	**11**	T	T	05 35 43.7	
	baz=186,slow=75,SNR=5.0						
H10S1	**ASCENSION HYDR**	**52.18**	**11**	T	T	05 35 40.3	
	baz=186,slow=75,SNR=5.5						
H10N3	**ASCENSION HYDR**	**53.28**	**11**	T	T	05 37 09.6	
	baz=187,slow=74,SNR=4.6						
H10N2	**ASCENSION HYDR**	**53.30**	**11**	T	T	05 37 01.9	
	baz=267,slow=74,SNR=4.1						
LPAZ	**La Paz**	**54.64**	**304**	P	**P**	**04 39 24.6**	**0.0**
	1.7nm,0.8s,baz=130,slow=4.8,SNR=6.7						
LPAZ				LR	LR	05 04 17.4	
	comp=Z,26nm,19.6s,baz=134,slow=38						
SAML	**Samuel**	**59.46**	**313**	*eP*	**P**	**04 39 57.2**	**-0.9**
	3.8nm,1.1s						
DBIC	**Dimbokro**	**68.86**	**20**	P	**P**	**04 41 00.5**	**+0.8**
	3.3nm,0.6s,baz=192,slow=6.3,SNR=7.7						
DBIC				LR	LR	05 04 18.7	
	comp=Z,66nm,18.2s,baz=153,slow=30						
OTAV	**Otavalo**	**73.81**	**302**	*eP*	**P**	**04 41 30.5**	**+0.2**
	5.6nm,1.1s						
ROSC	**El Rosal**	**76.32**	**307**	LR	LR	05 18 57.1	
	comp=Z,37nm,18.1s,baz=214,slow=38						
TORD	**Torodi Ar. Bea**	**76.41**	**25**	P	**P**	**04 41 45.6**	**+1.0**
	8.7nm,0.7s,baz=195,slow=5.9,SNR=63						
STKA	**Stephens Creek**	**86.87**	**167**	P	**P**	**04 42 40.7**	**+0.9**
	2.5nm,1.0s,baz=141,slow=7.6,SNR=3.2						
STKA				LR	LR	05 19 27.1	
	comp=Z,85nm,19.7s,baz=207,slow=34						
VAH	**Vaihoa**	**92.13**	**233**	*eT*	T	04 42 24.4	
	144nm,0.3s						
PMOR	**Pomariorio Ree**	**92.45**	**233**	*eT*	T	04 42 47.6	
	7.7nm,0.3s						
ASAR	**Alice Springs**	**93.88**	**159**	P	**P**	**04 43 11.7**	**-1.1**
	0.9nm,0.8s,baz=193,slow=4.5,SNR=8.6						
ASAR				LR	LR	05 22 06.2	
	comp=Z,129nm,22.0s,baz=222,slow=33						
MDT	**Midelt**	**94.56**	**16**	LR	LR	05 21 08.4	
	comp=Z,49nm,18.7s,slow=32						
WRA	**Warramunga Arr**	**97.59**	**159**	P	**P**	**04 43 29.7**	**0.0**
	0.4nm,0.9s,baz=201,slow=4.6,SNR=3.4						
SCHQ	**Schefferville**	**120.27**	**333**	PKP	**PKPdf**	**04 48 44.2**	**-0.8**
	1.6nm,0.7s,baz=238,slow=6.8,SNR=3.6						
NOA	**NORSAR Array B**	**124.43**	**20**	PKP	**PKPdf**	**04 48 52.6**	**-0.3**
	0.7nm,0.7s,baz=190,slow=1.5,SNR=3.5						
FINES	**FINESS Array B**	**127.72**	**28**	PKP	**PKPdf**	**04 48 59.0**	**0.0**
	2.7nm,0.6s,baz=174,slow=1.0,SNR=16						
ARCES	**ARCESS Array B**	**134.66**	**22**	PKP	**PKPdf**	**04 49 11.8**	**-0.2**
	2.6nm,0.8s,baz=311,slow=11,SNR=5.5						
MKAR	**Makanchi Array**	**136.51**	**74**	PKP	**PKPdf**	**04 49 16.2**	**0.0**
	0.6nm,0.8s,baz=225,slow=1.5,SNR=5.8						
YKA	**Yellowknife Ar**	**140.88**	**313**	PKhKP	PKPpre	04 49 17.6	
	0.1nm,0.5s,baz=125,slow=3.5,SNR=4.7						
YKA				PKP	**PKPdf**	**04 49 23.9**	**+0.2**
	1.0nm,0.6s,baz=124,slow=2.3,SNR=22						
DLBC	**Dease Lake**	**144.50**	**300**	PKP	**PKPdf**	**04 49 29.8**	**-0.5**
	7.8nm,1.0s,baz=97,slow=2.4,SNR=15						
DLBC	**Dease Lake**	**144.50**	**300**	*ePKPdf*	**PKPdf**	**04 49 29.5**	**-0.8**
DLBC				PKP	**PKPdf**	**04 49 29.8**	**-0.5**
SONM	**Songino Array**	**148.92**	**92**	PKPbc	**PKPbc**	**04 49 42.4**	**+0.2**
	2.5nm,0.7s,baz=20,slow=4.7,SNR=3.8						
KSAR	**Wonju Array Be**	**150.53**	**129**	PKPbc	**PKPbc**	**04 49 46.4**	**+0.1**
KSRS	**Korea Array**	**150.56**	**130**	PKPbc	**PKPbc**	**04 49 46.4**	**+0.1**
	2.0nm,0.8s,baz=190,slow=2.7,SNR=12						
INK	**Inuvik**	**150.59**	**315**	PKPbc	**PKPbc**	**04 49 45.3**	**-0.1**
	8.5nm,0.9s,baz=83,slow=3.1,SNR=37						
NRIK	**Noril'sk**	**151.35**	**44**	PKPbc	**PKPbc**	**04 49 46.4**	**-0.8**
	1.7nm,0.3s,baz=236,slow=2.1,SNR=4.6						
BMRM	**Bremner River**	**152.12**	**297**	*ePKPbc*	**PKPbc**	**04 49 49.4**	**+0.1**
ILAR	**Eielson Array**	**154.52**	**304**	PKPbc	**PKPbc**	**04 49 54.0**	**-0.3**
	1.7nm,1.1s,baz=151,slow=1.7,SNR=9.1						
COLA	**College**	**154.94**	**304**	*ePKPbc*	**PKPbc**	**04 49 53.3**	**-1.9**
COLA				*ePKPab*	**PKPab**	**04 50 10.4**	**-0.4**

*ISCJB **08** 04:32:19.4±0.3,44°.84N±0°.02×110°.92W±0°.03,h10km, Error ellipse: s-maj=3.6km s-min=2.7km az=163.5*
*NEIC **08** 04:32:20.0,44°.80N×110°.99W,h8km,ML3.1(SLC),After SLC.*
*IDC **08** 04:32:24.0±4.1,44°.64N×110°.97W,h28km±31km, mb1 2.9/4,mb1mx2.8/37,mbtmp2.6/4,ML3.1/4,Error ellipse: s-maj=24.4km s-min=20.2km az=26.0*
ISC 08 04:32:20.3±0.7,44°.80N±0°.02×110°.99W±0°.02,h10km,n25, σ1§78/52,Yellowstone region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LKWY	**Lake**	**0.48**	**119**	*ePg*	**Pb**	**04 32 30.1**	**-0.9**
LKWY				*eSg*	**Sg**	**04 32 34.6**	**-1.6**
H17A	**Grant Village**	**0.50**	**144**	*ePg*	**Pb**	**04 32 30.6**	**-0.7**
H17A				*eSg*	**Sg**	**04 32 34.8**	**-2.0**
FLWY	**Flagg Ranch**	**0.75**	**164**	*ePg*	**Pg**	**04 32 34.6**	**-0.2**
IMW	**Indian Meadow**	**0.91**	**178**	*ePg*	**Pg**	**04 32 37.1**	**-0.7**
IMW				*eSg*	**Sb**	**04 32 49.9**	**-0.7**
BOZ	**Bozeman (W)**	**0.96**	**332**	*ePg*	**Pg**	**04 32 37.5**	**-1.2**
BOZ				*eSg*	**Sg**	**04 32 49.4**	**-1.9**
MOOW	**Moose Ponds**	**1.07**	**171**	*ePn*	**Pg**	**04 32 39.9**	**-0.9**
MOOW				*eSg*	**Sg**	**04 32 54.4**	**-0.4**
LOHW	**Long Hollow**	**1.22**	**167**	*ePn*	**Pb**	**04 32 42.6**	**-1.0**
LOHW				*eSg*	**Sn**	**04 33 00.8**	**+0.5**
RLMT	**Red Lodge**	**1.26**	**75**	*ePn*	**Pn**	**04 32 43.7**	**-0.5**
RLMT				*eSg*	**Sb**	**04 32 59.9**	**-0.8**
DLMT	**Dillon**	**1.27**	**297**	*ePn*	**Pn**	**04 32 44.0**	**-0.3**
DLMT				*eSg*	**Sn**	**04 33 02.5**	**+1.0**
SNOW	**Snow King Moun**	**1.35**	**173**	*ePn*	**Pn**	**04 32 45.3**	**-0.2**
SNOW				*eSn*	**Sg**	**04 33 04.7**	**+0.9**
REDW	**Red Top Meadow**	**1.44**	**176**	*ePn*	**Pn**	**04 32 46.5**	**-0.2**
REDW				*eSn*	**Sg**	**04 33 07.0**	**+0.3**
AHID	**Auburn Hatcher**	**2.04**	**182**	*ePn*	**Pb**	**04 32 56.1**	**-1.5**
AHID				*eSg*	**Sg**	**04 33 26.7**	**+0.9**
BW06	**Boulder Array**	**2.28**	**153**	*ePn*	**Pn**	**04 32 59.6**	**+1.4**
BW06				*eSg*	**Sb**	**04 33 30.7**	**+0.6**
PDAR	**Pinedale Array**	**2.28**	**153**	Pn	**Pb**	**04 33 00.2**	**-1.5**
	3.3nm,0.3s,baz=335,slow=13,SNR=104						
PDAR				Lg	Lg	04 33 31.6	
	1.2nm,0.3s,baz=355,slow=28,SNR=12						
HLID	**Hailey**	**2.76**	**244**	*ePn*	**Pn**	**04 33 06.6**	**+1.9**
HLID				*ePb*	**Pb**	**04 33 10.9**	**+1.1**
HLID				*ePg*	**Pg**	**04 33 14.3**	**+1.1**
HLID				*eSg*	**Sb**	**04 33 44.8**	**+1.1**
HWUT	**Hardware Ranch**	**3.22**	**188**	*ePn*	**Pn**	**04 33 12.8**	**+1.6**
EGMT	**Eagleton**	**3.33**	**14**	*ePn*	**Pn**	**04 33 13.6**	**+1.0**
EGMT				*ePg*	**Pb**	**04 33 20.3**	**+0.8**
EGMT				*eSn*	**Sn**	**04 33 51.2**	**-1.0**
EGMT				*eSg*	**Sb**	**04 34 02.5**	**+2.4**
MFID	**Camas Ranch**	**3.75**	**250**	*ePn*	**Pn**	**04 33 21.0**	**+2.7**
MFID				*eSg*	**Sg**	**04 34 16.5**	**-4.2**
LAO	**LASA Array**	**3.83**	**59**	*ePn*	**Pn**	**04 33 18.3**	**-1.1**
LAO				*ePg*	**Pg**	**04 33 30.9**	**-2.7**
LAO				*eSn*	**Sn**	**04 34 02.6**	**-1.8**
LAO				*eSg*	**Sb**	**04 34 18.5**	**+4.0**
BMO	**Blue Mountains**	**4.50**	**273**	*ePn*	**Pn**	**04 33 30.1**	**+1.6**
BMO				*ePg*	**Pg**	**04 33 44.2**	**-2.2**
BMO				*eSg*	**Sg**	**04 34 41.3**	**-3.3**
DUG	**Dugway, Tooele**	**4.80**	**197**	*ePn*	**Pn**	**04 33 33.8**	**+1.1**
DUG				*ePg*	**Pg**	**04 33 49.0**	**-3.1**
RSSD	**Black Hills**	**5.02**	**95**	*ePn*	**Pn**	**04 33 35.9**	**+0.1**
	6.8nm,0.5s						
RSSD				*ePg*	**Pb**	**04 33 51.1**	**+2.7**
RSSD				*eSg*	**Sb**	**04

25nm,0.3s,baz=290,slow=23,SNR=7.3
KSRS Korea Array 10.50 276 P **Pn 04 56 14.1 +3.9**
0.4nm,0.3s,baz=88,slow=13,SNR=18
KSAR Wonju Array Be 10.53 276 P **Pn 04 56 14.1 +3.4**
MDJ Mudanjiang 11.52 315 P Pn 04 56 29.5 +5.3
MDJ pmax pmax
comp=Z,19nm,1.0s
MDJ pmax pmax
comp=Z,100nm,6.2s
MDJ Mudanjiang 11.52 315 *e*Pn **Pn 04 56 22.2 -2.1**
KLR Kul'dur 13.94 334 P **Pn 04 56 58.1 +0.9**
comp=Z,0.1nm,0.3s,baz=161,slow=11,SNR=3.0
NJ2 Nanjing 18.96 261 *e*P **Pn 04 58 01.0 +0.5**
NJ2 pmax pmax
comp=Z,11nm,0.5s
TIA Tai'an 19.24 275 *e*P **Pn 04 58 04.4 +0.5**
TIA pmax pmax
comp=Z,20nm,1.1s
BJI Beijing 19.69 286 P **P 04 58 06.5 -0.9**
BJI pmax pmax
comp=Z,3.0nm,1.0s
PETK Petropavlovsk- 19.82 31 P **P 04 58 07.8 -0.9**
comp=Z,0.5nm,0.3s,baz=226,slow=11,SNR=4.2
YHNB Yeheng 20.88 239 *e*P **P 04 58 20.1 -0.4**
comp=Z,5.1nm,0.5s
YULB Yu-li 21.79 237 *e*P **P 04 58 29.0 -1.1**
HHC Hu-ho-hao-te 23.21 289 *e*P **P 04 58 46.5 +1.4**
HHC pP sP 04 59 00.6 -2.9
HHC sP pP 04 59 07.6 +10
HHC S **S 05 02 50.4 -2.9**
HHC pmax pmax
comp=Z,11nm,0.8s
HHC pmax pmax
comp=Z,70nm,3.9s
HHC LR LR
comp=N,660nm,12.6s
HHC LR LR
comp=E,770nm,13.6s
HHC LR LR
comp=Z,770nm,12.6s
MA2 Magadan 23.41 12 *e*P **P 04 58 46.4 -0.2**
comp=Z,68nm,1.1s
YAK Yakutsk 26.01 348 P **P 04 59 10.7 +0.4**
comp=Z,16nm,0.4s,baz=33,slow=0.6,SNR=3.3
XAN Xi'an 26.27 273 P **P 04 59 14.4 +1.3**
XAN pP pP 04 59 25.1 -0.9
XAN pmax pmax
comp=Z,5.0nm,0.5s
SEY Seymchan 26.84 11 P **P 04 59 19.0 +1.2**
comp=Z,4.9nm,1.0s,baz=221,slow=10,SNR=8.8
ENH Enshi 27.07 265 *e*P **P 04 59 19.8 -0.5**
comp=Z,13nm,0.8s
SONM Songino Array 27.56 304 P **P 04 59 23.9 -0.8**
comp=Z,2.7nm,0.5s,baz=100,slow=8.6,SNR=4.0
SONM PcP **PcP 05 02 41.0 -0.3**
comp=Z,1.7nm,0.5s,baz=100,slow=2.3,SNR=3.7
H11N2 WAKE ISLAND Hy 28.38 120 T T 05 29 36.5
baz=313,slow=75,SNR=455
H11N1 WAKE ISLAND Hy 28.39 120 T T 05 29 37.1
baz=313,slow=75,SNR=418
H11N3 WAKE ISLAND Hy 28.40 120 T T 05 29 37.8
baz=313,slow=75,SNR=370
H11S1 WAKE ISLAND Hy 29.09 122 T T 05 30 29.8
baz=314,slow=76,SNR=693
H11S3 WAKE ISLAND Hy 29.09 122 T T 05 30 29.4
baz=314,slow=76,SNR=384
H11S2 WAKE ISLAND Hy 29.11 122 T T 05 30 25.4
baz=314,slow=76,SNR=283
LZH Lanzhou 29.80 280 *e*P **P 04 59 48.2 +3.5**
LZH pP sP 05 00 04.4 +0.6
LZH sP pP 05 00 10.5 +13
LZH pmax pmax
comp=Z,16nm,1.0s
LZH pmax pmax
comp=Z,70nm,4.9s
CD2 Chengdu 31.40 270 P **P 04 59 57.4 -1.4**
CD2 pmax pmax
comp=Z,1.0nm,0.5s
GTA Gaotai 32.30 287 *e*P **P 05 00 07.1 +0.4**
GTA pP pP 05 00 21.8 +2.0
GTA sP sP 05 00 29.4 +3.6
GTA pmax pmax
comp=Z,5.0nm,1.0s
DAV Davao City (W) 33.01 209 LR LR 05 14 46.1
comp=Z,24nm,19.2s,baz=14,slow=38
KMI Kunming 34.70 261 P **P 05 00 28.9 +1.1**
KMI pmax pmax
comp=Z,9.0nm,0.9s
KMI pmax pmax
comp=Z,29nm,3.1s
TIXI Tiksi 35.25 353 P **P 05 00 31.2 -0.6**
comp=Z,1.9nm,0.3s,baz=126,slow=4.3,SNR=5.6
TIXI Tiksi 35.25 353 *e*P **P 05 00 31.3 -0.4**
comp=Z,7.2nm,1.3s
MYLDM Lahad Datu 37.85 219 *e*P **P 05 00 56.2 +1.8**
comp=Z,27nm,1.1s
WMQ Urumqi 40.60 297 P **P 05 01 17.9 +0.7**
WMQ pP pP 05 01 32.7 +2.1
WMQ sP sP 05 01 39.7 +3.1
WMQ PcP **PcP 05 03 17.8 -0.7**
WMQ ScP **ScP 05 07 06.2 +2.6**
WMQ S **S 05 07 18.7 -4.5**
WMQ sS sS 05 07 54.8 +9.1
WMQ ScS **ScS 05 11 17.4 -0.7**
WMQ pmax pmax
comp=Z,9.0nm,0.6s
WMQ pmax pmax
comp=Z,47nm,5.2s
WMQ LR LR
comp=Z,22nm,31.8s
ZAA0 Zalesovo Array 41.71 312 *e*P **P 05 01 25.9 -0.2**
ZAA0 *e*pP **sP 05 01 43.2 -2.3**
ZALV Zalesovo Beam 41.71 312 P **P 05 01 26.4 +0.3**
comp=Z,7.9nm,0.6s,baz=91,slow=6.4,SNR=40
ZALV sP **sP 05 01 44.5 -1.0**
comp=Z,3.2nm,0.8s,baz=94,slow=6.8,SNR=3.7
ZALV PcP **PcP 05 03 21.5 -0.3**
comp=Z,1.0nm,0.4s,baz=98,slow=2.1,SNR=3.7
NRIK Noril'sk 43.15 335 P **P 05 01 39.0 +1.4**
comp=Z,1.3nm,0.3s,baz=114,slow=7.6,SNR=3.9
MK01 Makanchi Array 43.88 302 *e*P **P 05 01 43.4 -0.5**
MK31 Makanchi Array 43.89 302 *e*P **P 05 01 43.8 -0.1**
MKAR Makanchi Array 43.89 302 P **P 05 01 44.0 +0.1**
comp=Z,4.2nm,0.7s,baz=89,slow=9.8,SNR=36
MKAR PcP **PcP 05 03 28.2 -1.1**
comp=Z,0.8nm,0.8s,baz=57,slow=4.5,SNR=3.5
MKAR Makanchi Array 43.89 302 *e*P **P 05 01 43.4 -0.6**
MKAR PcP **PcP 05 03 28.2 -1.1**
MAKZ Makanchi 44.10 302 *e*P **P 05 01 45.4 -0.2**
comp=Z,6.3nm,0.9s
KSM Kuching 45.36 226 *e*P **P 05 01 56.2 +0.3**
comp=Z,9.7nm,1.1s
KURK Kurchatov 45.72 308 *e*P **P 05 01 58.1 -0.3**
comp=Z,18nm,0.6s
KURK pP **pP 05 02 13.3 +1.4**
KURBB Kurchatov Arra 45.79 308 P **P 05 01 58.7 -0.2**
comp=Z,8.2nm,0.8s,baz=85,slow=8.1,SNR=34
KURBB pP **pP 05 02 13.3 +0.8**
comp=Z,4.8nm,0.7s,baz=84,slow=7.9,SNR=4.4
GUN Gumba 46.89 275 *e*P **P 05 02 08.5 +0.2**
comp=Z,20nm,0.6s
CAST Castle Rocks 47.37 34 *e*P **P 05 02 12.5 +1.3**
comp=Z,3.3nm,0.9s
KKN Kakani 47.42 276 *e*P **P 05 02 12.5 +0.3**
comp=Z,17nm,0.7s
PKIN Phulchoki 47.42 275 *e*P **P 05 02 13.8 +1.5**
comp=Z,6.8nm,0.6s
DMN Daman 47.63 276 *e*P **P 05 02 15.1 +1.1**
GKN Gorkha 47.84 276 *e*P **P 05 02 15.3 -0.1**
comp=Z,34nm,0.8s
BPAW Bear Paw Mtn. 47.87 33 *e*P **P 05 02 15.6 +0.5**
comp=Z,0.8nm,1.1s
KTH Kantishna Hill 47.89 34 *e*P **P 05 02 15.9 +0.6**
comp=Z,7.4nm,1.1s
MLY Manley 47.99 32 *e*P **P 05 02 16.6 +0.7**
comp=Z,10nm,1.6s
MLY *e*pP **pP 05 02 31.2 +1.6**
TRF Thorofare Moun 48.18 34 *e*P **P 05 02 19.1 +1.5**
comp=Z,2.4nm,0.8s
COLD Coldfoot 48.28 29 *e*P **P 05 02 18.0 -0.1**
comp=Z,2.0nm,1.0s
SEW Seward 48.73 39 *e*P **P 05 02 22.0 +0.4**
comp=Z,9.8nm,1.0s
KOLN Koldanda 48.76 276 *e*P **P 05 02 22.6 0.0**
comp=Z,12nm,0.8s
MCK McKinley 48.78 34 *e*P **P 05 02 21.9 -0.1**
comp=Z,1.9nm,0.5s
RND Reindeer 48.83 34 *e*P **P 05 02 22.4 0.0**
RND *e*pP **pP 05 02 37.1 +1.0**
MDM Murphy Dome 49.05 32 *e*P **P 05 02 25.2 +1.1**
comp=Z,5.9nm,1.0s
PYUN Piuthan 49.10 277 *e*P **P 05 02 25.1 -0.1**
TKM2 Tokmak 2 49.39 298 *e*P **P 05 02 27.4 +0.2**
comp=Z,8.1nm,1.1s
IL1 Eielson Array 49.63 32 *e*P **P 05 02 29.1 +0.6**
ILAR Eielson Array 49.63 32 P **P 05 02 29.1 +0.5**
comp=Z,2.0nm,0.7s,baz=270,slow=6.4,SNR=26
ILAR pP **pP 05 02 42.7 +0.5**
comp=Z,2.4nm,0.8s,baz=271,slow=6.1,SNR=11
ILB Eielson Array 49.63 32 *e*P **P 05 02 28.9 +0.3**
AAK Ala-Archa 50.25 298 *e*P **P 05 02 33.3 -0.4**
comp=Z,3.3nm,0.9s
BVAR Borovoye Array 50.37 312 P **P 05 02 34.1 -0.1**
comp=Z,1.8nm,0.6s,baz=64,slow=6.8,SNR=10
BVAR PcP **PcP 05 03 52.0 -0.1**
comp=Z,1.7nm,0.6s,baz=85,slow=1.9,SNR=5.6
BRVK Borovoye 50.42 312 *e*P **P 05 02 34.3 -0.3**
comp=Z,3.6nm,0.8s
EKS2 Erkin-Say 50.75 299 *e*P **P 05 02 36.9 -0.5**
comp=Z,1.6nm,0.6s
COEN Coen 50.76 177 *e*P **P 05 02 39.5 +2.0**
comp=Z,2.6nm,0.6s
DOT Dot Lake 50.95 34 *e*P **P 05 02 38.3 -0.2**
comp=Z,5.5nm,0.7s
MENT Mentasta 51.18 35 *e*P **P 05 02 40.6 +0.4**
comp=Z,2.8nm,0.7s
ZRNK Zerenda 51.20 312 *e*P **P 05 02 39.8 -0.7**
comp=Z,5.2nm,0.8s
KKAR Karatay Array 52.89 300 *e*P **P 05 02 53.1 -0.1**
comp=Z,1.5nm,0.6s
GSI Gunungsitoli 53.57 239 *e*P **P 05 02 58.2 -0.4**
comp=Z,17nm,0.7s
INK Inuvik 54.51 27 P **P 05 03 05.5 +0.9**
baz=265,slow=5.6
INK pP **pP 05 03 18.9 +0.5**
baz=247,slow=5.1
ARU Arti 56.18 318 P **P 05 03 16.5 -0.3**
comp=Z,8.6nm,0.6s,baz=70,slow=2.3,SNR=20
ARU Arti 56.18 318 *e*P **P 05 03 16.2 -0.6**
comp=Z,14nm,0.8s
WRAB Tennant Creek 57.02 188 *e*P **P 05 03 21.8 -1.4**
comp=Z,3.9nm,0.7s
WRA Warramunga Arr 57.03 188 P **P 05 03 22.2 -1.0**
comp=Z,2.7nm,0.8s,baz=4.5,slow=7.4,SNR=30
WRA pP **pP 05 03 37.8 +0.6**
comp=Z,1.2nm,0.4s,baz=5.3,slow=7.3,SNR=6.5
WRA LR LR 05 26 54.2
comp=Z,52nm,18.9s,baz=95,slow=35
ABKAR Akbulak array 57.73 310 *e*P **P 05 03 26.9 -1.0**
AKTO Aktyubinsk 58.47 312 P **P 05 03 35.5 +2.3**
comp=Z,0.8nm,0.5s,baz=60,slow=9.8,SNR=5.1
DLBC Dease Lake 58.79 38 *e*P **P 05 03 36.7 +1.4**
comp=Z,5.1nm,1.1s
AS01 Alice Springs 60.75 187 *e*P **P 05 03 49.0 0.0**
ASAR Alice Springs 60.76 188 P **P 05 03 48.7 -0.3**
comp=Z,0.7nm,0.7s,baz=5.1,slow=6.0,SNR=8.1
ASAR pP **pP 05 04 03.5 +0.3**
comp=Z,2.8nm,1.0s,baz=1.7,slow=5.7,SNR=10.0
MBWA Marble Bar 61.29 203 *e*P **P 05 03 52.1 -0.6**
comp=Z,22nm,1.0s
EIDS Eidsvold 62.79 170 *e*P **P 05 04 02.6 +0.1**
comp=Z,3.5nm,0.8s
GEYT Alibeck 63.60 299 P **P 05 04 08.4 +0.3**
comp=Z,4.3nm,0.8s,baz=57,slow=5.5,SNR=5.9
ARCES ARCESS Array B 63.90 339 P **P 05 04 09.9 +0.4**
comp=Z,3.0nm,0.9s,baz=46,slow=8.7,SNR=5.8
YKA Yellowknife Ar 63.94 30 P **P 05 04 10.1 +0.2**
comp=Z,1.4nm,0.7s,baz=304,slow=6.8,SNR=37
YKA pP **pP 05 04 24.9 +0.9**
comp=Z,0.4nm,0.7s,baz=303,slow=7.8,SNR=4.8
YKB5 Yellowknife Ar 63.94 30 *e*P **P 05 04 08.9 -0.9**
AFI Afiamalu 67.34 130 LR LR 05 26 29.2
comp=Z,35nm,21.9s,baz=212,slow=29
STKA Stephens Creek 68.56 180 P **P 05 04 38.8 -0.9**
comp=Z,3.0nm,1.1s,baz=325,slow=14,SNR=2.3
STKA pP **pP 05 04 54.3 +0.3**
comp=Z,1.5nm,0.5s,baz=347,slow=4.7,SNR=3.0
FIA1 FINESS Array S 68.68 332 *e*P **P 05 04 40.0 -0.2**
FINES FINESS Array B 68.68 332 P **P 05 04 40.0 -0.3**
comp=Z,3.3nm,0.7s,baz=63,slow=8.8,SNR=17
FINES pP **pP 05 04 53.4 -1.2**
comp=Z,2.6nm,0.7s,baz=39,slow=7.3,SNR=5.1
SUMG Summit 70.68 360 *e*P **P 05 04 53.2 +0.4**
comp=Z,6.1nm,1.1s
KVAR Kislovodsk Arr 70.69 311 P **P 05 04 53.8 +0.7**
comp=Z,4.1nm,0.4s,baz=184,slow=5.3,SNR=4.1
KBZ Khabaz 70.69 311 P **P 05 04 52.4 -0.5**
comp=Z,4.1nm,0.9s,baz=60,slow=3.4,SNR=5.1
KIV Kislovodsk 70.70 311 *e*P **P 05 04 53.6 +0.5**
comp=Z,9.6nm,0.7s
GNI Garni 71.49 307 LR LR 05 37 10.8
comp=Z,59nm,19.5s,baz=66,slow=36
MFID Camas Ranch 73.82 48 *e*P **P 05 05 12.6 +0.8**
comp=Z,1.7nm,0.9s
HFS Hagfors 73.97 336 P **P 05 05 12.3 +0.2**
comp=Z,1.7nm,0.6s,baz=83,slow=5.1,SNR=6.4
NC204 NORSAR Array S 74.03 337 *e*P **P 05 05 11.3 -1.3**
NB2 NORSAR Subarra 74.08 337 P **P 05 05 12.6 -0.2**
comp=Z,3.9nm,0.9s,baz=40,slow=6.2
NOA NORSAR Array B 74.08 337 P **P 05 05 12.4 -0.4**
comp=Z,3.3nm,0.9s,baz=39,slow=5.8,SNR=12
NOA LR LR 05 40 58.6
comp=Z,29nm,19.9s,baz=230,slow=38
FCC Fort Churchill 74.12 26 *e*P **P 05 05 12.8 -0.2**
comp=Z,4.8nm,1.1s
AKASG Malin Array Be 74.13 322 P **P 05 05 12.1 -1.1**
comp=Z,1.0nm,0.4s,baz=50,slow=7.6,SNR=4.8
AKASG pP **pP 05 05 27.1 -0.6**
comp=Z,1.0nm,0.5s,baz=46,slow=6.5,SNR=2.8
AKASG LR LR 05 39 37.2
comp=Z,39nm,20.9s,baz=40,slow=37
KIEV Kiev 74.14 322 *e*P **P 05 05 11.9 -1.4**
comp=Z,3.8nm,0.7s
LRM Limekiln Ridge 74.33 44 *e*P **P 05 05 15.5 +0.6**
EGMT Eagleton 74.44 41 *e*P **P 05 05 16.2 +1.0**
comp=Z,6.7nm,1.1s
DLMT Dillon 74.53 45 *e*P **P 05 05 16.9 +1.0**
comp=Z,3.3nm,0.8s
BOZ Bozeman (W) 74.89 44 *e*P **P 05 05 18.6 +0.6**
comp=Z,4.6nm,1.1s
NV01 Mina Array Sit 75.20 53 *e*P **P 05 05 20.9 +1.0**
NVAR Mina Array Bea 75.20 53 P **P 05 05 21.6 +1.6**
comp=Z,1.8nm,0.8s,baz=300,slow=5.1,SNR=12
NVAR pP **pP 05 05 36.1 +1.7**
comp=Z,0.8nm,0.7s,baz=299,slow=6.1,SNR=4.1
H17A Grant Village 76.25 44 *e*P **P 05 05 27.2 +1.2**
comp=Z,3.4nm,0.9s
IMW Indian Meadow 76.36 45 *e*P **P 05 05 26.4 -0.2**
comp=Z,3.2nm,0.9s
R11A Troy Canyon, C 76.97 52 *e*P **P 05 05 30.6 +0.6**
comp=Z,1.9nm,1.0s
TPNV Topopah Spring 77.39 53 *e*P **P 05 05 33.3 +1.0**
comp=Z,4.7nm,1.1s
DUG Dugway, Tooele 77.56 49 *e*P **P 05 05 33.3 +0.1**
comp=Z,2.4nm,0.7s
PDAR Pinedale Array 77.85 45 P **P 05 05 35.7 +0.8**
comp=Z,0.9nm,0.7s,baz=253,slow=2.2,SNR=12
PDAR pP **pP 05 05 49.9 +0.4**
comp=Z,0.3nm,0.5s,baz=238,slow=1.3,SNR=4.5
BUR08 Bucovina Ar. S 78.13 322 *e*P **P 05 05 35.5 -0.7**
BRTR Keskin Array B 78.65 311 P **P 05 05 39.3 0.0**
comp=Z,0.9nm,0.7s,baz=95,slow=4.1,SNR=5.7
OJC Ojcow 78.89 326 *e*P **P 05 05 40.0 -0.2**
comp=Z,14nm,1.4s
BR231 Keskin MP Arra 79.09 312 *e*P **P 05 05 39.9 -1.7**
ULM Lac du Bonnet 79.65 33 LR LR 05 41 20.3
comp=Z,19nm,21.1s,baz=306,slow=36
DPC Dobruska-Polom 80.31 328 *e*P **P 05 05 48.8 +0.8**
DPC *e*pP **pP 05 06 02.4 -0.2**
PSZ Piszkesteto 80.50 324 *e*P **P 05 05 49.9 +0.8**
comp=Z,4.8nm,1.0s
VYHS Vyhne 80.57 325 *e*P **P 05 05 49.6 +0.3**
BRG Berggiesshubel 80.91 329 *e*(P) **P 05 05 51.1 0.0**
comp=Z,4.5nm,1.1s
PVCC Panska Ves 80.92 329 *e*P **P 05 05 51.6 +0.5**
CLL Collm 80.96 330 *i* P **P 05 05 50.9 -0.4**
comp=Z,7.0nm,1.3s
VRAC Vranov 80.97 327 P **P 05 05 51.0 -0.5**
comp=Z,2.5nm,1.0s,baz=48,slow=3.7,SNR=3.7
PV10 Paradox Valley 80.97 48 *e*P **P 05 05 53.9 +1.9**
PV05 Paradox Valley 81.13 49 *e*P **P 05 05 54.1 +1.2**
PV01 Paradox Valley 81.41 48 *e*P **P 05 05 55.4 +1.1**
SMCO Snowmass 81.67 47 *e*P **P 05 05 56.6 +0.8**
comp=Z,26nm,1.1s
KHC Kasperske Hory 82.40 328 *e*P **P 05 05 59.0 0.0**
KHC Kasperske Hory 82.40 328 *e*P **P 05 05 58.2 -0.9**
comp=Z,2.3nm,1.3s
GERES GERESS Array B 82.56 328 P **P 05 05 59.8 -0.2**
comp=Z,0.9nm,0.6s,baz=37,slow=6.4,SNR=8.7
GERES pP **pP 05 06 14.3 -0.3**
comp=Z,0.4nm,0.6s,baz=38,slow=6.8,SNR=2.4
GEA0 GERESS Array S 82.57 328 *e*P **P 05 05 59.1 -0.9**
S22A 4UR Ranch, Cre 82.70 48 *e*P **P 05 06 01.8 +0.6**
comp=Z,2.8nm,1.0s
GRFO Grafenberg 82.93 330 *e*P **P 05 06 01.5 -0.2**
comp=Z,6.0nm,0.9s
PMOR Pomariorio Ree 84.43 113 *e*T T 06 38 52.2
comp=Z,5.9nm,0.2s
T25A Trinidad 84.53 47 *e*P **P 05 06 09.9 -0.5**
comp=Z,3.9nm,0.9s
PPT2 Papeete2 84.89 116 *e*LR LR 05 32 56.0
comp=Z,82nm,31.5s
SCHQ Schefferville 85.41 16 P **P 05 06 13.6 -0.6**
comp=Z,5.5nm,1.0s,baz=282,slow=7.9,SNR=4.6
TX31 Lajitas Ar. Si 90.33 52 *e*P **P 05 06 38.9 +0.5**
TXAR Lajitas Array 90.33 52 P **P 05 06 39.3 +0.9**
comp=Z,1.7nm,0.8s,baz=297,slow=3.1,SNR=19
TXAR pP **pP 05 06 54.3 +1.1**
comp=Z,0.1nm,0.2s,baz=270,slow=3.2,SNR=2.6
TORD Torodi Ar. Bea 117.14 315 PKP **PKPdf 05 12 21.7 -0.8**
comp=Z,0.2nm,0.7s,baz=340,slow=2.7,SNR=2.3
SAML Samuel 144.43 44 *e*PKPdf **PKPdf 05 13 13.5 -0.2**
LCO Las Campanas 152.28 83 *e*PKPbc **PKPbc 05 13 33.2 +0.1**

NIED ***08*** *04:59:00, 38.°20N×144.°10E, h5km, Mw4.4 Best double couple: M₀5.01000×10¹⁵ NP1:φ₀21.00000°, δ18.00000°, λ-67.00000°. NP2:φ₀177.00000°, δ74.00000°, λ-97.00000°.*
JMA ***08*** *04:59:40.6±0.2, 38.°20N×144.°14E, h43km, M4.9*
ISCJB ***08*** *04:59:40.4±0.2, 38.°18N±0.°03×144.°15E±0.°02, h31km, mb4.5/137, MS3.7/10, Error ellipse: s-maj=4.4km s-min=2.5km az=169.9*
NEIC ***08*** *04:59:40.2±1.8, 38.°13N×144.°22E, h19km±11km, mb4.7/89, Error ellipse: s-maj=5.1km s-min=3.1km az=136.0*
MOS ***08*** *04:59:41.4±0.9, 38.°31N×144.°19E, h33km, mb4.7/57, Error ellipse: s-maj=8.2km s-min=5.6km az=94.2*
IDC ***08*** *04:59:41.7±0.4, 38.°09N×144.°22E, h31km±2km, mb4.1/29, mb1 4.3/37, mb1mx4.2/58, mbtmp4.3/37, ML3.9/7, MS3.2/7, Ms1 3.2/7, ms1mx2.9/41, Error ellipse: s-maj=12.1km s-min=9.9km az=112.0*

ISC 08 04:59:41.1±0.4, 38.°23N±0.°05×144.°23E±0.°04, h26km±2km, h25km:pP-P, n295, σ1ˢ50/327, mb4.6/137, MS3.6/10, 10C-5D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.18**	**294**	P	**Pn**	**05 00 14.9**	**-0.8**
OFUJ				S	**Sn**	**05 00 40.1**	**-1.7**
JIO	**Ouri**	**2.28**	**277**	P	**Pn**	**05 00 16.1**	**-0.9**
JIO				S	**Sn**	**05 00 42.1**	**-2.2**
JMK	**Ichinoseki**	**2.47**	**288**	P	**Pn**	**05 00 19.0**	**-0.6**
JMK				S	**Sn**	**05 00 48.1**	**-0.8**
JOM	**Ohasama**	**2.61**	**299**	P	**Pn**	**05 00 21.2**	**-0.4**
JOM				S	**Sn**	**05 00 51.8**	**-0.6**
JANG	**Nango**	**3.00**	**316**	P	**Pn**	**05 00 26.3**	**-0.7**
JANG				S	**Sn**	**05 01 00.2**	**-2.0**
JYK	**Kaneyama**	**3.11**	**284**	P	**Pn**	**05 00 28.3**	**-0.2**
JYK				*e*S	**Sn**	**05 01 04.0**	**-0.9**
JFT	**Otama**	**3.17**	**258**	P	**Pn**	**05 00 28.7**	**-0.5**
JFT				S	**Sn**	**05 01 04.5**	**-1.7**
ERM	**Erimo**	**3.87**	**348**	*e*P	**Pn**	**05 00 38.0**	**-0.9**
ERM	**Erimo**	**3.87**	**348**	*e*Pn	**Pn**	**05 00 38.2**	**-0.7**
ERM				*e*Sn	**Sn**	**05 01 15.4**	**-8.0**
MJAR	**Matsushiro Arr**	**5.08**	**252**	Pn	**Pn**	**05 00 55.6**	**0.0**
	11nm,0.3s,baz=80,slow=15,SNR=75						
MAJO	**Matsushiro**	**5.09**	**253**	*c i*P	**Pn**	**05 00 56.0**	**+0.4**
MAJO	**Matsushiro**	**5.09**	**253**	*e*Pn	**Pn**	**05 00 56.1**	**+0.4**
MAT	**Matsushiro**	**5.09**	**253**	P	**Pn**	**05 00 55.8**	**+0.1**
MAT				*e*S	**Sn**	**05 01 52.8**	**-0.8**
MJB9	**Matsu-Tunnel**	**5.09**	**253**	*e*Pn	**Pn**	**05 00 56.1**	**+0.4**
YUK	**Yuzh-Kuril'sk**	**5.93**	**11⇑**	*i*P	**Pn**	**05 01 04.0**	**-3.1**
YUK				*i* S	**Sn**	**05 02 06.6**	**-7.6**
YUK				pmax	pmax		
	comp=Z,446nm,0.3s						
YUK				pmax	pmax		
	comp=N,142nm,0.4s						
YUK				pmax	pmax		
	comp=E,159nm,0.3s						
SHO	**Shikotan**	**5.97**	**18⇑**	*i*P	**Pn**	**05 01 04.2**	**-3.5**
SHO				*i* S	Sn	05 02 07.4	-7.7
SHO				pmax	pmax		
	comp=Z,340nm,0.5s						
SHO				pmax	pmax		
	comp=N,130nm,0.4s						
SHO				pmax	pmax		
	comp=E,151nm,0.4s						
ASAJ	**Asahikawa**	**6.01**	**349**	Pn	**Pn**	**05 01 08.1**	**-0.1**
	comp=E,9.2nm,0.3s,baz=198,slow=8.5,SNR=33						
ASAJ				Sn	**Sn**	**05 02 17.5**	**+1.3**
	comp=E,6.4nm,0.3s,baz=46,slow=33,SNR=6.1						
ASAJ				LR	LR	05 03 12.0	
	comp=E,87nm,21.4s,baz=36,slow=34						
JHJ2	**Mitsune**	**6.25**	**216**	*e*Pn	**Pn**	**05 01 08.8**	**-2.8**
JHJ	**Hachijo jima 2**	**6.25**	**217**	Pn	**Pn**	**05 01 09.1**	**-2.6**
	comp=E,15nm,0.3s,baz=128,slow=24,SNR=9.0						
JHJ				Sn	**Sn**	**05 02 15.9**	**-6.4**
	comp=E,30nm,0.3s,baz=88,slow=23,SNR=3.8						
INU	**Inuyama**	**6.46**	**246**	*e*Pn	**Pn**	**05 01 14.4**	**-0.2**
KUR	**Kuril'sk**	**7.50**	**20**	*e*P	**Pn**	**05 01 25.9**	**-2.9**
KUR				*i* S	**Sn**	**05 02 45.9**	**-7.1**
KUR				pmax	pmax		
	comp=Z,106nm,0.4s						
KUR				pmax	pmax		
	comp=N,33nm,0.1s						
KUR				pmax	pmax		
	comp=E,21nm,0.2s						
VLA	**Vladivostok**	**10.57**	**301**	*e*P	**Pn**	**05 02 11.4**	**+0.6**
VLA				pmax	pmax		
	comp=Z,26nm,1.0s						
USRK	**Ussuriysk Ar.**	**10.98**	**307**	Pn	**Pn**	**05 02 18.7**	**+2.3**
	comp=Z,0.6nm,0.3s,baz=121,slow=13,SNR=9.0						
JCJ	**Chichijima**	**11.24**	**189**	Sn	Sn	05 04 14.7	-10
	comp=Z,8.0nm,0.3s,baz=287,slow=22,SNR=6.7						
JNU	**Nakatsue**	**11.99**	**249**	Pn	**Pn**	**05 02 29.3**	**-1.1**
	comp=Z,0.3nm,0.3s,baz=51,slow=8.0,SNR=7.4						
JNU	**Nakatsue**	**11.99**	**249**	*e*Pn	**Pn**	**05 02 29.1**	**-1.3**
MDJ	**Mudanjiang**	**12.70**	**305**	P	**Pn**	**05 02 41.2**	**+1.3**
MDJ				pmax	pmax		
	comp=Z,15nm,1.1s						
MDJ				pmax	pmax		
	comp=Z,81nm,5.7s						
MDJ				LR	LR		
	comp=N,130nm,11.8s						
MDJ				LR	LR		
	comp=E,230nm,15.2s						
MDJ				LR	LR		
	comp=Z,340nm,15.2s						
MDJ	**Mudanjiang**	**12.70**	**305**	*e*Pn	**Pn**	**05 02 40.9**	**+1.0**
	comp=Z,15nm,0.9s						
KSRS	**Korea Array**	**12.92**	**272**	Pn	**Pn**	**05 02 45.0**	**+2.1**
	comp=Z,0.4nm,0.3s,baz=87,slow=13,SNR=16						
KS15	**Wonju Array Si**	**12.95**	**272**	*e*Pn	**Pn**	**05 02 42.9**	**-0.5**
KSAR	**Wonju Array Be**	**12.95**	**272**	P	**Pn**	**05 02 45.1**	**+1.7**
KSAR	**Wonju Array Be**	**12.95**	**272**	Pn	**Pn**	**05 02 45.0**	**+1.7**
KLR	**Kul'dur**	**14.20**	**325**	Pn	**Pn**	**05 03 02.4**	**+2.0**
	comp=Z,0.1nm,0.3s,baz=131,slow=11,SNR=3.3						
KLR				LR	LR	05 08 28.6	
	comp=Z,95nm,21.5s,baz=102,slow=37						
SKR	**Severo-Kuril's**	**15.04**	**30**	*e*P	P	05 03 28.0	+11
PETK	**Petropavlovsk-**	**17.56**	**28**	P	**Pn**	**05 03 44.6**	**+0.8**
	comp=Z,0.6nm,0.3s,baz=195,slow=11,SNR=6.4						
PETK				LR	LR	05 11 41.5	
	comp=Z,33nm,18.8s,baz=216,slow=41						
JOW	**Kunigami**	**17.59**	**234**	*e*Pn	**Pn**	**05 03 43.6**	**-0.8**
	comp=Z,152nm,2.0s						
NJ2	**Nanjing**	**21.62**	**261**	*e*P	**P**	**05 04 30.1**	**+1.0**
NJ2				pmax	pmax		
	comp=Z,19nm,0.5s						
MA2	**Magadan**	**21.77**	**9**	*e*P	**P**	**05 04 31.0**	**+0.5**
MA2				pmax	pmax		
	comp=Z,55nm,0.8s						
MA2	**Magadan**	**21.77**	**9**	*e*P	**P**	**05 04 31.0**	**+0.5**
	comp=Z,55nm,0.8s						
BJI	**Beijing**	**21.81**	**284**	P	**P**	**05 04 30.8**	**-0.3**
BJI				S	**S**	**05 08 29.1**	**-1.8**

BJI pmax pmax
comp=Z,4.0nm,0.5s
BJI LR LR
comp=N,120nm,13.0s
BJI LR LR
comp=E,240nm,12.8s
BJI LR LR
comp=Z,150nm,15.6s
YHNB Yeheng 23.65 242 *e*P **P 05 04 50.2 -0.2**
comp=Z,6.9nm,0.8s
YULB Yu-li 24.54 240 *e*P **P 05 04 55.8 -2.9**
comp=Z,5.8nm,0.8s
TPUB Ta-pu 25.06 240 *e*P **P 05 05 02.6 -0.8**
comp=Z,30nm,1.1s
SEY Seymchan 25.23 9 P **P 05 05 06.2 +1.7**
comp=Z,18nm,0.7s,baz=188,slow=6.9,SNR=69
SEY Seymchan 25.23 9 ‖ *i*P **P 05 05 04.0 -0.5**
HHC Hu-ho-hao-te 25.25 286 *e*P **P 05 05 04.4 -0.7**
HHC sP sP 05 05 17.7 +1.8
HHC S **S 05 09 23.1 -6.2**
HHC sS sS 05 09 39.2 -2.6
HHC pmax pmax
comp=Z,33nm,0.8s
HHC pmax pmax
comp=Z,330nm,3.8s
HHC LR LR
comp=N,540nm,11.1s
HHC LR LR
comp=E,630nm,12.3s
HHC LR LR
comp=Z,620nm,13.6s
YAK Yakutsk 25.46 344 P **P 05 05 07.1 +0.4**
comp=Z,17nm,0.4s,baz=68,slow=0.7,SNR=8.6
YAK Yakutsk 25.46 344 *e*P **P 05 05 07.6 +1.0**
YAK pmax pmax
comp=Z,28nm,0.8s
YAK pmax pmax
comp=N,15nm,1.0s
YAK Yakutsk 25.46 344 *e*P **P 05 05 07.1 +0.4**
comp=N,34nm,0.7s
H11N2 WAKE ISLAND Hy 26.95 127 T T 05 33 29.0
baz=201
H11N1 WAKE ISLAND Hy 26.96 127 T T 05 33 31.8
baz=201
H11N3 WAKE ISLAND Hy 26.97 127 T T 05 33 28.1
baz=201
H11S1 WAKE ISLAND Hy 27.74 129 T T 05 34 31.2
baz=319
H11S3 WAKE ISLAND Hy 27.75 129 T T 05 34 28.7
baz=319
H11S2 WAKE ISLAND Hy 27.76 129 T T 05 34 34.2
baz=319
BOD Bodaibo 27.78 325 *e*P **P 05 05 28.0 +0.4**
BOD pmax pmax
comp=Z,6.0nm,0.7s
XAN Xi'an 28.72 273 P **P 05 05 40.5 +4.2**
XAN pP sP 05 05 47.1 0.0
XAN pmax pmax
comp=Z,7.0nm,0.5s
XAN pmax pmax
comp=Z,56nm,4.8s
XAN LR LR
comp=N,120nm,14.4s
XAN LR LR
comp=E,73nm,12.5s
XAN LR LR
comp=Z,150nm,12.5s
SONM Songino Array 29.02 302 LR LR 05 18 51.4
comp=Z,91nm,19.3s,baz=130,slow=40
ENH Enshi 29.67 265 *e*P **P 05 05 43.1 -1.6**
comp=Z,8.1nm,0.3s
ZAK Zakamensk 31.33 306 *e*P **P 05 06 03.5 +4.2**
ZAK pmax pmax
comp=Z,3.0nm,1.2s
LZH Lanzhou 32.09 279 *e*P **P 05 06 05.7 -0.5**
LZH pP pP 05 06 14.6 +0.8
LZH sP sP 05 06 19.1 +2.1
LZH pmax pmax
comp=Z,18nm,1.0s
LZH pmax pmax
comp=Z,67nm,5.2s
LZH LR LR
comp=N,220nm,13.6s
LZH LR LR
comp=E,170nm,14.5s
LZH LR LR
comp=Z,180nm,14.6s
BILL Bilibino 32.27 15 *i* P **P 05 06 06.9 -0.3**
BILL pmax pmax
comp=Z,7.0nm,1.0s
BILL Bilibino 32.27 15 *e*P **P 05 06 07.4 +0.3**
comp=Z,7.6nm,1.0s
GYA Guiyang 33.63 261 *e*P **P 05 06 20.4 +0.7**
GYA pP sP 05 06 30.2 -0.3
GYA PP **PP 05 07 34.0 -1.9**
GYA PcP **PcP 05 09 02.6 +3.1**
GYA S **S 05 11 40.8 -0.1**
GYA sS sS 05 11 56.4 +2.8
GYA ScP **ScP 05 12 43.0 +0.7**
GYA Guiyang 33.63 261 ScS ScS 05 16 41.5 -2.4
GYA pmax pmax
comp=Z,10.0nm,0.8s
CD2 Chengdu 33.91 270 P **P 05 06 20.9 -1.1**
CD2 pmax pmax
comp=Z,1.0nm,0.6s
GTA Gaotai 34.37 286 *e*P **P 05 06 25.1 -0.9**
GTA pP pP 05 06 34.2 +0.5
GTA sP sP 05 06 38.6 +1.8
GTA S **S 05 11 48.9 -3.3**
GTA sS sS 05 12 05.5 +0.6
GTA SS **SnSn 05 13 58.6 -4.2**
GTA pmax pmax
comp=Z,4.0nm,0.9s
GTA pmax pmax
comp=Z,89nm,6.2s
GTA LR LR
comp=N,120nm,13.8s
GTA LR LR
comp=E,230nm,17.1s
GTA LR LR
comp=Z,220nm,16.2s
TIXI Tiksi 34.41 351 *i* P **P 05 06 24.6 -1.1**
TIXI pmax pmax
comp=Z,2.0nm,0.8s
KMI Kunming 37.35 262 P **P 05 06 52.4 +0.6**
KMI pmax pmax
comp=Z,7.0nm,0.5s
KMI pmax pmax
comp=Z,130nm,4.5s
TNA Tin City 38.71 30 *e*P **P 05 07 03.2 +0.7**
comp=Z,3.3nm,0.7s
WMQ Urumqi 42.31 296 *e*P **P 05 07 33.8 +1.1**
WMQ sS sS 05 14 15.3 +10
WMQ SS SS 05 16 47.2 -13
WMQ LR LR
comp=Z,27nm,26.6s
ZAA0 Zalesovo Array 42.78 311 *e*P **P 05 07 36.7 +0.5**
ZALV Zalesovo Beam 42.78 311 P **P 05 07 36.6 +0.3**
comp=Z,0.9nm,0.6s,baz=83,slow=6.1,SNR=5.9
ZALV pP **pP 05 07 45.0 +1.0**
comp=Z,1.3nm,0.4s,baz=94,slow=9.5,SNR=5.9
ZALV PcP **PcP 05 09 27.4 +0.2**
comp=Z,3.6nm,0.7s,baz=88,slow=3.1,SNR=9.3
NRIK Noril'sk 43.14 334 P **P 05 07 39.8 +0.8**
comp=Z,1.9nm,0.4s,baz=116,slow=9.8,SNR=3.7
NRIK LR LR 05 26 37.8
comp=Z,71nm,19.1s,baz=160,slow=37
CHTO Chiang Mai 43.75 257 *e*P **P 05 07 44.3 -0.2**
CHTO pmax pmax
comp=Z,3.0nm,0.9s
CHTO Chiang Mai 43.75 257 *e*P **P 05 07 44.3 -0.2**
comp=Z,3.2nm,0.9s
CMAR Chiang Mai Arr 43.96 256 P **P 05 07 42.6 -3.6**
comp=Z,3.2nm,0.3s
KDAK Kodiak Island 44.71 43 P P 05 08 06.8 +15
comp=Z,10.0nm,0.7s,baz=282,slow=6.3,SNR=13
KDAK Kodiak Island 44.71 43 *ce*P **P 05 07 51.8 +0.2**
KDAK Kodiak Island 44.71 43 *e*P **P 05 07 51.9 +0.2**
comp=Z,13nm,0.7s
SPU Mount Spurr 44.92 38 *e*P **P 05 07 52.4 -1.0**
CAST Castle Rocks 44.97 35 *e*P **P 05 07 52.8 -0.9**
comp=Z,14nm,1.9s
MK01 Makanchi Array 45.39 302 *e*P **P 05 07 57.9 +0.6**
MK31 Makanchi Array 45.39 302 *e*P **P 05 07 58.5 +1.2**
MK31 Makanchi Array 45.39 302 *e*P **P 05 07 58.5 +1.2**
MKAR Makanchi Array 45.39 302 P **P 05 07 58.1 +0.8**
comp=Z,1.4nm,0.7s,baz=82,slow=11,SNR=11
MKAR pP **pP 05 08 05.8 +0.6**
comp=Z,2.2nm,0.6s,baz=89,slow=10,SNR=9.7
BPAW Bear Paw Mtn. 45.49 34 *e*P **P 05 07 58.9 +1.0**
comp=Z,0.3nm,0.7s
KTH Kantishna Hill 45.50 35 *e*P **P 05 07 59.0 +1.0**
comp=Z,6.9nm,1.2s
MAKZ Makanchi 45.60 302 *e*P **P 05 08 00.5 +1.6**
MAKZ pmax pmax
comp=Z,17nm,1.6s
MAKZ Makanchi 45.60 302 *e*P **P 05 08 00.5 +1.6**
comp=Z,17nm,1.6s
MLY Manley 45.64 33 *e*P **P 05 07 59.5 +0.5**
comp=Z,14nm,1.7s
TRF Thorofare Moun 45.78 35 *e*P **P 05 08 01.9 +1.6**
comp=Z,2.3nm,0.8s
COLD Coldfoot 46.02 30 *e*P **P 05 08 02.2 +0.3**
comp=Z,1.3nm,0.7s
PMR Palmer 46.32 37 *e*P **P 05 08 04.6 +0.2**
PMR pmax pmax
comp=Z,8.0nm,1.0s
PMR Palmer 46.32 37 *e*P **P 05 08 04.6 +0.2**
comp=Z,8.3nm,1.0s
MCK McKinley 46.39 34 *e*P **P 05 08 05.3 +0.4**
MCK pmax pmax
comp=Z,2.0nm,0.8s
MCK McKinley 46.39 34 *e*P **P 05 08 05.3 +0.4**
comp=Z,2.4nm,0.8s
RND Reindeer 46.42 35 *e*P **P 05 08 05.5 +0.2**
RND pmax pmax
comp=Z,6.0nm,1.2s
RND Reindeer 46.42 35 *e*P **P 05 08 05.5 +0.2**
comp=Z,6.1nm,1.2s
SML Sawmill 46.70 37 *e*P **P 05 08 07.5 +0.1**
SML pmax pmax
comp=Z,15nm,0.8s
SML Sawmill 46.70 37 *e*P **P 05 08 07.5 +0.1**
comp=Z,15nm,0.8s
MDM Murphy Dome 46.71 33 *e*P **P 05 08 07.1 -0.3**
comp=Z,5.7nm,1.0s
COLA College 46.87 33 *e*P **P 05 08 08.0 -0.6**
COLA pmax pmax
comp=Z,3.0nm,1.2s
KURK Kurchatov 46.97 308 P **P 05 08 11.0 +1.4**
KURK *PP **sP 05 08 19.9 -0.7**
KURK pmax pmax
comp=Z,2.0nm,0.6s
KURK pmax pmax
comp=Z,7.0nm,0.7s
KURK Kurchatov 46.97 308 P **P 05 08 11.0 +1.4**
KURK pP **sP 05 08 19.9 -0.7**
KURBB Kurchatov Arra 47.04 308 P **P 05 08 11.0 +0.8**
comp=Z,2.3nm,0.6s,baz=82,slow=8.1,SNR=12
KURBB pP **sP 05 08 19.9 -1.3**
comp=Z,7.4nm,0.7s,baz=80,slow=8.3,SNR=14
IL1 Eielson Array 47.28 33 *e*P **P 05 08 11.4 -0.4**
ILAR Eielson Array 47.28 33 P **P 05 08 11.9 0.0**
comp=Z,2.0nm,0.8s,baz=263,slow=6.3,SNR=19
ILB Eielson Array 47.28 33 *e*P **P 05 08 11.8 -0.1**
KLU Klutina 47.86 37 *e*P **P 05 08 17.4 +0.9**
KLU *e*pP **sP 05 08 28.2 +0.7**
FYU Fort Yukon 47.95 31 *e*P **P 05 08 18.2 +1.2**
comp=Z,27nm,1.5s
DIV Divide 47.97 38 *e*P **P 05 08 17.6 +0.2**
comp=Z,7.2nm,0.7s
PAX Paxson 47.97 35 *e*P **P 05 08 18.8 +1.4**
PAX pmax pmax
comp=Z,4.0nm,0.8s
PAX Paxson 47.97 35 *e*P **P 05 08 18.8 +1.4**
comp=Z,3.8nm,0.8s
BMRM Brenner River 48.55 38 *e*P **P 05 08 22.4 +0.6**
comp=Z,12nm,0.7s
DOT Dot Lake 48.56 34 *e*P **P 05 08 22.2 +0.4**
comp=Z,30nm,1.6s
MENT Mentasta 48.77 35 *e*P **P 05 08 24.1 +0.7**
comp=Z,12nm,0.2s
GUN Gumba 49.26 276 *e*P **P 05 08 30.2 +2.1**
comp=Z,11nm,0.4s
BALM Baldy 49.63 38 *e*P **P 05 08 29.8 -0.3**
BALM pmax pmax
comp=Z,5.0nm,0.7s
BALM Baldy 49.63 38 *e*P **P 05 08 29.8 -0.3**
comp=Z,5.2nm,0.7s
PKIN Phulchoki 49.79 276 *e*P **P 05 08 32.2 +0.2**
comp=Z,5.3nm,0.4s
GKN Gorkha 50.19 277 *e*P **P 05 08 36.7 +1.8**
comp=Z,12nm,0.5s
TKM2 Tokmak 2 51.03 298 *e*P **P 05 08 42.7 +1.5**
TKM2 pmax pmax
comp=Z,7.0nm,0.9s
TKM2 Tokmak 2 51.03 298 *e*P **P 05 08 42.7 +1.5**
comp=Z,7.1nm,0.9s
KOLN Koldanda 51.11 277 *e*P **P 05 08 42.2 +0.3**
comp=Z,2.8nm,0.4s
PYUN Piuthan 51.43 278 *e*P **P 05 08 46.2 +1.9**
IPM Ipoh 51.68 240 *e*P **P 05 08 45.6 -0.4**
comp=Z,6.6nm,0.7s
AAK Ala-Archa 51.89 298 LR LR 05 30 55.9
comp=Z,38nm,19.9s,baz=19,slow=36
COEN Coen 51.92 181 *e*P **P 05 08 46.8 -0.8**
comp=Z,4.5nm,0.9s
ZRNK Zerenda 52.26 312 *e*P **P 05 08 51.2 +1.3**
ZRNK *e*PP **sP 05 09 02.0 +1.1**
ZRNK pmax pmax
comp=Z,4.0nm,1.0s
ZRNK Zerenda 52.26 312 *e*P **P 05 08 51.2 +1.3**
comp=Z,4.4nm,1.0s
ZRNK *e*pP **sP 05 09 02.0 +1.1**
MTN Manton Dam 52.27 196 *e*P **P 05 08 49.6 -0.7**
MTN *e*pP **sP 05 08 59.8 -1.5**
INK Inuvik 52.30 28 P **P 05 08 50.8 +0.9**
comp=Z,2.6nm,0.5s,baz=301,slow=6.3,SNR=27
INK pP **pP 05 08 58.9 +1.0**
comp=Z,1.5nm,0.9s,baz=275,slow=11,SNR=3.6
SKAG Skagway 53.37 39 *e*P **P 05 08 59.6 +1.7**
comp=Z,3.9nm,0.9s
KKAR Karatay Array 54.46 300 *e*P **P 05 09 06.2 0.0**
KKAR pmax pmax
comp=Z,2.0nm,0.7s
KKAR Karatay Array 54.46 300 *e*P **P 05 09 06.2 0.0**
comp=Z,2.0nm,0.7s
SVE Sverdlovsk 55.73 319 ‖ *i*P **P 05 09 16.6 +1.4**
SVE pmax pmax
comp=Z,15nm,1.0s
DLBC Dease Lake 56.30 39 *e*P **P 05 09 19.9 +0.6**
comp=Z,4.0nm,0.9s
ARU Arti 56.95 319 *d i*P **P 05 09 24.7 +0.9**
ARU 05 11 28.8
ARU S **S 05 17 17.9 +1.9**
ARU SS **SS 05 21 00.6 -3.4**
ARU pmax pmax
comp=Z,14nm,1.2s
ARU Arti 56.95 319 *e*P **P 05 09 24.3 +0.4**
comp=Z,10nm,1.0s
WRAB Tennant Creek 58.59 191 *e*P **P 05 09 33.8 -1.9**
WRAB pmax pmax
comp=Z,15nm,1.3s
WRAB Tennant Creek 58.59 191 *e*P **P 05 09 33.8 -1.9**
comp=Z,16nm,1.3s
WB2 Warramunga Arr 58.60 191 *e*P **P 05 09 34.1 -1.7**
WB2 *e*pP **pP 05 09 40.5 -3.4**
WRA Warramunga Arr 58.61 191 P **P 05 09 34.1 -1.7**
comp=Z,3.7nm,0.6s,baz=13,slow=7.3,SNR=38
WRA pP **pP 05 09 44.0 +0.1**
comp=Z,2.9nm,0.5s,baz=12,slow=7.4,SNR=7.4
FITZ Fitzroy Crossi 58.69 201 P **P 05 09 36.1 -0.3**
comp=Z,4.1nm,0.9s,baz=19,slow=10.0,SNR=3.2
FITZ pP **pP 05 09 44.5 0.0**
comp=Z,2.3nm,0.7s,baz=4.8,slow=5.1,SNR=2.0
ABKAR Akbulak array 58.88 310 *e*P **P 05 09 37.5 +0.1**
RES Resolute Bay 60.87 15 *e*P **P 05 09 51.2 +0.4**
RES Resolute Bay 60.87 15 *e*P **P 05 09 51.1 +0.4**
YKW3 Yellowknife Ar 61.60 31 *e*P **P 05 09 55.5 -0.4**
YKA Yellowknife Ar 61.64 31 P **P 05 09 56.3 +0.2**
comp=Z,1.7nm,0.7s,baz=302,slow=6.6,SNR=39
YKA pP **sP 05 10 07.0 -0.3**
comp=Z,0.7nm,0.6s,baz=301,slow=6.5,SNR=6.6
YKB5 Yellowknife Ar 61.64 31 *e*P **P 05 09 55.7 -0.5**
ASAR Alice Springs 62.33 191 P **P 05 10 00.0 -1.2**
comp=Z,1.1nm,0.7s,baz=12,slow=8.7,SNR=17
ASAR pP **pP 05 10 09.8 +0.5**
comp=Z,1.0nm,0.6s,baz=10,slow=15,SNR=7.3
EIDS Eidsvold 63.59 173 *e*P **P 05 10 08.8 -0.7**
comp=Z,2.2nm,0.7s
ARCES ARCESS Array B 63.66 340 P **P 05 10 09.7 +0.2**
comp=Z,3.2nm,0.9s,baz=42,slow=8.2,SNR=5.0
KLMR Klimovskoe 63.93 328 *e*P **P 05 10 10.4 -1.0**
KLMR *e* 05 10 45.7
KLMR pmax pmax
comp=Z,4.0nm,0.8s
GEYT Alibeck 65.20 300 P **P 05 10 20.6 +0.4**
comp=Z,2.9nm,0.9s,baz=141,slow=0.9,SNR=4.7
F04A Amboy 65.84 50 *e*P **P 05 10 25.3 +1.2**
comp=Z,14nm,0.9s
B08A Colville Reser 66.40 46 *e*P **P 05 10 28.4 +0.6**
comp=Z,4.4nm,0.9s
H04A Detroit Lake 66.62 51 *e*P **P 05 10 26.8 -2.5**
comp=Z,12nm,0.8s
C09A Chrisman Ranch 67.30 46 *e*P **P 05 10 34.3 +0.8**
comp=Z,12nm,1.1s
NEW Newport 67.70 46 *e*P **P 05 10 36.8 +0.7**
NEW pmax pmax
comp=Z,10.0nm,1.0s
NEW Newport 67.70 46 *e*P **P 05 10 36.8 +0.7**
comp=Z,9.6nm,1.0s
YBH Yreka Blue Hor 67.84 54 LR LR 05 35 32.8
comp=Z,18nm,20.0s,baz=230,slow=32
YBH Yreka Blue Hor 67.84 54 *e*P **P 05 10 38.5 +1.5**
YBH pmax pmax
comp=Z,9.0nm,1.3s
YBH Yreka Blue Hor 67.84 54 *e*P **P 05 10 38.5 +1.5**
comp=Z,8.8nm,1.3s
K05A Summer Lake 68.45 52 *e*P **P 05 10 42.2 +1.2**
comp=Z,18nm,0.9s
FIA1 FINESS Array S 68.78 333 *e*P **P 05 10 42.7 +0.3**
FINES FINESS Array B 68.78 333 P **P 05 10 43.1 +0.6**
comp=Z,4.0nm,0.8s,baz=61,slow=9.4,SNR=13
FINES pP **sP 05 10 52.8 -1.0**
comp=Z,1.8nm,0.7s,baz=47,slow=8.4,SNR=3.7
FINES FINESS Array B 68.78 333 *ce*P **P 05 10 43.0 +0.6**
FINES pmax pmax
comp=Z,5.0nm,0.9s
WALA Waterton Lakes 69.04 44 *e*P **P 05 10 44.5 +0.1**
comp=Z,6.1nm,0.8s
MOD Modoc Plateau 69.26 53 *e*P **P 05 10 47.1 +1.0**
comp=Z,2.0nm,0.8s
BMO Blue Mountains 69.47 49 *e*P **P 05 10 47.8 +0.6**
comp=Z,1.7nm,0.5s
SUMG Summit 69.47 1 *i* P **P 05 10 48.0 +0.9**
comp=Z,8.0nm,0.8s
SUMG Summit 69.47 1 *i* P **P 05 10 48.0 +0.9**
SUMG pmax pmax
comp=Z,8.0nm,0.8s
SUMG Summit 69.47 1 *e*P **P 05 10 47.6 +0.5**
comp=Z,11nm,0.9s
JTMT Jette 69.58 45 *e*P **P 05 10 48.9 +1.0**
YBMT Yellow Bay 69.66 45 *e*P **P 05 10 49.5 +1.1**
SWMT Swartz Lake 69.87 45 *e*P **P 05 10 50.5 +0.9**
WVOR Wild Horse Val 70.00 51 *e*P **P 05 10 51.7 +1.1**
WVOR pmax pmax
comp=Z,9.0nm,1.3s
WVOR Wild Horse Val 70.00 51 *e*P **P 05 10 51.7 +1.1**
comp=Z,9.2nm,1.3s
MSO Missoula 70.29 46 *e*P **P 05 10 53.0 +0.7**
comp=Z,5.3nm,1.1s
VSU Vasula 70.54 330 *i* P **P 05 10 54.5 +1.2**
VSU pmax pmax
comp=Z,14nm,0.8s
MFID Camas Ranch 71.16 49 *e*P **P 05 10 58.5 +1.0**
comp=Z,3.9nm,0.8s
CMB Columbia Colle 71.35 56 *e*P **P 05 11 00.0 +1.3**
CMB pmax pmax
comp=Z,17nm,1.4s
CMB Columbia Colle 71.35 56 *e*P **P 05 10 60.0 +1.3**
comp=Z,17nm,1.4s
LRM Limekiln Ridge 71.72 46 *e*P **P 05 11 02.1 +1.1**
KBZ Khabaz 71.80 312 P **P 05 11 03.5 +2.2**
comp=Z,4.3nm,0.9s,baz=91,slow=3.6,SNR=7.3
EGMT Eagleton 71.88 43 *e*P **P 05 11 01.9 0.0**
comp=Z,6.6nm,0.9s
DLMT Dillon 71.91 46 *e*P **P 05 11 02.8 +0.7**
comp=Z,8.0nm,1.2s
HLID Hailey 71.91 49 *e*P **P 05 11 03.1 +0.9**
comp=Z,4.1nm,0.9s
FCC Fort Churchill 71.92 28 *e*P **P 05 11 01.7 +0.1**
FCC pmax pmax
comp=Z,17nm,1.4s
FCC Fort Churchill 71.92 28 *e*P **P 05 11 01.7 +0.1**
comp=Z,17nm,1.4s
NV01 Mina Array Sit 72.47 55 *e*P **P 05 11 06.7 +1.0**
NVAR Mina Array Bea 72.47 55 P **P 05 11 06.8 +1.1**
comp=Z,6.0nm,0.7s,baz=288,slow=6.2,SNR=43
NVAR pP **sP 05 11 17.1 +0.1**
comp=Z,2.5nm,0.7s,baz=281,slow=6.6,SNR=7.7
NV11 Mina Array Sit 72.57 55 *e*P **P 05 11 07.2 +1.0**
H17A Grant Village 73.64 46 *e*P **P 05 11 15.2 +2.7**
comp=Z,8.6nm,1.0s
IMW Indian Meadow 73.73 47 *e*P **P 05 11 14.8 +1.6**
comp=Z,7.1nm,0.9s
FLWY Flagg Ranch 73.76 46 *e*P **P 05 11 15.3 +2.1**
comp=Z,17nm,1.4s
HFS Hagfors 73.90 337 P **P 05 11 14.1 +0.6**
comp=Z,2.7nm,0.7s,baz=45,slow=4.4,SNR=6.7
HFS pP **sP 05 11 24.6 -0.1**
comp=Z,1.6nm,0.7s,baz=87,slow=6.1,SNR=1.5
RLMT Red Lodge 73.93 45 *e*P **P 05 11 15.9 +1.8**
comp=Z,9.6nm,1.5s
NB2 NORSAR Subarra 73.93 338 P **P 05 11 13.9 +0.3**
comp=Z,1.2nm,0.7s,baz=38,slow=6.2
NOA NORSAR Array B 73.93 338 P **P 05 11 13.9 +0.3**
comp=Z,3.3nm,0.9s,baz=38,slow=5.8,SNR=8.1
NOA NORSAR Array B 73.93 338 P **P 05 11 13.9 +0.3**
NOA pmax pmax
comp=Z,2.0nm,0.8s
MOOW Moose Ponds 73.94 47 *e*P **P 05 11 15.3 +1.1**
comp=Z,3.9nm,0.9s
LOHW Long Hollow 74.10 47 *e*P **P 05 11 15.4 +0.2**
comp=Z,6.7nm,1.4s
SNOW Snow King Moun 74.10 47 *e*P **P 05 11 15.8 +0.6**
comp=Z,4.6nm,0.8s
REDW Red Top Meadow 74.11 47 *e*P **P 05 11 16.9 +1.6**
comp=Z,5.0nm,1.1s
R11A Troy Canyon, C 74.26 54 *e*P **P 05 11 17.1 +1.0**
BGU Big Grassy Mou 74.30 50 *e*P **P 05 11 17.8 +1.4**
comp=Z,4.4nm,1.1s
TPNV Topopah Spring 74.66 55 *e*P **P 05 11 19.7 +1.2**
TPNV pmax pmax
comp=Z,13nm,1.1s
TPNV Topopah Spring 74.66 55 *e*P **P 05 11 19.7 +1.2**
comp=Z,13nm,1.1s
AKASG Malin Array Be 74.70 323 P **P 05 11 18.6 +0.4**
comp=Z,2.2nm,0.6s,baz=43,slow=5.6,SNR=11
AKASG pP **sP 05 11 29.0 -0.5**
comp=Z,1.5nm,0.6s,baz=45,slow=6.0,SNR=4.2
KIEV Kiev 74.71 323 *e*P **P 05 11 18.6 +0.3**
KIEV pmax pmax
comp=Z,3.0nm,0.9s
KIEV Kiev 74.71 323 *e*P **P 05 11 17.9 -0.3**
comp=Z,4.3nm,1.0s
HWUT Hardware Ranch 74.77 49 *e*P **P 05 11 20.1 +1.0**
comp=Z,12nm,1.3s
DUG Dugway, Tooele 74.87 51 *e*P **P 05 11 20.1 +0.5**
DUG pmax pmax
comp=Z,9.0nm,1.2s
DUG Dugway, Tooele 74.87 51 *e*P **P 05 11 20.1 +0.5**
comp=Z,9.4nm,1.2s
FRB Frobisher Bay 75.08 14 P **P 05 11 20.4 +0.2**
comp=Z,4.3nm,0.7s,baz=359,slow=7.6,SNR=6.1
TCUT Toone Canyon 75.16 49 *e*P **P 05 11 22.7 +1.3**
comp=Z,32nm,1.7s
BW06 Boulder Array 75.22 47 *e*P **P 05 11 21.9 +0.2**
comp=Z,3.4nm,0.7s
PD31 Pinedale Array 75.22 47 *e*P **P 05 11 22.3 +0.6**
PDAR Pinedale Array 75.22 47 P **P 05 11 22.1 +0.4**
comp=Z,2.6nm,0.6s,baz=268,slow=1.9,SNR=40
PDAR pP **sP 05 11 32.9 -0.1**
comp=Z,0.9nm,0.6s,baz=259,slow=2.1,SNR=5.3
JLU Jordanelle 75.45 50 *e*P **P 05 11 24.5 +1.4**
comp=Z,6.1nm,1.2s
SHPR Sheep Range 75.63 55 *e*P **P 05 11 25.5 +1.5**
comp=Z,6.9nm,1.1s
MSU Marysvale 76.29 52 *e*P **P 05 11 27.9 0.0**
MSU Marysvale 76.29 52 *e*P **P 05 11 27.9 0.0**
LCMT Little Creek M 76.54 53 *e*P **P 05 11 30.3 +1.1**
comp=Z,7.8nm,1.0s
P17A Butcher Ranch, 76.58 50 *e*P **P 05 11 30.7 +1.3**
comp=Z,24nm,1.6s
Q16A Castle Valley 76.66 51 *e*P **P 05 11 31.1 +1.1**
comp=Z,7.4nm,1.2s
KNB Kanab 76.81 53 *e*P **P 05 11 32.1 +1.3**
KNB pmax pmax
comp=Z,11nm,1.2s
KNB Kanab 76.81 53 *e*P **P 05 11 32.1 +1.3**

comp=Z,11nm,1.2s
SRU San Rafael Swe 76.93 50 *e*P **P 05 11 32.2 +0.7**
SRU pmax pmax
comp=Z,8.0nm,0.9s
SRU San Rafael Swe 76.93 50 *e*P **P 05 11 32.2 +0.7**
comp=Z,7.6nm,0.9s
K22A Casper 77.03 46 *e*P **P 05 11 32.0 +0.1**
comp=Z,5.9nm,1.0s
ULM Lac du Bonnet 77.26 35 P **P 05 11 33.7 +0.8**
comp=Z,2.4nm,0.7s,baz=327,slow=7.3,SNR=4.3
PV09 Paradox Valley 78.16 50 *e*P **P 05 11 39.8 +1.3**
PV10 Paradox Valley 78.30 50 *e*P **P 05 11 40.7 +1.5**
KWP Kalwaria Pacla 78.44 326 ⇓*i*P **P 05 11 41.1 +1.7**
PV05 Paradox Valley 78.45 51 *e*P **P 05 11 41.4 +1.4**
N23A Red Feather La 78.50 47 *e*P **P 05 11 41.7 +1.4**
BUR08 Bucovina Ar. S 78.72 323 *e*P **P 05 11 42.4 +1.2**
PV01 Paradox Valley 78.73 50 *e*P **P 05 11 42.7 +1.1**
BURAR Bucovina Array 78.74 323 ⇑*i*P **P 05 11 41.9 +0.7**
TESR Tescani 78.82 321 ⇓*i*P **P 05 11 41.7 +0.1**
KOLS Kolonicke sedl 79.14 325 *e*P **P 05 11 44.6 +1.3**
KOLS Kolonicke sedl 79.14 325 *e*P **P 05 11 44.6 +1.3**
MVCO Mesa Verde 79.37 51 *e*P **P 05 11 46.1 +1.0**
comp=Z,6.7nm,1.1s
ISCO Idaho Springs 79.40 47 *e*P **P 05 11 46.5 +1.2**
ISCO pmax pmax
comp=Z,4.0nm,1.0s
ISCO Idaho Springs 79.40 47 *e*P **P 05 11 46.5 +1.2**
comp=Z,4.1nm,1.0s
BRTR Keskin Array B 79.71 313 P **P 05 11 45.2 -1.5**
comp=Z,0.6nm,0.7s,baz=90,slow=2.5,SNR=3.7
S22A 4UR Ranch, Cre 80.03 50 *e*P **P 05 11 49.4 +0.6**
DPC Dobruska-Polom 80.61 329 *e*P **P 05 11 52.9 +1.6**
DPC *ex* x 05 12 08.5
DPC Dobruska-Polom 80.61 329 *e*P **P 05 11 52.9 +1.6**
DPC *e* 05 12 08.5
ARR Arges 80.63 322 ⇑*i*P **P 05 11 53.7 +2.2**
PSZ Piszkesteto 80.96 326 *e*P **P 05 11 54.1 +0.9**
PSZ pmax pmax
comp=Z,2.0nm,0.5s
PSZ Piszkesteto 80.96 326 *e*P **P 05 11 54.1 +0.9**
comp=Z,2.1nm,0.5s
VYHS Vyhne 80.98 327 *e*P **P 05 11 52.7 -0.6**
VYHS *e* 05 12 02.4
VYHS Vyhne 80.98 327 *e*P **P 05 11 52.7 -0.6**
VYHS *e* 05 12 02.4
BRG Berggiesshubel 81.14 331 *e*P **P 05 11 54.5 +0.5**
comp=Z,2.8nm,1.0s
BRG Berggiesshubel 81.14 331 *e*P **P 05 11 54.5 +0.5**
CLL Collm 81.15 331 *i*P **P 05 11 54.8 +0.7**
comp=Z,7.0nm,1.0s
CLL *i* 05 12 04.7
CLL Collm 81.15 331 *i*P **P 05 11 54.8 +0.7**
CLL pmax pmax
comp=Z,7.0nm,1.0s
VRAC Vranov 81.31 328 P **P 05 11 55.6 +0.6**
comp=Z,0.9nm,0.4s,baz=17,slow=9.6,SNR=3.7
ECSD EROS Data Cent 81.58 40 *e*P **P 05 11 56.4 -0.1**
comp=Z,5.5nm,0.8s
T25A Trinidad 81.88 49 *e*P **P 05 11 59.6 +1.1**
ANMO Albuquerque 82.10 52 *i*P **P 05 12 00.3 +0.6**
ANMO pmax pmax
comp=Z,3.0nm,1.2s
ANMO Albuquerque 82.10 52 *e*P **P 05 12 01.0 +1.3**
NKC Novy Kostel 82.22 331 *e*P **P 05 12 00.9 +1.1**
NKC Novy Kostel 82.22 331 *e*P **P 05 12 00.9 +1.1**
MDVR Moldovita 82.47 323 ⇑*i*P **P 05 12 01.9 +0.7**
KHC Kasperske Hory 82.67 330 *e*P **P 05 12 03.4 +1.2**
KHC *es*P **sP 05 12 14.1 +0.6**
KHC Kasperske Hory 82.67 330 *e*P **P 05 12 03.4 +1.2**
KHC *e* 05 12 14.1
KHC Kasperske Hory 82.67 330 *e*P **P 05 12 02.6 +0.5**
comp=Z,1.3nm,0.9s
EKA Eskdalemuir Ar 82.72 342 P **P 05 12 03.3 +1.0**
comp=Z,1.8nm,0.6s,baz=26,slow=4.6,SNR=8.2
GERES GERESS Array B 82.84 330 P **P 05 12 03.9 +0.7**
comp=Z,0.6nm,0.7s,baz=46,slow=8.1,SNR=6.0
GRFO Grafenberg 83.12 331 *e*P **P 05 12 05.3 +0.8**
GRFO pmax pmax
comp=Z,4.0nm,0.6s
GRFO Grafenberg 83.12 331 *e*P **P 05 12 05.3 +0.8**
comp=Z,4.4nm,0.6s
AMTX Amarillo 85.03 49 *e*P **P 05 12 15.1 +0.5**
comp=Z,9.7nm,0.9s
BFO Black Forest 85.32 332 *ce*P **P 05 12 17.1 +1.4**
BFO Black Forest 85.32 332 *e*P **P 05 12 16.6 +0.9**
PDG Podgorica 85.41 323 ⇑*i*P **P 05 12 17.0 +0.8**
FUORN Ofenpass-Fuorn 86.01 330 *e*P **P 05 12 18.2 -1.2**
DAVOX Davos/Dischmat 86.03 330 P **P 05 12 19.3 -0.1**
comp=Z,2.8nm,0.9s,baz=337,slow=7.7
U34A Anderson Ranch 86.33 45 *e*P **P 05 12 21.4 +0.5**
V34A Guthrie 86.77 46 *e*P **P 05 12 23.7 +0.6**
comp=Z,9.9nm,0.7s
TXAR Lajitas Array 87.61 54 P **P 05 12 27.0 -0.4**
comp=Z,0.5nm,0.5s,baz=282,slow=1.8,SNR=10
TXAR Lajitas Array 87.61 54 P **P 05 12 27.0 -0.4**
TXAR pmax pmax
comp=Z,1.0nm,0.5s
PBMO Poplar Bluff 89.90 41 *e*P **P 05 12 38.0 +0.1**
MIAR Mount Ida 89.91 44 *e*P **P 05 12 38.2 +0.2**
MIAR Mount Ida 89.91 44 *e*P **P 05 12 38.2 +0.2**
MDV Middlebury 91.42 26 *e*P **P 05 12 45.0 +0.1**
TORD Torodi Ar. Bea 118.01 318 PKP **PKPdf 05 18 25.1 -0.9**
comp=Z,0.6nm,0.6s,baz=30,slow=1.5,SNR=7.6
TORD pPKP **pPKPdf 05 18 35.9 +1.2**
comp=Z,0.3nm,0.5s,baz=24,slow=1.4,SNR=2.3
SAML Samuel 141.81 47 *e*PKPdf **PKPdf 05 19 11.3 +0.4**
LPAZ La Paz 144.16 61 PKP PKPbc 05 19 13.9 +0.1
comp=Z,1.7nm,0.9s,baz=3.8,slow=7.1,SNR=5.4
LVC Limon Verde 147.66 71 *e*PKPbc **PKPbc 05 19 24.1 +0.1**

JMA 08 05:00:17.2, 35°48N×134°48E, h5km±1km, M0.5, Western Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JKSM	**Kasumi**	**0.18**	**54**	P	Pg	05 00 21.0	+0.1
JKSM				S	Sg	05 00 23.8	+0.5
JKY	**Yasaka**	**0.53**	**74**	P	Pg	05 00 27.6	+0.2

*ISCJB **08** 05:01:47.7±0.6, 36°.88N±0°.03×140°.73E±0°.06, h10km±4km, mb3.8/7, Error ellipse: s-maj=8.4km s-min=4.1km az=18.7*
*IDC **08** 05:01:47.7±0.8, 36°.65N×140°.64E, h0km, mb3.8/7, mb1 4.0/7, mb1mx3.6/51, mbtmp3.8/7, Error ellipse: s-maj=22.7km s-min=14.2km az=172.0*
*JMA **08** 05:01:48.1, 36°.89N×140°.67E, h8km±1km, M3.7*
JMA Felt II J1.
ISC 08 05:01:48.2±1.2, 36°.89N±0°.03×140°.65E±0°.04, h3km±8km, n24, σ1°.00/27, mb3.8/7, 6C-2D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.24**	**29**	⇑P	Pg	05 01 52.9	0.0
ONAJ				S	Sg	05 01 56.5	+0.4
JHO	**Hitachi**	**0.29**	**193**	⇑P	Pg	05 01 53.9	+0.1
JHO				S	Sg	05 01 58.0	+0.5
JFK	**Kawauchi**	**0.51**	**21**	⇓P	Pg	05 01 57.6	-0.4
JFK				S	Sg	05 02 04.6	0.0
JSB	**Shiboa**	**0.59**	**278**	⇑P	Pb	05 02 00.6	-0.7
JSB				S	Sb	05 02 09.7	-0.3
JFT	**Otama**	**0.67**	**338**	⇑P	Pg	05 02 01.3	+0.1
JFT				S	Sg	05 02 10.7	+0.8
JYT	**Yasato**	**0.76**	**209**	⇑P	Pg	05 02 02.5	-0.3
JYT				S	Sg	05 02 13.2	+0.6
JFY	**Yanaizu**	**0.91**	**304**	⇑P	Pg	05 02 05.7	-0.1
JFY				S	Sg	05 02 18.0	+0.3
JMM	**Marumori**	**0.98**	**7**	⇓P	Pg	05 02 06.2	-0.8
JMM				S	Sg	05 02 19.2	-0.5
MJAR	**Matsushiro Arr**	**1.99**	**261**	Pg	Pn	05 02 22.6	-0.2
	40nm,0.3s,baz=84,slow=16,SNR=18						
MJAR				Lg	Lg	05 02 50.7	
	32nm,0.3s,baz=89,slow=27,SNR=19						
MAT	**Matsushiro**	**2.00**	**261**	P	Pn	05 02 23.4	+0.5
MAT				*e*S	Sb	05 02 50.2	-0.2
H11N2	**WAKE ISLAND Hy 28.60**	**120**		T	T	05 37 29.6	
	baz=313,slow=75,SNR=18						
H11N1	**WAKE ISLAND Hy 28.61**	**120**		T	T	05 37 30.2	
	baz=313,slow=75,SNR=21						
H11N3	**WAKE ISLAND Hy 28.62**	**120**		T	T	05 37 32.0	
	baz=313,slow=75,SNR=24						
H11S1	**WAKE ISLAND Hy 29.30**	**122**		T	T	05 38 22.0	
	baz=314,slow=76,SNR=38						
H11S3	**WAKE ISLAND Hy 29.30**	**122**		T	T	05 38 22.2	
	baz=314,slow=76,SNR=50						
H11S2	**WAKE ISLAND Hy 29.32**	**122**		T	T	05 38 23.3	
	baz=314,slow=76,SNR=43						
KURBB	**Kurchatov Arra**	**45.61**	**308**	P	P	05 10 10.2	+0.6
	1.1nm,0.4s,baz=82,slow=7.9,SNR=3.1						
ILAR	**Eielson Array**	**49.94**	**32**	P	P	05 10 46.1	+3.2
	0.6nm,0.9s,baz=278,slow=7.2,SNR=2.4						
WRA	**Warramunga Arr**	**56.84**	**187**	P	P	05 11 33.1	-1.0
	0.8nm,0.5s,baz=2.8,slow=7.5,SNR=5.2						
ASAR	**Alice Springs**	**60.57**	**187**	P	P	05 11 57.3	-2.7
	0.7nm,0.8s,baz=11,slow=5.2,SNR=3.1						
FINES	**FINESS Array B**	**68.65**	**332**	P	P	05 12 52.5	0.0
	1.1nm,0.8s,baz=55,slow=7.3,SNR=3.7						
GERES	**GERESS Array B**	**82.51**	**328**	P	P	05 14 12.4	+0.1
	0.2nm,0.4s,baz=44,slow=7.9,SNR=4.1						
TXAR	**Lajitas Array**	**90.69**	**52**	P	P	05 14 52.5	-0.2
	0.2nm,0.8s,baz=251,slow=2.8,SNR=2.7						
LPAZ	**La Paz**	**147.29**	**59**	PKPbc	PKPab	05 21 35.5	-0.7
	0.8nm,0.8s,baz=332,slow=13,SNR=3.7						

*IDC **08** 05:03:02.5±1.0, 37°.88N×144°.77E, h0km, mb3.5/6, mb1 3.7/7, mb1mx3.5/51, mbtmp3.5/7, ML3.6/1, Error ellipse: s-maj=30.9km s-min=21.2km az=101.0*
*ISCJB **08** 05:03:05.8±0.8, 38°.16N±0°.05×144°.17E±0°.06, h33km, mb3.6/6, Error ellipse: s-maj=7.3km s-min=6.8km az=26.8*
*JMA **08** 05:03:05.7±0.2, 38°.24N×143°.90E, h2km, M3.8*
ISC 08 05:03:07.6±1.2, 38°.18N±0°.07×144°.16E±0°.09, h35km, n20, σ0°.85/25, mb3.7/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.15**	**295**	P	Pn	05 03 40.4	-0.5
JIO	**Ouri**	**2.23**	**278**	P	Pn	05 03 41.5	-0.5
JIO				S	Sn	05 04 07.5	-0.8
JMK	**Ichinoseki**	**2.43**	**289**	P	Pn	05 03 44.5	-0.3
JTH	**Tanohata**	**2.51**	**315**	*e*S	Sn	05 04 15.0	-0.2
JOM	**Ohasama**	**2.59**	**301**	P	Pn	05 03 47.0	+0.1
JOM				*e*S	Sn	05 04 16.9	-0.2
JMM	**Marumori**	**2.68**	**264**	P	Pn	05 03 47.6	-0.6
JMM				S	Sn	05 04 18.2	-1.2
JOU	**Okura**	**2.76**	**275**	P	Pn	05 03 49.4	+0.1
JOU				*e*S	Sn	05 04 21.6	+0.2
JANG	**Nango**	**3.00**	**318**	*e*S	Sn	05 04 26.8	-0.6
JRG	**Rokugo**	**3.01**	**295**	P	Pn	05 03 53.6	+0.8
JRG				S	Sn	05 04 29.0	+1.4
JYK	**Kaneyama**	**3.07**	**285**	P	Pn	05 03 54.0	+0.4
JFT	**Otama**	**3.10**	**259**	P	Pn	05 03 54.2	+0.2
JFT				S	Sn	05 04 29.9	+0.1
JTM	**Tenmabayashi**	**3.54**	**318**	*e*S	Sn	05 04 39.9	-0.6
MJAR	**Matsushiro Arr**	**5.01**	**253**	Pn	Pn	05 04 22.4	+2.0
	1.8nm,0.3s,baz=77,slow=14,SNR=3.2						
MAT	**Matsushiro**	**5.02**	**253**	P	Pn	05 04 20.5	+0.1
MAT				*e*S	Sn	05 05 18.0	+0.9
SEY	**Seymchan**	**25.29**	**9**	P	P	05 08 31.6	+1.3
	1.6nm,0.6s,baz=67,slow=22,SNR=4.6						
MKAR	**Makanchi Array**	**45.37**	**302**	P	P	05 11 28.4	+6.0
	0.5nm,0.5s,baz=64,slow=6.6,SNR=4.6						
KURBB	**Kurchatov Arra**	**47.03**	**308**	P	P	05 11 39.1	+3.8
	0.3nm,0.3s,baz=81,slow=8.9,SNR=1.9						
WRA	**Warramunga Arr**	**58.55**	**191**	P	P	05 12 59.5	-1.2
	0.6nm,0.5s,baz=7.8,slow=7.0,SNR=5.0						
YKA	**Yellowknife Ar**	**61.71**	**31**	P	P	05 13 22.2	+0.4
	0.2nm,0.7s,baz=300,slow=6.4,SNR=2.9						
ASAR	**Alice Springs**	**62.27**	**191**	P	P	05 13 24.9	-1.1
	0.2nm,0.7s,baz=7.8,slow=7.5,SNR=3.1						

*NIED **08** 05:29:00, 39°.30N×143°.00E, h11km, Mw3.4 Best double couple: M0=1.53000×10^14 NP1:φ=242.00000°, δ=79.00000°, λ=-11.00000°. NP2:φ=334.00000°, δ=80.00000°, λ=-169.00000°.*
*IDC **08** 05:29:24.2±1.4, 39°.50N×143°.64E, h0km, mb3.4/5, mb1 3.5/6, mb1mx3.3/41, mbtmp3.4/6, ML3.4/1, Error ellipse: s-maj=31.2km s-min=25.2km az=126.0*
*ISCJB **08** 05:29:27.8±1.0, 39°.32N±0°.06×143°.09E±0°.09, h18km, mb3.4/5, Error ellipse: s-maj=9.8km s-min=8.8km az=17.0*
*JMA **08** 05:29:28.1±0.2, 39°.35N×143°.03E, h19km±2km, M3.7*
ISC 08 05:29:29.7±1.5, 39°.35N±0°.06×142°.92E±0°.10, h18km, n23, σ1°.47/23, mb3.5/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**0.88**	**285**	P	Pb	05 29 46.0	-0.5
JTH	**Tanohata**	**1.01**	**306**	P	Pb	05 29 47.7	-0.9
OFUJ	**Ofunato**	**1.01**	**255**	P	Pb	05 29 48.0	-0.6
JOM	**Ohasama**	**1.27**	**276**	P	Pn	05 29 52.3	-0.2
JOM				S	Sb	05 30 09.6	+0.5
JMK	**Ichinoseki**	**1.38**	**254**	P	Pn	05 29 53.8	-0.3
JMK				S	Sb	05 30 12.9	+0.6
JANG	**Nango**	**1.49**	**314**	P	Pn	05 29 54.7	-0.9
JIO	**Ouri**	**1.52**	**235**	P	Pn	05 29 55.7	-0.2
JIO				S	Sn	05 30 14.9	-0.3
JRG	**Rokugo**	**1.77**	**272**	P	Pn	05 30 01.1	+1.6
JAH	**Hinai**	**1.95**	**296**	P	Pn	05 30 03.1	+1.2
JAH				S	Sb	05 30 29.6	+0.9
JTM	**Tenmabayashi**	**2.02**	**316**	P	Pn	05 30 03.2	+0.3
JYK	**Kaneyama**	**2.04**	**259**	P	Pn	05 30 04.6	+1.5
MJAR	**Matsushiro Arr**	**4.66**	**235**	Pn	Pn	05 30 42.2	+3.1
	1.3nm,0.3s,baz=34,slow=13,SNR=20						
MJAR				Sn	Sb	05 31 43.3	-3.4
	baz=25,slow=24,SNR=2.2						
MAT	**Matsushiro**	**4.66**	**235**	P	Pn	05 30 42.0	+2.8
MAT				S	Sn	05 31 31.2	-1.6
SONM	**Songino Array**	**27.57**	**300**	P	P	05 35 16.6	+0.9
	0.9nm,0.5s,baz=89,slow=38,SNR=4.3						
H11N2	**WAKE ISLAND Hy 28.44**	**127**		T	T	06 05 31.1	
	baz=312,slow=75,SNR=30						
H11N3	**WAKE ISLAND Hy 28.45**	**127**		T	T	06 05 08.1	
	baz=322,slow=75,SNR=35						
H11S1	**WAKE ISLAND Hy 29.24**	**128**		T	T	06 06 03.5	
	baz=321,slow=76,SNR=8.8						
H11S3	**WAKE ISLAND Hy 29.24**	**128**		T	T	06 06 03.8	
	baz=321,slow=76,SNR=9.4						
H11S2	**WAKE ISLAND Hy 29.26**	**128**		T	T	06 06 04.7	
	baz=321,slow=76,SNR=10						
MKAR	**Makanchi Array**	**43.94**	**300**	P	P	05 37 36.0	+0.5
	0.2nm,0.6s,baz=76,slow=12,SNR=2.6						
KURBB	**Kurchatov Arra**	**45.55**	**306**	P	P	05 37 48.4	+0.2
	0.6nm,0.5s,baz=78,slow=8.3,SNR=3.7						
WRA	**Warramunga Arr**	**59.52**	**189**	P	P	05 39 31.3	-0.6
	0.3nm,0.8s,baz=7.7,slow=7.0,SNR=5.5						
YKA	**Yellowknife Ar**	**61.21**	**31**	P	P	05 39 37.1	-5.9
	0.1nm,0.8s,baz=304,slow=5.7,SNR=3.0						

JMA 08 05:37:58.3±0.2, 38°.15N×143°.64E, h5km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**1.80**	**302**	P	Pn	05 38 30.5	+0.5
OFUJ				*e*S	Sb	05 38 54.3	-0.4
JIO	**Ouri**	**1.83**	**280**	P	Pn	05 38 30.8	+0.4
JIO				S	Sn	05 38 54.0	+0.1
JMK	**Ichinoseki**	**2.06**	**294**	P	Pn	05 38 34.2	+0.7
JMK				S	Sb	05 39 01.2	-0.9
JOM	**Ohasama**	**2.26**	**306**	P	Pb	05 38 38.1	-1.5
JOM				*e*S	Sn	05 39 05.7	+1.1
JMM	**Marumori**	**2.27**	**264**	P	Pn	05 38 36.6	+0.2
JMM				S	Sn	05 39 05.1	+0.4
JOU	**Okura**	**2.35**	**276**	P	Pn	05 38 38.8	+1.2
JOU				S	Sb	05 39 09.1	-1.4
JRG	**Rokugo**	**2.66**	**299**	P	Pn	05 38 43.9	+2.1
JYK	**Kaneyama**	**2.69**	**288**	P	Pn	05 38 43.6	+1.4

*ISK **08** 05:48:34.0, 37°.04N×29°.75E, h5km, MD2.4*
*DDA **08** 05:48:35.6, 36°.66N×29°.96E, h7km, Md2.6*
ISC 08 05:48:32.5±1.7, 36°.52N±0°.06×30°.05E±0°.06, h18km±9km, n7, σ0°.80/12, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ELL	**Elmali**	**0.25**	**333**	*e*PG	Pn	05 48 41.3	-0.2
ELL				*e*SG	Sn	05 48 47.1	0.0
AKAS	**Kas**	**0.46**	**231**	*i*P	Pn	05 48 43.4	-0.9
AKAS				*i*S	Sn	05 48 53.4	+1.2
KORT	**Korkueli**	**0.54**	**27**	*i*P	Pn	05 48 45.0	-0.4
KORT				*i*S	Sn	05 48 55.4	+1.3
FETY	**Fethiye**	**0.79**	**279**	*e*PG	Pg	05 48 47.9	0.0
FETY				*e*SG	Sg	05 48 58.7	+0.4
GOLH	**Golhisar**	**0.81**	**331**	*i*P	Pg	05 48 48.5	+0.1
GOLH				*i*S	Sn	05 49 01.4	+0.4
SUTC	**Sutluce-Ispart**	**1.22**	**38**	*e*PN	Pg	05 48 56.0	-0.1
KHAL	**Karahalli**	**1.90**	**347**	*i*S	Sn	05 49 26.9	-0.7

IDC 08 05:49:19.9±8.4, 5°.53S×151°.14E, h48km±61km, mb3.4/4, mb1 3.6/5, mb1mx3.3/25, mbtmp3.7/5, ML1.5/1, Error ellipse: s-maj=64.0km s-min=53.5km az=87.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**5.52**	**225**	P	Pn	05 50 40.3	+0.8
	1.1nm,0.3s,baz=275,slow=22,SNR=3.3						
PMG				S	Sn	05 51 42.7	+1.0
	5.9nm,0.3s,baz=355,slow=23,SNR=5.1						
WRA	**Warramunga Arr**	**21.73**	**227**	P	P	05 54 06.5	-0.8
	0.7nm,0.6s,baz=54,slow=11,SNR=10						
ASAR	**Alice Springs**	**24.51**	**221**	P	P	05 54 35.0	0.0
	0.5nm,0.6s,baz=59,slow=8.3,SNR=7.7						
STKA	**Stephens Creek**	**27.69**	**198**	P	P	05 55 03.9	+0.3
	1.0nm,0.6s,baz=16,slow=18,SNR=2.5						
FITZ	**Fitzroy Crossi**	**27.86**	**241**	P	P	05 55 04.8	-0.5
	1.4nm,0.6s,baz=59,slow=5.9,SNR=2.0						
H06S1	**SOCORRO T**	**99.22**	**72**	T	T	07 53 56.3	
	SNR=9.7						
TORD	**Torodi Ar. Bea**	**148.94**	**286**	PKPbc	PKPbc	06 09 03.3	-0.3
	0.3nm,0.6s,baz=59,slow=1.9,SNR=3.4						

*ISK **08** 06:02:33.7, 40°.20N×27°.73E, h7km, MD2.7*
*ISCJB **08** 06:02:34.1±0.4, 40°.21N±0°.03×27°.75E±0°.03, h3km±5km, Error ellipse: s-maj=4.5km s-min=3.3km az=20.9*
*CSEM **08** 06:02:34.5±0.1, 40°.22N×27°.74E, h8km, MD2.7, Error ellipse: s-maj=2.5km s-min=1.9km az=31.0*
*DDA **08** 06:02:34.7, 40°.21N×27°.69E, h5km, Md2.7*
ISC 08 06:02:34.4±0.9, 40°.20N±0°.02×27°.73E±0°.02, h11km±7km, n47, σ0°.50/60, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KNL	**Bal¨–kesir**	**0.17**	**295**	*i*P	Pg	06 02 37.8	-0.5
KNL				*i*S	Sg	06 02 40.5	-0.4
EDC	**Edincik**	**0.18**	**34**	*e*PG	Pg	06 02 38.5	+0.1
EDC	**Edincik**	**0.18**	**34**	*e*Pg	Pg	06 02 38.5	+0.1
KRBG	**Karabiga-Canak**	**0.39**	**301**	*e*PG	Pg	06 02 41.6	-0.4
KRBG	**Karabiga-Canak**	**0.39**	**301**	*e*Pg	Pg	06 02 41.6	-0.4
MRMT	**Marmara Adasi**	**0.42**	**346**	*e*PG	Pg	06 02 42.7	0.0
MRMT				*e*SG	Sg	06 02 48.4	+0.1
MRMT	**Marmara Adasi**	**0.42**	**346**	*e*Pg	Pg	06 02 42.7	0.0
MRMT				*e*Sg	Sg	06 02 48.4	+0.1
BALY	**Balya**	**0.46**	**191**	P	Pb	06 02 44.7	+0.1
BALY				S	Sb	06 02 51.1	-0.3
BALY	**Balya**	**0.46**	**191**	*i*P	Pb	06 02 44.7	+0.1
BALY				*i*S	Sb	06 02 51.1	-0.3
KCTX	**Karacabey (Bur**	**0.48**	**82**	*e*PG	Pg	06 02 43.1	-0.7
KCTX				*e*SG	Sg	06 02 50.7	+0.5
KCTX	**Karacabey (Bur**	**0.48**	**82**	*e*Pg	Pg	06 02 43.2	-0.7
KCTX				*e*Sg	Sg	06 02 50.7	+0.5
BALB	**Balikesir**	**0.57**	**168**	*e*PG	Pg	06 02 45.2	-0.2
BALB	**Balikesir**	**0.57**	**168**	*e*Pg	Pg	06 02 45.2	-0.2
RKY	**Sarkoy-Tekirda**	**0.65**	**319**	*e*PG	Pg	06 02 46.7	-0.3
RKY	**Sarkoy-Tekirda**	**0.65**	**319**	*e*Pg	Pg	06 02 46.7	-0.3
LPK	**Lapseki**	**0.77**	**284**	*e*PG	Pg	06 02 48.9	-0.3
LPK	**Lapseki**	**0.77**	**284**	*e*Pg	Pg	06 02 48.9	-0.3
TKR	**Tekirdag**	**0.81**	**349**	*e*PG	Pg	06 02 49.4	-0.6
TKR	**Tekirdag**	**0.81**	**349**	*e*Pg	Pg	06 02 49.4	-0.6
DURS	**Dursunbey**	**0.82**	**136**	P	Pb	06 02 51.1	+0.4
DURS				S	Sb	06 03 02.0	+0.1
DURS	**Dursunbey**	**0.82**	**136**	*i*P	Pb	06 02 51.1	+0.4
DURS				*i*S	Sb	06 03 02.0	+0.1
MDNY	**Mudanya-Bursa**	**0.90**	**79**	*e*PG	Pg	06 02 51.2	-0.4
MDNY	**Mudanya-Bursa**	**0.90**	**79**	*e*Pg	Pg	06 02 51.3	-0.4
ORLT	**Orhaneli**	**0.90**	**99**	*e*PG	Pg	06 02 51.5	-0.2
ORLT	**Orhaneli**	**0.90**	**99**	*e*Pg	Pg	06 02 51.6	-0.2
ARMT	**Armutlu**	**0.94**	**66**	*e*PG	Pg	06 02 52.2	-0.3
ARMT	**Armutlu**	**0.94**	**66**	*e*Pg	Pg	06 02 52.2	-0.3
GELI	**Tayfur-Gelibol**	**0.98**	**282**	*e*PG	Pg	06 02 52.8	-0.5
GELI	**Tayfur-Gelibol**	**0.98**	**282**	*e*Pg	Pg	06 02 52.8	-0.5
KESN	**Edirne-Kesan**	**1.02**	**308**	P	Pn	06 02 55.2	+0.2
KESN				S	Sn	06 03 09.5	+0.1
KESN	**Edirne-Kesan**	**1.02**	**308**	*i*P	Pn	06 02 55.1	+0.2
KESN				*i*S	Sn	06 03 09.5	+0.1
IGD	**Bursa**	**1.13**	**86**	*i*P	Pg	06 02 53.9	-2.2
IGD				*i*S	Sn	06 03 11.6	+0.1
CTKS	**Kestanelik-??a**	**1.19**	**29**	*e*PN	Pb	06 02 56.8	-0.2
CTKS	**Kestanelik-??a**	**1.19**	**29**	*e*Pn	Pb	06 02 56.8	-0.2
BOZC	**Bozcaada**	**1.34**	**255**	*i*P	Pn	06 02 57.9	-1.0
BOZC				*i*S	Sg	06 03 17.9	+0.4
IZI	**Iznik**	**1.34**	**83**	*e*PN	Pb	06 02 59.5	0.0
IZI	**Iznik**	**1.34**	**83**	*e*Pn	Pb	06 02 59.5	0.0
CTYL	**Yalikoy Yolu**	**1.34**	**18**	*e*PN	Pb	06 02 59.5	-0.1
CTYL	**Yalikoy Yolu**	**1.34**	**18**	*e*Pn	Pb	06 02 59.5	-0.1
ALN	**Alexandroupoli**	**1.46**	**299**	*e*PN	Pn	06 03 01.1	+0.4
ALN	**Alexandroupoli**	**1.46**	**299**	*e*Pn	Pn	06 03 01.1	+0.4
TVSB	**Tavsanli**	**1.53**	**119**	*e*PN	Pb	06 03 02.4	-0.3
TVSB	**Tavsanli**	**1.53**	**119**	*e*Pn	Pb	06 03 02.4	-0.3
SIGR	**SIGRI**	**1.75**	**236**	*e*PN	Pn	06 03 05.5	+0.9
SIGR	**SIGRI**	**1.75**	**236**	*e*Pn	Pn	06 03 05.5	+0.9
EDRB	**Edirne**	**1.81**	**336**	*e*PN	Pn	06 03 06.0	+0.6

1.0nm,0.8s,baz=60,slow=5.3,SNR=5.6
BRTR Keskin Array B 152.56 299 PKPbc PKPbc 06 27 47.5 +0.6
0.2nm,0.3s,baz=31,slow=6.7,SNR=2.5

DDA ***08*** *06:24:20.6, 39.°04N×42.°46E, 7km, Md2.8*
ISK ***08*** *06:24:21.7, 39.°04N×42.°23E, h2km, MD2.9*
CSEM ***08*** *06:24:22.2±0.3, 39.°12N×42.°33E, h5km, MD2.8, Error ellipse: s-maj=7.6km s-min=6.0km az=72.0*
ISCJB ***08*** *06:24:23.1±0.7, 39.°09N±0.°04×42.°36E±0.°05, h15km±7km, Error ellipse: s-maj=7.0km s-min=6.3km az=8.3*
ISC 08 06:24:23.0±1.0, 39.°10N±0.°03×42.°32E±0.°04, h15km±7km**, n27,** σ1§17/38**, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EKAR	**Karacoban**	**0.25**	**309**	P	**Pg**	**06 24 28.1**	**-0.6**
EKAR				S	**Sg**	**06 24 34.0**	**+1.4**
EKAR	**Karacoban**	**0.25**	**309**	*i* P	**Pg**	**06 24 28.1**	**-0.6**
EKAR				*i* S	**Sg**	**06 24 34.0**	**+1.4**
EATA	**Eleskirt**	**0.78**	**10**	P	**Pg**	**06 24 36.5**	**-1.7**
EATA				S	**Sb**	**06 24 48.5**	**-0.4**
EATA	**Eleskirt**	**0.78**	**10**	*i* P	**Pg**	**06 24 36.5**	**-1.7**
EATA				*i* S	**Sb**	**06 24 48.5**	**-0.4**
BNGL	**BINGOL**	**0.92**	**261**	*i* P	**Pg**	**06 24 39.0**	**-1.9**
BNGL				*i* S	**Sg**	**06 24 52.9**	**-0.2**
VANB	**Van**	**0.98**	**121**	*e*PG	**Pb**	**06 24 41.8**	**+0.1**
VANB	**Van**	**0.98**	**121**	*e*Pg	**Pb**	**06 24 41.8**	**+0.1**
HOMI	**Horasan**	**1.00**	**342**	*i* P	**Pb**	**06 24 41.6**	**-0.6**
HOMI				*i* S	**Sn**	**06 24 57.4**	**+0.7**
ERZM	**Erzurum**	**1.09**	**318**	P	**Pb**	**06 24 43.4**	**-0.4**
ERZM	**Erzurum**	**1.09**	**318**	*i* P	**Pb**	**06 24 43.4**	**-0.4**
EZM	**Erzurum**	**1.09**	**318**	*e*PN	**Pn**	**06 24 43.9**	**-0.2**
EZM				*e*SN	**Sn**	**06 24 59.3**	**+0.2**
BNGB	**Bing¶||**	**1.28**	**266**	*e*PN	**Pg**	**06 24 45.4**	**-2.3**
BGOL	**Bingol**	**1.29**	**266**	S	**Sb**	**06 25 04.5**	**+1.1**
BGOL	**Bingol**	**1.29**	**266**	*i* S	**Sb**	**06 25 04.5**	**+1.1**
YEDI	**Yedisu-Bingol**	**1.42**	**284**	*e*PN	**Pn**	**06 24 48.8**	**+0.4**
YEDI				*e*SN	**Sn**	**06 25 08.5**	**+1.6**
YEDI	**Yedisu-Bingol**	**1.42**	**284**	*e*Pn	**Pn**	**06 24 48.8**	**+0.4**
YEDI				*e*Sn	**Sn**	**06 25 08.5**	**+1.6**
BINT	**Bingol**	**1.44**	**262**	*e*Pn	**Pn**	**06 24 45.4**	**-3.3**
BTMN	**Batman**	**1.46**	**215**	P	**Pn**	**06 24 48.6**	**-0.3**
BTMN				S	**Sg**	**06 25 10.8**	**+0.7**
BTMN	**Batman**	**1.46**	**215**	*i* P	**Pn**	**06 24 48.6**	**-0.3**
BTMN				*i* S	**Sg**	**06 25 10.8**	**+0.7**
SIRT	**Sirnak**	**1.60**	**177**	*e*PN	**Pn**	**06 24 51.3**	**+0.5**
SIRT	**Sirnak**	**1.60**	**177**	*e*Pn	**Pn**	**06 24 51.3**	**+0.5**
DDEM	**Demirkent**	**1.84**	**347**	*i* S	**Pg**	**06 24 57.5**	**-0.9**
DAGI	**Agillar**	**2.00**	**351**	*i* S	**Pn**	**06 24 57.4**	**+0.9**
MAZI	**Mazidag**	**2.20**	**223**	*e*PN	**Pn**	**06 24 59.5**	**+0.3**
MAZI	**Mazidag**	**2.20**	**223**	*e*Pn	**Pn**	**06 24 59.5**	**+0.3**
PTK	**Pertek**	**2.29**	**266**	*e*PN	**Pn**	**06 25 01.6**	**+1.1**
PTK	**Pertek**	**2.29**	**266**	*e*Pn	**Pn**	**06 25 01.6**	**+1.1**

NIED ***08*** *06:38:00, 31.°40N×128.°80E, h5km, Mw3.7 Best double couple: M0=3.91000×10^14 NP1:φs=272.00000°, δ50.00000°, λ-32.00000°. NP2:φs=24.00000°, δ66.00000°, λ-136.00000°.*
JMA ***08*** *06:38:47.3±0.1, 31.°42N×128.°78E, h0km, M3.5*
ISCJB ***08*** *06:38:49.3±0.7, 31.°44N±0.°04×128.°77E±0.°05, h10km, mb3.5/3, Error ellipse: s-maj=7.3km s-min=4.9km az=149.1*
IDC ***08*** *06:38:49.9±1.3, 31.°45N×128.°44E, h0km, mb3.5/3, mb1 3.6/6, mb1mx3.3/68, mbtmp3.5/6, ML3.1/3, MS2.5/1, Ms1 2.5/1, ms1mx2.2/35, Error ellipse: s-maj=33.9km s-min=20.6km az=96.0*
ISC 08 06:38:49.4±0.9, 31.°41N±0.°03×128.°86E±0.°05, h10km**, n14,** σ1§37/22**, mb3.5/3, Northwest of Ryukyu Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JSJ	**Shimokoshiki**	**0.78**	**70**	P	**Pg**	**06 39 03.6**	**-0.8**
JSJ				S	**Sg**	**06 39 14.7**	**+0.2**
JFU	**Fukue jima 2**	**1.25**	**356**	P	**Pg**	**06 39 11.2**	**-2.2**
JFU				*e*S	**Sn**	**06 39 28.4**	**-1.4**
JSU	**Suzuyama**	**1.36**	**86**	P	**Pb**	**06 39 14.4**	**-0.6**
JSU				*e*S	**Sg**	**06 39 34.4**	**+1.1**
JNN	**Nakanoshima**	**1.79**	**151**	P	**Pg**	**06 39 22.2**	**-1.5**
JNN				*e*S	**Sg**	**06 39 46.3**	**-0.6**
JYAK	**Yakushimahirau**	**1.83**	**129**	P	**Pb**	**06 39 21.4**	**-1.7**
JYAK				*e*S	**Sg**	**06 39 47.6**	**-0.8**
JTZ	**Takazaki**	**1.96**	**75**	P	**Pb**	**06 39 23.0**	**-2.2**
JTZ				*e*S	**Sb**	**06 39 50.7**	**+1.0**
JTN	**Tanegashima 3**	**1.97**	**112**	P	**Pn**	**06 39 22.5**	**-0.3**
JTN				*e*S	**Sb**	**06 39 50.9**	**+1.0**
JIU2	**Izumi 2**	**2.01**	**55**	P	**Pb**	**06 39 25.6**	**-0.4**
JIU2				S	**Sg**	**06 39 53.6**	**-0.4**
JNU	**Nakatsue**	**2.41**	**44**	Pn	**Pg**	**06 39 34.1**	**-1.6**
	3.6nm,0.3s,baz=296,slow=3.1,SNR=29						
JNU				Sn	**Sg**	**06 40 06.8**	**-0.2**
	6.6nm,0.3s,baz=76,slow=7.5,SNR=4.4						
KSRS	**Korea Array**	**6.08**	**353**	Pn	**Pn**	**06 40 19.9**	**+0.5**
	0.6nm,0.3s,baz=174,slow=13,SNR=9.7						
KSRS				Lg	Lg	06 42 00.9	
	0.7nm,0.3s,baz=170,slow=30,SNR=12						
KSRS				LR	LR	06 42 32.0	
	comp=Z,46nm,20.7s,baz=183,slow=37						
KLR	**Kul'dur**	**17.93**	**6**	Pn	**P**	**06 43 01.2**	**+1.9**
	0.1nm,0.3s,baz=170,slow=11,SNR=2.4						
ASAR	**Alice Springs**	**54.98**	**174**	P	**P**	**06 48 23.6**	**+2.7**
	0.5nm,0.9s,baz=1.5,slow=14,SNR=4.7						
FINES	**FINESS Array B**	**68.66**	**330**	P	**P**	**06 49 52.8**	**+0.2**
	0.9nm,0.7s,baz=64,slow=6.3,SNR=2.6						
YKA	**Yellowknife Ar**	**73.62**	**26**	P	P	06 50 26.0	+3.4
	0.2nm,0.8s,baz=329,slow=4.7,SNR=4.2						

ISCJB ***08*** *06:40:19.9±0.3, 51.°47N±0.°01×16.°21E±0.°02, h0km, Error ellipse: s-maj=2.2km s-min=1.9km az=27.6*
CSEM ***08*** *06:40:21.9±0.1, 51.°47N×16.°19E, h1km, ML3.0, Error ellipse: s-maj=2.4km s-min=2.0km az=44.0*
WAR ***08*** *06:40:21.3, 51.°44N×16.°91E, h1km, Mw2.8*
IPEC ***08*** *06:40:22.3±0.3, 51.°47N×16.°30E, h0km, ML2.4/2, Error ellipse: s-maj=3.2km s-min=1.7km az=67.0*
UPP ***08*** *06:40:23.3±3.3, 51.°47N×15.°71E, h0km, ML1.9, Suspected explosion*
PRU ***08*** *06:40:23.7, 51.°42N×16.°17E, h0km*
BGR ***08*** *06:40:23.2±0.4, 51.°44N×16.°21E, h1km, ML3.0/15, Error ellipse: s-maj=4.4km s-min=2.2km az=13.0*
IDC ***08*** *06:40:23.4±0.7, 51.°44N×16.°16E, h0km, mb1 3.3/7, mb1mx3.1/53, mbtmp3.2/7, ML2.8/7, Error ellipse: s-maj=14.8km s-min=5.5km az=96.0*
VIE ***08*** *06:40:25.0±0.6, 51.°27N×16.°26E, h0km, mb2.2/4, ml3.0/4, Error ellipse: s-maj=5.6km s-min=4.3km az=85.0, Suspected Mining induced.*
ISC 08 06:40:21.2±0.7, 51.°52N±0.°03×16.°21E±0.°02, h0km**, n96,** σ1§13/172**, 6D, Poland**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.68**	**176**	*i* Pg	**Pg**	**06 40 34.6**	**+0.4**
KSP				*e*Sg	**Sg**	**06 40 42.6**	**-0.3**
KSP	**Ksiaz**	**0.68**	**176**	*i* Pg	**Pg**	**06 40 34.6**	**+0.4**
KSP				Sg	**Sg**	**06 40 42.9**	**0.0**
KSP	**Ksiaz**	**0.68**	**176**	*e*Pg	**Pg**	**06 40 34.5**	**+0.3**
KSP				*e*Sg	**Sg**	**06 40 42.9**	**0.0**
KSP	**Ksiaz**	**0.68**	**176**	*i* Pgd	**Pg**	**06 40 34.6**	**+0.4**
KSP				*e*Sg	**Sg**	**06 40 42.6**	**-0.3**
UPC	**Upice**	**1.02**	**187**	‖*e*PG	**Pg**	**06 40 40.4**	**-0.3**
UPC				*e*SG	**Sg**	**06 40 53.2**	**-0.7**
	comp=Z,137nm,0.3s						
DPC	**Dobruska-Polom**	**1.17**	**177**	*e*PG	**Pg**	**06 40 43.4**	**-0.2**
DPC				*e*SG	**Sg**	**06 40 57.6**	**-1.2**
	comp=Z,36nm,0.3s						
DPC	**Dobruska-Polom**	**1.17**	**177**	Pg	**Pg**	**06 40 43.4**	**-0.2**
DPC				Sg	**Sg**	**06 40 58.7**	**-0.1**
DPC	**Dobruska-Polom**	**1.17**	**177**	*e*Pg	**Pg**	**06 40 43.4**	**-0.2**
DPC				*e*Sg	**Sg**	**06 40 58.7**	**-0.1**
PVCC	**Panska Ves**	**1.44**	**227**	‖*e*PG	**Pb**	**06 40 48.8**	**0.0**
PVCC				*e*SG	**Sb**	**06 41 07.8**	**+0.2**
	comp=Z,262nm,0.3s						
KRLC	**Kraliky**	**1.49**	**166**	*e*PG	**Pn**	**06 40 49.1**	**-0.2**
KRLC				*e*SG	**Sg**	**06 41 08.2**	**-0.8**
BRG	**Berggiesshubel**	**1.57**	**247**	PN	**Pn**	**06 40 50.1**	**-0.2**
BRG				PG	**Pg**	**06 40 52.1**	**+0.8**
BRG				SG	**Sg**	**06 41 12.0**	**+0.5**
	61nm,0.5s						
BRG	**Berggiesshubel**	**1.57**	**247**	*e*Pn	**Pn**	**06 40 50.2**	**-0.2**
BRG	**Berggiesshubel**	**1.57**	**247**	*e*Pn	**Pn**	**06 40 50.2**	**-0.1**
BRG				*e*Pg	**Pg**	**06 40 52.0**	**+0.8**
BRG				*e*Sg	**Sg**	**06 41 12.0**	**+0.5**
GOPC	**GO Pecny, Ondr**	**1.84**	**210**	*e*PG	**Pb**	**06 40 56.0**	**+0.2**
GOPC				*e*SG	**Sb**	**06 41 19.1**	**-0.3**
	comp=Z,22nm,0.2s						
PRU	**Pruhonice**	**1.86**	**215**	‖*e*PN	**Pn**	**06 40 54.2**	**-0.2**
PRU				*e*PG	**Pb**	**06 40 56.0**	**-0.1**
PRU				*e*SG	**Sb**	**06 41 20.0**	**+0.1**
	comp=Z,40nm,0.4s						
FBE	**Freiberg**	**1.90**	**253**	Pg	**Pg**	**06 40 58.1**	**+0.6**
FBE				Sg	**Sb**	**06 41 21.3**	**+0.5**
FBE	**Freiberg**	**1.90**	**253**	*e*Pg	**Pg**	**06 40 58.1**	**+0.6**
FBE				*e*Sg	**Sb**	**06 41 21.3**	**+0.5**
RAC	**Raciborz**	**1.91**	**138**	*e*Pg	**Pg**	**06 40 58.8**	**+1.0**
RAC				*e*Sg	**Sg**	**06 41 22.8**	**+0.3**
MORC	**Moravsky Berou**	**1.94**	**154**	*e*Pn	**Pn**	**06 40 55.3**	**-0.1**
	baz=335						
MORC				Sg	**Sb**	**06 41 21.9**	**-0.2**
MORC	**Moravsky Berou**	**1.94**	**154**	*e*Pn	**Pn**	**06 40 55.1**	**-0.4**
MORC				*e*Sg	**Sb**	**06 41 21.9**	**-0.2**
CLL	**Collm**	**2.02**	**265**	*i* Pn	**Pn**	**06 40 56.7**	**+0.2**
	comp=Z,2.0nm,0.5s						
CLL				*i* Pg	**Pg**	**06 41 00.5**	**+0.5**
CLL				*i* Sg	**Sg**	**06 41 27.6**	**+1.5**
	comp=Z,25nm,0.4s						
CLL	**Collm**	**2.02**	**265**	Pn	**Pn**	**06 40 56.8**	**+0.2**
CLL				Sg	**Sg**	**06 41 27.6**	**+1.5**
CLL	**Collm**	**2.02**	**265**	*e*Pn	**Pn**	**06 40 56.8**	**+0.2**
CLL				*e*Sg	**Sg**	**06 41 27.6**	**+1.5**
OKC	**Ostrava-Krasne**	**2.08**	**143**	‖*e*PN	**Pn**	**06 40 57.3**	**-0.2**
OKC				*e*PG	**Pg**	**06 41 01.3**	**+0.2**
OKC				*e*SG	**Sb**	**06 41 26.1**	**-0.2**
	comp=Z,45nm,0.6s						
OKC	**Ostrava-Krasne**	**2.08**	**143**	Pn	**Pn**	**06 40 57.2**	**-0.2**
OKC				Sg	**Sb**	**06 41 26.1**	**-0.2**
OKC	**Ostrava-Krasne**	**2.08**	**143**	*e*Pn	**Pn**	**06 40 57.2**	**-0.2**
OKC				*e*Sg	**Sb**	**06 41 26.1**	**-0.2**
VRAC	**Vranov**	**2.23**	**174**	Pn	**Pn**	**06 41 00.5**	**+1.1**
	comp=Z,2.2nm,0.3s,baz=341,slow=16,SNR=17						
VRAC				Pg	**Pg**	**06 41 04.2**	**+0.3**
	comp=Z,2.2nm,0.3s,baz=339,slow=16,SNR=18						
VRAC				Lg	Lg	06 41 31.0	
	comp=Z,6.5nm,0.3s,baz=282,slow=21,SNR=9.4						
VRAC	**Vranov**	**2.23**	**174**	*e*Pn	**Pn**	**06 40 59.8**	**+0.4**
VRAC				*e*Sg	**Sb**	**06 41 30.0**	**-0.4**
TREC	**Trest**	**2.27**	**192**	‖*e*PG	**Pb**	**06 41 03.6**	**+0.5**
TREC				*e*SG	**Sb**	**06 41 32.7**	**+0.9**
	comp=Z,29nm,0.3s						
KRUC	**Moravsky**	**2.46**	**177**	*e*Pn	**Pn**	**06 41 03.1**	**+0.5**
	baz=359						
KRUC				*e*Sg	**Sb**	**06 41 37.9**	**+0.7**
	comp=Z,13nm,0.3s,baz=359						
TANN	**Tannenbergstha**	**2.62**	**247**	Pn	**Pn**	**06 41 05.5**	**+0.7**
TANN				Sg	**Sg**	**06 41 44.6**	**-0.6**
TANN	**Tannenbergstha**	**2.62**	**247**	*e*Pn	**Pn**	**06 41 05.5**	**+0.7**
TANN				*e*Sg	**Sg**	**06 41 44.6**	**-0.6**
OJC	**Ojcow**	**2.62**	**118**	*e*Pg	**Pg**	**06 41 12.8**	**+1.5**
OJC				*e*Sn	**Sn**	**06 41 35.5**	**-1.7**
OJC				*e*Sg	**Sg**	**06 41 46.8**	**+1.6**
OJC	**Ojcow**	**2.62**	**118**	Pn	**Pn**	**06 41 04.3**	**-0.4**
OJC	**Ojcow**	**2.62**	**118**	*e*Pg	**Pg**	**06 41 12.8**	**+1.5**
OJC				*e*Sn	**Sn**	**06 41 35.5**	**-1.7**
OJC				*e*Sg	**Sg**	**06 41 46.8**	**+1.6**
OJC	**Ojcow**	**2.62**	**118**	*e*Pn	**Pn**	**06 41 04.3**	**-0.4**
OJC				*e*Pg	**Pg**	**06 41 11.5**	**+0.2**
OJC				*e*Sg	**Sg**	**06 41 46.0**	**+0.7**
OJC	**Ojcow**	**2.62**	**118**	*e*Pg	**Pg**	**06 41 12.8**	**+1.5**
OJC				*e*Sn	**Sn**	**06 41 35.5**	**-1.7**
OJC				*e*Sg	**Sg**	**06 41 46.8**	**+1.6**
WERD	**Werda**	**2.69**	**248**	Pn	**Pn**	**06 41 06.2**	**+0.4**
WERD	**Werda**	**2.69**	**248**	*e*Pn	**Pn**	**06 41 06.2**	**+0.4**
WERD				*e*Pg	**Pg**	**06 41 13.1**	**+0.3**
WERD				*e*Sg	**Sg**	**06 41 46.4**	**-1.2**
NKC	**Novy Kostel**	**2.71**	**243**	‖*e*PN	**Pn**	**06 41 06.9**	**+0.9**
NKC				*e*PG	**Pg**	**06 41 12.3**	**-0.8**
NKC				*e*SG	**Sg**	**06 41 47.8**	**-0.4**
	comp=Z,38nm,0.3s						
KHC	**Kasperske Hory**	**2.93**	**216**	*e*PN	**Pn**	**06 41 09.4**	**+0.4**
KHC				*e*PG	**Pb**	**06 41 15.6**	**+1.3**
KHC				*e*SN	**Sn**	**06 41 44.2**	**-0.7**
KHC				*e*SG	**Sg**	**06 41 53.8**	**-1.4**
	comp=Z,15nm,0.4s						
MANZ	**Manzenberg**	**3.02**	**241**	Pn	**Pn**	**06 41 11.0**	**+0.6**
MANZ	**Manzenberg**	**3.02**	**241**	*e*Pn	**Pn**	**06 41 11.0**	**+0.6**
MANZ				*e*Pg	**Pg**	**06 41 19.5**	**+0.3**
MANZ				*e*Sg	**Sg**	**06 41 58.9**	**+0.5**
MOX	**Moxa**	**3.03**	**255**	Pn	**Pn**	**06 41 10.5**	**+0.1**
MOX				Sg	**Sg**	**06 41 59.2**	**+0.7**
MOX	**Moxa**	**3.03**	**255**	*e*Pn	**Pn**	**06 41 10.5**	**+0.1**
MOX				*e*Sg	**Sg**	**06 41 59.2**	**+0.7**
ROTZ	**Rotzenmuhle**	**3.09**	**237**	Pn	**Pn**	**06 41 12.2**	**+0.9**
ROTZ	**Rotzenmuhle**	**3.09**	**237**	*e*Pn	**Pn**	**06 41 12.2**	**+0.9**
SMOL	**Smolenice**	**3.11**	**165**	*e*Sg	**Sg**	**06 42 01.7**	**+0.7**
SMOL	**Smolenice**	**3.11**	**165**	*e*SG	**Sg**	**06 42 01.7**	**+0.7**
GEC2	**GERESS Array S**	**3.12**	**212**	Pn	**Pn**	**06 41 12.8**	**+1.0**
GEC2	**GERESS Array S**	**3.12**	**212**	Pg	**Pb**	**06 41 19.0**	**+1.3**
GEC2				Sg	**Sb**	**06 41 58.7**	**+2.4**
GEC2	**GERESS Array S**	**3.12**	**212**	*e*Pn	**Pn**	**06 41 12.8**	**+1.0**
GEC2				*e*Pg	**Pb**	**06 41 19.0**	**+1.3**
GEC2				*e*Sg	**Sb**	**06 41 58.7**	**+2.4**
GERES	**GERESS Array B**	**3.12**	**212**	Pn	**Pn**	**06 41 12.3**	**+0.5**
	comp=Z,0.6nm,0.3s,baz=31,slow=13,SNR=17						
GERES				Pg	**Pb**	**06 41 19.0**	**+1.3**
	comp=Z,4.9nm,0.3s,baz=29,slow=17,SNR=66						
GERES				Lg	Lg	06 42 01.0	
	comp=Z,6.6nm,0.3s,baz=34,slow=25,SNR=11						
LANS	**Liptovska Anna**	**3.16**	**137**	*e*Sg	**Sg**	**06 42 01.4**	**-1.2**
LANS	**Liptovska Anna**	**3.16**	**137**	*e*	**Pn**	**06 41 15.1**	**+2.9**
LANS	**Liptovska Anna**	**3.16**	**137**	*e*SG	**Sg**	**06 42 01.4**	**-1.2**
WET	**Wettzell**	**3.19**	**223**	Pn	**Pn**	**06 41 13.0**	**+0.3**
WET				Sg	**Sg**	**06 42 03.7**	**-0.1**
WET	**Wettzell**	**3.19**	**223**	*e*Pn	**Pn**	**06 41 13.0**	**+0.3**
WET				*e*Sg	**Sg**	**06 42 03.7**	**-0.1**
VYHS	**Vyhne**	**3.47**	**150**	*e*Pg	**Pg**	**06 41 28.4**	**+0.8**
VYHS				*e*Sg	**Sg**	**06 42 11.2**	**-1.3**
VYHS	**Vyhne**	**3.47**	**150**	*e*	**Pn**	**06 41 16.6**	**+0.2**
VYHS	**Vyhne**	**3.47**	**150**	*e*PG	**Pg**	**06 41 28.4**	**+0.8**
VYHS				*e*SG	**Sg**	**06 42 11.2**	**-1.3**
VYHS				*e*LG	Lg	06 42 22.0	
CONA	**Conrad Observa**	**3.60**	**184**	*i* Pn	**Pn**	**06 41 19.2**	**+0.9**
	comp=Z,0.4nm,0.1s						
CONA				*e*Sg	**Sg**	**06 42 16.1**	**-0.7**
	comp=Z,16nm,0.4s						
CONA	**Conrad Observa**	**3.60**	**184**	Pn	**Pn**	**06 41 19.2**	**+0.9**
	comp=Z,0.4nm,0.1s						
CONA				Sg	**Sg**	**06 42 16.1**	**-0.7**
	comp=Z,16nm,0.4s						
GRA1	**Grafenberg Arr**	**3.67**	**242**	Sg	**Sg**	**06 42 18.6**	**-0.4**
GRF	**Grafenberg Arr**	**3.67**	**242**	*e*Sg	**Sg**	**06 42 18.6**	**-0.4**
BSD	**Bornholm Skovb**	**3.69**	**348**	*i* P	**Pn**	**06 41 20.4**	**+1.0**
BSD				*e*S	**Sn**	**06 42 02.0**	**-1.5**
BSD	**Bornholm Skovb**	**3.69**	**348**	*i* P	**Pn**	**06 41 20.4**	**+1.0**
BSD				*e*S	**Sn**	**06 42 02.0**	**-1.5**
STHS	**Stebnicka Huta**	**3.84**	**121**	*e*Pg	**Pg**	**06 41 36.4**	**+1.6**
STHS				*e*Sg	**Sg**	**06 42 25.2**	**+0.7**
STHS	**Stebnicka Huta**	**3.84**	**121**	*e*PG	**Pg**	**06 41 36.4**	**+1.6**
STHS				*e*SG	**Sg**	**06 42 25.2**	**+0.7**
STHS				*e*LG	Lg	06 42 36.9	
MOA	**Molln**	**3.88**	**200**	*i* Pn	**Pn**	**06 41 22.9**	**+0.7**
	comp=Z,1.0nm,0.2s						
MOA				*e*Sg	**Sg**	**06 42 25.5**	**-0.4**
	comp=Z,9.1nm,0.5s						
MOA	**Molln**	**3.88**	**200**	Pn	**Pn**	**06 41 22.9**	**+0.7**
	comp=Z,1.0nm,0.2s						
MOA				Sg	**Sg**	**06 42 25.5**	**-0.4**
	comp=Z,9.1nm,0.5s						
KECS	**Kecovo**	**4.10**	**136**	*e*Sg	**Sg**	**06 42 32.0**	**-0.9**
KECS	**Kecovo**	**4.10**	**136**	*e*SG	**Sg**	**06 42 32.0**	**-0.9**
KECS				*e*LG	Lg	06 42 37.4	
CRVS	**Cervenica-Dubn**	**4.27**	**126**	*e*Sg	**Sg**	**06 42 40.0**	**+1.8**
CRVS	**Cervenica-Dubn**	**4.27**	**126**	*e*SG	**Sg**	**06 42 40.0**	**+1.8**
LUNU	**Lund**	**4.44**	**339**	P	**Pn**	**06 41 30.4**	**+0.6**
LUNU				S	**Sn**	**06 42 21.4**	**-0.7**
LUNU	**Lund**	**4.44**	**339**	P	**Pn**	**06 41 30.4**	**+0.6**
LUNU				S	**Sn**	**06 42 21.4**	**-0.7**
BLEU	**Blekinge**	**4.80**	**357**	P	**Pn**	**06 41 35.9**	**+1.2**
BLEU	**Blekinge**	**4.80**	**357**	P	**Pn**	**06 41 35.9**	**+1.2**
BJUU	**Bjuv**	**4.94**	**339**	P	**Pn**	**06 41 36.8**	**+0.2**
BJUU	**Bjuv**	**4.94**	**339**	P	**Pn**	**06 41 36.8**	**+0.2**
VXJU	**Vaexsjoe**	**5.47**	**353**	P	**Pn**	**06 41 45.0**	**+1.2**
VXJU	**Vaexsjoe**	**5.47**	**353**	P	**Pn**	**06 41 45.0**	**+1.2**
OSKU	**Oskarshamn**	**5.69**	**359**	P	**Pn**	**06 41 48.6**	**+1.7**
OSKU	**Oskarshamn**	**5.69**	**359**	P	**Pn**	**06 41 48.6**	**+1.7**
BYXU	**Byxelkrok**	**5.80**	**4**	P	**Pn**	**06 41 50.2**	**+1.7**
BYXU	**Byxelkrok**	**5.80**	**4**	P	**Pn**	**06 41 50.2**	**+1.7**
GNOU	**Gnosjoe**	**5.96**	**347**	P	**Pn**	**06 41 51.7**	**+1.1**
GNOU	**Gnosjoe**	**5.96**	**347**	P	**Pn**	**06 41 51.7**	**+1.1**
EKSU	**Eksjoe**	**6.09**	**355**	P	**Pn**	**06 41 53.6**	**+1.2**
EKSU	**Eksjoe**	**6.09**	**355**	P	**Pn**	**06 41 53.6**	**+1.2**
DAVOX	**Davos/Dischmat**	**6.30**	**224**	Pn	**Pn**	**06 41 57.8**	**+2.3**
	comp=Z,0.2nm,0.3s,baz=12,slow=23,SNR=2.9						
DAVOX				Lg	Lg	06 43 41.9	
	comp=Z,0.4nm,0.3s,baz=250,slow=19,SNR=3.2						
HFS	**Hagfors**	**8.75**	**352**	Pn	**Pn**	**06 42 29.5**	**+0.6**
	comp=Z,0.1nm,0.3s,baz=166,slow=13,SNR=5.2						
HFS				Sn	**Sn**	**06 44 05.0**	**-3.2**
	comp=Z,0.1nm,0.3s,baz=185,slow=32,SNR=2.6						
NOA	**NORSAR Array B**	**9.94**	**346**	Pn	**Pn**	**06 42 45.8**	**+0.6**
	comp=Z,0.1nm,0.3s,baz=157,slow=12,SNR=3.0						
NOA				Sn	**Sn**	**06 44 34.4**	**-3.0**
	comp=Z,0.1nm,0.3s,baz=170,slow=18,SNR=2.6						
FINES	**FINESS Array B**	**11.33**	**25**	Pn	**Pn**	**06 43 04.0**	**-0.1**
	comp=Z,0.1nm,0.3s,baz=203,slow=10,SNR=7.4						
FINES				Sn	**Sn**	**06 45 04.6**	**-6.7**
	comp=Z,0.1nm,0.3s,baz=193,slow=24,SNR=4.1						
ARCES	**ARCESS Array B**	**18.60**	**10**	Pn	**P**	**06 44 37.4**	**-2.3**
	comp=Z,0.1nm,0.3s,baz=192,slow=13,SNR=5.9						

BEO ***08*** *06:50:14.6, 36.°35N×28.°36E, h0km*
BJI ***08*** *06:50:21.5, 36.°60N×27.°30E, h13km, mb5.0/63, mB5.2/52, Ms4.9/45, Ms7 4.6/44*
IDC ***08*** *06:50:21.4±0.4, 36.°67N×27.°22E, h0km, mb4.8/31, mb1 4.8/45, mb1mx4.8/52, mbtmp4.7/45, ML3.9/12, MS4.5/38, Ms1 4.5/38, ms1mx4.4/55, Error ellipse: s-maj=10.4km s-min=8.1km az=157.0*
ISK ***08*** *06:50:22.3, 36.°70N×27.°12E, h6km, ML5.1*
ISCJB ***08*** *06:50:23.7±0.2, 36.°65N±0.°01×27.°23E±0.°01, h26km±1km, mb5.0/189, MS4.6/48, Error ellipse: s-maj=1.9km s-min=1.4km az=9.0*
CSEM ***08*** *06:50:23.5±0.1, 36.°63N×27.°26E, h12km, mb5.2/99, Ms4.7, Mw5.2, Error ellipse: s-maj=2.1km s-min=1.6km az=13.0*
NIC ***08*** *06:50:23.8±0.4, 35.°94N×26.°93E, h81km, mb5.0, ML4.7*
PDG ***08*** *06:50:23.2±0.6, 36.°72N×27.°27E, h13km±1km, ML4.8/9, Error ellipse: s-maj=0.9km s-min=1.1km az=0.0*
ATH ***08*** *06:50:23.2, 36.°69N×27.°18E, h22km, ML4.9/40, Error ellipse: s-maj=0.7km s-min=0.3km az=69.0*
GCMT ***08*** *06:50:24.3±0.2, 36.°57N×27.°36E, h13km, MW5.2/104, Moment Tensor Solution. s82,c113; s104,c196; Duration: 1s0 Moment tensor: Scale 10^17Nm; Mrr-0.71±.02; Mθθ0.65±.01; Mφφ0.05±.01; Mrθ0.44±.04; Mθφ0.37±.01; Mφr0.15±.03; Best double couple: M0 0.89900×10^17 NP1:φs248.00000°, δ61.00000°, λ-86.00000°. NP2:φs60.00000°, δ30.00000°, λ-97.00000°. Principal axes: T 0.9580, Plg15.0000°, Azm335.0000°; N -0.1190, Plg4.0000°, Azm66.0000°; P -0.8390, Plg74.0000°, Azm169.0000°; nsta1 refers to body waves, cutoff=40s. nsta2

KARP	Karpathos	1.13 182	P	Pb	06 50 45.2	-0.2
KARP			S	Sg	06 51 01.3	+0.4
KARP			AML	AML	06 51 07.0	
KARP			AML	AML	06 51 07.8	
KARP	Karpathos	1.13 182	*e*Pn	Pb	06 50 45.1	-0.2
KARP			*e*Sn	Sb	06 50 57.8	-1.9
TURN	Turunc	1.13 80⇑	*i*P	Pb	06 50 39.0	-6.4
TURN			*i* S	Sb	06 50 52.1	-7.7
DALY	Dalyan (Mu¨la	1.16 83	*e*PN	Pn	06 50 45.5	-0.3
DALY			*e*SN	Sg	06 51 03.9	+1.9
DALY	Dalyan (Mu¨la	1.16 83	*e*Pn	Pn	06 50 45.5	-0.3
DALY			*e*Sn	Sg	06 51 03.9	+1.9
AYDB	Zeytinkoy-Aydi	1.38 23	*e*PN	Pn	06 50 48.1	-0.8
AYDB	Zeytinkoy-Aydi	1.38 23	*e*Pn	Pn	06 50 48.1	-0.8
DGB	¨zmir	1.40 349⇑	*i*P	Pn	06 50 47.9	-1.1
DGB			*i* S	Sg	06 51 11.0	+1.4
APE	Apeiranthos	1.41 287	*e*PN	Pn	06 50 48.4	-0.8
APE	Apeiranthos	1.41 287⇑	*i*P	Pn	06 50 48.8	-0.5
APE	Apeiranthos	1.41 287	S	Sg	06 51 11.1	+1.3
APE	Apeiranthos	1.41 287	P	Pn	06 50 48.7	-0.5
APE			S	Sn	06 51 07.8	+0.4
APE	Apeiranthos	1.41 287*c*	*i*P	Pn	06 50 48.6	-0.6
APE	Apeiranthos	1.41 287	P	Pn	06 50 48.6	-0.6
APE			S	Sn	06 51 07.4	0.0
APE	Apeiranthos	1.41 287	P	Pn	06 50 48.6	-0.6
APE			S	Sn	06 51 07.4	0.0
APE			AML	AML	06 51 15.9	
	comp=N,43500µm,0.7s					
APE			AML	AML	06 51 16.4	
	comp=E,33506µm,0.4s					
APE	Apeiranthos	1.41 287	P	Pn	06 50 48.7	-0.5
SANT	Santorini	1.45 258⇓	*i*P	Pn	06 50 49.4	-0.4
SANT	Santorini	1.45 258	S	Sg	06 51 11.5	+0.4
SANT	Santorini	1.45 258	P	Pn	06 50 49.4	-0.4
SANT			S	Sn	06 51 08.6	+0.2
SANT	Santorini	1.45 258	P	Pn	06 50 49.1	-0.7
SANT	Santorini	1.45 258	*e*Pn	Pn	06 50 50.0	+0.3
SANT			S	Sn	06 51 08.6	+0.2
SANT	Santorini	1.45 258	P	Pn	06 50 49.1	-0.7
SANT			S	Sn	06 51 08.8	+0.5
SANT			AML	AML	06 51 14.5	
	comp=N,79417µm,0.9s					
SANT			AML	AML	06 51 21.1	
SANT	Santorini	1.45 258	*e*Pn	Pn	06 50 50.0	+0.3
THR2	Thira island,	1.45 261	P	Pn	06 50 49.5	-0.3
THR2	Thira island,	1.45 261	P	Pn	06 50 49.5	-0.3
THR2	Thira island,	1.45 261	P	Pn	06 50 49.5	-0.3
THR7	Fira-Santorini	1.46 261	P	Pn	06 50 49.8	-0.1
THR7	Fira-Santorini	1.46 261	P	Pn	06 50 49.8	-0.1
THT1	Athinios (Pele	1.47 259	P	Pn	06 50 49.6	-0.4
THT1	Athinios (Pele	1.47 259	P	Pn	06 50 49.6	-0.4
CMBO	Columbo, Santo	1.47 263	P	Pn	06 50 49.8	-0.2
CMBO			S	Sn	06 51 09.2	+0.3
CMBO	Columbo, Santo	1.47 263	P	Pn	06 50 49.8	-0.2
CMBO			S	Sn	06 51 09.2	+0.3
CMBO	Columbo, Santo	1.47 263	P	Pn	06 50 50.0	0.0
CMBO			S	Sb	06 51 10.4	+0.8
CMBO			AML	AML	06 51 17.1	
CMBO			AML	AML	06 51 17.2	
THR3	Thira Island,	1.49 260	P	Pn	06 50 50.0	-0.2
THR3	Thira Island,	1.49 260	P	Pn	06 50 50.0	-0.2
THR3	Thira Island,	1.49 260	P	Pn	06 50 50.1	-0.2
THR6	Thira Island,	1.50 258	P	Pn	06 50 50.4	0.0
THR6	Thira Island,	1.50 258	P	Pn	06 50 50.4	0.0
THR6	Thira Island,	1.50 258	P	Pn	06 50 50.4	0.0
FETY	Fethiye	1.50 91	*e*PN	Pb	06 50 51.2	-0.5
FETY	Fethiye	1.50 91	P	Pb	06 50 51.1	-0.7
FETY	Fethiye	1.50 91	P	Pb	06 50 51.1	-0.7
FETY	Fethiye	1.50 91	P	Pb	06 50 51.1	-0.7
THR5	Thira Island,	1.53 261	*e*PN	Pn	06 50 49.6	-1.2
THR5	Thira Island,	1.53 261	P	Pn	06 50 50.7	-0.1
THR5	Thira Island,	1.53 261	*e*Pn	Pn	06 50 49.6	-1.2
THR5	Thira Island,	1.53 261	P	Pn	06 50 50.7	-0.1
ZEY	¨zmir	1.66 340⇑	*i*P	Pn	06 50 51.4	-1.2
ZEY			*i* S	Sg	06 51 18.3	+0.4
BLCB	Balcova	1.71 355	*e*PN	Pn	06 50 53.0	-0.4
BLCB	Balcova	1.71 355	*e*Pn	Pn	06 50 53.0	-0.4
IZM	Izmir	1.72 1	*e*PN	Pn	06 50 52.6	-0.9
IZM	Izmir	1.72 1	*e*Pn	Pn	06 50 52.6	-0.9
URLA	Izmir	1.75 344	P	Pn	06 50 53.0	-0.9
URLA	Izmir	1.75 344⇑	*i*P	Pn	06 50 53.0	-0.9
URLA			*i* S	Sg	06 51 22.4	+1.5
ZKR	Zakros	1.76 208	P	Pn	06 50 54.0	0.0
ZKR			S	Sn	06 51 15.9	0.0
ZKR	Zakros	1.76 208	P	Pn	06 50 54.0	0.0
ZKR			S	Sn	06 51 15.9	0.0
ZKR	Zakros	1.76 208	P	Pn	06 50 54.1	+0.2
ZKR			S	Sb	06 51 18.4	+0.6
ZKR			AML	AML	06 51 29.7	
	comp=N,55277µm,1.1s					
ZKR			AML	AML	06 51 34.0	
	comp=E,37259µm,1.1s					
ZKR	Zakros	1.76 208	P	Pn	06 50 54.2	+0.2
DNZL	Cakiroluk	1.78 55	P	Pn	06 50 54.6	+0.2
DNZL	Cakiroluk	1.78 55⇓	*i*P	Pn	06 50 54.6	+0.2
DNZL			*i* S	Sg	06 51 23.7	+2.0
DENT	Denizli	1.81 53	*e*PN	Pn	06 50 54.9	+0.2
DENT	Denizli	1.81 53	*e*Pn	Pn	06 50 54.9	+0.2
GLHS	Glhisar (BURDU	1.89 75	*e*PN	Pb	06 50 57.6	-0.8
GLHS	Glhisar (BURDU	1.89 75	*e*Pn	Pb	06 50 57.6	-0.8
NPS	Neapolis	1.92 223	P	Pn	06 50 56.1	-0.1
NPS	Neapolis	1.92 223	P	Pn	06 50 56.1	-0.1
NPS	Neapolis	1.92 223	P	Pn	06 50 55.9	-0.3
NPS	Neapolis	1.92 223	P	Pn	06 50 55.9	-0.3
NPS			AML	AML	06 51 36.5	
	comp=N,28219µm,0.5s					
NPS			AML	AML	06 51 41.4	
	comp=E,24901µm,0.8s					
NPS	Neapolis	1.92 223	P	Pn	06 50 56.1	-0.1
CHOS	Chios island	1.94 332	*e*PN	Pn	06 50 56.5	-0.1
CHOS	Chios island	1.94 332	P	Pn	06 50 55.7	-0.9
CHOS	Chios island	1.94 332	P	Pn	06 50 54.8	-1.8
CHOS	Chios island	1.94 332	*e*Pn	Pn	06 50 56.5	-0.1
CHOS			S	Sb	06 51 22.3	-0.9
CHOS	Chios island	1.94 332	P	Pn	06 50 54.8	-1.8
CHOS			S	Sb	06 51 22.3	-0.9
CHOS			AML	AML	06 51 40.6	
	comp=N,36050µm,0.6s					
CHOS			AML	AML	06 51 40.7	
	comp=E,47102µm,1.1s					
CHOS	Chios island	1.94 332	P	Pn	06 50 55.7	-0.9
GOLH	Golhisar	1.96 73	P	Pb	06 50 58.7	-0.9
GOLH	Golhisar	1.96 73⇓	*i*P	Pb	06 50 58.7	-0.9
GOLH			*i* S	Sg	06 51 29.5	+2.1
AKAS	Kas	1.98 102	P	Pn	06 50 57.7	+0.6
AKAS	Kas	1.98 102⇓	*i*P	Pn	06 50 57.7	+0.6
AKAS			*i* S	Sg	06 51 32.6	+4.6
KSL	Kastellorizon	1.98 105	P	Pn	06 50 57.6	+0.6
KSL	Kastellorizon	1.98 105	P	Pn	06 50 57.3	+0.3
KSL			S	Sb	06 51 24.6	+0.4
KSL	Kastellorizon	1.98 105	P	Pn	06 50 57.3	+0.3
KSL			S	Sb	06 51 24.6	+0.4
KSL			AML	AML	06 51 36.0	
	comp=N,21280µm,1.2s					
KSL			AML	AML	06 51 41.7	
	comp=E,24477µm,1.8s					
LAST	Lasithi	2.07 224⇓	*i*P	Pn	06 50 58.3	-0.1
LAST	Lasithi	2.07 224	P	Pn	06 50 58.2	-0.1
LAST	Lasithi	2.07 224	*e*Pn	Pn	06 50 58.4	+0.1
LAST	Lasithi	2.07 224	P	Pn	06 50 58.5	+0.2
LAST	Lasithi	2.07 224	*e*Pn	Pn	06 50 58.4	+0.1
MANT	Manisa	2.10 30	P	Pn	06 50 58.2	-0.8
MANT	Manisa	2.10 30⇓	*i*P	Pn	06 50 58.2	-0.8
MANT			*i* S	Sg	06 51 30.5	-1.6
ELL	Elmali	2.17 87	*e*PN	Pn	06 51 01.2	+1.5
ELL	Elmali	2.17 87	*e*Pn	Pn	06 51 01.2	+1.5
KULA	Kula-Manisa	2.17 32	*e*PN	Pn	06 50 59.7	0.0
KULA	Kula-Manisa	2.17 32	P	Pn	06 50 59.0	-0.7
KULA	Kula-Manisa	2.17 32	P	Pn	06 50 59.0	-0.7
KULA	Kula-Manisa	2.17 32	*e*Pn	Pn	06 50 59.7	0.0
KULA	Kula-Manisa	2.17 32	P	Pn	06 50 59.0	-0.7
IACM	Heraklion	2.21 232	P	Pn	06 51 00.1	-0.1
IACM	Heraklion	2.21 232	P	Pn	06 51 00.1	-0.1
IACM	Heraklion	2.21 232	P	Pb	06 51 02.9	-0.9
IACM			AML	AML	06 51 57.3	
IACM			AML	AML	06 52 09.0	
SERI	Serifos	2.24 283	P	Pn	06 51 00.2	-0.5
SERI			S	Sn	06 51 30.0	+2.1
SERI	Serifos	2.24 283	P	Pn	06 51 00.2	-0.5
SERI			S	Sn	06 51 30.0	+2.1
SERI			AML	AML	06 51 41.8	
	comp=N,41573µm,0.8s					
SERI			AML	AML	06 51 42.4	
	comp=E,17966µm,0.9s					
AKHS	Akhisar	2.25 12	P	Pn	06 50 59.6	-1.2
AKHS	Akhisar	2.25 12⇑	*i*P	Pn	06 50 59.6	-1.2
AKHS			*i* S	Sg	06 51 38.8	+2.0
AKS	Akhisar	2.25 12	*e*PN	Pn	06 51 01.7	+0.9
AKS	Akhisar	2.25 12	*e*Pn	Pn	06 51 01.7	+0.9
MHLO	Agia Marina, M	2.26 271	P	Pn	06 51 01.3	+0.4
MHLO	Agia Marina, M	2.26 271	P	Pn	06 51 01.3	+0.4
MHLO	Agia Marina, M	2.26 271	P	Pn	06 51 02.4	+1.5
MHLO			AML	AML	06 51 19.0	
	comp=N,89578µm,0.8s					
MHLO			AML	AML	06 51 47.1	
IDI	Anoyia	2.34 234	Pn	Pn	06 51 02.0	0.0
	comp=N,65nm,0.3s,baz=53,slow=14,SNR=427					
IDI			Lg	Lg	06 51 37.5	
	comp=N,242nm,0.3s,baz=25,slow=14,SNR=5.6					
IDI	Anoyia	2.34 234⇓	*i*P	Pn	06 51 02.0	0.0
IDI	Anoyia	2.34 234	P	Pn	06 51 01.8	-0.3
IDI	Anoyia	2.34 234	P	Pn	06 51 01.7	-0.3
IDI	Anoyia	2.34 234	*e*Pn	Pn	06 51 02.2	+0.2
IDI			*e*Sn	Sn	06 51 29.4	-1.0
IDI	Anoyia	2.34 234	P	Pn	06 51 01.7	-0.4
IDI			AML	AML	06 51 48.6	
	comp=N,14157µm,0.9s					
IDI			AML	AML	06 51 56.3	
	comp=E,14175µm,1.3s					
IDI	Anoyia	2.34 234	*e*Pn	Pn	06 51 02.2	+0.2
IDI			*e*Sn	Sn	06 51 29.4	-1.0
IDI			Lg	Lg	06 51 37.5	
DKL	Dikili	2.41 354	*e*PN	Pn	06 51 02.5	-0.3
DKL	Dikili	2.41 354	*e*Pn	Pn	06 51 02.5	-0.3
KHL	Karahalli	2.46 47	*e*PN	Pn	06 51 04.3	+0.5
KHL	Karahalli	2.46 47	*e*Pn	Pn	06 51 04.3	+0.5
KHAL	Karahalli	2.48 46	P	Pn	06 51 03.7	-0.3
KHAL	Karahalli	2.48 46⇓	*i*P	Pn	06 51 03.7	-0.3
KHAL			*i* S	Sg	06 51 44.0	-0.1
KORT	Korkueli	2.54 82⇓	*i*P	Pb	06 51 07.5	-1.9
KORT			*i* S	Sb	06 51 42.0	+1.6
SIVA	Sivas	2.56 230⇑	*i*P	Pn	06 51 06.2	+1.2
SIVA	Sivas	2.56 230	P	Pn	06 51 05.8	+0.8
SIVA	Sivas	2.56 230	P	Pn	06 51 05.8	+0.8
SIVA			S	Sb	06 51 39.1	-1.9
SIVA	Sivas	2.56 230	P	Pn	06 51 06.2	+1.2
SIVA			S	Sb	06 51 39.1	-1.9
SIVA			AML	AML	06 51 55.8	
	comp=E,27936µm,1.2s					
SIVA			AML	AML	06 52 13.8	
	comp=N,23380µm,1.3s					
SIVA	Sivas	2.56 230	P	Pn	06 51 05.8	+0.8
DEMI	Demirci	2.65 26	P	Pn	06 51 05.7	-0.6
DEMI	Demirci	2.65 26⇑	*i*P	Pn	06 51 05.7	-0.6
DEMI			*i* S	Sg	06 51 49.0	-0.3
AYVA	Ayvalik	2.66 351	P	Pn	06 51 05.5	-0.9
AYVA	Ayvalik	2.66 351⇑	*i*P	Pn	06 51 05.5	-0.9
AYVA			*i* S	Sg	06 51 48.9	-1.0
PRK	Paraskevi	2.67 344	P	Pn	06 51 06.0	-0.6
PRK	Paraskevi	2.67 344	P	Pn	06 51 06.0	-0.6
PRK	Paraskevi	2.67 344	P	Pn	06 51 05.2	-1.3
PRK	Paraskevi	2.67 344	P	Pn	06 51 05.2	-1.3
PRK			AML	AML	06 51 53.6	
	comp=E,32654µm,0.8s					
PRK			AML	AML	06 51 55.9	
	comp=N,45413µm,1.0s					
PRK	Paraskevi	2.67 344	P	Pn	06 51 06.0	-0.6
SIGR	SIGRI	2.75 337	*e*PN	Pn	06 51 07.4	-0.2
SIGR	SIGRI	2.75 337	P	Pn	06 51 07.0	-0.6
SIGR	SIGRI	2.75 337	P	Pn	06 51 06.3	-1.3
SIGR	SIGRI	2.75 337	*e*Pn	Pn	06 51 07.4	-0.2
SIGR			S	Sn	06 51 42.3	+1.9
SIGR	SIGRI	2.75 337	P	Pn	06 51 06.3	-1.3
SIGR			S	Sn	06 51 42.3	+1.9
SIGR			AML	AML	06 51 59.8	
	comp=E,10753µm,0.9s					
SIGR			AML	AML	06 52 06.9	
	comp=N,9836µm,0.7s					
SIGR	SIGRI	2.75 337	P	Pn	06 51 07.0	-0.6
VAM	Vamos	2.75 244	P	Pn	06 51 07.5	-0.2
VAM	Vamos	2.75 244	P	Pn	06 51 07.5	-0.2
VAM	Vamos	2.75 244	P	Pn	06 51 07.5	-0.2
VAM	Vamos	2.75 244	P	Pn	06 51 07.5	-0.2
ANTB	Antalya	2.77 84	*e*PN	Pn	06 51 10.0	+2.2
ANTB	Antalya	2.77 84	*e*Pn	Pn	06 51 10.0	+2.2
BCK	Bucak	2.81 73	*e*PN	Pn	06 51 10.3	+1.8
BCK	Bucak	2.81 73	*e*Pn	Pn	06 51 10.3	+1.8
ISP	Isparta	2.88 66	*e*PN	Pn	06 51 11.2	+1.7
ISP	Isparta	2.88 66	P	Pn	06 51 10.2	+0.7
ISP	Isparta	2.88 66	*e*P	Pn	06 51 10.8	+1.3
ISP	Isparta	2.88 66	P	Pn	06 51 10.2	+0.7
ISP	Isparta	2.88 66	*e*Pn	Pn	06 51 10.8	+1.3
ISP	Isparta	2.88 66	*e*Pn	Pn	06 51 10.8	+1.3
IMMV	Iera Moni Meta	2.89 246	P	Pn	06 51 09.9	+0.4
IMMV	Iera Moni Meta	2.89 246	P	Pn	06 51 09.2	-0.3
IMMV	Iera Moni Meta	2.89 246	P	Pn	06 51 09.2	-0.3
IMMV			AML	AML	06 52 09.2	
	comp=N,17193µm,1.3s					
IMMV			AML	AML	06 52 24.1	
	comp=E,22641µm,1.0s					
VLY	Voula,Athens	2.97 294	P	Pn	06 51 11.1	+0.4
VLY	Voula,Athens	2.97 294	P	Pn	06 51 11.1	+0.4
VLY			S	Sn	06 51 46.9	+1.0
VLY	Voula,Athens	2.97 294	P	Pn	06 51 11.5	+0.8
VLY			S	Sn	06 51 46.9	+1.0
VLY			AML	AML	06 52 02.9	
	comp=N,46788µm,0.9s					
VLY			AML	AML	06 52 05.9	
	comp=E,32642µm,0.8s					
VLY	Voula,Athens	2.97 294	P	Pn	06 51 11.1	+0.4
PTL	Penteli	3.00 298	P	Pn	06 51 11.7	+0.6
PTL	Penteli	3.00 298	P	Pn	06 51 11.6	+0.5
PTL	Penteli	3.00 298	P	Pn	06 51 12.4	+1.3
PTL			AML	AML	06 52 13.0	
	comp=N,13984µm,1.0s					
PTL			AML	AML	06 52 18.9	
	comp=E,12751µm,1.0s					
PTL	Penteli	3.00 298	P	Pn	06 51 11.6	+0.5
GDZ	Gediz	3.00 36	P	Pn	06 51 11.0	-0.3
GDZ	Gediz	3.00 36⇓	*i*P	Pn	06 51 11.0	-0.3
GDZ			*i* S	Sg	06 52 00.7	-0.1
BALB	Balikesir	3.01 10	*e*PN	Pn	06 51 10.9	-0.2
BALB	Balikesir	3.01 10	*e*Pn	Pn	06 51 10.9	-0.2
ATHU	Athens Univers	3.02 296	P	Pn	06 51 11.8	+0.4
ATHU	Athens Univers	3.02 296	P	Pn	06 51 11.8	+0.4
ATHU	Athens Univers	3.02 296	P	Pn	06 51 12.2	+0.8
ATHU			AML	AML	06 52 03.4	
	comp=E,9744µm,0.9s					
ATHU			AML	AML	06 52 04.4	
	comp=N,10890µm,1.1s					
ATHU	Athens Univers	3.02 296	P	Pn	06 51 11.8	+0.4
ATH	Athens Observa	3.08 296	P	Pn	06 51 12.8	+0.7
ATH	Athens Observa	3.08 296	P	Pn	06 51 12.6	+0.5
ATH	Athens Observa	3.08 296	P	Pn	06 51 12.6	+0.5
ATH			S	Sn	06 51 48.3	-0.1
ATH	Athens Observa	3.08 296	P	Pn	06 51 12.6	+0.5
DURS	Dursunbey	3.08 18	P	Pn	06 51 11.1	-1.2
DURS	Dursunbey	3.08 18⇑	*i*P	Pn	06 51 11.1	-1.2
DURS			*i* S	Sg	06 52 01.4	-2.0
SUTC	Sutluce-Ispart	3.13 74	*e*PN	Pn	06 51 15.1	+2.1
SUTC	Sutluce-Ispart	3.13 74	*e*Pn	Pn	06 51 15.1	+2.1
BAGO	Egridir - ISPA	3.13 64⇓	*i*P	Pn	06 51 13.6	+0.6
BAGO			*i* S	Sg	06 52 04.1	-1.0
GVD	Gavdhos	3.13 235	P	Pn	06 51 15.0	+2.1
GVD	Gavdhos	3.13 235	P	Pn	06 51 15.0	+2.1
GVD	Gavdhos	3.13 235	P	Pb	06 51 16.6	-3.0
GVD			AML	AML	06 52 20.9	
	comp=E,11306µm,0.8s					
GVD			AML	AML	06 52 34.1	
	comp=N,8372µm,1.4s					
GVD	Gavdhos	3.13 235	P	Pn	06 51 15.0	+2.1
EREA	Eretria	3.14 305	P	Pn	06 51 13.7	+0.7
EREA	Eretria	3.14 305	P	Pn	06 51 13.7	+0.7
EREA			S	Sn	06 51 48.1	-2.0
EREA	Eretria	3.14 305	P	Pn	06 51 13.8	+0.8
EREA			S	Sn	06 51 48.1	-2.0
EREA			AML	AML	06 52 09.7	
	comp=N,10495µm,1.1s					
EREA			AML	AML	06 52 17.9	
	comp=E,11555µm,0.9s					
EZN	Ezine	3.22 348	*e*PN	Pn	06 51 14.2	+0.2
EZN	Ezine	3.22 348	P	Pn	06 51 13.5	-0.6
EZN	Ezine	3.22 348	P	Pn	06 51 13.6	-0.6
EZN	Ezine	3.22 348	P	Pn	06 51 13.5	-0.6
EZN	Ezine	3.22 348	*e*Pn	Pn	06 51 14.3	+0.2
EZN	Ezine	3.22 348	P	Pn	06 51 13.6	-0.6
ANKY	Antikythira Is	3.27 257	P	Pn	06 51 15.6	+0.9
ANKY	Antikythira Is	3.27 257	P	Pn	06 51 15.6	+0.9
ANKY	Antikythira Is	3.27 257	P	Pn	06 51 15.8	+1.2
ANKY			AML	AML	06 52 18.8	
	comp=N,16819µm,1.0s					
ANKY			AML	AML	06 52 31.1	
	comp=E,13354µm,1.4s					
ANKY	Antikythira Is	3.27 257	P	Pn	06 51 15.6	+0.9
DID	Didima	3.29 286	P	Pn	06 51 15.2	+0.1
DID	Didima	3.29 286	P	Pn	06 51 15.1	+0.1
DID	Didima	3.29 286	P	Pn	06 51 15.1	+0.1
DID			AML	AML	06 52 18.1	
	comp=E,10139µm,1.1s					
DID			AML	AML	06 52 30.4	
	comp=N,10983µm,1.1s					
DID	Didima	3.29 286	P	Pn	06 51 15.2	+0.1
TVSB	Tavsanli	3.29 32	*e*PN	Pn	06 51 16.7	+1.6
TVSB	Tavsanli	3.29 32	*e*Pn	Pn	06 51 16.7	+1.6
BOZC	Bozcaada	3.29 344⇑	*i*P	Pn	06 51 14.4	-0.7
BOZC			*i* S	Sg	06 52 07.2	-2.9
KRND	KRANIDI	3.33 283	P	Pn	06 51 15.9	+0.3
KRND	KRANIDI	3.33 283	P	Pn	06 51 15.9	+0.3
KRND	KRANIDI	3.33 283	P	Pn	06 51 16.6	+1.0
KRND			AML	AML	06 52 19.6	
	comp=N,13417µm,0.9s					
KRND			AML	AML	06 52 28.5	
	comp=E,11590µm,1.0s					
KYTH	Kithira	3.38 264	P	Pn	06 51 17.4	+1.0
KYTH	Kithira	3.38 264	P	Pn	06 51 17.3	+0.9
KYTH			S	Sn	06 51 57.9	+1.7
KYTH	Kithira	3.38 264	P	Pn	06 51 17.3	+0.9
KYTH	Kithira	3.38 264	P	Pn	06 51 17.3	+0.9
VLI	Veliai	3.44 272	P	Pn	06 51 17.9	+0.8
VLI	Veliai	3.44 272	P	Pn	06 51 17.8	+0.7
VLI	Veliai	3.44 272	P	Pn	06 51 18.3	+1.2
VLI			AML	AML	06 52 22.4	
	comp=N,9736µm,1.2s					
VLI			AML	AML	06 52 29.4	
	comp=E,9105µm,1.8s					
VLI	Veliai	3.44 272	P	Pn	06 51 17.8	+0.7
VILL	Villia	3.44 297	P	Pn	06 51 17.8	+0.5
VILL	Villia	3.44 297	P	Pn	06 51 17.7	+0.5
VIL2	Platees	3.50 297	P	Pn	06 51 17.7	-0.2
VIL2			AML	AML	06 52 18.6	
	comp=N,25583µm,0.9s					
VIL2			AML	AML	06 52 19.1	
	comp=E,26390µm,1.2s					
LIA	Limnos Island	3.59 334	P	Pn	06 51 19.2	0.0
LIA	Limnos Island	3.59 334	P	Pn	06 51 18.4	-0.8
LIA	Limnos Island	3.59 334	P	Pn	06 51 19.0	-0.2
BOLV	Bolvadin	3.60 54	P	Pn	06 51 20.1	+0.7
BOLV	Bolvadin	3.60 54⇓	*i*P	Pn	06 51 20.1	+0.7
BOLV			*i* S	Sg	06 52 25.6	+5.7
KNL	Bal¨–kesir	3.60 4⇑	*i*P	Pn	06 51 17.3	-2.0
KNL			*i* S	Sg	06 52 18.1	-1.8
ORLT	Orhaneli	3.62 21	*e*PN	Pn	06 51 21.0	+1.4
ORLT	Orhaneli	3.62 21	*e*Pn	Pn	06 51 21.0	+1.4
AOS	Alonnisos	3.63 314	P	Pn	06 51 19.9	+0.2
AOS	Alonnisos	3.63 314	P	Pn	06 51 19.9	+0.2
AOS	Alonnisos	3.63 314	P	Pn	06 51 19.9	+0.2
AOS			AML	AML	06 52 29.9	
	comp=E,3399µm,1.0s					
AOS			AML	AML	06 52 35.4	
	comp=N,5063µm,1.1s					
AOS	Alonnisos	3.63 314	P	Pn	06 51 19.9	+0.2
LTK	Loutraki	3.64 293	P	Pn	06 51 20.8	+0.9
LTK	Loutraki	3.64 293	P	Pn	06 51 20.5	+0.6
LTK			S	Sn	06 52 04.1	+1.6
LTK	Loutraki	3.64 293	P	Pn	06 51 21.2	+1.2
LTK			S	Sn	06 52 04.1	+1.6
LTK			AML	AML	06 52 23.4	
	comp=E,27421µm,1.2s					
LTK			AML	AML	06 52 32.6	
	comp=N,13024µm,1.2s					
LTK	Loutraki	3.64 293	P	Pn	06 51 20.5	+0.6
KCTX	Karacabey (Bur	3.69 14	*e*PN	Pn	06 51 21.9	+1.2
KCTX	Karacabey (Bur	3.69 14	*e*Pn	Pn	06 51 21.9	+1.2
EDC	Edincik	3.70 8	*e*PN	Pn	06 51 21.8	+1.1
EDC	Edincik	3.70 8	*e*Pn	Pn	06 51 21.8	+1.1
LPK	Lapseki	3.71 355	*e*PN	Pn	06 51 20.7	-0.1
LPK	Lapseki	3.71 355	*e*Pn	Pn	06 51 20.7	-0.1
KRBG	Karabiga-Canak	3.71 1	*e*PN	Pn	06 51 21.0	+0.2
KRBG	Karabiga-Canak	3.71 1	*e*Pn	Pn	06 51 21.0	+0.2
GELI	Tayfur-Gelibol	3.76 351	*e*PN	Pn	06 51 21.5	0.0
GELI	Tayfur-Gelibol	3.76 351	*e*Pn	Pn	06 51 21.5	0.0
ULDT	Uludag	3.78 23	P	Pn	06 51 21.0	-0.9
ULDT	Uludag	3.78 23	*i*P	Pn	06 51 21.0	-0.9
ULDT			*i* S	Sg	06 52 23.2	-2.4
PROD	Prodromos	3.78 296	P	Pn	06 51 22.9	+1.1
PROD	Prodromos	3.78 296	P	Pn	06 51 22.9	+1.1
SMIA	Simia	3.86 306	P	Pn	06 51 23.9	+1.0
SMIA	Simia	3.86 306	P	Pn	06 51 23.9	+1.0
SMIA	Simia	3.86 306	P	Pn	06 51 25.2	+2.2
SKIA	Skiathos	3.87 311	P	Pn	06 51 23.8	+0.8
SKIA	Skiathos	3.87 311	P	Pn	06 51 23.8	+0.8
SKIA	Skiathos	3.87

comp=E,2955µm,1.0s
NEO AML AML 06 52 48.3
comp=N,3465µm,1.4s
NEO Neokhori 4.11 311 P Pn 06 51 26.9 +0.6
DSF Desfina 4.11 296 P Pn 06 51 27.1 +0.7
DSF Desfina 4.11 296 P Pn 06 51 27.1 +0.7
DSF S Sn 06 52 13.2 -0.9
DSF Desfina 4.11 296 P Pn 06 51 28.0 +1.6
DSF S Sn 06 52 13.2 -0.9
DSF AML AML 06 52 39.0
comp=N,6942µm,1.1s
DSF AML AML 06 52 45.3
comp=E,7097µm,1.0s
DSF Desfina 4.11 296 P Pn 06 51 27.1 +0.7
GAZI Gazipasa 4.13 95 P Pn 06 51 26.3 -0.4
GAZI Gazipasa 4.13 95 ⇓iP Pn 06 51 26.3 -0.4
GAZI *i* S Sg 06 52 37.8 +0.7
ENEZ Enez 4.14 349 P Pn 06 51 26.8 +0.1
ENEZ Enez 4.14 349 P Pn 06 51 26.8 +0.1
XOR Xorichti 4.16 311 P Pn 06 51 27.0 -0.1
XOR Xorichti 4.16 311 P Pn 06 51 27.0 -0.1
XOR Xorichti 4.16 311 P Pn 06 51 27.1 +0.1
XOR Xorichti 4.16 311 P Pn 06 51 27.0 -0.1
KESN Edirne-Kesan 4.17 354 P Pn 06 51 26.9 -0.5
KESN Edirne-Kesan 4.17 354 ⇑iP Pn 06 51 26.9 -0.5
KESN *i* S Sg 06 52 42.3 +4.2
ADVT Abdulvahap 4.24 27 *e*PN Pn 06 51 30.1 +2.0
ADVT Abdulvahap 4.24 27 *e*Pn Pn 06 51 30.1 +2.0
KMER Konya-Meram 4.25 74 ⇓iP Pn 06 51 30.6 +2.2
KMER *i* S Sg 06 52 41.9 +1.0
KLV Kalavryta, Ach 4.26 290 P Pn 06 51 29.6 +1.1
KLV Kalavryta, Ach 4.26 290 P Pn 06 51 29.6 +1.1
KLV Kalavryta, Ach 4.26 290 P Pn 06 51 30.0 +1.6
KLV Kalavryta, Ach 4.26 290 P Pn 06 51 30.8 +2.3
ITM Ithomi 4.27 278 P Pn 06 51 30.1 +1.6
ITM Ithomi 4.27 278 P Pn 06 51 30.1 +1.6
ITM Ithomi 4.27 278 P Pn 06 51 32.9 +4.4
ITM AML AML 06 52 50.7
comp=E,3229µm,1.3s
ITM AML AML 06 52 53.0
comp=N,4570µm,1.6s
ITM Ithomi 4.27 278 P Pn 06 51 31.2 +2.7
PAIG Paliouri 4.28 320 P Pn 06 51 28.7 +0.1
PAIG Paliouri 4.28 320 P Pn 06 51 28.6 0.0
PAIG Paliouri 4.28 320 P Pn 06 51 28.0 -0.6
PAIG Paliouri 4.28 320 P Pn 06 51 28.0 -0.6
PAIG Paliouri 4.28 320 P Pn 06 51 28.6 0.0
KONT Konya--Tatoy 4.29 71 *e*PN Pn 06 51 31.7 +2.8
KONT Konya--Tatoy 4.29 71 *e*Pn Pn 06 51 31.7 +2.8
KIZT Kizilcal 4.30 58 *e*PN Pn 06 51 31.4 +2.4
KIZT Kizilcal 4.30 58 *e*Pn Pn 06 51 31.5 +2.4
KDHN Kadinhani 4.31 63 P Pn 06 51 30.1 +1.0
KDHN Kadinhani 4.31 63 ⇓iP Pn 06 51 30.1 +1.0
KDHN *i* S Sg 06 52 51.9 +9.3
ALN Alexandroupoli 4.31 348 P Pn 06 51 28.7 -0.4
ALN Alexandroupoli 4.31 348 P Pn 06 51 28.7 -0.4
ALN Alexandroupoli 4.31 348 P Pn 06 51 27.3 -1.8
ALN Alexandroupoli 4.31 348 P Pn 06 51 27.3 -1.8
ALN Alexandroupoli 4.31 348 P Pn 06 51 28.7 -0.4
FYTO Fytoko, Volos 4.34 310 P Pn 06 51 30.2 +0.7
FYTO Fytoko, Volos 4.34 310 P Pn 06 51 30.2 +0.7
FYTO Fytoko, Volos 4.34 310 P Pn 06 51 30.2 +0.7
FYTO Fytoko, Volos 4.34 310 P Pn 06 51 30.2 +0.7
GPA Golpazari 4.35 33 *e*PN Pn 06 51 31.4 +1.8
GPA Golpazari 4.35 33 *e*Pn Pn 06 51 31.4 +1.8
LADK Ladik-KONYA 4.37 68 *e*PN Pn 06 51 32.8 +2.8
LADK Ladik-KONYA 4.37 68 *e*Pn Pn 06 51 32.8 +2.8
KALE Kalithea 4.38 295 P Pn 06 51 31.5 +1.3
KALE Kalithea 4.38 295 P Pn 06 51 31.4 +1.3
KALE Kalithea 4.38 295 P Pn 06 51 31.4 +1.2
KALE Kalithea 4.38 295 P Pn 06 51 31.9 +1.8
SVRH Sivrihisar-ESK 4.38 50 *e*PN Pn 06 51 32.8 +2.6
SVRH Sivrihisar-ESK 4.38 50 *e*Pn Pn 06 51 32.8 +2.6
PYL PYLOS 4.40 274 P Pn 06 51 33.2 +2.9
PYL PYLOS 4.40 274 P Pn 06 51 33.2 +2.9
PYL PYLOS 4.40 274 P Pn 06 51 35.2 +4.9
PYL AML AML 06 52 55.8
comp=E,4994µm,1.2s
PYL AML AML 06 52 59.5
comp=N,4817µm,1.4s
PYL PYLOS 4.40 274 P Pn 06 51 33.2 +2.9
BUY Buyukada 4.43 19 *i* P **Pg** 06 51 45.9 -3.2
BUY *i* S **Sg** 06 52 43.4 -3.1
OUR Ouranopolis 4.45 326 P Pn 06 51 31.1 +0.1
OUR Ouranopolis 4.45 326 P Pn 06 51 31.0 +0.1
OUR Ouranopolis 4.45 326 P Pn 06 51 30.5 -0.5
OUR Ouranopolis 4.45 326 P Pn 06 51 30.5 -0.5
OUR Ouranopolis 4.45 326 P Pn 06 51 31.0 +0.1
LAKA Lakka 4.45 292 P Pn 06 51 32.4 +1.4
LAKA Lakka 4.45 292 P Pn 06 51 32.4 +1.4
LAKA Lakka 4.45 292 P Pn 06 51 33.0 +1.9
LAKA AML AML 06 53 02.2
comp=N,3247µm,1.3s
LAKA AML AML 06 53 14.4
comp=E,2780µm,1.8s
LAKA Lakka 4.45 292 P Pn 06 51 32.4 +1.4
AKMC Akamas 4.47 110 P Pn 06 51 30.8 -0.5
baz=283
AKMC Akamas 4.47 110 P Pn 06 51 30.8 -0.5
AMT Artemida-Makis 4.49 283 P Pn 06 51 35.0 +3.5
AMT Artemida-Makis 4.49 283 P Pn 06 51 35.0 +3.5
AGG Agios Georgios 4.52 303 P Pn 06 51 33.4 +1.4
AGG Agios Georgios 4.52 303 *e*P Pn 06 51 33.5 +1.4
AGG Agios Georgios 4.52 303 P Pn 06 51 33.4 +1.4
AGG Agios Georgios 4.52 303 P Pn 06 51 33.8 +1.8
AGG AML AML 06 53 08.7
comp=N,8679µm,2.1s
AGG AML AML 06 53 12.8
comp=E,8833µm,1.8s
AGG Agios Georgios 4.52 303 *e*Pn Pn 06 51 33.5 +1.4
EFP Efpalio 4.57 294 P Pn 06 51 34.3 +1.7
EFP Efpalio 4.57 294 P Pn 06 51 34.3 +1.7
EFP Efpalio 4.57 294 P Pn 06 51 35.2 +2.6
DRO Drossia 4.57 288 P Pn 06 51 34.3 +1.6
DRO Drossia 4.57 288 P Pn 06 51 34.3 +1.6
DRO Drossia 4.57 288 P Pn 06 51 35.5 +2.9
ERMK Ermenek 4.58 89 ⇓iP Pn 06 51 35.8 +2.8
ERMK *i* S **Sn** 06 52 31.5 +5.6
ANX Ano Chora 4.62 296 P Pn 06 51 35.1 +1.7
ANX Ano Chora 4.62 296 P Pn 06 51 35.1 +1.7
ALFC Alefka 4.62 108 P Pn 06 51 33.0 -0.4
baz=281
ALFC S **Sn** 06 52 26.9 +0.2
ALFC Alefka 4.62 108 P Pn 06 51 33.0 -0.4
ALFC S **Sn** 06 52 26.9 +0.2
AUMIH MIHALICIK 4.63 45 *i* P **Pg** 06 51 52.1 -0.8
AUMIH *i* S **Sg** 06 52 58.2 +5.3
PLG Polygyros 4.73 322 P Pn 06 51 35.0 +0.1
PLG Polygyros 4.73 322 P Pn 06 51 35.3 +0.4
PLG Polygyros 4.73 322 P Pn 06 51 34.3 -0.6
PLG Polygyros 4.73 322 P Pn 06 51 34.3 -0.6
PLG Polygyros 4.73 322 P Pn 06 51 35.3 +0.4
RLS Riolos of Patr 4.78 288 P Pn 06 51 39.8 +4.2
RLS Riolos of Patr 4.78 288 P Pn 06 51 41.1 +5.5
KAVA Kavala 4.80 335 P Pn 06 51 35.7 -0.1
KAVA Kavala 4.80 335 P Pn 06 51 34.6 -1.2
KAVA Kavala 4.80 335 P Pn 06 51 34.6 -1.2
KAVA Kavala 4.80 335 P Pn 06 51 35.7 -0.1
EVR Evrytania 4.83 299 P Pn 06 51 38.4 +2.1
EVR Evrytania 4.83 299 P Pn 06 51 38.4 +2.1
EVR Evrytania 4.83 299 P Pn 06 51 39.0 +2.7
EVR AML AML 06 53 23.3
comp=N,4990µm,1.6s
EVR Evrytania 4.83 299 P Pn 06 51 38.4 +2.1
AXS Araxos 4.89 290 P Pn 06 51 40.0 +3.0
AXS Araxos 4.89 290 P Pn 06 51 40.0 +3.0
AXS Araxos 4.89 290 P Pn 06 51 42.1 +5.1
PVO Paravola 4.91 295 P Pn 06 51 42.0 +4.6
PVO Paravola 4.91 295 P Pn 06 51 42.0 +4.6
SZAC Souni 4.99 111 P Pn 06 51 38.2 -0.3
baz=285
SZAC Souni 4.99 111 P Pn 06 51 38.2 -0.3
THL Klokotos Trika 5.01 307 P Pn 06 51 38.8 +0.1
THL Klokotos Trika 5.01 307 P Pn 06 51 38.8 +0.1
LIT Litokhoron 5.05 314 P Pn 06 51 39.9 +0.6
LIT Litokhoron 5.05 314 P Pn 06 51 39.9 +0.6
LIT Litokhoron 5.05 314 P Pn 06 51 39.8 +0.6
LIT Litokhoron 5.05 314 P Pn 06 51 39.8 +0.6
LIT Litokhoron 5.05 314 P Pn 06 51 39.9 +0.6
HORT Hortiatis 5.07 322 P Pn 06 51 40.3 +0.7
HORT Hortiatis 5.07 322 P Pn 06 51 39.9 +0.3
HORT Hortiatis 5.07 322 P Pn 06 51 39.9 +0.3
HORT Hortiatis 5.07 322 P Pn 06 51 40.3 +0.7
MAMC Mammari 5.10 105 P Pn 06 51 40.3 +0.4
baz=280
MAMC Mammari 5.10 105 P Pn 06 51 40.3 +0.4
SOH Sokhos 5.12 325 P Pn 06 51 41.1 +0.8
SOH Sokhos 5.12 325 P Pn 06 51 41.1 +0.8
SOH Sokhos 5.12 325 P Pn 06 51 40.9 +0.6
SOH Sokhos 5.12 325 P Pn 06 51 40.9 +0.6
SOH Sokhos 5.12 325 P Pn 06 51 41.1 +0.8
PDO Prodromos 5.16 294 P Pn 06 51 46.6 +5.9
THE Thessaloniki 5.17 321 P Pn 06 51 41.8 +0.9
THE Thessaloniki 5.17 321 P Pn 06 51 41.7 +0.9
THE Thessaloniki 5.17 321 P Pn 06 51 41.6 +0.8
THE Thessaloniki 5.17 321 P Pn 06 51 41.6 +0.8
THE Thessaloniki 5.17 321 P Pn 06 51 41.7 +0.9
EDRB Edirne 5.18 356 P Pn 06 51 40.5 -0.5
EDRB Edirne 5.18 356 P Pn 06 51 40.5 -0.5
EDRB Edirne 5.18 356 P Pn 06 51 40.5 -0.5
ZKS Zakynthos 5.24 283 P Pn 06 51 45.4 +3.6
ZKS Zakynthos 5.24 283 P Pn 06 51 45.4 +3.6
ZKS Zakynthos 5.24 283 P Pn 06 51 46.1 +4.3
CSS Mathiatis 5.25 107 P Pn 06 51 41.4 -0.6
baz=282
CSS S **Sn** 06 52 43.9 +1.6
CSS Mathiatis 5.25 107 P Pn 06 51 41.5 -0.6
CSS Mathiatis 5.25 107 P Pn 06 51 41.4 -0.6
CSS Mathiatis 5.25 107 *e*Pn Pn 06 51 42.3 +0.2
CSS S **Sn** 06 52 43.9 +1.6
CSS Mathiatis 5.25 107 *e*Pn Pn 06 51 42.4 +0.2
SRS Serrai 5.26 329 P Pn 06 51 42.2 +0.1
SRS Serrai 5.26 329 P Pn 06 51 42.2 +0.1
SRS Serrai 5.26 329 P Pn 06 51 41.9 -0.2
SRS Serrai 5.26 329 P Pn 06 51 41.9 -0.2
SRS Serrai 5.26 329 P Pn 06 51 42.2 +0.1
KFL Anninata 5.32 288 P Pn 06 51 47.3 +4.4
KFL Anninata 5.32 288 P Pn 06 51 47.3 +4.4
KFL Anninata 5.32 288 P Pn 06 51 48.6 +5.7
MATC Matruh 5.32 180 P Pn 06 51 40.2 -2.6
baz=181
NVR Nevrokopi 5.35 332 P Pn 06 51 43.6 +0.2
NVR Nevrokopi 5.35 332 P Pn 06 51 43.6 +0.2
NVR Nevrokopi 5.35 332 P Pn 06 51 43.6 +0.2
BR231 Keskin MP Arra 5.40 52 *e*Pn Pn 06 51 45.9 +1.8
BR231 Keskin MP Arra 5.40 52 *e*Pn Pn 06 51 45.9 +1.8
ANTO Ankara 5.42 52 *e*P Pn 06 51 46.3 +1.8
ANTO Ankara 5.42 52 *e*P Pn 06 51 46.3 +1.8
ANTO Ankara 5.42 52 *e*Pn Pn 06 51 46.3 +1.8
DSL Palaion Diasel 5.43 299 P Pn 06 51 48.6 +4.2
DSL Palaion Diasel 5.43 299 P Pn 06 51 48.1 +3.7
SLUM Salum 5.43 198 P Pn 06 51 42.2 -2.3
baz=200
SLUM AMP 06 52 00.0
comp=E,400µm,0.8s,logA/T=5.7,baz=200
SLUM S **Sn** 06 52 40.3 -6.3
baz=200
SLUM Salum 5.43 198 P Pn 06 51 42.2 -2.3
KTI Kastanea 5.46 314 P Pn 06 51 46.5 +1.6
KTI Kastanea 5.46 314 P Pn 06 51 46.5 +1.6
VLS Valsamata 5.48 288 P Pn 06 51 49.9 +4.7
VLS Valsamata 5.48 288 P Pn 06 51 47.0 +1.8
VLS Valsamata 5.48 288 P Pn 06 51 49.9 +4.7
HMAT Matruh 5.57 181 S Sn 06 52 42.9 -7.0
baz=182
HMAT AMP 06 53 00.0
comp=N,460µm,0.6s,logA/T=5.9,baz=182
KZN Kozani 5.60 312 P Pn 06 51 48.4 +1.5
KZN Kozani 5.60 312 P Pn 06 51 48.4 +1.5
KZN Kozani 5.60 312 P Pn 06 51 48.4 +1.5
KZN Kozani 5.60 312 P Pn 06 51 48.4 +1.5
KNT Kendrikon 5.60 324 P Pn 06 51 47.9 +1.0
KNT Kendrikon 5.60 324 P Pn 06 51 47.9 +1.0
KNT Kendrikon 5.60 324 P Pn 06 51 47.9 +1.0
KNT Kendrikon 5.60 324 P Pn 06 51 48.2 +1.3
KNT Kendrikon 5.60 324 P Pn 06 51 47.9 +1.0
LKD2 Lefkada island 5.61 294 P Pn 06 51 50.6 +3.6
LKD2 Lefkada island 5.61 294 P Pn 06 51 52.4 +5.4
LKD2 Lefkada island 5.61 294 P Pn 06 51 50.6 +3.6
MEV Metsovon 5.64 305 P Pn 06 51 49.1 +1.6
MEV Metsovon 5.64 305 P Pn 06 51 49.1 +1.6
MEV Metsovon 5.64 305 P Pn 06 51 51.3 +3.8
KPRO Kipourio 5.65 307 P Pn 06 51 49.3 +1.8
KPRO Kipourio 5.65 307 P Pn 06 51 49.3 +1.8
KPRO Kipourio 5.65 307 P Pn 06 51 50.7 +3.2
GRG Griva 5.69 320 P Pn 06 51 49.5 +1.3
GRG Griva 5.69 320 P Pn 06 51 49.4 +1.3
GRG Griva 5.69 320 P Pn 06 51 49.4 +1.3
GRG Griva 5.69 320 P Pn 06 51 49.8 +1.7
GRG Griva 5.69 320 P Pn 06 51 49.4 +1.3
JAN Janina 5.83 303 P Pn 06 51 51.0 +1.0
JAN Janina 5.83 303 P Pn 06 51 54.2 +4.2
JAN Janina 5.83 303 P Pn 06 51 51.0 +1.0
JAN Janina 5.83 303 P Pn 06 51 54.2 +4.2
VAY Valandovo 5.88 323 P Pn 06 51 52.3 +1.7
VAY Valandovo 5.88 323 *i* Pn **Pn 06 51 52.4 +1.7**
VAY Valandovo 5.88 323 *e*Pn Pn 06 51 52.7 +2.0
VAY Valandovo 5.88 323 P Pn 06 51 52.3 +1.7
BR131 Keskin Array S 5.90 57 *e*Pn Pn 06 51 52.3 +1.2
BR131 Keskin Array S 5.90 57 *e*Pn Pn 06 51 52.3 +1.2
BRTR Keskin Array B 5.90 57 Pn **Pn 06 51 52.5 +1.4**
comp=N,9.5nm,0.3s,baz=236,slow=16,SNR=89
BRTR LR LR 06 54 52.8
comp=N,6µm,18.1s,baz=230,slow=46
PENT Pentalofos 5.92 308 P Pn 06 51 53.4 +2.0
PENT Pentalofos 5.92 308 P Pn 06 51 53.4 +2.0
NEST Nestorio 6.11 310 P Pn 06 51 56.0 +2.1
NEST Nestorio 6.11 310 P Pn 06 51 56.0 +2.1
NEST Nestorio 6.11 310 P Pn 06 51 57.3 +3.4
IGT Igoumenitsa 6.13 300 P Pn 06 51 57.0 +2.9
IGT Igoumenitsa 6.13 300 P Pn 06 51 57.0 +2.9
IGT Igoumenitsa 6.13 300 P Pn 06 51 59.0 +4.9
IGT Igoumenitsa 6.13 300 P Pn 06 51 57.0 +2.9
FNA Florina 6.14 314 P Pn 06 51 56.0 +1.8
FNA Florina 6.14 314 P Pn 06 51 57.8 +3.6
FNA Florina 6.14 314 P Pn 06 51 56.0 +1.8
FNA Florina 6.14 314 P Pn 06 51 57.5 +3.2
FNA Florina 6.14 314 P Pn 06 51 57.8 +3.6
SGD Sagiada 6.24 300 P Pn 06 51 58.6 +3.1
SGD Sagiada 6.24 300 P Pn 06 52 01.0 +5.5
BIA Bitola 6.32 315 *i* Pn **Pn 06 51 59.4 +2.7**
BIA Bitola 6.32 315 *i* Pn **Pn 06 51 59.4 +2.7**
HBRG Burj al 'Arab 6.47 159 P Pn 06 51 56.1 -2.6
baz=159
HBRG Burj al 'Arab 6.47 159 P Pn 06 51 56.1 -2.6
KEK Kerkira 6.58 300 P Pn 06 52 02.7 +2.4
KEK Kerkira 6.58 300 P Pn 06 52 02.7 +2.4
KEK Kerkira 6.58 300 P Pn 06 52 02.7 +2.4
OHR Ohrid 6.68 313 *i* Pn **Pn 06 52 04.8 +3.1**
SKO Skopje 6.93 322 P Pn 06 52 06.7 +1.7
SKO Skopje 6.93 322 P Pn 06 52 06.7 +1.7
COAL Corum-Alaca 7.07 57 P Pn 06 52 09.1 +2.1
COAL Corum-Alaca 7.07 57 *i* P **Pn 06 52 09.1 +2.1**
ARNB Al Arnab 7.12 94 *e*P Pn 06 52 09.1 +1.3
YAYL Yayladag 7.20 92 P Pn 06 52 09.1 +0.1
YAYL Yayladag 7.20 92 *i* P **Pn 06 52 09.1 +0.1**
ANDN Andirin 7.35 80 *i* P **Pn 06 52 13.4 +2.5**
TIR Tirane 7.38 311 ⇓iP Pn 06 52 14.5 +3.2
TIR Tirane 7.38 311 *e*P Pn 06 52 14.4 +3.2
TIR Tirane 7.38 311 *e*Pn Pn 06 52 14.4 +3.2
BARS Barje 7.41 328 *i* Pn **Pn 06 52 13.1 +1.5**
BARS Barje 7.41 328 *i* Pn **Pn 06 52 13.1 +1.5**
BHL Bhannes 7.43 109 *e*P Pn 06 52 11.0 -1.1
BHL Bhannes 7.43 109 *e*P Pn 06 52 11.0 -1.1
DQRL Deir Qamar 7.45 111 *e*Pn Pn 06 52 10.6 -1.8
DQRL Deir Qamar 7.45 111 *e*P Pn 06 52 10.6 -1.8
ZAPS Zavoj 7.47 333 *e*Pn Pn 06 52 14.8 +2.3
ZAPS *e*Sn **Sn** 06 53 43.3 +6.5
BTCH Batrach 7.49 92 *e*P Pn 06 52 14.6 +1.9
HWQ Hawqa 7.51 106 *e*P Pn 06 52 12.7 -0.5
HWQ Hawqa 7.51 106 *e*P Pn 06 52 12.7 -0.5
SWA2 7.56 192 P Pn 06 52 11.6 -2.1
baz=193
SWA2 7.56 192 P Pn 06 52 11.6 -2.1
HNAT Natroun 7.58 157 P Pn 06 52 11.4 -2.6
baz=156
HNAT Natroun 7.58 157 P Pn 06 52 11.4 -2.6
KAMA Osmaniye 7.59 83 *i* P **Pn 06 52 14.6 +0.4**
DRWC Darouich 7.60 88 *e*P Pn 06 52 14.2 -0.1
CUSAR Sarkisla-SIVAS 7.63 66 *i* P **Pn 06 52 19.5 +4.6**
MMAI Mount Meron Ar 7.66 116 Pn **Pn 06 52 13.6 -1.6**
comp=N,54nm,0.3s,baz=308,slow=12,SNR=78
MMAI Sn **Sn** 06 53 39.6 -1.9
comp=N,36nm,0.3s,baz=312,slow=28,SNR=8.2
MMAI LR LR 06 55 56.4
comp=N,2µm,19.0s,baz=310,slow=44
FYM Al Fayyum 7.67 154 P Pn 06 52 13.0 -2.2
baz=154
FYM Al Fayyum 7.67 154 P Pn 06 52 13.0 -2.2
AYT Al 'Ayyat 7.69 154 P Pn 06 52 13.1 -2.5
baz=153
AYT Al 'Ayyat 7.69 154 P Pn 06 52 13.1 -2.5
RCY Rachaya 7.74 112 *e*P Pn 06 52 15.4 -1.0
RCY Rachaya 7.74 112 *e*P Pn 06 52 15.4 -1.0
KOT Kottamia 7.76 149 P Pn 06 52 13.8 -2.7
baz=148
KOT Kottamia 7.76 149 P Pn 06 52 13.8 -2.7
HCB Kahramanmara˜ 7.78 82 *i* P **Pn 06 52 17.9 +1.1**
TIRR Tirgusor 7.83 6 ⇓iP Pn 06 52 15.8 -1.5
TIRR Tirgusor 7.83 6 *e*P Pn 06 52 18.5 +1.2
TIRR Tirgusor 7.83 6 *e*P Pn 06 52 18.5 +1.2
TIRR Tirgusor 7.83 6 *e*Pn Pn 06 52 18.5 +1.2
HHAG Hagoal 7.85 147 P Pn 06 52 15.2 -2.6
baz=146
HHAG Hagoal 7.85 147 P Pn 06 52 15.2 -2.6
FKH Fakeheh 7.88 105 *e*P Pn 06 52 17.2 -1.1
FKH Fakeheh 7.88 105 *e*P Pn 06 52 17.2 -1.1
KUZU Kuzuini 7.92 86 P Pn 06 52 19.2 +0.5
KUZU Kuzuini 7.92 86 *i* P **Pn 06 52 19.2 +0.5**
HSAF As Saff 7.92 151 P Pn 06 52 16.7 -2.0
baz=151
HSAF As Saff 7.92 151 P Pn 06 52 16.7 -2.0
CUALT Altinyayla-SIV 7.97 68 *i* P **Pn 06 52 24.0 +4.5**
GLL Jalalah 8.02 151 P Pn 06 52 17.6 -2.5
baz=150
GLL Jalalah 8.02 151 P Pn 06 52 17.6 -2.5
SELS Selova 8.04 326 *e*Pn Pn 06 52 21.2 +0.9
QASN Qassioun 8.06 110 *e*P Pn 06 52 22.5 +1.8
ULC Ulcinj 8.12 313 *e*Pn Pn 06 52 23.9 +2.4
ULC *e*Sn **Sn** 06 53 52.7 -0.2
ULC Ulcinj 8.12 313 *e*Pn Pn 06 52 23.9 +2.4
ULC *e*Sn **Sn** 06 53 52.7 -0.2
BOVS Bovan 8.13 330 *e*Pn Pn 06 52 23.2 +1.7
BOVS Bovan 8.13 330 *e*Pn Pn 06 52 23.2 +1.7
PVY Plav 8.14 319 ⇑iPn Pn 06 52 23.0 +1.2
PVY *e*Sn **Sn** 06 53 52.8 -0.6
PVY Plav 8.14 319 ⇑iPn Pn 06 52 23.0 +1.2
PVY *e*Sn **Sn** 06 53 52.8 -0.6
BOLS Boljevac 8.20 332 *i* Pn **Pn 06 52 22.6 +0.1**
BOLS Boljevac 8.20 332 *i* Pn **Pn 06 52 22.6 +0.1**
TCHB Talchebab 8.24 116 *e*P Pn 06 52 21.2 -1.9
TOTH TOTAH 8.25 111 *e*P Pn 06 52 23.5 +0.2
SUZ Suez 8.28 144 P Pn 06 52 21.2 -2.4
baz=143
SUZ Suez 8.28 144 P Pn 06 52 21.2 -2.4
DRME Dracevica, Mon 8.30 314 ⇑iPn Pn 06 52 25.9 +2.1
DRME *e*Sn **Sn** 06 53 57.5 +0.4
DRME Dracevica, Mon 8.30 314 ⇑iP Pn 06 52 25.9 +2.1
DRME *e*Sn **Sn** 06 53 57.5 +0.4
GZT Gaziantep 8.31 82 *i* P **Pn 06 52 25.8 +1.7**
BEY Berane 8.37 320 *e*Pn Pn 06 52 26.4 +1.5
BEY *e*Sn **Sn** 06 53 58.0 -1.0
IVA Berane 8.37 320 *e*Pn Pn 06 52 26.4 +1.5
IVA *e*Sn **Sn** 06 53 58.0 -1.0
HBNS Bani Suef 8.40 155 P Pn 06 52 22.8 -2.5
baz=155
HBNS Bani Suef 8.40 155 P Pn 06 52 22.8 -2.5
PDG Podgorica 8.41 316 ⇑iP Pn 06 52 27.5 +2.1
PDG Podgorica 8.41 316 P Pn 06 52 27.9 +2.5
PDG Podgorica 8.41 316 ⇑iPn Pn 06 52 27.0 +1.6
PDG Podgorica 8.41 316 P Pn 06 52 27.9 +2.5
PDG *e*Sn **Sn** 06 53 58.9 -1.0
TTG Podgorica 8.41 316 ⇑iPn Pn 06 52 27.0 +1.6
TTG *e*Sn **Sn** 06 53 58.9 -1.0
TTG Podgorica 8.41 316 P Pn 06 52 27.9 +2.5
TTG Podgorica 8.41 316 P Pn 06 52 27.9 +2.5
TTG Podgorica 8.41 316 P Pn 06 52 27.9 +2.5
AWBH 8.45 170 P Pn 06 52 22.7 -3.2
baz=170
CUKAN kangal_SIVAS 8.51 69 *i* P **Pn 06 52 31.0 +4.1**
CFR Carcaliu 8.52 4 ⇓iP Pn 06 52 26.7 -0.2
BUM Brajici-Budva 8.54 314 ⇓iPn Pn 06 52 28.9 +1.7
BUM *e*Sn **Sn** 06 54 02.5 -0.6
BUM Brajici-Budva 8.54 314 ⇓iPn Pn 06 52 28.9 +1.7
BUM *e*Sn **Sn** 06 54 02.5 -0.6
SRE Strehaia 8.54 340 ⇑iP Pn 06 52 27.5 +0.4
TLCR 8.59 8 ⇑iP Pn 06 52 28.8 +1.0
ROOS tl_alroos 8.59 104 *e*P Pn 06 52 27.3 -0.7
SJES Sjenica 8.61 322 *e*Pn Pn 06 52 31.4 +3.2
ZAF Zafarana 8.62 147 P Pn 06 52 25.7 -2.7
baz=147
ZAF Zafarana 8.62 147 P Pn 06 52 25.7 -2.7
TIP Timpagrande 8.63 290 ⇑iP Pn 06 52 30.0 +1.5
TIP Timpagrande 8.63 290 P Pn 06 52 29.9 +1.5
TIP Timpagrande 8.63 290 P Pn 06 52 29.8 +1.3
TIP Timpagrande 8.63 290 *e*Pn Pn 06 52 30.1 +1.5
TIP Timpagrande 8.63 290 P Pn 06 52 29.8 +1.3
TIP Timpagrande 8.63 290 *e*Pn Pn 06 52 30.1 +1.6
TAR1 Taranto 8.67 299 *e*Pn Pn 06 52 30.1 +1.2
CEME Cevo 8.68 315 *e*Pn Pn 06 52 30.8 +1.7
CEME *e*Sn **Sn** 06 54 05.9 -0.7
CEME Cevo 8.68 315 *e*Pn Pn 06 52 30.8 +1.7
CEME *e*Sn **Sn** 06 54 05.9 -0.7
ZNM Zenema 8.69 145 P Pn 06 52 27.1 -2.2
baz=145
ZNM Zenema 8.69 145 P Pn 06 52 27.1 -2.2
IVAS Ivanjica 8.76 324 *e*Pn Pn 06 52 32.5 +2.3
IVAS Ivanjica 8.76 324 *e*Pn Pn 06 52 32.5 +2.3
KUBS Kucevo 8.80 333 *e*Pn Pn 06 52 31.2 +0.5
KUBS Kucevo 8.80 333 *e*Pn Pn 06 52 31.2 +0.5
NKME Niksic 8.80 316 ⇑iPn Pn 06 52 32.9 +2.1
NKME *e*Sn **Sn** 06 54 09.0 -0.6
NKME Niksic 8.80 316 ⇑iPn Pn 06 52 32.9 +2.1
NKME *e*Sn **Sn** 06 54 09.0 -0.6
NKY Niksic 8.81 317 ⇑iPn Pn 06 52 33.0 +2.0
NKY *e*Sn **Sn** 06 54 09.2 -0.7
NKY Niksic 8.81 317 ⇑iPn Pn 06 52 33.0 +2.0
NKY *e*Sn **Sn** 06 54 09.2 -0.7
MLR Muntele Rosu 8.86 354 Pn Pn 06 52 32.2 +0.6
comp=N,0.2nm,0.3s,baz=210,slow=3.1,SNR=35
MLR Muntele Rosu 8.86 354 ⇓iP Pn 06 52 32.7 +1.1
MLR Muntele Rosu 8.86 354 *e*P Pn 06 52 32.6 +1.0
MLR Muntele Rosu 8.86 354 *e*P Pn 06 52 32.6 +1.0
MLR Muntele Rosu 8.86 354 *e*Pn Pn 06 52 32.6 +1.0
HCY Herceg Novi 8.86 313 ⇓iPn Pn 06 52 33.1 +1.5
HCY *e*Sn **Sn** 06 54 09.7 -1.3
HCY Herceg Novi 8.86 313 ⇓iPn Pn 06 52 33.1 +1.5
HCY *e*Sn **Sn** 06 54 09.7 -1.3
ARR Arges 8.90 348 ⇑iP Pn 06 52 32.4 +0.3
VOIR 8.90 350 ⇑iP Pn 06 52 32.5 +0.3
NOCI Noci 8.93 300 P Pn 06 52 32.4 -0.1
NOCI Noci 8.93 300 P Pn 06 52 32.4 -0.1
PLE Pljevlja 8.95 320 ⇓iPn Pn 06 52 34.6 +1.7
PLE *e*Sn **Sn** 06 54 12.4 -1.0
PLE Pljevlja 8.95 320 ⇓iPn Pn 06 52 34.6 +1.7
PLE *e*Sn **Sn** 06 54 12.4 -1.0
MDVR Moldovita 9.11 334 ⇓iP Pn 06 52 35.5 +0.5
TREB Trebinje 9.11 314 *e*P Pn 06 52 36.6 +1.6
UPM Unac-Piva 9.12 318 ⇓iPn Pn 06 52 37.6 +2.3
UPM *e*Sn **Sn** 06 54 16.5 -1.1
UPM Unac-Piva 9.12 318 ⇓iPn Pn 06 52 37.6 +2.3
UPM *e*Sn **Sn** 06 54 16.5 -1.1
BRY Bratogost 9.12 316 ⇑iPn Pn 06 52 36.6 +1.4
BRY *e*Sn **Sn** 06 54 16.4 -1.2
BRY Bratogost 9.12 316 ⇑iPn Pn 06 52 36.6 +1.4
BRY Bratogost 9.12 316 *e*P Pn 06 52 37.2 +1.9
BRY *e*Sn **Sn** 06 54 16.4 -1.2
ZALF Zalf 9.12 111 *e*P Pn 06 52 35.3 +0.1
MATE Matera 9.13 299 ⇑iP Pn 06 52 36.5 +1.3
CEL Celeste 9.14 283 *e*Pn Pn 06 52 36.6 +1.1
CEL Celeste 9.14 283 *e*Pn Pn 06 52 36.6 +1.1
ASF Jabal al Asfar 9.17 117 Pn **Pn 06 52 36.4 +0.5**
comp=N,3.6nm,0.3s,baz=250,slow=9.2,SNR=17
ASF LR LR 06 56 56.1
comp=N,2µm,21.4s,baz=242,slow=43
PLOR Plostina 9.18 358 ⇑iP Pn 06 52 37.1 +1.2
VRI Vrincioaia 9.19 358 ⇑iP Pn 06 52 36.5 +0.4
**BAI Bari 9.19

SEV *eS* **Sn** **06 54 17.7 -3.1**
SEV Sevastopol' 9.26 30 *eP* **Pn** **06 52 36.4 -0.6**
KEMA Kemaliye 9.27 70 *i P* **Pn** **06 52 41.2 +3.9**
BBLS Lazići 9.34 323 *ePn* **Pn** **06 52 40.6 +2.4**
BBLS Lazići 9.34 323⇑ *iP* **Pn** **06 52 40.5 +2.4**
YAL Yalta 9.42 32 *eP* **Pn** **06 52 40.6 +1.5**
YAL *eS* **Sn** **06 54 24.6 +0.1**
YAL Yalta 9.42 32 *eP* **Pn** **06 52 40.6 +1.5**
YAL *eS* **Sn** **06 54 24.6 +0.1**
ELZG Elazig 9.52 75 *i P* **Pn** **06 52 45.1 +4.3**
EIL Elat 9.53 135 Pn **Pn** **06 52 39.3 -1.4**
comp=N,11nm,0.3s,baz=310,slow=3.6,SNR=30
EIL Sn **Sn** **06 54 25.9 -1.5**
comp=N,14nm,0.3s,baz=303,slow=14,SNR=6.1
EIL LR LR 06 58 31.4
comp=N,2μm,20.4s,baz=331,slow=52
CUC Castrocucco 9.55 294 *ePn* **Pn** **06 52 43.2 +2.2**
CUC Castrocucco 9.55 294 *ePn* **Pn** **06 52 43.2 +2.2**
STON Ston 9.59 313 P **Pn** **06 52 41.1 -0.3**
STON Ston 9.59 313 *i P* **Pn** **06 52 41.1 -0.3**
CDT Castel del Mon 9.60 301 *ePn* **Pn** **06 52 42.3 +0.6**
GRB Gharib 9.61 149 P **Pn** **06 52 39.9 -2.0**
baz=149
GRB Gharib 9.61 149 P **Pn** **06 52 39.9 -2.0**
ALU Alushta 9.68 32 *eP* **Pn** **06 52 45.3 +2.6**
MDB Medias 9.69 348 *iP* **Pn** **06 52 44.2 +1.2**
DEV Deva 9.75 342⇑ *iP* **Pn** **06 52 44.9 +1.1**
SIM Simferopol' 9.78 30 *eP* **Pn** **06 52 48.5 +4.4**
SIM *eS* **Sn** **06 54 36.0 +2.6**
SIM pmax pmax
comp=Z,58nm,0.3s
SIM MLR MLR
comp=Z,1μm,11.0s
TEKS Tekeris 9.79 326 *ePn* **Pn** **06 52 46.2 +1.9**
TEKS Tekeris 9.79 326⇑ *iP* **Pn** **06 52 45.5 +1.2**
TEKS Tekeris 9.79 326 *ePn* **Pn** **06 52 46.2 +1.9**
TESR Tescani 9.84 358⇑ *iP* **Pn** **06 52 45.0 +0.1**
BZS Buzias 9.88 336⇑ *iP* **Pn** **06 52 45.2 -0.3**
MS1 Monte Sant'Ang 10.09 303 *ePn* **Pn** **06 52 50.1 +1.7**
SUDU Sudak 10.10 33 *eP* **Pn** **06 52 51.4 +2.9**
SUDU *eS* **Sn** **06 54 39.8 -1.6**
FGSL Fruska Gora 10.15 329 *ePn* **Pn** **06 52 51.0 +1.7**
FRGS Fruska Gora 10.15 329 *ePn* **Pn** **06 52 51.0 +1.7**
VAE Valguarnera 10.26 278 Pn **Pn** **06 52 50.4 -0.4**
comp=Z,1.5nm,0.3s,baz=92,slow=5.8,SNR=9.5
VAE Sn **Sn** **06 54 48.3 +2.8**
comp=Z,1.3nm,0.3s,baz=235,slow=22,SNR=2.6
WDD Wied Dalam 10.28 269 *ePn* **Pn** **06 52 50.4 -0.6**
WDD Wied Dalam 10.28 269 *ePn* **Pn** **06 52 50.4 -0.6**
MILM Milestii Mici 10.30 6 *iiP* **Pn** **06 52 52.5 +1.2**
KIS Kishinev 10.38 6 *eP* **Pn** **06 52 52.0 -0.4**
KIS Kishinev 10.38 6 *ePP* Pn 06 52 58.0 +5.6
KIS *eS* **Sn** **06 54 48.0 -0.3**
KIS *i Li* 06 55 25.0
KIS *eLg* Lg 06 55 29.0
KIS *eLg2* 06 56 00.0
KIS *eRg* Rg 06 56 35.0
KIS LRM MLR 06 57 22.0
comp=Z,12μm,11.0s
KIS Kishinev 10.38 6 *eP* **Pn** **06 52 52.0 -0.4**
KIS *eS* **Sn** **06 54 48.0 -0.3**
KIS MLR MLR
comp=N,10μm,10.0s
KIS MLR MLR
comp=Z,11μm,10.0s
KIS MLR MLR
comp=E,5μm,11.0s
KIS MLR MLR
comp=Z,12μm,11.0s
KIS Kishinev 10.38 6 *eP* **Pn** **06 52 52.0 -0.4**
KIS *eS* **Sn** **06 54 48.0 -0.3**
comp=Z,12μm,11.0s
CJR Cluj-Napoca 10.39 346⇑ *iP* **Pn** **06 52 53.5 +1.0**
SIRR Siria 10.45 338⇑ *iP* **Pn** **06 52 53.2 -0.1**
DRGR 10.65 343⇑ *iP* **Pn** **06 52 56.9 +0.8**
BURAR Bucovina Array 11.03 353⇑ *iP* **Pn** **06 53 03.3 +1.9**
BUR08 Bucovina Ar. S 11.06 353 *ePn* **Pn** **06 53 03.3 +1.5**
BUR08 Bucovina Ar. S 11.06 353 *ePn* **Pn** **06 53 03.3 +1.5**
BLY Banja Luka 11.08 320⇑ *iP* **Pn** **06 53 02.9 +0.9**
BLY Banja Luka 11.08 320 *eP* **Pn** **06 53 02.8 +0.8**
ANN Anapa 11.21 40 *eP* **Pn** **06 53 03.6 -0.1**
ANN *eS* **Sn** **06 55 11.8 +3.2**
ANN pmax pmax
comp=Z,54nm,1.9s
ANN MLR MLR
comp=Z,2μm,15.0s
ANN Anapa 11.21 40 *eP* **Pn** **06 53 03.6 -0.1**
comp=Z,54nm,1.9s
CLTB Caltabellotta 11.22 279 *ePn* **Pn** **06 53 05.6 +1.7**
CLTB Caltabellotta 11.22 279 *ePn* **Pn** **06 53 05.6 +1.7**
UDBI Udbina 11.71 316 P **Pn** **06 53 11.5 +0.9**
UDBI Udbina 11.71 316 *i P* **Pn** **06 53 11.5 +0.9**
SOC Sochi 11.79 50*c iP* **Pn** **06 53 14.6 +3.0**
SOC *e* 06 55 29.3
SOC pmax pmax
comp=Z,19nm,0.7s
SOC MLR MLR
comp=Z,2μm,12.0s
SISC Sisak 12.00 320 P **Pn** **06 53 16.2 +1.7**
SISC Sisak 12.00 320 *i P* **Pn** **06 53 16.1 +1.7**
AQU L'Aquila 12.08 302 *eP* **Pn** **06 53 18.4 +2.8**
AQU L'Aquila 12.08 302 *eP* **Pn** **06 53 18.4 +2.8**
AQU L'Aquila 12.08 302 *ePn* **Pn** **06 53 18.4 +2.8**
NVLJ Novalja 12.24 314 P **Pn** **06 53 16.9 -0.8**
NVLJ Novalja 12.24 314 *i P* **Pn** **06 53 16.9 -0.8**
ZAG Zagreb 12.44 321 *eP* **Pn** **06 53 22.2 +1.7**
PSZ Piszkesteto 12.47 337⇑ *iP* **Pn** **06 53 22.5 +1.6**
PSZ Piszkesteto 12.47 337 *ePn* **Pn** **06 53 20.3 -0.6**
PSZ Piszkesteto 12.47 337 *eP* **Pn** **06 53 20.9 0.0**
PSZ Piszkesteto 12.47 337 *eP* **Pn** **06 53 20.9 0.0**
PSZ Piszkesteto 12.47 337 *ePn* **Pn** **06 53 20.9 0.0**
UZH Uzhgorod 12.48 345 *eP* **Pn** **06 53 22.5 +1.5**
UZH *eS* **Sn** **06 55 42.0 +2.4**
UZH MLR MLR
comp=E,2μm,10.0s
UZH MLR MLR
comp=Z,9μm,10.0s
UZH Uzhgorod 12.48 345 *eP* **Pn** **06 53 22.5 +1.5**
UZH *eS* **Sn** **06 55 42.0 +2.4**
BEHE Becsehely 12.51 325 *ePn* Pn 06 53 26.6 +5.1
BOJS Bojanci 12.61 318 *i Pn* **Pn** **06 53 23.0 +0.2**
BOJS Bojanci 12.61 318 *i Pn* **Pn** **06 53 23.0 +0.2**
CRES Cresnjev 12.71 320⇑ *iP* **Pn** **06 53 24.4 +0.2**
KOLS Kolonicke sedl 12.77 345 *eP* **Pn** **06 53 26.2 +1.1**
KOLS Kolonicke sedl 12.77 345 *eP* **Pn** **06 53 26.2 +1.1**
KOLS Kolonicke sedl 12.77 345 *ePN* **Pn** **06 53 26.2 +1.1**
KECS Kecovo 12.79 339 *eP* **Pn** **06 53 26.5 +1.1**
KECS Kecovo 12.79 339 *eP* **Pn** **06 53 26.5 +1.1**
KECS Kecovo 12.79 339 *ePN* **Pn** **06 53 26.4 +1.1**
CRVS Cervenica-Dubn 12.92 343 *eP* **Pn** **06 53 28.9 +1.8**
CRVS Cervenica-Dubn 12.92 343 *eP* **Pn** **06 53 28.9 +1.8**
CRVS Cervenica-Dubn 12.92 343 *ePN* **Pn** **06 53 28.9 +1.8**
CRVS *e* 06 53 48.7
VISS Visnje 13.02 318 *ePn* **Pn** **06 53 28.5 0.0**
VISS Visnje 13.02 318 *ePn* **Pn** **06 53 28.5 0.0**
CEY Cerknica 13.20 317 *eP* **Pn** **06 53 31.3 +0.3**
VYHS Vyhne 13.32 335 *eP* **Pn** **06 53 33.1 +0.6**
VYHS Vyhne 13.32 335 *eP* **Pn** **06 53 33.1 +0.6**
VYHS Vyhne 13.32 335 *ePN* **Pn** **06 53 33.1 +0.6**
LVV L'vov 13.34 351 *eP* **Pn** **06 53 32.2 -0.6**
LVV *eS* **Sn** **06 56 03.0 +2.4**
LVV MLR MLR
comp=N,2μm,9.0s
LVV MLR MLR
comp=E,1μm,9.0s
LVV MLR MLR
comp=Z,2μm,9.0s
LVV L'vov 13.34 351 *eP* **Pn** **06 53 32.2 -0.6**
LVV *eS* **Sn** **06 56 03.0 +2.4**
LJU Ljubljana 13.34 318⇑ *iP* **Pn** **06 53 34.7 +1.9**
KWP Kalwaria Pacla 13.36 347 *eP* **Pn** **06 53 36.7 +3.7**
KWP Kalwaria Pacla 13.36 347 *eP* **Pn** **06 53 36.7 +3.7**
PERS Pernice 13.43 322 *ePn* **Pn** **06 53 34.3 +0.2**
PERS Pernice 13.43 322 *ePn* **Pn** **06 53 34.3 +0.2**
STHS Stebnicka Huta 13.46 343 *eP* **Pn** **06 53 36.7 +2.3**
STHS Stebnicka Huta 13.46 343 *eP* **Pn** **06 53 36.7 +2.3**
STHS Stebnicka Huta 13.46 343 *ePN* **Pn** **06 53 36.7 +2.3**
JAVS Javornik 13.50 317 *ePn* **Pn** **06 53 34.6 -0.5**
JAVS Javornik 13.50 317 *ePn* **Pn** **06 53 34.6 -0.5**
AKH Akhalkalaki 13.50 65 P **Pn** **06 53 38.9 +3.7**
AKH Akhalkalaki 13.50 65 P **Pn** **06 53 38.9 +3.7**
SOKA Soboth 13.50 322 *i Pn* **Pn** **06 53 35.3 +0.2**
comp=Z,99nm,1.3s,SNR=37
SOKA Soboth 13.50 322 P **Pn** **06 53 35.3 +0.2**
comp=Z,99nm,1.3s,SNR=37
SOP Sopron 13.53 328 *ePn* **Pn** **06 53 37.6 +2.3**
SOP Sopron 13.53 328 *eP* **Pn** **06 53 37.6 +2.3**
TRI Trieste 13.55 316 *eP* **Pn** **06 53 35.4 -0.3**
TRI Trieste 13.55 316 *eP* **Pn** **06 53 35.4 -0.3**
TRI Trieste 13.55 316 *ePn* **Pn** **06 53 35.4 -0.3**
NEY Neytrino 13.58 56*c iP* **Pn** **06 53 40.5 +4.3**
OBKA Obir 13.63 320 *i Pn* **Pn** **06 53 38.2 +1.3**
comp=Z,60nm,1.4s,SNR=13
OBKA Obir 13.63 320 P **Pn** **06 53 38.2 +1.3**
comp=Z,60nm,1.4s,SNR=13
ARSA Arzberg 13.67 324 *i Pn* **Pn** **06 53 38.9 +1.6**
comp=Z,60nm,1.9s,SNR=16
ARSA Arzberg 13.67 324 P **Pn** **06 53 38.9 +1.6**
comp=Z,60nm,1.9s,SNR=16
LANS Liptovska Anna 13.69 338 *eP* **Pn** **06 53 40.1 +2.5**
LANS Liptovska Anna 13.69 338 *eP* **Pn** **06 53 40.1 +2.5**
LANS Liptovska Anna 13.69 338 *ePN* **Pn** **06 53 40.1 +2.5**
LANS *e* 06 53 50.7
NIE Niedzica 13.70 341 *eP* **Pn** **06 53 39.1 +1.5**
NIE *eS* **S** **06 56 37.7 +5.7**
NIE Niedzica 13.70 341 *eP* **Pn** **06 53 39.1 +1.5**
NIE Niedzica 13.70 341 *eP* **Pn** **06 53 39.1 +1.5**
ONI Oni 13.83 60 P **Pn** **06 53 41.4 +1.8**
ONI Oni 13.83 60 P **Pn** **06 53 41.4 +1.8**
ONI Oni 13.83 60 P **Pn** **06 53 41.4 +1.8**
KIV Kislovodsk 13.85 54 *i P* **Pn** **06 53 42.3 +2.4**
SNR=8.6
KIV Kislovodsk 13.85 54 *eP* **Pn** **06 53 40.8 +0.9**
KIV Kislovodsk 13.85 54 *eP* **Pn** **06 53 40.8 +0.9**
KIV Kislovodsk 13.85 54 *ePn* **Pn** **06 53 40.8 +0.9**
KVAR Kislovodsk Arr 13.86 54 Pn **Pn** **06 53 43.2 +3.2**
baz=282,slow=11,SNR=10
KVAR LR LR 06 59 43.3
comp=Z,1μm,19.8s,baz=235,slow=40
KBZ Khabaz 13.89 55 Pn **Pn** **06 53 42.5 +2.3**
comp=Z,0.1nm,0.3s,baz=238,slow=13,SNR=8.9
KBZ LR LR 06 59 43.8
comp=Z,1μm,18.2s,baz=250,slow=40
CONA Conrad Observa 14.02 327 *i Pn* **Pn** **06 53 42.5 +0.3**
comp=Z,31nm,1.8s,SNR=13
CONA Conrad Observa 14.02 327 P **Pn** **06 53 42.5 +0.3**
comp=Z,31nm,1.8s,SNR=13
KIEV Kiev 14.09 5*d iP* **Pn** **06 53 43.9 +0.9**
KIEV Kiev 14.09 5 *i P* **Pn** **06 53 43.9 +0.9**
KIEV Kiev 14.09 5 *ePn* **Pn** **06 53 44.5 +1.5**
KIEV Kiev 14.09 5 *ePn* **Pn** **06 53 44.5 +1.5**
AKASG Malin Array Be 14.10 5 Pn **Pn** **06 53 43.1 +0.1**
comp=Z,0.5nm,0.3s,baz=185,slow=10,SNR=5.4
AKASG LR LR 06 59 06.5
comp=Z,3μm,19.6s,baz=185,slow=37
AKBB Malin Array Si 14.10 5 *eP* **P** **06 53 48.8 -1.9**
AKBB Malin Array Si 14.10 5 *ePn* **P** **06 53 48.8 -1.9**
GNI Garni 14.17 71 Pn **P** **06 53 48.4 -3.5**
comp=Z,0.9nm,0.3s,baz=248,slow=3.7,SNR=9.8
GNI Garni 14.17 71 *i P* **Pn** **06 53 47.6 +3.2**
SNR=20
GNI Garni 14.17 71*d iP* **Pn** **06 53 47.0 +2.6**
GNI pmax pmax
comp=Z,182nm,1.7s
GNI Garni 14.17 71 *i P* **Pn** **06 53 47.0 +2.6**
comp=Z,182nm,1.7s
GNI Garni 14.17 71 P **P** **06 53 48.3 -3.5**
SNR=27
GNI Garni 14.17 71 *ePn* **Pn** **06 53 47.7 +3.3**
MYKA Terra Mystica 14.19 319 *eP* **Pn** **06 53 47.2 +2.7**
comp=Z,43nm,0.8s
MYKA Terra Mystica 14.19 319 P **Pn** **06 53 47.2 +2.7**
comp=Z,43nm,0.8s
ZEI Tsey 14.21 59 *eP* **Pn** **06 53 47.2 +2.3**
ZEI pmax pmax
comp=Z,104nm,1.5s
ZEI Tsey 14.21 59 *eP* **Pn** **06 53 47.2 +2.3**
comp=Z,104nm,1.5s
NCK Nalchik 14.26 56⇑ *iP* **P** **06 53 49.4 -3.2**
NCK Nalchik 14.26 56 *i P* **P** **06 53 49.4 -3.2**
VSL Villasalto 14.33 287 *ePn* **Pn** **06 53 48.4 +2.0**
VSL Villasalto 14.33 287 *ePn* **Pn** **06 53 48.4 +2.0**
KEST Kesra 14.46 272 Pn **Pn** **06 53 48.2 0.0**
comp=Z,0.4nm,0.3s,baz=214,slow=9.0,SNR=19
KEST Kesra 14.46 272 *ePn* **Pn** **06 53 49.0 +0.7**
KEST Kesra 14.46 272 *ePn* **Pn** **06 53 49.0 +0.7**
TBLG Delisi 14.49 64 P **Pn** **06 53 50.6 +2.1**
TBLG Delisi 14.49 64 P **Pn** **06 53 50.6 +2.1**
GUDG Gudauri 14.51 61 P **Pn** **06 53 51.3 +2.3**
OJC Ojcow 14.56 341 *eP* **Pn** **06 53 50.7 +1.2**
OJC *eS* **S** **06 56 51.4 +1.8**
OJC Ojcow 14.56 341 *eP* **Pn** **06 53 49.7 +0.2**
OJC Ojcow 14.56 341 *ePn* **Pn** **06 53 49.7 +0.2**
OJC *eS* **S** **06 56 51.4 +1.8**
OJC Ojcow 14.56 341 *ePn* **Pn** **06 53 49.7 +0.2**
GOF Gofitskoye 14.59 50⇑ *eP* **P** **06 53 53.8 -2.5**
GOF pmax pmax
comp=Z,71nm,1.3s
GOF Gofitskoye 14.59 50 *eP* **P** **06 53 53.8 -2.5**
comp=Z,71nm,1.3s
KBA Koelnbreinsper 14.63 320 *i Pn* **Pn** **06 53 50.6 0.0**
comp=Z,205nm,1.0s,SNR=37
KBA Koelnbreinsper 14.63 320 Pn **Pn** **06 53 50.6 0.0**
comp=Z,205nm,1.0s,SNR=37
MOA Molln 14.69 323 *i Pn* **Pn** **06 53 52.0 +0.7**
comp=Z,83nm,1.6s,SNR=16
MOA Molln 14.69 323 Pn **Pn** **06 53 52.0 +0.7**
comp=Z,83nm,1.6s,SNR=16
OKC Ostrava-Krasne 14.71 336 *eP* **P** **06 53 54.5 -3.0**
OKC *epP* Pn 06 53 59.5 +8.1
OKC *eS* **Sn** **06 56 42.3 +8.4**
OKC AMS AMS 07 00 50.0
comp=Z,5μm,11.7s
OKC Ostrava-Krasne 14.71 336 *eP* **P** **06 53 54.5 -3.0**
OKC *eS* **Sn** **06 56 42.3 +8.4**
OKC MLR MLR
comp=Z,5μm,11.7s
VRAC Vranov 14.81 332 Pn **P** **06 53 56.7 -1.9**
comp=Z,0.3nm,0.3s,baz=146,slow=12,SNR=6.9
VRAC LR LR 06 59 36.2
comp=Z,2μm,21.0s,baz=157,slow=37
VRAC ScP **ScP** **07 02 35.1 -1.2**
comp=Z,0.2nm,0.3s,baz=207,slow=5.2,SNR=3.1
VRAC Vranov 14.81 332⇑ *iP* **Pn** **06 53 54.7 +1.9**
VRAC Vranov 14.81 332 *ePn* **Pn** **06 53 53.2 +0.4**
VLC Villacollemand 14.82 305 *ePn* **Pn** **06 53 54.0 +0.9**
VLC Villacollemand 14.82 305 *ePn* **Pn** **06 53 54.0 +0.9**
MORC Moravsky Berou 14.85 335⇑ *iP* **Pn** **06 53 54.5 +1.0**
MORC Moravsky Berou 14.85 335 *eP* **Pn** **06 53 53.6 +0.1**
MORC Moravsky Berou 14.85 335 *ePn* **Pn** **06 53 53.0 -0.5**
MORC Moravsky Berou 14.85 335 *ePn* **Pn** **06 53 53.6 +0.1**
RAC Raciborz 14.90 337 *eP* **P** **06 53 57.7 -2.0**
RAC MLR MLR
comp=Z,5μm,14.9s
RAC Raciborz 14.90 337 *eP* **P** **06 53 57.7 -2.0**
comp=Z,5μm,14.9s
TREC Trest 15.23 330 *eP* **P** **06 54 07.4 +4.0**
TREC AMS AMS 07 01 10.0
comp=Z,4μm,9.9s
TREC Trest 15.23 330 *eP* **P** **06 54 07.4 +4.0**
TREC MLR MLR
comp=Z,4μm,9.9s
KRLC Kraliky 15.37 334 *eP* **Pn** **06 54 01.2 +0.8**
KRLC *epP* **P** **06 54 06.6 +1.7**
KRLC *ex* x 06 54 13.4
KRLC Kraliky 15.37 334 *eP* **Pn** **06 54 01.2 +0.8**
GEA0 GERESS Array S 15.66 325 *ePn* **Pn** **06 54 04.5 +0.3**
GEA0 GERESS Array S 15.66 325 *ePn* **Pn** **06 54 04.5 +0.3**
WTTA Wattenberg 15.66 317 *i P* **P** **06 54 08.0 -0.3**
comp=Z,186nm,2.0s,SNR=14
WTTA Wattenberg 15.66 317 P **P** **06 54 08.0 -0.3**
comp=Z,186nm,2.0s,SNR=14
GEC2 GERESS Array S 15.67 325 *eP* **Pn** **06 54 05.4 +1.1**
GEC2 pmax pmax
comp=Z,239nm,1.9s
GEC2 GERESS Array S 15.67 325 *ePn* **Pn** **06 54 05.4 +1.1**
comp=Z,239nm,1.9s
GEC2 GERESS Array S 15.67 325 *ePn* **Pn** **06 54 05.4 +1.1**
comp=Z,239nm,1.9s
GERES GERESS Array B 15.67 325 Pn **P** **06 54 06.9 -1.4**
comp=Z,0.2nm,0.3s,baz=147,slow=12,SNR=18
GERES LR LR 07 00 03.3
comp=Z,1μm,19.2s,baz=136,slow=37
GERES ScP **ScP** **07 02 35.9 -2.1**
comp=Z,0.1nm,0.3s,baz=92,slow=6.7,SNR=4.4
DPC Dobruska-Polom 15.76 334 *eP* **Pn** **06 54 06.1 +0.6**
DPC *epP* **P** **06 54 09.5 +0.2**
DPC *esP* **pP** **06 54 12.3 -1.8**
DPC *eS* **S** **06 57 08.6 -5.7**
DPC AMS AMS 07 01 40.0
comp=Z,3μm,9.8s
DPC Dobruska-Polom 15.76 334 *eP* **Pn** **06 54 06.1 +0.6**
DPC *eS* **S** **06 57 08.6 -5.7**
DPC MLR MLR
comp=Z,3μm,9.8s
BEL Belsk 15.83 345 *eP* **P** **06 54 08.5 -1.4**
BEL Belsk 15.83 345 *eP* **P** **06 54 08.5 -1.4**
BEL Belsk 15.83 345 *eP* **P** **06 54 08.5 -1.4**
ABSA Djebel Ababsia 15.89 274 P **P** **06 54 12.9 +2.1**
ABSA Djebel Ababsia 15.89 274 P **P** **06 54 12.9 +2.1**
CMAH Djebel Manchou 15.89 276 P **P** **06 54 12.7 +1.9**
CMAH Djebel Manchou 15.89 276 P **P** **06 54 12.7 +1.9**
KHC Kasperske Hory 15.93 326 *eP* **Pn** **06 54 08.3 +0.7**
KHC *ex* x 06 54 10.3
KHC *eS* **Sn** **06 57 09.0 +5.3**
KHC AMS AMS 07 01 20.0
comp=Z,5μm,9.8s
KHC Kasperske Hory 15.93 326 *eP* **Pn** **06 54 08.3 +0.7**
KHC *eS* **Sn** **06 57 09.0 +5.3**
KHC MLR MLR
comp=Z,5μm,9.8s
KHC Kasperske Hory 15.93 326 *ePn* **Pn** **06 54 09.2 +1.6**
comp=Z,80nm,1.6s
KHC Kasperske Hory 15.93 326 *ePn* **Pn** **06 54 09.2 +1.6**
comp=Z,80nm,1.6s
GOPC GO Pecny, Ondr 16.00 330 *eP* **P** **06 54 14.4 +2.5**
GOPC *ex* x 06 54 19.1
GOPC *eS* **S** **06 57 14.3 -4.8**
GOPC AMS AMS 07 01 30.0
comp=Z,4μm,11.5s
GOPC GO Pecny, Ondr 16.00 330 *eP* **P** **06 54 14.4 +2.5**
GOPC *eS* **S** **06 57 14.3 -4.8**
GOPC MLR MLR
comp=Z,4μm,11.5s
GOPC GO Pecny, Ondr 16.00 330 *eP* **P** **06 54 14.4 +2.5**
MOTA Moosalm 16.00 317 *i Pn* **Pn** **06 54 09.7 +1.1**
comp=Z,58nm,1.0s,SNR=14
MOTA Moosalm 16.00 317 Pn **Pn** **06 54 09.7 +1.1**
comp=Z,58nm,1.0s,SNR=14
UPC Upice 16.00 333 *eP* **Pn** **06 54 09.3 +0.8**
UPC *eS* **Sn** **06 57 11.8 +6.3**
UPC AMS AMS 07 01 20.0
comp=Z,2μm,10.3s
UPC Upice 16.00 333 *eP* **Pn** **06 54 09.3 +0.8**
UPC *eS* **Sn** **06 57 11.8 +6.3**
UPC MLR MLR
comp=Z,2μm,10.3s
FETA Feichten 16.02 315 *i P* **P** **06 54 14.1 +1.8**
comp=Z,240nm,1.3s,SNR=89
FETA Feichten 16.02 315 P **P** **06 54 14.1 +1.8**
comp=Z,240nm,1.3s,SNR=89
FUORN Ofenpass-Fuorn 16.07 313 *ePn* **P** **06 54 11.4 -1.6**
comp=Z,269nm,1.4s
FUORN Ofenpass-Fuorn 16.07 313 *ePn* **P** **06 54 11.4 -1.6**
comp=Z,269nm,1.4s
PRU Pruhonice 16.16 329 *eP* **Pn** **06 54 11.1 +0.6**
PRU *epP* **pP** **06 54 15.8 -2.6**
PRU *esP* **sP** **06 54 19.9 -0.8**
PRU *eS* **Sn** **06 57 13.8 +4.6**
PRU AMS AMS 07 01 40.0
comp=Z,5μm,9.6s
PRU Pruhonice 16.16 329 *eP* **Pn** **06 54 11.1 +0.6**
PRU *eS* **Sn** **06 57 13.8 +4.6**
PRU MLR MLR
comp=Z,5μm,9.6s
KSP Ksiaz 16.18 334 *eP* **Pn** **06 54 12.1 +1.3**
KSP *eS* **S** **06 57 25.9 +3.1**
KSP Ksiaz 16.18 334 *eP* **Pn** **06 54 12.1 +1.3**
KSP Ksiaz 16.18 334 *eP* **Pn** **06 54 12.1 +1.3**
KSP *eS* **S** **06 57 25.9 +3.1**
RETA Reutte 16.27 317 *i P* **P** **06 54 15.5 +0.5**
comp=Z,157nm,1.7s,SNR=20
RETA Reutte 16.27 317 P **P** **06 54 15.5 +0.5**
comp=Z,157nm,1.7s,SNR=20
CAEH 'Ain El Ouahch 16.33 276 P **P** **06 54 17.6 +1.9**
CAEH 'Ain El Ouahch 16.33 276 P **P** **06 54 17.6 +1.9**
DAVOX Davos/Dischmat 16.38 313 Pn **Pn** **06 54 13.8 +0.3**
comp=Z,0.2nm,0.3s,baz=130,slow=9.6,SNR=4.6
DAVOX LR LR 07 01 27.3
comp=Z,3μm,20.5s,baz=126,slow=41
CKFL Kef-Lekhel 16.48 275 P **P** **06 54 19.8 +2.4**
CKFL Kef-Lekhel 16.48 275 P **P** **06 54 19.8 +2.4**
TUE Stuetta 16.54 312 *ePn* **P** **06 54 17.3 -0.8**
comp=Z,176nm,1.3s
TUE Stuetta 16.54 312 *ePn* **P** **06 54 17.3 -0.8**
comp=Z,176nm,1.3s
PVCC Panska Ves 16.57 331 *eP* **P** **06 54 20.2 +2.0**
PVCC *ex* x 06 54 26.9
PVCC *ex* x 06 54 30.9
PVCC AMS AMS 07 02 00.0
comp=Z,4μm,9.9s
PVCC Panska Ves 16.57 331 *eP* **P** **06 54 20.2 +2.0**
PVCC MLR MLR
comp=Z,4μm,9.9s
PVCC Panska Ves 16.57 331 *eP* **P** **06 54 20.2 +2.0**
comp=Z,4μm,9.9s
DAVA Damuels 16.65 315 *i Pn* **P** **06 54 18.9 -0.4**
comp=Z,51nm,0.8s,SNR=39
DAVA Damuels 16.65 315 P **P** **06 54 18.9 -0.4**
comp=Z,51nm,0.8s,SNR=39
CASM Ain Smara 16.68 275 P **P** **06 54 21.8 +2.2**
CASM Ain Smara 16.68 275 P **P** **06 54 21.8 +2.2**
REVF Revere 16.70 301 *eP* **P** **06 54 25.4 +5.6**
LUCF Luceram 16.77 302 *eP* **P** **06 54 20.2 -0.3**
LUCF Luceram 16.77 302 *eP* **P** **06 54 20.2 -0.3**
CTEI Djebel Teioual 16.77 274 P **P** **06 54 22.9 +2.2**
CTEI Djebel Teioual 16.77 274 P **P** **06 54 22.9 +2.2**
VSR Storozhevoye 16.86 27 *eP* **Pn** **06 54 18.4 -0.9**
VSR *e* 06 57 31.0
VSR pmax pmax
comp=Z,10.0nm,0.9s
VSR MLR MLR
comp=Z,1μm,10.0s
MVIF Mont Vial 16.90 301 *eP* **P** **06 54 22.1 +0.1**
MVIF Mont Vial 16.90 301 *eP* **P** **06 54 22.1 +0.1**
CALN Calern 17.04 301 *eP* **P** **06 54 26.0 +2.4**
CALN Calern 17.04 301 *eP* **P** **06 54 26.0 +2.4**
BRG Berggiesshubel 17.09 330 *eP* **P** **06 54 26.9 +3.0**
comp=Z,155nm,1.5s
BRG S **Sn** **06 57 36.0 +4.3**
comp=N,3μm,13.4s
comp=E,2μm,11.5s
comp=Z,3μm,10.9s
BRG Berggiesshubel 17.09 330 *eP* **P** **06 54 26.9 +3.0**
BRG S **Sn** **06 57 36.0 +4.3**
BRG pmax pmax
comp=Z,155nm,1.5s
BRG MLR MLR
comp=N,3μm,13.4s
BRG MLR MLR
comp=E,2μm,11.5s
BRG MLR MLR
comp=Z,3μm,10.9s
DFRA Djebel Bou Aff 17.14 276 P **P** **06 54 24.5 -0.2**
DFRA Djebel Bou Aff 17.14 276 P **P** **06 54 24.5 -0.2**
NKC Novy Kostel 17.23 326 *eS* **Sn** **06 57 39.8 +4.5**
NKC AMS AMS 07 01 50.0
comp=Z,4μm,9.4s
VORR Voronezh 17.25 26 *eP* **P** **06 54 25.0 -0.6**
VORR pmax pmax
comp=Z,300nm,1.4s
VORR Voronezh 17.25 26 *eP* **P** **06 54 25.0 -0.6**
comp=Z,300nm,1.4s
GRFO Grafenberg 17.42 323 *eP* **Pn** **06 54 26.7 +0.3**
GRFO pmax pmax
comp=Z,119nm,1.3s
GRFO Grafenberg 17.42 323 *eP* **Pn** **06 54 26.7 +0.3**
comp=Z,119nm,1.3s
GRFO Grafenberg 17.42 323 *ePn* **Pn** **06 54 26.7 +0.3**
comp=Z,119nm,1.3s
CKHR Kef el Ahmar 17.50 274 P **Pn** **06 54 27.6 0.0**
CKHR Kef el Ahmar 17.50 274 P **Pn** **06 54 27.6 0.0**
SET Setif 17.56 275 P **P** **06 54 29.0 -0.4**
SET Setif 17.56 275 P **P** **06 54 29.0 -0.4**
SUW Suwalki 17.56 352 *eP* **Pn** **06 54 26.0 -2.1**
SUW *eS* **S** **06 57 51.6 +0.8**
SUW Suwalki 17.56 352 *eP* **Pn** **06 54 26.0 -2.1**
BNI Bardonecchia 17.61 305 *eP* Pn 06 54 17.9 -11
BNI Bardonecchia 17.61 305 *ePn* Pn 06 54 17.9 -11
SPAK Spaichingen-Ko 17.72 316 *eP* **P** **06 54 32.4 +1.4**

SENIN	Lac Senin/Sane	17.74	309	eP	P	06 54 32.7 +1.3
	comp=Z,240nm,1.4s					
SENIN	Lac Senin/Sane	17.74	309	eP	P	06 54 32.6 +1.3
	comp=Z,240nm,1.4s					
CLL	Collm	17.80	330	i P	P	06 54 32.5 +0.8
	comp=Z,80nm,2.1s					
CLL				i		06 54 39.7
	comp=Z,173nm,1.8s					
CLL				i		06 54 43.6
	comp=Z,135nm,1.6s					
CLL				eS	S	06 57 55.0 -0.7
	comp=N,2μm,10.9s					
CLL				eS	S	06 57 55.0 -0.7
CLL				eS	S	06 57 55.0 -0.7
	comp=Z,2μm,11.3s					
CLL				L	L	07 02 00.0
	comp=Z,1μm,19.6s					
CLL				i		07 02 56.9
CLL	Collm	17.80	330	i P	P	06 54 32.5 +0.8
CLL				eS	S	06 57 55.0 -0.7
CLL				pmax	pmax	
	comp=Z,80nm,2.1s					
CLL				MLR	MLR	
	comp=Z,1μm,19.6s					
CLL	Collm	17.80	330	i P	P	06 54 32.5 +0.8
	comp=Z,80nm,2.1s					
CLL				eS	S	06 57 55.0 -0.7
	comp=Z,1μm,19.6s					
CLL	Collm	17.80	330	ePn	P	06 54 32.4 +0.6
	comp=Z,126nm,1.4s					
MICGM	Minsk	17.84	1⇓	eP	Pn	06 54 31.0 -0.5
MICGM				PM		06 54 33.0
	comp=Z,0.1nm,1.2s					
MICGM				ePP	PnPn	06 54 57.0 +15
MICGM				eS	Sn	06 57 49.0 -0.7
MICGM				eSS	SnSn	06 58 14.0 +11
MICGM				eLR	LR	06 59 10.0
MNK	Minsk	17.84	1⇓	eP	Pn	06 54 31.0 -0.5
MNK				eS	Sn	06 57 49.0 -0.7
MNK				pmax	pmax	
	comp=Z,140nm,1.2s					
MNK	Minsk	17.84	1	eP	Pn	06 54 31.0 -0.5
	comp=Z,140nm,1.2s					
VRH	Novokhopyorsk	17.84	31	eP	P	06 54 32.9 +0.7
VRH				e		06 57 55.7
VRH				pmax	pmax	
	comp=Z,50nm,0.9s					
VRH				MLR	MLR	
	comp=Z,1μm,12.0s					
VRH	Novokhopyorsk	17.84	31	eP	P	06 54 32.9 +0.7
	comp=Z,50nm,0.9s					
VRH				eS	S	06 57 55.7 -0.7
	comp=Z,1μm,12.0s					
STU	Stuttgart	17.88	318	eP	P	06 54 33.1 +0.5
STU				pmax	pmax	
	comp=Z,221nm,1.4s					
STU	Stuttgart	17.88	318	eP	P	06 54 33.1 +0.5
	comp=Z,221nm,1.4s					
STU	Stuttgart	17.88	318	ePn	P	06 54 33.1 +0.5
	comp=Z,221nm,1.4s					
LPSR	Galich'ya Gora	17.93	24	eP	P	06 54 33.6 +0.4
LPSR				e		06 57 56.6
LPSR				pmax	pmax	
	comp=Z,40nm,1.2s					
LPSR				MLR	MLR	
	comp=Z,890nm,12.0s					
LPSR	Galich'ya Gora	17.93	24	eP	P	06 54 33.6 +0.4
	comp=Z,40nm,1.2s					
LPSR				eS	S	06 57 56.6 -1.7
	comp=Z,890nm,12.0s					
GDM	Grand'Maison	18.04	305	eP	P	06 54 36.6 +2.0
GDM	Grand'Maison	18.04	305	eP	P	06 54 36.6 +2.0
FELD	Feldberg im Sc	18.04	314	eP	P	06 54 36.3 +1.7
BFO	Black Forest	18.10	316	i P	P	06 54 37.4 +2.3
BFO	Black Forest	18.10	316	ePn	P	06 54 36.9 +1.8
	comp=Z,71nm,1.1s					
BFO	Black Forest	18.10	316	i P	P	06 54 37.4 +2.3
BFO	Black Forest	18.10	316	ePn	P	06 54 36.9 +1.8
	comp=Z,71nm,1.1s					
BBS	Basel-Blauen	18.12	313	eP	P	06 54 37.4 +2.0
NACGM	Naroch	18.23	359	eP	Pn	06 54 36.0 -0.4
NACGM				eS	S	06 58 06.0 +1.6
NACGM				eSSS	SSS	06 59 23.0
NACGM				eLQ	LQ	07 00 26.0
NACGM				eLR	LR	07 01 50.0
NACGM	Naroch	18.23	359	eP	Pn	06 54 36.0 -0.4
NACGM				eS	S	06 58 06.0 +1.6
GRN	Grenoble	18.30	305	eP	P	06 54 38.3 +0.9
GRN	Grenoble	18.30	305	eP	P	06 54 38.3 +0.9
LOMF	Lomont	18.47	312	eP	Pn	06 54 42.1 +2.6
LOMF	Lomont	18.47	312	eP	Pn	06 54 42.1 +2.6
ATAF	Djebel Tarf	18.51	274	P	Pn	06 54 41.6 +1.6
ATAF	Djebel Tarf	18.51	274	P	Pn	06 54 41.6 +1.6
MOF	Molkenrain	18.53	313	eP	Pn	06 54 44.9 +4.7
KLNR	Kaliningrad	18.57	347	i P	Pn	06 54 41.5 +1.1
KLNR				pmax	pmax	
	comp=Z,335nm,1.3s					
KLNR	Kaliningrad	18.57	347	i P	Pn	06 54 41.5 +1.1
	comp=Z,335nm,1.3s					
TOD	Tromm	18.58	320	eP	Pn	06 54 42.5 +1.8
IDID	Didziasalis	18.65	359	eP	P	06 54 40.7 -0.3
IDID				IAmb	IAmb	06 54 49.8
	comp=Z,25nm,1.1s					
IDID	Didziasalis	18.65	359	eP	P	06 54 40.7 -0.3
ECH	Echery	18.70	314	eP	Pn	06 54 42.8 +0.6
ECH	Echery	18.70	314	eP	Pn	06 54 42.8 +0.6
LANF	Langenberg	18.75	317	eP	Pn	06 54 46.0 +3.3
KTD	Kalmit	18.79	318	eP	Pn	06 54 45.1 +1.9
IZAR	Zarasai	19.09	358	eP	P	06 54 45.5 -0.4
IZAR				IAmb	IAmb	06 55 02.9
	comp=Z,51nm,1.4s					
IZAR	Zarasai	19.09	358	eP	P	06 54 45.5 -0.4
SSB	Saint Sauveur	19.11	304	eP	Pn	06 54 48.7 +1.6
SSB	Saint Sauveur	19.11	304	eP	P	06 54 46.4 +0.1
SSB				pmax	pmax	
	comp=Z,75nm,1.2s					
SSB	Saint Sauveur	19.11	304	eP	P	06 54 46.4 +0.1
	comp=Z,75nm,1.2s					
SSB	Saint Sauveur	19.11	304	eP	P	06 54 46.4 +0.1
	comp=Z,76nm,1.2s					
ADJB	Djebel Djouab	19.14	276	P	Pn	06 54 48.1 +0.5
ADJB	Djebel Djouab	19.14	276	P	Pn	06 54 48.1 +0.5
THEF	They Montfort	19.39	313	eP	Pn	06 54 51.4 +1.0
THEF	They Montfort	19.39	313	eP	Pn	06 54 51.4 +1.0
ABH	Alteburg	19.40	319	eP	Pn	06 54 51.4 +0.8
EMHD	Djebel Mahouad	19.52	276	P	Pn	06 54 52.9 +0.7
EMHD	Djebel Mahouad	19.52	276	P	Pn	06 54 52.9 +0.7
OBN	Obninsk	19.52	16	P	P	06 54 49.4 -1.3
	comp=Z,3.4nm,0.3s,baz=228,slow=8.2,SNR=13					
OBN				LR	LR	07 02 31.2
	comp=Z,1μm,21.4s,baz=206,slow=37					
OBN	Obninsk	19.52	16c	i P	P	06 54 49.9 -0.7
OBN				i S	S	06 58 30.2 -0.2
OBN				pmax	pmax	
	comp=Z,44nm,1.4s					
OBN				MLR	MLR	
	comp=Z,2μm,14.0s					
OBN	Obninsk	19.52	16	i P	P	06 54 49.9 -0.7
	comp=Z,44nm,1.4s					
OBN				i S	S	06 58 30.2 -0.2
	comp=Z,2μm,14.0s					
OBN	Obninsk	19.52	16	eP	P	06 54 50.0 -0.6
	comp=Z,259nm,1.7s					
RUP	Ruppelstein	19.56	318	eP	Pn	06 54 53.1 +0.6
FILF	Fillols	19.85	295	eP	Pn	06 54 55.6 -0.4
FILF	Fillols	19.85	295	eP	Pn	06 54 55.6 -0.4
LRDF	Laroque-de-Fa	19.93	296	eP	P	06 54 55.6 +0.4
LRDF	Laroque-de-Fa	19.93	296	eP	P	06 54 55.6 +0.4
PLDF	La Plantade	19.95	305	eP	P	06 54 56.2 +0.8
PLDF	La Plantade	19.95	305	eP	P	06 54 56.2 +0.8
LBL	Lubilhac	19.96	303	eP	Pn	06 54 57.0 -0.4
LBL	Lubilhac	19.96	303	eP	Pn	06 54 57.0 -0.4
WLF	Walferdange	20.03	317	P	Pn	06 54 58.4 +0.3
	comp=Z,138nm,2.1s					
WLF	Walferdange	20.03	317	eP	Pn	06 54 57.7 -0.3
WLF				pmax	pmax	
	comp=Z,144nm,1.2s					
WLF	Walferdange	20.03	317	eP	Pn	06 54 57.7 -0.3
	comp=Z,144nm,1.2s					
WLF	Walferdange	20.03	317	eP	Pn	06 54 57.7 -0.3
	comp=Z,144nm,1.2s					
VALF	Valcebollere	20.22	294	eP	Pn	06 54 59.9 -0.7
VALF	Valcebollere	20.22	294	eP	Pn	06 54 59.9 -0.7
BSD	Bornholm Skovb	20.27	339	i P	P	06 54 59.2 +0.4
BSD				i S	S	06 58 43.4 -2.0
	comp=Z,4μm,12.0s					
BSD	Bornholm Skovb	20.27	339	eP	P	06 54 59.2 +0.4
BSD				i S	S	06 58 43.4 -2.0
BSD				MLR	MLR	
	comp=Z,4μm,12.0s					
BSD	Bornholm Skovb	20.27	339	eP	P	06 54 58.7 -0.1
	comp=Z,23nm,1.7s,SNR=35					
PYM	Petit Puy Mans	20.28	304	eP	Pn	06 55 00.3 -0.8
PYM	Petit Puy Mans	20.28	304	eP	Pn	06 55 00.3 -0.8
AGO	Saint Agoulin	20.30	305	eP	Pn	06 55 00.5 -0.7
AGO	Saint Agoulin	20.30	305	eP	Pn	06 55 00.5 -0.7
MOS	Moscow	20.34	17	eP	Pn	06 55 02.0 +0.4
MOS				e		06 55 09.1
MOS				e		06 55 22.6
MOS				eS	Sn	06 58 51.0 +0.9
MOS				pmax	pmax	
	comp=Z,70nm,1.0s					
MOS				pmax	pmax	
	comp=Z,300nm,1.8s					
MOS				MLR	MLR	
	comp=Z,2μm,14.0s					
MOS				MLR	MLR	
	comp=E,1μm,12.0s					
MOS	Moscow	20.34	17	eP	Pn	06 55 02.0 +0.4
	comp=E,300nm,1.8s					
FRNF	Fournols	20.47	303	eP	Pn	06 55 03.3 0.0
FRNF	Fournols	20.47	303	eP	Pn	06 55 03.3 0.0
MEM	Membach	20.63	319	P	Pn	06 55 04.5 -0.5
	comp=Z,144nm,1.5s					
MEM	Membach	20.63	319	P	Pn	06 55 04.4 -0.6
	comp=Z,144nm,1.5s					
EBNR	Beni Rached	20.64	277	P	P	06 55 04.0 +0.9
EBNR	Beni Rached	20.64	277	P	P	06 55 04.0 +0.9
HGN	Heimansgroeve	20.75	319	eP	Pn	06 55 06.1 -0.4
	comp=Z,376nm,1.6s					
HGN				eS	Sn	06 59 00.9 +0.7
HGN				eL	L	07 05 27.7
	comp=Z,558nm,21.3s					
ECHA	Ech Chlef	20.80	276	P	P	06 55 04.8 +0.2
ECHA	Ech Chlef	20.80	276	P	P	06 55 04.8 +0.2
SALF	Salau	20.88	295	eP	Pn	06 55 11.3 +3.2
BCLA	Clavier	20.90	318	P	Pn	06 55 07.3 -0.9
	comp=Z,220nm,1.4s					
BCLA	Clavier	20.90	318	P	Pn	06 55 07.2 -1.0
	comp=Z,220nm,1.4s					
BEBN	Eben Emael	20.91	319	P	Pn	06 55 07.7 -0.6
BEBN	Eben Emael	20.91	319	P	Pn	06 55 07.6 -0.6
ETRT	Tiaret	20.98	274	P	P	06 55 05.5 -1.3
ETRT	Tiaret	20.98	274	P	P	06 55 05.5 -1.3
WTSB	Winterswijk	21.04	323	eP	P	06 55 08.3 +1.2
	comp=Z,475nm,2.3s					
WTSB	Winterswijk	21.04	323	eP	P	06 55 08.3 +1.2
	comp=Z,475nm,2.3s					
EANR	'Ain N'Sour	21.04	276	P	P	06 55 07.7 +0.3
EANR	'Ain N'Sour	21.04	276	P	P	06 55 07.7 +0.3
DOU	Dourbes	21.11	317	P	P	06 55 09.2 +1.2
	comp=Z,104nm,1.4s					
DOU	Dourbes	21.11	317	P	P	06 55 09.1 +1.2
	comp=Z,104nm,1.4s					
MELF	Melles	21.21	295	eP	P	06 55 11.7 +2.5
MELF	Melles	21.21	295	eP	P	06 55 11.7 +2.5
SNF	Seneffe	21.50	317	P	P	06 55 13.0 +1.0
SNF	Seneffe	21.50	317	P	P	06 55 13.0 +1.0
COP	Copenhagen	21.51	337	i P	P	06 55 14.1 +2.0
COP				i S	Sn	06 59 14.2 -4.0
	comp=Z,2μm,13.0s					
COP	Copenhagen	21.51	337	eP	P	06 55 14.1 +2.0
COP				i S	Sn	06 59 14.2 -4.0
COP				MLR	MLR	
	comp=Z,2μm,13.0s					
COP	Copenhagen	21.51	337	eP	P	06 55 14.1 +2.0
	comp=Z,2μm,13.0s					
LABF	Labassere	21.73	295	eP	P	06 55 16.0 +1.3
LABF	Labassere	21.73	295	eP	P	06 55 16.0 +1.3
VIEF	Viey	21.75	295	eP	P	06 55 18.0 +3.1
VSU	Vasula	21.80	359	ceP	P	06 55 16.1 +0.9
VSU				pmax	pmax	
	comp=Z,208nm,1.2s					
VSU	Vasula	21.80	359	eP	P	06 55 15.3 +0.1
	comp=Z,223nm,1.4s,SNR=34					
MTSE	Matsula	22.16	355	eP	P	06 55 19.8 +0.7
	SNR=34					
ORDF	Ordiarp	22.48	296	eP	P	06 55 23.8 +1.0
ORDF	Ordiarp	22.48	296	eP	P	06 55 23.8 +1.0
LARF	Larrau	22.50	295	eP	P	06 55 24.2 +1.2
LARF	Larrau	22.50	295	eP	P	06 55 24.2 +1.2
OSSF	Osses	22.73	296	eP	P	06 55 25.1 -0.2
OSSF	Osses	22.73	296	eP	P	06 55 25.1 -0.2
MUD	Monsted U'grnd	23.22	334	i P	P	06 55 31.3 +1.1
MUD				i S	S	06 59 48.7 +7.5
	comp=Z,4μm,11.0s					
MUD	Monsted U'grnd	23.22	334	eP	P	06 55 31.3 +1.1
MUD				i S	S	06 59 48.7 +7.5
MUD				MLR	MLR	
	comp=Z,4μm,11.0s					
MUD	Monsted U'grnd	23.22	334	eP	P	06 55 31.3 +1.1
	comp=Z,4μm,11.0s					
TAM	Tamanrasset	23.30	240	eP	P	06 55 32.5 +0.9
TAM				pmax	pmax	
	comp=Z,44nm,1.1s					
TAM	Tamanrasset	23.30	240	eP	P	06 55 32.5 +0.9
	comp=Z,44nm,1.1s					
TAM	Tamanrasset	23.30	240	eP	P	06 55 32.5 +0.9
	comp=Z,44nm,1.1s					
MEF	Metsahovi	23.63	356	eP	P	06 55 34.8 +0.5
	comp=Z,177nm,1.9s,SNR=33					
GEYT	Alibeck	24.56	78	P	P	06 55 43.3 +0.1
	comp=Z,9.1nm,0.7s,baz=281,slow=8.9,SNR=24					
ES19	SONSECA Array	24.58	287	eP	P	06 55 43.5 0.0
ES19	SONSECA Array	24.58	287	eP	P	06 55 43.5 0.0
RAF	Rauma	24.61	354	eP	P	06 55 43.5 +0.1
	comp=Z,45nm,1.4s,SNR=28					
ESDC	Sonseca Array	24.63	287	P	P	06 55 44.0 +0.1
	comp=Z,42nm,0.9s,baz=80,slow=9.9,SNR=139					
ESLA	Sonseca Array	24.63	287	eP	P	06 55 44.0 +0.1
	comp=Z,132nm,1.3s					
ESLA	Sonseca Array	24.63	287	eP	P	06 55 44.0 +0.1
	comp=Z,132nm,1.3s					
FINES	FINESS Array B	24.80	359	P	P	06 55 44.7 -0.4
	comp=Z,15nm,0.8s,baz=157,slow=10,SNR=47					
FINES				LR	LR	07 06 22.3
	comp=Z,2μm,20.0s,baz=192,slow=39					
FIA1	FINESS Array S	24.80	359	eP	P	06 55 44.8 -0.3
FIA1	FINESS Array S	24.80	359	eP	P	06 55 44.9 -0.3
PAB	San Pablo	24.94	286	eP	P	06 55 47.0 +0.3
PAB				pmax	pmax	
	comp=Z,68nm,1.0s					
PAB	San Pablo	24.94	286	eP	P	06 55 47.0 +0.3
	comp=Z,68nm,1.0s					
PAB	San Pablo	24.94	286	eP	P	06 55 47.0 +0.3
	comp=Z,68nm,1.0s					
HFS	Hagfors	25.03	344	P	P	06 55 47.2 -0.1
	comp=Z,20nm,0.8s,baz=152,slow=6.7,SNR=32					
HFS				LR	LR	07 06 49.4
	comp=Z,1μm,20.4s,baz=172,slow=40					
KLMR	Klimovskoe	25.43	14	eP	P	06 55 49.2 -1.6
KLMR				e		06 56 25.2
KLMR				pmax	pmax	
	comp=Z,206nm,1.4s					
KLMR	Klimovskoe	25.43	14	eP	P	06 55 49.2 -1.6
	comp=Z,206nm,1.4s					
KONO	Kongsberg	25.65	339	eP	P	06 55 52.8 -0.1
KONO				pmax	pmax	
	comp=Z,203nm,1.7s					
KONO	Kongsberg	25.65	339	eP	P	06 55 52.8 -0.1
	comp=Z,203nm,1.7s					
KONO	Kongsberg	25.65	339	eP	P	06 55 52.8 -0.1
	comp=Z,204nm,1.7s					
AKTK	Aktyubinsk	26.00	48	P	P	06 55 56.2 +0.1
	comp=Z,72nm,1.1s					
AKTO	Aktyubinsk	26.00	48	P	P	06 55 56.4 +0.2
	comp=Z,37nm,1.0s,baz=249,slow=9.5,SNR=68					
AKTO				LR	LR	07 10 38.8
	comp=Z,1μm,18.0s,baz=259,slow=47					
AKTO	Aktyubinsk	26.00	48	P	P	06 55 56.2 +0.1
AKTO				pmax	pmax	
	comp=Z,72nm,1.1s					
NC602	NORSAR Array S	26.07	342	eP	P	06 55 56.5 -0.1
NC602	NORSAR Array S	26.07	342	eP	P	06 55 56.5 -0.1
NAO01	NORSAR Array S	26.32	342	eP	P	06 55 59.2 +0.3
NAO01	NORSAR Array S	26.32	342	eP	P	06 55 59.2 +0.3
NC405	NORSAR Array S	26.36	343	eP	P	06 55 59.9 +0.7
NC405	NORSAR Array S	26.36	343	eP	P	06 55 59.9 +0.7
MDT	Midelt	26.37	271	P	P	06 56 00.2 +0.4
	comp=Z,27nm,1.0s,baz=82,slow=12,SNR=19					
MDT				LR	LR	07 08 42.3
	comp=Z,679nm,19.9s,baz=88,slow=42					
NB201	NORSAR Array S	26.40	343	eP	P	06 56 00.2 +0.6
NB201	NORSAR Array S	26.40	343	eP	P	06 56 00.2 +0.6
NB2	NORSAR Subarra	26.41	342	P	P	06 55 59.0 -0.8
	comp=Z,89nm,1.2s,baz=150,slow=9.3					
NB2	NORSAR Subarra	26.41	342	P	P	06 55 59.0 -0.8
	baz=150,slow=9.3					
NB2	NORSAR Subarra	26.41	342	P	P	06 55 59.0 -0.8
	comp=Z,89nm,1.2s,SNR=3.0					
NOA	NORSAR Array B	26.41	342	P	P	06 56 00.2 +0.4
	comp=Z,0.9nm,0.6s,baz=148,slow=9.5,SNR=16					
NOA				LR	LR	07 08 18.8
	comp=Z,1μm,19.6s,baz=150,slow=41					
NBO02	NORSAR Array S	26.51	342	eP	P	06 56 00.4 -0.2
NBO02	NORSAR Array S	26.51	342	eP	P	06 56 00.4 -0.2
NBO00	NORSAR Array S	26.51	342	eP	P	06 56 01.6 +0.9
NBO00	NORSAR Array S	26.51	342	eP	P	06 56 01.6 +0.9
NC303	NORSAR Array S	26.54	343	eP	P	06 56 03.3 +2.5
NC303	NORSAR Array S	26.54	343	eP	P	06 56 03.4 +2.5
PBRG	Braganca	26.68	292	eP	P	06 56 02.3 -0.2
	comp=Z,157nm,1.7s					
PBRG				eS	S	07 00 51.2 +14
PBRG	Braganca	26.68	292	eP	P	06 56 02.3 -0.2
	comp=Z,157nm,1.7s					
NC204	NORSAR Array S	26.73	342	eP	P	06 56 02.5 -0.1
NC204	NORSAR Array S	26.73	342	eP	P	06 56 02.5 -0.1
AB31	Akbulak array	26.82	52	i P	P	06 56 03.1 -0.5
AB31				pmax	pmax	
	comp=Z,19nm,1.0s					
AB31	Akbulak array	26.82	52	i P	P	06 56 03.1 -0.5
	comp=Z,19nm,1.0s					
ABKAR	Akbulak array	26.82	52	eP	P	06 56 03.6 0.0
ABKAR	Akbulak array	26.82	52	eP	P	06 56 03.6 0.0
DAMY	Dhamar	26.82	141	eP	P	06 56 04.7 +0.5
	comp=Z,107nm,1.5s					
DAMY	Dhamar	26.82	141	eP	P	06 56 04.7 +0.5
	comp=Z,107nm,1.5s					
MVO	Moncorvo	26.91	290	eP	P	06 56 04.8 +0.3
	comp=Z,133nm,1.7s					
MVO				eS	S	07 00 50.6 +10
MVO	Moncorvo	26.91	290	eP	P	06 56 04.8 +0.3
	comp=Z,133nm,1.7s					
NAZ	Nazwa, Dubai	26.96	108	i P	P	06 56 05.7 +0.7
	SNR=14					
NAZ	Nazwa, Dubai	26.96	108	P	P	06 56 05.7 +0.7
	SNR=14					
NAZ	Nazwa, Dubai	26.96	108	P	P	06 56 08.0 +2.9
	SNR=18					
BANOM	Banah	26.97	105	i P	P	06 56 05.3 +0.2
	SNR=14					
BANOM	Banah	26.97	105	P	P	06 56 05.3 +0.2
	SNR=14					
BANOM	Banah	26.97	105	P	P	06 56 06.7 +1.6
	SNR=18					
FAQ	Al Faqa, Dubai	27.04	108	P	P	06 56 08.0 +2.2
	SNR=14					
PBAR	Barrancos	27.16	284	eP	P	06 56 06.6 -0.1
	comp=Z,226nm,2.1s					
PBAR				eS	S	07 00 42.5 -2.0
PBAR	Barrancos	27.16	284	eP	P	06 56 06.6 -0.1
	comp=Z,226nm,2.1s					
PMRV	Marv??o	27.29	286	eP	P	06 56 07.6 -0.3
	comp=Z,72nm,1.5s					
PMRV				eS	S	07 00 46.0 -0.6
PMRV	Marv??o	27.29	286	eP	P	06 56 07.6 -0.3
	comp=Z,72nm,1.5s					
PMRV				eS	S	07 00 46.0 -0.6
PCBR	Castelo Branco	27.32	287	eP	P	06 56 09.2 +1.0
PCBR	Castelo Branco	27.32	287	eP	P	06 56 09.2 +1.0
MTE	Manteigas	27.34	289	eP	P	06 56 08.5 +0.1
	comp=Z,80nm,1.4s					
MTE				eS	S	07 01 00.6 +13
MTE	Manteigas	27.34	289	eP	P	06 56 08.7 +0.3
	comp=Z,40nm,0.9s					
MTE	Manteigas	27.34	289	eP	P	06 56 08.7 +0.3
	comp=Z,40nm,0.9s					
UOSS	Minazif	27.40	107	P	P	06 56 08.9 -0.1
	SNR=10					
UOSS	Minazif	27.40	107	eP	P	06 56 09.2 +0.2
	comp=Z,3.3nm,1.2s					
HATD	Hatta, Dubai	27.41	107	i P	P	06 56 10.0 +0.9
	SNR=7.3					
HATD	Hatta, Dubai	27.41	107	P	P	06 56 10.0 +0.9
	SNR=23					
HATD	Hatta, Dubai	27.41	107	P	P	06 56 10.0 +0.9
	SNR=23					
PVRL	Vila Real	27.43	290	eP	P	06 56 09.9 +0.8
PVRL	Vila Real	27.43	290	eP	P	06 56 09.9 +0.8
ASHO	Ashiyiah	27.43	108	i P	P	06 56 09.3 0.0
	SNR=12					
ASHO	Ashiyiah	27.43	108	P	P	06 56 09.3 0.0
	SNR=12					
ASHO	Ashiyiah	27.43	108	P	P	06 56 10.7 +1.4
	SNR=19					
POLO	Lamas de Olo	27.48	291	eP	P	06 56 10.2 +0.5
	comp=Z,43nm,1.3s					
POLO				eS	S	07 00 54.9 +5.2
POLO	Lamas de Olo	27.48	291	eP	P	06 56 10.2 +0.5
	comp=Z,43nm,1.3s					
PESTR	Estremoz	27.50	285	eP	P	06 56 09.6 -0.2
	comp=Z,62nm,2.3s					
PESTR				eS	S	07 00 48.4 -1.6
PESTR	Estremoz	27.50	285	eP	P	06 56 09.6 -0.2
	comp=Z,62nm,2.3s					
PVIS	Viseu	27.59	289	eP	P	06 56 11.2 +0.6
	comp=Z,77nm,1.3s					
PVIS	Viseu	27.59	289	eP	P	06 56 11.2 +0.6
	comp=Z,77nm,1.3s					
KIB	El Ksiba	27.59	271	i P	P	06 56 12.0 +1.3
PVAQ	Vaqueiros	27.80	282	eP	P	06 56 12.3 -0.2
	comp=Z,105nm,1.6s					
PVAQ				eS	S	07 00 59.8 +5.2
PVAQ	Vaqueiros	27.80	282	eP	P	06 56 12.3 -0.2
	comp=Z,105nm,1.6s					
PGAV	Gavieira, Arco	27.82	292	eP	P	06 56 12.0 -0.8
	comp=Z,131nm,1.7s					
PGAV				eS	S	07 00 59.1 +4.0
PGAV	Gavieira, Arco	27.82	292	eP	P	06 56 12.0 -0.8
	comp=Z,131nm,1.7s					
PBEJ	Beja	27.82	283	eP	P	06 56 12.7 0.0
	comp=Z,98nm,1.3s					
PBEJ	Beja	27.82	283	eP	P	06 56 12.7 0.0
	comp=Z,98nm,1.3s					
EKA	Eskdalemuir Ar	27.83	322	P	P	06 56 14.4 +2.0
	comp=Z,23nm,1.0s,baz=117,slow=9.4,SNR=11					
EKA				LR	LR	07 08 18.1
	comp=Z,600nm,20.1s,baz=110,slow=39					
ESK	Eskdalemuir	27.84	322	eP	P	06 56 14.1 +1.5
ESK				eSP	sP	06 56 20.6 +0.6
ESK	Eskdalemuir	27.84	322	eP	P	06 56 14.1 +1.5
ESK	Eskdalemuir	27.84	322	eP	P	06 56 14.1 +1.5
ESK				esP	sP	06 56 20.6 +0.6
EVO	Evora	27.87	285	eP	P	06 56 13.3 +0.2
	comp=Z,44nm,1.5s					
EVO	Evora	27.87	285	eP	P	06 56 13.3 +0.2
	comp=Z,44nm,1.5s					
PMTG	Montargil	27.97	286	eP	P	06 56 13.8 -0.2
	comp=Z,49nm,

PNCL	**Nicolau / Gran**	**28.33**	**284**	*e*P	**P**	**06 56 17.4**	**+0.2**
	comp=Z,100nm,1.6s						
PNCL				*e*S	**S**	**07 01 00.0**	**-2.9**
PNCL	**Nicolau / Gran**	**28.33**	**284**	*e*P	**P**	**06 56 17.4**	**+0.2**
	comp=Z,100nm,1.6s						
ARQ	**Araqi**	**28.52**	**110**	P	**P**	**06 56 20.1**	**+1.1**
	SNR=14						
ARQ	**Araqi**	**28.52**	**110**	P	**P**	**06 56 20.1**	**+1.1**
	SNR=14						
MORF	**Marmelete**	**28.55**	**282**	*e*S	**S**	**07 01 06.8**	**+0.2**
MORF	**Marmelete**	**28.55**	**282**	*e*S	**S**	**07 01 06.8**	**+0.2**
PFVI	**Vila Bisbo**	**28.72**	**282**	*e*S	**S**	**07 01 14.6**	**+5.5**
ATD	**Arta Tunnel**	**28.73**	**147**	P	**P**	**06 56 19.4**	**-1.6**
	comp=Z,1.9nm,0.3s,baz=75,slow=12,SNR=2.3						
PMST	**Lisbon--Monsan**	**28.75**	**285**	*e*P	**P**	**06 56 22.3**	**+1.3**
	comp=Z,139nm,1.5s						
PMST	**Lisbon--Monsan**	**28.75**	**285**	*e*P	**P**	**06 56 22.3**	**+1.3**
	comp=Z,139nm,1.5s						
PMAFR	**Mafra**	**28.80**	**286**	*e*P	**P**	**06 56 25.5**	**+4.1**
PMAFR				*e*S	**S**	**07 01 13.4**	**+3.0**
ARU	**Arti**	**28.84**	**37**	P	**P**	**06 56 21.7**	**+0.2**
	comp=Z,10nm,0.9s,baz=248,slow=7.5,SNR=25						
ARU				LR	LR	07 10 10.6	
	comp=Z,911nm,19.6s,baz=230,slow=41						
ARU	**Arti**	**28.84**	**37**	*d i*P	**P**	**06 56 21.6**	**0.0**
ARU						06 57 11.5	
ARU				PPP	PPP	06 57 25.3	
ARU						06 59 27.8	
ARU				S	**S**	**07 01 13.9**	**+3.2**
ARU				SS	**SnSn**	**07 02 36.8**	**+4.2**
ARU				pmax	pmax		
	comp=Z,56nm,1.7s						
ARU				MLR	MLR		
	comp=Z,1μm,16.0s						
ARU	**Arti**	**28.84**	**37**	*e*P	**P**	**06 56 21.1**	**-0.4**
	comp=Z,42nm,1.2s						
ARU	**Arti**	**28.84**	**37**	*e*P	**P**	**06 56 21.1**	**-0.4**
	comp=Z,42nm,1.2s						
SMDO	**Samad**	**29.84**	**108**	P	**P**	**06 56 31.1**	**+0.3**
	SNR=12						
SMDO	**Samad**	**29.84**	**108**	P	**P**	**06 56 31.1**	**+0.3**
	SNR=12						
SVE	**Sverdlovsk**	**30.04**	**37⇑**	*e*P	**P**	**06 56 32.5**	**+0.3**
SVE				*e*S	**S**	**07 01 35.2**	**+5.8**
SVE				pmax	pmax		
	comp=Z,48nm,1.3s						
SVE				MLR	MLR		
	comp=Z,1μm,15.0s						
SVE	**Sverdlovsk**	**30.04**	**37**	*e*P	**P**	**06 56 32.5**	**+0.3**
	comp=Z,48nm,1.3s						
WSAR	**Wadi Sarin**	**30.18**	**108**	P	**P**	**06 56 35.0**	**+1.3**
	comp=Z,12nm,0.9s,baz=329,slow=10.0,SNR=6.4						
WSAR				LR	LR	07 13 31.5	
	comp=Z,701nm,19.1s,baz=317,slow=46						
WBK	**Wadi Bani Khal**	**30.79**	**108**	P	**P**	**06 56 43.1**	**+4.0**
	SNR=6.0						
APA	**Apatity**	**31.14**	**5⇓**	*i*P	P	06 56 47.6	+5.9
APA				*i*		06 57 53.6	
APA				*i*		06 59 42.0	
APA				*i* S	**S**	**07 01 54.0**	**+7.6**
APA				*i* SS	**SnSn**	**07 03 34.0**	**+5.7**
APA				MLR	MLR		
	comp=Z,3μm,11.0s						
TORD	**Torodi Ar. Bea**	**32.74**	**231**	P	**P**	**06 56 56.4**	**+0.1**
	comp=Z,48nm,1.0s,baz=37,slow=8.5,SNR=198						
TORD				PcP	**PcP**	**06 59 41.2**	**-0.4**
	comp=Z,2.7nm,0.9s,baz=4.8,slow=3.5,SNR=2.9						
ARA0	**ARCESS Array S**	**32.93**	**359**	*e*P	**P**	**06 56 57.5**	**0.0**
ARA0	**ARCESS Array S**	**32.93**	**359**	*e*P	**P**	**06 56 57.5**	**0.0**
ARCES	**ARCESS Array B**	**32.93**	**359**	P	**P**	**06 56 57.6**	**+0.2**
	comp=Z,11nm,0.8s,baz=172,slow=7.4,SNR=24						
ARCES				LR	LR	07 12 10.6	
	comp=Z,607nm,20.8s,baz=168,slow=40						
ZRNK	**Zerenda**	**33.26**	**47**	P	**P**	**06 57 00.4**	**-0.1**
ZRNK				pmax	pmax		
	comp=Z,44nm,1.1s						
ZRNK	**Zerenda**	**33.26**	**47**	P	**P**	**06 57 00.4**	**-0.1**
	comp=Z,44nm,1.1s						
ZRNK	**Zerenda**	**33.26**	**47**	*e*P	**P**	**06 57 01.3**	**+0.8**
	comp=Z,38nm,1.0s						
KK31	**Karatay Array**	**33.54**	**65**	*i* P	**P**	**06 57 03.1**	**0.0**
KK31				pmax	pmax		
	comp=Z,13nm,0.9s						
KK31	**Karatay Array**	**33.54**	**65**	*i* P	**P**	**06 57 03.1**	**0.0**
	comp=Z,13nm,0.9s						
KKAR	**Karatay Array**	**33.54**	**65**	*e*P	**P**	**06 57 03.5**	**+0.4**
KKAR	**Karatay Array**	**33.54**	**65**	*e*P	**P**	**06 57 03.5**	**+0.4**
KKAR	**Karatay Array**	**33.54**	**65**	*e*P	**P**	**06 57 03.5**	**+0.4**
BRVK	**Borovoye**	**34.04**	**47**	*d i*P	**P**	**06 57 07.8**	**+0.5**
BRVK				pmax	pmax		
	comp=Z,31nm,1.7s						
BRVK	**Borovoye**	**34.04**	**47**	*i* P	**P**	**06 57 07.8**	**+0.5**
	comp=Z,31nm,1.7s						
BRVK	**Borovoye**	**34.04**	**47**	*e*P	**P**	**06 57 08.2**	**+0.9**
	comp=Z,24nm,1.2s						
BVA0	**Borovoye Array**	**34.09**	**47**	*i* P	**P**	**06 57 08.0**	**+0.2**
BVA0				pmax	pmax		
	comp=Z,22nm,1.2s						
BVA0	**Borovoye Array**	**34.09**	**47**	*i* P	**P**	**06 57 08.0**	**+0.2**
	comp=Z,22nm,1.2s						
OTUK	**Ortayu**	**34.77**	**56**	P	**P**	**06 57 14.0**	**+0.3**
OTUK				pmax	pmax		
	comp=Z,70nm,0.9s						
OTUK	**Ortayu**	**34.77**	**56**	P	**P**	**06 57 14.0**	**+0.3**
	comp=Z,70nm,0.9s						
MNAS	**Manas**	**35.06**	**66**	P	**P**	**06 57 16.1**	**-0.3**
MNAS				pmax	pmax		
	comp=Z,20nm,1.5s						
MNAS	**Manas**	**35.06**	**66**	P	**P**	**06 57 16.1**	**-0.3**
	comp=Z,20nm,1.5s						
PMPS	**Porto Santo**	**35.69**	**277**	*e*P	**P**	**06 57 23.6**	**+1.9**
PMPS	**Porto Santo**	**35.69**	**277**	*e*P	**P**	**06 57 23.6**	**+1.9**
EKS2	**Erkin-Say**	**35.97**	**66**	*e*P	**P**	**06 57 25.0**	**+0.8**
EKS2	**Erkin-Say**	**35.97**	**66**	*e*P	**P**	**06 57 25.0**	**+0.8**
EKS2	**Erkin-Say**	**35.97**	**66**	*e*P	**P**	**06 57 25.0**	**+0.8**
SFK	**Sufi-Kurgan**	**36.14**	**70**	P	**P**	**06 57 25.1**	**-0.8**
SFK				pmax	pmax		
	comp=Z,14nm,1.2s						
SFK	**Sufi-Kurgan**	**36.14**	**70**	P	**P**	**06 57 25.1**	**-0.8**
	comp=Z,14nm,1.2s						
PMAR	**Madeira**	**36.26**	**277**	*e*P	**P**	**06 57 28.3**	**+1.5**
PMAR	**Madeira**	**36.26**	**277**	*e*P	**P**	**06 57 28.3**	**+1.5**
AAK	**Ala-Archa**	**36.50**	**66**	P	**P**	**06 57 29.1**	**+0.3**
	comp=Z,18nm,1.0s,baz=240,slow=6.3,SNR=27						
AAK	**Ala-Archa**	**36.50**	**66**	P	**P**	**06 57 29.5**	**+0.7**
AAK				pmax	pmax		
	comp=Z,25nm,1.2s						
AAK	**Ala-Archa**	**36.50**	**66**	P	**P**	**06 57 29.5**	**+0.7**
AAK	**Ala-Archa**	**36.50**	**66**	*e*P	**P**	**06 57 29.6**	**+0.8**
FRU	**Bishkek**	**36.57**	**65⇓**	*i*P	**P**	**06 57 29.0**	**-0.2**
FRU				*e*		06 58 54.0	
FRU				*e*S	**S**	**07 03 13.0**	**+2.0**
FRU				pmax	pmax		
	comp=Z,110nm,1.6s						
FRU	**Bishkek**	**36.57**	**65**	*i* P	**P**	**06 57 29.0**	**-0.2**
	comp=Z,110nm,1.6s						
TKM2	**Tokmak 2**	**37.27**	**65**	P	**P**	**06 57 35.2**	**-0.2**
TKM2				pmax	pmax		
	comp=Z,26nm,1.8s						
TKM2	**Tokmak 2**	**37.27**	**65**	P	**P**	**06 57 35.2**	**-0.2**
	comp=Z,26nm,1.8s						
TKM2	**Tokmak 2**	**37.27**	**65**	*e*P	**P**	**06 57 35.7**	**+0.2**
KSH	**Kashi**	**38.11**	**70**	P	**P**	**06 57 41.5**	**-0.9**
KSH				*es*P	sP	06 57 48.5	-1.4
KSH				*e*PP	**PnPn**	**06 59 10.2**	**-0.8**
KSH				S	**S**	**07 03 30.0**	**-4.7**
KSH				PcS	**PcS**	**07 03 48.4**	**+2.1**
KSH				SS	**SnSn**	**07 06 03.6**	**-14**
KSH				pmax	pmax		
	comp=Z,220nm,4.9s						
KSH				LR	LR		
	comp=Z,420nm,15.6s						
KSH				LR	LR		
	comp=Z,300nm,12.2s						
KSH				LR	LR		
	comp=Z,500nm,23.9s						
KMBO	**Kilima Mbogo**	**38.75**	**164**	*e*P	**P**	**06 57 50.8**	**+2.7**
KMBO	**Kilima Mbogo**	**38.75**	**164**	*e*P	**P**	**06 57 50.8**	**+2.7**
KURBB	**Kurchatov Arra**	**38.87**	**52**	P	**P**	**06 57 48.9**	**+0.4**
	comp=Z,32nm,0.9s,baz=277,slow=8.6,SNR=135						
KURBB				PcP	**PcP**	**06 59 59.9**	**+0.7**
	comp=Z,3.9nm,0.8s,baz=270,slow=4.3,SNR=4.2						
KURK	**Kurchatov**	**38.93**	**52**	*e*P	**P**	**06 57 49.3**	**+0.3**
KURK						06 59 59.9	
KURK	**Kurchatov**	**38.93**	**52**	*e*P	**P**	**06 57 49.3**	**+0.3**
KURK	**Kurchatov**	**38.93**	**52**	*e*P	**P**	**06 57 49.3**	**+0.3**
KURK				PcP	**PcP**	**06 59 59.9**	**+0.5**
JMIC	**Jan Mayen**	**39.12**	**342**	LR	LR	07 15 49.4	
	comp=Z,419nm,18.6s,baz=120,slow=39						
PDGK	**Podgornoye**	**40.04**	**64**	P	**P**	**06 57 57.7**	**-0.6**
PDGK				pmax	pmax		
	comp=Z,16nm,0.9s						
PDGK	**Podgornoye**	**40.04**	**64**	P	**P**	**06 57 57.7**	**-0.6**
	comp=Z,16nm,0.9s						
MAKZ	**Makanchi**	**41.34**	**58**	P	**P**	**06 58 09.1**	**0.0**
MAKZ				pmax	pmax		
	comp=Z,23nm,1.2s						
MAKZ	**Makanchi**	**41.34**	**58**	P	**P**	**06 58 09.1**	**0.0**
	comp=Z,23nm,1.2s						
MAKZ	**Makanchi**	**41.34**	**58**	*e*P	**P**	**06 58 09.3**	**+0.2**
MK31	**Makanchi Array**	**41.55**	**58**	*i* P	**P**	**06 58 11.0**	**+0.1**
MK31				pmax	pmax		
	comp=Z,29nm,0.8s						
MK31	**Makanchi Array**	**41.55**	**58**	*i* P	**P**	**06 58 11.0**	**+0.1**
	comp=Z,29nm,0.8s						
MK31	**Makanchi Array**	**41.55**	**58**	*e*P	**P**	**06 58 11.2**	**+0.3**
MKAR	**Makanchi Array**	**41.55**	**58**	P	**P**	**06 58 11.1**	**+0.2**
	comp=Z,31nm,0.7s,baz=279,slow=6.3,SNR=182						
MKAR				PcP	**PcP**	**07 00 07.8**	**-0.1**
	comp=Z,5.8nm,0.9s,baz=273,slow=5.6,SNR=3.6						
MKAR				ScP	**ScP**	**07 03 56.9**	**-0.4**
	comp=Z,0.4nm,0.7s,baz=291,slow=3.7,SNR=3.7						
MKAR				LR	LR	07 20 24.8	
	comp=Z,325nm,18.9s,baz=278,slow=43						
MK01	**Makanchi Array**	**41.56**	**58**	*e*P	**P**	**06 58 10.5**	**-0.4**
MK01	**Makanchi Array**	**41.56**	**58**	*e*P	**P**	**06 58 10.5**	**-0.4**
DBIC	**Dimbokro**	**41.81**	**232**	P	**P**	**06 58 12.6**	**-0.6**
	comp=Z,47nm,1.0s,baz=28,slow=9.2,SNR=16						
DBIC				LR	LR	07 19 54.2	
	comp=Z,557nm,18.1s,baz=22,slow=42						
DBIC	**Dimbokro**	**41.81**	**232**	*e*P	**P**	**06 58 13.0**	**-0.2**
DBIC	**Dimbokro**	**41.81**	**232**	*e*P	**P**	**06 58 13.0**	**-0.2**
DBIC	**Dimbokro**	**41.81**	**232**	*e*P	**P**	**06 58 13.0**	**-0.2**
NVS	**Novosibirsk**	**41.84**	**46**	*e*P	**P**	**06 58 13.9**	**+0.9**
NVS				*e*		07 00 05.4	
NVS				pmax	pmax		
	comp=E,28nm,1.4s						
NVS				pmax	pmax		
	comp=Z,54nm,1.4s						
NVS	**Novosibirsk**	**41.84**	**46**	*e*P	**P**	**06 58 13.9**	**+0.9**
SPITS	**Spitsbergen Ar**	**41.86**	**357**	P	**P**	**06 58 15.6**	**+2.6**
	comp=Z,32nm,1.0s,baz=146,slow=11,SNR=11						
SPITS				LR	LR	07 16 54.8	
	comp=Z,525nm,19.3s,baz=170,slow=38						
TIC	**Toumodi**	**41.94**	**232**	*e*P	**P**	**06 58 13.7**	**-0.6**
KIC	**Kosan Boka**	**41.98**	**232**	*e*P	**P**	**06 58 14.4**	**-0.2**
	comp=Z,130nm,1.0s						
LIC	**Lamto**	**42.26**	**232**	*e*P	**P**	**06 58 16.7**	**-0.2**
	comp=Z,86nm,0.9s						
SCO	**Scoresbysund**	**42.54**	**338**	*i* P	**P**	**06 58 19.5**	**+1.0**
	comp=Z,41nm,1.3s						
SCO	**Scoresbysund**	**42.54**	**338**	*i* P	**P**	**06 58 19.5**	**+1.0**
SCO				pmax	pmax		
	comp=Z,41nm,1.3s						
SCO	**Scoresbysund**	**42.54**	**338**	*i* P	**P**	**06 58 19.5**	**+1.0**
	comp=Z,41nm,1.3s						
ZALV	**Zalesovo Beam**	**42.75**	**47**	P	**P**	**06 58 20.4**	**-0.1**
	comp=Z,4.0nm,0.7s,baz=263,slow=9.4,SNR=14						
ZALV				PcP	**PcP**	**07 00 12.1**	**+0.3**
	comp=Z,5.4nm,0.9s,baz=278,slow=4.3,SNR=2.9						
ZALV				LR	LR	07 21 42.7	
	comp=Z,485nm,18.4s,baz=264,slow=44						
DAG	**Danmarks Havn**	**44.96**	**346⇓**	*i*P	**P**	**06 58 37.7**	**-0.2**
	comp=Z,32nm,1.2s						
	comp=Z,950nm,19.0s						
DAG	**Danmarks Havn**	**44.96**	**346⇓**	*i*P	**P**	**06 58 37.7**	**-0.2**
DAG				pmax	pmax		
	comp=Z,51nm,1.2s						
DAG				MLR	MLR		
	comp=Z,990nm,19.0s						
NRIK	**Noril'sk**	**45.80**	**25**	P	**P**	**06 58 46.0**	**+1.3**
	comp=Z,18nm,0.9s,baz=245,slow=5.2,SNR=35						
NRIK				LR	LR	07 19 50.4	
	comp=Z,454nm,19.0s,baz=268,slow=39						
NRIK	**Noril'sk**	**45.80**	**25**	P	**P**	**06 58 46.0**	**+1.3**
NRIK				pmax	pmax		
	comp=Z,18nm,1.0s						
NRIK				MLR	MLR		
	comp=Z,454nm,19.0s						
WMQ	**Urumqi**	**45.81**	**61⇑**	*i*P	**P**	**06 58 46.4**	**+1.2**
WMQ				pP	pP	06 58 50.5	-0.1
WMQ				sP	sP	06 58 52.7	0.0
WMQ				PcP	**PP**	**07 00 27.7**	**-4.7**
WMQ				PP	PcP	07 00 34.0	+11
WMQ				S	**S**	**07 05 28.4**	**+0.1**
WMQ				sS	sS	07 05 36.3	-0.8
WMQ				pmax	pmax		
	comp=Z,21nm,1.0s						
WMQ				pmax	pmax		
	comp=Z,160nm,5.2s						
WMQ				LR	LR		
	comp=Z,400nm,20.0s						
WMQ				LR	LR		
	comp=Z,310nm,31.8s						
KRAR	**Krasnoyarsk**	**47.30**	**44⇑**	*e*P	**P**	**06 58 58.3**	**+1.7**
KRAR				pmax	pmax		
	comp=Z,36nm,0.6s						
KRAR	**Krasnoyarsk**	**47.30**	**44**	*e*P	**P**	**06 58 58.3**	**+1.7**
	comp=Z,36nm,0.6s						
SUMG	**Summit**	**48.17**	**338**	*i* P	**P**	**06 59 06.9**	**+3.2**
	comp=Z,680nm,15.0s						
SUMG	**Summit**	**48.17**	**338**	*e*P	**P**	**06 59 03.6**	**-0.1**
SUMG				pmax	pmax		
	comp=Z,39nm,1.5s						
SUMG	**Summit**	**48.17**	**338**	*e*P	**P**	**06 59 03.6**	**-0.1**
	comp=Z,39nm,1.5s						
SUMG	**Summit**	**48.17**	**338**	*e*P	**P**	**06 59 03.6**	**-0.1**
	comp=Z,39nm,1.5s						
HYB	**Hyderabad**	**48.97**	**99**	*i* P	**P**	**06 59 10.0**	**-0.1**
LSZ	**Lusaka**	**51.68**	**179**	*e*P	**P**	**06 59 31.4**	**+0.9**
LSZ				*e*		07 00 44.5	
LSZ				pmax	pmax		
	comp=Z,17nm,1.3s						
LSZ	**Lusaka**	**51.68**	**179**	*e*P	**P**	**06 59 31.4**	**+0.9**
	comp=Z,17nm,1.3s						
LSZ	**Lusaka**	**51.68**	**179**	*e*P	**P**	**06 59 31.4**	**+0.9**
	comp=Z,17nm,1.3s						
LSZ				*e*PcP	**PcP**	**07 00 44.5**	**+0.6**
MOY	**Mondy**	**52.76**	**49**	*e*P	**P**	**06 59 39.3**	**+1.0**
MOY	**Mondy**	**52.76**	**49**	*e*P	**P**	**06 59 39.3**	**+1.0**
LSA	**Lhasa**	**53.09**	**78**	P	**P**	**06 59 41.9**	**+0.4**
LSA				pmax	pmax		
	comp=Z,24nm,1.2s						
LSA	**Lhasa**	**53.09**	**78**	*e*P	**P**	**06 59 41.8**	**+0.3**
LSA				pmax	pmax		
	comp=Z,25nm,1.0s						
LSA	**Lhasa**	**53.09**	**78**	*e*P	**P**	**06 59 41.8**	**+0.3**
	comp=Z,25nm,1.0s						
LSA	**Lhasa**	**53.09**	**78**	*e*P	**P**	**06 59 41.8**	**+0.3**
	comp=Z,25nm,1.0s						
TLY	**Talaya**	**54.35**	**48**	*e*P	**P**	**06 59 50.0**	**+0.2**
TLY				*e*S	**S**	**07 07 19.8**	**-7.2**
TLY				pmax	pmax		
	comp=Z,30nm,1.9s						
TLY				MLR	MLR		
	comp=Z,593nm,28.0s						
TLY	**Talaya**	**54.35**	**48**	*e*P	**P**	**06 59 49.6**	**-0.2**
	comp=Z,37nm,1.6s						
TLY	**Talaya**	**54.35**	**48**	*e*P	**P**	**06 59 49.6**	**-0.2**
	comp=Z,37nm,1.6s						
ZAK	**Zakamensk**	**54.49**	**50**	*e*P	**P**	**06 59 50.6**	**-0.4**
ZAK				pmax	pmax		
	comp=Z,10.0nm,1.5s						
ZAK	**Zakamensk**	**54.49**	**50**	*e*P	**P**	**06 59 50.6**	**-0.4**
	comp=Z,10.0nm,1.5s						
IRK	**Irkutsk**	**54.57**	**47**	*e*P	**P**	**06 59 50.5**	**-0.9**
IRK				pmax	pmax		
	comp=Z,41nm,1.6s						
IRK	**Irkutsk**	**54.57**	**47**	*e*P	**P**	**06 59 50.5**	**-0.9**
	comp=Z,41nm,1.6s						
SHL	**Shillong**	**55.53**	**82⇓**	*i*P	**P**	**06 59 58.0**	**-1.0**
GTA	**Gaotai**	**55.78**	**63**	⇑P	**P**	**07 00 01.1**	**+0.6**
GTA				pP	pP	07 00 06.0	0.0
GTA				sP	sP	07 00 08.2	+0.1
GTA				PcP	**PcP**	**07 01 00.1**	**+0.6**
GTA				S	**S**	**07 07 46.0**	**-0.8**
GTA				sS	sS	07 07 53.8	-2.0
GTA				SS	**SS**	**07 11 31.9**	**-0.1**
GTA				pmax	pmax		
	comp=Z,14nm,1.0s						
GTA				pmax	pmax		
	comp=Z,190nm,5.9s						
GTA				LR	LR		
	comp=Z,340nm,19.0s						
GTA				LR	LR		
	comp=Z,340nm,19.5s						
GTA				LR	LR		
	comp=Z,460nm,20.4s						
SONM	**Songino Array**	**57.24**	**52**	P	**P**	**07 00 11.2**	**+0.4**
	comp=Z,3.0nm,0.6s,baz=266,slow=6.8,SNR=4.2						
SONM				LR	LR	07 28 26.9	
	comp=Z,582nm,18.7s,baz=284,slow=40						
ULN	**Ulaanbaatar**	**57.64**	**52**	*e*P	**P**	**07 00 13.8**	**+0.2**
ULN				pmax	pmax		
	comp=Z,15nm,1.0s						
ULN	**Ulaanbaatar**	**57.64**	**52**	*e*P	**P**	**07 00 13.8**	**+0.2**
	comp=Z,15nm,1.0s						
ULN	**Ulaanbaatar**	**57.64**	**52**	*e*P	**P**	**07 00 13.8**	**+0.2**
	comp=Z,15nm,1.0s						
BOD	**Bodaibo**	**58.23**	**39**	*e*P	**P**	**07 00 17.1**	**-0.3**
BOD				pmax	pmax		
	comp=Z,31nm,1.2s						
BOD	**Bodaibo**	**58.23**	**39**	*e*P	**P**	**07 00 17.1**	**-0.3**
	comp=Z,31nm,1.2s						
TIXI	**Tiksi**	**59.16**	**21**	*d i*P	**P**	**07 00 23.5**	**-0.1**
TIXI				pmax	pmax		
	comp=Z,26nm,1.7s						
TIXI				MLR	MLR		
	comp=Z,708nm,16.0s						
TIXI	**Tiksi**	**59.16**	**21**	*i* P	**P**	**07 00 23.5**	**-0.1**
	comp=Z,708nm,16.0s						
TIXI	**Tiksi**	**59.16**	**21**	*e*P	**P**	**07 00 23.9**	**+0.2**
	comp=Z,9.0nm,0.8s						
LZH	**Lanzhou**	**60.04**	**65**	*e*P	**P**	**07 00 31.6**	**+1.1**
LZH				pP	pP	07 00 35.9	-0.1
LZH				sP	sP	07 00 38.0	-0.1
LZH				pmax	pmax		
	comp=Z,100nm,1.6s						
LZH				pmax	pmax		
	comp=Z,170nm,4.0s						
LZH				LR	LR		
	comp=Z,330nm,12.7s						
LZH				LR	LR		
	comp=Z,410nm,14.3s						
LZH				LR	LR		
	comp=Z,670nm,15.3s						
CD2	**Chengdu**	**62.30**	**71**	P	**P**	**07 00 44.4**	**-1.4**
CD2				sP	sP	07 00 51.8	-1.6
CD2				PP	**PP**	**07 03 01.3**	**-1.4**
CD2				S	**S**	**07 09 10.0**	**-1.4**
CD2				sS	sS	07 09 19.0	-1.5
CD2				SS	**SS**	**07 13 14.3**	**-0.2**
CD2				pmax	pmax		
	comp=Z,30nm,1.0s						
CD2				pmax	pmax		
	comp=Z,180nm,5.4s						
CD2				LR	LR		
	comp=Z,360nm,14.4s						
CD2				LR	LR		
	comp=Z,340nm,18.0s						
RES	**Resolute Bay**	**62.63**	**345**	*e*P	**P**	**07 00 46.7**	**-0.5**
RES				pmax	pmax		
	comp=Z,23nm,1.5s						
RES	**Resolute Bay**	**62.63**	**345**	*e*P	**P**	**07 00 46.7**	**-0.5**
	comp=Z,23nm,1.5s						
RES	**Resolute Bay**	**62.63**	**345**	*e*P	**P**	**07 00 46.7**	**-0.5**
	comp=Z,23nm,1.5s						
SCHQ	**Schefferville**	**63.12**	**320**	P	**P**	**07 00 50.1**	**-0.7**
	comp=Z,4.9nm,0.5s,baz=55,slow=4.8,SNR=13						
SCHQ				LR	LR	07 27 38.0	
	comp=Z,202nm,20.8s,baz=75,slow=35						
HHC	**Hu-ho-hao-te**	**63.41**	**58**	*e*P	**P**	**07 00 53.6**	**+0.5**
HHC				sP	sP	07 01 01.7	+1.0
HHC				S	**S**	**07 09 24.8**	**-0.4**
HHC				SS	**SS**	**07 13 33.8**	**+2.3**
HHC				pmax	pmax		
	comp=Z,37nm,1.1s						
HHC				pmax	pmax		
	comp=Z,210nm,6.8s						
HHC				LR	LR		
	comp=Z,430nm,16.8s						
HHC				LR	LR		
	comp=Z,340nm,16.0s						
HHC				LR	LR		
	comp=Z,480nm,16.8s						
YAK	**Yakutsk**	**63.73**	**31**	*e*P	**P**	**07 00 53.3**	**-1.3**
YAK				pmax	pmax		
	comp=Z,13nm,0.9s						
YAK				pmax	pmax		
	comp=N,6.0nm,1.3s						
YAK				pmax	pmax		
	comp=E,12nm,1.4s						
YAK	**Yakutsk**	**63.73**	**31**	*e*P	**P**	**07 00 53.3**	**-1.3**
	comp=E,6.0nm,1.3s						
CMAI	**Chiengmai2**	**64.06**	**84**	P	**P**	**07 00 57.3**	**-0.4**
	comp=E,10nm,1.5s						
KMI	**Kunming**	**64.32**	**77**	P	**P**	**07 01 00.7**	**+1.3**
KMI				pP	sP	07 01 05.9	-1.2
KMI				sP	pP	07 01 08.0	+3.0
KMI				S	**S**	**07 09 36.5**	**-0.6**
KMI				SKS	**SKSac**	**07 10 51.1**	**-2.2**
KMI				SS	**SS**	**07 13 42.2**	**-4.5**
KMI				pmax	pmax		
	comp=E,13nm,0.5s						
KMI				pmax	pmax		
	comp=E,200nm,5.9s						
KMI				LR	LR		
	comp=E,110nm,7.5s						
KMI				LR	LR		
	comp=E,100nm,7.2s						
KMI				LR	LR		
	comp=E,88nm,7.2s						
CHTO	**Chiang Mai**	**64.57**	**85**	P	**P**	**07 01 00.8**	**-0.1**
	comp=E,82nm,1.5s						
CHTO	**Chiang Mai**	**64.57**	**85**	*e*P	**P**	**07 01 00.5**	**-0.4**
CHTO				pmax	pmax		
	comp=Z,28nm,1.3s						
CHTO	**Chiang Mai**	**64.57**	**85**	*e*P	**P**	**07 01 00.4**	**-0.4**
	comp=Z,28nm,1.3s						
CHTO	**Chiang Mai**	**64.57**	**85**	P	**P**	**07 01 01.1**	**+0.2**
	SNR=7.1						
CHTO	**Chiang Mai**	**64.57**	**85**	*e*P	**P**	**07 01 00.5**	**-0.4**
	comp=Z,28nm,1.3s						
CMMT	**Chiang Mai**	**64.57**	**85**	P	**P**	**07 01 00.7**	**-0.2**
	comp=Z,18nm,1.5s						
XAN	**Xi'an**	**64.68**	**65**	P	**P**	**07 01 01.2**	**-0.2**
XAN				pP	sP	07 01 09.

GYA LR LR
comp=Z,550nm,18.8s
GYA LR LR
comp=Z,510nm,19.2s
GYA LR LR
comp=Z,530nm,19.0s
BJI Beijing 66.90 57 P **P 07 01 15.8 +0.2**
BJI PP **PP 07 03 43.0 +0.3**
BJI S **S 07 10 10.2 +2.5**
BJI SS **SS 07 14 26.7 +1.2**
BJI pmax pmax
comp=Z,14nm,0.9s
BJI LR LR
comp=Z,240nm,13.4s
BJI LR LR
comp=Z,630nm,18.8s
BJI LR LR
comp=Z,560nm,18.8s
ENH Enshi 66.93 69 *e*P **P 07 01 15.9 -0.1**
comp=Z,17nm,1.0s
ENH Enshi 66.93 69 *e*P **P 07 01 15.9 -0.1**
comp=Z,17nm,1.0s
LOEI Loei 67.13 85 P P 07 01 25.3 +7.9
comp=Z,5.9nm,1.9s,comp=Z,864nm
PBKT Sadao Pong 67.40 86 P **P 07 01 19.1 0.0**
comp=Z,16nm,1.3s,comp=Z,1μm
NONG Nongkai 68.33 83 P P 07 01 31.8 +6.9
comp=Z,21nm,1.0s,comp=Z,2μm
CHAI Chaiyaphum 68.58 86 P **P 07 01 26.6 +0.1**
comp=Z,6.7nm,1.1s,comp=Z,91nm
PKME Peaks-Kenny Pk 69.10 311 *e*P **P 07 01 28.4 -0.9**
comp=Z,42nm,1.3s
PKME Peaks-Kenny Pk 69.10 311 *e*P **P 07 01 28.4 -0.9**
comp=Z,42nm,1.3s
TIA Tai'an 69.46 60 *e*P **P 07 01 31.7 0.0**
TIA pmax pmax
comp=Z,30nm,1.0s
SKNT Sakolnakorn 69.59 84 P **P 07 01 32.5 -0.3**
comp=Z,22nm,1.3s
PANO Nakornpanom 70.00 83 P **P 07 01 35.2 -0.1**
comp=Z,27nm,1.2s
WHN Wuhan 70.40 66 ⇓P **P 07 01 37.5 -0.1**
SNY Shenyang 70.82 52 ⇓P **P 07 01 39.0 -0.9**
SNY pmax pmax
comp=Z,22nm,1.4s
CN2 Changchun 70.92 49 *e*P **P 07 01 40.5 0.0**
CN2 *e*S **S 07 10 56.0 +0.7**
CN2 pmax pmax
comp=Z,10.0nm,0.9s
CN2 pmax pmax
comp=Z,200nm,5.0s
CN2 LR LR
comp=Z,400nm,19.0s
CN2 LR LR
comp=Z,400nm,19.0s
CN2 LR LR
comp=Z,400nm,18.0s
BILL Bilibino 71.18 15*d i*P **P 07 01 41.1 -0.6**
BILL *i* 07 01 56.7
BILL pmax pmax
comp=Z,20nm,1.2s
BILL MLR MLR
comp=Z,356nm,21.0s
BILL Bilibino 71.18 15 *e*P **P 07 01 41.0 -0.6**
comp=Z,33nm,1.4s
BILL Bilibino 71.18 15 *e*P **P 07 01 41.0 -0.7**
comp=Z,33nm,1.4s
SEY Seymchan 71.52 23⇑*i*P **P 07 01 44.5 +0.7**
SEY Seymchan 71.52 23 *i*P **P 07 01 44.5 +0.7**
KLR Kul'dur 71.53 42 LR LR 07 38 15.7
comp=Z,731nm,18.8s,slow=40
KLR Kul'dur 71.53 42 *i*P **P 07 01 43.9 -0.2**
KLR Kul'dur 71.53 42 *i*P **P 07 01 43.9 -0.2**
KCSI Kotacane, Aceh 72.34 99 P **P 07 01 48.2 -1.3**
comp=Z,22nm,1.0s
LONY Lake Ozonia 72.61 313 *e*P **P 07 01 51.0 +0.3**
comp=Z,24nm,1.0s
LONY Lake Ozonia 72.61 313 *e*P **P 07 01 51.0 +0.3**
comp=Z,24nm,1.0s
NJ2 Nanjing 72.87 63 *e*P **P 07 01 54.2 +1.8**
NJ2 pmax pmax
comp=Z,18nm,0.5s
MDJ Mudanjiang 72.95 47 P **P 07 01 53.6 +0.9**
MDJ pP pP 07 01 56.9 -1.4
MDJ sP sP 07 01 58.2 -2.2
MDJ PP **PP 07 04 35.1 +0.4**
MDJ S **S 07 11 18.0 -0.6**
MDJ sS SKiKP 07 11 25.4 +0.6
MDJ ScS **SKKSac 07 11 58.3 +0.6**
MDJ pmax pmax
comp=Z,5.0nm,0.8s
MDJ pmax pmax
comp=Z,140nm,5.3s
MDJ LR LR
comp=Z,390nm,15.6s
MDJ LR LR
comp=Z,170nm,17.4s
MDJ LR LR
comp=Z,520nm,16.5s
TSI Tuntungan 72.98 98 P **P 07 01 53.4 +0.1**
comp=Z,62nm,0.8s
MA2 Magadan 73.39 26 *e*P **P 07 01 55.3 +0.3**
MA2 pmax pmax
comp=Z,124nm,1.1s
MA2 Magadan 73.39 26 *e*P **P 07 01 55.3 +0.3**
comp=Z,124nm,1.1s
MA2 Magadan 73.39 26 *e*P **P 07 01 55.3 +0.3**
comp=Z,124nm,1.1s
GSI Gunungsitoli 73.53 101 P **P 07 01 56.5 0.0**
comp=Z,34nm,1.0s
KULM Kulim 73.58 96 *e*P **P 07 01 56.1 -0.7**
comp=Z,21nm,1.0s
KULM Kulim 73.58 96 *e*P **P 07 01 56.1 -0.7**
comp=Z,21nm,1.0s
NKL Nikolayevsk 73.62 35 *e*P **P 07 01 56.0 -0.5**
NKL pmax pmax
comp=Z,24nm,1.0s
NKL MLR MLR
comp=N,400nm,17.0s
NKL MLR MLR
comp=Z,500nm,17.0s
NKL Nikolayevsk 73.62 35 *e*P **P 07 01 56.0 -0.5**
comp=Z,24nm,1.0s
HABR Khabarovsk 73.74 41 *e*P **P 07 01 55.6 -1.6**
HABR *e**SP **pP 07 02 02.4 -0.5**
HABR *e* 07 04 39.9
HABR *e*PPP PPP 07 06 25.2
HABR *e*S **S 07 11 27.4 +0.1**
HABR *e* 07 12 04.8
HABR *e*SS **SS 07 16 12.4 +2.4**
HABR pmax pmax
comp=Z,37nm,0.7s
HABR pmax pmax
comp=N,20nm,0.7s
HABR MLR MLR
comp=Z,156nm,18.0s
HABR Khabarovsk 73.74 41 *e*P **P 07 01 55.6 -1.6**
comp=Z,37nm,0.7s
HABR *e*S **S 07 11 27.4 +0.1**
INK Inuvik 74.34 353 *e*P **P 07 01 59.2 -1.2**
INK pmax pmax
comp=Z,15nm,1.4s
INK Inuvik 74.34 353 *e*P **P 07 01 59.2 -1.2**
comp=Z,15nm,1.4s
INK Inuvik 74.34 353 *e*P **P 07 01 59.2 -1.2**
comp=Z,15nm,1.4s
USRK Ussuriysk Ar. 74.59 46 P **P 07 02 01.9 -0.4**
comp=Z,20nm,1.0s,baz=304,slow=5.0,SNR=21
USRK LR LR 07 41 51.5
comp=Z,332nm,18.3s,baz=304,slow=41
PBSI Pulau Batu 74.91 102 P **P 07 02 04.1 -0.5**
comp=Z,95nm,1.4s
MNSI Mandailing Nat 75.42 100 P **P 07 02 07.2 -0.3**
comp=Z,16nm,1.1s,comp=Z,1μm
N59A State Game Lan 75.46 310 P **P 07 02 06.7 -0.7**
baz=54,SNR=12
KSAR Wonju Array Be 76.02 54 P **P 07 02 10.5 -0.2**
KSAR Wonju Array Be 76.02 54 P **P 07 02 10.5 -0.2**
KSAR Wonju Array Be 76.02 54 P **P 07 02 10.5 -0.2**
KSRS Korea Array 76.04 54 P **P 07 02 10.5 -0.2**
comp=Z,12nm,0.9s,baz=303,slow=5.0,SNR=42
KSRS LR LR 07 40 55.4
comp=Z,315nm,18.1s,baz=304,slow=40
COLD Coldfoot 76.40 359 *e*P **P 07 02 11.9 -0.4**
comp=Z,25nm,1.2s
COLD Coldfoot 76.40 359 *e*P **P 07 02 11.9 -0.4**
comp=Z,25nm,1.2s
YKA Yellowknife Ar 76.51 343 P **P 07 02 11.5 -1.5**
comp=Z,1.6nm,1.0s,baz=37,slow=5.6,SNR=19
YKA PKPPKP **P'P'df 07 29 35.3 +1.6**
comp=Z,0.1nm,0.7s,baz=184,slow=2.4,SNR=4.2
YKA Yellowknife Ar 76.51 343 P **P 07 02 11.5 -1.5**
YKA pmax pmax
comp=Z,1.0nm,1.0s
YKA Yellowknife Ar 76.51 343 P **P 07 02 11.5 -1.5**
comp=Z,1.0nm,1.0s
SSPA Standing Stone 76.92 311 *e*P **P 07 02 15.7 0.0**
comp=Z,229nm,1.4s
SSPA Standing Stone 76.92 311 *e*P **P 07 02 15.7 0.0**
comp=Z,229nm,1.4s
TNA Tin City 77.41 6 *e*P **P 07 02 17.1 -0.9**
comp=Z,32nm,1.4s
TNA Tin City 77.41 6 *e*P **P 07 02 17.1 -0.9**
comp=Z,32nm,1.4s
M54A Oil Creek Stat 77.45 313 P **P 07 02 18.3 -0.4**
baz=52
O56A Blue Knob Stat 77.55 311 P **P 07 02 18.5 -0.8**
baz=52
N54A Moraine State 77.98 312 P **P 07 02 21.3 -0.3**
baz=52
CBN Corbin Frederi 78.07 309 *e*P **P 07 02 22.2 +0.1**
comp=Z,39nm,1.0s
CBN Corbin Frederi 78.07 309 *e*P **P 07 02 22.2 +0.1**
comp=Z,39nm,1.0s
COLA College 78.71 358*d i*P **P 07 02 24.7 -0.5**
COLA pmax pmax
comp=Z,28nm,1.6s
COLA College 78.71 358 *i* P **P 07 02 24.7 -0.5**
comp=Z,28nm,1.6s
COLA College 78.71 358 *e*P **P 07 02 25.1 0.0**
comp=Z,25nm,1.4s
GAMB Gambell 78.76 8 *e*P **P 07 02 24.2 -1.2**
comp=Z,23nm,1.5s
GAMB Gambell 78.76 8 *e*P **P 07 02 24.2 -1.2**
comp=Z,23nm,1.5s
ILAR Eielson Array 78.78 357 P **P 07 02 25.1 -0.5**
comp=Z,3.4nm,1.1s,baz=354,slow=3.3,SNR=18
ILAR PKPPKP **P'P'df 07 29 27.0 -2.7**
comp=Z,0.6nm,0.9s,baz=246,slow=3.2,SNR=5.1
DAWY Dawson 79.03 354 *e*P **P 07 02 26.6 -0.5**
comp=Z,30nm,1.3s
DAWY Dawson 79.03 354 *e*P **P 07 02 26.6 -0.5**
comp=Z,30nm,1.3s
AAM Ann Arbor 79.27 315 *e*P **P 07 02 28.1 -0.6**
AAM pmax pmax
comp=Z,27nm,0.9s
AAM Ann Arbor 79.27 315 *e*P **P 07 02 28.1 -0.6**
comp=Z,27nm,0.9s
AAM Ann Arbor 79.27 315 *e*P **P 07 02 28.1 -0.6**
comp=Z,27nm,0.9s
BPAW Bear Paw Mtn. 79.55 359 *e*P **P 07 02 28.6 -1.3**
comp=Z,8.9nm,1.4s
BPAW Bear Paw Mtn. 79.55 359 *e*P **P 07 02 28.6 -1.3**
comp=Z,8.9nm,1.4s
COWI Conover 79.70 321 *e*P **P 07 02 30.1 -0.9**
comp=Z,22nm,1.2s
COWI Conover 79.70 321 *e*P **P 07 02 30.1 -0.9**
comp=Z,22nm,1.2s
DOT Dot Lake 79.77 356 *e*P **P 07 02 30.7 -0.4**
comp=Z,56nm,1.2s
DOT Dot Lake 79.77 356 *e*P **P 07 02 30.7 -0.4**
comp=Z,56nm,1.2s
MCK McKinley 79.88 358 *e*P **P 07 02 30.8 -0.9**
MCK pmax pmax
comp=Z,31nm,1.2s
MCK McKinley 79.88 358 *e*P **P 07 02 30.8 -0.9**
comp=Z,31nm,1.2s
MCK McKinley 79.88 358 *e*P **P 07 02 30.8 -0.9**
comp=Z,31nm,1.2s
MASI Maura Aman, Be 79.92 102 P **P 07 02 32.7 0.0**
comp=Z,63nm,1.8s,comp=Z,5μm
ULM Lac du Bonnet 79.97 327 P **P 07 02 31.3 -1.1**
comp=Z,3.0nm,0.9s,baz=68,slow=4.5,SNR=4.4
ULM LR LR 07 37 14.0
comp=Z,371nm,21.8s,baz=52,slow=35
KTH Kantishna Hill 80.10 359 *e*P **P 07 02 32.1 -0.8**
comp=Z,39nm,1.3s
KTH Kantishna Hill 80.10 359 *e*P **P 07 02 32.1 -0.8**
comp=Z,39nm,1.3s
TRF Thorofare Moun 80.19 359 *e*P **P 07 02 32.7 -0.9**
comp=Z,56nm,1.8s
TRF Thorofare Moun 80.19 359 *e*P **P 07 02 32.6 -0.9**
comp=Z,56nm,1.8s
ACSO Alum Creek Sta 80.21 313 *e*P **P 07 02 33.5 -0.3**
comp=Z,40nm,1.1s
ACSO Alum Creek Sta 80.21 313 *e*P **P 07 02 33.5 -0.3**
comp=Z,40nm,1.1s
PAX Paxson 80.52 357 *e*P **P 07 02 34.1 -1.1**
PAX pmax pmax
comp=Z,17nm,1.5s
PAX Paxson 80.52 357 *e*P **P 07 02 34.1 -1.1**
comp=Z,17nm,1.5s
PAX Paxson 80.52 357 *e*P **P 07 02 34.1 -1.1**
comp=Z,17nm,1.5s
ASAJ Asahikawa 80.54 41 LR LR 07 41 48.2
comp=Z,155nm,20.1s,baz=45,slow=38
JNU Nakatsue 80.56 56 *e*P **P 07 02 35.7 -0.2**
comp=Z,5.8nm,1.0s
JNU Nakatsue 80.56 56 *e*P **P 07 02 35.7 -0.2**
comp=Z,5.8nm,1.0s
A33A Warroad 80.71 326 P **P 07 02 34.9 -1.5**
baz=43
PPLA Purkeypile 80.77 360 *e*P **P 07 02 36.4 -0.2**
comp=Z,63nm,1.5s
PPLA Purkeypile 80.77 360 *e*P **P 07 02 36.4 -0.2**
comp=Z,63nm,1.5s
PETK Petropavlovsk- 80.81 28 P **P 07 02 35.2 -1.6**
comp=Z,5.4nm,1.0s,baz=266,slow=5.8,SNR=2.2
PETK LR LR 07 41 38.2
comp=Z,381nm,20.7s,baz=315,slow=38
A32A Rocking H Ranc 81.22 326 P **P 07 02 38.2 -0.9**
baz=42
PET Petropavlovsk 81.22 27 *e*P **P 07 02 35.1 -3.9**
PET *e*S **S 07 12 40.4 -7.9**
PET pmax pmax
comp=Z,100nm,13.6s
D35A Remer 81.43 324 P **P 07 02 39.3 -1.0**
baz=44
B32A Ashes, Strandq 81.62 326 P **P 07 02 39.6 -1.7**
baz=42
C33A Trail 81.75 325 P **P 07 02 40.3 -1.6**
baz=43
SML Sawmill 81.80 358 *e*P **P 07 02 40.9 -1.1**
SML pmax pmax
comp=Z,15nm,1.6s
SML Sawmill 81.80 358 *e*P **P 07 02 40.9 -1.1**
comp=Z,15nm,1.6s
SML Sawmill 81.80 358 *e*P **P 07 02 40.9 -1.1**
comp=Z,15nm,1.6s
D34A Park Rapids 81.97 324 P **P 07 02 41.6 -1.5**
baz=43
A30A Hoffart Farm, 82.00 327 P **P 07 02 41.2 -2.0**
baz=41
PMR Palmer 82.03 358 *e*P **P 07 02 42.5 -0.6**
PMR pmax pmax
comp=Z,42nm,1.4s
PMR Palmer 82.03 358 *e*P **P 07 02 42.5 -0.6**
comp=Z,42nm,1.4s
PMR Palmer 82.03 358 *e*P **P 07 02 42.5 -0.6**
comp=Z,42nm,1.4s
F36A Milaca 82.05 323 P **P 07 02 42.2 -1.4**
baz=44
SPMN Marine on St. 82.16 322 *e*P **P 07 02 43.5 -0.6**
comp=Z,9.2nm,1.2s
SPMN Marine on St. 82.16 322 *e*P **P 07 02 43.5 -0.6**
comp=Z,9.2nm,1.2s
E34A Wadena 82.37 324 P **P 07 02 43.9 -1.4**
baz=43
B30A Myrvik Farm, E 82.38 327 P **P 07 02 43.7 -1.5**
baz=41
A29A Manning Farm, 82.42 328 P **P 07 02 43.9 -1.5**
baz=41
KMSC Kings Mountain 82.46 308 P **P 07 02 45.1 -0.8**
baz=50,SNR=8.2
KMSC Kings Mountain 82.46 308 *e*P **P 07 02 45.8 -0.1**
comp=Z,20nm,1.1s
KMSC Kings Mountain 82.46 308 *e*P **P 07 02 45.8 -0.1**
comp=Z,20nm,1.1s
JFWS Jewell Farm 82.47 319 *e*P **P 07 02 44.7 -1.1**
JFWS pmax pmax
comp=Z,14nm,1.0s
JFWS Jewell Farm 82.47 319 *e*P **P 07 02 44.7 -1.1**
comp=Z,14nm,1.0s
JFWS Jewell Farm 82.47 319 *e*P **P 07 02 44.7 -1.1**
comp=Z,14nm,1.0s
BMRM Bremner River 82.47 356 *e*P **P 07 02 45.1 -0.4**
comp=Z,35nm,1.6s
BMRM Bremner River 82.47 356 *e*P **P 07 02 45.1 -0.4**
comp=Z,35nm,1.6s
RC01 Rabbit Creek A 82.55 359 *e*P **P 07 02 43.7 -2.2**
comp=Z,38nm,1.2s
I38A Scamlan Farm, 82.76 321 P **P 07 02 46.3 -1.0**
baz=45
TZTN Tazewell 82.93 311 *e*P **P 07 02 48.3 -0.1**
comp=Z,40nm,1.2s
TZTN Tazewell 82.93 311 *e*P **P 07 02 48.3 -0.1**
comp=Z,40nm,1.2s
MAJO Matsushiro 83.07 49⇑*i*P **P 07 02 48.6 -0.5**
MAJO pmax pmax
comp=Z,138nm,1.5s
MAJO Matsushiro 83.07 49 *i* P **P 07 02 48.6 -0.5**
comp=Z,138nm,1.5s
MJAR Matsushiro Arr 83.07 49 P **P 07 02 48.6 -0.5**
comp=Z,3.7nm,0.8s,baz=307,slow=5.7,SNR=9.5
J38A Wedel Dairy, R 83.34 320 P **P 07 02 48.6 -1.7**
baz=44
F33A 5 Mile Ranch, 83.40 324 P **P 07 02 49.1 -1.5**
baz=42
WCI Wyandotte Cave 83.46 313 *e*P **P 07 02 50.2 -0.9**
WCI pmax pmax
comp=Z,101nm,0.9s
WCI Wyandotte Cave 83.46 313 *e*P **P 07 02 50.2 -0.9**
comp=Z,101nm,0.9s
WCI Wyandotte Cave 83.46 313 *e*P **P 07 02 50.2 -0.9**
comp=Z,101nm,0.9s
G34A Benson 83.53 323 P **P 07 02 50.1 -1.2**
baz=43
KSM Kuching 83.58 93 *e*P **P 07 02 52.9 +0.9**
comp=Z,2.0nm,0.3s
KSM Kuching 83.58 93 *e*P **P 07 02 52.9 +0.9**
comp=Z,2.0nm,0.3s
D30A Buchanan 83.58 326 P **P 07 02 50.4 -1.1**
baz=41
HDIL Hopedale 83.58 317 P **P 07 02 50.8 -0.8**
baz=46
HDIL Hopedale 83.58 317 *e*P **P 07 02 51.1 -0.5**
comp=Z,23nm,0.9s
HDIL Hopedale 83.58 317 *e*P **P 07 02 51.1 -0.5**
comp=Z,23nm,0.9s
A26A Wade Farm, Ken 83.62 329 P **P 07 02 51.1 -0.6**
baz=39
J37A Redenius Farm, 83.90 321 P **P 07 02 52.2 -1.0**
baz=44
K37A Belmond 84.33 321 P **P 07 02 54.4 -1.0**
baz=44
L38A Oak Wood Farm, 84.43 320 P **P 07 02 54.4 -1.6**
baz=44,SNR=6.4
F30A Leola 84.67 326 P **P 07 02 56.1 -1.0**
baz=40
L37A Phoenix Point, 84.86 320 P **P 07 02 56.7 -1.3**
baz=44,SNR=6.9
GOGA Godfrey 84.93 308 *e*P **P 07 02 58.2 -0.3**
GOGA pmax pmax
comp=Z,14nm,1.0s
GOGA Godfrey 84.93 308 *e*P **P 07 02 58.2 -0.3**
comp=Z,14nm,1.0s
GOGA Godfrey 84.93 308 *e*P **P 07 02 58.2 -0.3**
comp=Z,14nm,1.0s
F29A Eureka 85.03 326 P **P 07 02 57.8 -1.2**
baz=40
M38A Pleasantville 85.08 319 P **P 07 02 58.3 -0.9**
baz=44,SNR=6.4
N39A Derby Farms, D 85.10 319 P **P 07 02 58.4 -0.9**
baz=44
ECSD EROS Data Cent 85.11 323 P **P 07 02 58.4 -1.0**
baz=42
ECSD EROS Data Cent 85.11 323 *e*P **P 07 02 57.7 -1.6**
comp=Z,153nm,0.8s
ECSD EROS Data Cent 85.11 323 *e*P **P 07 02 57.7 -1.6**
comp=Z,153nm,0.8s
J34A George 85.12 322 P **P 07 02 57.9 -1.5**
baz=42
G30A Faulkton 85.26 325 P **P 07 02 58.7 -1.4**
baz=40
O40A La Belle 85.30 318 P **P 07 02 59.3 -1.0**
baz=45,SNR=8.2
E27A Carson 85.34 327 P **P 07 02 59.2 -1.3**
baz=39
D25A Fairfield 85.53 329 P **P 07 03 00.6 -0.8**
baz=38
M37A Trindle Farm, 85.53 320 P **P 07 03 00.6 -0.8**
baz=43
N38A Joes South For 85.54 319 P **P 07 03 00.3 -1.2**
baz=44,SNR=7.4
O39A Kirksville 85.56 318 P **P 07 03 00.9 -0.7**
baz=44
K34A Le Mars 85.63 322 P **P 07 03 01.0 -1.0**
baz=42
P40A Paris 85.81 317 P **P 07 03 01.9 -1.0**
baz=44,SNR=10
E25A Miller Ranch, 86.07 328 P **P 07 03 03.5 -0.7**
baz=38
Q40A Laux Farm, Aux 86.20 317 P **P 07 03 04.1 -0.7**
baz=44,SNR=15
P39B Salisbury 86.22 318 P **P 07 03 04.2 -0.7**
baz=44
TIGA Tifton 86.30 307 *e*P **P 07 03 04.7 -0.7**
comp=Z,112nm,1.6s
TIGA Tifton 86.30 307 *e*P **P 07 03 04.7 -0.7**
comp=Z,112nm,1.6s
O37A Wolven Farm, M 86.48 319 P **P 07 03 04.6 -1.6**
baz=43
P38A Dawn 86.54 318 P **P 07 03 05.0 -1.5**
baz=44
Q39A Willow Grove F 86.66 318 P **P 07 03 06.5 -0.6**
baz=44,SNR=13
G26A Maurine 86.68 327 P **P 07 03 05.9 -1.2**
baz=38
N35A Tabor 86.75 320 P **P 07 03 06.9 -0.6**
baz=42
J30A Dallas 86.80 324 P **P 07 03 06.4 -1.3**
baz=40
R40A Maddies Statio 86.81 317 P **P 07 03 07.0 -0.8**
baz=44,SNR=35
H27A Howes 86.97 326 P **P 07 03 06.9 -1.7**
baz=38
P37A Lathrop 87.00 319 P **P 07 03 07.4 -1.3**
baz=43
Q38A Cooks Store, C 87.07 318 P **P 07 03 08.4 -0.6**
baz=44,SNR=11
LAO LASA Array 87.09 330 P **P 07 03 08.3 -0.8**
baz=36
LAO LASA Array 87.09 330 *e*P **P 07 03 08.8 -0.3**
comp=Z,15nm,1.0s
LAO LASA Array 87.09 330 *e*P **P 07 03 08.8 -0.3**
comp=Z,15nm,1.0s
R39A Chumby, Stover 87.22 317 P **P 07 03 09.0 -0.9**
baz=44,SNR=21
Y47A UCPARC, Winfie 87.31 311 P **P 07 03 09.0 -1.4**
baz=47,SNR=10
EGMT Eagleton 87.35 333 P **P 07 03 09.4 -0.9**
baz=33
EGMT Eagleton 87.35 333 *e*P **P 07 03 09.2 -1.2**
comp=Z,36nm,1.3s
EGMT Eagleton 87.35 333 *e*P **P 07 03 09.2 -1.2**
comp=Z,36nm,1.3s
K30A Basset 87.35 324 P **P 07 03 10.2 -0.3**
baz=40
LRAL Lakeview Retre 87.38 310 *e*P **P 07 03 09.8 -0.9**
comp=Z,25nm,0.9s
LRAL Lakeview Retre 87.38 310 *e*P **P 07 03 09.8 -0.9**
comp=Z,25nm,0.9s
S40A Lebanon 87.44 316 P **P 07 03 10.1 -0.7**
baz=44,SNR=21
Z48A Northport 87.49 310 P **P 07 03 09.9 -1.3**
baz=47,SNR=6.7
BGNE Belgrade 87.60 322 *e*P **P 07 03 10.8 -0.9**
comp=Z,32nm,0.8s
BGNE Belgrade 87.60 322 *e*P **P 07 03 10.8 -0.9**
comp=Z,32nm,0.8s
T40A Mansfield 87.77 316 P **P 07 03 11.7 -0.7**
baz=44,SNR=15
R38A Fenwick Farm, 87.78 318 P **P 07 03 11.4 -1.1**
baz=43,SNR=7.9
O34A Beatrice 87.79 320 P **P 07 03 11.5 -1.0**
baz=42
S39A Bolivar 87.82 317 P **P 07 03 11.3 -1.4**
baz=44,SNR=8.8
WALA Waterton Lakes 87.93 336 *e*P **P 07 03 11.0 -2.2**
comp=Z,5.7nm,1.1s
Z47A Carrollton 87.93 311 P **P 07 03 11.8 -1.5**
baz=46

Y46A	Houston	87.93	312	P	P	07 03 11.8	-1.5
	baz=46,SNR=21						
I25A	Rochford	88.18	327	P	P	07 03 13.7	-0.8
	baz=37						
S38A	Stockton	88.19	317	P	P	07 03 13.5	-0.9
	baz=43,SNR=14						
RSSD	Black Hills	88.23	327	eP	P	07 03 14.1	-0.7
RSSD				pmax	pmax		
	comp=Z,16nm,1.6s						
RSSD	Black Hills	88.23	327	eP	P	07 03 14.1	-0.7
	comp=Z,16nm,1.6s						
RSSD	Black Hills	88.23	327	eP	P	07 03 14.1	-0.7
	comp=Z,16nm,1.6s						
O33A	Hebron	88.32	321	P	P	07 03 13.5	-1.6
	baz=41						
P34A	Walnut Farm, R	88.33	320	P	P	07 03 13.7	-1.4
	baz=42						
T39A	Clever	88.33	316	P	P	07 03 14.1	-1.0
	baz=44						
Y45A	Yeager Farm, C	88.36	312	P	P	07 03 14.6	-0.7
	baz=46,SNR=6.7						
248A	Dixon Mills	88.48	310	P	P	07 03 15.3	-0.6
	baz=47						
U40A	Yellville	88.52	316	P	P	07 03 14.7	-1.4
	baz=44,SNR=8.2						
KSU1	Kansas State U	88.55	320	eP	P	07 03 14.1	-2.1
	comp=Z,15nm,0.9s						
KSU1	Kansas State U	88.55	320	eP	P	07 03 14.1	-2.1
	comp=Z,15nm,0.9s						
S37A	Fort Scott	88.59	318	P	P	07 03 15.3	-1.0
	baz=43,SNR=6.9						
T38A	Diamond	88.83	317	P	P	07 03 16.5	-1.0
	baz=43,SNR=11						
U39A	Green Forest	88.85	316	P	P	07 03 16.8	-0.9
	baz=44,SNR=15						
V40A	Witts Springs	88.90	315	P	P	07 03 16.9	-1.0
	baz=44,SNR=9.3						
W41A	Tony Mavity, V	89.02	314	P	P	07 03 17.4	-1.1
	baz=44,SNR=6.8						
W41B	Gary Mavity, V	89.02	314	P	P	07 03 17.4	-1.0
	baz=44,SNR=6.9						
S36A	Lake Cedric, C	89.03	318	P	P	07 03 17.0	-1.5
	baz=42						
T37A	Cheneyville 18	89.11	317	P	P	07 03 17.7	-1.1
	baz=43,SNR=18						
Q33A	Connelly Farm,	89.26	320	P	P	07 03 18.0	-1.5
	baz=41						
V39A	Pettigrew	89.34	316	P	P	07 03 18.8	-1.2
	baz=44,SNR=6.8						
R34A	Isabella, Hill	89.48	320	P	P	07 03 18.9	-1.7
	baz=41,SNR=6.1						
NEW	Newport	89.66	337	P	P	07 03 20.3	-1.0
	baz=28						
U37A	Salina	89.74	317	P	P	07 03 20.9	-0.9
	baz=43,SNR=9.2						
V38A	Canehill	89.75	316	P	P	07 03 20.8	-1.0
	baz=43,SNR=10						
245A	Little AP, Sta	89.84	311	P	P	07 03 21.6	-0.7
	baz=46						
X40A	Basin Creek Fa	89.85	314	P	P	07 03 21.4	-0.9
	baz=44,SNR=7.4						
MSO	Missoula	89.86	334	P	P	07 03 21.0	-1.3
	baz=30						
BOZ	Bozeman (W)	90.05	333	P	P	07 03 22.6	-0.7
	baz=32						
BOZ	Bozeman (W)	90.05	333	eP	P	07 03 22.5	-0.7
BOZ				pmax	pmax		
	comp=Z,4.0nm,1.0s						
BOZ	Bozeman (W)	90.05	333	eP	P	07 03 22.5	-0.7
	comp=Z,4.0nm,1.0s						
BOZ	Bozeman (W)	90.05	333	eP	P	07 03 22.5	-0.7
	comp=Z,4.0nm,1.0s						
T35A	Sooner Cattle	90.12	318	P	P	07 03 22.6	-1.0
	baz=42,SNR=7.3						
V37A	Hulbert	90.14	317	P	P	07 03 22.4	-1.3
	baz=43,SNR=8.5						
R32A	Long Quarter,	90.14	321	P	P	07 03 22.2	-1.5
	baz=40						
Y41A	Eaglette Beard	90.15	314	P	P	07 03 22.9	-0.8
	baz=44						
MIAR	Mount Ida	90.23	315	P	P	07 03 23.7	-0.4
	baz=44,SNR=16						
244A	Avery, Jackson	90.32	311	P	P	07 03 24.1	-0.5
	baz=45						
CBKS	Cedar Bluff	90.36	321	eP	P	07 03 23.7	-1.0
CBKS				pmax	pmax		
	comp=Z,30nm,1.3s						
CBKS	Cedar Bluff	90.36	321	eP	P	07 03 23.7	-1.0
	comp=Z,30nm,1.3s						
CBKS	Cedar Bluff	90.36	321	eP	P	07 03 23.7	-1.0
	comp=Z,30nm,1.3s						
W38A	Poteau	90.38	316	P	P	07 03 24.1	-0.7
	baz=43,SNR=7.1						
S33A	Kaszmaul Farm,	90.40	320	P	P	07 03 23.8	-1.1
	baz=41						
T34A	McClaskey Farm	90.40	319	P	P	07 03 24.1	-0.8
	baz=41						
Y40A	Okolona	90.44	314	P	P	07 03 24.5	-0.6
	baz=44,SNR=5.6						
TUL1	Leonard	90.47	317	P	P	07 03 24.3	-0.9
	baz=42,SNR=9.7						
TUL1	Leonard	90.47	317	eP	P	07 03 24.0	-1.2
	comp=Z,28nm,1.0s						
TUL1	Leonard	90.47	317	eP	P	07 03 24.0	-1.2
	comp=Z,28nm,1.0s						
K22A	Casper	90.49	328	P	P	07 03 23.8	-1.6
	baz=35						
X39A	Fountain Ranch	90.56	315	P	P	07 03 25.0	-0.7
	baz=43,SNR=16						
U35A	Pawnee	90.64	318	P	P	07 03 25.0	-1.0
	baz=42,SNR=8.3						
V36A	Jenks	90.65	317	P	P	07 03 25.2	-0.8
	baz=42						
H17A	Grant Village	90.70	331	eP	P	07 03 27.2	+0.7
	comp=Z,30nm,2.0s						
H17A	Grant Village	90.70	331	eP	P	07 03 27.2	+0.7
	comp=Z,30nm,2.0s						
W37B	Quinton	90.84	316	P	P	07 03 26.1	-0.9
	baz=42						
X38A	Whitesboro	90.85	316	P	P	07 03 26.7	-0.3
	baz=43,SNR=25						
Y39A	Lockesburg	90.97	315	P	P	07 03 27.1	-0.5
	baz=43,SNR=7.0						
FLWY	Flagg Ranch	91.01	331	eP	P	07 03 27.7	-0.1
	comp=Z,25nm,1.8s						
FLWY	Flagg Ranch	91.01	331	eP	P	07 03 27.7	-0.1
	comp=Z,25nm,1.8s						
PHWY	Pilot Hill	91.12	326	eP	P	07 03 27.5	-1.0
	comp=Z,10.0nm,1.1s						
PHWY	Pilot Hill	91.12	326	eP	P	07 03 27.5	-1.0
	comp=Z,10.0nm,1.1s						
V35A	Meyer Ranch, C	91.15	318	P	P	07 03 27.8	-0.6
	baz=42						
W36A	Wetumka	91.28	317	P	P	07 03 28.7	-0.3
	baz=42						
Y38A	Idabel	91.34	315	P	P	07 03 28.4	-0.9
	baz=43,SNR=5.4						
W35A	Tecumseh	91.63	317	P	P	07 03 29.6	-1.0
	baz=42						
PDAR	Pinedale Array	91.66	330	P	P	07 03 28.7	-2.2
	comp=Z,0.3nm,0.7s,baz=42,slow=6.9,SNR=3.9						
PDAR				LR	LR	07 47 28.8	
	comp=Z,481nm,18.5s,baz=32,slow=37						
X35A	Drake	92.24	317	P	P	07 03 32.4	-1.0
	baz=42						
WMOK	Wichita Mounta	92.97	318	eP	P	07 03 35.7	-1.2
WMOK				pmax	pmax		
	comp=Z,7.0nm,1.1s						
WMOK	Wichita Mounta	92.97	318	eP	P	07 03 35.7	-1.2
	comp=Z,7.0nm,1.1s						
WMOK	Wichita Mounta	92.97	318	eP	P	07 03 35.6	-1.2
	comp=Z,7.1nm,1.1s						
HWUT	Hardware Ranch	93.45	330	eP	P	07 03 37.6	-1.5
	comp=Z,6.6nm,1.2s						
HWUT	Hardware Ranch	93.45	330	eP	P	07 03 37.6	-1.5
	comp=Z,6.6nm,1.2s						
MFID	Camas Ranch	93.49	334	eP	P	07 03 38.2	-1.0
	comp=Z,4.0nm,1.0s						
MFID	Camas Ranch	93.49	334	eP	P	07 03 38.2	-1.0
	comp=Z,4.0nm,1.0s						
T25A	Trinidad	93.97	323	P	P	07 03 40.2	-1.5
	baz=37						
SDCO	Great Sand Dun	94.00	324	P	P	07 03 40.1	-1.8
	baz=36						
SDCO	Great Sand Dun	94.00	324	eP	P	07 03 40.3	-1.6
	comp=Z,15nm,1.7s						
SDCO	Great Sand Dun	94.00	324	eP	P	07 03 40.3	-1.6
	comp=Z,15nm,1.7s						
334A	Lometa	95.24	316	P	P	07 03 46.6	-0.7
	baz=41						
ANMO	Albuquerque	96.72	323	i P	P	07 03 53.1	-1.1
ANMO				pmax	pmax		
	comp=Z,2.0nm,1.3s						
ANMO	Albuquerque	96.72	323	i P	P	07 03 53.1	-1.1
	comp=Z,2.0nm,1.3s						
NVAR	Mina Array Bea	98.77	333	P	P	07 04 01.6	-1.8
	comp=Z,0.4nm,0.7s,baz=57,slow=5.5,SNR=3.7						
NVAR				PKKPbc	PKKPdf	07 20 37.5	+5.1
	comp=Z,0.8nm,0.8s,baz=206,slow=5.6,SNR=4.1						
NVAR				LR	LR	07 49 50.2	
	comp=Z,333nm,21.3s,baz=32,slow=36						
TXAR	Lajitas Array	99.77	318	P	Pdif	07 04 06.7	-1.2
	comp=Z,1.6nm,1.1s,baz=57,slow=4.6,SNR=5.5						
TXAR				LR	LR	07 50 12.0	
	comp=Z,184nm,19.7s,baz=0.0,slow=36						
WRA	Warramunga Arr	115.11	97	PKP	PKPdf	07 09 03.2	-1.8
	comp=Z,1.2nm,0.7s,baz=319,slow=1.7,SNR=12						
ASAR	Alice Springs	116.68	101	PKP	PKPdf	07 09 06.8	-1.1
	comp=Z,1.6nm,0.6s,baz=317,slow=1.4,SNR=23						
ASAR				PKKPbc	PKKPbc	07 19 34.1	+0.2
	comp=Z,0.3nm,0.7s,baz=113,slow=3.6,SNR=4.3						
STKA	Stephens Creek	126.50	105	PKP	PKPdf	07 09 26.1	-0.4
	comp=Z,5.0nm,1.0s,baz=289,slow=5.6,SNR=5.3						
QSPA	South Pole Qui	126.53	180	ePKPdf	PKPdf	07 09 24.6	-0.9
QSPA				ePP	PP	07 11 22.2	+0.1
MSVF	Nonsavu	148.12	62	ePKP2	PKPbc	07 10 10.7	+1.1
MSVF	Nonsavu	148.12	62	ePKPbc	PKPbc	07 10 10.7	+1.1
MSVF				ePKPab	PKPab	07 10 14.5	+2.1
TAOE	Nuku Hiva Isla	150.02	334	eLR	LR	08 00 08.1	
	comp=Z,296nm,31.0s						
PPT2	Papeete2	160.78	351	eLR	LR	08 05 15.1	
	comp=Z,246nm,25.5s						

*ISK **08** 06:57:15.4, 39°.11N×29°.13E, h4km, MD2.8*
*ISCJB **08** 06:57:16.1±0.5, 39°.10N±0°.03×29°.09E±0°.04, h7km±5km, Error ellipse: s-maj=4.7km s-min=4.2km az=32.5*
*DDA **08** 06:57:16.2, 39°.12N×29°.10E, h7km, Md2.7*
*CSEM **08** 06:57:16.4±0.1, 39°.10N×29°.11E, h10km, MD2.7, Error ellipse: s-maj=3.3km s-min=2.7km az=108.0*
ISC 08 06:57:15.7±0.9, **39°.12N**±0°.02×**29°.12E**±0°.03, **h16**km±8km, **n33**, σ0s**50**/46, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	Gediz	0.28	96	P	Pb	06 57 22.8	+0.2
GDZ				S	Sb	06 57 27.5	+0.3
GDZ	Gediz	0.28	96	i P	Pb	06 57 22.8	+0.2
GDZ				i S	Sb	06 57 27.5	+0.3
DEMI	Demirci	0.32	257	P	Pg	06 57 22.6	+0.2
DEMI				S	Sg	06 57 26.9	-0.1
DEMI	Demirci	0.32	257	i P	Pg	06 57 22.6	+0.2
DEMI				i S	Sg	06 57 26.9	-0.1
TVSB	Tavsanli	0.43	39	ePG	Pg	06 57 24.5	+0.1
TVSB				eSG	Sb	06 57 31.0	-0.2
TVSB	Tavsanli	0.43	39	ePg	Pg	06 57 24.5	+0.1
TVSB				eSg	Sb	06 57 31.0	-0.2
DURS	Dursunbey	0.69	314	P	Pb	06 57 30.0	+0.5
DURS				S	Sn	06 57 40.7	-0.8
DURS	Dursunbey	0.69	314	i P	Pb	06 57 30.0	+0.5
DURS				i S	Sn	06 57 40.7	-0.8
KULA	Kula-Manisa	0.70	211	ePG	Pg	06 57 29.3	-0.1
KULA	Kula-Manisa	0.70	211	ePg	Pg	06 57 29.3	-0.1
MANT	Manisa	0.76	215	P	Pb	06 57 31.0	+0.3
MANT				S	Sg	06 57 39.2	-1.5
MANT	Manisa	0.76	215	i P	Pb	06 57 31.0	+0.3
MANT				i S	Sg	06 57 39.2	-1.5
KHAL	Karahalli	0.80	158	P	Pn	06 57 32.8	+0.3
KHAL				S	Sb	06 57 43.0	+1.0
KHAL	Karahalli	0.80	158	i P	Pn	06 57 32.8	+0.3
KHAL				i S	Sb	06 57 43.0	+1.0
KHL	Karahalli	0.85	158	ePG	Pg	06 57 32.2	-0.1
KHL	Karahalli	0.85	158	ePg	Pg	06 57 32.2	-0.1
AKS	Akhisar	1.04	257	ePG	Pg	06 57 36.2	+0.3
AKS	Akhisar	1.04	257	ePg	Pg	06 57 36.2	+0.3
IGD	Bursa	1.15	3	i P	Pn	06 57 36.9	-0.2
IGD				i S	Sg	06 57 53.1	+0.2
CAVI	Cavuskoy	1.22	27	ePN	Pg	06 57 39.4	+0.2
CAVI	Cavuskoy	1.22	27	ePn	Pg	06 57 39.4	+0.2
IZI	Iznik	1.25	13	ePN	Pg	06 57 40.0	+0.2
IZI	Iznik	1.25	13	ePn	Pg	06 57 40.0	+0.2
ADVT	Abdulvahap	1.40	20	ePN	Pg	06 57 42.4	-0.2
ADVT	Abdulvahap	1.40	20	ePn	Pg	06 57 42.4	-0.2
GONE	Gonen-Balikesi	1.44	310	ePN	Pg	06 57 43.4	-0.1
GONE	Gonen-Balikesi	1.44	310	ePn	Pg	06 57 43.4	-0.1
ARMT	Armutlu	1.46	352	ePN	Pg	06 57 43.7	-0.1
ARMT	Armutlu	1.46	352	ePn	Pg	06 57 43.7	-0.1
EDC	Edincik	1.56	322	ePN	Pb	06 57 44.8	+0.6
EDC	Edincik	1.56	322	ePn	Pb	06 57 44.8	+0.6
GULT	Gulveren	1.70	39	ePN	Pb	06 57 46.9	+0.3
GULT	Gulveren	1.70	39	ePn	Pb	06 57 46.9	+0.3

*IDC **08** 06:59:35.8±1.2, 36°.19N×27°.63E, h0km, mb3.4/3, mb1 3.3/6, mb1mx3.2/39, mbtmp3.2/6, ML3.1/3, Error ellipse: s-maj=42.8km s-min=14.3km az=159.0*
*DDA **08** 06:59:35.4, 36°.70N×27°.13E, h2km, Ml3.4*
*ISK **08** 06:59:36.8, 36°.77N×27°.13E, h7km, ML3.3*
*ATH **08** 06:59:36.3, 36°.74N×27°.19E, h20km±1km, ML3.3/7, Error ellipse: s-maj=1.5km s-min=1.0km az=60.0*
*ISCJB **08** 06:59:37.3±0.4, 36°.75N±0°.02×27°.14E±0°.03, h9km±3km, mb3.4/3, Error ellipse: s-maj=3.6km s-min=3.1km az=27.8*
*THE **08** 06:59:37.5, 36°.73N×27°.22E, h1km±2km, ML3.6/5, Error ellipse: s-maj=2.4km s-min=0.9km az=285.0*
*CSEM **08** 06:59:37.1±0.1, 36°.73N×27°.13E, h5km, ML3.3, Error ellipse: s-maj=2.9km s-min=2.6km az=145.0*
ISC 08 06:59:37.6±0.8, **36°.74N**±0°.02×**27°.15E**±0°.02, **h10**km±5km, **n123**, σ0s**97**/155, **mb3.5**/3, **Dodecanese Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NISR	Nisiros	0.13	188	P	Pg	06 59 40.7	+0.1
NISR				S	Sg	06 59 42.9	+0.2
NISR	Nisiros	0.13	188	P	Pg	06 59 40.7	+0.1
NISR				S	Sg	06 59 42.9	+0.2
NISR	Nisiros	0.13	188	P	Pg	06 59 40.8	+0.1
NISR				S	Sg	06 59 43.5	+0.8
NISR				AML	AML	06 59 51.8	
	comp=N,21646μm,0.2s						
NISR				AML	AML	06 59 52.9	
	comp=E,5491 9μm,0.3s						
NIS1	Nisyros Isl.	0.14	171	ePG	Pg	06 59 40.7	-0.1
NIS1	Nisyros Isl.	0.14	171	P	Pg	06 59 40.5	-0.3
NIS1				S	Sg	06 59 42.7	-0.3
NIS1	Nisyros Isl.	0.14	171	P	Pg	06 59 40.5	-0.3
NIS1				S	Sg	06 59 42.7	-0.3
NIS1	Nisyros Isl.	0.14	171	P	Pg	06 59 40.2	-0.6
NIS1				S	Sg	06 59 44.2	+1.2
NIS1				AML	AML	06 59 51.3	
	comp=N,95218μm,0.6s						
NIS1				AML	AML	06 59 52.4	
BODT	Bodrum	0.35	21	ePG	Pg	06 59 44.2	-0.4
BODT	Bodrum	0.35	21	P	Pg	06 59 44.2	-0.4
BODT				S	Sg	06 59 49.4	+0.1
BODT	Bodrum	0.35	21	P	Pg	06 59 44.2	-0.4
BODT				S	Sg	06 59 49.4	+0.1
BDRM	Kayabasi	0.40	36	P	Pg	06 59 45.4	-0.2
BDRM				S	Sg	06 59 50.8	-0.1
BDRM	Kayabasi	0.40	36	i P	Pg	06 59 45.4	-0.2
BDRM				i S	Sg	06 59 50.9	-0.1
BDRM				i S	Sb	06 59 51.0	-2.1
ARG	Arkhangelos	0.94	123	P	Pg	06 59 54.0	-1.8
ARG				S	Sg	07 00 07.9	-0.1
ARG	Arkhangelos	0.94	123	P	Pg	06 59 54.0	-1.8
ARG				S	Sg	07 00 07.9	-0.1
GCAM	G?zelcaml?	0.96	4	P	Pg	06 59 55.9	-0.3
GCAM				S	Sn	07 00 10.7	-0.2
GCAM	G?zelcaml?	0.96	4	i P	Pg	06 59 55.9	-0.3
GCAM				i S	Sn	07 00 10.7	-0.2
YER	Yerkesik	0.99	66	ePG	Pg	06 59 56.4	-0.3
YER				eSG	Sb	07 00 10.6	+0.6
YER	Yerkesik	0.99	66	P	Pg	06 59 56.2	-0.5
YER				S	Sg	07 00 09.1	-0.5
YER	Yerkesik	0.99	66	ePg	Pg	06 59 56.4	-0.3
YER				S	Sg	07 00 09.1	-0.5
YER				eSg	Sb	07 00 10.6	+0.6
SMG	Samos	1.00	346	P	Pg	06 59 56.6	-0.3
SMG				S	Sn	07 00 12.7	+0.7
SMG	Samos	1.00	346	P	Pg	06 59 56.6	-0.3
SMG				S	Sg	07 00 09.8	-0.1
SMG	Samos	1.00	346	P	Pg	06 59 56.5	-0.3
SMG				S	Sg	07 00 09.8	-0.1
SMG				AML	AML	07 00 13.5	
	comp=N,4974μm,0.4s						
SMG				AML	AML	07 00 15.9	
	comp=E,8704μm,0.4s						
AYDN	Tasoluk	1.09	32	P	Pb	06 59 57.7	-0.9
AYDN	Tasoluk	1.09	32	i P	Pb	06 59 57.7	-0.9
TURN	Turunc	1.17	83	i P	Pb	06 59 52.9	-7.0
TURN				i S	Sb	07 00 06.2	-9.0
KARP	Karpathos	1.19	180	ePN	Pg	07 00 00.6	+0.2
KARP	Karpathos	1.19	180	P	Pb	06 59 58.5	-1.7
KARP				S	Sg	07 00 15.7	-0.2
KARP	Karpathos	1.19	180	P	Pb	06 59 58.5	-1.7
KARP	Karpathos	1.19	180	ePn	Pg	07 00 00.6	+0.2
KARP				S	Sg	07 00 15.7	-0.2
KARP	Karpathos	1.19	180	P	Pb	06 59 58.5	-1.7
KARP				S	Sb	07 00 14.7	-1.0
KARP				AML	AML	07 00 18.9	
	comp=N,1646μm,0.7s						
KARP				AML	AML	07 00 25.0	
	comp=E,1825μm,0.5s						
DALY	Dalyan (Mu¨la	1.21	86	ePN	Pn	07 00 00.2	-0.4
DALY	Dalyan (Mu¨la	1.21	86	ePn	Pn	07 00 00.2	-0.4
DGB	¨zmir	1.33	351	i P	Pn	07 00 01.1	-1.2
APE	Apeiranthos	1.34	285	ePN	Pn	07 00 02.1	-0.4
APE	Apeiranthos	1.34	285	P	Pn	07 00 01.8	-0.6
APE	Apeiranthos	1.34	285	P	Pn	07 00 01.8	-0.6
APE	Apeiranthos	1.34	285	ePn	Pn	07 00 02.1	-0.4
APE				S	Sg	07 00 20.6	-0.2
APE	Apeiranthos	1.34	285	P	Pn	07 00 01.6	-0.8
APE				S	Sg	07 00 20.6	-0.2
APE				AML	AML	07 00 27.6	
	comp=E,510μm,0.4s						
APE				AML	AML	07 00 29.7	
	comp=N,623μm,0.3s						
AYDB	Zeytinkoy-Aydi	1.34	26	ePN	Pn	07 00 01.8	-0.8
AYDB	Zeytinkoy-Aydi	1.34	26	ePn	Pn	07 00 01.8	-0.8
SANT	Santorini	1.41	255	P	Pg	07 00 04.4	-0.3
SANT	Santorini	1.41	255	P	Pg	07 00 04.4	-0.3
CMBO	Columbo, Santo	1.43	260	P	Pb	07 00 04.1	-0.2
CMBO	Columbo, Santo	1.43	260	P	Pb	07 00 04.1	-0.2
CMBO	Columbo, Santo	1.43	260	P	Pg	07 00 04.5	-0.6
THR5	Thira Island,	1.49	258	ePN	Pn	07 00 04.5	+0.1
THR5	Thira Island,	1.49	258	ePn	Pn	07 00 04.5	+0.1
FETY	Fethiye	1.56	93	ePN	Pb	07 00 06.1	-0.5
FETY	Fethiye	1.56	93	P	Pn	07 00 05.7	+0.3
FETY	Fethiye	1.56	93	P	Pn	07 00 05.7	+0.3
FETY	Fethiye	1.56	93	ePn	Pb	07 00 06.1	-0.5
ZEY	¨zmir	1.58	341	i P	Pn	07 00 05.0	-0.8
ZEY				i S	Sg	07 00 32.2	+3.5
BLCB	Balcova	1.65	357	ePN	Pn	07 00 06.4	-0.2
BLCB	Balcova	1.65	357	ePn	Pn	07 00 06.4	-0.2
IZM	Izmir	1.66	3	ePN	Pn	07 00 06.6	-0.3
IZM	Izmir	1.66	3	ePn	Pn	07 00 06.6	-0.3
URLA	Izmir	1.68	345	P	Pn	07 00 06.4	-0.7
URLA	Izmir	1.68	345	i P	Pn	07 00 06.4	-0.7
DNZL	Cakiroluk	1.79	57	P	Pn	07 00 09.0	+0.3
DNZL				S	Sg	07 00 35.2	+0.1
DNZL	Cakiroluk	1.79	57	i P	Pn	07 00 09.0	+0.3
DNZL				i S	Sg	07 00 35.2	+0.1
ZKR	Zakros	1.79	205	P	Pn	07 00 08.2	-0.3
ZKR	Zakros	1.79	205	P	Pn	07 00 08.2	-0.3
ZKR	Zakros	1.79	205	P	Pn	07 00 08.2	-0.3
DENT	Denizli	1.81	55	ePN	Pn	07 00 09.5	+0.6
DENT	Denizli	1.81	55	ePn	Pn	07 00 09.5	+0.6
CHOS	Chios island	1.86	332	ePN	Pn	07 00 09.6	-0.1
CHOS	Chios island	1.86	332	P	Pn	07 00 09.6	-0.1
CHOS	Chios island	1.86	332	P	Pn	07 00 09.6	-0.1
CHOS	Chios island	1.86	332	P	Pn	07 00 09.5	-0.1
CHOS				AML	AML	07 00 41.8	
	comp=E,892μm,0.5s						
CHOS				AML	AML	07 00 48.7	
	comp=N,629μm,0.8s						
GLHS	Glhisar (BURDU	1.93	77	ePN	Pn	07 00 11.4	+0.8
GLHS	Glhisar (BURDU	1.93	77	ePn	Pn	07 00 11.4	+0.8
GOLH	Golhisar	1.99	75	P	Pn	07 00 10.7	-0.8
GOLH	Golhisar	1.99	75	i P	Pn	07 00 10.7	-0.8
GOLH				i S	Sg	07 00 41.4	-0.4
AKAS	Kas	2.04	104	P	Pb	07 00 15.3	+0.4
AKAS	Kas	2.04	104	i P	Pb	07 00 15.3	+0.4
AKAS				i S	Sg	07 00 47.5	+4.2
KSL	Kastellorizon	2.05	106	P	Pn	07 00 11.8	-0.3
KSL	Kastellorizon	2.05	106	P	Pn	07 00 11.8	-0.3
KSL	Kastellorizon	2.05	106	P	Pn	07 00 11.8	-0.3
LAST	Lasithi	2.08	221	P	Pn	07 00 12.3	-0.3
LAST	Lasithi	2.08	221	P	Pn	07 00 12.3	-0.3
MANT	Manisa	2.08	32	P	Pn	07 00 12.3	-0.5
MANT	Manisa	2.08	32	i P	Pn	07 00 12.3	-0.5
KULA	Kula-Manisa	2.14	34	ePN	Pn	07 00 14.1	+0.6
KULA	Kula-Manisa	2.14	34	P	Pn	07 00 12.4	-1.1
KULA	Kula-Manisa	2.14	34	P	Pn	07 00 12.4	-1.1
KULA	Kula-Manisa	2.14	34	ePn	Pn	07 00 14.1	+0.6
SERI	Serifos	2.18	282	P	Pn	07 00 14.3	+0.4
SERI	Serifos	2.18	282	P	Pn	07 00 14.3	+0.4
SERI				AML	AML	07 00 55.8	
	comp=E,222μm,0.7s						
SERI				AML	AML	07 01 00.4	
	comp=N,320μm,0.8s						
AKS	Akhisar	2.20	14	ePN	Pn	07 00 14.4	+0.1
AKS	Akhisar	2.20	14	ePn	Pn	07 00 14.4	+0.1
ELL	Elmali	2.21	89	ePN	Pn	07 00 15.2	+0.6
ELL	Elmali	2.21	89	ePn	Pn	07 00 15.2	+0.6
IDI	Anoyia	2.33	232	Pn	Pn	07 00 16.0	-0.1
	comp=N,0.7nm,0.3s,baz=5.7,slow=12,SNR=5.0						
IDI				Lg	Lg	07 00 52.1	
	comp=N,4.6nm,0.3s,baz=93,slow=11,SNR=5.4					

NIS1	**Nisyros Isl.**	**0.15**	**187**	*e*PG	**Pg**	**07 01 11.5**	**+0.1**
NIS1				*e*SG	**Sg**	**07 01 14.5**	**+0.6**
NIS1	**Nisyros Isl.**	**0.15**	**187**	P	**Pg**	**07 01 11.2**	**-0.2**
NIS1	**Nisyros Isl.**	**0.15**	**187**	*e*Pg	**Pg**	**07 01 11.5**	**+0.1**
NIS1				S	**Sg**	**07 01 13.4**	**-0.5**
NIS1				*e*Sg	Sg	07 01 14.5	+0.6
NIS1	**Nisyros Isl.**	**0.15**	**187**	P	**Pg**	**07 01 11.2**	**-0.2**
NIS1				S	**Sg**	**07 01 13.4**	**-0.5**
NIS1				AML	AML	07 01 14.9	
	comp=E,21070μm,0.3s						
NIS1				AML	AML	07 01 17.8	
	comp=N,22628μm,0.3s						
NISR	**Nisiros**	**0.15**	**203**	P	**Pg**	**07 01 10.2**	**-1.2**
NISR				S	**Sg**	**07 01 14.0**	**+0.1**
NISR	**Nisiros**	**0.15**	**203**	P	**Pg**	**07 01 10.2**	**-1.2**
NISR				S	**Sg**	**07 01 14.0**	**+0.1**
NISR				AML	AML	07 01 14.0	
	comp=E,12717μm,0.3s						
NISR				AML	AML	07 01 14.7	
	comp=N,6176μm,0.1s						
BODT	**Bodrum**	**0.32**	**16**	*e*PG	**Pb**	**07 01 15.1**	**-0.6**
BODT	**Bodrum**	**0.32**	**16**	*e*Pg	**Pb**	**07 01 15.1**	**-0.6**
BDRM	**Kayabasi**	**0.37**	**32**	P	**Pg**	**07 01 15.0**	**-0.3**
BDRM				S	**Sb**	**07 01 21.6**	**-0.6**
BDRM	**Kayabasi**	**0.37**	**32**	*i* P	**Pg**	**07 01 15.0**	**-0.3**
BDRM				*i* S	**Sb**	**07 01 21.6**	**-0.6**
ARG	**Arkhangelos**	**0.92**	**125**	P	**Pg**	**07 01 24.5**	**-1.1**
ARG				S	**Sg**	**07 01 36.7**	**-0.8**
YER	**Yerkesik**	**0.95**	**66**	*e*PG	**Pn**	**07 01 27.9**	**+0.7**
YER	**Yerkesik**	**0.95**	**66**	*e*Pg	**Pn**	**07 01 27.9**	**+0.7**
GCAM	**G?zelcaml?**	**0.95**	**1**	P	**Pg**	**07 01 24.2**	**-2.0**
GCAM				S	**Sg**	**07 01 38.0**	**-0.6**
GCAM	**G?zelcaml?**	**0.95**	**1**	*i* P	**Pg**	**07 01 24.2**	**-2.0**
GCAM				*i* S	**Sg**	**07 01 38.0**	**-0.6**
SMG	**Samos**	**1.00**	**343**	P	**Pb**	**07 01 27.4**	**+0.2**
SMG				S	**Sn**	**07 01 42.3**	**+0.4**
SMG	**Samos**	**1.00**	**343**	P	**Pb**	**07 01 27.4**	**+0.2**
SMG				S	**Sn**	**07 01 42.3**	**+0.4**
SMG				AML	AML	07 01 46.3	
	comp=E,963μm,0.4s						
SMG				AML	AML	07 01 46.3	
	comp=N,567μm,0.3s						
AYDN	**Tasoluk**	**1.06**	**31**	P	**Pg**	**07 01 28.1**	**-0.2**
AYDN				S	**Sn**	**07 01 44.6**	**+1.2**
AYDN	**Tasoluk**	**1.06**	**31**	*i* P	**Pg**	**07 01 28.1**	**-0.2**
AYDN				*i* S	**Sn**	**07 01 44.6**	**+1.2**
TURN	**Turunc**	**1.13**	**83**	*i* P	Pg	07 01 22.7	-7.0
TURN				*i* S	Sg	07 01 34.9	-9.4
DALY	**Dalyan (Mu¨la**	**1.17**	**86**	*e*PN	**Pn**	**07 01 31.9**	**+1.8**
DALY	**Dalyan (Mu¨la**	**1.17**	**86**	*e*Pn	**Pn**	**07 01 31.9**	**+1.8**
KARP	**Karpathos**	**1.20**	**182**	*e*PN	**Pb**	**07 01 31.4**	**+0.7**
KARP	**Karpathos**	**1.20**	**182**	P	**Pg**	**07 01 28.8**	**-2.2**
KARP	**Karpathos**	**1.20**	**182**	*e*Pn	**Pb**	**07 01 31.4**	**+0.7**
KARP				S	**Sg**	**07 01 45.5**	**-1.2**
KARP	**Karpathos**	**1.20**	**182**	P	**Pg**	**07 01 28.8**	**-2.2**
KARP				S	**Sg**	**07 01 45.5**	**-1.2**
KARP				AML	AML	07 01 49.8	
	comp=N,263μm,0.5s						
KARP				AML	AML	07 01 50.8	
	comp=E,328μm,0.8s						
APE	**Apeiranthos**	**1.38**	**284**	*e*PN	**Pn**	**07 01 33.6**	**+0.5**
APE	**Apeiranthos**	**1.38**	**284**	*e*Pn	**Pn**	**07 01 33.6**	**+0.5**
APE	**Apeiranthos**	**1.38**	**284**	P	**Pg**	**07 01 34.6**	**+0.2**
APE	**Apeiranthos**	**1.38**	**284**	P	**Pg**	**07 01 34.6**	**+0.2**

*ISCJB **08** 07:04:28.9±0.4, 36˚.72N±0˚.02×27˚.22E±0˚.04, h8km±4km, Error ellipse: s-maj=5.2km s-min=3.5km az=178.2*
*CSEM **08** 07:04:28.7±0.2, 36˚.70N×27˚.23E, h5km, ML3.0, Error ellipse: s-maj=4.3km s-min=3.5km az=91.0*
*ISK **08** 07:04:28.6, 36˚.71N×27˚.27E, h5km, ML3.3*
*THE **08** 07:04:29.0, 36˚.71N×27˚.21E, h10km±1km, ML3.0/4, Error ellipse: s-maj=1.7km s-min=0.8km az=265.0*
*DDA **08** 07:04:29.7, 36˚.88N×27˚.31E, h20km, Md2.8*
ISC 08 07:04:28.3±0.8, 36˚.71N±0˚.02×27˚.23E±0˚.02, h15km±5km, n53, σ0°50/76, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NIS1	**Nisyros Isl.**	**0.12**	**202**	*e*PG	**Pg**	**07 04 31.9**	**+0.1**
NIS1	**Nisyros Isl.**	**0.12**	**202**	P	**Pg**	**07 04 31.9**	**+0.1**
NIS1				S	**Sg**	**07 04 34.2**	**+0.1**
NIS1	**Nisyros Isl.**	**0.12**	**202**	P	**Pg**	**07 04 31.9**	**+0.1**
NIS1				S	**Sg**	**07 04 34.2**	**+0.1**
NISR	**Nisiros**	**0.13**	**221**	P	**Pg**	**07 04 32.0**	**+0.1**
NISR				S	**Sb**	**07 04 34.9**	**-0.4**
NISR	**Nisiros**	**0.13**	**221**	P	**Pg**	**07 04 32.0**	**+0.1**
NISR				S	**Sb**	**07 04 34.9**	**-0.4**
BODT	**Bodrum**	**0.36**	**10**	*e*PG	**Pg**	**07 04 35.9**	**+0.3**
BODT				*e*SG	**Sb**	**07 04 41.5**	**-0.4**
BODT	**Bodrum**	**0.36**	**10**	P	**Pg**	**07 04 35.8**	**+0.2**
BODT				S	**Sg**	**07 04 40.9**	**+0.3**
BODT	**Bodrum**	**0.36**	**10**	*e*Pg	**Pg**	**07 04 35.9**	**+0.3**
BODT				S	**Sg**	**07 04 40.9**	**+0.3**
BODT				*e*Sg	**Sb**	**07 04 41.5**	**-0.4**
BDRM	**Kayabasi**	**0.39**	**25**	P	**Pg**	**07 04 35.6**	**-0.7**
BDRM	**Kayabasi**	**0.39**	**25**	*i* P	**Pg**	**07 04 35.6**	**-0.7**
ARG	**Arkhangelos**	**0.87**	**124**	P	**Pg**	**07 04 45.4**	**+0.1**
ARG				S	**Sn**	**07 04 58.7**	**+0.1**
ARG	**Arkhangelos**	**0.87**	**124**	P	**Pg**	**07 04 45.4**	**+0.1**
ARG				S	**Sn**	**07 04 58.7**	**+0.1**
YER	**Yerkesik**	**0.94**	**63**	*e*PG	**Pg**	**07 04 46.8**	**+0.2**
YER	**Yerkesik**	**0.94**	**63**	P	**Pn**	**07 04 47.6**	**+0.4**
YER				S	**Sn**	**07 05 01.1**	**+0.7**
YER	**Yerkesik**	**0.94**	**63**	*e*Pg	**Pg**	**07 04 46.8**	**+0.2**
YER	**Yerkesik**	**0.94**	**63**	P	**Pn**	**07 04 47.6**	**+0.4**
YER				S	**Sn**	**07 05 01.1**	**+0.7**
GCAM	**G?zelcaml?**	**0.99**	**0**	P	**Pb**	**07 04 46.3**	**-0.9**
GCAM				S	**Sn**	**07 05 01.6**	**+0.1**
GCAM	**G?zelcaml?**	**0.99**	**0**	*i* P	**Pb**	**07 04 46.3**	**-0.9**
GCAM				*i* S	**Sn**	**07 05 01.6**	**+0.1**
SMG	**Samos**	**1.04**	**343**	P	**Pn**	**07 04 48.5**	**0.0**
SMG				S	**Sn**	**07 05 03.0**	**+0.1**
SMG	**Samos**	**1.04**	**343**	P	**Pn**	**07 04 48.5**	**0.0**
SMG				S	**Sn**	**07 05 03.0**	**+0.1**
AYDN	**Tasoluk**	**1.08**	**28**	P	**Pg**	**07 04 49.3**	**+0.1**
AYDN				S	**Sb**	**07 05 03.1**	**+0.3**
AYDN	**Tasoluk**	**1.08**	**28**	*i* P	**Pg**	**07 04 49.3**	**+0.1**
AYDN				*i* S	**Sb**	**07 05 03.1**	**+0.3**
TURN	**Turunc**	**1.11**	**81**	*i* P	Pb	07 04 44.5	-4.8
TURN				*i* S	Sb	07 04 55.5	-8.1
DALY	**Dalyan (Mu¨la**	**1.15**	**84**	*e*PN	**Pg**	**07 04 50.5**	**+0.1**
DALY	**Dalyan (Mu¨la**	**1.15**	**84**	*e*Pn	**Pg**	**07 04 50.5**	**+0.1**
KARP	**Karpathos**	**1.16**	**183**	*e*PN	**Pg**	**07 04 50.9**	**+0.1**
KARP	**Karpathos**	**1.16**	**183**	P	**Pn**	**07 04 49.9**	**-0.3**
KARP				S	**Sb**	**07 05 05.2**	**+0.1**
KARP	**Karpathos**	**1.16**	**183**	P	**Pn**	**07 04 49.9**	**-0.3**
KARP	**Karpathos**	**1.16**	**183**	*e*Pn	**Pg**	**07 04 50.9**	**+0.1**
KARP				S	**Sb**	**07 05 05.2**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**1.34**	**23**	*e*PN	**Pg**	**07 04 54.7**	**+0.5**
AYDB	**Zeytinkoy-Aydi**	**1.34**	**23**	*e*Pn	**Pg**	**07 04 54.7**	**+0.5**
DGB	**˙zmir**	**1.37**	**348**	*i* P	**Pn**	**07 04 52.4**	**-0.5**
DGB				*i* S	**Sb**	**07 05 11.1**	**+0.1**
APE	**Apeiranthos**	**1.41**	**285**	*e*PN	**Pg**	**07 04 56.4**	**+0.9**
APE	**Apeiranthos**	**1.41**	**285**	P	**Pn**	**07 04 53.5**	**-0.1**
APE	**Apeiranthos**	**1.41**	**285**	P	**Pn**	**07 04 53.5**	**-0.1**
APE	**Apeiranthos**	**1.41**	**285**	*e*Pn	**Pg**	**07 04 56.4**	**+0.9**
FETY	**Fethiye**	**1.49**	**92**	*e*PN	**Pb**	**07 04 56.0**	**+0.3**
FETY	**Fethiye**	**1.49**	**92**	*e*Pn	**Pb**	**07 04 56.1**	**+0.3**
THR5	**Thira Island,**	**1.55**	**260**	*e*PN	**Pg**	**07 04 57.8**	**-0.2**
THR5	**Thira Island,**	**1.55**	**260**	*e*Pn	**Pg**	**07 04 57.8**	**-0.2**
ZEY	**˙zmir**	**1.63**	**339**	*i* P	**Pn**	**07 04 55.5**	**-1.1**
ZEY				*i* S	**Sb**	**07 05 18.4**	**-0.2**
BLCB	**Balcova**	**1.68**	**355**	*e*PN	**Pb**	**07 04 59.5**	**+0.5**
BLCB	**Balcova**	**1.68**	**355**	*e*Pn	**Pb**	**07 04 59.5**	**+0.5**
IZM	**Izmir**	**1.68**	**1**	*e*PN	**Pg**	**07 05 00.1**	**-0.6**
IZM	**Izmir**	**1.68**	**1**	*e*Pn	**Pg**	**07 05 00.1**	**-0.6**
URLA	**Izmir**	**1.72**	**343**	P	**Pn**	**07 04 58.5**	**+0.6**
URLA				S	**Sg**	**07 05 24.5**	**+0.7**
URLA	**Izmir**	**1.72**	**343**	*i* P	**Pn**	**07 04 58.5**	**+0.6**
URLA				*i* S	**Sg**	**07 05 24.5**	**+0.7**
GLHS	**Glhisar (BURDU**	**1.87**	**76**	*e*PN	**Pb**	**07 05 01.6**	**-0.7**
GLHS	**Glhisar (BURDU**	**1.87**	**76**	*e*Pn	**Pb**	**07 05 01.6**	**-0.7**
KULA	**Kula-Manisa**	**2.13**	**32**	*e*PN	**Pb**	**07 05 05.6**	**-1.1**
KULA	**Kula-Manisa**	**2.13**	**32**	*e*Pn	**Pb**	**07 05 05.6**	**-1.1**
ELL	**Elmali**	**2.15**	**88**	*e*PN	**Pb**	**07 05 06.1**	**-1.0**
ELL	**Elmali**	**2.15**	**88**	*e*Pn	**Pb**	**07 05 06.1**	**-1.0**

*ATH **08** 07:06:12.7, 36˚.71N×27˚.15E, h24km, ML3.8/4, Error ellipse: s-maj=1.6km s-min=0.7km az=75.0*
*DDA **08** 07:06:12.2, 36˚.67N×27˚.15E, h20km, Ml3.7*
*IDC **08** 07:06:12.0±1.0, 36˚.69N×27˚.27E, h0km, mb3.7/6, mb1 3.7/9, mb1mx3.5/46, mbtmp3.6/9, ML3.3/3, Error ellipse: s-maj=24.2km s-min=13.1km az=148.0*
*ISK **08** 07:06:13.2, 36˚.74N×27˚.13E, h5km, ML3.5*
*CSEM **08** 07:06:13.8±0.1, 36˚.70N×27˚.14E, h8km, ML3.8, Error ellipse: s-maj=3.0km s-min=2.5km az=161.0*
*ISCJB **08** 07:06:13.6±0.3, 36˚.72N±0˚.02×27˚.13E±0˚.02, h11km±2km, mb3.6/6, Error ellipse: s-maj=3.1km s-min=2.8km az=141.4*
*THE **08** 07:06:14.1, 36˚.73N×27˚.21E, h3km±2km, ML3.8/5, Error ellipse: s-maj=2.8km s-min=0.8km az=237.0*
ISC 08 07:06:14.3±0.7, 36˚.70N±0˚.02×27˚.14E±0˚.02, h16km±4km, n182, σ1°12/214, mb3.7/6, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NISR	**Nisiros**	**0.09**	**187**	P	**Pg**	**07 06 17.2**	**-0.3**
NISR				S	**Sg**	**07 06 19.7**	**+0.1**
NISR	**Nisiros**	**0.09**	**187**	P	**Pg**	**07 06 17.4**	**-0.2**
NISR				S	**Sg**	**07 06 19.7**	**+0.1**
NISR	**Nisiros**	**0.09**	**187**	P	**Pg**	**07 06 17.4**	**-0.2**
NISR				S	**Sg**	**07 06 19.0**	**-0.7**
NISR				AML	AML	07 06 20.2	
NISR				AML	AML	07 06 26.1	
	comp=N,55656μm,0.5s						
NIS1	**Nisyros Isl.**	**0.10**	**162**	*e*PG	**Pg**	**07 06 17.0**	**-0.7**
NIS1	**Nisyros Isl.**	**0.10**	**162**	P	**Pg**	**07 06 17.1**	**-0.7**
NIS1				S	**Sg**	**07 06 19.3**	**-0.6**
NIS1	**Nisyros Isl.**	**0.10**	**162**	P	**Pg**	**07 06 17.1**	**-0.7**
NIS1				S	**Sg**	**07 06 19.3**	**-0.6**
NIS1	**Nisyros Isl.**	**0.10**	**162**	P	**Pg**	**07 06 17.1**	**-0.7**
NIS1				S	**Sg**	**07 06 18.7**	**-1.2**
NIS1				AML	AML	07 06 20.7	
NIS1				AML	AML	07 06 21.1	
BODT	**Bodrum**	**0.39**	**20**	*e*PG	**Pg**	**07 06 20.9**	**-1.4**
BODT	**Bodrum**	**0.39**	**20**	P	**Pg**	**07 06 20.8**	**-1.5**
BODT				S	**Sg**	**07 06 26.1**	**-1.6**
BODT	**Bodrum**	**0.39**	**20**	*e*Pg	**Pg**	**07 06 20.9**	**-1.4**
BODT				S	**Sg**	**07 06 26.1**	**-1.6**
BDRM	**Kayabasi**	**0.44**	**33**	P	**Pg**	**07 06 21.7**	**-1.5**
BDRM				S	**Sg**	**07 06 27.7**	**-1.5**
BDRM	**Kayabasi**	**0.44**	**33**	*i* P	**Pg**	**07 06 21.7**	**-1.5**
BDRM				*i* S	**Sg**	**07 06 27.7**	**-1.5**
ARG	**Arkhangelos**	**0.93**	**121**	P	**Pg**	**07 06 30.5**	**-1.8**
ARG				S	**Sg**	**07 06 44.1**	**-0.4**
ARG	**Arkhangelos**	**0.93**	**121**	P	**Pg**	**07 06 30.6**	**-1.8**
ARG				S	**Sg**	**07 06 44.1**	**-0.4**
GCAM	**G?zelcaml?**	**1.00**	**4**	P	**Pg**	**07 06 32.4**	**-1.4**
GCAM				S	**Sb**	**07 06 47.0**	**+0.7**
GCAM	**G?zelcaml?**	**1.00**	**4**	*i* P	**Pg**	**07 06 32.4**	**-1.4**
GCAM				*i* S	**Sb**	**07 06 47.0**	**+0.7**
YER	**Yerkesik**	**1.01**	**64**	*e*PG	**Pg**	**07 06 33.2**	**-0.8**
YER				*e*SG	**Sb**	**07 06 47.1**	**+0.4**
YER	**Yerkesik**	**1.01**	**64**	P	**Pg**	**07 06 32.6**	**-1.4**
YER				S	**Sg**	**07 06 45.6**	**-1.7**
YER	**Yerkesik**	**1.01**	**64**	P	**Pg**	**07 06 32.6**	**-1.4**
YER	**Yerkesik**	**1.01**	**64**	*e*Pg	**Pg**	**07 06 33.2**	**-0.8**
YER				S	**Sg**	**07 06 45.6**	**-1.7**
YER				*e*Sg	**Sb**	**07 06 47.1**	**+0.4**
SMG	**Samos**	**1.04**	**347**	P	**Pg**	**07 06 33.1**	**-1.3**
SMG				S	**Sb**	**07 06 47.7**	**+0.4**
SMG	**Samos**	**1.04**	**347**	P	**Pn**	**07 06 34.2**	**0.0**
SMG				S	**Sb**	**07 06 47.7**	**+0.4**
SMG	**Samos**	**1.04**	**347**	P	**Pn**	**07 06 34.2**	**0.0**
SMG				S	**Sg**	**07 06 46.6**	**-1.4**
SMG				AML	AML	07 06 52.4	
	comp=N,7973μm,0.2s						
SMG				AML	AML	07 06 52.8	
	comp=E,8984μm,0.3s						
AYDN	**Tasoluk**	**1.13**	**31**	P	**Pg**	**07 06 34.2**	**-2.0**
AYDN				S	**Sg**	**07 06 48.7**	**-2.2**
AYDN	**Tasoluk**	**1.13**	**31**	*i* P	**Pg**	**07 06 34.1**	**-2.0**
AYDN				*i* S	**Sg**	**07 06 48.7**	**-2.2**
KARP	**Karpathos**	**1.15**	**179**	*e*PN	**Pb**	**07 06 36.1**	**+0.3**
KARP	**Karpathos**	**1.15**	**179**	P	**Pg**	**07 06 35.1**	**-1.4**
KARP				S	**Sg**	**07 06 50.9**	**-0.6**
KARP	**Karpathos**	**1.15**	**179**	P	**Pg**	**07 06 35.4**	**-1.1**
KARP	**Karpathos**	**1.15**	**179**	*e*Pn	**Pb**	**07 06 36.1**	**+0.3**
KARP				S	**Sg**	**07 06 50.9**	**-0.6**
KARP	**Karpathos**	**1.15**	**179**	P	**Pg**	**07 06 35.4**	**-1.1**
KARP				S	**Sg**	**07 06 49.7**	**-1.7**
KARP				AML	AML	07 06 53.4	
	comp=E,2703μm,0.4s						
KARP				AML	AML	07 06 55.3	
	comp=N,3459μm,0.7s						
TURN	**Turunc**	**1.19**	**81**	*i* P	Pg	07 06 29.5	-7.8
TURN				*i* S	Sg	07 06 43.0	-10
DALY	**Dalyan (Mu¨la**	**1.22**	**84**	*e*PN	**Pg**	**07 06 36.2**	**-1.6**
DALY	**Dalyan (Mu¨la**	**1.22**	**84**	*e*Pn	**Pg**	**07 06 36.2**	**-1.6**
APE	**Apeiranthos**	**1.34**	**287**	*e*PN	**Pn**	**07 06 38.2**	**-0.2**
APE	**Apeiranthos**	**1.34**	**287**	P	**Pn**	**07 06 38.3**	**-0.2**
APE	**Apeiranthos**	**1.34**	**287**	P	**Pn**	**07 06 38.3**	**-0.2**
APE	**Apeiranthos**	**1.34**	**287**	P	**Pn**	**07 06 38.3**	**-0.2**
DGB	**˙zmir**	**1.37**	**351**	*i* P	**Pn**	**07 06 37.8**	**-1.0**
DGB				*i* S	**Sn**	**07 06 59.8**	**+3.2**
AYDB	**Zeytinkoy-Aydi**	**1.38**	**25**	*e*PN	**Pn**	**07 06 38.8**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**1.38**	**25**	*e*Pn	**Pn**	**07 06 38.8**	**-0.3**
SANT	**Santorini**	**1.39**	**257**	P	**Pg**	**07 06 40.1**	**-1.0**
SANT	**Santorini**	**1.39**	**257**	P	**Pn**	**07 06 39.5**	**+0.4**
SANT	**Santorini**	**1.39**	**257**	P	**Pn**	**07 06 39.5**	**+0.4**
CMBO	**Columbo, Santo**	**1.41**	**261**	P	**Pg**	**07 06 40.4**	**-1.1**
CMBO	**Columbo, Santo**	**1.41**	**261**	P	**Pg**	**07 06 40.4**	**-1.1**
THR5	**Thira Island,**	**1.47**	**260**	*e*PN	**Pb**	**07 06 41.0**	**-0.3**
THR5	**Thira Island,**	**1.47**	**260**	*e*Pn	**Pb**	**07 06 41.0**	**-0.3**
FETY	**Fethiye**	**1.56**	**92**	*e*PN	**Pn**	**07 06 42.4**	**+0.9**
FETY	**Fethiye**	**1.56**	**92**	P	**Pn**	**07 06 42.1**	**+0.6**
FETY				S	**Sn**	**07 07 01.6**	**+0.2**
FETY	**Fethiye**	**1.56**	**92**	P	**Pn**	**07 06 42.1**	**+0.6**
FETY	**Fethiye**	**1.56**	**92**	*e*Pn	**Pn**	**07 06 42.4**	**+0.9**
FETY				S	**Sn**	**07 07 01.6**	**+0.2**
ZEY	**˙zmir**	**1.62**	**342**	*i* P	**Pn**	**07 06 41.6**	**-0.7**
BLCB	**Balcova**	**1.69**	**357**	*e*PN	**Pn**	**07 06 43.6**	**+0.4**
BLCB	**Balcova**	**1.69**	**357**	*e*Pn	**Pn**	**07 06 43.6**	**+0.4**
IZM	**Izmir**	**1.70**	**3**	*e*PN	**Pn**	**07 06 44.2**	**+0.9**
IZM	**Izmir**	**1.70**	**3**	*e*Pn	**Pn**	**07 06 44.3**	**+0.9**
URLA	**Izmir**	**1.72**	**346**	P	**Pn**	**07 06 43.0**	**-0.6**
URLA	**Izmir**	**1.72**	**346**	*i* P	**Pn**	**07 06 43.0**	**-0.6**
URLA				*i* S	**Sg**	**07 07 11.7**	**+2.1**
ZKR	**Zakros**	**1.75**	**206**	P	**Pn**	**07 06 45.1**	**+1.1**
ZKR	**Zakros**	**1.75**	**206**	P	**Pn**	**07 06 45.1**	**+1.1**
ZKR	**Zakros**	**1.75**	**206**	P	**Pn**	**07 06 42.8**	**-1.2**
DNZL	**Cakiroluk**	**1.82**	**56**	P	**Pn**	**07 06 45.2**	**+0.1**
DNZL	**Cakiroluk**	**1.82**	**56**	*i* P	**Pn**	**07 06 45.2**	**+0.1**
DENT	**Denizli**	**1.84**	**54**	*e*PN	**Pn**	**07 06 46.5**	**+1.2**
DENT	**Denizli**	**1.84**	**54**	*e*Pn	**Pn**	**07 06 46.5**	**+1.2**
NPS	**Neapolis**	**1.89**	**221**	P	**Pn**	**07 06 44.9**	**-1.1**
NPS	**Neapolis**	**1.89**	**221**	P	**Pn**	**07 06 44.9**	**-1.1**
CHOS	**Chios island**	**1.90**	**333**	*e*PN	**Pn**	**07 06 46.6**	**+0.5**
CHOS	**Chios island**	**1.90**	**333**	P	**Pn**	**07 06 45.4**	**-0.7**
CHOS	**Chios island**	**1.90**	**333**	P	**Pn**	**07 06 45.4**	**-0.7**
CHOS	**Chios island**	**1.90**	**333**	*e*Pn	**Pn**	**07 06 46.6**	**+0.5**
CHOS	**Chios island**	**1.90**	**333**	P	**Pn**	**07 06 44.6**	**-1.5**
GLHS	**Glhisar (BURDU**	**1.94**	**76**	*e*PN	**Pn**	**07 06 48.1**	**+1.3**
GLHS	**Glhisar (BURDU**	**1.94**	**76**	*e*Pn	**Pn**	**07 06 48.1**	**+1.3**
GOLH	**Golhisar**	**2.01**	**74**	P	**Pn**	**07 06 47.2**	**-0.5**
GOLH	**Golhisar**	**2.01**	**74**	*i* P	**Pn**	**07 06 47.2**	**-0.5**
AKAS	**Kas**	**2.04**	**102**	P	**Pn**	**07 06 48.7**	**+0.6**
AKAS	**Kas**	**2.04**	**102**	*i* P	**Pn**	**07 06 48.7**	**+0.6**
LAST	**Lasithi**	**2.04**	**222**	P	**Pb**	**07 06 49.9**	**-1.2**
LAST	**Lasithi**	**2.04**	**222**	P	**Pb**	**07 06 49.9**	**-1.2**
KSL	**Kastellorizon**	**2.04**	**105**	P	**Pn**	**07 06 48.1**	**+0.1**
KSL	**Kastellorizon**	**2.04**	**105**	P	**Pn**	**07 06 48.1**	**+0.1**
KSL	**Kastellorizon**	**2.04**	**105**	P	**Pn**	**07 06 46.2**	**-1.8**
MANT	**Manisa**	**2.12**	**32**	P	**Pn**	**07 06 48.2**	**-1.1**
MANT	**Manisa**	**2.12**	**32**	*i* P	**Pn**	**07 06 48.2**	**-1.1**
KULA	**Kula-Manisa**	**2.18**	**33**	*e*PN	**Pn**	**07 06 50.5**	**+0.5**
KULA	**Kula-Manisa**	**2.18**	**33**	P	**Pn**	**07 06 49.0**	**-1.0**
KULA	**Kula-Manisa**	**2.18**	**33**	P	**Pn**	**07 06 49.0**	**-1.0**
KULA	**Kula-Manisa**	**2.18**	**33**	*e*Pn	**Pn**	**07 06 50.5**	**+0.5**
MHLO	**Agia Marina, M**	**2.20**	**271**	P	**Pn**	**07 06 49.5**	**-0.7**
MHLO	**Agia Marina, M**	**2.20**	**271**	P	**Pn**	**07 06 49.5**	**-0.7**
ELL	**Elmali**	**2.23**	**88**	*e*PN	**Pn**	**07 06 52.1**	**+1.4**
ELL	**Elmali**	**2.23**	**88**	*e*Pn	**Pn**	**07 06 52.1**	**+1.4**
AKHS	**Akhisar**	**2.24**	**14**	*i* P	**Pg**	**07 06 56.7**	**-0.6**
AKHS				*i* S	**Sb**	**07 07 20.9**	**-1.1**
AKS	**Akhisar**	**2.24**	**14**	*e*PN	**Pn**	**07 06 51.3**	**+0.5**
AKS	**Akhisar**	**2.24**	**14**	*e*Pn	**Pn**	**07 06 51.3**	**+0.5**
IDI	**Anoyia**	**2.30**	**233**	Pn	**Pb**	**07 06 54.4**	**-1.1**
	comp=N,4.8nm,0.3s,baz=63,slow=13,SNR=6.6						
IDI				Lg	Lg	07 07 27.5	
	comp=N,3.8nm,0.3s,baz=205,slow=13,SNR=5.0						
IDI	**Anoyia**	**2.30**	**233**	P	**Pn**	**07 06 52.4**	**+0.7**
IDI	**Anoyia**	**2.30**	**233**	P	**Pn**	**07 06 52.4**	**+0.7**
IDI	**Anoyia**	**2.30**	**233**	P	**Pn**	**07 06 52.1**	**+0.4**
DKL	**Dikili**	**2.38**	**356**	*e*PN	**Pn**	**07 06 53.5**	**+0.8**
DKL	**Dikili**	**2.38**	**356**	*e*Pn	**Pn**	**07 06 53.5**	**+0.8**
KHL	**Karahalli**	**2.50**	**49**	*e*PN	**Pn**	**07 06 54.5**	**+0.2**
KHL	**Karahalli**	**2.50**	**49**	*e*Pn	**Pn**	**07 06 54.5**	**+0.2**
KHAL	**Karahalli**	**2.51**	**48**	P	**Pn**	**07 06 53.3**	**-1.2**
KHAL	**Karahalli**	**2.51**	**48**	*i* P	**Pn**	**07 06 53.3**	**-1.2**
KORT	**Korkueli**	**2.59**	**82**	P	**Pn**	**07 06 56.4**	**+0.7**
KORT				S	**Sn**	**07 07 28.5**	**+1.5**
KORT	**Korkueli**	**2.59**	**82**	*i* P	**Pn**	**07 06 56.4**	**+0.7**
KORT				*i* S	**Sn**	**07 07 28.5**	**+1.5**
AYVA	**Ayvalik**	**2.63**	**352**	*i* P	**Pg**	**07 07 05.6**	**+0.8**
PRK	**Paraskevi**	**2.64**	**345**	P	**Pn**	**07 06 55.8**	**-0.4**
PRK	**Paraskevi**	**2.64**	**345**	P	**Pn**	**07 06 55.8**	**-0.4**
PRK	**Paraskevi**	**2.64**	**345**	P	**Pn**	**07 06 55.0**	**-1.2**
SIGR	**SIGRI**	**2.71**	**338**	*e*PN	**Pn**	**07 06 57.7**	**+0.5**
SIGR	**SIGRI**	**2.71**	**338**	P	**Pn**	**07 06 56.8**	**-0.4**
SIGR	**SIGRI**	**2.71**	**338**	P	**Pn**	**07 06 56.8**	**-0.4**
SIGR	**SIGRI**	**2.71**	**338**	*e*Pn	**Pn**	**07 06 57.7**	**+0.5**
SIGR	**SIGRI**	**2.71**	**338**	P	**Pn**	**07 06 56.2**	**-1.0**
ANTB	**Antalya**	**2.83**	**85**	*e*PN	**Pn**	**07 07 00.4**	**+1.6**
ANTB	**Antalya**	**2.83**	**85**	*e*Pn	**Pn**	**07 07 00.4**	**+1.6**
BCK	**Bucak**	**2.86**	**74**	*e*PN	**Pn**	**07 07 01.2**	**+1.8**
BCK	**Bucak**	**2.86**	**74**	*e*Pn	**Pn**	**07 07 01.2**	**+1.8**
VLY	**Voula,Athens**	**2.91**	**294**	P	**Pn**	**07 07 00.7**	**+0.8**
VLY	**Voula,Athens**	**2.91**	**294**	P	**Pn**	**07 07 00.7**	**+0.8**
ISP	**Isparta**	**2.92**	**66**	*e*PN	**Pn**

0.6nm,0.6s,baz=247,slow=5.9,SNR=4.0
INK Inuvik 74.00 22 P **P 07 21 17.2 +0.3**
0.9nm,0.8s,baz=260,slow=6.6,SNR=4.5
YKA Yellowknife Ar 82.41 28 P **P 07 22 04.2 +0.6**
0.4nm,0.4s,baz=287,slow=5.0,SNR=21
YKA pP **sP 07 22 26.1 +4.0**
0.2nm,0.6s,baz=284,slow=5.2,SNR=2.5
ARCES ARCESS Array B 87.38 342 P **P 07 22 26.6 -1.9**
3.2nm,1.0s,baz=44,slow=11,SNR=5.2
FINES FINESS Array B 91.57 335 P **P 07 22 45.5 -2.8**
0.6nm,0.4s,baz=74,slow=4.0,SNR=13
FINES pP **sP 07 23 06.7 0.0**
0.9nm,0.8s,baz=109,slow=4.6,SNR=1.9
TORD Torodi Ar. Bea 135.66 305 PKP **PKPdf 07 29 02.4 -0.5**
0.4nm,0.8s,baz=38,slow=2.0,SNR=3.5
DBIC Dimbokro 144.64 303 PKP **PKPab 07 29 17.4 -0.5**
3.2nm,0.7s,baz=20,slow=2.9,SNR=4.5
LPAZ La Paz 147.07 99 PKPbc **PKPbc 07 29 25.9 -0.2**
0.4nm,0.5s,baz=233,slow=5.9,SNR=2.3

*IDC **08** 07:15:54.7±1.5, 36°.51N×27°.34E, h0km, mb3.6/6, mb1 3.6/7, mb1mx3.4/42, mbtmp3.5/7, ML3.2/1, Error ellipse: s-maj=34.6km s-min=21.3km az=150.0*
*DDA **08** 07:15:54.0, 36°.65N×27°.13E, h11km, Ml3.6*
*ATH **08** 07:15:55.5, 36°.73N×27°.16E, h21km±1km, ML3.6/4, Error ellipse: s-maj=1.8km s-min=1.0km az=217.0*
*CSEM **08** 07:15:56.5±0.1, 36°.73N×27°.15E, h10km, ML3.6, Error ellipse: s-maj=2.9km s-min=2.6km az=147.0*
*THE **08** 07:15:56.3, 36°.73N×27°.19E, h0km±1km, ML3.8/4, Error ellipse: s-maj=1.8km s-min=0.9km az=278.0*
*ISK **08** 07:15:56.1, 36°.73N×27°.17E, h13km, ML3.2*
*ISCJB **08** 07:15:56.3±0.4, 36°.73N±0°.02×27°.14E±0°.03, h10km±3km, mb3.4/6, Error ellipse: s-maj=3.5km s-min=3.0km az=24.1*
ISC 08 07:15:57.0±0.7, 36°.71N±0°.02×27°.17E±0°.02, h11km±4km, n139, σ0°89/171, mb3.5/6, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NISR	**Nisiros**	**0.11**	**200**	P	**Pg**	**07 15 59.8**	**+0.1**
NISR				S	**Sg**	**07 16 02.2**	**+0.4**
NISR	**Nisiros**	**0.11**	**200**	P	**Pg**	**07 15 59.8**	**+0.1**
NISR				S	**Sg**	**07 16 01.7**	**-0.1**
NISR	**Nisiros**	**0.11**	**200**	P	**Pg**	**07 15 59.9**	**+0.2**
NISR				S	**Sg**	**07 16 01.7**	**-0.1**
NISR				AML	AML	07 16 02.6	
	comp=E,85967μm,0.3s						
NISR				AML	AML	07 16 03.6	
	comp=N,28817μm,0.2s						
NIS1	**Nisyros Isl.**	**0.11**	**178**	*e*PG	**Pg**	**07 15 59.8**	**0.0**
NIS1	**Nisyros Isl.**	**0.11**	**178**	P	**Pg**	**07 15 59.8**	**0.0**
NIS1				S	**Sg**	**07 16 01.9**	**0.0**
NIS1	**Nisyros Isl.**	**0.11**	**178**	P	**Pg**	**07 15 59.8**	**0.0**
NIS1				S	**Sg**	**07 16 01.9**	**0.0**
NIS1	**Nisyros Isl.**	**0.11**	**178**	P	**Pg**	**07 15 60.0**	**+0.2**
NIS1				S	**Sg**	**07 16 01.5**	**-0.4**
NIS1				AML	AML	07 16 05.0	
NIS1				AML	AML	07 16 05.4	
BODT	**Bodrum**	**0.37**	**17**	*e*PG	**Pg**	**07 16 03.8**	**-0.5**
BODT				*e*SG	**Sg**	**07 16 09.1**	**-0.1**
BODT	**Bodrum**	**0.37**	**17**	P	**Pg**	**07 16 03.7**	**-0.6**
BODT				S	**Sg**	**07 16 09.1**	**-0.1**
BODT	**Bodrum**	**0.37**	**17**	P	**Pg**	**07 16 03.7**	**-0.6**
BODT				S	**Sg**	**07 16 09.1**	**-0.1**
BDRM	**Kayabasi**	**0.41**	**32**	P	**Pg**	**07 16 04.6**	**-0.6**
BDRM				S	**Sg**	**07 16 10.4**	**-0.3**
BDRM	**Kayabasi**	**0.41**	**32**	*i* P	**Pg**	**07 16 04.6**	**-0.6**
BDRM				*i* S	**Sg**	**07 16 10.4**	**-0.3**
ARG	**Arkhangelos**	**0.91**	**122**	P	**Pg**	**07 16 13.2**	**-1.3**
ARG				S	**Sb**	**07 16 26.8**	**-0.1**
ARG	**Arkhangelos**	**0.91**	**122**	P	**Pg**	**07 16 13.3**	**-1.3**
ARG				S	**Sb**	**07 16 26.8**	**-0.1**
YER	**Yerkesik**	**0.98**	**64**	*e*PG	**Pg**	**07 16 15.6**	**-0.4**
YER	**Yerkesik**	**0.98**	**64**	P	**Pg**	**07 16 14.7**	**-1.2**
YER				S	**Sb**	**07 16 29.5**	**+0.4**
YER	**Yerkesik**	**0.98**	**64**	P	**Pg**	**07 16 14.7**	**-1.2**
YER	**Yerkesik**	**0.98**	**64**	*e*Pg	**Pg**	**07 16 15.6**	**-0.4**
YER				S	**Sb**	**07 16 29.5**	**+0.4**
GCAM	**G?zelcaml?**	**0.99**	**3**	P	**Pg**	**07 16 15.4**	**-0.6**
GCAM				S	**Sn**	**07 16 30.3**	**-0.4**
GCAM	**G?zelcaml?**	**0.99**	**3**	*i* P	**Pg**	**07 16 15.4**	**-0.6**
GCAM				*i* S	**Sn**	**07 16 30.3**	**-0.4**
SMG	**Samos**	**1.03**	**345**	P	**Pb**	**07 16 15.8**	**-1.0**
SMG				S	**Sn**	**07 16 31.0**	**-0.8**
SMG	**Samos**	**1.03**	**345**	P	**Pb**	**07 16 15.8**	**-1.0**
SMG				S	**Sn**	**07 16 31.0**	**-0.8**
SMG	**Samos**	**1.03**	**345**	P	**Pg**	**07 16 16.9**	**+0.1**
SMG				S	**Sn**	**07 16 32.2**	**+0.4**
SMG				AML	AML	07 16 34.8	
	comp=N,4760μm,0.4s						
SMG				AML	AML	07 16 35.2	
	comp=E,7992μm,0.3s						
AYDN	**Tasoluk**	**1.10**	**31**	P	**Pb**	**07 16 16.9**	**-1.2**
AYDN				S	**Sb**	**07 16 31.5**	**-1.0**
AYDN	**Tasoluk**	**1.10**	**31**	*i* P	**Pb**	**07 16 16.9**	**-1.2**
AYDN				*i* S	**Sb**	**07 16 31.5**	**-1.0**
TURN	**Turunc**	**1.16**	**82**	*i* P	Pb	07 16 11.8	-7.1
TURN				*i* S	Sb	07 16 23.6	-10
KARP	**Karpathos**	**1.16**	**180**	*e*PN	**Pb**	**07 16 18.8**	**-0.2**
KARP	**Karpathos**	**1.16**	**180**	P	**Pb**	**07 16 17.7**	**-1.4**
KARP	**Karpathos**	**1.16**	**180**	P	**Pb**	**07 16 17.7**	**-1.4**
KARP	**Karpathos**	**1.16**	**180**	*e*Pn	**Pb**	**07 16 18.8**	**-0.2**
KARP				S	**Sg**	**07 16 34.4**	**0.0**
KARP	**Karpathos**	**1.16**	**180**	P	**Pb**	**07 16 17.5**	**-1.5**
KARP				S	**Sg**	**07 16 34.4**	**0.0**
KARP				AML	AML	07 16 37.4	
	comp=N,1768μm,0.7s						
KARP				AML	AML	07 16 40.1	
	comp=E,1110μm,0.5s						
DALY	**Dalyan (Mu¨la**	**1.19**	**84**	*e*PN	**Pn**	**07 16 18.9**	**-0.7**
DALY	**Dalyan (Mu¨la**	**1.19**	**84**	*e*Pn	**Pn**	**07 16 18.9**	**-0.7**
DGB	**¨zmir**	**1.36**	**350**	*i* P	**Pn**	**07 16 20.6**	**-1.3**
DGB				*i* S	**Sg**	**07 16 40.5**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**1.36**	**25**	*e*PN	**Pn**	**07 16 21.2**	**-0.8**
AYDB	**Zeytinkoy-Aydi**	**1.36**	**25**	*e*Pn	**Pn**	**07 16 21.2**	**-0.8**
APE	**Apeiranthos**	**1.36**	**286**	*e*PN	**Pn**	**07 16 21.5**	**-0.5**
APE	**Apeiranthos**	**1.36**	**286**	P	**Pn**	**07 16 20.9**	**-1.1**
APE	**Apeiranthos**	**1.36**	**286**	*e*Pn	**Pn**	**07 16 21.5**	**-0.5**
APE	**Apeiranthos**	**1.36**	**286**	P	**Pn**	**07 16 20.9**	**-1.1**
SANT	**Santorini**	**1.42**	**257**	P	**Pn**	**07 16 21.5**	**-1.2**
SANT	**Santorini**	**1.42**	**257**	P	**Pn**	**07 16 21.5**	**-1.2**
CMBO	**Columbo, Santo**	**1.44**	**261**	P	**Pg**	**07 16 24.2**	**-0.4**
CMBO	**Columbo, Santo**	**1.44**	**261**	P	**Pg**	**07 16 24.2**	**-0.4**
THR3	**Thira Island,**	**1.46**	**259**	P	**Pn**	**07 16 22.3**	**-0.9**
THR3	**Thira Island,**	**1.46**	**259**	P	**Pn**	**07 16 22.3**	**-0.9**
THR5	**Thira Island,**	**1.50**	**259**	*e*PN	**Pn**	**07 16 23.4**	**-0.4**
THR5	**Thira Island,**	**1.50**	**259**	*e*Pn	**Pn**	**07 16 23.4**	**-0.4**
FETY	**Fethiye**	**1.54**	**92**	*e*PN	**Pn**	**07 16 23.8**	**-0.5**
FETY	**Fethiye**	**1.54**	**92**	P	**Pb**	**07 16 25.0**	**-0.5**
FETY				S	**Sg**	**07 16 45.8**	**-0.6**
FETY	**Fethiye**	**1.54**	**92**	*e*Pn	**Pn**	**07 16 23.8**	**-0.5**
FETY	**Fethiye**	**1.54**	**92**	P	**Pb**	**07 16 25.0**	**-0.5**
FETY				S	**Sg**	**07 16 45.8**	**-0.6**
ZEY	**¨zmir**	**1.61**	**341**	*i* P	**Pn**	**07 16 24.0**	**-1.4**
ZEY				*i* S	**Sg**	**07 16 51.8**	**+2.9**
BLCB	**Balcova**	**1.67**	**356**	*e*PN	**Pn**	**07 16 25.7**	**-0.5**
BLCB	**Balcova**	**1.67**	**356**	*e*Pn	**Pn**	**07 16 25.7**	**-0.5**
IZM	**Izmir**	**1.69**	**2**	*e*PN	**Pn**	**07 16 26.0**	**-0.4**
IZM	**Izmir**	**1.69**	**2**	*e*Pn	**Pn**	**07 16 26.0**	**-0.4**
URLA	**Izmir**	**1.71**	**345**	P	**Pn**	**07 16 25.5**	**-1.2**
URLA	**Izmir**	**1.71**	**345**	*i* P	**Pn**	**07 16 25.5**	**-1.2**
URLA				*i* S	**Sg**	**07 16 54.0**	**+2.1**
ZKR	**Zakros**	**1.77**	**206**	P	**Pn**	**07 16 28.3**	**+0.8**
ZKR	**Zakros**	**1.77**	**206**	P	**Pn**	**07 16 28.3**	**+0.8**
DNZL	**Cakiroluk**	**1.79**	**56**	P	**Pn**	**07 16 27.9**	**0.0**
DNZL	**Cakiroluk**	**1.79**	**56**	*i* P	**Pn**	**07 16 27.9**	**0.0**
DNZL				*i* S	**Sg**	**07 16 56.3**	**+1.9**
DENT	**Denizli**	**1.81**	**54**	*e*PN	**Pn**	**07 16 28.1**	**0.0**
DENT	**Denizli**	**1.81**	**54**	*e*Pn	**Pn**	**07 16 28.2**	**0.0**
CHOS	**Chios island**	**1.89**	**332**	*e*PN	**Pn**	**07 16 28.6**	**-0.7**
CHOS	**Chios island**	**1.89**	**332**	P	**Pn**	**07 16 28.1**	**-1.2**
CHOS	**Chios island**	**1.89**	**332**	P	**Pn**	**07 16 28.1**	**-1.2**
CHOS	**Chios island**	**1.89**	**332**	*e*Pn	**Pn**	**07 16 28.6**	**-0.7**
CHOS	**Chios island**	**1.89**	**332**	P	**Pn**	**07 16 27.6**	**-1.7**
GLHS	**Glhisar (BURDU**	**1.92**	**76**	*e*PN	**Pn**	**07 16 29.5**	**-0.1**
GLHS	**Glhisar (BURDU**	**1.92**	**76**	*e*Pn	**Pn**	**07 16 29.5**	**-0.1**
NPS	**Neapolis**	**1.92**	**222**	P	**Pb**	**07 16 30.8**	**-1.2**
NPS	**Neapolis**	**1.92**	**222**	P	**Pb**	**07 16 30.8**	**-1.2**
GOLH	**Golhisar**	**1.98**	**74**	P	**Pb**	**07 16 32.6**	**-0.5**
GOLH				S	**Sb**	**07 16 58.6**	**+0.7**
GOLH	**Golhisar**	**1.98**	**74**	*i* P	**Pb**	**07 16 32.6**	**-0.5**
GOLH				*i* S	**Sb**	**07 16 58.6**	**+0.7**
AKAS	**Kas**	**2.02**	**103**	P	**Pb**	**07 16 32.6**	**-1.1**
AKAS	**Kas**	**2.02**	**103**	*i* P	**Pb**	**07 16 32.6**	**-1.1**
KSL	**Kastellorizon**	**2.02**	**105**	P	**Pn**	**07 16 30.9**	**-0.1**
KSL	**Kastellorizon**	**2.02**	**105**	P	**Pn**	**07 16 30.6**	**-0.4**
LAST	**Lasithi**	**2.07**	**222**	P	**Pn**	**07 16 32.5**	**+0.8**
LAST	**Lasithi**	**2.07**	**222**	P	**Pn**	**07 16 32.5**	**+0.8**
MANT	**Manisa**	**2.09**	**31**	P	**Pn**	**07 16 31.5**	**-0.6**
MANT	**Manisa**	**2.09**	**31**	*i* P	**Pn**	**07 16 31.5**	**-0.6**
KULA	**Kula-Manisa**	**2.15**	**33**	*e*PN	**Pn**	**07 16 32.2**	**-0.7**
KULA	**Kula-Manisa**	**2.15**	**33**	P	**Pn**	**07 16 31.7**	**-1.2**
KULA	**Kula-Manisa**	**2.15**	**33**	P	**Pn**	**07 16 31.7**	**-1.2**
KULA	**Kula-Manisa**	**2.15**	**33**	*e*Pn	**Pn**	**07 16 32.2**	**-0.7**
ELL	**Elmali**	**2.20**	**88**	*e*PN	**Pn**	**07 16 33.0**	**-0.5**
ELL	**Elmali**	**2.20**	**88**	*e*Pn	**Pn**	**07 16 33.0**	**-0.5**
SERI	**Serifos**	**2.20**	**283**	P	**Pn**	**07 16 32.0**	**-1.4**
SERI	**Serifos**	**2.20**	**283**	P	**Pn**	**07 16 32.0**	**-1.4**
AKHS	**Akhisar**	**2.22**	**13**	*i* P	**Pg**	**07 16 39.3**	**-0.2**
AKS	**Akhisar**	**2.22**	**13**	*e*PN	**Pn**	**07 16 33.3**	**-0.5**
AKS	**Akhisar**	**2.22**	**13**	*e*Pn	**Pn**	**07 16 33.3**	**-0.5**
IDI	**Anoyia**	**2.33**	**233**	P	**Pn**	**07 16 34.3**	**-1.0**
IDI	**Anoyia**	**2.33**	**233**	P	**Pn**	**07 16 34.3**	**-1.0**
DKL	**Dikili**	**2.37**	**355**	*e*PN	**Pn**	**07 16 35.5**	**-0.2**
DKL	**Dikili**	**2.37**	**355**	*e*Pn	**Pn**	**07 16 35.5**	**-0.2**
KHL	**Karahalli**	**2.47**	**49**	*e*PN	**Pn**	**07 16 37.6**	**+0.4**
KHL	**Karahalli**	**2.47**	**49**	*e*Pn	**Pn**	**07 16 37.6**	**+0.4**
KHAL	**Karahalli**	**2.48**	**47**	P	**Pn**	**07 16 36.0**	**-1.4**
KHAL	**Karahalli**	**2.48**	**47**	*i* P	**Pn**	**07 16 36.0**	**-1.4**
KORT	**Korkueli**	**2.56**	**83**	P	**Pn**	**07 16 39.4**	**+0.8**
KORT	**Korkueli**	**2.56**	**83**	*i* P	**Pn**	**07 16 39.4**	**+0.8**
PRK	**Paraskevi**	**2.63**	**345**	P	**Pn**	**07 16 38.5**	**-0.8**
PRK	**Paraskevi**	**2.63**	**345**	P	**Pn**	**07 16 38.5**	**-0.8**
PRK	**Paraskevi**	**2.63**	**345**	P	**Pn**	**07 16 37.5**	**-1.8**
SIGR	**SIGRI**	**2.70**	**338**	P	**Pn**	**07 16 39.3**	**-1.0**
SIGR	**SIGRI**	**2.70**	**338**	P	**Pn**	**07 16 38.6**	**-1.7**
SIGR	**SIGRI**	**2.70**	**338**	P	**Pn**	**07 16 38.6**	**-1.7**
ANTB	**Antalya**	**2.80**	**85**	*e*PN	**Pn**	**07 16 42.5**	**+0.8**
ANTB	**Antalya**	**2.80**	**85**	*e*Pn	**Pn**	**07 16 42.5**	**+0.8**
BCK	**Bucak**	**2.83**	**74**	*e*PN	**Pn**	**07 16 41.9**	**-0.3**
BCK	**Bucak**	**2.83**	**74**	*e*Pn	**Pn**	**07 16 41.9**	**-0.3**
ISP	**Isparta**	**2.89**	**66**	*e*PN	**Pn**	**07 16 43.6**	**+0.6**
ISP	**Isparta**	**2.89**	**66**	*e*Pn	**Pn**	**07 16 43.6**	**+0.6**
VLY	**Voula,Athens**	**2.92**	**294**	P	**Pn**	**07 16 43.5**	**+0.1**
VLY	**Voula,Athens**	**2.92**	**294**	P	**Pn**	**07 16 43.5**	**+0.1**
BALB	**Balikesir**	**2.98**	**11**	*e*PN	**Pn**	**07 16 44.1**	**0.0**
BALB	**Balikesir**	**2.98**	**11**	*e*Pn	**Pn**	**07 16 44.1**	**0.0**
GDZ	**Gediz**	**2.99**	**37**	P	**Pn**	**07 16 42.8**	**-1.7**
GDZ	**Gediz**	**2.99**	**37**	*i* P	**Pn**	**07 16 42.8**	**-1.7**
DURS	**Dursunbey**	**3.06**	**19**	P	**Pn**	**07 16 45.3**	**0.0**
DURS	**Dursunbey**	**3.06**	**19**	*i* P	**Pn**	**07 16 45.3**	**0.0**
DURS				*i* S	**Pb**	**07 16 52.9**	**+1.4**
SUTC	**Sutluce-Ispart**	**3.15**	**75**	*e*PN	**Pn**	**07 16 47.1**	**+0.4**
SUTC	**Sutluce-Ispart**	**3.15**	**75**	*e*Pn	**Pn**	**07 16 47.1**	**+0.4**
TVSB	**Tavsanli**	**3.28**	**33**	*e*PN	**Pn**	**07 16 48.7**	**+0.4**
TVSB	**Tavsanli**	**3.28**	**33**	*e*Pn	**Pn**	**07 16 48.7**	**+0.4**
LIA	**Limnos Island**	**3.54**	**334**	P	**Pn**	**07 16 51.3**	**-0.6**
SMTH	**Samothraki Isl**	**3.97**	**342**	P	**Pn**	**07 16 56.1**	**-1.6**
SMTH	**Samothraki Isl**	**3.97**	**342**	P	**Pn**	**07 16 56.1**	**-1.6**
BRTR	**Keskin Array B**	**5.91**	**57**	Pn	**Pn**	**07 17 25.5**	**+0.9**
	comp=E,0.6nm,0.3s,baz=236,slow=15,SNR=14						
ESDC	**Sonseca Array**	**24.59**	**286**	P	**P**	**07 21 18.1**	**+1.0**
	comp=E,0.4nm,0.6s,baz=88,slow=8.5,SNR=3.3						
FINES	**FINESS Array B**	**24.76**	**359**	P	**P**	**07 21 19.1**	**+0.8**
	comp=E,1.5nm,1.0s,baz=174,slow=14,SNR=2.7						
HFS	**Hagfors**	**24.99**	**344**	P	**P**	**07 21 21.2**	**+0.8**
	comp=E,1.7nm,0.9s,baz=174,slow=30,SNR=2.2						
EKA	**Eskdalemuir Ar**	**27.78**	**322**	P	**P**	**07 21 48.4**	**+2.8**
	comp=E,1.2nm,0.8s,baz=125,slow=17,SNR=3.8						
TORD	**Torodi Ar. Bea**	**32.73**	**231**	P	**P**	**07 22 29.0**	**-0.8**
	comp=E,0.2nm,0.4s,baz=34,slow=8.7,SNR=2.7						
MKAR	**Makanchi Array**	**41.56**	**58**	P	**P**	**07 23 44.3**	**-0.2**
	comp=E,0.6nm,0.7s,baz=280,slow=7.3,SNR=5.6						

*ISCJB **08** 07:28:01.9±0.5, 10°.77N±0°.03×62°.39W±0°.03, h93km±7km, Error ellipse: s-maj=6.3km s-min=3.4km az=138.2*
*FUNV **08** 07:28:03.1, 10°.77N×62°.24W, h27km, MW3.4*
*TRN **08** 07:28:04.6, 10°.81N×62°.22W, h92km, MD3.7*
ISC 08 07:28:02.0±1.3, 10°.73N±0°.04×62°.34W±0°.04, h99km±9km, n25, σ1°37/45, 1D, Near coast of Venezuela

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TCE	**Chacachacare**	**0.58**	**94**	*e*P	**Pn**	**07 28 20.1**	**+1.7**
TCE				*e*S	**Sn**	**07 28 30.4**	**-0.2**
GUNV	**Guanoco**	**0.82**	**226**	*e*P	**Pn**	**07 28 21.3**	**+0.8**
GUNV				*e*S	**Sn**	**07 28 33.2**	**-1.2**
CRUV	**Carupano**	**0.88**	**266**	⇓P	**Pn**	**07 28 20.8**	**-0.3**
CRUV				*e*S	**Sn**	**07 28 33.5**	**-2.0**
TRN	**Trinidad (W)**	**0.93**	**95**	*e*P	**Pn**	**07 28 22.4**	**+0.8**
TRN				*e*S	**Sn**	**07 28 35.4**	**-0.9**
TPP	**Pointe-a-Pierr**	**0.97**	**115**	*e*P	**Pn**	**07 28 23.5**	**+1.5**
TPP				*e*S	**Sn**	**07 28 37.2**	**+0.1**
GRGR	**Grenville**	**1.54**	**26**	*e*P	**Pn**	**07 28 28.6**	**-0.2**
GRGR				*e*S	**Sn**	**07 28 47.9**	**-1.2**
GRW	**Mount Saint Ca**	**1.57**	**25**	*e*P	**Pn**	**07 28 30.2**	**+1.0**
GRW				*e*S	**Sn**	**07 28 47.6**	**-2.1**
GRHS	**Sauteurs**	**1.63**	**25**	*e*P	**Pn**	**07 28 31.3**	**+1.4**
GRHS				*e*S	**Sn**	**07 28 50.5**	**-0.6**
GRSS	**Sisters**	**1.71**	**25**	*e*P	**Pn**	**07 28 32.6**	**+1.7**
GRSS				*e*S	**Sn**	**07 28 52.3**	**-0.5**
TOSP	**Speyside**	**1.86**	**72**	*e*P	**Pn**	**07 28 33.3**	**+0.6**
TOSP				*e*S	**Sn**	**07 28 55.0**	**-1.2**
ORIV	**Oritupano**	**1.96**	**213**	*e*P	**Pn**	**07 28 35.6**	**+1.6**
FCV	**Fort Charlotte**	**2.64**	**24**	*e*P	**Pn**	**07 28 44.1**	**+1.2**
FCV				*e*S	**Sn**	**07 29 13.7**	**-0.7**
SVB	**Belmont**	**2.74**	**23**	*e*P	**Pn**	**07 28 44.7**	**+0.4**
SVB				*e*S	**Sn**	**07 29 14.8**	**-2.0**
GURV	**El Guri**	**3.04**	**194**	*e*P	**Pn**	**07 28 49.5**	**+1.1**
GURV				*e*S	**Sn**	**07 29 23.4**	**-0.7**
MCLT	**Moule a Chique**	**3.26**	**25**	*e*P	**Pn**	**07 28 52.1**	**+0.9**
MCLT				*e*S	**Sn**	**07 29 27.0**	**-2.2**
CUPV	**Cœpira**	**3.46**	**259**	*e*P	**Pn**	**07 28 55.1**	**+1.1**
CUPV				*e*S	**Sn**	**07 29 34.3**	**+0.2**
BIRV	**Birongo**	**3.87**	**267**	*e*P	**Pn**	**07 29 01.6**	**+2.2**
BIRV				*e*S	**Sn**	**07 29 44.5**	**+0.6**
LPMF	**Morne Lapointe**	**4.05**	**19**	*e*P	**Pn**	**07 29 04.0**	**+2.2**
FDF	**Fort de France**	**4.14**	**16**	*e*P	**Pn**	**07 29 04.0**	**+0.8**
MERV	**Las Mercedes**	**4.17**	**250**	*e*P	**Pn**	**07 29 04.4**	**+1.0**
MERV				*e*S	**Sn**	**07 29 50.6**	**-0.5**
GBMF	**Grand Be**	**4.20**	**16**	*e*P	**Pn**	**07 29 05.2**	**+1.2**
LUEV	**Luepa**	**4.94**	**170**	*e*P	**Pn**	**07 29 14.4**	**+0.4**
LUEV				*e*S	**Sn**	**07 30 07.2**	**-2.9**
TURV	**Turiamo**	**5.41**	**268**	*e*P	**Pn**	**07 29 21.5**	**+1.2**
TURV				*e*S	**Sn**	**07 30 20.5**	**-0.9**
BAUV	**El Baul**	**5.89**	**253**	*e*S	**Sn**	**07 30 31.2**	**-1.9**
MAPV	**Macapo**	**6.08**	**262**	*e*P	**Pn**	**07 29 30.4**	**+0.9**
MAPV				*e*S	**Sn**	**07 30 35.7**	**-2.1**

IDC 08 07:28:11.5±3.2, 6°.42S×147°.84E, h0km, mb3.8/2, mb1 3.9/4, mb1mx3.5/47, mbtmp3.8/4, ML3.6/1, MS3.1/3, Ms1 3.1/3, ms1mx2.7/33, Error ellipse: s-maj=70.7km s-min=33.7km az=97.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**3.04**	**193**	Pn	Pn	07 29 02.6	+1.7
	3.6nm,0.3s,baz=22,slow=5.6,SNR=27						
PMG				Sn	Sn	07 29 40.6	+2.6
	8.3nm,0.3s,baz=153,slow=18,SNR=8.2						
PMG				LR	LR	07 30 14.1	
	comp=Z,151nm,18.7s,baz=14,slow=40						
HNR	**Honiara**	**12.36**	**105**	LR	LR	07 35 18.4	
	comp=Z,70nm,19.4s,baz=62,slow=34						
WRA	**Warramunga Arr**	**18.78**	**223**	P	P	07 32 31.3	-1.2
	0.2nm,0.3s,baz=49,slow=11,SNR=9.5						
ASAR	**Alice Springs**	**21.76**	**217**	P	P	07 33 03.8	-1.2
	1.3nm,0.5s,baz=53,slow=9.1,SNR=16						
FITZ	**Fitzroy Crossi**	**24.57**	**240**	P	P	07 33 33.2	-0.2
	2.9nm,0.5s,baz=48,slow=8.4,SNR=15						
KAPI	**Kappang**	**27.98**	**271**	LR	LR	07 47 25.9	
	comp=Z,108nm,19.8s,baz=312,slow=41						
TORD	**Torodi Ar. Bea**	**146.00**	**284**	PKPbc	PKPbc	07 47 54.4	0.0
	0.3nm,0.4s,baz=68,slow=3.6,SNR=4.1						

*ATH **08** 07:28:52.1, 36°.68N×27°.20E, h23km±1km, ML2.2/6, Error ellipse: s-maj=3.3km s-min=1.1km az=81.0*
*DDA **08** 07:28:52.8, 36°.71N×27°.25E, h7km, Md2.6*
*ISCJB **08** 07:28:53.3±0.4, 36°.69N±0°.02×27°.26E±0°.04, h10km±3km, Error ellipse: s-maj=5.1km s-min=3.6km az=7.8*
*THE **08** 07:28:53.2, 36°.69N×27°.28E, h4km±3km, ML2.6/3, Error ellipse: s-maj=3.3km s-min=0.7km az=240.0*
*CSEM **08** 07:28:53.0±0.2, 36°.69N×27°.24E, h12km, ML2.2, Error ellipse: s-maj=4.8km s-min=3.8km az=90.0*
*ISK **08** 07:28:53.4, 36°.72N×27°.29E, h13km, MD3.1*
ISC 08 07:28:52.7±0.8, 36°.70N±0°.02×27°.22E±0°.02, h18km±4km, n48, σ0°58/73, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NIS1	**Nisyros Isl.**	**0.10**	**201**	*e*PG	**Pg**	**07 28 57.4**	**+1.0**
NIS1	**Nisyros Isl.**	**0.10**	**201**	P	**Pg**	**07 28 56.4**	**0.0**
NIS1				S	**Sg**	**07 28 57.6**	**-1.2**
NIS1	**Nisyros Isl.**	**0.10**	**201**	P	**Pg**	**07 28 56.4**	**0.0**
NIS1	**Nisyros Isl.**	**0.10**	**201**	*e*Pg	**Pg**	**07 28 57.4**	**+1.0**
NIS1				S	**Sg**	**07 28 58.9**	**+0.1**
NIS1	**Nisyros Isl.**	**0.10**	**201**	P	**Pg**	**07 28 56.0**	**-0.4**
NIS1				S	**Sg**	**07 28 58.9**	**+0.1**
NIS1				AML	AML	07 29 02.0	
	comp=E,9816μm,0.2s						
NIS1				AML	AML	07 29 02.8	
	comp=N,7748μm,0.2s						
NISR	**Nisiros**	**0.12**	**221**	P	**Pg**	**07 28 56.6**	**+0.1**
NISR				S	**Sg**	**07 28 59.1**	**+0.1**
NISR	**Nisiros**	**0.12**	**221**	P	**Pg**	**07 28 57.1**	**+0.6**
NISR				S	**Sg**	**07 28 59.1**	**+0.1**
NISR	**Nisiros**	**0.12**	**221**	P	**Pg**	**07 28 57.1**	**+0.6**
NISR				S	**Sg**	**07 28 58.8**	**-0.2**
NISR				AML	AML	07 28 59.4	
	comp=N,3253μm,0.2s						
NISR				AML	AML	07 28 59.5	
	comp=E,5478μm,0.2s						
BODT	**Bodrum**	**0.37**	**11**	*e*PG	**Pb**	**07 29 00.8**	**0.0**
BODT				*e*SG	**Sb**	**07 29 06.2**	**-0.1**
BODT	**Bodrum**	**0.37**	**11**	P	**Pg**	**07 29 00.6**	**+0.2**
BODT				S	**Sb**	**07 29 06.2**	**-0.1**
BODT	**Bodrum**	**0.37**	**11**	*e*Pg	**Pb**	**07 29 00.8**	**0.0**
BODT				S	**Sb**	**07 29 06.2**	**-0.1**
BDRM	**Kayabasi**	**0.41**	**26**	P	**Pg**	**07 29 00.7**	**-0.4**
BDRM				S	**Sg**	**07 29 06.8**	**+0.1**
BDRM	**Kayabasi**	**0.41**	**26**	*i* P	**Pg**	**07 29 00.7**	**-0.4**
BDRM				*i* S	**Sg**	**07 29 06.8**	**+0.1**
ARG	**Arkhangelos**	**0.87**	**123**	P	**Pg**	**07 29 09.7**	**0.0**
ARG				S	**Sg**	**07 29 21.4**	**+0.2**
ARG	**Arkh

MJAR				LR	LR	07 34 44.0	
	comp=Z,109nm,21.4s,baz=95,slow=43						
MAT	**Matsushiro**	**5.04**	**254**	P	**Pn**	**07 32 22.9**	**+0.2**
MAT				S	**Sn**	**07 33 16.9**	**-2.8**
NEM2	**Nemuro 2**	**5.39**	**12**	P	Pn	07 32 22.8	-4.6
NEM2				S	Sn	07 33 19.4	-8.7
JOSM	**Okushiri--Mats**	**5.39**	**319**	P	**Pn**	**07 32 25.9**	**-1.6**
JTKR	**Abashiri--Toko**	**5.87**	**358**	P	**Pn**	**07 32 31.1**	**-3.0**
JTKR				*e*S	Sn	07 33 33.5	-6.6
JHJ2	**Mitsune**	**6.13**	**217**	*e*Pn	**Pn**	**07 32 38.2**	**+0.5**
JHJ2				*e*Sn	**Sn**	**07 33 43.5**	**-3.1**
ASAJ	**Asahikawa**	**6.14**	**349**	Pn	**Pn**	**07 32 36.4**	**-1.3**
	4.1nm,0.3s,baz=191,slow=9.1,SNR=25						
ASAJ				Sn	**Sn**	**07 33 47.3**	**+0.6**
	1.7nm,0.3s,baz=31,slow=20,SNR=5.0						
JHJ	**Hachijo jima 2**	**6.14**	**217**	Pn	**Pn**	**07 32 36.0**	**-1.8**
	12nm,0.3s,baz=101,slow=22,SNR=5.2						
JHJ				Sn	**Sn**	**07 33 42.8**	**-4.1**
	25nm,0.3s,baz=248,slow=21,SNR=4.0						
USRK	**Ussuriysk Ar.**	**11.05**	**307**	Pn	**Pn**	**07 33 46.1**	**+1.1**
	0.5nm,0.3s,baz=115,slow=14,SNR=6.6						
JCJ	**Chichijima**	**11.10**	**189**	LR	LR	07 39 37.8	
	comp=Z,25nm,18.1s,baz=158,slow=47						
JNU	**Nakatsue**	**11.94**	**249**	Pn	**Pn**	**07 33 56.5**	**-0.8**
	0.3nm,0.3s,baz=13,slow=7.4,SNR=3.5						
MDJ	**Mudanjiang**	**12.77**	**305**	*e*Pn	**Pn**	**07 34 07.9**	**-0.7**
KSRS	**Korea Array**	**12.92**	**272**	Pn	**Pn**	**07 34 11.1**	**+0.5**
	0.2nm,0.3s,baz=86,slow=14,SNR=7.5						
KSAR	**Wonju Array Be**	**12.95**	**272**	Pn	**Pn**	**07 34 11.1**	**+0.1**
KLR	**Kul'dur**	**14.31**	**325**	Pn	**Pn**	**07 34 32.2**	**+2.7**
	0.1nm,0.3s,baz=137,slow=18,SNR=4.2						
PETK	**Petropavlovsk-**	**17.68**	**28**	Pn	**Pn**	**07 35 13.5**	**+0.6**
	0.5nm,0.3s,baz=112,slow=19,SNR=5.6						
PET	**Petropavlovsk**	**17.97**	**29**	*e*P	**P**	**07 35 17.1**	**+0.4**
	2.0nm,0.2s						
HIA	**Hailar**	**20.84**	**310**	*e*P	Pn	07 35 49.6	-1.1
	9.0nm,1.1s						
BJT	**Baijiatuau**	**21.84**	**284**	*e*P	**P**	**07 36 00.7**	**+1.8**
	4.1nm,0.8s						
SEY	**Seymchan**	**25.36**	**9**	P	**P**	**07 36 34.0**	**+0.9**
	4.3nm,0.6s,baz=178,slow=6.1,SNR=18						
H11N1	**WAKE ISLAND Hy**	**26.89**	**127**	T	T	08 04 50.2	
	baz=195,slow=74,SNR=3.6						
H11N3	**WAKE ISLAND Hy**	**26.89**	**127**	T	T	08 04 48.4	
	baz=318,slow=74,SNR=3.8						
ZALV	**Zalesovo Beam**	**42.87**	**312**	P	**P**	**07 39 06.2**	**+2.0**
	0.5nm,0.5s,baz=108,slow=9.7,SNR=2.6						
MKAR	**Makanchi Array**	**45.45**	**302**	P	**P**	**07 39 25.9**	**+0.8**
	0.5nm,0.6s,baz=79,slow=8.9,SNR=5.2						
KURK	**Kurchatov**	**47.04**	**308**	*e*P	**P**	**07 39 37.5**	**0.0**
	7.6nm,0.8s						
ILAR	**Eielson Array**	**47.40**	**33**	P	**P**	**07 39 39.5**	**-0.5**
	0.6nm,0.8s,baz=263,slow=7.0,SNR=5.6						
TKM2	**Tokmak 2**	**51.09**	**298**	*e*P	**P**	**07 40 10.5**	**+1.6**
	1.4nm,0.6s						
INK	**Inuvik**	**52.42**	**28**	P	**P**	**07 40 16.9**	**-1.1**
	1.0nm,0.5s,baz=301,slow=4.1,SNR=12						
WRAB	**Tennant Creek**	**58.46**	**191**	*e*P	**P**	**07 41 01.4**	**-0.7**
	3.0nm,0.8s						
WRA	**Warramunga Arr**	**58.47**	**191**	P	**P**	**07 41 01.3**	**-0.8**
	1.7nm,0.5s,baz=7.9,slow=7.1,SNR=22						
AKTO	**Aktyubinsk**	**59.62**	**312**	P	**P**	**07 41 12.3**	**+2.5**
	1.1nm,0.7s,baz=72,slow=5.7,SNR=5.1						
YKA	**Yellowknife Ar**	**61.76**	**31**	P	**P**	**07 41 23.6**	**-0.6**
	0.5nm,0.7s,baz=301,slow=6.6,SNR=10.0						
ASAR	**Alice Springs**	**62.20**	**191**	P	**P**	**07 41 27.1**	**-0.4**
	0.4nm,0.8s,baz=15,slow=9.9,SNR=7.4						
NVAR	**Mina Array Bea**	**72.56**	**55**	P	**P**	**07 42 34.4**	**+1.0**
	1.9nm,0.7s,baz=288,slow=5.8,SNR=13						
PDAR	**Pinedale Array**	**75.32**	**47**	P	**P**	**07 42 49.6**	**+0.2**
	1.0nm,0.5s,baz=271,slow=1.3,SNR=13						
TXAR	**Lajitas Array**	**87.70**	**54**	P	**P**	**07 43 54.9**	**-0.1**
	0.2nm,0.6s,baz=305,slow=3.2,SNR=3.1						
TORD	**Torodi Ar. Bea**	**118.11**	**318**	PKP	**PKPdf**	**07 49 53.4**	**+0.1**
	0.4nm,0.9s,baz=205,slow=6.6,SNR=2.5						

*ISCJB **08** 07:34:16.9±0.4, 36°.70N±0°.02×27°.22E±0°.05, h8km±3km, Error ellipse: s-maj=6.4km s-min=3.6km az=6.2*
*ATH **08** 07:34:16.1, 36°.67N×27°.13E, h19km±1km, ML2.2/3, Error ellipse: s-maj=2.0km s-min=1.0km az=241.0*
*DDA **08** 07:34:16.7, 36°.72N×27°.24E, h8km, Md2.5*
*CSEM **08** 07:34:16.6±0.1, 36°.70N×27°.18E, h8km, ML2.2, Error ellipse: s-maj=3.5km s-min=2.4km az=93.0*
*ISK **08** 07:34:16.5, 36°.73N×27°.19E, h5km, MD3.0*

ISC 08 07:34:16.2±0.8, 36°.71N±0°.02×27°.19E±0°.03, h17km±5km, n37, σ0s56/53, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NIS1	**Nisyros lsl.**	**0.11**	**187**	*e*PG	**Pb**	**07 34 19.7**	**-0.3**
NIS1	**Nisyros lsl.**	**0.11**	**187**	P	**Pb**	**07 34 19.1**	**-0.8**
NIS1	**Nisyros lsl.**	**0.11**	**187**	*e*Pg	**Pb**	**07 34 19.7**	**-0.3**
NIS1				S	**Sb**	**07 34 21.5**	**-0.9**
NIS1	**Nisyros lsl.**	**0.11**	**187**	P	**Pb**	**07 34 19.1**	**-0.8**
NIS1				S	**Sb**	**07 34 21.5**	**-0.9**
NIS1				AML	AML	07 34 23.8	
	comp=E,5182μm,0.3s						
NIS1				AML	AML	07 34 24.6	
	comp=N,5733μm,0.3s						
NISR	**Nisiros**	**0.11**	**208**	P	**Pg**	**07 34 19.9**	**0.0**
NISR				S	**Sg**	**07 34 22.7**	**+0.4**
NISR	**Nisiros**	**0.11**	**208**	P	**Pg**	**07 34 19.9**	**0.0**
NISR				AML	AML	07 34 22.4	
	comp=N,1516μm,0.1s						
NISR				AML	AML	07 34 22.4	
	comp=E,3549μm,0.2s						
NISR				S	**Sg**	**07 34 22.7**	**+0.4**
BODT	**Bodrum**	**0.36**	**15**	*e*PG	**Pg**	**07 34 23.7**	**-0.1**
BODT				*e*SG	**Sg**	**07 34 29.1**	**+0.2**
BODT	**Bodrum**	**0.36**	**15**	*e*Pg	**Pg**	**07 34 23.7**	**-0.1**
BODT				*e*Sg	**Sg**	**07 34 29.1**	**+0.2**
BDRM	**Kayabasi**	**0.41**	**30**	P	**Pg**	**07 34 24.5**	**0.0**
BDRM				S	**Sg**	**07 34 30.6**	**+0.4**
BDRM	**Kayabasi**	**0.41**	**30**	*i* P	**Pg**	**07 34 24.5**	**0.0**
BDRM				*i* S	**Sg**	**07 34 30.6**	**+0.4**
ARG	**Arkhangelos**	**0.90**	**123**	P	**Pb**	**07 34 33.5**	**+0.1**
ARG				S	**Sn**	**07 34 46.7**	**-0.1**
YER	**Yerkesik**	**0.97**	**64**	*e*PG	**Pg**	**07 34 35.8**	**+0.8**
YER	**Yerkesik**	**0.97**	**64**	*e*Pg	**Pg**	**07 34 35.8**	**+0.8**
GCAM	**G?zelcaml?**	**0.99**	**2**	P	**Pb**	**07 34 33.3**	**-1.6**
GCAM				S	**Sn**	**07 34 49.1**	**+0.2**
GCAM	**G?zelcaml?**	**0.99**	**2**	*i* P	**Pb**	**07 34 33.3**	**-1.6**
GCAM				*i* S	**Sn**	**07 34 49.1**	**+0.2**
SMG	**Samos**	**1.03**	**344**	P	**Pg**	**07 34 36.7**	**+0.4**
SMG				S	**Sn**	**07 34 50.5**	**+0.3**
SMG	**Samos**	**1.03**	**344**	P	**Pg**	**07 34 36.7**	**+0.4**
SMG				S	**Sn**	**07 34 50.5**	**+0.3**
SMG				AML	AML	07 34 54.8	
	comp=N,244μm,0.2s						
SMG				AML	AML	07 34 55.0	
	comp=E,256μm,0.3s						
AYDN	**Tasoluk**	**1.09**	**30**	P	**Pg**	**07 34 37.7**	**+0.3**
AYDN				S	**Sg**	**07 34 52.5**	**+0.7**
AYDN	**Tasoluk**	**1.09**	**30**	*i* P	**Pg**	**07 34 37.7**	**+0.3**
AYDN				*i* S	**Sg**	**07 34 52.5**	**+0.7**
TURN	**Turunc**	**1.14**	**81**	*i* P	Pn	07 34 31.8	-5.6
TURN				*i* S	Sb	07 34 44.0	-8.1
KARP	**Karpathos**	**1.16**	**181**	*e*PN	Pg	**07 34 39.1**	**+0.4**
KARP	**Karpathos**	**1.16**	**181**	P	**Pn**	**07 34 37.7**	**-0.1**
KARP	**Karpathos**	**1.16**	**181**	*e*Pn	**Pg**	**07 34 39.1**	**+0.4**
KARP				S	**Sb**	**07 34 52.6**	**-0.1**
KARP	**Karpathos**	**1.16**	**181**	P	**Pn**	**07 34 37.7**	**-0.1**
KARP				S	**Sb**	**07 34 52.6**	**-0.1**
DALY	**Dalyan (Mu¨la**	**1.18**	**84**	*e*PN	**Pg**	**07 34 39.6**	**+0.6**
DALY	**Dalyan (Mu¨la**	**1.18**	**84**	*e*Pn	**Pg**	**07 34 39.6**	**+0.6**
AYDB	**Zeytinkoy-Aydi**	**1.35**	**24**	*e*PN	**Pg**	**07 34 42.6**	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**1.35**	**24**	*e*Pn	**Pg**	**07 34 42.6**	**+0.3**
APE	**Apeiranthos**	**1.38**	**285**	*e*PN	**Pg**	**07 34 43.0**	**+0.2**
APE	**Apeiranthos**	**1.38**	**285**	P	**Pn**	**07 34 41.3**	**+0.5**
APE	**Apeiranthos**	**1.38**	**285**	*e*Pn	**Pg**	**07 34 43.0**	**+0.2**
APE	**Apeiranthos**	**1.38**	**285**	P	**Pn**	**07 34 41.4**	**+0.5**
FETY	**Fethiye**	**1.52**	**92**	*e*PN	**Pg**	**07 34 45.0**	**-0.5**
FETY	**Fethiye**	**1.52**	**92**	*e*Pn	**Pg**	**07 34 45.0**	**-0.5**
ZEY	**¨zmir**	**1.62**	**340**	*i* S	**Sg**	**07 35 09.4**	**+0.9**
CHOS	**Chios island**	**1.90**	**332**	*e*PN	**Pb**	**07 34 50.3**	**-0.2**
CHOS	**Chios island**	**1.90**	**332**	*e*Pn	**Pb**	**07 34 50.3**	**-0.2**

*ISK **08** 07:37:24.6, 34°.35N×26°.82E, h62km, MD3.6*
*ISCJB **08** 07:37:25.8±0.5, 34°.42N±0°.05×26°.80E±0°.05, h73km±14km, Error ellipse: s-maj=8.2km s-min=5.6km az=152.0*

*ATH **08** 07:37:25.2, 34°.37N×26°.89E, h40km±3km, ML2.6/2, Error ellipse: s-maj=5.0km s-min=1.9km az=319.0*
*CSEM **08** 07:37:27.3±0.2, 34°.44N×26°.81E, h60km, ML2.5, Error ellipse: s-maj=4.2km s-min=3.6km az=173.0*
*THE **08** 07:37:31.1, 34°.72N×26°.65E, h78km±4km, ML2.5/4, Error ellipse: s-maj=5.9km s-min=1.4km az=341.0*
*HLW **08** 07:37:31.5, 34°.00N×26°.96E, h30km±19km, Md2.7, Ml2.8*
*DDA **08** 07:38:01.0, 36°.98N×28°.46E, h7km, Md2.9*

ISC 08 07:37:24.8±1.3, 34°.43N±0°.04×26°.82E±0°.04, h90km±14km, n76, σ2s26/93, Crete

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZKR	**Zakros**	**0.85**	**324**	P	**Pn**	**07 37 42.9**	**+0.1**
ZKR				S	**Sn**	**07 37 54.4**	**-2.0**
ZKR	**Zakros**	**0.85**	**324**	P	**Pn**	**07 37 42.9**	**+0.1**
ZKR				S	**Sn**	**07 37 54.4**	**-2.0**
ZKR	**Zakros**	**0.85**	**324**	P	**Pn**	**07 37 42.6**	**-0.2**
ZKR				S	**Sn**	**07 37 57.4**	**+1.0**
ZKR				AML	AML	07 38 02.0	
	comp=E,800μm,0.4s						
ZKR				AML	AML	07 38 04.5	
	comp=N,746μm,0.7s						
KARP	**Karpathos**	**1.15**	**14**	*e*PN	**Pn**	**07 37 46.4**	**+0.1**
KARP				*e*SN	**Sn**	**07 38 02.5**	**0.0**
KARP	**Karpathos**	**1.15**	**14**	P	**Pn**	**07 37 47.6**	**+1.3**
KARP				S	**Sn**	**07 38 01.7**	**-0.8**
KARP	**Karpathos**	**1.15**	**14**	*e*Pn	**Pn**	**07 37 46.4**	**+0.1**
KARP	**Karpathos**	**1.15**	**14**	P	**Pn**	**07 37 47.6**	**+1.3**
KARP				S	**Sn**	**07 38 02.6**	**0.0**
KARP	**Karpathos**	**1.15**	**14**	P	**Pn**	**07 37 48.3**	**+2.0**
KARP				S	**Sn**	**07 38 02.6**	**0.0**
KARP				AML	AML	07 38 05.8	
	comp=E,362μm,0.4s						
KARP				AML	AML	07 38 15.2	
	comp=N,408μm,0.6s						
NPS	**Neapolis**	**1.30**	**310**	P	**Pn**	**07 37 49.7**	**+1.7**
NPS	**Neapolis**	**1.30**	**310**	P	**Pn**	**07 37 49.8**	**+1.7**
NPS	**Neapolis**	**1.30**	**310**	P	**Pn**	**07 37 49.8**	**+1.7**
LAST	**Lasithi**	**1.33**	**304**	P	**Pn**	**07 37 50.0**	**+1.5**
LAST				S	**Sn**	**07 38 03.9**	**-2.4**
LAST	**Lasithi**	**1.33**	**304**	P	**Pn**	**07 37 50.0**	**+1.5**
LAST				S	**Sn**	**07 38 03.9**	**-2.4**
LAST	**Lasithi**	**1.33**	**304**	P	**Pn**	**07 37 50.3**	**+1.9**
SIVA	**Sivas**	**1.76**	**290**	P	**Pn**	**07 37 56.0**	**+2.2**
SIVA	**Sivas**	**1.76**	**290**	P	**Pn**	**07 37 56.0**	**+2.2**
SIVA	**Sivas**	**1.76**	**290**	P	**Pn**	**07 37 55.0**	**+1.2**
IDI	**Anoyia**	**1.81**	**299**	P	**Pn**	**07 37 56.9**	**+2.4**
IDI				S	**Sn**	**07 38 15.0**	**-2.1**
IDI	**Anoyia**	**1.81**	**299**	P	**Pn**	**07 37 56.8**	**+2.3**
IDI	**Anoyia**	**1.81**	**299**	P	**Pn**	**07 37 56.9**	**+2.3**
ARG	**Arkhangelos**	**2.08**	**30**	P	**Pn**	**07 38 00.6**	**+2.6**
ARG				S	**Sn**	**07 38 24.3**	**+0.9**
ARG	**Arkhangelos**	**2.08**	**30**	P	**Pn**	**07 38 00.6**	**+2.6**
ARG				S	**Sn**	**07 38 24.3**	**+0.9**
SANT	**Santorini**	**2.24**	**331**	P	**Pn**	**07 38 00.6**	**+0.5**
SANT	**Santorini**	**2.24**	**331**	P	**Pn**	**07 38 00.6**	**+0.5**
THR5	**Thira Island,**	**2.32**	**329**	*e*PN	**Pn**	**07 38 02.8**	**+1.5**
THR5	**Thira Island,**	**2.32**	**329**	P	**Pn**	**07 38 01.9**	**+0.7**
THR5	**Thira Island,**	**2.32**	**329**	P	**Pn**	**07 38 01.9**	**+0.7**
THR5	**Thira Island,**	**2.32**	**329**	*e*Pn	**Pn**	**07 38 02.8**	**+1.5**
VAM	**Vamos**	**2.37**	**295**	P	**Pn**	**07 38 04.5**	**+2.7**
IMMV	**Iera Moni Meta**	**2.55**	**295**	P	**Pn**	**07 38 07.7**	**+3.4**
IMMV	**Iera Moni Meta**	**2.55**	**295**	P	**Pn**	**07 38 07.7**	**+3.4**
BODT	**Bodrum**	**2.66**	**8**	*e*PN	**Pn**	**07 38 07.7**	**+1.9**
BODT	**Bodrum**	**2.66**	**8**	*e*Pn	**Pn**	**07 38 07.7**	**+1.9**
DALY	**Dalyan (Mu¨la**	**2.81**	**32**	*e*PN	**Pn**	**07 38 09.7**	**+1.9**
DALY	**Dalyan (Mu¨la**	**2.81**	**32**	*e*Pn	**Pn**	**07 38 09.7**	**+1.9**
APE	**Apeiranthos**	**2.84**	**339**	*e*PN	**Pn**	**07 38 09.7**	**+1.5**
APE	**Apeiranthos**	**2.84**	**339**	*e*Pn	**Pn**	**07 38 09.7**	**+1.5**
KSL	**Kastellorizon**	**2.84**	**52**	P	**Pn**	**07 38 10.4**	**+2.3**
TURN	**Turunc**	**2.84**	**30**	*i* P	**Pn**	**07 38 06.7**	**-1.4**
TURN				*i* S	**Sn**	**07 38 33.8**	**-7.7**
FETY	**Fethiye**	**2.88**	**39**	*e*PN	**Pn**	**07 38 10.7**	**+2.1**
FETY	**Fethiye**	**2.88**	**39**	*e*Pn	**Pn**	**07 38 10.7**	**+2.1**
AKAS	**Kas**	**2.90**	**51**	P	**Pn**	**07 38 11.4**	**+2.3**
AKAS				S	**Sn**	**07 38 39.5**	**-3.7**
AKAS	**Kas**	**2.90**	**51**	*i* P	**Pn**	**07 38 11.4**	**+2.2**
AKAS				*i* S	**Sn**	**07 38 39.5**	**-3.8**
YER	**Yerkesik**	**2.95**	**23**	*e*PN	**Pn**	**07 38 11.8**	**+2.1**
YER	**Yerkesik**	**2.95**	**23**	*e*Pn	**Pn**	**07 38 11.8**	**+2.1**
ANKY	**Antikythira Is**	**3.22**	**297**	P	**Pn**	**07 38 14.8**	**+1.5**
ANKY	**Antikythira Is**	**3.22**	**297**	P	**Pn**	**07 38 14.8**	**+1.5**
SLUM	**Salum**	**3.22**	**205**	P	**Pn**	**07 38 15.2**	**+1.9**
	baz=211						
SLUM				S	**Sn**	**07 38 48.6**	**-2.2**
	baz=211						
SLUM	**Salum**	**3.22**	**205**	P	**Pn**	**07 38 15.2**	**+1.9**
SLUM				S	**Sn**	**07 38 48.6**	**-2.2**
HMAT	**Matruh**	**3.33**	**176**	S	**Sn**	**07 38 48.7**	**-4.7**
	baz=177						
HMAT				AMP		07 39 00.0	
	comp=N,20μm,0.3s,logA/T=4.8,baz=177						
AYDN	**Tasoluk**	**3.34**	**15**	P	**Pn**	**07 38 16.9**	**+2.0**
AYDN	**Tasoluk**	**3.34**	**15**	*i* P	**Pn**	**07 38 16.9**	**+1.9**
AYDN				*i* S	Sn	07 38 42.8	-11
ELL	**Elmali**	**3.42**	**46**	*e*PN	**Pn**	**07 38 18.3**	**+2.2**
ELL	**Elmali**	**3.42**	**46**	*e*Pn	**Pn**	**07 38 18.3**	**+2.2**
GLHS	**Glhisar (BURDU**	**3.49**	**38**	*e*PN	**Pn**	**07 38 19.1**	**+2.1**
GLHS	**Glhisar (BURDU**	**3.49**	**38**	*e*Pn	**Pn**	**07 38 19.1**	**+2.1**
GOLH	**Golhisar**	**3.58**	**38**	P	**Pn**	**07 38 21.4**	**+3.2**
GOLH	**Golhisar**	**3.58**	**38**	*i* P	**Pn**	**07 38 21.4**	**+3.2**
DNZL	**Cakiroluk**	**3.72**	**28**	P	**Pn**	**07 38 18.0**	**-2.2**
DNZL	**Cakiroluk**	**3.72**	**28**	*i* P	**Pn**	**07 38 18.0**	**-2.2**
KORT	**Korkueli**	**3.85**	**47**	P	**Pn**	**07 38 24.8**	**+2.9**
KORT	**Korkueli**	**3.85**	**47**	*i* P	**Pn**	**07 38 24.8**	**+2.8**
CHOS	**Chios island**	**4.00**	**351**	*e*PN	**Pn**	**07 38 26.6**	**+2.7**
CHOS	**Chios island**	**4.00**	**351**	*e*Pn	**Pn**	**07 38 26.6**	**+2.7**
DID	**Didima**	**4.23**	**318**	P	**Pn**	**07 38 28.3**	**+1.4**
DID	**Didima**	**4.23**	**318**	P	**Pn**	**07 38 28.3**	**+1.4**
KHAL	**Karahalli**	**4.49**	**28**	P	**Pn**	**07 38 30.4**	**-0.1**
KHAL	**Karahalli**	**4.49**	**28**	*i* P	**Pn**	**07 38 30.4**	**-0.1**
SUTC	**Sutluce-Ispart**	**4.56**	**47**	*e*PN	**Pn**	**07 38 34.2**	**+2.7**
SUTC	**Sutluce-Ispart**	**4.56**	**47**	*e*Pn	**Pn**	**07 38 34.2**	**+2.7**
SWA2		**5.30**	**193**	P	**Pn**	**07 38 43.7**	**+2.3**
	baz=196						
SWA2		**5.30**	**193**	P	**Pn**	**07 38 43.7**	**+2.3**
GLL	**Jalalah**	**6.37**	**138**	P	**Pn**	**07 38 58.3**	**+2.2**
	baz=136						
GLL	**Jalalah**	**6.37**	**138**	P	**Pn**	**07 38 58.3**	**+2.2**
SUZ	**Suez**	**6.85**	**130**	P	**Pn**	**07 39 05.3**	**+2.7**
	baz=128						
SUZ	**Suez**	**6.85**	**130**	P	**Pn**	**07 39 05.3**	**+2.7**

IDC 08 07:42:02.1±2.7, 37°.34N×144°.24E, h0km, mb3.4/3, mb1 3.5/4, mb1mx3.2/50, mbtmp3.4/4, ML3.1/1, Error ellipse: s-maj=72.7km s-min=31.6km az=64.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**4.90**	**262**	Pn	Pn	07 43 16.5	-0.5
	0.8nm,0.3s,baz=79,slow=15,SNR=6.1						
H11N2	**WAKE ISLAND Hy**	**26.42**	**125**	T	T	08 17 17.3	
	baz=317,slow=75,SNR=4.9						
H11N1	**WAKE ISLAND Hy**	**26.43**	**125**	T	T	08 17 23.8	
	baz=317,slow=75,SNR=7.7						
H11N3	**WAKE ISLAND Hy**	**26.44**	**125**	T	T	08 17 22.0	
	baz=317,slow=75,SNR=6.4						
H11S1	**WAKE ISLAND Hy**	**27.19**	**128**	T	T	08 18 19.4	
	baz=318,slow=76,SNR=6.1						
H11S3	**WAKE ISLAND Hy**	**27.19**	**128**	T	T	08 18 19.5	
	baz=318,slow=76,SNR=7.6						
H11S2	**WAKE ISLAND Hy**	**27.21**	**128**	T	T	08 18 20.6	
	baz=318,slow=76,SNR=7.5						
MKAR	**Makanchi Array**	**45.87**	**302**	P	P	07 50 26.2	+0.2
	0.1nm,0.3s,baz=93,slow=7.5,SNR=2.7						
KURBB	**Kurchatov Arra**	**47.59**	**308**	P	P	07 50 38.9	-0.5
	0.2nm,0.4s,baz=80,slow=8.2,SNR=4.1						
WRA	**Warramunga Arr**	**57.74**	**191**	P	P	07 51 54.7	-0.1
	0.2nm,0.3s,baz=8.7,slow=7.1,SNR=3.8						

JMA 08 07:44:40.1±0.3, 38°.22N×143°.87E, h8km, M3.8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**1.93**	**297**	P	Pn	07 45 13.8	+0.6
OFUJ				*e*S	Sn	07 45 38.4	+0.8
JIO	**Ouri**	**2.00**	**278**	P	Pn	07 45 14.9	+0.8
JIO				*e*S	Sn	07 45 39.7	+0.4
JMK	**Ichinoseki**	**2.20**	**290**	P	Pn	07 45 18.1	+1.2
JMK				S	Sn	07 45 45.9	+1.5
JOM	**Ohasama**	**2.37**	**303**	P	Pn	07 45 20.7	+1.4
JOM				S	Sb	07 45 50.6	-1.8
JANG	**Nango**	**2.82**	**320**	P	Pn	07 45 27.1	+1.6
JYK	**Kaneyama**	**2.84**	**285**	P	Pn	07 45 27.6	+1.9
JYK				*e*S	Sn	07 46 02.3	+2.2
JFT	**Otama**	**2.88**	**257**	S	Sn	07 46 02.7	+1.5
JOT	**Ohata**	**3.83**	**326**	P	Pn	07 45 41.0	+1.6
JOT				*e*S	Sn	07 46 23.5	-1.1
JAG	**Ashikaga**	**3.95**	**244**	P	Pn	07 45 42.0	+1.0
JAG				S	Sn	07 46 27.6	+0.1
BSO1	**Boso 1**	**4.25**	**214**	*e*S	Sn	07 46 31.5	-2.8
JKB	**Kayabe**	**4.26**	**330**	P	Pn	07 45 46.2	+1.0
JKB				*e*S	Sn	07 46 32.4	-2.7
JCH	**Churui**	**4.41**	**355**	S	Sn	07 46 32.4	-6.3
JRY	**Ryogami san**	**4.54**	**243**	P	Pn	07 45 50.0	+0.9
JRY				S	Sn	07 46 40.0	-2.1

*IDC **08** 07:52:59.7±1.3, 37°.11N×142°.56E, h0km, mb3.5/4, mb1 3.6/5, mb1mx3.3/32, mbtmp3.4/5, ML2.6/1, Error ellipse: s-maj=30.9km s-min=29.5km az=104.0*
*ISCJB **08** 07:53:01.3±1.6, 37°.45N±0°.05×141°.81E±0°.09, h30km±8km, mb3.5/4, Error ellipse: s-maj=12.5km s-min=7.8km az=7.9*
*JMA **08** 07:53:02.4±0.2, 37°.48N×141°.78E, h33km±4km, M3.4*

ISC 08 07:53:00.8±2.1, 37°.45N±0°.05×141°.79E±0°.08, h16km±12km, n18, σ0s83/17, mb3.4/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.73**	**263**	P	**Pn**	**07 53 16.3**	**-0.2**
JFK				S	**Sb**	**07 53 25.7**	**+0.7**
ONAJ	**Iwakimizuishiy**	**0.86**	**246**	P	**Pn**	**07 53 18.4**	**0.0**
ONAJ				S	**Sg**	**07 53 29.0**	**+0.1**
JMM	**Marumori**	**0.89**	**298**	P	**Pn**	**07 53 18.4**	**-0.3**
JMM				S	**Sb**	**07 53 29.5**	**0.0**
JIO	**Ouri**	**1.06**	**341**	P	**Pb**	**07 53 20.5**	**-0.2**
JIO				S	**Sb**	**07 53 32.6**	**-1.7**
JFT	**Otama**	**1.16**	**274**	P	**Pg**	**07 53 23.3**	**+0.2**
JFT				S	**Sn**	**07 53 37.9**	**+0.1**
JOU	**Okura**	**1.27**	**316**	P	**Pb**	**07 53 24.6**	**+0.2**
JOU				S	**Sb**	**07 53 40.0**	**-0.5**
JHO	**Hitachi**	**1.29**	**230**	P	**Pn**	**07 53 24.0**	**-0.2**
JHO				S	**Sb**	**07 53 39.0**	**-2.0**
MJAR	**Matsushiro Arr**	**3.00**	**253**	Pn	**Pb**	**07 53 53.8**	**-0.2**
	0.6nm,0.3s,baz=84,slow=15,SNR=4.3						
SONM	**Songino Array**	**27.80**	**303**	P	P	07 58 57.1	+7.9
	2.8nm,0.5s,baz=106,slow=27,SNR=3.2						
H11N2	**WAKE ISLAND Hy**	**28.11**	**122**	T	T	08 28 19.2	
	baz=317						
H11N1	**WAKE ISLAND Hy**	**28.12**	**122**	T	T	08 28 20.8	
	baz=317						
H11N3	**WAKE ISLAND Hy**	**28.13**	**122**	T	T	08 28 32.7	
	baz=317						
H11S1	**WAKE ISLAND Hy**	**28.84**	**124**	T	T	08 29 22.9	
	baz=316						
H11S3	**WAKE ISLAND Hy**	**28.84**	**124**	T	T	08 29 21.7	
	baz=316						
H11S2	**WAKE ISLAND Hy**	**28.

CISI Cisompet, Garu 4.11 266 P **Pn 08 06 17.7 -3.4**
CISI Cisompet, Garu 4.11 266 *e*Pn **Pn 08 06 18.4 -2.7**
CISI *e*S **S 08 07 09.1 -3.7**
LEM Lembang 4.33 276 P Pn 08 06 28.4 +4.6
10nm,0.3s,baz=94,slow=14,SNR=19
LEM S **S 08 07 23.1 +5.4**
6.5nm,0.3s,baz=163,slow=19,SNR=5.6
LEM Lembang 4.33 276 P Pn 08 06 28.7 +4.9
PBKI Pangkalan Bun 4.59 356 P **Pn 08 06 24.8 -2.0**
CNJI Cibinong 4.79 270 P **Pn 08 06 27.2 -1.9**
BBKI Banjar Baru 4.79 37 P Pn 08 06 39.1 +10
TWSI Taliwang, Sumb 5.08 106 P **Pn 08 06 28.7 -4.0**
59nm,0.7s,2μm0.5nm
CBJI Citeko 5.15 280 P **Pn 08 06 29.6 -3.9**
570nm,0.7s,23μm4.4nm
SKJI Sukabumi 5.37 273 P **Pn 08 06 35.5 -0.7**
278nm,0.7s,6μm1.9nm
PLAI Plampang 5.96 105 P **Pn 08 06 40.5 -3.0**
50nm,0.8s,0.4nm
CGJI Cibinong 6.25 276 P **Pn 08 06 45.2 -2.0**
237nm,0.5s,9μm1.1nm
KASI Kota Agung 7.62 283 P **Pn 08 07 04.1 -0.4**
254nm,0.6s,4μm1.1nm
PPBI Pangkal Pinang 7.74 311 P **Pn 08 07 04.7 -1.2**
22nm,1.0s,4μm0.3nm
KAPI Kappang 8.08 74 P **Pn 08 07 08.5 -1.8**
0.6nm,0.3s,baz=252,slow=11,SNR=9.4
LWLI Liwa 8.18 286 P **Pn 08 07 11.7 +0.1**
348nm,0.5s,12μm
MDSI Maura Dua 8.23 290 P **Pn 08 07 11.6 -0.6**
40nm,0.7s
PMBI Palembang 8.38 301 P **Pn 08 07 12.3 -1.7**
342nm,0.5s,8μm
SPSI Sidrap Palu 8.46 67 P **Pn 08 07 14.4 -0.7**
12nm,0.8s,1μm
BSSI Bau Bau, Buton 8.56 83 P **Pn 08 07 15.1 -1.2**
32nm,1.3s
BASI Baing, Sumba 9.00 109 P **Pn 08 07 19.5 -2.3**
166nm,0.7s
MNAI Manna 9.42 288 P **Pn 08 07 26.2 -1.0**
1μm,0.6s,18μm
MNAI Manna 9.42 288 *e*Pn **Pn 08 07 26.2 -1.0**
951nm,0.6s
MNAI *e*S **S 08 09 08.6 -5.1**
EDFI Ende, Flores 9.74 99 P **Pn 08 07 29.2 -2.2**
49nm,0.6s,1μm
MASI Maura Aman, Be 10.53 293 P **Pn 08 07 41.3 +0.1**
221nm,0.8s
SOEI Soe 12.41 102 P **P 08 08 07.5 +0.2**
62nm,0.8s
SOEI Soe 12.41 102 *e*Pn **Pn 08 08 03.7 -1.1**
39nm,0.6s
MBWA Marble Bar 15.68 152 *e*P **Pn 08 08 44.7 +0.4**
18nm,0.3s
FITZ Fitzroy Crossi 17.10 130 P **Pn 08 09 00.6 -0.4**
0.6nm,0.3s,baz=315,slow=11,SNR=11
FITZ S **S 08 12 07.2 +3.0**
1.3nm,0.3s,baz=170,slow=21,SNR=7.3
FITZ Fitzroy Crossi 17.10 130 P **Pn 08 09 00.0 -1.0**
baz=17,SNR=9.0
MTN Manton Dam 19.66 108 P **P 08 09 26.5 +0.1**
baz=20,SNR=28
WRKA Warakurna 23.55 140 P **P 08 10 05.1 +1.0**
baz=23,SNR=14
WRA Warramunga Arr 25.07 122 P **P 08 10 18.5 +0.6**
1.1nm,0.3s,baz=292,slow=11,SNR=35
WRA PcP **PcP 08 13 45.8 +0.3**
0.3nm,0.3s,baz=309,slow=2.0,SNR=4.7
ASAR Alice Springs 26.61 130 P **P 08 10 32.9 +1.2**
4.5nm,0.5s,baz=302,slow=7.7,SNR=143
ASAR PcP **PcP 08 13 49.9 +0.8**
0.5nm,0.4s,baz=321,slow=2.1,SNR=4.3
CMAR Chiang Mai Arr 28.65 334 P **P 08 10 51.2 +1.4**
3.8nm,0.3s,baz=168,slow=8.4,SNR=20
QIS Mount Isa 29.82 119 P **P 08 11 01.2 +1.0**
baz=30,SNR=4.4
MTSU Mount Surprise 33.29 112 P **P 08 11 31.5 +1.1**
baz=33,SNR=5.9
BBOO Buckleboo 33.82 142 P **P 08 11 35.8 +0.9**
baz=34,SNR=5.6
HTT Hallett 36.03 140 P **P 08 11 55.0 +1.3**
baz=36,SNR=4.4
QLP Quilpie 36.16 126 P **P 08 11 57.0 +2.2**
baz=36,SNR=3.2
STKA Stephens Creek 36.87 135 P **P 08 12 02.5 +1.8**
6.9nm,0.4s,baz=316,slow=8.1,SNR=47
STKA Stephens Creek 36.87 135 P **P 08 12 01.9 +1.1**
baz=37,SNR=44
GUN Gumba 43.15 325 *e*P **P 08 12 52.9 +0.3**
56nm,0.4s
PKIN Phulchoki 43.17 325 *e*P **P 08 12 52.2 -0.5**
DMN Daman 43.36 324 *e*P **P 08 12 54.2 0.0**
42nm,0.6s
GKN Gorkha 43.93 324 *e*P **P 08 12 58.4 -0.2**
44nm,0.3s
KOLN Koldanda 44.37 323 *e*P **P 08 13 01.7 -0.4**
54nm,0.5s
PYUN Piuthan 44.97 323 *e*P **P 08 13 06.6 -0.3**
22nm,0.4s
TKM2 Tokmak 2 59.94 330 *e*P **P 08 14 56.5 +0.3**
3.8nm,1.0s
MKAR Makanchi Array 59.98 337 P **P 08 14 55.9 -0.2**
2.0nm,0.3s,baz=148,slow=7.2,SNR=53
ZALV Zalesovo Beam 65.18 343 P **P 08 15 29.4 -0.8**
3.6nm,0.3s,baz=156,slow=5.6,SNR=16
GEYT Alibeck 67.33 316 P **P 08 15 44.1 -0.2**
1.5nm,0.5s,baz=153,slow=9.7,SNR=3.6
MAW Mawson 68.54 198 P **P 08 15 53.5 +2.4**
2.7nm,0.6s,baz=106,slow=7.4,SNR=3.1
ABKAR Akbulak array 72.28 327 *e*P **P 08 16 13.9 -0.2**
2.6nm,0.5s
VNDA Vanda 74.78 170 P **P 08 16 30.1 +1.9**
0.9nm,0.6s,baz=294,slow=7.1,SNR=6.1
SYO Syowa Base 76.92 201⇑*e*X **P 08 16 38.6 -1.7**
KBZ Khabaz 80.22 317 P **P 08 16 58.8 +0.1**
1.2nm,0.7s,baz=101,slow=5.2,SNR=3.8
BRTR Keskin Array B 85.73 311 P **P 08 17 26.5 -0.8**
0.6nm,0.5s,baz=107,slow=6.6,SNR=3.8
CPUP Villa Florida 144.97 197 PKPbc **PKPab 08 24 24.7 +0.7**
1.5nm,0.6s,baz=195,slow=3.1,SNR=3.9

IDC ***08*** *08:21:44.4±1.0, 40°.15N×51°.93E, h0km, mb3.9/10, mb1 4.1/18, mb1mx3.9/44, mbtmp4.0/18, ML4.1/8, MS2.7/8, Ms1 2.7/8, ms1mx2.5/49, Error ellipse: s-maj=18.1km s-min=9.6km az=3.0*
MOS ***08*** *08:21:47.2±1.6, 40°.32N×52°.15E, h33km, mb4.3/8, Error ellipse: s-maj=8.1km s-min=6.0km az=106.3*
ISCJB ***08*** *08:21:49.6±0.3, 40°.37N±0°.03×52°.18E±0°.02, h60km±6km, mb3.9/15, Error ellipse: s-maj=5.4km s-min=2.8km az=15.6*
CSEM ***08*** *08:21:50.9±0.2, 40°.38N×52°.16E, h53km±3km, mb4.1/7, Error ellipse: s-maj=5.8km s-min=3.6km az=16.0*
AZER ***08*** *08:21:51.0±0.0, 40°.06N×51°.83E, h28km, Error ellipse: s-maj=15.1km s-min=1.9km az=266.0*
THR ***08*** *08:21:50.9±0.6, 39°.61N×51°.92E, h15km, ML4.1*
NEIC ***08*** *08:21:50.6±0.7, 40°.38N×52°.15E, h49km±10km, mb4.0/4, Error ellipse: s-maj=10.3km s-min=6.9km az=172.0*
TEH ***08*** *08:21:53.0, 40°.41N×52°.20E, h49km, ML4.2*
NNC ***08*** *08:21:57.0±3.0, 40°.96N×53°.03E, h0km, mb4.2, Error ellipse: s-maj=26.5km s-min=21.0km az=85.0*
ISC 08 08:21:50.2±0.7, **40°.36N**±0°.04×**52°.25E**±0°.03, **h57**km±8km, **n212**, σ2§**43**/258, **mb4.0**/14, **32C-31D, Turkmenistan**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
GALA	**Gala**			**1.60 272**	⇑P		**Pn**	**08 22 16.3**	**+0.1**
GALA	SNR=3.2				⇑S		**Sn**	**08 22 40.2**	**+4.6**
GALA	**Gala**			**1.60 272**	P		**Pn**	**08 22 16.2**	**+0.1**
GALA	**Gala**			**1.60 272**	P		**Pn**	**08 22 16.2**	**+0.1**
GALA					S		**Sn**	**08 22 40.2**	**+4.6**
NDR	**Nardaran**			**1.74 278**	⇑P		**Pn**	**08 22 18.2**	**+0.2**
NDR	SNR=4.0 **Nardaran**			**1.74 278**	P		**Pn**	**08 22 18.1**	**+0.2**
NDR	**Nardaran**			**1.74 278**	P		**Pn**	**08 22 18.1**	**+0.2**
ALIB	**Äli-Bayra**			**2.51 262**	⇓Pn		**Pn**	**08 22 28.7**	**+0.1**
ALIB					⇓Sn		**Sn**	**08 22 56.3**	**-1.8**
ALIB	**Äli-Bayra**			**2.51 262**	Pn		**Pn**	**08 22 28.7**	**+0.1**
ALIB					Sn		**Sn**	**08 22 56.3**	**-1.8**
GBS	**Qobustan**			**2.53 275**	⇓Pn		**Pn**	**08 22 30.4**	**+1.6**
GBS					⇑Sn		**Sn**	**08 22 58.5**	**0.0**
GBS	**Qobustan**			**2.53 275**	Pn		**Pn**	**08 22 30.4**	**+1.6**
GBS					Sn		**Sn**	**08 22 58.5**	**0.0**
ATGJ	**Altiaghaj**			**2.57 282**	⇓Pn		**Pn**	**08 22 30.5**	**+1.1**
ATGJ	SNR=6.3 **Altiaghaj**			**2.57 282**	Pn		**Pn**	**08 22 30.5**	**+1.1**
SIZA	SNR=6.3 **Siyzn**			**2.64 287**	⇓Pn		**Pn**	**08 22 33.3**	**+2.9**
SIZA	SNR=5.9				⇓Sn		**Sn**	**08 23 05.9**	**+4.5**
PQL	**Pirkuli**			**2.81 280**	Pn		**Pn**	**08 22 34.0**	**+1.1**
PQL	SNR=6.8				⇑Sn		**Sn**	**08 23 08.7**	**+3.1**
PQL	**Pirkuli**			**2.81 280**	Pn		**Pn**	**08 22 34.0**	**+1.1**
PQL	SNR=6.8 **Pirkuli**			**2.81 280**	Pn		**Pn**	**08 22 34.0**	**+1.1**
PQL					Sn		**Sn**	**08 23 08.7**	**+3.1**
SAAT	**Saatly**			**2.97 262**	⇑Sn		**Sn**	**08 23 10.1**	**+0.8**
SAAT	**Saatly**			**2.97 262**	Sn		**Sn**	**08 23 10.1**	**+0.8**
QUBA	**Quba, Azerbaij**			**3.01 290**	⇑Pn		**Pn**	**08 22 36.9**	**+1.4**
QUBA	SNR=8.9 **Quba, Azerbaij**			**3.01 290**	Pn		**Pn**	**08 22 36.9**	**+1.4**
KDMR	SNR=8.9 **Kurdemir**			**3.10 272**	⇓Sn		**Sn**	**08 23 12.1**	**-0.4**
KDMR	**Kurdemir**			**3.10 272**	Sn		**Sn**	**08 23 12.1**	**-0.4**
QUB	**Quba**			**3.12 290**	Pn		**Pn**	**08 22 36.9**	**0.0**
IML	**Ismayilli**			**3.12 279**	⇑Pn		**Pn**	**08 22 38.8**	**+1.8**
IML	SNR=8.9				⇓Sn		**Sn**	**08 23 12.9**	**-0.2**
IML	**Ismayilli**			**3.12 279**	Pn		**Pn**	**08 22 38.8**	**+1.8**
IML	SNR=8.9				Sn		**Sn**	**08 23 12.9**	**-0.2**
LKRN	**Lenkeran, Azer**			**3.15 240**	⇓Pn		**Pn**	**08 22 35.9**	**-1.3**
LKRN	SNR=6.8				⇓Sn		**Sn**	**08 23 09.3**	**-4.3**
LKRN	**Lenkeran, Azer**			**3.15 240**	Pn		**Pn**	**08 22 35.9**	**-1.3**
GLBA	SNR=6.8 **Clilabad**			**3.17 251**	Pn		**Pn**	**08 22 36.5**	**-1.1**
GLBA	SNR=12				⇑Sn		**Sn**	**08 23 11.4**	**-2.8**
GLBA	**Clilabad**			**3.17 251**	Pn		**Pn**	**08 22 36.5**	**-1.1**
ASTR	SNR=12 **Astara**			**3.22 237**	⇓Pn		**Pn**	**08 22 39.8**	**+1.5**
ASTR					⇓Sn		**Sn**	**08 23 10.9**	**-4.5**
ASTR	**Astara**			**3.22 237**	Pn		**Pn**	**08 22 39.8**	**+1.5**
XNQ	**Khinaliq**			**3.22 286**	⇓Pn		**Pn**	**08 22 40.0**	**+1.5**
XNQ	SNR=7.4 **Khinaliq**			**3.22 286**	Pn		**Pn**	**08 22 40.0**	**+1.5**
QSAR	SNR=7.4 **Qusar**			**3.23 292**	⇓Pn		**Pn**	**08 22 39.1**	**+0.7**
QBL	**Gabala**			**3.40 281**	⇑Pn		**Pn**	**08 22 40.0**	**-0.8**
QBL					⇑Sn		**Sn**	**08 23 17.8**	**-2.2**
QBL	**Gabala**			**3.40 281**	Pn		**Pn**	**08 22 40.0**	**-0.8**
QBL					Sn		**Sn**	**08 23 17.8**	**-2.2**
LRK	**Lerik**			**3.47 242**	Pn		**Pn**	**08 22 40.1**	**-1.8**
LRK	SNR=13				⇑Sn		**Sn**	**08 23 16.4**	**-5.5**
LRK	**Lerik**			**3.47 242**	Pn		**Pn**	**08 22 40.1**	**-1.8**
ZRD	SNR=13 **Zardab**			**3.49 270**	Pn		**Pn**	**08 22 41.7**	**-0.2**
ZRD	SNR=4.1				⇓Sn		**Sn**	**08 23 21.0**	**-0.9**
ZRD	**Zardab**			**3.49 270**	Pn		**Pn**	**08 22 41.7**	**-0.2**
ZRD	SNR=4.1				Sn		**Sn**	**08 23 21.0**	**-0.9**
GRMI	**Germi**			**3.70 247**	*e*Pn		**Pn**	**08 22 43.1**	**-1.9**
GRMI	**Germi**			**3.70 247**	*e*Pn		**Pn**	**08 22 43.1**	**-1.9**
BRDA	**Brd**			**3.87 270**	⇑Sn		**Sn**	**08 23 31.1**	**-0.3**
BRDA	**Brd**			**3.87 270**	Sn		**Sn**	**08 23 31.1**	**-0.3**
SEKA	**Sheki**			**3.92 284**	Pn		**Pn**	**08 22 48.2**	**+0.2**
SEKA	SNR=21				⇓Sn		**Sn**	**08 23 31.5**	**-1.3**
SEKA	**Sheki**			**3.92 284**	Pn		**Pn**	**08 22 48.2**	**+0.2**
SEKA	SNR=21				Sn		**Sn**	**08 23 31.5**	**-1.3**
SEKA	**Sheki**			**3.92 284**	Pn		**Pn**	**08 22 48.1**	**+0.2**
SEKA					Sn		**Sn**	**08 23 31.5**	**-1.3**
MNGR	**Mingechevir, A**			**3.95 278**	⇑Sn		**Sn**	**08 23 32.5**	**-0.8**
MNGR	**Mingechevir, A**			**3.95 278**	Sn		**Sn**	**08 23 32.5**	**-0.8**
MRVT	**Maraveh tapeh**			**4.03 131**	*e*Pn		**Pn**	**08 22 51.4**	**+2.0**
MRVT	**Maraveh tapeh**			**4.03 131**	*e*Pn		**Pn**	**08 22 51.4**	**+2.0**
IGLO	**Ghaloghah**			**4.05 162**	*e*P		**Pn**	**08 22 51.0**	**+1.1**
IGLO	**Ghaloghah**			**4.05 162**	P		**Pn**	**08 22 50.9**	**+1.1**
IPRN	**Peran**			**4.11 179**	*e*P		**Pn**	**08 22 50.8**	**+0.2**
IPRN	**Peran**			**4.11 179**	*e*P		**Pn**	**08 22 50.8**	**+0.2**
IPRN	**Peran**			**4.11 179**	P		**Pn**	**08 22 50.8**	**+0.2**
IALA	**Alasht**			**4.29 174**	*e*P		**Pn**	**08 22 54.3**	**+1.0**
IALA	**Alasht**			**4.29 174**	*e*P		**Pn**	**08 22 54.3**	**+1.0**
IKIA	**Kiasar**			**4.30 164**	*e*P		**Pn**	**08 22 54.9**	**+1.6**
IKIA	**Kiasar**			**4.30 164**	*e*P		**Pn**	**08 22 54.9**	**+1.6**
ZKT	**Zaqatala**			**4.41 289**	P		**Pn**	**08 22 56.5**	**+1.9**
ZKT					Sn		**Sn**	**08 23 48.6**	**+3.9**
ZKTA	**Zakatala**			**4.44 289**	Pn		**Pn**	**08 22 56.5**	**+1.5**
ZKTA	SNR=6.1				⇓Sn		**Sn**	**08 23 48.7**	**+3.2**
IHRS	**Heris**			**4.52 245**	*e*P		**Pn**	**08 22 56.7**	**+0.4**
IHRS	**Heris**			**4.52 245**	*e*P		**Pn**	**08 22 56.7**	**+0.4**
GANJ	**Ganja**			**4.52 276**	⇑Pn		**Pn**	**08 22 54.1**	**-2.1**
GANJ	SNR=3.3				⇑Sn		**Sn**	**08 23 43.0**	**-4.4**
GANJ	**Ganja**			**4.52 276**	Pn		**Pn**	**08 22 54.1**	**-2.1**
ISHM	SNR=3.3 **Shahmirzad**			**4.62 169**	*e*P		**Pn**	**08 22 58.5**	**+0.8**
ZNJK	**Zanjan**			**4.62 218**	AML		AML	08 23 49.2	
DAMV	comp=N,218nm,0.1s **Damavand**			**4.73 183**	*e*Pn		Pn	08 22 53.4	-5.8
DAMV					AML		AML	08 23 45.2	
DAMV	comp=E,410nm,0.4s				AML		AML	08 23 45.6	
IFIR	comp=N,270nm,0.4s **Firoozkooh**			**4.73 175**	*e*P		**Pn**	**08 23 00.4**	**+1.2**
IFIR	**Firoozkooh**			**4.73 175**	*e*P		**Pn**	**08 23 00.4**	**+1.2**
IDMV	**Damavand**			**4.78 182**	*e*P		**Pn**	**08 23 01.1**	**+1.2**
IDMV	**Damavand**			**4.78 182**	*e*P		**Pn**	**08 23 01.1**	**+1.2**
BJRD	**Bojnurd**			**4.82 122**	*e*Pn		**Pn**	**08 23 03.2**	**+2.9**
BJRD	**Bojnurd**			**4.82 122**	*e*Pn		**Pn**	**08 23 03.2**	**+2.9**
GDB	**GEDABAY**			**4.96 276**	Pn		**Pn**	**08 23 01.5**	**-0.7**
GDB	SNR=5.4				⇑Sn		**Sn**	**08 23 53.3**	**-5.0**
GDB	**GEDABAY**			**4.96 276**	Pn		**Pn**	**08 23 01.5**	**-0.7**
GEYT	SNR=5.4 **Alibeck**			**5.17 116**	Pn		**Pn**	**08 23 06.1**	**+1.1**
GEYT	comp=N,7.9nm,0.3s,baz=303,slow=16,SNR=77				Sn		**Sn**	**08 24 06.8**	**+3.5**
GEYT	comp=N,8.0nm,0.3s,baz=300,slow=26,SNR=4.0				LR		LR	08 25 44.3	
QZX	comp=N,25nm,18.9s,baz=110,slow=45 **Qazax, Azerbai**			**5.27 280**	⇓Pn		**Pn**	**08 23 04.5**	**-1.8**
QZX	SNR=8.1				⇑Sn		**Sn**	**08 24 01.5**	**-4.3**
QZX	**Qazax, Azerbai**			**5.27 280**	Pn		**Pn**	**08 23 04.5**	**-1.8**
IRAZ	SNR=8.1 **Razeghan**			**5.28 201**	*e*P		**Pn**	**08 23 06.5**	**-0.1**
IRAZ	**Razeghan**			**5.28 201**	*e*P		**Pn**	**08 23 06.5**	**-0.1**
DGRG	**David-gareji**			**5.32 284**	P		**Pn**	**08 23 07.4**	**+0.3**
DGRG					S		**Sn**	**08 24 04.4**	**-2.6**
DGRG	**David-gareji**			**5.32 284**	P		**Pn**	**08 23 07.4**	**+0.3**
DGRG					S		**Sn**	**08 24 04.4**	**-2.6**
DGRG	**David-gareji**			**5.32 284**	P		**Pn**	**08 23 07.4**	**+0.3**
DGRG					S		**Sn**	**08 24 04.4**	**-2.6**
NAX	**Nakhchivan**			**5.33 259**	⇑Pn		**Pn**	**08 23 04.1**	**-3.2**
NAX					⇑Sn		**Sn**	**08 24 03.9**	**-3.5**
NAX	**Nakhchivan**			**5.33 259**	Pn		**Pn**	**08 23 04.1**	**-3.2**
NAX					Sn		**Sn**	**08 24 03.9**	**-3.5**
ISFR	**Sfrayin**			**5.58 124**	*e*P		**Pn**	**08 23 13.4**	**+2.5**
ISFR	**Sfrayin**			**5.58 124**	*e*P		**Pn**	**08 23 13.4**	**+2.5**
GNI	**Garni**			**5.74 270**	Pn		**Pn**	**08 23 14.5**	**+1.5**
GNI	comp=N,0.9nm,0.3s,baz=157,slow=13,SNR=1.7				Sn		**Sn**	**08 24 20.3**	**+2.7**
GNI	comp=N,3.0nm,0.3s,baz=18,slow=20,SNR=2.7				LR		LR	08 25 08.3	
GNI	comp=N,19nm,21.0s,baz=56,slow=37 **Garni**			**5.74 270**	P		Pn	08 23 23.2	+10
IEMG	**Emamgholi**			**5.80 118**	*e*P		**Pn**	**08 23 15.8**	**+1.9**
IEMG	**Emamgholi**			**5.80 118**	*e*P		**Pn**	**08 23 15.8**	**+1.9**
TBLG	**Delisi**			**5.84 286**	P		**Pn**	**08 23 15.1**	**+0.9**
TBLG					S		**Sn**	**08 24 15.7**	**-4.0**
TBLG	**Delisi**			**5.84 286**	P		**Pn**	**08 23 15.0**	**+0.9**
TBLG					S		**Sn**	**08 24 15.7**	**-4.0**
TBLG	**Delisi**			**5.84 286**	P		**Pn**	**08 23 15.0**	**+0.9**
IKRD	**Kardeh**			**6.08 124**	*e*P		Pn	08 23 28.5	+11
IAKL	**Akhelmad**			**6.34 124**	*e*P		**Pn**	**08 23 23.5**	**+2.2**
IPAY	**Payeh**			**6.58 124**	*e*P		**Pn**	**08 23 27.0**	**+2.4**
IPAY	**Payeh**			**6.58 124**	*e*P		**Pn**	**08 23 27.0**	**+2.4**
ZEI	**Tsey**			**6.71 294**	*e*P		Pn	08 23 32.3	+6.1
ZEI					pmax		pmax		
KHMZ	comp=Z,15nm,0.6s **Khomeyn**			**6.86 196**	*e*Pn		Pn	08 23 22.6	-5.8
IMOG	**Moghan**			**7.01 125**	*e*P		**Pn**	**08 23 32.7**	**+2.2**
IMOG	**Moghan**			**7.01 125**	*e*P		**Pn**	**08 23 32.7**	**+2.2**
NCK	**Nalchik**			**7.17 299**	P		Pn	08 23 38.2	+5.8
IMYA	**Miami**			**7.36 121**	*e*P		**Pn**	**08 23 36.5**	**+1.3**
IMYA	**Miami**			**7.36 121**	*e*P		**Pn**	**08 23 36.5**	**+1.3**
NEY	**Neytrino**			**7.68 295**⇑	*e*P		Pn	08 23 46.4	+6.9
KBZ	**Khabaz**			**7.73 299**	Pn		**Pn**	**08 23 39.9**	**0.0**
KBZ	comp=Z,0.7nm,0.3s,baz=110,slow=8.2,SNR=7.6				Sn		**Sn**	**08 25 02.7**	**-3.3**
KVAR	comp=Z,3.1nm,0.3s,baz=156,slow=20,SNR=4.8 **Kislovodsk Arr**			**7.95 300**	Pn		**Pn**	**08 23 42.1**	**-1.1**
KVAR	baz=130,slow=7.9,SNR=8.2				Sn		**Sn**	**08 25 07.9**	**-3.8**
KIV	baz=210,slow=19,SNR=6.8 **Kislovodsk**			**7.96 300**	P		**Pn**	**08 23 40.5**	**-2.7**
KIV	**Kislovodsk**			**7.96 300**	Pn		**Pn**	**08 23 40.5**	**-2.7**
GOF	**Gofitskoye**			**8.24 308**⇑	*e*P		**Pn**	**08 23 51.1**	**+4.1**
GOF					*e*S		**Sn**	**08 25 12.4**	**-6.2**
GOF					pmax		pmax		
GOF	comp=Z,16nm,0.6s				smax		smax		
AB31	comp=E,99nm,0.8s **Akbulak array**			**10.44 29**	P		**Pn**	**08 24 16.7**	**-0.2**
AB31	comp=E,1.0nm,0.3s,baz=206,slow=12,SNR=63				⇑S		**Sn**	**08 26 09.1**	**-3.1**
AB31	comp=E,1.9nm,0.6s,baz=210,slow=24,SNR=5.9 **Akbulak array**			**10.44 29**	P		**Pn**	**08 24 16.7**	**-0.2**
AB31					S		**Sn**	**08 26 09.1**	**-3.1**
AB31					pmax		pmax		
AB31	comp=Z,1.0nm,0.4s				smax		smax		
AB31	comp=N,5.0nm,0.4s **Akbulak array**			**10.44 29**	P		**Pn**	**08 24 16.7**	**-0.2**
ABKAR	comp=N,1.0nm,0.3s,SNR=63 **Akbulak array**			**10.44 29**	*e*Pn		**Pn**	**08 24 16.8**	**-0.2**
ABKAR	comp=N,3.3nm,0.4s **Akbulak array**			**10.44 29**	*e*Pn		**Pn**	**08 24 16.8**	**-0.2**
ABKAR	comp=N,3.4nm,0.4s				*e*Sn		**Sn**	**08 26 06.0**	**-6.3**
AKTK	**Aktyubinsk**			**10.86 20**	P		**Pn**	**08 24 23.2**	**+0.5**
AKTO	comp=N,6.0nm,0.8s **Aktyubinsk**			**10.86 20**	Pn		**Pn**	**08 24 23.4**	**+0.7**
AKTO	comp=N,2.4nm,0.3s,baz=206,slow=10,SNR=46				Sn		**Sn**	**08 26 17.1**	**-5.5**
AKTO	comp=N,2.5nm,0.3s,baz=49,slow=23,SNR=11				LR		LR	08 29 47.0	
AKTO	comp=N,37nm,21.2s,baz=213,slow=43 **Aktyubinsk**			**10.86 20**	⇑P		**Pn**	**08 24 23.3**	**+0.5**
AKTO	comp=N,6.3nm,0.8s				⇓S		**Sn**	**08 26 16.7**	**-5.9**
AKTO	comp=N,38nm,0.7s **Aktyubinsk**			**10.86 20**	P		**Pn**	**08 24 23.2**	**+0.5**
AKTO					S		**Sn**	**08 26 16.6**	**-5.9**
AKTO					pmax		pmax		
AKTO	comp=Z,6.0nm,0.8s				smax		smax		
AKTO	comp=N,38nm,0.7s **Aktyubinsk**			**10.86 20**	P		**Pn**	**08 24 23.3**	**+0.5**
ANN	comp=N,6.3nm,0.8s **Anapa**			**11.78 297**	*e*P		**Pn**	**08 24 34.3**	**-1.1**
ANN					pmax		pmax		
ANN	comp=Z,17nm,1.0s **Anapa**			**11.78 297**	*e*P		**Pn**	**08 24 34.3**	**-1.1**
VRH	comp=Z,17nm,1.0s **Novokhopyorsk**			**13.08 329**	*e*P		**Pn**	**08 24 52.7**	**-0.3**
VRH					pmax		pmax		
VRH	comp=Z,20nm,0.4s **Novokhopyorsk**			**13.08 329**	*e*P		**Pn**	**08 24 52.7**	**-0.3**
KK31	comp=Z,20nm,0.4s **Karatay Array**			**13.91 73**	⇓P		**Pn**	**08 25 06.0**	**+1.5**
KK31	comp=Z,0.9nm,0.4s,baz=268,slow=16,SNR=9.5				⇓S		**Sn**	**08 27 33.1**	**-4.2**
KK31	comp=Z,2.5nm,0.6s,baz=265,slow=25,SNR=3.4 **Karatay Array**			**13.91 73**	P		**Pn**	**08 25 05.9**	**+1.5**
KK31					S		**Sn**	**08 27 33.0**	**-4.2**
KK31					pmax		pmax		
KK31	comp=Z,1.0nm,0.4s				smax		smax		
KKAR	comp=N,3.0nm,0.6s **Karatay Array**			**13.91 73**	*e*P		**Pn**	**08 25 05.1**	**+0.7**
KKAR					pmax		pmax		
KKAR	comp=Z,2.0nm,0.4s **Karatay Array**			**13.91 73**	*e*Pn		**Pn**	**08 25 05.1**	**+0.7**
KKAR	comp=Z,2.0nm,0.4s **Karatay Array**			**13.91 73**	*e*Pn		**Pn**	**08 25 05.1**	**+0.7**
VSR	comp=Z,2.0nm,0.4s **Storozhevoye**			**14.16 324**	*e*P		**Pn**	**08 25 09.8**	**+2.3**
VSR					pmax		pmax		
BRTR	comp=Z,4.0nm,0.5s **Keskin Array B**			**14.27 273**	Pn		**P**	**08 25 14.6**	**-0.3**
BRTR	comp=Z,0.2nm,0.3s,baz=79,slow=7.9,SNR=4.0 **Keskin Array B**			**14.27 273**	*i* P		**P**	**08 25 15.8**	**+0.8**
BRTR	**Keskin Array B**			**14.27 273**	*i* P		**P**	**08 25 15.8**	**+0.8**
LPSR	**Galich'ya Gora**			**15.27 328**	*e*P		**P**	**08 25 24.3**	**-1.4**
LPSR					pmax		pmax		
LPSR	comp=Z,10.0nm,0.7s **Galich'ya Gora**			**15.27 328**	*e*P		**P**	**08 25 24.3**	**-1.4**
MMAI	comp=Z,10.0nm,0.7s **Mount Meron Ar**			**15.36 247**	LR		LR	08 33 24.9	
ARU	comp=Z,39nm,18.3s,baz=185,slow=46 **Arti**			**16.61 12**	Pn		**Pn**	**08 25 37.7**	**-1.3**
ARU	comp=Z,0.0nm,0.3s,baz=195,slow=5.7,SNR=15				Sn		Sn	08 28 30.0	-12
ARU	comp=Z,0.0nm,0.3s,baz=84,slow=19,SNR=10 **Arti**			**16.61 12**	*d i* P		**Pn**	**08 25 37.6**	**-1.3**
ARU	comp=Z,37nm,19.1s,baz=131,slow=40				LR		LR	08 32 59.3	
ARU	**Arti**			**16.61 12**	*d i* P		**Pn**	**08 25 37.6**	**-1.3**
ARU					S		**Sn**	**08 28 34.0**	**-8.3**
ARU					pmax		pmax		
AAK	comp=Z,36n

AKASG Malin Array Be 19.08 310 P **P 08 26 06.2 -1.7**
comp=Z,5.5nm,0.3s,baz=91,slow=8.7,SNR=16
AKASG S **S 08 29 37.4 -3.7**
comp=Z,0.4nm,0.3s,baz=114,slow=23,SNR=4.1
AKASG Malin Array Be 19.08 310 *i* P **P 08 26 07.6 -0.2**
AKASG pmax pmax
comp=Z,2.0nm,0.3s
AKASG Malin Array Be 19.08 310 *i* P **P 08 26 07.6 -0.2**
comp=Z,2.0nm,0.3s
KIEV Kiev 19.09 310 *ce*P **P 08 26 07.7 -0.2**
KIEV pmax pmax
comp=Z,3.0nm,0.6s
KIEV Kiev 19.09 310 *e*P **P 08 26 07.7 -0.2**
comp=Z,3.0nm,0.6s
KIEV Kiev 19.09 310 *e*P **P 08 26 07.2 -0.7**
comp=Z,8.0nm,0.7s
MLR Muntele Rosu 19.89 294 P **P 08 26 16.9 +0.1**
comp=Z,0.1nm,0.3s,baz=143,slow=8.0,SNR=4.2
HUMR Humele 20.51 291⇑ *i*P **P 08 26 22.8 -0.6**
VOIR 20.51 293⇑ *i*P **P 08 26 24.5 +1.0**
VOIR 20.51 293 ⇑P **P 08 26 24.5 +1.0**
VOIR 20.51 293 P **P 08 26 24.5 +1.0**
BURAR Bucovina Array 20.68 299⇑ *i*P **P 08 26 25.4 0.0**
BURAR Bucovina Array 20.68 299 ⇑P **P 08 26 25.4 0.0**
ARR Arges 20.80 293⇓ *i*P **P 08 26 27.5 +0.9**
KURBB Kurchatov Arra 20.99 52 P Pn 08 26 31.9 +0.2
comp=Z,2.6nm,0.8s,baz=255,slow=12,SNR=16
KURK Kurchatov 21.07 52 *e*P **P 08 26 32.6 +3.2**
KURK *e*S **S 08 30 15.4 -5.2**
KURK pmax pmax
comp=Z,8.0nm,0.8s
KURK Kurchatov 21.07 52 *e*P **P 08 26 32.6 +3.2**
comp=Z,7.7nm,0.8s
KURK Kurchatov 21.07 52 *e*P **P 08 26 32.6 +3.2**
comp=Z,7.7nm,0.8s
KURK *e*S **S 08 30 15.4 -5.2**
KLMR Klimovskoe 21.97 343 *e*P **P 08 26 38.0 -0.9**
KLMR *e**PP **pP 08 26 51.2 -0.5**
KLMR *e* 08 30 42.8
KLMR pmax pmax
comp=Z,16nm,0.9s
KLMR Klimovskoe 21.97 343 *e*P **P 08 26 38.0 -0.9**
comp=Z,16nm,0.9s
DRGR 22.26 297⇓ *i*P **P 08 26 42.5 +0.2**
DRGR 22.26 297 ⇓P **P 08 26 42.5 +0.2**
DRGR 22.26 297 P **P 08 26 42.5 +0.2**
MKAR Makanchi Array 22.61 63 P **P 08 26 49.3 +3.3**
comp=Z,1.6nm,0.8s,baz=267,slow=8.5,SNR=11
MKAR Makanchi Array 22.61 63 *i* P **P 08 26 50.2 +4.2**
MKAR pmax pmax
comp=Z,2.0nm,0.7s
KOLS Kolonicke sedl 22.86 302 *e*P **P 08 26 50.8 +2.2**
KOLS Kolonicke sedl 22.86 302 *e*P **P 08 26 50.8 +2.2**
KOLS Kolonicke sedl 22.86 302 *e*P **P 08 26 50.8 +2.2**
VSU Vasula 24.32 327⇓ *e*P **P 08 27 03.4 +1.3**
VSU pmax pmax
comp=Z,33nm,0.9s
VSU Vasula 24.32 327 *e*P **P 08 27 03.4 +1.3**
SNR=28
MTSE Matsula 25.72 325 *e*P **P 08 27 17.7 +2.9**
SNR=152
ZALV Zalesovo Beam 25.72 47 P **P 08 27 18.1 +3.2**
comp=Z,1.4nm,0.4s,baz=264,slow=11,SNR=7.9
ZALV Zalesovo Beam 25.72 47 P **P 08 27 18.1 +3.2**
ZALV pmax pmax
comp=Z,2.0nm,0.4s
SLIT Slitere, Latvi 25.85 322 *e*P **P 08 27 18.1 +2.1**
SNR=28
MEF Metsahovi 26.33 328 *e*P **P 08 27 21.1 +0.8**
SNR=28
FINES FINESS Array B 26.46 332 P **P 08 27 22.2 +0.8**
comp=Z,2.3nm,0.4s,baz=136,slow=12,SNR=14
RAF Rauma 27.86 328 *e*P **P 08 27 34.3 +0.3**
SNR=27
GERES GERESS Array B 28.47 300 P **P 08 27 41.3 +1.6**
comp=Z,0.4nm,0.5s,baz=96,slow=9.0,SNR=2.7
NB2 NORSAR Subarra 32.43 323 P **P 08 28 14.6 +0.1**
comp=Z,2.4nm,0.6s,baz=115,slow=8.6
NB2 NORSAR Subarra 32.43 323 P **P 08 28 14.6 +0.1**
comp=Z,2.4nm,0.6s,baz=115,slow=8.4,SNR=4.7
NOA NORSAR Array B 32.43 323 P **P 08 28 14.8 +0.3**
comp=Z,2.1nm,0.6s,baz=114,slow=8.4,SNR=16
NOA LR LR 08 43 14.1
comp=Z,21nm,20.4s,baz=140,slow=40
ARCES ARCESS Array B 32.45 343 P **P 08 28 15.7 +1.2**
comp=Z,3.8nm,0.9s,baz=149,slow=9.8,SNR=12
ARCES LR LR 08 42 57.7
comp=Z,33nm,18.4s,baz=92,slow=39
ARCES ARCESS Array B 32.45 343 *e*P **P 08 28 16.1 +1.6**
BOD Bodaibo 42.40 44 *e*P **P 08 29 41.5 +2.8**
BOD pmax pmax
comp=Z,3.0nm,1.0s
BOD Bodaibo 42.40 44 *e*P **P 08 29 41.5 +2.8**
comp=Z,3.0nm,1.0s
TORD Torodi Ar. Bea 51.77 253 P **P 08 30 52.0 -0.2**
comp=Z,0.1nm,0.3s,baz=62,slow=6.8,SNR=7.0
TORD Torodi Ar. Bea 51.77 253 P **P 08 30 52.0 -0.2**
DBIC Dimbokro 60.88 253 P **P 08 31 57.6 +0.6**
comp=Z,2.6nm,0.9s,baz=18,slow=6.4,SNR=3.8
BILL Bilibino 61.27 23 *e*P **P 08 31 59.4 +0.4**
BILL pmax pmax
comp=Z,1.0nm,0.9s
BILL Bilibino 61.27 23 *e*P **P 08 31 59.4 +0.4**
comp=Z,1.0nm,0.9s
YKA Yellowknife Ar 76.95 354 P **P 08 33 37.4 +1.4**
comp=Z,0.3nm,0.5s,baz=4.2,slow=5.8,SNR=17

*NEIC **08** 08:23:04.0, 17°.72N×94°.56W, h151km, MD4.0(MEX), After MEX.*

MEX 08 08:23:04.0±0.6, 17°.72N×94°.56W, h151km±7km, MD4.0, Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMIG	**Matias Romero**	**0.70**	**206**	*e*P	Pn	08 23 25.6	-1.1
CMIG				*e*S	Sn	08 23 41.8	-2.1
CMIG	**Matias Romero**	**0.70**	**206**	*e*P	Pn	08 23 25.6	-1.1
CMIG				*e*S	Sn	08 23 41.8	-2.1
VHO	**Vista Hermosa**	**2.17**	**253**	*e*P	Pn	08 23 39.8	-1.6
VHO				*i* S	Sn	08 24 08.7	-1.5
VHO	**Vista Hermosa**	**2.17**	**253**	*e*P	Pn	08 23 39.8	-1.6
VHO				*i* S	Sn	08 24 08.7	-1.5
PCIG		**2.38**	**147**	*e*P	Pn	08 23 42.7	-1.0
PCIG				*e*S	Sn	08 24 12.0	-2.4
PCIG		**2.38**	**147**	*e*P	Pn	08 23 42.7	-1.0
PCIG				*e*S	Sn	08 24 12.0	-2.4
HUIG	**Huatulco**	**2.44**	**218**	*e*P	Pn	08 23 40.1	-4.4
HUIG				*e*S	Sn	08 24 11.0	-4.7
HUIG	**Huatulco**	**2.44**	**218**	*e*P	Pn	08 23 40.1	-4.4
HUIG				*e*S	Sn	08 24 11.0	-4.7
LVIG	**Laguna Verde**	**2.66**	**319**	*i* P	Pn	08 23 46.6	-0.5
LVIG				*i* S	Sn	08 24 18.9	-1.5
LVIG	**Laguna Verde**	**2.66**	**319**	*i* P	Pn	08 23 46.6	-0.5
LVIG				*i* S	Sn	08 24 18.9	-1.5
TPIG	**Tehuac#an**	**2.75**	**285**	*i* P	Pn	08 23 47.4	-1.1
TPIG				*e*S	Sn	08 24 20.3	-2.5
TPIG	**Tehuac#an**	**2.75**	**285**	*i* P	Pn	08 23 47.4	-1.1
TPIG				*e*S	Sn	08 24 20.3	-2.5
PPM	**Popocatepetl**	**4.09**	**290**	*e*P	Pn	08 24 05.0	-0.9
PPM				*i* S	Sn	08 24 51.2	-2.7
PPM	**Popocatepetl**	**4.09**	**290**	*e*P	Pn	08 24 05.0	-0.9
PPM				*i* S	Sn	08 24 51.2	-2.7
YAIG	**Yautepec**	**4.43**	**286**	*e*P	Pn	08 24 09.5	-0.5
YAIG				*i* S	Sn	08 24 59.9	-1.6
YAIG	**Yautepec**	**4.43**	**286**	*e*P	Pn	08 24 09.5	-0.5
YAIG				*i* S	Sn	08 24 59.9	-1.6

*IDC **08** 08:30:55.0±1.5, 36°.96N×27°.28E, h0km, mb3.4/3, mb1 3.4/5, mb1mx3.2/34, mbtmp3.3/5, ML3.1/2, Error ellipse: s-maj=40.5km s-min=17.7km az=149.0*
*ATH **08** 08:30:56.5, 36°.72N×27°.21E, h21km±1km, ML3.3/5, Error ellipse: s-maj=2.1km s-min=1.1km az=78.0*
*THE **08** 08:30:57.5, 36°.73N×27°.23E, h4km±4km, ML3.4/5, Error ellipse: s-maj=4.2km s-min=1.2km az=249.0*
*ISCJB **08** 08:30:57.4±0.4, 36°.75N±0°.02×27°.16E±0°.03, h8km±3km, mb3.3/3, Error ellipse: s-maj=4.0km s-min=2.8km az=19.6*
*DDA **08** 08:30:57.6, 36°.81N×27°.21E, h26km, Md3.1*
*ISK **08** 08:30:57.1, 36°.79N×27°.14E, h3km, ML3.1*
*CSEM **08** 08:30:57.3±0.1, 36°.75N×27°.14E, h2km, ML3.3, Error ellipse: s-maj=3.8km s-min=3.1km az=116.0*

ISC 08 08:30:56.7±0.8, 36°.78N±0°.01×27°.20E±0°.02, h11km±5km, n117, σ1°.07/155, mb3.3/3, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NISR	**Nisiros**	**0.18**	**198**	P	**Pg**	**08 31 00.8**	**+0.2**
NISR				S	**Sg**	**08 31 03.4**	**+0.2**
NISR	**Nisiros**	**0.18**	**198**	P	**Pg**	**08 31 00.8**	**+0.2**
NISR				S	**Sg**	**08 31 03.0**	**-0.2**
NISR	**Nisiros**	**0.18**	**198**	P	**Pg**	**08 31 00.9**	**+0.4**
NISR				S	**Sg**	**08 31 03.0**	**-0.2**
NISR				AML	AML	08 31 04.1	
NISR	comp=E,41000μm,0.3s			AML	AML	08 31 04.3	
NIS1	**Nisyros Isl.**	**0.18**	**185**	*e*PG	**Pb**	**08 31 01.6**	**-0.3**
NIS1	**Nisyros Isl.**	**0.18**	**185**	P	**Pg**	**08 31 00.7**	**+0.1**
NIS1				S	**Sg**	**08 31 03.0**	**-0.3**
NIS1	**Nisyros Isl.**	**0.18**	**185**	P	**Pg**	**08 31 00.9**	**+0.3**
NIS1	**Nisyros Isl.**	**0.18**	**185**	*e*Pg	**Pb**	**08 31 01.6**	**-0.3**
NIS1				S	**Sg**	**08 31 03.0**	**-0.3**
NIS1	**Nisyros Isl.**	**0.18**	**185**	P	**Pg**	**08 31 00.9**	**+0.3**
NIS1				S	**Sg**	**08 31 02.4**	**-1.0**
NIS1				AML	AML	08 31 05.2	
NIS1	comp=E,76236μm,0.3s			AML	AML	08 31 10.8	
BODT	**Bodrum**	**0.30**	**18**	*e*PG	**Pb**	**08 31 03.9**	**-0.1**
BODT				*e*SG	**Sb**	**08 31 09.3**	**+0.4**
BODT	**Bodrum**	**0.30**	**18**	P	**Pb**	**08 31 03.9**	**-0.1**
BODT				S	**Sb**	**08 31 08.8**	**-0.1**
BODT	**Bodrum**	**0.30**	**18**	P	**Pb**	**08 31 03.9**	**-0.1**
BODT				S	**Sb**	**08 31 08.8**	**-0.1**
BODT				*e*Sg	**Sb**	**08 31 09.3**	**+0.4**
BDRM	**Kayabasi**	**0.35**	**35**	P	**Pb**	**08 31 04.8**	**-0.1**
BDRM				S	**Sb**	**08 31 10.2**	**-0.2**
BDRM	**Kayabasi**	**0.35**	**35**	*i* P	**Pb**	**08 31 04.8**	**-0.1**
BDRM				*i* S	**Sb**	**08 31 10.2**	**-0.2**
GCAM	**G?zelcaml?**	**0.92**	**2**	P	**Pn**	**08 31 16.5**	**+1.0**
GCAM				S	**Sn**	**08 31 28.2**	**-0.5**
GCAM	**G?zelcaml?**	**0.92**	**2**	*i* P	**Pn**	**08 31 16.5**	**+1.0**
GCAM				*i* S	**Sn**	**08 31 28.2**	**-0.5**
ARG	**Arkhangelos**	**0.94**	**127**	P	**Pg**	**08 31 13.9**	**-0.8**
ARG				S	**Sb**	**08 31 27.7**	**+0.4**
ARG	**Arkhangelos**	**0.94**	**127**	P	**Pg**	**08 31 13.9**	**-0.8**
ARG				S	**Sb**	**08 31 27.7**	**+0.4**
YER	**Yerkesik**	**0.94**	**68**	*e*PG	**Pn**	**08 31 16.1**	**+0.3**
YER				*e*SG	**Sn**	**08 31 30.8**	**+1.5**
YER	**Yerkesik**	**0.94**	**68**	P	**Pn**	**08 31 15.9**	**+0.1**
YER				S	**Sb**	**08 31 27.9**	**+0.4**
YER	**Yerkesik**	**0.94**	**68**	*e*Pg	**Pn**	**08 31 16.1**	**+0.3**
YER				S	**Sb**	**08 31 27.9**	**+0.4**
YER				*e*Sg	**Sn**	**08 31 30.8**	**+1.5**
SMG	**Samos**	**0.97**	**343**	P	**Pn**	**08 31 16.3**	**+0.1**
SMG				S	**Sn**	**08 31 32.3**	**+2.3**
SMG	**Samos**	**0.97**	**343**	P	**Pn**	**08 31 16.3**	**+0.1**
SMG				S	**Sn**	**08 31 32.3**	**+2.3**
SMG	**Samos**	**0.97**	**343**	P	**Pn**	**08 31 16.8**	**+0.6**
SMG				S	**Sn**	**08 31 32.1**	**+2.1**
SMG				AML	AML	08 31 34.1	
SMG	comp=N,2394μm,0.3s			AML	AML	08 31 34.4	
SMG	comp=E,3403μm,0.3s						
AYDN	**Tasoluk**	**1.03**	**32**	P	**Pb**	**08 31 16.5**	**-0.1**
AYDN				S	**Sb**	**08 31 30.8**	**+0.6**
AYDN	**Tasoluk**	**1.03**	**32**	*i* P	**Pb**	**08 31 16.5**	**-0.1**
AYDN				*i* S	**Sb**	**08 31 30.8**	**+0.6**
TURN	**Turunc**	**1.13**	**85**	*i* P	Pb	08 31 13.9	-4.3
TURN				*i* S	Sb	08 31 25.5	-7.5
DALY	**Dalyan (Mu¨la**	**1.17**	**88**	*e*PN	**Pg**	**08 31 21.2**	**+2.0**
DALY	**Dalyan (Mu¨la**	**1.17**	**88**	*e*Pn	**Pg**	**08 31 21.2**	**+2.0**
KARP	**Karpathos**	**1.23**	**181**	*e*PN	**Pg**	**08 31 21.7**	**+1.4**
KARP	**Karpathos**	**1.23**	**181**	P	**Pn**	**08 31 18.7**	**-1.1**
KARP				S	**Sb**	**08 31 34.2**	**-1.6**
KARP	**Karpathos**	**1.23**	**181**	P	**Pn**	**08 31 18.9**	**-0.9**
KARP	**Karpathos**	**1.23**	**181**	*e*Pn	**Pg**	**08 31 21.7**	**+1.4**
KARP				S	**Sb**	**08 31 34.4**	**-1.4**
KARP	**Karpathos**	**1.23**	**181**	P	**Pn**	**08 31 18.9**	**-0.9**
KARP				S	**Sb**	**08 31 34.4**	**-1.4**
KARP				AML	AML	08 31 37.8	
KARP	comp=E,1672μm,0.4s			AML	AML	08 31 39.9	
KARP	comp=N,1363μm,0.6s						
AYDB	**Zeytinkoy-Aydi**	**1.29**	**25**	*e*PN	**Pg**	**08 31 21.9**	**+0.4**
AYDB	**Zeytinkoy-Aydi**	**1.29**	**25**	*e*Pn	**Pg**	**08 31 21.9**	**+0.4**
DGB	**¨zmir**	**1.29**	**349**	*i* P	**Pg**	**08 31 21.7**	**+0.2**
DGB				*i* S	**Sg**	**08 31 38.6**	**+0.2**
APE	**Apeiranthos**	**1.36**	**283**	*e*PN	**Pg**	**08 31 22.9**	**0.0**
APE	**Apeiranthos**	**1.36**	**283**	P	**Pn**	**08 31 21.8**	**+0.1**
APE	**Apeiranthos**	**1.36**	**283**	P	**Pn**	**08 31 21.8**	**+0.1**
APE	**Apeiranthos**	**1.36**	**283**	*e*Pn	**Pg**	**08 31 22.9**	**0.0**
APE	**Apeiranthos**	**1.36**	**283**	P	**Pn**	**08 31 20.8**	**-0.9**
SANT	**Santorini**	**1.46**	**254**	P	**Pb**	**08 31 23.5**	**-0.3**
SANT	**Santorini**	**1.46**	**254**	P	**Pb**	**08 31 23.5**	**-0.3**
CMBO	**Columbo, Santo**	**1.47**	**258**	P	**Pg**	**08 31 24.9**	**0.0**
CMBO	**Columbo, Santo**	**1.47**	**258**	P	**Pg**	**08 31 24.9**	**0.0**
FETY	**Fethiye**	**1.52**	**95**	*e*PN	**Pg**	**08 31 26.8**	**+0.9**
FETY	**Fethiye**	**1.52**	**95**	P	**Pg**	**08 31 25.5**	**-0.4**
FETY	**Fethiye**	**1.52**	**95**	P	**Pg**	**08 31 25.5**	**-0.4**
FETY	**Fethiye**	**1.52**	**95**	*e*Pn	**Pg**	**08 31 26.8**	**+0.9**
THR5	**Thira Island,**	**1.53**	**257**	*e*PN	**Pg**	**08 31 25.8**	**-0.2**
THR5	**Thira Island,**	**1.53**	**257**	*e*Pn	**Pg**	**08 31 25.8**	**-0.2**
ZEY	**¨zmir**	**1.56**	**339**	*i* P	**Pn**	**08 31 23.0**	**-1.3**
ZEY				*i* S	**Sg**	**08 31 51.5**	**+4.8**
BLCB	**Balcova**	**1.61**	**356**	*e*PN	**Pg**	**08 31 27.3**	**-0.2**
BLCB	**Balcova**	**1.61**	**356**	*e*Pn	**Pg**	**08 31 27.3**	**-0.2**
IZM	**Izmir**	**1.62**	**2**	*e*PN	**Pg**	**08 31 27.0**	**-0.7**
IZM	**Izmir**	**1.62**	**2**	*e*Pn	**Pg**	**08 31 27.0**	**-0.7**
URLA	**Izmir**	**1.65**	**343**	P	**Pn**	**08 31 25.6**	**0.0**
URLA				S	**Sg**	**08 31 50.2**	**+0.5**
URLA	**Izmir**	**1.65**	**343**	*i* P	**Pn**	**08 31 25.6**	**0.0**
URLA				*i* S	**Sg**	**08 31 50.2**	**+0.5**
DNZL	**Cakiroluk**	**1.73**	**58**	P	**Pg**	**08 31 29.5**	**-0.5**
DNZL				S	**Sg**	**08 31 51.5**	**-0.9**
DNZL	**Cakiroluk**	**1.73**	**58**	*i* P	**Pg**	**08 31 29.5**	**-0.5**
DNZL				*i* S	**Sg**	**08 31 51.5**	**-0.9**
DENT	**Denizli**	**1.76**	**56**	*e*PN	**Pg**	**08 31 30.3**	**-0.1**
DENT	**Denizli**	**1.76**	**56**	*e*Pn	**Pg**	**08 31 30.3**	**-0.1**
CHOS	**Chios island**	**1.84**	**331**	*e*PN	**Pb**	**08 31 29.5**	**-0.9**
CHOS	**Chios island**	**1.84**	**331**	P	**Pn**	**08 31 28.7**	**+0.4**
CHOS	**Chios island**	**1.84**	**331**	P	**Pn**	**08 31 28.7**	**+0.4**
CHOS	**Chios island**	**1.84**	**331**	*e*Pn	**Pb**	**08 31 29.5**	**-0.9**
CHOS	**Chios island**	**1.84**	**331**	P	**Pn**	**08 31 27.5**	**-0.7**
ZKR	**Zakros**	**1.84**	**206**	P	**Pn**	**08 31 28.8**	**+0.6**
ZKR	**Zakros**	**1.84**	**206**	P	**Pn**	**08 31 29.3**	**+1.1**
ZKR				S	**Sb**	**08 31 53.2**	**-0.2**
ZKR	**Zakros**	**1.84**	**206**	P	**Pn**	**08 31 29.3**	**+1.1**
ZKR				S	**Sb**	**08 31 53.2**	**-0.2**
ZKR				AML	AML	08 31 59.0	
ZKR	comp=E,407μm,0.5s			AML	AML	08 32 02.9	
ZKR	comp=N,377μm,0.4s						
GLHS	**Glhisar (BURDU**	**1.88**	**78**	*e*PN	**Pg**	**08 31 31.9**	**-0.9**
GLHS	**Glhisar (BURDU**	**1.88**	**78**	*e*Pn	**Pg**	**08 31 31.9**	**-0.9**
MANT	**Manisa**	**2.02**	**32**	P	**Pg**	**08 31 34.7**	**-0.8**
MANT				S	**Sg**	**08 32 03.2**	**+1.5**
MANT	**Manisa**	**2.02**	**32**	*i* P	**Pg**	**08 31 34.7**	**-0.8**
MANT				*i* S	**Sg**	**08 32 03.2**	**+1.5**
KSL	**Kastellorizon**	**2.02**	**107**	P	**Pb**	**08 31 33.2**	**-0.2**
KSL	**Kastellorizon**	**2.02**	**107**	P	**Pb**	**08 31 33.2**	**-0.2**
KULA	**Kula-Manisa**	**2.08**	**33**	*e*PN	**Pb**	**08 31 34.6**	**0.0**
KULA	**Kula-Manisa**	**2.08**	**33**	P	**Pb**	**08 31 34.0**	**-0.5**
KULA	**Kula-Manisa**	**2.08**	**33**	P	**Pb**	**08 31 34.0**	**-0.5**
KULA	**Kula-Manisa**	**2.08**	**33**	*e*Pn	**Pb**	**08 31 34.6**	**0.0**
LAST	**Lasithi**	**2.13**	**221**	P	**Pn**	**08 31 32.8**	**+0.6**
LAST	**Lasithi**	**2.13**	**221**	P	**Pn**	**08 31 32.8**	**+0.6**
AKHS	**Akhisar**	**2.15**	**13**	P	**Pg**	**08 31 37.3**	**-0.6**
AKHS	**Akhisar**	**2.15**	**13**	*i* P	**Pg**	**08 31 37.3**	**-0.6**
AKS	**Akhisar**	**2.15**	**13**	*e*PN	**Pb**	**08 31 35.4**	**-0.3**
AKS	**Akhisar**	**2.15**	**13**	*e*Pn	**Pb**	**08 31 35.4**	**-0.3**
ELL	**Elmali**	**2.18**	**90**	*e*PN	**Pb**	**08 31 36.4**	**+0.3**
ELL	**Elmali**	**2.18**	**90**	*e*Pn	**Pb**	**08 31 36.4**	**+0.3**
DKL	**Dikili**	**2.30**	**354**	*e*PN	**Pb**	**08 31 37.0**	**-1.1**
DKL	**Dikili**	**2.30**	**354**	*e*Pn	**Pb**	**08 31 37.0**	**-1.1**
IDI	**Anoyia**	**2.39**	**232**	Pn	**Pn**	**08 31 37.0**	**+1.2**
IDI	comp=N,0.9nm,0.3s,baz=45,slow=16,SNR=3.8			Lg	Lg	08 32 18.5	
IDI	comp=N,2.0nm,0.3s,baz=144,slow=19,SNR=3.6						
IDI	**Anoyia**	**2.39**	**232**	P	**Pn**	**08 31 35.9**	**+0.1**
IDI	**Anoyia**	**2.39**	**232**	P	**Pn**	**08 31 35.9**	**+0.1**
KHL	**Karahalli**	**2.41**	**50**	*e*PN	**Pb**	**08 31 39.4**	**-0.6**
KHL	**Karahalli**	**2.41**	**50**	*e*Pn	**Pb**	**08 31 39.4**	**-0.6**
KHAL	**Karahalli**	**2.42**	**48**	P	**Pn**	**08 31 37.3**	**+1.1**
KHAL	**Karahalli**	**2.42**	**48**	*i* P	**Pn**	**08 31 37.3**	**+1.1**
DEMI	**Demirci**	**2.56**	**28**	P	**Pb**	**08 31 41.7**	**-0.9**
DEMI	**Demirci**	**2.56**	**28**	*i* P	**Pb**	**08 31 41.7**	**-0.9**
SIGR	**SIGRI**	**2.65**	**337**	*e*PN	**Pb**	**08 31 42.0**	**-2.1**
SIGR	**SIGRI**	**2.65**	**337**	P	**Pn**	**08 31 40.0**	**+0.7**
SIGR	**SIGRI**	**2.65**	**337**	P	**Pn**	**08 31 40.0**	**+0.7**
SIGR	**SIGRI**	**2.65**	**337**	*e*Pn	**Pb**	**08 31 42.0**	**-2.1**
SIGR	**SIGRI**	**2.65**	**337**	P	**Pn**	**08 31 38.8**	**-0.4**
BALB	**Balikesir**	**2.91**	**10**	*e*PN	**Pb**	**08 31 45.6**	**-2.9**
BALB	**Balikesir**	**2.91**	**10**	*e*Pn	**Pb**	**08 31 45.6**	**-2.9**
BALY	**Balya**	**2.97**	**6**	*i* P	**Pg**	**08 31 52.8**	**-0.8**
DURS	**Dursunbey**	**2.99**	**19**	*i* P	**Pg**	**08 31 52.8**	**-1.2**
DURS				*i* S	**Sg**	**08 32 30.4**	**-2.3**
SUTC	**Sutluce-Ispart**	**3.12**	**76**	*e*PN	**Pb**	**08 31 49.3**	**-2.9**
SUTC	**Sutluce-Ispart**	**3.12**	**76**	*e*Pn	**Pb**	**08 31 49.3**	**-2.9**
BOZC	**Bozcaada**	**3.19**	**344**	*i* P	**Pn**	**08 31 46.3**	**-0.3**
TVSB	**Tavsanli**	**3.21**	**33**	*e*PN	**Pb**	**08 31 50.7**	**-3.0**
TVSB	**Tavsanli**	**3.21**	**33**	*e*Pn	**Pb**	**08 31 50.7**	**-3.0**
MMAI	**Mount Meron Ar**	**7.72**	**117**	Pn	**Pn**	**08 32 49.1**	**+0.1**
ESDC	**Sonseca Array**	**24.59**	**286**	P	**P**	**08 36 17.2**	**+0.5**
TORD	**Torodi Ar. Bea**	**32.79**	**231**	P	**P**	**08 37 30.0**	**0.0**
MKAR	**Makanchi Array**	**41.51**	**58**	P	**P**	**08 38 43.4**	**-0.4**

comp=N,0.4nm,0.7s,baz=282,slow=7.2,SNR=3.4

IDC 08 08:40:42.8±1.5, 17°.96S×178°.37W, h547km±20km, mb3.3/9, mb1 3.5/10, mb1mx3.3/25, mbtmp4.2/10, Error ellipse: s-maj=21.4km s-min=13.1km az=123.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**7.51**	**59**	P	P	08 42 35.8	0.0
AFI	2.0nm,0.3s,baz=203,slow=7.7,SNR=5.6			S	S	08 44 09.4	+1.1
URZ	**Urewera**	**20.61**	**190**	P	P	08 44 43.3	-1.2
RPZ	**Rata Peaks**	**27.19**	**197**	P	P	08 45 41.8	-1.0
STKA	**Stephens Creek**	**38.64**	**241**	P	P	08 47 20.7	+0.9
WRA	**Warramunga Arr**	**44.66**	**260**	P	P	08 48 07.1	-0.4
WRA	2.0nm,0.5s,baz=95,slow=7.0,SNR=46			PcP	PcP	08 49 38.1	-0.2
ASAR	**Alice Springs**	**44.82**	**254**	P	P	08 48 08.8	+0.2
ASAR	12nm,0.6s,baz=88,slow=8.4,SNR=246			PcP	PcP	08 49 36.0	-2.8
VNDA	**Vanda**	**60.40**	**185**	P	P	08 50 00.5	+1.6
MJAR	**Matsushiro Arr**	**67.97**	**323**	P	P	08 50 47.1	-0.5
ILAR	**Eielson Array**	**85.92**	**13**	P	P	08 52 24.0	-0.7
YKA	**Yellowknife Ar**	**94.36**	**25**	P	P	08 53 03.7	-0.1
FINES	**FINESS Array B**	**133.25**	**344**	PKhKP	PKPpre	08 58 52.1	
BRTR	**Keskin Array B**	**144.84**	**315**	PKP	PKPbc	08 59 18.6	-0.2
GERES	**GERESS Array B**	**147.67**	**345**	PKPbc	PKPbc	08 59 26.4	+0.2

*ISCJB **08** 08:51:31.6±0.7, 44°.08N±0°.07×147°.21E±0°.09, h100km±4km, mb3.5/6, Error ellipse: s-maj=14.8km s-min=5.9km az=139.5*
*MOS **08** 08:51:31.4±1.3, 44°.09N×147°.23E, h107km, mb4.0/2, Error ellipse: s-maj=23.2km s-min=15.1km az=62.5*
*IDC **08** 08:51:32.0±2.6, 45°.98N×146°.37E, h0km, mb3.7/6, mb1 3.8/6, mb1mx3.5/48, mbtmp3.7/6, MS3.7/2, Ms1 3.7/2, ms1mx2.5/40, Error ellipse: s-maj=67.4km s-min=25.8km az=151.0*
*SKHL **08** 08:51:33.3±0.2, 44°.20N×147°.10E, h106km±5km, mb4.8/5, msha5.8/3*
*JMA **08** 08:51:33.9±0.3, 43°.94N×147°.17E, h83km±5km, M3.6*

ISC 08 08:51:32.6±0.9, 44°.07N±0°.07×147°.19E±0°.07, h91km±6km, n35, σ1°.23/43, mb3.5/6, 6C-1D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHO	**Shikotan**	**0.33**	**232**	*d* iPN	**Pn**	**08 51 46.8**	**+0.4**
SHO				*i* S	**Sn**	**08 51 56.1**	**-0.2**
SHO	comp=N,63nm,0.2s			pmax	pmax		
SHO	comp=Z,226nm,0.2s			pmax	pmax		
SHO	comp=E,52nm,0.1s			pmax	pmax		
SHO	comp=N,10μm,0.4s			smax	smax		
SHO	comp=E,5μm,0.5s			smax	smax		
SHO	**Shikotan**	**0.33**	**232⇑**	*i*P	**Pn**	**08 51 46.8**	**+0.6**
SHO				AMB	AMB	08 51 47.0	
SHO	comp=E,60nm,0.2s			AMB	AMB	08 51 47.0	
SHO	comp=E,50nm,0.2s			AMB	AMB	08 51 47.0	
SHO	comp=E,230nm,0.2s						
SHO				*i* S	**Sn**	**08 51 56.3**	**0.0**
SHO				A	A	08 51 56.5	
SHO	comp=E,10μm,0.5s			A	A	08 51 56.5	
SHO	comp=E,5μm,0.5s						
YUK	**Yuzh-Kuril'sk**	**0.96**	**268**	*c* iPN	**Pn**	**08 51 52.1**	**+0.3**
YUK				*i* S	**Sn**	**08 52 05.7**	**-0.5**
YUK	comp=N,359nm,0.1s			pmax	pmax		
YUK	comp=E,204nm,0.1s			pmax	pmax		
YUK	comp=Z,590nm,0.1s			pmax	pmax		
YUK	comp=E,2μm

JAR **Ashorobuto 2.60 254** P **Pn 08 52 14.3 +1.6**
JAR eS **Sn 08 52 44.9 +1.4**
JOB Onbets 2.71 246 P **Pn 08 52 15.4 +1.3**
JOB eS **Sn 08 52 46.6 +0.5**
JCH Churui 3.15 244 P **Pn 08 52 20.8 +0.7**
JCH eS **Sn 08 52 55.5 -1.2**
JKA Kamikawa-asahi 3.31 272 eP **Pn 08 52 24.1 +1.9**
ASAJ Asahikawa 3.31 272 Pn **Pn 08 52 24.1 +1.8**
baz=42,slow=14
ASAJ Sn Sn 08 53 12.3 +12
baz=72,slow=20,SNR=1.9
ERM Erimo 3.60 237⇑ ePN **Pn 08 52 28.6 +2.5**
ERM Erimo 3.60 237⇑ eP **Pn 08 52 28.6 +2.5**
JNBK Urakawa-nobuka 3.71 243 P **Pn 08 52 28.0 +0.4**
YSS Yuzh-Sakhalins 4.25 314 eP **Pn 08 52 37.2 +2.4**
YSS AMB AMB 08 52 38.6
comp=E,20nm,0.4s
UGL Uglegorsk 6.13 327 eP **Pn 08 52 59.3 -1.1**
UGL AMB AMB 08 53 02.7
comp=E,180nm,1.0s
SKR Severo-Kuril's 8.96 39 i PN **Pn 08 53 38.7 -0.3**
SKR Severo-Kuril's 8.96 39 eP **Pn 08 53 38.7 -0.3**
KROS Kirovskiy 16.72 315 eP **Pn 08 55 19.5 -1.5**
TLY Talaya 29.81 300 LR LR 09 08 53.9
comp=E,30nm,19.1s,baz=70,slow=37
MKAR Makanchi Array 44.46 297 P **P 08 59 34.1 -0.4**
comp=E,0.3nm,0.5s,baz=61,slow=8.8,SNR=4.6
INK Inuvik 46.11 30 P **P 08 59 47.3 +0.2**
baz=282,slow=8.2
YKA Yellowknife Ar 55.52 34 P **P 09 00 58.9 +1.2**
comp=E,0.1nm,0.5s,baz=302,slow=7.1,SNR=5.4
YKA Yellowknife Ar 55.52 34 i P P 09 01 02.7 +5.0
YKA Yellowknife Ar 55.52 34 i P P 09 01 02.7 +5.0
FINES FINESS Array B 64.60 333 P **P 09 01 57.6 -2.2**
comp=E,0.7nm,0.7s,baz=37,slow=7.1,SNR=4.7
NOA NORSAR Array B 69.31 339 P **P 09 02 28.2 -1.5**
comp=E,0.2nm,0.3s,baz=32,slow=6.6,SNR=5.4
HFS Hagfors 69.40 337 P **P 09 02 28.2 -2.0**
comp=E,1.3nm,0.8s,baz=20,slow=4.6,SNR=6.0
KBZ Khabaz 69.61 311 P **P 09 02 32.7 +0.9**
comp=E,0.9nm,0.5s,baz=40,slow=7.7,SNR=4.0
RAR Rarotonga 81.08 131 LR LR 09 31 32.9
comp=E,190nm,21.7s,baz=36,slow=29

DDA ***08*** *08:53:14.6, 37.°24N×28.°12E, h7km, Md2.6*
CSEM ***08*** *08:53:15.7±0.2, 37.°25N×28.°19E, h2km, MD2.8, Error ellipse: s-maj=4.1km s-min=3.5km az=45.0*
ISK ***08*** *08:53:15.5, 37.°22N×28.°20E, h6km, MD2.8*
ISC 08 08:53:15.7±1.1, 37.°26N±0.°02×28.°17E±0.°02, h4km±10km, n36, σ1§04/49, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.15**	**145**	ePG	**Pg**	**08 53 18.0**	**-0.8**
YER	**Yerkesik**	**0.15**	**145**	ePg	**Pg**	**08 53 18.0**	**-0.8**
AYDN	**Tasoluk**	**0.46**	**330**	P	**Pg**	**08 53 23.6**	**-1.0**
AYDN				S	**Sg**	**08 53 31.5**	**+0.9**
AYDN	**Tasoluk**	**0.46**	**330**	i P	**Pg**	**08 53 23.6**	**-1.0**
AYDN				i S	**Sg**	**08 53 31.5**	**+0.9**
TURN	**Turunc**	**0.52**	**138**	i P	**Pg**	**08 53 24.0**	**-1.7**
TURN				i S	**Sg**	**08 53 31.5**	**-0.8**
DALY	**Dalyan (Mu¨la**	**0.59**	**139**	ePG	**Pg**	**08 53 26.8**	**-0.2**
DALY	**Dalyan (Mu¨la**	**0.59**	**139**	ePg	**Pg**	**08 53 26.8**	**-0.2**
BODT	**Bodrum**	**0.72**	**254**	ePG	**Pg**	**08 53 29.7**	**+0.3**
BODT				eSG	**Sb**	**08 53 40.7**	**-0.3**
BODT	**Bodrum**	**0.72**	**254**	ePg	**Pg**	**08 53 29.7**	**+0.3**
BODT				eSg	**Sb**	**08 53 40.7**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**0.72**	**342**	ePG	**Pb**	**08 53 30.6**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**0.72**	**342**	ePg	**Pb**	**08 53 30.6**	**-0.3**
DNZL	**Cakiroluk**	**0.81**	**58**	P	**Pg**	**08 53 31.5**	**+0.2**
DNZL				S	**Sb**	**08 53 44.0**	**0.0**
DNZL	**Cakiroluk**	**0.81**	**58**	i P	**Pg**	**08 53 31.5**	**+0.2**
DNZL				i S	**Sb**	**08 53 44.0**	**0.0**
DENT	**Denizli**	**0.84**	**54**	ePG	**Pb**	**08 53 32.5**	**-0.4**
DENT	**Denizli**	**0.84**	**54**	ePg	**Pb**	**08 53 32.5**	**-0.4**
FETY	**Fethiye**	**0.96**	**130**	ePG	**Pg**	**08 53 33.5**	**-0.6**
FETY	**Fethiye**	**0.96**	**130**	ePg	**Pg**	**08 53 33.5**	**-0.6**
GLHS	**Glhisar (BURDU**	**1.06**	**95**	ePG	**Pb**	**08 53 35.9**	**-0.8**
GLHS	**Glhisar (BURDU**	**1.06**	**95**	ePg	**Pb**	**08 53 35.9**	**-0.8**
GOLH	**Golhisar**	**1.11**	**91**	P	**Pg**	**08 53 36.1**	**-0.9**
GOLH				S	**Sn**	**08 53 55.3**	**+1.4**
GOLH	**Golhisar**	**1.11**	**91**	i P	**Pg**	**08 53 36.1**	**-0.9**
GOLH				i S	**Sn**	**08 53 55.3**	**+1.4**
MANT	**Manisa**	**1.26**	**14**	P	**Pb**	**08 53 40.6**	**+0.4**
MANT				S	**Sn**	**08 53 57.5**	**-0.4**
MANT	**Manisa**	**1.26**	**14**	i P	**Pb**	**08 53 40.6**	**+0.4**
MANT				i S	**Sn**	**08 53 57.5**	**-0.4**
DGB	**¨zmir**	**1.29**	**308**	i P	**Pn**	**08 53 38.3**	**-2.2**
DGB				i S	**Sb**	**08 53 56.4**	**-1.1**
KULA	**Kula-Manisa**	**1.31**	**17**	ePN	**Pg**	**08 53 41.4**	**+0.6**
KULA	**Kula-Manisa**	**1.31**	**17**	ePn	**Pg**	**08 53 41.4**	**+0.6**
ELL	**Elmali**	**1.48**	**110**	ePN	**Pb**	**08 53 43.4**	**-0.5**
ELL	**Elmali**	**1.48**	**110**	ePn	**Pb**	**08 53 43.4**	**-0.5**
KHAL	**Karahalli**	**1.52**	**43**	P	**Pn**	**08 53 42.8**	**-1.0**
KHAL	**Karahalli**	**1.52**	**43**	i P	**Pn**	**08 53 42.8**	**-1.0**
AKAS	**Kas**	**1.54**	**131**	P	**Pg**	**08 53 45.1**	**-0.2**
AKAS	**Kas**	**1.54**	**131**	i P	**Pg**	**08 53 45.1**	**-0.2**
AKAS				i S	**Sg**	**08 54 09.9**	**+4.7**
KARP	**Karpathos**	**1.90**	**206**	ePN	**Pn**	**08 53 48.9**	**0.0**
KARP	**Karpathos**	**1.90**	**206**	ePn	**Pn**	**08 53 48.9**	**0.0**
CHOS	**Chios island**	**2.02**	**304**	ePN	**Pn**	**08 53 51.1**	**+0.5**
CHOS	**Chios island**	**2.02**	**304**	ePn	**Pn**	**08 53 51.1**	**+0.5**

JMA ***08*** *09:00:21.5±0.3, 38.°58N×143.°37E, h12km, M4.3*
ISCJB ***08*** *09:00:22.1±0.2, 38.°59N±0.°03×143.°34E±0.°03, h15km, mb4.4/82, MS3.3/9, Error ellipse: s-maj=4.9km s-min=3.3km az=150.9*
MOS ***08*** *09:00:24.4±1.1, 38.°64N×143.°37E, h33km, mb4.5/38, Error ellipse: s-maj=8.7km s-min=5.6km az=102.0*
NEIC ***08*** *09:00:27.0±0.6, 38.°59N×143.°26E, h40km±5km, mb4.5/36, Error ellipse: s-maj=6.3km s-min=4.3km az=122.0*
IDC ***08*** *09:00:28.6±2.1, 38.°49N×143.°33E, h60km±19km, mb3.9/24, mb1 4.0/30, mb1mx3.9/49, mbtmp4.1/30, MS3.2/9, Ms1 3.2/9, ms1mx2.9/39, Error ellipse: s-maj=15.7km s-min=12.4km az=94.0*
ISC 08 09:00:23.3±0.4, 38.°62N±0.°04×143.°32E±0.°05, h15km, n183, σ1§27/187, mb4.5/82, MS3.5/9, 11C-8D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**1.37**	**290**	P	**Pn**	**09 00 47.1**	**-0.8**
JIO	**Ouri**	**1.56**	**265**	P	**Pn**	**09 00 49.6**	**-0.8**
JIO				eS	**Sb**	**09 01 10.8**	**-0.4**
JMK	**Ichinoseki**	**1.68**	**282**	P	**Pn**	**09 00 51.9**	**-0.2**
JTH	**Tanohata**	**1.74**	**320**	P	**Pb**	**09 00 55.1**	**+0.2**
JOM	**Ohasama**	**1.79**	**299**	P	**Pn**	**09 00 54.2**	**+0.5**
JKZ	**Kuzumaki**	**2.06**	**312**	P	**Pn**	**09 00 57.5**	**+0.1**
JOU	**Okura**	**2.10**	**264**	P	**Pn**	**09 00 58.2**	**+0.3**
JOU				eS	**Sn**	**09 01 23.3**	**-0.5**
JMM	**Marumori**	**2.13**	**250**	P	**Pn**	**09 00 58.0**	**-0.3**
JRG	**Rokugo**	**2.23**	**291**	P	**Pn**	**09 01 00.2**	**+0.5**
JANG	**Nango**	**2.24**	**322**	P	**Pb**	**09 01 02.7**	**-0.8**
JFK	**Kawauchi**	**2.30**	**238**	P	**Pn**	**09 00 59.4**	**-1.3**
ERM	**Erimo**	**3.40**	**358**	⇓i P	**Pn**	**09 01 14.6**	**-1.1**
ERM	**Erimo**	**3.40**	**358**	ePn	**Pn**	**09 01 15.3**	**-0.4**
MJAR	**Matsushiro Arr**	**4.56**	**245**	P	**Pn**	**09 01 33.2**	**+1.5**
2.7nm,0.3s,baz=67,slow=12,SNR=22							
MAJO	**Matsushiro**	**4.56**	**245**	⇑eP	**Pn**	**09 01 33.9**	**+2.1**
MAJO	**Matsushiro**	**4.56**	**245**	ePn	**Pn**	**09 01 32.4**	**+0.6**
MAT	**Matsushiro**	**4.56**	**245**	P	**Pn**	**09 01 33.3**	**+1.5**
MAT				eS	**Sn**	09 02 17.7	-6.8
MJB9	**Matsu-Tunnel**	**4.56**	**245**	ePn	**Pn**	**09 01 32.3**	**+0.6**
ASAJ	**Asahikawa**	**5.52**	**355**	P	**Pn**	**09 01 44.6**	**-0.3**
4.1nm,0.3s,baz=193,slow=14,SNR=27							
ASAJ				S	**Sn**	**09 02 47.1**	**-1.0**
1.8nm,0.3s,baz=126,slow=19,SNR=2.5							
ASAJ				LR	LR	09 04 20.7	
comp=Z,157nm,21.7s,baz=1.0,slow=41							
ASAJ	**Asahikawa**	**5.52**	**355**	ePn	**Pn**	**09 01 45.0**	**0.0**
ASAJ				S	**Sn**	**09 02 47.1**	**-1.0**
YUK	**Yuzh-Kuril'sk**	**5.74**	**19**	eP	**Pn**	**09 01 45.6**	**-2.3**
YUK				i S	**Sn**	**09 02 48.3**	**-5.2**
YUK				pmax	pmax		
comp=Z,209nm,0.2s							
YUK				pmax	pmax		
comp=N,144nm,0.1s							
SHO	**Shikotan**	**5.88**	**26**	⇓i P	Pn	09 01 46.7	-3.1
SHO				i S	Sn	09 02 49.3	-7.5
SHO				pmax	pmax		
comp=Z,72nm,0.8s							
SHO				pmax	pmax		
comp=E,55nm,0.9s							
SHO				pmax	pmax		
comp=N,52nm,0.6s							
INU	**Inuyama**	**6.01**	**239**	ePn	**Pn**	**09 01 53.4**	**+1.8**
JHJ2	**Mitsune**	**6.19**	**208**	ePn	**Pn**	**09 01 55.6**	**+1.5**
JHJ	**Hachijo jima 2**	**6.19**	**209**	P	**Pn**	**09 01 56.1**	**+1.9**
comp=N,12nm,0.3s,baz=48,slow=19,SNR=4.2							
JHJ				S	**Sn**	**09 03 01.7**	**-3.0**
comp=N,12nm,0.3s,baz=60,slow=20,SNR=2.1							
KUR	**Kuril'sk**	**7.43**	**26**	eP	**Pn**	**09 02 10.4**	**-0.7**
KUR				eS	**Sn**	**09 03 29.7**	**-5.3**
KUR				pmax	pmax		
comp=Z,19nm,0.8s							
KUR				smax	smax		
comp=E,47nm,0.4s							
KUR				smax	smax		
comp=N,15nm,0.2s							
VLA	**Vladivostok**	**9.76**	**301**	⇓eP	**Pn**	**09 02 43.6**	**+0.6**
VLA				pmax	pmax		
comp=Z,13nm,0.6s							
USRK	**Ussuriysk Ar.**	**10.17**	**307**	P	Pn	09 02 53.4	+4.7
comp=Z,0.4nm,0.3s,baz=118,slow=13,SNR=12							
USRK				LR	LR	09 06 54.2	
comp=Z,133nm,18.4s,baz=148,slow=38							
JNU	**Nakatsue**	**11.48**	**245**	P	Pn	09 03 10.2	+3.5
comp=Z,0.2nm,0.3s,baz=15,slow=20,SNR=1.9							
JNU				LR	LR	09 07 57.2	
comp=Z,133nm,20.6s,baz=298,slow=39							
CBIJ	**Chichi jima**	**11.53**	**185**	ePn	**Pn**	**09 03 08.3**	**+1.0**
JCJ	**Chichijima**	**11.53**	**185**	P	**Pn**	**09 03 08.1**	**+0.8**
comp=Z,3.2nm,0.3s,baz=273,slow=18,SNR=3.3							
KSRS	**Korea Array**	**12.20**	**269**	P	Pn	09 03 20.2	+3.8
comp=Z,0.1nm,0.3s,baz=82,slow=14,SNR=4.1							
KSRS				LR	LR	09 07 55.0	
comp=Z,84nm,18.8s,baz=75,slow=36							
KSAR	**Wonju Array Be**	**12.23**	**269**	P	Pn	09 03 20.3	+3.4
KSAR	**Wonju Array Be**	**12.23**	**269**	P	Pn	09 03 20.2	+3.4
KLR	**Kul'dur**	**13.48**	**326**	P	**Pn**	**09 03 33.9**	**0.0**
comp=Z,0.1nm,0.3s,baz=135,slow=8.8,SNR=3.8							
KLR				LR	LR	09 08 22.9	
comp=Z,57nm,20.4s,baz=129,slow=35							
NJ2	**Nanjing**	**20.98**	**259**	eP	**P**	**09 05 05.8**	**-0.1**
NJ2				pmax	pmax		
comp=Z,8.0nm,0.5s							
BJI	**Beijing**	**21.02**	**282**	P	**P**	**09 05 03.6**	**-2.7**
BJI				S	**S**	**09 08 56.3**	**-3.6**
BJI				pmax	pmax		
comp=Z,4.0nm,0.9s							
BJI				LR	LR		
comp=N,140nm,6.5s							
BJI				LR	LR		
comp=E,170nm,10.8s							
BJI				LR	LR		
comp=Z,81nm,14.2s							
MA2	**Magadan**	**21.51**	**10**	eP	**P**	**09 05 11.4**	**0.0**
HHC	**Hu-ho-hao-te**	**24.46**	**285**	eP	**P**	**09 05 39.7**	**-2.0**
HHC				pmax	pmax		
comp=Z,33nm,0.7s							
HHC				pmax	pmax		
comp=Z,240nm,3.8s							
YAK	**Yakutsk**	**24.90**	**345**	P	**P**	**09 05 46.1**	**+0.8**
comp=Z,7.2nm,0.4s,baz=359,slow=3.3,SNR=3.3							
YAK				LR	LR	09 15 35.5	
comp=Z,53nm,19.0s,baz=83,slow=36							
YAK	**Yakutsk**	**24.90**	**345**	eP	**P**	**09 05 46.0**	**+0.8**
YAK				pmax	pmax		
comp=Z,16nm,0.9s							
YAK	**Yakutsk**	**24.90**	**345**	eP	**P**	**09 05 45.6**	**+0.4**
comp=Z,23nm,0.9s							
SEY	**Seymchan**	**24.96**	**10**	P	**P**	**09 05 47.1**	**+1.2**
comp=Z,11nm,0.8s,baz=192,slow=11,SNR=38							
SEY	**Seymchan**	**24.96**	**10**	⇑i P	**P**	**09 05 48.1**	**+2.3**
BOD	**Bodaibo**	**27.05**	**325**	eP	**P**	**09 06 04.6**	**-0.2**
BOD				pmax	pmax		
comp=Z,6.0nm,1.0s							
H11N2	**WAKE ISLAND Hy**	**27.76**	**126**	T	T	09 34 60.0	
baz=318,slow=74,SNR=90							
H11N1	**WAKE ISLAND Hy**	**27.77**	**126**	T	T	09 35 06.7	
baz=318,slow=74,SNR=50							
ULN	**Ulaanbaatar**	**27.77**	**301**	⇑eP	**P**	**09 06 12.7**	**+1.1**
ULN				pmax	pmax		
comp=Z,3.0nm,1.1s							
H11N3	**WAKE ISLAND Hy**	**27.77**	**126**	T	T	09 35 03.7	
baz=318,slow=74,SNR=80							
XAN	**Xi'an**	**27.99**	**271**	P	P	09 06 23.7	+10
XAN				pP	sP	09 06 29.2	+9.3
XAN				S	S	09 11 14.3	+17
XAN				pmax	pmax		
comp=Z,7.0nm,0.7s							
XAN				pmax	pmax		
comp=Z,74nm,6.0s							
XAN				LR	LR		
comp=E,98nm,11.5s							
XAN				LR	LR		
comp=Z,130nm,13.5s							
H11S1	**WAKE ISLAND Hy**	**28.55**	**128**	T	T	09 36 03.4	
baz=320,slow=76,SNR=18							
H11S3	**WAKE ISLAND Hy**	**28.55**	**128**	T	T	09 36 03.1	
baz=320,slow=76,SNR=14							
H11S2	**WAKE ISLAND Hy**	**28.56**	**128**	T	T	09 36 04.3	
baz=320,slow=76,SNR=15							
TLY	**Talaya**	**30.48**	**308**	eP	**P**	**09 06 37.3**	**+1.8**
TLY				eS	**S**	**09 11 36.0**	**0.0**
TLY				pmax	pmax		
comp=Z,3.0nm,1.2s							
TLY				MLR	MLR		
comp=Z,94nm,16.0s							
ZAK	**Zakamensk**	**30.52**	**306**	eP	**P**	**09 06 36.5**	**+0.6**
ZAK				pmax	pmax		
comp=Z,4.0nm,1.1s							
LZH	**Lanzhou**	**31.32**	**278**	eP	P	09 06 39.3	-3.9
LZH				pP	pP	09 06 47.3	-0.5
LZH				sP	sP	09 06 51.7	+2.1
LZH				pmax	pmax		
comp=Z,19nm,1.0s							
BILL	**Bilibino**	**32.09**	**16**	⇓i P	**P**	**09 06 49.3**	**0.0**
BILL				pmax	pmax		
comp=Z,4.0nm,1.0s							
BILL	**Bilibino**	**32.09**	**16**	eP	**P**	**09 06 49.6**	**+0.2**
comp=Z,4.4nm,0.9s							
CD2	**Chengdu**	**33.20**	**269**	P	**P**	**09 06 58.8**	**-0.8**
CD2				pmax	pmax		
comp=Z,6.0nm,0.6s							
GTA	**Gaotai**	**33.57**	**285**	eP	**P**	**09 07 03.7**	**+0.9**
GTA				pP	pP	09 07 08.6	+1.2
GTA				sP	sP	09 07 10.9	+1.6
GTA				S	**S**	**09 12 23.0**	**-1.7**
GTA				sS	sS	09 12 30.4	-1.9
GTA				SS	**SnSn**	**09 14 26.5**	**-1.0**
GTA				pmax	pmax		
comp=Z,6.0nm,1.2s							
GTA				pmax	pmax		
comp=Z,46nm,6.2s							
GTA				LR	LR		
comp=N,70nm,14.3s							
GTA				LR	LR		
comp=E,140nm,16.2s							
GTA				LR	LR		
comp=Z,150nm,17.1s							
TIXI	**Tiksi**	**33.92**	**352**	⇓eP	**P**	**09 07 08.4**	**+3.1**
TIXI				pmax	pmax		
comp=Z,2.0nm,0.8s							
KMI	**Kunming**	**36.70**	**261**	P	**P**	**09 07 31.5**	**+1.5**
KMI				pmax	pmax		
comp=Z,18nm,0.6s							
KMI				pmax	pmax		
comp=Z,100nm,6.4s							
KRAR	**Krasnoyarsk**	**37.40**	**315**	⇓eP	**P**	**09 07 35.5**	**+0.2**
KRAR				pmax	pmax		
comp=Z,10.0nm,0.3s							
WMQ	**Urumqi**	**41.50**	**296**	eP	**P**	**09 08 11.4**	**+1.6**
WMQ				PP	**PP**	**09 09 46.8**	**+1.3**
WMQ				PcP	**PcP**	**09 10 04.8**	**-2.4**
WMQ				ScP	**ScP**	**09 13 55.0**	**-1.7**
WMQ				S	**S**	**09 14 21.4**	**-3.3**
WMQ	**Urumqi**	**41.50**	**296**	ScS	ScS	09 18 15.8	+2.8
WMQ				pmax	pmax		
comp=Z,3.0nm,0.6s							
WMQ				pmax	pmax		
comp=Z,76nm,5.8s							
WMQ				LR	LR		
comp=Z,12nm,31.8s							
ZAA0	**Zalesovo Array**	**41.99**	**311**	eP	**P**	**09 08 13.8**	**+0.2**
ZALV	**Zalesovo Beam**	**41.99**	**311**	P	**P**	**09 08 13.9**	**+0.3**
comp=Z,1.1nm,0.5s,baz=100,slow=6.7,SNR=4.8							
ZALV				PcP	**PcP**	**09 10 08.4**	**-0.1**
comp=Z,1.9nm,0.6s,baz=94,slow=3.1,SNR=5.3							
ZALV				LR	LR	09 26 14.8	
comp=Z,41nm,18.0s,baz=66,slow=37							
ZALV	**Zalesovo Beam**	**41.99**	**311**	i P	**P**	**09 08 13.8**	**+0.2**
ZALV				pmax	pmax		
comp=Z,1.0nm,0.5s							
NRIK	**Noril'sk**	**42.48**	**334**	LR	LR	09 26 54.9	
comp=Z,53nm,18.4s,baz=104,slow=37							
MK01	**Makanchi Array**	**44.58**	**301**	eP	**P**	**09 08 35.1**	**+0.5**
MK31	**Makanchi Array**	**44.58**	**301**	eP	**P**	**09 08 34.5**	**-0.1**
MK31	**Makanchi Array**	**44.58**	**301**	eP	**P**	**09 08 34.5**	**-0.1**
MKAR	**Makanchi Array**	**44.58**	**301**	P	**P**	**09 08 35.0**	**+0.4**
comp=Z,1.0nm,0.7s,baz=88,slow=8.6,SNR=6.4							
MKAR				LR	LR	09 28 58.4	
comp=Z,16nm,18.1s,baz=114,slow=38							
MKAR	**Makanchi Array**	**44.58**	**301**	ceP	**P**	**09 08 37.7**	**+3.1**
MKAR				pmax	pmax		
comp=Z,1.0nm,0.5s							
MKAR	**Makanchi Array**	**44.58**	**301**	eP	**P**	**09 08 34.1**	**-0.5**
PPLA	**Purkeypile**	**45.01**	**36**	eP	**P**	**09 08 39.9**	**+1.9**
comp=Z,19nm,1.7s							
CAST	**Castle Rocks**	**45.07**	**35**	eP	**P**	**09 08 39.7**	**+1.4**
comp=Z,12nm,1.7s							
BPAW	**Bear Paw Mtn.**	**45.57**	**34**	eP	**P**	**09 08 43.4**	**+1.1**
comp=Z,7.5nm,1.6s							
KTH	**Kantishna Hill**	**45.59**	**35**	eP	**P**	**09 08 42.9**	**+0.4**
comp=Z,10.0nm,1.4s							
MLY	**Manley**	**45.71**	**33**	eP	**P**	**09 08 43.9**	**+0.5**
TRF	**Thorofare Moun**	**45.87**	**35**	eP	**P**	**09 08 46.7**	**+1.8**
comp=Z,25nm,2.0s							
COLD	**Coldfoot**	**46.03**	**30**	eP	**P**	**09 08 47.4**	**+1.6**
comp=Z,9.8nm,1.9s							
KURK	**Kurchatov**	**46.16**	**307**	eP	**P**	**09 08 47.3**	**+0.2**
KURK				pmax	pmax		
comp=Z,7.0nm,0.8s							
KURK	**Kurchatov**	**46.16**	**307**	eP	**P**	**09 08 47.3**	**+0.2**
comp=Z,6.8nm,0.8s							
BWN	**Browne**	**46.24**	**34**	eP	**P**	**09 08 49.8**	**+2.2**
comp=Z,11nm,1.0s							
RND	**Reindeer**	**46.52**	**35**	eP	**P**	**09 08 50.4**	**+0.6**
RND				pmax	pmax		
comp=Z,3.0nm,0.9s							
RND	**Reindeer**	**46.52**	**35**	eP	**P**	**09 08 50.4**	**+0.6**
comp=Z,2.9nm,0.9s							
MDM	**Murphy Dome**	**46.77**	**33**	eP	**P**	**09 08 52.6**	**+0.9**
comp=Z,3.7nm,0.9s							
SML	**Sawmill**	**46.82**	**37**	eP	**P**	**09 08 53.3**	**+1.1**
SML				pmax	pmax		
comp=Z,7.0nm,0.5s							
SML	**Sawmill**	**46.82**	**37**	eP	**P**	**09 08 53.2**	**+1.1**
comp=Z,7.2nm,0.5s							
WRH	**Wood River Hil**	**46.84**	**34**	eP	**P**	**09 08 53.0**	**+0.8**
comp=Z,2.1nm,0.8s							
IL1	**Eielson Array**	**47.35**	**33**	eP	**P**	**09 08 56.5**	**+0.3**
ILAR	**Eielson Array**	**47.35**	**33**	P	**P**	**09 08 56.5**	**+0.4**
comp=Z,2.2nm,0.7s,baz=265,slow=6.7,SNR=27							
ILB	**Eielson Array**	**47.35**	**33**	eP	**P**	**09 08 56.6**	**+0.4**
KLU	**Klutina**	**47.99**	**38**	eP	**P**	**09 09 02.5**	**+1.2**
comp=Z,4.4nm,0.7s							
EYAK	**Cordova Ski Ar**	**48.18**	**39**	eP	**P**	**09 09 03.9**	**+1.3**
comp=Z,5.4nm,0.5s							
KAPI	**Kappang**	**48.60**	**212**	P	**P**	**09 09 05.8**	**-0.5**
comp=Z,1.3nm,0.3s,baz=51,slow=14,SNR=3.0							
DOT	**Dot Lake**	**48.65**	**35**	eP	**P**	**09 09 06.2**	**-0.1**
comp=Z,27nm,1.9s							
BALM	**Baldy**	**49.77**	**38**	eP	**P**	**09 09 16.4**	**+1.4**
BALM				pmax	pmax		
comp=Z,20nm,1.9s							
BALM	**Baldy**	**49.77**	**38**	eP	**P**	**09 09 16.4**	**+1.4**
comp=Z,20nm,1.9s							
TKM2	**Tokmak 2**	**50.22**	**298**	eP	**P**	**09 09 19.3**	**+0.5**
TKM2				pmax	pmax		
comp=Z,5.0nm,0.8s							
TKM2	**Tokmak 2**	**50.22**	**298**	eP	**P**	**09 09 19.3**	**+0.5**
comp=Z,4.7nm,0.8s							
BVAR	**Borovoye Array**	**50.64**	**312**	P	**P**	**09 09 22.1**	**+0.5**
comp=Z,0.9nm,0.5s,baz=81,slow=9.2,SNR=6.4							
BVAR				PcP	**PcP**	**09 10 39.2**	**+0.3**
comp=Z,1.7nm,0.6s,baz=80,slow=5.0,SNR=5.2							
BRVK	**Borovoye**	**50.69**	**312**	⇑eP	**P**	**09 09 22.7**	**+0.8**
BRVK				pmax	pmax		
comp=Z,3.0nm,1.2s							
AAK	**Ala-Archa**	**51.08**	**298**	⇑eP	**P**	**09 09 25.7**	**+0.4**
AAK				pmax	pmax		
comp=Z,8.0nm,1.8s							
ZRNK	**Zerenda**	**51.47**	**312**	eP	**P**	**09 09 28.1**	**+0.3**
ZRNK				pmax	pmax		
comp=Z,3.0nm,0.8s							
ZRNK	**Zerenda**	**51.47**	**312**	eP	**P**	**09 09 28.1**	**+0.3**
comp=Z,3.4nm,0.8s							
INK	**Inuvik**	**52.29**	**28**	P	**P**	**09 09 34.4**	**+0.8**
comp=Z,1.1nm,0.6s,baz=279,slow=6.9,SNR=10							
INK	**Inuvik**	**52.29**	**28**	eP	**P**	**09 09 34.6**	**+0.9**
INK				pmax	pmax		
comp=Z,2.0nm,0.9s							
INK	**Inuvik**	**52.29**	**28**	eP	**P**	**09 09 34.6**	**+0.9**
comp=Z,2.1nm,0.9s							
MTN	**Manton Dam**	**52.45**	**195**	eP	**P**	**09 09 35.2**	**-0.1**
comp=Z,70nm,0.3s							
SVE	**Sverdlovsk**	**54.97**	**318**	eP	**P**	**09 09 53.6**	**+0.1**
ARU	**Arti**	**56.18**	**318**	P	**P**	**09 10 02.5**	**+0.3**
comp=Z,1.7nm,0.3s,baz=84,slow=9.2,SNR=7.0							
ARU	**Arti**	**56.18**	**318**	d i P	**P**	**09 10 02.2**	**0.0**
ARU				S	**S**	**09 17 51.3**	**+0.5**
ARU				SS	**SS**	**09 21 36.0**	**-0.7**
ARU				pmax	pmax		
comp=

GOF	Gofitskoye	70.16 312⇑	*e*P		P	09 11 35.3	+0.1
NCK	Nalchik	70.73 311⇑	*e*P		P	09 11 39.6	+0.9
NCK			pmax	pmax			
	comp=Z,9.0nm,0.4s						
KIV	Kislovodsk	71.00 311	*e*P		P	09 11 42.0	+1.6
KIV			pmax	pmax			
	comp=Z,13nm,1.3s						
KBZ	Khabaz	71.01 311	P		P	09 11 40.9	+0.6
	comp=Z,4.4nm,1.0s,baz=45,slow=4.3,SNR=5.5						
LRM	Limekiln Ridge	71.96 45	*e*P		P	09 11 47.9	+1.5
EGMT	Eagleton	72.09 42	*e*P		P	09 11 47.7	+0.8
	comp=Z,4.1nm,0.9s						
NV01	Mina Array Sit	72.84 54	*e*P		P	09 11 52.5	+0.8
NVAR	Mina Array Bea	72.84 54	P		P	09 11 52.5	+0.7
	comp=Z,1.3nm,0.7s,baz=283,slow=6.7,SNR=7.8						
HFS	Hagfors	73.26 336	P		P	09 11 53.8	+0.3
	comp=Z,2.5nm,0.7s,baz=58,slow=5.8,SNR=6.1						
NB2	NORSAR Subarra	73.30 338	P		P	09 11 53.8	0.0
	comp=Z,3.8nm,0.9s,baz=39,slow=6.2						
NOA	NORSAR Array B	73.30 338	P		P	09 11 54.1	+0.3
	comp=Z,2.2nm,0.8s,baz=38,slow=5.8,SNR=7.7						
H17A	Grant Village	73.88 46	*e*P		P	09 12 00.4	+2.5
	comp=Z,3.6nm,0.9s						
AKASG	Malin Array Be	73.96 323	P		P	09 11 57.8	0.0
	comp=Z,1.4nm,0.4s,baz=46,slow=6.0,SNR=9.3						
AKASG	Malin Array Be	73.96 323	*i* P		P	09 11 57.9	+0.1
AKASG			pmax	pmax			
	comp=Z,1.0nm,0.4s						
KIEV	Kiev	73.97 323⇑	*e*P		P	09 11 58.1	+0.2
KIEV			pmax	pmax			
	comp=Z,6.0nm,0.8s						
IMW	Indian Meadow	73.99 46	*e*P		P	09 12 00.2	+1.7
	comp=Z,3.8nm,1.2s						
R11A	Troy Canyon, C	74.60 53	*e*P		P	09 12 03.0	+0.9
	comp=Z,3.1nm,1.3s						
BW06	Boulder Array	75.48 47	*e*P		P	09 12 07.5	+0.3
PDAR	Pinedale Array	75.48 47	P		P	09 12 07.1	0.0
	comp=Z,1.0nm,0.7s,baz=275,slow=3.3,SNR=11						
SRU	San Rafael Swe	77.24 50	*e*P		P	09 12 18.0	+0.9
SRU			pmax	pmax			
	comp=Z,6.0nm,1.0s						
SRU	San Rafael Swe	77.24 50	*e*P		P	09 12 18.0	+0.9
	comp=Z,6.1nm,1.0s						
BUR08	Bucovina Ar. S	77.98 322	*e*P		P	09 12 21.7	+0.7
STHS	Stebnicka Huta	78.52 326	*e*P		P	09 12 24.9	+1.1
STHS	Stebnicka Huta	78.52 326	*e*P		P	09 12 24.9	+1.1
BRTR	Keskin Array B	78.92 312	P		P	09 12 26.4	+0.1
	comp=Z,0.5nm,0.6s,baz=46,slow=6.2,SNR=4.1						
BRTR	Keskin Array B	78.92 312	*i* P		P	09 12 29.1	+2.8
BRTR			pmax	pmax			
	comp=Z,1.0nm,0.6s						
Y14A	Wickenburg	78.96 55	*e*P		P	09 12 27.4	+0.9
	comp=Z,13nm,0.9s						
DPC	Dobruska-Polom	79.91 329	*e*P		P	09 12 32.7	+1.3
DPC			*e*PCP		pP	09 12 36.0	-0.4
DPC	Dobruska-Polom	79.91 329	*e*P		P	09 12 32.7	+1.3
DPC			*e*			09 12 36.0	
VYHS	Vyhne	80.27 326	*e*P		P	09 12 34.3	+1.0
VYHS	Vyhne	80.27 326	*e*P		P	09 12 34.3	+1.0
CLL	Collm	80.46 331	*i* P		P	09 12 34.5	+0.2
	comp=Z,5.0nm,1.1s						
CLL			*i*			09 12 38.5	
	comp=Z,4.0nm,1.1s						
CLL	Collm	80.46 331	*i* P		P	09 12 34.5	+0.2
CLL			pmax	pmax			
	comp=Z,5.0nm,1.1s						
ECSD	EROS Data Cent	81.74 39	*e*P		P	09 12 41.6	+0.3
	comp=Z,14nm,1.9s						
KHC	Kasperske Hory	81.97 329	*e*P		P	09 12 43.3	+0.9
KHC	Kasperske Hory	81.97 329	*e*P		P	09 12 43.3	+0.9
GERES	GERESS Array B	82.15 329	P		P	09 12 43.4	0.0
	comp=Z,0.3nm,0.4s,baz=47,slow=7.2,SNR=3.2						
ANMO	Albuquerque	82.42 51⇓	*e*P		P	09 12 45.6	+0.4
ANMO			pmax	pmax			
	comp=Z,2.0nm,1.2s						
ANMO	Albuquerque	82.42 51	*e*P		P	09 12 46.9	+1.7
	comp=Z,1.8nm,1.0s						
FUORN	Ofenpass-Fuorn	85.31 330	*e*P		P	09 13 00.1	+0.2
TX31	Lajitas Ar. Si	87.96 54	*e*P		P	09 13 13.1	+0.1
TXAR	Lajitas Array	87.96 54	P		P	09 13 12.9	-0.1
	comp=Z,0.6nm,0.7s,baz=296,slow=3.3,SNR=9.9						
VNDA	Vanda	116.43 176	PKP		PKPdf	09 19 02.4	-2.6
	comp=Z,0.4nm,0.3s,baz=347,slow=3.1,SNR=9.9						
TORD	Torodi Ar. Bea	117.24 317	PKP		PKPdf	09 19 06.9	-1.6
	comp=Z,0.2nm,0.6s,baz=7.5,slow=3.7,SNR=2.6						

DDA ***08*** *09:11:28.3, 37°.20N×31°.87E, h9km, Md2.9*
ISK ***08*** *09:11:31.3, 37°.39N×31°.88E, h3km, MD2.8*
CSEM ***08*** *09:11:32.3±0.3, 37°.41N×31°.87E, h8km, MD2.8, Error ellipse: s-maj=8.0km s-min=4.1km az=162.0*
ISC 08 09:11:31.1±1.6, 37°.35N±0°.04×31°.89E±0°.03, h1km±13km, n23, σ0s99/34, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KMER	Konya-Meram	0.56	43	P	Pg	09 11 41.6	-0.3
KMER				S	Sb	09 11 51.4	-1.1
KMER	Konya-Meram	0.56	43	*i* P	Pg	09 11 41.6	-0.3
KMER				*i* S	Sb	09 11 51.4	-1.1
KONT	Konya--Tatoy	0.70	32	*e*PG	Pg	09 11 45.0	+0.5
KONT				*e*SG	Sb	09 11 55.2	-1.1
KONT	Konya--Tatoy	0.70	32	*e*Pg	Pg	09 11 45.0	+0.5
KONT				*e*Sg	Sb	09 11 55.2	-1.1
SUTC	Sutluce-Ispart	0.72	280	*e*PG	Pg	09 11 45.1	+0.2
SUTC				*e*SG	Sb	09 11 56.3	-0.6
SUTC	Sutluce-Ispart	0.72	280	*e*Pg	Pg	09 11 45.1	+0.2
SUTC				*e*Sg	Sb	09 11 56.3	-0.6
LADK	Ladik-KONYA	0.93	24	*e*PG	Pg	09 11 49.5	+0.6
LADK				*e*SG	Sb	09 12 02.4	-0.5
LADK	Ladik-KONYA	0.93	24	*e*Pg	Pg	09 11 49.5	+0.6
LADK				*e*Sg	Sb	09 12 02.4	-0.5
BCK	Bucak	1.04	276	*e*PG	Pb	09 11 52.2	+0.2
BCK	Bucak	1.04	276	*e*Pg	Pb	09 11 52.2	+0.2
BAGO	Egridir - ISPA	1.08	306	*i* P	Pg	09 11 51.4	-0.3
BAGO				*i* S	Sn	09 12 09.7	+0.6
GAZI	Gazipasa	1.17	163	*i* P	Pb	09 11 48.1	-6.1
GAZI				*i* S	Sb	09 12 06.2	-3.6
ISP	Isparta	1.18	294	*e*PN	Pg	09 11 54.1	+0.4
ISP	Isparta	1.18	294	*e*Pn	Pg	09 11 54.2	+0.4
KORT	Korkueli	1.28	254	*i* P	Pn	09 11 50.7	-5.6
KORT				*i* S	Sn	09 12 15.3	+1.2
KIZT	Kizilcal	1.52	360	*e*PN	Pb	09 11 60.0	-0.3
KIZT	Kizilcal	1.52	360	*e*Pn	Pb	09 12 00.0	-0.3
KERG	Konya-Eregli	1.78	87	P	Pn	09 12 03.6	+0.4
KERG				S	Sn	09 12 27.0	+0.4
KERG	Konya-Eregli	1.78	87	*i* P	Pn	09 12 03.6	+0.4
KERG				*i* S	Sn	09 12 27.0	+0.4
IKL	Isikli	1.82	127	*e*PN	Pn	09 12 05.1	+1.5
IKL	Isikli	1.82	127	*e*Pn	Pn	09 12 05.1	+1.5
KHAL	Karahalli	2.15	299	P	Pn	09 12 07.5	-0.7
KHAL	Karahalli	2.15	299	*i* P	Pn	09 12 07.5	-0.7

DDA ***08*** *09:18:48.8, 37°.36N×28°.14E, h7km, Md2.7*
ISCJB ***08*** *09:18:49.5±0.5, 37°.33N±0°.03×28°.12E±0°.03, h13km±4km, Error ellipse: s-maj=4.8km s-min=3.9km az=140.7*
CSEM ***08*** *09:18:49.7±0.1, 37°.35N×28°.13E, h10km, MD2.7, Error ellipse: s-maj=3.2km s-min=2.9km az=29.0*
ISK ***08*** *09:18:49.6, 37°.32N×28°.11E, h9km, MD2.7*
ISC 08 09:18:49.6±0.9, 37°.35N±0°.02×28°.13E±0°.02, h12km±8km, n31, σ0s54/48, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	Yerkesik	0.25	151	*e*PG	Pg	09 18 54.6	-0.2
YER				*e*SG	Sg	09 18 58.7	+0.4
YER	Yerkesik	0.25	151	*e*Pg	Pg	09 18 54.6	-0.2
YER				*e*Sg	Sg	09 18 58.7	+0.4
AYDN	Tasoluk	0.37	327	P	Pg	09 18 56.7	-0.3
AYDN				S	Sg	09 19 02.0	0.0
AYDN	Tasoluk	0.37	327	*i* P	Pg	09 18 56.6	-0.3
AYDN				*i* S	Sg	09 19 02.0	0.0
TURN	Turunc	0.61	142	*i* P	Pg	09 19 00.8	-0.6
TURN				*i* S	Sg	09 19 09.0	-0.4
BDRM	Kayabasi	0.62	243	P	Pg	09 19 01.2	-0.4
BDRM				S	Sg	09 19 09.0	-0.8
BDRM	Kayabasi	0.62	243	*i* P	Pg	09 19 01.2	-0.4
BDRM				*i* S	Sg	09 19 09.0	-0.8
AYDB	Zeytinkoy-Aydi	0.62	342	*e*PG	Pb	09 19 02.3	-0.2
AYDB				*e*SG	Sb	09 19 12.2	+0.9
AYDB	Zeytinkoy-Aydi	0.62	342	*e*Pg	Pb	09 19 02.3	-0.2
AYDB				*e*Sg	Sb	09 19 12.2	+0.9
DALY	Dalyan (Mu¨la	0.68	142	*e*PG	Pb	09 19 03.2	-0.1
DALY	Dalyan (Mu¨la	0.68	142	*e*Pg	Pb	09 19 03.2	-0.1
BODT	Bodrum	0.72	246	*e*PG	Pg	09 19 03.5	0.0
BODT	Bodrum	0.72	246	*e*Pg	Pg	09 19 03.5	0.0
GCAM	G?zelcaml?	0.80	296	P	Pb	09 19 05.2	-0.1
GCAM				S	Sg	09 19 15.5	+0.1
GCAM	G?zelcaml?	0.80	296	*i* P	Pb	09 19 05.2	-0.1
GCAM				*i* S	Sg	09 19 15.5	+0.1
DNZL	Cakiroluk	0.80	65	P	Pg	09 19 05.3	+0.2
DNZL				S	Sg	09 19 15.5	-0.1
DNZL	Cakiroluk	0.80	65	*i* P	Pg	09 19 05.3	+0.2
DNZL				*i* S	Sg	09 19 15.5	-0.1
DENT	Denizli	0.82	60	*e*PG	Pb	09 19 06.4	+0.6
DENT	Denizli	0.82	60	*e*Pg	Pb	09 19 06.4	+0.6
FETY	Fethiye	1.04	133	*e*PG	Pb	09 19 10.1	+0.5
FETY	Fethiye	1.04	133	*e*Pg	Pb	09 19 10.1	+0.5
MANT	Manisa	1.19	16	P	Pg	09 19 11.6	-0.8
MANT				S	Sg	09 19 27.1	-0.8
MANT	Manisa	1.19	16	*i* P	Pg	09 19 11.6	-0.8
MANT				*i* S	Sg	09 19 27.1	-0.8
KULA	Kula-Manisa	1.23	20	*e*PN	Pg	09 19 13.8	+0.5
KULA	Kula-Manisa	1.23	20	*e*Pn	Pg	09 19 13.8	+0.5
KHAL	Karahalli	1.48	46	P	Pn	09 19 15.5	-0.7
KHAL				S	Sn	09 19 34.9	-0.6
KHAL	Karahalli	1.48	46	*i* P	Pn	09 19 15.5	-0.7
KHAL				*i* S	Sn	09 19 34.9	-0.6
ELL	Elmali	1.54	112	*e*PN	Pb	09 19 18.2	0.0
ELL	Elmali	1.54	112	*e*Pn	Pb	09 19 18.2	0.0
CHOS	Chios island	1.94	303	*e*PN	Pn	09 19 23.5	+1.0
CHOS	Chios island	1.94	303	*e*Pn	Pn	09 19 23.5	+1.0

NIED ***08*** *09:27:00, 37°.90N×142°.50E, h35km, Mw3.8 Best double couple: M0:6.31000×1014 NP1:φ=213.00000°, δ=16.00000°, λ=110.00000°. NP2:φ=11.00000°, δ=75.00000°, λ=84.00000°.*
ISCJB ***08*** *09:27:23.4±0.7, 37°.87N±0°.05×142°.68E±0°.07, h14km, mb3.6/7, MS2.6/1, Error ellipse: s-maj=8.3km s-min=6.6km az=22.4*
IDC ***08*** *09:27:23.1±0.9, 37°.89N×142°.68E, h0km, mb3.6/7, mb1 3.7/12, mb1mx3.5/40, mbtmp3.6/12, ML3.5/3, MS2.8/6, Ms1 2.8/6, ms1mx2.6/36, Error ellipse: s-maj=25.9km s-min=16.7km az=99.0*
JMA ***08*** *09:27:25.5±0.3, 37°.87N×142°.54E, h27km±3km, M4.1*
ISC 08 09:27:25.7±1.0, 37°.92N±0°.07×142°.53E±0°.08, h14km, n33, σ1s15/27, mb3.6/7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	1.07	300	P	Pb	09 27 45.2	-0.9
JMM	Marumori	1.37	269	P	Pn	09 27 49.3	-1.1
JFK	Kawauchi	1.42	248	P	Pn	09 27 49.8	-1.4
JMK	Ichinoseki	1.46	316	P	Pn	09 27 51.2	-0.4
JOU	Okura	1.54	288	P	Pn	09 27 52.6	-0.1
JFT	Otama	1.78	258	P	Pn	09 27 56.2	+0.1
JOM	Ohasama	1.83	329	P	Pn	09 27 57.0	+0.2
JOM				S	Sn	09 28 20.5	+0.7
JYS	Shiratake	1.97	280	P	Pn	09 28 00.0	+1.4
JYS				*e*S	Sn	09 28 22.3	-0.8
JYK	Kaneyama	1.98	301	P	Pn	09 27 59.0	+0.2
JRG	Rokugo	2.09	316	P	Pn	09 28 01.5	+1.1
JANG	Nango	2.58	343	P	Pn	09 28 08.3	+1.2
MJAR	Matsushiro Arr	3.71	250	Pn	Pn	09 28 24.1	+1.5
	2.3nm,0.3s,baz=85,slow=15,SNR=20						
MJAR				LR	LR	09 30 10.9	
	comp=Z,145nm,18.1s,baz=80,slow=44						
MAT	Matsushiro	3.71	250	P	Pn	09 28 24.1	+1.5
MAT				*e*S	Sn	09 29 08.6	+2.5
JHJ	Hachijo jima 2	5.28	206	Pn	Pn	09 28 44.2	0.0
	11nm,0.3s,baz=67,slow=18,SNR=8.1						
JHJ				Sn	Sn	09 29 39.5	-5.4
	17nm,0.3s,baz=40,slow=23,SNR=7.7						
ASAJ	Asahikawa	6.20	0	Pn	Pn	09 28 57.0	+0.3
	0.8nm,0.3s,baz=205,slow=19,SNR=7.6						
USRK	Ussuriysk Ar.	10.13	312	Pn	Pn	09 29 53.2	+2.4
	0.2nm,0.3s,baz=118,slow=14,SNR=4.6						
USRK				LR	LR	09 33 33.2	
	comp=Z,58nm,18.7s,baz=165,slow=36						
JNU	Nakatsue	10.63	247	LR	LR	09 34 32.9	
	comp=Z,57nm,19.3s,baz=124,slow=40						
KSRS	Korea Array	11.58	272	Pn	Pn	09 30 12.5	+1.9
	baz=86,slow=14,SNR=3.6						
KSRS				LR	LR	09 34 27.1	
	comp=Z,38nm,18.8s,baz=54,slow=36						
KLR	Kul'dur	13.73	329	LR	LR	09 35 49.8	
	comp=Z,50nm,18.9s,baz=138,slow=37						
YAK	Yakutsk	25.42	346	LR	LR	09 42 20.1	
	comp=Z,18nm,20.7s,baz=88,slow=35						
SEY	Seymchan	25.76	10	P	P	09 32 55.0	-0.6
	0.7nm,0.5s,baz=264,slow=8.1,SNR=3.5						
H11N2	WAKE ISLAND Hy	27.87	124	T	T	10 02 31.2	
	baz=316,slow=75,SNR=135						
H11N1	WAKE ISLAND Hy	27.88	124	T	T	10 02 29.6	
	baz=316,slow=75,SNR=118						
H11N3	WAKE ISLAND Hy	27.89	124	T	T	10 02 29.8	
	baz=316,slow=75,SNR=124						
H11S1	WAKE ISLAND Hy	28.62	126	T	T	10 03 25.1	
	baz=317,slow=76,SNR=57						
H11S3	WAKE ISLAND Hy	28.62	126	T	T	10 03 22.4	
	baz=317,slow=76,SNR=56						
H11S2	WAKE ISLAND Hy	28.64	126	T	T	10 03 31.0	
	baz=317,slow=76,SNR=38						
ZALV	Zalesovo Beam	41.98	312	P	P	09 35 15.8	-0.3
	1.3nm,0.5s,baz=87,slow=6.5,SNR=5.1						
MKAR	Makanchi Array	44.41	302	P	P	09 35 35.7	-0.2
	0.8nm,0.5s,baz=82,slow=9.6,SNR=6.5						
WRA	Warramunga Arr	58.06	189	P	P	09 37 17.6	-0.9
	0.4nm,0.6s,baz=5.8,slow=7.2,SNR=8.7						
ASAR	Alice Springs	61.79	189	P	P	09 37 43.8	-0.2
	0.2nm,0.7s,baz=19,slow=6.1,SNR=3.7						
YKA	Yellowknife Ar	62.60	31	P	P	09 37 49.1	+0.1
	0.1nm,0.6s,baz=304,slow=6.8,SNR=3.1						
FINES	FINESS Array B	68.45	332	P	P	09 38 26.5	-0.4
	1.4nm,1.0s,baz=19,slow=8.8,SNR=3.0						

PRU ***08*** *09:47:04.8, 41°.64N×21°.53E, h0km*
TIR ***08*** *09:47:09.0, 40°.06N×21°.18E, h25km, ML3.2*
IDC ***08*** *09:47:10.6±1.1, 42°.05N×21°.09E, h0km, mb3.5/4, mb1 3.5/8, mb1mx3.4/28, mbtmp3.3/8, ML3.2/4, MS2.5/1, Ms1 2.5/1, ms1mx2.1/23, Error ellipse: s-maj=24.6km s-min=15.1km az=34.0*
SOF ***08*** *09:47:10.9, 41°.97N×21°.35E, h15km, MD2.8*
ISCJB ***08*** *09:47:10.2±0.3, 42°.04N±0°.01×21°.30E±0°.02, h0km±2km, mb3.4/4, Error ellipse: s-maj=2.5km s-min=1.7km az=143.2*
NEIC ***08*** *09:47:11.4±0.6, 42°.01N×21°.25E, h5km, ML3.4(SKO), Error ellipse: s-maj=8.8km s-min=6.5km az=131.0*
NEIC Felt [II] at Skopje.
CSEM ***08*** *09:47:11.4±0.1, 42°.01N×21°.28E, h2km, ML3.5/4, Error ellipse: s-maj=3.2km s-min=1.9km az=50.0*
SKO ***08*** *09:47:11.2, 41°.93N×21°.29E, h15km, M3.1, ML3.4*
PDG ***08*** *09:47:11.3±0.5, 42°.03N×21°.29E, h9km, MD3.4/1, ML3.5/12, Error ellipse: s-maj=0.5km s-min=0.7km az=0.0*
THE ***08*** *09:47:11.9, 42°.01N×21°.30E, h2km±3km, ML3.5/4, Error ellipse: s-maj=3.1km s-min=1.7km az=18.0*
BEO ***08*** *09:47:12.2±0.4, 42°.01N×21°.27E, h13km±2km, M3.2/1*
ISC 08 09:47:11.9±0.8, 41°.99N±0°.01×21°.28E±0°.02, h9km±5km, n227, σ1s14/313, mb3.4/4, 23C-16D, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKO	Skopje	0.12	96	P	Pg	09 47 14.1	-0.7
SKO				S	Sg	09 47 17.3	+0.5
SKO	Skopje	0.12	96	*i* P	Pg	09 47 14.7	-0.1
SKO				*i* Sg	Sg	09 47 17.2	+0.5
SKO	Skopje	0.12	96	P	Pg	09 47 14.1	-0.7
SKO	Skopje	0.12	96	*i* P	Pg	09 47 14.6	-0.1
SKO				S	Sg	09 47 17.3	+0.5
SKO	Skopje	0.12	96	*i* P	Pg	09 47 14.6	-0.1
SKO				*i* Sg	Sg	09 47 17.2	+0.5
BARS	Barje	0.92	25	*e*Pg	Pg	09 47 28.9	-0.7
BARS	Barje	0.92	25	*e*Pg	Pg	09 47 28.6	-1.0
BARS				*e*Sg	Sb	09 47 41.8	-0.6
BARS	Barje	0.92	25	*e*Pg	Pg	09 47 28.6	-1.0
BARS				*e*Sg	Sb	09 47 41.8	-0.6
OHR	Ohrid	0.94	202	*i* P	Pg	09 47 28.7	-1.4
OHR				*i* Sg	Sg	09 47 42.1	-0.3
OHR				*e*Lg	Lg	09 47 42.8	
	comp=N,646nm,0.4s						
OHR				*e*Lg	Lg	09 47 43.7	
	comp=E,1μm,0.4s						
OHR	Ohrid	0.94	202	*i* Pg	Pg	09 47 28.7	-1.4
OHR				*i* Sg	Sg	09 47 42.0	-0.3
OHR				*e*Lg	Lg	09 47 42.8	
	comp=E,646nm,0.4s						
OHR	Ohrid	0.94	202	*i* Pg	Pg	09 47 28.7	-1.4
OHR				*i* Sg	Sg	09 47 42.0	-0.3
BIA	Bitola	0.97	178	P	Pg	09 47 29.6	-0.9
BIA				S	Sg	09 47 42.6	-0.4
BIA	Bitola	0.97	178	*i* Pg	Pg	09 47 29.6	-0.9
BIA				*i* Sg	Sg	09 47 42.7	-0.4
BIA	Bitola	0.97	178	P	Pg	09 47 29.6	-0.9
BIA				S	Sg	09 47 42.6	-0.4
PVY	Plav	1.15	302	*i* Pg	Pb	09 47 32.3	-1.7
PVY				*e*Sg	Sn	09 47 50.5	+0.3
PVY	Plav	1.15	302	*i* Pg	Pb	09 47 32.3	-1.7
PVY				*e*Sg	Sn	09 47 50.5	+0.3
VAY	Valandovo	1.18	124	P	Pb	09 47 33.2	-1.1
VAY				S	Sb	09 47 49.4	-0.2
VAY	Valandovo	1.18	124	*i* Pg	Pb	09 47 33.2	-1.1
VAY				*i* Sg	Sn	09 47 50.2	-0.4
VAY				*e*Lg	Lg	09 47 52.6	
	comp=E,727nm,0.6s						
VAY				*e*Lg	Lg	09 47 56.2	
	comp=N,696nm,0.9s						
VAY	Valandovo	1.18	124	*e*Pg	Pb	09 47 33.5	-0.8
VAY				*i* Sg	Sn	09 47 50.3	-0.3
VAY	Valandovo	1.18	124	P	Pb	09 47 33.2	-1.1
VAY				S	Sb	09 47 49.4	-0.2
VAY				*i* Sg	Sn	09 47 50.1	-0.4
VAY				*e*Lg	Lg	09 47 52.6	
	comp=N,727nm,0.6s						
FNA	Florina	1.20	176	*e*PN	Pn	09 47 34.7	-0.2
FNA	Florina	1.20	176	P	Pn	09 47 33.6	-1.3
FNA				S	Sn	09 47 51.1	-0.3
FNA	Florina	1.20	176	P	Pn	09 47 33.6	-1.3
FNA	Florina	1.20	176	*e*Pn	Pn	09 47 34.7	-0.2
FNA				S	Sn	09 47 51.1	-0.3
TIR	Tirane	1.23	239	*i* PN	Pn	09 47 33.2	-2.1
TIR	Tirane	1.23	239	*i* P	Pn	09 47 34.4	-0.9
TIR	Tirane	1.23	239	S	Sb	09 47 51.0	-0.4
TIR	Tirane	1.23	239	*e*Pn	Pg	09 47 35.7	+0.1
TIR				*e*Sn	Sn	09 47 54.4	+2.4
TIR	Tirane	1.23	239	*e*Pn	Pg	09 47 35.7	+0.1
TIR				*e*Sn	Sn	09 47 54.4	+2.4
SELS	Selova	1.24	355	*e*Pg	Pn	09 47 34.0	-1.4
SELS				*e*Sg	Sb	09 47 50.0	-1.5
SELS				*e*Sg	Sg	09 47 50.6	-1.2
GRG	Griva	1.33	140	*e*PN	Pn	09 47 36.0	-0.6
GRG	Griva	1.33	140	P	Pn	09 47 36.3	-0.3
GRG				S	Sg	09 47 54.6	-0.1
GRG	Griva	1.33	140	*e*Pn	Pn	09 47 36.0	-0.6
GRG	Griva	1.33	140	P	Pn	09 47 36.3	-0.3
GRG				S	Sg	09 47 54.6	-0.1
KKB	Krupnik	1.35	94	*i* Pg	Pg	09 47 38.1	+0.2
BEY	Berane	1.35	311	*i* Pg	Pn	09 47 35.7	-1.3
BEY				*e*Sg	Sg	09 47 56.9	+1.4
IVA	Berane	1.35	311	*i* Pg	Pn	09 47 35.7	-1.3
IVA				*e*Sg	Sg	09 47 56.9	+1.4
KNT	Kendrikon	1.47	124	*e*PN	Pn	09 47 38.4	-0.1
KNT	Kendrikon	1.47	124	P	Pn	09 47 38.4	-0.1
KNT				S	Sb	09 47 58.1	0.0
KNT	Kendrikon	1.47	124	P	Pn	09 47 38.4	-0.1
KNT				S	Sb	09 47 58.1	0.0
ULC	Ulcinj	1.52	270	*i* Pg	Pn	09 47 38.5	-0.7
ULC				*e*Sg	Sg	09 48 02.4	+1.8
ULC	Ulcinj	1.52	270	*i* Pg	Pn	09 47 38.5	-0.7
ULC				*e*Sg	Sg	09 48 02.4	+1.8
PDG	Podgorica	1.57	287	*i* P	Pn	09 47 38.3	-1.5
PDG	Podgorica	1.57	287	P	Pn	09 47 38.3	-1.5
PDG				S	Sn	09 48 00.1	-0.1
PDG	Podgorica	1.57	287	*e*Pn	Pn	09 47 38.8	-1.0
PDG				*i* Sg	Sg	09 48 02.2	0.0
PDG	Podgorica	1.57	287	P	Pn	09 47 38.3	-1.5
PDG	Podgorica	1.57	287	*i* Pg	Pn	09 47 38.8	-1.0
PDG				S	Sn	09 48 00.1	-0.1
PDG				*i* Sg	Sg	09 48 02.2	0.0
TTG	Podgorica	1.57	287	*i* Pg	Pn	09 47 38.8	-1.0
TTG				*e*Sg	Sg	09 48 02.9	+0.7
DRME	Dracevica, Mon	1.57	278	*i* Pn	Pn	09 47 39.0	-0.9
DRME				*e*Sn	Sg	09 48 03.3	+0.9
DRME	Dracevica, Mon	1.57	278	*e*Pn	Pn	09 47 38.8	-1.1
DRME				*e*Sn	Sg	09 48 03.3	+0.9
NEST	Nestorio	1.58	186	P	Pn	09 47 40.0	-0.1
NEST				S	Sg	09 48 02.7	0.0
NEST	Nestorio	1.58	186	P	Pn	09 47 40.0	-0.1
NEST				S	Sg	09 48 02.7

MPEP	Malo Peshtene	2.27	52	*i* Pg		Pg	09 47 55.4 -0.1
TREB	Trebinje	2.29	290	*e*Pn		Pb	09 47 51.7 -1.6
PLG	Polygyros	2.30	134	P		Pn	09 47 50.6 +0.7
PLG	Polygyros	2.30	134	P		Pn	09 47 50.6 +0.7
DIVS	Divibare	2.31	336	P		Pn	09 47 49.5 -0.7
DIVS	Divibare	2.31	336	*e*Pn		Pn	09 47 49.8 -0.4
DIVS				*e*Sn		Sn	09 48 17.8 -1.0
DIVS	Divibare	2.31	336	*e*Pn		Pn	09 47 48.9 -1.3
DIVS	Divibare	2.31	336	P		Pn	09 47 49.5 -0.7
DIVS				*e*Sn		Sn	09 48 17.8 -1.0
TRUS	Trudelj	2.33	344	*e*Pn		Pn	09 47 49.9 -0.4
TRUS	Trudelj	2.33	344	*e*Pn		Pn	09 47 49.9 -0.4
BBLS	Lazići	2.33	324	*e*Pn		Pn	09 47 50.3 -0.1
BBLS	Lazići	2.33	324	*e*Pn		Pn	09 47 49.9 -0.5
KUBS	Kucevo	2.44	7	⇓*i*Pn		Pn	09 47 50.3 -1.6
KUBS				*e*Sn		Sn	09 48 20.3 -1.6
KUBS	Kucevo	2.44	7	⇓*i*Pn		Pn	09 47 50.3 -1.6
KUBS				*e*Sn		Sn	09 48 20.3 -1.6
THL	Klokotos Trika	2.48	167	P		Pn	09 47 53.6 +1.2
THL	Klokotos Trika	2.48	167	P		Pn	09 47 53.6 +1.2
KEK	Kerkira	2.53	207	P		Pn	09 47 54.2 +1.1
KEK	Kerkira	2.53	207	P		Pn	09 47 54.2 +1.1
IGT	Igoumenitsa	2.55	197	P		Pn	09 47 55.4 +2.0
IGT	Igoumenitsa	2.55	197	P		Pn	09 47 55.4 +2.0
KAVA	Kavala	2.62	111	P		Pn	09 47 55.4 +1.0
KAVA	Kavala	2.62	111	P		Pn	09 47 55.4 +1.0
OUR	Ouranopolis	2.63	128	*e*PN		Pn	09 47 54.8 +0.5
OUR	Ouranopolis	2.63	128	P		Pn	09 47 55.0 +0.6
OUR	Ouranopolis	2.63	128	P		Pn	09 47 55.0 +0.6
PAIG	Paliouri	2.75	138	P		Pn	09 47 56.5 +0.4
PAIG	Paliouri	2.75	138	P		Pn	09 47 56.5 +0.4
STON	Ston	2.79	290	*e*Pn		Pn	09 47 54.0 -2.6
STON				Sn		Sb	09 48 34.2 -1.9
STON	Ston	2.79	290	*e*Pn		Pn	09 47 55.8 -0.9
STON	Ston	2.79	290	*e*Pn		Pn	09 47 55.8 -0.9
STON				Sn		Sb	09 48 34.2 -1.9
MDVR	Moldovita	2.81	6	⇓*i*P		Pn	09 47 56.0 -1.0
MDVR	Moldovita	2.81	6	S		Sn	09 48 30.3 -0.8
DSL	Palaion Diasel	2.85	183	P		Pb	09 48 00.3 -2.7
DSL	Palaion Diasel	2.85	183	P		Pb	09 48 00.3 -2.7
TEKS	Tekeris	2.86	334	*e*Pn		Pn	09 47 57.6 -0.1
TEKS	Tekeris	2.86	334	*e*Pn		Pn	09 47 57.3 -0.4
XOR	Xorichti	3.00	150	P		Pn	09 47 59.7 +0.2
XOR	Xorichti	3.00	150	P		Pn	09 47 59.7 +0.2
AGG	Agios Georgios	3.07	164	*e*PN		Pn	09 48 00.4 -0.1
AGG	Agios Georgios	3.07	164	P		Pn	09 48 01.6 +1.1
AGG	Agios Georgios	3.07	164	*e*Pn		Pn	09 48 00.4 -0.1
AGG	Agios Georgios	3.07	164	P		Pn	09 48 01.6 +1.1
KDZ	Kurdzhali	3.11	95	*i* Pg		Pg	09 48 09.7 -1.8
BLJ	Bijeljina	3.16	333	*e*Pn		Pn	09 48 01.0 -0.7
FGSL	Fruska Gora	3.34	342	*i* Pn		Pn	09 48 03.7 -0.6
FRGS	Fruska Gora	3.34	342	*i* Pn		Pn	09 48 03.7 -0.6
ANX	Ano Chora	3.42	172	P		Pn	09 48 07.3 +1.8
ANX	Ano Chora	3.42	172	P		Pn	09 48 07.3 +1.8
AOS	Alonnisos	3.44	144	*e*PN		Pn	09 48 05.3 -0.3
AOS	Alonnisos	3.44	144	P		Pn	09 48 05.7 +0.1
AOS	Alonnisos	3.44	144	*e*Pn		Pn	09 48 05.3 -0.3
AOS	Alonnisos	3.44	144	P		Pn	09 48 05.7 +0.1
BZS	Buzias	3.64	4	⇓*i*P		Pn	09 48 07.1 -1.2
BZS	Buzias	3.64	4	*i* Pn		Pn	09 48 07.2 -1.1
BZS	Buzias	3.64	4	*i* Pn		Pn	09 48 07.2 -1.1
MATE	Matera	3.69	250	⇓*i*P		Pn	09 48 08.8 -0.3
ALN	Alexandroupoli	3.75	105	P		Pn	09 48 10.8 +1.0
ALN	Alexandroupoli	3.75	105	P		Pn	09 48 10.8 +1.0
ENEZ	Enez	3.88	107	*e*PN		Pn	09 48 08.7 -2.9
ENEZ	Enez	3.88	107	*e*Pn		Pn	09 48 08.7 -2.9
BLY	Banja Luka	4.07	314	⇑*i*P		Pn	09 48 13.9 -0.3
BLY	Banja Luka	4.07	314	S		Pb	09 48 26.7 +3.1
BLY	Banja Luka	4.07	314	*e*Pn		Pn	09 48 14.2 -0.0
EDRB	Edirne	4.08	90	*e*PN		Pn	09 48 16.0 +1.6
EDRB	Edirne	4.08	90	*e*Pn		Pn	09 48 16.0 +1.6
ARR	Arges	4.17	35	⇑*i*P		Pn	09 48 16.4 +0.8
GELI	Tayfur-Gelibol	4.23	110	*e*PN		Pn	09 48 19.3 +2.8
GELI	Tayfur-Gelibol	4.23	110	*e*Pn		Pn	09 48 19.3 +2.8
SIRR	Siria	4.29	4	⇓*i*P		Pn	09 48 17.4 +0.1
VOIR		4.40	37	⇑*i*P		Pn	09 48 20.0 +1.1
TIP	Timpagrande	4.44	232	*e*Pn		Pn	09 48 20.5 +1.1
TIP	Timpagrande	4.44	232	*e*Pn		Pn	09 48 20.5 +1.1
LPK	Lapseki	4.44	109	*e*PN		Pn	09 48 20.2 +0.8
LPK	Lapseki	4.44	109	*e*Pn		Pn	09 48 20.2 +0.8
SIGR	SIGRI	4.45	127	*e*PN		Pn	09 48 21.2 +1.7
SIGR	SIGRI	4.45	127	*e*Pn		Pn	09 48 21.2 +1.7
CUC	Castrocucco	4.59	246	*e*Pn		Pn	09 48 21.6 +0.2
CUC				*e*Sn		Sn	09 49 17.8 +3.0
CUC	Castrocucco	4.59	246	*e*Pn		Pn	09 48 21.6 +0.2
CUC				*e*Sn		Sn	09 49 17.8 +3.0
RKY	Sarkoy-Tekirda	4.63	104	*e*PN		Pn	09 48 22.5 +0.5
RKY	Sarkoy-Tekirda	4.63	104	*e*Pn		Pn	09 48 22.5 +0.5
UDBI	Udbina	4.76	304	*i* Pn		Pn	09 48 26.6 +2.8
UDBI				Sn		Sn	09 49 21.0 +1.9
UDBI	Udbina	4.76	304	*i* Pn		Pn	09 48 26.6 +2.8
UDBI				Sn		Sn	09 49 21.0 +1.9
DRGR		4.91	12	⇑*i*P		Pn	09 48 25.6 -0.3
CHOS	Chios island	5.13	133	*e*PN		Pn	09 48 30.2 +1.3
CHOS	Chios island	5.13	133	*e*Pn		Pn	09 48 30.2 +1.3
CRES	Cresnjev	5.69	314	*e*Pn		Pn	09 48 36.4 -0.2
AQU	L'Aquila	5.86	276	*e*Pn		Pn	09 48 38.0 -1.0
	comp=N,9.6nm,0.6s						
AQU	L'Aquila	5.86	276	*e*Pn		Pn	09 48 38.0 -1.0
	comp=N,9.6nm,0.6s						
PSZ	Piszkesteto	6.01	351	⇑*i*P		Pn	09 48 39.7 -1.3
PSZ	Piszkesteto	6.01	351	*e*Pn		Pn	09 48 40.9 -0.1
PSZ	Piszkesteto	6.01	351	*e*P		Pn	09 48 40.9 -0.1
PSZ				*e*Sn		Sn	09 49 51.5 +1.5
PSZ	Piszkesteto	6.01	351	*e*Pn		Pn	09 48 40.9 -0.1
	comp=N,5.9nm,0.5s						
PSZ				*e*Sn		Sn	09 49 51.5 +1.5
CEY	Cerknica	6.21	309	*e*Pn		Pn	09 48 44.5 +0.8
SOKA	Soboth	6.48	318	*i* Pn		Pn	09 48 47.8 +0.3
	comp=N,5.0nm,0.8s,SNR=6.4						
SOKA	Soboth	6.48	318	Pn		Pn	09 48 47.8 +0.3
	comp=N,5.0nm,0.8s,SNR=6.4						
KECS	Kecovo	6.52	355	*e*Pn		Pn	09 48 47.3 -0.7
KECS	Kecovo	6.52	355	*e*Pn		Pn	09 48 47.2 -0.7
TRI	Trieste	6.58	307	*e*Pn		Pn	09 48 48.4 -0.4
	comp=N,11nm,0.7s						
TRI				*e*Sn		Sn	09 50 04.1 +0.2
TRI	Trieste	6.58	307	*e*Pn		Pn	09 48 48.4 -0.4
	comp=N,11nm,0.7s						
TRI				*e*Sn		Sn	09 50 04.1 +0.2
AYDN	Tasoluk	6.67	128	P		Pn	09 48 52.6 +2.6
AYDN	Tasoluk	6.67	128	*i* P		Pn	09 48 52.6 +2.6
AYDN				*i* S		Pb	09 49 10.3 +2.3
ARSA	Arzberg	6.67	324	*i* P		Pn	09 48 50.4 +0.3
	comp=N,4.2nm,0.6s						
ARSA				*i* Sn		Sn	09 50 07.5 +1.3
	comp=N,4.4nm,0.4s						
ARSA	Arzberg	6.67	324	P		Pn	09 48 50.4 +0.3
	comp=N,4.2nm,0.6s						
ARSA				Sn		Sn	09 50 07.5 +1.3
	comp=N,4.4nm,0.4s						
VYHS	Vyhne	6.73	346	*e*Pn		Pn	09 48 51.2 +0.4
VYHS	Vyhne	6.73	346	*e*PN		Pn	09 48 51.2 +0.4
VYHS				*e*			09 50 07.5
CRVS	Cervenica-Dubn	6.92	1	*e*Pn		Pn	09 48 55.5 +2.1
CRVS	Cervenica-Dubn	6.92	1	*e*PN		Pn	09 48 55.5 +2.1
KOLS	Kolonicke sedl	6.98	5	*e*Pn		Pn	09 48 55.2 +0.9
KOLS	Kolonicke sedl	6.98	5	*e*PN		Pn	09 48 55.2 +0.9
KOLS	Kolonicke sedl	6.98	5	*e*SG		Sg	09 50 58.5 +2.6
STHS	Stebnicka Huta	7.43	360	*e*PN		Pn	09 48 53.3 -7.1
MOA	Molln	7.69	322	*i* Pn		Pn	09 49 06.1 +2.2
	comp=N,1.7nm,0.5s,SNR=4.8						
MOA				*i* Sn		Sn	09 50 30.5 -0.6
	comp=N,4.1nm,0.6s						
MOA	Molln	7.69	322	Pn		Pn	09 49 06.1 +2.2
	comp=N,1.7nm,0.5s,SNR=4.8						
MOA				Sn		Sn	09 50 30.5 -0.6
	comp=N,4.1nm,0.6s						
ABTA	Abfaltersbach	7.88	310	*e*Pn		Pn	09 49 08.0 +1.4
	comp=N,12nm,1.1s,SNR=10						
ABTA				*e*Sn		Sn	09 50 34.9 -1.0
	comp=N,3.9nm,0.7s						
ABTA	Abfaltersbach	7.88	310	Pn		Pn	09 49 08.0 +1.4
	comp=N,12nm,1.1s,SNR=10						
ABTA				Sn		Sn	09 50 34.9 -1.0
	comp=N,3.9nm,0.7s						
GERES	GERESS Array B	8.68	325	Pn		Pn	09 49 17.0 -0.6
	comp=N,0.2nm,0.3s,baz=139,slow=12,SNR=4.3						
GERES				LR		LR	09 53 06.6
	comp=N,31nm,19.8s,baz=74,slow=42						
KHC	Kasperske Hory	8.95	326	*e*PN		Pn	09 49 22.7 +1.4
KHC				*e*SN		Sn	09 51 02.5 +0.3
MOTA	Moosalm	9.01	310	*e*Pn		Pn	09 49 24.5 +2.3
	comp=N,1.7nm,0.5s						
MOTA				*i* Sn		Sn	09 51 05.0 +1.2
	comp=N,3.4nm,0.6s						
MOTA	Moosalm	9.01	310	Pn		Pn	09 49 24.5 +2.3
	comp=N,1.7nm,0.5s						
MOTA				Sn		Sn	09 51 05.0 +1.2
	comp=N,3.4nm,0.6s						
BRTR	Keskin Array B	9.64	99	Pn		Pn	09 49 33.7 +2.9
	comp=N,0.1nm,0.3s,baz=285,slow=13,SNR=2.8						
FINES	FINESS Array B	19.70	7	P		P	09 51 40.0 -1.2
	comp=N,0.1nm,0.3s,baz=183,slow=12,SNR=5.4						
NOA	NORSAR Array B	20.04	346	P		P	09 51 44.2 -0.7
	comp=N,0.1nm,0.3s,baz=160,slow=10,SNR=3.1						
ARCES	ARCESS Array B	27.70	3	P		P	09 52 58.9 -1.1
	comp=N,1.0nm,0.6s,baz=194,slow=9.8,SNR=5.0						
TORD	Torodi Ar. Bea	33.40	216	P		P	09 53 50.5 -0.2
	comp=N,0.7nm,0.8s,baz=24,slow=9.5,SNR=4.3						
MKAR	Makanchi Array	42.91	62	P		P	09 55 12.2 +1.5
	comp=N,0.3nm,0.6s,baz=290,slow=4.3,SNR=3.1						
YKA	Yellowknife Ar	70.02	340	P		P	09 58 22.7 -0.6
	comp=N,0.1nm,0.7s,baz=38,slow=5.3,SNR=4.8						

ISK ***08*** *09:52:26.2, 37.21N×28.17E, h6km, MD2.5*
CSEM ***08*** *09:52:26.2, 37.21N×28.17E, h6km, MD2.5*
ISC 08 09:52:26.0±1.1, 37.22N±0.05×28.18E±0.05, h14km±10km, n10, σ0.38/13, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	Yerkesik	0.12	139	*e*PG	Pg	09 52 29.4	-0.2
YER	Yerkesik	0.12	139	*e*Pg	Pg	09 52 29.4	-0.2
TURN	Turunc	0.48	136	*i* P	Pg	09 52 35.2	-0.4
AYDN	Tasoluk	0.50	331	*i* P	Pg	09 52 35.2	-0.8
AYDN				*i* S	Sg	09 52 43.0	+0.3
DALY	Dalyan (Mu¨la	0.55	137	*e*PG	Pb	09 52 37.5	0.0
DALY	Dalyan (Mu¨la	0.55	137	*e*Pg	Pb	09 52 37.5	0.0
BODT	Bodrum	0.72	257	*e*PG	Pb	09 52 40.3	0.0
BODT				*e*SG	Sb	09 52 50.3	+0.3
BODT	Bodrum	0.72	257	*e*Pg	Pb	09 52 40.3	0.0
BODT				*e*Sg	Sb	09 52 50.3	+0.3
AYDB	Zeytinkoy-Aydi	0.76	342	*e*PG	Pb	09 52 41.4	+0.3
AYDB	Zeytinkoy-Aydi	0.76	342	*e*Pg	Pb	09 52 41.4	+0.3

ISK ***08*** *09:58:05.0, 36.58N×28.54E, h6km, MD2.7*
DDA ***08*** *09:58:05.9, 36.99N×28.72E, h7km, Md2.8*
CSEM ***08*** *09:58:07.9±0.4, 36.87N×28.83E, h2km, MD2.7, Error ellipse: s-maj=9.9km s-min=8.5km az=177.0*
ISC 08 09:58:08.6±0.9, 36.91N±0.03×28.85E±0.03, h9km±8km, n20, σ1.24/29, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DALY	Dalyan (Mu¨la	0.18	240	*e*PG	Pg	09 58 10.4	-1.9
DALY				*e*SG	Sg	09 58 14.5	-0.4
DALY	Dalyan (Mu¨la	0.18	240	*e*Pg	Pg	09 58 10.4	-1.9
DALY				*e*Sg	Sg	09 58 14.5	-0.4
TURN	Turunc	0.20	260	*i* P	Pb	09 58 15.0	+2.2
TURN				*i* S	Sg	09 58 25.3	+10
FETY	Fethiye	0.33	145	*e*PG	Pg	09 58 14.0	-1.2
FETY	Fethiye	0.33	145	*e*Pg	Pg	09 58 14.0	-1.2
YER	Yerkesik	0.51	297	*e*PG	Pg	09 58 16.9	-1.6
YER	Yerkesik	0.51	297	*e*Pg	Pg	09 58 16.9	-1.6
GLHS	Gihisar (BURDU	0.58	64	*e*PG	Pn	09 58 23.9	+0.8
GOLH	Golhisar	0.66	60	P	Pg	09 58 19.4	-2.0
GOLH				S	Sg	09 58 30.5	+0.5
GOLH	Golhisar	0.66	60	*i* P	Pg	09 58 19.4	-2.0
GOLH				*i* S	Sg	09 58 30.5	+0.5
DNZL	Cakiroluk	0.80	11	P	Pb	09 58 24.8	0.0
DNZL	Cakiroluk	0.80	11	*i* P	Pb	09 58 24.8	0.0
DNZL				*i* S	Sn	09 58 40.2	+1.8
ELL	Elmali	0.87	100	*e*PN	Pn	09 58 26.7	-0.4
ELL	Elmali	0.87	100	*e*Pn	Pn	09 58 26.7	-0.4
AKAS	Kas	0.91	138	P	Pg	09 58 24.9	-1.2
AKAS				S	Sn	09 58 40.9	0.0
AKAS	Kas	0.91	138	*i* P	Pg	09 58 24.9	-1.2
AKAS				*i* S	Sn	09 58 40.9	0.0
KHAL	Karahalli	1.55	19	P	Pb	09 58 38.3	+0.8
KHAL				S	Sb	09 58 57.8	+0.5
KHAL	Karahalli	1.55	19	*i* P	Pb	09 58 38.3	+0.8
KHAL				*i* S	Sb	09 58 57.8	+0.5
SUTC	Sutluce-Ispart	1.81	71	*e*PN	Pb	09 58 42.8	+0.8
SUTC	Sutluce-Ispart	1.81	71	*e*Pn	Pb	09 58 42.8	+0.8

CSEM ***08*** *10:04:53.8, 36.10N×37.42E, h12km, MD2.8*
ISK 08 10:04:53.8, 36.10N×37.42E, h12km, MD2.8, Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TAHT	Tahtakopru-Hat	1.04	286	*e*PG	Pn	10 05 14.2	+0.1
TAHT				*e*SG	Sn	10 05 28.9	+0.3
TAHT	Tahtakopru-Hat	1.04	286	*e*Pg	Pn	10 05 14.2	0.0
TAHT				*e*Sg	Sn	10 05 28.9	+0.3
GAZ	Gaziantep	1.08	351	*e*PN	Pn	10 05 15.0	+0.2
GAZ	Gaziantep	1.08	351	*e*Pn	Pn	10 05 15.0	+0.2
KMRS	Kahramanmaras	1.46	343	*e*PN	Pb	10 05 20.8	-0.2
KMRS	Kahramanmaras	1.46	343	*e*Pn	Pb	10 05 20.8	-0.1
URFA	Urfa	1.74	40	*e*PN	Pn	10 05 24.5	+0.6
URFA	Urfa	1.74	40	*e*Pn	Pn	10 05 24.5	+0.5

IDC ***08*** *10:10:28.5±1.4, 14.35S×76.41W, h0km, mb4.0/3, mb1 4.2/6, mb1mx3.9/27, mbtmp4. 1/6, ML3.6/2, MS3.0/2, Ms1 3.1/2, ms1mx2.7/27, Error ellipse: s-maj=46.2km s-min=17.1km az=62.0*
ISCJB ***08*** *10:10:29.7±1.3, 14.5S±0.1×76.6W±0.2, h23km, mb3.9/4, Error ellipse: s-maj=30.5km s-min=12.3km az=142.6*
ISC 08 10:10:31.5±1.1, 14.5S±0.1×76.5W±0.2, h23km, n13, σ2.49/10, mb3.8/4, Near coast of Peru

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NNA	Nana	2.56	352	Pn	Pn	10 11 09.5	-2.2
	9.9nm,0.3s,baz=162,slow=12,SNR=19						
NNA				Lg	Lg	10 11 44.6	
	27nm,0.3s,baz=210,slow=15,SNR=5.5						
LPAZ	La Paz	8.23	103	Pn	Pn	10 12 30.9	+0.7
	0.6nm,0.3s,baz=279,slow=7.5,SNR=31						
LPAZ				LR	LR	10 16 04.8	
	comp=Z,65nm,21.3s,baz=63,slow=41						
LVC	Limon Verde	10.76	139	Pn	Pn	10 13 07.2	+2.6
	15nm,0.3s,baz=318,slow=14,SNR=4.0						
LVC				Sn	Sn	10 15 00.1	-4.5
	8.5nm,0.3s,baz=345,slow=20,SNR=2.9						
LVC				Lg	Lg	10 16 05.5	
	8.1nm,0.3s,baz=189,slow=19,SNR=3.4						
SIV	San Ignacio	14.93	98	LR	LR	10 20 11.1	
	comp=Z,109nm,21.3s,baz=190,slow=39						
PTGA	Pitinga	21.32	51	P	P	10 15 20.1	+3.1
	1.3nm,0.3s,baz=215,slow=6.7,SNR=4.9						
TXAR	Lajitas Array	50.91	329	P	P	10 19 31.2	+0.1
	1.0nm,0.9s,baz=148,slow=9.7,SNR=10						
TORD	Torodi Ar. Bea	82.13	74	P	P	10 22 50.5	-0.4
	3.8nm,0.7s,baz=266,slow=5.9,SNR=21						
YKA	Yellowknife Ar	82.37	343	P	P	10 22 50.7	-0.5
	0.6nm,0.8s,baz=135,slow=5.2,SNR=7.3						
H11S2	WAKE ISLAND Hyl	19.56	283	T	T	12 40 11.8	
	baz=97,slow=75,SNR=14						
H11S1	WAKE ISLAND Hyl	19.56	283	T	T	12 40 09.1	
	baz=97,slow=75,SNR=11						
H11S3	WAKE ISLAND Hyl	19.57	283	T	T	12 40 10.7	
	baz=97,slow=75,SNR=8.9						
ZALV	Zalesovo Beam	138.02	16	PKP	PKPdf	10 29 54.9	+0.6
	0.5nm,0.4s,baz=276,slow=2.6,SNR=2.9						
SONM	Songino Array	146.72	356	PKPbc	PKPdf	10 30 11.0	+0.9
	0.4nm,0.3s,baz=169,slow=1.5,SNR=4.1						

NNC 08 10:28:45.1±3.0, 36.40N×70.16E, h146km±44km, mb2.7, mpv3.6, 3C-6D, Error ellipse: s-maj=29.5km s-min=18.1km az=156.0, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	Dzherino	2.63	337	⇓P	Pn	10 29 28.0	+0.3
	8.1nm,0.5s						
DZET				⇓S	Sn	10 30 01.2	+0.6
	45nm,0.8s						
SFK	Sufi-Kurgan	4.47	35	⇓P	Pn	10 29 51.1	-0.4
	8.4nm,0.3s						
SFK				⇑S	Sn	10 30 43.3	-0.1
	10.0nm,0.3s						
MNAS	Manas	6.35	16	⇓P	Pn	10 30 17.1	+0.7
	1.5nm,0.4s						
MNAS				⇓S	Sn	10 31 28.9	+1.0
	5.9nm,0.7s						
KK31	Karatay Array	6.71	2	P	Pn	10 30 21.6	+0.4
	2.0nm,0.5s,baz=185,slow=13,SNR=23						
KK31				⇑S	Sn	10 31 36.7	+0.4
	1.0nm,0.3s,baz=187,slow=23,SNR=4.9						
AAK	Ala-Archa	7.07	27	⇑P	Pn	10 30 25.3	-0.9
	1.9nm,0.4s						
AAK				⇓S	Sn	10 31 46.8	+1.4
	7.2nm,0.7s						

DDA ***08*** *10:34:20.9, 36.77N×27.15E, h3km, Ml3.2*
ATH ***08*** *10:34:20.4, 36.71N×27.18E, h24km±1km, ML2.9/5, Error ellipse: s-maj=2.5km s-min=1.1km az=69.0*
THE ***08*** *10:34:21.4, 36.72N×27.25E, h1km±1km, ML3.1/3, Error ellipse: s-maj=1.8km s-min=0.7km az=229.0*
CSEM ***08*** *10:34:21.8±0.1, 36.73N×27.17E, h5km, ML2.9, Error ellipse: s-maj=3.8km s-min=3.3km az=92.0*
ISK ***08*** *10:34:21.9, 36.76N×27.21E, h7km, MD3.1*
ISCJB ***08*** *10:34:21.9±0.4, 36.74N±0.02×27.19E±0.03, h8km±3km, Error ellipse: s-maj=4.1km s-min=3.4km az=21.3*
ISC 08 10:34:21.7±0.8, 36.73N±0.02×27.18E±0.02, h13km±5km, n81, σ1.13/107, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NISR	Nisiros	0.12	201	P	Pg	10 34 24.8	-0.1
NISR				S	Sg	10 34 27.3	+0.1
NISR	Nisiros	0.12	201	P	Pg	10 34 24.8	-0.1
NISR				S	Sg	10 34 26.9	-0.4
NISR	Nisiros	0.12	201	P	Pg	10 34 24.8	-0.1
NISR				S	Sg	10 34 26.9	-0.4
NISR				AML	AML	10 34 28.7	
	comp=E,25810μm,0.2s						
NISR				AML	AML	10 34 30.8	
	comp=N,17523μm,0.1s						
NIS1	Nisyros Isl.	0.12	182	*e*PG	Pg	10 34 25.7	+0.7
NIS1	Nisyros Isl.	0.12	182	P	Pg	10 34 24.7	-0.3
NIS1	Nisyros Isl.	0.12	182	P	Pg	10 34 24.7	-0.3
NIS1	Nisyros Isl.	0.12	182	*e*Pg	Pg	10 34 25.7	+0.7
NIS1				S	Sg	10 34 28.4	+1.1
NIS1	Nisyros Isl.	0.12	182	P	Pg	10 34 24.6	-0.4
NIS1				S	Sg	10 34 28.4	+1.1
NIS1				AML	AML	10 34 28.9	
	comp=N,44059μm,0.3s						
NIS1				AML	AML	10 34 29.0	
	comp=E,55457μm,0.2s						
BODT	Bodrum	0.35	17	*e*PG	Pg	10 34 28.4	-0.4
BODT				*e*SG	Sg	10 34 33.7	+0.2
BODT	Bodrum	0.35	17	P	Pg	10 34 28.3	-0.4
BODT				S	Sg	10 34 33.5	0.0
BODT	Bodrum	0.35	17	*e*Pg	Pg	10 34 28.4	-0.4
BODT				S	Sg	10 34 33.5	0.0
BDRM	Kayabasi	0.40	32	S	Sg	10 34 34.9	-0.1
BDRM	Kayabasi	0.40	32	*i* S	Sg	10 34 34.9	-0.1
BDRM				*i* P	Pn	10 34 41.0	+7.8
ARG	Arkhangelos	0.92	124	P	Pg	10 34 38.2	-1.2
ARG				S	Sg	10 34 51.4	+0.1
ARG	Arkhangelos	0.92	124	P	Pg	10 34 38.8	-0.6
ARG				S	Sg	10 34 51.4	+0.1
YER	Yerkesik	0.97	65	*e*PG	Pg	10 34 40.2	-0.2
YER				*e*SG	Sb	10 34 53.8	+0.6
YER	Yerkesik	0.97	65	P	Pg	10 34 40.1	-0.3
YER				S	Sg	10 34 53.4	+0.3
YER	Yerkesik	0.97	65	*e*Pg	Pg	10 34 40.2	-0.2
YER				S	Sg	10 34 53.4	+0.3
GCAM	G?zelcaml?	0.97	2	P	Pb	10 34 40.2	-0.2
GCAM				S	Sg	10 34 53.1	0.0
GCAM	G?zelcaml?	0.97	2	*i* P	Pb	10 34 40.2	-0.2
GCAM				*i* S	Sg	10 34 53.1	0.0
SMG	Samos	1.02	344	P	Pb	10 34 41.1	-0.1
SMG				S	Sn	10 34 56

NIED **08** *10:42:00, 37°.60N×141°.60E, h53km, Mw4.6 Best double couple: M₀8.76000×10¹⁵ NP1:φ₀213.00000°, δ36.00000°, λ115.00000°. NP2:φ₀3.00000°, δ58.00000°, λ73.00000°.*
ISCJB **08** *10:42:53.9±0.3, 37°.66N±0°.02×141°.45E±0°.03, h60km±2km, mb4.8/254, MS3.8/32, Error ellipse: s-maj=3.9km s-min=2.7km az=41.7*
JMA **08** *10:42:53.7±0.1, 37°.65N×141°.59E, h46km±2km, M4.7*
JMA Felt III J1.
IDC **08** *10:42:54.2±0.4, 37°.63N×141°.51E, h53km±3km, mb4.5/36, mb1 4.6/43, mb1mx4.5/61, mbtmp4.7/43, MS3.7/30, Ms1 3.7/30, ms1mx3.5/55, Error ellipse: s-maj=10.8km s-min=7.4km az=103.0*
MOS **08** *10:42:54.3±0.8, 37°.88N×141°.44E, h57km, mb5.1/87, Error ellipse: s-maj=6.1km s-min=4.3km az=107.7*
NEIC **08** *10:42:55.8±0.4, 37°.65N×141°.44E, h64km±3km, mb4.8/157, Error ellipse: s-maj=3.3km s-min=2.2km az=137.0*
NEIC Felt at Tokyo. Recorded [3 JMA] in Fukushima and Miyagi.
ISC 08 10:42:54.2±0.3, 37°.67N±0°.03×141°.58E±0°.03, h54km±2km, h53km:pP-P,n538,σ1§41/583, mb4.8/257, MS3.7/33, 34C-26D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.64**	**241**	P		**Pn**		**10 43 06.4**	**-0.9**
JFK				S		**Sn**		**10 43 15.0**	**-1.9**
JMM	**Marumori**	**0.65**	**287**	P		**Pn**		**10 43 07.0**	**-0.4**
JMM				S		**Sn**		**10 43 16.3**	**-0.8**
JIO	**Ouri**	**0.80**	**347**	P		**Pn**		**10 43 09.1**	**-0.3**
JIO				S		**Sn**		**10 43 19.7**	**-0.7**
ONAJ	**Iwakimizuishiy**	**0.84**	**228**	P		**Pn**		**10 43 09.0**	**-1.0**
ONAJ				S		**Sn**		**10 43 19.4**	**-2.1**
JFT	**Otama**	**1.00**	**261**	P		**Pn**		**10 43 12.1**	**+0.1**
JFT				S		**Sn**		**10 43 25.5**	**+0.4**
JOU	**Okura**	**1.00**	**314**	P		**Pn**		**10 43 11.7**	**-0.3**
JOU				S		**Sn**		**10 43 25.8**	**+0.7**
JMK	**Ichinoseki**	**1.31**	**348**	P		**Pn**		**10 43 16.2**	**+0.1**
JMK				S		**Sn**		**10 43 32.3**	**-0.2**
JYS	**Shiratake**	**1.31**	**295**	P		**Pn**		**10 43 16.2**	**0.0**
JFY	**Yanaizu**	**1.51**	**260**	P		**Pn**		**10 43 18.9**	**0.0**
JYK	**Kaneyama**	**1.57**	**323**	P		**Pn**		**10 43 19.9**	**+0.2**
MJAR	**Matsushiro Arr**	**2.92**	**248**	P		**Pn**		**10 43 38.8**	**+0.6**
	64nm,0.3s,baz=54,slow=10,SNR=445								
MJAR				LR		LR		10 45 01.1	
	comp=Z,2μm,19.4s,baz=70,slow=45								
MAJO	**Matsushiro**	**2.92**	**248**	*d*	*i*P		**Pn**	**10 43 39.1**	**+0.9**
MAJO					pmax		pmax		
	comp=Z,305nm,0.6s								
MAJO	**Matsushiro**	**2.92**	**248**		*e*Pn		**Pn**	**10 43 39.4**	**+1.2**
MAT	**Matsushiro**	**2.92**	**248**		P		**Pn**	**10 43 39.1**	**+0.9**
MAT					*e*S		**Sn**	**10 44 18.2**	**+6.2**
MJB9	**Matsu-Tunnel**	**2.92**	**248**		*e*Pn		**Pn**	**10 43 39.4**	**+1.2**
INU	**Inuyama**	**4.34**	**239**		*e*Pn		**Pn**	**10 43 59.2**	**+1.5**
ERM	**Erimo**	**4.50**	**15**	⇓	*e*P		**Pn**	**10 44 00.6**	**+0.8**
ERM	**Erimo**	**4.50**	**15**		*e*Pn		**Pn**	**10 44 00.6**	**+0.8**
ERM					*e*Sn		**Sn**	**10 44 55.0**	**+4.1**
JHJ2	**Mitsune**	**4.77**	**198**		*e*Pn		**Pn**	**10 44 02.4**	**-1.2**
JHJ	**Hachijo jima 2**	**4.78**	**198**		P		**Pn**	**10 44 02.5**	**-1.1**
	comp=Z,216nm,0.3s,baz=84,slow=21,SNR=43								
JHJ					S		**Sn**	**10 44 55.0**	**-2.6**
	comp=Z,320nm,0.3s,baz=107,slow=19,SNR=13								
JHJ					LR		LR	10 46 19.5	
	comp=Z,459nm,20.0s,baz=74,slow=44								
ASAJ	**Asahikawa**	**6.48**	**7**		P		**Pn**	**10 44 26.1**	**-0.8**
	comp=Z,4.6nm,0.3s,baz=234,slow=10,SNR=27								
ASAJ					S		**Sn**	**10 45 41.1**	**+1.7**
	comp=Z,3.6nm,0.3s,baz=282,slow=20,SNR=3.4								
YUK	**Yuzh-Kuril'sk**	**7.13**	**26**		*e*P		**Pn**	**10 44 34.0**	**-1.8**
YUK					*e*S		**Sn**	**10 45 50.0**	**-5.5**
YUK					pmax		pmax		
	comp=Z,191nm,0.6s								
SHO	**Shikotan**	**7.36**	**31**		*e*P		**Pn**	**10 44 35.9**	**-3.0**
SHO					*e*S		**Sn**	**10 45 53.0**	**-8.0**
SHO					pmax		pmax		
	comp=Z,79nm,0.6s								
KUR	**Kuril'sk**	**8.90**	**30**		*e*P		**Pn**	**10 44 59.4**	**-0.7**
KUR					*e*S		**Sn**	**10 46 34.7**	**-4.2**
KUR					pmax		pmax		
	comp=Z,49nm,0.6s								
VLA	**Vladivostok**	**9.18**	**309**	⇑	*e*P		**Pn**	**10 45 05.2**	**+1.4**
VLA					pmax		pmax		
	comp=Z,88nm,1.7s								
YSS	**Yuzh-Sakhalins**	**9.31**	**5**		*e*P		**Pn**	**10 45 06.4**	**+0.7**
YSS					*e*S		**Sn**	**10 46 47.3**	**-1.6**
YSS					pmax		pmax		
	comp=Z,30nm,1.6s								
MSHR	**Mys Shultsa**	**9.36**	**305**	⇑	*e*P		**Pn**	**10 45 07.3**	**+1.0**
USRK	**Ussuriysk Ar.**	**9.75**	**315**		P		**Pn**	**10 45 12.9**	**+1.3**
	comp=Z,1.8nm,0.3s,baz=130,slow=12,SNR=50								
USRK					LR		LR	10 48 51.8	
	comp=Z,425nm,18.0s,baz=126,slow=37								
JNU	**Nakatsue**	**9.84**	**246**		P		**Pn**	**10 45 13.7**	**+0.7**
	comp=Z,1.5nm,0.3s,baz=50,slow=8.5,SNR=16								
JNU					LR		LR	10 49 23.5	
	comp=Z,682nm,20.6s,baz=119,slow=40								
JNU	**Nakatsue**	**9.84**	**246**		*e*Pn		**Pn**	**10 45 14.8**	**+1.8**
CBIJ	**Chichi jima**	**10.56**	**177**		*e*Pn		**Pn**	**10 45 19.3**	**-3.5**
CBIJ					*e*Sn		Sn	10 47 09.8	-10
JCJ	**Chichijima**	**10.56**	**177**		P		**Pn**	**10 45 18.7**	**-4.2**
	comp=Z,21nm,0.3s,baz=91,slow=20,SNR=34								
JCJ					S		Sn	10 47 08.8	-11
	comp=Z,36nm,0.3s,baz=64,slow=24,SNR=8.1								
KSRS	**Korea Array**	**10.84**	**273**		P		**Pn**	**10 45 29.9**	**+3.4**
	comp=Z,2.0nm,0.3s,baz=84,slow=14,SNR=74								
KSRS					LR		LR	10 49 17.4	
	comp=Z,344nm,21.3s,baz=84,slow=35								
KSRS	**Korea Array**	**10.84**	**273**		P		**Pn**	**10 45 30.0**	**+3.4**
KSRS					pmax		pmax		
	comp=Z,2.0nm,0.3s								
KSRS					MLR		MLR		
	comp=Z,344nm,21.3s								
KS01	**Wonju Array Si**	**10.86**	**273**		*e*Pn		**Pn**	**10 45 28.8**	**+1.9**
KSAR	**Wonju Array Be**	**10.87**	**273**		P		**Pn**	**10 45 30.0**	**+2.9**
KSAR	**Wonju Array Be**	**10.87**	**273**		P		**Pn**	**10 45 29.9**	**+2.9**
MDJ	**Mudanjiang**	**11.38**	**311**		P		Pn	10 45 38.8	+4.8
MDJ					pmax		pmax		
	comp=Z,18nm,0.9s								
MDJ					pmax		pmax		
	comp=Z,50nm,6.2s								
MDJ					LR		LR		
	comp=N,140nm,16.2s								
MDJ					LR		LR		
	comp=E,210nm,15.2s								
MDJ					LR		LR		
	comp=Z,340nm,17.1s								
MDJ	**Mudanjiang**	**11.38**	**311**		*e*Pn		**Pn**	**10 45 38.1**	**+4.2**
	comp=Z,21nm,0.8s								
KLR	**Kul'dur**	**13.56**	**332**		P		**Pn**	**10 46 04.6**	**+0.9**
	comp=Z,0.2nm,0.3s,baz=145,slow=13,SNR=6.0								
KLR					LR		LR	10 51 15.6	
	comp=Z,223nm,19.6s,baz=146,slow=37								
CN2	**Changchun**	**13.67**	**302**		*e*P		**Pn**	**10 46 06.4**	**+1.3**
CN2					*e*S		**Sn**	**10 48 36.2**	**+0.9**
CN2					pmax		pmax		
	comp=Z,10.0nm,0.9s								
CN2					pmax		pmax		
	comp=Z,200nm,6.0s								
CN2					LR		LR		
	comp=N,200nm,19.0s								
CN2					LR		LR		
	comp=E,200nm,19.0s								
CN2					LR		LR		
	comp=Z,200nm,20.0s								
JOW	**Kunigami**	**15.59**	**230**		*e*P		**Pn**	**10 46 28.5**	**-2.0**
DL2	**Dalian**	**15.71**	**281**		P		**Pn**	**10 46 33.1**	**+1.1**
DL2					sP		**sP**	**10 46 54.7**	**+1.0**
DL2					*e*S		**Sn**	**10 49 26.7**	**+1.7**
DL2					pmax		pmax		
	comp=Z,76nm,0.8s								
DL2					LR		LR		
	comp=N,300nm,18.6s								
DL2					LR		LR		
	comp=E,280nm,16.7s								
DL2					LR		LR		
	comp=Z,410nm,18.2s								
PETK	**Petropavlovsk-**	**19.07**	**31**		P		**Pn**	**10 47 13.4**	**+0.2**
	comp=Z,0.2nm,0.3s,baz=163,slow=5.6,SNR=5.3								
PETK					LR		LR	10 55 44.2	
	comp=Z,62nm,18.0s,baz=213,slow=40								
PET	**Petropavlovsk**	**19.41**	**32**		*e*P		**Pn**	**10 47 22.5**	**+5.3**
PET					MLR		MLR		
	comp=Z,200nm,18.0s								
NJ2	**Nanjing**	**19.45**	**260**		*e*P		**P**	**10 47 16.3**	**0.0**
NJ2					pmax		pmax		
	comp=Z,10.0nm,0.5s								
TIA	**Tai'an**	**19.59**	**273**	⇓	P		**P**	**10 47 16.4**	**-1.4**
TIA					S		**S**	**10 50 46.7**	**-9.4**
TIA					pmax		pmax		
	comp=Z,50nm,1.0s								
TIA					LR		LR		
	comp=N,260nm,13.5s								
TIA					LR		LR		
	comp=E,300nm,14.4s								
TIA					LR		LR		
	comp=Z,240nm,15.4s								
BJT	**Baijiatuau**	**19.91**	**285**		*e*P		**P**	**10 47 19.9**	**-1.4**
BJT					pmax		pmax		
	comp=Z,36nm,0.6s								
BJT	**Baijiatuau**	**19.91**	**285**		*e*P		**P**	**10 47 19.9**	**-1.4**
	comp=Z,36nm,0.6s								
YOJ	**Yonaguni jima**	**20.60**	**236**		*e*P		**P**	**10 47 28.4**	**-0.4**
YOJ					pmax		pmax		
	comp=Z,106nm,1.2s								
YOJ	**Yonaguni jima**	**20.60**	**236**		*e*P		**P**	**10 47 28.4**	**-0.4**
	comp=Z,106nm,1.2s								
YHNB	**Yeheng**	**21.55**	**239**		*e*P		**P**	**10 47 37.2**	**-1.9**
	comp=Z,20nm,0.9s								
SSLB	**Suanglung**	**22.43**	**238**		*e*P		**P**	**10 47 48.0**	**-0.5**
	comp=Z,19nm,0.9s								
YULB	**Yu-li**	**22.47**	**236**		*e*P		**P**	**10 47 48.5**	**-0.4**
	comp=Z,29nm,1.5s								
MA2	**Magadan**	**22.70**	**12**		*e*P		**P**	**10 47 50.7**	**-0.4**
MA2					pmax		pmax		
	comp=Z,49nm,0.8s								
MA2	**Magadan**	**22.70**	**12**		*e*P		**P**	**10 47 50.7**	**-0.4**
	comp=Z,49nm,0.8s								
TPUB	**Ta-pu**	**22.97**	**237**		*e*P		**P**	**10 47 50.7**	**-3.6**
	comp=Z,30nm,0.6s								
TWG	**Pinlang**	**23.01**	**236**		*e*P		**P**	**10 47 54.4**	**-0.2**
	comp=Z,384nm,1.6s								
HHC	**Hu-ho-hao-te**	**23.40**	**287**		*e*P		**P**	**10 47 58.9**	**+0.5**
HHC					pP		pP	10 48 14.0	+2.9
HHC					sP		sP	10 48 18.5	+0.8
HHC					S		**S**	**10 52 03.8**	**-3.7**
HHC					pmax		pmax		
	comp=Z,31nm,0.7s								
HHC					pmax		pmax		
	comp=Z,340nm,4.3s								
HHC					LR		LR		
	comp=N,1μm,13.6s								
HHC					LR		LR		
	comp=E,1μm,13.6s								
HHC					LR		LR		
	comp=Z,1μm,12.2s								
WHN	**Wuhan**	**23.59**	**261**	⇓	*i*P		**P**	**10 47 59.6**	**-0.4**
WHN					*e*S		**S**	**10 52 06.5**	**-3.9**
WHN					pmax		pmax		
	comp=Z,47nm,1.0s								
WHN					LR		LR		
	comp=Z,520nm,15.0s								
YAK	**Yakutsk**	**25.48**	**347**		P		**P**	**10 48 16.1**	**-0.8**
	comp=Z,49nm,0.7s,baz=167,slow=1.2,SNR=22								
YAK	**Yakutsk**	**25.48**	**347**		*e*P		**P**	**10 48 16.0**	**-0.8**
YAK					*e**PP		**pP**	**10 48 28.2**	**-2.2**
YAK					*e*			10 48 52.1	
YAK					*e*			10 51 45.7	
YAK					*e*S		**S**	**10 52 38.4**	**-1.7**
YAK					*e**SS		**sS**	**10 53 01.3**	**-1.6**
YAK					pmax		pmax		
	comp=N,21nm,1.3s								
YAK					pmax		pmax		
	comp=E,8.0nm,0.9s								
YAK					pmax		pmax		
	comp=Z,65nm,0.9s								
YAK					pmax		pmax		
	comp=Z,14nm,0.7s								
YAK					pmax		pmax		
	comp=N,47nm,2.2s								
YAK					pmax		pmax		
	comp=E,90nm,3.0s								
YAK					smax		smax		
	comp=N,40nm,1.7s								
YAK					smax		smax		
	comp=E,61nm,2.7s								
YAK	**Yakutsk**	**25.48**	**347**		*e*P		**P**	**10 48 16.2**	**-0.8**
	comp=E,66nm,0.8s								
SEY	**Seymchan**	**26.14**	**11**		P		**P**	**10 48 24.0**	**+1.1**
	comp=E,22nm,1.1s,baz=192,slow=7.5,SNR=35								
SEY	**Seymchan**	**26.14**	**11**	⇓	*i*P		**P**	**10 48 24.6**	**+1.7**
XAN	**Xi'an**	**26.64**	**272**		P		**P**	**10 48 27.3**	**-0.5**
XAN					pP		pP	10 48 42.7	+1.4
XAN					S		**S**	**10 52 54.9**	**-4.2**
XAN					pmax		pmax		
	comp=Z,42nm,0.6s								
XAN					pmax		pmax		
	comp=Z,72nm,7.4s								
XAN					LR		LR		
	comp=E,73nm,14.4s								
XAN					LR		LR		
	comp=Z,100nm,9.6s								
BOD	**Bodaibo**	**27.06**	**327**		*e*P		**P**	**10 48 30.3**	**-1.0**
BOD					pmax		pmax		
	comp=Z,10.0nm,1.1s								
ULN	**Ulaanbaatar**	**27.11**	**303**	*d*	*i*P		**P**	**10 48 32.6**	**+0.5**
ULN					pmax		pmax		
	comp=Z,5.0nm,0.6s								
ULN	**Ulaanbaatar**	**27.11**	**303**		*e*P		**P**	**10 48 32.8**	**+0.7**
	comp=Z,7.1nm,0.6s								
ENH	**Enshi**	**27.52**	**264**		*e*P		**P**	**10 48 35.0**	**-0.8**
	comp=Z,78nm,0.9s								
SONA1	**Songino Array**	**27.54**	**303**		*e*P		**P**	**10 48 36.6**	**+0.7**
SONM	**Songino Array**	**27.54**	**303**		P		**P**	**10 48 36.4**	**+0.5**
	comp=Z,9.5nm,0.6s,baz=102,slow=8.4,SNR=22								
SONM					PcP		**PcP**	**10 51 52.3**	**-0.4**
	comp=Z,0.8nm,0.5s,baz=138,slow=1.6,SNR=3.3								
SONM					LR		LR	11 00 03.9	
	comp=Z,116nm,18.3s,baz=110,slow=37								
H11N2	**WAKE ISLAND Hy**	**28.37**	**122**		T		T	11 18 58.9	
	baz=315,slow=75,SNR=129								
H11N1	**WAKE ISLAND Hy**	**28.38**	**122**		T		T	11 19 06.8	
	baz=315,slow=75,SNR=614								
H11N3	**WAKE ISLAND Hy**	**28.39**	**122**		T		T	11 19 05.2	
	baz=315,slow=75,SNR=418								
H11S1	**WAKE ISLAND Hy**	**29.10**	**124**		T		T	11 19 59.1	
	baz=317,slow=76,SNR=661								
H11S3	**WAKE ISLAND Hy**	**29.10**	**124**		T		T	11 19 51.3	
	baz=317,slow=76,SNR=639								
H11S2	**WAKE ISLAND Hy**	**29.12**	**124**		T		T	11 19 56.9	
	baz=317,slow=76,SNR=584								
ZAK	**Zakamensk**	**29.98**	**307**		*e*P		**P**	**10 48 56.8**	**-0.7**
ZAK					pmax		pmax		
	comp=Z,9.0nm,0.9s								
TLY	**Talaya**	**30.01**	**310**		*e*P		**P**	**10 48 57.6**	**-0.1**
TLY					*e*			10 50 07.7	
TLY					*e*S		**S**	**10 53 51.2**	**-0.6**
TLY					pmax		pmax		
	comp=Z,10.0nm,1.0s								
TLY					MLR		MLR		
	comp=Z,166nm,21.0s								
TLY	**Talaya**	**30.01**	**310**		*e*P		**P**	**10 48 57.9**	**+0.2**
	comp=Z,9.0nm,1.0s								
LZH	**Lanzhou**	**30.09**	**279**		*e*P		**P**	**10 48 57.7**	**-1.0**
LZH					pP		pP	10 49 12.7	+0.4
LZH					sP		sP	10 49 19.9	+1.2
LZH					pmax		pmax		
	comp=Z,44nm,1.2s								
LZH					pmax		pmax		
	comp=Z,150nm,4.5s								
LZH					LR		LR		
	comp=N,340nm,15.4s								
LZH					LR		LR		
	comp=E,450nm,16.1s								
LZH					LR		LR		
	comp=Z,370nm,15.8s								
GYA	**Guiyang**	**31.46**	**259**	⇑	*i*P		**P**	**10 49 09.5**	**-1.3**
GYA					pP		pP	10 49 26.4	+2.0
GYA					sP		sP	10 49 32.0	+1.2
GYA					PP		**PnPn**	**10 50 17.2**	**+1.9**
GYA					PcP		**PcP**	**10 52 05.8**	**+2.8**
GYA					S		**S**	**10 54 15.6**	**+0.5**
GYA					sS		sS	10 54 39.0	+0.8
GYA					ScP		**ScP**	**10 55 42.2**	**+0.7**
GYA					SS		**SnSn**	**10 56 05.8**	**+2.1**
GYA	**Guiyang**	**31.46**	**259**		ScS		ScS	10 59 38.4	-1.1
GYA					pmax		pmax		
	comp=Z,40nm,0.9s								
GYA					pmax		pmax		
	comp=Z,120nm,4.9s								
GYA					LR		LR		
	comp=N,580nm,16.8s								
GYA					LR		LR		
	comp=E,520nm,17.2s								
GYA					LR		LR		
	comp=Z,530nm,17.0s								
MOY	**Mondy**	**31.63**	**309**		*e*P		**P**	**10 49 12.5**	**+0.5**
CD2	**Chengdu**	**31.81**	**269**		P		**P**	**10 49 12.6**	**-1.1**
CD2					pmax		pmax		
	comp=Z,30nm,0.8s								
GTA	**Gaotai**	**32.50**	**286**		*e*P		**P**	**10 49 19.4**	**-0.5**
GTA					pP		pP	10 49 31.5	-2.0
GTA					sP		sP	10 49 37.0	-2.9
GTA					PcP		**PcP**	**10 52 06.0**	**+0.4**
GTA					S		**S**	**10 54 30.3**	**-0.9**
GTA					sS		sS	10 54 49.8	-4.5
GTA					SS		**SnSn**	**10 56 26.5**	**-2.2**
GTA					pmax		pmax		
	comp=Z,5.0nm,0.8s								
GTA					pmax		pmax		
	comp=Z,80nm,6.2s								
GTA					LR		LR		
	comp=N,190nm,19.0s								
GTA					LR		LR		
	comp=E,220nm,18.5s								
GTA					LR		LR		
	comp=Z,160nm,20.9s								
BILL	**Bilibino**	**33.38**	**17**	*d*	*i*P		**P**	**10 49 25.7**	**-1.3**
BILL					*i*			10 49 38.8	
BILL					pmax		pmax		
	comp=Z,4.0nm,1.1s								
DAV	**Davao City (W)**	**33.75**	**209**		LR		LR	11 00 59.9	
	comp=Z,52nm,21.1s,baz=12,slow=32								
TIXI	**Tiksi**	**34.67**	**353**	⇑	*i*P		**P**	**10 49 37.5**	**-0.6**
TIXI					pmax		pmax		
	comp=Z,4.0nm,0.6s								
TIXI					MLR		MLR		
	comp=Z,66nm,16.0s								
TIXI	**Tiksi**	**34.67**	**353**		*e*P		**P**	**10 49 37.6**	**-0.5**
	comp=Z,4.5nm,0.6s								
KMI	**Kunming**	**35.19**	**261**		P		**P**	**10 49 43.0**	**-0.4**
KMI					pP		pP	10 49 57.5	+0.3
KMI					sP		sP	10 50 04.0	+0.5
KMI					PP		**PP**	**10 51 04.8**	**+0.8**
KMI					S		**S**	**10 55 09.9**	**-3.3**
KMI					sS		sS	10 55 32.0	-4.4
KMI					pmax		pmax		
	comp=Z,33nm,1.2s								
KMI					pmax		pmax		
	comp=Z,95nm,4.8s								
KMI					LR		LR		
	comp=N,60nm,5.5s								
KMI					LR		LR		
	comp=E,140nm,4.9s								
KMI					LR		LR		
	comp=Z,65nm,6.4s								
MYLDM	**Lahad Datu**	**38.59**	**219**	⇑	P		**P**	**10 50 14.9**	**+2.8**
MYLDM	**Lahad Datu**	**38.59**	**219**		*e*P		**P**	**10 50 11.1**	**-0.9**
	comp=Z,26nm,0.9s								
NONG	**Nongkai**	**38.84**	**251**		P		**P**	**10 50 14.5**	**+0.3**
	comp=Z,39nm,0.9s								
SDKM	**Sandakan**	**38.86**	**221**	⇓	P		**P**	**10 50 17.3**	**+2.9**
SKNT	**Sakolnakorn**	**38.90**	**248**		P		**P**	**10 50 15.1**	**+0.4**
	comp=Z,17nm,0.9s								
KKM	**Kota Kinabalu**	**39.04**	**223**	⇑	P		**P**	**10 50 19.0**	**+3.1**
SWI	**Sorong**	**39.52**	**196**		P		**P**	**10 50 20.9**	**+1.1**
	comp=Z,22nm,1.1s,comp=Z,1μm								
RKPI	**Ransiki, Papua**	**39.59**	**192**		P		**P**	**10 50 20.3**	**-0.1**
	comp=Z,229nm,0.8s,comp=Z,7μm								
CRAI	**Chiangrai**	**39.66**	**256**		P		**P**	**10 50 21.4**	**+0.3**
	comp=Z,98nm,0.7s								
TSM	**Tawau**	**39.66**	**219**	⇓	P		**P**	**10 50 22.8**	**+1.8**
GENI	**Genyem**	**40.08**	**182**		P		**P**	**10 50 25.6**	**+1.1**
	comp=Z,45nm,1.3s								
TNA	**Tin City**	**40.23**	**30**		*e*P		**P**	**10 50 27.2**	**+2.0**
	comp=Z,13nm,1.0s								
LBMI	**Labuha**	**40.28**	**202**		P		**P**	**10 50 27.3**	**+1.2**
	comp=Z,33nm,1.7s								
LOEI	**Loei**	**40.59**	**252**		P		**P**	**10 50 25.9**	**-2.9**
	comp=Z,10nm,0.9s								
WMQ	**Urumqi**	**40.67**	**296**	⇓	*i*P		**P**	**10 50 30.2**	**+1.0**
WMQ					pP		sP	10 50 48.0	-1.4
WMQ					sP		pP	10 50 51.5	+8.3
WMQ					S		**S**	**10 56 38.1**	**+2.7**
WMQ					sS		sS	10 56 53.4	-5.5
WMQ					SS		**SS**	**10 59 37.0**	**-0.2**
WMQ					ScS		**ScS**	**11 00 26.4**	**-3.2**
WMQ					pmax		pmax		
	comp=Z,18nm,1.0s								
WMQ					pmax		pmax		
	comp=Z,49nm,4.2s								
WMQ					LR		LR		
	comp=N,49nm,21.6s								
WMQ					LR		LR		
	comp=E,46nm,25.2s								
WMQ					LR		LR		
	comp=Z,57nm,29.0s								
CHAI	**Chaiyaphum**	**41.05**	**249**		P		**P**	**10 50 33.2**	**+0.6**
	comp=Z,4.3nm,1.0s								
MRSI	**Marisa**	**41.21**	**211**		P		**P**	**10 50 37.0**	**+3.3**
	comp=Z,28nm,1.1s,comp=Z,772nm								
FAKI	**Fak Fak**	**41.31**	**194**		P		**P**	**10 50 34.3**	**-0.3**
	comp=Z,31nm,0.9s								
FAKI	**Fak Fak**	**41.31**	**194**		*e*P		**P**	**10 50 34.0**	**-0.6**
	comp=Z,23nm,0.8s								
CMMT	**Chiang Mai**	**41.58**	**255**		P		**P**	**10 50 37.7**	**+0.9**
	comp=Z,9.4nm,0.8s								
CHTO	**Chiang Mai**	**41.58**	**255**		P		**P**	**10 50 37.8**	**+0.9**
	comp=Z,42nm,0.8s								
CHTO	**Chiang Mai**	**41.58**	**255**		*e*P		**P**	**10 50 36.5**	**-0.3**
CHTO					pmax		pmax		
	comp=Z,6.0nm,0.8s								
CHTO	**Chiang Mai**	**41.58**	**255**		*e*P		**P**	**10 50 36.5**	**-0.3**
	comp=Z,6.5nm,0.8s								
ZAA0	**Zalesovo Array**	**41.58**	**312**		*e*P		**P**	**10 50 36.5**	**+0.1**
ZALV	**Zalesovo Beam**	**41.58**	**312**		P		**P**	**10 50 36.2**	**-0.3**
	comp=Z,12nm,0.9s,baz=90,slow=6.5,SNR=32								
ZALV					PcP		**PcP**	**10 52 32.2**	**-0.5**
	comp=Z,1.5nm,0.5s,baz=111,slow=3.1,SNR=3.0								
ZALV					LR		LR	11 08 33.2	
	comp=Z,89nm,19.4s,baz

MKAR Makanchi Array 43.89 302 *i* P **P 10 50 55.2 -0.1**
MKAR pmax pmax
comp=Z,11nm,0.7s
MAKZ Makanchi 44.10 302 *e*P **P 10 50 57.5 +0.5**
MAKZ pmax pmax
comp=Z,10.0nm,0.7s
MAKZ Makanchi 44.10 302 *e*P **P 10 50 57.5 +0.5**
comp=Z,9.9nm,0.7s
SBUM Sibu 44.21 225 *e*P **P 10 50 57.3 -0.8**
comp=Z,5.3nm,0.7s
TT01 Tatalina 44.82 35 *e*P **P 10 51 03.9 +1.5**
TTA Tatalina 44.82 35 *e*P **P 10 51 03.6 +1.0**
TTA pmax pmax
comp=Z,6.0nm,1.4s
TTA Tatalina 44.82 35 *e*P **P 10 51 03.6 +1.0**
comp=Z,6.2nm,1.4s
TTSI Tana Toraja 45.27 211 P **P 10 51 08.1 +1.6**
comp=Z,7.9nm,1.0s,comp=Z,2µm
KURK Kurchatov 45.64 308 P **P 10 51 08.7 -0.4**
KURK pmax pmax
comp=Z,90nm,0.7s
KURK Kurchatov 45.64 308 *e*P **P 10 51 09.3 +0.2**
comp=Z,60nm,0.8s
KURBB Kurchatov Arra 45.71 308 P **P 10 51 09.7 0.0**
comp=Z,35nm,0.6s,baz=84,slow=8.3,SNR=103
KSM Kuching 46.09 226 *e*P **P 10 51 13.6 +0.5**
comp=Z,10nm,0.8s
SPSI Sidrap Palu 46.12 211 P **P 10 51 13.5 +0.3**
comp=Z,14nm,1.0s
OHAK Old Harbor 46.20 43 *e*P **P 10 51 13.8 +0.4**
comp=Z,14nm,0.8s
KDAK Kodiak Island 46.54 42 *i* P **P 10 51 16.3 +0.3**
KDAK Kodiak Island 46.54 42 *e*P **P 10 51 16.8 +0.7**
comp=Z,22nm,0.8s
PPLA Purkeypile 46.57 35 *e*P **P 10 51 18.7 +2.3**
comp=Z,32nm,1.6s
STKI Sintang 46.59 224 P **P 10 51 18.8 +1.8**
comp=Z,36nm,0.5s
PDGK Podgornoye 46.60 297 P **P 10 51 16.4 -0.3**
PDGK pmax pmax
comp=Z,25nm,0.8s
CAST Castle Rocks 46.62 35 *e*P **P 10 51 18.8 +2.1**
comp=Z,26nm,1.8s
SPU Mount Spurr 46.65 38 *e*P **P 10 51 18.7 +1.7**
KAPI Kappang 47.08 210 *e*P **P 10 51 21.0 +0.3**
comp=Z,33nm,1.0s
BPAW Bear Paw Mtn. 47.12 34 *e*P **P 10 51 22.3 +1.7**
comp=Z,3.5nm,0.9s
PMG Port Moresby 47.12 172 LR LR 11 09 59.6
comp=Z,37nm,21.6s,baz=56,slow=34
KTH Kantishna Hill 47.15 34 *e*P **P 10 51 22.4 +1.5**
comp=Z,8.1nm,0.9s
GUN Gumba 47.22 275 *e*P **P 10 51 22.5 +0.2**
comp=Z,72nm,0.4s
MLY Manley 47.24 32 *e*P **P 10 51 23.3 +1.7**
comp=Z,9.2nm,1.2s
TRF Thorofare Moun 47.43 34 *e*P **P 10 51 25.3 +2.1**
comp=Z,4.8nm,0.8s
COLD Coldfoot 47.53 29 *e*P **P 10 51 25.4 +1.7**
comp=Z,12nm,1.7s
KKN Kakani 47.75 275 *e*P **P 10 51 26.4 +0.2**
comp=Z,43nm,0.6s
PKIN Phulchoki 47.76 275 *e*P **P 10 51 26.0 -0.3**
comp=Z,15nm,0.5s
RC01 Rabbit Creek A 47.77 38 *e*P **P 10 51 26.6 +0.9**
comp=Z,9.3nm,0.9s
BBKI Banjar Baru 47.87 217 P **P 10 51 26.8 -0.1**
comp=Z,50nm,1.1s
DMN Daman 47.97 275 *e*P **P 10 51 27.9 -0.1**
comp=Z,19nm,0.5s
MCK McKinley 48.03 34 *e*P **P 10 51 28.8 +1.1**
MCK pmax pmax
comp=Z,8.0nm,1.1s
MCK McKinley 48.03 34 *e*P **P 10 51 28.8 +1.1**
comp=Z,7.8nm,1.1s
PMR Palmer 48.04 37 *e*P **P 10 51 28.1 +0.5**
PMR pmax pmax
comp=Z,8.0nm,0.7s
PMR Palmer 48.04 37 *e*P **P 10 51 28.1 +0.5**
comp=Z,7.8nm,0.7s
RND Reindeer 48.08 35 *e*P **P 10 51 28.6 +0.5**
RND pmax pmax
comp=Z,6.0nm,0.8s
RND Reindeer 48.08 35 *e*P **P 10 51 28.6 +0.5**
comp=Z,6.1nm,0.8s
GKN Gorkha 48.16 276 *e*P **P 10 51 29.3 0.0**
comp=Z,130nm,0.9s
MDM Murphy Dome 48.31 32 *e*P **P 10 51 31.2 +1.5**
comp=Z,11nm,0.9s
WRH Wood River Hil 48.38 33 *e*P **P 10 51 31.5 +1.2**
comp=Z,3.7nm,0.6s
SML Sawmill 48.40 37 *e*P **P 10 51 31.8 +1.2**
SML pmax pmax
comp=Z,11nm,0.8s
SML Sawmill 48.40 37 *e*P **P 10 51 31.8 +1.2**
comp=Z,11nm,0.8s
COLA College 48.47 33⇑ *e*P **P 10 51 31.7 +0.8**
COLA pmax pmax
comp=Z,5.0nm,1.2s
COLA College 48.47 33 *e*P **P 10 51 32.2 +1.2**
comp=Z,3.9nm,0.9s
CCB Clear Creek Bu 48.50 33 *e*P **P 10 51 32.0 +0.9**
comp=Z,2.3nm,0.7s
PBKI Pangkalan Bun 48.81 221 P **P 10 51 35.7 +1.5**
comp=Z,146nm,0.6s
SCM Sheep Creek Mo 48.88 37 *e*P **P 10 51 35.7 +1.5**
SCM pmax pmax
comp=Z,10.0nm,0.8s
SCM Sheep Creek Mo 48.88 37 *e*P **P 10 51 35.7 +1.5**
comp=Z,10nm,0.8s
HDA Harding Lake 48.88 33 *e*P **P 10 51 34.9 +0.7**
comp=Z,8.7nm,1.0s
IL1 Eielson Array 48.89 33 *e*P **P 10 51 34.4 +0.3**
ILAR Eielson Array 48.89 33 P **P 10 51 34.6 +0.4**
comp=Z,5.5nm,0.8s,baz=268,slow=6.1,SNR=68
ILAR pP **pP 10 51 49.0 +0.5**
comp=Z,6.2nm,0.7s,baz=267,slow=6.4,SNR=15
ILB Eielson Array 48.89 33 *e*P **P 10 51 34.9 +0.7**
KOLN Koldanda 49.09 276 *e*P **P 10 51 36.5 0.0**
comp=Z,40nm,0.8s
KULM Kulim 49.25 239 *e*P **P 10 51 37.8 +0.2**
comp=Z,36nm,1.8s
PYUN Piuthan 49.42 277 *e*P **P 10 51 39.2 +0.2**
comp=Z,214nm,1.0s
TKM2 Tokmak 2 49.44 298 P **P 10 51 39.6 +0.6**
TKM2 pmax pmax
comp=Z,17nm,0.6s
TKM2 Tokmak 2 49.44 298 *e*P **P 10 51 39.8 +0.8**
comp=Z,26nm,0.7s
FYU Fort Yukon 49.49 30 *e*P **P 10 51 41.2 +2.5**
comp=Z,16nm,1.0s
KLU Klutina 49.58 37 *e*P **P 10 51 41.0 +1.4**
comp=Z,8.1nm,0.9s
IPM Ipoh 49.59 238 *e*P **P 10 51 39.6 -0.5**
comp=Z,14nm,0.5s
EYAK Cordova Ski Ar 49.77 38 *e*P **P 10 51 42.7 +1.8**
comp=Z,9.4nm,1.0s
FRU Bishkek 50.16 298 *e*P **P 10 51 44.0 -0.2**
FRU *e* 10 52 02.0
OTUK Ortayu 50.16 306 P **P 10 51 44.1 -0.1**
OTUK pmax pmax
comp=Z,19nm,0.9s
DOT Dot Lake 50.20 34 *e*P **P 10 51 45.1 +0.8**
comp=Z,10nm,0.8s
BVA0 Borovoye Array 50.24 312 *i* P **P 10 51 44.4 -0.3**
BVA0 pmax pmax
comp=Z,13nm,1.4s
BVAR Borovoye Array 50.24 312 P **P 10 51 44.8 +0.2**
comp=Z,6.1nm,0.8s,baz=69,slow=8.1,SNR=23
BVAR PcP **PcP 10 53 03.2 +0.2**
comp=Z,3.2nm,0.7s,baz=94,slow=2.0,SNR=4.4
KSH Kashi 50.27 294 P **P 10 51 49.5 +4.3**
KSH *e*pP sP 10 52 05.4 -0.3
KSH *es*P pP 10 52 12.6 +13
KSH PcS **PcS 10 57 02.4 +1.6**
KSH S **S 10 58 57.8 +3.9**
KSH pmax pmax
comp=Z,11nm,1.1s
KSH pmax pmax
comp=Z,120nm,4.6s
KSH LR LR
comp=N,100nm,4.7s
KSH LR LR
comp=E,86nm,5.7s
KSH LR LR
comp=Z,130nm,5.4s
BMRM Bremner River 50.27 38 *e*P **P 10 51 46.1 +1.2**
comp=Z,11nm,1.0s
BRVK Borovoye 50.30 312 *ce*P **P 10 51 44.9 -0.2**
BRVK pmax pmax
comp=Z,13nm,1.0s
BRVK Borovoye 50.30 312 *e*P **P 10 51 45.2 +0.1**
comp=Z,12nm,1.0s
AAK Ala-Archa 50.30 298 P **P 10 51 45.7 +0.2**
comp=Z,8.0nm,0.5s,baz=99,slow=6.0,SNR=17
AAK Ala-Archa 50.30 298 *c i*P **P 10 51 45.5 0.0**
AAK pmax pmax
comp=Z,14nm,0.7s
AAK Ala-Archa 50.30 298 *e*P **P 10 51 45.4 -0.1**
comp=Z,19nm,1.4s
RAGM Ragged Mountai 50.32 38 *e*P **P 10 51 46.7 +1.5**
comp=Z,41nm,1.9s
MENT Mentasta 50.44 35 *e*P **P 10 51 47.8 +1.8**
comp=Z,6.5nm,0.8s
EKS2 Erkin-Say 50.80 298 *e*P **P 10 51 49.3 +0.1**
EKS2 pmax pmax
comp=Z,9.0nm,0.6s
EKS2 Erkin-Say 50.80 298 *e*P **P 10 51 49.3 +0.1**
comp=Z,8.7nm,0.6s
ZRNK Zerenda 51.07 312 P **P 10 51 50.6 -0.3**
ZRNK pmax pmax
comp=Z,17nm,1.2s
ZRNK Zerenda 51.07 312 *e*P **P 10 51 51.0 +0.1**
comp=Z,12nm,0.9s
MTN Manton Dam 51.20 193 *e*P **P 10 51 51.9 -0.2**
comp=Z,50nm,1.5s
BALM Baldy 51.35 37 *e*P **P 10 51 54.2 +1.2**
BALM pmax pmax
comp=Z,28nm,1.6s
BALM Baldy 51.35 37 *e*P **P 10 51 54.2 +1.2**
comp=Z,28nm,1.6s
COEN Coen 51.38 178 *e*P **P 10 51 54.0 +0.5**
comp=Z,25nm,1.2s
MNAS Manas 51.74 298 P **P 10 51 56.5 +0.2**
MNAS pmax pmax
comp=Z,18nm,0.6s
SFK Sufi-Kurgan 51.88 295 P **P 10 51 57.6 +0.2**
SFK pmax pmax
comp=Z,28nm,1.2s
DAWY Dawson 52.20 33 *e*P **P 10 52 00.2 +1.0**
comp=Z,9.7nm,1.6s
KK31 Karatay Array 52.92 300 *i* P **P 10 52 04.6 -0.2**
KK31 pmax pmax
comp=Z,10.0nm,0.9s
KKAR Karatay Array 52.92 300 *e*P **P 10 52 04.7 -0.1**
KKAR Karatay Array 52.92 300 *e*P **P 10 52 04.7 -0.1**
INK Inuvik 53.76 27 *e*P **P 10 52 11.6 +1.1**
INK pmax pmax
comp=Z,12nm,1.1s
INK Inuvik 53.76 27 *e*P **P 10 52 11.6 +1.1**
comp=Z,12nm,1.1s
UGM Wanagama 53.83 219 *e*P **P 10 52 11.5 -0.3**
comp=Z,676nm,2.0s
OPA Opana 53.99 89 *e*P **P 10 52 13.7 +0.8**
OPA pmax pmax
comp=Z,266nm,1.5s
OPA Opana 53.99 89 *e*P **P 10 52 13.7 +0.8**
comp=Z,266nm,1.5s
GSI Gunungsitoli 54.24 239 *e*P **P 10 52 15.0 +0.2**
comp=Z,33nm,0.7s
SVE Sverdlovsk 54.76 318⇓ *e*P **P 10 52 18.0 0.0**
SVE pmax pmax
comp=Z,41nm,1.0s
DZET Dzherino 55.69 295 P **P 10 52 25.1 0.0**
DZET pmax pmax
comp=Z,29nm,0.7s
ARU Arti 55.97 318 P **P 10 52 26.7 0.0**
comp=Z,16nm,0.6s,baz=70,slow=4.5,SNR=32
ARU Arti 55.97 318 *c i*P **P 10 52 26.6 -0.1**
ARU *PP **pP 10 52 43.2 +2.0**
ARU 10 53 23.8
ARU 10 54 28.8
ARU S **S 11 00 12.1 +1.5**
ARU SS **SS 11 03 53.9 -2.7**
ARU pmax pmax
comp=Z,32nm,1.0s
ARU Arti 55.97 318 *e*P **P 10 52 27.1 +0.4**
comp=Z,23nm,0.7s
KBL Kabul 57.31 291 *e*P **P 10 52 37.8 +0.9**
KBL pmax pmax
comp=Z,26nm,1.3s
KBL Kabul 57.31 291 *e*P **P 10 52 37.8 +0.9**
comp=Z,26nm,1.3s
FITZ Fitzroy Crossi 57.47 198 *e*P **P 10 52 38.3 +0.6**
comp=Z,41nm,1.4s
CTAO Charters Tower 57.62 175 *e*P **P 10 52 38.0 -0.7**
CTAO pmax pmax
comp=Z,185nm,1.6s
CTAO Charters Tower 57.62 175 *e*P **P 10 52 38.0 -0.7**
comp=Z,185nm,1.6s
AB31 Akbulak array 57.63 310 P **P 10 52 38.0 -0.6**
AB31 pmax pmax
comp=Z,10.0nm,0.6s
ABKAR Akbulak array 57.63 310 *e*P **P 10 52 38.3 -0.3**
WRAB Tennant Creek 57.70 188 *c i*P **P 10 52 38.5 -0.8**
WRAB pmax pmax
comp=Z,25nm,0.8s
WRAB Tennant Creek 57.70 188 *e*P **P 10 52 38.7 -0.6**
comp=Z,25nm,0.8s
WB2 Warramunga Arr 57.71 188 *e*P **P 10 52 38.9 -0.5**
comp=Z,25nm,0.8s
WRA Warramunga Arr 57.71 188 P **P 10 52 38.7 -0.7**
comp=Z,20nm,0.5s,baz=5.9,slow=7.0,SNR=358
WRA pP **pP 10 52 53.6 -0.4**
comp=Z,12nm,0.6s,baz=3.6,slow=7.4,SNR=13
WC3 Warramunga Arr 57.72 188 *e*P **P 10 52 39.1 -0.4**
comp=Z,26nm,0.8s
DLBC Dease Lake 58.04 38 *e*P **P 10 52 44.1 +2.6**
comp=Z,10nm,1.3s
AKTO Akubinsk 58.35 312 P **P 10 52 43.3 -0.3**
comp=Z,9.2nm,0.7s,baz=72,slow=5.1,SNR=22
HYB Hyderabad 58.35 268 *i* P **P 10 52 44.0 -0.1**
AS01 Alice Springs 61.43 188 *e*P **P 10 53 04.9 -0.1**
AS31 Alice Springs 61.44 188 *e*P **P 10 53 04.7 -0.3**
comp=Z,4.3nm,0.9s
ASAR Alice Springs 61.44 188 P **P 10 53 04.8 -0.2**
comp=Z,11nm,0.7s,baz=13,slow=6.0,SNR=147
ASAR pP **pP 10 53 19.4 -0.4**
comp=Z,7.1nm,0.8s,baz=14,slow=9.3,SNR=15
RES Resolute Bay 61.95 15 *e*P **P 10 53 08.0 +0.2**
RES pmax pmax
comp=Z,8.0nm,1.0s
RES Resolute Bay 61.95 15 *e*P **P 10 53 08.0 +0.2**
comp=Z,8.3nm,1.0s
MBWA Marble Bar 62.03 203 *e*P **P 10 53 08.9 -0.1**
comp=Z,32nm,0.6s
YKW3 Yellowknife Ar 63.15 30 *e*P **P 10 53 16.7 +0.7**
comp=Z,21nm,1.7s
YKA Yellowknife Ar 63.19 30 P **P 10 53 16.6 +0.3**
comp=Z,2.6nm,0.7s,baz=302,slow=6.7,SNR=60
YKA pP **pP 10 53 30.9 -0.2**
comp=Z,2.0nm,0.6s,baz=302,slow=6.3,SNR=18
YKB5 Yellowknife Ar 63.19 30 *e*P **P 10 53 16.0 -0.3**
KLMR Klimovskoe 63.29 328 *e*P **P 10 53 13.8 -3.1**
KLMR *e**SP **sP 10 53 38.6 +0.8**
KLMR pmax pmax
comp=Z,11nm,0.6s
EIDS Eidsvold 63.34 170 *e*P **P 10 53 18.2 +0.5**
comp=Z,4.9nm,0.6s
ARCES ARCESS Array B 63.44 339 P **P 10 53 18.1 +0.2**
comp=Z,5.5nm,0.8s,baz=47,slow=8.9,SNR=6.8
ARCES LR LR 11 24 59.4
comp=Z,32nm,18.2s,baz=47,slow=40
GEYT Alibeck 63.64 299 P **P 10 53 19.9 +0.2**
comp=Z,8.2nm,0.8s,baz=35,slow=3.6,SNR=14
GEYT LR LR 11 22 19.4
comp=Z,59nm,20.0s,baz=320,slow=37
DAG Danmarks Havn 65.15 355 *i* P **P 10 53 29.0 +0.1**
comp=Z,9.1nm,0.9s
DAG Danmarks Havn 65.15 355 *i* P **P 10 53 29.0 +0.1**
DAG pmax pmax
comp=Z,8.0nm,0.9s
VRH Novokhopyorsk 67.19 318 *e*P **P 10 53 41.5 -0.9**
VRH pmax pmax
comp=Z,60nm,1.6s
OBN Obninsk 67.66 323 *i* P **P 10 53 45.4 +0.1**
OBN pmax pmax
comp=Z,18nm,1.0s
OBN MLR MLR
comp=Z,40nm,19.0s
PUL Pulkovo 67.71 329 *ce*P **P 10 53 45.3 -0.2**
PUL pmax pmax
comp=Z,31nm,0.7s
LPSR Galich'ya Gora 67.89 320 *e*P **P 10 53 46.5 -0.3**
LPSR pmax pmax
comp=Z,20nm,0.7s
FIA1 FINESS Array S 68.31 332 *e*P **P 10 53 49.1 -0.1**
comp=Z,16nm,0.8s
FINES FINESS Array B 68.31 332 P **P 10 53 49.1 -0.1**
comp=Z,9.7nm,0.6s,baz=42,slow=8.5,SNR=52
FINES pP **pP 10 54 03.3 -0.9**
comp=Z,4.1nm,0.7s,baz=49,slow=8.6,SNR=4.9
FINES LR LR 11 26 09.8
comp=Z,70nm,18.7s,baz=14,slow=38
VSR Storozhevoye 68.54 319 *e*P **P 10 53 50.3 -0.6**
VSR pmax pmax
comp=Z,20nm,0.6s
STKA Stephens Creek 69.19 180 P **P 10 53 54.6 -0.4**
comp=Z,2.8nm,0.5s,baz=360,slow=6.6,SNR=19
STKA pP **pP 10 54 10.2 +0.3**
comp=Z,9.1nm,0.8s,baz=342,slow=8.1,SNR=11
STKA Stephens Creek 69.19 180 *e*P **P 10 53 55.0 0.0**
STKA *PP **pP 10 54 10.2 +0.3**
STKA pmax pmax
comp=Z,3.0nm,0.9s
STKA Stephens Creek 69.19 180 *e*P **P 10 53 55.0 0.0**
comp=Z,2.5nm,0.9s
STKA pP **pP 10 54 10.2 +0.3**
NEW Newport 69.58 44 *e*P **P 10 53 58.8 +1.3**
NEW pmax pmax
comp=Z,12nm,1.4s
NEW Newport 69.58 44 *e*P **P 10 53 58.8 +1.3**
comp=Z,12nm,1.4s
GOF Gofitskoye 69.77 312⇑ *e*P **P 10 53 58.2 -0.4**
YBH Yreka Blue Hor 69.85 52 *e*P **P 10 54 01.5 +2.2**
YBH pmax pmax
comp=Z,9.0nm,1.1s
YBH Yreka Blue Hor 69.85 52 *e*P **P 10 54 01.5 +2.2**
comp=Z,8.8nm,1.1s
VSU Vasula 69.97 329⇑ *e*P **P 10 53 59.4 -0.2**
VSU pmax pmax
comp=Z,49nm,1.1s
SUMG Summit 70.05 0 *i* P **P 10 54 01.0 +0.7**
comp=Z,10nm,1.0s
SUMG Summit 70.05 0 *i* P **P 10 54 01.0 +0.7**
SUMG pmax pmax
comp=Z,10.0nm,1.0s
SUMG Summit 70.05 0 *e*P **P 10 54 00.8 +0.5**
comp=Z,8.9nm,0.9s
NCK Nalchik 70.29 310⇑ *e*P **P 10 54 01.4 -0.5**
NCK pmax pmax
comp=Z,13nm,0.7s
BBOO Buckleboo 70.31 185 *e*P **P 10 54 01.9 0.0**
comp=Z,28nm,1.1s
K05A Summer Lake 70.44 51 *e*P **P 10 54 05.2 +2.2**
comp=Z,28nm,1.2s
ZEI Tsey 70.49 309 *e*P **P 10 54 00.9 -2.5**
ZEI pmax pmax
comp=Z,16nm,0.8s
KVAR Kislovodsk Arr 70.58 311 P **P 10 54 04.3 +0.5**
comp=Z,15nm,0.9s,baz=27,slow=2.3,SNR=13
KVAR LR LR 11 30 04.3
comp=Z,44nm,18.6s,baz=140,slow=40
KBZ Khabaz 70.58 311 P **P 10 54 03.7 +0.1**
comp=Z,12nm,0.8s,baz=70,slow=3.2,SNR=18
KIV Kislovodsk 70.59 311 *i* P **P 10 54 04.2 +0.5**
SNR=7.3
KIV Kislovodsk 70.59 311 *e*P **P 10 54 03.9 +0.2**
KIV pmax pmax
comp=Z,35nm,1.0s
KIV Kislovodsk 70.59 311 *e*P **P 10 54 03.9 +0.2**
comp=Z,36nm,1.0s
WALA Waterton Lakes 70.88 42 *e*P **P 10 54 06.7 +1.2**
comp=Z,6.8nm,0.8s
NEY Neytrino 70.96 310⇓ *e*P **P 10 54 06.5 +0.4**
NEY pmax pmax
comp=Z,2.0nm,0.8s
BANOM Banah 71.13 288 *i* P **P 10 54 07.4 +0.2**
SNR=8.7
BANOM Banah 71.13 288 P **P 10 54 07.8 +0.5**
SNR=8.7
BANOM Banah 71.13 288 P **P 10 54 07.8 +0.5**
SNR=8.7
MOD Modoc Plateau 71.26 51 *e*P **P 10 54 08.8 +0.8**
comp=Z,4.5nm,0.8s
BMO Blue Mountains 71.40 47 *e*P **P 10 54 10.2 +1.5**
BMO pmax pmax
comp=Z,12nm,1.4s
BMO Blue Mountains 71.40 47 *e*P **P 10 54 10.2 +1.5**
comp=Z,12nm,1.4s
GNI Garni 71.43 307⇓ *e*P **P 10 54 10.0 +1.0**
GNI pmax pmax
comp=Z,64nm,1.6s
GNI MLR MLR
comp=Z,150nm,21.0s
JTMT Jette 71.44 44 *e*P **P 10 54 10.5 +1.6**
YBMT Yellow Bay 71.52 43 *e*P **P 10 54 11.0 +1.6**
SWMT Swartz Lake 71.74 44 *e*P **P 10 54 12.0 +1.4**
UOSS Minazif 71.74 288 *e*P **P 10 54 11.0 +0.1**
comp=Z,4.1nm,0.3s
HATD Hatta, Dubai 71.86 288 *i* P **P 10 54 12.1 +0.5**
SNR=6.1
HATD Hatta, Dubai 71.86 288 P **P 10 54 12.1 +0.5**
SNR=6.1
HATD Hatta, Dubai 71.86 288 P **P 10 54 12.1 +0.5**
SNR=6.1
ASHO Ashiyiah 71.99 288 *i* P **P 10 54 12.4 -0.1**
SNR=6.0
ASHO Ashiyiah 71.99 288 P **P 10 54 12.8 +0.3**
SNR=6.0
ASHO Ashiyiah 71.99 288 P **P 10 54 12.8 +0.3**
SNR=6.0
NAZ Nazwa, Dubai 72.12 288 P **P 10 54 14.3 +1.1**
MSO Missoula 72.17 44 *e*P **P 10 54 14.3 +1.0**
comp=Z,12nm,1.6s
CHMT Chamberlain Mo 72.50 44 *e*P **P 10 54 16.2 +0.8**
MFID Camas Ranch 73.10 48 *e*P **P 10 54 20.0 +1.1**
comp=Z,14nm,1.4s
ANN Anapa 73.18 314 *e*P P 10 54 26.5 +7.4
ANN pmax pmax
comp=Z,29nm,1.0s
FCC Fort Churchill 73.37 27 *e*P **P 10 54 20.3 +0.3**
FCC pmax pmax
comp=Z,16nm,1.3s
FCC Fort Churchill 73.37 27 *e*P **P 10 54 20.2 +0.3**
comp=Z,16nm,1.3s
CMB Columbia Colle 73.39 55 *e*P **P 10 54 22.1 +1.5**
CMB pmax pmax
comp=Z,15nm,1.5s
CMB Columbia Colle 73.39 55 *e*P **P 10 54 22.1 +1.5**
comp=Z,15nm,1.5s
NC405 NORSAR Array S 73.44 337 *e*P **P 10 54 20.7 +0.3**
NC303 NORSAR Array S 73.46 337 *e*P **P 10 54 20.9 +0.4**
HFS Hagfors 73.56 336 P **P 10 54 21.2 +0.1**
comp=Z,5.5nm,0.4s,baz=62,slow=4.2,SNR=39
HFS pP **pP 10 54 36.2 +0.1**
comp=Z,2.3nm,0.5s,baz=90,slow=4.4,SNR=2.8
HFS LR LR 11 29 31.2
comp=Z,111nm,18.6s,baz=18,slow=38
LRM Limekiln Ridge 73.60 44 *e*P **P 10 54 23.4 +1.4**
NC204 NORSAR Array S 73.60 338 *e*P **P 10 54 21.4 0.0**
NB201 NORSAR Array S 73.61 337 *e*P **P 10 54 21.7 +0.2**
NB2 NORSAR Subarra 73.65 337 P **P 10 54 21.4 -0.3**
comp=Z,23nm,1.1s,baz=38,slow=6.2
NB2 NORSAR Subarra 73.65 337 P **P 10 54 21.4 -0.3**
baz=38,slow=6.2
NOA NORSAR Array B 73.65 337 P **P 10 54 21.6 0.0**
comp=Z,11nm,0.9s,baz=38,slow=5.8,SNR=32
NOA pP **pP 10 54 36.2 -0.5**
comp=Z,3.0nm,0.8s,baz=38,slow=5.9,SNR=3.0
NOA LR LR 11 29 13.9
comp=Z,54nm,21.6s,baz=40,slow=38
EGMT Eagleton 73.70 41 *e*P **P 10 54 23.3 +0.9**
comp=Z,10.0nm,0.9s
NBO02 NORSAR Array S 73.75 337 *e*P **P 10 54 22.4 +0.2**
NC602 NORSAR Array S 73.78 337 *e*P **P 10 54 22.3 -0.1**
NBO00 NORSAR Array S 73.79 337 *e*P **P 10 54 22.9 +0.4**
DLMT Dillon 73.80 45 *e*P **P 10 54 24.1 +1.1**
comp=Z,26nm,1.5s
HLID Hailey 73.84 47 *e*P **P 10 54 24.7 +1.4**
comp=Z,8.9nm,1.4s
AKASG Malin Array Be 73.87 322 P **P 10 54 22.8 -0.3**
comp=Z,12nm,0.6s,baz=46,slow=6.0,SNR=54
AKASG pP **PcP 10 54 38.5 +0.1**
comp=Z,2.3nm,0.5s,baz=45,slow=5.9,SNR=3.0
AKASG LR LR 11 29 45.6
AKASG Malin Array Be 73.87 322 *i* P **P 10 54 22.7 -0.4**
AKASG pmax pmax
comp=Z,14nm,0.6s

AKBB Malin Array Si 73.87 322 *eP* **P 10 54 23.0 -0.1**
AKBB pmax pmax
comp=Z,19nm,0.6s
AKBB Malin Array Si 73.87 322 *eP* **P 10 54 22.9 -0.1**
comp=Z,19nm,0.6s
KIEV Kiev 73.88 322 *c iP* **P 10 54 22.7 -0.4**
KIEV pmax pmax
comp=Z,10.0nm,0.5s
KIEV Kiev 73.88 322 *eP* **P 10 54 22.8 -0.4**
comp=Z,16nm,0.6s
NAO01 NORSAR Array S 73.90 337 *eP* **P 10 54 23.9 +0.7**
AK11 Malin Array Si 73.91 322 *eP* **P 10 54 23.1 -0.3**
MCMT McKenzie Canyo 73.98 45 *eP* **P 10 54 25.0 +0.8**
BOZ Bozeman (W) 74.16 44 *eP* **P 10 54 26.4 +1.3**
BOZ pmax pmax
comp=Z,22nm,1.5s
BOZ Bozeman (W) 74.16 44 *eP* **P 10 54 26.4 +1.3**
comp=Z,22nm,1.5s
SUW Suwalki 74.42 327 *eP* **P 10 54 26.4 +0.2**
SUW Suwalki 74.42 327 *eP* **P 10 54 26.4 +0.2**
NV01 Mina Array Sit 74.50 53 *eP* **P 10 54 28.5 +1.2**
NVAR Mina Array Bea 74.50 53 *P* **P 10 54 28.6 +1.2**
comp=Z,3.7nm,0.8s,baz=288,slow=6.5,SNR=23
NVAR pP **pP 10 54 43.3 +0.9**
comp=Z,2.8nm,0.7s,baz=295,slow=5.7,SNR=9.3
NVAR LR LR 11 18 38.8
comp=Z,28nm,21.8s,baz=308,slow=29
NV11 Mina Array Sit 74.59 53 *eP* **P 10 54 29.8 +2.1**
comp=Z,13nm,1.9s
YMR Madison River 75.14 45 *eP* **P 10 54 32.8 +2.0**
comp=Z,29nm,1.7s
KONO Kongsberg 75.24 337 *eP* **P 10 54 31.2 +0.3**
KONO pmax pmax
comp=Z,31nm,1.4s
KONO Kongsberg 75.24 337 *eP* **P 10 54 31.2 +0.3**
comp=Z,31nm,1.4s
LKWY Lake 75.52 45 *eP* **P 10 54 36.0 +2.9**
LKWY pmax pmax
comp=Z,4.0nm,0.8s
LKWY Lake 75.52 45 *eP* **P 10 54 36.0 +2.9**
comp=Z,3.9nm,0.8s
H17A Grant Village 75.52 45 *eP* **P 10 54 36.5 +3.3**
comp=Z,40nm,1.6s
IMW Indian Meadow 75.63 45 *eP* **P 10 54 36.1 +2.3**
comp=Z,7.1nm,0.8s
FLWY Flagg Ranch 75.65 45 *eP* **P 10 54 36.2 +2.4**
comp=Z,27nm,1.6s
RLMT Red Lodge 75.79 44 *eP* **P 10 54 36.2 +1.7**
comp=Z,26nm,1.6s
MOOW Moose Ponds 75.83 45 *eP* **P 10 54 36.9 +2.0**
comp=Z,14nm,1.5s
LOHW Long Hollow 76.00 45 *eP* **P 10 54 37.3 +1.5**
comp=Z,12nm,1.6s
SNOW Snow King Moun 76.01 46 *eP* **P 10 54 37.6 +1.7**
comp=Z,5.1nm,0.8s
REDW Red Top Meadow 76.02 46 *eP* **P 10 54 37.8 +1.8**
comp=Z,14nm,1.4s
DAC Darwin (Calif) 76.23 55 *eP* **P 10 54 37.7 +0.5**
DAC pmax pmax
comp=Z,19nm,1.8s
DAC Darwin (Calif) 76.23 55 *eP* **P 10 54 37.7 +0.5**
comp=Z,19nm,1.8s
R11A Troy Canyon, C 76.27 52 *eP* **P 10 54 38.6 +1.2**
comp=Z,17nm,1.6s
TPNV Topopah Spring 76.69 54 *eP* **P 10 54 41.3 +1.5**
TPNV pmax pmax
comp=Z,7.0nm,0.8s
TPNV Topopah Spring 76.69 54 *eP* **P 10 54 41.3 +1.5**
comp=Z,6.8nm,0.8s
HWUT Hardware Ranch 76.70 48 *eP* **P 10 54 41.5 +1.7**
comp=Z,14nm,1.3s
DUG Dugway, Tooele 76.84 49 *eP* **P 10 54 42.0 +1.5**
DUG pmax pmax
comp=Z,6.0nm,0.7s
DUG Dugway, Tooele 76.84 49 *eP* **P 10 54 42.0 +1.5**
comp=Z,5.8nm,0.7s
LVV L'vov 76.94 324 *eP* P 10 54 32.4 -8.3
BW06 Boulder Array 77.13 46 *eP* **P 10 54 43.2 +1.0**
comp=Z,4.0nm,0.6s
PD31 Pinedale Array 77.13 46 *eP* **P 10 54 43.1 +0.9**
PDAR Pinedale Array 77.13 46 *P* **P 10 54 42.8 +0.6**
comp=Z,3.3nm,0.8s,baz=273,slow=2.9,SNR=21
PDAR pP **pP 10 54 58.0 +0.7**
comp=Z,3.6nm,0.6s,baz=264,slow=2.2,SNR=18
NLU North Lily Min 77.43 49 *eP* **P 10 54 46.1 +2.1**
comp=Z,22nm,1.8s
SHPR Sheep Range 77.66 53 *eP* **P 10 54 46.9 +1.7**
comp=Z,25nm,1.8s
KWP Kalwaria Pacla 77.69 324 *eP* **P 10 54 46.0 +1.1**
KWP Kalwaria Pacla 77.69 324 *eP* **P 10 54 46.0 +1.1**
BUR08 Bucovina Ar. S 77.88 322 *eP* **P 10 54 46.6 +0.5**
BURAR Bucovina Array 77.89 322 ⇓ *iP* **P 10 54 46.5 +0.3**
BURAR Bucovina Array 77.89 322 ⇓ *P* **P 10 54 46.5 +0.3**
TESR Tescani 77.93 320 ⇑ *iP* **P 10 54 46.3 0.0**
CFR Carcaliu 78.05 318 ⇓ *iP* **P 10 54 47.1 +0.1**
CFR Carcaliu 78.05 318 ⇓ *P* **P 10 54 47.1 +0.1**
VRI Vrincioaia 78.32 320 ⇑ *iP* **P 10 54 49.6 +1.1**
VRI Vrincioaia 78.32 320 ⇑ *P* **P 10 54 49.6 +1.1**
PLOR Plostina 78.37 320 ⇓ *iP* **P 10 54 49.4 +0.6**
PLOR Plostina 78.37 320 ⇓ *P* **P 10 54 49.4 +0.6**
KOLS Kolonicke sedl 78.38 324 *eP* **P 10 54 49.3 +0.5**
KOLS pmax pmax
comp=Z,86nm,3.5s
KOLS Kolonicke sedl 78.38 324 *eP* **P 10 54 49.3 +0.5**
HARR Harsova 78.49 318 ⇑ *iP* **P 10 54 47.8 -1.6**
HARR Harsova 78.49 318 ⇑ *P* **P 10 54 47.8 -1.6**
STHS Stebnicka Huta 78.51 325 *eP* **P 10 54 50.8 +1.3**
STHS *e* 10 55 08.7
STHS pmax pmax
comp=Z,5.0nm,1.0s
STHS Stebnicka Huta 78.51 325 *eP* **P 10 54 50.8 +1.3**
STHS *e* 10 55 08.7
BR131 Keskin Array S 78.53 312 *eP* **P 10 54 50.2 +0.3**
BRTR Keskin Array B 78.53 312 *P* **P 10 54 50.0 0.0**
comp=Z,2.0nm,0.6s,baz=79,slow=3.1,SNR=13
BRTR Keskin Array B 78.53 312 *P* **P 10 54 50.0 0.0**
BRTR pmax pmax
comp=Z,2.0nm,0.6s
P17A Butcher Ranch, 78.53 49 *eP* **P 10 54 51.9 +1.8**
comp=Z,10nm,0.7s
LCMT Little Creek M 78.55 52 *eP* **P 10 54 52.1 +1.9**
comp=Z,18nm,1.6s
OJC Ojcow 78.58 326 *eP* **P 10 54 50.3 +0.4**
OJC Ojcow 78.58 326 *eP* **P 10 54 50.3 +0.5**
OJC Ojcow 78.58 326 *eP* **P 10 54 50.4 +0.5**
comp=Z,20nm,1.1s
Q16A Castle Valley 78.63 49 *eP* **P 10 54 52.9 +2.3**
comp=Z,15nm,1.3s
P18A Preston Nutter 78.73 48 *eP* **P 10 54 53.5 +2.2**
comp=Z,34nm,1.8s
CRVS Cervenica-Dubn 78.78 324 *eP* **P 10 54 51.4 +0.4**
CRVS Cervenica-Dubn 78.78 324 *eP* **P 10 54 51.4 +0.4**
KNB Kanab 78.81 52 *eP* **P 10 54 53.6 +2.0**
KNB pmax pmax
comp=Z,24nm,1.7s
KNB Kanab 78.81 52 *eP* **P 10 54 53.6 +2.0**
comp=Z,24nm,1.7s
SRU San Rafael Swe 78.89 49 *eP* **P 10 54 53.5 +1.5**
SRU pmax pmax
comp=Z,8.0nm,0.6s
SRU San Rafael Swe 78.89 49 *eP* **P 10 54 53.5 +1.5**
comp=Z,8.4nm,0.6s
ULM Lac du Bonnet 78.90 33 *P* **P 10 54 51.6 0.0**
comp=Z,1.7nm,0.5s,baz=318,slow=5.1,SNR=3.4
NIE Niedzica 78.94 325 *eP* **P 10 54 52.8 +0.9**
NIE Niedzica 78.94 325 *eP* **P 10 54 52.8 +0.9**
BR231 Keskin MP Arra 78.96 312 *eP* **P 10 54 50.5 -1.7**
MLR Muntele Rosu 78.98 320 *P* **P 10 54 52.5 +0.2**
comp=Z,0.4nm,0.4s,baz=349,slow=16,SNR=6.6
MLR Muntele Rosu 78.98 320 ⇑ *iP* **P 10 54 52.7 +0.4**
MLR Muntele Rosu 78.98 320 ⇑ *P* **P 10 54 52.7 +0.4**
MLR Muntele Rosu 78.98 320 *eP* **P 10 54 52.7 +0.4**
comp=Z,14nm,1.5s
VOIR 79.47 320 ⇑ *iP* **P 10 54 55.9 +1.0**
VOIR 79.47 320 ⇑ *P* **P 10 54 55.9 +1.0**
KECS Kecovo 79.53 325 *eP* **P 10 54 55.5 +0.4**
KECS pmax pmax
comp=Z,2.0nm,1.0s
KECS Kecovo 79.53 325 *eP* **P 10 54 55.5 +0.4**
KSP Ksiaz 79.63 328 *eP* **P 10 54 56.1 +0.5**
KSP Ksiaz 79.63 328 *eP* **P 10 54 56.1 +0.5**
DRGR 79.69 322 ⇓ *iP* **P 10 54 55.7 -0.4**
DRGR 79.69 322 ⇓ *P* **P 10 54 55.7 -0.4**
ARR Arges 79.73 320 ⇓ *iP* **P 10 54 57.0 +0.7**
MORC Moravsky Berou 79.89 327 ⇑ *iP* **P 10 54 57.4 +0.3**
MORC Moravsky Berou 79.89 327 *eP* **P 10 54 57.5 +0.4**
comp=Z,33nm,1.0s
DPC Dobruska-Polom 79.99 328 *eP* **P 10 54 58.4 +0.8**
DPC Dobruska-Polom 79.99 328 *eP* **P 10 54 58.4 +0.8**
KRLC Kraliky 80.00 328 *eP* **P 10 54 58.1 +0.5**
KRLC Kraliky 80.00 328 *eP* **P 10 54 58.1 +0.5**
PSZ Piszkesteto 80.21 324 ⇑ *iP* **P 10 54 59.7 +0.8**
PSZ Piszkesteto 80.21 324 ⇑ *P* **P 10 54 59.7 +0.8**
PSZ Piszkesteto 80.21 324 *eP* **P 10 54 59.6 +0.7**
comp=Z,12nm,1.0s
PV10 Paradox Valley 80.25 49 *eP* **P 10 55 01.4 +1.9**
VYHS Vyhne 80.27 325 *eP* **P 10 54 59.5 +0.4**
VYHS pmax pmax
comp=Z,8.0nm,1.6s
VYHS Vyhne 80.27 325 *eP* **P 10 54 59.5 +0.4**
VYHS *ePP* **PP 10 57 59.4 -2.2**
PV04 Paradox Valley 80.32 49 *eP* **P 10 55 01.1 +1.4**
N23A Red Feather La 80.39 45 *eP* **P 10 55 02.0 +1.7**
comp=Z,17nm,1.2s
PV05 Paradox Valley 80.41 49 *eP* **P 10 55 02.1 +1.8**
BRG Berggiesshubel 80.57 329 *eP* **P 10 55 00.9 +0.3**
comp=Z,7.5nm,0.8s
BRG Berggiesshubel 80.57 329 *eP* **P 10 55 00.9 +0.3**
BRG pmax pmax
comp=Z,8.0nm,0.8s
SIRR Siria 80.57 322 ⇓ *iP* **P 10 55 01.4 +0.6**
PVCC Panska Ves 80.58 329 *eP* **P 10 55 01.4 +0.7**
PVCC Panska Ves 80.58 329 *eP* **P 10 55 01.4 +0.7**
CLL Collm 80.61 330 *i P* **P 10 55 00.6 -0.2**
comp=Z,16nm,1.1s
CLL *ep*P **pP 10 55 17.0 +0.9**
CLL Collm 80.61 330 *i P* **P 10 55 00.6 -0.2**
CLL pmax pmax
comp=Z,16nm,1.1s
CLL Collm 80.61 330 *eP* **P 10 55 00.7 -0.1**
comp=Z,16nm,1.0s
Y14A Wickenburg 80.63 54 *eP* **P 10 55 02.8 +1.4**
comp=Z,20nm,0.8s
VRAC Vranov 80.66 327 *P* **P 10 55 01.3 +0.2**
comp=Z,5.0nm,0.7s,baz=67,slow=4.3,SNR=7.4
VRAC LR LR 11 34 22.8
comp=Z,64nm,18.3s,baz=50,slow=38
VRAC Vranov 80.66 327 ⇑ *iP* **P 10 55 01.1 0.0**
VRAC Vranov 80.66 327 ⇑ *P* **P 10 55 01.1 0.0**
PV01 Paradox Valley 80.69 49 *eP* **P 10 55 03.5 +1.6**
PRU Pruhonice 81.00 329 *eP* **P 10 55 03.4 +0.4**
PRU Pruhonice 81.00 329 *eP* **P 10 55 03.4 +0.4**
BZS Buzias 81.06 322 ⇑ *iP* **P 10 55 02.1 -1.2**
BZS Buzias 81.06 322 ⇑ *P* **P 10 55 02.1 -1.2**
ASF Jabal al Asfar 81.26 304 LR LR 11 34 21.3
comp=Z,163nm,21.1s,slow=38
ISCO Idaho Springs 81.31 46 *eP* **P 10 55 06.4 +1.2**
ISCO pmax pmax
comp=Z,20nm,1.8s
ISCO Idaho Springs 81.31 46 *eP* **P 10 55 06.4 +1.2**
comp=Z,20nm,1.8s
X16A Lo Mia Camp, P 81.33 53 *eP* **P 10 55 07.1 +1.8**
comp=Z,4.7nm,0.9s
MVCO Mesa Verde 81.34 49 *eP* **P 10 55 06.8 +1.5**
comp=Z,5.8nm,0.8s
MDVR Moldovita 81.61 321 ⇓ *iP* **P 10 55 06.5 +0.1**
MMAI Mount Meron Ar 81.70 305 *P* **P 10 55 07.0 -0.1**
comp=Z,1.7nm,0.5s,baz=20,slow=6.2,SNR=5.2
CSS Mathiatis 81.77 308 *eP* **P 10 55 07.5 +0.2**
comp=Z,2.1nm,0.6s
S22A 4UR Ranch, Cre 81.98 48 *eP* **P 10 55 10.3 +1.6**
comp=Z,21nm,1.8s
CONA Conrad Observa 82.02 327 *eP* **P 10 55 09.1 +0.6**
comp=Z,7.6nm,1.1s
KHC Kasperske Hory 82.07 328 *eP* **P 10 55 09.0 +0.3**
KHC *ep*P **pP 10 55 24.0 0.0**
KHC Kasperske Hory 82.07 328 *eP* **P 10 55 09.0 +0.3**
KHC *e* 10 55 24.0
KHC Kasperske Hory 82.07 328 *eP* **P 10 55 09.0 +0.3**
comp=Z,4.3nm,1.0s
GEC2 GERESS Array S 82.24 328 *eP* **P 10 55 09.7 0.0**
GEC2 GERESS Array S 82.24 328 *eP* **P 10 55 09.7 0.0**
GERES GERESS Array B 82.24 328 *P* **P 10 55 09.6 0.0**
comp=Z,3.8nm,0.7s,baz=38,slow=5.7,SNR=15
GERES LR LR 11 36 43.0
comp=Z,35nm,18.0s,baz=56,slow=39
GERES GERESS Array B 82.24 328 *P* **P 10 55 09.6 0.0**
GERES pmax pmax
comp=Z,3.0nm,0.6s
GEA0 GERESS Array S 82.24 328 *eP* **P 10 55 09.5 -0.1**
URZ Urewera 82.36 153 LR LR 11 26 17.6
comp=Z,86nm,20.9s,baz=188,slow=32
EYMN Ely 82.53 33 *eP* **P 10 55 11.3 +0.3**
comp=Z,7.0nm,0.9s
ARSA Arzberg 82.68 326 *eP* **P 10 55 12.0 +0.1**
comp=Z,1.7nm,0.6s
SDCO Great Sand Dun 82.76 47 *eP* **P 10 55 14.3 +1.5**
comp=Z,11nm,1.8s
MOA Molln 82.77 327 *i* PcP **P 10 55 13.7 +1.4**
comp=Z,5.5nm,1.1s
ECSD EROS Data Cent 83.33 38 *eP* **P 10 55 15.4 +0.1**
comp=Z,4.9nm,0.8s
SOKA Soboth 83.34 326 *i P* **P 10 55 15.4 +0.1**
comp=Z,8.8nm,0.7s,SNR=9.3
OBKA Obir 83.68 326 *i P* **P 10 55 17.6 +0.5**
comp=Z,2.9nm,0.8s
KBA Koelnbreinsper 83.76 327 *i* PcP **P 10 55 18.7 +1.1**
comp=Z,7.6nm,0.8s
T25A Trinidad 83.81 47 *eP* **P 10 55 19.6 +1.4**
comp=Z,5.0nm,0.8s
ANMO Albuquerque 84.08 50 ⇓ *iP* **P 10 55 21.0 +1.5**
ANMO pmax pmax
comp=Z,7.0nm,1.2s
ANMO Albuquerque 84.08 50 *eP* **P 10 55 21.1 +1.6**
comp=Z,8.2nm,1.3s
EIL Elat 84.14 303 *P* **P 10 55 19.8 +0.1**
comp=Z,7.1nm,0.8s,baz=46,slow=5.0,SNR=5.0
EIL LR LR 11 35 59.5
comp=Z,55nm,18.3s,baz=324,slow=38
PMOR Pomariorio Ree 84.32 114 *eT* T 12 28 42.1
comp=Z,26nm,0.2s
MOTA Moosalm 84.49 329 *i* PcP **P 10 55 21.7 +0.4**
comp=Z,4.6nm,0.7s
RETA Reutte 84.52 329 *i P* **P 10 55 21.4 0.0**
comp=Z,7.3nm,0.7s
PDG Podgorica 84.55 321 ⇑ *iP* **P 10 55 17.2 -4.3**
SCHQ Schefferville 84.69 16 LR LR 11 37 48.0
comp=Z,28nm,18.5s,baz=303,slow=39
PPT Papeete 84.80 117 LR LR 11 23 19.2
comp=Z,43nm,21.9s,baz=328,slow=29
BFO Black Forest 84.81 331 *i P* **P 10 55 23.4 +0.7**
BFO Black Forest 84.81 331 *eP* **P 10 55 23.0 +0.3**
comp=Z,15nm,1.0s
PPT2 Papeete2 84.82 117 *e*LR LR 11 22 20.0
comp=Z,88nm,24.8s
PPT2 Papeete2 84.82 117 *eT* T 12 29 19.6
comp=Z,3.6nm,0.3s
TIAR Tiarei 84.96 117 *eT* T 12 29 29.3
comp=Z,4.4nm,0.3s
COWI Conover 84.98 33 *eP* **P 10 55 23.9 +0.3**
comp=Z,5.8nm,1.1s
DAVA Damuels 85.04 329 *i P* **P 10 55 23.2 -0.8**
comp=Z,15nm,1.1s
FUORN Ofenpass-Fuorn 85.42 329 *eP* **P 10 55 26.2 +0.1**
comp=Z,13nm,0.8s
DAVOX Davos/Dischmat 85.45 329 LR LR 11 37 05.3
comp=Z,36nm,19.2s,baz=258,slow=38
LAST Lasithi 86.39 312 *eP* **P 10 55 31.4 +0.5**
comp=Z,17nm,0.9s
IDI Anoyia 86.65 313 *P* **P 10 55 31.4 -0.8**
comp=Z,6.2nm,0.8s,baz=27,slow=6.8,SNR=8.6
IDI Anoyia 86.65 313 *eP* **P 10 55 32.3 +0.1**
comp=Z,18nm,1.2s
MNTX Cornudas Mount 86.93 52 *eP* **P 10 55 34.5 +0.9**
comp=Z,2.5nm,1.0s
TIP Timpagrande 88.24 320 *eP* **P 10 55 39.3 -0.4**
comp=Z,15nm,1.6s
WMOK Wichita Mounta 88.74 46 *eP* **P 10 55 43.4 +1.3**
WMOK pmax pmax
comp=Z,17nm,1.9s
WMOK Wichita Mounta 88.74 46 *eP* **P 10 55 43.4 +1.3**
comp=Z,17nm,1.9s
TUL1 Leonard 89.54 43 *eP* **P 10 55 46.8 +1.0**
comp=Z,4.1nm,0.8s
TX31 Lajitas Ar. Si 89.63 52 *eP* **P 10 55 46.9 +0.4**
TXAR Lajitas Array 89.63 52 *P* **P 10 55 47.0 +0.6**
comp=Z,2.5nm,0.6s,baz=296,slow=3.1,SNR=42
TXAR pP **pP 10 56 02.4 +0.5**
comp=Z,2.5nm,0.7s,baz=299,slow=3.0,SNR=13
TXAR Lajitas Array 89.63 52 *P* **P 10 55 47.1 +0.6**
TXAR *PP **pP 10 56 02.4 +0.5**
TXAR pmax pmax
comp=Z,3.0nm,0.6s
TXAR pmax pmax
comp=Z,3.0nm,0.7s
HPIG 89.99 55 *eP* **P 10 55 49.0 +0.7**
comp=Z,2.5nm,0.8s
LMQ La Malbaie 90.50 21 *eP* **P 10 55 51.0 +0.9**
comp=Z,14nm,1.3s
JCT Junction City 91.20 49 *eP* **P 10 55 54.9 +1.2**
JCT pmax pmax
comp=Z,4.0nm,0.6s
JCT Junction City 91.20 49 *eP* **P 10 55 54.9 +1.2**
comp=Z,3.8nm,0.6s
MIAR Mount Ida 91.76 43 *eP* **P 10 55 57.0 +0.8**
MIAR pmax pmax
comp=Z,7.0nm,1.0s
MIAR Mount Ida 91.76 43 *eP* **P 10 55 57.0 +0.8**
comp=Z,6.9nm,1.0s
WHAR Wooly Hollow 91.88 41 *eP* **P 10 55 57.3 +0.6**
comp=Z,4.6nm,0.9s
TZTN Tazewell 95.17 35 *eP* **P 10 56 12.3 +0.5**
comp=Z,23nm,1.6s
ESDC Sonseca Array 96.77 334 *P* **P 10 56 18.8 -0.4**
comp=Z,0.2nm,0.3s,baz=22,slow=5.3,SNR=4.9
TORD Torodi Ar. Bea 116.97 315 PKP **PKPdf 11 01 32.4 -1.1**
comp=Z,0.4nm,0.5s,baz=46,slow=0.8,SNR=7.6
BOSA Boshof 126.82 260 PKP **PKPdf 11 01 52.2 +0.2**
comp=Z,1.8nm,0.7s,baz=72,slow=3.5,SNR=5.3
BOSA Boshof 126.82 260 PKIKP **PKPdf 11 01 52.3 +0.2**
BOSA pmax pmax
comp=Z,4.0nm,0.9s
QSPA South Pole Qui 127.42 180 *e*PKPdf **PKPdf 11 01 52.3 +0.4**
LPAZ La Paz 146.25 59 PKPbc **PKPbc 11 02 29.8 -0.1**
comp=Z,8.2nm,0.7s,baz=333,slow=2.0,SNR=46
LPAZ La Paz 146.25 59 *e*PKPdf **PKPbc 11 02 30.0 +0.1**
PB01 IPOC Station P 148.45 67 *e*PKPbc **PKPbc 11 02 35.8 +0.6**
LCO Las Campanas 151.79 82 *e*PKPbc **PKPbc 11 02 43.6 +0.3**
ROC1 El Roble 153.08 90 *e*PKPbc **PKPbc 11 02 45.9 -0.2**

IDC 08 10:50:29.9±598.0, 47°.04N×47°.90E, h0km, Error ellipse: s-maj=229.6km s-min=137.5km az=46.0, Ukraine-Moldova-Southwestern Russia region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I31KZ	**AKTYUBINSK INF**	**7.51**	**60**	*i*		11 33 00.0	
	baz=248,slow=331,SNR=0.3						
I43RU	**DUBNA INFRASONI**	**1.71**	**330**	*i*		12 02 50.0	
	baz=141,slow=317,SNR=1.6						
I46RU	**ZALESOVO INFRA**	**24.27**	**60**	*i*		13 18 20.0	
	baz=264,slow=334,SNR=3.6						
I34MN	**SONGINO INFRAS**	**38.77**	**67**	*i*		14 53 00.0	
	baz=288,slow=326,SNR=0.4						

ISCJB ***08*** *10:53:20.1±0.5, 30°.60N±0°.05×50°.29E±0°.06, h25km, mb3.8/13, MS2.6/2, Error ellipse: s-maj=8.2km s-min=5.7km az=145.1*

CSEM ***08*** *10:53:22.3±0.3, 30°.73N×50°.43E, h10km, ML4.0, Error ellipse: s-maj=7.6km s-min=4.1km az=59.0*

THR ***08*** *10:53:23.2±0.5, 30°.75N×50°.29E, h36km±15km, ML3.9*

TEH ***08*** *10:53:23.1, 30°.70N×50°.41E, h17km, ML4.0*

IDC ***08*** *10:53:24.1±2.9, 30°.70N×50°.33E, h50km±29km, mb3.6/14, mb1 3.7/16, mb1mx3.5/53, mbtmp3.9/16, ML3.6/2, MS2.9/5, Ms1 2.9/5, ms1mx2.6/45, Error ellipse: s-maj=23.8km s-min=16.7km az=5.0*

DSN ***08*** *10:53:28.9±1.4, 30°.73N×51°.47E, h10km, Error ellipse: s-maj=69.1km s-min=10.2km az=45.0*

ISC 08 10:53:21.6±0.6, 30°.67N±0°.07×50°.35E±0°.06, h25km, n53, σ1§54/53, mb3.9/13, Northern and central Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IKAZ	**Kazeroun**	**1.56**	**124**	*ePn*	**Pb**	**10 53 50.3**	**+0.2**
IKAZ				*eSg*	**Sb**	**10 54 11.4**	**+1.8**
IKAZ				*e*AMB	AMB	10 54 16.2	
	comp=Z,52μm,0.1s						
IKAZ	**Kazeroun**	**1.56**	**124**	*ePn*	**Pb**	**10 53 50.3**	**+0.2**
IKAZ				*eSg*	**Sb**	**10 54 11.4**	**+1.8**
SHGR	**Shooshtar-Gavs**	**1.95**	**318**	*ePg*	**Pb**	**10 53 56.6**	**+0.2**
SHGR				*eSg*	**Sb**	**10 54 20.8**	**+0.4**
SHGR	**Shooshtar-Gavs**	**1.95**	**318**	*eP*	**Pn**	**10 53 55.0**	**+1.8**
SHGR				*eSg*	**Sb**	**10 54 20.8**	**+0.4**
AHBU	**AHRAM**	**1.98**	**155**	*eP*	**Pb**	**10 53 57.2**	**+0.3**
IPIR	**Pirpir**	**2.06**	**13**	*ePn*	**Pn**	**10 53 56.3**	**+1.3**
IPIR				*e*AMB	AMB	10 54 34.1	
	comp=Z,5μm,0.2s						
IPIR	**Pirpir**	**2.06**	**13**	*ePn*	**Pn**	**10 53 56.3**	**+1.3**
IGAR	**Gharneh**	**2.26**	**39**	*ePn*	**Pn**	**10 53 58.7**	**+1.1**
IGAR				*e*AMB	AMB	10 54 34.0	
	comp=Z,6μm,0.2s						
ISRV	**Sarvestan**	**2.72**	**117**	*ePn*	**Pn**	**10 54 05.4**	**+1.4**
ISRV				*e*AMB	AMB	10 54 55.7	
	comp=Z,4μm,0.1s						
ISRV	**Sarvestan**	**2.72**	**117**	*ePn*	**Pn**	**10 54 05.4**	**+1.4**
IZEF	**Zefreh**	**2.79**	**37**	*e*AMB	AMB	10 54 12.5	
	comp=Z,2μm,0.2s						
IZEF				*ePn*	**Pn**	**10 54 05.9**	**+1.0**
IKLH	**Kolahrood**	**2.84**	**21**	*e*AMB	AMB	10 54 07.8	
	comp=Z,4μm,0.1s						
IKLH				*ePn*	**Pn**	**10 54 07.1**	**+1.4**
IKLH	**Kolahrood**	**2.84**	**21**	*ePn*	**Pn**	**10 54 07.1**	**+1.4**
KHMZ	**Khomeyn**	**3.08**	**354**	*ePn*	**Pn**	**10 54 10.6**	**+1.7**
KHMZ	**Khomeyn**	**3.08**	**354**	*ePn*	**Pn**	**10 54 10.6**	**+1.7**
ISAD	**Sadrabad**	**3.12**	**66**	*ePn*	**Pn**	**10 54 11.0**	**+1.6**
ISAD				*e*AMB	AMB	10 54 48.8	
	comp=Z,6μm,0.2s						
ISAD	**Sadrabad**	**3.12**	**66**	*ePn*	**Pn**	**10 54 11.0**	**+1.6**
QAM	**Ghamsar**	**3.22**	**16**	*ePn*	**Pn**	**10 54 12.7**	**+1.9**
QAM				*e*AMB	AMB	10 54 15.1	
	comp=Z,8μm,0.1s						
GHIR	**Ghir-Karzin**	**3.30**	**135**	AML	AML	10 55 22.2	
	comp=E,223nm,0.4s						
IMEH	**Mehriz**	**3.73**	**78**	*ePn*	**Pn**	**10 54 19.2**	**+1.4**
IMEH				*e*AMB	AMB	10 54 20.0	
	comp=Z,2μm,0.2s						
IMEH	**Mehriz**	**3.73**	**78**	*ePn*	**Pn**	**10 54 19.2**	**+1.4**
ICHK	**Chekchek**	**3.81**	**65**	*ePn*	**Pn**	**10 54 19.8**	**+0.9**
ICHK				*e*AMB	AMB	10 54 20.4	
	comp=Z,6μm,0.2s						
ICHK	**Chekchek**	**3.81**	**65**	*ePn*	**Pn**	**10 54 19.8**	**+0.9**
GHVR	**GHOM**	**3.89**	**12**	*ePn*	**Pn**	**10 54 21.4**	**+1.6**
GHVR	**GHOM**	**3.89**	**12**	*ePn*	**Pn**	**10 54 21.4**	**+1.6**
IBAF	**Bafgh**	**4.57**	**77**	*ePn*	**Pn**	**10 54 30.1**	**+0.8**
IBAF				*e*AMB	AMB	10 54 30.8	
	comp=Z,748nm,0.2s						
IBAF	**Bafgh**	**4.57**	**77**	*ePn*	**Pn**	**10 54 30.1**	**+0.8**
KRBR	**Kerman**	**5.59**	**95**	AML	AML	10 55 50.4	
	comp=N,74nm,0.5s						
KRBR				AML	AML	10 55 52.6	
	comp=E,44nm,0.4s						
BANOM	**Banah**	**7.06**	**131**	*P*	**Pn**	**10 55 03.4**	**0.0**
BANOM				S	**Sn**	**10 56 18.4**	**-4.5**
NAZ	**Nazwa, Dubai**	**7.36**	**139**	*i P*	**Pn**	**10 55 10.1**	**+2.6**
	SNR=10.0						
HATD	**Hatta, Dubai**	**7.75**	**137**	*P*	**Pn**	**10 55 15.2**	**+2.3**
ASHO	**Ashiyiah**	**7.82**	**138**	*i P*	**Pn**	**10 55 15.1**	**+1.3**
	SNR=8.6						
GEYT	**Alibeck**	**9.68**	**39**	*P*	**Pn**	**10 55 40.4**	**+1.1**
	comp=E,0.3nm,0.3s,baz=211,slow=10,SNR=10.0						
WSAR	**Wadi Sarin**	**10.45**	**133**	*P*	**Pn**	**10 55 50.8**	**+0.9**
	comp=E,0.8nm,0.3s,baz=338,slow=14,SNR=4.1						
WSAR				S	Sn	10 57 39.4	-6.9
	comp=E,2.1nm,0.3s,baz=143,slow=23,SNR=6.9						
WSAR				LR	LR	11 00 24.3	
	comp=E,50nm,18.4s,baz=188,slow=40						
MMAI	**Mount Meron Ar**	**12.92**	**284**	LR	LR	11 02 49.4	
	comp=E,64nm,18.2s,baz=85,slow=44						
EIL	**Elat**	**13.36**	**270**	LR	LR	11 02 51.4	
	comp=E,83nm,19.9s,baz=276,slow=42						
ATD	**Arta Tunnel**	**20.27**	**202**	LR	LR	11 05 26.7	
	comp=E,29nm,19.0s,baz=37,slow=36						
AKTO	**Aktyubinsk**	**20.57**	**14**	*P*	**P**	**10 57 59.4**	**+1.0**
	comp=E,1.4nm,0.6s,baz=215,slow=9.7,SNR=5.3						
AKTO				LR	LR	11 07 49.5	
	comp=E,29nm,20.9s,baz=150,slow=42						
IDI	**Anoyia**	**21.82**	**289**	*P*	**P**	**10 58 12.0**	**-0.1**
	comp=E,4.5nm,0.8s,baz=78,slow=14,SNR=2.4						
AKASG	**Malin Array Be**	**25.47**	**328**	*P*	**P**	**10 58 47.0**	**-0.5**
	comp=E,0.3nm,0.3s,baz=141,slow=8.7,SNR=5.0						
BVAR	**Borovoye Array**	**26.70**	**27**	*P*	**P**	**10 58 58.6**	**0.0**
	comp=E,1.3nm,0.8s,baz=218,slow=6.3,SNR=4.9						

KOLS	Kolonicke sedl	28.01 319	eP	P	10 59 13.8	+3.3
CRVS	Cervenica-Dubn	28.46 318	eP	P	10 59 17.6	+3.1
KURBB	Kurchatov Arra	28.95 38	P	P	10 59 19.1	+0.3
	comp=E,1.3nm,0.7s,baz=241,slow=9.4,SNR=6.6					
MKAR	Makanchi Array	29.41 48	P	P	10 59 22.8	-0.2
	comp=E,0.4nm,0.4s,baz=237,slow=11,SNR=5.4					
ZALV	Zalesovo Beam	33.98 37	P	P	11 00 02.3	-0.6
	comp=E,1.0nm,0.6s,baz=250,slow=7.8,SNR=5.2					
FINES	FINESS Array B	34.66 340	P	P	11 00 07.0	-1.8
	comp=E,1.4nm,0.7s,baz=146,slow=9.0,SNR=7.7					
HFS	Hagfors	38.25 331	P	P	11 00 38.4	-1.0
	comp=E,1.6nm,0.8s,baz=139,slow=8.7,SNR=9.0					
CMAR	Chiang Mai Arr	45.52 94	P	P	11 01 38.9	-0.5
	comp=E,1.2nm,0.3s,baz=305,slow=9.7,SNR=3.7					
TORD	Torodi Ar. Bea	47.99 260	P	P	11 01 59.0	+0.3
	comp=E,0.7nm,0.6s,baz=56,slow=8.5,SNR=5.7					
KSRS	Korea Array	62.95 61	P	P	11 03 45.4	-0.6
	comp=E,1.7nm,0.6s,baz=282,slow=7.8,SNR=8.3					
ILAR	Eielson Array	83.92 7	P	P	11 05 47.6	-1.5
	comp=E,0.2nm,0.7s,baz=337,slow=6.0,SNR=3.4					
YKA	Yellowknife Ar	86.38 353	P	P	11 06 00.2	-1.2
	comp=E,0.3nm,0.8s,baz=12,slow=5.3,SNR=5.5					

IDC 08 11:02:04.8±3.4, 41°.66N×144°.42E, h0km, mb3.5/2, mb1 3.7/3, mb1mx3.2/37, mbtmp3.4/3, ML3.6/1, MS2.6/1, Ms1 2.6/1, ms1mx2.0/37, Error ellipse: s-maj=79.9km s-min=40.3km az=70.0, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	7.03 225		Pn	Pn	11 03 49.0	0.0
	1.1nm,0.3s,baz=87,slow=15,SNR=9.9						
KSRS	Korea Array	13.40 257		LR	LR	11 09 58.3	
	comp=Z,23nm,19.3s,baz=215,slow=35						
MKAR	Makanchi Array	43.79 299		P	P	11 10 11.9	-0.2
	0.1nm,0.3s,baz=77,slow=8.7,SNR=4.2						
WRA	Warramunga Arr	62.00 191		P	P	11 12 26.7	0.0
	0.5nm,0.6s,baz=8.6,slow=7.1,SNR=5.0						

*ISCJB **08** 11:07:37.0±1.1, 32°.26N±0°.05×15°.81W±0°.08, h10km, Error ellipse: s-maj=12.1km s-min=4.6km az=145.3*
*CSEM **08** 11:07:37.8±0.6, 32°.47N×15°.72W, h20km, ML2.3, Error ellipse: s-maj=17.3km s-min=6.9km az=49.0*
*MDD **08** 11:07:37.9±1.4, 32°.42N×15°.72W, h0km, mb3.6/2, Error ellipse: s-maj=16.6km s-min=8.8km az=43.0, PRXIMO*
*INMG **08** 11:07:41.4±0.5, 32°.69N×15°.56W, h10km, ML2.3, Error ellipse: s-maj=4.8km s-min=4.6km az=169.0*

ISC 08 11:07:36.4±1.2, 32°.39N±0°.05×15°.80W±0°.07, h10km, n18, σ1°.07/32, 4C-1D, Madeira Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMPS	Porto Santo	0.80 326	⇑	eP	Pg	11 07 52.5	+0.6
PMPS				eS	Sg	11 08 00.4	-1.9
PMPS				A	A	11 08 02.3	
	84nm,0.1s						
PMPS	Porto Santo	0.80 326		P	Pg	11 07 52.5	+0.6
PMPS				S	Sg	11 08 00.4	-1.9
	42nm,0.1s						
PMPS	Porto Santo	0.80 326	⇑	eP	Pg	11 07 52.5	+0.6
PMPS				S	Sg	11 08 00.4	-1.9
	42nm,0.1s						
FUL	Funchal	0.96 286		eP	Pn	11 07 57.4	+1.5
FUL				eS	Sn	11 08 09.7	+0.1
FUL	Funchal	0.96 286		P	Pn	11 07 57.4	+1.5
FUL				S	Sn	11 08 09.7	+0.1
FUL	Funchal	0.96 286		eP	Pn	11 07 57.4	+1.5
FUL				eS	Sn	11 08 09.7	+0.1
PMAR	Madeira	1.00 290	⇑	eP	Pn	11 07 57.8	+1.1
PMAR				eS	Sn	11 08 10.4	-0.5
PMAR				A	A	11 08 12.9	
	65nm,0.3s						
PMAR	Madeira	1.00 290		P	Pn	11 07 57.8	+1.1
PMAR				S	Sn	11 08 10.4	-0.5
	33nm,0.3s						
PMAR	Madeira	1.00 290	⇑	eP	Pn	11 07 57.8	+1.1
PMAR				S	Sn	11 08 10.4	-0.5
	33nm,0.3s						
PMOZ	Porto Moniz, M	1.25 290	⇓	eP	Pg	11 08 01.2	+0.7
PMOZ				eS	Sb	11 08 16.2	-0.3
PMOZ				A	A	11 08 25.1	
	38nm,0.4s						
PMOZ	Porto Moniz, M	1.25 290		P	Pg	11 08 01.2	+0.7
	11nm,0.2s						
PMOZ				S	Sb	11 08 16.2	-0.3
	63nm,0.4s						
PMOZ	Porto Moniz, M	1.25 290		P	Pg	11 08 01.2	+0.7
	11nm,0.2s						
PMOZ				S	Sb	11 08 16.2	-0.3
	63nm,0.4s						
CFUE	Fuerteventura	4.07 156		P	Pn	11 08 39.6	+0.9
	1.3nm,0.1s,SNR=7.9						
CFUE				S	Sn	11 09 25.9	-0.5
	5.0nm,0.1s,SNR=7.9						
CFUE	Fuerteventura	4.07 156		P	Pn	11 08 39.6	+0.9
	1.3nm,0.1s,SNR=7.9						
CFUE				S	Sn	11 09 25.9	-0.5
	5.0nm,0.1s,SNR=7.9						
TBT	Taburiente	4.13 207		S	Sn	11 09 26.1	-1.8
	2.1nm,0.1s,SNR=7.9						
TBT	Taburiente	4.13 207		S	Sn	11 09 26.1	-1.8
	2.1nm,0.1s,SNR=7.9						
EGOM	La Gomera	4.39 196		S	Sn	11 09 34.4	0.0
	4.4nm,0.2s,SNR=7.9						
EGOM	La Gomera	4.39 196		S	Sn	11 09 34.4	0.0
	4.4nm,0.2s,SNR=7.9						

*NIED **08** 11:21:00, 38°.80N×142°.40E, h20km, Mw3.5 Best double couple: M0=2.12000×10^14 NP1:φs=212.00000°, δ14.00000°, λ141.00000°. NP2:φs=341.00000°, δ81.00000°, λ79.00000°.*
*JMA **08** 11:21:32.9±0.1, 38°.80N×142°.35E, h28km±2km, M4.1*
JMA Felt I J1.
*IDC **08** 11:21:35.6±2.3, 38°.70N×142°.37E, h44km±21km, mb3.3/6, mb1 3.5/11, mb1mx3.3/58, mbtmp3.6/11, ML3.2/5, MS2.8/4, Ms1 2.8/4, ms1mx2.5/21, Error ellipse: s-maj=28.0km s-min=14.2km az=90.0*

ISC 08 11:21:31.4±2.0, 38°.77N±0°.04×142°.39E±0°.07, h12km±11km, n27, σ1°.12/31, mb3.6/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.64 299		P	Pb	11 21 44.8	+0.2
OFUJ				S	Sg	11 21 52.4	0.0
JIO	Ouri	0.87 249		P	Pb	11 21 48.4	-0.1
JIO				S	Sg	11 21 59.1	-0.6
JMK	Ichinoseki	0.93 282		P	Pg	11 21 49.4	0.0
JMK				S	Sg	11 22 00.6	-1.0
JOM	Ohasama	1.11 310		P	Pb	11 21 52.1	-0.4
JOM				S	Sb	11 22 05.7	-1.1
JTH	Tanohata	1.24 341		P	Pn	11 21 53.5	-1.0
JTH				eS	Sb	11 22 09.0	-1.7
JOU	Okura	1.41 254		P	Pn	11 21 57.1	+0.2
JOU				eS	Sn	11 22 14.4	-1.0
JRG	Rokugo	1.50 295		P	Pn	11 21 58.5	+0.3
JRG				S	Sn	11 22 17.7	0.0
JMM	Marumori	1.54 235		P	Pn	11 21 58.7	0.0
JMM				S	Sn	11 22 17.3	-1.3
JYK	Kaneyama	1.59 276		P	Pn	11 21 59.7	+0.3
JYK				eS	Sn	11 22 19.3	-0.5
MJAR	Matsushiro Arr	3.99 237		P	Pn	11 22 34.4	+2.0
	3.5nm,0.3s,baz=54,slow=10.0,SNR=30						
MJAR				LR	LR	11 24 16.5	
	comp=Z,92nm,18.1s,baz=50,slow=41						
ASAJ	Asahikawa	5.35 2		P	Pn	11 22 53.0	+2.0
	0.6nm,0.3s,baz=203,slow=13,SNR=8.4						
ASAJ				S	Sn	11 23 52.2	-0.3
	0.2nm,0.3s,baz=260,slow=18,SNR=1.9						
JHJ	Hachijo jima 2	6.02 201		P	Pn	11 23 01.2	+1.0
	9.9nm,0.3s,baz=26,slow=17,SNR=3.9						
JHJ				S	Sn	11 24 07.7	-1.3
	12nm,0.3s,baz=323,slow=18,SNR=3.8						
JHJ				LR	LR	11 24 56.9	
	comp=Z,118nm,18.3s,baz=125,slow=34						
USRK	Ussuriysk Ar.	9.50 308		P	Pn	11 23 50.0	+2.1
	0.3nm,0.3s,baz=123,slow=14,SNR=4.3						
JNU	Nakatsue	10.89 242		LR	LR	11 28 28.4	
	comp=Z,33nm,18.4s,baz=122,slow=38						
KSRS	Korea Array	11.47 268		P	Pn	11 24 17.7	+2.7
	0.2nm,0.3s,baz=76,slow=15,SNR=2.9						

SONM	Songino Array	27.51 301		P	P	11 27 17.8	+0.1
	0.3nm,0.5s,baz=101,slow=7.8,SNR=2.7						
H11N2	WAKE ISLAND Hy 28.44 125			T	T	11 57 17.7	
	baz=318,slow=75,SNR=21						
H11N1	WAKE ISLAND Hy 28.45 125			T	T	11 57 16.8	
	baz=318,slow=75,SNR=46						
H11N3	WAKE ISLAND Hy 28.45 125			T	T	11 57 17.8	
	baz=318,slow=75,SNR=28						
H11S1	WAKE ISLAND Hy 29.22 127			T	T	11 58 45.8	
	baz=318,slow=76,SNR=26						
H11S3	WAKE ISLAND Hy 29.22 127			T	T	11 58 49.4	
	baz=318,slow=76,SNR=31						
H11S2	WAKE ISLAND Hy 29.23 127			T	T	11 58 48.6	
	baz=318,slow=76,SNR=24						
ZALV	Zalesovo Beam	41.34 311		P	P	11 29 16.9	+0.1
	0.7nm,0.4s,baz=95,slow=7.8,SNR=4.1						
MKAR	Makanchi Array	43.87 301		P	P	11 29 37.5	0.0
	0.7nm,0.7s,baz=86,slow=9.5,SNR=7.6						
MKAR				LR	LR	11 47 36.5	
	comp=Z,18nm,18.7s,baz=206,slow=36						
ILAR	Eielson Array	47.62 33		P	P	11 30 07.5	+0.6
	0.4nm,0.7s,baz=280,slow=6.7,SNR=5.7						
WRA	Warramunga Arr	58.88 189		P	P	11 31 29.2	-0.9
	0.5nm,0.8s,baz=5.8,slow=7.1,SNR=5.7						
ASAR	Alice Springs	62.61 189		P	P	11 31 55.0	-0.4
	0.3nm,0.8s,baz=3.4,slow=6.2,SNR=3.9						

SJA 08 11:21:54.5±0.4, 28°.70S×67°.23W, h10km±3km, ML2.9, MW3.5, La Rioja Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VCA	Vinchina	0.86 267		iP	Pg	11 22 11.3	+0.2
VCA				IAML		11 22 24.1	
	comp=Z,265nm,0.5s						
CYA	Choya	1.28 79		iP	Pb	11 22 18.7	0.0
CYA				iS	Sn	11 22 36.7	+0.9
CYA				IAML		11 22 36.9	
	comp=Z,198nm,0.3s						
AGUA	GUANDACOL	1.35 234		iP	Pb	11 22 20.1	+0.1
AGUA				iS	Sg	11 22 39.1	+0.9
AVFE	Valle Fertil	1.96 186		iP	Pb	11 22 30.1	-0.3
AVFE				iS	Sg	11 22 56.4	-1.2
AVFE				IAML		11 22 58.3	
	comp=Z,192nm,0.6s						
AMOG	MOGNA	2.49 206		iP	Pb	11 22 37.4	-1.9
RTLL	Cerro Villicun	2.83 202		iP	Pn	11 22 42.4	+2.5
ACAN	Cantantal	3.56 179		iP	Pn	11 22 53.3	+3.4

*IDC **08** 11:32:41.9±3.6, 38°.82N×110°.95W, h0km, mb3.0/1, mb1 3.2/3, mb1mx3.1/39, mbtmp2.8/3, ML2.9/2, Error ellipse: s-maj=59.5km s-min=12.8km az=131.0*
*NEIC **08** 11:32:43.0, 39°.00N×111°.37W, h1km, ML2.7(SLC), After SLC.*
*ISCJB **08** 11:32:45.5±0.6, 39°.03N±0°.05×111°.28W±0°.05, h10km, mb2.9/1, Error ellipse: s-maj=8.8km s-min=4.3km az=32.6*

ISC 08 11:32:47.2±1.1, 39°.10N±0°.05×111°.26W±0°.05, h10km, n24, σ1°.21/28, Utah

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DUG	Dugway, Tooele	1.62 313		ePn	Pn	11 33 13.3	-2.8
PV04	Paradox Valley	1.97 110		ePg	Pn	11 33 20.6	-0.2
PV04				eSg	Sg	11 33 49.5	-1.0
PV01	Paradox Valley	2.31 114		ePn	Pn	11 33 25.3	-0.4
PV01				eSg	Sg	11 34 01.3	-0.4
HWUT	Hardware Ranch	2.52 355		ePn	Pn	11 33 28.1	-0.2
O20A	White River Ci	2.55 65		ePn	Pn	11 33 31.2	+2.4
O20A				eSg	Sg	11 34 07.5	-1.6
MVCO	Mesa Verde	2.88 130		ePn	Pn	11 33 33.2	-0.2
MVCO				eSg	Sb	11 34 16.1	+1.9
SMCO	Snowmass	3.33 87		ePn	Pn	11 33 41.1	+1.3
SMCO				eSg	Sb	11 34 26.9	-0.4
R11A	Troy Canyon, C	3.47 259		ePn	Pn	11 33 39.2	-2.3
ELK	Elko	3.48 299		ePg	Pb	11 33 49.1	+0.1
AHID	Auburn Hatcher	3.66 2		ePn	Pn	11 33 45.6	+1.5
BW06	Boulder Array	3.88 19		ePn	Pn	11 33 47.6	+0.4
PDAR	Pinedale Array	3.88 19		Pn	Pn	11 33 48.0	+0.8
	0.2nm,0.3s,baz=189,slow=14,SNR=7.2						
PDAR				Pg	Pb	11 33 55.2	-0.7
	0.3nm,0.3s,baz=198,slow=14,SNR=25						
PDAR				Lg	Lg	11 34 51.1	
	0.4nm,0.3s,baz=201,slow=29,SNR=8.2						
REDW	Red Top Meadow	4.27 4		ePn	Pn	11 33 51.2	-1.3
SNOW	Snow King Moun	4.37 5		ePg	Pb	11 34 03.7	-0.6
ISCO	Idaho Springs	4.42 79		ePn	Pn	11 33 56.8	+2.1
LOHW	Long Hollow	4.53 6		ePn	Pn	11 33 55.8	-0.3
MOOW	Moose Ponds	4.66 5		ePn	Pn	11 33 57.5	-0.4
SDCO	Great Sand Dun	4.72 105		ePn	Pn	11 33 58.9	+0.2
IMW	Indian Meadow	4.80 3		ePn	Pn	11 34 01.7	+1.8
K22A	Casper	5.04 44		ePn	Pn	11 34 04.6	+1.5
	23nm,0.8s						
HLID	Hailey	5.05 333		ePn	Pn	11 34 03.4	+0.2
	2.6nm,0.7s						
MFID	Camas Ranch	5.52 323		ePn	Pn	11 34 11.9	+2.4
	4.2nm,0.8s						
NVAR	Mina Array Bea	5.55 265		Pn	Pn	11 34 09.9	-0.2
	0.1nm,0.3s,baz=87,slow=14,SNR=4.7						
YKA	Yellowknife Ar	23.51 356		P	P	11 37 56.9	-0.2
	0.4nm,0.9s,baz=173,slow=9.7,SNR=11						

JMA 08 11:39:08.9, 38°.24N×141°.82E, h56km±1km, M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.43 300		P	Pn	11 39 19.9	+0.1
JIO				S	Sn	11 39 27.6	0.0
OFUJ	Ofunato	0.85 352		P	Pn	11 39 24.9	+0.1
OFUJ				S	Sn	11 39 36.2	-0.3
JMK	Ichinoseki	0.85 327		P	Pn	11 39 25.2	+0.4
JMK				S	Sn	11 39 36.8	+0.2
JMM	Marumori	0.89 246		P	Pn	11 39 25.3	-0.1
JMM				S	Sn	11 39 37.0	-0.5
JOU	Okura	0.92 278		P	Pn	11 39 26.1	+0.4
JOU				S	Sn	11 39 38.4	+0.3
JFK	Kawauchi	1.15 221		P	Pn	11 39 28.6	-0.2
JFK				eS	Sn	11 39 43.1	-0.5
JOM	Ohasama	1.30 342		P	Pn	11 39 31.6	+0.8
JOM				S	Sn	11 39 47.5	+0.4
JYK	Kaneyama	1.33 301		P	Pn	11 39 31.6	+0.4
JYK				S	Sn	11 39 48.6	+0.7
MIYJ	Miyakonagasawa	1.33 360		P	Pn	11 39 31.5	+0.2
MIYJ				S	Sn	11 39 47.8	-0.2
JFT	Otama	1.38 239		P	Pn	11 39 32.5	+0.6
JFT				S	Sn	11 39 49.3	+0.2
JYS	Shiratake	1.38 270		P	Pn	11 39 32.5	+0.6
JYS				S	Sn	11 39 50.0	+0.8
JRG	Rokugo	1.48 322		P	Pn	11 39 34.3	+1.1

*OMAN **08** 11:44:20.8, 30°.81N×57°.48E, h4km*
*CSEM **08** 11:44:21.8±0.7, 30°.74N×57°.33E, h5km, ML2.9, Error ellipse: s-maj=20.5km s-min=7.2km az=52.0*
*DSN **08** 11:45:16.9±0.1, 26°.84N×56°.20E, h10km, ML2.9, Error ellipse: s-maj=12.3km s-min=2.5km az=258.0*

TEH 08 11:44:20.8, 30°.81N×57°.48E, h4km, ML2.8, Northern and central Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHMN	Cheshme madani	0.95 177		ePn	Pn	11 44 41.7	+0.4
CHMN	Cheshme madani	0.95 177		ePn	Pn	11 44 41.7	+0.4
KHGB	Koh Gabri	0.96 244		ePg	Pg	11 44 37.9	-1.4
KHGB	Koh Gabri	0.96 244		ePg	Pg	11 44 37.9	-1.4
NGRK	Negar Kerman	1.33 209		ePn	Pg	11 44 46.1	-0.2
NGRK	Negar Kerman	1.33 209		ePn	Pg	11 44 46.1	-0.2
IBAF	Bafgh	1.81 296		ePn	Pn	11 44 52.7	-0.3
IBAF				eAMB	AMB	11 44 59.1	
	comp=Z,518nm,0.1s						
IBAF				eSg	Sb	11 45 17.5	-0.3
IBAF	Bafgh	1.81 296		ePn	Pn	11 44 52.7	-0.3
IBAF				eSg	Sb	11 45 17.5	-0.3
IKOO	Kooshah	2.07 39		ePn	Pn	11 44 56.3	-0.4
IKOO				eAMB	AMB	11 45 33.6	
	comp=E,2μm,0.1s						
IKOO	Kooshah	2.07 39		ePn	Pn	11 44 56.3	-0.4
IMEH	Mehriz	2.52 284		ePn	Pn	11 45 02.4	-0.5
IMEH				eAMB	AMB	11 45 43.1	
	comp=N,212nm,0.3s						
IMEH	Mehriz	2.52 284		ePn	Pn	11 45 02.4	-0.5
BANOM	Banah	4.98 192		eP	Pn	11 45 34.4	-2.0
	SNR=114						
BANOM	Banah	4.98 192		P	Pn	11 45 34.4	-2.0
	SNR=114						
BANOM	Banah	4.98 192		Pn	Pn	11 45 34.5	-1.9
	SNR=114						
BANOM	Banah	4.98 192		P	Pn	11 45 34.5	-1.9
	SNR=114						
UOSS	Minazif	5.95 191		P	Pn	11 45 49.4	-0.4
	SNR=7.7						
HATD	Hatta, Dubai	6.08 192		eP	Pn	11 45 52.1	+0.6
	SNR=18						
HATD	Hatta, Dubai	6.08 192		P	Pn	11 45 52.1	+0.6
	SNR=18						
ASHO	Ashiyiah	6.23 192		eP	Pn	11 45 53.0	-0.7
	SNR=7.7						
ASHO	Ashiyiah	6.23 192		P	Pn	11 45 53.0	-0.7
	SNR=7.7						

*ISCJB **08** 11:46:48.2±0.5, 38°.13N±0°.04×144°.22E±0°.04, h10km, mb3.8/14, MS3.2/9, Error ellipse: s-maj=6.2km s-min=4.4km az=169.2*
*IDC **08** 11:46:48.3±0.7, 38°.01N×144°.58E, h0km, mb3.8/12, mb1 3.9/16, mb1mx3.8/35, mbtmp3.8/16, ML3.4/4, MS3.1/14, Ms1 3.1/14, ms1mx2.9/49, Error ellipse: s-maj=20.8km s-min=14.8km az=119.0*
*NEIC **08** 11:46:49.7±0.6, 38°.06N×144°.50E, h10km, mb4.1/2, Error ellipse: s-maj=13.0km s-min=9.2km az=121.0*
*JMA **08** 11:46:51.8±0.2, 38°.26N×144°.14E, h29km, M4.3*

ISC 08 11:46:50.4±0.7, 38°.16N±0°.05×144°.26E±0°.07, h10km, n47, σ2°.33/53, mb3.9/14, MS3.2/9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	2.23 295		P	Pn	11 47 26.3	-1.1
OFUJ				eS	Sn	11 47 51.8	-3.2
JIO	Ouri	2.31 278		P	Pn	11 47 27.5	-1.0
JIO				S	Sn	11 47 53.6	-3.4
JMK	Ichinoseki	2.51 289		P	Pn	11 47 30.5	-0.8
JMK				S	Sn	11 47 59.2	-2.8
JTH	Tanohata	2.58 314		P	Pn	11 47 31.4	-0.8
JOM	Ohasama	2.67 300		P	Pn	11 47 33.0	-0.4
JOM				eS	Sn	11 48 03.2	-2.6
JMM	Marumori	2.75 265		P	Pn	11 47 33.8	-0.8
JMM				S	Sn	11 48 04.5	-3.5
JFK	Kawauchi	2.80 255		P	Pn	11 47 35.0	-0.3
JFK				eS	Sn	11 48 08.0	-1.1
JOU	Okura	2.84 275		P	Pn	11 47 35.5	-0.3
JOU				S	Sn	11 48 07.6	-2.5
JANG	Nango	3.07 317		P	Pn	11 47 37.7	-1.3
JRG	Rokugo	3.09 295		P	Pn	11 47 39.0	-0.3
JYK	Kaneyama	3.15 285		P	Pn	11 47 40.0	-0.1
JYK				S	Sn	11 48 15.9	-1.9
JFT	Otama	3.17 260		P	Pn	11 47 40.9	+0.5
JFT				S	Sn	11 48 16.0	-2.3
JTM	Tenmabayashi	3.61 318		P	Pn	11 47 45.3	-1.0
JTM				eS	Sn	11 48 25.0	-3.9
ERM	Erimo	3.94 348		ePn	Pn	11 47 49.4	-1.6
ERM				eSn	Sn	11 48 31.1	-6.2
MJAR	Matsushiro Arr	5.08 253		Pn	Pn	11 48 07.4	+0.7
	2.7nm,0.3s,baz=86,slow=15,SNR=25						
MJAR				LR	LR	11 50 11.7	
	comp=Z,85nm,19.8s,baz=85,slow=39						
MAJO	Matsushiro	5.09 253		ePn	Pn	11 48 07.5	+0.8
	20nm,0.6s						
MAT	Matsushiro	5.09 253		P	Pn	11 48 07.4	+0.7
MAT				eS	Sn	11 49 03.1	-2.4
ASAJ	Asahikawa	6.08 349		Pn	Pn	11 48 19.3	-1.1
	4.7nm,0.3s,baz=202,slow=10,SNR=29						
ASAJ				Sn	Sn	11 49 27.2	-2.8
	1.0nm,0.3s,baz=143,slow=20,SNR=4.3						
JHJ2	Mitsune	6.20 217		ePn	Pn	11 48 20.4	-1.6
JHJ2				eSn	Sn	11 49 27.4	-5.5
JHJ	Hachijo jima 2	6.21 217		Pn	Pn	11 48 20.7	-1.4
	11nm,0.3s,baz=62,slow=22,SNR=6.2						
JHJ				Sn	Sn	11 49 28.0	-5.1
	14nm,0.3s,baz=240,slow=20,SNR=3.8						
USRK	Ussuriysk Ar.	11.04 307		LR	LR	11 53 30.2	
	comp=Z,88nm,20.0s,baz=101,slow=36						
CBIJ	Chichi jima	11.17 190		Pn	Pn	11 49 24.6	-5.6
CBIJ				Sn	Sn	11 51 22.3	-13
JCJ	Chichijima	11.17 190		Pn	Pn	11 49 24.6	-5.6
	2.2nm,0.3s,baz=66,slow=20,SNR=4.4						
JCJ				Sn	Sn	11 51 22.3	-13
	6.3nm,0.3s,baz=295,slow=23,SNR=7.0						
JNU	Nakatsue	11.99 249		LR	LR	11 54 25.0	
	comp=Z,74nm,19.1s,baz=117,slow=38						
KSRS	Korea Array	12.94 272		Pn	Pn	11 49 58.3	+4.0
	0.1nm,0.3s,baz=80,slow=14,SNR=3.7						
KSRS				LR	LR	11 54 17.1	
	comp=Z,62nm,21.2s,baz=72,slow=34						
KSAR	Wonju Array Be	12.98 272		Pn	Pn	11 49 58.3	+3.5
KLR	Kul'dur	14.28 325		Pn	Pn	11 50 15.6	+3.1
	0.1nm,0.3s,baz=106,slow=9.8,SNR=3.5						
KLR				LR	LR	11 55 37.3	
	comp=Z,60nm,19.8s,baz=146,slow=36						
SEY	Seymchan	25.30 9		P	P	11 52 17.3	+0.6
	3.4nm,0.8s,baz=178,slow=6.0,SNR=13						
YAK	Yakutsk	25.54 344		LR	LR	12 03 18.6	
	comp=Z,33nm,18.5s,baz=166,slow=38						
SONM	Songino Array	29.08 302		P	P	11 52 53.6	+2.5
	0.2nm,0.3s,baz=86,slow=8.5,SNR=2.7						
SONM				LR	LR	12 04 18.2	
	comp=Z,38nm,19.1s,baz=66,slow=36						
TLY	Talaya	31.35 309		LR	LR	12 05 45.1	
	comp=Z,36nm,19.9s,baz=103,slow=36						
TIXI	Tiksi	34.48 351		P	P	11 53 37.6	-0.4
	0.5nm,0.2s,baz=124,slow=7.3,SNR=2.8						
ZALV	Zalesovo Beam	42.85 312		P	P	11 54 54.0	+5.5
	0.9nm,0.4s,baz=104,slow=7.6,SNR=4.2						
ZALV				PcP	PcP	11 56 38.8	-0.5
	0.8nm,0.4s,baz=85,slow=3.0,SNR=4.7						
ZALV				LR	LR	12 13 09.2	
	comp=Z,31nm,18.9s,baz=270,slow=37						
MKAR	Makanchi Array	45.45 302		P	P	11 55 12.3	+2.8
	0.6nm,0.7s,baz=92,slow=8.9,SNR=4.8						
MKAR				LR	LR	12 14 02.0	
	comp=Z,32nm,21.1s,baz=71,slow=36						
ILAR	Eielson Array	47.33 33		P	P	11 55 22.4	-1.6
	0.3nm,0.7s,baz=265,slow=9.0,SNR=2.8						
INK	Inuvik	52.35 28		P	P	11 56 01.4	-0.6
	0.6nm,0.7s,baz=281,slow

ISC 08 11:49:51.2±1.3, 38°26N±0°.05×141°.78E±0°.09, h45km±12km, n18, σ0°70/28, mb3.6/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.39	300	P	Pn	11 50 01.4	+0.6
JIO				S	Sn	11 50 07.7	+0.2
JMK	Ichinoseki	0.82	328	P	Pn	11 50 06.5	+0.2
JMK				S	Sn	11 50 16.7	-0.6
OFUJ	Ofunato	0.83	354	P	Pn	11 50 06.7	+0.3
OFUJ				S	Sn	11 50 17.0	-0.5
JMM	Marumori	0.87	244	P	Pn	11 50 07.0	0.0
JMM				S	Sn	11 50 17.8	-0.7
JOU	Okura	0.88	277	P	Pn	11 50 07.2	0.0
JOU				S	Sn	11 50 18.2	-0.7
JFK	Kawauchi	1.14	219	P	Pn	11 50 11.3	+0.6
JFK				S	Sn	11 50 25.2	0.0
JOM	Ohasama	1.27	343	P	Pn	11 50 12.8	+0.3
JOM				S	Sn	11 50 28.5	+0.1
JYK	Kaneyama	1.29	301	P	Pn	11 50 12.6	-0.2
JYS	Shirataka	1.35	269	P	Pn	11 50 13.7	+0.2
JYS				S	Sn	11 50 30.5	+0.3
MJAR	Matsushiro Arr	3.32	240	P	Pn	11 50 42.1	+1.5
	1.4nm,0.3s,baz=40,slow=13,SNR=4.4						
MAT	Matsushiro	3.32	240	P	Pn	11 50 42.7	+2.1
MAT				S	Sn	11 51 19.2	+0.4
JHJ	Hachijo jima 2	5.38	198	P	Pn	11 51 09.1	+0.3
	2.8nm,0.3s,baz=61,slow=19,SNR=2.9						
JHJ				S	Sn	11 52 08.6	-0.9
	8.5nm,0.3s,baz=78,slow=20,SNR=4.2						
ASAJ	Asahikawa	5.89	6	P	Pn	11 51 16.1	+0.3
	0.6nm,0.3s,baz=211,slow=10,SNR=6.0						
USRK	Ussuriysk Ar.	9.46	312	P	Pn	11 52 05.2	+0.4
	0.3nm,0.3s,baz=120,slow=14,SNR=3.7						
MKAR	Makanchi Array	43.72	301	P	P	11 57 51.5	-0.3
	0.3nm,0.3s,baz=85,slow=12,SNR=3.8						
WRA	Warramunga Arr	58.31	188	P	P	11 59 40.9	-0.6
	0.8nm,0.5s,baz=5.3,slow=7.1,SNR=14						
ASAR	Alice Springs	62.04	188	P	P	12 00 06.6	-0.5
	0.3nm,0.6s,baz=7.4,slow=5.5,SNR=5.5						
TXAR	Lajitas Array	89.15	53	P	P	12 02 42.7	+0.5
	0.2nm,0.6s,baz=276,slow=4.3,SNR=4.3						

IDC 08 12:03:18.6±618.0, 47°38N×48°27E, h0km, Error ellipse: s-maj=233.9km s-min=137.6km az=49.0, Western Kazakhstan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I31KZ	AKTYUBINSK INF	7.12	61	*i*		12 48 10.0	
	baz=249,slow=327,SNR=0.4						
I43RU	DUBNA INFRASONI	1.55	328	*i*		13 14 38.8	
	baz=139,slow=318						
I46RU	ZALESOVO INFRA	23.88	60	*i*		14 29 40.0	
	baz=265,slow=336,SNR=2.2						

*IDC **08** 12:18:27.4±2.8, 37°.28N×144°.37E, h0km, mb3.4/2, mb1 3.5/3, mb1mx3.2/43, mbtmp3.3/3, ML3.3/1, Error ellipse: s-maj=70.9km s-min=35.8km az=64.0*
*ISCJB **08** 12:18:33.1±1.3, 37°.21N±0°.07×143°.96E±0°.09, h33km, mb3.3/2, Error ellipse: s-maj=10.5km s-min=9.3km az=139.3*
*JMA **08** 12:18:35.1±0.2, 37°.25N×143°.85E, h50km, M3.6*

ISC 08 12:18:33.9±1.7, 37°21N±0°.08×144°0E±0°.1, h35km, n12, σ1°10/18, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	2.45	301	P	Pn	12 19 12.0	+0.6
JIO				S	Sn	12 19 39.7	-0.5
ONAJ	Iwakimizuishiy	2.58	269	*e*S	Sn	12 19 41.8	-1.6
OFUJ	Ofunato	2.63	316	P	Pn	12 19 14.2	+0.3
OFUJ				*e*S	Sn	12 19 43.4	-1.2
JMM	Marumori	2.65	285	*e*S	Sn	12 19 44.1	-0.9
JMK	Ichinoseki	2.81	309	P	Pn	12 19 16.9	+0.5
JMK				*e*S	Sn	12 19 48.7	-0.4
JOU	Okura	2.90	294	P	Pn	12 19 19.8	+2.2
JOU				S	Sn	12 19 51.7	+0.4
JFT	Otama	2.95	277	*e*S	Sn	12 19 52.3	-0.3
JOM	Ohasama	3.12	317	P	Pn	12 19 21.6	+1.0
JOM				S	Sn	12 19 56.3	-0.2
JANG	Nango	3.71	329	P	Pn	12 19 30.3	+1.5
JANG				*e*S	Sn	12 20 09.6	-1.8
MJAR	Matsushiro Arr	4.71	264	Pn	Pn	12 19 43.3	+0.8
	1.1nm,0.3s,baz=77,slow=9.3,SNR=9.8						
ZALV	Zalesovo Beam	43.34	312	P	P	12 26 32.2	-0.2
	0.4nm,0.3s,baz=81,slow=9.2,SNR=3.6						
WRA	Warramunga Arr	57.58	191	P	P	12 28 19.8	-0.4
	0.1nm,0.5s,baz=8.6,slow=7.2,SNR=4.9						

*FUNV **08** 12:23:41.3, 5°.73N×72°.41W, h5km, MW3.4*
*RSNC **08** 12:23:50.6±0.9, 6°.10N×72°.07W, h0km±9km, ML2.8*

ISC 08 12:23:46.3±1.4, 6°08N±0°.05×71°86W±0°.04, h4km±12km, n19, σ1°38/26, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RUSC	La Rusia	1.23	261	*e*P	Pg	12 24 09.3	-0.7
RUSC				*e*S	Sg	12 24 24.4	-1.7
RUSC				*i*		12 24 30.4	
	comp=Z,93nm,0.4s						
BARC	Barichara	1.41	291	*e*P	Pg	12 24 12.6	-0.9
BARC				*i*		12 24 36.7	
	comp=Z,171nm,0.4s						
PAMC	Pamplona, Colo	1.51	326	*e*P	Pb	12 24 15.4	+0.2
PAMC				*e*S	Sn	12 24 35.0	+0.1
CAPV	Capacho	1.83	346	*e*P	Pn	12 24 17.6	-1.2
CAPV				*e*S	Sn	12 24 43.4	+0.7
CBRI	Barrientos, No	1.88	330	*e*P	Pb	12 24 21.6	+0.3
CBRI				*i*		12 24 51.8	
	comp=Z,179nm,0.6s						
GRMC	Gramalote, San	1.88	330	*e*P	Pg	12 24 22.7	+0.2
GRMC				*e*S	Sg	12 24 50.0	+3.1
GRMC				*i*		12 24 54.6	
	comp=Z,191nm,0.4s						
BRRC	Barranca, Sant	2.11	299	*e*P	Pn	12 24 23.5	+1.1
BRRC				*i*		12 24 56.4	
	comp=Z,48nm,0.3s						
ELOV	Elorza	2.53	69	*e*P	Pb	12 24 31.4	-1.0
ELOV				*e*S	Sg	12 25 08.1	+0.4
VILC	Villavicencio,	2.68	223	*e*P	Pn	12 24 32.5	+2.1
VILC				*i*		12 25 24.5	
	comp=Z,47nm,0.4s						
VIGV	El Vigia	2.79	10	*e*P	Pn	12 24 32.8	+0.9
VIGV				*e*S	Sb	12 25 09.3	-2.0
NORC	Norcasia	3.04	260	*e*P	Pn	12 24 35.9	+0.5
NORC				*e*S	Sn	12 25 12.0	-0.3
SJAC	San Juan de Ar	3.48	217	*e*P	Pn	12 24 43.4	+1.9
HELC	Santa Helena	3.65	272	*e*P	Pn	12 24 44.8	+0.7
HELC				*i*		12 25 39.0	
	comp=Z,10.0nm,0.5s						
PRAC	Prado	3.82	232	*e*P	Pn	12 24 48.0	+1.9
PRAC				*i*		12 25 38.0	
	comp=Z,38nm,0.2s						
SANV	Sanarito	4.11	34	*e*P	Pn	12 24 51.0	+1.0
CURV	Curarigua	4.34	26	*e*P	Pn	12 24 53.5	+0.3
VIRV	Villa del Rosa	4.43	353	*e*S	Sn	12 25 44.9	-1.6
BAUV	El Baul	4.73	53	*e*P	Pn	12 24 59.8	+1.2
CUPV	Cœpira	7.19	56	*e*P	Pn	12 25 33.4	+0.9

*IDC **08** 12:32:12.8±1.6, 29°.93N×79°.94E, h0km, mb3.4/8, mb1 3.6/10, mb1mx3.4/51, mbtmp3.5/10, ML3.6/2, Error ellipse: s-maj=54.1km s-min=18.8km az=64.0*
*ISCJB **08** 12:32:15.2±0.6, 30°.25N±0°.05×80°.39E±0°.05, h11km, mb3.3/6, Error ellipse: s-maj=7.9km s-min=5.4km az=161.2*
*NDI **08** 12:32:19.7±2.1, 30°.42N×80°.22E, h10km, ML3.2*

ISC 08 12:32:16.9±0.8, 30°30N±0°.08×80°33E±0°.05, h11km, n17, σ1°54/20, mb3.3/6, Western Xizang-India border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JOSI	Joshimath	0.72	292	*e*P	Pg	12 32 29.2	-1.6
JOSI				*e*S	Sg	12 32 39.5	-0.8
DDI	Dehra Dun	1.97	271	*e*P	Pb	12 32 52.6	-0.2
DDI				*e*S	Sb	12 33 17.0	-0.4
SMLA	Simla	2.85	288	*e*P	Pn	12 33 04.5	+2.2
SMLA				*e*S	Sn	12 33 35.9	-0.7
SMLA				IAML		12 33 49.4	
	comp=E,302nm,0.2s						
SMLA				IAML		12 33 49.6	
	comp=N,307nm,0.4s						
NDI	New Delhi	3.15	240	*e*P	Pn	12 32 57.0	-10
NDI				*e*S	Sn	12 33 33.0	-11
SONA	Sohna	3.49	235	*e*S	Sn	12 33 52.5	0.0
SONA				IAML		12 34 11.9	
	comp=N,107nm,0.4s						
SONA				IAML		12 34 13.3	
	comp=E,80nm,0.3s						
KUDL	Kundal	3.98	238	*e*S	Sn	12 34 06.0	+1.3
KUDL				IAML		12 34 30.3	
	comp=N,65nm,0.6s						
KUDL				IAML		12 34 30.6	
	comp=E,56nm,0.5s						
KHET	Khetri	4.53	242	*e*P	Pn	12 33 27.9	+2.4
KHET				*e*S	Sn	12 34 18.4	+0.1
KHET				IAML		12 34 38.7	
	comp=N,29nm,0.5s						
KHET				IAML		12 34 39.0	
	comp=E,17nm,0.4s						
AAK	Ala-Archa	13.17	341	Pn	Pn	12 35 25.9	+1.9
	comp=E,0.2nm,0.3s,baz=141,slow=13,SNR=2.9						
MKAR	Makanchi Array	16.54	5	Pn	P	12 36 10.2	-1.3
	comp=E,0.3nm,0.3s,baz=193,slow=12,SNR=11						
KURBB	Kurchatov Arra	20.35	357	P	P	12 36 52.6	-0.6
	comp=E,1.6nm,0.7s,baz=181,slow=9.9,SNR=16						
CMAR	Chiang Mai Arr	20.61	121	P	P	12 36 56.2	-0.1
	comp=E,0.8nm,0.7s,baz=303,slow=7.4,SNR=4.4						
ZALV	Zalesovo Beam	23.86	7	P	P	12 37 30.9	+0.7
	comp=E,0.8nm,0.6s,baz=202,slow=7.3,SNR=2.7						
SONM	Songino Array	26.57	41	P	P	12 37 57.4	+2.3
	comp=E,0.3nm,0.4s,baz=230,slow=8.6,SNR=3.0						
FINES	FINESS Array B	46.92	328	P	P	12 40 46.3	-1.0
	comp=E,1.2nm,0.9s,baz=103,slow=10,SNR=3.2						
WRA	Warramunga Arr	72.06	127	P	P	12 43 39.1	-2.3
	comp=E,0.1nm,0.3s,baz=320,slow=5.8,SNR=7.6						
ASAR	Alice Springs	74.30	130	P	P	12 43 52.1	-2.5
	comp=E,0.1nm,0.5s,baz=315,slow=6.3,SNR=6.8						
YKA	Yellowknife Ar	86.76	7	P	P	12 45 01.3	+0.5
	comp=E,0.1nm,0.5s,baz=342,slow=5.3,SNR=2.8						

WEL 08 12:34:43.8±2.4, 36°01S×178°27E, h5km, ML3.5/3, Error ellipse: s-maj=17.9km s-min=10.4km az=0.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HAZ	Te Kaha	1.79	192	P*	Pn	12 35 14.2	-1.1
PKGZ	Pakihiroa	1.89	185	PN	Pn	12 35 14.1	-2.7
PUZ	Puketiti	2.06	180	PN	Pn	12 35 18.7	-0.4
PUZ				AML	AML	12 35 51.1	
PUZ				AML	AML	12 36 03.2	
MWZ	Matawai	2.40	194	P*	Pn	12 35 22.5	-1.3
MWZ				AML	AML	12 36 09.1	
URZ	Urewera	2.43	202	P*	Pn	12 35 23.2	-1.0
URZ				AML	AML	12 35 56.0	
RAGZ	Rawiri	2.58	195	P*	Pn	12 35 27.4	+1.1
RIGZ	Rimuhau	2.73	188	PN	Pn	12 35 27.8	-0.4
TOZ	Tahuroa Road	2.81	231	P*	Pn	12 35 28.5	-0.9

IDC 08 12:40:28.8±1.7, 7°96S×126°61E, h0km, mb3.5/1, mb1 3.4/4, mb1mx3.3/35, mbtmp3.3/4, ML2.9/3, Error ellipse: s-maj=104.1km s-min=26.2km az=70.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	Fitzroy Crossi	10.12	185	Pn	Pn	12 42 55.0	-0.5
	0.1nm,0.3s,baz=9.4,slow=13,SNR=3.9						
FITZ				Sn	Sn	12 44 39.4	-10
	0.1nm,0.3s,baz=304,slow=18,SNR=3.2						
WRA	Warramunga Arr	14.07	149	Pn	Pn	12 43 47.7	-1.8
	0.1nm,0.3s,baz=323,slow=13,SNR=5.3						
WRA				Sn	Sn	12 46 17.6	-9.0
	0.1nm,0.3s,baz=319,slow=25,SNR=3.5						
ASAR	Alice Springs	17.11	157	P	P	12 44 31.3	-0.1
	0.1nm,0.3s,baz=336,slow=13,SNR=6.5						
MKAR	Makanchi Array	67.24	329	P	P	12 51 24.0	-1.0
	0.4nm,0.8s,baz=118,slow=5.2,SNR=3.6						
KURBB	Kurchatov Arra	71.61	330	P	P	12 51 52.9	+1.0
	0.8nm,0.3s,baz=126,slow=4.7,SNR=4.7						

*ISCJB **08** 12:41:37.2±0.6, 37°.90N±0°.04×27°.43E±0°.04, h10km, Error ellipse: s-maj=5.9km s-min=5.0km az=178.7*
*CSEM **08** 12:41:37.3±0.1, 37°.90N×27°.42E, h8km, MD2.7, Error ellipse: s-maj=2.2km s-min=1.6km az=46.0*
*ISK **08** 12:41:37.0, 37°.91N×27°.43E, h9km, MD2.7*

ISC 08 12:41:37.5±1.0, 37°90N±0°.03×27°42E±0°.03, h10km, n20, σ0°27/26, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GCAM	G?zelcaml?	0.25	216	P	Pg	12 41 42.7	0.0
GCAM				S	Sg	12 41 46.1	0.0
GCAM	G?zelcaml?	0.25	216	*i* P	Pg	12 41 42.7	0.0
GCAM				*i* S	Sg	12 41 46.1	0.0
AYDB	Zeytinkoy-Aydi	0.37	83	*e*PG	Pg	12 41 45.0	0.0
AYDB				*e*SG	Sg	12 41 50.2	+0.3
AYDB	Zeytinkoy-Aydi	0.37	83	*e*Pg	Pg	12 41 45.0	0.0
AYDB				*e*Sg	Sg	12 41 50.2	+0.3
AYDN	Tasoluk	0.43	124	P	Pg	12 41 45.8	-0.3
AYDN				S	Sg	12 41 51.2	-0.7
AYDN	Tasoluk	0.43	124	*i* P	Pg	12 41 45.9	-0.3
AYDN				*i* S	Sg	12 41 51.2	-0.7
IZM	Izmir	0.51	346	*e*PG	Pg	12 41 47.4	-0.1
IZM	Izmir	0.51	346	*e*Pg	Pg	12 41 47.4	-0.1
BLCB	Balcova	0.57	328	*e*PG	Pg	12 41 48.4	-0.2
BLCB	Balcova	0.57	328	*e*Pg	Pg	12 41 48.4	-0.2
BODT	Bodrum	0.84	186	*e*PG	Pg	12 41 53.8	0.0
BODT	Bodrum	0.84	186	*e*Pg	Pg	12 41 53.8	0.0
YER	Yerkesik	1.03	138	*e*PG	Pg	12 41 57.3	0.0
YER	Yerkesik	1.03	138	*e*Pg	Pg	12 41 57.3	0.0
KULA	Kula-Manisa	1.15	58	*e*PN	Pb	12 41 59.5	-0.1
KULA	Kula-Manisa	1.15	58	*e*Pn	Pb	12 41 59.5	-0.1
CHOS	Chios island	1.18	295	*e*PN	Pb	12 41 59.9	-0.2
CHOS	Chios island	1.18	295	*e*Pn	Pb	12 41 59.9	-0.2
FETY	Fethiye	1.83	133	*e*PN	Pn	12 42 09.5	+0.4
FETY	Fethiye	1.83	133	*e*Pn	Pn	12 42 09.5	+0.4

MAN 08 12:43:25, 17°66N×120°52E, h4km, mb4.4, ML3.2, MS3.1, 1C-2D, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ABRA	Dolores	0.19	93	*e*P	Pg	12 43 30.0	+1.4
ABRA				*e*S	Sg	12 43 33.8	+2.6
SIPP	Brgy, Tapao	0.27	348	‖ *i*P	Pg	12 43 30.9	+0.7
SIPP				*e*S	Sb	12 43 36.7	-0.7
APYP	Conner	0.72	74	*e*P	Pg	12 43 38.5	-0.4
APYP				*e*S	Sg	12 43 49.1	+0.9
CVP	Callao Caves	1.25	88	‖ *e*P	Pg	12 43 47.8	-1.1
BCPH	Baguio City Da	1.27	177	‖ *i*P	Pn	12 43 49.9	+0.2
BCPH				*i* S	Sb	12 44 06.2	-0.2
BOLP	Bolinao	1.40	205	*e*P	Pn	12 43 50.5	-0.7
SGCP	Mt. Cagua	1.57	68	*e*P	Pn	12 43 53.2	-0.4
BALP	Baler	2.16	152	*e*P	Pn	12 44 01.7	-0.1

*LJU **08** 12:47:14.8, 46°.39N×15°.07E, h0km Rockburst*

CSEM 08 12:47:14.8±99.0, 46°39N×15°07E, h0km, Mining explosion., Northwestern Balkan Peninsula

*IDC **08** 12:57:26.8±2.0, 37°.73N×144°.25E, h0km, mb3.5/3, mb1 3.7/5, mb1mx3.3/72, mbtmp3.5/5, ML3.5/2, MS2.4/2, Ms1 2.4/2, ms1mx2.2/32, Error ellipse: s-maj=55.1km s-min=26.8km az=76.0*
*ISCJB **08** 12:57:29.8±1.0, 37°.81N±0°.06×143°.90E±0°.07, h33km, mb3.6/3, Error ellipse: s-maj=9.5km s-min=7.5km az=37.0*
*JMA **08** 12:57:30.6±0.2, 37°.92N×143°.80E, h24km, M3.4*

ISC 08 12:57:32.5±1.4, 37°85N±0°.08×143°87E±0°.10, h35km, n14, σ1°09/20, mb3.8/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	2.07	288	P	Pn	12 58 03.9	-0.9
JIO				*e*S	Sn	12 58 28.0	-1.4
OFUJ	Ofunato	2.12	306	P	Pn	12 58 04.3	-1.1
OFUJ				*e*S	Sn	12 58 29.8	-0.7
JMK	Ichinoseki	2.35	299	P	Pn	12 58 08.0	-0.6
JMK				S	Sn	12 58 35.8	-0.5
JMM	Marumori	2.43	271	P	Pn	12 58 09.0	-0.7
JMM				*e*S	Sn	12 58 36.8	-1.5
JOM	Ohasama	2.58	310	P	Pn	12 58 11.4	-0.5
JOM				*e*S	Sn	12 58 41.5	-0.5
JFT	Otama	2.82	264	S	Sn	12 58 47.6	-0.3
JYK	Kaneyama	2.95	292	P	Pn	12 58 17.1	+0.2
JYK				S	Sn	12 58 51.6	+0.4
JRG	Rokugo	2.96	302	S	Sn	12 58 52.5	+1.1
MJAR	Matsushiro Arr	4.70	256	Pn	Pn	12 58 41.4	+0.4
	1.3nm,0.3s,baz=73,slow=17,SNR=17						
MJAR				Sn	Sn	12 59 34.4	+0.1
	0.3nm,0.3s,baz=81,slow=24,SNR=2.7						
MJAR				LR	LR	13 00 41.6	
	comp=Z,42nm,18.7s,baz=320,slow=39						
ASAJ	Asahikawa	6.33	352	Pn	Pn	12 59 02.6	-0.7
	1.2nm,0.3s,baz=192,slow=9.7,SNR=17						
JNU	Nakatsue	11.59	250	LR	LR	13 05 07.0	
	comp=Z,17nm,18.1s,baz=124,slow=39						
KURBB	Kurchatov Arra	47.04	308	P	P	13 06 03.0	+2.7
	0.4nm,0.3s,baz=84,slow=8.6,SNR=3.2						
WRA	Warramunga Arr	58.18	191	P	P	13 07 21.6	-1.4
	0.8nm,1.0s,baz=9.8,slow=7.0,SNR=3.5						
ASAR	Alice Springs	61.90	190	P	P	13 07 47.9	-0.7
	0.3nm,0.8s,baz=17,slow=6.8,SNR=3.3						

ISC 08 13:09:45.2±1.9, 51°49N±0°.09×15°99E±0°.05, h0km, n12, σ0°47/27, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	Ksiaz	0.68	164	*e*Pg	Pg	13 09 58.0	-0.1
KSP				*e*Sg	Sg	13 10 07.6	+0.7
UPC	Upice	0.99	179	*e*PG	Pg	13 10 03.8	-0.3
UPC				*e*SG	Sg	13 10 17.7	+0.8
	comp=Z,28nm,0.2s						
DPC	Dobruska-Polom	1.16	170	*e*PG	Pg	13 10 06.8	-0.7
DPC				*e*SG	Sg	13 10 22.7	+0.2
	comp=Z,12nm,0.2s						
PVCC	Panska Ves	1.32	224	*e*PG	Pg	13 10 10.7	+0.2
PVCC				*e*SG	Sn	13 10 29.2	0.0
	comp=Z,45nm,0.2s						
BRG	Berggiesshubel	1.43	245	PG	Pn	13 10 12.7	+0.2
BRG				SG	Sb	13 10 32.0	+0.5
	18nm,0.4s						
KRLC	Kraliky	1.50	160	*e*PG	Pn	13 10 13.1	-0.4
KRLC				*e*SG	Sg	13 10 33.6	+0.1
GOPC	GO Pecny, Ondr	1.76	206	*e*PG	Pn	13 10 17.7	+0.8
GOPC				*e*SG	Sg	13 10 41.8	+0.2
	comp=Z,5.0nm,0.2s						
PRU	Pruhonice	1.77	212	*e*PN	Pn	13 10 16.7	-0.3
PRU				*e*PG	Pb	13 10 17.9	-0.5
PRU				*e*SG	Sg	13 10 42.2	+0.3
	comp=Z,6.4nm,0.2s						
CLL	Collm	1.88	266	*e*Pg	Pn	13 10 19.0	+0.4
CLL				*e*Sg	Sg	13 10 46.0	+0.4
	comp=Z,5.0nm,0.6s						
OKC	Ostrava-Krasne	2.15	140	*e*SG	Sb	13 10 52.6	+0.4
NKC	Novy Kostel	2.58	242	*e*PN	Pn	13 10 28.0	-0.2
NKC				*e*PG	Pg	13 10 33.9	-0.7
NKC				*e*SG	Sg	13 11 07.6	-0.3
	comp=Z,10nm,0.3s						
KHC	Kasperske Hory	2.83	214	*e*PN	Pn	13 10 31.4	-0.2
KHC				*e*PG	Pb	13 10 36.9	+0.4
KHC				*e*SN	Sn	13 11 06.2	-0.2
KHC				*e*SG	Sg	13 11 15.2	-0.8
	comp=Z,2.1nm,0.2s						

*MEX **08** 13:24:46.4±0.8, 30°.67N×105°.10W, h15km, MD3.7*
*ISCJB **08** 13:24:48.5±0.6, 30°.70N±0°.04×105°.82W±0°.07, h10km, Error ellipse: s-maj=8.3km s-min=5.8km az=170.6*
*NEIC **08** 13:24:49.6±0.8, 30°.75N×105°.81W, h10km, ML3.1, Error ellipse: s-maj=11.7km s-min=8.2km az=176.0*

ISC 08 13:24:46.3±1.0, 30°66N±0°.05×105°62W±0°.04, h10km, n22, σ0°82/21, Texas-Mexico border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MNTX	Cornudas Mount	1.05	11	*e*Pn	Pn	13 25 19.5	+12
CGIG		2.06	262	*e*P	Pb	13 25 24.1	+0.1
CGIG				*e*S	Sg	13 25 52.8	+0.2
CGIG		2.06	262	*e*P	Pb	13 25 24.1	+0.1
CGIG				*e*S	Sg	13 25 52.8	+0.2
TX31	Lajitas Ar. Si	2.15	128	*e*Pn	Pg	13 25 26.7	-0.8
CLNB	Carlsbad	2.18	42	*e*Pn	Pg	13 25 27.9	-0.3
121A	Cookes Peak, D	2.63	316	*e*P	Pn	13 25 29.4	+0.3
121A				*e*S	Sb	13 26 04.8	-1.2
121A	Cookes Peak, D	2.63	316	*e*Pn	Pn	13 25 28.9	-0.1
CPRX	Cap Rock	2.79	32	*e*Pn	Pb	13 25 36.8	+0.3
319A	Douglas	3.23	284	*e*P	Pb	13 25 40.1	-3.7
319A				*e*S	Sb	13 26 22.8	-0.5
319A	Douglas	3.23	284	*e*Pn	Pn	13 25 37.3	+0.1
Y22D	IRIS PASSCAL I	3.58	342	*e*Pn	Pn	13 25 42.1	+0.1
Y22D				*e*Sn	Sg	13 26 40.3	-1.0
BNM	Barren Site	3.58	346	*e*Pn	Pn	13 25 43.4	+1.2
HPIG		3.71	181	*e*Sg	Sg	13 26 53.1	+7.5
LPM	Los Pinos Moun	3.74	347	*e*Pn	Pn	13 25 45.6	+1.3
LAZ	Ladron	3.95	341	*e*Pn	Pn	13 25 48.3	+1.2
MSTX	Muleshoe	4.08	35	*e*Pn	Pn	13 25 52.9	+3.9
ANMO	Albuquerque	4.33	351	*e*Pn	Pn	13 25 57.4	+5.0
TUC	Tucson	4.71	292	*e*Pn	Pn	13 25 58.3	+0.7
JCT	Junction City	5.02	91	*e*Pn	Pb	13 26 14.5	+0.2
X16A	Lo Mia Camp, P	6.18	309	*e*Pn	Pn	13 26 19.1	+1.2
Y14A	Wickenburg	7.06	300	*e*Pn	Pn	13 26 31.1	+1.4
Y14A				*e*Lg	Lg	13 28 32.1	
DCU	Deer Creek Res	10.85	335	*e*Pn	Pn	13 27 25.1	+3.2

*NIED **08** 13:28:00, 38°.50N×142°.50E, h20km, Mw4.2 Best double couple: M0 2.01000×10^15 NP1:φs 131.00000°, δ43.00000°, λ-114.00000°. NP2:φs 343.00000°, δ52.00000°, λ-69.00000°.*
*ISCJB **08** 13:28:38.3±0.9, 38°.53N±0°.03×142°.61E±0°.05, h15km±5km, mb4.4/60, MS3.6/14, Error ellipse: s-maj=6.6km s-min=4.6km az=32.5*
*MOS **08** 13:28:41.1±1.0, 38°.61N×142°.57E, h33km, mb4.5/34, Error ellipse: s-maj=8.9km s-min=5.6km az=97.5*
*JMA **08** 13:28:41.0±0.1, 38°.56N×142°.47E, h28km±2km, M4.2*
JMA Felt I J1.
*

MJB9	**Matsu-Tunnel**	4.00 242	*e*Pn	Pn	13 29 41.8	+1.3
INU	**Inuyama**	5.47 236	*e*Pn	Pn	13 30 03.1	+2.5
ASAJ	**Asahikawa**	5.59 0	P	Pn	13 30 03.2	+1.0
	2.5nm,0.3s,baz=239,slow=13,SNR=21					
ASAJ			S	Sn	13 31 07.4	+1.2
	2.0nm,0.3s,baz=288,slow=20,SNR=4.1					
ASAJ			LR	LR	13 32 48.5	
	comp=Z,193nm,19.2s,baz=272,slow=43					
JHJ2	**Mitsune**	5.85 203	*e*Pg	Pn	13 30 05.7	-0.2
JHJ	**Hachijo jima 2**	5.85 204	P	Pn	13 30 06.0	+0.1
	27nm,0.3s,baz=333,slow=21,SNR=13					
JHJ			S	Sn	13 31 08.3	-4.6
	36nm,0.3s,baz=85,slow=22,SNR=8.5					
YUK	**Yuzh-Kuril'sk**	6.03 23	*e*P	Pn	13 30 08.0	-0.3
YUK			*e*S	Sn	13 31 12.1	-5.1
YUK			pmax	pmax		
	comp=Z,91nm,0.8s					
YUK			pmax	pmax		
	comp=N,61nm,0.4s					
YUK			pmax	pmax		
	comp=E,71nm,0.4s					
SHO	**Shikotan**	6.22 30	*e*P	Pn	13 30 09.2	-1.8
SHO			*e*S	Sn	13 31 14.3	-7.7
SHO			pmax	pmax		
	comp=Z,83nm,0.6s					
SHO			pmax	pmax		
	comp=N,55nm,0.5s					
SHO			pmax	pmax		
	comp=E,32nm,0.5s					
KUR	**Kuril'sk**	7.77 29	*e*P	Pn	13 30 32.2	0.0
KUR			*e*S	Sn	13 31 54.4	-5.7
KUR			smax	smax		
	comp=N,48nm,0.5s					
KUR			smax	smax		
	comp=E,13nm,0.5s					
YSS	**Yuzh-Sakhalins**	8.43 1	*e*P	Pn	13 30 39.8	-1.3
YSS			*e*S	Sn	13 32 11.7	-4.4
YSS			pmax	pmax		
	comp=Z,10.0nm,1.3s					
USRK	**Ussuriysk Ar.**	9.77 309	P	Pn	13 31 04.2	+4.6
	comp=Z,0.4nm,0.3s,baz=127,slow=14,SNR=13					
JNU	**Nakatsue**	10.92 244	P	Pn	13 31 17.9	+2.4
	comp=Z,0.3nm,0.3s,baz=59,slow=6.8,SNR=9.3					
JNU			LR	LR	13 35 52.2	
	comp=Z,289nm,18.4s,baz=119,slow=40					
JNU	**Nakatsue**	10.92 244	*e*Pn	Pn	13 31 17.3	+1.8
JCJ	**Chichijima**	11.40 182	S	Sn	13 33 18.2	-11
	comp=Z,2.9nm,0.3s,baz=261,slow=19,SNR=3.6					
MDJ	**Mudanjiang**	11.47 306	P	Pn	13 31 29.4	+6.5
MDJ			pmax	pmax		
	comp=Z,7.0nm,1.1s					
MDJ			pmax	pmax		
	comp=Z,63nm,4.3s					
KSRS	**Korea Array**	11.62 269	P	Pn	13 31 28.1	+3.2
	comp=Z,0.1nm,0.3s,baz=81,slow=14,SNR=4.7					
KSRS			LR	LR	13 35 37.0	
	comp=Z,115nm,18.4s,baz=69,slow=36					
KSAR	**Wonju Array Be**	11.65 269	P	Pn	13 31 28.1	+2.7
KSAR	**Wonju Array Be**	11.65 269	P	Pn	13 31 28.1	+2.7
KLR	**Kul'dur**	13.23 327	P	P	13 31 53.3	-3.6
	comp=Z,0.2nm,0.3s,baz=135,slow=14,SNR=5.3					
KLR			LR	LR	13 36 54.3	
	comp=Z,118nm,19.0s,baz=137,slow=37					
PETK	**Petropavlovsk-**	17.93 31	LR	LR	13 40 49.1	
	comp=Z,48nm,18.0s,baz=221,slow=40					
NJ2	**Nanjing**	20.39 259	*e*P	Pn	13 33 17.8	-0.3
NJ2			pmax	pmax		
	comp=Z,15nm,0.5s					
BJI	**Beijing**	20.48 283	P	P	13 33 17.0	+0.1
BJI			S	S	13 37 04.5	-1.2
BJI			pmax	pmax		
	comp=Z,5.0nm,0.5s					
BJI			LR	LR		
	comp=N,190nm,13.3s					
BJI			LR	LR		
	comp=E,110nm,4.3s					
BJI			LR	LR		
	comp=Z,52nm,15.8s					
MA2	**Magadan**	21.71 11	*i* P	P	13 33 31.1	+1.1
HHC	**Hu-ho-hao-te**	23.92 285	*e*P	P	13 33 53.7	+0.5
HHC			sP	sP	13 34 10.1	+11
HHC			S	S	13 38 05.0	-4.4
HHC			pmax	pmax		
	comp=Z,21nm,0.9s					
HHC			pmax	pmax		
	comp=Z,240nm,3.9s					
HHC			LR	LR		
	comp=N,1μm,13.6s					
HHC			LR	LR		
	comp=E,1μm,13.6s					
HHC			LR	LR		
	comp=Z,1μm,12.8s					
YAK	**Yakutsk**	24.84 345	*e*P	P	13 34 00.4	-0.8
YAK			pmax	pmax		
	comp=Z,10.0nm,0.7s					
YAK	**Yakutsk**	24.84 345	*e*P	P	13 34 00.2	-1.0
	comp=Z,11nm,0.7s					
SEY	**Seymchan**	25.15 11	P	P	13 34 06.1	+2.1
	comp=Z,10.0nm,0.7s,baz=196,slow=7.8,SNR=46					
SEY	**Seymchan**	25.15 11	⇑*i*P	P	13 34 06.5	+2.5
BOD	**Bodaibo**	26.80 325	*e*P	P	13 34 18.1	-0.9
BOD			pmax	pmax		
	comp=Z,8.0nm,1.4s					
ULN	**Ulaanbaatar**	27.32 302	⇑*e*P	P	13 34 24.6	+0.5
ULN			pmax	pmax		
	comp=Z,6.0nm,2.5s					
XAN	**Xi'an**	27.41 271	P	P	13 34 34.3	+9.5
XAN			pmax	pmax		
	comp=Z,6.0nm,0.6s					
SONM	**Songino Array**	27.76 301	P	P	13 34 28.4	+0.4
	comp=Z,1.0nm,0.7s,baz=102,slow=8.1,SNR=6.6					
SONM			PcP	PcP	13 37 44.1	-0.1
	comp=Z,0.3nm,0.5s,baz=130,slow=3.9,SNR=3.1					
ENH	**Enshi**	28.41 263	*e*P	P	13 34 35.6	+1.9
	comp=Z,10nm,0.8s					
TLY	**Talaya**	30.09 309	*e*P	P	13 34 49.2	+0.8
TLY			pmax	pmax		
	comp=Z,7.0nm,0.8s					
ZAK	**Zakamensk**	30.11 306	*e*P	P	13 34 47.9	-0.8
ZAK			pmax	pmax		
	comp=Z,4.0nm,1.2s					
LZH	**Lanzhou**	30.76 278	*e*P	P	13 34 54.0	-0.7
LZH			pP	sP	13 35 07.5	+7.3
LZH			sP	pP	13 35 12.2	+14
LZH			pmax	pmax		
	comp=Z,16nm,1.0s					
LZH			pmax	pmax		
	comp=Z,110nm,4.2s					
LZH			LR	LR		
	comp=N,350nm,19.7s					
LZH			LR	LR		
	comp=E,200nm,17.0s					
LZH			LR	LR		
	comp=Z,150nm,21.0s					
BILL	**Bilibino**	32.34 16	*i* P	P	13 35 08.1	+0.1
BILL			pmax	pmax		
	comp=Z,3.0nm,1.0s					
BILL			MLR	MLR		
	comp=Z,28nm,18.0s					
GYA	**Guiyang**	32.40 259	⇑*i*P	P	13 35 11.0	+1.8
GYA			pP	sP	13 35 22.4	+7.7
GYA			PP	PP	13 36 20.8	-1.5
GYA			PcP	PcP	13 37 58.0	+1.5
GYA			S	S	13 40 21.2	-2.1
GYA			sS	sS	13 40 41.6	+12
GYA			ScP	ScP	13 41 37.8	-2.2
GYA			SS	SnSn	13 42 18.0	+2.1
GYA	**Guiyang**	32.40 259	ScS	ScS	13 45 35.3	-4.1
GYA			pmax	pmax		
	comp=Z,30nm,0.9s					
GYA			pmax	pmax		
	comp=Z,120nm,5.2s					
GYA			LR	LR		
	comp=N,530nm,16.8s					
GYA			LR	LR		
	comp=E,500nm,17.2s					
GYA			LR	LR		
	comp=Z,510nm,17.0s					
CD2	**Chengdu**	32.62 268	P	P	13 35 09.9	-1.1
CD2			pmax	pmax		
	comp=Z,20nm,0.7s					
GTA	**Gaotai**	33.04 285	*e*P	P	13 35 15.5	+0.8
GTA			pP	sP	13 35 25.9	+5.7
GTA			sP	pP	13 35 29.6	+11
GTA			S	S	13 40 32.5	-0.6
GTA			sS	sS	13 40 53.4	+14
GTA			SS	SnSn	13 42 38.0	+6.9
GTA			pmax	pmax		
	comp=Z,3.0nm,0.9s					
GTA			pmax	pmax		
	comp=Z,80nm,5.2s					
GTA			LR	LR		
	comp=N,140nm,19.0s					
GTA			LR	LR		
	comp=E,130nm,21.4s					
GTA			LR	LR		
	comp=Z,100nm,17.6s					
TIXI	**Tiksi**	33.93 352	P	P	13 35 20.8	-1.0
	comp=Z,1.2nm,0.7s,baz=104,slow=8.3,SNR=4.6					
TIXI	**Tiksi**	33.93 352	⇑*i*P	P	13 35 21.7	-0.1
TIXI			pmax	pmax		
	comp=Z,4.0nm,1.7s					
KMI	**Kunming**	36.12 260	P	P	13 35 42.0	+0.5
KMI			pmax	pmax		
	comp=Z,8.0nm,0.5s					
KMI			pmax	pmax		
	comp=Z,76nm,5.3s					
KRAR	**Krasnoyarsk**	37.05 315	⇓*i*P	P	13 35 50.2	+1.4
KRAR			pmax	pmax		
	comp=Z,17nm,0.7s					
WMQ	**Urumqi**	41.02 296	*e*P	P	13 36 23.1	+0.8
WMQ			PcS	PcS	13 42 13.2	+0.1
WMQ			SS	SS	13 45 34.1	-2.0
WMQ			LR	LR		
	comp=Z,24nm,18.4s					
ZALV	**Zalesovo Beam**	41.61 311	P	P	13 36 26.8	-0.1
	comp=Z,2.8nm,0.5s,baz=89,slow=6.6,SNR=14					
ZALV			PcP	PcP	13 38 23.7	-0.1
	comp=Z,1.4nm,0.6s,baz=92,slow=2.9,SNR=4.6					
NRIK	**Noril'sk**	42.31 334	LR	LR	13 55 08.6	
	comp=Z,57nm,19.2s,baz=110,slow=37					
NVS	**Novosibirsk**	42.50 313	*e*P	P	13 36 34.7	+0.5
CMAR	**Chiang Mai Arr**	42.78 255	P	P	13 36 37.1	+0.2
	comp=Z,0.4nm,0.4s,baz=47,slow=6.3					
MK01	**Makanchi Array**	44.13 301	*e*P	P	13 36 47.3	-0.2
MK31	**Makanchi Array**	44.13 301	*e*P	P	13 36 47.3	-0.2
MK31	**Makanchi Array**	44.13 301	*e*P	P	13 36 47.3	-0.2
MKAR	**Makanchi Array**	44.13 301	P	P	13 36 47.5	0.0
	comp=Z,1.9nm,0.8s,baz=84,slow=10.0,SNR=14					
MKAR	**Makanchi Array**	44.13 301	*e*P	P	13 36 47.2	-0.3
KURK	**Kurchatov**	45.76 307	P	P	13 37 00.7	+0.3
KURK					13 38 37.9	
KURK			pmax	pmax		
	comp=Z,9.0nm,0.8s					
KURK	**Kurchatov**	45.76 307	*e*P	P	13 36 59.7	-0.6
	comp=Z,13nm,0.9s					
KURK			PcP	PcP	13 38 37.9	0.0
KURBB	**Kurchatov Arra**	45.83 307	P	P	13 37 00.7	-0.2
	comp=Z,8.6nm,0.8s,baz=81,slow=8.1,SNR=64					
KURBB			PcP	PcP	13 38 37.9	-0.3
	comp=Z,0.4nm,0.6s,baz=89,slow=4.9,SNR=2.6					
ILAR	**Eielson Array**	47.74 33	P	P	13 37 16.7	+1.0
	comp=Z,1.2nm,0.8s,baz=270,slow=6.2,SNR=14					
BVAR	**Borovoye Array**	50.27 312	P	P	13 37 35.2	0.0
	comp=Z,2.1nm,0.6s,baz=69,slow=8.1,SNR=11					
BVAR			PcP	PcP	13 38 54.4	+0.4
	comp=Z,1.4nm,0.6s,baz=54,slow=3.7,SNR=5.9					
BRVK	**Borovoye**	50.32 312	*d i*P	P	13 37 35.6	0.0
BRVK			pmax	pmax		
	comp=Z,4.0nm,0.8s					
AAK	**Ala-Archa**	50.61 298	LR	LR	13 59 16.4	
	comp=Z,32nm,18.4s,baz=60,slow=36					
AAK	**Ala-Archa**	50.61 298	⇓*e*P	P	13 37 38.7	+0.5
AAK			pmax	pmax		
	comp=Z,4.0nm,1.1s					
ZRNK	**Zerenda**	51.10 312	*e*P	P	13 37 41.1	-0.4
ZRNK			pmax	pmax		
	comp=Z,4.0nm,0.9s					
ZRNK	**Zerenda**	51.10 312	*e*P	P	13 37 41.1	-0.4
	comp=Z,4.1nm,0.9s					
INK	**Inuvik**	52.64 28	P	P	13 37 54.1	+1.4
	comp=Z,0.8nm,0.7s,baz=314,slow=6.4,SNR=6.0					
INK			LR	LR	14 00 48.8	
	comp=Z,26nm,20.3s,baz=250,slow=36					
SVE	**Sverdlovsk**	54.65 318	⇓*i*P	P	13 38 08.3	+0.6
SVE			pmax	pmax		
	comp=Z,9.0nm,0.8s					
ARU	**Arti**	55.87 318	P	P	13 38 16.5	0.0
	comp=Z,5.1nm,0.6s,baz=75,slow=5.8,SNR=11					
ARU			LR	LR	14 04 29.9	
	comp=Z,52nm,19.4s,baz=52,slow=38					
ARU	**Arti**	55.87 318	*d i*P	P	13 38 16.4	0.0
ARU			S	S	13 46 03.9	+0.6
ARU			SS	SS	13 49 49.4	+1.0
ARU			pmax	pmax		
	comp=Z,10.0nm,1.0s					
ARU	**Arti**	55.87 318	*e*P	P	13 38 16.4	0.0
	comp=Z,7.3nm,0.7s					
AKTO	**Aktyubinsk**	58.37 312	LR	LR	14 04 56.9	
	comp=Z,37nm,18.2s,slow=37					
WRAB	**Tennant Creek**	58.66 189	*d i*P	P	13 38 36.3	-0.2
WRAB			pmax	pmax		
	comp=Z,12nm,0.8s					
WRA	**Warramunga Arr**	58.67 189	P	P	13 38 36.4	-0.2
	comp=Z,5.4nm,0.6s,baz=7.6,slow=7.0,SNR=93					
RES	**Resolute Bay**	60.92 15	P	P	13 38 51.8	+0.4
	comp=Z,1.8nm,0.6s,baz=307,slow=6.5,SNR=20					
RES			PcP	PcP	13 39 35.5	+0.7
	comp=Z,1.1nm,0.7s,baz=291,slow=5.5,SNR=4.0					
YKA	**Yellowknife Ar**	62.05 31	P	P	13 39 00.1	+0.8
	comp=Z,0.5nm,0.7s,baz=302,slow=6.3,SNR=7.8					
YKA			PcP	PcP	13 39 40.3	+0.7
	comp=Z,0.5nm,0.6s,baz=305,slow=4.7,SNR=7.5					
YKA	**Yellowknife Ar**	62.05 31	P	P	13 39 00.1	+0.8
YKA					13 39 40.3	
YKA			pmax	pmax		
	comp=Z,1.0nm,0.7s					
YKA			pmax	pmax		
	comp=Z,1.0nm,0.6s					
ASAR	**Alice Springs**	62.40 189	P	P	13 39 02.1	+0.1
	comp=Z,2.0nm,0.7s,baz=11,slow=5.6,SNR=40					
ARCES	**ARCESS Array B**	62.93 339	P	P	13 39 05.3	+0.3
	comp=Z,3.1nm,0.9s,baz=46,slow=7.8,SNR=3.7					
KLMR	**Klimovskoe**	62.99 328	*e*P	P	13 39 04.3	-1.3
KLMR			pmax	pmax		
	comp=Z,2.0nm,0.7s					
GEYT	**Alibeck**	63.93 299	P	P	13 39 12.1	-0.2
	comp=Z,3.4nm,0.6s,baz=15,slow=6.0,SNR=7.1					
OBN	**Obninsk**	67.46 323	*i* P	P	13 39 35.4	+0.8
OBN			pmax	pmax		
	comp=Z,4.0nm,0.8s					
OBN			MLR	MLR		
	comp=Z,24nm,13.0s					
FIA1	**FINESS Array S**	67.92 332	*e*P	P	13 39 37.3	-0.1
	comp=Z,47nm,1.8s					
FINES	**FINESS Array B**	67.93 332	P	P	13 39 37.5	+0.1
	comp=Z,5.2nm,0.7s,baz=45,slow=8.4,SNR=19					
FINES	**FINESS Array B**	67.93 332	*i* P	P	13 39 37.2	-0.3
FINES			pmax	pmax		
	comp=Z,5.0nm,0.7s					
VSU	**Vasula**	69.64 330	P	P	13 39 48.1	-0.1
VSU			pmax	pmax		
	comp=Z,35nm,0.8s					
ZEI	**Tsey**	70.57 309	*e*P	P	13 39 52.9	-1.6
ZEI			pmax	pmax		
	comp=Z,6.0nm,0.6s					
KIV	**Kislovodsk**	70.63 311	*e*P	P	13 39 55.3	+0.6
KIV			pmax	pmax		
	comp=Z,12nm,0.8s					
KIV	**Kislovodsk**	70.63 311	*e*P	P	13 39 55.2	+0.6
	comp=Z,12nm,0.8s					
KBZ	**Khabaz**	70.63 311	P	P	13 39 54.8	+0.3
	comp=Z,2.2nm,0.3s,baz=90,slow=2.0,SNR=8.7					
NEY	**Neytrino**	71.01 310	P	P	13 39 58.0	+0.9
NEY			pmax	pmax		
	comp=Z,1.0nm,0.8s					
NB2	**NORSAR Subarra**	73.17 338	P	P	13 40 09.6	+0.1
	comp=Z,1.4nm,0.6s,baz=38,slow=6.2					
NOA	**NORSAR Array B**	73.17 338	P	P	13 40 09.7	+0.2
	comp=Z,2.7nm,0.8s,baz=39,slow=6.0,SNR=7.7					
NOA			LR	LR	14 15 14.3	
	comp=Z,25nm,21.9s,baz=25,slow=38					
NVAR	**Mina Array Bea**	73.36 54	P	P	13 40 13.1	+1.8
	comp=Z,1.0nm,0.9s,baz=283,slow=7.2,SNR=4.3					
AKASG	**Malin Array Be**	73.68 323	P	P	13 40 12.7	+0.1
	comp=Z,2.7nm,0.5s,baz=45,slow=6.3,SNR=11					
AKASG	**Malin Array Be**	73.68 323	*i* P	P	13 40 12.6	-0.1
AKASG			pmax	pmax		
	comp=Z,2.0nm,0.4s					
KIEV	**Kiev**	73.69 323	*d i*P	P	13 40 12.5	-0.2
KIEV			pmax	pmax		
	comp=Z,8.0nm,0.9s					
KIEV	**Kiev**	73.69 323	*e*P	P	13 40 12.2	-0.5
	comp=Z,6.3nm,0.8s					
PDAR	**Pinedale Array**	75.96 46	P	P	13 40 27.4	+1.1
	comp=Z,0.8nm,0.6s,baz=277,slow=2.1,SNR=10					
BUR08	**Bucovina Ar. S**	77.70 322	*e*P	P	13 40 36.2	+0.3
BRTR	**Keskin Array B**	78.55 312	P	P	13 40 40.9	+0.1
	comp=Z,0.5nm,0.5s,baz=88,slow=3.2,SNR=3.5					
BRTR	**Keskin Array B**	78.55 312	*i* P	P	13 40 41.0	+0.1
BRTR			pmax	pmax		
	comp=Z,1.0nm,0.5s					
MORC	**Moravsky Berou**	79.61 327	*e*P	P	13 40 46.9	+0.6
MORC			pmax	pmax		
	comp=Z,16nm,0.9s					
MORC	**Moravsky Berou**	79.61 327	*e*P	P	13 40 46.9	+0.6
	comp=Z,16nm,0.9s					
DPC	**Dobruska-Polom**	79.68 328	*e*P	P	13 40 47.8	+1.1
DPC			*e*x	x	13 41 09.3	
DPC	**Dobruska-Polom**	79.68 328	*e*P	P	13 40 47.8	+1.1
KRLC	**Kraliky**	79.70 328	*e*P	P	13 40 47.7	+0.9
KRLC	**Kraliky**	79.70 328	*e*P	P	13 40 47.7	+0.9
VYHS	**Vyhne**	80.02 326	*e*P	P	13 40 49.2	+0.7
VYHS	**Vyhne**	80.02 326	*e*P	P	13 40 49.2	+0.7
BRG	**Berggiesshubel**	80.24 330	*e*P	P	13 40 49.7	+0.1
	comp=Z,4.8nm,1.3s					
BRG	**Berggiesshubel**	80.24 330	*e*P	P	13 40 49.7	+0.1
BRG			pmax	pmax		
	comp=Z,3.0nm,1.3s					
CLL	**Collm**	80.26 331	*i* P	P	13 40 49.8	+0.1
	comp=Z,4.0nm,0.8s					
CLL	**Collm**	80.26 331	*i* P	P	13 40 49.8	+0.1
CLL			pmax	pmax		
	comp=Z,4.0nm,0.8s					
PRU	**Pruhonice**	80.69 329	*e*P	P	13 40 53.0	+1.0
PRU	**Pruhonice**	80.69 329	*e*P	P	13 40 53.0	+1.0
KHC	**Kasperske Hory**	81.75 329	*e*P	P	13 40 58.7	+0.9
KHC	**Kasperske Hory**	81.75 329	*e*P	P	13 40 58.7	+0.9
GERES	**GERESS Array B**	81.93 329	P	P	13 40 59.0	+0.3
	comp=Z,0.5nm,0.5s,baz=38,slow=6.8,SNR=5.8					
ANMO	**Albuquerque**	82.92 51	P	P	13 41 06.2	+1.9
	comp=Z,0.9nm,0.8s,baz=309,slow=9.0,SNR=3.5					
ANMO	**Albuquerque**	82.92 51	P	P	13 41 06.6	+2.2
ANMO			pmax	pmax		
	comp=Z,1.0nm,1.1s					
TXAR	**Lajitas Array**	88.48 53	P	P	13 41 33.0	+1.1
	comp=Z,0.4nm,0.6s,baz=306,slow=2.8,SNR=11					
TKL	**Tuckaleechee C**	94.64 36	P	P	13 42 01.1	+0.8
	comp=Z,1.3nm,0.6s,baz=193,slow=5.8,SNR=3.2					
LPAZ	**La Paz**	145.14 59	PKPbc	PKPbc	13 48 17.7	+0.3
	comp=Z,1.1nm,0.5s,baz=38,slow=3.9,SNR=6.1					

*IDC **08** 13:31:13.5±2.7, 13°.71N×91°.17W, h0km, mb3.7/8, mb1 4.0/10, mb1mx3.8/38, mbtmp3.7/10, ML3.9/2, Error ellipse: s-maj=56.5km s-min=40.6km az=15.0*
*ISCJB **08** 13:31:16.9±0.9, 13°.64N±0°.10×91°.53W±0°.09, h28km, mb3.7/9, Error ellipse: s-maj=17.4km s-min=7.9km az=43.0*
*MEX **08** 13:31:18.8±0.5, 13°.59N×91°.59W, h15km, MD4.1*
*NEIC **08** 13:31:20.5±1.7, 13°.76N×91°.52W, h40km±13km, mb3.7/2, MD4.1(MEX), Error ellipse: s-maj=28.9km s-min=14.2km az=215.0*
ISC 08 13:31:18.7±1.0,**13°.7N**±0°.1×**91°.58W**±0°.08,**h28**km,**n20,**
σ1°50/26,mb3.8/9,Near coast of Guatemala

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		2.58	322	*e*P	Pn	13 31 58.1	-0.4
PCIG				*e*S	Sn	13 32 28.0	-1.0
PCIG		2.58	322	*e*P	Pn	13 31 58.1	-0.4
PCIG				*e*S	Sn	13 32 28.0	-1.0
CCIG	Comitan	2.66	348	*e*P	Pn	13 31 59.8	-0.1
CCIG				*e*S	Sn	13 32 31.9	+0.5
CCIG	Comitan	2.66	348	*e*P	Pn	13 31 59.8	-0.1
CCIG				*e*S	Sn	13 32 31.9	+0.5
CMIG	Matias Romero	4.67	317	Pn	Pn	13 32 27.3	0.0
	1.9nm,0.3s,baz=134,slow=12,SNR=11						
CMIG				Sn	Sn	13 33 24.4	+3.9
	2.3nm,0.3s,baz=274,slow=19,SNR=4.1						
TEIG	Tepich	7.26	25	Pn	Pn	13 33 04.1	+1.2
	6.1nm,0.3s,baz=270,slow=20,SNR=51						
TEIG	Tepich	7.26	25	*e*Pn	Pn	13 33 03.8	+0.9
	44nm,0.4s						
JTS	JuntasAbangare	7.30	117	Pn	Pn	13 33 04.7	+1.1
	16nm,0.7s						
TXAR	Lajitas Array	19.20	326	P	Pn	13 35 42.9	+1.3
	0.1nm,0.3s,baz=153,slow=12,SNR=23						
TKL	Tuckaleechee C	23.01	16	P	P	13 36 20.0	-1.4
	3.7nm,0.6s,baz=182,slow=9.5,SNR=13						
ANMO	Albuquerque	25.09	330	P	P	13 36 42.8	+1.5
	0.6nm,0.6s,baz=137,slow=13,SNR=6.0						
ANMO	Albuquerque	25.09	330	P	P	13 36 41.0	-0.3
	0.9nm,0.6s						
PDAR	Pinedale Array	32.90	335	P	P	13 37 49.2	-1.5
	0.3nm,0.6s,baz=149,slow=7.2,SNR=3.3						
NVAR	Mina Array Bea	34.19	321	P	P	13 38 03.4	+1.4
	0.7nm,0.6s,baz=122,slow=8.6,SNR=5.3						
HLID	Hailey	35.67	331	P	P	13 38 16.8	+2.2
	1.0nm,0.7s						
YKA	Yellowknife Ar	51.45	347	P	P	13 40 19.9	-1.2
	0.5nm,0.4s,baz=152,slow=7.8,SNR=19						
YKA				PcP	PcP	13 41 33.8	-1.4
	0.3nm,0.7s,baz=145,slow=3.7,SNR=5.2						
DLBC	Dease Lake	53.13	336	P	P	13 40 35.0	+1.2
	0.8nm,0.5s,baz=136,slow=5.5,SNR=5.7						
INK	Inuvik	60.88	343	P	P	13 41 26.3	-2.0
	0.5nm,0.6s,baz=135,slow=8.2,SNR=4.7						
RES	Resolute Bay	61.05	359	P	P	13 41 26.9	-2.6
	0.3nm,0.5s,baz=196,slow=7.0,SNR=4.4						
CMAR	Chiang Mai Arr	146.44	342	PKPbc	PKPab	13 50 58.4	-0.4
	1.2nm,0.9s,baz=349,slow=0.9,SNR=4.8						

*IDC **08** 13:36:44.8±5.2, 36°.52N×141°.23E, h0km, mb3.3/2, mb1 3.5/3, mb1mx3.2/37, mbtmp3.2/3, ML3.0/1, Error ellipse: s-maj=113.3km s-min=38.1km az=33.0*
*ISCJB **08** 13:36:48.3±1.0, 36°.75N±0°.05×141°.1E±0°.1, h50km±8km, mb3.3/2, Error ellipse: s-maj=15.0km s-min=6.8km az=24.1*
*JMA **08** 13:36:50.1±0.1, 36°.78N×140°.99E, h49km±1km, M3.1*
ISC 08 13:36:48.9±1.5,**36°.75N**±0°.07×**141°.1E**±0°.1,**h40**km±13km,
n12,σ0°69/20,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.44	323	P	Pn	13 36 59.4	+0.5
ONAJ				S	Sn	13 37 05.6	-0.4
JHO	Hitachi	0.47	253	P	Pn	13 36 59.8	+0.5
JHO				S	Sn	13 37 06.6	0.0
JFK	Kawauchi	0.65	342	P	Pn	13 37 01.9	+0.2
JFK				S	Sn	13 37 10.2	-0.7
JYT	Yasato	0.92	236	P	Pn	13 37 05.5	+0.2
JYT				S	Sn	13 37 16.4	-0.9
JFT	Otama	1.00	321	P	Pn	13 37 06.9	+0.5
JFT				S	Sn	13 37 18.9	-0.4
JMM	Marumori	1.15	346	P	Pn	13 37 08.8	+0.3
JMM				S	Sn	13 37 22.5	-0.5
JFY	Yanaizu	1.32	300	P	Pn	13 37 10.9	+0.1
JAG	Ashikaga	1.39	257	P	Pn	13 37 11.6	-0.2
JAG				S	Sn	13 37 27.2	-1.7
MJAR	Matsushiro Arr	2.36	266	Pn	Pn	13 37 25.6	+0.5
	3.2nm,0.3s,baz=88,slow=15,SNR

CGIG		**1.97**	**259**	*eP*	**Pb**	**13 46 50.8**	**-0.2**
CGIG				*eS*	**Sg**	**13 47 18.1**	**-0.1**
CGIG		**1.97**	**259**	*eP*	**Pb**	**13 46 50.8**	**-0.2**
CGIG				*eS*	**Sg**	**13 47 18.1**	**-0.1**
CLNB	**Carlsbad**	**2.19**	**46**	*ePn*	**Pb**	**13 46 54.3**	**-0.4**
TX31	**Lajitas Ar. Si**	**2.30**	**128**	*ePn*	**Pn**	**13 46 54.5**	**+1.5**
121A	**Cookes Peak, D**	**2.48**	**316**	*eP*	**Pn**	**13 46 56.5**	**+0.9**
121A				*eS*	**Sb**	**13 47 30.2**	**-0.1**
121A	**Cookes Peak, D**	**2.48**	**316**	*ePn*	**Pn**	**13 46 56.5**	**+0.9**
319A	**Douglas**	**3.10**	**282**	*eP*	**Pb**	**13 47 07.4**	**-2.8**
319A				*eS*	**Sb**	**13 47 47.0**	**-1.0**
319A	**Douglas**	**3.10**	**282**	*ePn*	**Pn**	**13 47 04.7**	**+0.7**
Y22D	**IRIS PASSCAL I**	**3.45**	**344**	*ePn*	**Pn**	**13 47 11.3**	**+2.5**
BNM	**Barren Site**	**3.46**	**348**	*ePn*	**Pn**	**13 47 12.1**	**+3.0**
LPM	**Los Pinos Moun**	**3.62**	**348**	*ePn*	**Pn**	**13 47 13.1**	**+1.8**
HPIG		**3.81**	**179**	*ePn*	**Pn**	**13 47 13.4**	**-0.6**
LAZ	**Ladron**	**3.81**	**342**	*ePn*	**Pn**	**13 47 15.9**	**+2.0**
MSTX	**Muleshoe**	**4.07**	**37**	*ePn*	Pn	13 47 21.3	+4.0
ANMO	**Albuquerque**	**4.21**	**352**	*eP*	**Pn**	**13 47 19.0**	**-0.5**
ANMO				*eS*	**Sn**	**13 48 09.7**	**+0.9**
ANMO	**Albuquerque**	**4.21**	**352**	*ePn*	**Pn**	**13 47 21.7**	**+2.2**
TUC	**Tucson**	**4.57**	**291**	*ePn*	**Pn**	**13 47 24.9**	**+0.7**
JCT	**Junction City**	**5.13**	**92**	*ePn*	**Pn**	**13 47 33.8**	**+1.9**
AMTX	**Amarillo**	**5.35**	**39**	*ePn*	**Pn**	**13 47 37.6**	**+2.7**
ABTX	**Abilene, Hawle**	**5.52**	**69**	*ePn*	**Pn**	**13 47 39.2**	**+1.9**
ABTX				*eSg*	**Sg**	**13 49 08.5**	**-3.7**
X16A	**Lo Mia Camp, P**	**6.03**	**309**	*ePn*	**Pn**	**13 47 47.4**	**+3.0**
Y14A	**Wickenburg**	**6.91**	**299**	*ePn*	**Pn**	**13 47 58.1**	**+1.7**
SDCO	**Great Sand Dun**	**6.97**	**2**	*ePn*	**Pn**	**13 48 00.2**	**+2.8**
S22A	**4UR Ranch, Cre**	**7.02**	**353**	*ePn*	**Pn**	**13 47 59.3**	**+1.2**
WMOK	**Wichita Mounta**	**7.08**	**54**	*ePn*	**Pn**	**13 47 59.5**	**+0.8**
WMOK				*eSg*	Sg	13 49 55.2	-7.0
113A	**Mohawk Valley,**	**7.12**	**288**	*ePn*	**Pn**	**13 48 00.6**	**+1.5**
WHTX	**Lake Whitney,**	**7.19**	**78**	*ePn*	**Pn**	**13 48 02.6**	**+2.4**
PV01	**Paradox Valley**	**7.71**	**343**	*ePn*	Pn	13 48 11.0	+3.5
SLBS	**Sierra La Lagu**	**7.98**	**209**	*ePn*	**Pn**	**13 48 12.4**	**+1.4**

KRNET 08 13:49:53.2±0.1, 39°.94N×73°.10E, h6km, mb1.9, 14C-4D, Tajikistan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFK	**Sufi-Kurgan**	**0.32**	**76**	⇑*iP*	Pg	13 49 58.8	-0.7
	baz=345						
SFK				⇑*iS*	Sb	13 50 05.5	-1.5
	baz=345						
SFK	**Sufi-Kurgan**	**0.32**	**76**	⇓*eP*	Pg	13 49 58.8	-0.7
	baz=75						
SFK				⇓*eS*	Sg	13 50 04.6	+0.8
	baz=75						
OHH	**Osh**	**0.63**	**338**	⇑*eP*	Pg	13 50 05.8	+0.4
	baz=338						
OHH				⇑*iS*	Sb	13 50 15.1	-0.8
	baz=338						
ARSB	**Arslanbob**	**1.39**	**356**	⇑*eP*	Pg	13 50 19.9	+0.1
	baz=356						
ARSB				⇑*eS*	Sn	13 50 40.1	+2.1
	baz=356						
BTK	**Batken**	**1.76**	**275**	⇑*eP*	Pg	13 50 26.5	-0.3
	baz=275						
BTK				⇑*eS*	Sg	13 50 50.2	+0.6
	baz=275						
AML	**Almayashu**	**2.24**	**11**	⇓*iP*	Pb	13 50 33.5	-0.7
	baz=0.0						
AML				⇓*iS*	Sg	13 51 05.4	+0.3
	baz=0.0						
UCH	**Uchtor**	**2.52**	**25**	⇑*iP*	Pn	13 50 35.7	+0.6
	baz=13						
UCH				⇑*iS*	Sb	13 51 09.1	-1.6
	baz=13						
MNAS	**Manas**	**2.59**	**350**	⇑*eP*	Pb	13 50 38.9	-1.1
	baz=350						
MNAS				⇑*eS*	Sb	13 51 11.5	-0.6
	baz=350						
KZA	**Kyzart**	**2.69**	**37**	⇑*iP*	Pn	13 50 35.8	-1.5
	baz=25						
KZA				⇑*iS*	Sn	13 51 10.3	-0.1
	baz=25						

*IDC **08** 13:55:53.2±13.0, 31°.31S×177°.57W, h0km, mb3.4/3, mb1 3.7/3, mb1mx3.5/19, mbtmp3.4/3, Error ellipse: s-maj=322.2km s-min=38.4km az=48.0*

ISC 08 13:56:01.7±2.3, 31°.75±0°.1×178.2W±0°.3, h26km, n8, σ1°85/11, mb3.6/3, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HAZ	**Te Kaha**	**6.84**	**208**	PN	**Pn**	**13 57 42.7**	**+2.3**
HAZ				SN	**Sn**	**13 58 59.0**	**+1.7**
PKGZ	**Pakihiroa**	**6.85**	**205**	PN	**Pn**	**13 57 42.5**	**+2.0**
PKGZ				SN	**Sn**	**13 58 55.1**	**-2.5**
MWZ	**Matawai**	**7.44**	**207**	PN	**Pn**	**13 57 50.0**	**+1.3**
MWZ				SN	**Sn**	**13 59 10.5**	**-1.8**
URZ	**Urewera**	**7.54**	**209**	PN	**Pn**	**13 57 49.7**	**-0.3**
RIGZ	**Rimuhau**	**7.69**	**204**	PN	**Pn**	**13 57 53.6**	**+1.7**
ASAR	**Alice Springs**	**42.85**	**268**	P	**P**	**14 03 58.0**	**0.0**
	0.1nm,0.4s,baz=106,slow=7.4,SNR=5.8						
WRA	**Warramunga Arr**	**43.97**	**274**	P	**P**	**14 04 06.6**	**-0.3**
	0.4nm,0.3s,baz=114,slow=8.0,SNR=13						
VNDA	**Vanda**	**46.75**	**186**	P	**P**	**14 04 27.2**	**-1.0**
	0.3nm,0.5s,baz=14,slow=9.1,SNR=5.1						

*ISCJB **08** 13:57:58.6±0.7, 30°.87N±0°.05×105°.73W±0°.04, h10km, Error ellipse: s-maj=7.6km s-min=5.1km az=170.8*
*NEIC **08** 13:57:58.5±0.6, 30°.71N×105°.75W, h10km, ML2.9, Error ellipse: s-maj=8.9km s-min=6.4km az=87.0*
*MEX **08** 13:58:02.0±0.3, 30°.91N×105°.67W, h9km±9km, MD3.6*

ISC 08 13:57:58.9±0.9, 30°.88N±0°.04×105°.70W±0°.04, h10km, n24, σ1°19/26, Texas-Mexico border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MNTX	**Cornudas Mount**	**0.86**	**18**	*ePg*	**Pb**	**13 58 15.8**	**-0.3**
GDL2	**Guadalupe Moun**	**1.75**	**41**	*ePn*	**Pb**	**13 58 31.5**	**+0.4**
GDL2				*ePg*	**Pg**	**13 58 32.1**	**-0.3**
CGIG		**2.03**	**256**	*eP*	**Pn**	**13 58 33.7**	**+0.5**
CGIG				*eS*	**Sn**	**13 58 58.4**	**-0.4**
CGIG		**2.03**	**256**	*eP*	**Pn**	**13 58 33.7**	**+0.5**
CGIG				*eS*	**Sn**	**13 58 58.4**	**-0.4**
CLNB	**Carlsbad**	**2.08**	**48**	*ePn*	**Pb**	**13 58 36.7**	**-0.2**
TX31	**Lajitas Ar. Si**	**2.34**	**131**	*ePn*	**Pn**	**13 58 36.7**	**-0.8**
121A	**Cookes Peak, D**	**2.42**	**313**	*eP*	**Pn**	**13 58 38.9**	**+0.1**
121A				*eS*	**Sn**	**13 59 07.3**	**-1.3**
121A	**Cookes Peak, D**	**2.42**	**313**	*ePn*	**Pn**	**13 58 38.8**	**0.0**
CPRX	**Cap Rock**	**2.66**	**36**	*ePn*	Pn	13 58 36.2	-5.7
319A	**Douglas**	**3.11**	**280**	*eP*	**Pn**	**13 58 48.3**	**+0.2**
319A				*eS*	**Sn**	**13 59 25.6**	**+0.2**
319A	**Douglas**	**3.11**	**280**	*ePn*	**Pn**	**13 58 47.1**	**-1.0**
Y22D	**IRIS PASSCAL I**	**3.35**	**342**	*ePn*	**Pn**	**13 58 53.2**	**+1.7**
BNM	**Barren Site**	**3.36**	**347**	*ePn*	**Pn**	**13 58 52.5**	**+0.8**
LPM	**Los Pinos Moun**	**3.52**	**347**	*ePn*	**Pn**	**13 58 55.8**	**+2.1**
LAZ	**Ladron**	**3.72**	**341**	*ePn*	**Pn**	**13 58 57.9**	**+1.3**
HPIG		**3.93**	**180**	*eSg*	**Sb**	**13 59 58.0**	**+2.0**
MSTX	**Muleshoe**	**3.96**	**38**	*ePn*	**Pn**	**13 59 01.4**	**+1.6**
ANMO	**Albuquerque**	**4.11**	**351**	*eP*	**Pn**	**13 59 03.3**	**+1.3**
ANMO				*eS*	**Sn**	**13 59 50.0**	**-0.2**
ANMO	**Albuquerque**	**4.11**	**351**	*ePn*	Pb	13 59 06.0	-5.4
TUC	**Tucson**	**4.57**	**290**	*ePn*	Pn	13 59 02.5	-5.6
TUC				*eLg*	Lg	14 00 23.6	
JCT	**Junction City**	**5.10**	**93**	*ePn*	**Pn**	**13 59 16.7**	**+1.2**
AMTX	**Amarillo**	**5.24**	**39**	*ePn*	Pn	13 59 20.6	+3.3
AMTX				*eSg*	**Sg**	**14 00 44.2**	**-2.8**
T25A	**Trinidad**	**6.34**	**9**	*ePn*	Pn	13 59 40.3	+7.7
WMOK	**Wichita Mounta**	**6.98**	**55**	*ePn*	**Pn**	**13 59 41.9**	**+0.6**

SJA 08 14:06:56.5±0.4, 32°.16S×68°.38W, h115km±2km, ML3.4, MW3.6, Mendoza Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RTCV	**Cerro Valdivia**	**0.33**	**335**	*iP*	Pn	14 07 13.5	+0.4
RTCV				*iS*	Sn	14 07 26.2	+0.7
ASAL	**Salagasta**	**0.58**	**222**	*iS*	Sn	14 07 29.2	+1.0
SJA	**San Juan**	**0.65**	**346**	*iP*	Pn	14 07 15.8	+0.7
SJA				IAML		14 07 32.8	
	comp=Z,403nm,0.3s						
ARCO	**CERRO ARCO**	**0.83**	**214**	*iS*	Sn	14 07 32.7	+0.8
ARCO				IAML		14 07 35.3	
	comp=Z,2μm,0.2s						
RTLL	**Cerro Villicun**	**0.83**	**354**	*iP*	Pn	14 07 17.2	+0.7
RTLL				*iS*	Sn	14 07 32.7	+1.0
RTLS	**Leoncito**	**0.86**	**294**	*iP*	Pn	14 07 18.2	+1.2
AAGR	**Agrelo**	**1.00**	**202**	*iS*	Sn	14 07 35.8	+1.1
AMOG	**MOGNA**	**1.22**	**355**	*iP*	Pn	14 07 21.3	+0.8
AMOG				*iS*	Sn	14 07 39.4	+0.7
AVFE	**Valle Fertil**	**1.69**	**28**	IAML		14 07 54.3	
	comp=Z,152nm,0.6s						
AGUA	**GUANDACOL**	**2.66**	**358**	*iP*	Pn	14 07 39.4	+1.0

IDC 08 14:16:45.0±1.0, 55°.89S×26°.47W, h0km, mb4.0/3, mb1 4.2/3, mb1mx3.9/15, mbtmp4.0/3, Error ellipse: s-maj=58.9km s-min=31.4km az=65.0, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VNDA	**Vanda**	**46.76**	**182**	P	P	14 25 15.4	+0.2
	1.2nm,0.7s,baz=191,slow=7.9,SNR=11						
H10S2	**ASCENSION HYDR**	**47.73**	**16**	T	T	15 17 38.7	
	baz=188						
H10S3	**ASCENSION HYDR**	**47.73**	**16**	T	T	15 17 38.9	
	baz=188						
H10S1	**ASCENSION HYDR**	**47.74**	**16**	T	T	15 17 40.3	
	baz=188						
H10N1	**ASCENSION HYDR**	**48.85**	**16**	T	T	15 19 04.3	
	baz=192						
H10N3	**ASCENSION HYDR**	**48.85**	**16**	T	T	15 19 01.7	
	baz=192						
H10N2	**ASCENSION HYDR**	**48.86**	**16**	T	T	15 19 01.3	
	baz=192						
LPAZ	**La Paz**	**50.62**	**304**	P	P	14 25 46.6	+0.3
	0.9nm,0.5s,baz=166,slow=7.9,SNR=6.3						
ASAR	**Alice Springs**	**99.02**	**162**	P	Pdif	14 30 26.4	-1.2
	0.3nm,0.7s,baz=189,slow=3.9,SNR=9.6						
FINES	**FINESS Array B**	**124.05**	**27**	PKP	PKPdf	14 35 43.6	0.0
	0.4nm,0.6s,baz=288,slow=1.8,SNR=6.2						
YKA	**Yellowknife Ar**	**136.32**	**318**	PKP	PKPdf	14 36 05.7	-1.2
	0.2nm,0.5s,baz=128,slow=2.2,SNR=5.8						
ILAR	**Eielson Array**	**150.31**	**312**	PKPbc	PKPbc	14 36 35.5	-1.0
	1.1nm,0.7s,baz=139,slow=2.6,SNR=12						
SONM	**Songino Array**	**150.31**	**86**	PKPbc	PKPbc	14 36 37.5	+0.2
	0.6nm,0.4s,baz=229,slow=3.3,SNR=6.6						

MEX 08 14:20:50.2±0.8, 14°.69N×92°.31W, h81km±8km, MD3.5, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THIG		**0.22**	**12**	*iP*	Pn	14 21 01.7	-0.5
THIG				*iS*	Sn	14 21 09.7	-1.5
PCIG		**1.34**	**319**	*iP*	Pn	14 21 12.2	-1.3
PCIG				*eS*	Sn	14 21 29.1	-1.9
CCIG	**Comitan**	**1.59**	**6**	*eP*	Pn	14 21 16.6	-0.4
CCIG				*eS*	Sn	14 21 35.3	-1.9

*GRAL **08** 14:43:16.7±0.3, 33°.79N×35°.77E, h8km±3km, MD3.0*
*CSEM **08** 14:43:16.5±0.2, 33°.77N×35°.77E, h2km, ML3.0, Error ellipse: s-maj=5.7km s-min=3.5km az=88.0*
*NSSC **08** 14:43:19.6±1.5, 33°.80N×36°.07E, h10km±9km, MD1.1, ML1.6*

ISC 08 14:43:16.1±0.9, 33°.78N±0°.02×35°.79E±0°.05, h11km±9km, n19, σ0°67/33, Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BHL	**Bhannes**	**0.16**	**318**	*eP*	**Pg**	**14 43 19.7**	**-0.1**
BHL				*eS*	**Sg**	**14 43 21.9**	**-0.5**
BHL	**Bhannes**	**0.16**	**318**	*eP*	**Pg**	**14 43 19.7**	**-0.1**
BHL				*eS*	**Sg**	**14 43 21.9**	**-0.5**
DQRL	**Deir Qamar**	**0.20**	**247**	*eP*	**Pg**	**14 43 20.4**	**+0.1**
DQRL				*eS*	**Sg**	**14 43 23.1**	**-0.1**
DQRL	**Deir Qamar**	**0.20**	**247**	*eP*	**Pg**	**14 43 20.4**	**+0.1**
DQRL				*eS*	**Sg**	**14 43 23.1**	**-0.1**
BEYL	**Beirut**	**0.26**	**290**	*eP*	**Pg**	**14 43 21.2**	**-0.2**
BEYL	**Beirut**	**0.26**	**290**	*eP*	**Pg**	**14 43 21.2**	**-0.2**
RCY	**Rachaya**	**0.29**	**172**	*eP*	**Pg**	**14 43 22.3**	**+0.4**
RCY				*eS*	**Sg**	**14 43 26.4**	**+0.5**
HWQ	**Hawqa**	**0.51**	**15**	*eP*	**Pg**	**14 43 25.9**	**-0.2**
HWQ	**Hawqa**	**0.51**	**15**	*eP*	**Pg**	**14 43 25.9**	**-0.2**
HAWK	**Haweek**	**0.90**	**35**	*eP*	**Pb**	**14 43 34.2**	**+0.4**
HAWK				*eS*	**Sb**	**14 43 45.5**	**-0.4**
HAWK				AML	AML	14 43 52.8	
	comp=N,16nm,0.4s						
HAWK				AML	AML	14 43 56.6	
	comp=E,26nm,0.5s						
HAWK	**Haweek**	**0.90**	**35**	*eP*	**Pb**	**14 43 34.2**	**+0.4**
BIDA	**Albida**	**1.31**	**20**	*eP*	**Pg**	**14 43 42.1**	**+0.9**
BIDA				*eS*	**Sn**	**14 43 58.2**	**+0.3**
BIDA				AML	AML	14 44 03.4	
	comp=E,50nm,0.3s						
BIDA				AML	AML	14 44 05.7	
	comp=N,56nm,0.5s						
BIDA	**Albida**	**1.31**	**20**	*eP*	**Pg**	**14 43 42.1**	**+0.9**
BIDA				*eS*	**Sn**	**14 43 58.2**	**+0.3**
	comp=N,56nm,0.5s						
SALA	**Sala**	**1.33**	**143**	*eP*	**Pg**	**14 43 41.5**	**-0.2**
SALA				*eS*	**Sn**	**14 43 58.9**	**+0.3**
SALA				AML	AML	14 44 08.8	
	comp=E,1.8nm,0.3s						
SALA				AML	AML	14 44 15.1	
	comp=N,22nm,0.6s						
SALA	**Sala**	**1.33**	**143**	*eP*	**Pg**	**14 43 41.5**	**-0.2**
SALA				*eS*	**Sn**	**14 43 58.9**	**+0.3**
	comp=N,22nm,0.6s						
ZALF	**Zalf**	**1.55**	**123**	*eP*	**Pb**	**14 43 45.4**	**+0.5**
ZALF				*eS*	**Sn**	**14 44 01.9**	**-2.1**
ZALF				AML	AML	14 44 13.6	
	comp=E,15nm,0.4s						
ZALF				AML	AML	14 44 14.7	
	comp=N,17nm,0.6s						
ZALF	**Zalf**	**1.55**	**123**	*eP*	**Pb**	**14 43 45.4**	**+0.5**
ZALF				*eS*	**Sn**	**14 44 01.9**	**-2.1**
	comp=N,17nm,0.6s						
WRDH	**Warideh**	**1.80**	**17**	*eP*	**Pg**	**14 43 50.2**	**-0.4**
WRDH				*eS*	**Sb**	**14 44 12.0**	**+0.3**
WRDH	**Warideh**	**1.80**	**17**	*eP*	**Pg**	**14 43 50.2**	**-0.4**
WRDH				*eS*	**Sb**	**14 44 12.0**	**+0.3**

*ISCJB **08** 14:44:50.6±1.1, 32°.27N±0°.10×115°.2W±0°.1, h26km±11km, Error ellipse: s-maj=23.2km s-min=7.3km az=136.8*
*ECX **08** 14:44:52.2±0.5, 32°.21N×115°.30W, h8km, MD2.1, ML2.3*
*MEX **08** 14:44:53.0±0.5, 32°.27N×115°.16W, h15km, MD3.3*

ISC 08 14:44:50.6±1.5, 32°.25N±0°.08×115°.2W±0°.1, h25km±14km, n12, σ0°34/20, 1C-2D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MBIG	**Mexicali**	**0.16**	**9**	*eP*	**Pb**	**14 44 56.2**	**+0.4**
MBIG				*eS*	**Sb**	**14 44 58.5**	**-0.8**
CPBX	**Cerro Prieto**	**0.18**	**339**	*eP*	**Pb**	**14 44 56.1**	**+0.1**
CPBX				*eS*	**Sb**	**14 44 59.8**	**0.0**
CPBX				*e*		14 45 02.5	
CPBX				AML	AML	14 45 02.5	
	comp=N,2μm,0.3s						
RMX	**La Rumorosa**	**0.80**	**296**	*eP*	**Pb**	**14 45 05.6**	**-0.3**
RMX				*eS*	**Sb**	**14 45 16.4**	**-0.1**
RMX				AML	AML	14 45 17.3	
	comp=E,103nm,0.4s						
RMX				⇑*e*		14 45 17.3	
ZAX	**El Zacaton**	**1.15**	**231**	*eP*	**Pn**	**14 45 10.9**	**-0.3**
ZAX				⇓*e*		14 45 29.4	
SPIG	**San Pedro Mart**	**1.22**	**190**	*eP*	**Pn**	**14 45 12.2**	**-0.1**
SPIG				*eS*	**Sb**	**14 45 28.5**	**0.0**
SPIG	**San Pedro Mart**	**1.22**	**190**	*eP*	**Pn**	**14 45 12.1**	**-0.3**
SPX	**San Pedro Mart**	**1.22**	**190**	*eP*	**Pn**	**14 45 12.1**	**-0.2**
SPX				*eS*	**Sb**	**14 45 28.9**	**+0.3**
SPX				AML	AML	14 45 30.1	
	comp=E,37nm,0.4s						
SPX				⇓*e*		14 45 30.1	
CBX	**Cerro Bola**	**1.22**	**273**	*eP*	**Pn**	**14 45 12.4**	**+0.2**
CBX				*eS*	**Sn**	**14 45 28.2**	**+0.3**
CBX	**Cerro Bola**	**1.22**	**273**	*eP*	**Pn**	**14 45 12.3**	**+0.2**
CBX				*eS*	**Sn**	**14 45 28.1**	**+0.3**
TJIG	**Tijuana**	**1.24**	**279**	*eP*	**Pn**	**14 45 12.6**	**+0.2**
TJIG				*eS*	**Sn**	**14 45 28.3**	**+0.1**
BAR	**Barrett**	**1.29**	**290**	*eP*	**Pb**	**14 45 13.9**	**-0.3**
ECNX	**Esteban Cantu**	**1.30**	**243**	*eP*	**Pn**	**14 45 13.8**	**+0.4**

*NIED **08** 14:45:00, 39°.80N×143°.40E, h17km, Mw4.5 Best double couple: M0 5.84000×10^15 NP1:φ0 177.00000°, δ17.00000°, λ59.00000°. NP2:φ0 29.00000°, δ76.00000°, λ99.00000°.*
*IDC **08** 14:45:57.8±0.5, 39°.74N×143°.25E, h0km, mb4.2/29, mb1 4.4/34, mb1mx4.3/51, mbtmp4.3/34, ML3.6/5, MS3.9/25, Ms1 3.9/25, ms1mx3.6/60, Error ellipse: s-maj=13.5km s-min=12.0km az=111.0*
*JMA **08** 14:45:59.2±0.3, 39°.79N×143°.40E, h22km±5km, M4.5*
*ISCJB **08** 14:46:02.5±0.5, 39°.79N±0°.03×143°.14E±0°.04, h40km±4km, mb4.5/100, MS4.1/34, Error ellipse: s-maj=5.4km s-min=3.7km az=43.3*
*MOS **08** 14:46:02.7±1.0, 39°.98N×143°.11E, h33km, mb4.8/51, Error ellipse: s-maj=7.4km s-min=4.8km az=101.1*
*NEIC **08** 14:46:04.8±0.6, 39°.78N×143°.10E, h46km±5km, mb4.6/52, Error ellipse: s-maj=5.9km s-min=4.2km az=137.0*

ISC 08 14:46:01.9±1.0, 39°.77N±0°.04×143°.27E±0°.04, h28km±6km, n274, σ1°89/287, mb4.6/100, MS4.2/36, 17C-5D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.10**	**279**	P	**Pn**	**14 46 20.5**	**-0.9**
MIYJ	**Miyakonagasawa**	**1.14**	**261**	P	**Pn**	**14 46 21.3**	**-0.6**
JANG	**Nango**	**1.48**	**295**	P	**Pn**	**14 46 25.7**	**-0.9**
JOM	**Ohasama**	**1.56**	**260**	P	**Pn**	**14 46 28.1**	**+0.4**
JOM				*eS*	**Sb**	**14 46 49.5**	**+0.1**
JMK	**Ichinoseki**	**1.79**	**243**	P	**Pn**	**14 46 30.8**	**-0.1**
JTM	**Tenmabayashi**	**1.97**	**302**	P	**Pn**	**14 46 33.4**	**+0.1**
JTM				*eS*	**Sb**	**14 46 59.4**	**-1.7**
JIO	**Ouri**	**1.99**	**229**	P	**Pn**	**14 46 32.8**	**-0.9**
JAH	**Hinai**	**2.07**	**282**	P	**Pn**	**14 46 35.4**	**+0.7**
JAH				*eS*	**Sb**	**14 47 03.2**	**-0.8**
ERM	**Erimo**	**2.24**	**358**	⇑*eP*	**Pn**	**14 46 37.1**	**0.0**
ERM	**Erimo**	**2.24**	**358**	*ePn*	**Pn**	**14 46 38.5**	**+1.4**
JOT	**Ohata**	**2.33**	**314**	P	**Pn**	**14 46 38.4**	**0.0**
JOT				*eS*	**Sb**	**14 47 08.4**	**-3.3**
JYK	**Kaneyama**	**2.41**	**250**	P	**Pn**	**14 46 40.0**	**+0.5**
JNBK	**Urakawa-nobuka**	**2.54**	**351**	P	**Pn**	**14 46 41.4**	**+0.2**
JNBK				*eS*	**Sn**	**14 47 12.8**	**+1.7**
ASAJ	**Asahikawa**	**4.37**	**354**	Pn	**Pn**	**14 47 06.8**	**+0.5**
	2.7nm,0.3s,baz=202,slow=15,SNR=40						
ASAJ				Sn	**Sn**	**14 47 57.8**	**+1.5**
	4.4nm,0.3s,baz=238,slow=18,SNR=3.5						
YUK	**Yuzh-Kuril'sk**	**4.68**	**24**	*eP*	**Pn**	**14 47 08.9**	**-1.7**
YUK				*eS*	**Sn**	**14 47 58.9**	**-5.0**
YUK				pmax	pmax		
	comp=Z,168nm,0.5s						
YUK				pmax	pmax		
	comp=N,96nm,0.4s						
YUK				pmax	pmax		
	comp=E,92nm,0.2s						
YUK				MLR	MLR		
	comp=Z,975nm,17.0s						
SHO	**Shikotan**	**4.88**	**32**	*eP*	**Pn**	**14 47 10.3**	**-3.1**
SHO				*iS*	**Sn**	**14 48 01.8**	**-7.1**
SHO				pmax	pmax		
	comp=Z,242nm,0.6s						
SHO				pmax	pmax		
	comp=E,169nm,0.4s						
SHO				pmax	pmax		
	comp=N,133nm,0.5s						
MAJO	**Matsushiro**	**5.13**	**233**	*cP*	**Pn**	**14 47 17.9**	**+1.0**
MAJO	**Matsushiro**	**5.13**	**233**	*ePn*	**Pn**	**14 47 17.8**	**+0.9**
MAT	**Matsushiro**	**5.13**	**233**	P	**Pn**	**14 47 17.6**	**+0.7**
MAT				*eS*	**Sn**	**14 48 17.8**	**+2.7**
MJAR	**Matsushiro Arr**	**5.13**	**233**	Pn	**Pn**	**14 47 18.0**	**+1.1**
	comp=N,5.7nm,0.3s,baz=38,slow=12,SNR=74						
MJAR				LR	LR	14 49 30.5	
	comp=N,738nm,19.1s,baz=45,slow=42						
MJAR	**Matsushiro Arr**	**5.13**	**233**	P	**Pn**	**14 47 18.0**	**+1.1**
MJAR				pmax	pmax		
	comp=Z,6.0nm,0.3s						
MJAR				MLR	MLR		
	comp=Z,738nm,19.1s						
MJB9	**Matsu-Tunnel**	**5.13**	**233**	*ePn*	**Pn**	**14 47 17.8**	**+0.9**
KUR	**Kuril'sk**	**6.43**	**30**	*eP*	**Pn**	**14 47 33.6**	**-1.0**
KUR				*eS*	**Sn**	**14 48 42.2**	**-4.7**
KUR				pmax	pmax		
	comp=Z,63nm,0.5s						
KUR				pmax	pmax		
	comp=N,38nm,0.4s						
KUR				pmax	pmax		
	comp=E,20nm,0.4s						
KUR				smax	smax		
	comp=N,82nm,0.4s						
KUR				smax	smax		
	comp=E,108nm,0.4s						
INU	**Inuyama**	**6.64**	**230**	*ePn*	**Pn**	**14 47 38.3**	**+0.6**
YSS	**Yuzh-Sakhalins**	**7.19**	**357**	*eP*	**Pn**	**14 47 45.4**	**+0.4**
YSS				*eS*	**Sn**	**14 49 03.5**	**-2.2**
YSS				pmax	pmax		
	comp=Z,30nm,1.0s						
YSS				MLR	MLR		
	comp=Z,1μm,14.0s						
JHJ2	**Mitsune**	**7.21**	**204**	*ePn*	**Pn**	**14 47 45.6**	**+0.3**
JHJ	**Hachijo jima 2**	**7.21**	**204**	Pn	**Pn**	**14 47 43.2**	**-2.2**
	comp=Z,17nm,0.3s,baz=286,slow=23,SNR=7.4						
JHJ				Sn	**Sn**	**14 48 58.0**	**-8.3**
	comp=Z,7.6nm,0.3s,baz=94,slow=19,SNR=3.8						

CN2 eS Sn 14 51 51.4 +1.4
CN2 pmax pmax
comp=Z,10.0nm,0.5s
CN2 pmax pmax
comp=Z,200nm,3.0s
CN2 LR LR
comp=N,500nm,16.0s
CN2 LR LR
comp=E,600nm,16.0s
CN2 LR LR
comp=Z,600nm,18.0s
PETK Petropavlovsk- 16.59 32 LR LR 14 57 17.0
comp=Z,150nm,19.0s,baz=216,slow=41
PET Petropavlovsk 16.93 33 *i* P **Pn 14 49 57.3 +0.8**
HIA Hailar 19.21 307 *e*P **P 14 50 23.6 +0.1**
HIA pmax pmax
comp=Z,18nm,0.8s
HIA Hailar 19.21 307 *e*P **P 14 50 23.6 +0.1**
comp=Z,18nm,0.8s
MA2 Magadan 20.38 11 *e*P **P 14 50 36.5 +0.3**
MA2 pmax pmax
comp=Z,76nm,0.8s
MA2 Magadan 20.38 11 *e*P **P 14 50 36.5 +0.3**
comp=Z,76nm,0.8s
BJI Beijing 20.76 279 P **P 14 50 38.5 -1.9**
BJI S **S 14 54 27.5 -3.2**
BJI pmax pmax
comp=Z,12nm,0.9s
BJI LR LR
comp=N,260nm,15.4s
BJI LR LR
comp=E,520nm,14.7s
BJI LR LR
comp=Z,330nm,17.2s
BJT Baijiatuau 20.77 279 *e*P **P 14 50 38.3 -2.2**
BJT pmax pmax
comp=Z,11nm,0.8s
BJT Baijiatuau 20.77 279 *e*P **P 14 50 38.3 -2.2**
comp=Z,11nm,0.8s
TIA Tai'an 20.89 269 ⇓P **P 14 50 41.2 -0.6**
TIA S S 14 53 58.3 -35
TIA pmax pmax
comp=Z,40nm,1.0s
TIA LR LR
comp=N,370nm,12.6s
TIA LR LR
comp=E,920nm,13.5s
TIA LR LR
comp=Z,1μm,15.2s
NJ2 Nanjing 21.18 256 *e*P **P 14 50 49.2 +4.2**
NJ2 pmax pmax
comp=Z,18nm,0.5s
YAK Yakutsk 23.78 344 P **P 14 51 10.5 -1.2**
comp=Z,13nm,0.5s,baz=9.2,slow=0.7,SNR=8.6
YAK LR LR 15 01 13.5
comp=Z,60nm,19.1s,baz=160,slow=38
YAK Yakutsk 23.78 344 *e*P **P 14 51 10.1 -1.7**
YAK pmax pmax
comp=Z,22nm,0.9s
YAK pmax pmax
comp=N,23nm,1.2s
YAK pmax pmax
comp=E,11nm,1.2s
YAK Yakutsk 23.78 344 *e*P **P 14 51 10.1 -1.7**
comp=E,27nm,0.7s
SEY Seymchan 23.83 10 P **P 14 51 11.6 -0.7**
comp=E,19nm,1.1s,baz=191,slow=7.5,SNR=36
SEY Seymchan 23.83 10⇑*e*P **P 14 51 12.3 0.0**
HHC Hu-ho-hao-te 24.14 283 *e*P **P 14 51 14.7 -0.8**
HHC sP sP 14 51 31.7 +4.5
HHC S **S 14 55 24.4 -7.3**
HHC pmax pmax
comp=Z,25nm,0.8s
HHC pmax pmax
comp=Z,160nm,4.1s
HHC LR LR
comp=N,530nm,12.3s
HHC LR LR
comp=E,550nm,11.8s
HHC LR LR
comp=Z,600nm,12.6s
SSLB Suanglung 24.68 236 *e*P **P 14 51 18.6 -1.8**
comp=Z,10nm,0.7s
WHN Wuhan 25.29 258 ⇓P **P 14 51 26.0 +0.2**
WHN *e*S **S 14 55 54.0 +4.0**
WHN pmax pmax
comp=Z,67nm,0.6s
WHN LR LR
comp=N,730nm,15.5s
WHN LR LR
comp=E,620nm,13.2s
WHN LR LR
comp=Z,890nm,21.4s
QZH Quanzhou 25.45 242 P **P 14 51 28.6 +1.2**
QZH S **S 14 55 54.0 +1.4**
QZH LR LR
comp=N,490nm,13.8s
QZH LR LR
comp=E,580nm,15.7s
QZH LR LR
comp=Z,550nm,17.0s
BOD Bodaibo 26.09 324 *e*P **P 14 51 32.6 -0.3**
BOD pmax pmax
comp=Z,25nm,0.9s
ULN Ulaanbaatar 27.16 299*c i*P **P 14 51 42.8 0.0**
ULN pmax pmax
comp=Z,23nm,1.2s
ULN Ulaanbaatar 27.16 299 *e*P **P 14 51 42.1 -0.7**
comp=Z,19nm,1.1s
SONA1 Songino Array 27.59 299 *e*P **P 14 51 46.8 +0.1**
SONM Songino Array 27.60 299 P **P 14 51 47.4 +0.7**
comp=Z,8.7nm,0.8s,baz=97,slow=9.2,SNR=50
SONM LR LR 15 03 25.0
comp=Z,588nm,18.6s,baz=92,slow=38
XAN Xi'an 27.94 269 P **P 14 51 48.8 -1.1**
XAN pP sP 14 52 00.8 -0.8
XAN S S 14 56 56.9 +25
XAN pmax pmax
comp=Z,10.0nm,0.9s
XAN pmax pmax
comp=Z,67nm,5.5s
XAN LR LR
comp=E,460nm,15.4s
XAN LR LR
comp=Z,410nm,14.4s
H11N2 WAKE ISLAND Hy 28.48 128 T T 15 22 57.7
baz=318,slow=75,SNR=19
H11N1 WAKE ISLAND Hy 28.49 128 T T 15 22 54.3
baz=318,slow=75,SNR=39
H11N3 WAKE ISLAND Hy 28.50 128 T T 15 22 43.9
baz=318,slow=75,SNR=30
ENH Enshi 29.10 262 *e*P **P 14 51 59.8 -0.4**
comp=Z,31nm,0.8s
H11S1 WAKE ISLAND Hy 29.30 130 T T 15 22 54.3
baz=322,slow=76,SNR=28
H11S3 WAKE ISLAND Hy 29.30 130 T T 15 22 50.6
baz=322,slow=76,SNR=15
H11S2 WAKE ISLAND Hy 29.31 130 T T 15 22 59.4
baz=322,slow=76,SNR=15
TLY Talaya 29.75 307 P **P 14 52 04.9 -0.8**
comp=Z,2.3nm,0.7s,baz=72,slow=1.3,SNR=4.0
TLY Talaya 29.75 307 *e*P **P 14 52 06.0 +0.3**
TLY *e*SS SS 14 58 36.9 -30
TLY pmax pmax
comp=Z,5.0nm,0.7s
TLY MLR MLR
comp=Z,232nm,15.0s
TLY Talaya 29.75 307 *e*P **P 14 52 04.3 -1.4**
comp=Z,7.1nm,1.0s
ZAK Zakamensk 29.83 304 *e*P **P 14 52 06.0 -0.5**
ZAK pmax pmax
comp=Z,11nm,1.3s
BILL Bilibino 30.99 17 *i* P **P 14 52 15.0 -1.5**
BILL pmax pmax
comp=Z,3.0nm,1.0s
BILL MLR MLR
comp=Z,132nm,16.0s
BILL Bilibino 30.99 17 *e*P **P 14 52 15.9 -0.6**
comp=Z,7.5nm,1.1s
LZH Lanzhou 31.14 276 *e*P **P 14 52 18.2 -0.2**
LZH pP sP 14 52 30.4 +0.3
LZH sP pP 14 52 36.2 +10
LZH pmax pmax
comp=Z,43nm,1.2s
MOY Mondy 31.39 306 *e*P **P 14 52 21.4 +1.1**
TIXI Tiksi 32.77 352 P **P 14 52 31.1 -0.9**
comp=Z,1.1nm,0.3s,baz=168,slow=8.0,SNR=4.8

TIXI LR LR 15 07 22.9
comp=Z,134nm,19.6s,baz=212,slow=39
TIXI Tiksi 32.77 352*ce*P **P 14 52 32.2 +0.2**
TIXI pmax pmax
comp=Z,2.0nm,0.8s
TIXI Tiksi 32.77 352 *e*P **P 14 52 31.0 -1.0**
comp=Z,4.2nm,1.1s
CD2 Chengdu 33.20 267 P **P 14 52 34.4 -1.9**
CD2 pmax pmax
comp=Z,10.0nm,0.8s
GTA Gaotai 33.25 284 *e*P **P 14 52 37.0 +0.3**
GTA pP sP 14 52 49.6 +1.1
GTA sP pP 14 52 54.6 +10
GTA PcP **PcP 14 55 19.8 +1.1**
GTA S **S 14 57 51.8 -3.3**
GTA sS sS 14 58 11.5 +2.6
GTA SS **SnSn 14 59 53.6 -2.5**
GTA pmax pmax
comp=Z,7.0nm,1.2s
GTA pmax pmax
comp=Z,65nm,7.8s
GTA LR LR
comp=N,190nm,17.1s
GTA LR LR
comp=E,540nm,16.2s
GTA LR LR
comp=Z,700nm,17.1s
KRAR Krasnoyarsk 36.57 313⇑*i*P **P 14 53 06.4 +1.4**
KRAR pmax pmax
comp=Z,21nm,0.7s
KMI Kunming 36.87 259 P **P 14 53 08.1 -0.1**
KMI pP pP 14 53 18.4 +1.8
KMI sP sP 14 53 23.8 +3.8
KMI S **S 14 58 47.0 -4.2**
KMI SS **SnSn 15 01 13.9 -10**
KMI pmax pmax
comp=Z,12nm,0.9s
KMI pmax pmax
comp=Z,99nm,6.2s
KMI LR LR
comp=N,280nm,15.3s
KMI LR LR
comp=E,250nm,16.6s
KMI LR LR
comp=Z,310nm,14.4s
TNA Tin City 37.76 31 *e*P **P 14 53 16.7 +1.8**
WMQ Urumqi 40.97 294⇓*i*P **P 14 53 43.6 +1.4**
WMQ pP sP 14 53 52.8 -1.3
WMQ sP pP 14 54 01.0 +10
WMQ PcP **PcP 14 55 40.9 -1.1**
WMQ PcS **PcS 14 59 35.8 +2.9**
WMQ sS S 15 00 08.5 +16
WMQ pmax pmax
comp=Z,14nm,0.8s
WMQ pmax pmax
comp=Z,35nm,5.0s
WMQ LR LR
comp=N,48nm,15.8s
WMQ LR LR
comp=E,100nm,38.6s
WMQ LR LR
comp=Z,30nm,21.2s
ZAA0 Zalesovo Array 41.21 310 *e*P **P 14 53 43.5 -0.3**
ZALV Zalesovo Beam 41.21 310 P **P 14 53 44.4 +0.5**
comp=Z,9.0nm,0.5s,baz=89,slow=7.7,SNR=38
ZALV PcP **PcP 14 55 42.9 +0.5**
comp=Z,1.9nm,0.6s,baz=98,slow=2.0,SNR=3.8
ZALV LR LR 15 11 38.1
comp=Z,150nm,20.2s,baz=70,slow=37
NRIK Noril'sk 41.43 334 P **P 14 53 45.0 -0.5**
comp=Z,1.2nm,0.4s,baz=121,slow=7.8,SNR=4.3
NRIK LR LR 15 12 09.4
comp=Z,280nm,18.0s,baz=109,slow=38
NRIK Noril'sk 41.43 334 P **P 14 53 45.0 -0.5**
NRIK pmax pmax
comp=Z,1.0nm,0.5s
NRIK MLR MLR
comp=Z,280nm,18.0s
NVS Novosibirsk 42.06 312⇓*i*P **P 14 53 51.6 +0.8**
NVS pmax pmax
comp=E,8.0nm,1.0s
NVS pmax pmax
comp=Z,2.0nm,1.0s
CHTO Chiang Mai 43.41 254 *e*P **P 14 54 02.0 -0.2**
CHTO pmax pmax
comp=Z,6.0nm,0.8s
CHTO Chiang Mai 43.41 254 *e*P **P 14 54 02.0 -0.2**
comp=Z,6.3nm,0.8s
LSA Lhasa 43.46 273 *e*P **P 14 54 05.0 +1.9**
LSA pmax pmax
comp=Z,6.0nm,0.8s
LSA Lhasa 43.46 273 *e*P **P 14 54 05.0 +1.9**
comp=Z,6.0nm,0.8s
CMAR Chiang Mai Arr 43.63 254 P **P 14 54 04.6 +0.6**
comp=Z,2.1nm,0.8s,baz=45,slow=6.9,SNR=14
CM01 Chiang Mai Arr 43.64 254 *e*P **P 14 54 04.2 +0.1**
MK01 Makanchi Array 43.96 300 *e*P **P 14 54 06.1 -0.3**
MK31 Makanchi Array 43.96 300 *e*P **P 14 54 06.3 -0.1**
MK31 Makanchi Array 43.96 300 *e*P **P 14 54 06.3 -0.1**
MKAR Makanchi Array 43.96 300 P **P 14 54 06.6 +0.2**
comp=Z,8.6nm,0.8s,baz=82,slow=9.7,SNR=75
MKAR LR LR 15 13 31.6
comp=Z,263nm,18.0s,baz=66,slow=38
MKAR Makanchi Array 43.96 300 *e*P **P 14 54 06.3 -0.1**
PPLA Purkeypile 44.10 36 *e*P **P 14 54 08.5 +1.1**
comp=Z,30nm,1.1s
KDAK Kodiak Island 44.10 44 P P 14 54 22.8 +16
comp=Z,2.4nm,0.5s,baz=297,slow=16,SNR=7.7
KDAK Kodiak Island 44.10 44 *i* P **P 14 54 08.1 +0.8**
CAST Castle Rocks 44.15 36 *e*P **P 14 54 09.7 +2.0**
comp=Z,16nm,1.8s
KTH Kantishna Hill 44.67 36 *e*P **P 14 54 13.5 +1.7**
MLY Manley 44.76 33 *e*P **P 14 54 14.3 +1.8**
comp=Z,3.3nm,0.9s
SHL Shillong 44.94 268 *e*P **P 14 54 16.0 +1.4**
COLD Coldfoot 45.05 30 *e*P **P 14 54 18.4 +3.6**
comp=Z,3.1nm,0.8s
KURK Kurchatov 45.44 306 *e*P **P 14 54 18.0 -0.1**
KURK pmax pmax
comp=Z,19nm,0.9s
KURK Kurchatov 45.44 306 *e*P **P 14 54 18.0 -0.1**
comp=Z,20nm,0.9s
RND Reindeer 45.60 36 *e*P **P 14 54 19.4 +0.1**
RND pmax pmax
comp=Z,6.0nm,0.8s
RND Reindeer 45.60 36 *e*P **P 14 54 19.4 +0.1**
comp=Z,5.6nm,0.8s
MDM Muhy Dome 45.83 34 *e*P **P 14 54 22.6 +1.6**
comp=Z,7.4nm,1.0s
WRH Wood River Hil 45.90 34 *e*P **P 14 54 22.8 +1.3**
comp=Z,3.7nm,1.0s
COLA College 45.99 34 P **P 14 54 23.8 +1.6**
COLA College 45.99 34 P **P 14 54 23.8 +1.6**
IL1 Eielson Array 46.41 34 *e*P **P 14 54 25.7 +0.2**
ILAR Eielson Array 46.41 34 P **P 14 54 26.8 +1.2**
comp=Z,1.6nm,0.7s,baz=260,slow=6.3,SNR=18
ILB Eielson Array 46.41 34 *e*P **P 14 54 26.2 +0.7**
FYU Fort Yukon 47.01 31 *e*P **P 14 54 32.4 +2.2**
BMRM Bremner River 47.81 39 *e*P **P 14 54 38.7 +2.2**
comp=Z,4.4nm,0.7s
GUN Gumba 48.38 274 *e*P **P 14 54 42.3 +0.6**
comp=Z,82nm,0.6s
KSM Kuching 48.49 227 *e*P **P 14 54 42.4 +0.1**
comp=Z,5.3nm,1.1s
EGAK Eagle 48.85 33 *e*P **P 14 54 46.0 +1.5**
KKN Kakani 48.90 274 *e*P **P 14 54 46.2 +0.6**
comp=Z,70nm,0.8s
PKIN Phulchoki 48.91 274 *e*P **P 14 54 45.7 -0.1**
comp=Z,17nm,0.6s
DMN Daman 49.12 274 *e*P **P 14 54 47.7 +0.4**
comp=Z,32nm,0.8s
GKN Gorkha 49.28 275 *e*P **P 14 54 48.7 +0.2**
comp=Z,24nm,0.8s
TKM2 Tokmak 2 49.65 297 *e*P **P 14 54 51.8 +0.6**
TKM2 pmax pmax
comp=Z,25nm,0.9s
TKM2 Tokmak 2 49.65 297 *e*P **P 14 54 51.8 +0.6**
comp=Z,25nm,0.9s
BRVK Borovoye 49.90 311*c i*P **P 14 54 53.2 +0.6**
BRVK pmax pmax
comp=Z,7.0nm,0.6s
BRVK Borovoye 49.90 311 *e*P **P 14 54 53.0 +0.4**
comp=Z,8.9nm,0.8s
KOLN Koldanda 50.20 275 *e*P **P 14 54 55.9 +0.4**
comp=Z,29nm,0.7s
FRU Bishkek 50.36 297 *e*P **P 14 54 54.0 -2.3**

PYUN Piuthan 50.50 276 *e*P **P 14 54 58.1 +0.3**
comp=Z,71nm,1.0s
AAK Ala-Archa 50.51 297*c i*P **P 14 54 57.8 +0.1**
AAK pmax pmax
comp=Z,18nm,1.3s
AAK Ala-Archa 50.51 297 *e*P **P 14 54 57.4 -0.2**
comp=Z,1.0nm,1.2s
KSH Kashi 50.66 293 P **P 14 55 03.2 +4.4**
KSH *e*sP sP 14 55 21.3 +11
KSH *e*PP **PP 14 57 00.7 +6.0**
KSH S **S 15 02 14.6 +2.6**
KSH sS sS 15 02 35.4 +9.2
KSH pmax pmax
comp=Z,7.0nm,0.9s
KSH pmax pmax
comp=Z,41nm,4.4s
KSH LR LR
comp=N,130nm,6.0s
KSH LR LR
comp=E,70nm,5.4s
KSH LR LR
comp=Z,370nm,16.4s
ZRNK Zerenda 50.67 311 *e*P **P 14 54 59.1 +0.6**
ZRNK pmax pmax
comp=Z,13nm,0.8s
ZRNK Zerenda 50.67 311 *e*P **P 14 54 59.1 +0.6**
comp=Z,13nm,0.8s
EKS2 Erkin-Say 51.00 297 *e*P **P 14 55 01.3 0.0**
EKS2 pmax pmax
comp=Z,9.0nm,0.9s
EKS2 Erkin-Say 51.00 297 *e*P **P 14 55 01.2 0.0**
comp=Z,9.0nm,0.9s
INK Inuvik 51.29 28 P **P 14 55 03.2 +0.3**
comp=Z,1.2nm,0.7s,baz=299,slow=4.2,SNR=5.6
INK Inuvik 51.29 28 *e*P **P 14 55 04.3 +1.4**
INK pmax pmax
comp=Z,6.0nm,0.8s
INK Inuvik 51.29 28 *e*P **P 14 55 04.2 +1.4**
comp=Z,5.5nm,0.8s
KKAR Karatay Array 53.05 299 *e*P **P 14 55 16.1 -0.3**
KKAR Karatay Array 53.05 299 *e*P **P 14 55 16.1 -0.3**
SVE Sverdlovsk 54.09 318 *e*P **P 14 55 24.4 +0.7**
SVE pmax pmax
comp=Z,13nm,0.8s
SVE MLR MLR
comp=Z,516nm,14.0s
ARU Arti 55.30 318*c i*P **P 14 55 32.8 +0.2**
ARU 14 56 35.0
ARU 14 57 36.9
ARU S **S 15 03 16.7 +2.3**
ARU SS **SS 15 07 01.7 +3.4**
ARU pmax pmax
comp=Z,19nm,1.2s
ARU MLR MLR
comp=Z,459nm,16.0s
ARU Arti 55.30 318 *e*P **P 14 55 32.7 +0.2**
comp=Z,13nm,1.0s
ABKAR Akbulak array 57.31 309 *e*P **P 14 55 47.0 0.0**
KBL Kabul 57.82 290 *e*P **P 14 55 51.0 -0.1**
KBL pmax pmax
comp=Z,11nm,0.8s
KBL Kabul 57.82 290 *e*P **P 14 55 51.0 -0.1**
comp=Z,11nm,0.8s
AKTO Aktyubinsk 57.95 311 LR LR 15 22 03.3
comp=Z,105nm,19.6s,baz=69,slow=37
RES Resolute Bay 59.58 15 P **P 14 56 02.5 0.0**
comp=Z,2.4nm,0.8s,baz=307,slow=7.7,SNR=13
RES Resolute Bay 59.58 15 *e*P **P 14 56 02.2 -0.3**
RES pmax pmax
comp=Z,6.0nm,1.0s
RES Resolute Bay 59.58 15 *e*P **P 14 56 02.1 -0.3**
comp=Z,5.8nm,1.0s
WRAB Tennant Creek 59.98 190⇑*i*P **P 14 56 04.7 -1.0**
WRAB pmax pmax
comp=Z,31nm,2.0s
WRAB Tennant Creek 59.98 190 *e*P **P 14 56 04.5 -1.2**
WB2 Warramunga Arr 59.98 190 *e*P **P 14 56 05.7 -0.2**
comp=Z,7.8nm,1.0s
WRA Warramunga Arr 59.99 190 P **P 14 56 04.6 -1.2**
comp=Z,3.2nm,0.7s,baz=7.9,slow=6.9,SNR=33
WRA Warramunga Arr 59.99 190 *i* P **P 14 56 05.0 -0.8**
WRA pmax pmax
comp=Z,3.0nm,0.7s
YKA Yellowknife Ar 60.71 31 P **P 14 56 10.1 -0.2**
comp=Z,0.2nm,0.5s,baz=302,slow=6.3,SNR=6.6
ARCES ARCESS Array B 61.95 339 P **P 14 56 18.8 +0.1**
comp=Z,2.2nm,0.8s,baz=358,slow=9.0,SNR=3.6
ARCES LR LR 15 26 06.6
comp=Z,84nm,21.8s,baz=56,slow=39
KLMR Klimovskoe 62.23 327 *e*P **P 14 56 19.6 -1.0**
KLMR pmax pmax
comp=Z,7.0nm,1.0s
AS01 Alice Springs 63.70 190 *e*P **P 14 56 30.1 -0.7**
ASAR Alice Springs 63.71 190 P **P 14 56 30.4 -0.5**
comp=Z,1.6nm,0.7s,baz=11,slow=6.0,SNR=27
GEYT Alibeck 63.80 299 P **P 14 56 31.7 +0.3**
comp=Z,4.9nm,0.8s,baz=40,slow=2.5,SNR=13
DZM Mont Dzumac 65.22 156 LR LR 15 20 30.1
comp=Z,75nm,21.9s,baz=42,slow=32
OBN Obninsk 66.78 323 *i* P **P 14 56 50.6 +0.2**
OBN pmax pmax
comp=Z,7.0nm,1.2s
FIA1 FINESS Array S 67.07 332 *e*P **P 14 56 51.8 -0.3**
FINES FINESS Array B 67.07 332 P **P 14 56 52.5 +0.3**
comp=Z,5.3nm,0.8s,baz=40,slow=10.0,SNR=15
FINES LR LR 15 29 05.0
comp=Z,290nm,18.3s,baz=18,slow=39
LPSR Galich'ya Gora 67.14 320 *e*P **P 14 56 52.5 -0.2**
LPSR pmax pmax
comp=Z,9.0nm,0.9s
LPSR MLR MLR
comp=Z,310nm,20.0s
YBH Yreka Blue Hor 67.53 54 P **P 14 56 57.4 +1.8**
comp=Z,2.6nm,1.2s,baz=114,slow=13,SNR=4.2
AFI Afiamalu 67.83 132 LR LR 15 23 18.4
comp=Z,52nm,18.6s,baz=303,slow=33
VSR Storozhevoye 67.84 319 *e*P **P 14 56 57.0 -0.2**
VSR pmax pmax
comp=Z,10.0nm,1.0s
VSR MLR MLR
comp=Z,260nm,18.0s
SUMG Summit 67.94 1 *e*P **P 14 56 59.1 +1.0**
SUMG pmax pmax
comp=Z,5.0nm,0.8s
SUMG Summit 67.94 1 *e*P **P 14 56 59.1 +1.0**
comp=Z,5.0nm,0.8s
K05A Summer Lake 68.10 52 *e*P **P 14 57 02.2 +2.9**
comp=Z,12nm,0.9s
MOD Modoc Plateau 68.92 53 *e*P **P 14 57 07.0 +2.6**
SWMT Swartz Lake 69.31 45 *e*P **P 14 57 08.6 +2.0**
GOF Gofitskoye 69.36 312⇑*e*P **P 14 57 07.7 +0.9**
WVOR Wild Horse Val 69.63 51 *e*P **P 14 57 11.0 +2.3**
WVOR pmax pmax
comp=Z,6.0nm,1.0s
WVOR Wild Horse Val 69.63 51 *e*P **P 14 57 11.0 +2.3**
comp=Z,5.7nm,1.0s
MSO Missoula 69.75 46 *e*P **P 14 57 10.4 +1.0**
ZEI Tsey 70.19 309 *e*P **P 14 57 11.6 -0.6**
ZEI pmax pmax
comp=Z,11nm,0.6s
KIV Kislovodsk 70.22 311 *e*P **P 14 57 12.8 +0.6**
KIV pmax pmax
comp=Z,30nm,1.0s
KIV Kislovodsk 70.22 311 *e*P **P 14 57 12.8 +0.6**
comp=Z,30nm,1.0s
KBZ Khabaz 70.23 311 P **P 14 57 13.2 +1.0**
comp=Z,8.5nm,0.9s,baz=68,slow=2.6,SNR=19
KBZ LR LR 15 32 24.3
comp=Z,86nm,18.2s,baz=58,slow=40
NEY Neytrino 70.61 310⇓*e*P **P 14 57 16.7 +1.9**
NEY pmax pmax
comp=Z,2.0nm,0.8s
MFID Camas Ranch 70.72 49 *e*P **P 14 57 17.3 +1.9**
CMB Columbia Colle 71.11 56 *e*P **P 14 57 19.8 +2.1**
CMB Columbia Colle 71.11 56 *e*P **P 14 57 19.8 +2.1**
STKA Stephens Creek 71.31 182 P **P 14 57 18.8 +0.2**
comp=Z,0.9nm,0.5s,baz=346,slow=5.7,SNR=3.8
DLMT Dillon 71.38 46 *e*P **P 14 57 20.5 +1.1**
comp=Z,8.7nm,1.0s
BOZ Bozeman (W) 71.74 45 *e*P **P 14 57 23.4 +1.8**
BOZ pmax pmax
comp=Z,5.0nm,1.1s
BOZ Bozeman (W) 71.74 45 *e*P **P 14 57 23.4 +1.8**
comp=Z,5.3nm,1.1s
NC204 NORSAR Array S 72.16 338 *e*P **P 14 57 23.3 -0.3**
NV01 Mina Array Sit 72.20 55 *e*P **P 14 57 25.7 +1.2**

NVAR Mina Array Bea 72.20 55 P **P 14 57 25.7 +1.2**
comp=Z,1.1nm,0.6s,baz=290,slow=6.2,SNR=9.2
NB2 NORSAR Subarra 72.22 338 P **P 14 57 23.9 -0.1**
comp=Z,7.1nm,0.9s,baz=38,slow=5.9
NOA NORSAR Array B 72.22 338 P **P 14 57 24.3 +0.3**
comp=Z,4.7nm,0.8s,baz=38,slow=6.0,SNR=18
NOA LR LR 15 34 45.0
comp=Z,86nm,18.0s,baz=30,slow=40
NBO02 NORSAR Array S 72.32 338 *e*P **P 14 57 24.7 +0.2**
AKASG Malin Array Be 73.02 323 P **P 14 57 28.9 0.0**
comp=Z,1.3nm,0.5s,baz=44,slow=6.5,SNR=9.6
AKASG LR LR 15 34 34.4
comp=Z,53nm,18.8s,baz=55,slow=40
KIEV Kiev 73.03 323*c i*P **P 14 57 28.8 -0.1**
KIEV pmax pmax
comp=Z,4.0nm,0.8s
KIEV Kiev 73.03 323 *e*P **P 14 57 28.6 -0.3**
comp=Z,7.8nm,1.2s
H17A Grant Village 73.11 46 *e*P **P 14 57 33.0 +3.2**
comp=Z,11nm,1.3s
IMW Indian Meadow 73.22 47 *e*P **P 14 57 33.0 +2.4**
comp=Z,3.7nm,0.9s
MOOW Moose Ponds 73.42 47 *e*P **P 14 57 34.9 +3.2**
comp=Z,3.4nm,1.1s
REDW Red Top Meadow 73.61 47 *e*P **P 14 57 35.3 +2.5**
comp=Z,7.4nm,1.3s
R11A Troy Canyon, C 73.94 53 *e*P **P 14 57 36.3 +1.5**
comp=Z,5.2nm,1.0s
BW06 Boulder Array 74.72 47 *e*P **P 14 57 40.3 +1.0**
PDAR Pinedale Array 74.72 47 P **P 14 57 39.7 +0.5**
comp=Z,0.7nm,0.6s,baz=284,slow=3.6,SNR=9.6
SHPR Sheep Range 75.35 55 *e*P **P 14 57 45.0 +2.0**
comp=Z,5.8nm,0.9s
BUR08 Bucovina Ar. S 77.04 322 *e*P **P 14 57 52.7 +0.4**
STHS Stebnicka Huta 77.55 325 *e*P **P 14 57 56.8 +1.8**
STHS pmax pmax
comp=Z,2.0nm,0.7s
STHS Stebnicka Huta 77.55 325 *e*P **P 14 57 56.8 +1.8**
OJC Ojcow 77.57 327 *e*P **P 14 57 55.1 +0.1**
OJC pmax pmax
comp=Z,11nm,1.1s
OJC Ojcow 77.57 327 *e*P **P 14 57 55.1 +0.1**
comp=Z,11nm,1.1s
CRVS Cervenica-Dubn 77.83 325 *e*P **P 14 57 57.4 +0.8**
CRVS Cervenica-Dubn 77.83 325 *e*P **P 14 57 57.3 +0.7**
BRTR Keskin Array B 78.12 312 P **P 14 57 59.3 +0.8**
comp=Z,1.0nm,0.8s,baz=90,slow=3.7,SNR=5.4
BRTR LR LR 15 37 58.3
comp=Z,46nm,19.1s,baz=54,slow=40
WUAZ Wupatki 78.34 53 *e*P **P 14 58 00.9 +1.1**
comp=Z,9.9nm,0.8s
LANS Liptovska Anna 78.52 326 *e*P **P 14 58 01.5 +1.1**
LANS Liptovska Anna 78.52 326 *e*P **P 14 58 01.5 +1.1**
BR231 Keskin MP Arra 78.53 313 *e*P **P 14 57 59.0 -1.7**
KECS Kecovo 78.58 325 *e*P **P 14 58 01.9 +1.2**
KECS pmax pmax
comp=Z,2.0nm,1.0s
KECS Kecovo 78.58 325 *e*P **P 14 58 01.8 +1.1**
MORC Moravsky Berou 78.85 328 *e*P **P 14 58 03.0 +0.8**
MORC pmax pmax
comp=Z,19nm,0.9s
MORC Moravsky Berou 78.85 328 *e*P **P 14 58 03.0 +0.8**
MORC Moravsky Berou 78.85 328 *e*P **P 14 58 03.0 +0.8**
comp=Z,19nm,0.9s
DPC Dobruska-Polom 78.90 329 *e*P **P 14 58 03.8 +1.3**
DPC *e*PCP **PcP 14 58 10.7 -0.4**
DPC Dobruska-Polom 78.90 329 *e*P **P 14 58 03.8 +1.3**
DPC *e* 14 58 10.7
MVCO Mesa Verde 78.98 51 *e*P **P 14 58 04.2 +0.8**
VYHS Vyhne 79.29 326 *e*P **P 14 58 05.5 +0.9**
VYHS pmax pmax
comp=Z,2.0nm,0.9s
VYHS Vyhne 79.29 326 *e*P **P 14 58 05.5 +0.9**
BRG Berggiesshubel 79.43 330 *e*P **P 14 58 05.7 +0.5**
comp=Z,14nm,1.6s
BRG Berggiesshubel 79.43 330 *e*P **P 14 58 05.7 +0.5**
BRG pmax pmax
comp=Z,14nm,1.7s
CLL Collm 79.44 331 *i*P **P 14 58 05.7 +0.4**
comp=Z,6.0nm,1.0s
CLL *i*pP **pP 14 58 15.9 +1.6**
CLL L L 15 36 00.0
comp=Z,100nm,19.0s
CLL Collm 79.44 331 *i*P **P 14 58 05.7 +0.4**
CLL pmax pmax
comp=Z,6.0nm,1.0s
VRAC Vranov 79.60 328 LR LR 15 36 44.4
comp=Z,167nm,18.4s,baz=0.0,slow=38
PRU Pruhonice 79.90 329 *e*P **P 14 58 08.9 +1.1**
PRU Pruhonice 79.90 329 *e*P **P 14 58 08.9 +1.1**
KHC Kasperske Hory 80.96 329 *e*P **P 14 58 14.5 +0.9**
KHC *e*PCP **PcP 14 58 21.4 +1.3**
KHC *ex* x 14 58 36.2
KHC Kasperske Hory 80.96 329 *e*P **P 14 58 14.5 +0.9**
KHC *e* 14 58 21.4
KHC Kasperske Hory 80.96 329 *e*P **P 14 58 14.1 +0.4**
comp=Z,2.1nm,1.0s
GERES GERESS Array B 81.14 329 P **P 14 58 14.9 +0.3**
comp=Z,2.2nm,0.9s,baz=32,slow=5.2,SNR=6.7
GERES LR LR 15 38 48.1
comp=Z,96nm,19.3s,baz=332,slow=39
GEA0 GERESS Array S 81.14 329 *e*P **P 14 58 14.4 -0.3**
ANMO Albuquerque 81.72 51 P **P 14 58 18.8 +0.7**
comp=Z,0.3nm,0.3s,baz=317,slow=8.7,SNR=3.9
ANMO Albuquerque 81.72 51⇑*e*P **P 14 58 21.2 +3.1**
ANMO pmax pmax
comp=Z,1.0nm,0.9s
ANMO Albuquerque 81.72 51 *e*P **P 14 58 18.7 +0.5**
comp=Z,5.0nm,1.1s
SCHQ Schefferville 82.30 17 LR LR 15 40 00.2
comp=Z,31nm,18.1s,baz=358,slow=39
PMOR Pomariorio Ree 83.97 115 *e*T T 16 30 51.4
comp=Z,2.6nm,0.2s
FUORN Ofenpass-Fuorn 84.30 330 *e*P **P 14 58 31.7 +0.4**
comp=Z,10nm,0.8s
PPT Papeete 84.59 118 LR LR 15 28 47.5
comp=Z,80nm,20.5s,baz=316,slow=30
PPT2 Papeete2 84.60 118 *e*LR LR 15 25 21.8
comp=Z,119nm,23.0s,baz=310
TAOE Nuku Hiva Isla 85.45 105 *e*LR LR 15 25 43.9
comp=Z,125nm,22.0s
WMOK Wichita Mounta 86.33 47 *e*P **P 14 58 44.2 +2.8**
WMOK pmax pmax
comp=Z,3.0nm,0.8s
WMOK Wichita Mounta 86.33 47 *e*P **P 14 58 44.2 +2.8**
comp=Z,2.5nm,0.8s
TX31 Lajitas Ar. Si 87.31 54 *e*P **P 14 58 47.9 +1.6**
TXAR Lajitas Array 87.31 54 P **P 14 58 47.6 +1.3**
comp=Z,0.6nm,1.0s,baz=287,slow=5.1,SNR=4.5
LPAZ La Paz 144.03 58 PKP **PKPdf 15 05 36.3 +0.4**
comp=Z,0.6nm,0.7s,baz=59,slow=5.9,SNR=1.8

CASC 08 14:46:18.9±3.1, 11°.04N×86°.54W, h35km±999km, MD4.2, ML3.0, Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
XAVN	**Gruta Xavier**	**1.12**	**11**	*e*P		Pn	14 46 38.8	+0.7
TISN	**Laguna Tiscapa**	**1.12**	**14**	*e*P		Pn	14 46 38.8	+0.6
COPN	**Copaltepe**	**1.13**	**358**	*e*P		Pn	14 46 38.9	+0.6
MGAN	**Managua**	**1.13**	**15**	*e*P		Pn	14 46 38.7	+0.4
MGAN				*e*S		Sn	14 46 51.7	-1.0
CNGN	**Cerro Negro**	**1.46**	**354**	*e*P		Pn	14 46 43.4	+0.6
CNGN				*e*S		Sn	14 46 59.7	-0.9
CNGN				AML		AML	14 47 00.4	
	comp=N,190nm,0.5s							
BOAB	**BOACO BROADBAN**	**.64**	**31**	*e*P		Pn	14 46 45.7	+0.4
JCR	**Jicaral**	**1.84**	**130**	*e*P		Pn	14 46 46.0	-2.0
CGA2	**Cerro Gallo 2**	**2.28**	**116**	*e*P		Pn	14 46 54.5	+0.3
CGA2				*e*S		Sn	14 47 21.7	+0.5
QCR	**Quepos**	**2.84**	**124**	*e*P		Pn	14 47 02.6	+0.8
URSC	**Urasca**	**2.97**	**114**	*e*P		Pn	14 47 05.4	+1.7
URSC				*e*S		Sn	14 47 40.4	+2.1
BUS	**Buena Vista**	**3.11**	**118**	*e*P		Pn	14 47 04.0	-1.9

ISK ***08*** *14:51:29.4, 36°.99N×27°.75E, h3km, MD2.8*
DDA ***08*** *14:51:29.2, 36°.98N×27°.77E, h7km, Md2.8*
CSEM ***08*** *14:51:30.2±0.4, 36°.98N×27°.77E, h2km, MD2.8, Error ellipse: s-maj=8.3km s-min=5.6km az=145.0*
ISC 08 14:51:26.6±1.4, 36°.86N±0°.05×27°.90E±0°.03, h4km±15km, n15, σ0°.39/24, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.41**	**49**	*e*PG		**Pn**	**14 51 39.0**	**-0.4**
YER	**Yerkesik**	**0.41**	**49**	*e*Pg		**Pn**	**14 51 39.0**	**-0.4**
BDRM	**Kayabasi**	**0.41**	**299**	P		**Pg**	**14 51 34.9**	**+0.3**
BDRM				S		**Sg**	**14 51 39.2**	**-0.8**
BDRM	**Kayabasi**	**0.41**	**299**	*i* P		**Pg**	**14 51 34.9**	**+0.3**
BDRM				*i* S		**Sg**	**14 51 39.2**	**-0.8**
BODT	**Bodrum**	**0.51**	**293**	*e*PG		**Pg**	**14 51 36.6**	**+0.3**
BODT				*e*SG		**Sg**	**14 51 42.9**	**-0.1**
BODT	**Bodrum**	**0.51**	**293**	*e*Pg		**Pg**	**14 51 36.7**	**+0.3**
BODT				*e*Sg		**Sg**	**14 51 42.9**	**-0.1**
TURN	**Turunc**	**0.57**	**89**	*i* P		**Pg**	**14 51 38.1**	**+0.6**
TURN				*i* S		**Sg**	**14 51 44.6**	**-0.3**
NIS1	**Nisyros Isl.**	**0.63**	**246**	*e*PG		**Pn**	**14 51 42.3**	**-0.9**
NIS1	**Nisyros Isl.**	**0.63**	**246**	*e*Pg		**Pn**	**14 51 42.3**	**-0.1**
AYDN	**Tasoluk**	**0.80**	**359**	P		**Pb**	**14 51 43.0**	**-0.1**
AYDN				S		**Sg**	**14 51 51.9**	**-0.3**
AYDN	**Tasoluk**	**0.80**	**359**	*i* P		**Pb**	**14 51 43.0**	**-0.1**
AYDN				*i* S		**Sg**	**14 51 51.9**	**-0.3**
GCAM	**G?zelcaml?**	**0.99**	**328**	P		**Pn**	**14 51 47.6**	**+0.3**
GCAM				S		**Sg**	**14 51 58.1**	**-0.3**
GCAM	**G?zelcaml?**	**0.99**	**328**	*i* P		**Pn**	**14 51 47.6**	**+0.3**
GCAM				*i* S		**Sg**	**14 51 58.1**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**1.08**	**360**	*e*PG		**Pn**	**14 51 48.9**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**1.08**	**360**	*e*Pg		**Pn**	**14 51 48.9**	**+0.2**

DDA ***08*** *14:54:07.2, 37°.24N×31°.77E, h7km, Md3.1*
ISK ***08*** *14:54:09.8, 37°.36N×31°.88E, h5km, MD2.8*
CSEM ***08*** *14:54:09.0±0.4, 37°.22N×31°.96E, h2km, MD2.8, Error ellipse: s-maj=7.3km s-min=6.2km az=168.0*
ISC 08 14:54:09.2±1.4, 37°.27N±0°.04×31°.94E±0°.03, h1km±12km, n20, σ0°.90/32, Turkey

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
KMER	**Konya-Meram**	**0.60**	**34**	P		**Pg**	**14 54 20.2**	**-0.6**
KMER				S		**Sb**	**14 54 31.9**	**+0.2**
KMER	**Konya-Meram**	**0.60**	**34**	*i* P		**Pg**	**14 54 20.2**	**-0.6**
KMER				*i* S		**Sb**	**14 54 31.9**	**+0.2**
KONT	**Konya--Tatoy**	**0.75**	**26**	*e*PG		**Pg**	**14 54 24.5**	**+0.8**
KONT				*e*SG		**Sb**	**14 54 35.2**	**-0.7**
KONT	**Konya--Tatoy**	**0.75**	**26**	*e*Pg		**Pg**	**14 54 24.5**	**+0.8**
KONT				*e*Sg		**Sb**	**14 54 35.2**	**-0.7**
SUTC	**Sutluce-Ispart**	**0.78**	**286**	*e*PG		**Pg**	**14 54 24.2**	**+0.1**
SUTC				*e*SG		**Sb**	**14 54 35.7**	**-0.9**
SUTC	**Sutluce-Ispart**	**0.78**	**286**	*e*Pg		**Pg**	**14 54 24.2**	**+0.1**
SUTC				*e*Sg		**Sb**	**14 54 35.7**	**-0.9**
LADK	**Ladik-KONYA**	**0.99**	**20**	*e*PG		**Pg**	**14 54 28.8**	**+0.6**
LADK	**Ladik-KONYA**	**0.99**	**20**	*e*Pg		**Pg**	**14 54 28.8**	**+0.6**
ERMK	**Ermenek**	**1.00**	**128**	P		**Pb**	**14 54 28.0**	**-1.4**
ERMK	**Ermenek**	**1.00**	**128**	*i* P		**Pb**	**14 54 28.0**	**-1.4**
ERMK				*i* S		**Sn**	**14 54 47.5**	**+2.1**
BAGO	**Egridir - ISPA**	**1.16**	**309**	*i* P		**Pb**	**14 54 31.6**	**-0.5**
BAGO				*i* S		**Sn**	**14 54 50.7**	**+1.4**
ISP	**Isparta**	**1.25**	**297**	*e*PN		**Pb**	**14 54 33.4**	**-0.3**
ISP	**Isparta**	**1.25**	**297**	*e*Pn		**Pb**	**14 54 33.4**	**-0.3**
KDHN	**Kadinhani**	**1.26**	**6**	P		**Pn**	**14 54 33.2**	**-0.8**
KDHN				S		**Sb**	**14 54 50.1**	**-0.4**
KDHN	**Kadinhani**	**1.26**	**6**	*i* P		**Pn**	**14 54 33.2**	**-0.8**
KDHN				*i* S		**Sb**	**14 54 50.1**	**-0.4**
KIZT	**Kizilcal**	**1.61**	**358**	*e*PN		**Pb**	**14 54 39.0**	**-0.7**
KIZT	**Kizilcal**	**1.61**	**358**	*e*Pn		**Pb**	**14 54 39.0**	**-0.7**
BOLV	**Bolvadin**	**1.65**	**332**	P		**Pg**	**14 54 41.0**	**+0.3**
BOLV				S		**Sg**	**14 55 03.0**	**+1.0**
BOLV	**Bolvadin**	**1.65**	**332**	*i* P		**Pg**	**14 54 41.0**	**+0.3**
BOLV				*i* S		**Sg**	**14 55 03.0**	**+1.0**
IKL	**Isikli**	**1.74**	**126**	*e*PN		**Pg**	**14 54 43.7**	**+1.2**

ISCJB ***08*** *15:00:58.0±0.5, 39°.49N±0°.02×26°.32E±0°.04, h3km±5km, Error ellipse: s-maj=5.0km s-min=3.6km az=152.0*
ISK ***08*** *15:00:57.3, 39°.52N×26°.37E, h2km, MD2.7*
DDA ***08*** *15:00:58.6, 39°.52N×26°.33E, h7km, Md2.8*
CSEM ***08*** *15:00:58.1±0.2, 39°.48N×26°.32E, h10km, ML1.5, Error ellipse: s-maj=4.2km s-min=3.9km az=93.0*
ATH ***08*** *15:00:58.2, 39°.48N×26°.32E, h13km±7km, ML1.5/3, Error ellipse: s-maj=7.6km s-min=1.0km az=168.0*
ISC 08 15:00:58.0±0.9, 39°.50N±0°.02×26°.32E±0°.03, h13km±7km, n39, σ0°.74/56, Turkey

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
PRK	**Paraskevi**	**0.25**	**188**	P		**Pg**	**15 01 03.3**	**0.0**
PRK				S		**Sg**	**15 01 07.2**	**+0.2**
PRK	**Paraskevi**	**0.25**	**188**	P		**Pg**	**15 01 03.3**	**0.0**
PRK				S		**Sg**	**15 01 07.2**	**+0.2**
PRK				AML		AML	15 01 07.7	
	comp=E,412μm,0.2s							
PRK				AML		AML	15 01 08.7	
	comp=N,352μm,0.2s							
EZN	**Ezine**	**0.33**	**1**	*e*PG		**Pg**	**15 01 04.3**	**-0.3**
EZN				*e*SG		**Sg**	**15 01 09.7**	**+0.5**
AYVA	**Ayvalik**	**0.34**	**123**	P		**Pg**	**15 01 04.8**	**-0.2**
AYVA	**Ayvalik**	**0.34**	**123**	*i* P		**Pg**	**15 01 04.8**	**-0.2**
BOZC	**Bozcaada**	**0.40**	**329**	*i* P		**Pb**	**15 01 06.7**	**-0.2**
BOZC				*i* S		**Sg**	**15 01 12.1**	**+0.7**
SIGR	**SIGRI**	**0.46**	**232**	*e*PG		**Pb**	**15 01 07.8**	**-0.1**
SIGR	**SIGRI**	**0.46**	**232**	P		**Pg**	**15 01 06.7**	**-0.4**
SIGR	**SIGRI**	**0.46**	**232**	*e*Pg		**Pb**	**15 01 07.8**	**-0.1**
SIGR	**SIGRI**	**0.46**	**232**	P		**Pg**	**15 01 06.7**	**-0.4**
DKL	**Dikili**	**0.62**	**133**	*e*PG		**Pg**	**15 01 09.9**	**-0.2**
DKL				*e*SG		**Sb**	**15 01 19.3**	**-0.1**
DKL	**Dikili**	**0.62**	**133**	*e*Pg		**Pg**	**15 01 09.9**	**-0.2**
DKL				*e*Sg		**Sb**	**15 01 19.3**	**-0.1**
GELI	**Tayfur-Gelibol**	**0.91**	**8**	*e*PG		**Pg**	**15 01 15.0**	**-0.5**
GELI	**Tayfur-Gelibol**	**0.91**	**8**	*e*Pg		**Pg**	**15 01 15.0**	**-0.5**
LPK	**Lapseki**	**0.94**	**21**	*e*PG		**Pb**	**15 01 15.5**	**-0.6**
LPK	**Lapseki**	**0.94**	**21**	*e*Pg		**Pb**	**15 01 15.5**	**-0.6**
LIA	**Limnos Island**	**0.96**	**295**	P		**Pb**	**15 01 16.5**	**0.0**
LIA				S		**Sn**	**15 01 30.5**	**-0.2**
BALY	**Balya**	**1.03**	**76**	P		**Pn**	**15 01 19.1**	**+0.9**
BALY				S		**Sn**	**15 01 33.4**	**+0.9**
BALY	**Balya**	**1.03**	**76**	*i* P		**Pn**	**15 01 19.1**	**+0.9**
BALY				*i* S		**Sn**	**15 01 33.4**	**+0.9**
CHOS	**Chios island**	**1.13**	**191**	*e*PN		**Pg**	**15 01 20.6**	**+0.9**
CHOS	**Chios island**	**1.13**	**191**	P		**Pb**	**15 01 19.2**	**-0.1**
CHOS	**Chios island**	**1.13**	**191**	P		**Pb**	**15 01 19.2**	**-0.1**
SMTH	**Samothraki Isl**	**1.14**	**328**	P		**Pg**	**15 01 20.6**	**+0.6**
SMTH				S		**Sb**	**15 01 34.5**	**+0.1**
SMTH	**Samothraki Isl**	**1.14**	**328**	P		**Pg**	**15 01 20.6**	**+0.6**
SMTH				S		**Sb**	**15 01 34.5**	**+0.1**
SMTH				AML		AML	15 01 37.1	
	comp=E,50μm,0.2s							
SMTH				AML		AML	15 01 37.6	
	comp=N,52μm,0.3s							
GONE	**Gonen-Balikesi**	**1.19**	**62**	*e*PN		**Pn**	**15 01 19.9**	**-0.4**
GONE	**Gonen-Balikesi**	**1.19**	**62**	*e*Pn		**Pn**	**15 01 19.9**	**-0.4**
KESN	**Edirne-Kesan**	**1.35**	**12**	P		**Pn**	**15 01 20.4**	**-2.5**
KESN				S		**Sg**	**15 01 42.5**	**+0.7**
KESN	**Edirne-Kesan**	**1.35**	**12**	*i* P		**Pn**	**15 01 20.4**	**-2.5**
KESN				*i* S		**Sg**	**15 01 42.5**	**+0.7**
RKY	**Sarkoy-Tekirda**	**1.36**	**29**	*e*PN		**Pb**	**15 01 23.3**	**0.0**
RKY	**Sarkoy-Tekirda**	**1.36**	**29**	*e*Pn		**Pb**	**15 01 23.3**	**0.0**
ALN	**Alexandroupoli**	**1.41**	**352**	*e*PN		**Pb**	**15 01 24.6**	**+0.4**
ALN	**Alexandroupoli**	**1.41**	**352**	P		**Pb**	**15 01 24.6**	**+0.4**
ALN				S		**Sg**	**15 01 44.5**	**+1.0**
ALN	**Alexandroupoli**	**1.41**	**352**	P		**Pb**	**15 01 24.6**	**+0.4**
ALN				S		**Sg**	**15 01 44.5**	**+1.0**
ALN				AML		AML	15 01 45.7	
	comp=N,40μm,0.4s							
ALN				AML		AML	15 01 47.4	
	comp=E,35μm,0.6s							
MRMT	**Marmara Adasi**	**1.48**	**41**	*e*PN		**Pb**	**15 01 25.2**	**-0.1**
MRMT	**Marmara Adasi**	**1.48**	**41**	*e*Pn		**Pb**	**15 01 25.2**	**-0.1**
DURS	**Dursunbey**	**1.67**	**86**	P		**Pn**	**15 01 25.6**	**-1.4**
DURS				S		**Sg**	**15 01 51.5**	**-0.2**
DURS	**Dursunbey**	**1.67**	**86**	*i* P		**Pn**	**15 01 25.6**	**-1.4**
DURS				*i* S		**Sg**	**15 01 51.5**	**-0.2**
KCTX	**Karacabey (Bur**	**1.75**	**63**	*e*PN		**Pn**	**15 01 28.6**	**+0.6**
KCTX	**Karacabey (Bur**	**1.75**	**63**	*e*Pn		**Pn**	**15 01 28.6**	**+0.6**

IDC ***08*** *15:02:33.6±0.7, 34°.47N×141°.83E, h0km, mb3.7/12, mb1 3.8/15, mb1mx3.7/56, mbtmp3.7/15, ML3.4/2, MS2.9/4, Ms1 2.9/4, ms1mx2.5/54, Error ellipse: s-maj=19.3km s-min=15.3km az=111.0*
ISCJB ***08*** *15:02:34.7±0.5, 34°.46N±0°.05×141°.89E±0°.05, h21km, mb3.6/12, MS2.9/1, Error ellipse: s-maj=7.3km s-min=5.9km az=39.3*
JMA ***08*** *15:02:34.0±0.4, 34°.44N×142°.01E, h37km±4km, M3.4*
ISC 08 15:02:35.9±0.7, 34°.40N±0°.05×141°.77E±0°.07, h21km, n29, σ1°.10/31, mb3.7/12, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**0.70**	**291**	P		**Pn**	**15 02 50.0**	**-0.1**
BSO3	**Boso 3**	**1.11**	**292**	P		**Pb**	**15 02 56.9**	**+0.6**
BSO4	**Boso 4**	**1.32**	**297**	P		**Pb**	**15 02 59.8**	**-0.1**
KTR	**Katsuura**	**1.41**	**302**	P		**Pb**	**15 03 00.5**	**-1.0**
KTR				*e*S		**Sb**	**15 03 19.7**	**+0.7**
CHOJ	**Chosi**	**1.50**	**330**	P		**Pn**	**15 03 00.1**	**-1.5**
CHOJ				*e*S		**Sb**	**15 03 20.3**	**-1.3**
JIM2	**Oshima 3**	**1.96**	**280**	P		**Pn**	**15 03 07.9**	**0.0**
JHJ	**Hachijo jima 2**	**2.09**	**233**	Pn		**Pb**	**15 03 12.1**	**-1.0**
	21nm,0.3s,baz=80,slow=23,SNR=11							
JHJ				Sn		**Sb**	**15 03 38.4**	**-0.2**
	116nm,0.3s,baz=228,slow=23,SNR=14							
JOD2	**Odawara 2**	**2.37**	**292**	P		**Pn**	**15 03 13.4**	**-0.1**
JOD2				*e*S		**Sb**	**15 03 44.3**	**-2.3**
JIZS	**Izushimoda**	**2.41**	**278**	P		**Pn**	**15 03 14.7**	**+0.7**
JAG	**Ashikaga**	**2.77**	**318**	P		**Pn**	**15 03 18.7**	**-0.3**
MJAR	**Matsushiro Arr**	**3.61**	**307**	Pn		**Pn**	**15 03 31.6**	**+1.0**
	4.9nm,0.3s,baz=106,slow=6.6,SNR=51							
MJAR				LR		LR	15 05 16.3	
	comp=Z,215nm,18.2s,baz=135,slow=46							
MAT	**Matsushiro**	**3.61**	**307**	P		**Pn**	**15 03 30.9**	**+0.3**
MAT				*e*S		**Sn**	**15 04 12.1**	**-0.5**
JCJ	**Chichijima**	**7.29**	**177**	Pn		**Pn**	**15 04 22.2**	**+1.1**
	baz=292,slow=18							
JCJ				Sn		**Sn**	**15 05 40.0**	**-3.2**
	15nm,0.3s,baz=310,slow=21,SNR=10							
ASAJ	**Asahikawa**	**9.72**	**4**	Pn		Pn	15 04 50.3	-4.2
	1.2nm,0.3s,baz=170,slow=10,SNR=10							
ASAJ				Sn		Sn	15 06 33.8	-9.2
	0.3nm,0.3s,baz=288,slow=20,SNR=2.5							
KSRS	**Korea Array**	**11.63**	**289**	LR		LR	15 08 58.5	
	comp=Z,32nm,20.7s,baz=102,slow=33							
KLR	**Kul'dur**	**16.57**	**336**	LR		LR	15 12 37.3	
	comp=Z,54nm,18.9s,baz=102,slow=36							
SONM	**Songino Array**	**29.56**	**308**	P		**P**	**15 08 39.9**	**+0.7**
	1.0nm,0.8s,baz=115,slow=7.4,SNR=7.9							
SONM				LR		LR	15 21 09.4	
	comp=Z,29nm,18.6s,baz=13,slow=38							
ZALV	**Zalesovo Beam**	**43.93**	**314**	P		**P**	**15 10 40.8**	**-0.2**
	1.2nm,0.7s,baz=95,slow=8.5,SNR=4.9							
ZALV				PcP		**PcP**	**15 12 27.2**	**+0.5**
	0.6nm,0.5s,baz=104,slow=6.1,SNR=3.4							
MKAR	**Makanchi Array**	**45.80**	**304**	P		**P**	**15 10 56.7**	**+0.6**
	0.5nm,0.7s,baz=88,slow=10,SNR=6.3							
ILAR	**Eielson Array**	**51.58**	**31**	P		**P**	**15 11 40.5**	**+0.4**
	0.4nm,0.8s,baz=267,slow=5.9,SNR=7.1							
WRA	**Warramunga Arr**	**54.50**	**189**	P		**P**	**15 12 03.2**	**+1.0**
	0.6nm,0.5s,baz=6.5,slow=7.6,SNR=18							
INK	**Inuvik**	**56.61**	**26**	P		**P**	**15 12 17.0**	**+0.2**
	0.4nm,0.3s,baz=31,slow=5.9,SNR=3.8							
ASAR	**Alice Springs**	**58.23**	**188**	P		**P**	**15 12 30.4**	**+1.6**
	0.4nm,0.7s,baz=2.9,slow=7.0,SNR=8.6							
AKTO	**Aktyubinsk**	**60.67**	**313**	P		P	15 12 48.1	+2.7
	1.1nm,0.6s,baz=77,slow=10,SNR=3.7							
YKA	**Yellowknife Ar**	**65.94**	**30**	P		**P**	**15 13 20.0**	**-0.1**
	0.2nm,0.7s,baz=296,slow=6.5,SNR=2.9							
NVAR	**Mina Array Bea**	**76.34**	**53**	P		P	15 14 25.9	+2.1
	0.5nm,0.8s,baz=280,slow=8.0,SNR=4.1							
NOA	**NORSAR Array B**	**76.72**	**338**	P		**P**	**15 14 25.4**	**+0.1**
	0.6nm,0.8s,baz=40,slow=5.7,SNR=3.4							
TXAR	**Lajitas Array**	**91.49**	**53**	P		**P**	**15 15 42.1**	**+0.9**
	0.3nm,0.8s,baz=302,slow=5.1,SNR=3.3							
LPAZ	**La Paz**	**147.69**	**64**	PKPbc		**PKPab**	**15 22 20.9**	**-1.5**
	0.6nm,0.7s,baz=345,slow=6.4,SNR=3.6							

IDC ***08*** *15:07:56.5±2.8, 9°.98S×107°.94E, h0km, mb3.7/5, mb1 3.9/6, mb1mx3.5/44, mbtmp3.7/6, ML3.7/1, MS2.4/1, Ms1 2.4/1, ms1mx2.2/41, Error ellipse: s-maj=125.5km s-min=19.7km az=51.0*
ISC 08 15:07:59.7±1.7, 10°.00S±0°.1×107°.9E±0°.3, h22km, n8, σ1°.28/9, mb3.7/5, South of Jawa

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
LEM	**Lembang**	**3.17**	**355**	Pn		**Pb**	**15 08 54.0**	**-1.5**
	16nm,0.3s,baz=308,slow=6.8,SNR=22							
LEM				Sn		**Sb**	**15 09 35.4**	**+1.6**
	16nm,0.3s,baz=329,slow=23,SNR=9.8							
LEM				LR		LR	15 09 39.3	
	comp=Z,63nm,20.2s,baz=156,slow=33							
FITZ	**Fitzroy Crossi**	**18.99**	**117**	P		**Pn**	**15 12 21.1**	**+0.5**
	0.2nm,0.3s,baz=281,slow=11,SNR=5.4							
FITZ				S		Sn	15 15 32.3	-21
	0.1nm,0.3s,baz=220,slow=17,SNR=2.0							
WRA	**Warramunga Arr**	**27.35**	**114**	P		**P**	**15 13 42.0**	**-1.4**
	0.9nm,0.6s,baz=286,slow=11,SNR=8.1							
ASAR	**Alice Springs**	**28.29**	**122**	P		**P**	**15 13 53.2**	**+1.3**
	0.6nm,0.7s,baz=295,slow=9.3,SNR=10							
STKA	**Stephens Creek**	**38.01**	**130**	P		**

1.3nm,0.3s,baz=220,slow=7.3,SNR=14
ASAJ Sn **Sn** **15 23 54.8 +0.7**
0.3nm,0.3s,baz=49,slow=20,SNR=1.9
ASAJ LR LR 15 25 48.7
comp=Z,23nm,21.7s,baz=24,slow=42
JNU Nakatsue 8.93 248 Pn Pn 15 23 01.1 +8.2
0.2nm,0.3s,baz=72,slow=11,SNR=5.8
JNU LR LR 15 26 33.2
comp=Z,68nm,18.5s,baz=124,slow=39
USRK Ussuriysk Ar. 9.86 320 Pn Pn 15 23 11.8 +6.1
0.2nm,0.3s,baz=126,slow=13,SNR=9.6
CBIJ Chichi jima 9.86 172 Pn **Pn** **15 23 04.3 -1.4**
CBIJ Sn **Sn** **15 24 50.9 -5.4**
JCJ Chichijima 9.86 172 Pn **Pn** **15 23 04.3 -1.5**
3.5nm,0.3s,baz=318,slow=16,SNR=4.7
JCJ Sn **Sn** **15 24 50.9 -5.5**
1.5nm,0.3s,baz=246,slow=20,SNR=2.4
KSRS Korea Array 10.24 277 Pn Pn 15 23 19.4 +8.5
0.2nm,0.3s,baz=87,slow=15,SNR=9.2
KSRS LR LR 15 26 51.7
comp=Z,45nm,18.4s,baz=80,slow=36
KSAR Wonju Array Be 10.27 277 Pn Pn 15 23 19.4 +8.0
KLR Kul'dur 13.94 335 Pn **Pn** **15 24 03.1 +1.6**
0.1nm,0.3s,baz=270,slow=20,SNR=2.1
HHC Hu-ho-hao-te 23.00 289 *e*P **P** **15 25 47.6 -1.3**
HHC sP sP 15 26 04.5 +10
HHC S **S** **15 29 49.0 -10**
HHC pmax pmax
comp=Z,25nm,0.8s
HHC pmax pmax
comp=Z,200nm,3.9s
HHC LR LR
comp=N,800nm,12.3s
HHC LR LR
comp=E,800nm,11.5s
HHC LR LR
comp=Z,860nm,13.0s
YAK Yakutsk 26.08 348 P **P** **15 26 16.8 -0.4**
comp=Z,5.5nm,0.4s,baz=283,slow=1.6,SNR=7.0
YAK Yakutsk 26.08 348 *e*P **P** **15 26 16.7 -0.5**
comp=Z,17nm,0.4s
SEY Seymchan 27.02 12 P **P** **15 26 26.2 +0.4**
comp=Z,3.6nm,0.9s,baz=206,slow=7.8,SNR=10
SONM Songino Array 27.41 304 P **P** **15 26 30.2 +0.6**
comp=Z,0.6nm,0.5s,baz=125,slow=10,SNR=5.9
H11N2 WAKE ISLAND Hy 28.55 120 T T 15 56 23.7
baz=313,slow=75,SNR=166
H11N1 WAKE ISLAND Hy 28.56 120 T T 15 56 28.8
baz=313,slow=75,SNR=331
H11N3 WAKE ISLAND Hy 28.57 120 T T 15 56 30.5
baz=313,slow=75,SNR=141
H11S1 WAKE ISLAND Hy 29.25 122 T T 15 57 16.6
baz=314,slow=75,SNR=457
H11S3 WAKE ISLAND Hy 29.25 122 T T 15 57 18.8
baz=314,slow=75,SNR=249
H11S2 WAKE ISLAND Hy 29.27 122 T T 15 57 24.1
baz=314,slow=75,SNR=254
CD2 Chengdu 31.13 270 P **P** **15 27 02.7 0.0**
CD2 pmax pmax
comp=Z,1.0nm,0.5s
TIXI Tiksi 35.35 354 *e*P **P** **15 27 38.6 -0.3**
comp=Z,1.7nm,0.8s
WMQ Urumqi 40.41 297 *e*P **P** **15 28 21.1 -1.1**
WMQ pmax pmax
comp=Z,1.0nm,0.6s
WMQ pmax pmax
comp=Z,34nm,4.2s
ZAA0 Zalesovo Array 41.60 312 *e*P **P** **15 28 31.7 +0.1**
ZALV Zalesovo Beam 41.60 312 P **P** **15 28 32.0 +0.4**
comp=Z,1.1nm,0.5s,baz=96,slow=8.2,SNR=6.5
ZALV PcP **PcP** **15 30 29.5 +1.0**
comp=Z,1.0nm,0.6s,baz=103,slow=2.5,SNR=4.1
MKAR Makanchi Array 43.73 302 P **P** **15 28 50.3 +1.2**
comp=Z,1.0nm,0.6s,baz=88,slow=9.9,SNR=15
MKAR PcP **PcP** **15 30 36.8 +0.9**
comp=Z,0.6nm,0.8s,baz=72,slow=4.7,SNR=3.9
KURK Kurchatov 45.58 308 *e*P **P** **15 29 04.1 +0.3**
comp=Z,6.4nm,1.1s
ILAR Eielson Array 49.89 32 P **P** **15 29 36.6 -0.4**
comp=Z,0.4nm,0.7s,baz=270,slow=6.0,SNR=7.4
INK Inuvik 54.74 27 P **P** **15 30 14.2 +1.3**
comp=Z,0.3nm,0.5s,baz=302,slow=5.4,SNR=2.9
WRA Warramunga Arr 56.87 187 P **P** **15 30 29.9 +1.2**
comp=Z,0.6nm,0.5s,baz=4.5,slow=7.4,SNR=26
CTA Charters Tower 56.93 174 P **P** **15 30 30.4 +1.2**
comp=Z,2.0nm,0.9s,baz=300,slow=16,SNR=2.6
ABKAR Akbulak array 57.60 310 *e*P **P** **15 30 34.3 +0.6**
comp=Z,0.4nm,0.4s
ASAR Alice Springs 60.59 187 P **P** **15 30 55.5 +0.8**
comp=Z,0.2nm,0.5s,baz=9.2,slow=9.7,SNR=7.1
RES Resolute Bay 62.85 14 P **P** **15 31 09.2 -0.1**
comp=Z,0.5nm,0.7s,baz=306,slow=9.7,SNR=2.7
ARCES ARCESS Array B 63.92 339 P **P** **15 31 16.8 +0.4**
comp=Z,2.5nm,0.8s,baz=57,slow=8.8,SNR=7.4
YKA Yellowknife Ar 64.19 30 P **P** **15 31 18.6 +0.4**
comp=Z,0.2nm,0.8s,baz=304,slow=7.3,SNR=3.7
FINES FINESS Array B 68.67 332 P **P** **15 31 47.6 +0.7**
comp=Z,3.4nm,0.7s,baz=60,slow=7.5,SNR=13
KBZ Khabaz 70.57 310 P **P** **15 32 00.3 +1.4**
comp=Z,1.2nm,0.6s,baz=234,slow=6.9,SNR=3.4
HFS Hagfors 73.98 335 P **P** **15 32 19.7 +0.6**
comp=Z,0.7nm,0.4s,baz=75,slow=8.5,SNR=5.0
AKASG Malin Array Be 74.06 322 P **P** **15 32 19.1 -0.7**
comp=Z,0.4nm,0.3s,baz=46,slow=5.1,SNR=4.4
NB2 NORSAR Subarra 74.09 337 P **P** **15 32 20.0 +0.2**
comp=Z,1.4nm,0.7s,baz=40,slow=6.2
NOA NORSAR Array B 74.09 337 P **P** **15 32 20.4 +0.7**
comp=Z,1.2nm,0.7s,baz=40,slow=5.9,SNR=6.2
BRTR Keskin Array B 78.53 311 P **P** **15 32 46.5 +1.0**
comp=Z,0.6nm,0.6s,baz=124,slow=2.8,SNR=3.8
GERES GERESS Array B 82.53 328 P **P** **15 33 07.8 +1.0**
comp=Z,0.4nm,0.4s,baz=40,slow=7.7,SNR=3.6
ATD Arta Tunnel 89.38 284 LR LR 16 16 53.8
comp=Z,20nm,18.2s,slow=38
LPAZ La Paz 147.22 59 PKPbc **PKPbc** **15 40 28.2 -0.3**
comp=Z,0.9nm,0.6s,baz=352,slow=4.6,SNR=4.9

DDA ***08*** *15:24:02.3, 36°.81N×27°.49E, h9km, Ml3.1*
THE ***08*** *15:24:03.1, 36°.87N×27°.57E, h2km±3km, ML3.1/4, Error ellipse: s-maj=3.1km s-min=0.7km az=168.0*
ISCJB ***08*** *15:24:03.6±0.4, 36°.87N±0°.02×27°.54E±0°.03, h5km±4km, Error ellipse: s-maj=3.8km s-min=3.5km az=150.3*
CSEM ***08*** *15:24:03.8±0.2, 36°.87N×27°.51E, h5km, MD3.1, Error ellipse: s-maj=4.3km s-min=4.1km az=134.0*
ATH ***08*** *15:24:03.1, 36°.82N×27°.51E, h32km±1km, ML2.8/3, Error ellipse: s-maj=3.2km s-min=1.3km az=230.0*
ISK ***08*** *15:24:03.4, 36°.92N×27°.55E, h10km, MD3.1*
ISC 08 15:24:03.4±0.9, 36°.85N±0°.02×27°.52E±0°.02, h12km±7km, n77, σ0°82/107, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BDRM	**Kayabasi**	**0.22**	**344**	P	**Pg**	**15 24 08.0**	**-0.1**
BDRM				S	**Sg**	**15 24 12.2**	**+0.8**
BDRM	**Kayabasi**	**0.22**	**344**	*i* P	**Pg**	**15 24 08.0**	**-0.1**
BDRM				*i* S	**Sg**	**15 24 12.2**	**+0.8**
BODT	**Bodrum**	**0.27**	**321**	PG	**Pg**	**15 24 09.2**	**+0.2**
BODT				*e*SG	**Sg**	**15 24 12.0**	**-0.8**
BODT	**Bodrum**	**0.27**	**321**	P	**Pg**	**15 24 09.1**	**+0.1**
BODT				S	**Sg**	**15 24 13.6**	**+0.8**
BODT	**Bodrum**	**0.27**	**321**	P	**Pg**	**15 24 09.1**	**+0.1**
BODT				*e*Sg	**Sg**	**15 24 12.0**	**-0.8**
BODT				S	**Sg**	**15 24 13.6**	**+0.8**
NIS1	**Nisyros Isl.**	**0.37**	**228**	PG	**Pb**	**15 24 12.6**	**+0.6**
NIS1	**Nisyros Isl.**	**0.37**	**228**	P	**Pb**	**15 24 11.4**	**-0.5**
NIS1				S	**Sb**	**15 24 17.9**	**+0.2**
NIS1	**Nisyros Isl.**	**0.37**	**228**	P	**Pb**	**15 24 11.5**	**-0.5**
NIS1	**Nisyros Isl.**	**0.37**	**228**	*i* Pg	**Pb**	**15 24 12.6**	**+0.6**
NIS1				S	**Sb**	**15 24 17.9**	**+0.2**
NIS1	**Nisyros Isl.**	**0.37**	**228**	P	**Pb**	**15 24 11.5**	**-0.4**
NISR	**Nisiros**	**0.40**	**233**	P	**Pb**	**15 24 11.8**	**-0.6**
NISR				S	**Sb**	**15 24 18.2**	**-0.2**
NISR	**Nisiros**	**0.40**	**233**	P	**Pb**	**15 24 11.8**	**-0.6**
NISR				S	**Sb**	**15 24 18.2**	**-0.2**
NISR	**Nisiros**	**0.40**	**233**	P	**Pb**	**15 24 11.8**	**-0.6**
NISR				S	**Sb**	**15 24 19.0**	**+0.6**
NISR				AML	AML	15 24 19.2	
	comp=N,3542μm,0.2s						
NISR				AML	AML	15 24 20.4	
	comp=E,6894μm,0.2s						
YER	**Yerkesik**	**0.67**	**65**	*e*PG	**Pg**	**15 24 16.1**	**-0.4**
YER	**Yerkesik**	**0.67**	**65**	P	**Pg**	**15 24 16.1**	**-0.4**
YER				S	**Sg**	**15 24 24.5**	**-0.8**
YER	**Yerkesik**	**0.67**	**65**	P	**Pg**	**15 24 16.1**	**-0.4**
YER				S	**Sg**	**15 24 24.5**	**-0.8**
ARG	**Arkhangelos**	**0.80**	**142**	P	**Pg**	**15 24 18.1**	**-0.8**
ARG				S	**Sn**	**15 24 31.4**	**-0.9**
ARG	**Arkhangelos**	**0.80**	**142**	P	**Pg**	**15 24 18.2**	**-0.7**
ARG				S	**Sb**	**15 24 30.9**	**+0.9**
AYDN	**Tasoluk**	**0.86**	**19**	P	**Pg**	**15 24 19.4**	**-0.6**
AYDN				S	**Sg**	**15 24 30.9**	**-0.3**
AYDN	**Tasoluk**	**0.86**	**19**	*i* P	**Pg**	**15 24 19.4**	**-0.6**
AYDN				*i* S	**Sg**	**15 24 30.9**	**-0.3**
TURN	**Turunc**	**0.87**	**88**	*i* P	Pg	15 24 14.1	-6.0
TURN				*i* S	Sg	15 24 21.9	-10
GCAM	**G?zelcaml?**	**0.88**	**345**	P	**Pg**	**15 24 20.2**	**-0.2**
GCAM	**G?zelcaml?**	**0.88**	**345**	*i* P	**Pg**	**15 24 20.2**	**-0.2**
DALY	**Dalyan (Mu¨la**	**0.91**	**92**	*e*PG	**Pg**	**15 24 20.7**	**-0.2**
DALY	**Dalyan (Mu¨la**	**0.91**	**92**	*e*Pg	**Pg**	**15 24 20.7**	**-0.2**
SMG	**Samos**	**1.01**	**328**	P	**Pb**	**15 24 22.4**	**-0.5**
SMG				S	**Sn**	**15 24 37.5**	**-0.2**
SMG	**Samos**	**1.01**	**328**	P	**Pb**	**15 24 22.4**	**-0.5**
SMG				S	**Sn**	**15 24 37.5**	**-0.2**
SMG	**Samos**	**1.01**	**328**	P	**Pb**	**15 24 22.4**	**-0.5**
SMG				S	**Sn**	**15 24 38.1**	**+0.4**
SMG				AML	AML	15 24 40.1	
	comp=N,1291μm,0.3s						
SMG				AML	AML	15 24 41.9	
	comp=E,1776μm,0.4s						
AYDB	**Zeytinkoy-Aydi**	**1.13**	**15**	*e*PG	**Pb**	**15 24 24.3**	**-0.7**
AYDB	**Zeytinkoy-Aydi**	**1.13**	**15**	*e*Pg	**Pb**	**15 24 24.3**	**-0.7**
FETY	**Fethiye**	**1.27**	**99**	*e*PN	**Pg**	**15 24 27.8**	**-0.1**
FETY	**Fethiye**	**1.27**	**99**	*e*Pn	**Pg**	**15 24 27.8**	**-0.1**
DGB	**¨zmir**	**1.30**	**337**	*i* P	**Pn**	**15 24 27.4**	**0.0**
DGB				*i* S	**Sb**	**15 24 43.6**	**-0.9**
KARP	**Karpathos**	**1.33**	**193**	*e*PN	**Pg**	**15 24 29.6**	**+0.6**
KARP	**Karpathos**	**1.33**	**193**	P	**Pn**	**15 24 27.2**	**-0.7**
KARP	**Karpathos**	**1.33**	**193**	P	**Pn**	**15 24 27.5**	**-0.4**
KARP	**Karpathos**	**1.33**	**193**	*e*Pn	**Pg**	**15 24 29.7**	**+0.6**
KARP	**Karpathos**	**1.33**	**193**	P	**Pn**	**15 24 27.5**	**-0.4**
DNZL	**Cakiroluk**	**1.48**	**55**	P	**Pg**	**15 24 31.8**	**0.0**
DNZL	**Cakiroluk**	**1.48**	**55**	*i* P	**Pg**	**15 24 31.8**	**0.0**
DNZL				*i* S	**Sg**	**15 24 54.0**	**+3.0**
DENT	**Denizli**	**1.50**	**53**	*e*PN	**Pn**	**15 24 30.5**	**+0.3**
DENT	**Denizli**	**1.50**	**53**	*e*Pn	**Pn**	**15 24 30.5**	**+0.3**
IZM	**Izmir**	**1.56**	**352**	*e*PN	**Pn**	**15 24 31.3**	**+0.3**
IZM	**Izmir**	**1.56**	**352**	*e*Pn	**Pn**	**15 24 31.3**	**+0.3**
BLCB	**Balcova**	**1.58**	**346**	*e*PN	**Pn**	**15 24 31.3**	**+0.1**
BLCB	**Balcova**	**1.58**	**346**	*e*Pn	**Pn**	**15 24 31.3**	**+0.1**
ZEY	**¨zmir**	**1.60**	**330**	*i* P	**Pn**	**15 24 31.9**	**+0.4**
ZEY				*i* S	**Sg**	**15 24 56.5**	**+1.5**
APE	**Apeiranthos**	**1.61**	**278**	*e*PN	**Pb**	**15 24 32.5**	**-0.6**
APE	**Apeiranthos**	**1.61**	**278**	P	**Pn**	**15 24 31.3**	**-0.4**
APE	**Apeiranthos**	**1.61**	**278**	P	**Pn**	**15 24 31.6**	**-0.1**
APE	**Apeiranthos**	**1.61**	**278**	*e*Pn	**Pb**	**15 24 32.5**	**-0.6**
APE				S	**Sn**	**15 24 50.7**	**-1.7**
APE	**Apeiranthos**	**1.61**	**278**	P	**Pn**	**15 24 31.6**	**-0.1**
APE				S	**Sn**	**15 24 50.7**	**-1.7**
APE				AML	AML	15 24 52.6	
	comp=E,136μm,0.3s						
APE				AML	AML	15 24 59.2	
	comp=N,185μm,0.5s						
GLHS	**Glhisar (BURDU**	**1.61**	**79**	*e*PN	**Pb**	**15 24 32.4**	**-0.7**
GLHS	**Glhisar (BURDU**	**1.61**	**79**	*e*Pn	**Pb**	**15 24 32.4**	**-0.7**
GOLH	**Golhisar**	**1.68**	**76**	P	**Pg**	**15 24 35.8**	**+0.2**
GOLH				S	**Sg**	**15 24 57.8**	**+0.5**
GOLH	**Golhisar**	**1.68**	**76**	*i* P	**Pg**	**15 24 35.8**	**+0.2**
GOLH				*i* S	**Sg**	**15 24 57.8**	**+0.5**
URLA	**Izmir**	**1.68**	**334**	P	**Pb**	**15 24 34.5**	**+0.3**
URLA	**Izmir**	**1.68**	**334**	*i* P	**Pb**	**15 24 34.5**	**+0.3**
URLA				*i* S	**Sg**	**15 25 00.4**	**+3.1**
AKAS	**Kas**	**1.79**	**110**	P	**Pg**	**15 24 37.1**	**-0.6**
AKAS	**Kas**	**1.79**	**110**	*i* P	**Pg**	**15 24 37.1**	**-0.6**
AKAS				*i* S	**Sg**	**15 25 04.3**	**+3.4**
MANT	**Manisa**	**1.83**	**26**	P	**Pg**	**15 24 38.5**	**-0.1**
MANT	**Manisa**	**1.83**	**26**	*i* P	**Pg**	**15 24 38.5**	**-0.1**
MANT				*i* S	**Sg**	**15 25 03.0**	**+0.7**
CHOS	**Chios island**	**1.93**	**323**	*e*PN	**Pn**	**15 24 36.6**	**+0.6**
CHOS	**Chios island**	**1.93**	**323**	P	**Pn**	**15 24 35.6**	**-0.4**
CHOS	**Chios island**	**1.93**	**323**	P	**Pn**	**15 24 35.6**	**-0.4**
CHOS	**Chios island**	**1.93**	**323**	*e*Pn	**Pn**	**15 24 36.6**	**+0.6**
CHOS	**Chios island**	**1.93**	**323**	P	**Pn**	**15 24 35.5**	**-0.6**
AKHS	**Akhisar**	**2.04**	**6**	P	**Pb**	**15 24 39.7**	**-0.7**
AKHS	**Akhisar**	**2.04**	**6**	*i* P	**Pb**	**15 24 39.7**	**-0.7**
AKHS				*i* S	**Sg**	**15 25 10.8**	**+1.9**
AKS	**Akhisar**	**2.04**	**6**	*e*PN	**Pn**	**15 24 37.6**	**+0.1**
AKS	**Akhisar**	**2.04**	**6**	*e*Pn	**Pn**	**15 24 37.6**	**+0.1**
KHAL	**Karahalli**	**2.18**	**45**	P	**Pb**	**15 24 42.5**	**-0.3**
KHAL	**Karahalli**	**2.18**	**45**	*i* P	**Pb**	**15 24 42.5**	**-0.3**
SIGR	**SIGRI**	**2.70**	**331**	*e*PN	**Pn**	**15 24 47.5**	**+0.9**
SIGR	**SIGRI**	**2.70**	**331**	*e*Pn	**Pn**	**15 24 47.5**	**+0.9**
SUTC	**Sutluce-Ispart**	**2.85**	**76**	*e*PN	**Pn**	**15 24 49.6**	**+0.8**
SUTC	**Sutluce-Ispart**	**2.85**	**76**	*e*Pn	**Pn**	**15 24 49.6**	**+0.8**

IDC 08 15:25:37.4±61.0, 17°.55S×176°.58E, h0km, mb4.0/3, mb1 4.2/3, mb1mx3.6/27, mbtmp4.0/3, Error ellipse: s-maj=1069.0km s-min=133.3km az=76.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**34.67**	**239**	P	P	15 32 29.5	+0.7
	3.5nm,1.1s,baz=83,slow=8.1,SNR=3.2						
WRA	**Warramunga Arr**	**40.00**	**260**	P	P	15 33 13.8	-0.4
	0.2nm,0.3s,baz=95,slow=7.9,SNR=12						
ASAR	**Alice Springs**	**40.30**	**254**	P	P	15 33 16.2	-0.4
	2.0nm,0.4s,baz=89,slow=7.9,SNR=94						

CSEM ***08*** *15:42:04.5, 40°.82N×41°.23E, h7km, MD2.6*
DDA ***08*** *15:42:04.5, 40°.82N×41°.23E, h7km, Md2.6*
ISK ***08*** *15:42:08.4, 39°.95N×40°.75E, h5km, MD2.5*
ISC 08 15:42:03.8±1.2, 40°.69N±0°.04×41°.26E±0°.04, h7km±16km, n13, σ1°43/22, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DDEM	**Demirkent**	**0.43**	**61**	P	**Pg**	**15 42 12.1**	**0.0**
DDEM				S	**Sg**	**15 42 18.5**	**+0.8**
DDEM	**Demirkent**	**0.43**	**61**	*i* P	**Pg**	**15 42 12.1**	**0.0**
DDEM				*i* S	**Sg**	**15 42 18.5**	**+0.8**
DBAD	**Bademkaya**	**0.47**	**45**	P	**Pg**	**15 42 12.9**	**0.0**
DBAD				S	**Sb**	**15 42 19.4**	**-2.3**
DBAD	**Bademkaya**	**0.47**	**45**	*i* P	**Pg**	**15 42 12.9**	**0.0**
DBAD				*i* S	**Sb**	**15 42 19.4**	**-2.3**
DAGI	**Agillar**	**0.63**	**52**	*i* P	**Pg**	**15 42 15.3**	**-0.7**
DAGI				*i* S	**Sg**	**15 42 21.9**	**-2.3**
ARTV	**Artvin**	**0.71**	**46**	P	**Pg**	**15 42 17.4**	**-0.1**
ARTV				S	**Sg**	**15 42 26.4**	**-0.3**
ARTV	**Artvin**	**0.71**	**46**	*i* P	**Pg**	**15 42 17.4**	**-0.1**
ARTV				*i* S	**Sg**	**15 42 26.4**	**-0.3**
EZM	**Erzurum**	**0.79**	**174**	*e*PG	**Pg**	**15 42 18.9**	**-0.1**
EZM				*e*SG	**Sg**	**15 42 26.6**	**-2.6**
ERZM	**Erzurum**	**0.79**	**174**	P	**Pg**	**15 42 18.5**	**-0.4**
ERZM	**Erzurum**	**0.79**	**174**	*i* P	**Pg**	**15 42 18.5**	**-0.4**
BAYT	**Ayd¨–ntepe-Bay**	**0.90**	**251**	*e*PG	**Pg**	**15 42 21.3**	**+0.2**
BAYT				*e*SG	**Sg**	**15 42 32.5**	**-0.4**
EATA	**Eleskirt**	**1.25**	**131**	P	**Pb**	**15 42 30.4**	**+2.4**
EATA	**Eleskirt**	**1.25**	**131**	*i* P	**Pb**	**15 42 30.4**	**+2.4**

RSNC ***08*** *15:50:52.9±0.5, 11°.35N×73°.83W, h198km±21km, ML3.3*
ISCJB ***08*** *15:50:57.6±1.2, 11°.07N±0°.09×73°.57W±0°.06, h17km, Error ellipse: s-maj=13.5km s-min=6.3km az=154.1*
FUNV ***08*** *15:51:00.3, 11°.06N×73°.46W, h5km, MW2.6*
ISC 08 15:50:59.0±1.8, 11°.06N±0°.09×73°.56W±0°.08, h17km, n17, σ0°74/21, Near north coast of Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VIRV	**Villa del Rosa**	**1.26**	**116**	*e*P	**Pn**	**15 51 22.0**	**+0.1**
VIRV				*e*S	**Sb**	**15 51 37.6**	**-0.7**
URIC	**Uribia, Colomb**	**1.67**	**67**	*e*P	**Pb**	**15 51 29.3**	**+0.1**
URIC				*i*		15 51 52.2	
	comp=Z,43nm,0.1s						
OCAC	**Ocana**	**2.81**	**175**	*e*P	**Pn**	**15 51 43.6**	**+0.3**
OCAC				*e*S	**Sb**	**15 52 23.9**	**+0.8**
OCAC				*i*		15 52 27.5	
	comp=Z,80nm,0.5s						
DABV	**Dabajuro**	**2.88**	**92**	*e*P	**Pn**	**15 51 44.8**	**+0.7**
DABV				*e*S	**Sn**	**15 52 18.0**	**-0.3**
MOTC	**Monteria, Cord**	**3.07**	**223**	*e*S	**Sn**	**15 52 23.5**	**+0.3**
VIGV	**El Vigia**	**3.09**	**135**	*e*P	**Pn**	**15 51 48.1**	**+1.0**
VIGV				*e*S	**Sn**	**15 52 23.7**	**+0.1**
GRMC	**Gramalote, San**	**3.40**	**167**	*e*P	**Pn**	**15 51 49.2**	**-2.2**
GRMC				*i*		15 52 38.0	
	comp=Z,105nm,0.3s						
CBRI	**Barrientos, No**	**3.41**	**167**	*e*P	**Pn**	**15 51 51.8**	**+0.3**
CBRI				*i*		15 52 44.0	
	comp=Z,97nm,0.5s						
CURV	**Curarigua**	**3.69**	**106**	*e*P	**Pn**	**15 51 55.5**	**+0.2**
SIQV	**Siquisique**	**3.71**	**96**	*e*P	**Pn**	**15 51 55.5**	**-0.1**
SOCV	**Socops**	**3.84**	**136**	*e*P	**Pn**	**15 51 57.5**	**+0.2**
BRRC	**Barranca, Sant**	**3.93**	**182**	*e*P	**Pn**	**15 51 58.0**	**-0.6**
BRRC				*i*		15 52 57.4	
	comp=Z,13nm,0.2s						
SANV	**Sanarito**	**4.25**	**111**	*e*P	**Pn**	**15 52 03.9**	**+0.7**
TEPV	**Terepaima**	**4.43**	**104**	*e*P	**Pn**	**15 52 05.5**	**0.0**
MAPV	**Macapo**	**5.17**	**103**	*e*P	**Pn**	**15 52 15.4**	**-0.2**
TURV	**Turiamo**	**5.65**	**96**	*e*P	**Pn**	**15 52 21.6**	**-0.7**
BAUV	**El Baul**	**5.83**	**111**	*e*P	**Pn**	**15 52 24.2**	**-0.5**

MOS ***08*** *15:51:32.8±1.1, 1°.19N×125°.14E, h41km, mb5.3/52, Error ellipse: s-maj=10.0km s-min=5.3km az=114.6*
IDC ***08*** *15:51:37.6±1.5, 1°.11N×125°.26E, h73km±13km, mb4.5/40, mb1 4.5/42, mb1mx4.5/44, mbtmp4.8/42, MS3.8/17, Ms1 3.8/17, ms1mx3.6/37, Error ellipse: s-maj=11.8km s-min=8.6km az=74.0*
ISCJB ***08*** *15:51:37.2±0.3, 1°.09N±0°.02×125°.44E±0°.02, h84km±3km, mb4.8/139, Error ellipse: s-maj=3.6km s-min=2.8km az=162.5*
NEIC ***08*** *15:51:38.9±0.6, 1°.07N×125°.31E, h86km±6km, mb4.9/61, Error ellipse: s-maj=5.7km s-min=4.4km az=61.0*
NEIC Felt [IV] at Manado and [III] at Tondano, Indonesia.
BJI ***08*** *15:51:38.7, 1°.00N×125°.30E, h84km, mb4.8/48, mB4.9/40, Ms4.5/37, Ms7 4.2/29*
DJA ***08*** *15:51:38.7±0.2, 1°N±2°×12°6E±°, h57km±3km, M5.1/41, mb4.9/41, mB5.5/23, MLv5.5/12, Mw(mB)5.0/23, Mwp5.7/2*
GCMT ***08*** *15:51:38.9±0.2, 1°.18N×125°.28E, h59km±2km, MW5.1/68, Moment Tensor Solution. s55,c75; s68,c104; Duration: 0 Moment tensor: Scale 10^16Nm; M_rr0.94±.16; M_θθ-2.88±.13; M_φφ1.94±.18; M_rθ1.38±.12; M_θφ4.47±.13; M_φr2.80±.17; Best double couple: M_0 5.97400×10^16 NP1:φs342.00000°, δ71.00000°, λ156.00000°. NP2: φs80.00000°, δ67.00000°, λ20.00000°. Principal axes: T 6.3880, Plg30.0000°, Azm300.0000°; N -0.8250, Plg60.0000°, Azm126.0000°; P -5.5600, Plg3.0000°, Azm32.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
KLM ***08*** *15:51:43.3, 1°.00N×125°.14E, h65km, mb5.0, ML5.4, MS5.6*
ISC 08 15:51:37.9±0.5, 1°.05N±0°.03×125°.42E±0°.04, h76km±4km, n376, σ1°60/422, mb4.8/139, 20C-20D, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KMSI	**Cibinong**	**1.51**	**252**	P	**Pn**	**15 52 04.7**	**+1.5**
KMSI				S	**Sn**	**15 52 25.5**	**+3.2**
SGSI	**Sangihe**	**2.62**	**2**	P	**Pn**	**15 52 18.2**	**+0.1**
SGSI				S	**Sn**	**15 52 49.7**	**+0.7**
LBMI	**Labuha**	**2.67**	**129**	P	**Pn**	**15 52 18.7**	**0.0**
LBMI				S	**Sn**	**15 52 49.9**	**-0.2**
SANI	**Sanana**	**3.13**	**169**	P	**Pn**	**15 52 25.0**	**+0.1**
SANI				S	**Sn**	**15 52 55.5**	**-5.7**
LUWI	**Luwuk**	**3.36**	**232**	P	**Pn**	**15 52 29.7**	**+1.6**
LUWI				S	**Sn**	**15 53 10.5**	**+3.6**
LUWI	**Luwuk**	**3.36**	**232**	*e*Pn	**Pn**	**15 52 27.2**	**-0.9**
MRSI	**Marisa**	**3.52**	**261**	P	**Pn**	**15 52 31.7**	**+1.4**
NLAI	**Namlea**	**4.58**	**158**	P	**Pn**	**15 52 44.2**	**-0.5**
NLAI				S	**Sn**	**15 53 32.7**	**-3.9**
GSPH	**General Santos**	**5.03**	**355**	*i* P	**Pn**	**15 52 51.1**	**+0.1**
MSAI	**Masohi**	**5.60**	**141**	P	**Pn**	**15 52 59.0**	**+0.4**
	325nm,0.9s,3μm1.0nm						
MSAI				S	**Sn**	**15 54 01.4**	**-0.2**
	325nm,0.9s,3μm1.0nm						
MATI	**Mati**	**5.92**	**8**	*e*P	**Pn**	**15 53 01.7**	**-1.3**
KCP	**Kidapawan**	**5.93**	**357**	‖*e*P	**Pn**	**15 53 05.9**	**+2.6**
DAV	**Davao City (W)**	**5.99**	**2**	P	**Pn**	**15 53 06.5**	**+2.6**
	32nm,0.3s,baz=274,slow=2.2,SNR=6.8						
DAV				S	**Sn**	**15 54 12.2**	**+1.0**
	34nm,0.3s,baz=288,slow=20,SNR=1.7						
DAV				LR	LR	15 55 51.4	
	comp=Z,3μm,20.0s,baz=332,slow=43						
DAV	**Davao City (W)**	**5.99**	**2**	*e*Pn	**Pn**	**15 53 05.8**	**+1.9**
DAV				S	**Sn**	**15 54 12.2**	**+1.0**
DMPH	**Davao City--Mi**	**6.00**	**1**	⇑*e*P	**Pn**	**15 53 06.1**	**+2.0**
DMPH	**Davao City--Mi**	**6.00**	**1**	⇑*e*P	**Sn**	**15 54 13.4**	**+2.0**
SWI	**Sorong**	**6.14**	**108**	P	**Pn**	**15 53 06.9**	**+0.9**
SIJI	**Sorong**	**6.15**	**108**	S	**Sn**	**15 54 17.1**	**+1.9**
	8.7nm,0.3s,baz=232,slow=17,SNR=1.9						
CTBH	**Cotabato--PC H**	**6.25**	**349**	‖*e*P	**Pn**	**15 53 07.9**	**+0.4**
BUKP	**Musuan**	**6.80**	**357**	*e*P	**Pn**	**15 53 17.0**	**+1.9**
TTSI	**Tana Toraja**	**6.92**	**234**	P	**Pn**	**15 53 17.4**	**+0.8**
	376nm,0.6s,4μm1.4nm						
PAGZ	**Pagadian**	**7.05**	**343**	*e*P	**Pn**	**15 53 18

	80nm,1.4s					
PPBI	Pangkal Pinang	19.54	261	P	Pn	15 56 03.6 +2.1
CBJI	Citeko	19.96	248	P	Pn	15 56 07.7 +1.2
TPRI	Tanjung Pinang	20.89	270	P	Pn	15 56 18.4 +1.0
	64nm,1.2s,2µm					
TPRI				P	pP	15 56 28.8 -0.9
	64nm,1.2s,2µm					
MYKOM	Kota Tinggi	21.57	272	⇓P	P	15 56 25.1 +3.6
MYKOM	Kota Tinggi	21.57	272	eP	P	15 56 22.8 +1.3
	99nm,1.5s					
MDSI	Maura Dua	21.92	255	P	P	15 56 20.9 -4.3
TWG	Pinlang	22.05	349	eP	P	15 56 27.2 +0.7
	87nm,0.7s					
KGM	Kluang	22.11	273	⇓P	P	15 56 29.7 +2.4
TPUB	Ta-pu	22.61	348	eP	P	15 56 29.2 -3.3
	51nm,0.9s					
WRAB	Tennant Creek	22.61	158	d iP	P	15 56 32.1 -0.5
WRAB				pmax	pmax	
	comp=Z,199nm,1.2s					
WRAB	Tennant Creek	22.61	158	eP	P	15 56 31.8 -0.8
	comp=Z,50nm,0.8s					
WRA	Warramunga Arr	22.62	158	P	P	15 56 31.9 -0.7
	comp=Z,42nm,0.6s,baz=337,slow=11,SNR=283					
WRA				S	S	16 00 31.9 -3.2
	comp=Z,6.8nm,1.1s,baz=322,slow=16,SNR=5.0					
WB2	Warramunga Arr	22.62	158	eP	P	15 56 32.0 -0.7
	comp=Z,68nm,0.9s					
KTGM	Kuala Trenggan	22.65	281	⇓P	P	15 56 38.0 +5.0
MBWA	Marble Bar	22.76	194	eP	P	15 56 32.9 -1.2
	comp=Z,31nm,0.8s					
GUMO	Guam	22.93	56	P	P	15 56 36.4 +0.5
	comp=Z,189nm,0.7s,baz=175,slow=5.3,SNR=10					
GUMO	Guam	22.93	56	eP	P	15 56 37.0 +1.1
SSLB	Suanglung	23.02	349	eP	P	15 56 34.7 -2.0
COEN	Coen	23.06	131	P	P	15 56 36.8 -0.3
	baz=23,SNR=10					
COEN	Coen	23.06	131	eP	P	15 56 35.7 -1.5
	comp=Z,58nm,1.2s					
QIZ	Qiongzhong	23.51	320	P	P	15 56 41.9 +0.6
QIZ				S	S	16 00 51.4 +1.9
HKC	Hong Kong Obse	23.79	333	P	P	15 56 45.0 +1.2
YHNB	Yeheng	23.81	351	eP	P	15 56 42.5 -1.5
	comp=Z,85nm,1.6s					
FRIM	Kepong	23.87	276	⇑P	P	15 56 46.8 +2.2
PMG	Port Moresby	24.01	116	P	P	15 56 46.9 +1.0
	comp=Z,3.7nm,0.4s,baz=283,slow=17,SNR=3.1					
PMG	Port Moresby	24.01	116	P	P	15 56 48.3 +2.4
PMG				pmax	pmax	
	comp=Z,58nm,1.0s					
PMG	Port Moresby	24.01	116	eP	P	15 56 44.5 -1.4
	comp=Z,22nm,0.9s					
IPM	Ipoh	24.60	278	⇓P	P	15 56 54.0 +2.8
IPM	Ipoh	24.60	278	eP	P	15 56 50.8 -0.4
	comp=Z,96nm,1.6s					
QZH	Quanzhou	24.66	345	P	P	15 56 56.5 +4.9
QZH				S	S	16 01 07.1 -0.7
QZH				LR	LR	
	comp=Z,890nm,22.2s					
PDSI	Padang	25.03	266	P	P	15 56 57.4 +2.2
	comp=Z,15nm,1.3s,comp=Z,3µm					
KULM	Kulim	25.08	280	⇑P	P	15 56 59.3 +3.7
KULM	Kulim	25.08	280	eP	P	15 56 53.9 -1.7
	comp=Z,34nm,1.1s					
SKLT	Songkhla	25.46	285	P	P	15 57 00.4 +1.4
	comp=Z,23nm,1.4s					
QIS	Mount Isa	25.57	148	P	P	15 57 00.8 +0.7
	baz=26,SNR=32					
JOW	Kunigami	25.79	6	eP	P	15 57 02.2 +0.4
	comp=Z,284nm,0.9s					
AS31	Alice Springs	25.91	162	eP	P	15 57 03.9 +0.8
	comp=Z,24nm,0.6s					
ASAR	Alice Springs	25.91	162	P	P	15 57 04.0 +0.9
	comp=Z,38nm,0.9s,baz=338,slow=7.3,SNR=242					
ASAR				PcP	PcP	16 00 31.5 +1.2
	comp=Z,3.4nm,0.5s,baz=342,slow=2.3,SNR=5.6					
ASAR				S	S	16 01 27.4 -0.5
	comp=Z,2.0nm,0.9s,baz=342,slow=15,SNR=3.3					
AS01	Alice Springs	25.93	162	eP	P	15 57 03.7 +0.5
GIRL	Giralia	25.95	204	P	P	15 57 04.4 +1.1
	baz=26,SNR=3.1					
PANO	Nakornpanom	25.98	309	P	P	15 57 05.0 +1.3
	comp=Z,42nm,1.5s					
WRKA	Warakurna	26.08	174	P	P	15 57 05.4 +0.8
	baz=26,SNR=16					
SKNT	Sakolnakorn	26.38	308	P	P	15 57 08.7 +1.4
	comp=Z,40nm,1.5s					
PSI	Prapat	26.54	274	P	P	15 57 08.8 -0.1
	baz=180,slow=2.1					
PSI	Prapat	26.54	274	eP	P	15 57 08.3 -0.6
PSI				pmax	pmax	
	comp=Z,17nm,0.9s					
PSI	Prapat	26.54	274	eP	P	15 57 08.3 -0.6
	comp=Z,17nm,0.9s					
MTSU	Mount Surprise	26.63	137	P	P	15 57 10.6 +1.0
	baz=27,SNR=9.2					
NAYO	Nakonayok	27.23	300	P	P	15 57 16.5 +1.5
	comp=Z,22nm,1.3s,comp=Z,5µm					
CHAI	Chaiyaphum	27.42	304	P	P	15 57 17.9 +1.2
	comp=Z,5.8nm,0.8s,comp=Z,71nm					
NONG	Nongkai	27.65	309	P	P	15 57 24.0 +5.3
	comp=Z,43nm,1.1s,comp=Z,7µm					
GSI	Gunungsitoli	27.84	271	eP	P	15 57 18.6 -1.9
	comp=Z,33nm,1.2s					
LOEI	Loei	28.84	306	P	P	15 57 26.7 -2.6
CTA	Charters Tower	29.30	137	P	P	15 57 36.6 +3.3
	comp=Z,2.2nm,0.8s,baz=301,slow=12,SNR=4.3					
UTTA	Uttaradit	29.54	306	P	P	15 57 37.0 +1.5
	comp=Z,2.4nm,1.1s					
LAMP	Lampang	30.69	306	P	P	15 57 47.6 +1.9
	comp=Z,3.6nm,1.1s,comp=Z,71nm					
CRAI	Chiangrai	31.03	310	P	P	15 57 49.6 +0.9
	comp=Z,42nm,1.8s,comp=Z,18µm					
GYA	Guiyang	31.05	326	⇑iP	P	15 57 51.0 +2.1
GYA				pP	sP	15 58 11.6 -4.1
GYA				PcP	PcP	16 00 45.4 +2.2
GYA				S	S	16 02 49.8 +1.0
GYA				sS	sS	16 03 24.0 +4.4
GYA				ScP	ScP	16 04 18.6 -0.9
GYA				SS	SnSn	16 04 40.2 +3.0
GYA				ScS	ScS	16 08 14.0 -2.9
GYA				pmax	pmax	
	comp=Z,30nm,0.9s					
GYA				pmax	pmax	
	comp=Z,120nm,5.2s					
GYA				LR	LR	
	comp=Z,560nm,16.9s					
GYA				LR	LR	
	comp=Z,520nm,17.0s					
GYA				LR	LR	
	comp=Z,540nm,17.2s					
WHN	Wuhan	31.16	341	⇓iP	P	15 57 58.4 +8.8
WHN				eS	S	16 02 46.6 -3.6
WHN				LR	LR	
	comp=Z,640nm,15.4s					
CM01	Chiang Mai Arr	31.18	305	eP	P	15 57 49.9 -0.1
CMAR	Chiang Mai Arr	31.22	305	P	P	15 57 50.6 +0.3
	comp=Z,4.0nm,1.0s,baz=122,slow=7.1,SNR=16					
CMMT	Chiang Mai	31.39	306	P	P	15 57 52.7 +0.8
	comp=Z,15nm,1.2s					
CHTO	Chiang Mai	31.40	306	P	P	15 57 52.7 +0.8
	comp=Z,66nm,1.2s					
CHTO	Chiang Mai	31.40	306	eP	P	15 57 51.1 -0.8
CHTO				pmax	pmax	
	comp=Z,23nm,1.4s					
CHTO	Chiang Mai	31.40	306	eP	P	15 57 51.1 -0.8
	comp=Z,23nm,1.4s					
CMAI	Chiengmai2	31.91	308	P	P	15 57 57.6 +1.0
	comp=Z,188nm,1.4s					
JNU	Nakatsue	32.32	9	eP	P	15 58 00.0 +0.2
	comp=Z,37nm,0.9s					
KMBL	Kambalda	32.41	186	P	P	15 58 01.3 +0.7
	baz=33,SNR=7.2					
KMI	Kunming	32.44	319	P	P	15 58 02.6 +1.3
KMI				pmax	pmax	
	comp=Z,17nm,1.2s					
KMI				pmax	pmax	
	comp=Z,150nm,4.7s					
KMI				LR	LR	
	comp=Z,200nm,14.6s					
KMI				LR	LR	
	comp=Z,180nm,14.6s					
BLDU	Ballidu	32.56	194	P	P	15 58 02.6 +0.7
	baz=33,SNR=7.2					
ENH	Enshi	32.77	334	eP	P	15 58 02.5 -1.3
	comp=Z,34nm,1.1s					
QLP	Quilpie	32.92	148	P	P	15 58 05.7 +0.6
	baz=33,SNR=5.1					
KLBR	Kellerberrin	33.26	192	P	P	15 58 09.2 +1.2
	baz=34,SNR=5.7					
BBOO	Buckleboo	35.14	164	P	P	15 58 25.4 +1.0
	baz=35,SNR=6.0					
INU	Inuyama	35.80	16	eP	P	15 58 30.0 +0.1
	comp=Z,58nm,1.0s					
HNR	Honiara	35.93	108	P	P	15 58 31.0 -0.3
	comp=Z,26nm,0.6s,baz=204,slow=17,SNR=2.7					
CD2	Chengdu	36.10	327	P	P	15 58 32.3 -0.4
CD2				sP	sP	15 59 02.1 +2.5
CD2				PP	PnPn	15 59 56.2 0.0
CD2				S	S	16 04 06.9 +0.1
CD2				sS	sS	16 04 41.6 +3.7
CD2				pmax	pmax	
	comp=Z,20nm,1.6s					
CD2				pmax	pmax	
	comp=Z,100nm,5.9s					
CD2				LR	LR	
	comp=Z,400nm,17.4s					
CD2				LR	LR	
	comp=Z,360nm,21.6s					
STKA	Stephens Creek	36.16	156	P	P	15 58 34.1 +1.2
	comp=Z,21nm,0.8s,baz=334,slow=8.7,SNR=39					
STKA	Stephens Creek	36.16	156	P	P	15 58 34.2 +1.2
	baz=36,SNR=28					
STKA	Stephens Creek	36.16	156	eP	P	15 58 33.9 +0.9
STKA				pmax	pmax	
	comp=Z,6.0nm,1.0s					
STKA	Stephens Creek	36.16	156	eP	P	15 58 33.9 +0.9
	comp=Z,6.0nm,1.0s					
XAN	Xi'an	36.28	337	P	P	15 58 32.5 -1.6
XAN				pmax	pmax	
	comp=Z,13nm,1.6s					
XAN				LR	LR	
	comp=Z,240nm,21.2s					
XAN				LR	LR	
	comp=Z,280nm,19.2s					
KS15	Wonju Array Si	36.29	3	eP	P	15 58 34.6 +0.6
KSAR	Wonju Array Be	36.29	3	P	P	15 58 34.9 +0.8
KSAR	Wonju Array Be	36.29	3	P	P	15 58 34.9 +0.8
KSAR				ScP	ScP	16 04 39.2 +1.7
KSRS	Korea Array	36.30	3	P	P	15 58 34.9 +0.7
	comp=Z,7.8nm,0.8s,baz=176,slow=9.4,SNR=38					
KSRS				ScP	ScP	16 04 39.2 +1.7
	comp=Z,0.6nm,0.5s,baz=185,slow=3.5,SNR=5.5					
KSRS				LR	LR	16 14 32.2
	comp=Z,116nm,21.1s,baz=198,slow=38					
KS01	Wonju Array Si	36.32	3	eP	P	15 58 34.1 -0.2
HTT	Hallett	36.58	161	P	P	15 58 38.4 +1.7
	baz=37,SNR=3.5					
MAJO	Matsushiro	37.25	17	⇑eP	P	15 58 41.6 -0.7
MAJO				pmax	pmax	
	comp=Z,55nm,0.9s					
MAJO	Matsushiro	37.25	17	eP	P	15 58 41.3 -1.0
	comp=Z,35nm,1.0s					
MAT	Matsushiro	37.25	17	P	P	15 58 41.8 -0.5
MJAR	Matsushiro Arr	37.25	17	P	P	15 58 41.8 -0.5
	comp=Z,5.8nm,0.8s,baz=198,slow=8.9,SNR=18					
MJAR				ScP	ScP	16 04 42.3 +1.1
	comp=Z,2.5nm,0.9s,baz=194,slow=3.9,SNR=4.6					
MJB9	Matsu-Tunnel	37.26	17	eP	P	15 58 41.2 -1.2
	comp=Z,8.4nm,1.0s					
CMSA	Cobar Meteorol	37.68	151	P	P	15 58 47.6 +1.6
	baz=38,SNR=14					
BJI	Beijing	39.71	349	P	P	15 59 02.3 -0.5
BJI				S	S	16 05 01.2 +0.2
BJI				pmax	pmax	
	comp=Z,11nm,0.7s					
BJI				LR	LR	
	comp=Z,120nm,8.0s					
BJI				LR	LR	
	comp=Z,230nm,21.4s					
BJI				LR	LR	
	comp=Z,320nm,35.6s					
ARMA	Armidale	40.03	144	P	P	15 59 07.8 +2.1
	baz=40,SNR=10					
ARMA	Armidale	40.03	144	eP	P	15 59 07.6 +1.9
	comp=Z,12nm,0.8s					
LZH	Lanzhou	40.20	333	eP	P	15 59 08.0 +0.8
LZH				pP	pP	15 59 27.0 +1.4
LZH				sP	sP	15 59 34.4 +0.1
LZH				SS	SS	16 07 59.8 -10
LZH				pmax	pmax	
	comp=Z,33nm,1.1s					
LZH				pmax	pmax	
	comp=Z,120nm,5.4s					
LZH				LR	LR	
	comp=Z,300nm,15.4s					
LZH				LR	LR	
	comp=Z,210nm,12.5s					
LZH				LR	LR	
	comp=Z,430nm,15.4s					
SHL	Shillong	40.49	310	eP	P	15 59 10.0 +0.3
ARPS	Mount Arapiles	40.60	160	P	P	15 59 12.1 +1.9
	baz=41,SNR=12					
HHC	Hu-ho-hao-te	41.56	344	eP	P	15 59 20.5 +2.3
HHC				pP	pP	15 59 36.1 -0.6
HHC				S	S	16 05 33.3 +4.5
HHC				pmax	pmax	
	comp=Z,14nm,0.9s					
HHC				pmax	pmax	
	comp=Z,110nm,5.9s					
HHC				LR	LR	
	comp=Z,2µm,14.5s					
HHC				LR	LR	
	comp=Z,2µm,14.5s					
LSA	Lhasa	43.29	314	eP	P	15 59 33.5 +0.6
LSA				pmax	pmax	
	comp=Z,70nm,1.9s					
LSA	Lhasa	43.29	314	eP	P	15 59 33.5 +0.6
	comp=Z,70nm,1.9s					
USRK	Ussuriysk Ar.	43.36	7	P	P	15 59 33.0 +0.4
	comp=Z,4.5nm,0.6s,baz=180,slow=6.5,SNR=22					
USRK				LR	LR	16 19 39.1
	comp=Z,41nm,19.1s,baz=189,slow=39					
MDJ	Mudanjiang	43.54	4	P	P	15 59 34.7 +0.6
MDJ				pP	pP	15 59 52.5 -0.2
MDJ				sP	sP	16 00 03.4 +2.0
MDJ				PP	PP	16 01 18.3 +1.5
MDJ				PcP	PcP	16 01 21.1 +0.5
MDJ				ScP	ScP	16 05 04.4 -1.2
MDJ				PcS	PcS	16 05 13.5 +0.2
MDJ				S	S	16 06 01.1 +3.6
MDJ				sS	sS	16 06 33.1 +3.8
MDJ				pmax	pmax	
	comp=Z,29nm,1.0s					
MDJ				pmax	pmax	
	comp=Z,33nm,4.5s					
MDJ				LR	LR	
	comp=Z,140nm,11.4s					
MDJ				LR	LR	
	comp=Z,110nm,8.8s					
MDJ	Mudanjiang	43.54	4	eP	P	15 59 35.0 +0.9
	comp=Z,60nm,0.9s					
H11S3	WAKE ISLAND Hy	44.04	64	T	T	16 46 35.2
	baz=252,slow=75,SNR=145					
H11S2	WAKE ISLAND Hy	44.05	64	T	T	16 46 43.5
	baz=252,slow=75,SNR=135					
H11S1	WAKE ISLAND Hy	44.05	64	T	T	16 46 43.6
	baz=252,slow=75,SNR=100					
GTA	Gaotai	44.77	332	eP	P	15 59 43.0 -1.1
GTA				PcP	PcP	16 01 26.0 +0.8
GTA				ScP	ScP	16 05 12.6 +1.7
GTA				S	S	16 06 13.6 -2.2
GTA				ScS	ScS	16 09 33.6 -1.0
GTA				pmax	pmax	
	comp=Z,6.0nm,0.9s					
GTA				pmax	pmax	
	comp=Z,37nm,5.9s					
GTA				LR	LR	
	comp=Z,190nm,19.5s					
GTA				LR	LR	
	comp=Z,200nm,20.4s					
GTA				LR	LR	
	comp=Z,260nm,20.4s					
ASAJ	Asahikawa	45.53	17	P	P	15 59 50.9 +1.0
	comp=Z,8.8nm,0.4s,baz=241,slow=17,SNR=6.4					
ASAJ	Asahikawa	45.53	17	eP	P	15 59 50.8 +0.9
DZM	Mont Dzumac	46.14	122	P	P	15 59 56.0 +0.8
	comp=Z,12nm,1.1s,baz=331,slow=19,SNR=2.3					
GUN	Gumba	46.30	309	eP	P	15 59 55.6 -1.1
	comp=Z,39nm,0.7s					
PKIN	Phulchoki	46.53	308	eP	P	15 59 56.7 -1.7
KKN	Kakani	46.72	308	eP	P	15 59 58.4 -1.4
	comp=Z,21nm,0.8s					
DMN	Daman	46.77	308	eP	P	15 59 59.1 -1.2
GKN	Gorkha	47.32	308	eP	P	16 00 03.1 -1.3
HABR	Khabarovsk	47.97	9	ceP	P	16 00 06.5 -2.4
HABR				e*PP	pP	16 00 22.3 -5.4
HABR				e		16 01 34.0
HABR				e		16 01 59.3
HABR				ePPP	PPP	16 02 48.2
HABR				eS	S	16 07 00.7 -0.3
HABR				e		16 09 54.1
HABR				eSS	SS	16 10 31.7 +0.8
HABR				eSSS	SSS	16 11 43.5
HABR				pmax	pmax	
	comp=Z,35nm,2.2s					
HABR				MLR	MLR	
	comp=Z,99nm,19.0s					
KOLN	Koldanda	48.03	307	eP	P	16 00 08.9 -1.1
	comp=Z,21nm,0.5s					
KLR	Kul'dur	48.31	6	P	P	16 00 11.3 -0.1
	comp=Z,5.1nm,0.5s,baz=198,slow=8.7					
PYUN	Piuthan	48.66	307	eP	P	16 00 13.9 -1.0
	comp=Z,22nm,0.5s					
HYB	Hyderabad	48.85	292	i P	P	16 00 16.0 -0.2
ULN	Ulaanbaatar	49.28	344	eP	P	16 00 17.9 -1.3
ULN				pmax	pmax	
	comp=Z,17nm,1.3s					
ULN	Ulaanbaatar	49.28	344	eP	P	16 00 17.9 -1.3
	comp=Z,17nm,1.3s					
SONM	Songino Array	49.44	343	P	P	16 00 18.6 -1.7
	comp=Z,2.6nm,0.5s,baz=160,slow=8.5,SNR=23					
SONM				PcP	PcP	16 01 41.8 +0.2
	comp=Z,3.9nm,0.9s,baz=160,slow=3.7,SNR=3.8					
SONM				ScP	ScP	16 05 29.9 -0.5
	comp=Z,0.2nm,0.4s,baz=145,slow=5.3,SNR=3.4					
SONM				LR	LR	16 22 36.5
	comp=Z,152nm,21.4s,baz=127,slow=38					
TYV	Tymovskoe	51.74	14	eP	P	16 00 47.0 +10
CIT	Chita	51.77	351	eP	P	16 00 52.2 +15
CIT				e		16 01 09.9
ZAK	Zakamensk	52.64	342	eP	P	16 00 42.2 -2.1
ZAK				pmax	pmax	
	comp=Z,6.0nm,1.3s					
NKL	Nikolayevsk	53.46	11	eP	P	16 00 50.7 +0.7
NKL				e		16 01 03.0
NKL				i		16 01 09.6
NKL				pmax	pmax	
	comp=Z,28nm,1.0s					
TLY	Talaya	53.68	343	eP	P	16 00 52.0 +0.2
TLY				pmax	pmax	
	comp=Z,9.0nm,1.3s					
TLY				MLR	MLR	
	comp=Z,121nm,19.0s					
TLY	Talaya	53.68	343	eP	P	16 00 51.3 -0.5
	comp=Z,5.8nm,0.8s					
WMQ	Urumqi	54.20	327	⇓iP	P	16 00 55.3 -0.5
WMQ				pP	pP	16 01 16.9 +1.9
WMQ				PcP	PcP	16 02 00.5 +1.1
WMQ				S	S	16 08 26.7 -0.7
WMQ				sS	sS	16 08 59.7 -0.4
WMQ				pmax	pmax	
	comp=Z,12nm,1.0s					
WMQ				pmax	pmax	
	comp=Z,33nm,4.6s					
WMQ				LR	LR	
	comp=Z,160nm,21.4s					
WMQ				LR	LR	
	comp=Z,94nm,17.2s					
MOY	Mondy	54.47	342	eP	P	16 00 54.7 -2.9
MOY				pmax	pmax	
	comp=Z,20nm,2.9s					
BOD	Bodaibo	57.33	353	⇑iP	P	16 01 17.6 -0.2
BOD				pmax	pmax	
	comp=Z,18nm,1.5s					
PETK	Petropavlovsk-	58.39	22	P	P	16 01 26.1 +0.7
	comp=Z,6.8nm,0.9s,baz=188,slow=3.0,SNR=7.9					
PDGK	Podgornoye	58.68	322	P	P	16 01 25.7 -1.8
PDGK				pmax	pmax	
	comp=Z,20nm,1.1s					
MK01	Makanchi Array	59.01	327	eP	P	16 01 28.4 -1.4
MK31	Makanchi Array	59.03	327	eP	P	16 01 28.5 -1.5
MK31				pmax	pmax	
	comp=Z,3.0nm,0.4s					
MK31	Makanchi Array	59.03	327	eP	P	16 01 28.6 -1.4
MKAR	Makanchi Array	59.03	327	P	P	16 01 28.6 -1.4
	comp=Z,5.3nm,0.4s,baz=122,slow=7.7,SNR=212					
MKAR				PcP	PcP	16 02 17.9 -0.3
	comp=Z,10.0nm,0.6s,baz=119,slow=4.2,SNR=8.0					
MKAR				ScP	ScP	16 06 09.5 -2.7
	comp=Z,0.4nm,0.7s,baz=123,slow=5.3,SNR=2.9					
MKAR				LR	LR	16 29 49.4
	comp=Z,93nm,18.1s,baz=118,slow=39					
KSH	Kashi	59.05	317	P	P	16 01 30.0 -0.3
KSH				epP	pP	16 01 49.9 +0.1
KSH				ePcP	PcP	16 02 19.4 +0.9
KSH				SS	SS	16 13 23.5 -3.4
KSH				pmax	pmax	
	comp=Z,110nm,5.1s					
KSH				LR	LR	
	comp=Z,150nm,10.8s					
KSH				LR	LR	
	comp=Z,120nm,9.0s					
MAKZ	Makanchi	59.21	327	eP	P	16 01 29.8 -1.4
MAKZ				pmax	pmax	
	comp=Z,39nm,1.4s					
MAKZ	Makanchi	59.21	327	eP	P	16 01 29.8 -1.4
	comp=Z,39nm,1.4s					
TKM2	Tokmak 2	60.91	320	eP	P	16 01 42.5 -0.7
TKM2				pmax	pmax	
	comp=Z,38nm,1.6s					
TKM2	Tokmak 2	60.91	320	eP	P	16 01 42.5 -0.7
	comp=Z,38nm,1.6s					
YAK	Yakutsk	60.92	2	P	P	16 01 42.7 +0.2
	comp=Z,32nm,0.4s,baz=215,slow=0.6,SNR=40					
YAK				S	S	16 09 54.0 -0.4
	comp=Z,1.3nm,0.3s,baz=332,slow=23,SNR=19					
YAK	Yakutsk	60.92	2	eP	P	16 01 42.4 -0.1
YAK				S	S	16 09 54.1 -0.4
YAK				pmax	pmax	
	comp=Z,58nm,0.9s					
YAK	Yakutsk	60.92	2	eP	P	16 01 42.4 -0.1
	comp=Z,58nm,0.9s					
YAK				S	S	16 09 54.0 -0.4
AAK	Ala-Archa	61.49	319	PcP	PcP	16 02 28.6 +0.3
	comp=Z,11nm,0.5s,baz=123,slow=5.3,SNR=8.2					
AAK	Ala-Archa	61.49	319	⇑eP	P	16 01 46.3 -0.7
AAK				pmax	pmax	
	comp=Z,26nm,1.5s					
AAK	Ala-Archa	61.49	319	eP	P	16 01 46.6 -0.4
	comp=Z,2.8nm,1.3s					
AAK				PcP	PcP	16 02 28.6 +0.3
MA2	Magadan	61.61	14	eP	P	16 01 48.4 +1.2
MA2				pmax	pmax	
	comp=Z,126nm,1.1s					
MA2	Magadan	61.61	14	eP	P	16 01 48.4 +1.2
	comp=Z,126nm,1.1s					
EKS2	Erkin-Say	61.97	319	eP	P	16 01 49.2 -1.0
EKS2				pmax	pmax	
	comp=Z,11nm,1.0s					
EKS2	Erkin-Say	61.97	319	eP	P	16 01 49.1 -1.0
	comp=Z,11nm,1.0s					
KBL	Kabul	62.14	309	eP	P	16 01 49.7 -1.9
KBL				pmax	pmax	
	comp=Z,28nm,1.5s					
KBL	Kabul	62.14	309	eP	P	16 01 49.6 -1.9
	comp=Z,28nm,1.5s					
ZAA0	Zalesovo Array	62.40	334	eP	P	16 01 50.2 -2.4
ZALV	Zalesovo Beam	62.40	334	P	P	16 01 50.3 -2.3
	comp=Z,2.7nm,0.5s,baz=134,slow=4.3,SNR=18					
ZALV				LR	LR	16 31 02.4
	comp=Z,69nm,19.6s,baz=74,slow=38					
KURK	Kurchatov	63.31	329	eP	P	16 01 57.0 -1.8
KURK				pmax	pmax	
	comp=Z,21nm,0.6s					
KURK	Kurchatov	63.31	329	eP	P	16 01 57.0 -1.8
	comp=Z,21nm,0.6s					
NVS	Novosibirsk	63.68	334	⇓iP	P	16 01 59.4 -1.7
NVS				e		16 02 13.2
NVS				eS	S	16 10 28.7 -0.8
NVS				e		16 11 42.3
NVS				pmax	pmax	
	comp=Z,15nm,1.2s					
NVS				pmax	pmax	
	comp=N,11nm,1.4s					
NVS				pmax	pmax	
	comp=E,12nm,1.4s					
NVS				smax	smax	
	comp=N,6.0nm,2.0s					

NVS smax smax
comp=E,10.0nm,2.0s
KK31 Karatay Array 64.32 318 *i* P **P 16 02 04.2 -1.4**
KK31 pmax pmax
comp=Z,3.0nm,0.6s
KKAR Karatay Array 64.32 318 *e*P **P 16 02 04.0 -1.6**
KKAR Karatay Array 64.32 318 *e*P **P 16 02 04.0 -1.6**
SEY Seymchan 64.93 13 P **P 16 02 10.0 +0.9**
comp=Z,9.9nm,1.1s,baz=215,slow=6.1,SNR=17
SEY Seymchan 64.93 13⇑ *e*P **P 16 02 10.4 +1.3**
OTUK Ortayu 65.48 324 P **P 16 02 10.7 -2.4**
OTUK pmax pmax
comp=Z,14nm,1.6s
WSAR Wadi Sarin 68.31 295 P **P 16 02 30.4 -1.1**
comp=Z,2.7nm,0.7s,baz=194,slow=8.3,SNR=2.9
BRVK Borovoye 68.94 328*c i*P **P 16 02 33.3 -1.4**
BRVK pmax pmax
comp=Z,23nm,1.7s
BRVK Borovoye 68.94 328 *e*P **P 16 02 33.1 -1.6**
comp=Z,16nm,1.1s
ZRNK Zerenda 69.57 327 *e*P **P 16 02 36.8 -1.9**
ZRNK pmax pmax
comp=Z,19nm,0.5s
ZRNK Zerenda 69.57 327 *e*P **P 16 02 36.8 -1.9**
comp=Z,18nm,0.5s
TIXI Tiksi 70.53 1 P **P 16 02 43.3 -0.9**
comp=Z,10nm,0.4s,baz=170,slow=5.5,SNR=46
TIXI Tiksi 70.53 1*c i*P **P 16 02 43.8 -0.4**
TIXI pmax pmax
comp=Z,29nm,1.2s
TIXI Tiksi 70.53 1 *e*P **P 16 02 43.6 -0.6**
comp=Z,39nm,1.3s
GEYT Alibeck 71.57 310 P **P 16 02 50.0 -1.2**
comp=Z,2.5nm,0.5s,baz=143,slow=3.6,SNR=7.2
GEYT LR LR 16 40 09.0
comp=Z,34nm,18.7s,baz=125,slow=41
BILL Bilibino 72.47 15⇓*i*P **P 16 02 56.4 +0.5**
BILL *i* 16 03 16.3
BILL pmax pmax
comp=Z,2.0nm,1.1s
BILL MLR MLR
comp=Z,41nm,18.0s
NRIK Noril'sk 72.72 347 P **P 16 02 57.2 -0.1**
comp=Z,27nm,0.5s,baz=127,slow=5.8,SNR=73
NRIK LR LR 16 37 35.3
comp=Z,101nm,20.8s,baz=122,slow=38
AB31 Akbulak array 73.40 322 P **P 16 03 00.0 -1.8**
AB31 pmax pmax
comp=Z,4.0nm,0.5s
ABKAR Akbulak array 73.40 322 *e*P **P 16 03 00.2 -1.6**
AKTO Aktyubinsk 74.95 322 P **P 16 03 09.5 -1.4**
comp=Z,9.6nm,0.4s,baz=107,slow=7.5,SNR=46
SVE Sverdlovsk 75.56 329⇑*i*P **P 16 03 12.9 -1.3**
SVE pmax pmax
comp=Z,15nm,0.5s
UNV Unalaska Valle 76.36 34 *e*P **P 16 03 20.2 +1.4**
ARU Arti 76.50 328 P **P 16 03 18.2 -1.4**
comp=Z,7.2nm,0.5s,baz=102,slow=6.9,SNR=4.6
ARU Arti 76.50 328*c i*P **P 16 03 17.5 -2.0**
ARU *PP **PcP 16 03 35.2 +4.3**
ARU 16 06 12.2
ARU S **S 16 12 58.9 -0.4**
ARU pmax pmax
comp=Z,23nm,1.7s
ARU Arti 76.50 328 *e*P **P 16 03 17.3 -2.2**
comp=Z,8.7nm,0.8s
GAMB Gambell 77.37 24 *e*P **P 16 03 23.2 -1.0**
FALS False Pass 78.38 34 *e*P **P 16 03 30.1 +0.1**
TNA Tin City 79.56 23 *e*P **P 16 03 37.8 +1.5**
SDPT Sand Point 80.14 34 *e*P **P 16 03 40.7 +1.1**
comp=Z,58nm,0.6s
MAW Mawson 80.80 200 P **P 16 03 44.1 +1.2**
comp=Z,3.7nm,0.6s,baz=44,slow=4.0,SNR=6.1
MAW LR LR 16 35 59.7
comp=Z,96nm,21.9s,baz=46,slow=33
VNDA Vanda 80.95 172 P **P 16 03 44.4 +0.8**
comp=Z,2.2nm,0.7s,baz=320,slow=6.0,SNR=15
VNDA Vanda 80.95 172 *e*P **P 16 03 44.6 +1.0**
VNDA pmax pmax
comp=Z,7.0nm,0.8s
VNDA Vanda 80.95 172 *e*P **P 16 03 44.6 +1.0**
comp=Z,6.6nm,0.8s
SBA Scott Base 81.88 172 *e*P **P 16 03 50.0 +1.6**
SBA pmax pmax
comp=Z,27nm,1.6s
SBA Scott Base 81.88 172 *e*P **P 16 03 50.0 +1.6**
comp=Z,26nm,1.6s
GNI Garni 82.19 310 P **P 16 03 49.6 -1.5**
comp=Z,1.9nm,0.3s,baz=114,slow=18,SNR=3.1
GNI Garni 82.19 310⇓*e*P **P 16 03 51.1 0.0**
GNI pmax pmax
comp=Z,19nm,1.2s
ZEI Tsey 83.06 313 *e*P **P 16 03 51.3 -4.3**
ZEI pmax pmax
comp=Z,23nm,0.6s
TT01 Tatalina 83.86 27 *e*P **P 16 04 00.9 +2.0**
KBZ Khabaz 83.87 314 P **P 16 03 58.3 -1.1**
comp=Z,1.4nm,0.2s,baz=138,slow=6.2,SNR=3.8
KBZ LR LR 16 45 42.3
comp=Z,49nm,21.7s,baz=82,slow=39
TTA Tatalina 83.87 27 *e*P **P 16 04 01.2 +2.1**
TTA pmax pmax
comp=Z,13nm,1.0s
TTA Tatalina 83.87 27 *e*P **P 16 04 01.2 +2.1**
comp=Z,13nm,1.0s
NEY Neytrino 83.96 313⇑*e*P **P 16 04 00.2 +0.1**
NEY pmax pmax
comp=Z,4.0nm,1.7s
KVAR Kislovodsk Arr 84.03 314 P **P 16 03 59.8 -0.6**
comp=Z,2.8nm,0.6s,baz=243,slow=6.8,SNR=2.4
OHAK Old Harbor 84.40 33 *e*P **P 16 04 03.5 +1.6**
comp=Z,40nm,1.3s
KDAK Kodiak Island 84.84 32 P P 16 04 20.8 +17
comp=Z,3.8nm,0.4s,baz=255,slow=3.5,SNR=15
KDAK Kodiak Island 84.84 32 *i* P **P 16 04 05.5 +1.5**
KDAK Kodiak Island 84.84 32 *e*P **P 16 04 05.1 +1.1**
comp=Z,19nm,0.8s
VRH Novokhopyorsk 85.23 321 *e*P **P 16 04 04.6 -1.5**
VRH pmax pmax
comp=Z,20nm,1.0s
PPT Papeete 85.55 108 LR LR 16 38 37.8
comp=Z,25nm,21.8s,baz=264,slow=33
CAST Castle Rocks 85.70 27 *e*P **P 16 04 09.2 +1.0**
comp=Z,3.0nm,0.7s
BPAW Bear Paw Mtn. 86.26 26 *e*P **P 16 04 11.3 +0.3**
comp=Z,6.5nm,1.3s
MLY Manley 86.45 25 *e*P **P 16 04 12.5 +0.5**
comp=Z,7.6nm,1.2s
TRF Thorofare Moun 86.51 27 *e*P **P 16 04 12.6 +0.2**
VSR Storozhevoye 86.83 321 *e*P **P 16 04 12.4 -1.6**
VSR pmax pmax
comp=Z,8.0nm,0.4s
COLD Coldfoot 86.86 23 *e*P **P 16 04 15.1 +1.3**
comp=Z,5.7nm,0.8s
LPSR Galich'ya Gora 87.04 322 *e*P **P 16 04 13.3 -1.7**
LPSR pmax pmax
comp=Z,30nm,1.0s
KLMR Klimovskoe 87.09 331 *e*P **P 16 04 12.6 -2.4**
KLMR pmax pmax
comp=Z,12nm,0.5s
RND Reindeer 87.15 27 *e*P **P 16 04 14.9 -0.5**
RND pmax pmax
comp=Z,5.0nm,0.7s
RND Reindeer 87.15 27 *e*P **P 16 04 14.9 -0.5**
comp=Z,5.4nm,0.7s
SML Sawmill 87.31 28 *e*P **P 16 04 16.2 +0.1**
SML pmax pmax
comp=Z,2.0nm,0.7s
SML Sawmill 87.31 28 *e*P **P 16 04 16.2 +0.1**
comp=Z,2.4nm,0.7s
WRH Wood River Hil 87.54 26 *e*P **P 16 04 17.3 +0.1**
comp=Z,3.9nm,1.0s
CCB Clear Creek Bu 87.67 25 *e*P **P 16 04 17.3 -0.5**
comp=Z,10nm,1.5s
TMCR Tamitsa 87.92 334 *e*P **P 16 04 17.3 -1.6**
TMCR pmax pmax
comp=Z,32nm,0.9s
ILAR Eielson Array 88.07 25 P **P 16 04 18.9 -0.8**
comp=Z,0.8nm,0.5s,baz=261,slow=4.2,SNR=16
KMBO Kilima Mbogo 88.19 269 *e*P **P 16 04 22.1 +0.5**
KMBO pmax pmax
comp=Z,93nm,1.8s
KMBO Kilima Mbogo 88.19 269 *e*P **P 16 04 22.1 +0.5**
comp=Z,93nm,1.8s
ASF Jabal al Asfar 88.19 302 P **P 16 04 21.1 0.0**
comp=Z,3.4nm,0.4s,baz=267,slow=1.5,SNR=9.2
OBN Obninsk 88.49 325 P **P 16 04 20.0 -1.8**
comp=Z,14nm,0.5s,baz=58,slow=13,SNR=7.3
OBN Obninsk 88.49 325 *i* P **P 16 04 19.1 -2.7**
OBN *i* 16 04 34.6
OBN pmax pmax
comp=Z,29nm,1.3s
OBN Obninsk 88.49 325 *e*P **P 16 04 19.9 -1.8**
comp=Z,110nm,1.6s
PAX Paxson 88.67 27 *e*P **P 16 04 23.2 +0.5**
PAX pmax pmax
comp=Z,10.0nm,1.4s
PAX Paxson 88.67 27 *e*P **P 16 04 23.2 +0.5**
comp=Z,9.6nm,1.4s
DOT Dot Lake 89.30 27 *e*P **P 16 04 25.8 +0.3**
comp=Z,7.9nm,0.7s
MMAI Mount Meron Ar 89.45 303 P **P 16 04 27.0 0.0**
comp=Z,1.8nm,0.5s,baz=108,slow=7.1,SNR=5.9
SYO Syowa Base 89.47 201⇑*e*P **P 16 04 29.8 +3.7**
MENT Mentasta 89.47 27 *e*P **P 16 04 27.5 +1.1**
EIL Elat 89.89 300 P **P 16 04 28.8 -0.3**
comp=Z,2.4nm,0.7s,baz=297,slow=6.1,SNR=3.7
EGAK Eagle 90.53 25 *e*P **P 16 04 31.6 +0.4**
BRTR Keskin Array B 90.71 310 P **P 16 04 31.0 -1.8**
comp=Z,0.9nm,0.7s,baz=93,slow=2.5,SNR=5.7
BRTR LR LR 16 52 06.3
comp=Z,27nm,20.3s,baz=79,slow=40
BRTR Keskin Array B 90.71 310 *i* P **P 16 04 31.8 -1.0**
BRTR pmax pmax
comp=Z,1.0nm,0.6s
QSPA South Pole Qui 90.97 180 *e*P **P 16 04 35.2 +1.8**
DAWY Dawson 91.35 26 *e*P **P 16 04 35.4 +0.3**
ARCES ARCESS Array B 92.50 340 P **P 16 04 38.8 -1.4**
comp=Z,6.1nm,0.9s,baz=88,slow=5.3,SNR=26
ARCES LR LR 16 50 30.2
comp=Z,31nm,18.8s,baz=84,slow=38
INK Inuvik 93.12 21 *e*P **P 16 04 43.3 +0.2**
INK Inuvik 93.12 21 *e*P **P 16 04 43.3 +0.2**
AKASG Malin Array Be 93.13 321 P **P 16 04 41.5 -2.0**
comp=Z,1.0nm,0.4s,baz=71,slow=5.0,SNR=18
AKASG LR LR 16 50 29.6
comp=Z,56nm,21.6s,baz=80,slow=38
AKASG Malin Array Be 93.13 321 *i* P **P 16 04 41.7 -1.8**
AKASG pmax pmax
comp=Z,1.0nm,0.4s
KIEV Kiev 93.14 321⇓*e*P **P 16 04 41.2 -2.4**
KIEV pmax pmax
comp=Z,10.0nm,1.6s
AK11 Malin Array Si 93.17 321 *e*P **P 16 04 42.0 -1.8**
FIA1 FINESS Array S 93.56 332 *e*P **P 16 04 43.2 -2.1**
FINES FINESS Array B 93.56 332 P **P 16 04 43.6 -1.7**
comp=Z,2.1nm,0.5s,baz=71,slow=4.0,SNR=15
FINES LR LR 16 49 28.3
comp=Z,127nm,21.7s,baz=92,slow=37
SKAG Skagway 93.81 30 *e*P **P 16 04 47.9 +1.5**
comp=Z,8.9nm,1.0s
TESR Tescani 95.29 317⇓*i*P **P 16 04 52.5 -1.1**
MLR Muntele Rosu 95.90 316 P **P 16 04 53.7 -2.8**
comp=Z,0.3nm,0.5s,baz=16,slow=6.3
MLR Muntele Rosu 95.90 316⇑*i*P **P 16 04 55.9 -0.7**
BURAR Bucovina Array 96.11 318⇓*i*P **P 16 04 56.7 -0.7**
BUR08 Bucovina Ar. S 96.12 318 *e*P **P 16 04 56.3 -1.1**
SUW Suwalki 96.34 325 *e*P **P 16 04 57.4 -0.7**
SUW Suwalki 96.34 325 *e*P **P 16 04 57.4 -0.7**
KWP Kalwaria Pacla 97.43 320 *e*P **P 16 05 02.9 -0.3**
KWP Kalwaria Pacla 97.43 320⇑*i*P Pdif 16 05 03.3 0.0
KWP Kalwaria Pacla 97.43 320 *e*P **P 16 05 02.9 -0.3**
KOLS Kolonicke sedl 97.83 320 *e*P **P 16 05 04.5 -0.6**
KOLS pmax pmax
comp=Z,9.0nm,1.3s
KOLS Kolonicke sedl 97.83 320 *e*P **P 16 05 04.5 -0.6**
IDI Anoyia 97.99 306 P **P 16 05 05.0 -1.1**
comp=Z,7.8nm,1.0s,baz=53,slow=5.1,SNR=3.0
CRVS Cervenica-Dubn 98.37 320 *e*P **P 16 05 07.1 -0.3**
CRVS Cervenica-Dubn 98.37 320 *e*P **P 16 05 07.1 -0.3**
STHS Stebnicka Huta 98.40 320 *e*P Pdif 16 05 08.0 +0.4
STHS pmax pmax
comp=Z,4.0nm,1.0s
STHS Stebnicka Huta 98.40 320 *e*P Pdif 16 05 08.0 +0.4
NIE Niedzica 99.01 320 *e*P **Pdif 16 05 10.7 +0.4**
NIE Niedzica 99.01 320 *e*P **Pdif 16 05 10.7 +0.4**
KECS Kecovo 99.08 319 *e*P **Pdif 16 05 10.0 -0.7**
KECS pmax pmax
comp=Z,3.0nm,1.2s
KECS Kecovo 99.08 319 *e*P **Pdif 16 05 10.0 -0.7**
OJC Ojcow 99.15 321 *e*P **Pdif 16 05 10.6 -0.3**
OJC Ojcow 99.15 321 *e*P **Pdif 16 05 09.6 -1.3**
OJC pmax pmax
comp=Z,14nm,1.3s
OJC Ojcow 99.15 321 *e*P **Pdif 16 05 09.6 -1.3**
comp=Z,14nm,1.3s
BOSA Boshof 99.42 241 LR LR 16 44 16.6
comp=Z,55nm,21.0s,baz=106,slow=32
LANS Liptovska Anna 99.60 320 *e*P **Pdif 16 05 13.5 +0.5**
LANS Liptovska Anna 99.60 320 *e*P **Pdif 16 05 13.5 +0.5**
VYHS Vyhne 100.15 320 *e*P **Pdif 16 05 15.3 -0.1**
VYHS pmax pmax
comp=Z,5.0nm,1.8s
VYHS Vyhne 100.15 320 *e*P **Pdif 16 05 15.3 -0.1**
NB2 NORSAR Subarra100.58 333 P **Pdif 16 05 14.9 -2.2**
comp=Z,2.8nm,1.1s,baz=72,slow=4.4
NB2 NORSAR Subarra100.58 333 P **Pdif 16 05 14.9 -2.2**
baz=72,slow=4.4
NOA NORSAR Array B100.58 333 P **Pdif 16 05 15.9 -1.1**
comp=Z,0.7nm,0.6s,baz=103,slow=4.1,SNR=4.1
NOA NORSAR Array B100.58 333 P **Pdif 16 05 16.0 -1.1**
KSP Ksiaz 101.17 322 *e*P **Pdif 16 05 20.0 +0.2**
KSP Ksiaz 101.17 322 *e*P **Pdif 16 05 20.0 +0.2**
YKA Yellowknife Ar 102.47 24 P **Pdif 16 05 26.1 +0.7**
comp=Z,0.1nm,0.5s,baz=301,slow=4.5,SNR=4.7
YKA PKiKP **PKiKP 16 09 45.8 -0.6**
comp=Z,0.1nm,0.5s,baz=306,slow=2.1,SNR=5.6
YKA PKKPbc **PKKPbc 16 21 25.6 -2.9**
comp=Z,0.2nm,0.4s,baz=121,slow=3.5,SNR=7.2
BRG Berggiesshubel 102.58 323 *e*P **Pdif 16 05 25.9 -0.2**
comp=Z,9.0nm,1.2s
BRG Berggiesshubel 102.58 323 *e*P **Pdif 16 05 26.0 -0.2**
BRG pmax pmax
comp=Z,9.0nm,1.2s
GERES GERESS Array B 103.34 321 Pdiff **Pdif 16 05 29.0 -0.7**
comp=Z,0.5nm,0.6s,baz=67,slow=4.5,SNR=4.8
KEST Kesra 110.30 309 PKiKP **PKiKP 16 10 01.5 -0.4**
comp=Z,4.4nm,1.0s,baz=63,slow=2.3,SNR=3.1
PDAR Pinedale Array 114.22 41 PKP PKPdf 16 10 09.3 0.0
comp=Z,0.2nm,0.5s,baz=338,slow=1.9,SNR=3.4
PDAR PKKPbc **PKKPbc 16 20 48.8 -2.3**
comp=Z,0.2nm,0.5s,baz=106,slow=5.7,SNR=4.2
PDAR PKKPab **PKKPab 16 20 56.2 -0.8**
comp=Z,0.6nm,0.6s,baz=106,slow=5.9,SNR=7.2
PHWY Pilot Hill 117.61 41 *e*PKPdf **PKPdf 16 10 16.8 +0.9**
ULM Lac du Bonnet 117.93 29 PKP **PKPdf 16 10 14.6 -1.3**
comp=Z,1.3nm,0.5s,baz=333,slow=4.5,SNR=2.6
ESDC Sonseca Array 118.56 317 PKP **PKPdf 16 10 15.6 -1.9**
comp=Z,0.3nm,0.5s,baz=26,slow=2.5,SNR=4.4
ECSD EROS Data Cent 121.72 35 *e*PKPdf **PKPdf 16 10 23.6 +0.2**
TORD Torodi Ar. Bea 122.45 286 PKP **PKPdf 16 10 25.3 -0.3**
comp=Z,3.1nm,0.6s,baz=64,slow=1.8,SNR=20
SCHQ Schefferville 123.40 8 PKP **PKPdf 16 10 27.0 +0.7**
comp=Z,2.2nm,0.5s,baz=254,slow=7.0,SNR=9.6
TX31 Lajitas Ar. Si 124.26 53 *e*PKPdf **PKPdf 16 10 29.6 +0.8**
TXAR Lajitas Array 124.26 53 PKP **PKPdf 16 10 29.9 +1.2**
comp=Z,0.3nm,0.7s,baz=252,slow=2.5,SNR=4.4
TXAR Lajitas Array 124.26 53 PKiKP **PKPdf 16 10 30.0 +1.2**
MIAR Mount Ida 129.14 42 *e*PKiKP **PKPdf 16 10 39.9 +2.0**
MIAR Mount Ida 129.14 42 *e*PKPdf **PKPdf 16 10 39.9 +2.0**
DBIC Dimbokro 129.79 280 PKP **PKPdf 16 10 39.4 -0.3**
comp=Z,2.2nm,0.6s,baz=115,slow=3.2,SNR=6.2
PLCA Paso Flores 137.93 162 PKP **PKPdf 16 10 56.2 +1.9**
comp=Z,1.3nm,0.6s,baz=350,slow=2.8,SNR=6.5
LPAZ La Paz 159.81 139 PKP **PKPdf 16 11 31.6 +1.6**
comp=Z,0.6nm,0.4s,baz=230,slow=4.9,SNR=3.7

WEL 08 15:52:59.5±0.3, 38°.37S×175°.66E, h175km±2km, ML3.6/7, 12C-3D, Error ellipse: s-maj=2.4km s-min=1.9km az=0.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TLZ	**Tolley Road**	**0.11**	**294**	PN	Pn	15 53 23.0	+0.2
TWVZ	**Taurewa**	**0.72**	**194**	PN	Pn	15 53 24.8	-0.1
KRVZ	**Karewarewa**	**0.72**	**181**	PN	Pn	15 53 25.1	+0.1
WTVZ	**West Tongariro**	**0.74**	**184**	PN	Pn	15 53 25.2	+0.1
MRHZ	**Matea Rd**	**0.75**	**128**	PN	Pn	15 53 25.0	-0.1
MRHZ				SN	Sn	15 53 44.4	-0.4
OTVZ	**Oturere**	**0.79**	**180**	PN	Pn	15 53 25.7	+0.2
NGZ	**Ngauruhoe**	**0.80**	**183**	⇓PN	Pn	15 53 25.7	+0.2
MUGZ	**Murupara**	**0.88**	**97**	PN	Pn	15 53 25.9	+0.1
FWVZ	**Far West T-bar**	**0.88**	**186**	PN	Pn	15 53 26.1	-0.1
TUVZ	**Tukino**	**0.89**	**180**	PN	Pn	15 53 26.2	+0.1
TUVZ				SN	Sn	15 53 46.8	0.0
PKVZ	**Pokaka**	**0.95**	**195**	PN	Pn	15 53 26.3	-0.1
WNVZ	**Wahianoa**	**0.95**	**183**	PN	Pn	15 53 26.6	0.0
MTVZ	**Mangateitei**	**1.02**	**188**	PN	Pn	15 53 26.9	-0.1
BKZ	**Black Stump Fm**	**1.02**	**141**	⇑PN	Pn	15 53 26.9	-0.1
BKZ				SN	Sn	15 53 47.4	-0.8
BKZ				AML	AML	15 53 49.6	
VRZ	**Vera Road**	**1.03**	**223**	⇑PN	Pn	15 53 26.9	0.0
MOVZ	**Moawhango**	**1.03**	**176**	PN	Pn	15 53 26.7	-0.4
MOVZ				SN	Sn	15 53 46.9	-1.6
URZ	**Urewera**	**1.15**	**85**	PN	Pn	15 53 27.2	-0.6
URZ				SN	Sn	15 53 48.8	-0.8
NMHZ	**Naumai**	**1.15**	**129**	PN	Pn	15 53 28.9	+0.9
BHHZ	**Black Hill Sta**	**1.16**	**164**	⇑PN	Pn	15 53 27.6	-0.4
KWHZ	**Kaweka Forest**	**1.21**	**151**	PN	Pn	15 53 28.4	0.0
RAHZ	**Arahi**	**1.24**	**116**	PN	Pn	15 53 29.2	+0.5
MCHZ	**McNeill Hill**	**1.34**	**143**	PN	Pn	15 53 30.2	+0.7
ARHZ	**Aropaoanui**	**1.37**	**131**	PN	Pn	15 53 30.3	+0.5
SNGZ	**Shannon Statio**	**1.38**	**108**	⇓PN	Pn	15 53 30.2	+0.3
RAGZ	**Rawiri**	**1.38**	**96**	PN	Pn	15 53 29.9	-0.1
KRHZ	**Kereru**	**1.38**	**157**	PN	Pn	15 53 29.8	-0.1
WHHZ	**Waihua**	**1.42**	**120**	PN	Pn	15 53 30.5	+0.3
MWZ	**Matawai**	**1.47**	**89**	⇑PN	Pn	15 53 30.4	-0.4
MWZ				AML	AML	15 53 54.4	
MWZ				AML	AML	15 53 56.4	
WAZ	**Wanganui**	**1.48**	**201**	PN	Pn	15 53 30.5	-0.3
NEZ	**North Egmont**	**1.52**	**233**	PN	Pn	15 53 31.4	+0.1
KHEZ	**Kahui Hut**	**1.58**	**234**	PN	Pn	15 53 31.9	0.0
PNHZ	**Pukenui**	**1.59**	**165**	PN	Pn	15 53 31.9	-0.5
RIGZ	**Rimuhau**	**1.68**	**102**	PN	Pn	15 53 32.8	-0.1
CKHZ	**Cape Kidnapper**	**1.69**	**140**	PN	Pn	15 53 33.3	+0.4
TSZ	**Takapari Road**	**1.70**	**172**	⇑PN	Pn	15 53 32.3	-0.7
TSZ				AML	AML	15 53 59.8	
KNZ	**Kokohu**	**1.70**	**113**	⇓PN	Pn	15 53 32.8	-0.2
KAHZ	**Kahuranaki**	**1.71**	**147**	PN	Pn	15 53 33.2	+0.1
TKGZ	**Te Karaka**	**1.72**	**93**	PN	Pn	15 53 33.2	0.0
HAZ	**Te Kaha**	**1.78**	**70**	PN	Pn	15 53 32.8	-1.0
WPHZ	**Waipukurau**	**1.79**	**161**	⇑PN	Pn	15 53 33.5	-0.5
PRGZ	**Paritu Road**	**1.82**	**108**	PN	Pn	15 53 34.4	+0.1
TWGZ	**Tauwhareparae**	**1.83**	**85**	PN	Pn	15 53 34.4	-0.1
OHWZ	**Ohakea**	**1.85**	**188**	⇑PN	Pn	15 53 34.1	-0.4
PXZ	**Pawanui**	**1.90**	**151**	⇑PN	Pn	15 53 34.6	-0.5
PXZ				AML	AML	15 54 05.2	
PXZ				AML	AML	15 54 05.6	
MHGZ	**Mahia Peninsul**	**1.92**	**115**	PN	Pn	15 53 35.4	+0.1
DVHZ	**Dannevirke**	**1.96**	**169**	PN	Pn	15 53 34.6	-1.2
PKGZ	**Pakihiroa**	**1.96**	**76**	PN	Pn	15 53 35.4	-0.5
CNGZ	**Carnagh Statio**	**2.00**	**94**	⇑PN	Pn	15 53 36.4	+0.2
POWZ	**Post Office Ro**	**2.02**	**178**	PN	Pn	15 53 35.0	-1.3
PRHZ	**Porangahau**	**2.04**	**159**	⇑PN	Pn	15 53 35.8	-0.7
PUZ	**Puketiti**	**2.07**	**82**	PN	Pn	15 53 36.1	-0.8
ANWZ	**Angora Road**	**2.18**	**163**	PN	Pn	15 53 37.2	-0.9
PRWZ	**Pori Road**	**2.19**	**174**	PN	Pn	15 53 37.1	-1.2
WMGZ	**Waiomatatini S**	**2.24**	**77**	PN	Pn	15 53 38.2	-0.7
MRZ	**Mangatainoka R**	**2.29**	**182**	⇑PN	Pn	15 53 37.5	-1.8
BFZ	**Birch Farm**	**2.35**	**169**	PN	Pn	15 53 38.5	-1.6
TIWZ	**Tintock**	**2.41**	**176**	PN	Pn	15 53 39.0	-1.8
OGWZ	**Otaki Gorge**	**2.47**	**189**	PN	Pn	15 53 39.6	-1.9
HOWZ	**Holdsworth Sta**	**2.52**	**183**	PN	Pn	15 53 39.9	-2.2
KIW	**Kapiti Island**	**2.55**	**193**	PN	Pn	15 53 40.1	-2.4
CPWZ	**Castlepoint**	**2.57**	**171**	PN	Pn	15 53 41.2	-1.4
TMWZ	**Te Maipa**	**2.73**	**176**	PN	Pn	15 53 42.4	-2.3
CAW	**Cannon Point**	**2.77**	**189**	PN	Pn	15 53 42.5	-2.5
DUWZ	**D'Urville Isla**	**2.77**	**208**	PN	Pn	15 53 42.3	-2.8
MTW	**Mount Morrison**	**2.78**	**182**	⇑PN	Pn	15 53 42.6	-2.6
WEL	**Wellington**	**2.99**	**193**	PN	Pn	15 53 44.9	-2.8
PAWZ	**Paruwai Farm**	**3.01**	**183**	PN	Pn	15 53 45.1	-2.9
TRWZ	**Traveller**	**3.02**	**180**	PN	Pn	15 53 45.4	-2.7
TCW	**Tory Channel**	**3.03**	**200**	PN	Pn	15 53 45.4	-2.8
TCW				AML	AML	15 54 23.1	
TCW				AML	AML	15 54 23.3	
MSWZ	**Moikau Station**	**3.06**	**186**	PN	Pn	15 53 45.5	-3.0
BHW	**Baring Head**	**3.09**	**191**	PN	Pn	15 53 45.9	-3.0
BHW				AML	AML	15 53 46.4	
PLWZ	**Palliser**	**3.21**	**185**	PN	Pn	15 53 47.2	-3.3
TUWZ	**Tuamarina**	**3.33**	**203**	PN	Pn	15 53 48.5	-3.4
TUWZ				AML	AML	15 54 29.2	
TUWZ				AML	AML	15 54 29.5	
NNZ	**Nelson**	**3.34**	**211**	PN	Pn	15 53 48.8	-3.3
QRZ	**Quartz Range**	**3.44**	**224**	PN	Pn	15 53 49.5	-3.8
BSWZ	**Blackbirch Sta**	**3.51**	**202**	PN	Pn	15 53 52.2	-3.2
THZ	**Tophouse**	**3.99**	**211**	PN	Pn	15 53 56.0	-4.3
KHZ	**Kahutara**	**4.35**	**201**	PN	Pn	15 54 01.2	-3.6
INZ	**Inchbonnie**	**5.40**	**215**	PN	Pn	15 54 14.4	-4.1
MQZ	**McQueen's Vall**	**5.79**	**202**	PN	Pn	15 54 17.7	-5.9

IDC 08 16:06:16.8±5.8, 7°.93S×157°.83E, h0km, mb3.6/3, mb1 3.8/5, mb1mx3.5/36, mbtmp3.7/5, ML3.7/2, Error ellipse: s-maj=118.4km s-min=31.2km az=9.0, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	**Honiara**	**2.57**	**126**	PN	Pn	16 06 59.6	-0.1
	29nm,0.3s,baz=192,slow=9.3,SNR=35						
HNR				Sn	Sb	16 07 37.0	+0.9
	247nm,0.3s,baz=283,slow=22,SNR=16						
HNR	**Honiara**	**2.57**	**126**	*e*P	Pn	16 06 59.0	-0.8
HNR				*e*S	Sb	16 07 37.0	+0.9
CTA	**Charters Tower**	**16.48**	**222**	Pn	Pn	16 10 09.4	-0.2
	0.1nm,0.3s,baz=42,slow=15,SNR=2.1						
WRA	**Warramunga Arr**	**25.69**	**240**	P	P	16 11 49.0	+0.2
	0.8nm,0.6s,baz=66,slow=9.3,SNR=11						
H11S3	**WAKE ISLAND Hy**	**27.67**	**18**	T	T	16 40 54.3	
	baz=203						
H11S2	**WAKE ISLAND Hy**	**27.68**	**18**	T	T	16 40 55.7	
	baz=203						
H11S1	**WAKE ISLAND Hy**	**27.69**	**18**	T	T	16 40 51.5	
	baz=203						
ASAR	**Alice Springs**	**27.76**	**233**	P	P	16 12 06.2	-1.3
	0.3nm,0.8s,baz=71,slow=9.9,SNR=2.4						
STKA	**Stephens Creek**	**28.22**	**210**	P	P	16 12 12.5	+1.1
	1.6nm,0.7s,baz=31,slow=12,SNR=3.8						

*DDA **08** 16:11:58.8, 40°.54N×41°.30E, h7km, Md2.7*
*ISCJB **08** 16:11:59.4±0.9, 40°.8N±0°.4×41°.1E±0°.3, h7km, Error ellipse: s-maj=68.8km s-min=5.5km az=153.8*
*CSEM **08** 16:11:59.9±0.3, 40°.74N×41°.14E, h2km, MD2.7, Error ellipse: s-maj=48.6km s-min=5.3km az=153.0*

ISC 08 16:11:59.5±1.3, 40°.7N±0°.2×41°.1E±0°.1, h7km, n11, σ0°37/13, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DDEM	**Demirkent**	**0.50**	**68**	P	**Pg**	**16 12 09.2**	**0.0**
DDEM	**Demirkent**	**0.50**	**68**	*i* P	**Pg**	**16 12 09.2**	**0.0**
DBAD	**Bademkaya**	**0.53**	**53**	P	**Pg**	**16 12 09.8**	**+0.2**
DBAD	**Bademkaya**	**0.53**	**53**	*i* P	**Pg**	**16 12 09.8**	**+0.2**
DAGI	**Agillar**	**0.70**	**57**	*i* P	**Pg**	**16 12 12.8**	**0.0**
ARTV	**Artvin**	**0.77**	**51**	P	**Pg**	**16 12 14.2**	**0.0**
ARTV	**Artvin**	**0.77**	**51**	*i* P	**Pg**	**16 12 14.2**	**0.0**
BAYT	**Ayd¨–ntepe-Bay**	**0.82**	**248**	*e*PG	**Pb**	**16 12 16.5**	**+0.3**
BAYT				*e*SG	**Sg**	**16 12 25.2**	**-0.7**
BAYT	**Ayd¨–ntepe-Bay**	**0.82**	**248**	*e*Pg	**Pb**	**16 12 16.5**	**+0.3**
BAYT				*e*Sg	**S

BODT	**Bodrum**	**0.27**	**319**	PG	**Pg**	**16 35 32.3**	**+0.3**
BODT				SG	**Sb**	**16 35 37.1**	**-0.8**
BODT	**Bodrum**	**0.27**	**319**	*i* Pg	**Pg**	**16 35 32.3**	**+0.3**
BODT				*i* Sg	**Sb**	**16 35 37.1**	**-0.8**
NIS1	**Nisyros Isl.**	**0.38**	**228**	*e*PG	**Pg**	**16 35 33.4**	**-0.6**
NIS1	**Nisyros Isl.**	**0.38**	**228**	*e*Pg	**Pg**	**16 35 33.4**	**-0.6**
NIS1	**Nisyros Isl.**	**0.38**	**228**	P	**Pg**	**16 35 34.5**	**+0.5**
NIS1				S	**Sb**	**16 35 42.1**	**+1.0**
NIS1	**Nisyros Isl.**	**0.38**	**228**	P	**Pg**	**16 35 34.5**	**+0.5**
NIS1				S	**Sb**	**16 35 42.1**	**+1.0**
NIS1				AML	AML	16 35 43.5	
	comp=E,2606μm,0.3s						
NIS1				AML	AML	16 35 46.3	
	comp=N,2878μm,0.3s						
NISR	**Nisiros**	**0.41**	**233**	P	**Pg**	**16 35 34.6**	**+0.1**
NISR				S	**Sb**	**16 35 41.9**	**+0.1**
NISR	**Nisiros**	**0.41**	**233**	P	**Pg**	**16 35 34.6**	**+0.1**
NISR				S	**Sb**	**16 35 41.9**	**+0.1**
NISR				AML	AML	16 35 43.3	
	comp=E,2062μm,0.3s						
NISR				AML	AML	16 35 51.1	
	comp=N,876μm,0.5s						
YER	**Yerkesik**	**0.66**	**65**	*e*PG	**Pg**	**16 35 39.1**	**-0.2**
YER	**Yerkesik**	**0.66**	**65**	*e*Pg	**Pg**	**16 35 39.1**	**-0.2**
ARG	**Arkhangelos**	**0.80**	**143**	P	**Pg**	**16 35 41.2**	**-0.7**
ARG				S	**Sb**	**16 35 53.2**	**0.0**
AYDN	**Tasoluk**	**0.85**	**19**	P	**Pg**	**16 35 42.5**	**-0.3**
AYDN	**Tasoluk**	**0.85**	**19**	*i* P	**Pg**	**16 35 42.5**	**-0.3**
TURN	**Turunc**	**0.86**	**89**	*i* P	Pg	16 35 37.0	-6.0
GCAM	**G?zelcaml?**	**0.87**	**344**	P	**Pn**	**16 35 43.9**	**-0.7**
GCAM	**G?zelcaml?**	**0.87**	**344**	*i* P	**Pn**	**16 35 43.9**	**-0.7**
DALY	**Dalyan (Mu¨la**	**0.90**	**92**	*e*PG	**Pg**	**16 35 43.9**	**+0.1**
DALY	**Dalyan (Mu¨la**	**0.90**	**92**	*e*Pg	**Pg**	**16 35 43.9**	**+0.1**
SMG	**Samos**	**1.01**	**327**	P	**Pb**	**16 35 45.8**	**-0.2**
SMG				S	**Sn**	**16 36 00.6**	**-0.2**
SMG	**Samos**	**1.01**	**327**	P	**Pb**	**16 35 45.8**	**-0.2**
SMG				S	**Sn**	**16 36 00.6**	**-0.2**
SMG				AML	AML	16 36 02.9	
	comp=E,827μm,0.4s						
SMG				AML	AML	16 36 04.3	
	comp=N,563μm,0.3s						
AYDB	**Zeytinkoy-Aydi**	**1.12**	**15**	*e*PN	**Pb**	**16 35 47.5**	**-0.4**
AYDB	**Zeytinkoy-Aydi**	**1.12**	**15**	*e*Pn	**Pb**	**16 35 47.5**	**-0.4**
FETY	**Fethiye**	**1.27**	**100**	*e*PN	**Pg**	**16 35 50.9**	**+0.1**
FETY	**Fethiye**	**1.27**	**100**	*e*Pn	**Pg**	**16 35 50.9**	**+0.1**
DGB	**¨zmir**	**1.30**	**337**	*i* P	**Pg**	**16 35 52.0**	**+0.7**
KARP	**Karpathos**	**1.34**	**193**	*e*PN	**Pb**	**16 35 51.4**	**-0.2**
KARP	**Karpathos**	**1.34**	**193**	P	**Pn**	**16 35 51.0**	**-0.1**
KARP	**Karpathos**	**1.34**	**193**	*e*Pn	**Pb**	**16 35 51.4**	**-0.2**
KARP	**Karpathos**	**1.34**	**193**	P	**Pn**	**16 35 51.0**	**-0.1**
DNZL	**Cakiroluk**	**1.47**	**55**	P	**Pg**	**16 35 54.5**	**-0.1**
DNZL	**Cakiroluk**	**1.47**	**55**	*i* P	**Pg**	**16 35 54.5**	**-0.1**
IZM	**Izmir**	**1.55**	**352**	*e*PN	**Pg**	**16 35 56.1**	**-0.1**
IZM	**Izmir**	**1.55**	**352**	*e*Pn	**Pg**	**16 35 56.1**	**-0.1**
BLCB	**Balcova**	**1.57**	**346**	*e*PN	**Pb**	**16 35 55.6**	**+0.1**
BLCB	**Balcova**	**1.57**	**346**	*e*Pn	**Pb**	**16 35 55.6**	**+0.1**
APE	**Apeiranthos**	**1.61**	**278**	*e*PN	**Pb**	**16 35 55.7**	**-0.6**
APE	**Apeiranthos**	**1.61**	**278**	*e*Pn	**Pb**	**16 35 55.7**	**-0.6**
URLA	**Izmir**	**1.67**	**334**	P	**Pg**	**16 35 59.6**	**+1.1**
URLA	**Izmir**	**1.67**	**334**	*i* P	**Pg**	**16 35 59.6**	**+1.1**
KULA	**Kula-Manisa**	**1.88**	**28**	*e*PN	**Pb**	**16 36 00.5**	**-0.3**
KULA	**Kula-Manisa**	**1.88**	**28**	*e*Pn	**Pb**	**16 36 00.5**	**-0.3**
ELL	**Elmali**	**1.91**	**93**	*e*PN	**Pb**	**16 36 00.5**	**-0.8**
ELL	**Elmali**	**1.91**	**93**	*e*Pn	**Pb**	**16 36 00.5**	**-0.8**
CHOS	**Chios island**	**1.92**	**323**	*e*PN	**Pb**	**16 36 00.4**	**-1.1**
CHOS	**Chios island**	**1.92**	**323**	*e*Pn	**Pb**	**16 36 00.4**	**-1.1**
SUTC	**Sutluce-Ispart**	**2.84**	**76**	*e*PN	**Pn**	**16 36 13.7**	**+1.9**
SUTC	**Sutluce-Ispart**	**2.84**	**76**	*e*Pn	**Pn**	**16 36 13.7**	**+1.9**

*ATH **08** 17:00:56.5, 36°.87N×27°.54E, h30km±1km, ML2.9/4, Error ellipse: s-maj=2.3km s-min=1.1km az=216.0*
*CSEM **08** 17:00:57.8±0.1, 36°.87N×27°.54E, h12km, MD2.9, Error ellipse: s-maj=2.6km s-min=2.3km az=120.0*
*DDA **08** 17:00:57.9, 36°.88N×27°.58E, h7km, Md2.9*
*ISCJB **08** 17:00:57.7±0.5, 36°.87N±0°.02×27°.53E±0°.03, h14km±4km, Error ellipse: s-maj=4.6km s-min=3.9km az=175.2*
*THE **08** 17:00:57.6, 36°.86N×27°.55E, h3km±4km, ML3.2/3, Error ellipse: s-maj=4.1km s-min=0.8km az=295.0*
*ISK **08** 17:00:57.4, 36°.89N×27°.55E, h12km, ML3.0*

ISC 08 17:00:57.9±0.9, 36°.87N±0°.02×27°.53E±0°.02, h16km±7km, n77, σ0°.65/91, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BDRM	**Kayabasi**	**0.21**	**340**	P	**Pg**	**17 01 02.3**	**-0.5**
BDRM	**Kayabasi**	**0.21**	**340**	*i* P	**Pg**	**17 01 02.3**	**-0.5**
BODT	**Bodrum**	**0.26**	**318**	PG	**Pg**	**17 01 03.4**	**-0.3**
BODT	**Bodrum**	**0.26**	**318**	P	**Pg**	**17 01 03.3**	**-0.3**
BODT				S	**Sg**	**17 01 07.7**	**0.0**
BODT	**Bodrum**	**0.26**	**318**	*i* Pg	**Pg**	**17 01 03.4**	**-0.3**
BODT				S	**Sg**	**17 01 07.7**	**0.0**
NIS1	**Nisyros Isl.**	**0.39**	**227**	PG	**Pb**	**17 01 06.7**	**+0.3**
NIS1				SG	**Sg**	**17 01 11.9**	**+0.7**
NIS1	**Nisyros Isl.**	**0.39**	**227**	P	**Pg**	**17 01 05.7**	**0.0**
NIS1				S	**Sb**	**17 01 12.2**	**+0.1**
NIS1	**Nisyros Isl.**	**0.39**	**227**	P	**Pg**	**17 01 05.8**	**0.0**
NIS1	**Nisyros Isl.**	**0.39**	**227**	*i* Pg	**Pb**	**17 01 06.7**	**+0.3**
NIS1				*i* Sg	**Sg**	**17 01 11.9**	**+0.7**
NIS1				S	**Sb**	**17 01 12.2**	**+0.1**
NIS1	**Nisyros Isl.**	**0.39**	**227**	P	**Pg**	**17 01 05.8**	**0.0**
NIS1				S	**Sb**	**17 01 12.4**	**+0.3**
NIS1				AML	AML	17 01 14.7	
	comp=E,11857μm,0.2s						
NIS1				AML	AML	17 01 17.4	
	comp=N,9965μm,0.3s						
NISR	**Nisiros**	**0.41**	**232**	P	**Pg**	**17 01 06.0**	**-0.2**
NISR				S	**Sg**	**17 01 12.4**	**+0.5**
NISR	**Nisiros**	**0.41**	**232**	P	**Pg**	**17 01 06.2**	**0.0**
NISR				S	**Sg**	**17 01 12.4**	**+0.5**
NISR	**Nisiros**	**0.41**	**232**	P	**Pg**	**17 01 06.2**	**0.0**
NISR				S	**Sg**	**17 01 12.4**	**+0.5**
NISR				AML	AML	17 01 13.1	
	comp=N,3917μm,0.2s						
NISR				AML	AML	17 01 14.3	
	comp=E,8532μm,0.3s						
YER	**Yerkesik**	**0.66**	**66**	*e*PG	**Pg**	**17 01 10.2**	**-0.6**
YER	**Yerkesik**	**0.66**	**66**	P	**Pg**	**17 01 10.1**	**-0.6**
YER	**Yerkesik**	**0.66**	**66**	*e*Pg	**Pg**	**17 01 10.2**	**-0.6**
ARG	**Arkhangelos**	**0.81**	**144**	P	**Pg**	**17 01 12.5**	**-1.0**
ARG				S	**Sb**	**17 01 24.5**	**+0.4**
ARG	**Arkhangelos**	**0.81**	**144**	P	**Pg**	**17 01 12.6**	**-1.0**
ARG				S	**Sb**	**17 01 24.5**	**+0.4**
AYDN	**Tasoluk**	**0.84**	**19**	P	**Pg**	**17 01 13.6**	**-0.6**
AYDN	**Tasoluk**	**0.84**	**19**	*i* P	**Pg**	**17 01 13.6**	**-0.6**
TURN	**Turunc**	**0.86**	**89**	*i* P	Pg	17 01 08.1	-6.4
GCAM	**G?zelcaml?**	**0.87**	**344**	P	**Pg**	**17 01 14.3**	**-0.4**
GCAM	**G?zelcaml?**	**0.87**	**344**	*i* P	**Pg**	**17 01 14.3**	**-0.4**
DALY	**Dalyan (Mu¨la**	**0.90**	**93**	*e*PG	**Pg**	**17 01 14.9**	**-0.4**
DALY	**Dalyan (Mu¨la**	**0.90**	**93**	*e*Pg	**Pg**	**17 01 14.9**	**-0.4**
SMG	**Samos**	**1.01**	**327**	P	**Pb**	**17 01 16.6**	**-0.3**
SMG	**Samos**	**1.01**	**327**	P	**Pb**	**17 01 16.6**	**-0.3**
SMG	**Samos**	**1.01**	**327**	P	**Pb**	**17 01 15.4**	**-1.5**
SMG				S	**Sb**	**17 01 29.1**	**-0.9**
SMG				AML	AML	17 01 34.1	
	comp=E,2004μm,0.4s						
SMG				AML	AML	17 01 34.1	
	comp=N,1278μm,0.3s						
AYDB	**Zeytinkoy-Aydi**	**1.11**	**15**	*e*PN	**Pb**	**17 01 18.4**	**-0.4**
AYDB	**Zeytinkoy-Aydi**	**1.11**	**15**	*e*Pn	**Pb**	**17 01 18.4**	**-0.4**
FETY	**Fethiye**	**1.27**	**100**	*e*PN	**Pn**	**17 01 21.1**	**+0.2**
FETY	**Fethiye**	**1.27**	**100**	P	**Pb**	**17 01 21.5**	**+0.2**
FETY	**Fethiye**	**1.27**	**100**	*e*Pn	**Pn**	**17 01 21.1**	**+0.2**
FETY	**Fethiye**	**1.27**	**100**	P	**Pb**	**17 01 21.5**	**+0.2**
DGB	**¨zmir**	**1.29**	**337**	*i* P	**Pn**	**17 01 20.7**	**-0.5**
KARP	**Karpathos**	**1.35**	**193**	*e*PN	**Pn**	**17 01 22.6**	**+0.5**
KARP	**Karpathos**	**1.35**	**193**	P	**Pn**	**17 01 21.4**	**-0.6**
KARP	**Karpathos**	**1.35**	**193**	P	**Pn**	**17 01 21.5**	**-0.6**
KARP	**Karpathos**	**1.35**	**193**	*e*Pn	**Pn**	**17 01 22.6**	**+0.5**
KARP				S	**Sb**	**17 01 38.6**	**-1.2**
KARP	**Karpathos**	**1.35**	**193**	P	**Pn**	**17 01 21.5**	**-0.6**
KARP				S	**Sb**	**17 01 38.6**	**-1.2**
KARP				AML	AML	17 01 45.9	
	comp=E,285μm,0.2s						
KARP				AML	AML	17 01 46.6	
	comp=N,367μm,0.5s						
DNZL	**Cakiroluk**	**1.46**	**55**	P	**Pb**	**17 01 24.9**	**+0.1**
DNZL	**Cakiroluk**	**1.46**	**55**	*i* P	**Pb**	**17 01 24.9**	**+0.1**
IZM	**Izmir**	**1.54**	**352**	*e*PN	**Pn**	**17 01 25.2**	**+0.5**
IZM	**Izmir**	**1.54**	**352**	*e*Pn	**Pn**	**17 01 25.2**	**+0.5**
BLCB	**Balcova**	**1.56**	**346**	*e*PN	**Pn**	**17 01 25.5**	**+0.5**
BLCB	**Balcova**	**1.56**	**346**	*e*Pn	**Pn**	**17 01 25.5**	**+0.5**
GLHS	**Glhisar (BURDU**	**1.60**	**79**	*e*PN	**Pn**	**17 01 26.0**	**+0.5**
GLHS	**Glhisar (BURDU**	**1.60**	**79**	*e*Pn	**Pn**	**17 01 26.0**	**+0.5**
APE	**Apeiranthos**	**1.62**	**278**	*e*PN	**Pn**	**17 01 25.6**	**-0.2**
APE	**Apeiranthos**	**1.62**	**278**	P	**Pn**	**17 01 25.7**	**0.0**
APE	**Apeiranthos**	**1.62**	**278**	P	**Pn**	**17 01 25.7**	**0.0**
URLA	**Izmir**	**1.67**	**334**	*i* P	**Pg**	**17 01 30.3**	**+0.4**
AKAS	**Kas**	**1.78**	**110**	*i* P	**Pg**	**17 01 31.6**	**-0.6**
KSL	**Kastellorizon**	**1.80**	**113**	P	**Pn**	**17 01 26.5**	**-1.7**
MANT	**Manisa**	**1.81**	**26**	P	**Pn**	**17 01 28.7**	**+0.1**
MANT	**Manisa**	**1.81**	**26**	*i* P	**Pn**	**17 01 28.7**	**+0.1**
KULA	**Kula-Manisa**	**1.87**	**28**	*e*PN	**Pn**	**17 01 29.8**	**+0.5**
KULA	**Kula-Manisa**	**1.87**	**28**	*e*Pn	**Pn**	**17 01 29.8**	**+0.5**
ELL	**Elmali**	**1.91**	**93**	*e*PN	**Pn**	**17 01 30.9**	**+1.1**
ELL	**Elmali**	**1.91**	**93**	*e*Pn	**Pn**	**17 01 30.9**	**+1.1**
CHOS	**Chios island**	**1.92**	**323**	*e*PN	**Pn**	**17 01 30.5**	**+0.6**
CHOS	**Chios island**	**1.92**	**323**	P	**Pn**	**17 01 29.9**	**0.0**
CHOS	**Chios island**	**1.92**	**323**	P	**Pn**	**17 01 29.9**	**0.0**
CHOS	**Chios island**	**1.92**	**323**	*e*Pn	**Pn**	**17 01 30.5**	**+0.6**
AKHS	**Akhisar**	**2.02**	**6**	*i* P	**Pg**	**17 01 36.4**	**-0.3**
AKS	**Akhisar**	**2.02**	**6**	*e*PN	**Pn**	**17 01 32.0**	**+0.7**
AKS	**Akhisar**	**2.02**	**6**	*e*Pn	**Pn**	**17 01 32.0**	**+0.7**
ZKR	**Zakros**	**2.05**	**212**	P	**Pn**	**17 01 31.6**	**0.0**
ZKR	**Zakros**	**2.05**	**212**	P	**Pn**	**17 01 31.6**	**0.0**
DKL	**Dikili**	**2.26**	**347**	*e*PN	**Pn**	**17 01 35.5**	**+1.1**
DKL	**Dikili**	**2.26**	**347**	*e*Pn	**Pn**	**17 01 35.5**	**+1.1**
SIGR	**SIGRI**	**2.69**	**331**	*e*PN	**Pn**	**17 01 40.7**	**+0.3**
SIGR	**SIGRI**	**2.69**	**331**	*e*Pn	**Pn**	**17 01 40.7**	**+0.3**
SUTC	**Sutluce-Ispart**	**2.83**	**77**	*e*PN	**Pn**	**17 01 44.0**	**+1.4**
SUTC	**Sutluce-Ispart**	**2.83**	**77**	*e*Pn	**Pn**	**17 01 44.0**	**+1.4**
TVSB	**Tavsanli**	**2.99**	**30**	*e*PN	**Pn**	**17 01 46.1**	**+1.4**
TVSB	**Tavsanli**	**2.99**	**30**	*e*Pn	**Pn**	**17 01 46.1**	**+1.4**

IDC 08 17:06:18.0±2.7, 9°.74S×108°.59E, h0km, mb3.5/4, mb1 3.7/5, mb1mx3.4/39, mbtmp3.6/5, ML3.2/1, Error ellipse: s-maj=132.2km s-min=26.1km az=49.0, South of Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LEM	**Lembang**	**3.05**	**342**	Pn	Pb	17 07 11.9	-1.4
	6.5nm,0.3s,baz=4.7,slow=18,SNR=12						
LEM				Sn	Sb	17 07 52.6	+1.5
	6.8nm,0.3s,baz=345,slow=22,SNR=6.5						
FITZ	**Fitzroy Crossi**	**18.51**	**119**	P	Pn	17 10 37.7	+1.7
	0.1nm,0.3s,baz=306,slow=8.7,SNR=2.8						
WRA	**Warramunga Arr**	**26.84**	**115**	P	P	17 11 59.7	-0.8
	0.3nm,0.6s,baz=288,slow=11,SNR=4.8						
ASAR	**Alice Springs**	**27.86**	**123**	P	P	17 12 11.2	+1.7
	0.2nm,0.6s,baz=296,slow=8.8,SNR=8.8						
STKA	**Stephens Creek**	**37.66**	**131**	P	P	17 13 33.3	-1.8
	1.2nm,0.8s,baz=297,slow=11,SNR=2.9						
MKAR	**Makanchi Array**	**60.98**	**340**	P	P	17 16 33.3	+0.2
	0.3nm,0.6s,baz=159,slow=7.4,SNR=4.4						

KRSC 08 17:20:11.3±3.0, 50°.61N×157°.83E, h80km±27km, ML3.9, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**1.09**	**274**	*e*P	Pn	17 20 31.3	-0.1
SKR				*e*S	Sn	17 20 43.5	-3.0
ASAK	**Asacha**	**1.77**	**1**	*i* P	Pn	17 20 42.3	+2.1
ASAK				*e*S	Sn	17 21 02.9	+0.8
RUS	**Russkaya**	**1.87**	**13**	*i* P	Pn	17 20 43.5	+2.1
RUS				*e*S	Sn	17 21 04.9	+0.6
MTVR	**Mutnovka**	**1.89**	**7**	*i* P	Pn	17 20 44.3	+2.6
MTVR				*i* S	Sn	17 21 06.1	+1.2
GRL	**Gorelyy**	**1.95**	**4**	*i* P	Pn	17 20 45.5	+3.0
GRL				*e*S	Sn	17 21 07.9	+1.6
KRMR	**Karymshinskiy**	**2.23**	**5**	*e*P	Pn	17 20 49.3	+3.2
KRMR				*e*S	Sn	17 21 16.7	+3.9
PET	**Petropavlovsk**	**2.47**	**12**	*i* P	Pn	17 20 52.4	+3.1
PET				*e*S	Sn	17 21 20.5	+2.0
DALK	**Dalny**	**2.49**	**13**	*e*P	Pn	17 20 52.7	+3.1
DALK				*e*S	Sn	17 21 21.5	+2.5
UGLR	**Uglovaya**	**2.67**	**13**	*i* P	Pn	17 20 55.8	+3.6
UGLR				S	Sn	17 21 27.0	+3.4
AVH	**Avacha**	**2.71**	**12**	*e*P	Pn	17 20 57.2	+4.4
AVH				*e*S	Sn	17 21 29.5	+4.9
SMAR	**Somma**	**2.72**	**12**	*e*P	Pn	17 20 56.3	+3.3
NLC	**Nalytchevo**	**2.73**	**20**	P	Pn	17 20 55.0	+2.2
NLC				*e*S	Sn	17 21 24.9	+0.1
SDLR	**Sedlovina**	**2.75**	**13**	*i* P	Pn	17 20 56.3	+3.0
SDLR				*e*S	Sn	17 21 26.7	+1.2
KRER	**Koryakskii**	**2.75**	**12**	*i* P	Pn	17 20 57.2	+3.8
KRER				S	Sn	17 21 28.3	+2.5
KRX	**Arik**	**2.80**	**10**	*i* P	Pn	17 20 57.9	+4.0
KRX				S	Sn	17 21 29.7	+3.0
GNL	**Ganaly**	**3.09**	**1**	*i* P	Pn	17 21 01.3	+3.5
GNL				S	Sn	17 21 36.0	+2.3
MKZ	**Mys Kozlova**	**4.61**	**30**	*e*P	Pn	17 21 21.7	+3.3
MKZ				S	Sn	17 22 10.0	-0.5
BKI	**Bering**	**6.73**	**44**	*e*P	Pn	17 21 51.0	+3.7
BKI				*e*S	Sn	17 22 59.5	-2.9

*ISCJB **08** 17:20:44.8±1.2, 14°.45S±0°.2×73°.1W±0°.1, h83km, mb3.2/3, Error ellipse: s-maj=36.0km s-min=7.2km az=26.5*
*IDC **08** 17:20:45.7±2.2, 14°.57S×73°.17W, h91km±16km, mb3.1/3, mb1 3.4/6, mb1mx3.2/39, mbtmp3.6/6, Error ellipse: s-maj=65.2km s-min=11.4km az=27.0*

ISC 08 17:20:45.7±1.5, 14°.55±0°.3×73°.1W±0°.2, h83km, n7, σ1°.14/9, mb3.4/3, Central Peru

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NNA	**Nana**	**4.38**	**304**	P	**Pn**	**17 21 50.8**	**+0.9**
	2.0nm,0.3s,baz=126,slow=16,SNR=4.4						
NNA				S	**Sn**	**17 22 40.4**	**+0.5**
	11nm,0.3s,baz=217,slow=16,SNR=7.9						
LPAZ	**La Paz**	**5.15**	**111**	P	**Pn**	**17 22 02.2**	**+1.3**
	1.3nm,0.3s,baz=295,slow=7.9,SNR=19						
LPAZ				S	**Sn**	**17 22 59.3**	**0.0**
	0.1nm,0.3s,baz=200,slow=18,SNR=1.4						
PTGA	**Pitinga**	**18.88**	**45**	P	**P**	**17 25 00.5**	**+0.9**
	0.3nm,0.3s,baz=16,slow=20,SNR=1.7						
TXAR	**Lajitas Array**	**52.60**	**326**	P	**P**	**17 29 51.3**	**0.0**
	0.1nm,0.6s,baz=150,slow=7.3,SNR=2.0						
TORD	**Torodi Ar. Bea**	**79.00**	**73**	P	**P**	**17 32 39.8**	**-1.5**
	0.3nm,0.6s,baz=251,slow=4.4,SNR=2.1						
YKA	**Yellowknife Ar**	**83.29**	**342**	P	**P**	**17 33 01.9**	**-1.0**
	0.4nm,0.7s,baz=134,slow=5.1,SNR=11						
SONM	**Songino Array**	**146.75**	**1**	PKPbc	**PKPbc**	**17 40 17.4**	**-1.0**
	0.6nm,0.5s,baz=296,slow=1.0,SNR=6.1						

*IDC **08** 17:22:07.8±7.5, 32°.62S×180°.00E, h457km±94km, mb2.7/3, mb1 2.9/4, mb1mx2.8/30, mbtmp3.7/4, Error ellipse: s-maj=117.2km s-min=34.4km az=4.0*

ISC 08 17:22:04.4±1.6, 31°.9S±0°.1×179°.1E±0°.3, h400km, n44, σ1°.25/47, mb3.0/3, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WMGZ	**Waiomatatini S**	**5.90**	**185**	PN	**Pn**	**17 23 36.4**	**+0.7**
HAZ	**Te Kaha**	**5.91**	**190**	PN	**Pn**	**17 23 36.9**	**+1.1**
HAZ				SN	**S**	**17 24 49.2**	**-1.2**
PKGZ	**Pakihiroa**	**6.00**	**188**	PN	**Pn**	**17 23 37.8**	**+0.9**
PUZ	**Puketiti**	**6.16**	**186**	PN	**Pn**	**17 23 40.6**	**+2.0**
PUZ				SN	**S**	**17 24 52.4**	**-3.0**
TWGZ	**Tauwhareparae**	**6.29**	**188**	PN	**Pn**	**17 23 41.7**	**+1.6**
MWZ	**Matawai**	**6.51**	**191**	PN	**P**	**17 23 44.5**	**+1.4**
URZ	**Urewera**	**6.52**	**194**	P	**P**	**17 23 44.5**	**+1.4**
	1.9nm,0.3s,baz=269,slow=4.6,SNR=31						
URZ				S	**S**	**17 25 00.5**	**-2.1**
	4.0nm,0.3s,baz=68,slow=22,SNR=19						
URZ	**Urewera**	**6.52**	**194**	PN	**P**	**17 23 43.9**	**+0.8**
URZ				SN	**S**	**17 25 01.0**	**-1.6**
TKGZ	**Te Karaka**	**6.57**	**189**	PN	**P**	**17 23 44.9**	**+1.2**
RAGZ	**Rawiri**	**6.69**	**192**	PN	**Pn**	**17 23 45.5**	**+1.1**
MUGZ	**Murupara**	**6.80**	**196**	PN	**P**	**17 23 47.5**	**+1.2**
RIGZ	**Rimuhau**	**6.84**	**189**	PN	**Pn**	**17 23 46.5**	**+0.3**
SNGZ	**Shannon Statio**	**6.98**	**191**	PN	**Pn**	**17 23 49.0**	**+1.3**
KNZ	**Kokohu**	**7.17**	**189**	PN	**Pn**	**17 23 50.4**	**+0.7**
MRHZ	**Matea Rd**	**7.22**	**197**	PN	**P**	**17 23 52.1**	**+1.1**
NMHZ	**Naumai**	**7.39**	**194**	PN	**P**	**17 23 54.2**	**+1.3**
ARHZ	**Aropaoanui**	**7.51**	**193**	PN	**P**	**17 23 55.4**	**+1.3**
BKZ	**Black Stump Fm**	**7.52**	**196**	PN	**Pn**	**17 23 54.9**	**+1.1**
MCHZ	**McNeill Hill**	**7.74**	**194**	PN	**P**	**17 23 58.4**	**+1.6**
KWHZ	**Kaweka Forest**	**7.78**	**196**	PN	**Pn**	**17 23 58.0**	**+1.2**
KWHZ				SN	**S**	**17 25 29.3**	**+0.4**
BHHZ	**Black Hill Sta**	**7.93**	**197**	PN	**Pn**	**17 23 59.2**	**+0.7**
KRHZ	**Kereru**	**8.01**	**195**	PN	**Pn**	**17 24 00.4**	**+1.2**
KAHZ	**Kahuranaki**	**8.05**	**192**	PN	**P**	**17 24 01.1**	**+0.9**
PXZ	**Pawanui**	**8.28**	**192**	PN	**Pn**	**17 24 03.6**	**+1.2**
PXZ				SN	**S**	**17 25 36.9**	**-2.2**
TSZ	**Takapari Road**	**8.50**	**197**	PN	**Pn**	**17 24 05.4**	**+0.5**
PRHZ	**Porangahau**	**8.55**	**193**	PN	**P**	**17 24 06.7**	**+1.0**
ANWZ	**Angora Road**	**8.77**	**193**	PN	**P**	**17 24 09.4**	**+1.3**
BFZ	**Birch Farm**	**9.03**	**194**	PN	**P**	**17 24 11.4**	**+0.4**
MRZ	**Mangatainoka R**	**9.16**	**197**	PN	**P**	**17 24 12.4**	**0.0**
TIWZ	**Tintock**	**9.20**	**196**	PN	**P**	**17 24 13.5**	**+0.6**
HOWZ	**Holdsworth Sta**	**9.40**	**197**	PN	**P**	**17 24 15.8**	**+0.7**
OGWZ	**Otaki Gorge**	**9.41**	**199**	PN	**P**	**17 24 15.8**	**+0.5**
KIW	**Kapiti Island**	**9.53**	**200**	PN	**P**	**17 24 16.7**	**+0.2**
MTW	**Mount Morrison**	**9.65**	**196**	PN	**P**	**17 24 18.3**	**+0.4**
TCW	**Tory Channel**	**10.04**	**201**	PN	**Pn**	**17 24 23.4**	**+0.8**
PLWZ	**Palliser**	**10.10**	**197**	PN	**P**	**17 24 23.7**	**+0.8**
QRZ	**Quartz Range**	**10.33**	**209**	PN	**Pn**	**17 24 27.8**	**+1.8**
TUWZ	**Tuamarina**	**10.34**	**202**	PN	**P**	**17 24 26.0**	**+0.5**
NNZ	**Nelson**	**10.34**	**205**	PN	**P**	**17 24 25.6**	**+0.1**
STKA	**Stephens Creek**	**31.75**	**260**	P	P	17 28 00.0	+6.8
	2.0nm,1.1s,baz=112,slow=11,SNR=4.3						
ASAR	**Alice Springs**	**40.59**	**270**	P	P	17 29 11.8	+4.4
	0.3nm,0.7s,baz=107,slow=7.4,SNR=7.0						
WRA	**Warramunga Arr**	**41.73**	**275**	P	P	17 29 21.0	+4.5
	0.3nm,0.4s,baz=116,slow=7.5,SNR=3.3						
FINES	**FINESS Array B**	**145.67**	**337**	PKPbc	**PKPab**	**17 40 56.5**	**-0.9**
	0.6nm,0.8s,baz=298,slow=4.1,SNR=4.2						
NOA	**NORSAR Array B**	**149.82**	**348**	PKPbc	**PKPbc**	**17 41 06.0**	**-1.2**
	0.4nm,0.8s,baz=1.1,slow=6.8,SNR=2.5						

*NIED **08** 17:32:00, 30°.10N×130°.90E, h5km, Mw4.0 Best double couple: M0 1.13000×10^15 NP1:φ0=119.00000°, δ4.00000°, λ165.00000°. NP2:φ0=224.00000°, δ89.00000°, λ86.00000°.*
*IDC **08** 17:32:38.1±3.1, 29°.95N×130°.81E, h0km, mb3.7/6, mb1 3.7/9, mb1mx3.5/48, mbtmp3.7/9, ML3.4/3, MS2.8/2, Ms1 2.8/2, ms1mx2.4/47, Error ellipse: s-maj=62.3km s-min=31.5km az=156.0*
*ISCJB **08** 17:32:42.5±1.0, 30°.09N±0°.05×130°.90E±0°.07, h31km±6km, mb3.7/6, Error ellipse: s-maj=12.3km s-min=5.4km az=35.1*
*JMA **08** 17:32:42.4±0.1, 30°.07N×130°.89E, h24km±1km, M3.6*

comp=Z,7.3nm,0.7s,baz=51,slow=4.9,SNR=6.1
STKA ScP **ScP** 17 45 22.5 +1.4
comp=Z,4.8nm,0.7s,baz=66,slow=4.3,SNR=8.9
STKA Stephens Creek 29.71 228 *e*P **P** 17 38 59.7 +0.3
STKA 17 41 58.2
STKA pmax pmax
comp=Z,3.0nm,0.4s
STKA Stephens Creek 29.71 228 *e*P **P** 17 38 59.7 +0.3
comp=Z,3.1nm,0.4s
STKA PcP **PcP** 17 41 58.2 -0.1
STKA ScP **ScP** 17 45 22.5 +1.4
RPZ Rata Peaks 30.17 175 P **P** 17 39 02.3 -0.9
comp=Z,12nm,0.7s,baz=25,slow=14,SNR=6.8
WB2 Warramunga Arr 32.09 254 *e*P **P** 17 39 18.6 -1.8
comp=Z,6.3nm,1.0s
WRAB Tennant Creek 32.09 254 *e*P **P** 17 39 18.8 -1.6
WRAB *e* 17 42 03.9
WRAB pmax pmax
comp=Z,9.0nm,1.3s
WRAB Tennant Creek 32.09 254 *e*P **P** 17 39 18.8 -1.6
comp=Z,9.0nm,1.3s
WRAB *e*PcP **PcP** 17 42 03.9 -1.0
WRA Warramunga Arr 32.10 254 P **P** 17 39 19.3 -1.2
comp=Z,4.0nm,0.5s,baz=86,slow=9.3,SNR=78
WRA PcP **PcP** 17 42 04.8 -0.1
comp=Z,5.3nm,0.8s,baz=81,slow=3.3,SNR=14
WRA ScP **ScP** 17 45 30.9 +1.7
comp=Z,4.4nm,0.9s,baz=83,slow=3.5,SNR=17
AS01 Alice Springs 33.02 247 *e*P **P** 17 39 27.4 -1.2
AS31 Alice Springs 33.07 247 *e*P **P** 17 39 27.2 -1.7
comp=Z,4.0nm,0.4s
ASAR Alice Springs 33.07 247 P **P** 17 39 27.6 -1.3
comp=Z,6.0nm,0.4s,baz=75,slow=9.7,SNR=414
ASAR PcP **PcP** 17 42 07.0 -0.5
comp=Z,3.9nm,0.7s,baz=81,slow=2.4,SNR=12
ASAR ScP **ScP** 17 45 33.8 +1.2
comp=Z,7.1nm,0.9s,baz=89,slow=3.3,SNR=26
ASAR PKiKP **PKiKP** 17 49 31.9 -1.6
comp=Z,0.4nm,0.5s,baz=110,slow=1.5,SNR=18
RKPI Ransiki, Papua 34.86 287 P **P** 17 39 46.1 +1.7
MTN Manton Dam 35.15 267 *e*P **P** 17 39 45.5 -1.4
comp=Z,31nm,1.8s
SAUI Saumlaki 35.73 275 P **P** 17 39 52.8 +1.0
SWI Sorong 37.81 287 P **P** 17 40 10.8 +1.4
BNDI Bandanaira 37.92 280 P **P** 17 40 12.3 +2.0
MSAI Masohi 39.20 282 P **P** 17 40 21.7 +0.8
NLAI Namlea 40.97 281 P **P** 17 40 37.0 +1.5
LBMI Labuha 41.41 285 P **P** 17 40 40.8 +1.7
SANI Sanana 42.38 282 P **P** 17 40 48.8 +1.8
CBIJ Chichi jima 47.23 329 P **P** 17 41 25.4 +0.5
JCJ Chichijima 47.23 329 P **P** 17 41 25.4 +0.5
comp=Z,20nm,0.5s,baz=193,slow=19,SNR=6.8
KAPI Kappang 47.57 276 *e*P **P** 17 41 27.5 -0.4
comp=Z,8.4nm,0.9s
KAPI *e*PcP **PcP** 17 42 54.8 +0.3
NWAO Narrogin (SRO) 49.31 238 P **P** 17 41 39.8 -1.1
comp=Z,11nm,0.6s,baz=307,slow=6.5,SNR=18
TWSI Taliwang, Sumb 49.59 270 P **P** 17 41 44.8 +1.6
comp=Z,25nm,1.1s
KKM Kota Kinabalu 54.30 288 *e*P **P** 17 42 17.3 -0.8
comp=Z,44nm,1.2s
SBUM Sibu 56.86 282 *e*P **P** 17 42 36.7 +0.5
comp=Z,3.6nm,1.0s
MJAR Matsushiro Arr 56.92 332 P **P** 17 42 36.5 +0.3
comp=Z,3.7nm,0.6s,baz=171,slow=7.8,SNR=27
MJAR PcP **PcP** 17 43 29.7 +0.5
comp=Z,1.6nm,0.8s,baz=184,slow=2.9,SNR=4.4
MAJO Matsushiro 56.92 332*c i*P **P** 17 42 36.4 +0.2
MAJO pmax pmax
comp=Z,72nm,1.0s
MAJO Matsushiro 56.92 332 P **P** 17 42 36.5 +0.2
comp=Z,14nm,1.0s
MAT Matsushiro 56.92 332 P **P** 17 42 36.4 +0.2
MJB9 Matsu-Tunnel 56.93 332 *e*P **P** 17 42 35.1 -1.2
comp=Z,3.4nm,1.0s
JNU Nakatsue 58.02 324 *e*P **P** 17 42 42.2 -1.7
comp=Z,23nm,1.0s
KSM Kuching 58.39 280 *e*P **P** 17 42 46.3 -0.6
comp=Z,7.0nm,1.1s
TPUB Ta-pu 58.54 308 *e*P **P** 17 42 46.7 -1.0
comp=Z,17nm,0.7s
SSLB Suanglung 58.57 309 P **P** 17 42 45.7 -2.3
comp=Z,14nm,1.0s
SSLB *e*PcP **pP** 17 43 34.2 -0.1
YHNB Yeheng 58.76 310 *e*P **P** 17 42 48.1 -1.1
comp=Z,27nm,0.8s
ASAJ Asahikawa 61.70 340 P **P** 17 43 10.8 +2.1
comp=Z,15nm,0.6s,baz=211,slow=8.0,SNR=20
TJN Taejon 62.37 324⇓*e*P **P** 17 43 15.5 +2.2
KSRS Korea Array 62.82 325 P **P** 17 43 17.2 +1.0
comp=Z,3.7nm,0.8s,baz=138,slow=6.8,SNR=21
KSAR Wonju Array Be 62.83 325 P **P** 17 43 17.3 +0.9
KSAR Wonju Array Be 62.83 325 P **P** 17 43 17.2 +0.9
KS01 Wonju Array Si 62.85 325 *e*P **P** 17 43 15.9 -0.6
VNDA Vanda 63.96 181 P **P** 17 43 22.9 -0.3
comp=Z,3.2nm,0.6s,baz=359,slow=7.3,SNR=19
VNDA Vanda 63.96 181 *e*P **P** 17 43 22.3 -0.9
VNDA pmax pmax
comp=Z,19nm,1.6s
VNDA Vanda 63.96 181 *e*P **P** 17 43 22.3 -0.9
comp=Z,19nm,1.6s
SBA Scott Base 64.24 180 *e*P **P** 17 43 25.5 +0.5
SBA *e* 17 43 59.0
SBA pmax pmax
comp=Z,17nm,0.9s
SBA Scott Base 64.24 180 *e*P **P** 17 43 25.5 +0.5
comp=Z,17nm,0.9s
SBA *e*PcP **PcP** 17 43 59.0 +1.0
USRK Ussuriysk Ar. 65.90 333 P **P** 17 43 38.0 +1.8
comp=Z,8.0nm,0.8s,baz=138,slow=5.4,SNR=18
PETK Petropavlovsk- 66.96 354 P **P** 17 43 44.1 +1.5
comp=Z,14nm,0.8s,baz=142,slow=4.9,SNR=9.7
MDJ Mudanjiang 67.30 332 P **P** 17 43 42.4 -2.6
comp=Z,17nm,1.0s
HABR Khabarovsk 68.11 338 *e*P **P** 17 43 49.3 -0.6
HABR *e* 17 44 13.6
HABR *e**PP **pP** 17 44 40.5 +2.8
HABR *e* 17 46 22.1
HABR *e*PPP PPP 17 48 03.6
HABR *e*S **S** 17 52 31.0 -2.0
HABR *e* 17 53 25.7
HABR *e*SS **SS** 17 56 58.9 -1.3
HABR pmax pmax
comp=N,3.0nm,0.5s
HABR pmax pmax
comp=E,11nm,1.0s
HABR pmax pmax
comp=Z,9.0nm,1.0s
HABR MLR MLR
comp=Z,101nm,17.0s
IPM Ipoh 68.13 281 *e*P **P** 17 43 49.7 -1.1
comp=Z,17nm,0.9s
MNSI Mandailing Nat 68.53 276 P **P** 17 43 53.2 -0.1
CN2 Changchun 68.69 329 *e*P **P** 17 43 54.6 +0.9
CN2 pmax pmax
comp=Z,30nm,0.7s
SKNT Sakolnakorn 69.48 294 P **P** 17 44 00.0 +0.9
comp=Z,23nm,1.1s
PSI Prapat 69.68 278 *e*P **P** 17 43 58.5 -2.1
PSI pmax pmax
comp=Z,34nm,0.5s
PSI Prapat 69.68 278 *e*P **P** 17 43 58.5 -2.1
comp=Z,34nm,0.5s
KLR Kul'dur 69.99 336 P **P** 17 44 03.4 +1.8
comp=Z,7.7nm,0.6s,baz=154,slow=3.7,SNR=33
NKL Nikolayevsk 70.31 343 *e*P **P** 17 44 04.8 +1.5
NKL pmax pmax
comp=N,13nm,0.8s
NKL pmax pmax
comp=Z,33nm,0.8s
GSI Gunungsitoli 70.59 276 *e*P **P** 17 44 05.3 -0.7
comp=Z,16nm,0.8s
ENH Enshi 70.66 309 *e*P **P** 17 44 05.2 -0.9
comp=Z,33nm,1.1s
BJI Beijing 71.40 321 P **P** 17 44 10.9 +0.7
BJI pmax pmax
comp=Z,14nm,1.2s
LOEI Loei 72.09 294 P **P** 17 44 13.8 -1.0
comp=Z,36nm,1.2s
UTTA Uttaradit 72.81 294 P **P** 17 44 21.1 +2.1
comp=Z,2.7nm,1.1s
XAN Xi'an 72.94 312 P **P** 17 44 20.3 +0.8
XAN pmax pmax
comp=Z,13nm,0.9s
XAN pmax pmax
comp=Z,82nm,5.7s

NANT Nan 73.05 295 P **P** 17 44 21.3 +0.8
comp=Z,6.5nm,0.8s,comp=Z,66nm
SUKH Sukhothai 73.54 293 P **P** 17 44 24.9 +1.6
comp=Z,5.6nm,0.7s
KMI Kunming 73.72 302 P **P** 17 44 25.9 +1.4
KMI pP pP 17 45 18.1 +5.2
KMI S **SKiKP** 17 53 33.0 -0.2
KMI SKS **SKSac** 17 54 09.2 -3.2
KMI Kunming 73.72 302 sS sS 17 55 04.7 +1.2
KMI Kunming 73.72 302 SS SS 17 58 28.9 +1.5
KMI pmax pmax
comp=Z,21nm,1.2s
KMI pmax pmax
comp=Z,110nm,7.1s
KMI LR LR
comp=N,66nm,5.1s
KMI LR LR
comp=E,76nm,5.8s
KMI LR LR
comp=Z,110nm,7.2s
CRAI Chiangrai 73.86 296 P **P** 17 44 26.3 +1.1
comp=Z,92nm,0.9s
LAMP Lampang 73.90 294 P **P** 17 44 26.9 +1.5
comp=Z,12nm,0.8s,comp=Z,102nm
MA2 Magadan 74.16 351 *i*P **P** 17 44 26.2 +0.2
CM01 Chiang Mai Arr 74.46 294 *e*P **P** 17 44 29.4 +0.8
CM31 Chiang Mai Arr 74.49 294 *e*P **P** 17 44 30.5 +1.7
CMAR Chiang Mai Arr 74.49 294 P **P** 17 44 30.2 +1.4
comp=Z,7.6nm,0.7s,baz=129,slow=4.7,SNR=38
CMAR pP **pP** 17 45 16.0 -1.4
comp=Z,0.8nm,0.8s,baz=137,slow=4.4,SNR=1.5
CMMT Chiang Mai 74.61 294 P **P** 17 44 30.9 +1.4
comp=Z,11nm,0.9s
CHTO Chiang Mai 74.61 294 P **P** 17 44 30.9 +1.4
comp=Z,50nm,1.0s
CHTO Chiang Mai 74.61 294 *e*P **P** 17 44 30.2 +0.7
CHTO pmax pmax
comp=Z,12nm,1.0s
CHTO Chiang Mai 74.61 294 *e*P **P** 17 44 30.2 +0.7
comp=Z,12nm,1.0s
HHC Hu-ho-hao-te 74.74 319 *e*P **P** 17 44 31.4 +1.5
HHC pmax pmax
comp=Z,19nm,1.2s
HHC pmax pmax
comp=Z,130nm,7.9s
CMAI Chiengmai2 74.92 295 P **P** 17 44 32.9 +1.4
comp=Z,59nm,0.7s
CD2 Chengdu 75.33 307 P **P** 17 44 32.6 -0.9
CD2 pmax pmax
comp=Z,30nm,0.8s
QSPA South Pole Qui 76.40 180 *e*P **P** 17 44 38.4 -0.7
comp=Z,73nm,0.8s
SEY Seymchan 77.19 353⇑*i*P **P** 17 44 43.8 +0.7
LZH Lanzhou 77.57 312 *e*P **P** 17 44 48.1 +2.0
LZH pP pP 17 45 36.3 +1.3
LZH sP sP 17 46 02.4 +5.8
LZH pmax pmax
comp=Z,28nm,1.1s
LZH pmax pmax
comp=Z,62nm,4.2s
KDAK Kodiak Island 78.44 21 *i*P **P** 17 44 52.0 +1.9
YAK Yakutsk 80.97 343*c i*P **P** 17 45 04.3 +0.7
YAK pmax pmax
comp=Z,42nm,1.0s
YAK pmax pmax
comp=E,8.0nm,1.3s
YAK pmax pmax
comp=N,15nm,1.1s
YAK Yakutsk 80.97 343 *e*P **P** 17 45 02.7 -0.9
comp=N,41nm,0.8s
ULN Ulaanbaatar 81.24 324*c i*P **P** 17 45 06.8 +1.2
ULN pmax pmax
comp=Z,12nm,0.9s
ULN Ulaanbaatar 81.24 324 *e*P **P** 17 45 06.3 +0.7
comp=Z,10nm,0.9s
BILL Bilibino 81.44 360 *e*P **P** 17 45 06.7 +0.7
BILL pmax pmax
comp=Z,37nm,1.3s
BILL Bilibino 81.44 360 *e*P **P** 17 45 06.7 +0.7
comp=Z,37nm,1.3s
SONM Songino Array 81.60 323 P **P** 17 45 08.2 +0.8
comp=Z,1.7nm,0.4s,baz=144,slow=5.9,SNR=25
SONA1 Songino Array 81.60 324 *e*P **P** 17 45 08.2 +0.7
GTA Gaotai 81.89 314⇑P **P** 17 45 10.4 +1.2
GTA pP pP 17 45 59.2 +0.6
GTA sP sP 17 46 20.4 +0.3
GTA pmax pmax
comp=Z,8.0nm,1.1s
PMR Palmer 82.47 19 *e*P **P** 17 45 11.0 -0.5
PMR pmax pmax
comp=Z,36nm,1.9s
PMR Palmer 82.47 19 *e*P **P** 17 45 11.0 -0.5
comp=Z,36nm,1.9s
SML Sawmill 82.88 20 *e*P **P** 17 45 14.2 +0.5
SML pmax pmax
comp=Z,13nm,1.3s
SML Sawmill 82.88 20 *e*P **P** 17 45 14.2 +0.5
comp=Z,13nm,1.3s
MAW Mawson 82.90 202 P **P** 17 45 13.8 +0.1
comp=Z,12nm,0.6s,baz=109,slow=6.2,SNR=9.8
CAST Castle Rocks 82.95 17 *e*P **P** 17 45 13.6 -0.4
comp=Z,6.8nm,1.0s
SHL Shillong 83.03 298 *e*P **P** 17 45 17.0 +1.6
SCM Sheep Creek Mo 83.23 20 *e*P **P** 17 45 14.9 -0.6
SCM pmax pmax
comp=Z,9.0nm,0.9s
SCM Sheep Creek Mo 83.23 20 *e*P **P** 17 45 14.9 -0.6
comp=Z,8.8nm,0.9s
KTH Kantishna Hill 83.39 17 *e*P **P** 17 45 15.3 -0.9
comp=Z,6.9nm,1.0s
BOD Bodaibo 83.47 334 *e*P **P** 17 45 16.4 -0.3
BOD pmax pmax
comp=Z,6.0nm,1.4s
TRF Thorefare Moun 83.50 18 *e*P **P** 17 45 17.5 +0.5
comp=Z,11nm,1.3s
RND Reindeer 83.89 18 *e*P **P** 17 45 17.9 -0.9
RND pmax pmax
comp=Z,9.0nm,0.9s
RND Reindeer 83.89 18 *e*P **P** 17 45 17.9 -0.9
comp=Z,9.3nm,0.9s
MCK McKinley 84.11 18 *e*P **P** 17 45 19.9 0.0
MCK McKinley 84.11 18 *e*P **P** 17 45 19.9 0.0
BWN Browne 84.28 18 *e*P **P** 17 45 20.4 -0.2
BALM Baldy 84.42 22 *e*P **P** 17 45 22.0 +0.4
BALM Baldy 84.42 22 *e*P **P** 17 45 22.0 +0.4
MLY Manley 84.56 17 *e*P **P** 17 45 21.8 -0.3
ZAK Zakamensk 84.64 325 *e*P **P** 17 45 21.4 -1.5
ZAK pmax pmax
comp=Z,10.0nm,1.2s
YBH Yreka Blue Hor 84.65 45 *e*P **P** 17 45 23.8 +0.7
YBH pmax pmax
comp=Z,8.0nm,1.3s
YBH Yreka Blue Hor 84.65 45 *e*P **P** 17 45 23.8 +0.7
comp=Z,8.0nm,1.3s
AFDM Forest Hills D 84.80 48 *e*P **P** 17 45 24.4 +0.4
comp=Z,3.1nm,0.9s
WRH Wood River Hil 84.91 18 *e*P **P** 17 45 23.4 -0.4
LSA Lhasa 84.96 302 *e*P **P** 17 45 24.8 -0.7
LSA pmax pmax
comp=Z,5.0nm,0.7s
LSA Lhasa 84.96 302 *e*P **P** 17 45 24.8 -0.7
comp=Z,5.3nm,0.7s
TLY Talaya 85.07 326 *e*P **P** 17 45 24.0 -1.0
TLY pmax pmax
comp=Z,10.0nm,0.8s
TLY Talaya 85.07 326 *e*P **P** 17 45 24.0 -1.0
comp=Z,9.9nm,0.8s
CCB Clear Creek Bu 85.12 18 *e*P **P** 17 45 23.9 -0.9
HDA Harding Lake 85.20 18 *e*P **P** 17 45 26.2 +0.9
comp=Z,13nm,1.0s
MDM Murphy Dome 85.22 17 *e*P **P** 17 45 25.5 +0.1
COLA College 85.27 18⇓*i*P **P** 17 45 25.5 0.0
COLA pmax pmax
comp=Z,10.0nm,1.8s
IL1 Eielson Array 85.48 18 *e*P **P** 17 45 26.8 +0.1
ILAR Eielson Array 85.48 18 P **P** 17 45 26.3 -0.4
comp=Z,2.1nm,0.7s,baz=238,slow=5.6,SNR=26
ILAR pP **pP** 17 46 15.1 -1.4
comp=Z,2.5nm,0.8s,baz=230,slow=6.0,SNR=5.7
ILB Eielson Array 85.48 18 *e*P **P** 17 45 25.8 -0.9
DOT Dot Lake 85.58 20 *e*P **P** 17 45 27.7 +0.5
COLD Coldfoot 86.37 15 *e*P **P** 17 45 32.4 +1.4
NV01 Mina Array Sit 86.56 49 *e*P **P** 17 45 33.5 +0.7
NVAR Mina Array Bea 86.56 49 P **P** 17 45 33.4 +0.6
comp=Z,1.2nm,0.8s,baz=231,slow=10,SNR=6.0
NVAR pP **pP** 17 46 23.0 +0.2

comp=Z,0.2nm,0.4s,baz=217,slow=4.4,SNR=2.3
EGAK Eagle 87.28 20 *e*P **P** 17 45 35.3 -0.1
comp=Z,2.6nm,0.8s
SHPR Sheep Range 88.29 52 *e*P **P** 17 45 41.5 +0.4
comp=Z,5.0nm,1.1s
G08A Pilot Rock 88.52 43 *e*P **P** 17 45 42.6 +0.8
comp=Z,1.8nm,0.9s
R11A Troy Canyon, C 88.55 50 *e*P **P** 17 45 42.5 +0.2
GUN Gumba 88.85 299 *e*P **P** 17 45 44.0 -0.1
comp=Z,16nm,0.8s
TIXI Tiksi 88.89 349⇑*i*P **P** 17 45 42.5 -0.2
TIXI pmax pmax
comp=Z,5.0nm,1.0s
TIXI Tiksi 88.89 349 *e*P **P** 17 45 42.6 -0.2
PKIN Phulchoki 89.17 299 *e*P **P** 17 45 45.2 -0.3
comp=Z,19nm,0.8s
KKN Kakani 89.33 299 *e*P **P** 17 45 45.9 -0.3
comp=Z,18nm,0.8s
DMN Daman 89.43 298 *e*P **P** 17 45 46.8 +0.1
comp=Z,44nm,1.0s
BMO Blue Mountains 89.46 44 *e*P **P** 17 45 44.2 -2.0
BMO pmax pmax
comp=Z,4.0nm,1.1s
BMO Blue Mountains 89.46 44 *e*P **P** 17 45 44.2 -2.0
comp=Z,3.7nm,1.1s
SYO Syowa Base 89.76 197⇑*e*P **P** 17 45 46.0 -1.1
GKN Gorkha 89.93 299 *e*P **P** 17 45 48.3 -0.6
MFID Camas Ranch 89.99 45 *e*P **P** 17 45 49.4 +0.6
TUC Tucson 90.53 57 *e*P **P** 17 45 52.5 +1.0
TUC Tucson 90.53 57 *e*P **P** 17 45 52.5 +1.0
WMQ Urumqi 91.94 315 *e*P **P** 17 45 56.6 -1.2
WMQ pmax pmax
comp=Z,4.0nm,0.6s
WMQ pmax pmax
comp=Z,7.0nm,5.0s
PDAR Pinedale Array 94.21 47 P **P** 17 46 07.7 -0.7
comp=Z,0.2nm,0.4s,baz=248,slow=4.8,SNR=3.2
TXAR Lajitas Array 95.76 61 P **P** 17 46 15.4 -0.2
comp=Z,0.4nm,0.7s,baz=196,slow=6.4,SNR=2.7
TXAR PP **PP** 17 50 10.7 +0.2
comp=Z,0.2nm,0.9s,baz=251,slow=5.6,SNR=4.9
MK01 Makanchi Array 96.38 316 *e*P **P** 17 46 18.1 +0.2
MK31 Makanchi Array 96.39 316 *e*P **P** 17 46 18.8 +0.7
MK31 Makanchi Array 96.39 316 *e*P **P** 17 46 18.8 +0.7
MKAR Makanchi Array 96.39 316 P **P** 17 46 18.6 +0.6
comp=Z,5.3nm,0.7s,baz=93,slow=6.3,SNR=57
MKAR PKiKP **PKiKP** 17 50 54.4 -0.3
comp=Z,0.3nm,0.6s,baz=268,slow=0.5,SNR=5.5
MKAR PKKPbc **PKKPbc** 18 03 01.4 -2.7
comp=Z,0.2nm,0.4s,baz=262,slow=4.3,SNR=7.1
MKAR Makanchi Array 96.39 316 *e*P **P** 17 46 18.5 +0.5
ZALV Zalesovo Beam 96.49 324 P **P** 17 46 17.8 -0.4
comp=Z,3.5nm,0.7s,baz=110,slow=4.7,SNR=17
YKA Yellowknife Ar 96.57 27 P **P** 17 46 17.5 -0.8
comp=Z,0.5nm,0.5s,baz=256,slow=4.5,SNR=14
YKA pP **pP** 17 47 07.6 -1.2
comp=Z,0.6nm,1.0s,baz=256,slow=4.2,SNR=2.8
YKA PKiKP **PKiKP** 17 50 54.9 +0.5
comp=Z,0.1nm,0.4s,baz=244,slow=1.4,SNR=3.3
PHWY Pilot Hill 96.84 49 *e*P **P** 17 46 21.6 +1.1
NRIK Noril'sk 99.04 339 P **Pdif** 17 46 28.6 -0.7
comp=Z,2.4nm,0.6s,baz=120,slow=3.5,SNR=3.2
KURK Kurchatov 99.55 320 PKKPbc PKKPbc 18 02 53.5 -1.9
KURBB Kurchatov Arra 99.59 320 PKKPbc PKKPbc 18 02 53.5 -1.8
comp=Z,0.3nm,0.7s,baz=283,slow=3.8,SNR=4.5
GEYT Alibeck 113.28 306 PKiKP **PKiKP** 17 51 26.4 +0.4
comp=Z,1.2nm,0.6s,baz=212,slow=1.4,SNR=6.5
LPAZ La Paz 117.72 117 PKP **PKPdf** 17 51 36.0 +0.2
comp=Z,0.8nm,0.5s,baz=66,slow=1.3,SNR=4.2
ARCES ARCESS Array B 119.18 346 PKP **PKPdf** 17 51 36.3 -0.1
comp=Z,8.7nm,0.6s,baz=59,slow=1.5,SNR=37
ARCES PKKPbc **PKKPab** 18 01 49.2 -3.1
comp=Z,1.2nm,0.4s,baz=224,slow=2.5,SNR=26
KLMR Klimovskoe 119.69 334 *e*PKiKP **PKPdf** 17 51 36.2 -1.3
KLMR pmax pmax
comp=Z,3.0nm,0.6s
CPUP Villa Florida 121.21 133 PKP **PKPdf** 17 51 40.2 -1.4
comp=Z,1.3nm,0.8s,baz=333,slow=4.5,SNR=2.8
VRH Novokhopyorsk 122.50 323 *e*PKiKP **PKPdf** 17 51 43.2 0.0
VRH pmax pmax
comp=Z,10.0nm,0.6s
GNI Garni 123.42 309⇓*i*PKiKP **PKPdf** 17 51 46.6 +1.0
ZEI Tsey 123.50 312 *i*PKiKP **PKPdf** 17 51 45.5 -0.2
ZEI pmax pmax
comp=Z,20nm,1.2s
LPSR Galich'ya Gora 123.58 325 *e*PKiKP **PKPdf** 17 51 46.2 +0.9
LPSR pmax pmax
comp=Z,10.0nm,0.9s
OBN Obninsk 123.76 328 *i*PKiKP **PKPdf** 17 51 45.3 -0.2
OBN pmax pmax
comp=Z,9.0nm,0.8s
KBZ Khabaz 123.98 314 PKP **PKPdf** 17 51 45.6 -0.7
comp=Z,1.2nm,0.6s,baz=116,slow=4.8,SNR=4.3
VSR Storozhevoye 124.00 323 *e*PKiKP **PKPdf** 17 51 45.9 -0.2
VSR pmax pmax
comp=Z,10.0nm,0.8s
BOSA Boshof 124.20 221 PKP **PKPdf** 17 51 47.3 -0.2
comp=Z,2.9nm,0.6s,baz=175,slow=1.7,SNR=7.4
NEY Neytrino 124.23 313⇑*i*PKiKP **PKPdf** 17 51 48.5 +1.4
FINES FINESS Array B 124.69 339 PKP **PKPdf** 17 51 47.0 -0.1
comp=Z,4.9nm,0.8s,baz=20,slow=4.4,SNR=19
FINES FINESS Array B 124.69 339 PKiKP **PKPdf** 17 51 47.0 -0.1
VSU Vasula 126.41 335⇓*i*PKiKP **PKPdf** 17 51 50.7 +0.2
NB2 NORSAR Subarra 129.56 345 PKPdf **PKPdf** 17 51 56.6 +0.1
comp=Z,1.7nm,0.6s,baz=31,slow=1.9
NOA NORSAR Array B 129.56 345 PKP **PKPdf** 17 51 56.9 +0.4
comp=Z,2.3nm,0.7s,baz=32,slow=2.0,SNR=11
AKASG Malin Array Be 129.81 326 PKP **PKPdf** 17 51 57.2 0.0
comp=Z,1.8nm,0.6s,baz=60,slow=2.2,SNR=9.4
KIEV Kiev 129.82 326⇓*e*PKiKP **PKPdf** 17 51 58.0 +0.8
BRTR Keskin Array B 131.77 312 PKP **PKPdf** 17 52 01.6 0.0
comp=Z,1.1nm,0.7s,baz=138,slow=2.9,SNR=8.1
BRTR SKPbc **SKPab** 17 55 10.8 +1.7
comp=Z,1.8nm,0.7s,baz=93,slow=3.4,SNR=10.0
TLCR 132.84 320⇑*i*P **PKPdf** 17 52 04.3 +1.2
TLCR 132.84 320⇑PKiKP **PKPdf** 17 52 04.3 +1.2
BURAR Bucovina Array 133.70 325⇑*i*P **PKPdf** 17 52 06.9 +2.1
BURAR Bucovina Array 133.70 325⇑PKiKP **PKPdf** 17 52 06.9 +2.1
KWP Kalwaria Pacla 133.85 328⇓*i*P **PKPdf** 17 52 05.9 +1.0
KWP Kalwaria Pacla 133.85 328⇓PKiKP **PKPdf** 17 52 05.9 +1.0
MLR Muntele Rosu 134.44 322⇑*i*P **PKPdf** 17 52 10.4 +4.1
MLR Muntele Rosu 134.44 322⇑PKiKP **PKPdf** 17 52 10.5 +4.1
KOLS Kolonicke sedl 134.50 328 *e*PKiKP **PKPdf** 17 52 06.7 +0.5
KOLS Kolonicke sedl 134.50 328 *e*PKP **PKPdf** 17 52 06.7 +0.5
CRVS Cervenica-Dubn 134.94 328 *e*PKiKP **PKPdf** 17 52 08.5 +1.5
CRVS Cervenica-Dubn 134.94 328 *e*PKP **PKPdf** 17 52 08.5 +1.5
VOIR 135.00 322⇑*i*P **PKPdf** 17 52 06.9 -0.4
VOIR 135.00 322⇑PKiKP **PKPdf** 17 52 06.9 -0.4
ARR Arges 135.28 323⇓*i*P **PKPdf** 17 52 09.3 +1.5
DRGR 135.57 325⇑*i*P **PKPdf** 17 52 10.0 +1.7
DRGR 135.57 325⇑PKiKP **PKPdf** 17 52 10.0 +1.7
MORC Moravsky Berou 136.25 332⇓*i*P **PKPdf** 17 52 10.4 +0.9
MORC Moravsky Berou 136.25 332⇓PKiKP **PKPdf** 17 52 10.4 +0.9
DPC Dobruska-Polom 136.39 333 *e*PKPdf **PKPdf** 17 52 10.5 +0.8
DPC Dobruska-Polom 136.39 333 *e*PKiKP **PKPdf** 17 52 10.5 +0.8
BRG Berggiesshubel 137.00 335 *e*PKP **PKPdf** 17 52 13.1 +2.3
comp=Z,10nm,1.5s
BRG Berggiesshubel 137.00 335 *e*PKiKP **PKPdf** 17 52 13.1 +2.3
BRG pmax pmax
comp=Z,11nm,1.5s
PVCC Panska Ves 137.01 335 *e*PKPdf **PKPdf** 17 52 12.0 +1.2
PVCC Panska Ves 137.01 335 *e*PKiKP **PKPdf** 17 52 12.0 +1.2
CLL Collm 137.04 336 *i*PKPdf **PKPdf** 17 52 13.1 +2.3
comp=Z,5.0nm,0.7s
CLL *i* 17 52 16.7
CLL Collm 137.04 336 *i*PKiKP **PKPdf** 17 52 13.1 +2.3
CLL pmax pmax
comp=Z,5.0nm,0.7s
PRU Pruhonice 137.43 334 *e*PKPdf **PKPdf** 17 52 12.1 +0.5
PRU Pruhonice 137.43 334 *e*PKiKP **PKPdf** 17 52 12.1 +0.5
KHC Kasperske Hory 138.49 334 *e*PKPdf **PKPdf** 17 52 14.6 +1.0
KHC Kasperske Hory 138.49 334 *e*PKiKP **PKPdf** 17 52 14.6 +1.0
GERES GERESS Array B 138.65 334 PKhKP PKPpre 17 52 07.3
comp=Z,0.5nm,0.7s,baz=8.5,slow=2.0,SNR=3.9
GERES PKP **PKPdf** 17 52 14.7 +0.7
comp=Z,2.7nm,0.8s,baz=11,slow=1.4,SNR=17
GERES SKPbc **SKiKP** 17 55 32.0 -1.0
comp=Z,0.6nm,0.6s,baz=35,slow=3.6,SNR=4.4
LAST Lasithi 139.46 309⇓*i*P **PKPdf** 17 52 18.4 +2.5
PDG Podgorica 140.15 322⇓*i*P **PKPdf** 17 52 17.0 +0.3
TIP Timpagrande 143.60 320⇓*i*P PKPbc 17 52 22.0 +0.9
GDM Grand'Maison 144.68 337 PKP **PKPdf** 17 52 25.3 +0.4
GRN Grenoble 144.79 337 PKP **PKPdf** 17 52 25.9 +0.9
PLDF La Plantade 144.91 340 PKP **PKPdf** 17 52 25.9 +0.7
AGO Saint Agoulin 145.00 341 PKP **PKPdf** 17 52 25.9 +0.6

SSB	**Saint Sauveur**	**145.20**	**338**	PKP	**PKPab**	**17 52 26.7**	**+0.7**
PYM	**Petit Puy Mans**	**145.31**	**340**	PKP	**PKPab**	**17 52 27.4**	**+0.9**
OG26	**St.-Nazaire-De**	**145.52**	**337**	PKP	**PKPab**	**17 52 28.1**	**+0.8**
LBL	**Lubilhac**	**145.69**	**340**	PKP	**PKPab**	**17 52 28.6**	**+0.7**
KEST	**Kesra**	**150.34**	**322**	PKPbc	**PKPbc**	**17 52 40.9**	**+0.9**
	comp=Z,25nm,0.7s,baz=264,slow=0.6,SNR=18						
ESDC	**Sonseca Array**	**152.92**	**345**	PKPbc	**PKPbc**	**17 52 46.3**	**+0.7**
	comp=Z,2.8nm,0.8s,baz=16,slow=3.0,SNR=13						
ESDC				PKPab	**PKPab**	**17 52 57.7**	**+0.2**
	comp=Z,1.4nm,0.6s,baz=5.5,slow=4.4,SNR=9.5						
ESDC				PP	**PP**	**17 56 27.7**	**-2.6**
	comp=Z,0.1nm,0.3s,baz=352,slow=9.5,SNR=4.8						
TORD	**Torodi Ar. Bea**	**165.94**	**270**	PKP	**PKPdf**	**17 52 53.5**	**-0.2**
	comp=Z,4.4nm,0.8s,baz=76,slow=0.7,SNR=24						
TORD				PKPab	**PKPab**	**17 53 55.0**	**+0.1**
	comp=Z,2.2nm,0.5s,baz=93,slow=4.7,SNR=13						
DBIC	**Dimbokro**	**169.61**	**229**	PKP	**PKPdf**	**17 52 55.2**	**-1.0**
	comp=Z,8.1nm,1.2s,baz=187,slow=1.8,SNR=3.7						

MAN 08 17:36:44, 17°.78N×120°.63E, h37km, mb4.2, ML3.1, MS2.8, 1D, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ABRA	**Dolores**	**0.15**	**149**	*e*P	Pn	17 36 52.6	-2.3
ABRA				*e*S	Sn	17 36 55.5	-10
SIPP	**Brgy, Tapao**	**0.21**	**311**	⇓*i*P	Pn	17 36 53.5	+0.5
SIPP				*e*S	Sn	17 36 59.7	-2.1
APYP	**Conner**	**0.59**	**82**	*e*P	Pn	17 36 58.0	+1.9
APYP				*e*S	Sn	17 37 10.2	+5.8

*BYKL **08** 17:54:12.3±0.2, 53°.49N×112°.18E*
*MOS **08** 17:54:12.2±1.6, 53°.49N×112°.20E, h3km, mb4.3/1, Error ellipse: s-maj=14.8km s-min=8.6km az=82.9*

ISC 08 17:54:12.7±0.7, 53°.51N±0°.02×112°.12E±0°.02, h10km, n40, σ2°.81/89, 2C-2D, Lake Baykal region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SYVR	**Suvo**	**1.27**	**278**	*e*Pg	**Pn**	**17 54 36.4**	**-0.1**
SYVR				*e*Sg	**Sb**	**17 54 53.7**	**+0.5**
SYVR				*e*		17 54 58.4	
SYVR				Pmax			
	86nm,0.2s						
SYVR				Smax			
	489nm,0.5s						
SYVR	**Suvo**	**1.27**	**278**	*e*PG	**Pn**	**17 54 36.3**	**-0.2**
SYVR				*e*		17 54 53.7	
SYVR				pmax	pmax		
	comp=Z,88nm,0.2s						
SYVR				smax	smax		
	comp=N,541nm,0.6s						
YLYR	**Ulyunkhan**	**1.48**	**338**	⇑*i*Pg	**Pn**	**17 54 39.7**	**+0.3**
YLYR				*e*Sg	**Sn**	**17 54 59.2**	**+0.3**
YLYR				Pmax			
	comp=N,88nm,0.2s						
YLYR				Smax			
	comp=N,450nm,0.8s						
YLYR	**Ulyunkhan**	**1.48**	**338**	⇑*i*PG	**Pn**	**17 54 39.7**	**+0.3**
YLYR				*e*		17 55 00.8	
YLYR				pmax	pmax		
	comp=Z,98nm,0.2s						
YLYR				smax	smax		
	comp=E,456nm,0.9s						
CIT	**Chita**	**1.72**	**149**	*e*Pg	**Pb**	**17 54 43.0**	**-1.4**
CIT				*e*Sg	**Sg**	**17 55 05.8**	**-2.2**
CIT				Pmax			
	comp=E,210nm,0.2s						
CIT				Smax			
	comp=E,778nm,0.2s						
CIT	**Chita**	**1.72**	**149**	⇓*i*PG	**Pb**	**17 54 43.1**	**-1.4**
CIT				*e*		17 55 05.6	
CIT				pmax	pmax		
	comp=Z,244nm,0.3s						
CIT				smax	smax		
	comp=E,781nm,0.2s						
UKT	**Uakit**	**2.17**	**23**	*e*Pg	**Pb**	**17 54 51.4**	**-0.7**
UKT				*e*Sn	**Sn**	**17 55 17.2**	**+1.2**
UKT				*e*Sg	**Sb**	**17 55 19.9**	**+0.8**
UKT				Pmax			
	comp=E,69nm,0.6s						
UKT				Smax			
	comp=E,230nm,0.7s						
UKT	**Uakit**	**2.17**	**23**	*e*PN	**Pb**	**17 54 51.4**	**-0.7**
KMO	**Kumora**	**2.44**	**348**	*e*Pn	**Pn**	**17 54 54.3**	**+1.7**
KMO				*e*Pg	**Pb**	**17 54 56.4**	**-0.3**
KMO				*e*Sg	**Sb**	**17 55 29.2**	**+2.3**
KMO				*e*SgSg	**SnSn**	**17 55 36.9**	**+3.3**
KMO				Pmax			
	comp=E,119nm,0.4s						
KMO				Smax			
	comp=E,455nm,0.9s						
KMO	**Kumora**	**2.44**	**348**	*e*PN	**Pn**	**17 54 54.3**	**+1.7**
KMO				*e*		17 55 28.3	
KMO				pmax	pmax		
	comp=Z,118nm,0.4s						
KMO				smax	smax		
	comp=N,456nm,1.1s						
YOA	**Uoyan**	**2.64**	**355**	*e*Pg	**Pb**	**17 55 00.3**	**+0.2**
YOA				*e*Sg	**Sb**	**17 55 34.9**	**+2.4**
YOA				Pmax			
	comp=N,135nm,0.4s						
YOA				Smax			
	comp=N,655nm,0.9s						
YOA	**Uoyan**	**2.64**	**355**	⇓*i*PN	**Pb**	**17 55 00.4**	**+0.3**
YOA				*i*		17 55 36.6	
YOA				pmax	pmax		
	comp=Z,142nm,0.5s						
YOA				smax	smax		
	comp=N,653nm,0.8s						
OGRR	**Ongureny**	**2.70**	**275**	*e*Pn	**Pn**	**17 54 58.3**	**+2.1**
OGRR				*e*Pg	**Pb**	**17 55 01.5**	**+0.4**
OGRR				*e*PgPg	**PnPn**	**17 55 03.4**	**+0.1**
OGRR				*e*Sn	**Sn**	**17 55 30.5**	**+1.6**
OGRR				*e*Sg	**Sg**	**17 55 37.7**	**-1.7**
OGRR				max			
	comp=N,16nm,0.3s						
OGRR				Smax			
	comp=N,136nm,0.4s						
SVKR	**Severomuysk**	**2.75**	**17**	*e*Pn	**Pn**	**17 54 58.7**	**+1.9**
SVKR				*e*		17 55 01.0	
SVKR				*e*Pg	**Pg**	**17 55 03.3**	**-2.0**
SVKR				*e*Sg	**Sg**	**17 55 40.0**	**-0.8**
SVKR				Pmax			
	comp=N,50nm,0.3s						
SVKR				Smax			
	comp=N,1μm,0.7s						
ZRHB	**Zarechye**	**3.15**	**254**	*e*Pn	**Pn**	**17 55 03.4**	**+1.1**
ZRHB				*e*Pg	**Pb**	**17 55 09.7**	**+1.0**
ZRHB				*e*Sg	**Sg**	**17 55 51.8**	**-1.9**
ZRHB				Pmax			
	comp=N,81nm,0.5s						
ZRHB				Smax			
	comp=N,559nm,0.9s						
TRG	**Tyrgan**	**3.56**	**260**	*e*Pn	**Pn**	**17 55 09.2**	**+1.3**
TRG				*e*Pg	**Pb**	**17 55 16.3**	**+0.6**
TRG				*e*Sn	**Sn**	**17 55 50.0**	**0.0**
TRG				*e*Sg	**Sg**	**17 56 04.3**	**-2.5**
TRG				Pmax			
	comp=N,12nm,0.5s						
TRG				Smax			
	comp=N,87nm,0.3s						
KAB	**Kabansk**	**3.63**	**248**	*e*Sg	**Sg**	**17 56 05.6**	**-3.4**
KAB				Smax			
	comp=N,429nm,0.8s						
NLYR	**Nelyaty**	**3.63**	**33**	*e*Pn	**Pn**	**17 55 09.8**	**+0.8**
NLYR				*e*		17 55 11.8	
NLYR				*e*Pg	**Pb**	**17 55 16.8**	**-0.2**
NLYR				*e*Sn	**Sn**	**17 55 51.0**	**-0.9**
NLYR				*e*Sg	**Sb**	**17 56 04.4**	**+3.3**
NLYR				Pmax			
	comp=N,19nm,0.3s						
NLYR				Smax			
	comp=N,482nm,1.0s						
NLYR	**Nelyaty**	**3.63**	**33**	*e*PN	**Pn**	**17 55 11.5**	**+2.5**
NLYR				*e*		17 55 18.5	
NLYR				*e*		17 56 04.2	
NLYR				pmax	pmax		
	comp=Z,23nm,0.5s						
NLYR				smax	smax		
	comp=E,655nm,0.5s						
HRMR	**Khuramsha**	**3.67**	**241**	*e*Pn	**Pn**	**17 55 11.2**	**+1.7**
HRMR				*e*Pg	**Pb**	**17 55 18.3**	**+0.7**
HRMR				*e*Sn	**Sn**	**17 55 52.8**	**0.0**
HRMR				*e*Sg	**Sb**	**17 56 06.5**	**+4.4**
HRMR				Pmax			
	comp=E,50nm,0.4s						
HRMR				Smax			
	comp=E,472nm,0.5s						
KPC	**Khapcheranga**	**3.81**	**177**	*e*Pn	**Pn**	**17 55 12.1**	**+0.6**
KPC				*e*Pg	**Pb**	**17 55 21.0**	**+1.0**
KPC				*e*Sg	**Sb**	**17 56 09.7**	**+3.4**
KPC				*e*		17 56 26.0	
KPC				Pmax			
	comp=E,23nm,0.3s						
KPC				max			
	comp=E,279nm,0.8s						
KPC	**Khapcheranga**	**3.81**	**177**	*e*PN	**Pn**	**17 55 12.6**	**+1.1**
KPC				*e*		17 55 21.1	
KPC				*e*		17 56 09.4	
KPC				pmax	pmax		
	comp=Z,27nm,0.3s						
KPC				smax	smax		
	comp=E,278nm,1.0s						
BOD	**Bodaibo**	**4.45**	**13**	*e*Pn	**Pn**	**17 55 20.2**	**0.0**
BOD				*e*Pg	**Pb**	**17 55 31.7**	**+0.8**
BOD				*e*Sg	**Sb**	**17 56 29.4**	**+4.8**
BOD				Pmax			
	comp=E,9.0nm,0.4s						
BOD				Smax			
	comp=E,110nm,1.1s						
BOD	**Bodaibo**	**4.45**	**13**	*e*PN	**Pn**	**17 55 20.0**	**-0.2**
BOD				*e*		17 55 32.0	
BOD				*e*		17 56 29.5	
BOD				pmax	pmax		
	comp=Z,15nm,0.8s						
BOD				smax	smax		
	comp=E,110nm,1.1s						
TUP	**Tupik**	**4.72**	**76**	*e*Pn	**Pn**	**17 55 24.0**	**+0.1**
TUP				*e*Pg	**Pb**	**17 55 36.5**	**+1.1**
TUP				*e*		17 55 39.3	
TUP				*e*Sg	**Sb**	**17 56 36.5**	**+4.3**
TUP				Pmax			
	comp=E,12nm,0.3s						
TUP				Smax			
	comp=E,86nm,0.7s						
TUP	**Tupik**	**4.72**	**76**	*e*PN	**Pn**	**17 55 23.6**	**-0.3**
TUP				*e*		17 55 35.8	
TUP				*e*S	**Sn**	**17 56 15.7**	**-2.9**
TUP				*e*		17 56 35.2	
TUP				pmax	pmax		
	comp=Z,15nm,0.5s						
TUP				smax	smax		
	comp=N,85nm,1.1s						
LSTR	**Listvyanka**	**4.73**	**253**	*e*Pn	**Pn**	**17 55 24.9**	**+0.9**
LSTR				*e*Pg	**Pb**	**17 55 37.1**	**+1.5**
LSTR				*e*Sn	**Sn**	**17 56 17.4**	**-1.4**
LSTR				*e*Sg	**Sb**	**17 56 38.0**	**+5.5**
LSTR				Pmax			
	comp=N,4.0nm,0.4s						
LSTR				Smax			
	comp=N,34nm,0.9s						
CRS	**Chara**	**4.89**	**44**	*e*Pg	**Pb**	**17 55 40.0**	**+1.6**
CRS				*e*Sn	**Sn**	**17 56 19.8**	**-3.2**
CRS				*e*Sg	**Sg**	**17 56 44.4**	**-5.3**
CRS				Pmax			
	comp=N,51nm,0.8s						
CRS				Smax			
	comp=N,148nm,1.2s						
CRS	**Chara**	**4.89**	**44**	*e*PN	**Pb**	**17 55 40.1**	**+1.6**
CRS				*e*		17 56 42.9	
CRS				pmax	pmax		
	comp=Z,62nm,0.8s						
CRS				smax	smax		
	comp=E,149nm,1.1s						
IRK	**Irkutsk**	**4.92**	**258**	*e*PN	**Pb**	**17 55 42.2**	**+3.3**
IRK				*e*		17 56 45.2	
IRK				pmax	pmax		
	comp=Z,29nm,0.2s						
IRK				smax	smax		
	comp=N,137nm,0.6s						
TLY	**Talaya**	**5.48**	**254**	*e*Sg	**Sg**	**17 57 03.1**	**-5.4**
TLY				Smax			
	comp=N,36nm,1.0s						
TLY	**Talaya**	**5.48**	**254**	*e*Pn	**Pn**	**17 55 34.1**	**-0.2**
TLY				*e*		17 55 51.2	
TLY				*e*S	**Sn**	**17 56 37.0**	**-0.4**
TLY				*e*		17 57 02.1	
TLY				pmax	pmax		
	comp=Z,3.0nm,0.3s						
TLY				smax	smax		
	comp=E,36nm,1.1s						
KHNR	**Khani**	**5.65**	**50**	*e*Pg	**Pb**	**17 55 54.2**	**+2.9**
KHNR				*e*Sg	**Sg**	**17 57 06.4**	**-7.5**
ARS	**Arshan**	**6.10**	**259**	*e*Pg	**Pb**	**17 56 03.0**	**+3.9**
ARS				*e*Sg	**Sg**	**17 57 21.7**	**-6.8**
ARS				Pmax			
	comp=E,11nm,0.6s						
ARS				Smax			
	comp=E,119nm,0.9s						
ARS	**Arshan**	**6.10**	**259**	*e*PN	**Pb**	**17 56 03.8**	**+4.7**
ARS				*e*		17 57 21.1	
ARS				pmax	pmax		
	comp=Z,11nm,0.5s						
ARS				smax	smax		
	comp=E,119nm,0.9s						
ZAK	**Zakamensk**	**6.30**	**244**	*e*Pn	**Pn**	**17 55 47.5**	**+1.9**
ZAK				*e*Pg	**Pb**	**17 56 04.7**	**+2.3**
ZAK				*e*Sn	**Sn**	**17 56 55.4**	**-2.2**
ZAK				*e*Sg	**Sg**	**17 57 28.2**	**-6.5**
ZAK				Pmax			
	comp=E,5.0nm,0.9s						
ZAK				Smax			
	comp=E,35nm,1.2s						
ZAK	**Zakamensk**	**6.30**	**244**	*e*PN	**Pb**	**17 56 03.7**	**+1.3**
ZAK				*e*		17 57 28.3	
ZAK				pmax	pmax		
	comp=Z,5.0nm,0.9s						
ZAK				smax	smax		
	comp=E,35nm,1.2s						
MOY	**Mondy**	**7.03**	**259**	*e*Pn	**Pn**	**17 55 59.1**	**+3.5**
MOY				*e*		17 56 08.0	
MOY				*e*Sn	**Sn**	**17 57 13.7**	**-1.9**
MOY				*e*Sg	**Sg**	**17 57 50.1**	**-7.9**
MOY				Smax			
	comp=E,31nm,1.2s						
ORL	**Orlik**	**7.49**	**268**	*e*Pn	**Pn**	**17 56 04.6**	**+2.6**
ORL				*e*		17 56 14.6	
ORL				*e*Sn	**Sn**	**17 57 25.2**	**-1.8**
ORL				*e*Sg	**Sg**	**17 58 04.7**	**-8.2**
ORL				Smax			
	comp=E,33nm,1.3s						
ORL	**Orlik**	**7.49**	**268**	*e*PN	**Pn**	**17 56 04.4**	**+2.4**
ORL				*e*		17 56 28.9	
ORL				*e*S	**Sn**	**17 57 26.8**	**-0.2**
ORL				*e*		17 58 04.6	
ORL				pmax	pmax		
	comp=Z,3.0nm,0.8s						
ORL				smax	smax		
	comp=N,33nm,1.3s						

*ISCJB **08** 18:00:00.8±0.6, 6°.81N±0°.04×73°.04W±0°.05, h163km±5km, Error ellipse: s-maj=9.3km s-min=4.1km az=37.2*
*FUNV **08** 18:00:00.7, 6°.67N×73°.17W, h163km, MW2.9*
*RSNC **08** 18:00:03.7±1.0, 6°.78N×73°.12W, h145km±6km, ML3.0*

ISC 08 18:00:00.8±1.4, 6°.80N±0°.04×73°.04W±0°.05, h164km±8km, n21, σ1°.18/37, 1D, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BARC	**Barichara**	**0.25**	**215**	*e*P	**Pn**	**18 00 23.2**	**0.0**
BARC				*e*S	**Sn**	**18 00 38.5**	**-1.9**
BARC				*i*		18 00 40.8	
	comp=Z,193nm,0.3s						
PAMC	**Pamplona, Colo**	**0.63**	**32**	*e*P	**Pn**	**18 00 25.9**	**+0.9**
PAMC				*e*S	**Sn**	**18 00 42.9**	**-0.7**
PAMC				*i*		18 00 45.5	
	comp=Z,72nm,0.5s						
BRRC	**Barranca, Sant**	**0.73**	**294**	*e*P	**Pn**	**18 00 24.9**	**-0.1**
BRRC				*e*S	**Sn**	**18 00 41.7**	**-2.0**
BRRC				*i*		18 00 44.5	
	comp=Z,135nm,0.1s						
RUSC	**La Rusia**	**0.90**	**183**	*e*P	**Pn**	**18 00 27.2**	**+0.4**
RUSC				*e*S	**Sn**	**18 00 45.7**	**-1.1**
RUSC				*i*		18 00 47.7	
	comp=Z,137nm,0.2s						
GRMC	**Gramalote, San**	**0.94**	**14**	*e*P	**Pn**	**18 00 28.8**	**+2.1**
GRMC				*e*S	**Sn**	**18 00 47.7**	**+1.1**
GRMC				*i*		18 00 49.7	
	comp=Z,111nm,0.4s						
CBRI	**Barrientos, No**	**0.94**	**15**	*e*P	**Pn**	**18 00 27.6**	**+0.9**
CBRI				*e*S	**Sn**	**18 00 46.7**	**0.0**
CBRI				*i*		18 00 50.3	
	comp=Z,84nm,0.3s						
CAPV	**Capacho**	**1.28**	**34**	*e*P	**Pn**	**18 00 31.0**	**+1.4**
CAPV				*e*S	**Sn**	**18 00 52.3**	**+0.5**
OCAC	**Ocana**	**1.46**	**349**	*e*P	**Pn**	**18 00 31.7**	**+0.5**
OCAC				*e*S	**Sn**	**18 00 55.2**	**+0.6**
OCAC				*i*		18 00 59.0	
	comp=Z,142nm,0.3s						
NORC	**Norcasia**	**2.20**	**236**	*e*P	**Pn**	**18 00 39.1**	**0.0**
NORC				*e*S	**Sn**	**18 01 06.6**	**-2.1**
ROSC	**El Rosal**	**2.33**	**213**	*e*P	**Pn**	**18 00 42.3**	**+1.3**
ROSC				*i*		18 01 18.1	
	comp=Z,119nm,0.4s						
HELC	**Santa Helena**	**2.55**	**256**	*e*P	**Pn**	**18 00 45.0**	**+1.4**
HELC				*e*S	**Sn**	**18 01 15.7**	**-0.9**
HELC				*i*		18 01 22.6	
	comp=Z,67nm,0.6s						
SOCV	**Socops**	**2.62**	**56**	*e*P	**Pn**	**18 00 45.3**	**+1.3**
SOCV				*e*S	**Sn**	**18 01 17.5**	**-0.1**
VIGV	**El Vigia**	**2.62**	**39**	*e*S	**Sn**	**18 01 17.0**	**-0.7**
VILC	**Villavicencio,**	**2.75**	**194**	*e*P	**Pn**	**18 00 47.1**	**+1.3**
VILC				*e*S	**Sn**	**18 01 21.1**	**+0.3**
VILC				*i*		18 01 25.5	
	comp=Z,42nm,0.3s						
DBBC	**Dabeiba**	**3.16**	**274**	*e*P	**Pn**	**18 00 51.2**	**+0.4**
TOLC	**Tolima**	**3.16**	**226**	*e*P	**Pn**	**18 00 52.9**	**+1.8**
PRAC	**Prado**	**3.58**	**211**	*e*P	**Pn**	**18 00 56.9**	**+0.8**
PRAC				*e*S	**Sn**	**18 01 38.8**	**-0.3**
SJAC	**San Juan de Ar**	**3.62**	**195**	*e*P	**Pn**	**18 00 57.2**	**+0.5**
SJAC				*i*		18 01 50.4	
	comp=Z,78nm,0.4s						
VIRV	**Villa del Rosa**	**3.73**	**10**	*e*P	**Pn**	**18 00 58.0**	**0.0**
VIRV				*e*S	**Sn**	**18 01 41.4**	**-1.3**
CURV	**Curarigua**	**4.41**	**43**	*e*P	**Pn**	**18 01 07.5**	**+0.6**
CURV				*e*S	**Sn**	**18 01 57.7**	**-0.7**
BAUV	**El Baul**	**5.39**	**66**	*e*P	**Pn**	**18 01 19.2**	**-0.4**
BAUV				⇓*e*S	**Sn**	**18 02 18.7**	**-2.5**

*NIED **08** 18:00:00.37°.60N×143°.80E, h5km, Mw3.3 Best double couple: M0=9.92000×10^13 NP1:φ1=169.00000°, δ1=43.00000°, λ1=-117.00000°. NP2:φ2=24.00000°, δ2=53.00000°, λ2=-67.00000°.*

JMA 08 18:00:09.6±0.3, 37°.64N×143°.83E, h35km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.12**	**293**	P	Pn	18 00 44.1	+1.6
JIO				*e*S	Sn	18 01 09.5	+1.9
OFUJ	**Ofunato**	**2.23**	**311**	P	Pn	18 00 45.2	+1.2
OFUJ				S	Sn	18 01 11.8	+1.6
JFK	**Kawauchi**	**2.37**	**264**	P	Pn	18 00 47.0	+1.0
JFK				S	Sn	18 01 15.0	+1.2
JMM	**Marumori**	**2.42**	**276**	P	Pn	18 00 48.1	+1.5
JMM				*e*S	Sn	18 01 16.6	+1.6
JMK	**Ichinoseki**	**2.44**	**303**	P	Pn	18 00 49.0	+2.1
JMK				S	Sn	18 01 17.4	+2.0
JOU	**Okura**	**2.60**	**287**	*e*S	Sn	18 01 21.7	+2.1
JOM	**Ohasama**	**2.70**	**313**	P	Pn	18 00 52.6	+2.0
JOM				S	Sn	18 01 24.6	+2.6
JFT	**Otama**	**2.78**	**269**	P	Pn	18 00 53.9	+2.3
JFT				*e*S	Sn	18 01 26.7	+2.8
JYK	**Kaneyama**	**3.02**	**296**	P	Pn	18 00 57.3	+2.5
JYK				*e*S	Sn	18 01 33.3	+3.6
JRG	**Rokugo**	**3.06**	**306**	P	Pn	18 00 58.6	+3.2
JRG				S	Sn	18 01 34.6	+3.8
JANG	**Nango**	**3.27**	**327**	*e*S	Sn	18 01 36.7	+0.6
MAT	**Matsushiro**	**4.63**	**258**	P	Pn	18 01 20.2	+3.2
MAT				*e*S	Sn	18 02 10.9	+1.4

DJA 08 18:00:15.2±0.4, 7°.S±5°.×10°.6E±°, h54km±7km, M3.6/10, MLv3.6/10, Sunda Strait

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CGJI	**Cibinong**	**0.21**	**358**	P	Pn	18 00 25.1	+1.0
CGJI				S	Sn	18 00 32.9	+2.5
SBJI	**Serang**	**0.82**	**31**	P	Pn	18 00 30.3	-0.4
SKJI	**Sukabumi**	**0.87**	**102**	P	Pn	18 00 32.2	+0.9
SKJI				S	Sn	18 00 44.9	+1.8
TNG	**Tangerang**	**1.15**	**55**	P	Pn	18 00 35.0	0.0
CBJI	**Citeko**	**1.21**	**70**	P	Pn	18 00 36.9	+1.0
CNJI	**Cibinong**	**1.50**	**109**	P	Pn	18 00 39.5	-0.2
BLSI	**Bandar Lampung**	**1.52**	**343**	P	Pn	18 00 40.0	-0.1
KASI	**Kota Agung**	**1.77**	**317**	P	Pn	18 00 43.0	-0.4
KASI				S	Sn	18 01 05.0	+0.3
LEM	**Lembang**	**1.90**	**90**	P	Pn	18 00 52.4	+7.0
KLI	**Kotabumi**	**2.13**	**337**	P	Pn	18 00 48.5	+0.2
LWLI	**Liwa**	**2.43**	**318**	P	Pn	18 00 53.5	+0.9
MDSI	**Maura Dua**	**2.78**	**327**	P	Pn	18 00 57.4	+0.1
CMJI	**Cimerak**	**2.89**	**109**	P	Pn	18 00 58.2	-0.5
CMJI				S	Sn	18 01 32.8	+0.5
MNAI	**Manna**	**3.67**	**312**	P	Pn	18 01 09.4	-0.1
LHSI	**Lahat**	**3.69**	**324**	P	Pn	18 01 09.6	-0.1

IDC 08 18:02:29.1±21.0, 5°.44S×128°.56E, h196km±226km, mb2.8/1, mb1 3.4/4, mb1mx3.0/42, mbtmp3.9/4, ML3.9/3, Error ellipse: s-maj=184.9km s-min=48.9km az=45.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**12.90**	**193**	P	Pn	18 05 26.0	+0.4
	0.4nm,0.3s,baz=26,slow=8.8,SNR=8.6						
WRA	**Warramunga Arr**	**15.47**	**159**	P	P	18 05 57.6	0.0
	0.6nm,0.3s,baz=332,slow=12,SNR=36						
ASAR	**Alice Springs**	**18.84**	**165**	P	P	18 06 34.1	-0.3
	0.6nm,0.3s,baz=345,slow=12,SNR=91						
MKAR	**Makanchi Array**	**66.14**	**327**	P	P	18 12 55.5	0.0
	0.3nm,0.8s,baz=143,slow=8.5,SNR=3.1						

IDC 08 18:05:59.8±4.5, 3°.87S×153°.96E, h381km±39km, mb2.8/4, mb1 3.0/5, mb1mx2.7/42, mbtmp3.6/5, Error ellipse: s-maj=57.2km s-min=22.7km az=109.0, New Ireland region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**8.71**	**230**	P	P	18 08 04.2	+0.5
	0.9nm,0.3s,baz=47,slow=7.4,SNR=3.8						
PMG				S	S	18 09 43.9	+0.3
	0.1nm,0.3s,baz=311,slow=19,SNR=2.2						
WRA	**Warramunga Arr**	**24.92**	**229**	P	P	18 10 49.4	-0.9
	0.4nm,0.5s,baz=52,slow=9.6,SNR=4.7						
WRA				PcP	PcP	18 14 14.8	+0.5
	1.3nm,1.2s,baz=41,slow=2.1,SNR=4.7						
ASAR	**Alice Springs**	**27.61**	**223**	P	P	18 11 13.9	-0.3
	0.4nm,0.4s,baz=55,slow=8.9,SNR=22						
ASAR				PcP	PcP	18 14 21.0	+0.4
	0.6nm,1.1s,baz=57,slow=3.4,SNR=3.3						
SONM	**Songino Array**	**66.17**	**327**	P	P	18 16 08.5	+0.5
	0.3nm,0.6s,baz=130,slow=6.0,SNR=2.7						
ILAR	**Eielson Array**	**80.87**	**22**	P	P	18 17 31.4	-0.7
	0.3nm,0.6s,baz=256,slow=5.7,SNR=3.4						
TORD	**Torodi Ar. Bea**	**151.09**	**290**	PKPbc	PKPbc	18 25 08.8	-0.7
	0.4nm,0.4s,baz=61,slow=1.8,SNR=7.7						

MAN 08 18:08:12, 17°.68N×120°.51E, h3km, mb4.1, ML3.0, MS2.7, 1C, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ABRA	**Dolores**	**0.19**	**99**	*e*P	Pg	18 08 17.4	+1.7
ABRA				*e*S	Sg	18 08 21.2	+2.9
SIPP	**Brgy, Tapao**	**0.25**	**348**	⇑*i*P	Pg	18 08 18.4	+1.5
SIPP				*e*S	Sg	18 08 23.9	+3.8
APYP	**Conner**	**0.72**	**75**

BALP Baler 2.18 152 *eP* Pn 18 08 50.5 +1.3

*IDC **08** 18:08:14.6±1.2, 38°.82N×142°.62E, h0km, mb3.6/6, mb1 3.7/8, mb1mx3.5/44, mbtmp3.6/8, ML2.9/1, MS2.8/1, Ms1 2.8/1, ms1mx2.1/41, Error ellipse: s-maj=32.1km s-min=21.6km az=78.0*
*JMA **08** 18:08:18.7±0.2, 38°.95N×142°.56E, h27km±2km, M3.6*
ISC 08 18:08:16.6±2.1, 38°.93N±0°.06×142°.61E±0°.08, h10km±12km, n18, σ0§83/23, mb3.6/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**0.75**	**282**	P	**Pb**	**18 08 32.4**	**+0.7**
OFUJ				S	**Sb**	**18 08 41.9**	**-0.1**
MIYJ	**Miyakonagasawa**	**0.89**	**317**	P	**Pb**	**18 08 34.1**	**-0.1**
MIYJ				S	**Sg**	**18 08 45.2**	**-0.2**
JMK	**Ichinoseki**	**1.09**	**272**	P	**Pb**	**18 08 37.5**	**+0.1**
JMK				S	**Sg**	**18 08 51.2**	**-0.4**
JIO	**Ouri**	**1.10**	**245**	P	**Pg**	**18 08 37.3**	**-0.3**
JOM	**Ohasama**	**1.16**	**298**	P	**Pb**	**18 08 38.6**	**-0.1**
JOM				S	**Sg**	**18 08 53.1**	**-0.9**
JTH	**Tanohata**	**1.16**	**330**	P	**Pn**	**18 08 39.7**	**+0.8**
JRG	**Rokugo**	**1.61**	**288**	P	**Pb**	**18 08 46.2**	**-0.1**
JRG				*e*S	**Sn**	**18 09 05.3**	**-0.5**
JANG	**Nango**	**1.67**	**330**	P	**Pn**	**18 08 46.7**	**+0.8**
JANG				S	**Sn**	**18 09 06.8**	**-0.6**
ASAJ	**Asahikawa**	**5.18**	**360**	Pn	**Pn**	**18 09 35.2**	**+1.1**
	0.3nm,0.3s,baz=208,slow=12,SNR=5.4						
ASAJ				Sn	**Sn**	**18 10 32.8**	**-1.2**
	0.7nm,0.3s,baz=94,slow=18,SNR=2.8						
USRK	**Ussuriysk Ar.**	**9.54**	**307**	Pn	Pn	18 10 38.7	+4.7
	0.2nm,0.3s,baz=121,slow=14,SNR=5.7						
JNU	**Nakatsue**	**11.12**	**242**	LR	LR	18 15 30.4	
	comp=Z,57nm,21.2s,baz=278,slow=39						
KSRS	**Korea Array**	**11.65**	**267**	Pn	**Pn**	**18 11 04.6**	**+1.7**
	baz=80,slow=13,SNR=2.6						
SONM	**Songino Array**	**27.57**	**301**	P	**P**	**18 14 02.7**	**-1.1**
	0.3nm,0.4s,baz=66,slow=7.1,SNR=3.6						
ZALV	**Zalesovo Beam**	**41.37**	**311**	P	**P**	**18 16 03.1**	**+0.7**
	0.9nm,0.5s,baz=85,slow=8.1,SNR=5.3						
MKAR	**Makanchi Array**	**43.94**	**301**	P	**P**	**18 16 23.3**	**-0.2**
	1.1nm,0.7s,baz=86,slow=10,SNR=10						
ILAR	**Eielson Array**	**47.39**	**33**	P	**P**	**18 16 50.9**	**+0.3**
	0.3nm,0.7s,baz=269,slow=6.3,SNR=3.8						
WRA	**Warramunga Arr**	**59.07**	**189**	P	**P**	**18 18 15.5**	**-1.4**
	1.5nm,0.8s,baz=7.0,slow=7.0,SNR=11						
ASAR	**Alice Springs**	**62.80**	**189**	P	**P**	**18 18 41.5**	**-0.7**
	0.3nm,0.7s,baz=352,slow=5.3,SNR=4.1						

IDC 08 18:20:01.1±3.3, 4°.21S×152°.60E, h0km, mb3.7/3, mb1 3.9/3, mb1mx3.4/33, mbtmp3.7/3, Error ellipse: s-maj=116.7km s-min=47.2km az=122.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**23.69**	**227**	P	P	18 25 15.2	+0.4
	1.3nm,0.6s,baz=52,slow=9.7,SNR=26						
ASAR	**Alice Springs**	**26.45**	**221**	P	P	18 25 40.1	0.0
	0.3nm,0.6s,baz=55,slow=9.0,SNR=11						
FITZ	**Fitzroy Crossi**	**29.77**	**240**	P	P	18 26 09.8	+0.1
	2.1nm,0.8s,baz=53,slow=5.1,SNR=3.1						
TORD	**Torodi Ar. Bea**	**149.93**	**289**	PKPbc	PKPbc	18 39 53.8	-0.9
	0.2nm,0.3s,baz=88,slow=1.9,SNR=5.1						

IDC 08 18:29:29.1±2.0, 36°.97N×144°.22E, h0km, mb3.5/2, mb1 3.6/5, mb1mx3.3/44, mbtmp3.6/5, ML3.4/3, Error ellipse: s-maj=46.9km s-min=31.0km az=84.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**4.85**	**267**	Pn	Pn	18 30 44.0	+0.8
	0.8nm,0.3s,baz=89,slow=15,SNR=9.9						
JHJ	**Hachijo jima 2**	**5.29**	**225**	Pn	Pn	18 30 47.5	-1.9
	3.6nm,0.3s,baz=202,slow=19,SNR=6.5						
JHJ				Sn	Sn	18 31 46.0	-5.1
	5.7nm,0.3s,baz=86,slow=16,SNR=2.2						
ASAJ	**Asahikawa**	**7.24**	**351**	Pn	Pn	18 31 15.4	-0.8
	0.8nm,0.3s,baz=198,slow=14,SNR=15						
ASAJ				Sn	Sn	18 32 37.2	-1.9
	0.1nm,0.3s,baz=108,slow=16,SNR=1.7						
WRA	**Warramunga Arr**	**57.37**	**191**	P	P	18 39 19.0	-0.2
	0.4nm,0.5s,baz=8.9,slow=7.0,SNR=9.5						
ASAR	**Alice Springs**	**61.09**	**191**	P	P	18 39 45.4	+0.4
	0.2nm,0.4s,baz=5.0,slow=6.8,SNR=7.1						

*IDC **08** 18:45:14.4±1.1, 35°.02S×73°.73W, h0km, mb3.9/4, mb1 4.1/6, mb1mx3.9/27, mbtmp3.8/6, ML3.8/2, MS2.9/2, Ms1 2.9/2, ms1mx2.7/27, Error ellipse: s-maj=46.1km s-min=24.6km az=62.0*
*ISCJB **08** 18:45:17.7±0.9, 34°.98S±0°.05×73°.8W±0°.1, h33km, mb3.9/4, MS3.0/1, Error ellipse: s-maj=12.8km s-min=7.4km az=12.6*
ISC 08 18:45:19.9±0.9, 34°.92S±0°.08×73°.8W±0°.1, h35km, n23, σ1§04/24, mb3.9/4, Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ROC1	**El Roble**	**3.04**	**51**	*i* P	**Pn**	**18 46 05.0**	**-0.7**
ROC1				*i* S	**Sn**	**18 46 41.5**	**+0.4**
AAGR	**Agrelo**	**4.54**	**68**	*i* P	**Pn**	**18 46 27.5**	**+1.3**
AUSP	**Uspallata**	**4.58**	**55**	*i* P	**Pn**	**18 46 27.7**	**+0.8**
ASAL	**Salagasta**	**4.77**	**62**	*i* P	**Pn**	**18 46 30.1**	**+0.8**
RTLS	**Leoncito**	**4.91**	**52**	*i* P	**Pn**	**18 46 32.0**	**+0.6**
RTLL	**Cerro Villicun**	**5.75**	**53**	*i* P	**Pn**	**18 46 42.8**	**+0.1**
AMOG	**MOGNA**	**5.99**	**50**	*i* P	**Pn**	**18 46 46.0**	**-0.1**
ACAN	**Cantantal**	**6.14**	**66**	*i* P	**Pn**	**18 46 48.7**	**+0.6**
PLCA	**Paso Flores**	**6.35**	**157**	Pn	**Pn**	**18 46 48.4**	**-2.6**
	0.6nm,0.3s,baz=347,slow=11,SNR=9.9						
PLCA				Sn	**Sn**	**18 48 03.0**	**+0.7**
	baz=330,slow=16,SNR=1.4						
PLCA				LR	LR	18 48 32.4	
	comp=Z,53nm,18.4s,baz=356,slow=32						
AVFE	**Valle Fertil**	**6.85**	**53**	*i* P	**Pn**	**18 46 57.3**	**-0.5**
AVFE				IAML		18 47 06.9	
	comp=Z,11nm,0.3s						
AGUA	**GUANDACOL**	**7.06**	**41**	*i* P	**Pn**	**18 46 59.9**	**-0.9**
VCA	**Vinchina**	**7.80**	**39**	*i* P	**Pn**	**18 47 10.1**	**-1.0**
VCA				IAML		18 47 22.6	
	comp=Z,11nm,0.2s						
LPAZ	**La Paz**	**19.25**	**17**	P	**Pn**	**18 49 42.9**	**-0.2**
	comp=Z,0.1nm,0.3s,baz=194,slow=6.4,SNR=7.1						
NNA	**Nana**	**23.00**	**352**	LR	LR	18 57 08.4	
	comp=Z,53nm,18.1s,baz=136,slow=31						
TXAR	**Lajitas Array**	**69.84**	**332**	P	**P**	**18 56 27.4**	**+0.4**
	comp=Z,0.6nm,0.6s,baz=152,slow=9.2,SNR=9.3						
DBIC	**Dimbokro**	**76.87**	**72**	P	**P**	**18 57 09.2**	**+0.5**
	comp=Z,1.7nm,0.5s,baz=160,slow=2.0,SNR=3.7						
NVAR	**Mina Array Bea**	**83.81**	**326**	P	**P**	**18 57 47.2**	**+1.5**
	comp=Z,0.3nm,0.4s,baz=163,slow=6.5,SNR=2.8						
TORD	**Torodi Ar. Bea**	**85.91**	**71**	P	**P**	**18 57 55.2**	**-1.3**
	comp=Z,0.9nm,0.9s,baz=271,slow=4.4,SNR=4.6						
BRTR	**Keskin Array B**	**123.57**	**62**	PKP	**PKPdf**	**19 04 12.7**	**-0.9**
	comp=Z,0.5nm,0.7s,baz=209,slow=7.1,SNR=3.8						
BVAR	**Borovoye Array**	**148.97**	**43**	PKPbc	**PKPbc**	**19 05 04.0**	**+0.5**
	comp=Z,1.0nm,0.6s,baz=132,slow=5.3,SNR=4.6						
KURBB	**Kurchatov Arra**	**154.56**	**43**	PKPbc	**PKPbc**	**19 05 15.1**	**-1.3**
	comp=Z,0.4nm,0.8s,baz=303,slow=3.3,SNR=5.0						
ZALV	**Zalesovo Beam**	**155.79**	**32**	PKPab	**PKPab**	**19 05 37.0**	**+0.8**
	comp=Z,0.5nm,0.4s,baz=343,slow=4.5,SNR=2.6						
MKAR	**Makanchi Array**	**158.49**	**49**	PKPab	**PKPab**	**19 05 47.3**	**-0.9**
	comp=Z,0.4nm,1.0s,baz=276,slow=5.4,SNR=3.6						

*TAP **08** 18:51:00.6, 24°.55N×122°.82E, h16km±1km, ML3.0, D*
*JMA **08** 18:51:00.0±0.1, 24°.78N×122°.80E, h88km, M1.7*
*ISCJB **08** 18:51:01.1±0.6, 24°.65N±0°.04×122°.78E±0°.02, h79km±6km, Error ellipse: s-maj=6.8km s-min=3.2km az=176.1*
ISC 08 18:51:01.8±1.4, 24°.63N±0°.05×122°.78E±0°.03, h76km±9km, n34, σ1§03/64, Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JYNG	**Yonagunijimaku**	**0.23**	**139**	P	**Pn**	**18 51 13.5**	**+0.2**
JYNG				S	**Sn**	**18 51 23.4**	**+1.7**
YOJ	**Yonaguni jima**	**0.27**	**128**	P	**Pn**	**18 51 13.6**	**+0.1**
YOJ				S	**Sn**	**18 51 23.7**	**+1.7**
EGS		**0.80**	**286**	*e*P	**Pn**	**18 51 17.0**	**-1.3**
	baz=290						
EGS				*e*S	**Sn**	**18 51 29.1**	**-1.5**
	baz=290						
TWB1	**Santiao Chiao**	**0.81**	**298**	P	**Pn**	**18 51 17.5**	**-0.9**
	baz=301						
TWB1				*e*S	**Sn**	**18 51 30.1**	**-0.7**
	baz=301						
TWC	**Suao**	**0.85**	**269**	P	**Pn**	**18 51 17.7**	**-1.1**
	baz=273						
TWC				S	**Sn**	**18 51 30.1**	**-1.4**
	baz=273						
IRIF	**Iriomote-Funau**	**0.91**	**108**	P	**Pn**	**18 51 18.9**	**-0.7**
IRIF				S	**Sn**	**18 51 33.7**	**+0.9**
ENA	**Nanau**	**0.97**	**258**	*e*P	**Pn**	**18 51 19.8**	**-0.4**
	baz=262						
ENA				*e*S	**Sn**	**18 51 34.0**	**0.0**
	baz=262						
NWF	**Wu-fen Shan**	**1.01**	**296**	*e*P	**Pn**	**18 51 19.9**	**-1.0**
	baz=299						
TWE	**Neicheng**	**1.02**	**276**	*e*P	**Pn**	**18 51 20.0**	**-0.9**
	baz=279						
TWE				*e*S	**Sn**	**18 51 35.2**	**+0.1**
	baz=279						
ENTT	**Nioudou**	**1.10**	**271**	*e*P	**Pn**	**18 51 22.0**	**0.0**
	baz=274						
ENTT				*e*S	**Sn**	**18 51 37.7**	**+0.7**
	baz=274						
JKRS	**Kuro-shima**	**1.19**	**109**	P	**Pn**	**18 51 22.8**	**-0.2**
PCYT	**Pengchaiyu**	**1.19**	**327**	*e*P	**Pn**	**18 51 23.9**	**+0.9**
	baz=328						
PCYT				*e*S	**Sn**	**18 51 41.1**	**+2.2**
	baz=328						
TWD	**Chiawan**	**1.21**	**243**	*e*P	**Pn**	**18 51 22.9**	**-0.4**
	baz=247						
TWD				*e*S	**Sn**	**18 51 38.5**	**-0.9**
	baz=247						
HWA	**Hwalien**	**1.25**	**239**	*e*P	**Pn**	**18 51 23.4**	**-0.4**
	baz=242						
JIJ	**Ishigaki jima**	**1.27**	**102**	P	**Pn**	**18 51 23.1**	**-0.9**
JIJ				S	**Sn**	**18 51 40.6**	**-0.1**
NNS	**Nan Shan**	**1.29**	**262**	*e*P	**Pn**	**18 51 24.8**	**+0.4**
	baz=265						
NNS				*e*S	**Sn**	**18 51 41.6**	**+0.1**
	baz=265						
NSK	**Sanguang**	**1.29**	**272**	*e*P	**Pn**	**18 51 23.8**	**-0.6**
	baz=275						
NSK				*e*S	**Sn**	**18 51 40.9**	**-0.5**
	baz=275						
JISG	**Ishigakijimahi**	**1.39**	**91**	P	**Pn**	**18 51 24.1**	**-1.5**
JISG				*e*S	**Sn**	**18 51 43.4**	**-0.1**
ESL	**Shilin**	**1.47**	**237**	*e*P	**Pn**	**18 51 26.5**	**-0.2**
	baz=239						
ESL				*e*S	**Sn**	**18 51 43.5**	**-1.9**
	baz=239						
TWT	**Tachien**	**1.51**	**256**	*e*P	**Pn**	**18 51 28.3**	**+1.0**
	baz=258						
TWT				*e*S	**Sn**	**18 51 46.2**	**-0.3**
	baz=258						
NSTT	**Nanjuang**	**1.62**	**271**	*e*P	**Pn**	**18 51 28.1**	**-0.4**
	baz=272						
NSTT				*e*S	**Sn**	**18 51 48.2**	**-0.7**
	baz=272						
EHY	**Hungye**	**1.74**	**230**	*e*P	**Pn**	**18 51 29.7**	**-0.5**
	baz=232						
EHY				*e*S	**Sn**	**18 51 50.1**	**-1.6**
	baz=232						
JTJ	**Tarama**	**1.75**	**89**	P	**Pn**	**18 51 29.7**	**-0.6**
JTJ				S	**Sn**	**18 51 52.0**	**+0.1**
TWF1	**Yuli**	**1.86**	**227**	*e*P	**Pn**	**18 51 30.7**	**-1.1**
	baz=229						
TWF1				*e*S	**Sn**	**18 51 52.5**	**-2.0**
	baz=229						
SMLT	**Sun Moon Lake**	**1.87**	**247**	*e*P	**Pn**	**18 51 32.3**	**+0.3**
	baz=249						
SMLT				*e*S	**Sn**	**18 51 56.8**	**+1.9**
	baz=249						
TYC	**Yuchr**	**1.90**	**248**	*e*P	**Pn**	**18 51 32.5**	**+0.2**
	baz=250						
TYC				*e*S	**Sn**	**18 51 56.4**	**+1.0**
	baz=250						
CHKT	**Chengkung**	**2.00**	**221**	*e*P	**Pn**	**18 51 34.1**	**+0.5**
	baz=222						
ALS	**Alishan**	**2.12**	**239**	*e*P	**Pn**	**18 51 36.5**	**+0.9**
	baz=240						
ALS				*e*S	**Sn**	**18 52 02.4**	**+1.2**
	baz=240						
ELDTW	**Lidau**	**2.16**	**229**	*e*P	**Pn**	**18 51 35.2**	**-0.7**
	baz=230						
ELDTW				*e*S	**Sn**	**18 51 59.8**	**-2.0**
	baz=230						
CHN5	**Tsauling**	**2.18**	**242**	*e*P	**Pn**	**18 51 36.8**	**+0.7**
	baz=244						
CHN5				*e*S	**Sn**	**18 52 03.6**	**+1.3**
	baz=244						
STYT	**Tauyuan**	**2.36**	**232**	*e*P	**Pn**	**18 51 38.9**	**+0.4**
	baz=233						
STYT				*e*S	**Sn**	**18 52 07.0**	**+0.4**
	baz=233						
CHN4	**Tsaushan**	**2.37**	**238**	*e*P	**Pn**	**18 51 39.5**	**+0.9**
	baz=239						
CHN4				*e*S	**Sn**	**18 52 08.3**	**+1.6**
	baz=239						
WTP	**Ta-pu**	**2.41**	**236**	*e*P	**Pn**	**18 51 40.5**	**+1.2**
	baz=237						
WTP				*e*S	**Sn**	**18 52 08.9**	**+1.1**
	baz=237						
CHN1	**Nanshi**	**2.51**	**236**	*e*P	**Pn**	**18 51 41.7**	**+1.1**
	baz=237						
CHN1				*e*S	**Sn**	**18 52 11.1**	**+0.9**
	baz=237						

KRSC 08 18:53:05.0±0.8, 60°.72N×167°.24E, h24km±4km, ML3.5, Eastern Siberia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TILK	**Tilichiki**	**0.60**	**244**	*e*P	Pb	18 53 16.7	-0.2
TILK				*e*S	Sn	18 53 26.3	-0.7
KMSK	**Kamenskaya**	**1.83**	**345**	*e*P	Pb	18 53 37.0	-0.7
KMSK				*e*S	Sb	18 53 58.9	-1.2
OSSR	**Ossora**	**2.56**	**237**	*e*P	Pn	18 53 47.4	+2.4
OSSR				S	Sb	18 54 18.3	-2.9

IDC 08 18:55:12.1±1.3, 2°.79S×139°.39E, h0km, mb3.2/3, mb1 3.6/4, mb1mx3.3/44, mbtmp3.4/4, ML3.7/1, Error ellipse: s-maj=24.1km s-min=18.5km az=141.0, Near north coast of Irian Jaya

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JAY	**Jayapura**	**1.35**	**78**	Pn	Pb	18 55 38.4	+0.1
	1.1nm,0.3s,baz=263,slow=23,SNR=26						
JAY				Sn	Sb	18 55 56.4	+0.4
	2.6nm,0.3s,baz=268,slow=23,SNR=14						
WRA	**Warramunga Arr**	**17.75**	**196**	P	Pn	18 59 19.9	-0.9
	0.3nm,0.3s,baz=16,slow=13,SNR=15						
FITZ	**Fitzroy Crossi**	**20.33**	**221**	P	P	18 59 48.8	-1.2
	1.2nm,0.7s,baz=48,slow=15,SNR=4.7						
ASAR	**Alice Springs**	**21.42**	**194**	P	P	19 00 02.4	+0.5
	0.5nm,0.4s,baz=23,slow=10,SNR=11						
MKAR	**Makanchi Array**	**70.26**	**322**	P	P	19 06 27.9	+0.5
	0.1nm,0.4s,baz=106,slow=7.7,SNR=2.8						

IDC 08 19:00:13.9±27.0, 18°.72S×178°.37W, h650km±244km, mb2.4/2, mb1 2.7/2, mb1mx2.4/48, mbtmp3.5/2, Error ellipse: s-maj=307.8km s-min=77.6km az=124.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**44.53**	**260**	P	P	19 07 31.1	+0.2
	0.3nm,0.3s,baz=96,slow=7.7,SNR=11						
WRA				PcP	PcP	19 08 58.8	-0.5
	0.2nm,0.7s,baz=92,slow=3.4,SNR=3.7						
ASAR	**Alice Springs**	**44.62**	**255**	P	P	19 07 31.5	0.0
	0.3nm,0.4s,baz=86,slow=8.2,SNR=13						
ASAR				PcP	PcP	19 08 59.4	-0.2
	0.2nm,0.6s,baz=108,slow=4.0,SNR=4.7						
GERES	**GERESS Array B**	**148.40**	**345**	PKPbc	PKPbc	19 18 48.8	-0.3
	0.3nm,0.6s,baz=48,slow=3.1,SNR=3.3						

*IDC **08** 19:02:08.2±1.4, 17°.55N×120°.94E, h0km, mb3.3/4, mb1 3.4/4, mb1mx3.2/50, mbtmp3.3/4, MS2.9/1, Ms1 2.9/1, ms1mx2.2/23, Error ellipse: s-maj=155.8km s-min=21.7km az=67.0*
*MAN **08** 19:02:10, 17°.68N×120°.50E, h3km, mb4.3, ML3.2, MS3.0*
*ISCJB **08** 19:02:11.3±0.7, 17°.68N±0°.04×120°.51E±0°.05, h15km±8km, mb3.2/4, MS2.7/1, Error ellipse: s-maj=8.3km s-min=6.2km az=3.3*
ISC 08 19:02:10.7±1.1, 17°.62N±0°.04×120°.52E±0°.04, h17km±8km, n15, σ1§34/19, mb3.1/4, 2C, Luzon

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ABRA	**Dolores**	**0.19**	**82**	*e*P	**Pg**	**19 02 15.5**	**+0.1**
ABRA				*e*S	**Sb**	**19 02 19.7**	**+0.5**
SIPP	**Brgy, Tapao**	**0.30**	**350**	⇑*i*P	**Pg**	**19 02 16.3**	**-0.9**
SIPP				*e*S	**Sb**	**19 02 22.0**	**-0.4**
APYP	**Conner**	**0.73**	**71**	*e*P	**Pb**	**19 02 23.9**	**-1.1**
APYP				*e*S	**Sb**	**19 02 34.6**	**-0.2**
BCPH	**Baguio City Da**	**1.24**	**177**	⇑*i*P	**Pg**	**19 02 35.1**	**+0.4**
BCPH				*i* S	**Sg**	**19 02 52.6**	**+1.7**
CVP	**Callao Caves**	**1.25**	**86**	*e*P	**Pn**	**19 02 33.3**	**-0.1**
BOLP	**Bolinao**	**1.36**	**205**	*e*P	**Pb**	**19 02 35.1**	**-0.7**
BOLP				*e*S	**Sn**	**19 02 51.0**	**-1.7**
CAUP	**Cauayan**	**1.42**	**118**	*e*P	**Pg**	**19 02 38.2**	**0.0**
SGCP	**Mt. Cagua**	**1.58**	**67**	*e*P	**Pb**	**19 02 38.6**	**-0.9**
SCZP	**Santa Cruz**	**1.93**	**198**	*e*P	**Pg**	**19 02 47.3**	**-0.5**
BALP	**Baler**	**2.13**	**151**	*e*P	**Pb**	**19 02 47.6**	**-1.3**
KAPI	**Kappang**	**22.51**	**182**	LR	LR	19 18 04.9	
	comp=Z,28nm,19.0s,baz=130,slow=43						
SONM	**Songino Array**	**32.28**	**342**	P	**P**	**19 08 40.7**	**+2.0**
	0.2nm,0.5s,baz=152,slow=9.7,SNR=2.5						
WRA	**Warramunga Arr**	**39.72**	**159**	P	**P**	**19 09 40.6**	**-1.9**
	0.2nm,0.7s,baz=343,slow=8.3,SNR=2.6						
MKAR	**Makanchi Array**	**42.83**	**321**	P	**P**	**19 10 10.1**	**+2.3**
	0.8nm,0.8s,baz=111,slow=9.9,SNR=6.8						
ASAR	**Alice Springs**	**43.07**	**162**	P	**P**	**19 10 08.5**	**-1.5**
	0.1nm,0.4s,baz=338,slow=7.3,SNR=9.2						

*ISCJB **08** 19:04:23.9±1.2, 34°.70N±0°.06×141°.5E±0°.1, h35km, mb3.6/3, Error ellipse: s-maj=13.4km s-min=7.6km az=159.8*
*JMA **08** 19:04:24.6±0.4, 34°.71N×141°.39E, h33km, M2.7*
*IDC **08** 19:04:28.7±1.1, 33°.75N×138°.06E, h0km, mb3.5/3, mb1 3.7/3, mb1mx3.2/49, mbtmp3.5/3, ML2.6/1, Error ellipse: s-maj=30.8km s-min=20.4km az=71.0*
ISC 08 19:04:24.2±1.5, 34°.73N±0°.06×141°.5E±0°.1, h35km, n11, σ1§70/13, mb3.7/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BSO1	**Boso 1**	**0.41**	**260**	P	**Pn**	**19 04 32.7**	**-0.3**
BSO3	**Boso 3**	**0.79**	**276**	P	**Pn**	**19 04 38.8**	**+0.3**
BSO4	**Boso 4**	**0.96**	**286**	P	**Pn**	**19 04 41.4**	**+0.3**
BSO4				S	**Sn**	**19 04 52.2**	**-1.3**
CHOJ	**Chosi**	**1.09**	**333**	P	**Pn**	**19 04 43.8**	**+0.8**
JCN	**Nagara**	**1.25**	**304**	P	**Pn**	**19 04 46.8**	**+1.8**
JHJ	**Hachijo jima 2**	**2.13**	**222**	Pn	**Pn**	**19 04 58.1**	**+1.0**
	16nm,0.3s,baz=325,slow=17,SNR=14						
JHJ				Sn	**Sn**	**19 05 24.1**	**+1.8**
	22nm,0.3s,baz=175,slow=23,SNR=6.1						
MJAR	**Matsushiro Arr**	**3.21**	**305**	Pn	Pn	19 05 14.5	+2.4
	1.0nm,0.3s,baz=177,slow=2.4,SNR=11						
MJAR				Sn	**Sn**	**19 05 49.7**	**+0.5**
	0.7nm,0.3s,baz=144,slow=13,SNR=5.5						
MAT	**Matsushiro**	**3.21**	**305**	P	Pn	19 05 15.1	+3.0
MAT				S	**Sn**	**19 05 52.2**	**+3.0**
WRA	**Warramunga Arr**	**54.79**	**188**	P	**P**	**19 13 51.0**	**+0.4**
	0.6nm,0.7s,baz=2.0,slow=7.6,SNR=17						
ASAR	**Alice Springs**	**58.51**	**188**	P	**P**	**19 14 17.8**	**+0.8**
	0.3nm,0.8s,baz=1.3,slow=5.7,SNR=6.0						
GEYT	**Alibeck**	**65.00**	**300**	P	**P**	**19 14 57.7**	**-3.0**
	0.3nm,0.4s,baz=86,slow=6.2,SNR=2.5						

*ISCJB **08** 19:07:06.8±0.8, 36°.40N±0°.06×71°.5E±0°.1, h100km, Error ellipse: s-maj=13.5km s-min=5.9km az=149.3*
*NNC **08** 19:07:15.3±1.2, 37°.02N×71°.22E, h160km±14km, mb2.8, mpv3.8, Error ellipse: s-maj=11.3km s-min=5.2km az=158.0*
ISC 08 19:07:07.6±1.4, 36°.45N±0°.09×71°.45E±0°.09, h100km, n12, σ2§46/17, 5C-1D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZET	**Dzherino**	**3.14**	**319**	⇑P	**Pn**	**19 07 57.7**	**+2.5**
	42nm,0.4s						
DZET				S	**Sn**	**19 08 32.1**	**+0.1**
	130nm,0.4s						
SFK	**Sufi-Kurgan**	**3.91**	**24**	⇑P	**Pn**	**19 08 09.7**	**+4.0**
	12nm,0.6s						
SFK				⇑S	**Sn**	**19 08 52.1**	**+1.4**
	10nm,0.3s						
MNAS	**Manas**	**6.08**	**7**	⇑P	**Pn**	**19 08 36.6**	**+1.5**
	3.0nm,0.5s						
MNAS				⇓S	**Sn**	**19 09 40.3**	**-3.0**
	10nm,0.5s						
AAK	**Ala-Archa**	**6.61**	**20**	P	**Pn**	**19 08 44.2**	**+1.9**
	1.7nm,0.4s						
AAK				S	**Sn**	**19 09 54.3**	**-1.9**
	6.2nm,0.6s						
KK31	**Karatay Array**	**6.68**	**354**	P	**Pn**	**19 08 44.6**	**+1.5**
	10nm,0.5s,baz=178,slow=12,SNR=174						
KK31				⇑S	**Sn**	**19 09 52.5**	**-5.2**
	3.9nm,0.5s,baz=174,slow=19,SNR=7.7						
PYUN	**Piuthan**	**12.83**	**127**	*e*P	**Pn**	**19 10 04.0**	**-2.5**
KOLN	**Koldanda**	**13.45**	**127**	*e*P	**Pn**	**19 10 11.9**	**-2.7**
	2.4nm,0.3s						
GKN	**Gorkha**	**13.98**	**123**	*e*P	**Pn**	**19 10 20.9**	**-0.5**
	9.0nm,0.7s						
DMN	**Daman**	**14.55**	**123**	*e*P	**Pn**	**19 10 28.7**	**-0.1**
KKN	**Kakani**	**14.55**	**123**	*e*P	**Pn**	**19 10 28.5**	**-0.3**
PKIN

Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.61**	**281**	P	**Pn**	**19 23 06.7**	**-0.6**
JIO				S	**Sn**	**19 23 14.4**	**-1.7**
OFUJ	**Ofunato**	**0.81**	**335**	P	**Pn**	**19 23 09.5**	**-0.6**
OFUJ				S	**Sn**	**19 23 19.5**	**-1.5**
JMK	**Ichinoseki**	**0.92**	**311**	P	**Pn**	**19 23 10.9**	**-0.7**
JMK				S	**Sn**	**19 23 21.9**	**-1.8**
JOU	**Okura**	**1.14**	**271**	P	**Pn**	**19 23 14.0**	**-0.5**
JOU				S	**Sn**	**19 23 27.2**	**-1.7**
JMM	**Marumori**	**1.14**	**246**	P	**Pn**	**19 23 13.9**	**-0.7**
JOM	**Ohasama**	**1.29**	**331**	P	**Pn**	**19 23 16.3**	**-0.4**
JOM				S	**Sn**	**19 23 32.4**	**-0.4**
JFK	**Kawauchi**	**1.38**	**225**	P	**Pn**	**19 23 17.6**	**-0.3**
JFK				S	**Sn**	**19 23 34.2**	**-0.8**
JYK	**Kaneyama**	**1.48**	**293**	P	**Pn**	**19 23 18.7**	**-0.6**
JRG	**Rokugo**	**1.56**	**313**	P	**Pn**	**19 23 19.8**	**-0.5**
MJAR	**Matsushiro Arr**	**3.59**	**241**	P	**Pn**	**19 23 49.5**	**+1.3**
	7.3nm,0.3s,baz=48,slow=10,SNR=59						
MAT	**Matsushiro**	**3.59**	**241**	P	**Pn**	**19 23 49.6**	**+1.4**
MAT				S	**Sn**	**19 24 31.1**	**+1.8**
JHJ	**Hachijo jima 2**	**5.55**	**201**	P	**Pn**	**19 24 15.2**	**+0.2**
	14nm,0.3s,baz=331,slow=22,SNR=16						
JHJ				S	**Sn**	**19 25 15.2**	**-2.3**
	24nm,0.3s,baz=107,slow=19,SNR=4.9						
ASAJ	**Asahikawa**	**5.78**	**3**	P	**Pn**	**19 24 19.4**	**+1.2**
	2.1nm,0.3s,baz=200,slow=17,SNR=16						
USRK	**Ussuriysk Ar.**	**9.60**	**311**	P	**Pn**	**19 25 13.5**	**+3.0**
	0.4nm,0.3s,baz=114,slow=14,SNR=5.8						
JNU	**Nakatsue**	**10.51**	**244**	P	**Pn**	**19 25 24.7**	**+1.6**
	0.4nm,0.3s,baz=90,slow=6.6,SNR=6.1						
KSRS	**Korea Array**	**11.25**	**270**	P	**Pn**	**19 25 36.4**	**+3.3**
	0.2nm,0.3s,baz=82,slow=13,SNR=4.8						
SEY	**Seymchan**	**25.40**	**11**	P	**P**	**19 28 19.5**	**+1.4**
	0.3nm,0.2s,baz=200,slow=21,SNR=3.6						
SONM	**Songino Array**	**27.54**	**302**	P	**P**	**19 28 38.2**	**+0.5**
	0.2nm,0.5s,baz=109,slow=8.9,SNR=2.2						
H11N2	**WAKE ISLAND Hy**	**28.38**	**124**	T	T	19 59 02.2	
	baz=316,slow=75,SNR=124						
H11N1	**WAKE ISLAND Hy**	**28.39**	**124**	T	T	19 59 08.8	
	baz=316,slow=75,SNR=175						
H11N3	**WAKE ISLAND Hy**	**28.40**	**124**	T	T	19 59 09.7	
	baz=316,slow=75,SNR=86						
H11S1	**WAKE ISLAND Hy**	**29.14**	**126**	T	T	20 00 00.1	
	baz=318,slow=76,SNR=150						
H11S3	**WAKE ISLAND Hy**	**29.14**	**126**	T	T	19 59 60.0	
	baz=318,slow=76,SNR=118						
H11S2	**WAKE ISLAND Hy**	**29.16**	**126**	T	T	20 00 08.5	
	baz=318,slow=76,SNR=78						
ZALV	**Zalesovo Beam**	**41.45**	**311**	P	**P**	**19 30 36.0**	**-1.3**
	0.4nm,0.3s,baz=91,slow=7.4,SNR=2.8						
MKAR	**Makanchi Array**	**43.90**	**301**	P	**P**	**19 30 55.7**	**-1.6**
	0.3nm,0.5s,baz=93,slow=12,SNR=6.0						
ILAR	**Eielson Array**	**48.09**	**33**	P	**P**	**19 31 30.3**	**+0.3**
	0.3nm,0.7s,baz=263,slow=6.2,SNR=3.6						
WRA	**Warramunga Arr**	**58.44**	**189**	P	**P**	**19 32 45.7**	**-0.7**
	1.4nm,0.4s,baz=6.7,slow=7.2,SNR=39						
ASAR	**Alice Springs**	**62.16**	**189**	P	**P**	**19 33 11.8**	**0.0**
	1.0nm,0.7s,baz=6.6,slow=5.0,SNR=13						
YKA	**Yellowknife Ar**	**62.40**	**31**	P	**P**	**19 33 12.7**	**-0.3**
	0.2nm,0.7s,baz=300,slow=6.5,SNR=3.9						
FINES	**FINESS Array B**	**67.91**	**332**	P	**P**	**19 33 47.6**	**-1.2**
	1.2nm,1.0s,baz=46,slow=9.9,SNR=2.9						
PDAR	**Pinedale Array**	**76.36**	**46**	P	**P**	**19 34 40.7**	**+0.8**
	0.4nm,0.5s,baz=277,slow=0.7,SNR=3.7						

ISCJB ***08*** *19:29:49.2±0.9, 37°.05N±0°.04×20°.71E±0°.04, h1km±6km, Error ellipse: s-maj=6.9km s-min=4.1km az=39.2*
CSEM ***08*** *19:29:50.0±0.3, 37°.08N×20°.72E, h2km, ML3.5, Error ellipse: s-maj=7.3km s-min=3.9km az=31.0*
ATH ***08*** *19:29:50.7, 37°.11N×20°.78E, h18km±1km, ML3.5/8, Error ellipse: s-maj=2.1km s-min=0.8km az=54.0*
THE ***08*** *19:29:51.6, 37°.11N×20°.81E, h1km±3km, ML3.7/9, Error ellipse: s-maj=3.3km s-min=1.1km az=223.0*
ISC 08 19:29:49.8±1.5, 37°.10N±0°.04×20.76E±0°.04, h4km±11km, n123, σ0°98/159, Ionian Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZKS	**Zakynthos**	**0.60**	**2**	P	**Pb**	**19 30 02.9**	**+0.1**
ZKS				S	**Sb**	**19 30 11.3**	**-0.3**
ZKS	**Zakynthos**	**0.60**	**2**	P	**Pb**	**19 30 02.9**	**+0.1**
ZKS				S	**Sb**	**19 30 10.6**	**-1.0**
ZKS	**Zakynthos**	**0.60**	**2**	P	**Pb**	**19 30 03.6**	**+0.8**
ZKS				S	**Sb**	**19 30 10.6**	**-1.0**
ZKS				AML	AML	19 30 19.3	
	comp=N,20468μm,0.6s						
ZKS				AML	AML	19 30 19.6	
	comp=Z,35352μm,0.4s						
PYL	**PYLOS**	**0.81**	**104**	P	**Pb**	**19 30 06.4**	**-0.1**
PYL				S	**Sb**	**19 30 17.9**	**+0.1**
PYL	**PYLOS**	**0.81**	**104**	P	**Pb**	**19 30 06.4**	**-0.1**
PYL				S	**Sb**	**19 30 17.9**	**+0.1**
PYL	**PYLOS**	**0.81**	**104**	P	**Pb**	**19 30 06.7**	**+0.2**
PYL				S	**Sb**	**19 30 18.7**	**+0.9**
PYL				AML	AML	19 30 21.8	
	comp=N,9130μm,0.6s						
PYL				AML	AML	19 30 23.4	
	comp=E,4476μm,0.5s						
AMT	**Artemida-Makis**	**0.87**	**60**	P	**Pb**	**19 30 07.5**	**0.0**
AMT	**Artemida-Makis**	**0.87**	**60**	P	**Pb**	**19 30 07.8**	**+0.3**
AMT				S	**Sb**	**19 30 18.5**	**-1.1**
AMT	**Artemida-Makis**	**0.87**	**60**	P	**Pb**	**19 30 07.8**	**+0.3**
AMT				S	**Sb**	**19 30 18.5**	**-1.1**
AMT				AML	AML	19 30 30.7	
	comp=Z,14417μm,0.8s						
AMT				AML	AML	19 30 31.7	
	comp=N,13794μm,0.7s						
ITM	**Ithomi**	**0.94**	**85**	P	**Pb**	**19 30 08.4**	**-0.2**
ITM				S	**Sb**	**19 30 21.5**	**+0.1**
ITM	**Ithomi**	**0.94**	**85**	P	**Pb**	**19 30 08.4**	**-0.2**
ITM				S	**Sb**	**19 30 20.5**	**-0.9**
ITM	**Ithomi**	**0.94**	**85**	P	**Pb**	**19 30 08.1**	**-0.5**
ITM				S	**Sb**	**19 30 20.5**	**-0.9**
ITM				AML	AML	19 30 25.8	
	comp=N,3116μm,0.5s						
ITM				AML	AML	19 30 33.0	
	comp=E,3229μm,0.8s						
KFL	**Anninata**	**1.01**	**1**	P	**Pg**	**19 30 09.5**	**+0.4**
KFL				S	**Sb**	**19 30 23.9**	**+0.5**
KFL	**Anninata**	**1.01**	**1**	P	**Pg**	**19 30 09.5**	**+0.4**
KFL				S	**Sb**	**19 30 23.9**	**+0.5**
KFL	**Anninata**	**1.01**	**1**	P	**Pg**	**19 30 08.9**	**-0.2**
KFL				S	**Sb**	**19 30 24.3**	**+0.8**
VLS	**Valsamata**	**1.08**	**353**	P	**Pg**	**19 30 10.8**	**+0.2**
VLS				S	**Sn**	**19 30 27.4**	**+0.2**
VLS	**Valsamata**	**1.08**	**353**	P	**Pb**	**19 30 11.2**	**+0.1**
VLS				S	**Sb**	**19 30 26.2**	**+0.6**
RLS	**Riolos of Patr**	**1.11**	**30**	P	**Pb**	**19 30 11.4**	**-0.1**
RLS				S	**Sb**	**19 30 26.8**	**+0.4**
RLS	**Riolos of Patr**	**1.11**	**30**	P	**Pb**	**19 30 11.6**	**+0.1**
RLS				S	**Sb**	**19 30 26.2**	**-0.2**
RLS	**Riolos of Patr**	**1.11**	**30**	S	**Sb**	**19 30 26.2**	**-0.2**
RLS				AML	AML	19 30 29.8	
	comp=E,2964μm,0.7s						
RLS				AML	AML	19 30 32.5	
	comp=N,2063μm,0.6s						
DRO	**Drossia**	**1.14**	**41**	P	**Pg**	**19 30 11.4**	**-0.2**
DRO				S	**Sn**	**19 30 28.7**	**+0.1**
DRO	**Drossia**	**1.14**	**41**	P	**Pg**	**19 30 11.4**	**-0.2**
DRO				S	**Sn**	**19 30 28.7**	**+0.1**
DRO	**Drossia**	**1.14**	**41**	P	**Pg**	**19 30 11.4**	**-0.2**
AXS	**Araxos**	**1.20**	**24**	P	**Pb**	**19 30 13.3**	**+0.2**
AXS				S	**Sn**	**19 30 32.2**	**+2.1**
AXS	**Araxos**	**1.20**	**24**	P	**Pb**	**19 30 13.3**	**+0.2**
AXS				S	**Sb**	**19 30 28.9**	**0.0**
AXS	**Araxos**	**1.20**	**24**	P	**Pb**	**19 30 13.1**	**0.0**
AXS				S	**Sb**	**19 30 28.9**	**0.0**
TRIP	**Tripoli**	**1.28**	**70**	P	**Pn**	**19 30 14.8**	**+0.3**
TRIP	**Tripoli**	**1.28**	**70**	P	**Pn**	**19 30 14.8**	**+0.3**
VLX	**Vlachokerasia**	**1.32**	**78**	P	**Pb**	**19 30 15.1**	**-0.1**
VLX				S	**Sn**	**19 30 34.9**	**+1.6**
VLX	**Vlachokerasia**	**1.32**	**78**	P	**Pb**	**19 30 15.1**	**-0.1**
VLX				S	**Sn**	**19 30 34.9**	**+1.6**
VLX	**Vlachokerasia**	**1.32**	**78**	P	**Pb**	**19 30 15.1**	**-0.1**
KLV	**Kalavryta, Ach**	**1.45**	**49**	P	**Pn**	**19 30 16.9**	**0.0**
KLV	**Kalavryta, Ach**	**1.45**	**49**	P	**Pn**	**19 30 16.9**	**0.0**
KLV	**Kalavryta, Ach**	**1.45**	**49**	P	**Pn**	**19 30 16.9**	**0.0**
LAKA	**Lakka**	**1.50**	**40**	P	**Pg**	**19 30 18.0**	**-0.5**
LAKA	**Lakka**	**1.50**	**40**	P	**Pg**	**19 30 18.0**	**-0.5**
LAKA	**Lakka**	**1.50**	**40**	P	**Pn**	**19 30 17.7**	**+0.2**
PDO	**Prodromos**	**1.53**	**13**	P	**Pn**	**19 30 18.5**	**+0.6**
PDO				S	**Sn**	**19 30 39.2**	**+0.9**
PDO	**Prodromos**	**1.53**	**13**	P	**Pn**	**19 30 18.5**	**+0.6**
PDO				S	**Sn**	**19 30 39.2**	**+0.9**
PDO	**Prodromos**	**1.53**	**13**	P	**Pn**	**19 30 18.4**	**+0.4**
PDO				S	**Sn**	**19 30 39.1**	**+0.8**
PDO				AML	AML	19 30 45.5	
	comp=N,3481μm,0.4s						
PDO				AML	AML	19 30 50.6	
	comp=E,2677μm,0.5s						
EFP	**Efpalio**	**1.61**	**34**	P	**Pg**	**19 30 21.0**	**+0.4**
EFP	**Efpalio**	**1.61**	**34**	P	**Pg**	**19 30 21.0**	**+0.4**
PVO	**Paravola**	**1.63**	**22**	P	**Pg**	**19 30 20.9**	**-0.2**
PVO	**Paravola**	**1.63**	**22**	P	**Pg**	**19 30 20.9**	**-0.2**
LKD2	**Lefkada island**	**1.69**	**357**	P	**Pb**	**19 30 21.6**	**+0.1**
LKD2				S	**Sg**	**19 30 45.5**	**+1.5**
LKD2	**Lefkada island**	**1.69**	**357**	P	**Pb**	**19 30 21.5**	**+0.1**
LKD2				S	**Sg**	**19 30 43.8**	**-0.2**
LKD2	**Lefkada island**	**1.69**	**357**	P	**Pb**	**19 30 21.5**	**+0.1**
LKD2				S	**Sg**	**19 30 43.9**	**-0.2**
LKD2				AML	AML	19 30 48.1	
	comp=E,2856μm,0.6s						
LKD2				AML	AML	19 30 51.2	
	comp=N,1398μm,0.4s						
KALE	**Kalithea**	**1.69**	**40**	P	**Pb**	**19 30 21.5**	**0.0**
KALE	**Kalithea**	**1.69**	**40**	P	**Pb**	**19 30 21.5**	**0.0**
KALE	**Kalithea**	**1.69**	**40**	P	**Pb**	**19 30 21.6**	**0.0**
THAL	**Thalero**	**1.78**	**58**	P	**Pb**	**19 30 22.9**	**-0.1**
THAL	**Thalero**	**1.78**	**58**	P	**Pb**	**19 30 22.9**	**-0.1**
THAL	**Thalero**	**1.78**	**58**	P	**Pb**	**19 30 23.1**	**+0.1**
VLI	**Veliai**	**1.79**	**102**	P	**Pb**	**19 30 23.3**	**+0.2**
	comp=N,425nm,1.3s						
VLI				S	**Sn**	**19 30 45.2**	**+0.6**
VLI	**Veliai**	**1.79**	**102**	P	**Pg**	**19 30 23.6**	**-0.5**
VLI				S	**Sn**	**19 30 45.2**	**+0.6**
VLI	**Veliai**	**1.79**	**102**	P	**Pg**	**19 30 23.6**	**-0.5**
VLI				S	**Sb**	**19 30 45.8**	**-0.1**
VLI				AML	AML	19 31 02.6	
	comp=E,1391μm,0.8s						
VLI				AML	AML	19 31 05.5	
	comp=N,1012μm,1.1s						
DSF	**Desfina**	**1.92**	**46**	P	**Pb**	**19 30 24.9**	**-0.5**
DSF	**Desfina**	**1.92**	**46**	P	**Pb**	**19 30 24.9**	**-0.5**
DSF	**Desfina**	**1.92**	**46**	P	**Pb**	**19 30 25.1**	**-0.2**
KRND	**KRANIDI**	**1.93**	**81**	P	**Pn**	**19 30 24.0**	**+0.6**
KRND	**KRANIDI**	**1.93**	**81**	P	**Pn**	**19 30 23.6**	**+0.2**
KRND	**KRANIDI**	**1.93**	**81**	P	**Pn**	**19 30 23.6**	**+0.2**
LTK	**Loutraki**	**1.98**	**62**	P	**Pn**	**19 30 24.9**	**+0.8**
LTK	**Loutraki**	**1.98**	**62**	P	**Pn**	**19 30 24.2**	**+0.1**
LTK	**Loutraki**	**1.98**	**62**	P	**Pn**	**19 30 24.2**	**+0.1**
EVR	**Evrytania**	**2.00**	**24**	P	**Pg**	**19 30 27.4**	**-0.6**
EVR	**Evrytania**	**2.00**	**24**	P	**Pb**	**19 30 26.9**	**+0.2**
EVR				S	**Sb**	**19 30 52.6**	**+0.7**
EVR	**Evrytania**	**2.00**	**24**	P	**Pb**	**19 30 26.9**	**+0.2**
DID	**Didima**	**2.02**	**78**	P	**Pb**	**19 30 25.1**	**+0.5**
DID	**Didima**	**2.02**	**78**	P	**Pn**	**19 30 24.8**	**+0.1**
DID	**Didima**	**2.02**	**78**	P	**Pn**	**19 30 24.8**	**+0.1**
DSL	**Palaion Diasel**	**2.05**	**7**	P	**Pb**	**19 30 27.3**	**-0.3**
DSL	**Palaion Diasel**	**2.05**	**7**	P	**Pb**	**19 30 26.7**	**-0.9**
DSL	**Palaion Diasel**	**2.05**	**7**	P	**Pb**	**19 30 26.7**	**-0.9**
PROD	**Prodromos**	**2.06**	**55**	P	**Pn**	**19 30 25.7**	**+0.5**
PROD	**Prodromos**	**2.06**	**55**	P	**Pn**	**19 30 25.7**	**+0.5**
AGG	**Agios Georgios**	**2.29**	**32**	P	**Pb**	**19 30 30.5**	**-1.1**
AGG	**Agios Georgios**	**2.29**	**32**	P	**Pb**	**19 30 30.5**	**-1.1**
VILL	**Villia**	**2.29**	**62**	P	**Pn**	**19 30 28.8**	**+0.4**
LKR	**Lokris**	**2.35**	**48**	P	**Pn**	**19 30 30.7**	**+1.5**
LKR	**Lokris**	**2.35**	**48**	P	**Pn**	**19 30 30.5**	**+1.3**
LKR	**Lokris**	**2.35**	**48**	P	**Pn**	**19 30 30.6**	**+1.3**
IGT	**Igoumenitsa**	**2.45**	**352**	P	**Pn**	**19 30 31.6**	**+1.0**
IGT	**Igoumenitsa**	**2.45**	**352**	P	**Pn**	**19 30 31.2**	**+0.6**
IGT	**Igoumenitsa**	**2.45**	**352**	P	**Pn**	**19 30 31.2**	**+0.6**
VLY	**Voula,Athens**	**2.53**	**72**	P	**Pn**	**19 30 31.5**	**-0.1**
SMIA	**Simia**	**2.63**	**47**	P	**Pn**	**19 30 34.4**	**+1.3**
SMIA	**Simia**	**2.63**	**47**	P	**Pn**	**19 30 34.3**	**+1.3**
SMIA	**Simia**	**2.63**	**47**	P	**Pn**	**19 30 34.3**	**+1.3**
PTL	**Penteli**	**2.64**	**68**	P	**Pn**	**19 30 33.2**	**0.0**
THL	**Klokotos Trika**	**2.65**	**22**	P	**Pb**	**19 30 36.3**	**-1.5**
THL	**Klokotos Trika**	**2.65**	**22**	P	**Pb**	**19 30 36.3**	**-1.5**
KEK	**Kerkira**	**2.71**	**344**	P	**Pn**	**19 30 35.2**	**+1.0**
KPRO	**Kipourio**	**2.89**	**9**	P	**Pn**	**19 30 39.0**	**+2.3**
KPRO	**Kipourio**	**2.89**	**9**	P	**Pn**	**19 30 39.0**	**+2.3**
KPRO	**Kipourio**	**2.89**	**9**	P	**Pn**	**19 30 39.3**	**+2.7**
NEO	**Neokhori**	**2.94**	**41**	P	**Pn**	**19 30 37.9**	**+0.6**
NEO	**Neokhori**	**2.94**	**41**	P	**Pn**	**19 30 37.9**	**+0.6**
XOR	**Xorichti**	**2.96**	**40**	P	**Pn**	**19 30 38.5**	**+0.8**
XOR	**Xorichti**	**2.96**	**40**	P	**Pn**	**19 30 38.5**	**+0.8**
PENT	**Pentalofos**	**3.10**	**5**	P	**Pn**	**19 30 41.7**	**+2.0**
PENT	**Pentalofos**	**3.10**	**5**	P	**Pn**	**19 30 41.7**	**+2.0**
AOS	**Alonnisos**	**3.21**	**49**	P	**Pn**	**19 30 41.3**	**+0.3**
AOS	**Alonnisos**	**3.21**	**49**	P	**Pn**	**19 30 41.3**	**+0.3**
LIT	**Litokhoron**	**3.29**	**24**	P	**Pn**	**19 30 43.0**	**+0.9**
LIT	**Litokhoron**	**3.29**	**24**	P	**Pn**	**19 30 43.0**	**+0.9**
KZN	**Kozani**	**3.30**	**14**	P	**Pn**	**19 30 44.1**	**+1.8**
NEST	**Nestorio**	**3.32**	**4**	P	**Pn**	**19 30 44.7**	**+2.1**
NEST	**Nestorio**	**3.32**	**4**	P	**Pn**	**19 30 44.7**	**+2.1**
FNA	**Florina**	**3.71**	**7**	P	**Pn**	**19 30 49.0**	**+1.1**
FNA	**Florina**	**3.71**	**7**	P	**Pn**	**19 30 49.0**	**+1.1**
TIP	**Timpagrande**	**3.77**	**305**	P	**Pn**	**19 30 50.6**	**+1.8**
TIP	**Timpagrande**	**3.77**	**305**	P	**Pn**	**19 30 50.6**	**+1.8**
TAR1	**Taranto**	**4.37**	**323**	*e*Pn	**Pn**	**19 30 57.1**	**+0.3**
BARS	**Barje**	**5.77**	**8**	*e*Pn	**Pn**	**19 31 16.0**	**-0.1**
SJES	**Sjenica**	**6.18**	**355**	*e*Pn	**Pn**	**19 31 22.2**	**+0.3**
STON	**Ston**	**6.22**	**339**	*e*Pn	**Pn**	**19 31 21.1**	**-1.2**
STON				Sn	**Sn**	**19 32 27.8**	**-6.1**
STON	**Ston**	**6.22**	**339**	*e*Pn	**Pn**	**19 31 21.1**	**-1.2**
IVAS	**Ivanjica**	**6.49**	**356**	*e*Pn	**Pn**	**19 31 26.0**	**0.0**
GRUS	**Gruza**	**6.78**	**360**	*e*Pn	**Pn**	**19 31 29.7**	**-0.3**
BBLS	**Lazići**	**6.84**	**352**	*e*Pn	**Pn**	**19 31 30.1**	**-0.8**
DIVS	**Divibare**	**7.01**	**355**	*e*Pn	**Pn**	**19 31 32.3**	**-1.0**
TEKS	**Tekeris**	**7.50**	**353**	*e*Pn	**Pn**	**19 31 38.7**	**-1.2**

NIED ***08*** *19:30:00.36°.20N×141°.40E, h20km, Mw4.0 Best double couple: M0=1.12000×10^15 NP1:φ0=226.00000°, δ17.00000°, λ109.00000°. NP2:φ0=27.00000°, δ74.00000°, λ84.00000°.*
ISCJB ***08*** *19:30:17.8±0.5, 36°.27N±0°.04×141°.48E±0°.06, h26km, mb3.8/21, MS3.0/3, Error ellipse: s-maj=7.8km s-min=5.0km az=29.0*
JMA ***08*** *19:30:19.2±0.2, 36°.24N×141°.40E, h56km±3km, M3.8*
IDC ***08*** *19:30:21.5±1.8, 36°.23N×141°.34E, h42km±17km, mb3.7/21, mb1 3.8/26, mb1mx3.7/49, mbtmp3.9/26, ML3.4/4, MS2.9/9, Ms1 2.9/9, ms1mx2.7/43, Error ellipse: s-maj=17.3km s-min=10.5km az=97.0*
ISC 08 19:30:19.6±0.6, 36°.26N±0°.05×141°.41E±0°.07, h26km, n49, σ1°05/44, mb4.0/21, MS3.0/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.71**	**219**	P	**Pb**	**19 30 33.3**	**-0.1**
CHOJ				S	**Sn**	**19 30 43.9**	**-0.2**
JHO	**Hitachi**	**0.76**	**297**	P	**Pb**	**19 30 34.0**	**-0.3**
ONAJ	**Iwakimizuishiy**	**0.97**	**330**	P	**Pn**	**19 30 36.8**	**-0.8**
JYT	**Yasato**	**0.98**	**268**	P	**Pn**	**19 30 37.1**	**-0.6**
JFK	**Kawauchi**	**1.18**	**339**	P	**Pn**	**19 30 39.8**	**-0.7**
JMM	**Marumori**	**1.68**	**343**	P	**Pn**	**19 30 47.3**	**0.0**
MJAR	**Matsushiro Arr**	**2.60**	**277**	P	**Pn**	**19 31 00.1**	**+0.2**
	26nm,0.3s,baz=113,slow=9.1,SNR=270						
MJAR				LR	LR	19 32 18.1	
	comp=Z,233nm,18.4s,baz=125,slow=46						
MAT	**Matsushiro**	**2.60**	**277**	P	**Pn**	**19 31 01.0**	**+1.0**
MAT				S	**Sn**	**19 31 29.6**	**-1.1**
JHJ	**Hachijo jima 2**	**3.41**	**204**	P	**Pn**	**19 31 11.9**	**+0.8**
	24nm,0.3s,baz=329,slow=22,SNR=28						
JHJ				S	**Sn**	**19 31 49.8**	**-0.9**
	31nm,0.3s,baz=70,slow=22,SNR=10						
JHJ				LR	LR	19 32 20.9	
	comp=Z,48nm,20.3s,baz=234,slow=36						
ASAJ	**Asahikawa**	**7.90**	**6**	P	**Pn**	**19 32 12.8**	**+0.1**
	0.9nm,0.3s,baz=259,slow=16,SNR=4.0						
ASAJ				LR	LR	19 35 51.0	
	comp=Z,69nm,19.9s,baz=195,slow=42						
JNU	**Nakatsue**	**9.22**	**253**	P	**Pn**	**19 32 32.5**	**+1.5**
	0.1nm,0.3s,baz=115,slow=6.8,SNR=2.3						
JNU				LR	LR	19 36 22.3	
	comp=Z,85nm,19.1s,baz=324,slow=39						
USRK	**Ussuriysk Ar.**	**10.70**	**321**	P	**Pn**	**19 32 51.5**	**+0.3**
	0.2nm,0.3s,baz=142,slow=14,SNR=5.9						
KSRS	**Korea Array**	**10.87**	**280**	P	**Pn**	**19 32 57.8**	**+4.3**
	0.2nm,0.3s,baz=92,slow=14,SNR=7.2						
KSRS				LR	LR	19 37 03.4	
	comp=Z,81nm,19.0s,baz=71,slow=37						
KLR	**Kul'dur**	**14.76**	**334**	LR	LR	19 39 11.2	
	comp=Z,51nm,21.0s,baz=114,slow=36						
YAK	**Yakutsk**	**26.82**	**348**	P	**P**	**19 35 57.4**	**-0.1**
	2.2nm,0.4s,baz=340,slow=4.6,SNR=7.2						
YAK				LR	LR	19 47 09.4	
	comp=Z,29nm,18.6s,baz=184,slow=38						
SEY	**Seymchan**	**27.55**	**11**	P	**P**	**19 36 06.3**	**+2.4**
	0.9nm,0.2s,baz=197,slow=17,SNR=3.1						
H11N2	**WAKE ISLAND Hy**	**27.76**	**120**	T	T	20 05 15.9	
	baz=314						
H11N1	**WAKE ISLAND Hy**	**27.77**	**120**	T	T	20 05 18.8	
	baz=314						
H11N3	**WAKE ISLAND Hy**	**27.78**	**120**	T	T	20 05 24.5	
	baz=314						
SONM	**Songino Array**	**28.22**	**305**	P	**P**	**19 36 10.2**	**-0.1**
	1.2nm,0.5s,baz=103,slow=8.9,SNR=6.6						
H11S1	**WAKE ISLAND Hy**	**28.45**	**122**	T	T	20 06 07.5	
	baz=314,slow=75,SNR=14						
H11S3	**WAKE ISLAND Hy**	**28.45**	**122**	T	T	20 06 00.5	
	baz=314,slow=75,SNR=12						
H11S2	**WAKE ISLAND Hy**	**28.47**	**122**	T	T	20 06 17.3	
	baz=314,slow=75,SNR=12						
TLY	**Talaya**	**30.84**	**312**	LR	LR	19 49 43.7	
	comp=Z,33nm,19.1s,baz=86,slow=38						
CMAR	**Chiang Mai Arr**	**41.30**	**256**	P	**P**	**19 38 02.7**	**-0.5**
	0.3nm,0.4s,baz=339,slow=33,SNR=3.0						
ZALV	**Zalesovo Beam**	**42.44**	**313**	P	**P**	**19 38 11.9**	**0.0**
	1.9nm,0.6s,baz=96,slow=7.0,SNR=10						
MKAR	**Makanchi Array**	**44.53**	**303**	P	**P**	**19 38 29.0**	**0.0**
	2.8nm,0.8s,baz=88,slow=8.6,SNR=21						
GUN	**Gumba**	**47.23**	**276**	*e*P	**P**	**19 38 51.6**	**+0.7**
PKIN	**Phulchoki**	**47.76**	**276**	*e*P	**P**	**19 38 55.0**	**0.0**
KKN	**Kakani**	**47.77**	**277**	*e*P	**P**	**19 38 55.4**	**+0.5**
	14nm,0.9s						
GKN	**Gorkha**	**48.19**	**277**	*e*P	**P**	**19 38 58.8**	**+0.6**
	23nm,0.9s						
PYUN	**Piuthan**	**49.47**	**278**	*e*P	**P**	**19 39 08.8**	**+0.8**
ILAR	**Eielson Array**	**50.15**	**32**	P	**P**	**19 39 12.5**	**+0.1**
	1.0nm,0.8s,baz=266,slow=6.7,SNR=10.0						
INK	**Inuvik**	**55.08**	**27**	P	**P**	**19 39 48.3**	**-0.5**
	1.6nm,0.9s,baz=226,slow=3.9,SNR=3.9						
WRA	**Warramunga Arr**	**56.30**	**188**	P	**P**	**19 39 56.9**	**-1.2**
	0.5nm,0.8s,baz=4.0,slow=7.2,SNR=9.8						
ASAR	**Alice Springs**	**60.02**	**188**	P	**P**	**19 40 24.9**	**+0.8**
	0.5nm,0.9s,baz=14,slow=12,SNR=3.5						
GEYT	**Alibeck**	**64.21**	**299**	P	**P**	**19 40 50.0**	**-2.3**
	0.8nm,0.6s,baz=46,slow=6.4,SNR=3.6						
YKA	**Yellowknife Ar**	**64.48**	**30**	P	**P**	**19 40 53.3**	**-0.2**
	0.3nm,0.9s,baz=290,slow=7.4,SNR=4.1						
ARCES	**ARCESS Array B**	**64.72**	**340**	P	**P**	**19 40 55.1**	**+0.1**
	3.9nm,0.8s,baz=31,slow=13,SNR=3.2						
ARCES				LR	LR	20 11 08.8	
	comp=Z,18nm,22.0s,baz=217,slow=38						
FINES	**FINESS Array B**	**69.50**	**332**	P	**P**	**19 41 25.2**	**-0.2**
	2.2nm,0.8s,baz=40,slow=10.0,SNR=7.5						

*ISCJB **08** 20:08:22.3±1.9, 37.°08N±0.°04×142.°54E±0.°06, h30km±15km, mb3.6/9, MS3.0/2, Error ellipse: s-maj=7.9km s-min=7.2km az=160.0*

*JMA **08** 20:08:22.3±0.2, 37.°19N×142.°44E, h14km, M4.2*

ISC 08 20:08:22.3±3.9, 37.°13N±0.°05×142.°40E±0.°07, h12km±24km, n32, σ1°53/31, mb3.7/9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.24**	**281**	P	**Pn**	**20 08 44.9**	**-0.6**
JFK				S	**Sn**	**20 09 02.4**	**+0.2**
ONAJ	**Iwakimizuishiy**	**1.28**	**269**	P	**Pn**	**20 08 46.5**	**+0.4**
ONAJ				*e*S	**Sb**	**20 09 03.6**	**+0.8**
JMM	**Marumori**	**1.47**	**300**	P	**Pn**	**20 08 48.5**	**-0.1**
JMM				S	**Sn**	**20 09 07.2**	**-0.6**
JIO	**Ouri**	**1.56**	**328**	P	**Pn**	**20 08 49.7**	**-0.1**
JIO				*e*S	**Sn**	**20 09 08.7**	**-1.2**
JFT	**Otama**	**1.69**	**284**	P	**Pn**	**20 08 52.5**	**+0.9**
JFT				S	**Sb**	**20 09 14.6**	**0.0**
JOU	**Okura**	**1.85**	**312**	P	**Pn**	**20 08 54.0**	**+0.2**
JOU				*e*S	**Sb**	**20 09 17.5**	**-1.6**
JMK	**Ichinoseki**	**2.04**	**333**	P	**Pn**	**20 08 56.2**	**-0.2**
JYS	**Shiratake**	**2.15**	**301**	P	**Pb**	**20 08 59.8**	**-1.3**
MJAR	**Matsushiro Arr**	**3.42**	**261**	Pn	**Pn**	**20 09 17.2**	**+1.9**
	9.2nm,0.3s,baz=89,slow=15,SNR=137						
MJAR				LR	LR	20 10 55.3	
	comp=Z,129nm,19.1s,baz=75,slow=43						
MAT	**Matsushiro**	**3.42**	**261**	P	**Pn**	**20 09 17.4**	**+2.0**
MAT				*e*S	**Sb**	**20 10 01.3**	**-3.0**
JHJ	**Hachijo jima 2**	**4.54**	**209**	Pn	**Pn**	**20 09 29.1**	**-1.8**
	31nm,0.3s,baz=86,slow=23,SNR=18						
JHJ				Sn	**Sn**	**20 10 21.9**	**-1.7**
	45nm,0.3s,baz=76,slow=22,SNR=7.3						
ASAJ	**Asahikawa**	**6.98**	**1**	Pn	**Pn**	**20 10 03.0**	**-1.3**
	1.6nm,0.3s,baz=202,slow=14,SNR=16						
JNU	**Nakatsue**	**10.25**	**250**	Pn	**Pn**	**20 10 50.4**	**+1.2**
	0.3nm,0.3s,baz=57,slow=7.5,SNR=7.3						
JNU				LR	LR	20 15 04.2	
	comp=Z,52nm,19.6s,baz=120,slow=39						
USRK	**Ussuriysk Ar.**	**10.60**	**315**	Pn	**Pn**	**20 10 58.0**	**+4.2**
	0.1nm,0.3s,baz=128,slow=15,SNR=3.6						
KSRS	**Korea Array**	**11.54**	**276**	Pn	Pn	20 11 12.2	+5.4
	baz=82,slow=14,SNR=4.4						
KSRS				LR	LR	20 14 39.3	
	comp=Z,22nm,19.8s,baz=164,slow=32						
SEY	**Seymchan**	**26.55**	**10**	P	**P**	**20 14 00.6**	**+1.0**
	2.3nm,0.7s,baz=182,slow=9.1,SNR=7.7						
H11N2	**WAKE ISLAND Hy**	**27.53**	**122**	T	T	20 43 04.0	
	baz=315,slow=75,SNR=43						
H11N1	**WAKE ISLAND Hy**	**27.53**	**122**	T	T	20 43 01.7	
	baz=315,slow=75,SNR=29						
H11N3	**WAKE ISLAND Hy**	**27.54**	**122**	T	T	20 42 57.6	
	baz=315,slow=75,SNR=30						
H11S1	**WAKE ISLAND Hy**	**28.26**	**124**	T	T	20 43 55.1	
	baz=316,slow=76,SNR=56						
H11S3	**WAKE ISLAND Hy**	**28.26**	**124**	T	T	20 43 58.2	
	baz=316,slow=76,SNR=62						
H11S2	**WAKE ISLAND Hy**	**28.27**	**124**	T	T	20 43 59.8	
	baz=316,slow=76,SNR=44						
SONM	**Songino Array**	**28.39**	**304**	P	**P**	**20 14 16.5**	**0.0**
	0.4nm,0.6s,baz=98,slow=9.5,SNR=5.0						
TLY	**Talaya**	**30.86**	**311**	LR	LR	20 27 34.0	
	comp=Z,24nm,18.1s,baz=128,slow=37						
TIXI	**Tiksi**	**35.29**	**353**	LR	LR	20 31 14.1	
	comp=Z,31nm,19.1s,baz=272,slow=39						
ZALV	**Zalesovo Beam**	**42.43**	**312**	P	**P**	**20 16 17.3**	**+0.7**
	0.5nm,0.5s,baz=89,slow=7.6,SNR=2.6						
MKAR	**Makanchi Array**	**44.73**	**302**	P	**P**	**20 16 37.5**	**+2.2**
	0.9nm,0.8s,baz=82,slow=9.9,SNR=8.0						
ILAR	**Eielson Array**	**48.99**	**32**	P	**P**	**20 17 07.5**	**-0.8**
	0.6nm,0.7s,baz=261,slow=6.5,SNR=7.0						
WRA	**Warramunga Arr**	**57.28**	**189**	P	**P**	**20 18 09.7**	**-0.1**
	0.8nm,0.5s,baz=7.1,slow=7.0,SNR=24						
ASAR	**Alice Springs**	**61.00**	**189**	P	**P**	**20 18 35.2**	**-0.4**
	0.3nm,0.6s,baz=2.9,slow=6.8,SNR=8.5						
YKA	**Yellowknife Ar**	**63.32**	**30**	P	**P**	**20 18 48.7**	**-2.0**
	0.2nm,0.9s,baz=288,slow=5.9,SNR=2.7						
FINES	**FINESS Array B**	**69.09**	**333**	P	**P**	**20 19 28.8**	**+1.1**
	0.5nm,0.7s,baz=15,slow=22,SNR=3.1						

*IDC **08** 20:20:18.6±2.3, 17.°68N×121.°06E, h0km, mb3.4/4, mb1 3.5/4, mb1mx3.2/35, mbtmp3.4/4, Error ellipse: s-maj=269.9km s-min=22.9km az=63.0*

*ISCJB **08** 20:20:21.0±0.9, 17.°75N±0.°07×120.°43E±0.°08, h41km, mb3.3/4, Error ellipse: s-maj=12.5km s-min=7.6km az=33.6*

*MAN **08** 20:20:21, 17.°63N×120.°52E, h7km, mb4.7, ML3.6, MS3.5*

ISC 08 20:20:22.0±1.1, 17.°78N±0.°06×120.°44E±0.°07, h41km, n13, σ2°78/16, mb3.2/4, 2C, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SIPP	**Brgy, Tapao**	**0.14**	**7**	↑*e*P	**Pn**	**20 20 27.1**	**-2.0**
SIPP				*e*S	**Sn**	**20 20 30.2**	**-3.7**
ABRA	**Dolores**	**0.29**	**116**	*e*P	**Pn**	**20 20 26.3**	**-4.0**
ABRA				*e*S	**Sn**	**20 20 30.8**	**-5.2**
APYP	**Conner**	**0.77**	**84**	*e*P	**Pn**	**20 20 34.9**	**-1.6**
APYP				*e*S	**Sn**	**20 20 45.6**	**-1.3**
CVP	**Callao Caves**	**1.32**	**93**	*e*P	**Pn**	**20 20 44.2**	**+0.2**
BCPH	**Baguio City Da**	**1.40**	**174**	↑↑*i*P	**Pn**	**20 20 43.0**	**-2.1**
BCPH				*i*S	**Sn**	**20 21 00.2**	**-2.3**
BOLP	**Bolinao**	**1.48**	**200**	*e*P	**Pn**	**20 20 46.6**	**+0.5**
CAUP	**Cauayan**	**1.56**	**122**	*e*P	**Pn**	**20 20 49.1**	**+1.9**
SGCP	**Mt. Cagua**	**1.60**	**73**	*e*P	**Pn**	**20 20 49.3**	**+1.6**
BALP	**Baler**	**2.30**	**152**	*e*P	**Pn**	**20 20 58.5**	**+1.1**
WRA	**Warramunga Arr**	**39.89**	**159**	P	**P**	**20 27 51.7**	**-0.4**
	0.2nm,0.8s,baz=337,slow=9.0,SNR=2.6						
MKAR	**Makanchi Array**	**42.66**	**321**	P	P	20 28 21.2	+6.5
	0.6nm,0.8s,baz=126,slow=7.9,SNR=6.0						
ASAR	**Alice Springs**	**43.24**	**162**	P	**P**	**20 28 19.8**	**+0.2**
	0.2nm,0.5s,baz=337,slow=7.1,SNR=8.0						
FINES	**FINESS Array B**	**76.62**	**330**	P	**P**	**20 32 12.5**	**+4.3**
	0.9nm,0.8s,baz=64,slow=9.4,SNR=3.7						

MAN 08 20:25:13, 17.°60N×120.°38E, h32km, mb3.7, ML2.4, MS2.0, 1D, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ABRA	**Dolores**	**0.32**	**81**	*e*P	Pn	20 25 21.8	+0.4
ABRA				*e*S	Sb	20 25 26.0	-0.3
SIPP	**Brgy, Tapao**	**0.33**	**13**	↓*i*P	Pn	20 25 22.7	+1.1
SIPP				*e*S	Sb	20 25 26.4	-0.1
APYP	**Conner**	**0.86**	**72**	*e*P	Pb	20 25 30.3	+0.8
APYP				*e*S	Sb	20 25 40.9	+0.1

*NIED **08** 20:25:00, 38.°40N×142.°20E, h20km, Mw3.6 Best double couple: M₀2.82000×10¹⁴ NP1:φ₁185.00000°, δ53.00000°, λ-11.00000°. NP2:φ₂281.00000°, δ82.00000°, λ-143.00000°.*

*ISCJB **08** 20:25:21.8±1.5, 38.°38N±0.°04×142.°28E±0.°08, h33km±10km, mb3.4/4, Error ellipse: s-maj=10.2km s-min=6.5km az=1.0*

*JMA **08** 20:25:22.4±0.1, 38.°43N×142.°23E, h30km±2km, M3.7*

*IDC **08** 20:25:25.5±3.0, 38.°45N×142.°03E, h56km±25km, mb3.2/4, mb1 3.5/7, mb1mx3.1/31, mbtmp3.6/7, ML3.1/3, MS2.4/1, Ms1 2.4/1, ms1mx2.0/23, Error ellipse: s-maj=43.4km s-min=19.0km az=81.0*

ISC 08 20:25:21.8±2.3, 38.°40N±0.°05×142.°2E±0.°1, h27km±14km, n15, σ1°28/23, mb3.5/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.69**	**275**	P	**Pn**	**20 25 35.7**	**-0.2**
JIO				S	**Sb**	**20 25 44.6**	**+0.1**
OFUJ	**Ofunato**	**0.81**	**327**	P	**Pb**	**20 25 37.0**	**-0.3**
OFUJ				S	**Sb**	**20 25 47.1**	**-0.8**
JMK	**Ichinoseki**	**0.96**	**305**	P	**Pb**	**20 25 39.7**	**-0.2**
JMK				S	**Sb**	**20 25 52.0**	**-0.3**
JOU	**Okura**	**1.23**	**269**	P	**Pb**	**20 25 44.4**	**0.0**
JOU				S	**Sb**	**20 26 00.0**	**+0.1**
JMM	**Marumori**	**1.25**	**245**	P	**Pn**	**20 25 43.8**	**+0.2**
JMM				S	**Sn**	**20 25 59.4**	**-0.1**
JOM	**Ohasama**	**1.30**	**326**	P	**Pn**	**20 25 44.6**	**+0.4**
JOM				S	**Sn**	**20 26 01.0**	**+0.3**
JFK	**Kawauchi**	**1.49**	**227**	P	**Pn**	**20 25 46.8**	**-0.1**
JFK				*e*S	**Sn**	**20 26 04.7**	**-0.7**
MJAR	**Matsushiro Arr**	**3.70**	**241**	P	**Pn**	**20 26 19.6**	**+2.4**
	0.8nm,0.3s,baz=57,slow=10,SNR=6.5						
MAT	**Matsushiro**	**3.70**	**241**	P	**Pn**	**20 26 20.2**	**+3.0**
JHJ	**Hachijo jima 2**	**5.63**	**201**	P	**Pn**	**20 26 44.7**	**+9.9**
	1.5nm,0.3s,baz=47,slow=19,SNR=3.3						
JHJ				S	**Sn**	**20 27 46.2**	**-1.3**
	5.1nm,0.3s,baz=14,slow=14,SNR=2.8						
JHJ				LR	LR	20 29 28.7	
	comp=Z,34nm,19.2s,baz=353,slow=43						
ASAJ	**Asahikawa**	**5.72**	**3**	P	**Pn**	**20 26 47.9**	**+2.9**
	0.6nm,0.3s,baz=198,slow=13,SNR=7.8						
ZALV	**Zalesovo Beam**	**41.49**	**311**	P	**P**	**20 33 04.6**	**-1.7**
	0.5nm,0.6s,baz=99,slow=8.9,SNR=2.2						
MKAR	**Makanchi Array**	**43.96**	**301**	P	**P**	**20 33 25.8**	**-0.7**
	0.3nm,0.9s,baz=79,slow=7.5,SNR=2.3						
WRA	**Warramunga Arr**	**58.50**	**189**	P	**P**	**20 35 15.9**	**+0.2**
	0.4nm,0.6s,baz=6.1,slow=7.2,SNR=10						
ASAR	**Alice Springs**	**62.23**	**189**	P	**P**	**20 35 42.0**	**+0.8**
	0.4nm,0.7s,baz=14,slow=5.2,SNR=7.7						

*IDC **08** 20:39:46.6±1.5, 30.°20S×112.°11W, h0km, mb4.0/5, mb1 4.3/5, mb1mx4.0/29, mbtmp4.0/5, MS4.2/16, Ms1 4.2/16, ms1mx4.1/23, Error ellipse: s-maj=58.4km s-min=38.3km az=34.0*

*NEIC **08** 20:39:48.5±1.0, 30.°22S×111.°97W, h10km, mb4.5/5, Error ellipse: s-maj=38.5km s-min=27.7km az=224.0*

*GCMT **08** 20:39:52.0±0.3, 29.°79S×111.°93W, h21km±1km, MW5.0/79, Moment Tensor Solution. s30, c38; s79, c108; Duration: 0 Moment tensor: Scale 10¹⁶Nm; Mrr-0.42±.16; Mθθ-2.78±.12; Mφφ3.20±.13; Mrθ-1.47±.26; Mφθ-0.84±.11; Mφr-0.70±.21; Best double couple: M₀3.51900×10¹⁶ NP1:φ₁35.00000°, δ78.00000°, λ-25.00000°. NP2: φ₂130.00000°, δ66.00000°, λ-167.00000°. Principal axes: T 3.3880, Plg8.0000°, Azm84.0000°; N 0.2620, Plg63.0000°, Azm191.0000°; P -3.6500, Plg26.0000°, Azm350.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 08 20:39:48.1±1.0, 30.°3S±0.°2×112.°2W±0.°2, h10km, n37, σ1°08/18, mb4.4/10, MS4.2/17, Easter Island region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RPN	**Rapa Nui**	**4.02**	**39**	P	**Pb**	**20 40 59.7**	**+0.6**
RKT	**Rikitea**	**21.57**	**284**	*e*LQ	LQ	20 48 55.7	
	562nm,27.4s						
RKT				*e*LR	LR	20 49 45.6	
	1μm,27.5s						
RKT	**Rikitea**	**21.57**	**284**	*e*T	T	21 06 39.5	
	3.0nm,0.3s						
TAOE	**Nuku Hiva Isla**	**33.74**	**303**	*e*LR	LR	20 55 26.9	
	448nm,26.9s						
PLCA	**Paso Flores**	**35.15**	**119**	LR	LR	20 57 24.4	
	comp=Z,275nm,19.4s,baz=292,slow=30						
PPT2	**Papeete2**	**36.29**	**282**	*e*LR	LR	20 56 29.5	
	996nm,26.8s,baz=107						
USHA	**Ushuaia**	**39.55**	**141**	LR	LR	20 59 18.1	
	comp=Z,4μm,18.5s,baz=118,slow=30						
LPAZ	**La Paz**	**42.52**	**81**	P	**P**	**20 47 44.6**	**-0.1**
	1.1nm,0.6s,baz=233,slow=4.1,SNR=4.9						
LPAZ				LR	LR	21 01 13.4	
	comp=Z,273nm,19.3s,baz=265,slow=30						
PMSA	**Palmer Station**	**45.49**	**153**	LR	LR	21 01 59.2	
	comp=Z,229nm,19.0s,baz=293,slow=29						
CPUP	**Villa Florida**	**48.05**	**99**	LR	LR	21 05 05.7	
	comp=Z,308nm,19.3s,baz=258,slow=32						
ROSC	**El Rosal**	**50.32**	**53**	LR	LR	21 06 19.0	
	comp=Z,197nm,19.2s,baz=237,slow=32						
URZ	**Urewera**	**57.70**	**242**	LR	LR	21 08 08.4	
	comp=Z,330nm,21.1s,baz=187,slow=29						
VNDA	**Vanda**	**59.79**	**195**	LR	LR	21 11 27.8	
	comp=Z,176nm,18.4s,baz=108,slow=32						
TXAR	**Lajitas Array**	**59.85**	**9**	LR	LR	21 10 35.9	
	comp=Z,84nm,20.1s,baz=0.0,slow=31						
NVAR	**Mina Array Bea**	**68.62**	**355**	P	**P**	**20 50 51.6**	**+0.2**
	3.1nm,1.0s,baz=174,slow=8.5,SNR=7.7						
NVAR				LR	LR	21 15 00.9	
	comp=Z,238nm,18.0s,baz=89,slow=31						
PDAR	**Pinedale Array**	**72.75**	**2**	P	**P**	**20 51 15.9**	**-0.6**
	0.7nm,0.6s,baz=172,slow=7.3,SNR=9.1						
PDAR				LR	LR	21 17 36.8	
	comp=Z,103nm,20.8s,baz=186,slow=31						
HLID	**Hailey**	**73.53**	**358**	P	**P**	**20 51 22.0**	**+0.9**
	17nm,1.6s						
LOHW	**Long Hollow**	**73.57**	**1**	P	**P**	**20 51 21.2**	**-0.2**
	7.2nm,1.5s						
IMW	**Indian Meadow**	**73.85**	**1**	P	**P**	**20 51 22.6**	**-0.5**
	0.7nm,0.6s						
FLWY	**Flagg Ranch**	**74.04**	**1**	P	**P**	**20 51 23.8**	**-0.4**
	4.1nm,0.7s						
RLMT	**Red Lodge**	**75.11**	**2**	P	**P**	**20 51 30.4**	**+0.1**
	6.9nm,1.3s						
ULM	**Lac du Bonnet**	**81.49**	**10**	P	**P**	**20 52 04.7**	**-0.5**
	2.0nm,0.5s,baz=207,slow=3.9,SNR=2.3						
ULM				LR	LR	21 24 33.9	
	comp=Z,56nm,20.0s,baz=233,slow=33						
MAW	**Mawson**	**82.33**	**178**	LR	LR	21 26 24.9	
	comp=Z,154nm,19.2s,baz=227,slow=34						
STKA	**Stephens Creek**	**86.67**	**235**	LR	LR	21 23 01.9	
	comp=Z,79nm,20.8s,baz=181,slow=30						
YKA	**Yellowknife Ar**	**92.49**	**359**	P	**P**	**20 52 57.9**	**-0.8**
	0.3nm,0.8s,baz=167,slow=4.7,SNR=8.0						
ASAR	**Alice Springs**	**96.97**	**238**	LR	LR	21 31 29.8	
	comp=Z,112nm,18.4s,baz=174,slow=32						
ILAR	**Eielson Array**	**98.56**	**346**	LR	LR	21 28 55.6	
	comp=Z,74nm,19.1s,baz=124,slow=30						
WRA	**Warramunga Arr**	**98.87**	**241**	LR	LR	21 32 38.8	
	comp=Z,248nm,21.1s,baz=10.0,slow=32						
H01W1	**Cape Leeuwin H**	**101.83**	**217**	T	T	22 48 16.5	
	baz=140						
H01W2	**Cape Leeuwin H**	**101.84**	**217**	T	T	22 48 17.4	
	baz=140						
H01W3	**Cape Leeuwin H**	**101.85**	**217**	T	T	22 48 21.8	
	baz=140						
TORD	**Torodi Ar. Bea**	**117.02**	**90**	PKP	**PKPdf**	**20 58 34.8**	**+0.9**
	7.8nm,0.6s,baz=250,slow=5.5,SNR=4.3						
AKASG	**Malin Array Be**	**144.81**	**44**	PKP	**PKPab**	**20 59 22.7**	**-1.1**
	0.4nm,0.6s,baz=291,slow=2.9,SNR=4.4						
ULN	**Ulaanbaatar**	**145.32**	**312**	P	**PKPdf**	**20 59 28.7**	**+2.6**
SONM	**Songino Array**	**145.75**	**312**	PKPbc	**PKPbc**	**20 59 26.7**	**-0.6**
	1.3nm,0.9s,baz=75,slow=3.3,SNR=7.5						
BRTR	**Keskin Array B**	**150.61**	**62**	PKPbc	**PKPbc**	**20 59 38.9**	**-1.6**
	1.4nm,0.9s,baz=0.0,slow=0.2,SNR=5.7						
ZALV	**Zalesovo Beam**	**153.36**	**337**	PKP	**PKPdf**	**20 59 40.1**	**+1.6**
	0.3nm,0.4s,baz=8.7,slow=1.9,SNR=2.2						
ZALV				PKPbc	**PKPbc**	**20 59 45.5**	**-0.6**
	0.3nm,0.3s,baz=336,slow=3.3,SNR=4.6						

*CSEM **08** 20:40:10.7±0.2, 34.°37N×28.°78E, h20km, MD3.5, Error ellipse: s-maj=5.1km s-min=4.4km az=157.0*

*ATH **08** 20:40:11.8, 34.°66N×28.°67E, h23km±7km, ML2.9/4, Error ellipse: s-maj=8.9km s-min=1.8km az=143.0*

*THE **08** 20:40:14.6, 34.°66N×28.°64E, h8km±6km, ML3.0/5, Error ellipse: s-maj=9.3km s-min=1.6km az=145.0*

*DDA **08** 20:40:15.8, 34.°98N×28.°71E, h15km, Md3.5*

*HLW **08** 20:40:18.2, 33.°68N×28.°73E, h30km±26km, Md3.1, Ml3.2*

ISC 08 20:40:11.0±1.7, 34.°71N±0.°06×28.°78E±0.°03, h13km±11km, n159, σ2°00/172, Eastern Mediterranean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KARP	**Karpathos**	**1.57**	**303**	*e*PN	**Pb**	**20 40 41.2**	**+1.4**
KARP	**Karpathos**	**1.57**	**303**	P	**Pb**	**20 40 41.2**	**+1.4**
KARP	**Karpathos**	**1.57**	**303**	P	**Pb**	**20 40 41.2**	**+1.4**
KARP				S	**Sb**	**20 40 59.3**	**-0.2**
KARP	**Karpathos**	**1.57**	**303**	P	**Pb**	**20 40 41.2**	**+1.4**
KARP				S	**Sb**	**20 40 59.3**	**-0.2**
KARP				AML	AML	20 41 05.0	
	comp=N,424μm,0.3s						
KARP				AML	AML	20 41 07.5	
	comp=E,441μm,0.3s						
KSL	**Kastellorizon**	**1.58**	**24**	P	**Pb**	**20 40 41.5**	**+1.4**
KSL	**Kastellorizon**	**1.58**	**24**	P	**Pb**	**20 40 41.3**	**+1.3**
ARG	**Arkhangelos**	**1.59**	**341**	P	**Pg**	**20 40 42.0**	**+0.4**
ARG				S	**Sg**	**20 41 04.0**	**+1.6**
ARG	**Arkhangelos**	**1.59**	**341**	P	**Pg**	**20 40 42.3**	**+0.7**
ARG				S	**Sg**	**20 41 04.0**	**+1.6**
AKAS	**Kas**	**1.67**	**24**	P	**Pb**	**20 40 43.0**	**+1.4**
AKAS	**Kas**	**1.67**	**24**	*i* P	**Pb**	**20 40 43.0**	**+1.4**
FETY	**Fethiye**	**1.94**	**7**	PN	**Pb**	**20 40 46.5**	**+0.3**
FETY	**Fethiye**	**1.94**	**7**	P	**Pb**	**20 40 46.5**	**+0.3**
FETY				S	**Sg**	**20 41 12.3**	**-1.1**
FETY	**Fethiye**	**1.94**	**7**	P	**Pb**	**20 40 46.5**	**+0.3**
FETY				S	**Sg**	**20 41 12.3**	**-1.1**
DALY	**Dalyan (Mu¨la**	**2.11**	**357**	*e*PN	**Pb**	**20 40 48.6**	**-0.4**
DALY	**Dalyan (Mu¨la**	**2.11**	**357**	*e*Pn	**Pb**	**20 40 48.6**	**-0.4**
ZKR	**Zakros**	**2.14**	**282**	P	**Pn**	**20 40 47.2**	**+0.9**
ZKR				S	**Sn**	**20 41 13.9**	**+1.1**
ZKR	**Zakros**	**2.14**	**282**	P	**Pn**	**20 40 47.3**	**+0.9**
ZKR				S	**Sn**	**20 41 13.8**	**+1.0**
ZKR	**Zakros**	**2.14**	**282**	P	**Pn**	**20 40 47.4**	**+1.0**
ZKR				S	**Sn**	**20 41 13.8**	**+1.0**
ZKR				AML	AML	20 41 15.3	
	comp=N,371μm,0.6s						
ZKR				AML	AML	20 41 19.8	
	comp=E,213μm,0.4s						
TURN	**Turunc**	**2.16**	**356**	*i* P	**Pb**	**20 40 49.7**	**-0.3**
ELL	**Elmali**	**2.23**	**24**	*e*PN	**Pb**	**20 40 52.0**	**+0.8**
ELL	**Elmali**	**2.23**	**24**	*e*Pn	**Pb**	**20 40 52.0**	**+0.8**
NIS1	**Nisyros Isl.**	**2.29**	**326**	*e*PN	**Pn**	**20 40 50.5**	**+2.0**
NIS1	**Nisyros Isl.**	**2.29**	**326**	*e*Pn	**Pn**	**20 40 50.5**	**+2.0**
NIS1	**Nisyros Isl.**	**2.29**	**326**	P	**Pb**	**20 40 51.8**	**-0.4**
NIS1	**Nisyros Isl.**	**2.29**	**326**	P	**Pb**	**20 40 51.8**	**-0.4**
YER	**Yerkesik**	**2.45**	**351**	*e*PN	**Pb**	**20 40 53.3**	**-1.7**
YER	**Yerkesik**	**2.45**	**351**	P	**Pb**	**20 40 54.6**	**-0.4**
YER	**Yerkesik**	**2.45**	**351**	*e*Pn	**Pb**	**20 40 53.3**	**-1.7**
YER	**Yerkesik**	**2.45**	**351**	P	**Pb**	**20 40 54.6**	**-0.4**
GLHS	**Glhisar (BURDU**	**2.51**	**13**	*e*PN	**Pb**	**20 40 55.3**	**-0.7**
GLHS	**Glhisar (BURDU**	**2.51**	**13**	*e*Pn	**Pb**	**20 40 55.3**	**-0.7**
BDRM	**Kayabasi**	**2.59**	**336**	P	**Pn**	**20 40 55.0**	**+2.5**
BDRM	**Kayabasi**	**2.59**	**336**	*i* P	**Pn**	**20 40 55.0**	**+2.5**
GOLH	**Golhisar**	**2.60**	**14**	P	**Pb**	**20 40 57.3**	**-0.2**
GOLH	**Golhisar**	**2.60**	**14**	*i* P	**Pb**	**20 40 57.3**	**-0.2**
KORT	**Korkueli**	**2.62**	**29**	P	**Pb**	**20 40 57.4**	**-0.5**
KORT	**Korkueli**	**2.62**	**29**	*i* P	**Pb**	**20 40 57.4**	**-0.5**
BODT	**Bodrum**	**2.63**	**334**	*e*PN	**Pn**	**20 40 55.6**	**+2.5**
BODT	**Bodrum**	**2.63**	**334**	P	**Pn**	**20 40 55.6**	**+2.5**
BODT				S	**Sb**	**20 41 27.4**	**-2.8**
BODT	**Bodrum**	**2.63**	**334**	P	**Pn**	**20 40 55.6**	**+2.5**
BODT				S	**Sb**	**20 41 27.4**	**-2.8**
NPS	**Neapolis**	**2.66**	**283**	P	**Pn**	**20 40 55.3**	**+1.8**
NPS	**Neapolis**	**2.66**	**283**	P	**Pn**	**20 40 55.3**	**+1.8**
NPS	**Neapolis**	**2.66**	**283**	P	**Pn**	**20 40 56.2**	**+2.7**
LAST	**Lasithi**	**2.75**	**280**	P	**Pn**	**20 40 56.0**	**+1.2**
LAST	**Lasithi**	**2.75**	**280**	P	**Pn**	**20 40 56.3**	**+1.6**
LAST				S	**Sn**	**20 41 29.6**	**+1.8**
LAST	**Lasithi**	**2.75**	**280**	P	**Pn**	**20 40 56.4**	**+1.6**
DNZL	**Cakiroluk**	**2.98**	**4**	P	**Pb**	**20 41 01.7**	**-2.4**
DNZL	**Cakiroluk**	**2.98**	**4**	*i* P	**Pb**	**20 41 01.7**	**-2.4**
AYDN	**Tasoluk**	**3.03**	**346**	P	**Pb**	**20 41 02.2**	**-2.6**
AYDN	**Tasoluk**	**3.03**	**346**	*i* P	**Pb**	**20 41 02.2**	**-2.6**
DENT	**Denizli**	**3.05**	**4**	*e*PN	**Pn**	**20 41 02.4**	**+3.5**
DENT	**Denizli**	**3.05**	**4**	*e*Pn	**Pn**	**20 41 02.4**	**+3.5**
BCK	**Bucak**	**3.12**	**28**	*e*PN	**Pb**	**20 41 05.0**	**-1.2**
BCK	**Bucak**	**3.12**	**28**	*e*Pn	**Pb**	**20 41 05.0**	**-1.2**
SANT	**Santorini**	**3.17**	**302**	P	**Pn**	**20 41 02.2**	**+1.6**
SANT				S	**Sn**	**20 41 38.5**	**+0.2**
SANT	**Santorini**	**3.17**	**302**	P	**Pn**	**20 41 02.2**	**+1.6**
SANT				S	**Sn**	**20 41 38.5**	**+0.2**
SANT	**Santorini**	**3.17**	**302**	P	**Pn**	**20 41 02.6**	**+2.0**
SANT				S	**Sn**	**20 41 37.4**	**-0.9**
SANT				AML	AML	20 41 39.7	
	comp=N,145μm,0.2s						
SANT				AML	AML	20 41 40.3	
	comp=E,345μm,0.2s						
THR6	**Thira Island,**	**3.21**	**302**	P	**Pn**	**20 41 02.9**	**+1.9**
THR6	**Thira Island,**	**3.21**	**302**	P	**Pn**	**20 41 02.9**	**+1.9**
THR3	**Thira Island,**	**3.23**	**303**	P	**Pn**	**20 41 03.1**	**+1.7**
THR3	**Thira Island,**	**3.23**	**303**	P	**Pn**	**20 41 03.1**	**+1.7**
GCAM	**G?zelcaml?**	**3.23**	**338**	P	**Pn**	**20 41 04.4**	**+3.0**
GCAM	**G?zelcaml?**	**3.23**	**338**	*i* P	**Pn**	**20 41 04.4**	**+3.0**
IDI	**Anoyia**	**3.24**	**281**	P	**Pn**	**20 41 03.1**	**+1.5**
IDI				S	**Sn**	**20 41 40.5**	**+0.5**
IDI	**Anoyia**	**3.24**	**281**	P	**Pn**	**20 41 03.1**	**+1.5**
IDI				S	**Sn**	**20 41 40.5**	**+0.5**
IDI	**Anoyia**	**

VLI	**Veliai**	**5.16 295**	P	**Pn**	**20 41 28.0**	**+0.2**
VLI	**Veliai**	**5.16 295**	P	**Pn**	**20 41 26.6**	**-1.2**
KRND	**KRANIDI**	**5.28 302**	P	**Pn**	**20 41 31.5**	**+2.0**
KRND	**KRANIDI**	**5.28 302**	P	**Pn**	**20 41 31.1**	**+1.6**
KRND	**KRANIDI**	**5.28 302**	P	**Pn**	**20 41 31.1**	**+1.6**
DID	**Didima**	**5.28 304**	P	**Pn**	**20 41 31.5**	**+1.9**
DID	**Didima**	**5.28 304**	P	**Pn**	**20 41 31.0**	**+1.4**
DID	**Didima**	**5.28 304**	P	**Pn**	**20 41 31.0**	**+1.4**
HNAT	**Natroun**	**5.30 162**	P	Pn	20 41 21.9	-7.9
baz=157						
HNAT	**Natroun**	**5.30 162**	P	Pn	20 41 21.9	-7.9
VILL	**Villia**	**5.59 310**	P	**Pn**	**20 41 37.2**	**+3.3**
VIL2	**Platees**	**5.65 310**	P	**Pn**	**20 41 37.2**	**+2.6**
GLL	**Jalalah**	**5.69 153**	P	Pn	20 41 28.8	-6.4
baz=147						
GLL	**Jalalah**	**5.69 153**	P	Pn	20 41 28.8	-6.4
LTK	**Loutraki**	**5.74 307**	P	**Pn**	**20 41 38.6**	**+2.8**
LTK	**Loutraki**	**5.74 307**	P	**Pn**	**20 41 38.6**	**+2.8**
VLX	**Vlachokerasia**	**5.82 299**	P	**Pn**	**20 41 37.9**	**+0.8**
VLX	**Vlachokerasia**	**5.82 299**	P	**Pn**	**20 41 37.9**	**+0.8**
VLX	**Vlachokerasia**	**5.82 299**	P	**Pn**	**20 41 36.6**	**-0.5**
SUZ	**Suez**	**5.95 144**	P	Pn	20 41 34.1	-4.6
baz=136						
SUZ	**Suez**	**5.95 144**	P	Pn	20 41 34.1	-4.6
ITM	**Ithomi**	**6.08 296**	P	**Pn**	**20 41 41.3**	**+0.8**
ITM	**Ithomi**	**6.08 296**	P	**Pn**	**20 41 41.3**	**+0.8**
SWA2		**6.13 208**	P	Pn	20 41 35.1	-6.2
baz=214						
SWA2		**6.13 208**	P	Pn	20 41 35.1	-6.2
AGG	**Agios Georgios**	**6.72 312**	*e*PN	**Pn**	**20 41 53.0**	**+3.6**

IDC 08 20:43:15.9±2.0, 5°64S×130°79E, $h0^{km}$, mb3.7/1, mb1 4.1/4, mb1mx3.6/29, mbtmp3.9/4, ML3.9/3, Error ellipse: s-maj=76.9km s-min=27.5km az=78.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**13.37 202**		Pn	Pn	20 46 26.0	-1.0
0.4nm,0.3s,baz=34,slow=12,SNR=14							
FITZ				Sn	Sn	20 48 37.8	-19
0.8nm,0.3s,baz=154,slow=22,SNR=8.2							
WRA	**Warramunga Arr**	**14.63 167**		Pn	Pn	20 46 44.3	0.0
0.5nm,0.3s,baz=347,slow=11,SNR=28							
WRA				Sn	Sn	20 49 14.7	-13
0.6nm,0.3s,baz=336,slow=22,SNR=7.6							
ASAR	**Alice Springs**	**18.17 171**		P	P	20 47 30.4	+0.1
0.5nm,0.3s,baz=350,slow=9.6,SNR=48							
ASAR				S	Sn	20 50 39.9	-14
0.1nm,0.3s,baz=352,slow=25,SNR=3.6							
MKAR	**Makanchi Array**	**67.53 326**		P	P	20 54 14.1	0.0
0.3nm,0.4s,baz=114,slow=8.2,SNR=9.8							

*SCB **08** 20:46:11.9±0.4, 23°.25S×66°.43W, $h225^{km}$, Ml4.8/2, Error ellipse: s-maj=11.9km s-min=5.6km az=39.0*
*MOS **08** 20:46:15.0±1.5, 23°.16S×66°.36W, $h212^{km}$, mb4.9/35, Error ellipse: s-maj=15.7km s-min=6.7km az=116.0*
*SJA **08** 20:46:15.3±1.1, 23°.19S×66°.42W, $h248^{km}\pm9^{km}$, ML4.0*
*NEIC **08** 20:46:16.1±0.6, 23°.18S×66°.25W, $h210^{km}\pm5^{km}$, mb4.9/129, Error ellipse: s-maj=7.9km s-min=5.5km az=61.0*
*ISCJB **08** 20:46:16.6±0.2, 23°.19S±0°.02×66°.42W±0°.03, $h226^{km}\pm2^{km}$, mb4.8/142, Error ellipse: s-maj=5.5km s-min=3.1km az=148.9*
*IDC **08** 20:46:16.4±0.8, 23°.16S×66°.26W, $h213^{km}\pm6^{km}$, mb4.4/14, mb1 4.5/19, mb1mx4.5/24, mbtmp4.9/19, Error ellipse: s-maj=10.3km s-min=8.3km az=87.0*
*GCMT **08** 20:46:16.2±0.4, 23°.49S×66°.43W, $h224^{km}\pm3^{km}$, MW5.1/69, Moment Tensor Solution. s23,c24; s69,c82; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}0.16±.23; $M_{\theta\theta}$-0.48±.30; $M_{\phi\phi}$0.32±.34; $M_{r\theta}$-0.19±.17; $M_{\theta\phi}$3.37±.20; $M_{\phi r}$~3.66±.19; Best double couple: M_0=4.98700×10^{16} NP1:ϕ_s177.00000°, δ88.00000°, λ133.00000°. NP2: ϕ_s269.00000°, δ43.00000°, λ3.00000°. Principal axes: T 5.1750, Plg33.0000°, Azm122.0000°; N -0.3770, Plg43.0000°, Azm355.0000°; P -4.7980, Plg30.0000°, Azm233.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 08 20:46:17.2±0.5, 23°.18S±0°.04×66°.44W±0°.04, $h224^{km}\pm4^{km}$, n593, σ1§48/633, mb4.8/142, 19C-5D, Jujuy Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HJA	**Humahuaca**	**0.95**	**92**	*i* P	**Pn**	**20 46 50.6**	**+1.0**
YJA	**Yavi**	**1.32**	**41**	*i* P	**Pn**	**20 46 53.6**	**+1.5**
YJA				*i* S	**S**	**20 47 21.5**	**+2.2**
AZAP	**Zapla**	**1.63**	**130**	*i* P	**Pn**	**20 46 54.3**	**-0.1**
SLA	**San Lorenzo**	**1.75**	**151**	*i* P	**Pn**	**20 46 55.8**	**+0.4**
SLA				*i* S	**S**	**20 47 26.4**	**+1.1**
SLA				IAML		20 47 30.4	
comp=N,909nm,0.8s							
ASTB	**Santa Barbara**	**1.98**	**113**	*i* P	**Pn**	**20 46 58.0**	**+0.5**
ASTB				*i* P	**Pn**	**20 46 58.0**	**+0.5**
LVC	**Limon Verde**	**2.35**	**284**	*i* P	**Pn**	**20 47 01.9**	**+0.4**
LVC				*i* S	**S**	**20 47 36.5**	**+0.7**
LVC	**Limon Verde**	**2.35**	**284**	P	**Pn**	**20 47 02.4**	**+1.0**
comp=N,42μm,0.3s,baz=104,slow=7.0,SNR=6455							
LVC				S	**S**	**20 47 36.5**	**+0.7**
comp=N,17μm,0.3s,baz=311,slow=20,SNR=26							
LVC	**Limon Verde**	**2.35**	**284**	*e*Pn	**Pn**	**20 47 02.5**	**+1.0**
LVC				*e*S	**S**	**20 47 36.9**	**+1.1**
PB06	**IPOC Station P**	**2.93**	**279⇑**	*e*P	**Pn**	**20 47 08.1**	**+0.6**
PB06				*e*S	**S**	**20 47 46.2**	**-0.5**
PB06				IAML		20 47 50.7	
comp=N,13μm,0.4s							
PB09	**IPOC Station P**	**2.94**	**297⇑**	*e*P	**Pn**	**20 47 09.0**	**+1.4**
PB09				*e*S	**S**	**20 47 47.5**	**+0.6**
PB09				IAML		20 47 49.0	
comp=N,19μm,0.7s							
FSA	**Cafayete**	**2.94**	**172**	*i* P	**Pn**	**20 47 07.3**	**-0.3**
FSA				*i* S	**S**	**20 47 45.8**	**-1.4**
FSA				IAML		20 47 47.7	
comp=Z,157nm,0.7s							
PB07	**IPOC Station P**	**3.50**	**294**	*e*P	**Pn**	**20 47 14.6**	**+0.4**
PB07				*e*S	**S**	**20 47 56.9**	**-1.9**
PB07				IAML		20 47 58.2	
comp=N,12μm,0.5s							
PB04	**IPOC Station P**	**3.53**	**283⇑**	*e*P	**Pn**	**20 47 14.6**	**+0.2**
PB04				*e*S	**S**	**20 47 57.1**	**-2.1**
PB04				IAML		20 48 00.8	
comp=N,11μm,0.4s							
PB04	**IPOC Station P**	**3.53**	**283**	*e*Pn	**Pn**	**20 47 14.7**	**+0.2**
PB01	**IPOC Station P**	**3.54**	**306**	*e*P	**Pn**	**20 47 15.0**	**+0.5**
PB01				*e*S	**S**	**20 47 58.4**	**-1.0**
PB01				IAML		20 48 00.6	
comp=E,8μm,0.4s							
PB01	**IPOC Station P**	**3.54**	**306**	*e*Pn	**Pn**	**20 47 15.2**	**+0.7**
AHML	**Horco Molle**	**3.72**	**165**	*i* P	**Pn**	**20 47 15.8**	**-0.8**
AHML				*i* S	**S**	**20 48 01.6**	**-1.7**
AHML				IAML		20 48 07.2	
comp=Z,56nm,0.5s							
PB10	**IPOC Station P**	**3.79**	**264⇑**	*e*P	**Pn**	**20 47 17.1**	**-0.3**
PB10				*e*S	**S**	**20 48 01.9**	**-2.8**
PB10	**IPOC Station P**	**3.79**	**264**	*e*Pn	**Pn**	**20 47 17.5**	**+0.1**
PATCX	**Punta Patache**	**4.17**	**304**	*e*P	**Pn**	**20 47 21.7**	**-0.4**
PATCX				*e*S	**S**	**20 48 10.3**	**-2.8**
PB11	**IPOC Station P**	**4.54**	**318⇑**	*e*P	**Pn**	**20 47 26.4**	**-0.3**
PB11				*e*S	**S**	**20 48 19.2**	**-2.2**
PB11	**IPOC Station P**	**4.54**	**318**	*e*Pn	**Pn**	**20 47 26.4**	**-0.3**
CYA	**Choya**	**5.27**	**174**	*i* P	**Pn**	**20 47 35.3**	**-0.3**
CYA				*i* S	**S**	**20 48 34.0**	**-3.7**
CYA				IAML		20 48 40.8	
comp=Z,133nm,0.9s							
BBOJ	**La Paz, Jacaqu**	**6.39**	**345⇑**	*i*Pn	**Pn**	**20 47 52.5**	**+2.1**
BBOJ				⇑*i*Sn	**S**	**20 49 05.8**	**+1.3**
comp=Z,305nm,1.0s							
BBOE	**La Paz, Chanca**	**6.50**	**347⇑**	*i*Pn	**Pn**	**20 47 54.1**	**+2.2**
BBOD	**La Paz, Gloria**	**6.82**	**342⇑**	*i*Pn	**Pn**	**20 47 57.8**	**+1.9**
BBOD				⇑*i*Sn	**S**	**20 49 15.1**	**+0.6**
comp=Z,553nm,0.9s							
LCO	**Las Campanas**	**6.95**	**213**	*e*Pn	Pn	20 47 51.1	-6.2
LCO				*e*Sn	S	20 49 00.9	-16
LPAZ	**La Paz**	**7.04**	**347**	P	**Pn**	**20 47 60.0**	**+1.1**
comp=Z,25nm,0.3s,baz=165,slow=9.4,SNR=339							
LPAZ				S	**S**	**20 49 19.0**	**-0.8**
comp=Z,5.8nm,0.3s,baz=343,slow=18,SNR=12							
LPAZ	**La Paz**	**7.04**	**347⇑**	*i*Pn	**Pn**	**20 47 59.9**	**+1.1**
LPAZ				*e*Sn	**S**	**20 49 20.4**	**+0.6**
BBOB	**La Paz, Bander**	**7.18**	**347⇑**	*i*Pn	**Pn**	**20 48 01.5**	**+0.9**
BBOB				⇑*i*Sn	**S**	**20 49 23.5**	**+0.6**
ARE	**Arequipa**	**8.20**	**324⇑**	*i*P	**Pn**	**20 48 11.2**	**-2.3**
ARE				*i* S	**S**	**20 49 38.0**	**-8.6**
ARE	**Arequipa**	**8.20**	**324⇑**	*i*P	**Pn**	**20 48 11.2**	**-2.3**
ARE				*i* S	**S**	**20 49 38.0**	**-8.6**
SIV	**San Ignacio**	**8.76**	**36**	P	**Pn**	**20 48 19.1**	**-1.3**
comp=Z,47nm,0.3s,baz=234,slow=14,SNR=556							
SIV	**San Ignacio**	**8.76**	**36**	*e*P	**Pn**	**20 48 16.4**	**-4.0**
CPUP	**Villa Florida**	**8.85**	**113**	P	**Pn**	**20 48 19.6**	**-1.8**
comp=Z,0.7nm,0.3s,baz=292,slow=11,SNR=21							
CPUP	**Villa Florida**	**8.85**	**113**	*e*P	**Pn**	**20 48 19.0**	**-2.4**
CPUP	**Villa Florida**	**8.85**	**113**	*e*Pn	**Pn**	**20 48 19.0**	**-2.4**
ROC1	**El Roble**	**10.56**	**201**	*e*Pn	**Pn**	**20 48 41.3**	**-2.2**
SAML	**Samuel**	**14.49**	**13**	*e*Pn	**Pn**	**20 49 32.4**	**-0.1**
NNA	**Nana**	**14.90**	**317**	P	**P**	**20 49 38.5**	**+0.8**
comp=Z,3.1nm,0.3s,baz=164,slow=10,SNR=16							
NNA				S	**S**	**20 52 22.6**	**+0.3**
comp=Z,2.9nm,0.3s,baz=243,slow=18,SNR=4.0							
NNA	**Nana**	**14.90**	**317**	*e*P	**Pn**	**20 49 34.4**	**-3.0**
NNA				*e*S	**S**	**20 52 23.4**	**+1.1**
NNA	**Nana**	**14.90**	**317**	*e*Pn	**Pn**	**20 49 34.4**	**-3.0**
NNA				*e*S	**S**	**20 52 23.4**	**+1.1**
TRQA	**Tornquist**	**15.31**	**167**	*e*P	**P**	**20 49 40.1**	**-1.9**
comp=Z,81nm,0.6s							
TRQA				*e*S	**S**	**20 52 25.4**	**-5.9**
SPB	**Sao Paulo**	**17.46**	**95**	*e*P	**P**	**20 50 05.0**	**-0.7**
comp=Z,90nm,0.7s							
PLCA	**Paso Flores**	**17.84**	**190**	P	**P**	**20 50 09.0**	**-0.7**
comp=Z,0.9nm,0.3s,baz=34,slow=12,SNR=56							
PLCA				S	**S**	**20 53 22.8**	**-0.1**
baz=30,slow=20,SNR=1.5							
PLCA	**Paso Flores**	**17.84**	**190**	*e*P	**P**	**20 50 09.8**	**+0.1**
PLCA				S	**S**	**20 53 22.8**	**-0.1**
PLCA				pmax	pmax		
comp=Z,27nm,0.9s							
PLCA	**Paso Flores**	**17.84**	**190**	*e*P	**P**	**20 50 09.8**	**+0.1**
comp=Z,27nm,0.9s							
PLCA				S	**S**	**20 53 22.8**	**-0.1**
ATAH	**Atahualpa**	**19.67**	**322**	P	**Pn**	**20 50 33.6**	**-0.7**
comp=Z,0.8nm,0.3s,baz=160,slow=6.4,SNR=8.9							
PTGA	**Pitinga**	**23.19**	**17**	P	**P**	**20 51 03.2**	**-1.2**
comp=Z,4.7nm,0.3s,baz=198,slow=10,SNR=17							
PTGA				S	**S**	**20 54 55.2**	**-4.1**
comp=Z,1.7nm,0.3s,baz=24,slow=19,SNR=3.5							
OTAV	**Otavalo**	**26.05**	**332**	*e*P	**P**	**20 51 33.0**	**+2.2**
FLOC	**Flavencia**	**26.20**	**339**	*e*P	**P**	**20 51 30.6**	**-1.0**
ROSC	**El Rosal**	**28.90**	**344**	P	**P**	**20 51 57.2**	**+1.3**
comp=Z,2.5nm,0.4s,baz=207,slow=18,SNR=4.0							
EFI	**East Falkland**	**29.17**	**169⇓**	*i*P	**P**	**20 51 57.4**	**-0.1**
EFI				pmax	pmax		
comp=Z,159nm,1.7s							
HELC	**Santa Helena**	**30.52**	**342**	*e*P	**P**	**20 52 09.2**	**-1.0**
CBRI	**Barrientos, No**	**31.33**	**348**	*e*P	**P**	**20 52 16.1**	**-1.1**
GRMC	**Gramalote, San**	**31.34**	**348**	*e*P	**P**	**20 52 16.6**	**-0.6**
USHA	**Ushuaia**	**31.64**	**182**	P	**P**	**20 52 22.1**	**+2.8**
comp=Z,25nm,0.4s,baz=352,slow=8.2,SNR=11							
SDV	**Santo Domingo**	**32.13**	**352**	*e*P	P	20 52 18.7	-5.5
comp=Z,8.5nm,0.4s							
RCBR	**Riachuelo**	**34.11**	**64**	*e*P	**P**	**20 52 38.0**	**-3.1**
comp=Z,53nm,0.8s							
JTS	**JuntasAbangare**	**37.88**	**329**	*d i*P	**P**	**20 53 16.0**	**+2.9**
JTS				pmax	pmax		
comp=Z,57nm,1.1s							
JTS	**JuntasAbangare**	**37.88**	**329**	P	**P**	**20 53 13.9**	**+0.8**
comp=Z,30nm,1.0s							
FDF	**Fort de France**	**38.04**	**8**	*e*P	**P**	**20 53 13.5**	**-0.8**
FDF				pmax	pmax		
comp=Z,43nm,0.6s							
FDF	**Fort de France**	**38.04**	**8**	*e*P	**P**	**20 53 13.5**	**-0.8**
comp=Z,43nm,0.6s							
RPN	**Rapa Nui**	**38.89**	**255**	*e*P	**P**	**20 53 20.7**	**-0.7**
RPN	**Rapa Nui**	**38.89**	**255**	*e*P	**P**	**20 53 20.7**	**-0.7**
comp=Z,712nm,1.4s							
TGUH	**Tegucigalpa,Un**	**42.26**	**329**	*e*P	**P**	**20 53 48.0**	**-0.8**
comp=Z,56nm,0.7s							
CCIG	**Comitan**	**46.58**	**325**	*e*P	**P**	**20 54 23.9**	**+0.6**
comp=Z,36nm,0.9s							
TEIG	**Tepich**	**48.12**	**332**	*e*P	**P**	**20 54 34.1**	**-0.7**
comp=Z,25nm,0.8s							
TLIG	**Tlapa**	**51.24**	**319**	*e*P	**P**	**20 54 58.1**	**-0.4**
comp=Z,14nm,0.9s							
DWPF	**Disney Wildern**	**53.01**	**343**	*e*P	**P**	**20 55 09.8**	**-1.4**
comp=Z,35nm,0.8s							
TIGA	**Tifton**	**56.74**	**342**	P	**P**	**20 55 38.4**	**+0.5**
baz=161							
TIGA	**Tifton**	**56.74**	**342**	*e*P	**P**	**20 55 35.2**	**-2.6**
comp=Z,19nm,0.8s							
NHSC	**New Hope**	**57.49**	**346**	*e*P	**P**	**20 55 44.5**	**+1.5**
comp=Z,110nm,0.9s							
BRAL	**Brewton**	**57.54**	**339**	P	**P**	**20 55 42.8**	**-0.7**
comp=Z,24nm,0.6s							
ZAIG	**Zacatecas**	**57.63**	**320**	*e*P	**P**	**20 55 46.5**	**+1.9**
comp=Z,23nm,0.9s							
447A	**Lucedale**	**57.75**	**337**	P	**P**	**20 55 45.8**	**+0.9**
baz=156							
VNA3	**Neumayer Olymp**	**57.76**	**161**	P	**P**	**20 55 45.3**	**+0.8**
VNA1	**Neumayer--Stat**	**57.94**	**160**	P	**P**	**20 55 46.9**	**+1.1**
446A	**Poplarville**	**58.00**	**337**	P	**P**	**20 55 47.9**	**+1.2**
baz=155							
347A	**Saraland**	**58.26**	**338**	P	**P**	**20 55 48.9**	**+0.5**
baz=156,SNR=5.4							
VNA2	**Neumayer--Watz**	**58.31**	**161**	P	**P**	**20 55 49.4**	**+1.1**
baz=284,slow=8.8							
GOGA	**Godfrey**	**58.57**	**343**	*e*P	**P**	**20 55 47.6**	**-3.0**
GOGA				pmax	pmax		
comp=Z,15nm,0.7s							
GOGA	**Godfrey**	**58.57**	**343**	*e*P	**P**	**20 55 47.6**	**-3.0**
comp=Z,15nm,0.7s							
248A	**Dixon Mills**	**58.62**	**339**	P	**P**	**20 55 51.5**	**+0.6**
baz=157							
247A	**Quitman**	**58.88**	**338**	P	**P**	**20 55 53.1**	**+0.4**
baz=156							
034A	**Hebbronville**	**58.88**	**326**	P	**P**	**20 55 53.7**	**+0.9**
baz=145							
344A	**Westbrook Farm**	**59.10**	**336**	P	**P**	**20 55 55.0**	**+0.8**
baz=154							
934A	**Benavides**	**59.23**	**327**	P	**P**	**20 55 56.8**	**+1.6**
baz=145							
LRAL	**Lakeview Retre**	**59.24**	**340**	*e*P	**P**	**20 55 53.6**	**-1.6**
comp=Z,15nm,0.6s							
245A	**Little AP, Sta**	**59.31**	**337**	P	**P**	**20 55 56.0**	**+0.4**
baz=155,SNR=6.4							
244A	**Avery, Jackson**	**59.61**	**336**	P	**P**	**20 55 58.0**	**+0.3**
baz=154							
933A	**Laredo**	**59.63**	**326**	P	**P**	**20 55 59.4**	**+1.4**
baz=145,SNR=7.9							
736A	**Circle Diamond**	**59.64**	**329**	P	**P**	**20 55 59.7**	**+1.8**
baz=147,SNR=8.0							
342A	**Flagon Creek P**	**59.65**	**334**	P	**P**	**20 55 59.2**	**+1.2**
baz=152							
834A	**Tilden**	**59.68**	**327**	P	**P**	**20 55 59.9**	**+1.6**
baz=145,SNR=7.7							
KMSC	**Kings Mountain**	**59.70**	**346**	P	**P**	**20 55 59.1**	**+0.8**
baz=164,SNR=19							
KMSC	**Kings Mountain**	**59.70**	**346**	*e*P	**P**	**20 55 59.0**	**+0.7**
comp=Z,42nm,0.8s							
637A	**Eagle Lake**	**59.70**	**330**	P	**P**	**20 56 00.2**	**+1.8**
baz=148							
Z48A	**Northport**	**59.74**	**340**	P	**P**	**20 55 58.4**	**-0.2**
baz=157,SNR=17							
Z47A	**Carrollton**	**59.74**	**339**	P	**P**	**20 55 58.6**	**0.0**
baz=157							
HKT	**Hockley**	**59.91**	**331**	*e*P	**P**	**20 55 59.4**	**-0.3**
HKT				pmax	pmax		
comp=Z,16nm,1.1s							
HKT	**Hockley**	**59.91**	**331**	*e*P	**P**	**20 55 59.4**	**-0.3**
comp=Z,16nm,1.1s							
SNAA	**Sanae**	**59.95**	**161**	P	**P**	**20 56 00.1**	**+0.5**
SNAA	**Sanae**	**59.95**	**161⇑**	*e*P	**P**	**20 56 00.1**	**+0.5**
SNAA	**Sanae**	**59.95**	**161**	*e*P	**P**	**20 55 57.6**	**-2.0**
comp=Z,886nm,0.8s							
341A	**Kurthwood**	**59.95**	**334**	P	**P**	**20 56 01.4**	**+1.4**
baz=151							
Z46A	**Louisville**	**60.03**	**338**	P	**P**	**20 56 01.0**	**+0.5**
baz=156							
636A	**Smothers Creek**	**60.08**	**329**	P	**P**	**20 56 02.4**	**+1.4**
baz=147							
833A	**Chaparral WMA,**	**60.27**	**326**	P	**P**	**20 56 03.5**	**+1.3**
baz=145,SNR=34							
734A	**La Parita Cree**	**60.27**	**328**	P	**P**	**20 56 03.4**	**+1.1**
baz=146,SNR=11							
Y47A	**UCPARC, Winfie**	**60.32**	**340**	P	**P**	**20 56 02.6**	**+0.1**
baz=157,SNR=10							
340A	**Bronson**	**60.32**	**333**	P	**P**	**20 56 03.9**	**+1.4**
baz=151							
832A	**Faith Ranch, C**	**60.53**	**326**	P	**P**	**20 56 05.1**	**+1.0**
baz=144,SNR=11							
733A	**Divot King Ran**	**60.54**	**327**	P	**P**	**20 56 05.1**	**+1.0**
baz=145							
536A	**Bastrop**	**60.58**	**330**	P	**P**	**20 56 05.5**	**+1.2**
baz=147							
Y46A	**Houston**	**60.63**	**339**	P	**P**	**20 56 04.7**	**+0.2**
baz=156							
535A	**Dale**	**60.78**	**329**	P	**P**	**20 56 06.5**	**+0.8**
baz=147							
CPCT	**Cooper Cave**	**60.78**	**343**	*e*P	**P**	**20 56 05.4**	**-0.2**
comp=Z,7.7nm,0.8s							
TKL	**Tuckaleechee C**	**60.78**	**344**	*e*P	**P**	**20 56 05.5**	**-0.1**
TKL				pmax	pmax		
comp=Z,28nm,1.2s							
TKL	**Tuckaleechee C**	**60.78**	**344**	*e*P	**P**	**20 56 05.5**	**-0.1**
comp=Z,28nm,1.2s							
Y45A	**Yeager Farm, C**	**60.85**	**338**	P	**P**	**20 56 06.2**	**+0.2**
baz=156,SNR=5.3							
338A	**Crockett**	**60.88**	**332**	P	**P**	**20 56 08.2**	**+1.9**
baz=149							
NATX	**Nacogdoches**	**60.95**	**333**	P	**P**	**20 56 08.3**	**+1.5**
baz=150							
NATX	**Nacogdoches**	**60.95**	**333**	*e*P	**P**	**20 56 05.7**	**-1.0**
comp=Z,52nm,1.0s							
SWET	**Sewanee**	**60.95**	**342**	*e*P	**P**	**20 56 06.6**	**-0.2**
comp=Z,8.9nm,0.8s							
141A	**Papa Simpson,**	**60.96**	**335**	P	**P**	**20 56 08.3**	**+1.5**
baz=152							
436A	**Wall Ranch, Ga**	**61.04**	**330**	P	**P**	**20 56 08.5**	**+1.1**
baz=148							
633A	**Saathoff Ranch**	**61.08**	**327**	P	**P**	**20 56 08.8**	**+1.1**
baz=145,SNR=8.0							
534A	**Blanco**	**61.21**	**328**	P	**P**	**20 56 08.7**	**+0.1**
baz=146,SNR=10.0							
140A	**Cam and Jess,**	**61.26**	**334**	P	**P**	**20 56 10.4**	**+1.6**
baz=151							
238A	**Jacksonville**	**61.35**	**332**	P	**P**	**20 56 11.3**	**+1.9**
baz=150							
OXF	**Oxford**	**61.39**	**338**	*e*P	**P**	**20 56 06.0**	**-3.7**
OXF				pmax	pmax		
comp=Z,28nm,0.8s							
OXF	**Oxford**	**61.39**	**338**	*e*P	**P**	**20 56 06.0**	**-3.7**
comp=Z,28nm,0.8s							
435B	**Jarrell**	**61.41**	**330**	P	**P**	**20 56 11.0**	**+1.0**
baz=147							
VWCC	**Virginia Weste**	**61.44**	**348**	*e*P	**P**	**20 56 09.5**	**-0.5**
Z41A	**Richland Creek**	**61.50**	**335**	P	**P**	**20 56 12.2**	**+1.8**
baz=152							
BLA	**Blacksburg**	**61.50**	**347**	*e*P	**P**	**20 56 09.3**	**-1.1**
BLA				pmax	pmax		
comp=Z,22nm,1.1s							
BLA	**Blacksburg**	**61.50**	**347**	*e*P	**P**	**20 56 09.3**	**-1.1**
comp=Z,22nm,1.1s							
533A	**Kerrville**	**61.52**	**328**	P	**P**	**20 56 11.5**	**+0.9**
baz=146							
TZTN	**Tazewell**	**61.56**	**344**	*e*P	**P**	**20 56 08.5**	**-2.3**
336A	**Riesel**	**61.58**	**331**	P	**P**	**20 56 11.9**	**+0.9**
baz=148,SNR=6.7							
Y42A	**Garnett, Star**	**61.62**	**336**	P	**P**	**20 56 12.5**	**+1.3**
baz=153							
237A	**Washetta, Mont**	**61.65**	**332**	P	**P**	**20 56 12.7**	**+1.2**
baz=149							
Z40A	**Long Farm, Mag**	**61.73**	**334**	P	**P**	**20 56 13.4**	**+1.4**
baz=152,SNR=9.6							
335A	**Moody**	**61.76**	**330**	P	**P**	**20 56 13.1**	**+0.9**
baz=147,SNR=8.6							
434A	**Burnet**	**61.76**	**329**	P	**P**	**20 56 12.8**	**+0.5**
baz=146							
138A	**Matatall Enter**	**61.90**	**333**	P	**P**	**20 56 14.5**	**+1.4**
baz=150,SNR=5.5							
Y41A	**Eaglette Beard**	**61.98**	**335**	P	**P**	**20 56 14.4**	**+0.8**
baz=153							
433A	**Art**	**62.11**	**328**	P	**P**	**20 56 14.9**	**+0.3**
baz=146,SNR=28							
137A	**Heron Place, G**	**62.13**	**332**	P	**P**	**20 56 16.0**	**+1.3**
baz=149							
334A	**Lometa**	**62.18**	**329**	P	**P**	**20 56 15.7**	**+0.7**
baz=147,SNR=5.8							
JCT	**Junction City**	**62.23**	**328**	P	**P**	**20 56 16.3**	**+0.8**
baz=145,SNR=14							
JCT	**Junction City**	**62.23**	**328**	*e*P	**P**	**20 56 13.8**	**-1.6**
JCT				pmax	pmax		
comp=Z,33nm,0.8s							
JCT	**Junction City**	**62.23**	**328**	*e*P	**P**	**20 56 13.8**	**-1.6**
comp=Z,32nm,0.8s							
WVT	**Waverly**	**62.36**	**341**	*e*P	**P**	**20 56 15.3**	**-0.8**
WVT				pmax	pmax		
comp=Z,36nm,0.9s							
WVT	**Waverly**	**62.36**	**341**	*e*P	**P**	**20 56 15.3**	**-0.8**
comp=Z,36nm,0.9s							
WHTX	**Lake Whitney,**	**62.37**	**330**	P

X36A	Centrahoma baz=149,SNR=8.6	64.08 333	P	P	20 56 27.7 +0.3
V39A	Pettigrew baz=152,SNR=15	64.10 336	P	P	20 56 27.9 +0.3
O56A	Blue Knob Stat baz=167	64.13 350	P	P	20 56 28.4 +0.8
Y34A	Reagan Ranch, baz=148,SNR=11	64.17 331	P	P	20 56 28.6 +0.6
W37B	Quinton baz=150,SNR=6.7	64.19 334	P	P	20 56 28.9 +0.8
X35A	Drake baz=149	64.20 332	P	P	20 56 28.5 +0.3
U40A	Yellville baz=153,SNR=8.8	64.26 337	P	P	20 56 28.6 0.0
SSPA	Standing Stone comp=Z,48nm,1.0s	64.38 350	eP	P	20 56 25.9 -3.3
V38A	Canehill baz=151,SNR=21	64.41 335	P	P	20 56 29.4 -0.2
NVL	N'lazarevskaya	64.45 159	eP	P	20 56 31.5 +2.2
W36A	Wetumka baz=150,SNR=12	64.52 333	P	P	20 56 30.5 +0.3
U39A	Green Forest baz=152,SNR=13	64.52 336	P	P	20 56 30.4 +0.2
Y33A	Hilltop Ranch, baz=147	64.59 331	P	P	20 56 31.6 +0.8
V37A	Hulbert baz=151,SNR=15	64.72 334	P	P	20 56 31.8 +0.3
X34A	Smith Ranch, M baz=148,SNR=6.3	64.74 332	P	P	20 56 32.7 +1.0
W35A	Tecumseh baz=149	64.80 333	P	P	20 56 31.8 -0.2
BLO	Bloomington	64.81 343	eP	P	20 56 30.9 -1.2
BLO			pmax	pmax	
	comp=Z,19nm,0.7s				
BLO	Bloomington comp=Z,19nm,0.7s	64.81 343	eP	P	20 56 30.9 -1.2
T40A	Mansfield baz=153	64.85 337	P	P	20 56 32.5 +0.1
U38A	Gravette baz=152,SNR=6.2	64.91 335	P	P	20 56 33.1 +0.3
ACSO	Alum Creek Sta comp=Z,30nm,0.7s	64.94 346	eP	P	20 56 31.0 -1.9
V36A	Jenks baz=150,SNR=13	64.96 334	P	P	20 56 33.6 +0.5
X33A	Lawton baz=147	64.99 331	P	P	20 56 33.2 -0.1
TUL1	Leonard baz=150	65.00 334	P	P	20 56 33.6 +0.2
TUL1	Leonard comp=Z,16nm,0.8s	65.00 334	eP	P	20 56 30.6 -2.8
N54A	Moraine State baz=166	65.05 349	P	P	20 56 34.0 +0.4
T39A	Clever baz=153,SNR=7.1	65.05 336	P	P	20 56 33.6 0.0
U37A	Salina baz=151,SNR=10	65.17 335	P	P	20 56 34.8 +0.4
S40A	Lebanon baz=154,SNR=14	65.24 337	P	P	20 56 35.0 +0.1
V35A	Meyer Ranch, C baz=149,SNR=11	65.31 333	P	P	20 56 35.6 +0.3
T38A	Diamond baz=152,SNR=17	65.40 336	P	P	20 56 36.7 +0.8
W33A	Caddo, Fort Co baz=148,SNR=12	65.49 331	P	P	20 56 37.9 +1.4
M54A	Oil Creek Stat baz=166,SNR=10	65.52 349	P	P	20 56 37.3 +0.7
S39A	Bolivar baz=153,SNR=23	65.62 337	P	P	20 56 37.5 +0.2
T37A	Cheneyville 18 baz=151,SNR=36	65.72 335	P	P	20 56 38.4 +0.5
Q42A	Golden Eagle baz=156	65.76 340	P	P	20 56 37.8 -0.4
S38A	Stockton baz=152,SNR=5.7	65.78 336	P	P	20 56 38.6 +0.3
R40A	Maddies Statio baz=154,SNR=9.8	65.78 338	P	P	20 56 38.3 0.0
U35A	Pawnee baz=149,SNR=13	65.78 333	P	P	20 56 39.3 +0.9
W32A	Sentinel baz=147,SNR=14	65.81 331	P	P	20 56 39.4 +0.8
TRY	Troy comp=Z,26nm,0.8s	65.92 354	eP	P	20 56 40.4 +1.4
V33A	Lossen Ranch, baz=148,SNR=8.9	65.97 332	P	P	20 56 40.3 +0.7
T36A	Boggs Farm, Ca baz=150,SNR=6.4	66.04 335	P	P	20 56 40.8 +0.8
R39A	Chumby, Stover baz=153,SNR=11	66.07 337	P	P	20 56 40.4 +0.3
MNTX	Cornudas Mount baz=141,SNR=19	66.08 324	P	P	20 56 40.7 +0.3
MNTX	Cornudas Mount comp=Z,17nm,0.9s	66.08 324	eP	P	20 56 38.6 -1.8
ERPA	Erie comp=Z,64nm,0.6s	66.17 349	eP	P	20 56 39.0 -1.7
U34A	Anderson Ranch baz=149,SNR=11	66.17 333	P	P	20 56 41.5 +0.7
U34A	Anderson Ranch comp=Z,38nm,0.7s	66.17 333	eP	P	20 56 40.3 -0.5
S37A	Fort Scott baz=151,SNR=16	66.24 336	P	P	20 56 41.5 +0.3
R38A	Fenwick Farm, baz=152,SNR=17	66.27 337	P	P	20 56 41.7 +0.3
Q40A	Laux Farm, Aux baz=154	66.35 338	P	P	20 56 42.0 +0.1
U33A	Lingo Farm, Me baz=148	66.42 332	P	P	20 56 42.4 0.0
S36A	Lake Cedric, C baz=151,SNR=6.7	66.50 335	P	P	20 56 43.5 +0.6
MSTX	Muleshoe baz=144,SNR=30	66.52 328	P	P	20 56 43.8 +0.6
MSTX	Muleshoe comp=Z,58nm,0.8s	66.52 328	eP	P	20 56 43.7 +0.4
T34A	McClaskey Farm baz=149	66.53 334	P	P	20 56 43.8 +0.7
Q39A	Willow Grove F baz=153,SNR=5.3	66.70 338	P	P	20 56 44.6 +0.4
R37A	Teagarden Farm baz=152,SNR=9.9	66.72 336	P	P	20 56 44.6 +0.3
S35A	Otter Creek Ra baz=150,SNR=10	66.75 335	P	P	20 56 45.1 +0.6
P40A	Paris baz=154	66.82 339	P	P	20 56 45.1 +0.3
Q38A	Cooks Store, C baz=153,SNR=8.0	66.85 337	P	P	20 56 45.3 +0.2
R36A	Gordon, Harris baz=151,SNR=5.4	66.99 335	P	P	20 56 46.2 +0.2
QSPA	South Pole Qui comp=Z,57nm,0.6s	67.02 180	P	P	20 56 45.8 -0.2
P39B	Salisbury baz=154	67.02 338	P	P	20 56 45.9 -0.2
T33A	Patterson Ranc baz=148,SNR=11	67.02 333	P	P	20 56 47.3 +1.1
DBIC	Dimbokro comp=Z,50nm,0.8s,baz=217,slow=7.3,SNR=56	67.06 72	P	P	20 56 45.9 -1.1
DBIC	Dimbokro	67.06 72	eP	P	20 56 45.4 -1.5
DBIC			pmax	pmax	
	comp=Z,50nm,0.8s				
DBIC	Dimbokro comp=Z,50nm,0.8s	67.06 72	eP	P	20 56 45.4 -1.5
Q37A	Longview Farm, baz=152,SNR=5.7	67.08 337	P	P	20 56 46.8 +0.3
R35A	Emporia Munici baz=150	67.26 335	P	P	20 56 48.5 +0.8
O40A	La Belle baz=154,SNR=5.9	67.30 339	P	P	20 56 46.9 -1.0
HSIG		67.30 318	eP	P	20 56 48.7 +0.5
	comp=Z,31nm,1.1s				
S33A	Kaszmaul Farm, baz=148	67.35 333	P	P	20 56 49.0 +0.7
T32A	Huddler Ranch, baz=148,SNR=5.2	67.39 332	P	P	20 56 49.7 +1.1
P38A	Dawn baz=153,SNR=9.4	67.41 338	P	P	20 56 48.7 +0.1
R34A	Isabella, Hill baz=149,SNR=7.8	67.65 334	P	P	20 56 50.8 +0.7
Q35A	Mercer Eighty, baz=150	67.66 335	P	P	20 56 50.6 +0.4
P37A	Lathrop baz=152	67.67 337	P	P	20 56 50.1 -0.1
O38A	Galt baz=153	67.83 338	P	P	20 56 51.3 +0.1
S32A	Newby Ranch, P baz=148,SNR=6.4	67.84 333	P	P	20 56 52.3 +1.0
R33A	Olander Ranch, baz=149	67.96 334	P	P	20 56 52.5 +0.4
319A	Douglas	68.02 321	eP	P	20 56 54.0 +1.3
121A	Cookes Peak, D baz=139,SNR=16	68.03 323	P	P	20 56 54.6 +1.8
121A	Cookes Peak, D comp=Z,30nm,1.0s	68.03 323	P	P	20 56 51.8 -1.0
Q34A	Chapman baz=150	68.06 335	P	P	20 56 53.2 +0.5
KSU1	Kansas State U baz=150	68.09 335	P	P	20 56 53.1 +0.2
O37A	Wolven Farm, M baz=152	68.11 337	P	P	20 56 53.5 +0.6
N39A	Derby Farms, D baz=154	68.18 339	P	P	20 56 53.2 -0.1
R32A	Long Quarter, baz=148,SNR=5.9	68.35 333	P	P	20 56 55.7 +1.2
P34A	Walnut Farm, R baz=150,SNR=7.8	68.56 335	P	P	20 56 56.3 +0.6
SADO	Sadowa comp=Z,32nm,1.4s	68.61 350	eP	P	20 56 55.6 -0.3
BNM	Barren Site	68.64 325	eP	P	20 56 56.9 +0.3
LPM	Los Pinos Moun	68.76 325	eP	P	20 56 59.1 +1.8
M38A	Pleasantville baz=154	68.90 339	P	P	20 56 57.7 0.0
O34A	Beatrice baz=150	69.06 336	P	P	20 56 59.1 +0.3
LAZ	Ladron	69.10 325	eP	P	20 56 59.0 -0.5
CBKS	Cedar Bluff baz=147,SNR=5.3	69.11 333	P	P	20 57 00.3 +1.1
CBKS	Cedar Bluff	69.11 333	eP	P	20 56 57.3 -1.9
CBKS			pmax	pmax	
	comp=Z,55nm,1.1s				
CBKS	Cedar Bluff comp=Z,55nm,1.1s	69.11 333	eP	P	20 56 57.3 -1.9
ANMO	Albuquerque baz=141	69.16 326	P	P	20 57 01.6 +1.8
ANMO	Albuquerque	69.16 326	dP	P	20 57 01.3 +1.5
ANMO			pmax	pmax	
	comp=Z,26nm,1.0s				
ANMO	Albuquerque comp=Z,21nm,0.9s	69.16 326	eP	P	20 57 00.4 +0.6
M37A	Trindle Farm, baz=153	69.18 338	P	P	20 56 59.7 +0.2
O33A	Hebron baz=149	69.31 335	P	P	20 57 01.1 +0.7
JFWS	Jewell Farm	69.33 342	eP	P	20 56 58.4 -2.0
JFWS			pmax	pmax	
	comp=Z,21nm,0.6s				
JFWS	Jewell Farm comp=Z,21nm,0.6s	69.33 342	eP	P	20 56 58.4 -2.0
TRQ	Mont Tremblant	69.47 354	eP	P	20 57 01.5 +0.3
TUC	Tucson baz=137	69.57 321	P	P	20 57 03.9 +1.7
TUC	Tucson	69.57 321	eP	P	20 57 02.2 0.0
TUC			pmax	pmax	
	comp=Z,19nm,1.1s				
TUC	Tucson comp=Z,19nm,1.1s	69.57 321	eP	P	20 57 02.2 0.0
T25A	Trinidad baz=143,SNR=15	69.86 328	P	P	20 57 05.6 +1.6
T25A	Trinidad comp=Z,18nm,0.8s	69.86 328	eP	P	20 57 05.6 +1.6
N31A	Bailey Ranch, baz=148	70.49 334	P	P	20 57 08.7 +1.1
214A	Organ Pipe Nat baz=135,SNR=7.8	70.52 319	P	P	20 57 09.9 +2.0
214A	Organ Pipe Nat comp=Z,100nm,1.3s	70.52 319	eP	P	20 57 06.6 -1.3
KSCO	Kaye Shedlock' baz=145,SNR=5.9	70.54 331	P	P	20 57 09.4 +1.4
KSCO	Kaye Shedlock' comp=Z,41nm,1.2s	70.54 331	eP	P	20 57 08.6 +0.6
BGNE	Belgrade comp=Z,82nm,0.9s	70.67 335	eP	P	20 57 09.7 +1.0
X18A	Snowflake	70.72 323	eP	P	20 57 11.7 +2.4
SDCO	Great Sand Dun baz=142,SNR=7.9	70.86 328	P	P	20 57 12.0 +1.8
W18A	Petrified Fore baz=138,SNR=5.3	71.04 324	P	P	20 57 13.2 +2.0
W18A	Petrified Fore comp=Z,32nm,1.0s	71.04 324	eP	P	20 57 10.0 -1.2
X16A	Lo Mia Camp, P	71.48 322	eP	P	20 57 16.4 +2.6
S22A	4UR Ranch, Cre baz=141,SNR=10	71.52 327	P	P	20 57 15.7 +1.6
S22A	4UR Ranch, Cre comp=Z,8.1nm,0.8s	71.52 327	eP	P	20 57 15.9 +1.8
Q24A	Divide baz=143,SNR=15	71.66 329	P	P	20 57 16.7 +1.7
Q24A	Divide comp=Z,27nm,0.9s	71.66 329	eP	P	20 57 16.5 +1.6
113A	Mohawk Valley, comp=Z,6.9nm,0.8s	71.66 319	eP	P	20 57 15.4 +0.7
OGNE	Ogallala baz=146	71.86 332	P	P	20 57 17.4 +1.5
OGNE	Ogallala comp=Z,23nm,0.7s	71.86 332	eP	P	20 57 17.5 +1.7
MVCO	Mesa Verde baz=140,SNR=11	71.96 326	P	P	20 57 17.6 +0.9
MVCO	Mesa Verde comp=Z,22nm,0.8s	71.96 326	eP	P	20 57 17.6 +0.9
H36A	Jessenland, He baz=153	71.97 340	P	P	20 57 16.8 +0.6
Y14A	Wickenburg	72.03 321	eP	P	20 57 18.9 +1.9
ECSD	EROS Data Cent baz=151,SNR=6.9	72.12 337	P	P	20 57 17.4 +0.2
ECSD	EROS Data Cent comp=Z,6.9nm,1.0s	72.12 337	eP	P	20 57 17.4 +0.2
WUAZ	Wupatki baz=137,SNR=5.4	72.24 323	P	P	20 57 20.1 +1.8
ISCO	Idaho Springs baz=142,SNR=21	72.54 329	P	P	20 57 22.0 +1.9
ISCO	Idaho Springs	72.54 329	eP	P	20 57 21.7 +1.6
ISCO			pmax	pmax	
	comp=Z,14nm,0.9s				
ISCO	Idaho Springs comp=Z,14nm,0.9s	72.54 329	eP	P	20 57 21.7 +1.6
SMCO	Snowmass comp=Z,17nm,0.8s	72.70 328	eP	P	20 57 23.3 +2.0
PDMCI	Parker Dam,Lak baz=135	72.96 320	P	P	20 57 24.1 +1.8
F36A	Milaca baz=154,SNR=11	72.99 341	P	P	20 57 22.4 +0.2
BC3	Big Chuckawall baz=134	73.29 319	P	P	20 57 26.1 +1.7
BAR	Barrett comp=Z,18nm,0.9s	73.38 317	eP	P	20 57 27.2 +2.3
IRM	Iron Mountain baz=134,SNR=7.6	73.45 319	P	P	20 57 27.1 +1.8
E36A	McGregor baz=154	73.50 341	P	P	20 57 25.7 +0.5
N23A	Red Feather La baz=142,SNR=15	73.56 330	P	P	20 57 27.9 +1.8
N23A	Red Feather La comp=Z,18nm,0.8s	73.56 330	eP	P	20 57 28.1 +2.1
J27A	Elkhorn Farm, baz=146,SNR=5.6	73.76 334	P	P	20 57 28.8 +1.8
C39A	Grand Marais baz=157	73.81 344	P	P	20 57 27.1 +0.2
D37A	Cotton baz=155	73.84 342	P	P	20 57 27.7 +0.5
PFO	Pinyon Flats O	73.88 318	eP	P	20 57 30.2 +2.4
PFO			pmax	pmax	
	comp=Z,11nm,1.0s				
PFO	Pinyon Flats O comp=Z,11nm,1.0s	73.88 318	eP	P	20 57 30.2 +2.4
O20A	White River Ci baz=140,SNR=12	74.06 328	P	P	20 57 30.9 +2.0
O20A	White River Ci comp=Z,38nm,0.8s	74.06 328	eP	P	20 57 30.8 +1.9
SYO	Syowa Base	74.12 159	eP	P	20 57 28.2 -0.4
KNB	Kanab	74.13 323	eP	P	20 57 32.1 +2.7
KNB			pmax	pmax	
	comp=Z,63nm,1.0s				
KNB	Kanab comp=Z,63nm,1.0s	74.13 323	eP	P	20 57 32.0 +2.7
GMRC	Granite Mounta baz=134,SNR=21	74.19 320	P	P	20 57 31.9 +2.2
J26A	Sides Ranch, S baz=145,SNR=8.6	74.25 333	P	P	20 57 31.6 +1.9
C37A	Embarrass baz=155	74.29 342	P	P	20 57 30.5 +0.7
EYMN	Ely baz=156	74.30 343	P	P	20 57 29.8 0.0
SRU	San Rafael Swe	74.44 326	eP	P	20 57 32.9 +1.9
SRU			pmax	pmax	
	comp=Z,39nm,0.7s				
SRU	San Rafael Swe comp=Z,39nm,0.7s	74.44 326	eP	P	20 57 32.9 +1.9
C36A	Pine Crest Far baz=155	74.50 342	P	P	20 57 31.6 +0.6
MTPU	Mount Pierson comp=Z,17nm,0.9s	74.52 324	eP	P	20 57 34.1 +2.3
F31A	Hecla baz=150	74.55 338	P	P	20 57 32.0 +0.7
J25A	Sunshine Ranch baz=144,SNR=8.9	74.62 333	P	P	20 57 33.4 +1.5
HEC	Hector,Ludlow baz=133,SNR=6.1	74.63 319	P	P	20 57 33.9 +1.8
P18A	Preston Nutter comp=Z,39nm,0.7s	74.68 326	eP	P	20 57 34.7 +2.1
C35A	Jirik Farms, M baz=154	74.78 341	P	P	20 57 32.7 +0.2
P17A	Butcher Ranch, comp=Z,39nm,0.9s	74.82 326	eP	P	20 57 35.4 +2.2
TMUT	Trail Mountain comp=Z,9.7nm,0.7s	74.93 326	eP	P	20 57 36.2 +2.2
SHPR	Sheep Range comp=Z,16nm,1.1s	75.09 321	eP	P	20 57 36.5 +1.6
I25A	Rochford baz=145,SNR=12	75.10 333	P	P	20 57 36.5 +1.7
K22A	Casper baz=142,SNR=7.0	75.22 331	P	P	20 57 37.3 +1.9
GSC	Goldstone, Bar baz=133,SNR=7.1	75.23 319	P	P	20 57 37.4 +1.9
B35A	Bob, Littlefor baz=154,SNR=10.0	75.30 342	P	P	20 57 35.7 +0.2
RSSD	Black Hills baz=144	75.31 333	P	P	20 57 37.3 +1.3
RSSD	Black Hills	75.31 333	eP	P	20 57 37.5 +1.5
RSSD			pmax	pmax	
	comp=Z,9.0nm,1.0s				
RSSD	Black Hills comp=Z,8.8nm,1.0s	75.31 333	eP	P	20 57 37.5 +1.5
G27A	Dupree baz=146	75.50 335	P	P	20 57 37.8 +1.0
VNDA	Vanda comp=Z,3.0nm,1.1s,baz=135,slow=3.5,SNR=7.6	75.59 190	P	P	20 57 38.5 +1.7
EDW2	Edwards Air Fo baz=132,SNR=6.4	75.67 318	P	P	20 57 39.5 +1.5
B34A	Aery, Baudette baz=153	75.69 341	P	P	20 57 37.9 +0.2
G26A	Maurine baz=146	75.69 335	P	P	20 57 38.6 +0.7
PSUT	Pine Spring comp=Z,22nm,0.8s	75.79 323	eP	P	20 57 41.4 +2.6
TORD	Torodi Ar. Bea comp=Z,41nm,0.7s,baz=257,slow=5.4,SNR=356	75.80 69	P	P	20 57 37.8 -1.3
TORD			S	S	21 06 56.7 -6.1
	comp=Z,1.4nm,0.8s,baz=239,slow=11,SNR=6.4				
NLU	North Lily Min comp=Z,12nm,1.0s	75.86 325	eP	P	20 57 41.6 +2.4
G25A	Newell baz=145,SNR=5.8	75.94 334	P	P	20 57 40.4 +1.1
JLU	Jordanelle comp=Z,25nm,0.7s	76.02 326	eP	P	20 57 42.2 +2.1
TPNV	Topopah Spring baz=134,SNR=6.3	76.03 321	P	P	20 57 42.7 +2.5
TPNV	Topopah Spring	76.03 321	eP	P	20 57 42.7 +2.5
TPNV			pmax	pmax	
	comp=Z,24nm,0.9s				
TPNV	Topopah Spring comp=Z,24nm,0.9s	76.03 321	eP	P	20 57 42.7 +2.5
MPMC	Manual Prospec baz=132,SNR=10	76.15 320	P	P	20 57 42.3 +1.5
RCWM	Renegade Canyo	76.17 319	eP	P	20 57 41.0 +0.1
F26A	Lodgepole baz=146	76.18 335	P	P	20 57 41.7 +1.0
B32A	Ashes, Strandq baz=152,SNR=8.1	76.19 340	P	P	20 57 40.9 +0.3
A33A	Warroad baz=153,SNR=5.9	76.31 341	P	P	20 57 41.8 +0.6
DAC	Darwin (Calif)	76.36 320	eP	P	20 57 43.9 +1.8
DAC			pmax	pmax	
	comp=Z,18nm,0.9s				
DAC	Darwin (Calif) comp=Z,18nm,0.9s	76.36 320	eP	P	20 57 43.9 +1.8
DUG	Dugway, Tooele baz=137,SNR=20	76.43 325	P	P	20 57 44.1 +1.8
DUG	Dugway, Tooele	76.43 325	eP	P	20 57 44.3 +2.0
DUG			pmax	pmax	
	comp=Z,20nm,1.0s				
DUG	Dugway, Tooele comp=Z,20nm,1.0s	76.43 325	eP	P	20 57 44.3 +2.0
SBC	Santa Barbara baz=131	76.44 317	P	P	20 57 44.1 +1.8
ISA	Isabella, Lake baz=132,SNR=5.5	76.48 319	P	P	20 57 44.8 +2.2
ISA	Isabella, Lake	76.48 319	eP	P	20 57 44.9 +2.3
ISA			pmax	pmax	
	comp=Z,17nm,0.8s				
ISA	Isabella, Lake comp=Z,17nm,0.8s	76.48 319	eP	P	20 57 44.9 +2.3
R11A	Troy Canyon, C baz=134,SNR=41	76.62 322	P	P	20 57 45.7 +2.3
R11A	Troy Canyon, C comp=Z,29nm,1.3s	76.62 322	eP	P	20 57 45.6 +2.1
GRAC	Grapevine Rang baz=133	76.71 320	P	P	20 57 45.8 +1.9
BW06	Boulder Array baz=140,SNR=14	76.71 329	P	P	20 57 45.1 +1.1
BW06	Boulder Array	76.71 329	eP	P	20 57 44.7 +0.7
PD31	Pinedale Array	76.71 329	eP	P	20 57 45.1 +1.1
PDAR	Pinedale Array comp=Z,4.8nm,0.5s,baz=124,slow=7.4,SNR=70	76.71 329	P	P	20 57 45.0 +1.0
CWC	Cottonwood Cre baz=132	76.76 319	P	P	20 57 46.0 +1.7
PKM	Mcpherson Peak baz=131,SNR=7.1	76.80 317	P	P	20 57 46.3 +1.8
B30A	Myrvik Farm, E baz=150	76.81 339	P	P	20 57 45.1 +1.0
HWUT	Hardware Ranch comp=Z,21nm,0.7s	76.82 327	eP	P	20 57 45.9 +1.4
VES	Vestal, Richgr baz=131,SNR=11	76.97 318	P	P	20 57 47.2 +2.0
SPUT	South Promonto comp=Z,30nm,0.7s	77.05 326	eP	P	20 57 47.9 +2.1
BGU	Big Grassy Mou comp=Z,18nm,0.9s	77.07 326	eP	P	20 57 47.0 +1.1
SMMC	Simmler baz=131	77.19 318	P	P	20 57 49.1 +2.6
TSUM	Tsumeb comp=Z,33nm,0.9s	77.38 106	eP	P	20 57 47.8 -0.4
AHID	Auburn Hatcher comp=Z,44nm,0.7s	77.46 328	eP	P	20 57 49.5 +1.5
A29A	Manning Farm, baz=149	77.53 339	P	P	20 57 48.6 +0.6
HVU	Hansel Valley	77.56 326	eP	P	20 57 49.9 +1.3
HVU			pmax	pmax	
	comp=Z,20nm,0.8s				
HVU	Hansel Valley comp=Z,20nm,0.8s	77.56 326	eP	P	20 57 49.9 +1.3
ULM	Lac du Bonnet	77.62 341	P	P	20 57 48.1 -0.3
	comp=Z,7.5nm,0.6s,baz=138,slow=5.7,SNR=11				
ULM	Lac du Bonnet	77.62 341	eP	P	20 57 48.5 0.0
ULM	Lac du Bonnet	77.62 341	eP	P	20 57 48.5 0.0
SCHQ	Schefferville comp=Z,5.8nm,0.6s,baz=171,slow=3.6,SNR=4.4	77.69 360	P	P	20 57 48.7 -0.1
REDW	Red Top Meadow comp=Z,19nm,0.8s	77.78 329	eP	P	20 57 50.7 +0.8
SNOW	Snow King Moun comp=Z,16nm,0.8s	77.81 329	eP	P	20 57 51.7 +1.6
LOHW	Long Hollow comp=Z,16nm,0.8s	77.85 329	eP	P	20 57 51.8 +1.5
MOOW	Moose Ponds comp=Z,7.3nm,0.8s	78.02 329	eP	P	20 57 52.5 +1.4
FXWY	Fox Creek comp=Z,7.1nm,0.8s	78.08 329	eP	P	20 57 53.0 +1.5
ELK	Elko	78.11 324	eP	P	20 57 53.3 +1.6
ELK			pmax	pmax	
	comp=Z,16nm,0.9s				
ELK	Elko comp=Z,16nm,0.9s	78.11 324	eP	P	20 57 53.3 +1.6
NV11	Mina Array Sit	78.14 321	eP	P	20 57 53.9 +2.1
IMW	Indian Meadow comp=Z,24nm,0.8s	78.23 329	eP	P	20 57 54.1 +1.7
NV01	Mina Array Sit	78.23 321	eP	P	20 57 54.1 +1.7
NVAR	Mina Array Bea comp=Z,5.7nm,0.7s,baz=154,slow=6.0,SNR=26	78.23 321	P	P	20 57 53.1 +0.7
FLWY	Flagg Ranch comp=Z,55nm,1.4s	78.25 329	eP	P	20 57 53.7 +1.3
RLMT	Red Lodge baz=140,SNR=24	78.38 331	P	P	20 57 54.5 +1.4
RLMT	Red Lodge comp=Z,17nm,0.9s	78.38 331	eP	P	20 57 54.6 +1.5
H17A	Grant Village baz=139,SNR=7.8	78.43 329	P	P	20 57 55.3 +1.9
H17A	Grant Village comp=Z,7.7nm,0.8s	78.43 329	eP	P	20 57 55.9 +2.4
A26A	Wade Farm, Ken baz=147	78.48 337	P	P	20 57 54.5 +1.2

YFT	Old Faithful	78.60	329	eP		P	20 57 57.6 +3.3
	comp=Z,11nm,1.0s						
YMR	Madison River	78.82	329	eP		P	20 57 58.2 +2.7
	comp=Z,22nm,0.9s						
A25A	Svangstu Ranch	78.91	336	P		P	20 57 56.9 +1.3
	baz=146						
WAKR	Walker	78.94	320	eP		P	20 57 58.6 +2.3
GCMT	Greycliff	79.08	331	eP		P	20 57 58.1 +1.3
QLMT	Earthquake Lak	79.16	329	eP		P	20 57 59.6 +2.3
CMB	Columbia Colle	79.19	319	eP		P	20 57 58.8 +1.3
CMB					pmax	pmax	
	comp=Z,5.0nm,0.7s						
CMB	Columbia Colle	79.19	319	eP		P	20 57 58.8 +1.3
	comp=Z,4.8nm,0.7s						
HLID	Hailey	79.69	327	P		P	20 58 02.0 +1.8
	baz=136,SNR=80						
HLID	Hailey	79.69	327	eP		P	20 58 02.3 +2.2
	comp=Z,38nm,0.8s						
MCMT	McKenzie Canyo	79.83	328	P		P	20 58 03.1 +2.1
BOZ	Bozeman (W)	79.87	330	P		P	20 58 02.0 +0.9
	baz=138,SNR=8.7						
DLMT	Dillon	80.11	329	eP		P	20 58 04.4 +2.1
	comp=Z,10nm,0.9s						
AFDM	Forest Hills D	80.14	320	eP		P	20 58 04.1 +1.7
	comp=Z,14nm,1.0s						
MFID	Camas Ranch	80.31	326	eP		P	20 58 05.3 +1.9
	comp=Z,13nm,0.8s						
LRM	Limekiln Ridge	80.38	329	eP		P	20 58 05.4 +1.5
BOSA	Boshof	80.64	117	P		P	20 58 04.5 -1.3
	comp=Z,17nm,0.8s,baz=258,slow=4.2,SNR=25						
BOSA	Boshof	80.64	117	eP		P	20 58 05.1 -0.6
BOSA					pmax	pmax	
	comp=Z,19nm,1.0s						
BOSA	Boshof	80.64	117	eP		P	20 58 05.0 -0.6
	comp=Z,19nm,1.0s						
HRY	Holter Researc	80.75	330	eP		P	20 58 07.7 +2.0
EGMT	Eagleton	80.83	332	P		P	20 58 06.9 +0.9
	baz=140,SNR=9.7						
EGMT	Eagleton	80.83	332	eP		P	20 58 06.8 +0.7
	comp=Z,16nm,1.0s						
ORV	Oroville	80.84	320	eP		P	20 58 08.3 +2.1
ORV					pmax	pmax	
	comp=Z,26nm,1.0s						
ORV	Oroville	80.84	320	eP		P	20 58 08.3 +2.1
	comp=Z,26nm,1.0s						
WVOR	Wild Horse Val	81.12	324	eP		P	20 58 07.0 -0.7
WVOR					pmax	pmax	
	comp=Z,10.0nm,1.3s						
WVOR	Wild Horse Val	81.12	324	eP		P	20 58 07.0 -0.7
	comp=Z,9.8nm,1.3s						
O03D	Paynes Creek	81.50	320	P		P	20 58 10.3 +0.6
	baz=130,SNR=9.7						
PBDV	Barranco-do-Ve	81.51	43	eP		P	20 58 11.0 +1.3
CHMT	Chamberlain Mo	81.56	330	eP		P	20 58 11.7 +1.7
PNCL	Nicolau / Gran	81.66	42	eP		P	20 58 11.3 +0.8
PCVE	Castro Verde	81.67	43	eP		P	20 58 11.7 +1.1
MOD	Modoc Plateau	81.68	322	eP		P	20 58 12.4 +1.6
	comp=Z,28nm,1.2s						
MESJ	Messejana	81.69	43	eP		P	20 58 11.3 +0.7
MESJ					AMb	AMB	20 58 11.8
	comp=Z,26nm,0.5s						
MESJ	Messejana	81.69	43	eP		P	20 58 11.7 +1.1
MESJ	Messejana	81.69	43	eP		P	20 58 11.3 +0.7
PVAQ	Vaqueiros	81.74	43	eP		P	20 58 12.0 +1.1
MSO	Missoula	81.82	329	P		P	20 58 12.7 +1.4
	baz=137						
MSO	Missoula	81.82	329	eP		P	20 58 12.7 +1.4
	comp=Z,14nm,1.5s						
PBEJ	Beja	82.02	43	eP		P	20 58 13.6 +1.2
MAW	Mawson	82.06	163	P		P	20 58 12.7 +0.6
	comp=Z,6.6nm,0.7s,baz=229,slow=7.2,SNR=10						
MAW	Mawson	82.06	163	eP		P	20 58 13.3 +1.2
MAW					pmax	pmax	
	comp=Z,3.0nm,0.7s						
MAW	Mawson	82.06	163	eP		P	20 58 13.3 +1.2
	comp=Z,2.5nm,0.7s						
LBTB	Lobatse	82.25	114	eP		P	20 58 13.7 -0.4
LBTB					pmax	pmax	
	comp=Z,14nm,0.9s						
LBTB	Lobatse	82.25	114	eP		P	20 58 13.7 -0.4
	comp=Z,14nm,0.9s						
SWMT	Swartz Lake	82.34	330	eP		P	20 58 15.6 +1.6
PMTG	Montargil	82.44	42	eP		P	20 58 15.4 +0.9
N02D	Trinity Center	82.46	321	P		P	20 58 15.2 +0.6
	baz=129,SNR=8.3						
M04C	Macdoel	82.47	322	P		P	20 58 16.2 +1.3
	baz=130,SNR=13						
K05A	Summer Lake	82.55	323	P		P	20 58 17.1 +1.8
YBMT	Yellow Bay	82.61	330	eP		P	20 58 16.9 +1.6
PBAR	Barrancos	82.63	43	eP		P	20 58 16.4 +0.9
JTMT	Jette	82.65	330	eP		P	20 58 17.1 +1.5
PTOM	Tomar	82.66	41	eP		P	20 58 16.6 +1.0
PESTR	Estremoz	82.71	42	eP		P	20 58 16.9 +1.0
M02C	Callahan	82.81	321	P		P	20 58 17.4 +0.9
	baz=129						
PCAS	Casmilo, Conde	82.88	41	eP		P	20 58 17.8 +1.0
YBH	Yreka Blue Hor	82.94	321	eP		P	20 58 17.5 +0.3
YBH					pmax	pmax	
	comp=Z,8.0nm,0.8s						
YBH	Yreka Blue Hor	82.94	321	eP		P	20 58 17.5 +0.3
	comp=Z,8.1nm,0.8s						
BSMT	Bassoo Peak	82.96	330	eP		P	20 58 18.5 +1.2
K04D	Chiloquin, OR	82.97	322	P		P	20 58 18.8 +1.4
	baz=130						
KHMM	Horse Mountain	83.00	320	eP		P	20 58 19.6 +2.0
	comp=Z,10nm,0.8s						
J05D	Fort Rock, OR	83.11	323	P		P	20 58 19.6 +1.5
	baz=131,SNR=12						
PMRV	Marv??o	83.17	42	eP		P	20 58 18.6 +0.3
G08A	Pilot Rock	83.22	326	eP		P	20 58 19.8 +1.3
	comp=Z,4.9nm,0.7s						
PCBR	Castelo Branco	83.37	42	eP		P	20 58 20.0 +0.8
WALA	Waterton Lakes	83.44	331	eP		P	20 58 20.6 +1.0
TAM	Tamanrasset	83.56	62	eP		P	20 58 20.9 +0.1
TAM	Tamanrasset	83.56	62	eP		P	20 58 20.9 +0.1
HUMO	Hull Mountain	83.64	322	eP		P	20 58 21.2 +0.6
	comp=Z,6.4nm,0.8s						
MTE	Manteigas	83.67	41	eP		P	20 58 21.4 +0.5
L02D	Cave Junction,	83.73	321	P		P	20 58 22.7 +1.6
	baz=129,SNR=6.3						
I05D	Terrebonne, OR	83.86	324	P		P	20 58 23.4 +1.7
	baz=131,SNR=10.0						
G06A	Carlson Farm,	84.07	325	eP		P	20 58 24.9 +2.1
I04A	Tendick Farm,	84.09	323	P		P	20 58 23.7 +0.8
	baz=130						
PVRL	Vila Real	84.10	40	eP		P	20 58 23.8 +0.8
POLO	Lamas de Olo	84.11	40	eP		P	20 58 23.8 +0.7
PCAB	Cabril	84.18	40	eP		P	20 58 24.3 +0.9
HAWA	Hanford	84.26	326	eP		P	20 58 25.1 +1.5
	comp=Z,17nm,0.9s						
NEW	Newport	84.36	329	eP		P	20 58 27.7 +3.6
NEW					pmax	pmax	
	comp=Z,3.0nm,0.7s						
NEW	Newport	84.36	329	eP		P	20 58 27.7 +3.6
	comp=Z,3.3nm,0.7s						
D08A	Wollman Farm,	84.40	327	eP		P	20 58 25.7 +1.4
	comp=Z,13nm,1.0s						
MVO	Moncorvo	84.44	41	eP		P	20 58 25.7 +1.0
H04A	Detroit Lake	84.54	324	eP		P	20 58 26.1 +1.0
	comp=Z,38nm,1.7s						
I03D	Drain, OR	84.55	322	P		P	20 58 26.5 +1.4
	baz=129						
C09A	Chrisman Ranch	84.59	328	eP		P	20 58 26.6 +1.3
FCC	Fort Churchill	84.79	346	eP		P	20 58 26.7 +0.8
FCC	Fort Churchill	84.79	346	eP		P	20 58 26.7 +0.8
RNO	Roman Nose	84.91	322	P		P	20 58 28.7 +1.7
PBRG	Braganca	85.00	40	eP		P	20 58 28.5 +1.0
PAB	San Pablo	85.14	43	eP		P	20 58 28.9 +0.7
PAB	San Pablo	85.14	43	eP		P	20 58 28.9 +0.7
TBM	Table Mountain	85.33	326	P		P	20 58 30.3 +1.3
WTV	Waterville	85.36	327	P		P	20 58 30.3 +1.2
ESDC	Sonseca Array	85.45	43	P		P	20 58 30.2 +0.4
	comp=Z,9.2nm,0.9s,baz=240,slow=4.7,SNR=41						
F04A	Amboy	85.47	325	eP		P	20 58 30.9 +1.3
B08A	Colville Reser	85.49	328	eP		P	20 58 30.5 +0.7
ES19	SONSECA Array	85.51	43	eP		P	20 58 30.6 +0.5
LON	Longmire	85.68	325	eP		P	20 58 31.5 +0.8
LON	Longmire	85.68	325	eP		P	20 58 31.5 +0.8
NLW	Nelson Butte	85.80	327	P		P	20 58 32.2 +0.8
D05A	Enumclaw	86.06	326	eP		P	20 58 33.6 +1.1
E03A	Lebam	86.47	324	eP		P	20 58 36.0 +1.5
B05A	Bryant	86.81	326	P		P	20 58 36.7 +0.6
	baz=130,SNR=6.7						
YKA	Yellowknife Ar	93.54	340	P		P	20 59 07.6 +0.5
	comp=Z,4.9nm,0.5s,baz=132,slow=4.6,SNR=176						
ILAR	Eielson Array	106.75	334	PP		PP	21 04 34.1 -0.8
	comp=Z,0.6nm,0.7s,baz=125,slow=6.8,SNR=4.8						
FINES	FINESS Array B	111.27	31	PKKPbc		PKKPbc	21 15 20.3 -1.9
	comp=Z,0.6nm,0.8s,baz=56,slow=3.4,SNR=4.6						
BRTR	Keskin Array B	111.92	55	PKKPab		PKKPab	21 15 29.1 +1.9
	comp=Z,1.0nm,0.7s,baz=109,slow=5.2,SNR=9.8						
ARCES	ARCESS Array B	112.17	22	PKKPbc		PKKPbc	21 15 18.4 -1.1
	comp=Z,3.6nm,1.0s,baz=46,slow=7.6,SNR=5.5						
ASAR	Alice Springs	129.41	204	PKP		PKPdf	21 04 59.9 0.0
	comp=Z,2.8nm,0.7s,baz=138,slow=1.9,SNR=28						
ASAR				SKPbc		SKPbc	21 08 00.7 +0.5
	comp=Z,1.5nm,0.8s,baz=147,slow=4.1,SNR=6.0						
GEYT	Alibeck	130.72	59	PKP		PKPdf	21 05 02.6 +0.7
	comp=Z,0.5nm,0.6s,baz=282,slow=7.2,SNR=3.0						
GEYT				SKPbc		SKPab	21 08 06.6 +1.6
	comp=Z,2.6nm,0.8s,baz=256,slow=6.0,SNR=9.1						
TIXI	Tiksi	130.72	354⇑	ePKIKP		PKPdf	21 05 01.1 +0.3
SEY	Seymchan	132.53	337⇑	PKIKP		PKPdf	21 05 05.6 +1.2
WRA	Warramunga Arr	132.58	207	PKhKP		PKPpre	21 04 56.9
	comp=Z,0.4nm,0.6s,baz=209,slow=1.3,SNR=8.2						
WRA				PKP		PKPdf	21 05 05.8 -0.1
	comp=Z,1.9nm,0.5s,baz=157,slow=1.7,SNR=7.5						
WRA				SKPbc		SKPbc	21 08 12.0 +0.1
	comp=Z,7.6nm,0.9s,baz=153,slow=3.6,SNR=30						
WRAB	Tennant Creek	132.59	207⇑	PKIKP		PKPdf	21 05 06.4 +0.4
PETK	Petropavlovsk-	135.27	323	PKhKP		PKPpre	21 05 02.9
	comp=Z,1.4nm,0.6s,baz=45,slow=2.2,SNR=3.5						
PETK				PKP		PKiKP	21 05 11.0 -0.4
	comp=Z,3.8nm,0.8s,baz=46,slow=5.1,SNR=3.9						
PETK				SKPbc		SKPbc	21 08 20.4 +0.7
	comp=Z,6.3nm,0.7s,baz=93,slow=7.6,SNR=4.5						
FITZ	Fitzroy Crossi	137.30	197	PKP		PKPdf	21 05 15.2 +0.5
	comp=Z,2.1nm,0.6s,baz=271,slow=3.7,SNR=8.7						
YAK	Yakutsk	139.64	348	ePKIKP		PKPdf	21 05 15.3 -2.3
ZALV	Zalesovo Beam	142.43	28	PKhKP		PKPpre	21 05 19.9
	comp=Z,2.6nm,0.5s,baz=312,slow=4.3,SNR=12						
ZALV				SKPbc		SKiKP	21 08 40.9 +0.1
	comp=Z,1.6nm,0.6s,baz=300,slow=4.9,SNR=4.7						
KSH	Kashi	144.31	54	PKP		PKPbc	21 05 26.1 +0.3
KSH				esPKP			21 06 47.2
KSH				ePP		PP	21 08 46.3 +1.6
KSH				PKS		PKSdf	21 09 01.4 -1.1
KSH				SKKS			21 15 12.0
TYV	Tymovskoe	144.33	328	ePKIKP		PKPbc	21 05 25.5 +0.2
TYV				pmax		pmax	
	comp=Z,22nm,1.0s						
BOD	Bodaibo	145.40	360	ePKP2		PKPbc	21 05 28.1 -0.3
BOD				pmax		pmax	
	comp=Z,25nm,0.7s						
MKAR	Makanchi Array	145.57	39	PKPbc		PKPab	21 05 29.9 0.0
	comp=Z,5.3nm,0.4s,baz=343,slow=2.8,SNR=149						
MKAR				SKPbc		SKiKP	21 08 48.4 +0.8
	comp=Z,4.0nm,0.8s,baz=336,slow=2.7,SNR=7.9						
HYB	Hyderabad	146.72	93⇓	iPKP		PKPbc	21 05 34.0 +0.4
	comp=Z,81nm,0.8s						
GUMO	Guam	148.86	258	PKPbc		PKPbc	21 05 40.1 +1.0
	baz=41,slow=11						
MOY	Mondy	149.95	16	ePKP2		PKPbc	21 05 42.5 +1.5
MOY				pmax		pmax	
	comp=Z,10.0nm,2.0s						
KLR	Kul'dur	150.31	336	iPKIKP		PKPbc	21 05 42.0 +0.3
TLY	Talaya	150.54	13	ePKIKP		PKPdf	21 05 39.1 +2.5
KAPI	Kappang	151.33	193	PKPbc		PKPbc	21 05 45.8 +0.6
	comp=Z,9.1nm,0.6s,baz=18,slow=1.8,SNR=12						
ZAK	Zakamensk	151.69	14	ePKIKP		PKPdf	21 05 36.5 -2.0
ZAK				pmax		pmax	
	comp=Z,3.0nm,1.5s						
PYUN	Piuthan	152.05	73	eP		PKPbc	21 05 45.0 -1.7
	comp=Z,58nm,1.0s						
KOLN	Koldanda	152.61	74	eP		PKPbc	21 05 47.6 -0.3
	comp=Z,9.3nm,0.5s						
GKN	Gorkha	153.51	73	eP		PKPbc	21 05 49.0 -0.9
	comp=Z,22nm,0.5s						
DMN	Daman	153.95	74	eP		PKPbc	21 05 51.1 +0.2
	comp=Z,44nm,1.0s						
KKN	Kakani	154.09	74	eP		PKPbc	21 05 50.6 -0.6
USRK	Ussuriysk Ar.	154.14	329	PKPbc		PKPbc	21 05 50.8 +0.3
	comp=Z,2.1nm,0.6s,baz=36,slow=2.2,SNR=8.7						
PKIN	Phulchoki	154.21	74	eP		PKPbc	21 05 52.4 +0.9
	comp=Z,15nm,0.8s						
GUN	Gumba	154.61	74	eP		PKPbc	21 05 51.5 -0.9
SONM	Songino Array	154.74	11	PKP		PKPdf	21 05 43.8 +0.7
	comp=Z,0.7nm,0.8s,baz=320,slow=2.3,SNR=5.8						
SONM				PKPbc		PKiKP	21 05 52.3 +0.5
	comp=Z,0.8nm,0.5s,baz=309,slow=1.2,SNR=9.7						
SONM				PKPab		PKPab	21 06 08.8 +1.2
	comp=Z,1.3nm,0.6s,baz=335,slow=4.6,SNR=7.4						
MJAR	Matsushiro Arr	154.90	308	PKPbc		PKPbc	21 05 52.2 -0.1
	comp=Z,0.8nm,0.5s,baz=68,slow=2.0,SNR=4.5						
MJAR				PKPab		PKPab	21 06 08.9 +0.2
	comp=Z,4.6nm,0.8s,baz=74,slow=2.8,SNR=13						
MAJO	Matsushiro	154.91	308	iPKIKP		PKPdf	21 05 42.0 -1.5
GTA	Gaotai	160.05	33	ePKP		PKPdf	21 05 51.2 +1.3
GTA				PKPab		PKPab	21 06 31.7 +0.8
GTA				pPKP		pPKPdf	21 06 49.3 +1.5
GTA				sPKP			21 07 12.0
KSRS	Korea Array	161.16	322	PKPab		PKPab	21 06 37.1 +1.5
	comp=Z,1.0nm,0.5s,baz=48,slow=4.6,SNR=6.3						
KSAR	Wonju Array Be	161.19	322	PKP2		PKPab	21 06 37.2 +1.4
KSAR	Wonju Array Be	161.19	322	PKPab		PKPab	21 06 37.1 +1.4
CMAR	Chiang Mai Arr	165.55	106	PKPab		PKPab	21 06 55.5 0.0
	comp=Z,9.9nm,0.8s,baz=251,slow=5.5,SNR=49						
CD2	Chengdu	168.36	47	PKP		PKPdf	21 05 57.1 -0.4
GYA	Guiyang	172.94	61	ePKPbc		PKPdf	21 05 59.2 -1.0
GYA				pPKP		pPKPdf	21 06 58.0 -0.1
GYA				sPKP			21 07 20.4
GYA				PKPab		PKPab	21 07 29.6 +1.3
GYA				PKS		PKSdf	21 09 30.8 -1.9
GYA				PP		PP	21 11 21.2 +0.9
GYA				AMB		AMB	
	comp=Z,120nm,8.6s						

MAN 08 20:54:29,17°.59N×120°.38E,h32km,mb3.8,ML2.5,MS2.1, 1D,Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ABRA	Dolores	0.32	80	eP	Pn	20 54 37.8	+0.3
ABRA				eS	Sb	20 54 41.2	-1.0
SIPP	Brgy, Tapao	0.34	12	i/P	Pn	20 54 38.6	+0.9
SIPP				eS	Sb	20 54 42.3	-0.3
APYP	Conner	0.86	72	eP	Pb	20 54 46.1	+0.6
APYP				eS	Sb	20 54 56.8	+0.1

SJA 08 20:56:30.7±0.4,28°.38S×67°.13W,h144km±1km,ML3.5, MW3.6,La Rioja Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VCA	Vinchina	1.01	249	iP	Pn	20 56 55.8	+0.6
VCA				iS	Sn	20 57 14.3	+0.6
VCA				IAML		20 57 17.0	
	comp=Z,1μm,0.2s						
CYA	Choya	1.17	93	iP	Pn	20 56 57.1	+0.7
CYA				iS	Sn	20 57 16.6	+0.5
CYA				IAML		20 57 18.6	
	comp=Z,560nm,0.4s						
AHML	Horco Molle	2.25	45	iP	Pn	20 57 09.3	+0.7
AVFE	Valle Fertil	2.29	187	iP	Pn	20 57 09.9	+0.9
AVFE				IAML		20 57 43.1	
	comp=Z,159nm,0.4s						
AMOG	MOGNA	2.81	205	iP	Pn	20 57 16.2	+0.8
RTLL	Cerro Villicun	3.16	201	iP	Pn	20 57 20.8	+0.9
RTCV	Cerro Valdivia	3.68	199	iP	Pn	20 57 27.8	+1.2
RTLS	Leoncito	3.89	208	iP	Pn	20 57 30.7	+1.1
MRA	San Martin	4.21	163	iP	Pn	20 57 34.6	+1.1
MRA				IAML		20 58 53.0	
	comp=Z,33nm,0.5s						
AUSP	Uspallata	4.30	206	iP	Pn	20 57 36.5	+1.5
ASAL	Salagasta	4.45	199	iP	Pn	20 57 37.9	+1.2
AAGR	Agrelo	4.91	197	iP	Pn	20 57 44.2	+1.3

IDC 08 21:05:20.9±1.2,7°.71S×123°.35E,h0km,mb4.1/3, mb1 4.1/6,mb1mx3.7/29,mbtmp4.0/6,ML3.9/3,Error ellipse: s-maj=137.4km s-min=20.2km az=62.0,Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	Fitzroy Crossi	10.56	168	Pn	Pn	21 07 54.2	+0.4
	0.3nm,0.3s,baz=337,slow=12,SNR=12						
FITZ				Sn	Sn	21 09 38.5	-14
	1.8nm,0.3s,baz=223,slow=12,SNR=12						
WRA	Warramunga Arr	16.16	140	Pn	P	21 09 11.8	-1.2
	0.6nm,0.3s,baz=323,slow=13,SNR=34						
WRA				Sn	Sn	21 12 00.5	-9.3
	0.5nm,0.3s,baz=310,slow=23,SNR=9.0						
ASAR	Alice Springs	18.82	149	P	Pn	21 09 43.2	+0.5
	0.8nm,0.3s,baz=329,slow=12,SNR=28						
ASAR				S	Sn	21 13 02.1	-12
	0.1nm,0.3s,baz=325,slow=24,SNR=5.4						
STKA	Stephens Creek	29.44	147	P	P	21 11 25.1	-1.5
	2.6nm,0.7s,baz=316,slow=8.5,SNR=4.6						
MKAR	Makanchi Array	65.38	330	P	P	21 16 05.2	-0.1
	0.8nm,0.7s,baz=129,slow=9.8,SNR=8.9						
ZALV	Zalesovo Beam	69.47	337	P	P	21 16 31.3	+0.4
	0.7nm,0.4s,baz=142,slow=4.7,SNR=3.9						

MAN 08 21:06:02,7°.04N×126°.05E,h202km,mb4.6,ML3.4,MS3.3, 1C-4D,Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MATI	Mati	0.23	113	eP	Pn	21 06 19.8	-8.8
MATI				eS	S	21 06 32.0	-17
DMPH	Davao City--Mi	0.54	275⇑	eP	Pn	21 06 23.9	-5.5
DMPH				eS	S	21 06 40.5	-10
KCP	Kidapawan	0.95	268⇓	eP	Pn	21 06 29.1	-2.6
KCP				iS	S	21 06 47.0	-7.5
BIPH	Bislig	1.18	15⇓	iP	Pn	21 06 34.2	+0.9
BIPH				iS	S	21 06 59.2	+1.7
BUKP	Musuan	1.29	311	eP	Pn	21 06 33.8	-0.3
BUKP				eS	S	21 07 00.3	+1.4
GSPH	General Santos	1.44	229⇓	iP	Pn	21 06 34.2	-1.4
GSPH				iS	S	21 06 59.2	-2.0
CTBH	Cotabato--PC H	1.80	276⇓	iP	Pn	21 06 36.2	-2.4
CGP	Cagayan de Oro	1.94	317	eP	Pn	21 06 40.2	+0.1
PAGZ	Pagadian	2.76	287	eP	Pn	21 06 50.5	+1.5
IPIL	Ipil	3.53	282	eP	Pn	21 06 59.5	+1.4

WEL 08 21:06:58.0±0.4,37°.60S×179°.23E,h33km,ML3.7/6,1C-1D, Error ellipse: s-maj=3.8km s-min=2.8km az=90.0,Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WMGZ	Waiomatatini S	0.69	251	PN	Pn	21 07 10.4	-0.9
WMGZ				SN	Sb	21 07 20.3	-0.5
MXZ	Matakaoa Point	0.73	272	PN	Pn	21 07 11.7	-0.3
MXZ				SN	Sn	21 07 22.0	-0.1
MXZ				AML	AML	21 07 24.7	
PUZ	Puketiti	0.91	238	PN	Pn	21 07 13.7	-0.8
PUZ				SN	Sn	21 07 26.1	-0.3
PKGZ	Pakihiroa	0.96	252	⇓PN	Pn	21 07 14.4	-0.8
TWGZ	Tauwhareparae	1.15	239	PN	Pn	21 07 17.1	-0.6
TWGZ				SN	Sn	21 07 32.5	+0.1
HAZ	Te Kaha	1.16	262	PN	Pn	21 07 17.8	-0.1
CNGZ	Carnagh Statio	1.20	222	PN	Pn	21 07 18.3	-0.1
TKGZ	Te Karaka	1.38	232	⇑PN	Pn	21 07 20.2	-0.6
MWZ	Matawai	1.54	241	PN	Pn	21 07 22.0	-1.0
MWZ				AML	AML	21 07 43.9	
MWZ				AML	AML	21 07 45.5	
RIGZ	Rimuhau	1.60	226	PN	Pn	21 07 23.5	-0.6
RAGZ	Rawiri	1.69	237	PN	Pn	21 07 24.5	-0.8
PRGZ	Paritu Road	1.70	218	PN	Pn	21 07 24.8	-0.5
URZ	Urewera	1.80	248	PN	Pn	21 07 26.8	+0.1
URZ				AML	AML	21 07 57.8	
URZ				AML	AML	21 07 58.2	
MHGZ	Mahia Peninsul	1.87	213	PN	Pn	21 07 27.0	-0.7
KNZ	Kokohu	1.88	220	PN	Pn	21 07 26.4	-1.3
WHHZ	Waihua	2.16	226	PN	Pn	21 07 31.1	-0.5
NMHZ	Naumai	2.42	231	PN	Pn	21 07 34.8	-0.5
BKZ	Black Stump Fm	2.66	233	PN	Pn	21 07 37.8	-0.8
MCHZ	McNeill Hill	2.71	226	PN	Pn	21 07 38.4	-0.9
KWHZ	Kaweka Forest	2.86	229	PN	Pn	21 07 40.1	-1.2
KAHZ	Kahuranaki	2.87	219	PN	Pn	21 07 39.9	-1.5
KUZ	Kuaotunu	2.93	286	PN	Pn	21 07 42.5	+0.3
KUZ				AML	AML	21 08 21.2	
KRHZ	Kereru	3.03	227	PN	Pn	21 07 42.5	-1.2
PXZ	Pawanui	3.06	217	AML	AML	21 08 18.2	
PXZ				AML	AML	21 08 19.0	
BHHZ	Black Hill Sta	3.12	232	PN	Pn	21 07 43.5	-1.4
PNHZ	Pukenui	3.31	225	PN	Pn	21 07 45.1	-2.5
TSZ	Takapari Road	3.54	225	PN	Pn	21 07 48.3	-2.4
DVHZ	Dannevirke	3.60	221	PN	Pn	21 07 49.0	-2.5
BFZ	Birch Farm	3.86	216	PN	Pn	21 07 51.5	-3.4
TIWZ	Tintock	4.10	218	PN	Pn	21 07 55.2	-3.2
TIWZ				AML	AML	21 08 42.6	
TIWZ				AML	AML	21 08 43.6	
TMWZ	Te Maipa	4.36	215	PN	Pn	21 07 58.4	-3.5
HOWZ	Holdsworth Sta	4.38	220	PN	Pn	21 07 58.5	-3.6
MTW	Mount Morrison	4.58	218	PN	Pn	21 08 00.8	-4.2

CSEM 08 21:15:10.6,42°.50N×13°.34E,h12km,MD2.1/23

**ROM 08 21:15:10.6±0.1,42°.50N×13°.34E,h12km±1km,Md2.1/23, Ml2.1/12,Error ellipse: s

261nm,0.3s
VCEL Villa Celiera 0.39 106 Pg Pg 21 15 18.9 +0.5
261nm,0.3s
PTQR Pietraquaria 0.48 174 Pg Pg 21 15 20.0 -0.1
PTQR Pietraquaria 0.48 174 Pg Pg 21 15 20.0 -0.1
OFFI Offida 0.50 31 Pg Pb 21 15 21.5 +0.1
OFFI Offida 0.50 31 Pg Pb 21 15 21.5 +0.1
FDMO Fiordimonte 0.56 341 Pg Pg 21 15 21.5 -0.1
34nm,0.2s
FDMO Fiordimonte 0.56 341 Pg Pg 21 15 21.5 -0.1
34nm,0.2s
CESX Cesi 0.57 281 Pg Pg 21 15 21.6 -0.1
CESX Cesi 0.57 281 Pg Pg 21 15 21.6 -0.1
CESI CESI - Serrava 0.59 328 Pg Pg 21 15 22.0 -0.2
11nm,0.3s
CESI CESI - Serrava 0.59 328 Pg Pg 21 15 22.0 -0.2
11nm,0.3s
CERT Cerreto 0.61 206 Pg Pb 21 15 23.3 0.0
CERT Cerreto 0.61 206 Pg Pb 21 15 23.3 0.0
INTR Introdacqua 0.65 139 Pg Pg 21 15 22.7 -0.5
53nm,0.6s
INTR Introdacqua 0.65 139 Pg Pg 21 15 22.7 -0.5
53nm,0.6s
VVLD Villa Vallelon 0.67 161 Pg Pb 21 15 24.1 -0.1
VVLD Villa Vallelon 0.67 161 Pg Pb 21 15 24.1 -0.1
GUMA Gualdo di Mace 0.71 38 Pg Pg 21 15 21.8 -2.6
GUMA Gualdo di Mace 0.71 38 Pg Pg 21 15 21.8 -2.6
SNTG Esanatoglia 0.81 339 Pg Pg 21 15 25.7 -0.5
SNTG Esanatoglia 0.81 339 Pg Pg 21 15 25.7 -0.5
SSFR Montelago di S 1.02 337 Pg Pb 21 15 29.6 -0.6
36nm,0.2s
SSFR Montelago di S 1.02 337 Pg Pb 21 15 29.6 -0.6
36nm,0.2s

*CSEM **08** 21:16:09.8, 41°.76N×13°.75E, h13km, MD1.8/1*
ROM 08 21:16:09.8±0.2, 41°.76N×13°.75E, h13km±2km, Md1.8/1, Ml1.2/1, Error ellipse: s-maj=2.8km s-min=2.4km az=83.0, Southern Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
POFI	**Posta Fibreno**	**0.05**	**216**	Pg	Pg	21 16 12.6	+0.3
POFI				Sg	Sg	21 16 14.5	+0.4
POFI	**Posta Fibreno**	**0.05**	**216**	Pg	Pg	21 16 12.6	+0.3
POFI				Sg	Sg	21 16 14.5	+0.4
VVLD	**Villa Vallelon**	**0.15**	**320**	Pg	Pg	21 16 13.9	+0.4
VVLD				Sg	Sg	21 16 16.6	+0.5
VVLD	**Villa Vallelon**	**0.15**	**320**	Pg	Pg	21 16 13.9	+0.4
VVLD				Sg	Sg	21 16 16.6	+0.5
GUAR	**Guarcino**	**0.33**	**277**	Pg	Pg	21 16 17.0	+0.5
GUAR				Sg	Sg	21 16 21.9	+0.9
22nm,0.3s							
GUAR	**Guarcino**	**0.33**	**277**	Pg	Pg	21 16 17.0	+0.5
GUAR				Sg	Sg	21 16 21.9	+0.9
22nm,0.3s							
PTQR	**Pietraquaria**	**0.37**	**316**	Pg	Pg	21 16 17.4	+0.1
PTQR				Sg	Sb	21 16 23.5	-0.6
PTQR	**Pietraquaria**	**0.37**	**316**	Pg	Pg	21 16 17.4	+0.1
PTQR				Sg	Sb	21 16 23.5	-0.6

IDC 08 21:17:20.9±3.8, 6°.44S×154°.92E, h0km, mb3.2/2, mb1 3.5/2, mb1mx3.1/34, mbtmp3.2/2, MS3.3/3, Ms1 3.3/3, ms1mx3.1/12, Error ellipse: s-maj=185.0km s-min=56.7km az=129.0, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	**Honiara**	**5.80**	**121**	LR	LR	21 21 25.7	
comp=Z,147nm,19.7s,baz=132,slow=42							
WRA	**Warramunga Arr**	**24.07**	**234**	P	P	21 22 38.3	+0.1
0.3nm,0.4s,baz=60,slow=9.6,SNR=2.4							
ASAR	**Alice Springs**	**26.48**	**227**	P	P	21 23 00.3	+0.1
0.1nm,0.5s,baz=61,slow=9.5,SNR=1.9							
JNU	**Nakatsue**	**45.49**	**331**	LR	LR	21 42 47.2	
comp=Z,82nm,21.5s,baz=118,slow=34							
KSRS	**Korea Array**	**50.41**	**332**	LR	LR	21 45 20.9	
comp=Z,33nm,21.6s,baz=30,slow=33							
TORD	**Torodi Ar. Bea**	**152.80**	**286**	PKPbc	PKPbc	21 37 20.8	-0.3
0.6nm,1.1s,baz=70,slow=3.3,SNR=2.7							

MEX 08 21:20:06.4±0.5, 17°.18N×93°.80W, h91km±21km, MD3.7, Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		**1.57**	**159**	*eP*	Pn	21 20 31.9	-1.2
PCIG				*eS*	Sn	21 20 52.0	-1.4
CCIG	**Comitan**	**1.83**	**119**	*eP*	Pn	21 20 36.0	-0.7
CCIG				*eS*	Sn	21 20 57.5	-2.1
HUIG	**Huatulco**	**2.62**	**238**	*eP*	Pn	21 20 45.9	-1.0
HUIG				*eS*	Sn	21 21 16.8	-1.2
VHO	**Vista Hermosa**	**2.80**	**268**	*eP*	Pn	21 20 48.3	-1.2
VHO				*eS*	Sn	21 21 20.9	-1.7
TPIG	**Tehuac#an**	**3.61**	**290**	*iP*	Pn	21 21 01.9	+1.6
TPIG				*iS*	Sn	21 21 40.7	-1.2

*IDC **08** 21:28:19.9±1.4, 35°.88N×140°.80E, h0km, mb3.5/4, mb1 3.6/7, mb1mx3.4/34, mbtmp3.5/7, ML3.4/3, MS2.5/2, Ms1 2.5/2, ms1mx2.2/43, Error ellipse: s-maj=30.6km s-min=21.3km az=95.0*
*ISCJB **08** 21:28:21.3±0.9, 35°.91N±0°.04×141°.12E±0°.10, h31km, mb3.4/4, Error ellipse: s-maj=11.2km s-min=6.3km az=174.0*
*JMA **08** 21:28:23.8±0.1, 35°.89N×140°.84E, h42km±1km, M2.7*
ISC 08 21:28:23.7±0.8, 35°.92N±0°.04×140°.88E±0°.07, h31km, n16, σ0°.92/16, mb3.5/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.22**	**185**	P	**Pn**	**21 28 31.0**	**+0.1**
CHOJ				S	**Sn**	**21 28 36.8**	**+1.4**
JYT	**Yasato**	**0.64**	**299**	P	**Pb**	**21 28 36.1**	**-0.3**
JHO	**Hitachi**	**0.73**	**340**	P	**Pb**	**21 28 38.0**	**0.0**
JHO				S	**Sn**	**21 28 48.2**	**+0.2**
JHO	**Hitachi**	**0.73**	**340**	S	**Sn**	**21 28 48.2**	**+0.2**
MJAR	**Matsushiro Arr**	**2.25**	**287**	Pn	**Pn**	**21 28 59.2**	**+0.4**
4.2nm,0.3s,baz=95,slow=9.0,SNR=26							
MJAR				LR	LR	21 30 01.0	
comp=Z,104nm,21.9s,baz=95,slow=47							
MAT	**Matsushiro**	**2.25**	**287**	P	**Pn**	**21 29 00.0**	**+1.2**
MAT				*eS*	**Sb**	**21 29 30.0**	**-1.1**
JHJ	**Hachijo jima 2**	**2.94**	**198**	Pn	**Pn**	**21 29 08.2**	**-0.2**
5.9nm,0.3s,baz=284,slow=22,SNR=1.4							
JHJ				Sn	**Sn**	**21 29 41.4**	**-1.2**
14nm,0.3s,baz=241,slow=23,SNR=1.7							
ASAJ	**Asahikawa**	**8.29**	**9**	Pn	**Pn**	**21 30 20.9**	**-0.7**
1.0nm,0.3s,baz=212,slow=9.0,SNR=1.8							
KSRS	**Korea Array**	**10.52**	**282**	LR	LR	21 34 58.3	
comp=Z,32nm,20.4s,baz=91,slow=38							
SONM	**Songino Array**	**28.07**	**306**	P	**P**	**21 34 12.3**	**-0.2**
0.3nm,0.6s,baz=99,slow=8.9,SNR=2.8							
H11S1	**WAKE ISLAND Hy**	**28.64**	**120**	T	T	22 04 23.4	
baz=313,slow=76,SNR=16							
H11S3	**WAKE ISLAND Hy**	**28.64**	**120**	T	T	22 04 25.2	
baz=313,slow=76,SNR=8.4							
H11S2	**WAKE ISLAND Hy**	**28.66**	**120**	T	T	22 04 41.2	
baz=313,slow=76,SNR=7.5							
MKAR	**Makanchi Array**	**44.35**	**303**	P	**P**	**21 36 30.6**	**-0.5**
0.5nm,0.6s,baz=89,slow=11,SNR=6.9							
ILAR	**Eielson Array**	**50.66**	**32**	P	**P**	**21 37 21.6**	**+2.0**
0.5nm,0.7s,baz=262,slow=6.1,SNR=4.9							
WRA	**Warramunga Arr**	**55.91**	**187**	P	**P**	**21 37 58.7**	**0.0**
0.3nm,0.5s,baz=2.9,slow=7.5,SNR=2.6							

JMA 08 21:28:31.5±0.1, 36°.32N×140°.81E, h53km±1km, M3.3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.35**	**326**	P	Pn	21 28 41.3	-0.1
JYT	**Yasato**	**0.51**	**260**	P	Pn	21 28 43.1	+0.1
JYT				S	Sn	21 28 51.6	+0.3
CHOJ	**Chosi**	**0.62**	**176**	*eS*	Sn	21 28 53.5	-0.1
ONAJ	**Iwakimizuishiy**	**0.78**	**359**	S	Sn	21 28 56.5	-0.9

MAN 08 21:33:13, 17°.83N×120°.53E, h22km, mb4.1, ML3.0, MS2.7, 1C-1D, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SIPP	**Brgy, Tapao**	**0.11**	**324**	↓*iP*	Pb	21 33 20.1	+1.8
SIPP				*eS*	Sb	21 33 25.6	+3.7
ABRA	**Dolores**	**0.25**	**136**	*eP*	Pb	21 33 19.3	+0.1
ABRA				*eS*	Sb	21 33 23.4	+0.1
APYP	**Conner**	**0.68**	**87**	*eP*	Pn	21 33 27.8	+0.4
APYP				*eS*	Sn	21 33 38.3	+1.0
CVP	**Callao Caves**	**1.24**	**96**	*eP*	Pb	21 33 37.1	+1.4
BCPH	**Baguio City Da**	**1.44**	**178**	↑*iP*	Pn	21 33 26.9	-11
BCPH				*iS*	Sn	21 33 52.8	-3.6
CAUP	**Cauayan**	**1.52**	**125**	*eP*	Pb	21 33 41.2	+0.8
BOLP	**Bolinao**	**1.56**	**202**	*eP*	Pn	21 33 39.4	+0.1
BALP	**Baler**	**2.31**	**154**	*eP*	Pb	21 33 51.9	-2.1

*ISCJB **08** 21:37:10.5±1.3, 35°.90N±0°.05×141°.1E±0°.1, h48km±7km, mb3.5/2, MS3.3/1, Error ellipse: s-maj=19.6km s-min=7.5km az=166.1*
*JMA **08** 21:37:12.2±0.1, 35°.90N×140°.84E, h40km±1km, M2.8*
*IDC **08** 21:37:16.9±1.5, 34°.78N×138°.02E, h0km, mb3.5/2, mb1 3.6/3, mb1mx3.2/55, mbtmp3.5/3, ML2.7/1, MS3.1/2, Ms1 3.1/2, ms1mx2.5/41, Error ellipse: s-maj=45.0km s-min=23.6km az=71.0*
ISC 08 21:37:11.2±1.7, 35°.94N±0°.06×141°.1E±0°.1, h35km±2km, n12, σ1°.02/15, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.29**	**216**	P	**Pn**	**21 37 19.3**	**+0.2**
CHOJ				*eS*	**Sn**	**21 37 24.8**	**-0.4**
JYT	**Yasato**	**0.76**	**293**	P	**Pn**	**21 37 24.4**	**-1.0**
JHO	**Hitachi**	**0.78**	**329**	P	**Pn**	**21 37 26.3**	**+0.6**
JHO				*eS*	**Sn**	**21 37 36.8**	**+0.6**
BSO4	**Boso 4**	**1.12**	**212**	P	**Pn**	**21 37 31.6**	**+1.4**
BSO3	**Boso 3**	**1.22**	**202**	P	**Pn**	**21 37 31.9**	**+0.5**
JAG	**Ashikaga**	**1.39**	**291**	P	**Pn**	**21 37 33.2**	**-0.9**
MJAR	**Matsushiro Arr**	**2.39**	**285**	Pn	**Pn**	**21 37 47.9**	**+0.2**
5.6nm,0.3s,baz=97,slow=9.1,SNR=28							
MAT	**Matsushiro**	**2.39**	**286**	P	**Pn**	**21 37 48.3**	**+0.5**
MAT				S	**Sn**	**21 38 17.5**	**+1.6**
JHJ	**Hachijo jima 2**	**3.00**	**201**	Pn	**Pn**	**21 37 56.8**	**+0.6**
5.4nm,0.3s,baz=219,slow=23,SNR=2.1							
JHJ				Sn	**Sn**	**21 38 29.2**	**-1.7**
15nm,0.3s,baz=70,slow=23,SNR=1.9							
JCJ	**Chichijima**	**8.87**	**174**	LR	LR	21 42 34.6	
comp=Z,58nm,19.3s,baz=340,slow=38							
MKAR	**Makanchi Array**	**44.47**	**303**	P	**P**	**21 45 18.9**	**0.0**
0.6nm,0.6s,baz=87,slow=6.9,SNR=6.5							
MKAR				LR	LR	22 04 54.2	
comp=Z,40nm,20.0s,baz=31,slow=38							
WRA	**Warramunga Arr**	**55.94**	**188**	P	**P**	**21 46 45.2**	**-0.5**
0.4nm,0.8s,baz=2.9,slow=7.6,SNR=2.5							

JMA 08 21:43:51.5±0.2, 38°.55N×144°.46E, h21km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.24**	**285**	P	Pn	21 44 28.4	+1.0
OFUJ				*eS*	Sn	21 44 55.8	+1.4
JIO	**Ouri**	**2.44**	**269**	P	Pn	21 44 31.0	+0.9
JIO				S	Sn	21 45 00.4	+1.1
JMK	**Ichinoseki**	**2.56**	**280**	P	Pn	21 44 33.3	+1.5
JMK				*eS*	Sn	21 45 05.0	+2.7
JOM	**Ohasama**	**2.63**	**291**	*eS*	Sn	21 45 05.9	+1.8
JMM	**Marumori**	**2.97**	**258**	P	Pn	21 44 38.5	+1.2
JMM				S	Sn	21 45 13.6	+1.3
JOU	**Okura**	**2.99**	**268**	P	Pn	21 44 39.3	+1.7
JOU				S	Sn	21 45 15.6	+2.8
JFK	**Kawauchi**	**3.07**	**248**	S	Sn	21 45 15.4	+0.5
JRG	**Rokugo**	**3.10**	**287**	*eS*	Sn	21 45 18.4	+2.8
JYK	**Kaneyama**	**3.23**	**278**	P	Pn	21 44 43.3	+2.4
JYK				*eS*	Sn	21 45 21.5	+2.8
JFT	**Otama**	**3.42**	**254**	P	Pn	21 44 45.8	+2.3
JFT				*eS*	Sn	21 45 26.0	+2.6
JTM	**Tenmabayashi**	**3.44**	**312**	*eS*	Sn	21 45 24.7	+0.7

*IDC **08** 21:44:42.5±2.1, 17°.76N×121°.18E, h0km, mb3.6/4, mb1 3.8/4, mb1mx3.4/55, mbtmp3.6/4, Error ellipse: s-maj=240.7km s-min=22.3km az=63.0*
*MAN **08** 21:44:44, 17°.80N×120°.53E, h23km, mb4.9, ML3.8, MS3.8*
MAN INTENSITY II - VIGAN SANTA MAGSINGALSTO DOMINGO BANTAY AND SAN ILDEFONSO ILOCOS SUR.
*ISCJB **08** 21:44:45.7±0.6, 17°.67N±0°.05×120°.52E±0°.06, h28km, mb3.5/4, Error ellipse: s-maj=7.7km s-min=7.6km az=156.2*
ISC 08 21:44:45.7±1.2, 17°.77N±0°.09×120°.7E±0°.1, h28km, n11, σ1°.88/11, mb3.5/4, 3D, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ABRA	**Dolores**	**0.12**	**165**	*eP*	**Pb**	**21 44 50.5**	**-0.4**
ABRA				*eS*	**Sb**	**21 44 55.2**	**+0.8**
SIPP	**Brgy, Tapao**	**0.26**	**307**	↓*eP*	**Pb**	**21 44 51.4**	**-1.1**
SIPP				*eS*	**Sb**	**21 44 57.0**	**-0.1**
APYP	**Conner**	**0.55**	**80**	*eP*	Pn	21 44 59.0	+1.3
APYP				*eS*	Sn	21 45 09.6	+3.8
CVP	**Callao Caves**	**1.09**	**93**	↓*eP*	Pb	21 45 08.3	+2.3
BCPH	**Baguio City Da**	**1.38**	**184**	↓*iP*	**Pn**	**21 45 08.3**	**-1.0**
BCPH				*iS*	**Sb**	**21 45 31.5**	**+3.2**
BOLP	**Bolinao**	**1.56**	**208**	*eP*	**Pn**	**21 45 10.1**	**-1.5**
BALP	**Baler**	**2.19**	**157**	*eP*	**Pb**	**21 45 22.4**	**-2.2**
WRA	**Warramunga Arr**	**39.80**	**160**	P	**P**	**21 52 15.7**	**-0.9**
0.1nm,0.4s,baz=340,slow=9.0,SNR=3.2							
MKAR	**Makanchi Array**	**42.82**	**321**	P	P	21 52 44.6	+3.4
1.2nm,0.8s,baz=115,slow=9.8,SNR=13							
ASAR	**Alice Springs**	**43.16**	**162**	P	**P**	**21 52 44.2**	**+0.1**
0.3nm,0.4s,baz=343,slow=7.0,SNR=5.2							
FINES	**FINESS Array B**	**76.75**	**331**	P	**P**	**21 56 37.0**	**+2.7**
1.4nm,0.9s,baz=64,slow=4.4,SNR=5.0							

*ISCJB **08** 21:45:40.6±1.3, 50°.7N±0°.1×171°.75W±0°.09, h33km, mb3.3/2, MS3.4/2, Error ellipse: s-maj=18.7km s-min=6.9km az=12.7*
*NEIC **08** 21:45:41.1, 50°.70N×171°.87W, h10km, ML3.0(AEIC), After AEIC.*
*IDC **08** 21:46:06.1±31.0, 51°.27N×165°.88W, h0km, mb3.3/2, mb1 3.7/3, mb1mx3.2/55, mbtmp3.3/3, ML3.7/1, MS3.4/2, Ms1 3.4/2, ms1mx2.6/30, Error ellipse: s-maj=604.8km s-min=50.1km az=82.0*
ISC 08 21:45:42.8±1.6, 50°.8N±0°.2×171°.79W±0°.06, h35km, n13, σ1°.10/14, South of Aleutian Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KOFP	**Korovin Flat P**	**2.09**	**317**	P	**Pn**	**21 46 15.3**	**-0.1**
KOFP				S	**Sn**	**21 46 40.4**	**+0.2**
KOSE	**Korovin Southe**	**2.12**	**319**	P	**Pn**	**21 46 15.9**	**+0.2**
KOSE				S	**Sn**	**21 46 41.8**	**+0.9**
KOWE	**Korovin West**	**2.23**	**317**	P	**Pn**	**21 46 17.4**	**+0.3**
GSMY	**Great Sitkin M**	**2.97**	**297**	P	**Pn**	**21 46 26.4**	**-0.9**
GSTD	**Great Sitkin T**	**3.02**	**297**	P	**Pn**	**21 46 27.6**	**-0.5**
GSTD				S	**Sn**	**21 47 01.5**	**-1.6**
OKTU	**Okmok Mt. Tuli**	**3.50**	**40**	P	**Pn**	**21 46 34.1**	**-0.6**
OKAK	**Okmok**	**3.53**	**35**	P	**Pn**	**21 46 33.3**	**-1.7**
OKRE	**Okmok R'deer P**	**3.55**	**38**	P	**Pn**	**21 46 35.4**	**0.0**
ILAR	**Eielson Array**	**19.13**	**33**	Pn	**P**	**21 50 00.8**	**-1.6**
0.1nm,0.3s,baz=226,slow=9.9,SNR=7.0							
YKA	**Yellowknife Ar**	**32.44**	**47**	P	**P**	**21 52 10.7**	**+1.6**
0.2nm,0.5s,baz=271,slow=7.7,SNR=6.6							
GUMO	**Guam**	**50.99**	**239**	LR	LR	22 15 46.6	
comp=Z,19nm,19.3s,baz=106,slow=33							
TXAR	**Lajitas Array**	**54.33**	**86**	P	**P**	**21 55 06.2**	**+0.5**
0.3nm,0.7s,baz=322,slow=4.5,SNR=4.6							
AKASG	**Malin Array Be**	**77.34**	**346**	LR	LR	22 38 31.3	
comp=Z,38nm,18.3s,baz=140,slow=40							

*CSEM **08** 21:52:04.5, 42°.51N×13°.32E, h14km, MD1.4/5*
ROM 08 21:52:04.5±0.2, 42°.51N×13°.32E, h14km±3km, Md1.4/5, Ml1.2/3, Error ellipse: s-maj=3.2km s-min=2.3km az=62.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RM33	**Pellescritta (**	**0.08**	**273**	Pg	Pg	21 52 07.6	+0.1
RM33				Sg	Sg	21 52 09.6	+0.1
36nm,0.2s							
RM33	**Pellescritta (**	**0.08**	**273**	Pg	Pg	21 52 07.6	+0.1
RM33				Sg	Sg	21 52 09.6	+0.1
36nm,0.2s							
RM29	**Verrico (Monte**	**0.10**	**302**	Pg	Pg	21 52 08.0	+0.2
RM29				Sg	Sg	21 52 10.5	+0.5
47nm,0.2s							
RM29	**Verrico (Monte**	**0.10**	**302**	Pg	Pg	21 52 08.0	+0.2
RM29				Sg	Sg	21 52 10.5	+0.5
47nm,0.2s							
SMA1	**SAN MARTINO**	**0.13**	**5**	Pg	Pb	21 52 08.5	-0.3
SMA1				Sg	Sg	21 52 10.8	+0.3
61nm,0.3s							
SMA1	**SAN MARTINO**	**0.13**	**5**	Pg	Pb	21 52 08.5	-0.3
SMA1				Sg	Sg	21 52 10.8	+0.3
61nm,0.3s							
LNSS	**Leonessa**	**0.23**	**295**	Pg	Pg	21 52 09.9	+0.3
LNSS				Sg	Sb	21 52 14.0	-0.6
LNSS	**Leonessa**	**0.23**	**295**	Pg	Pg	21 52 09.9	+0.3
LNSS				Sg	Sb	21 52 14.0	-0.6
NRCA	**Norcia**	**0.36**	**335**	Pg	Pg	21 52 11.9	0.0
NRCA				Sg	Sg	21 52 17.6	+0.7
144nm,2.5s							
NRCA	**Norcia**	**0.36**	**335**	Pg	Pg	21 52 11.9	0.0
NRCA				Sg	Sg	21 52 17.6	+0.7
144nm,2.5s							

MAN 08 21:53:34, 17°.81N×120°.62E, h9km, mb4.1, ML2.9, MS2.6, 1C, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ABRA	**Dolores**	**0.18**	**153**	*eP*	Pg	21 53 38.7	+0.8
SIPP	**Brgy, Tapao**	**0.19**	**304**	↑*eP*	Pg	21 53 39.5	+1.5
SIPP				*eS*	Sg	21 53 44.0	+3.3
APYP	**Conner**	**0.59**	**85**	*eP*	Pb	21 53 47.5	+1.0
APYP				*eS*	Sn	21 53 58.0	-0.3
CAUP	**Cauayan**	**1.44**	**127**	*eP*	Pg	21 54 01.5	-0.1

*CSEM **08** 22:10:49.5±0.2, 41°.17N×43°.85E, h5km, ML1.8, Error ellipse: s-maj=6.4km s-min=3.8km az=148.0*
*TIF **08** 22:10:49.2, 41°.21N×43°.89E, h17km*
*ISCJB **08** 22:10:50.1±0.8, 41°.19N±0°.04×43°.86E±0°.04, h6km±7km, Error ellipse: s-maj=6.3km s-min=4.9km az=156.4*
*DDA **08** 22:10:54.5, 41°.01N×43°.48E, h7km, Md2.9*
ISC 08 22:10:49.2±1.0, 41°.14N±0°.04×43°.86E±0°.03, h12km±8km, n24, σ0°.57/41, Turkey-Georgia-Armenia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BGD	**Bogdanovka**	**0.24**	**303**	P	**Pg**	**22 10 54.5**	**+0.2**
BGD				S	**Sg**	**22 10 57.9**	**+0.2**
BGD	**Bogdanovka**	**0.24**	**303**	P	**Pg**	**22 10 54.6**	**+0.2**
BGD				S	**Sg**	**22 10 58.0**	**+0.2**
AKH	**Akhalkalaki**	**0.39**	**315**	P	**Pg**	**22 10 56.8**	**-0.3**
AKH				S	**Sg**	**22 11 01.7**	**-0.7**
AKH	**Akhalkalaki**	**0.39**	**315**	P	**Pg**	**22 10 56.8**	**-0.3**
AKH				S	**Sg**	**22 11 01.6**	**-0.7**
EAK	**Akyaka**	**0.49**	**203**	P	**Pb**	**22 11 00.8**	**+0.9**
EAK	**Akyaka**	**0.49**	**203**	*iP*	**Pb**	**22 11 00.8**	**+0.9**
KARS	**Kars**	**0.78**	**230**	*e*PG	**Pg**	**22 11 03.0**	**-1.3**
KARS				*e*SG	**Sn**	**22 11 17.9**	**0.0**
KARS	**Kars**	**0.78**	**230**	*e*Pg	**Pg**	**22 11 03.0**	**-1.3**
KARS				*e*Sg	**Sn**	**22 11 17.9**	**0.0**
TBLG	**Delisi**	**0.89**	**48**	P	**Pg**	**22 11 05.9**	**-0.5**
TBLG				S	**Sg**	**22 11 17.7**	**-0.3**
TBLG	**Delisi**	**0.89**	**48**	P	**Pg**	**22 11 05.9**	**-0.5**
TBLG				S	**Sg**	**22 11 17.4**	**-0.6**
EPOS	**Posof**	**0.93**	**294**	P	**Pg**	**22 11 07.0**	**-0.2**
EPOS				S	**Sg**	**22 11 19.0**	**-0.3**
EPOS	**Posof**	**0.93**	**294**	*iP*	**Pg**	**22 11 07.0**	**-0.2**
EPOS				*iS*	**Sg**	**22 11 19.0**	**-0.3**
DUS	**Dusheti**	**1.14**	**33**	P	**Pn**	**22 11 11.2**	**+0.1**
DUS				S	**Sn**	**22 11 26.8**	**-0.1**
DUS	**Dusheti**	**1.14**	**33**	P	**Pn**	**22 11 11.3**	**+0.1**
DUS				S	**Sn**	**22 11 26.7**	**-0.1**
DGRG	**David-gareji**	**1.18**	**74**	P	**Pn**	**22 11 11.9**	**+0.3**
DGRG				S	**Sn**	**22 11 28.9**	**+1.2**
DGRG	**David-gareji**	**1.18**	**74**	P	**Pn**	**22 11 12.0**	**+0.3**
DGRG				S	**Sg**	**22 11 27.7**	**+0.4**
GUDG	**Gudauri**	**1.41**	**19**	P	**Pn**	**22 11 15.2**	**+0.3**
GUDG				S	**Sb**	**22 11 32.3**	**-1.3**
GUDG	**Gudauri**	**1.41**	**19**	P	**Pg**	**22 11 15.8**	**-0.5**
GUDG				S	**Sg**	**22 11 34.0**	**-0.5**
ARTV	**Artvin**	**1.46**	**273**	P	**Pg**	**22 11 17.2**	**-0.1**
ARTV	**Artvin**	**1.46**	**273**	*iP*	**Pg**	**22 11 17.2**	**-0.1**
DAGI	**Agillar**	**1.47**	**268**	*iP*	**Pg**	**22 11 17.3**	**-0.2**
ONI	**Oni**	**1.49**	**348**	P	**Pn**	**22 11 15.8**	**0.0**
ONI				S	**Sb**	**22 11 35.5**	**-0.2**
DDEM	**Demirkent**	**1.62**	**262**	*iP*	**Pg**	**22 11 20.2**	**0.0**
DBAD	**Bademkaya**	**1.64**	**267**	*iP*	**Pg**	**22 11 20.4**	**-0.3**

IDC 08 22:11:14.0±2.9, 20°.94S×178°.94W, h620km±34km, mb2.9/5, mb1 3.0/5, mb1mx2.9/24, mbtmp3.9/5, Error ellipse: s-maj=27.7km s-min=17.0km az=173.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**9.77**	**45**	P	P	22 13 24.0	-7.2
3.9nm,0.3s,baz=100,slow=7.1,SNR=7.3							
AFI				S	S	22 15 09.7	-14
1.0nm,0.3s,baz=39,slow=5.6,SNR=2.8							
URZ	**Urewera**	**17.60**	**190**	P	P	22 14 42.2	-2.6
1.8nm,0.3s,baz=256,slow=0.2,SNR=4.9							
RPZ	**Rata Peaks**	**24.20**	**198**	P	P	22 15 42.3	-1.7
2.8nm,0.4s,baz=82,slow=7.1,SNR=3.2							
STKA	**Stephens Creek**	**36.81**	**245**	P	P	22 17 32.4	+0.8
1.5nm,0.6s,baz=70,slow=8.9,SNR=3.5							
ASAR	**Alice Springs**	**43.57**	**257**	P	P	22 18 25.8	+0.5
0.6nm,0.5s,baz=96,slow=7.9,SNR=11							
ASAR				S	S	22 24 12.1	+0.8
0.9nm,0.8s,baz=93,slow=16,SNR=7.2							
WRA	**Warramunga Arr**	**43.67**	**263**	P	P	22 18 26.1	-0.1
0.9nm,0.3s,baz=97,slow=7.4,SNR=74							
WRA		

ISCJB **08** *22:17:34.8±0.6, 29°.72N±0°.02×50°.92E±0°.02, h24km±4km, mb4.9/179, MS3.9/31, Error ellipse: s-maj=3.4km s-min=2.4km az=24.3*
CSEM **08** *22:17:34.8±0.1, 29°.76N×50°.91E, h10km, mb5.0/99, Error ellipse: s-maj=3.5km s-min=2.5km az=19.0*
DSN **08** *22:17:35.1±0.5, 29.63N×50°.74E, h10km, mb4.6, Error ellipse: s-maj=10.6km s-min=3.5km az=62.0*
IDC **08** *22:17:37.1±2.8, 29°.82N×50°.94E, h25km±18km, mb4.5/36, mb1 4.6/45, mb1mx4.5/52, mbtmp4.6/45, ML4.3/8, MS3.7/26, Ms1 3.7/26, ms1mx3.5/61, Error ellipse: s-maj=12.0km s-min=9.6km az=167.0*
THR **08** *22:17:38.0±0.3, 29°.84N×51°.00E, h42km±3km, ML4.9*
NEIC **08** *22:17:38.0, 29°.84N×51°.00E, h42km, mb4.9/87, After THR.*
NEIC Felt at Shiraz.
ISN **08** *22:17:46.6±1.1, 29°.67N×50°.48E, h0km±140km, ML4.9*
ISC 08 22:17:37.7±0.6, 29°.78N±0°.03×50°.95E±0°.03, h30km±3km, n867, σ1$32/934, mb4.9/179, MS3.8/32, 37C-12D, Southern Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IKAZ	**Kazeroun**	**0.77**	**90**	*e*Pg	**Pn**	**22 17 49.5**	**-3.4**
IKAZ				*e*AMB	AMB	22 18 07.3	
	comp=Z,5μm,0.2s						
IKAZ	**Kazeroun**	**0.77**	**90**	*e*Pg	**Pn**	**22 17 49.5**	**-3.4**
IKAZ	**Kazeroun**	**0.77**	**90**	Pg	**Pn**	**22 17 49.5**	**-3.4**
AHBU	**AHRAM**	**0.96**	**162**	*e*Pg	**Pb**	**22 17 57.1**	**+1.4**
SHI	**Shiraz**	**1.37**	**95**	*e*Pg	**Pn**	**22 18 01.9**	**+1.0**
SHI				*e*AMB	AMB	22 18 24.5	
	comp=Z,69μm,0.1s						
ISRV	**Sarvestan**	**1.93**	**101**	*e*Pn	**Pn**	**22 18 11.0**	**+2.3**
ISRV				*e*AMB	AMB	22 18 47.8	
	comp=Z,96μm,0.2s						
ISRV	**Sarvestan**	**1.93**	**101**	*e*Pn	**Pn**	**22 18 11.0**	**+2.3**
ISRV	**Sarvestan**	**1.93**	**101**	Pn	**Pn**	**22 18 11.0**	**+2.3**
GHIR	**Ghir-Karzin**	**2.32**	**129**	*e*Pn	**Pn**	**22 18 15.4**	**+1.4**
GHIR				*e*Sg	**Sb**	**22 18 49.8**	**+2.5**
GHIR				AML	AML	22 18 59.7	
	comp=N,5μm,0.5s						
GHIR				AML	AML	22 19 01.0	
	comp=E,7μm,0.5s						
GHIR	**Ghir-Karzin**	**2.32**	**129**	*e*Pn	**Pn**	**22 18 15.4**	**+1.4**
GHIR				*e*Sg	**Sb**	**22 18 49.8**	**+2.5**
IRAM	**Ramesheh**	**2.37**	**31**	*e*Pn	**Pn**	**22 18 15.6**	**+0.8**
IRAM				*e*AMB	AMB	22 18 56.7	
	comp=Z,63μm,0.3s						
IRAM	**Ramesheh**	**2.37**	**31**	Pn	**Pn**	**22 18 15.5**	**+0.8**
IRAM	**Ramesheh**	**2.37**	**31**	Pn	**Pn**	**22 18 15.5**	**+0.8**
IGAR	**Gharneh**	**2.78**	**19**	*e*Pn	**Pn**	**22 18 21.3**	**+0.9**
IGAR				*e*AMB	AMB	22 18 32.3	
	comp=Z,33μm,0.3s						
IPIR	**Pirpir**	**2.90**	**359**	*e*Pn	**Pn**	**22 18 22.7**	**+0.6**
IPIR				*e*AMB	AMB	22 19 24.7	
	comp=Z,20μm,0.4s						
IPIR	**Pirpir**	**2.90**	**359**	*e*Pn	**Pn**	**22 18 22.7**	**+0.6**
IPIR	**Pirpir**	**2.90**	**359**	Pn	**Pn**	**22 18 22.7**	**+0.6**
SHGR	**Shooshtar-Gavs**	**2.97**	**322**	*e*Pn	**Pn**	**22 18 23.6**	**+0.9**
SHGR	**Shooshtar-Gavs**	**2.97**	**322**	*e*Pn	**Pn**	**22 18 23.6**	**+0.9**
KFJS		**3.08**	**240**	P	**Pn**	**22 18 26.9**	**+2.7**
ISAD	**Sadrabad**	**3.17**	**47**	*e*Pn	**Pn**	**22 18 27.0**	**+1.1**
ISAD				*e*AMB	AMB	22 19 22.9	
	comp=Z,19μm,0.3s						
ISAD	**Sadrabad**	**3.17**	**47**	Pn	**Pn**	**22 18 26.9**	**+1.1**
ISAD	**Sadrabad**	**3.17**	**47**	Pn	**Pn**	**22 18 26.9**	**+1.1**
IZEF	**Zefreh**	**3.33**	**20**	*e*Pn	**Pn**	**22 18 28.4**	**+0.5**
IZEF				*e*AMB	AMB	22 19 10.9	
	comp=Z,11μm,0.3s						
IZEF	**Zefreh**	**3.33**	**20**	*e*Pn	**Pn**	**22 18 28.4**	**+0.5**
IZEF	**Zefreh**	**3.33**	**20**	Pn	**Pn**	**22 18 28.4**	**+0.5**
NASN	**Na'in**	**3.41**	**27**	*e*Pn	**Pn**	**22 18 29.5**	**+0.4**
NASN	**Na'in**	**3.41**	**27**	*e*Pn	**Pn**	**22 18 29.5**	**+0.4**
IMEH	**Mehriz**	**3.54**	**62**	*e*Pn	**Pn**	**22 18 33.1**	**+2.1**
IMEH	**Mehriz**	**3.54**	**62**	Pn	**Pn**	**22 18 33.0**	**+2.1**
IMEH	**Mehriz**	**3.54**	**62**	Pn	**Pn**	**22 18 33.0**	**+2.1**
IKLH	**Kolahrood**	**3.57**	**8**	*e*Pn	**Pn**	**22 18 31.8**	**+0.5**
IKLH				*e*AMB	AMB	22 18 47.2	
	comp=Z,12μm,0.3s						
IKLH	**Kolahrood**	**3.57**	**8**	*e*Pn	**Pn**	**22 18 31.8**	**+0.5**
IKLH	**Kolahrood**	**3.57**	**8**	Pn	**Pn**	**22 18 31.8**	**+0.5**
ICHK	**Chekchek**	**3.85**	**49**	*e*Pn	**Pn**	**22 18 35.8**	**+0.6**
ICHK				*e*AMB	AMB	22 18 49.0	
	comp=Z,8μm,0.2s						
ICHK	**Chekchek**	**3.85**	**49**	*e*Pn	**Pn**	**22 18 35.8**	**+0.6**
ICHK	**Chekchek**	**3.85**	**49**	Pn	**Pn**	**22 18 35.8**	**+0.6**
QAM	**Ghamsar**	**3.99**	**6**	*e*Pn	**Pn**	**22 18 37.6**	**+0.5**
QAM				*e*AMB	AMB	22 19 49.0	
	comp=Z,14μm,0.2s						
BOQSS		**4.13**	**200**	P	**Pn**	**22 18 42.4**	**+3.6**
IBAF	**Bafgh**	**4.37**	**64**	*e*Pn	**Pn**	**22 18 43.2**	**+1.0**
IBAF	**Bafgh**	**4.37**	**64**	Pn	**Pn**	**22 18 43.1**	**+0.9**
IBAF	**Bafgh**	**4.37**	**64**	Pn	**Pn**	**22 18 43.1**	**+0.9**
SLWS		**4.97**	**183**	P	**Pn**	**22 18 52.7**	**+2.5**
IVRN	**Varamin**	**5.25**	**7**	*e*Pn	**Pn**	**22 18 54.1**	**0.0**
IVRN				*e*AMB	AMB	22 19 22.6	
	comp=Z,7μm,0.4s						
IVRN	**Varamin**	**5.25**	**7**	*e*Pn	**Pn**	**22 18 54.1**	**0.0**
IVRN	**Varamin**	**5.25**	**7**	Pn	**Pn**	**22 18 54.1**	**0.0**
IBZA	**Bozab**	**5.36**	**332**	*e*Pn	**Pn**	**22 18 55.7**	**-0.2**
IBZA				*e*AMB	AMB	22 20 02.3	
	comp=Z,6μm,0.3s						
IBZA	**Bozab**	**5.36**	**332**	*e*Pn	**Pn**	**22 18 55.7**	**-0.2**
IBZA	**Bozab**	**5.36**	**332**	Pn	**Pn**	**22 18 55.7**	**-0.2**
IRAZ	**Razeghan**	**5.68**	**352**	*e*Pn	**Pn**	**22 19 00.4**	**+0.2**
IRAZ				*e*AMB	AMB	22 20 15.4	
	comp=Z,4μm,0.3s						
IRAZ	**Razeghan**	**5.68**	**352**	*e*Pn	**Pn**	**22 19 00.4**	**+0.2**
IRAZ	**Razeghan**	**5.68**	**352**	Pn	**Pn**	**22 19 00.4**	**+0.2**
BTHS		**5.71**	**181**	S	**Sn**	**22 20 06.7**	**+1.7**
BTHS				P	**Pn**	**22 19 02.8**	**+2.4**
IDMV	**Damavand**	**5.86**	**9**	*e*AMB	AMB	22 19 08.3	
	comp=Z,3μm,0.3s						
IDMV				*e*Pn	**Pn**	**22 19 02.8**	**+0.1**
IGHG	**Ghaleghazi**	**5.87**	**322**	*e*Pn	**Pn**	**22 19 02.5**	**-0.3**
IGHG				*e*AMB	AMB	22 21 30.0	
	comp=Z,9μm,0.4s						
IGHG	**Ghaleghazi**	**5.87**	**322**	*e*Pn	**Pn**	**22 19 02.5**	**-0.3**
IGHG	**Ghaleghazi**	**5.87**	**322**	Pn	**Pn**	**22 19 02.5**	**-0.3**
IVIS	**Veis**	**5.87**	**325**	*e*Pn	**Pn**	**22 19 02.5**	**-0.4**
IVIS				*e*AMB	AMB	22 20 20.6	
	comp=Z,3μm,0.3s						
IVIS	**Veis**	**5.87**	**325**	Pn	**Pn**	**22 19 02.4**	**-0.4**
IVIS	**Veis**	**5.87**	**325**	Pn	**Pn**	**22 19 02.4**	**-0.4**
IFIR	**Firoozkooh**	**6.04**	**14**	*e*AMB	AMB	22 19 09.3	
	comp=Z,2μm,0.1s						
IFIR				*e*Pn	**Pn**	**22 19 05.2**	**-0.1**
BANOM	**Banah**	**6.10**	**128**	*i* P	**Pn**	**22 19 06.3**	**+0.5**
	SNR=62						
BANOM	**Banah**	**6.10**	**128**	P	**Pn**	**22 19 05.1**	**-0.7**
	SNR=62						
BANOM	**Banah**	**6.10**	**128**	Pn	**Pn**	**22 19 05.1**	**-0.7**
	SNR=62						
BANOM	**Banah**	**6.10**	**128**	P	**Pn**	**22 19 05.1**	**-0.7**
	SNR=62						
IAFJ	**Afjeh**	**6.10**	**6**	*e*AMB	AMB	22 19 38.2	
	comp=Z,3μm,0.4s						
IAFJ				*e*Pn	**Pn**	**22 19 06.2**	**+0.1**
ILIN	**Lien**	**6.14**	**328**	*e*Pn	**Pn**	**22 19 06.2**	**-0.3**
ILIN				*e*AMB	AMB	22 20 23.8	
	comp=Z,6μm,0.3s						
ILIN	**Lien**	**6.14**	**328**	*e*Pn	**Pn**	**22 19 06.2**	**-0.3**
ILIN	**Lien**	**6.14**	**328**	Pn	**Pn**	**22 19 06.2**	**-0.3**
IDHR	**Dehrash**	**6.25**	**323**	*e*Pn	**Pn**	**22 19 07.6**	**-0.4**
IDHR				*e*AMB	AMB	22 20 22.3	
	comp=Z,5μm,0.3s						
IDHR	**Dehrash**	**6.25**	**323**	*e*Pn	**Pn**	**22 19 07.6**	**-0.4**
IDHR	**Dehrash**	**6.25**	**323**	Pn	**Pn**	**22 19 07.6**	**-0.4**
NAZ	**Nazwa, Dubai**	**6.35**	**138**	*i* P	**Pn**	**22 19 09.9**	**+0.7**
	SNR=58						
NAZ	**Nazwa, Dubai**	**6.35**	**138**	P	**Pn**	**22 19 09.9**	**+0.7**
	SNR=58						
FAQ	**Al Faqa, Dubai**	**6.49**	**139**	*i* P	**Pn**	**22 19 12.0**	**+0.7**
	SNR=25						
FAQ	**Al Faqa, Dubai**	**6.49**	**139**	P	**Pn**	**22 19 12.0**	**+0.7**
	SNR=25						
TABS	**Tabas**	**6.52**	**52**	*e*Pn	**Pn**	**22 19 12.3**	**+0.6**
TABS	**Tabas**	**6.52**	**52**	*e*P	**Pn**	**22 19 12.4**	**+0.7**
UOSS	**Minazif**	**6.71**	**135**	P	**Pn**	**22 19 13.5**	**-0.7**
	SNR=43						
UOSS	**Minazif**	**6.71**	**135**	*e*Pn	**Pn**	**22 19 13.8**	**-0.4**
UOSS				*e*Sn	Sn	22 20 21.1	-8.5
UOSS	**Minazif**	**6.71**	**135**	*e*Pn	**Pn**	**22 19 13.8**	**-0.4**
UOSS				*e*Sn	Sn	22 20 21.1	-8.5
HATD	**Hatta, Dubai**	**6.75**	**136**	*i* P	**Pn**	**22 19 15.0**	**+0.2**
	SNR=50						
HATD	**Hatta, Dubai**	**6.75**	**136**	P	**Pn**	**22 19 15.0**	**+0.2**
	SNR=50						
ASHO	**Ashiyiah**	**6.81**	**137**	*i* P	**Pn**	**22 19 15.5**	**-0.2**
	SNR=76						
ASHO	**Ashiyiah**	**6.81**	**137**	P	**Pn**	**22 19 15.3**	**-0.4**
	SNR=76						
ASHO	**Ashiyiah**	**6.81**	**137**	pPn	**Pn**	**22 19 15.3**	**-0.4**
	SNR=76						
ASHO	**Ashiyiah**	**6.81**	**137**	P	**Pn**	**22 19 15.3**	**-0.4**
	SNR=76						
SHRO	**Shahrood**	**7.51**	**33**	*e*Pn	**Pn**	**22 19 26.1**	**+0.7**
SHRO	**Shahrood**	**7.51**	**33**	*e*Pn	**Pn**	**22 19 26.1**	**+0.7**
ARQ	**Araqi**	**8.12**	**141**	P	**Pn**	**22 19 33.1**	**-0.5**
	SNR=23						
ARQ	**Araqi**	**8.12**	**141**	pPn	**Pn**	**22 19 33.1**	**-0.5**
	SNR=23						
ARQ	**Araqi**	**8.12**	**141**	P	**Pn**	**22 19 33.1**	**-0.5**
	SNR=23						
SMDO	**Samad**	**9.23**	**135**	P	**Pn**	**22 19 48.0**	**-0.9**
	SNR=68						
SMDO	**Samad**	**9.23**	**135**	Pn	**Pn**	**22 19 48.0**	**-0.9**
	SNR=68						
SMDO	**Samad**	**9.23**	**135**	P	**Pn**	**22 19 48.0**	**-0.9**
	SNR=68						
WSAR	**Wadi Sarin**	**9.47**	**132**	Pn	**Pn**	**22 19 50.9**	**-1.2**
	comp=Z,14nm,0.3s,baz=323,slow=9.6,SNR=76						
WSAR				Sn	**Sn**	**22 21 31.7**	**-5.8**
	comp=Z,22nm,0.3s,baz=110,slow=18,SNR=7.8						
WSAR				LR	LR	22 24 17.3	
	comp=Z,362nm,20.3s,baz=330,slow=42						
GEYT	**Alibeck**	**10.08**	**34**	Pn	**Pn**	**22 20 01.4**	**+1.0**
	comp=Z,3.0nm,0.3s,baz=219,slow=12,SNR=125						
GEYT				Lg	Lg	22 23 05.1	
	baz=222,slow=21,SNR=1.7						
GEYT				LR	LR	22 23 53.0	
	comp=Z,182nm,18.2s,baz=210,slow=37						
GNI	**Garni**	**11.53**	**335**	Pn	**Pn**	**22 20 21.2**	**+0.8**
	comp=Z,0.4nm,0.3s,baz=222,slow=1.7,SNR=12						
GNI				LR	LR	22 25 44.9	
	comp=Z,95nm,21.9s,baz=152,slow=42						
GNI	**Garni**	**11.53**	**335**	*i* P	**Pn**	**22 20 21.2**	**+0.8**
	SNR=9.4						
GNI	**Garni**	**11.53**	**335⇓**	*e*P	**Pn**	**22 20 22.5**	**+2.1**
GNI				pmax	pmax		
	comp=Z,144nm,1.7s						
GNI	**Garni**	**11.53**	**335**	P	**Pn**	**22 20 20.1**	**-0.3**
	SNR=12						
GNI	**Garni**	**11.53**	**335**	*e*Pn	**Pn**	**22 20 22.5**	**+2.1**
GNI	**Garni**	**11.53**	**335**	pPn	**Pn**	**22 20 20.1**	**-0.3**
	SNR=12						
GNI	**Garni**	**11.53**	**335**	P	**Pn**	**22 20 20.1**	**-0.3**
	SNR=12						
GNI	**Garni**	**11.53**	**335**	*e*Pn	**Pn**	**22 20 22.5**	**+2.1**
ASF	**Jabal al Asfar**	**12.29**	**285**	Pn	**Pn**	**22 20 28.9**	**-1.9**
	comp=Z,3.3nm,0.3s,baz=34,slow=4.9,SNR=29						
ASF				Lg	Lg	22 24 19.6	
	comp=Z,0.6nm,0.3s,baz=173,slow=12,SNR=3.2						
SHAO	**Shalim**	**12.46**	**159**	P	**Pn**	**22 20 31.2**	**-1.8**
	SNR=40						
DGRG	**David-gareji**	**12.50**	**340**	P	**Pn**	**22 20 35.7**	**+2.2**
DGRG	**David-gareji**	**12.50**	**340**	P	**Pn**	**22 20 35.7**	**+2.2**
DGRG	**David-gareji**	**12.50**	**340**	P	**Pn**	**22 20 35.7**	**+2.2**
BGD	**Bogdanovka**	**12.92**	**334**	P	**Pn**	**22 20 41.5**	**+2.0**
TBLG	**Delisi**	**12.95**	**339**	P	**Pn**	**22 20 40.2**	**+0.6**
TBLG	**Delisi**	**12.95**	**339**	P	**Pn**	**22 20 40.2**	**+0.6**
TBLG	**Delisi**	**12.95**	**339**	P	**Pn**	**22 20 40.2**	**+0.6**
AKH	**Akhalkalaki**	**13.09**	**334**	P	**Pn**	**22 20 44.1**	**+2.4**
AKH	**Akhalkalaki**	**13.09**	**334**	P	**Pn**	**22 20 44.1**	**+2.4**
MMAI	**Mount Meron Ar**	**13.67**	**288**	Pn	**Pn**	**22 20 47.5**	**-2.0**
	comp=Z,2.0nm,0.3s,baz=102,slow=16,SNR=18						
MMAI				Lg	Lg	22 25 11.2	
	baz=116,slow=36,SNR=4.3						
MMAI				LR	LR	22 27 20.7	
	comp=Z,370nm,19.6s,baz=120,slow=43						
GUDG	**Gudauri**	**13.69**	**339**	P	**Pn**	**22 20 51.9**	**+1.9**
EIL	**Elat**	**13.91**	**274**	Pn	**Pn**	**22 20 50.9**	**-1.9**
	comp=Z,0.6nm,0.3s,baz=53,slow=11,SNR=4.7						
EIL				Lg	Lg	22 25 22.6	
	comp=Z,0.7nm,0.3s,baz=165,slow=19,SNR=6.1						
EIL				LR	LR	22 27 15.9	
	comp=Z,259nm,20.1s,baz=118,slow=42						
ZEI	**Tsey**	**14.17**	**338**	*e*P	**Pn**	**22 20 57.6**	**+1.2**
ZEI				pmax	pmax		
	comp=Z,51nm,0.8s						
CHVG	**Ch'k'valeri**	**14.75**	**334**	P	**P**	**22 21 09.6**	**-0.2**
NCK	**Nalchik**	**14.90**	**339⇑**	*e*P	**P**	**22 21 09.0**	**-2.6**
NCK				pmax	pmax		
	comp=Z,31nm,1.4s						
NEY	**Neytrino**	**14.97**	**336⇑**	*e*P	**P**	**22 21 12.3**	**-0.2**
NEY	**Neytrino**	**14.97**	**336**	*e*P	**P**	**22 21 12.3**	**-0.2**
KBZ	**Khabaz**	**15.34**	**337**	Pn	**Pn**	**22 21 10.9**	**-0.9**
	comp=Z,0.1nm,0.3s,baz=176,slow=7.4,SNR=5.7						
KBZ	**Khabaz**	**15.34**	**337**	P	**Pn**	**22 21 11.0**	**-0.9**
HAJJ	**Hajjah**	**15.56**	**207**	*e*P	**Pn**	**22 21 12.8**	**-2.3**
KVAR	**Kislovodsk Arr**	**15.60**	**337**	Pn	**Pn**	**22 21 16.8**	**+1.2**
	baz=151,slow=19,SNR=15						
KIV	**Kislovodsk**	**15.61**	**337**	*i* P	**Pn**	**22 21 16.3**	**+0.8**
	SNR=22						
KIV	**Kislovodsk**	**15.61**	**337**	*e*P	**Pn**	**22 21 16.8**	**+1.2**
KIV				pmax	pmax		
	comp=Z,73nm,1.0s						
KIV	**Kislovodsk**	**15.61**	**337**	*e*Pn	**Pn**	**22 21 16.8**	**+1.2**
	comp=Z,73nm,1.0s						
KIV	**Kislovodsk**	**15.61**	**337**	*e*Pn	**Pn**	**22 21 16.8**	**+1.2**
	comp=Z,73nm,1.0s						
CSS	**Mathiatis**	**15.76**	**294**	P	**Pn**	**22 21 16.5**	**-0.9**
CSS	**Mathiatis**	**15.76**	**294**	*e*Pn	**Pn**	**22 21 16.5**	**-0.9**
	comp=Z,17nm,1.0s						
CSS				*e*Sn	Sn	22 23 55.8	-15
CSS	**Mathiatis**	**15.76**	**294**	*e*Pn	**Pn**	**22 21 16.5**	**-0.9**
	comp=Z,17nm,1.0s						
CSS				*e*Sn	Sn	22 23 55.9	-15
KBL	**Kabul**	**16.04**	**68**	*e*P	**P**	**22 21 24.9**	**+0.4**
KBL				pmax	pmax		
	comp=Z,22nm,1.3s						
KBL	**Kabul**	**16.04**	**68**	*e*P	**P**	**22 21 24.9**	**+0.4**
	comp=Z,22nm,1.3s						
KBL	**Kabul**	**16.04**	**68**	*e*Pn	**P**	**22 21 24.9**	**+0.4**
	comp=Z,22nm,1.3s						
DAMY	**Dhamar**	**16.30**	**203**	*e*Pn	**Pn**	**22 21 23.5**	**-1.3**
	comp=Z,51nm,0.8s						
DAMY				*e*Sn	**Sn**	**22 24 21.7**	**-3.2**
DAMY	**Dhamar**	**16.30**	**203**	*e*Pn	**Pn**	**22 21 23.5**	**-1.3**
	comp=Z,51nm,0.8s						
DAMY				*e*Sn	**Sn**	**22 24 21.7**	**-3.2**
SOC	**Sochi**	**16.44**	**330**	*e*P	**Pn**	**22 21 25.8**	**-0.3**
SOC				*e*		22 24 33.5	
SOC				pmax	pmax		
	comp=Z,22nm,0.7s						
SOC				MLR	MLR		
	comp=Z,486nm,12.0s						
GOF	**Gofitskoye**	**16.48**	**340⇑**	*e*P	**Pn**	**22 21 27.6**	**+1.0**
GOF				*e*S	**S**	**22 24 38.1**	**-1.8**
GOF				pmax	pmax		
	comp=Z,71nm,0.9s						
GOF				smax	smax		
	comp=E,45nm,1.6s						
GOF	**Gofitskoye**	**16.48**	**340**	*e*P	**Pn**	**22 21 27.6**	**+1.0**
	comp=E,71nm,0.9s						
BDHA	**Al Bayda'**	**16.50**	**199**	*e*P	**Pn**	**22 21 23.9**	**-3.3**
BR101	**Keskin Array S**	**17.32**	**310**	*e*Pn	**Pn**	**22 21 36.8**	**-0.5**
BR101	**Keskin Array S**	**17.32**	**310**	*e*Pn	**Pn**	**22 21 36.8**	**-0.5**
BR101				*e*PcP	**PcP**	**22 26 19.3**	**+0.5**
BR131	**Keskin Array S**	**17.32**	**310**	*e*Pn	**Pn**	**22 21 36.9**	**-0.5**
BR131	**Keskin Array S**	**17.32**	**310**	*e*Pn	**Pn**	**22 21 36.9**	**-0.5**
BRTR	**Keskin Array B**	**17.32**	**310**	P	**Pn**	**22 21 36.8**	**-0.5**
	comp=E,0.8nm,0.3s,baz=135,slow=9.5,SNR=33						
BRTR				PcP	**PcP**	**22 26 19.3**	**+0.5**
	comp=E,0.1nm,0.3s,baz=143,slow=5.5,SNR=3.9						
BRTR				LR	LR	22 30 05.4	
	comp=E,353nm,19.1s,baz=118,slow=43						
BR231	**Keskin MP Arra**	**17.96**	**309**	*e*Pn	**P**	**22 21 45.7**	**+0.1**
BR231	**Keskin MP Arra**	**17.96**	**309**	*e*Pn	**P**	**22 21 45.6**	**+0.1**
ANTO	**Ankara**	**17.96**	**309**	*e*P	**P**	**22 21 45.6**	**+0.1**
ANTO				pmax	pmax		
	comp=Z,18nm,0.9s						
ANTO	**Ankara**	**17.96**	**309**	*e*P	**P**	**22 21 45.6**	**+0.1**
	comp=Z,18nm,0.9s						
ANTO	**Ankara**	**17.96**	**309**	*e*Pn	**P**	**22 21 45.6**	**+0.1**
	comp=Z,18nm,0.9s						
ANN	**Anapa**	**18.41**	**328**	*e*P	**P**	**22 21 46.1**	**-4.3**
ANN				*e*S	**Sn**	**22 25 09.6**	**-5.8**
ANN				pmax	pmax		
	comp=Z,59nm,1.6s						
ANN				MLR	MLR		
	comp=Z,243nm,20.0s						
ISP	**Isparta**	**18.75**	**301**	P	**P**	**22 21 53.8**	**-0.5**
ISP	**Isparta**	**18.75**	**301**	*e*P	**Pn**	**22 21 54.7**	**-0.2**
ISP				pmax	pmax		
	comp=Z,21nm,1.1s						
ISP	**Isparta**	**18.75**	**301**	*e*P	**Pn**	**22 21 54.7**	**-0.2**
	comp=Z,22nm,1.1s						
ISP	**Isparta**	**18.75**	**301**	*e*P	**Pn**	**22 21 54.7**	**-0.2**
	comp=Z,22nm,1.1s						
KSL	**Kastellorizon**	**19.00**	**295**	P	**Pn**	**22 21 57.2**	**-0.6**
KSL	**Kastellorizon**	**19.00**	**295**	*e*P	**Pn**	**22 21 57.2**	**-0.6**
KSL	**Kastellorizon**	**19.00**	**295**	*e*P	**Pn**	**22 21 57.2**	**-0.6**
CHCP	**Chirah Chowk**	**19.37**	**73**	P	**P**	**22 22 00.7**	**-0.3**
FETY	**Fethiye**	**19.51**	**296**	P	**P**	**22 22 02.1**	**-0.5**
FETY	**Fethiye**	**19.51**	**296**	*e*P	**P**	**22 22 02.1**	**-0.5**
FETY	**Fethiye**	**19.51**	**296**	*e*P	**P**	**22 22 02.1**	**-0.5**
ATD	**Arta Tunnel**	**19.66**	**204**	P	**Pn**	**22 22 05.5**	**-0.3**
	comp=Z,0.8nm,0.3s,baz=290,slow=22,SNR=13						
ATD				LR	LR	22 30 19.2	
	comp=Z,289nm,18.5s,baz=20,slow=39						
SIM	**Simferopol'**	**20.15**	**323**	*e*P	**P**	**22 22 09.4**	**0.0**
SIM				*e*S	**S**	**22 25 49.0**	**-5.0**
SIM				pmax	pmax		
	comp=Z,23nm,0.5s						
SIM				smax	smax		
	comp=N,50nm,15.0s						
SIM	**Simferopol'**	**20.15**	**323**	*e*P	**P**	**22 22 09.4**	**0.0**
	comp=N,23nm,0.5s						
YER	**Yerkesik**	**20.26**	**297**	P	**P**	**22 22 10.9**	**+0.2**
YER	**Yerkesik**	**20.26**	**297**	*e*P	**P**	**22 22 10.9**	**+0.2**
YER	**Yerkesik**	**20.26**	**297**	*e*P	**P**	**22 22 10.9**	**+0.2**
YER	**Yerkesik**	**20.26**	**297**	*e*P	**P**	**22 22 10.9**	**+0.2**
KULA	**Kula-Manisa**	**20.36**	**301**	P	**P**	**22 22 11.9**	**0.0**
KULA	**Kula-Manisa**	**20.36**	**301**	P	**P**	**22 22 11.9**	**0.0**
KULA	**Kula-Manisa**	**20.36**	**301**	P	**P**	**22 22 11.9**	**0.0**
KK31	**Karatay Array**	**20.54**	**44**	*i* P	**P**	**22 22 14.4**	**+0.7**
KK31				pmax	pmax		
	comp=Z,21nm,0.5s						
KK31	**Karatay Array**	**20.54**	**44**	*i* P	**P**	**22 22 14.4**	**+0.7**
	comp=Z,21nm,0.5s						
KKAR	**Karatay Array**	**20.54**	**44**	*e*P	**P**	**22 22 14.4**	**+0.7**
KKAR	**Karatay Array**	**20.54**	**44**	*e*P	**P**	**22 22 14.4**	**+0.7**
KKAR	**Karatay Array**	**20.54**	**44**	*e*P	**P**	**22 22 14.4**	**+0.7**
AB31	**Akbulak array**	**20.62**	**17**	*i* P	**P**	**22 22 14.4**	**-0.1**
AB31				pmax	pmax		
	comp=Z,8.0nm,0.5s						
AB31	**Akbulak array**	**20.62**	**17**	*i* P	**P**	**22 22 14.4**	**-0.1**
	comp=Z,8.0nm,0.5s						
ABKAR	**Akbulak array**	**20.62**	**17**	*e*P	**P**	**22 22 14.5**	**0.0**
ABKAR	**Akbulak array**	**20.62**	**17**	*e*P	**P**	**22 22 14.5**	**0.0**
BODT	**Bodrum**	**21.00**	**296**	P	**P**	**22 22 17.7**	**-1.0**
BODT	**Bodrum**	**21.00**	**296**	*e*P	**P**	**22 22 17.7**	**-1.0**
BODT	**Bodrum**	**21.00**	**296**	*e*P	**P**	**22 22 17.7**	**-1.0**
SFK	**Sufi-Kurgan**	**21.08**	**55**	*i* P	**P**	**22 22 20.3**	**+0.5**
SFK				pmax	pmax		
	comp=Z,15nm,0.6s						
SFK	**Sufi-Kurgan**	**21.08**	**55**	*i* P	**P**	**22 22 20.3**	**+0.5**
	comp=Z,15nm,0.6s						
AKTK	**Aktyubinsk**	**21.31**	**13**	P	**P**	**22 22 21.4**	**-0.5**
	comp=Z,13nm,0.8s						
AKTO	**Aktyubinsk**	**21.31**	**13**	P	**P**	**22 22 21.4**	**-0.5**
	comp=Z,12nm,0.8s,baz=200,slow=11,SNR=20						
MNAS	**Manas**	**21.47**	**48**	*i* P	**

TKM2	Tokmak 2	23.69	50	eP		P	22 22 47.8	+0.8
	comp=Z,11nm,0.8s							
TKM2	Tokmak 2	23.69	50	eP		P	22 22 47.8	+0.8
	comp=Z,11nm,0.8s							
FURI	Furi	23.74	211	eP		P	22 22 51.4	+3.5
	comp=Z,26nm,0.8s							
DID	Didima	24.27	296	P		P	22 22 51.1	-1.2
DID	Didima	24.27	296	eP		P	22 22 51.1	-1.2
DID	Didima	24.27	296	eP		P	22 22 51.1	-1.2
KIS	Kishinev	24.29	321	eP		P	22 22 50.0	-2.3
KIS	Kishinev	24.29	321	eP		P	22 22 50.0	-2.3
KIS				e			22 22 55.0	
KIS				e			22 23 19.0	
KIS	Kishinev	24.29	321	eP		P	22 22 50.0	-2.3
LEOM	Leova	24.30	320⇑	iP		P	22 22 51.9	-0.5
KRND	KRANIDI	24.31	296	P		P	22 22 51.8	-0.8
KRND	KRANIDI	24.31	296	P		P	22 22 51.8	-0.8
LPSR	Galich'ya Gora	24.47	342	eP		P	22 22 52.6	-1.2
LPSR				eS		S	22 27 11.3	-0.7
LPSR				pmax	pmax			
	comp=Z,60nm,1.1s							
LPSR				smax	smax			
	comp=N,50nm,1.4s							
LPSR	Galich'ya Gora	24.47	342	eP		P	22 22 52.6	-1.2
	comp=N,60nm,1.1s							
ISR	Istrita	24.57	315⇑	iP		P	22 22 52.7	-2.2
LTK	Loutraki	24.57	297	P		P	22 22 54.3	-0.7
LTK	Loutraki	24.57	297	eP		P	22 22 54.3	-0.7
LTK	Loutraki	24.57	297	eP		P	22 22 54.3	-0.7
OTUK	Ortayu	24.68	36	i P		P	22 22 56.9	+1.0
OTUK				pmax	pmax			
	comp=Z,48nm,1.0s							
VRI	Vrincioaia	24.84	317⇑	iP		P	22 22 58.0	+0.6
PLOR	Plostina	24.88	317⇑	iP		P	22 22 58.8	+1.1
VLX	Vlachokerasia	24.91	295	P		P	22 22 57.5	-0.7
VLX	Vlachokerasia	24.91	295	P		P	22 22 57.5	-0.7
VLX	Vlachokerasia	24.91	295	eP		P	22 22 57.5	-0.7
HORT	Hortiatis	25.09	303	P		P	22 23 00.3	+0.5
HORT	Hortiatis	25.09	303	P		P	22 23 00.3	+0.5
HORT	Hortiatis	25.09	303	P		P	22 23 00.3	+0.5
IAS	Iasi	25.10	320⇑	iP		P	22 22 59.0	-0.6
MLR	Muntele Rosu	25.12	316	P		P	22 23 01.5	+1.5
	comp=Z,12nm,0.8s,baz=132,slow=3.0							
MLR	Muntele Rosu	25.12	316	iP		P	22 23 01.5	+1.5
MLR	Muntele Rosu	25.12	316	eP		P	22 23 01.5	+1.5
	comp=Z,64nm,0.9s							
MLR	Muntele Rosu	25.12	316	eP		P	22 23 01.5	+1.5
	comp=Z,64nm,0.9s							
THE	Thessaloniki	25.20	303	P		P	22 23 00.8	+0.2
THE	Thessaloniki	25.20	303	eP		P	22 23 00.8	+0.2
THE	Thessaloniki	25.20	303	P		P	22 23 00.8	+0.2
THE	Thessaloniki	25.20	303	eP		P	22 23 00.8	+0.2
KLV	Kalavryta, Ach	25.21	297	P		P	22 23 00.6	-0.2
KLV	Kalavryta, Ach	25.21	297	P		P	22 23 00.6	-0.2
KLV	Kalavryta, Ach	25.21	297	eP		P	22 23 00.6	-0.2
TESR	Tescani	25.23	318	iP		P	22 23 00.9	0.0
ITM	Ithomi	25.24	295	P		P	22 23 00.9	-0.2
ITM	Ithomi	25.24	295	P		P	22 23 00.9	-0.2
ITM	Ithomi	25.24	295	P		P	22 23 00.9	-0.2
HUMR	Humele	25.26	313	iP		P	22 23 02.3	+1.1
AGG	Agios Georgios	25.27	299	eP		P	22 23 01.9	+0.6
AGG				pmax	pmax			
	comp=Z,101nm,1.0s							
AGG	Agios Georgios	25.27	299	eP		P	22 23 01.9	+0.6
	comp=Z,101nm,1.0s							
AGG	Agios Georgios	25.27	299	eP		P	22 23 01.9	+0.6
	comp=Z,101nm,1.0s							
LAKA	Lakka	25.38	297	P		P	22 23 01.7	-0.6
LAKA	Lakka	25.38	297	P		P	22 23 01.7	-0.6
LAKA	Lakka	25.38	297	eP		P	22 23 01.7	-0.6
KNT	Kendrikon	25.41	304	P		P	22 23 02.8	+0.3
KNT	Kendrikon	25.41	304	P		P	22 23 02.8	+0.3
KNT	Kendrikon	25.41	304	P		P	22 23 02.8	+0.3
KNT	Kendrikon	25.41	304	P		P	22 23 02.8	+0.3
DRO	Drossia	25.54	296	P		P	22 23 04.2	+0.4
DRO	Drossia	25.54	296	P		P	22 23 04.2	+0.4
VOIR		25.64	315⇑	iP		P	22 23 05.5	+0.8
EVR	Evrytania	25.64	299	P		P	22 23 03.9	-0.9
EVR	Evrytania	25.64	299	P		P	22 23 03.9	-0.9
EVR	Evrytania	25.64	299	P		P	22 23 03.9	-0.9
VAY	Valandovo	25.69	304	i P		P	22 23 05.1	0.0
VAY	Valandovo	25.69	304	i P		P	22 23 05.1	0.0
GRG	Griva	25.70	303	P		P	22 23 05.5	+0.2
GRG	Griva	25.70	303	eP		P	22 23 05.5	+0.2
GRG	Griva	25.70	303	P		P	22 23 05.5	+0.2
GRG	Griva	25.70	303	eP		P	22 23 05.5	+0.2
RLS	Riolos of Patr	25.74	297	P		P	22 23 06.9	+1.3
RLS	Riolos of Patr	25.74	297	P		P	22 23 06.9	+1.3
RLS	Riolos of Patr	25.74	297	P		P	22 23 06.9	+1.3
ARR	Arges	25.87	314⇑	iP		P	22 23 06.8	+0.1
PRAR	RASCA	25.94	319⇑	iP		P	22 23 07.6	+0.3
PDO	Prodromos	26.06	298	P		P	22 23 07.9	-0.6
PDO	Prodromos	26.06	298	P		P	22 23 07.9	-0.6
DSL	Palaion Diasel	26.23	299	P		P	22 23 09.4	-0.7
DSL	Palaion Diasel	26.23	299	P		P	22 23 09.4	-0.7
DSL	Palaion Diasel	26.23	299	eP		P	22 23 09.4	-0.7
KFL	Anninata	26.28	296	P		P	22 23 09.8	-0.7
KFL	Anninata	26.28	296	P		P	22 23 09.8	-0.7
MDB	Medias	26.39	316	iP		P	22 23 13.3	+1.9
FNA	Florina	26.40	303	P		P	22 23 11.8	+0.2
FNA	Florina	26.40	303	P		P	22 23 11.8	+0.2
FNA	Florina	26.40	303	P		P	22 23 11.8	+0.2
FNA	Florina	26.40	303	P		P	22 23 11.8	+0.2
LOT	Lotru	26.44	314	iP		P	22 23 12.0	0.0
VLS	Valsamata	26.45	297	P		P	22 23 11.0	-1.0
VLS	Valsamata	26.45	297	P		P	22 23 11.0	-1.0
VLS	Valsamata	26.45	297	P		P	22 23 11.0	-1.0
VLS	Valsamata	26.45	297	P		P	22 23 11.0	-1.0
PDGK	Podgornoye	26.47	51	i P		P	22 23 14.4	+2.3
PDGK				pmax	pmax			
	comp=Z,13nm,0.8s							
LKD2	Lefkada island	26.50	298	P		P	22 23 11.7	-0.8
LKD2	Lefkada island	26.50	298	P		P	22 23 11.7	-0.8
LKD2	Lefkada island	26.50	298	P		P	22 23 11.7	-0.8
AKASG	Malin Array Be	26.50	328	P		P	22 23 11.0	-1.3
	comp=Z,3.0nm,0.5s,baz=134,slow=8.7,SNR=18							
AKASG				PcP		PcP	22 26 36.5	-0.1
	comp=Z,3.7nm,0.5s,baz=87,slow=2.4,SNR=11							
AKASG	Malin Array Be	26.50	328	P		P	22 23 11.0	-1.3
AKASG							22 26 36.5	
AKASG				pmax	pmax			
	comp=Z,4.0nm,0.6s							
AKASG				pmax	pmax			
	comp=Z,4.0nm,0.5s							
AKBB	Malin Array Si	26.50	328	eP		P	22 23 11.0	-1.3
AKBB				e			22 26 36.5	
AKBB				pmax	pmax			
	comp=Z,18nm,0.6s							
AKBB	Malin Array Si	26.50	328	eP		P	22 23 11.0	-1.3
	comp=Z,18nm,0.6s							
AKBB	Malin Array Si	26.50	328	eP		P	22 23 11.0	-1.3
	comp=Z,18nm,0.6s							
AKBB				ePcP		PcP	22 26 36.5	-0.1
KIEV	Kiev	26.50	328	c iP		P	22 23 11.0	-1.3
KIEV				pmax	pmax			
	comp=Z,28nm,1.8s							
KIEV	Kiev	26.50	328	eP		P	22 23 11.4	-0.9
	comp=Z,45nm,1.4s							
KIEV	Kiev	26.50	328	eP		P	22 23 11.4	-0.9
	comp=Z,45nm,1.4s							
AK11	Malin Array Si	26.51	328	eP		P	22 23 11.1	-1.3
AK11	Malin Array Si	26.51	328	eP		P	22 23 11.2	-1.3
AK11				ePcP		PcP	22 26 36.8	+0.2
JAN	Janina	26.52	300	P		P	22 23 12.3	-0.4
JAN	Janina	26.52	300	P		P	22 23 12.3	-0.4
JAN	Janina	26.52	300	P		P	22 23 12.3	-0.4
JAN	Janina	26.52	300	P		P	22 23 12.3	-0.4
NEST	Nestorio	26.55	302	P		P	22 23 14.6	+1.6
NEST	Nestorio	26.55	302	P		P	22 23 14.6	+1.6
BURAR	Bucovina Array	26.65	319⇑	iP		P	22 23 14.8	+0.9
ZRNK	Zerenda	26.68	25	i P		P	22 23 14.1	+0.2
ZRNK				pmax	pmax			
	comp=Z,46nm,1.0s							
ZRNK	Zerenda	26.68	25	eP		P	22 23 14.2	+0.3
	comp=Z,39nm,0.9s							
ZRNK	Zerenda	26.68	25	eP		P	22 23 14.2	+0.3
	comp=Z,39nm,0.9s							
BUR08	Bucovina Ar. S	26.68	319	eP		P	22 23 14.5	+0.4
BUR08	Bucovina Ar. S	26.68	319	eP		P	22 23 14.5	+0.4
BARS	Barje	26.70	307	ePn		P	22 23 13.8	-0.4
ARCR	ARCALIA	26.88	317⇑	iP		P	22 23 16.7	+0.9
OHR	Ohrid	26.91	303	i P		P	22 23 16.2	-0.1
OHR	Ohrid	26.91	303	i P		P	22 23 16.1	-0.1
BOLS	Boljevac	26.96	309	ePn		P	22 23 15.9	-0.7
SGD	Sagiada	26.98	300	P		P	22 23 15.8	-1.0
SGD	Sagiada	26.98	300	P		P	22 23 15.8	-1.0
ARU	Arti	27.18	9	P		P	22 23 18.4	+0.1
	comp=Z,6.2nm,0.7s,baz=193,slow=5.5,SNR=8.0							
ARU				LR		LR	22 36 38.6	
	comp=Z,179nm,19.5s,baz=173,slow=42							
ARU	Arti	27.18	9	c iP		P	22 23 21.3	+3.0
ARU							22 24 03.4	
ARU							22 26 41.3	
ARU				S		S	22 28 03.5	+8.5
ARU				SS		SnSn	22 29 13.0	+9.3
ARU				pmax	pmax			
	comp=Z,14nm,1.2s							
ARU	Arti	27.18	9	eP		P	22 23 18.4	+0.1
	comp=Z,19nm,1.1s							
ARU	Arti	27.18	9	eP		P	22 23 18.4	+0.1
	comp=Z,19nm,1.1s							
BRVK	Borovoye	27.24	26	c iP		P	22 23 19.2	+0.3
BRVK				pmax	pmax			
	comp=Z,36nm,1.2s							
BRVK	Bovoye	27.24	26	eP		P	22 23 18.7	-0.2
	comp=Z,31nm,0.9s							
BRVK	Borovoye	27.24	26	eP		P	22 23 18.7	-0.2
	comp=Z,31nm,0.9s							
BVAR	Borovoye Array	27.25	26	P		P	22 23 19.5	+0.4
	comp=Z,28nm,0.8s,baz=218,slow=7.0,SNR=38							
BVAR				PcP		PcP	22 26 38.8	+0.5
	comp=Z,2.7nm,0.4s,baz=188,slow=3.3,SNR=8.6							
SELS	Selova	27.32	308	ePn		P	22 23 20.6	+0.8
OBN	Obninsk	27.34	342	P		P	22 23 18.8	-1.0
	comp=Z,30nm,0.7s,baz=156,slow=20,SNR=9.1							
OBN	Obninsk	27.34	342	i P		P	22 23 19.4	-0.4
OBN				i S		S	22 27 48.5	-9.0
OBN				pmax	pmax			
	comp=Z,17nm,0.9s							
OBN				MLR	MLR			
	comp=Z,104nm,23.0s							
OBN	Obninsk	27.34	342	eP		P	22 23 18.8	-1.0
	comp=Z,36nm,0.8s							
OBN	Obninsk	27.34	342	eP		P	22 23 18.8	-1.0
	comp=Z,36nm,0.8s							
MDVR	Moldovita	27.48	311⇑	iP		P	22 23 21.1	-0.2
MOS	Moscow	27.63	344	eP		P	22 23 18.2	-4.2
MOS				e			22 24 03.5	
MOS				e			22 28 01.7	
MOS				pmax	pmax			
	comp=Z,23nm,0.9s							
TIR	Tirane	27.65	303	eP		P	22 23 23.0	+0.2
TIR				pmax	pmax			
	comp=Z,27nm,0.9s							
TIR	Tirane	27.65	303	eP		P	22 23 23.0	+0.2
	comp=Z,26nm,0.9s							
TIR	Tirane	27.65	303	eP		P	22 23 23.0	+0.2
	comp=Z,26nm,0.9s							
DRGR		27.71	316⇑	iP		P	22 23 23.9	+0.5
GRUS	Gruza	27.82	309	ePn		P	22 23 25.2	+1.0
BZS	Buzias	27.88	313	iP		P	22 23 25.1	+0.3
SVE	Sverdlovsk	27.89	11	eP		P	22 23 25.2	+0.5
SVE				pmax	pmax			
	comp=Z,17nm,1.5s							
SVE				MLR	MLR			
	comp=Z,183nm,14.0s							
PYUN	Piuthan	28.05	85	eP		P	22 23 26.8	+0.1
IVAS	Ivanjica	28.10	308	ePn		P	22 23 26.7	-0.1
KOLN	Koldanda	28.64	86	eP		P	22 23 31.9	-0.1
	comp=Z,22nm,0.3s							
BBLS	Lazići	28.70	308	ePn		P	22 23 30.8	-1.4
TEKS	Tekeris	28.85	309	ePn		P	22 23 32.7	-0.7
KOLS	Kolonicke sedl	29.02	319	eP		P	22 23 35.8	+0.9
KOLS				e			22 23 41.7	
KOLS				pmax	pmax			
	comp=Z,12nm,1.1s							
KOLS	Kolonicke sedl	29.02	319	eP		P	22 23 35.8	+0.9
	comp=Z,12nm,1.1s							
KOLS	Kolonicke sedl	29.02	319	eP		P	22 23 35.8	+0.9
KOLS				e			22 23 41.7	
KWP	Kalwaria Pacla	29.14	321	eP		P	22 23 36.1	+0.1
KWP	Kalwaria Pacla	29.14	321	iP		P	22 23 36.1	+0.1
KWP	Kalwaria Pacla	29.14	321	eP		P	22 23 36.1	+0.1
KWP	Kalwaria Pacla	29.14	321	eP		P	22 23 36.1	+0.1
KURBB	Kurchatov Arra	29.34	37	P		P	22 23 38.5	+0.8
	comp=Z,20nm,0.9s,baz=238,slow=8.7,SNR=31							
KURBB				PcP		PcP	22 26 43.5	0.0
	comp=Z,1.3nm,0.7s,baz=228,slow=3.1,SNR=6.2							
KURBB				ScP		ScP	22 30 22.6	-0.6
	comp=Z,0.2nm,0.5s,baz=240,slow=3.6,SNR=4.4							
KURK	Kurchatov	29.44	37	P		P	22 23 38.5	0.0
KURK							22 26 43.5	
KURK							22 30 22.6	
KURK				pmax	pmax			
	comp=Z,20nm,0.9s							
KURK				pmax	pmax			
	comp=Z,1.0nm,0.7s							
KURK	Kurchatov	29.44	37	ePcP		PcP	22 26 43.5	-0.3
KURK				eScP		ScP	22 30 22.5	-0.9
KURK	Kurchatov	29.44	37	ePcP		PcP	22 26 43.5	-0.3
KURK				eScP		ScP	22 30 22.6	-0.9
MAKZ	Makanchi	29.44	46	eP		P	22 23 39.0	+0.3
MAKZ				pmax	pmax			
	comp=Z,26nm,1.6s							
MAKZ	Makanchi	29.44	46	eP		P	22 23 39.0	+0.3
	comp=Z,26nm,1.6s							
MAKZ	Makanchi	29.44	46	eP		P	22 23 39.0	+0.3
	comp=Z,26nm,1.6s							
CRVS	Cervenica-Dubn	29.47	319	eP		P	22 23 39.2	+0.3
CRVS	Cervenica-Dubn	29.47	319	eP		P	22 23 39.2	+0.3
CRVS	Cervenica-Dubn	29.47	319	eP		P	22 23 39.2	+0.3
GKN	Gorkha	29.49	85	eP		P	22 23 39.2	-0.3
	comp=Z,59nm,0.6s							
TIP	Timpagrande	29.56	298	P		P	22 23 39.9	0.0
TIP	Timpagrande	29.56	298	P		P	22 23 39.9	0.0
TIP	Timpagrande	29.56	298	P		P	22 23 39.9	0.0
MK01	Makanchi Array	29.63	46	eP		P	22 23 40.5	+0.1
MK01	Makanchi Array	29.63	46	eP		P	22 23 40.5	+0.1
MK01				ePcP		PcP	22 26 43.3	-1.1
MK31	Makanchi Array	29.64	46	eP		P	22 23 41.0	+0.6
MK31				e			22 26 42.4	
MK31	Makanchi Array	29.64	46	eP		P	22 23 41.0	+0.6
MK31	Makanchi Array	29.64	46	eP		P	22 23 41.0	+0.6
MK31				ePcP		PcP	22 26 42.4	-2.0
MK32	Makanchi Array	29.64	46	eP		P	22 23 40.7	+0.3
MK32	Makanchi Array	29.64	46	eP		P	22 23 40.7	+0.3
MK32				ePcP		PcP	22 26 44.2	-0.2
MKAR	Makanchi Array	29.64	46	P		P	22 23 40.7	+0.3
	comp=Z,3.8nm,0.9s,baz=244,slow=8.8,SNR=34							
MKAR				PcP		PcP	22 26 44.2	-0.2
	comp=Z,1.5nm,0.5s,baz=242,slow=3.6,SNR=6.8							
MKAR				LR		LR	22 36 01.9	
	comp=Z,111nm,19.4s,baz=248,slow=37							
MKAR	Makanchi Array	29.64	46	P		P	22 23 40.7	+0.3
MKAR							22 26 44.2	
MKAR				pmax	pmax			
	comp=Z,2.0nm,0.6s							
MKAR				pmax	pmax			
	comp=Z,2.0nm,0.5s							
MKAR				MLR	MLR			
	comp=Z,111nm,19.4s							
MKAR	Makanchi Array	29.64	46	eP		P	22 23 41.0	+0.6
MKAR	Makanchi Array	29.64	46	ePcP		PcP	22 26 44.0	-0.4
MKAR	Makanchi Array	29.64	46	eP		P	22 23 41.0	+0.6
MKAR				ePcP		PcP	22 26 44.0	-0.4
KECS	Kecovo	29.84	317	eP		P	22 23 42.0	-0.1
KECS				pmax	pmax			
	comp=Z,8.0nm,0.7s							
KECS	Kecovo	29.84	317	eP		P	22 23 42.0	-0.1
	comp=Z,7.5nm,0.7s							
KECS	Kecovo	29.84	317	eP		P	22 23 42.0	-0.1
STHS	Stebnicka Huta	29.85	319	eP		P	22 23 43.7	+1.5
STHS				pmax	pmax			
	comp=Z,3.0nm,0.8s							
STHS	Stebnicka Huta	29.85	319	eP		P	22 23 43.7	+1.5
	comp=Z,2.8nm,0.8s							
STHS	Stebnicka Huta	29.85	319	eP		P	22 23 43.7	+1.5
PSZ	Piszkesteto	29.93	316	eP		P	22 23 42.5	-0.6
PSZ				pmax	pmax			
	comp=Z,6.0nm,0.8s							
PSZ	Piszkesteto	29.93	316	eP		P	22 23 42.5	-0.6
	comp=Z,5.8nm,0.8s							
PSZ	Piszkesteto	29.93	316	eP		P	22 23 42.5	-0.6
	comp=Z,5.8nm,0.8s							
DMN	Daman	29.98	86	eP		P	22 23 43.8	-0.1
	comp=Z,90nm,0.5s							
KKN	Kakani	30.09	85	eP		P	22 23 44.8	-0.1
	comp=Z,95nm,0.5s							
PKIN	Phulchoki	30.24	86	eP		P	22 23 45.9	-0.3
	comp=Z,59nm,0.5s							
NIE	Niedzica	30.39	319	eP		P	22 23 47.1	+0.1
NIE	Niedzica	30.39	319	eP		P	22 23 47.1	+0.1
NIE	Niedzica	30.39	319	eP		P	22 23 47.1	+0.1
CUC	Castrocucco	30.40	299	eP		P	22 23 48.0	+0.7
	comp=Z,6.9nm,0.7s							
CUC	Castrocucco	30.40	299	eP		P	22 23 48.0	+0.7
	comp=Z,6.9nm,0.7s							
GUN	Gumba	30.59	85	eP		P	22 23 49.4	0.0
	comp=Z,100nm,0.6s							
CSKK	Cs¨‡kako	30.71	314	eP		P	22 23 50.4	+0.6
CSKK	Cs¨‡kako	30.71	314	eP		P	22 23 50.4	+0.6
LANS	Liptovska Anna	30.74	318	eP		P	22 23 50.8	+0.6
LANS	Liptovska Anna	30.74	318	eP		P	22 23 50.8	+0.6
LANS	Liptovska Anna	30.74	318	eP		P	22 23 50.8	+0.6
VYHS	Vyhne	30.82	316	eP		P	22 23 50.8	0.0
VYHS				pmax	pmax			
	comp=Z,5.0nm,0.8s							
VYHS	Vyhne	30.82	316	eP		P	22 23 50.8	0.0
	comp=Z,4.5nm,0.8s							
VYHS	Vyhne	30.82	316	eP		P	22 23 50.8	0.0
OJC	Ojcow	31.06	320	eP		P	22 23 52.5	-0.4
OJC	Ojcow	31.06	320	eP		P	22 23 52.4	-0.5
OJC				pmax	pmax			
	comp=Z,15nm,0.7s							
OJC	Ojcow	31.06	320	eP		P	22 23 52.5	-0.4
OJC	Ojcow	31.06	320	eP		P	22 23 52.4	-0.5
	comp=Z,15nm,0.7s							
SMOL	Smolenice	31.68	316	eP		P	22 23 58.2	-0.2
SMOL	Smolenice	31.68	316	eP		P	22 23 58.2	-0.2
SMOL	Smolenice	31.68	316	eP		P	22 23 58.2	-0.2
OKC	Ostrava-Krasne	31.82	318	eP		P	22 23 59.3	-0.3
OKC				ex		x	22 24 02.0	
OKC				ex		x	22 24 04.1	
OKC	Ostrava-Krasne	31.82	318	eP		P	22 23 59.3	-0.3
OKC				e			22 24 02.0	
OKC				e			22 24 04.1	
SOP	Sopron	31.90	314⇑	eP		P	22 24 00.2	-0.1
SOP	Sopron	31.90	314⇑	eP		P	22 24 00.2	-0.1
KLMR	Klimovskoe	32.00	349	eP		P	22 23 59.4	-1.6
KLMR				pmax	pmax			
	comp=Z,37nm,0.6s							
BOJS	Bojanci	32.03	309	eP		P	22 24 01.3	-0.1
BOJS	Bojanci	32.03	309	eP		P	22 24 01.3	-0.1
MORC	Moravsky Berou	32.14	318	iP		P	22 24 02.4	-0.1
MORC	Moravsky Berou	32.14	318	eP		P	22 24 02.3	-0.2
MORC				pmax	pmax			
	comp=Z,60nm,0.7s							
MORC	Moravsky Berou	32.14	318	eP		P	22 24 02.1	-0.4
MORC	Moravsky Berou	32.14	318	eP		P	22 24 02.3	-0.2
	comp=Z,60nm,0.7s							
WMQ	Urumqi	32.31	54	P		P	22 24 05.7	+1.6
WMQ				pP	pP		22 24 08.5	-4.3
WMQ				sP	sP		22 24 11.8	-4.7
WMQ				PP	PnPn		22 25 09.6	-1.3
WMQ				PcP	PcP		22 26 51.0	-0.6
WMQ				S	S		22 29 18.0	+2.1
WMQ				sS	sS		22 29 29.2	-1.2
WMQ	Urumqi	32.31	54	ScS	ScS		22 34 30.3	-2.0
WMQ				pmax	pmax			
	comp=Z,4.0nm,0.6s							
WMQ				pmax	pmax			
	comp=Z,42nm,4.9s							
WMQ				LR	LR			
	comp=N,130nm,19.6s							
WMQ				LR	LR			
	comp=E,48nm,18.2s							
WMQ				LR	LR			
	comp=Z,55nm,22.8s							
VISS	Visnje	32.39	310	eP		P	22 24 05.2	+0.5
VISS	Visnje	32.39	310	eP		P	22 24 05.2	+0.5
CONA	Conrad Observa	32.42	314	i P		P	22 24 04.8	-0.2
	comp=Z,12nm,1.3s							
CONA	Conrad Observa	32.42	314	P		P	22 24 04.8	-0.2
	comp=Z,12nm,1.3s							
PERS	Pernice	32.46	311	i P		P	22 24 05.6	+0.3
PERS	Pernice	32.46	311	i P		P	22 24 05.6	+0.3
VRAC	Vranov	32.51	317	P		P	22 24 05.2	-0.4
	comp=Z,11nm,0.8s,baz=115,slow=9.1,SNR=9.5							
VRAC	Vranov	32.51	317	eP		P	22 24 05.6	-0.1
KRLC	Kraliky	32.72	318	eP		P	22 24 07.0	-0.5
KRLC				ex		x	22 24 10.7	
KRLC	Kraliky	32.72	318	eP		P	22 24 07.0	-0.5
KRLC				e			22 24 10.7	
JAVS	Javornik	32.94	310	eP		P	22 24 09.3	-0.2
JAVS	Javornik	32.94	310	eP		P	22 24 09.3	-0.2
DPC	Dobruska-Polom	33.10	318	i P		P	22 24 10.5	-0.4
DPC				epP		pP	22 24 20.9	+1.3
DPC				esP		sP	22 24 24.2	+0.9
DPC	Dobruska-Polom	33.10	318	i P		P	22 24 10.5	-0.4
VSU	Vasula	33.16	337⇑	eP		P	22 24 08.7	-2.5
VSU				pmax	pmax			
	comp=Z,22nm,0.7s							
TREC	Trest	33.16	316	eP		P	22 24 11.0	-0.4
TREC				ex		x	22 24 14.3	
TREC	Trest	33.16	316	eP		P	22 24 11.0	-0.4
TREC				e

ZALV LR LR 22 40 11.8
comp=Z,212nm,19.0s,baz=250,slow=39
ZAA1 Zalesovo Array 34.39 36 *e*P **P 22 24 22.0 +0.1**
ZAA1 Zalesovo Array 34.39 36 *e*P **P 22 24 22.0 +0.1**
BRG Berggiesshubel 34.70 318 *e*P **P 22 24 24.0 -0.7**
comp=Z,10.0nm,0.8s
BRG Berggiesshubel 34.70 318 *e*P **P 22 24 24.0 -0.7**
BRG pmax pmax
comp=Z,10.0nm,0.8s
LSA Lhasa 34.78 80 P **P 22 24 26.8 +0.6**
LSA pmax pmax
comp=Z,8.0nm,0.7s
LSA Lhasa 34.78 80 *e*P **P 22 24 26.9 +0.7**
LSA pmax pmax
comp=Z,5.0nm,0.6s
LSA Lhasa 34.78 80 *e*P **P 22 24 26.9 +0.7**
comp=Z,5.3nm,0.6s
WTTA Wattenberg 34.92 311 *i* P **P 22 24 26.2 -0.7**
comp=Z,25nm,1.3s,SNR=5.0
WTTA *i* PcP **PcP 22 26 59.3 +0.3**
comp=Z,2.4nm,0.3s
WTTA Wattenberg 34.92 311 P **P 22 24 26.2 -0.7**
comp=Z,25nm,1.3s,SNR=5.0
VSL Villasalto 35.29 297 *e*P **P 22 24 30.5 +0.6**
comp=Z,21nm,0.8s
VSL Villasalto 35.29 297 *e*P **P 22 24 30.5 +0.6**
comp=Z,21nm,0.8s
MOTA Moosalm 35.29 311 *i* P **P 22 24 28.8 -1.3**
comp=Z,19nm,0.9s,SNR=9.8
MOTA *i* PcP **PcP 22 27 00.6 +0.4**
comp=Z,4.2nm,0.6s
MOTA Moosalm 35.29 311 P **P 22 24 28.8 -1.3**
comp=Z,19nm,0.9s,SNR=9.8
NKC Novy Kostel 35.34 316 *e*P **P 22 24 30.0 -0.3**
NKC *ex* x 22 24 34.6
NKC Novy Kostel 35.34 316 *e*P **P 22 24 30.0 -0.3**
NKC *e* 22 24 34.6
TMCR Tamitsa 35.37 350 *e*P **P 22 24 29.2 -1.0**
TMCR pmax pmax
comp=Z,67nm,0.6s
CLL Collm 35.41 318 *i* P **P 22 24 30.2 -0.6**
comp=Z,17nm,1.0s
CLL L L 22 41 00.0
comp=Z,100nm,21.9s
CLL Collm 35.41 318 *i* P **P 22 24 30.2 -0.6**
CLL pmax pmax
comp=Z,17nm,1.0s
CLL Collm 35.41 318 *e*P **P 22 24 30.1 -0.7**
comp=Z,20nm,1.0s
CLL Collm 35.41 318 *e*P **P 22 24 30.1 -0.7**
comp=Z,20nm,1.0s
FETA Feichten 35.46 310 *i* P **P 22 24 30.9 -0.6**
comp=Z,16nm,0.8s,SNR=8.1
FETA *i* PcP **PcP 22 27 01.0 +0.4**
comp=Z,8.6nm,1.0s
FETA Feichten 35.46 310 P **P 22 24 30.9 -0.6**
comp=Z,16nm,0.8s,SNR=8.1
RETA Reutte 35.55 311 *i* P **P 22 24 31.2 -1.0**
comp=Z,7.0nm,0.8s
RETA *i* PcP **PcP 22 27 01.0 +0.2**
comp=Z,2.4nm,0.5s
RETA Reutte 35.55 311 P **P 22 24 31.2 -1.0**
comp=Z,7.0nm,0.8s
RETA Reutte 35.55 311 PcP **PcP 22 27 01.0 +0.2**
comp=Z,2.4nm,0.5s
FUORN Ofenpass-Fuorn 35.67 310 *e*P **P 22 24 35.6 +2.2**
comp=Z,24nm,1.5s
FUORN Ofenpass-Fuorn 35.67 310 *e*P **P 22 24 35.6 +2.2**
comp=Z,24nm,1.5s
FIA0 FINESS Array S 35.68 340 *e*P **P 22 24 31.7 -1.2**
FIA0 *e* 22 27 00.3
FIA0 FINESS Array S 35.68 340 *e*P **P 22 24 31.7 -1.2**
FIA0 FINESS Array S 35.68 340 *e*P **P 22 24 31.7 -1.2**
FIA0 *e*PcP **PcP 22 27 00.3 -0.4**
FIA1 FINESS Array S 35.68 340 *e*P **P 22 24 31.4 -1.5**
FIA1 FINESS Array S 35.68 340 *e*P **P 22 24 31.4 -1.5**
FINES FINESS Array B 35.68 340 P **P 22 24 31.7 -1.2**
comp=Z,4.1nm,0.5s,baz=143,slow=9.7,SNR=72
FINES PcP **PcP 22 27 00.3 -0.4**
comp=Z,3.8nm,0.6s,baz=126,slow=4.9,SNR=5.6
FINES LR LR 22 40 59.0
comp=Z,142nm,20.4s,baz=152,slow=39
GRFO Grafenberg 35.91 315 *e*P **P 22 24 34.8 -0.3**
GRFO pmax pmax
comp=Z,16nm,0.8s
GRFO Grafenberg 35.91 315 *e*P **P 22 24 34.8 -0.3**
comp=Z,16nm,0.8s
GRFO Grafenberg 35.91 315 *e*P **P 22 24 34.8 -0.3**
comp=Z,16nm,0.8s
DAVOX Davos/Dischmat 35.96 310 P **P 22 24 35.2 -0.7**
comp=Z,3.1nm,0.6s,baz=132,slow=4.9,SNR=8.8
DAVOX PcP **PcP 22 27 02.5 +0.3**
baz=157,slow=15
BSD Bornholm Skovb 36.07 325 *i* P **P 22 24 33.3 -3.0**
BSD Bornholm Skovb 36.07 325 *i* P **P 22 24 33.3 -3.0**
DAVA Damuels 36.08 311 *i* P **P 22 24 35.9 -1.0**
comp=Z,33nm,0.7s,SNR=13
DAVA Damuels 36.08 311 P **P 22 24 35.9 -1.0**
comp=Z,33nm,0.7s,SNR=13
TUE Stuetta 36.25 309 *e*P **P 22 24 37.5 -0.9**
comp=Z,6.1nm,0.7s
TUE Stuetta 36.25 309 *e*P **P 22 24 37.5 -0.9**
comp=Z,6.1nm,0.7s
SHL Shillong 36.36 87 *ex* x 22 24 40.0
SENIN Lac Senin/Sane 37.62 308 *e*P **P 22 24 49.6 -0.4**
comp=Z,6.1nm,0.8s
SENIN Lac Senin/Sane 37.62 308 *e*P **P 22 24 49.6 -0.4**
comp=Z,6.1nm,0.8s
WLF Walferdange 39.06 313 P **P 22 25 00.8 -1.1**
WLF Walferdange 39.06 313 *e*P **P 22 25 00.7 -1.1**
WLF pmax pmax
comp=Z,16nm,1.1s
WLF Walferdange 39.06 313 P **P 22 25 00.7 -1.1**
WLF Walferdange 39.06 313 *e*P **P 22 25 00.7 -1.1**
comp=Z,16nm,1.1s
APA Apatity 39.25 349⇑ *i*P **P 22 25 03.0 -0.1**
APA MLR MLR
comp=Z,400nm,11.0s
HFS Hagfors 39.27 331 P **P 22 25 02.4 -1.0**
comp=Z,5.6nm,0.6s,baz=127,slow=9.5,SNR=41
HFS LR LR 22 42 36.3
comp=Z,119nm,21.0s,baz=122,slow=38
SSB Saint Sauveur 39.36 306 *e*P **P 22 25 02.4 -2.0**
SSB pmax pmax
comp=Z,27nm,1.7s
SSB Saint Sauveur 39.36 306 *e*P **P 22 25 02.4 -2.0**
comp=Z,27nm,1.7s
SSB Saint Sauveur 39.36 306 *e*P **P 22 25 02.4 -2.0**
comp=Z,27nm,1.7s
LVZ Lovozero 39.36 350 *ce*P **P 22 25 03.2 -0.9**
LVZ pmax pmax
comp=Z,16nm,0.8s
LVZ Lovozero 39.36 350 *e*P **P 22 25 03.7 -0.4**
comp=Z,24nm,0.8s
LVZ Lovozero 39.36 350 *e*P **P 22 25 03.7 -0.4**
comp=Z,24nm,0.8s
KRAR Krasnoyarsk 39.46 36⇑ *e*P **P 22 25 07.3 +2.3**
KRAR pmax pmax
comp=Z,23nm,0.5s
BEBN Eben Emael 39.63 315 P **P 22 25 07.8 +1.2**
BEBN Eben Emael 39.63 315 P **P 22 25 07.7 +1.2**
BCLA Clavier 39.77 314 P **P 22 25 08.2 +0.5**
BCLA Clavier 39.77 314 P **P 22 25 08.2 +0.5**
DOU Dourbes 40.14 314 P **P 22 25 10.3 -0.5**
DOU Dourbes 40.14 314 P **P 22 25 10.2 -0.5**
SNF Seneffe 40.43 314 P **P 22 25 12.7 -0.4**
SNF Seneffe 40.43 314 P **P 22 25 12.7 -0.4**
EMHD Djebel Mahouad 40.44 292 P **P 22 25 15.0 +1.4**
EMHD Djebel Mahouad 40.44 292 P **P 22 25 15.0 +1.4**
NC405 NORSAR Array S 40.63 332 *e*P **P 22 25 13.4 -1.3**
NC405 NORSAR Array S 40.63 332 *e*P **P 22 25 13.4 -1.3**
NB201 NORSAR Array S 40.77 332 *e*P **P 22 25 14.5 -1.3**
NB201 NORSAR Array S 40.77 332 *e*P **P 22 25 14.5 -1.3**
KONO Kongsberg 40.79 329 *e*P **P 22 25 14.2 -1.8**
KONO pmax pmax
comp=Z,30nm,1.5s
KONO Kongsberg 40.79 329 *e*P **P 22 25 14.2 -1.8**
comp=Z,30nm,1.5s
KONO Kongsberg 40.79 329 *e*P **P 22 25 14.2 -1.8**
comp=Z,30nm,1.5s
NB2 NORSAR Subarra 40.80 332 P **P 22 25 13.9 -2.2**
comp=Z,2.7nm,0.7s,baz=122,slow=8.6
NB2 NORSAR Subarra 40.80 332 P **P 22 25 13.9 -2.2**
comp=Z,2.7nm,0.7s,SNR=3.3
NB200 NORSAR Array S 40.80 332 *e*P **P 22 25 14.5 -1.6**
NB200 NORSAR Array S 40.80 332 *e*P **P 22 25 14.5 -1.6**
NB200 *e*PP **PP 22 26 51.5 +1.2**
NB200 *e*PcP **PcP 22 27 16.8 +0.1**
NOA NORSAR Array B 40.80 332 P **P 22 25 14.5 -1.6**
comp=Z,2.9nm,0.8s,baz=124,slow=8.5,SNR=13
NOA PP **PP 22 26 51.5 +1.2**
comp=Z,1.5nm,0.8s,baz=117,slow=10,SNR=3.7
NOA PcP **PcP 22 27 16.8 +0.1**
comp=Z,2.0nm,0.9s,baz=91,slow=5.9,SNR=4.5
NOA LR LR 22 43 33.0
comp=Z,120nm,20.4s,baz=125,slow=38
NOA NORSAR Array B 40.80 332 P **P 22 25 14.5 -1.6**
NOA 22 26 51.5
NOA 22 27 16.8
NOA pmax pmax
comp=Z,2.0nm,0.6s
NOA pmax pmax
comp=Z,2.0nm,0.8s
NOA pmax pmax
comp=Z,2.0nm,0.9s
NOA MLR MLR
comp=Z,120nm,20.4s
NC303 NORSAR Array S 40.83 332 *e*P **P 22 25 14.8 -1.5**
NC303 NORSAR Array S 40.83 332 *e*P **P 22 25 14.8 -1.5**
GTA Gaotai 40.93 63⇑ P **P 22 25 18.4 +0.8**
GTA pP pP 22 25 22.0 -4.5
GTA sP sP 22 25 24.8 -5.3
GTA PcP **PcP 22 27 18.3 +0.6**
GTA ScP **ScP 22 31 08.5 +3.2**
GTA S **S 22 31 29.6 +2.0**
GTA sS sS 22 31 37.5 -4.8
GTA SS **SS 22 34 27.8 -1.9**
GTA pmax pmax
comp=Z,17nm,0.8s
GTA pmax pmax
comp=Z,170nm,6.2s
GTA LR LR
comp=N,140nm,19.0s
GTA LR LR
comp=E,200nm,16.2s
GTA LR LR
comp=Z,170nm,18.5s
NBO02 NORSAR Array S 40.95 331 *e*P **P 22 25 16.4 -0.9**
NBO02 NORSAR Array S 40.95 331 *e*P **P 22 25 16.4 -0.9**
NBO00 NORSAR Array S 40.97 331 *e*P **P 22 25 16.1 -1.5**
NBO00 NORSAR Array S 40.97 331 *e*P **P 22 25 16.1 -1.5**
NC204 NORSAR Array S 41.11 332 *e*P **P 22 25 16.9 -1.8**
NC204 NORSAR Array S 41.11 332 *e*P **P 22 25 16.9 -1.8**
TAM Tamanrasset 41.11 271 *e*P **P 22 25 20.5 +1.2**
TAM pmax pmax
comp=Z,10.0nm,0.9s
TAM Tamanrasset 41.11 271 *e*P **P 22 25 20.5 +1.2**
comp=Z,10.0nm,0.9s
TAM Tamanrasset 41.11 271 *e*P **P 22 25 20.5 +1.2**
comp=Z,10.0nm,0.9s
EBNR Beni Rached 41.57 292 P **P 22 25 21.1 -1.8**
EBNR Beni Rached 41.57 292 P **P 22 25 21.1 -1.8**
ECHA Ech Chlef 41.72 292 P **P 22 25 24.8 +0.9**
ECHA Ech Chlef 41.72 292 P **P 22 25 24.8 +0.9**
ETRT Tiaret 41.86 291 P **P 22 25 25.9 +0.6**
ETRT Tiaret 41.86 291 P **P 22 25 25.9 +0.6**
EANR 'Ain N'Sour 41.96 292 P **P 22 25 27.3 +1.3**
EANR 'Ain N'Sour 41.96 292 P **P 22 25 27.3 +1.3**
KEV Kevo 42.29 348 *e*P **P 22 25 27.9 -0.2**
KEV pmax pmax
comp=Z,89nm,1.8s
KEV Kevo 42.29 348 *e*P **P 22 25 27.9 -0.2**
comp=Z,89nm,1.8s
KEV Kevo 42.29 348 *e*P **P 22 25 27.9 -0.2**
comp=Z,89nm,1.8s
ARA0 ARCESS Array S 42.38 347 *e*P **P 22 25 28.4 -0.5**
ARA0 ARCESS Array S 42.38 347 *e*P **P 22 25 28.4 -0.5**
ARA0 *e*PcP **PcP 22 27 22.0 +0.3**
ARCES ARCESS Array B 42.38 347 P **P 22 25 28.4 -0.5**
comp=Z,6.5nm,0.8s,baz=144,slow=8.7,SNR=35
ARCES PcP **PcP 22 27 22.0 +0.3**
comp=Z,7.0nm,0.7s,baz=141,slow=4.7,SNR=5.7
ARE0 ARCESS Array S 42.38 347 *e*P **P 22 25 28.5 -0.4**
comp=Z,84nm,1.7s
ARE0 ARCESS Array S 42.38 347 *e*P **P 22 25 28.5 -0.4**
comp=Z,84nm,1.7s
MOY Mondy 42.75 45 *e*P **P 22 25 34.0 +1.7**
MOY pmax pmax
comp=Z,19nm,1.5s
ZAK Zakamensk 43.97 47 *e*P **P 22 25 41.7 -0.5**
ZAK *e* 22 27 25.5
ZAK pmax pmax
comp=Z,5.0nm,1.0s
ZAK pmax pmax
comp=Z,5.0nm,2.0s
TLY Talaya 44.38 45 P **P 22 25 46.2 +0.8**
comp=Z,0.8nm,0.3s,baz=180,slow=3.0,SNR=3.6
TLY Talaya 44.38 45 *e*P **P 22 25 47.2 +1.9**
TLY pmax pmax
comp=Z,6.0nm,1.1s
TLY MLR MLR
comp=Z,201nm,12.0s
LZH Lanzhou 44.39 67 *e*P **P 22 25 46.0 +0.2**
LZH pP pP 22 25 49.6 -5.2
LZH sP sP 22 25 50.9 -7.5
LZH pmax pmax
comp=Z,38nm,1.1s
LZH pmax pmax
comp=Z,130nm,4.3s
LZH LR LR
comp=N,440nm,16.2s
LZH LR LR
comp=E,410nm,15.5s
LZH LR LR
comp=Z,180nm,17.0s
NRIK Noril'sk 44.79 17 P **P 22 25 48.9 +0.6**
comp=Z,9.1nm,0.8s,baz=230,slow=5.7,SNR=11
NRIK LR LR 22 48 05.0
comp=Z,118nm,19.7s,baz=282,slow=41
NRIK Noril'sk 44.79 17 P **P 22 25 48.9 +0.6**
NRIK pmax pmax
comp=Z,6.0nm,0.6s
NRIK MLR MLR
comp=Z,118nm,19.7s
CHTO Chiang Mai 44.81 93 *e*P **P 22 25 48.5 -0.6**
CHTO pmax pmax
comp=Z,38nm,1.7s
CHTO Chiang Mai 44.81 93 *e*P **P 22 25 48.5 -0.6**
comp=Z,38nm,1.7s
CHTO Chiang Mai 44.81 93 *e*P **P 22 25 48.5 -0.6**
comp=Z,38nm,1.7s
CD2 Chengdu 45.23 75 P **P 22 25 50.4 -2.0**
CD2 pmax pmax
comp=Z,30nm,0.7s
CD2 LR LR
comp=E,190nm,4.8s
CD2 LR LR
comp=Z,170nm,15.6s
CRAI Chiangrai 45.50 90 P **P 22 25 58.6 +4.0**
comp=Z,64nm,1.5s,comp=Z,83μm
ES19 SONSECA Array 45.53 298 *e*P **P 22 25 54.6 -0.1**
ES19 SONSECA Array 45.53 298 *e*P **P 22 25 54.6 -0.1**
ESDC Sonseca Array 45.58 298 P **P 22 25 55.0 -0.1**
comp=Z,0.8nm,0.4s,baz=74,slow=7.8,SNR=20
ESDC PcP **PcP 22 27 33.5 +0.2**
comp=Z,2.0nm,0.8s,baz=47,slow=3.1,SNR=5.1
ESLA Sonseca Array 45.58 298 *e*P **P 22 25 54.5 -0.6**
comp=Z,15nm,1.4s
ESLA Sonseca Array 45.58 298 *e*P **P 22 25 54.5 -0.6**
comp=Z,15nm,1.4s
SONA0 Songino Array 45.78 51 *e*P **P 22 25 57.0 +0.3**
comp=Z,6.8nm,1.2s
SONA0 Songino Array 45.78 51 *e*P **P 22 25 57.0 +0.3**
comp=Z,6.8nm,1.2s
SONA0 *e*PcP **PcP 22 27 33.8 -0.1**
SONM Songino Array 45.78 51 P **P 22 25 57.0 +0.3**
comp=Z,1.5nm,0.8s,baz=271,slow=9.8,SNR=8.5
SONM PcP **PcP 22 27 33.8 -0.1**
comp=Z,0.9nm,0.7s,baz=318,slow=1.9,SNR=3.0
SONM LR LR 22 46 08.9
comp=Z,76nm,20.3s,baz=202,slow=37
SONA1 Songino Array 45.79 51 *e*P **P 22 25 56.9 +0.2**
SONA1 Songino Array 45.79 51 *e*P **P 22 25 56.9 +0.2**
EKA Eskdalemuir Ar 45.83 320 P **P 22 25 56.1 -0.7**
comp=Z,5.8nm,0.5s,baz=103,slow=8.6,SNR=28
ESK Eskdalemuir 45.86 320 *e*P **P 22 25 56.4 -0.6**
ESK pmax pmax
comp=Z,114nm,1.8s
ESK Eskdalemuir 45.86 320 *e*P **P 22 25 56.4 -0.6**
comp=Z,114nm,1.8s
ESK Eskdalemuir 45.86 320 *e*P **P 22 25 56.4 -0.6**
comp=Z,114nm,1.8s
KMI Kunming 45.88 83 P **P 22 25 57.7 -0.2**
KMI pP pP 22 26 01.6 -5.3
KMI S **S 22 32 42.2 +1.6**
KMI Kunming 45.88 83 SS SS 22 35 59.3 -6.1
KMI pmax pmax
comp=Z,14nm,0.8s
KMI pmax pmax
comp=Z,66nm,3.1s
KMI LR LR
comp=N,110nm,5.7s
KMI LR LR
comp=E,91nm,5.7s
KMI LR LR
comp=Z,120nm,6.3s
ULN Ulaanbaatar 46.23 51⇑ *e*P **P 22 26 00.4 +0.2**
ULN pmax pmax
comp=Z,9.0nm,1.2s
ULN Ulaanbaatar 46.23 51 *e*P **P 22 26 00.4 +0.2**
comp=Z,8.0nm,1.1s
ULN Ulaanbaatar 46.23 51 *e*P **P 22 26 00.4 +0.2**
comp=Z,8.0nm,1.1s
NANT Nan 46.34 92 P **P 22 26 01.2 0.0**
comp=Z,5.3nm,0.7s,comp=Z,199nm
UTTA Uttaradit 46.64 93 P **P 22 26 03.6 0.0**
comp=Z,5.3nm,0.8s
MDT Midelt 47.12 289 P **P 22 26 07.4 +0.1**
comp=Z,5.0nm,0.9s,baz=82,slow=10,SNR=9.9
LOEI Loei 47.35 93 P **P 22 26 11.2 +2.0**
comp=Z,17nm,0.8s
DSB Dublin 47.39 317 *e*P **P 22 26 08.0 -1.0**
comp=Z,31nm,1.0s
DSB Dublin 47.39 317 *e*P **P 22 26 08.0 -1.0**
comp=Z,31nm,1.0s
PBRG Braganca 47.50 301 *e*P **P 22 26 10.4 +0.3**
PBRG Braganca 47.50 301 *e*P **P 22 26 10.4 +0.3**
MVO Moncorvo 47.77 300 *e*P **P 22 26 12.8 +0.5**
comp=Z,38nm,2.0s
MVO Moncorvo 47.77 300 *e*P **P 22 26 12.8 +0.5**
comp=Z,38nm,2.0s
PBAR Barrancos 48.14 296 *e*P **P 22 26 14.8 -0.2**
comp=Z,51nm,1.4s
PBAR Barrancos 48.14 296 *e*P **P 22 26 14.8 -0.2**
comp=Z,51nm,1.4s
PMRV Marv??o 48.24 298 *e*P **P 22 26 15.9 0.0**
PMRV Marv??o 48.24 298 *e*P **P 22 26 15.9 0.0**
MTE Manteigas 48.24 299 *e*P **P 22 26 16.2 +0.3**
comp=Z,91nm,1.8s
MTE Manteigas 48.24 299 *e*P **P 22 26 16.2 +0.3**
comp=Z,91nm,1.8s
PCBR Castelo Branco 48.26 298 *e*P **P 22 26 16.0 +0.1**
PCBR Castelo Branco 48.26 298 *e*P **P 22 26 16.0 +0.1**
PVRL Vila Real 48.28 300 *e*P **P 22 26 16.6 +0.5**
comp=Z,64nm,2.1s
PVRL Vila Real 48.28 300 *e*P **P 22 26 16.6 +0.5**
comp=Z,64nm,2.1s
POLO Lamas de Olo 48.33 301 *e*P **P 22 26 17.3 +0.7**
comp=Z,37nm,2.7s
POLO Lamas de Olo 48.33 301 *e*P **P 22 26 17.3 +0.7**
comp=Z,37nm,2.7s
TOA0 Torodi Ar. Sit 48.36 261 *e*P **P 22 26 17.0 0.0**
TOA0 Torodi Ar. Sit 48.36 261 *e*P **P 22 26 17.1 0.0**
TOA1 Torodi Ar. Sit 48.36 261 *e*P **P 22 26 17.3 +0.3**
comp=Z,40nm,0.8s
TOA1 Torodi Ar. Sit 48.36 261 *e*P **P 22 26 17.3 +0.3**
comp=Z,40nm,0.8s
TORD Torodi Ar. Bea 48.36 261 P **P 22 26 17.3 +0.3**
comp=Z,35nm,0.8s,baz=56,slow=7.7,SNR=236
TORD LR LR 22 48 46.1
comp=Z,158nm,18.0s,baz=255,slow=39
PESTR Estremoz 48.47 297 *e*P **P 22 26 17.5 -0.1**
PESTR Estremoz 48.47 297 *e*P **P 22 26 17.5 -0.1**
PVIS Viseu 48.47 300 *e*P **P 22 26 18.6 +0.9**
comp=Z,32nm,1.9s
PVIS Viseu 48.47 300 *e*P **P 22 26 18.6 +0.9**
comp=Z,32nm,1.9s
PGAV Gavieira, Arco 48.62 301 *e*P **P 22 26 20.0 +1.1**
PGAV Gavieira, Arco 48.62 301 *e*P **P 22 26 20.0 +1.1**
NONG Nongkai 48.76 92 P **P 22 26 19.3 -0.7**
comp=Z,27nm,1.1s,comp=Z,3μm
PBEJ Beja 48.80 296 *e*P **P 22 26 20.1 -0.1**
comp=Z,18nm,1.4s
PBEJ Beja 48.80 296 *e*P **P 22 26 20.1 -0.1**
comp=Z,18nm,1.4s
XAN Xi'an 48.84 69 P **P 22 26 20.0 -0.6**
XAN pP pP 22 26 25.6 -4.0
XAN pmax pmax
comp=Z,25nm,0.6s
GYA Guiyang 48.85 80 *e*P **P 22 26 21.2 +0.4**
GYA PcP **PcP 22 27 46.8 +1.6**
GYA PP **PP 22 28 15.4 +1.2**
GYA ScP **ScP 22 31 40.2 +2.1**
GYA S **S 22 33 23.0 +0.3**
GYA ScS **ScS 22 36 11.8 +0.3**
GYA Guiyang 48.85 80 SS SS 22 36 49.6 -3.8
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,120nm,5.4s
GYA LR LR
comp=N,490nm,18.4s
GYA LR LR
comp=E,470nm,19.0s
GYA LR LR
comp=Z,450nm,18.8s
PTOM Tomar 49.00 298 *e*P **P 22 26 22.3 +0.7**
comp=Z,63nm,1.5s
PTOM Tomar 49.00 298 *e*P **P 22 26 22.3 +0.7**
comp=Z,63nm,1.5s
PCAS Casmilo, Conde 49.01 299 *e*P **P 22 26 22.1 +0.4**
PCAS Casmilo, Conde 49.01 299 *e*P **P 22 26 22.1 +0.4**
PTEO Sao Teotonio 49.55 296 *e*P **P 22 26 26.4 +0.5**
PTEO Sao Teotonio 49.55 296 *e*P **P 22 26 26.4 +0.5**
PFVI Vila Bisbo 49.70 295 *e*P **P 22 26 27.2 +0.2**
PFVI Vila Bisbo 49.70 295 *e*P **P 22 26 27.2 +0.2**
LHMI Lhok Sumawe 49.74 110 P **P 22 26 24.1 -3.5**
HHC Hu-ho-hao-te 49.79 60 *e*P **P 22 26 27.6 -0.2**
HHC sP pP 22 26 35.0 -1.9
HHC S **S 22 33 29.4 -6.1**
HHC pmax pmax
comp=Z,23nm,1.0s
HHC pmax pmax
comp=Z,100nm,6.8s
HHC LR LR
comp=N,120nm,15.8s
HHC LR LR
comp=E,630nm,16.0s
HHC LR LR
comp=Z,510nm,15.6s
MLSI Meulaboh, Aceh 49.86 112 P **P 22 26 27.6 -0.8**
LSZ Lusaka 49.88 209 *e*P **P 22 26 30.7 +2.0**
LSZ pmax pmax
comp=Z,25nm,0.8s
LSZ Lusaka 49.88 209 *e*P **P 22 26 30.7 +2.0**
comp=Z,25nm,0.8s
LSZ Lusaka 49.88 209 *e*P **P 22 26 30.7 +2.0**
comp=Z,25nm,0.8s
ENH Enshi 50.18 74 *e*P **P 22 26 30.6 -0.2**
comp=Z,15nm,1.1s
ENH Enshi 50.18 74 *e*P **P 22 26 30.6 -0.2**
comp=Z,15nm,1.1s
SPITS Spitsbergen Ar 50.87 351 P **P 22 26 35.5 +0.2**
comp=Z,7.2nm,0.4s,baz=135,slow=11,SNR=44
SPITS LR LR 22 51 03.7
comp=Z,50nm,19.1s,baz=15,slow=40
BOD Bodaibo 51.08 38 *e*P **P 22 26 37.3 +0.2**
BOD pmax pmax
comp=Z,37nm,1.1s
PSI Prapat 52.75 111 *e*P **P 22 26 48.7 -1.6**
PSI pmax pmax
comp=Z,10.0nm,0.6s
PSI Prapat 52.75 111 *e*P **P 22 26 48.7 -1.6**
comp=Z,10nm,0.6s
BJI Beijing 53.39 60 P **P 22 26 52.9 -1.7**
BJI pmax pmax
comp=Z,5.0nm,0.9s
IPM Ipoh 53.52 108 *e*P **P 22 26 54.0 -1.8**
comp=Z,16nm,0.8s
IPM Ipoh 53.52 108 *e*P **P 22 26 54.0 -1.8**
comp=Z,16nm,0.8s
PBSI Pulau Batu 53.93 115 P **P 22 26 58.9 +0.1**
WHN Wuhan 54.15 72⇓ *i*P **P 22 27 00.5 +0.3**
WHN pP **pP 22 27 05.6 -3.8**
MNSI Mandailing Nat 54.45 113 P **P 22 27 02.7 +0.1**
TIA Tai'an 54.92 65⇑ P **P 22 27 06.0 +0.2**
TIA pmax pmax
comp=Z,30nm,0.7s

BKNI	Bangkinang	55.90	112	P	P	22 27 13.4	+0.3
PDSI	Padang	56.18	114	P	P	22 27 15.0	-0.1
	comp=Z,197nm,0.8s						
DAG	Danmarks Havn	56.59	345	*i* P	P	22 27 16.4	-0.7
	comp=Z,6.3nm,0.7s						
DAG	Danmarks Havn	56.59	345	*i* P	P	22 27 16.4	-0.7
DAG				pmax	pmax		
	comp=Z,4.0nm,0.7s						
PPSI	Pulau Pagai	56.95	116	P	P	22 27 20.0	-0.5
DBIC	Dimbokro	57.16	258	P	P	22 27 22.6	+0.5
	comp=Z,49nm,0.7s,baz=32,slow=7.3,SNR=64						
DBIC				LR	LR	22 53 45.6	
	comp=Z,154nm,19.9s,baz=46,slow=38						
DBIC	Dimbokro	57.16	258	*e*P	P	22 27 22.5	+0.5
	comp=Z,50nm,0.8s						
DBIC	Dimbokro	57.16	258	*e*P	P	22 27 22.6	+0.5
	comp=Z,50nm,0.8s						
TIXI	Tiksi	58.24	21	LR	LR	22 55 57.8	
	comp=Z,129nm,19.7s,baz=247,slow=40						
TIXI	Tiksi	58.24	21⇑	*e*P	P	22 27 28.1	-0.7
TIXI				pmax	pmax		
	comp=Z,6.0nm,1.2s						
TIXI				MLR	MLR		
	comp=Z,120nm,18.0s						
TIXI	Tiksi	58.24	21	*e*P	P	22 27 28.4	-0.4
	comp=Z,5.1nm,0.7s						
TIXI	Tiksi	58.24	21	*e*P	P	22 27 28.4	-0.4
	comp=Z,5.1nm,0.7s						
TSUM	Tsumeb	58.35	218	*e*P	P	22 27 31.5	+1.1
	comp=Z,8.9nm,1.0s						
TSUM	Tsumeb	58.35	218	*e*P	P	22 27 31.5	+1.1
	comp=Z,8.9nm,1.0s						
TPRI	Tanjung Pinang	58.40	109	P	P	22 27 31.6	+0.8
YAK	Yakutsk	58.95	33	LR	LR	22 55 59.4	
	comp=Z,66nm,19.0s,baz=285,slow=39						
YAK	Yakutsk	58.95	33	*e*P	P	22 27 33.5	-0.4
YAK				pmax	pmax		
	comp=Z,23nm,0.8s						
YAK				pmax	pmax		
	comp=E,11nm,1.3s						
YAK	Yakutsk	58.95	33	*e*P	P	22 27 33.5	-0.4
	comp=E,25nm,0.7s						
YAK	Yakutsk	58.95	33	*e*P	P	22 27 33.5	-0.4
	comp=E,25nm,0.7s						
CN2	Changchun	59.40	54	*e*P	P	22 27 36.0	-1.3
CN2				pmax	pmax		
	comp=Z,10.0nm,0.6s						
LBTB	Lobatse	59.67	207	*e*P	P	22 27 40.7	+1.3
LBTB				pmax	pmax		
	comp=Z,40nm,0.8s						
LBTB	Lobatse	59.67	207	*e*P	P	22 27 40.7	+1.3
	comp=Z,40nm,0.8s						
LBTB	Lobatse	59.67	207	*e*P	P	22 27 40.6	+1.3
	comp=Z,40nm,0.8s						
MNAI	Manna	60.24	115	P	P	22 27 43.1	-0.4
MDSI	Maura Dua	61.28	114	P	P	22 27 48.8	-1.8
LWLI	Liwa	61.51	115	P	P	22 27 51.3	-1.0
	comp=Z,81nm,0.6s						
SUMG	Summit	61.71	340	*i* P	P	22 27 53.1	0.0
	comp=Z,15nm,0.9s						
SUMG	Summit	61.71	340	*i* P	P	22 27 53.1	0.0
SUMG				pmax	pmax		
	comp=Z,15nm,0.9s						
SUMG	Summit	61.71	340	*i* P	P	22 27 53.1	0.0
	comp=Z,15nm,0.9s						
SUMG	Summit	61.71	340	*e*P	P	22 27 52.9	-0.2
	comp=Z,15nm,0.9s						
MDJ	Mudanjiang	62.09	52	P	P	22 27 54.4	-1.2
MDJ				pmax	pmax		
	comp=Z,6.0nm,1.0s						
MDJ				pmax	pmax		
	comp=Z,71nm,4.4s						
MDJ				LR	LR		
	comp=N,88nm,3.6s						
MDJ				LR	LR		
	comp=E,82nm,6.2s						
MDJ				LR	LR		
	comp=Z,130nm,6.7s						
KLR	Kul'dur	62.34	47	*e*P	P	22 27 56.4	-0.8
KS01	Wonju Array Si	62.90	61	*e*P	P	22 28 00.3	-0.8
KS01	Wonju Array Si	62.90	61	*e*P	P	22 28 00.3	-0.8
KS15	Wonju Array Si	62.90	61	*e*P	P	22 28 00.6	-0.6
KS15	Wonju Array Si	62.90	61	*e*P	P	22 28 00.6	-0.6
KSAR	Wonju Array Be	62.90	61	P	P	22 28 00.6	-0.6
KSAR	Wonju Array Be	62.90	61	P	P	22 28 00.6	-0.6
KSAR	Wonju Array Be	62.90	61	P	P	22 28 00.6	-0.6
KSRS	Korea Array	62.92	61	P	P	22 28 00.6	-0.8
	comp=Z,6.9nm,0.6s,baz=280,slow=6.8,SNR=34						
KSRS				LR	LR	22 59 29.2	
	comp=Z,48nm,20.0s,baz=236,slow=40						
BOSA	Boshof	63.04	205	P	P	22 28 02.8	+0.6
	comp=Z,14nm,0.7s,baz=6.4,slow=4.4,SNR=24						
CGJI	Cibinong	63.77	115	P	P	22 28 06.6	-0.5
	comp=Z,36nm,0.7s						
USRK	Ussuriysk Ar.	63.85	52	P	P	22 28 06.5	-0.9
	comp=Z,1.9nm,0.6s,baz=302,slow=5.8,SNR=8.9						
USRK				LR	LR	22 59 08.9	
	comp=Z,92nm,19.7s,baz=242,slow=39						
CISI	Cisompet, Garu	66.01	115	*e*P	P	22 28 19.8	-2.0
	comp=Z,27nm,0.7s						
CISI	Cisompet, Garu	66.01	115	*e*P	P	22 28 19.8	-2.0
	comp=Z,27nm,0.7s						
JNU	Nakatsue	66.65	64	LR	LR	23 00 20.5	
	comp=Z,505nm,20.5s,baz=248,slow=38						
SEY	Seymchan	68.87	29⇑	*e*P	P	22 28 39.9	+0.8
MA2	Magadan	69.52	32	*i* P	P	22 28 43.6	+0.4
MAJO	Matsushiro	70.95	58	P	P	22 28 53.9	+1.5
MAJO				pmax	pmax		
	comp=Z,57nm,1.1s						
MJAR	Matsushiro Arr	70.95	58	P	P	22 28 51.9	-0.6
	comp=Z,1.1nm,0.5s,baz=288,slow=4.0,SNR=5.3						
BILL	Bilibino	71.46	21	*i* P	P	22 28 55.4	+0.5
BILL				pmax	pmax		
	comp=Z,7.0nm,0.9s						
BILL				MLR	MLR		
	comp=Z,42nm,20.0s						
BILL	Bilibino	71.46	21	*e*P	P	22 28 55.6	+0.7
	comp=Z,10nm,1.0s						
BILL	Bilibino	71.46	21	*e*P	P	22 28 55.6	+0.7
	comp=Z,10nm,1.0s						
RES	Resolute Bay	73.43	351	*e*P	P	22 29 06.4	-0.2
RES	Resolute Bay	73.43	351	*e*P	P	22 29 06.4	-0.2
RES	Resolute Bay	73.43	351	*e*P	P	22 29 06.4	-0.2
PEA1	Petropavlovsk-	75.92	37	*e*P	P	22 29 20.1	-1.3
PEA1	Petropavlovsk-	75.92	37	*e*P	P	22 29 20.1	-1.3
PETK	Petropavlovsk-	75.93	37	P	P	22 29 20.1	-1.3
	comp=Z,6.5nm,0.9s,baz=284,slow=7.3,SNR=3.1						
SCHQ	Schefferville	80.30	329	P	P	22 29 45.3	-0.3
	comp=Z,11nm,0.5s,baz=44,slow=4.9,SNR=38						
SCHQ	Schefferville	80.30	329	*e*P	P	22 29 45.3	-0.3
	comp=Z,12nm,0.6s						
SCHQ	Schefferville	80.30	329	*e*P	P	22 29 45.3	-0.3
	comp=Z,12nm,0.6s						
COLD	Coldfoot	81.98	8	*e*P	P	22 29 55.2	+0.8
	comp=Z,5.8nm,1.0s						
COLD	Coldfoot	81.98	8	*e*P	P	22 29 55.2	+0.8
	comp=Z,5.8nm,1.0s						
INK	Inuvik	82.16	2	*e*P	P	22 29 54.5	-0.7
INK	Inuvik	82.16	2	*e*P	P	22 29 54.5	-0.7
INK	Inuvik	82.16	2	*e*P	P	22 29 54.5	-0.7
MLY	Manley	84.00	9	*e*P	P	22 30 05.2	+0.3
	comp=Z,4.4nm,0.9s						
MLY	Manley	84.00	9	*e*P	P	22 30 05.2	+0.3
	comp=Z,4.4nm,0.9s						
MDM	Murphy Dome	84.40	8	*e*P	P	22 30 07.4	+0.5
	comp=Z,11nm,1.0s						
MDM	Murphy Dome	84.40	8	*e*P	P	22 30 07.4	+0.5
	comp=Z,11nm,1.0s						
COLA	College	84.52	8⇓	*i* P	P	22 30 07.9	+0.5
COLA				pmax	pmax		
	comp=Z,6.0nm,0.9s						
IL1	Eielson Array	84.74	8	*e*P	P	22 30 06.9	-1.6
IL1	Eielson Array	84.74	8	*e*P	P	22 30 06.9	-1.6
ILAR	Eielson Array	84.74	8	P	P	22 30 08.2	-0.4
	comp=Z,2.9nm,0.7s,baz=325,slow=4.1,SNR=25						
ILAR				PP	PP	22 33 28.6	+4.6
	comp=Z,0.5nm,0.7s,baz=336,slow=5.4,SNR=4.8						
ILB	Eielson Array	84.74	8	*e*P	P	22 30 08.2	-0.4
ILB	Eielson Array	84.74	8	*e*P	P	22 30 08.2	-0.4
ILB				*e*PP	PP	22 33 28.6	+4.6
CCB	Clear Creek Bu	84.75	8	*e*P	P	22 30 08.0	-0.6
	comp=Z,3.6nm,1.0s						
CCB	Clear Creek Bu	84.75	8	*e*P	P	22 30 08.0	-0.6
	comp=Z,3.6nm,1.0s						
BPAW	Bear Paw Mtn.	84.85	9	*e*P	P	22 30 09.6	+0.4
	comp=Z,14nm,0.8s						
BPAW	Bear Paw Mtn.	84.85	9	*e*P	P	22 30 09.6	+0.4
	comp=Z,14nm,0.8s						
BPAW				*e*PP	PP	22 33 21.9	-3.0
WRH	Wood River Hil	84.88	8	*e*P	P	22 30 08.9	-0.4
	comp=Z,12nm,1.8s						
WRH	Wood River Hil	84.88	8	*e*P	P	22 30 08.9	-0.4
	comp=Z,12nm,1.8s						
TTA	Tatalina	85.13	12	*e*P	P	22 30 11.0	+0.3
TTA				pmax	pmax		
	comp=Z,8.0nm,1.2s						
TTA	Tatalina	85.13	12	*e*P	P	22 30 11.0	+0.3
	comp=Z,8.4nm,1.2s						
TTA	Tatalina	85.13	12	*e*P	P	22 30 11.0	+0.3
	comp=Z,8.4nm,1.2s						
TT01	Tatalina	85.15	12	*e*P	P	22 30 10.8	+0.1
TT01	Tatalina	85.15	12	*e*P	P	22 30 10.8	+0.1
EGAK	Eagle	85.28	5	*e*P	P	22 30 11.4	+0.1
	comp=Z,12nm,1.0s						
EGAK	Eagle	85.28	5	*e*P	P	22 30 11.4	+0.1
	comp=Z,12nm,1.0s						
CAST	Castle Rocks	85.33	10	*e*P	P	22 30 12.0	+0.4
	comp=Z,52nm,0.3s						
CAST	Castle Rocks	85.33	10	*e*P	P	22 30 12.0	+0.4
	comp=Z,52nm,0.3s						
KTH	Kantishna Hill	85.38	10	*e*P	P	22 30 10.6	-1.3
	comp=Z,22nm,0.3s						
KTH	Kantishna Hill	85.38	10	*e*P	P	22 30 10.6	-1.3
	comp=Z,22nm,0.3s						
MCK	McKinley	85.48	9	*e*P	P	22 30 12.4	0.0
MCK				pmax	pmax		
	comp=Z,14nm,0.8s						
MCK	McKinley	85.48	9	*e*P	P	22 30 12.4	0.0
	comp=Z,14nm,0.8s						
MCK	McKinley	85.48	9	*e*P	P	22 30 12.4	0.0
	comp=Z,14nm,0.8s						
RND	Reindeer	85.81	9	*e*P	P	22 30 13.5	-0.6
RND				pmax	pmax		
	comp=Z,12nm,1.0s						
RND	Reindeer	85.81	9	*e*P	P	22 30 13.4	-0.6
	comp=Z,12nm,1.0s						
RND	Reindeer	85.81	9	*e*P	P	22 30 13.4	-0.6
	comp=Z,12nm,1.0s						
RND				*e*PP	PP	22 33 44.9	+12
PPLA	Purkeypile	85.81	10	*e*P	P	22 30 14.1	-0.1
	comp=Z,6.8nm,0.7s						
PPLA	Purkeypile	85.81	10	*e*P	P	22 30 14.1	-0.1
	comp=Z,6.8nm,0.7s						
DAWY	Dawson	86.12	5	*e*P	P	22 30 16.1	+0.6
DAWY	Dawson	86.12	5	*e*P	P	22 30 16.1	+0.6
DOT	Dot Lake	86.13	7	*e*P	P	22 30 16.0	+0.4
	comp=Z,34nm,0.9s						
DOT	Dot Lake	86.13	7	*e*P	P	22 30 16.1	+0.4
	comp=Z,34nm,0.9s						
FITZ	Fitzroy Crossi	86.23	113	*e*P	P	22 30 16.3	-0.4
	comp=Z,17nm,0.7s						
FITZ	Fitzroy Crossi	86.23	113	*e*P	P	22 30 16.3	-0.4
	comp=Z,17nm,0.7s						
MENT	Mentasta	86.86	7	*e*P	P	22 30 20.2	+1.0
	comp=Z,7.6nm,0.9s						
MENT	Mentasta	86.86	7	*e*P	P	22 30 20.2	+1.0
	comp=Z,7.6nm,0.9s						
YKW3	Yellowknife Ar	87.26	353	*e*P	P	22 30 20.9	-0.1
	comp=Z,19nm,1.6s						
YKW3	Yellowknife Ar	87.26	353	*e*P	P	22 30 20.9	-0.1
	comp=Z,19nm,1.6s						
YKA	Yellowknife Ar	87.32	353	P	P	22 30 21.2	-0.1
	comp=Z,3.8nm,0.8s,baz=8.2,slow=5.0,SNR=73						
YKB5	Yellowknife Ar	87.32	353	*e*P	P	22 30 21.2	-0.1
YKB5	Yellowknife Ar	87.32	353	*e*P	P	22 30 21.2	-0.1
SML	Sawmill	87.41	9	*e*P	P	22 30 22.1	+0.2
SML				pmax	pmax		
	comp=Z,17nm,1.2s						
SML	Sawmill	87.41	9	*e*P	P	22 30 22.0	+0.2
	comp=Z,17nm,1.2s						
SML	Sawmill	87.41	9	*e*P	P	22 30 22.1	+0.2
	comp=Z,17nm,1.2s						
PMR	Palmer	87.51	9	*e*P	P	22 30 22.4	+0.2
PMR				pmax	pmax		
	comp=Z,14nm,1.4s						
PMR	Palmer	87.51	9	*e*P	P	22 30 22.4	+0.2
	comp=Z,14nm,1.4s						
PMR	Palmer	87.51	9	*e*P	P	22 30 22.4	+0.2
	comp=Z,14nm,1.4s						
SCM	Sheep Creek Mo	87.52	9	*e*P	P	22 30 23.3	+0.9
SCM				pmax	pmax		
	comp=Z,9.0nm,0.9s						
SCM	Sheep Creek Mo	87.52	9	*e*P	P	22 30 23.3	+0.9
	comp=Z,8.7nm,0.9s						
SCM	Sheep Creek Mo	87.52	9	*e*P	P	22 30 23.3	+0.9
	comp=Z,8.7nm,0.9s						
KLU	Klutina	88.03	8	*e*P	P	22 30 26.4	+1.5
	comp=Z,14nm,1.1s						
KLU	Klutina	88.03	8	*e*P	P	22 30 26.4	+1.5
	comp=Z,14nm,1.1s						
BALM	Baldy	88.87	6	*e*P	P	22 30 30.8	+1.9
BALM				pmax	pmax		
	comp=Z,32nm,1.9s						
BALM	Baldy	88.87	6	*e*P	P	22 30 30.8	+1.9
	comp=Z,32nm,1.9s						
BALM	Baldy	88.87	6	*e*P	P	22 30 30.8	+1.9
	comp=Z,32nm,1.9s						
KDAK	Kodiak Island	90.56	12	*i* P	P	22 30 37.0	+0.3
KDAK	Kodiak Island	90.56	12	*e*P	P	22 30 37.3	+0.6
	comp=Z,10nm,0.7s						
KDAK	Kodiak Island	90.56	12	*e*P	P	22 30 37.3	+0.6
	comp=Z,10nm,0.7s						
WR1	Warramunga Arr	94.21	110	*e*P	P	22 30 53.2	-1.0
	comp=Z,20nm,1.7s						
WR1	Warramunga Arr	94.21	110	*e*P	P	22 30 53.2	-1.0
	comp=Z,20nm,1.7s						
WRA	Warramunga Arr	94.21	110	P	P	22 30 53.2	-1.0
	comp=Z,1.8nm,0.6s,baz=317,slow=4.1,SNR=43						
WRAB	Tennant Creek	94.21	110⇑	*i*P	P	22 30 53.4	-0.8
WRAB				pmax	pmax		
	comp=Z,38nm,2.7s						
ASAR	Alice Springs	95.71	114	P	P	22 30 59.8	-1.3
	comp=Z,2.1nm,0.6s,baz=304,slow=4.7,SNR=30						
AS31	Alice Springs	95.71	114	*e*P	P	22 30 59.8	-1.2
	comp=Z,1.2nm,0.8s						
AS31	Alice Springs	95.71	114	*e*P	P	22 30 59.8	-1.2
	comp=Z,1.2nm,0.8s						
AS01	Alice Springs	95.74	114	*e*P	P	22 30 59.5	-1.7
AS01	Alice Springs	95.74	114	*e*P	P	22 30 59.5	-1.7
HHAR	Hobbs	106.47	331	*e*Pdif	Pdif	22 31 46.1	-2.9
WVOR	Wild Horse Val	107.51	352	*e*P	Pdif	22 32 01.8	+8.2
WVOR	Wild Horse Val	107.51	352	*e*Pdif	Pdif	22 32 01.8	+8.2
Y14A	Wickenburg	114.84	345	*e*PP	PP	22 37 11.9	-1.0
Y14A	Wickenburg	114.84	345	*e*PP	PP	22 37 11.9	-1.0
LTX	Lajitas	116.42	335	*e*PKIKP	PKPdf	22 36 18.6	-0.4
LTX	Lajitas	116.42	335	*e*PKIKP	PKPdf	22 36 18.6	-0.4
LTX	Lajitas	116.42	335	*e*PKPdf	PKPdf	22 36 18.6	-0.4
TXAR	Lajitas Array	116.42	335	PKP	PKPdf	22 36 18.6	-0.4
	comp=Z,0.4nm,0.6s,baz=163,slow=1.3,SNR=5.7						
LPAZ	La Paz	122.92	269	PKP	PKPdf	22 36 32.2	-0.2
	comp=Z,1.2nm,0.8s,baz=86,slow=4.8,SNR=5.3						
VNDA	Vanda	123.35	166	PKP	PKPdf	22 36 30.0	-0.7
	comp=Z,0.6nm,0.6s,baz=298,slow=2.3,SNR=4.0						
VNDA				PP	PP	22 38 10.6	-1.4
	comp=Z,1.1nm,1.1s,baz=19,slow=2.3,SNR=3.1						
VNDA	Vanda	123.35	166	*e*PKIKP	PKPdf	22 36 30.0	-0.7
TLIG	Tlapa	124.51	324	*e*PP	PP	22 38 11.0	-9.2

THE ***08*** *22:21:25.6, 34.°93N×26.°41E, h3km±3km, ML2.5/4, Error ellipse: s-maj=3.0km s-min=0.5km az=226.0*
ATH ***08*** *22:21:26.5, 34.°96N×26.°40E, h12km±2km, ML2.3/3, Error ellipse: s-maj=5.2km s-min=1.3km az=344.0*
CSEM ***08*** *22:21:26.6±0.7, 34.°97N×26.°39E, h2km, ML2.3, Error ellipse: s-maj=19.7km s-min=4.9km az=166.0*

ISC 08 22:21:26.4±2.0, 35.°0N±0.°1×26.°41E±0.°04, h7km±12km, n25, σ0.°70/36, Crete

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZKR	Zakros	0.23	315	P	Pg	22 21 30.6	-0.4
ZKR				S	Sg	22 21 34.7	+0.6
ZKR	Zakros	0.23	315	P	Pg	22 21 30.6	-0.4
ZKR				S	Sg	22 21 34.7	+0.6
ZKR	Zakros	0.23	315	P	Pg	22 21 30.6	-0.4
ZKR				S	Sg	22 21 34.4	+0.3
ZKR				AML	AML	22 21 35.1	
	comp=E,2121μm,0.4s						
ZKR				AML	AML	22 21 35.4	
	comp=N,2441μm,0.4s						
NPS	Neapolis	0.73	296	P	Pg	22 21 40.2	-0.2
NPS				S	Sb	22 21 50.7	-1.0
NPS	Neapolis	0.73	296	P	Pg	22 21 40.1	-0.3
NPS				S	Sg	22 21 50.5	+0.6
NPS	Neapolis	0.73	296	P	Pg	22 21 40.1	-0.3
NPS				S	Sg	22 21 50.5	+0.6
NPS				AML	AML	22 21 51.9	
	comp=N,452μm,0.3s						
NPS				AML	AML	22 21 53.5	
	comp=E,626μm,0.4s						
LAST	Lasithi	0.80	286	P	Pg	22 21 41.0	-0.7
LAST				S	Sb	22 21 53.3	-0.4
LAST	Lasithi	0.80	286	P	Pg	22 21 41.0	-0.7
LAST				S	Sb	22 21 53.3	-0.4
LAST	Lasithi	0.80	286	P	Pg	22 21 40.7	-1.0
KARP	Karpathos	0.85	46	P	Pg	22 21 42.3	-0.5
KARP				S	Sb	22 21 55.6	+0.3
KARP	Karpathos	0.85	46	P	Pg	22 21 42.1	-0.7
KARP				S	Sb	22 21 55.6	+0.3
KARP	Karpathos	0.85	46	P	Pg	22 21 42.1	-0.7
KARP				S	Sb	22 21 56.0	+0.6
KARP				AML	AML	22 21 58.1	
	comp=N,517μm,0.4s						
KARP				AML	AML	22 22 03.2	
	comp=E,611μm,0.6s						
IDI	Anoyia	1.29	286	P	Pg	22 21 50.9	-0.4
IDI	Anoyia	1.29	286	P	Pg	22 21 50.9	-0.4
SIVA	Sivas	1.32	273	P	Pg	22 21 50.6	-1.1
SIVA	Sivas	1.32	273	P	Pg	22 21 50.6	-1.1
SANT	Santorini	1.62	332	P	Pn	22 21 54.9	-0.6
SANT	Santorini	1.62	332	P	Pn	22 21 54.9	-0.6
ARG	Arkhangelos	1.88	47	P	Pb	22 22 01.0	-0.1
IMMV	Iera Moni Meta	2.06	285	P	Pn	22 22 02.8	+1.4
IMMV	Iera Moni Meta	2.06	285	P	Pn	22 22 02.9	+1.4
APE	Apeiranthos	2.23	342	P	Pn	22 22 03.9	0.0
APE	Apeiranthos	2.23	342	P	Pn	22 22 03.9	0.0
VLI	Veliai	3.33	303	P	Pn	22 22 19.6	+0.6
VLI	Veliai	3.33	303	P	Pn	22 22 19.6	+0.6

IDC ***08*** *22:24:31.9±2.6, 37.°57N×141.°23E, h0km, mb3.3/3, mb1 3.4/4, mb1mx3.2/54, mbtmp3.2/4, ML3.1/1, Error ellipse: s-maj=59.0km s-min=33.7km az=68.0*
JMA ***08*** *22:24:34.9, 37.°22N×140.°89E, h8km±1km, M3.2 Broadband fault plane solution: P waves. NP1: φ±20.00000°, δ56.00000°, λ-65.00000°. NP2: φ±161.00000°, δ41.00000°, λ-122.00000°. Principal axes: T Plg8.0000°, Azm93.0000°; N Plg20.0000°, Azm186.0000°; P Plg68.0000°, Azm343.0000°;*
JMA Felt I J1.

ISC 08 22:24:34.3±1.3, 37.°20N±0.°04×140.°94E±0.°08, h10km±7km, n10, σ0.°95/17, mb3.2/3, 3C-2D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.15	229	⇓P	Pg	22 24 37.9	+0.2
ONAJ				S	Sg	22 24 40.1	0.0
JFK	Kawauchi	0.17	342	⇑P	Pg	22 24 38.3	+0.2
JFK				S	Sg	22 24 40.7	0.0
JFT	Otama	0.58	303	⇑P	Pg	22 24 45.6	+0.1
JFT				S	Sg	22 24 53.0	-0.1
JHO	Hitachi	0.66	207	⇑P	Pb	22 24 47.3	-0.6
JHO				S	Sb	22 24 56.1	-1.1
JMM	Marumori	0.67	350	⇓P	Pg	22 24 47.3	0.0
JMM				S	Sg	22 24 56.1	-0.1
MJAR	Matsushiro Arr	2.29	254	Pn	Pb	22 25 15.2	-0.5
	3.8nm,0.3s,baz=104,slow=15,SNR=28						
MJAR				Sn	Sb	22 25 44.1	0.0
	5.1nm,0.3s,baz=294,slow=5.1,SNR=11						
MAT	Matsushiro	2.29	254	P	Pb	22 25 15.6	-0.1
MAT				S	Sb	22 25 45.0	+0.9
MKAR	Makanchi Array	43.71	302	P	P	22 32 39.8	+0.4
	0.2nm,0.7s,baz=61,slow=8.9,SNR=2.2						
KURBB	Kurchatov Arra	45.60	308	P	P	22 32 52.1	-2.3
	0.6nm,0.9s,baz=81,slow=7.9,SNR=5.1						
WRA	Warramunga Arr	57.18	187	P	P	22 34 23.3	+1.9
	0.1nm,0.4s,baz=4.3,slow=7.4,SNR=5.0						

IDC 08 22:29:10.1±1.6, 58.°31S×25.°21W, h0km, mb4.1/4, mb1 4.2/4, mb1mx3.8/30, mbtmp4.1/4, Error ellipse: s-maj=59.3km s-min=36.6km az=5.0, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CPUP	Villa Florida	39.11	311	P	P	22 36 40.1	+1.2
	2.8nm,1.0s,baz=174,slow=7.5,SNR=3.0						
LPAZ	La Paz	52.56	305	P	P	22 38 25.1	-0.9
	0.8nm,0.8s,baz=110,slow=3.9,SNR=3.6						
DBIC	Dimbokro	66.82	22	P	P	22 40 03.1	-0.3
	5.8nm,1.2s,baz=181,slow=8.0,SNR=4.4						
TORD	Torodi Ar. Bea	74.54	27	P	P	22 40 50.6	+0.2
	0.5nm,0.3s,baz=199,slow=6.2,SNR=22						
FINES	FINESS Array B	125.89	28	PKP	PKPdf	22 48 11.4	-0.8
	0.4nm,0.5s,baz=346,slow=0.8,SNR=5.7						
ARCES	ARCESS Array B	132.65	22	PKP	PKPdf	22 48 24.4	-0.5
	2.9nm,0.8s,baz=198,slow=2.6,SNR=3.2						
YKA	Yellowknife Ar	138.56	315	PKP	PKPdf	22 48 35.1	-1.0
	0.2nm,0.6s,baz=128,slow=2.3,SNR=5.9						
SONM	Songino Array	149.74	89	PKPbc	PKPbc	22 49 01.5	+0.6
	0.2nm,0.4s,baz=216,slow=3.0,SNR=3.6						
ILAR	Eielson Array	152.40	308	PKPbc	PKPbc	22 49 06.0	-0.5
	0.3nm,0.4s,baz=163,slow=2.3,SNR=5.1						

IDC ***08*** *22:33:50.1±0.8, 41.°99S×83.°86W, h0km, mb4.1/10, mb1 4.3/11, mb1mx4.2/32, mbtmp4.1/11, ML3.8/1, MS4.2/17, Ms1 4.2/17, ms1mx4.0/26, Error ellipse: s-maj=27.1km s-min=23.7km az=102.0*
ISCJB ***08*** *22:33:53.0±0.4, 41.°48S±0.°09×83.°43W±0.°10, h10km, mb4.9/57, MS

comp=Z,265nm,19.6s,baz=213,slow=34
SNAA Sanae 48.29 155 eP **P 22 42 31.9 -2.7**
21nm,1.2s
JTS JuntasAbangare 51.64 358 eP **P 22 42 60.0 -0.6**
15nm,1.2s
SBA Scott Base 53.63 194 eP **P 22 43 18.0 +3.3**
40nm,1.8s
VNDA Vanda 54.70 194 P **P 22 43 18.4 -4.1**
1.2nm,1.0s,baz=146,slow=13,SNR=4.2
VNDA LR LR 23 03 07.0
comp=Z,292nm,19.0s,baz=133,slow=32
TAOE Nuku Hiva Isla 59.34 287 eLR LR 23 01 20.7
436nm,25.3s
TLIG Tlapa 60.46 344 eP **P 22 44 03.8 0.0**
25nm,1.7s
PPT2 Papeete2 60.65 272 eS **S 22 52 20.1 -1.7**
164nm,27.0s
PPT2 eLR LR 23 01 49.9
617nm,28.5s,baz=146
PPT Papeete 60.66 272 LR LR 23 03 41.0
comp=Z,125nm,21.8s,baz=112,slow=30
LRS Lares 61.58 18 eP **P 22 44 14.0 +2.7**
HUMP Col San Antoni 61.67 19 eP **P 22 44 11.1 -0.7**
20nm,1.2s
ZAIG Zacatecas 66.40 341 eP **P 22 44 42.4 -0.8**
6.0nm,1.0s
MAW Mawson 68.21 167 LR LR 23 14 38.3
comp=Z,116nm,18.2s,baz=238,slow=36
HPIG 71.18 339 eP **P 22 45 13.7 +0.9**
15nm,1.2s
533A Kerrville 72.72 346 P **P 22 45 21.2 -0.6**
baz=168
LTX Lajitas 72.97 342 eP **P 22 45 22.8 -0.5**
TX31 Lajitas Ar. Si 72.97 342 eP **P 22 45 23.3 0.0**
TXAR Lajitas Array 72.97 342 P **P 22 45 22.8 -0.5**
1.4nm,0.9s,baz=161,slow=8.0,SNR=9.1
TXAR LR LR 23 12 08.0
comp=Z,73nm,19.0s,baz=0.0,slow=31
JCT Junction City 73.26 345 eP **P 22 45 24.9 -0.1**
434A Burnet 73.31 347 P **P 22 45 25.4 +0.2**
baz=169
433A Art 73.39 346 P **P 22 45 26.3 +0.5**
baz=168
334A Lometa 73.81 347 P **P 22 45 27.6 -0.6**
baz=169
LRAL Lakeview Retre 74.33 357 eP **P 22 45 30.4 -0.7**
233A Rising Star 74.59 347 P **P 22 45 33.0 +0.2**
baz=168
133A Hamilton Ranch 75.17 347 P **P 22 45 36.7 +0.7**
baz=168
Y47A UCPARC, Winfie 75.23 356 P **P 22 45 37.0 +0.7**
baz=177
SWET Sewanee 76.47 358 eP **P 22 45 43.5 +0.1**
4.3nm,1.0s
CPCT Cooper Cave 76.68 359 eP **P 22 45 44.5 0.0**
CPCT epP **sP 22 45 50.2 +1.1**
W41B Gary Mavity, V 76.81 353 P **P 22 45 44.2 -1.1**
baz=174
X301 Greenbrier Sit 76.89 353 eP **P 22 45 45.9 +0.2**
11nm,1.0s
WHAR Wooly Hollow 76.93 353 eP **P 22 45 45.0 -0.9**
WHAR epP **sP 22 45 50.8 +0.4**
X201 Greenbrier Sit 76.94 353 eP **P 22 45 45.4 -0.6**
12nm,0.9s
W39A Magazine 76.99 351 P **P 22 45 46.9 +0.6**
baz=172
MSTX Muleshoe 77.23 344 eP **P 22 45 47.4 -0.5**
24nm,1.1s
WVT Waverly 77.45 357 eP **P 22 45 48.2 -0.6**
8.9nm,1.1s
W32A Sentinel 77.68 347 P **P 22 45 50.7 +0.5**
baz=168
TUC Tucson 77.69 337 eP **P 22 45 51.6 +1.2**
15nm,1.9s
TUL1 Leonard 77.94 350 eP **P 22 45 51.5 -0.1**
15nm,0.9s
U40A Yellville 78.04 352 P **P 22 45 52.4 +0.2**
baz=173
V34A Guthrie 78.10 348 P **P 22 45 52.8 +0.2**
baz=170
U38A Gravette 78.28 351 P **P 22 45 53.4 -0.1**
baz=172
BNM Barren Site 78.29 341 eP **P 22 45 56.5 +2.6**
LAZ Ladron 78.66 340 eP **P 22 45 56.9 +1.0**
T40A Mansfield 78.79 353 P **P 22 45 56.1 -0.2**
baz=173
ANMO Albuquerque 79.00 341 P **P 22 45 57.9 +0.1**
3.7nm,1.0s,baz=166,slow=10,SNR=3.6
ANMO Albuquerque 79.00 341 P **P 22 45 58.3 +0.5**
baz=163
ANMO Albuquerque 79.00 341 eP **P 22 45 57.8 +0.1**
21nm,1.3s
SIUC Southern Illin 79.10 355 eP **P 22 45 57.6 -0.3**
SIUC esP **sP 22 46 04.1 +1.7**
S40A Lebanon 79.23 353 P **P 22 45 58.7 -0.1**
baz=173
BLO Bloomington 80.43 358 eP P 22 46 10.3 +5.1
17nm,0.9s
Q40A Laux Farm, Aux 80.58 353 P **P 22 46 05.7 -0.3**
baz=174
T25A Trinidad 80.63 343 eP **P 22 46 07.9 +1.3**
21nm,1.3s
SHPR Sheep Range 82.92 335 eP **P 22 46 20.1 +1.5**
28nm,1.5s
SMCO Snowmass 83.16 342 eP **P 22 46 21.4 +1.3**
13nm,1.3s
DAC Darwin (Calif) 83.51 333 eP **P 22 46 22.3 +0.6**
17nm,1.4s
TPNV Topopah Spring 83.67 334 eP **P 22 46 21.3 -1.2**
26nm,1.5s
BOSA Boshof 84.16 123 P **P 22 46 23.5 -1.9**
4.1nm,1.0s,baz=227,slow=12,SNR=4.1
BOSA LR LR 23 18 18.8
comp=Z,123nm,18.6s,baz=214,slow=32
TMUT Trail Mountain 84.34 339 eP **P 22 46 27.4 +1.3**
21nm,0.9s
R11A Troy Canyon, C 84.74 335 P **P 22 46 29.3 +1.3**
baz=157
R11A Troy Canyon, C 84.74 335 eP **P 22 46 28.6 +0.7**
18nm,1.5s
NLU North Lily Min 85.19 338 eP **P 22 46 33.5 +3.3**
18nm,1.6s
DUG Dugway, Tooele 85.62 338 P **P 22 46 33.5 +1.2**
baz=159
DUG Dugway, Tooele 85.62 338 eP **P 22 46 33.5 +1.2**
24nm,1.6s
NV11 Mina Array Sit 85.65 333 eP **P 22 46 33.7 +1.3**
17nm,1.6s
NV01 Mina Array Sit 85.70 333 eP **P 22 46 32.9 +0.2**
NVAR Mina Array Bea 85.70 333 P **P 22 46 32.9 +0.2**
0.6nm,0.7s,baz=176,slow=7.1,SNR=4.6
ECSD EROS Data Cent 85.75 351 eP P 22 46 38.1 +5.6
18nm,1.4s
DBIC Dimbokro 86.05 78 LR LR 23 19 10.4
comp=Z,149nm,20.4s,baz=200,slow=32
SADO Sadowa 86.08 3 eP P 22 46 39.4 +5.2
7.7nm,0.8s
WAKR Walker 86.15 333 eP **P 22 46 37.0 +2.0**
BGU Big Grassy Mou 86.36 338 eP **P 22 46 37.5 +1.6**
21nm,1.9s
K22A Casper 86.37 343 eP **P 22 46 36.8 +0.9**
43nm,1.4s
SPUT South Promonto 86.56 339 eP **P 22 46 37.6 +0.8**
19nm,1.6s
HWUT Hardware Ranch 86.60 339 eP **P 22 46 37.5 +0.5**
41nm,1.9s
ELK Elko 86.83 336 eP **P 22 46 38.6 +0.3**
15nm,1.5s
HVU Hansel Valley 87.08 339 eP **P 22 46 40.6 +1.2**
40nm,1.9s
EMMW East Machias 87.14 11 eP **P 22 46 40.4 +1.1**
52nm,1.0s
BW06 Boulder Array 87.18 341 eP **P 22 46 38.7 -1.2**
PD31 Pinedale Array 87.18 341 eP **P 22 46 39.0 -0.9**
PDAR Pinedale Array 87.18 341 P **P 22 46 39.0 -0.9**
0.8nm,0.9s,baz=189,slow=6.8,SNR=6.8
PDAR LR LR 23 19 59.3
comp=Z,63nm,20.5s,baz=130,slow=32
RSSD Black Hills 87.28 345 P **P 22 46 40.1 -0.3**
baz=165
RSSD Black Hills 87.28 345 eP **P 22 46 40.1 -0.3**
11nm,1.0s
COWI Conover 87.45 356 eP **P 22 46 39.7 -1.2**
11nm,1.0s
REDW Red Top Meadow 88.06 340 eP **P 22 46 44.7 +0.6**
23nm,1.6s
LOHW Long Hollow 88.23 341 eP **P 22 46 46.3 +1.4**
20nm,2.0s
FXWY Fox Creek 88.36 340 eP **P 22 46 46.1 +0.5**
10nm,1.5s
MOOW Moose Ponds 88.39 341 eP **P 22 46 46.1 +0.4**
18nm,1.9s
IMW Indian Meadow 88.58 341 eP **P 22 46 47.3 +0.6**
19nm,1.6s
FLWY Flagg Ranch 88.70 341 eP **P 22 46 48.0 +0.9**
32nm,1.6s
HLID Hailey 89.19 338 P **P 22 46 50.4 +1.0**
baz=158
HLID Hailey 89.19 338 eP **P 22 46 50.4 +1.0**
17nm,1.4s
MCMT McKenzie Canyo 89.94 340 eP **P 22 46 53.8 +0.8**
DLMT Dillon 90.37 340 eP **P 22 46 56.9 +2.0**
13nm,1.4s
K05A Summer Lake 90.42 333 eP **P 22 46 56.2 +1.0**
25nm,1.4s
LRM Limekiln Ridge 90.76 340 eP **P 22 46 57.3 +0.6**
ULM Lac du Bonnet 92.09 352 LR LR 23 25 46.8
comp=Z,63nm,18.4s,baz=288,slow=34
TORD Torodi Ar. Bea 95.15 77 P **P 22 47 16.4 -1.1**
0.9nm,1.1s,baz=215,slow=1.8,SNR=2.7
TORD LR LR 23 28 56.2
comp=Z,107nm,18.1s,baz=235,slow=35
TOA1 Torodi Ar. Sit 95.15 77 eP **P 22 47 16.4 -1.1**
18nm,1.8s
STKA Stephens Creek 95.85 217 LR LR 23 21 08.4
comp=Z,85nm,21.0s,baz=189,slow=30
GERES GERESS Array B 124.03 52 PKP **PKPdf 22 52 49.5 -2.2**
0.4nm,0.7s,baz=252,slow=6.5,SNR=3.7
BRTR Keskin Array B 133.31 70 PKP **PKPdf 22 53 09.0 -0.8**
0.4nm,0.8s,baz=189,slow=4.1,SNR=2.7
BR101 Keskin Array S 133.31 70 ePKPdf **PKPdf 22 53 09.0 -0.8**
TIXI Tiksi 145.87 342 PKPbc **PKPdf 22 53 30.7 -0.6**
4.5nm,1.0s,baz=346,slow=1.8,SNR=8.9
TIXI Tiksi 145.87 342 ePKPdf **PKPdf 22 53 28.4 -2.9**
TIXI ePKPdf **PKPdf 22 53 30.7 -0.6**
GEYT Alibeck 150.52 84 PKPbc **PKPdf 22 53 41.8 +1.7**
0.9nm,0.6s,baz=251,slow=4.5,SNR=5.8
ARU Arti 151.53 46 PKPbc **PKPbc 22 53 45.2 -2.0**
2.1nm,0.6s,baz=90,slow=6.0,SNR=5.1
ABKAR Abkulak array 153.51 61 ePKPbc **PKPbc 22 53 49.5 -2.3**
ZRNK Zerenda 158.37 49 ePKPdf **PKPdf 22 53 48.9 -1.5**
GYA Guiyang 162.68 213 ePKPbc **PKPdf 22 53 56.0 -0.2**
GYA PKPab **PKPab 22 54 47.4 +2.8**
GYA PKS **PKSdf 22 57 28.2 -1.3**
GYA PP **PP 22 58 32.6 +4.1**
GYA AMB AMB
comp=Z,120nm,8.2s
KSH Kashi 164.35 91 ePKP **PKPdf 22 54 01.5 +4.1**
KSH ePP PP 22 58 50.7 +12
KSH SKS **SKSdf 23 01 03.1 +1.3**
ZAA0 Zalesovo Array 165.43 28 ePKPdf **PKPdf 22 54 00.0 +2.4**
SONA1 Songino Array 170.52 315 ePKPab **PKPab 22 55 17.4 -1.4**

NIED ***08*** *22:45:00,38.°50N×144.°60E,h5km,Mw3.9 Best double couple: M0 8.02000×10^14 NP1:φ0 7.00000°,δ27.00000°, λ-88.00000°. NP2:φ0 186.00000°,δ63.00000°, λ-91.00000°.*
IDC ***08*** *22:45:32.0±1.0,38.°51N×145.°10E,h0km,mb3.8/9, mb1 4.0/11,mb1mx3.7/47,mbtmp3.8/11,ML3.0/2,MS3.1/1, Ms1 3.1/1,ms1mx2.2/45,Error ellipse: s-maj=27.5km s-min=19.7km az=88.0*
ISCJB ***08*** *22:45:35.1±0.7,38.°60N±0.°05×144.°73E±0.°05,h35km, mb3.7/9,MS3.0/1,Error ellipse: s-maj=7.5km s-min=5.6km az=156.2*
JMA ***08*** *22:45:36.1±0.2,38.°50N×144.°63E,h44km,M3.9*
ISC 08 22:45:37.8±0.9,38.°65N±0.°06×144.°78E±0.°08,h35km,n25, σ2°38/36,mb3.8/9,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.46**	**281**	P	**Pn**	**22 46 14.0**	**-1.4**
OFUJ				eS	**Sn**	**22 46 42.1**	**-2.2**
MIYJ	**Miyakonagasawa**	**2.48**	**293**	P	**Pn**	**22 46 14.3**	**-1.3**
MIYJ				S	**Sn**	**22 46 43.2**	**-1.5**
JMK	**Ichinoseki**	**2.79**	**277**	P	**Pn**	**22 46 18.9**	**-1.1**
JMK				S	**Sn**	**22 46 50.5**	**-1.9**
JOM	**Ohasama**	**2.83**	**288**	P	**Pn**	**22 46 19.6**	**-0.9**
JOM				eS	**Sn**	**22 46 51.2**	**-2.2**
JYK	**Kaneyama**	**3.46**	**276**	P	**Pn**	**22 46 28.6**	**-0.5**
JYK				eS	**Sn**	**22 47 07.4**	**-1.5**
JFT	**Otama**	**3.68**	**254**	S	**Sn**	**22 47 11.6**	**-2.7**
JOT	**Ohata**	**3.96**	**315**	P	**Pn**	**22 46 36.9**	**+1.0**
JCH	**Churui**	**4.11**	**345**	P	**Pn**	**22 46 36.3**	**-1.7**
JCH				S	**Sn**	**22 47 22.2**	**-2.6**
NEM2	**Nemuro 2**	**4.77**	**9**	P	**Pn**	**22 46 44.6**	**-2.5**
NEM2				S	**Sn**	**22 47 35.6**	**-5.5**
BSO1	**Boso 1**	**5.02**	**219**	P	**Pn**	**22 46 47.6**	**-2.5**
BSO1				S	**Sn**	**22 47 41.7**	**-4.9**
JOSM	**Okushiri--Mats**	**5.31**	**312**	P	**Pn**	**22 46 54.6**	**+0.1**
JTKR	**Abashiri--Toko**	**5.36**	**353**	P	**Pn**	**22 46 53.9**	**-1.3**
JTKR				eS	**Sn**	**22 47 52.3**	**-3.3**
JRY	**Ryogami san**	**5.37**	**243**	P	**Pn**	**22 46 53.2**	**-2.2**
JRY				S	**Sn**	**22 47 50.3**	**-5.6**
MJAR	**Matsushiro Arr**	**5.62**	**250**	Pn	**Pn**	**22 46 58.2**	**-0.7**
	1.7nm,0.3s,baz=58,slow=11,SNR=18						
MAT	**Matsushiro**	**5.62**	**250**	P	**Pn**	**22 46 58.4**	**-0.5**
MAT				S	**Sn**	**22 48 01.1**	**-1.1**
USRK	**Ussuriysk Ar.**	**11.08**	**304**	Pn	**Pn**	**22 48 14.8**	**+1.2**
	0.2nm,0.3s,baz=102,slow=13,SNR=9.2						
SEY	**Seymchan**	**24.75**	**8**	P	**P**	**22 50 54.6**	**-1.1**
	2.1nm,0.7s,baz=216,slow=7.9,SNR=6.4						
SONM	**Songino Array**	**29.17**	**301**	P	**P**	**22 51 39.5**	**+3.7**
	0.2nm,0.4s,baz=92,slow=9.1,SNR=3.4						
SONM				LR	LR	23 03 39.0	
	comp=Z,31nm,18.2s,baz=182,slow=37						
ZALV	**Zalesovo Beam**	**42.83**	**311**	P	**P**	**22 53 33.4**	**+1.4**
	0.2nm,0.3s,baz=72,slow=4.7,SNR=3.3						
MKAR	**Makanchi Array**	**45.54**	**301**	P	**P**	**22 53 54.8**	**+0.9**
	1.0nm,0.9s,baz=87,slow=7.7,SNR=7.1						
ILAR	**Eielson Array**	**46.70**	**33**	P	**P**	**22 54 02.9**	**+0.2**
	0.4nm,0.8s,baz=287,slow=3.2,SNR=4.2						
WRA	**Warramunga Arr**	**59.10**	**191**	P	**P**	**22 55 33.0**	**-1.6**
	1.3nm,0.7s,baz=13,slow=7.4,SNR=10.0						
ASAR	**Alice Springs**	**62.82**	**191**	P	**P**	**22 55 59.2**	**-0.6**
	0.6nm,0.7s,baz=22,slow=5.9,SNR=5.3						
FINES	**FINESS Array B**	**68.61**	**333**	P	**P**	**22 56 37.3**	**+0.6**
	1.3nm,0.7s,baz=46,slow=5.5,SNR=5.8						
KBZ	**Khabaz**	**71.85**	**312**	P	**P**	**22 56 59.1**	**+2.2**
	2.2nm,0.9s,baz=121,slow=2.3,SNR=3.9						

IDC ***08*** *22:47:03.0±3.0,18.°45N×106.°79W,h0km,mb3.7/6, mb1 4.0/10,mb1mx3.8/42,mbtmp3.8/10,ML3.7/4,MS3.8/13, Ms1 3.9/13,ms1mx3.6/34,Error ellipse: s-maj=62.8km s-min=35.1km az=32.0*
ISCJB ***08*** *22:47:05.9±0.7,18.°41N±0.°07×106.°61W±0.°04,h30km, mb4.2/38,MS3.9/12,Error ellipse: s-maj=10.6km s-min=5.4km az=18.2*
NEIC ***08*** *22:47:06.1±3.9,18.°40N×106.°75W,h17km±22km,mb4.3/46, MD4.4(MEX),Error ellipse: s-maj=16.8km s-min=6.5km az=205.0*
MEX ***08*** *22:47:13.0±0.7,18.°36N×106.°01W,h10km,MD4.4*
ISC 08 22:47:07.4±1.4,18.°4N±0.°1×106.°8W±0.°1,h30km,n147, σ1°06/120,mb4.3/39,MS3.9/12,Off coast of Jalisco

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
R15V		**2.81**	**73**	*i* P	Pn	22 47 44.4	-6.1
R15V				*i* S	Sn	22 48 10.1	-13
EZ5V		**3.25**	**70**	eP	Pn	22 47 51.8	-4.8
EZ5V				*i* S	Sn	22 48 21.6	-13
MMIG	**Aquila**	**3.31**	**91**	eP	Pn	22 47 51.7	-5.5
MMIG				eS	Sn	22 48 20.5	-15
MMIG	**Aquila**	**3.31**	**91**	ePn	Pn	22 47 51.7	-5.5
MMIG				eSn	Sn	22 48 20.5	-15
ANIG	**Ahuacatlan**	**3.44**	**39**	eP	Pn	22 47 53.2	-5.9
ANIG				eS	Sn	22 48 28.5	-11
ANIG	**Ahuacatlan**	**3.44**	**39**	ePn	Pn	22 47 53.2	-5.9
ANIG				eSn	Sn	22 48 28.5	-11
H06E1	**SOCORRO T-PHAS**	**3.90**	**277**	T	T	22 51 58.3	
	SNR=176						
H06S1	**SOCORRO T**	**3.93**	**276**	T	T	22 52 04.1	
	SNR=52						
H06N1	**SOCORRO T-PHAS**	**3.97**	**278**	T	T	22 52 06.5	
	SNR=29						
SFJM	**Santa Fe**	**4.15**	**59**	eP	**Pn**	**22 48 09.0**	**0.0**
SFJM	**Santa Fe**	**4.15**	**59**	ePn	**Pn**	**22 48 09.0**	**0.0**
ZAIG	**Zacatecas**	**5.92**	**42**	ePn	Pn	22 48 30.4	-3.0
TLIG	**Tlapa**	**7.91**	**95**	ePn	**Pn**	**22 48 59.6**	**-0.9**
HPIG		**8.59**	**7**	ePn	Pn	22 49 15.6	+5.7
HSIG		**11.25**	**341**	ePn	**Pn**	**22 49 45.9**	**-0.2**
LTX	**Lajitas**	**11.29**	**14**	ePn	Pn	22 49 44.2	-2.6
TX31	**Lajitas Ar. Si**	**11.29**	**14**	ePn	**Pn**	**22 49 45.4**	**-1.4**
TXAR	**Lajitas Array**	**11.29**	**14**	Pn	Pn	22 49 44.2	-2.6
	0.2nm,0.3s,baz=195,slow=14,SNR=8.4						
CMIG	**Matias Romero**	**11.46**	**95**	Pn	**Pn**	**22 49 48.7**	**-0.4**
	1.2nm,0.3s,baz=278,slow=11,SNR=22						
CMIG				Sn	Sn	22 51 45.5	-11
	0.4nm,0.3s,baz=210,slow=23,SNR=1.4						
CMIG				LR	LR	22 54 08.9	
	comp=Z,280nm,20.6s,baz=282,slow=37						
734A	**La Parita Cree**	**12.89**	**34**	P	**Pn**	**22 50 08.1**	**-0.4**
	baz=217						
MNTX	**Cornudas Mount**	**13.33**	**5**	P	**Pn**	**22 50 14.5**	**-0.2**
	baz=186,SNR=8.4						
MNTX	**Cornudas Mount**	**13.33**	**5**	ePn	**Pn**	**22 50 14.7**	**0.0**
JCT	**Junction City**	**13.64**	**27**	P	**Pn**	**22 50 18.8**	**-0.1**
	baz=209						
JCT	**Junction City**	**13.64**	**27**	ePn	**Pn**	**22 50 19.5**	**+0.6**
CCIG	**Comitan**	**14.19**	**96**	ePn	**Pn**	**22 50 29.1**	**+2.6**
433A	**Art**	**14.19**	**28**	P	**Pn**	**22 50 25.8**	**-0.5**
	baz=211						
TUC	**Tucson**	**14.33**	**346**	P	**Pn**	**22 50 27.9**	**-0.5**
	baz=164						
TUC	**Tucson**	**14.33**	**346**	ePn	**Pn**	**22 50 28.0**	**-0.3**
TUC				eSn	**Sn**	**22 53 08.2**	**+1.9**
214A	**Organ Pipe Nat**	**14.56**	**339**	P	**Pn**	**22 50 31.0**	**-0.5**
	baz=157						
214A	**Organ Pipe Nat**	**14.56**	**339**	ePn	**Pn**	**22 50 30.2**	**-1.3**
333A	**Richland Sprin**	**14.72**	**27**	P	**Pn**	**22 50 32.4**	**-1.3**
	baz=210						
334A	**Lometa**	**15.07**	**29**	P	**Pn**	**22 50 36.6**	**-1.6**
	baz=213						
HKT	**Hockley**	**15.27**	**39**	ePn	**Pn**	**22 50 39.0**	**-1.9**
	26nm,1.6s						
233A	**Rising Star**	**15.36**	**26**	P	**Pn**	**22 50 39.9**	**-2.2**
	baz=209						
234A	**Clairette**	**15.68**	**28**	P	**Pn**	**22 50 45.4**	**-0.8**
	baz=212						
BNM	**Barren Site**	**15.71**	**1**	ePn	**Pn**	**22 50 47.9**	**+0.9**
133A	**Hamilton Ranch**	**15.86**	**25**	P	**Pn**	**22 50 47.6**	**-1.0**
	baz=208						
MSTX	**Muleshoe**	**15.95**	**12**	P	**Pn**	**22 50 49.5**	**-0.3**
	baz=194,SNR=6.2						
MSTX	**Muleshoe**	**15.95**	**12**	ePn	**Pn**	**22 50 49.6**	**-0.2**
	49nm,1.2s						
Y14A	**Wickenburg**	**16.45**	**342**	ePn	**Pn**	**22 50 56.0**	**-0.2**
	32nm,1.0s						
135A	**Vickery Place,**	**16.47**	**29**	P	**Pn**	**22 50 58.5**	**+2.1**
	baz=213						
X16A	**Lo Mia Camp, P**	**16.50**	**346**	ePn	**Pn**	**22 50 57.2**	**+0.3**
	6.9nm,0.8s						
ANMO	**Albuquerque**	**16.51**	**1**	Pn	**Pn**	**22 50 57.0**	**0.0**
	0.1nm,0.3s,baz=162,slow=21,SNR=5.0						
ANMO	**Albuquerque**	**16.51**	**1**	ePn	**Pn**	**22 50 57.0**	**0.0**
	8.0nm,1.4s						
PFO	**Pinyon Flats O**	**17.45**	**332**	P	**Pn**	**22 51 08.9**	**+0.1**
	0.1nm,0.3s,baz=153,slow=12,SNR=6.0						
PFO	**Pinyon Flats O**	**17.45**	**332**	ePn	**Pn**	**22 51 08.9**	**+0.1**
	25nm,1.4s						
W32A	**Sentinel**	**18.00**	**21**	P	**Pn**	**22 51 15.3**	**-0.1**
	baz=204						
GMRC	**Granite Mounta**	**18.14**	**336**	P	**Pn**	**22 51 17.2**	**0.0**
	baz=152						
W33A	**Caddo, Fort Co**	**18.29**	**22**	P	**Pn**	**22 51 19.2**	**+0.2**
	baz=206						
SDCO	**Great Sand Dun**	**19.34**	**3**	eP	**Pn**	**22 51 33.3**	**+1.4**
	12nm,1.5s						
X38A	**Whitesboro**	**19.43**	**31**	P	**P**	**22 51 31.3**	**-0.1**
	baz=216,SNR=13						
SHPR	**Sheep Range**	**19.50**	**340**	eP	**P**	**22 51 33.4**	**+1.1**
	6.6nm,1.2s						
W37B	**Quinton**	**19.53**	**29**	P	**P**	**22 51 32.6**	**+0.1**
	baz=214						
X39A	**Fountain Ranch**	**19.67**	**33**	P	**P**	**22 51 33.0**	**-1.0**
	baz=218,SNR=6.8						
MIAR	**Mount Ida**	**19.97**	**34**	P	**P**	**22 51 36.1**	**-1.3**
	baz=219						
MIAR	**Mount Ida**	**19.97**	**34**	eP	**P**	**22 51 36.0**	**-1.3**
	13nm,1.3s						
TUL1	**Leonard**	**20.01**	**27**	eP	**P**	**22 51 36.4**	**-1.4**
	15nm,0.9s						
DAC	**Darwin (Calif)**	**20.21**	**334**	eP	**P**	**22 51 41.0**	**+0.9**
	6.8nm,1.1s						
V37A	**Hulbert**	**20.28**	**28**	P	**P**	**22 51 40.5**	**-0.1**
	baz=213,SNR=6.7						
X40A	**Basin Creek Fa**	**20.33**	**35**	P	**P**	**22 51 40.6**	**-0.5**
	baz=221						
W39A	**Magazine**	**20.37**	**32**	P	**P**	**22 51 40.6**	**-1.0**
	baz=218						
V38A	**Canehill**	**20.60**	**30**	P	**P**	**22 51 42.8**	**-1.3**
	baz=215						
U37A	**Salina**	**20.73**	**28**	P	**P**	**22 51 44.2**	**-1.3**
	baz=213						
SMCO	**Snowmass**	**20.73**	**360**	eP	**P**	**22 51 46.5**	**+0.6**
	12nm,1.4s						
W40A	**Ferguson Farm,**	**20.74**	**33**	P	**P**	**22 51 44.8**	**-0.7**
	baz=219						
V39A	**Pettigrew**	**20.95**	**31**	P	**P**	**22 51 46.2**	**-1.8**
	baz=217						
U38A	**Gravette**	**21.08**	**29**	P	**P**	**22 51 47.4**	**-2.0**
	baz=214						
X301	**Greenbrier Sit**	**21.12**	**34**	eP	**P**	**22 51 50.7**	**+0.9**
	8.1nm,1.0s						
W41B	**Gary Mavity, V**	**21.16**	**35**	P	**P**	**22 51 48.5**	**-1.7**
	baz=221						
HHAR	**Hobbs**	**21.16**	**30**	eP	**P**	**22 51 49.2**	**-1.0**
	36nm,1.6s						
X201	**Greenbrier Sit**	**21.19**	**34**	eP	**P**	**22 51 49.5**	**-1.0**
	19nm,1.3s						
WHAR	**Wooly Hollow**	**21.22**	**35**	eP	**P**	**22 51 50.0**	**-0.8**
	26nm,1.5s						
R11A	**Troy Canyon, C**	**21.32**	**341**	P	**P**	**22 51 51.5**	**-0.5**
	baz=156,SNR=13						
R11A	**Troy Canyon, C**	**21.32**	**341**	eP	**P**	**22 51 52.2**	**+0.1**
	9.2nm,1.3s						
V40A	**Witts Springs**	**21.34**	**33**	P	**P**	**22 51 51.3**	**-0.8**
	baz=219,SNR=7.6						
ISCO	**Idaho Springs**	**21.38**	**3**	P	**P**	**22 51 53.0**	**+0.2**
	baz=183,SNR=8.8						
ISCO	**Idaho Springs**	**21.38**	**3**	eP	**P**	**22 51 53.0**	**+0.2**
	12nm,1.3s						
P18A	**Prestonx Nutter**	**21.39**	**353**	eP	**P**	**22 51 53.5**	**+0.5**
	17nm,1.3s						
U39A	**Green Forest**	**21.46**	**31**	P	**P**	**22 51 52.1**	**-1.3**
	baz=217,SNR=7.0						
T38A	**Diamond**	**21.61**	**28**	P	**P**	**22 51 54.1**	**-1.0**
	baz=214						
O20A	**White River Ci**	**21.72**	**357**	eP	**P**	**22 51 57.5**	**+1.1**
	11nm,0.9s						
U40A	**Yellville**	**21.75**	**32**	P	**P**	**22 51 55.8**	**-0.7**
	baz=218						
Q32A	**Meitler Ranch,**	**21.77**	**18**	P	**P**	**22 51 55.5**	**-1.2**
	baz=201						
S37A	**Fort Scott**	**21.99**	**26**	P	**P**	**22 51 58.1**	**-0.9**
	baz=212						
Q33A	**Connelly Farm,**	**21.99**	**19**	P	**P**	**22 51 58.8**	**-0.3**
	baz=203						
R36A	**Gordon, Harris**	**22.20**	**24**	P	**P**	**22 52 01.7**	**+0.4**
	baz=209						
NV11	**Mina Array Sit**	**22.29**	**336**	eP	**P**	**22 52 02.9**	**+0.4**
	15nm,1.2s						
NV01	**Mina Array Sit**	**22.35**	**336**	eP	**P**	**22 52 03.5**	**+0.3**
NVAR	**Mina Array Bea**	**22.35**	**336**	P	**P**	**22 52 03.5**	**+0.3**
	0.7nm,0.5s,baz=160,slow=11,SNR=5.8						
NVAR				LR	LR	22 59 50.0	
	comp=Z,267nm,20.8s,baz=159,slow=34						
DUG	**Dugway, Tooele**	**22.35**	**348**	P	**P**	**22 52 02.8**	**-0.3**
	baz=165,SNR=7.8						
DUG	**Dugway, Tooele**	**22.35**	**348**	eP	**P**	**22 52 03.8**	**+0.7**
	14nm,1.3s						
N23A	**Red Feather La**	**22.46**	**2**	P	**P**	**22 52 04.8**	**+0.5**
	baz=182						
N23A	**Red Feather La**	**22.46**	**2**	eP	**P**	**22 52 04.8**	**+0.5**
	14nm,1.3s						
JLU	**Jordanelle**	**22.51**	**351**	eP	**P**	**22 52 06.5**	**+1.7**
	22nm,1.6s						
T40A	**Mansfield**	**22.54**	**31**	P	**P**	**22 52 05.3**	**+0.3**
	baz=218						
S39A	**Bolivar**	**22.59**	**29**	P	**P**	**22 52 05.8**	**+0.2**
	baz=215						
WAKR	**Walker**	**22.87**	**334**	eP	**P**	**22 52 09.6**	**+0.9**
PHWY	**Pilot Hill**	**22.88**	**3**	eP	**P**	**22 52 09.6**	**+0.8**
	20nm,1.1s						
CMB	**Columbia Colle**	**22.89**	**332**	eP	**P**	**22 52 08.4**	**-0.3**
	6

S40A	Lebanon	22.90	30	P		P	22 52 08.0	-0.8
	baz=217,SNR=5.7							
LRAL	Lakeview Retre	23.02	47	eP		P	22 52 08.8	-1.2
	6.6nm,0.9s							
R39A	Chumby, Stover	23.23	28	P		P	22 52 11.5	-0.6
	baz=215							
HVU	Hansel Valley	23.88	349	eP		P	22 52 20.4	+1.8
	8.8nm,1.4s							
PD31	Pinedale Array	24.43	355	eP		P	22 52 22.6	-1.1
PDAR	Pinedale Array	24.43	355	P		P	22 52 22.6	-1.1
	0.6nm,0.7s,baz=169,slow=8.8,SNR=5.9							
PDAR					LR	LR	23 01 28.4	
	comp=Z,162nm,21.4s,baz=184,slow=36							
P40A	Paris	24.67	28	P		P	22 52 24.0	-1.6
	baz=215							
TIGA	Tifton	24.71	54	eP		P	22 52 26.0	0.0
	60nm,1.5s							
SWET	Sewanee	25.00	44	eP		P	22 52 29.2	+0.5
	5.2nm,1.4s							
REDW	Red Top Meadow	25.14	353	eP		P	22 52 30.9	+0.8
	10nm,1.2s							
SNOW	Snow King Moun	25.23	353	eP		P	22 52 31.9	+1.0
	11nm,1.0s							
LOHW	Long Hollow	25.36	354	eP		P	22 52 32.2	+0.1
	14nm,1.2s							
FXWY	Fox Creek	25.44	353	eP		P	22 52 32.6	-0.2
	8.1nm,1.4s							
MOOW	Moose Ponds	25.51	353	eP		P	22 52 35.1	+1.6
	14nm,1.6s							
FLWY	Flagg Ranch	25.84	354	eP		P	22 52 38.5	+2.0
	10.0nm,1.3s							
WVOR	Wild Horse Val	26.00	340	eP		P	22 52 35.1	-2.7
	9.5nm,0.9s							
RLMT	Red Lodge	26.75	356	eP		P	22 52 46.1	+1.4
	12nm,1.0s							
MCMT	McKenzie Canyo	26.85	350	eP		P	22 52 49.6	+3.9
MSO	Missoula	28.98	350	P		P	22 53 04.7	+0.3
	baz=166							
MSO	Missoula	28.98	350	eP		P	22 53 04.8	+0.3
	8.3nm,1.1s							
SWMT	Swartz Lake	29.65	350	eP		P	22 53 11.0	+0.6
COWI	Conover	31.29	24	eP		P	22 53 28.9	+4.1
	17nm,1.7s							
TAOE	Nuku Hiva Isla	42.58	233	eLR		LR	23 06 41.4	
	267nm,25.8s							
TAOE	Nuku Hiva Isla	42.58	233	eT		T	23 40 22.3	
	216nm,0.3s							
DLBC	Dease Lake	43.48	342	LR		LR	23 13 40.0	
	comp=Z,290nm,18.4s,baz=134,slow=37							
DLBC	Dease Lake	43.48	342	eP		P	22 55 10.0	+2.2
	7.2nm,1.2s							
YKA	Yellowknife Ar	44.41	355	P		P	22 55 14.6	-0.5
	0.4nm,0.8s,baz=169,slow=7.4,SNR=9.4							
YKB5	Yellowknife Ar	44.41	355	eP		P	22 55 14.6	-0.5
RKT	Rikitea	49.56	215	eLR		LR	23 10 03.3	
	309nm,28.2s,baz=37							
LPAZ	La Paz	51.36	130	LR		LR	23 15 00.3	
	comp=Z,92nm,18.6s,baz=313,slow=33							
INK	Inuvik	52.68	348	P		P	22 56 18.4	-0.2
	3.9nm,1.1s,baz=137,slow=7.9,SNR=9.6							
INK					LR	LR	23 17 49.6	
	comp=Z,122nm,19.6s,baz=155,slow=35							
INK	Inuvik	52.68	348	eP		P	22 56 18.4	-0.2
	5.9nm,1.0s							
SPU	Mount Spurr	53.26	335	eP		P	22 56 27.8	+4.6
IL1	Eielson Array	53.52	340	eP		P	22 56 24.0	-0.9
ILAR	Eielson Array	53.52	340	P		P	22 56 24.0	-0.9
	0.8nm,0.7s,baz=150,slow=6.2,SNR=8.6							
ILAR					LR	LR	23 19 47.4	
	comp=Z,66nm,18.1s,baz=122,slow=37							
ILB	Eielson Array	53.52	340	eP		P	22 56 24.0	-0.9
TRF	Thorofare Moun	53.87	338	eP		P	22 56 28.3	+0.6
	11nm,1.1s							
PPLA	Purkeypile	54.26	336	eP		P	22 56 35.6	+5.1
	32nm,1.8s							
CAST	Castle Rocks	54.51	337	eP		P	22 56 32.3	+0.1
	8.2nm,1.5s							
PPT	Papeete	55.16	232	LR		LR	23 13 38.1	
	comp=Z,64nm,21.0s,baz=37,slow=29							
PPT2	Papeete2	55.17	232	eLR		LR	23 12 32.5	
	309nm,26.2s,baz=56							
TTA	Tatalina	55.77	335	eP		P	22 56 41.2	-0.1
	4.5nm,1.2s							
RES	Resolute Bay	56.70	4	LR		LR	23 21 29.8	
	comp=Z,119nm,21.6s,baz=97,slow=36							
TIXI	Tiksi	82.67	345	P		P	22 59 27.6	0.0
	1.4nm,0.5s,baz=40,slow=4.7,SNR=4.5							
ESDC	Sonseca Array	87.94	49	LR		LR	23 40 26.6	
	comp=Z,72nm,18.0s,baz=280,slow=36							
GERES	GERESS Array B	94.79	35	LR		LR	23 45 04.7	
	comp=Z,59nm,18.5s,baz=254,slow=37							
RPZ	Rata Peaks	96.97	226	LR		LR	23 32 35.5	
	comp=Z,90nm,20.6s,baz=240,slow=28							
DBIC	Dimbokro	99.18	80	LR		LR	23 42 33.6	
	comp=Z,21nm,20.0s,baz=198,slow=34							

*MEX **08** 22:54:55.4±0.6, 30°.49N×104°.99W, h20km±74km, MD4.0*
*NEIC **08** 22:54:59.9±0.8, 30°.74N×105°.74W, h10km, ML3.3, Error ellipse: s-maj=11.8km s-min=9.1km az=133.0*
ISC 08 22:54:53.4±0.8, 30°.36N±0°.03×105°.48W±0°.03, h10km, n25, σ2°58/41, Texas-Mexico border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MNTX	Cornudas Mount	1.34	3	ePg	Pb	22 55 18.2	-0.5
MNTX				eSn	Sb	22 55 31.7	-4.2
GDL2	Guadalupe Moun	2.07	27	ePn	Pg	22 55 34.0	+0.9
GDL2				eSn	Sb	22 55 56.6	-0.4
CGIG		2.16	271	eP	Pg	22 55 34.2	-0.6
CGIG				eS	Sg	22 56 03.5	+0.6
CGIG		2.16	271	eP	Pg	22 55 34.2	-0.6
CGIG				eS	Sg	22 56 03.5	+0.6
CLNB	Carlsbad	2.34	35	ePn	Pg	22 55 39.9	+1.6
CLNB				eSn	Sg	22 56 08.2	-0.5
121A	Cookes Peak, D	2.93	318	eP	Pn	22 55 40.9	+0.6
121A				eS	Sn	22 56 18.2	+2.6
121A	Cookes Peak, D	2.93	318	ePn	Pn	22 55 40.8	+0.6
CPRX	Cap Rock	3.00	27	ePn	Pn	22 55 41.1	0.0
CPRX				eSn	Sb	22 56 25.6	+1.9
HPIG		3.41	183	eP	Pn	22 55 48.0	+1.2
HPIG				eS	Sn	22 56 28.7	+1.2
HPIG		3.41	183	ePn	Pg	22 55 58.0	-0.8
HPIG				eS	Sn	22 56 28.7	+1.2
319A	Douglas	3.43	288	eP	Pn	22 55 49.3	+2.4
319A				eS	Sb	22 56 34.3	-1.7
Y22D	IRIS PASSCAL I	3.91	342	ePn	Pb	22 55 58.2	-4.2
Y22D				eSg	Sb	22 56 50.5	+0.7
BNM	Barren Site	3.91	346	ePn	Pn	22 55 55.3	+1.6
BNM				eSn	Sb	22 56 49.8	-0.2
LPM	Los Pinos Moun	4.07	346	ePn	Pb	22 56 04.2	-1.0
MSTX	Muleshoe	4.27	32	ePn	Pn	22 56 02.6	+4.0
MSTX				eSn	Sn	22 56 48.8	+0.3
MSTX				eSg	Sg	22 57 08.0	-2.5
ANMO	Albuquerque	4.65	350	ePn	Pn	22 56 02.7	-1.2
ANMO				eSg	Sb	22 57 10.4	-1.0
JCT	Junction City	4.90	87	ePn	Pg	22 56 27.1	-0.2
HSIG		4.95	256	ePg	Pg	22 56 30.6	+2.5
HSIG				eSg	Sg	22 57 31.2	-1.0
ABTX	Abilene, Hawle	5.47	64	ePn	Pb	22 56 21.8	-7.2
ABTX				eSg	Sg	22 57 52.6	+3.6
AMTX	Amarillo	5.53	34	ePn	Pn	22 56 20.7	+4.8
AMTX				eSn	Sn	22 57 25.6	+5.9
X18A	Snowflake	5.62	319	ePn	Pn	22 56 21.5	+4.3
X18A				eSg	Sb	22 57 41.8	+2.5
T25A	Trinidad	6.82	7	ePn	Pn	22 56 39.4	+5.7
T25A				eSg	Sg	22 58 24.6	-7.8
WHTX	Lake Whitney,	7.06	75	ePn	Pb	22 56 52.0	-4.1
WMOK	Wichita Mounta	7.14	51	Pn	Pn	22 56 43.8	+5.9
WMOK				eSg	Sg	22 58 41.5	-1.1
WUAZ	Wupatki	7.15	318	ePn	Pn	22 56 45.8	+7.7

*NIED **08** 23:03:00, 36°.90N×140°.70E, h8km, Mw3.5 Best double couple: M0=2.34000×10^14 NP1:φs=308.00000°, δ21.00000°, λ-143.00000°. NP2:φs=183.00000°, δ78.00000°, λ-73.00000°.*
*ISCJB **08** 23:03:58.0±0.8, 36°.90N±0°.03×140°.74E±0°.06, h8km±5km, mb3.7/4, Error ellipse: s-maj=9.0km s-min=4.6km az=20.0*
*IDC **08** 23:03:57.3±1.9, 36°.69N×140°.78E, h0km, mb3.6/3, mb1 3.8/4, mb1mx3.3/47, mbtmp3.6/4, ML3.6/1, Error ellipse: s-maj=42.3km s-min=26.5km az=51.0*
*JMA **08** 23:03:58.5, 36°.92N×140°.68E, h10km±1km, M3.7*

Broadband fault plane solution: P waves. NP1: φs=176.00000°, δ68.00000°, λ-68.00000°. NP2: φs=308.00000°, δ31.00000°, λ-133.00000°. Principal axes: T Plg20.0000°, Azm249.0000°; N Plg20.0000°, Azm347.0000°; P Plg61.0000°, Azm119.0000°;
JMA Felt II J1.
ISC 08 23:03:58.5±1.2, 36°.89N±0°.03×140°.73E±0°.05, h6km±9km, n18, σ0°78/19, mb3.6/4, 5C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.22	16	⇑P	Pg	23 04 03.0	+0.2
ONAJ				S	Sg	23 04 06.4	+0.6
JHO	Hitachi	0.31	204	⇑P	Pg	23 04 04.7	+0.2
JHO				S	Sg	23 04 09.1	+0.6
JFK	Kawauchi	0.49	14	⇑P	Pg	23 04 07.6	-0.3
JFK				S	Sg	23 04 14.0	-0.3
JSB	Shiboa	0.65	277	⇑P	Pg	23 04 11.0	0.0
JSB				S	Sg	23 04 19.6	+0.2
JFT	Otama	0.70	334	⇓P	Pg	23 04 11.3	-0.6
JFT				S	Sg	23 04 20.4	-0.6
JYT	Yasato	0.79	213	⇑P	Pg	23 04 13.1	-0.5
JYT				S	Sg	23 04 23.5	-0.4
MJAR	Matsushiro Arr	2.05	261	Pn	Pn	23 04 33.4	0.0
	21nm,0.3s,baz=92,slow=16,SNR=85						
MJAR				Sn	Sn	23 05 00.4	+1.0
	23nm,0.3s,baz=84,slow=23,SNR=14						
MAT	Matsushiro	2.05	261	P	Pn	23 04 33.5	0.0
MAT				S	Sb	23 05 01.0	-0.9
HHC	Hu-ho-hao-te	23.00	289	eP	P	23 08 53.8	-10
HHC				pmax	pmax		
	comp=Z,32nm,1.4s						
HHC				pmax	pmax		
	comp=Z,95nm,7.8s						
SONM	Songino Array	27.41	304	P	P	23 09 45.7	+0.9
	comp=Z,0.4nm,0.6s,baz=109,slow=9.0,SNR=3.0						
H11N2	WAKE ISLAND Hy	28.55	120	T	T	23 39 41.7	
	baz=313,slow=75,SNR=32						
H11N1	WAKE ISLAND Hy	28.56	120	T	T	23 39 40.5	
	baz=313,slow=75,SNR=48						
H11N3	WAKE ISLAND Hy	28.57	120	T	T	23 39 41.3	
	baz=313,slow=75,SNR=29						
H11S1	WAKE ISLAND Hy	29.25	122	T	T	23 40 31.6	
	baz=315,slow=76,SNR=40						
H11S3	WAKE ISLAND Hy	29.25	122	T	T	23 40 33.9	
	baz=315,slow=76,SNR=32						
H11S2	WAKE ISLAND Hy	29.27	122	T	T	23 40 35.8	
	baz=315,slow=76,SNR=23						
ZALV	Zalesovo Beam	41.60	313	P	P	23 11 48.1	+1.2
	comp=Z,0.5nm,0.6s,baz=108,slow=9.4,SNR=2.8						
WRA	Warramunga Arr	56.85	187	P	P	23 13 42.2	-1.6
	comp=Z,0.5nm,0.5s,baz=3.0,slow=7.3,SNR=17						

*KRSC **08** 23:11:06.3±1.5, 48°.75N×156°.47E, h6km±5km, ML4.2*
*MOS **08** 23:11:06.2±2.9, 48°.75N×156°.47E, h6km, mb4.2/1, Error ellipse: s-maj=65.1km s-min=18.2km az=82.8*
*SKHL **08** 23:11:08.1±3.4, 48°.90N×155°.40E, h10km±5km*
*ISCJB **08** 23:11:10.8±1.9, 49°.3N±0°.2×155°.1E±0°.2, h10km, Error ellipse: s-maj=33.1km s-min=6.8km az=146.3*
ISC 08 23:11:11.1±2.3, 49°.1N±0°.2×155°.2E±0°.2, h10km, n20, σ1°78/24, 1D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	Severo-Kuril's	1.68	20	P	Pn	23 11 39.9	-0.6
SKR				eS	Sb	23 12 05.3	+2.0
SKR	Severo-Kuril's	1.68	20	PN	Pn	23 11 37.0	-3.5
SKR	Severo-Kuril's	1.68	20	eP	Pn	23 11 37.2	-3.3
SKR				eS	Sn	23 11 59.0	-3.1
SKR				A	A	23 12 04.5	
	310nm,0.2s						
SKR				A	A	23 12 04.5	
	190nm,0.2s						
PAU	Pauzhetka	2.57	23	PN	Pg	23 12 09.7	+9.3
PAU	Pauzhetka	2.57	23	eP	Pg	23 12 09.7	+9.3
ASAK	Asacha	3.69	26	P	Pn	23 12 08.9	+0.6
RUS	Russkaya	3.93	31	P	Pn	23 12 09.7	-1.7
RUS				S	Sn	23 12 59.0	+1.4
RUS	Russkaya	3.93	31	PN	Pn	23 12 09.7	-1.7
RUS				S	Sn	23 12 59.0	+1.4
RUS	Russkaya	3.93	31	eP	Pn	23 12 09.7	-1.7
RUS				eS	Sn	23 12 59.0	+1.4
PET	Petropavlovsk	4.48	28	eP	Pn	23 12 19.5	+0.5
SMAR	Somma	4.73	27	P	Pn	23 12 21.4	-1.3
SMAR	Somma	4.73	27	PN	Pn	23 12 21.4	-1.3
KRER	Koryakskii	4.75	26	P	Pn	23 12 24.0	+1.1
SDLR	Sedlovina	4.77	27	P	Pn	23 12 22.7	-0.4
SDLR	Sedlovina	4.77	27	PN	Pn	23 12 22.7	-0.4
TYV	Tymovskoe	8.29	287	eP	Pn	23 13 13.3	+2.0
UGL	Uglegorsk	8.64	275	eP	Pn	23 13 15.3	-0.7
EKMR	Ekimchan	14.53	294	eP	Pn	23 14 35.0	-1.6
VLA	Vladivostok	17.22	258	⇓iP	P	23 15 13.6	+0.5
VLA				eS	S	23 18 33.1	+0.9
VLA				pmax	pmax		
	comp=Z,9.0nm,1.1s						
VLA	Vladivostok	17.22	258	iP	P	23 15 13.6	+0.5
VLA				AMB	AMB	23 15 17.4	
	comp=Z,10.0nm,1.1s						

*ISCJB **08** 23:20:40.7±0.9, 6°.9S±0°.1×155°.77E±0°.06, h100km, mb3.7/6, Error ellipse: s-maj=16.7km s-min=7.6km az=6.5*
*IDC **08** 23:20:44.0±2.3, 7°.06S×155°.77E, h120km±22km, mb3.6/6, mb1 3.8/9, mb1mx3.6/39, mbtmp4.1/9, MS3.5/4, Ms1 3.5/4, ms1mx3.0/28, Error ellipse: s-maj=24.3km s-min=15.0km az=178.0*
ISC 08 23:20:42.2±0.9, 6°.9S±0°.1×155°.77E±0°.07, h100km, n15, σ1°35/12, mb3.7/6, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	Honiara	4.85	122	P	Pn	23 21 54.8	+1.9
	16nm,0.3s,baz=135,slow=12,SNR=1.6						
HNR				S	Sn	23 22 48.0	+0.1
	12nm,0.3s,baz=137,slow=11,SNR=2.1						
HNR				LR	LR	23 23 55.0	
	comp=Z,237nm,18.4s,baz=190,slow=40						
PMG	Port Moresby	8.88	253	P	Pn	23 22 48.4	+0.7
	7.2nm,0.3s,baz=56,slow=9.6,SNR=20						
PMG				S	Sn	23 24 28.4	+2.2
	1.4nm,0.3s,baz=2.5,slow=16,SNR=2.7						
CTA	Charters Tower	16.05	214	P	Pn	23 24 22.0	-0.2
	0.3nm,0.3s,baz=41,slow=11,SNR=3.3						
WRA	Warramunga Arr	24.51	236	P	P	23 25 51.6	-0.9
	1.6nm,0.5s,baz=61,slow=9.8,SNR=13						
ASAR	Alice Springs	26.82	229	P	P	23 26 11.7	-1.7
	0.9nm,0.7s,baz=60,slow=9.4,SNR=6.1						
H11S3	WAKE ISLAND Hy	27.43	23	T	T	23 54 41.3	
	baz=203,slow=75,SNR=55						
H11S2	WAKE ISLAND Hy	27.43	23	T	T	23 54 45.0	
	baz=203,slow=75,SNR=77						
H11S1	WAKE ISLAND Hy	27.44	23	T	T	23 54 42.6	
	baz=203,slow=75,SNR=27						
STKA	Stephens Creek	28.16	206	P	P	23 26 24.0	-1.2
	2.9nm,0.8s,baz=32,slow=12,SNR=3.7						
STKA				LR	LR	23 37 18.5	
	comp=Z,100nm,21.3s,baz=31,slow=36						
SONM	Songino Array	69.66	327	P	P	23 31 41.8	+0.7
	1.3nm,0.7s,baz=140,slow=6.5,SNR=9.6						
VNDA	Vanda	70.67	179	P	P	23 31 45.7	-0.9
	0.8nm,0.8s,baz=327,slow=4.6,SNR=3.2						
TLY	Talaya	73.36	329	LR	LR	00 02 25.6	
	comp=Z,57nm,20.0s,baz=0.0,slow=34						
MKAR	Makanchi Array	83.83	319	LR	LR	00 14 05.2	
	comp=Z,39nm,18.3s,baz=353,slow=38						
YKA	Yellowknife Ar	95.88	28	P	P	23 33 56.8	-0.5
	0.2nm,0.8s,baz=276,slow=4.7,SNR=2.6						
TORD	Toordi Ar. Bea	153.74	286	PKPbc	PKPbc	23 40 29.9	-0.7
	0.3nm,0.4s,baz=25,slow=2.4,SNR=3.5						

*SJA **08** 23:22:05.2±0.4, 23°.39S×66°.64W, h228km±10km, ML1.8, MW2.5*
*GUC **08** 23:22:06.8±0.4, 23°.24S×67°.18W, h264km±7km, ML4.0*
*ISCJB **08** 23:22:07.2±0.5, 23°.36S±0°.05×66°.76W±0°.04, h196km, Error ellipse: s-maj=8.0km s-min=4.3km az=32.2*
ISC 08 23:22:07.2±1.3, 23°.37S±0°.06×66°.74W±0°.05, h196km, n17, σ1°02/27, 3C-2D, Jujuy Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HJA	Humahuaca	1.23	83	iP	Pn	23 22 39.9	+1.2
HJA				IAML		23 23 11.0	
	comp=Z,9.4nm,0.5s						
YJA	Yavi	1.64	44	iP	Pn	23 22 43.8	+1.5
YJA				IAML		23 23 18.9	
	comp=Z,3.0nm,0.5s						
AZAP	Zapla	1.75	119	iP	Pn	23 22 43.5	+0.4
SLA	San Lorenzo	1.76	140	iP	Pn	23 22 43.5	+0.4
LVC	Limon Verde	2.14	290	iP	Pn	23 22 49.0	+1.8
ASTB	Santa Barbara	2.17	106	iP	Pn	23 22 47.5	+0.1
ALOL	LOMAS DE OLMED	2.57	101	iP	Pn	23 22 51.1	-0.6
PB06	IPOC Station P	2.69	284	⇑eP	Pn	23 22 54.2	+1.1
PB06				eS	Sn	23 23 30.2	+1.2
PB06				IAML		23 23 31.8	
	comp=E,135nm,0.1s						
PB09	IPOC Station P	2.79	304	⇓eP	Pn	23 22 55.4	+1.0
PB09				eS	Sn	23 23 32.7	+1.5
PB09				IAML		23 23 35.0	
	comp=N,182nm,0.2s						
FSA	Cafayete	2.82	166	iP	Pn	23 22 54.7	+0.1
FSA				iS	Sn	23 23 31.6	-0.3
FSA				IAML		23 23 34.0	
	comp=Z,1.3nm,0.6s						
PB04	IPOC Station P	3.31	287	eP	Pn	23 23 00.8	+0.4
PB04				eS	Sn	23 23 41.8	-0.4
PB04				IAML		23 23 46.0	
	comp=N,146nm,0.2s						
PB07	IPOC Station P	3.34	299	⇑eP	Pn	23 23 01.4	+0.5
PB07				eS	Sn	23 23 42.0	-0.8
PB07				IAML		23 23 42.7	
	comp=N,188nm,0.3s						
PB01	IPOC Station P	3.44	312	⇓eP	Pn	23 23 02.5	+0.5
PB01				eS	Sn	23 23 44.7	-0.2
PB01				IAML		23 23 46.2	
	comp=E,89nm,0.3s						
PB10	IPOC Station P	3.51	267	⇑eP	Pn	23 23 02.8	+0.1
PB10				eS	Sn	23 23 45.4	-0.8
PB10				IAML		23 23 50.8	
	comp=E,199nm,0.1s						
PB14	IPOC Station P	3.58	249	eP	Pn	23 23 04.2	+0.3
PB14				eS	Sn	23 23 47.8	-0.5
PATCX	Punta Patache	4.05	308	eP	Pn	23 23 09.1	-0.5
PATCX				eS	Sn	23 23 56.9	-1.7
PB11	IPOC Station P	4.50	322	eP	Pn	23 23 14.8	-0.5
PB11				eS	Sn	23 24 06.5	-2.3

*IDC **08** 23:30:58.4±0.7, 43°.34N×83°.17E, h0km, mb4.1/16, mb1 4.2/23, mb1mx4.0/46, mbtmp4.1/23, ML3.6/7, MS3.0/4, Ms1 3.0/4, ms1mx2.7/49, Error ellipse: s-maj=14.7km s-min=11.5km az=68.0*
*BJI **08** 23:31:00.2, 43°.36N×83°.04E, h6km, mb4.1/8, mB4.4/7, ML4.1/11, Ms3.6/3, Ms7 3.5/3*
*MOS **08** 23:31:02.6±1.2, 43°.36N×83°.05E, h33km, mb4.5/23, Error ellipse: s-maj=8.7km s-min=5.6km az=128.1*
*SOME **08** 23:31:03.1, 43°.40N×82°.88E, h5km, MS3.4*
*NEIC **08** 23:31:03.9±0.5, 43°.28N×83°.11E, h35km, mb4.3/10, Error ellipse: s-maj=9.5km s-min=7.3km az=175.0*
*NNC **08** 23:31:05.4±2.5, 43°.46N×82°.76E, h0km, mb4.4, mpv4.0, Error ellipse: s-maj=28.3km s-min=10.1km az=134.0*
ISC 08 23:31:01.8±0.4, 43°.35N±0°.04×82°.86E±0°.03, h10km, n146, σ2°30/172, mb4.4/33, 11C-15D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KTMS	Ketmen	1.83	274	eP	Pg	23 31 38.2	+1.3
	420nm,0.3s						
KTMS				eS	Sg	23 32 04.1	+3.4
	3μm,0.6s						
SHLS	Shalkode	2.19	266	eP	Pg	23 31 44.7	+1.0
	466nm,0.4s						
SHLS				eS	Sg	23 32 14.7	+2.7
	1μm,7.8s						
DJR	Jarkent	2.43	295	eP	Pb	23 31 46.4	+0.8
	194nm,0.5s						
DJR				eS	Sg	23 32 18.7	-1.2
	802nm,0.5s						
PDGK	Podgornoye	2.46	271	⇑Pn	Pb	23 31 44.9	-1.2
	71nm,0.4s						
PDGK				⇓Pg	Pg	23 31 51.2	+2.2
	417nm,0.7s						
PDGK				⇑Lg	Lg	23 32 19.3	
	3μm,0.6s						
PDGK	Podgornoye	2.46	271	iP	Pb	23 31 44.9	-1.2
PDGK				pmax	pmax		
	comp=Z,71nm,0.3s						
UZB	Uzynbulak	2.81	267	eP	Pg	23 31 55.6	-0.1
	comp=Z,178nm,0.6s						
UZB				eS	Sg	23 32 34.0	+1.8
	comp=Z,634nm,0.6s						
KPKS	Kokpek	3.05	274	eP	Pg	23 31 59.1	-1.1
	comp=Z,256nm,0.3s						
KPKS				eS	Sg	23 32 39.4	-0.2
	comp=Z,2μm,0.6s						
KAPS	Kapalarasan	3.17	309	eP	Pb	23 32 00.2	+1.9
	comp=Z,94nm,0.6s						
KAPS				eS	Sg	23 32 43.5	-0.2
	comp=Z,242nm,0.4s						
ZHN	Zhinishke	3.24	268	eP	Pg	23 32 02.1	-1.7
	comp=Z,104nm,0.4s						
ZHN				eS	Sg	23 32 44.6	-1.2
	comp=Z,538nm,0.5s						
SATY	Saty	3.27	266	eP	Pg	23 32 03.1	-1.4
	comp=Z,167nm,0.5s						
SATY				eS	Sg	23 32 47.2	+0.3
	comp=Z,1μm,0.4s						
MNBS	Baschi	3.32	284	eP	Pb	23 32 02.4	+1.7
	comp=Z,47nm,0.5s						
MNBS				eS	Sg	23 32 47.2	-1.0
	comp=Z,788nm,0.5s						
KURS	Kuram	3.42	274	eP	Pb	23 32 04.8	+2.2
	comp=Z,66nm,0.6s						
KURS				eS	Sg	23 32 50.5	-1.1
	comp=Z,276nm,0.7s						
MK01	Makanchi Array	3.44	354	ePn	Pn	23 31 57.2	+1.7
MK31	Makanchi Array	3.47	353	⇑Pn	Pn	23 31 57.7	+1.9
	comp=Z,3.0nm,0.3s						
MK31				⇓Pg	Pg	23 32 09.3	+1.1
	comp=Z,39nm,0.5s						
MK31				⇑Lg	Lg	23 32 51.4	
	comp=Z,421nm,0.7s						
MK31	Makanchi Array	3.47	353	eP	Pn	23 31 57.8	+1.9
MK31	Makanchi Array	3.47	353	ePn	Pn	23 31 57.8	+1.9
MKAR	Makanchi Array	3.47	353	Pn	Pn	23 31 57.7	+1.8
	comp=Z,3.8nm,0.3s,baz=178,slow=14,SNR=140						
MKAR				Lg	Lg	23 32 46.5	
	comp=Z,30nm,0.3s,baz=174,slow=30,SNR=8.7						
MKAR	Makanchi Array	3.47

comp=Z,81nm,0.4s
AAA eS **Sg** **23 33 20.2 -0.2**
comp=Z,482nm,0.7s
AAA Alma-Ata 4.32 271 eP **Pg** **23 32 22.9 -1.6**
AAA pmax pmax
comp=Z,290nm,0.7s
TNSS Tian-Shan 4.34 268 eP **Pg** **23 32 23.9 -1.0**
comp=Z,84nm,0.5s
TNSS eS **Sg** **23 33 22.3 +1.2**
comp=Z,116nm,0.7s
KUU Kurty 4.77 279 eP **Pg** **23 32 30.4 -2.6**
comp=Z,37nm,0.5s
KUU eS **Sg** **23 33 32.8 -2.0**
comp=Z,210nm,0.4s
TKM2 Tokmak 2 5.33 268 ⇓Pn **Pn** **23 32 24.8 +3.1**
comp=Z,13nm,0.8s
TKM2 ⇓Pg **Pg** **23 32 42.1 -1.9**
comp=Z,30nm,0.6s
TKM2 ⇑Lg Lg 23 33 50.9
comp=Z,207nm,0.7s
TKM2 Tokmak 2 5.33 268 *i* P **Pn** **23 32 24.8 +3.1**
TKM2 pmax pmax
comp=Z,13nm,0.7s
TKM2 Tokmak 2 5.33 268 ePn **Pn** **23 32 25.3 +3.6**
AAK Ala-Archa 6.18 266 Pn **Pn** **23 32 37.4 +4.2**
comp=Z,1.0nm,0.3s,baz=94,slow=10,SNR=14
AAK Lg Lg 23 34 16.4
comp=Z,4.6nm,0.3s,baz=239,slow=22,SNR=7.7
AAK LR LR 23 35 23.4
comp=Z,93nm,21.4s,baz=56,slow=41
AAK Ala-Archa 6.18 266 ⇓Pn **Pn** **23 32 37.0 +3.7**
comp=Z,4.7nm,0.7s
AAK ⇓Pg **Pg** **23 32 58.1 -2.0**
comp=Z,28nm,0.7s
AAK ⇑Lg Lg 23 34 15.9
comp=Z,175nm,0.8s
AAK Ala-Archa 6.18 266 ePn **Pn** **23 32 36.7 +3.5**
KSH Kashi 6.44 236 ePn Pb 23 32 48.8 -5.2
KSH smax smax
comp=Z,74nm,0.8s
KSH smax smax
comp=Z,85nm,1.0s
EKS2 Erkin-Say 6.70 267 eP **Pn** **23 32 43.1 +2.8**
EKS2 Erkin-Say 6.70 267 ePn **Pn** **23 32 43.1 +2.8**
MNAS Manas 7.65 267 ⇓Pn **Pn** **23 32 57.2 +3.7**
comp=Z,2.7nm,0.6s
MNAS ⇓Pg **Pg** **23 33 24.4 -3.9**
comp=Z,13nm,1.0s
MNAS ⇓Lg Lg 23 35 02.7
comp=Z,70nm,1.1s
MNAS Manas 7.65 267 *i* P **Pn** **23 32 57.2 +3.7**
MNAS pmax pmax
comp=Z,3.0nm,0.6s
KURBB Kurchatov Arra 7.85 339 Pn **Pn** **23 32 56.3 +0.3**
comp=Z,0.6nm,0.3s,baz=164,slow=12,SNR=26
KURBB Sn **Sn** **23 34 22.4 -2.4**
comp=Z,1.6nm,0.3s,baz=191,slow=27,SNR=9.0
KURBB Lg Lg 23 35 08.8
comp=Z,0.7nm,0.3s,baz=155,slow=32,SNR=5.5
KURK Kurchatov 7.92 340 eP **Pn** **23 32 57.0 +0.2**
KURK 23 34 22.4
KURK Kurchatov 7.92 340 ePn **Pn** **23 32 57.0 +0.2**
KURK Sn **Sn** **23 34 22.4 -4.0**
OTUK Ortayu 8.83 307 ⇓Pn **Pn** **23 33 09.9 +0.5**
comp=Z,3.8nm,0.7s
OTUK Ortayu 8.83 307 *i* P **Pn** **23 33 09.9 +0.5**
OTUK pmax pmax
comp=Z,4.0nm,0.6s
KK31 Karatay Array 9.02 273 Pn **Pn** **23 33 15.8 +3.7**
comp=Z,1.4nm,0.6s,baz=87,slow=13,SNR=16
KK31 ⇑Pg 23 33 48.2
comp=Z,4.2nm,0.6s,baz=83,slow=15,SNR=7.5
KK31 ⇑Lg Lg 23 35 48.7
comp=Z,38nm,0.8s,baz=72,slow=31,SNR=8.0
KK31 Karatay Array 9.02 273 *i* P **Pn** **23 33 15.8 +3.7**
KK31 pmax pmax
comp=Z,1.0nm,0.6s
KKAR Karatay Array 9.02 273 eP **Pn** **23 33 15.4 +3.3**
KKAR Karatay Array 9.02 273 ePn **Pn** **23 33 15.4 +3.3**
ZAA0 Zalesovo Array 10.69 6 ePn **Pn** **23 33 34.8 0.0**
ZALV Zalesovo Beam 10.69 6 Pn **Pn** **23 33 34.1 -0.6**
comp=Z,1.1nm,0.3s,baz=190,slow=14,SNR=14
ZALV Sn **Sn** **23 35 29.9 -4.4**
comp=Z,3.1nm,0.3s,baz=199,slow=24,SNR=12
ZALV Lg Lg 23 36 35.6
baz=196,slow=25,SNR=3.1
ZALV LR LR 23 37 49.5
comp=Z,39nm,19.0s,baz=98,slow=38
CHCP Chirah Chowk 12.24 221 P **Pn** **23 33 56.3 +0.1**
BVA0 Borovoye Array 12.75 324 ⇑Pn **Pn** **23 34 03.7 +0.7**
comp=Z,2.6nm,0.6s,baz=91,slow=87,SNR=7.0
BVA0 ⇓Lg Lg 23 37 44.8
comp=Z,33nm,1.4s,baz=130,slow=29,SNR=4.5
BVAR Borovoye Array 12.75 324 Pn **Pn** **23 34 04.1 +1.1**
comp=Z,0.3nm,0.3s,baz=118,slow=8.6,SNR=6.7
BVAR Lg Lg 23 37 46.5
comp=Z,0.6nm,0.3s,baz=104,slow=36,SNR=2.9
CEP Cherat 12.79 226 P **Pn** **23 34 05.2 +1.4**
BRVK Borovoye 12.82 324 P **Pn** **23 34 05.4 +1.5**
BRVK Borovoye 12.82 324 ePn Pn 23 34 09.4 +5.5
ZRNK Zerenda 13.31 321 eP **Pn** **23 34 14.4 +3.7**
ZRNK pmax pmax
comp=Z,7.0nm,0.8s
ZRNK Zerenda 13.31 321 ePn **Pn** **23 34 14.4 +3.7**
comp=Z,7.4nm,0.8s
GTA Gaotai 13.32 101 eP **Pn** **23 34 13.4 +2.4**
GTA pP pP 23 34 16.7
GTA sP sP 23 34 19.4
GTA S **Sn** **23 36 43.8 +4.6**
GTA sS sS 23 36 48.3
GTA SS **S** **23 36 58.5 -5.1**
GTA pmax pmax
comp=Z,5.0nm,1.0s
GTA pmax pmax
comp=Z,85nm,5.7s
GTA LR LR
comp=Z,160nm,18.1s
GTA LR LR
comp=Z,220nm,15.7s
GTA LR LR
comp=Z,160nm,15.2s
GTA Gaotai 13.32 101 eP **Pn** **23 34 13.4 +2.4**
THW Thamme Wali 13.69 223 P **Pn** **23 34 13.4 -2.6**
TLY Talaya 16.28 52 LR LR 23 41 42.2
comp=Z,88nm,19.4s,baz=242,slow=40
AB31 Akbulak array 16.87 298 *i* P **Pn** **23 34 56.1 -1.8**
AB31 pmax pmax
comp=Z,3.0nm,0.6s
ABKAR Akbulak array 16.87 298 ePn **Pn** **23 34 56.2 -1.7**
SONM Songino Array 17.05 67 Pn **Pn** **23 34 57.3 -2.9**
comp=Z,0.5nm,0.3s,baz=260,slow=12,SNR=20
SONM Lg Lg 23 39 43.4
comp=Z,0.1nm,0.3s,baz=259,slow=22,SNR=3.7
SONM Songino Array 17.05 67 eP **Pn** **23 34 59.9 -0.4**
SONM pmax pmax
comp=Z,1.0nm,0.3s
ULN Ulaanbaatar 17.49 67 ⇓eP **Pn** **23 35 06.2 +0.4**
ULN pmax pmax
comp=Z,4.0nm,0.7s
ULN Ulaanbaatar 17.49 67 eP **Pn** **23 35 04.8 -1.1**
comp=Z,3.7nm,0.8s
AKTO Aktyubinsk 18.34 301 P **P** **23 35 17.1 +0.9**
comp=Z,0.3nm,0.3s,baz=107,slow=12,SNR=8.8
SVE Sverdlovsk 19.51 321 eP **Pn** **23 35 34.8 +4.7**
GEYT Alibeck 19.51 262 P **P** **23 35 29.7 +0.5**
comp=Z,0.2nm,0.3s,baz=64,slow=6.8,SNR=7.6
ARU Arti 20.27 319 P **P** **23 35 38.2 +1.1**
comp=Z,2.9nm,0.3s,baz=119,slow=22,SNR=9.9
ARU Arti 20.27 319 *d i* P **P** **23 35 38.1 +0.9**
ARU 23 35 55.1
ARU S Sn 23 39 27.1 -0.1
ARU SS **SnSn** **23 39 46.2 +4.7**
ARU pmax pmax
comp=Z,3.0nm,0.5s
ARU Arti 20.27 319 eP **P** **23 35 37.9 +0.7**
comp=Z,5.2nm,0.6s
XAN Xi'an 22.29 106 P **P** **23 36 04.0 +4.8**
XAN pmax pmax
comp=Z,8.0nm,1.0s
XAN Xi'an 22.29 106 eP **P** **23 36 04.0 +4.8**
XAN Xi'an 22.29 106 eP **P** **23 36 04.0 +4.8**
NRIK Noril'sk 26.17 4 P **P** **23 36 34.3 -1.6**
comp=Z,1.7nm,0.3s,baz=123,slow=7.6,SNR=5.7
GNI Garni 28.46 277 eP **P** **23 36 52.4 -4.6**
GNI pmax pmax
comp=Z,4.0nm,0.8s
GNI Garni 28.46 277 eP **P** **23 36 52.4 -4.6**
comp=Z,4.1nm,0.8s
VRH Novokhopyorsk 28.68 300 eP **P** **23 36 58.1 -0.5**
VRH pmax pmax
comp=Z,6.0nm,0.9s
KVAR Kislovodsk Arr 28.87 285 LR LR 23 50 45.6
comp=Z,59nm,19.3s,baz=266,slow=41
VSR Storozhevoye 30.29 301 eP **P** **23 37 12.4 -0.5**
VSR pmax pmax
comp=Z,5.0nm,0.5s
LPSR Galich'ya Gora 30.41 303 eP **P** **23 37 14.6 +0.7**
LPSR pmax pmax
comp=Z,6.0nm,0.6s
KLMR Klimovskoe 31.11 319 eP **P** **23 37 18.8 -1.3**
KLMR e*SP **sP** **23 37 31.2 +6.8**
KLMR pmax pmax
comp=Z,3.0nm,0.5s
OBN Obninsk 31.85 308 eP **P** **23 37 23.8 -2.8**
comp=Z,8.8nm,0.5s
AKASG Malin Array Be 36.59 301 P **P** **23 38 07.4 -0.3**
comp=Z,3.0nm,0.7s,baz=67,slow=8.8,SNR=5.8
AKASG Malin Array Be 36.59 301 eP **P** **23 38 07.6 -0.1**
AKASG pmax pmax
comp=Z,3.0nm,0.7s
BRTR Keskin Array B 36.60 282 P **P** **23 38 08.7 +0.6**
comp=Z,0.5nm,0.6s,baz=106,slow=9.2,SNR=6.5
KIEV Kiev 36.60 301 ⇓*i* P **P** **23 38 07.7 -0.1**
KIEV pmax pmax
comp=Z,5.0nm,0.9s
KIEV Kiev 36.60 301 eP **P** **23 38 05.0 -2.9**
comp=Z,4.1nm,0.9s
ANTO Ankara 37.15 282 eP P 23 38 07.6 -5.1
ANTO pmax pmax
comp=Z,6.0nm,1.0s
ANTO Ankara 37.15 282 eP P 23 38 07.6 -5.1
comp=Z,6.0nm,1.0s
FINES FINESS Array B 37.64 319 P **P** **23 38 16.3 -0.2**
comp=Z,0.7nm,0.5s,baz=103,slow=10,SNR=9.4
FINES FINESS Array B 37.64 319 eP **P** **23 38 17.1 +0.6**
FINES pmax pmax
comp=Z,1.0nm,0.5s
ARCES ARCESS Array B 38.86 332 P **P** **23 38 26.0 -0.7**
comp=Z,1.5nm,0.4s,baz=87,slow=8.5,SNR=19
ARCES ARCESS Array B 38.86 332 eP **P** **23 38 26.6 -0.1**
ARCES pmax pmax
comp=Z,2.0nm,0.4s
STHS Stebnicka Huta 41.89 301 eP **P** **23 38 52.2 +0.1**
STHS pmax pmax
comp=Z,2.0nm,0.9s
STHS Stebnicka Huta 41.89 301 eP **P** **23 38 52.2 +0.1**
OJC Ojcow 42.57 302 eP **P** **23 38 53.4 -4.2**
OJC pmax pmax
comp=Z,7.0nm,0.6s
OJC Ojcow 42.57 302 eP **P** **23 38 53.4 -4.2**
comp=Z,6.9nm,0.6s
KECS Kecovo 42.64 300 eP **P** **23 38 58.3 +0.2**
KECS pmax pmax
comp=Z,2.0nm,0.8s
KECS Kecovo 42.64 300 eP **P** **23 38 58.3 +0.2**
VYHS Vyhne 43.68 300 eP **P** **23 39 06.3 -0.3**
VYHS Vyhne 43.68 300 eP **P** **23 39 06.3 -0.3**
OKC Ostrava-Krasne 43.70 302 eP **P** **23 39 07.5 +0.8**
OKC Ostrava-Krasne 43.70 302 eP **P** **23 39 07.5 +0.8**
KRLC Kraliky 44.47 303 eP **P** **23 39 13.7 +0.8**
KRLC Kraliky 44.47 303 eP **P** **23 39 13.7 +0.8**
DPC Dobruska-Polom 44.66 303 eP **P** **23 39 15.8 +1.3**
DPC e*pP* **sP** **23 39 24.1 +5.2**
DPC Dobruska-Polom 44.66 303 eP **P** **23 39 15.8 +1.3**
DPC *e* 23 39 24.1
UPC Upice 44.80 304 eP **P** **23 39 16.7 +1.1**
UPC Upice 44.80 304 eP **P** **23 39 16.7 +1.1**
NB2 NORSAR Subarra 44.82 319 P **P** **23 39 15.2 -0.4**
comp=Z,2.6nm,0.5s,baz=79,slow=7.9
NOA NORSAR Array B 44.82 319 P **P** **23 39 15.5 -0.1**
comp=Z,3.1nm,0.6s,baz=77,slow=7.8,SNR=11
PVCC Panska Ves 45.67 304 eP **P** **23 39 23.5 +1.1**
PVCC Panska Ves 45.67 304 eP **P** **23 39 23.5 +1.1**
CONA Conrad Observa 45.74 300 *i* P **P** **23 39 24.0 +0.8**
comp=Z,5.6nm,1.1s
PRU Pruhonice 45.86 303 eP **P** **23 39 25.0 +1.0**
PRU Pruhonice 45.86 303 eP **P** **23 39 25.0 +1.0**
CLL Collm 46.36 305 *i* P **P** **23 39 27.9 +0.1**
comp=Z,9.0nm,1.0s
CLL Collm 46.36 305 *i* P **P** **23 39 27.9 +0.1**
CLL pmax pmax
comp=Z,9.0nm,1.0s
KHC Kasperske Hory 46.74 302 eP **P** **23 39 31.6 +0.6**
KHC Kasperske Hory 46.74 302 eP **P** **23 39 31.6 +0.6**
GERES GERESS Array B 46.77 302 P **P** **23 39 31.9 +0.7**
comp=Z,1.0nm,0.6s,baz=60,slow=8.0,SNR=11
GRFO Grafenberg 47.98 304 eP P 23 39 35.4 -5.2
GRFO pmax pmax
comp=Z,12nm,1.0s
GRFO Grafenberg 47.98 304 eP P 23 39 35.4 -5.1
comp=Z,12nm,1.0s
WTTA Wattenberg 48.64 301 *i* P **P** **23 39 46.2 +0.3**
comp=Z,8.6nm,0.8s
MOTA Moosalm 48.95 301 *i* P **P** **23 39 48.2 0.0**
comp=Z,6.3nm,0.9s
ESDC Somseca Array 62.22 299 P **P** **23 41 23.2 -0.4**
comp=Z,2.0nm,0.5s,baz=55,slow=6.6,SNR=32
INK Inuvik 65.38 14 P **P** **23 41 42.1 -1.7**
comp=Z,0.8nm,0.5s,baz=319,slow=5.8,SNR=7.2
INK Inuvik 65.38 14 eP **P** **23 41 41.7 -2.1**
INK pmax pmax
comp=Z,2.0nm,1.0s
INK Inuvik 65.38 14 eP **P** **23 41 41.7 -2.1**
comp=Z,2.2nm,1.0s
ILAR Eielson Array 65.42 21 P **P** **23 41 41.5 -2.7**
comp=Z,0.9nm,0.6s,baz=318,slow=5.2,SNR=12
YKA Yellowknife Ar 73.58 8 P **P** **23 42 32.1 -2.5**
comp=Z,0.5nm,0.5s,baz=340,slow=5.7,SNR=10.0
TORD Torodi Ar. Bea 74.71 274 P **P** **23 42 40.4 -1.6**
comp=Z,2.8nm,0.5s,baz=42,slow=5.0,SNR=56
WRAB Tennant Creek 78.72 131 eP **P** **23 43 01.6 -2.8**
WRAB pmax pmax
comp=Z,2.0nm,0.6s
WRAB Tennant Creek 78.72 131 eP **P** **23 43 01.6 -2.8**
comp=Z,2.2nm,0.6s
WRA Warramunga Arr 78.72 131 P **P** **23 43 01.6 -2.8**
comp=Z,2.5nm,0.7s,baz=331,slow=5.4,SNR=22
ASAR Alice Springs 81.52 134 P **P** **23 43 16.4 -3.0**
comp=Z,1.9nm,0.8s,baz=330,slow=5.7,SNR=16
DBIC Dimbokro 83.81 273 P **P** **23 43 29.8 -1.9**
comp=Z,4.8nm,0.9s,baz=35,slow=6.2,SNR=3.6

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*JMA **08** 23:35:30.9±0.2, 37.°29N×143.°17E, h10km, M3.8*
*IDC **08** 23:35:30.4±2.7, 36.°62N×143.°40E, h0km, mb3.5/3, mb1 3.7/4, mb1mx3.3/51, mbtmp3.5/4, ML3.2/1, Error ellipse: s-maj=64.2km s-min=29.9km az=44.0*
*ISCJB **08** 23:35:31.7±1.4, 37.°25N±0.°08×143.°34E±0.°10, h59km±19km, mb3.6/3, Error ellipse: s-maj=15.2km s-min=10.0km az=41.6*
ISC 08 23:35:32.4±4.0, 37.°3N±0.°1×143.°4E±0.°2, h42km±43km, n15, σ1°20/23, mb3.7/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.99**	**274**	P	**Pn**	**23 36 02.9**	**-0.6**
JFK				S	**Sn**	**23 36 26.4**	**-0.9**
JIO	**Ouri**	**2.00**	**308**	P	**Pn**	**23 36 03.3**	**-0.3**
JIO				S	**Sn**	**23 36 27.0**	**-0.4**
ONAJ	**Iwakimizuishiy**	**2.06**	**267**	P	**Pn**	**23 36 04.1**	**-0.4**
ONAJ				eS	**Sn**	**23 36 28.5**	**-0.4**
JMM	**Marumori**	**2.13**	**288**	P	**Pn**	**23 36 04.9**	**-0.6**
JMK	**Ichinoseki**	**2.40**	**316**	P	**Pn**	**23 36 08.7**	**-0.4**
JMK				S	**Sn**	**23 36 36.9**	**-0.3**
JOU	**Okura**	**2.41**	**298**	P	**Pn**	**23 36 09.6**	**+0.3**
JFT	**Otama**	**2.43**	**277**	P	**Pn**	**23 36 10.3**	**+0.8**
JFT				eS	**Sn**	**23 36 37.4**	**-0.6**
JOM	**Ohasama**	**2.75**	**324**	P	**Pn**	**23 36 15.3**	**+1.3**
JAG	**Ashikaga**	**3.25**	**256**	P	**Pn**	**23 36 20.6**	**-0.2**
JAG				S	**Sn**	**23 36 57.6**	**-0.5**
JRY	**Ryogami san**	**3.80**	**252**	P	**Pn**	**23 36 28.5**	**+0.1**
JRY				eS	**Sn**	**23 37 09.2**	**-2.6**
MJAR	**Matsushiro Arr**	**4.19**	**262**	Pn	**Pn**	**23 36 35.5**	**+1.7**
	1.5nm,0.3s,baz=84,slow=15,SNR=8.8						
MJAR				Sn	**Sn**	**23 37 23.6**	**+2.0**
	1.4nm,0.3s,baz=323,slow=18,SNR=2.7						
MAT	**Matsushiro**	**4.20**	**262**	P	**Pn**	**23 36 35.7**	**+1.9**
MAT				eS	**Sn**	**23 37 23.8**	**+2.2**
MKAR	**Makanchi Array**	**45.32**	**302**	P	P	23 43 52.8	+6.7
	0.1nm,0.6s,baz=103,slow=6.5,SNR=1.6						
WRA	**Warramunga Arr**	**57.52**	**190**	P	**P**	**23 45 16.9**	**-0.5**
	1.3nm,0.7s,baz=10.0,slow=7.4,SNR=8.5						
ASAR	**Alice Springs**	**61.24**	**190**	P	**P**	**23 45 43.2**	**0.0**
	0.5nm,0.7s,baz=15,slow=7.7,SNR=4.4						

IDC 08 23:46:48.2±9.1, 31.°33S×178.°79W, h0km, mb3.7/2, mb1 3.9/2, mb1mx3.7/28, mbtmp3.7/2, MS2.8/1, Ms1 2.8/1, ms1mx2.4/28, Error ellipse: s-maj=390.5km s-min=66.0km az=158.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PPT	**Papeete**	**29.81**	**69**	LR	LR	00 01 00.1	
	comp=Z,20nm,21.1s,baz=340,slow=29						
ASAR	**Alice Springs**	**42.39**	**268**	P	P	23 54 43.0	-1.6
	0.6nm,0.7s,baz=109,slow=7.9,SNR=2.4						
WRA	**Warramunga Arr**	**43.47**	**274**	P	P	23 54 54.5	+1.1
	3nm,0.8s,baz=112,slow=7.6,SNR=4.6						
FINES	**FINESS Array B**	**145.78**	**339**	PKPbc	PKPdf	00 06 27.6	-0.4
	2.0nm,1.0s,baz=20,slow=4.4,SNR=2.5						

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*NEIC **08** 23:52:19.0, 43.°59S×172.°39E, h10km, ML4.0(WEL), After WEL.*
NEIC Felt in Canterbury.
WEL 08 23:52:18.9±0.1, 43.°59S×172.°40E, h11km, ML4.0/18, 5C-7D, Error ellipse: s-maj=0.7km s-min=0.7km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRLZ	**Canterbury Las**	**0.16**	**84**	⇓PG	Pg	23 52 22.7	+0.1
CRLZ				SG	Sg	23 52 25.3	+0.1
CRLZ				AML	AML	23 52 25.5	
CRLZ				AML	AML	23 52 25.5	
CRLZ				AML	AML	23 52 25.7	
CRLZ	**Canterbury Las**	**0.16**	**84**	⇓Pg	Pg	23 52 22.7	+0.1
CRLZ				Sg	Sg	23 52 25.3	+0.1
MQZ	**McQueen's Vall**	**0.22**	**122**	⇓PG	Pg	23 52 23.6	+0.1
MQZ				SG	Sg	23 52 26.8	+0.2
MQZ				AML	AML	23 52 27.3	
MQZ	**McQueen's Vall**	**0.22**	**122**	Pg	Pg	23 52 23.6	+0.1
MQZ				Sg	Sg	23 52 26.8	+0.2
OXZ	**Oxford**	**0.38**	**315**	⇓P*	Pg	23 52 26.1	-0.3
OXZ				S*	Sg	23 52 31.2	-0.1
OXZ	**Oxford**	**0.38**	**315**	⇓P*	Pg	23 52 26.1	-0.3
OXZ				Sg	Sg	23 52 31.2	-0.1
LTZ	**Lake Taylor**	**0.81**	**353**	P*	Pg	23 52 34.5	-0.1
LTZ				S*	Sg	23 52 45.7	+0.4
LTZ				AML	AML	23 52 45.8	
LTZ	**Lake Taylor**	**0.81**	**353**	P*	Pg	23 52 34.5	-0.1
LTZ				S*	Sg	23 52 45.7	+0.4
RPZ	**Rata Peaks**	**0.98**	**262**	⇓P*	Pg	23 52 37.4	-0.5
RPZ				AML	AML	23 52 56.7	
RPZ				AML	AML	23 52 58.2	
RPZ	**Rata Peaks**	**0.98**	**262**	P*	Pg	23 52 37.4	-0.5
INZ	**Inchbonnie**	**1.11**	**321**	P*	Pb	23 52 39.0	-1.2
WVZ	**Waitaha Valley**	**1.32**	**293**	⇑PN	Pn	23 52 42.4	-0.9
WVZ				AML	AML	23 53 04.2	
WVZ				AML	AML	23 53 10.3	
WVZ	**Waitaha Valley**	**1.32**	**293**	Pn	Pn	23 52 42.4	-0.9
KHZ	**Kahutara**	**1.44**	**36**	⇑PN	Pn	23 52 43.2	-1.8
KHZ	**Kahutara**	**1.44**	**36**	Pn	Pn	23 52 43.2	-1.8
LBZ	**Lake Benmore**	**1.79**	**243**	PN	Pn	23 52 48.8	-0.9
LBZ				AML	AML	23 53 17.3	
LBZ				AML	AML	23 53 17.4	
LBZ				AML	AML	23 53 22.6	
LBZ				AML	AML	23 53 22.6	
LBZ	**Lake Benmore**	**1.79**	**243**	Pn	Pn	23 52 48.8	-0.9
THZ	**Tophouse**	**1.87**	**12**	⇑PN	Pn	23 52 49.2	-1.6
THZ				AML	AML	23 53 23.5	
THZ				AML	AML	23 53 33.0	
THZ	**Tophouse**	**1.87**	**12**	Pn	Pn	23 52 49.2	-1.6
FOZ	**Fox Glacier**	**1.88**	**271**	PN	Pn	23 52 51.0	+0.1
FOZ				AML	AML	23 53 21.2	
FOZ				AML	AML	23 53 21.2	
FOZ				AML	AML	23 53 27.7	
FOZ				AML	AML	23 53 27.7	
FOZ	**Fox Glacier**	**1.88**	**271**	Pn	Pn	23 52 51.0	+0.1
DSZ	**Denniston Nort**	**1.90**	**346**	PN	Pn	23 52 50.4	-0.9
DSZ				AML	AML	23 53 22.1	
DSZ				AML	AML	23 53 22.1	
DSZ				AML	AML	23 53 22.2	
DSZ				AML	AML	23 53 22.3	
DSZ	**Denniston Nort**	**1.90**	**346**	Pn	Pn	23 52 50.4	-0.8
ODZ	**Otahua Downs**	**1.92**	**220**	PN	Pn	23 52 50.2	-1.4
ODZ				AML	AML	23 53 26.5	
ODZ				AML	AML	23 53 27.5	
ODZ	**Otahua Downs**	**1.92**	**220**	Pn	Pn	23 52 50.2	-1.4
BSWZ	**Blackbirch Sta**	**2.17**	**31**	PN	Pn	23 52 53.6	-1.4
BSWZ	**Blackbirch Sta**	**2.17**	**31**	Pn	Pn	23 52 53.6	-1.4
NNZ	**Nelson**	**2.48**	**17**	⇑PN	Pn	23 52 58.2	-1.1
NNZ	**Nelson**	**2.48**	**17**	Pn	Pn	23 52 58.2	-1.1
HHSZ	**Highcliff Hill**	**2.63**	**209**	PN	Pn	23 52 59.2	-2.0
HHSZ	**Highcliff Hill**	**2.63**	**209**	Pn	Pn	23 52 59.2	-2.0
JCZ	**Jackson Bay**	**2.66**	**258**	PN	Pn	23 53 01.1	-0.7
JCZ				AML	AML	23 53 50.8	
JCZ				AML	AML	23 53 52.8	
JCZ	**Jackson Bay**	**2.66**	**258**	Pn	Pn	23 53 01.1	-0.7
WKZ	**Wanaka**	**2.73**	**242**	PN	Pn	23 53 02.2	-0.4
WKZ				AML	AML	23 53 52.3	
WKZ				AML	AML	23 53 52.3	
WKZ				AML	AML	23 53 52.6	
WKZ				AML	AML	23 53 52.7	
WKZ	**Wanaka**	**2.73**	**242**	Pn	Pn	23 53 02.2	-0.4
EAZ	**Earnscleugh**	**2.76**	**232**	⇑PN	Pn	23 53 01.7	-1.3
EAZ				AML	AML	23 53 48.2	
EAZ				AML	AML	23 53 48.3	
EAZ				AML	AML	23 53 51.1	
EAZ				AML	AML	23 53 51.1	
EAZ	**Earnscleugh**	**2.76**	**232**	Pn	Pn	23 53 01.7	-1.3
TCW	**Tory Channel**	**2.76**	**31**	PN	Pn	23 53 00.8	-2.2
TCW	**Tory Channel**	**2.76**	**31**	Pn	Pn	23 53 00.8	-2.2
QRZ	**Quartz Range**	**2.77**	**2**	PN	Pn	23 53 01.5	-1.6
QRZ				AML	AML	23 53 11.2	
QRZ				AML	AML	23 53 50.8	
QRZ				AML	AML	23 53 52.7	
QRZ				AML	AML	23 53 53.8	
BHW	**Baring Head**	**2.85**	**41**	PN	Pn	23 53 01.7	-2.6
BHW	**Baring Head**	**2.85**	**41**	Pn	Pn	23 53 01.7	-2.6
PLWZ	**Palliser**	**2.92**	**47**	PN	Pn	23 53 02.7	-2.7
PLWZ	**Palliser**	**2.92**	**47**	Pn	Pn	23 53 02.7	-2.7
DUWZ	**D'Urville Isla**	**3.01**	**23**	PN	Pn	23 53 05.8	-0.7
TUZ	**Tuapeka**	**3.08**	**219**	PN	Pn	23 53 06.0	-1.4
TUZ				AML	AML	23 54 06.0	
TUZ				AML	AML	23 54 06.0	
TUZ				AML	AML	23 54 06.3	
TUZ				AML	AML	23 54 06.3	
TUZ	**Tuapeka**	**3.08**	**219**	Pn	Pn	23 53 06.0	-1.4
CAW	**Cannon Point**	**3.17**	**39**	PN	Pn	23 53 06.3	-2.5
CAW				AML	AML	23 53 44.4	
CAW				AML	AML	23 53 45.6	
CAW	**Cannon Point**	**3.17**	**39**	Pn	Pn	23 53 06.3	-2.5
KIW	**Kapiti Island**	**3.30**	**35**	PN	Pn	23 53 08.5	-2.1
KIW	**Kapiti Island**	**3.30**	**35**	Pn	Pn	23 53 08.5	-2.1
MTW	**Mount Morrison**	**3.35**	**44**	PN	Pn	23 53 08.2	-2.9
MTW	**Mount Morrison**	**3.35**	**44**	ePn	Pn	23 53 08.2	-2.9
OGWZ	**Otaki Gorge**	**3.45**	**38**	PN	Pn	23 53 10.5	-2.1
OGWZ	**Otaki Gorge**	**3.45**	**38**	Pn	Pn	23 53 10.5	-2.1
MLZ	**Mavora Lakes**	**3.54**	**238**	PN	Pn	23 53 12.3	-1.6
MLZ				AML	AML	23 54 23.0	
MLZ				AML	AML	23 55 43.5	
MLZ	**Mavora Lakes**	**3.54**	**238**	Pn	Pn	23 53 12.3	-1.6
SYZ	**Scrubby Hill**	**3.74**	**217**	PN	Pn	23 53 15.4	-1.2
SYZ				AML	AML	23 54 28.1	
SYZ				AML	AML	23 54 30.6	
SYZ	**Scrubby Hill**	**3.74**	**217**	Pn	Pn	23 53 15.4	-1.2
WHZ	**Wether Hill Ro**	**3.92**	**233**	⇓PN	Pn	23 53 16.7	-2.4
WHZ	**Wether Hill Ro**	**3.92**	**233**	Pn	Pn	23 53 16.7	-2.4
BFZ	**Birch Farm**	**4.08**	**46**	PN	Pn	23 53 18.8	-2.4
BFZ	**Birch Farm**	**4.08**	**46**	Pn	Pn	23 53 18.8	-2.4
ANWZ	**Angora Road**	**4.36**	**45**	PN	Pn	23 53 22.2	-2.8
PREZ	**Palmer Road**	**4.45**	**18**	PN	Pn	23 53 25.8	-0.5
PREZ	**Palmer Road**	**4.45**	**18**	Pn	Pn	23 53 25.8	-0.5
KHEZ	**Kahui Hut**	**4.46**	**16**	PN	Pn	23 53 26.3	-0.2
KHEZ	**Kahui Hut**	**4.46**	**16**	Pn	Pn	23 53 26.3	-0.2
APZ	**The Paps**	**4.50**	**222**	Pn	Pn	23 53 25.1	-1.8
PKE	**Pukeiti**	**4.55**	**16**	Pn	Pn	23 53 27.6	-0.2
VRZ	**Vera Road**	**4.80**	**22**	Pn	Pn	23 53 30.8	-0.3

HIZ	**Hauiti**	**5.40**	**21**	Pn	Pn	23 53 38.0	-1.4

*ISCJB **08** 23:52:45.6±1.3, 36.°51N±0.°09×71.°3E±0.°1, h188km, mb3.5/3, Error ellipse: s-maj=15.3km s-min=8.5km az=143.7*
*IDC **08** 23:52:46.8±4.0, 36.°33N×71.°35E, h211km±30km, mb3.2/3, mb1 3.1/9, mb1mx2.8/55, mbtmp3.7/9, Error ellipse: s-maj=54.2km s-min=19.9km az=146.0*
*NNC **08** 23:52:55.5±0.7, 37.°09N×71.°08E, h210km±6km, mb2.3, mpv3.5, Error ellipse: s-maj=6.8km s-min=3.2km az=157.0*
ISC 08 23:52:45.9±1.6, 36.°5N±0.°1×71.°1E±0.°1, h188km, n14, σ2°80/19, mb3.4/3, 4C-5D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**2.90**	**323**	⇓P	Pn	23 53 39.8	+6.1
	8.5nm,0.3s						
DZET				⇑S	**Sn**	**23 54 15.0**	**+3.8**
	52nm,0.4s						
SFK	**Sufi-Kurgan**	**3.99**	**28**	⇓P	**Pn**	**23 53 51.6**	**+4.3**
	2.8nm,0.3s						
SFK				⇓S	**Sn**	**23 54 36.2**	**+0.6**
	44nm,0.3s						
MNAS	**Manas**	**6.07**	**10**	⇓P	**Pn**	**23 54 16.9**	**+2.9**
	4.9nm,0.5s						
MNAS				⇑S	**Sn**	**23 55 21.0**	**-2.6**
	22nm,0.4s						
KK31	**Karatay Array**	**6.60**	**357**	⇑P	**Pn**	**23 54 23.2**	**+2.4**
	1.4nm,0.5s,baz=180,slow=12,SNR=24						
KK31				S	**Sn**	**23 55 33.4**	**-2.4**
	11nm,0.8s,baz=171,slow=22,SNR=19						
AAK	**Ala-Archa**	**6.67**	**22**	P	**Pn**	**23 54 24.7**	**+2.9**
	1.5nm,0.3s,baz=195,slow=6.1,SNR=16						
AAK				S	**Sn**	**23 55 32.4**	**-5.2**
	1.5nm,0.3s,baz=182,slow=5.3,SNR=5.4						
AAK	**Ala-Archa**	**6.67**	**22**	⇑P	**Pn**	**23 54 24.1**	**+2.4**
	4.7nm,0.7s						
AAK				⇓S	**Sn**	**23 55 36.2**	**-1.3**
	15nm,0.7s						
GEYT	**Alibeck**	**10.42**	**282**	P	**P**	**23 55 14.3**	**-4.3**
	0.1nm,0.3s,baz=133,slow=10.0,SNR=2.8						
MKAR	**Makanchi Array**	**13.26**	**36**	P	**Pn**	**23 55 47.6**	**+0.8**
	0.2nm,0.3s,baz=218,slow=14,SNR=12						
MKAR				S	Sn	23 58 07.8	-6.6
	0.1nm,0.3s,baz=168,slow=28,SNR=4.0						
KURBB	**Kurchatov Arra**	**15.10**	**19**	P	**Pn**	**23 56 08.8**	**-0.8**
	0.1nm,0.3s,baz=206,slow=11,SNR=12						
BVAR	**Borovoye Array**	**16.52**	**359**	P	**Pn**	**23 56 26.8**	**0.0**
	0.6nm,0.3s,baz=161,slow=12,SNR=10						
ZALV	**Zalesovo Beam**	**19.89**	**24**	P	**P**	**23 57 02.7**	**+0.1**
	0.6nm,0.3s,baz=211,slow=12,SNR=11						
FINES	**FINESS Array B**	**37.50**	**326**	P	**P**	**23 59 42.7**	**+1.6**
	1.7nm,1.0s,baz=129,slow=13,SNR=3.2						
NOA	**NORSAR Array B**	**44.40**	**323**	P	**P**	**00 00 38.1**	**+0.6**
	0.6nm,0.5s,baz=102,slow=7.1,SNR=4.0						
TORD	**Torodi Ar. Bea**	**65.76**	**269**	P	**P**	**00 03 10.9**	**-0.1**
	0.5nm,0.7s,baz=49,slow=5.8,SNR=12						

*NIED **08** 23:54:00, 29.°10N×129.°40E, h8km, Mw4.0 Best double couple: M₀1.05000×10^15 NP1:φs96.00000°, δ51.00000°, λ-133.00000°. NP2:φs332.00000°, δ55.00000°, λ-49.00000°.*
*ISCJB **08** 23:54:32.5±0.4, 29.°10N±0.°03×129.°40E±0.°05, h25km±4km, mb3.4/5, Error ellipse: s-maj=7.6km s-min=3.7km az=20.6*
*JMA **08** 23:54:32.5±0.1, 29.°09N×129.°43E, h23km±4km, M3.8*
JMA Felt I J1.
*IDC **08** 23:54:40.2±4.3, 29.°27N×129.°38E, h71km±43km, mb3.2/5, mb1 3.4/6, mb1mx3.1/57, mbtmp3.5/6, ML3.5/1, MS2.7/3, Ms1 2.7/3, ms1mx2.6/17, Error ellipse: s-maj=43.8km s-min=21.9km az=70.0*
ISC 08 23:54:32.7±1.3, 29.°10N±0.°03×129.°45E±0.°04, h18km±3km, n23, σ0°98/30, mb3.3/5, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTAJ	**Takarajima**	**0.22**	**285**	P	**Pb**	**23 54 37.9**	**+0.1**
JTAJ				eS	**Sg**	**23 54 41.7**	**+0.1**
JAM	**Amami Oshima**	**0.70**	**169**	P	**Pb**	**23 54 45.0**	**-1.3**
JAM				eS	**Sb**	**23 54 54.5**	**-1.0**
JNN	**Nakanoshima**	**0.83**	**27**	P	**Pb**	**23 54 48.1**	**-0.5**
JNN				eS	**Sb**	**23 54 59.7**	**+0.3**
JAMN	**Amaminishikomi**	**0.89**	**196**	P	**Pb**	**23 54 48.8**	**-0.7**
JAMN				eS	**Sb**	**23 55 00.1**	**-0.8**
JZK	**Kikaishima**	**0.91**	**149**	P	**Pb**	**23 54 50.4**	**+0.6**
JZK				eS	**Sb**	**23 55 04.1**	**+2.6**
JTK	**Tokunoshima**	**1.38**	**199**	P	**Pn**	**23 54 56.0**	**-1.0**
JTK				eS	**Sn**	**23 55 12.8**	**-1.9**
JYAK	**Yakushimahirau**	**1.47**	**39**	P	**Pn**	**23 54 57.6**	**-0.6**
JYAK				eS	**Sn**	**23 55 16.0**	**-0.9**
JKC	**Kuchinoerabu**	**1.51**	**25**	P	**Pn**	**23 54 58.7**	**0.0**
JKC				eS	**Sn**	**23 55 17.4**	**-0.5**
JOKE	**Okinoerabujima**	**1.90**	**204**	P	**Pn**	**23 55 03.9**	**-0.2**
JTN	**Tanegashima 3**	**2.04**	**40**	P	**Pn**	**23 55 06.0**	**-0.1**
JTN				eS	**Sn**	**23 55 31.8**	**+0.6**
JIH	**Iheya**	**2.44**	**213**	P	**Pn**	**23 55 11.3**	**-0.2**
JIH				eS	**Sn**	**23 55 40.2**	**-0.6**
JOW	**Kunigami**	**2.48**	**205**	P	**Pn**	**23 55 12.0**	**-0.2**
JNTH	**Nagotoyohara**	**2.86**	**207**	P	**Pn**	**23 55 17.8**	**+0.4**
JAGN	**Aguni-jima**	**3.17**	**219**	P	**Pn**	**23 55 22.7**	**+1.1**
JKE	**Kume jima 2**	**3.63**	**221**	P	**Pn**	**23 55 29.0**	**+1.0**
JNU	**Nakatsue**	**4.20**	**17**	P	Pn	23 55 39.9	+4.1
	3.5nm,0.3s,baz=175,slow=9.4,SNR=16						
JNU				S	**Sb**	**23 56 34.4**	**-1.9**
	0.9nm,0.3s,baz=184,slow=16,SNR=3.6						
JNU				LR	LR	23 57 28.6	
	comp=Z,131nm,21.8s,baz=114,slow=42						
KSRS	**Korea Array**	**8.43**	**352**	LR	LR	23 59 34.5	
	comp=Z,37nm,21.9s,baz=180,slow=36						
JHJ	**Hachijo jima 2**	**9.72**	**63**	LR	LR	00 00 31.0	
	comp=Z,59nm,18.9s,baz=124,slow=36						
SONM	**Songino Array**	**25.83**	**323**	P	**P**	**00 00 03.3**	**+0.3**
	0.9nm,0.7s,baz=137,slow=10,SNR=5.6						
MKAR	**Makanchi Array**	**40.50**	**309**	P	**P**	**00 02 10.7**	**+0.3**
	0.5nm,0.7s,baz=100,slow=8.3,SNR=5.6						
WRA	**Warramunga Arr**	**48.98**	**174**	P	**P**	**00 03 19.2**	**+1.0**
	0.8nm,0.6s,baz=354,slow=8.3,SNR=3.3						
ASAR	**Alice Springs**	**52.63**	**175**	P	P	00 03 49.5	+3.8
	0.2nm,0.5s,baz=3.1,slow=8.5,SNR=6.9						
YKA	**Yellowknife Ar**	**75.48**	**26**	P	**P**	**00 06 15.6**	**+0.3**
	0.2nm,0.7s,baz=302,slow=5.5,SNR=4.0						

IDC 08 23:59:12.8±5.4, 29.°42S×178.°88W, h0km, mb3.5/2, mb1 3.8/2, mb1mx3.6/28, mbtmp3.5/2, Error ellipse: s-maj=256.1km s-min=83.9km az=165.0, Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**42.41**	**266**	P	P	00 07 08.8	-0.5
	0.3nm,0.4s,baz=102,slow=7.6,SNR=5.3						
WRA	**Warramunga Arr**	**43.30**	**272**	P	P	00 07 16.9	+0.3
	0.3nm,0.5s,baz=112,slow=8.0,SNR=5.3						
FINES	**FINESS Array B**	**143.96**	**340**	PKP	PKPdf	00 18 48.7	-0.8
	1.4nm,1.0s,baz=46,slow=4.0,SNR=2.9						

*NIED **09** 00:00:00, 36.°80N×140.°60E, h5km, Mw3.9 Best double couple: M₀6.92000×10^14 NP1:φs14.00000°, δ18.00000°, λ-109.00000°. NP2:φs214.00000°, δ73.00000°, λ-84.00000°.*
*IDC **09** 00:00:57.3±0.6, 36.°81N×140.°52E, h0km, mb3.8/14, mb1 4.0/15, mb1mx3.8/38, mbtmp3.7/15, ML3.2/1, Error ellipse: s-maj=17.3km s-min=15.6km az=143.0*
*ISCJB **09** 00:00:58.5±0.5, 36.°79N±0.°03×140.°62E±0.°05, h19km±3km, mb3.9/18, Error ellipse: s-maj=6.9km s-min=4.4km az=27.2*
*JMA **09** 00:00:58.9, 36.°81N×140.°58E, h5km±1km, M3.8*
JMA Felt II J1.
*NEIC **09** 00:01:04.2±0.9, 36.°78N×140.°36E, h51km±8km, mb4.1/3, Error ellipse: s-maj=8.9km s-min=6.9km az=134.0*
ISC 09 00:00:58.9±1.0, 36.°82N±0.°03×140.°51E±0.°04, h8km±7km, n38, σ0°94/40, mb4.0/18, 3C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.21**	**167**	⇑P	**Pg**	**00 01 02.9**	**-0.3**
JHO				S	**Sg**	**00 01 05.8**	**-0.2**
ONAJ	**Iwakimizuishiy**	**0.36**	**39**	P	**Pg**	**00 01 05.3**	**-0.8**
ONAJ				eS	**Sg**	**00 01 10.8**	**-0.1**
JSB	**Shiboa**	**0.50**	**288**	⇑P	**Pb**	**00 01 10.3**	**+0.4**
JSB				S	**Sb**	**00 01 18.3**	**+0.9**
JFK	**Kawauchi**	**0.62**	**28**	P	**Pg**	**00 01 10.2**	**-0.7**
JFK				S	**Sg**	**00 01 18.8**	**-0.2**
JYT	**Yasato**	**0.64**	**204**	P	**Pg**	**00 01 11.4**	**+0.1**
JYT				S	**Sg**	**00 01 20.2**	**+0.6**
JFT	**Otama**	**0.71**	**349**	⇑P	**Pb**	**00 01 13.1**	**-0.5**
JFT				S	**Sb**	**00 01 23.3**	**-0.3**
MJAR	**Matsushiro Arr**	**1.87**	**262**	Pn	**Pb**	**00 01 32.5**	**-0.8**
	40nm,0.3s,baz=88,slow=15,SNR=92						
MJAR				Sn	**Sb**	**00 01 57.3**	**+0.4**
	68nm,0.3s,baz=77,slow=29,SNR=19						
MAT	**Matsushiro**	**1.87**	**262**	P	**Pb**	**00 01 32.8**	**-0.6**
MAT				S	**Sg**	**00 01 58.6**	**-0.5**
ERM	**Erimo**	**5.58**	**21**	ePn	**Pn**	**00 02 25.6**	**+3.4**
KSRS	**Korea Array**	**10.07**	**277**	Pn	**Pn**	**00 03 24.3**	**+0.4**
	0.2nm,0.3s,baz=104,slow=14,SNR=3.0						
KSAR	**Wonju Array Be**	**10.10**	**277**	Pn	**Pn**	**00 03 24.3**	**0.0**
MDJ	**Mudanjiang**	**11.36**	**317**	ePn	**Pn**	**00 03 43.3**	**+1.8**
GUMO	**Guam**	**23.46**	**169**	P	**P**	**00 06 08.8**	**-0.1**
	64nm,0.4s,baz=84,slow=5.4,SNR=3.8						
GUMO	**Guam**	**23.46**	**169**	eP	**P**	**00 06 09.2**	**+0.3**
ENH	**Enshi**	**26.59**	**265**	eP	**P**	**00 06 36.5**	**-1.3**
	3.6nm,0.5s						
SONM	**Songino Array**	**27.31**	**305**	P	**P**	**00 06 43.8**	**-0.3**
	0.6nm,0.6s,baz=92,slow=6.8,SNR=6.0						
H11N2	**WAKE ISLAND Hy**	**28.67**	**119**	T	T	00 36 40.6	
	baz=312,slow=75,SNR=97						
H11N1	**WAKE ISLAND Hy**	**28.67**	**119**	T	T	00 36 41.1	
	baz=312,slow=75,SNR=188						
H11N3	**WAKE ISLAND Hy**	**28.68**	**119**	T	T	00 36 41.0	
	baz=312,slow=75,SNR=123						
H11S1	**WAKE ISLAND Hy**	**29.36**	**121**	T	T	00 37 30.1	
	baz=314,slow=76,SNR=1166						
H11S3	**WAKE ISLAND Hy**	**29.36**	**121**	T	T	00 37 30.1	
	baz=314,slow=76,SNR=1074						
H11S2	**WAKE ISLAND Hy**	**29.37**	**121**	T	T	00 37 31.2	
	baz=314,slow=76,SNR=677						
ZALV	**Zalesovo Beam**	**41.53**	**313**	P	**P**	**00 08 45.6**	**-1.0**
	1.1nm,0.6s,baz=92,slow=6.6,SNR=5.0						
MKAR	**Makanchi Array**	**43.62**	**302**	P	**P**	**00 09 02.9**	**-0.8**
	0.2nm,0.6s,baz=85,slow=11,SNR=4.4						
KURK	**Kurchatov**	**45.50**	**308**	eP	**P**	**00 09 18.1**	**-0.5**
	2.1nm,0.7s						
COLA	**College**	**49.65**	**32**	eP	**P**	**00 09 51.4**	**+0.8**
	1.1nm,0.5s						
ILAR	**Eielson Array**	**50.06**	**32**	P	**P**	**00 09 53.8**	**-0.1**
	0.7nm,0.7s,baz=268,slow=6.4,SNR=11						
INK	**Inuvik**	**54.91**	**27**	P	**P**	**00 10 29.9**	**+0.3**
	0.3nm,0.4s,baz=302,slow=6.8,SNR=5.5						
WRA	**Warramunga Arr**	**56.75**	**187**	P	**P**	**00 10 41.8**	**-1.7**
	0.8nm,0.4s,baz=3.7,slow=7.4,SNR=13						
ASAR	**Alice Springs**	**60.48**	**187**	P	**P**	**00 11 09.2**	**-0.2**
	1.1nm,0.9s,baz=9.4,slow=6.6,SNR=8.5						
ARCES	**ARCESS Array B**	**63.94**	**339**	P	**P**	**00 11 30.4**	**-1.7**
	4.6nm,0.9s,baz=34,slow=9.0,SNR=3.6						
YKA	**Yellowknife Ar**	**64.36**	**30**	P	**P**	**00 11 34.6**	**-0.2**
	0.4nm,0.8s,baz=300,slow=6.2,SNR=6.0						
FINES	**FINESS Array B**	**68.67**	**332**	P	**P**	**00 12 01.6**	**-0.9**
	0.8nm,0.7s,baz=51,slow=11,SNR=3.1						
NVAR	**Mina Array Bea**	**75.69**	**53**	Pn	**P**	**00 12 45.9**	**+0.7**
	0.9nm,0.7s,baz=298,slow=7.7,SNR=4.0						
PDAR	**Pinedale Array**	**78.33**	**45**	P	**P**	**00 12 59.7**	**-0.3**
	0.4nm,0.6s,baz=318,slow=2.0,SNR=5.0						
BRTR	**Keskin Array B**	**78.45**	**311**	P	**P**	**00 13 00.5**	**-0.1**
	0.1nm,0.3s,baz=50,slow=4.9,SNR=3.0						
TXAR	**Lajitas Array**	**90.82**	**52**	P	**P**	**00 14 03.6**	**+0.4**
	0.4nm,0.6s,baz=305,slow=3.0,SNR=8.6						
LPAZ	**La Paz**	**147.42**	**59**	PKPbc	**PKPdf**	**00 20 43.0**	**+0.8**
	0.7nm,0.5s,baz=353,slow=2.5,SNR=4.6						

*NIED **09** 00:05:00, 36.°60N×142.°00E, h26km, Mw3.8 Best double couple: M₀6.20000×10^14 NP1:φs222.00000°, δ21.00000°, λ109.00000°. NP2:φs22.00000°, δ70.00000°, λ83.00000°.*
*IDC **09** 00:05:40.9±1.4, 36.°57N×142.°32E, h0km, mb3.8/7, mb1 3.8/11, mb1mx3.6/37, mbtmp3.8/11, ML3.9/2, MS3.1/2, Ms1 3.1/2, ms1mx2.6/39, Error ellipse: s-maj=42.2km s-min=18.1km az=67.0*
*ISCJB **09** 00:05:42.0±0.6, 36.°50N±0.°05×142.°16E±0.°07, h19km, mb3.9/10, Error ellipse: s-maj=8.3km s-min=6.2km az=152.6*
*NEIC **09** 00:05:42.5±3.4, 36.°54N×142.°28E, h10km±22km, mb4.3/3, Error ellipse: s-maj=12.9km s-min=8.4km az=80.0*
*JMA **09** 00:05:45.2±0.3, 36.°64N×142.°02E, h37km, M3.9*
ISC 09 00:05:43.7±0.8, 36.°52N±0.°05×142.°06E±0.°07, h19km, n30, σ1°77/34, mb3.9/10, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**1.17**	**300**	P	**Pn**	**00 06 04.0**	**-1.1**
JHO	**Hitachi**	**1.20**	**275**	P	**Pn**	**00 06 05.2**	**-0.3**
JHO				eS	**Sb**	**00 06 19.6**	**-1.4**
JFK	**Kawauchi**	**1.27**	**312**	P	**Pn**	**00 06 05.2**	**-1.3**
JMM	**Marumori**	**1.69**	**324**	P	**Pn**	**00 06 11.4**	**-0.7**
JMM				eS	**Sn**	**00 06 30.9**	**-2.3**
JFT	**Otama**	**1.70**	**306**	P	**Pn**	**00 06 12.6**	**-1.8**
JFT				eS	**Sn**	**00 06 33.4**	**-0.3**
JIO	**Ouri**	**2.02**	**344**	P	**Pn**	**00 06 16.2**	**-0.4**
JFY	**Yanaizu**	**2.08**	**296**	P	**Pb**	**00 06 18.7**	**-2.2**
JAG	**Ashikaga**	**2.10**	**268**	P	**Pn**	**00 06 18.8**	**+1.0**
JOU	**Okura**	**2.15**	**329**	P	**Pn**	**00 06 18.9**	**+0.3**
JRY	**Ryogami san**	**2.60**	**260**	P	**Pn**	**00 06 25.6**	**+0.9**
JYK	**Kaneyama**	**2.75**	**331**	P	**Pn**	**00 06 27.5**	**+0.7**
MJAR	**Matsushiro Arr**	**3.10**	**272**	Pn	**Pn**	**00 06 33.8**	**+2.2**
	13nm,0.3s,baz=99,slow=9.5,SNR=106						
MJAR				LR	LR	00 07 58.5	
	comp=Z,205nm,18.0s,baz=110,slow=42						
MAT	**Matsushiro**	**3.10**	**272**	P	**Pn**	**00 06 33.6**	**+2.0**
MAT				S	**Sb**	**00 07 13.7**	**-2.0**
JHJ	**Hachijo jima 2**	**3.87**	**210**	Sn	**Sn**	**00 07 24.1**	**-2.9**
	32nm,0.3s,baz=52,slow=20,SNR=4.6						
ERM	**Erimo**	**5.56**	**8**	ePn	**Pn**	**00 07 04.7**	**-0.6**
CBIJ	**Chichi jima**	**9.39**	**179**	Pn	**Pn**	**00 07 58.0**	**0.0**
CBIJ				Sn	**Sn**	**00 09 38.8**	**-4.3**
JCJ	**Chichijima**	**9.39**	**179**	Pn	**Pn**	**00 07 58.0**	**0.0**
	1.2nm,0.3s,baz=41,slow=20,SNR=2.9						
JCJ				Sn	**Sn**	**00 09 38.8**	**-4.3**
	3.7nm,0.3s,baz=25,slow=17,SNR=3.1						
USRK	**Ussuriysk Ar.**	**10.85**	**318**	Pn	**Pn**	**00 08 18.0**	**+0.1**
	0.1nm,0.3s,baz=142,slow=14,SNR=2.5						
KSRS	**Korea Array**	**11.35**	**279**	Pn	Pn	00 08 28.0	+3.3
	baz=89,slow=15,SNR=2.9						
KSRS				LR	LR	00 12 48.3	
	comp=Z,92nm,18.2s,baz=80,slow=37						
KSAR	**Wonju Array Be**	**11.38**	**279**	Pn	Pn	00 08 28.0	+2.9
ENH	**Enshi**	**27.81**	**267**	eP	**P**	**00 11 33.7**	**+1.9**
	1.9nm,0.3s						
SONM	**Songino Array**	**28.50**	**305**	P	**P**	**00 11 39.4**	**+1.6**
	3.2nm,0.8s,baz=107,slow=8.8,SNR=24						
ZALV	**Zalesovo Beam**	**42.65**	**313**	P	**P**	**00 13 39.2**	**+0.6**
	1.1nm,0.5s,baz=102,slow=6.5,SNR=7.6						
MKAR	**Makanchi Array**	**44.83**	**303**	P	**P**	**00 13 57.4**	**+1.0**
	1.1nm,0.7s,baz=88,slow=9.3,SNR=12						
KURK	**Kurchatov**	**46.66**	**309**	eP	**P**	**00 14 11.6**	**+0.8**
	2.2nm,0.6s						
EKS2	**Erkin-Say**	**51.69**	**299**	eP	**P**	**00 14 51.2**	**+1.7**
	0.8nm,0.5s						
WRA	**Warramunga Arr**	**56.62**	**189**	P	**P**	**00 15 27.4**	**+1.9**
	0.2nm,0.4s,baz=6.0,slow=7.5,SNR=5.4						
ASAR	**Alice Springs**	**60.35**	**189**	P	**P**	**00 15 51.2**	**-0.2**
	0.3nm,0.8s,baz=8.9,slow=6.4,SNR=3.1						
NOA	**NORSAR Array B**	**74.86**	**338**	P	**P**	**00 17 23.7**	**+1.0**
	0.8nm,0.8s,baz=39,slow=5.8,SNR=3.4						
AKASG	**Malin Array Be**	**75.02**	**323**	P	**P**	**00 17 24.8**	**+1.0**
	0.9nm,0.5s,baz=47,slow=5.9,SNR=4.3						

*CSEM **09** 00:09:20.2±0.4, 28.°05N×51.°22E, h2km, ML3.2, Error ellipse: s-maj=11.6km s-min=4.7km az=70.0*
*OMAN **09** 00:09:26.1, 28.°24N×51.°27E, h27km*
*TEH **09** 00:09:26.1, 28.°24N×51.°27E, h27km, ML3.2*
*DSN **09** 00:09:33.7±0.2, 27.°66N×52.°19E, h10km, ML3.1, Error ellipse: s-maj=9.6km s-min=4.5km az=7.0*
ISC 09 00:09:21.5±2.4, 27.°92N±0.°08×50.°9E±0.°1, h35km, n33, σ0°94/35, Persian Gulf

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IKAZ	**Kazeroun**	**2.01**	**23**	ePn	**Pn**	**00 09 52.7**	**-0.6**
IKAZ				eAMB	AMB	00 10 24.3	
	comp=Z,2μm,0.2s						
IKAZ	**Kazeroun**	**2.01**	**23**	ePn	**Pn**	**00 09 52.7**	**-0.6**
ISRV	**Sarvestan**	**2.40**	**52**	ePn	**Pn**	**00 09 57.6**	**-1.1**
ISRV				eSg	**Sn**	**00 10 28.3**	**+1.2**
ISRV				eAMB	AMB	00 10 41.4	
	comp=Z,2μm,0.4s						
ISRV	**Sarvestan**	**2.40**	**52**	ePn	**Pn**	**00 09 57.6**	**-1.1**
ISRV				eSg	**Sn**	**00 10 28.3**	**+1.2**
IRAM	**Ramesheh**	**4.07**	**18**	ePn	**Pn**	**00 10 21.0**	**-0.5**
IRAM				eAMB	AMB	00 10 35.1	
	comp=N,164nm,0.2s						
IRAM	**Ramesheh**	**4.07**	**18**	ePn	**Pn**	**00 10 21.0**	**-0.5**
ISAD	**Sadrabad**	**4.64**	**30**	ePn	**Pn**	**00 10 28.9**	**-0.5**
ISAD				eAMB	AMB	00 10 30.1	
	comp=Z,291nm,0.1s						
ISAD	**Sadrabad**	**4.64**	**30**	ePn	**Pn**	**00 10 28.9**	**-0.5**
IMEH	**Mehriz**	**4.71**	**42**	ePn	**Pn**	**00 10 29.9**	**-0.4**
IMEH				eAMB	AMB	00 10 30.6	
	comp=Z,1μm,0.2s						
IMEH	**Mehriz**	**4.71**	**42**	ePn	**Pn**	**00 10 29.9**	**-0.4**
IPIR	**Pirpir**	**4.74**	**360**	ePn	**Pn**	**00 10 32.0**	**+1.1**
IPIR				eAMB	AMB	00 10 33.9	
	comp=Z,102nm,0.1s						
IPIR	**Pirpir**	**4.74**	**360**	ePn	**Pn**	**00 10 32.0**	**+1.1**
IZEF	**Zefreh**	**5.10**	**13**	ePn	**Pn**	**00 10 34.7**	**-1.0**
IZEF				eAMB	AMB	00 10 37.0	
	comp=Z,130nm,0.1s						
IZEF	**Zefreh**	**5.10**	**13**	ePn	**Pn**	**00 10 34.7**	**-1.0**
NAZ	**Nazwa, Dubai**	**5.15**	**124**	P	**Pn**	**00 10 37.1**	**+1.0**
NAZ	**Nazwa, Dubai**	**5.15**	**124**	P	**Pn**	**00 10 37.1**	**+1.0**
NAZ	**Nazwa, Dubai**	**5.15**	**124**	P	**Pn**	**00 10 37.2**	**+1.1**
BANOM	**Banah**	**5.19**	**111**	*i* P	**Pn**	**00 10 35.7**	**-1.0**
	SNR=28						
BANOM				S	Sn	00 11 24.2	-11
BANOM	**Banah**	**5.19**	**111**	Pn	**Pn**	**00 10 35.7**	**-1.0**
	SNR=28						
BANOM				S	Sn	00 11 24.2	-11
BANOM	**Banah**	**5.19**	**111**	P	**Pn**	**00 10 35.7**	**-1.0**
	SNR=28						
BANOM	**Banah**	**5.19**	**111**	Pn	**Pn**	**00 10 35.7**	**-1.0**
	SNR=28						
ICHK	**Chekchek**	**5.25**	**34**	ePn	**Pn**	**00 10 36.4**	**-1.4**
ICHK				eAMB	AMB	00 10 37.0	
	comp=Z,299nm,0.1s						
ICHK	**Chekchek**	**5.25**	**34**	ePn	**Pn**	**00 10 36.4**	**-1.4**
IKLH	**Kolahrood**	**5.41**	**6**	ePn	**Pn**	**00 10 39.6**	**-0.3**
IKLH				eAMB	AMB	00 10 41.7	
	comp=Z,92nm,0.1s						
IKLH	**Kolahrood**	**5.41**	**6**	ePn	**Pn**	**00 10 39.6**	**-0.3**
IBAF	**Bafgh**	**5.44**	**47**	ePn	**Pn**	**00 10 38.7**	**-1.5**
IBAF				eAMB	AMB	00 10 40.0	
	comp=Z,207nm,0.1s						
IBAF	**Bafgh**	**5.44**	**47**	ePn	**Pn**	**00 10 38.7**	**-1.5**
HATD	**Hatta, Dubai**	**5.59**	**122**	P	**Pn**	**00 10 42.3**	**+0.1**
HATD	**Hatta, Dubai**	**5.59**	**122**	P	**Pn**	**00 10 42.3**	**+0.1**
ASHO	**Ashiyiah**	**5.62**	**124**	*i* P	**Pn**	**00 10 42.7**	**+0.1**
	SNR=12						
ASHO	**Ashiyiah**	**5.62**	**124**	P	**Pn**	**00 10 42.7**	**+0.1**
	SNR=12						
ASHO	**Ashiyiah**	**5.62**	**124**	P	**Pn**	**00 10 42.7**	**+0.1**
	SNR=12						
ASHO	**Ashiyiah**	**5.62**	**124**	Pn	**Pn**	**00 10 42.7**	**+0.1**
	SNR=12						

*CSEM **09** 00:21:03.5±0.2, 38.°87N×27.°93E, h2km, MD2.6, Error ellipse: s-maj=4.5km s-min=4.0km az=23.0*
*DDA **09** 00:21:03.8, 38.°91N×27.°92E, h7km, Md2.6*
ISC 09 00:21:03.7±1.3, 38.°89N±0.°03×27.°94E±0.°03, h4km±15km, n26, σ0°47/26, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKHS	**Akhisar**	**0.10**	**267**	P	**Pg**	**00 21 05.7**	**0.0**
AKHS	**Akhisar**	**0.10**	**267**	*i* P	**Pg**	**00 21 05.7**	**0.0**
MANT	**Manisa**	**0.62**	**129**	P	**Pg**	**00 21 16.1**	**+0.4**
MANT	**Manisa**	**0.62**	**129**	*i* P	**Pg**	**00 21 16.1**	**+0.4**
DEMI	**Demirci**	**0.63**	**75**	P	**Pg**	**00 21 15.5**	**-0.2**
DEMI	**Demirci**	**0.63**	**75**	*i* P	**Pg**	**00 21 15.5**	**-0.2**
KULA	**Kula-Manisa**	**0.67**	**123**	ePG	**Pg**	**00 21 15.7**	**-0.9**
KULA	**Kula-Manisa**	**0.67**	**123**	ePg	**Pg**	**00 21 15.7**	**-0.9**
BALB	**Balikesir**	**0.76**	**356**	ePG	**Pg**	**00 21 18.5**	**+0.3**
BALB	**Balikesir**	**0.76**	**356**	ePg	**Pg**	**00 21 18.5**	**+0.3**
DKL	**Dikili**	**0.83**	**283**	ePG	**Pg**	**00 21 19.3**	**-0.2**

σ1°60/37, **Dodecanese Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FETY	**Fethiye**	**0.39**	**47**	*e*PG	**Pb**	**00 25 58.9**	**-1.5**
FETY				*e*SG	**Sb**	**00 26 03.7**	**-2.8**
FETY	**Fethiye**	**0.39**	**47**	*e*Pg	**Pb**	**00 25 58.9**	**-1.5**
FETY				*e*Sg	**Sb**	**00 26 03.7**	**-2.8**
DALY	**Dalyan (Mu¨la**	**0.45**	**352**	*e*PG	**Pb**	**00 25 59.9**	**-1.4**
DALY	**Dalyan (Mu¨la**	**0.45**	**352**	*e*Pg	**Pb**	**00 25 59.9**	**-1.4**
TURN	**Turunc**	**0.51**	**348**	*i* P	**Pn**	**00 26 03.9**	**+1.3**
AKAS	**Kas**	**0.72**	**101**	P	**Pb**	**00 26 07.2**	**+1.5**
AKAS	**Kas**	**0.72**	**101**	*i* P	**Pb**	**00 26 07.2**	**+1.5**
YER	**Yerkesik**	**0.84**	**335**	*e*PG	**Pn**	**00 26 06.3**	**-0.9**
YER				*e*SG	**Sn**	**00 26 19.6**	**+1.0**
YER	**Yerkesik**	**0.84**	**335**	*e*Pg	**Pn**	**00 26 06.3**	**-0.9**
YER				*e*Sg	**Sn**	**00 26 19.6**	**+1.0**
ELL	**Elmali**	**1.02**	**68**	*e*PG	**Pn**	**00 26 09.8**	**+0.1**
ELL	**Elmali**	**1.02**	**68**	*e*Pg	**Pn**	**00 26 09.8**	**+0.1**
GOLH	**Golhisar**	**1.09**	**37**	P	**Pb**	**00 26 12.3**	**+0.4**
GOLH	**Golhisar**	**1.09**	**37**	*i* P	**Pb**	**00 26 12.3**	**+0.4**
BDRM	**Kayabasi**	**1.25**	**304**	P	**Pb**	**00 26 17.2**	**+2.7**
BDRM	**Kayabasi**	**1.25**	**304**	*i* P	**Pb**	**00 26 17.2**	**+2.7**
NIS1	**Nisyros Isl.**	**1.27**	**281**	*e*PN	**Pn**	**00 26 12.2**	**-0.9**
NIS1	**Nisyros Isl.**	**1.27**	**281**	*e*Pn	**Pn**	**00 26 12.2**	**-0.9**
BODT	**Bodrum**	**1.33**	**302**	*e*PN	**Pn**	**00 26 13.8**	**-0.1**
BODT	**Bodrum**	**1.33**	**302**	*e*Pn	**Pn**	**00 26 13.8**	**-0.1**
DNZL	**Cakiroluk**	**1.34**	**11**	P	**Pb**	**00 26 17.6**	**+1.4**
DNZL	**Cakiroluk**	**1.34**	**11**	*i* P	**Pb**	**00 26 17.6**	**+1.4**
KORT	**Korkueli**	**1.45**	**64**	P	**Pb**	**00 26 21.0**	**+3.1**
KORT	**Korkueli**	**1.45**	**64**	*i* P	**Pb**	**00 26 21.0**	**+3.1**
AYDN	**Tasoluk**	**1.46**	**332**	P	**Pb**	**00 26 19.8**	**+1.7**
AYDN	**Tasoluk**	**1.46**	**332**	*i* P	**Pb**	**00 26 19.8**	**+1.7**
KARP	**Karpathos**	**1.52**	**238**	*e*PN	**Pn**	**00 26 14.5**	**-1.9**
KARP	**Karpathos**	**1.52**	**238**	*e*Pn	**Pn**	**00 26 14.5**	**-1.9**
AYDB	**Zeytinkoy-Aydi**	**1.71**	**337**	*e*PN	**Pn**	**00 26 19.9**	**+0.7**
AYDB	**Zeytinkoy-Aydi**	**1.71**	**337**	*e*Pn	**Pn**	**00 26 19.9**	**+0.7**
KHAL	**Karahalli**	**2.09**	**17**	P	**Pb**	**00 26 28.9**	**+0.1**
KHAL	**Karahalli**	**2.09**	**17**	*i* P	**Pb**	**00 26 28.9**	**+0.1**
SUTC	**Sutluce-Ispart**	**2.13**	**58**	*e*PN	**Pn**	**00 26 25.1**	**+0.2**
SUTC	**Sutluce-Ispart**	**2.13**	**58**	*e*Pn	**Pn**	**00 26 25.1**	**+0.2**

NIED ***09*** *00:41:00,36°.90N×141°.60E,h5km,Mw3.4 Best double couple: M₀1.61000×10¹⁴ NP1:φs.31.00000°,δ43.00000°, λ-101.00000°. NP2:φs.226.00000°,δ48.00000°, λ-80.00000°.*
IDC ***09*** *00:41:13.8±1.3,36°.79N×141°.70E,h0km,mb3.4/5, mb1 3.6/6,mb1mx3.4/32,mbtmp3.3/6,ML3.0/1,Error ellipse: s-maj=32.5km s-min=28.8km az=152.0*
ISCJB ***09*** *00:41:14.4±1.3,36°.94N±0°.05×141°.63E±0°.06,h15km±7km, mb3.4/5,Error ellipse: s-maj=10.1km s-min=6.7km az=42.8*
JMA ***09*** *00:41:15.3±0.1,36°.92N×141°.58E,h30km±2km,M3.7*
JMA Felt I J1.

ISC 09 00:41:15.1±2.1,36°.97N±0°.06×141°.57E±0°.07,h9km±12km, n21,σ1°17/23,mb3.5/5,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.63**	**282**	P	**Pg**	**00 41 28.0**	**+0.7**
ONAJ				*e*S	**Sb**	**00 41 37.0**	**-0.4**
JFK	**Kawauchi**	**0.68**	**305**	P	**Pg**	**00 41 28.8**	**+0.5**
JHO	**Hitachi**	**0.88**	**246**	P	**Pb**	**00 41 31.1**	**-1.5**
JHO				S	**Sb**	**00 41 42.5**	**-2.0**
JMM	**Marumori**	**1.09**	**325**	P	**Pb**	**00 41 35.1**	**-1.0**
JFT	**Otama**	**1.13**	**299**	P	**Pb**	**00 41 36.3**	**-0.5**
JFT				S	**Sb**	**00 41 50.9**	**-0.6**
JIO	**Ouri**	**1.49**	**353**	P	**Pn**	**00 41 41.2**	**-0.9**
JIO				S	**Sn**	**00 41 59.6**	**-2.0**
JFY	**Yanaizu**	**1.55**	**287**	P	**Pn**	**00 41 42.8**	**-0.2**
JFY				S	**Sb**	**00 42 02.9**	**-0.9**
JOU	**Okura**	**1.57**	**333**	P	**Pn**	**00 41 43.3**	**+0.2**
JOU				S	**Sn**	**00 42 03.6**	**0.0**
MJAR	**Matsushiro Arr**	**2.73**	**262**	Pn	**Pn**	**00 41 59.5**	**+0.3**
	2.1nm,0.3s,baz=88,slow=15,SNR=9.2						
MJAR				Sn	**Sn**	**00 42 31.7**	**-0.7**
	3.0nm,0.3s,baz=325,slow=29,SNR=4.6						
MAT	**Matsushiro**	**2.74**	**262**	P	**Pn**	**00 41 59.9**	**+0.7**
MAT				S	**Sn**	**00 42 33.1**	**+0.7**
H11N2	**WAKE ISLAND Hy 28.01**	**121**		T	T	01 16 19.4	
	baz=314,slow=75,SNR=65						
H11N1	**WAKE ISLAND Hy 28.02**	**121**		T	T	01 16 17.0	
	baz=314,slow=75,SNR=49						
H11N3	**WAKE ISLAND Hy 28.02**	**121**		T	T	01 16 19.8	
	baz=314,slow=75,SNR=58						
H11S1	**WAKE ISLAND Hy 28.72**	**123**		T	T	01 17 10.4	
	baz=315,slow=76,SNR=28						
H11S3	**WAKE ISLAND Hy 28.72**	**123**		T	T	01 17 12.6	
	baz=315,slow=76,SNR=29						
H11S2	**WAKE ISLAND Hy 28.73**	**123**		T	T	01 17 12.6	
	baz=315,slow=76,SNR=17						
ZALV	**Zalesovo Beam**	**42.05**	**312**	P	**P**	**00 49 07.6**	**+0.8**
	0.5nm,0.5s,baz=111,slow=7.9,SNR=2.9						
MKAR	**Makanchi Array**	**44.26**	**302**	P	**P**	**00 49 27.4**	**+2.6**
	0.2nm,0.7s,baz=72,slow=9.2,SNR=2.7						
ILAR	**Eielson Array**	**49.48**	**32**	P	**P**	**00 50 05.7**	**+0.3**
	0.4nm,0.7s,baz=274,slow=6.5,SNR=4.6						
WRA	**Warramunga Arr**	**57.02**	**188**	P	**P**	**00 51 00.0**	**-1.3**
	0.3nm,0.6s,baz=2.2,slow=7.8,SNR=5.5						
TXAR	**Lajitas Array**	**90.06**	**52**	P	**P**	**00 54 16.7**	**+1.0**
	0.1nm,0.5s,baz=289,slow=2.8,SNR=2.4						

ISCJB ***09*** *00:58:22.4±0.3,30°.65S±0°.02×68°.78W±0°.04,h119km±4km, mb3.3/3,Error ellipse: s-maj=5.0km s-min=3.9km az=2.1*
SJA ***09*** *00:58:23.0±1.1,30°.64S×68°.71W,h109km±6km,ML3.8, MW3.9*
GUC ***09*** *00:58:24.4±0.5,30°.71S×68°.90W,h116km±21km,ML4.1*
IDC ***09*** *00:58:25.1±1.2,30°.38S×68°.62W,h110km±6km,mb3.2/3, mb1 3.5/6,mb1mx3.4/22,mbtmp3.7/6,Error ellipse: s-maj=36.3km s-min=25.9km az=31.0*

ISC 09 00:58:23.2±0.7,30°.64S±0°.04×68°.78W±0°.04,h109km±6km, n38,σ1°51/61,mb3.3/3,1C,San Juan Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AMOG	**MOGNA**	**0.39**	**141**	*e*P	**Pn**	**00 58 39.9**	**+0.4**
RTLL	**Cerro Villicun**	**0.74**	**160**	*e*P	**Pn**	**00 58 42.3**	**+0.4**
RTLL				*e*S	**Sn**	**00 58 55.9**	**-0.1**
SJA	**San Juan**	**0.91**	**168**	*e*P	**Pn**	**00 58 44.4**	**+0.9**
SJA				*e*S	**Sn**	**00 58 58.9**	**+0.1**
SJA				IAML		00 59 00.7	
	comp=Z,8μm,0.2s						
AVFE	**Valle Fertil**	**1.14**	**91**	*e*P	**Pn**	**00 58 46.3**	**+0.4**
AVFE				*e*S	**Sn**	**00 59 03.1**	**0.0**
AVFE				IAML		00 59 05.1	
	comp=Z,2μm,0.5s						
AGUA	**GUANDACOL**	**1.17**	**12**	*e*P	**Pn**	**00 58 48.0**	**+1.7**
RTCV	**Cerro Valdivia**	**1.24**	**171**	*e*P	**Pn**	**00 58 47.7**	**+0.7**
RTCV				*e*S	**Sn**	**00 59 04.2**	**-0.8**
RTLS	**Leoncito**	**1.24**	**201**	*e*P	**Pn**	**00 58 48.2**	**+0.9**
AUSP	**Uspallata**	**1.67**	**198**	*e*P	**Pn**	**00 58 53.5**	**+1.2**
AUSP				*e*S	**Sn**	**00 59 16.2**	**+1.8**
TLL	**Tololo Astrono**	**1.81**	**284**	*i* P	**Pn**	**00 58 54.6**	**+0.6**
TLL				*i* S	**Sn**	**00 59 17.8**	**+0.2**
TLL				IAML		00 59 22.1	
	comp=N,2μm,0.5s						
ASAL	**Salagasta**	**1.95**	**181**	*e*P	**Pn**	**00 58 56.9**	**+1.2**
ASAL				*e*S	**Sn**	**00 59 21.6**	**+1.2**
VCA	**Vinchina**	**1.96**	**15**	*e*P	**Pn**	**00 58 57.4**	**+1.6**
VCA				*e*S	**Sn**	**00 59 21.9**	**+1.2**
VCA				IAML		00 59 28.1	
	comp=Z,2μm,0.5s						
ACAN	**Cantantal**	**2.12**	**141**	*e*P	**Pn**	**00 58 58.6**	**+0.9**
ACAN				*e*S	**Sn**	**00 59 23.2**	**-1.0**
ACAN				*e*S	**Sn**	**00 59 23.2**	**-1.0**
ARCO	**CERRO ARCO**	**2.20**	**183**	*e*P	**Pn**	**00 59 00.1**	**+1.2**
ARCO				*e*S	**Sn**	**00 59 27.2**	**+0.9**
ARCO				IAML		00 59 33.0	
	comp=Z,355nm,0.3s						
LSCH	**La Serena**	**2.26**	**288**	*i* P	**Pn**	**00 58 59.8**	**+0.4**
LSCH				*i* S	**Sn**	**00 59 26.4**	**-0.8**
LSCH				IAML		00 59 28.7	
	comp=E,2μm,0.2s						
LCO	**Las Campanas**	**2.33**	**314**	*e*P	**Pn**	**00 59 02.0**	**+1.4**
LCO				*e*S	**Sn**	**00 59 31.0**	**+1.7**
LCO	**Las Campanas**	**2.33**	**314**	*i* P	**Pn**	**00 59 01.8**	**+1.1**
LCO				*e*S	**Sn**	**00 59 29.3**	**0.0**
LCO				IAML		00 59 34.7	
	comp=E,636nm,0.2s						
AAGR	**Agrelo**	**2.44**	**181**	*e*P	**Pn**	**00 59 03.0**	**+1.0**
AAGR				*e*S	**Sn**	**00 59 28.6**	**-3.1**
VACH	**Vallenar**	**2.68**	**319**	*i* P	**Pn**	**00 59 06.2**	**+1.1**
VACH				*e*S	**Sn**	**00 59 36.9**	**-0.3**
PEL	**Peldehue**	**2.98**	**213**	*i* P	**Pn**	**00 59 07.7**	**-1.3**
PEL				*i* S	**Sn**	**00 59 41.5**	**-2.7**
PEL				IAML		00 59 48.0	
	comp=E,423nm,0.4s						
ROCH	**El Roble**	**3.01**	**219**	*i* P	**Pn**	**00 59 09.4**	**-0.1**
ROCH				*i* S	**Sn**	**00 59 43.8**	**-1.4**
ROCH				IAML		00 59 54.3	
	comp=N,605nm,0.3s						
ROC1	**El Roble**	**3.01**	**219**	*e*P	**Pn**	**00 59 10.0**	**+0.4**
ROC1				*e*S	**Sn**	**00 59 44.9**	**-0.4**
CLCH	**Cerro Calan**	**3.13**	**208**	*i* P	**Pn**	**00 59 11.0**	**0.0**
CLCH				*i* S	**Sn**	**00 59 46.3**	**-1.6**
CLCH				IAML		00 59 59.9	
	comp=E,541nm,0.8s						
CYA	**Choya**	**3.39**	**51**	*e*P	**Pn**	**00 59 14.0**	**-0.4**
CYA				IAML		00 59 53.4	
	comp=Z,138nm,0.3s						
AHML	**Horco Molle**	**4.88**	**39**	*e*P	**Pn**	**00 59 33.9**	**-0.7**
AHML				*e*S	Sn	01 00 52.9	+23
AHML				IAML		01 01 04.5	
	comp=Z,61nm,0.5s						
FSA	**Cafayete**	**5.14**	**29**	*e*P	**Pn**	**00 59 38.6**	**+0.5**
FSA				IAML		01 01 24.6	
	comp=Z,30nm,0.6s						
AZAP	**Zapla**	**7.19**	**28**	*e*P	**Pn**	**01 00 05.6**	**-0.4**
AZAP				IAML		01 02 24.8	
	comp=Z,10nm,0.5s						
HJA	**Humahuaca**	**7.99**	**23**	IAML		01 01 38.0	
	comp=Z,4.3nm,0.6s						
LVC	**Limon Verde**	**8.00**	**359**	P	**Pn**	**01 00 15.5**	**-1.5**
	comp=Z,218nm,0.3s,baz=192,slow=8.3,SNR=50						
LVC				S	**Sn**	**01 01 39.0**	**-7.0**
	comp=Z,48nm,0.3s,baz=255,slow=12,SNR=1.8						
PLCA	**Paso Flores**	**10.18**	**188**	P	**Pn**	**01 00 44.4**	**-1.9**
	comp=Z,0.3nm,0.3s,baz=28,slow=11,SNR=7.3						
CPUP	**Villa Florida**	**10.94**	**70**	P	**Pn**	**01 00 54.0**	**-2.6**
	comp=Z,0.2nm,0.3s,baz=262,slow=9.7,SNR=4.3						
LPAZ	**La Paz**	**14.30**	**3**	P	**Pn**	**01 01 39.2**	**-2.0**
	comp=Z,0.1nm,0.3s,baz=186,slow=6.0,SNR=2.7						
SIV	**San Ignacio**	**16.19**	**28**	P	**Pn**	**01 02 04.0**	**-0.5**
	comp=Z,0.2nm,0.3s,baz=228,slow=5.8,SNR=5.9						
TXAR	**Lajitas Array**	**68.27**	**327**	P	**P**	**01 09 12.9**	**+0.4**
	comp=Z,0.2nm,0.7s,baz=138,slow=5.6,SNR=3.5						
TORD	**Torodi Ar. Bea**	**80.44**	**69**	P	**P**	**01 10 24.1**	**+0.9**
	comp=Z,0.7nm,0.6s,baz=278,slow=6.4,SNR=21						
TORD				pP	**pP**	**01 10 52.2**	**+1.0**
	comp=Z,1.4nm,0.7s,baz=254,slow=4.7,SNR=8.0						
PDAR	**Pinedale Array**	**82.09**	**331**	P	**P**	**01 10 33.0**	**+1.4**
	comp=Z,0.3nm,0.6s,baz=174,slow=4.4,SNR=3.4						
KURBB	**Kurchatov Arra**	**148.53**	**41**	PKPbc	**PKPbc**	**01 17 57.5**	**+0.6**
	comp=Z,0.8nm,0.8s,baz=295,slow=3.3,SNR=9.2						
ZALV	**Zalesovo Beam**	**149.92**	**32**	PKPbc	**PKPbc**	**01 18 01.2**	**+1.0**
	comp=Z,2.0nm,0.5s,baz=299,slow=3.2,SNR=11						
ZALV				pPKPbc	**pPKPbc**	**01 18 31.1**	**+1.3**
	comp=Z,1.6nm,0.5s,baz=310,slow=3.9,SNR=4.5						
MKAR	**Makanchi Array**	**152.46**	**46**	PKPbc	**PKPbc**	**01 18 06.9**	**+0.5**
	comp=Z,1.0nm,0.7s,baz=276,slow=2.2,SNR=7.8						
MKAR				pPKPbc	**pPKPbc**	**01 18 36.9**	**+0.8**
	comp=Z,0.9nm,0.6s,baz=322,slow=1.3,SNR=4.9						

SJA 09 01:13:21.3±0.6,32°.42S×67°.93W,h126km±4km,ML5.0, MW2.8,Mendoza Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ACAN	**Cantantal**	**0.65**	**78**	*i* P	Pn	01 13 41.5	+0.6
ACAN				*i* S	Sn	01 13 56.3	+0.6
RTCV	**Cerro Valdivia**	**0.75**	**317**	*i* P	Pn	01 13 42.6	+0.8
RTCV				*i* S	Sn	01 13 58.1	+0.9
ASAL	**Salagasta**	**0.78**	**257**	*i* P	Pn	01 13 42.8	+0.8
ASAL				*i* S	Sn	01 13 58.5	+0.9
ARCO	**CERRO ARCO**	**0.94**	**243**	*i* P	Pn	01 13 44.5	+1.1
ARCO				*i* S	Sn	01 14 00.9	+0.6
ARCO				IAML		01 14 03.2	
	comp=Z,11nm,0.3s						
AAGR	**Agrelo**	**1.01**	**228**	*i* P	Pn	01 13 44.8	+0.7
AAGR				*i* S	Sn	01 14 02.2	+0.9
SJA	**San Juan**	**1.03**	**329**	*i* P	Pn	01 13 44.4	+0.2
RTLL	**Cerro Villicun**	**1.18**	**337**	*i* P	Pn	01 13 46.5	+0.8
RTLL				*i* S	Sn	01 14 05.0	+0.9
AUSP	**Uspallata**	**1.25**	**278**	*i* P	Pn	01 13 47.6	+1.0
AUSP				*i* S	Sn	01 14 07.7	+1.9
RTLS	**Leoncito**	**1.31**	**298**	*i* P	Pn	01 13 48.5	+1.2
RTLS				*i* S	Sn	01 14 08.4	+1.3

ISCJB ***09*** *01:17:26.0±0.7,36°.64N±0°.04×26°.85E±0°.04,h129km±8km, Error ellipse: s-maj=7.7km s-min=4.4km az=142.0*
CSEM ***09*** *01:17:26.0±0.3,36°.65N×26°.84E,h131km±4km,MD3.0, Error ellipse: s-maj=4.7km s-min=3.1km az=137.0*
ISK ***09*** *01:17:26.9,36°.71N×26°.92E,h125km,MD3.0*
ATH ***09*** *01:17:28.1,36°.67N×26°.66E,h29km±6km,ML2.4/2,Error ellipse: s-maj=7.1km s-min=1.8km az=29.0*
DDA ***09*** *01:17:33.1,37°.15N×27°.20E,h35km,Md3.0*

ISC 09 01:17:25.5±1.5,36°.68N±0°.04×26°.85E±0°.03,h134km±10km, n60,σ1°20/77,Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BODT	**Bodrum**	**0.53**	**44**	*e*PG	**Pn**	**01 17 45.8**	**+0.6**
BODT				*e*SG	**Sn**	**01 17 59.1**	**-1.0**
BODT	**Bodrum**	**0.53**	**44**	*e*Pg	**Pn**	**01 17 45.8**	**+0.6**
BODT				*e*Sg	**Sn**	**01 17 59.2**	**-1.0**
BDRM	**Kayabasi**	**0.61**	**51**	P	**Pn**	**01 17 46.9**	**+1.2**
BDRM	**Kayabasi**	**0.61**	**51**	*i* P	**Pn**	**01 17 46.9**	**+1.2**
SMG	**Samos**	**1.03**	**359**	P	**Pn**	**01 17 50.5**	**+1.5**
SMG	**Samos**	**1.03**	**359**	P	**Pn**	**01 17 50.5**	**+1.5**
APE	**Apeiranthos**	**1.13**	**291**	*e*PN	**Pn**	**01 17 52.3**	**+2.3**
APE	**Apeiranthos**	**1.13**	**291**	P	**Pn**	**01 17 47.4**	**-2.6**
APE	**Apeiranthos**	**1.13**	**291**	*e*Pn	**Pn**	**01 17 52.3**	**+2.3**
APE	**Apeiranthos**	**1.13**	**291**	P	**Pn**	**01 17 47.4**	**-2.6**
ARG	**Arkhangelos**	**1.13**	**114**	P	**Pn**	**01 17 50.3**	**+0.3**
ARG				S	**Sn**	**01 18 08.8**	**+0.2**
KARP	**Karpathos**	**1.16**	**167**	*e*PN	**Pn**	**01 17 50.8**	**+0.4**
KARP				*e*SN	**Sn**	**01 18 09.6**	**+0.5**
KARP	**Karpathos**	**1.16**	**167**	*e*Pn	**Pn**	**01 17 50.8**	**+0.4**
KARP	**Karpathos**	**1.16**	**167**	P	**Pn**	**01 17 51.2**	**+0.8**
KARP				S	**Sn**	**01 18 07.4**	**-1.8**
KARP				*e*Sn	Sn	01 18 09.6	+0.4
KARP	**Karpathos**	**1.16**	**167**	P	**Pn**	**01 17 51.2**	**+0.8**
KARP				S	**Sn**	**01 18 07.4**	**-1.8**
YER	**Yerkesik**	**1.24**	**68**	*e*PN	**Pn**	**01 17 52.4**	**+1.3**
YER	**Yerkesik**	**1.24**	**68**	*e*Pn	**Pn**	**01 17 52.4**	**+1.3**
AYDN	**Tasoluk**	**1.28**	**40**	P	**Pn**	**01 17 52.9**	**+1.3**
AYDN	**Tasoluk**	**1.28**	**40**	*i* P	**Pn**	**01 17 52.9**	**+1.3**
TURN	**Turunc**	**1.42**	**82**	*i* P	**Pn**	**01 17 50.7**	**-2.3**
DALY	**Dalyan (Mu¨la**	**1.46**	**84**	*e*PN	**Pn**	**01 17 54.3**	**+0.9**
DALY	**Dalyan (Mu¨la**	**1.46**	**84**	*e*Pn	**Pn**	**01 17 54.3**	**+0.9**
AYDB	**Zeytinkoy-Aydi**	**1.51**	**33**	*e*PN	**Pn**	**01 17 55.0**	**+0.9**
AYDB	**Zeytinkoy-Aydi**	**1.51**	**33**	*e*Pn	**Pn**	**01 17 55.0**	**+0.9**
ZEY	**¨zmir**	**1.58**	**350**	*i* P	**Pn**	**01 17 55.7**	**+1.0**
ZKR	**Zakros**	**1.64**	**198**	P	**Pn**	**01 17 57.3**	**+1.8**
ZKR				S	**Sn**	**01 18 18.1**	**-0.3**
ZKR	**Zakros**	**1.64**	**198**	P	**Pn**	**01 17 57.3**	**+1.8**
ZKR				S	**Sn**	**01 18 18.1**	**-0.3**
ZKR				AML	AML	01 18 21.1	
	comp=E,474μm,0.4s						
ZKR				AML	AML	01 18 24.6	
	comp=N,188μm,0.4s						
BLCB	**Balcova**	**1.71**	**5**	*e*PN	**Pn**	**01 17 57.1**	**+0.9**
BLCB	**Balcova**	**1.71**	**5**	*e*Pn	**Pn**	**01 17 57.1**	**+0.9**
NPS	**Neapolis**	**1.73**	**216**	P	**Pn**	**01 17 57.1**	**+0.5**
NPS				S	**Sn**	**01 18 21.5**	**+1.2**
NPS	**Neapolis**	**1.73**	**216**	P	**Pn**	**01 17 57.1**	**+0.5**
NPS				S	**Sn**	**01 18 21.5**	**+1.2**
IZM	**Izmir**	**1.75**	**11**	*e*PN	**Pn**	**01 17 57.2**	**+0.5**
IZM	**Izmir**	**1.75**	**11**	*e*Pn	**Pn**	**01 17 57.2**	**+0.5**
FETY	**Fethiye**	**1.80**	**91**	*e*PN	**Pn**	**01 17 58.2**	**+0.9**
FETY	**Fethiye**	**1.80**	**91**	*e*Pn	**Pn**	**01 17 58.2**	**+0.9**
CHOS	**Chios island**	**1.82**	**340**	*e*PN	**Pn**	**01 17 58.6**	**+1.0**
CHOS	**Chios island**	**1.82**	**340**	P	**Pn**	**01 17 58.2**	**+0.6**
CHOS	**Chios island**	**1.82**	**340**	*e*Pn	**Pn**	**01 17 58.6**	**+1.0**
CHOS	**Chios island**	**1.82**	**340**	P	**Pn**	**01 17 58.2**	**+0.6**
LAST	**Lasithi**	**1.88**	**217**	P	**Pn**	**01 17 58.5**	**+0.1**
LAST				S	**Sn**	**01 18 22.1**	**-1.3**
LAST	**Lasithi**	**1.88**	**217**	P	**Pn**	**01 17 58.5**	**+0.1**
IDI	**Anoyia**	**2.11**	**229**	P	**Pn**	**01 18 00.7**	**-0.4**
IDI				S	**Sn**	**01 18 27.4**	**-1.0**
IDI	**Anoyia**	**2.11**	**229**	P	**Pn**	**01 18 00.7**	**-0.4**
IDI				S	**Sn**	**01 18 27.4**	**-1.0**
IDI				AML	AML	01 18 28.0	
	comp=N,78μm,0.2s						
IDI				AML	AML	01 18 29.7	
	comp=E,110μm,0.3s						
GLHS	**Glhisar (BURDU**	**2.18**	**77**	*e*PN	**Pn**	**01 18 02.9**	**+1.0**
GLHS	**Glhisar (BURDU**	**2.18**	**77**	*e*Pn	**Pn**	**01 18 02.9**	**+1.0**
GOLH	**Golhisar**	**2.24**	**75**	P	**Pn**	**01 18 03.9**	**+1.1**
GOLH	**Golhisar**	**2.24**	**75**	*i* P	**Pn**	**01 18 03.9**	**+1.1**
GOLH				*i* S	**Sn**	**01 18 27.8**	**-3.5**
AKAS	**Kas**	**2.27**	**101**	P	**Pn**	**01 18 04.0**	**+0.9**
AKAS				S	**Sn**	**01 18 30.9**	**-1.0**
AKAS	**Kas**	**2.27**	**101**	*i* P	**Pn**	**01 18 04.0**	**+0.9**
AKAS				*i* S	**Sn**	**01 18 30.9**	**-1.0**
KULA	**Kula-Manisa**	**2.33**	**38**	*e*PN	**Pn**	**01 18 04.6**	**+0.8**
KULA	**Kula-Manisa**	**2.33**	**38**	*e*Pn	**Pn**	**01 18 04.6**	**+0.8**
SIVA	**Sivas**	**2.34**	**226**	P	**Pn**	**01 18 04.5**	**+0.6**
SIVA	**Sivas**	**2.34**	**226**	P	**Pn**	**01 18 04.5**	**+0.6**
ELL	**Elmali**	**2.46**	**87**	*e*PN	**Pn**	**01 18 06.2**	**+0.7**
ELL	**Elmali**	**2.46**	**87**	*e*Pn	**Pn**	**01 18 06.2**	**+0.7**
VAM	**Vamos**	**2.49**	**240**	P	**Pn**	**01 18 05.7**	**-0.1**
VAM				S	**Sn**	**01 18 37.6**	**+0.8**
IMMV	**Iera Moni Meta**	**2.62**	**243**	P	**Pn**	**01 18 07.2**	**-0.3**
IMMV	**Iera Moni Meta**	**2.62**	**243**	P	**Pn**	**01 18 07.2**	**-0.3**
KHAL	**Karahalli**	**2.69**	**50**	P	**Pn**	**01 18 09.3**	**+0.9**
KHAL	**Karahalli**	**2.69**	**50**	*i* P	**Pn**	**01 18 09.3**	**+0.9**
KHAL				*i* S	Sn	01 18 36.6	-4.9

IDC 09 01:46:55.8±3.1,24°.00S×69°.59E,h0km,mb3.9/8, mb1 3.9/8,mb1mx3.7/51,mbtmp3.9/8,Error ellipse: s-maj=108.4km s-min=26.1km az=44.0,Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08S1	**Diego Carcia H**	**16.49**	**10**	T	T	02 07 39.1	
	baz=190,slow=76,SNR=31						
H08S2	**Diego Garcia H**	**16.50**	**10**	T	T	02 07 38.9	
	baz=190,slow=76,SNR=29						
H08S3	**Diego Garcia H**	**16.51**	**10**	T	T	02 07 38.4	
	baz=190,slow=76,SNR=30						
ASAR	**Alice Springs**	**58.34**	**104**	P	P	01 56 53.2	0.0
	0.6nm,0.6s,baz=253,slow=6.0,SNR=6.2						
WRA	**Warramunga Arr**	**59.73**	**100**	P	P	01 57 02.7	-0.1
	0.8nm,0.9s,baz=248,slow=6.7,SNR=3.1						
MKAR	**Makanchi Array**	**71.39**	**9**	P	P	01 58 17.7	+0.1
	1.4nm,0.8s,baz=191,slow=5.8,SNR=10						
BRTR	**Keskin Array B**	**71.73**	**332**	P	P	01 58 20.6	+0.6
	0.6nm,0.9s,baz=179,slow=7.4,SNR=4.0						
AKTO	**Aktyubinsk**	**74.81**	**352**	P	P	01 58 36.9	-0.8
	0.9nm,0.6s,baz=318,slow=2.1,SNR=5.1						
BVAR	**Borovoye Array**	**76.70**	**0**	P	P	01 58 48.6	+0.2
	0.8nm,0.7s,baz=149,slow=6.1,SNR=5.8						
ZALV	**Zalesovo Beam**	**78.73**	**9**	P	P	01 58 59.7	-0.1
	1.7nm,0.7s,baz=196,slow=4.9,SNR=6.4						
SONM	**Songino Array**	**78.78**	**24**	P	P	01 59 00.7	+0.3
	0.7nm,0.7s,baz=208,slow=5.7,SNR=3.4						
YKA	**Yellowkn

ISC 09 02:12:57.5±0.9, 40°44N±0°02×26°23E±0°02, h14km±9km, n27, σ0°37/50, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ENEZ	**Enez**	**0.30 349**		P	**Pb**	**02 13 04.5**	**-0.2**
ENEZ				S	**Sb**	**02 13 09.4**	**-0.2**
ENEZ	**Enez**	**0.30 349**		P	**Pb**	**02 13 04.5**	**-0.2**
ENEZ				S	**Sb**	**02 13 09.4**	**-0.2**
ALN	**Alexandroupoli**	**0.48 343**		P	**Pg**	**02 13 07.3**	**+0.3**
ALN				S	**Sb**	**02 13 14.5**	**-0.1**
ALN	**Alexandroupoli**	**0.48 343**		P	**Pg**	**02 13 07.3**	**+0.3**
ALN				S	**Sg**	**02 13 13.7**	**+0.2**
ALN	**Alexandroupoli**	**0.48 343**		P	**Pb**	**02 13 07.7**	**0.0**
ALN				S	**Sg**	**02 13 13.7**	**+0.2**
ALN				AML	AML	02 13 14.8	
	comp=E,236μm,0.4s						
ALN				AML	AML	02 13 14.8	
	comp=N,166μm,0.2s						
KESN	**Edirne-Kesan**	**0.52**	**41**	P	**Pg**	**02 13 07.8**	**-0.1**
KESN	**Edirne-Kesan**	**0.52**	**41**	*i* P	**Pg**	**02 13 07.8**	**-0.1**
SMTH	**Samothraki Isl**	**0.53 274**		P	**Pg**	**02 13 07.7**	**-0.3**
SMTH				S	**Sg**	**02 13 15.2**	**0.0**
SMTH	**Samothraki Isl**	**0.53 274**		P	**Pg**	**02 13 08.0**	**0.0**
SMTH				S	**Sg**	**02 13 15.2**	**0.0**
SMTH	**Samothraki Isl**	**0.53 274**		P	**Pg**	**02 13 08.0**	**0.0**
SMTH				S	**Sb**	**02 13 16.0**	**-0.2**
SMTH				AML	AML	02 13 16.2	
	comp=N,461μm,0.2s						
SMTH				AML	AML	02 13 16.2	
	comp=E,392μm,0.2s						
BOZC	**Bozcaada**	**0.61 193**		*i* P	**Pg**	**02 13 09.7**	**+0.2**
BOZC				*i* S	**Sb**	**02 13 18.6**	**+0.2**
EZN	**Ezine**	**0.62 173**		P	**Pg**	**02 13 08.8**	**-0.8**
EZN				S	**Sg**	**02 13 17.9**	**+0.2**
EZN	**Ezine**	**0.62 173**		P	**Pg**	**02 13 08.8**	**-0.8**
EZN				S	**Sg**	**02 13 17.9**	**+0.2**
LIA	**Limnos Island**	**0.96 236**		P	**Pb**	**02 13 14.9**	**-1.1**
LIA				S	**Sb**	**02 13 28.5**	**-0.1**
LIA	**Limnos Island**	**0.96 236**		P	**Pb**	**02 13 16.2**	**+0.2**
LIA				S	**Sb**	**02 13 28.5**	**-0.1**
KNL	**Bal¨–kesir**	**1.01**	**99**	*i* P	**Pb**	**02 13 15.4**	**-1.3**
KNL				*i* S	**Sb**	**02 13 29.5**	**-0.3**
AYVA	**Ayvalik**	**1.18 162**		P	**Pg**	**02 13 20.5**	**+0.2**
AYVA				S	**Sn**	**02 13 35.6**	**+0.1**
AYVA	**Ayvalik**	**1.18 162**		*i* P	**Pg**	**02 13 20.5**	**+0.2**
AYVA				*i* S	**Sn**	**02 13 35.6**	**+0.1**
PRK	**Paraskevi**	**1.19 178**		P	**Pn**	**02 13 19.6**	**-0.1**
PRK				S	**Sg**	**02 13 36.4**	**+0.4**
PRK	**Paraskevi**	**1.19 178**		P	**Pn**	**02 13 19.6**	**-0.1**
PRK				S	**Sg**	**02 13 36.2**	**+0.2**
PRK	**Paraskevi**	**1.19 178**		P	**Pg**	**02 13 20.8**	**+0.3**
PRK				S	**Sg**	**02 13 36.2**	**+0.2**
PRK				AML	AML	02 13 37.0	
	comp=E,352μm,0.6s						
PRK				AML	AML	02 13 37.1	
	comp=N,338μm,0.6s						
SIGR	**SIGRI**	**1.26 193**		P	**Pn**	**02 13 20.8**	**+0.2**
SIGR				S	**Sg**	**02 13 38.5**	**+0.4**
SIGR	**SIGRI**	**1.26 193**		P	**Pn**	**02 13 20.8**	**+0.2**
SIGR				S	**Sg**	**02 13 38.5**	**+0.4**
SIGR				AML	AML	02 13 38.7	
	comp=N,326μm,0.6s						
SIGR				AML	AML	02 13 38.9	
	comp=E,195μm,0.3s						
BALY	**Balya**	**1.27 123**		P	**Pb**	**02 13 21.5**	**+0.2**
BALY				S	**Sg**	**02 13 39.1**	**+0.4**
BALY	**Balya**	**1.27 123**		*i* P	**Pb**	**02 13 21.6**	**+0.2**
BALY				*i* S	**Sg**	**02 13 39.1**	**+0.4**
CHOS	**Chios island**	**2.05 184**		P	**Pn**	**02 13 31.9**	**+0.3**
CHOS	**Chios island**	**2.05 184**		P	**Pn**	**02 13 31.9**	**+0.3**

*ISCJB **09** 02:15:34.4±1.1, 11°.98N±0°.06×43°.94E±0°.06, h2km±10km, Error ellipse: s-maj=13.0km s-min=5.3km az=139.6*
*DHMR **09** 02:15:34.8±2.4, 12°.05N×43°.90E, h15km±12km, ML4.0*
*ARO **09** 02:15:38.3, 12°N±5°×4°4E±°, h11km±10km, ML3.4*

ISC 09 02:15:34.8±1.2, 12°06N±0°04×43°89E±0°04, h12km±11km, n19, σ1°44/32, 5C-2D, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OBO	**Obock**	**0.59 262**		*e*P	**Pb**	**02 15 47.7**	**+0.6**
MCAD	**Moucha**	**0.74 244**		*e*P	**Pn**	**02 15 50.4**	**-0.7**
ATA	**Atar**	**0.91 228**		*e*P	**Pn**	**02 15 52.9**	**-0.4**
TDD	**Tadjoura Ara**	**1.00 255**		*e*P	**Pg**	**02 15 54.3**	**+0.2**
ATD	**Arta Tunnel**	**1.15 243**		*e*P	**Pg**	**02 15 57.1**	**+0.1**
ATD				*e*S	**Sg**	**02 16 12.1**	**+0.1**
TRBA	**At Turbah**	**1.18**	**11⇑**	*i*P	**Pg**	**02 15 58.1**	**+0.6**
TRBA				*i* S	**Sn**	**02 16 13.5**	**+0.1**
TRBA	**At Turbah**	**1.18**	**11⇑**	*i*P	**Pg**	**02 15 57.9**	**+0.4**
TRBA				*i* S	**Sg**	**02 16 13.9**	**+1.0**
ADEN	**Aden**	**1.28**	**56⇑**	*i*P	**Pg**	**02 15 59.2**	**-0.2**
ADEN				*i* S	**Sg**	**02 16 16.2**	**+0.1**
ADEN				AML	AML	02 16 23.4	
	comp=N,4μm,0.3s						
ADEN	**Aden**	**1.28**	**56⇑**	*i*P	**Pg**	**02 15 59.3**	**-0.2**
ADEN				*i* S	**Sg**	**02 16 15.9**	**-0.2**
ADEN				AML	AML	02 16 23.4	
	comp=N,4μm,0.3s						
SGH	**Sud-Ghoubbet**	**1.38 243**		*e*P	**Pb**	**02 16 00.8**	**+0.2**
LDLD	**Lac de Lave**	**1.45 251**		*e*P	**Pb**	**02 16 01.4**	**-0.2**
GBR	**Grand-Bara**	**1.67 237**		*e*P	**Pn**	**02 16 04.3**	**+0.5**
UDYN	**Al 'Udayn**	**1.89**	**2⇓**	*i*P	**Pb**	**02 16 08.7**	**-0.7**
UDYN				*i* S	**Sg**	**02 16 35.0**	**-0.8**
UDYN	**Al 'Udayn**	**1.89**	**2⇓**	*i*P	**Pb**	**02 16 08.3**	**-1.0**
UDYN				*i* S	**Sg**	**02 16 35.5**	**-0.3**
BDHA	**Al Bayda'**	**2.50**	**41**	*i* P	**Pn**	**02 16 16.8**	**+1.3**
BDHA				*i* P	**Pb**	**02 16 17.0**	**-2.8**
BDHA				*i* S	**Sb**	**02 16 51.3**	**+0.6**
BDHA				AML	AML	02 16 58.8	
	comp=N,726nm,0.5s						
BDHA	**Al Bayda'**	**2.50**	**41⇑**	*i*P	**Pn**	**02 16 17.4**	**+1.8**
BDHA				*i* S	**Sb**	**02 16 53.0**	**+2.3**
BDHA				AML	AML	02 16 58.8	
	comp=N,726nm,0.5s						
DHBB	**Dhamar BB**	**2.54**	**11**	*i* P	**Pn**	**02 16 17.6**	**+1.5**
DHBB				*i* S	**Sb**	**02 16 52.8**	**+1.0**
HAJJ	**Hajjah**	**3.62 356**		*i* P	**Pn**	**02 16 32.5**	**+1.6**
HAJJ				*i* S	**Sb**	**02 17 19.6**	**-3.4**
HAJJ				AML	AML	02 17 33.7	
	comp=Z,622nm,0.8s						
HAJJ	**Hajjah**	**3.62 356**		*i* P	**Pn**	**02 16 33.2**	**+2.3**
HAJJ				*i* S	**Sb**	**02 17 19.6**	**-3.4**

*NIED **09** 02:19:00, 36°.40N×141°.00E, h41km, Mw3.7 Best double couple: M0 3.68000×10^14 NP1:φ=200.00000°, δ=26.00000°, λ=79.00000°. NP2:φ=32.00000°, δ=65.00000°, λ=95.00000°.*
*IDC **09** 02:19:16.1±1.0, 36°.39N×141°.15E, h0km, mb3.5/8, mb1 3.7/11, mb1mx3.5/54, mbtmp3.6/11, ML3.1/2, MS3.0/2, Ms1 3.0/2, ms1mx2.3/61, Error ellipse: s-maj=23.1km s-min=19.7km az=180.0*
*JMA **09** 02:19:21.9±0.1, 36°.39N×141°.02E, h47km±2km, M3.7*
JMA Felt I J1.

ISC 09 02:19:18.9±1.2, 36°39N±0°04×141°15E±0°06, h19km±4km, n23, σ0°93/31, mb3.5/9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.52 296**		P	**Pn**	**02 19 32.0**	**+0.7**
JHO				*e*S	**Sn**	**02 19 38.7**	**-0.9**
ONAJ	**Iwakimizuishiy**	**0.77 339**		P	**Pn**	**02 19 35.6**	**+0.8**
ONAJ				*e*S	**Sg**	**02 19 44.6**	**+0.3**
JYT	**Yasato**	**0.79 259**		P	**Pn**	**02 19 35.5**	**+0.5**
JYT				*e*S	**Sb**	**02 19 44.5**	**+0.2**
JFK	**Kawauchi**	**1.00 347**		P	**Pg**	**02 19 38.8**	**+0.4**
JFK				*e*S	**Sb**	**02 19 50.5**	**-0.1**
JFT	**Otama**	**1.30 330**		P	**Pg**	**02 19 44.2**	**+0.1**
JFT				*e*S	**Sb**	**02 19 59.5**	**+0.3**
JAG	**Ashikaga**	**1.37 272**		P	**Pn**	**02 19 43.7**	**+0.7**
JAG				*e*S	**Sn**	**02 19 59.5**	**-1.1**
JMM	**Marumori**	**1.50 349**		P	**Pb**	**02 19 46.5**	**+0.3**
JMM				S	**Sn**	**02 20 04.1**	**+0.2**
JFY	**Yanaizu**	**1.54 312**		P	**Pb**	**02 19 46.9**	**0.0**
MJAR	**Matsushiro Arr**	**2.38 275**		Pn	**Pn**	**02 19 58.0**	**+1.2**
	20nm,0.3s,baz=109,slow=9.2,SNR=76						
MJAR				Sn	**Sn**	**02 20 25.2**	**-0.3**
	8.2nm,0.3s,baz=88,slow=7.2,SNR=6.1						
MJAR				LR	LR	02 21 09.0	
	comp=Z,59nm,18.8s,baz=230,slow=48						
MAT	**Matsushiro**	**2.38 275**		P	**Pn**	**02 19 58.8**	**+1.9**
MAT				S	**Sn**	**02 20 27.8**	**+2.3**
JHJ	**Hachijo jima 2**	**3.45 199**		Sn	**Sn**	**02 20 53.0**	**+1.1**
	baz=60,slow=20,SNR=2.4						
JCJ	**Chichijima**	**9.30 174**		Pn	**Pn**	**02 21 30.6**	**-1.4**
USRK	**Ussuriysk Ar.**	**10.48 321**		Pn	**Pn**	**02 21 46.4**	**-1.6**
	0.4nm,0.3s,baz=120,slow=15,SNR=3.4						
SONM	**Songino Array**	**27.98 305**		P	**P**	**02 25 08.0**	**-0.4**
	0.5nm,0.6s,baz=90,slow=7.2,SNR=2.5						
TLY	**Talaya**	**30.60 312**		P	**P**	**02 25 30.4**	**-1.1**
	3.2nm,0.3s,baz=186,slow=18,SNR=3.0						
ZALV	**Zalesovo Beam**	**42.20 313**		P	**P**	**02 27 10.3**	**0.0**
	1.1nm,0.5s,baz=86,slow=5.0,SNR=4.2						
MKAR	**Makanchi Array**	**44.29 303**		P	**P**	**02 27 27.7**	**+0.4**
	0.6nm,0.8s,baz=81,slow=8.9,SNR=3.4						
ILAR	**Eielson Array**	**50.16 32**		P	**P**	**02 28 12.5**	**-0.3**
	0.5nm,0.7s,baz=264,slow=6.2,SNR=4.4						
INK	**Inuvik**	**55.06 27**		P	**P**	**02 28 49.1**	**+0.2**
	0.5nm,0.6s,baz=7.5,slow=5.7,SNR=4.1						
WRA	**Warramunga Arr**	**56.39 188**		P	**P**	**02 28 59.1**	**+0.1**
	0.2nm,0.4s,baz=5.9,slow=7.7,SNR=3.8						
YKA	**Yellowknife Ar**	**64.47 30**		P	**P**	**02 29 54.8**	**+1.0**
	0.2nm,0.7s,baz=302,slow=6.7,SNR=4.1						
PDAR	**Pinedale Array**	**78.27 45**		P	**P**	**02 31 18.2**	**+0.4**
	0.2nm,0.6s,baz=7.4,slow=2.8,SNR=2.7						
GERES	**GERESS Array B**	**83.15 328**		LR	LR	03 10 13.7	
	comp=Z,41nm,18.3s,baz=88,slow=37						

*NIED **09** 02:21:00, 37°.10N×143°.70E, h5km, Mw4.0 Best double couple: M0 1.09000×10^15 NP1:φ=32.00000°, δ=24.00000°, λ=110.00000°. NP2:φ=234.00000°, δ=67.00000°, λ=81.00000°.*
*IDC **09** 02:21:41.1±0.7, 36°.89N×144°.18E, h0km, mb3.9/21, mb1 4.1/25, mb1mx3.9/61, mbtmp3.9/25, ML3.1/4, MS3.1/6, Ms1 3.1/6, ms1mx2.7/58, Error ellipse: s-maj=20.1km s-min=16.9km az=93.0*
*NEIC **09** 02:21:42.9±0.4, 36°.99N×144°.12E, h10km, mb4.2/3, Error ellipse: s-maj=10.3km s-min=7.8km az=101.0*
*ISCJB **09** 02:21:45.4±0.5, 37°.02N±0°.04×143°.80E±0°.04, h33km, mb4.0/23, MS3.2/4, Error ellipse: s-maj=5.7km s-min=4.2km az=162.1*
*JMA **09** 02:21:46.9±0.3, 37°.06N×143°.69E, h36km, M4.3*

ISC 09 02:21:47.1±0.7, 37°07N±0°05×143°95E±0°06, h35km, n57, σ2°01/64, mb4.0/23, MS3.2/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**2.47 278**		P	**Pn**	**02 22 23.1**	**-1.8**
JFK				S	**Sn**	**02 22 50.4**	**-3.5**
JIO	**Ouri**	**2.48 305**		P	**Pn**	**02 22 24.0**	**-0.9**
JIO				S	**Sn**	**02 22 51.2**	**-2.8**
ONAJ	**Iwakimizuishiy**	**2.52 272**		P	**Pn**	**02 22 24.1**	**-1.5**
ONAJ				S	**Sn**	**02 22 51.7**	**-3.4**
JMM	**Marumori**	**2.63 288**		P	**Pn**	**02 22 25.9**	**-1.1**
JMM				S	**Sn**	**02 22 54.4**	**-3.4**
JMK	**Ichinoseki**	**2.86 312**		P	**Pn**	**02 22 29.5**	**-0.6**
JMK				S	**Sn**	**02 23 01.2**	**-2.1**
JFT	**Otama**	**2.92 280**		P	**Pn**	**02 22 31.0**	**+0.1**
JFT				S	**Sn**	**02 23 02.7**	**-2.1**
JOM	**Ohasama**	**3.18 320**		P	**Pn**	**02 22 35.1**	**+0.5**
JOM				S	**Sn**	**02 23 09.3**	**-2.0**
JYK	**Kaneyama**	**3.38 304**		P	**Pn**	**02 22 38.1**	**+0.8**
JYK				S	**Sn**	**02 23 13.7**	**-2.5**
BSO1	**Boso 1**	**3.41 226**		S	**Sn**	**02 23 13.4**	**-2.9**
JAG	**Ashikaga**	**3.67 261**		P	**Pn**	**02 22 39.9**	**-1.4**
JAG				*e*S	**Sn**	**02 23 19.4**	**-3.9**
JRY	**Ryogami san**	**4.20 257**		P	**Pn**	**02 22 46.6**	**-2.0**
JRY				*e*S	**Sn**	**02 23 31.1**	**-5.4**
JOD2	**Odawara 2**	**4.33 247**		*e*S	**Sn**	**02 23 37.4**	**-2.2**
MJAR	**Matsushiro Arr**	**4.64 265**		Pn	**Pn**	**02 22 54.1**	**-0.5**
	7.7nm,0.3s,baz=88,slow=15,SNR=10						
MJAR				Sn	**Sn**	**02 23 45.3**	**-1.9**
	4.0nm,0.3s,baz=100,slow=26,SNR=5.8						
MAJO	**Matsushiro**	**4.64 265**		*e*Pn	**Pn**	**02 22 54.3**	**-0.4**
MAJO				*e*S	Sn	02 23 38.6	-8.7
MAT	**Matsushiro**	**4.64 265**		P	**Pn**	**02 22 54.5**	**-0.1**
MAT				S	**Sn**	**02 23 45.1**	**-2.2**
ERM	**Erimo**	**4.97 353**		*e*Pn	**Pn**	**02 22 57.2**	**-2.0**
ERM				*e*S	**Sn**	**02 23 52.4**	**-3.0**
JHJ	**Hachijo jima 2**	**5.22 222**		Sn	Sn	02 23 52.6	-8.9
	40nm,0.3s,baz=41,slow=20,SNR=4.4						
JKB	**Kayabe**	**5.31 336**		P	**Pn**	**02 23 04.7**	**+0.9**
JKB				S	**Sn**	**02 23 59.7**	**-4.0**
JCH	**Churui**	**5.55 356**		P	**Pn**	**02 23 05.9**	**-1.3**
JCH				*e*S	**Sn**	**02 24 05.0**	**-4.7**
ASAJ	**Asahikawa**	**7.11 352**		Pn	**Pn**	**02 23 26.1**	**-2.5**
	2.0nm,0.3s,baz=89,slow=12,SNR=4.2						
ASAJ				Sn	**Sn**	**02 24 44.9**	**-3.2**
	1.5nm,0.3s,baz=162,slow=19,SNR=2.7						
ASAJ				LR	LR	02 26 40.4	
	comp=Z,64nm,20.0s,baz=79,slow=41						
CBIJ	**Chichi jima**	**10.06 189**		*e*Pn	Pn	02 24 05.4	-3.6
CBIJ				*e*S	Sn	02 25 47.0	-14
JCJ	**Chichijima**	**10.06 189**		Pn	Pn	02 24 02.7	-6.4
	1.1nm,0.3s,baz=85,slow=10,SNR=2.1						
JCJ				Sn	Sn	02 25 46.6	-14
	3.1nm,0.3s,baz=300,slow=20,SNR=3.5						
USRK	**Ussuriysk Ar.**	**11.54 312**		Pn	**Pn**	**02 24 30.6**	**+1.5**
	0.2nm,0.3s,baz=118,slow=14,SNR=3.0						
KLR	**Kul'dur**	**15.04 328**		Pn	**Pn**	**02 25 16.5**	**-0.3**
	0.0nm,0.3s,baz=135,slow=20,SNR=2.6						
KLR				LR	LR	02 30 55.0	
	comp=Z,61nm,20.0s,baz=97,slow=36						
SEY	**Seymchan**	**26.40 9**		P	**P**	**02 27 19.6**	**-0.4**
	2.9nm,0.7s,baz=204,slow=9.7,SNR=8.3						
H11N2	**WAKE ISLAND Hy 26.46 124**			T	T	02 54 15.8	
	baz=312,slow=75,SNR=28						
H11N1	**WAKE ISLAND Hy 26.47 125**			T	T	02 54 18.0	
	baz=312,slow=75,SNR=26						
H11N3	**WAKE ISLAND Hy 26.48 124**			T	T	02 54 19.2	
	baz=312,slow=75,SNR=23						
YAK	**Yakutsk**	**26.52 345**		LR	LR	02 40 18.0	
	comp=Z,23nm,18.4s,baz=90,slow=42						
H11S1	**WAKE ISLAND Hy 27.21 127**			T	T	02 55 14.0	
	baz=314,slow=76,SNR=68						
H11S3	**WAKE ISLAND Hy 27.22 127**			T	T	02 55 14.6	
	baz=314,slow=76,SNR=58						
H11S2	**WAKE ISLAND Hy 27.23 127**			T	T	02 55 15.7	
	baz=314,slow=76,SNR=43						
SONM	**Songino Array**	**29.45 303**		P	**P**	**02 27 49.9**	**+2.4**
	0.6nm,0.5s,baz=102,slow=8.5,SNR=6.2						
SONM				LR	LR	02 39 55.2	
	comp=Z,39nm,18.4s,baz=76,slow=37						
ZALV	**Zalesovo Beam**	**43.39 312**		P	**P**	**02 29 47.2**	**+1.3**
	0.4nm,0.3s,baz=91,slow=5.9,SNR=4.0						
ZALV				PcP	**PcP**	**02 31 34.2**	**+0.3**
	0.9nm,0.4s,baz=63,slow=3.2,SNR=3.8						
NRIK	**Noril'sk**	**44.09 335**		LR	LR	02 49 16.2	
	comp=Z,44nm,18.8s,baz=113,slow=37						
MKAR	**Makanchi Array**	**45.81 303**		P	**P**	**02 30 06.6**	**+1.2**
	0.6nm,0.7s,baz=99,slow=7.5,SNR=4.1						
KURK	**Kurchatov**	**47.50 308**		*e*P	**P**	**02 30 19.1**	**+0.6**
	4.4nm,0.8s						
ILAR	**Eielson Array**	**48.38 32**		P	**P**	**02 30 23.6**	**-1.5**
	0.6nm,0.7s,baz=251,slow=6.7,SNR=7.2						
BVAR	**Borovoye Array**	**52.04 313**		P	**P**	**02 30 52.7**	**-0.3**
	0.5nm,0.7s,baz=62,slow=10.0,SNR=3.3						
BVAR				PcP	**PcP**	**02 32 05.0**	**+0.1**
	0.4nm,0.6s,baz=85,slow=4.6,SNR=3.1						
WRA	**Warramunga Arr**	**57.43 191**		P	**P**	**02 31 30.6**	**-1.7**
	0.7nm,0.3s,baz=10.0,slow=7.0,SNR=5.4						
ARU	**Arti**	**57.67 319**		P	**P**	**02 31 34.6**	**+0.9**
	1.0nm,0.3s,baz=107,slow=19,SNR=2.8						
ABKAR	**Akbulak array**	**59.46 311**		*e*P	**P**	**02 31 46.9**	**+0.7**
	1.5nm,0.8s						
AKTO	**Aktyubinsk**	**60.15 313**		P	**P**	**02 31 51.9**	**+1.0**
	0.9nm,0.5s,baz=64,slow=11,SNR=4.4						
ASAR	**Alice Springs**	**61.15 191**		P	**P**	**02 31 56.5**	**-1.5**
	0.4nm,0.6s,baz=15,slow=10,SNR=5.9						
RES	**Resolute Bay**	**62.05 15**		P	**P**	**02 32 04.2**	**+0.8**
	1.1nm,0.8s,baz=314,slow=7.3,SNR=5.7						
YKA	**Yellowknife Ar**	**62.75 31**		P	**P**	**02 32 07.9**	**-0.4**
	0.5nm,0.9s,baz=296,slow=8.1,SNR=6.7						
ARCES	**ARCESS Array B**	**64.66 340**		P	**P**	**02 32 22.0**	**+1.2**
	3.5nm,0.9s,baz=29,slow=5.8,SNR=3.7						
FINES	**FINESS Array B**	**69.71 333**		P	**P**	**02 32 54.1**	**+1.2**
	3.0nm,0.7s,baz=36,slow=7.1,SNR=11						
KBZ	**Khabaz**	**72.40 312**		P	**P**	**02 33 11.0**	**+1.4**
	3.5nm,0.9s,baz=38,slow=2.4,SNR=8.3						
HFS	**Hagfors**	**74.87 337**		P	**P**	**02 33 25.0**	**+1.3**
	2.1nm,0.5s,baz=57,slow=5.5,SNR=17						
HFS				LR	LR	03 11 22.9	
	comp=Z,31nm,18.1s,baz=42,slow=40						
NB2	**NORSAR Subarra**	**74.92 338**		P	**P**	**02 33 25.2**	**+1.1**
	comp=Z,3.4nm,0.7s,baz=39,slow=5.9						
NOA	**NORSAR Array B**	**74.92 338**		P	**P**	**02 33 25.4**	**+1.3**
	comp=Z,2.9nm,0.8s,baz=39,slow=5.8,SNR=11						
AKASG	**Malin Array Be**	**75.49 323**		P	**P**	**02 33 27.8**	**+0.4**
	comp=Z,0.5nm,0.4s,baz=47,slow=6.1,SNR=6.0						
BRTR	**Keskin Array B**	**80.33 313**		P	**P**	**02 33 56.0**	**+1.3**
	comp=Z,0.8nm,0.9s,baz=68,slow=4.5,SNR=5.5						
GERES	**GERESS Array B**	**83.73 330**		P	**P**	**02 34 12.7**	**+0.3**
	comp=Z,0.3nm,0.4s,baz=25,slow=3.5,SNR=7.8						
TXAR	**Lajitas Array**	**88.47 54**		P	**P**	**02 34 36.5**	**+0.3**
	comp=Z,0.2nm,0.6s,baz=336,slow=2.7,SNR=4.8						
LPAZ	**La Paz**	**144.90 62**		PKP	**PKPbc**	**02 41 21.3**	**+0.4**
	comp=Z,0.4nm,0.4s,baz=37,slow=5.9,SNR=3.4						

*NIED **09** 02:26:00, 36°.90N×141°.60E, h8km, Mw3.9 Best double couple: M0 9.03000×10^14 NP1:φ=208.00000°, δ=40.00000°, λ=89.00000°. NP2:φ=27.00000°, δ=50.00000°, λ=91.00000°.*
*ISCJB **09** 02:26:38.0±1.4, 36°.93N±0°.03×141°.71E±0°.04, h9km±9km, mb3.8/20, Error ellipse: s-maj=5.4km s-min=5.0km az=162.5*
*IDC **09** 02:26:38.4±0.7, 36°.84N×141°.56E, h0km, mb3.8/17, mb1 4.0/19, mb1mx3.8/60, mbtmp3.8/19, ML3.7/2, Error ellipse: s-maj=19.0km s-min=18.5km az=91.0*
*JMA **09** 02:26:41.0±0.1, 36°.96N×141°.54E, h43km±2km, M4.3*
JMA Felt II J1.
*NEIC **09** 02:26:42.8±2.7, 36°.85N×141°.63E, h30km±20km, mb4.0/3, Error ellipse: s-maj=11.1km s-min=10.1km az=102.0*
NEIC Recorded [2 JMA] in Fukushima.

ISC 09 02:26:38.9±1.9, 36°94N±0°04×141°56E±0°06, h3km±11km, n46, σ0°98/49, mb3.9/20, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.63 285**		P	**Pb**	**02 26 53.3**	**+0.7**
ONAJ				*e*S	**Sb**	**02 27 02.0**	**+0.1**
JFK	**Kawauchi**	**0.69 308**		P	**Pb**	**02 26 53.9**	**+0.2**
JFK				*e*S	**Sb**	**02 27 03.0**	**-0.7**
JHO	**Hitachi**	**0.86 248**		P	**Pb**	**02 26 56.6**	**+0.1**
JHO				*e*S	**Sb**	**02 27 08.1**	**-0.4**
JMM	**Marumori**	**1.11 327**		P	**Pg**	**02 27 00.1**	**0.0**
JMM				*e*S	**Sg**	**02 27 14.5**	**0.0**
JFT	**Otama**	**1.14 301**		P	**Pb**	**02 27 01.4**	**+0.2**
JFT				*e*S	**Sg**	**02 27 15.7**	**+0.3**
JIO	**Ouri**	**1.52 354**		P	**Pn**	**02 27 06.2**	**-0.8**
JIO				*e*S	**Sn**	**02 27 24.4**	**-2.9**
JOU	**Okura**	**1.59 334**		P	**Pn**	**02 27 08.2**	**+0.2**
JOU				S	**Sn**	**02 27 28.1**	**-1.0**
JYS	**Shiratake**	**1.75 318**		P	**Pb**	**02 27 11.2**	**-0.4**
JYS				*e*S	**Sn**	**02 27 33.3**	**+0.4**
JAG	**Ashikaga**	**1.77 254**		P	**Pn**	**02 27 10.5**	**0.0**
MJAR	**Matsushiro Arr**	**2.72 263**		Pn	**Pn**	**02 27 24.6**	**+1.1**
	4.4nm,0.3s,baz=84,slow=15,SNR=13						
MJAR				Sn	**Sb**	**02 28 00.5**	**-1.6**
	8.2nm,0.3s,baz=104,slow=12,SNR=5.8						
MAJO	**Matsushiro**	**2.72 263**		*e*Pn	**Pn**	**02 27 25.1**	**+1.5**
MAJO				*e*S	**Sb**	**02 28 01.1**	**-1.1**
MAT	**Matsushiro**	**2.72 263**		P	**Pn**	**02 27 24.9**	**+1.3**
MAT				*e*S	**Sb**	**02 28 00.7**	**-1.4**
ERM	**Erimo**	**5.21**	**13**	*e*Pn	**Pn**	**02 27 58.5**	**+0.7**
ERM				*e*S	**Sn**	**02 28 59.4**	**+0.9**
CBIJ	**Chichi jima**	**9.83 177**		Pn	**Pn**	**02 29 00.1**	**-1.0**
CBIJ				Sn	Sn	02 30 42.3	-10
JCJ	**Chichijima**	**9.83 177**		Pn	**Pn**	**02 29 00.1**	**-1.0**
	1.9nm,0.3s,baz=288,slow=20,SNR=2.6						
JCJ				Sn	Sn	02 30 42.3	-10
	2.2nm,0.3s,baz=287,slow=19,SNR=2.6						
USRK	**Ussuriysk Ar.**	**10.27 318**		Pn	Pn	02 29 12.5	+5.4
	0.1nm,0.3s,baz=159,slow=14,SNR=4.3						
KSRS	**Korea Array**	**10.89 277**		Pn	Pn	02 29 20.4	+4.7
	0.1nm,0.3s,baz=84,slow=12,SNR=2.8						
KSAR	**Wonju Array Be**	**10.92 277**		Pn	Pn

WRAB Tennant Creek 49.84 257 eP P 02 43 07.7 -1.5
3.2nm,1.2s
WRA Warramunga Arr 49.84 257 P P 02 43 08.2 -1.1
0.8nm,0.5s,baz=90,slow=6.9,SNR=5.6
ASAR Alice Springs 50.05 252 P P 02 43 09.7 -1.1
7.5nm,0.6s,baz=89,slow=8.2,SNR=149
DAV Davao City (W) 64.78 286 LR LR 03 12 43.9
comp=Z,825nm,18.0s,baz=56,slow=36
KAPI Kappang 66.56 271 P P 02 45 05.9 -0.4
1.9nm,0.5s,baz=52,slow=17,SNR=3.0
QSPA South Pole Qui 73.94 180 eP P 02 45 50.5 -0.2
8.1nm,0.8s
NVAR Mina Array Bea 74.74 42 P P 02 45 58.3 +2.4
1.3nm,0.8s,baz=230,slow=9.8,SNR=5.8
NVAR LR LR 03 11 34.7
comp=Z,31nm,20.2s,baz=254,slow=30
TXAR Lajitas Array 80.87 56 P P 02 46 29.9 -0.2
0.4nm,1.0s,baz=213,slow=6.5,SNR=3.1
PDAR Pinedale Array 82.68 42 P P 02 46 41.0 +1.6
1.4nm,0.7s,baz=212,slow=2.9,SNR=15
PDAR LR LR 03 19 16.1
comp=Z,32nm,18.3s,baz=256,slow=33
ILAR Eielson Array 83.10 11 P P 02 46 42.0 +1.1
0.4nm,0.6s,baz=207,slow=5.8,SNR=4.1
YKA Yellowknife Ar 90.67 23 P P 02 47 19.6 +1.8
0.4nm,0.9s,baz=242,slow=5.4,SNR=6.7
FINES FINESS Array B 132.66 348 PKP PKPdf 02 53 29.3 -0.6
2.6nm,1.1s,baz=5.7,slow=5.6,SNR=3.3
BRG Berggiesshubel 144.84 352 ePKP PKPdf 02 53 55.0 +2.6
2.7nm,0.9s
DPC Dobruska-Polom 144.98 349 ePKP PKPdf 02 53 55.0 +2.2
DPC ex x 02 54 05.5
KRLC Kraliky 145.16 349 ePKP PKPdf 02 53 55.2 +2.1
KRLC ex x 02 54 05.8
PRU Pruhonice 145.62 351 ePKP PKPab 02 53 56.7 +2.4
PRU ex x 02 54 07.3
GOPC GO Pecny, Ondr 145.66 351 ePKP PKPab 02 53 56.8 +2.3
GOPC ex x 02 54 07.4
KHC Kasperske Hory 146.59 352 ex x 02 54 10.5
BRTR Keskin Array B 146.80 320 PKPbc PKPab 02 54 00.0 +0.6
2.5nm,0.8s,baz=112,slow=2.2,SNR=20
GERES GERESS Array B 146.86 352 PKPbc PKPab 02 53 59.8 +0.6
0.5nm,0.5s,baz=3.8,slow=4.0,SNR=6.9

IDC 09 02:41:12.5±4.1, 6°.98S×128°.14E, h366km±79km, mb3.1/1, mb1 3.2/5, mb1mx2.9/32, mbtmp4.0/5, Error ellipse: s-maj=81.6km s-min=47.4km az=102.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BATI	**Baumata**	5.46	234	P	Pn	02 42 38.5	+0.5
	baz=90,slow=20						
BATI				S	S	02 43 46.7	-0.6
	baz=30,slow=20						
FITZ	**Fitzroy Crossi**	11.32	192	P	Pn	02 43 46.1	-0.1
	0.1nm,0.3s,baz=5.6,slow=13,SNR=4.4						
WRA	**Warramunga Arr**	14.23	156	P	P	02 44 18.2	+0.2
	0.7nm,0.3s,baz=335,slow=11,SNR=8.6						
WRA				S	S	02 46 50.7	-1.0
	0.2nm,0.3s,baz=342,slow=20,SNR=4.6						
ASAR	**Alice Springs**	17.50	162	P	P	02 44 54.0	+0.6
	0.5nm,0.3s,baz=334,slow=7.9,SNR=22						
ASAR				S	S	02 47 57.1	+0.7
	0.1nm,0.3s,baz=346,slow=21,SNR=7.0						
STKA	**Stephens Creek**	27.78	155	P	P	02 46 28.5	-0.7
	1.4nm,0.9s,baz=350,slow=11,SNR=3.0						

*IDC **09** 02:55:30.3±8.4, 36°.13N×142°.49E, h0km, mb3.7/3, mb1 3.7/4, mb1mx3.3/53, mbtmp3.7/4, ML3.4/1, MS3.0/3, Ms1 3.0/3, ms1mx2.4/43, Error ellipse: s-maj=165.4km s-min=33.6km az=159.0*
*ISCJB **09** 02:55:36.4±1.1, 36°.66N±0°.07×142°.07E±0°.09, h19km, mb3.5/3, Error ellipse: s-maj=10.8km s-min=9.5km az=35.2*
*JMA **09** 02:55:36.7±0.4, 36°.60N×142°.07E, h51km, M3.4*
ISC 09 02:55:38.5±1.6, 36°.68N±0°.07×141°.86E±0°.09, h19km, n19, σ1§04/20, mb3.6/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	0.95	297	P	Pg	02 55 57.1	0.0
JHO	**Hitachi**	1.04	267	P	Pb	02 55 57.1	-0.9
JFK	**Kawauchi**	1.05	311	P	Pb	02 55 57.2	-0.9
JFK				eS	Sn	02 56 12.2	-0.2
JMM	**Marumori**	1.46	325	P	Pn	02 56 03.4	-0.5
JFT	**Otama**	1.48	305	P	Pb	02 56 04.8	-0.7
JFT				eS	Sb	02 56 23.9	-0.1
JFY	**Yanaizu**	1.88	294	P	Pb	02 56 11.7	-0.5
JAG	**Ashikaga**	1.96	263	P	Pn	02 56 11.1	+0.4
JMK	**Ichinoseki**	2.33	348	P	Pn	02 56 16.9	+1.1
JRY	**Ryogami san**	2.48	256	P	Pn	02 56 17.8	-0.1
JYK	**Kaneyama**	2.54	332	P	Pn	02 56 19.9	+1.2
JOD2	**Odawara 2**	2.66	239	P	Pn	02 56 20.6	+0.2
MJAR	**Matsushiro Arr**	2.94	268	Pn	Pn	02 56 25.8	+1.5
	3.6nm,0.3s,baz=98,slow=9.5,SNR=31						
MJAR				Sn	Sb	02 57 07.4	+1.3
	1.8nm,0.3s,baz=113,slow=15,SNR=4.8						
MAT	**Matsushiro**	2.94	269	P	Pn	02 56 26.3	+2.0
MAT				eS	Sb	02 57 04.6	-1.5
JCJ	**Chichijima**	9.56	178	LR	LR	03 03 45.7	
	comp=Z,30nm,18.3s,baz=192,slow=55						
USRK	**Ussuriysk Ar.**	10.63	318	LR	LR	03 02 08.5	
	comp=Z,182nm,19.1s,baz=132,slow=35						
KSRS	**Korea Array**	11.17	278	LR	LR	03 03 13.9	
	comp=Z,87nm,18.2s,baz=102,slow=39						
SEY	**Seymchan**	27.07	11	P	P	03 01 18.2	-1.4
	0.8nm,0.4s,baz=165,slow=20,SNR=4.5						
SONM	**Songino Array**	28.29	304	P	P	03 01 31.6	+0.8
	0.7nm,0.6s,baz=111,slow=7.9,SNR=3.7						
MKAR	**Makanchi Array**	44.62	302	P	P	03 03 50.0	+0.4
	0.2nm,0.4s,baz=92,slow=7.2,SNR=3.3						

*ISCJB **09** 02:56:01.5±0.6, 39°.51N±0°.04×143°.50E±0°.06, h11km, mb3.8/13, Error ellipse: s-maj=7.8km s-min=5.3km az=32.3*
*IDC **09** 02:56:02.1±1.1, 39°.56N×143°.32E, h0km, mb3.8/10, mb1 3.9/13, mb1mx3.7/52, mbtmp3.9/13, ML3.6/2, MS2.8/1, Ms1 2.8/1, ms1mx2.3/47, Error ellipse: s-maj=28.7km s-min=20.4km az=114.0*
*JMA **09** 02:56:02.8±0.3, 39°.54N×143°.45E, h16km, M4.3*
*NEIC **09** 02:56:06.2±2.6, 39°.59N×143°.30E, h26km±17km, mb4.2/3, Error ellipse: s-maj=14.7km s-min=8.0km az=120.0*
ISC 09 02:56:03.1±0.8, 39°.47N±0°.05×143°.33E±0°.08, h11km, n42, σ1§53/42, mb3.9/13, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	1.18	276	P	Pb	02 56 25.6	+0.1
JTH	**Tanohata**	1.23	293	P	Pn	02 56 26.1	-0.1
JTH				eS	Sb	02 56 42.1	-0.1
OFUJ	**Ofunato**	1.35	254	P	Pn	02 56 28.4	+0.5
JOM	**Ohasama**	1.58	271	P	Pn	02 56 32.1	+1.0
JKZ	**Kuzumaki**	1.63	289	P	Pn	02 56 32.5	+0.7
JANG	**Nango**	1.67	304	P	Pn	02 56 31.8	-0.5
JMK	**Ichinoseki**	1.72	253	P	Pn	02 56 34.1	+1.1
JRG	**Rokugo**	2.09	269	P	Pn	02 56 39.7	+1.6
JTM	**Tenmabayashi**	2.18	308	P	Pn	02 56 39.9	+0.6
JAH	**Hinai**	2.20	290	P	Pn	02 56 40.6	+1.0
JYK	**Kaneyama**	2.38	258	P	Pn	02 56 43.7	+1.7
ERM	**Erimo**	2.55	357	ePn	Pn	02 56 43.2	-1.2
ERM				eS	Sn	02 57 13.6	-1.9
JEM	**Erimo**	2.55	357	P	Pn	02 56 44.4	0.0
JOT	**Ohata**	2.59	318	P	Pn	02 56 45.1	+0.2
JNBK	**Urakawa-nobuka**	2.84	351	P	Pn	02 56 48.9	+0.4
JKB	**Kayabe**	2.98	325	P	Pn	02 56 52.7	+2.3
JCH	**Churui**	3.15	0	P	Pn	02 56 51.9	-0.7
JCH				S	Sn	02 57 27.0	-3.1
ASAJ	**Asahikawa**	4.68	353	Pn	Pn	02 57 14.1	+0.3
	2.2nm,0.3s,baz=223,slow=12,SNR=3.8						
ASAJ				Sn	Sn	02 58 05.2	-2.8
	2.3nm,0.3s,baz=189,slow=19,SNR=3.0						
ASAJ	**Asahikawa**	4.68	353	ePn	Pn	02 57 14.0	+0.3
ASAJ				eS	Sb	02 58 24.8	+3.3
MJAR	**Matsushiro Arr**	4.99	236	Pn	Pn	02 57 20.3	+2.3
	2.7nm,0.3s,baz=41,slow=11,SNR=9.3						
MJAR				LR	LR	02 59 30.6	
	comp=Z,93nm,19.6s,baz=15,slow=42						
JHJ	**Hachijo jima 2**	6.95	205	Pn	Pn	02 57 45.9	+1.0
	baz=48,slow=20,SNR=1.8						
JHJ				Sn	Sn	02 58 59.1	-4.9
	17nm,0.3s,baz=73,slow=19,SNR=4.2						
USRK	**Ussuriysk Ar.**	9.70	303	Pn	Pn	02 58 25.4	+2.9
	0.3nm,0.3s,baz=116,slow=12,SNR=5.3						
SONM	**Songino Array**	27.79	300	P	P	03 01 51.6	-0.5
	1.3nm,0.8s,baz=95,slow=8.2,SNR=6.1						
H11N2	**WAKE ISLAND Hy**	28.25	127	T	T	03 31 28.8	
	baz=318,slow=75,SNR=16						
H11N1	**WAKE ISLAND Hy**	28.26	127	T	T	03 31 29.9	
	baz=318,slow=75,SNR=12						
H11N3	**WAKE ISLAND Hy**	28.27	127	T	T	03 31 29.9	
	baz=318,slow=75,SNR=16						
H11S1	**WAKE ISLAND Hy**	29.07	129	T	T	03 32 37.2	
	baz=320						
H11S3	**WAKE ISLAND Hy**	29.07	129	T	T	03 32 36.1	
	baz=320						
H11S2	**WAKE ISLAND Hy**	29.08	129	T	T	03 32 36.1	
	baz=320						
ZALV	**Zalesovo Beam**	41.44	310	P	P	03 03 50.0	+0.4
	1.4nm,0.5s,baz=97,slow=8.1,SNR=5.7						
MKAR	**Makanchi Array**	44.15	300	P	P	03 04 12.1	+0.4
	1.4nm,0.6s,baz=82,slow=9.4,SNR=8.8						
ILAR	**Eielson Array**	46.63	34	P	P	03 04 31.8	+0.7
	0.4nm,0.8s,baz=277,slow=6.0,SNR=5.6						
TKM2	**Tokmak 2**	49.84	297	eP	P	03 04 57.2	+0.8
	2.3nm,0.7s						
ARU	**Arti**	55.56	318	P	P	03 05 38.0	-0.2
	1.8nm,0.5s,baz=336,slow=4.6,SNR=4.1						
ABKAR	**Akbulak array**	57.55	310	eP	P	03 05 52.2	-0.3
	0.9nm,0.3s						
WRA	**Warramunga Arr**	59.69	190	P	P	03 06 08.8	+1.2
	0.4nm,0.7s,baz=6.2,slow=7.2,SNR=3.1						
RES	**Resolute Bay**	59.87	15	eP	P	03 06 08.3	+0.1
	0.7nm,0.7s						
YKA	**Yellowknife Ar**	60.95	31	P	P	03 06 15.7	0.0
	0.1nm,0.6s,baz=306,slow=6.7,SNR=3.9						
FINES	**FINESS Array B**	67.36	332	P	P	03 06 57.6	-0.3
	0.8nm,0.7s,baz=62,slow=5.2,SNR=5.3						
HFS	**Hagfors**	72.49	336	P	P	03 07 29.5	0.0
	0.9nm,0.4s,baz=38,slow=7.5,SNR=11						
NB2	**NORSAR Subarra**	72.52	338	P	P	03 07 29.8	+0.1
	comp=Z,0.6nm,0.7s,baz=40,slow=5.9						
NOA	**NORSAR Array B**	72.52	338	P	P	03 07 29.5	-0.2
	comp=Z,1.3nm,0.9s,baz=39,slow=5.8,SNR=4.5						

*JMA **09** 02:58:09.8±0.1, 30°.22N×139°.09E, h468km, M3.9*
*ISCJB **09** 02:58:11.2±0.4, 30°.16N±0°.05×138°.81E±0°.08, h421km, mb3.4/8, Error ellipse: s-maj=9.6km s-min=5.8km az=157.5*
*IDC **09** 02:58:12.0±0.8, 30°.23N×138°.93E, h423km±9km, mb3.2/8, mb1 3.3/13, mb1mx2.9/51, mbtmp4.0/13, Error ellipse: s-maj=24.5km s-min=9.8km az=84.0*
ISC 09 02:58:11.9±0.7, 30°.21N±0°.06×138°.9E±0°.1, h421km, n27, σ1§29/32, mb3.5/8, Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHCJ	**Hachijojimakas**	2.96	15	P	P	02 59 18.0	+1.8
JHJ	**Hachijo jima 2**	3.00	14	P	P	02 59 18.4	+1.8
	62nm,0.3s,baz=107,slow=23,SNR=9.3						
JHJ				S	S	03 00 09.3	+0.1
	18nm,0.3s,baz=281,slow=16,SNR=2.5						
JHJ2	**Mitsune**	3.00	15	P	P	02 59 18.3	+1.8
JHJ2				eS	S	03 00 10.4	+1.3
TK01	**Tokai 1**	3.72	343	P	P	02 59 25.2	+3.0
TTO1	**TONANKAI O.B.S**	3.85	333	P	P	02 59 26.4	+3.0
CBIJ	**Chichi jima**	4.24	136	P	P	02 59 27.9	+0.5
CBIJ				S	S	03 00 28.0	-0.9
JCJ	**Chichijima**	4.24	136	P	P	02 59 28.4	+1.0
	baz=294,slow=20						
JCJ				S	S	03 00 28.6	-0.3
	baz=270,slow=20						
JWZ	**Kozaga**	4.28	322	P	P	02 59 29.5	+1.8
JIE	**Ise**	4.57	337	P	P	02 59 32.9	+2.5
BSO1	**Boso 1**	4.77	21	P	P	02 59 33.1	+1.4
BSO1				eS	S	03 00 36.3	-0.8
JOD2	**Odawara 2**	5.04	2	P	P	02 59 35.6	+0.5
JRY	**Ryogami san**	5.79	0	P	P	02 59 43.2	+0.4
JTO	**Tosashimizu**	5.84	298	P	P	02 59 43.6	+0.3
MJAR	**Matsushiro Arr**	6.34	355	P	P	02 59 47.7	-0.9
	2.5nm,0.3s,baz=166,slow=12,SNR=5.6						
MAT	**Matsushiro**	6.34	355	P	P	02 59 49.2	+0.6
JHS	**Saijyo**	6.83	316	P	P	02 59 54.5	+0.1
JSJ	**Shimokoshiki**	8.03	283	P	P	03 00 07.7	+0.3
KSRS	**Korea Array**	11.64	311	P	P	03 00 47.1	+0.1
	0.4nm,0.3s,baz=117,slow=11,SNR=4.8						
USRK	**Ussuriysk Ar.**	15.00	340	P	P	03 01 23.1	-0.5
	0.4nm,0.3s,baz=156,slow=7.8,SNR=7.1						
WRA	**Warramunga Arr**	50.05	186	P	P	03 06 26.2	-0.1
	2.7nm,0.5s,baz=1.6,slow=7.7,SNR=15						
ASAR	**Alice Springs**	53.78	186	P	P	03 06 53.7	+0.3
	0.9nm,0.5s,baz=3.2,slow=6.5,SNR=18						
ILAR	**Eielson Array**	56.41	30	P	P	03 07 11.1	-0.3
	0.5nm,0.8s,baz=255,slow=5.0,SNR=6.2						
INK	**Inuvik**	61.42	25	P	P	03 07 44.2	-1.0
	0.2nm,0.3s,baz=274,slow=3.6,SNR=4.1						
STKA	**Stephens Creek**	61.80	177	P	P	03 07 47.6	-0.5
	0.8nm,0.4s,baz=314,slow=14,SNR=3.1						
ARCES	**ARCESS Array B**	69.65	340	P	P	03 08 36.7	-0.4
	3.8nm,0.9s,baz=64,slow=8.2,SNR=3.9						
YKA	**Yellowknife Ar**	70.78	28	P	P	03 08 44.0	+0.1
	0.5nm,0.7s,baz=297,slow=6.1,SNR=7.7						
FINES	**FINESS Array B**	73.88	333	P	P	03 09 01.1	-0.9
	1.1nm,0.8s,baz=25,slow=6.9,SNR=5.0						

*DDA **09** 03:01:22.8, 40°.86N×29°.31E, h16km, MI3.6*
*ISCJB **09** 03:01:23.2±0.3, 40°.90N±0°.01×29°.29E±0°.02, h8km±2km, Error ellipse: s-maj=2.4km s-min=2.2km az=9.3*
*CSEM **09** 03:01:23.9±0.1, 40°.86N×29°.29E, h5km, ML3.6, Error ellipse: s-maj=1.8km s-min=1.6km az=27.0*
*ISK **09** 03:01:23.2, 40°.85N×29°.29E, h5km, ML3.4*
*IDC **09** 03:01:24.0±2.1, 41°.00N×29°.59E, h0km, mb3.0/1, mb1 3.3/5, mb1mx3.1/50, mbtmp3.3/5, ML3.2/4, Error ellipse: s-maj=44.7km s-min=8.8km az=45.0*
ISC 09 03:01:24.0±0.8, 40°.87N±0°.02×29°.29E±0°.01, h11km±6km, n179, σ1§05/233, 13C-24D, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BUY	**Buyukada**	0.13	264	P	Pg	03 01 26.9	-0.2
BUY				S	Sg	03 01 29.0	-0.4
BUY	**Buyukada**	0.13	264	↓iP	Pg	03 01 26.9	-0.2
BUY				i S	Sg	03 01 29.0	-0.4
HRT	**Hereke**	0.29	99	ePG	Pg	03 01 29.5	-0.3
HRT				eSG	Sg	03 01 33.6	-0.2
HRT	**Hereke**	0.29	99	ePg	Pg	03 01 29.5	-0.3
HRT				eSg	Sg	03 01 33.6	-0.2
SILT	**Sile**	0.39	43	ePG	Pg	03 01 31.7	0.0
SILT				eSG	Sg	03 01 37.5	+0.6
SILT	**Sile**	0.39	43	ePg	Pg	03 01 31.7	0.0
SILT				eSg	Sg	03 01 37.5	+0.6
KLYT	**Kilyos**	0.43	334	ePG	Pg	03 01 32.4	-0.1
KLYT	**Kilyos**	0.43	334	ePg	Pg	03 01 32.4	-0.1
GEMT	**Gemlik**	0.44	190	ePG	Pg	03 01 32.0	-0.6
GEMT				eSG	Sg	03 01 37.6	-0.7
GEMT	**Gemlik**	0.44	190	ePg	Pg	03 01 32.0	-0.6
GEMT				eSg	Sg	03 01 37.6	-0.7
ARMT	**Armutlu**	0.44	228	ePG	Pg	03 01 32.2	-0.5
ARMT				eSG	Sg	03 01 38.6	+0.1
ARMT	**Armutlu**	0.44	228	ePg	Pg	03 01 32.2	-0.5
ARMT				eSg	Sg	03 01 38.6	+0.1
BGKT	**Bogazkoy**	0.50	309	ePG	Pg	03 01 33.7	-0.1
BGKT	**Bogazkoy**	0.50	309	ePg	Pg	03 01 33.7	-0.1
IZI	**Iznik**	0.55	165	ePG	Pg	03 01 34.3	-0.3
IZI	**Iznik**	0.55	165	ePg	Pg	03 01 34.3	-0.3
ADVT	**Abdulvahap**	0.55	142	ePG	Pg	03 01 34.1	-0.5
ADVT	**Abdulvahap**	0.55	142	ePg	Pg	03 01 34.1	-0.5
MDNY	**Mudanya-Bursa**	0.58	212	ePG	Pg	03 01 34.8	-0.6
MDNY	**Mudanya-Bursa**	0.58	212	ePg	Pg	03 01 34.8	-0.6
IGD	**Bursa**	0.60	187	↑iP	Pg	03 01 34.3	-1.4
IGD				i S	Sg	03 01 42.3	-1.4
CTKS	**Kestanelik-??a**	0.70	302	ePG	Pg	03 01 37.0	-0.5
CTKS	**Kestanelik-??a**	0.70	302	ePg	Pg	03 01 37.0	-0.5
KAND	**Kocaeli-Kandir**	0.72	71	P	Pg	03 01 37.2	-0.6
KAND				S	Sg	03 01 46.6	-0.6
KAND	**Kocaeli-Kandir**	0.72	71	↑iP	Pg	03 01 37.2	-0.6
KAND				i S	Sg	03 01 46.6	-0.6
ULDT	**Uludag**	0.73	189	P	Pg	03 01 37.7	-0.5
ULDT				S	Sg	03 01 46.6	-1.1
ULDT	**Uludag**	0.73	189	↑iP	Pg	03 01 37.6	-0.5
ULDT				i S	Sg	03 01 46.6	-1.1
CAVI	**Cavuskoy**	0.78	148	ePG	Pg	03 01 38.5	-0.6
CAVI	**Cavuskoy**	0.78	148	ePg	Pg	03 01 38.5	-0.6
SPNC	**Sapanca-Adapaz**	0.79	103	ePG	Pg	03 01 39.1	-0.2
SPNC	**Sapanca-Adapaz**	0.79	103	ePg	Pg	03 01 39.1	-0.2
SLVT	**Silivri**	0.90	294	P	Pg	03 01 40.8	-0.4
SLVT				S	Sg	03 01 53.0	+0.1
KCTX	**Karacabey (Bur**	0.93	230	ePG	Pg	03 01 41.3	-0.6
KCTX	**Karacabey (Bur**	0.93	230	ePg	Pg	03 01 41.3	-0.6
CTYL	**Yalikoy Yolu**	0.97	309	ePG	Pg	03 01 42.2	-0.5
CTYL	**Yalikoy Yolu**	0.97	309	ePg	Pg	03 01 42.2	-0.5
GULT	**Gulveren**	1.03	115	ePG	Pg	03 01 43.4	-0.3
GULT	**Gulveren**	1.03	115	ePg	Pg	03 01 43.4	-0.3
AUKUT	**KUTAHYA**	1.06	148	i P	Pn	03 01 52.1	+7.2
AUKUT				i S	Sn	03 02 14.7	+15
AUBOZ	**BOZOYUK**	1.11	149	P	Pg	03 01 44.3	-1.0
AUBOZ				S	Sg	03 01 59.0	-0.7
AUBOZ	**BOZOYUK**	1.11	149	↓iP	Pg	03 01 44.4	-1.0
AUBOZ				i S	Sg	03 01 59.0	-0.7
SAHE	**Sakarya_HENDEK**	1.18	90	P	Pg	03 01 45.5	-1.2
SAHE				S	Sg	03 02 00.9	-1.2
SAHE	**Sakarya_HENDEK**	1.18	90	↑iP	Pg	03 01 45.5	-1.2
SAHE				i S	Sg	03 02 00.9	-1.2
EDC	**Edincik**	1.21	245	ePN	Pg	03 01 46.0	-1.1
EDC	**Edincik**	1.21	245	ePn	Pg	03 01 46.0	-1.1
CRLT	**Corlu**	1.21	283	ePN	Pg	03 01 46.7	-0.5
CRLT	**Corlu**	1.21	283	ePn	Pg	03 01 46.7	-0.5
MRMT	**Marmara Adasi**	1.32	259	ePN	Pg	03 01 48.0	-1.2
MRMT	**Marmara Adasi**	1.32	259	ePn	Pg	03 01 48.0	-1.2
BORA	**Eskisehir**	1.32	138	P	Pg	03 01 48.3	-1.1
BORA				S	Sn	03 02 07.8	+1.6
BORA	**Eskisehir**	1.32	138	↑iP	Pg	03 01 48.3	-1.1
BORA				i S	Sn	03 02 07.8	+1.6
BTAS	**Taskesti**	1.33	102	P	Pg	03 01 48.3	-1.2
BTAS				S	Sg	03 02 06.4	-0.7
BTAS	**Taskesti**	1.33	102	↓iP	Pg	03 01 48.3	-1.2
BTAS				i S	Sg	03 02 06.1	-0.7
TKR	**Tekirdag**	1.34	276	ePN	Pn	03 01 49.3	+0.7
TKR	**Tekirdag**	1.34	276	ePn	Pn	03 01 49.3	+0.7
DURS	**Dursunbey**	1.41	207	P	Pn	03 01 50.5	+0.8
DURS				S	Sn	03 02 09.6	+1.3
DURS	**Dursunbey**	1.41	207	↓iP	Pn	03 01 50.5	+0.8
DURS				i S	Sn	03 02 09.7	+1.3
TVSB	**Tavsanli**	1.42	175	ePN	Pn	03 01 49.8	0.0
TVSB	**Tavsanli**	1.42	175	ePn	Pn	03 01 49.8	0.0
KNL	**Bal¨–kesir**	1.47	247	i P	Pn	03 01 49.1	-1.3
KNL				i S	Sb	03 02 09.5	-0.6
GONE	**Gonen-Balikesi**	1.47	237	ePN	Pn	03 01 50.9	+0.4
GONE	**Gonen-Balikesi**	1.47	237	ePn	Pn	03 01 50.9	+0.4
MDUB	**Mudurnu**	1.50	105	ePN	Pn	03 01 51.7	+0.7
MDUB	**Mudurnu**	1.50	105	ePn	Pn	03 01 51.7	+0.7
PHSR	**Pinarhisar**	1.54	300	ePN	Pn	03 01 52.0	+0.6
PHSR	**Pinarhisar**	1.54	300	ePn	Pn	03 01 52.0	+0.6
KRBG	**Karabiga-Canak**	1.59	253	ePN	Pn	03 01 52.6	+0.5
KRBG	**Karabiga-Canak**	1.59	253	ePn	Pn	03 01 52.6	+0.5
RKY	**Sarkoy-Tekirda**	1.62	264	ePN	Pn	03 01 53.3	+0.8
RKY	**Sarkoy-Tekirda**	1.62	264	ePn	Pn	03 01 53.3	+0.8
BALB	**Balikesir**	1.63	222	ePN	Pn	03 01 53.6	+0.9
BALB	**Balikesir**	1.63	222	ePn	Pn	03 01 53.6	+0.9
KDZE	**Karadeniz Ereo**	1.69	74	ePN	Pn	03 01 53.8	+0.4
KDZE	**Karadeniz Ereo**	1.69	74	ePn	Pn	03 01 53.8	+0.4
BALY	**Balya**	1.70	229	P	Pb	03 01 55.4	+0.1
BALY				S	Sn	03 02 16.7	+1.2
BALY	**Balya**	1.70	229	i P	Pb	03 01 55.4	+0.1
BALY				i S	Sn	03 02 16.7	+1.2
GDZ	**Gediz**	1.78	175	P	Pn	03 01 54.6	-0.2
GDZ				S	Sn	03 02 18.7	+1.2
GDZ	**Gediz**	1.78	175	i P	Pn	03 01 54.6	-0.2
GDZ				i S	Sn	03 02 18.7	+1.2
ESKT	**Eskisehir**	1.80	138	i P	Pn	03 01 55.2	+0.1
SEYT	**Eskypehyr**	1.80	138	P	Pn	03 01 55.2	+0.2
AUKIR	**K¨–rka- Seyitg**	1.85	149	i P	Pn	03 01 56.2	+0.5
AUKIR				i S	Sg	03 02 24.0	+0.6
DEMI	**Demirci**	1.87	194	P	Pn	03 01 55.7	-0.4
DEMI				S	Sn	03 02 19.7	0.0
DEMI	**Demirci**	1.87	194	i P	Pn	03 01 55.7	-0.4
DEMI				i S	Sn	03 02 19.7	0.0
AUMIH	**MIHALICIK**	1.95	120	P	Pn	03 01 57.2	+0.1
AUMIH				S	Sn	03 02 23.2	+1.5
AUMIH	**MIHALICIK**	1.95	120	i P	Pn	03 01 57.2	+0.1
AUMIH				i S	Sn	03 02 23.2	+1.5
KESN	**Edirne-Kesan**	1.98	270	P	Pn	03 01 57.1	-0.7
KESN				S	Sn	03 02 21.8	-1.1
KESN	**Edirne-Kesan**	1.98	270	i P	Pn	03 01 57.1	-0.7
KESN				i S	Sn	03 02 21.8	-1.1
LPK	**Lapseki**	1.99	257	ePN	P

CORM	**Corum**	**4.12**	**98**	*e*Pn	**Pn**	**03 02 28.5**	**+1.4**
TLCR		**4.33**	**356**	⇓*i*P	**Pn**	**03 02 30.2**	**+0.4**
TLCR		**4.33**	**356**	⇓*i*P	**Pn**	**03 02 30.2**	**+0.4**
TLCR				S	**Sn**	**03 03 18.4**	**-1.9**
CFR	**Carcaliu**	**4.39**	**349**	⇓*i*P	**Pn**	**03 02 30.4**	**-0.2**
CFR	**Carcaliu**	**4.39**	**349**	⇓*i*P	**Pn**	**03 02 30.4**	**-0.2**
CFR				S	**Sn**	**03 03 19.8**	**-1.9**
GIUM	**Giurgiulesti**	**4.69**	**351**	⇓*i*P	**Pn**	**03 02 35.9**	**+1.3**
GIUM	**Giurgiulesti**	**4.69**	**351**	⇓*i*P	**Pn**	**03 02 35.9**	**+1.3**
MLR	**Muntele Rosu**	**5.23**	**333**	Pn	**Pn**	**03 02 44.5**	**+2.2**
	0.2nm,0.3s,baz=106,slow=7.4,SNR=12						
MLR				Sn	**Sn**	**03 03 43.5**	**+0.9**
	0.1nm,0.3s,baz=133,slow=19,SNR=2.5						
MLR				Lg	Lg	03 04 11.1	
	0.1nm,0.3s,baz=101,slow=22,SNR=3.7						
MLR	**Muntele Rosu**	**5.23**	**333**	⇑*i*P	**Pn**	**03 02 44.3**	**+2.0**
MLR	**Muntele Rosu**	**5.23**	**333**	⇑*i*P	**Pn**	**03 02 44.3**	**+2.0**
MLR				S	**Sn**	**03 03 42.6**	**0.0**
VRI	**Vrincioaia**	**5.34**	**340**	⇑*i*P	**Pn**	**03 02 45.2**	**+1.6**
VRI	**Vrincioaia**	**5.34**	**340**	⇑*i*P	**Pn**	**03 02 45.2**	**+1.6**
VRI				S	**Sn**	**03 03 44.5**	**-0.6**
PLOR	**Plostina**	**5.34**	**340**	⇑*i*P	**Pn**	**03 02 45.3**	**+1.6**
PLOR	**Plostina**	**5.34**	**340**	⇑*i*P	**Pn**	**03 02 45.3**	**+1.6**
PLOR				S	**Sn**	**03 03 45.5**	**+0.2**
VOIR		**5.52**	**327**	⇓*i*P	**Pn**	**03 02 47.9**	**+1.7**
VOIR		**5.52**	**327**	⇓*i*P	**Pn**	**03 02 47.9**	**+1.7**
ARR	**Arges**	**5.64**	**324**	⇓*i*P	**Pn**	**03 02 48.7**	**+0.8**
ARR	**Arges**	**5.64**	**324**	⇓*i*P	**Pn**	**03 02 48.7**	**+0.8**
TESR	**Tescani**	**5.96**	**342**	⇓*i*P	**Pn**	**03 02 52.3**	**+0.1**
TESR	**Tescani**	**5.96**	**342**	S	**Sn**	**03 03 57.7**	**-2.7**
TESR	**Tescani**	**5.96**	**342**	⇓*i*P	**Pn**	**03 02 52.3**	**+0.1**
MILM	**Milestii Mici**	**6.06**	**357**	⇓*i*P	**Pn**	**03 02 53.6**	**+0.1**
MILM	**Milestii Mici**	**6.06**	**357**	S	**Sn**	**03 04 00.1**	**-2.7**
MILM	**Milestii Mici**	**6.06**	**357**	⇓*i*P	**Pn**	**03 02 53.6**	**+0.1**
BURAR	**Bucovina Array**	**7.35**	**338**	⇓*i*P	**Pn**	**03 03 12.8**	**+1.4**
BURAR	**Bucovina Array**	**7.35**	**338**	⇓*i*P	**Pn**	**03 03 12.8**	**+1.4**
DRGR		**7.60**	**323**	⇓*i*P	**Pn**	**03 03 15.9**	**+1.2**
DRGR		**7.60**	**323**	⇓*i*P	**Pn**	**03 03 15.9**	**+1.2**
AKASG	**Malin Array Be**	**9.84**	**360**	Pn	**Pn**	**03 03 43.4**	**-1.9**
	1.1nm,0.3s,baz=180,slow=12,SNR=6.0						
ASF	**Jabal al Asfar**	**10.61**	**142**	Pn	**Pn**	**03 03 55.1**	**-0.9**
	0.7nm,0.3s,baz=324,slow=19,SNR=3.6						
FINES	**FINESS Array B**	**20.70**	**356**	P	**P**	**03 06 03.5**	**-0.4**
	1.1nm,0.8s,baz=171,slow=9.8,SNR=5.7						

IDC 09 03:03:07.1±2.5, 5°.90N×125°.57E, h0km, mb3.5/4, mb1 3.7/4, mb1mx3.4/41, mbtmp3.5/4, Error ellipse: s-maj=276.2km s-min=21.9km az=66.0, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**27.09**	**162**	P	P	03 08 52.7	+0.8
	0.1nm,0.3s,baz=341,slow=11,SNR=4.3						
ASAR	**Alice Springs**	**30.50**	**165**	P	P	03 09 21.3	-0.8
	0.4nm,0.5s,baz=356,slow=11,SNR=7.4						
MKAR	**Makanchi Array**	**55.12**	**325**	P	P	03 12 41.2	0.0
	0.4nm,0.5s,baz=111,slow=6.8,SNR=4.1						
KURBB	**Kurchatov Arra**	**59.30**	**327**	P	P	03 13 10.5	-0.1
	0.6nm,0.6s,baz=122,slow=7.3,SNR=5.3						

*IDC **09** 03:14:28.3±0.6, 2°.86S×139°.17E, h0km, mb4.2/15, mb1 4.3/17, mb1mx4.1/41, mbtmp4.2/17, ML4.3/2, MS3.3/4, Ms1 3.4/4, ms1mx2.9/36, Error ellipse: s-maj=13.1km s-min=9.6km az=110.0*

*DJA **09** 03:14:31.7±1.1, 3°.S±8°.×13°.9E±°, h20km±15km, M4.8/3, mb4.8/3*

*ISCJB **09** 03:14:32.7±0.3, 2°.91S±0°.04×139°.12E±0°.04, h46km, mb4.2/14, MS3.5/3, Error ellipse: s-maj=6.5km s-min=5.2km az=165.8*

*NEIC **09** 03:14:33.9±1.0, 2°.89S×139°.20E, h38km±10km, mb4.5/5, Error ellipse: s-maj=9.7km s-min=7.5km az=97.0*

ISC 09 03:14:34.7±0.5, 2°.86S±0°.05×139°.06E±0°.04, h46km, n40, σ2§85/48, mb4.2/14, MS3.5/3, Near north coast of Irian Jaya

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GENI	**Genyem**	**1.14**	**76**		**Pn**	**03 14 51.7**	**-2.5**
GENI				S	**Sn**	**03 15 04.2**	**-4.5**
JAY	**Jayapura**	**1.68**	**78**	Pg	**Pn**	**03 14 58.2**	**-3.5**
	7.9nm,0.3s,baz=253,slow=20,SNR=115						
JAY				Lg	Lg	03 15 16.6	
	18nm,0.3s,baz=85,slow=23,SNR=19						
JAY	**Jayapura**	**1.68**	**78**	P	**Pn**	**03 14 59.1**	**-2.6**
JAY				S	**Sn**	**03 15 21.3**	**-0.7**
FAKI	**Fak Fak**	**6.81**	**269**	P	**Pn**	**03 16 09.7**	**-2.4**
FAKI	**Fak Fak**	**6.81**	**269**	*e*Pn	**Pn**	**03 16 15.7**	**+3.6**
FAKI				*e*S	**Sn**	**03 17 26.8**	**-1.6**
SIJI	**Sorong**	**8.04**	**284**	Pn	**Pn**	**03 16 31.9**	**+2.8**
	30nm,0.3s,baz=360,slow=17,SNR=3.1						
SIJI				Sn	**Sn**	**03 18 02.3**	**+3.5**
	30nm,0.3s,baz=360,slow=18,SNR=3.2						
PMG	**Port Moresby**	**10.34**	**129**	Pn	**Pn**	**03 17 00.8**	**+0.2**
	0.6nm,0.3s,baz=306,slow=7.9,SNR=2.1						
PMG				Sn	**Sn**	**03 19 01.1**	**+5.8**
	0.6nm,0.3s,baz=192,slow=20,SNR=2.2						
PMG	**Port Moresby**	**10.34**	**129**	*e*Pn	**Pn**	**03 17 03.7**	**+3.1**
	27nm,1.0s						
PMG				Sn	**Sn**	**03 19 01.1**	**+5.8**
COEN	**Coen**	**11.75**	**160**	*e*Pn	**Pn**	**03 17 19.1**	**-0.7**
	9.8nm,0.5s						
MTN	**Manton Dam**	**12.64**	**218**	*e*Pn	**Pn**	**03 17 31.4**	**-0.7**
	46nm,1.3s						
SOEI	**Soe**	**16.21**	**244**	P	**Pn**	**03 18 18.8**	**-0.8**
SOEI	**Soe**	**16.21**	**244**	*e*Pn	**Pn**	**03 18 19.5**	**-0.1**
	42nm,0.8s						
DAV	**Davao City (W)**	**16.69**	**306**	LR	LR	03 24 01.0	
	comp=Z,32nm,20.7s,baz=184,slow=34						
WRAB	**Tennant Creek**	**17.58**	**195**	*e*Pn	**Pn**	**03 18 35.8**	**-0.7**
	38nm,0.8s						
WB2	**Warramunga Arr**	**17.59**	**195**	*e*P	**Pn**	**03 18 34.9**	**-1.7**
	32nm,0.8s						
WRA	**Warramunga Arr**	**17.59**	**195**	P	**Pn**	**03 18 34.9**	**-1.8**
	1.8nm,0.3s,baz=16,slow=12,SNR=33						
WRA				S	**Sn**	**03 21 53.9**	**+2.1**
	0.4nm,0.3s,baz=13,slow=21,SNR=3.6						
CTA	**Charters Tower**	**18.50**	**158**	P	**P**	**03 18 47.0**	**-0.3**
	0.3nm,0.3s,baz=334,slow=11,SNR=2.8						
FITZ	**Fitzroy Crossi**	**20.06**	**220**	P	**P**	**03 19 04.8**	**+0.5**
	4.0nm,0.6s,baz=46,slow=10,SNR=13						
FITZ				S	**S**	**03 22 38.2**	**-9.2**
	2.8nm,0.8s,baz=123,slow=17,SNR=1.8						
FITZ	**Fitzroy Crossi**	**20.06**	**220**	*e*P	**P**	**03 19 04.5**	**+0.1**
	47nm,1.8s						
FITZ				S	**S**	**03 22 38.2**	**-9.2**
AS01	**Alice Springs**	**21.26**	**193**	*e*P	**P**	**03 19 17.0**	**-0.3**
AS31	**Alice Springs**	**21.27**	**193**	*e*P	**P**	**03 19 17.6**	**+0.1**
	8.1nm,0.8s						
ASAR	**Alice Springs**	**21.27**	**193**	P	**P**	**03 19 17.2**	**-0.2**
	3.0nm,0.4s,baz=22,slow=10.0,SNR=48						
ASAR				S	**S**	**03 23 13.9**	**+2.4**
	1.5nm,1.0s,baz=15,slow=26,SNR=3.4						
ASAR				LR	LR	03 28 07.6	
	comp=Z,207nm,18.9s,baz=319,slow=38						
STKA	**Stephens Creek**	**28.96**	**176**	P	**P**	**03 20 29.3**	**-0.6**
	1.6nm,0.6s,baz=353,slow=10,SNR=3.9						
JNU	**Nakatsue**	**36.62**	**348**	P	**P**	**03 21 36.8**	**0.0**
	5.3nm,1.0s,baz=170,slow=12,SNR=2.8						
USRK	**Ussuriysk Ar.**	**47.28**	**353**	LR	LR	03 39 40.7	
	comp=Z,28nm,19.4s,baz=161,slow=32						
RPZ	**Rata Peaks**	**49.58**	**150**	P	**P**	**03 23 22.3**	**+0.9**
	4.6nm,0.4s,baz=293,slow=5.1,SNR=3.5						
KLR	**Kul'dur**	**52.27**	**354**	P	**P**	**03 23 42.3**	**+0.9**
	2.1nm,0.5s,baz=185,slow=6.9,SNR=8.1						
PETK	**Petropavlovsk-**	**57.93**	**13**	P	**P**	**03 24 22.4**	**+0.2**
	3.3nm,0.8s,baz=134,slow=8.3,SNR=3.5						
SONM	**Songino Array**	**58.01**	**335**	P	**P**	**03 24 23.4**	**+0.4**
	0.3nm,0.5s,baz=163,slow=6.0,SNR=2.8						
MKAR	**Makanchi Array**	**70.13**	**322**	P	**P**	**03 25 43.3**	**+0.8**
	1.2nm,0.7s,baz=106,slow=9.1,SNR=10						
ZALV	**Zalesovo Beam**	**72.25**	**330**	P	**P**	**03 25 55.2**	**+0.1**
	1.3nm,0.5s,baz=124,slow=5.7,SNR=5.3						
KURK	**Kurchatov**	**74.04**	**325**	P	**P**	**03 26 05.6**	**-0.1**
KURBB	**Kurchatov Arra**	**74.06**	**325**	P	**P**	**03 26 05.6**	**-0.2**
	0.7nm,0.7s,baz=115,slow=5.5,SNR=7.0						
TIXI	**Tiksi**	**74.68**	**357**	P	**P**	**03 26 09.1**	**+0.1**
	1.3nm,0.3s,baz=167,slow=3.1,SNR=4.4						
VNDA	**Vanda**	**75.60**	**175**	P	**P**	**03 26 15.1**	**+0.8**
	2.7nm,0.7s,baz=318,slow=6.4,SNR=18						
VNDA				LR	LR	03 58 08.3	
	comp=Z,37nm,21.0s,baz=316,slow=35						
ILAR	**Eielson Array**	**85.83**	**24**	P	**P**	**03 27 07.5**	**-1.7**
	1.5nm,0.9s,baz=266,slow=4.4,SNR=12						
YKA	**Yellowknife Ar**	**100.04**	**27**	P	**Pdif**	**03 28 14.9**	**-0.1**
	0.3nm,1.0s,baz=254,slow=4.4,SNR=3.4						
TORD	**Torodi Ar. Bea**	**136.64**	**286**	PKP	**PKPdf**	**03 33 54.9**	**+1.8**
	0.4nm,0.8s,baz=77,slow=2.0,SNR=5.8						
DBIC	**Dimbokro**	**143.85**	**277**	PKP	**PKPdf**	**03 34 05.3**	**-0.8**
	7.3nm,1.2s,baz=76,slow=4.2,SNR=3.4						
LPAZ	**La Paz**	**147.07**	**126**	PKPbc	**PKPbc**	**03 34 14.3**	**-0.1**
	0.6nm,0.6s,baz=229,slow=6.2,SNR=3.8						

*ISCJB **09** 03:19:10.0±0.5, 40°.49N±0°.05×30°.72E±0°.04, h9km±8km, Error ellipse: s-maj=9.2km s-min=4.9km az=159.0*

*ISK **09** 03:19:09.8, 40°.41N×30°.74E, h6km, MD2.6*

*DDA **09** 03:19:09.8, 40°.50N×30°.72E, h7km, Md2.4*

*CSEM **09** 03:19:10.0±0.2, 40°.48N×30°.74E, h10km, MD2.6, Error ellipse: s-maj=4.3km s-min=3.4km az=178.0*

ISC 09 03:19:10.2±0.9, 40°.48N±0°.03×30°.74E±0°.02, h8km±8km, n24, σ0§42/33, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GULT	**Gulveren**	**0.18**	**254**	*e*PG	**Pg**	**03 19 13.8**	**-0.1**
GULT				*e*SG	**Sg**	**03 19 16.8**	**+0.4**
GULT	**Gulveren**	**0.18**	**254**	*e*Pg	**Pg**	**03 19 13.8**	**-0.1**
GULT				*e*Sg	**Sg**	**03 19 16.8**	**+0.4**
BTAS	**Taskesti**	**0.22**	**66**	P	**Pg**	**03 19 14.4**	**-0.3**
BTAS				S	**Sg**	**03 19 18.0**	**+0.3**
BTAS	**Taskesti**	**0.22**	**66**	*i* P	**Pg**	**03 19 14.4**	**-0.3**
BTAS				*i* S	**Sg**	**03 19 18.0**	**+0.3**
MDUB	**Mudurnu**	**0.35**	**91**	*e*PG	**Pg**	**03 19 17.1**	**0.0**
MDUB	**Mudurnu**	**0.35**	**91**	*e*Pg	**Pg**	**03 19 17.1**	**0.0**
SAHE	**Sakarya_HENDEK**	**0.38**	**13**	P	**Pg**	**03 19 17.4**	**-0.3**
SAHE				S	**Sg**	**03 19 23.0**	**+0.2**
SAHE	**Sakarya_HENDEK**	**0.38**	**13**	*i* P	**Pg**	**03 19 17.4**	**-0.3**
SAHE				*i* S	**Sg**	**03 19 23.0**	**+0.2**
SPNC	**Sapanca-Adapaz**	**0.39**	**302**	*e*PG	**Pb**	**03 19 18.9**	**-0.4**
SPNC	**Sapanca-Adapaz**	**0.39**	**302**	*e*Pg	**Pb**	**03 19 18.9**	**-0.4**
BORA	**Eskisehir**	**0.64**	**200**	P	**Pg**	**03 19 22.1**	**-0.4**
BORA	**Eskisehir**	**0.64**	**200**	*i* P	**Pg**	**03 19 22.1**	**-0.4**
BORA				*i* S	**Sn**	**03 19 37.0**	**+1.1**
CAVI	**Cavuskoy**	**0.74**	**248**	*e*PG	**Pg**	**03 19 23.9**	**-0.5**
CAVI	**Cavuskoy**	**0.74**	**248**	*e*Pg	**Pg**	**03 19 23.9**	**-0.5**
ADVT	**Abdulvahap**	**0.76**	**267**	*e*PG	**Pg**	**03 19 25.0**	**+0.1**
ADVT	**Abdulvahap**	**0.76**	**267**	*e*Pg	**Pg**	**03 19 25.0**	**+0.1**
AUMIH	**MIHALICIK**	**0.84**	**137**	P	**Pb**	**03 19 26.9**	**-0.2**
AUMIH				S	**Sb**	**03 19 39.0**	**+0.5**
AUMIH	**MIHALICIK**	**0.84**	**137**	*i* P	**Pb**	**03 19 26.9**	**-0.2**
AUMIH				*i* S	**Sb**	**03 19 39.0**	**+0.5**
IZI	**Iznik**	**0.98**	**262**	*e*PG	**Pg**	**03 19 28.7**	**-0.3**
IZI	**Iznik**	**0.98**	**262**	*e*Pg	**Pg**	**03 19 28.7**	**-0.3**
SVRH	**Sivrihisar-ESK**	**1.20**	**149**	*e*PN	**Pg**	**03 19 32.5**	**-0.7**
SVRH	**Sivrihisar-ESK**	**1.20**	**149**	*e*Pn	**Pg**	**03 19 32.5**	**-0.7**
TVSB	**Tavsanli**	**1.42**	**224**	*e*PN	**Pn**	**03 19 36.1**	**-0.3**
TVSB	**Tavsanli**	**1.42**	**224**	*e*Pn	**Pn**	**03 19 36.1**	**-0.3**

IDC 09 03:20:36.4±3.0, 5°.78S×147°.78E, h198km±40km, mb3.5/3, mb1 3.6/5, mb1mx3.2/41, mbtmp4.0/5, Error ellipse: s-maj=84.1km s-min=29.2km az=116.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**3.66**	**190**	P	Pn	03 21 35.3	+1.4
	5.6nm,0.3s,baz=310,slow=1.3,SNR=7.4						
PMG				S	Sn	03 22 18.9	-0.2
	12nm,0.3s,baz=220,slow=21,SNR=15						
WRA	**Warramunga Arr**	**19.21**	**222**	P	P	03 24 45.8	+0.2
	0.9nm,0.3s,baz=47,slow=11,SNR=5.7						
ASAR	**Alice Springs**	**22.24**	**216**	P	P	03 25 18.4	+1.1
	2.0nm,0.6s,baz=53,slow=9.2,SNR=8.9						
FITZ	**Fitzroy Crossi**	**24.84**	**239**	P	P	03 25 40.3	-0.6
	3.2nm,0.5s,baz=61,slow=10,SNR=7.8						
ZALV	**Zalesovo Beam**	**79.24**	**328**	P	P	03 32 19.6	+0.2
	0.6nm,0.5s,baz=111,slow=7.9,SNR=2.4						
TORD	**Torodi Ar. Bea**	**145.78**	**285**	PKPbc	PKPdf	03 39 51.4	-1.0
	0.2nm,0.9s,baz=70,slow=3.8,SNR=3.8						

*ISCJB **09** 03:21:46.6±0.3, 19°.00N±0°.03×145°.51E±0°.08, h214km, mb4.1/36, Error ellipse: s-maj=11.3km s-min=4.1km az=172.5*

*NEIC **09** 03:21:46.3±0.9, 18°.98N×145°.62E, h196km±9km, mb4.4/9, Error ellipse: s-maj=11.6km s-min=4.5km az=90.0*

*IDC **09** 03:21:48.3±0.6, 19°.01N×145°.55E, h216km±5km, mb3.8/23, mb1 3.9/28, mb1mx3.7/51, mbtmp4.4/28, Error ellipse: s-maj=14.9km s-min=6.5km az=91.0*

ISC 09 03:21:48.0±0.5, 19°.03N±0°.04×145°.5E±0°.1, h214km, n68, σ1§52/85, mb4.2/36, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**5.44**	**186**	P	**Pn**	**03 23 08.8**	**+0.5**
	26nm,0.3s,baz=160,slow=7.6,SNR=6.2						
GUMO				S	**S**	**03 24 12.1**	**+0.4**
	59nm,0.3s,baz=9.7,slow=23,SNR=4.7						
GUMO	**Guam**	**5.44**	**186**	*e*Pn	**Pn**	**03 23 05.3**	**-3.0**
GUMO				*e*S	**S**	**03 24 09.8**	**-1.9**
JHHJ	**Haha-jima-NKT**	**8.15**	**339**	P	**Pn**	**03 23 42.6**	**-0.5**
JHHJ				*e*S	**S**	**03 25 10.1**	**-5.1**
CBIJ	**Chichi jima**	**8.58**	**340**	P	**Pn**	**03 23 47.3**	**-1.3**
CBIJ				*e*S	**S**	**03 25 20.3**	**-5.0**
CBIJ	**Chichi jima**	**8.58**	**340**	*e*Pn	**Pn**	**03 23 47.7**	**-0.9**
CBIJ				*e*S	**S**	**03 25 21.6**	**-3.8**
JCJ	**Chichijima**	**8.58**	**340**	P	**Pn**	**03 23 48.0**	**-0.6**
	baz=180,slow=18						
JCJ				S	**S**	**03 25 20.4**	**-4.9**
	14nm,0.3s,baz=287,slow=19,SNR=4.5						
JHCJ	**Hachijojimakas**	**14.88**	**341**	P	**P**	**03 25 10.9**	**+2.4**
JHJ	**Hachijo jima 2**	**14.93**	**341**	P	**Pn**	**03 25 08.7**	**0.0**
	5.0nm,0.3s,baz=120,slow=20,SNR=2.1						
JHJ				S	**S**	**03 27 52.6**	**-1.2**
	10.0nm,0.3s,baz=73,slow=19,SNR=3.0						
JIM2	**Oshima 3**	**16.52**	**342**	P	**Pn**	**03 25 28.9**	**+1.1**
JOD2	**Odawara 2**	**17.13**	**342**	P	**Pn**	**03 25 35.0**	**0.0**
JKN2	**Miekihoku**	**17.21**	**333**	P	**Pn**	**03 25 37.6**	**+1.6**
JWM	**Minabe**	**17.29**	**331**	P	**Pn**	**03 25 37.3**	**+0.4**
JYN	**Shimob**	**17.51**	**341**	P	**Pn**	**03 25 39.6**	**+0.1**
MRT2	**Murotomisaki 2**	**17.52**	**327**	P	**Pn**	**03 25 40.2**	**+0.7**
JNY	**Yasuok**	**17.60**	**339**	P	**Pn**	**03 25 40.6**	**0.0**
JRY	**Ryogami san**	**17.89**	**342**	P	**Pn**	**03 25 43.3**	**-0.6**
INU	**Inuyama**	**17.89**	**337**	*e*P	**Pn**	**03 25 44.0**	**+0.1**
	15nm,0.8s						
MJAR	**Matsushiro Arr**	**18.58**	**341**	P	**P**	**03 25 49.7**	**+0.6**
	1.4nm,0.3s,baz=172,slow=10,SNR=22						
MAJO	**Matsushiro**	**18.58**	**341**	*e*P	**P**	**03 25 49.9**	**+0.9**
	15nm,0.6s						
MAT	**Matsushiro**	**18.58**	**341**	P	**P**	**03 25 50.2**	**+1.1**
MJB9	**Matsu-Tunnel**	**18.58**	**341**	*e*P	**P**	**03 25 50.4**	**+1.2**
	3.8nm,0.5s						
MJB9				*e*S	**S**	**03 29 11.0**	**+1.5**
JAD	**Aida**	**18.75**	**330**	P	**P**	**03 25 52.4**	**+1.5**
JNU	**Nakatsue**	**19.16**	**320**	P	**P**	**03 25 56.7**	**+1.3**
	0.3nm,0.3s,baz=108,slow=3.2,SNR=3.3						
JAY	**Jayapura**	**21.91**	**193**	P	**P**	**03 26 25.4**	**+1.0**
	1.2nm,0.5s,baz=262,slow=22,SNR=6.6						
NJ2	**Nanjing**	**27.20**	**304**	*e*P	**P**	**03 27 12.3**	**+0.4**
NJ2				pmax	pmax		
	comp=Z,12nm,0.5s						
USRK	**Ussuriysk Ar.**	**27.52**	**339**	P	**P**	**03 27 16.0**	**+1.4**
	comp=Z,1.9nm,0.7s,baz=160,slow=11,SNR=4.2						
USRK				pP	**pP**	**03 27 59.7**	**+2.2**
	comp=Z,1.9nm,0.8s,baz=177,slow=14,SNR=2.6						
PMG	**Port Moresby**	**28.30**	**176**	P	**P**	**03 27 19.9**	**-1.9**
	comp=Z,4.3nm,0.4s,baz=359,slow=8.3,SNR=4.9						
HNR	**Honiara**	**31.68**	**152**	P	P	03 27 58.0	+6.4
	comp=Z,134nm,0.4s,baz=221,slow=3.0,SNR=4.8						
KLR	**Kul'dur**	**32.09**	**343**	P	**P**	**03 27 55.5**	**+0.7**
	comp=Z,5.3nm,0.4s,baz=159,slow=8.4,SNR=22						
KLR				pP	**pP**	**03 28 38.3**	**0.0**
	comp=Z,1.8nm,0.5s,baz=147,slow=12,SNR=2.1						
BJI	**Beijing**	**32.74**	**316**	P	**P**	**03 28 01.0**	**+0.4**
BJI				S	**S**	**03 33 03.7**	**+2.6**
BJI				pmax	pmax		
	comp=Z,4.0nm,1.5s						
BJI				LR	LR		
	comp=Z,37nm,25.2s						
COEN	**Coen**	**32.85**	**184**	*e*P	**P**	**03 28 01.4**	**-0.4**
	comp=Z,6.9nm,0.6s						
KAPI	**Kappang**	**34.81**	**229**	P	**P**	**03 28 19.5**	**+0.8**
	comp=Z,6.1nm,0.5s,baz=321,slow=0.9,SNR=6.7						
KAPI	**Kappang**	**34.81**	**229**	*e*P	**P**	**03 28 19.9**	**+1.2**
HHC	**Hu-ho-hao-te**	**36.21**	**314**	*e*P	**P**	**03 28 30.9**	**+0.4**
HHC				pmax	pmax		
	comp=Z,22nm,1.0s						
HHC				pmax	pmax		
	comp=Z,120nm,5.4s						
CTA	**Charters Tower**	**38.88**	**179**	P	**P**	**03 28 52.3**	**-0.6**
	comp=Z,1.7nm,0.4s,baz=328,slow=8.2,SNR=5.1						
CD2	**Chengdu**	**39.40**	**296**	P	**P**	**03 28 55.6**	**-1.6**
CD2				pmax	pmax		
	comp=Z,4.0nm,0.6s						
WRAB	**Tennant Creek**	**40.22**	**196**	*e*P	**P**	**03 29 04.0**	**0.0**
WB2	**Warramunga Arr**	**40.23**	**196**	*e*P	**P**	**03 29 04.4**	**+0.4**
	comp=Z,79nm,1.5s						
WRA	**Warramunga Arr**	**40.23**	**196**	P	**P**	**03 29 04.4**	**+0.3**
	comp=Z,11nm,0.6s,baz=17,slow=9.6,SNR=38						
WRA				PcP	**PcP**	**03 31 03.4**	**-0.3**
	comp=Z,1.8nm,0.6s,baz=14,slow=3.2,SNR=5.1						
LZH	**Lanzhou**	**40.27**	**304**	*e*P	**P**	**03 29 04.9**	**+0.4**
LZH				pP	pP	03 29 47.7	-1.8
LZH				sP	sP	03 30 08.5	-5.3
LZH				pmax	pmax		
	comp=Z,34nm,1.3s						
FITZ	**Fitzroy Crossi**	**41.72**	**209**	P	**P**	**03 29 16.9**	**+0.8**
	comp=Z,6.3nm,0.2s,baz=21,slow=8.1,SNR=99						
FITZ	**Fitzroy Crossi**	**41.72**	**209**	*e*P	**P**	**03 29 16.5**	**+0.4**
	comp=Z,17nm,1.3s						
SONM	**Songino Array**	**42.74**	**321**	P	**P**	**03 29 24.9**	**+0.6**
	comp=Z,0.6nm,0.6s,baz=138,slow=10,SNR=4.9						
AS01	**Alice Springs**	**43.89**	**195**	*e*P	**P**	**03 29 33.5**	**0.0**
AS31	**Alice Springs**	**43.90**	**195**	*e*P	**P**	**03 29 34.1**	**+0.4**
	comp=Z,3.6nm,0.5s						
ASAR	**Alice Springs**	**43.91**	**195**	P	**P**	**03 29 33.8**	**+0.1**
	comp=Z,4.6nm,0.5s,baz=13,slow=7.8,SNR=55						
DZM	**Mont Dzumac**	**45.71**	**152**	P	**P**	**03 29 48.2**	**+0.2**
	comp=Z,14nm,0.6s,baz=343,slow=3.9,SNR=15						
STKA	**Stephens Creek**	**50.75**	**184**	P	**P**	**03 30 25.1**	**-1.1**
	comp=Z,2.4nm,0.5s,baz=5.2,slow=6.7,SNR=8.1						
WMQ	**Urumqi**	**53.92**	**311**	*e*P	**P**	**03 30 50.3**	**+0.7**
WMQ				pmax	pmax		
	comp=Z,1.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,35nm,4.2s						
ZALV	**Zalesovo Beam**	**57.62**	**322**	P	**P**	**03 31 16.2**	**+0.7**
	comp=Z,0.5nm,0.4s,baz=104,slow=6.1,SNR=2.3						
ZALV				pP	**pP**	**03 32 03.1**	**-0.7**
	comp=Z,0.5nm,0.4s,baz=117,slow=8.3,SNR=1.9						
MKAR	**Makanchi Array**	**58.07**	**314**	P	**P**	**03 31 20.1**	**+1.2**
	comp=Z,0.5nm,0.6s,baz=91,slow=6.9,SNR=3.9						
MKAR				pP	**pP**	**03 32 07.2**	**0.0**
	comp=Z,0.4nm,0.5s,baz=99,slow=8.9,SNR=2.4						
NWAO	**Narrogin (SRO)**	**58.28**	**208**	P	**P**	**03 31 20.6**	**+0.3**
	comp=Z,10nm,0.5s,baz=265,slow=7.4,SNR=8.4						
KDAK	**Kodiak Island**	**59.21**	**33**	P	P	03 31 42.3	+16
	comp=Z,1.4nm,0.3s,baz=252,slow=6.4,SNR=3.8						
NRIK	**Noril'sk**	**61.22**	**340**	P	**P**	**03 31 40.1**	**+0.2**
	comp=Z,1.9nm,0.3s,baz=97,slow=12,SNR=3.4						
BPAW	**Bear Paw Mtn.**	**61

JNTH	**Nagotoyohara**	0.66	312	P	Pn	03 43 07.5	-0.6
JNTH				eS	Sn	03 43 16.6	-1.8
JJT2	**Tamagusuku 2**	0.74	275	P	Pn	03 43 09.8	+0.6
JJT2				eS	Sn	03 43 20.4	0.0
JOW	**Kunigami**	0.80	341	P	Pn	03 43 09.4	-0.6
JOW				S	Sb	03 43 19.7	+0.1
JOW	**Kunigami**	0.80	341	ePg	Pb	03 43 09.3	+0.5
JOW				eS	Sg	03 43 17.5	-1.4
JIH	**Iheya**	1.10	331	P	Pn	03 43 14.2	+0.1
JIH				eS	Sb	03 43 27.1	-1.0
JOKE	**Okinoerabujima**	1.28	0	P	Pn	03 43 16.3	-0.4
JOKE				eS	Sb	03 43 31.8	-1.7
JAGN	**Aguni-jima**	1.29	294	P	Pg	03 43 17.8	0.0
JKE	**Kume jima 2**	1.62	279	P	Pn	03 43 21.6	+0.3
JTK	**Tokunoshima**	1.74	11	P	Pn	03 43 22.3	-0.7
JAMN	**Amaminishikomi**	2.23	14	P	Pn	03 43 29.2	-0.5
JMZ	**Minamidaito 2**	2.41	95	P	Pn	03 43 30.0	-2.1
JAM	**Amami Oshima**	2.51	21	P	Pn	03 43 32.4	-1.1
JAM				eS	Sn	03 44 01.6	-2.4
JZK	**Kikaishima**	2.56	29	P	Pn	03 43 34.5	+0.2
JZK				eS	Sn	03 44 04.1	-1.3
JTAJ	**Takarajima**	3.12	10	P	Pn	03 43 41.3	-0.6
JTJ	**Tarama**	3.77	249	P	Pn	03 43 51.3	+0.4
JTJ				S	Sn	03 44 33.6	-1.7
JISG	**Ishigakijimahi**	4.12	250	P	Pn	03 43 55.7	0.0
JISG				S	Sn	03 44 40.8	-3.1
NACB	**Ninganchiao**	6.59	255	ePn	Pn	03 44 29.4	-0.3
NACB				eS	Sn	03 45 39.8	-5.1
YULB	**Yu-li**	7.12	250	ePn	Pn	03 44 35.6	-1.4
YULB				eS	Sn	03 45 45.9	-12
SSLB	**Suanglung**	7.27	253	ePn	Pn	03 44 38.2	-0.9
SSLB				eS	Sn	03 45 54.4	-7.3
JNU	**Nakatsue**	7.31	15	Pn	Pn	03 44 40.5	+0.9
	1.2nm,0.3s,baz=232,slow=6.3,SNR=18						
JNU				Sn	Sn	03 46 00.6	-1.9
	0.4nm,0.3s,baz=72,slow=19,SNR=1.9						
JNU				LR	LR	03 47 56.5	
	comp=Z,128nm,19.3s,baz=287,slow=42						
KSRS	**Korea Array**	11.36	357	LR	LR	03 50 19.1	
	comp=Z,108nm,18.6s,baz=167,slow=39						
MJAR	**Matsushiro Arr**	13.29	36	LR	LR	03 51 02.9	
	comp=Z,39nm,18.6s,baz=235,slow=37						
USRK	**Ussuriysk Ar.**	18.30	8	P	P	03 47 07.9	+1.3
	0.1nm,0.3s,baz=187,slow=10,SNR=2.7						
GUMO	**Guam**	19.71	126	LR	LR	03 54 18.3	
	comp=Z,28nm,19.6s,baz=102,slow=35						
KLR	**Kul'dur**	23.25	5	LR	LR	03 56 10.1	
	comp=Z,44nm,18.3s,baz=79,slow=34						
SONM	**Songino Array**	27.85	327	P	P	03 48 44.5	+2.1
	0.5nm,0.5s,baz=134,slow=10,SNR=3.6						
TLY	**Talaya**	31.80	330	LR	LR	04 03 29.8	
	comp=Z,35nm,18.4s,baz=120,slow=39						
YAK	**Yakutsk**	35.96	1	LR	LR	04 04 54.2	
	comp=Z,24nm,18.9s,baz=188,slow=37						
MKAR	**Makanchi Array**	41.86	312	P	P	03 50 43.0	+0.1
	0.4nm,0.4s,baz=84,slow=10,SNR=5.6						
ZALV	**Zalesovo Beam**	42.55	323	P	P	03 50 47.9	-0.4
	0.3nm,0.3s,baz=106,slow=11,SNR=2.3						
ZALV				LR	LR	04 09 53.1	
	comp=Z,44nm,18.0s,baz=75,slow=38						
KURK	**Kurchatov**	45.14	317	P	P	03 51 08.5	-0.7
KURBB	**Kurchatov Arra**	45.17	317	P	P	03 51 08.5	-0.9
	0.6nm,0.4s,baz=107,slow=9.4,SNR=4.2						
WRAB	**Tennant Creek**	46.08	172	eP	P	03 51 17.1	+0.2
	3.1nm,0.8s						
WRA	**Warramunga Arr**	46.08	172	P	P	03 51 17.5	+0.5
	2.6nm,0.6s,baz=353,slow=8.4,SNR=21						
ASAR	**Alice Springs**	49.72	174	P	P	03 51 45.5	+0.4
	1.6nm,0.8s,baz=4.5,slow=9.7,SNR=16						
ABKAR	**Akbulak array**	56.97	313	eP	P	03 52 39.5	+1.2
	0.4nm,0.4s						
ILAR	**Eielson Array**	64.43	28	P	P	03 53 29.3	+0.5
	0.2nm,0.7s,baz=263,slow=6.3,SNR=3.7						
FINES	**FINESS Array B**	73.15	331	P	P	03 54 23.8	+0.7
	0.5nm,0.5s,baz=203,slow=33,SNR=4.0						
FINES				LR	LR	04 30 12.6	
	comp=Z,34nm,19.3s,baz=28,slow=39						
RES	**Resolute Bay**	75.64	11	eP	P	03 54 38.4	+1.0
	1.1nm,0.8s						
AKASG	**Malin Array Be**	75.84	320	P	P	03 54 39.7	+0.7
	0.5nm,0.4s,baz=63,slow=6.3,SNR=2.9						
BRTR	**Keskin Array B**	77.37	308	P	P	03 54 49.1	+1.0
	0.7nm,0.7s,baz=89,slow=9.1,SNR=4.6						
YKA	**Yellowknife Ar**	78.54	25	P	P	03 54 54.7	+0.8
	0.3nm,0.7s,baz=303,slow=5.8,SNR=9.0						
HFS	**Hagfors**	79.10	332	P	P	03 54 57.2	+0.2
	0.3nm,0.4s,baz=75,slow=7.8,SNR=5.3						
NB2	**NORSAR Subarra**	79.58	334	P	P	03 54 59.9	+0.1
	comp=Z,1.6nm,0.8s,baz=52,slow=5.9						
NOA	**NORSAR Array B**	79.58	334	P	P	03 54 59.5	-0.3
	comp=Z,0.6nm,0.8s,baz=165,slow=18,SNR=3.6						

MEX 09 03:52:11.5±0.3, 14°.32N×92°.68W, h16km±65km, MD3.5, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
THIG		**0.71**	**34**	*i* P	Pg	03 52 23.3	-2.1
THIG				*i* S	Sg	03 52 31.8	-3.1
PCIG		**1.47**	**339**	*e*P	Pn	03 52 33.5	-3.9
PCIG				*e*S	Sn	03 52 51.4	-4.9
CCIG	**Comitan**	**2.02**	**15**	*e*P	Pn	03 52 42.4	-2.7
CCIG				*e*S	Sn	03 53 05.8	-4.3

*DDA **09** 03:52:12.4, 34°.77N×27°.70E, h26km, Md3.6*
*IDC **09** 03:52:14.9±0.9, 35°.24N×28°.00E, h0km, mb3.7/11, mb1 3.6/18, mb1mx3.5/51, mbtmp3.6/18, ML3.3/6, MS2.3/3, Ms1 2.3/3, ms1mx2.1/50, Error ellipse: s-maj=19.3km s-min=13.4km az=2.0*
*ATH **09** 03:52:16.4, 35°.12N×27°.92E, h14km±3km, ML3.1/2, Error ellipse: s-maj=5.0km s-min=1.7km az=322.0*
*ISCJB **09** 03:52:17.7±0.9, 35°.08N±0°.03×27°.97E±0°.03, h27km±8km, mb3.6/11, MS2.8/1, Error ellipse: s-maj=5.8km s-min=3.7km az=177.2*
*ISK **09** 03:52:18.1, 35°.38N×27°.94E, h5km, MD3.4*
*CSEM **09** 03:52:18.3±0.3, 35°.26N×27°.92E, h2km, ML3.2, Error ellipse: s-maj=8.4km s-min=3.6km az=169.0*
*THE **09** 03:52:18.8, 35°.29N×27°.84E, h4km±3km, ML3.2/3, Error ellipse: s-maj=4.2km s-min=1.4km az=324.0*

ISC 09 03:52:16.4±1.4, 35°.14N±0°.04×27°.87E±0°.03, h8km±9km, n128, σ1§30/147, mb3.6/11, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KARP	**Karpathos**	**0.71**	**305**	*e*PG	Pb	03 52 31.6	+0.5
KARP				*e*SG	Sb	03 52 42.1	+1.1
KARP	**Karpathos**	**0.71**	**305**	P	Pg	03 52 30.1	0.0
KARP				S	Sb	03 52 41.2	+0.2
KARP	**Karpathos**	**0.71**	**305**	P	Pg	03 52 30.1	0.0
KARP	**Karpathos**	**0.71**	**305**	*e*Pg	Pb	03 52 31.6	+0.5
KARP				S	Sb	03 52 41.2	+0.2
KARP				*e*Sg	Sb	03 52 42.1	+1.1
KARP	**Karpathos**	**0.71**	**305**	P	Pg	03 52 29.7	-0.4
KARP				S	Sb	03 52 42.3	+1.3
KARP				AML	AML	03 52 44.3	
	comp=N,3575μm,0.3s						
KARP				AML	AML	03 52 44.6	
	comp=E,3139μm,0.4s						
ARG	**Arkhangelos**	**1.09**	**11**	P	Pg	03 52 37.5	0.0
ARG				S	Sg	03 52 50.9	-0.8
ARG	**Arkhangelos**	**1.09**	**11**	P	Pg	03 52 37.5	0.0
ZKR	**Zakros**	**1.35**	**269**	P	Pg	03 52 42.4	0.0
ZKR				S	Sn	03 53 01.3	+1.4
ZKR	**Zakros**	**1.35**	**269**	P	Pg	03 52 42.4	0.0
ZKR				S	Sn	03 53 01.8	+2.0
ZKR	**Zakros**	**1.35**	**269**	P	Pg	03 52 42.4	0.0
ZKR				S	Sn	03 53 01.8	+2.0
ZKR				AML	AML	03 53 11.2	
	comp=N,1136μm,0.7s						
ZKR				AML	AML	03 53 13.7	
	comp=E,1406μm,0.5s						
NIS1	**Nisyros Isl.**	**1.56**	**339**	*e*PN	Pn	03 52 45.4	+0.8
NIS1	**Nisyros Isl.**	**1.56**	**339**	*e*Pn	Pn	03 52 45.4	+0.8
NIS1	**Nisyros Isl.**	**1.56**	**339**	P	Pn	03 52 45.7	+1.1
NIS1	**Nisyros Isl.**	**1.56**	**339**	P	Pn	03 52 45.7	+1.1
KSL	**Kastellorizon**	**1.72**	**54**	P	Pn	03 52 47.4	+0.7
AKAS	**Kas**	**1.79**	**52**	P	Pb	03 52 49.2	-0.3
AKAS	**Kas**	**1.79**	**52**	*i* P	Pb	03 52 49.2	-0.3
FETY	**Fethiye**	**1.79**	**33**	*e*PN	Pn	03 52 48.4	+0.7
FETY	**Fethiye**	**1.79**	**33**	P	Pn	03 52 48.1	+0.4
FETY				S	Sn	03 53 09.0	-1.6
FETY	**Fethiye**	**1.79**	**33**	P	Pn	03 52 48.1	+0.4
FETY	**Fethiye**	**1.79**	**33**	*e*Pn	Pn	03 52 48.4	+0.7
FETY				S	Sn	03 53 09.0	-1.6
DALY	**Dalyan (Mu¨la**	**1.79**	**21**	*e*PN	Pn	03 52 47.7	0.0
DALY	**Dalyan (Mu¨la**	**1.79**	**21**	*e*Pn	Pn	03 52 47.7	0.0
TURN	**Turunc**	**1.83**	**19**	*i* P	Pb	03 52 49.8	-0.4
TURN				*i* S	Sb	03 53 14.3	+1.1
NPS	**Neapolis**	**1.85**	**274**	P	Pg	03 52 52.5	+0.6
NPS	**Neapolis**	**1.85**	**274**	P	Pg	03 52 52.5	+0.6
BDRM	**Kayabasi**	**1.95**	**350**	P	Pn	03 52 51.0	+1.1
BDRM				S	Sb	03 53 18.0	+1.2
BDRM	**Kayabasi**	**1.95**	**350**	*i* P	Pn	03 52 51.0	+1.1
BDRM				*i* S	Sb	03 53 18.0	+1.2
LAST	**Lasithi**	**1.96**	**271**	P	Pg	03 52 54.2	+0.2
LAST	**Lasithi**	**1.96**	**271**	P	Pg	03 52 54.2	+0.2
BODT	**Bodrum**	**1.97**	**347**	*e*PN	Pn	03 52 51.1	+0.9
YER	**Yerkesik**	**2.02**	**9**	*e*PN	Pn	03 52 51.2	+0.3
YER	**Yerkesik**	**2.02**	**9**	*e*Pn	Pn	03 52 51.2	+0.3
ELL	**Elmali**	**2.31**	**45**	*e*PN	Pn	03 52 56.8	+1.9
ELL	**Elmali**	**2.31**	**45**	*e*Pn	Pn	03 52 56.8	+1.9
SANT	**Santorini**	**2.31**	**303**	P	Pn	03 52 55.5	+0.6
SANT	**Santorini**	**2.31**	**303**	P	Pn	03 52 55.5	+0.6
CMBO	**Columbo, Santo**	**2.40**	**304**	P	Pn	03 52 56.1	0.0
CMBO	**Columbo, Santo**	**2.40**	**304**	P	Pn	03 52 56.1	0.0
THR5	**Thira Island,**	**2.42**	**303**	*e*PN	Pb	03 52 59.5	-0.6
THR5	**Thira Island,**	**2.42**	**303**	*e*Pn	Pb	03 52 59.5	-0.6
IDI	**Anoyia**	**2.44**	**274**	Pn	Pb	03 52 59.4	-1.3
	comp=E,4.0nm,0.3s,baz=106,slow=12,SNR=33						
IDI				Sn	Sb	03 53 32.3	+1.3
	comp=E,8.2nm,0.3s,baz=110,slow=13,SNR=5.5						
IDI				LR	LR	03 53 36.6	
	comp=E,15nm,20.4s,baz=128,slow=32						
IDI	**Anoyia**	**2.44**	**274**	P	Pb	03 53 00.2	-0.5
IDI	**Anoyia**	**2.44**	**274**	P	Pb	03 53 00.2	-0.5
GOLH	**Golhisar**	**2.50**	**33**	P	Pn	03 52 59.7	+2.2
GOLH	**Golhisar**	**2.50**	**33**	*i* P	Pn	03 52 59.7	+2.2
SIVA	**Sivas**	**2.51**	**268**	P	Pb	03 53 01.8	0.0
SIVA	**Sivas**	**2.51**	**268**	P	Pb	03 53 01.8	0.0
AYDN	**Tasoluk**	**2.52**	**0**	P	Pn	03 52 58.6	+0.9
AYDN	**Tasoluk**	**2.52**	**0**	*i* P	Pn	03 52 58.6	+0.9
GCAM	**G?zelcaml?**	**2.61**	**349**	P	Pb	03 53 02.5	-0.9
GCAM	**G?zelcaml?**	**2.61**	**349**	*i* P	Pb	03 53 02.5	-0.9
SMG	**Samos**	**2.70**	**342**	P	Pn	03 53 00.5	+0.4
SMG	**Samos**	**2.70**	**342**	P	Pn	03 53 00.5	+0.4
APE	**Apeiranthos**	**2.70**	**316**	*e*PN	Pn	03 53 02.5	+2.2
APE	**Apeiranthos**	**2.70**	**316**	P	Pn	03 53 01.0	+0.8
APE	**Apeiranthos**	**2.70**	**316**	*e*Pn	Pn	03 53 02.5	+2.2
APE	**Apeiranthos**	**2.70**	**316**	P	Pn	03 53 01.0	+0.8
DNZL	**Cakiroluk**	**2.72**	**20**	P	Pn	03 53 01.8	+1.2
DNZL	**Cakiroluk**	**2.72**	**20**	*i* P	Pn	03 53 01.8	+1.2
KORT	**Korkueli**	**2.74**	**47**	P	Pn	03 53 02.8	+2.0
KORT	**Korkueli**	**2.74**	**47**	*i* P	Pn	03 53 02.8	+2.0
DENT	**Denizli**	**2.77**	**19**	*e*PN	Pn	03 53 01.8	+0.6
AYDB	**Zeytinkoy-Aydi**	**2.80**	**0**	*e*PN	Pn	03 53 02.1	+0.4
AYDB	**Zeytinkoy-Aydi**	**2.80**	**0**	*e*Pn	Pn	03 53 02.1	+0.4
DGB	**¨zmir**	**3.01**	**345**	*i* P	Pn	03 53 04.8	+0.3
IMMV	**Iera Moni Meta**	**3.20**	**277**	P	Pb	03 53 11.5	-2.0
IMMV	**Iera Moni Meta**	**3.20**	**277**	P	Pb	03 53 11.5	-2.0
ZEY	**¨zmir**	**3.28**	**341**	*i* P	Pn	03 53 09.9	+1.8
URLA	**Izmir**	**3.37**	**343**	P	Pn	03 53 12.0	+2.5
URLA	**Izmir**	**3.37**	**343**	*i* P	Pn	03 53 12.0	+2.5
MANT	**Manisa**	**3.39**	**9**	P	Pn	03 53 10.5	+0.6
MANT	**Manisa**	**3.39**	**9**	*i* P	Pn	03 53 10.5	+0.6
KULA	**Kula-Manisa**	**3.43**	**10**	*e*PN	Pn	03 53 11.0	+0.8
KULA	**Kula-Manisa**	**3.43**	**10**	*e*Pn	Pn	03 53 11.0	+0.8
SUTC	**Sutluce-Ispart**	**3.44**	**46**	*e*PN	Pn	03 53 12.1	+1.6
SUTC	**Sutluce-Ispart**	**3.44**	**46**	*e*Pn	Pn	03 53 12.1	+1.6
KHL	**Karahalli**	**3.44**	**22**	*e*PN	Pn	03 53 11.3	+0.8
KHL	**Karahalli**	**3.44**	**22**	*e*Pn	Pn	03 53 11.3	+0.8
KHAL	**Karahalli**	**3.48**	**22**	P	Pn	03 53 11.3	+0.3
KHAL	**Karahalli**	**3.48**	**22**	*i* P	Pn	03 53 11.3	+0.3
CHOS	**Chios island**	**3.55**	**336**	*e*PN	Pn	03 53 13.9	+1.9
CHOS	**Chios island**	**3.55**	**336**	P	Pn	03 53 12.4	+0.4
CHOS	**Chios island**	**3.55**	**336**	*e*Pn	Pn	03 53 13.9	+1.9
CHOS	**Chios island**	**3.55**	**336**	P	Pn	03 53 12.3	+0.4
AKHS	**Akhisar**	**3.73**	**359**	P	Pn	03 53 14.7	+0.3
AKHS	**Akhisar**	**3.73**	**359**	*i* P	Pn	03 53 14.7	+0.3
GAZI	**Gazipasa**	**3.78**	**72**	P	Pn	03 53 15.2	+0.1
GAZI				S	Sn	03 53 59.2	-0.5
GAZI	**Gazipasa**	**3.78**	**72**	*i* P	Pn	03 53 15.2	+0.1
GAZI				*i* S	Sn	03 53 59.2	-0.5
ANKY	**Antikythira Is**	**3.80**	**282**	P	Pn	03 53 18.6	+3.4
ANKY	**Antikythira Is**	**3.80**	**282**	P	Pn	03 53 18.6	+3.4
GDZ	**Gediz**	**4.15**	**18**	P	Pn	03 53 20.4	+0.2
GDZ	**Gediz**	**4.15**	**18**	*i* P	Pn	03 53 20.4	+0.2
ERMK	**Ermenek**	**4.36**	**68**	P	Pn	03 53 25.6	+2.4
ERMK				S	Sn	03 54 18.5	+4.2
ERMK	**Ermenek**	**4.36**	**68**	*i* P	Pn	03 53 25.6	+2.4
ERMK				*i* S	Sn	03 54 18.5	+4.2
TVSB	**Tavsanli**	**4.49**	**16**	*e*PN	Pn	03 53 26.2	+1.4
TVSB	**Tavsanli**	**4.49**	**16**	*e*Pn	Pn	03 53 26.2	+1.4
EREA	**Eretria**	**4.55**	**317**	P	Pn	03 53 27.8	+2.2
EREA	**Eretria**	**4.55**	**317**	P	Pn	03 53 27.8	+2.2
KONT	**Konya--Tatoy**	**4.57**	**51**	*e*PN	Pn	03 53 28.4	+2.4
LADK	**Ladik-KONYA**	**4.73**	**48**	*e*PN	Pn	03 53 30.6	+2.4
LADK	**Ladik-KONYA**	**4.73**	**48**	*e*Pn	Pn	03 53 30.6	+2.4
KIZT	**Kizilcal**	**4.92**	**39**	*e*PN	Pn	03 53 32.2	+1.4
KIZT	**Kizilcal**	**4.92**	**39**	*e*Pn	Pn	03 53 32.2	+1.4
KERG	**Konya-Eregli**	**5.54**	**64**	P	Pn	03 53 41.2	+1.8
KERG				S	Sn	03 54 43.1	-0.2
KERG	**Konya-Eregli**	**5.54**	**64**	*i* P	Pn	03 53 41.2	+1.8
KERG				*i* S	Sn	03 54 43.1	-0.2
BRTR	**Keskin Array B**	**6.48**	**43**	Pn	Pn	03 53 53.4	+1.1
	comp=E,0.2nm,0.3s,baz=217,slow=17,SNR=5.4						
BRTR				Sn	Sn	03 55 06.9	+0.4
	comp=E,0.2nm,0.3s,baz=208,slow=26,SNR=5.8						
MMAI	**Mount Meron Ar**	**6.60**	**107**	Pn	Pn	03 53 53.2	-0.6
	comp=E,2.6nm,0.3s,baz=295,slow=12,SNR=7.4						
MMAI				Sn	Sn	03 55 06.9	-2.5
	comp=E,1.6nm,0.3s,baz=271,slow=26,SNR=2.8						
YAYL	**Yayladag**	**6.77**	**80**	P	Pn	03 53 56.7	+0.5
YAYL	**Yayladag**	**6.77**	**80**	*i* P	Pn	03 53 56.7	+0.5
ASF	**Jabal al Asfar**	**8.09**	**109**	Pn	Pn	03 54 14.2	-0.1
	comp=E,0.2nm,0.3s,baz=283,slow=14,SNR=3.1						
ASF				Sn	Sn	03 55 44.1	-1.9
	comp=E,0.1nm,0.3s,baz=337,slow=15,SNR=1.9						
EIL	**Elat**	**8.10**	**130**	Pn	Pn	03 54 14.5	+0.2
	comp=E,0.6nm,0.3s,baz=337,slow=13,SNR=4.7						
EIL				Sn	Sn	03 55 39.0	-7.1
	comp=E,0.5nm,0.3s,baz=321,slow=16,SNR=1.9						
MLR	**Muntele Rosu**	**10.44**	**353**	Pn	Pn	03 54 48.0	+1.4
	baz=115,slow=19,SNR=1.9						
MLR				LR	LR	03 58 56.5	
	comp=E,9.3nm,19.1s,baz=80,slow=39						
KBZ	**Khabaz**	**14.42**	**49**	Pn	P	03 55 50.0	+2.3
	comp=E,0.1nm,0.3s,baz=242,slow=8.2,SNR=7.0						
KEST	**Kesra**	**15.12**	**278**	Pn	P	03 55 55.3	-0.4
	comp=E,0.1nm,0.3s,baz=87,slow=17,SNR=2.7						
GERES	**GERESS Array B**	**17.24**	**327**	P	Pn	03 56 17.6	+0.1
	comp=E,0.1nm,0.3s,baz=138,slow=10,SNR=4.4						
OBN	**Obninsk**	**20.86**	**14**	LR	LR	04 05 14.8	
	comp=E,42nm,19.4s,baz=61,slow=38						
ESDC	**Sonseca Array**	**25.61**	**290**	P	P	03 57 45.7	-0.6
	comp=E,0.4nm,0.5s,baz=84,slow=9.2,SNR=6.4						
FINES	**FINESS Array B**	**26.35**	**358**	P	P	03 57 50.6	-2.0
	comp=E,0.6nm,0.7s,baz=169,slow=11,SNR=3.9						
HFS	**Hagfors**	**26.65**	**344**	P	P	03 57 54.5	-0.9
	comp=E,1.1nm,0.7s,baz=162,slow=15,SNR=4.7						
AKTO	**Aktyubinsk**	**26.66**	**46**	P	P	03 57 54.6	-1.0
	comp=E,1.5nm,0.6s,baz=257,slow=6.5,SNR=6.1						
TORD	**Torodi Ar. Bea**	**32.22**	**234**	P	P	03 58 46.1	+0.8
	comp=E,0.6nm,0.5s,baz=24,slow=9.2,SNR=34						
ARCES	**ARCESS Array B**	**34.48**	**359**	P	P	03 59 03.0	-1.4
	comp=E,2.0nm,0.9s,baz=161,slow=8.6,SNR=3.5						
KURBB	**Kurchatov Arra**	**39.41**	**51**	P	P	03 59 43.3	-3.3
	comp=E,0.4nm,0.5s,baz=280,slow=9.1,SNR=3.6						
MKAR	**Makanchi Array**	**41.93**	**57**	P	P	04 00 06.9	-0.6
	comp=E,0.3nm,0.4s,baz=270,slow=0.7,SNR=3.1						
ZALV	**Zalesovo Beam**	**43.42**	**46**	P	P	04 00 16.2	-3.3
	comp=E,0.4nm,0.3s,baz=266,slow=11,SNR=2.5						
SONM	**Songino Array**	**57.77**	**51**	P	P	04 02 07.5	-0.7
	comp=E,0.2nm,0.4s,baz=316,slow=4.0,SNR=3.1						
SCHQ	**Schefferville**	**64.63**	**320**	P	P	04 02 53.6	-0.8
	comp=E,0.8nm,0.5s,baz=37,slow=5.1,SNR=3.9						

*IDC **09** 03:53:02.3±2.1, 38°.71N×145°.43E, h0km, mb3.5/2, mb1 3.8/5, mb1mx3.3/60, mbtmp3.7/5, ML3.4/3, MS3.2/1, Ms1 3.2/1, ms1mx2.3/36, Error ellipse: s-maj=51.4km s-min=27.8km az=146.0*

*JMA **09** 03:53:11.5±0.2, 38°.88N×144°.20E, h9km, Md3.6*

ISC 09 03:53:11.8±2.2, 38°.76N±0°.08×144°.6E±0°.1, h35km, n15, σ1§62/19, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**2.29**	**279**	P	Pn	03 53 46.1	-0.9
MIYJ	**Miyakonagasawa**	**2.29**	**292**	P	Pn	03 53 45.6	-1.5
MIYJ				S	Sn	03 54 10.9	-3.2
JMK	**Ichinoseki**	**2.62**	**275**	P	Pn	03 53 51.2	-0.5
JOM	**Ohasama**	**2.65**	**287**	P	Pn	03 53 51.2	-0.8
JFT	**Otama**	**3.56**	**251**	P	Pn	03 54 05.3	+0.7
JFT				S	Sn	03 54 44.8	-0.7
JKB	**Kayabe**	**4.13**	**320**	P	Pn	03 54 12.5	+0.1
JOSM	**Okushiri--Mats**	**5.11**	**312**	P	Pn	03 54 25.4	-0.5
JRY	**Ryogami san**	**5.28**	**241**	P	Pn	03 54 28.8	+0.6
JRY				S	Sn	03 55 26.6	-1.2
MJAR	**Matsushiro Arr**	**5.51**	**248**	Pn	Pn	03 54 32.2	+0.8
	1.4nm,0.3s,baz=65,slow=11,SNR=16						
MJAR				Sn	Sn	03 55 35.2	+1.6
	0.7nm,0.3s,baz=107,slow=18,SNR=3.4						
MAT	**Matsushiro**	**5.51**	**248**	P	Pn	03 54 33.0	+1.6
MAT				*e*S	Sn	03 55 37.0	+3.4
JHJ	**Hachijo jima 2**	**6.84**	**216**	Pn	Pn	03 54 49.5	-0.1
	9.0nm,0.3s,baz=51,slow=13,SNR=2.8						
JHJ				Sn	Sn	03 56 03.7	-2.4
	26nm,0.3s,baz=59,slow=19,SNR=3.1						
USRK	**Ussuriysk Ar.**	**10.89**	**304**	Pn	Pn	03 55 46.0	+1.0
	0.3nm,0.3s,baz=107,slow=12,SNR=4.2						
KURBB	**Kurchatov Arra**	**46.93**	**307**	P	P	04 01 39.6	+0.9
	0.4nm,0.3s,baz=80,slow=9.1,SNR=3.7						
FITZ	**Fitzroy Crossi**	**59.28**	**201**	LR	LR	04 32 05.0	
	comp=Z,17nm,18.4s,baz=348,slow=39						
YKA	**Yellowknife Ar**	**61.05**	**31**	P	P	04 03 15.1	-6.5
	0.0nm,0.4s,baz=293,slow=8.6,SNR=2.4						

IDC 09 03:56:01.0±3.6, 5°.90S×150°.06E, h0km, mb3.1/2, mb1 3.5/3, mb1mx3.3/37, mbtmp3.3/3, ML1.5/1, Error ellipse: s-maj=152.1km s-min=27.2km az=116.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**4.51**	**219**	Pn	Pn	03 57 12.5	+1.9
	1.7nm,0.3s,baz=21,slow=9.8,SNR=6.8						
PMG				Sn	Sn	03 58 04.4	+0.5
	3.0nm,0.3s,baz=89,slow=19,SNR=6.9						
WRA	**Warramunga Arr**	**20.69**	**226**	P	P	04 00 42.8	-0.1
	0.4nm,0.4s,baz=52,slow=11,SNR=3.8						
ASAR	**Alice Springs**	**23.53**	**220**	P	P	04 01 12.5	-0.6
	0.2nm,0.3s,baz=45,slow=9.2,SNR=3.3						
NRIK	**Noril'sk**	**86.13**	**342**	P	P	04 08 43.8	+0.2
	3.6nm,0.6s,baz=117,slow=6.7,SNR=3.7						
TORD	**Torodi Ar. Bea**	**148.01**	**285**	PKPbc	PKPbc	04 15 48.8	-0.8
	0.4nm,0.6s,baz

AMT				S	Sn	04 35 26.5	+0.1
AMT	**Artemida-Makis**	**1.11**	**92**	P	Pn	04 35 11.0	0.0
DRO	**Drossia**	**1.17**	**71**	P	Pg	04 35 11.8	-0.2
DRO				S	Sn	04 35 28.1	+0.2
DRO	**Drossia**	**1.17**	**71**	P	Pg	04 35 11.8	-0.2
DRO				S	Sn	04 35 28.1	+0.2
DRO	**Drossia**	**1.17**	**71**	P	Pg	04 35 11.7	-0.2
PDO	**Prodromos**	**1.23**	**33**	P	Pg	04 35 13.0	-0.1
PDO				S	Sn	04 35 31.7	+2.3
PDO	**Prodromos**	**1.23**	**33**	P	Pg	04 35 13.1	-0.1
PDO				S	Sn	04 35 31.7	+2.3
PDO	**Prodromos**	**1.23**	**33**	P	Pg	04 35 13.1	-0.1
LKD2	**Lefkada island**	**1.24**	**12**	P	Pg	04 35 13.5	0.0
LKD2				S	Sn	04 35 31.9	+2.1
LKD2	**Lefkada island**	**1.24**	**12**	P	Pg	04 35 13.5	0.0
LKD2				S	Sn	04 35 31.9	+2.1
LKD2	**Lefkada island**	**1.24**	**12**	P	Pn	04 35 12.6	-0.4
LKD2				S	Sn	04 35 32.8	+3.0
LKD2				AML	AML	04 35 40.1	
	comp=N,579μm,0.3s						
LKD2				AML	AML	04 35 40.4	
	comp=E,634μm,0.6s						
PYL	**PYLOS**	**1.32**	**120**	P	Pb	04 35 14.0	-0.4
PYL				S	Sg	04 35 33.5	+1.4
PYL	**PYLOS**	**1.32**	**120**	P	Pb	04 35 14.0	-0.4
PYL				S	Sg	04 35 33.5	+1.4
PYL	**PYLOS**	**1.32**	**120**	P	Pn	04 35 13.4	-0.6
ITM	**Ithomi**	**1.34**	**107**	P	Pb	04 35 14.6	-0.1
ITM				S	Sg	04 35 33.4	+0.7
ITM	**Ithomi**	**1.34**	**107**	P	Pb	04 35 14.6	-0.1
ITM				S	Sg	04 35 33.4	+0.7
ITM	**Ithomi**	**1.34**	**107**	P	Pg	04 35 15.0	-0.3
PVO	**Paravola**	**1.41**	**42**	P	Pg	04 35 16.7	0.0
PVO	**Paravola**	**1.41**	**42**	P	Pg	04 35 16.7	0.0
LAKA	**Lakka**	**1.47**	**63**	P	Pb	04 35 16.5	-0.5
LAKA				S	Sg	04 35 36.5	-0.5
LAKA	**Lakka**	**1.47**	**63**	P	Pb	04 35 16.5	-0.5
LAKA				S	Sg	04 35 36.5	-0.5
KLV	**Kalavryta, Ach**	**1.53**	**71**	P	Pb	04 35 17.7	-0.2
KLV				S	Sg	04 35 38.4	-0.2
KLV	**Kalavryta, Ach**	**1.53**	**71**	P	Pb	04 35 17.8	-0.2
KLV				S	Sg	04 35 38.4	-0.2
KLV	**Kalavryta, Ach**	**1.53**	**71**	P	Pb	04 35 17.8	-0.2
KALE	**Kalithea**	**1.66**	**60**	P	Pb	04 35 19.5	-0.7
KALE	**Kalithea**	**1.66**	**60**	P	Pb	04 35 19.5	-0.7
DSL	**Palaion Diasel**	**1.68**	**21**	P	Pg	04 35 21.2	-0.5
DSL	**Palaion Diasel**	**1.68**	**21**	P	Pg	04 35 21.2	-0.5
AGG	**Agios Georgios**	**2.15**	**47**	P	Pb	04 35 27.6	-0.9
AGG	**Agios Georgios**	**2.15**	**47**	P	Pb	04 35 27.6	-0.9
STON	**Ston**	**5.66**	**340**	*i* Pn	Pn	04 36 13.9	+0.3
STON				Sn	Sn	04 37 15.9	-2.7

ISCJB ***09*** *05:06:16.4±0.5, 67°.12N×0°.03×20°.53E±0°.10, h0km, Error ellipse: s-maj=5.6km s-min=3.6km az=10.0*
NAO ***09*** *05:06:20.3±1.1, 67°.14N×21°.12E, ML2.2*
CSEM ***09*** *05:06:20.6±0.2, 67°.16N×20°.93E, h2km, ML2.4, Error ellipse: s-maj=6.3km s-min=4.0km az=99.0, Mining explosion.*
HEL ***09*** *05:06:21.1±0.1, 67°.19N×20°.75E, h0km, ML2.4, Explosion*
IDC ***09*** *05:06:21.2±1.1, 67°.23N×21°.56E, h0km, mb1 2.8/3, mb1mx2.8/43, mbtmp2.7/3, ML2.5/3, Error ellipse: s-maj=18.1km s-min=7.7km az=105.0*
BER ***09*** *05:06:22.1±4.3, 67°.17N×20°.75E, h0km, ML2.2(NAO), Suspected explosion*

ISC 09 05:06:19.1±0.8, 67°.13N±0°.03×20°.71E±0°.04, h0km, n40, σ1°29/57, Sweden

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LANU	**Lannavaara**	**1.05**	**27**	*e*P	**Pg**	**05 06 38.8**	**-0.3**
LANU	**Lannavaara**	**1.05**	**27**	P	**Pg**	**05 06 38.8**	**-0.3**
HEF	**Hetta**	**1.71**	**40**	*e*P	**Pn**	**05 06 49.3**	**-0.8**
HEF				*e*S	**Sn**	**05 07 11.7**	**-0.9**
HEF	**Hetta**	**1.71**	**40**	P	**Pn**	**05 06 49.2**	**-0.8**
HEF				S	**Sn**	**05 07 11.6**	**-0.9**
TOF	**Tornio**	**1.79**	**124**	*e*P	**Pb**	**05 06 53.1**	**+0.4**
TOF				*e*SG	**Sg**	**05 07 16.8**	**+0.3**
TOF	**Tornio**	**1.79**	**124**	P	**Pb**	**05 06 53.0**	**+0.4**
TOF				Sg	**Sg**	**05 07 16.7**	**+0.3**
KIF	**Kilpisjarvi**	**1.89**	**1**	*e*P	**Pb**	**05 06 54.0**	**-0.3**
KIF				*e*SG	**Sg**	**05 07 20.2**	**+0.6**
KIF	**Kilpisjarvi**	**1.89**	**1**	P	**Pb**	**05 06 53.9**	**-0.3**
KIF				Sg	**Sg**	**05 07 20.1**	**+0.6**
KTK1	**Kautokeino**	**2.12**	**25**	*e*P	**Pb**	**05 06 58.2**	**0.0**
KTK1				*e*Sg	**Sg**	**05 07 26.3**	**-0.7**
KTK1	**Kautokeino**	**2.12**	**25**	*e*P	**Pb**	**05 06 58.2**	**0.0**
	SNR=50						
KTK1				*e*Sg	**Sg**	**05 07 26.3**	**-0.7**
	SNR=90						
RNF	**Rovaniemi**	**2.16**	**102**	*e*PB	**Pb**	**05 06 58.7**	**-0.3**
RNF	**Rovaniemi**	**2.16**	**102**	Pb	**Pb**	**05 06 58.7**	**-0.3**
SGF	**Sodankyl**	**2.28**	**79**	*e*PG	**Pg**	**05 07 02.5**	**-0.2**
SGF	**Sodankyl**	**2.28**	**79**	Pg	**Pg**	**05 07 02.5**	**-0.2**
TRO	**Tromso**	**2.60**	**346**	*e*Sg	**Sg**	**05 07 41.0**	**-1.5**
TRO	**Tromso**	**2.60**	**346**	*e*Sg	**Sg**	**05 07 41.0**	**-1.5**
	SNR=90						
MOR8	**Moi Rana**	**2.67**	**252**	*e*Sg	**Sb**	**05 07 40.7**	**-0.4**
ARE0	**ARCESS Array S**	**3.00**	**34**	*e*P	**Pn**	**05 07 08.9**	**+1.1**
ARE0	**ARCESS Array S**	**3.00**	**34**	P	**Pn**	**05 07 08.9**	**+1.1**
ARA0	**ARCESS Array S**	**3.00**	**34**	Pn	**Pn**	**05 07 07.4**	**-0.4**
	baz=218,slow=14						
ARA0				Sn	**Sn**	**05 07 44.6**	**+0.1**
	baz=213,slow=28						
ARA0	**ARCESS Array S**	**3.00**	**34**	Pn	**Pn**	**05 07 07.4**	**-0.4**
	baz=218,slow=14						
ARA0				Sn	**Sn**	**05 07 44.6**	**+0.1**
	baz=213,slow=28						
ARA0	**ARCESS Array S**	**3.00**	**34**	Pn	**Pn**	**05 07 07.4**	**-0.4**
	baz=218,slow=13,SNR=50						
ARA0				Sn	**Sn**	**05 07 44.6**	**+0.1**
	baz=213,slow=23,SNR=50						
ARCES	**ARCESS Array B**	**3.00**	**34**	Pn	**Pn**	**05 07 07.1**	**-0.7**
	0.8nm,0.3s,baz=213,slow=15,SNR=14						
ARCES				Lg	Lg	05 07 46.5	
	1.9nm,0.3s,baz=214,slow=23,SNR=12						
KEV	**Kevo**	**3.52**	**39**	*e*S	**Sn**	**05 07 56.9**	**-0.2**
KEV				MSG		05 08 16.5	
	comp=Z,11nm,0.4s						
KEV	**Kevo**	**3.52**	**39**	S	**Sn**	**05 07 56.8**	**-0.2**
VAF	**Ylistaro**	**4.19**	**168**	*e*SG	**Sg**	**05 08 31.3**	**-2.1**
VAF				MSG		05 08 36.6	
	comp=Z,4.8nm,0.4s						
APA0	**Apatity Array**	**4.77**	**79**	Sn	**Sn**	**05 08 26.9**	**-1.1**
	baz=278,slow=37						
APA0				Lg	Lg	05 08 45.6	
	baz=290,slow=28						
APA0	**Apatity Array**	**4.77**	**79**	Sn	**Sn**	**05 08 26.9**	**-1.1**
	baz=278,slow=37						
APA0				Lg	Lg	05 08 45.6	
	baz=290,slow=28						
APA0	**Apatity Array**	**4.77**	**79**	Sn	**Sn**	**05 08 26.9**	**-1.1**
	baz=278,slow=34,SNR=50						
FIA0	**FINESS Array S**	**6.17**	**155**	Pn	**Pn**	**05 07 53.5**	**+2.3**
	baz=348,slow=22						
FIA0				Sn	**Sn**	**05 09 01.1**	**-1.3**
	baz=352,slow=22						
FIA0				Lg	Lg	05 09 33.1	
	baz=343,slow=37						
FIA0	**FINESS Array S**	**6.17**	**155**	Pn	**Pn**	**05 07 53.5**	**+2.3**
	baz=348,slow=22						
FIA0				Sn	**Sn**	**05 09 01.1**	**-1.3**
	baz=352,slow=22						
FIA0				Lg	Lg	05 09 33.1	
	baz=343,slow=37						
FIA0	**FINESS Array S**	**6.17**	**155**	Pn	**Pn**	**05 07 53.5**	**+2.3**
	baz=348,slow=20,SNR=50						
FIA0				Sn	**Sn**	**05 09 01.0**	**-1.3**
	baz=352,slow=20,SNR=50						
FIA0				Lg	Lg	05 09 33.1	
	SNR=5.5						
FINES	**FINESS Array B**	**6.17**	**155**	Pn	**Pn**	**05 07 53.7**	**+2.5**
	comp=Z,0.1nm,0.3s,baz=348,slow=20,SNR=3.2						
FINES				Sn	**Sn**	**05 09 03.4**	**+1.1**
	comp=Z,0.2nm,0.3s,baz=338,slow=24,SNR=3.6						
FINES				Lg	Lg	05 09 32.2	
	comp=Z,1.0nm,0.3s,baz=346,slow=27,SNR=8.0						
NB2	**NORSAR Subarra**	**7.38**	**219**	Pn	**Pn**	**05 08 10.7**	**+2.7**
NB2	**NORSAR Subarra**	**7.38**	**219**	Pn	**Pn**	**05 08 10.7**	**+2.7**
NB2	**NORSAR Subarra**	**7.38**	**219**	Pn	**Pn**	**05 08 10.7**	**+2.7**
	SNR=50						
NOA	**NORSAR Array B**	**7.38**	**219**	Pn	Pn	05 08 12.3	+4.3
	comp=Z,0.2nm,0.3s,baz=28,slow=11,SNR=2.8						
NOA				Sn	**Sn**	**05 09 30.0**	**-2.4**
	comp=Z,0.3nm,0.3s,baz=66,slow=18,SNR=4.1						
NOA				Lg	Lg	05 10 11.2	
	comp=Z,0.3nm,0.3s,baz=95,slow=14,SNR=3.4						
HFS	**Hagfors**	**7.68**	**207**	Pn	**Pn**	**05 08 13.2**	**+1.2**
	baz=38,slow=11						
HFS				Sn	**Sn**	**05 09 37.6**	**-2.0**
	baz=24,slow=22						
HFS				Lg	Lg	05 10 19.6	
	baz=42,slow=28						
HFS	**Hagfors**	**7.68**	**207**	Pn	**Pn**	**05 08 13.2**	**+1.2**
	baz=38,slow=11						
HFS				Sn	**Sn**	**05 09 37.6**	**-2.0**
	baz=24,slow=22						
HFS				Lg	Lg	05 10 19.6	
	baz=42,slow=28						
HFS	**Hagfors**	**7.68**	**207**	Pn	**Pn**	**05 08 13.2**	**+1.2**
	baz=38,slow=11,SNR=50						

NIED ***09*** *05:15:00, 37°.10N×143°.70E, h5km, Mw3.5 Best double couple: M0 2.22000×10^14 NP1:φs 12.00000°, δ23.00000°, λ-102.00000°. NP2:φs 205.00000°, δ67.00000°, λ-85.00000°*

JMA 09 05:15:49.9±0.2, 37°.06N×143°.73E, h28km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**2.30**	**279**	P	Pn	05 16 27.4	+1.4
JFK				S	Sn	05 16 54.7	+1.3
JIO	**Ouri**	**2.34**	**307**	P	Pn	05 16 27.9	+1.4
JIO				*e*S	Sn	05 16 56.0	+1.6
ONAJ	**Iwakimizuishiy**	**2.34**	**272**	P	Pn	05 16 27.8	+1.2
ONAJ				*e*S	Sn	05 16 56.1	+1.6
JMM	**Marumori**	**2.47**	**290**	P	Pn	05 16 29.8	+1.5
JMM				S	Sn	05 16 59.6	+2.1
JMK	**Ichinoseki**	**2.74**	**314**	P	Pn	05 16 33.4	+1.4
JFT	**Otama**	**2.75**	**281**	S	Sn	05 17 07.4	+3.1
JOM	**Ohasama**	**3.08**	**322**	P	Pn	05 16 37.8	+1.1
JOM				*e*S	Sn	05 17 14.3	+1.7
JYK	**Kaneyama**	**3.25**	**306**	P	Pn	05 16 41.4	+2.5
BSO1	**Boso 1**	**3.28**	**224**	S	Sn	05 17 20.7	+4.0
JAG	**Ashikaga**	**3.49**	**261**	P	Pn	05 16 43.6	+1.2
JAG				S	Sn	05 17 24.3	+1.5

NIED ***09*** *05:20:00, 38°.50N×144°.60E, h5km, Mw3.6 Best double couple: M0 3.08000×10^14 NP1:φs 32.00000°, δ34.00000°, λ-76.00000°. NP2:φs 195.00000°, δ57.00000°, λ-99.00000°.*
IDC ***09*** *05:20:37.0±0.9, 38°.46N×144°.96E, h0km, mb3.6/8, mb1 3.9/10, mb1mx3.7/41, mbtmp3.6/10, ML3.0/2, MS3.0/3, Ms1 3.0/3, ms1mx2.5/32, Error ellipse: s-maj=28.1km s-min=19.3km az=112.0*
ISCJB ***09*** *05:20:39.8±0.6, 38°.55N±0°.05×144°.68E±0°.05, h29km, mb3.6/8, MS3.4/2, Error ellipse: s-maj=7.8km s-min=5.5km az=173.8*
JMA ***09*** *05:20:41.6±0.3, 38°.54N×144°.57E, h42km, M3.9*

ISC 09 05:20:41.6±0.8, 38°.63N±0°.07×144°.72E±0°.07, h29km, n26, σ1°42/32, mb3.6/8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.43**	**282**	P	**Pn**	**05 21 19.4**	**+0.1**
OFUJ				S	**Sn**	**05 21 46.8**	**-1.2**
MIYJ	**Miyakonagasawa**	**2.45**	**294**	P	**Pn**	**05 21 18.9**	**-0.7**
MIYJ				S	**Sn**	**05 21 47.4**	**-1.2**
JMK	**Ichinoseki**	**2.76**	**278**	P	**Pn**	**05 21 23.5**	**-0.3**
JMK				S	**Sn**	**05 21 54.8**	**-1.4**
JOM	**Ohasama**	**2.80**	**289**	P	**Pn**	**05 21 24.3**	**-0.2**
JOM				S	**Sn**	**05 21 56.1**	**-1.2**
JANG	**Nango**	**3.03**	**306**	*e*S	**Sn**	**05 22 02.2**	**-0.7**
JYK	**Kaneyama**	**3.42**	**276**	P	**Pn**	**05 21 33.0**	**0.0**
JYK				*e*S	**Sn**	**05 22 11.9**	**-0.7**
JFT	**Otama**	**3.64**	**254**	P	**Pn**	**05 21 35.5**	**-0.5**
JFT				S	**Sn**	**05 22 16.2**	**-1.7**
JOT	**Ohata**	**3.94**	**315**	P	**Pn**	**05 21 41.7**	**+1.6**
JOT				*e*S	**Sn**	**05 22 22.1**	**-3.2**
JCH	**Churui**	**4.11**	**346**	P	**Pn**	**05 21 41.7**	**-0.7**
JCH				*e*S	**Sn**	**05 22 25.5**	**-4.0**
JKB	**Kayabe**	**4.31**	**320**	P	**Pn**	**05 21 46.4**	**+1.3**
JRY	**Ryogami san**	**5.32**	**242**	P	**Pn**	**05 21 57.7**	**-1.5**
MJAR	**Matsushiro Arr**	**5.58**	**250**	Pn	**Pn**	**05 22 02.8**	**+0.1**
	2.2nm,0.3s,baz=56,slow=10,SNR=19						
MAT	**Matsushiro**	**5.58**	**250**	P	**Pn**	**05 22 03.1**	**+0.4**
MAT				*e*S	**Sn**	**05 23 05.4**	**-0.5**
ASAJ	**Asahikawa**	**5.71**	**344**	LR	LR	05 24 18.0	
	comp=Z,33nm,22.0s,baz=248,slow=37						
USRK	**Ussuriysk Ar.**	**11.06**	**304**	Pn	**Pn**	**05 23 19.9**	**+2.1**
	0.2nm,0.3s,baz=113,slow=15,SNR=4.4						
SEY	**Seymchan**	**24.77**	**8**	P	**P**	**05 26 02.4**	**+1.9**
	1.5nm,0.6s,baz=162,slow=11,SNR=6.0						
ZALV	**Zalesovo Beam**	**42.81**	**311**	PcP	**PcP**	**05 30 27.9**	**+0.5**
	0.6nm,0.4s,baz=77,slow=3.6,SNR=3.5						
MKAR	**Makanchi Array**	**45.51**	**301**	P	**P**	**05 28 59.5**	**+1.2**
	0.5nm,0.7s,baz=82,slow=10,SNR=3.8						
ILAR	**Eielson Array**	**46.73**	**33**	P	**P**	**05 29 07.7**	**0.0**
	0.3nm,0.6s,baz=240,slow=5.4,SNR=4.3						
WRA	**Warramunga Arr**	**59.08**	**191**	P	**P**	**05 30 37.9**	**-1.3**
	1.4nm,0.8s,baz=9.6,slow=7.2,SNR=7.8						
YKA	**Yellowknife Ar**	**61.09**	**31**	P	**P**	**05 30 51.9**	**-0.7**
	0.1nm,0.6s,baz=297,slow=6.1,SNR=4.0						
ASAR	**Alice Springs**	**62.80**	**191**	P	**P**	**05 31 03.7**	**-0.7**
	0.4nm,0.6s,baz=7.3,slow=6.8,SNR=5.6						
FINES	**FINESS Array B**	**68.60**	**333**	P	**P**	**05 31 42.7**	**+1.3**
	1.7nm,0.7s,baz=66,slow=4.8,SNR=6.1						
NOA	**NORSAR Array B**	**73.70**	**338**	LR	LR	06 09 13.2	
	comp=Z,9.4nm,21.3s,baz=195,slow=39						
AKASG	**Malin Array Be**	**74.61**	**323**	LR	LR	06 08 25.2	
	comp=Z,43nm,18.7s,baz=230,slow=38						
PDAR	**Pinedale Array**	**74.67**	**47**	P	**P**	**05 32 18.6**	**0.0**
	0.2nm,0.5s,baz=318,slow=2.0,SNR=3.6						

IDC 09 05:23:16.4±2.9, 31°.31S×178°.68W, h0km, mb3.6/2, mb1 3.9/3, mb1mx3.7/30, mbtmp3.7/3, ML3.4/1, MS3.3/4, Ms1 3.3/4, ms1mx3.0/23, Error ellipse: s-maj=68.5km s-min=35.7km az=108.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**7.75**	**205**	Pn	Pn	05 25 10.6	+0.2
	0.5nm,0.3s,baz=19,slow=18,SNR=4.5						
URZ				Sn	Sn	05 26 39.0	+0.1
	0.5nm,0.3s,baz=3.4,slow=17,SNR=2.2						
AFI	**Afiamalu**	**18.44**	**22**	LR	LR	05 35 05.0	
	comp=Z,27nm,18.1s,baz=155,slow=38						
RAR	**Rarotonga**	**19.69**	**64**	LR	LR	05 34 15.2	
	comp=Z,61nm,20.2s,baz=224,slow=34						
PAE	**Paea**	**29.66**	**70**	*e*T	T	06 00 08.0	
	9.9nm,0.3s						
PPT2	**Papeete2**	**29.70**	**69**	*e*LR	LR	05 36 58.3	
	109nm,28.0s						
PPT2	**Papeete2**	**29.70**	**69**	*e*T	T	06 00 11.9	
	7.7nm,0.3s						
VAH	**Vaihoa**	**32.56**	**68**	*e*T	T	06 03 40.9	
	56nm,0.2s						
STKA	**Stephens Creek**	**33.71**	**258**	LR	LR	05 42 10.2	
	comp=Z,112nm,18.6s,baz=196,slow=34						
RKT	**Rikitea**	**39.51**	**89**	*e*T	T	06 12 40.0	
	1.0nm,0.2s						
ASAR	**Alice Springs**	**42.48**	**268**	P	P	05 31 12.1	-1.5
	0.5nm,0.8s,baz=103,slow=6.8,SNR=5.5						
ASAR				LR	LR	05 48 18.8	
	comp=Z,82nm,18.8s,baz=246,slow=35						
WRA	**Warramunga Arr**	**43.55**	**273**	P	P	05 31 23.7	+1.5
	1.0nm,0.8s,baz=112,slow=7.8,SNR=4.9						
FINES	**FINESS Array B**	**145.79**	**339**	PKPbc	PKPdf	05 42 55.8	-0.5
	1.0nm,0.8s,baz=318,slow=1.9,SNR=2.5						

GCMT 09 05:25:12.0±0.4, 11°.07S×13°.03W, h20km±1km, MW4.9/68, Moment Tensor Solution. s18,c22; s68,c90; Duration: 0 Moment tensor: Scale 1016Nm; Mrr=2.67±.21; Mθθ0.78±.12; Mφφ1.89±.13; Mrθ1.06±.29; Mθφ-0.70±.07; Mφr-0.28±.22; **Best double couple:** M0 2.65600×1016 **NP1:**φs 319.00000°, δ55.00000°, λ-106.00000°. **NP2:**φs 165.00000°, δ38.00000°, λ-69.00000°. **Principal axes:** T 2.3400, Plg9.0000°, Azm60.0000°; N 0.6260, Plg13.0000°, Azm328.0000°; P -2.9710, Plg74.0000°, Azm184.0000°; **nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s. Ascension Island region**

NIED ***09*** *05:37:00, 38°.50N×144°.60E, h5km, Mw3.8 Best double couple: M0 4.75000×10^14 NP1:φs 14.00000°, δ32.00000°, λ-101.00000°. NP2:φs 206.00000°, δ58.00000°, λ-83.00000°.*
IDC ***09*** *05:37:23.6±0.9, 38°.46N×145°.06E, h0km, mb3.8/8, mb1 4.0/10, mb1mx3.7/32, mbtmp3.8/10, ML3.1/2, MS2.9/3, Ms1 2.9/3, ms1mx2.5/34, Error ellipse: s-maj=26.6km s-min=20.0km az=105.0*
ISCJB ***09*** *05:37:26.3±0.6, 38°.56N±0°.05×144°.74E±0°.06, h29km, mb3.8/9, MS3.6/1, Error ellipse: s-maj=7.8km s-min=6.0km az=34.1*
JMA ***09*** *05:37:27.9±0.3, 38°.49N×144°.59E, h40km, M4.1*
NEIC ***09*** *05:37:28.7±0.6, 38°.48N×144°.91E, h35km, mb4.1/1, Error ellipse: s-maj=15.1km s-min=9.1km az=125.0*

ISC 09 05:37:28.6±0.8, 38°.56N±0°.07×144°.63E±0°.08, h29km, n29, σ2°01/34, mb3.9/9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.37**	**284**	P	**Pn**	**05 38 05.4**	**-0.1**
MIYJ	**Miyakonagasawa**	**2.41**	**296**	P	**Pn**	**05 38 05.8**	**-0.3**
JIO	**Ouri**	**2.58**	**269**	P	**Pn**	**05 38 08.1**	**-0.2**
JIO				S	**Sn**	**05 38 37.6**	**-1.1**
JMK	**Ichinoseki**	**2.69**	**279**	P	**Pn**	**05 38 10.2**	**+0.2**
JOM	**Ohasama**	**2.75**	**290**	P	**Pn**	**05 38 11.4**	**+0.6**
JANG	**Nango**	**3.02**	**308**	P	**Pn**	**05 38 14.8**	**+0.4**
JYK	**Kaneyama**	**3.36**	**277**	P	**Pn**	**05 38 20.3**	**+1.2**
JYK				*e*S	**Sn**	**05 38 58.9**	**+0.9**
ERM	**Erimo**	**3.63**	**342**	*e*Pn	**Pn**	**05 38 23.4**	**+0.6**
ERM				*e*Sn	**Sn**	**05 39 03.1**	**-1.6**
JCH	**Churui**	**4.17**	**347**	P	**Pn**	**05 38 28.7**	**-1.5**
JKB	**Kayabe**	**4.32**	**322**	P	**Pn**	**05 38 33.1**	**+0.9**
JRY	**Ryogami san**	**5.22**	**243**	P	**Pn**	**05 38 44.5**	**-0.3**
MJAR	**Matsushiro Arr**	**5.48**	**250**	Pn	**Pn**	**05 38 49.7**	**+1.4**
	2.3nm,0.3s,baz=61,slow=10,SNR=16						
MJAR				Sn	**Sn**	**05 39 44.9**	**-5.5**
	4.1nm,0.3s,baz=86,slow=27,SNR=9.5						
MAJO	**Matsushiro**	**5.49**	**250**	*e*Pn	**Pn**	**05 38 49.5**	**+1.1**
	11nm,0.4s						
MAJO				*e*Sn	**Sn**	**05 39 47.2**	**-3.3**
MAT	**Matsushiro**	**5.49**	**250**	P	**Pn**	**05 38 49.7**	**+1.3**
MAT				S	**Sn**	**05 39 46.0**	**-4.5**
JHJ2	**Mitsune**	**6.69**	**217**	*e*Pn	**Pn**	**05 39 05.3**	**+0.4**
JHJ2				*e*Sn	**Sn**	**05 40 24.1**	**+3.9**
USRK	**Ussuriysk Ar.**	**11.04**	**305**	Pn	**Pn**	**05 40 07.2**	**+2.7**
	0.2nm,0.3s,baz=105,slow=14,SNR=5.0						
KSRS	**Korea Array**	**13.22**	**270**	LR	LR	05 44 25.1	
	comp=Z,13nm,21.7s,baz=120,slow=31						
KLR	**Kul'dur**	**14.12**	**323**	LR	LR	05 46 21.8	
	comp=Z,34nm,18.1s,baz=104,slow=37						
SEY	**Seymchan**	**24.86**	**8**	P	**P**	**05 42 49.5**	**+1.3**
	1.6nm,0.4s,baz=164,slow=12,SNR=4.8						
ZALV	**Zalesovo Beam**	**42.80**	**311**	PcP	**PcP**	**05 47 14.5**	**+0.2**
	0.8nm,0.4s,baz=92,slow=2.7,SNR=4.8						
MKAR	**Makanchi Array**	**45.48**	**301**	P	**P**	**05 45 46.6**	**+1.4**
	0.6nm,0.7s,baz=82,slow=8.7,SNR=5.4						
TKM2	**Tokmak 2**	**51.15**	**298**	*e*P	**P**	**05 46 30.9**	**+1.8**
	1.1nm,0.5s						
DLBC	**Dease Lake**	**55.85**	**39**	*e*P	**P**	**05 47 00.5**	**-2.7**
WRA	**Warramunga Arr**	**58.99**	**191**	P	**P**	**05 47 24.7**	**-0.8**
	1.6nm,0.8s,baz=13,slow=7.1,SNR=8.4						
YKA	**Yellowknife Ar**	**61.20**	**31**	P	**P**	**05 47 38.6**	**-1.6**
	0.2nm,0.6s,baz=300,slow=5.9,SNR=4.1						
ASAR	**Alice Springs**	**62.71**	**191**	P	**P**	**05 47 50.6**	**-0.2**
	0.5nm,0.7s,baz=12,slow=6.9,SNR=6.8						
FINES	**FINESS Array B**	**68.63**	**333**	P	**P**	**05 48 29.4**	**+0.8**
	2.5nm,0.8s,baz=34,slow=12,SNR=5.6						
KBZ	**Khabaz**	**71.82**	**312**	P	**P**	**05 48 50.2**	**+1.9**
	1.0nm,0.6s,baz=63,slow=6.8,SNR=4.3						
PDAR	**Pinedale Array**	**74.77**	**47**	P	**P**	**05 49 04.0**	**-2.2**
	0.2nm,0.4s,baz=24,slow=5.1,SNR=7.5						
PDAR				LR	LR	06 20 49.4	
	comp=Z,27nm,19.3s,baz=101,slow=35						

KRSC ***09*** *05:37:41.9±1.5, 49°.43N×156°.91E, h98km±37km, ML3.5*
IDC ***09*** *05:37:53.3±9.1, 50°.54N×157°.47E, h157km±54km, mb3.1/3, mb1 3.2/4, mb1mx2.9/35, mbtmp3.4/4, Error ellipse: s-maj=127.6km s-min=30.5km az=0.0*

ISC 09 05:37:42.0±1.7, 49°.4N±0°.1×156°.9E±0°.1, h100km, n10, σ2°07/13, mb3.2/3, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**1.43**	**339**	*e*P	**Pn**	**05 38 07.2**	**-0.1**
SKR				*e*S	**Sn**	**05 38 25.8**	**-0.7**
ASAK	**Asacha**	**3.10**	**11**	*e*P	**Pn**	**05 38 30.2**	**+1.2**
RUS	**Russkaya**	**3.24**	**17**	*e*P	**Pn**	**05 38 32.4**	**+1.6**
RUS				*e*S	**Sn**	**05 39 09.5**	**+0.9**
PETK	**Petropavlovsk-**

JOW	Kunigami	0.83	334	P	Pb	05 57 14.4	+0.3
JJT2	Tamagusuku 2	0.84	274	P	Pb	05 57 14.3	0.0
JIH	Iheya	1.15	326	P	Pn	05 57 19.2	-0.1
JIH				eS	Sb	05 57 33.3	-0.7
JOKE	Okinoerabujima	1.28	355	P	Pn	05 57 21.2	0.0
JOKE				eS	Sb	05 57 36.6	-1.3
JAGN	Aguni-jima	1.39	292	P	Pn	05 57 22.3	-0.4
JTK	Tokunoshima	1.71	8	P	Pn	05 57 27.2	0.0
JTK				S	Sn	05 57 47.5	-1.2
JKE	Kume jima 2	1.72	278	P	Pn	05 57 26.2	-1.1
JKE				eS	Sn	05 57 47.3	-1.7
JAMN	Amaminishikomi	2.20	11	P	Pn	05 57 34.1	+0.3
JMZ	Minamidaito 2	2.30	96	P	Pn	05 57 34.6	-0.6
JMZ				S	Sn	05 58 00.3	-2.9
JAM	Amami Oshima	2.46	19	P	Pn	05 57 37.3	-0.1
JAM				S	Sn	05 58 05.6	-1.6
JNU	Nakatsue	7.27	15	Pn	Pn	05 58 46.6	+3.0
	0.7nm,0.3s,baz=180,slow=2.0,SNR=5.0						
JNU				LR	LR	06 02 01.5	
	comp=Z,56nm,20.9s,baz=294,slow=42						
KSRS	Korea Array	11.36	357	LR	LR	06 04 15.0	
	comp=Z,32nm,21.8s,baz=150,slow=39						
SONM	Songino Array	27.90	327	P	P	06 02 49.2	+1.9
	1.3nm,0.8s,baz=131,slow=10,SNR=5.9						
MKAR	Makanchi Array	41.94	312	P	P	06 04 47.5	-0.4
	0.5nm,0.6s,baz=99,slow=9.8,SNR=6.6						
ZALV	Zalesovo Beam	42.61	323	P	P	06 04 52.8	-0.5
	0.4nm,0.5s,baz=128,slow=9.3,SNR=2.7						
WRA	Warramunga Arr	46.08	173	P	P	06 05 22.2	+0.8
	0.7nm,0.7s,baz=353,slow=8.5,SNR=5.5						
ASAR	Alice Springs	49.71	174	P	P	06 05 50.6	+1.1
	0.1nm,0.4s,baz=7.5,slow=15,SNR=3.2						
KDAK	Kodiak Island	62.39	36	LR	LR	06 37 45.2	
	comp=Z,25nm,18.4s,baz=107,slow=39						
FINES	FINESS Array B	73.19	331	P	P	06 08 27.3	-0.5
	2.7nm,1.0s,baz=87,slow=7.1,SNR=3.7						
BRTR	Keskin Array B	77.45	308	P	P	06 08 53.8	+0.9
	1.1nm,0.9s,baz=89,slow=6.5,SNR=6.1						
YKA	Yellowknife Ar	78.48	25	P	P	06 08 59.3	+1.4
	0.2nm,0.6s,baz=304,slow=5.3,SNR=5.3						
NOA	NORSAR Array B	79.62	334	P	P	06 09 03.6	-0.7
	0.8nm,0.8s,baz=54,slow=7.4,SNR=3.3						

*CSEM **09** 06:06:51.1, 36.°85N×24.°29W, h10km, ML3.7*

PDA 09 06:06:51.1±1.2, 36.°85N×24.°29W, h10km, MD4.0, ML3.7, 2C, Error ellipse: s-maj=6.9km s-min=4.9km az=56.0, Azores Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PSMN	Pico do Norte,	0.64	284⇑	iP	Pg	06 07 00.9	-2.6
PSMN				eS	Sg	06 07 09.3	-2.6
PSMN	Pico do Norte,	0.64	284⇑	iP	Pg	06 07 00.9	-2.6
PSMN				eS	Sg	06 07 09.3	-2.6
PSMN				A	A	06 07 12.0	
	649nm,0.5s						
PSMA	Santa Maria	0.69	283	eP	Pg	06 07 01.5	-2.9
PSMA				eS	Sg	06 07 10.4	-3.0
PSMA				A	A	06 07 12.6	
	881nm,0.4s						
BART	Pico Bartolome	1.16	323	eP	Pb	06 07 08.4	-5.0
BART				eS	Sb	06 07 22.0	-6.5
BART	Pico Bartolome	1.16	323	eP	Pb	06 07 08.4	-5.0
BART				eS	Sb	06 07 22.0	-6.5
BART				A	A	06 07 25.0	
	463nm,0.4s						
CMLA	Cha da Macela	1.34	313	eP	Pn	06 07 11.3	-4.6
CMLA				eS	Sb	06 07 26.4	-7.3
CMLA	Cha da Macela	1.34	313	eP	Pn	06 07 11.3	-4.6
CMLA				eS	Sb	06 07 26.4	-7.3
PCALD	Caldeiras da R	1.35	315	eP	Pn	06 07 10.9	-5.1
PCALD				eS	Sb	06 07 25.8	-7.9
PCALD				A	A	06 07 28.2	
	228nm,0.1s						
GRON	Grota Negra	1.35	313	eP	Pn	06 07 10.1	-6.0
GRON				eS	Sb	06 07 24.4	-10
GRON				A	A	06 07 26.7	
	138nm,0.1s						
PDA	Ponta Delgada	1.42	310	eP	Pn	06 07 12.0	-4.9
PDA				eS	Sn	06 07 27.8	-7.8
PDA	Ponta Delgada	1.42	310	eP	Pn	06 07 12.0	-4.9
PDA				eS	Sn	06 07 27.8	-7.8
PDA				A	A	06 07 31.1	
	225nm,0.2s						
PSET	Sete Cidades	1.50	311	eP	Pn	06 07 13.7	-4.4
PSET				eS	Sn	06 07 30.5	-7.3
PSET	Sete Cidades	1.50	311	eP	Pn	06 07 13.7	-4.4
PSET				eS	Sn	06 07 30.5	-7.3
PSET				A	A	06 07 33.1	
	217nm,0.2s						
ADH	Angra Heroismo	2.95	309	eP	Pn	06 07 33.9	-4.1
ADH				eS	Sn	06 08 05.7	-7.8
ADH	Angra Heroismo	2.95	309	eP	Pn	06 07 33.9	-4.1
ADH				eS	Sn	06 08 05.7	-7.8
ADH				A	A	06 08 08.6	
	79nm,0.2s						
PPNO	Prainha do Nor	3.55	298	eP	Pn	06 07 42.3	-4.0
PPNO				eS	Sn	06 08 20.1	-8.2
PPNO	Prainha do Nor	3.55	298	eP	Pn	06 07 42.3	-4.0
PPNO				eS	Sn	06 08 20.1	-8.2
PPNO				A	A	06 08 22.0	
	80nm,0.1s						
PGRA	Graciosa	3.64	308	eP	Pn	06 07 43.4	-4.1
PGRA				eS	Sn	06 08 22.9	-7.6
PGRA	Graciosa	3.64	308	eP	Pn	06 07 43.4	-4.1
PGRA				eS	Sn	06 08 22.9	-7.6
PGRA				A	A	06 08 26.5	
	32nm,0.3s						
ROSA	Rosais	3.65	302	eP	Pn	06 07 43.7	-3.9
ROSA				eS	Sn	06 08 22.4	-8.3
ROSA	Rosais	3.65	302	eP	Pn	06 07 43.7	-3.9
ROSA				eS	Sn	06 08 22.4	-8.3
ROSA				A	A	06 08 25.4	
	40nm,0.1s						
PICO	Pico	3.67	298	eP	Pn	06 07 44.0	-4.0
PICO				eS	Sn	06 08 23.2	-8.2
PICO	Pico	3.67	298	eP	Pn	06 07 44.0	-4.0
PICO				eS	Sn	06 08 23.2	-8.2
PICO				A	A	06 08 24.4	
	128nm,0.3s						
PCAN	Candelaria	3.70	297	eP	Pn	06 07 44.2	-4.1
PCAN				eS	Sn	06 08 23.5	-8.5
PCAN	Candelaria	3.70	297	eP	Pn	06 07 44.2	-4.1
PCAN				eS	Sn	06 08 23.5	-8.5
PCAN				A	A	06 08 25.4	
	56nm,0.2s						
HOR	Horta	3.83	297	eP	Pb	06 07 56.8	-1.9
CALA	Caldeira	3.90	298	eP	Pn	06 07 47.0	-4.2
CALA				eS	Sn	06 08 28.6	-8.5
CALA	Caldeira	3.90	298	eP	Pn	06 07 47.0	-4.2
CALA				eS	Sn	06 08 28.6	-8.5
PCED	Cedros	3.92	298	eP	Pn	06 07 47.1	-4.3
PCED				eS	Sn	06 08 28.8	-8.7
PCED	Cedros	3.92	298	eP	Pn	06 07 47.1	-4.3
PCED				eS	Sn	06 08 28.8	-8.7
PCED				A	A	06 08 33.0	
	87nm,0.3s						

*ISCJB **09** 06:12:51.5±1.1, 61.°1S±0.°2×25.°4W±0.°7, h10km, mb3.7/2, MS3.4/2, Error ellipse: s-maj=55.2km s-min=13.1km az=152.8*

*IDC **09** 06:12:53.9±2.4, 60.°71S×25.°11W, h0km, mb3.9/2, mb1 4.1/2, mb1mx3.7/16, mbtmp3.9/2, MS3.5/2, Ms1 3.5/2, ms1mx3.0/19, Error ellipse: s-maj=89.2km s-min=53.0km az=171.0*

ISC 09 06:12:54.3±0.9, 61.°0S±0.°2×25.°1W±0.°3, h10km, n10, σ1⇑14/10, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VNA1	Neumayer--Stat	11.79	152	P	Pn	06 15 42.7	+0.5
VNA3	Neumayer Olymp	11.93	155	P	Pn	06 15 44.0	-0.3
VNA2	Neumayer--Watz	12.19	152	P	Pn	06 15 46.8	-0.9
	baz=314,slow=14						
SNAA	Sanae	13.78	150	P	Pn	06 16 09.0	-0.4
PLCA	Paso Flores	34.20	285	LR	LR	06 31 48.3	
	comp=Z,50nm,18.3s,baz=163,slow=33						
CPUP	Villa Florida	41.00	313	P	P	06 20 35.9	-1.4
	2.3nm,0.9s,baz=168,slow=5.1,SNR=3.1						
CPUP				LR	LR	06 38 29.8	
	comp=Z,75nm,18.1s,baz=85,slow=38						
TORD	Torodi Ar. Bea	76.94	27	P	P	06 24 46.5	-0.2
	0.5nm,0.6s,baz=189,slow=6.7,SNR=4.2						
YKA	Yellowknife Ar	140.52	313	PKP	PKPdf	06 32 23.8	+1.7
	0.2nm,0.6s,baz=129,slow=2.3,SNR=6.7						
INK	Inuvik	150.25	315	PKPbc	PKPbc	06 32 43.4	-0.4
	1.6nm,0.8s,baz=75,slow=3.2,SNR=9.6						
ILAR	Eielson Array	154.06	304	PKPbc	PKPbc	06 32 52.8	+0.2
	0.5nm,0.8s,baz=164,slow=1.6,SNR=4.4						
ILAR				PKPab	PKPab	06 33 07.8	+1.6
	0.9nm,1.0s,baz=84,slow=3.2,SNR=5.0						

IDC 09 06:14:08.9±2.9, 39.°13N×143.°23E, h0km, mb3.4/3, mb1 3.5/4, mb1mx3.3/37, mbtmp3.4/4, ML3.4/1, Error ellipse: s-maj=73.3km s-min=30.3km az=154.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MAT	Matsushiro	4.74	239	P	Pn	06 15 21.6	-0.1
MJAR	Matsushiro Arr	4.74	239	Pn	Pn	06 15 21.8	+0.1
	1.6nm,0.3s,baz=42,slow=12,SNR=11						
SONM	Songino Array	27.89	300	P	P	06 20 01.7	+1.1
	0.7nm,0.7s,baz=99,slow=9.4,SNR=4.5						
MKAR	Makanchi Array	44.26	301	P	P	06 22 18.9	-1.2
	0.8nm,0.9s,baz=87,slow=9.1,SNR=2.8						
YKA	Yellowknife Ar	61.28	31	P	P	06 24 25.7	0.0
	0.1nm,0.6s,baz=299,slow=5.8,SNR=2.8						

MEX 09 06:23:26.7±0.5, 15.°73N×93.°45W, h40km±5km, MD3.5, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		0.22	97	eP	Pn	06 23 33.8	-0.4
PCIG				eS	Sn	06 23 37.5	-1.9
CCIG	Comitan	1.38	66	eP	Pn	06 23 48.3	-1.3
CCIG				eS	Sn	06 24 03.8	-2.9

MEX 09 06:24:19.7±0.3, 16.°03N×95.°97W, h31km±48km, MD3.7, Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HUIG	Huatulco	0.29	208	eP	Pb	06 24 25.7	-1.5
HUIG				i S	Sb	06 24 30.4	-1.8
VHO	Vista Hermosa	1.27	325	eP	Pn	06 24 39.6	-1.9
VHO				i S	Sn	06 24 54.9	-2.8
TPIG	Tehuac#an	2.73	331	i P	Pn	06 24 59.8	-1.8
TPIG				i S	Sn	06 25 30.2	-3.4
YAIG	Yautepec	4.09	314	i P	Pn	06 25 18.6	-1.7
YAIG				i S	Sn	06 26 05.4	-1.7

*IDC **09** 06:29:48.3±0.9, 32.°80N×89.°11E, h0km, mb3.7/11, mb1 3.9/14, mb1mx3.7/44, mbtmp3.7/14, ML3.2/3, MS3.2/10, Ms1 3.2/10, ms1mx3.0/39, Error ellipse: s-maj=24.9km s-min=17.4km az=35.0*

*ISCJB **09** 06:29:52.4±0.5, 33.°02N±0.°06×89.°19E±0.°10, h33km, mb3.6/11, MS3.2/9, Error ellipse: s-maj=12.6km s-min=6.9km az=26.3*

*BJI **09** 06:29:52.6, 33.°09N×89.°15E, h6km, Ms3.8/1, Ms7 3.6/1*

ISC 09 06:29:54.5±0.7, 33.°06N±0.°09×89.°09E±0.°09, h35km, n28, σ1⇑22/21, mb3.6/11, MS3.3/9, Xizang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LSA	Lhasa	3.78	152	Pn	Pn	06 30 53.2	+2.4
GUN	Gumba	5.83	209	eP	Pn	06 31 19.6	+0.8
	38nm,0.6s						
PKIN	Phulchoki	6.32	211	eP	Pn	06 31 24.9	-0.6
	21nm,0.5s						
GKN	Gorkha	6.33	218	eP	Pn	06 31 27.5	+1.9
	22nm,0.4s						
DMN	Daman	6.43	213	eP	Pn	06 31 27.2	+0.2
	27nm,0.7s						
KOLN	Koldanda	7.08	223	eP	Pn	06 31 36.2	+0.3
PYUN	Piuthan	7.21	228	eP	Pn	06 31 39.0	+1.3
MKAR	Makanchi Array	14.67	341	Pn	Pn	06 33 19.5	+0.1
	0.1nm,0.3s,baz=146,slow=16,SNR=4.4						
MKAR				LR	LR	06 39 58.2	
	comp=Z,64nm,20.1s,baz=162,slow=41						
KURBB	Kurchatov Arra	19.20	339	P	P	06 34 15.5	+0.3
	0.1nm,0.3s,baz=140,slow=12,SNR=9.4						
SONM	Songino Array	19.72	36	P	Pn	06 34 22.3	-0.4
	0.2nm,0.3s,baz=231,slow=12,SNR=8.5						
ZALV	Zalesovo Beam	21.11	353	P	P	06 34 36.8	+0.9
	2.6nm,0.9s,baz=171,slow=10,SNR=7.4						
BVAR	Borovoye Array	24.05	332	P	P	06 35 07.8	+1.5
	0.6nm,0.7s,baz=120,slow=13,SNR=3.7						
GEYT	Alibeck	25.61	290	LR	LR	06 47 42.5	
	comp=Z,55nm,19.8s,baz=165,slow=42						
ARU	Arti	31.43	327	LR	LR	06 51 34.9	
	comp=Z,9.5nm,21.6s,baz=359,slow=41						
KSRS	Korea Array	31.86	71	P	P	06 36 15.8	-0.4
	2.6nm,0.6s,baz=272,slow=9.2,SNR=7.9						
GNI	Garni	36.00	294	LR	LR	06 52 46.6	
	comp=Z,38nm,20.5s,baz=110,slow=38						
MJAR	Matsushiro Arr	40.14	71	P	P	06 37 27.1	-0.1
	2.6nm,0.9s,baz=270,slow=9.2,SNR=5.5						
BRTR	Keskin Array B	44.53	295	P	P	06 38 03.7	+0.7
	0.8nm,0.8s,baz=83,slow=4.5,SNR=4.7						
BRTR				LR	LR	06 58 58.0	
	comp=Z,17nm,21.3s,baz=88,slow=39						
JCJ	Chichijima	45.93	83	LR	LR	06 59 02.9	
	comp=Z,49nm,19.6s,baz=352,slow=38						
AKASG	Malin Array Be	46.60	311	P	P	06 38 19.7	+0.7
	0.1nm,0.3s,baz=79,slow=7.1,SNR=2.3						
AKASG				LR	LR	07 01 17.7	
	comp=Z,30nm,18.1s,baz=200,slow=40						
FINES	FINESS Array B	48.76	325	LR	LR	07 00 35.6	
	comp=Z,54nm,20.5s,baz=173,slow=38						
NOA	NORSAR Array B	55.94	325	LR	LR	07 04 56.2	
	comp=Z,43nm,20.5s,baz=85,slow=38						
GERES	GERESS Array B	56.80	310	LR	LR	07 05 38.3	
	comp=Z,39nm,19.8s,baz=62,slow=38						
WRA	Warramunga Arr	68.15	134	P	P	06 40 48.5	-2.8
	0.8nm,0.8s,baz=329,slow=6.0,SNR=6.1						
ASAR	Alice Springs	70.76	137	P	P	06 41 06.8	-0.5
	0.6nm,0.9s,baz=353,slow=6.5,SNR=4.0						
ILAR	Eielson Array	73.20	22	P	P	06 41 21.4	-0.1
	0.7nm,1.0s,baz=293,slow=4.7,SNR=4.9						
TORD	Torodi Ar. Bea	80.80	280	P	P	06 42 03.9	-1.1
	1.7nm,0.9s,baz=40,slow=4.5,SNR=7.7						
YKA	Yellowknife Ar	82.89	11	P	P	06 42 14.8	-0.4
	0.5nm,0.8s,baz=332,slow=5.4,SNR=9.1						

*NEIC **09** 06:40:19.1±0.4, 30.°76N×105.°69W, h10km, ML3.8, MD3.9(MEX), Error ellipse: s-maj=6.1km s-min=4.1km az=178.0*

NEIC Felt at El Paso, Texas.

*MEX **09** 06:40:19.8±0.5, 30.°79N×105.°62W, h4km±13km, MD3.9*

ISC 09 06:40:19.7±1.3, 30.°84N±0.°04×105.°69W±0.°03, h16km±9km, n47, σ2⇑28/76, Texas-Mexico border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MNTX	Cornudas Mount	0.89	17	ePg	Pg	06 40 36.2	-0.8
MNTX				eSn	Sg	06 40 49.6	+0.8
GDL2	Guadalupe Moun	1.77	40	ePn	Pb	06 40 51.9	0.0
GDL2				eSn	Sg	06 41 17.8	+1.1
CGIG		2.03	257	eP	Pn	06 40 52.1	-1.3
CGIG				eS	Sn	06 41 18.0	-0.6
CGIG		2.03	257	ePn	Pn	06 40 52.1	-1.3
CGIG				eSn	Sn	06 41 18.0	-0.6
CLNB	Carlsbad	2.10	47	ePn	Pn	06 40 56.6	+2.2
CLNB				eSn	Sg	06 41 27.2	0.0
TX31	Lajitas Ar. Si	2.31	130	ePn	Pn	06 40 57.1	-0.1
TX31				eSn	Sn	06 41 25.7	+0.2
121A	Cookes Peak, D	2.45	314	eP	Pn	06 40 59.2	-0.1
121A				eS	Sn	06 41 29.5	+0.4
121A	Cookes Peak, D	2.45	314	ePn	Pn	06 40 59.2	-0.1
121A				eSn	Sn	06 41 31.1	+2.0
319A	Douglas	3.12	281	eP	Pn	06 41 07.4	-1.1
319A				i S	Sn	06 41 45.9	+0.4
319A	Douglas	3.12	281	ePn	Pn	06 41 07.5	-0.9
319A				eSn	Sn	06 41 45.0	-0.5
Y22D	IRIS PASSCAL I	3.38	342	ePn	Pn	06 41 15.9	+3.8
Y22D				eSg	Sg	06 42 06.8	-1.6
BNM	Barren Site	3.39	347	ePn	Pn	06 41 13.4	+1.1
BNM				eSn	Sn	06 41 49.2	-3.1
BNM				eSg	Sg	06 42 07.4	-1.2
LPM	Los Pinos Moun	3.55	347	ePn	Pn	06 41 15.4	+1.0
LPM				eSg	Sb	06 42 11.0	+5.8
LAZ	Ladron	3.75	341	ePn	Pn	06 41 18.5	+1.3
HPIG		3.89	180	ePn	Pn	06 41 17.9	-1.2
MSTX	Muleshoe	3.98	38	ePn	Pn	06 41 21.8	+1.6
MSTX				eSg	Sg	06 42 26.6	-0.8
ANMO	Albuquerque	4.14	351	ePn	Pn	06 41 24.4	+1.8
ANMO				eSg	Sg	06 42 29.9	-2.8
TUC	Tucson	4.58	290	ePn	Pn	06 41 28.1	-0.4
TUC				eSg	Sg	06 42 43.5	-3.4
HSIG		4.91	250	ePn	Pn	06 41 34.1	+1.1
HSIG				ePg	Pb	06 41 47.8	+2.5
HSIG				eSg	Sg	06 42 51.6	-5.8
JCT	Junction City	5.09	93	ePn	Pn	06 41 36.2	+0.8
X18A	Snowflake	5.14	317	ePn	Pn	06 41 37.2	+1.0
X18A				eSg	Sg	06 43 02.1	-2.6
AMTX	Amarillo	5.26	39	ePn	Pn	06 41 40.7	+2.9
W18A	Petrified Fore	5.45	323	ePn	Pn	06 41 42.8	+2.2
ABTX	Abilene, Hawle	5.45	69	ePn	Pn	06 41 41.2	+0.8
ABTX				eSg	Sg	06 43 11.1	-3.5
X16A	Lo Mia Camp, P	6.02	308	ePn	Pn	06 41 50.6	+2.3
X16A				eSg	Sg	06 43 31.5	-1.4
214A	Organ Pipe Nat	6.19	282	ePn	Pn	06 41 50.0	-0.4
214A				eSn	Sn	06 43 00.9	0.0
MVCO	Mesa Verde	6.76	341	ePn	Pn	06 42 03.1	+4.6
MVCO				ePg	Pg	06 42 24.9	-4.3
MVCO				eSg	Sg	06 43 53.5	-3.3
SDCO	Great Sand Dun	6.89	1	ePg	Pb	06 42 23.6	+4.4
SDCO				eSg	Sg	06 43 58.8	-1.9
Y14A	Wickenburg	6.91	298	ePn	Pn	06 42 00.7	+0.3
Y14A				eSg	Sg	06 43 58.5	-3.0
WMOK	Wichita Mounta	7.00	54	ePn	Pn	06 42 02.1	+0.5
WMOK				eSg	Sg	06 44 00.5	-3.7
WHTX	Lake Whitney,	7.13	79	ePn	Pn	06 42 03.0	-0.4
WHTX				eSg	Sg	06 44 07.2	-1.3
W34A	Bridge Creek,	7.96	55	ePn	Pn	06 42 15.1	+0.3
	21nm,0.5s						
W34A				eSn	Sn	06 43 47.1	+2.5
GLA	Glamis	8.07	288	ePn	Pn	06 42 17.1	+0.7
SLBS	Sierra La Lagu	8.07	209	ePn	Pn	06 42 16.6	+0.2
Q24A	Divide	8.11	3	ePn	Pn	06 42 26.8	+10
V34A	Guthrie	8.46	52	ePn	Pn	06 42 22.2	+0.6
HKT	Hockley	8.56	93	ePn	Pn	06 42 23.1	+0.1
LCMT	Little Creek M	8.78	316	ePn	Pn	06 42 25.2	-1.0
LCMT				eLg	Lg	06 44 53.4	
U34A	Anderson Ranch	8.79	48	ePn	Pn	06 42 26.4	+0.1
Q16A	Castle Valley	9.22	332	ePn	Pn	06 42 34.5	+2.2
MIAR	Mount Ida	10.85	67	ePn	Pn	06 42 55.5	+1.0
HHAR	Hobbs	11.20	58	ePn	Pn	06 42 57.8	-1.5
X301	Greenbrier Sit	11.98	65	ePn	Pn	06 43 09.9	0.0
X201	Greenbrier Sit	12.03	65	ePn	Pn	06 43 10.2	-0.4
WHAR	Wooly Hollow	12.09	65	ePn	Pn	06 43 11.1	-0.2
YLT	Little Thumb C	14.11	345	eP	P	06 43 46.4	-0.5
BSMT	Bassoo Peak	18.36	340	ePn	P	06 44 29.8	-4.1
BSMT				eSn	Sn	06 47 50.4	-8.2

*SJA **09** 06:44:49.7±0.5, 24.°50S×68.°37W, h64km±23km, ML2.9, MW3.5*

*ISCJB **09** 06:45:04.1±0.8, 24.°04S±0.°08×66.°97W±0.°05, h178km, mb3.3/1, Error ellipse: s-maj=11.7km s-min=6.7km az=3.4*

*GUC **09** 06:45:04.9±0.5, 23.°98S×67.°50W, h238km±18km, ML3.9*

*IDC **09** 06:45:10.6±10.0, 23.°27S×66.°19W, h226km±77km, mb3.1/1, mb1 3.0/2, mb1mx2.8/25, mbtmp3.5/2, Error ellipse: s-maj=123.3km s-min=71.9km az=39.0*

ISC 09 06:45:02.7±1.2, 24.°06S±0.°09×66.°89W±0.°06, h178km, n12, σ1⇑55/18, Salta Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HJA	Humahuaca	1.60	58	i P	Pn	06 45 38.0	+2.0
AZAP	Zapla	1.68	96	i P	Pn	06 45 38.2	+1.7
AZAP				IAML		06 45 39.7	
	comp=Z,35nm,0.4s						
AZAP				i S	Sn	06 46 13.5	+11
YJA	Yavi	2.27	34	i P	Pn	06 45 44.9	+1.8
YJA				i S	Sn	06 46 26.2	+12
PB06	IPOC Station P	2.81	298	i P	Pn	06 45 51.2	+2.1
PB06				i S	Sn	06 46 26.1	+0.9
PB06				IAML		06 46 29.4	
	comp=N,166nm,0.1s						
PB09	IPOC Station P	3.13	316	i P	Pn	06 45 55.4	+2.3
PB09				eS	Sn	06 46 33.0	+0.8
PB09				IAML		06 46 37.6	
	comp=N,192nm,0.2s						
PB14	IPOC Station P	3.25	259	i P	Pn	06 45 56.1	+1.4
PB14				i S	Sn	06 46 35.1	0.0
PB14				IAML		06 46 38.6	
	comp=E,136nm,0.3s						
PB10	IPOC Station P	3.40	279	eP	Pn	06 45 57.3	+1.1
PB10				i S	Sn	06 46 36.3	-1.6
PB10				IAML		06 46 42.9	
	comp=E,181nm,0.4s						
PB04	IPOC Station P	3.46	299	i P	Pn	06 45 58.4	+1.3
PB04				i S	Sn	06 46 39.0	-0.4
PB04				IAML		06 46 41.3	
	comp=N,123nm,0.2s						
PB07	IPOC Station P	3.61	310	eP	Pn	06 46 00.1	+1.1
PB07				i S	Sn	06 46 42.6	-0.4
PB07				IAML		06 46 45.3	
	comp=E,173nm,0.1s						
LPAZ	La Paz	7.82	351	P	Pn	06 46 54.0	-0.3
	comp=E,0.3nm,0.3s,baz=176,slow=7.5,SNR=7.2						
LPAZ				S	Sn	06 48 16.9	-5.6
	baz=233,slow=15,SNR=2.2						
TORD	Torodi Ar. Bea	76.50	69	P	P	06 56 31.1	-2.4
	comp=E,0.4nm,0.5s,baz=256,slow=5.1,SNR=8.1						
MKAR	Makanchi Array	146.51	40	PKPbc	PKPdf	07 04 21.3	+0.1
	comp=E,0.2nm,0.4s,baz=285,slow=3.6,SNR=2.6						

KRSC 09 06:51:41.7±0.8, 50.°00N×156.°36E, h76km±28km, ML3.8, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	Severo-Kuril's	0.70	347	eP	Pn	06 51 58.0	+1.0
SKR				eS	Sn	06 52 09.6	+1.3
PAU	Pauzhetka	1.49	11	eP	Pn	06 52 08.9	+2.2
PAU				eS	Sn	06 52 27.8	+2.2
ASAK	Asacha	2.57	22	eP	Pn	06 52 22.8	+1.6
RU

TWE				*e*S	**Sg**	**06 54 15.1**	**-0.1**
	baz=312						
ENTT	**Nioudou**	**1.13 308**		*e*P	**Pg**	**06 54 01.3**	**+0.4**
	baz=297						
ENTT				*e*S	**Sg**	**06 54 16.1**	**+0.3**
	baz=297						
IRIF	**Iriomote-Funau**	**1.15 70**		P	**Pb**	**06 54 01.0**	**+0.6**
IRIF				S	**Sb**	**06 54 15.6**	**+0.5**
TWB1	**Santiao Chiao**	**1.17 334**		P	**Pb**	**06 54 01.1**	**+0.2**
	baz=320						
TWB1				S	**Sb**	**06 54 15.3**	**-0.5**
	baz=320						
NNS	**Nan Shan**	**1.18 295**		P	**Pg**	**06 54 01.8**	**0.0**
	baz=293						
NNS				*e*S	**Sg**	**06 54 16.8**	**-0.6**
	baz=293						
WHF	**Hehuan Shan**	**1.19 280**		P	**Pb**	**06 54 01.6**	**+0.2**
	baz=277						
EHY	**Hungye**	**1.21 249**		*e*P	**Pb**	**06 54 01.8**	**+0.4**
	baz=259						
EHY				*e*S	**Sn**	**06 54 17.5**	**+0.4**
	baz=259						
TWF1	**Yuli**	**1.29 243**		P	**Pb**	**06 54 03.2**	**+0.3**
	baz=234						
TWF1				*e*S	**Sb**	**06 54 19.4**	**+0.2**
	baz=234						
TWT	**Tachien**	**1.29 284**		*e*P	**Pg**	**06 54 04.0**	**0.0**
	baz=274						
TWT				*e*S	**Sn**	**06 54 19.2**	**-0.3**
	baz=274						
NSK	**Sanguang**	**1.31 304**		*e*P	**Pb**	**06 54 03.4**	**+0.2**
	baz=302						
NSK				*e*S	**Sn**	**06 54 19.4**	**-0.3**
	baz=302						
WDT	**Danda**	**1.31 262**		P	**Pb**	**06 54 03.5**	**+0.2**
	baz=260						
WDT				S	**Sb**	**06 54 19.8**	**-0.2**
	baz=260						
NWF	**Wu-fen Shan**	**1.32 328**		*e*P	**Pn**	**06 54 03.0**	**+0.2**
	baz=327						
NWF				*e*S	**Sn**	**06 54 19.9**	**-0.1**
	baz=327						
TWA	**Mucha**	**1.35 320**		*e*P	**Pb**	**06 54 03.9**	**-0.1**
	baz=330						
JKRS	**Kuro-shima**	**1.37 77**		P	**Pb**	**06 54 04.5**	**+0.3**
JKRS				*e*S	**Sn**	**06 54 21.8**	**+0.7**
CHKT	**Chengkung**	**1.37 232**		*e*P	**Pb**	**06 54 04.8**	**+0.5**
	baz=223						
CHKT				*e*S	**Sn**	**06 54 20.1**	**-1.1**
	baz=223						
TAP	**Taipei**	**1.44 319**		*e*P	**Pg**	**06 54 06.9**	**+0.1**
	baz=329						
TAP				*e*S	**Sb**	**06 54 23.4**	**-0.2**
	baz=329						
SMLT	**Sun Moon Lake**	**1.51 268**		*e*P	**Pb**	**06 54 06.7**	**0.0**
	baz=258						
JIJ	**Ishigaki jima**	**1.52 74**		P	**Pn**	**06 54 05.4**	**0.0**
JIJ				S	**Sn**	**06 54 23.3**	**-1.5**
YUS	**Yu-Shan**	**1.53 253**		P	**Pb**	**06 54 07.3**	**+0.1**
	baz=251						
YUS				*e*S	**Sn**	**06 54 25.7**	**-0.2**
	baz=251						
TYC	**Yuchr**	**1.55 269**		*e*P	**Pb**	**06 54 07.0**	**-0.2**
	baz=267						
TYC				*e*S	**Sb**	**06 54 25.9**	**-0.6**
	baz=267						
NSTT	**Nanjuang**	**1.57 296**		*e*P	**Pb**	**06 54 07.6**	**0.0**
	baz=295						
NSTT				*e*S	**Sb**	**06 54 26.9**	**-0.3**
	baz=295						
TWY	**Chenhua**	**1.58 327**		*e*P	**Pb**	**06 54 07.6**	**-0.2**
	baz=326						
TWY				*e*S	**Sn**	**06 54 26.2**	**-0.2**
	baz=326						
ELDTW	**Lidau**	**1.59 242**		⇑P	**Pn**	**06 54 07.3**	**+0.7**
	baz=240						
ELDTW				*e*S	**Sn**	**06 54 25.5**	**-1.4**
	baz=240						
ALS	**Alishan**	**1.65 255**		P	**Pb**	**06 54 09.4**	**+0.1**
	baz=254						
ALS				*e*S	**Sb**	**06 54 29.5**	**-0.5**
	baz=254						
TWQ1	**Liyutan**	**1.67 284**		*e*P	**Pb**	**06 54 08.8**	**-0.6**
	baz=283						
TWQ1				*e*S	**Sb**	**06 54 30.0**	**-0.1**
	baz=283						
TCU	**Taichung**	**1.72 277**		*e*P	**Pb**	**06 54 10.8**	**+0.5**
	baz=276						
TCU				*e*S	**Sb**	**06 54 31.6**	**0.0**
	baz=276						
JISG	**Ishigakijimahi**	**1.73 68**		P	**Pn**	**06 54 08.1**	**-0.3**
CHN5	**Tsauling**	**1.75 259**		*e*P	**Pb**	**06 54 10.8**	**+0.1**
	baz=252						
CHN5				*e*S	**Sb**	**06 54 32.5**	**+0.1**
	baz=252						
TWG	**Pinlang**	**1.76 231**		*e*P	**Pn**	**06 54 09.5**	**+0.7**
	baz=240						
TWG				*e*S	**Sn**	**06 54 30.2**	**-0.6**
	baz=240						
CHN4	**Tsaushan**	**1.89 252**		*e*P	**Pb**	**06 54 12.8**	**-0.3**
	baz=251						
CHN4				*e*S	**Sb**	**06 54 36.7**	**+0.3**
	baz=251						
WTP	**Ta-pu**	**1.91 249**		*e*P	**Pb**	**06 54 13.1**	**-0.3**
	baz=247						
WTP				*e*S	**Sb**	**06 54 36.6**	**-0.3**
	baz=247						
CHY	**Chiayi**	**2.00 258**		*e*P	**Pn**	**06 54 13.2**	**+1.2**
	baz=256						
CHY				*e*S	**Sb**	**06 54 38.7**	**-0.8**
	baz=256						
SGST	**Jiashian**	**2.00 245**		*e*P	**Pb**	**06 54 15.2**	**+0.2**
	baz=236						
SGST				*e*S	**Sb**	**06 54 39.6**	**+0.1**
	baz=236						
CHN1	**Nanshi**	**2.00 248**		*e*P	**Pb**	**06 54 14.7**	**-0.3**
	baz=247						
CHN1				*e*S	**Sb**	**06 54 39.1**	**-0.6**
	baz=247						
LAY	**Lan-yu**	**2.11 206**		*e*P	**Pn**	**06 54 13.4**	**-0.3**
	baz=205						
LAY				*e*S	**Sn**	**06 54 37.5**	**-1.9**
	baz=205						
TAW	**Tawu**	**2.19 224**		*e*P	**Pn**	**06 54 15.6**	**+0.9**
	baz=230						
TAW				*e*S	**Sn**	**06 54 42.6**	**+1.1**
	baz=230						
EAST	**Anshuo**	**2.21 225**		*e*P	**Pn**	**06 54 15.6**	**+0.6**
	baz=231						
EAST				*e*S	**Sn**	**06 54 42.6**	**+0.7**
	baz=231						
SCZT	**Fangliau**	**2.37 229**		*e*P	**Pb**	**06 54 20.1**	**-1.1**
	baz=222						
HEN	**Hengchun**	**2.55 221**		*e*S	**Sn**	**06 54 51.0**	**+0.6**
	baz=220						
TWK1	**Hengchun**	**2.56 219**		*e*P	**Pn**	**06 54 20.2**	**+0.4**
	baz=224						
TWK1				*e*S	**Sn**	**06 54 51.1**	**+0.6**
	baz=224						

NIED ***09*** *06:58:00, 37.°30N×141.°60E, h47km, Mw3.9 Best double couple: M0 8.15000×10^14 NP1:φs=211.00000°, δ25.00000°, λ72.00000°. NP2:φs=50.00000°, δ67.00000°, λ98.00000°.*
ISCJB ***09*** *06:58:44.0±1.2, 37.°28N±0.°05×141.°7E±0.°1, h46km±9km, mb3.8/12, MS3.5/1, Error ellipse: s-maj=15.5km s-min=7.7km az=21.5*
JMA ***09*** *06:58:44.6±0.1, 37.°29N×141.°60E, h45km±2km, M3.8*
JMA Felt I J1.
IDC ***09*** *06:58:48.9±2.9, 37.°24N×141.°55E, h77km±26km, mb3.5/12, mb1 3.6/15, mb1mx3.4/49, mbtmp3.8/15, MS2.8/4, Ms1 2.8/4, ms1mx2.6/38, Error ellipse: s-maj=22.7km s-min=20.6km az=6.0*

ISC 09 06:58:43.5±1.9, 37.°25N±0.°05×141.°57E±0.°07, h27km±13km, n35, σ1°20/31, mb3.9/12, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JFK	**Kawauchi**	**0.57 282**		P	**Pn**	**06 58 56.6**	**+0.7**
JFK				S	**Sn**	**06 59 04.9**	**+0.5**
ONAJ	**Iwakimizuishiy**	**0.64 257**		P	**Pn**	**06 58 57.7**	**+0.9**
ONAJ				S	**Sn**	**06 59 06.9**	**+0.8**
JMM	**Marumori**	**0.87 315**		P	**Pn**	**06 59 00.3**	**+0.3**
JFT	**Otama**	**1.02 286**		P	**Pb**	**06 59 03.6**	**+1.1**
JFT				S	**Sn**	**06 59 17.0**	**+1.5**
JHO	**Hitachi**	**1.02 232**		P	**Pb**	**06 59 02.9**	**+0.3**
JHO				S	**Sn**	**06 59 16.0**	**+0.4**
JIO	**Ouri**	**1.22 352**		P	**Pn**	**06 59 04.5**	**-0.3**
JIO				*e*S	**Sn**	**06 59 18.9**	**-1.4**
JOU	**Okura**	**1.33 327**		P	**Pb**	**06 59 07.2**	**-0.5**
JFY	**Yanaizu**	**1.50 277**		P	**Pn**	**06 59 08.3**	**-0.3**
JYS	**Shirataka**	**1.54 310**		P	**Pb**	**06 59 10.9**	**-0.4**
MJAR	**Matsushiro Arr**	**2.79 256**		P	**Pb**	**06 59 30.3**	**-2.3**
	4.5nm,0.3s,baz=81,slow=11,SNR=16						
MJAR				LR	LR	07 00 50.3	
	comp=Z,101nm,19.2s,baz=70,slow=44						
MAT	**Matsushiro**	**2.79 256**		P	**Pb**	**06 59 30.3**	**-2.3**
MAT				*e*S	**Sb**	**07 00 05.7**	**-0.6**
ASAJ	**Asahikawa**	**6.91 6**		LR	LR	07 02 52.7	
	comp=Z,58nm,19.6s,baz=180,slow=35						
USRK	**Ussuriysk Ar.**	**10.05 317**		P	Pn	07 01 09.9	+3.9
	0.2nm,0.3s,baz=113,slow=15,SNR=4.1						
KSRS	**Korea Array**	**10.87 275**		P	Pn	07 01 22.9	+5.6
	0.2nm,0.3s,baz=89,slow=14,SNR=5.1						
KSRS				LR	LR	07 05 33.4	
	comp=Z,35nm,19.0s,baz=186,slow=37						
PETK	**Petropavlovsk-**	**19.44 30**		P	**Pn**	**07 03 13.2**	**+4.2**
	0.1nm,0.3s,baz=238,slow=8.5,SNR=3.8						
SONM	**Songino Array**	**27.77 304**		P	**P**	**07 04 30.4**	**+0.2**
	0.9nm,0.5s,baz=89,slow=8.2,SNR=6.4						
H11N2	**WAKE ISLAND Hy**	**28.15 121**		T	T	07 33 59.3	
	baz=314,slow=75,SNR=31						
H11N1	**WAKE ISLAND Hy**	**28.16 121**		T	T	07 34 15.6	
	baz=314,slow=75,SNR=31						
H11N3	**WAKE ISLAND Hy**	**28.17 121**		T	T	07 34 12.9	
	baz=314,slow=75,SNR=33						
H11S1	**WAKE ISLAND Hy**	**28.87 123**		T	T	07 35 07.0	
	baz=316,slow=76,SNR=23						
H11S3	**WAKE ISLAND Hy**	**28.87 123**		T	T	07 35 13.0	
	baz=316,slow=76,SNR=21						
H11S2	**WAKE ISLAND Hy**	**28.89 123**		T	T	07 35 00.5	
	baz=316,slow=76,SNR=21						
ZALV	**Zalesovo Beam**	**41.86 312**		P	**P**	**07 06 30.8**	**-0.3**
	1.2nm,0.4s,baz=82,slow=6.3,SNR=5.6						
MKAR	**Makanchi Array**	**44.11 302**		P	**P**	**07 06 49.5**	**0.0**
	1.5nm,0.6s,baz=86,slow=10.0,SNR=17						
KURBB	**Kurchatov Arra**	**45.97 308**		P	**P**	**07 07 04.0**	**-0.1**
	2.7nm,0.5s,baz=83,slow=7.9,SNR=18						
ILAR	**Eielson Array**	**49.25 32**		P	**P**	**07 07 29.4**	**+0.1**
	0.7nm,0.8s,baz=275,slow=6.5,SNR=9.7						
BVAR	**Borovoye Array**	**50.52 312**		P	**P**	**07 07 38.9**	**-0.3**
	0.6nm,0.5s,baz=77,slow=6.7,SNR=4.7						
INK	**Inuvik**	**54.14 27**		P	**P**	**07 08 05.6**	**-0.1**
	0.9nm,0.8s,baz=244,slow=5.2,SNR=4.7						
WRA	**Warramunga Arr**	**57.29 188**		P	**P**	**07 08 28.6**	**-0.3**
	0.2nm,0.4s,baz=5.9,slow=7.2,SNR=5.8						
AKTO	**Aktyubinsk**	**58.63 312**		P	**P**	**07 08 37.9**	**-0.1**
	0.5nm,0.3s,baz=90,slow=14,SNR=3.5						
YKA	**Yellowknife Ar**	**63.56 30**		P	**P**	**07 09 10.6**	**-0.6**
	0.2nm,0.7s,baz=304,slow=5.6,SNR=4.6						
AKASG	**Malin Array Be**	**74.20 322**		P	**P**	**07 10 17.0**	**-0.7**
	0.6nm,0.4s,baz=46,slow=6.1,SNR=2.8						
MMAI	**Mount Meron Ar**	**81.94 305**		LR	LR	07 51 58.6	
	comp=Z,20nm,18.2s,baz=250,slow=39						
TXAR	**Lajitas Array**	**89.89 52**		P	**P**	**07 11 40.5**	**0.0**
	0.3nm,0.9s,baz=280,slow=5.9,SNR=3.4						
LPAZ	**La Paz**	**146.47 59**		PKPbc	**PKPdf**	**07 18 21.2**	**-0.8**
	0.3nm,0.4s,baz=0.0,slow=4.0,SNR=2.5						

IDC 09 07:00:23.7±3.8, 19.°23S×177.°35W, h415km±57km, mb3.2/3, mb1 3.5/5, mb1mx3.1/26, mbtmp4.3/5, Error ellipse: s-maj=126.6km s-min=36.2km az=147.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AFI	**Afiamalu**	**7.52 46**		P	P	07 02 14.9	+1.0
	2.4nm,0.3s,baz=24,slow=7.4,SNR=4.3						
AFI				S	S	07 03 42.6	-1.0
	1.4nm,0.3s,baz=216,slow=19,SNR=2.3						
DZM	**Mont Dzumac**	**15.43 257**		P	P	07 03 40.3	-0.1
	1.0nm,0.3s,baz=82,slow=19,SNR=17						
STKA	**Stephens Creek**	**38.90 243**		P	P	07 07 11.1	-0.6
	1.0nm,0.4s,baz=100,slow=11,SNR=3.9						
WRA	**Warramunga Arr**	**45.39 261**		P	P	07 08 03.3	-0.2
	0.4nm,0.3s,baz=96,slow=7.6,SNR=20						
ASAR	**Alice Springs**	**45.41 255**		P	P	07 08 03.8	+0.1
	3.6nm,0.7s,baz=94,slow=8.1,SNR=60						

NNC ***09*** *07:07:23.7±4.3, 36.°60N×67.°55E, h0km, mb3.9, mpv3.6, Error ellipse: s-maj=36.3km s-min=30.8km az=148.0*
IDC ***09*** *07:07:29.7±3.1, 36.°54N×68.°80E, h0km, mb3.6/3, mb1 3.8/7, mb1mx3.5/35, mbtmp3.7/7, ML3.5/4, Error ellipse: s-maj=52.1km s-min=22.7km az=157.0*

ISC 09 07:07:38.8±1.7, 37.°6N±0.°1×68.°33E±0.°09, h10km, n12, σ3°45/18, 5C-5D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SFK	**Sufi-Kurgan**	**4.71 57**		⇓Pn	**Pn**	**07 08 50.3**	**+0.2**
	2.0nm,0.3s						
SFK				⇑Sn	**Sb**	**07 09 58.7**	**+0.3**
	1.8nm,0.5s						
KK31	**Karatay Array**	**5.75 16**		⇓Pn	**Pn**	**07 09 07.1**	**+2.8**
	0.5nm,0.3s,baz=198,slow=14,SNR=18						
KK31				⇑Sn	**Sb**	**07 10 24.2**	**-4.1**
	1.3nm,0.5s,baz=201,slow=24,SNR=3.5						
MNAS	**Manas**	**5.85 32**		⇓Pn	**Pn**	**07 09 08.9**	**+3.2**
	2.8nm,0.4s						
MNAS				⇑Sn	**Sb**	**07 10 29.0**	**-2.0**
	0.4nm,0.3s						
AAK	**Ala-Archa**	**6.91 41**		Pn	**Pn**	**07 09 22.3**	**+2.1**
	2.0nm,0.3s,baz=191,slow=6.3,SNR=19						
AAK				Sn	**Sn**	**07 10 45.3**	**+6.4**
	0.2nm,0.3s,baz=306,slow=17,SNR=1.8						
AAK	**Ala-Archa**	**6.91 41**		⇑Pn	**Pn**	**07 09 22.5**	**+2.2**
	4.8nm,0.6s						
AAK				⇓Sn	**Sb**	**07 10 59.0**	**-2.6**
	2.6nm,0.8s						
TKM2	**Tokmak 2**	**7.69 44**		⇓Pn	**Pn**	**07 09 31.0**	**-0.1**
	0.9nm,0.4s						
TKM2				⇑Sn	**Sb**	**07 11 15.9**	**-8.4**
	1.4nm,0.8s						
MKAR	**Makanchi Array**	**13.83 44**		Pn	**Pn**	**07 10 54.4**	**-0.4**
	0.1nm,0.3s,baz=229,slow=13,SNR=8.8						
AKTO	**Aktyubinsk**	**14.81 333**		Pn	**P**	**07 11 12.3**	**-1.8**
	0.2nm,0.3s,baz=133,slow=16,SNR=3.4						
BVAR	**Borovoye Array**	**15.50 5**		Pn	**Pn**	**07 11 20.1**	**+2.7**
	0.2nm,0.3s,baz=181,slow=7.2,SNR=4.1						
ZALV	**Zalesovo Beam**	**19.92 30**		P	**P**	**07 12 10.3**	**-0.1**
	0.8nm,0.3s,baz=219,slow=11,SNR=6.0						
KVAR	**Kislovodsk Ar**	**20.38 296**		P	**P**	**07 12 15.6**	**-0.2**
	2.2nm,0.4s,baz=251,slow=5.5,SNR=2.9						
YKA	**Yellowknife Ar**	**80.23 1**		P	**P**	**07 19 47.6**	**-1.5**
	0.2nm,0.4s,baz=352,slow=5.3,SNR=10						

WEL 09 07:15:00.1±0.3, 37.°26S×179.°95E, h33km, ML3.8/6, 2D, Error ellipse: s-maj=3.3km s-min=3.3km az=90.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MXZ	**Matakaoa Point**	**1.34 256**		PN	Pn	07 15 22.0	-0.5
MXZ				SN	Sn	07 15 38.2	-1.0
MXZ				AML	AML	07 15 40.1	
MXZ				AML	AML	07 15 41.0	
WMGZ	**Waiomatatini S**	**1.34 245**		PN	Pn	07 15 22.1	-0.5
WMGZ				SN	Sn	07 15 39.5	+0.3
PUZ	**Puketiti**	**1.57 238**		PN	Pn	07 15 24.7	-1.0
PUZ				SN	Sn	07 15 44.1	-0.8
PUZ				AML	AML	07 15 49.3	
PKGZ	**Pakihiroa**	**1.61 246**		PN	Pn	07 15 25.5	-0.8
HAZ	**Te Kaha**	**1.79 253**		PN	Pn	07 15 28.6	-0.1
TWGZ	**Tauwhareparae**	**1.81 239**		PN	Pn	07 15 28.6	-0.4
TWGZ				SN	Sn	07 15 50.6	-0.2
CNGZ	**Carnagh Statio**	**1.84 228**		PN	Pn	07 15 28.6	-0.8
TKGZ	**Te Karaka**	**2.04 234**		PN	Pn	07 15 31.2	-0.9
MWZ	**Matawai**	**2.20 240**		PN	Pn	07 15 33.2	-1.1
MWZ				SN	Sn	07 15 58.1	-2.3
MWZ				AML	AML	07 16 01.6	
RIGZ	**Rimuhau**	**2.25 229**		PN	Pn	07 15 33.8	-1.3
PRGZ	**Paritu Road**	**2.33 224**		⇓PN	Pn	07 15 34.6	-1.5
RAGZ	**Rawiri**	**2.35 238**		PN	Pn	07 15 35.3	-1.2
URZ	**Urewera**	**2.46 245**		PN	Pn	07 15 37.7	-0.2
URZ				AML	AML	07 16 07.4	
URZ				AML	AML	07 16 10.7	
MHGZ	**Mahia Peninsul**	**2.48 220**		PN	Pn	07 15 36.4	-1.8
KNZ	**Kokohu**	**2.52 225**		PN	Pn	07 15 36.5	-2.1
SNGZ	**Shannon Statio**	**2.56 233**		PN	Pn	07 15 38.2	-1.1
RTZ	**Ruatahuna**	**2.71 239**		PN	Pn	07 15 40.9	-0.5
MUGZ	**Murupara**	**2.79 243**		PN	Pn	07 15 41.8	-0.7
WHHZ	**Waihua**	**2.81 229**		PN	Pn	07 15 40.8	-1.8
TARZ	**Mount Tarawera**	**2.90 249**		PN	Pn	07 15 44.2	+0.2
ARHZ	**Aropaoanui**	**3.07 228**		PN	Pn	07 15 44.7	-1.6
NMHZ	**Naumai**	**3.08 232**		⇓PN	Pn	07 15 45.6	-0.9
ALRZ	**Allen Road**	**3.13 244**		PN	Pn	07 15 46.8	-0.4
MRHZ	**Matea Rd**	**3.20 239**		PN	Pn	07 15 47.1	-1.0
BKZ	**Black Stump Fm**	**3.32 234**		PN	Pn	07 15 48.2	-1.7
BKZ				AML	AML	07 17 21.2	
MCHZ	**McNeill Hill**	**3.36 228**		PN	Pn	07 15 48.5	-1.8
KAHZ	**Kahuranaki**	**3.50 223**		PN	Pn	07 15 49.7	-2.5
PXZ	**Pawanui**	**3.68 220**		PN	Pn	07 15 51.4	-3.2
KRHZ	**Kereru**	**3.68 229**		PN	Pn	07 15 51.8	-3.0
BHHZ	**Black Hill Sta**	**3.78 233**		PN	Pn	07 15 54.4	-1.7
MKAZ	**Moumakai**	**3.83 271**		PN	Pn	07 15 56.8	+0.2
TUVZ	**Tukino**	**3.93 238**		PN	Pn	07 15 56.7	-1.6
PNHZ	**Pukenui**	**3.96 227**		PN	Pn	07 15 55.6	-2.9
PRHZ	**Porangahau**	**3.97 220**		PN	Pn	07 15 54.9	-3.7
WNVZ	**Wahianoa**	**4.00 238**		PN	Pn	07 15 57.4	-1.8
TSZ	**Takapari Road**	**4.19 227**		PN	Pn	07 15 58.3	-3.4
ANWZ	**Angora Road**	**4.19 219**		PN	Pn	07 15 57.9	-3.8
DVHZ	**Dannevirke**	**4.24 223**		PN	Pn	07 15 58.8	-3.6
BFZ	**Birch Farm**	**4.47 219**		PN	Pn	07 16 00.9	-4.7
BFZ				AML	AML	07 20 33.0	
BFZ				AML	AML	07 23 16.6	
VRZ	**Vera Road**	**4.49 244**		PN	Pn	07 16 05.2	-0.7
POWZ	**Post Office Ro**	**4.52 225**		PN	Pn	07 16 03.0	-3.2
PRWZ	**Pori Road**	**4.53 222**		PN	Pn	07 16 02.9	-3.3
WAZ	**Wanganui**	**4.62 236**		PN	Pn	07 16 06.0	-1.7
MRZ	**Mangatainoka R**	**4.81 224**		PN	Pn	07 16 06.4	-3.8
HOWZ	**Holdsworth Sta**	**5.01 222**		PN	Pn	07 16 08.6	-4.3
OGWZ	**Otaki Gorge**	**5.14 225**		PN	Pn	07 16 10.6	-4.2
MTW	**Mount Morrison**	**5.21 220**		PN	Pn	07 16 10.5	-5.1
CAW	**Cannon Point**	**5.40 223**		PN	Pn	07 16 13.8	-4.5
DUWZ	**D'Urville Isla**	**5.88 231**		PN	Pn	07 16 20.7	-4.1
QRZ	**Quartz Range**	**6.79 236**		PN	Pn	07 16 32.8	-4.5
MQZ	**McQueen's Vall**	**8.51 218**		PN	Pn	07 16 55.5	-5.4

ISK ***09*** *07:21:10.9, 36.°95N×36.°06E, h14km, MD2.4*
ISCJB ***09*** *07:21:11.9±0.5, 36.°92N±0.°03×36.°04E±0.°02, h4km±5km, Error ellipse: s-maj=5.2km s-min=3.2km az=179.5*
DDA ***09*** *07:21:12.2, 36.°93N×36.°05E, h7km, Md2.8*
CSEM ***09*** *07:21:12.0±0.2, 36.°91N×36.°05E, h15km, MD2.4, Error ellipse: s-maj=5.3km s-min=4.2km az=10.0*

ISC 09 07:21:11.8±0.9, 36.°93N±0.°03×36.°05E±0.°02, h14km±7km, n27, σ0°51/46, Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CEYT	**Ceyhan**	**0.25 289**		*e*PG	**Pg**	**07 21 16.8**	**-0.3**
CEYT				*e*SG	**Sg**	**07 21 21.2**	**+0.4**
CEYT	**Ceyhan**	**0.25 289**		*e*Pg	**Pg**	**07 21 16.8**	**-0.3**
CEYT				*e*Sg	**Sg**	**07 21 21.2**	**+0.4**
YURE	**YUREGIR**	**0.35 253**		P	**Pg**	**07 21 18.8**	**-0.1**
YURE				S	**Sb**	**07 21 25.5**	**+0.3**
YURE	**YUREGIR**	**0.35 253**		*i* P	**Pg**	**07 21 18.8**	**-0.1**
YURE				*i* S	**Sb**	**07 21 25.5**	**+0.3**
KAMA	**Osmaniye**	**0.56 62**		*i* P	**Pg**	**07 21 22.5**	**-0.3**
KAMA				*i* S	**Sg**	**07 21 30.5**	**+0.3**
TAHT	**Tahtakopru-Hat**	**0.56 169**		*e*PG	**Pg**	**07 21 22.8**	**0.0**
TAHT	**Tahtakopru-Hat**	**0.56 169**		*e*Pg	**Pg**	**07 21 22.8**	**0.0**
ANDN	**Andirin**	**0.69 20**		P	**Pn**	**07 21 27.0**	**-0.3**
ANDN				S	**Sb**	**07 21 35.9**	**+0.7**
ANDN	**Andirin**	**0.69 20**		*i* P	**Pn**	**07 21 27.0**	**-0.3**
ANDN				*i* S	**Sb**	**07 21 35.9**	**+0.7**
AKO	**Adana**	**0.72 318**		*i* P	**Pg**	**07 21 25.4**	**-0.3**
AKO				*i* S	**Sg**	**07 21 35.0**	**-0.2**
HCB	**Kahramanmara¯**	**0.80 59**		*i* P	**Pg**	**07 21 27.4**	**0.0**
HCB				*i* S	**Sn**	**07 21 39.5**	**-1.1**
KUZU	**Kuzuini**	**0.84 100**		P	**Pb**	**07 21 28.1**	**-0.1**
KUZU				S	**Sn**	**07 21 40.8**	**-0.6**
KUZU	**Kuzuini**	**0.84 100**		*i* P	**Pb**	**07 21 28.1**	**-0.1**
KUZU				*i* S	**Sn**	**07 21 40.8**	**-0.6**
YAYL	**Yayladag**	**0.89 177**		P	**Pg**	**07 21 28.9**	**-0.1**
YAYL				S	**Sn**	**07 21 42.4**	**-0.5**
YAYL	**Yayladag**	**0.89 177**		*i* P	**Pg**	**07 21 28.9**	**-0.1**
YAYL				*i* S	**Sn**	**07 21 42.4**	**-0.5**
GAZ	**Gaziantep**	**0.96 75**		*e*PG	**Pb**	**07 21 29.6**	**-0.7**
GAZ	**Gaziantep**	**0.96 75**		*e*Pg	**Pb**	**07 21 29.6**	**-0.7**
DED	**Mersin**	**1.00 272**		*i* P	**Pg**	**07 21 31.0**	**-0.1**
DED				*i* S	**Sn**	**07 21 45.8**	**+0.4**
GULE	**Gulek**	**1.08 290**		P	**Pn**	**07 21 33.4**	**+0.8**
GULE				S	**Sn**	**07 21 48.0**	**+0.5**
GULE	**Gulek**	**1.08 290**		*i* P	**Pn**	**07 21 33.4**	**+0.8**
GULE				*i* S	**Sn**	**07 21 48.0**	**+0.5**
MERS	**Mersin**	**1.23 268**		*e*PN	**Pn**	**07 21 34.3**	**-0.3**
MERS	**Mersin**	**1.23 268**		*e*Pn	**Pn**	**07 21 34.3**	**-0.3**
GZT	**Gaziantep**	**1.28 70**		*i* P	**Pg**	**07 21 37.8**	**+1.3**
GZT				*i* S	**Sg**	**07 21 54.0**	**+0.8**
KERG	**Konya-Eregli**	**1.61 288**		P	**

AFI	**Afiamalu**	**2.12**	**42**	Pn	Pn	07 25 51.2	+0.5
	180nm,0.3s,baz=136,slow=1.1,SNR=159						
AFI				Sn	Sn	07 26 12.9	-5.0
	254nm,0.3s,baz=39,slow=21,SNR=19						
AFI				LR	LR	07 26 33.4	
	comp=Z,254nm,21.1s,baz=258,slow=37						
RAR	**Rarotonga**	**14.00**	**116**	LR	LR	07 32 30.7	
	comp=Z,43nm,19.2s,baz=292,slow=31						
PPT	**Papeete**	**22.79**	**99**	LR	LR	07 36 59.1	
	comp=Z,17nm,19.2s,baz=238,slow=31						
URZ	**Urewera**	**24.22**	**199**	P	P	07 30 32.9	+0.4
	11nm,0.4s,baz=72,slow=13,SNR=3.5						
HNR	**Honiara**	**26.84**	**280**	LR	LR	07 40 35.2	
	comp=Z,75nm,18.4s,baz=188,slow=34						
STKA	**Stephens Creek**	**44.12**	**240**	P	P	07 33 24.1	-0.2
	4.1nm,0.8s,baz=96,slow=9.4,SNR=7.8						
WRA	**Warramunga Arr**	**49.96**	**257**	P	P	07 34 09.9	-0.4
	0.4nm,0.5s,baz=89,slow=7.8,SNR=10						
ASAR	**Alice Springs**	**50.22**	**252**	P	P	07 34 11.7	-0.5
	4.5nm,0.6s,baz=86,slow=7.9,SNR=105						
LPIG	**La Paz**	**72.96**	**58**	LR	LR	08 01 06.4	
	comp=Z,32nm,19.2s,baz=282,slow=30						
NVAR	**Mina Array Bea**	**74.30**	**42**	P	P	07 36 53.7	+0.1
	1.6nm,0.8s,baz=223,slow=10.0,SNR=7.0						
NVAR				LR	LR	08 00 52.7	
	comp=Z,24nm,19.9s,baz=264,slow=29						
TXAR	**Lajitas Array**	**80.54**	**56**	P	P	07 37 28.4	-0.3
	0.2nm,0.6s,baz=230,slow=7.0,SNR=5.8						
PDAR	**Pinedale Array**	**82.24**	**42**	P	P	07 37 37.1	-0.4
	0.2nm,0.4s,baz=224,slow=4.1,SNR=4.4						
ILAR	**Eielson Array**	**82.51**	**11**	P	P	07 37 37.9	-0.2
	0.2nm,0.7s,baz=245,slow=6.3,SNR=4.3						
YKA	**Yellowknife Ar**	**90.12**	**23**	P	P	07 38 15.1	-0.5
	0.3nm,0.8s,baz=236,slow=4.4,SNR=4.3						
BRTR	**Keskin Array B**	**146.32**	**321**	PKPbc	PKPab	07 44 58.5	+0.5
	0.7nm,0.6s,baz=215,slow=1.5,SNR=4.3						

*ISCJB **09** 07:27:58.5±0.5, 40°.57N±0°.04×39°.02E±0°.04, h0km, Error ellipse: s-maj=6.1km s-min=3.8km az=9.2*
*ISK **09** 07:27:58.3, 40°.59N×39°.06E, h19km, MD2.9*
*CSEM **09** 07:27:58.8±0.2, 40°.55N×39°.02E, h2km, MD2.9, Error ellipse: s-maj=5.7km s-min=3.8km az=8.0, Suspected Mining explosion.*
*DDA **09** 07:27:58.7, 40°.54N×39°.00E, h7km, Md2.9, Suspected Mining explosion.*

ISC 09 07:27:56.8±0.9, 40°.57N±0°.04×39°.06E±0°.02, h0km, n22, σ0s43/32, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMT	**Gumushane**	**0.34**	**108**	*e*PG	**Pb**	**07 28 06.0**	**+0.2**
GUMT				*e*SG	**Sb**	**07 28 11.7**	**-0.2**
GUMT	**Gumushane**	**0.34**	**108**	*e*Pg	**Pb**	**07 28 06.0**	**+0.2**
GUMT				*e*Sg	**Sb**	**07 28 11.7**	**-0.2**
ESPY	**Espiye-Giresun**	**0.43**	**325**	*e*PG	**Pb**	**07 28 07.2**	**-0.1**
ESPY	**Espiye-Giresun**	**0.43**	**325**	*e*Pg	**Pb**	**07 28 07.2**	**-0.1**
KELT	**Kelkit**	**0.45**	**160**	P	**Pb**	**07 28 07.6**	**-0.1**
KELT				S	**Sb**	**07 28 14.1**	**-0.8**
KELT	**Kelkit**	**0.45**	**160**	*i* P	**Pb**	**07 28 07.6**	**-0.1**
KELT				*i* S	**Sb**	**07 28 14.1**	**-0.8**
MACK	**Trabzon**	**0.66**	**55**	P	**Pn**	**07 28 13.0**	**-0.4**
MACK	**Trabzon**	**0.66**	**55**	*i* P	**Pn**	**07 28 13.0**	**-0.4**
KTUT	**Trabzon**	**0.68**	**52**	*e*PG	**Pb**	**07 28 11.8**	**+0.2**
KTUT	**Trabzon**	**0.68**	**52**	*e*Pg	**Pb**	**07 28 11.8**	**+0.2**
GRSN	**GIRESUNGRSN**	**0.70**	**301**	P	**Pb**	**07 28 11.5**	**-0.3**
GRSN	**GIRESUNGRSN**	**0.70**	**301**	*i* P	**Pb**	**07 28 11.5**	**-0.3**
SUSE	**Susehri**	**0.74**	**241**	P	**Pb**	**07 28 12.7**	**0.0**
SUSE				S	**Sb**	**07 28 23.0**	**-0.5**
SUSE	**Susehri**	**0.74**	**241**	*i* P	**Pb**	**07 28 12.7**	**0.0**
SUSE				*i* S	**Sb**	**07 28 23.0**	**-0.5**
BAYT	**Ayd¨–ntepe-Bay**	**0.85**	**102**	*e*PG	**Pn**	**07 28 15.5**	**-0.6**
BAYT	**Ayd¨–ntepe-Bay**	**0.85**	**102**	*e*Pg	**Pn**	**07 28 15.5**	**-0.6**
KOPT	**Kop Dagi**	**1.23**	**116**	P	**Pn**	**07 28 22.2**	**+0.7**
KOPT				S	**Sg**	**07 28 36.1**	**-0.3**
KOPT	**Kop Dagi**	**1.23**	**116**	*i* P	**Pn**	**07 28 22.2**	**+0.7**
KOPT				*i* S	**Sg**	**07 28 36.1**	**-0.3**
SVSK	**Karacayir**	**1.70**	**248**	*e*PN	**Pn**	**07 28 27.7**	**0.0**
SVSK	**Karacayir**	**1.70**	**248**	*e*Pn	**Pn**	**07 28 27.7**	**0.0**
ERBA	**Erbaa**	**1.75**	**274**	P	**Pg**	**07 28 31.0**	**+0.6**
ERBA				S	**Sg**	**07 28 53.4**	**+0.2**
ERBA	**Erbaa**	**1.75**	**274**	*i* P	**Pg**	**07 28 31.0**	**+0.6**
ERBA				*i* S	**Sg**	**07 28 53.4**	**+0.2**

WEL 09 07:28:36.3±0.1, 40°.64S×176°.05E, h29km±1km, ML3.6/31, 11C-6D, Error ellipse: s-maj=1.3km s-min=0.8km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PRWZ	**Pori Road**	**0.10**	**323**	⇓P*	Pb	07 28 41.5	-0.1
PRWZ				S*	Sb	07 28 45.5	+0.3
BFZ	**Birch Farm**	**0.15**	**107**	⇑P*	Pn	07 28 43.1	+0.4
BFZ				AML	AML	07 28 48.6	
BFZ				AML	AML	07 28 48.7	
TIWZ	**Tintock**	**0.19**	**222**	P*	Pn	07 28 43.3	0.0
TIWZ				S*	Sb	07 28 48.7	+2.1
TIWZ				AML	AML	07 28 49.0	
CPWZ	**Castlepoint**	**0.29**	**157**	⇑P*	Pn	07 28 46.1	+1.4
POWZ	**Post Office Ro**	**0.33**	**319**	⇑P*	Pb	07 28 42.8	-1.3
DVHZ	**Dannevirke**	**0.35**	**15**	P*	Pb	07 28 43.4	-1.1
DVHZ				S*	Sb	07 28 48.8	-1.1
MRZ	**Mangatainoka R**	**0.36**	**266**	⇑P*	Pb	07 28 44.1	-0.5
MRZ				S*	Sb	07 28 49.9	-0.3
ANWZ	**Angora Road**	**0.37**	**61**	⇑P*	Pn	07 28 45.3	-0.3
HOWZ	**Holdsworth Sta**	**0.48**	**237**	⇑P*	Pb	07 28 46.8	+0.3
TMWZ	**Te Maipa**	**0.48**	**195**	P*	Pn	07 28 47.9	+0.6
PRHZ	**Porangahau**	**0.58**	**50**	⇑P*	Pb	07 28 48.1	0.0
TSZ	**Takapari Road**	**0.58**	**353**	P*	Pb	07 28 46.4	-1.7
TSZ				AML	AML	07 28 54.1	
TSZ				AML	AML	07 28 54.1	
WPHZ	**Waipukurau**	**0.65**	**28**	⇑P*	Pb	07 28 48.7	-0.4
MTW	**Mount Morrison**	**0.67**	**219**	P*	Pb	07 28 49.6	+0.1
MTW				AML	AML	07 29 01.8	
MTW				AML	AML	07 29 02.0	
OGWZ	**Otaki Gorge**	**0.69**	**255**	⇑P*	Pb	07 28 49.6	-0.3
OHWZ	**Ohakea**	**0.71**	**307**	⇑P*	Pb	07 28 49.4	-0.8
PNHZ	**Pukenui**	**0.73**	**9**	P*	Pb	07 28 49.3	-1.3
TRWZ	**Traveller**	**0.81**	**200**	P*	Pb	07 28 52.0	+0.1
TRWZ				AML	AML	07 29 06.3	
TRWZ				AML	AML	07 29 17.8	
PXZ	**Pawanui**	**0.87**	**46**	P*	Pn	07 28 51.9	-0.7
PXZ				AML	AML	07 29 06.4	
PXZ				AML	AML	07 29 06.4	
PXZ				AML	AML	07 29 08.0	
PXZ				AML	AML	07 29 08.0	
PAWZ	**Paruwai Farm**	**0.88**	**212**	P*	Pn	07 28 52.7	-0.1
PAWZ				AML	AML	07 29 20.0	
PAWZ				AML	AML	07 29 22.1	
CAW	**Cannon Point**	**0.88**	**238**	P*	Pn	07 28 52.4	-0.3
CAW				AML	AML	07 29 07.1	
CAW				AML	AML	07 29 07.2	
KIW	**Kapiti Island**	**0.90**	**255**	P*	Pn	07 28 52.7	-0.3
KIW				AML	AML	07 29 05.1	
KIW				AML	AML	07 29 05.5	
MSWZ	**Moikau Station**	**0.99**	**218**	P*	Pn	07 28 53.7	-0.5
MSWZ				AML	AML	07 29 12.6	
MSWZ				AML	AML	07 29 14.0	
KRHZ	**Kereru**	**1.02**	**14**	⇓PN	Pn	07 28 53.6	-1.2
KAHZ	**Kahuranaki**	**1.05**	**37**	PN	Pn	07 28 54.4	-0.7
PLWZ	**Palliser**	**1.11**	**213**	P*	Pn	07 28 55.3	-0.6
BHHZ	**Black Hill Sta**	**1.15**	**0**	⇓PN	Pn	07 28 55.5	-1.0
WEL	**Wellington**	**1.17**	**236**	P*	Pn	07 28 56.2	-0.4
WEL				AML	AML	07 29 13.5	
WEL				AML	AML	07 29 15.2	
BHW	**Baring Head**	**1.18**	**229**	P*	Pn	07 28 56.1	-0.7
BHW				AML	AML	07 29 14.2	
BHW				AML	AML	07 29 14.3	
WAZ	**Wanganui**	**1.20**	**317**	⇑PN	Pn	07 28 57.1	-0.1
WAZ				AML	AML	07 29 13.8	
WAZ				AML	AML	07 29 15.3	
KWHZ	**Kaweka Forest**	**1.25**	**13**	⇓PN	Pn	07 28 56.8	-1.0
MOVZ	**Moawhango**	**1.25**	**349**	PN	Pn	07 28 57.0	-0.9
MOVZ				AML	AML	07 29 13.6	
MOVZ				AML	AML	07 29 13.8	
WNVZ	**Wahianoa**	**1.35**	**345**	PN	Pn	07 28 59.0	-0.4
WHVZ	**Whangaehu Hut**	**1.40**	**345**	⇓PN	Pn	07 28 59.9	-0.1
TUVZ	**Tukino**	**1.40**	**347**	PN	Pn	07 28 59.9	-0.2
TUVZ				AML	AML	07 29 18.8	
TUVZ				AML	AML	07 29 19.1	
FWVZ	**Far West T-bar**	**1.43**	**344**	PN	Pn	07 29 00.4	-0.2
FWVZ				AML	AML	07 29 18.3	
FWVZ				AML	AML	07 29 18.3	
PKVZ	**Pokaka**	**1.45**	**338**	PN	Pn	07 29 00.4	-0.2
PKVZ				AML	AML	07 29 19.9	
PKVZ				AML	AML	07 29 23.2	
TCW	**Tory Channel**	**1.46**	**246**	PN	Pn	07 28 60.0	-0.7
TCW				AML	AML	07 29 21.9	
TCW				AML	AML	07 29 23.0	
NGZ	**Ngauruhoe**	**1.50**	**347**	PN	Pn	07 29 01.2	-0.2
NGZ				AML	AML	07 29 20.5	
NGZ				AML	AML	07 29 24.6	
OTVZ	**Oturere**	**1.50**	**348**	PN	Pn	07 29 01.1	-0.3
OTVZ				AML	AML	07 29 20.2	
OTVZ				AML	AML	07 29 21.9	
BKZ	**Black Stump Fm**	**1.51**	**13**	⇓PN	Pn	07 29 00.2	-1.3
BKZ				AML	AML	07 29 23.3	
BKZ				AML	AML	07 29 23.5	
ARHZ	**Aropaoanui**	**1.55**	**28**	PN	Pn	07 29 01.2	-0.8
WTVZ	**West Tongariro**	**1.56**	**347**	PN	Pn	07 29 01.9	-0.3
WTVZ				AML	AML	07 29 22.7	
WTVZ				AML	AML	07 29 25.1	
KRVZ	**Karewarewa**	**1.57**	**348**	PN	Pn	07 29 02.3	0.0
KRVZ				AML	AML	07 29 23.2	
KRVZ				AML	AML	07 29 24.6	
DUWZ	**D'Urville Isla**	**1.63**	**264**	PN	Pn	07 29 02.1	-1.0
DUWZ				AML	AML	07 29 26.4	
DUWZ				AML	AML	07 29 28.5	
TWVZ	**Taurewa**	**1.64**	**343**	PN	Pn	07 29 02.9	-0.3
TWVZ				AML	AML	07 29 24.8	
TWVZ				AML	AML	07 29 26.7	
NMHZ	**Naumai**	**1.65**	**21**	PN	Pn	07 29 02.3	-1.0
RITZ	**Rihia Road**	**1.67**	**355**	PN	Pn	07 29 03.2	-0.3
RITZ				AML	AML	07 29 35.5	
RITZ				AML	AML	07 29 36.4	
KATZ	**Kakaramea**	**1.68**	**350**	PN	Pn	07 29 04.0	+0.1
KATZ				AML	AML	07 29 32.9	
LREZ	**Lake Rotokare**	**1.73**	**312**	PN	Pn	07 29 04.7	+0.4
TUWZ	**Tuamarina**	**1.78**	**243**	PN	Pn	07 29 04.2	-0.9
TUWZ				AML	AML	07 29 32.4	
TUWZ				AML	AML	07 29 33.7	
VRZ	**Vera Road**	**1.81**	**326**	PN	Pn	07 29 05.1	-0.4
VRZ				AML	AML	07 29 33.9	
VRZ				AML	AML	07 29 34.9	
PREZ	**Palmer Road**	**1.95**	**311**	PN	Pn	07 29 07.9	+0.5
BSWZ	**Blackbirch Sta**	**1.96**	**236**	PN	Pn	07 29 06.5	-1.1
NEZ	**North Egmont**	**2.03**	**312**	PN	Pn	07 29 08.9	+0.2
KNZ	**Kokohu**	**2.04**	**38**	PN	Pn	07 29 06.9	-1.7
KHEZ	**Kahui Hut**	**2.06**	**310**	PN	Pn	07 29 09.7	+0.7
NMEZ	**Namu Road**	**2.07**	**306**	PN	Pn	07 29 09.7	+0.7
SNGZ	**Shannon Statio**	**2.10**	**29**	PN	Pn	07 29 08.0	-1.6
NNZ	**Nelson**	**2.11**	**253**	PN	Pn	07 29 09.1	-0.4
RTZ	**Ruatahuna**	**2.14**	**20**	PN	Pn	07 29 08.7	-1.5
PRRZ	**Plateau Road**	**2.15**	**7**	PN	Pn	07 29 08.7	-1.5
HIZ	**Hauiti**	**2.31**	**336**	PN	Pn	07 29 13.2	+0.7
HIZ				AML	AML	07 29 50.0	
HIZ				AML	AML	07 29 52.1	
RIGZ	**Rimuhau**	**2.34**	**35**	PN	Pn	07 29 10.9	-1.9
URZ	**Urewera**	**2.51**	**19**	PN	Pn	07 29 12.5	-2.6
MWZ	**Matawai**	**2.57**	**27**	PN	Pn	07 29 13.5	-2.5
KHZ	**Kahutara**	**2.59**	**226**	PN	Pn	07 29 14.3	-1.9
QRZ	**Quartz Range**	**2.68**	**265**	PN	Pn	07 29 16.3	-1.2
PKGZ	**Pakihiroa**	**3.16**	**30**	PN	Pn	07 29 22.7	-1.5
HAZ	**Te Kaha**	**3.18**	**26**	PN	Pn	07 29 22.6	-1.7
LTZ	**Lake Taylor**	**3.55**	**232**	PN	Pn	07 29 27.5	-2.0
LTZ				AML	AML	07 31 59.1	
MQZ	**McQueen's Vall**	**3.97**	**218**	PN	Pn	07 29 32.7	-2.5
OXZ	**Oxford**	**4.02**	**227**	PN	Pn	07 29 33.7	-2.2
INZ	**Inchbonnie**	**4.03**	**237**	PN	Pn	07 29 34.0	-2.0

CASC 09 07:44:35.0±6.5, 13°.37N×82°.73W, h0km±99km, MD4.5, 1C, Caribbean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URSC	**Urasca**	**3.66**	**196**	⇑*e*P	Pn	07 45 30.7	-2.4
CGA2	**Cerro Gallo 2**	**3.74**	**207**	*e*P	Pn	07 45 35.1	+0.9
CGA2				*e*S	Sb	07 46 25.3	-2.8
COPN	**Copaltepe**	**3.95**	**253**	*e*P	Pn	07 45 32.0	-5.0
PACA	**Pacayal**	**5.45**	**272**	*e*P	Pn	07 45 59.7	+2.1
PACA				*e*S	Sn	07 47 05.0	+3.9

JMA 09 08:01:16.4±0.2, 38°.59N×144°.60E, h57km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.34**	**283**	P	Pn	08 01 53.3	+0.9
OFUJ				S	Sn	08 02 21.6	+1.6
JIO	**Ouri**	**2.55**	**268**	P	Pn	08 01 56.5	+1.2
JIO				S	Sn	08 02 25.3	+0.1
JMK	**Ichinoseki**	**2.67**	**279**	S	Sn	08 02 30.1	+2.1
JOM	**Ohasama**	**2.72**	**290**	*e*S	Sn	08 02 31.0	+1.6
JMM	**Marumori**	**3.08**	**258**	P	Pn	08 02 03.6	+1.0
JMM				*e*S	Sn	08 02 38.1	-0.1
JOU	**Okura**	**3.10**	**267**	*e*S	Sn	08 02 40.0	+1.4
JFK	**Kawauchi**	**3.19**	**249**	*e*S	Sn	08 02 40.1	-0.8
JRG	**Rokugo**	**3.19**	**286**	S	Sn	08 02 43.2	+2.3
JYK	**Kaneyama**	**3.33**	**277**	S	Sn	08 02 47.3	+3.0
JFT	**Otama**	**3.53**	**254**	S	Sn	08 02 50.4	+1.1
JNBK	**Urakawa-nobuka**	**3.95**	**340**	P	Pn	08 02 15.7	+1.3
JNBK				*e*S	Sn	08 02 59.7	+0.3
JCH	**Churui**	**4.13**	**347**	P	Pn	08 02 17.5	+0.6
JCH				*e*S	Sn	08 03 03.2	-0.7

*IDC **09** 08:09:17.1±0.8, 3°.38S×99°.31E, h0km, mb4.4/22, mb1 4.5/22, mb1mx4.3/42, mbtmp4.4/22, MS3.4/3, Ms1 3.4/3, ms1mx2.9/33, Error ellipse: s-maj=28.6km s-min=12.9km az=43.0*
*NEIC **09** 08:09:18.1±0.5, 3°.48S×99°.47E, h10km, mb4.5/11, Error ellipse: s-maj=11.7km s-min=6.7km az=46.0*
*ISCJB **09** 08:09:19.5±0.4, 3°.48S±0°.03×99°.53E±0°.04, h33km, mb4.5/35, MS3.6/3, Error ellipse: s-maj=6.0km s-min=4.0km az=136.5*
*DJA **09** 08:09:22.6±0.9, 3°S±3°×10°0E±°, h30km±9km, M5.0/10, mb5.0/7, mB5.4/3, MLv5.0/10, Mw(mB)4.8/3*

ISC 09 08:09:21.4±0.5, 3°.50S±0°.06×99°.49E±0°.06, h35km, n183, σ1s51/172, mb4.5/35, MS3.5/4, Southwest of Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PPSI	**Pulau Pagai**	**0.90**	**35**	P	**Pn**	**08 09 36.4**	**-1.1**
PDSI	**Padang**	**2.75**	**21**	P	**Pn**	**08 10 01.6**	**-1.4**
PDSI				S	**Sn**	**08 10 33.7**	**-1.3**
MASI	**Maura Aman, Be**	**2.77**	**83**	P	**Pn**	**08 10 02.6**	**-0.7**
MASI				S	**Sn**	**08 10 33.4**	**-2.2**
SDSI	**Sungai Dareh**	**3.20**	**37**	P	**Pn**	**08 10 08.4**	**-0.8**
MNAI	**Manna**	**3.56**	**104**	P	**Pn**	**08 10 13.8**	**-0.4**
MNAI	**Manna**	**3.56**	**104**	*e*Pn	**Pn**	**08 10 14.1**	**-0.2**
MNAI				*e*Sn	**Sn**	**08 10 56.6**	**+1.5**
LHSI	**Lahat**	**4.04**	**95**	P	**Pn**	**08 10 20.5**	**-0.2**
BKNI	**Bangkinang**	**4.10**	**22**	P	Pn	08 10 30.5	+8.8
BKNI	**Bangkinang**	**4.10**	**22**	*e*Pn	**Pn**	**08 10 21.5**	**-0.2**
BKNI				*e*Sn	**Sn**	**08 11 07.8**	**-0.7**
RGRI	**Rengat**	**4.23**	**42**	P	**Pn**	**08 10 22.6**	**-0.8**
MNSI	**Mandailing Nat**	**4.27**	**1**	P	**Pn**	**08 10 22.8**	**-1.1**
LWLI	**Liwa**	**4.80**	**108**	P	**Pn**	**08 10 31.4**	**+0.1**
GSI	**Gunungsitoli**	**5.14**	**338**	*e*Pn	**Pn**	**08 10 32.0**	**-3.9**
GSI				*e*Sn	**Sn**	**08 11 29.2**	**-4.8**
KASI	**Kota Agung**	**5.38**	**112**	P	**Pn**	**08 10 38.3**	**-0.9**
	188nm,0.5s,6µm1.8nm						
PSI	**Prapat**	**6.28**	**355**	*e*Pn	**Pn**	**08 10 52.0**	**+0.3**
MYKOM	**Kota Tinggi**	**6.83**	**40**	*e*Pn	**Pn**	**08 10 59.0**	**-0.1**
CGJI	**Cibinong**	**6.91**	**117**	P	**Pn**	**08 10 58.7**	**-1.5**
	151nm,0.7s,3µm0.5nm						
IPM	**Ipoh**	**8.07**	**11**	*e*Pn	**Pn**	**08 11 16.4**	**+0.1**
IPM				*e*Sn	**Sn**	**08 12 48.9**	**+2.6**
CNJI	**Cibinong**	**8.49**	**117**	P	**Pn**	**08 11 21.2**	**-0.8**
	108nm,0.6s,0.4nm						
LEM	**Lembang**	**8.74**	**113**	Pn	Pn	08 11 33.2	+7.7
	9.7nm,0.3s,baz=190,slow=12,SNR=5.7						
LEM				LR	LR	08 15 12.2	
	comp=Z,214nm,20.8s,baz=347,slow=40						
LEM	**Lembang**	**8.74**	**113**	P	Pn	08 11 33.5	+7.9
CISI	**Cisompet, Garu**	**9.21**	**116**	*e*Pn	**Pn**	**08 11 29.9**	**-2.0**
CISI				*e*Sn	**Sn**	**08 13 06.5**	**-8.0**
XMIS	**Christmas Isla**	**9.24**	**139**	*e*Pn	Pn	08 11 26.2	-6.1
CMJI	**Cimerak**	**9.88**	**116**	P	**Pn**	**08 11 40.6**	**-0.4**
	110nm,1.2s						
UGM	**Wanagama**	**11.82**	**112**	*e*Pn	**Pn**	**08 12 06.7**	**-0.9**
NGJI	**Ngawi**	**12.52**	**108**	P	**P**	**08 12 26.3**	**-2.1**
SBUM	**Sibu**	**14.03**	**65**	*e*Pn	**Pn**	**08 12 34.7**	**-3.1**
ABJI	**Asem Bagus**	**15.28**	**107**	P	**Pn**	**08 12 54.1**	**-0.5**
BBKI	**Banjar Baru**	**15.32**	**90**	P	**P**	**08 13 00.2**	**+0.6**
KKM	**Kota Kinabalu**	**19.20**	**60**	*e*P	**P**	**08 13 40.7**	**-1.9**
	5.4nm,0.7s						
SPSI	**Sidrap Palu**	**20.24**	**92**	P	Pn	08 13 59.6	+3.7
KAPI	**Kappang**	**20.26**	**95**	P	**P**	**08 13 54.7**	**+0.7**
	18nm,0.6s,baz=271,slow=9.0,SNR=9.9						
MYLDM	**Lahad Datu**	**20.86**	**66**	*e*P	Pn	08 14 05.3	+2.2
	22nm,1.0s						
CM01	**Chiang Mai Arr**	**21.79**	**359**	*e*P	**P**	**08 14 09.9**	**-0.5**
CM31	**Chiang Mai Arr**	**21.82**	**359**	*e*P	**P**	**08 14 11.8**	**+1.0**
CMAR	**Chiang Mai Arr**	**21.82**	**359**	P	**P**	**08 14 11.4**	**+0.6**
	13nm,0.7s,baz=188,slow=9.9,SNR=45						
CHTO	**Chiang Mai**	**22.18**	**359**	*e*P	**P**	**08 14 14.7**	**0.0**
	3.5nm,0.4s						
H08S2	**Diego Garcia H**	**27.18**	**260**	T	T	08 44 30.3	
	baz=81,SNR=15						
H08S3	**Diego Garcia H**	**27.18**	**260**	T	T	08 44 30.8	
	baz=81,slow=74,SNR=15						
H08S1	**Diego Carcia H**	**27.20**	**260**	T	T	08 44 26.2	
	baz=81,slow=74,SNR=17						
KMI	**Kunming**	**28.63**	**6**	P	P	08 15 20.2	+5.2
KMI				pmax	pmax		
	comp=Z,26nm,0.5s						
KMI				pmax	pmax		
	comp=Z,79nm,6.5s						
KMI				LR	LR		
	comp=N,100nm,7.7s						
KMI				LR	LR		
	comp=E,140nm,11.7s						
KMI				LR	LR		
	comp=Z,85nm,5.5s						
FITZ	**Fitzroy Crossi**	**29.43**	**121**	P	**P**	**08 15 26.6**	**+4.7**
	comp=Z,2.6nm,0.9s,baz=326,slow=3.6,SNR=2.7						
CD2	**Chengdu**	**34.46**	**6**	P	**P**	**08 16 07.7**	**+1.7**
CD2				pmax	pmax		
	comp=Z,2.0nm,0.5s						
WRA	**Warramunga Arr**	**37.70**	**118**	P	**P**	**08 16 35.8**	**+1.8**
	comp=Z,2.3nm,0.5s,baz=306,slow=9.1,SNR=32						
WRAB	**Tennant Creek**	**37.71**	**118**	*e*P	**P**	**08 16 35.6**	**+1.7**
	comp=Z,3.3nm,0.5s						
XAN	**Xi'an**	**38.38**	**13**	P	**P**	**08 16 39.4**	**0.0**
XAN				pP	pP	08 16 45.8	-3.9
XAN				pmax	pmax		
	comp=Z,9.0nm,0.8s						
ASAR	**Alice Springs**	**38.81**	**124**	P	**P**	**08 16 44.7**	**+1.5**
	comp=Z,0.1nm,0.3s,baz=298,slow=7.5,SNR=4.1						
ASAR				LR	LR	08 33 37.1	
	comp=Z,78nm,18.3s,baz=274,slow=37						
AS01	**Alice Springs**	**38.85**	**124**	*e*P	P	08 16 38.3	-5.3
NJ2	**Nanjing**	**39.86**	**26**	*e*P	**P**	**08 16 54.8**	**+3.1**
NJ2				pmax	pmax		
	comp=Z,13nm,0.8s						
HHC	**Hu-ho-hao-te**	**45.50**	**13**	*e*P	**P**	**08 17 41.1**	**+3.6**
HHC				pmax	pmax		
	comp=Z,36nm,1.1s						
HHC				pmax	pmax		
	comp=Z,94nm,6.7s						
WMQ	**Urumqi**	**48.29**	**349**	*e*P	**P**	**08 18 00.5**	**+1.3**
WMQ				pmax	pmax		
	comp=Z,9.0nm,1.0s						
WMQ				pmax	pmax		
	comp=Z,44nm,4.4s						
WMQ				LR	LR		
	comp=N,43nm,27.2s						
WMQ				LR	LR		
	comp=E,170nm,31.0s						
WMQ				LR	LR		
	comp=Z,43nm,25.4s						
CTAO	**Charters Tower**	**48.44**	**114**	*e*P	**P**	**08 18 02.2**	**+1.4**
	comp=Z,7.3nm,0.3s						
KSAR	**Wonju Array Be**	**48.53**	**30**	P	**P**	**08 18 01.1**	**0.0**
STKA	**Stephens Creek**	**48.55**	**130**	P	**P**	**08 18 05.6**	**+4.2**
	comp=Z,2.9nm,0.9s,baz=317,slow=7.6,SNR=6.0						
STKA	**Stephens Creek**	**48.55**	**130**	*e*P	**P**	**08 17 59.9**	**-1.5**
STKA				*e*pP	**pP**	**08 18 06.2**	**-5.8**
KSRS	**Korea Array**	**48.56**	**30**	P	**P**	**08 18 01.1**	**-0.2**
	comp=Z,2.9nm,0.8s,baz=224,slow=7.7,SNR=5.6						
SONM	**Songino Array**	**51.48**	**6**	P	**P**	**08 18 24.7**	**+1.2**
	comp=Z,5.4nm,0.7s,baz=190,slow=9.4,SNR=18						
SON

	baz=334							
R40A	**Maddies Statio**	143.74	16	P		**PKPdf**	08 28 52.8	-0.5
	baz=340							
S39A	**Bolivar**	144.00	17	P		PKPbc	08 28 51.4	-0.2
	baz=338							
T37A	**Cheneyville 18**	144.01	20	P		PKPbc	08 28 51.8	+0.1
	baz=335							
U35A	**Pawnee**	144.03	23	P		**PKPdf**	08 28 52.9	-0.9
	baz=332							
W32A	**Sentinel**	144.06	27	P		PKPbc	08 28 52.9	+1.0
	baz=327							
V34A	**Guthrie**	144.19	24	P		PKPbc	08 28 53.2	+1.0
	baz=330							
T38A	**Diamond**	144.30	19	P		PKPbc	08 28 52.8	+0.2
	baz=336							
S40A	**Lebanon**	144.33	16	P		**PKPab**	08 28 52.3	0.0
	baz=339,SNR=5.2							
W33A	**Caddo, Fort Co**	144.38	26	P		**PKPdf**	08 28 53.8	-0.7
	baz=328							
V35A	**Meyer Ranch, C**	144.52	23	P		**PKPdf**	08 28 54.0	-0.7
	baz=331							
U37A	**Salina**	144.59	21	P		PKPbc	08 28 53.9	+0.4
	baz=334							
W34A	**Bridge Creek,**	144.60	25	P		**PKPdf**	08 28 54.3	-0.6
	baz=330							
T39A	**Clever**	144.60	18	P		**PKPab**	08 28 53.3	0.0
	baz=338,SNR=6.0							
TUL1	**Leonard**	144.79	22	P		**PKPdf**	08 28 54.7	-0.5
	baz=333							
TUL1	**Leonard**	144.79	22	*e*PKPbc		PKPbc	08 28 54.6	+0.5
U38A	**Gravette**	144.81	20	P		**PKPab**	08 28 54.0	-0.1
	baz=336,SNR=5.5							
V36A	**Jenks**	144.85	22	P		**PKPdf**	08 28 55.0	-0.3
	baz=333,SNR=6.2							
WCI	**Wyandotte Cave**	145.03	8	*e*PKPbc		**PKPab**	08 28 55.2	+0.3
W35A	**Tecumseh**	145.04	24	P		**PKPdf**	08 28 55.9	+0.2
	baz=331							
V37A	**Hulbert**	145.05	21	P		**PKPbc**	08 28 54.9	-0.1
	baz=334,SNR=5.4							
X34A	**Smith Ranch, M**	145.12	25	P		**PKPdf**	08 28 56.0	+0.2
	baz=329							
U39A	**Green Forest**	145.16	18	P		**PKPbc**	08 28 55.3	-0.1
	baz=337,SNR=9.2							
Y33A	**Hilltop Ranch,**	145.27	27	P		**PKPdf**	08 28 56.5	+0.4
	baz=327							
W36A	**Wetumka**	145.31	23	P		**PKPdf**	08 28 56.6	+0.5
	baz=332							
V38A	**Canehill**	145.33	20	P		**PKPbc**	08 28 55.8	-0.1
	baz=335,SNR=8.0							
U40A	**Yellville**	145.38	18	P		**PKPbc**	08 28 56.1	0.0
	baz=338,SNR=8.5							
V39A	**Pettigrew**	145.60	19	P		**PKPab**	08 28 57.1	0.0
	baz=336							
X35A	**Drake**	145.65	25	P		**PKPbc**	08 28 57.0	0.0
	baz=330							
X36A	**Centrahoma**	145.76	24	P		**PKPab**	08 28 57.9	+0.2
	baz=331							
Z33A	**Whitaker Ranch**	145.81	28	P		**PKPbc**	08 28 57.5	0.0
	baz=326							
V40A	**Witts Springs**	145.90	18	P		**PKPdf**	08 28 57.2	+0.1
	baz=338,SNR=6.4							
ABTX	**Abilene, Hawle**	145.93	30	P		**PKPab**	08 28 58.5	+0.1
	baz=324							
Z34A	**Collier Ranch,**	146.12	27	P		**PKPab**	08 28 59.2	+0.2
	baz=328							
TX31	**Lajitas Ar. Si**	146.19	38	*e*PKPdf		**PKPbc**	08 28 59.2	+0.3
TXAR	**Lajitas Array**	146.19	38	PKPbc		**PKPab**	08 29 00.4	+0.8
	comp=Z,3.1nm,0.8s,baz=285,slow=1.1,SNR=43							
X38A	**Whitesboro**	146.25	22	P		**PKPbc**	08 28 59.1	+0.3
	baz=334							
133A	**Hamilton Ranch**	146.29	29	P		**PKPbc**	08 28 59.4	+0.4
	baz=326							
Y36A	**Durant**	146.37	24	P		**PKPab**	08 28 59.6	-0.3
	baz=331							
HPIG		146.50	43	*e*PKPdf		**PKPab**	08 29 01.9	+0.9
X201	**Greenbrier Sit**	146.51	18	*e*PKPdf		**PKPbc**	08 28 59.5	-0.1
X39A	**Fountain Ranch**	146.65	21	P		**PKPab**	08 29 00.7	-0.3
	baz=335							
W41B	**Gary Mavity, V**	146.66	18	P		**PKPab**	08 29 01.0	0.0
	baz=338							
233A	**Rising Star**	146.78	29	P		**PKPab**	08 29 01.5	-0.2
	baz=325							
MIAR	**Mount Ida**	146.81	20	P		**PKPbc**	08 29 00.7	+0.3
	baz=336							
WVT	**Waverly**	146.83	11	*e*PKPdf		**PKPbc**	08 29 00.7	+0.3
TZTN	**Tazewell**	147.00	4	*e*PKPbc		**PKPbc**	08 29 01.0	+0.1
333A	**Richland Sprin**	147.31	30	P		**PKPab**	08 29 03.1	-0.7
	baz=324							
JCT	**Junction City**	147.56	32	P		**PKPab**	08 29 03.9	-0.9
	baz=322							
JCT	**Junction City**	147.56	32	*e*PKPdf		**PKPbc**	08 29 03.7	+1.0
334A	**Lometa**	147.67	29	P		**PKPbc**	08 29 03.7	+0.7
	baz=326							
433A	**Art**	147.71	31	P		**PKPbc**	08 29 03.5	+0.4
	baz=324							
434A	**Burnet**	148.07	30	P		**PKPbc**	08 29 04.3	+0.3
	baz=325							
335A	**Moody**	148.10	28	P		**PKPbc**	08 29 04.9	+0.8
	baz=327							
336A	**Riesel**	148.28	27	P		**PKPbc**	08 29 05.2	+0.6
	baz=328							
533A	**Kerrville**	148.28	32	P		**PKPbc**	08 29 05.2	+0.5
	baz=323							
Y44A	**Strider, Charl**	148.37	15	P		**PKPbc**	08 29 05.2	+0.5
	baz=342							
KMSC	**Kings Mountain**	148.51	1	P		**PKPbc**	08 29 05.2	+0.2
	baz=359							
Y45A	**Yeager Farm, C**	148.64	15	P		**PKPbc**	08 29 05.7	+0.3
	baz=343							
Y46A	**Houston**	148.78	13	P		**PKPbc**	08 29 06.0	+0.2
	baz=344							
NATX	**Nacogdoches**	148.90	24	P		**PKPbc**	08 29 07.0	+0.9
	baz=332							
Z44A	**Pea Ridge, Bel**	148.96	16	P		**PKPbc**	08 29 06.7	+0.5
	baz=341							
Y47A	**UCPARC, Winfie**	148.99	12	P		**PKPbc**	08 29 06.1	-0.1
	baz=346							
535A	**Dale**	149.06	30	P		**PKPbc**	08 29 07.4	+0.8
	baz=326							
832A	**Faith Ranch, C**	149.16	35	P		**PKPbc**	08 29 08.0	+1.0
	baz=320							
733A	**Divot King Ran**	149.21	34	P		**PKPbc**	08 29 08.2	+1.1
	baz=321							
Z46A	**Louisville**	149.43	14	P		**PKPbc**	08 29 08.0	+0.6
	baz=344							
833A	**Chaparral WMA,**	149.46	34	P		**PKPbc**	08 29 09.0	+1.4
	baz=321							
635A	**Leesville**	149.48	31	P		**PKPbc**	08 29 08.8	+1.2
	baz=325							
Z48A	**Northport**	149.56	12	P		**PKPbc**	08 29 07.5	-0.2
	baz=346							
Z47A	**Carrollton**	149.62	13	P		**PKPbc**	08 29 08.1	+0.3
	baz=345							
145A	**Houston Renfro**	149.73	16	P		**PKPbc**	08 29 09.6	+1.4
	baz=341							
636A	**Smothers Creek**	149.77	30	P		**PKPbc**	08 29 10.3	+1.9
	baz=326							
146A	**Union**	149.93	14	P		**PKPbc**	08 29 10.1	+1.5
	baz=343							
933A	**Laredo**	150.07	35	P		**PKPbc**	08 29 10.9	+1.7
	baz=320							
834A	**Tilden**	150.08	33	P		**PKPbc**	08 29 11.4	+2.2
	baz=322							
637A	**Eagle Lake**	150.15	29	P		**PKPbc**	08 29 12.0	+2.7
	baz=327							
736A	**Circle Diamond**	150.19	30	P		**PKPbc**	08 29 11.9	+2.5
	baz=325							
245A	**Little AP, Sta**	150.28	16	P		**PKPbc**	08 29 11.1	+1.5
	baz=341							
344A	**Westbrook Farm**	150.57	18	P		**PKPbc**	08 29 11.6	+1.4
	baz=339							
034A	**Hebbronville**	150.82	35	P		**PKPbc**	08 29 13.3	+2.3
	baz=321							
346A	**Big Creek Wild**	151.00	16	P		**PKPbc**	08 29 12.5	+1.3
	baz=342							
347A	**Saraland**	151.23	14	P		**PKPbc**	08 29 13.4	+1.6
	baz=343							

NNC ***09*** *08:12:12.5±3.2, 40°.49N×83°.75E, h0km, mb4.5, mpv4.3, Error ellipse: s-maj=31.5km s-min=23.8km az=42.0*
BJI ***09*** *08:12:15.5, 41°.02N×83°.61E, h7km, mb4.3/7, mB4.6/1, ML4.0/11, Ms3.9/2, Ms7 3.5/2*
SOME ***09*** *08:12:15.5, 40°.18N×81°.55E, h5km*
IDC ***09*** *08:12:16.3±1.0, 41°.10N×83°.58E, h0km, mb3.7/6, mb1 3.7/12, mb1mx3.6/54, mbtmp3.6/12, ML3.1/5, MS2.9/5, Ms1 2.9/5, ms1mx2.6/42, Error ellipse: s-maj=21.8km s-min=17.6km az=36.0*

ISC 09 08:12:16.1±1.0, 40°.87N±0°.09×83°.78E±0°.05, h10km, n46, σ2°.20/52, mb3.8/7, MS3.1/3, 11C-10D, Southern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHLS	**Shalkode**	**3.69**	**309**	*e*P	**Pn**	**08 13 13.2**	**-0.3**
	27nm,0.3s						
SHLS				*e*S	**Sn**	08 13 54.5	-2.6
	156nm,0.6s						
PDGK	**Podgornoye**	**4.03**	**309**	⇑Pn	**Pn**	**08 13 16.9**	**-0.8**
	50nm,0.4s						
PDGK				⇑Sn	**Sn**	**08 14 12.4**	**+7.4**
	317nm,0.9s						
WMQ	**Urumqi**	**4.13**	**43**	Pn	**Pn**	**08 13 19.7**	**+0.3**
WMQ				Sn	**Sn**	**08 14 07.8**	**0.0**
WMQ				smax	smax		
	comp=N,230nm,0.3s						
WMQ				smax	smax		
	comp=E,230nm,0.3s						
UZB	**Uzynbulak**	**4.21**	**304**	*e*P	**Pn**	**08 13 19.9**	**-0.6**
	14nm,0.4s						
UZB				*e*S	**Sn**	**08 14 06.9**	**-2.9**
	56nm,0.6s						
DJR	**Jarkent**	**4.54**	**321**	*e*P	**Pb**	**08 13 36.4**	**+0.5**
	146nm,0.6s						
DJR				*e*S	**Sb**	**08 14 33.8**	**+3.1**
	141nm,0.6s						
SATY	**Saty**	**4.56**	**300**	⇓*i*P	**Pn**	**08 13 25.3**	**0.0**
	38nm,0.3s						
SATY				*e*S	**Sn**	**08 14 16.1**	**-2.3**
	152nm,0.4s						
KPKS	**Kokpek**	**4.59**	**306**	*e*P	**Pn**	**08 13 24.8**	**-0.8**
	49nm,0.3s						
KPKS				*e*S	**Sn**	**08 14 15.7**	**-3.3**
	196nm,0.5s						
ZHN	**Zhinishke**	**4.59**	**302**	*e*P	**Pn**	**08 13 27.1**	**+1.3**
	21nm,0.1s						
ZHN				*e*S	**Sn**	**08 14 18.4**	**-0.8**
	191nm,0.3s						
KURS	**Kuram**	**4.92**	**304**	*e*P	**Pn**	**08 13 29.4**	**-0.8**
	7.5nm,0.7s						
KURS				*e*S	**Sn**	**08 14 22.0**	**-5.2**
	19nm,0.8s						
MDOK	**Medeo**	**5.51**	**297**	*e*P	**Pn**	**08 13 38.8**	**+0.4**
	13nm,0.4s						
MDOK				*e*S	**Sn**	**08 14 39.8**	**-2.0**
	23nm,0.6s						
TNSS	**Tian-Shan**	**5.54**	**295**	*e*P	**Pn**	**08 13 40.0**	**+1.0**
	8.8nm,0.3s						
TNSS				*e*S	**Sn**	**08 14 40.6**	**-2.3**
	15nm,0.7s						
KNDC	**Almaty**	**5.59**	**297**	⇑Pn	**Pn**	**08 13 39.6**	**+0.3**
	73nm,0.8s						
KNDC				⇑Lg	Lg	08 15 11.4	
	187nm,0.7s						
AAA	**Alma-Ata**	**5.62**	**297**	*e*P	**Pn**	**08 13 41.9**	**+2.2**
	61nm,0.4s						
AAA				*e*S	**Sn**	**08 14 43.8**	**-0.6**
	78nm,0.5s						
CHKK	**Chushkaly**	**5.85**	**303**	*e*P	**Pn**	**08 13 42.6**	**-0.2**
	4.9nm,0.4s						
CHKK				*e*S	**Sn**	**08 14 44.5**	**-5.4**
	23nm,0.3s						
MTBS	**Maitube**	**5.92**	**295**	*e*P	**Pn**	**08 13 45.8**	**+1.9**
	20nm,0.3s						
MTBS				*e*S	**Sn**	**08 14 50.7**	**-1.2**
	39nm,0.5s						
MK31	**Makanchi Array**	**6.02**	**350**	⇓Lg	Lg	08 15 34.0	
	34nm,0.6s,baz=156,slow=31,SNR=6.3						
MKAR	**Makanchi Array**	**6.02**	**350**	Pn	**Pn**	**08 13 45.4**	**+0.2**
	0.4nm,0.3s,baz=186,slow=12,SNR=14						
KST	**Kastek**	**6.22**	**293**	*e*P	**Pn**	**08 13 48.9**	**+0.9**
	14nm,0.4s						
KST				*e*S	**Sn**	**08 14 57.6**	**-1.6**
	35nm,0.6s						
KUU	**Kurty**	**6.28**	**301**	*e*P	**Pn**	**08 13 49.5**	**+0.7**
	9.6nm,0.3s						
KUU				*e*S	**Sn**	**08 14 56.8**	**-3.8**
	26nm,0.5s						
TKM2	**Tokmak 2**	**6.44**	**291**	⇑Pn	**Pn**	**08 13 51.2**	**+0.1**
	13nm,0.3s						
TKM2				⇑Sn	**Sn**	**08 15 04.6**	**-0.2**
	33nm,0.6s						
TKM2				⇓Lg	Lg	08 15 39.5	
	82nm,0.8s						
AAK	**Ala-Archa**	**7.16**	**287**	Pn	**Pn**	**08 14 01.7**	**+0.6**
	1.3nm,0.3s,baz=95,slow=9.8,SNR=10.0						
AAK				Lg	Lg	08 15 58.9	
	2.2nm,0.3s,baz=246,slow=20,SNR=2.6						
AAK				LR	LR	08 17 00.6	
	comp=Z,86nm,18.9s,baz=97,slow=41						
AAK	**Ala-Archa**	**7.16**	**287**	⇓Pn	**Pn**	**08 14 00.1**	**-0.9**
	2.2nm,0.4s						
AAK				⇓Lg	Lg	08 16 03.5	
	41nm,0.8s						
MNAS	**Manas**	**8.59**	**285**	⇓Pn	**Pn**	**08 14 22.4**	**+1.8**
	3.7nm,0.8s						
MNAS				⇓Lg	Lg	08 16 48.6	
	19nm,0.9s						
KK31	**Karatay Array**	**10.13**	**287**	⇑Pg	Pg	08 15 20.9	
	2.6nm,0.7s,baz=92,slow=16,SNR=4.6						
KK31				⇓Lg	Lg	08 17 33.6	
	2.5nm,0.7s,baz=87,slow=28,SNR=3.6						
KURBB	**Kurchatov Arra**	**10.41**	**341**	Pn	**Pn**	**08 14 44.9**	**-0.5**
	0.1nm,0.3s,baz=154,slow=13,SNR=5.1						
KURK	**Kurchatov**	**10.48**	**342**	⇑Lg	Lg	08 17 56.3	
	56nm,1.0s						
OTUK	**Ortayu**	**10.99**	**316**	⇑Pn	**Pn**	**08 14 50.8**	**-2.5**
	2.7nm,0.7s						
OTUK				⇑Lg	Lg	08 18 11.1	
	19nm,0.9s						
GTA	**Gaotai**	**12.36**	**92**	*e*P	Pn	08 15 16.7	+4.5
GTA				pP		08 15 20.8	
GTA				sP		08 15 23.3	
GTA				pmax	pmax		
	comp=Z,4.0nm,0.8s						
THW	**Thamme Wali**	**12.56**	**234**	P	Pn	08 15 14.3	-0.6
ZALV	**Zalesovo Beam**	**13.10**	**3**	Pn	**Pn**	**08 15 22.3**	**+0.2**
	0.4nm,0.3s,baz=184,slow=12,SNR=10						
ZALV				Sn	Sn	08 17 37.0	-11
	0.4nm,0.3s,baz=191,slow=15,SNR=3.3						
BVA0	**Borovoye Array**	**15.18**	**328**	Pn	**P**	**08 15 53.1**	**-2.3**
	3.5nm,1.1s,baz=131,slow=12,SNR=12						
BVA0				⇓Lg	Lg	08 20 22.8	
	13nm,1.3s,baz=142,slow=30,SNR=3.6						
BVAR	**Borovoye Array**	**15.18**	**328**	Pn	**Pn**	**08 15 48.0**	**-2.4**
	0.1nm,0.3s,baz=137,slow=11,SNR=4.9						
BRVK	**Borovoye**	**15.24**	**328**	⇓Pn	**Pn**	**08 15 53.7**	**+2.5**
	9.8nm,0.6s						
BRVK				⇑Lg	Lg	08 20 26.6	
	31nm,1.3s						
LZH	**Lanzhou**	**16.41**	**100**	*e*P	**P**	**08 16 06.0**	**-3.5**
LZH				pP	sP	08 16 09.7	-3.9
LZH				pmax	pmax		
	comp=Z,28nm,1.1s						
TLY	**Talaya**	**17.41**	**45**	LR	LR	08 22 46.9	
	comp=Z,28nm,18.4s,baz=340,slow=36						
SONM	**Songino Array**	**17.57**	**59**	P	**P**	**08 16 22.7**	**+0.5**
	baz=276,slow=14,SNR=2.5						
AKTO	**Aktyubinsk**	**20.30**	**307**	LR	LR	08 25 51.7	
	comp=Z,12nm,19.3s,baz=101,slow=41						
ARU	**Arti**	**22.61**	**322**	LR	LR	08 26 38.5	
	comp=Z,74nm,18.4s,baz=100,slow=39						
BJI	**Beijing**	**24.59**	**81**	P	P	08 17 42.6	+6.3
BJI				pmax	pmax		
	comp=Z,8.0nm,1.2s						
CMAR	**Chiang Mai Arr**	**25.86**	**145**	P	P	08 17 52.8	+4.9
	1.6nm,0.4s,baz=325,slow=9.6,SNR=7.9						
BRTR	**Keskin Array B**	**37.84**	**285**	P	**P**	**08 19 33.8**	**+0.8**
	1.0nm,0.6s,baz=100,slow=9.0,SNR=5.5						
ARCES	**ARCESS Array B**	**41.37**	**333**	P	**P**	**08 20 01.5**	**-0.4**
	2.7nm,0.8s,baz=100,slow=10,SNR=3.6						
NOA	**NORSAR Array B**	**47.15**	**321**	LR	LR	08 41 52.6	
	comp=Z,22nm,19.0s,baz=105,slow=38						
ILAR	**Eielson Array**	**67.48**	**21**	P	**P**	**08 23 12.5**	**+0.8**
	0.2nm,0.7s,baz=280,slow=6.0,SNR=3.4						
TORD	**Torodi Ar. Bea**	**75.58**	**275**	P	**P**	**08 24 01.4**	**+0.1**
	0.3nm,0.4s,baz=46,slow=5.7,SNR=5.6						
YKA	**Yellowknife Ar**	**75.92**	**9**	P	**P**	**08 24 02.6**	**+0.1**
	0.1nm,0.5s,baz=338,slow=6.0,SNR=3.7						

IDC ***09*** *08:18:06.4±2.4, 27°.24S×113°.11E, h0km, mb3.3/1, mb1 4.3/4, mb1mx3.7/39, mbtmp4.1/4, ML2.1/1, MS3.0/1, Ms1 3.0/1, ms1mx2.7/12, Error ellipse: s-maj=49.6km s-min=43.7km az=123.0*
AUST ***09*** *08:18:10.0±0.9, 27°.25S×112°.97E, h10km, Error ellipse: s-maj=2.1km s-min=0.1km az=261.0*

ISC 09 08:18:08.8±1.8, 27°.28S±0°.09×113°.3E±0°.2, h10km, n17, σ1°.90/16, Western Australia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MORW	**Morawa**	**2.99**	**127**	P	**Pb**	**08 19 00.2**	**-2.0**
	baz=3.3,SNR=68						
BLDU	**Ballidu**	**4.46**	**139**	P	**Pn**	**08 19 18.9**	**+2.5**
	baz=4.7,SNR=66						
GIRL	**Giralia**	**4.69**	**10**	P	**Pn**	**08 19 19.4**	**-0.2**
	baz=4.7						
MUN	**Mundaring**	**5.32**	**152**	P	**Pn**	**08 19 30.3**	**+2.1**
	baz=5.5						
NWAO	**Narrogin (SRO)**	**6.57**	**150**	Pn	**Pn**	**08 19 46.1**	**+0.6**
	1.7nm,0.3s,baz=344,slow=18,SNR=16						
NWAO				Sn	**Sn**	**08 20 58.6**	**-1.9**
	5.3nm,0.3s,baz=108,slow=20,SNR=5.9						
NWAO	**Narrogin (SRO)**	**6.57**	**150**	P	**Pn**	**08 19 46.6**	**+1.1**
	baz=6.8						
RKGY	**Rocky Gully**	**7.96**	**158**	P	**Pn**	**08 20 05.3**	**+0.9**
	baz=8.1,SNR=7.2						
KMBL	**Kambalda**	**8.51**	**121**	P	**Pn**	**08 20 13.8**	**+1.7**
	baz=8.8,SNR=11						
WRKA	**Warakurna**	**13.63**	**84**	P	**Pn**	**08 21 23.2**	**+0.9**
	baz=14,SNR=19						
FITZ	**Fitzroy Crossi**	**14.57**	**54**	Pn	**Pn**	**08 21 34.1**	**-0.9**
	4.2nm,0.3s,baz=228,slow=11,SNR=77						
FITZ				Sn	Sn	08 24 04.1	-13
	1.0nm,0.3s,baz=153,slow=21,SNR=6.7						
FITZ	**Fitzroy Crossi**	**14.57**	**54**	P	**Pn**	**08 21 34.2**	**-0.9**
	baz=15,SNR=15						
ASAR	**Alice Springs**	**18.93**	**84**	P	**P**	**08 22 29.8**	**-0.2**
	0.7nm,0.3s,baz=256,slow=12,SNR=58						
ASAR				S	Sn	08 25 52.2	-10
	0.3nm,0.3s,baz=260,slow=22,SNR=4.4						
WRA	**Warramunga Arr**	**20.58**	**74**	P	Pn	08 22 50.6	+0.4
	1.0nm,0.5s,baz=244,slow=12,SNR=8.8						
KAPI	**Kappang**	**22.97**	**17**	LR	LR	08 33 37.2	
	comp=Z,38nm,18.5s,baz=226,slow=40						
STKA	**Stephens Creek**	**24.98**	**107**	P	**P**	**08 23 36.8**	**+4.1**
	0.7nm,0.6s,baz=309,slow=6.5,SNR=1.8						
YKA	**Yellowknife Ar**	**132.89**	**28**	PKP	**PKPdf**	**08 37 21.6**	**-2.0**
	0.1nm,0.5s,baz=289,slow=2.0,SNR=4.4						
TXAR	**Lajitas Array**	**147.45**	**78**	PKPbc	**PKPbc**	**08 37 53.1**	**-0.4**
	0.1nm,0.4s,baz=197,slow=1.9,SNR=3.5						

TIF ***09*** *08:19:02.9, 41°.44N×44°.02E, h8km±1km*
CSEM ***09*** *08:19:04.0±0.2, 41°.45N×43°.98E, h2km, ML2.7, Error ellipse: s-maj=5.4km s-min=2.8km az=142.0*
DDA ***09*** *08:19:05.1, 41°.40N×43°.85E, h7km, Md2.8*

ISC 09 08:19:04.0±1.0, 41°.46N±0°.03×43°.98E±0°.03, h6km±9km, n25, σ0°.44/46, Turkey-Georgia-Armenia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BGD	**Bogdanovka**	**0.35**	**236**	P	**Pg**	**08 19 10.6**	**-0.3**
BGD				S	**Sg**	**08 19 15.8**	**+0.4**
BGD	**Bogdanovka**	**0.35**	**236**	P	**Pg**	**08 19 10.5**	**-0.3**
BGD				S	**Sg**	**08 19 15.9**	**+0.5**
AKH	**Akhalkalaki**	**0.37**	**262**	P	**Pg**	**08 19 11.0**	**-0.3**
AKH				S	**Sg**	**08 19 16.6**	**+0.5**
AKH	**Akhalkalaki**	**0.37**	**262**	P	**Pg**	**08 19 11.0**	**-0.3**
AKH				S	**Sg**	**08 19 16.4**	**+0.3**
TBLG	**Delisi**	**0.63**	**64**	P	**Pg**	**08 19 15.6**	**-0.6**
TBLG				S	**Sg**	**08 19 24.7**	**+0.3**
TBLG	**Delisi**	**0.63**	**64**	P	**Pg**	**08 19 15.6**	**-0.6**
TBLG				S	**Sg**	**08 19 24.7**	**+0.3**
SEAG	**Tbilisi Sea**	**0.69**	**63**	P	**Pg**	**08 19 17.0**	**-0.3**
SEAG				S	**Sg**	**08 19 26.8**	**+0.6**
SEAG	**Tbilisi Sea**	**0.69**	**63**	P	**Pg**	**08 19 17.0**	**-0.3**
SEAG				S	**Sg**	**08 19 26.8**	**+0.6**
EAK	**Akyaka**	**0.82**	**200**	P	**Pg**	**08 19 19.1**	**-0.7**
EAK				S	**Sg**	**08 19 30.3**	**-0.2**
EAK	**Akyaka**	**0.82**	**200**	*i* P	**Pg**	**08 19 19.1**	**-0.7**
EAK				*i* S	**Sg**	**08 19 30.3**	**-0.2**
DUS	**Dusheti**	**0.83**	**40**	P	**Pb**	**08 19 20.5**	**-0.4**
DUS				S	**Sb**	**08 19 33.1**	**+0.7**
DUS	**Dusheti**	**0.83**	**40**	P	**Pb**	**08 19 20.5**	**-0.4**
DUS				S	**Sb**	**08 19 33.1**	**+0.7**
EPOS	**Posof**	**0.94**	**273**	P	**Pg**	**08 19 21.8**	**-0.3**
EPOS				S	**Sb**	**08 19 35.5**	**-0.1**
EPOS	**Posof**	**0.94**	**273**	*i* P	**Pg**	**08 19 21.8**	**-0.3**
EPOS				*i* S	**Sb**	**08 19 35.5**	**-0.1**
GUDG	**Gudauri**	**1.07**	**20**	P	**Pb**	**08 19 25.3**	**+0.2**
GUDG				S	**Sn**	**08 19 40.7**	**-0.4**
GUDG	**Gudauri**	**1.07**	**20**	P	**Pb**	**08 19 25.3**	**+0.2**
GUDG				S	**Sn**	**08 19 40.7**	**-0.4**
ONI	**Oni**	**1.20**	**341**	P	**Pg**	**08 19 26.2**	**-0.8**
ONI				S	**Sn**	**08 19 43.6**	**-0.4**
ONI	**Oni**	**1.20**	**341**	P	**Pg**	**08 19 26.2**	**-0.8**
ONI				S	**Sn**	**08 19 43.3**	**-0.7**
ARTV	**Artvin**	**1.57**	**261**	P	**Pn**	**08 19 32.8**	**+0.2**
ARTV				S	**Sn**	**08 19 53.4**	**0.0**
ARTV	**Artvin**	**1.57**	**261**	*i* P	**Pn**	**08 19 32.8**	**+0.2**
ARTV				*i* S	**Sn**	**08 19 53.4**	**0.0**
DAGI	**Agillar**	**1.60**	**257**	*i* P	**Pn**	**08 19 33.3**	**+0.4**
DAGI				*i* S	**Sb**	**08 19 54.8**	**+0.1**
DDEM	**Demirkent**	**1.77**	**252**	P	**Pn**	**08 19 35.9**	**+0.5**
DDEM	**Demirkent**	**1.77**	**252**	*i* P	**Pn**	**08 19 35.9**	**+0.5**
EATA	**Eleskirt**	**1.96**	**216**	P	**Pb**	**08 19 40.3**	**+0.1**
EATA	**Elesk

LZH Sn **Sb** **08 33 47.4 -1.7**
LZH Sg **Sg** **08 34 02.6 +2.2**
LZH smax smax
comp=N,97nm,1.1s
LZH smax smax
comp=E,180nm,1.0s
LZH LR LR
comp=N,210nm,8.2s
LZH LR LR
comp=E,170nm,7.9s
LZH LR LR
comp=Z,910nm,8.8s
GTA Gaotai 5.73 6 *e*P **Pg** **08 33 20.7 -1.6**
GTA pP pP 08 33 23.8
GTA sP sP 08 33 26.8
GTA S **Sg** **08 34 41.1 +4.5**
GTA sS sS 08 34 46.6
GTA pmax pmax
comp=Z,5.0nm,1.0s
GTA pmax pmax
comp=Z,120nm,4.3s
GTA LR LR
comp=N,420nm,9.5s
GTA LR LR
comp=E,2μm,9.5s
GTA LR LR
comp=Z,470nm,10.0s
XAN Xi'an 8.22 85 P Pn 08 33 36.8 +4.9
WMQ Urumqi 13.43 322 *e*P **P** **08 34 49.3 -3.4**
WMQ LR LR
comp=Z,240nm,5.0s
WMQ LR LR
comp=Z,170nm,4.0s
WMQ LR LR
comp=Z,83nm,12.3s
MKAR Makanchi Array 18.24 321 P **P** **08 35 48.7 +2.7**
comp=Z,0.1nm,0.3s,baz=116,slow=9.9,SNR=4.8
MKAR LR LR 08 43 32.9
comp=Z,87nm,18.1s,baz=168,slow=39
AAK Ala-Archa 21.21 302 LR LR 08 44 24.0
comp=Z,97nm,18.7s,baz=88,slow=36
ZALV Zalesovo Beam 22.61 338 P **P** **08 36 35.6 +2.3**
comp=Z,4.3nm,0.9s,baz=148,slow=8.7,SNR=12
KURBB Kurchatov Arra 22.62 325 P **P** **08 36 35.2 +1.8**
comp=Z,2.7nm,1.0s,baz=131,slow=9.6,SNR=9.1
KSRS Korea Array 23.74 73 LR LR 08 47 11.3
comp=Z,50nm,19.8s,baz=251,slow=40
JNU Nakatsue 26.52 82 LR LR 08 48 26.9
comp=Z,57nm,18.5s,baz=295,slow=38
KLR Kul'dur 28.72 47 LR LR 08 50 05.6
comp=Z,80nm,18.9s,baz=18,slow=39
GEYT Alibeck 33.27 289 LR LR 08 54 51.2
comp=Z,53nm,20.0s,baz=55,slow=42
AKTO Aktyubinsk 34.23 312 LR LR 08 53 45.9
comp=Z,43nm,18.9s,slow=39
NRIK Noril'sk 36.27 353 LR LR 08 54 00.6
comp=Z,56nm,18.1s,baz=91,slow=37
FINES FINESS Array B 53.01 325 LR LR 09 04 42.8
comp=Z,54nm,21.3s,baz=122,slow=38
NOA NORSAR Array B 60.15 326 LR LR 09 08 53.3
comp=Z,28nm,18.2s,baz=110,slow=37
ASAR Alice Springs 66.00 145 P **P** **08 42 21.1 +1.8**
comp=Z,0.2nm,0.6s,baz=327,slow=6.6,SNR=4.2
ILAR Eielson Array 69.31 25 P **P** **08 42 40.9 +1.1**
comp=Z,0.5nm,0.8s,baz=288,slow=5.5,SNR=4.4

IDC ***09*** *08:44:34.0± 1.2, 13°.42N× 89°.68W, h0km, mb3.9/9, mb1 4.2/10, mb1mx4.0/32, mbtmp3.9/10, ML3.3/1, MS3.3/13, Ms1 3.3/13, ms1mx3.2/29, Error ellipse: s-maj=37.3km s-min=22.5km az=59.0*
ISCJB ***09*** *08:44:37.6± 0.6, 13°.09N± 0°.04× 90°.11W± 0°.03, h47km± 4km, mb4.3/29, MS3.2/13, Error ellipse: s-maj=7.1km s-min=4.0km az=37.6*
CASC ***09*** *08:44:38.0± 1.7, 13°.20N× 90°.13W, h32km± 7km, ML4.1*
NEIC ***09*** *08:44:39.5± 1.0, 13°.15N× 90°.06W, h42km± 9km, mb4.4/27, MD4.6(SNET), Error ellipse: s-maj=13.4km s-min=8.3km az=216.0*
NEIC Felt [II] at San Salvador.
MEX ***09*** *08:44:44.4± 0.9, 13°.30N× 90°.62W, h9km± 145km, MD4.0*
ISC 09 08:44:37.7±1.6,**13°.18N**±0°.06×**90°.18W**±0°.04,**h28**km±12km, **n233,**σ1**$**35/234,**mb4.4**/29,**MS3.4**/13,**1C-3D,Near coast of Guatemala**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SONS	**Sonsonate**	**0.71**	**39**	*e*P	**Pb**	**08 44 50.9**	**-0.7**
SONS				*e*S	**Sn**	**08 45 01.0**	**-1.1**
SONS				AML	AML	08 45 03.8	
	comp=Z,18μm,0.3s						
MONT	**Ecomontaæa**	**0.85**	**37**	↑*i*P	**Pb**	**08 44 53.5**	**-0.6**
SBLS	**San Blas**	**0.85**	**39**	||*i*P	**Pb**	**08 44 53.4**	**-0.7**
RTR	**El Retiro**	**0.88**	**36**	*e*P	**Pb**	**08 44 54.0**	**-0.6**
SNJE	**San Jose**	**0.88**	**39**	*i* P	**Pb**	**08 44 53.8**	**-0.8**
COLS	**Colinas**	**0.98**	**60**	*i* P	**Pn**	**08 44 55.2**	**-0.5**
IXG	**Ixpaco**	**1.03**	**345**	*i* P	**Pn**	**08 44 55.9**	**-0.6**
BOQS	**Boqueron**	**1.03**	**57**	*e*P	**Pn**	**08 44 56.0**	**-0.5**
BOQS				*e*S	**Sn**	**08 45 10.1**	**-0.1**
RBDL	**Robledal**	**1.04**	**27**	||*i*P	**Pn**	**08 44 56.5**	**-0.2**
SNET	**Serv Nac Est T**	**1.05**	**61**	*e*P	**Pn**	**08 44 55.8**	**-0.8**
SNET				*e*P	**Pb**	**08 44 56.1**	**-1.2**
SNET				*e*S	**Sn**	**08 45 09.3**	**-1.1**
SNET				*e*S	**Sn**	**08 45 09.3**	**-1.1**
SNET				AML	AML	08 45 15.4	
	comp=Z,17μm,0.3s						
SNET				AML	AML	08 45 15.4	
	comp=Z,16μm,0.3s						
LFRS	**El Faro**	**1.17**	**68**	*e*P	**Pn**	**08 44 57.3**	**-1.0**
LFU	**La Fuente**	**1.18**	**61**	*e*P	**Pn**	**08 44 58.0**	**-0.4**
LFU				*e*S	**Sn**	**08 45 12.5**	**-1.1**
LBRS	**Las Brisas**	**1.23**	**63**	||*i*P	**Pn**	**08 44 58.7**	**-0.5**
SNVI	**San Vicente**	**1.37**	**71**	*e*P	**Pn**	**08 45 00.7**	**-0.4**
SNVI				*e*S	**Sn**	**08 45 17.9**	**-0.5**
PACA	**Pacayal**	**1.83**	**81**	*e*P	**Pn**	**08 45 07.4**	**+0.1**
LCY	**Lacayo**	**1.85**	**82**	*i* P	**Pn**	**08 45 07.7**	**0.0**
VSM	**San Miguel**	**1.87**	**82**	*e*P	**Pn**	**08 45 07.9**	**-0.2**
CAHU	**Cacauatique**	**2.00**	**73**	*e*P	**Pn**	**08 45 09.5**	**-0.3**
CNCH	**Conchagua**	**2.28**	**87**	*e*P	**Pn**	**08 45 12.5**	**-1.2**
THIG		**2.66**	**311**	*e*P	**Pn**	**08 45 19.6**	**+0.9**
THIG				*e*S	**Sn**	**08 45 45.5**	**-4.5**
THIG		**2.66**	**311**	*e*P	**Pn**	**08 45 19.6**	**+0.9**
THIG				*e*S	**Sn**	**08 45 45.5**	**-4.5**
TGUH	**Tegucigalpa,Un**	**2.95**	**72**	*e*P	**Pn**	**08 45 22.4**	**-0.3**
TGUH	**Tegucigalpa,Un**	**2.95**	**72**	*e*Pn	**Pn**	**08 45 22.0**	**-0.7**
CCIG	**Comitan**	**3.62**	**329**	*e*P	**Pn**	**08 45 34.7**	**+2.6**
CCIG				*i* S	**Sn**	**08 46 11.9**	**-2.2**
CCIG	**Comitan**	**3.62**	**329**	*e*Pn	**Pn**	**08 45 34.9**	**+2.7**
CCIG				*i* S	**Sn**	**08 46 11.9**	**-2.2**
COPN	**Copaltepe**	**3.63**	**105**	*e*P	**Pn**	**08 45 31.4**	**-0.8**
PCIG		**3.87**	**311**	*e*P	**Pn**	**08 45 35.8**	**+0.4**
PCIG				*e*S	**Sn**	**08 46 16.3**	**-3.7**
PCIG		**3.87**	**311**	*e*P	**Pn**	**08 45 35.8**	**+0.4**
PCIG				*e*S	**Sn**	**08 46 16.3**	**-3.7**
BOAB	**BOACO BROADBAN**	**4.46**	**99**	*e*P	**Pn**	**08 45 41.8**	**-1.7**
ESPN	**Las Esperanzas**	**5.82**	**99**	*e*P	**Pn**	**08 46 00.5**	**-1.6**
JTS	**JuntasAbangare**	**5.86**	**119**	*e*Pn	**Pn**	**08 46 03.2**	**+0.4**
JTS				*e*Sn	**Sn**	**08 47 08.5**	**-0.6**
CMIG	**Matias Romero**	**5.99**	**311**	Pn	**Pn**	**08 46 05.5**	**+1.1**
	comp=Z,0.7nm,0.3s,baz=128,slow=9.6,SNR=14						
CMIG				Sn	**Sn**	**08 47 13.5**	**+1.4**
	comp=Z,3.4nm,0.3s,baz=270,slow=22,SNR=3.6						
TEIG	**Tepich**	**7.24**	**14**	Pn	**Pn**	**08 46 23.3**	**+1.6**
	comp=Z,3.6nm,0.3s,baz=90,slow=24,SNR=34						
TEIG	**Tepich**	**7.24**	**14**	*e*Pn	**Pn**	**08 46 23.3**	**+1.6**
TEIG				*e*Sn	**Sn**	**08 47 44.6**	**+1.6**
BRU2	**Volcan**	**8.54**	**120**	*e*P	**Pn**	**08 46 39.6**	**-0.1**
BRU2				*e*S	**Sn**	**08 48 19.4**	**+4.1**
TLIG	**Tlapa**	**9.19**	**299**	*e*Pn	Pn	08 46 53.5	+4.9
MOIG	**Morelia**	**12.38**	**303**	*e*Pn	**Pn**	**08 47 35.9**	**+3.5**
835A	**Beeville**	**16.64**	**336**	P	**P**	**08 48 32.1**	**+0.9**
	baz=153						
933A	**Laredo**	**16.69**	**331**	P	**P**	**08 48 32.9**	**+1.1**
	baz=147						
834A	**Tilden**	**16.80**	**334**	P	**P**	**08 48 34.1**	**+1.1**
	baz=150						
736A	**Circle Diamond**	**16.96**	**339**	P	**P**	**08 48 36.1**	**+1.4**
	baz=156						
POPC	**Popayan, Colom**	**17.03**	**127**	*e*P	**P**	**08 48 37.0**	**+1.1**
POPC				*e*P	**P**	**08 48 37.0**	**+1.1**
833A	**Chaparral WMA,**	**17.35**	**332**	P	**P**	**08 48 41.1**	**+2.0**
	baz=148						
636A	**Smothers Creek**	**17.44**	**340**	P	**P**	**08 48 41.9**	**+2.0**
	baz=157						
445A	**Amite**	**17.47**	**360**	P	**P**	**08 48 42.0**	**+1.6**
	baz=179						
446A	**Poplarville**	**17.55**	**2**	P	**P**	**08 48 44.0**	**+2.8**
	baz=182,SNR=5.2						
733A	**Divot King Ran**	**17.64**	**333**	P	**P**	**08 48 44.2**	**+1.9**
	baz=149						
PRAC	**Prado**	**17.79**	**121**	*e*P	**Pn**	**08 48 43.6**	**+0.1**
PRAC				*e*P	**P**	**08 48 46.3**	**+2.2**
GRMC	**Gramalote, San**	**17.92**	**106**	*e*P	**Pn**	**08 48 42.3**	**-2.9**
345A	**Thompson Farm,**	**18.05**	**0**	P	**P**	**08 48 49.4**	**+2.7**
	baz=180						
344A	**Westbrook Farm**	**18.20**	**358**	P	**P**	**08 48 51.3**	**+2.9**
	baz=178						
347A	**Saraland**	**18.20**	**4**	P	**P**	**08 48 51.0**	**+2.6**
	baz=185						
342A	**Flagon Creek P**	**18.22**	**354**	P	**P**	**08 48 51.7**	**+3.1**
	baz=173						
348A	**Jackson**	**18.27**	**6**	P	**P**	**08 48 51.7**	**+2.6**
	baz=187						
534A	**Blanco**	**18.45**	**337**	P	**Pn**	**08 48 53.5**	**+2.1**
	baz=153						
339A	**Huntington**	**18.52**	**348**	P	**Pn**	**08 48 54.6**	**+2.4**
	baz=166						
245A	**Little AP, Sta**	**18.77**	**1**	P	**Pn**	**08 48 57.5**	**+2.2**
	baz=180,SNR=7.4						
244A	**Avery, Jackson**	**18.78**	**359**	P	**Pn**	**08 48 57.7**	**+2.3**
	baz=178,SNR=6.5						
435B	**Jarrell**	**18.81**	**340**	P	**Pn**	**08 48 57.7**	**+1.9**
	baz=157						
SJAC	**San Juan de Ar**	**18.82**	**120**	*e*P	**P**	**08 48 55.6**	**+0.1**
247A	**Quitman**	**18.84**	**4**	P	**Pn**	**08 48 58.5**	**+2.3**
	baz=184						
VBMS	**Vicksburg**	**18.96**	**359**	P	**Pn**	**08 48 59.5**	**+2.0**
	baz=179,SNR=7.1						
VBMS	**Vicksburg**	**18.96**	**359**	*e*P	**Pn**	**08 48 59.8**	**+2.3**
	comp=Z,35nm,0.7s						
248A	**Dixon Mills**	**18.96**	**6**	P	**Pn**	**08 48 59.0**	**+1.4**
	baz=187						
434A	**Burnet**	**19.08**	**338**	P	**Pn**	**08 48 59.5**	**+0.5**
	baz=155						
336A	**Riesel**	**19.14**	**342**	P	**Pn**	**08 49 00.9**	**+1.2**
	baz=160						
TIGA	**Tifton**	**19.16**	**17**	P	**Pn**	**08 49 00.8**	**+0.8**
	baz=200						
TIGA	**Tifton**	**19.16**	**17**	*e*P	**Pn**	**08 49 01.1**	**+1.2**
	comp=Z,18nm,0.9s						
239A	**Gary**	**19.16**	**349**	P	**Pn**	**08 49 00.8**	**+0.8**
	baz=167						
335A	**Moody**	**19.22**	**341**	P	**Pn**	**08 49 01.9**	**+1.2**
	baz=158						
433A	**Art**	**19.33**	**336**	P	**Pn**	**08 49 02.6**	**+0.5**
	baz=153						
144A	**Alexander Plac**	**19.37**	**359**	P	**Pn**	**08 49 03.8**	**+1.4**
	baz=179						
237A	**Washetta, Mont**	**19.44**	**345**	P	**Pn**	**08 49 04.4**	**+1.1**
	baz=163						
147A	**Livingston**	**19.49**	**5**	P	**Pn**	**08 49 05.1**	**+1.3**
	baz=185						
141A	**Papa Simpson,**	**19.50**	**353**	P	**Pn**	**08 49 04.7**	**+0.7**
	baz=172						
334A	**Lometa**	**19.54**	**339**	P	**P**	**08 49 04.2**	**+1.1**
	baz=156,SNR=8.1						
140A	**Cam and Jess,**	**19.62**	**351**	P	**Pn**	**08 49 06.1**	**+0.6**
	baz=170						
236A	**Katherine and**	**19.62**	**344**	P	**Pn**	**08 49 06.2**	**+0.7**
	baz=161						
333A	**Richland Sprin**	**19.80**	**337**	P	**Pn**	**08 49 07.9**	**+0.3**
	baz=154						
WHTX	**Lake Whitney,**	**19.88**	**342**	P	**Pn**	**08 49 08.9**	**+0.3**
	baz=158						
WHTX	**Lake Whitney,**	**19.88**	**342**	*e*P	**Pn**	**08 49 09.2**	**+0.6**
	comp=Z,19nm,0.6s						
138A	**Matatall Enter**	**19.91**	**348**	P	**Pn**	**08 49 09.2**	**+0.3**
	baz=166						
Z46A	**Louisville**	**19.96**	**3**	P	**Pn**	**08 49 10.8**	**+1.4**
	baz=183,SNR=12						
LRAL	**Lakeview Retre**	**19.98**	**8**	*e*P	**Pn**	**08 49 09.7**	**-0.1**
	comp=Z,15nm,0.9s						
137A	**Heron Place, G**	**20.00**	**346**	P	**Pn**	**08 49 10.1**	**+0.2**
	baz=164						
Z47A	**Carrollton**	**20.02**	**5**	P	**Pn**	**08 49 11.1**	**+0.9**
	baz=186,SNR=9.8						
136A	**Ennis**	**20.07**	**344**	P	**P**	**08 49 09.8**	**+0.9**
	baz=162,SNR=6.6						
234A	**Clairette**	**20.11**	**340**	P	Pn	08 49 11.3	0.0
	baz=157,SNR=7.3						
Z41A	**Richland Creek**	**20.13**	**354**	P	Pn	08 49 11.2	-0.3
	baz=172						
Z40A	**Long Farm, Mag**	**20.21**	**352**	P	Pn	08 49 11.9	-0.5
	baz=171,SNR=7.3						
Z48A	**Northport**	**20.25**	**6**	P	Pn	08 49 13.3	+0.4
	baz=187,SNR=9.5						
TXAR	**Lajitas Array**	**20.38**	**324**	P	Pn	08 49 14.8	+0.2
	comp=Z,1.2nm,0.5s,baz=150,slow=10.0,SNR=24						
TXAR				LR	LR	08 58 41.9	
	comp=Z,34nm,19.0s,baz=0.0,slow=41						
TX31	**Lajitas Ar. Si**	**20.38**	**324**	*e*P	Pn	08 49 14.8	+0.2
233A	**Rising Star**	**20.39**	**338**	P	**P**	**08 49 14.0**	**+1.5**
	baz=155,SNR=16						
135A	**Vickery Place,**	**20.40**	**342**	P	**P**	**08 49 13.9**	**+1.4**
	baz=159,SNR=6.7						
Z38A	**Mt. Pleasant**	**20.46**	**348**	P	Pn	08 49 15.1	-0.3
	baz=166						
Z37A	**Pogue Cattle C**	**20.54**	**347**	P	**P**	**08 49 15.4**	**+1.4**
	baz=164,SNR=7.7						
WLAR	**White Oak Lake**	**20.59**	**353**	*e*P	Pn	08 49 17.1	+0.2
	comp=Z,22nm,1.2s						
Y45A	**Yeager Farm, C**	**20.60**	**1**	P	Pn	08 49 17.4	+0.3
	baz=181,SNR=7.5						
134A	**White-Moore Ra**	**20.62**	**341**	P	**P**	**08 49 15.6**	**+0.7**
	baz=158						
Y46A	**Houston**	**20.65**	**3**	P	Pn	08 49 17.8	+0.3
	baz=183,SNR=14						
Y47A	**UCPARC, Winfie**	**20.74**	**5**	P	Pn	08 49 18.6	0.0
	baz=186,SNR=20						
Z36A	**Blue Ridge**	**20.80**	**345**	P	**P**	**08 49 17.5**	**+0.7**
	baz=162,SNR=8.9						
133A	**Hamilton Ranch**	**20.93**	**339**	P	**P**	**08 49 19.3**	**+1.1**
	baz=155,SNR=13						
Y40A	**Okolona**	**20.93**	**353**	P	**P**	**08 49 19.3**	**+1.0**
	baz=171						
Y39A	**Lockesburg**	**20.97**	**351**	P	**P**	**08 49 19.6**	**+1.0**
	baz=169						
Y38A	**Idabel**	**21.07**	**349**	P	**P**	**08 49 20.7**	**+1.0**
	baz=167,SNR=13						
Z35A	**Perchaven, San**	**21.08**	**343**	P	**P**	**08 49 20.5**	**+0.7**
	baz=160						
ABTX	**Abilene, Hawle**	**21.21**	**337**	*e*P	**P**	**08 49 23.5**	**+2.2**
	comp=Z,24nm,1.5s						
OXF	**Oxford**	**21.25**	**2**	*e*P	**P**	**08 49 22.3**	**+0.7**
	comp=Z,34nm,1.0s						
Y37A	**Hugo**	**21.29**	**347**	P	**P**	**08 49 23.1**	**+1.0**
	baz=165,SNR=8.4						
Z34A	**Collier Ranch,**	**21.31**	**342**	P	**P**	**08 49 23.3**	**+1.0**
	baz=159						
Y36A	**Durant**	**21.37**	**346**	P	**P**	**08 49 23.6**	**+0.7**
	baz=163						
MIAR	**Mount Ida**	**21.50**	**352**	P	**P**	**08 49 24.7**	**+0.4**
	baz=171						
MIAR	**Mount Ida**	**21.50**	**352**	*e*P	**P**	**08 49 25.5**	**+1.2**
	comp=Z,7.4nm,0.9s						
Z33A	**Whitaker Ranch**	**21.50**	**340**	P	**P**	**08 49 25.4**	**+1.1**
	baz=156,SNR=7.6						
X39A	**Fountain Ranch**	**21.54**	**351**	P	**P**	**08 49 25.2**	**+0.4**
	baz=169						
Y35A	**Marietta**	**21.56**	**344**	P	**P**	**08 49 25.9**	**+0.9**
	baz=161,SNR=12						
UALR	**University of**	**21.59**	**355**	*e*P	**P**	**08 49 26.8**	**+1.4**
	comp=Z,17nm,1.0s						
Y34A	**Reagan Ranch,**	**21.81**	**343**	P	**P**	**08 49 27.9**	**+0.3**
	baz=160						
X38A	**Whitesboro**	**21.81**	**350**	P	**P**	**08 49 27.9**	**+0.2**
	baz=168						
X37A	**Clayton**	**21.83**	**348**	P	**P**	**08 49 27.9**	**0.0**
	baz=166						
LPIG	**La Paz**	**21.92**	**303**	LR	LR	08 57 15.0	
	comp=Z,25nm,19.8s,baz=196,slow=34						
W41B	**Gary Mavity, V**	**21.98**	**355**	P	**P**	**08 49 28.9**	**-0.6**
	baz=174						
X35A	**Drake**	**22.01**	**345**	P	**P**	**08 49 29.0**	**-0.9**
	baz=162,SNR=14						
X36A	**Centrahoma**	**22.02**	**346**	P	**P**	**08 49 30.0**	**0.0**
	baz=164,SNR=20						
WHAR	**Wooly Hollow**	**22.10**	**355**	*e*P	**P**	**08 49 32.1**	**+1.3**
	comp=Z,28nm,1.5s						
W39A	**Magazine**	**22.16**	**352**	P	**P**	**08 49 31.5**	**0.0**
	baz=170						
SWET	**Sewanee**	**22.28**	**9**	*e*P	**P**	**08 49 32.3**	**-0.4**
	comp=Z,3.5nm,0.7s						
W37B	**Quinton**	**22.38**	**349**	P	**P**	**08 49 33.8**	**+0.1**
	baz=166						
X34A	**Smith Ranch, M**	**22.43**	**343**	P	**P**	**08 49 34.2**	**-0.2**
	baz=160						
W36A	**Wetumka**	**22.54**	**347**	P	**P**	**08 49 35.2**	**-0.3**
	baz=164						
X33A	**Lawton**	**22.57**	**342**	P	**P**	**08 49 35.8**	**0.0**
	baz=158,SNR=8.5						
V40A	**Witts Springs**	**22.66**	**354**	P	**P**	**08 49 36.3**	**-0.5**
	baz=173						
W35A	**Tecumseh**	**22.70**	**346**	P	**P**	**08 49 35.8**	**-1.4**
	baz=163,SNR=23						
CPCT	**Cooper Cave**	**22.76**	**12**	*e*P	**P**	**08 49 39.1**	**+1.3**
	comp=Z,3.8nm,0.6s						
WMOK	**Wichita Mounta**	**22.84**	**341**	*e*P	**P**	**08 49 37.7**	**-1.0**
	comp=Z,5.0nm,0.9s						
V38A	**Canehill**	**22.91**	**351**	P	**P**	**08 49 38.4**	**-1.0**
	baz=169						
WVT	**Waverly**	**22.95**	**5**	*e*P	**P**	**08 49 41.3**	**+1.5**
	comp=Z,6.7nm,0.7s						
W34A	**Bridge Creek,**	**23.01**	**344**	P	**P**	**08 49 39.6**	**-0.9**
	baz=161,SNR=17						
W34A	**Bridge Creek,**	**23.01**	**344**	*e*P	**P**	**08 49 39.1**	**-1.4**
	comp=Z,43nm,0.4s						
V37A	**Hulbert**	**23.05**	**350**	P	**P**	**08 49 40.3**	**-0.5**
	baz=167,SNR=14						
V36A	**Jenks**	**23.11**	**348**	P	**P**	**08 49 40.4**	**-1.0**
	baz=165						
TKL	**Tuckaleechee C**	**23.12**	**13**	P	**P**	**08 49 40.0**	**-1.5**
	comp=Z,4.7nm,0.7s,baz=188,slow=13,SNR=8.4						
TKL				LR	LR	08 58 58.5	
	comp=Z,140nm,21.7s,baz=188,slow=38						
W33A	**Caddo, Fort Co**	**23.13**	**342**	P	**P**	**08 49 41.3**	**-0.3**
	baz=159,SNR=5.3						
MNTX	**Cornudas Mount**	**23.13**	**325**	*e*P	**P**	**08 49 43.9**	**+2.2**
	comp=Z,7.4nm,1.4s						
TUL1	**Leonard**	**23.20**	**348**	P	**P**	**08 49 41.6**	**-0.7**
	baz=166						
TUL1	**Leonard**	**23.20**	**348**	*e*P	**P**	**08 49 41.4**	**-0.9**
	comp=Z,8.2nm,0.8s						
V35A	**Meyer Ranch, C**	**23.28**	**346**	P	**P**	**08 49 42.2**	**-0.9**
	baz=163,SNR=5.1						
ATAH	**Atahualpa**	**23.33**	**149**	LR	LR	08 57 54.7	
	comp=Z,108nm,19.1s,baz=350,slow=34						
W32A	**Sentinel**	**23.34**	**341**	P	**P**	**08 49 43.1**	**-0.7**
	baz=157,SNR=6.7						
U38A	**Gravette**	**23.47**	**351**	P	**P**	**08 49 45.4**	**+0.4**
	baz=169						
V34A	**Guthrie**	**23.51**	**345**	P	**P**	**08 49 44.4**	**-1.1**
	baz=162,SNR=22						
V34A	**Guthrie**	**23.51**	**345**	*e*P	**P**	**08 49 43.5**	**-1.9**
	comp=Z,58nm,0.6s						
U37A	**Salina**	**23.55**	**350**	P	**P**	**08 49 45.1**	**-0.7**
	baz=168						
SJG	**San Juan**	**23.64**	**75**	LR	LR	08 57 18.1	
	comp=Z,28nm,19.6s,baz=269,slow=33						
MSTX	**Muleshoe**	**23.66**	**333**	P	**P**	**08 49 46.5**	**-0.5**
	baz=148						
V33A	**Lossen Ranch,**	**23.70**	**343**	P	**P**	**08 49 47.4**	**+0.1**
	baz=160,SNR=6.3						
V32A	**Arapaho**	**23.83**	**342**	P	**P**	**08 49 47.5**	**-0.9**
	baz=158						
U35A	**Pawnee**	**23.84**	**347**	P	**P**	**08 49 48.1**	**-0.5**
	baz=164						
T39A	**Clever**	**23.92**	**354**	P	**P**	**08 49 48.9**	**-0.4**
	baz=172						
AMTX	**Amarillo**	**23.99**	**336**	P	**P**	**08 49 49.8**	**-0.3**
	baz=151						
TZTN	**Tazewell**	**24.02**	**13**	*e*P	**P**	**08 49 51.2**	**+1.0**
	comp=Z,10.0nm,0.9s						
T38A	**Diamond**	**24.04**	**352**	P	**P**	**08 49 49.9**	**-0.6**
	baz=170						
U34A	**Anderson Ranch**	**24.09**	**345**	P	**P**	**08 49 50.5**	**-0.3**
	baz=162						
U34A	**Anderson Ranch**	**24.09**	**345**	*e*P	**P**	**08 49 50.5**	**-0.3**
	comp=Z,13nm,0.8s						
T37A	**Cheneyville 18**	**24.22**	**351**	P	**P**	**08 49 52.5**	**+0.4**
	baz=168,SNR=8.8						
U33A	**Lingo Farm, Me**	**24.23**	**344**	P	**P**	**08 49 52.2**	**0.0**
	baz=161						
T35A	**Sooner Cattle**	**24.31**	**348**	P	**P**	**08 49 52.9**	**0.0**
	baz=165						
T36A	**Boggs Farm, Ca**	**24.33**	**349**	P	**P**	**08 49 52.9**	**-0.2**
	baz=166,SNR=6.4						
SIUC	**Southern Illin**	**24.45**	**2**	*e*P	**P**	**08 49 55.5**	**+1.3**
	comp=Z,23nm,0.8s						
T34A	**McClaskey Farm**	**24.56**	**346**	P	**P**	**08 49 54.7**	**-0.5**
	baz=163,SNR=14						
S39A	**Bolivar**	**24.57**	**354**	P	**P**	**08 49 55.7**	**+0.4**
	baz=172,SNR=6.5						
S38A	**Stockton**	**24.58**	**353**	P	**P**	**08 49 55.5**	**+0.2**
	baz=171						
S37A	**Fort Scott**	**24.83**	**351**	P	**P**	**08 49 58.1**	**+0.5**
	baz=169						
T33A	**Patterson Ranc**	**24.88**	**345**	P	**P**	**08 49 58.3**	**+0.3**
	baz=161						
S36A	**Lake Cedric, C**	**24.92**	**350**	P	**P**	**08 49 58.7**	**+0.2**
	baz=167,SNR=5.8						
S35A	**Otter Creek Ra**	**25.01**	**348**	P	**P**	**08 49 59.3**	**0.0**
	baz=166						
R40A	**Maddies Statio**	**25.08**	**356**	P	**P**	**08 49 59.8**	**-0.1**
	baz=175						
R38A	**Fenwick Farm,**	**25.13**	**353**	P	**P**	**08 49 59.9**	**-0.4**
	baz=171						
T32A	**Huddler Ranch,**	**25.15**	**343**	P	**P**	**08 50 01.2**	**+0.6**
	baz=159,SNR=9.3						
R39A	**Chumby, Stover**	**25.16**	**355**	P	**P**	**08 50 00.7**	**+0.1**
	baz=173						
WCI	**Wyandotte Cave**	**25.19**	**7**	*e*P	**P**	**08 49 59.2**	**-1.7**
	comp=Z,21nm,0.7s						
S34A	**Willow Spring**	**25.20**	**347**	P	**P**	**08 50 01.4**	**+0.5**
	baz=164						
S33A	**Kaszmaul Farm,**	**25.30**	**345**	P	**P**	**08 50 02.4**	**+0.5**
	baz=162						
OLIL	**Olney**	**25.52**	**4**	*e*P	**P**	**08 50 05.3**	**+1.4**
	comp=Z,11nm,0.6s						
S32A	**Newby Ranch, P**	**25.64**	**344**	P	**P**	**08 50 06.2**	**+1.1**
	baz=160						
Q40A	**Laux Farm, Aux**	**25.77**	**357**	P	**P**	**08 50 06.3**	**+0.2**
	baz=176						
R34A	**Isabella, Hill**	**25.80**	**347**	P	**P**	**08 50 07.1**	**+0.6**
	baz=164						
Q38A	**Cooks Store, C**	**25.86**	**354**	P	**P**	**08 50 07.5**	**+0.6**
	baz=172						
Q39A	**Willow Grove F**	**25.89**	**355

NVAR Mina Array Bea 35.43 320 P **P** **08 51 34.1 +2.4**
comp=Z,1.6nm,0.6s,baz=137,slow=8.5,SNR=11
NVAR PcP **PcP** **08 54 03.3 +2.1**
comp=Z,0.6nm,0.7s,baz=130,slow=3.6,SNR=3.3
NVAR LR LR 09 07 37.9
comp=Z,79nm,20.5s,baz=90,slow=39
B32A Ashes, Strandq 35.51 353 P **P** **08 51 31.0 -1.0**
baz=169,SNR=10
B31A Greenbush Farm 35.69 351 P **P** **08 51 32.8 -0.7**
baz=167
RLMT Red Lodge 35.75 337 P **P** **08 51 33.8 -0.6**
baz=147
B30A Myrvik Farm, E 35.81 351 P **P** **08 51 34.6 0.0**
baz=166,SNR=5.5
A33A Warroad 35.92 354 P **P** **08 51 34.6 -0.9**
baz=171,SNR=7.8
B29A Wagenman Farm, 36.00 350 P **P** **08 51 36.1 -0.1**
baz=164
A29A Manning Farm, 36.42 350 P **P** **08 51 39.7 -0.1**
baz=165
LPAZ La Paz 36.50 143 P **P** **08 51 41.4 -0.1**
comp=Z,1.1nm,0.6s,baz=327,slow=8.0,SNR=3.6
LPAZ LR LR 09 05 26.5
comp=Z,83nm,18.5s,baz=326,slow=34
A28A Rude Farm, Bot 36.59 349 P **P** **08 51 40.7 -0.7**
baz=163
B25A Knox Farm, Ray 36.62 345 P **P** **08 51 41.7 +0.1**
baz=158
BOZ Bozeman (W) 37.12 335 P **P** **08 51 46.5 +0.4**
baz=144
ULM Lac du Bonnet 37.26 354 P **P** **08 51 45.4 -1.6**
comp=Z,3.8nm,0.7s,baz=167,slow=9.5,SNR=5.8
ULM LR LR 09 10 03.2
comp=Z,55nm,19.0s,baz=84,slow=41
ULM Lac du Bonnet 37.26 354 *e*P **P** **08 51 46.2 -0.8**
comp=Z,5.7nm,0.9s
EGMT Eagleton 38.38 339 P **P** **08 51 57.2 +0.6**
baz=148
SCHQ Schefferville 45.40 19 P **P** **08 52 50.5 -3.2**
comp=Z,3.3nm,0.7s,baz=218,slow=8.3,SNR=8.6
YKA Yellowknife Ar 52.24 346 P **P** **08 53 44.3 -1.7**
comp=Z,0.5nm,0.5s,baz=150,slow=7.4,SNR=19
ILAR Eielson Array 64.29 337 P **P** **08 55 10.3 +0.1**
comp=Z,0.5nm,0.9s,baz=140,slow=4.2,SNR=5.1
TORD Torodi Ar. Bea 88.84 77 LR LR 09 36 12.0
comp=Z,37nm,18.2s,baz=295,slow=35
FINES FINESS Array B 90.48 26 LR LR 09 37 34.8
comp=Z,17nm,20.2s,baz=48,slow=35
NRIK Noril'sk 97.68 1 LR LR 09 44 52.3
comp=Z,43nm,19.4s,baz=94,slow=37
WRA Warramunga Arr 136.90 255 PKP **PKPdf** **09 04 00.0 +1.3**
comp=Z,0.6nm,0.5s,baz=88,slow=2.5,SNR=3.2

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*ISCJB **09** 08:47:36.2±0.6, 50°.10N±0°.04×18°.35E±0°.03, h0km, Error ellipse: s-maj=5.4km s-min=2.6km az=7.4*
*CSEM **09** 08:47:36.8±0.2, 50°.09N×18°.38E, h1km, ML2.7/7, Error ellipse: s-maj=5.5km s-min=2.6km az=7.0*
*IPEC **09** 08:47:37.0±0.2, 50°.07N×18°.45E, h0km, ML1.7/3, Error ellipse: s-maj=2.0km s-min=1.1km az=160.0*
*PRU **09** 08:47:38.4, 50°.06N×18°.34E, h0km*
ISC 09 08:47:36.8±0.8, 50°.10N±0°.04×18°.41E±0°.02, h0km, n28, σ0§90/49, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAC	**Raciborz**	**0.14**	**265**	*e*Pg	**Pg**	**08 47 40.0**	**+0.5**
RAC				*e*Sg	**Sg**	**08 47 44.0**	**+2.8**
OKC	**Ostrava-Krasne**	**0.31**	**213**	*e*PG	**Pg**	**08 47 43.2**	**+0.5**
OKC				*e*SG	**Sg**	**08 47 47.7**	**+1.0**
comp=Z,22nm,0.3s							
OKC	**Ostrava-Krasne**	**0.31**	**213**	Pg	**Pg**	**08 47 43.2**	**+0.5**
OKC				Sg	**Sg**	**08 47 47.7**	**+1.0**
22nm,0.3s							
MORC	**Moravsky Berou**	**0.64**	**241**	*e*Pg	**Pg**	**08 47 49.4**	**+0.2**
baz=64							
MORC				*e*Sg	**Sg**	**08 47 57.5**	**0.0**
14nm,0.1s,baz=64							
OJC	**Ojcow**	**0.90**	**82**	*e*Pg	**Pg**	**08 47 54.0**	**-0.1**
OJC				*e*Sg	**Sb**	**08 48 07.3**	**-0.7**
OJC	**Ojcow**	**0.90**	**82**	*e*Pg	**Pg**	**08 47 54.0**	**-0.1**
OJC				*e*Sg	**Sb**	**08 48 07.3**	**-0.7**
KRLC	**Kraliky**	**1.05**	**269**	*e*PG	**Pg**	**08 47 56.6**	**-0.3**
KRLC				*e*SG	**Sg**	**08 48 10.0**	**-0.5**
KRLC	**Kraliky**	**1.05**	**269**	Pg	**Pg**	**08 47 56.6**	**-0.3**
KRLC				Sg	**Sg**	**08 48 10.0**	**-0.5**
LANS	**Liptovska Anna**	**1.17**	**144**	*e*Pg	**Pg**	**08 47 59.1**	**-0.2**
LANS				*e*Sg	**Sb**	**08 48 15.8**	**+0.1**
LANS	**Liptovska Anna**	**1.17**	**144**	*e*PG	**Pg**	**08 47 59.1**	**-0.2**
LANS				*e*SG	**Sb**	**08 48 15.8**	**+0.1**
DPC	**Dobruska-Polom**	**1.36**	**282**	*e*PG	**Pn**	**08 48 03.1**	**-0.1**
DPC				*e*SG	**Sb**	**08 48 21.2**	**0.0**
comp=Z,15nm,0.5s							
DPC	**Dobruska-Polom**	**1.36**	**282**	Pg	**Pn**	**08 48 03.1**	**-0.1**
DPC				Sg	**Sb**	**08 48 21.2**	**0.0**
15nm,0.5s							
NIE	**Niedzica**	**1.40**	**118**	*e*Pg	**Pb**	**08 48 03.9**	**0.0**
NIE				*e*Sg	**Sn**	**08 48 24.2**	**+1.2**
NIE	**Niedzica**	**1.40**	**118**	*e*Pg	**Pb**	**08 48 03.9**	**0.0**
NIE				*e*Sg	**Sn**	**08 48 24.2**	**+1.3**
VRAC	**Vranov**	**1.42**	**237**	*e*Pg	**Pn**	**08 48 03.3**	**-0.6**
VRAC				*e*Sg	**Sg**	**08 48 21.6**	**-0.7**
9.1nm,0.2s,baz=57							
UPC	**Upice**	**1.59**	**286**	*e*SG	**Sg**	**08 48 28.6**	**+0.7**
comp=Z,7.1nm,0.3s							
UPC	**Upice**	**1.59**	**286**	Sg	**Sg**	**08 48 28.6**	**+0.7**
7.1nm,0.3s							
VYHS	**Vyhne**	**1.63**	**170**	*e*Pn	**Pn**	**08 48 06.5**	**-0.3**
VYHS				*e*Sn	**Sn**	**08 48 27.7**	**-0.7**
VYHS	**Vyhne**	**1.63**	**170**	*e*PN	**Pn**	**08 48 06.5**	**-0.3**
VYHS				*e*SN	**Sn**	**08 48 27.6**	**-0.8**
VYHS				*e*LG	Lg	08 48 28.9	
KRUC	**Moravsky**	**1.67**	**232**	*e*Pg	**Pn**	**08 48 07.4**	**+0.1**
baz=52							
KRUC				*e*Sg	**Sn**	**08 48 29.5**	**+0.1**
5.9nm,0.3s,baz=52							
STHS	**Stebnicka Huta**	**1.96**	**109**	*e*Pn	**Pg**	**08 48 14.4**	**0.0**
STHS	**Stebnicka Huta**	**1.96**	**109**	*e*PN	**Pg**	**08 48 14.4**	**0.0**
STHS				*e*SN	**Sg**	**08 48 40.8**	**+1.0**
STHS				*e*LG	Lg	08 48 45.8	
GOPC	**GO Pecny, Ondr**	**2.34**	**267**	*e*SG	**Sb**	**08 48 50.1**	**+0.7**
GOPC	**GO Pecny, Ondr**	**2.34**	**267**	Sg	**Sb**	**08 48 50.1**	**+0.7**
PRU	**Pruhonice**	**2.49**	**269**	*e*SG	**Sb**	**08 48 55.2**	**+1.5**
comp=Z,3.5nm,0.3s							
PRU	**Pruhonice**	**2.49**	**269**	Sg	**Sb**	**08 48 55.2**	**+1.5**
3.5nm,0.3s							
KHC	**Kasperske Hory**	**3.29**	**255**	*e*PG	**Pg**	**08 48 38.7**	**-1.1**
KHC				*e*SG	**Sg**	**08 49 20.1**	**-2.2**
comp=Z,2.4nm,0.4s							
KHC	**Kasperske Hory**	**3.29**	**255**	Pg	**Pg**	**08 48 38.7**	**-1.1**
KHC				Sg	**Sg**	**08 49 20.1**	**-2.2**
2.4nm,0.4s							

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*ISK **09** 08:47:48.6, 37°.23N×28°.11E, h5km, MD2.7*
*ISCJB **09** 08:47:49.6±0.6, 37°.23N±0°.04×28°.18E±0°.04, h0km, Error ellipse: s-maj=6.6km s-min=3.9km az=31.9*
*DDA **09** 08:47:49.6, 37°.23N×28°.14E, h7km, Md2.5, Suspected Mining explosion.*
*CSEM **09** 08:47:50.0±0.3, 37°.24N×28°.15E, h2km, MD2.7, Error ellipse: s-maj=7.5km s-min=4.7km az=35.0, Suspected Mining explosion.*
ISC 09 08:47:48.6±1.0, 37°.25N±0°.04×28°.12E±0°.04, h0km, n17, σ0§52/24, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.18**	**132**	*e*PG	**Pg**	**08 47 52.1**	**+0.1**
YER	**Yerkesik**	**0.18**	**132**	*e*Pg	**Pg**	**08 47 52.1**	**+0.1**
AYDN	**Tasoluk**	**0.45**	**335**	P	**Pb**	**08 47 59.2**	**-0.2**
AYDN				S	**Sb**	**08 48 06.8**	**+0.1**
AYDN	**Tasoluk**	**0.45**	**335**	*i* P	**Pb**	**08 47 59.2**	**-0.2**
AYDN				*i* S	**Sb**	**08 48 06.8**	**+0.1**
TURN	**Turunc**	**0.54**	**134**	*i* P	**Pg**	**08 47 58.3**	**-0.7**
TURN				*i* S	**Sg**	**08 48 05.8**	**-0.2**
BDRM	**Kayabasi**	**0.57**	**251**	P	**Pb**	**08 48 01.2**	**-0.2**
BDRM				S	**Sb**	**08 48 11.4**	**+1.3**
BDRM	**Kayabasi**	**0.57**	**251**	*i* P	**Pb**	**08 48 01.2**	**-0.2**
BDRM				*i* S	**Sb**	**08 48 11.4**	**+1.3**
DALY	**Dalyan (Mu¨la**	**0.61**	**135**	*e*PG	**Pb**	**08 48 02.0**	**-0.2**
DALY	**Dalyan (Mu¨la**	**0.61**	**135**	*e*Pg	**Pb**	**08 48 02.0**	**-0.2**
BODT	**Bodrum**	**0.67**	**254**	*e*PG	**Pb**	**08 48 02.7**	**-0.5**
BODT				*e*SG	**Sb**	**08 48 12.7**	**-0.4**
BODT	**Bodrum**	**0.67**	**254**	*e*Pg	**Pb**	**08 48 02.7**	**-0.5**
BODT				*e*Sg	**Sb**	**08 48 12.7**	**-0.4**
AYDB	**Zeytinkoy-Aydi**	**0.71**	**346**	*e*PG	**Pb**	**08 48 03.9**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**0.71**	**346**	*e*Pg	**Pb**	**08 48 03.9**	**-0.1**
FETY	**Fethiye**	**0.99**	**128**	*e*PG	**Pb**	**08 48 08.4**	**-0.2**
FETY	**Fethiye**	**0.99**	**128**	*e*Pg	**Pb**	**08 48 08.4**	**-0.2**
AKAS	**Kas**	**1.57**	**130**	P	**Pg**	**08 48 19.2**	**+0.5**
AKAS	**Kas**	**1.57**	**130**	*i* P	**Pg**	**08 48 19.2**	**+0.5**
AKAS				*i* S	Sg	08 48 45.2	+6.2

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*ISCJB **09** 08:56:12.5±0.8, 10°.12S±0°.05×107°.77E±0°.06, h22km, mb3.9/5, Error ellipse: s-maj=9.7km s-min=6.6km az=142.6*
*IDC **09** 08:56:12.7±1.9, 9°.80S×108°.06E, h0km, mb4.0/5, mb1 4.1/6, mb1mx3.7/35, mbtmp4.0/6, ML3.8/1, MS2.8/1, Ms1 2.8/1, ms1mx2.4/33, Error ellipse: s-maj=104.4km s-min=19.4km az=47.0*
*DJA **09** 08:56:13.6±3.7, 10°S±5°×10°8E±°, h28km±48km, M4.5/9, mB5.2/1, mb4.9/1, MLv4.3/9, Mw(mB)4.6/1*
ISC 09 08:56:15.2±0.9, 10°.01S±0°.07×107°.83E±0°.06, h22km, n19, σ1§18/24, mb4.0/5, South of Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMJI	**Cimerak**	**2.29**	**16**	P	**Pn**	**08 56 51.1**	**-0.7**
CMJI				S	**Sb**	**08 57 22.3**	**-1.6**
CNJI	**Cibinong**	**2.77**	**345**	P	**Pn**	**08 56 57.6**	**-0.7**
CNJI				S	**Sn**	**08 57 32.1**	**+1.0**
LEM	**Lembang**	**3.17**	**356**	Pn	**Pb**	**08 57 10.2**	**-0.7**
35nm,0.3s,baz=169,slow=10,SNR=15							
LEM				Sn	**Sb**	**08 57 51.2**	**+2.0**
27nm,0.3s,baz=344,slow=21,SNR=11							
LEM				LR	LR	08 58 06.7	
comp=Z,149nm,18.3s,baz=174,slow=38							
LEM	**Lembang**	**3.17**	**356**	P	**Pn**	**08 57 03.7**	**-0.2**
SKJI	**Sukabumi**	**3.24**	**337**	P	**Pn**	**08 57 04.0**	**-0.8**
UGM	**Wanagama**	**3.38**	**52**	P	**Pn**	**08 57 06.5**	**-0.2**
UGM				S	**Sn**	**08 57 49.2**	**+3.0**
PCJI	**Pacitan**	**3.77**	**62**	P	**Pn**	**08 57 12.3**	**+0.3**
CGJI	**Cibinong**	**3.98**	**328**	P	**Pn**	**08 57 14.3**	**-0.7**
PWJI	**Pagerwojo**	**4.39**	**64**	P	**Pn**	**08 57 19.5**	**-1.2**
PWJI				S	**Sn**	**08 58 08.6**	**-2.6**
GMJI	**Gumukmas**	**5.81**	**73**	P	**Pn**	**08 57 40.4**	**+0.3**
JAGI	**Jajag, Banyuwa**	**6.43**	**77**	P	**Pn**	**08 57 48.2**	**-0.4**
ABJI	**Asem Bagus**	**6.70**	**71**	P	**Pn**	**08 57 52.9**	**+0.5**
FITZ	**Fitzroy Crossi**	**19.05**	**117**	P	**Pn**	**09 00 37.4**	**+0.4**
0.2nm,0.3s,baz=290,slow=5.9,SNR=6.1							
WRA	**Warramunga Arr**	**27.41**	**114**	P	**P**	**09 01 58.6**	**-0.9**
1.5nm,0.8s,baz=285,slow=11,SNR=10							
ASAR	**Alice Springs**	**28.34**	**122**	P	**P**	**09 02 07.8**	**-0.1**
1.1nm,0.7s,baz=295,slow=9.1,SNR=16							
STKA	**Stephens Creek**	**38.06**	**130**	P	**P**	**09 03 32.3**	**0.0**
4.2nm,0.8s,baz=310,slow=8.3,SNR=11							
MKAR	**Makanchi Array**	**60.98**	**340**	P	**P**	**09 06 26.9**	**+0.1**
0.5nm,0.4s,baz=155,slow=6.4,SNR=5.3							
BVAR	**Borovoye Array**	**70.44**	**337**	P	**P**	**09 07 28.3**	**+0.6**
0.9nm,0.7s,baz=147,slow=8.8,SNR=6.8							
TXAR	**Lajitas Array**	**144.84**	**52**	PKP	**PKPdf**	**09 15 51.6**	**+0.3**
0.6nm,0.8s,baz=270,slow=1.1,SNR=7.1							

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*IDC **09** 08:56:52.1±10.0, 5°.93N×123°.75E, h0km, mb3.9/3, mb1 4.1/4, mb1mx3.6/37, mbtmp4.0/4, ML4.3/1, MS3.1/1, Ms1 3.1/1, ms1mx2.4/30, Error ellipse: s-maj=214.9km s-min=25.2km az=124.0*
*MAN **09** 08:56:58, 5.81N×124°.15E, h32km, mb5.0, ML4.0, MS4.1*
ISC 09 08:56:54.4±2.2, 5°.80N±0°.07×124°.12E±0°.07, h1km±15km, n11, σ0§66/16, mb3.9/3, 2C-1D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GSPH	**General Santos**	**0.87**	**71**	⇓*e*P	**Pn**	**08 57 14.3**	**+0.3**
GSPH				*i* S	**Sn**	**08 57 27.1**	**-0.3**
CTBH	**Cotabato--PC H**	**1.42**	**5**	⇑*i*P	**Pg**	**08 57 21.9**	**+0.3**
CTBH				*i* S	**Sg**	**08 57 39.7**	**-0.4**
DMPH	**Davao City--Mi**	**1.88**	**47**	⇑*e*P	**Pb**	**08 57 28.8**	**-0.8**
DMPH				*e*S	**Sn**	**08 57 51.7**	**-0.4**
DAV	**Davao City (W)**	**1.92**	**49**	Pn	**Pb**	**08 57 29.6**	**-0.7**
102nm,0.3s,baz=180,slow=1.2,SNR=10							
DAV				Sn	**Sb**	**08 57 55.3**	**+0.5**
95nm,0.3s,baz=268,slow=23,SNR=8.9							
PAGZ	**Pagadian**	**2.16**	**340**	*e*P	**Pb**	**08 57 33.7**	**-0.7**
PAGZ				*e*S	**Sn**	**08 57 58.5**	**-0.7**
BUKP	**Musuan**	**2.27**	**24**	*e*P	**Pn**	**08 57 34.5**	**+1.4**
BUKP				*e*S	**Sn**	**08 58 01.5**	**-0.3**
MATI	**Mati**	**2.41**	**62**	*e*P	**Pn**	**08 57 35.6**	**+0.6**
LEM	**Lembang**	**20.70**	**233**	LR	LR	09 09 24.0	
comp=Z,57nm,19.6s,baz=206,slow=37							
WRA	**Warramunga Arr**	**27.48**	**159**	P	**P**	**09 02 42.4**	**0.0**
1.6nm,0.7s,baz=333,slow=10,SNR=13							
ASAR	**Alice Springs**	**30.80**	**162**	P	**P**	**09 03 12.1**	**+0.1**
0.7nm,0.7s,baz=335,slow=6.4,SNR=9.3							
STKA	**Stephens Creek**	**41.00**	**157**	P	**P**	**09 04 39.1**	**-0.1**
1.9nm,0.8s,baz=323,slow=10,SNR=2.9							

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*ISCJB **09** 09:07:02.4±1.0, 36°.62N±0°.06×36°.90E±0°.05, h0km, Error ellipse: s-maj=8.7km s-min=5.8km az=171.6*
*CSEM **09** 09:07:02.1±0.9, 36°.54N×36°.94E, h1km, MD2.7, Error ellipse: s-maj=18.9km s-min=11.7km az=155.0, Suspected Mining explosion.*
*ISK **09** 09:07:04.8, 36°.74N×36°.94E, h23km, MD3.0*
*DDA **09** 09:07:13.2, 37°.16N×37°.43E, h7km, Md2.7, Suspected Mining explosion.*
ISC 09 09:07:02.3±1.2, 36°.75N±0°.07×36°.94E±0°.03, h0km, n17, σ2§19/25, Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUZU	**Kuzuini**	**0.11**	**77**	*i* P	Pg	09 07 23.0	+19
GAZ	**Gaziantep**	**0.48**	**27**	*e*PG	**Pn**	**09 07 15.9**	**-0.6**
GAZ				*e*SG	**Sb**	**09 07 23.4**	**+2.1**
GAZ	**Gaziantep**	**0.48**	**27**	*e*Pg	**Pn**	**09 07 15.9**	**-0.6**
GAZ				*e*Sg	**Sb**	**09 07 23.4**	**+2.1**
KAMA	**Osmaniye**	**0.49**	**334**	*i* P	Pn	09 07 25.1	+8.5
HCB	**Kahramanmara¸**	**0.59**	**358**	*i* P	**Pn**	**09 07 21.4**	**+3.3**
KMRS	**Kahramanmaras**	**0.76**	**358**	*e*PG	**Pn**	**09 07 19.9**	**-0.4**
KMRS				*e*SG	**Sb**	**09 07 31.2**	**+1.9**
KMRS	**Kahramanmaras**	**0.76**	**358**	*e*Pg	**Pn**	**09 07 19.9**	**-0.4**
KMRS				*e*Sg	**Sb**	**09 07 31.2**	**+1.9**
GZT	**Gaziantep**	**0.79**	**39**	*i* P	**Pg**	**09 07 16.7**	**-0.7**
GZT				*i* S	**Sg**	**09 07 21.3**	**-6.3**
ANDN	**Andirin**	**0.96**	**330**	*i* P	Pn	09 07 32.1	+9.0
SURC	**SANLIURFA_SURC**	**1.35**	**84**	*i* P	**Pb**	**09 07 31.8**	**+3.3**
SURC				*i* S	**Sn**	**09 07 46.3**	**-0.9**
KARA	**Karaisali**	**1.59**	**289**	*e*PN	**Pg**	**09 07 31.8**	**-1.1**
KARA				*e*SN	**Sg**	**09 07 53.0**	**-0.5**
KARA	**Karaisali**	**1.59**	**289**	*e*Pn	**Pg**	**09 07 31.8**	**-1.1**
KARA				*e*Sn	**Sg**	**09 07 53.0**	**-0.5**
URFA	**Urfa**	**1.66**	**65**	*e*PN	**Pg**	**09 07 33.2**	**-0.9**
URFA				*e*SN	**Sn**	**09 07 53.5**	**-1.3**
URFA	**Urfa**	**1.66**	**65**	*e*Pn	**Pg**	**09 07 33.2**	**-0.9**
URFA				*e*Sn	**Sn**	**09 07 53.5**	**-1.3**
AKCD	**Akcadag**	**1.73**	**27**	*i* P	**Pg**	**09 07 36.5**	**+1.0**
AKCD				*i* S	**Sn**	**09 07 53.4**	**-3.3**
MERS	**Mersin**	**1.94**	**274**	*e*PN	**Pg**	**09 07 37.7**	**-1.9**
MERS	**Mersin**	**1.94**	**274**	*e*Pn	**Pg**	**09 07 37.7**	**-1.9**

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*NIED **09** 09:09:00, 35°.80N×140°.90E, h32km, Mw3.8 Best double couple: Mo5.33000×1014 NP1:φ=180.00000°, δ50.00000°, λ-36.00000°. NP2:φ=295.00000°, δ63.00000°, λ-134.00000°.*
*IDC **09** 09:09:22.4±1.2, 35°.70N×141°.06E, h0km, mb3.6/3, mb1 3.8/4, mb1mx3.5/31, mbtmp3.6/4, ML3.1/1, MS3.7/4, Ms1 3.7/4, ms1mx2.9/38, Error ellipse: s-maj=31.6km s-min=30.0km az=35.0*
*ISCJB **09** 09:09:25.4±1.0, 35°.85N±0°.06×140°.97E±0°.10, h30km±5km, mb3.6/3, MS4.0/3, Error ellipse: s-maj=14.3km s-min=8.1km az=155.7*
*JMA **09** 09:09:26.3±0.1, 35°.82N×140°.92E, h29km±1km, M3.5*
JMA Felt I J1.
ISC 09 09:09:25.6±1.0, 35°.84N±0°.06×140°.95E±0°.08, h21km±2km, n15, σ0§69/15, mb3.6/3, MS3.9/3, 1C-2D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.16**	**209**	⇑P	**Pb**	**09 09 31.5**	**+0.1**
CHOJ				S	**Sb**	**09 09 35.2**	**-0.2**
JYT	**Yasato**	**0.73**	**302**	⇓P	**Pb**	**09 09 39.6**	**+0.1**
JYT				S	**Sb**	**09 09 48.7**	**-0.4**
JHO	**Hitachi**	**0.83**	**338**	⇓P	**Pb**	**09 09 41.5**	**+0.2**
JHO				S	**Sb**	**09 09 52.3**	**+0.2**
BSO3	**Boso 3**	**1.10**	**199**	P	**Pb**	**09 09 46.1**	**+0.4**
JAG	**Ashikaga**	**1.35**	**296**	P	**Pn**	**09 09 48.4**	**-0.8**
MJAR	**Matsushiro Arr**	**2.33**	**288**	Pn	**Pn**	**09 10 03.3**	**+0.6**
4.0nm,0.3s,baz=94,slow=8.6,SNR=25							
MAT	**Matsushiro**	**2.33**	**288**	P	**Pn**	**09 10 03.3**	**+0.6**
MAT				*e*S	**Sn**	**09 10 30.3**	**-0.4**
USRK	**Ussuriysk Ar.**	**10.81**	**323**	LR	LR	09 16 20.7	
comp=Z,60nm,18.2s,baz=131,slow=38							
MKAR	**Makanchi Array**	**44.45**	**303**	P	**P**	**09 17 36.2**	**+1.1**
0.7nm,0.7s,baz=91,slow=11,SNR=5.1							
ILAR	**Eielson Array**	**50.70**	**32**	P	**P**	**09 18 23.1**	**-0.2**
0.5nm,0.9s,baz=280,slow=5.1,SNR=3.6							
WRA	**Warramunga Arr**	**55.83**	**188**	P	**P**	**09 19 00.2**	**-1.3**
1.1nm,0.8s,baz=4.4,slow=7.4,SNR=7.3							
ASAR	**Alice Springs**	**59.56**	**187**	LR	LR	09 41 06.8	
comp=Z,100nm,21.2s,baz=38,slow=32							
NVAR	**Mina Array Bea**	**76.00**	**53**	LR	LR	09 46 38.6	
comp=Z,92nm,21.0s,baz=284,slow=29							
PFO	**Pinyon Flats O**	**80.02**	**56**	LR	LR	09 50 09.0	
comp=Z,57nm,19.6s,baz=332,slow=31							
LPAZ	**La Paz**	**147.61**	**61**	PKPbc	**PKPbc**	**09 29 10.2**	**+0.5**
0.8nm,0.6s,baz=315,slow=1.4,SNR=3.2							

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*NSSC **09** 09:09:26.9±1.6, 34°.37N×36°.66E, h0km±4km, ML1.9*
*ISCJB **09** 09:09:27.2±0.6, 34°.37N±0°.02×36°.66E±0°.04, h3km±5km, Error ellipse: s-maj=5.1km s-min=3.1km az=170.0*
*CSEM **09** 09:09:27.1±0.1, 34°.37N×36°.66E, h2km, ML2.8, Error ellipse: s-maj=3.6km s-min=2.4km az=88.0*
*GRAL **09** 09:09:28.3±0.3, 34°.34N×36°.68E, h3km±62km, MD2.8*
ISC 09 09:09:26.7±1.0, 34°.37N±0°.02×36°.66E±0°.03, h11km±9km, n30, σ0§45/54, Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FKH	**Fakeheh**	**0.24**	**239**	*e*P	**Pb**	**09 09 32.6**	**-0.6**
HAWK	**Haweek**	**0.26**	**306**	*e*P	**Pg**	**09 09 32.1**	**0.0**
HAWK				*e*S	**Sb**	**09 09 37.1**	**-1.0**
HAWK				AML	AML	09 09 39.4	
comp=E,365nm,0.2s							
HAWK				AML	AML	09 09 41.1	
comp=N,241nm,0.4s							
HAWK	**Haweek**	**0.26**	**306**	*e*P	**Pg**	**09 09 32.1**	**0.0**
HAWK				*e*S	**Sb**	**09 09 37.1**	**-1.0**
ROOS	**tl_alroos**	**0.56**	**111**	*e*P	**Pg**	**09 09 37.6**	**0.0**
ROOS				*e*S	**Sb**	**09 09 46.0**	**-0.6**
ROOS				AML	AML	09 09 49.3	
comp=N,75nm,0.5s							
ROOS				AML	AML	09 10 00.6	
comp=E,99nm,0.5s							
ROOS	**tl_alroos**	**0.56**	**111**	*e*P	**Pg**	**09 09 37.6**	**0.0**
ROOS				*e*S	**Sb**	**09 09 46.0**	**-0.6**
comp=E,99nm,0.5s							
HWQ	**Hawqa**	**0.60**	**262**	*e*P	**Pb**	**09 09 39.3**	**0.0**
HWQ				*e*S	**Sb**	**09 09 47.3**	**-0.5**
HWQ	**Hawqa**	**0.60**	**262**	*e*P	**Pb**	**09 09 39.3**	**0.0**
HWQ				*e*S	**Sb**	**09 09 47.3**	**-0.5**
BIDA	**Albida**	**0.70**	**337**	*e*P	**Pg**	**09 09 40.3**	**0.0**
BIDA				*e*S	**Sb**	**09 09 51.0**	**+0.2**
BIDA				AML	AML	09 09 54.7	
comp=N,123nm,0.4s							
BIDA				AML	AML	09 09 56.1	
comp=E,39nm,0.3s							
BIDA	**Albida**	**0.70**	**337**	*e*P	**Pg**	**09 09 40.3**	**0.0**
BIDA				*e*S	**Sb**	**09 09 51.0**	**+0.2**
BHL	**Bhannes**	**0.95**	**241**	*e*P	**Pb**	**09 09 45.4**	**+0.1**
BHL	**Bhannes**	**0.95**	**241**	*e*P	**Pb**	**09 09 45.4**	**+0.1**
TOTH	**TOTAH**	**1.02**	**191**	*e*P	**Pn**	**09 09 47.3**	**+0.2**
TOTH				*e*S	**Sn**	**09 10 01.2**	**-0.2**
TOTH				AML	AML	09 10 05.6	
comp=E,18nm,0.4s							
TOTH				AML	AML	09 10 09.3	
comp=N,14nm,0.3s							
TOTH	**TOTAH**	**1.02**	**191**	*e*P	**Pn**	**09 09 47.3**	**+0.2**
TOTH				*e*S	**Sn**	**09 10 01.2**	**-0.2**
comp=N,14nm,0.3s							
RCY	**Rachaya**	**1.11**	**219**	*e*P	**Pb**	**09 09 48.0**	**0.0**
RCY				*e*S	**Sg**	**09 10 02.5**	**+0.1**
DQRL	**Deir Qamar**	**1.12**	**234**	*e*P	**Pg**	**09 09 48.3**	**+0.1**
DQRL	**Deir Qamar**	**1.12**	**234**	*e*P	**Pg**	**09 09 48.3**	**+0.1**
WRDH	**Warideh**	**1.16**	**350**	*e*P	**Pb**	**09 09 48.7**	**0.0**
WRDH				*e*S	**Sn**	**09 10 05.2**	**+0.4**
WRDH				AML	AML	09 10 08.5	
comp=E,30nm,0.3s							
WRDH	**Warideh**	**1.16**	**350**	*e*P	**Pb**	**09 09 48.7**	**0.0**
WRDH				*e*S	**Sn**	**09 10 05.2**	**+0.4**
comp=E,30nm,0.3s							
SLNF	**Slenfeh**	**1.28**	**344**	*e*P	**Pn**	**09 09 50.7**	**0.0**
SLNF				*e*S	**Sn**	**09 10 08.6**	**+0.7**
SLNF				AML	AML	09 10 11.7	
comp=N,99nm,0.2s							
SLNF				AML	AML	09 10 12.2	
comp=E,26nm,0.6s							
SLNF	**Slenfeh**	**1.28**	**344**	*e*P	**Pn**	**09 09 50.7**

coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**3.43**	**284**	Pn	Pn	09 19 29.3	-0.7
	1.8nm,0.3s,baz=115,slow=8.5,SNR=8.5						
MAT	**Matsushiro**	**3.43**	**284**	P	Pn	09 19 29.7	-0.3
USRK	**Ussuriysk Ar.**	**11.54**	**320**	Pn	Pn	09 21 19.4	-1.9
	0.1nm,0.3s,baz=127,slow=14,SNR=4.4						
MKAR	**Makanchi Array**	**45.42**	**303**	P	P	09 26 56.4	+0.8
	0.5nm,0.7s,baz=83,slow=9.7,SNR=3.6						
WRA	**Warramunga Arr**	**55.96**	**189**	P	P	09 28 15.1	-0.3
	0.4nm,0.8s,baz=9.8,slow=8.3,SNR=2.2						

*ISCJB **09** 09:24:33.5±0.4, 36°.71N±0°.02×27°.30E±0°.04, h11km±3km, Error ellipse: s-maj=6.0km s-min=3.5km az=22.1*
*CSEM **09** 09:24:33.5±0.2, 36°.73N×27°.25E, h15km, ML2.4, Error ellipse: s-maj=5.6km s-min=3.6km az=102.0*
*ATH **09** 09:24:33.4, 36°.69N×27°.14E, h20km±1km, ML2.4/4, Error ellipse: s-maj=2.4km s-min=1.1km az=252.0*
*ISK **09** 09:24:33.1, 36°.77N×27°.28E, h20km, MD2.8*
*DDA **09** 09:24:37.7, 36°.91N×27°.49E, h19km, Md2.7*

ISC 09 09:24:33.2±0.8, 36°.72N±0°.02×27°.31E±0°.03, h12km±6km, n32, σ1°.23/54, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NIS1	**Nisyros Isl.**	**0.16**	**222**	*e*PG	**Pb**	**09 24 38.1**	**0.0**
NIS1	**Nisyros Isl.**	**0.16**	**222**	P	**Pg**	**09 24 37.0**	**+0.1**
NIS1	**Nisyros Isl.**	**0.16**	**222**	*e*Pg	**Pb**	**09 24 38.1**	**0.0**
NIS1				S	**Sg**	**09 24 39.5**	**+0.1**
NIS1	**Nisyros Isl.**	**0.16**	**222**	P	**Pg**	**09 24 37.0**	**+0.1**
NIS1				S	**Sg**	**09 24 39.5**	**+0.1**
NIS1				AML	AML	09 24 40.8	
	comp=N,13616μm,0.3s						
NIS1				AML	AML	09 24 42.9	
	comp=E,12949μm,0.2s						
NISR	**Nisiros**	**0.18**	**233**	P	**Pg**	**09 24 37.4**	**+0.2**
NISR				S	**Sg**	**09 24 40.1**	**+0.2**
NISR	**Nisiros**	**0.18**	**233**	P	**Pg**	**09 24 37.4**	**+0.2**
NISR				S	**Sg**	**09 24 40.1**	**+0.2**
NISR				AML	AML	09 24 40.4	
	comp=E,6054μm,0.2s						
NISR				AML	AML	09 24 40.5	
	comp=N,3953μm,0.1s						
BODT	**Bodrum**	**0.34**	**0**	*e*PG	**Pg**	**09 24 40.3**	**+0.2**
BODT	**Bodrum**	**0.34**	**0**	*e*Pg	**Pg**	**09 24 40.3**	**+0.2**
BDRM	**Kayabasi**	**0.36**	**18**	P	**Pg**	**09 24 41.2**	**+0.7**
BDRM				S	**Sg**	**09 24 46.8**	**+1.5**
BDRM	**Kayabasi**	**0.36**	**18**	*i* P	**Pg**	**09 24 41.2**	**+0.7**
BDRM				*i* S	**Sg**	**09 24 46.8**	**+1.5**
ARG	**Arkhangelos**	**0.83**	**127**	P	**Pn**	**09 24 51.4**	**+0.6**
ARG				S	**Sn**	**09 25 03.5**	**+0.6**
YER	**Yerkesik**	**0.88**	**62**	*e*PG	**Pg**	**09 24 50.9**	**+0.6**
YER				*e*SG	**Sg**	**09 25 03.4**	**+1.5**
YER	**Yerkesik**	**0.88**	**62**	*e*Pg	**Pg**	**09 24 50.9**	**+0.6**
YER				*e*Sg	**Sg**	**09 25 03.4**	**+1.5**
GCAM	**G?zelcaml?**	**0.98**	**357**	P	**Pn**	**09 24 52.7**	**-0.1**
GCAM				S	**Sn**	**09 25 07.0**	**+0.3**
GCAM	**G?zelcaml?**	**0.98**	**357**	*i* P	**Pn**	**09 24 52.7**	**-0.1**
GCAM				*i* S	**Sn**	**09 25 07.0**	**+0.3**
AYDN	**Tasoluk**	**1.04**	**26**	P	**Pg**	**09 24 53.9**	**+0.5**
AYDN				S	**Sn**	**09 25 09.5**	**+1.1**
AYDN	**Tasoluk**	**1.04**	**26**	*i* P	**Pg**	**09 24 53.9**	**+0.5**
AYDN				*i* S	**Sn**	**09 25 09.5**	**+1.1**
TURN	**Turunc**	**1.05**	**81**	*i* P	**Pb**	**09 24 49.9**	**-3.4**
TURN				*i* S	**Sb**	**09 25 00.9**	**-6.2**
SMG	**Samos**	**1.06**	**339**	P	**Pb**	**09 24 53.2**	**-0.3**
SMG				S	**Sb**	**09 25 06.9**	**-0.4**
SMG	**Samos**	**1.06**	**339**	P	**Pb**	**09 24 53.2**	**-0.3**
SMG				S	**Sb**	**09 25 06.9**	**-0.4**
SMG				AML	AML	09 25 11.9	
	comp=N,351μm,0.3s						
SMG				AML	AML	09 25 12.2	
	comp=E,384μm,0.3s						
DALY	**Dalyan (Mu¨la**	**1.08**	**84**	*e*PN	**Pb**	**09 24 53.6**	**-0.3**
DALY				*e*SN	**Sb**	**09 25 08.6**	**+0.5**
DALY	**Dalyan (Mu¨la**	**1.08**	**84**	*e*Pn	**Pb**	**09 24 53.6**	**-0.3**
DALY				*e*Sn	**Sb**	**09 25 08.6**	**+0.5**
KARP	**Karpathos**	**1.18**	**186**	*e*PN	**Pb**	**09 24 56.0**	**+0.5**
KARP				*e*SN	**Sn**	**09 25 12.3**	**+0.8**
KARP	**Karpathos**	**1.18**	**186**	P	**Pn**	**09 24 55.1**	**-0.5**
KARP	**Karpathos**	**1.18**	**186**	*e*Pn	**Pb**	**09 24 56.0**	**+0.5**
KARP				S	**Sb**	**09 25 09.7**	**-1.1**
KARP				*e*Sn	**Sn**	**09 25 12.4**	**+0.8**
KARP	**Karpathos**	**1.18**	**186**	P	**Pn**	**09 24 55.1**	**-0.5**
KARP				S	**Sb**	**09 25 09.7**	**-1.1**
KARP				AML	AML	09 25 13.6	
	comp=E,168μm,0.5s						
KARP				AML	AML	09 25 15.3	
	comp=N,116μm,0.4s						
AYDB	**Zeytinkoy-Aydi**	**1.31**	**21**	*e*PN	**Pn**	**09 24 56.6**	**-0.9**
AYDB	**Zeytinkoy-Aydi**	**1.31**	**21**	*e*Pn	**Pn**	**09 24 56.6**	**-0.9**
APE	**Apeiranthos**	**1.47**	**284**	*e*PN	**Pn**	**09 24 58.3**	**-1.3**
APE	**Apeiranthos**	**1.47**	**284**	*e*Pn	**Pn**	**09 24 58.3**	**-1.3**
ZKR	**Zakros**	**1.83**	**209**	P	**Pn**	**09 25 05.0**	**+0.5**
ZKR	**Zakros**	**1.83**	**209**	P	**Pn**	**09 25 05.0**	**+0.5**

IDC 09 09:25:39.5±1.3, 3°.22S×147°.93E, h0km, mb4.0/5, mb1 4.3/5, mb1mx3.8/27, mbtmp4.0/5, ML1.3/1, MS3.4/6, Ms1 3.4/6, ms1mx3.0/26, Error ellipse: s-maj=77.8km s-min=22.4km az=120.0, Bismarck Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**6.20**	**187**	Pn	Pn	09 27 11.6	-0.8
	0.4nm,0.3s,baz=252,slow=20,SNR=2.3						
PMG				LR	LR	09 30 06.4	
	comp=Z,171nm,19.5s,baz=359,slow=43						
WRA	**Warramunga Arr**	**21.27**	**218**	P	P	09 30 27.7	0.0
	3.3nm,0.8s,baz=42,slow=9.9,SNR=12						
WRA				LR	LR	09 40 10.5	
	comp=Z,95nm,18.2s,baz=270,slow=41						
ASAR	**Alice Springs**	**24.44**	**212**	P	P	09 31 00.8	+0.5
	3.4nm,1.0s,baz=39,slow=7.3,SNR=18						
FITZ	**Fitzroy Crossi**	**26.38**	**234**	P	P	09 31 17.4	-0.4
	6.8nm,1.0s,baz=56,slow=14,SNR=5.0						
FITZ				LR	LR	09 42 59.9	
	comp=Z,116nm,20.5s,baz=56,slow=39						
KAPI	**Kappang**	**28.16**	**265**	LR	LR	09 43 37.9	
	comp=Z,47nm,18.5s,baz=40,slow=38						
H11S3	**WAKE ISLAND Hy 28.40**	**40**		T	T	10 01 14.7	
	baz=222,slow=76,SNR=173						
H11S2	**WAKE ISLAND Hy 28.41**	**40**		T	T	10 01 15.3	
	baz=222,slow=76,SNR=71						
H11S1	**WAKE ISLAND Hy 28.42**	**40**		T	T	10 01 15.6	
	baz=222,slow=76,SNR=72						
STKA	**Stephens Creek**	**29.13**	**191**	LR	LR	09 43 57.1	
	comp=Z,129nm,20.7s,baz=18,slow=38						
H11N1	**WAKE ISLAND Hy 29.43**	**39**		T	T	10 02 28.9	
	baz=221,slow=76,SNR=53						
H11N3	**WAKE ISLAND Hy 29.45**	**39**		T	T	10 02 30.0	
	baz=221,slow=76,SNR=126						
H11N2	**WAKE ISLAND Hy 29.45**	**39**		T	T	10 02 30.2	
	baz=221,slow=76,SNR=138						
ILAR	**Eielson Array**	**82.57**	**23**	P	P	09 38 04.2	0.0
	0.4nm,0.8s,baz=259,slow=4.7,SNR=4.5						
NVAR	**Mina Array Bea**	**94.94**	**52**	LR	LR	10 16 22.4	
	comp=Z,21nm,18.5s,baz=227,slow=32						
YKA	**Yellowknife Ar**	**96.29**	**28**	P	P	09 39 09.6	-0.1
	0.4nm,0.7s,baz=270,slow=4.8,SNR=7.8						

*ISCJB **09** 09:38:28.9±0.4, 50°.07N±0°.03×18°.36E±0°.03, h0km, Error ellipse: s-maj=4.6km s-min=2.4km az=12.8*
*IPEC **09** 09:38:29.6±0.2, 50°.05N×18°.49E, h0km, ML1.8/3, Error ellipse: s-maj=2.1km s-min=1.1km az=160.0*
*CSEM **09** 09:38:29.7±0.3, 50°.06N×18°.38E, h1km, ML2.7/10, Error ellipse: s-maj=6.9km s-min=3.6km az=12.0*
*PRU **09** 09:38:30.5, 50°.02N×18°.47E, h0km*

ISC 09 09:38:29.6±0.8, 50°.01N±0°.03×18°.42E±0°.02, h0km, n36, σ1°.07/69, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAC	**Raciborz**	**0.16**	**296**	*e*Pg	**Pg**	**09 38 34.0**	**+1.4**
RAC				*e*Sg	**Sg**	**09 38 37.4**	**+2.7**
OKC	**Ostrava-Krasne**	**0.25**	**225**	*e*PG	**Pb**	**09 38 36.1**	**+1.8**
OKC				*e*SG	**Sb**	**09 38 40.6**	**+3.1**
	comp=Z,89nm,0.5s						
OKC	**Ostrava-Krasne**	**0.25**	**225**	Pg	**Pb**	**09 38 36.1**	**+1.8**
OKC				Sg	**Sb**	**09 38 40.6**	**+3.1**
	89nm,0.5s						
MORC	**Moravsky Berou**	**0.61**	**248**	*e*Pg	**Pg**	**09 38 42.1**	**+0.8**
MORC				*e*Sg	**Sg**	**09 38 50.8**	**+1.6**
	25nm,0.3s						
OJC	**Ojcow**	**0.91**	**76**	*e*Pg	**Pg**	**09 38 46.5**	**-0.6**
OJC				*e*Sg	**Sg**	**09 38 58.6**	**-0.3**
OJC	**Ojcow**	**0.91**	**76**	*e*Pg	**Pg**	**09 38 46.5**	**-0.6**
OJC				*e*Sg	**Sg**	**09 38 58.6**	**-0.3**
KRLC	**Kraliky**	**1.06**	**274**	*e*PG	**Pg**	**09 38 49.4**	**-0.4**
KRLC				*e*SG	**Sg**	**09 39 03.7**	**+0.2**
KRLC	**Kraliky**	**1.06**	**274**	Pg	**Pg**	**09 38 49.4**	**-0.4**
KRLC				Sg	**Sg**	**09 39 03.7**	**+0.2**
LANS	**Liptovska Anna**	**1.10**	**141**	*e*PG	**Pb**	**09 38 51.6**	**+0.1**
LANS				*e*Sg	**Sn**	**09 39 08.7**	**+0.5**
LANS	**Liptovska Anna**	**1.10**	**141**	*e*PG	**Pb**	**09 38 51.6**	**+0.1**
LANS				*e*SG	**Sn**	**09 39 08.7**	**+0.5**
NIE	**Niedzica**	**1.36**	**115**	*e*Pg	**Pb**	**09 38 56.4**	**+0.5**
NIE				*e*Sg	**Sn**	**09 39 15.7**	**+1.1**
NIE	**Niedzica**	**1.36**	**115**	*e*Pg	**Pb**	**09 38 56.4**	**+0.5**
NIE				*e*Sg	**Sn**	**09 39 15.7**	**+1.1**
VRAC	**Vranov**	**1.38**	**240**	*e*Pg	**Pn**	**09 38 56.1**	**0.0**
VRAC				*e*Sg	**Sb**	**09 39 14.5**	**+0.1**
	10.0nm,0.4s						
DPC	**Dobruska-Polom**	**1.39**	**285**	*e*PG	**Pn**	**09 38 55.9**	**-0.3**
DPC				*e*SG	**Sn**	**09 39 15.0**	**-0.3**
	comp=Z,30nm,0.3s						
DPC	**Dobruska-Polom**	**1.39**	**285**	Pg	**Pn**	**09 38 55.9**	**-0.3**
DPC				Sg	**Sn**	**09 39 15.0**	**-0.3**
	30nm,0.3s						
VYHS	**Vyhne**	**1.54**	**170**	*e*Pn	**Pn**	**09 38 58.2**	**-0.2**
VYHS				*e*Sn	**Sg**	**09 39 20.0**	**+0.8**
VYHS	**Vyhne**	**1.54**	**170**	*e*PN	**Pn**	**09 38 58.2**	**-0.2**
VYHS				*e*SN	**Sg**	**09 39 20.0**	**+0.8**
VYHS				*e*LG	Lg	09 39 24.9	
KSP	**Ksiaz**	**1.59**	**302**	*e*Pn	**Pn**	**09 38 58.1**	**-0.9**
KSP				*e*Pg	**Pg**	**09 39 01.0**	**+0.9**
KSP				*e*Sg	**Sg**	**09 39 22.4**	**+1.7**
KSP	**Ksiaz**	**1.59**	**302**	*e*Pn	**Pn**	**09 38 58.1**	**-0.9**
KSP	**Ksiaz**	**1.59**	**302**	*e*Pg	**Pg**	**09 39 01.0**	**+0.9**
KSP				*e*Sg	**Sg**	**09 39 22.4**	**+1.7**
UPC	**Upice**	**1.62**	**289**	*e*PG	**Pb**	**09 39 00.0**	**-0.3**
UPC				*e*SG	**Sg**	**09 39 21.6**	**0.0**
	comp=Z,8.0nm,0.3s						
UPC	**Upice**	**1.62**	**289**	Pg	**Pb**	**09 39 00.0**	**-0.3**
UPC				Sg	**Sg**	**09 39 21.6**	**0.0**
	8.0nm,0.3s						
KRUC	**Moravsky**	**1.62**	**235**	*e*Pg	**Pb**	**09 39 00.0**	**-0.4**
KRUC				*e*Sg	**Sg**	**09 39 22.3**	**+0.6**
	6.3nm,0.2s						
STHS	**Stebnicka Huta**	**1.93**	**107**	*e*Pn	**Pg**	**09 39 06.5**	**0.0**
STHS				*e*Sn	**Sg**	**09 39 31.4**	**-0.1**
STHS	**Stebnicka Huta**	**1.93**	**107**	*e*PN	**Pg**	**09 39 06.5**	**0.0**
STHS				*e*SN	**Sg**	**09 39 31.4**	**-0.1**
STHS				*e*LG	Lg	09 39 38.6	
TREC	**Trest**	**2.04**	**250**	*e*SG	**Sb**	**09 39 34.1**	**+0.8**
	comp=Z,5.7nm,0.3s						
TREC	**Trest**	**2.04**	**250**	Sg	**Sb**	**09 39 34.1**	**+0.8**
	5.7nm,0.3s						
GOPC	**GO Pecny, Ondr**	**2.35**	**269**	*e*PG	**Pb**	**09 39 12.1**	**-0.6**
GOPC				*e*SG	**Sb**	**09 39 42.6**	**+0.4**
	comp=Z,4.3nm,0.2s						
GOPC	**GO Pecny, Ondr**	**2.35**	**269**	Pg	**Pb**	**09 39 12.1**	**-0.6**
GOPC				Sg	**Sb**	**09 39 42.6**	**+0.4**
	4.3nm,0.2s						
PRU	**Pruhonice**	**2.50**	**271**	*e*PG	**Pb**	**09 39 15.4**	**+0.1**
PRU				*e*SG	**Sg**	**09 39 48.4**	**-1.5**
	comp=Z,5.5nm,0.4s						
PRU	**Pruhonice**	**2.50**	**271**	Pg	**Pb**	**09 39 15.4**	**+0.1**
PRU				Sg	**Sg**	**09 39 48.4**	**-1.5**
	5.5nm,0.4s						
PVCC	**Panska Ves**	**2.52**	**283**	*e*PG	**Pg**	**09 39 17.2**	**-0.7**
PVCC				*e*SG	**Sg**	**09 39 50.2**	**-0.3**
	comp=Z,9.8nm,0.3s						
PVCC	**Panska Ves**	**2.52**	**283**	Pg	**Pg**	**09 39 17.2**	**-0.7**
PVCC				Sg	**Sg**	**09 39 50.2**	**-0.3**
	9.8nm,0.3s						
BRG	**Berggiesshubel**	**2.99**	**288**	SG	**Sg**	**09 40 03.3**	**-2.2**
	10nm,0.3s						
KHC	**Kasperske Hory**	**3.27**	**256**	*e*PN	**Pn**	**09 39 22.0**	**-0.1**
KHC				*e*PG	**Pb**	**09 39 29.6**	**+1.1**
KHC				*e*SG	**Sg**	**09 40 12.1**	**-2.5**
	comp=Z,5.5nm,0.5s						
KHC	**Kasperske Hory**	**3.27**	**256**	Pn	**Pn**	**09 39 22.0**	**-0.1**

*ISCJB **09** 09:40:54.0±0.5, 37°.20N±0°.03×35°.70E±0°.04, h14km±4km, Error ellipse: s-maj=6.1km s-min=4.3km az=26.8*
*ISK **09** 09:40:53.1, 37°.25N×35°.71E, h12km, MD2.5*
*CSEM **09** 09:40:53.7±0.1, 37°.22N×35°.70E, h15km, MD2.5, Error ellipse: s-maj=3.1km s-min=2.5km az=10.0*
*DDA **09** 09:40:53.7, 37°.14N×35°.67E, h7km, Md2.6*

ISC 09 09:40:53.6±1.1, 37°.19N±0°.03×35°.69E±0°.02, h14km±12km, n27, σ0°.28/35, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CEYT	**Ceyhan**	**0.18**	**165**	*e*PG	**Pb**	**09 40 58.6**	**-0.1**
CEYT				*e*SG	**Sb**	**09 41 02.5**	**+0.3**
CEYT	**Ceyhan**	**0.18**	**165**	*e*Pg	**Pb**	**09 40 58.6**	**-0.1**
CEYT				*e*Sg	**Sb**	**09 41 02.5**	**+0.3**
AKO	**Adana**	**0.34**	**325**	*i* P	**Pb**	**09 41 01.5**	**+0.1**
AKO				*i* S	**Sb**	**09 41 07.3**	**+0.6**
YURE	**YUREGIR**	**0.36**	**187**	P	**Pb**	**09 41 01.7**	**-0.2**
YURE	**YUREGIR**	**0.36**	**187**	*i* P	**Pb**	**09 41 01.7**	**-0.2**
KARA	**Karaisali**	**0.51**	**278**	*e*PG	**Pg**	**09 41 03.7**	**0.0**
KARA				*e*SG	**Sb**	**09 41 11.5**	**-0.2**
KARA	**Karaisali**	**0.51**	**278**	*e*Pg	**Pg**	**09 41 03.7**	**0.0**
KARA				*e*Sg	**Sb**	**09 41 11.5**	**-0.2**
ANDN	**Andirin**	**0.65**	**53**	P	**Pb**	**09 41 06.9**	**0.0**
ANDN	**Andirin**	**0.65**	**53**	*i* P	**Pb**	**09 41 06.9**	**0.0**
GULE	**Gulek**	**0.74**	**278**	*i* S	**Sb**	**09 41 18.6**	**+0.3**
DED	**Mersin**	**0.75**	**253**	*i* P	**Pg**	**09 41 07.5**	**-0.6**
DED				*i* S	**Sg**	**09 41 18.0**	**0.0**
KAMA	**Osmaniye**	**0.78**	**90**	*i* P	**Pg**	**09 41 08.9**	**+0.1**
TAHT	**Tahtakopru-Hat**	**0.90**	**154**	*e*PG	**Pn**	**09 41 11.8**	**-0.1**
TAHT	**Tahtakopru-Hat**	**0.90**	**154**	*e*Pg	**Pn**	**09 41 11.8**	**-0.1**
HCB	**Kahramanmara¨**	**0.98**	**80**	*i* P	**Pg**	**09 41 12.8**	**+0.2**
MERS	**Mersin**	**0.99**	**252**	*e*PG	**Pg**	**09 41 12.8**	**+0.1**
MERS	**Mersin**	**0.99**	**252**	*e*Pg	**Pg**	**09 41 12.8**	**+0.1**
KMRS	**Kahramanmaras**	**1.01**	**71**	*e*PG	**Pb**	**09 41 12.3**	**-0.7**
KMRS	**Kahramanmaras**	**1.01**	**71**	*e*Pg	**Pb**	**09 41 12.3**	**-0.7**
YAYL	**Yayladag**	**1.20**	**164**	P	**Pb**	**09 41 16.2**	**0.0**
YAYL				S	**Sg**	**09 41 32.5**	**+0.2**
YAYL	**Yayladag**	**1.20**	**164**	*i* P	**Pb**	**09 41 16.2**	**0.0**
YAYL				*i* S	**Sg**	**09 41 32.5**	**+0.2**
GAZ	**Gaziantep**	**1.22**	**90**	*e*PN	**Pn**	**09 41 16.2**	**-0.1**
GAZ	**Gaziantep**	**1.22**	**90**	*e*Pn	**Pn**	**09 41 16.2**	**-0.1**
NIG	**Nigde**	**1.26**	**317**	*e*PN	**Pn**	**09 41 17.0**	**0.0**
NIG	**Nigde**	**1.26**	**317**	*e*Pn	**Pn**	**09 41 17.0**	**0.0**
KERG	**Konya-Eregli**	**1.27**	**281**	P	**Pb**	**09 41 17.4**	**0.0**
KERG	**Konya-Eregli**	**1.27**	**281**	*i* P	**Pb**	**09 41 17.4**	**0.0**

*ISCJB **09** 09:46:25.0±0.3, 38°.48N±0°.02×118°.65W±0°.03, h10km, mb2.8/1, MS2.7/1, Error ellipse: s-maj=3.9km s-min=2.7km az=160.0*
*IDC **09** 09:46:24.5±1.0, 38°.41N×118°.78W, h0km, mb3.0/1, mb1 3.4/4, mb1mx3.3/38, mbtmp3.1/4, ML3.6/3, MS2.8/1, Ms1 2.8/1, ms1mx2.3/11, Error ellipse: s-maj=10.6km s-min=7.0km az=13.0*
*NEIC **09** 09:46:24.2, 38°.42N×118°.74W, h2km, MW3.6, ML3.9(REN), Moment Tensor Solution. s35 Moment tensor: Scale 10^{14}Nm; M_{rr}=0.88; $M_{\theta\theta}$-1.89; $M_{\phi\phi}$2.77; $M_{r\theta}$1.13; $M_{r\phi}$0.44; $M_{\theta\phi}$0.83; Best double couple: $M_0$2.90000×10^{14} NP1: ϕ_s324.00000°, δ56.00000°, λ-165.00000°. NP2: ϕ_s225.00000°, δ78.00000°, λ-35.00000°. Principal axes: T 3.0500, Plg14.0000°, Azm278.0000°; N -0.4200, Plg53.0000°, Azm28.0000°; P -2.6200, Plg33.0000°, Azm179.0000°; After REN.*
NEIC Felt [II] at Hawthorne.

ISC 09 09:46:24.8±0.7, 38°.42N±0°.02×118°.73W±0°.02, h10km, n80, σ2°.07/83, California-Nevada border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NV01	**Mina Array Sit**	**0.34**	**88**	Pg	**Pg**	**09 46 30.4**	**-1.3**
NVAR	**Mina Array Bea**	**0.34**	**88**	Pg	**Pg**	**09 46 30.9**	**-0.7**
	857nm,0.3s,baz=261,slow=21,SNR=7979						
NVAR				Lg	Lg	09 46 36.1	
	3μm,0.3s,baz=92,slow=25,SNR=108						
NV11	**Mina Array Sit**	**0.45**	**88**	*e*Pg	**Pg**	**09 46 33.1**	**-0.6**
WAKR	**Walker**	**0.56**	**279**	*e*Pg	**Pg**	**09 46 35.0**	**-0.8**
MLAC	**Mammoth, Mammo**	**0.79**	**186**	P	**Pg**	**09 46 39.4**	**-0.8**
	baz=5.7						
MTUM	**Tungsten Hills**	**1.07**	**173**	*e*Pg	**Pg**	**09 46 44.4**	**-1.0**
CMB	**Columbia Colle**	**1.36**	**254**	*e*Pg	**Pn**	**09 46 49.2**	**-0.8**
TIN	**Tinemaha, Big**	**1.42**	**164**	P	**Pb**	**09 46 50.8**	**-0.7**
	baz=344						
GRAC	**Grapevine Rang**	**1.78**	**142**	P	**Pn**	**09 46 55.9**	**+0.1**
	baz=323						
AFDM	**Forest Hills D**	**1.83**	**288**	*e*Pn	**Pb**	**09 46 56.8**	**-1.7**
WLHM	**Little Horse**	**2.28**	**172**	*e*Pn	**Pb**	**09 47 06.2**	**-0.2**
DAC	**Darwin (Calif)**	**2.32**	**157**	*e*Pn	**Pb**	**09 47 07.2**	**+0.3**
ORV	**Oroville**	**2.44**	**299**	*e*Pn	**Pn**	**09 47 05.3**	**+0.5**
TPNV	**Topopah Spring**	**2.45**	**126**	P	**Pn**	**09 47 04.7**	**-0.3**
	baz=308						
TPNV	**Topopah Spring**	**2.45**	**126**	*e*Pn	**Pg**	**09 47 10.1**	**-1.8**
TPNV				*e*Sn	**Sg**	**09 47 42.4**	**-1.3**
R11A	**Troy Canyon, C**	**2.47**	**91**	P	**Pn**	**09 47 04.5**	**-0.9**
	baz=273						
R11A				Sb	**Sg**	**09 47 42.4**	**-1.9**
	baz=273						
R11A	**Troy Canyon, C**	**2.47**	**91**	*e*Pn	**Pn**	**09 47 05.0**	**-0.3**
R11A				*e*Sn	**Sg**	**09 47 42.9**	**-1.4**
MPMC	**Manual Prospec**	**2.55**	**157**	Pb	**Pb**	**09 47 11.5**	**+0.7**
	baz=338						
MPMC				Sb	**Sg**	**09 47 44.9**	**-2.0**
	baz=338						
VES	**Vestal, Richgr**	**2.59**	**186**	P	**Pn**	**09 47 08.1**	**+1.3**
	baz=6.0						
VES				Sb	**Sg**	**09 47 45.6**	**-2.3**
	baz=6.0						
WASM	**Alta Sierra Ca**	**2.68**	**177**	*e*Pn	**Pb**	**09 47 13.1**	**+0.1**
SAO	**San Andreas Ge**	**2.72**	**233**	*e*Pn	**Pb**	**09 47 11.3**	**-2.2**
ISA	**Isabella, Lake**	**2.76**	**176**	Pb	**Pb**	**09 47 14.3**	**0.0**
	baz=356						
ISA				Sb	**Sg**	**09 47 50.6**	**-2.8**
	baz=356						
ISA	**Isabella, Lake**	**2.76**	**176**	*e*Pn	**Pb**	**09 47 12.1**	**-2.2**
WOFM	**Oak Flat**	**2.88**	**180**	*e*Pn	**Pb**	**09 47 16.5**	**+0.2**
O03D	**Paynes Creek**	**3.03**	**309**	P	**Pn**	**09 47 13.4**	**+0.4**
	baz=127,SNR=26						
O03D				Sb	**Sb**	**09 47 58.2**	**+2.2**
	baz=127						
SMMC	**Simmler**	**3.26**	**199**	S	**Sn**	**09 47 55.4**	**+0.5**
	baz=18						
MCCM	**Marconi Confer**	**3.28**	**267**	*e*Pn	**Pn**	**09 47 18.7**	**+2.4**
ARVC	**Arvin**	**3.28**	**181**	Pb	**Pb**	**09 47 22.9**	**-0.3**
	baz=1.3						
SHPR	**Sheep Range**	**3.42**	**123**	*e*Pn	**Pn**	**09 47 19.3**	**+0.9**
GSC	**Goldstone, Bar**	**3.47**	**153**	P	**Pn**	**09 47 19.5**	**+0.5**
	baz=334						
GSC	**Goldstone, Bar**	**3.47**	**153**	*e*Pn	**Pn**	**09 47 19.5**	**+0.5**
ELK	**Elko**	**3.56**	**48**	*e*Pn	**Pn**	**09 47 19.8**	**-0.6**
EDW2	**Edwards Air Fo**	**3.58**	**170**	Pb	**Pb**	**09 47 28.6**	**+0.4**
	baz=351						
EDW2				Sb	**Sg**	**09 48 15.7**	**-4.0**
	baz=351						
MOD	**Modoc Plateau**	**3.69**	**341**	Pn	**Pn**	**09 47 22.6**	**+0.6**
MOD				*e*Sg	**Sg**	**09 48 23.5**	**+0.3**
OSI	**Osito Audit: C**	**3.79**	**180**	Sb	**Sg**	**09 48 23.3**	**-3.4**
	baz=360						
OSI	**Osito Audit: C**	**3.79**	**180**	*e*Pn	**Pn**	**09 47 26.9**	**+3.4**
PSUT	**Pine Spring**	**3.83**	**87**	*e*Pg	**Pg**	**09 47 35.8**	**-2.4**
N02D	**Trinity Center**	**3.99**	**311**	P	**Pn**	**09 47 25.7**	**-0.5**
	baz=129,SNR=5.7						
WVOR	**Wild Horse Val**	**4.01**	**1**	*e*Pn	**Pn**	**09 47 27.5**	**+1.0**
M04C	**Macdoel**	**4.12**	**326**	P	**Pn**	**09 47 28.9**	**+0.9**
	baz=144,SNR=7.4						
M04C				Sb	**Sg**	**09 48 32.5**	**-4.7**
	baz=144						
PASC	**Pasadena Art C**	**4.26**	**174**	*e*Pn	**Pn**	**09 47 33.4**	**+3.6**
PASC				*e*Pg	**Pb**	**09 47 42.0**	**+2.2**
KMRM	**Mail Ridge**	**4.26**	**297**	*e*Pn	**Pn**	**09 47 31.0**	**+1.1**
CCUT	**Cedar City**	**4.33**	**100**	*e*Pg	**Pg**	**09

GRMC	**Gramalote, San**	**0.98**	**18**	*i* P		Pn	10 00 21.1	+1.1
GRMC				*e*S		Sn	10 00 40.8	+2.3
GRMC				*i*			10 00 41.8	
	comp=Z,18nm,0.5s							
CBRI	**Barrientos, No**	**0.98**	**19**	*e*P		Pn	10 00 19.8	-0.2
CBRI				*e*S		Sn	10 00 37.9	-0.7
CBRI	**Barrientos, No**	**0.98**	**19**	*e*P		Pn	10 00 19.8	-0.2
CBRI				*e*S		Sn	10 00 37.9	-0.7
CAPV	**Capacho**	**1.34**	**36**	*e*P		Pn	10 00 21.6	-1.8
CAPV				*e*S		Sn	10 00 44.1	-0.5
OCAC	**Ocana**	**1.46**	**352**	*e*P		Pn	10 00 23.7	-1.0
OCAC				*e*S		Sn	10 00 46.0	-0.8
OCAC				*i*			10 00 49.1	
	comp=Z,18nm,0.3s							
OCAC	**Ocana**	**1.46**	**352**	*e*P		Pn	10 00 23.7	-1.0
NORC	**Norcasia**	**2.13**	**235**	*e*P		Pn	10 00 31.5	-0.6
NORC	**Norcasia**	**2.13**	**235**	*e*P		Pn	10 00 31.5	-0.6
HELC	**Santa Helena**	**2.47**	**256**	*e*P		Pn	10 00 37.2	+0.6
HELC				*e*S		Sn	10 01 07.2	-0.8
HELC				*i*			10 01 13.5	
	comp=Z,5.8nm,0.6s							
SOCV	**Socops**	**2.69**	**56**	*e*P		Pn	10 00 38.1	-0.8
SOCV				*e*S		Sn	10 01 09.4	-2.9
PRAC	**Prado**	**3.52**	**210**	*e*P		Pn	10 00 49.2	-0.4
PRAC				*e*S		Sn	10 01 30.6	-0.9
PRAC	**Prado**	**3.52**	**210**	*e*P		Pn	10 00 49.7	0.0
PRAC				*e*S		Sn	10 01 31.3	-0.2
VIRV	**Villa del Rosa**	**3.76**	**11**	*e*P		Pn	10 00 50.6	-2.2
VIRV				*e*S		Sn	10 01 34.2	-2.8
BAUV	**El Baul**	**5.46**	**67**	*e*P		Pn	10 01 12.4	-2.8
BAUV				*e*S		Sn	10 02 10.8	-6.5

*IDC **09** 10:00:47.4±0.9, 12°.56N×145°.33E, h0km, mb3.6/5, mb1 3.9/5, mb1mx3.6/32, mbtmp3.6/5, MS3.1/3, Ms1 3.1/3, ms1mx2.6/28, Error ellipse: s-maj=39.7km s-min=17.8km az=90.0*

*ISCJB **09** 10:00:50.6±1.0, 12°.61N±0°.08×145°.1E±0°.3, h33km, mb3.6/5, MS3.0/3, Error ellipse: s-maj=39.0km s-min=10.3km az=173.4*

ISC 09 10:00:52.3±1.1, 12°.67N±0°.10×144°.9E±0°.4, h35km, n10, σ0s73/7, mb3.6/5, MS3.0/3, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**0.92**	**355**	Pn	**Pn**	**10 01 09.3**	**+0.6**
	226nm,0.3s,baz=162,slow=5.1,SNR=62						
GUMO				Sn	**Sn**	**10 01 20.2**	**-0.6**
	293nm,0.3s,baz=285,slow=20,SNR=29						
PMG	**Port Moresby**	**22.04**	**174**	LR	LR	10 14 46.3	
	comp=Z,82nm,18.0s,baz=256,slow=38						
MJAR	**Matsushiro Arr**	**24.53**	**347**	LR	LR	10 14 46.9	
	comp=Z,28nm,21.2s,baz=170,slow=34						
WRA	**Warramunga Arr**	**34.04**	**198**	P	**P**	**10 07 32.9**	**-0.5**
	1.3nm,0.7s,baz=22,slow=9.8,SNR=13						
ASAR	**Alice Springs**	**37.69**	**197**	P	**P**	**10 08 04.8**	**+0.2**
	0.6nm,0.7s,baz=17,slow=10,SNR=15						
SONM	**Songino Array**	**47.53**	**325**	P	P	10 09 28.3	+4.0
	0.3nm,0.5s,baz=127,slow=9.6,SNR=3.2						
TLY	**Talaya**	**51.17**	**328**	LR	LR	10 30 54.6	
	comp=Z,13nm,19.9s,baz=93,slow=35						
ILAR	**Eielson Array**	**69.37**	**25**	P	**P**	**10 11 55.4**	**-0.9**
	0.4nm,0.7s,baz=250,slow=5.6,SNR=5.7						
YKA	**Yellowknife Ar**	**83.64**	**27**	P	**P**	**10 13 17.7**	**+0.7**
	0.1nm,0.4s,baz=284,slow=5.0,SNR=7.0						
LPAZ	**La Paz**	**147.79**	**100**	PKPbc	**PKPbc**	**10 20 35.3**	**+0.1**
	1.6nm,0.9s,baz=243,slow=4.5,SNR=3.8						

*IDC **09** 10:34:27.6±3.6, 34°.77N×142°.83E, h0km, mb3.5/2, mb1 3.6/5, mb1mx3.3/47, mbtmp3.7/5, MLL3.5/3, MS3.6/2, Ms1 3.6/2, ms1mx2.5/41, Error ellipse: s-maj=69.7km s-min=34.7km az=46.0*

*ISCJB **09** 10:34:30.1±1.1, 34°.84N±0°.06×142°.79E±0°.09, h33km, mb3.6/2, MS3.7/2, Error ellipse: s-maj=11.4km s-min=8.1km az=163.0*

*JMA **09** 10:34:30.1±0.6, 34°.92N×142°.84E, h64km, M3.4*

ISC 09 10:34:30.5±1.6, 34°.91N±0°.06×142°.9E±0°.1, h35km, n23, σ1s28/25, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**1.58**	**261**	P	**Pn**	**10 34 55.7**	**+0.1**
CHOJ	**Chosi**	**1.83**	**296**	P	**Pn**	**10 35 00.1**	**+0.6**
BSO3	**Boso 3**	**1.95**	**268**	P	**Pn**	**10 35 01.6**	**+0.7**
BSO4	**Boso 4**	**2.09**	**273**	P	**Pn**	**10 35 03.8**	**+0.9**
JHO	**Hitachi**	**2.53**	**313**	P	**Pn**	**10 35 08.7**	**-0.5**
JYT	**Yasato**	**2.55**	**302**	P	**Pn**	**10 35 09.4**	**0.0**
JFK	**Kawauchi**	**2.94**	**327**	*e*S	**Sn**	**10 35 46.0**	**-2.9**
JHU	**Hanno**	**3.09**	**289**	P	**Pn**	**10 35 17.7**	**+0.9**
JHJ2	**Mitsune**	**3.11**	**236**	P	**Pn**	**10 35 17.1**	**0.0**
JHJ	**Hachijo jima 2**	**3.13**	**236**	Pn	**Pn**	**10 35 16.8**	**-0.5**
	30nm,0.3s,baz=42,slow=17,SNR=13						
JHJ				Sn	**Sn**	**10 35 51.4**	**-2.0**
	29nm,0.3s,baz=100,slow=23,SNR=7.6						
JOD2	**Odawara 2**	**3.13**	**278**	P	**Pn**	**10 35 17.1**	**-0.2**
JOD2				*e*S	**Sn**	**10 35 52.5**	**-1.0**
JAG	**Ashikaga**	**3.17**	**300**	P	**Pn**	**10 35 18.4**	**+0.4**
JFT	**Otama**	**3.32**	**322**	P	**Pn**	**10 35 20.5**	**+0.5**
JFT				*e*S	**Sn**	**10 35 56.5**	**-1.7**
JRY	**Ryogami san**	**3.43**	**290**	P	**Pn**	**10 35 22.6**	**+1.1**
JYN	**Shimob**	**3.60**	**281**	P	**Pn**	**10 35 23.9**	**+0.1**
MJAR	**Matsushiro Arr**	**4.13**	**295**	Pn	**Pn**	**10 35 31.7**	**+0.5**
	1.4nm,0.3s,baz=117,slow=8.4,SNR=7.2						
MAT	**Matsushiro**	**4.14**	**295**	P	**Pn**	**10 35 32.8**	**+1.6**
MAT				*e*S	**Sn**	**10 36 19.0**	**+0.6**
MAT	**Matsushiro**	**4.14**	**295**	P	**Pn**	**10 35 32.9**	**+1.7**
JCJ	**Chichijima**	**7.81**	**185**	Pn	**Pn**	**10 36 19.5**	**-2.1**
	1.1nm,0.3s,baz=299,slow=19,SNR=3.4						
JCJ				Sn	Sn	10 37 40.5	-8.4
	1.9nm,0.3s,baz=287,slow=19,SNR=3.0						
SIJI	**Sorong**	**37.21**	**199**	LR	LR	10 57 26.6	
	comp=Z,168nm,19.1s,baz=200,slow=37						
WRA	**Warramunga Arr**	**55.15**	**190**	P	**P**	**10 44 00.1**	**+0.6**
	0.8nm,0.8s,baz=4.2,slow=6.6,SNR=6.1						
ASAR	**Alice Springs**	**58.87**	**190**	P	**P**	**10 44 27.8**	**+1.9**
	0.3nm,0.8s,baz=5.2,slow=7.6,SNR=6.0						
FRB	**Frobisher Bay**	**78.56**	**14**	LR	LR	11 26 36.8	
	comp=Z,20nm,18.8s,baz=244,slow=40						

*NIED **09** 10:53:00, 36°.60N×140°.90E, h56km, Mw4.1 Best double couple: M0 1.84000×10^15 NP1:φs356.00000°, δ56.00000°, λ144.00000°. NP2:φs107.00000°, δ61.00000°, λ39.00000°.*

*ISCJB **09** 10:53:18.7±0.4, 36°.54N±0°.03×140°.96E±0°.05, h56km±3km, mb4.2/28, MS3.3/9, Error ellipse: s-maj=6.5km s-min=4.1km az=5.8*

*NEIC **09** 10:53:18.5±0.4, 36°.53N×140°.99E, h35km, mb4.5/3, Error ellipse: s-maj=9.7km s-min=7.4km az=108.0*

NEIC Recorded [3 JMA] in Ibaraki.

*JMA **09** 10:53:20.0±0.1, 36°.54N×140°.86E, h52km±1km, M4.0*

JMA Felt III J1.

*IDC **09** 10:53:22.8±2.0, 36°.49N×140°.75E, h75km±17km, mb3.9/25, mb1 4.0/29, mb1mx3.8/69, mbtmp4.2/29, MS3.1/15, Ms1 3.2/15, ms1mx3.0/39, Error ellipse: s-maj=16.6km s-min=11.5km az=85.0*

ISC 09 10:53:19.7±0.8, 36°.53N±0°.04×140°.95E±0°.06, h47km±7km, n64, σ1s10/70, mb4.3/28, MS3.4/9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.32**	**284**	P	**Pn**	**10 53 28.8**	**+0.1**
JHO				S	**Sn**	**10 53 34.7**	**-0.4**
ONAJ	**Iwakimizuishiy**	**0.58**	**348**	P	**Pn**	**10 53 31.8**	**-0.1**
ONAJ				S	**Sn**	**10 53 39.8**	**-0.7**
JYT	**Yasato**	**0.69**	**244**	P	**Pn**	**10 53 32.8**	**-0.3**
JYT				S	**Sn**	**10 53 41.6**	**-1.2**
CHOJ	**Chosi**	**0.83**	**185**	P	**Pn**	**10 53 35.5**	**+0.4**
CHOJ				S	**Sn**	**10 53 46.6**	**+0.3**
JFK	**Kawauchi**	**0.83**	**356**	P	**Pn**	**10 53 34.9**	**-0.3**
JFK				S	**Sn**	**10 53 45.3**	**-1.1**
JFT	**Otama**	**1.10**	**334**	P	**Pn**	**10 53 39.3**	**+0.6**
JFT				S	**Sn**	**10 53 52.8**	**0.0**
JAG	**Ashikaga**	**1.21**	**265**	P	**Pn**	**10 53 39.9**	**-0.4**
JFY	**Yanaizu**	**1.33**	**311**	P	**Pn**	**10 53 41.9**	**+0.1**
JFY				S	**Sn**	**10 53 57.9**	**-0.4**
JMM	**Marumori**	**1.34**	**355**	P	**Pn**	**10 53 42.0**	**+0.1**
JMM				S	**Sn**	**10 53 58.3**	**-0.2**
JKT	**Katashina**	**1.39**	**280**	P	**Pn**	**10 53 43.0**	**+0.3**
JKT				S	**Sn**	**10 53 59.3**	**-0.7**
BSO3	**Boso 3**	**1.77**	**192**	P	**Pn**	**10 53 49.6**	**+2.0**
BSO1	**Boso 1**	**1.88**	**179**	P	**Pn**	**10 53 50.9**	**+2.1**
MJAR	**Matsushiro Arr**	**2.21**	**271**	P	**Pn**	**10 53 54.4**	**+0.5**
	31nm,0.3s,baz=96,slow=11,SNR=327						
MJAR				S	**Sn**	**10 54 19.2**	**-0.8**
	29nm,0.3s,baz=77,slow=22,SNR=8.2						
MJAR				LR	LR	10 54 51.8	
	comp=Z,228nm,20.2s,baz=105,slow=44						
MAJO	**Matsushiro**	**2.21**	**271**	*e*Pn	**Pn**	**10 53 54.6**	**+0.7**
MAT	**Matsushiro**	**2.21**	**271**	P	**Pn**	**10 53 54.5**	**+0.6**
MAT				S	**Sn**	**10 54 20.4**	**+0.3**
JHJ	**Hachijo jima 2**	**3.54**	**196**	P	**Pn**	**10 54 13.2**	**+1.0**
	52nm,0.3s,baz=64,slow=22,SNR=26						
JHJ				S	**Sn**	**10 54 51.7**	**-1.1**
	66nm,0.3s,baz=73,slow=19,SNR=11						
ERM	**Erimo**	**5.73**	**17**	*e*Pn	**Pn**	**10 54 42.1**	**-0.1**
ASAJ	**Asahikawa**	**7.68**	**9**	P	**Pn**	**10 55 08.0**	**-0.9**
	3.8nm,0.3s,baz=213,slow=11,SNR=32						
ASAJ				S	**Sn**	**10 56 32.5**	**-1.9**
	1.5nm,0.3s,baz=127,slow=20,SNR=3.4						
ASAJ				LR	LR	10 59 14.2	
	comp=Z,36nm,20.7s,baz=184,slow=45						
JNU	**Nakatsue**	**8.95**	**251**	P	**Pn**	**10 55 28.8**	**+2.3**
	0.2nm,0.3s,baz=89,slow=18,SNR=2.2						
JNU				LR	LR	10 59 17.3	
	comp=Z,82nm,18.2s,baz=117,slow=40						
CBIJ	**Chichi jima**	**9.47**	**173**	P	**Pn**	**10 55 31.9**	**-1.6**
CBIJ				S	Sn	10 57 09.2	-9.3
JCJ	**Chichijima**	**9.47**	**173**	P	**Pn**	**10 55 31.9**	**-1.6**
	11nm,0.3s,baz=356,slow=21,SNR=20						
JCJ				S	Sn	10 57 09.2	-9.3
	5.4nm,0.3s,baz=287,slow=19,SNR=4.2						
USRK	**Ussuriysk Ar.**	**10.26**	**321**	P	**Pn**	**10 55 46.9**	**+2.6**
	0.7nm,0.3s,baz=135,slow=11,SNR=20						
USRK				LR	LR	10 59 37.1	
	comp=Z,97nm,20.1s,baz=133,slow=37						
KSRS	**Korea Array**	**10.46**	**279**	P	**Pn**	**10 55 50.5**	**+3.5**
	0.2nm,0.3s,baz=90,slow=13,SNR=5.8						
KSRS				LR	LR	10 59 39.2	
	comp=Z,61nm,20.6s,baz=63,slow=36						
KSAR	**Wonju Array Be**	**10.49**	**279**	P	**Pn**	**10 55 50.5**	**+3.1**
KLR	**Kul'dur**	**14.36**	**335**	P	**Pn**	**10 56 38.9**	**-1.1**
	0.2nm,0.3s,baz=129,slow=12,SNR=3.5						
KLR				LR	LR	11 01 59.1	
	comp=Z,58nm,19.9s,baz=140,slow=36						
YAK	**Yakutsk**	**26.48**	**348**	LR	LR	11 08 50.0	
	comp=Z,54nm,19.1s,baz=192,slow=35						
SEY	**Seymchan**	**27.35**	**11**	P	**P**	**10 59 02.0**	**+2.0**
	4.7nm,0.9s,baz=218,slow=11,SNR=8.5						
SONM	**Songino Array**	**27.76**	**305**	P	**P**	**10 59 03.2**	**-0.8**
	4.4nm,0.6s,baz=106,slow=8.7,SNR=11						
SONM				LR	LR	11 09 39.5	
	comp=Z,49nm,18.3s,baz=133,slow=35						
H11N2	**WAKE ISLAND Hy**	**28.22**	**119**	T	T	11 29 11.8	
	baz=313,slow=75,SNR=71						
H11N1	**WAKE ISLAND Hy**	**28.23**	**119**	T	T	11 29 12.4	
	baz=313,slow=75,SNR=123						
H11N3	**WAKE ISLAND Hy**	**28.24**	**119**	T	T	11 29 13.2	
	baz=313,slow=75,SNR=90						
H11S1	**WAKE ISLAND Hy**	**28.91**	**121**	T	T	11 30 04.6	
	baz=314,slow=76,SNR=386						
H11S3	**WAKE ISLAND Hy**	**28.92**	**122**	T	T	11 30 03.0	
	baz=314,slow=76,SNR=212						
H11S2	**WAKE ISLAND Hy**	**28.92**	**122**	T	T	11 29 58.8	
	baz=314,slow=76,SNR=287						
TIXI	**Tiksi**	**35.74**	**353**	P	**P**	**11 00 12.8**	**-0.7**
	2.4nm,0.6s,baz=142,slow=5.2,SNR=7.9						
TIXI				LR	LR	11 15 30.7	
	comp=Z,28nm,18.1s,baz=244,slow=37						
TIXI	**Tiksi**	**35.74**	**353**	P	**P**	**11 00 12.8**	**-0.7**
TIXI				*e*P	**P**	**11 00 13.0**	**-0.5**
ZALV	**Zalesovo Beam**	**41.98**	**313**	P	**P**	**11 01 05.7**	**-0.2**
	8.7nm,0.6s,baz=93,slow=6.9,SNR=36						
ZALV				LR	LR	11 19 06.8	
	comp=Z,26nm,18.4s,baz=332,slow=37						
MKAR	**Makanchi Array**	**44.07**	**302**	P	**P**	**11 01 22.9**	**-0.2**
	2.3nm,0.6s,baz=87,slow=10.0,SNR=12						
MKAR				LR	LR	11 19 37.2	
	comp=Z,44nm,19.4s,baz=202,slow=36						
KAPI	**Kappang**	**45.84**	**210**	P	**P**	**11 01 37.7**	**+0.4**
	4.8nm,0.6s,baz=13,slow=5.4,SNR=4.6						
KURK	**Kurchatov**	**45.95**	**308**	P	**P**	**11 01 37.5**	**-0.3**
KURBB	**Kurchatov Arra**	**46.02**	**308**	P	**P**	**11 01 37.5**	**-0.9**
	3.0nm,0.5s,baz=84,slow=8.2,SNR=26						
TKM2	**Tokmak 2**	**49.54**	**299**	*e*P	**P**	**11 02 06.5**	**+0.4**
	4.0nm,0.7s						
ILAR	**Eielson Array**	**50.11**	**32**	P	**P**	**11 02 10.9**	**+1.1**
	1.8nm,0.8s,baz=269,slow=6.3,SNR=24						
BVAR	**Borovoye Array**	**50.64**	**313**	P	**P**	**11 02 13.4**	**-0.5**
	1.1nm,0.6s,baz=50,slow=7.9,SNR=8.5						
KKAR	**Karatay Array**	**53.06**	**300**	*e*P	**P**	**11 02 32.0**	**-0.1**
	1.7nm,0.6s						
INK	**Inuvik**	**55.00**	**27**	P	**P**	**11 02 47.3**	**+1.5**
	1.8nm,0.6s,baz=303,slow=5.8,SNR=19						
INK				LR	LR	11 28 25.6	
	comp=Z,35nm,18.5s,baz=36,slow=38						
ARU	**Arti**	**56.49**	**319**	P	**P**	**11 02 55.9**	**-0.8**
	5.4nm,0.4s,baz=43,slow=2.5,SNR=15						
WRA	**Warramunga Arr**	**56.52**	**187**	P	**P**	**11 02 57.0**	**-0.3**
	1.9nm,0.5s,baz=4.0,slow=7.3,SNR=24						
ABKAR	**Akbulak array**	**57.98**	**310**	*e*P	**P**	**11 03 06.7**	**-0.6**
	4.7nm,0.6s						
AKTO	**Aktyubinsk**	**58.73**	**312**	P	**P**	**11 03 11.8**	**-0.7**
	1.8nm,0.7s,baz=91,slow=12,SNR=5.6						
ASAR	**Alice Springs**	**60.24**	**187**	P	**P**	**11 03 23.0**	**-0.2**
	0.5nm,0.5s,baz=9.0,slow=9.7,SNR=9.0						
ARCES	**ARCESS Array B**	**64.33**	**339**	P	**P**	**11 03 49.9**	**-0.1**
	3.1nm,0.9s,baz=57,slow=8.8,SNR=6.1						
YKA	**Yellowknife Ar**	**64.42**	**30**	P	**P**	**11 03 51.2**	**+0.5**
	0.2nm,0.6s,baz=306,slow=7.3,SNR=8.2						
STKA	**Stephens Creek**	**68.06**	**179**	P	**P**	**11 04 12.8**	**-1.4**
	2.1nm,0.8s,baz=311,slow=11,SNR=3.7						
FINES	**FINESS Array B**	**69.08**	**332**	P	**P**	**11 04 19.7**	**-0.7**
	2.0nm,0.5s,baz=40,slow=8.5,SNR=13						
KBZ	**Khabaz**	**70.95**	**311**	P	**P**	**11 04 31.9**	**-0.1**
	3.5nm,0.8s,baz=56,slow=2.5,SNR=11						
KVAR	**Kislovodsk Arr**	**70.95**	**311**	P	**P**	**11 04 32.2**	**-0.1**
	4.1nm,0.7s,baz=51,slow=14,SNR=4.6						
HFS	**Hagfors**	**74.39**	**336**	P	**P**	**11 04 51.7**	**-0.5**
	2.0nm,0.8s,baz=33,slow=5.7,SNR=6.8						
AKASG	**Malin Array Be**	**74.47**	**322**	P	**P**	**11 04 52.3**	**-0.6**
	1.4nm,0.3s,baz=47,slow=6.1,SNR=6.1						
AKASG				LR	LR	11 39 34.8	
	comp=Z,37nm,19.6s,baz=10.0,slow=37						
NB2	**NORSAR Subarra**	**74.50**	**337**	P	**P**	**11 04 52.7**	**-0.3**
	comp=Z,1.6nm,0.6s,baz=40,slow=6.2						
NOA	**NORSAR Array B**	**74.50**	**337**	P	**P**	**11 04 52.9**	**-0.1**
	comp=Z,1.8nm,0.6s,baz=39,slow=5.8,SNR=10.0						
NOA				LR	LR	11 40 52.4	
	comp=Z,17nm,19.0s,baz=185,slow=38						
BRTR	**Keskin Array B**	**78.91**	**311**	P	**P**	**11 05 17.8**	**-0.5**
	comp=Z,1.6nm,0.9s,baz=116,slow=2.9,SNR=6.3						
GERES	**GERESS Array B**	**82.94**	**328**	LR	LR	11 43 59.7	
	comp=Z,32nm,21.9s,baz=306,slow=37						
TXAR	**Lajitas Array**	**90.72**	**52**	P	**P**	**11 06 19.3**	**+1.4**
	comp=Z,0.1nm,0.5s,baz=291,slow=3.5,SNR=3.9						

*DDA **09** 11:40:56.8, 36°.18N×37°.16E, h5km, Md2.9, Suspected Mining explosion.*

*NSSC **09** 11:40:58.8±1.3, 36°.66N×36°.75E, h58km±10km, ML1.9*

*CSEM **09** 11:40:58.1±0.4, 36°.31N×37°.12E, h1km, ML1.9, Error ellipse: s-maj=10.9km s-min=7.3km az=124.0, Suspected Mining explosion.*

*ISCJB **09** 11:40:59.1±0.7, 36°.31N±0°.03×37°.02E±0°.05, h0km, Error ellipse: s-maj=6.8km s-min=4.3km az=30.1*

ISC 09 11:40:57.8±0.9, 36°.38N±0°.03×37°.05E±0°.04, h0km, n16, σ0s84/27, Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DRWC	**Darouich**	**0.40**	**308**	*i* P	**Pb**	**11 41 07.0**	**-0.7**
DRWC				*e*S	**Sb**	**11 41 14.3**	**-0.1**
DRWC				AML	AML	11 41 21.8	
	comp=E,96nm,0.7s						
DRWC				AML	AML	11 41 25.1	
	comp=N,76nm,0.5s						
DRWC	**Darouich**	**0.40**	**308**	*i* P	**Pb**	**11 41 07.0**	**-0.7**
DRWC				*e*S	**Sb**	**11 41 14.4**	**-0.1**
	comp=N,76nm,0.5s						
KUZU	**Kuzuini**	**0.40**	**2**	P	**Pb**	**11 41 08.0**	**+0.3**
KUZU	**Kuzuini**	**0.40**	**2**	*i* P	**Pb**	**11 41 08.0**	**+0.3**
YAYL	**Yayladag**	**0.84**	**246**	P	**Pg**	**11 41 13.7**	**-0.1**
YAYL	**Yayladag**	**0.84**	**246**	*i* P	**Pg**	**11 41 13.7**	**-0.1**
KAMA	**Osmaniye**	**0.87**	**339**	*i* P	**Pn**	**11 41 17.5**	**+0.2**
KAMA				*i* S	**Sg**	**11 41 25.4**	**-0.3**
HCB	**Kahramanmara¯**	**0.97**	**353**	*i* P	**Pn**	**11 41 19.7**	**+1.0**
ARNB	**Al Arnab**	**1.01**	**240**	*i* P	**Pg**	**11 41 17.6**	**+0.4**
ARNB				*e*S	**Sg**	**11 41 29.9**	**-0.5**
ARNB				AML	AML	11 41 35.8	
	comp=N,16nm,0.2s						
ARNB				AML	AML	11 41 37.3	
	comp=E,34nm,0.4s						
ARNB	**Al Arnab**	**1.01**	**240**	*i* P	**Pg**	**11 41 17.6**	**+0.4**
ARNB				*e*S	**Sg**	**11 41 29.9**	**-0.5**
	comp=E,34nm,0.4s						
SLNF	**Slenfeh**	**1.03**	**221**	*i* P	**Pb**	**11 41 18.7**	**+0.1**
SLNF				*e*S	**Sn**	**11 41 34.2**	**-0.6**
SLNF				AML	AML	11 41 38.6	
	comp=N,84nm,0.2s						
SLNF				AML	AML	11 41 39.4	
	comp=E,24nm,0.6s						
SLNF	**Slenfeh**	**1.03**	**221**	*i* P	**Pb**	**11 41 18.7**	**+0.1**
SLNF				*e*S	**Sn**	**11 41 34.2**	**-0.6**
	comp=E,24nm,0.6s						
SURC	**SANLIURFA_SURC**	**1.35**	**68**	P	**Pg**	**11 41 22.2**	**-1.5**
SURC				S	**Sn**	**11 41 44.6**	**+2.0**
SURC	**SANLIURFA_SURC**	**1.35**	**68**	*i* P	**Pg**	**11 41 22.2**	**-1.5**
SURC				*i* S	**Sn**	**11 41 44.6**	**+2.0**
BIDA	**Albida**	**1.48**	**204**	*i* P	**Pg**	**11 41 26.2**	**0.0**
BIDA				*e*S	**Sg**	**11 41 44.8**	**-0.6**
BIDA				AML	AML	11 41 49.9	
	comp=E,19nm,0.5s						
BIDA				AML	AML	11 41 52.4	
	comp=N,52nm,0.3s						
BIDA	**Albida**	**1.48**	**204**	*i* P	**Pg**	**11 41 26.2**	**0.0**
BIDA				*e*S	**Sg**	**11 41 44.8**	**-0.6**
	comp=N,52nm,0.3s						

*NIED **09** 12:08:00, 36°.50N×141°.10E, h5km, Mw4.1 Best double couple: M0 1.73000×10^15 NP1:φs4.00000°, δ19.00000°, λ-103.00000°. NP2:φs197.00000°, δ72.00000°, λ-86.00000°.*

*ISCJB **09** 12:08:15.1±0.8, 36°.37N±0°.03×141°.14E±0°.04, h5km±5km, mb4.2/40, MS3.6/6, Error ellipse: s-maj=5.4km s-min=5.0km az=8.5*

*IDC **09** 12:08:15.3±0.6, 36°.42N×140°.97E, h0km, mb4.0/19, mb1 4.2/23, mb1mx4.1/36, mbtmp4.0/23, ML4.0/2, MS3.2/7, Ms1 3.2/7, ms1mx2.9/44, Error ellipse: s-maj=17.1km s-min=13.9km az=84.0*

*JMA **09** 12:08:17.6, 36°.47N×141°.08E, h23km±1km, M4.4*

JMA Felt II J1.

*NEIC **09** 12:08:21.3±0.4, 36°.27N×140°.98E, h35km, mb4.5/16, Error ellipse: s-maj=8.6km s-min=7.8km az=124.0*

NEIC Recorded [2 JMA] in Ibaraki and Tochigi.

ISC 09 12:08:17.4±1.3, 36°.42N±0°.04×141°.06E±0°.04, h9km±7km, n88, σ1s95/93, mb4.3/40, MS3.4/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.44**	**296**	P	**Pb**	**12 08 26.3**	**-1.1**
JHO				*e*S	**Sg**	**12 08 32.6**	**+0.9**
ONAJ	**Iwakimizuishiy**	**0.71**	**343**	P	**Pg**	**12 08 30.2**	**-1.0**
ONAJ				S	**Sg**	**12 08 39.8**	**-0.7**
JYT	**Yasato**	**0.72**	**255**	P	**Pb**	**12 08 31.8**	**-0.4**
JYT				S	**Sb**	**12 08 42.5**	**+0.3**
JFK	**Kawauchi**	**0.96**	**351**	P	**Pg**	**12 08 33.6**	**-2.3**
JSB	**Shiboa**	**1.06**	**301**	P	**Pg**	**12 08 37.2**	**-0.7**
JSB				S	**Sb**	**12 08 52.3**	**+0.1**
MJAR	**Matsushiro Arr**	**2.30**	**274**	Pn	**Pn**	**12 08 54.9**	**-0.7**
	20nm,0.3s,baz=96,slow=9.4,SNR=108						
MJAR				Sn	**Sn**	**12 09 23.8**	**-0.3**
	45nm,0.3s,baz=93,slow=16,SNR=5.7						
MJAR				LR	LR	12 10 03.1	
	comp=Z,425nm,19.8s,baz=115,slow=49						
MAJO	**Matsushiro**	**2.30**	**274**	*e*Pn	**Pn**	**12 08 55.6**	**0.0**
MAJO				*e*Pg	**Pb**	**12 08 55.7**	**-3.4**
MAT	**Matsushiro**	**2.30**	**274**	P	**Pn**	**12 08 55.5**	**-0.1**
MAT				*e*S	**Sn**	**12 09 24.8**	**+0.8**
MJB9	**Matsu-Tunnel**	**2.30**	**274**	*e*Pn	**Pn**	**12 08 55.6**	**0.0**
MJB9				*e*Pg	**Pb**	**12 08 55.7**	**-3.4**
INU	**Inuyama**	**3.45**	**253**	*e*Pn	**Pn**	**12 09 12.1**	**+0.7**
JHJ2	**Mitsune**	**3.45**	**198**	*e*Pn	**Pn**	**12 09 10.6**	**-0.8**
JHJ2				*e*Pg	**Pg**	**12 09 21.6**	**-1.9**
JHJ	**Hachijo jima 2**	**3.45**	**198**	Pn	**Pn**	**12 09 12.8**	**

GTA	**Gaotai**	**32.47 288**	*e*P	**P**	**12 14 50.2**	**+1.8**
GTA			pP	pP	12 14 56.3	+5.3
GTA			sP	sP	12 14 59.2	+7.1
GTA			S	**S**	**12 20 00.3**	**-3.1**
GTA			sS	sS	12 20 13.3	+5.6
GTA			SS	**SnSn**	**12 21 54.5**	**-1.8**
GTA			pmax	pmax		
	comp=Z,3.0nm,0.9s					
GTA			pmax	pmax		
	comp=Z,56nm,5.9s					
GTA			LR	LR		
	comp=N,260nm,16.6s					
GTA			LR	LR		
	comp=E,250nm,20.0s					
GTA			LR	LR		
	comp=Z,220nm,14.7s					
KMI	**Kunming**	**34.59 262**	P	**P**	**12 15 06.6**	**-0.4**
KMI			pmax	pmax		
	comp=Z,11nm,0.5s					
KMI			pmax	pmax		
	comp=Z,120nm,5.0s					
TIXI	**Tiksi**	**35.87 353**	P	**P**	**12 15 15.6**	**-1.6**
	comp=Z,1.5nm,0.7s,baz=147,slow=5.9					
TIXI	**Tiksi**	**35.87 353**	*e*P	**P**	**12 15 20.5**	**+3.3**
	comp=Z,5.1nm,1.2s					
WMQ	**Urumqi**	**40.86 297**	*e*P	**P**	**12 16 01.2**	**+1.5**
WMQ			pmax	pmax		
	comp=Z,3.0nm,0.6s					
WMQ			pmax	pmax		
	comp=Z,45nm,3.8s					
WMQ			LR	LR		
	comp=N,26nm,20.0s					
WMQ			LR	LR		
	comp=E,28nm,22.4s					
WMQ			LR	LR		
	comp=Z,11nm,30.0s					
ZALV	**Zalesovo Beam**	**42.12 313**	P	**P**	**12 16 08.7**	**-1.1**
	comp=Z,3.8nm,0.6s,baz=98,slow=6.8,SNR=21					
MK01	**Makanchi Array**	**44.20 303**	*e*P	**P**	**12 16 26.1**	**-0.7**
MK31	**Makanchi Array**	**44.20 303**	*e*P	**P**	**12 16 26.2**	**-0.7**
MKAR	**Makanchi Array**	**44.20 303**	P	**P**	**12 16 25.4**	**-1.4**
	comp=Z,1.3nm,0.8s,baz=78,slow=12,SNR=8.8					
MKAR			LR	LR	12 35 49.4	
	comp=Z,26nm,20.2s,baz=39,slow=38					
MKAR	**Makanchi Array**	**44.20 303**	*e*P	**P**	**12 16 26.2**	**-0.7**
MAKZ	**Makanchi**	**44.41 303**	*e*P	**P**	**12 16 27.5**	**-1.0**
	comp=Z,4.4nm,0.9s					
KURK	**Kurchatov**	**46.09 309**	*e*P	**P**	**12 16 44.6**	**+2.9**
	comp=Z,11nm,0.8s					
TKM2	**Tokmak 2**	**49.67 299**	*e*P	**P**	**12 17 10.5**	**+0.7**
	comp=Z,6.1nm,0.6s					
IL1	**Eielson Array**	**50.17 32**	*e*P	**P**	**12 17 15.6**	**+2.5**
ILAR	**Eielson Array**	**50.17 32**	P	**P**	**12 17 12.3**	**-0.7**
	comp=Z,0.7nm,0.7s,baz=265,slow=6.6,SNR=9.7					
ILB	**Eielson Array**	**50.17 32**	*e*P	**P**	**12 17 15.8**	**+2.8**
AAK	**Ala-Archa**	**50.53 299**	LR	LR	12 39 49.9	
	comp=Z,65nm,18.7s,baz=36,slow=38					
ZRNK	**Zerenda**	**51.61 313**	*e*P	**P**	**12 17 25.7**	**+1.6**
	comp=Z,3.3nm,0.7s					
EGAK	**Eagle**	**52.61 32**	P	**P**	**12 17 31.6**	**+0.3**
KKAR	**Karatay Array**	**53.19 300**	*e*P	**P**	**12 17 36.1**	**+0.1**
	comp=Z,2.0nm,0.6s					
INK	**Inuvik**	**55.07 27**	P	**P**	**12 17 49.0**	**-0.2**
	comp=Z,1.1nm,0.8s,baz=286,slow=7.6,SNR=8.1					
INK	**Inuvik**	**55.07 27**	*e*P	**P**	**12 17 48.9**	**-0.3**
INK			P	P	12 17 49.0	-0.2
WRAB	**Tennant Creek**	**56.40 188**	*e*P	**P**	**12 17 58.7**	**-0.7**
	comp=Z,34nm,1.9s					
WRA	**Warramunga Arr**	**56.41 188**	P	**P**	**12 17 58.2**	**-1.1**
	comp=Z,3.6nm,0.4s,baz=6.0,slow=7.3,SNR=110					
ARU	**Arti**	**56.63 319**	*e*P	**P**	**12 18 03.5**	**+2.9**
	comp=Z,5.7nm,0.7s					
ABKAR	**Akbulak array**	**58.12 310**	*e*P	**P**	**12 18 09.9**	**-1.3**
AS01	**Alice Springs**	**60.13 188**	*e*P	**P**	**12 18 24.6**	**-0.8**
AS31	**Alice Springs**	**60.14 188**	*e*P	**P**	**12 18 25.1**	**-0.3**
	comp=Z,1.2nm,1.1s					
ASAR	**Alice Springs**	**60.14 188**	P	**P**	**12 18 24.8**	**-0.7**
	comp=Z,2.0nm,0.7s,baz=17,slow=7.4,SNR=44					
RES	**Resolute Bay**	**63.27 14**	*e*P	**P**	**12 18 50.4**	**+4.5**
	comp=Z,6.2nm,1.3s					
ARCES	**ARCESS Array B**	**64.47 339**	P	**P**	**12 18 52.1**	**-1.8**
	comp=Z,4.6nm,0.9s,baz=64,slow=8.1,SNR=2.9					
YKA	**Yellowknife Ar**	**64.48 30**	P	**P**	**12 18 53.6**	**-0.4**
	comp=Z,0.4nm,0.8s,baz=304,slow=6.7,SNR=6.8					
STKA	**Stephens Creek**	**67.94 180**	P	**P**	**12 19 16.1**	**-0.4**
	comp=Z,1.7nm,0.8s,baz=340,slow=8.6,SNR=3.8					
FINES	**FINESS Array B**	**69.22 332**	P	**P**	**12 19 22.9**	**-1.4**
	comp=Z,2.1nm,0.7s,baz=46,slow=11,SNR=5.4					
AKASG	**Malin Array Be**	**74.61 322**	P	**P**	**12 19 54.7**	**-2.1**
	comp=Z,0.4nm,0.4s,baz=45,slow=5.8,SNR=4.2					
KIEV	**Kiev**	**74.62 322**	*e*P	**P**	**12 19 58.0**	**+1.2**
	comp=Z,2.9nm,0.5s					
NB2	**NORSAR Subarra**	**74.64 337**	P	**P**	**12 19 57.8**	**+0.9**
	comp=Z,1.6nm,0.6s,baz=40,slow=6.2					
NOA	**NORSAR Array B**	**74.64 337**	P	**P**	**12 19 55.8**	**-1.1**
	comp=Z,0.2nm,0.4s,baz=43,slow=5.6,SNR=3.2					
NV01	**Mina Array Sit**	**75.59 53**	*e*P	**P**	**12 20 03.8**	**+0.7**
NVAR	**Mina Array Bea**	**75.59 53**	P	**P**	**12 20 03.5**	**+0.4**
	comp=Z,1.4nm,0.8s,baz=281,slow=5.4,SNR=6.1					
H17A	**Grant Village**	**76.71 44**	*e*P	**P**	**12 20 11.8**	**+2.4**
	comp=Z,3.9nm,0.9s					
IMW	**Indian Meadow**	**76.81 45**	*e*P	**P**	**12 20 10.8**	**+0.8**
	comp=Z,1.9nm,0.7s					
PDAR	**Pinedale Array**	**78.30 45**	P	**P**	**12 20 17.9**	**-0.4**
	comp=Z,0.6nm,0.6s,baz=264,slow=1.4,SNR=10					
BUR08	**Bucovina Ar. S**	**78.60 322**	*e*P	**P**	**12 20 21.3**	**+1.7**
BRTR	**Keskin Array B**	**79.04 311**	P	**P**	**12 20 22.1**	**-0.2**
	comp=Z,1.4nm,1.0s,baz=84,slow=5.1,SNR=6.9					
BR231	**Keskin MP Arra**	**79.49 312**	*e*P	**P**	**12 20 26.5**	**+1.8**
Q16A	**Castle Valley**	**79.76 49**	*e*P	**P**	**12 20 28.6**	**+2.3**
	comp=Z,12nm,0.3s					
GERES	**GERESS Array B**	**83.08 328**	P	**P**	**12 20 44.6**	**+1.1**
	comp=Z,0.4nm,0.2s,baz=45,slow=5.8,SNR=3.8					
TXAR	**Lajitas Array**	**90.72 52**	P	**P**	**12 21 20.9**	**-0.3**
	comp=Z,0.5nm,0.7s,baz=300,slow=3.2,SNR=8.2					
LPAZ	**La Paz**	**147.25 60**	PKPbc	**PKPbc**	**12 28 01.6**	**-0.9**
	comp=Z,1.1nm,0.7s,baz=329,slow=3.1,SNR=4.8					

NIED ***09*** *12:15:00, 36°.90N×142°.00E, h8km, Mw3.5 Best double couple: M0=1.88000×10^14 NP1:φs=33.00000°, δ=47.00000°, λ=-68.00000°. NP2:φs=182.00000°, δ=47.00000°, λ=-112.00000°.*

IDC ***09*** *12:15:23.6±1.4, 36°.99N×141°.71E, h0km, mb3.6/3, mb1 3.8/6, mb1mx3.6/48, mbtmp3.8/6, ML3.6/3, MS3.1/1, Ms1 3.1/1, ms1mx2.5/41, Error ellipse: s-maj=41.0km s-min=23.7km az=114.0*

ISCJB ***09*** *12:15:24.3±1.2, 36°.97N±0°.04×141°.67E±0°.07, h20km±8km, mb3.7/3, MS3.0/1, Error ellipse: s-maj=9.2km s-min=6.2km az=10.3*

JMA ***09*** *12:15:26.4±0.1, 36°.98N×141°.53E, h42km±2km, M3.6*

ISC 09 12:15:23.8±1.9, 36°.99N±0°.04×141°.66E±0°.07, h9km±11km, n20, σ1°.75/23, mb3.5/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.70**	**280**	P		**Pb**	**12 15 38.3**	**+0.2**
ONAJ				*e*S		**Sb**	**12 15 47.5**	**-0.4**
JFK	**Kawauchi**	**0.73**	**301**	P		**Pb**	**12 15 38.8**	**+0.1**
JFK				*e*S		**Sg**	**12 15 47.4**	**0.0**
JHO	**Hitachi**	**0.95**	**247**	P		**Pg**	**12 15 41.9**	**-0.2**
JHO				S		**Sg**	**12 15 53.8**	**-0.6**
JMM	**Marumori**	**1.11**	**322**	P		**Pb**	**12 15 45.1**	**-0.1**
JMM				*e*S		**Sg**	**12 15 58.5**	**-1.2**
JFT	**Otama**	**1.18**	**297**	P		**Pb**	**12 15 46.4**	**0.0**
JFT				*e*S		**Sg**	**12 16 00.6**	**-1.2**
JIO	**Ouri**	**1.48**	**351**	P		**Pn**	**12 15 51.2**	**+0.5**
JIO				S		**Sn**	**12 16 09.2**	**-1.0**
MJAR	**Matsushiro Arr**	**2.81**	**262**	Pn		**Pn**	**12 16 09.8**	**+0.9**
	4.5nm,0.3s,baz=82,slow=14,SNR=21							
MJAR				Sn		**Sn**	**12 16 43.8**	**+1.0**
	4.5nm,0.3s,baz=101,slow=19,SNR=6.0							
MAT	**Matsushiro**	**2.81**	**262**	P		**Pn**	**12 16 10.2**	**+1.3**
MAT				*e*S		**Sn**	**12 16 41.9**	**-0.9**
JHJ	**Hachijo jima 2**	**4.15**	**202**	Pn		**Pn**	**12 16 28.8**	**+1.5**
	7.7nm,0.3s,baz=51,slow=13,SNR=4.0							
JHJ				Sn		**Sn**	**12 17 16.0**	**-0.1**
	8.6nm,0.3s,baz=68,slow=19,SNR=2.8							
JCJ	**Chichijima**	**9.87**	**177**	Pn		**Pn**	**12 17 46.9**	**+1.0**
	1.4nm,0.3s,baz=282,slow=20,SNR=2.4							
JCJ				Sn		**Sn**	**12 19 30.4**	**-6.5**
	1.7nm,0.3s,baz=300,slow=20,SNR=2.4							
H11N2	**WAKE ISLAND Hy**	**27.96**	**121**	T		T	12 50 35.3	
	baz=314,slow=75,SNR=51							
H11N1	**WAKE ISLAND Hy**	**27.96**	**121**	T		T	12 50 37.4	
	baz=314,slow=75,SNR=56							
H11N3	**WAKE ISLAND Hy**	**27.97**	**121**	T		T	12 50 38.1	
	baz=314,slow=75,SNR=49							
H11S1	**WAKE ISLAND Hy**	**28.67**	**123**	T		T	12 51 30.0	
	baz=316,slow=76,SNR=35							
H11S3	**WAKE ISLAND Hy**	**28.67**	**123**	T		T	12 51 27.6	
	baz=316,slow=76,SNR=30							
H11S2	**WAKE ISLAND Hy**	**28.69**	**123**	T		T	12 51 31.1	
	baz=316,slow=76,SNR=30							
DAV	**Davao City (W)**	**33.19**	**210**	LR		LR	12 36 41.4	
	comp=Z,29nm,18.7s,baz=227,slow=38							
ILAR	**Eielson Array**	**49.43**	**32**	P		**P**	**12 24 14.5**	**+0.9**
	1.4nm,0.7s,baz=274,slow=6.0,SNR=1.7							
WRA	**Warramunga Arr**	**57.04**	**188**	P		**P**	**12 25 11.1**	**+1.0**
	0.3nm,0.5s,baz=5.9,slow=7.5,SNR=6.7							
ASAR	**Alice Springs**	**60.77**	**188**	P		**P**	**12 25 37.5**	**+1.5**
	0.4nm,0.9s,baz=24,slow=7.1,SNR=4.4							

JMA 09 12:15:24.3±0.3, 36°.92N×142°.01E, h0km, M4.2, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
JFT	**Otama**	**1.46**	**295**	P		Pn	12 15 52.0	0.0

NIED ***09*** *12:16:00, 46°.70N×144°.70E, h460km, Mw5.1 Best double couple: M0=5.33000×10^16 NP1:φs=57.00000°, δ=75.00000°, λ=-171.00000°. NP2:φs=324.00000°, δ=81.00000°, λ=-15.00000°.*

MOS ***09*** *12:16:03.7±0.9, 47°.05N×144°.62E, h404km, mb4.5/70, Error ellipse: s-maj=6.4km s-min=4.5km az=97.0*

JMA ***09*** *12:16:03.4±0.4, 46°.67N×144°.75E, h442km±4km, M5.0*

IDC ***09*** *12:16:04.5±0.8, 47°.07N×144°.62E, h400km±9km, mb4.0/26, mb1 4.1/36, mb1mx4.0/53, mbtmp4.9/36, Error ellipse: s-maj=9.2km s-min=7.0km az=136.0*

NEIC ***09*** *12:16:04.6±0.4, 47°.13N×144°.57E, h394km±4km, mb4.5/144, Error ellipse: s-maj=4.4km s-min=2.6km az=153.0*

SKHL ***09*** *12:16:04.5±0.8, 46°.90N×144°.70E, h400km±8km, mb5.2/13, mbh5.6/1, mbv5.6/5, msh5.6/12, msha5.6/14*

ISCJB ***09*** *12:16:04.0±0.1, 47°.00N±0°.02×144°.65E±0°.02, h407km±1km, mb4.4/211, Error ellipse: s-maj=3.3km s-min=2.2km az=157.4*

ISC 09 12:16:04.7±0.3, 46°.98N±0°.04×144°.69E±0°.04, h404km±3km, h403km:pP-P, n746, σ1°.43/846, mb4.5/211, 47C-13D, Sea of Okhotsk

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
YSS	**Yuzh-Sakhalins**	**1.33**	**270**	⇑*i*PN		**P**	**12 16 58.9**	**+1.4**
YSS				*i*S		**S**	**12 17 40.6**	**+0.5**
YSS				pmax		pmax		
	comp=Z,160nm,0.5s							
YSS				smax		smax		
	comp=N,1μm,0.8s							
YSS				smax		smax		
	comp=E,1μm,1.0s							
YSS	**Yuzh-Sakhalins**	**1.33**	**270**	⇑*i*P		**P**	**12 16 58.8**	**+1.3**
YSS				AMB		AMB	12 16 59.2	
	comp=E,160nm,0.5s							
YSS				*e*S		**S**	**12 17 40.5**	**+0.5**
YSS				A		A	12 17 42.0	
	comp=E,4μm,2.0s							
YSS				A		A	12 17 42.0	
	comp=E,3μm,2.0s							
YSS				A		A	12 17 43.0	
	comp=E,1μm,1.0s							
YSS				A		A	12 17 43.0	
	comp=E,1μm,1.0s							
JSE	**Soyaes**	**2.50**	**217**	⇑P		**P**	**12 17 04.9**	**+0.6**
JSE				*e*S		**S**	**12 17 52.5**	**-0.1**
JWK2	**Keihoku**	**2.56**	**230**	⇑P		**P**	**12 17 06.1**	**+1.4**
JWK2				*e*S		**S**	**12 17 54.4**	**+1.0**
UGL	**Uglegorsk**	**2.74**	**321**	⇓*i*PN		**P**	**12 17 07.5**	**+1.6**
UGL				*e*S		**S**	**12 17 57.0**	**+1.3**
UGL				pmax		pmax		
	comp=Z,1μm,1.0s							
UGL				pmax		pmax		
	comp=N,159nm,0.6s							
UGL				pmax		pmax		
	comp=E,239nm,0.6s							
UGL				smax		smax		
	comp=E,1μm,0.6s							
UGL				smax		smax		
	comp=N,690nm,0.9s							
UGL				smax		smax		
	comp=Z,435nm,0.6s							
UGL				smax		smax		
	comp=N,5μm,3.0s							
UGL				smax		smax		
	comp=E,6μm,3.0s							
UGL	**Uglegorsk**	**2.74**	**321**	⇓*i*P		**P**	**12 17 07.5**	**+1.6**
UGL				AMB		AMB	12 17 08.5	
	comp=E,160nm,0.6s							
UGL				AMB		AMB	12 17 08.5	
	comp=E,240nm,0.6s							
UGL				AMB		AMB	12 17 08.5	
	comp=E,1μm,1.0s							
UGL				*i*S		**S**	**12 17 56.8**	**+1.1**
UGL				A		A	12 17 58.5	
	comp=E,1μm,0.6s							
UGL				A		A	12 17 59.0	
	comp=E,5μm,3.0s							
UGL				A		A	12 17 59.0	
	comp=E,6μm,3.0s							
KUR	**Kuril'sk**	**2.82**	**127**	*d i*PN		**P**	**12 17 06.6**	**-0.1**
KUR				*i*S		**S**	**12 17 55.9**	**-1.1**
KUR				pmax		pmax		
	comp=Z,121nm,1.0s							
KUR				smax		smax		
	comp=N,225nm,0.8s							
KUR				smax		smax		
	comp=E,163nm,0.7s							
KUR				smax		smax		
	comp=N,5μm,4.9s							
KUR				smax		smax		
	comp=E,3μm,5.1s							
KUR	**Kuril'sk**	**2.82**	**127**	⇓*i*P		**P**	**12 17 06.6**	**-0.1**
KUR				AMB		AMB	12 17 07.8	
	comp=E,240nm,0.8s							
KUR				*i*S		**S**	**12 17 55.8**	**-1.2**
KUR				A		A	12 17 58.6	
	comp=E,5μm,5.0s							
KUR				A		A	12 17 58.6	
	comp=E,3μm,5.0s							
KUR				A		A	12 18 09.4	
	comp=E,260nm,0.4s							
KUR				A		A	12 18 09.4	
	comp=E,450nm,0.4s							
JRA	**Rausu**	**3.06**	**174**	⇑P		**P**	**12 17 08.4**	**-0.2**
JRA				*e*S		**S**	**12 17 59.5**	**-1.0**
YUK	**Yuzh-Kuril'sk**	**3.06**	**164**	*c i*PN		**P**	**12 17 08.4**	**-0.2**
YUK				*i*S		**S**	**12 17 58.7**	**-1.8**
YUK				pmax		pmax		
	comp=Z,593nm,0.6s							
YUK				pmax		pmax		
	comp=E,167nm,0.3s							
YUK				pmax		pmax		
	comp=N,191nm,0.4s							
YUK				smax		smax		
	comp=E,20μm,2.2s							
YUK				smax		smax		
	comp=N,10μm,2.4s							
YUK				smax		smax		
	comp=E,2μm,0.5s							
YUK				smax		smax		
	comp=N,4μm,0.4s							
YUK	**Yuzh-Kuril'sk**	**3.06**	**164**	⇑*i*P		**P**	**12 17 08.4**	**-0.2**
YUK				AMB		AMB	12 17 10.0	
	comp=N,590nm,0.6s							
YUK				AMB		AMB	12 17 10.0	
	comp=N,190nm,0.4s							
YUK				AMB		AMB	12 17 10.0	
	comp=N,170nm,0.4s							
YUK				*i*S		**S**	**12 17 58.7**	**-1.8**
YUK				A		A	12 18 00.5	
	comp=N,10μm,2.5s							
YUK				A		A	12 18 00.5	
	comp=N,20μm,2.5s							
YUK				A		A	12 18 09.1	
	comp=N,4μm,0.5s							
YUK				A		A	12 18 09.1	
	comp=N,2μm,0.5s							
JTKR	**Abashiri--Toko**	**3.06**	**191**	⇑P		**P**	**12 17 08.8**	**+0.2**
JTKR				*e*S		**S**	**12 18 00.4**	**-0.2**
ASAJ	**Asahikawa**	**3.22**	**208**	P		**P**	**12 17 10.5**	**+0.5**
	comp=N,54nm,0.3s,baz=324,slow=3.8,SNR=334							
ASAJ				S		**S**	**12 18 03.0**	**-0.1**
	comp=N,4.9nm,0.3s,baz=330,slow=20,SNR=11							
JKA	**Kamikawa-asahi**	**3.22**	**208**	*e*P		**P**	**12 17 10.5**	**+0.5**
JKK2	**Kamakawa 2**	**3.40**	**204**	⇑P		**P**	**12 17 11.7**	**+0.2**
JKK2				*e*S		**S**	**12 18 06.0**	**+0.2**
JYG	**Yagishiri**	**3.43**	**223**	P		**P**	**12 17 12.0**	**+0.3**
JYG				*e*S		**S**	**12 18 05.9**	**-0.3**
SHO	**Shikotan**	**3.46**	**153**	*c i*PN		**P**	**12 17 09.2**	**-2.8**
SHO				*i*S		**S**	**12 18 00.9**	**-5.8**
SHO				pmax		pmax		
	comp=Z,713nm,0.7s							
SHO				pmax		pmax		
	comp=E,154nm,0.8s							
SHO				pmax		pmax		
	comp=N,172nm,0.3s							
SHO				smax		smax		
	comp=E,19μm,0.5s							
SHO				smax		smax		
	comp=N,9μm,0.4s							
SHO	**Shikotan**	**3.46**	**153**	⇑*i*P		**P**	**12 17 09.6**	**-2.4**
SHO				AMB		AMB	12 17 11.1	
	comp=N,710nm,0.7s							
SHO				*i*S		**S**	**12 18 01.3**	**-5.4**
SHO				A		A	12 18 02.6	
	comp=N,9μm,0.5s							
SHO				A		A	12 18 02.6	
	comp=N,19μm,0.5s							
NEM2	**Nemuro 2**	**3.69**	**168**	P		**P**	**12 17 11.4**	**-2.7**
NEM2				*e*S		**S**	**12 18 04.0**	**-6.5**
JAR	**Ashorobuto**	**3.74**	**190**	⇑P		**P**	**12 17 13.9**	**-0.6**
JAR				*e*S		**S**	**12 18 09.7**	**-1.7**
JHR	**Hokuryu**	**3.85**	**214**	P		**P**	**12 17 16.0**	**+0.5**
JAK	**Akkeshi**	**3.98**	**180**	⇑P		**P**	**12 17 14.6**	**-2.2**
JAK				*e*S		**S**	**12 18 09.9**	**-5.6**
JFR	**Furan**	**4.10**	**202**	⇑P		**P**	**12 17 17.7**	**-0.1**
JFR				*e*S		**S**	**12 18 16.1**	**-1.4**
TYV	**Tymovskoe**	**4.11**	**342**	*e*PN		**P**	**12 17 19.2**	**+1.5**
TYV				*e*S		**S**	**12 18 17.8**	**+0.4**
TYV				pmax		pmax		
	comp=Z,2μm,4.0s							
TYV				pmax		pmax		
	comp=E,308nm,1.0s							
TYV				pmax		pmax		
	comp=Z,427nm,1.0s							
TYV				smax		smax		
	comp=N,339nm,1.0s							
TYV				smax		smax		
	comp=N,6μm,6.0s							
TYV	**Tymovskoe**	**4.11**	**342**	⇓*i*P		**P**	**12 17 19.8**	**+2.1**
TYV				AMB		AMB	12 17 21.0	
	comp=N,2μm,4.0s							
TYV				AMB		AMB	12 17 21.0	
	comp=N,310nm,1.0s							
TYV				AMB		AMB	12 17 21.0	
	comp=N,430nm,1.0s							
TYV				*i*S		**S**	**12 18 18.5**	**+1.1**
TYV				A		A	12 18 19.0	
	comp=N,340nm,1.0s							
TYV				A		A	12 18 26.0	
	comp=N,6μm,6.0s							
JCH	**Churui**	**4.47**	**193**	⇑P		**P**	**12 17 19.3**	**-2.1**
JCH				*e*S		**S**	**12 18 18.1**	**-5.9**
JSK	**Shakotan**	**4.70**	**221**	P		**P**	**12 17 23.9**	**+0.3**
JSK				*e*S		**S**	**12 18 26.1**	**-2.0**
JEW	**Eniwo**	**4.74**	**210**	⇑P		**P**	**12 17 24.1**	**0.0**
JEW				*e*S		**S**	**12 18 26.0**	**-2.9**
JNBK	**Urakawa-nobuka**	**4.90**	**197**	P		**P**	**12 17 23.8**	**-1.9**
JNBK				*e*S		**S**	**12 18 26.3**	**-5.6**
ERM	**Erimo**	**5.09**	**193**	*e*PN		**P**	**12 17 26.6**	**-1.0**
ERM	**Erimo**	**5.09**	**193**	*e*Pn		**P**	**12 17 26.6**	**-1.0**
ERM	**Erimo**	**5.09**	**193**	*e*P		**P**	**12 17 26.6**	**-1.0**
JKB	**Kayabe**	**5.73**	**209**	⇑P		**P**	**12 17 32.3**	**-2.0**
JKB				*e*S		**S**	**12 18 40.4**	**-7.3**
TEY	**Ternei**	**5.96**	**254**	*e*P		**P**	**12 17 38.0**	**+1.3**
TEY				*i*S		**S**	**12 18 51.0**	**-1.2**
TEY				*i*S		S	12 18 51.5	-0.7
TEY				A		A	12 18 53.5	
	comp=N,220nm,1.0s							
TEY				A		A	12 18 54.0	
	comp=N,5μm,3.5s							
TEY				A		A	12 18 54.0	
	comp=N,2μm,3.5s							
JOSM	**Okushiri--Mats**	**6.15**	**219**	P		**P**	**12 17 38.2**	**-0.6**
JOSM				*e*S		**S**	**12 18 51.2**	**-4.9**
JOT	**Ohata**	**6.18**	**206**	P		**P**	**12 17 36.8**	**-2.3**
JOT				*e*S		**S**	**12 18 49.7**	**-7.0**
GRNR	**Gornyy**	**6.64**	**308**	*i*P		**P**	**12 17 45.4**	**+0.6**
GRNR				AMB		AMB	12 17 45.8	
	comp=N,90nm,0.5s							
GRNR				*i*S		**S**	**12 19 05.1**	**-0.6**
GRNR				A		A	12 19 06.6	
	comp=N,370nm,1.4s							
HABR	**Khabarovsk**	**6.67**	**286**	*de*PN		**P**	**12 17 42.5**	**-2.7**
HABR				*e*S		**S**	**12 19 03.6**	**-2.7**
HABR				pmax		pmax		
	comp=N,27nm,1.0s							
HABR				pmax		pmax		
	comp=E,197nm,1.0s							
HABR				pmax		pmax		
	comp=Z,346nm,1.0s							
HABR				smax		smax		
	comp=N,79nm,1.3s							
HABR				smax		smax		
	comp=Z,246nm,2.5s							
HABR				smax		smax		
	comp=E,210nm,1.3s							
HABR				MLR		MLR		
	comp=Z,95nm,13.0s							
HABR	**Khabarovsk**	**6.67**	**286**	*e*P		**P**	**12 17 42.5**	**-2.7**
HABR				AMB		AMB	12 17 47.2	
	comp=Z,30nm,1.0s							
HABR				AMB		AMB	12 17 47.2	
	comp=Z,200nm,1.0s							
HABR				AMB		AMB	12 17 47.2	
	comp=Z,350nm,1.0s							
HABR				*e*S		**S**	**12 19 03.6**	**-2.7**
HABR				A		A	12 19 10.4	
	comp=Z,80nm,1.3s							
HABR				A		A	12 19 10.9	
	comp=Z,210nm,1.3s							
OKH	**Okha**	**6.67**	**351**	*e*PN		**P**	**12 17 46.0**	**+1.0**
OKH				*e*S		**S**	**12 19 09.0**	**+2.8**
OKH				pmax		pmax		
	comp=Z,3μm,3.0s							
OKH				smax		smax		
	comp=N,6μm,4.5s							
OKH	**Okha**	**6.67**	**351**	⇑*i*P		**P**	**12 17 46.1**	**+1.0**
OKH				AMB		AMB	12 17 46.9	
	comp=N,1μm,0.8s							
OKH				AMB		AMB	12 17 47.6	
	comp=N,3μm,3.0s							
OKH				*i*S		**S**	**12 19 09.0**	**+2.8**
OKH				A		A	12 19 10.2	
	comp=N,6μm,4.5s							
OKH				A		A	12 19 10.2	
	comp=N,5μm,4.5s							
OKH				A		A	12 19 10.4	
	comp=N,390nm,1.0s							
NKL	**Nikolayevsk**	**6

comp=E,490nm,1.0s
NKL AMB AMB 12 17 47.2
comp=E,20nm,0.5s
NKL AMB AMB 12 17 47.5
comp=E,600nm,3.0s
NKL AMB AMB 12 17 47.5
comp=E,1µm,3.0s
NKL AMB AMB 12 17 47.5
comp=E,1µm,3.0s
NKL *i* S **S** **12 19 07.5 +0.9**
NKL A A 12 19 10.0
comp=E,110nm,1.0s
NKL A A 12 19 12.0
comp=E,3µm,4.5s
NKL A A 12 19 12.0
comp=E,3µm,4.5s
JANG Nango 7.00 200 P **P** **12 17 45.7 -3.3**
JANG *e*S **S** **12 19 05.3 -7.9**
JOM Ohasama 7.90 199 P **P** **12 17 56.8 -2.2**
JOM *e*S **S** **12 19 26.2 -5.8**
SKR Severo-Kuril's 8.40 60 *e*PN P 12 17 59.0 -5.2
SKR *e*S S 12 19 32.5 -9.5
SKR pmax pmax
comp=Z,150nm,0.5s
SKR smax smax
comp=N,220nm,1.0s
SKR smax smax
comp=E,220nm,1.0s
SKR Severo-Kuril's 8.40 60 *e*P **P** **12 18 04.6 +0.4**
SKR AMB AMB 12 18 06.3
comp=E,310nm,0.6s
SKR AMB AMB 12 18 15.0
comp=E,4µm,4.5s
SKR *e*S **S** **12 19 39.2 -2.8**
SKR A A 12 19 40.7
comp=E,250nm,1.1s
SKR A A 12 19 55.2
comp=E,8µm,4.0s
JMK Ichinoseki 8.42 199 P **P** **12 18 03.1 -1.6**
JYK Kaneyama 8.66 203 P **P** **12 18 06.2 -1.2**
JYK *e*S **S** **12 19 41.6 -6.3**
KLR Kul'dur 8.95 289 P **P** **12 18 11.0 +0.7**
comp=E,3.5nm,0.3s,baz=100,slow=14,SNR=77
KLR S **S** **12 19 54.2 +0.5**
baz=18,slow=19,SNR=8.8
PAU Pauzhetka 9.11 56 *e*P **P** **12 18 12.8 +0.7**
PAU *e*S **S** **12 19 55.7 -1.3**
USRK Ussuriysk Ar. 9.33 257 P **P** **12 18 14.5 -0.2**
comp=E,5.7nm,0.3s,baz=63,slow=9.0,SNR=67
USRK S **S** **12 20 00.0 -1.7**
baz=68,slow=19,SNR=3.7
EKMR Ekimchan 9.70 313 ⇓*i*P **P** **12 18 20.1 +1.4**
EKMR AMB AMB 12 18 21.0
comp=E,10.0nm,1.0s
EKMR AMB AMB 12 18 21.0
comp=E,80nm,1.0s
VLA Vladivostok 9.85 252 *e*PN **P** **12 18 21.9 +1.5**
VLA Vladivostok 9.85 252 *e*P **P** **12 18 21.9 +1.5**
PETK Petropavlovsk- 10.36 49 P **P** **12 18 26.1 +0.1**
comp=E,0.6nm,0.3s,baz=227,slow=6.5,SNR=16
MSHR Mys Shultsa 10.58 250 *ce*PN **P** **12 18 30.6 +2.1**
MDJ Mudanjiang 10.81 263 P **P** **12 18 31.8 +0.8**
MDJ S **S** **12 20 29.6 -2.2**
MDJ PcP **PcP** **12 23 56.4 +4.4**
MDJ ScP **ScP** **12 26 48.2 +2.8**
MDJ Mudanjiang 10.81 263 ScS ScS 12 30 25.2 +4.7
MDJ pmax pmax
comp=Z,100nm,0.8s
MDJ pmax pmax
comp=Z,230nm,3.2s
MDJ Mudanjiang 10.81 263 *e*P **P** **12 18 30.8 -0.2**
comp=Z,113nm,0.7s
MDJ Mudanjiang 10.81 263 *e*P **P** **12 18 30.8 -0.2**
PET Petropavlovsk 10.82 51 *e*PN **P** **12 18 34.2 +3.2**
PET Petropavlovsk 10.82 51 *e*P **P** **12 18 33.3 +2.3**
PET AMB AMB 12 18 55.1
comp=Z,2µm,4.5s
PET *e*S **S** **12 20 32.7 +0.8**
PET A A 12 20 38.0
comp=Z,1µm,4.0s
PET A A 12 20 38.0
comp=Z,2µm,4.0s
PET A A 12 20 45.1
comp=Z,70nm,0.8s
PET AMS AMS 12 21 05.0
comp=Z,500nm,15.0s
MJB9 Matsu-Tunnel 11.49 207 *e*P **P** **12 18 40.1 +1.3**
MAJO Matsushiro 11.49 207 *c i*PN **P** **12 18 38.8 0.0**
MAJO Matsushiro 11.49 207 *e*P **P** **12 18 40.1 +1.3**
MAJO Matsushiro 11.49 207 *e*P **P** **12 18 40.1 +1.3**
MAT Matsushiro 11.49 207 P **P** **12 18 38.8 0.0**
MAT S **S** **12 20 43.2 -2.8**
MJAR Matsushiro Arr 11.49 207 P **P** **12 18 39.2 +0.5**
comp=Z,16nm,0.3s,baz=14,slow=12,SNR=43
BMKR Bomnak 12.63 314 ⇓*i*P **P** **12 18 51.6 +0.6**
BMKR AMB AMB 12 18 55.1
comp=Z,20nm,0.5s
INU Inuyama 12.97 209 *e*P **P** **12 18 55.1 +0.1**
ZEA Zeya 13.01 308 *e*P **P** **12 18 56.5 +1.4**
ZEA AMB AMB 12 19 02.5
comp=Z,40nm,1.0s
ZEA AMB AMB 12 19 02.5
comp=Z,20nm,1.0s
ZEA AMB AMB 12 19 02.5
comp=Z,50nm,1.0s
ZEA *e*S **S** **12 21 14.6 -1.4**
ZEA A A 12 21 18.0
comp=Z,500nm,4.0s
ZEA A A 12 21 18.0
comp=Z,900nm,4.0s
MA2 Magadan 13.12 14 *e*PN **P** **12 18 55.9 -0.3**
MA2 pmax pmax
comp=Z,402nm,0.6s
MA2 Magadan 13.12 14 *e*P **P** **12 18 55.9 -0.3**
comp=Z,402nm,0.6s
MA2 Magadan 13.12 14 *e*P **P** **12 18 55.9 -0.3**
KROS Kirovskiy 13.46 310 *e*P **P** **12 19 00.5 +0.5**
KROS AMB AMB 12 19 03.0
comp=Z,10.0nm,0.6s
KROS AMB AMB 12 19 03.0
comp=Z,20nm,0.6s
KROS AMB AMB 12 19 03.0
comp=Z,30nm,0.6s
CN2 Changchun 13.89 264 *e*P **P** **12 19 03.7 -1.2**
CN2 *e*S **S** **12 21 26.5 -7.4**
CN2 pmax pmax
comp=Z,70nm,0.7s
CN2 pmax pmax
comp=Z,200nm,4.0s
CN2 LR LR
comp=N,300nm,10.0s
CN2 LR LR
comp=E,200nm,10.0s
CN2 LR LR
comp=Z,300nm,10.0s
JHJ Hachijo jima 2 14.34 197 P **P** **12 19 12.1 +2.2**
comp=Z,33nm,0.3s,baz=66,slow=9.6,SNR=5.7
JHJ S **S** **12 21 46.5 +3.4**
comp=Z,4.4nm,0.3s,baz=78,slow=20,SNR=1.7
JHJ2 Mitsune 14.34 197 *e*P **P** **12 19 11.7 +1.8**
KSRS Korea Array 15.62 238 P **P** **12 19 25.0 +1.3**
comp=Z,2.2nm,0.3s,baz=38,slow=10,SNR=60
KSRS ScP **ScP** **12 26 54.2 +0.9**
comp=Z,0.1nm,0.3s,baz=20,slow=1.6,SNR=7.3
KS01 Wonju Array Si 15.62 239 *e*P **P** **12 19 24.0 +0.3**
CLNS Chul'man 15.64 316 *e*P **P** **12 19 23.9 +0.2**
CLNS *e*S **S** **12 22 02.6 -5.8**
CLNS pmax pmax
comp=Z,28nm,1.1s
CLNS pmax pmax
comp=E,18nm,1.0s
CLNS pmax pmax
comp=N,26nm,1.3s
CLNS smax smax
comp=N,63nm,1.1s
CLNS smax smax
comp=E,128nm,1.0s
CLNS Chul'man 15.64 316 *e*P **P** **12 19 23.9 +0.2**
KS15 Wonju Array Si 15.65 239 *e*P **P** **12 19 25.9 +1.9**
KSAR Wonju Array Be 15.65 239 P **P** **12 19 25.0 +1.0**
KSAR Wonju Array Be 15.65 239 P **P** **12 19 25.0 +1.0**
KSAR Wonju Array Be 15.65 239 *e*P **P** **12 19 25.0 +1.0**
INCN Inchon 16.37 241 *e*P **P** **12 19 33.0 +1.3**
comp=E,54nm,1.1s
INCN Inchon 16.37 241 *e*P **P** **12 19 33.0 +1.3**

SEY Seymchan 16.56 12 P **P** **12 19 34.1 +0.7**
comp=E,16nm,0.3s,baz=190,slow=7.5,SNR=284
SEY S **S** **12 22 27.6 +1.5**
comp=E,0.1nm,0.3s,baz=18,slow=20,SNR=3.6
SEY Seymchan 16.56 12 *ce*P **P** **12 19 33.9 +0.5**
SEY Seymchan 16.56 12 *e*P **P** **12 19 33.9 +0.5**
TJN Taejon 16.69 237 *ce*P **P** **12 19 36.8 +1.7**
HIA Hailar 16.79 287 *e*P **P** **12 19 34.5 -1.6**
HIA pmax pmax
comp=Z,93nm,0.8s
HIA Hailar 16.79 287 *e*P **P** **12 19 34.5 -1.6**
comp=Z,93nm,0.8s
HIA Hailar 16.79 287 *e*P **P** **12 19 34.5 -1.6**
YAK Yakutsk 17.34 336 P **P** **12 19 39.7 -1.9**
comp=Z,0.0nm,0.3s,baz=137,slow=4.3,SNR=15
YAK S **S** **12 22 36.3 -5.0**
comp=Z,0.0nm,0.3s,baz=285,slow=20,SNR=7.7
YAK Yakutsk 17.34 336 *e*P **P** **12 19 39.7 -1.9**
YAK *e*S **S** **12 22 35.4 -5.9**
YAK pmax pmax
comp=E,7.0nm,1.0s
YAK pmax pmax
comp=N,12nm,0.9s
YAK pmax pmax
comp=Z,38nm,0.9s
YAK smax smax
comp=E,177nm,1.4s
YAK smax smax
comp=N,347nm,2.0s
YAK Yakutsk 17.34 336 *e*P **P** **12 19 39.9 -1.7**
comp=N,49nm,0.8s
YAK *e*S **S** **12 22 39.6 -1.6**
YAK Yakutsk 17.34 336 *e*P **P** **12 19 39.9 -1.7**
JNU Nakatsue 17.38 222 P **P** **12 19 43.0 +0.4**
comp=N,0.7nm,0.3s,baz=38,slow=8.4,SNR=12
JNU Nakatsue 17.38 222 *e*P **P** **12 19 43.5 +0.9**
comp=N,52nm,1.0s
DL2 Dalian 18.67 253 P **P** **12 19 56.9 +0.9**
DL2 *es*P **sP** **12 21 44.0 +0.3**
DL2 S **S** **12 23 06.4 +0.2**
DL2 pmax pmax
comp=Z,68nm,0.9s
DL2 pmax pmax
comp=Z,380nm,8.6s
CBIJ Chichi jima 19.95 187 *e*P **P** **12 20 08.5 +0.1**
comp=Z,97nm,0.8s
JCJ Chichijima 19.95 187 P **P** **12 20 08.6 +0.1**
comp=Z,57nm,0.5s,baz=315,slow=20,SNR=10
CIT Chita 20.75 296 *e*P **P** **12 20 15.2 -0.3**
BOD Bodaibo 21.44 312 *e*P **P** **12 20 20.3 -1.3**
BOD pmax pmax
comp=Z,31nm,1.0s
BJI Beijing 21.73 262 P **P** **12 20 26.2 +1.7**
BJI sP **sP** **12 22 15.4 -2.1**
BJI S **S** **12 24 01.2 +5.2**
BJI pmax pmax
comp=Z,100nm,0.9s
BJI pmax pmax
comp=Z,670nm,6.5s
BJT Baijiatuau 21.75 262 *e*P **P** **12 20 25.8 +1.1**
BJT pmax pmax
comp=Z,102nm,0.9s
BJT Baijiatuau 21.75 262 *e*P **P** **12 20 25.8 +1.1**
comp=Z,102nm,0.9s
BJT Baijiatuau 21.75 262 *e*P **P** **12 20 25.8 +1.1**
TIA Tai'an 23.14 252 *e*P **P** **12 20 37.5 +0.2**
TIA pmax pmax
comp=Z,20nm,1.7s
BILL Biiibino 23.82 20 *ce*P **P** **12 20 41.6 -1.4**
BILL *i* S **S** **12 24 27.0 -1.4**
BILL pmax pmax
comp=Z,22nm,1.2s
BILL Biiibino 23.82 20 *e*P **P** **12 20 42.7 -0.3**
HHC Hu-ho-hao-te 24.51 268 *e*P **P** **12 20 50.0 +0.3**
HHC pP sP 12 22 47.1 -0.6
HHC S **S** **12 24 35.0 -5.2**
HHC pmax pmax
comp=Z,97nm,0.8s
HHC pmax pmax
comp=Z,140nm,3.8s
NJ2 Nanjing 24.74 242 *e*P **P** **12 20 54.1 +2.4**
NJ2 pmax pmax
comp=Z,16nm,0.6s
ULN Ulaanbaatar 25.32 286 *ce*P **P** **12 20 56.6 -0.3**
ULN pmax pmax
comp=Z,32nm,0.8s
ULN Ulaanbaatar 25.32 286 *e*P **P** **12 20 56.7 -0.1**
comp=Z,42nm,1.0s
ULN Ulaanbaatar 25.32 286 *e*P **P** **12 20 56.7 -0.1**
SONA1 Songino Array 25.75 286 *e*P **P** **12 21 00.1 -0.6**
SONM Songino Array 25.76 286 P **P** **12 21 00.1 -0.6**
comp=Z,9.9nm,0.7s,baz=74,slow=8.8,SNR=38
SONM ScP **ScP** **12 27 17.7 -0.4**
comp=Z,1.7nm,0.8s,baz=90,slow=2.4,SNR=8.4
TIXI Tiksi 25.85 349 P **P** **12 20 58.9 -2.1**
comp=Z,4.7nm,0.6s,baz=141,slow=6.6,SNR=26
TIXI ScP **ScP** **12 27 17.6 -0.1**
comp=Z,0.5nm,0.3s,baz=120,slow=3.8,SNR=2.7
TIXI Tiksi 25.85 349 *ce*P **P** **12 20 59.2 -1.8**
TIXI pmax pmax
comp=Z,7.0nm,1.0s
TIXI Tiksi 25.85 349 *e*P **P** **12 20 59.3 -1.7**
comp=Z,5.3nm,0.7s
TIXI Tiksi 25.85 349 *e*P **P** **12 20 59.3 -1.7**
TIXI Tiksi 25.85 349 *e*S **P** **12 20 59.1 -1.7**
TLY Talaya 26.89 295 *e*P **P** **12 21 11.3 +0.7**
ZAK Zakamensk 27.30 293 *e*P **P** **12 21 14.0 -0.2**
ZAK *e* 12 22 28.0
ZAK pmax pmax
comp=Z,8.0nm,1.5s
ZAK pmax pmax
comp=Z,10.0nm,1.2s
MOY Mondy 28.53 296 *e*P **P** **12 21 25.4 +0.3**
WHN Wuhan 28.56 246 ⇑P **P** **12 21 26.6 +1.2**
XAN Xi'an 29.84 257 P **P** **12 21 36.6 -0.1**
XAN S **SS** **12 28 28.1 -3.8**
XAN pmax pmax
comp=Z,17nm,1.3s
TNA Tin City 31.17 36 *e*P **P** **12 21 47.5 -0.3**
comp=Z,29nm,1.0s
TNA Tin City 31.17 36 *e*P **P** **12 21 47.5 -0.3**
ENH Enshi 31.84 251 *e*P **P** **12 21 54.2 +0.1**
comp=Z,18nm,1.0s
LZH Lanzhou 32.12 265 *e*P **P** **12 21 57.2 +0.6**
LZH pP pP 12 23 10.5 -0.1
LZH PP **PP** **12 23 23.0 +3.4**
LZH sP sP 12 23 59.7 +2.4
LZH PcP **PcP** **12 24 34.6 +0.2**
LZH *e*S **S** **12 26 39.3 +0.3**
LZH sS sS 12 28 55.5 +0.6
LZH SS **SS** **12 29 13.5 -4.6**
LZH pmax pmax
comp=Z,61nm,1.0s
LZH pmax pmax
comp=Z,190nm,4.9s
KRAR Krasnoyarsk 32.78 305 *e*P **P** **12 22 02.1 +0.3**
KRAR pmax pmax
comp=Z,16nm,1.1s
GTA Gaotai 33.20 273 *e*P **P** **12 22 06.4 +0.6**
GTA pP pP 12 23 22.5 +2.4
GTA sP sP 12 24 08.3 +1.5
GTA PcP **PcP** **12 24 38.9 +1.6**
GTA ScP **ScP** **12 27 44.3 +2.0**
GTA pmax pmax
comp=Z,9.0nm,1.0s
CD2 Chengdu 35.20 258 P **P** **12 22 22.1 -0.6**
CD2 pmax pmax
comp=Z,2.0nm,0.6s
TT01 Tatalina 36.09 42 *e*P **P** **12 22 29.2 -0.5**
TTA Tatalina 36.10 42 *e*P **P** **12 22 29.2 -0.7**
TTA pmax pmax
comp=Z,27nm,1.4s
TTA Tatalina 36.10 42 *e*P **P** **12 22 29.2 -0.7**
comp=Z,27nm,1.4s
GYA Guiyang 36.25 249 ⇑*i*P **P** **12 22 31.6 0.0**
GYA pP pP 12 23 49.2 +2.2
GYA sP sP 12 24 34.8 +1.4
GYA S **S** **12 27 43.0 +1.1**
GYA ScP **ScP** **12 27 55.5 +2.0**
GYA PcS **PcS** **12 28 35.4 +0.4**
GYA ScS **ScS** **12 32 01.6 +0.5**
GYA pmax pmax
comp=Z,20nm,0.8s
SVW2 Sparrevohn 36.41 45 *e*P **P** **12 22 32.7 +0.2**
comp=Z,12nm,0.9s

ZAA0 Zalesovo Array 37.72 303 *e*P **P** **12 22 42.2 -1.1**
ZAA0 *e*P P 12 22 42.7 -0.6
ZAA0 *e*PcP **PcP** **12 24 50.6 +0.3**
ZAA0 *e*PcP **sP** **12 24 51.5 +5.8**
ZALV Zalesovo Beam 37.72 303 P **P** **12 22 42.1 -1.2**
comp=Z,1.1nm,0.3s,baz=59,slow=5.7,SNR=10
ZALV PcP **PcP** **12 24 51.4 +1.0**
comp=Z,3.7nm,0.7s,baz=70,slow=2.3,SNR=11
ZALV ScP **ScP** **12 27 58.8 +0.4**
comp=Z,2.9nm,0.9s,baz=68,slow=4.0,SNR=7.2
CAST Castle Rocks 37.84 41 *e*P **P** **12 22 44.4 +0.1**
comp=Z,32nm,0.8s
PPLA Purkeypile 37.84 42 *e*P **P** **12 22 45.2 +0.8**
comp=Z,94nm,1.9s
RSO Redoubt South 37.87 46 *e*P **P** **12 22 45.7 +1.0**
SPU Mount Spurr 38.11 45 *e*P **P** **12 22 46.9 +0.4**
OHAK Old Harbor 38.16 51 *e*P **P** **12 22 46.4 -0.4**
comp=Z,27nm,1.0s
BPAW Bear Paw Mtn. 38.27 40 *e*P **P** **12 22 47.8 0.0**
comp=Z,15nm,0.8s
MLY Manley 38.30 38 *e*P **P** **12 22 47.8 -0.2**
comp=Z,23nm,0.9s
KTH Kantishna Hill 38.35 41 *e*P **P** **12 22 48.5 0.0**
comp=Z,46nm,0.9s
NVS Novosibirsk 38.39 305 *e*P **P** **12 22 49.0 +0.2**
NVS *e* 12 24 28.8
NVS *e*S **S** **12 28 11.1 -1.8**
NVS pmax pmax
comp=Z,14nm,1.2s
NVS pmax pmax
comp=E,10.0nm,1.1s
NVS pmax pmax
comp=Z,14nm,1.8s
NVS pmax pmax
comp=E,6.0nm,1.3s
NVS smax smax
comp=N,20nm,2.1s
NVS smax smax
comp=E,5.0nm,1.3s
NVS Novosibirsk 38.39 305 *e*P **P** **12 22 49.0 +0.2**
COLD Coldfoot 38.41 35 *e*P **P** **12 22 48.1 -0.8**
comp=E,53nm,0.8s
COLD *e*S **S** **12 28 11.0 -2.0**
KDAK Kodiak Island 38.41 50 P P 12 23 03.5 +15
comp=E,13nm,0.4s,baz=293,slow=1.5,SNR=34
KDAK Kodiak Island 38.41 50 *i* P **P** **12 22 48.6 -0.4**
KDAK Kodiak Island 38.41 50 *e*P **P** **12 22 49.0 +0.1**
comp=E,22nm,0.6s
KDAK P P 12 23 03.5 +15
KDAK Kodiak Island 38.41 50 *e*P **P** **12 22 48.6 -0.4**
TRF Thorofare Moun 38.65 41 *e*P **P** **12 22 50.8 -0.2**
comp=E,8.3nm,0.8s
BWN Browne 38.93 40 *e*P **P** **12 22 54.0 +0.9**
comp=E,69nm,0.8s
MCK McKinley 39.21 40 *e*P **P** **12 22 55.1 -0.4**
MCK *e*S **S** **12 28 23.6 -1.3**
MCK pmax pmax
comp=Z,24nm,1.0s
MCK McKinley 39.21 40 *e*P **P** **12 22 55.0 -0.4**
comp=Z,24nm,1.0s
MCK *e*S **S** **12 28 23.6 -1.3**
MCK McKinley 39.21 40 *e*P **P** **12 22 55.1 -0.4**
RND Reindeer 39.29 41 *e*P **P** **12 22 54.8 -1.4**
RND pmax pmax
comp=Z,20nm,0.8s
RND Reindeer 39.29 41 *e*P **P** **12 22 54.8 -1.4**
comp=Z,20nm,0.8s
MDM Murphy Dome 39.37 38 *e*P **P** **12 22 56.3 -0.5**
comp=Z,43nm,0.9s
WMQ Urumqi 39.39 287 ⇓*i*P **P** **12 22 58.2 +0.9**
WMQ pP pP 12 24 19.8 +5.8
WMQ sP sP 12 25 02.7 +2.6
WMQ pmax pmax
comp=Z,9.0nm,0.6s
WMQ pmax pmax
comp=Z,71nm,3.6s
WMQ LR LR
comp=N,26nm,25.4s
WMQ LR LR
comp=E,11nm,21.2s
WMQ LR LR
comp=Z,12nm,22.8s
PMR Palmer 39.44 44 *e*P **P** **12 22 56.7 -0.5**
PMR pmax pmax
comp=Z,29nm,1.4s
PMR Palmer 39.44 44 *e*P **P** **12 22 56.7 -0.5**
comp=Z,29nm,1.4s
WRH Wood River Hil 39.49 39 *e*P **P** **12 22 57.4 -0.3**
comp=Z,32nm,1.0s
COLA College 39.54 38 *c i*P **P** **12 22 57.3 -0.8**
COLA pmax pmax
comp=Z,74nm,0.9s
COLA College 39.54 38 *e*P **P** **12 22 57.8 -0.3**
comp=Z,66nm,0.8s
COLA College 39.54 38 *e*P **P** **12 22 57.8 -0.3**
SEW Seward 39.55 46 *e*P **P** **12 22 58.2 0.0**
comp=Z,51nm,1.0s
CCB Clear Creek Bu 39.59 39 *e*P **P** **12 22 57.2 -1.3**
comp=Z,12nm,1.0s
KMI Kunming 39.71 252 P **P** **12 23 01.1 +0.9**
KMI pP pP 12 24 17.1 0.0
KMI PP **PP** **12 24 39.7 -2.2**
KMI sP sP 12 25 02.8 -0.3
KMI S **S** **12 28 34.9 +1.4**
KMI sS sS 12 30 51.1 -2.0
KMI SS **SS** **12 31 45.5 -3.2**
KMI pmax pmax
comp=Z,32nm,1.2s
KMI pmax pmax
comp=Z,120nm,3.1s
KMI LR LR
comp=N,81nm,4.3s
KMI LR LR
comp=E,95nm,9.3s
KMI LR LR
comp=Z,55nm,4.1s
SML Sawmill 39.77 43 *e*P **P** **12 23 00.0 -0.1**
SML pmax pmax
comp=Z,44nm,1.0s
SML Sawmill 39.77 43 *e*P **P** **12 22 60.0 -0.1**
comp=Z,44nm,1.0s
ILAR Eielson Array 39.97 38 P **P** **12 23 00.4 -1.2**
comp=Z,42nm,0.9s,baz=277,slow=7.0,SNR=214
ILB Eielson Array 39.97 38 *e*P **P** **12 23 00.7 -0.9**
IL1 Eielson Array 39.97 38 *e*P **P** **12 23 00.8 -0.7**
HDA Harding Lake 39.99 39 *e*P **P** **12 23 00.4 -1.3**
comp=Z,28nm,1.3s
SCM Sheep Creek Mo 40.24 43 *e*P **P** **12 23 03.9 0.0**
SCM pmax pmax
comp=Z,24nm,0.8s
SCM Sheep Creek Mo 40.24 43 *e*P **P** **12 23 03.9 0.0**
comp=Z,24nm,0.8s
FYU Fort Yukon 40.42 35 *e*P **P** **12 23 05.3 +0.2**
comp=Z,69nm,0.7s
PAX Paxson 40.88 41 *e*P **P** **12 23 09.0 0.0**
PAX pmax pmax
comp=Z,5.0nm,0.8s
PAX Paxson 40.88 41 *e*P **P** **12 23 09.0 0.0**
comp=Z,5.2nm,0.8s
KLU Klutina 40.96 43 *e*P **P** **12 23 09.9 +0.2**
comp=Z,42nm,0.8s
DIV Divide 41.11 44 *e*P **P** **12 23 11.2 +0.3**
comp=Z,29nm,0.8s
DIV Divide 41.11 44 *e*P **P** **12 23 11.2 +0.3**
EYAK Cordova Ski Ar 41.26 45 *e*P **P** **12 23 12.6 +0.7**
comp=Z,38nm,0.9s
DOT Dot Lake 41.37 40 *e*P **P** **12 23 11.7 -1.2**
comp=Z,30nm,0.8s
MK31 Makanchi Array 41.62 294 *i* P **P** **12 23 14.6 -0.6**
MK31 pmax pmax
comp=Z,18nm,0.7s
MK31 Makanchi Array 41.62 294 *e*P **P** **12 23 14.9 -0.3**
MKAR Makanchi Array 41.62 294 P **P** **12 23 14.8 -0.4**
comp=Z,22nm,0.8s,baz=76,slow=7.0,SNR=87
MKAR PcP **PcP** **12 25 04.4 +1.2**
comp=Z,1.7nm,0.7s,baz=67,slow=4.8,SNR=3.7
MKAR ScP **ScP** **12 28 14.2 +0.3**
comp=Z,1.5nm,0.8s,baz=63,slow=5.0,SNR=4.7
MKAR Makanchi Array 41.62 294 P **P** **12 23 14.8 -0.4**
MKAR 12 25 04.4
MKAR pmax pmax
comp=Z,24nm,0.8s
MKAR pmax pmax
comp=Z,2.0nm,0.7s
MKAR pmax pmax
comp=N,2.0nm,0.8s

MKAR **Makanchi Array** 41.62 294 *e*P P 12 23 15.0 -0.2
MK01 **Makanchi Array** 41.63 294 *e*P P 12 23 14.9 -0.3
MENT **Mentasta** 41.66 41 *e*P P 12 23 15.5 +0.2
comp=N,15nm,0.7s
BMRM **Bremner River** 41.70 44 *e*P P 12 23 15.9 +0.2
comp=N,18nm,0.9s
RAGM **Ragged Mountai** 41.81 45 *e*P P 12 23 17.9 +1.4
comp=N,27nm,0.8s
MAKZ **Makanchi** 41.81 294 P P 12 23 15.8 -0.9
MAKZ pmax pmax
comp=Z,18nm,0.9s
MAKZ **Makanchi** 41.81 294 *e*P P 12 23 16.3 -0.4
comp=Z,18nm,0.9s
KURK **Kurchatov** 42.34 300 P P 12 23 20.0 -0.7
KURK pmax pmax
comp=Z,40nm,0.7s
KURK **Kurchatov** 42.34 300 *e*P P 12 23 20.1 -0.7
comp=Z,23nm,0.6s
KURK **Kurchatov** 42.34 300 *e*P P 12 23 20.1 -0.7
EGAK **Eagle** 42.38 38 *e*P P 12 23 19.9 -1.0
comp=Z,53nm,0.8s
BALM **Baldy** 42.75 43 *e*P P 12 23 24.0 0.0
BALM pmax pmax
comp=Z,20nm,0.8s
BALM **Baldy** 42.75 43 *e*P P 12 23 24.0 0.0
comp=Z,20nm,0.8s
DAWY **Dawson** 43.29 38 *e*P P 12 23 27.6 -0.6
comp=Z,5.4nm,0.9s
LSA **Lhasa** 44.50 267 P P 12 23 40.0 +1.3
LSA pmax pmax
comp=Z,9.0nm,0.7s
LSA **Lhasa** 44.50 267 *e*P P 12 23 39.9 +1.3
LSA pmax pmax
comp=Z,12nm,0.6s
LSA **Lhasa** 44.50 267 *e*P P 12 23 39.9 +1.2
comp=Z,12nm,0.6s
INK **Inuvik** 44.52 32 P P 12 23 36.9 -0.8
comp=Z,23nm,0.5s,baz=306,slow=7.3,SNR=140
INK **Inuvik** 44.52 32 *e*P P 12 23 36.8 -0.8
comp=Z,33nm,0.7s
NONG **Nongkai** 44.59 244 P P 12 23 40.9 +2.0
comp=Z,24nm,1.4s
CRAI **Chiangrai** 44.72 249 P P 12 23 41.0 +1.1
comp=Z,89nm,1.0s
SKNT **Sakolnakorn** 44.91 242 P P 12 23 43.2 +1.8
comp=Z,25nm,2.0s
PDGK **Podgornoye** 44.94 290 P P 12 23 40.6 -0.7
PDGK pmax pmax
comp=Z,13nm,1.0s
CMAI **Chiengmai2** 45.79 250 P P 12 23 50.0 +1.6
comp=Z,14nm,1.1s
LOEI **Loei** 46.18 245 P P 12 23 50.0 -1.2
comp=Z,20nm,0.9s
BRVK **Borovoye** 46.20 306*de*P P 12 23 51.0 +0.1
BRVK pmax pmax
comp=Z,8.0nm,0.8s
BRVK **Borovoye** 46.20 306 *e*P P 12 23 51.3 +0.4
comp=Z,12nm,0.9s
BRVK **Borovoye** 46.20 306 *e*P P 12 23 51.3 +0.4
UTTA **Uttaradit** 46.44 246 P P 12 23 55.2 +2.0
comp=Z,4.3nm,1.0s
LAMP **Lampang** 46.45 248 P P 12 23 54.5 +1.3
comp=Z,12nm,0.9s,comp=Z,102nm
SHL **Shillong** 46.63 262 *e*P P 12 23 54.0 -0.8
CMMT **Chiang Mai** 46.67 249 P P 12 23 55.7 +0.8
comp=Z,36nm,1.0s
CHTO **Chiang Mai** 46.67 249 P P 12 23 56.0 +1.1
comp=Z,158nm,1.0s
CHTO **Chiang Mai** 46.67 249 *e*P P 12 23 55.5 +0.6
CHTO pmax pmax
comp=Z,25nm,0.9s
CHTO **Chiang Mai** 46.67 249 *e*P P 12 23 55.5 +0.6
comp=Z,25nm,0.9s
CM31 **Chiang Mai Arr** 46.93 249 *e*P P 12 23 58.5 +1.6
CMAR **Chiang Mai Arr** 46.93 249 P P 12 23 57.7 +0.8
baz=35,slow=6.7,SNR=15
ZRNK **Zerenda** 46.95 307 P P 12 23 55.7 -0.9
ZRNK pmax pmax
comp=Z,15nm,1.0s
ZRNK **Zerenda** 46.95 307 *e*P P 12 23 56.0 -0.6
comp=Z,12nm,0.8s
CM01 **Chiang Mai Arr** 46.95 248 *e*P P 12 23 57.7 +0.7
OTUK **Ortayu** 47.09 300 P P 12 23 57.1 -0.7
OTUK pmax pmax
comp=Z,16nm,0.7s
SUKH **Sukhothai** 47.22 247 P P 12 24 00.8 +1.7
comp=Z,4.3nm,1.0s
TKM2 **Tokmak 2** 47.62 292 P P 12 24 01.8 -0.4
TKM2 pmax pmax
comp=Z,10.0nm,0.9s
TKM2 **Tokmak 2** 47.62 292 *e*P P 12 24 02.3 +0.2
comp=Z,27nm,1.4s
FRU **Bishkek** 48.29 292 *e*P P 12 24 08.0 +1.0
FRU **Bishkek** 48.29 292 *e*P P 12 24 08.0 +1.0
SRAK **Srakaew** 48.38 242 P P 12 24 07.2 -0.7
comp=Z,62nm,0.9s
AAK **Ala-Archa** 48.47 292 *e*P P 12 24 08.3 -0.2
AAK pmax pmax
comp=Z,17nm,1.0s
AAK **Ala-Archa** 48.47 292 *e*P P 12 24 09.2 +0.7
comp=Z,11nm,1.0s
AAK **Ala-Archa** 48.47 292 *e*P P 12 24 09.2 +0.7
NAYO **Nakonayok** 48.58 243 P P 12 24 12.2 +2.8
comp=Z,14nm,1.2s
EKS2 **Erkin-Say** 48.91 292 *e*P P 12 24 11.9 +0.2
EKS2 pmax pmax
comp=Z,9.0nm,0.6s
EKS2 **Erkin-Say** 48.91 292 *e*P P 12 24 11.9 +0.2
comp=Z,9.0nm,0.6s
KSH **Kashi** 49.15 288 P P 12 24 18.8 +5.2
KSH *e*PcP pP 12 25 33.2 -1.1
KSH *e*pP PcP 12 25 41.6 +12
KSH *es*P sP 12 26 26.6 +7.3
KSH S **S** 12 30 54.4 +6.9
KSH pmax pmax
comp=Z,92nm,2.2s
GUN **Gumba** 49.22 269 *e*P P 12 24 14.7 +0.2
comp=Z,42nm,0.6s
DLBC **Dease Lake** 49.50 44 P P 12 24 17.0 +1.2
comp=Z,8.7nm,0.9s,baz=295,slow=8.3,SNR=21
DLBC **Dease Lake** 49.50 44 *e*P P 12 24 17.5 +1.7
comp=Z,10nm,0.9s
SVE **Sverdlovsk** 49.62 314 *e*P P 12 24 16.4 -0.3
SVE pmax pmax
comp=Z,38nm,1.2s
SVE **Sverdlovsk** 49.62 314 *e*P P 12 24 16.4 -0.3
KKN **Kakani** 49.71 269 *e*P P 12 24 18.7 +0.7
PKIN **Phulchoki** 49.76 269 *e*P P 12 24 18.6 +0.1
comp=Z,9.0nm,0.4s
MNAS **Manas** 49.80 293 P P 12 24 18.2 -0.2
MNAS pmax pmax
comp=Z,13nm,1.1s
DMN **Daman** 49.94 269 *e*P P 12 24 20.2 +0.4
GKN **Gorkha** 50.01 270 *e*P P 12 24 20.5 +0.3
comp=Z,73nm,0.7s
SFK **Sufi-Kurgan** 50.48 290 P P 12 24 23.3 -0.3
SFK pmax pmax
comp=Z,28nm,0.9s
KK31 **Karatay Array** 50.73 294 *i*P P 12 24 24.6 -0.5
KK31 pmax pmax
comp=Z,9.0nm,0.8s
KKAR **Karatay Array** 50.73 294 *e*P P 12 24 25.0 -0.1
KKAR **Karatay Array** 50.73 294 *e*P P 12 24 25.0 -0.1
ARU **Arti** 50.82 314*d i*P P 12 24 24.6 -0.9
ARU 12 25 32.0
ARU *PP **pP** 12 25 48.4 +1.5
ARU 12 26 24.8
ARU S **S** 12 31 09.0 -0.7
ARU 12 33 30.3
ARU pmax pmax
comp=Z,34nm,1.0s
ARU **Arti** 50.82 314 *e*P P 12 24 24.8 -0.7
comp=Z,23nm,0.7s
ARU **Arti** 50.82 314 *e*P P 12 24 24.8 -0.7
KOLN **Koldanda** 50.87 270 *e*P P 12 24 27.0 +0.4
comp=Z,33nm,0.6s
PYUN **Piuthan** 51.08 271 *e*P P 12 24 29.0 +0.9
comp=Z,248nm,1.0s
RES **Resolute Bay** 52.37 17 P P 12 24 35.7 -0.8
comp=Z,55nm,0.9s,baz=308,slow=7.0,SNR=202
RES **Resolute Bay** 52.37 17 *e*P P 12 24 35.8 -0.8
RES pmax pmax
comp=Z,56nm,0.9s
RES **Resolute Bay** 52.37 17 *e*P P 12 24 35.8 -0.8
comp=Z,56nm,0.9s
RES **Resolute Bay** 52.37 17 *e*P P 12 24 35.8 -0.8

SBUM **Sibu** 52.55 223 *e*P P 12 24 40.6 +1.9
comp=Z,8.8nm,1.0s
AB31 **Akbulak array** 53.72 306 *e*P P 12 24 46.0 -0.7
AB31 pmax pmax
comp=Z,4.0nm,0.4s
ABKAR **Akbulak array** 53.72 306 *e*P P 12 24 45.6 -1.1
YKW3 **Yellowknife Ar** 54.05 34 *e*P P 12 24 47.7 -1.0
comp=Z,18nm,1.0s
YKA **Yellowknife Ar** 54.09 34 P P 12 24 48.4 -0.7
comp=Z,16nm,0.8s,baz=304,slow=6.8,SNR=146
YKA PcP **PcP** 12 25 47.1 -0.7
comp=Z,0.8nm,0.5s,baz=310,slow=3.7,SNR=7.4
YKA **Yellowknife Ar** 54.09 34 P P 12 24 48.4 -0.7
YKA 12 25 47.1
YKA pmax pmax
comp=Z,10.0nm,0.6s
YKA pmax pmax
comp=Z,1.0nm,0.5s
YKB5 **Yellowknife Ar** 54.09 34 *e*P P 12 24 47.5 -1.6
AKTO **Aktyubinsk** 54.15 308 P P 12 24 48.2 -1.5
AKTO pmax pmax
comp=Z,6.0nm,0.9s
KSM **Kuching** 54.30 224 *e*P P 12 24 52.7 +1.4
comp=Z,10nm,1.0s
NDI **New Delhi** 54.66 276 *e*P P 12 24 47.0 -6.6
ARCES **ARCESS Array B** 55.61 338 P P 12 24 59.8 +0.1
comp=Z,5.1nm,0.9s,baz=40,slow=7.6,SNR=17
DAG **Danmarks Havn** 56.07 355⇑*i*P P 12 25 01.5 -1.3
comp=Z,14nm,0.9s
DAG **Danmarks Havn** 56.07 355⇑*i*P P 12 25 01.5 -1.3
DAG pmax pmax
comp=Z,12nm,0.9s
DAG **Danmarks Havn** 56.07 355⇑*i*P P 12 25 01.5 -1.3
KULM **Kulim** 56.16 236 *e*P P 12 25 05.8 +1.5
comp=Z,23nm,1.1s
KBL **Kabul** 56.53 287 *e*P P 12 25 06.4 -0.6
KBL pmax pmax
comp=Z,63nm,0.9s
KBL **Kabul** 56.53 287 *e*P P 12 25 06.4 -0.6
comp=Z,63nm,0.9s
KLMR **Klimovskoe** 56.78 326 *e*P P 12 25 04.2 -3.8
KLMR *e**SP **sP** 12 27 12.5 -3.4
KLMR pmax pmax
comp=Z,15nm,1.2s
PGC **Sidney** 57.94 51 *e*P P 12 25 17.1 +1.0
A04D **Lummi Island** 58.30 51 P P 12 25 20.0 +1.4
baz=307
NLWA **Neilton Lookou** 58.46 53 *e*P P 12 25 22.1 +2.3
comp=Z,18nm,1.0s
B05A **Bryant** 58.89 51 P P 12 25 24.2 +1.6
baz=307,SNR=7.0
JCW **Jim Creek** 59.02 51 P P 12 25 24.6 +1.0
E03A **Lebam** 59.13 53 *e*P P 12 25 25.9 +1.6
comp=Z,29nm,1.0s
PSI **Prapat** 59.17 236 *e*P P 12 25 26.2 +1.0
PSI pmax pmax
comp=Z,11nm,0.9s
PSI **Prapat** 59.17 236 *e*P P 12 25 26.2 +1.0
comp=Z,11nm,0.9s
D05A **Enumclaw** 59.60 52 *e*P P 12 25 29.4 +1.9
comp=Z,12nm,0.8s
C06D **Leavenworth** 59.74 51 P P 12 25 29.3 +0.9
baz=308
NLW **Nelson Butte** 59.94 51 P P 12 25 31.0 +1.0
LON **Longmire** 59.97 52 *e*P P 12 25 31.7 +1.6
LON pmax pmax
comp=Z,5.0nm,1.0s
LON **Longmire** 59.97 52 *e*P P 12 25 31.7 +1.6
comp=Z,4.9nm,1.0s
TDL **Tradedollar La** 59.99 53 P P 12 25 32.0 +1.6
ETW **Entiat** 60.24 51 P P 12 25 32.9 +0.9
B08A **Colville Reser** 60.30 50 *e*P P 12 25 32.8 +0.6
comp=Z,8.0nm,0.9s
COEN **Coen** 60.67 182 *e*P P 12 25 35.7 +0.7
comp=Z,9.4nm,0.9s
SUMG **Summit** 60.72 1 *i*P P 12 25 35.0 -0.1
comp=Z,40nm,0.7s
SUMG **Summit** 60.72 1 *e*P P 12 25 35.0 -0.1
SUMG pmax pmax
comp=Z,45nm,0.8s
SUMG **Summit** 60.72 1 *e*P P 12 25 35.0 -0.1
comp=Z,45nm,0.8s
I03D **Drain, OR** 61.00 56 P P 12 25 38.3 +1.4
baz=309
H04A **Detroit Lake** 61.04 54 *e*P P 12 25 37.4 +0.2
comp=Z,12nm,0.8s
G05D **Wamic, OR** 61.17 54 P P 12 25 38.8 +0.7
baz=309
C09A **Chrisman Ranch** 61.20 50 *e*P P 12 25 39.1 +1.0
comp=Z,12nm,1.0s
FIA1 **FINESS Array S** 61.21 331 *e*P P 12 25 36.8 -1.1
FIA1 *e*P P 12 25 37.0 -0.9
FINES **FINESS Array B** 61.21 331 P P 12 25 36.9 -1.1
comp=Z,9.8nm,0.5s,baz=43,slow=7.4,SNR=42
GEYT **Alibeck** 61.41 296 P P 12 25 39.8 0.0
comp=Z,14nm,0.8s,baz=38,slow=2.6,SNR=25
HAWA **Hanford** 61.42 52 *e*P P 12 25 41.0 +1.4
comp=Z,8.1nm,1.0s
I04A **Tendick Farm,** 61.47 55 P P 12 25 41.2 +1.1
baz=309
NEW **Newport** 61.50 49 P P 12 25 40.4 +0.2
baz=310,SNR=6.2
NEW **Newport** 61.50 49 *e*P P 12 25 40.8 +0.6
NEW pmax pmax
comp=Z,12nm,1.0s
NEW **Newport** 61.50 49 *e*P P 12 25 40.8 +0.6
comp=Z,12nm,1.0s
NEW **Newport** 61.50 49 *e*P P 12 25 40.8 +0.6
VTHM **Trough** 61.63 53 P P 12 25 42.7 +1.6
OBN **Obninsk** 61.69 322⇑*e*P P 12 25 41.2 0.0
OBN *e**PP **pP** 12 27 08.0 +1.5
OBN *e* 12 28 03.3
OBN pmax pmax
comp=Z,11nm,1.1s
OBN **Obninsk** 61.69 322 *e*P P 12 25 41.7 +0.5
I05D **Terrebonne, OR** 61.73 54 P P 12 25 43.6 +1.8
baz=309,SNR=5.2
L02D **Cave Junction,** 61.82 57 P P 12 25 43.5 +1.2
baz=309
VRH **Novokhopyorsk** 61.98 316 *e*P P 12 25 43.0 -0.2
VRH pmax pmax
comp=Z,9.0nm,0.4s
E09A **Wood Farm, Sta** 62.09 51 *e*P P 12 25 45.0 +1.0
comp=Z,16nm,1.0s
LPSR **Galich'ya Gora** 62.35 318 *e*P P 12 25 44.8 -0.8
LPSR pmax pmax
comp=Z,10.0nm,0.8s
G08A **Pilot Rock** 62.43 52 *e*P P 12 25 47.4 +0.9
comp=Z,4.3nm,1.2s
SCO **Scoresbysund** 62.45 355 *i*P P 12 25 45.4 -0.5
comp=Z,8.8nm,0.7s
SCO **Scoresbysund** 62.45 355 *i*P P 12 25 45.4 -0.5
SCO pmax pmax
comp=Z,9.0nm,0.7s
J05D **Fort Rock, OR** 62.46 55 P P 12 25 48.4 +1.7
baz=310,SNR=6.1
YBH **Yreka Blue Hor** 62.61 57 P P 12 25 48.9 +1.3
comp=Z,3.3nm,0.7s,baz=347,slow=2.0,SNR=7.7
WALA **Waterton Lakes** 62.62 47 *e*P P 12 25 48.0 +0.4
comp=Z,12nm,0.8s
BSMT **Bassoo Peak** 62.97 48 *e*P P 12 25 48.7 -1.3
K05A **Summer Lake** 63.01 56 *e*P P 12 25 52.4 +2.0
comp=Z,15nm,0.9s
M04C **Macdoel** 63.07 57 P P 12 25 51.9 +1.1
baz=310
BLMT **Blacktail Moun** 63.08 48 *e*P P 12 25 52.1 +1.4
N02D **Trinity Center** 63.09 58 P P 12 25 52.0 +1.2
baz=310
VSR **Storozhevoye** 63.17 317 *e*P P 12 25 50.8 -0.2
VSR pmax pmax
comp=Z,20nm,1.1s
VSU **Vasula** 63.17 329*ce*P P 12 25 51.2 +0.4
VSU pmax pmax
comp=Z,31nm,0.7s
JTMT **Jette** 63.29 48 *e*P P 12 25 54.1 +2.0
SWMT **Swartz Lake** 63.59 48 *e*P P 12 25 54.8 +0.9
O03D **Paynes Creek** 64.06 58 P P 12 25 57.3 +0.2
baz=311
MSO **Missoula** 64.07 48 P P 12 25 57.2 +0.1
baz=312,SNR=17
MSO **Missoula** 64.07 48 *e*P P 12 25 57.6 +0.5
comp=Z,15nm,1.1s
FCC **Fort Churchill** 64.08 30 *e*P P 12 25 56.5 -0.2
FCC pmax pmax
comp=Z,11nm,0.8s
FCC **Fort Churchill** 64.08 30 *e*P P 12 25 56.5 -0.2
comp=Z,11nm,0.8s
FCC **Fort Churchill** 64.08 30 *e*P P 12 25 56.5 -0.2
CHMT **Chamberlain Mo** 64.37 48 *e*P P 12 25 59.4 +0.4
EGMT **Eagleton** 65.36 45 P P 12 26 05.5 +0.3
baz=314,SNR=19
EGMT **Eagleton** 65.36 45 *e*P P 12 26 06.1 +0.9
comp=Z,21nm,0.9s
MFID **Camas Ranch** 65.36 52 *e*P P 12 26 06.6 +1.3
comp=Z,6.8nm,1.0s
LRM **Limekiln Ridge** 65.52 49 *e*P P 12 26 07.2 +0.7
DLMT **Dillon** 65.75 49 *e*P P 12 26 09.1 +1.3
comp=Z,17nm,0.8s
SFJD **Kangerlussuaq** 65.75 7 *i*P P 12 26 06.3 -0.9
comp=Z,11nm,0.6s
SFJD **Kangerlussuaq** 65.75 7 *e*P P 12 26 06.3 -0.9
SFJD pmax pmax
comp=Z,11nm,0.6s
SFJD **Kangerlussuaq** 65.75 7 *e*P P 12 26 06.6 -0.6
comp=Z,12nm,0.6s
NC303 **NORSAR Array S** 65.76 337 *e*P P 12 26 06.6 -0.8
NC405 **NORSAR Array S** 65.76 337 *e*P P 12 26 06.7 -0.7
NC204 **NORSAR Array S** 65.88 338 *e*P P 12 26 07.5 -0.6
NB201 **NORSAR Array S** 65.93 337 *e*P P 12 26 06.5 -2.0
NB2 **NORSAR Subarra** 65.96 337 P P 12 26 07.3 -1.4
comp=Z,5.0nm,0.5s,baz=32,slow=6.4
NOA **NORSAR Array B** 65.96 337 P P 12 26 07.5 -1.2
comp=Z,4.6nm,0.5s,baz=34,SNR=27
MCMT **McKenzie Canyo** 65.99 50 *e*P P 12 26 10.0 +0.6
HLID **Hailey** 66.02 51 P P 12 26 10.1 +0.6
baz=313,SNR=5.8
HLID **Hailey** 66.02 51 *e*P P 12 26 10.5 +0.9
comp=Z,2.3nm,1.0s
NBO02 **NORSAR Array S** 66.04 337 *e*P P 12 26 08.4 -0.8
BOZ **Bozeman (W)** 66.06 48 P P 12 26 10.4 +0.7
baz=314,SNR=21
BOZ **Bozeman (W)** 66.06 48 *e*P P 12 26 10.4 +0.7
BOZ pmax pmax
comp=Z,12nm,0.7s
BOZ **Bozeman (W)** 66.06 48 *e*P P 12 26 10.3 +0.7
comp=Z,12nm,0.7s
BOZ **Bozeman (W)** 66.06 48 *e*P P 12 26 10.4 +0.7
NBO00 **NORSAR Array S** 66.08 337 *e*P P 12 26 08.8 -0.6
NCK **Nalchik** 66.17 309 *e*P P 12 26 10.7 +0.4
NCK pmax pmax
comp=Z,13nm,0.8s
KIV **Kislovodsk** 66.34 310⇑*e*P P 12 26 12.3 +0.8
KIV *e* 12 28 43.2
KIV pmax pmax
comp=Z,23nm,0.7s
KIV **Kislovodsk** 66.34 310 *e*P P 12 26 12.1 +0.6
comp=Z,27nm,0.8s
KIV **Kislovodsk** 66.34 310 *e*P P 12 26 12.3 +0.8
KBZ **Khabaz** 66.39 309 P P 12 26 11.8 +0.3
comp=Z,12nm,0.9s,baz=70,slow=2.0,SNR=26
ZEI **Tsey** 66.49 308 *e*P P 12 26 11.9 -0.6
ZEI pmax pmax
comp=Z,20nm,0.7s
NEY **Neytrino** 66.81 309 *e*P P 12 26 17.1 +2.6
NEY pmax pmax
comp=Z,2.0nm,1.0s
GCMT **Greycliff** 66.95 47 *e*P P 12 26 16.6 +1.3
YMR **Madison River** 67.07 49 *e*P P 12 26 17.5 +1.4
comp=Z,13nm,1.2s
WRAB **Tennant Creek** 67.25 191*ce*P P 12 26 18.3 +1.1
WRAB pmax pmax
comp=Z,2.0nm,0.5s
WRA **Warramunga Arr** 67.26 191 P P 12 26 16.5 -0.7
comp=Z,2.7nm,0.8s,baz=9.2,slow=6.8,SNR=16
WRA pP **pP** 12 27 48.8 +4.4
comp=Z,0.5nm,0.6s,baz=7.6,slow=6.9,SNR=2.2
YFT **Old Faithful** 67.29 49 *e*P P 12 26 20.2 +2.6
comp=Z,15nm,1.0s
NVAR **Mina Array Bea** 67.32 58 P P 12 26 18.8 +1.0
comp=Z,4.8nm,0.7s,baz=297,slow=6.1,SNR=20
NVAR pP **pP** 12 27 44.8 -0.1
comp=Z,0.3nm,0.5s,baz=23,slow=23,SNR=1.3
NV11 **Mina Array Sit** 67.41 58 *e*P P 12 26 19.6 +1.3
comp=Z,5.5nm,1.2s
LKWY **Lake** 67.43 48 *e*P P 12 26 20.4 +2.0
LKWY pmax pmax
comp=Z,9.0nm,1.0s
LKWY **Lake** 67.43 48 *e*P P 12 26 20.4 +2.0
comp=Z,8.8nm,1.0s
H17A **Grant Village** 67.46 49 P P 12 26 21.0 +2.4
baz=314,SNR=18
H17A **Grant Village** 67.46 49 *e*P P 12 26 21.0 +2.4
comp=Z,17nm,1.0s
FLWY **Flagg Ranch** 67.61 49 *e*P P 12 26 21.6 +2.1
comp=Z,14nm,1.4s
RLMT **Red Lodge** 67.62 47 P P 12 26 20.0 +0.4
baz=315,SNR=9.8
RLMT **Red Lodge** 67.62 47 *e*P P 12 26 20.5 +1.0
comp=Z,22nm,1.5s
IMW **Indian Meadow** 67.62 49 *e*P P 12 26 21.0 +1.3
comp=Z,6.2nm,0.9s
MOOW **Moose Ponds** 67.82 49 *e*P P 12 26 22.5 +1.7
comp=Z,10nm,1.0s
GNI **Garni** 67.83 305 *e*P P 12 26 21.3 +0.5
GNI pmax pmax
comp=Z,31nm,1.3s
A25A **Svangstu Ranch** 67.83 41 P P 12 26 20.8 +0.3
baz=317,SNR=6.8
AKASG **Malin Array Be** 67.96 322 P P 12 26 19.8 -1.4
comp=Z,3.8nm,0.6s,baz=39,slow=6.8,SNR=20
AKBB **Malin Array Si** 67.96 322 *e*P P 12 26 21.3 +0.1
AKBB pmax pmax
comp=Z,12nm,1.0s
AKBB **Malin Array Si** 67.96 322 *e*P P 12 26 21.3 +0.1
comp=Z,12nm,1.0s
KIEV **Kiev** 67.97 322 *e*P P 12 26 20.9 -0.4
KIEV pmax pmax
comp=Z,12nm,1.1s
KIEV **Kiev** 67.97 322 *e*P P 12 26 20.4 -0.9
comp=Z,14nm,1.1s
LOHW **Long Hollow** 67.99 49 *e*P P 12 26 23.5 +1.6
comp=Z,8.5nm,1.2s
AK11 **Malin Array Si** 68.00 322 *e*P P 12 26 21.3 -0.2
LAO **LASA Array** 68.00 45 P P 12 26 21.7 0.0
baz=316
LAO **LASA Array** 68.00 45 *e*P P 12 26 22.5 +0.8
comp=Z,12nm,0.8s
SNOW **Snow King Moun** 68.02 49 *e*P P 12 26 24.0 +1.9
comp=Z,12nm,1.2s
REDW **Red Top Meadow** 68.04 50 *e*P P 12 26 23.4 +1.3
comp=Z,8.1nm,1.1s
A26A **Wade Farm, Ken** 68.34 41 P P 12 26 24.0 +0.3
baz=318,SNR=5.6
ANN **Anapa** 68.46 313 *e*P P 12 26 21.7 -2.7
ANN *e* 12 26 43.1
ANN *e**PP **pP** 12 27 48.8 -3.0
ANN *e*S **S** 12 34 48.9 -3.8
ANN pmax pmax
comp=Z,13nm,1.1s
B26A **Jensen Ranch,** 68.64 41 P P 12 26 26.3 +0.8
baz=318
A27A **Ledoux Ranch,** 68.65 40 P P 12 26 26.0 +0.5
baz=318
GRAC **Grapevine Rang** 68.84 58 P P 12 26 28.3 +1.3
baz=314,SNR=6.8
HWUT **Hardware Ranch** 68.89 51 *e*P P 12 26 28.8 +1.4
comp=Z,9.3nm,1.0s
R11A **Troy Canyon, C** 68.94 56 P P 12 26 28.6 +1.0
baz=314
R11A **Troy Canyon, C** 68.94 56 *e*P P 12 26 28.7 +1.0
comp=Z,8.8nm,1.7s
D25A **Fairfield** 69.04 43 P P 12 26 28.7 +0.7
baz=317
A28A **Rude Farm, Bot** 69.11 40 P P 12 26 28.6 +0.2
baz=319,SNR=7.1
BW06 **Boulder Array** 69.13 49 P P 12 26 29.0 +0.1
baz=315,SNR=16
BW06 **Boulder Array** 69.13 49 *e*P P 12 26 29.0 +0.1
BW06 *e*P P 12 26 29.3 +0.4
PD31 **Pinedale Array** 69.13 49 *e*P P 12 26 29.2 +0.3
PDAR **Pinedale Array** 69.13 49 P P 12 26 29.2 +0.3
comp=Z,11nm,0.9s,baz=310,slow=1.2,SNR=48
DAC **Darwin (Calif)** 69.20 59 *e*P P 12 26 29.9 +0.5
DAC pmax pmax
comp=Z,3.0nm,0.8s
DAC **Darwin (Calif)** 69.20 59 *e*P P 12 26 29.9 +0.5
comp=Z,2.8nm,0.8s
DUG **Dugway, Tooele** 69.20 53 P P 12 26 29.5 +0.3
baz=315,SNR=5.8
DUG **Dugway, Tooele** 69.20 53 *e*P P 12 26 30.6 +1.4
DUG pmax pmax
comp=Z,5.0nm,0.8s

DUG	Dugway, Tooele	69.20	53	eP	P	12 26 30.6	+1.4
	comp=Z,4.7nm,0.8s						
MPMC	Manual Prospec	69.41	59	P	P	12 26 31.2	+0.5
	baz=314						
B28A	Dugan Ranch, T	69.42	40	P	P	12 26 30.3	+0.1
	baz=319,SNR=5.3						
E25A	Miller Ranch,	69.48	43	P	P	12 26 31.2	+0.6
	baz=318,SNR=7.1						
FURC	Furnace Creek,	69.50	58	P	P	12 26 31.1	+0.3
	baz=314,SNR=6.2						
TPNV	Topopah Spring	69.52	58	P	P	12 26 32.0	+0.8
	baz=314,SNR=11						
TPNV	Topopah Spring	69.52	58	eP	P	12 26 32.5	+1.3
TPNV				pmax	pmax		
	comp=Z,9.0nm,0.6s						
TPNV	Topopah Spring	69.52	58	eP	P	12 26 32.5	+1.3
	comp=Z,8.7nm,0.6s						
D26A	Manning	69.54	42	P	P	12 26 31.3	+0.3
	baz=318						
A29A	Manning Farm,	69.56	39	P	P	12 26 30.7	-0.3
	baz=319,SNR=9.8						
NLU	North Lily Min	69.77	53	eP	P	12 26 34.0	+1.2
	comp=Z,5.0nm,0.8s						
BSD	Bornholm Skovb	69.83	332	i P	P	12 26 31.5	-1.0
	comp=Z,16nm,0.7s						
BSD	Bornholm Skovb	69.83	332	eP	P	12 26 31.5	-1.0
BSD				pmax	pmax		
	comp=Z,16nm,0.7s						
B29A	Wagenman Farm,	69.85	40	P	P	12 26 32.9	+0.1
	baz=319,SNR=9.6						
F25A	Bowman	69.88	44	P	P	12 26 33.5	+0.5
	baz=318						
D27A	Center	69.90	42	P	P	12 26 33.7	+0.6
	baz=318						
EDW2	Edwards Air Fo	69.92	60	P	P	12 26 34.4	+0.9
	baz=314						
A30A	Hoffart Farm,	69.94	39	P	P	12 26 33.7	+0.3
	baz=320						
ULM	Lac du Bonnet	69.95	37	P	P	12 26 32.7	-0.7
	comp=Z,12nm,0.6s,baz=315,slow=7.4,SNR=14						
ULM	Lac du Bonnet	69.95	37	eP	P	12 26 33.2	-0.2
ULM				pmax	pmax		
	comp=Z,14nm,0.7s						
ULM	Lac du Bonnet	69.95	37	eP	P	12 26 33.1	-0.2
	comp=Z,14nm,0.7s						
MDND	Maddock	70.20	40	P	P	12 26 35.4	+0.5
	baz=319						
MDND	Maddock	70.20	40	eP	P	12 26 35.8	+0.9
	comp=Z,46nm,1.0s						
B30A	Myrvik Farm, E	70.30	39	P	P	12 26 35.3	-0.2
	baz=320,SNR=22						
E27A	Carson	70.39	42	P	P	12 26 36.3	+0.2
	baz=319,SNR=5.8						
SHPR	Sheep Range	70.46	57	eP	P	12 26 38.4	+1.6
	comp=Z,5.0nm,0.8s						
BANOM	Banah	70.48	287	i P	P	12 26 37.7	+0.7
	SNR=17						
BANOM	Banah	70.48	287	P	P	12 26 37.7	+0.7
	SNR=17						
BANOM	Banah	70.48	287	P	P	12 26 37.7	+0.7
	SNR=17						
E28A	Huff	70.67	42	P	P	12 26 38.0	+0.2
	baz=319						
A32A	Rocking H Ranc	70.73	38	P	P	12 26 38.3	+0.3
	baz=321						
MSU	Marysvale	70.73	54	eP	P	12 26 40.3	+1.7
MSU	Marysvale	70.73	54	eP	P	12 26 40.3	+1.7
G26A	Maurine	70.75	44	P	P	12 26 38.4	+0.1
	baz=318,SNR=10						
K22A	Casper	70.77	48	P	P	12 26 38.7	0.0
	baz=317						
H25A	Fruitdale	70.77	45	P	P	12 26 38.7	+0.2
	baz=318						
C30A	Mose, Pekin	70.81	40	P	P	12 26 38.6	+0.1
	baz=320						
RSSD	Black Hills	70.93	45	P	P	12 26 39.9	+0.3
	baz=318						
RSSD	Black Hills	70.93	45	eP	P	12 26 40.0	+0.4
RSSD				pmax	pmax		
	comp=Z,8.0nm,0.8s						
RSSD	Black Hills	70.93	45	eP	P	12 26 40.0	+0.4
	comp=Z,8.2nm,0.8s						
AS01	Alice Springs	70.98	190	eP	P	12 26 40.7	+0.9
AS31	Alice Springs	70.99	190	eP	P	12 26 41.4	+1.6
	comp=Z,1.4nm,0.8s						
ASAR	Alice Springs	70.99	190	P	P	12 26 40.1	+0.3
	comp=Z,3.9nm,0.8s,baz=5.5,slow=5.4,SNR=34						
P18A	Preston Nutter	71.00	52	eP	P	12 26 41.5	+1.2
	comp=Z,12nm,1.4s						
G27A	Dupree	71.00	43	P	P	12 26 40.1	+0.3
	baz=319,SNR=5.2						
C31A	Landman Farms,	71.06	39	P	P	12 26 40.1	+0.1
	baz=320						
MTPU	Mount Pierson	71.06	54	eP	P	12 26 42.5	+1.9
	comp=Z,2.6nm,0.6s						
B32A	Ashes, Strandq	71.11	38	P	P	12 26 40.1	-0.2
	baz=321						
I25A	Rochford	71.15	45	P	P	12 26 40.6	-0.3
	baz=318,SNR=7.8						
A33A	Warroad	71.17	37	P	P	12 26 39.7	-0.9
	baz=321,SNR=10						
UOSS	Minazif	71.21	287	eP	P	12 26 41.0	-0.3
	comp=Z,2.3nm,1.0s						
SRU	San Rafael Swe	71.22	53	eP	P	12 26 42.8	+1.4
SRU				pmax	pmax		
	comp=Z,8.0nm,0.6s						
SRU	San Rafael Swe	71.22	53	eP	P	12 26 42.8	+1.4
	comp=Z,8.4nm,0.6s						
HATD	Hatta, Dubai	71.34	287	i P	P	12 26 43.0	+0.9
	SNR=11						
HATD	Hatta, Dubai	71.34	287	P	P	12 26 43.0	+0.9
	SNR=11						
HATD	Hatta, Dubai	71.34	287	P	P	12 26 43.0	+0.9
	SNR=11						
KWP	Kalwaria Pacla	71.46	324	eP	P	12 26 42.5	+0.1
KWP	Kalwaria Pacla	71.46	324	⇓i P	P	12 26 43.0	+0.6
KWP	Kalwaria Pacla	71.46	324	eP	P	12 26 42.5	+0.1
ASHO	Ashiyiah	71.48	286	i P	P	12 26 43.9	+0.9
	SNR=9.6						
ASHO	Ashiyiah	71.48	286	P	P	12 26 44.7	+1.7
	SNR=9.6						
ASHO	Ashiyiah	71.48	286	P	P	12 26 44.7	+1.7
	SNR=9.6						
H27A	Howes	71.49	44	P	P	12 26 42.8	+0.1
	baz=319						
J25A	Sunshine Ranch	71.58	46	P	P	12 26 43.7	+0.3
	baz=318						
F29A	Eureka	71.63	42	P	P	12 26 43.8	+0.4
	baz=320						
D31A	Mcclaflin, Tow	71.64	40	P	P	12 26 43.8	+0.3
	baz=320						
O20A	White River Ci	71.70	51	P	P	12 26 44.6	+0.3
	baz=317						
O20A	White River Ci	71.70	51	eP	P	12 26 45.6	+1.3
	comp=Z,5.8nm,0.8s						
BELC	Belle Mtn. Jos	71.72	60	P	P	12 26 44.7	+0.4
	baz=315						
FAQ	Al Faqa, Dubai	71.75	287	P	P	12 26 44.4	-0.1
B34A	Aery, Baudette	71.83	37	P	P	12 26 43.7	-0.8
	baz=322,SNR=6.7						
D32A	Dogwood Acres,	71.88	39	P	P	12 26 45.3	+0.5
	baz=321						
E31A	Nome	71.94	40	P	P	12 26 45.5	+0.2
	baz=320						
J26A	Sides Ranch, S	72.00	45	P	P	12 26 46.0	+0.2
	baz=318						
BUR08	Bucovina Ar. S	72.00	322	eP	P	12 26 46.0	+0.3
BURAR	Bucovina Array	72.02	322	⇑i P	P	12 26 45.8	0.0
IRM	Iron Mountain	72.11	59	P	P	12 26 47.5	+1.0
	baz=315						
OJC	Ojcow	72.12	326	eP	P	12 26 46.8	+0.5
OJC	Ojcow	72.12	326	eP	P	12 26 46.8	+0.5
KOLS	Kolonicke sedl	72.19	324	eP	P	12 26 47.3	+0.6
KOLS	Kolonicke sedl	72.19	324	eP	P	12 26 47.3	+0.6
STHS	Stebnicka Huta	72.21	325	eP	P	12 26 47.2	+0.4
STHS				pmax	pmax		
	comp=Z,11nm,1.7s						
STHS	Stebnicka Huta	72.21	325	eP	P	12 26 47.2	+0.4
TESR	Tescani	72.25	320	⇑i P	P	12 26 47.7	+0.6
B35A	Bob, Littlefor	72.31	37	P	P	12 26 47.0	-0.3
	baz=322,SNR=24						
F31A	Hecla	72.32	41	P	P	12 26 47.6	+0.1
	baz=320						
N23A	Red Feather La	72.35	49	P	P	12 26 48.0	-0.1
	baz=318						
H29A	Onida	72.37	43	P	P	12 26 47.8	0.0
	baz=320						
I28A	Midland	72.39	44	P	P	12 26 47.9	-0.1
	baz=319						
G30A	Faulkton	72.48	42	P	P	12 26 48.7	+0.2
	baz=320						
CRVS	Cervenica-Dubn	72.54	325	eP	P	12 26 48.2	-0.5
CRVS	Cervenica-Dubn	72.54	325	eP	P	12 26 48.2	-0.5
J27A	Elkhorn Farm,	72.56	45	P	P	12 26 49.2	+0.2
	baz=319						
NIE	Niedzica	72.58	326	eP	P	12 26 49.6	+0.6
NIE	Niedzica	72.58	326	eP	P	12 26 49.6	+0.6
PDMCI	Parker Dam,Lak	72.60	58	P	P	12 26 50.0	+0.7
	baz=316						
CFR	Carcaliu	72.62	318	⇑i P	P	12 26 49.1	-0.1
D34A	Park Rapids	72.70	38	P	P	12 26 49.9	+0.2
	baz=322						
VRI	Vrincioaia	72.72	320	⇑i P	P	12 26 49.5	-0.3
C35A	Jirik Farms, M	72.73	37	P	P	12 26 49.4	-0.4
	baz=322						
Y12C	Blythe	72.76	59	P	P	12 26 51.2	+1.0
	baz=316						
COCO	West Island	72.77	229	i P	P	12 26 51.3	+0.9
I29A	Vivian Onida	72.79	43	P	P	12 26 50.4	+0.1
	baz=320						
E33A	Westby DABS, E	72.81	39	P	P	12 26 50.3	0.0
	baz=322						
G31A	Conde	72.83	41	P	P	12 26 51.2	+0.8
	baz=321						
KSP	Ksiaz	72.90	329	eP	P	12 26 51.3	+0.5
KSP	Ksiaz	72.90	329	eP	P	12 26 51.3	+0.5
SMCO	Snowmass	73.07	50	eP	P	12 26 53.4	+0.9
	comp=Z,3.7nm,0.6s						
LANS	Liptovska Anna	73.11	326	eP	P	12 26 52.8	+0.7
LANS	Liptovska Anna	73.11	326	eP	P	12 26 52.8	+0.7
G32A	Webster	73.12	41	P	P	12 26 51.0	-1.1
	baz=321						
C36A	Pine Crest Far	73.15	36	P	P	12 26 51.4	-0.8
	baz=323,SNR=17						
D35A	Remer	73.18	38	P	P	12 26 51.9	-0.6
	baz=323						
F33A	5 Mile Ranch,	73.20	40	P	P	12 26 52.1	-0.5
	baz=322						
I30A	Oacoma	73.28	43	P	P	12 26 52.9	-0.2
	baz=320						
DPC	Dobruska-Polom	73.30	328	eP	P	12 26 53.6	+0.5
DPC	Dobruska-Polom	73.30	328	eP	P	12 26 53.6	+0.5
WUAZ	Wupatki	73.32	56	P	P	12 26 54.2	+0.5
	baz=316						
ISCO	Idaho Springs	73.33	49	P	P	12 26 54.2	+0.4
	baz=318						
ISCO	Idaho Springs	73.33	49	eP	P	12 26 55.0	+1.2
ISCO				pmax	pmax		
	comp=Z,6.0nm,1.3s						
ISCO	Idaho Springs	73.33	49	eP	P	12 26 55.0	+1.2
	comp=Z,5.6nm,1.3s						
MORC	Moravsky Berou	73.33	327	⇑i P	P	12 26 53.8	+0.5
MORC	Moravsky Berou	73.33	327	eP	P	12 26 53.9	+0.6
MORC				pmax	pmax		
	comp=Z,85nm,1.5s						
MORC	Moravsky Berou	73.33	327	eP	P	12 26 53.9	+0.6
	comp=Z,85nm,1.5s						
MLR	Muntele Rosu	73.36	320	⇑i P	P	12 26 54.4	+0.7
KRLC	Kraliky	73.36	328	eP	P	12 26 53.7	+0.2
KRLC	Kraliky	73.36	328	eP	P	12 26 53.7	+0.2
ISR	Istrita	73.38	319	⇑i P	P	12 26 54.3	+0.6
C37A	Embarrass	73.44	36	P	P	12 26 52.7	-1.2
	baz=324,SNR=12						
D36A	Goodland	73.48	37	P	P	12 26 53.7	-0.4
	baz=323						
Y14A	Wickenburg	73.52	58	eP	P	12 26 56.0	+1.3
EYMN	Ely	73.54	36	P	P	12 26 53.7	-0.8
	baz=324,SNR=14						
EYMN	Ely	73.54	36	eP	P	12 26 54.3	-0.2
	comp=Z,32nm,0.6s						
G33A	Ortonville	73.64	40	P	P	12 26 55.0	-0.1
	baz=322						
CLL	Collm	73.65	331	eP	P	12 26 54.0	-1.0
	comp=Z,8.0nm,0.9s						
CLL	Collm	73.65	331	eP	P	12 26 54.3	-0.7
CLL				pmax	pmax		
	comp=Z,8.0nm,0.6s						
CLL	Collm	73.65	331	eP	P	12 26 54.3	-0.7
	comp=Z,8.2nm,0.6s						
CLL	Collm	73.65	331	eP	P	12 26 54.3	-0.7
F34A	Alexandria	73.69	39	P	P	12 26 55.0	-0.4
	baz=322						
MVCO	Mesa Verde	73.69	53	P	P	12 26 55.1	-0.8
	baz=317,SNR=5.1						
MVCO	Mesa Verde	73.69	53	eP	P	12 26 56.9	+1.0
	comp=Z,5.4nm,0.6s						
J30A	Dallas	73.70	43	P	P	12 26 55.4	-0.1
	baz=320						
VOIR		73.79	320	⇑i P	P	12 26 56.9	+0.8
D37A	Cotton	73.80	37	P	P	12 26 55.0	-0.9
	baz=324,SNR=7.0						
C38A	Sawbill Land.	73.81	36	P	P	12 26 55.4	-0.7
	baz=324,SNR=19						
VYHS	Vyhne	73.89	326	eP	P	12 26 57.1	+0.5
VYHS				pmax	pmax		
	comp=Z,9.0nm,1.5s						
VYHS	Vyhne	73.89	326	eP	P	12 26 57.0	+0.5
H33A	Prehn Over Nor	73.91	41	P	P	12 26 57.1	+0.3
	baz=322						
F35A	Swanville	73.93	39	P	P	12 26 56.9	+0.1
	baz=322						
G34A	Benson	73.96	40	P	P	12 26 57.1	+0.1
	baz=322						
E36A	McGregor	73.96	38	P	P	12 26 56.3	-0.7
	baz=323,SNR=8.7						
ARR	Arges	74.03	321	⇑i P	P	12 26 59.3	+1.9
VRAC	Vranov	74.06	328	⇑i P	P	12 26 57.5	0.0
J31A	Geddes	74.07	43	P	P	12 26 57.8	+0.2
	baz=321						
BR131	Keskin Array S	74.08	312	eP	P	12 26 59.0	+1.0
BRTR	Keskin Array B	74.08	312	P	P	12 26 58.0	+0.1
	comp=Z,2.6nm,0.6s,baz=86,slow=3.3,SNR=19						
K30A	Basset	74.14	44	P	P	12 26 58.4	+0.3
	baz=320						
Q24A	Divide	74.19	50	P	P	12 26 59.3	+0.5
	baz=318						
S22A	4UR Ranch, Cre	74.20	51	P	P	12 26 59.5	+0.6
	baz=318						
S22A	4UR Ranch, Cre	74.20	51	eP	P	12 27 00.3	+1.4
	comp=Z,4.8nm,1.0s						
I33A	Coleman	74.38	41	P	P	12 26 59.4	0.0
	baz=322						
BR231	Keskin MP Arra	74.43	312	eP	P	12 26 58.8	-1.1
ESK	Eskdalemuir	74.54	342	i P	P	12 27 00.5	+0.4
K31A	O'Neill	74.58	43	P	P	12 27 01.0	+0.4
	baz=321						
ECSD	EROS Data Cent	74.70	41	P	P	12 27 00.8	-0.5
	baz=322,SNR=13						
ECSD	EROS Data Cent	74.70	41	eP	P	12 27 01.4	+0.1
	comp=Z,11nm,0.8s						
H35A	Sunnyside Ranc	74.74	40	P	P	12 27 01.3	-0.1
	baz=323,SNR=8.0						
L31A	Butterfield Fa	74.89	44	P	P	12 27 02.1	-0.2
	baz=321,SNR=6.3						
SDCO	Great Sand Dun	74.91	51	P	P	12 27 02.7	-0.1
	baz=318,SNR=6.6						
SDCO	Great Sand Dun	74.91	51	eP	P	12 27 03.8	+0.9
	comp=Z,11nm,1.4s						
BZS	Buzias	75.11	323	⇑i P	P	12 27 04.1	+0.6
SCHQ	Schefferville	75.12	18	P	P	12 27 02.2	-1.1
	comp=Z,6.3nm,0.5s,baz=308,slow=3.7,SNR=7.4						
SPMN	Marine on St.	75.19	38	eP	P	12 27 03.5	-0.4
	comp=Z,17nm,0.4s						
H36A	Jessenland, He	75.22	39	P	P	12 27 04.5	+0.4
	baz=323						
KHC	Kasperske Hory	75.29	329	eP	P	12 27 04.6	+0.1
KHC	Kasperske Hory	75.29	329	eP	P	12 27 04.8	+0.3
KHC				pmax	pmax		
	comp=Z,14nm,1.7s						
KHC	Kasperske Hory	75.29	329	eP	P	12 27 04.8	+0.3
	comp=Z,14nm,1.7s						
KHC	Kasperske Hory	75.29	329	eP	P	12 27 04.8	+0.3
GERES	GERESS Array B	75.49	329	P	P	12 27 05.3	-0.3
	comp=Z,1.7nm,0.5s,baz=38,slow=5.5,SNR=9.1						
GEA0	GERESS Array S	75.50	329	eP	P	12 27 05.3	-0.4
K34A	Le Mars	75.76	42	P	P	12 27 07.6	+0.4
	baz=322						
I37A	Lemond, Waseca	75.90	39	P	P	12 27 08.1	+0.1
	baz=323						
T25A	Trinidad	75.94	50	P	P	12 27 08.4	-0.2
	baz=319						
T25A	Trinidad	75.94	50	eP	P	12 27 08.9	+0.3
	comp=Z,11nm,1.2s						
COWI	Conover	75.98	35	eP	P	12 27 06.2	-2.2
	comp=Z,15nm,1.1s						
TUC	Tucson	75.98	58	P	P	12 27 09.6	+1.0
	baz=317						
J36A	Seneca 1, Swea	76.04	40	P	P	12 27 08.5	-0.2
	baz=323						
L34A	Svendsen Farm,	76.20	42	P	P	12 27 09.6	-0.1
	baz=322						
I38A	Scanlan Farm,	76.34	39	P	P	12 27 09.8	-0.6
	baz=324						
ANMO	Albuquerque	76.47	53	P	P	12 27 12.0	+0.4
	baz=318						
ANMO	Albuquerque	76.47	53	ceP	P	12 27 13.3	+1.7
ANMO				pmax	pmax		
	comp=Z,4.0nm,1.2s						
ANMO	Albuquerque	76.47	53	eP	P	12 27 12.9	+1.4
	comp=Z,3.2nm,1.0s						
K37A	Belmond	76.80	40	P	P	12 27 12.5	-0.5
	baz=324						
J38A	Wedel Dairy, R	76.86	39	P	P	12 27 12.8	-0.5
	baz=324						
L36A	Harm Buss Farm	76.87	41	P	P	12 27 13.3	-0.1
	baz=323						
M35A	Neola	76.91	42	P	P	12 27 13.6	+0.1
	baz=323						
P32A	Huiting Farm,	76.98	45	P	P	12 27 13.4	-0.7
	baz=321						
L37A	Phoenix Point,	77.26	41	P	P	12 27 15.0	-0.5
	baz=324						
O34A	Beatrice	77.45	44	P	P	12 27 15.7	-0.9
	baz=322						
Q32A	Meitler Ranch,	77.49	45	P	P	12 27 16.5	-0.4
	baz=322						
319A	Douglas	77.53	57	eP	P	12 27 19.2	+1.9
BFO	Black Forest	77.75	332	i P	P	12 27 19.2	+1.1
Q33A	Connelly Farm,	77.84	45	P	P	12 27 17.9	-0.9
	baz=322						
P34A	Walnut Farm, R	77.89	44	P	P	12 27 17.9	-1.2
	baz=322						
M38A	Pleasantville	78.08	41	P	P	12 27 19.4	-0.6
	baz=324						
N37A	Lee Faris, Mou	78.15	42	P	P	12 27 19.7	-0.7
	baz=324						
P35A	Duane Minner,	78.29	44	P	P	12 27 20.1	-1.0
	baz=323						
O36A	Bolckow	78.30	43	P	P	12 27 20.6	-0.7
	baz=323						
N38A	Joes South For	78.56	41	P	P	12 27 22.9	+0.3
	baz=324						
P36A	Good Intent, A	78.60	43	P	P	12 27 23.0	+0.2
	baz=323						
O37A	Wolven Farm, M	78.65	42	P	P	12 27 23.2	+0.1
	baz=324						
R34A	Isabella, Hill	78.67	45	P	P	12 27 22.5	-0.8
	baz=322						
T32A	Huddler Ranch,	78.72	47	P	P	12 27 23.3	-0.2
	baz=322						
N39A	Derby Farms, D	78.82	41	P	P	12 27 23.7	-0.3
	baz=324						
AMTX	Amarillo	79.08	50	P	P	12 27 26.2	+0.5
	baz=321						
R35A	Emporia Munici	79.16	44	P	P	12 27 25.9	0.0
	baz=323						
MSTX	Muleshoe	79.21	51	P	P	12 27 26.5	+0.1
	baz=320						
P38A	Dawn	79.37	42	P	P	12 27 26.9	0.0
	baz=324						
R36A	Gordon, Harris	79.49	44	P	P	12 27 27.9	+0.2
	baz=323						
MNTX	Cornudas Mount	79.50	55	P	P	12 27 27.6	-0.3
	baz=319,SNR=6.8						
MNTX	Cornudas Mount	79.50	55	eP	P	12 27 29.0	+1.1
	comp=Z,7.1nm,1.4s						
S35A	Otter Creek Ra	79.61	45	P	P	12 27 28.1	-0.1
	baz=323						
T34A	McClaskey Farm	79.71	46	P	P	12 27 29.0	+0.1
	baz=322						
U33A	Lingo Farm, Me	79.71	47	P	P	12 27 28.9	0.0
	baz=322						
O40A	La Belle	79.72	41	P	P	12 27 28.3	-0.4
	baz=325						
R37A	Teagarden Farm	79.82	44	P	P	12 27 28.8	-0.5
	baz=323						
Q38A	Cooks Store, C	79.86	42	P	P	12 27 29.2	-0.4
	baz=324						
S36A	Lake Cedric, C	79.92	44	P	P	12 27 29.7	-0.2
	baz=323,SNR=8.3						
U34A	Anderson Ranch	80.00	46	P	P	12 27 30.1	-0.2
	baz=322						
P40A	Paris	80.12	41	P	P	12 27 30.2	-0.7
	baz=325						
T35A	Sooner Cattle	80.12	45	P	P	12 27 31.0	0.0
	baz=323,SNR=5.6						
W32A	Sentinel	80.16	48	P	P	12 27 31.7	+0.4
	baz=322						
S37A	Fort Scott	80.26	44	P	P	12 27 31.6	-0.1
	baz=324						
T36A	Boggs Farm, Ca	80.31	45	P	P	12 27 31.7	-0.3
	baz=323						
R38A	Fenwick Farm,	80.35	43	P	P	12 27 32.0	-0.1
	baz=324						
U35A	Pawnee	80.44	46	P	P	12 27 32.4	-0.3
	baz=323						
V34A	Guthrie	80.48	47	P	P	12 27 32.2	-0.7
	baz=322						
Q40A	Laux Farm, Aux	80.54	41	P	P	12 27 33.2	+0.1
	baz=325						
R39A	Chumby, Stover	80.65	42	P	P	12 27 33.3	-0.4
	baz=324						
T37A	Cheneyville 18	80.73	44	P	P	12 27 33.9	-0.2
	baz=324						
TRQ	Mont Tremblant	81.00	26	eP	P	12 27 35.2	-0.3
R40A	Maddies Statio	81.02	42	P	P	12 27 35.3	-0.4
	baz=325						
S39A	Bolivar	81.02	43	P	P	12 27 35.3	-0.4
	baz=324						
T38A	Diamond	81.09	44	P	P	12 27 35.6	-0.5
	baz=324,SNR=5.4						
U37A	Salina	81.20	45	P	P	12 27 36.6	-0.1
	baz=324						
TUL1	Leonard	81.27	46	P	P	12 27 37.1	0.0
	baz=323						
TUL1	Leonard	81.27	46	eP	P	12 27 38.2	+1.1
	comp=Z,8.8nm,0.6s						
V36A	Jenks	81.30	46	P	P	12 27 37.2	+0.1
	baz=323						
W35A	Tecumseh	81.34	47	P	P	12 27 37.1	-0.3
	baz=323						
Y33A	Hilltop Ranch,	81.35	49	P	P	12 27 37.7	+0.2
	baz=322						
S40A	Lebanon	81.48	42	P	P	12 27 37.9	-0.2
	baz=325						
U38A	Gravette	81.53	44	P	P	12 27 37.9	-0.5
	baz=324						
SFIN	Lafayette	81.56	37	P	P	12 27 37.7	-0.7
	baz=327						
V37A	Hulbert	81.61	45	P	P	12 27 38.4	-0.3
	baz=324,SNR=5.5						
W36A	Wetumka	81.67	46	P	P	12 27 39.5	+0.4
	baz=323						
LAST	Lasithi	81.72	314	eP	P	12 27 40.5	+1.1
	comp=Z,64nm,1.3s						
T40A	Mansfield	81.83	43	P	P	12 27 39.6	-0.3
	baz=325						
X35A	Drake	81.88	47	P	P	12 27 39.9	-0.3
	baz=323						
IDI	Anoyia	81.91	314	⇓i P	P	12 27 39.1	-1.3
V38A	Canehill	81.98	45	P	P	12 27 40.5	-0.2
	baz=324						
U39A	Green Forest	82.01	44	P	P	12 27 40.1	-0.8
	baz=324,SNR=6.6						
W37B	Quinton	82.06	46	P	P	12 27 41.3	+0.2
	baz=324						
Y35A	Marietta	82.24	48	P	P	12 27 41.2	-0.9
	baz=323

baz=324
W38A **Poteau** 82.56 45 P P 12 27 43.2 -0.4
baz=324
Z35A **Perchaven, San** 82.59 48 P P 12 27 43.2 -0.6
baz=323
Y36A **Durant** 82.63 47 P P 12 27 44.4 +0.3
baz=323
X38A **Whitesboro** 82.73 46 P P 12 27 44.9 +0.3
baz=324
233A **Rising Star** 82.77 50 P P 12 27 45.2 +0.4
baz=322
V40A **Witts Springs** 82.78 44 P P 12 27 44.8 0.0
baz=325
W39A **Magazine** 82.82 45 P P 12 27 44.8 -0.2
baz=324
PBMO **Poplar Bluff** 83.10 42 *eP* P 12 27 46.6 +0.2
comp=Z,11nm,0.8s
W40A **Ferguson Farm,** 83.17 44 P P 12 27 45.9 -0.8
baz=325
X39A **Fountain Ranch** 83.21 45 P P 12 27 46.8 -0.2
baz=324
333A **Richland Sprin** 83.27 51 P P 12 27 47.0 -0.4
baz=322
X201 **Greenbrier Sit** 83.42 44 *eP* P 12 27 48.2 +0.2
comp=Z,14nm,1.2s
MIAR **Mount Ida** 83.44 45 P P 12 27 47.9 -0.2
baz=324
MIAR **Mount Ida** 83.44 45 *eP* P 12 27 48.2 +0.1
MIAR pmax pmax
comp=Z,6.0nm,0.8s
MIAR **Mount Ida** 83.44 45 *eP* P 12 27 48.2 +0.1
comp=Z,6.0nm,0.8s
WHAR **Wooly Hollow** 83.46 44 *eP* P 12 27 48.5 +0.3
comp=Z,11nm,0.7s
M54A **Oil Creek Stat** 83.48 32 P P 12 27 48.0 -0.2
baz=331
JCT **Junction City** 83.49 52 P P 12 27 48.5 0.0
baz=322
W41B **Gary Mavity, V** 83.57 44 P P 12 27 48.7 -0.1
baz=325
334A **Lometa** 83.66 50 P P 12 27 49.3 0.0
baz=322
433A **Art** 83.66 51 P P 12 27 49.3 0.0
baz=322
Y39A **Lockesburg** 83.68 46 P P 12 27 49.8 +0.5
baz=324
N54A **Moraine State** 83.84 32 P P 12 27 49.9 -0.1
baz=331
X40A **Basin Creek Fa** 83.85 44 P P 12 27 50.5 +0.3
baz=325
434A **Burnet** 84.05 50 P P 12 27 51.5 +0.3
baz=322
533A **Kerrville** 84.22 51 P P 12 27 52.3 +0.1
baz=322
534A **Blanco** 84.56 51 P P 12 27 53.8 0.0
baz=322
Z40A **Long Farm, Mag** 84.57 46 P P 12 27 54.0 +0.2
baz=325
WVT **Waverly** 84.80 40 *eP* P 12 27 55.2 +0.4
WVT pmax pmax
comp=Z,6.0nm,0.6s
WVT **Waverly** 84.80 40 *eP* P 12 27 55.2 +0.4
comp=Z,6.0nm,0.6s
O56A **Blue Knob Stat** 84.97 32 P P 12 27 55.5 -0.2
baz=332
N59A **State Game Lan** 85.37 30 P P 12 27 57.2 -0.4
baz=334
240A **Hunter Patters** 85.38 47 P P 12 27 57.9 +0.1
baz=324
Y45A **Yeager Farm, C** 85.91 43 P P 12 28 00.7 +0.4
baz=326
Y46A **Houston** 86.21 42 P P 12 28 01.3 -0.5
baz=327
SWET **Sewanee** 86.40 39 *eP* P 12 28 02.7 0.0
comp=Z,2.5nm,0.8s
Y47A **UCPARC, Winfie** 86.66 41 P P 12 28 03.4 -0.5
baz=327
CPCT **Cooper Cave** 86.81 38 *eP* P 12 28 04.7 +0.1
comp=Z,6.8nm,0.9s
TKL **Tuckaleechee C** 86.95 38 *eP* P 12 28 05.9 +0.7
TKL **Tuckaleechee C** 86.95 38 *eP* P 12 28 05.9 +0.7
Z48A **Northport** 87.23 41 P P 12 28 05.6 -1.0
baz=328
CMLA **Cha da Macela** 95.18 352 *eP* P 12 28 43.2 0.0
CMLA **Cha da Macela** 95.18 352 *eP* P 12 28 43.2 0.0
TORD **Torodi Ar. Bea** 111.59 321 PKiKP PKiKP 12 33 50.8 -1.4
comp=Z,0.2nm,0.3s,baz=44,slow=2.4,SNR=5.2

IDC 09 12:22:14.7±0.9,36°.29N×142°.77E,h0km,mb3.5/9, mb1 3.8/12,mb1mx3.6/51,mbtmp3.6/12,ML3.6/3, MS2.8/1,Ms1 2.8/1,ms1mx2.2/33,Error ellipse: s-maj=23.7km s-min=19.0km az=144.0,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**3.69**	**275**	Pn	Pn	12 23 12.3	-0.6
	1.8nm,0.3s,baz=100,slow=8.8,SNR=11						
MAT	**Matsushiro**	**3.69**	**275**	P	Pn	12 23 13.0	+0.1
JHJ	**Hachijo jima 2**	**4.01**	**219**	Pn	Pn	12 23 17.6	+0.2
	8.2nm,0.3s,baz=11,slow=16,SNR=3.8						
JHJ				Sn	Sn	12 23 59.2	-5.8
	13nm,0.3s,baz=72,slow=19,SNR=3.9						
ASAJ	**Asahikawa**	**7.82**	**359**	Pn	Pn	12 24 07.7	-1.9
	1.7nm,0.3s,baz=211,slow=18,SNR=13						
ASAJ				Sn	Sn	12 25 32.4	-6.5
	0.4nm,0.3s,baz=70,slow=32,SNR=4.8						
JCJ	**Chichijima**	**9.18**	**183**	Sn	Sn	12 26 01.4	-11
	baz=294,slow=19						
KSRS	**Korea Array**	**11.95**	**280**	LR	LR	12 30 06.7	
	comp=Z,40nm,18.6s,baz=115,slow=39						
SONM	**Songino Array**	**29.10**	**305**	P	P	12 28 17.6	+0.5
	0.6nm,0.8s,baz=98,slow=10,SNR=2.5						
ZALV	**Zalesovo Beam**	**43.22**	**313**	P	P	12 30 17.1	-0.2
	0.5nm,0.3s,baz=101,slow=6.0,SNR=2.5						
MKAR	**Makanchi Array**	**45.44**	**303**	P	P	12 30 35.2	0.0
	1.0nm,0.7s,baz=88,slow=9.9,SNR=5.1						
ILAR	**Eielson Array**	**49.54**	**32**	P	P	12 31 06.1	-0.7
	0.4nm,0.8s,baz=263,slow=7.2,SNR=3.6						
INK	**Inuvik**	**54.55**	**27**	P	P	12 31 43.9	-0.1
	0.5nm,0.6s,baz=315,slow=4.5,SNR=4.4						
WRA	**Warramunga Arr**	**56.49**	**190**	P	P	12 31 57.8	-0.8
	0.3nm,0.6s,baz=8.2,slow=7.3,SNR=4.0						
YKA	**Yellowknife Ar**	**63.90**	**30**	P	P	12 32 49.0	+0.2
	0.3nm,0.8s,baz=299,slow=6.5,SNR=4.2						
NVAR	**Mina Array Bea**	**74.56**	**54**	P	P	12 33 56.1	+0.5
	0.2nm,0.4s,baz=290,slow=5.6,SNR=1.4						
TXAR	**Lajitas Array**	**89.70**	**53**	P	P	12 35 15.6	+0.6
	0.1nm,0.6s,baz=328,slow=3.2,SNR=2.5						

IDC 09 12:25:21.9±9.6,24°.59S×179°.82E,h569km±118km, mb2.8/4,mb1 3.1/4,mb1mx2.7/37,mbtmp3.8/4,Error ellipse: s-maj=155.8km s-min=46.6km az=172.0,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**31.32**	**271**	P	P	12 30 56.9	+0.2
	1.5nm,0.5s,baz=96,slow=12,SNR=6.1						
ASAR	**Alice Springs**	**41.76**	**261**	P	P	12 32 22.6	+0.1
	0.6nm,0.8s,baz=95,slow=7.3,SNR=8.4						
WRA	**Warramunga Arr**	**42.20**	**267**	P	P	12 32 25.3	-0.6
	0.5nm,0.4s,baz=105,slow=8.2,SNR=13						
TXAR	**Lajitas Array**	**90.93**	**58**	P	P	12 37 25.8	-0.2
	0.2nm,0.7s,baz=204,slow=5.7,SNR=3.4						
AKASG	**Malin Array Be**	**145.45**	**327**	PKPbc	PKPdf	12 43 56.0	+0.6
	0.1nm,0.2s,baz=44,slow=4.1,SNR=2.2						

IDC 09 12:27:16.1±8.2,4°.75N×96°.46E,h229km±78km,mb3.1/6, mb1 3.2/6,mb1mx2.9/50,mbtmp3.7/6,Error ellipse: s-maj=40.5km s-min=20.4km az=49.0,Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**13.84**	**10**	P	Pn	12 30 23.5	+0.4
	0.1nm,0.3s,baz=198,slow=11,SNR=5.4						
KSRS	**Korea Array**	**43.42**	**37**	P	P	12 34 56.2	-0.2
	0.4nm,0.4s,baz=224,slow=7.2,SNR=3.2						
MKAR	**Makanchi Array**	**43.64**	**346**	P	P	12 34 57.4	-0.7
	0.5nm,0.4s,baz=152,slow=8.9,SNR=12						
SONM	**Songino Array**	**43.76**	**10**	P	P	12 34 59.5	+0.3
	0.9nm,0.6s,baz=195,slow=9.0,SNR=4.2						
WRA	**Warramunga Arr**	**44.59**	**125**	P	P	12 35 05.7	-0.3
	0.6nm,0.6s,baz=304,slow=9.4,SNR=5.7						
ZALV	**Zalesovo Beam**	**49.96**	**351**	P	P	12 35 46.3	-0.4
	0.6nm,0.4s,baz=173,slow=8.8,SNR=3.7						
BRTR	**Keskin Array B**	**66.21**	**311**	P	P	12 37 40.2	+0.4
	0.5nm,0.6s,baz=112,slow=6.5,SNR=3.0						

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*IDC **09** 12:27:39.2±2.0,31°.93S×179°.58W,h239km±18km,mb3.6/4, mb1 3.7/7,mb1mx3.4/38,mbtmp4.3/7,Error ellipse: s-maj=24.6km s-min=16.0km az=139.0*

ISC 09 12:27:37.6±0.8,31°.88S±0°.07×179°.8W±0°.1,h200km,n61, σ2°.13/60,mb3.8/4,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**3.06**	**32**	S	Sn	12 29 08.7	+1.2
	189nm,0.3s,baz=228,slow=19,SNR=4.2						
WMGZ	**Waiomatatini S**	**6.11**	**194**	PN	Pn	12 29 07.9	+1.7
WMGZ				SN	Sn	12 30 18.6	+2.2
HAZ	**Te Kaha**	**6.20**	**198**	PN	Pn	12 29 09.0	+1.7
HAZ				SN	Sn	12 30 18.3	-0.2
PKGZ	**Pakihiroa**	**6.25**	**196**	PN	Pn	12 29 09.2	+1.1
PUZ	**Puketiti**	**6.38**	**194**	PN	Pn	12 29 10.3	+0.5
PUZ				SN	Sn	12 30 23.7	+0.8
TWGZ	**Tauwhareparae**	**6.55**	**196**	PN	Pn	12 29 13.8	+1.9
MWZ	**Matawai**	**6.81**	**198**	PN	Pn	12 29 15.5	+0.2
TKGZ	**Te Karaka**	**6.83**	**196**	PN	Pn	12 29 15.2	-0.3
TKGZ				SN	Sn	12 30 33.7	+0.4
URZ	**Urewera**	**6.86**	**201**	P	Pn	12 29 16.1	+0.2
	1.4nm,0.3s,baz=350,slow=13,SNR=15						
URZ				S	Sn	12 30 33.0	-0.9
	13nm,0.3s,baz=34,slow=24,SNR=13						
URZ	**Urewera**	**6.86**	**201**	PN	Pn	12 29 17.2	+1.3
URZ				SN	Sn	12 30 34.6	+0.6
RAGZ	**Rawiri**	**6.99**	**199**	PN	Pn	12 29 20.4	+2.7
TARZ	**Mount Tarawera**	**7.04**	**205**	Pn	Pn	12 29 25.1	+6.7
RIGZ	**Rimuhau**	**7.10**	**196**	PN	Pn	12 29 20.1	+0.9
SNGZ	**Shannon Statio**	**7.28**	**198**	PN	Pn	12 29 21.4	0.0
ALRZ	**Allen Road**	**7.39**	**205**	PN	Pn	12 29 27.4	+4.5
KNZ	**Kokohu**	**7.42**	**196**	PN	Pn	12 29 23.0	-0.3
RAHZ	**Arahi**	**7.47**	**199**	PN	Pn	12 29 26.9	+2.9
MHGZ	**Mahia Peninsul**	**7.50**	**194**	PN	Pn	12 29 28.7	+4.4
MRHZ	**Matea Rd**	**7.61**	**203**	PN	Pn	12 29 29.5	+3.8
NMHZ	**Naumai**	**7.72**	**200**	PN	Pn	12 29 30.5	+3.2
ARHZ	**Aropaoanui**	**7.82**	**199**	PN	Pn	12 29 32.1	+3.6
BKZ	**Black Stump Fm**	**7.88**	**202**	PN	Pn	12 29 27.7	-1.6
KRVZ	**Karewarewa**	**8.11**	**206**	PN	Pn	12 29 36.4	+4.0
KWHZ	**Kaweka Forest**	**8.14**	**201**	PN	Pn	12 29 34.0	+1.4
TWVZ	**Taurewa**	**8.17**	**207**	PN	Pn	12 29 36.9	+3.8
NGZ	**Ngauruhoe**	**8.20**	**206**	PN	Pn	12 29 36.4	+2.9
MOVZ	**Moawhango**	**8.35**	**205**	PN	Pn	12 29 37.1	+1.7
KAHZ	**Kahuranaki**	**8.35**	**198**	PN	Pn	12 29 33.8	-1.6
PXZ	**Pawanui**	**8.58**	**198**	PN	Pn	12 29 39.0	+0.7
WPHZ	**Waipukurau**	**8.72**	**208**	PN	Pn	12 29 41.8	+1.6
NEZ	**North Egmont**	**8.91**	**212**	PN	Pn	12 29 46.1	+3.4
WAZ	**Wanganui**	**8.94**	**207**	PN	Pn	12 29 43.5	+0.5
ANWZ	**Angora Road**	**9.08**	**199**	PN	Pn	12 29 46.1	+1.3
MRZ	**Mangatainoka R**	**9.53**	**202**	PN	Pn	12 29 46.7	-4.0
TIWZ	**Tintock**	**9.54**	**200**	PN	Pn	12 29 48.6	-2.3
OGWZ	**Otaki Gorge**	**9.81**	**203**	PN	Pn	12 29 52.6	-1.6
KIW	**Kapiti Island**	**9.94**	**204**	PN	Pn	12 29 53.4	-2.5
CAW	**Cannon Point**	**10.10**	**203**	PN	Pn	12 29 54.7	-3.3
DUWZ	**D'Urville Isla**	**10.25**	**208**	PN	Pn	12 29 56.7	-3.4
NNZ	**Nelson**	**10.82**	**209**	PN	Pn	12 30 03.2	-4.2
QRZ	**Quartz Range**	**10.87**	**213**	PN	Pn	12 30 06.6	-1.4
DSZ	**Denniston Nort**	**11.93**	**212**	PN	Pn	12 30 19.4	-2.2
LTZ	**Lake Taylor**	**12.59**	**208**	PN	Pn	12 30 25.2	-4.6
INZ	**Inchbonnie**	**12.88**	**210**	PN	Pn	12 30 29.5	-4.0
RPZ	**Rata Peaks**	**13.85**	**209**	P	Pn	12 30 42.8	-2.8
	1.3nm,0.3s,baz=249,slow=2.0,SNR=10						
RPZ				S	S	12 33 07.3	-12
	1.7nm,0.3s,baz=321,slow=20,SNR=11						
ODZ	**Otahua Downs**	**15.12**	**207**	PN	Pn	12 30 59.5	-1.7
JCZ	**Jackson Bay**	**15.14**	**213**	PN	Pn	12 30 59.0	-2.4
DZM	**Mont Dzumac**	**15.70**	**305**	P	P	12 31 10.1	+1.7
	0.3nm,0.3s,baz=115,slow=17,SNR=4.0						
AFI	**Afiamalu**	**19.33**	**24**	P	P	12 31 46.4	-1.6
	1.6nm,0.3s,baz=108,slow=20,SNR=3.9						
CTA	**Charters Tower**	**32.60**	**283**	P	P	12 33 50.6	+0.1
	0.7nm,0.3s,baz=104,slow=10,SNR=4.7						
STKA	**Stephens Creek**	**32.70**	**260**	P	P	12 33 51.2	-0.1
	1.1nm,0.5s,baz=97,slow=9.8,SNR=4.1						
ASAR	**Alice Springs**	**41.55**	**269**	P	P	12 35 04.8	-1.1
	1.1nm,0.4s,baz=107,slow=7.5,SNR=51						
ASAR				ScP	ScP	12 40 20.7	-10
	0.1nm,0.7s,baz=124,slow=4.2,SNR=3.3						
WRA	**Warramunga Arr**	**42.68**	**275**	P	P	12 35 13.5	-1.5
	3.1nm,0.4s,baz=112,slow=8.0,SNR=77						
SNAA	**Sanae**	**76.71**	**179**	P	P	12 39 05.2	-1.0
VNA3	**Neumayer Olymp**	**76.92**	**177**	P	P	12 39 06.5	-0.9
VNA1	**Neumayer--Stat**	**77.58**	**177**	P	P	12 39 10.7	-0.3
FINES	**FINESS Array B**	**145.99**	**338**	PKPbc	PKPdf	12 46 49.6	-2.2
	4.2nm,0.4s,baz=41,slow=3.9,SNR=36						
NB2	**NORSAR Subarra**	**149.96**	**349**	PKP	PKPdf	12 47 00.3	+1.9
	comp=Z,1.0nm,0.5s,baz=14,slow=2.6						
NOA	**NORSAR Array B**	**149.96**	**349**	PKPbc	PKPdf	12 47 00.4	+1.9
	comp=Z,1.4nm,0.5s,baz=16,slow=4.2,SNR=8.0						
AKASG	**Malin Array Be**	**151.51**	**320**	PKPbc	PKPdf	12 47 04.6	+3.5
	comp=Z,0.5nm,0.4s,baz=43,slow=2.8,SNR=2.5						
TORD	**Torodi Ar. Bea**	**161.30**	**184**	PKPab	PKPab	12 47 57.4	-2.2
	comp=Z,0.5nm,0.3s,baz=160,slow=4.4,SNR=11						

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*IDC **09** 12:30:55.8±0.8,51°.07N×179°.29E,h0km,mb3.8/14, mb1 4.0/14,mb1mx3.8/49,mbtmp3.9/14,MS2.9/4, Ms1 2.9/4,ms1mx2.6/37,Error ellipse: s-maj=25.7km s-min=15.9km az=164.0*

*ISCJB **09** 12:31:01.0±1.0,51°.0N±0°.1×179°.27E±0°.09,h54km±8km, mb3.9/17,MS2.8/3,Error ellipse: s-maj=20.2km s-min=8.4km az=169.8*

*NEIC **09** 12:31:03.0±0.6,51°.11N×179°.36E,h52km±5km,mb4.0/5, ML3.7(AEIC),Error ellipse: s-maj=11.4km s-min=5.5km az=175.0*

ISC 09 12:31:03.5±1.9,51°.1N±0°.2×179°.34E±0°.06,h57km±15km, n45,σ1°.04/41,mb3.8/17,MS2.8/3,Rat Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GALAA	**Gareloi Lava P**	**1.36**	**59**	P	Pn	12 31 25.5	-0.7
GALAA				S	Sn	12 31 44.0	+0.7
GAEA	**Gareloi East**	**1.39**	**59**	P	Pn	12 31 25.5	-1.0
TANO	**Tanaga North**	**1.79**	**61**	P	Pn	12 31 30.5	-1.6
TASE	**Tanaga Southea**	**1.80**	**64**	P	Pn	12 31 31.0	-1.3
TASE				S	Sn	12 31 56.3	+2.2
TAFL	**Tanaga Flats**	**1.85**	**68**	P	Pn	12 31 31.7	-1.2
TAFP	**Tanaga Falls P**	**1.86**	**63**	P	Pn	12 31 32.2	-0.8
TAFP				S	Sn	12 31 57.6	+2.2
TAPA	**Tanaga Point A**	**1.92**	**67**	P	Pn	12 31 32.5	-1.4
KIKV	**Kanaga Island**	**2.32**	**69**	P	Pn	12 31 38.1	-1.1
KIRH	**Kanaga Island**	**2.37**	**69**	P	Pn	12 31 39.0	-1.0
KIRH				S	Sn	12 32 09.2	+1.3
ADAG	**Mount Adagdak**	**2.69**	**69**	P	Pn	12 31 43.8	-0.5
GSTD	**Great Sitkin T**	**2.98**	**69**	P	Pn	12 31 47.7	-0.6
GSTD				S	Sn	12 32 24.1	+1.2
GSMY	**Great Sitkin M**	**3.03**	**70**	P	Pn	12 31 47.9	-1.1
SMY	**Shemya**	**3.64**	**299**	P	Pn	12 31 57.1	-0.2
KOWE	**Korovin West**	**4.18**	**70**	P	Pn	12 32 03.9	-0.9
KOKL	**Mount Kliuchef**	**4.20**	**70**	P	Pn	12 32 04.7	-0.4
KOFP	**Korovin Flat P**	**4.25**	**71**	P	Pn	12 32 05.7	-0.1
PETK	**Petropavlovsk-**	**13.45**	**287**	LR	LR	12 40 24.7	
	comp=Z,42nm,18.9s,baz=84,slow=42						
KDAK	**Kodiak Island**	**17.56**	**57**	P	P	12 35 15.8	+11
	1.2nm,0.3s,baz=238,slow=6.7,SNR=11						
KTH	**Kantishna Hill**	**20.10**	**40**	*eP*	P	12 35 30.9	-1.3
	16nm,1.2s						
BPAW	**Bear Paw Mtn.**	**20.31**	**39**	*eP*	P	12 35 34.5	+0.2
	0.7nm,0.8s						
COLD	**Coldfoot**	**22.11**	**32**	*eP*	P	12 35 53.6	-0.1
	5.5nm,1.1s						
ILAR	**Eielson Array**	**22.20**	**39**	P	P	12 35 53.1	-1.6
	0.6nm,0.6s,baz=255,slow=11,SNR=11						
EGAK	**Eagle**	**24.54**	**41**	*eP*	P	12 36 17.3	0.0
	4.9nm,0.9s						
INK	**Inuvik**	**28.37**	**35**	P	P	12 36 52.9	+1.1
	1.3nm,0.6s,baz=270,slow=6.9,SNR=9.9						
YAK	**Yakutsk**	**28.74**	**312**	LR	LR	12 48 36.3	
	comp=Z,42nm,18.4s,baz=319,slow=37						
KLR	**Kul'dur**	**30.13**	**285**	P	P	12 37 07.6	0.0
	3.2nm,0.5s,baz=62,slow=8.0,SNR=17						
KLR				LR	LR	12 49 53.4	
	comp=Z,18nm,18.4s,baz=314,slow=38						
H11N2	**WAKE ISLAND Hy**	**32.80**	**202**	T	T	13 12 33.1	
	baz=19,slow=76						
H11N3	**WAKE ISLAND Hy**	**32.81**	**202**	T	T	13 12 44.3	
	baz=19,slow=76						
H11N1	**WAKE ISLAND Hy**	**32.81**	**202**	T	T	13 12 41.1	
	baz=19,slow=76						
H11S1	**WAKE ISLAND Hy**	**34.02**	**202**	T	T	13 14 08.0	
	baz=18						
H11S2	**WAKE ISLAND Hy**	**34.04**	**202**	T	T	13 14 07.8	
	baz=18						
H11S3	**WAKE ISLAND Hy**	**34.04**	**202**	T	T	13 14 15.5	
	baz=18						
YKA	**Yellowknife Ar**	**36.28**	**46**	P	P	12 37 59.9	-1.0
	1.0nm,0.5s,baz=281,slow=8.0,SNR=22						
YKA				PcP	PcP	12 40 25.5	+1.0
	0.3nm,0.9s,baz=286,slow=3.1,SNR=4.1						
KSRS	**Korea Array**	**38.47**	**270**	LR	LR	12 51 28.9	
	comp=Z,8.4nm,21.6s,baz=240,slow=32						
SONM	**Songino Array**	**45.73**	**296**	P	P	12 39 19.2	+0.4
	0.6nm,0.6s,baz=67,slow=7.5,SNR=4.6						
BW06	**Boulder Array**	**47.51**	**71**	*eP*	P	12 39 33.0	0.0
	1.8nm,0.8s						
PDAR	**Pinedale Array**	**47.51**	**71**	P	P	12 39 33.4	+0.4
	1.7nm,0.6s,baz=298,slow=3.4,SNR=26						
MKAR	**Makanchi Array**	**59.29**	**308**	P	P	12 40 58.2	-0.8
	1.1nm,0.5s,baz=46,slow=6.2,SNR=9.9						
TXAR	**Lajitas Array**	**59.85**	**80**	P	P	12 41 03.5	+0.3
	0.2nm,0.5s,baz=304,slow=4.9,SNR=5.9						
BVAR	**Borovoye Array**	**60.35**	**319**	P	P	12 41 06.4	+0.2
	2.7nm,0.6s,baz=46,slow=6.2,SNR=18						
NOA	**NORSAR Array B**	**67.82**	**354**	P	P	12 41 54.5	-0.5
	0.6nm,0.6s,baz=7.0,slow=5.5,SNR=3.0						
AKASG	**Malin Array Be**	**75.45**	**341**	P	P	12 42 39.9	-1.1
	0.5nm,0.5s,baz=22,slow=6.2,SNR=5.0						
WRA	**Warramunga Arr**	**81.00**	**222**	P	P	12 43 11.3	-0.6
	0.6nm,0.9s,baz=32,slow=6.1,SNR=3.9						
ASAR	**Alice Springs**	**84.49**	**221**	P	P	12 43 30.5	+0.5
	0.3nm,0.8s,baz=31,slow=5.7,SNR=3.5						
BRTR	**Keskin Array B**	**84.71**	**334**	P	P	12 43 32.4	+1.2
	0.4nm,0.6s,baz=100,slow=1.8,SNR=2.7						

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*ISCJB **09** 12:33:15.1±0.9,23°.90N±0°.02×122°.31E±0°.02,h10km±6km, Error ellipse: s-maj=3.4km s-min=2.2km az=158.2*

*JMA **09** 12:33:15.5±0.2,23°.89N×122°.29E,h20km±4km,M3.0*

*TAP **09** 12:33:15.8,23°.96N×122°.29E,h19km,ML3.4,C*

ISC 09 12:33:14.1±1.1,23°.88N±0°.02×122°.31E±0°.02,h11km±9km, n49,σ0°.53/87,2C-2D,Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWD	**Chiawan**	**0.68**	**288**	*eP*	Pb	12 33 28.6	+0.7
	baz=280						
TWD				S	Sb	12 33 37.5	+0.1
	baz=280						
ENA	**Nanau**	**0.75**	**317**	*eP*	Pb	12 33 29.1	-0.1
	baz=325						
ENA				*eS*	Sb	12 33 39.7	+0.2
	baz=325						
ESL	**Shilin**	**0.80**	**266**	*eP*	Pb	12 33 30.4	+0.4
	baz=247						
ESL				*eS*	Sb	12 33 40.8	-0.1
	baz=247						
JYNG	**Yonagunijimaku**	**0.82**	**45**	P	Pb	12 33 30.9	+0.6
JYNG				*eS*	Sg	12 33 40.6	-0.1
TWC	**Suao**	**0.84**	**330**	⇑P	Pg	12 33 30.1	-0.2
	baz=327						
TWC				*eS*	Sg	12 33 40.5	-0.9
	baz=327						
YOJ	**Yonaguni jima**	**0.87**	**48**	P	Pb	12 33 31.8	+0.6
YOJ				*eS*	Sg	12 33 42.2	-0.1
EHY	**Hungye**	**0.97**	**248**	*eP*	Pn	12 33 33.7	0.0
	baz=243						
EHY				S	Sb	12 33 46.7	+0.8
	baz=243						
WHF	**Hehuan Shan**	**0.99**	**286**	*eP*	Pg	12 33 33.4	+0.1
	baz=281						
WHF				*eS*	Sg	12 33 46.3	+0.1
	baz=281						
ENTT	**Nioudou**	**1.02**	**319**	⇓P	Pn	12 33 34.1	-0.2
	baz=315						
ENTT				S	Sb	12 33 47.7	+0.5
	baz=315						
NNS	**Nan Shan**	**1.02**	**304**	P	Pb	12 33 34.0	+0.1
	baz=286						
NNS				S	Sb	12 33 47.3	0.0
	baz=286						
EGS		**1.02**	**341**	*eP*	Pb	12 33 33.8	0.0
	baz=339						
EGS				*eS*	Sb	12 33 47.3	0.0
	baz=339						
TWE	**Neicheng**	**1.02**	**325**	P	Pb	12 33 33.8	0.0
	baz=330						
TWE				S	Sb	12 33 47.8	+0.5
	baz=330						
TWF1	**Yuli**	**1.06**	**241**	*i* P	Pn	12 33 35.2	+0.3
	baz=236						
TWF1				S	Sn	12 33 49.8	+0.1
	baz=236						
WDT	**Danda**	**1.08**	**264**	*eP*	Pn	12 33 35.4	-0.1
	baz=259						
WDT				S	Sb	12 33 49.4	+0.2
	baz=259						
TWT	**Tachien**	**1.10**	**290**	P	Pn	12 33 35.7	+0.1
	baz=285						
TWT				*eS*	Sn	12 33 50.7	-0.1
	baz=285						
NSK	**Sanguang**	**1.18**	**313**	⇓*eP*	Pb	12 33 36.4	-0.1
	baz=309						
NSK				S	Sb	12 33 51.6	-0.2
	baz=309						
TWA	**Mucha**	**1.28**	**329**	*eP*	Pg	12 33 38.8	0.0
	baz=326						
TWA				*eS*	Sb	12 33 54.5	-0.2
	baz=326						
NWF	**Wu-fen Shan**	**1.28**	**338**	*eP*	Pn	12 33 37.9	-0.1
	baz=335						
NWF				*eS*	Sb	12 33 54.4	-0.4
	baz=335						
SMLT	**Sun Moon Lake**	**1.29**	**271**	*eP*	Pb	12 33 38.7	+0.3
	baz=266						
SMLT				*eS*	Sb	12 33 54.6	-0.3
	baz=266						
YUS	**Yu-Shan**	**1.30**	**253**	*eP*	Pg	12 33 39.5	+0.3
	baz=249						
YUS				*eS*	Sn	12 33 56.3	+0.1
	baz=249						
TYC	**Yuchr**	**1.33**	**271**	*eP*	Pb	12 33 38.9	-0.1
	baz=268						
ELDTW	**Lidau**	**1.37**	**240**	*eP*	Pn	12 33 39.1	-0.1
	baz=237						
ELDTW				*eS*	Sb	12 33 54.8	-2.5
	baz=237						
IRIF	**Iriomote-Funau**	**1.38**	**70**	P	Pg	12 33 40.8	+0.2
IRIF				*eS*	Sg	12 33 59.0	+0.4
HATJ	**Hateruma jima**	**1.38**	**82**	*eS*	Sb	12 33 58.2	+0.6
NSTT	**Nanjuang**	**1.41**	**303**	⇑P	Pg	12 33 41.2	0.0
	baz=285						
NSTT				S	Sb	12 33 58.6	+0.

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
	baz=229						
JKRS	**Kuro-shima**	**1.60**	**77**	*e*S	**Sg**	**12 34 04.9**	**-0.7**
CHN4	**Tsaushan**	**1.66**	**252**	*e*P	**Pg**	**12 33 45.8**	**-0.1**
	baz=249						
CHN4				*e*S	**Sg**	**12 34 07.5**	**+0.1**
	baz=249						
WTP	**Ta-pu**	**1.67**	**248**	*e*P	**Pg**	**12 33 46.2**	**0.0**
	baz=246						
WTP				*e*S	**Sg**	**12 34 07.2**	**-0.8**
	baz=246						
JIJ	**Ishigaki jima**	**1.75**	**74**	P	**Pb**	**12 33 46.3**	**+0.1**
JIJ				*e*S	**Sn**	**12 34 06.4**	**-0.2**
SGST	**Jiashian**	**1.77**	**244**	*e*P	**Pb**	**12 33 47.1**	**+0.5**
	baz=230						
SGST				*e*S	**Sg**	**12 34 10.6**	**-0.4**
	baz=230						
CHN1	**Nanshi**	**1.77**	**247**	*e*P	**Pg**	**12 33 47.5**	**-0.6**
	baz=245						
CHN1				*e*S	**Sb**	**12 34 09.8**	**+1.0**
	baz=245						
SSD	**Sandimen**	**1.91**	**234**	*e*P	**Pb**	**12 33 49.6**	**+0.7**
	baz=224						
SSD				*e*S	**Sb**	**12 34 12.9**	**+0.2**
	baz=224						
WSF	**Szhu**	**1.92**	**263**	*e*P	**Pb**	**12 33 49.5**	**+0.3**
	baz=260						
LAY	**Lan-yu**	**1.96**	**201**	*e*P	**Pn**	**12 33 46.6**	**-0.6**
	baz=199						
JISG	**Ishigakijimahi**	**1.96**	**68**	P	**Pn**	**12 33 48.2**	**+0.9**
JISG				*e*S	**Sn**	**12 34 11.2**	**-0.7**
EAST	**Anshuo**	**2.00**	**222**	*e*P	**Pn**	**12 33 48.8**	**+0.9**
	baz=219						
TWM1	**Shoushan**	**2.02**	**239**	*e*P	**Pb**	**12 33 50.5**	**-0.4**
	baz=236						
SCZT	**Fangliau**	**2.16**	**226**	*e*P	**Pb**	**12 33 53.0**	**-0.2**
	baz=217						
SCZT				*e*S	**Sb**	**12 34 18.8**	**-1.1**
	baz=217						
JTJ	**Tarama**	**2.32**	**70**	*e*S	**Sb**	**12 34 23.1**	**-1.4**
PNG	**Penghu**	**2.54**	**264**	*e*P	**Pn**	**12 33 56.1**	**+0.9**
	baz=261						
PNG				*e*S	**Sn**	**12 34 26.3**	**+0.2**
	baz=261						

NIED ***09*** *13:03:00, 25°.50N×143°.40E, h5km, Mw4.6 Best double couple: M0:8.35000×10^15 NP1:φs122.00000°, δ5.00000°, λ-100.00000°. NP2:φs312.00000°, δ85.00000°, λ-89.00000°.*
IDC ***09*** *13:03:45.0±0.6, 25°.37N×142°.84E, h0km, mb4.1/22, mb1 4.3/23, mb1mx4.2/39, mbtmp4.1/23, ML3.7/1, MS3.5/9, Ms1 3.5/9, ms1mx3.2/34, Error ellipse: s-maj=22.1km s-min=13.8km az=85.0*
ISCJB ***09*** *13:03:48.8±0.3, 25°.33N±0°.04×142°.76E±0°.07, h38km, mb4.4/55, MS3.5/10, Error ellipse: s-maj=8.9km s-min=5.5km az=166.3*
MOS ***09*** *13:03:49.6±1.1, 25°.39N×142°.78E, h43km, mb4.8/20, Error ellipse: s-maj=14.1km s-min=6.2km az=107.8*
NEIC ***09*** *13:03:52.7±0.5, 25°.41N×142°.72E, h55km±4km, mb4.7/25, Error ellipse: s-maj=7.7km s-min=5.7km az=89.0*

ISC 09 13:03:50.8±0.5, 25°.34N±0°.07×142°.7E±0°.1, h38km, n105, σ0s89/102, mb4.5/55, MS3.5/10, 2C-2D, Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JCJ	**Chichijima**	**1.81**	**345**	Pn	**Pn**	**13 04 19.1**	**-0.3**
	121nm,0.3s,baz=113,slow=9.4,SNR=128						
JCJ				Sn	**Sn**	**13 04 42.5**	**+1.3**
	108nm,0.3s,baz=272,slow=23,SNR=17						
CBIJ	**Chichi jima**	**1.81**	**345**	*e*Pn	**Pn**	**13 04 19.0**	**-0.4**
CBIJ				Sn	**Sn**	**13 04 42.5**	**+1.3**
MJAR	**Matsushiro Arr**	**11.81**	**342**	Pn	**Pn**	**13 06 36.7**	**0.0**
	0.4nm,0.3s,baz=152,slow=12,SNR=4.6						
MJAR				LR	LR	13 11 21.6	
	comp=Z,168nm,18.1s,baz=160,slow=39						
MAJO	**Matsushiro**	**11.81**	**342**	*e*P	**Pn**	**13 06 37.4**	**+0.7**
MAJO				pmax	pmax		
	comp=Z,20nm,0.9s						
KSRS	**Korea Array**	**17.45**	**317**	P	**P**	**13 07 54.0**	**+1.9**
	comp=Z,0.1nm,0.3s,baz=139,slow=11,SNR=4.1						
KSRS				LR	LR	13 14 12.6	
	comp=Z,130nm,20.1s,baz=144,slow=36						
KSRS	**Korea Array**	**17.45**	**317**	P	**P**	**13 07 54.0**	**+1.9**
KSRS				MLR	MLR		
	comp=Z,130nm,20.1s						
KSAR	**Wonju Array Be**	**17.46**	**317**	P	**P**	**13 07 54.0**	**+1.7**
KSAR	**Wonju Array Be**	**17.46**	**317**	P	**P**	**13 07 54.0**	**+1.7**
MSHR	**Mys Shultsa**	**19.65**	**334**	*e*P	**P**	**13 08 15.3**	**-1.0**
VLA	**Vladivostok**	**19.83**	**336**	||*e*P	**P**	**13 08 18.1**	**-0.1**
VLA				pmax	pmax		
	comp=Z,14nm,1.2s						
USRK	**Ussuriysk Ar.**	**20.74**	**338**	P	**P**	**13 08 27.9**	**-0.2**
	comp=Z,2.2nm,0.7s,baz=164,slow=12,SNR=6.5						
USRK				LR	LR	13 16 20.0	
	comp=Z,85nm,18.6s,baz=177,slow=36						
H11N2	**WAKE ISLAND Hy 23.00**	**99**		T	T	13 32 33.4	
	baz=290,slow=75,SNR=3.3						
H11N1	**WAKE ISLAND Hy 23.00**	**99**		T	T	13 32 32.0	
	baz=290,slow=75,SNR=4.6						
H11N3	**WAKE ISLAND Hy 23.02**	**99**		T	T	13 32 36.0	
	baz=290,slow=75,SNR=5.0						
H11S3	**WAKE ISLAND Hy 23.23**	**102**		T	T	13 32 43.8	
	baz=292,slow=75,SNR=6.4						
H11S1	**WAKE ISLAND Hy 23.24**	**102**		T	T	13 32 50.9	
	baz=292,slow=75,SNR=6.4						
H11S2	**WAKE ISLAND Hy 23.25**	**102**		T	T	13 32 45.8	
	baz=292,slow=75,SNR=9.5						
KLR	**Kul'dur**	**25.34**	**343**	P	**P**	**13 09 14.3**	**+0.3**
	comp=Z,7.0nm,1.0s,baz=147,slow=9.4,SNR=16						
PETK	**Petropavlovsk-**	**29.93**	**18**	LR	LR	13 23 37.4	
	comp=Z,11nm,18.8s,baz=73,slow=40						
CD2	**Chengdu**	**34.68**	**288**	P	**P**	**13 10 35.0**	**-2.0**
CD2				pmax	pmax		
	comp=Z,11nm,0.8s						
PMG	**Port Moresby**	**34.81**	**172**	*ce*P	**P**	**13 10 38.7**	**+0.6**
PMG				pmax	pmax		
	comp=Z,32nm,1.0s						
PMG	**Port Moresby**	**34.81**	**172**	*e*P	**P**	**13 10 38.1**	**0.0**
	comp=Z,8.9nm,0.9s						
ULN	**Ulaanbaatar**	**35.93**	**318**	*e*P	**P**	**13 10 47.1**	**-0.6**
ULN				pmax	pmax		
	comp=Z,2.0nm,0.9s						
SONM	**Songino Array**	**36.32**	**318**	P	**P**	**13 10 51.1**	**+0.1**
	comp=Z,1.0nm,0.7s,baz=133,slow=9.7,SNR=7.7						
SONM				PcP	**PcP**	**13 13 15.8**	**+0.6**
	comp=Z,0.4nm,0.5s,baz=116,slow=3.4,SNR=2.8						
SONM				LR	LR	13 26 13.5	
	comp=Z,85nm,19.2s,baz=109,slow=37						
YAK	**Yakutsk**	**37.72**	**350**	*e*P	**P**	**13 11 02.4**	**0.0**
YAK				pmax	pmax		
	comp=Z,3.0nm,0.6s						
SEY	**Seymchan**	**38.13**	**7**	P	**P**	**13 11 06.2**	**+0.2**
	comp=Z,2.1nm,0.8s,baz=216,slow=8.4,SNR=4.0						
TLY	**Talaya**	**39.60**	**322**	LR	LR	13 28 35.1	
	comp=Z,102nm,19.6s,baz=157,slow=38						
BILL	**Bilibino**	**45.05**	**12**	*e*P	**P**	**13 12 03.3**	**+0.8**
BILL				*e*		13 13 46.1	
BILL				*e*S	S	13 18 54.6	+16
BILL				pmax	pmax		
	comp=Z,11nm,1.7s						
BILL				MLR	MLR		
	comp=Z,27nm,17.0s						
BILL	**Bilibino**	**45.05**	**12**	*e*P	**P**	**13 12 01.5**	**-1.0**
	comp=Z,14nm,1.3s						
WRAB	**Tennant Creek**	**45.74**	**191**	*ce*P	**P**	**13 12 09.2**	**+0.7**
WRAB				pmax	pmax		
	comp=Z,29nm,1.2s						
WRAB	**Tennant Creek**	**45.74**	**191**	*e*P	**P**	**13 12 08.8**	**+0.3**
	comp=Z,9.3nm,0.8s						
WB2	**Warramunga Arr**	**45.74**	**191**	*e*P	**P**	**13 12 09.2**	**+0.6**
	comp=Z,10nm,0.8s						
WRA	**Warramunga Arr**	**45.75**	**191**	P	**P**	**13 12 08.7**	**+0.1**
	comp=Z,1.5nm,0.3s,baz=14,slow=9.4,SNR=34						
TIXI	**Tiksi**	**46.99**	**354**	*e*P	**P**	**13 12 17.6**	**-0.1**
TIXI				pmax	pmax		
	comp=Z,1.0nm,0.9s						
TIXI	**Tiksi**	**46.99**	**354**	*e*P	**P**	**13 12 17.4**	**-0.4**
	comp=Z,3.3nm,0.4s						
WMQ	**Urumqi**	**48.00**	**307**	*e*P	**P**	**13 12 25.9**	**-0.2**
WMQ				pP	sP	13 12 39.5	-2.2
WMQ				sP	pP	13 12 46.9	+10
WMQ				pmax	pmax		
	comp=Z,4.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,29nm,5.0s						
WMQ				LR	LR		
	comp=N,22nm,18.8s						
WMQ				LR	LR		
	comp=E,6.0nm,22.4s						
WMQ				LR	LR		
	comp=Z,19nm,20.6s						
AS31	**Alice Springs**	**49.46**	**191**	*e*P	**P**	**13 12 38.0**	**+0.6**
	comp=Z,0.8nm,0.7s						
ASAR	**Alice Springs**	**49.46**	**191**	P	**P**	**13 12 37.6**	**+0.2**
	comp=Z,0.7nm,0.7s,baz=11,slow=6.0,SNR=17						
TNA	**Tin City**	**50.78**	**24**	*e*P	**P**	**13 12 47.3**	**+0.5**
	comp=Z,6.3nm,1.0s						
ZALV	**Zalesovo Beam**	**51.13**	**320**	P	**P**	**13 12 49.4**	**-0.3**
	comp=Z,0.6nm,0.4s,baz=126,slow=7.3,SNR=3.3						
ZALV				PcP	**PcP**	**13 14 04.4**	**-0.4**
	comp=Z,0.7nm,0.4s,baz=90,slow=2.9,SNR=3.9						
MKAR	**Makanchi Array**	**51.97**	**311**	P	**P**	**13 12 55.7**	**-0.4**
	comp=Z,0.9nm,0.8s,baz=98,slow=8.4,SNR=5.8						
MKAR				LR	LR	13 36 28.5	
	comp=Z,43nm,18.1s,baz=261,slow=38						
NRIK	**Noril'sk**	**54.45**	**339**	LR	LR	13 37 44.8	
	comp=Z,79nm,18.3s,baz=288,slow=38						
SVW2	**Sparrevohn**	**54.51**	**32**	*es*P	sP	13 13 36.1	+5.8
KURK	**Kurchatov**	**54.56**	**315**	*e*P	**P**	**13 13 14.3**	**-0.8**
KURK				pmax	pmax		
	comp=Z,6.0nm,0.6s						
KURK	**Kurchatov**	**54.56**	**315**	*e*P	**P**	**13 13 14.2**	**-0.8**
	comp=Z,5.6nm,0.6s						
KDAK	**Kodiak Island**	**55.48**	**36**	*i*P	**P**	**13 13 22.7**	**+1.1**
CAST	**Castle Rocks**	**56.57**	**29**	*e*P	**P**	**13 13 29.6**	**+0.3**
	comp=Z,5.7nm,0.8s						
STKA	**Stephens Creek**	**56.91**	**181**	P	**P**	**13 13 32.8**	**+0.8**
	comp=Z,3.7nm,0.9s,baz=357,slow=4.4,SNR=5.1						
TRF	**Thorofare Moun**	**57.37**	**29**	*e*P	**P**	**13 13 34.6**	**-0.6**
	comp=Z,9.3nm,1.2s						
AAK	**Ala-Archa**	**57.66**	**306**	*e*P	**P**	**13 13 39.5**	**+1.9**
AAK				pmax	pmax		
	comp=Z,4.0nm,1.0s						
RND	**Reindeer**	**58.00**	**30**	*e*P	**P**	**13 13 38.6**	**-0.9**
RND				pmax	pmax		
	comp=Z,5.0nm,0.8s						
RND	**Reindeer**	**58.00**	**30**	*e*P	**P**	**13 13 38.6**	**-0.9**
	comp=Z,4.7nm,0.8s						
MCK	**McKinley**	**58.01**	**29**	*e*P	**P**	**13 13 38.8**	**-0.7**
MCK				pmax	pmax		
	comp=Z,10.0nm,1.2s						
MCK	**McKinley**	**58.01**	**29**	*e*P	**P**	**13 13 38.8**	**-0.7**
	comp=Z,10nm,1.2s						
COLD	**Coldfoot**	**58.04**	**25**	*e*P	**P**	**13 13 40.2**	**+0.6**
	comp=Z,4.3nm,1.0s						
SCM	**Sheep Creek Mo**	**58.54**	**32**	*e*P	**P**	**13 13 43.3**	**0.0**
SCM				pmax	pmax		
	comp=Z,9.0nm,0.8s						
SCM	**Sheep Creek Mo**	**58.54**	**32**	*e*P	**P**	**13 13 43.3**	**0.0**
	comp=Z,8.8nm,0.8s						
IL1	**Eielson Array**	**59.02**	**28**	*e*P	**P**	**13 13 44.8**	**-1.7**
ILAR	**Eielson Array**	**59.02**	**28**	P	**P**	**13 13 45.0**	**-1.5**
	comp=Z,3.2nm,0.9s,baz=258,slow=5.4,SNR=24						
ILAR	**Eielson Array**	**59.02**	**28**	P	**P**	**13 13 45.0**	**-1.5**
ILB	**Eielson Array**	**59.02**	**28**	*e*P	**P**	**13 13 44.8**	**-1.7**
BRVK	**Borovoye**	**59.72**	**318**	*e*P	**P**	**13 13 51.7**	**+0.2**
BRVK				pmax	pmax		
	comp=Z,10.0nm,1.7s						
BRVK	**Borovoye**	**59.72**	**318**	*e*P	**P**	**13 13 50.9**	**-0.7**
	comp=Z,4.1nm,0.8s						
BMRM	**Bremner River**	**59.80**	**33**	*e*P	**P**	**13 13 51.2**	**-0.7**
	comp=Z,7.9nm,1.0s						
DOT	**Dot Lake**	**60.16**	**30**	*e*P	**P**	**13 13 53.8**	**-0.6**
	comp=Z,12nm,1.0s						
ZRNK	**Zerenda**	**60.50**	**318**	*e*P	**P**	**13 13 56.2**	**-0.6**
ZRNK				pmax	pmax		
	comp=Z,3.0nm,0.7s						
ZRNK	**Zerenda**	**60.50**	**318**	*e*P	**P**	**13 13 56.2**	**-0.6**
	comp=Z,2.5nm,0.7s						
KKAR	**Karatay Array**	**60.51**	**307**	*e*P	**P**	**13 13 56.5**	**-0.6**
KKAR	**Karatay Array**	**60.51**	**307**	*e*P	**P**	**13 13 56.5**	**-0.6**
INK	**Inuvik**	**64.42**	**24**	P	**P**	**13 14 22.2**	**-0.6**
	comp=Z,3.6nm,1.0s,baz=293,slow=5.3,SNR=13						
INK	**Inuvik**	**64.42**	**24**	*e*P	**P**	**13 14 22.5**	**-0.2**
	comp=Z,4.1nm,0.9s						
ARU	**Arti**	**66.10**	**323**	*d*iP	**P**	**13 14 34.3**	**+0.5**
ARU						13 15 01.2	
ARU						13 17 01.2	
ARU				S	**S**	**13 23 20.7**	**+1.3**
ARU				SS	**SS**	**13 27 34.0**	**-0.9**
ARU				pmax	pmax		
	comp=Z,8.0nm,1.0s						
ARU	**Arti**	**66.10**	**323**	*e*P	**P**	**13 14 33.2**	**-0.6**
	comp=Z,9.3nm,1.1s						
ABKAR	**Akbulak array**	**66.66**	**315**	*e*P	**P**	**13 14 36.9**	**-0.7**
DLBC	**Dease Lake**	**67.36**	**35**	*e*P	**P**	**13 14 42.6**	**+0.6**
	comp=Z,6.7nm,1.3s						
YKW3	**Yellowknife Ar**	**73.42**	**28**	*e*P	**P**	**13 15 18.4**	**-0.4**
	comp=Z,4.2nm,1.1s						
YKA	**Yellowknife Ar**	**73.45**	**28**	P	**P**	**13 15 18.2**	**-0.7**
	comp=Z,2.6nm,0.9s,baz=291,slow=5.8,SNR=23						
YKB5	**Yellowknife Ar**	**73.45**	**28**	*e*P	**P**	**13 15 17.5**	**-1.5**
RES	**Resolute Bay**	**73.64**	**14**	P	**P**	**13 15 19.9**	**0.0**
	comp=Z,1.7nm,1.1s,baz=332,slow=9.9,SNR=4.0						
KLMR	**Klimovskoe**	**74.33**	**330**	*e*P	**P**	**13 15 24.6**	**+0.5**
KLMR				pmax	pmax		
	comp=Z,10.0nm,1.4s						
E03A	**Lebam**	**74.48**	**46**	*e*P	**P**	**13 15 27.6**	**+2.3**
	comp=Z,40nm,0.4s						
ARCES	**ARCESS Array B**	**75.35**	**341**	P	**P**	**13 15 31.3**	**+1.4**
	comp=Z,4.0nm,0.8s,baz=79,slow=7.5,SNR=4.2						
ZEI	**Tsey**	**79.28**	**312**	*e*P	**P**	**13 15 51.1**	**-1.6**
ZEI				pmax	pmax		
	comp=Z,5.0nm,0.6s						
KBZ	**Khabaz**	**79.55**	**313**	P	**P**	**13 15 54.4**	**+0.5**
	comp=Z,4.7nm,0.9s,baz=108,slow=6.4,SNR=9.3						
KIV	**Kislovodsk**	**79.60**	**314**	*e*P	**P**	**13 15 55.8**	**+1.6**
KIV				pmax	pmax		
	comp=Z,4.0nm,1.0s						
KIV				MLR	MLR		
	comp=Z,45nm,18.0s						
FIA1	**FINESS Array S**	**79.72**	**334**	*e*P	**P**	**13 15 53.7**	**-0.7**
FINES	**FINESS Array B**	**79.72**	**334**	P	**P**	**13 15 54.0**	**-0.4**
	comp=Z,2.6nm,0.6s,baz=79,slow=5.1,SNR=20						
GNI	**Garni**	**79.80**	**310**	*e*P	**P**	**13 15 55.6**	**+0.1**
GNI				pmax	pmax		
	comp=Z,14nm,1.2s						
LRM	**Limekiln Ridge**	**81.81**	**43**	*e*P	**P**	**13 16 06.1**	**-0.2**
AKASG	**Malin Array Be**	**84.31**	**324**	P	**P**	**13 16 18.0**	**-0.7**
	comp=Z,1.0nm,0.4s,baz=51,slow=5.1,SNR=4.1						
AKASG				LR	LR	13 56 59.5	
	comp=Z,75nm,18.2s,baz=70,slow=38						
AKASG	**Malin Array Be**	**84.31**	**324**	P	**P**	**13 16 18.0**	**-0.7**
KIEV	**Kiev**	**84.32**	**324**	*i*P	**P**	**13 16 18.2**	**-0.6**
KIEV				pmax	pmax		
	comp=Z,3.0nm,0.9s						
PDAR	**Pinedale Array**	**85.11**	**45**	P	**P**	**13 16 22.9**	**-0.4**
	comp=Z,0.9nm,1.0s,baz=267,slow=6.3,SNR=4.9						
NB2	**NORSAR Subarra**	**85.41**	**339**	P	**P**	**13 16 23.2**	**-0.9**
	comp=Z,2.2nm,0.7s,baz=45,slow=5.1						
NOA	**NORSAR Array B**	**85.41**	**339**	P	**P**	**13 16 23.3**	**-0.8**
	comp=Z,2.4nm,0.9s,baz=46,slow=4.8,SNR=5.0						
KNB	**Kanab**	**85.73**	**51**	*e*P	**P**	**13 16 26.7**	**+0.3**
KNB				pmax	pmax		
	comp=Z,7.0nm,1.0s						
KNB	**Kanab**	**85.73**	**51**	*e*P	**P**	**13 16 26.7**	**+0.3**
	comp=Z,7.1nm,1.0s						
Q16A	**Castle Valley**	**85.96**	**49**	*e*P	**P**	**13 16 27.5**	**0.0**
	comp=Z,5.8nm,1.2s						
BRTR	**Keskin Array B**	**87.54**	**313**	P	**P**	**13 16 34.8**	**-0.3**
	comp=Z,0.3nm,0.4s,baz=63,slow=6.6,SNR=2.9						
ANMO	**Albuquerque**	**91.23**	**50**	*e*P	**P**	**13 16 53.2**	**+0.6**
ANMO				pmax	pmax		
	comp=Z,3.0nm,1.2s						
ANMO	**Albuquerque**	**91.23**	**50**	*e*P	**P**	**13 16 53.1**	**+0.4**
	comp=Z,3.3nm,1.1s						
GERES	**GERESS Array B**	**93.25**	**329**	P	**P**	**13 17 02.1**	**+0.6**
	comp=Z,0.5nm,0.3s,baz=34,slow=7.1,SNR=3.5						
TXAR	**Lajitas Array**	**96.26**	**54**	P	**P**	**13 17 14.8**	**-0.9**
	comp=Z,0.8nm,1.0s,baz=293,slow=4.7,SNR=4.8						
LPAZ	**La Paz**	**149.85**	**79**	PKPbc	**PKPbc**	**13 23 38.7**	**+0.3**
	comp=Z,3.0nm,0.6s,baz=21,slow=3.9,SNR=12						
SAML	**Samuel**	**150.45**	**61**	*e*PKPdf	**PKPdf**	**13 23 33.9**	**0.0**
SAML				*e*PKPbc	**PKPbc**	**13 23 38.4**	**-0.7**

JMA 09 13:15:37.4±0.2, 35°.84N×140°.99E, h14km±2km, M3.2, 1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.17**	**218**	||P	Pg	13 15 41.5	0.0
CHOJ				S	Sg	13 15 44.3	0.0
JYT	**Yasato**	**0.75**	**301**	P	Pg	13 15 51.3	-0.7
JYT				S	Sg	13 16 01.6	-0.3
JCN	**Nagara**	**0.77**	**237**	P	Pn	13 15 53.2	-0.6
JCN				S	Sn	13 16 05.1	0.0
MAT	**Matsushiro**	**2.36**	**288**	P	Pn	13 16 15.4	-0.3
MAT				*e*S	Sn	13 16 42.9	-1.6

IDC 09 13:19:13.3±1.1, 26°.66N×144°.27E, h0km, mb3.4/6, mb1 3.5/6, mb1mx3.4/35, mbtmp3.4/6, Error ellipse: s-maj=32.4km s-min=22.5km az=76.0, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JCJ	**Chichijima**	**1.91**	**284**	Pn	Pn	13 19 46.2	-0.9
	baz=40,slow=18						
JCJ				Sn	Sn	13 20 08.2	-3.7
	baz=44,slow=18						
SONM	**Songino Array**	**36.32**	**316**	P	P	13 26 19.0	+0.1
	0.4nm,0.5s,baz=117,slow=7.7,SNR=4.3						
WRA	**Warramunga Arr**	**47.31**	**193**	P	P	13 27 48.8	0.0
	1.0nm,0.8s,baz=13,slow=8.3,SNR=7.2						
ASAR	**Alice Springs**	**51.02**	**192**	P	P	13 28 17.1	-0.1
	0.1nm,0.7s,baz=18,slow=13,SNR=3.7						
MKAR	**Makanchi Array**	**52.18**	**310**	P	P	13 28 26.4	+0.6
	0.5nm,0.8s,baz=98,slow=7.4,SNR=3.8						
KURBB	**Kurchatov Arra**	**54.67**	**315**	P	P	13 28 43.8	-0.2
	0.2nm,0.4s,baz=91,slow=8.1,SNR=4.1						
YKA	**Yellowknife Ar**	**71.64**	**29**	P	P	13 30 36.2	-0.2
	0.1nm,0.6s,baz=292,slow=6.4,SNR=2.8						

IDC 09 13:22:45.9±7.8, 10°.26N×91°.23E, h0km, mb3.2/4, mb1 3.4/4, mb1mx3.2/42, mbtmp3.2/4, MS3.3/3, Ms1 3.3/3, ms1mx2.8/16, Error ellipse: s-maj=400.5km s-min=22.8km az=59.0, Andaman Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
H08S3	**Diego Garcia H**	**25.77**	**227**	T	T	13 55 57.0	
	baz=47,slow=76,SNR=40						
H08S2	**Diego Garcia H**	**25.78**	**227**	T	T	13 56 00.7	
	baz=47,slow=76,SNR=30						
H08S1	**Diego Garcia H**	**25.79**	**227**	T	T	13 55 59.4	
	baz=47,slow=76,SNR=38						
DAV	**Davao City (W)**	**34.09**	**93**	LR	LR	13 44 43.4	
	comp=Z,28nm,18.1s,baz=284,slow=39						
MKAR	**Makanchi Array**	**37.19**	**350**	P	P	13 29 58.7	-0.2
	0.1nm,0.5s,baz=157,slow=7.8,SNR=2.2						
KURBB	**Kurchatov Arra**	**41.58**	**348**	P	P	13 30 35.3	-0.1
	0.2nm,0.6s,baz=165,slow=7.7,SNR=3.2						
FITZ	**Fitzroy Crossi**	**44.14**	**129**	LR	LR	13 51 08.2	
	comp=Z,46nm,18.5s,baz=248,slow=39						
KLR	**Kul'dur**	**51.38**	**33**	LR	LR	13 55 34.2	
	comp=Z,26nm,20.0s,baz=272,slow=38						
WRA	**Warramunga Arr**	**51.98**	**125**	P	P	13 31 57.1	-0.2
	0.4nm,0.8s,baz=305,slow=8.5,SNR=3.9						
ASAR	**Alice Springs**	**53.64**	**129**	P	P	13 32 09.7	0.0
	0.4nm,0.8s,baz=299,slow=7.0,SNR=5.9						

ISCJB ***09*** *13:33:44.4±0.8, 24°.99N±0°.09×123°.30E±0°.07, h137km±5km, mb3.1/3, Error ellipse: s-maj=16.8km s-min=7.3km az=152.6*
JMA ***09*** *13:33:46.8±0.2, 24°.88N×123°.32E, h130km±3km, M2.9*
IDC ***09*** *13:33:55.9±8.7, 24°.98N×123°.76E, h230km±66km, mb2.9/3, mb1 3.2/4, mb1mx2.8/42, mbtmp3.6/4, Error ellipse: s-maj=297.7km s-min=22.8km az=92.0*

ISC 09 13:33:45.4±1.0, 25°.0N±0°.1×123°.29E±0°.07, h135km±8km, n17, σ0s65/25, mb3.2/3, Southwestern Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
YOJ	**Yonaguni jima**	**0.59**	**205**	P	**Pn**	**13 34 06.2**	**+0.7**
YOJ				*e*S	**Sn**	**13 34 19.9**	**-0.8**
JYNG	**Yonagunijimaku**	**0.63**	**210**	P	**Pn**	**13 34 06.4**	**+0.7**
JYNG				*e*S	**Sn**	**13 34 20.8**	**-0.3**
IRIF	**Iriomote-Funau**	**0.77**	**149**	P	**Pn**	**13 34 06.9**	**+0.1**
IRIF				S	**Sn**	**13 34 22.2**	**-0.8**
JIJ	**Ishigaki jima**	**1.00**	**129**	P	**Pn**	**13 34 09.0**	**+0.3**
JIJ				S	**Sn**	**13 34 25.1**	**-1.3**
JKRS	**Kuro-shima**	**1.00**	**139**	P	**Pn**	**13 34 09.4**	**+0.7**
JKRS				S	**Sn**	**13 34 26.0**	**-0.4**
JISG	**Ishigakijimahi**	**1.01**	**114**	P	**Pn**	**13 34 09.3**	**+0.5**
JISG				S	**Sn**	**13 34 26.0**	**-0.6**
HATJ	**Hateruma jima**	**1.05**	**153**	*e*S	**Sn**	**13 34 26.8**	**-0.4**
JTJ	**Tarama**	**1.33**	**105**	P	**Pn**	**13 34 12.8**	**+0.8**
JTJ				S	**Sn**	**13 34 32.5**	**+0.3**
JIRB	**Irabujima**	**1.72**	**95**	S	**Sn**	**13 34 39.2**	**-0.6**
JIKM	**Ikemajima**	**1.78**	**92**	S	**Sn**	**13 34 41.3**	**+0.2**
JMJ	**Miyako jima 2**	**1.83**	**95**	S	**Sn**	**13 34 42.1**	**0.0**
JKE	**Kume jima 2**	**3.42**	**67**	P	**Pn**	**13 34 37.6**	**0.0**
JKE				*e*S	**Sn**	**13 35 18.2**	**+0.2**
JAGN	**Aguni-jima**	**3.90**	**65**	*e*S

baz=314,slow=76,SNR=50
KURBB Kurchatov Arra 46.07 308 P **P 13 43 42.9 -0.7**
0.3nm,0.4s,baz=84,slow=7.6,SNR=5.0
WRA Warramunga Arr 56.53 188 P **P 13 45 00.9 -1.4**
0.4nm,0.7s,baz=5.7,slow=7.2,SNR=5.3
ASAR Alice Springs 60.26 188 P **P 13 45 28.5 +0.1**
0.3nm,0.8s,baz=15,slow=5.8,SNR=4.3
AFI Afiamalu 67.05 129 LR LR 14 08 26.5
comp=Z,102nm,21.8s,baz=114,slow=30

*IDC **09** 13:54:42.6±2.2, 37°.08N×143°.89E, h0km, mb3.4/3, mb1 3.6/6, mb1mx3.3/38, mbtmp3.6/6, ML3.4/3, MS2.9/1, Ms1 2.9/1, ms1mx2.2/24, Error ellipse: s-maj=48.2km s-min=25.1km az=81.0*
ISC 09 13:54:49.0±2.2, 36°.9N±0°.2×143°.6E±0°.3, h35km, n8, σ0°72/6, mb3.4/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**4.36**	**267**	Pn	**Pn**	**13 55 52.5**	**-0.3**
	2.5nm,0.3s,baz=83,slow=16,SNR=26						
MAT	**Matsushiro**	**4.36**	**267**	P	**Pn**	**13 55 53.4**	**+0.6**
JHJ	**Hachijo jima 2**	**4.92**	**221**	Pn	**Pn**	**13 56 00.1**	**-0.3**
	2.7nm,0.3s,baz=66,slow=19,SNR=2.0						
ASAJ	**Asahikawa**	**7.24**	**354**	Pn	Pn	13 56 26.1	-6.1
	0.8nm,0.3s,baz=205,slow=14,SNR=8.7						
KSRS	**Korea Array**	**12.53**	**277**	LR	LR	14 01 54.7	
	comp=Z,53nm,21.8s,baz=113,slow=34						
SONM	**Songino Array**	**29.32**	**304**	P	**P**	**14 00 48.7**	**+0.4**
	0.3nm,0.4s,baz=91,slow=7.5,SNR=2.8						
MKAR	**Makanchi Array**	**45.68**	**303**	P	**P**	**14 03 05.4**	**-0.8**
	0.4nm,0.7s,baz=91,slow=8.8,SNR=2.6						
WRA	**Warramunga Arr**	**57.22**	**190**	P	**P**	**14 04 33.2**	**+0.5**
	0.2nm,0.5s,baz=8.3,slow=7.4,SNR=3.7						

*NIED **09** 13:55:00, 35°.70N×140°.20E, h62km, Mw4.1 Best double couple: M0 1.75000×10^15 NP1:φ=204.00000°, δ27.00000°, λ110.00000°. NP2:φ=1.00000°, δ65.00000°, λ80.00000°.*
*ISCJB **09** 13:55:45.2±0.4, 35°.56N±0°.04×140°.15E±0°.06, h74km±4km, mb3.6/12, Error ellipse: s-maj=8.1km s-min=5.8km az=145.5*
*JMA **09** 13:55:45.1±0.2, 35°.66N×140°.19E, h66km±2km, M3.7 Broadband fault plane solution: P waves. NP1: φ=11.00000°, δ86.00000°, λ89.00000°. NP2:φ=205.00000°, δ4.00000°, λ104.00000°. Principal axes: T Plg49.0000°, Azm280.0000°; N Plg1.0000°, Azm11.0000°; P Plg41.0000°, Azm102.0000°;*
JMA Felt I J1.
*IDC **09** 13:55:46.7±2.0, 35°.51N×140°.12E, h72km±18km, mb3.4/12, mb1 3.6/14, mb1mx3.5/37, mbtmp3.7/14, MS3.1/4, Ms1 3.1/4, ms1mx2.7/20 Error ellipse: s-maj=22.1km s-min=14.1km az=76.0*
ISC 09 13:55:45.9±0.8, 35°.63N±0°.05×140°.18E±0°.05, h65km±7km, n38, σ1°32/37, mb3.7/12, 2C-5D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCN	**Nagara**	**0.22**	**176**	↑P	**Pn**	**13 55 56.1**	**0.0**
JCN				S	**Sn**	**13 56 05.0**	**+1.6**
TOK	**Tokyo**	**0.35**	**279**	↓P	**Pn**	**13 55 57.2**	**+0.3**
BSO3	**Boso 3**	**0.87**	**162**	↑P	**Pn**	**13 56 01.7**	**-0.6**
JOD2	**Odawara 2**	**0.97**	**248**	↓P	**Pn**	**13 56 03.1**	**-0.7**
JOD2				S	**Sn**	**13 56 15.9**	**-1.2**
JAG	**Ashikaga**	**0.99**	**323**	↓P	**Pn**	**13 56 03.5**	**-0.5**
JIM2	**Oshima 3**	**1.10**	**214**	P	**Pn**	**13 56 04.6**	**-1.0**
JIM2				S	**Sn**	**13 56 18.9**	**-1.2**
JRY	**Ryogami san**	**1.11**	**291**	↓P	**Pn**	**13 56 05.7**	**+0.1**
BSO1	**Boso 1**	**1.18**	**146**	P	**Pn**	**13 56 04.9**	**-1.0**
BSO1				S	**Sn**	**13 56 21.6**	**+0.7**
JYN	**Shimob**	**1.34**	**265**	↓P	**Pn**	**13 56 08.3**	**-0.4**
JKT	**Katashina**	**1.36**	**326**	P	**Pn**	**13 56 08.6**	**-0.4**
JIZS	**Izushimoda**	**1.41**	**230**	P	**Pn**	**13 56 08.7**	**-0.8**
JIZS				S	**Sn**	**13 56 25.7**	**-1.5**
MJAR	**Matsushiro Arr**	**1.84**	**300**	P	**Pn**	**13 56 15.0**	**-0.3**
	64nm,0.3s,baz=59,slow=24,SNR=180						
MJAR				LR	LR	13 56 57.3	
	comp=Z,201nm,19.3s,baz=115,slow=39						
MAT	**Matsushiro**	**1.84**	**300**	P	**Pn**	**13 56 15.6**	**+0.3**
MAT				eS	**Sn**	**13 56 38.0**	**+0.3**
JHJ	**Hachijo jima 2**	**2.53**	**188**	P	**Pn**	**13 56 24.4**	**-0.3**
	108nm,0.3s,baz=52,slow=3.5,SNR=25						
JHJ				S	**Sn**	**13 56 52.8**	**-1.6**
	115nm,0.3s,baz=81,slow=23,SNR=13						
JNU	**Nakatsue**	**8.09**	**255**	P	Pn	13 57 43.8	+3.0
	0.6nm,0.3s,baz=15,slow=6.5,SNR=6.1						
ASAJ	**Asahikawa**	**8.67**	**12**	P	**Pn**	**13 57 46.8**	**-1.8**
	0.7nm,0.3s,baz=210,slow=14,SNR=3.5						
ASAJ				S	**Sn**	**13 59 20.0**	**-4.8**
	0.2nm,0.3s,baz=233,slow=20,SNR=1.9						
JCJ	**Chichijima**	**8.68**	**168**	P	Pn	13 57 44.8	-4.0
	baz=336,slow=20						
JCJ				S	Sn	13 59 14.0	-11
	8.4nm,0.3s,baz=253,slow=19,SNR=3.3						
KSRS	**Korea Array**	**10.03**	**284**	P	**Pn**	**13 58 08.9**	**+1.7**
	0.2nm,0.3s,baz=93,slow=15,SNR=5.8						
USRK	**Ussuriysk Ar.**	**10.61**	**326**	P	Pn	13 58 18.9	+3.8
	baz=124,slow=13,SNR=2.8						
KLR	**Kul'dur**	**14.93**	**338**	LR	LR	14 04 14.3	
	comp=Z,34nm,21.1s,baz=169,slow=34						
SONM	**Songino Array**	**27.78**	**306**	P	**P**	**14 01 30.7**	**+2.0**
	0.4nm,0.4s,baz=109,slow=11,SNR=3.0						
SONM				LR	LR	14 12 54.4	
	comp=Z,38nm,20.8s,baz=92,slow=37						
H11N2	**WAKE ISLAND Hy 28.34**	**117**		T	T	14 31 01.3	
	baz=310						
H11N1	**WAKE ISLAND Hy 28.35**	**117**		T	T	14 30 58.4	
	baz=310						
H11N3	**WAKE ISLAND Hy 28.36**	**117**		T	T	14 30 54.7	
	baz=310						
H11S3	**WAKE ISLAND Hy 28.99**	**119**		T	T	14 31 32.4	
	baz=308,slow=75						
H11S1	**WAKE ISLAND Hy 28.99**	**119**		T	T	14 31 32.3	
	baz=308,slow=75						
H11S2	**WAKE ISLAND Hy 29.01**	**119**		T	T	14 31 35.9	
	baz=308,slow=75,SNR=18						
ZALV	**Zalesovo Beam**	**42.14**	**314**	P	**P**	**14 03 31.5**	**-0.1**
	1.1nm,0.7s,baz=90,slow=4.4,SNR=5.3						
ZALV				PcP	**PcP**	**14 05 24.2**	**-0.7**
	1.0nm,0.7s,baz=108,slow=3.2,SNR=3.3						
MKAR	**Makanchi Array**	**44.04**	**303**	P	**P**	**14 03 46.9**	**-0.2**
	1.3nm,0.8s,baz=94,slow=9.8,SNR=10						
MKAR				LR	LR	14 21 00.2	
	comp=Z,30nm,19.2s,baz=202,slow=34						
ILAR	**Eielson Array**	**51.20**	**32**	P	**P**	**14 04 43.0**	**+0.7**
	0.3nm,0.7s,baz=269,slow=5.8,SNR=4.2						
WRA	**Warramunga Arr**	**55.55**	**187**	P	**P**	**14 05 13.1**	**-1.6**
	1.9nm,0.5s,baz=0.8,slow=7.6,SNR=47						
INK	**Inuvik**	**56.08**	**27**	P	**P**	**14 05 19.2**	**+1.3**
	0.6nm,0.8s,baz=304,slow=6.5,SNR=2.5						
ASAR	**Alice Springs**	**59.28**	**187**	P	**P**	**14 05 40.1**	**-0.7**
	0.6nm,0.5s,baz=22,slow=10,SNR=24						
YKA	**Yellowknife Ar**	**65.51**	**29**	P	**P**	**14 06 22.6**	**+0.7**
	0.1nm,0.3s,baz=301,slow=6.7,SNR=3.7						
FINES	**FINESS Array B**	**69.59**	**332**	P	**P**	**14 06 48.3**	**+0.7**
	1.4nm,0.9s,baz=22,slow=2.1,SNR=4.1						
AKASG	**Malin Array Be**	**74.79**	**322**	P	**P**	**14 07 18.4**	**-0.5**
	0.5nm,0.3s,baz=48,slow=5.9,SNR=5.7						
AKASG				LR	LR	14 42 16.3	
	comp=Z,32nm,21.9s,baz=270,slow=37						
BRTR	**Keskin Array B**	**79.03**	**311**	P	**P**	**14 07 44.1**	**+1.0**
	0.5nm,0.7s,baz=90,slow=3.7,SNR=3.5						
PDAR	**Pinedale Array**	**79.36**	**45**	P	**P**	**14 07 46.1**	**+1.1**
	0.4nm,0.8s,baz=276,slow=2.7,SNR=4.1						

*NIED **09** 13:58:00, 37°.40N×142°.50E, h14km, Mw3.4 Best double couple: M0 1.2000×10^14 NP1:φ=127.00000°, δ48.00000°, λ138.00000°. NP2:φ=248.00000°, δ60.00000°, λ51.00000°.*
*IDC **09** 13:58:28.0±1.8, 37°.40N×142°.84E, h0km, mb3.6/3, mb1 3.7/7, mb1mx3.4/38, mbtmp3.8/7, ML3.2/3, Error ellipse: s-maj=44.5km s-min=23.6km az=79.0*
*ISCJB **09** 13:58:29.2±0.8, 37°.41N±0°.05×142°.68E±0°.08, h21km, mb3.6/3, Error ellipse: s-maj=9.6km s-min=7.0km az=150.9*
*JMA **09** 13:58:29.9±0.2, 37°.45N×142°.52E, h9km±3km, M3.8*
ISC 09 13:58:30.3±1.0, 37°.43N±0°.05×142°.73E±0°.08, h21km, n22, σ1°74/23, mb3.7/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.48**	**268**	P	**Pn**	**13 58 54.2**	**-1.5**
JIO	**Ouri**	**1.50**	**314**	P	**Pn**	**13 58 54.9**	**-1.0**
JIO				S	**Sn**	**13 59 12.4**	**-2.3**
ONAJ	**Iwakimizuishiy**	**1.57**	**259**	P	**Pn**	**13 58 55.2**	**-1.8**
JMM	**Marumori**	**1.59**	**287**	P	**Pn**	**13 58 55.7**	**-1.6**
JMM				eS	**Sn**	**13 59 15.1**	**-2.1**
JOU	**Okura**	**1.88**	**300**	P	**Pn**	**13 59 00.8**	**-0.4**
JOU				S	**Sn**	**13 59 23.1**	**-1.2**
JFT	**Otama**	**1.90**	**273**	P	**Pn**	**13 59 01.1**	**-0.4**
JFT				eS	**Sn**	**13 59 23.5**	**-1.4**
JMK	**Ichinoseki**	**1.93**	**323**	P	**Pn**	**13 59 01.8**	**-0.1**
JOM	**Ohasama**	**2.33**	**332**	P	**Pn**	**13 59 07.9**	**+0.5**
JYK	**Kaneyama**	**2.38**	**309**	P	**Pn**	**13 59 08.5**	**+0.4**
MJAR	**Matsushiro Arr**	**3.72**	**258**	Pn	**Pn**	**13 59 27.7**	**+1.1**
	0.7nm,0.3s,baz=78,slow=13,SNR=5.6						
MJAR				Sn	**Sn**	**14 00 13.6**	**+3.8**
	0.4nm,0.3s,baz=54,slow=18,SNR=3.3						
JHJ	**Hachijo jima 2**	**4.93**	**210**	Pn	**Pn**	**13 59 44.6**	**+1.5**
	1.5nm,0.3s,baz=68,slow=19,SNR=3.1						
JHJ				Sn	**Sn**	**14 00 36.0**	**-3.4**
	9.5nm,0.3s,baz=72,slow=20,SNR=2.8						
ASAJ	**Asahikawa**	**6.68**	**359**	Pn	**Pn**	**14 00 08.3**	**+1.1**
	0.8nm,0.3s,baz=186,slow=18,SNR=5.3						
ASAJ				Sn	**Sn**	**14 01 21.3**	**-1.3**
	0.2nm,0.3s,baz=127,slow=20,SNR=2.1						
JCJ	**Chichijima**	**10.31**	**183**	Pn	**Pn**	**14 00 55.6**	**-1.4**
	baz=18,slow=20,SNR=2.0						
JCJ				Sn	Sn	14 02 43.6	-8.3
	1.3nm,0.3s,baz=16,slow=20,SNR=2.0						
H11N2	**WAKE ISLAND Hy 27.47**	**123**		T	T	14 33 03.3	
	baz=312,slow=76						
H11N1	**WAKE ISLAND Hy 27.48**	**123**		T	T	14 33 03.7	
	baz=312,slow=76						
H11N3	**WAKE ISLAND Hy 27.49**	**123**		T	T	14 33 00.5	
	baz=312,slow=76						
H11S1	**WAKE ISLAND Hy 28.21**	**125**		T	T	14 34 02.2	
	baz=317,slow=76,SNR=41						
H11S3	**WAKE ISLAND Hy 28.21**	**125**		T	T	14 34 02.6	
	baz=317,slow=76,SNR=38						
H11S2	**WAKE ISLAND Hy 28.23**	**125**		T	T	14 34 04.7	
	baz=317,slow=76,SNR=32						
SONM	**Songino Array**	**28.44**	**303**	P	**P**	**14 04 25.0**	**+1.3**
	0.6nm,0.7s,baz=106,slow=9.2,SNR=3.7						
WRA	**Warramunga Arr**	**57.61**	**189**	P	**P**	**14 08 19.6**	**+0.8**
	0.8nm,0.7s,baz=9.2,slow=7.3,SNR=6.2						
ASAR	**Alice Springs**	**61.33**	**189**	P	**P**	**14 08 45.5**	**+1.1**
	0.5nm,0.9s,baz=3.1,slow=6.6,SNR=5.6						

GUC 09 14:16:59.0±0.4, 35°.51S×72°.23W, h15km±5km, ML3.6, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TALC	**Talca**	**0.49**	**78**	eP	Pb	14 17 09.2	-0.2
TALC				eS	Sg	14 17 15.6	+0.2
COCH	**Cobquecura**	**0.77**	**216**	eP	Pg	14 17 13.4	-0.7
COCH				eS	Sg	14 17 23.4	-0.9
COCH				IAML		14 17 24.3	
	comp=E,4μm,0.1s						
CCHI	**Chillan**	**1.10**	**174**	eP	Pb	14 17 18.8	-1.0
CCHI				eS	Sb	14 17 32.8	-1.2
CCHI				IAML		14 17 35.5	
	comp=E,3μm,0.4s						
CHPI	**Pichilemu**	**1.13**	**9**	eP	Pb	14 17 19.1	-1.1
CHPI				eS	Sb	14 17 33.3	-1.3

*DDA **09** 14:24:04.8, 39°.91N×33°.04E, h7km, Md2.6, Suspected Mining explosion.*
*ISCJB **09** 14:24:05.1±0.5, 39°.90N±0°.03×33°.06E±0°.04, h0km, Error ellipse: s-maj=4.1km s-min=3.6km az=31.1*
*ISK **09** 14:24:05.4, 39°.86N×33°.04E, h7km, MD2.9*
*CSEM **09** 14:24:05.0±0.2, 39°.89N×33°.06E, h2km, MD2.9, Error ellipse: s-maj=4.2km s-min=4.1km az=126.0, Suspected Mining explosion.*
ISC 09 14:24:05.5±0.8, 39°.89N±0°.02×33°.09E±0°.02, h0km, n24, σ0°74/41, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LOD	**Lodumlu**	**0.25**	**269**	ePG	**Pg**	**14 24 10.2**	**0.0**
LOD				eSG	**Sg**	**14 24 13.5**	**-0.1**
LOD	**Lodumlu**	**0.25**	**269**	ePg	**Pg**	**14 24 10.3**	**0.0**
LOD				eSg	**Sg**	**14 24 13.5**	**-0.1**
BBAL	**Bala**	**0.35**	**176**	P	**Pg**	**14 24 10.9**	**-1.3**
BBAL				S	**Sg**	**14 24 18.0**	**+1.3**
BBAL	**Bala**	**0.35**	**176**	iP	**Pg**	**14 24 10.9**	**-1.3**
BBAL				iS	**Sg**	**14 24 18.0**	**+1.3**
AFSR	**Af¨ar-Bala (A**	**0.45**	**182**	ePG	**Pg**	**14 24 13.7**	**-0.3**
AFSR				eSG	**Sg**	**14 24 20.3**	**+0.5**
AFSR	**Af¨ar-Bala (A**	**0.45**	**182**	ePg	**Pg**	**14 24 13.7**	**-0.3**
AFSR				eSg	**Sg**	**14 24 20.3**	**+0.5**
ELDT	**Eldivan**	**0.65**	**23**	P	**Pg**	**14 24 17.2**	**-0.7**
ELDT				S	**Sg**	**14 24 27.3**	**+0.9**
ELDT	**Eldivan**	**0.65**	**23**	iP	**Pg**	**14 24 17.2**	**-0.7**
ELDT				iS	**Sg**	**14 24 27.3**	**+0.9**
KAMT	**Kaman**	**0.71**	**137**	ePG	**Pg**	**14 24 18.6**	**-0.4**
KAMT	**Kaman**	**0.71**	**137**	ePg	**Pg**	**14 24 18.6**	**-0.4**
KKUL	**Konya-Kulu**	**0.73**	**191**	P	**Pg**	**14 24 19.1**	**-0.4**
KKUL	**Konya-Kulu**	**0.73**	**191**	iP	**Pg**	**14 24 19.1**	**-0.4**
KKUL				iS	**Sb**	**14 24 31.0**	**-0.8**
CDAG	**Cicekdag**	**1.02**	**105**	P	**Pg**	**14 24 24.4**	**-0.7**
CDAG				S	**Sn**	**14 24 41.4**	**-0.9**
CDAG	**Cicekdag**	**1.02**	**105**	iP	**Pg**	**14 24 24.4**	**-0.7**
CDAG				iS	**Sn**	**14 24 41.4**	**-0.9**
BCAM	**Yenicaga**	**1.21**	**320**	P	**Pg**	**14 24 27.6**	**-1.1**
BCAM				S	**Sn**	**14 24 47.6**	**+0.6**
BCAM	**Yenicaga**	**1.21**	**320**	iP	**Pg**	**14 24 27.6**	**-1.1**
BCAM				iS	**Sn**	**14 24 47.6**	**+0.6**
CORM	**Corum**	**1.21**	**76**	ePN	**Pn**	**14 24 29.8**	**0.0**
CORM				eSN	**Sn**	**14 24 48.1**	**+1.0**
CORM	**Corum**	**1.21**	**76**	ePn	**Pn**	**14 24 29.8**	**0.0**
CORM				eSn	**Sn**	**14 24 48.1**	**+1.0**
SVRH	**Sivrihisar-ESK**	**1.29**	**250**	ePN	**Pg**	**14 24 29.8**	**-0.4**
SVRH				eSN	**Sb**	**14 24 47.4**	**-0.5**
SVRH	**Sivrihisar-ESK**	**1.29**	**250**	ePn	**Pg**	**14 24 29.8**	**-0.4**
SVRH				eSn	**Sb**	**14 24 47.4**	**-0.5**
TOS	**Tosya**	**1.34**	**32**	ePN	**Pb**	**14 24 31.6**	**0.0**
TOS	**Tosya**	**1.34**	**32**	ePn	**Pb**	**14 24 31.6**	**0.0**
YOZ	**Yozgat**	**1.73**	**98**	ePN	**Pn**	**14 24 37.5**	**+0.5**
YOZ	**Yozgat**	**1.73**	**98**	ePn	**Pn**	**14 24 37.5**	**+0.5**

*ISK **09** 14:26:27.8, 39°.87N×33°.05E, h5km, MD3.1*
*ISCJB **09** 14:26:28.7±0.4, 39°.90N±0°.02×33°.07E±0°.04, h0km, Error ellipse: s-maj=4.4km s-min=3.4km az=18.1*
*DDA **09** 14:26:28.5, 39°.91N×33°.09E, h7km, Md2.6, Suspected Mining explosion.*
*CSEM **09** 14:26:28.5±0.2, 39°.91N×33°.05E, h2km, MD3.1, Error ellipse: s-maj=4.9km s-min=3.7km az=107.0, Suspected Mining explosion.*
ISC 09 14:26:29.0±0.8, 39°.91N±0°.02×33°.06E±0°.02, h0km, n24, σ0°67/40, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LOD	**Lodumlu**	**0.23**	**266**	ePG	**Pg**	**14 26 33.4**	**0.0**
LOD				eSG	**Sg**	**14 26 36.8**	**+0.4**
LOD	**Lodumlu**	**0.23**	**266**	ePg	**Pg**	**14 26 33.4**	**0.0**
LOD				eSg	**Sg**	**14 26 36.8**	**+0.4**
BBAL	**Bala**	**0.37**	**173**	P	**Pg**	**14 26 35.7**	**-0.3**
BBAL				S	**Sg**	**14 26 41.3**	**+0.6**
BBAL	**Bala**	**0.37**	**173**	iP	**Pg**	**14 26 35.7**	**-0.3**
BBAL				iS	**Sg**	**14 26 41.3**	**+0.6**
AFSR	**Af¨ar-Bala (A**	**0.46**	**179**	ePG	**Pg**	**14 26 37.4**	**-0.4**
AFSR	**Af¨ar-Bala (A**	**0.46**	**179**	ePg	**Pg**	**14 26 37.4**	**-0.4**
ELDT	**Eldivan**	**0.65**	**25**	P	**Pg**	**14 26 41.2**	**-0.2**
ELDT				S	**Sg**	**14 26 51.0**	**+1.2**
ELDT	**Eldivan**	**0.65**	**25**	iP	**Pg**	**14 26 41.2**	**-0.2**
ELDT				iS	**Sg**	**14 26 51.0**	**+1.2**
KAMT	**Kaman**	**0.73**	**137**	ePG	**Pg**	**14 26 42.0**	**-1.1**
KAMT	**Kaman**	**0.73**	**137**	ePg	**Pg**	**14 26 42.0**	**-1.1**
KKUL	**Konya-Kulu**	**0.74**	**189**	P	**Pg**	**14 26 42.9**	**-0.3**
KKUL				S	**Sb**	**14 26 54.9**	**-0.7**
KKUL	**Konya-Kulu**	**0.74**	**189**	iP	**Pg**	**14 26 42.9**	**-0.3**
KKUL				iS	**Sb**	**14 26 54.9**	**-0.7**
BCAM	**Yenicaga**	**1.19**	**320**	P	**Pg**	**14 26 51.2**	**-0.5**
BCAM				S	**Sn**	**14 27 10.0**	**+0.1**
BCAM	**Yenicaga**	**1.19**	**320**	iP	**Pg**	**14 26 51.2**	**-0.5**
BCAM				iS	**Sn**	**14 27 10.0**	**+0.1**
CORM	**Corum**	**1.23**	**77**	ePN	**Pg**	**14 26 52.5**	**-0.1**
CORM				eSN	**Sn**	**14 27 11.5**	**+0.5**
CORM	**Corum**	**1.23**	**77**	ePn	**Pg**	**14 26 52.6**	**-0.1**
CORM				eSn	**Sn**	**14 27 11.5**	**+0.5**
ILGA	**Ilgaz**	**1.25**	**23**	P	**Pg**	**14 26 51.1**	**-1.8**
ILGA				S	**Sg**	**14 27 09.3**	**+0.2**
ILGA	**Ilgaz**	**1.25**	**23**	iP	**Pg**	**14 26 51.1**	**-1.8**
ILGA				iS	**Sg**	**14 27 09.3**	**+0.2**
SVRH	**Sivrihisar-ESK**	**1.27**	**249**	ePN	**Pg**	**14 26 52.8**	**-0.6**
SVRH	**Sivrihisar-ESK**	**1.27**	**249**	ePn	**Pg**	**14 26 52.8**	**-0.6**
TOS	**Tosya**	**1.34**	**33**	ePN	**Pb**	**14 26 55.3**	**+0.1**
TOS	**Tosya**	**1.34**	**33**	ePn	**Pb**	**14 26 55.3**	**+0.1**
YOZ	**Yozgat**	**1.76**	**98**	ePN	**Pn**	**14 27 00.9**	**0.0**
YOZ				eSN	**Sb**	**14 27 25.0**	**+0.1**
YOZ	**Yozgat**	**1.76**	**98**	ePn	**Pn**	**14 27 00.9**	**0.0**
YOZ				eSn	**Sb**	**14 27 25.0**	**+0.1**

*NIED **09** 14:34:00, 37°.80N×142°.00E, h35km, Mw3.6 Best double couple: M0 3.04000×10^14 NP1:φ=179.00000°, δ40.00000°, λ-84.00000°. NP2:φ=351.00000°, δ50.00000°, λ-95.00000°.*
*IDC **09** 14:34:13.5±1.2, 37°.67N×142°.13E, h0km, mb3.6/5, mb1 3.7/9, mb1mx3.5/48, mbtmp3.7/9, ML3.1/4, MS3.3/1, Ms1 3.3/1, ms1mx2.3/42, Error ellipse: s-maj=31.6km s-min=18.8km az=86.0*
*ISCJB **09** 14:34:15.6±1.4, 37°.76N±0°.04×142°.12E±0°.06, h27km±11km, mb3.5/5, MS3.2/1, Error ellipse: s-maj=8.0km s-min=6.3km az=40.1*
*JMA **09** 14:34:16.8±0.2, 37°.77N×142°.02E, h28km±3km, M3.9*
ISC 09 14:34:14.6±1.9, 37°.74N±0°.05×142°.10E±0°.07, h10km±11km, n27, σ1°40/32, mb3.5/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.92**	**321**	P	**Pg**	**14 34 32.8**	**+0.4**
JIO				S	**Sg**	**14 34 43.4**	**-1.0**
JMM	**Marumori**	**1.04**	**277**	P	**Pb**	**14 34 34.6**	**-0.1**
JMM				S	**Sb**	**14 34 46.8**	**-1.6**
JFK	**Kawauchi**	**1.04**	**249**	P	**Pb**	**14 34 34.7**	**-0.1**
JFK				S	**Sb**	**14 34 47.3**	**-1.2**
ONAJ	**Iwakimizuishiy**	**1.22**	**239**	P	**Pn**	**14 34 37.1**	**-0.6**
ONAJ				S	**Sb**	**14 34 51.5**	**-2.0**
JOU	**Okura**	**1.29**	**299**	P	**Pn**	**14 34 38.6**	**-0.2**
JOU				S	**Sb**	**14 34 54.1**	**-1.6**
JMK	**Ichinoseki**	**1.39**	**331**	P	**Pn**	**14 34 39.8**	**-0.3**
JMK				eS	**Sn**	**14 34 55.5**	**-3.0**
JFT	**Otama**	**1.42**	**261**	P	**Pn**	**14 34 40.9**	**+0.4**
JFT				S	**Sn**	**14 34 58.3**	**-0.9**
JYS	**Shiratake**	**1.68**	**287**	P	**Pn**	**14 34 44.8**	**+0.8**
JYS				S	**Sn**	**14 35 05.6**	**0.0**
JYK	**Kaneyama**	**1.80**	**311**	P	**Pn**	**14 34 45.9**	**+0.1**
JFY	**Yanaizu**	**1.93**	**261**	P	**Pn**	**14 34 48.4**	**+0.9**
JFY				S	**Sn**	**14 35 12.9**	**+1.0**
MJAR	**Matsushiro Arr**	**3.33**	**250**	Pn	**Pn**	**14 35 08.5**	**+1.7**
	2.4nm,0.3s,baz=81,slow=15,SNR=17						
MJAR				Sn	**Sn**	**14 35 48.0**	**+1.6**
	1.5nm,0.3s,baz=84,slow=24,SNR=3.0						
MAT	**Matsushiro**	**3.33**	**250**	P	**Pn**	**14 35 08.5**	**+1.7**
MAT				eS	**Sn**	**14 35 48.1**	**+1.6**
JHJ	**Hachijo jima 2**	**4.98**	**203**	Pn	**Pn**	**14 35 29.4**	**-0.1**
	6.3nm,0.3s,baz=108,slow=20,SNR=3.2						
JHJ				Sn	**Sn**	**14 36 23.7**	**-3.5**
	14nm,0.3s,baz=98,slow=19,SNR=2.8						
ASAJ	**Asahikawa**	**6.38**	**3**	Pn	**Pn**	**14 35 50.2**	**+1.6**
	0.3nm,0.3s,baz=228,slow=16,SNR=3.4						
KSRS	**Korea Array**	**11.25**	**273**	Pn	Pn	14 37 00.5	+5.1
	0.0nm,0.3s,baz=87,slow=14,SNR=3.5						
PETK	**Petropavlovsk-**	**18.80**	**30**	P	**Pn**	**14 38 36.2**	**+1.6**
	0.2nm,0.3s,baz=209,slow=16,SNR=3.4						
SONM	**Songino Array**	**27.85**	**303**	P	**P**	**14 40 05.3**	**+0.9**
	0.3nm,0.5s,baz=97,slow=7.4,SNR=3.0						
H11N2	**WAKE ISLAND Hy 28.06**	**123**		T	T	15 09 46.1	
	baz=315,slow=75,SNR=56						
H11N1	**WAKE ISLAND Hy 28.07**	**123**		T	T	15 09 42.3	
	baz=315,slow=75,SNR=29						
H11N3	**WAKE ISLAND Hy 28.07**	**123**		T	T	15 09 46.6	
	baz=315,slow=75,SNR=32						
H11S1	**WAKE ISLAND Hy 28.80**	**125**		T	T	15 10 37.7	
	baz=317,slow=76,SNR=36						
H11S3	**WAKE ISLAND Hy 28.80**	**125**		T	T	15 10 25.1	
	baz=317,slow=76,SNR=30						
H11S2	**WAKE ISLAND Hy 28.82**	**125**		T	T	15 10 33.2	
	baz=317,slow=76,SNR=28						
ZALV	**Zalesovo Beam**	**41.84**	**312**	P	**P**	**14 42 04.4**	**-0.1**
	0.3nm,0.3s,baz=77,slow=6.4,SNR=3.0						
MKAR	**Makanchi Array**	**44.21**	**302**	P	**P**	**14 42 24.6**	**+0.8**
	0.2nm,0.6s,baz=87,slow=8.8,SNR=3.1		

URZ			Sn	Sn	14 44 58.5	-1.1
	2.3nm,0.3s,baz=306,slow=19,SNR=4.0					
URZ	**Urewera**	**5.08 212**	PN	**Pn**	14 44 02.3	0.0
URZ			SN	**Sn**	14 44 59.6	0.0
RAGZ	**Rawiri**	**5.15 208**	PN	**Pn**	14 44 03.1	-0.3
RIGZ	**Rimuhau**	**5.21 204**	PN	**Pn**	14 44 04.7	+0.5
SNGZ	**Shannon Statio**	**5.43 207**	PN	**Pn**	14 44 08.3	+1.2
ASAR	**Alice Springs**	**41.79 272**	P	**P**	14 50 33.6	+0.2
	0.5nm,0.7s,baz=112,slow=7.6,SNR=12					
ASAR			PcP	**PcP**	14 52 27.1	-1.7
	0.3nm,0.9s,baz=104,slow=4.2,SNR=2.8					
WRA	**Warramunga Arr**	**43.11 277**	P	**P**	14 50 44.2	+0.1
	0.5nm,0.6s,baz=117,slow=7.9,SNR=6.0					
FINES	**FINESS Array B**	**148.00 337**	PKPbc	**PKPdf**	15 02 25.6	+1.3
	1.4nm,0.8s,baz=22,slow=4.5,SNR=3.7					
TORD	**Torodi Ar. Bea**	**159.23 183**	PKPab	**PKPab**	15 03 19.1	+0.3
	0.4nm,0.7s,baz=171,slow=2.7,SNR=2.6					

*IDC **09** 14:52:35.2±0.6,27.°14N×143.°55E,h0km,mb4.2/20, mb1 4.4/23,mb1mx4.2/49,mbtmp4.2/23,ML3.5/3,MS3.2/8, Ms1 3.2/8,ms1mx2.8/55,Error ellipse: s-maj=17.3km s-min=15.1km az=120.0*

*NEIC **09** 14:52:35.5±4.8,27.°16N×143.°49E,h1km±29km,mb4.6/29, Error ellipse: s-maj=9.5km s-min=7.5km az=133.0*

*ISCJB **09** 14:52:39.0±0.3,27.°18N±0.°06×143.°46E±0.°04,h33km, mb4.3/69,MS3.3/8,Error ellipse: s-maj=8.4km s-min=4.7km az=171.0*

*MOS **09** 14:52:38.8±1.0,27.°14N×143.°46E,h33km,mb4.6/28,Error ellipse: s-maj=13.4km s-min=6.9km az=109.4*

ISC 09 14:52:40.7±0.6,27.°15N±0.°08×143.°48E±0.°06,h35km,n128, σ1**18**/133,**mb4.4**/69,**MS3.2**/9,**7C,Bonin Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**1.16**	**268**	*e*Pn	**Pn**	**14 52 59.5**	**-0.8**
CBIJ				Sn	**Sn**	**14 53 14.5**	**-0.5**
JCJ	**Chichijima**	**1.16**	**268**	Pn	**Pn**	**14 52 59.7**	**-0.7**
	293nm,0.3s,baz=92,slow=18,SNR=148						
JCJ				Sn	**Sn**	**14 53 14.5**	**-0.5**
	225nm,0.3s,baz=108,slow=18,SNR=18						
JNU	**Nakatsue**	**12.42**	**302**	LR	LR	14 59 47.4	
	comp=Z,85nm,18.4s,baz=123,slow=35						
KSRS	**Korea Array**	**16.67**	**312**	Pn	**Pn**	**14 56 31.3**	**-0.2**
	0.2nm,0.3s,baz=121,slow=11,SNR=12						
KSRS				LR	LR	15 03 09.7	
	comp=Z,49nm,18.6s,baz=111,slow=38						
KSAR	**Wonju Array Be**	**16.69**	**312**	P	**Pn**	**14 56 31.3**	**-0.5**
KSAR	**Wonju Array Be**	**16.69**	**312**	Pn	**Pn**	**14 56 31.3**	**-0.5**
SHO	**Shikotan**	**16.91**	**8**	P	Pn	14 56 24.9	-10
SHO				pmax	pmax		
	comp=Z,67nm,0.9s						
ASAJ	**Asahikawa**	**16.95**	**358**	Pn	**Pn**	**14 56 31.9**	**-3.1**
	comp=Z,0.7nm,0.3s,baz=185,slow=11,SNR=4.0						
ASAJ				LR	LR	15 03 06.5	
	comp=Z,20nm,21.8s,baz=206,slow=37						
VLA	**Vladivostok**	**18.52**	**332⇑**	*i*P	**P**	**14 56 53.1**	**-0.8**
VLA				*i* S	**Sn**	**15 00 19.9**	**-0.2**
VLA				pmax	pmax		
	comp=Z,42nm,1.4s						
USRK	**Ussuriysk Ar.**	**19.38**	**334**	P	**P**	**14 57 01.8**	**-1.5**
	comp=Z,0.2nm,0.3s,baz=148,slow=11,SNR=8.1						
SSLB	**Suanglung**	**20.61**	**266**	*e*P	**P**	**14 57 17.4**	**+0.5**
	comp=Z,24nm,0.6s						
MDJ	**Mudanjiang**	**20.70**	**331**	P	**P**	**14 57 18.3**	**+0.6**
MDJ				pmax	pmax		
	comp=Z,7.0nm,0.9s						
MDJ				pmax	pmax		
	comp=Z,89nm,4.1s						
NJ2	**Nanjing**	**21.95**	**289**	*e*P	**P**	**14 57 30.5**	**-0.7**
NJ2				pmax	pmax		
	comp=Z,15nm,0.8s						
KLR	**Kul'dur**	**23.84**	**341**	P	**P**	**14 57 50.8**	**+0.3**
	comp=Z,2.2nm,0.6s,baz=141,slow=10,SNR=7.5						
BJI	**Beijing**	**26.02**	**307**	P	**P**	**14 58 10.4**	**+0.1**
BJI				S	**S**	**15 02 39.0**	**+0.2**
BJI				pmax	pmax		
	comp=Z,8.0nm,1.2s						
BJI				LR	LR		
	comp=N,150nm,4.9s						
BJI				LR	LR		
	comp=E,100nm,5.6s						
BJI				LR	LR		
	comp=Z,55nm,16.8s						
DAV	**Davao City (W)**	**26.22**	**224**	LR	LR	15 07 56.1	
	comp=Z,34nm,21.6s,baz=161,slow=35						
PETK	**Petropavlovsk-**	**28.01**	**18**	LR	LR	15 10 06.3	
	comp=Z,12nm,21.4s,baz=273,slow=38						
HHC	**Hu-ho-hao-te**	**29.60**	**306**	*e*P	**P**	**14 58 43.7**	**+1.1**
HHC				pmax	pmax		
	comp=Z,21nm,0.7s						
HHC				pmax	pmax		
	comp=Z,88nm,4.1s						
SIJI	**Sorong**	**30.23**	**205**	LR	LR	15 07 40.9	
	comp=Z,304nm,22.0s,slow=30						
XAN	**Xi'an**	**30.43**	**292**	P	**P**	**14 58 49.2**	**-0.7**
XAN				pP	pP	14 58 58.3	-1.7
XAN				sP	sP	14 59 02.9	-1.3
XAN				pmax	pmax		
	comp=Z,5.0nm,0.9s						
XAN				pmax	pmax		
	comp=Z,50nm,3.9s						
LZH	**Lanzhou**	**34.72**	**295**	*e*P	**P**	**14 59 27.1**	**-0.5**
LZH				pP	pP	14 59 38.1	+0.4
LZH				sP	sP	14 59 43.1	+1.2
LZH				pmax	pmax		
	comp=Z,19nm,1.0s						
LZH				pmax	pmax		
	comp=Z,100nm,4.6s						
CD2	**Chengdu**	**34.81**	**286**	P	**P**	**14 59 26.1**	**-2.2**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
ULN	**Ulaanbaatar**	**35.09**	**316**	*c*e*P	**P**	**14 59 32.1**	**+1.5**
ULN				pmax	pmax		
	comp=Z,4.0nm,1.2s						
SONA1	**Songino Array**	**35.48**	**316**	*e*P	**P**	**14 59 31.3**	**-2.7**
YAK	**Yakutsk**	**36.08**	**349**	*e*P	**P**	**14 59 39.2**	**+0.5**
YAK				pmax	pmax		
	comp=Z,4.0nm,0.8s						
SEY	**Seymchan**	**36.27**	**7**	P	**P**	**14 59 39.8**	**-0.4**
	comp=Z,2.3nm,0.9s,baz=182,slow=8.6,SNR=4.0						
SEY	**Seymchan**	**36.27**	**7**	*e*P	**P**	**14 59 41.3**	**+1.0**
BOD	**Bodaibo**	**37.01**	**334**	*e*P	**P**	**14 59 44.4**	**-2.3**
BOD				pmax	pmax		
	comp=Z,3.0nm,1.6s						
GTA	**Gaotai**	**38.16**	**300**	*e*P	**P**	**15 00 00.7**	**+3.9**
GTA				pP	sP	15 00 10.4	-0.8
GTA				sP	pP	15 00 14.2	+7.2
GTA				S	**S**	**15 05 51.2**	**+3.3**
GTA				sS	sS	15 06 06.5	+1.8
GTA				SS	**SnSn**	**15 08 28.7**	**-4.4**
GTA				pmax	pmax		
	comp=Z,3.0nm,1.0s						
GTA				pmax	pmax		
	comp=Z,72nm,5.2s						
GTA				LR	LR		
	comp=N,57nm,15.7s						
GTA				LR	LR		
	comp=E,74nm,18.1s						
GTA				LR	LR		
	comp=Z,58nm,17.6s						
ZAK	**Zakamensk**	**38.34**	**318**	*e*P	**P**	**14 59 56.2**	**-2.0**
ZAK				pmax	pmax		
	comp=Z,6.0nm,1.4s						
TLY	**Talaya**	**38.63**	**320**	*e*P	**P**	**15 00 01.5**	**+1.0**
TLY				pmax	pmax		
	comp=Z,11nm,1.5s						
BILL	**Bilibino**	**43.16**	**12⇑**	*e*P	**P**	**15 00 38.0**	**+0.5**
BILL				*e*		15 02 23.4	
BILL				*e*PPP	PPP	15 02 54.4	
BILL				pmax	pmax		
	comp=Z,9.0nm,2.5s						
BILL				MLR	MLR		
	comp=Z,22nm,15.0s						
BILL	**Bilibino**	**43.16**	**12**	*e*P	**P**	**15 00 37.6**	**+0.1**
	comp=Z,8.8nm,1.5s						
TIXI	**Tiksi**	**45.28**	**354**	*e*P	**P**	**15 00 54.8**	**+0.3**
TIXI				pmax	pmax		
	comp=Z,3.0nm,0.7s						
TIXI	**Tiksi**	**45.28**	**354**	*e*P	**P**	**15 00 54.8**	**+0.3**
	comp=Z,3.5nm,0.7s						
WMQ	**Urumqi**	**47.48**	**306**	*e*P	**P**	**15 01 12.7**	**+0.4**
WMQ				pmax	pmax		
	comp=Z,4.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,49nm,3.6s						
WMQ				LR	LR		
	comp=N,17nm,31.8s						
WMQ				LR	LR		
	comp=E,12nm,37.2s						
WMQ				LR	LR		
	comp=Z,8.0nm,26.6s						
WRAB	**Tennant Creek**	**47.63**	**192**	*c*e*P	**P**	**15 01 14.2**	**+0.7**
WRAB				pmax	pmax		
	comp=Z,13nm,0.8s						
WRAB	**Tennant Creek**	**47.63**	**192**	*e*P	**P**	**15 01 13.3**	**-0.1**
	comp=Z,7.9nm,0.8s						
WRA	**Warramunga Arr**	**47.64**	**192**	P	**P**	**15 01 13.2**	**-0.3**
	comp=Z,7.4nm,0.6s,baz=12,slow=8.6,SNR=59						
ZAA0	**Zalesovo Array**	**50.21**	**319**	*e*P	**P**	**15 01 33.5**	**+0.6**
ZALV	**Zalesovo Beam**	**50.21**	**319**	P	**P**	**15 01 33.8**	**+0.9**
	comp=Z,0.6nm,0.3s,baz=100,slow=7.7,SNR=5.9						
ZALV				PcP	**PcP**	**15 02 51.2**	**-0.4**
	comp=Z,1.2nm,0.6s,baz=104,slow=3.7,SNR=3.9						
MK01	**Makanchi Array**	**51.33**	**310**	*e*P	**P**	**15 01 39.4**	**-2.1**
MK31	**Makanchi Array**	**51.33**	**310**	*e*P	**P**	**15 01 40.0**	**-1.6**
MK31	**Makanchi Array**	**51.33**	**310**	*e*P	**P**	**15 01 40.0**	**-1.6**
MKAR	**Makanchi Array**	**51.33**	**310**	LR	LR	15 24 49.8	
	comp=Z,27nm,18.5s,baz=240,slow=38						
MKAR	**Makanchi Array**	**51.33**	**310**	*e*P	**P**	**15 01 40.1**	**-1.5**
AS31	**Alice Springs**	**51.35**	**191**	*e*P	**P**	**15 01 41.2**	**-0.7**
	comp=Z,0.7nm,0.8s						
ASAR	**Alice Springs**	**51.35**	**191**	P	**P**	**15 01 41.2**	**-0.7**
	comp=Z,0.6nm,0.5s,baz=357,slow=4.8,SNR=32						
ASAR				PcP	**PcP**	**15 02 56.4**	**+0.1**
	comp=Z,0.9nm,0.8s,baz=12,slow=4.9,SNR=4.6						
MAKZ	**Makanchi**	**51.55**	**310**	*e*P	**P**	**15 01 42.8**	**-0.4**
MAKZ				pmax	pmax		
	comp=Z,10.0nm,1.5s						
MAKZ	**Makanchi**	**51.55**	**310**	*e*P	**P**	**15 01 42.8**	**-0.4**
	comp=Z,10nm,1.5s						
KDAK	**Kodiak Island**	**53.63**	**37**	P	P	15 02 13.0	+15
	comp=Z,5.6nm,0.7s,baz=288,slow=3.9,SNR=7.7						
KDAK	**Kodiak Island**	**53.63**	**37**	*i* P	**P**	**15 01 58.2**	**-0.1**
BPAW	**Bear Paw Mtn.**	**55.26**	**29**	*e*P	**P**	**15 02 10.6**	**+0.4**
TRF	**Thorofare Moun**	**55.47**	**30**	*e*P	**P**	**15 02 11.7**	**-0.1**
	comp=Z,5.4nm,1.0s						
MLY	**Manley**	**55.52**	**28**	*e*P	**P**	**15 02 12.8**	**+0.8**
	comp=Z,5.5nm,0.4s						
RND	**Reindeer**	**56.10**	**30**	*e*P	**P**	**15 02 15.6**	**-0.7**
RND				pmax	pmax		
	comp=Z,7.0nm,1.0s						
RND	**Reindeer**	**56.10**	**30**	*e*P	**P**	**15 02 15.6**	**-0.7**
	comp=Z,6.8nm,1.0s						
COLD	**Coldfoot**	**56.13**	**25**	*e*P	**P**	**15 02 17.2**	**+0.9**
	comp=Z,4.9nm,0.9s						
MDM	**Murphy Dome**	**56.57**	**28**	*e*P	**P**	**15 02 16.3**	**-3.2**
	comp=Z,4.4nm,0.7s						
IL1	**Eielson Array**	**57.12**	**29**	*e*P	**P**	**15 02 22.2**	**-1.1**
ILAR	**Eielson Array**	**57.12**	**29**	P	**P**	**15 02 22.2**	**-1.1**
	comp=Z,3.0nm,0.9s,baz=260,slow=5.8,SNR=27						
ILAR				PcP	**PcP**	**15 03 17.4**	**-0.4**
	comp=Z,0.8nm,0.7s,baz=292,slow=4.5,SNR=4.1						
ILB	**Eielson Array**	**57.12**	**29**	*e*P	**P**	**15 02 22.2**	**-1.1**
AAK	**Ala-Archa**	**57.18**	**305**	*e*P	**P**	**15 02 25.6**	**+1.3**
AAK				pmax	pmax		
	comp=Z,3.0nm,1.0s						
FYU	**Fort Yukon**	**57.98**	**27**	*e*P	**P**	**15 02 30.6**	**+1.2**
	comp=Z,12nm,1.1s						
DOT	**Dot Lake**	**58.27**	**30**	*e*P	**P**	**15 02 30.5**	**-1.0**
	comp=Z,8.8nm,0.6s						
BRVK	**Borovoye**	**58.85**	**318**	*e*P	**P**	**15 02 37.1**	**+1.4**
BRVK				pmax	pmax		
	comp=Z,3.0nm,0.7s						
BRVK	**Borovoye**	**58.85**	**318**	*e*P	**P**	**15 02 36.1**	**+0.5**
	comp=Z,2.9nm,0.6s						
ZRNK	**Zerenda**	**59.63**	**317**	*e*P	**P**	**15 02 41.3**	**+0.3**
ZRNK				pmax	pmax		
	comp=Z,3.0nm,1.0s						
ZRNK	**Zerenda**	**59.63**	**317**	*e*P	**P**	**15 02 41.3**	**+0.3**
	comp=Z,3.1nm,1.0s						
KKAR	**Karatay Array**	**59.99**	**306**	*e*P	**P**	**15 02 44.3**	**+0.5**
KKAR	**Karatay Array**	**59.99**	**306**	*e*P	**P**	**15 02 44.3**	**+0.5**
DAWY	**Dawson**	**60.34**	**30**	*e*P	**P**	**15 02 46.4**	**+0.6**
	comp=Z,6.0nm,1.0s						
INK	**Inuvik**	**62.51**	**25**	P	**P**	**15 03 00.1**	**-0.2**
	comp=Z,1.7nm,0.5s,baz=297,slow=6.8,SNR=5.8						
INK	**Inuvik**	**62.51**	**25**	*e*P	**P**	**15 03 00.3**	**+0.1**
INK				pmax	pmax		
	comp=Z,3.0nm,0.7s						
INK	**Inuvik**	**62.51**	**25**	*e*P	**P**	**15 03 00.3**	**+0.1**
	comp=Z,2.6nm,0.7s						
ARU	**Arti**	**65.09**	**322**	*c i*P	**P**	**15 03 17.9**	**+0.4**
ARU						15 05 36.8	
ARU				S	**S**	**15 12 00.3**	**+2.9**
ARU				SS	**SS**	**15 16 09.0**	**-0.5**
ARU				pmax	pmax		
	comp=Z,9.0nm,1.2s						
ARU	**Arti**	**65.09**	**322**	*e*P	**P**	**15 03 17.8**	**+0.3**
	comp=Z,31nm,1.8s						
ABKAR	**Akbulak array**	**65.89**	**314**	*e*P	**P**	**15 03 23.5**	**+0.7**
GEYT	**Alibeck**	**70.44**	**303**	P	**P**	**15 03 52.5**	**+0.9**
	comp=Z,1.0nm,0.5s,baz=35,slow=5.7,SNR=4.6						
YKA	**Yellowknife Ar**	**71.55**	**29**	P	**P**	**15 03 57.6**	**-0.2**
	comp=Z,1.8nm,0.8s,baz=294,slow=5.8,SNR=24						
YKB5	**Yellowknife Ar**	**71.55**	**29**	*e*P	**P**	**15 03 56.5**	**-1.3**
RES	**Resolute Bay**	**71.74**	**14**	*e*P	**P**	**15 03 59.2**	**+0.5**
RES				pmax	pmax		
	comp=Z,3.0nm,1.0s						
RES	**Resolute Bay**	**71.74**	**14**	*e*P	**P**	**15 03 59.2**	**+0.5**
	comp=Z,3.3nm,1.0s						
KLMR	**Klimovskoe**	**73.11**	**330**	*e*P	**P**	**15 04 06.2**	**-1.0**
KLMR				*e**PP	**pP**	**15 04 16.1**	**-2.0**
KLMR				pmax	pmax		
	comp=Z,6.0nm,1.3s						
RPZ	**Rata Peaks**	**74.92**	**160**	LR	LR	15 30 46.2	
	comp=Z,117nm,20.7s,baz=252,slow=31						
YBH	**Yreka Blue Hor**	**75.13**	**51**	P	**P**	**15 04 20.1**	**+0.7**
	comp=Z,1.9nm,0.7s,baz=281,slow=5.2,SNR=4.9						
DAG	**Danmarks Havn**	**75.74**	**356**	*i* P	**P**	**15 04 22.6**	**+0.4**
	comp=Z,2.1nm,0.7s						
DAG	**Danmarks Havn**	**75.74**	**356**	*i* P	**P**	**15 04 22.6**	**+0.4**
DAG				pmax	pmax		
	comp=Z,1.0nm,0.7s						
OBN	**Obninsk**	**77.14**	**326⇑**	*e*P	**P**	**15 04 29.7**	**-0.8**
OBN				*e*		15 07 21.8	
OBN				*e*S	**S**	**15 14 19.7**	**+2.7**
OBN				pmax	pmax		
	comp=Z,5.0nm,1.0s						
CMB	**Columbia Colle**	**78.27**	**53**	*e*P	**P**	**15 04 35.6**	**-1.6**
CMB				pmax	pmax		
	comp=Z,6.0nm,0.9s						
CMB	**Columbia Colle**	**78.27**	**53**	*e*P	**P**	**15 04 35.6**	**-1.6**
	comp=Z,5.5nm,0.9s						
FINES	**FINESS Array B**	**78.41**	**334**	P	**P**	**15 04 37.5**	**+0.1**
	comp=Z,0.5nm,0.4s,baz=57,slow=7.0,SNR=6.3						
ZEI	**Tsey**	**78.58**	**312**	*e*P	**P**	**15 04 38.7**	**-0.3**
ZEI				pmax	pmax		
	comp=Z,7.0nm,1.0s						
KBZ	**Khabaz**	**78.82**	**313**	P	**P**	**15 04 41.3**	**+1.3**
	comp=Z,2.7nm,0.8s,baz=68,slow=5.4,SNR=8.1						
KIV	**Kislovodsk**	**78.85**	**314⇑**	*e*P	**P**	**15 04 41.1**	**+0.8**
KIV				*e*		15 07 37.1	
KIV				*e*PPP	PPP	15 09 24.6	
KIV				pmax	pmax		
	comp=Z,3.0nm,1.0s						
MFID	**Camas Ranch**	**79.03**	**47**	*e*P	**P**	**15 04 41.6**	**+0.3**
	comp=Z,7.2nm,1.1s						
NV01	**Mina Array Sit**	**79.58**	**52**	*e*P	**P**	**15 04 45.0**	**+0.4**
NVAR	**Mina Array Bea**	**79.58**	**52**	P	**P**	**15 04 45.0**	**+0.4**
	comp=Z,1.6nm,0.6s,baz=288,slow=5.8,SNR=12						
LRM	**Limekiln Ridge**	**80.04**	**44**	*e*P	**P**	**15 04 47.5**	**+0.5**
SUMG	**Summit**	**80.54**	**1**	*i* P	**P**	**15 04 50.5**	**+1.2**
	comp=Z,4.2nm,0.8s						
SUMG	**Summit**	**80.54**	**1**	*i* P	**P**	**15 04 50.5**	**+1.2**
SUMG				pmax	pmax		
	comp=Z,4.0nm,0.8s						
BOZ	**Bozeman (W)**	**80.63**	**43**	*e*P	**P**	**15 04 50.0**	**0.0**
BOZ				pmax	pmax		
	comp=Z,1.0nm,0.8s						
BOZ	**Bozeman (W)**	**80.63**	**43**	*e*P	**P**	**15 04 50.0**	**0.0**
	comp=Z,1.2nm,0.8s						
R11A	**Troy Canyon, C**	**81.52**	**51**	*e*P	**P**	**15 04 55.3**	**+0.4**
	comp=Z,4.9nm,1.3s						
H17A	**Grant Village**	**81.90**	**44**	*e*P	**P**	**15 04 58.7**	**+1.8**
	comp=Z,8.6nm,1.3s						
IMW	**Indian Meadow**	**81.92**	**45**	*e*P	**P**	**15 04 58.2**	**+1.1**
	comp=Z,2.7nm,0.9s						
FLWY	**Flagg Ranch**	**81.98**	**44**	*e*P	**P**	**15 04 58.9**	**+1.6**
	comp=Z,5.5nm,1.1s						
RLMT	**Red Lodge**	**82.33**	**43**	*e*P	**P**	**15 04 59.9**	**+0.7**
	comp=Z,3.6nm,0.9s						
DUG	**Dugway, Tooele**	**82.53**	**49**	*e*P	**P**	**15 05 00.6**	**+0.4**
DUG				pmax	pmax		
	comp=Z,4.0nm,0.6s						
DUG	**Dugway, Tooele**	**82.53**	**49**	*e*P	**P**	**15 05 00.6**	**+0.4**
	comp=Z,3.8nm,0.6s						
HWUT	**Hardware Ranch**	**82.66**	**47**	*e*P	**P**	**15 05 00.6**	**-0.3**
	comp=Z,4.9nm,1.1s						
AKASG	**Malin Array Be**	**83.25**	**324**	P	**P**	**15 05 03.3**	**-0.2**
	comp=Z,1.1nm,0.5s,baz=50,slow=5.5,SNR=4.8						
KIEV	**Kiev**	**83.27**	**324**	*e*P	**P**	**15 05 04.0**	**+0.4**
KIEV				pmax	pmax		
	comp=Z,2.0nm,0.9s						
BW06	**Boulder Array**	**83.36**	**45**	*e*P	**P**	**15 05 04.4**	**-0.2**
PDAR	**Pinedale Array**	**83.36**	**45**	P	**P**	**15 05 04.0**	**-0.5**
	comp=Z,1.0nm,0.8s,baz=278,slow=3.4,SNR=6.2						
NOA	**NORSAR Array B**	**83.99**	**339**	P	**P**	**15 05 07.1**	**-0.1**
	comp=Z,0.7nm,0.7s,baz=43,slow=4.5,SNR=3.0						
SFJD	**Kangerlussuaq**	**85.55**	**6**	P	**P**	**15 05 15.2**	**+0.4**
	comp=Z,9.0nm,0.6s,baz=39,slow=4.8,SNR=5.9						
SFJD	**Kangerlussuaq**	**85.55**	**6**	*i* P	**P**	**15 05 15.4**	**+0.6**
	comp=Z,9.7nm,0.8s						
SFJD	**Kangerlussuaq**	**85.55**	**6**	*i* P	**P**	**15 05 15.4**	**+0.6**
SFJD				pmax	pmax		
	comp=Z,10.0nm,0.8s						
FRB	**Frobisher Bay**	**85.96**	**14**	P	**P**	**15 05 17.0**	**+0.1**
	comp=Z,5.9nm,0.9s,baz=336,slow=4.4,SNR=3.0						
FRB	**Frobisher Bay**	**85.96**	**14**	P	**P**	**15 05 17.0**	**+0.1**
BRTR	**Keskin Array B**	**86.81**	**313**	P	**P**	**15 05 21.6**	**-0.2**
	comp=Z,0.7nm,0.8s,baz=90,slow=7.2,SNR=3.8						
BR231	**Keskin MP Arra**	**87.30**	**314**	*e*P	**P**	**15 05 22.5**	**-1.7**
ANMO	**Albuquerque**	**89.56**	**51**	*e*P	**P**	**15 05 36.1**	**+1.1**
ANMO				pmax	pmax		
	comp=Z,2.0nm,1.2s						
TX31	**Lajitas Ar. Si**	**94.64**	**54**	*e*P	**P**	**15 05 59.0**	**+0.5**
TXAR	**Lajitas Array**	**94.64**	**54**	P	**P**	**15 05 59.0**	**+0.5**
	comp=Z,1.2nm,0.9s,baz=307,slow=1.9,SNR=9.5						
LPAZ	**La Paz**	**148.79**	**76**	PKPbc	**PKPbc**	**15 12 25.3**	**-0.6**
	comp=Z,2.9nm,0.5s,baz=300,slow=4.0,SNR=16						
SAML	**Samuel**	**148.97**	**59**	*e*PKPbc	**PKPbc**	**15 12 25.2**	**-0.5**

*NIED **09** 14:53:00,36.°20N×141.°80E,h23km,Mw3.6 Best double couple: M0 2.81000×10^14 NP1:φs191.00000°,δ28.00000°, λ79.00000°. NP2:φs23.00000°,δ62.00000°,λ96.00000°.*

*IDC **09** 14:53:23.3±8.0,36.°14N×141.°90E,h0km,mb3.7/3, mb1 3.7/4,mb1mx3.5/48,mbtmp3.7/4,ML3.6/1,MS2.4/1, Ms1 2.4/1,ms1mx2.0/60,Error ellipse: s-maj=172.3km s-min=51.6km az=167.0*

*JMA **09** 14:53:26.5±0.3,36.°21N×141.°85E,h60km,M3.5*

ISC 09 14:53:26.1±2.3,36.°1N±0.°1×141.°9E±0.°2,h23km,n18, σ0**99**/15,**mb3.7**/3,**Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.98**	**244**	P	**Pb**	**14 53 44.1**	**-0.3**
CHOJ				S	**Sn**	**14 53 57.8**	**+0.2**
JHO	**Hitachi**	**1.20**	**293**	P	**Pn**	**14 53 45.7**	**-1.8**
ONAJ	**Iwakimizuishiy**	**1.33**	**317**	P	**Pn**	**14 53 47.9**	**-1.4**
JYT	**Yasato**	**1.42**	**274**	P	**Pn**	**14 53 49.4**	**-1.0**
JFK	**Kawauchi**	**1.49**	**325**	P	**Pn**	**14 53 50.5**	**-1.0**
JFT	**Otama**	**1.88**	**317**	P	**Pn**	**14 53 56.8**	**-0.1**
JMM	**Marumori**	**1.95**	**332**	P	**Pn**	**14 53 57.7**	**-0.1**
MJAR	**Matsushiro Arr**	**3.04**	**279**	Pn	**Pn**	**14 54 12.6**	**-0.2**
	7.6nm,0.3s,baz=98,slow=8.7,SNR=84						
MJAR				Sn	**Sn**	**14 54 48.0**	**-0.5**
	1.6nm,0.3s,baz=66,slow=22,SNR=5.5						
MJAR				LR	LR	14 55 26.5	
	comp=Z,55nm,18.4s,baz=100,slow=41						
MAT	**Matsushiro**	**3.04**	**279**	P	**Pn**	**14 54 13.4**	**+0.6**
MAT				S	**Sn**	**14 54 50.3**	**+1.8**
H11N2	**WAKE ISLAND Hy**	**27.33**	**120**	T	T	15 28 36.3	
	baz=311						
H11N1	**WAKE ISLAND Hy**	**27.34**	**120**	T	T	15 28 33.9	
	baz=311						
H11N3	**WAKE ISLAND Hy**	**27.35**	**120**	T	T	15 28 28.3	
	baz=311						
H11S1	**WAKE ISLAND Hy**	**28.02**	**122**	T	T	15 29 16.8	
	baz=313,slow=75,SNR=6.9						
H11S3	**WAKE ISLAND Hy**	**28.02**	**122**	T	T	15 29 16.8	
	baz=313,slow=75,SNR=6.6						
H11S2	**WAKE ISLAND Hy**	**28.04**	**122**	T	T	15 29 16.8	
	baz=313,slow=75,SNR=3.3						
SONM	**Songino Array**	**28.64**	**305**	P	**P**	**14 59 21.6**	**+0.6**
	1.9nm,0.3s,baz=111,slow=7.9,SNR=18						
ZALV	**Zalesovo Beam**	**42.83**	**313**	P	**P**	**15 01 22.5**	**+0.4**
	0.8nm,0.6s,baz=97,slow=7.4,SNR=3.5						
MKAR	**Makanchi Array**	**44.96**	**303**	P	**P**	**15 01 39.1**	**-0.2**
	0.4nm,0.4s,baz=98,slow=8.1,SNR=4.5						

*ISCJB **09** 15:04:20.9±0.3,43.°62S±0.°03×172.°59E±0.°04,h16km, mb4.8/19,MS4.2/17,Error ellipse: s-maj=5.4km s-min=2.4km az=140.5*

*GCMT **09** 15:04:23.2±0.3,43.°56S×172.°31E,h14km±1km,MW5.0/70, Moment Tensor Solution. s20,c23; s70,c106; Du

WVZ	**Waitaha Valley**	**1.35**	**290**	⇓PN	**Pn**	**15 04 46.7**	**-1.7**
WVZ				AML	AML	15 05 10.6	
WVZ				AML	AML	15 05 11.0	
KHZ	**Kahutara**	**1.39**	**35**	PN	**Pn**	**15 04 47.2**	**-1.6**
KHZ	**Kahutara**	**1.39**	**35**	*e*Pn	**Pn**	**15 04 47.3**	**-1.6**
THZ	**Tophouse**	**1.82**	**10**	PN	**Pn**	**15 04 53.4**	**-1.6**
THZ				AML	AML	15 05 28.8	
THZ				AML	AML	15 05 41.0	
THZ	**Tophouse**	**1.82**	**10**	*e*Pn	**Pn**	**15 04 53.4**	**-1.6**
LBZ	**Lake Benmore**	**1.84**	**242**	PN	**Pn**	**15 04 53.3**	**-1.9**
LBZ				AML	AML	15 05 22.5	
LBZ				AML	AML	15 05 22.5	
LBZ				AML	AML	15 05 27.2	
LBZ				AML	AML	15 05 27.2	
LBZ	**Lake Benmore**	**1.84**	**242**	*e*Pn	**Pb**	**15 04 56.6**	**-1.0**
DSZ	**Denniston Nort**	**1.87**	**345**	⇓PN	**Pn**	**15 04 54.2**	**-1.4**
DSZ				AML	AML	15 05 27.7	
DSZ				AML	AML	15 05 30.6	
DSZ				AML	AML	15 05 30.6	
DSZ				AML	AML	15 05 30.6	
FOZ	**Fox Glacier**	**1.93**	**270**	⇓PN	**Pn**	**15 04 55.3**	**-1.0**
FOZ				AML	AML	15 05 32.3	
FOZ				AML	AML	15 05 32.3	
FOZ				AML	AML	15 05 33.6	
FOZ				AML	AML	15 05 33.7	
FOZ	**Fox Glacier**	**1.93**	**270**	*e*Pn	**Pn**	**15 04 55.6**	**-0.7**
ODZ	**Otahua Downs**	**1.98**	**221**	PN	**Pn**	**15 04 54.4**	**-2.7**
ODZ				AML	AML	15 05 32.6	
ODZ				AML	AML	15 05 32.6	
ODZ				AML	AML	15 05 34.8	
ODZ				AML	AML	15 05 34.8	
ODZ	**Otahua Downs**	**1.98**	**221**	*e*Pn	**Pn**	**15 04 54.9**	**-2.2**
BSWZ	**Blackbirch Sta**	**2.12**	**30**	PN	**Pn**	**15 04 57.8**	**-1.1**
BSWZ				AML	AML	15 05 35.6	
BSWZ				AML	AML	15 05 47.0	
CMWZ	**Cape Campbell**	**2.22**	**36**	PN	**Pn**	**15 05 00.1**	**-0.2**
CMWZ				AML	AML	15 05 53.9	
CMWZ				AML	AML	15 06 02.4	
TUWZ	**Tuamarina**	**2.39**	**28**	PN	**Pn**	**15 05 01.1**	**-1.6**
TUWZ				AML	AML	15 06 02.6	
TUWZ				AML	AML	15 06 05.3	
NNZ	**Nelson**	**2.43**	**17**	PN	**Pn**	**15 05 02.3**	**-1.0**
NNZ				AML	AML	15 05 10.7	
NNZ				AML	AML	15 05 43.6	
HHSZ	**Highcliff Hill**	**2.68**	**209**	PN	**Pn**	**15 05 04.0**	**-2.7**
TCW	**Tory Channel**	**2.70**	**30**	AML	AML	15 05 47.0	
TCW				AML	AML	15 06 06.0	
JCZ	**Jackson Bay**	**2.71**	**258**	PN	**Pn**	**15 05 05.4**	**-1.9**
JCZ				AML	AML	15 05 55.6	
JCZ				AML	AML	15 05 55.9	
QRZ	**Quartz Range**	**2.73**	**1**	PN	**Pn**	**15 05 05.8**	**-1.5**
QRZ				AML	AML	15 05 18.8	
QRZ				AML	AML	15 06 01.8	
WKZ	**Wanaka**	**2.79**	**242**	⇓PN	**Pn**	**15 05 05.7**	**-2.5**
WKZ				AML	AML	15 05 57.2	
WKZ				AML	AML	15 05 57.2	
WKZ				AML	AML	15 06 03.6	
WKZ				AML	AML	15 06 03.6	
WKZ	**Wanaka**	**2.79**	**242**	*e*Pn	**Pn**	**15 05 06.5**	**-1.7**
BHW	**Baring Head**	**2.79**	**41**	PN	**Pn**	**15 05 06.1**	**-2.1**
BHW				AML	AML	15 06 12.6	
BHW				AML	AML	15 06 13.5	
SNZO	**South Karori**	**2.79**	**37**	*e*Pn	**Pn**	**15 05 06.4**	**-1.8**
EAZ	**Earnscleugh**	**2.81**	**232**	⇓PN	**Pn**	**15 05 05.9**	**-2.6**
EAZ				AML	AML	15 05 55.0	
EAZ				AML	AML	15 05 55.1	
EAZ				AML	AML	15 06 03.0	
EAZ				AML	AML	15 06 03.0	
WEL	**Wellington**	**2.84**	**38**	PN	**Pn**	**15 05 07.2**	**-1.7**
WEL				AML	AML	15 05 45.2	
WEL				AML	AML	15 05 45.3	
DUWZ	**D'Urville Isla**	**2.96**	**22**	⇓PN	**Pn**	**15 05 09.4**	**-1.1**
DUWZ				AML	AML	15 06 01.4	
DUWZ				AML	AML	15 06 05.2	
MSWZ	**Moikau Station**	**2.97**	**45**	AML	AML	15 05 44.9	
MSWZ				AML	AML	15 06 38.4	
PAWZ	**Paruwai Farm**	**3.09**	**46**	PN	**Pn**	**15 05 09.9**	**-2.4**
PAWZ				AML	AML	15 05 51.2	
PAWZ				AML	AML	15 06 34.5	
CAW	**Cannon Point**	**3.12**	**39**	PN	**Pn**	**15 05 10.7**	**-2.0**
CAW				AML	AML	15 05 52.4	
CAW				AML	AML	15 06 35.0	
TUZ	**Tuapeka**	**3.13**	**219**	⇓PN	**Pn**	**15 05 10.3**	**-2.6**
TUZ				AML	AML	15 06 05.9	
TUZ				AML	AML	15 06 05.9	
TUZ				AML	AML	15 06 11.8	
TUZ				AML	AML	15 06 11.8	
TRWZ	**Traveller**	**3.21**	**49**	PN	**Pn**	**15 05 12.0**	**-2.1**
TRWZ				AML	AML	15 06 00.8	
TRWZ				AML	AML	15 06 15.9	
KIW	**Kapiti Island**	**3.25**	**35**	PN	**Pn**	**15 05 13.1**	**-1.4**
KIW				AML	AML	15 06 03.2	
KIW				AML	AML	15 06 33.4	
MTW	**Mount Morrison**	**3.29**	**44**	PN	**Pn**	**15 05 12.7**	**-2.3**
MTW				AML	AML	15 05 38.3	
MTW				AML	AML	15 06 16.2	
OGWZ	**Otaki Gorge**	**3.40**	**37**	PN	**Pn**	**15 05 14.4**	**-2.2**
MSZ	**Milford Sound**	**3.45**	**250**	PN	**Pn**	**15 05 14.6**	**-2.7**
MSZ				AML	AML	15 06 14.2	
MSZ				AML	AML	15 06 14.2	
MSZ				AML	AML	15 06 17.9	
MSZ				AML	AML	15 06 18.0	
MLZ	**Mavora Lakes**	**3.60**	**238**	PN	**Pn**	**15 05 16.6**	**-2.8**
MLZ				AML	AML	15 06 24.7	
MLZ				AML	AML	15 06 28.5	
MLZ	**Mavora Lakes**	**3.60**	**238**	*e*Pn	**Pn**	**15 05 16.6**	**-2.8**
MRZ	**Mangatainoka R**	**3.71**	**40**	⇑PN	**Pn**	**15 05 18.1**	**-2.7**
TIWZ	**Tintock**	**3.77**	**44**	PN	**Pn**	**15 05 19.4**	**-2.3**
TIWZ				AML	AML	15 06 07.2	
TIWZ				AML	AML	15 06 07.7	
SYZ	**Scrubby Hill**	**3.80**	**217**	⇑PN	**Pn**	**15 05 19.7**	**-2.3**
SYZ				AML	AML	15 06 33.8	
SYZ				AML	AML	15 06 33.8	
SYZ				AML	AML	15 06 37.9	
SYZ				AML	AML	15 06 37.9	
WHZ	**Wether Hill Ro**	**3.98**	**232**	⇑PN	**Pn**	**15 05 21.0**	**-3.5**
WHZ				AML	AML	15 06 37.2	
WHZ				AML	AML	15 06 42.4	
WHZ	**Wether Hill Ro**	**3.98**	**232**	*e*Pn	**Pn**	**15 05 20.9**	**-3.6**
BFZ	**Birch Farm**	**4.02**	**46**	AML	AML	15 06 12.8	
BFZ				AML	AML	15 06 14.3	
BFZ	**Birch Farm**	**4.02**	**46**	*e*Pn	**Pn**	**15 05 22.5**	**-2.6**
WAZ	**Wanganui**	**4.24**	**27**	PN	**Pn**	**15 05 27.3**	**-0.9**
WAZ				AML	AML	15 06 43.4	
WAZ				AML	AML	15 06 47.4	
DCZ	**Deep Cove**	**4.25**	**241**	PN	**Pn**	**15 05 25.3**	**-2.9**
DCZ				AML	AML	15 06 44.1	
DCZ				AML	AML	15 06 44.1	
DCZ				AML	AML	15 06 46.4	
DCZ				AML	AML	15 06 46.4	
DCZ	**Deep Cove**	**4.25**	**241**	*e*Pn	**Pn**	**15 05 25.7**	**-2.6**
NMEZ	**Namu Road**	**4.27**	**15**	PN	**Pn**	**15 05 28.6**	**+0.1**
TSZ	**Takapari Road**	**4.36**	**38**	PN	**Pn**	**15 05 27.1**	**-2.8**
TSZ				AML	AML	15 07 12.5	
TSZ				AML	AML	15 07 24.8	
PKE	**Pukeiti**	**4.51**	**15**	AML	AML	15 06 40.9	
PKE				AML	AML	15 06 51.8	
PRHZ	**Porangahau**	**4.53**	**45**	PN	**Pn**	**15 05 29.6**	**-2.5**
APZ	**The Paps**	**4.55**	**222**	PN	**Pn**	**15 05 29.4**	**-3.0**
APZ				AML	AML	15 06 54.4	
APZ				AML	AML	15 06 56.4	
WPHZ	**Waipukurau**	**4.58**	**42**	PN	**Pn**	**15 05 31.4**	**-1.5**
MTVZ	**Mangateitei**	**4.74**	**29**	AML	AML	15 07 17.5	
MTVZ				AML	AML	15 07 17.9	
VRZ	**Vera Road**	**4.75**	**22**	PN	**Pn**	**15 05 34.9**	**-0.3**
VRZ				AML	AML	15 07 11.6	
VRZ				AML	AML	15 07 23.4	
PKVZ	**Pokaka**	**4.78**	**28**	PN	**Pn**	**15 05 35.2**	**-0.5**
PKVZ				AML	AML	15 06 25.8	
PKVZ				AML	AML	15 07 07.3	
PXZ	**Pawanui**	**4.82**	**45**	AML	AML	15 06 37.4	
PXZ				AML	AML	15 06 44.9	
PXZ				AML	AML	15 06 44.9	
PXZ				AML	AML	15 07 34.0	
MOVZ	**Moawhango**	**4.83**	**32**	PN	**Pn**	**15 05 34.9**	**-1.4**
MOVZ				AML	AML	15 06 45.0	
MOVZ				AML	AML	15 07 11.5	
WNVZ	**Wahianoa**	**4.84**	**30**	PN	**Pn**	**15 05 35.4**	**-1.1**
TRVZ	**Turoa**	**4.84**	**30**	PN	**Pn**	**15 05 35.5**	**-1.1**
TRVZ				AML	AML	15 06 34.6	
TRVZ				AML	AML	15 06 34.9	
PYZ	**Puysegur Point**	**4.87**	**236**	PN	**Pn**	**15 05 33.4**	**-3.4**
PYZ	**Puysegur Point**	**4.87**	**236**	*e*Pn	**Pn**	**15 05 33.7**	**-3.0**
WHVZ	**Whangaehu Hut**	**4.87**	**30**	PN	**Pn**	**15 05 36.0**	**-1.1**
BHHZ	**Black Hill Sta**	**4.88**	**35**	PN	**Pn**	**15 05 34.9**	**-2.0**
FWVZ	**Far West T-bar**	**4.88**	**29**	PN	**Pn**	**15 05 36.4**	**-0.8**
FWVZ				AML	AML	15 06 46.8	
FWVZ				AML	AML	15 07 23.1	
KRHZ	**Kereru**	**4.88**	**38**	PN	**Pn**	**15 05 33.6**	**-3.4**
TUVZ	**Tukino**	**4.91**	**30**	PN	**Pn**	**15 05 36.5**	**-0.9**
TUVZ				AML	AML	15 06 43.5	
TUVZ				AML	AML	15 06 44.6	
NGZ	**Ngauruhoe**	**4.97**	**29**	PN	**Pn**	**15 05 37.1**	**-1.3**
NGZ				AML	AML	15 07 07.4	
NGZ				AML	AML	15 07 33.5	
KAHZ	**Kahuranaki**	**5.00**	**43**	PN	**Pn**	**15 05 36.6**	**-2.1**
OTVZ	**Oturere**	**5.01**	**30**	PN	**Pn**	**15 05 37.9**	**-0.9**
OTVZ				AML	AML	15 06 55.9	
OTVZ				AML	AML	15 07 15.5	
TWVZ	**Taurewa**	**5.01**	**28**	PN	**Pn**	**15 05 38.0**	**-0.8**
TWVZ				AML	AML	15 07 15.9	
TWVZ				AML	AML	15 07 16.5	
WTVZ	**West Tongariro**	**5.02**	**29**	PN	**Pn**	**15 05 37.6**	**-1.4**
WTVZ				AML	AML	15 07 02.6	
WTVZ				AML	AML	15 07 12.6	
KRVZ	**Karewarewa**	**5.06**	**29**	PN	**Pn**	**15 05 39.2**	**-0.3**
KRVZ				AML	AML	15 07 13.9	
KRVZ				AML	AML	15 07 30.9	
KWHZ	**Kaweka Forest**	**5.09**	**37**	PN	**Pn**	**15 05 37.9**	**-2.0**
KATZ	**Kakaramea**	**5.18**	**29**	PN	**Pn**	**15 05 41.4**	**+0.1**
KATZ				AML	AML	15 06 49.7	
MCHZ	**McNeill Hill**	**5.19**	**39**	PN	**Pn**	**15 05 39.3**	**-2.0**
RITZ	**Rihia Road**	**5.24**	**30**	PN	**Pn**	**15 05 41.0**	**-0.9**
RITZ				AML	AML	15 06 27.8	
RITZ				AML	AML	15 07 05.6	
RATZ	**Rangitukua**	**5.31**	**29**	PN	**Pn**	**15 05 43.3**	**+0.4**
RATZ				AML	AML	15 07 39.2	
RATZ				AML	AML	15 07 41.9	
BKZ	**Black Stump Fm**	**5.33**	**36**	PN	**Pn**	**15 05 40.1**	**-3.1**
BKZ				AML	AML	15 07 40.9	
BKZ				AML	AML	15 08 08.5	
BKZ	**Black Stump Fm**	**5.33**	**36**	*e*Pn	**Pn**	**15 05 41.1**	**-2.0**
HIZ	**Hauiti**	**5.35**	**21**	PN	**Pn**	**15 05 42.1**	**-1.3**
HIZ				AML	AML	15 07 04.6	
HIZ				AML	AML	15 07 17.1	
HIZ	**Hauiti**	**5.35**	**21**	*e*Pn	**Pn**	**15 05 41.9**	**-1.5**
WATZ	**Wairara**	**5.44**	**28**	PN	**Pn**	**15 05 44.8**	**+0.2**
WATZ				AML	AML	15 07 30.3	
WATZ				AML	AML	15 07 49.0	
ARHZ	**Aropaoanui**	**5.48**	**40**	PN	**Pn**	**15 05 42.9**	**-2.2**
NMHZ	**Naumai**	**5.53**	**38**	PN	**Pn**	**15 05 43.9**	**-2.0**
MRHZ	**Matea Rd**	**5.58**	**34**	PN	**Pn**	**15 05 44.0**	**-2.6**
KUTZ	**Kaahu Road**	**5.66**	**28**	PN	**Pn**	**15 05 48.6**	**+0.9**
TLZ	**Tolley Road**	**5.72**	**25**	PN	**Pn**	**15 05 47.7**	**-0.8**
WHHZ	**Waihua**	**5.74**	**40**	PN	**Pn**	**15 05 46.8**	**-1.9**
ALRZ	**Allen Road**	**5.79**	**32**	PN	**Pn**	**15 05 47.0**	**-2.4**
PRRZ	**Plateau Road**	**5.86**	**32**	PN	**Pn**	**15 05 48.3**	**-2.2**
KNZ	**Kokohu**	**5.99**	**43**	PN	**Pn**	**15 05 49.3**	**-2.9**
KNZ				AML	AML	15 07 01.0	
KNZ				AML	AML	15 07 14.6	
RTZ	**Ruatahuna**	**6.00**	**36**	PN	**Pn**	**15 05 50.2**	**-2.2**
MHGZ	**Mahia Peninsul**	**6.01**	**45**	*e*Pn	**Pn**	**15 05 50.8**	**-1.7**
SNGZ	**Shannon Statio**	**6.02**	**39**	PN	**Pn**	**15 05 49.8**	**-2.8**
PRGZ	**Paritu Road**	**6.17**	**43**	PN	**Pn**	**15 05 53.5**	**-1.2**
TOZ	**Tahuroa Road**	**6.26**	**23**	PN	**Pn**	**15 05 53.9**	**-2.0**
TOZ				AML	AML	15 07 34.3	
TOZ				AML	AML	15 08 15.4	
RIGZ	**Rimuhau**	**6.28**	**41**	PN	**Pn**	**15 05 52.6**	**-3.6**
RAGZ	**Rawiri**	**6.29**	**38**	PN	**Pn**	**15 05 53.5**	**-2.9**
URZ	**Urewera**	**6.35**	**35**	PN	**Pn**	**15 05 53.3**	**-3.8**
	3.9nm,0.3s,baz=228,slow=5.9,SNR=25						
URZ				Sn	**Sn**	**15 07 03.1**	**-6.3**
	17nm,0.3s,baz=272,slow=7.2,SNR=3.6						
URZ	**Urewera**	**6.35**	**35**	PN	**Pn**	**15 05 53.7**	**-3.4**
URZ				AML	AML	15 08 10.0	
URZ				AML	AML	15 08 14.7	
URZ	**Urewera**	**6.35**	**35**	*e*Pn	**Pn**	**15 05 54.2**	**-2.9**
URZ				Sn	**Sn**	**15 07 03.1**	**-6.3**
MWZ	**Matawai**	**6.47**	**38**	Pn	Pn	15 05 54.0	-4.9
MWZ				AML	AML	15 07 16.4	
MWZ				AML	AML	15 07 17.5	
TKGZ	**Te Karaka**	**6.54**	**40**	PN	**Pn**	**15 05 56.1**	**-3.5**
AWAZ	**Awhitu Peninsu**	**6.70**	**15**	PN	**Pn**	**15 06 01.0**	**-0.8**
KBAZ	**Karaka Road Bo**	**6.71**	**17**	PN	**Pn**	**15 06 02.4**	**+0.3**
MKAZ	**Moumakai**	**6.77**	**19**	PN	**Pn**	**15 06 01.2**	**-1.6**
MKAZ				AML	AML	15 07 47.3	
MKAZ				AML	AML	15 08 42.3	
TWGZ	**Tauwhareparae**	**6.81**	**40**	PN	**Pn**	**15 06 00.2**	**-3.3**
WTAZ	**Waiatarua**	**6.81**	**14**	PN	**Pn**	**15 06 03.4**	**0.0**
ETAZ	**East Tamaki Re**	**6.86**	**17**	PN	**Pn**	**15 06 02.9**	**-1.2**
RVAZ	**Riverhead Bore**	**6.97**	**14**	PN	**Pn**	**15 06 05.1**	**-0.5**
PUZ	**Puketiti**	**7.02**	**41**	PN	**Pn**	**15 06 03.0**	**-3.4**
PUZ				AML	AML	15 07 23.1	
PUZ				AML	AML	15 07 32.3	
WIAZ	**Waiheke Island**	**7.06**	**18**	PN	**Pn**	**15 06 05.7**	**-1.1**
HAZ	**Te Kaha**	**7.06**	**37**	PN	**Pn**	**15 06 03.5**	**-3.3**
PKGZ	**Pakihiroa**	**7.09**	**39**	PN	**Pn**	**15 06 03.8**	**-3.5**
ABAZ	**Army Bay**	**7.18**	**15**	PN	**Pn**	**15 06 07.7**	**-0.8**
KUZ	**Kuaotunu**	**7.25**	**21**	PN	**Pn**	**15 06 08.6**	**-0.8**
KUZ				AML	AML	15 09 07.5	
KUZ				AML	AML	15 09 13.1	
WMGZ	**Waiomatatini S**	**7.30**	**40**	PN	**Pn**	**15 06 07.3**	**-2.8**
MXZ	**Matakaoa Point**	**7.46**	**39**	*e*Pn	**Pn**	**15 06 09.6**	**-2.7**
WCZ	**Waipu Caves**	**7.74**	**11**	PN	**Pn**	**15 06 16.3**	**0.0**
WCZ				AML	AML	15 07 46.6	
WCZ				AML	AML	15 07 58.7	
CTZ	**Chatham Island**	**7.92**	**95**	PN	**Pn**	**15 06 16.9**	**-1.8**
I36NZ	**CHATHAM INFRAS**	**8.01**	**96**	*i*		15 51 50.0	
	baz=267,slow=318,SNR=0.3						
OUZ	**Omahuta**	**8.37**	**6**	PN	**Pn**	**15 06 24.4**	**-0.4**
OUZ				AML	AML	15 09 39.7	
OUZ				AML	AML	15 11 40.8	
OUZ	**Omahuta**	**8.37**	**6**	*e*Pn	**Pn**	**15 06 25.1**	**+0.3**
DZM	**Mont Dzumac**	**22.00**	**345**	LR	LR	15 17 17.7	
	comp=Z,2μm,18.5s,baz=185,slow=36						
STKA	**Stephens Creek**	**26.91**	**285**	P	**P**	**15 10 04.8**	**+0.3**
	7.0nm,0.8s,baz=120,slow=9.5,SNR=16						
STKA				LR	LR	15 20 12.6	
	comp=Z,354nm,18.2s,baz=115,slow=36						
STKA	**Stephens Creek**	**26.91**	**285**	*e*P	**P**	**15 10 03.9**	**-0.6**
	1.7nm,0.8s						
VNDA	**Vanda**	**34.35**	**184**	LR	LR	15 23 19.4	
	comp=Z,262nm,19.9s,baz=22,slow=33						
HNR	**Honiara**	**35.70**	**339**	P	**P**	**15 11 21.0**	**-0.9**
	19nm,0.4s,baz=167,slow=16,SNR=2.4						
AS01	**Alice Springs**	**37.28**	**290**	*e*P	**P**	**15 11 34.5**	**-1.0**
AS31	**Alice Springs**	**37.31**	**289**	*e*P	**P**	**15 11 34.5**	**-1.2**
	4.5nm,0.8s						
ASAR	**Alice Springs**	**37.31**	**289**	P	**P**	**15 11 34.9**	**-0.9**
	11nm,0.8s,baz=134,slow=9.4,SNR=46						
ASAR				LR	LR	15 26 04.1	
	comp=Z,358nm,19.5s,baz=135,slow=35						
WB2	**Warramunga Arr**	**39.56**	**294**	*e*P	**P**	**15 11 53.9**	**-0.8**
	17nm,0.8s						
WRAB	**Tennant Creek**	**39.57**	**294**	*e*P	**P**	**15 11 53.1**	**-1.6**
	13nm,0.6s						
WRA	**Warramunga Arr**	**39.57**	**294**	P	**P**	**15 11 53.6**	**-1.1**
	9.8nm,0.6s,baz=133,slow=7.9,SNR=56						
WRA				LR	LR	15 28 20.3	
	comp=Z,542nm,19.1s,baz=120,slow=37						
PMG	**Port Moresby**	**40.53**	**320**	P	**P**	**15 12 03.1**	**+0.4**
	7.8nm,1.0s,baz=229,slow=19,SNR=3.9						
PAE	**Paea**	**41.10**	**63**	*e*T	T	15 54 59.3	
	16nm,0.3s						
PPT2	**Papeete2**	**41.15**	**63**	*e*LR	LR	15 23 23.0	
	390nm,27.2s						
PPT2	**Papeete2**	**41.15**	**63**	*e*T	T	15 55 04.6	
	16nm,0.3s						
PPT	**Papeete**	**41.17**	**63**	LR	LR	15 28 23.6	
	comp=Z,175nm,18.5s,baz=196,slow=35						
TVO	**Taravao**	**41.22**	**64**	*e*T	T	15 55 08.7	
	2.8nm,0.3s						
PMOR	**Pomariorio Ree**	**44.14**	**62**	*e*T	T	15 58 48.6	
	6.8nm,0.3s						
FITZ	**Fitzroy Crossi**	**46.75**	**288**	P	**P**	**15 12 52.5**	**-0.2**
	3.4nm,0.5s,baz=137,slow=6.1,SNR=29						
FITZ	**Fitzroy Crossi**	**46.75**	**288**	*e*P	**P**	**15 12 52.1**	**-0.6**
	4.2nm,0.6s						
RKT	**Rikitea**	**47.55**	**82**	*e*LR	LR	15 26 12.2	
	299nm,25.5s						
SOEI	**Soe**	**53.61**	**294**	P	**P**	**15 13 45.6**	**+0.7**
	26nm,0.8s						
TAOE	**Nuku Hiva Isla**	**53.74**	**64**	*e*LR	LR	15 29 02.6	
	306nm,27.9s						
MAW	**Mawson**	**57.26**	**205**	LR	LR	15 38 26.7	
	comp=Z,192nm,18.1s,baz=60,slow=36						
GUMO	**Guam**	**62.21**	**329**	LR	LR	15 39 00.3	
	comp=Z,116nm,21.2s,baz=160,slow=34						
SNAA	**Sanae**	**65.03**	**182**	P	**P**	**15 15 03.5**	**+0.3**
VNA3	**Neumayer Olymp**	**65.50**	**179**	P	**P**	**15 15 10.1**	**+4.0**
VNA2	**Neumayer--Watz**	**65.83**	**180**	P	**P**	**15 15 08.7**	**+0.5**
	baz=154,slow=3.8						
DAV	**Davao City (W)**	**65.84**	**307**	LR	LR	15 44 54.5	
	comp=Z,91nm,20.0s,baz=155,slow=37						
KSM	**Kuching**	**71.22**	**291**	*e*P	**P**	**15 15 43.6**	**+1.0**
	8.1nm,0.8s						
PLCA	**Paso Flores**	**78.72**	**136**	P	P	15 16 30.8	+5.0
	1.8nm,0.8s,baz=256,slow=10,SNR=5.4						
PLCA				LR	LR	15 41 59.4	
	comp=Z,140nm,19.8s,baz=218,slow=28						
QIZ	**Qiongzhong**	**84.62**	**302**	P	**P**	**15 16 57.8**	**+0.8**
QIZ	**Qiongzhong**	**84.62**	**302**	S	**S**	**15 27 26.8**	**+3.2**
QIZ				LR	LR		
	comp=N,54nm,9.6s						
QIZ				LR	LR		
	comp=E,44nm,14.1s						
MJAR	**Matsushiro Arr**	**85.59**	**333**	P	**P**	**15 17 03.3**	**+1.9**
	comp=E,1.1nm,0.7s,baz=167,slow=7.3,SNR=4.1						
MJAR				LR	LR	15 54 29.1	
	comp=E,20nm,18.2s,baz=235,slow=35						
NJ2	**Nanjing**	**89.79**	**317**	*e*P	**P**	**15 17 22.1**	**+0.4**
NJ2				pmax	pmax		
	comp=Z,17nm,0.8s						
KSRS	**Korea Array**	**90.20**	**326**	P	**P**	**15 17 24.3**	**+0.9**
	comp=Z,2.4nm,0.8s,baz=148,slow=5.6,SNR=3.8						
KSRS				LR	LR	15 54 02.4	
	comp=Z,50nm,19.3s,baz=152,slow=33						
KSAR	**Wonju Array Be**	**90.20**	**326**	P	**P**	**15 17 24.3**	**+0.8**
CMAR	**Chiang Mai Arr**	**91.16**	**294**	P	**P**	**15 17 29.0**	**+0.5**
	comp=Z,0.9nm,0.6s,baz=160,slow=5.3,SNR=3.5						
GYA	**Guiyang**	**92.13**	**305**	P	**P**	**15 17 34.2**	**+1.3**
GYA				PP	**PP**	**15 21 17.4**	**+4.0**
GYA	**Guiyang**	**92.13**	**305**	SKS	**SKSac**	**15 28 05.0**	**-0.4**
GYA	**Guiyang**	**92.13**	**305**	S	**S**	**15 28 34.8**	**+0.1**
GYA	**Guiyang**	**92.13**	**305**	SS	SS	15 34 48.6	+3.5
GYA				pmax	pmax		
	comp=Z,20nm,1.0s						
GYA				pmax	pmax		
	comp=Z,120nm,5.6s						
GYA				LR	LR		
	comp=N,490nm,18.4s						
GYA				LR	LR		
	comp=E,470nm,19.0s						
GYA				LR	LR		
	comp=Z,450nm,18.8s						
CPUP	**Villa Florida**	**96.79**	**136**	LR	LR	15 56 08.0	
	comp=Z,67nm,19.4s,baz=133,slow=32						
PETK	**Petropavlovsk-**	**97.12**	**351**	LR	LR	15 55 20.2	
	comp=Z,95nm,21.5s,baz=155,slow=32						
CD2	**Chengdu**	**97.13**	**306**	P	**P**	**15 17 54.9**	**-0.7**
CD2				pmax	pmax		
	comp=Z,20nm,0.6s						
BJI	**Beijing**	**97.48**	**320**	P	Pdif	15 17 58.6	+1.7
BJI				pmax	pmax		
	comp=Z,6.0nm,0.8s						
BJI				pmax	pmax		
	comp=Z,110nm,4.8s						
LPAZ	**La Paz**	**98.71**	**122**	LR	LR	15 56 12.1	
	comp=Z,25nm,18.2s,baz=164,slow=31						
HHC	**Hu-ho-hao-te**	**100.32**	**318**	*e*P	**Pdif**	**15 18 10.7**	**+1.0**
HHC				PP	**PP**	**15 22 19.8**	**+3.2**
HHC	**Hu-ho-hao-te**	**100.32**	**318**	S	**Sdif**	**15 29 42.2**	**-2.5**
HHC	**Hu-ho-hao-te**	**100.32**	**318**	SS	SS	15 36 32.2	-8.6
HHC				pmax	pmax		
	comp=Z,48nm,1.4s						
HHC				pmax	pmax		
	comp=Z,130nm,7.4s						
HHC				LR	LR		
	comp=N,89nm,17.8s						
HHC				LR	LR		
	comp=E,380nm,18.1s						
HHC				LR	LR		
	comp=Z,290nm,17.3s						
LZH	**Lanzhou**	**100.83**	**310**	*e*P	**Pdif**	**15 18 15.7**	**+3.5**
LZH				pP	sP	15 18 20.0	+0.4
LZH				sP	pP	15 18 23.1	+5.4
LZH				pmax	pmax		
	comp=Z,15nm,1.1s						
KSH	**Kashi**	**119.92**	**298**	*e*PKP	**PKPdf**	**15 23 13.0**	**-0.6**
KSH				*es*PKP		15 23 27.2	
KSH				*e*PP	PP	15 24 49.3	+11
KSH				SKKS		15 31 37.5	
KSH				AMB	AMB		
	comp=Z,56nm,4.3s						
MKAR

PMPS A A 15 13 54.8
530nnm,0.3s
PMPS Porto Santo 0.94 123 P **Pn 15 13 40.6 +2.2**
PMPS S **Sg 15 13 52.6 +3.1**
265nnm,0.3s
PMPS Porto Santo 0.94 123 P **Pn 15 13 40.6 +2.2**
PMPS S **Sg 15 13 52.6 +3.1**
265nnm,0.3s
FUL Funchal 0.98 161 *e*P **Pg 15 13 39.4 +1.3**
FUL *e*S **Sg 15 13 49.7 -1.1**
FUL A A 15 13 54.8
658nnm,0.2s
FUL Funchal 0.98 161 P **Pg 15 13 39.4 +1.3**
FUL S **Sg 15 13 49.7 -1.1**
329nnm,0.2s
FUL Funchal 0.98 161 P **Pg 15 13 39.4 +1.3**
FUL S **Sg 15 13 49.7 -1.1**
329nnm,0.2s
EBAJ Bajamar 5.08 171 P **Pn 15 14 37.8 +2.3**
1.9nm,0.1s,SNR=7.9
EBAJ S Sn 15 15 24.8 -9.4
10nm,0.1s,SNR=7.9
EBAJ Bajamar 5.08 171 P **Pn 15 14 37.8 +2.3**
1.9nm,0.1s,SNR=7.9
EBAJ S Sn 15 15 24.8 -9.5
10nm,0.1s,SNR=7.9
CCAN Las Canadas 5.37 174 P Pn 15 14 35.8 -3.9
0.8nm,0.1s,SNR=7.9
CCAN S Sn 15 15 29.6 -12
1.9nm,0.3s,SNR=7.9
CCAN Las Canadas 5.37 174 P Pn 15 14 35.8 -3.9
0.8nm,0.1s,SNR=7.9
CCAN S Sn 15 15 29.6 -12
1.9nm,0.3s,SNR=7.9
CFUE Fuerteventura 5.69 149 P **Pn 15 14 45.1 +1.4**
1.5nm,0.1s,SNR=7.9
CFUE S Sn 15 15 39.8 -9.2
3.9nm,0.1s,SNR=7.9
CFUE Fuerteventura 5.69 149 P **Pn 15 14 45.1 +1.4**
1.5nm,0.1s,SNR=7.9
CFUE S Sn 15 15 39.8 -9.3
3.9nm,0.1s,SNR=7.9
CTIG El Hierro 5.80 186 S Sn 15 15 41.9 -10
31nm,0.2s,SNR=7.9
CTIG El Hierro 5.80 186 S Sn 15 15 41.9 -10
31nm,0.2s,SNR=7.9
CFTV Fuerteventura 5.83 151 S **Sn 15 15 46.0 -6.7**
SNR=7.9
CFTV Fuerteventura 5.83 151 S **Sn 15 15 46.0 -6.7**
SNR=7.9
PSMN Pico do Norte, 7.23 300 *e*P Pn 15 15 00.0 -5.0
PSMN *e*S Sn 15 16 10.5 -17
PSMN A A 15 16 11.8
18nm,0.3s
PSMA Santa Maria 7.28 300 *e*P Pn 15 14 59.7 -5.9
PSMA *e*S Sn 15 16 12.3 -16
PSMA A A 15 16 13.9
28nm,0.1s
BART Pico Bartolome 7.67 305 *e*S Sn 15 16 23.7 -14
BART A A 15 16 25.2
14nm,0.1s
PFVI Vila Bisbo 7.75 60⇓*e*P **Pn 15 15 14.8 +2.7**
PFVI *e*S **Sn 15 16 36.1 -3.9**
PFVI A A 15 16 40.0
7.8nm,0.6s
PFVI Vila Bisbo 7.75 60 P **Pn 15 15 14.8 +2.7**
3.3nm,0.1s,SNR=6.7
PFVI S **Sn 15 16 36.3 -3.7**
2.4nm,0.1s,SNR=7.9
PFVI Vila Bisbo 7.75 60 P **Pn 15 15 14.8 +2.7**
3.3nm,0.1s,SNR=6.7
PFVI S **Sn 15 16 36.3 -3.7**
2.4nm,0.1s,SNR=7.9
MORF Marmelete 7.95 60 *e*P **Pn 15 15 17.9 +3.0**
MORF *e*S **Sn 15 16 42.1 -2.9**
MORF A A 15 16 52.6
4.6nm,0.2s
MORF Marmelete 7.95 60 P **Pn 15 15 17.9 +3.0**
MORF S **Sn 15 16 42.1 -2.9**
4.6nm,0.2s
MORF Marmelete 7.95 60 P **Pn 15 15 17.9 +3.0**
MORF S **Sn 15 16 42.1 -2.9**
4.6nm,0.2s
PTEO Sao Teotonio 8.01 58 *e*P **Pn 15 15 18.8 +3.2**
PTEO *e*S **Sn 15 16 43.0 -3.2**
PTEO A A 15 16 59.5
8.8nm,0.5s
PTEO Sao Teotonio 8.01 58 P **Pn 15 15 18.8 +3.2**
PTEO S **Sn 15 16 43.0 -3.2**
4.4nm,0.5s
PTEO Sao Teotonio 8.01 58 P **Pn 15 15 18.8 +3.2**
PTEO S **Sn 15 16 43.0 -3.2**
4.4nm,0.5s
PMAFR Mafra 8.39 48 S Sn 15 16 49.8 -5.8
8.8nm,0.2s,SNR=7.9
PMAFR Mafra 8.39 48 S Sn 15 16 49.8 -5.7
8.8nm,0.2s,SNR=7.9
PNCL Nicolau / Gran 8.41 55 *e*P **Pn 15 15 23.9 +2.8**
PNCL *e*S **Sn 15 16 52.4 -3.8**
PNCL A A 15 17 11.5
3.7nm,0.6s
PNCL Nicolau / Gran 8.41 55 *e*P **Pn 15 15 23.9 +2.8**
PNCL *e*S **Sn 15 16 52.4 -3.8**
3.7nm,0.6s
PBDV Barranco-do-Ve 8.45 62 *e*S **Sn 15 16 54.0 -3.2**
PBDV Barranco-do-Ve 8.45 62 S **Sn 15 16 54.0 -3.2**
PBDV Barranco-do-Ve 8.45 62 S **Sn 15 16 54.0 -3.2**
MESJ Messejana 8.50 57 *e*P **Pn 15 15 25.0 +2.7**
MESJ *e*S **Sn 15 16 55.2 -3.0**
MESJ A A 15 17 03.2
3.0nm,0.4s
MESJ Messejana 8.50 57 P **Pn 15 15 25.0 +2.7**
MESJ S **Sn 15 16 55.2 -3.0**
3.0nm,0.4s
MESJ Messejana 8.50 57 P **Pn 15 15 25.0 +2.7**
MESJ S **Sn 15 16 55.2 -3.0**
3.0nm,0.4s
PVAQ Vaqueiros 8.67 61 *e*P **Pn 15 15 27.7 +3.0**
PVAQ *e*S **Sn 15 16 57.6 -5.0**
PVAQ A A 15 17 05.3
3.9nm,0.5s
PVAQ Vaqueiros 8.67 61 P **Pn 15 15 27.7 +3.0**
PVAQ S **Sn 15 16 57.6 -5.0**
3.9nm,0.5s
PVAQ Vaqueiros 8.67 61 P **Pn 15 15 27.7 +3.0**
PVAQ S **Sn 15 16 57.6 -5.0**
3.9nm,0.5s
EGRO El Granado 8.89 61 P **Pn 15 15 30.9 +3.2**
0.7nm,0.1s,SNR=5.0
EGRO S **Sn 15 17 02.8 -5.2**
2.1nm,0.2s,SNR=7.9
EGRO El Granado 8.89 61 P **Pn 15 15 30.9 +3.2**
0.7nm,0.1s,SNR=5.0
EGRO S **Sn 15 17 02.8 -5.2**
2.1nm,0.2s,SNR=7.9
EVO Evora 8.97 54 *e*P Pn 15 15 10.2 -19
EVO Evora 8.97 54 *e*P Pn 15 15 10.2 -19
PMTG Montargil 9.12 51 *e*P **Pn 15 15 31.8 +0.9**
PMTG *e*S **Sn 15 17 09.1 -4.5**
PMTG A A 15 17 21.4
2.2nm,0.6s
PMTG Montargil 9.12 51 *e*P **Pn 15 15 31.8 +0.9**
PMTG *e*S **Sn 15 17 09.1 -4.5**
2.2nm,0.6s
PBAR Barrancos 9.48 58 *e*P **Pn 15 15 38.3 +2.5**
PBAR *e*S **Sn 15 17 17.9 -4.5**
PBAR A A 15 17 27.9
4.6nm,0.7s
PBAR Barrancos 9.48 58 P **Pn 15 15 38.3 +2.5**
PBAR S **Sn 15 17 17.9 -4.5**
4.6nm,0.7s
PBAR Barrancos 9.48 58 P **Pn 15 15 38.3 +2.5**
PBAR S **Sn 15 17 17.9 -4.5**
4.6nm,0.7s
EMIN Mina Concepcio 9.58 61 P **Pn 15 15 40.0 +2.9**
0.3nm,0.1s,SNR=6.2
EMIN S **Sn 15 17 20.6 -4.2**
0.6nm,0.2s,SNR=7.9
EMIN Mina Concepcio 9.58 61 P **Pn 15 15 40.0 +2.9**
0.3nm,0.1s,SNR=6.2
EMIN S **Sn 15 17 20.6 -4.2**
0.6nm,0.2s,SNR=7.9
EBAD Badajoz 9.77 55 P **Pn 15 15 44.1 +4.4**
0.9nm,0.1s,SNR=4.0
EBAD S **Sn 15 17 26.1 -3.3**
0.5nm,0.1s,SNR=7.9

EBAD Badajoz 9.77 55 P **Pn 15 15 44.1 +4.4**
0.9nm,0.1s,SNR=4.0
PMRV Marv??o 9.86 51 *e*P **Pn 15 15 42.1 +1.1**
PMRV Marv??o 9.86 51 P **Pn 15 15 42.1 +1.1**
PMRV Marv??o 9.86 51 *e*P **Pn 15 15 42.1 +1.1**
ESPR Espera 9.89 67 P **Pn 15 15 43.9 +2.5**
1.0nm,0.2s,SNR=4.0
ESPR S **Sn 15 17 28.0 -4.6**
7.7nm,0.2s,SNR=7.9
ECAB El Cabril 10.61 62 P **Pn 15 15 54.1 +2.8**
0.1nm,0.1s,SNR=7.9
ECAB S **Sn 15 17 45.9 -4.3**
0.4nm,0.1s,SNR=7.9
EADA Adamuz 11.27 62 P **Pn 15 16 03.6 +3.3**
0.5nm,0.1s,SNR=7.9
EADA S **Sn 15 18 02.5 -3.7**
0.3nm,0.1s,SNR=7.9

*IDC **09** 15:17:22.4±1.8, 49°.74S×116°.74E, h0km, mb3.8/4, mb1 4.0/4, mb1mx3.8/25, mbtmp3.8/4, MS3.6/4, Ms1 3.6/4, ms1mx3.2/26, Error ellipse: s-maj=78.9km s-min=26.8km az=103.0*
*NEIC **09** 15:17:23.4±1.0, 49°.71S×116°.56E, h10km, mb4.2/1, Error ellipse: s-maj=45.0km s-min=10.3km az=109.0*
ISC 09 15:17:23.8±1.6, 49°.8S±0°.2×116°.7E±0°.5, h10km, n20, σ0=97/12, mb4.0/5, MS3.6/4, Western Indian-Antarctic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H01W2	**Cape Leeuwin H**	**14.97**	**352**	T	T	15 35 58.6	
	baz=173,slow=73,SNR=74						
H01W1	**Cape Leeuwin H**	**14.97**	**352**	T	T	15 36 01.8	
	baz=173,slow=73,SNR=65						
H01W3	**Cape Leeuwin H**	**14.98**	**352**	T	T	15 36 06.0	
	baz=173,slow=73,SNR=58						
CASY	**Casey**	**16.88**	**189**	*e*P	**Pn**	**15 21 19.2**	**-0.6**
BBOO	**Buckleboo**	**22.19**	**48**	P	**P**	**15 22 21.0**	**+0.9**
STKA	**Stephens Creek**	**25.75**	**55**	P	**P**	**15 22 55.0**	**+0.6**
	3.4nm,1.1s,baz=218,slow=15,SNR=3.6						
STKA				LR	LR	15 30 45.9	
	comp=Z,127nm,21.0s,baz=197,slow=31						
ASAR	**Alice Springs**	**29.31**	**34**	P	**P**	**15 23 25.6**	**-0.8**
	0.6nm,1.0s,baz=203,slow=9.0,SNR=10						
VNDA	**Vanda**	**32.60**	**163**	P	**P**	**15 23 53.8**	**-1.0**
	1.6nm,0.8s,baz=310,slow=9.0,SNR=5.2						
VNDA				LR	LR	15 36 38.9	
	comp=Z,65nm,18.0s,baz=330,slow=36						
WRA	**Warramunga Arr**	**32.89**	**32**	P	**P**	**15 23 57.3**	**-0.7**
	1.2nm,0.7s,baz=203,slow=8.7,SNR=6.6						
WRAB	**Tennant Creek**	**32.91**	**32**	*e*P	**P**	**15 23 56.9**	**-1.2**
	2.1nm,0.6s						
QSPA	**South Pole Qui**	**40.37**	**180**	*e*P	**P**	**15 25 02.6**	**+1.1**
H08S2	**Diego Garcia H**	**55.87**	**303**	T	T	16 26 59.0	
	baz=147,slow=76,SNR=6.6						
H08S1	**Diego Garcia H**	**55.88**	**303**	T	T	16 26 53.9	
	baz=147,slow=76,SNR=5.6						
H08S3	**Diego Garcia H**	**55.89**	**303**	T	T	16 26 53.7	
	baz=147,slow=76,SNR=7.3						
AFI	**Afiamalu**	**67.55**	**85**	LR	LR	15 53 16.0	
	comp=Z,56nm,18.3s,baz=203,slow=32						
PLCA	**Paso Flores**	**89.66**	**174**	LR	LR	16 08 25.6	
	comp=Z,38nm,19.1s,baz=188,slow=34						
ANMO	**Albuquerque**	**145.33**	**99**	PKPbc	**PKPdf**	**15 37 02.6**	**+0.9**
	2.5nm,0.9s,baz=186,slow=3.7,SNR=5.2						
PDAR	**Pinedale Array**	**147.66**	**84**	PKPbc	**PKPbc**	**15 37 08.8**	**+0.7**
	0.7nm,0.8s,baz=208,slow=2.9,SNR=4.7						
YKA	**Yellowknife Ar**	**149.57**	**46**	PKPbc	**PKPbc**	**15 37 11.3**	**-0.8**
	1.0nm,0.9s,baz=276,slow=2.1,SNR=12						
RES	**Resolute Bay**	**151.70**	**17**	PKPbc	**PKPbc**	**15 37 17.2**	**+0.4**
	0.9nm,0.8s,baz=148,slow=0.6,SNR=4.6						

JMA 09 15:22:39.5±0.1, 35°.80N×140°.91E, h30km±1km, M1.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.11**	**203**	P	Pb	15 22 44.8	-0.1
JYT	**Yasato**	**0.72**	**307**	P	Pb	15 22 53.0	-0.6
JYT				S	Sb	15 23 02.4	-0.7

IDC 09 15:23:14.2±2.9, 35°.97N×141°.91E, h34km±8km, mb3.2/4, mb1 3.3/5, mb1mx3.1/58, mbtmp3.3/5, ML2.9/1, MS2.7/1, Ms1 2.7/1, ms1mx2.1/22, Error ellipse: s-maj=89.9km s-min=20.0km az=59.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**3.04**	**282**	Pn	Pn	15 23 59.7	-0.3
	1.5nm,0.3s,baz=113,slow=8.8,SNR=14						
MAT	**Matsushiro**	**3.05**	**282**	P	Pn	15 24 01.3	+1.3
MAT				*e*S	Sn	15 24 39.6	+4.3
ASAJ	**Asahikawa**	**8.15**	**4**	LR	LR	15 28 59.0	
	comp=Z,54nm,18.6s,baz=88,slow=42						
SONM	**Songino Array**	**28.72**	**305**	P	P	15 29 06.6	-1.7
	0.3nm,0.4s,baz=110,slow=8.3,SNR=4.0						
SONM				pP	pP	15 29 17.7	-0.3
	0.5nm,0.5s,baz=105,slow=9.5,SNR=3.7						
MKAR	**Makanchi Array**	**45.03**	**303**	P	P	15 31 27.3	+0.8
	0.5nm,0.6s,baz=88,slow=12,SNR=5.0						
MKAR				pP	pP	15 31 37.4	+0.9
	0.4nm,0.6s,baz=87,slow=10.0,SNR=3.6						
WRA	**Warramunga Arr**	**56.07**	**189**	P	P	15 32 49.3	-0.7
	0.2nm,0.8s,baz=8.6,slow=7.5,SNR=3.4						
WRA				pP	pP	15 32 59.5	-0.7
	0.4nm,1.1s,baz=4.7,slow=7.2,SNR=1.3						
ASAR	**Alice Springs**	**59.79**	**188**	P	P	15 33 16.8	+0.7
	0.3nm,1.0s,baz=23,slow=11,SNR=3.0						

*ISCJB **09** 15:29:36.8±1.1, 26°.08N±0°.05×128°.70E±0°.06, h25km±9km, mb3.5/4, Error ellipse: s-maj=8.9km s-min=8.5km az=24.3*
*IDC **09** 15:29:36.5±3.5, 25°.86N×128°.06E, h0km, mb3.5/4, mb1 3.7/4, mb1mx3.3/56, mbtmp3.5/4, Error ellipse: s-maj=219.4km s-min=22.4km az=66.0*
*JMA **09** 15:29:38.9±0.2, 26°.15N×128°.60E, h38km±4km, M2.8*
ISC 09 15:29:36.0±1.8, 26°.14N±0°.06×128°.73E±0°.05, h10km±12km, n14, σ0=86/19, mb3.5/4, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JNTH	**Nagotoyohara**	**0.74**	**301**	P	**Pb**	**15 29 51.2**	**+0.3**
JNTH				S	**Sb**	**15 30 00.6**	**-0.4**
JOW	**Kunigami**	**0.80**	**330**	P	**Pn**	**15 29 53.1**	**-0.2**
JOW				S	**Sb**	**15 30 03.2**	**+0.3**
JJT2	**Tamagusuku 2**	**0.88**	**270**	P	**Pb**	**15 29 53.5**	**+0.1**
JJT2				*e*S	**Sg**	**15 30 03.7**	**-0.8**
JIH	**Iheya**	**1.12**	**323**	P	**Pn**	**15 29 57.9**	**+0.2**
JOKE	**Okinoerabujima**	**1.22**	**353**	P	**Pg**	**15 30 00.0**	**+0.5**
JOKE				*e*S	**Sb**	**15 30 15.4**	**+0.3**
JAGN	**Aguni-jima**	**1.41**	**289**	P	**Pn**	**15 30 01.4**	**-0.2**
JTK	**Tokunoshima**	**1.65**	**7**	P	**Pb**	**15 30 06.1**	**-0.4**
JKE	**Kume jima 2**	**1.75**	**276**	P	**Pn**	**15 30 05.4**	**-1.0**
JAMN	**Amaminishikomi**	**2.13**	**11**	P	**Pb**	**15 30 13.7**	**-1.0**
JMZ	**Minamidaito 2**	**2.27**	**98**	P	**Pn**	**15 30 13.8**	**+0.3**
JMZ				S	**Sn**	**15 30 40.2**	**-1.3**
SONM	**Songino Array**	**27.87**	**327**	P	**P**	**15 35 27.6**	**+1.7**
	0.3nm,0.4s,baz=138,slow=9.3,SNR=2.8						
MKAR	**Makanchi Array**	**41.93**	**312**	P	**P**	**15 37 26.1**	**-0.6**
	0.3nm,0.6s,baz=111,slow=7.9,SNR=3.9						
WRA	**Warramunga Arr**	**46.13**	**173**	P	**P**	**15 38 00.1**	**-0.6**
	0.6nm,0.6s,baz=354,slow=8.5,SNR=7.2						
ASAR	**Alice Springs**	**49.77**	**174**	P	**P**	**15 38 30.3**	**+1.4**
	0.5nm,0.8s,baz=350,slow=10,SNR=9.7						

*ISCJB **09** 15:30:40.5±0.4, 51°.46N±0°.02×16°.16E±0°.02, h0km, mb3.5/1, MS3.6/2, Error ellipse: s-maj=3.2km s-min=2.0km az=11.1*
*IDC **09** 15:30:42.9±0.7, 51°.45N×16°.17E, h0km, mb3.3/1, mb1 3.4/6, mb1mx3.2/55, mbtmp3.3/6, ML2.9/5, MS3.6/2, Ms1 3.6/2, ms1mx2.3/41, Error ellipse: s-maj=13.8km s-min=7.8km az=104.0*
*CSEM **09** 15:30:42.4±0.2, 51°.45N×16°.15E, h2km, ML3.7/10, Error ellipse: s-maj=3.4km s-min=2.1km az=17.0*
*WAR **09** 15:30:43.1, 51°.48N×16°.16E, h1km, Mw2.8*
*BGR **09** 15:30:43.4±0.3, 51°.45N×16°.16E, h1km, ML3.1/17, Error ellipse: s-maj=5.6km s-min=2.2km az=17.0*

*VIE **09** 15:30:46.0±0.8, 51°.20N×16°.25E, h0km, mb2.5/5, ml3.0/5, Error ellipse: s-maj=5.8km s-min=5.1km az=42.0, Suspected Mining induced.*
ISC 09 15:30:41.5±0.7, 51°.52N±0°.03×16°.18E±0°.02, h0km, n99, σ0=97/181, 5C-10D, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.68**	**174**	*i* Pg	**Pg**	**15 30 55.1**	**+0.7**
KSP				*e*Sg	**Sg**	**15 31 03.6**	**+0.3**
KSP				*e*		15 31 07.0	
KSP	**Ksiaz**	**0.68**	**174**	*i* Pg	**Pg**	**15 30 55.1**	**+0.7**
KSP				Sg	**Sg**	**15 31 01.7**	**-1.5**
KSP	**Ksiaz**	**0.68**	**174**	*e*Pg	**Pg**	**15 30 55.2**	**+0.7**
KSP				*e*Sg	**Sg**	**15 31 01.7**	**-1.5**
UPC	**Upice**	**1.01**	**186**⇓	*e*PG	**Pg**	**15 31 01.3**	**+0.4**
UPC				*e*SG	**Sg**	**15 31 14.4**	**+0.3**
	comp=Z,259nm,0.3s						
UPC	**Upice**	**1.01**	**186**	Pg	**Pg**	**15 31 01.3**	**+0.4**
UPC				Sg	**Sg**	**15 31 14.4**	**+0.3**
	259nm,0.3s						
DPC	**Dobruska-Polom**	**1.17**	**175**⇓	*i*PG	**Pg**	**15 31 04.0**	**+0.1**
DPC				*e*SG	**Sg**	**15 31 18.7**	**-0.4**
	comp=Z,97nm,0.4s						
DPC	**Dobruska-Polom**	**1.17**	**175**	Pg	**Pg**	**15 31 04.1**	**+0.1**
DPC				Sg	**Sg**	**15 31 19.1**	**0.0**
DPC	**Dobruska-Polom**	**1.17**	**175**	*e*Pg	**Pg**	**15 31 04.1**	**+0.2**
DPC				*e*Sg	**Sg**	**15 31 19.1**	**0.0**
PVCC	**Panska Ves**	**1.42**	**226**⇓	*e*PG	**Pg**	**15 31 08.7**	**0.0**
PVCC				*e*SG	**Sn**	**15 31 27.8**	**-0.1**
	comp=Z,185nm,0.3s						
PVCC	**Panska Ves**	**1.42**	**226**	Pg	**Pg**	**15 31 08.7**	**0.0**
PVCC				Sg	**Sn**	**15 31 27.8**	**-0.1**
	185nm,0.3s						
KRLC	**Kraliky**	**1.49**	**165**⇓	*e*PG	**Pn**	**15 31 09.5**	**-0.1**
KRLC				*e*SG	**Sg**	**15 31 29.2**	**-0.2**
KRLC	**Kraliky**	**1.49**	**165**	Pg	**Pn**	**15 31 09.5**	**-0.1**
KRLC				Sg	**Sg**	**15 31 29.2**	**-0.2**
BRG	**Berggiesshubel**	**1.54**	**246**	PN	**Pn**	**15 31 09.7**	**-0.6**
BRG				PG	**Pg**	**15 31 12.0**	**+0.9**
BRG				SG	**Sg**	**15 31 32.2**	**+1.0**
	81nm,0.3s						
BRG	**Berggiesshubel**	**1.54**	**246**	PN	**Pn**	**15 31 09.7**	**-0.6**
BRG				PG	**Pg**	**15 31 12.0**	**+0.9**
BRG				SG	**Sg**	**15 31 32.2**	**+1.0**
	81nm,0.3s						
BRG	**Berggiesshubel**	**1.54**	**246**	Pn	**Pn**	**15 31 09.8**	**-0.6**
BRG				Sg	**Sg**	**15 31 32.0**	**+0.9**
BRG	**Berggiesshubel**	**1.54**	**246**	*e*Pn	**Pn**	**15 31 09.8**	**-0.5**
BRG				*e*Sg	**Sg**	**15 31 32.0**	**+0.9**
GOPC	**GO Pecny, Ondr**	**1.83**	**209**⇓	*e*PN	**Pn**	**15 31 14.7**	**+0.4**
GOPC				*e*PG	**Pb**	**15 31 15.7**	**-0.2**
GOPC				*e*SG	**Sb**	**15 31 39.5**	**+0.2**
	comp=Z,39nm,0.3s						
GOPC	**GO Pecny, Ondr**	**1.83**	**209**	Pn	**Pn**	**15 31 14.7**	**+0.4**
PRU	**Pruhonice**	**1.85**	**215**⇓	*e*PN	**Pn**	**15 31 15.1**	**+0.6**
PRU				*e*PG	**Pb**	**15 31 15.9**	**-0.3**
PRU				*e*SG	**Sb**	**15 31 40.2**	**+0.4**
	comp=Z,58nm,0.3s						
PRU	**Pruhonice**	**1.85**	**215**	Pn	**Pn**	**15 31 15.1**	**+0.6**
PRU	**Pruhonice**	**1.85**	**215**	Pg	**Pb**	**15 31 15.9**	**-0.3**
PRU				Sg	**Sb**	**15 31 40.2**	**+0.4**
	58nm,0.3s						
FBE	**Freiberg**	**1.87**	**253**	Pg	**Pg**	**15 31 17.8**	**+0.4**
FBE				Sg	**Sg**	**15 31 41.8**	**+0.2**
FBE	**Freiberg**	**1.87**	**253**	*e*Pg	**Pg**	**15 31 17.8**	**+0.4**
FBE				*e*Sg	**Sg**	**15 31 41.8**	**+0.2**
MORC	**Moravsky Berou**	**1.94**	**153**⇑	*i*P	**Pn**	**15 31 15.9**	**0.0**
MORC	**Moravsky Berou**	**1.94**	**153**	S	**Sg**	**15 31 43.4**	**-0.5**
MORC	**Moravsky Berou**	**1.94**	**153**	Pn	**Pn**	**15 31 15.5**	**-0.3**
MORC	**Moravsky Berou**	**1.94**	**153**⇑	*i*P	**Pn**	**15 31 15.9**	**0.0**
MORC	**Moravsky Berou**	**1.94**	**153**	*e*Pn	**Pn**	**15 31 15.5**	**-0.3**
MORC				*e*Pg	**Pg**	**15 31 18.7**	**-0.1**
MORC				*e*Sg	**Sg**	**15 31 43.5**	**-0.5**
CLL	**Collm**	**2.00**	**265**	*i* Pn	**Pn**	**15 31 16.3**	**-0.2**
	comp=Z,7.0nm,0.6s						
CLL				*i* Pg	**Pb**	**15 31 19.0**	**+0.3**
CLL				*i*		15 31 23.9	
CLL				*i* Sg	**Sg**	**15 31 47.2**	**+1.5**
	comp=Z,46nm,0.4s						
CLL	**Collm**	**2.00**	**265**	Pn	**Pn**	**15 31 16.4**	**-0.2**
CLL				Sg	**Sg**	**15 31 46.2**	**+0.5**
CLL	**Collm**	**2.00**	**265**	*e*Pn	**Pn**	**15 31 16.4**	**-0.2**
CLL				*e*Sg	**Sg**	**15 31 46.2**	**+0.5**
OKC	**Ostrava-Krasne**	**2.10**	**142**⇓	*e*PN	**Pn**	**15 31 17.3**	**-0.6**
OKC				*e*PG	**Pg**	**15 31 21.4**	**-0.3**
OKC				*e*SG	**Sb**	**15 31 47.3**	**+0.3**
	comp=Z,37nm,0.5s						
OKC	**Ostrava-Krasne**	**2.10**	**142**	Pn	**Pn**	**15 31 17.3**	**-0.6**
OKC	**Ostrava-Krasne**	**2.10**	**142**	Pg	**Pg**	**15 31 22.3**	**+0.6**
OKC				Sg	**Sb**	**15 31 47.2**	**+0.3**
OKC	**Ostrava-Krasne**	**2.10**	**142**	*e*Pg	**Pg**	**15 31 22.3**	**+0.6**
OKC				*e*Sg	**Sb**	**15 31 47.2**	**+0.3**
VRAC	**Vranov**	**2.23**	**173**	Pn	**Pn**	**15 31 19.2**	**-0.4**
	comp=Z,3.8nm,0.3s,baz=327,slow=20,SNR=18						
VRAC				Lg	Lg	15 31 51.7	
	comp=Z,11nm,0.3s,baz=84,slow=23,SNR=8.6						
VRAC	**Vranov**	**2.23**	**173**⇑	*i*P	**Pn**	**15 31 20.0**	**+0.3**
VRAC	**Vranov**	**2.23**	**173**	*e*Sg	**Sb**	**15 31 50.5**	**-0.2**
TREC	**Trest**	**2.27**	**191**⇓	*e*PN	**Pn**	**15 31 20.6**	**+0.3**
TREC				*e*PG	**Pg**	**15 31 24.2**	**-0.7**
TREC				*e*SG	**Sb**	**15 31 53.0**	**+1.1**
	comp=Z,32nm,0.2s						
TREC	**Trest**	**2.27**	**191**	Pn	**Pn**	**15 31 20.6**	**+0.3**
TANN	**Tannenbergstha**	**2.59**	**246**	Pn	**Pn**	**15 31 25.3**	**+0.5**
TANN	**Tannenbergstha**	**2.59**	**246**	*e*Pn	**Pn**	**15 31 25.3**	**+0.5**
TANN				*e*Pg	**Pg**	**15 31 31.3**	**+0.1**
TANN				*e*Sg	**Sg**	**15 32 03.6**	**-1.2**
OJC	**Ojcow**	**2.64**	**118**	*e*Pg	**Pg**	**15 31 32.3**	**+0.3**
OJC				*e*Sg	**Sg**	**15 32 06.9**	**+0.7**
OJC	**Ojcow**	**2.64**	**118**	*e*Pg	**Pg**	**15 31 32.3**	**+0.3**
OJC				*e*Sg	**Sg**	**15 32 06.9**	**+0.7**
OJC	**Ojcow**	**2.64**	**118**	*e*Pg	**Pg**	**15 31 31.3**	**-0.7**
OJC				*e*Sg	**Sg**	**15 32 06.2**	**0.0**
OJC	**Ojcow**	**2.64**	**118**	*e*Pg	**Pg**	**15 31 32.3**	**+0.3**
OJC				*e*Sg	**Sg**	**15 32 06.9**	**+0.7**
WERD	**Werda**	**2.67**	**248**	Pn	**Pn**	**15 31 26.1**	**+0.3**
WERD				Sg	**Sg**	**15 32 05.9**	**-1.3**
WERD	**Werda**	**2.67**	**248**	*e*Pn	**Pn**	**15 31 26.1**	**+0.3**
WERD				*e*Sg	**Sg**	**15 32 05.9**	**-1.3**
NKC	**Novy Kostel**	**2.69**	**243**⇓	*e*PN	**Pn**	**15 31 26.4**	**+0.3**
NKC				*e*PG	**Pg**	**15 31 33.8**	**+0.8**
NKC				*e*SG	**Sg**	**15 32 08.7**	**+0.9**
	comp=Z,68nm,0.4s						
NKC	**Novy Kostel**	**2.69**	**243**	Pn	**Pn**	**15 31 26.4**	**+0.3**
NKC				Sg	**Sg**	**15 32 08.7**	**+0.9**
	comp=Z,68nm,0.4s						
KHC	**Kasperske Hory**	**2.91**	**216**⇓	*e*PN	**Pn**	**15 31 29.2**	**+0.1**
KHC				*e*PG	**Pb**	**15 31 35.6**	**+1.3**
KHC				*e*SN	**Sn**	**15 32 04.4**	**-0.4**
KHC				*e*SG	**Sg**	**15 32 14.5**	**-0.5**
	comp=Z,29nm,0.5s						
KHC	**Kasperske Hory**	**2.91**	**216**	Pn	**Pn**	**15 31 29.2**	**+0.1**
MANZ	**Manzenberg**	**3.00**	**241**	Pn	**Pn**	**15 31 31.0**	**+0.6**
MANZ				Sg	**Sg**	**15 32 16.9**	**-1.1**
MANZ	**Manzenberg**	**3.00**	**241**	*e*Pn	**Pn**	**15 31 31.0**	**+0.6**
MANZ				*e*Sg	**Sg**	**15 32 16.9**	**-1.1**
MOX	**Moxa**	**3.01**	**255**	Pn	**Pn**	**15 31 31.3**	**+0.9**
MOX				Sg	**Sg**	**15 32 16.6**	**-1.4**
MOX	**Moxa**	**3.01**	**255**	*e*Pn	**Pn**	**15 31 31.3**	**+0.9**
MOX				*e*Sg	**Sg**	**15 32 16.6**	**-1.4**
ROTZ	**Rotzenmuhle**	**3.07**	**237**	Pn	**Pn**	**15 31 31.8**	**+0.5**
ROTZ				Sg	**Sg**	**15 32 18.6**	**-1.

WET				Sn		Sn	15 32 11.2	-0.2
WET				Sg		Sg	15 32 21.4	-2.2
WET	**Wettzell**	**3.18**	**223**	*e*Pn		**Pn**	15 31 32.9	+0.1
WET				*e*Sn		**Sn**	15 32 11.2	-0.2
WET				*e*Sg		**Sg**	15 32 21.4	-2.2
NIE	**Niedzica**	**3.37**	**127**	*e*P		**Pg**	15 31 45.3	-0.8
NIE				*e*S		**Sg**	15 32 29.7	0.0
NIE	**Niedzica**	**3.37**	**127**	*e*P		**Pg**	15 31 45.3	-0.8
NIE				*e*S		**Sg**	15 32 29.7	0.0
VYHS	**Vyhne**	**3.48**	**149**	*e*Pg		**Pg**	15 31 47.8	-0.3
VYHS				*e*Sg		**Sg**	15 32 30.6	-2.6
VYHS	**Vyhne**	**3.48**	**149**	*e*PG		**Pg**	15 31 47.8	-0.3
VYHS				*e*SG		**Sg**	15 32 30.6	-2.6
VYHS				*e*LG		Lg	15 32 49.6	
CONA	**Conrad Observa**	**3.60**	**183**	*i* Pn		**Pn**	15 31 39.6	+1.0
	comp=Z,2.3nm,0.3s							
CONA				*e*Sg		**Sg**	15 32 35.5	-1.5
	comp=Z,19nm,0.4s							
CONA	**Conrad Observa**	**3.60**	**183**	Pn		**Pn**	15 31 39.6	+1.0
	comp=Z,2.3nm,0.3s							
CONA				Sg		**Sg**	15 32 35.5	-1.5
	comp=Z,19nm,0.4s							
CLZ	**Clausthal**	**3.63**	**277**	Pn		**Pn**	15 31 39.9	+0.9
CLZ	**Clausthal**	**3.63**	**277**	*e*Pn		**Pn**	15 31 39.9	+0.9
CLZ				*e*Pg		**Pg**	15 31 51.7	+0.6
CLZ				*e*Sg		**Sg**	15 32 38.2	+0.2
GRA1	**Grafenberg Arr**	**3.65**	**242**	Sg		**Sg**	15 32 38.0	-0.6
GRF	**Grafenberg Arr**	**3.65**	**242**	*e*Sg		**Sg**	15 32 38.0	-0.6
BSD	**Bornholm Skovb**	**3.69**	**349**	*i* P		**Pn**	15 31 39.2	-0.5
BSD				*e*S		**Sn**	15 32 21.6	-2.2
BSD	**Bornholm Skovb**	**3.69**	**349**	*i* P		**Pn**	15 31 39.2	-0.5
BSD				*e*S		**Sn**	15 32 21.6	-2.2
STHS	**Stebnicka Huta**	**3.86**	**121**	*e*PG		**Pg**	15 31 55.5	+0.1
STHS				*e*SG		**Sg**	15 32 49.0	+3.6
STHS				*e*LG		Lg	15 32 53.7	
MOA	**Molln**	**3.87**	**199**	*i* Pn		**Pn**	15 31 43.0	+0.7
	comp=Z,2.4nm,0.2s							
MOA				*e*Sg		**Sg**	15 32 44.5	-1.4
	comp=Z,14nm,0.4s							
MOA	**Molln**	**3.87**	**199**	Pn		**Pn**	15 31 43.0	+0.7
	comp=Z,2.4nm,0.2s							
MOA				Sg		**Sg**	15 32 44.5	-1.4
	comp=Z,14nm,0.4s							
KECS	**Kecovo**	**4.12**	**136**	*e*Pg		**Pg**	15 32 00.4	0.0
KECS	**Kecovo**	**4.12**	**136**	*e*		**Pn**	15 31 45.0	-0.6
KECS	**Kecovo**	**4.12**	**136**	*e*PG		**Pg**	15 32 00.4	0.0
KECS				*e*LG		Lg	15 33 02.1	
CRVS	**Cervenica-Dubn**	**4.28**	**126**	*e*Pg		**Pg**	15 32 04.9	+1.3
CRVS				*e*Sg		**Sg**	15 32 59.1	0.0
CRVS	**Cervenica-Dubn**	**4.28**	**126**	*e*PG		**Pg**	15 32 04.9	+1.3
CRVS				*e*SG		**Sg**	15 32 59.1	0.0
KWP	**Kalwaria Pacla**	**4.57**	**112**	⇑*i*P		**Pg**	15 32 07.1	-2.0
KOLS	**Kolonicke sedl**	**4.69**	**121**	*e*Pg		**Pg**	15 32 14.3	+2.9
KOLS	**Kolonicke sedl**	**4.69**	**121**	*e*		**Pn**	15 31 54.0	+0.5
KOLS	**Kolonicke sedl**	**4.69**	**121**	*e*PG		**Pg**	15 32 14.3	+2.9
KOLS				*e*LG		Lg	15 33 27.4	
KBA	**Koelnbreinsper**	**4.81**	**204**	*i* Pn		**Pn**	15 31 55.8	+0.4
	comp=Z,2.0nm,0.3s							
KBA				*e*Sg		**Sg**	15 33 14.3	-1.7
	comp=Z,11nm,0.6s							
KBA	**Koelnbreinsper**	**4.81**	**204**	Pn		**Pn**	15 31 55.8	+0.4
	comp=Z,2.0nm,0.3s							
KBA				Sg		**Sg**	15 33 14.3	-1.7
	comp=Z,11nm,0.6s							
BURAR	**Bucovina Array**	**7.05**	**120**	⇑*i*P		**Pn**	15 32 26.3	+0.2
AKASG	**Malin Array Be**	**8.25**	**91**	Pn		**Pn**	15 32 40.9	-1.5
	comp=Z,1.1nm,0.3s,baz=278,slow=12,SNR=4.7							
HFS	**Hagfors**	**8.75**	**352**	Pn		**Pn**	15 32 48.5	-0.7
	comp=Z,0.1nm,0.3s,baz=169,slow=16,SNR=4.3							
FINES	**FINESS Array B**	**11.34**	**25**	Pn		**Pn**	15 33 22.4	-2.2
	comp=Z,0.2nm,0.3s,baz=209,slow=11,SNR=6.4							
WSAR	**Wadi Sarin**	**43.08**	**115**	LR		LR	15 59 47.7	
	comp=Z,50nm,18.6s,slow=40							
SONM	**Songino Array**	**54.88**	**55**	LR		LR	16 05 52.2	
	comp=Z,58nm,19.0s,baz=127,slow=38							
YKA	**Yellowknife Ar**	**59.87**	**336**	P		**P**	15 40 49.4	+1.0
	comp=Z,0.3nm,0.6s,baz=29,slow=6.7,SNR=4.5							

SJA ***09*** *15:31:05.3±0.7, 24°.02S×66°.91W, h218km±9km, ML4.0, MW4.4*
IDC ***09*** *15:31:05.6±1.5, 23°.97S×66°.77W, h183km±11km, mb3.4/4, mb1 3.5/7, mb1mx3.4/26, mbtmp3.7/7, Error ellipse: s-maj=25.8km s-min=16.2km az=18.0*
ISCJB ***09*** *15:31:07.2±0.5, 24°.04S±0°.06×67°.03W±0°.04, h181km, mb3.5/4, Error ellipse: s-maj=8.6km s-min=4.3km az=29.1*
GUC ***09*** *15:31:09.3±0.3, 23°.77S×67°.51W, h236km±9km, ML4.7*

ISC 09 15:31:06.6±0.8, 24°.01S±0°.06×67°.00W±0°.05, h181km, n26, σ1§70/34, mb3.6/4, 5C-7D, Salta Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SLA	**San Lorenzo**	**1.54**	**118**	⇓*i*P	**Pn**	**15 31 41.2**	**+2.1**
SLA				IAML		15 31 42.9	
	comp=Z,682nm,0.8s						
SLA				⇓*i*S	**Sn**	**15 32 07.3**	**+3.0**
HJA	**Humahuaca**	**1.66**	**62**	*i* P	**Pn**	**15 31 42.4**	**+1.8**
HJA				⇓*i*S	**Sn**	**15 32 10.7**	**+3.8**
AZAP	**Zapla**	**1.78**	**97**	⇓*i*P	**Pn**	**15 31 42.8**	**+1.2**
LVC	**Limon Verde**	**2.24**	**308**	P	**Sn**	**15 31 49.4**	**+2.7**
LVC				S	**Sn**	**15 32 19.9**	**+2.0**
	comp=Z,3μm,0.3s,baz=258,slow=22,SNR=28						
YJA	**Yavi**	**2.28**	**37**	*i* P	**Pn**	**15 31 49.3**	**+2.0**
ASTB	**Santa Barbara**	**2.33**	**89**	⇓*i*P	**Pn**	**15 31 48.4**	**+0.9**
PB06	**IPOC Station P**	**2.70**	**298**	⇑*e*P	**Pn**	**15 31 54.3**	**+2.4**
PB06				*e*S	**Sn**	**15 32 28.2**	**+1.2**
PB06				IAML		15 32 30.8	
	comp=E,1μm,0.2s						
ALOL	**LOMAS DE OLMED**	**2.77**	**87**	⇓*i*P	**Pn**	**15 31 53.0**	**+0.6**
PB09	**IPOC Station P**	**3.02**	**316**	⇑*e*P	**Pn**	**15 31 58.0**	**+2.3**
PB09				*e*S	**Sn**	**15 32 35.3**	**+1.3**
PB09				IAML		15 32 38.8	
	comp=E,2μm,0.3s						
AHML	**Horco Molle**	**3.15**	**152**	⇓*i*P	**Pn**	**15 31 57.7**	**+0.6**
PB10	**IPOC Station P**	**3.30**	**278**	⇑*e*P	**Pn**	**15 32 00.9**	**+2.1**
PB10				*e*S	**Sn**	**15 32 39.8**	**+0.1**
PB04	**IPOC Station P**	**3.35**	**299**	⇑*e*P	**Pn**	**15 32 01.3**	**+1.6**
PB04				*e*S	**Sn**	**15 32 40.9**	**-0.2**
PB04				IAML		15 32 43.2	
	comp=E,1μm,0.5s						
PB07	**IPOC Station P**	**3.50**	**310**	⇑*e*P	**Pn**	**15 32 03.2**	**+1.5**
PB07				*e*S	**Sn**	**15 32 44.4**	**-0.2**
PB07				IAML		15 32 48.1	
	comp=N,807nm,0.7s						
PB08	**IPOC Station P**	**4.34**	**332**	*e*P	**Pn**	**15 32 14.2**	**+1.7**
PB08				*e*S	**Sn**	**15 33 04.1**	**+0.1**
LPAZ	**La Paz**	**7.75**	**352**	P	**Pn**	**15 32 57.3**	**0.0**
	comp=N,0.7nm,0.3s,baz=155,slow=7.4,SNR=11						
LPAZ				S	**Sn**	**15 34 23.9**	**-1.0**
	comp=N,0.4nm,0.3s,baz=312,slow=20,SNR=6.2						
CPUP	**Villa Florida**	**9.06**	**107**	P	**Pn**	**15 33 11.2**	**-2.6**
	comp=N,0.2nm,0.3s,baz=258,slow=19,SNR=2.7						
SIV	**San Ignacio**	**9.73**	**36**	P	Pn	15 33 20.0	-2.6
	comp=N,0.3nm,0.3s,baz=230,slow=14,SNR=5.2						
VNA3	**Neumayer Olymp**	**57.14**	**161**	P	**P**	**15 40 33.5**	**-0.4**
VNA2	**Neumayer--Watz**	**57.71**	**160**	P	**P**	**15 40 36.5**	**-1.3**
	baz=287,slow=7.8						
SNAA	**Sanae**	**59.34**	**161**	P	**P**	**15 40 48.3**	**-0.9**
TXAR	**Lajitas Array**	**63.69**	**324**	P	**P**	**15 41 18.9**	**0.0**
	comp=N,0.4nm,0.7s,baz=151,slow=7.9,SNR=5.3						
TORD	**Torodi Ar. Bea**	**76.57**	**69**	P	P	15 42 34.2	-3.1
	comp=N,0.7nm,0.4s,baz=270,slow=6.8,SNR=18						
PDAR	**Pinedale Array**	**77.16**	**329**	P	**P**	**15 42 39.8**	**-0.6**
	comp=N,0.4nm,0.7s,baz=138,slow=7.4,SNR=4.3						
YKA	**Yellowknife Ar**	**94.13**	**340**	P	**P**	**15 44 03.4**	**-0.6**
	comp=N,0.6nm,0.5s,baz=134,slow=4.5,SNR=16						
ASAR	**Alice Springs**	**128.45**	**205**	PKP	**PKPdf**	**15 49 50.9**	**-1.6**
	comp=N,0.4nm,0.8s,baz=131,slow=2.4,SNR=5.4						
MKAR	**Makanchi Array**	**146.53**	**40**	PKPbc	**PKPdf**	**15 50 24.3**	**-0.4**
	comp=N,0.3nm,0.5s,baz=273,slow=6.3,SNR=3.6						

ISCJB ***09*** *15:33:52.7±1.0, 26°.09N±0°.05×128°.68E±0°.04, h28km±7km, mb3.4/4, Error ellipse: s-maj=8.4km s-min=6.6km az=175.1*
JMA ***09*** *15:33:54.2±0.2, 26°.14N×128°.62E, h37km±4km, M2.9*
IDC ***09*** *15:33:58.8±2.6, 24°.63N×125°.67E, h0km, mb3.5/4, mb1 3.7/4, mb1mx3.3/48, mbtmp3.5/4, Error ellipse: s-maj=183.0km s-min=21.8km az=66.0*

ISC 09 15:33:52.8±1.8, 26°.10N±0°.06×128°.67E±0°.06, h13km±11km, n15, σ2§58/15, mb3.4/4, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JNTH	**Nagotoyohara**	**0.71**	**306**	P	**Pg**	**15 34 06.7**	**0.0**
JNTH				*e*S	**Sg**	**15 34 16.0**	**-0.1**
JOW	**Kunigami**	**0.81**	**334**	P	**Pg**	**15 34 08.6**	**+0.1**
JOW				S	**Sg**	**15 34 18.9**	**-0.2**
JJT2	**Tamagusuku 2**	**0.83**	**273**	P	**Pg**	**15 34 09.1**	**+0.2**
JJT2				S	**Sg**	**15 34 19.4**	**-0.4**
JIH	**Iheya**	**1.12**	**326**	P	**Pb**	**15 34 13.4**	**-0.7**
JIH				*e*S	**Sb**	**15 34 27.8**	**-0.8**
JOKE	**Okinoerabujima**	**1.26**	**356**	P	Pn	15 34 15.4	-0.8
JAGN	**Aguni-jima**	**1.37**	**291**	P	Pn	15 34 17.0	-0.7
JTK	**Tokunoshima**	**1.70**	**8**	P	Pn	15 34 21.7	-0.5
JKE	**Kume jima 2**	**1.71**	**278**	P	Pn	15 34 20.9	-1.4
JKE				*e*S	**Sn**	**15 34 40.7**	**-3.3**
JAMN	**Amaminishikomi**	**2.18**	**12**	P	Pn	15 34 29.0	+0.2
JMZ	**Minamidaito 2**	**2.31**	**96**	P	Pn	15 34 29.4	-1.3
JMZ				*e*S	**Sn**	**15 34 56.0**	**-3.0**
JAM	**Amami Oshima**	**2.45**	**20**	P	Pn	15 34 31.9	-0.6
JAM				*e*S	**Sn**	**15 35 00.3**	**-2.0**
SONM	**Songino Array**	**27.88**	**327**	P	**P**	**15 39 49.3**	**+6.9**
	0.3nm,0.4s,baz=145,slow=10,SNR=2.7						
MKAR	**Makanchi Array**	**41.91**	**312**	P	**P**	**15 41 42.6**	**-0.5**
	0.3nm,0.6s,baz=102,slow=10.0,SNR=3.6						
WRA	**Warramunga Arr**	**46.10**	**173**	P	**P**	**15 42 16.9**	**0.0**
	0.9nm,0.6s,baz=350,slow=8.5,SNR=10						
ASAR	**Alice Springs**	**49.73**	**174**	P	**P**	**15 42 44.8**	**-0.3**
	0.3nm,0.6s,baz=6.9,slow=13,SNR=12						

ISCJB ***09*** *15:45:41.1±0.5, 8°.46S±0°.06×120°.46E±0°.05, h200km, mb4.5/1, Error ellipse: s-maj=9.1km s-min=5.9km az=24.4*
IDC ***09*** *15:45:41.6±2.1, 8°.43S×120°.93E, h137km±33km, mb4.4/1, mb1 3.6/5, mb1mx3.1/40, mbtmp3.9/5, Error ellipse: s-maj=81.9km s-min=22.7km az=63.0*
NEIC ***09*** *15:45:42.7±1.3, 8°.40S×120°.50E, h176km±14km, mb4.1/1, Error ellipse: s-maj=39.1km s-min=12.1km az=55.0*
DJA ***09*** *15:45:44.1±0.8, 8°.5±5°.×12°.0E±°., h147km±11km, M3.8/8, MLv3.8/8*

ISC 09 15:45:42.0±0.9, 8°.43S±0°.06×120°.52E±0°.05, h200km, n17, σ2§21/26, Flores region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EDFI	**Ende, Flores**	**1.20**	**105**	P	**Pn**	**15 46 11.9**	**-1.4**
EDFI				S	**Sn**	**15 46 33.2**	**-4.3**
MMRI	**Maumere**	**1.71**	**97**	P	**Pn**	**15 46 17.1**	**-0.5**
MMRI				S	**Sn**	**15 46 42.8**	**-2.5**
MMRI	**Maumere**	**1.71**	**97**	*e*Pn	**Pn**	**15 46 16.6**	**-1.1**
BASI	**Baing, Sumba**	**1.78**	**178**	P	**Pn**	**15 46 17.8**	**-0.4**
BASI				S	**Sn**	**15 46 43.8**	**-2.8**
PLAI	**Plampang**	**2.74**	**262**	P	**Pn**	**15 46 28.0**	**-0.6**
PLAI				S	**Sn**	**15 47 02.0**	**-3.0**
KAPI	**Kappang**	**3.48**	**347**	P	**Pn**	**15 46 35.2**	**-2.2**
	2.1nm,0.3s,baz=191,slow=10,SNR=16						
KAPI	**Kappang**	**3.48**	**347**	*e*Pn	**Pn**	**15 46 36.7**	**-0.7**
TWSI	**Taliwang, Sumb**	**3.61**	**265**	P	**Pn**	**15 46 38.7**	**-0.2**
TWSI				S	**Sn**	**15 47 21.7**	**-1.9**
SOEI	**Soe**	**3.93**	**110**	P	**Pn**	**15 46 44.1**	**+1.1**
SOEI	**Soe**	**3.93**	**110**	*e*Pn	**Pn**	**15 46 43.3**	**+0.3**
SPSI	**Sidrap Palu**	**4.50**	**350**	P	**Pn**	**15 46 50.4**	**+0.3**
FITZ	**Fitzroy Crossi**	**10.82**	**153**	P	**Pn**	**15 48 11.4**	**-0.5**
	0.7nm,0.3s,baz=348,slow=12,SNR=25						
FITZ				S	**Sn**	**15 50 09.1**	**-3.6**
	0.5nm,0.3s,baz=195,slow=20,SNR=4.1						
FITZ	**Fitzroy Crossi**	**10.82**	**153**	*e*Pn	**Pn**	**15 48 13.6**	**+1.7**
FITZ				S	**Sn**	**15 50 09.1**	**-3.6**
WRA	**Warramunga Arr**	**17.60**	**132**	P	**Pn**	**15 49 36.0**	**+0.6**
	0.3nm,0.3s,baz=310,slow=12,SNR=14						
WRA				S	**S**	**15 52 47.0**	**+0.9**
	0.4nm,0.3s,baz=304,slow=22,SNR=6.3						
WRAB	**Tennant Creek**	**17.60**	**132**	P	**Pn**	**15 49 37.0**	**+1.5**
	5.2nm,0.6s						
ASAR	**Alice Springs**	**19.84**	**141**	P	**P**	**15 50 00.8**	**+3.0**
	0.4nm,0.3s,baz=318,slow=8.4,SNR=49						
ASAR				S	**S**	**15 53 33.1**	**+2.7**
	0.1nm,0.3s,baz=314,slow=18,SNR=8.4						
STKA	**Stephens Creek**	**30.46**	**143**	P	**P**	**15 51 38.9**	**+2.8**
	3.9nm,0.3s,baz=324,slow=8.3,SNR=27						

MAN 09 15:55:07.13°.34N×119°.99E, h40km, mb4.5, ML3.3, MS3.2, 1D, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PGP	**Puerto Galera**	**0.95**	**80**	⇓*e*P	Pn	15 55 24.7	+0.7
PGP				*i* S	Sn	15 55 38.7	+2.3
BUSP	**Coron**	**1.34**	**171**	*e*P	Pn	15 55 31.7	+2.4
SJMP	**San Jose**	**1.41**	**128**	*e*P	Pn	15 55 32.8	+2.6
SJMP				*e*S	Sn	15 55 48.9	+1.4
BOAC	**Boac**	**1.81**	**86**	*e*P	Pn	15 55 43.4	+7.7
ENPP	**El Nido**	**2.19**	**195**	*e*P	Pn	15 55 42.1	+1.2
CUYO	**Cuyo Island**	**2.67**	**158**	*e*P	Pn	15 55 49.1	+1.6

IDC 09 16:04:59.6±7.2, 18°.88S×176°.68W, h0km, mb3.8/2, mb1 4.1/2, mb1mx3.5/40, mbtmp3.8/2, Error ellipse: s-maj=275.3km s-min=116.4km az=152.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**46.07**	**260**	P	P	16 13 25.9	+0.2
	0.4nm,0.3s,baz=96,slow=7.5,SNR=23						
ASAR	**Alice Springs**	**46.11**	**255**	P	P	16 13 25.6	-0.4
	0.9nm,0.5s,baz=90,slow=8.3,SNR=44						
AKASG	**Malin Array Be**	**142.17**	**333**	PKP	PKPdf	16 24 33.3	-0.5
	0.8nm,0.4s,baz=44,slow=4.0,SNR=5.5						

ISCJB ***09*** *16:06:33.8±0.9, 36°.26N±0°.04×142°.53E±0°.07, h15km, mb3.4/5, Error ellipse: s-maj=8.4km s-min=5.3km az=18.0*
JMA ***09*** *16:06:34.6±0.2, 36°.25N×142°.57E, h30km, M3.4*
IDC ***09*** *16:06:37.3±1.1, 36°.91N×142°.34E, h0km, mb3.4/5, mb1 3.6/7, mb1mx3.4/53, mbtmp3.4/7, ML3.6/2, Error ellipse: s-maj=29.6km s-min=21.7km az=89.0*

ISC 09 16:06:35.6±1.2, 36°.30N±0°.05×142°.45E±0°.08, h15km, n23, σ1§13/25, mb3.5/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.42**	**246**	S	**Sn**	**16 07 19.5**	**+0.2**
JHO	**Hitachi**	**1.55**	**282**	P	**Pn**	**16 07 02.5**	**-0.1**
JHO				S	**Sn**	**16 07 22.4**	**0.0**
BSO1	**Boso 1**	**2.04**	**217**	P	**Pn**	**16 07 08.1**	**-0.7**
BSO1				*e*S	**Sn**	**16 07 34.0**	**+0.3**
JMM	**Marumori**	**2.05**	**320**	*e*S	**Sn**	**16 07 34.9**	**+0.1**
JFT	**Otama**	**2.08**	**306**	P	**Pn**	**16 07 11.3**	**+1.3**
JFT				*e*S	**Sb**	**16 07 38.0**	**-0.8**
JAG	**Ashikaga**	**2.42**	**274**	P	**Pn**	**16 07 15.0**	**+0.4**
JAG				S	**Sn**	**16 07 43.8**	**-0.2**
JRY	**Ryogami san**	**2.88**	**265**	P	**Pn**	**16 07 21.0**	**0.0**
JRY				*e*S	**Sn**	**16 07 55.6**	**+0.1**
JOD2	**Odawara 2**	**2.92**	**250**	P	**Pn**	**16 07 21.3**	**-0.2**
JYK	**Kaneyama**	**3.10**	**328**	P	**Pn**	**16 07 25.0**	**+1.1**
JOM	**Ohasama**	**3.30**	**344**	P	**Pn**	**16 07 27.4**	**+0.7**
JOM				*e*S	**Sn**	**16 08 05.1**	**-0.5**
MJAR	**Matsushiro Arr**	**3.43**	**275**	Pn	**Pn**	**16 07 28.8**	**+0.3**
	2.5nm,0.3s,baz=90,slow=16,SNR=13						
MAT	**Matsushiro**	**3.43**	**275**	P	**Pn**	**16 07 29.8**	**+1.3**
MAT				*e*S	**Sn**	**16 08 06.7**	**-2.2**
MAT	**Matsushiro**	**3.43**	**275**	P	**Pn**	**16 07 29.8**	**+1.3**
JHJ	**Hachijo jima 2**	**3.86**	**215**	Sn	**Sn**	**16 08 17.9**	**-1.6**
	15nm,0.3s,baz=72,slow=19,SNR=4.1						
ASAJ	**Asahikawa**	**7.81**	**1**	Pn	**Pn**	**16 08 25.4**	**-3.2**
	1.5nm,0.3s,baz=231,slow=8.5,SNR=15						
H11N2	**WAKE ISLAND Hy**	**27.06**	**121**	T	T	16 40 22.4	
	baz=319,slow=75,SNR=12						
H11N1	**WAKE ISLAND Hy**	**27.07**	**121**	T	T	16 41 26.3	
	SNR=11						
H11N3	**WAKE ISLAND Hy**	**27.07**	**121**	T	T	16 40 53.3	
	baz=315,slow=75,SNR=13						
SONM	**Songino Array**	**28.89**	**305**	P	**P**	**16 12 35.0**	**+1.2**
	0.3nm,0.5s,baz=94,slow=7.8,SNR=3.1						
MKAR	**Makanchi Array**	**45.21**	**303**	P	**P**	**16 14 52.2**	**+0.2**
	0.4nm,0.7s,baz=79,slow=7.5,SNR=2.6						
ILAR	**Eielson Array**	**49.67**	**32**	P	**P**	**16 15 25.8**	**-0.5**
	0.3nm,0.8s,baz=253,slow=9.3,SNR=3.8						
WRA	**Warramunga Arr**	**56.46**	**189**	P	P	16 16 24.0	+7.1
	0.5nm,0.8s,baz=4.7,slow=7.7,SNR=5.4						
ASAR	**Alice Springs**	**60.19**	**189**	P	P	16 16 52.2	+9.3
	0.4nm,0.8s,baz=20,slow=11,SNR=9.0						

IASPEI ***09*** *16:34:20.9±0.9, 50°.85N±0°.02×5°.71E±0°.01, h24km±4km, Error ellipse: s-maj=2.5km s-min=2.1km az=155.7, GT5 selection from ISC bulletin GT5 identified by Bond˙¡r and McLaughlin (2009) selection criteria Bond˙¡r and McLaughlin, A new ground truth data set for seismic studies, Seism. Res. Let., 80, 465-472, 2009*
ISCJB ***09*** *16:34:20.3±0.2, 50°.83N±0°.01×5°.76E±0°.02, h14km, Error ellipse: s-maj=2.1km s-min=1.6km az=164.4*
CSEM ***09*** *16:34:20.5±0.2, 50°.82N×5°.72E, h15km, ML2.7/22, Error ellipse: s-maj=3.2km s-min=2.5km az=159.0*
BGR ***09*** *16:34:20.8±0.5, 50°.85N×5°.69E, h22km, ML2.2/9, Error ellipse: s-maj=6.7km s-min=3.3km az=90.0*
LDG ***09*** *16:34:21.3±0.2, 50°.82N×5°.74E, h21km, Md2.7/3, Ml2.5/15, Error ellipse: s-maj=3.1km s-min=2.3km az=159.0*
UCC ***09*** *16:34:21.9, 50°.84N×5°.69E, h20km, ML1.9*
BNS ***09*** *16:34:22.4±0.7, 50°.87N×5°.80E, h18km±3km, ML1.9*

ISC 09 16:34:20.0±0.7, 50°.84N±0°.01×5°.71E±0°.01, h14km, n130, σ1§28/228, 10C-8D, Belgium

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BEBN	**Eben Emael**	**0.05**	**205**	⇓P	**Pg**	**16 34 25.2**	**+2.6**
BEBN				S	**Sg**	**16 34 27.9**	**+3.5**
	comp=N,92nm,0.2s						
BEBN	**Eben Emael**	**0.05**	**205**	P	**Pg**	**16 34 25.2**	**+2.6**
BEBN				S	**Sg**	**16 34 27.9**	**+3.5**
	comp=N,92nm,0.2s						
HGN	**Heimansgroeve**	**0.16**	**118**	*e*Pg	**Pb**	**16 34 26.1**	**+1.3**
	baz=298						
HGN				*e*Sg	**Sb**	**16 34 29.3**	**+1.4**
HGN	**Heimansgroeve**	**0.16**	**118**	Pg	**Pb**	**16 34 26.2**	**+1.4**
HGN				*e*Sg	**Sb**	**16 34 29.3**	**+1.4**
HGN	**Heimansgroeve**	**0.16**	**118**	*e*Pg	**Pb**	**16 34 26.2**	**+1.4**
HGN				*e*Sg	**Sb**	**16 34 29.4**	**+1.4**
BLCH	**La Chartreuse**	**0.21**	**199**	⇑P	**Pb**	**16 34 27.1**	**+1.4**
BLCH				S	**Sb**	**16 34 30.5**	**+1.0**
	comp=E,52nm,0.2s						
BLCH	**La Chartreuse**	**0.21**	**199**	P	**Pb**	**16 34 27.1**	**+1.4**
BLCH				S	**Sb**	**16 34 30.4**	**+1.0**
	comp=E,52nm,0.2s						
BSTI	**Sart Tilman**	**0.27**	**199**	⇑P	**Pb**	**16 34 28.1**	**+1.4**
BSTI	**Sart Tilman**	**0.27**	**199**	P	**Pb**	**16 34 28.1**	**+1.4**
BOPT	**Opiter**	**0.28**	**350**	S	**Sb**	**16 34 32.5**	**+1.2**
BOPT	**Opiter**	**0.28**	**350**	S	**Sb**	**16 34 32.5**	**+1.2**
MEM	**Membach**	**0.30**	**141**	⇓P	**Pb**	**16 34 28.3**	**+1.1**
MEM				S	**Sb**	**16 34 32.9**	**+1.0**
	comp=E,51nm,0.2s						
MEM	**Membach**	**0.30**	**141**	P	**Pb**	**16 34 28.2**	**+1.1**
MEM				Sg	**Sb**	**16 34 32.9**	**+1.0**
MEM	**Membach**	**0.30**	**141**	*e*Pg	**Pb**	**16 34 28.3**	**+1.1**
MEM				*e*Sg	**Sb**	**16 34 32.9**	**+1.0**
DREG	**Dreilaegerbach**	**0.38**	**118**	Pg	**Pb**	**16 34 29.3**	**+0.8**
DREG				Sg	**Sb**	**16 34 34.8**	**+0.6**
	comp=E,125nm,0.5s						
DREG	**Dreilaegerbach**	**0.38**	**118**	*e*Pg	**Pb**	**16 34 29.3**	**+0.8**
DREG				*e*Sg	**Sb**	**16 34 34.8**	**+0.6**
	comp=E,125nm,0.5s						
RWB	**Wassenberg**	**0.39**	**47**	Pg	**Pb**	**16 34 29.2**	**+0.6**
RWB				Sg	**Sb**	**16 34 34.7**	**+0.2**
	comp=E,59nm,0.1s						
RWB	**Wassenberg**	**0.39**	**47**	*e*Pg	**Pb**	**16 34 29.2**	**+0.6**
RWB				*e*Sg	**Sb**	**16 34 34.7**	**+0.2**
	comp=E,59nm,0.1s						
RODG	**Roetgen-Dahlhe**	**0.43**	**44**	Pg	**Pb**	**16 34 29.7**	**+0.3**
RODG				Sg	**Sb**	**16 34 36.1**	**+0.5**
RODG	**Roetgen-Dahlhe**	**0.43**	**44**	*e*Pg	**Pb**	**16 34 29.7**	**+0.3**
RODG				*e*Sg	**Sb**	**

comp=E,21nm,0.2s
GIVF Givet 0.93 218 *e*Pn **Pb 16 34 36.9 -1.0**
GIVF Givet 0.93 218 *e*Pg **Pg 16 34 38.8 +0.8**
GIVF *e*Sg **Sg 16 34 51.5 +1.3**
comp=E,10nm,0.2s
LVIA Vianden 0.96 161 ⇓P **Pg 16 34 39.5 +0.9**
LVIA S **Sg 16 34 52.2 +1.0**
comp=E,60nm,0.1s
LVIA Vianden 0.96 161 P **Pg 16 34 39.4 +0.9**
LVIA S **Sg 16 34 52.1 +1.0**
comp=E,60nm,0.1s
BRQR Ronqui˜ıre 0.97 257 P **Pb 16 34 39.2 +0.6**
BRQR Ronqui˜ıre 0.97 257 P **Pb 16 34 39.2 +0.6**
WBS Wahnbachalspe 1.00 91 Sg **Sb 16 34 52.1 0.0**
comp=E,28nm,0.2s
WBS Wahnbachalspe 1.00 91 *e*Sg **Sb 16 34 52.1 0.0**
comp=E,28nm,0.2s
DOU Dourbes 1.03 224 ⇑P **Pb 16 34 40.2 +0.6**
DOU S **Sg 16 34 54.0 +0.7**
comp=N,9.7nm,0.2s
DOU Dourbes 1.03 224 P **Pb 16 34 40.2 +0.6**
DOU S **Sg 16 34 54.0 +0.7**
comp=N,9.7nm,0.2s
HOBG Hohbusch 1.04 81 Pg **Pb 16 34 40.0 +0.2**
HOBG Hohbusch 1.04 81 *e*Pg **Pb 16 34 40.0 +0.2**
BSKQ Steenkerk 1.05 260 P **Pb 16 34 40.4 +0.3**
BSKQ S **Sb 16 34 53.7 +0.1**
comp=E,169nm,0.1s
BSKQ Steenkerk 1.05 260 P **Pb 16 34 40.3 +0.3**
BSKQ S **Sb 16 34 53.7 +0.1**
comp=E,169nm,0.1s
BHE Schloss Buerre 1.06 117 Pg **Pb 16 34 40.6 +0.5**
BHE Sg **Sb 16 34 54.2 +0.4**
comp=E,26nm,0.1s
BHE Schloss Buerre 1.06 117 *e*Pg **Pb 16 34 40.6 +0.5**
BHE *e*Sg **Sb 16 34 54.2 +0.4**
comp=E,26nm,0.1s
ENTS Ennepetalsperr 1.15 69 Pg **Pb 16 34 41.6 -0.1**
ENTS Sg **Sb 16 34 55.7 -0.7**
ENTS Ennepetalsperr 1.15 69 *e*Pg **Pb 16 34 41.6 -0.1**
ENTS *e*Sg **Sb 16 34 55.7 -0.7**
BUG Bochum--Univer 1.15 58 *e*Pg **Pb 16 34 41.8 +0.1**
BUG *e*Sg **Sb 16 34 56.3 -0.2**
FSH Hochheid 1.18 130 Pg **Pb 16 34 42.8 +0.7**
FSH Sg **Sn 16 34 58.4 +0.5**
FSH Hochheid 1.18 130 Pg **Pb 16 34 42.8 +0.7**
FSH Sg **Sn 16 34 58.4 +0.5**
FSH SmS 16 35 00.9
BBOU Bougnies 1.21 249 ⇑P **Pn 16 34 43.0 +0.5**
BBOU Bougnies 1.21 249 P **Pn 16 34 43.0 +0.5**
WLF Walferdange 1.21 166 ⇓P **Pg 16 34 43.9 +0.5**
WLF ⇓S **Sn 16 34 59.5 +0.7**
WLF Walferdange 1.21 166 P **Pg 16 34 43.8 +0.5**
WLF S **Sn 16 34 59.4 +0.7**
BGG Burgeitz 1.22 121 Pg **Pn 16 34 42.8 +0.2**
BGG Burgeitz 1.22 121 *e*Pg **Pn 16 34 42.8 +0.2**
BAIF Baives 1.24 231 *e*Pn **Pn 16 34 41.0 -1.9**
BAIF Baives 1.24 231 *e*Pg **Pn 16 34 43.4 +0.5**
BAIF *e*Sg **Sb 16 34 59.8 +0.8**
comp=E,6.6nm,0.2s
BAIF Baives 1.24 231 *e*Pn **Pn 16 34 41.0 -1.9**
BAIF Baives 1.24 231 *e*Pg **Pn 16 34 43.4 +0.5**
BAIF *e*Sg **Sb 16 34 59.8 +0.8**
comp=E,3.3nm,0.2s
WTSB Winterswijk 1.32 31 Sg **Sn 16 35 02.0 +0.6**
WTSB Winterswijk 1.32 31 *e*Sg **Sn 16 35 02.0 +0.6**
RIVT Riveris 1.32 149 Pg **Pb 16 34 45.2 +0.6**
RIVT Sg **Sn 16 35 02.3 +0.9**
RIVT Riveris 1.32 149 Pg **Pb 16 34 45.2 +0.6**
RIVT Sg **Sn 16 35 02.4 +0.9**
RIVT SmS 16 35 03.6
KOE Koeppel 1.35 107 Pg **Pn 16 34 44.8 +0.3**
KOE Koeppel 1.35 107 *e*Pg **Pn 16 34 44.8 +0.3**
BIW Bindweide 1.36 94 Pg **Pb 16 34 45.5 +0.3**
BIW Sg **Sn 16 35 02.3 0.0**
BIW Bindweide 1.36 94 Pg **Pb 16 34 45.5 +0.3**
BIW Sg **Sn 16 35 02.3 0.0**
DUP Duppenweiler 1.59 154 Sg **Sg 16 35 12.2 +1.0**
DUP Duppenweiler 1.59 154 Sg **Sg 16 35 12.2 +1.0**
TNS Taunus Mts 1.85 108 Pg **Pb 16 34 54.5 +0.8**
TNS Sg **Sg 16 35 18.9 -0.7**
TNS Taunus Mts 1.85 108 *e*Pg **Pb 16 34 54.5 +0.8**
TNS *e*Sg **Sg 16 35 18.9 -0.7**
IMS Imsbach 1.88 131 Sg **Sg 16 35 20.5 0.0**
IMS Imsbach 1.88 131 Sg **Sg 16 35 20.5 0.0**
PEB Petersbachel 2.20 143 Sg **Sg 16 35 29.4 -1.3**
PEB Petersbachel 2.20 143 Sg **Sg 16 35 29.4 -1.3**
PAGF Fort de Pagny 2.29 180 *e*Pn **Pn 16 34 55.6 -1.7**
PAGF *e*Sg **Sg 16 35 32.9 -0.6**
comp=E,2.6nm,0.4s
PAGF Fort de Pagny 2.29 180 *e*Pn **Pn 16 34 55.6 -1.7**
PAGF *e*Sg **Sg 16 35 32.9 -0.6**
comp=E,1.3nm,0.4s
MEZF Maizieres J'vi 2.38 191 *e*Pn **Pn 16 34 56.7 -1.9**
MEZF *e*Sg **Sg 16 35 35.7 -0.7**
comp=E,7.1nm,0.4s
MEZF Maizieres J'vi 2.38 191 *e*Pn **Pn 16 34 56.7 -1.9**
MEZF *e*Sg **Sg 16 35 35.7 -0.7**
comp=E,3.5nm,0.4s
CDF Champ du Feu 2.63 157 *e*Pn **Pn 16 35 00.5 -1.7**
CDF *e*Sg **Sg 16 35 43.7 -1.0**
comp=E,2.5nm,0.3s
CDF Champ du Feu 2.63 157 *e*Pn **Pn 16 35 00.5 -1.7**
CDF *e*Sg **Sg 16 35 43.7 -1.0**
comp=E,1.2nm,0.3s
SFTF Sexfontaines 2.67 190 *e*Pn **Pn 16 35 00.9 -1.8**
SFTF *e*Sn **Sn 16 35 30.2 -4.6**
SFTF *e*Sg **Sg 16 35 44.9 -1.0**
comp=E,7.5nm,0.3s
SFTF Sexfontaines 2.67 190 *e*Pn **Pn 16 35 00.9 -1.8**
SFTF *e*Sg **Sg 16 35 44.9 -1.0**
comp=E,3.8nm,0.3s
ECH Echery 2.79 160 Sg **Sb 16 35 46.0 +2.3**
ECH Echery 2.79 160 *e*Sg **Sb 16 35 46.0 +2.3**
HAU Haudompre 2.87 171 *e*Pn **Pn 16 35 03.2 -2.1**
HAU *e*Sg **Sg 16 35 50.9 -1.2**
comp=E,6.7nm,0.3s
HAU Haudompre 2.87 171 *e*Pn **Pn 16 35 03.2 -2.1**
HAU *e*Sg **Sg 16 35 50.9 -1.2**
comp=E,3.3nm,0.3s
CLZ Clausthal 3.09 69 Sg **Sg 16 35 56.8 -2.5**
CLZ Clausthal 3.09 69 *e*Sg **Sg 16 35 56.8 -2.5**
HINF Hinteralfeld 3.12 166 *e*Pn **Pn 16 35 07.0 -1.8**
HINF *e*Sg **Sg 16 35 58.8 -1.3**
comp=E,6.9nm,0.6s
HINF Hinteralfeld 3.12 166 *e*Pn **Pn 16 35 07.0 -1.8**
HINF *e*Sg **Sg 16 35 58.8 -1.3**
comp=E,3.5nm,0.6s
LOR Lormes 3.78 200 *e*Pn **Pn 16 35 16.3 -1.5**
LOR *e*Sn **Sn 16 35 57.1 -4.9**
LOR *e*Sg **Sg 16 36 19.3 -1.9**
comp=E,1.9nm,0.2s
LOR Lormes 3.78 200 *e*Pn **Pn 16 35 16.3 -1.5**
LOR *e*Sg **Sg 16 36 19.3 -1.9**
comp=E,0.9nm,0.2s
SSF Saint Saulge 4.05 202 *e*Pn **Pn 16 35 20.9 -0.7**
SSF *e*Sn **Sn 16 36 03.8 -5.0**
SSF *e*Sg **Sg 16 36 27.7 -2.3**
comp=E,1.6nm,0.3s
SSF Saint Saulge 4.05 202 *e*Pn **Pn 16 35 20.9 -0.7**
SSF *e*Sg **Sg 16 36 27.7 -2.3**
comp=E,0.8nm,0.3s
CABF La Chapelle 4.24 176 *e*Sg **Sg 16 36 33.5 -2.6**
comp=E,1.3nm,0.3s
CABF La Chapelle 4.24 176 *e*Sg **Sg 16 36 33.5 -2.6**
comp=E,0.6nm,0.3s
AVF Avril sur Loir 4.34 202 *e*Pn **Pn 16 35 24.7 -0.9**
AVF *e*Sg **Sg 16 36 36.8 -2.5**
comp=E,2.1nm,0.2s
AVF Avril sur Loir 4.34 202 *e*Pn **Pn 16 35 24.7 -0.9**
AVF *e*Sg **Sg 16 36 36.8 -2.5**
comp=E,1.0nm,0.2s
SMF Signal de Mont 4.38 197 *e*Pn **Pn 16 35 26.0 -0.1**
SMF *e*Sg **Sg 16 36 37.9 -2.6**
comp=E,3.9nm,0.6s
SMF Signal de Mont 4.38 197 *e*Pn **Pn 16 35 26.0 -0.1**
SMF *e*Sg **Sg 16 36 37.9 -2.6**
comp=E,2.0nm,0.6s
FLN La Foliniere 4.52 245 *e*Pn **Pn 16 35 28.4 +0.4**
FLN La Foliniere 4.52 245 *e*Pn **Pn 16 35 28.4 +0.4**

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*IDC **09** 16:44:46.2±2.2, 36°.69N×141°.84E, h0km, mb3.4/4, mb1 3.6/5, mb1mx3.4/34, mbtmp3.4/5, ML3.4/1, MS2.9/2, Ms1 2.9/2, ms1mx2.4/34, Error ellipse: s-maj=63.9km s-min=24.2km az=62.0*
*ISCJB **09** 16:44:47.0±1.1, 36°.77N±0°.06×141°.87E±0°.10, h19km, mb3.4/4, MS3.4/1, Error ellipse: s-maj=11.5km s-min=8.0km az=175.4*
*JMA **09** 16:44:50.8±0.4, 36°.76N×141°.56E, h51km±3km, M3.2*
ISC 09 16:44:48.5±1.5, 36°.86N±0°.07×141°.8E±0°.1, h19km, n16, σ1§03/16, mb3.5/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.81 288**		P	**Pn**	**16 45 04.4**	**-0.7**
JFK	**Kawauchi**	**0.88 306**		P	**Pg**	**16 45 05.9**	**+0.2**
JHO	**Hitachi**	**0.99 256**		P	**Pb**	**16 45 05.8**	**-1.4**
JMM	**Marumori**	**1.27 323**		P	**Pg**	**16 45 12.3**	**-0.8**
JMM				S	**Sn**	**16 45 27.8**	**0.0**
JFT	**Otama**	**1.32 300**		P	**Pg**	**16 45 13.2**	**-0.9**
JIO	**Ouri**	**1.63 348**		S	**Sb**	**16 45 37.9**	**-0.2**
JFY	**Yanaizu**	**1.74 289**		P	**Pb**	**16 45 19.3**	**-0.5**
JAG	**Ashikaga**	**1.91 258**		P	**Pn**	**16 45 19.5**	**-0.6**
MJAR	**Matsushiro Arr**	**2.88 265**		Pn	**Pn**	**16 45 34.2**	**+0.8**
	5.8nm,0.3s,baz=88,slow=15,SNR=39						
MAT	**Matsushiro**	**2.88 265**		P	**Pn**	**16 45 34.5**	**+1.1**
MAT				S	**Sn**	**16 46 08.7**	**+1.1**
KSRS	**Korea Array**	**11.07 277**		Pn	Pn	16 47 31.8	+6.0
	0.1nm,0.3s,baz=83,slow=13,SNR=4.3						
KSRS				LR	LR	16 51 31.1	
	comp=Z,24nm,18.1s,baz=240,slow=36						
ZALV	**Zalesovo Beam**	**42.24 313**		P	**P**	**16 52 41.7**	**+1.4**
	0.5nm,0.4s,baz=91,slow=8.6,SNR=3.3						
MKAR	**Makanchi Array**	**44.45 302**		P	**P**	**16 52 59.9**	**+1.6**
	0.3nm,0.6s,baz=86,slow=10,SNR=3.2						
WRA	**Warramunga Arr**	**56.93 188**		P	**P**	**16 54 31.3**	**-1.2**
	0.1nm,0.3s,baz=4.6,slow=7.6,SNR=6.0						
ASAR	**Alice Springs**	**60.66 188**		P	**P**	**16 54 58.5**	**+0.2**
	0.4nm,0.8s,baz=2.9,slow=7.9,SNR=4.1						
AFI	**Afiamalu**	**66.80 130**		LR	LR	17 19 10.5	
	comp=Z,24nm,20.0s,baz=219,slow=31						

IDC 09 17:07:36.2±2.2, 8°.09S×118°.84E, h0km, mb3.5/2, mb1 3.6/5, mb1mx3.3/44, mbtmp3.4/5, ML3.3/3, Error ellipse: s-maj=66.3km s-min=20.6km az=72.0, Sumbawa region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAPI	**Kappang**	**3.19**	**16**	Pn	Pn	17 08 27.1	-0.6
	1.9nm,0.3s,baz=214,slow=5.9,SNR=7.8						
KAPI				Sn	Sn	17 09 07.2	+0.8
	17nm,0.3s,baz=207,slow=23,SNR=22						
FITZ	**Fitzroy Crossi**	**11.95 147**		Pn	Pn	17 10 27.8	-0.1
	0.1nm,0.3s,baz=332,slow=15,SNR=3.6						
WRA	**Warramunga Arr**	**19.08 130**		P	Pn	17 12 01.2	-0.1
	0.1nm,0.3s,baz=300,slow=13,SNR=6.5						
ASAR	**Alice Springs**	**21.17 139**		P	P	17 12 22.9	-0.4
	2.2nm,0.5s,baz=312,slow=8.7,SNR=48						
SONM	**Songino Array**	**56.76 350**		P	P	17 17 22.2	+0.1
	0.2nm,0.5s,baz=151,slow=6.3,SNR=3.1						

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*ISCJB **09** 17:09:51.1±1.4, 29°.0N±0°.2×47°.6E±0°.2, h14km, mb3.5/4, Error ellipse: s-maj=40.4km s-min=9.4km az=39.9*
*IDC **09** 17:09:53.9±22.0, 29°.44N×47°.57E, h0km, mb3.6/4, mb1 3.5/5, mb1mx3.3/35, mbtmp3.5/5, ML3.0/1, Error ellipse: s-maj=452.9km s-min=33.0km az=9.0*
*DSN **09** 17:10:00.5±1.1, 29°.35N×48°.46E, h15km, Error ellipse: s-maj=35.3km s-min=9.0km az=27.0*
ISC 09 17:09:53.9±1.8, 29°.2N±0°.3×47°.7E±0°.2, h14km, n10, σ1§04/9, mb3.6/4, Eastern Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NAZ	**Nazwa, Dubai**	**8.25 118**		*i* P	**Pn**	**17 11 53.0**	**-0.2**
	SNR=6.0						
BANOM	**Banah**	**8.31 111**		*i* P	**Pn**	**17 11 52.2**	**-1.9**
	SNR=18						
BANOM				S	Sn	17 13 21.9	-6.0
FAQ	**Al Faqa, Dubai**	**8.33 120**		P	**Pn**	**17 11 54.9**	**+0.6**
ASHO	**Ashiyiah**	**8.72 119**		*i* P	**Pn**	**17 11 59.7**	**+0.1**
	SNR=14						
ASHO				S	Sn	17 13 32.3	-5.5
ASF	**Jabal al Asfar**	**9.75 291**		Lg	Lg	17 15 03.9	
	0.1nm,0.3s,baz=232,slow=19,SNR=2.6						
BRTR	**Keskin Array B**	**15.62 316**		Pn	**Pn**	**17 13 33.3**	**-0.5**
	0.1nm,0.3s,baz=133,slow=12,SNR=2.4						
AKASG	**Malin Array Be**	**25.60 332**		P	**P**	**17 15 21.7**	**-0.8**
	0.5nm,0.4s,baz=138,slow=9.8,SNR=4.8						
MKAR	**Makanchi Array**	**32.13 47**		P	**P**	**17 16 21.6**	**+0.8**
	0.3nm,0.5s,baz=252,slow=7.3,SNR=3.6						
ZALV	**Zalesovo Beam**	**36.56 37**		P	**P**	**17 16 59.8**	**+0.8**
	0.5nm,0.5s,baz=256,slow=8.8,SNR=2.9						
HFS	**Hagfors**	**38.48 333**		P	**P**	**17 17 15.7**	**+0.4**
	1.5nm,0.8s,baz=125,slow=12,SNR=4.4						

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*ISCJB **09** 17:19:28.5±0.2, 51°.50N±0°.02×16°.19E±0°.03, h0km, Error ellipse: s-maj=2.3km s-min=2.2km az=165.7*
*CSEM **09** 17:19:30.5±0.1, 51°.47N×16°.21E, h2km, ML3.1, Error ellipse: s-maj=2.3km s-min=1.9km az=92.0*
*WAR **09** 17:19:31.8, 51°.44N×16°.20E, h1km, Mw3.0*
*IDC **09** 17:19:31.5±0.8, 51°.44N×16°.16E, h0km, mb1 3.2/5, mb1mx3.0/43, mbtmp3.1/5, ML2.9/5, Error ellipse: s-maj=17.5km s-min=6.9km az=101.0*
*BGR **09** 17:19:32.5±0.4, 51°.39N×16°.17E, h1km, ML3.1/17, Error ellipse: s-maj=4.4km s-min=2.2km az=15.0*
*VIE **09** 17:19:34.1±0.8, 51°.23N×16°.13E, h0km, mb2.5/4, ml3.0/4, Error ellipse: s-maj=5.2km s-min=4.8km az=43.0, Suspected Mining induced.*
*UPP **09** 17:19:36.3±2.9, 51°.81N×15°.73E, h0km, ML2.3, Suspected explosion*
ISC 09 17:19:29.8±0.7, 51°.49N±0°.02×16°.20E±0°.02, h0km, n118, σ1§24/195, 5C-6D, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.65 175**		*i* Pg	**Pg**	**17 19 43.1**	**+1.0**
KSP				*e*Sg	**Sg**	**17 19 51.4**	**+0.9**
KSP				*e*		17 19 54.2	
KSP	**Ksiaz**	**0.65 175**		*i* Pg	**Pg**	**17 19 43.1**	**+1.0**
KSP				*e*Sg	**Sg**	**17 19 51.4**	**+0.9**
KSP	**Ksiaz**	**0.65 175**		*e*Pg	**Pg**	**17 19 43.2**	**+1.0**
KSP				*e*Sg	**Sg**	**17 19 50.0**	**-0.5**
KSP	**Ksiaz**	**0.65 175**		*i* Pgd	**Pg**	**17 19 43.1**	**+1.0**
KSP				*e*Sg	**Sg**	**17 19 51.4**	**+0.9**
KSP				*e*		17 19 54.2	
UPC	**Upice**	**0.99 187**		⇓*e*PG	**Pb**	**17 19 49.5**	**-0.2**
UPC				*e*SG	**Sg**	**17 20 02.3**	**+0.9**
	comp=Z,177nm,0.2s						
UPC	**Upice**	**0.99 187**		Pg	**Pb**	**17 19 49.5**	**-0.2**
UPC				Sg	**Sg**	**17 20 02.3**	**+0.9**
	177nm,0.2s						
DPC	**Dobruska-Polom**	**1.14 176**		*e*PG	**Pg**	**17 19 52.0**	**+0.4**
DPC				*e*SG	**Sg**	**17 20 06.8**	**+0.5**
	comp=Z,56nm,0.4s						
DPC	**Dobruska-Polom**	**1.14 176**		Pg	**Pb**	**17 19 52.2**	**-0.2**
DPC				Sg	**Sb**	**17 20 07.3**	**-0.4**
DPC	**Dobruska-Polom**	**1.14 176**		*e*Pg	**Pb**	**17 19 52.2**	**-0.2**
DPC				*e*Sg	**Sb**	**17 20 07.3**	**-0.4**
PVCC	**Panska Ves**	**1.41 228**		⇓*e*PG	**Pb**	**17 19 57.4**	**+0.5**
PVCC				*e*SG	**Sn**	**17 20 15.9**	**0.0**
	comp=Z,352nm,0.3s						
PVCC	**Panska Ves**	**1.41 228**		Pg	**Pb**	**17 19 57.4**	**+0.5**
PVCC				Sg	**Sn**	**17 20 15.9**	**0.0**
	352nm,0.3s						
KRLC	**Kraliky**	**1.46 165**		*e*PG	**Pn**	**17 19 57.6**	**+0.2**
KRLC				*e*SG	**Sb**	**17 20 17.0**	**+0.1**
KRLC	**Kraliky**	**1.46 165**		Pg	**Pn**	**17 19 57.6**	**+0.2**
KRLC				Sg	**Sb**	**17 20 17.0**	**+0.1**
BRG	**Berggiesshubel**	**1.55 248**		PG	**Pg**	**17 20 00.1**	**+0.7**
BRG				SG	**Sg**	**17 20 20.8**	**+1.3**
	90nm,0.8s						
BRG	**Berggiesshubel**	**1.55 248**		PG	**Pg**	**17 20 00.1**	**+0.7**
BRG				SG	**Sg**	**17 20 20.8**	**+1.3**
	90nm,0.8s						
BRG	**Berggiesshubel**	**1.55 248**		Pg	**Pg**	**17 20 00.4**	**+1.0**
BRG				Sg	**Sg**	**17 20 20.7**	**+1.3**
BRG	**Berggiesshubel**	**1.55 248**		*e*Pg	**Pg**	**17 20 00.4**	**+1.0**
BRG				*e*Sg	**Sg**	**17 20 20.7**	**+1.3**
GOPC	**GO Pecny, Ondr**	**1.81 210**		*e*PN	**Pn**	**17 20 03.0**	**+0.7**
GOPC				*e*PG	**Pg**	**17 20 04.6**	**+0.1**
GOPC				*e*SG	**Sg**	**17 20 27.8**	**-0.2**
	comp=Z,32nm,0.3s						
GOPC	**GO Pecny, Ondr**	**1.81 210**		Pn	**Pn**	**17 20 03.0**	**+0.7**
PRU	**Pruhonice**	**1.83 216**		⇓*e*PN	**Pn**	**17 20 03.4**	**+0.9**
PRU				*e*PG	**Pg**	**17 20 04.8**	**-0.1**
PRU				*e*SG	**Sb**	**17 20 28.1**	**+0.5**
	comp=Z,61nm,0.5s						
PRU	**Pruhonice**	**1.83 216**		Pn	**Pn**	**17 20 03.4**	**+0.9**
FBE	**Freiberg**	**1.88 254**		Pg	**Pg**	**17 20 05.9**	**+0.2**
FBE				Sg	**Sg**	**17 20 30.5**	**+0.4**
FBE	**Freiberg**	**1.88 254**		*e*Pg	**Pg**	**17 20 05.9**	**+0.2**
FBE				*e*Sg	**Sg**	**17 20 30.5**	**+0.4**
MORC	**Moravsky Berou**	**1.91 153**		⇑*i*P	**Pn**	**17 20 04.2**	**+0.6**
MORC	**Moravsky Berou**	**1.91 153**		S	**Sn**	**17 20 26.0**	**-2.4**
MORC	**Moravsky Berou**	**1.91 153**		Pn	**Pn**	**17 20 04.1**	**+0.4**
MORC				*e*Sg	**Sb**	**17 20 30.2**	**+0.2**
MORC	**Moravsky Berou**	**1.91 153**		*e*Pn	**Pn**	**17 20 04.1**	**+0.4**
CLL	**Collm**	**2.01 266**		*i* Pn	**Pn**	**17 20 05.3**	**+0.3**
	comp=Z,4.0nm,0.4s						
CLL				*i* Pg	**Pg**	**17 20 08.5**	**+0.2**
CLL				*i*		17 20 10.0	
CLL				*i* Sg	**Sg**	**17 20 36.0**	**+1.6**
	comp=Z,39nm,0.5s						
CLL	**Collm**	**2.01 266**		Pn	**Pn**	**17 20 05.4**	**+0.4**
CLL				Sg	**Sg**	**17 20 36.0**	**+1.6**
CLL	**Collm**	**2.01 266**		*e*Pn	**Pn**	**17 20 05.4**	**+0.4**
CLL				*e*Sg	**Sg**	**17 20 36.0**	**+1.6**
OKC	**Ostrava-Krasne**	**2.06 142**		⇓*e*PN	**Pn**	**17 20 05.9**	**+0.2**
OKC				*e*PG	**Pg**	**17 20 09.6**	**+0.3**
OKC				*e*SG	**Sb**	**17 20 35.0**	**+0.8**
	comp=Z,61nm,0.7s						
OKC	**Ostrava-Krasne**	**2.06 142**		Pn	**Pn**	**17 20 05.9**	**+0.2**
OKC	**Ostrava-Krasne**	**2.06 142**		Pg	**Pg**	**17 20 09.6**	**+0.3**
OKC				Sg	**Sb**	**17 20 34.7**	**+0.5**
OKC	**Ostrava-Krasne**	**2.06 142**		*e*Pn	**Pn**	**17 20 05.9**	**+0.2**
OKC				*e*Sg	**Sb**	**17 20 34.7**	**+0.5**
VRAC	**Vranov**	**2.19 173**		Pn	**Pn**	**17 20 08.3**	**+0.8**
	comp=Z,2.8nm,0.3s,baz=340,slow=12,SNR=19						
VRAC				Lg	Lg	17 20 38.5	
	comp=Z,6.4nm,0.3s,baz=93,slow=21,SNR=9.9						
VRAC	**Vranov**	**2.19 173**		⇑*i*P	**Pn**	**17 20 07.1**	**-0.4**
VRAC	**Vranov**	**2.19 173**		S	**Sg**	**17 20 41.9**	**+1.7**
VRAC	**Vranov**	**2.19 173**		⇑*i*P	**Pn**	**17 20 07.1**	**-0.4**
TREC	**Trest**	**2.24 192**		⇓*e*PN	**Pn**	**17 20 09.1**	**+1.0**
TREC				*e*PG	**Pg**	**17 20 12.1**	**-0.6**
TREC				*e*SG	**Sg**	**17 20 41.1**	**-0.6**
	comp=Z,23nm,0.2s						
TREC	**Trest**	**2.24 192**		Pn	**Pn**	**17 20 09.1**	**+1.0**
TANN	**Tannenbergstha**	**2.60 247**		Pn	**Pn**	**17 20 13.9**	**+0.8**
TANN				Sg	**Sg**	**17 20 53.5**	**+0.3**
TANN	**Tannenbergstha**	**2.60 247**		*e*Pn	**Pn**	**17 20 13.9**	**+0.8**
TANN				*e*Sg	**Sg**	**17 20 53.5**	**+0.3**
OJC	**Ojcow**	**2.61 118**		*e*Pg	**Pg**	**17 20 20.4**	**+0.6**
OJC				*e*Sg	**Sg**	**17 20 55.1**	**+1.6**
OJC	**Ojcow**	**2.61 118**		*e*Pg	**Pg**	**17 20 20.4**	**+0.6**
OJC				Sg	**Sg**	**17 20 54.9**	**+1.4**
OJC	**Ojcow**	**2.61 118**		*e*Pg	**Pg**	**17 20 20.3**	**+0.6**
OJC				*e*Sg	**Sg**	**17 20 54.9**	**+1.4**
OJC	**Ojcow**	**2.61 118**		*e*Pg	**Pg**	**17 20 20.4**	**+0.6**
OJC				*e*Sg	**Sg**	**17 20 55.1**	**+1.6**
WERD	**Werda**	**2.67 249**		Pn	**Pn**	**17 20 15.0**	**+0.9**
WERD	**Werda**	**2.67 249**		*e*Pn	**Pn**	**17 20 15.0**	**+0.9**
NKC	**Novy Kostel**	**2.69 244**		⇓*e*PN	**Pn**	**17 20 15.5**	**+1.2**
NKC				*e*PG	**Pg**	**17 20 21.4**	**+0.1**
NKC				*e*SG	**Sg**	**17 20 56.6**	**+0.5**
	comp=Z,70nm,0.3s						
NKC	**Novy Kostel**	**2.69 244**		Pn	**Pn**	**17 20 15.5**	**+1.2**
KHC	**Kasperske Hory**	**2.90 217**		*e*PN	**Pn**	**17 20 18.1**	**+0.9**
KHC				*e*PG	**Pg**	**17 20 24.3**	**-0.9**
KHC				*e*SN	**Sn**	**17 20 52.2**	**-0.5**
KHC				*e*SG	**Sg**	**17 21 01.3**	**-1.5**
	comp=Z,21nm,0.3s						
KHC	**Kasperske Hory**	**2.90 217**		Pn	**Pn**	**17 20 18.1**	**+0.9**
MANZ	**Manzenberg**	**3.00 242**		Pn	**Pn**	**17 20 20.1**	**+1.5**
MANZ				Sg	**Sg**	**17 21 06.3**	**+0.1**
MANZ	**Manzenberg**	**3.00 242**		*e*Pn	**Pn**	**17 20 20.1**	**+1.5**
MANZ				*e*Sg	**Sg**	**17 21 06.3**	**+0.1**
MOX	**Moxa**	**3.01 256**		Pn	**Pn**	**17 20 19.6**	**+0.9**
MOX				Sg	**Sg**	**17 21 07.6**	**+1.1**
MOX	**Moxa**	**3.01 256**		*e*Pn	**Pn**	**17 20 19.6**	**+0.9**
MOX				*e*Sg	**Sg**	**17 21 07.6**	**+1.1**
ROTZ	**Rotzenmuhle**	**3.07 237**		Pn	**Pn**	**17 20 20.6**	**+1.1**
ROTZ				Sg	**Sg**	**17 21 06.8**	**-1.6**
ROTZ	**Rotzenmuhle**	**3.07 237**		*e*Pn	**Pn**	**17 20 20.6**	**+1.1**
ROTZ				*e*Sg	**Sg**	**17 21 06.8**	**-1.6**
GEC2	**GERESS Array S**	**3.09 212**		Pn	**Pn**	**17 20 21.5**	**+1.5**
GEC2	**GERESS Array S**	**3.09 212**		*e*Pn	**Pn**	**17 20 21.5**	**+1.5**
GEC2				*e*Pg	**Pb**	**17 20 27.4**	**+1.7**
GEC2				*e*Sg	**Sg**	**17 21 07.2**	**-1.9**
GERES	**GERESS Array B**	**3.09 212**		Pn	**Pn**	**17 20 21.2**	**+1.3**
	comp=Z,0.8nm,0.3s,baz=34,slow=13,SNR=18						
GERES				Pg	**Pb**	**17 20 27.2**	**+1.5**
	comp=Z,7.0nm,0.3s,baz=30,slow=16,SNR=76						
GERES				Lg	Lg	17 21 06.9	
	comp=Z,7.2nm,0.3s,baz=31,slow=26,SNR=11						
LANS	**Liptovska Anna**	**3.14 137**		*e*Pg	**Pg**	**17 20 30.5**	**+0.6**
LANS				*e*Sg	**Sg**	**17 21 09.7**	**-0.8**
LANS	**Liptovska Anna**	**3.14 137**		*e*	**Pn**	**17 20 21.5**	**+1.0**
LANS	**Liptovska Anna**	**3.14 137**		*e*PG	**Pg**	**17 20 30.5**	**+0.6**
LANS				*e*SG	**Sg**	**17 21 09.7**	**-0.8**
WET	**Wettzell**	**3.17 224**		Pn	**Pn**	**17 20 21.9**	**+1.0**
WET				Sg	**Sg**	**17 21 09.8**	**-1.7**
WET	**Wettzell**	**3.17 224**		*e*Pn	**Pn**	**17 20 21.9**	**+1.0**
WET				*e*Sg	**Sg**	**17 21 09.8**	**-1.7**
NIE	**Niedzica**	**3.34 127**		*e*P	**Pg**	**17 20 33.9**	**+0.2**
NIE				*e*S	**Sg**	**17 21 18.4**	**+1.4**
NIE	**Niedzica**	**3.34 127**		*e*P	**Pg**	**17 20

OSKU Oskarshamn 5.72 359 P Pn 17 20 56.8 +0.9
OSKU S Sn 17 21 58.9 -3.3
OSKU Oskarshamn 5.72 359 P Pn 17 20 56.8 +0.9
BYXU Byxelkrok 5.84 4 P Pn 17 20 58.5 +1.1
BYXU Byxelkrok 5.84 4 P Pn 17 20 58.5 +1.1
FABU Falkenberg 5.89 341 P Pn 17 20 58.5 +0.3
FABU Falkenberg 5.89 341 P Pn 17 20 58.5 +0.3
ASPU Aespoe 5.95 2 P Pn 17 21 00.3 +1.3
ASPU Aespoe 5.95 2 P Pn 17 21 00.3 +1.3
GNOU Gnosjoe 5.99 347 P Pn 17 21 00.1 +0.6
GNOU Gnosjoe 5.99 347 P Pn 17 21 00.2 +0.6
VSTU Vaestervik 6.19 2 P Pn 17 21 03.3 +1.0
VSTU Vaestervik 6.19 2 P Pn 17 21 03.3 +1.0
DAVOX Davos/Dischmat 6.27 224 Lg Lg 17 22 56.4
comp=Z,0.5nm,0.3s,baz=208,slow=18,SNR=4.0
LNKU Linkoeping 6.76 357 P Pn 17 21 10.8 +0.6
LNKU Linkoeping 6.76 357 P Pn 17 21 10.8 +0.6
FKPU Falk 6.84 349 P Pn 17 21 11.9 +0.7
FKPU Falk 6.84 349 P Pn 17 21 11.9 +0.7
BURAR Bucovina Array 7.03 120⇑ *i*P **Pn 17 21 17.0 +3.0**
MTSE Matsula 8.45 28 *e*P **Pn 17 21 31.8 -1.5**
SNR=57
HFS Hagfors 8.78 352 Pn **Pn 17 21 37.0 -0.9**
comp=Z,0.2nm,0.3s,baz=170,slow=15,SNR=9.7
MEF Metsahovi 9.88 24 *e*P **Pn 17 21 54.8 +1.9**
SNR=57
NOA NORSAR Array B 9.97 346 Pn **Pn 17 21 53.1 -1.1**
comp=Z,0.2nm,0.3s,baz=180,slow=11,SNR=4.5
RAF Rauma 10.04 16 *e*P **Pn 17 21 55.2 +0.1**
SNR=57
FINES FINESS Array B 11.36 25 Pn **Pn 17 22 11.8 -1.4**
comp=Z,0.2nm,0.3s,baz=209,slow=12,SNR=9.0
FINES Sn **Sn 17 24 14.6 -6.1**
comp=Z,0.2nm,0.3s,baz=216,slow=19,SNR=5.0

MEX 09 17:22:54.5±0.6, 17°.47N×94°.80W, h138km±13km, MD3.7, Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TGIG		**1.74**	**113**	*e*P	Pn	17 23 25.1	-0.8
TGIG				*e*S	Sn	17 23 47.9	-2.0
VHO	**Vista Hermosa**	**1.89**	**258**	*e*P	Pn	17 23 26.4	-1.4
VHO				*e*S	Sn	17 23 51.6	-1.8
HUIG	**Huatulco**	**2.10**	**217**	*i* P	Pn	17 23 26.6	-3.6
HUIG				*e*S	Sn	17 23 54.0	-3.6
PCIG		**2.31**	**139**	*e*P	Pn	17 23 31.1	-1.6
PCIG				*e*S	Sn	17 23 59.7	-2.4
TPIG	**Tehuac#an**	**2.62**	**292**	*e*P	Pn	17 23 36.1	-0.6
TPIG				*e*S	Sn	17 24 07.2	-2.0
CCIG	**Comitan**	**2.81**	**114**	*e*P	Pn	17 23 38.0	-1.1
CCIG				*e*S	Sn	17 24 11.6	-1.8
PPM	**Popocatepetl**	**3.97**	**294**	*i* P	Pn	17 23 54.1	-0.5
PPM				*i* S	Sn	17 24 39.8	-1.3

*ISCJB **09** 17:25:15.4±1.3, 32°.21S±0°.05×71°.00W±0°.08, h97km±12km, Error ellipse: s-maj=11.7km s-min=7.4km az=7.3*
*SJA **09** 17:25:15.8±0.5, 32°.11S×70°.93W, h71km±11km, ML2.1, MW3.0*
*GUC **09** 17:25:16.1±0.3, 32°.16S×70°.93W, h82km±4km, ML2.7*
ISC 09 17:25:16.0±2.5, 32°.19S±0°.06×71°.00W±0°.08, h90km±27km, n11, σ0°39/19, 1D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ROCH	**El Roble**	**0.79**	**180⇓**	*e*P	**Pn**	**17 25 33.7**	**+0.1**
ROCH				*e*S	**Sn**	**17 25 46.9**	**+0.2**
ROCH				IAML		17 25 47.4	
comp=N,438nm,0.4s
ROC1 El Roble 0.79 181 *i* P **Pn 17 25 33.8 +0.1**
ROC1 *i* S **Sn 17 25 47.7 +0.8**
PEL Peldehue 0.99 164 *e*P **Pn 17 25 35.2 -0.4**
PEL *e*S **Sn 17 25 49.9 -0.6**
PEL IAML 17 25 51.7
comp=N,298nm,0.2s
CLCH Cerro Calan 1.27 162 *e*P **Pn 17 25 38.8 -0.1**
CLCH *e*S **Sn 17 25 56.0 -0.3**
CLCH IAML 17 25 57.0
comp=E,124nm,0.8s
RCDM Rinconada Maip 1.31 173 *e*P **Pn 17 25 39.4 -0.1**
RCDM *e*S **Sn 17 25 57.1 0.0**
AUSP Uspallata 1.37 92 *i* P **Pn 17 25 40.4 0.0**
AUSP *i* S **Sn 17 25 58.4 -0.5**
ANTU Antumapu 1.42 167 *e*S **Sn 17 25 59.3 -0.1**
ARCO CERRO ARCO 1.87 111 *i* P **Pn 17 25 47.2 +0.6**
ARCO *i* S **Sn 17 26 09.9 0.0**
ARCO IAML 17 26 13.6
comp=Z,17nm,0.3s
ASAL Salagasta 1.88 103 *i* P **Pn 17 25 47.1 +0.4**
TLL Tololo Astrono 2.02 5 *e*P **Pn 17 25 48.7 0.0**
TLL *e*S **Sn 17 26 13.5 0.0**
AMOG MOGNA 2.48 61 *i* P **Pn 17 25 54.4 -0.1**

*ISCJB **09** 17:27:26.1±0.8, 5°.22N±0°.05×94°.20E±0°.06, h65km±7km, mb4.4/31, Error ellipse: s-maj=11.1km s-min=5.4km az=142.3*
*NEIC **09** 17:27:27.3±1.4, 5°.23N×94°.25E, h60km±12km, mb4.6/8, Error ellipse: s-maj=17.6km s-min=6.4km az=64.0*
*IDC **09** 17:27:27.5±0.8, 5°.41N×94°.37E, h54km±6km, mb4.0/16, mb1 4.1/17, mb1mx3.8/52, mbtmp4.3/17, MS3.2/3, Ms1 3.2/3, ms1mx2.8/38, Error ellipse: s-maj=28.4km s-min=11.3km az=50.0*
*DJA **09** 17:27:28.6±0.7, 5°N±5°×9°5E±°, h10km, M4.3/4, mb4.6/4, MLv4.2/3*
ISC 09 17:27:27.0±0.6, 5°.26N±0°.05×94°.18E±0°.06, h54km±4km, h54km: pP-P, n90, σ1°34/98, mb4.5/32, MS3.3/5, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMBY	**CAMPBELL BAY**	**1.75**	**352**	*e*P	**Pn**	**17 27 54.3**	**-0.7**
CMBY				IAmb	IAmb	17 28 01.0	
comp=Z,568nm,1.0s
MLSI Meulaboh, Aceh 2.42 114 P **Pn 17 28 04.8 +0.6**
MLSI S **Sn 17 28 32.3 -0.4**
LHMI Lhok Sumawe 2.75 91 P **Pn 17 28 08.4 -0.3**
LHMI S **Sn 17 28 39.7 -1.0**
LHMI Lhok Sumawe 2.75 91 *e*Pn **Pn 17 28 07.9 -0.8**
KCSI Kotacane, Aceh 3.98 116 P **Pn 17 28 25.8 +0.4**
KCSI S **Sn 17 29 10.4 -0.4**
TSI Tuntungan 4.71 112 P **Pn 17 28 35.7 +0.2**
PKDT Phuket 4.88 57 P **Pn 17 28 37.2 -0.7**
GSI Gunungsitoli 5.19 139 P **Pn 17 28 43.0 +0.9**
GSI Gunungsitoli 5.19 139 *e*Pn **Pn 17 28 41.1 -1.1**
PSI Prapat 5.33 117 *e*Pn **Pn 17 28 44.8 +0.8**
KRAB Krabi 5.78 59 P **Pn 17 28 52.9 +2.7**
comp=Z,146nm,0.5s,comp=Z,3μmcomp=Z,0.7nm
TRTT Trang 6.04 65 P Pn 17 29 00.8 +7.0
comp=Z,55nm,0.6s,comp=Z,0.3nm
KULM Kulim 6.44 89 *e*Pn **Pn 17 28 58.0 -1.2**
SKLT Songkhla 6.67 73 P **Pn 17 29 03.4 +0.9**
comp=Z,41nm,0.8s
IPM Ipoh 6.86 96 *e*Pn **Pn 17 29 03.4 -1.7**
MNSI Mandailing Nat 6.98 129 P **Pn 17 29 07.7 +1.0**
BKNI Bangkinang 8.42 125 *e*Pn Pn 17 29 23.4 -3.0
PALK Pallekele 13.55 279 LR LR 17 35 40.5
comp=Z,100nm,20.4s,baz=116,slow=36
UTTA Uttaradit 13.88 26 P **P 17 30 47.4 -0.3**
comp=Z,8.1nm,0.7s,comp=Z,86nm
CM01 Chiang Mai Arr 13.88 19 *e*Pn **Pn 17 30 43.0 +1.9**
KHON Khomkaen 13.89 37 P **P 17 30 48.5 +0.7**
comp=Z,9.7nm,0.5s
CM31 Chiang Mai Arr 13.91 19 *e*Pn **Pn 17 30 44.1 +2.6**
CMAR Chiang Mai Arr 13.91 19 P **Pn 17 30 40.9 -0.5**
comp=Z,1.4nm,0.3s,baz=209,slow=14,SNR=35
LOEI Loei 14.01 29 P **P 17 30 51.1 +2.0**
comp=Z,64nm,0.8s,comp=Z,2μm
LAMP Lampang 14.21 22 P **P 17 30 49.6 -1.8**
comp=Z,13nm,0.8s,comp=Z,117nm
CHTO Chiang Mai 14.25 19 *e*Pn **Pn 17 30 48.0 +2.1**
CMMT Chiang Mai 14.25 19 P **P 17 30 49.4 -2.4**
comp=Z,29nm,0.8s
CMAI Chiengmai2 15.33 18 P **P 17 31 03.5 -0.5**
comp=Z,40nm,0.9s
CRAI Chiangrai 16.05 21 P **P 17 31 12.0 +0.2**
VIS Vishakhapatnam 16.31 320 *e*P **Pn 17 31 13.7 +1.2**
VIS IAmb IAmb 17 31 20.4
comp=Z,82nm,1.9s
KSM Kuching 16.53 103 *e*Pn **Pn 17 31 15.7 +0.4**
comp=Z,5.8nm,0.7s
BWNR Bhubaneshwar 17.02 332 *e*P **Pn 17 31 21.2 -0.1**
BOK Bokaro 20.08 337 *e*P **P 17 31 56.6 +0.5**
BOK IAmb IAmb 17 31 59.7
comp=Z,30nm,0.9s
KMI Kunming 21.39 22 P **P 17 32 12.8 +2.4**
KMI pmax pmax
comp=Z,69nm,3.1s
KMI LR LR
comp=N,79nm,6.4s
KMI LR LR
comp=E,60nm,4.5s
KMI LR LR
comp=Z,86nm,5.4s
PKIN Phulchoki 23.71 340 *e*P **P 17 32 31.1 -3.4**
comp=Z,2.0nm,0.5s
GUN Gumba 23.87 342 *e*P **P 17 32 34.5 -1.4**
comp=Z,21nm,0.5s
KKN Kakani 23.95 340 *e*P **P 17 32 35.2 -1.4**
comp=Z,9.6nm,0.4s
GKN Gorkha 24.37 339 *e*P **P 17 32 40.6 +0.3**
comp=Z,22nm,0.4s
LSA Lhasa 24.48 354 P **P 17 32 41.7 +0.1**
LSA pmax pmax
comp=Z,12nm,0.8s
LSA Lhasa 24.48 354 *e*P **P 17 32 40.5 -1.1**
comp=Z,11nm,0.6s
KOLN Koldanda 24.54 337 *e*P **P 17 32 42.2 +0.2**
comp=Z,24nm,0.6s
PYUN Piuthan 25.08 336 *e*P **P 17 32 47.3 +0.5**
comp=Z,15nm,0.3s
H08S3 Diego Garcia H 25.15 240 T T 17 58 51.3
baz=59,slow=76,SNR=145
H08S2 Diego Garcia H 25.15 240 T T 17 58 50.9
baz=59,slow=76,SNR=131
H08S1 Diego Carcia H 25.17 240 T T 17 58 47.2
baz=59,slow=76,SNR=119
CD2 Chengdu 27.05 18 P **P 17 33 05.6 +1.1**
CD2 pmax pmax
comp=Z,20nm,0.4s
SMLA Simla 30.29 330 *e*P **P 17 33 33.6 +0.4**
DHRM DHARAMSHALA 31.63 330 *e*P **P 17 33 44.2 -1.0**
DHRM IAmb IAmb 17 33 46.6
comp=Z,2.9nm,0.5s
XAN Xi'an 31.73 24 P **P 17 33 44.0 -1.9**
XAN pP pP 17 33 54.8 -4.9
XAN pmax pmax
comp=Z,16nm,0.7s
LZH Lanzhou 31.94 15 *e*P **P 17 33 47.8 0.0**
LZH pP pP 17 34 00.6 -1.0
LZH sP sP 17 34 07.7 -0.2
LZH pmax pmax
comp=Z,13nm,1.0s
GTA Gaotai 34.37 8 *e*P **P 17 34 07.7 -1.3**
GTA pP pP 17 34 20.1 -2.7
GTA sP sP 17 34 25.4 -3.8
GTA S **S 17 39 32.0 -1.1**
GTA sS sS 17 39 52.6 -3.9
GTA SS **SnSn 17 41 45.0 -2.4**
GTA pmax pmax
comp=Z,6.0nm,1.0s
GTA pmax pmax
comp=Z,67nm,5.2s
GTA LR LR
comp=N,68nm,15.7s
GTA LR LR
comp=E,76nm,17.6s
GTA LR LR
comp=Z,87nm,14.3s
NJ2 Nanjing 35.26 38 *e*P **P 17 34 16.8 +0.2**
NJ2 pmax pmax
comp=Z,17nm,0.8s
HHC Hu-ho-hao-te 38.71 21 *e*P **P 17 34 47.8 +1.9**
HHC S **S 17 40 43.8 +4.6**
HHC pmax pmax
comp=Z,15nm,0.8s
HHC pmax pmax
comp=Z,100nm,5.1s
HHC LR LR
comp=N,500nm,14.3s
HHC LR LR
comp=E,180nm,13.6s
HHC LR LR
comp=Z,560nm,14.1s
FITZ Fitzroy Crossi 38.76 128 P **P 17 34 46.6 +0.2**
comp=Z,2.1nm,0.7s,baz=336,slow=2.8,SNR=5.0
FITZ pP **pP 17 34 60.0 -0.4**
comp=Z,2.0nm,0.6s,baz=193,slow=4.6,SNR=2.3
WMQ Urumqi 38.82 353 P **P 17 34 47.6 +0.8**
WMQ pmax pmax
comp=Z,2.0nm,0.6s
WMQ pmax pmax
comp=Z,56nm,3.6s
BJI Beijing 39.89 27 P **P 17 34 55.5 -0.1**
BJI pP **pP 17 35 09.8 +0.2**
BJI sP **sP 17 35 16.6 +0.7**
BJI S **S 17 41 01.4 +4.7**
BJI pmax pmax
comp=Z,7.0nm,0.8s
BJI LR LR
comp=Z,45nm,28.3s
TKM2 Tokmak 2 40.96 339 *e*P **P 17 35 07.1 +2.4**
MK01 Makanchi Array 42.61 348 *e*P **P 17 35 17.7 -0.2**
MK31 Makanchi Array 42.63 348 *e*P **P 17 35 18.1 0.0**
MKAR Makanchi Array 42.63 348 P **P 17 35 18.2 +0.1**
comp=Z,14nm,0.7s,baz=167,slow=8.1,SNR=152
MKAR Makanchi Array 42.63 348 *e*P **P 17 35 18.0 -0.1**
MAKZ Makanchi 42.71 348 *e*P **P 17 35 18.7 0.0**
comp=Z,13nm,0.6s
KKAR Karatay Array 43.11 335 *e*P **P 17 35 22.3 +0.3**
SONM Songino Array 43.69 12 P **P 17 35 25.8 -0.9**
comp=Z,5.4nm,0.9s,baz=192,slow=7.6,SNR=22
SONM PcP **PcP 17 37 12.9 -0.1**
comp=Z,1.1nm,0.6s,baz=202,slow=3.9,SNR=4.5
SONA1 Songino Array 43.70 12 *e*P **P 17 35 25.6 -1.3**
KSAR Wonju Array Be 44.39 39 P **P 17 35 30.4 -1.9**
KSRS Korea Array 44.42 39 P **P 17 35 30.4 -2.1**
comp=Z,1.5nm,0.6s,baz=217,slow=9.8,SNR=6.6
KSRS LR LR 17 54 25.0
comp=Z,28nm,19.3s,baz=5.0,slow=37
GEYT Alibeck 46.19 320 P **P 17 35 48.0 +1.4**
comp=Z,2.5nm,0.4s,baz=146,slow=9.0,SNR=9.5
GEYT pP **pP 17 36 01.4 +0.5**
comp=Z,1.3nm,0.4s,baz=168,slow=7.6,SNR=3.3
WRA Warramunga Arr 46.76 124 P **P 17 35 51.5 +0.2**
comp=Z,3.7nm,0.6s,baz=306,slow=8.5,SNR=25
WB2 Warramunga Arr 46.77 124 *e*P **P 17 35 51.2 -0.1**
comp=Z,6.5nm,0.6s
KURK Kurchatov 47.14 347 *e*P **P 17 35 54.0 +0.2**
comp=Z,9.8nm,0.8s
AS31 Alice Springs 48.25 128 *e*P **P 17 36 03.3 +0.4**
comp=Z,1.9nm,0.4s
ASAR Alice Springs 48.25 128 P **P 17 36 03.0 +0.2**
comp=Z,1.8nm,0.6s,baz=301,slow=7.5,SNR=24
ASAR pP **pP 17 36 17.1 -0.1**
comp=Z,2.0nm,0.4s,baz=301,slow=7.6,SNR=13
ZAA0 Zalesovo Array 49.13 353 *e*P **P 17 36 09.0 -0.1**
ZALV Zalesovo Beam 49.13 353 P **P 17 36 09.3 +0.2**
comp=Z,7.7nm,0.3s,baz=188,slow=6.4,SNR=58
ZALV pP **pP 17 36 21.9 -1.5**
comp=Z,2.2nm,0.5s,baz=180,slow=8.9,SNR=3.5
ZRNK Zerenda 51.84 341 *e*P **P 17 36 29.4 -0.2**
comp=Z,3.6nm,0.9s
ABKAR Akbulak array 52.54 332 *e*P **P 17 36 35.0 +0.2**
AKTO Aktyubinsk 54.26 332 P **P 17 36 47.3 -0.1**
comp=Z,1.3nm,0.5s,baz=36,slow=2.9,SNR=4.5
ASAJ Asahikawa 57.37 40 LR LR 18 02 28.1
comp=Z,26nm,19.5s,baz=315,slow=37
STKA Stephens Creek 58.30 133 P **P 17 37 16.8 +0.2**
comp=Z,0.6nm,0.5s,baz=337,slow=9.2,SNR=3.8
BRTR Keskin Array B 64.17 312 P **P 17 37 56.7 +0.3**
comp=Z,0.9nm,0.6s,baz=124,slow=6.9,SNR=7.6
TIXI Tiksi 69.77 11 *e*P **P 17 38 29.7 -1.4**
comp=Z,9.3nm,0.6s
AKASG Malin Array Be 70.22 322 P **P 17 38 33.5 -0.7**
comp=Z,0.5nm,0.5s,baz=95,slow=3.3,SNR=4.3
FINES FINESS Array B 75.03 333 P **P 17 39 02.0 -0.6**
comp=Z,1.2nm,0.6s,baz=126,slow=6.1,SNR=7.0
GEA0 GERESS Array S 79.79 319 *e*P **P 17 39 30.6 +0.9**
GERES GERESS Array B 79.79 319 P **P 17 39 31.1 +1.5**
comp=Z,2.6nm,0.7s,baz=99,slow=5.7,SNR=19
GERES pP **pP 17 39 46.3 +1.3**
comp=Z,1.2nm,0.8s,baz=104,slow=5.6,SNR=4.9
SPITS Spitsbergen Ar 82.39 348 P **P 17 39 42.3 -0.5**
comp=Z,3.6nm,0.6s,baz=104,slow=11,SNR=5.1
TNA Tin City 88.51 24 *e*P **P 17 40 12.9 -0.5**
ILAR Eielson Array 97.13 22 P **P 17 40 51.6 -1.6**
comp=Z,0.3nm,0.6s,baz=299,slow=3.3,SNR=4.9
TXAR Lajitas Array 141.56 26 PKhKP PKPpre 17 46 45.9
comp=Z,0.1nm,0.4s,baz=53,slow=5.0,SNR=3.4
TXAR PKP **PKPdf 17 46 54.2 +1.1**
comp=Z,0.5nm,0.6s,baz=210,slow=1.9,SNR=6.0

*NIED **09** 17:37:00, 37°.10N×141°.70E, h35km, Mw3.9 Best double couple: M0 7.84000×10^14 NP1:φ=202.00000°, δ21.00000°, λ92.00000°. NP2:φ=20.00000°, δ69.00000°, λ89.00000°.*
*ISCJB **09** 17:37:26.3±0.9, 36°.98N±0°.03×141°.94E±0°.08, h34km±8km, mb3.7/12, MS3.0/1, Error ellipse: s-maj=11.2km s-min=5.7km az=6.7*
*JMA **09** 17:37:29.2±0.3, 37°.06N×141°.66E, h47km±4km, M3.8*
*IDC **09** 17:37:29.1±2.6, 37°.01N×141°.78E, h38km±23km, mb3.6/12, mb1 3.7/18, mb1mx3.5/46, mbtmp3.8/18, ML3.5/5, MS2.8/5, Ms1 2.8/5, ms1mx2.5/40, Error ellipse: s-maj=22.4km s-min=15.1km az=86.0*
ISC 09 17:37:25.9±2.1, 37°.03N±0°.05×141°.87E±0°.07, h16km±12km, n38, σ0°94/37, mb3.8/12, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.86**	**275**	P	**Pg**	**17 37 42.6**	**-0.1**
JFK	**Kawauchi**	**0.87**	**293**	P	**Pb**	**17 37 42.6**	**0.0**
JFK				*e*S	**Sb**	**17 37 52.6**	**-1.4**
JHO	**Hitachi**	**1.12**	**249**	P	**Pb**	**17 37 46.1**	**-0.9**
JMM	**Marumori**	**1.20**	**315**	P	**Pn**	**17 37 47.8**	**-0.3**
JFT	**Otama**	**1.32**	**292**	P	**Pb**	**17 37 50.1**	**-0.2**
JIO	**Ouri**	**1.49**	**344**	P	**Pn**	**17 37 52.1**	**+0.1**
JIO				*e*S	**Sn**	**17 38 09.0**	**-2.0**
JOU	**Okura**	**1.65**	**325**	P	**Pn**	**17 37 55.0**	**+0.8**
JOU				S	**Sn**	**17 38 14.9**	**-0.2**
JFY	**Yanaizu**	**1.77**	**283**	P	**Pn**	**17 37 56.3**	**+0.4**
JYS	**Shiratake**	**1.87**	**310**	P	**Pn**	**17 37 58.3**	**+1.1**
JMK	**Ichinoseki**	**1.99**	**345**	P	**Pn**	**17 37 59.8**	**+0.9**
JMK				*e*S	**Sn**	**17 38 23.7**	**+0.2**
JAG	**Ashikaga**	**2.03**	**254**	P	**Pn**	**17 37 59.7**	**+0.2**
MJAR	**Matsushiro Arr**	**2.98**	**262**	Pn	**Pn**	**17 38 13.2**	**+0.6**
10nm,0.3s,baz=88,slow=15,SNR=61
MJAR LR LR 17 39 38.4
comp=Z,143nm,19.9s,baz=80,slow=45
MAT Matsushiro 2.98 262 P **Pn 17 38 14.3 +1.7**
MAT *e*S **Sn 17 38 50.1 +2.1**
JHJ Hachijo jima 2 4.26 204 Pn **Pn 17 38 30.9 +0.9**
13nm,0.3s,baz=80,slow=19,SNR=5.4
JHJ Sn **Sn 17 39 17.3 -2.1**
43nm,0.3s,baz=24,slow=21,SNR=7.8
ASAJ Asahikawa 7.11 4 Pn **Pn 17 39 09.3 +0.1**
0.5nm,0.3s,baz=230,slow=12,SNR=8.1
ASAJ LR LR 17 42 25.9
comp=Z,57nm,18.1s,baz=225,slow=42
JNU Nakatsue 9.81 250 Pn **Pn 17 39 47.2 +0.8**
0.2nm,0.3s,baz=149,slow=5.4,SNR=3.9
JCJ Chichijima 9.90 178 Pn **Pn 17 39 48.1 +0.5**
2.3nm,0.3s,baz=312,slow=22,SNR=5.2
JCJ Sn Sn 17 41 29.9 -8.6
3.4nm,0.3s,baz=287,slow=19,SNR=4.6
USRK Ussuriysk Ar. 10.38 317 Pn **Pn 17 39 54.9 +0.8**
0.1nm,0.3s,baz=104,slow=12,SNR=2.5
USRK LR LR 17 43 27.4
comp=Z,52nm,19.6s,baz=111,slow=35
KSRS Korea Array 11.13 276 Pn Pn 17 40 09.6 +5.2
0.1nm,0.3s,baz=94,slow=14,SNR=4.2
KSRS LR LR 17 44 05.0
comp=Z,49nm,19.4s,baz=198,slow=36
H11N2 WAKE ISLAND Hy 27.83 121 T T 18 12 43.4
baz=314,slow=75,SNR=58
H11N1 WAKE ISLAND Hy 27.84 121 T T 18 12 34.6
baz=314,slow=75,SNR=55
H11N3 WAKE ISLAND Hy 27.85 121 T T 18 12 30.9
baz=314,slow=75,SNR=45
SONM Songino Array 28.09 304 P **P 17 43 16.3 -0.6**
1.7nm,0.8s,baz=101,slow=8.4,SNR=11
H11S1 WAKE ISLAND Hy 28.55 124 T T 18 13 31.0
baz=316,slow=76,SNR=28
H11S3 WAKE ISLAND Hy 28.55 124 T T 18 13 27.0
baz=316,slow=76,SNR=28
H11S2 WAKE ISLAND Hy 28.56 124 T T 18 13 40.1
baz=316,slow=76,SNR=22
ZALV Zalesovo Beam 42.19 312 P **P 17 45 18.1 +0.4**
1.1nm,0.7s,baz=115,slow=6.7,SNR=5.1
MKAR Makanchi Array 44.43 302 P **P 17 45 36.2 +0.2**
1.9nm,0.9s,baz=88,slow=9.3,SNR=12
KURBB Kurchatov Arra 46.30 308 P **P 17 45 50.4 -0.3**
1.5nm,0.5s,baz=82,slow=7.8,SNR=20
ILAR Eielson Array 49.31 32 P **P 17 46 14.6 +0.8**
0.3nm,0.8s,baz=265,slow=6.2,SNR=3.6
WRA Warramunga Arr 57.10 188 P **P 17 47 10.7 -0.9**
0.3nm,0.5s,baz=5.4,slow=7.0,SNR=6.1
ASAR Alice Springs 60.83 188 P **P 17 47 37.8 +0.4**
0.3nm,0.7s,baz=9.4,slow=6.9,SNR=5.9
YKA Yellowknife Ar 63.63 30 P **P 17 47 56.8 +1.0**
0.1nm,0.4s,baz=306,slow=6.7,SNR=2.9
FINES FINESS Array B 68.99 332 P **P 17 48 29.4 -0.7**
1.8nm,0.8s,baz=40,slow=12,SNR=4.7
HFS Hagfors 74.25 336 P **P 17 49 01.7 -0.1**
0.5nm,0.5s,baz=27,slow=9.7,SNR=4.8
NB2 NORSAR Subarra 74.34 337 P **P 17 49 02.6 +0.2**
comp=Z,0.5nm,0.6s,baz=40,slow=5.9
NOA NORSAR Array B 74.34 337 P **P 17 49 01.9 -0.4**
comp=Z,1.0nm,0.8s,baz=39,slow=5.7,SNR=3.8
NOA LR LR 18 24 21.5
comp=Z,8.9nm,20.5s,baz=235,slow=38
AKASG Malin Array Be 74.53 322 P **P 17 49 02.8 -0.8**
comp=Z,0.9nm,0.5s,baz=45,slow=6.3,SNR=6.4

*SJA **09** 17:52:51.3±0.7, 22°.29S×68°.69W, h129km±7km, ML2.9, MW3.5*
*ISCJB **09** 17:52:52.6±1.0, 22°.15S±0°.07×68°.64W±0°.06, h124km±11km, Error ellipse: s-maj=12.7km s-min=8.7km az=23.7*
*GUC **09** 17:52:53.8±0.5, 22°.11S×68°.66W, h111km±4km, ML3.8*
ISC 09 17:52:53.7±1.9, 22°.16S±0°.08×68°.62W±0°.06, h114km±17km, n11, σ0°77/18, 4C-1D, Northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LVC	**Limon Verde**	**0.52**	**211**	*i* P	**Pn**	**17 53 11.0**	**-0.6**
LVC				*i* S	**Sn**	**17 53 24.9**	**-0.1**
PB09	**IPOC Station P**	**0.68**	**302⇑**	*e*P	**Pn**	**17 53 12.5**	**0.0**
PB09				*e*S	**Sn**	**17 53 26.5**	**-0.1**
PB06	**IPOC Station P**	**1.03**	**238⇑**	*e*P	**Pn**	**17 53 16.1**	**+0.4**
PB06				*e*S	**Sn**	**17 53 32.8**	**+0.4**
PB06				IAML		17 53 33.8	
comp=E,2μm,0.2s
PB07 IPOC Station P 1.25 290⇑ *e*P **Pn 17 53 18.2 +0.2**
PB07 *e*S **Sn 17 53 36.5 0.0**
PB07 IAML 17 53 37.7
comp=N,3μm,0.3s
PB01 IPOC Station P 1.37 324⇓ *e*P **Pn 17 53 19.1 -0.3**
PB01 *e*S **Sn 17 53 38.2 -0.7**
PB01 IAML 17 53 40.0
comp=E,2μm,0.7s
PB04 IPOC Station P 1.42 263⇑ *e*P **Pn 17 53 20.2 +0.1**
PB04 *e*S **Sn 17 53 40.6 +0.6**
PB04 IAML 17 53 47.3
comp=N,2μm,0.3s
YJA Yavi 2.88 91 *i* P **Pn 17 53 39.2 +0.5**
YJA IAML 17 53 41.1
comp=Z,35nm,0.5s
YJA *i* S **Sn 17 54 15.1 +1.8**
HJA Humahuaca 3.15 110 *i* P **Pn 17 53 42.0 -0.2**
AZAP Zapla 3.86 123 *i* P **Pn 17 53 51.1 -0.4**
ASTB Santa Barbara 4.23 116 *i* P **Pn 17 53 55.7 -0.8**
ALOL LOMAS DE OLMED 4.58 112 *i* P **Pn 17 53 59.5 -1.5**

*NIED **09** 17:56:00, 36°.20N×141°.40E, h38km, Mw3.7 Best double couple: M0 4.73000×10^14 NP1:φ=87.00000°, δ84.00000°, λ178.00000°. NP2:φ=177.00000°, δ88.00000°, λ6.00000°.*
*JMA **09** 17:56:20.6±0.2, 36°.19N×141°.36E, h50km±3km, M3.6*
*IDC **09** 17:56:23.0±4.9, 36°.41N×141°.15E, h33km±36km, mb3.4/6, mb1 3.5/10, mb1mx3.3/42, mbtmp3.6/10, ML3.7/3, Error ellipse: s-maj=43.0km s-min=17.6km az=74.0*
ISC 09 17:56:20.6±1.8, 36°.25N±0°.06×141°.36E±0°.09, h27km±13km, n19, σ0°99/22, mb3.6/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	0.68	217	P	Pb	17 56 33.7	-0.1
CHOJ				S	Sb	17 56 42.7	-0.1
JHO	Hitachi	0.74	300	P	Pn	17 56 35.3	0.0
JYT	Yasato	0.95	269	P	Pn	17 56 37.9	-0.2
JYT				S	Sn	17 56 49.8	-0.9
ONAJ	Iwakimizuishiy	0.97	332	P	Pn	17 56 38.9	+0.4
JFK	Kawauchi	1.19	341	P	Pn	17 56 41.9	+0.4
JFK				S	Sn	17 56 57.2	+0.4
JAG	Ashikaga	1.55	277	P	Pn	17 56 46.9	+0.4
JAG				S	Sn	17 57 06.3	+0.5
MJAR	Matsushiro Arr	2.56	278	Pn	Pn	17 57 00.4	+0.1
	10nm,0.3s,baz=85,slow=9.9,SNR=67						
MAT	Matsushiro	2.56	278	P	Pn	17 57 02.1	+1.7
MAT				S	Sn	17 57 32.2	+1.4
JHJ	Hachijo jima 2	3.38	203	Pn	Pn	17 57 12.4	+0.8
	29nm,0.3s,baz=79,slow=22,SNR=11						
JHJ				Sn	Sn	17 57 49.5	-1.3
	41nm,0.3s,baz=45,slow=23,SNR=8.8						
ASAJ	Asahikawa	7.92	6	Pn	Pn	17 58 13.6	-0.3
	1.1nm,0.3s,baz=218,slow=17,SNR=7.0						
USRK	Ussuriysk Ar.	10.69	321	Pn	Pn	17 58 52.1	+0.2
	0.0nm,0.3s,baz=102,slow=14,SNR=2.5						
SONM	Songino Array	28.20	305	P	P	18 02 09.5	-1.5
	0.3nm,0.5s,baz=100,slow=9.5,SNR=3.5						
ZALV	Zalesovo Beam	42.42	313	P	P	18 04 12.6	-0.1
	0.6nm,0.5s,baz=101,slow=7.6,SNR=2.8						
MKAR	Makanchi Array	44.51	303	P	P	18 04 28.7	-1.0
	0.7nm,0.8s,baz=95,slow=10,SNR=6.4						
KURBB	Kurchatov Arra	46.46	309	P	P	18 04 43.8	-1.2
	1.0nm,0.7s,baz=84,slow=7.8,SNR=9.9						
ILAR	Eielson Array	50.18	32	pP	pP	18 05 26.7	+5.0
	0.4nm,0.8s,baz=257,slow=6.4,SNR=3.9						
WRA	Warramunga Arr	56.27	188	P	P	18 06 00.7	+1.9
	0.3nm,0.4s,baz=2.4,slow=7.7,SNR=9.8						
ASAR	Alice Springs	60.00	188	P	P	18 06 28.6	+3.7
	0.1nm,0.4s,baz=358,slow=5.3,SNR=6.6						
YKA	Yellowknife Ar	64.51	30	pP	pP	18 07 07.0	+4.0
	0.2nm,0.9s,baz=303,slow=7.1,SNR=3.0						

*ISCJB **09** 17:58:21.8±0.3, 32°.62N±0°.02×115°.71W±0°.03, h19km±5km, Error ellipse: s-maj=3.7km s-min=3.5km az=39.3*
*MEX **09** 17:58:21.8±1.0, 32°.79N×115°.60W, h16km±90km, MD3.2*
*ECX **09** 17:58:22.7±0.6, 32°.58N×115°.72W, h3km, MD2.5, ML2.7*
*NEIC **09** 17:58:22.8, 32°.58N×115°.72W, h3km, ML2.5(ECX), ML2.7(PAS), After ECX.*

ISC 09 17:58:21.2±0.9, 32°.61N±0°.02×115°.70W±0°.02, h17km±6km, n35, σ0°48/54, 4C-8D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SGL	Mount Signal	0.04	334	⇓iP	Pg	17 58 24.2	-0.1
SGL	Mount Signal	0.04	334	⇓iP	Pg	17 58 24.2	-0.1
ERPC	Ernies Place	0.14	14	⇓iP	Pb	17 58 26.3	+0.9
WESC	Westside Schoo	0.15	350	⇓eP	Pb	17 58 26.3	+0.6
WESC	Westside Schoo	0.15	350	⇓eP	Pb	17 58 26.3	+0.6
YUH	Yuha Desert	0.19	282	⇑iP	Pg	17 58 26.1	+0.2
COK	Cook Ranch	0.24	355	⇓iP	Pb	17 58 28.1	+0.9
RMX	La Rumorosa	0.32	269	eP	Pg	17 58 27.8	-0.3
RMX				eS	Sg	17 58 32.8	0.0
SWSC	Sam W. Stewart	0.35	346	P	Pb	17 58 29.4	+0.4
	baz=170,SNR=15						
SWSC				S	Sb	17 58 34.5	+0.3
	baz=170						
IKP	In-Ko-Pah, Jac	0.35	277	P	Pg	17 58 28.9	+0.4
	baz=106,SNR=19						
IKP				S	Sg	17 58 33.9	+0.4
	baz=106						
CRR	Carrizo Plain	0.36	321	⇓iP	Pb	17 58 29.6	+0.4
CPBX	Cerro Prieto	0.39	119	eP	Pb	17 58 30.0	+0.4
CPBX				eS	Sb	17 58 37.1	+1.7
CPBX	Cerro Prieto	0.39	119	eP	Pb	17 58 30.0	+0.4
CPBX				eS	Sb	17 58 35.8	+0.5
CPBX				⇓e		17 58 42.4	
CPBX				AML	AML	17 58 42.4	
	comp=N,2μm,0.2s						
MONP2	Monument Peak	0.67	295	P	Pg	17 58 34.7	+0.2
	baz=120,SNR=7.2						
MONP2				S	Sg	17 58 43.6	+0.2
	baz=120						
BAR	Barrett	0.82	275	⇑eP	Pg	17 58 37.4	+0.1
TJIG	Tijuana	0.84	258	iP	Pb	17 58 37.3	-0.1
TJIG				iS	Sb	17 58 48.3	-0.1
TJIG	Tijuana	0.84	258	eP	Pb	17 58 37.3	-0.1
GLA	Glamis	0.86	59	P	Pb	17 58 37.7	-0.1
	baz=237						
GLA				S	Sb	17 58 49.2	+0.1
	baz=237						
CBX	Cerro Bola	0.86	250	eP	Pb	17 58 38.0	+0.1
CBX				iS	Sb	17 58 49.4	+0.1
CBX	Cerro Bola	0.86	250	eP	Pb	17 58 38.0	+0.1
CBX				iS	Sb	17 58 49.4	+0.1
CBX	Cerro Bola	0.86	250	⇑eP	Pb	17 58 38.0	+0.1
CBX				eS	Sb	17 58 49.3	+0.1
SDRC	San Diego Road	1.05	277	eP	Pb	17 58 41.2	+0.2
BC3	Big Chuckawall	1.06	11	P	Pb	17 58 41.1	-0.2
	baz=191						
BC3				S	Sb	17 58 54.6	-0.4
	baz=191						
PFO	Pinyon Flats O	1.19	328	ePg	Pn	17 58 42.8	-0.5
PFO				eSg	Sb	17 58 57.5	-1.0
ZAX	El Zacaton	1.19	204	eP	Pn	17 58 43.3	0.0
ZAX				eS	Sb	17 58 58.6	-0.1
ZAX				⇑e		17 58 59.7	
ZAX				AML	AML	17 58 59.7	
	comp=E,176nm,0.3s						
109C	Camp Elliot, M	1.22	284	Pb	Pb	17 58 43.8	0.0
	baz=106,SNR=10						
109C				S	Sb	17 58 59.4	+0.2
	baz=106						
ECNX	Esteban Cantu	1.22	219	eP	Pn	17 58 43.5	-0.1
ECBX	El Chinero	1.26	154	eP	Pb	17 58 44.6	0.0
ECBX				eS	Sn	17 59 00.8	+0.1
BELC	Belle Mtn. Jos	1.41	350	P	Pn	17 58 45.7	-0.6
	baz=171,SNR=7.5						
BELC				S	Sn	17 59 04.3	-0.4
	baz=171						
SPIG	San Pedro Mart	1.57	173	eP	Pn	17 58 49.2	+0.5
SPIG				eS	Sb	17 59 09.7	-0.1
SPIG	San Pedro Mart	1.57	173	eP	Pn	17 58 49.2	+0.5
SPIG				eS	Sb	17 59 09.7	-0.1
SPX	San Pedro Mart	1.57	173	eP	Pb	17 58 49.5	-0.6
MURC	Murrieta	1.60	309	S	Sn	17 59 09.2	+0.2
	baz=130						
214A	Organ Pipe Nat	2.53	104	P	Pn	17 59 01.0	-0.7
	baz=284						
214A	Organ Pipe Nat	2.53	104	P	Pb	17 59 05.2	-1.1

*ISCJB **09** 18:01:35.5±0.4, 10°.91N±0°.03×61°.74W±0°.04, h59km±7km, Error ellipse: s-maj=6.6km s-min=3.7km az=29.8*
*FUNV **09** 18:01:36.2, 10°.80N×61°.69W, h26km, MW3.5*
*TRN **09** 18:01:37.0, 10°.91N×61°.66W, h48km, MD4.1*

ISC 09 18:01:35.9±1.2, 10°.89N±0°.03×61°.75W±0°.04, h56km±9km, n50, σ1°.26/65, 1D, Trinidad

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TCE	Chacachacare	0.19	181	eP	Pn	18 01 45.4	+0.5
TCE				eS	Sn	18 01 51.8	+0.4
TRN	Trinidad (W)	0.41	125	eP	Pn	18 01 46.3	-0.3
TRN				eS	Sn	18 01 53.2	-1.2
GUIV	Guiria	0.52	243	eP	Pn	18 01 46.1	-1.7
GUIV				eS	Sn	18 01 54.9	-1.6
TPP	Pointe-a-Pierr	0.64	153	eP	Pn	18 01 49.7	+0.5
ALNG	Atlantic LNG	0.70	175	eS	Sn	18 02 01.8	+1.6
BUAY	Buenos Aires	0.78	175	eP	Pn	18 01 52.6	+1.7
BUAY				eS	Sn	18 02 03.5	+1.6
SIPA	Siparia	0.78	162	eP	Pn	18 01 52.2	+1.3
SIPA				eS	Sn	18 02 02.6	+0.7
GRGR	Grenville	1.24	4	eP	Pn	18 01 57.4	+0.3
GRGR				eS	Sn	18 02 14.2	+1.3
TOSP	Speyside	1.26	71	eP	Pn	18 01 56.7	-0.6
TOSP				eS	Sn	18 02 12.3	-0.9
GRW	Mount Saint Ca	1.27	4	eP	Pn	18 01 58.1	+0.6
GRHS	Sauteurs	1.33	5	eP	Pn	18 01 58.7	+0.4
GRHS				eS	Sn	18 02 15.4	+0.3
GUNV	Guanoco	1.38	239	eP	Pn	18 02 00.2	+1.4
GRSS	Sisters	1.41	5	eP	Pn	18 02 00.1	+0.8
CRUV	Carupano	1.48	262	eP	Pn	18 02 00.6	+0.4
CRUV				eS	Sn	18 02 18.6	+0.1
FCV	Fort Charlotte	2.31	12	eP	Pn	18 02 13.2	+1.6
FCV				eS	Sn	18 02 38.6	-0.3
SVB	Belmont	2.42	12	eP	Pn	18 02 14.0	+0.9
SVB				eS	Sn	18 02 41.0	-0.6
ORIV	Oritupano	2.43	222	eP	Pn	18 02 14.4	+1.1
ORIV				eS	Sn	18 02 41.5	-0.4
MCLT	Moule a Chique	2.92	16	eP	Pn	18 02 20.1	+0.2
MCLT	Moule a Chique	2.92	16	eP	Pn	18 02 20.2	+0.4
MCLT				eS	Sn	18 02 53.0	-0.7
BBGH	Gun Hill	3.10	43	eS	Sn	18 02 56.5	-1.8
BBSP	Saint Philip	3.15	45	eS	Sn	18 02 58.2	-1.2
BBSP	Saint Philip	3.15	45	e	Sn	18 02 59.4	0.0
GURV	El Guri	3.37	203	eP	Pn	18 02 25.8	-0.4
GURV				eS	Sn	18 03 01.6	-3.4
BIM	Bigot	3.67	10	eP	Pn	18 02 31.2	+0.9
BIM				eS	Sn	18 03 11.9	-0.4
TRMF	Trois Ilets	3.69	11	eP	Pn	18 02 31.5	+1.0
ZAM	Aeronautique	3.73	11	eP	Pn	18 02 32.6	+1.5
MVM	Montagne Vaucl	3.74	13	eP	Pn	18 02 32.3	+1.1
LPMF	Morne Lapointe	3.75	12	eP	Pn	18 02 32.0	+0.8
PML	Morne Lenard	3.91	8	eP	Pn	18 02 34.9	+1.3
GBMF	Grand Be	3.93	8	eP	Pn	18 02 34.6	+0.8
PCM	Pelee Case Pet	3.94	8	⇓eP	Pn	18 02 34.7	+0.7
PCM	Pelee Case Pet	3.94	8	eP	Pn	18 02 35.0	+1.0
CXM	Morne La Croix	3.94	8	eP	Pn	18 02 35.1	+1.0
BAMF	Morne Balai	3.95	8	eP	Pn	18 02 34.9	+0.8
CUPV	Cepira	4.06	259	eP	Pn	18 02 36.8	+1.2
BBL	Barber's Block	4.62	3	eP	Pn	18 02 44.3	+1.0
DWS	Wesley	4.67	5	eP	Pn	18 02 45.4	+1.4
DWS	Wesley	4.67	5	eS	Sn	18 03 36.3	-0.7
MERV	Las Mercedes	4.76	250	eP	Pn	18 02 45.2	0.0
TBG	Guadaloupe-3	4.94	1	eP	Pn	18 02 48.8	+1.2
TBG	Guadaloupe-3	4.94	1	eS	Sn	18 03 41.5	-2.0
LUEV	Luepa	5.02	177	eP	Pn	18 02 46.8	-2.1
MGG	Marie-Galante	5.02	5	eP	Pn	18 02 51.0	+2.3
PHG	Guadaloupe-2	5.10	1	eP	Pn	18 02 51.5	+1.5
SSG	Sans Toucher	5.17	1	eP	Pn	18 02 52.2	+1.2
LZG	Guadaloupe-1	5.22	360	eP	Pn	18 02 53.1	+1.6
DEG	La Desirade	5.44	7	eP	Pn	18 02 55.6	+1.1
DEG	La Desirade	5.44	7	eS	Sn	18 03 54.4	-1.4
MLYT	Lee's Yard	5.82	356	eP	Pn	18 03 01.9	+2.2
MLYT	Lee's Yard	5.82	356	eS	Sn	18 04 02.8	-2.3

MAN 09 18:21:30.7±28N×123°.73E, h31km, mb4.5, ML3.4, MS3.3, 2D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTBH	Cotabato--PC H	0.52	97	⇓iP	Pn	18 21 42.4	+1.2
CTBH				iS	Sn	18 21 50.8	+1.8
PAGZ	Pagadian	0.66	328	eP	Pb	18 21 40.9	-2.3
PAGZ				eS	Sb	18 21 47.7	-4.4
DCPH	Dipolog City	1.34	344	⇓eP	Pb	18 21 53.9	-0.7
DCPH				eS	Sn	18 22 10.3	+0.8
BUKP	Musuan	1.45	66	eP	Pb	18 21 56.7	+0.4
BUKP				eS	Sb	18 22 13.5	-1.0
CGP	Cagayan de Oro	1.50	39	eP	Pn	18 21 54.3	-0.6
CGP				eS	Sn	18 22 14.2	+0.8

*SJA **09** 18:27:58.0±0.7, 28°.62S×70°.24W, h603km±11km, ML4.2, MW3.8*
*ISCJB **09** 18:28:30.4±1.8, 29°.21S±0°.04×71°.5W±0°.2, h35km, Error ellipse: s-maj=22.6km s-min=5.3km az=6.8*
*GUC **09** 18:28:30.8±0.3, 29°.26S×71°.30W, h61km±3km, ML3.5*

ISC 09 18:28:30.5±2.3, 29°.23S±0°.05×71°.5W±0°.2, h35km, n13, σ1°.21/15, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LSCH	La Serena	0.72	161	eP	Pn	18 28 44.4	+0.2
LSCH				eS	Sn	18 28 54.5	+0.5
LSCH				IAML		18 28 56.0	
	comp=E,4μm,0.3s						
VACH	Vallenar	0.93	46	eP	Pn	18 28 46.9	-0.2
VACH				eS	Sn	18 28 59.1	-0.2
TLL	Tololo Astrono	1.12	147	eP	Pn	18 28 49.9	0.0
TLL				eS	Sn	18 29 04.1	-0.2
TLL				IAML		18 29 05.2	
	comp=E,2μm,0.2s						
CPCH	Copiapo	2.13	29	eP	Pn	18 29 03.9	+0.4
CPCH				eS	Sn	18 29 29.0	+0.2
AGUA	GUANDACOL	2.66	96	iP	Pn	18 29 13.7	+2.8
VCA	Vinchina	2.94	81	iP	Pn	18 29 14.3	-0.6
VCA				iS	Sn	18 30 10.4	+21
VCA				IAML		18 30 11.9	
	comp=Z,98nm,0.5s						
AMOG	MOGNA	3.13	124	iP	Pn	18 29 18.9	+1.5
RTLS	Leoncito	3.20	144	iP	Pn	18 29 23.0	+4.5
RTLL	Cerro Villicun	3.37	129	iP	Pn	18 29 21.4	+0.8
AUSP	Uspallata	3.50	149	iP	Pn	18 29 25.1	+2.3
RTCV	Cerro Valdivia	3.67	136	iP	Pn	18 29 24.2	-0.7
ASAL	Salagasta	4.07	146	iP	Pn	18 29 28.4	-2.0
ARCO	CERRO ARCO	4.23	149	iP	Pn	18 29 30.6	-2.0

*IDC **09** 18:32:05.1±3.4, 12°.53N×125°.02E, h44km±33km, mb3.8/22, mb1 3.9/23, mb1mx3.8/45, mbtmp4.1/23, ML4.4/1, MS3.0/6, Ms1 3.0/6, ms1mx2.8/53, Error ellipse: s-maj=23.8km s-min=13.3km az=69.0*
*NEIC **09** 18:32:05.6±1.6, 12°.56N×125°.03E, h48km±15km, mb4.5/6, Error ellipse: s-maj=13.1km s-min=6.9km az=71.0*
*ISCJB **09** 18:32:06.3±0.8, 12°.59N±0°.05×125°.02E±0°.06, h69km±8km, mb4.0/24, Error ellipse: s-maj=10.7km s-min=6.1km az=147.4*
*MAN **09** 18:32:06, 12°.60N×124°.87E, h29km, mb5.0, ML3.9, MS4.0*

ISC 09 18:32:07.3±1.3, 12°.62N±0°.06×124°.98E±0°.07, h61km±13km, n55, σ1°.12/50, mb4.0/24, 4C-3D, Samar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BESP	Borongan	1.10	156	eP	Pn	18 32 26.1	-0.7
MMPH	Masbate	1.35	259	⇑iP	Pn	18 32 28.5	-1.5
MMPH				iS	Sn	18 32 48.6	+1.6
PLP	Palo	1.44	180	⇑eP	Pn	18 32 30.1	-1.2
PLP				eS	Sn	18 32 48.5	-0.8
OCLP	Ormoc	1.60	193	eP	Pn	18 32 33.0	-0.4
OCLP				eS	Sn	18 32 54.8	+1.8
RCP	Roxas	2.42	245	⇓eP	Pn	18 32 44.0	-0.6
RCP				eS	Sn	18 33 14.1	+0.9
LLP	Lapu-Lapu	2.49	204	⇓eP	Pn	18 32 44.0	-1.5
LLP				eS	Sn	18 33 14.5	-0.3
GQP	Guinayangan	2.78	298	⇑eP	Pn	18 32 48.6	-0.9
GQP				iS	Sn	18 33 25.4	+3.5
GUIM	Jordan	3.06	230	eP	Pn	18 32 52.3	-1.1
TGY	Tagaytay City	4.20	291	P	Pn	18 33 07.8	-1.2
	20nm,0.3s,baz=165,slow=11,SNR=10						
TGY				LR	LR	18 34 57.6	
	comp=Z,380nm,20.9s,baz=88,slow=40						
BUKP	Musuan	4.71	179	eP	Pn	18 33 18.5	+2.6
PAGZ	Pagadian	4.99	198	eP	Pn	18 33 20.5	+0.8
CTBH	Cotabato--PC H	5.41	188	⇑iP	Pn	18 33 27.8	+2.3
DAV	Davao City (W)	5.54	174	LR	LR	18 36 09.8	
	comp=Z,324nm,19.0s,baz=337,slow=45						
BCPH	Baguio City Da	5.67	312	⇓eP	Pn	18 33 32.9	+3.7
KSM	Kuching	18.27	234	eP	Pn	18 36 17.4	+0.6
	4.3nm,0.8s						
GUMO	Guam	19.40	85	LR	LR	18 42 42.9	
	comp=Z,32nm,20.8s,baz=270,slow=33						
JNU	Nakatsue	21.11	14	LR	LR	18 43 10.1	
	comp=Z,26nm,21.0s,baz=115,slow=31						
KSAR	Wonju Array Be	24.86	6	P	P	18 37 24.5	+0.3
KSRS	Korea Array	24.88	6	P	P	18 37 24.5	+0.2
	1.5nm,1.0s,baz=177,slow=9.8,SNR=6.6						
KSRS				LR	LR	18 46 16.7	
	comp=Z,28nm,21.0s,baz=192,slow=34						
CMAR	Chiang Mai Arr	25.73	286	P	P	18 37 31.0	-1.4
	0.6nm,0.7s,baz=96,slow=7.7,SNR=4.6						
MJAR	Matsushiro Arr	26.63	24	LR	LR	18 47 06.4	
	comp=Z,37nm,20.6s,baz=225,slow=34						
USRK	Ussuriysk Ar.	32.05	10	P	P	18 38 27.5	-0.7
	1.4nm,0.7s,baz=182,slow=5.9,SNR=5.7						
WRAB	Tennant Creek	33.63	164	P	P	18 38 41.3	-1.0
WRA	Warramunga Arr	33.64	164	P	P	18 38 40.2	-2.2
	0.8nm,0.5s,baz=346,slow=9.2,SNR=8.9						
LSA	Lhasa	35.66	304	eP	P	18 39 00.6	+0.3
	2.9nm,0.4s						
ASAR	Alice Springs	37.10	166	P	P	18 39 10.8	-1.3
	0.4nm,0.3s,baz=349,slow=8.1,SNR=39						
SONM	Songino Array	38.39	340	P	P	18 39 23.3	+0.4
	2.2nm,0.8s,baz=156,slow=9.2,SNR=12						
H11S3	WAKE ISLAND Hy	40.54	76	T	T	19 22 55.9	
	baz=268,slow=75,SNR=23						
H11S1	WAKE ISLAND Hy	40.55	76	T	T	19 22 45.2	
	baz=268,slow=75,SNR=14						
H11S2	WAKE ISLAND Hy	40.55	76	T	T	19 22 44.6	
	baz=268,slow=75,SNR=11						
H11N1	WAKE ISLAND Hy	40.79	74	T	T	19 23 05.5	
	baz=266,slow=75,SNR=71						
H11N2	WAKE ISLAND Hy	40.79	74	T	T	19 23 04.4	
	baz=266,slow=75,SNR=52						
H11N3	WAKE ISLAND Hy	40.81	74	T	T	19 23 06.7	
	baz=266,slow=75,SNR=63						
STKA	Stephens Creek	47.02	161	P	P	18 40 32.4	-0.4
	1.4nm,0.7s,baz=1.5,slow=10,SNR=3.0						
MKAR	Makanchi Array	49.41	322	P	P	18 40 51.8	+0.7
	3.3nm,0.7s,baz=120,slow=8.1,SNR=32						
YAK	Yakutsk	49.45	3	P	P	18 40 50.6	-0.5
	6.4nm,0.8s,baz=131,slow=0.4,SNR=5.2						
YAK	Yakutsk	49.45	3	eP	P	18 40 50.9	-0.2
	4.9nm,0.8s						
ZALV	Zalesovo Beam	51.97	331	P	P	18 41 10.4	+0.2
	3.0nm,0.8s,baz=124,slow=7.7,SNR=13						
KURK	Kurchatov	53.43	325	eP	P	18 41 21.4	+0.4
KURBB	Kurchatov Arra	53.44	325	P	P	18 41 21.7	+0.6
	11nm,0.7s,baz=126,slow=7.5,SNR=174						
KKAR	Karatay Array	55.72	314	eP	P	18 41 38.2	+0.4
	1.9nm,0.8s						
BVAR	Borovoye Array	59.03	325	P	P	18 42 01.5	+0.6
	3.7nm,0.8s,baz=124,slow=9.6,SNR=27						
TIXI	Tiksi	59.05	1	P	P	18 42 00.5	-0.2
	3.6nm,0.8s,baz=157,slow=5.6,SNR=17						
TIXI	Tiksi	59.05	1	eP	P	18 42 00.6	-0.1
	5.0nm,0.9s						
GEYT	Alibeck	64.14	306	P	P	18 42 36.2	+0.5
	1.2nm,0.7s,baz=197,slow=4.6,SNR=4.8						
ARU	Arti	66.58	326	P	P	18 42 51.0	-0.1
	4.5nm,0.5s,baz=116,slow=4.0,SNR=13						
ARU	Arti	66.58	326	eP	P	18 42 50.6	-0.4
	4.7nm,0.6s						
KBZ	Khabaz	75.70	312	P	P	18 43 47.0	+0.6
	3.2nm,0.9s,baz=94,slow=4.1,SNR=10						
BPAW	Bear Paw Mtn.	76.14	27	eP	P	18 43 49.3	+0.7
ILAR	Eielson Array	77.90	26	P	P	18 43 58.1	-0.3
	0.2nm,0.5s,baz=205,slow=4.0,SNR=3.0						
BRTR	Keskin Array B	83.08	309	P	P	18 44 26.5	-0.4
	0.3nm,0.4s,baz=77,slow=5.6,SNR=3.8						
FINES	FINESS Array B	83.24	331	P	P	18 44 27.1	0.0
	0.8nm,0.4s,baz=67,slow=4.9,SNR=20						
AKASG	Malin Array Be	83.96	320	P	P	18 44 31.1	+0.1
	0.5nm,0.4s,baz=67,slow=3.9,SNR=6.3						
NOA	NORSAR Array B	90.11	334	P	P	18 44 59.9	-0.7
	0.6nm,0.7s,baz=68,slow=4.5,SNR=3.3						
YKA	Yellowknife Ar	92.14	24	P	P	18 45 10.4	+0.5
	0.4nm,0.7s,baz=301,slow=4.3,SNR=5.6						

*ISK **09** 18:35:59.7, 38°.26N×26°.78E, h5km, MD2.5*
*ISCJB **09** 18:36:01.6±0.5, 38°.27N±0°.03×26°.79E±0°.03, h5km±7km, Error ellipse: s-maj=5.5km s-min=4.3km az=18.3*
*CSEM **09** 18:36:01.3±0.2, 38°.26N×26°.76E, h5km, MD2.6, Error ellipse: s-maj=6.2km s-min=3.7km az=20.0*
*DDA **09** 18:36:01.3, 38°.26N×26°.78E, h7km, Md2.6*

ISC 09 18:36:00.5±0.9, 38°.28N±0°.03×26°.74E±0°.02, h14km±7km, n16, σ0°.54/32, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URLA	Izmir	0.14	307	P	Pb	18 36 05.1	+0.1
URLA				S	Sb	18 36 08.1	+0.2
URLA	Izmir	0.14	307	iP	Pb	18 36 05.1	+0.1
URLA				iS	Sb	18 36 08.1	+0.2
ZEY	¨zmir	0.19	258	iP	Pb	18 36 05.9	+0.1
ZEY				iS	Sb	18 36 09.6	+0.3
DGB	¨zmir	0.25	153	iP	Pb	18 36 06.9	+0.1
DGB				iS	Sg	18 36 09.7	+0.1
BLCB	Balcova	0.26	66	ePG	Pg	18 36 05.8	-0.4
BLCB				eSG	Sg	18 36 09.9	-0.1
BLCB	Balcova	0.26	66	ePg	Pg	18 36 05.8	-0.4
BLCB				eSg	Sg	18 36 09.9	-0.1
CHOS	Chios island	0.55	282	ePG	Pg	18 36 11.7	+0.4
CHOS				eSG	Sn	18 36 21.5	-1.5
CHOS	Chios island	0.55	282	ePg	Pg	18 36 11.7	+0.4
CHOS				eSg	Sn	18 36 21.5	-1.5
DKL	Dikili	0.80	9	ePG	Pg	18 36 16.5	+0.4
DKL				eSG	Sn	18 36 29.2	0.0
DKL	Dikili	0.80	9	ePg	Pg	18 36 16.5	+0.4
DKL				eSg	Sn	18 36 29.2	0.0
AYDB	Zeytinkoy-Aydi	0.97	110	ePG	Pb	18 36 18.9	-0.2
AYDB				eSG	Sn	18 36 32.8	-0.6
AYDB	Zeytinkoy-Aydi	0.97	110	ePg	Pb	18 36 18.9	-0.2
AYDB				eSg	Sn	18 36 32.8	-0.6
AYDN	Tasoluk	1.09	124	P	Pg	18 36 22.3	+0.7
AYDN				S	Sg	18 36 35.8	-0.1
AYDN	Tasoluk	1.09	124	iP	Pg	18 36 22.3	+0.7
AYDN				iS	Sg	18 36 35.8	-0.1
MANT	Manisa	1.45	81	P	Pg	18 36 28.6	+0.2
MANT				S	Sb	18 36 46.4	+0.7
MANT	Manisa	1.45	81	iP

IDC ***09*** *18:54:42.1±0.4, 56°.69S×147°.36E, h0km, mb5.1/19, mb1 5.2/20, mb1mx5.1/28, mbtmp5.1/20, ML4.1/1, MS5.7/20, Ms1 5.7/20, ms1mx5.5/25 Error ellipse: s-maj=17.6km s-min=12.0km az=92.0*

ISCJB ***09*** *18:54:42.3±0.2, 56°.67S±0°.03×147°.39E±0°.06, h10km, mb5.5/94, MS5.7/145, Error ellipse: s-maj=5.1km s-min=4.4km az=164.5*

NEIC ***09*** *18:54:43.7±0.2, 56°.65S×147°.41E, h9km, mb5.7/63, MS5.7/92, MW5.8, MW5.9, Error ellipse: s-maj=5.8km s-min=5.2km az=139.0, Moment Tensor Solution. s15 Moment tensor: Scale 10^{17}Nm; M_{rr}0.95; $M_{\theta\theta}$1.58; $M_{\phi\phi}$-2.53; $M_{r\theta}$3.08; $M_{\theta\phi}$-6.31; $M_{\phi r}$-0.69; Best double couple: $M_0$7.40000×10^{17} NP1:ϕ_s79.00000°, δ80.00000°, λ156.00000°. NP2:ϕ_s173.00000°, δ66.00000°, λ11.00000°. Principal axes: T 7.4800, Plg24.0000°, Azm34.0000°; N -0.1600, Plg64.0000°, Azm237.0000°; P -7.3200, Plg9.0000°, Azm128.0000°; Depth from synthetics of broadband displacement seismograms.*

GCMT ***09*** *18:54:43.7±0.1, 56°.74S×147°.32E, h12km, MW5.9/130, Moment Tensor Solution. s125,c263; s130,c417; Duration: ≥2 Moment tensor: Scale 10^{18}Nm; M_{rr}-0.05±.01; $M_{\theta\theta}$0.44±.01; $M_{\phi\phi}$-0.38±.01; $M_{r\theta}$0.02±.02; $M_{\theta\phi}$-0.87±.01; $M_{\phi r}$-0.09±.02; Best double couple: $M_0$0.97000×10^{18} NP1:ϕ_s347.00000°, δ89.00000°, λ-5.00000°. NP2:ϕ_s77.00000°, δ85.00000°, λ-179.00000°. Principal axes: T 0.9960, Plg3.0000°, Azm33.0000°; N -0.0530, Plg85.0000°, Azm160.0000°; P -0.9430, Plg4.0000°, Azm302.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*

MOS ***09*** *18:54:45.1±1.6, 56°.61S×148°.12E, h10km, mb5.7/27, MS5.7/26 Error ellipse: s-maj=27.7km s-min=8.3km az=91.0*

ISC 09 18:54:43.8±1.0, 56°.65S±0°.05×147°.71E±0°.06, h9km±5km, n583, σ1§90/552, mb5.6/104, MS5.7/146, 43C-13D, West of Macquarie Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MCQ	**Macquarie Isla**	**6.73**	**76**	P	**Pn**	**18 56 20.6**	**-2.1**
baz=6.7,SNR=12							
MCQ	**Macquarie Isla**	**6.73**	**76**	*e*P	**Pn**	**18 56 20.0**	**-2.7**
MCQ	**Macquarie Isla**	**6.73**	**76**	*e*Pn	**Pn**	**18 56 20.0**	**-2.7**
TAU	**Tasmania Unive**	**13.76**	**359**	*e*P	**Pn**	**18 58 00.2**	**+1.3**
TAU	**Tasmania Unive**	**13.76**	**359**	*e*Pn	**Pn**	**18 58 00.2**	**+1.3**
MOO	**Moorlands**	**14.23**	**358**	P	**Pn**	**18 58 07.1**	**+1.8**
baz=14,SNR=17							
PYZ	**Puysegur Point**	**15.76**	**56**	*e*P	**P**	**18 58 33.0**	**+3.2**
DCZ	**Deep Cove**	**16.51**	**56**	*e*Pn	**P**	**18 58 37.6**	**-0.4**
162nm,1.4s							
WHZ	**Wether Hill Ro**	**16.55**	**58**	*e*Pn	**P**	**18 58 38.2**	**-0.3**
533nm,1.6s							
WHZ	**Wether Hill Ro**	**16.55**	**58**	PN	**P**	**18 58 39.8**	**+1.2**
SYZ	**Scrubby Hill**	**16.65**	**62**	PN	**P**	**18 58 40.6**	**+1.0**
MLZ	**Mavora Lakes**	**17.03**	**57**	*e*Pn	**Pn**	**18 58 42.0**	**0.0**
321nm,1.6s							
MLZ	**Mavora Lakes**	**17.03**	**57**	PN	**P**	**18 58 44.9**	**+1.1**
TUZ	**Tuapeka**	**17.31**	**61**	PN	**P**	**18 58 48.0**	**+1.2**
WKZ	**Wanaka**	**17.85**	**58**	*e*Pn	**P**	**18 58 54.8**	**+1.8**
1μm,1.4s							
WKZ	**Wanaka**	**17.85**	**58**	P*	**P**	**18 58 54.9**	**+2.0**
ODZ	**Otahua Downs**	**18.46**	**61**	*e*Pn	**Pn**	**18 59 01.0**	**+1.3**
264nm,1.9s							
LBZ	**Lake Benmore**	**18.73**	**59**	*e*P	**Pn**	**18 59 04.1**	**+1.1**
378nm,1.7s							
LBZ	**Lake Benmore**	**18.73**	**59**	P*	**Pn**	**18 59 04.8**	**+1.8**
TOO	**Toolangi**	**19.15**	**355**	P	**Pn**	**18 59 07.9**	**-0.2**
baz=19,SNR=70							
FOZ	**Fox Glacier**	**19.21**	**56**	*e*Pn	**Pn**	**18 59 10.7**	**+1.9**
RPZ	**Rata Peaks**	**19.65**	**59**	P	**Pn**	**18 59 14.9**	**+0.9**
0.6nm,0.3s,baz=354,slow=23,SNR=11							
RPZ				LR	LR	19 05 13.8	
comp=Z,46μm,20.7s,baz=222,slow=32							
RPZ	**Rata Peaks**	**19.65**	**59**	P	**Pn**	**18 59 14.9**	**+0.9**
306nm,1.6s							
CASY	**Casey**	**19.88**	**226**	*e*P	**P**	**18 59 13.3**	**-1.6**
595nm,1.7s							
WVZ	**Waitaha Valley**	**19.99**	**57**	P*	Pn	18 59 18.7	+0.7
ARPS	**Mount Arapiles**	**20.28**	**346**	P	**P**	**18 59 19.9**	**+0.4**
baz=20,SNR=88							
OXZ	**Oxford**	**20.41**	**60**	PFAKE		18 59 30.0	+7.0
OXZ				LR	LR		
comp=Z,31μm,22.0s							
OXZ	**Oxford**	**20.41**	**60**	P*	Pn	18 59 23.3	+0.3
MQZ	**McQueen's Vall**	**20.42**	**61**	*e*Pn	Pn	18 59 23.6	+0.5
MQZ				LR	LR		
comp=Z,23μm,19.0s							
INZ	**Inchbonnie**	**20.59**	**57**	P*	Pn	18 59 24.7	-0.4
LTZ	**Lake Taylor**	**20.93**	**59**	*e*P	**P**	**18 59 27.8**	**+1.2**
comp=Z,346nm,1.8s							
LTZ				LR	LR		
comp=Z,66μm,20.0s							
CAN	**Canberra**	**21.35**	**3**	*e*P	**P**	**18 59 31.7**	**+0.5**
CAN				pmax	pmax		
comp=Z,384nm,1.3s							
CAN				MLR	MLR		
comp=Z,30μm,20.0s							
CAN	**Canberra**	**21.35**	**3**	*e*P	**P**	**18 59 31.7**	**+0.5**
comp=Z,384nm,1.3s							
CAN				LR	LR		
comp=Z,30μm,20.0s							
CNB	**Canberra Magne**	**21.37**	**4**	P	**P**	**18 59 32.8**	**+1.4**
baz=22,SNR=21							
VNDA	**Vanda**	**21.54**	**172**	P	**P**	**18 59 31.8**	**-1.0**
comp=Z,24nm,0.9s,baz=337,slow=9.9,SNR=42							
VNDA				LR	LR	19 06 15.2	
comp=Z,10μm,18.9s,baz=344,slow=32							
VNDA	**Vanda**	**21.54**	**172**	*e*P	**P**	**18 59 31.1**	**-1.7**
VNDA				pmax	pmax		
comp=Z,2μm,1.8s							
VNDA	**Vanda**	**21.54**	**172**	*e*P	**P**	**18 59 31.1**	**-1.7**
comp=Z,2μm,1.8s							
KHZ	**Kahutara**	**21.82**	**60**	*e*P	**P**	**18 59 38.3**	**+2.2**
comp=Z,133nm,1.3s							
KHZ				LR	LR		
comp=Z,52μm,19.0s							
THZ	**Tophouse**	**22.02**	**58**	*e*P	**P**	**18 59 40.6**	**+2.3**
comp=Z,515nm,1.9s							
THZ				LR	LR		
comp=Z,48μm,22.0s							
THZ	**Tophouse**	**22.02**	**58**	P*	**P**	**18 59 41.6**	**+3.3**
SBA	**Scott Base**	**22.28**	**169**	*e*P	**P**	**18 59 40.3**	**-0.5**
SBA				pmax	pmax		
comp=Z,1μm,1.8s							
SBA				MLR	MLR		
comp=Z,9μm,21.0s							
SBA	**Scott Base**	**22.28**	**169**	*e*P	**P**	**18 59 40.3**	**-0.5**
comp=Z,1μm,1.8s							
SBA				LR	LR		
comp=Z,9μm,21.0s							
YNG	**Young**	**22.36**	**1**	P	**P**	**18 59 42.3**	**+0.3**
baz=23,SNR=64							
QRZ	**Quartz Range**	**22.58**	**56**	P*	**P**	**18 59 44.7**	**+0.4**
SNZO	**South Karori**	**23.22**	**60**	*e*P	**P**	**18 59 50.6**	**-0.3**
comp=Z,410nm,1.7s							
SNZO				LR	LR		
comp=Z,32μm,19.0s							
MGCD	**Mangrove Creek**	**23.56**	**7**	P	**P**	**18 59 55.5**	**+1.1**
baz=24,SNR=7.4							
HTT	**Hallett**	**24.00**	**342**	P	**P**	**18 59 59.1**	**+0.4**
baz=24,SNR=28							
MRZ	**Mangatainoka R**	**24.14**	**60**	P*	**P**	**19 00 01.0**	**+1.0**
BFZ	**Birch Farm**	**24.45**	**61**	*e*P	**P**	**19 00 03.3**	**+0.6**
comp=Z,627nm,2.0s							
BFZ				LR	LR		
comp=Z,56μm,19.0s							
BFZ	**Birch Farm**	**24.45**	**61**	P*	**P**	**19 00 03.9**	**+1.1**
STKA	**Stephens Creek**	**25.13**	**348**	P	**P**	**19 00 08.5**	**-0.5**
comp=Z,73nm,0.8s,baz=162,slow=10.0,SNR=73							
STKA				LR	LR	19 07 32.4	
comp=Z,11μm,18.5s,baz=175,slow=31							
STKA	**Stephens Creek**	**25.13**	**348**	P	**P**	**19 00 09.3**	**+0.4**
baz=25,SNR=65							
STKA	**Stephens Creek**	**25.13**	**348**	*e*P	**P**	**19 00 09.5**	**+0.6**
STKA	**Stephens Creek**	**25.13**	**348**	*e*P	**P**	**19 00 09.6**	**+0.6**
comp=Z,39nm,1.0s							
CMSA	**Cobar Meteorol**	**25.15**	**356**	P	**P**	**19 00 09.5**	**+0.4**
baz=25,SNR=67							
BBOO	**Buckleboo**	**25.16**	**336**	P	**P**	**19 00 08.8**	**-0.5**
baz=25,SNR=41							
BBOO	**Buckleboo**	**25.16**	**336**	*e*P	**P**	**19 00 08.7**	**-0.5**
comp=Z,115nm,1.1s							
BBOO				LR	LR		
comp=Z,14μm,18.0s							
BKZ	**Black Stump Fm**	**25.75**	**59**	*e*P	**P**	**19 00 15.1**	**+0.5**
comp=Z,461nm,1.9s							
BKZ				LR	LR		
comp=Z,21μm,20.0s							
LHI	**Lord Howe Isla**	**26.34**	**22**	PFAKE		19 00 30.0	+10
LHI				LR	LR		
comp=Z,23μm,20.0s							
ARMA	**Armidale**	**26.37**	**8**	P	**P**	**19 00 21.2**	**+1.0**
baz=27,SNR=8.5							
ARMA	**Armidale**	**26.37**	**8**	*e*P	**P**	**19 00 20.6**	**+0.4**
comp=Z,104nm,1.3s							
ARMA				LR	LR		
comp=Z,28μm,19.0s							
URZ	**Urewera**	**26.76**	**59**	P	**P**	**19 00 23.8**	**+0.2**
comp=Z,38nm,0.9s,baz=251,slow=6.6,SNR=17							
URZ				LR	LR	19 10 43.3	
comp=Z,12μm,18.1s,baz=210,slow=36							
URZ	**Urewera**	**26.76**	**59**	*e*P	**P**	**19 00 23.2**	**-0.4**
comp=Z,369nm,1.8s							
MIR	**Mirnyy**	**26.91**	**226**	⇓*i*P	**P**	**19 00 29.0**	**+4.3**
MIR				pmax	pmax		
comp=Z,16nm,1.5s							
MIR				MLR	MLR		
comp=Z,8μm,14.0s							
OUZ	**Omahuta**	**27.69**	**50**	*e*P	**P**	**19 00 27.4**	**-4.6**
comp=Z,246nm,2.0s							
QLP	**Quilpie**	**30.15**	**354**	P	**P**	**19 00 54.6**	**+0.7**
baz=30,SNR=39							
RMQ	**Roma**	**30.15**	**2**	P	**P**	**19 00 54.7**	**+0.8**
baz=30,SNR=33							
KMBL	**Kambalda**	**31.01**	**314**	P	**P**	**19 01 00.7**	**-0.8**
baz=31,SNR=8.7							
EIDS	**Eidsvold**	**31.35**	**6**	P	**P**	**19 01 05.3**	**+0.8**
baz=32,SNR=6.1							
EIDS	**Eidsvold**	**31.35**	**6**	*e*P	**P**	**19 01 04.5**	**0.0**
comp=Z,417nm,1.8s							
H01W1	**Cape Leeuwin H**	**31.45**	**299**	T	T	19 34 17.6	
baz=144,slow=75,SNR=1511							
H01W2	**Cape Leeuwin H**	**31.46**	**299**	T	T	19 34 18.0	
baz=144,slow=75,SNR=1335							
H01W3	**Cape Leeuwin H**	**31.47**	**299**	T	T	19 34 18.8	
baz=144,slow=75,SNR=1394							
NWAO	**Narrogin (SRO)**	**31.64**	**306**	LR	LR	19 10 52.5	
comp=Z,29μm,21.2s,baz=8.0,slow=31							
KLBR	**Kellerberrin**	**32.55**	**308**	P	**P**	**19 01 13.8**	**-1.3**
baz=33,SNR=12							
BLDU	**Ballidu**	**33.84**	**307**	P	**P**	**19 01 24.6**	**-1.8**
baz=34,SNR=5.5							
AS01	**Alice Springs**	**34.45**	**337**	*e*P	**P**	**19 01 29.7**	**-2.0**
ASAR	**Alice Springs**	**34.46**	**337**	P	**P**	**19 01 31.0**	**-0.8**
comp=Z,18nm,0.7s,baz=161,slow=8.7,SNR=337							
ASAR				PcP	**PcP**	**19 04 05.0**	**-1.9**
comp=Z,8.6nm,0.9s,baz=170,slow=3.3,SNR=6.5							
ASAR				LR	LR	19 13 17.6	
comp=Z,8μm,21.6s,baz=164,slow=32							
AS31	**Alice Springs**	**34.46**	**337**	*e*P	**P**	**19 01 30.8**	**-1.0**
comp=Z,8.8nm,0.6s							
WRKA	**Warakurna**	**34.58**	**328**	P	**P**	**19 01 31.9**	**-0.9**
baz=35,SNR=129							
MORW	**Morawa**	**35.47**	**308**	P	**P**	**19 01 39.5**	**-0.9**
baz=36,SNR=5.4							
RAO	**Raoul Island**	**36.52**	**56**	LR	LR	19 14 52.5	
comp=Z,8μm,20.1s,baz=200,slow=33							
CTA	**Charters Tower**	**36.53**	**358**	P	**P**	**19 01 49.9**	**+0.4**
comp=Z,36nm,0.8s,baz=182,slow=9.6,SNR=39							
CTA				LR	LR	19 15 36.2	
comp=Z,30μm,18.3s,baz=180,slow=34							
CTAO	**Charters Tower**	**36.53**	**358**	*e*P	**P**	**19 01 49.1**	**-0.4**
CTAO				MLR	MLR		
comp=Z,47μm,19.0s							
CTAO	**Charters Tower**	**36.53**	**358**	*e*P	**P**	**19 01 49.1**	**-0.4**
comp=Z,1μm,1.5s							
CTAO				LR	LR		
comp=Z,47μm,19.0s							
QIS	**Mount Isa**	**36.54**	**347**	P	**P**	**19 01 49.1**	**-0.6**
baz=37,SNR=13							
DZM	**Mont Dzumac**	**37.19**	**30**	P	**P**	**19 01 56.8**	**+1.5**
comp=Z,37nm,0.8s,baz=274,slow=21,SNR=21							
DZM				LR	LR	19 14 19.9	
comp=Z,23μm,19.6s,baz=188,slow=32							
MAW	**Mawson**	**37.90**	**218**	P	**P**	**19 02 00.1**	**-0.6**
comp=Z,18nm,1.0s,baz=112,slow=12,SNR=9.1							
MAW				LR	LR	19 17 04.8	
comp=Z,18μm,18.9s,baz=84,slow=36							
MAW	**Mawson**	**37.90**	**218**	*e*P	**P**	**19 02 01.1**	**+0.4**
MAW				pmax	pmax		
comp=Z,18nm,1.4s							
MAW	**Mawson**	**37.90**	**218**	*e*P	**P**	**19 02 01.1**	**+0.4**
comp=Z,18nm,1.4s							
WB2	**Warramunga Arr**	**37.98**	**339**	*e*P	**P**	**19 02 00.5**	**-1.4**
comp=Z,483nm,1.9s							
WRA	**Warramunga Arr**	**37.99**	**339**	P	**P**	**19 02 00.4**	**-1.5**
comp=Z,29nm,0.6s,baz=166,slow=7.7,SNR=372							
WRA				PcP	**PcP**	**19 04 16.4**	**-1.1**
comp=Z,12nm,1.0s,baz=175,slow=2.8,SNR=5.2							
WRA				LR	LR	19 15 55.7	
comp=Z,4μm,21.8s,baz=165,slow=34							
WRAB	**Tennant Creek**	**37.99**	**339**	*c i*P	**P**	**19 01 59.7**	**-2.3**
WRAB				pmax	pmax		
comp=Z,75nm,1.0s							
WRAB	**Tennant Creek**	**37.99**	**339**	*e*P	**P**	**19 02 00.6**	**-1.4**
comp=Z,432nm,1.9s							
MTSU	**Mount Surprise**	**38.54**	**355**	P	**P**	**19 02 07.0**	**+0.4**
baz=39,SNR=41							
GIRL	**Giralia**	**41.87**	**310**	P	**P**	**19 02 34.6**	**+0.5**
baz=42,SNR=3.0							
FITZ	**Fitzroy Crossi**	**41.91**	**328**	P	**P**	**19 02 33.7**	**-0.7**
comp=Z,17nm,0.7s,baz=180,slow=8.5,SNR=27							
FITZ				PcP	**PcP**	**19 04 28.5**	**-1.5**
comp=Z,9.1nm,0.7s,baz=200,slow=5.2,SNR=3.2							
FITZ				LR	LR	19 18 32.1	
comp=Z,8μm,20.1s,baz=168,slow=34							
FITZ	**Fitzroy Crossi**	**41.91**	**328**	P	**P**	**19 02 33.8**	**-0.7**
baz=42,SNR=24							
FITZ	**Fitzroy Crossi**	**41.91**	**328**	*e*P	**P**	**19 02 33.6**	**-0.9**
comp=Z,72nm,1.1s							
FITZ				PcP	**PcP**	**19 04 28.5**	**-1.5**
COEN	**Coen**	**42.75**	**354**	P	**P**	**19 02 41.3**	**0.0**
baz=43,SNR=26							
COEN	**Coen**	**42.75**	**354**	*e*P	**P**	**19 02 41.0**	**-0.3**
comp=Z,151nm,1.5s							
MSVF	**Nonsavu**	**45.03**	**43**	PFAKE		19 03 10.0	+10
MSVF				LR	LR		
comp=Z,12μm,21.0s							
KDU	**Kakadu**	**45.42**	**339**	P	**P**	**19 03 01.9**	**-0.9**
baz=46,SNR=4.2							
MTN	**Manton Dam**	**45.54**	**337**	P	**P**	**19 03 02.8**	**-0.9**
baz=46,SNR=7.1							
MTN	**Manton Dam**	**45.54**	**337**	*e*P	**P**	**19 03 02.5**	**-1.2**
comp=Z,316nm,1.9s							
PMG	**Port Moresby**	**47.13**	**359**	P	**P**	**19 03 16.7**	**+0.5**
comp=Z,27nm,0.8s,baz=145,slow=3.8,SNR=24							
PMG				LR	LR	19 21 52.5	
comp=Z,19μm,18.0s,baz=188,slow=35							
PMG	**Port Moresby**	**47.13**	**359**	*c i*P	**P**	**19 03 15.3**	**-0.9**
PMG				pmax	pmax		
comp=Z,462nm,1.5s							
PMG	**Port Moresby**	**47.13**	**359**	*e*P	**P**	**19 03 16.4**	**+0.1**
comp=Z,140nm,1.4s							
HNR	**Honiara**	**48.07**	**16**	P	**P**	**19 03 24.0**	**+0.6**
comp=Z,65nm,0.5s,baz=268,slow=3.2,SNR=6.3							
HNR				LR	LR	19 20 24.5	
comp=Z,4μm,19.4s,baz=171,slow=32							
HNR	**Honiara**	**48.07**	**16**	*e*P	**P**	**19 03 23.0**	**-0.5**
HNR	**Honiara**	**48.07**	**16**	*e*P	**P**	**19 03 23.3**	**-0.2**
HNR				pmax	pmax		
comp=Z,132nm,0.8s							
HNR	**Honiara**	**48.07**	**16**	*e*P	**P**	**19 03 23.3**	**-0.2**
comp=Z,132nm,0.8s							
NVL	**N'lazarevskaya**	**49.07**	**198**	*e*P	**P**	**19 03 30.7**	**+0.1**
NVL				*e*		19 05 26.2	
NVL				*e*S	**S**	**19 10 36.7**	**+1.8**
NVL				MLR	MLR		
comp=Z,51μm,22.0s							
SOEI	**Soe**	**50.22**	**329**	P	**P**	**19 03 40.5**	**+0.3**
comp=Z,113nm,1.6s,comp=Z,4μm							
SOEI	**Soe**	**50.22**	**329**	*e*P	**P**	**19 03 40.2**	**+0.1**
comp=Z,148nm,1.2s							
SNAA	**Sanae**	**50.31**	**192**	P	**P**	**19 03 39.3**	**-0.9**
SNAA	**Sanae**	**50.31**	**192**	*e*P	**P**	**19 03 37.3**	**-2.8**
SNAA	**Sanae**	**50.31**	**192**	*e*P	**P**	**19 03 38.8**	**-1.4**
comp=Z,14μm,1.6s							
VNA3	**Neumayer Olymp**	**51.40**	**189**	P	**P**	**19 03 47.0**	**-1.3**
VNA2	**Neumayer--Watz**	**51.49**	**190**	P	**P**	**19 03 47.5**	**-1.5**
baz=137,slow=5.8							
VNA1	**Neumayer--Stat**	**51.84**	**190**	P	**P**	**19 03 52.0**	**+0.5**
MMRI	**Maumere**	**51.88**	**327**	P	**P**	**19 03 52.2**	**-0.2**
comp=Z,163nm,1.1s,comp=Z,4μm							
MMRI	**Maumere**	**51.88**	**327**	*e*P	**P**	**19 03 51.7**	**-0.7**
comp=Z,131nm,0.9s							
EDFI	**Ende, Flores**	**51.93**	**327**	P	**P**	**19 03 52.2**	**-0.8**
comp=Z,53nm,1.7s,comp=Z,2μm							
AFI	**Afiamalu**	**52.64**	**53**	PFAKE		19 04 10.0	+12
AFI				LR	LR		
comp=Z,4μm,20.0s							
TWSI	**Taliwang, Sumb**	**53.51**	**321**	P	**P**	**19 04 04.6**	**+0.1**
comp=Z,60nm,1.5s,comp=Z,2μm							
BNDI	**Bandanaira**	**53.88**	**338**	P	P	19 04 17.3	+10
SRBI	**Singaraja**	**54.71**	**319**	P	**P**	**19 04 13.5**	**+0.2**
comp=Z,79nm,1.5s,comp=Z,3μm							
JAGI	**Jajag, Banyuwa**	**54.74**	**318**	P	**P**	**19 04 12.7**	**-0.8**
comp=Z,75nm,1.2s,comp=Z,2μm							
JAGI	**Jajag, Banyuwa**	**54.74**	**318**	*e*P	**P**	**19 04 13.8**	**+0.3**
comp=Z,70nm,1.1s							
BSSI	**Bau Bau, Buton**	**54.76**	**326**	P	**P**	**19 04 13.0**	**-0.7**
comp=Z,85nm,1.8s,comp=Z,2μm							
FAKI	**Fak Fak**	**54.98**	**341**	P	**P**	**19 04 15.5**	**+0.2**
comp=Z,100nm,1.8s,comp=Z,3μm							
FAKI	**Fak Fak**	**54.98**	**341**	*e*P	**P**	**19 04 15.0**	**-0.2**
comp=Z,326nm,1.8s							
GMJI	**Gumukmas**	**55.19**	**317**	P	**P**	**19 04 17.2**	**+0.5**
comp=Z,85nm,1.5s,comp=Z,3μm							
ABJI	**Asem Bagus**	**55.33**	**318**	P	P	19 04 23.4	+5.6
KAPI	**Kappang**	**56.06**	**326**	P	**P**	**19 04 22.6**	**-0.4**
comp=Z,61nm,1.2s,baz=168,slow=4.5,SNR=31							
KAPI	**Kappang**	**56.06**	**326**	*e*P	**P**	**19 04 22.4**	**-0.6**
comp=Z,82nm,1.1s							
KAPI				LR	LR		
comp=Z,7μm,19.0s							
PCJI	**Pacitan**	**56.13**	**315**	P	P	19 04 31.5	+8.0
NGJI	**Ngawi**	**56.77**	**315**	P	**P**	**19 04 32.2**	**+4.1**
SPSI	**Sidrap Palu**	**57.04**	**326**	P	**P**	**19 04 29.9**	**-0.1**
comp=Z,100nm,1.4s,comp=Z,3μm							
SANI	**Sanana**	**57.16**	**334**	P	**P**	**19 04 31.2**	**+0.4**
comp=Z,44nm,1.3s,comp=Z,2μm							
TTSI	**Tana Toraja**	**57.90**	**327**	P	**P**	**19 04 36.0**	**0.0**
comp=Z,76nm,0.9s,comp=Z,1μm							
CISI	**Cisompet, Garu**	**58.06**	**311**	*e*P	**P**	**19 04 34.7**	**-2.5**
comp=Z,137nm,1.3s							
LBMI	**Labuha**	**58.16**	**336**	P	**P**	**19 04 40.4**	**+2.5**
comp=Z,159nm,1.4s,comp=Z,3μm							
CNJI	**Cibinong**	**58.57**	**311**	P	P	19 04 46.8	+6.1
LEM	**Lembang**	**58.80**	**312**	P	P	19 04 49.1	+6.6
comp=Z,55nm,0.8s,baz=164,slow=6.5,SNR=18							
LEM				LR	LR	19 27 49.5	
comp=Z,9μm,19.8s,baz=130,slow=34							
LEM	**Lembang**	**58.80**	**312**	P	P	19 04 49.2	+6.6
COCO	**West Island**	**58.96**	**298**	PFAKE		19 04 50.0	+6.6
COCO				LR	LR		
comp=Z,6μm,19.0s							
BBKI	**Banjar Baru**	**59.13**	**321**	P	**P**	**19 04 44.4**	**-0.3**
comp=Z,275nm,0.8s,comp=Z,5μm							
CGJI	**Cibinong**	**59.80**	**310**	P	P	19 04 55.3	+6.0
PPT2	**Papeete2**	**60.53**	**77**	*e*S	**S**	**19 13 12.5**	**+2.3**
comp=Z,4μm,26.2s							
PPT2				*e*LQ	LQ	19 20 15.7	
comp=Z,13μm,27.0s							
PPT2				*e*LR	LR	19 22 48.8	
comp=Z,5μm,23.2s,baz=222							
PPT	**Papeete**	**60.55**	**77**	LR	LR	19 24 58.9	
comp=Z,3μm,21.8s,baz=214,slow=30							
MRSI	**Marisa**	**60.63**	**330**	P	**P**	**19 04 54.6**	**-0.3**
comp=Z,118nm,2.3s,comp=Z,2μm							
KASI	**Kota Agung**	**61.29**	**309**	P	**P**	**19 05 02.0**	**+2.6**
comp=Z,94nm,1.2s,comp=Z,3μm							
TARA	**Tarawa**	**61.32**	**29**	*e*P	**P**	**19 04 55.0**	**-4.5**
comp=Z,414nm,1.6s							
KLI	**Kotabumi**	**61.73**	**310**	P	P	19 05 07.6	+5.2
LWLI	**Liwa**	**61.93**	**309**	P	P	19 05 09.6	+5.7
LHSI	**Lahat**	**63.23**	**309**	P	P	19 05 18.0	+5.6
RKT	**Rikitea**	**64.08**	**93**	*e*S	**S**	**19 13 57.7**	**+3.1**
comp=Z,3μm,33.0s							
RKT				*e*LQ	LQ	19 21 33.6	
comp=Z,10μm,30.2s							
RKT				*e*LR	LR	19 24 11.4	
comp=Z,7μm,30.2s,baz=215							
RKT	**Rikitea**	**64.08**	**93**	*e*T	T	20 14 50.4	
comp=Z,121nm,0.2s							
MASI	**Maura Aman, Be**	**64.40**	**308**	P	**P**	**19 05 24.9**	**+4.7**
KSM	**Kuching**	**65.33**	**318**	*e*P	**P**	**19 05 25.6**	**-0.6**
comp=Z,71nm,1.1s							
KSM				LR	LR		
comp=Z,4μm,20.0s							
SBUM	**Sibu**	**65.55**	**320**	*e*P	**P**	**19 05 27.2**	**-0.4**
comp=Z,38nm,1.1s							
MATI	**Mati**	**65.78**	**337**	*e*P	**P**	**19 05 28.8**	**-0.2**
DAV	**Davao City (W)**	**66.06**	**336**	PFAKE		19 05 40.0	+9.2
DAV				LR	LR		
comp=Z,4μm,20.0s							
MYLDM	**Lahad Datu**	**66.09**	**328**	⇓P	**P**	**19 05 31.4**	**+0.3**
MYLDM	**Lahad Datu**	**66.09**	**328**	*e*P	**P**	**19 05 32.2**	**+1.2**
comp=Z,70nm,1.2s							
CTBH	**Cotabato--PC H**	**66.51**	**334**	⇓*i*P	**P**	**19 05 33.2**	**-0.6**
BUKP	**Musuan**	**66.96**	**336**	*e*P	**P**	**19 05 35.9**	**-0.7**
TPRI	**Tanjung Pinang**	**67.08**	**312**	P	**P**	**19 05 40.2**	**+2.8**
comp=Z,

CHBT	**CHBT**	**78.72 315**	P	**P**	**19 06 48.3**	**+2.0**
	comp=Z,117nm,1.2s,comp=Z,2μm					
JOHN	**Johnston Islan**	**81.37 41**	PFAKE		19 07 10.0	+9.4
JOHN			LR	LR		
	comp=Z,348nm,20.0s					
QIZ	**Qiongzhong**	**81.82 324**	P	**P**	**19 07 05.2**	**+2.2**
QIZ			S	**S**	**19 17 21.5**	**+5.3**
QIZ			pmax	pmax		
	comp=Z,22nm,1.6s					
QIZ			LR	LR		
	comp=Z,1μm,18.6s					
QIZ			LR	LR		
	comp=Z,1μm,19.2s					
BOSA	**Boshof**	**82.15 228**	P	**P**	**19 07 03.1**	**-1.9**
	comp=Z,6.7nm,0.6s,baz=151,slow=5.5,SNR=18					
BOSA			LR	LR	19 38 34.9	
	comp=Z,3μm,19.1s,baz=152,slow=32					
BOSA	**Boshof**	**82.15 228**	*e*P	**P**	**19 07 05.9**	**+0.9**
BOSA			pmax	pmax		
	comp=Z,206nm,1.8s					
BOSA	**Boshof**	**82.15 228**	*e*P	**P**	**19 07 05.9**	**+0.9**
	comp=Z,206nm,1.8s					
TRQA	**Tornquist**	**82.36 157**	*e*P	**P**	**19 07 05.6**	**-0.2**
	comp=Z,120nm,1.6s					
TPUB	**Ta-pu**	**82.86 335**	*e*P	**P**	**19 07 06.7**	**-1.7**
	comp=Z,67nm,1.4s					
SSLB	**Suanglung**	**83.26 335**	*e*P	**P**	**19 07 08.3**	**-2.0**
	comp=Z,38nm,1.4s					
GZH	**Guangzhou**	**84.56 329**	P	**P**	**19 07 20.2**	**+3.2**
GZH			PP	**PP**	**19 10 34.8**	**+1.9**
GZH			S	**S**	**19 17 48.0**	**+4.2**
GZH			pmax	pmax		
	comp=Z,1μm,6.7s					
QZH	**Quanzhou**	**84.93 334**⇑	*i*P	P	19 07 13.2	-5.6
QZH			PP	**PP**	**19 10 30.1**	**-5.8**
QZH	**Quanzhou**	**84.93 334**	S	**S**	**19 17 42.3**	**-5.0**
QZH			pmax	pmax		
	comp=Z,2μm,5.7s					
QZH			LR	LR		
	comp=N,2μm,17.9s					
QZH			LR	LR		
	comp=E,810nm,9.4s					
QZH			LR	LR		
	comp=Z,3μm,21.4s					
LBTB	**Lobatse**	**85.17 230**	*e*P	**P**	**19 07 24.2**	**+3.7**
LBTB			pmax	pmax		
	comp=Z,201nm,2.0s					
LBTB	**Lobatse**	**85.17 230**	*e*P	**P**	**19 07 24.2**	**+3.7**
	comp=Z,200nm,2.0s					
CM01	**Chiang Mai Arr**	**85.19 314**	*e*P	**P**	**19 07 18.9**	**-1.4**
CM31	**Chiang Mai Arr**	**85.23 314**	*e*P	**P**	**19 07 20.4**	**-0.1**
CMAR	**Chiang Mai Arr**	**85.23 314**	P	**P**	**19 07 19.9**	**-0.5**
	comp=Z,13nm,1.1s,baz=183,slow=4.7,SNR=24					
CMAR	**Chiang Mai Arr**	**85.23 314**	P	**P**	**19 07 20.0**	**-0.5**
CHTO	**Chiang Mai**	**85.55 314**	*e*P	**P**	**19 07 21.5**	**-0.6**
CHTO			pmax	pmax		
	comp=Z,34nm,1.0s					
CHTO			MLR	MLR		
	comp=Z,3μm,20.0s					
CHTO	**Chiang Mai**	**85.55 314**	*e*P	**P**	**19 07 21.5**	**-0.6**
	comp=Z,34nm,1.0s					
CHTO			LR	LR		
	comp=Z,3μm,20.0s					
LCO	**Las Campanas**	**88.67 147**	*e*P	**P**	**19 07 39.1**	**+1.4**
	comp=Z,142nm,1.8s					
SKHT	**Srikalahasti**	**89.75 296**	*e*P	**P**	**19 07 42.2**	**-0.2**
SKHT			IAmb	IAmb	19 07 46.4	
	comp=Z,12nm,0.9s					
SKHT			*e*SKSac	**SKSac**	**19 18 13.4**	**+0.4**
SKHT			IVMs_BB	IVMs_BB	19 40 33.5	
	comp=Z,1μm,20.9s					
GYA	**Guiyang**	**89.77 324**⇑	*i*P	**P**	**19 07 45.2**	**+2.8**
GYA			PP	**PP**	**19 11 21.4**	**+6.3**
GYA			SKS	**SKSac**	**19 18 15.0**	**+2.1**
GYA			S	**ScS**	**19 18 37.8**	**-0.7**
GYA			pmax	pmax		
	comp=Z,50nm,1.0s					
GYA			pmax	pmax		
	comp=Z,230nm,5.8s					
GYA			LR	LR		
	comp=Z,7μm,20.4s					
GYA			LR	LR		
	comp=Z,5μm,21.0s					
GYA			LR	LR		
	comp=Z,6μm,21.2s					
KMI	**Kunming**	**89.87 320**	P	**P**	**19 07 43.3**	**+0.3**
KMI			S	**S**	**19 18 35.9**	**+0.5**
KMI			pmax	pmax		
	comp=Z,20nm,0.9s					
KMI			pmax	pmax		
	comp=Z,560nm,5.9s					
KMI			LR	LR		
	comp=Z,1μm,25.3s					
KMI			LR	LR		
	comp=Z,2μm,23.1s					
KMI			LR	LR		
	comp=Z,3μm,25.3s					
SSE	**Sheshan**	**90.26 337**	P	**P**	**19 07 42.5**	**-1.8**
SSE			PP	**PP**	**19 11 17.8**	**-0.9**
SSE			S	**S**	**19 18 34.8**	**-3.3**
SSE			pmax	pmax		
	comp=Z,35nm,0.8s					
SSE			pmax	pmax		
	comp=Z,310nm,6.2s					
SSE			LR	LR		
	comp=Z,1μm,21.1s					
SSE			LR	LR		
	comp=Z,2μm,21.1s					
SSE			LR	LR		
	comp=Z,2μm,20.2s					
JNU	**Nakatsue**	**90.56 346**	P	**P**	**19 07 45.9**	**+0.1**
	comp=Z,14nm,0.9s,baz=118,slow=2.7,SNR=5.9					
WHN	**Wuhan**	**91.35 332** ‖	P	**P**	**19 07 50.3**	**+0.9**
WHN			S	**S**	**19 18 53.4**	**+5.2**
WHN			LR	LR		
	comp=Z,3μm,16.4s					
WHN			LR	LR		
	comp=Z,780nm,12.8s					
WHN			LR	LR		
	comp=Z,4μm,26.2s					
ADKI	**Addanki**	**91.42 297**	*e*P	**P**	**19 07 49.8**	**-0.3**
ADKI			IAmb	IAmb	19 07 58.3	
	comp=Z,7.9nm,0.8s					
ADKI			*e*SKSac	**SKSac**	**19 18 21.9**	**-0.7**
ADKI			IVMs_BB	IVMs_BB	19 40 22.8	
	comp=Z,2μm,23.0s					
RCLA	**Racherla**	**91.59 296**	*e*P	**P**	**19 07 50.2**	**-0.7**
RCLA			IAmb	IAmb	19 07 59.2	
	comp=Z,48nm,2.1s					
RCLA			*e*SKSac	**SKSac**	**19 18 23.4**	**-0.1**
RCLA			IVMs_BB	IVMs_BB	19 40 06.7	
	comp=Z,2μm,23.5s					
NJ2	**Nanjing**	**91.69 336**	*e*P	**P**	**19 07 51.1**	**+0.1**
NJ2			PP	**PP**	**19 11 29.0**	**-1.1**
NJ2			S	**S**	**19 18 52.6**	**+1.4**
NJ2			pmax	pmax		
	comp=Z,22nm,1.0s					
NJ2			pmax	pmax		
	comp=Z,440nm,3.5s					
NJ2			LR	LR		
	comp=Z,2μm,18.4s					
NJ2			LR	LR		
	comp=Z,2μm,20.1s					
NJ2			LR	LR		
	comp=Z,2μm,20.6s					
CHLP	**Challavanipeta**	**91.74 302**	*e*P	**P**	**19 07 51.3**	**-0.2**
CHLP			IAmb	IAmb	19 07 58.7	
	comp=Z,23nm,1.1s					
CHLP			*e*SKSac	**SKSac**	**19 18 24.4**	**+0.2**
CHLP			IVMs_BB	IVMs_BB	19 43 17.9	
	comp=Z,1μm,20.6s					
PVM	**Polavaram**	**91.82 299**	*e*P	**P**	**19 07 51.6**	**-0.4**
PVM			IAmb	IAmb	19 07 58.8	
	comp=Z,9.8nm,1.1s					
PVM			*e*SKSac	**SKSac**	**19 18 24.8**	**0.0**
PVM			IVMs_BB	IVMs_BB	19 39 26.1	
	comp=Z,2μm,23.9s					
URV	**Uravakonda**	**92.01 294**	*e*P	**P**	**19 07 51.2**	**-1.7**
INU	**Inuyama**	**92.09 351**	*e*P	**P**	**19 07 52.9**	**+0.2**
	comp=Z,41nm,1.2s					
SRLM	**Srisailam**	**92.17 296**	*e*P	**P**	**19 07 53.0**	**-0.7**
SRLM			IAmb	IAmb	19 07 55.9	
	comp=Z,21nm,1.0s					
SRLM			*e*SKSac	**SKSac**	**19 18 25.2**	**-1.7**
SRLM			IVMs_BB	IVMs_BB	19 40 35.9	
	comp=Z,2μm,22.2s					
NJS	**Nagarjunasagar**	**92.36 297**	*e*P	**P**	**19 07 53.6**	**-0.8**
NJS			IAmb	IAmb	19 08 01.4	
	comp=Z,12nm,0.8s					
NJS			*e*SKSac	**SKSac**	**19 18 27.1**	**-0.7**
NJS			IVMs_BB	IVMs_BB	19 39 09.6	
	comp=Z,2μm,24.8s					
ENH	**Enshi**	**92.45 328**	*e*P	**P**	**19 07 53.9**	**-0.7**
	comp=Z,69nm,1.8s					
ENH			LR	LR		
	comp=Z,2μm,20.0s					
LSZ	**Lusaka**	**92.54 237**	*e*P	**P**	**19 07 57.8**	**+2.1**
LSZ			pmax	pmax		
	comp=Z,98nm,1.7s					
LSZ	**Lusaka**	**92.54 237**	*e*P	**P**	**19 07 57.8**	**+2.1**
	comp=Z,98nm,1.7s					
MJAR	**Matsushiro Arr**	**93.18 352**	P	**P**	**19 07 57.9**	**+0.1**
	comp=Z,7.5nm,1.0s,baz=168,slow=4.7,SNR=13					
MAJO	**Matsushiro**	**93.18 352**	*e*P	**P**	**19 07 54.9**	**-2.9**
MAJO			pmax	pmax		
	comp=Z,81nm,1.2s					
MAJO	**Matsushiro**	**93.18 352**	*e*P	**P**	**19 08 00.7**	**+2.9**
	comp=Z,85nm,1.6s					
MAT	**Matsushiro**	**93.18 352**	P	**P**	**19 07 57.4**	**-0.4**
MAT			S	**S**	**19 19 07.4**	**+3.0**
MJB9	**Matsu-Tunnel**	**93.19 352**	*e*P	**P**	**19 07 58.3**	**+0.5**
	comp=Z,21nm,1.6s					
HYBB	**Hyderabad (bro**	**93.47 297**	*e*P	**P**	**19 07 58.9**	**-0.7**
HYBB			IAmb	IAmb	19 08 05.6	
	comp=Z,5.5nm,0.8s					
HYBB			*e*SKSac	**SKSac**	**19 18 32.2**	**-1.8**
HYBB			IVMs_BB	IVMs_BB	19 41 12.1	
	comp=Z,2μm,23.5s					
RPR	**Rampur**	**94.33 298**	*e*P	**P**	**19 08 02.9**	**-0.6**
RPR			IAmb	IAmb	19 08 07.8	
	comp=Z,17nm,1.3s					
RPR			*e*SKSac	**SKSac**	**19 18 38.7**	**+0.1**
RPR			IVMs_BB	IVMs_BB	19 42 13.1	
	comp=Z,1μm,22.7s					
CPUP	**Villa Florida**	**94.66 158**	P	**P**	**19 08 05.8**	**+0.6**
	comp=Z,8.4nm,1.0s,baz=198,slow=5.0,SNR=8.2					
CPUP			LR	LR	19 44 56.0	
	comp=Z,2μm,21.8s,baz=196,slow=32					
CPUP	**Villa Florida**	**94.66 158**	*e*P	**P**	**19 08 02.9**	**-2.3**
CPUP	**Villa Florida**	**94.66 158**	*e*P	**P**	**19 08 02.9**	**-2.3**
CD2	**Chengdu**	**94.84 323**	P	**P**	**19 08 05.1**	**-0.5**
CD2			PP	**PP**	**19 11 54.5**	**-0.4**
CD2			SKS	**SKSac**	**19 18 41.7**	**+0.8**
CD2			S	**ScS**	**19 19 21.3**	**+1.0**
CD2			sS	sS	19 19 24.5	+0.3
CD2			pmax	pmax		
	comp=Z,30nm,1.3s					
CD2			pmax	pmax		
	comp=Z,370nm,3.9s					
CD2			LR	LR		
	comp=Z,3μm,19.2s					
CD2			LR	LR		
	comp=Z,3μm,19.2s					
SRSP	**Sriramsagar**	**94.85 297**	*e*P	**P**	**19 08 05.4**	**-0.5**
SRSP			IAmb	IAmb	19 08 12.5	
	comp=Z,14nm,1.2s					
SRSP			*e*SKSac	**SKSac**	**19 18 42.5**	**+1.1**
SRSP			IVMs_BB	IVMs_BB	19 40 20.0	
	comp=Z,1μm,27.3s					
KLRI	**Killari**	**94.99 295**	*e*P	**P**	**19 08 05.9**	**-0.7**
KLRI			IAmb	IAmb	19 08 10.4	
	comp=Z,99nm,1.8s					
KLRI			*e*SKSac	**SKSac**	**19 18 40.2**	**-2.1**
KLRI			IVMs_BB	IVMs_BB	19 47 39.9	
	comp=Z,1μm,18.4s					
LVC	**Limon Verde**	**95.22 146**	LR	LR	19 41 45.6	
	comp=Z,10μm,21.9s,baz=176,slow=30					
LVC	**Limon Verde**	**95.22 146**	*e*P	**P**	**19 08 11.2**	**+3.0**
	comp=Z,35nm,1.4s					
KSAR	**Wonju Array Be**	**95.23 344**	P	**P**	**19 08 06.7**	**-0.5**
KSAR	**Wonju Array Be**	**95.23 344**	P	**P**	**19 08 06.7**	**-0.5**
KSRS	**Korea Array**	**95.23 344**	P	**P**	**19 08 06.7**	**-0.5**
	comp=Z,1.6nm,0.9s,baz=164,slow=4.8,SNR=3.6					
KS01	**Wonju Array Si**	**95.26 344**	*e*P	**P**	**19 08 07.4**	**+0.1**
INCN	**Inchon**	**95.46 343**	PFAKE		19 08 20.0	+12
INCN			LR	LR		
	comp=Z,3μm,20.0s					
TIA	**Tai'an**	**96.08 336**	*e*P	**P**	**19 08 09.3**	**-1.8**
TIA			pmax	pmax		
	comp=Z,10.0nm,1.6s					
XAN	**Xi'an**	**96.14 328**	P	**P**	**19 08 10.4**	**-1.1**
XAN			pP	sP	19 08 21.5	+6.0
XAN			PP	**PP**	**19 12 02.7**	**-2.3**
XAN			SKS	**SKSac**	**19 18 45.9**	**-1.8**
XAN			S	**S**	**19 19 27.0**	**-3.4**
XAN			SS	**SS**	**19 26 00.1**	**-2.9**
XAN			pmax	pmax		
	comp=Z,7.0nm,1.8s					
XAN			pmax	pmax		
	comp=Z,270nm,5.6s					
XAN			LR	LR		
	comp=Z,3μm,23.7s					
XAN			LR	LR		
	comp=Z,2μm,22.8s					
XAN			LR	LR		
	comp=Z,3μm,23.7s					
DL2	**Dalian**	**97.72 340**	P	Pdif	19 08 19.4	+0.9
DL2			PP	**PP**	**19 12 16.2**	**-0.8**
DL2			SKS	**SKSac**	**19 18 57.7**	**+2.3**
DL2			S	**S**	**19 19 41.0**	**-2.6**
DL2			pmax	pmax		
	comp=Z,310nm,4.3s					
DL2			LR	LR		
	comp=Z,1μm,20.7s					
DL2			LR	LR		
	comp=Z,490nm,19.8s					
DL2			LR	LR		
	comp=Z,2μm,21.0s					
ERM	**Erimo**	**98.37 357**	PFAKE		19 08 30.0	+8.7
ERM			LR	LR		
	comp=Z,599nm,20.0s					
LSA	**Lhasa**	**98.40 313**	*e*P	**P**	**19 08 20.4**	**-2.0**
LSA			pmax	pmax		
	comp=Z,4.0nm,0.6s					
LSA	**Lhasa**	**98.40 313**	*e*P	**P**	**19 08 20.4**	**-2.0**
	comp=Z,3.8nm,0.6s					
TIY	**Taiyuan**	**98.64 332**	*e*P	**P**	**19 08 22.7**	**0.0**
TIY			PP	**PP**	**19 12 21.6**	**-2.6**
TIY			SKS	**SKSac**	**19 19 01.6**	**+1.2**
TIY			S	**S**	**19 19 47.7**	**-4.0**
TIY			pmax	pmax		
	comp=Z,210nm,6.1s					
TIY			LR	LR		
	comp=Z,2μm,18.9s					
TIY			LR	LR		
	comp=Z,2μm,17.5s					
LZH	**Lanzhou**	**99.58 325**	*e*P	**Pdif**	**19 08 28.9**	**+1.9**
LZH			pP	sP	19 08 31.0	-0.1
LZH			sP	pP	19 08 32.3	+2.3
LZH			PP	**PP**	**19 12 29.2**	**-2.3**
LZH			SKS	**SKSac**	**19 19 03.1**	**-2.2**
LZH			pmax	pmax		
	comp=Z,16nm,1.0s					
LZH			pmax	pmax		
	comp=Z,59nm,4.5s					
LZH			LR	LR		
	comp=Z,3μm,19.2s					
LZH			LR	LR		
	comp=Z,3μm,17.8s					
LZH			LR	LR		
	comp=Z,5μm,20.0s					
BJT	**Baijiatuau**	**99.93 336**	PFAKE		19 08 40.0	+12
BJT			LR	LR		
	comp=Z,2μm,19.0s					
BJI	**Beijing**	**99.95 336**	P	**Pdif**	**19 08 30.0**	**+1.7**
BJI			PP	**PP**	**19 12 34.2**	**+0.2**
BJI			S	**S**	**19 20 05.1**	**+2.8**
BJI			SS	**SS**	**19 26 56.4**	**+0.1**
BJI			pmax	pmax		
	comp=Z,8.0nm,0.8s					
BJI			pmax	pmax		
	comp=Z,210nm,5.8s					
BJI			LR	LR		
	comp=Z,1μm,21.8s					
BJI			LR	LR		
	comp=Z,1μm,26.0s					
BJI			LR	LR		
	comp=Z,760nm,24.3s					
SNY	**Shenyang**	**100.21 342**	P	**Pdif**	**19 08 31.7**	**+2.3**
SNY			SS	SS	19 26 58.9	-0.9
SNY			LR	LR		
	comp=Z,1μm,21.6s					
SNY			LR	LR		
	comp=Z,1μm,22.2s					
SNY			LR	LR		
	comp=Z,3μm,22.0s					
YUK	**Yuzh-Kuril'sk**	**100.33 359**	*e*P	**Pdif**	**19 08 22.1**	**-7.8**
YUK			*i*		19 12 33.8	
YUK			*i* S	**SKSac**	**19 19 00.5**	**-7.7**
YUK			*i* SS	**SS**	**19 27 05.8**	**+4.4**
YUK			*i* SSS	SSS	19 30 49.7	
USRK	**Ussuriysk Ar.**	**101.35 349**	P	**Pdif**	**19 08 33.7**	**-0.7**
	comp=Z,0.8nm,0.7s,baz=221,slow=5.7,SNR=2.4					
LPAZ	**La Paz**	**101.40 145**	P	**Pdif**	**19 08 37.5**	**+1.1**
	comp=Z,1.6nm,0.9s,baz=122,slow=0.9,SNR=5.1					
LPAZ	**La Paz**	**101.40 145**	*e*P	**Pdif**	**19 08 38.3**	**+1.9**
LPAZ	**La Paz**	**101.40 145**	*e*Pdif	**Pdif**	**19 08 38.3**	**+1.9**
HHC	**Hu-ho-hao-te**	**101.82 333**	*e*P	**Pdif**	**19 08 42.6**	**+5.8**
HHC			PP	**PP**	**19 12 52.0**	**+3.7**
HHC			pmax	pmax		
	comp=Z,29nm,1.4s					
HHC			pmax	pmax		
	comp=Z,730nm,7.4s					
HHC			LR	LR		
	comp=Z,1μm,17.8s					
HHC			LR	LR		
	comp=Z,1μm,17.0s					
HHC			LR	LR		
	comp=Z,2μm,17.7s					
CN2	**Changchun**	**101.82 344**	*e*P	**Pdif**	**19 08 36.3**	**-0.3**
CN2			PP	**PP**	**19 12 46.7**	**-1.5**
CN2			*e*S	**Sdif**	**19 20 15.7**	**-2.1**
CN2			pmax	pmax		
	comp=Z,10.0nm,0.6s					
CN2			pmax	pmax		
	comp=Z,200nm,5.0s					
CN2			LR	LR		
	comp=Z,900nm,19.0s					
CN2			LR	LR		
	comp=Z,800nm,19.0s					
CN2			LR	LR		
	comp=Z,900nm,19.0s					
MDJ	**Mudanjiang**	**102.04 347**	P	**Pdif**	**19 08 40.3**	**+2.7**
MDJ			PP	**PP**	**19 12 50.1**	**+0.3**
MDJ			S	**Sdif**	**19 20 23.6**	**+4.0**
MDJ			SS	**SS**	**19 27 28.7**	**+3.4**
MDJ			pmax	pmax		
	comp=Z,2.0nm,0.6s					
MDJ			pmax	pmax		
	comp=Z,110nm,5.5s					
MDJ			LR	LR		
	comp=Z,760nm,20.8s					
MDJ			LR	LR		
	comp=Z,1μm,24.4s					
MDJ			LR	LR		
	comp=Z,1μm,18.9s					
NNA	**Nana**	**102.30 135**	PFAKE		19 08 50.0	+10
NNA			LR	LR		
	comp=Z,1μm,19.0s					
HIA	**Hailar**	**108.08 341**	PFAKE		19 13 20.0	
HIA			LR	LR		
	comp=Z,3μm,19.0s					
SONM	**Songino Array**	**109.67 332**	Pdiff	**Pdif**	**19 09 12.4**	**+0.8**
	comp=Z,0.1nm,0.4s,baz=79,slow=3.1,SNR=3.0					
SONM			PKiKP	**PKiKP**	**19 13 14.3**	**+0.2**
	comp=Z,0.6nm,0.6s,baz=135,slow=1.3,SNR=4.8					
WMQ	**Urumqi**	**112.05 317**	PKP	**PKiKP**	**19 13 18.4**	**-0.2**
WMQ			PP	**PP**	**19 14 05.8**	**+2.4**
WMQ			LR	LR		
	comp=Z,710nm,22.6s					
WMQ			LR	LR		
	comp=Z,400nm,20.4s					
WMQ			LR	LR		
	comp=Z,820nm,26.6s					
ZAK	**Zakamensk**	**112.83 331**	*e*PKIKP	**PKiKP**	**19 13 20.5**	**+0.6**
ZAK			pmax	pmax		
	comp=Z,5.0nm,1.5s					
KSH	**Kashi**	**113.23 307**	*e*PKP	**PKiKP**	**19 13 21.0**	**-0.1**
KSH			PP	**PP**	**19 14 11.3**	**-0.7**
KSH			PKS	**PKSdf**	**19 16 57.0**	**-0.8**
KSH			SKS	**SKSdf**	**19 20 32.4**	**-0.7**
KSH			SKKS	**SKKSac**	**19 21 05.3**	**-8.0**
KSH			AMB	AMB		
	comp=Z,170nm,4.7s					
KSH			LR	LR		
	comp=Z,1μm,17.0s					
KSH			LR	LR		
	comp=Z,610nm,14.4s					
KSH			LR	LR		
	comp=Z,2μm,20.2s					
ASCN	**Ascension**	**113.97 199**	PFAKE		19 13 30.0	
ASCN			LR	LR		
	comp=Z,7μm,21.0s					
MOY	**Mondy**	**114.61 330**	*e*PKIKP	PKPdf	19 13 24.8	+1.5
AAK	**Ala-Archa**	**116.42 308**	PFAKE		19 13 40.0	+13
AAK			LR	LR		
	comp=Z,3μm,22.0s					
MKAR	**Makanchi Array**	**116.61 316**	PKP	**PKPdf**	**19 13 25.4**	**-1.8**
	comp=Z,1.2nm,0.6s,baz=108,slow=4.0,SNR=13					
EKS2	**Erkin-Say**	**116.75 307**	PFAKE		19 13 40.0	+12
EKS2			LR	LR		
	comp=Z,2μm,22.0s					
JTS	**JuntasAbangare**	**118.53 117**	PFAKE		19 13 40.0	+8.1
JTS			LR	LR		
	comp=Z,3μm,19.0s					
KKAR	**Karatay Array**	**118.55 306**	*e*PKIKP	**PKPdf**	**19 13 29.6**	**-1.5**
KKAR	**Karatay Array**	**118.55 306**	*e*PKPdf	**PKPdf**	**19 13 29.6**	**-1.5**
BCIP	**Isla Barro Col**	**120.00 123**	PFAKE		19 13 50.0	+15
BCIP			LR	LR		
	comp=Z,1μm,19.0s					
GEYT	**Alibeck**	**120.48 293**	PKP	**PKPdf**	**19 13 33.7**	**-1.3**
	comp=Z,4.2nm,0.8s,baz=236,slow=1.6,SNR=14					
KURK	**Kurchatov**	**121.21 316**	*e*PKIKP	**PKPdf**	**19 13 36.1**	**+0.2**
KURK			MLR	MLR		
	comp=Z,3μm,21.0s					
KURK	**Kurchatov**	**121.21 316**	*e*PKPdf	**PKPdf**	**19 13 36.1**	**+0.2**
KURK			LR	LR		
	comp=Z,3μm,21.0s					
ZALV	**Zalesovo Beam**	**121.58 322**	PKP	**PKPdf**	**19 13 34.1**	**-2.4**
	comp=Z,1.9nm,0.7s,baz=156,slow=2.3,SNR=7.6					
ZALV			PP	**PP**	**19 15 14.4**	**+4.7**
	comp=Z,2.0nm,0.8s,baz=146,slow=3.4,SNR=5.4					
NVS	**Novosibirsk**	**122.84 322**	*e*PKIKP	**PKPdf**	**19 13 36.5**	**-2.4**
NVAR	**Mina Array Bea**	**123.11 69**	PKP	**PKPdf**	**19 13 39.3**	**-1.0**
	comp=Z,0.4nm,0.4s,baz=221,slow=4.8,SNR=2.9					
YBH	**Yreka Blue Hor**	**123.35 64**	PKP	**PKPdf**	**19 13 41.2**	**+0.7**
	comp=Z,4.5nm,0.8s,baz=62,slow=18,SNR=3.9					
KDAK	**Kodiak Island**	**123.69 34**	PFAKE		19 13 50.0	+10
KDAK			LR	LR		
	comp=Z,3μm,20.0s					
HUMO	**Hull Mountain**	**123.89 63**	*e*PKPdf	**PKPdf**	**19 13 40.9**	**-0.5**
TX31	**Lajitas Ar. Si**	**124.08 87**	*e*P	**PKPdf**	**19 13 40.5**	**-1.8**
R11A	**Troy Canyon, C**	**124.46 71**	*e*PKPdf	**PKPdf**	**19 13 46.9**	**+4.0**
MOD	**Modoc Plateau**	**124.68 65**	*e*PKPdf	**PKPdf**	**19 13 43.4**	**+0.3**
BILL	**Bilibino**	**125.13 8**‖	*e*PKIKP	**PKPdf**	**19 13 43.2**	**+0.3**
BILL			*e*		19 20 35.5	
BILL			pmax	pmax		
	comp=Z,8.0nm,1.1s					
BILL			MLR	MLR		
	comp=Z,1μm,20.0s					
BILL	**Bilibino**	**125.13 8**	PFAKE		19 13 50.0	+7.1
BILL			LR	LR		
	comp=Z,1μm,20.0s					
DBIC	**Dimbokro**	**125.67 214**	PKP	**PKPdf**	**19 13 45.3**	**-0.4**
	comp=Z,4.3nm,0.8s,baz=55,slow=8.0,SNR=3.5					
BVA0	**Borovoye Array**	**126.24 313**	*i* PKIKP	**PKPdf**	**19 13 43.7**	**-1.8**
BVA0			pmax	pmax		
	comp=Z,9.0nm,1.2s					
BVAR	**Borovoye Array**	**126.24 313**	PKP	**PKPdf**	**19 13 44.4**	**-1.1**
	comp=Z,3.2nm,0.8s,baz=131,slow=4.1,SNR=17					
BRVK	**Borovoye**	**126.31 313**	*e*PKIKP	**PKPdf**	**19 13 44.5**	**-1.1**
BRVK			MLR	MLR		
	comp=Z,3μm,21.0s					
BRVK	**Borovoye**	**126.31 313**	*e*PKPdf	**PKPdf**	**19 13 44.5**	**-1.1**
BRVK			LR	LR		
	comp=Z,3μm,21.0s					
MSU	**Marysvale**	**126.37 74**	*e*PKIKP	**PKPdf**	**19 13 48.1**	**+1.6**
MSU	**Marysvale**	**126.37 74**	*e*P	**PKPdf**	**19 13 48.1**	**+1.6**
ELK	**Elko**	**126.41 70**	*e*PKIKP	**PKPdf**	**19 13 46.1**	**-0.4**
ELK	**Elko**	**126.41 70**	*e*PKPdf	**PKPdf**	**19 13 46.1**	**-0.4**
TNA	**Tin City**	**126.43 21**	*e*PKPdf	**PKPdf**	**19 13 44.5**	**-0.9**
ZRNK	**Zerenda**	**126.75 312**	PKIKP	**PKPdf**	**19 13 44.7**	**-1.8**
ZRNK			pmax	pmax		
	comp=Z,7.0nm,1.0s					
ANMO	**Albuquerque**	**126.81 81**	*e*PKIKP	**PKPdf**	**19 13 45.4**	**-2.0**
ANMO	**Albuquerque**	**126.81 81**	*e*PKPdf	**PKPdf**	**19 13 47.6**	**+0.1**

ANMO LR LR
comp=Z,2μm,20.0s
DUG Dugway, Tooele 127.27 72 *e*PKIKP **PKPdf 19 13 47.5 -0.6**
DUG MLR MLR
comp=Z,2μm,21.0s
DUG Dugway, Tooele 127.27 72 *e*PKPdf **PKPdf 19 13 47.5 -0.6**
DUG LR LR
comp=Z,2μm,21.0s
MVCO Mesa Verde 127.38 77 *e*PP **PKPdf 19 13 50.8 +2.3**
RCS Mount Rainier- 127.60 60 P **Pdif 19 10 35.1 +3.5**
PV05 Paradox Valley 127.69 76 *e*PP **PKPdf 19 13 54.4 +5.3**
PMR Palmer 127.80 33 *e*PKIKP **PKPdf 19 13 46.9 -1.2**
PMR Palmer 127.80 33 *e*PKPdf **PKPdf 19 13 46.9 -1.2**
PV10 Paradox Valley 127.94 76 *e*PP **PKPdf 19 13 51.5 +1.9**
AB31 Akbulak array 128.00 304 *i* PKIKP **PKPdf 19 13 47.5 -1.5**
AB31 pmax pmax
comp=Z,2.0nm,0.8s
ABKAR Akbulak array 128.00 304 *e*PKPdf **PKPdf 19 13 47.9 -1.1**
PV04 Paradox Valley 128.03 76 *e*PKPdf **PKPdf 19 13 50.4 +0.7**
HAWA Hanford 128.32 62 PFAKE 19 14 00.0 +10
HAWA LR LR
comp=Z,2μm,19.0s
BMO Blue Mountains 128.32 65 PFAKE 19 14 00.0 +10
BMO LR LR
comp=Z,2μm,20.0s
DIV Divide 128.47 35 *e*PKPdf **PKPdf 19 13 48.6 -1.0**
TIXI Tiksi 128.69 352 PKP **PKPdf 19 13 48.1 -1.5**
comp=Z,7.6nm,0.9s,baz=67,slow=0.9,SNR=5.1
TIXI Tiksi 128.69 352 *e*PKIKP **PKPdf 19 13 48.5 -1.1**
TIXI pmax pmax
comp=Z,8.0nm,1.1s
ABTX Abilene, Hawle 128.81 88 PKPdf **PKPdf 19 13 52.4 +1.3**
HLID Hailey 128.87 68 PFAKE 19 14 00.0 +8.9
HLID LR LR
comp=Z,1μm,20.0s
HWUT Hardware Ranch 128.94 71 PFAKE 19 14 00.0 +8.7
HWUT LR LR
comp=Z,2μm,20.0s
GNI Garni 129.08 286 *e*PKIKP **PKPdf 19 13 53.7 +2.1**
GNI MLR MLR
comp=Z,2μm,21.0s
GNI Garni 129.08 286 *e*PKPdf **PKPdf 19 13 53.7 +2.1**
GNI LR LR
comp=Z,2μm,21.0s
NLW Nelson Butte 129.13 60 P **Pdif 19 10 35.8 -2.3**
AMTX Amarillo 129.38 85 *e*PKPdf **PKPdf 19 13 52.8 +0.6**
TORD Torodi Ar. Bea 129.38 225 PKP **PKPdf 19 13 51.8 -0.9**
comp=Z,3.3nm,0.9s,baz=175,slow=1.7,SNR=11
SDCO Great Sand Dun 129.39 79 *e*PKPdf **PKPdf 19 13 51.9 -0.6**
SMCO Snowmass 129.63 77 *e*PKPdf **PKPdf 19 13 53.0 0.0**
AHID Auburn Hatcher 130.01 71 *e*PKPdf **PKPdf 19 13 53.9 +0.6**
AHID LR LR
comp=Z,1μm,21.0s
GRGR Grenville 130.15 141 PFAKE 19 14 10.0 +16
GRGR LR LR
comp=Z,1μm,19.0s
REDW Red Top Meadow 130.56 70 *e*PKPdf **PKPdf 19 13 55.2 +0.9**
AKH Akhalkalaki 130.64 286⇑*i*P **PKPdf 19 13 58.0 +3.5**
COLA College 130.70 31 *e*PKIKP **PKPdf 19 13 52.7 -0.9**
COLA College 130.70 31 PFAKE 19 14 10.0 +16
COLA LR LR
comp=Z,3μm,22.0s
ISCO Idaho Springs 130.81 77 *e*PKIKP **PKPdf 19 14 00.1 +5.0**
ISCO Idaho Springs 130.81 77 PFAKE 19 14 10.0 +15
ISCO LR LR
comp=Z,2μm,21.0s
ISCO Idaho Springs 130.81 77 *e*PP **PKPdf 19 14 00.1 +5.0**
BW06 Boulder Array 130.82 72 PKPdf **PKPdf 19 13 57.8 +2.9**
BW06 LR LR
comp=Z,2μm,19.0s
PDAR Pinedale Array 130.82 72 PKP **PKPdf 19 13 55.5 +0.6**
comp=Z,0.5nm,0.7s,baz=197,slow=2.8,SNR=2.2
MOOW Moose Ponds 130.88 70 *e*PKPdf **PKPdf 19 13 56.1 +1.1**
IMW Indian Meadow 130.89 70 *e*PKPdf **PKPdf 19 13 57.4 +2.4**
ILAR Eielson Array 130.90 31 PKP **PKPdf 19 13 52.2 -1.8**
comp=Z,2.2nm,0.7s,baz=260,slow=3.1,SNR=4.2
ZEI Tsey 131.40 288 *i* PKIKP **PKPdf 19 13 55.9 0.0**
ZEI pmax pmax
comp=Z,14nm,0.9s
CSS Mathiatis 131.51 272 PFAKE 19 14 10.0 +14
CSS LR LR
comp=Z,287nm,19.0s
GTBY Guantanamo Bay 131.57 121 PFAKE 19 14 10.0 +13
GTBY LR LR
comp=Z,2μm,22.0s
LKWY Lake 131.63 69 PFAKE 19 14 10.0 +14
LKWY LR LR
comp=Z,2μm,21.0s
BOZ Bozeman (W) 131.74 68 PFAKE 19 14 10.0 +14
BOZ LR LR
comp=Z,1μm,21.0s
W34A Bridge Creek, 131.79 87 *e*PKPdf **PKPdf 19 13 58.3 +1.7**
BBGH Gun Hill 131.80 143 PFAKE 19 14 10.0 +13
BBGH LR LR
comp=Z,4μm,22.0s
KBZ Khabaz 132.58 288 PKP **PKPdf 19 13 57.4 -0.4**
comp=Z,3.2nm,0.8s,baz=42,slow=0.5,SNR=8.6
KBZ PP **PP 19 16 24.9 +2.3**
comp=Z,3.2nm,1.0s,baz=188,slow=5.0,SNR=4.1
EGAK Eagle 132.59 33 PFAKE 19 14 10.0 +13
EGAK LR LR
comp=Z,2μm,21.0s
FDF Fort de France 132.74 141 PFAKE 19 14 10.0 +11
FDF LR LR
comp=Z,1μm,21.0s
KIV Kislovodsk 132.84 288⇑*e*PKIKP **PKPdf 19 13 57.7 -0.8**
KIV *e* 19 16 23.5
KIV *e*PPP PPP 19 19 17.0
KIV *e* 19 21 04.5
KIV *e*SS SS 19 33 56.4 -10
KIV pmax pmax
comp=Z,5.0nm,1.0s
KIV MLR MLR
comp=Z,799nm,18.0s
KIV Kislovodsk 132.84 288 *e*PKPdf **PKPdf 19 13 58.5 0.0**
KIV LR LR
comp=Z,902nm,19.0s
SVE Sverdlovsk 132.91 311 *e*PKIKP **PKPdf 19 13 57.8 -0.2**
SVE pmax pmax
comp=Z,26nm,2.0s
CBKS Cedar Bluff 133.30 82 PFAKE 19 14 10.0 +11
CBKS LR LR
comp=Z,2μm,19.0s
ARU Arti 133.52 310 *i* PKIKP **PKPdf 19 13 58.8 -0.4**
ARU 19 16 23.6
ARU PPP PPP 19 19 18.3
ARU SS SS 19 34 05.3 -8.4
ARU SSS SSS 19 38 58.8
ARU MLR MLR
comp=Z,1μm,19.0s
ARU Arti 133.52 310 *e*PKPdf **PKPdf 19 13 58.6 -0.6**
ARU LR LR
comp=Z,2μm,20.0s
SOC Sochi 134.16 286 *i* PKIKP **PKPdf 19 14 01.2 +0.4**
SOC *e* 19 16 33.8
SOC *e*SS SS 19 34 14.7 -7.1
SOC pmax pmax
comp=Z,7.0nm,0.4s
EGMT Eagleton 134.29 66 PFAKE 19 14 10.0 +8.9
EGMT LR LR
comp=Z,2μm,20.0s
BRAL Brewton 134.63 100 PFAKE 19 14 10.0 +7.9
BRAL LR LR
comp=Z,1μm,20.0s
RSSD Black Hills 134.66 74 *e*PKIKP **PKPdf 19 14 03.6 +1.5**
RSSD Black Hills 134.66 74 *e*PKPdf **PKPdf 19 14 03.6 +1.5**
BRTR Keskin Array B 134.78 277 PKP **PKPdf 19 14 01.8 -0.6**
comp=Z,1.1nm,0.7s,baz=142,slow=6.2,SNR=7.9
BRTR PP **PP 19 16 37.1 +0.2**
comp=Z,0.8nm,0.7s,baz=133,slow=6.9,SNR=3.6
GRTK Grand Turk 134.79 125 PFAKE 19 14 10.0 +7.3
GRTK LR LR
comp=Z,1μm,20.0s
ISP Isparta 135.15 273 PFAKE 19 14 10.0 +7.0
ISP LR LR
comp=Z,871nm,20.0s
ANWB Willy Bob 135.22 138 PFAKE 19 14 20.0 +16
ANWB LR LR
comp=Z,1μm,21.0s
ANTO Ankara 135.35 277 PFAKE 19 14 10.0 +6.7
ANTO LR LR
comp=Z,10.0nm,22.0s
LAST Lasithi 136.00 266⇑*i*P **PKPdf 19 14 02.7 -1.9**
ANN Anapa 136.19 285 *i* PKIKP **PKPdf 19 14 04.1 -0.4**
ANN *e* 19 21 15.8
ANN pmax pmax
comp=Z,17nm,1.0s
VRH Novokhopyorsk 138.05 295 *e*PKIKP **PKPdf 19 14 10.3 +2.5**
VRH pmax pmax
comp=Z,10.0nm,1.0s
SIM Simferopol' 138.07 283 *i* PKIKP **PKPdf 19 14 09.3 +1.3**
SIM *e* 19 16 58.0
SIM pmax pmax
comp=Z,6.0nm,1.3s
SIM pmax pmax
comp=Z,180nm,9.3s
SIM MLR MLR
comp=N,570nm,16.2s
GOGA Godfrey 138.29 102 *e*PKIKP **PKPdf 19 14 08.6 -0.2**
GOGA MLR MLR
comp=Z,1μm,20.0s
GOGA Godfrey 138.29 102 *e*PKPdf **PKPdf 19 14 08.6 -0.2**
GOGA LR LR
comp=Z,1μm,20.0s
ECSD EROS Data Cent 138.40 80 PFAKE 19 14 20.0 +11
ECSD LR LR
comp=Z,2μm,20.0s
VSR Storozhevoye 139.34 294 *e*PKIKP **PKPdf 19 14 12.3 +2.2**
VSR pmax pmax
comp=Z,5.0nm,0.6s
TKL Tuckaleechee C 139.81 99 PKP **PKPdf 19 14 12.7 +1.1**
comp=Z,2.4nm,0.6s,baz=45,slow=4.3,SNR=3.3
NHSC New Hope 139.82 105 PFAKE 19 14 20.0 +8.4
NHSC LR LR
comp=Z,1μm,19.0s
HDIL Hopedale 140.27 89 PFAKE 19 14 20.0 +7.8
HDIL LR LR
comp=Z,2μm,19.0s
LPSR Galich'ya Gora 140.27 295 *e*PKIKP **PKPdf 19 14 14.0 +2.2**
LPSR pmax pmax
comp=Z,8.0nm,0.8s
WCI Wyandotte Cave 140.30 94 *e*PKPdf **PKPdf 19 14 07.2 -5.2**
YKA Yellowknife Ar 140.59 46 PKP **PKPdf 19 14 12.4 +0.3**
comp=Z,2.5nm,0.8s,baz=242,slow=2.5,SNR=4.2
YKA PP **PP 19 17 15.6 +3.1**
comp=Z,1.0nm,1.1s,baz=246,slow=5.3,SNR=4.5
JFWS Jewell Farm 141.34 85 PFAKE 19 14 30.0 +16
JFWS LR LR
comp=Z,2μm,19.0s
CFR Carcaliu 141.46 279⇑*i*P **PKPdf 19 14 10.6 -3.6**
CFR Carcaliu 141.46 279⇑PKHKP **PKPdf 19 14 10.6 -3.6**
KIS Kishinev 142.22 282 *e*PKP **PKPdf 19 14 20.0 +4.5**
KIS Kishinev 142.22 282 *e*PKIKP **PKPdf 19 14 20.0 +4.5**
KIS *e* 19 21 20.0
KIS MLR MLR
comp=Z,1μm,17.0s
KIS MLR MLR
comp=E,900nm,20.0s
KIS MLR MLR
comp=Z,1μm,20.0s
MOS Moscow 142.63 299 *e*PKHKP PKPpre 19 14 12.9
MOS *e* 19 17 19.6
MOS pmax pmax
comp=Z,41nm,1.0s
MOS MLR MLR
comp=N,700nm,21.0s
MOS MLR MLR
comp=E,900nm,21.0s
MOS MLR MLR
comp=Z,2μm,21.0s
VRI Vrincioaia 142.66 279⇑*i*P PKPpre 19 14 11.5
VRI Vrincioaia 142.66 279⇑PKHKP PKPpre 19 14 11.5
BLA Blacksburg 142.78 101 *e*PKPdf **PKPdf 19 14 14.0 -2.9**
BLA LR LR
comp=Z,1μm,20.0s
OBN Obninsk 142.82 298⇑*e*PKIKP **PKPdf 19 14 14.6 -1.6**
OBN *e* 19 20 31.9
OBN *e*SS SS 19 35 48.7 -15
OBN *e*SSS SSS 19 41 14.8
OBN pmax pmax
comp=Z,8.0nm,0.9s
OBN Obninsk 142.82 298 PFAKE 19 14 30.0 +14
OBN LR LR
comp=Z,1μm,22.0s
ULM Lac du Bonnet 142.84 72 PKP **PKPdf 19 14 15.2 -1.2**
comp=Z,7.0nm,0.8s,baz=219,slow=2.8,SNR=5.1
MLR Muntele Rosu 142.85 278 PKhKP PKPpre 19 14 11.4
baz=208,slow=6.5
MLR Muntele Rosu 142.85 278⇑*i*P PKPpre 19 14 12.0
MLR Muntele Rosu 142.85 278⇑PKHKP PKPpre 19 14 12.0
VOIR 143.31 277⇑*i*P PKPab 19 14 12.0 -1.5
VOIR 143.31 277⇑PKHKP PKPab 19 14 12.0 -1.5
ARR Arges 143.49 277⇑*i*P **PKPdf 19 14 19.5 +1.6**
CEL Celeste 143.51 261 PFAKE 19 14 30.0 +12
CEL LR LR
comp=Z,1μm,21.0s
ACSO Alum Creek Sta 143.53 95 PFAKE 19 14 30.0 +12
ACSO LR LR
comp=Z,2μm,20.0s
TIP Timpagrande 143.70 263⇑*i*P **PKPdf 19 14 19.0 +0.5**
EYMN Ely 143.82 78 PFAKE 19 14 30.0 +12
EYMN LR LR
comp=Z,2μm,19.0s
COWI Conover 143.99 82 *e*PKPdf **PKPab 19 14 15.7 -0.4**
COWI LR LR
comp=Z,2μm,20.0s
LOT Lotru 144.02 276⇑*i*P PKPab 19 14 15.8 -0.5
AKASG Malin Array Be 144.18 287 PKP **PKPab 19 14 15.2 -1.4**
comp=Z,1.8nm,0.7s,baz=96,slow=3.3,SNR=4.8
AKASG PKKP **PKKPdf 19 23 23.8 -3.6**
comp=Z,0.6nm,0.4s,baz=162,slow=0.6,SNR=5.5
KIEV Kiev 144.19 287 *e*PKHKP PKPpre 19 14 16.8
KIEV Kiev 144.19 287 *e*PKPpre PKPpre 19 14 12.1
KLMR Klimovskoe 144.23 307 *e*PKIKP PKPbc 19 14 17.3 +0.5
KLMR pmax pmax
comp=Z,64nm,1.5s
CLTB Caltabellotta 144.47 257 PFAKE 19 14 30.0 +10
CLTB LR LR
comp=Z,714nm,20.0s
BURAR Bucovina Array 144.55 280⇑*i*P **PKPab 19 14 16.7 -1.5**
BURAR Bucovina Array 144.55 280⇑PKHKP **PKPab 19 14 16.7 -1.5**
PDG Podgorica 144.56 269⇑*i*P **PKPab 19 14 16.9 -1.4**
AAM Ann Arbor 144.57 92 *e*PKIKP PKPbc 19 14 18.9 +0.4
AAM MLR MLR
comp=Z,2μm,21.0s
AAM Ann Arbor 144.57 92 *e*PKPdf PKPbc 19 14 18.9 +0.4
AAM LR LR
comp=Z,2μm,21.0s
ARCR ARCALIA 144.70 279⇑*i*P PKPbc 19 14 19.1 +0.3
MDVR Moldovita 144.73 274⇓*i*P **PKPab 19 14 17.5 -1.4**
CUC Castrocucco 144.79 263 *e*PKPdf **PKPab 19 14 17.1 -2.1**
CUC LR LR
comp=Z,1μm,19.0s
CJR Cluj-Napoca 144.89 278⇑*i*P **PKPdf 19 14 22.1 +1.8**
CJR Cluj-Napoca 144.89 278⇑PKIKP **PKPdf 19 14 22.1 +1.8**
KEST Kesra 145.14 251 PKP **PKPdf 19 14 21.1 0.0**
comp=Z,23nm,0.9s,baz=182,slow=1.1,SNR=16
CBN Corbin Frederi 145.15 102 *e*PKPdf **PKPdf 19 14 21.6 +0.7**
CBN LR LR
comp=Z,2μm,20.0s
BZS Buzias 145.30 275⇑*i*P **PKPbc 19 14 19.8 -1.0**
BZS Buzias 145.30 275⇑PKHKP **PKPbc 19 14 19.8 -1.0**
BANR Banloc 145.42 274⇑*i*P **PKPab 19 14 24.3 +2.9**
DRGR 145.42 277⇑*i*P **PKPab 19 14 22.7 +1.2**
DRGR 145.42 277⇑PKP2 **PKPab 19 14 22.7 +1.2**
BMR Baia Mare 145.52 279⇑*i*P **PKPdf 19 14 21.3 0.0**
BMR Baia Mare 145.52 279⇑PKHKP **PKPdf 19 14 21.3 0.0**
SIRR Siria 145.68 276⇑*i*P **PKPab 19 14 23.6 +1.2**
TMCR Tamitsa 146.19 312 *e*PKIKP **PKPdf 19 14 22.4 +0.6**
TMCR pmax pmax
comp=Z,63nm,1.1s
TRPA Tarpa 146.31 279 *e*PKPdf **PKPdf 19 14 22.0 -0.6**
LVV L'vov 146.46 283 *e*PKHKP PKPpre 19 14 22.4
ABSA Djebel Ababsia 146.52 250 P **PKPab 19 14 29.1 +3.1**
UZH Uzhgorod 146.73 280 *e*PKIKP **PKPab 19 14 25.8 -0.5**
UZH *e* 19 14 39.8
CMAH Djebel Manchou 146.82 250 P **PKPab 19 14 27.1 0.0**
MICGM Minsk 146.87 292⇓*e*P **PKPab 19 14 26.0 -0.6**
MICGM PM 19 14 27.0
comp=Z,0.1nm,1.0s
MICGM *e*LR LR 19 40 34.0
MNK Minsk 146.87 292⇓*e*PKP2 **PKPab 19 14 26.0 -0.6**
MNK pmax pmax
comp=Z,70nm,1.0s
KOLS Kolonicke sedl 146.92 280 *e*PKP2 **PKPab 19 14 27.4 +0.4**
KOLS Kolonicke sedl 146.92 280 *e*PKP **PKPab 19 14 27.4 +0.4**
BBSR BB Station 147.01 124 PFAKE 19 14 40.0 +12
BBSR LR LR
comp=Z,1μm,19.0s
CKFL Kef-Lekhel 147.01 249 P **PKPab 19 14 29.3 +1.4**
CASM Ain Smara 147.02 248 P **PKPab 19 14 30.1 +2.2**
KWP Kalwaria Pacla 147.07 282 *e*PKP **PKPdf 19 14 24.7 +0.8**
KWP Kalwaria Pacla 147.07 282⇑*i*P **PKPdf 19 14 24.4 +0.6**
KWP Kalwaria Pacla 147.07 282⇑PKHKP **PKPdf 19 14 24.4 +0.6**
BLY Banja Luka 147.21 270⇑*i*P **PKPbc 19 14 27.3 +0.8**
CAEH 'Ain El Ouahch 147.24 249 P **PKPab 19 14 33.0 +4.4**
CKHR Kef el Ahmar 147.34 247 P **PKPab 19 14 35.9 +6.7**
CRVS Cervenica-Dubn 147.34 280 *e*PKIKP **PKPab 19 14 28.2 -0.5**
CRVS Cervenica-Dubn 147.34 280 *e*PKP **PKPab 19 14 28.2 -0.5**
SET Setif 147.53 247 P **PKPab 19 14 30.0 +0.1**
DFRA Djebel Bou Aff 147.56 248 P **PKPab 19 14 33.4 +3.3**
NACOM Naroch 147.62 292 *e* **PKPbc 19 14 26.0 -1.3**
PSZ Piszkesteto 147.63 277⇓*i*P **PKPdf 19 14 26.2 +1.3**
PSZ Piszkesteto 147.63 277 *e*PKPdf **PKPbc 19 14 27.0 -0.7**
PSZ Piszkesteto 147.63 277⇓PKHKP **PKPdf 19 14 26.2 +1.3**
PSZ Piszkesteto 147.63 277 *e*PKPdf **PKPdf 19 14 25.5 +0.5**
KECS Kecovo 147.63 278 *e*PKHKP **PKPdf 19 14 25.7 +0.9**
KECS *e* 19 14 28.6
KECS Kecovo 147.63 278 *e*PKP **PKPdf 19 14 25.7 +0.9**
KECS *e* 19 14 28.6
AQU L'Aquila 147.73 263 PFAKE 19 14 40.0 +10
AQU LR LR
comp=Z,2μm,20.0s
STHS Stebnicka Huta 147.75 280 *e*PKIKP **PKPab 19 14 29.2 -1.1**
STHS Stebnicka Huta 147.75 280 *e*PKP **PKPab 19 14 29.2 -1.1**
FCC Fort Churchill 147.94 60⇑*e*PKP2 **PKPbc 19 14 26.7 -1.3**
FCC Fort Churchill 147.94 60 *e*PcP **PKPbc 19 14 26.7 -1.3**
CSKK Cs‡tkako 148.21 275 *e*PKPdf **PKPdf 19 14 27.3 +1.5**
NIE Niedzica 148.26 280 *e*PKP **PKPbc 19 14 27.9 -1.3**
NIE Niedzica 148.26 280 *e*PKIKP **PKPbc 19 14 27.9 -1.3**
BEHE Becsehely 148.49 272 *e*PKPdf **PKPab 19 14 34.1 +0.7**
VYHS Vyhne 148.54 277 *e*PKIKP **PKPbc 19 14 28.8 -1.2**
VYHS Vyhne 148.54 277 *e*PKP **PKPbc 19 14 28.8 -1.2**
LANS Liptovska Anna 148.57 279 *e*PKIKP **PKPbc 19 14 28.3 -1.8**
LANS Liptovska Anna 148.57 279 *e*PKP **PKPbc 19 14 28.3 -1.8**
LANS *e* 19 14 31.7
LVZ Lovozero 148.60 318 *e*PKP2 **PKPdf 19 14 27.4 +1.6**
LVZ MLR MLR
comp=Z,2μm,21.0s
LVZ Lovozero 148.60 318 *e*PKPdf **PKPdf 19 14 27.4 +1.6**
LVZ LR LR
comp=Z,2μm,21.0s
SADO Sadowa 148.67 92 PKPbc **PKPbc 19 14 31.0 +0.6**
comp=Z,21nm,0.7s,baz=298,slow=4.8,SNR=7.7
EMHD Djebel Mahouad 148.77 244 P **PKPbc 19 14 32.5 +1.4**
ETRT Tiaret 148.93 241 P **PKPab 19 14 35.0 -0.6**
OJC Ojcow 148.97 281 *e*PKP **PKPbc 19 14 29.9 -1.1**
OJC Ojcow 148.97 281 *e*PKIKP **PKPbc 19 14 29.9 -1.1**
APA Apatity 148.99 317 *e*PKP2 **PKPab 19 14 39.0 +4.3**
SUW Suwalki 149.06 289 *e*PKP **PKPbc 19 14 29.5 -1.6**
SUW Suwalki 149.06 289 *e*PKIKP **PKPbc 19 14 29.5 -1.6**
PDKS Podkum 149.23 270 *e*PKPdf **PKPbc 19 14 33.3 +1.4**
BEL Belsk 149.28 284 *e*PKP **PKPab 19 14 39.6 +3.3**
BEL Belsk 149.28 284 *e*PKP2 **PKPab 19 14 39.6 +3.3**
SOP Sopron 149.33 274 *e*PKPdf **PKPbc 19 14 33.0 +1.0**
EANR 'Ain N'Sour 149.48 242 P **PKPab 19 14 36.0 -1.7**
MDT Midelt 149.49 230 PKPbc **PKPbc 19 14 34.1 +1.1**
comp=Z,7.6nm,0.8s,baz=143,slow=3.9,SNR=9.3
PERS Pernice 149.51 271 *e*PKPdf **PKPbc 19 14 33.6 +1.1**
EBNR Beni Rached 149.54 242 P **PKPab 19 14 37.0 -1.0**
SOKA Soboth 149.58 271 *i* PKIKP **PKiKP 19 14 34.3 +0.5**
comp=Z,23nm,0.9s,SNR=12
ARSA Arzberg 149.65 273 *i* PKiKP **PKiKP 19 14 34.3 +0.5**
comp=Z,82nm,1.6s,SNR=17
OKC Ostrava-Krasne 149.66 279 *e*PKP **PKPbc 19 14 31.9 -0.8**
OKC *ep*PKP **PKiKP 19 14 34.4 +0.7**
OKC *ex* x 19 14 39.0
OKC *ex* x 19 14 51.3
OKC *e*SS SS 19 37 23.1 +1.3
OKC AMS AMS 20 32 50.0
comp=Z,1μm,17.3s
OKC Ostrava-Krasne 149.66 279 *e*PKHKP **PKPbc 19 14 31.9 -0.8**
OKC *e* 19 14 39.0
OKC *e*SS SS 19 37 23.1 +1.3
OKC MLR MLR
comp=Z,1μm,17.3s
CONA Conrad Observa 149.86 274 *e*PKPbc **PKPbc 19 14 34.0 +0.7**
comp=Z,26nm,1.5s
MORC Moravsky Berou 149.96 278⇑*i*P **PKPbc 19 14 32.7 -0.8**
MORC Moravsky Berou 149.96 278⇑PKHKP **PKPbc 19 14 32.7 -0.8**
VRAC Vranov 150.23 277 PKPbc **PKPbc 19 14 33.0 -1.1**
comp=Z,2.1nm,0.3s,baz=124,slow=10.0,SNR=3.7
VRAC Vranov 150.23 277⇑*i*P **PKPdf 19 14 30.1 +1.1**
VRAC Vranov 150.23 277⇑PKIKP **PKPdf 19 14 30.1 +1.1**
MYKA Terra Mystica 150.32 270 *i* PKiKP **PKiKP 19 14 36.0 +0.7**
comp=Z,78nm,1.5s,SNR=11
FINES FINESS Array B 150.49 304 PKPbc **PKPbc 19 14 33.1 -1.2**
comp=Z,39nm,0.8s,baz=96,slow=3.8,SNR=53
KRLC Kraliky 150.54 278 *e*PKP **PKPbc 19 14 34.4 -0.5**
KRLC *ep*PKP **PKiKP 19 14 36.5 +0.9**
KRLC *ex* x 19 14 41.5
KRLC *ex* x 19 14 51.5
KRLC Kraliky 150.54 278 *e*PKIKP **PKPbc 19 14 34.4 -0.5**
KRLC *e* 19 14 36.5
KRLC *e* 19 14 41.5
RES Resolute Bay 150.60 29 PKPbc **PKPbc 19 14 33.2 -1.0**
comp=Z,22nm,0.8s,baz=227,slow=2.1,SNR=14
MOA Molln 150.69 273 *e*PKPbc **PKPbc 19 14 36.1 +0.8**
comp=Z,29nm,1.3s
TREC Trest 150.83 276 *e*PKP **PKPbc 19 14 34.7 -0.9**
TREC AMS AMS 20 36 40.0
comp=Z,2μm,19.2s
TREC Trest 150.83 276 *e*PKIKP **PKPbc 19 14 34.7 -0.9**
TREC MLR MLR
comp=Z,2μm,19.2s
DPC Dobruska-Polom 150.93 278 *e*PKP **PKPbc 19 14 35.0 -0.8**
DPC *ep*PKP **PKiKP 19 14 37.2 +0.8**
DPC *es*PKP 19 14 42.8
DPC AMS AMS 20 35 50.0
comp=Z,1μm,20.2s
DPC Dobruska-Polom 150.93 278 *e*PKIKP **PKPbc 19 14 35.0 -0.8**
DPC *e* 19 14 37.2
DPC *e* 19 14 39.4
DPC *e* 19 14 42.8
DPC MLR MLR
comp=Z,1μm,20.2s
ABTA Abfaltersbach 151.01 269 *i* PKiKP **PKiKP 19 14 37.2 +0.4**
comp=Z,22nm,0.8s,SNR=7.8
UPC Upice 151.18 278 AMS AMS 20 33 00.0
comp=Z,1μm,17.8s
KSP Ksiaz 151.20 279 *e*PKP **PKPbc 19 14 36.0 -0.4**
KSP Ksiaz 151.20 279 *e*PKIKP **PKPbc 19 14 36.0 -0.4**
GOPC GO Pecny, Ondr 151.54 277 *e*PKP **PKPbc 19 14 35.7 -1.5**
GOPC *ep*PKP **PKPab 19 14 43.2 -2.7**
GOPC *ex* x 19 14 55.2
GOPC *e*SS SS 19 37 35.2 -7.5
GOPC AMS AMS 20 30 00.0
comp=Z,1μm,19.5s
GOPC GO Pecny, Ondr 151.54 277 *e*PKIKP **PKPbc 19 14 35.7 -1.5**
GOPC *e* 19 14 43.2
GOPC MLR MLR
comp=Z,1μm,19.5s
GERES GERESS Array B 151.56 274 PKPbc **PKPbc 19 14 35.4 -2.0**
comp=Z,5.4nm,0.8s,baz=144,slow=2.5,SNR=24
KEV Kevo 151.60 321 PFAKE 19 14 40.0 +3.3
KEV LR LR
comp=Z,2μm,21.0s
PRU Pruhonice 151.72 277 *e*PKP **PKPbc 19 14 36.2 -1.4**
PRU *ep*PKP **PKPab 19 14 43.9 -2.6**
PRU *e*SS SS 19 37 39.0 -5.6
PRU AMS AMS 20 31 20.0
comp=Z,2μm,18.3s
PRU Pruhonice 151.72 277 *e*PKIKP **PKPbc 19 14 36.2 -1.4**
PRU *e* 19 14 43.9
PRU *e*SS SS 19 37 39.0 -5.6
PRU MLR MLR
comp=Z,2μm,18.3s
KHC Kasperske Hory 151.79 274 *e*PKP **PKPbc 19 14 35.8 -2.0**
KHC *ep*PKP **PKPab 19 14 43.7 -3.2**
KHC *ex* x 19 14 59.5
KHC *e*SS SS 19 37 47.0 +1.5
KHC AMS AMS 20 41 20.0
comp=Z,2μm,18.6s
KHC Kasperske Hory 151.79 274 *e*PKIKP **PKPbc 19 14 35.8 -2.0**
KHC *e* 19 14 43.7
KHC *e*SS SS 19 37 47.0 +1.5
KHC MLR MLR
comp=Z,2μm,18.6s
KHC Kasperske Hory 151.79 274 *e*PKPdf **PKPdf 19 14 32.5 +1.1**
PVCC Panska Ves 151.98 278 *e*PKP **PKPbc 19 14 36.5 -1.7**

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
PVCC				*e*pPKP		**PKiKP**	**19 14 40.1**	**+1.6**
PVCC					AMS	AMS	20 36 30.0	
	comp=Z,2μm,22.5s							
PVCC	**Panska Ves**	**151.98**	**278**	*e*PKiKP		**PKPbc**	**19 14 36.5**	**-1.7**
PVCC				*e*			19 14 40.1	
PVCC					MLR	MLR		
	comp=Z,2μm,22.5s							
ARE0	**ARCESS Array S**	**152.12**	**320**	*e*PKPdf		**PKPdf**	**19 14 29.5**	**-1.8**
MOTA	**Moosalm**	**152.15**	**269**	*i* PKiKP		**PKiKP**	**19 14 39.7**	**+0.5**
	comp=Z,26nm,0.8s,SNR=11							
FETA	**Feichten**	**152.16**	**268**	*i* PKiKP		**PKiKP**	**19 14 40.1**	**+0.9**
	comp=Z,39nm,1.1s,SNR=10							
RETA	**Reutte**	**152.42**	**269**	*e*PKiKP		**PKiKP**	**19 14 40.4**	**+0.8**
	comp=Z,20nm,0.9s							
DAVOX	**Davos/Dischmat**	**152.49**	**267**	PKPbc		**PKPbc**	**19 14 38.9**	**-0.8**
	comp=Z,14nm,0.8s,baz=149,slow=11,SNR=10.0							
BRG	**Berggiesshubel**	**152.50**	**278**	*e*PKP		**PKPbc**	**19 14 40.1**	**+0.8**
	comp=Z,8.2nm,0.9s							
BRG				*i*			19 16 32.7	
	comp=Z,28nm,1.1s							
BRG	**Berggiesshubel**	**152.50**	**278**	*e*PKP		**PKPbc**	**19 14 40.1**	**+0.8**
	comp=Z,8.2nm,0.9s							
BRG				*i*			19 16 32.7	
	comp=Z,28nm,1.1s							
BRG	**Berggiesshubel**	**152.50**	**278**	*e*PKiKP		**PKPbc**	**19 14 40.1**	**+0.8**
BRG				pmax		pmax		
	comp=Z,28nm,1.1s							
TUE	**Stuetta**	**152.60**	**266**	*e*PKPbc		**PKPbc**	**19 14 41.2**	**+1.3**
HAMF	**Hammerfest**	**152.75**	**323**	*e*PKPdf		**PKPdf**	**19 14 33.9**	**+1.8**
DAVA	**Damuels**	**152.79**	**268**	*e*PKPbc		**PKPbc**	**19 14 40.7**	**+0.4**
	comp=Z,25nm,1.1s							
NKC	**Novy Kostel**	**153.00**	**275**	AMS		AMS	20 33 40.0	
	comp=Z,2μm,20.4s							
BNI	**Bardonecchia**	**153.18**	**261**	PFAKE			19 14 40.0	-1.2
BNI				LR		LR		
	comp=Z,3μm,22.0s							
CLL	**Collm**	**153.23**	**278**	*e*PKPdf		**PKPbc**	**19 14 42.0**	**+1.1**
	comp=Z,13nm,1.0s							
CLL				*i* PKPdif		**PKPab**	**19 14 47.1**	**-5.8**
	comp=Z,82nm,2.0s							
CLL				*i* PKPab		PKiKP	19 14 52.3	+11
	comp=Z,69nm,1.7s							
CLL				*e*SS		SS	19 37 54.0	-7.2
CLL				*e*			19 44 04.0	
CLL				*e*			19 44 40.0	
CLL				L		L	20 29 00.0	
	comp=Z,1μm,20.3s							
CLL	**Collm**	**153.23**	**278**	*e*PKiKP		**PKPbc**	**19 14 42.0**	**+1.1**
CLL				*i*			19 14 47.1	
CLL				*i*			19 14 52.3	
CLL				pmax		pmax		
	comp=Z,13nm,1.0s							
CLL				MLR		MLR		
	comp=Z,1μm,20.3s							
KBS	**Kingsbay**	**153.44**	**342**	*e*PKPdf		**PKPdf**	**19 14 32.9**	**0.0**
KBS	**Kingsbay**	**153.44**	**342**	PFAKE			19 14 40.0	-0.6
KBS				LR		LR		
	comp=Z,2μm,21.0s							
HSPB	**Hornsund (broa**	**153.63**	**338**	*e*PKPdf		**PKPdf**	**19 14 33.9**	**+0.7**
BFO	**Black Forest**	**154.24**	**269**	*e*PKiKP		**PKPbc**	**19 14 41.7**	**-1.5**
BFO				MLR		MLR		
	comp=Z,1μm,20.0s							
BFO	**Black Forest**	**154.24**	**269**	*e*PKPbc		**PKPbc**	**19 14 41.7**	**-1.5**
BFO				LR		LR		
	comp=Z,1μm,20.0s							
TRO	**Tromso**	**154.42**	**321**	*e*PKPdf		**PKPdf**	**19 14 34.0**	**-0.5**
TRO				*e*PP		**PP**	**19 18 35.6**	**+2.2**
ESDC	**Sonseca Array**	**154.87**	**240**	PKP		**PKPdf**	**19 14 37.3**	**+1.1**
	comp=Z,0.3nm,0.5s,baz=133,slow=1.3,SNR=4.7							
ESDC				PKPbc		**PKPbc**	**19 14 44.9**	**0.0**
	comp=Z,5.6nm,0.9s,baz=135,slow=1.1,SNR=11							
HFS	**Hagfors**	**156.03**	**298**	PKPab		**PKPab**	**19 15 03.2**	**-1.4**
	comp=Z,6.5nm,0.7s,baz=114,slow=3.7,SNR=13							
MTE	**Manteigas**	**157.11**	**235**	PFAKE			19 14 50.0	+11
MTE				LR		LR		
	comp=Z,3μm,22.0s							
NC602	**NORSAR Array S**	**157.20**	**299**	*e*PKPdf		**PKPdf**	**19 14 38.6**	**+0.1**
NC602				IVmB_BB			19 14 46.4	
	comp=Z,403nm,3.7s							
NB2	**NORSAR Subarra**	**157.40**	**299**	PKPdf		**PKPdf**	**19 14 43.7**	**+4.9**
	comp=Z,4.9nm,1.0s,baz=98,slow=1.3							
NB2	**NORSAR Subarra**	**157.40**	**299**	PKPdf		**PKPdf**	**19 14 43.7**	**+4.9**
	baz=98,slow=1.3							
NOA	**NORSAR Array B**	**157.40**	**299**	PKPab		**PKPab**	**19 15 08.8**	**-1.7**
	comp=Z,3.3nm,0.8s,baz=97,slow=4.7,SNR=8.1							
KONO	**Kongsberg**	**157.97**	**295**	*e*PKPdf		**PKPdf**	**19 14 39.8**	**+0.3**
KONO				*e*PKPab		**PKPab**	**19 15 13.5**	**+0.6**
HOMB	**Homborsund**	**158.23**	**291**	*e*PKPdf		**PKPdf**	**19 14 40.7**	**+0.9**
HOMB				IVmB_BB			19 14 55.0	
	comp=Z,664nm,4.3s							
BLS5	**Blasjo**	**159.50**	**294**	*e*SS		SS	19 39 09.1	+0.6
AKN	**Aaknes**	**159.51**	**302**	*e*PKPdf		**PKPdf**	**19 14 41.0**	**-0.3**
AKN				IVmB_BB			19 14 49.6	
	comp=Z,577nm,3.2s							
AKN				*e*PKPab		**PKPab**	**19 15 19.6**	**0.0**
AKN				*e*SS		SS	19 39 09.1	+0.7
FOO	**Floro**	**160.42**	**300**	*e*PKPdf		**PKPdf**	**19 14 41.3**	**-0.9**
FOO				*e*PP		**PP**	**19 19 07.1**	**+0.5**
FOO				*e*SS		SS	19 39 18.3	+0.4
SUE	**Sulen**	**160.53**	**298**	*e*PKPdf		**PKPdf**	**19 14 43.6**	**+1.2**
SUE				*e*SS		SS	19 39 19.5	+0.4
CMLA	**Cha da Macela**	**160.57**	**196**	PFAKE			19 14 50.0	+6.7
CMLA				LR		LR		
	comp=Z,3μm,20.0s							
EKA	**Eskdalemuir Ar**	**163.70**	**278**	PKPab		**PKPab**	**19 15 36.6**	**-1.5**
	comp=Z,1.5nm,0.8s,baz=111,slow=3.9,SNR=3.0							
ESK	**Eskdalemuir**	**163.72**	**278**	PFAKE			19 15 00.0	+14
ESK				LR		LR		
	comp=Z,2μm,21.0s							
BORG	**Borgarnes**	**170.28**	**331**	PFAKE			19 15 00.0	+10
BORG				LR		LR		
	comp=Z,2μm,20.0s							

MOS ***09*** *19:04:53.9±1.0, 55°.11N×160°.41W, h10km, mb5.4/62, MS4.7/5, Error ellipse: s-maj=8.6km s-min=5.4km az=79.1*
ISCJB ***09*** *19:04:57.6±0.1, 55°.00N±0°.02×160°.29W±0°.02, h36km, mb5.0/205, MS4.7/25, Error ellipse: s-maj=3.0km s-min=1.9km az=179.3*
NEIC ***09*** *19:04:58.8, 54°.86N×160°.17W, h21km, mb5.1/112, ML4.8(AEIC), After AEIC.*
NEIC Felt at Chignik, Cold Bay, Perryville and Sand Point.
GCMT ***09*** *19:04:58.8±0.4, 54°.68N×160°.28W, h52km±2km, MW5.1/41, Moment Tensor Solution. s41,c56; s38,c57; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr3.92±.25; Mθθ-2.76±.20; Mφφ-1.16±.20; Mrθ2.58±.21; Mθφ-1.61±.16; Mφr1.32±.17; Best double couple: M0=4.81000×10^16 NP1:φs61.00000°, δ84.00000°, λ92.00000°. NP2: φs236.00000°, δ27.00000°, λ85.00000°. Principal axes: T 4.8950, Plg71.0000°, Azm336.0000°; N -0.1710, Plg2.0000°, Azm240.0000°; P -4.7240, Plg18.0000°, Azm149.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
IDC ***09*** *19:04:58.3±0.6, 54°.98N×160°.31W, h33km±3km, mb4.7/42, mb1 4.7/45, mb1mx4.6/72, mbtmp4.9/45, ML4.1/3, MS4.4/17, Ms1 4.4/17, ms1mx4.0/67 Error ellipse: s-maj=12.4km s-min=8.7km az=171.0*
BJI ***09*** *19:04:58.6, 55°.37N×160°.80W, h37km, mb5.1/64, mB5.3/43, Ms5.3/38, Ms7 5.1/38*
ISC 09 19:04:58.3±0.3, 54°.94N±0°.04×160°.33W±0°.03, h32km±1km, h32km:pP-P, n770, σ1§48/882, mb5.1/206, MS4.7/26, 52C-9D, Alaska Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
SSLS				S		**Sb**	**19 06 02.4**	**+0.1**
SSLW	**Shishaldin Wes**	**2.20**	**267**	P		**Pb**	**19 05 36.1**	**-1.3**
AZAC	**Aniakchak**	**2.29**	**30**	P		**Pn**	**19 05 35.7**	**+1.9**
ANNE	**Aniakchak Nort**	**2.35**	**32**	P		**Pn**	**19 05 36.7**	**+2.0**
ANNW	**Aniakchak Nort**	**2.35**	**29**	P		**Pn**	**19 05 36.8**	**+2.1**
WESN	**West Dahl Nort**	**2.49**	**263**	P		**Pb**	**19 05 40.5**	**-1.8**
WESE	**West Dahl East**	**2.51**	**261**	P		**Pb**	**19 05 41.0**	**-1.8**
WEBT	**Westdahl Beart**	**2.59**	**264**	P		**Pb**	**19 05 42.0**	**-1.9**
WESP	**Westdahl Peak**	**2.59**	**262**	P		**Pb**	**19 05 42.2**	**-1.7**
AKGG	**Akutan Green G**	**3.38**	**260**	P		**Pn**	**19 05 52.6**	**+3.9**
PLK1	**Peulik 1**	**3.54**	**34**	P		**Pn**	**19 05 53.4**	**+2.6**
PLK3	**Peulik 3**	**3.56**	**38**	P		**Pn**	**19 05 53.7**	**+2.4**
PLK5	**Peulik 5**	**3.61**	**31**	P		**Pn**	**19 05 54.5**	**+2.6**
UNV	**Unalaska Valle**	**3.77**	**256**	P		**Pn**	**19 05 57.1**	**+3.1**
UNV				S		**Sn**	**19 06 41.9**	**+4.6**
MTBL	**Makushin Table**	**3.83**	**258**	P		**Pn**	**19 05 58.1**	**+3.2**
MSW	**Makushin Switc**	**3.91**	**257**	P		**Pn**	**19 05 59.4**	**+3.4**
MSW				S		**Sn**	**19 06 45.3**	**+4.6**
MGOD	**Makushin Gods**	**4.00**	**256**	P		**Pn**	**19 06 00.8**	**+3.6**
MSOM	**Makushin Julie**	**4.03**	**256**	P		**Pn**	**19 06 00.9**	**+3.3**
MSOM	**Makushin Julie**	**4.03**	**256**	P		**Pn**	**19 06 00.9**	**+3.3**
ANCK	**Angle Creek**	**4.22**	**37**	P		**Pn**	**19 06 02.2**	**+1.8**
KELA	**Mount Kelaz**	**4.33**	**34**	P		**Pn**	**19 06 03.7**	**+2.0**
KABU	**Katmai Buttres**	**4.35**	**38**	P		**Pn**	**19 06 04.1**	**+2.0**
KABR	**Katmai Barrier**	**4.36**	**41**	P		**Pn**	**19 06 03.7**	**+1.4**
KVTA	**Katmai Vly 10**	**4.43**	**37**	P		**Pn**	**19 06 04.8**	**+1.6**
KAKN	**Katmai Knife C**	**4.45**	**39**	P		**Pn**	**19 06 05.5**	**+2.1**
KAWH	**Katmai**	**4.61**	**39**	P		**Pn**	**19 06 07.7**	**+2.1**
KAHC	**Katmai Hardscr**	**4.73**	**36**	P		**Pn**	**19 06 08.9**	**+1.6**
OKTU	**Okmok Mt. Tuli**	**4.79**	**254**	P		**Pn**	**19 06 12.1**	**+3.9**
KDAK	**Kodiak Island**	**5.16**	**53**	Pn		Pb	19 06 28.1	+0.4
	15nm,0.3s,baz=155,slow=4.3,SNR=108							
KDAK				Sn		Sb	19 07 26.9	-2.3
	29nm,0.3s,baz=343,slow=19,SNR=4.0							
KDAK				LR		LR	19 08 33.4	
	comp=Z,2μm,21.9s,baz=236,slow=42							
KDAK	**Kodiak Island**	**5.16**	**53**	*i* P		**Pn**	**19 06 12.5**	**-0.7**
KDAK	**Kodiak Island**	**5.16**	**53**	P		**Pn**	**19 06 13.2**	**+0.1**
KDAK				Pn		**Pb**	**19 06 28.1**	**+0.4**
FOSS	**Fourpeaked Sta**	**5.31**	**41**	P		**Pn**	**19 06 18.2**	**+3.0**
FOPK	**Fourpeaked Vol**	**5.37**	**42**	P		**Pn**	**19 06 17.2**	**+1.3**
MCNL	**McNeil River**	**5.37**	**35**	P		**Pn**	**19 06 18.3**	**+2.3**
NIKH	**Nikolski High**	**5.40**	**252**	*e*Pn		**Pn**	**19 06 19.1**	**+2.6**
NIKH				*e*Pg		**Pb**	**19 06 28.9**	**-2.9**
CDD	**Cape Douglas**	**5.42**	**40**	P		**Pn**	**19 06 18.3**	**+1.5**
ILW	**Iliamna West**	**6.43**	**34**	P		**Pn**	**19 06 32.9**	**+2.1**
SVW2	**Sparrevohn**	**6.67**	**20**	*e*Pn		**Pn**	**19 06 30.1**	**-3.7**
SVW2				*e*Pg		Pb	19 06 39.1	-14
HOM	**Homer**	**6.67**	**41**	*e*Pn		**Pn**	**19 06 33.4**	**-0.5**
RDWB	**Redoubt West**	**6.86**	**33**	P		**Pn**	**19 06 38.9**	**+2.3**
RSO	**Redoubt South**	**6.86**	**33**	*e*Pn		**Pn**	**19 06 39.7**	**+3.0**
NCT	**North Crescent**	**6.88**	**32**	P		**Pn**	**19 06 39.4**	**+2.5**
SPWE	**Spurr West**	**7.56**	**30**	P		**Pn**	**19 06 48.2**	**+2.0**
CKL	**Chakachamna La**	**7.56**	**31**	P		**Pn**	**19 06 48.4**	**+2.1**
SPU	**Mount Spurr**	**7.64**	**32**	*e*Pn		**Pn**	**19 06 48.2**	**+1.1**
SLKM	**Skilak Lake**	**7.77**	**40**	P		**Pn**	**19 06 51.2**	**+2.2**
SLKM	**Skilak Lake**	**7.77**	**40**	P		**Pn**	**19 06 51.2**	**+2.2**
STLK	**Strandline Lak**	**7.95**	**31**	P		**Pn**	**19 06 53.3**	**+1.8**
TT01	**Tatalina**	**8.29**	**14**	P		**Pn**	**19 06 57.3**	**+1.2**
TTA	**Tatalina**	**8.32**	**14**	P		**Pn**	**19 06 57.5**	**+1.0**
TTA	**Tatalina**	**8.32**	**14**	P		**Pn**	**19 06 57.5**	**+1.0**
KOFP	**Korovin Flat P**	**8.61**	**258**	P		**Pn**	**19 07 02.8**	**+2.3**
MID	**Middleton Isla**	**8.82**	**54**	*e*P		**Pn**	**19 07 03.3**	**0.0**
MID	**Middleton Isla**	**8.82**	**54**	*e*Pn		**Pn**	**19 07 03.3**	**0.0**
PMR	**Palmer**	**8.89**	**37**	*e*P		**Pn**	**19 07 04.7**	**+0.4**
PMR	**Palmer**	**8.89**	**37**	*e*Pn		**Pn**	**19 07 04.7**	**+0.4**
PPLA	**Purkeypile**	**9.01**	**24**	*e*Pn		**Pn**	**19 07 09.1**	**+3.0**
SML	**Sawmill**	**9.32**	**38**	*e*P		**Pn**	**19 07 09.1**	**-1.1**
SML	**Sawmill**	**9.32**	**38**	*e*Pn		**Pn**	**19 07 09.1**	**-1.1**
CAST	**Castle Rocks**	**9.49**	**23**	*e*Pn		**Pn**	**19 07 14.7**	**+2.2**
EYAK	**Cordova Ski Ar**	**9.60**	**48**	*e*Pn		**Pn**	**19 07 12.8**	**-1.1**
SCM	**Sheep Creek Mo**	**9.70**	**39**	*e*P		**Pn**	**19 07 14.9**	**-0.5**
SCM	**Sheep Creek Mo**	**9.70**	**39**	*e*Pn		**Pn**	**19 07 14.9**	**-0.5**
GSTR	**Great Sitkin T**	**9.79**	**260**	*e*Sn		**Sn**	**19 09 02.5**	**-2.9**
GSTR				*e*ScP		**ScP**	**19 16 59.4**	**+1.3**
GSTR				*e*ScS		**ScS**	**19 20 34.5**	**+2.0**
KTH	**Kantishna Hill**	**9.88**	**25**	*e*Pn		**Pn**	**19 07 20.6**	**+2.8**
DIV	**Divide**	**9.89**	**45**	*e*Pn		**Pn**	**19 07 17.2**	**-0.8**
TRF	**Thorofare Moun**	**9.96**	**27**	*e*Pn		**Pn**	**19 07 19.8**	**+0.8**
RAGM	**Ragged Mountai**	**9.99**	**51**	*e*Pn		**Pn**	**19 07 18.5**	**-0.9**
KLU	**Klutina**	**10.03**	**43**	*e*Pn		**Pn**	**19 07 19.5**	**-0.4**
BMRM	**Bremner River**	**10.29**	**48**	*e*Pn		**Pn**	**19 07 23.5**	**-0.1**
RND	**Reindeer**	**10.31**	**30**	*e*P		**Pn**	**19 07 23.2**	**-0.6**
RND	**Reindeer**	**10.31**	**30**	*e*Pn		**Pn**	**19 07 23.2**	**-0.6**
BPAW	**Bear Paw Mtn.**	**10.33**	**23**	*e*Pn		**Pn**	**19 07 25.2**	**+1.3**
MCK	**McKinley**	**10.54**	**29**	*e*P		**Pn**	**19 07 28.7**	**+1.8**
MCK	**McKinley**	**10.54**	**29**	*e*Pn		**Pn**	**19 07 28.7**	**+1.8**
BWN	**Browne**	**10.76**	**26**	*e*Pn		Pn	19 07 35.9	+6.1
PAX	**Paxson**	**11.09**	**38**	*e*P		**Pn**	**19 07 33.7**	**-0.8**
PAX	**Paxson**	**11.09**	**38**	*e*Pn		**Pn**	**19 07 33.7**	**-0.8**
MLY	**Manley**	**11.19**	**21**	*e*Pn		**Pn**	**19 07 36.6**	**+0.9**
TNA	**Tin City**	**11.29**	**344**	*e*Pn		**Pn**	**19 07 39.6**	**+2.6**
BALM	**Baldy**	**11.31**	**50**	*e*P		**Pn**	**19 07 38.1**	**+0.6**
BALM	**Baldy**	**11.31**	**50**	*e*Pn		**Pn**	**19 07 38.1**	**+0.6**
WRH	**Wood River Hil**	**11.36**	**28**	*e*Pn		**Pn**	**19 07 36.6**	**-1.4**
CCB	**Clear Creek Bu**	**11.57**	**28**	*e*Pn		**Pn**	**19 07 39.1**	**-1.8**
HDA	**Harding Lake**	**11.63**	**30**	*e*Pn		**Pn**	**19 07 41.6**	**-0.1**
MENT	**Mentasta**	**11.71**	**40**	*e*Pn		**Pn**	**19 07 43.0**	**+0.1**
MENT				*e*Pn		Pn	19 07 48.4	+5.5
MDM	**Murphy Dome**	**11.71**	**26**	*e*Pn		**Pn**	**19 07 42.1**	**-0.8**
COLA	**College**	**11.74**	**27**	*i* P		**Pn**	**19 07 42.9**	**-0.3**
COLA	**College**	**11.74**	**27**	*e*Pn		**Pn**	**19 07 46.5**	**+3.3**
ILAR	**Eielson Array**	**11.92**	**29**	Pn		**Pn**	**19 07 41.6**	**-4.1**
	0.6nm,0.3s,baz=218,slow=13,SNR=24							
ILAR				Sn		**Sn**	**19 09 57.6**	**+0.3**
	1.1nm,0.3s,baz=231,slow=23,SNR=4.7							
ILAR				LR		LR	19 12 41.6	
	comp=Z,1μm,19.5s,baz=246,slow=39							
ILB	**Eielson Array**	**11.92**	**29**	*e*Pn		**Pn**	**19 07 44.0**	**-1.7**
IL1	**Eielson Array**	**11.92**	**29**	*e*Pn		**Pn**	**19 07 43.9**	**-1.7**
DOT	**Dot Lake**	**12.02**	**37**	*e*Pn		**Pn**	**19 07 47.1**	**0.0**
COLD	**Coldfoot**	**13.24**	**17**	*e*Pn		**Pn**	**19 08 04.9**	**+1.2**
EGAK	**Eagle**	**13.71**	**36**	*e*Pn		**Pn**	**19 08 09.3**	**-0.8**
FYU	**Fort Yukon**	**13.74**	**26**	*e*Pn		**Pn**	**19 08 13.1**	**+2.6**
DAWY	**Dawson**	**13.95**	**41**	*e*Pn		**Pn**	**19 08 12.5**	**-0.9**
SKAG	**Skagway**	**14.24**	**61**	*e*Pn		**Pn**	**19 08 19.3**	**+1.9**
WRAK	**Wrangell Islan**	**15.81**	**73**	*e*Pn		**P**	**19 08 40.1**	**-1.5**
	45nm,1.0s							
DLBC	**Dease Lake**	**16.93**	**66**	Pn		**Pn**	**19 08 51.9**	**-0.6**
	0.1nm,0.3s,baz=264,slow=11,SNR=27							
DLBC				LR		LR	19 15 04.6	
	comp=Z,565nm,19.2s,baz=287,slow=36							
DLBC	**Dease Lake**	**16.93**	**66**	*e*Pn		**P**	**19 08 54.1**	**-0.1**
	31nm,1.1s							
INK	**Inuvik**	**18.26**	**32**	P		**P**	**19 09 06.6**	**-2.0**
	1.6nm,0.3s,baz=223,slow=12,SNR=44							
INK				LR		LR	19 17 20.1	
	comp=Z,864nm,18.6s,baz=230,slow=41							
INK	**Inuvik**	**18.26**	**32**	*e*P		**P**	**19 09 06.9**	**-1.7**
INK				pmax		pmax		
	comp=Z,56nm,0.9s							
INK	**Inuvik**	**18.26**	**32**	*e*P		**P**	**19 09 06.9**	**-1.7**
	comp=Z,56nm,0.9s							
BBB	**Bella Bella**	**19.24**	**85**	LR		LR	19 15 32.0	
	comp=Z,690nm,18.9s,baz=287,slow=33							
A04D	**Lummi Island**	**23.85**	**89**	P		**P**	**19 10 10.3**	**+2.0**
	baz=299							
NLWA	**Neilton Lookou**	**23.86**	**93**	*e*P		**P**	**19 10 10.5**	**+2.1**
	comp=Z,40nm,1.0s							
NLWA				*e*P		**sP**	**19 10 20.8**	**-0.8**
PET	**Petropavlovsk**	**23.95**	**282**	*e*P		**P**	**19 10 08.9**	**-0.3**
PET				pmax		pmax		
	comp=Z,157nm,1.3s							
PET				MLR		MLR		
	comp=Z,900nm,13.0s							
PET				MLR		MLR		
	comp=Z,2μm,14.0s							
PET	**Petropavlovsk**	**23.95**	**282**	*e*P		**P**	**19 10 09.4**	**+0.2**
	comp=Z,236nm,1.3s							
B05A	**Bryant**	**24.43**	**90**	P		**P**	**19 10 15.6**	**+1.9**
	baz=300							
YKW3	**Yellowknife Ar**	**24.43**	**53**	*e*P		**P**	**19 10 13.5**	**0.0**
	comp=Z,22nm,0.9s							
YKA	**Yellowknife Ar**	**24.44**	**53**	P		**P**	**19 10 13.5**	**-0.1**
	comp=Z,10nm,0.8s,baz=269,slow=8.3,SNR=103							
YKA				PcP		**PcP**	**19 13 49.9**	**-1.5**
	comp=Z,1.6nm,0.6s,baz=272,slow=2.2,SNR=5.8							
YKB5	**Yellowknife Ar**	**24.44**	**53**	*e*P		**P**	**19 10 11.7**	**-1.9**
PEA0	**Petropavlovsk-**	**24.46**	**283**	*e*P		**P**	**19 10 14.5**	**+0.6**
PEA0B	**Petropavlovsk-**	**24.46**	**283**	*e*P		**P**	**19 10 14.6**	**+0.7**
	comp=Z,62nm,0.8s							
PETK	**Petropavlovsk-**	**24.46**	**283**	P		**P**	**19 10 14.4**	**+0.5**
	comp=Z,48nm,0.5s,baz=80,slow=14,SNR=158							
PETK				LR		LR	19 19 48.2	
	comp=Z,279nm,21.0s,baz=78,slow=36							
E03A	**Lebam**	**24.49**	**95**	*e*P		**P**	**19 10 19.1**	**+4.9**
	comp=Z,44nm,0.9s							
SEY	**Seymchan**	**25.13**	**308**	P		**P**	**19 10 18.7**	**-1.2**
	comp=Z,13nm,0.9s,baz=85,slow=8.8,SNR=25							
SEY	**Seymchan**	**25.13**	**308**	*c*eP		**P**	**19 10 19.2**	**-0.7**
LON	**Longmire**	**25.39**	**93**	*e*P		**P**	**19 10 24.4**	**+2.0**
LON				*e*pP		**pP**	**19 10 25.1**	**-6.6**
LON				*e*PcP		**PcP**	**19 13 57.4**	**+3.4**
F04A	**Amboy**	**25.49**	**95**	*e*P		**P**	**19 10 24.8**	**+1.6**
	comp=Z,44nm,1.4s							
F04A				*e*P		**sP**	**19 10 37.1**	**+0.6**
B08A	**Colville Reser**	**25.97**	**88**	*e*P		**P**	**19 10 29.1**	**+1.4**
	comp=Z,38nm,1.1s							
B08A				*e*P		**pP**	**19 10 34.8**	**-2.2**
MA2	**Magadan**	**26.35**	**300**	*e*P		**P**	**19 10 32.0**	**+1.0**
H04A	**Detroit Lake**	**26.35**	**97**	*e*P		**P**	**19 10 32.7**	**+1.5**
	comp=Z,38nm,1.0s							
H04A				*e*P		**sP**	**19 10 43.1**	**-1.3**
TRW	**Toppenish Ridg**	**26.37**	**93**	P		sP	19 10 43.3	-1.3
C09A	**Chrisman Ranch**	**26.87**	**88**	*e*P		**P**	**19 10 39.5**	**+3.7**
C09A	**Chrisman Ranch**	**26.87**	**88**	*e*P		**P**	**19 10 39.5**	**+3.7**
	comp=Z,15nm,1.0s							
D08A	**Wollman Farm,**	**26.89**	**90**	*e*P		**P**	**19 10 36.4**	**+0.5**
	comp=Z,30nm,1.4s							
D08A				*e*P		**sP**	**19 10 47.5**	**-1.7**
HAWA	**Hanford**	**26.90**	**91**	*e*P		**P**	**19 10 37.9**	**+1.9**
	comp=Z,25nm,1.0s							
HAWA				*e*P		**sP**	**19 10 48.1**	**-1.1**
HAWA				*e*PcP		**PcP**	**19 13 55.1**	**-2.3**
NEW	**Newport**	**27.29**	**86**	P		**P**	**19 10 40.8**	**+1.2**
	baz=300,SNR=5.6							
NEW	**Newport**	**27.29**	**86**	*e*P		**P**	**19 10 41.6**	**+2.0**
NEW	**Newport**	**27.29**	**86**	*e*P		**P**	**19 10 41.6**	**+2.0**
NEW	**Newport**	**27.29**	**86**	P		pP	19 10 50.7	+1.8
E09A	**Wood Farm, Sta**	**27.63**	**90**	*e*P		**P**	**19 10 42.5**	**-0.1**
	comp=Z,28nm,1.1s							
E09A				*e*P		**sP**	**19 10 54.3**	**-1.5**
J05D	**Fort Rock, OR**	**27.75**	**98**	P		**P**	**19 10 46.0**	**+2.2**
	baz=309,SNR=6.2							
G08A	**Pilot Rock**	**27.85**	**93**	*e*P		**P**	**19 10 42.0**	**-2.7**
	comp=Z,13nm,1.2s							
G08A				*e*P		**sP**	**19 10 56.2**	**-1.7**
YBH	**Yreka Blue Hor**	**27.91**	**103**	LR		LR	19 19 23.7	
	comp=Z,1μm,20.5s,baz=308,slow=31							
K05A	**Summer Lake**	**28.30**	**99**	*e*P		**P**	**19 10 50.4**	**+1.6**
	comp=Z,35nm,1.3s							
K05A				*e*P		**sP**	**19 11 01.3**	**-0.8**
F10A	**Beach Ranch, E**	**28.46**	**90**	*e*P		**P**	**19 10 51.5**	**+1.4**
	comp=Z,8.7nm,0.8s							
WALA	**Waterton Lakes**	**28.74**	**82**	*e*P		**P**	**19 10 54.3**	**+1.7**
WALA	**Waterton Lakes**	**28.74**	**82**	*e*P		**P**	**19 10 54.3**	**+1.7**
	comp=Z,35nm,1.5s							
BSMT	**Bassoo Peak**	**28.85**	**85**	*e*P		**P**	**19 10 55.7**	**+2.0**
BSMT				P		**pP**	**19 11 04.9**	**+1.9**
BMO	**Blue Mountains**	**29.06**	**92**	*e*P		pP	19 11 06.7	+1.9
BMO	**Blue Mountains**	**29.06**	**92**	*e*P		pP	19 11 06.7	+1.9
MOD	**Modoc Plateau**	**29.16**	**100**	*e*P		P	19 11 02.2	+

HVU e 19 11 42.4
HVU Hansel Valley 33.55 93 eP **P 19 11 36.1 +1.1**
HVU epP **P 19 11 36.8 +1.8**
HVU eP **pP 19 11 42.4 -2.1**
NKL Nikolayevsk 33.80 292 eP **P 19 11 37.0 +0.2**
NKL e 19 13 06.0
NKL pmax pmax
comp=Z,30nm,1.0s
TYV Tymovskoe 33.81 287 eP **P 19 11 37.8 +0.8**
TYV pmax pmax
comp=E,40nm,1.0s
TYV pmax pmax
comp=Z,66nm,1.0s
AHID Auburn Hatcher 33.90 90 eP **P 19 11 36.8 -1.3**
comp=Z,9.5nm,1.1s
AHID eP **sP 19 11 52.9 +1.5**
BGU Big Grassy Mou 33.95 94 eP **P 19 11 38.8 +0.2**
comp=Z,36nm,1.7s
BGU eP **sP 19 11 50.3 -1.5**
R11A Troy Canyon, C 34.22 100 P **P 19 11 42.0 +1.1**
baz=314,SNR=11
HWUT Hardware Ranch 34.36 92 eP sP 19 11 53.9 -1.5
DAC Darwin (Calif) 34.55 105 eP **P 19 11 40.8 -3.0**
DAC pmax pmax
comp=Z,25nm,1.4s
DAC Darwin (Calif) 34.55 105 eP **P 19 11 40.8 -3.0**
comp=Z,25nm,1.4s
DUG Dugway, Tooele 34.56 95 P **P 19 11 44.9 +1.1**
baz=311,SNR=5.6
DUG Dugway, Tooele 34.56 95 eP **P 19 11 42.3 -1.5**
DUG e 19 11 51.1
DUG pmax pmax
comp=Z,24nm,1.1s
DUG Dugway, Tooele 34.56 95 eP **P 19 11 42.3 -1.5**
comp=Z,24nm,1.1s
DUG eP **pP 19 11 51.1 -2.1**
TCUT Toone Canyon 34.76 93 eP **P 19 11 43.3 -2.4**
comp=Z,16nm,1.0s
TCUT eScP **ScP 19 18 01.3 0.0**
MPMC Manual Prospec 34.77 105 P **P 19 11 47.2 +1.5**
baz=317,SNR=8.3
BW06 Boulder Array 34.79 89 eP **P 19 11 46.2 +0.4**
BW06 eP **pP 19 11 56.9 +1.7**
PD31 Pinedale Array 34.79 89 eP **P 19 11 41.9 -4.0**
PD31 eP **pP 19 11 57.0 +1.7**
PDAR Pinedale Array 34.79 89 P **P 19 11 45.0 -0.8**
comp=Z,0.4nm,0.6s,baz=299,slow=6.6,SNR=4.6
PDAR LR LR 19 24 56.1
comp=Z,123nm,19.2s,baz=299,slow=34
TPNV Topopah Spring 34.83 103 P **P 19 11 48.1 +2.0**
baz=315,SNR=8.4
TPNV Topopah Spring 34.83 103 eP **P 19 11 47.9 +1.8**
TPNV pmax pmax
comp=Z,45nm,1.3s
TPNV Topopah Spring 34.83 103 eP **P 19 11 47.9 +1.8**
comp=Z,45nm,1.3s
A25A Svangstu Ranch 34.91 76 P **P 19 11 47.6 +1.0**
baz=302
JLU Jordanelle 35.08 93 epP pP 19 11 59.9 +2.1
FCC Fort Churchill 35.09 56 eP **P 19 11 48.1 +0.1**
FCC pmax pmax
comp=Z,28nm,0.9s
FCC Fort Churchill 35.09 56 eP **P 19 11 48.1 +0.1**
comp=Z,28nm,0.9s
SCZ2 Santa Cruz Isl 35.12 110 P **P 19 11 49.9 +1.4**
baz=319
NLU North Lily Min 35.14 95 eP P 19 11 42.8 -6.1
NLU eP sP 19 12 00.4 -1.8
A26A Wade Farm, Ken 35.53 75 P **P 19 11 52.8 +0.8**
baz=302
YAK Yakutsk 35.57 310 eP **P 19 11 50.5 -1.6**
YAK pmax pmax
comp=N,4.0nm,0.9s
YAK pmax pmax
comp=E,6.0nm,0.9s
YAK pmax pmax
comp=Z,25nm,0.8s
YAK MLR MLR
comp=Z,978nm,20.0s
YAK MLR MLR
comp=N,271nm,16.0s
YAK MLR MLR
comp=E,624nm,20.0s
YAK Yakutsk 35.57 310 eP **P 19 11 50.7 -1.4**
comp=E,30nm,0.7s
YAK ePcP **PcP 19 14 20.1 -0.1**
GSC Goldstone, Bar 35.70 105 P **P 19 11 56.1 +2.5**
baz=317,SNR=5.7
GSC Goldstone, Bar 35.70 105 eP **P 19 11 57.1 +3.5**
GSC e 19 12 05.6
GSC pmax pmax
comp=Z,32nm,1.4s
GSC Goldstone, Bar 35.70 105 eP **P 19 11 57.1 +3.5**
comp=Z,32nm,1.4s
GSC eP **sP 19 12 05.6 -1.3**
SHPR Sheep Range 35.76 102 eP **P 19 11 56.1 +2.0**
comp=Z,25nm,1.8s
SHPR eP **sP 19 12 06.3 -1.2**
YSS Yuzh-Sakhalins 35.83 281 eP **P 19 11 55.0 +0.6**
YSS MLR MLR
comp=Z,500nm,16.0s
MSU Marysvale 36.05 97 eP **P 19 11 58.5 +1.8**
MSU Marysvale 36.05 97 eP **P 19 11 58.5 +1.8**
MSU eP **sP 19 12 08.9 -1.2**
TMUT Trail Mountain 36.08 95 eP **P 19 11 56.0 -1.1**
TMUT epP **pP 19 11 59.2 -7.3**
TMUT eP **sP 19 12 05.0 -5.4**
P17A Butcher Ranch, 36.23 94 eP **P 19 11 59.3 +1.1**
comp=Z,10.0nm,1.0s
P17A eP **sP 19 12 09.9 -1.6**
D26A Manning 36.34 78 P **P 19 11 59.6 +0.7**
baz=304
Q16A Castle Valley 36.35 95 eP **P 19 12 01.7 +2.4**
comp=Z,32nm,1.2s
F25A Bowman 36.39 80 P **P 19 12 00.7 +1.3**
baz=305
P18A Preston Nutter 36.41 94 eP **P 19 12 02.0 +2.1**
comp=Z,28nm,1.5s
LCMT Little Creek M 36.48 100 eP **P 19 11 58.8 -1.5**
comp=Z,22nm,1.4s
LCMT eP **sP 19 12 12.4 -1.3**
A28A Rude Farm, Bot 36.51 74 P **P 19 12 01.2 +0.9**
baz=303
SRU San Rafael Swe 36.60 95 eP **P 19 12 03.1 +1.8**
SRU pmax pmax
comp=Z,40nm,1.0s
SRU San Rafael Swe 36.60 95 eP **P 19 12 03.1 +1.8**
comp=Z,40nm,1.0s
K22A Casper 36.61 87 eP sP 19 12 12.1 -2.6
comp=Z,13nm,1.0s
B28A Dugan Ranch, T 36.71 75 P **P 19 12 03.2 +1.2**
baz=303
GMRC Granite Mounta 36.72 105 P **P 19 12 04.1 +1.8**
baz=317,SNR=7.3
KNB Kanab 36.72 99 eP pP 19 12 15.1 +3.3
KNB Kanab 36.72 99 epP pP 19 12 15.1 +3.3
LDFC Landfair 36.81 104 eP **P 19 12 05.1 +1.9**
comp=Z,51nm,1.4s
LDFC eP **sP 19 12 14.8 -1.7**
G25A Newell 36.84 81 P **P 19 12 04.4 +1.2**
baz=306
F26A Lodgepole 36.88 80 P **P 19 12 05.0 +1.4**
baz=306
A29A Manning Farm, 37.08 73 P **P 19 12 05.3 +0.2**
baz=303,SNR=8.3
H25A Fruitdale 37.08 82 P **P 19 12 06.2 +0.9**
baz=307
RSSD Black Hills 37.13 83 P **P 19 12 06.6 +0.8**
baz=307
RSSD Black Hills 37.13 83 eP **P 19 12 04.5 -1.4**
RSSD pmax pmax
comp=Z,14nm,1.1s
RSSD Black Hills 37.13 83 eP **P 19 12 04.5 -1.4**
comp=Z,14nm,1.1s
O20A White River Ci 37.23 91 P **P 19 12 07.2 +0.5**
baz=311
O20A White River Ci 37.23 91 eP **P 19 12 03.0 -3.8**
comp=Z,27nm,0.9s
O20A eP **pP 19 12 17.7 +1.5**
G26A Maurine 37.25 80 P **P 19 12 07.2 +0.6**
baz=306
B29A Wagenman Farm, 37.26 74 P **P 19 12 07.2 +0.6**
baz=304
IRM Iron Mountain 37.47 105 P **P 19 12 08.7 +0.1**
baz=318,SNR=5.9
W13A Hualapai Mount 37.48 102 eP **P 19 12 09.8 +0.9**
comp=Z,23nm,1.3s
W13A eP **pP 19 12 19.6 +1.2**
A30A Hoffart Farm, 37.58 73 P **P 19 12 10.1 +0.7**
baz=303
E28A Huff 37.58 77 P **P 19 12 10.5 +1.1**
baz=305
ASAJ Asahikawa 37.58 278 P **P 19 12 09.8 +0.4**
comp=Z,31nm,0.9s,baz=7.3,slow=2.1,SNR=16
ASAJ Asahikawa 37.58 278 eP **P 19 12 07.4 -2.0**
comp=Z,37nm,1.0s
MONP2 Monument Peak 37.70 107 P **P 19 12 12.5 +1.7**
baz=319
J25A Sunshine Ranch 37.72 84 P **P 19 12 11.8 +1.1**
baz=308
B30A Myrvik Farm, E 37.84 73 P **P 19 12 11.6 +0.1**
baz=304,SNR=5.1
PV10 Paradox Valley 37.95 94 eP **P 19 12 16.9 +4.0**
Y12C Blythe 38.12 105 eP **P 19 12 15.8 +1.9**
comp=Z,40nm,1.4s
Y12C eP **sP 19 12 26.0 -1.4**
PV05 Paradox Valley 38.12 95 eP P 19 12 21.1 +6.9
ULM Lac du Bonnet 38.19 70 P **P 19 12 14.8 +0.3**
comp=Z,12nm,0.9s,baz=309,slow=9.6,SNR=8.7
ULM LR LR 19 28 07.4
comp=Z,574nm,18.4s,baz=276,slow=36
ULM Lac du Bonnet 38.19 70 eP **P 19 12 14.6 +0.1**
ULM pmax pmax
comp=Z,19nm,1.0s
ULM Lac du Bonnet 38.19 70 eP **P 19 12 14.6 +0.1**
comp=Z,19nm,1.0s
D30A Buchanan 38.36 75 P **P 19 12 16.6 +0.7**
baz=305
PV01 Paradox Valley 38.38 94 eP pP 19 12 26.8 +0.8
GLA Glamis 38.47 106 eP sP 19 12 32.8 +2.4
GLA Glamis 38.47 106 esP sP 19 12 32.8 +2.4
F29A Eureka 38.50 78 P **P 19 12 17.5 +0.3**
baz=306
A32A Rocking H Ranc 38.59 72 P **P 19 12 18.5 +0.7**
baz=304
WUAZ Wupatki 38.61 100 P **P 19 12 20.5 +2.2**
baz=316
WUAZ Wupatki 38.61 100 eP **P 19 12 19.8 +1.5**
comp=Z,33nm,1.2s
WUAZ eP **sP 19 12 30.4 -1.3**
Y14A Wickenburg 38.83 103 eP **P 19 12 17.4 -2.7**
comp=Z,72nm,1.3s
Y14A eP **sP 19 12 31.9 -1.5**
I28A Midland 38.85 81 P **P 19 12 20.8 +0.7**
baz=308
B32A Ashes, Strandq 38.86 72 P **P 19 12 20.4 +0.3**
baz=304
D31A Mcclaflin, Tow 38.97 75 P **P 19 12 21.1 +0.1**
baz=305
H29A Onida 39.01 80 P **P 19 12 22.1 +0.7**
baz=307
MVCO Mesa Verde 39.06 95 eP **P 19 12 20.2 -2.0**
A33A Warroad 39.18 71 P **P 19 12 22.2 -0.6**
baz=304,SNR=6.2
HABR Khabarovsk 39.27 288 ceP **P 19 12 22.2 -1.3**
HABR e 19 13 51.6
HABR e 19 14 32.4
HABR eS **S 19 18 18.8 -2.9**
HABR e 19 18 21.9
HABR eSS **SS 19 21 11.7 -3.6**
HABR e 19 22 29.0
HABR pmax pmax
comp=N,9.0nm,1.2s
HABR pmax pmax
comp=E,33nm,1.2s
HABR pmax pmax
comp=Z,74nm,1.2s
HABR MLR MLR
comp=Z,245nm,16.0s
113A Mohawk Valley, 39.27 105 eP pP 19 12 35.2 +2.0
G30A Faulkton 39.31 78 P **P 19 12 24.5 +0.6**
baz=307
D32A Dogwood Acres, 39.31 74 P **P 19 12 24.6 +0.7**
baz=306
B33A Robert and Kas 39.45 72 P **P 19 12 25.6 +0.5**
baz=305
C33A Trail 39.64 73 P **P 19 12 27.4 +0.8**
baz=305
S22A 4UR Ranch, Cre 39.65 93 eP pP 19 12 39.6 +2.9
B34A Aery, Baudette 39.84 71 P **P 19 12 27.7 -0.6**
baz=305,SNR=6.0
D34A Park Rapids 40.35 73 P **P 19 12 32.7 +0.2**
baz=306
214A Organ Pipe Nat 40.41 105 P **P 19 12 34.6 +1.3**
baz=319
B35A Bob, Littlefor 40.41 71 P **P 19 12 32.5 -0.6**
baz=305,SNR=5.5
SDCO Great Sand Dun 40.42 92 P **P 19 12 33.4 -0.1**
baz=313
F33A 5 Mile Ranch, 40.48 75 P **P 19 12 33.7 +0.1**
baz=307
KLR Kul'dur 40.63 291 P **P 19 12 34.0 -0.8**
comp=Z,8.8nm,0.7s,baz=64,slow=7.6,SNR=27
H32A Carlson Farm, 40.65 78 P **P 19 12 35.8 +0.7**
baz=308
C35A Jirik Farms, M 40.66 72 P **P 19 12 35.0 -0.1**
baz=306
E34A Wadena 40.70 74 P **P 19 12 35.8 +0.3**
baz=306
G33A Ortonville 40.79 76 P **P 19 12 36.3 +0.1**
baz=308
D35A Remer 40.98 73 P **P 19 12 38.2 +0.4**
baz=306
E35A Pequot Lakes 41.10 73 P **P 19 12 39.6 +0.9**
baz=307
G34A Benson 41.21 76 P **P 19 12 39.8 +0.2**
baz=308
C36A Pine Crest Far 41.25 71 P **P 19 12 40.2 +0.3**
baz=306
TUC Tucson 41.28 102 P **P 19 12 41.3 +0.9**
baz=318
TUC Tucson 41.28 102 eP **P 19 12 40.6 +0.1**
TUC pmax pmax
comp=Z,19nm,1.3s
TUC Tucson 41.28 102 eP **P 19 12 40.6 +0.1**
comp=Z,19nm,1.3s
TUC eP **sP 19 12 52.2 -1.7**
D36A Goodland 41.42 72 P **P 19 12 41.1 -0.2**
baz=306,SNR=5.2
F35A Swanville 41.43 74 P **P 19 12 41.4 -0.1**
baz=307
T25A Trinidad 41.46 92 P **P 19 12 42.7 +0.6**
baz=314
T25A Trinidad 41.46 92 eP pP 19 12 53.7 +2.1
H34A Spellman Lake, 41.49 77 P **P 19 12 41.9 -0.1**
baz=308
ECSD EROS Data Cent 41.60 78 P **P 19 12 42.6 -0.2**
baz=309
ECSD EROS Data Cent 41.60 78 eP **P 19 12 41.8 -1.1**
comp=Z,70nm,2.0s
ECSD eP **pP 19 12 52.5 +0.1**
C37A Embarrass 41.62 71 P **P 19 12 42.8 -0.2**
baz=306,SNR=5.7
E36A McGregor 41.76 73 P **P 19 12 44.4 +0.3**
baz=307
ANMO Albuquerque 41.83 96 PcP **PcP 19 14 40.8 +0.3**
comp=Z,6.4nm,1.0s,baz=301,slow=5.5,SNR=6.3
ANMO Albuquerque 41.83 96 eP P 19 12 52.6 +7.6
ANMO pmax pmax
comp=Z,9.0nm,1.2s
ANMO Albuquerque 41.83 96 eP **P 19 12 45.4 +0.3**
comp=Z,10.0nm,1.3s
ANMO eP **pP 19 12 56.3 +1.7**
ANMO ePcP **PcP 19 14 41.9 +1.3**
D37A Cotton 41.83 71 P **P 19 12 44.7 0.0**
baz=307
EYMN Ely 41.87 70 P **P 19 12 45.3 +0.2**
baz=306
EYMN Ely 41.87 70 eP **P 19 12 44.6 -0.4**
comp=Z,37nm,1.1s
G35A Watkins 41.87 75 P **P 19 12 45.2 +0.2**
baz=308
H35A Sunnyside Ranc 42.00 76 P **P 19 12 46.6 +0.5**
baz=308
F36A Milaca 42.01 74 P **P 19 12 46.6 +0.4**
baz=308
C38A Sawbill Land. 42.13 70 P **P 19 12 47.0 -0.1**
baz=306
G36A St. Michael 42.27 75 P **P 19 12 49.0 +0.7**
baz=308
BNM Barren Site 42.30 97 eP **P 19 12 50.1 +1.1**
BNM eP **sP 19 13 00.9 -1.4**
O31A Woolen Ranch, 42.36 84 P **P 19 12 49.8 +0.7**
baz=312
K34A Le Mars 42.55 79 P **P 19 12 51.3 +0.7**
baz=310
H36A Jessenland, He 42.58 75 P **P 19 12 51.9 +1.0**
baz=308
M33A Taylor Creek F 42.65 81 P **P 19 12 52.1 +0.7**
baz=310
C39A Grand Marais 42.69 69 P **P 19 12 51.8 +0.1**
baz=307
SPMN Marine on St. 42.80 74 P **P 19 12 52.9 +0.3**
baz=308
SPMN Marine on St. 42.80 74 eP **P 19 12 51.2 -1.4**
comp=Z,21nm,1.0s
SPMN eP **pP 19 13 02.9 +0.7**
L34A Svendsen Farm, 42.86 80 P **P 19 12 53.3 +0.2**
baz=310
H11N2 WAKE ISLAND Hy 43.02 228 T T 19 59 12.4
baz=28,slow=76,SNR=122
H11N3 WAKE ISLAND Hy 43.02 228 T T 19 59 12.9
baz=28,slow=76,SNR=118
H11N1 WAKE ISLAND Hy 43.04 228 T T 19 58 59.8
baz=28,slow=76,SNR=46
H37A Dierke Farm, C 43.14 75 P **P 19 12 56.3 +0.9**
baz=309
I37A Lemond, Waseca 43.23 76 P **P 19 12 56.2 +0.2**
baz=309
USRK Ussuriysk Ar. 43.53 285 P **P 19 12 57.9 -0.6**
comp=Z,3.8nm,1.0s,baz=62,slow=9.5,SNR=4.7
USRK PcP **PcP 19 14 46.5 +0.7**
comp=Z,1.8nm,0.9s,baz=21,slow=2.9,SNR=4.5
J37A Redenius Farm, 43.59 77 P **P 19 12 59.3 +0.3**
baz=310
P33A Williams Farm, 43.77 84 P **P 19 13 00.9 +0.4**
baz=312
I38A Scanlan Farm, 43.81 75 P **P 19 13 01.3 +0.5**
baz=309
O34A Beatrice 43.84 82 P **P 19 13 01.6 +0.5**
baz=312
Q33A Connelly Farm, 43.99 84 P **P 19 13 02.8 +0.5**
baz=312
J38A Wedel Dairy, R 44.19 76 P **P 19 13 04.8 +1.0**
baz=310
P34A Walnut Farm, R 44.19 83 P **P 19 13 04.5 +0.6**
baz=312
H11S2 WAKE ISLAND Hy 44.20 228 T T 20 00 35.6
baz=28,slow=74,SNR=32
H11S3 WAKE ISLAND Hy 44.20 228 T T 20 00 34.8
baz=181,slow=74,SNR=7.3
COWI Conover 44.27 71 eP **P 19 13 02.8 -1.7**
comp=Z,10nm,0.8s
VLA Vladivostok 44.27 284⇑ iP **P 19 13 03.4 -1.1**
VLA i 19 14 49.6
VLA pmax pmax
comp=Z,22nm,1.8s
BOD Bodaibo 44.50 310 eP **P 19 13 03.9 -2.2**
BOD pmax pmax
comp=Z,6.0nm,1.0s
M37A Trindle Farm, 44.54 79 P **P 19 13 07.3 +0.7**
baz=311
Q34A Chapman 44.55 84 P **P 19 13 07.0 +0.3**
baz=313
MDJ Mudanjiang 44.59 287 P **P 19 13 06.4 -0.6**
MDJ pP pP 19 13 15.3 -1.3
MDJ sP sP 19 13 19.2 -1.3
MDJ S **S 19 19 39.2 -1.3**
MDJ pmax pmax
comp=Z,7.0nm,0.8s
MDJ pmax pmax
comp=Z,190nm,4.0s
MDJ LR LR
comp=Z,540nm,19.2s
MDJ LR LR
comp=Z,620nm,21.7s
MDJ LR LR
comp=Z,700nm,17.2s
T32A Huddler Ranch, 44.60 87 P **P 19 13 07.4 +0.2**
baz=314
P35A Duane Minner, 44.67 82 P **P 19 13 07.7 0.0**
baz=312
R34A Isabella, Hill 44.80 85 P **P 19 13 09.6 +0.9**
baz=313
MNTX Cornudas Mount 44.80 98 P **P 19 13 09.5 +0.6**
baz=318,SNR=6.1
MNTX Cornudas Mount 44.80 98 eP **P 19 13 08.5 -0.4**
MNTX eP **sP 19 13 20.5 -1.8**
O36A Bolckow 44.87 81 P **P 19 13 09.9 +0.6**
baz=312
N37A Lee Faris, Mou 44.88 80 P **P 19 13 09.8 +0.5**
baz=312
M38A Pleasantville 45.02 78 P **P 19 13 10.6 +0.2**
baz=311
MSHR Mys Shultsa 45.03 284 eP **P 19 13 10.5 0.0**
P36A Good Intent, A 45.07 82 P **P 19 13 11.0 +0.1**
baz=312
MAJO Matsushiro 45.07 272 c iP **P 19 13 11.1 +0.1**
MAJO Matsushiro 45.07 272 eP **P 19 13 11.7 +0.7**
comp=Z,47nm,1.1s
MJAR Matsushiro Arr 45.07 272 P **P 19 13 11.5 +0.5**
comp=Z,7.4nm,0.7s,baz=40,slow=6.9,SNR=22
MJB9 Matsu-Tunnel 45.07 272 eP **P 19 13 12.0 +1.0**
MAT Matsushiro 45.08 272 P **P 19 13 11.0 0.0**
S34A Willow Spring 45.28 85 P **P 19 13 12.2 -0.5**
baz=314
JFWS Jewell Farm 45.69 75 eP P 19 13 25.0 +9.2
JFWS pmax pmax
comp=Z,28nm,0.9s
JFWS Jewell Farm 45.69 75 eP P 19 13 25.0 +9.2
comp=Z,28nm,0.9s
T34A McClaskey Farm 45.71 86 P **P 19 13 16.0 +0.1**
baz=314
N39A Derby Farms, D 45.77 79 P **P 19 13 15.7 -0.7**
baz=312
P38A Dawn 46.02 81 P **P 19 13 17.4 -1.0**
baz=312,SNR=5.4
S36A Lake Cedric, C 46.14 84 P **P 19 13 18.9 -0.5**
baz=314
DAG Danmarks Havn 46.33 11 i P **P 19 13 19.0 -1.3**
comp=Z,58nm,0.9s
DAG i 19 15 16.0
DAG Danmarks Havn 46.33 11 i P **P 19 13 19.0 -1.3**
DAG i 19 15 16.0
DAG pmax pmax
comp=Z,49nm,0.9s
T36A Boggs Farm, Ca 46.44 85 P **P 19 13 21.4 -0.3**
baz=314
SUMG Summit 46.61 21 i P **P 19 13 23.0 -0.1**
comp=Z,24nm,1.0s
SUMG Summit 46.61 21 i P **P 19 13 23.0 -0.1**
SUMG pmax pmax
comp=Z,24nm,1.0s
O40A La Belle 46.63 79 P **P 19 13 23.3 +0.1**
baz=312
NRIK Noril'sk 46.65 333 P **P 19 13 23.1 +0.2**
comp=Z,12nm,0.7s,baz=50,slow=6.9,SNR=14
NRIK LR LR 19 36 08.6
comp=Z,537nm,18.2s,baz=48,slow=40
Q39A Willow Grove F 46.73 81 P **P 19 13 23.4 -0.6**
baz=313
R38A Fenwick Farm, 46.79 82 P **P 19 13 22.9 -1.6**
baz=314
V35A Meyer Ranch, C 46.79 87 P **P 19 13 24.6 +0.1**
baz=315
P40A Paris 46.93 80 P **P 19 13 25.1 -0.4**
baz=313
T37A Cheneyville 18 46.94 84 P **P 19 13 24.6 -1.1**
baz=314
TUL1 Leonard 47.29 86 P **P 19 13 28.1 -0.3**
baz=315
V36A Jenks 47.29 86 P **P 19 13 27.9 -0.5**
baz=315
U37A Salina 47.33 85 P **P 19 13 28.1 -0.5**
baz=315
T38A Diamond 47.36 84 P **P 19 13 28.4 -0.6**
baz=314
CN2 Changchun 47.40 289 eP **P 19 13 27.8 -1.3**
CN2 pmax pmax
comp=Z,20nm,1.0s
ABTX Abilene, Hawle 47.42 92 P **P 19 13 28.6 -0.8**
baz=317
S39A Bolivar 47.46 82 P **P 19 13 28.9 -0.8**
baz=314
TX31 Lajitas Ar. Si 47.55 99 eP **P 19 13 30.9 +0.3**
TXAR Lajitas Array 47.55 99 P **P 19 13 31.2 +0.6**
comp=Z,2.4nm,0.9s,baz=309,slow=6.0,SNR=11
TXAR pP **pP 19 13 40.3 +0.1**
comp=Z,4.8nm,0.8s,baz=299,slow=6.2,SNR=13
TXAR PcP **PcP 19 14 59.0 -1.1**

comp=Z,2.5nm,0.9s,baz=270,slow=2.7,SNR=2.3
TXAR ScP **ScP** **19 18 50.3 -1.2**
comp=Z,0.6nm,1.0s,baz=270,slow=2.7,SNR=3.5
TXAR LR LR 19 32 15.1
comp=Z,387nm,19.7s,baz=0.0,slow=34
SFJD Kangerlussuaq 47.58 30 P **P** **19 13 30.4 +0.3**
comp=Z,52nm,0.9s,baz=326,slow=9.3,SNR=26
SFJD Kangerlussuaq 47.58 30 ⇑P **P** **19 13 30.5 +0.3**
comp=Z,46nm,0.8s
SFJD Kangerlussuaq 47.58 30 *e*P **P** **19 13 30.5 +0.3**
SFJD pmax pmax
comp=Z,57nm,0.9s
SFJD Kangerlussuaq 47.58 30 *e*P **P** **19 13 30.5 +0.3**
comp=Z,57nm,0.9s
R40A Maddies Statio 47.65 81 P **P** **19 13 30.8 -0.4**
baz=314
V37A Hulbert 47.68 85 P **P** **19 13 31.1 -0.3**
baz=315
U38A Gravette 47.73 84 P **P** **19 13 31.2 -0.6**
baz=315
HDIL Hopedale 47.79 77 P **P** **19 13 31.7 -0.5**
baz=312
HDIL Hopedale 47.79 77 *e*P **P** **19 13 31.4 -0.8**
comp=Z,72nm,0.8s
T39A Clever 47.90 83 P **P** **19 13 31.9 -1.2**
baz=314
V38A Canehill 48.12 85 P **P** **19 13 34.0 -0.8**
baz=315
U39A Green Forest 48.29 84 P **P** **19 13 35.4 -0.7**
baz=315
233A Rising Star 48.29 92 P **P** **19 13 36.7 +0.4**
baz=317
T40A Mansfield 48.30 82 P **P** **19 13 35.4 -0.9**
baz=314
SLBS Sierra La Lagu 48.43 109 *e*P pP 19 13 49.9 +2.8
X37A Clayton 48.47 87 P **P** **19 13 37.9 +0.4**
baz=316
V39A Pettigrew 48.57 84 P **P** **19 13 37.8 -0.6**
baz=315
W38A Poteau 48.62 86 P **P** **19 13 38.3 -0.4**
baz=316
U40A Yellville 48.66 83 P **P** **19 13 37.8 -1.2**
baz=315
X38A Whitesboro 48.72 86 P **P** **19 13 40.2 +0.7**
baz=316
333A Richland Sprin 48.75 93 P **P** **19 13 39.7 0.0**
baz=318
JCT Junction City 48.91 94 P **P** **19 13 41.2 +0.2**
baz=318
W39A Magazine 48.95 85 P **P** **19 13 40.6 -0.6**
baz=315
V40A Witts Springs 49.07 84 P **P** **19 13 41.0 -1.2**
baz=315
433A Art 49.11 93 P **P** **19 13 43.1 +0.6**
baz=318
SFIN Lafayette 49.14 75 P **P** **19 13 42.4 -0.2**
baz=313
SFIN Lafayette 49.14 75 *e*P **P** **19 13 42.0 -0.6**
comp=Z,56nm,1.1s
SFIN *e*P **pP** **19 13 51.9 -0.4**
334A Lometa 49.18 92 P **P** **19 13 43.7 +0.7**
baz=318
X39A Fountain Ranch 49.25 86 P **P** **19 13 43.5 0.0**
baz=316
MIAR Mount Ida 49.53 86 P **P** **19 13 45.7 0.0**
baz=316
MIAR Mount Ida 49.53 86 *e*P pP 19 13 56.0 +0.7
434A Burnet 49.54 93 P **P** **19 13 46.2 +0.3**
baz=318
OLIL Olney 49.71 78 *e*P **P** **19 13 46.3 -0.7**
comp=Z,64nm,0.9s
CBIJ Chichi jima 49.72 260 *e*P **P** **19 13 47.7 +0.5**
comp=Z,65nm,0.8s
JCJ Chichijima 49.72 260 P **P** **19 13 47.1 0.0**
comp=Z,50nm,0.6s,baz=317,slow=6.3,SNR=9.3
SNY Shenyang 49.74 288 ⇓P **P** **19 13 48.1 +1.0**
SNY pmax pmax
comp=Z,26nm,0.9s
SCHQ Schefferville 49.77 49 P **P** **19 13 47.0 -0.2**
comp=Z,10nm,0.9s,baz=332,slow=7.7,SNR=6.8
SCHQ Schefferville 49.77 49 *e*P **P** **19 13 47.0 -0.2**
comp=Z,31nm,1.3s
534A Blanco 50.01 94 P **P** **19 13 49.2 -0.1**
baz=318
633A Saathoff Ranch 50.03 95 P **P** **19 13 49.6 +0.1**
baz=319
Z39A Irene McRaven, 50.12 87 P **P** **19 13 50.6 +0.4**
baz=317
BLO Bloomington 50.29 76 *e*P **P** **19 13 51.2 -0.1**
comp=Z,49nm,1.3s
BLO *e*P **pP** **19 14 00.9 -0.1**
KSRS Korea Array 50.33 281 P **P** **19 13 52.5 +0.9**
comp=Z,18nm,1.1s,baz=55,slow=6.9,SNR=31
KSRS LR LR 19 33 16.6
comp=Z,2μm,21.8s,baz=178,slow=34
KS01 Wonju Array Si 50.33 281 *e*P **P** **19 13 52.1 +0.4**
KS15 Wonju Array Si 50.36 281 *e*P **P** **19 13 53.0 +1.1**
KSAR Wonju Array Be 50.36 281 P **P** **19 13 52.5 +0.6**
KSAR Wonju Array Be 50.36 281 P **P** **19 13 52.5 +0.6**
USIN University of 50.49 78 *e*P **P** **19 13 52.6 -0.3**
comp=Z,67nm,0.8s
SADO Sadowa 50.49 66 P **P** **19 13 51.6 -1.2**
comp=Z,8.8nm,0.7s,baz=336,slow=8.5,SNR=9.6
SADO Sadowa 50.49 66 P **P** **19 13 51.6 -1.2**
SADO *e*P **pP** **19 14 03.2 +0.7**
ACSO Alum Creek Sta 51.52 73 *e*P **P** **19 14 00.0 -0.6**
ACSO *e*P **pP** **19 14 10.6 +0.2**
HKT Hockley 51.59 91 *e*P **P** **19 14 00.5 -0.6**
TRQ Mont Tremblant 51.88 62 *e*P **P** **19 14 02.5 -0.8**
TRQ *e*P **pP** **19 14 13.5 +0.5**
ALLY Alegheny Colle 52.09 69 *e*P **P** **19 14 04.4 -0.4**
comp=Z,238nm,1.7s
ALLY *e*P **pP** **19 14 14.7 +0.1**
M54A Oil Creek Stat 52.45 69 P **P** **19 14 07.1 -0.4**
baz=314
N54A Moraine State 52.65 70 P **P** **19 14 08.3 -0.7**
baz=314
Y46A Houston 52.72 82 P **P** **19 14 09.2 -0.4**
baz=317
TLY Talaya 53.03 309 *e*P **P** **19 14 12.0 +0.3**
TLY pmax pmax
comp=Z,19nm,0.8s
TLY Talaya 53.03 309 *e*P **P** **19 14 11.2 -0.5**
comp=Z,14nm,0.9s
TZTN Tazewell 53.81 76 *e*P **P** **19 14 20.2 +2.6**
O56A Blue Knob Stat 53.91 70 P **P** **19 14 17.2 -1.1**
baz=315,SNR=5.6
ULN Ulaanbaatar 54.12 304 *c e*P **P** **19 14 20.4 +0.5**
ULN pmax pmax
comp=Z,14nm,1.0s
ULN Ulaanbaatar 54.12 304 *e*P **P** **19 14 19.7 -0.2**
comp=Z,19nm,1.1s
MOY Mondy 54.21 311 *e*P **P** **19 14 21.3 +0.8**
SONA1 Songino Array 54.44 304 *e*P **P** **19 14 22.7 +0.5**
SONM Songino Array 54.46 304 P **P** **19 14 22.7 +0.4**
comp=Z,17nm,0.7s,baz=44,slow=6.9,SNR=71
SONM PcP **PcP** **19 15 26.2 +0.6**
comp=Z,6.9nm,0.8s,baz=45,slow=2.6,SNR=7.2
KSPA Keystone Colle 54.49 67 *e*P **P** **19 14 21.8 -0.7**
comp=Z,345nm,1.9s
N59A State Game Lan 54.95 67 P **P** **19 14 24.8 -1.0**
baz=315
BJI Beijing 55.00 291 P **P** **19 14 25.8 -0.4**
BJI sP **sP** **19 14 38.3 -1.5**
BJI PP **PP** **19 16 32.4 +3.3**
BJI S **S** **19 22 04.5 -1.3**
BJI sS **sS** **19 22 20.1 -1.9**
BJI pmax pmax
comp=Z,10.0nm,1.5s
BJI pmax pmax
comp=Z,140nm,6.5s
BJI LR LR
comp=Z,1μm,22.6s
BJI LR LR
comp=Z,1μm,27.1s
BJI LR LR
comp=Z,750nm,23.2s
ODNJ Ogdensburg 55.45 66 *e*P **P** **19 14 29.6 +0.3**
comp=Z,168nm,1.8s
KEV Kevo 55.50 357 *e*P **P** **19 14 28.4 -0.9**
comp=Z,54nm,1.0s
BRNJ Basking Ridge 55.75 67 *e*P **P** **19 14 31.5 -0.1**
comp=Z,178nm,1.6s
BRNJ *e*P **pP** **19 14 37.0 -4.4**
ARA0 ARCESS Array S 55.76 358 *e*P **P** **19 14 30.5 -0.7**
ARCES ARCESS Array B 55.76 358 P **P** **19 14 30.2 -1.1**
comp=Z,17nm,0.9s,baz=26,slow=7.2,SNR=17
ARCES pP **pP** **19 14 39.3 -1.7**
comp=Z,24nm,0.8s,baz=101,slow=2.9,SNR=7.1
PAL Palisades 55.87 66 *e*P **P** **19 14 35.2 +2.9**
comp=Z,166nm,1.8s
YLE Yale 56.16 65 *e*P **P** **19 14 36.8 +2.4**
comp=Z,767nm,1.9s
URVA University of 56.40 71 *e*P P 19 14 45.5 +9.3
BRYW Bryant College 56.45 64 *e*P **P** **19 14 40.2 +3.6**
comp=Z,337nm,1.6s
HHC Hu-ho-hao-te 56.87 295 *e*P **P** **19 14 39.9 +0.3**
HHC S **S** **19 22 22.7 -8.2**
HHC SS **SS** **19 26 14.2 -4.5**
HHC pmax pmax
comp=Z,39nm,1.2s
HHC pmax pmax
comp=Z,230nm,6.9s
HHC LR LR
comp=Z,1μm,16.5s
HHC LR LR
comp=Z,1μm,16.5s
HHC LR LR
comp=Z,1μm,16.7s
TIA Tai'an 57.25 288 *e*P **P** **19 14 42.0 -0.3**
TIA pmax pmax
comp=Z,20nm,1.4s
BTO Baotou 57.84 296 *e*P **P** **19 14 45.5 -1.1**
NVS Novosibirsk 58.83 323 *e*P **P** **19 14 52.8 -0.2**
NVS pmax pmax
comp=N,6.0nm,1.2s
NVS pmax pmax
comp=E,9.0nm,1.2s
NVS pmax pmax
comp=Z,14nm,1.2s
ZALV Zalesovo Beam 58.97 321 P **P** **19 14 52.6 -1.4**
comp=Z,1.5nm,0.4s,baz=49,slow=4.5,SNR=9.6
ZALV PcP **PcP** **19 15 42.8 -0.1**
comp=Z,3.1nm,0.8s,baz=26,slow=3.5,SNR=4.1
NJ2 Nanjing 59.37 283 *e*P **P** **19 14 57.7 +0.6**
NJ2 pmax pmax
comp=Z,9.0nm,0.7s
TMCR Tamitsa 60.38 351 *e*P **P** **19 15 03.1 -0.5**
TMCR pmax pmax
comp=Z,36nm,0.7s
WHN Wuhan 63.02 285 ⇓P **P** **19 15 22.1 +0.2**
WHN pP **pP** **19 15 33.1 +1.3**
XAN Xi'an 63.33 292 P **P** **19 15 23.7 -0.3**
XAN pP pP 19 15 34.8 +0.9
XAN S **S** **19 23 49.7 -4.2**
XAN pmax pmax
comp=Z,26nm,1.2s
KLMR Klimovskoe 63.48 349 *e*P **P** **19 15 23.0 -1.4**
KLMR pmax pmax
comp=Z,55nm,1.1s
SVE Sverdlovsk 63.72 336 *d i*P **P** **19 15 25.7 -0.4**
SVE pmax pmax
comp=Z,47nm,1.2s
KURK Kurchatov 63.82 323 *e*P **P** **19 15 26.4 -0.4**
KURK pmax pmax
comp=Z,38nm,1.1s
KURK Kurchatov 63.82 323 *e*P **P** **19 15 26.4 -0.4**
comp=Z,38nm,1.1s
FINES FINESS Array B 63.85 357 P **P** **19 15 26.4 -0.5**
comp=Z,17nm,0.8s,baz=23,slow=6.8,SNR=7.2
GTA Gaotai 63.90 302 ⇑P **P** **19 15 26.9 -0.9**
GTA pP pP 19 15 36.4 -1.3
GTA sP sP 19 15 40.2 -1.3
GTA S **S** **19 23 56.6 -4.4**
GTA sS sS 19 24 13.7 -3.7
GTA SS **SS** **19 28 06.9 -2.0**
GTA pmax pmax
comp=Z,22nm,1.5s
GTA pmax pmax
comp=Z,180nm,6.7s
GTA LR LR
comp=Z,2μm,20.9s
GTA LR LR
comp=Z,2μm,23.8s
GTA LR LR
comp=Z,4μm,21.9s
NC303 NORSAR Array S 63.99 4 *e*P **P** **19 15 27.4 -0.4**
NC405 NORSAR Array S 64.12 4 *e*P **P** **19 15 27.4 -1.3**
NBO00 NORSAR Array S 64.16 5 *e*P **P** **19 15 28.4 -0.6**
NB201 NORSAR Array S 64.16 5 *e*P **P** **19 15 27.5 -1.5**
NB2 NORSAR Subarra 64.17 5 P **P** **19 15 28.3 -0.8**
comp=Z,23nm,0.9s,baz=355,slow=6.5
NB2 NORSAR Subarra 64.17 5 P **P** **19 15 28.3 -0.8**
baz=355,slow=6.5
NOA NORSAR Array B 64.17 5 P **P** **19 15 28.7 -0.3**
comp=Z,17nm,0.9s,baz=355,slow=6.5,SNR=45
NAO01 NORSAR Array S 64.35 5 *e*P **P** **19 15 30.2 0.0**
LZH Lanzhou 64.44 297 *e*P **P** **19 15 32.1 +0.7**
LZH pP pP 19 15 43.1 +1.8
LZH sP sP 19 15 48.7 +3.6
LZH PP **PP** **19 17 53.1 +0.3**
LZH *e*S **S** **19 24 02.5 -5.3**
LZH sS sS 19 24 19.0 -5.2
LZH SS **SS** **19 28 14.0 -3.5**
LZH pmax pmax
comp=Z,69nm,1.1s
LZH pmax pmax
comp=Z,270nm,5.1s
LZH LR LR
comp=Z,3μm,15.2s
LZH LR LR
comp=Z,3μm,15.8s
LZH LR LR
comp=Z,5μm,17.0s
SSLB Suanglung 64.47 275 *e*P **P** **19 15 31.2 -0.4**
comp=Z,37nm,0.7s
BVAR Borovoye Array 64.52 329 P **P** **19 15 31.4 0.0**
comp=Z,29nm,0.7s,baz=38,slow=7.5,SNR=96
BRVK Borovoye 64.52 329 *c e*P **P** **19 15 31.7 +0.3**
BRVK pmax pmax
comp=Z,34nm,0.8s
BRVK Borovoye 64.52 329 *e*P **P** **19 15 31.6 +0.2**
comp=Z,34nm,0.9s
ARU Arti 64.56 337 *c i*P **P** **19 15 31.0 -0.6**
ARU 19 16 03.1
ARU 19 17 54.8
ARU S **S** **19 24 06.1 -2.3**
ARU pmax pmax
comp=Z,45nm,1.2s
ARU Arti 64.56 337 *e*P **P** **19 15 31.1 -0.6**
comp=Z,42nm,1.1s
ZRNK Zerenda 64.99 330 *e*P **P** **19 15 34.6 +0.1**
ZRNK pmax pmax
comp=Z,50nm,1.0s
ZRNK Zerenda 64.99 330 *e*P **P** **19 15 34.6 +0.1**
comp=Z,50nm,1.0s
HFS Hagfors 65.17 3 P **P** **19 15 34.9 -0.7**
comp=Z,31nm,0.9s,baz=22,slow=3.0,SNR=30
HFS sP **sP** **19 15 49.8 +0.5**
comp=Z,20nm,0.7s,baz=337,slow=3.4,SNR=7.5
KONO Kongsberg 65.48 6 *e*P **P** **19 15 37.6 +0.1**
KONO pmax pmax
comp=Z,96nm,1.7s
KONO Kongsberg 65.48 6 *e*P **P** **19 15 37.6 +0.1**
comp=Z,96nm,1.7s
MK31 Makanchi Array 65.72 318 *e*P **P** **19 15 38.6 -0.8**
MK31 Makanchi Array 65.72 318 *e*P **P** **19 15 38.6 -0.8**
MKAR Makanchi Array 65.72 318 P **P** **19 15 38.8 -0.6**
comp=Z,6.3nm,0.9s,baz=48,slow=6.2,SNR=20
MKAR Makanchi Array 65.72 318 *e*P **P** **19 15 39.1 -0.3**
MKAR Makanchi Array 65.72 318 *e*P **P** **19 15 39.1 -0.3**
MK01 Makanchi Array 65.74 318 *e*P **P** **19 15 38.5 -0.9**
MAKZ Makanchi 65.83 318 *e*P **P** **19 15 39.4 -0.7**
MAKZ pmax pmax
comp=Z,24nm,1.4s
MAKZ Makanchi 65.83 318 *e*P **P** **19 15 39.4 -0.7**
comp=Z,24nm,1.4s
ENH Enshi 65.92 289 *e*P **P** **19 15 40.8 0.0**
comp=Z,35nm,1.0s
WMQ Urumqi 65.97 313 ⇓*i*P **P** **19 15 41.8 +0.7**
WMQ pP pP 19 15 52.9 +1.9
WMQ sP sP 19 15 57.7 +2.9
WMQ PP **PP** **19 18 11.9 +6.0**
WMQ pmax pmax
comp=Z,8.0nm,0.8s
WMQ pmax pmax
comp=Z,33nm,4.2s
WMQ LR LR
comp=Z,750nm,24.0s
WMQ LR LR
comp=Z,860nm,22.8s
WMQ LR LR
comp=Z,1μm,29.8s
VSU Vasula 66.81 356 *c e*P **P** **19 15 45.8 -0.2**
VSU pmax pmax
comp=Z,234nm,2.5s
CD2 Chengdu 68.51 293 P **P** **19 15 57.7 +0.4**
CD2 sP sP 19 16 13.6 +2.5
CD2 PP **PP** **19 18 28.5 +0.2**
CD2 S **S** **19 24 56.2 -0.8**
CD2 SS **SS** **19 29 20.6 0.0**
CD2 pmax pmax
comp=Z,100nm,0.9s
CD2 pmax pmax
comp=Z,280nm,9.6s
CD2 LR LR
comp=Z,2μm,21.6s
CD2 LR LR
comp=Z,2μm,20.4s
EKA Eskdalemuir Ar 68.51 14 P **P** **19 15 55.9 -1.0**
comp=Z,16nm,0.8s,baz=346,slow=4.7,SNR=22
ESK Eskdalemuir 68.52 14 *c e*P **P** **19 15 58.0 +1.1**
ESK Eskdalemuir 68.52 14 *e*P **P** **19 15 57.4 +0.5**
comp=Z,139nm,1.8s
MOS Moscow 68.71 349 *e*P P 19 16 07.2 +9.1
MOS pmax pmax
comp=Z,72nm,1.3s
OBN Obninsk 69.43 350 P **P** **19 16 01.5 -1.1**
comp=Z,12nm,0.4s,baz=138,slow=22,SNR=5.9
OBN Obninsk 69.43 350 ⇑*e*P **P** **19 16 01.2 -1.4**
OBN *e* 19 18 35.1
OBN pmax pmax
comp=Z,14nm,0.7s
IZAR Zarasai 69.54 356 *e*P **P** **19 16 03.4 +0.2**
IZAR IAmb IAmb 19 16 19.3
comp=Z,16nm,1.0s
IDID Didziasalis 69.95 356 *e*P **P** **19 16 05.9 +0.2**
IDID IAmb IAmb 19 16 21.8
comp=Z,17nm,1.1s
GYA Guiyang 70.44 288 P **P** **19 16 08.8 -0.6**
GYA pP pP 19 16 20.4 +1.0
GYA PcP **PcP** **19 16 31.0 +0.3**
GYA PP **PP** **19 18 47.6 +2.4**
GYA S **S** **19 25 17.8 -2.2**
GYA sS sS 19 25 36.2 -0.4
GYA SKS **SKSac** **19 26 03.4 -5.4**
GYA SS **SS** **19 29 49.0 -1.6**
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,120nm,5.8s
GYA LR LR
comp=Z,620nm,18.8s
GYA LR LR
comp=Z,570nm,19.2s
GYA LR LR
comp=Z,650nm,19.0s
BCPH Baguio City Da 70.50 271 ⇓*e*P **P** **19 16 08.1 -1.8**
TKM2 Tokmak 2 71.54 320 *e*P **P** **19 16 16.4 +0.5**
TKM2 pmax pmax
comp=Z,33nm,1.3s
TKM2 Tokmak 2 71.54 320 *e*P **P** **19 16 16.4 +0.5**
comp=Z,33nm,1.3s
LPSR Galich'ya Gora 71.64 348 *e*P **P** **19 16 14.8 -1.3**
LPSR *e**SP **sP** **19 16 30.1 +0.2**
LPSR pmax pmax
comp=Z,20nm,1.0s
FRU Bishkek 71.97 321 *i* P **P** **19 16 19.0 +0.7**
FRU *e* 19 16 34.5
FRU pmax pmax
comp=Z,70nm,1.9s
AAK Ala-Archa 72.19 321 *e*P **P** **19 16 18.6 -1.2**
AAK pmax pmax
comp=Z,40nm,1.0s
AAK Ala-Archa 72.19 321 *e*P **P** **19 16 20.4 +0.6**
comp=Z,16nm,0.8s
EKS2 Erkin-Say 72.43 321 *e*P **P** **19 16 21.9 +0.7**
EKS2 pmax pmax
comp=Z,27nm,1.1s
EKS2 Erkin-Say 72.43 321 *e*P **P** **19 16 21.9 +0.7**
comp=Z,27nm,1.1s
VRH Novokhopyorsk 72.64 346 *e*P **P** **19 16 20.5 -1.6**
VRH *e**SP **sP** **19 16 35.5 -0.4**
VRH pmax pmax
comp=Z,20nm,0.8s
VSR Storozhevoye 72.97 347 *e*P **P** **19 16 23.0 -1.0**
VSR *e**SP **sP** **19 16 37.9 0.0**
VSR pmax pmax
comp=Z,20nm,0.6s
KKAR Karatay Array 73.19 324 *e*P **P** **19 16 25.4 -0.1**
KKAR Karatay Array 73.19 324 *e*P **P** **19 16 25.4 -0.1**
CLL Collm 73.97 4 *i* P **P** **19 16 29.8 -0.2**
comp=Z,20nm,1.1s
CLL *i* pP **pP** **19 16 41.4 +1.3**
comp=Z,13nm,1.0s
CLL *i* sP **PcP** **19 16 45.2 0.0**
comp=Z,88nm,2.1s
CLL Collm 73.97 4 *i* P **P** **19 16 29.8 -0.2**
CLL pmax pmax
comp=Z,20nm,1.1s
CLL Collm 73.97 4 *e*P **P** **19 16 29.4 -0.5**
comp=Z,85nm,1.8s
SDDR Presa de Saban 74.15 80 *e*P **P** **19 16 31.2 -0.3**
comp=Z,17nm,0.8s
MEM Membach 74.20 9 P **P** **19 16 31.1 -0.2**
comp=Z,11nm,1.5s
BCLA Clavier 74.32 9 P **P** **19 16 32.2 +0.2**
KSH Kashi 74.34 318 P **P** **19 16 36.0 +3.5**
KSH *e*pP sP 19 16 46.4 +0.1
KSH *e*sP PcP 19 16 50.7 +3.6
KSH *e*PP **PP** **19 19 24.4 +6.4**
KSH S **S** **19 26 07.4 +3.1**
KSH SKS **SKSac** **19 26 36.7 -1.1**
KSH pmax pmax
comp=Z,64nm,1.0s
KSH LR LR
comp=Z,390nm,13.3s
KSH LR LR
comp=Z,340nm,12.4s
KSH LR LR
comp=Z,2μm,26.4s
AKASG Malin Array Be 74.43 354 P **P** **19 16 31.8 -0.8**
comp=Z,18nm,0.6s,baz=8.9,slow=5.9,SNR=48
AKBB Malin Array Si 74.43 354 *e*P **P** **19 16 31.7 -0.9**
AKBB pmax pmax
comp=Z,52nm,1.0s
AKBB Malin Array Si 74.43 354 *e*P **P** **19 16 31.7 -0.9**
comp=Z,52nm,1.0s
AKBB *e*pP **pP** **19 16 41.1 -1.6**
KIEV Kiev 74.43 354 *e*P **P** **19 16 31.6 -1.0**
KIEV pmax pmax
comp=Z,52nm,1.0s
KIEV Kiev 74.43 354 *e*P **P** **19 16 31.6 -1.0**
comp=Z,52nm,1.0s
AK11 Malin Array Si 74.45 354 *e*P **P** **19 16 31.7 -1.0**
AK11 *e*pP **pP** **19 16 43.1 +0.3**
DOU Dourbes 74.58 10 P **P** **19 16 34.0 +0.5**
comp=Z,7.7nm,1.7s
PVCC Panska Ves 74.81 3 *e*P **P** **19 16 35.2 +0.3**
PVCC *e*pP **pP** **19 16 43.6 -1.4**
PVCC *e*PCP **sP** **19 16 51.0 +2.3**
PVCC Panska Ves 74.81 3 *e*P **P** **19 16 35.2 +0.3**
PVCC *e* 19 16 43.6
PVCC *e**SP **sP** **19 16 51.0 +2.3**
UPC Upice 74.88 2 *e*P **P** **19 16 35.4 +0.2**
UPC Upice 74.88 2 *e*P **P** **19 16 35.4 +0.2**
NKC Novy Kostel 75.02 5 *e*P **P** **19 16 36.5 +0.4**
NKC *e*pP **pP** **19 16 46.3 +0.1**
NKC *e*PCP **sP** **19 16 52.1 +2.1**
NKC Novy Kostel 75.02 5 *e*P **P** **19 16 36.5 +0.4**
NKC *e**SP **sP** **19 16 52.1 +2.1**
DPC Dobruska-Polom 75.04 2 *e*P **P** **19 16 36.7 +0.5**
DPC *e*PCP **sP** **19 16 52.5 +2.4**
DPC Dobruska-Polom 75.04 2 *e*P **P** **19 16 36.7 +0.5**
DPC *e**SP **sP** **19 16 52.5 +2.4**
WLF Walferdange 75.15 9 P **P** **19 16 36.7 -0.1**
comp=Z,17nm,1.4s
WLF Walferdange 75.15 9 *e*P **P** **19 16 35.1 -1.7**
WLF *e**PP **PcP** **19 16 49.0 -1.2**
WLF pmax pmax
comp=Z,18nm,0.9s
WLF Walferdange 75.15 9 *e*P **P** **19 16 35.1 -1.7**
comp=Z,18nm,0.9s
WLF *e*pP **PcP** **19 16 49.0 -1.2**
KRLC Kraliky 75.33 2 *e*P **P** **19 16 38.1 +0.2**
KRLC *e*pP **PcP** **19 16 49.6 -1.5**

KRLC				ex	x	19 16 53.5
KRLC	**Kraliky**	**75.33**	**2**	eP	**P**	**19 16 38.1 +0.2**
KRLC				e*SP	**sP**	**19 16 53.5 +1.7**
PRU	**Pruhonice**	**75.35**	**3**	eP	**P**	**19 16 38.1 +0.1**
PRU				epP	**pP**	**19 16 49.6 +1.5**
PRU				ePCP	**sP**	**19 16 54.0 +2.1**
PRU	**Pruhonice**	**75.35**	**3**	eP	**P**	**19 16 38.1 +0.1**
PRU				e*SP	**sP**	**19 16 54.0 +2.1**
GOPC	**GO Pecny, Ondr**	**75.44**	**3**	eP	**P**	**19 16 38.6 +0.1**
GOPC				ePCP	**sP**	**19 16 54.6 +2.2**
GOPC	**GO Pecny, Ondr**	**75.44**	**3**	eP	**P**	**19 16 38.6 +0.1**
GOPC				e*SP	**sP**	**19 16 54.6 +2.2**
OKC	**Ostrava-Krasne**	**75.58**	**1**	eP	**P**	**19 16 39.6 +0.3**
OKC				epP	**pP**	**19 16 50.0 +0.6**
OKC				ePCP	**sP**	**19 16 54.8 +1.6**
OKC	**Ostrava-Krasne**	**75.58**	**1**	eP	**P**	**19 16 39.6 +0.3**
OKC				e*SP	**sP**	**19 16 54.8 +1.6**
MORC	**Moravsky Berou**	**75.64**	**1** ⇑	iP	**P**	**19 16 40.0 +0.3**
MORC	**Moravsky Berou**	**75.64**	**1** ⇑	iP	**P**	**19 16 40.0 +0.3**
KWP	**Kalwaria Pacla**	**75.77 358** ⇑		iP	**P**	**19 16 40.8 +0.4**
KWP	**Kalwaria Pacla**	**75.77 358** ⇑		iP	**P**	**19 16 40.8 +0.4**
LSA	**Lhasa**	**75.93 302**		P	**P**	**19 16 42.9 +0.7**
LSA				pmax	pmax	
	comp=Z,30nm,1.1s					
LSA	**Lhasa**	**75.93 302**		eP	**P**	**19 16 43.1 +0.9**
LSA				pmax	pmax	
	comp=Z,32nm,1.0s					
LSA	**Lhasa**	**75.93 302**		eP	**P**	**19 16 43.1 +0.9**
	comp=Z,32nm,1.0s					
LANF	**Langenberg**	**75.97**	**8**	PKP	**P**	**19 16 42.5 +0.9**
STHS	**Stebnicka Huta**	**76.01 359**		eP	**P**	**19 16 42.7 +0.9**
STHS				e		19 16 52.5
STHS				pmax	pmax	
	comp=Z,26nm,0.9s					
STHS	**Stebnicka Huta**	**76.01 359**		eP	**P**	**19 16 42.7 +0.9**
STHS				e		19 16 52.4
TREC	**Trest**	**76.08**	**3**	eP	**P**	**19 16 41.9 -0.3**
TREC				ePCP	**sP**	**19 16 58.0 +1.9**
TREC	**Trest**	**76.08**	**3**	eP	**P**	**19 16 41.9 -0.3**
TREC				e*SP	**sP**	**19 16 58.0 +1.9**
VRAC	**Vranov**	**76.09**	**2**	P	**P**	**19 16 41.8 -0.4**
	comp=Z,14nm,0.9s,baz=341,slow=5.2,SNR=7.4					
VRAC	**Vranov**	**76.09**	**2** ⇑	iP	**P**	**19 16 43.2 +1.0**
VRAC	**Vranov**	**76.09**	**2** ⇑	iP	**P**	**19 16 43.2 +1.0**
KHC	**Kasperske Hory**	**76.17**	**4**	eP	**P**	**19 16 43.2 +0.5**
KHC				epP	**PcP**	**19 16 54.9 +0.2**
KHC				ex	x	19 16 58.7
KHC	**Kasperske Hory**	**76.17**	**4**	eP	**P**	**19 16 43.2 +0.5**
KHC				e*PP	**PcP**	**19 16 54.9 +0.2**
KHC	**Kasperske Hory**	**76.17**	**4**	eP	**P**	**19 16 42.8 +0.1**
	comp=Z,10.0nm,1.1s					
LANS	**Liptovska Anna**	**76.28**	**0**	eP	**P**	**19 16 44.3 +1.0**
LANS				e		19 17 00.1
LANS	**Liptovska Anna**	**76.28**	**0**	eP	**P**	**19 16 44.3 +1.0**
LANS				e		19 17 00.1
GERES	**GERESS Array B**	**76.47**	**4**	P	**P**	**19 16 43.9 -0.6**
	comp=Z,6.0nm,1.0s,baz=2.9,slow=5.3,SNR=6.8					
GERES				pP	**pP**	**19 16 54.1 -0.5**
	comp=Z,5.6nm,0.8s,baz=3.8,slow=4.0,SNR=8.0					
GEA0	**GERESS Array S**	**76.47**	**4**	eP	**P**	**19 16 44.5 0.0**
GEA0				epP	**pP**	**19 16 53.9 -0.7**
KOLS	**Kolonicke sedl**	**76.47 358**		eP	**P**	**19 16 44.7 +0.3**
KOLS				pmax	pmax	
	comp=Z,14nm,1.1s					
KOLS	**Kolonicke sedl**	**76.47 358**		eP	**P**	**19 16 44.7 +0.3**
CRVS	**Cervenica-Dubn**	**76.52 359**		eP	**P**	**19 16 45.0 +0.3**
CRVS				e		19 16 53.5
CRVS	**Cervenica-Dubn**	**76.52 359**		eP	**P**	**19 16 45.0 +0.3**
CRVS				e		19 16 53.5
BFO	**Black Forest**	**76.66**	**8**	ceP	**P**	**19 16 45.7 +0.2**
ECH	**Echery**	**76.68**	**9**	PKP	**P**	**19 16 45.4 -0.2**
VYHS	**Vyhne**	**76.94**	**1**	eP	**P**	**19 16 47.1 +0.1**
VYHS				e		19 16 58.8
VYHS				pmax	pmax	
	comp=Z,12nm,1.1s					
VYHS	**Vyhne**	**76.94**	**1**	eP	**P**	**19 16 47.1 +0.1**
VYHS				e		19 16 58.8
KECS	**Kecovo**	**76.95 359**		eP	**P**	**19 16 47.7 +0.6**
KECS				e		19 16 59.2
KECS				pmax	pmax	
	comp=Z,10.0nm,0.9s					
KECS	**Kecovo**	**76.95 359**		eP	**P**	**19 16 47.7 +0.6**
KECS				e		19 16 59.2
MOF	**Molkenrain**	**77.04**	**9**	PKP	**P**	**19 16 47.5 -0.2**
CONA	**Conrad Observa**	**77.45**	**3**	iP	**P**	**19 16 50.6 +0.6**
	comp=Z,26nm,1.3s					
MOA	**Molln**	**77.48**	**4**	iP	**P**	**19 16 49.9 -0.2**
	comp=Z,9.0nm,1.0s					
LOMF	**Lomont**	**77.51**	**9**	PKP	**P**	**19 16 50.3 0.0**
PSZ	**Piszkesteto**	**77.51 360** ⇑		iP	**P**	**19 16 50.8 +0.5**
PSZ	**Piszkesteto**	**77.51 360** ⇑		iP	**P**	**19 16 50.8 +0.5**
PSZ	**Piszkesteto**	**77.51 360**		eP	**P**	**19 16 50.4 0.0**
	comp=Z,22nm,1.0s					
PMG	**Port Moresby**	**77.65 233**		P	**P**	**19 16 51.6 +0.3**
	comp=Z,9.8nm,1.0s,baz=345,slow=7.4,SNR=4.4					
PMG	**Port Moresby**	**77.65 233**		ceP	**P**	**19 16 51.6 +0.3**
PMG				pmax	pmax	
	comp=Z,49nm,1.2s					
PMG	**Port Moresby**	**77.65 233**		eP	**P**	**19 16 51.1 -0.2**
	comp=Z,40nm,1.1s					
BUR08	**Bucovina Ar. S**	**77.68 356**		eP	**P**	**19 16 51.5 +0.1**
BURAR	**Bucovina Array**	**77.71 356** ⇑		iP	**P**	**19 16 50.9 -0.6**
BURAR	**Bucovina Array**	**77.71 356** ⇑		iP	**P**	**19 16 50.9 -0.6**
MOTA	**Moosalm**	**77.83**	**6**	eP	**P**	**19 16 52.4 +0.1**
	comp=Z,15nm,0.9s					
WTTA	**Wattenberg**	**77.94**	**6**	iP	**P**	**19 16 53.3 +0.4**
	comp=Z,16nm,0.8s					
FETA	**Feichten**	**78.13**	**6**	eP	**P**	**19 16 54.4 +0.5**
	comp=Z,20nm,1.1s					
KBA	**Koelnbreinsper**	**78.21**	**4**	iP	**P**	**19 16 55.2 +0.9**
	comp=Z,27nm,1.1s					
ARCR	**ARCALIA**	**78.27 357** ⇑		iP	**P**	**19 16 56.0 +1.5**
DAVOX	**Davos/Dischmat**	**78.31**	**7**	P	**P**	**19 16 54.6 -0.3**
	comp=Z,6.0nm,0.7s,baz=3.4,slow=10,SNR=5.3					
GOF	**Gofitskoye**	**78.42 343** ⇑		iP	**P**	**19 16 55.6 +0.3**
GOF				pmax	pmax	
	comp=Z,136nm,1.0s					
FUORN	**Ofenpass-Fuorn**	**78.50**	**7**	eP	**P**	**19 16 56.5 +0.5**
	comp=Z,60nm,1.6s					
ABTA	**Abfaltersbach**	**78.50**	**5**	iP	**P**	**19 16 56.0 +0.1**
	comp=Z,15nm,1.1s					
DRGR		**78.61 358** ⇑		iP	**P**	**19 16 57.2 +0.8**
DRGR		**78.61 358** ⇑		iP	**P**	**19 16 57.2 +0.8**
SOKA	**Soboth**	**78.68**	**3**	iP	**P**	**19 16 57.4 +0.6**
	comp=Z,32nm,1.2s					
LEOM	**Leova**	**78.70 354** ⇑		iP	**P**	**19 16 57.3 +0.5**
LEOM	**Leova**	**78.70 354** ⇑		iP	**P**	**19 16 57.3 +0.5**
PERS	**Pernice**	**78.72**	**3**	iP	**P**	**19 16 57.5 +0.4**
OBKA	**Obir**	**78.83**	**4**	iP	**P**	**19 16 58.2 +0.5**
	comp=Z,35nm,0.8s					
CADS	**Cadrg**	**79.08**	**4**	iP	**P**	**19 16 58.5 -0.5**
SIRR	**Siria**	**79.15 359** ⇑		iP	**P**	**19 17 00.5 +1.1**
VRI	**Vrincioaia**	**79.39 355** ⇑		iP	**P**	**19 16 59.8 -0.9**
VRI	**Vrincioaia**	**79.39 355** ⇑		iP	**P**	**19 16 59.8 -0.9**
PLOR	**Plostina**	**79.41 355** ⇑		iP	**P**	**19 17 01.0 +0.2**
PLOR	**Plostina**	**79.41 355** ⇑		iP	**P**	**19 17 01.0 +0.2**
KVAR	**Kislovodsk Arr**	**79.55 343**		P	**P**	**19 17 02.2 +0.5**
	comp=Z,20nm,0.8s,baz=31,slow=6.4,SNR=14					
KVAR				LR	LR	19 55 43.6
	comp=Z,209nm,20.5s,baz=72,slow=38					
KIV	**Kislovodsk**	**79.55 343**		eP	**P**	**19 17 01.2 -0.5**
KIV				pmax	pmax	
	comp=Z,41nm,1.1s					
KIV	**Kislovodsk**	**79.55 343**		eP	**P**	**19 17 01.9 +0.3**
	comp=Z,34nm,0.9s					
SIM	**Simferopol'**	**79.73 350**		eP	**P**	**19 17 02.8 +0.3**
SIM				pmax	pmax	
	comp=Z,13nm,0.8s					
SIM				MLR	MLR	
	comp=N,250nm,18.8s					
KBZ	**Khabaz**	**79.74 343**		P	**P**	**19 17 02.8 +0.3**
	comp=N,23nm,0.9s,baz=317,slow=1.9,SNR=28					
MLR	**Muntele Rosu**	**79.80 356**		P	**P**	**19 17 03.2 +0.2**
	comp=N,1.2nm,0.9s,baz=324,slow=11,SNR=4.3					
MLR	**Muntele Rosu**	**79.80 356** ⇑		iP	**P**	**19 17 03.1 +0.1**
MLR	**Muntele Rosu**	**79.80 356** ⇑		iP	**P**	**19 17 03.1 +0.1**
MLR	**Muntele Rosu**	**79.80 356**		eP	**P**	**19 17 04.1 +1.0**
	comp=N,24nm,1.3s					
MLR				epP	**pP**	**19 17 14.6 +1.3**
BZS	**Buzias**	**79.80 359** ⇑		iP	**P**	**19 17 03.1 +0.2**
BZS	**Buzias**	**79.80 359** ⇑		iP	**P**	**19 17 03.1 +0.2**
NCK	**Nalchik**	**79.84 343**		eP	**P**	**19 17 04.1 +0.9**
NCK				pmax	pmax	
	comp=Z,59nm,0.9s					
VOIR		**79.89 356** ⇑		iP	**P**	**19 17 03.9 +0.4**
VOIR		**79.89 356** ⇑		iP	**P**	**19 17 03.9 +0.4**
ARR	**Arges**	**79.98 356** ⇓		iP	**P**	**19 17 04.9 +1.0**
CFR	**Carcaliu**	**80.00 354** ⇑		iP	**P**	**19 17 03.8 -0.1**
CFR	**Carcaliu**	**80.00 354** ⇑		iP	**P**	**19 17 03.8 -0.1**
NEY	**Neytrino**	**80.23 343**		eP	**P**	**19 17 06.7 +1.2**
NEY				pmax	pmax	
	comp=Z,1.0nm,0.8s					
PGOR	**Pogoanele**	**80.33 355** ⇓		iP	**P**	**19 17 06.1 +0.4**
SOC	**Sochi**	**80.38 345**		eP	**P**	**19 17 05.4 -0.6**
SOC				pmax	pmax	
	comp=Z,29nm,0.9s					
ZEI	**Tsey**	**80.48 342**		eP	**P**	**19 17 04.7 -2.1**
ZEI				pmax	pmax	
	comp=Z,51nm,1.1s					
PGAV	**Gavieira, Arco**	**80.56**	**21**	eLR	LR	20 08 54.5
	comp=Z,3μm,20.0s					
MDVR	**Moldovita**	**80.64 359** ⇑		iP	**P**	**19 17 07.4 -0.1**
GUDG	**Gudauri**	**80.69 342**		P	**P**	**19 17 10.2 +2.2**
TIRR	**Tirgusor**	**80.70 354** ⇑		iP	**P**	**19 17 08.4 +0.7**
TIRR	**Tirgusor**	**80.70 354** ⇑		iP	**P**	**19 17 08.4 +0.7**
TIRR	**Tirgusor**	**80.70 354**		eP	**P**	**19 17 07.7 0.0**
	comp=Z,32nm,1.1s					
CHTO	**Chiang Mai**	**80.79 289**		eP	**P**	**19 17 08.4 -0.2**
CHTO				pmax	pmax	
	comp=Z,17nm,0.6s					
CHTO	**Chiang Mai**	**80.79 289**		eP	**P**	**19 17 08.4 -0.2**
	comp=Z,17nm,0.6s					
PBRG	**Braganca**	**81.02**	**20**	eP	**P**	**19 17 10.2 +0.6**
PBRG	**Braganca**	**81.02**	**20**	eLR	LR	20 08 51.3
	comp=Z,2μm,20.0s					
CM31	**Chiang Mai Arr**	**81.08 289**		eP	**P**	**19 17 10.5 +0.4**
CM01	**Chiang Mai Arr**	**81.10 289**		eP	**P**	**19 17 10.3 0.0**
POLO	**Lamas de Olo**	**81.23**	**21**	eP	**P**	**19 17 09.7 -1.0**
	comp=Z,20nm,2.2s					
POLO	**Lamas de Olo**	**81.23**	**21**	eLR	LR	20 08 54.5
	comp=Z,1μm,18.0s					
PVRL	**Vila Real**	**81.34**	**21**	eP	**P**	**19 17 12.4 +1.1**
PVRL				epP	**sP**	**19 17 23.6 -1.6**
TBLG	**Delisi**	**81.35 341**		P	**P**	**19 17 12.4 +1.1**
TBLG	**Delisi**	**81.35 341**		P	**P**	**19 17 12.4 +1.1**
DGRG	**David-gareji**	**81.50 341**		P	**P**	**19 17 12.8 +0.7**
DGRG	**David-gareji**	**81.50 341**		P	**P**	**19 17 12.8 +0.7**
MVO	**Moncorvo**	**81.58**	**20**	eP	**P**	**19 17 13.4 +0.8**
MVO	**Moncorvo**	**81.58**	**20**	eLR	LR	20 08 54.5
	comp=Z,2μm,24.0s					
ZIMR		**81.66 356** ⇑		iP	**P**	**19 17 13.1 +0.3**
ZIMR		**81.66 356** ⇑		iP	**P**	**19 17 13.1 +0.3**
GEYT	**Alibeck**	**81.80 330**		P	**P**	**19 17 14.6 +0.8**
	comp=Z,27nm,0.9s,baz=330,slow=5.1,SNR=53					
PVIS	**Viseu**	**81.84**	**21**	eP	**P**	**19 17 14.8 +0.9**
AKH	**Akhalkalaki**	**81.89 342** ⇓		iP	**P**	**19 17 15.7 +1.4**
BGD	**Bogdanovka**	**82.01 342**		P	**P**	**19 17 16.7 +1.6**
MPEP	**Malo Peshtene**	**82.02 357**		eP	**P**	**19 17 12.6 -2.1**
MTE	**Manteigas**	**82.22**	**21**	eP	**P**	**19 17 16.7 +0.8**
MTE				epP	**sP**	**19 17 28.3 -1.6**
MTE	**Manteigas**	**82.22**	**21**	eLR	LR	20 08 38.9
	comp=Z,3μm,20.0s					
MTE	**Manteigas**	**82.22**	**21**	eP	**P**	**19 17 16.7 +0.8**
	comp=Z,33nm,1.1s					
PCAS	**Casmilo, Conde**	**82.35**	**21**	eP	**P**	**19 17 17.2 +0.6**
PCAS	**Casmilo, Conde**	**82.35**	**21**	eLR	LR	20 08 31.1
	comp=Z,3μm,20.0s					
SDV	**Santo Domingo**	**82.63**	**85**	LR	LR	19 58 52.1
	comp=Z,1μm,18.2s,baz=146,slow=39					
PCBR	**Castelo Branco**	**82.77**	**21**	eP	**P**	**19 17 19.4 +0.7**
PCBR				iP	**pP**	**19 17 29.1 +0.2**
GNI	**Garni**	**82.88 341**		eP	**P**	**19 17 21.2 +1.7**
GNI				pmax	pmax	
	comp=Z,39nm,0.8s					
GNI	**Garni**	**82.88 341**		eP	**P**	**19 17 20.6 +1.1**
	comp=Z,31nm,1.1s					
PDG	**Podgorica**	**83.00**	**0** ⇑	iP	**P**	**19 17 19.8 0.0**
PMRV	**Marv??o**	**83.19**	**21**	eP	**P**	**19 17 22.2 +1.3**
PMRV	**Marv??o**	**83.19**	**21**	eLR	LR	20 08 22.7
	comp=Z,2μm,18.0s					
PMAFR	**Mafra**	**83.24**	**22**	eLR	LR	20 07 28.8
	comp=Z,2μm,20.0s					
DIM	**Dimitrovgrad**	**83.25 356**		eP	**P**	**19 17 21.8 +0.6**
PMTG	**Montargil**	**83.36**	**22**	eP	**P**	**19 17 22.1 +0.3**
PMTG				epP	**sP**	**19 17 34.1 -1.6**
PMTG	**Montargil**	**83.36**	**22**	eLR	LR	20 07 28.8
	comp=Z,2μm,20.0s					
ES19	**SONSECA Array**	**83.59**	**18**	eP	**P**	**19 17 23.5 +0.5**
ESDC	**Sonseca Array**	**83.61**	**18**	P	**P**	**19 17 23.6 +0.5**
	comp=Z,11nm,0.7s,baz=343,slow=4.6,SNR=39					
ESDC				pP	**pP**	**19 17 33.2 -0.1**
	comp=Z,14nm,0.8s,baz=344,slow=4.7,SNR=17					
ESDC				PP	**PP**	**19 20 35.5 +0.5**
	comp=Z,0.3nm,0.5s,baz=346,slow=9.2,SNR=4.1					
PESTR	**Estremoz**	**83.68**	**21**	eP	**P**	**19 17 24.0 +0.5**
	comp=Z,30nm,1.4s					
PESTR				epP	**sP**	**19 17 35.8 -1.7**
PESTR	**Estremoz**	**83.68**	**21**	eLR	LR	20 07 28.8
	comp=Z,2μm,18.0s					
ROSC	**El Rosal**	**83.77**	**90**	LR	LR	19 57 23.5
	comp=Z,634nm,20.1s,baz=207,slow=38					
MMB	**Musomiste**	**83.78 357**		eP	**P**	**19 17 24.2 +0.2**
EVO	**Evora**	**83.92**	**21**	eP	**P**	**19 17 25.3 +0.6**
EVO				iP	**pP**	**19 17 34.7 -0.2**
VAY	**Valandovo**	**84.08 358**		iP	**P**	**19 17 25.8 +0.4**
PNCL	**Nicolau / Gran**	**84.21**	**22**	eP	**P**	**19 17 26.8 +0.7**
	comp=Z,45nm,1.3s					
PNCL				epP	**sP**	**19 17 38.6 -1.5**
PNCL	**Nicolau / Gran**	**84.21**	**22**	eLR	LR	20 07 18.2
	comp=Z,2μm,22.0s					
OHR	**Ohrid**	**84.31 359**		iP	**P**	**19 17 26.8 +0.1**
BIA	**Bitola**	**84.40 359**		iP	**P**	**19 17 27.4 +0.2**
PBAR	**Barrancos**	**84.47**	**21**	eP	**P**	**19 17 28.8 +1.4**
	comp=Z,94nm,1.2s					
PBAR				epP	**sP**	**19 17 39.8 -1.6**
PBAR	**Barrancos**	**84.47**	**21**	eLR	LR	20 07 28.8
	comp=Z,4μm,18.0s					
PCVE	**Castro Verde**	**84.78**	**22**	eLR	LR	20 06 49.9
	comp=Z,2μm,20.0s					
ANTO	**Ankara**	**84.89 350**		eP	**P**	**19 17 30.9 +1.2**
ANTO				pmax	pmax	
	comp=Z,39nm,1.3s					
ANTO	**Ankara**	**84.89 350**		eP	**P**	**19 17 30.9 +1.2**
	comp=Z,39nm,1.3s					
BR231	**Keskin MP Arra**	**84.92 350**		eP	**P**	**19 17 30.8 +0.9**
BR131	**Keskin Array S**	**84.95 349**		eP	**P**	**19 17 30.7 +0.6**
BRTR	**Keskin Array B**	**84.95 349**		P	**P**	**19 17 30.4 +0.3**
	comp=Z,14nm,1.1s,baz=29,slow=2.8,SNR=25					
BRTR				pP	**pP**	**19 17 41.5 +1.1**
	comp=Z,5.2nm,0.9s,baz=68,slow=1.7,SNR=6.0					
BRTR				PP	**PP**	**19 20 47.6 +1.6**
	comp=Z,1.4nm,1.0s,baz=10,slow=7.5,SNR=4.3					
MORF	**Marmelete**	**84.96**	**22**	eLR	LR	20 08 05.4
	comp=Z,2μm,18.0s					
PVAQ	**Vaqueiros**	**85.07**	**22**	eP	**P**	**19 17 31.6 +1.1**
PVAQ				epP	**sP**	**19 17 43.1 -1.4**
PVAQ	**Vaqueiros**	**85.07**	**22**	eLR	LR	20 06 42.1
	comp=Z,1μm,18.0s					
PFVI	**Vila Bispo**	**85.09**	**23**	eLR	LR	20 06 42.1
	comp=Z,2μm,20.0s					
PBDV	**Barranco-do-Ve**	**85.17**	**22**	eLR	LR	20 06 42.1
	comp=Z,2μm,20.0s					
TIP	**Timpagrande**	**86.22**	**2** ⇑	iP	**P**	**19 17 37.3 +1.0**
TIP	**Timpagrande**	**86.22**	**2**	eP	**P**	**19 17 36.5 +0.3**
	comp=Z,35nm,1.2s					
TIP				epP	**pP**	**19 17 47.3 +0.8**
PMOZ	**Porto Moniz, M**	**87.02**	**30**	eLR	LR	20 05 47.6
	comp=Z,2μm,18.0s					
CTA	**Charters Tower**	**87.46 229**		P	**P**	**19 17 43.0 +0.7**
	comp=Z,6.1nm,0.7s,baz=41,slow=8.1,SNR=8.2					
CTA	**Charters Tower**	**87.46 229**		P	**P**	**19 17 43.0 +0.7**
LAST	**Lasithi**	**90.12 355**		eP	**P**	**19 17 54.0 -0.9**
	comp=Z,22nm,1.0s					
MDT	**Midelt**	**90.14**	**20**	P	**P**	**19 17 55.5 +0.4**
	comp=Z,4.0nm,0.9s,baz=111,slow=1.9,SNR=3.6					
HYB	**Hyderabad**	**92.39 305**		iP	**P**	**19 18 05.5 -0.2**
WRAB	**Tennant Creek**	**92.87 239**		ceP	**P**	**19 18 07.7 +0.1**
WRAB				pmax	pmax	
	comp=Z,53nm,2.5s					
WRA	**Warramunga Arr**	**92.89 239**		P	**P**	**19 18 06.9 -0.8**
	comp=Z,2.5nm,0.9s,baz=39,slow=4.9,SNR=12					
NNA	**Nana**	**96.00 102**		iP	**P**	**19 18 24.4 +2.3**
AS01	**Alice Springs**	**96.22 237**		eP	**P**	**19 18 22.5 -0.4**
ASAR	**Alice Springs**	**96.25 237**		P	**P**	**19 18 22.6 -0.4**
	comp=Z,1.0nm,0.8s,baz=34,slow=5.2,SNR=11					
ASAR				PKKPbc	**PKKPbc**	**19 35 06.3 -1.0**
	comp=Z,0.5nm,0.8s,baz=214,slow=2.1,SNR=5.0					
LEM	**Lembang**	**96.72 268**		P	**P**	**19 18 29.5 +3.9**
	comp=Z,232nm,0.9s,baz=41,slow=7.1,SNR=51					
PLCA	**Paso Flores**	**121.95 116**		PKP	**PKPdf**	**19 23 47.6 -0.9**
	comp=Z,2.0nm,0.8s,baz=0.6,slow=7.3,SNR=3.4					
KMBO	**Kilima Mbogo**	**124.47 339**		ePKIKP	**PKPdf**	**19 23 55.5 +1.0**
KMBO	**Kilima Mbogo**	**124.47 339**		ePKPdf	**PKPdf**	**19 23 55.5 +1.0**
LBTB	**Lobatse**	**149.79 349**		ePKP2	**PKPbc**	**19 24 45.1 +0.4**
LBTB	**Lobatse**	**149.79 349**		ePKPbc	**PKPbc**	**19 24 45.1 +0.4**
BOSA	**Boshof**	**153.38 349**		PKPbc	**PKPbc**	**19 24 51.6 -1.2**
	comp=Z,5.4nm,0.8s,baz=138,slow=4.7,SNR=7.2					
MAW	**Mawson**	**156.29 221**		PKPab	**PKPab**	**19 25 15.3 -0.9**
	comp=Z,7.5nm,0.9s,baz=94,slow=7.4,SNR=5.3					

JMA 09 19:06:53.2±0.2, 38°.24N×144°.49E, h36km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**		**2.36 292**		P	Pn	19 07 31.1	+1.7
MIYJ	**Miyakonagasawa**		**2.47 303**		P	Pn	19 07 32.4	+1.5
MIYJ					eS	Sn	19 08 01.9	+2.0
JIO	**Ouri**		**2.48 276**		P	Pn	19 07 32.5	+1.5
JIO					eS	Sn	19 08 01.7	+1.7
JMK	**Ichinoseki**		**2.66 287**		P	Pn	19 07 35.3	+1.8
JOM	**Ohasama**		**2.78 297**		P	Pn	19 07 37.3	+2.1
JOM					eS	Sn	19 08 09.7	+2.2
JANG	**Nango**		**3.14 314**		P	Pn	19 07 41.3	+1.2
JYK	**Kaneyama**		**3.31 283**		P	Pn	19 07 45.2	+2.8
JYK					S	Sn	19 08 23.4	+2.9
JFT	**Otama**		**3.36 259**		P	Pn	19 07 45.5	+2.3
JFT					S	Sn	19 08 24.0	+2.1
JOT	**Ohata**		**4.11 321**		P	Pn	19 07 55.7	+2.3
JCH	**Churui**		**4.45 349**		P	Pn	19 07 57.6	-0.5
JCH					eS	Sn	19 08 48.1	-0.6
JKB	**Kayabe**		**4.51 325**		P	Pn	19 08 01.5	+2.7
JKB					eS	Sn	19 08 50.6	+0.6
JRY	**Ryogami san**		**4.99 245**		P	Pn	19 08 06.7	+1.2
NEM2	**Nemuro 2**		**5.21 10**		P	Pn	19 08 05.8	-2.7
NEM2					eS	Sn	19 09 02.1	-5.1
JTKR	**Abashiri--Toko**		**5.74 356**		P	Pn	19 08 15.4	-0.4
JTKR					S	Sn	19 09 17.1	-3.3

*MAN **09** 19:13:18, 4°.73N×126°.73E, h59km, mb5.9, ML5.0, MS5.5*
*BJI **09** 19:13:22.8, 4°.95N×126°.45E, h38km, mb5.3/85, mB5.4/62, Ms5.2/91, Ms7 5.0/86*
*MOS **09** 19:13:24.9±1.0, 5°.35N×126°.47E, h32km, mb5.7/46, MS5.1/14, Error ellipse: s-maj=16.6km s-min=7.9km az=98.4*
*GCMT **09** 19:13:25.9±0.2, 5°.33N×126°.68E, h32km, MW5.7/90, Moment Tensor Solution. s66,c95; s90,c168; Duration: 1s7 Moment tensor: Scale 10^17Nm; Mrr3.80±.11; Mθθ-0.13±.06; Mφφ-3.67±.07; Mrθ0.47±.10; Mrφ-0.12±.05; Mθφ1.60±.11; Best double couple: M0=4.09200×1017 NP1:φs8.00000°, δ57.00000°, λ96.00000°. NP2: φs177.00000°, δ34.00000°, λ81.00000°. Principal axes: T 4.1730, Plg77.0000°, Azm297.0000°; N -0.1630, Plg5.0000°, Azm184.0000°; P -4.0100, Plg12.0000°, Azm93.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*
*NEIC **09** 19:13:25.9±0.3, 5°.34N×126°.42E, h29km±2km, mb5.5/64, MS5.5/70 Error ellipse: s-maj=5.9km s-min=3.9km az=81.0*
NEIC Felt at Santo Nino.
*IDC **09** 19:13:25.9±1.6, 5°.34N×126°.24E, h29km±10km, mb4.9/50, mb1 5.0/50, mb1mx4.9/59, mbtmp5.1/50, MS5.0/12, Ms1 5.0/12, ms1mx4.4/47, Error ellipse: s-maj=14.9km s-min=8.0km az=73.0*
*ISCJB **09** 19:13:27.5±0.3, 5°.40N±0°.02×126°.53E±0°.02, h55km±3km, mb5.3/176, MS5.2/108, Error ellipse: s-maj=4.0km s-min=2.7km az=171.5*
*DJA **09** 19:13:30.9±0.4, 5°N±2°×12°7E±°, h52km±4km, M5.3/67, mb5.3/67, mB5.7/32, MLv5.3/1, Mw(mB)5.2/32*

ISC 09 19:13:28.9±0.4, 5°.34N±0°.02×126°.49E±0°.04, h47km±3km, h47km:pP-P, n668, σ2.9°07/690, mb5.4/209, MS5.3/110, 43C-15D, Mindanao

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
MATI	**Mati**		**1.61 352**	eP	**Pn**	**Pn**	**19 13 53.1**	**-1.9**
MATI				eS	**Sn**	**Sn**	**19 14 21.6**	**+7.0**
GSPH	**General Santos**		**1.71 296**	iP	Pn	Pn	19 13 52.6

PBKI	Pangkalan Bun	16.83	242	P	P	19 17 24.9 +2.0
TWSI	Taliwang, Sumb	16.95	214	P	Pn	19 17 24.0 +1.1
	410nm,1.1s,3μm					
SRBI	Singaraja	17.45	220	P	P	19 17 29.8 +0.1
	176nm,1.1s					
ABJI	Asem Bagus	17.88	223	P	Pn	19 17 38.4 +4.0
DNP	Denpasar	17.90	219	P	Pn	19 17 38.7 +4.1
TWG	Pinlang	18.15	344	ePn	P	19 17 37.0 -0.5
	193nm,0.8s					
JAGI	Jajag, Banyuwa	18.43	222	P	Pn	19 17 42.2 +1.1
	163nm,1.1s					
JAGI	Jajag, Banyuwa	18.43	222	eP	P	19 17 40.8 +0.2
	151nm,1.0s					
YULB	Yu-li	18.64	345	eP	P	19 17 41.1 -1.7
	57nm,1.0s					
MTN	Manton Dam	18.64	166	P	P	19 17 39.9 -3.0
	baz=19,SNR=16					
MTN	Manton Dam	18.64	166	eP	P	19 17 39.9 -3.0
	136nm,1.0s					
TPUB	Ta-pu	18.73	343	eP	P	19 17 42.1 -1.7
	137nm,1.0s					
GMJI	Gumukmas	18.77	224	P	Pn	19 17 46.1 +1.0
	151nm,1.0s,2μm					
KDU	Kakadu	18.87	162	P	P	19 17 44.5 -0.9
	baz=19,SNR=6.0					
SSLB	Suanglung	19.10	344	eP	P	19 17 47.1 -0.8
	66nm,0.9s					
NGJI	Ngawi	19.60	230	P	Pn	19 17 55.6 +0.5
	148nm,1.0s					
PWJI	Pagerwojo	19.77	228	P	Pn	19 17 57.5 +0.4
	69nm,0.8s					
YHNB	Yeheng	19.84	346	eP	P	19 17 56.1 +0.1
	73nm,0.9s					
GUMO	Guam	19.88	64	LR	LR	19 24 15.0
	comp=Z,6μm,21.9s,baz=203,slow=32					
TATO	Taipei	20.11	347	PFAKE		19 18 10.0 +9.0
TATO				LR	LR	
	comp=Z,2μm,19.0s					
PCJI	Pacitan	20.35	229	P	Pn	19 18 06.0 +2.0
	comp=Z,111nm,0.9s					
HKC	Hong Kong Obse	20.65	326	P	Pn	19 18 08.0 +0.6
UGM	Wanagama	20.67	231	P	Pn	19 18 14.8 +7.0
UGM	Wanagama	20.67	231	eP	P	19 18 04.2 -0.8
	comp=Z,302nm,1.2s					
MCO	Taipa Grande	20.86	324	P	Pn	19 18 10.0 +0.1
QZH	Quanzhou	20.92	340	⇑iP	P	19 18 03.6 -4.0
QZH				S	S	19 21 56.6 -1.6
QZH				pmax	pmax	
	comp=Z,120nm,0.8s					
QZH				pmax	pmax	
	comp=Z,2μm,3.4s					
QZH				LR	LR	
	comp=Z,7μm,19.6s					
QZH				LR	LR	
	comp=Z,2μm,11.4s					
QZH				LR	LR	
	comp=Z,9μm,23.0s					
QIZ	Qiongzhong	21.18	311	P	P	19 18 10.0 -0.5
QIZ				pP	pP	19 18 19.2 -2.5
QIZ				S	S	19 22 04.9 +1.2
QIZ				LR	LR	
	comp=Z,610nm,18.6s					
QIZ				LR	LR	
	comp=Z,1μm,20.8s					
JOW	Kunigami	21.44	4	eP	P	19 18 12.9 -0.3
	comp=Z,121nm,0.9s					
JCJI	Jatiwangi	21.66	237	P	P	19 18 20.4 +4.8
	comp=Z,289nm,1.0s					
PPBI	Pangkal Pinang	21.66	250	P	P	19 18 16.5 +0.8
	comp=Z,124nm,1.2s					
GZH	Guangzhou	21.73	326	P	P	19 18 18.4 +2.0
MANU	Manus Island	22.10	109	esP	sP	19 18 31.9 -5.7
CMJI	Cimerak	22.23	234	P	P	19 18 27.1 +5.3
	comp=Z,96nm,1.3s					
TPRI	Tanjung Pinang	22.36	259	P	P	19 18 25.7 +2.4
	comp=Z,125nm,1.3s,comp=Z,2μm					
LEM	Lembang	22.38	238	P	P	19 18 30.2 +6.6
	comp=Z,2μm,1.0s,comp=Z,25μm					
CISI	Cisompet, Garu	22.61	236	eP	P	19 18 24.7 -1.3
	comp=Z,128nm,0.9s					
CBJI	Citeko	22.82	239	P	P	19 18 29.0 +0.9
	comp=Z,959nm,1.2s,comp=Z,13μm					
MYKOM	Kota Tinggi	22.87	262	eP	P	19 18 28.2 -0.4
	comp=Z,335nm,1.4s					
CNJI	Cibinong	23.05	237	P	P	19 18 32.8 +2.4
	comp=Z,179nm,1.3s,comp=Z,2μm					
PMBI	Palembang	23.20	250	P	P	19 18 34.1 +2.2
	comp=Z,730nm,1.1s,comp=Z,8μm					
FITZ	Fitzroy Crossi	23.31	182	P	P	19 18 31.2 -1.6
	comp=Z,94nm,1.1s,baz=7.5,slow=8.4,SNR=41					
FITZ	Fitzroy Crossi	23.31	182	eP	P	19 18 30.2 -2.7
	comp=Z,246nm,1.3s					
BLSI	Bandar Lampung	23.73	244	P	P	19 18 42.7 +5.7
	comp=Z,100nm,0.9s					
KLI	Kotabumi	23.87	245	P	P	19 18 39.3 +1.1
CGJI	Cibinong	23.92	240	P	P	19 18 39.2 +0.5
PANO	Nakornpanom	24.42	300	P	P	19 18 43.8 +0.5
	comp=Z,96nm,1.2s					
KASI	Kota Agung	24.47	244	P	P	19 18 44.9 +1.1
LWLI	Liwa	24.65	246	P	P	19 18 47.1 +1.5
LHSI	Lahat	24.68	249	P	P	19 18 47.6 +1.9
	comp=Z,272nm,1.1s,comp=Z,3μm					
SKNT	Sakolnakorn	24.89	299	P	P	19 18 47.9 +0.3
	comp=Z,112nm,0.9s					
CHBT	CHBT	24.96	289	P	P	19 18 49.3 +1.1
	comp=Z,176nm,1.1s,comp=Z,3μm					
PMG	Port Moresby	25.27	125	P	P	19 18 52.1 +1.1
	comp=Z,5.0nm,0.7s,baz=346,slow=4.2,SNR=2.8					
PMG				ScP	ScP	19 26 00.4 +1.3
	comp=Z,7.1nm,0.8s,baz=348,slow=3.1,SNR=4.0					
PMG	Port Moresby	25.27	125	eP	P	19 18 54.0 +2.9
PMG				pmax	pmax	
	comp=Z,59nm,0.9s					
PMG	Port Moresby	25.27	125	eP	P	19 18 55.7 +4.7
	comp=Z,40nm,1.1s					
PMG				ScP	ScP	19 26 00.4 +1.3
COEN	Coen	25.33	139	P	P	19 18 49.8 -1.8
	baz=25,SNR=7.8					
COEN	Coen	25.33	139	eP	P	19 18 51.5 0.0
	comp=Z,288nm,1.8s					
IPM	Ipoh	25.39	269	eP	P	19 18 50.9 -1.2
	comp=Z,60nm,0.9s					
IPM				eScP	ScP	19 26 00.3 +0.8
MNAI	Manna	25.41	248	P	pP	19 19 04.4 -0.2
MNAI	Manna	25.41	248	eP	P	19 18 50.3 -2.0
MNAI				epP	pP	19 19 00.9 -3.7
SRAK	Srakaew	25.57	291	P	P	19 18 49.4 -4.4
MASI	Maura Aman, Be	25.65	251	P	P	19 18 56.5 +1.9
KHON	Khomkaen	25.65	297	P	P	19 18 56.3 +1.8
	comp=Z,34nm,1.0s,comp=Z,701nm					
KULM	Kulim	25.73	271	eP	P	19 18 54.3 -1.0
	comp=Z,98nm,1.0s					
KULM				LR	LR	
	comp=Z,1μm,22.0s					
SKLT	Songkhla	25.78	275	P	P	19 18 56.6 +0.9
	comp=Z,60nm,1.0s					
SDSI	Sungai Dareh	25.80	257	P	P	19 18 57.7 +1.9
BKNI	Bangkinang	25.90	260	P	P	19 19 00.0 +3.2
BKNI	Bangkinang	25.90	260	eP	P	19 18 55.8 -1.0
	comp=Z,391nm,1.2s					
SSE	Sheshan	26.10	350	P	P	19 18 59.6 +1.2
SSE				S	S	19 23 27.4 +0.8
SSE				pmax	pmax	
	comp=Z,61nm,0.7s					
SSE				pmax	pmax	
	comp=Z,410nm,4.6s					
SSE				LR	LR	
	comp=Z,1μm,20.3s					
SSE				LR	LR	
	comp=Z,700nm,20.7s					
SSE				LR	LR	
	comp=Z,2μm,16.8s					
CHAI	Chaiyaphum	26.24	295	P	P	19 19 00.6 +0.8
	comp=Z,18nm,1.0s,comp=Z,152nm					
WRAB	Tennant Creek	26.28	163	eP	P	19 18 59.1 -1.0
WRAB				pmax	pmax	
	comp=Z,124nm,1.0s					
WRAB	Tennant Creek	26.28	163	eP	P	19 18 59.8 -0.3
	comp=Z,147nm,0.9s					
WRA	Warramunga Arr	26.28	163	P	P	19 19 00.2 0.0
	comp=Z,19nm,0.7s,baz=344,slow=10.0,SNR=49					
WRA				ScP	ScP	19 26 02.1 +0.2
	comp=Z,24nm,0.8s,baz=340,slow=3.3,SNR=29					
WRA				LR	LR	19 30 34.9
	comp=Z,3μm,20.2s,baz=30,slow=39					
WRA				P3KPbc		19 51 44.1
	comp=Z,1.1nm,0.8s,baz=160,slow=3.9,SNR=7.1					
WB2	Warramunga Arr	26.29	163	eP	P	19 18 59.8 -0.4
	comp=Z,190nm,0.9s					
CBIJ	Chichi jima	26.30	33	eP	P	19 18 56.7 -3.5
	comp=Z,170nm,0.7s					
JCJ	Chichijima	26.30	33	P	P	19 18 56.6 -3.6
	comp=Z,98nm,0.7s,baz=135,slow=7.1,SNR=19					
JCJ				LR	LR	19 27 16.8
	comp=Z,2μm,21.9s,baz=230,slow=31					
PATY	Pattaya	26.38	288	P	P	19 19 02.4 +1.3
	comp=Z,20nm,1.0s					
PDSI	Padang	26.73	257	P	P	19 19 07.5 +3.2
MNSI	Mandailing Nat	27.24	261	P	P	19 19 14.9 +6.0
	comp=Z,60nm,0.9s					
PBKT	Sadao Pong	27.39	296	P	P	19 19 10.4 +0.3
	comp=Z,71nm,0.9s					
LOEI	Loei	27.48	298	P	P	19 19 07.7 -3.3
	comp=Z,93nm,0.9s					
NJ2	Nanjing	27.52	346	eP	P	19 19 10.7 -0.4
NJ2				pP	pP	19 19 19.2 -4.3
NJ2				sS	sS	19 24 06.0 -3.8
NJ2				pmax	pmax	
	comp=Z,12nm,0.8s					
NJ2				pmax	pmax	
	comp=Z,560nm,4.8s					
NJ2				LR	LR	
	comp=Z,1μm,16.8s					
NJ2				LR	LR	
	comp=Z,3μm,14.7s					
NJ2				LR	LR	
	comp=Z,2μm,19.6s					
WHN	Wuhan	27.56	337	⇓iP	P	19 19 12.0 +0.5
WHN				pP	pP	19 19 20.0 -3.8
WHN				S	S	19 23 56.8 +7.2
WHN				LR	LR	
	comp=Z,2μm,9.9s					
WHN				LR	LR	
	comp=Z,4μm,14.8s					
WHN				LR	LR	
	comp=Z,9μm,21.5s					
PSI	Prapat	27.61	266	eP	P	19 19 11.9 -0.5
PSI				pmax	pmax	
	comp=Z,71nm,1.1s					
PSI	Prapat	27.61	266	eP	P	19 19 11.9 -0.5
	comp=Z,71nm,1.1s					
TSI	Tuntungan	27.90	267	P	P	19 19 16.1 +1.3
JNU	Nakatsue	27.94	8	P	P	19 19 12.3 -2.6
	comp=Z,29nm,0.8s,baz=246,slow=4.3,SNR=8.7					
JNU	Nakatsue	27.94	8	eP	P	19 19 11.6 -3.3
	comp=Z,38nm,0.9s					
UTTA	Uttaradit	28.20	298	P	P	19 19 18.8 +1.5
	comp=Z,9.8nm,1.0s,comp=Z,81nm					
GYA	Guiyang	28.28	320	⇑iP	P	19 19 18.0 -0.2
GYA				pP	pP	19 19 28.8 -1.8
GYA				PP	PnPn	19 20 11.2 +2.7
GYA				PcP	PcP	19 22 30.9 +0.3
GYA				S	S	19 24 01.4 0.0
GYA				SS	SnSn	19 25 24.8 +3.0
GYA				pmax	pmax	
	comp=Z,20nm,0.9s					
GYA				pmax	pmax	
	comp=Z,430nm,5.0s					
GYA				LR	LR	
	comp=Z,9μm,17.0s					
GYA				LR	LR	
	comp=Z,8μm,17.2s					
GYA				LR	LR	
	comp=Z,8μm,17.5s					
SRDT	SRDT	28.39	290	P	P	19 19 23.4 +4.3
	comp=Z,140nm,1.0s					
KCSI	Kotacane, Aceh	28.69	268	P	P	19 19 20.8 -1.1
	comp=Z,91nm,1.4s,comp=Z,4μm					
QIS	Mount Isa	28.78	154	P	P	19 19 21.3 -1.2
	baz=29,SNR=14					
GSI	Gunungsitoli	29.14	263	P	P	19 19 24.7 -1.1
GSI	Gunungsitoli	29.14	263	eP	P	19 19 24.0 -1.8
	comp=Z,126nm,1.0s					
MTSU	Mount Surprise	29.21	143	P	P	19 19 26.0 -0.4
	baz=29,SNR=13					
LAMP	Lampang	29.30	299	P	P	19 19 29.0 +1.8
	comp=Z,10nm,0.8s,comp=Z,91nm					
CRAI	Chiangrai	29.39	303	P	P	19 19 28.1 +0.1
	comp=Z,655nm,0.8s,comp=Z,62μm					
ENH	Enshi	29.53	329	eP	P	19 19 27.3 -1.8
	comp=Z,31nm,0.8s					
ENH				LR	LR	
	comp=Z,3μm,19.0s					
AS31	Alice Springs	29.72	166	eP	P	19 19 29.5 -1.3
	comp=Z,7.9nm,0.7s					
ASAR	Alice Springs	29.72	166	P	P	19 19 29.1 -1.8
	comp=Z,3.9nm,0.6s,baz=341,slow=6.7,SNR=64					
ASAR				PcP	PcP	19 22 33.3 -0.9
	comp=Z,8.1nm,0.8s,baz=338,slow=2.9,SNR=5.1					
ASAR				ScP	ScP	19 26 13.7 +1.2
	comp=Z,19nm,0.8s,baz=349,slow=2.5,SNR=28					
ASAR				P3KPbc		19 51 31.9
	comp=Z,0.5nm,0.8s,baz=137,slow=4.5,SNR=4.5					
AS01	Alice Springs	29.73	166	eP	P	19 19 28.8 -2.2
AS01				eScP	ScP	19 26 14.0 +1.5
CM01	Chiang Mai Arr	29.86	298	eP	P	19 19 31.0 -1.1
CM31	Chiang Mai Arr	29.88	298	eP	P	19 19 31.2 -1.2
CM31				eScP	ScP	19 26 15.9 +2.8
CMAR	Chiang Mai Arr	29.88	298	P	P	19 19 30.9 -1.4
	comp=Z,8.6nm,0.7s,baz=119,slow=6.3,SNR=3.0					
MLSI	Meulaboh, Aceh	30.00	269	P	P	19 19 31.1 -2.4
CMMT	Chiang Mai	30.02	299	P	P	19 19 33.6 +0.1
	comp=Z,28nm,1.2s					
CHTO	Chiang Mai	30.02	299	P	P	19 19 33.6 0.0
	comp=Z,113nm,0.8s					
CHTO	Chiang Mai	30.02	299	eP	P	19 19 33.0 -0.6
CHTO				pmax	pmax	
	comp=Z,17nm,0.6s					
CHTO				MLR	MLR	
	comp=Z,2μm,20.0s					
CHTO	Chiang Mai	30.02	299	eP	P	19 19 33.0 -0.6
	comp=Z,17nm,0.6s					
CHTO				LR	LR	
	comp=Z,2μm,20.0s					
KMI	Kunming	30.10	313	P	P	19 19 34.9 +0.5
KMI				pP	pP	19 19 45.0 -1.9
KMI				sP	sP	19 19 50.2 -2.3
KMI				PP	PnPn	19 20 36.4 +3.4
KMI				S	S	19 24 28.8 -1.4
KMI				sS	sS	19 24 46.6 -4.5
KMI				SS	SnSn	19 26 06.1 -0.1
KMI				pmax	pmax	
	comp=Z,100nm,0.9s					
KMI				pmax	pmax	
	comp=Z,200nm,3.1s					
KMI				LR	LR	
	comp=Z,1μm,15.5s					
KMI				LR	LR	
	comp=Z,1μm,24.0s					
KMI				LR	LR	
	comp=Z,3μm,22.2s					
GIRL	Giralia	30.29	203	P	P	19 19 37.6 +1.9
	baz=31,SNR=4.3					
CMAI	Chiengmai2	30.38	301	P	P	19 19 37.8 +0.8
	comp=Z,48nm,1.7s,comp=Z,8μm					
MHMT	Maesarieng	30.67	297	P	P	19 19 41.3 +2.0
	comp=Z,31nm,0.9s					
INU	Inuyama	31.40	17	eP	P	19 19 45.1 -0.4
	comp=Z,32nm,0.9s					
CTA	Charters Tower	31.87	143	P	P	19 19 50.6 +0.7
	comp=Z,6.7nm,0.7s,baz=321,slow=13,SNR=11					
CTAO	Charters Tower	31.87	143	eP	P	19 19 50.8 +0.9
CTAO				pmax	pmax	
	comp=Z,809nm,1.5s					
CTAO				MLR	MLR	
	comp=Z,2μm,22.0s					
CTAO	Charters Tower	31.87	143	eP	P	19 19 50.8 +0.9
	comp=Z,809nm,1.5s					
CTAO				LR	LR	
	comp=Z,2μm,22.0s					
TIA	Tai'an	31.91	346	⇓iP	P	19 19 50.4 +0.4
TIA				S	S	19 24 59.9 +2.1
TIA				pmax	pmax	
	comp=Z,50nm,1.1s					
TIA				LR	LR	
	comp=Z,860nm,23.0s					
TIA				LR	LR	
	comp=Z,2μm,24.0s					
TIA				LR	LR	
	comp=Z,1μm,25.0s					
KS15	Wonju Array Si	31.98	2	eP	P	19 19 51.5 +0.9
KSAR	Wonju Array Be	31.98	2	P	P	19 19 50.2 -0.4
KSAR						19 22 39.9
KSAR	Wonju Array Be	31.98	2	P	P	19 19 50.2 -0.4
KSAR				PcP	PcP	19 22 39.9 +0.1
KSAR				ScP	ScP	19 26 20.4 +0.8
KSRS	Korea Array	31.99	2	P	P	19 19 50.2 -0.5
	comp=Z,16nm,0.7s,baz=189,slow=9.7,SNR=32					
KSRS				PcP	PcP	19 22 39.9 +0.1
	comp=Z,2.1nm,0.6s,baz=186,slow=2.6,SNR=5.8					
KSRS				ScP	ScP	19 26 20.4 +0.8
	comp=Z,3.5nm,0.9s,baz=183,slow=4.3,SNR=7.5					
KSRS	Korea Array	31.99	2	P	P	19 19 50.2 -0.5
KSRS						19 22 39.9
KSRS				pmax	pmax	
	comp=Z,8.0nm,0.7s					
KSRS				pmax	pmax	
	comp=Z,2.0nm,0.6s					
KSRS				pmax	pmax	
	comp=N,4.0nm,0.9s					
INCN	Inchon	31.99	0	PFAKE		19 20 00.0 +9.3
INCN				LR	LR	
	comp=Z,2μm,20.0s					
KS01	Wonju Array Si	32.01	2	eP	P	19 19 50.2 -0.7
KS01				e		19 26 20.8
MJAR	Matsushiro Arr	32.86	18	P	P	19 19 56.2 -2.2
	comp=Z,8.0nm,0.9s,baz=192,slow=8.8,SNR=14					
MJAR				ScP	ScP	19 26 23.6 +0.9
	comp=Z,13nm,0.9s,baz=186,slow=3.7,SNR=20					
MAJO	Matsushiro	32.86	18	ceP	P	19 19 58.9 +0.5
MAJO				pmax	pmax	
	comp=Z,19nm,2.5s					
MAJO	Matsushiro	32.86	18	epP	pP	19 20 08.8 -2.0
MAT	Matsushiro	32.86	18	P	P	19 19 55.5 -2.9
MAT				S	S	19 25 18.6 +5.9
MJB9	Matsu-Tunnel	32.87	18	epP	pP	19 20 08.8 -2.0
XAN	Xi'an	32.89	333	P	P	19 19 56.7 -1.9
XAN				pP	pP	19 20 06.0 -5.1
XAN				S	S	19 25 10.9 -2.3
XAN				pmax	pmax	
	comp=Z,75nm,1.1s					
XAN				LR	LR	
	comp=Z,3μm,23.7s					
XAN				LR	LR	
	comp=Z,2μm,22.8s					
XAN				LR	LR	
	comp=Z,3μm,23.7s					
CD2	Chengdu	33.22	323	P	P	19 20 00.9 -0.7
CD2				sP	pP	19 20 15.6 +1.5
CD2				PP	PP	19 21 16.6 -0.9
CD2				S	S	19 25 19.5 +1.0
CD2				sS	sS	19 25 36.8 -2.7
CD2				pmax	pmax	
	comp=Z,120nm,1.1s					
CD2				pmax	pmax	
	comp=Z,430nm,10.2s					
CD2				LR	LR	
	comp=Z,3μm,18.6s					
CD2				LR	LR	
	comp=Z,3μm,18.0s					
DL2	Dalian	33.70	353	P	P	19 20 06.6 +1.0
DL2				S	S	19 25 27.5 +1.9
DL2				pmax	pmax	
	comp=Z,180nm,0.8s					
DL2				LR	LR	
	comp=Z,2μm,21.6s					
DL2				LR	LR	
	comp=Z,1μm,19.4s					
DL2				LR	LR	
	comp=Z,2μm,19.2s					
COCO	West Island	34.25	239	PFAKE		19 20 20.0 +9.4
COCO				LR	LR	
	comp=Z,4μm,20.0s					
TIY	Taiyuan	34.68	340	eP	P	19 20 15.8 +1.6
TIY				S	S	19 25 39.7 -1.2
TIY				SS	SnSn	19 28 01.9 +4.8
TIY				pmax	pmax	
	comp=Z,360nm,7.2s					
TIY				LR	LR	
	comp=Z,610nm,12.6s					
TIY				LR	LR	
	comp=Z,160nm,10.0s					
TIY				LR	LR	
	comp=Z,1μm,17.9s					
BJT	Baijiatuau	35.76	346	eP	P	19 20 23.1 -0.2
BJT				pmax	pmax	
	comp=Z,187nm,0.8s					
BJT				MLR	MLR	
	comp=Z,2μm,20.0s					
BJT	Baijiatuau	35.76	346	eP	P	19 20 23.1 -0.2
	comp=Z,186nm,0.8s					
BJT				LR	LR	
	comp=Z,2μm,20.0s					
BJI	Beijing	35.78	346	P	P	19 20 23.3 -0.2
BJI				PP	PP	19 21 45.8 +0.3
BJI				S	S	19 25 57.3 -0.2
BJI				sS	sS	19 26 15.3 -3.3
BJI				pmax	pmax	
	comp=Z,270nm,1.0s					
BJI				pmax	pmax	
	comp=Z,630nm,3.2s					
BJI				LR	LR	
	comp=Z,1μm,20.4s					
BJI				LR	LR	
	comp=Z,440nm,23.4s					
BJI				LR	LR	
	comp=Z,1μm,21.9s					
QLP	Quilpie	36.09	152	P	P	19 20 25.4 -0.9
	baz=36,SNR=12					
HNR	Honiara	36.43	114	PFAKE		19 20 40.0 +11
HNR				LR	LR	
	comp=Z,3μm,19.0s					
SNY	Shenyang	36.43	356	⇑P	P	19 20 30.0 +1.0
SNY				S	S	19 26 06.2 -1.2
SNY				pmax	pmax	
	comp=Z,97nm,0.7s					
SNY				pmax	pmax	
	comp=Z,620nm,5.7s					
SNY				LR	LR	
	comp=Z,870nm,17.9s					
SNY				LR	LR	
	comp=Z,2μm,20.0s					
SNY				LR	LR	
	comp=Z,2μm,17.6s					
LZH	Lanzhou	37.01	329	eP	P	19 20 34.1 -0.2
LZH				pP	pP	19 20 44.2 -2.7
LZH				sP	sP	19 20 48.3 -4.2
LZH				PcP	PcP	19 22 55.7 +1.1
LZH				eS	S	19 26 17.2 +0.4
LZH				SS	SnSn	19 28 48.0 -5.5
LZH				pmax	pmax	
	comp=Z,66nm,1.2s					
LZH				pmax	pmax	
	comp=Z,330nm,5.5s					
LZH				LR	LR	
	comp=Z,3μm,19.2s					
LZH				LR	LR	
	comp=Z,3μm,17.8s					
LZH				LR	LR	
	comp=Z,5μm,23.0s					
MSHR	Mys Shultsa	37.31	6	eP	P	19 20 35.2 -1.4
HHC	Hu-ho-hao-te	37.81	341	eP	P	19 20 41.4 +0.5
HHC				sP	pP	19 20 58.3 +4.7
HHC				S	S	19 26 31.9 +3.2
HHC				pmax	pmax	
	comp=Z,75nm,0.9s					
HHC				pmax	pmax	
	comp=Z,440nm,5.7s					
HHC				LR	LR	
	comp=Z,11μm,13.6s					
HHC				LR	LR	
	comp=Z,8μm,14.8s					
HHC				LR	LR	
	comp=Z,11μm,14.7s					
VLA	Vladivostok	37.93	6	eP	P	19 20 40.7 -1.0
VLA				pmax	pmax	
	comp=Z,33nm,1.1s					
RMQ	Roma	38.29	147	P	P	19 20 45.7 +0.6
	baz=38,SNR=4.2					
CN2	Changchun	38.32	359	eP	P	19 20 43.5 -1.5
CN2				pmax	pmax	
	comp=Z,10.0nm,1.0s					
SHL	Shillong	38.75	305	eP	P	19 20 47.9 -1.3
SHL				IAmb	IAmb	19 20 50.0
	comp=Z,170nm,0.7s					
EIDS	Eidsvold	38.76	143	P	P	19 20 48.5 -0.5
	baz=39,SNR=9.9					
EIDS	Eidsvold	38.76	143	eP	P	19 20 48.6 -0.5
	comp=Z,151nm,1.6s					

USRK	**Ussuriysk Ar.**	**39.00**	**6**	P	**P**	**19 20 49.2**	**-1.5**
	comp=Z,26nm,0.7s,baz=178,slow=6.7,SNR=37						
BBOO	**Buckleboo**	**39.01**	**167**	*e*P	**P**	**19 20 50.4**	**-0.6**
	comp=Z,82nm,1.3s						
NWAO	**Narrogin (SRO)**	**39.06**	**192**	P	**P**	**19 20 49.4**	**-2.0**
	comp=Z,34nm,0.8s,baz=244,slow=9.2,SNR=11						
NWAO	**Narrogin (SRO)**	**39.06**	**192**	*e*P	**P**	**19 20 50.3**	**-1.1**
NWAO				pmax	pmax		
	comp=Z,447nm,1.2s						
NWAO	**Narrogin (SRO)**	**39.06**	**192**	*e*P	**P**	**19 20 50.3**	**-1.1**
	comp=Z,447nm,1.2s						
MDJ	**Mudanjiang**	**39.22**	**4**	P	**P**	**19 20 53.2**	**+0.7**
MDJ				pP	pP	19 21 02.1	-3.1
MDJ				sP	sP	19 21 06.0	-4.8
MDJ				PP	**PP**	**19 22 23.7**	**+0.5**
MDJ				PcP	**PcP**	**19 23 01.0**	**0.0**
MDJ				S	**S**	**19 26 52.8**	**+3.2**
MDJ				sS	sS	19 27 08.2	-2.6
MDJ				pmax	pmax		
	comp=Z,61nm,0.9s						
MDJ				pmax	pmax		
	comp=Z,290nm,5.9s						
MDJ				LR	LR		
	comp=Z,870nm,26.0s						
MDJ				LR	LR		
	comp=Z,1μm,22.7s						
MDJ				LR	LR		
	comp=Z,1μm,22.7s						
MDJ	**Mudanjiang**	**39.22**	**4**	*e*P	**P**	**19 20 52.4**	**-0.2**
	comp=Z,50nm,0.9s						
ERM	**Erimo**	**39.42**	**20**	PFAKE		19 21 10.0	+16
ERM				LR	LR		
	comp=Z,1μm,21.0s						
STKA	**Stephens Creek**	**39.71**	**160**	P	**P**	**19 20 56.4**	**-0.4**
	comp=Z,18nm,0.5s,baz=340,slow=8.1,SNR=32						
STKA				ScP	**ScP**	**19 26 49.2**	**+1.2**
	comp=Z,9.1nm,0.8s,baz=322,slow=3.3,SNR=5.6						
STKA				LR	LR	19 41 09.1	
	comp=Z,2μm,19.2s,baz=339,slow=42						
STKA	**Stephens Creek**	**39.71**	**160**	P	**P**	**19 20 56.2**	**-0.6**
	baz=40,SNR=46						
STKA	**Stephens Creek**	**39.71**	**160**	*e*P	**P**	**19 20 56.2**	**-0.6**
	comp=Z,35nm,1.0s						
STKA				ScP	**ScP**	**19 26 49.2**	**+1.2**
HTT	**Hallett**	**40.32**	**164**	P	**P**	**19 21 02.7**	**+0.7**
	baz=41,SNR=13						
RKGY	**Rocky Gully**	**40.74**	**192**	P	**P**	**19 21 05.3**	**+0.1**
	baz=41,SNR=8.7						
CMSA	**Cobar Meteorol**	**40.99**	**155**	P	**P**	**19 21 08.4**	**+0.9**
	baz=41,SNR=7.9						
ASAJ	**Asahikawa**	**41.13**	**18**	P	**P**	**19 21 08.4**	**0.0**
	comp=Z,22nm,0.8s,baz=224,slow=11,SNR=19						
ASAJ	**Asahikawa**	**41.13**	**18**	*e*P	**P**	**19 21 08.9**	**+0.5**
	comp=Z,32nm,0.9s						
LSA	**Lhasa**	**41.22**	**310**	P	**P**	**19 21 09.2**	**-0.7**
LSA				pmax	pmax		
	comp=Z,11nm,1.6s						
LSA				LR	LR		
	comp=Z,2μm,39.7s						
LSA				LR	LR		
	comp=Z,2μm,47.7s						
LSA				LR	LR		
	comp=Z,5μm,41.7s						
LSA	**Lhasa**	**41.22**	**310**	*e*P	**P**	**19 21 09.8**	**-0.1**
LSA				pmax	pmax		
	comp=Z,68nm,1.0s						
LSA	**Lhasa**	**41.22**	**310**	*e*P	**P**	**19 21 09.8**	**-0.1**
	comp=Z,68nm,1.0s						
H11S3	**WAKE ISLAND Hy**	**41.33**	**68**	T	T	20 05 03.4	
	baz=257,slow=75,SNR=16						
H11S1	**WAKE ISLAND Hy**	**41.34**	**68**	T	T	20 05 04.6	
	baz=257,slow=75,SNR=14						
H11S2	**WAKE ISLAND Hy**	**41.34**	**68**	T	T	20 05 04.8	
	baz=257,slow=75,SNR=25						
GTA	**Gaotai**	**41.61**	**328**	⇑P	**P**	**19 21 11.1**	**-1.5**
GTA				pP	pP	19 21 20.8	-4.6
GTA				sP	sP	19 21 24.9	-6.0
GTA				PcP	**PcP**	**19 23 09.3**	**+0.3**
GTA				ScP	**ScP**	**19 26 57.4**	**+1.9**
GTA				PcS	**PcS**	**19 26 59.2**	**-1.4**
GTA				S	**S**	**19 27 23.9**	**-1.8**
GTA				ScS	**ScS**	**19 31 12.0**	**-0.2**
GTA				pmax	pmax		
	comp=Z,12nm,1.2s						
GTA				pmax	pmax		
	comp=Z,260nm,5.7s						
GTA				LR	LR		
	comp=Z,2μm,22.3s						
GTA				LR	LR		
	comp=Z,2μm,25.2s						
GTA				LR	LR		
	comp=Z,4μm,22.8s						
H11N1	**WAKE ISLAND Hy**	**41.81**	**66**	T	T	20 05 45.0	
	baz=255,slow=75,SNR=44						
H11N2	**WAKE ISLAND Hy**	**41.82**	**66**	T	T	20 05 40.9	
	baz=255,slow=75,SNR=36						
H11N3	**WAKE ISLAND Hy**	**41.83**	**66**	T	T	20 05 46.7	
	baz=255,slow=75,SNR=35						
BWNR	**Bhubaneshwar**	**42.22**	**294**	*e*P	**P**	**19 21 18.0**	**+0.3**
BWNR				IAmb	IAmb	19 21 19.9	
	comp=Z,19nm,0.3s						
ARMA	**Armidale**	**42.94**	**147**	P	**P**	**19 21 23.7**	**+0.3**
	baz=43,SNR=4.7						
ARMA	**Armidale**	**42.94**	**147**	*e*pP	P	19 21 29.2	+5.7
	comp=Z,58nm,0.9s						
BOK	**Bokaro**	**43.15**	**299**	*e*P	**P**	**19 21 25.1**	**-0.2**
BOK				IAmb	IAmb	19 21 27.0	
	comp=Z,22nm,0.9s						
CHLP	**Challavanipeta**	**43.41**	**291**	*e*P	**P**	**19 21 26.6**	**-0.7**
CHLP				IAmb	IAmb	19 21 29.2	
	comp=Z,24nm,1.1s						
CHLP				*e*ScP	**ScP**	**19 27 03.3**	**+0.4**
CHLP				*e*S	**S**	**19 27 52.1**	**-0.3**
HABR	**Khabarovsk**	**43.59**	**8**	*de*P	**P**	**19 21 25.4**	**-3.0**
HABR				*e**PP	pP	19 21 35.1	-6.1
HABR				*e**SP	sP	19 21 39.3	-7.4
HABR				*e*		19 23 12.8	
HABR				*e*PPP	PPP	19 23 41.3	
HABR				*e*S	**S**	**19 27 52.4**	**-1.9**
HABR				*e**SS	sS	19 28 08.5	-7.3
HABR				*e*SS	**SS**	**19 31 08.8**	**-1.8**
HABR				*e*		19 31 22.3	
HABR				*e*SSS	SSS	19 31 47.7	
HABR				pmax	pmax		
	comp=N,41nm,2.1s						
HABR				pmax	pmax		
	comp=E,64nm,2.1s						
HABR				pmax	pmax		
	comp=Z,99nm,2.1s						
HABR				MLR	MLR		
	comp=Z,698nm,17.0s						
YSS	**Yuzh-Sakhalins**	**43.77**	**16**	*e*P	**P**	**19 21 29.3**	**-0.5**
YSS				*e*S	S	19 27 47.4	-10
VIS	**Vishakhapatnam**	**43.93**	**290**	*e*P	**P**	**19 21 29.4**	**-2.1**
VIS				IAmb	IAmb	19 21 35.9	
	comp=Z,31nm,1.2s						
KLR	**Kul'dur**	**43.96**	**5**	P	**P**	**19 21 31.1**	**-0.2**
	comp=Z,32nm,0.9s,baz=206,slow=5.8,SNR=40						
KLR				ScP	**ScP**	**19 27 06.2**	**+1.6**
	comp=Z,1.1nm,0.7s,baz=296,slow=4.8,SNR=3.5						
HIA	**Hailar**	**44.15**	**354**	*e*P	**P**	**19 21 34.3**	**+1.4**
HIA				pmax	pmax		
	comp=Z,88nm,1.0s						
HIA				MLR	MLR		
	comp=Z,3μm,19.0s						
HIA	**Hailar**	**44.15**	**354**	*e*P	**P**	**19 21 34.3**	**+1.4**
	comp=Z,88nm,1.0s						
HIA				LR	LR		
	comp=Z,3μm,19.0s						
PVM	**Polavaram**	**45.45**	**289**	*e*P	**P**	**19 21 43.7**	**+0.1**
PVM				IAmb	IAmb	19 21 48.5	
	comp=Z,18nm,0.7s						
PVM				*e*S	**S**	**19 28 23.7**	**+1.5**
ULN	**Ulaanbaatar**	**45.53**	**342**	*ce*P	**P**	**19 21 43.4**	**-0.6**
ULN				pmax	pmax		
	comp=Z,72nm,1.0s						
ULN	**Ulaanbaatar**	**45.53**	**342**	*e*P	**P**	**19 21 43.2**	**-0.8**
	comp=Z,66nm,1.0s						
CAN	**Canberra**	**45.65**	**154**	*e*P	P	19 21 50.9	+5.9
CAN				pmax	pmax		
	comp=Z,170nm,1.6s						
CAN				MLR	MLR		
	comp=Z,4μm,21.0s						
CAN	**Canberra**	**45.65**	**154**	*e*pP	P	19 21 50.9	+5.8
	comp=Z,170nm,1.6s						
CAN				LR	LR		
	comp=Z,4μm,21.0s						
SONM	**Songino Array**	**45.71**	**341**	P	**P**	**19 21 44.4**	**-1.0**
	comp=Z,26nm,0.9s,baz=156,slow=7.8,SNR=122						
SONM				PcP	**PcP**	**19 23 22.4**	**-0.4**
	comp=Z,14nm,0.8s,baz=152,slow=3.2,SNR=6.0						
SONM				ScP	**ScP**	**19 27 12.0**	**0.0**
	comp=Z,4.5nm,0.9s,baz=146,slow=4.1,SNR=7.7						
SONA1	**Songino Array**	**45.72**	**341**	*e*P	**P**	**19 21 44.2**	**-1.4**
TOO	**Toolangi**	**46.22**	**159**	P	**P**	**19 21 51.0**	**+1.6**
	baz=46,SNR=5.2						
ADKI	**Addanki**	**46.81**	**287**	*e*P	**P**	**19 21 53.1**	**-1.2**
ADKI				IAmb	IAmb	19 21 59.5	
	comp=Z,11nm,0.7s						
ADKI				*e*S	**S**	**19 28 42.3**	**+0.6**
SKHT	**Srikalahasti**	**46.81**	**284**	*e*P	**P**	**19 21 53.6**	**-0.8**
SKHT				IAmb	IAmb	19 21 57.8	
	comp=Z,24nm,0.9s						
SKHT				*e*S	**S**	**19 28 39.1**	**-2.7**
TYV	**Tymovskoe**	**47.34**	**14**	*e*P	**P**	**19 21 59.0**	**+1.0**
NJS	**Nagarjunasagar**	**47.53**	**287**	*e*P	**P**	**19 21 58.0**	**-2.0**
NJS				IAmb	IAmb	19 22 04.6	
	comp=Z,21nm,0.7s						
NJS				*e*S	**S**	**19 28 49.3**	**-2.7**
NJS				IVMs_BB	IVMs_BB	19 39 10.1	
	comp=Z,2μm,24.8s						
DZM	**Mont Dzumac**	**47.66**	**126**	P	**P**	**19 22 02.6**	**+1.5**
	comp=Z,7.5nm,0.7s,baz=357,slow=9.1,SNR=5.1						
RCLA	**Racherla**	**47.73**	**286**	*e*P	**P**	**19 21 58.8**	**-2.7**
RCLA				IAmb	IAmb	19 22 06.4	
	comp=Z,19nm,0.7s						
RCLA				*e*S	**S**	**19 28 52.1**	**-2.8**
RCLA				IVMs_BB	IVMs_BB	19 40 06.0	
	comp=Z,2μm,23.5s						
CIT	**Chita**	**47.75**	**349**	*e*P	**P**	**19 22 01.0**	**-0.3**
CIT				*e*		19 22 13.8	
CIT				*e*S	**S**	**19 28 57.8**	**+3.5**
CIT				*e*		19 31 50.4	
CIT				pmax	pmax		
	comp=Z,179nm,1.5s						
SRLM	**Srisailam**	**47.87**	**287**	*e*P	**P**	**19 22 01.1**	**-1.6**
SRLM				IAmb	IAmb	19 22 07.1	
	comp=Z,21nm,0.8s						
SRLM				*e*S	**S**	**19 28 53.7**	**-3.2**
RPR	**Rampur**	**47.90**	**291**	*e*P	**P**	**19 22 00.9**	**-2.0**
RPR				IAmb	IAmb	19 22 05.2	
	comp=Z,22nm,0.7s						
RPR				*e*S	**S**	**19 28 55.5**	**-1.9**
HYB	**Hyderabad**	**48.37**	**288**	*i* P	**P**	**19 22 06.5**	**-0.1**
HYB	**Hyderabad**	**48.37**	**288**	*e*P	**P**	**19 22 04.9**	**-1.6**
HYB				IAmb	IAmb	19 22 11.4	
	comp=Z,54nm,1.3s						
HYBB	**Hyderabad (bro**	**48.37**	**288**	*e*P	**P**	**19 22 03.8**	**-2.8**
HYBB				IAmb	IAmb	19 22 10.9	
	comp=Z,22nm,0.7s						
HYBB				*e*S	**S**	**19 29 03.3**	**-0.8**
NGP	**Nagpur**	**48.56**	**293**	*e*P	**P**	**19 22 06.7**	**-1.3**
NGP				IAmb	IAmb	19 22 15.1	
	comp=Z,143nm,2.3s						
SRSP	**Sriramsagar**	**48.80**	**290**	*e*P	**P**	**19 22 09.0**	**-0.9**
SRSP				IAmb	IAmb	19 22 12.2	
	comp=Z,26nm,0.8s						
SRSP				*e*S	**S**	**19 29 11.1**	**+1.1**
ZAK	**Zakamensk**	**48.94**	**340**	*e*P	**P**	**19 22 09.1**	**-1.4**
ZAK				*e*		19 23 33.5	
ZAK				pmax	pmax		
	comp=Z,14nm,1.4s						
ZAK				pmax	pmax		
	comp=Z,15nm,1.1s						
NKL	**Nikolayevsk**	**49.06**	**11**	*i* P	**P**	**19 22 12.0**	**+0.8**
NKL				*e*		19 31 54.0	
NKL				pmax	pmax		
	comp=Z,330nm,1.8s						
TLY	**Talaya**	**49.94**	**342**	P	**P**	**19 22 17.0**	**-1.0**
	comp=Z,18nm,0.6s,baz=176,slow=6.0,SNR=14						
TLY	**Talaya**	**49.94**	**342**	*c i* P	**P**	**19 22 18.3**	**+0.3**
TLY				*e*S	**S**	**19 29 27.4**	**+2.4**
TLY				*e*		19 32 05.7	
TLY				pmax	pmax		
	comp=Z,81nm,2.0s						
TLY				MLR	MLR		
	comp=Z,470nm,16.0s						
TLY	**Talaya**	**49.94**	**342**	*e*P	**P**	**19 22 17.9**	**0.0**
	comp=Z,98nm,1.6s						
IRK	**Irkutsk**	**50.23**	**342**	*e*P	**P**	**19 22 19.7**	**-0.5**
IRK				pmax	pmax		
	comp=Z,114nm,1.8s						
KLRI	**Killari**	**50.31**	**289**	*e*P	**P**	**19 22 20.1**	**-1.2**
KLRI				IAmb	IAmb	19 22 25.4	
	comp=Z,25nm,0.7s						
KLRI				*e*S	**S**	**19 29 29.7**	**-1.5**
BHPL	**Bhopal**	**50.48**	**296**	*e*P	**P**	**19 22 20.5**	**-2.1**
BHPL				IAmb	IAmb	19 22 23.8	
	comp=Z,15nm,0.5s						
JOSI	**Joshimath**	**50.71**	**305**	*e*P	**P**	**19 22 23.4**	**-1.0**
JOSI				IAmb	IAmb	19 22 26.0	
	comp=Z,968nm,0.8s						
MOY	**Mondy**	**50.80**	**340**	*e*P	**P**	**19 22 24.6**	**0.0**
MOY				pmax	pmax		
	comp=Z,137nm,2.5s						
WMQ	**Urumqi**	**51.28**	**324**	⇓*i*P	**P**	**19 22 28.5**	**+0.2**
WMQ				pP	pP	19 22 37.0	-4.4
WMQ				sP	sP	19 22 43.2	-3.7
WMQ				PcP	**PcP**	**19 23 43.1**	**+0.2**
WMQ				S	**S**	**19 29 37.6**	**-6.4**
WMQ				ScS	**ScS**	**19 32 12.0**	**-2.9**
WMQ				pmax	pmax		
	comp=Z,26nm,0.8s						
WMQ				pmax	pmax		
	comp=Z,170nm,8.8s						
WMQ				LR	LR		
	comp=Z,600nm,16.8s						
WMQ				LR	LR		
	comp=Z,880nm,19.8s						
WMQ				LR	LR		
	comp=Z,2μm,22.8s						
WMQ	**Urumqi**	**51.28**	**324**	SS	**S**	**19 29 37.7**	**-6.3**
DDI	**Dehra Dun**	**51.86**	**305**	*e*P	**P**	**19 22 31.0**	**-1.8**
DDI				IAmb	IAmb	19 22 33.2	
	comp=Z,70nm,0.6s						
KUDL	**Kundal**	**52.52**	**302**	*e*P	**P**	**19 22 35.3**	**-2.4**
KUDL				IAmb	IAmb	19 22 37.7	
	comp=Z,30nm,1.0s						
KKR	**Kurukshetra**	**52.76**	**304**	*e*P	**P**	**19 22 38.2**	**-1.3**
RTK	**Rohtak**	**52.83**	**303**	*e*P	**P**	**19 22 38.1**	**-1.8**
SMLA	**Simla**	**52.84**	**305**	*e*P	**P**	**19 22 39.0**	**-1.0**
SMLA				IAmb	IAmb	19 22 40.8	
	comp=Z,116nm,0.8s						
POO	**Poona**	**52.96**	**289**	*e*P	**P**	**19 22 39.5**	**-1.6**
POO				IAmb	IAmb	19 22 47.7	
	comp=Z,227nm,2.4s						
KHET	**Khetri**	**53.08**	**301**	*e*P	**P**	**19 22 40.2**	**-1.7**
KHET				IAmb	IAmb	19 22 42.7	
	comp=Z,20nm,0.7s						
BOD	**Bodaibo**	**53.25**	**352**	⇓*i*P	**P**	**19 22 42.3**	**-0.3**
BOD				pmax	pmax		
	comp=Z,89nm,1.1s						
DHRM	**DHARAMSHALA**	**53.90**	**306**	*e*P	**P**	**19 22 45.8**	**-2.3**
DHRM				IAmb	IAmb	19 22 49.3	
	comp=Z,247nm,1.0s						
PEA0	**Petropavlovsk-**	**54.04**	**23**	*e*P	**P**	**19 22 48.7**	**+0.2**
PETK	**Petropavlovsk-**	**54.04**	**23**	P	**P**	**19 22 49.0**	**+0.5**
	comp=Z,26nm,0.8s,baz=191,slow=4.3,SNR=21						
PETK	**Petropavlovsk-**	**54.04**	**23**	P	**P**	**19 22 49.0**	**+0.5**
DGAR	**Diego Garcia**	**55.39**	**257**	PFAKE		19 23 10.0	+11
DGAR				LR	LR		
	comp=Z,2μm,20.0s						
MSVF	**Nonsavu**	**55.80**	**116**	PFAKE		19 23 10.0	+8.1
MSVF				LR	LR		
	comp=Z,2μm,19.0s						
PDGK	**Podgornoye**	**56.04**	**320**	P	**P**	**19 23 01.5**	**-1.5**
PDGK				pmax	pmax		
	comp=Z,108nm,0.9s						
MK01	**Makanchi Array**	**56.09**	**325**	*e*P	**P**	**19 23 01.1**	**-2.3**
MK31	**Makanchi Array**	**56.11**	**325**	*i* P	**P**	**19 23 01.9**	**-1.7**
MK31				pmax	pmax		
	comp=Z,39nm,0.7s						
MK31	**Makanchi Array**	**56.11**	**325**	*e*P	**P**	**19 23 02.1**	**-1.5**
MKAR	**Makanchi Array**	**56.11**	**325**	P	**P**	**19 23 01.9**	**-1.6**
	comp=Z,37nm,0.6s,baz=122,slow=8.1,SNR=254						
MKAR				PcP	**PcP**	**19 24 00.5**	**-0.6**
	comp=Z,45nm,0.8s,baz=108,slow=4.0,SNR=9.5						
MKAR				PKP2bc		19 53 13.5	
	comp=Z,0.7nm,0.8s,baz=345,slow=3.8,SNR=4.3						
MAKZ	**Makanchi**	**56.30**	**325**	P	**P**	**19 23 03.0**	**-1.9**
MAKZ				pmax	pmax		
	comp=Z,100nm,1.2s						
MAKZ	**Makanchi**	**56.30**	**325**	*e*P	**P**	**19 23 03.2**	**-1.7**
	comp=Z,83nm,1.0s						
YAK	**Yakutsk**	**56.62**	**2**	*e*P	**P**	**19 23 05.7**	**-1.1**
YAK				*e**PP	**pP**	**19 23 20.2**	**+0.2**
YAK				*e*		19 25 10.8	
YAK				*e*S	**S**	**19 30 52.9**	**-2.4**
YAK				*e**SS	sS	19 31 10.5	-6.9
YAK				*e*		19 32 51.0	
YAK				*e*SSS	SSS	19 36 49.8	
YAK				pmax	pmax		
	comp=Z,91nm,0.9s						
YAK				pmax	pmax		
	comp=N,54nm,1.0s						
YAK				pmax	pmax		
	comp=E,26nm,1.0s						
YAK				pmax	pmax		
	comp=N,56nm,1.8s						
YAK				pmax	pmax		
	comp=E,29nm,1.5s						
YAK				pmax	pmax		
	comp=Z,60nm,1.9s						
YAK				smax	smax		
	comp=E,89nm,3.0s						
YAK				smax	smax		
	comp=N,32nm,1.8s						
YAK	**Yakutsk**	**56.62**	**2**	*e*P	**P**	**19 23 05.8**	**-1.0**
	comp=N,200nm,0.9s						
KSH	**Kashi**	**56.75**	**314**	P	**P**	**19 23 08.2**	**-0.2**
KSH				*ep*P	pP	19 23 18.3	-3.3
KSH				*es*P	sP	19 23 22.2	-4.9
KSH				*e*PP	**PP**	**19 25 15.5**	**+0.5**
KSH				S	**S**	**19 30 54.9**	**-3.2**
KSH				ScS	**ScS**	**19 32 51.7**	**-2.3**
KSH				pmax	pmax		
	comp=N,130nm,1.2s						
KSH				LR	LR		
	comp=N,1μm,17.0s						
KSH				LR	LR		
	comp=N,3μm,20.2s						
KSH				LR	LR		
	comp=N,3μm,24.6s						
KRAR	**Krasnoyarsk**	**57.17**	**338**	*e*P	**P**	**19 23 10.2**	**-0.6**
KRAR				pmax	pmax		
	comp=Z,38nm,0.8s						
MA2	**Magadan**	**57.21**	**14**	*e*P	**P**	**19 23 10.5**	**-0.6**
MA2				pmax	pmax		
	comp=Z,90nm,0.9s						
MA2	**Magadan**	**57.21**	**14**	*e*P	**P**	**19 23 10.5**	**-0.6**
	comp=Z,90nm,0.9s						
AAA	**Alma-Ata**	**57.66**	**319**	*i* P	**P**	**19 23 13.5**	**-1.1**
AAA				*e*S	**S**	**19 31 15.7**	**+5.9**
AAA				pmax	pmax		
	comp=Z,500nm,3.7s						
AAA				smax	smax		
	comp=N,500nm,8.5s						
AAA				MLR	MLR		
	comp=Z,1μm,18.0s						
TKM2	**Tokmak 2**	**58.40**	**318**	P	**P**	**19 23 18.5**	**-1.5**
TKM2				pmax	pmax		
	comp=Z,61nm,1.1s						
TKM2	**Tokmak 2**	**58.40**	**318**	*e*P	**P**	**19 23 18.6**	**-1.5**
	comp=Z,61nm,1.1s						
SFK	**Sufi-Kurgan**	**58.70**	**314**	P	**P**	**19 23 20.9**	**-1.3**
SFK				pmax	pmax		
	comp=Z,66nm,0.8s						
FRU	**Bishkek**	**59.02**	**318**	*e*P	**P**	**19 23 23.0**	**-1.1**
FRU				pmax	pmax		
	comp=Z,85nm,2.2s						
AAK	**Ala-Archa**	**59.02**	**317**	P	**P**	**19 23 21.7**	**-2.5**
	comp=Z,19nm,0.8s,baz=163,slow=8.3,SNR=32						
AAK	**Ala-Archa**	**59.02**	**317**	P	**P**	**19 23 22.9**	**-1.4**
AAK				pmax	pmax		
	comp=Z,64nm,1.4s						
AAK	**Ala-Archa**	**59.02**	**317**	*e*P	**P**	**19 23 23.3**	**-1.0**
	comp=Z,73nm,1.4s						
AAK				LR	LR		
	comp=Z,3μm,22.0s						
ZAA0	**Zalesovo Array**	**59.06**	**333**	*e*P	**P**	**19 23 20.9**	**-3.2**
ZALV	**Zalesovo Beam**	**59.06**	**333**	P	**P**	**19 23 21.7**	**-2.4**
	comp=Z,17nm,0.7s,baz=123,slow=6.1,SNR=62						
ZALV				PcP	**PcP**	**19 24 11.6**	**-0.9**
	comp=Z,29nm,0.8s,baz=161,slow=3.2,SNR=6.4						
ZALV				PKP2bc		19 53 06.8	
	comp=Z,0.9nm,0.6s,baz=300,slow=4.5,SNR=7.8						
EKS2	**Erkin-Say**	**59.51**	**317**	*e*P	**P**	**19 23 26.9**	**-0.8**
EKS2				pmax	pmax		
	comp=Z,80nm,0.9s						
EKS2				MLR	MLR		
	comp=Z,2μm,22.0s						
EKS2	**Erkin-Say**	**59.51**	**317**	*e*P	**P**	**19 23 26.9**	**-0.8**
	comp=Z,80nm,0.9s						
EKS2				LR	LR		
	comp=Z,2μm,22.0s						
KURBB	**Kurchatov Arra**	**60.27**	**327**	P	**P**	**19 23 30.6**	**-1.9**
	comp=Z,53nm,0.8s,baz=125,slow=6.4,SNR=272						
KURK	**Kurchatov**	**60.27**	**327**	P	**P**	**19 23 30.4**	**-2.1**
KURK				pmax	pmax		
	comp=Z,155nm,0.7s						
KURK	**Kurchatov**	**60.27**	**327**	*e*P	**P**	**19 23 30.6**	**-1.8**
	comp=Z,202nm,1.3s						
KURK				LR	LR		
	comp=Z,2μm,20.0s						
MNAS	**Manas**	**60.31**	**316**	P	**P**	**19 23 31.1**	**-2.1**
MNAS				pmax	pmax		
	comp=Z,98nm,1.1s						
NVS	**Novosibirsk**	**60.34**	**333**	*e*P	**P**	**19 23 31.1**	**-1.8**
NVS				*e*S	**S**	**19 31 43.2**	**-0.8**
NVS				*e*		19 33 18.2	
NVS				pmax	pmax		
	comp=Z,105nm,1.7s						
NVS				pmax	pmax		
	comp=N,76nm,1.9s						
NVS				pmax	pmax		
	comp=E,77nm,1.9s						
NVS				smax	smax		
	comp=E,35nm,1.7s						
NVS				smax	smax		
	comp=N,27nm,1.9s						
KBL	**Kabul**	**60.37**	**307**	*e*P	**P**	**19 23 32.1**	**-1.7**
KBL				pmax	pmax		
	comp=Z,43nm,0.8s						
KBL	**Kabul**	**60.37**	**307**	*e*P	**P**	**19 23 32.1**	**-1.7**
	comp=Z,43nm,0.8s						
SEY	**Seymchan**	**60.53**	**13**	P	**P**	**19 23 33.9**	**-0.2**
	comp=Z,7.0nm,0.9s,baz=234,slow=6.0,SNR=14						
SEY	**Seymchan**	**60.53**	**13**	*e*P	**P**	**19 23 34.9**	**+0.9**
DZET	**Dzherino**	**61.72**	**311**	P	**P**	**19 23 40.8**	**-1.9**
DZET				pmax	pmax		
	comp=Z,58nm,1.0s						
KK31	**Karatay Array**	**61.91**	**317**	*i* P	**P**	**19 23 41.8**	**-2.0**
KK31				pmax	pmax		
	comp=Z,58nm,0.8s						
KKAR	**Karatay Array**	**61.91**	**317**	*e*P	**P**	**19 23 42.1**	**-1.7**
KKAR	**Karatay Array**	**61.91**	**317**	*e*P	**P**	**19 23 42.1**	**-1.7**
DCZ	**Deep Cove**	**62.23**	**149**	*ep*P	pP	19 23 52.5	-6.8
	comp=Z,51nm,1.1s						
OTUK	**Ortayu**	**62.71**	**322**	P	**P**	**19 23 47.1**	**-2.0**
OTUK				pmax	pmax		
	comp=Z,58nm,1.4s						
WHZ	**Wether Hill Ro**	**62.93**	**149**	*ep*P	pP	19 23 56.7	-7.2
THZ	**Tophouse**	**63.11**	**143**	*e*P	**P**	**19 23 53.6**	**+1.8**
	comp=Z,30nm,0.9s						
LBZ	**Lake Benmore**	**63.14**	**146**	*e*P	**P**	**19 23 52.0**	**+0.1**
	comp=Z,108nm,1.4s						
RPZ	**Rata Peaks**	**63.21**

TIXI Tiksi 66.25 1 P **P 19 24 10.7 -1.0**
comp=Z,17nm,0.9s,baz=182,slow=4.8,SNR=54
TIXI Tiksi 66.25 1 *e*P **P 19 24 10.9 -0.7**
TIXI pmax pmax
comp=Z,21nm,1.1s
TIXI Tiksi 66.25 1 *e*P **P 19 24 11.0 -0.7**
comp=Z,56nm,1.2s
ZRNK Zerenda 66.58 326 P **P 19 24 11.9 -2.3**
ZRNK pmax pmax
comp=Z,132nm,1.1s
ZRNK Zerenda 66.58 326 *e*P **P 19 24 12.1 -2.1**
comp=Z,167nm,1.2s
BILL Bilibino 68.07 15⇓*e*P **P 19 24 22.7 -0.6**
BILL *e* 19 26 53.9
BILL *e*S **S 19 33 24.2 +5.0**
BILL *e*SS **SS 19 37 44.7 +2.5**
BILL pmax pmax
comp=Z,8.0nm,1.1s
BILL MLR MLR
comp=Z,2μm,25.0s
BILL Bilibino 68.07 15 *e*P **P 19 24 21.9 -1.4**
comp=Z,19nm,1.1s
BILL LR LR
comp=Z,1μm,20.0s
NRIK Noril'sk 68.82 346 P **P 19 24 27.5 -0.5**
comp=Z,66nm,0.7s,baz=135,slow=6.3,SNR=48
GEYT Alibeck 69.71 308 P **P 19 24 33.1 -1.0**
comp=Z,19nm,0.9s,baz=143,slow=3.0,SNR=43
GEYT LR LR 19 59 42.4
comp=Z,2μm,21.0s,baz=105,slow=40
AB31 Akbulak array 70.77 320 *i* P **P 19 24 38.2 -2.1**
AB31 pmax pmax
comp=Z,31nm,0.7s
ABKAR Akbulak array 70.77 320 *e*P **P 19 24 38.2 -2.1**
AKTO Aktyubinsk 72.26 321 P **P 19 24 47.5 -1.9**
comp=Z,58nm,0.8s,baz=102,slow=6.5,SNR=151
AKTO LR LR 19 59 52.1
comp=Z,1μm,19.6s,baz=110,slow=39
AKTO Aktyubinsk 72.26 321 P **P 19 24 47.3 -2.0**
AKTO pmax pmax
comp=Z,57nm,0.7s
CASY Casey 72.38 187 *e*P **P 19 24 50.4 +0.8**
comp=Z,281nm,2.0s
SVE Sverdlovsk 72.48 328*de*P **P 19 24 48.2 -2.3**
SVE *e*S **S 19 34 12.2 +1.2**
SVE pmax pmax
comp=Z,100nm,1.0s
GAMB Gambell 73.03 24 *e*P **P 19 24 54.7 +1.1**
comp=Z,26nm,1.1s
ARU Arti 73.46 328 P **P 19 24 54.2 -2.1**
comp=Z,49nm,0.7s,baz=116,slow=3.5,SNR=87
ARU Arti 73.46 328*c i*P **P 19 24 53.8 -2.5**
ARU 19 25 11.4
ARU 19 27 36.6
ARU S **SKiKP 19 34 21.0 -2.2**
ARU 19 35 04.5
ARU SS **SS 19 39 00.8 -4.5**
ARU pmax pmax
comp=Z,86nm,1.0s
ARU Arti 73.46 328 *e*P **P 19 24 53.6 -2.7**
comp=Z,63nm,0.7s
ARU LR LR
comp=Z,1μm,20.0s
TT01 Tatalina 79.57 27 *e*P **P 19 25 31.3 +0.5**
TTA Tatalina 79.58 27 *e*P **P 19 25 31.0 +0.1**
TTA Tatalina 79.58 27 *e*P **P 19 25 31.0 +0.1**
DGRG David-gareji 79.83 311 P **P 19 25 33.0 +0.3**
DGRG David-gareji 79.83 311 P **P 19 25 33.0 +0.3**
OHAK Old Harbor 80.24 33 *e*P **P 19 25 37.5 +3.1**
GNI Garni 80.28 310 P **P 19 25 33.5 -1.8**
comp=Z,4.3nm,0.8s,baz=167,slow=2.5,SNR=8.6
GNI Garni 80.28 310 *e*P **P 19 25 33.8 -1.5**
GNI pmax pmax
comp=Z,18nm,1.1s
GNI Garni 80.28 310 *e*P **P 19 25 35.8 +0.5**
GNI LR LR
comp=Z,2μm,21.0s
TBLG Delisi 80.32 311 P **P 19 25 34.8 -0.5**
TBLG Delisi 80.32 311 P **P 19 25 34.8 -0.5**
GUDG Gudauri 80.53 312 P **P 19 25 39.1 +2.4**
KDAK Kodiak Island 80.67 32 *i* P **P 19 25 38.0 +1.3**
KDAK Kodiak Island 80.67 32 *e*P **P 19 25 36.5 -0.2**
KDAK LR LR
comp=Z,3μm,20.0s
ZEI Tsey 80.96 312 *e*P **P 19 25 36.7 -2.3**
ZEI pmax pmax
comp=Z,67nm,0.8s
EAK Akyaka 81.15 310 *i* P **P 19 25 37.7 -2.2**
BGD Bogdanovka 81.17 311 P **P 19 25 39.7 -0.4**
NCK Nalchik 81.20 313*ce*P **P 19 25 38.8 -1.2**
SPU Mount Spurr 81.22 29 *e*P **P 19 25 39.4 -0.3**
SPU *ep*P **PcP 19 25 47.8 +1.9**
AKH Akhalkalaki 81.25 311⇑*i*P **P 19 25 40.5 0.0**
ONI Oni 81.29 312 P **P 19 25 40.4 -0.1**
ONI Oni 81.29 312 P **P 19 25 40.4 -0.1**
CAST Castle Rocks 81.41 27 *e*P **P 19 25 40.1 -0.5**
GOF Gofitskoye 81.62 315⇑*e*P **P 19 25 40.4 -1.7**
GOF pmax pmax
comp=Z,16nm,0.8s
KBZ Khabaz 81.71 313 P **P 19 25 40.5 -2.0**
comp=Z,12nm,0.9s,baz=152,slow=3.6,SNR=21
KBZ LR LR 20 07 51.3
comp=Z,637nm,18.2s,baz=118,slow=40
NEY Neytrino 81.83 313*c i*P **P 19 25 43.5 0.0**
NEY pmax pmax
comp=Z,2.0nm,1.0s
KIV Kislovodsk 81.86 314⇑*e*P **P 19 25 43.6 0.0**
KIV *e* 19 28 43.6
KIV *e*S **S 19 35 55.1 +1.3**
KIV pmax pmax
comp=Z,26nm,1.0s
KIV Kislovodsk 81.86 314 *e*P **P 19 25 42.9 -0.6**
KIV LR LR
comp=Z,902nm,19.0s
EATA Eleskirt 82.00 309 *i* P **P 19 25 43.5 -1.1**
MLY Manley 82.13 25 *e*P **P 19 25 44.4 -0.1**
CHVG Ch'k'valeri 82.30 312⇓*i*P **P 19 25 45.3 -0.5**
CHVG Ch'k'valeri 82.30 312 P **P 19 25 49.6 +3.9**
ARTV Artvin 82.42 311 *i* P **P 19 25 45.7 -1.0**
COLD Coldfoot 82.51 23 *e*P **P 19 25 46.4 0.0**
VRH Novokhopyorsk 82.59 321 *e*P **P 19 25 44.6 -2.4**
VRH pmax pmax
comp=Z,60nm,0.7s
VRH MLR MLR
comp=Z,1μm,26.0s
BWN Browne 82.62 26 *e*P **P 19 25 45.1 -1.8**
PMR Palmer 82.66 29 *e*P **P 19 25 46.5 -0.6**
PMR Palmer 82.66 29 *e*P **P 19 25 46.5 -0.6**
MCK McKinley 82.84 27 *e*P **P 19 25 47.7 -0.5**
MCK McKinley 82.84 27 *e*P **P 19 25 47.6 -0.5**
RND Reindeer 82.86 27 *e*P **P 19 25 47.8 -0.5**
RND Reindeer 82.86 27 *e*P **P 19 25 47.8 -0.5**
BTMN Batman 82.98 307 *i* P **P 19 25 48.4 -1.1**
MDM Murphy Dome 83.19 25 *e*P **P 19 25 49.6 -0.3**
WRH Wood River Hil 83.24 26 *e*P **P 19 25 49.8 -0.4**
COLA College 83.35 25*ce*P **P 19 25 50.3 -0.4**
COLA pmax pmax
comp=Z,6.0nm,0.8s
COLA College 83.35 25 PFAKE 19 26 00.0 +9.3
COLA LR LR
comp=Z,3μm,22.0s
CCB Clear Creek Bu 83.36 26 *e*P **P 19 25 50.1 -0.6**
SCM Sheep Creek Mo 83.52 28 *e*P **P 19 25 48.2 -3.6**
SCM Sheep Creek Mo 83.52 28 *e*P **P 19 25 48.2 -3.6**
HDA Harding Lake 83.73 26 *e*P **P 19 25 51.4 -1.3**
IL1 Eielson Array 83.76 25 *e*P **P 19 25 51.0 -1.8**
ILAR Eielson Array 83.76 25 P **P 19 25 51.8 -1.1**
comp=Z,5.7nm,1.0s,baz=237,slow=5.0,SNR=33
ILAR PKKPbc **PKKPbc 19 44 09.6 -2.4**
comp=Z,0.6nm,1.0s,baz=48,slow=0.6,SNR=4.5
ILAR LR LR 20 01 40.4
comp=Z,3μm,21.7s,baz=236,slow=34
ILB Eielson Array 83.76 25 *e*P **P 19 25 51.3 -1.5**
KLMR Klimovskoe 83.90 331 *e*P **P 19 25 51.1 -2.5**
KLMR *e*S **S 19 36 08.5 -5.0**
KLMR pmax pmax
comp=Z,51nm,0.8s
VSR Storozhevoye 84.20 321 *e*P **P 19 25 52.4 -2.9**
VSR pmax pmax
comp=Z,40nm,0.7s
VSR MLR MLR
comp=Z,2μm,28.0s
DIV Divide 84.27 29 *e*P **P 19 25 56.2 +0.7**
PAX Paxson 84.39 27 *e*P **P 19 25 56.0 -0.2**

PAX Paxson 84.39 27 *e*P **P 19 25 56.0 -0.2**
TMCR Tamitsa 84.56 334 *e*P **P 19 25 57.2 +0.4**
TMCR pmax pmax
comp=Z,97nm,0.8s
BMRM Bremner River 84.84 29 *e*P **P 19 25 58.6 +0.2**
REFA Refahiye_ERZ˜ 84.89 309 *i* P **P 19 25 58.8 -0.6**
MOS Moscow 84.99 325 *e*P **P 19 25 57.8 -1.4**
MOS *e* 19 29 11.3
MOS *i* S **S 19 36 19.4 -5.2**
MOS pmax pmax
comp=Z,109nm,1.1s
MOS pmax pmax
comp=Z,200nm,1.5s
MOS smax smax
comp=N,600nm,3.6s
MOS smax smax
comp=E,500μm,3.6s
DOT Dot Lake 85.01 27 *e*P **P 19 25 59.2 0.0**
VNDA Vanda 85.04 173 P **P 19 25 58.0 -1.0**
comp=E,8.6nm,0.9s,baz=303,slow=5.6,SNR=16
VNDA LR LR 20 03 43.5
comp=E,1μm,20.2s,baz=349,slow=36
SURC SANLIURFA_SURC 85.14 306 *i* P **P 19 25 59.3 -1.2**
MAW Mawson 85.17 200 P **P 19 25 58.1 -1.7**
comp=E,13nm,1.0s,baz=48,slow=4.7,SNR=5.7
MAW Mawson 85.17 200 *e*P **P 19 26 00.8 +1.0**
MENT Mentasta 85.19 27 *e*P **P 19 26 00.3 +0.2**
SUSE Susehri 85.29 310 *i* P **P 19 25 59.7 -1.6**
JHLN Al Jahlan 85.34 305 *i* P **P 19 26 04.8 +3.3**
ANN Anapa 85.61 314 *e*P **P 19 25 58.9 -3.6**
ANN *e**PP **PcP 19 26 10.1 +4.7**
ANN *e* 19 29 14.0
ANN *e*S S 19 36 20.5 -11
ANN pmax pmax
comp=Z,101nm,1.1s
OBN Obninsk 85.62 325 P **P 19 26 00.5 -1.9**
comp=Z,109nm,1.0s,baz=314,slow=2.7,SNR=20
OBN Obninsk 85.62 325⇑*e*P **P 19 26 00.7 -1.6**
OBN *e* 19 29 19.4
OBN *e*SSS SSS 19 45 35.0
OBN pmax pmax
comp=Z,149nm,1.2s
OBN Obninsk 85.62 325 *e*P **P 19 26 00.8 -1.6**
CUZAR Zara_SIVAS 85.63 310 *i* P **P 19 26 01.9 -1.1**
LVZ Lovozero 85.79 338 *e*P **P 19 26 02.2 -0.8**
LVZ MLR MLR
comp=Z,1μm,20.0s
LVZ Lovozero 85.79 338 *e*P **P 19 26 02.2 -0.8**
LVZ LR LR
comp=Z,1μm,20.0s
PPT Papeete 85.83 108 LR LR 19 56 36.5
comp=Z,435nm,20.8s,baz=326,slow=30
PPT2 Papeete2 85.83 108 *e*LR LR 19 52 59.3
comp=Z,1μm,24.2s
BALM Baldy 85.93 29 *e*P **P 19 26 04.6 +0.6**
BALM Baldy 85.93 29 *e*P **P 19 26 04.6 +0.6**
GZT Gaziantep 85.95 307 *i* P **P 19 26 02.1 -2.5**
SBA Scott Base 85.95 172 *e*P **P 19 26 06.1 +2.6**
SBA Scott Base 85.95 172 *e*P **P 19 26 06.1 +2.6**
EGAK Eagle 86.21 25 PFAKE 19 26 20.0 +15
EGAK LR LR
comp=Z,2μm,21.0s
APA Apatity 86.29 337⇓*i*P **P 19 26 05.0 -0.4**
APA MLR MLR
comp=Z,2μm,18.0s
ZALF Zalf 86.43 303 *i* P **P 19 26 06.4 -0.6**
ASF Jabal al Asfar 86.85 302 P **P 19 26 07.5 -1.6**
comp=Z,9.1nm,0.8s,baz=10,slow=3.7,SNR=14
SALA Sala 86.95 302 *i* P **P 19 26 08.9 -0.7**
FURI Furi 87.04 279 *e*P **P 19 26 13.0 +2.4**
BIDA Albida 87.11 305 *i* P **P 19 26 11.6 +1.3**
SLNF Slenfeh 87.15 305 *i* P **P 19 26 11.8 +1.3**
YAYL Yayladag 87.21 306 *i* P **P 19 26 08.5 -2.3**
ARNB Al Arnab 87.33 306 *i* P **P 19 26 12.6 +1.2**
BOYT Boyabat 87.70 311 *i* P **P 19 26 10.9 -2.0**
COAL Corum-Alaca 87.74 310 *i* P **P 19 26 11.8 -1.4**
SIM Simferopol' 87.95 315 *e*P **P 19 26 12.8 -1.2**
SIM pmax pmax
comp=Z,13nm,0.8s
AVNS Nevsehir-Avano 87.97 309 *i* P **P 19 26 12.4 -2.0**
MMAI Mount Meron Ar 88.04 303 P **P 19 26 13.0 -1.8**
comp=Z,2.5nm,0.6s,baz=84,slow=7.6,SNR=7.1
KEV Kevo 88.31 340 *e*P **P 19 26 13.8 -1.3**
KERG Konya-Eregli 88.67 307 *i* P **P 19 26 16.3 -1.5**
EIL Elat 88.73 300 P **P 19 26 16.1 -1.9**
comp=Z,7.0nm,0.8s,baz=10.0,slow=6.7,SNR=6.1
INK Inuvik 88.76 21 P **P 19 26 16.2 -1.1**
comp=Z,8.3nm,1.0s,baz=305,slow=2.1,SNR=14
BR131 Keskin Array S 88.82 310 *e*P **P 19 26 16.4 -1.9**
BRTR Keskin Array B 88.82 310 P **P 19 26 16.5 -1.9**
comp=Z,7.3nm,0.8s,baz=116,slow=4.8,SNR=25
SPITS Spitsbergen Ar 88.86 349 P **P 19 26 16.9 -0.7**
comp=Z,5.3nm,0.4s,baz=96,slow=6.0,SNR=24
SPITS Spitsbergen Ar 88.86 349 P **P 19 26 17.0 -0.7**
ARA0 ARCESS Array S 88.87 340 *e*P **P 19 26 16.6 -1.2**
ARCES ARCESS Array B 88.87 340 P **P 19 26 16.4 -1.3**
comp=Z,70nm,0.8s,baz=80,slow=3.7,SNR=77
ARE0 ARCESS Array S 88.87 340 *e*P **P 19 26 17.2 -0.6**
ARE0 IAmb IAmb 19 26 18.3
comp=Z,76nm,0.9s
ARE0 ARCESS Array S 88.87 340 *e*P **P 19 26 17.0 -0.8**
HAMF Hammerfest 89.22 341 *e*P **P 19 26 18.2 -1.2**
HAMF IAmb IAmb 19 26 19.5
comp=Z,68nm,0.8s
KMBO Kilima Mbogo 89.35 269 *e*P **P 19 26 20.5 -1.0**
KMBO Kilima Mbogo 89.35 269 *e*P **P 19 26 20.5 -1.0**
KBS Kingsbay 89.39 350 PFAKE 19 26 30.0 +10
KBS LR LR
comp=Z,2μm,21.0s
KKUL Konya-Kulu 89.43 309 *i* P **P 19 26 18.9 -2.4**
ANTO Ankara 89.45 310 PFAKE 19 26 30.0 +8.7
ANTO LR LR
comp=Z,9.0nm,22.0s
BR231 Keskin MP Arra 89.47 310 *e*P P 19 26 16.3 -5.1
CSS Mathiatis 89.56 305 *e*P **P 19 26 21.3 -0.5**
CSS LR LR
comp=Z,287nm,19.0s
BTIN Bart'–n 89.66 312 *i* P **P 19 26 18.6 -3.4**
HEF Hetta 89.77 339 *e*P **P 19 26 20.5 -1.5**
KTK1 Kautokeino 89.77 339 *e*P **P 19 26 20.5 -1.5**
KTK1 IAmb IAmb 19 26 22.2
comp=Z,75nm,1.0s
FIA1 FINESS Array S 90.31 332 *e*P **P 19 26 22.4 -2.2**
FINES FINESS Array B 90.31 332 P **P 19 26 22.9 -1.7**
comp=Z,22nm,0.6s,baz=66,slow=5.1,SNR=83
FINES FINESS Array B 90.31 332 P **P 19 26 23.0 -1.7**
AKASG Malin Array Be 90.50 321 P **P 19 26 23.4 -2.4**
comp=Z,7.8nm,1.0s,baz=68,slow=4.5,SNR=18
AKBB Malin Array Si 90.50 321 *e*P **P 19 26 23.6 -2.2**
AKBB Malin Array Si 90.50 321 *e*P **P 19 26 23.6 -2.2**
KIEV Kiev 90.51 321*ce*P **P 19 26 23.7 -2.1**
KIEV pmax pmax
comp=Z,16nm,1.0s
KIEV Kiev 90.51 321 *e*P **P 19 26 23.2 -2.6**
AK11 Malin Array Si 90.54 321 *e*P **P 19 26 23.5 -2.5**
VSU Vasula 90.58 329 *e*P **P 19 26 22.7 -3.2**
VSU pmax pmax
comp=Z,71nm,0.8s
KIF Kilpisjarvi 90.62 340 *e*P **P 19 26 24.1 -1.9**
MICGM Minsk 90.68 325 *e*P **P 19 26 25.0 -1.5**
MICGM *e*LR LR 20 07 20.0
MNK Minsk 90.68 325 *e*P **P 19 26 25.0 -1.5**
TRO Tromso 91.07 340 *e*P **P 19 26 26.6 -1.4**
TRO IAmb IAmb 19 26 27.9
comp=Z,38nm,0.8s
NACGM Naroch 91.23 325 *e* **P 19 26 27.0 -2.1**
NACGM *e*LR LR 20 06 22.0
ISP Isparta 91.47 308 PFAKE 19 26 40.0 +9.3
ISP LR LR
comp=Z,871nm,20.0s
TLCR 91.65 315⇑*i*P **P 19 26 30.4 -0.8**
CFR Carcaliu 92.12 316⇑*i*P **P 19 26 31.5 -1.9**
TESR Tescani 92.91 317⇑*i*P **P 19 26 35.4 -1.7**
STEI Steigen 92.91 339 *e*P **P 19 26 35.5 -1.1**
STEI IAmb IAmb 19 26 36.5
comp=Z,44nm,0.9s
VRI Vrincioaia 92.97 316⇑*i*P **P 19 26 36.4 -1.0**
PLOR Plostina 93.03 316⇑*i*P **P 19 26 36.8 -0.9**
SUW Suwalki 93.48 325 *e*P **P 19 26 37.2 -2.3**
SUW Suwalki 93.48 325 *e*P **P 19 26 37.2 -2.3**
MLR Muntele Rosu 93.58 316 P **P 19 26 37.7 -2.6**
comp=Z,2.2nm,0.8s,baz=228,slow=5.9
MLR Muntele Rosu 93.58 316⇑*i*P **P 19 26 38.8 -1.6**

BURAR Bucovina Array 93.65 318⇑*i*P **P 19 26 39.3 -1.3**
BUR08 Bucovina Ar. S 93.66 318 *e*P **P 19 26 39.3 -1.3**
TAOE Nuku Hiva Isla 94.12 98 *e*LR LR 19 57 08.8
comp=Z,2μm,25.0s
VOIR 94.21 316⇑*i*P **P 19 26 41.9 -1.3**
HUMR Humele 94.45 315⇑*i*P **P 19 26 42.3 -1.9**
ARR Arges 94.51 316⇑*i*P **P 19 26 45.4 +0.8**
KWP Kalwaria Pacla 94.82 321⇑*i*P **P 19 26 44.7 -1.1**
KOLS Kolonicke sedl 95.27 320 *e*P **P 19 26 46.7 -1.2**
KOLS *e* 19 26 57.9
KOLS pmax pmax
comp=Z,23nm,1.9s
KOLS Kolonicke sedl 95.27 320 *e*P **P 19 26 46.7 -1.2**
KOLS *e* 19 26 57.9
UZH Uzhgorod 95.33 320 *e*P **P 19 26 47.6 -0.5**
UZH *e* 19 26 58.2
UZH *e*S **S 19 37 57.8 -2.6**
NSS Namsos 95.47 337 *e*P **P 19 26 44.7 -3.7**
NSS IAmb IAmb 19 26 48.0
comp=Z,13nm,0.9s
DRGR 95.50 318⇑*i*P **P 19 26 47.6 -1.4**
DAG Danmarks Havn 95.64 352⇓*i*P **P 19 26 47.7 -1.2**
comp=Z,21nm,0.9s
DAG Danmarks Havn 95.64 352⇓*i*P **P 19 26 47.7 -1.2**
DAG pmax pmax
comp=Z,18nm,0.9s
CRVS Cervenica-Dubn 95.79 320 *e*P **P 19 26 49.1 -1.2**
CRVS *e* 19 27 00.8
CRVS Cervenica-Dubn 95.79 320 *e*P **P 19 26 49.0 -1.2**
CRVS *e* 19 27 00.8
STHS Stebnicka Huta 95.80 321 *e*P **P 19 26 49.9 -0.4**
STHS *e* 19 27 05.3
STHS pmax pmax
comp=Z,12nm,1.6s
STHS Stebnicka Huta 95.80 321 *e*P **P 19 26 49.9 -0.4**
STHS *e* 19 27 05.2
LAST Lasithi 95.91 306⇑*i*P **P 19 26 50.9 -0.3**
LAST Lasithi 95.91 306 *e*P **P 19 26 50.9 -0.3**
RES Resolute Bay 96.28 10 P **P 19 26 50.3 -1.6**
comp=Z,4.6nm,0.9s,baz=312,slow=6.3,SNR=16
SIRR Siria 96.33 318⇑*i*P **P 19 26 51.4 -1.4**
IDI Anoyia 96.36 306 P **P 19 26 50.4 -2.8**
comp=Z,4.2nm,0.8s,baz=59,slow=12,SNR=2.7
NIE Niedzica 96.39 321 *e*P **P 19 26 52.0 -1.0**
NIE Niedzica 96.39 321 *e*P **P 19 26 52.0 -1.0**
OJC Ojcow 96.48 322 *e*P **P 19 26 51.8 -1.6**
OJC Ojcow 96.48 322 *e*P **P 19 26 51.8 -1.6**
HFS Hagfors 96.49 332 P **P 19 26 51.4 -1.7**
comp=Z,31nm,0.9s,baz=93,slow=3.1,SNR=53
BZS Buzias 96.52 317⇑*i*P **P 19 26 51.0 -2.6**
MDVR Moldovita 96.66 316⇑*i*P **P 19 26 52.8 -1.6**
TBLU Trondheim 96.70 336 *e*P **P 19 26 52.4 -1.6**
TBLU IAmb IAmb 19 26 53.4
comp=Z,24nm,0.9s
NB2 NORSAR Subarra 97.25 334 P **P 19 26 54.4 -2.2**
comp=Z,31nm,0.8s,baz=66,slow=4.6
NB2 NORSAR Subarra 97.25 334 P **P 19 26 54.4 -2.2**
baz=66,slow=4.6
NOA NORSAR Array B 97.25 334 P **P 19 26 54.0 -2.6**
comp=Z,28nm,0.8s,baz=66,slow=4.6,SNR=107
VYHS Vyhne 97.58 320 *e*P Pdif 19 26 59.3 +0.9
VYHS Vyhne 97.58 320 *e*P Pdif 19 26 59.3 +0.9
BSD Bornholm Skovb 97.74 327 *i* P **P 19 26 57.4 -1.5**
comp=Z,25nm,1.0s
BSD Bornholm Skovb 97.74 327 *e*P **P 19 26 57.4 -1.5**
BSD pmax pmax
comp=Z,25nm,1.0s
MORC Moravsky Berou 98.00 322⇑*i*P **P 19 26 57.7 -2.6**
MORC Moravsky Berou 98.00 322 *e*P **P 19 26 59.5 -0.8**
MORC Moravsky Berou 98.00 322 *e*P **P 19 26 59.5 -0.8**
YKA Yellowknife Ar 98.14 24 P **P 19 26 59.8 -0.7**
comp=Z,1.7nm,0.7s,baz=300,slow=4.6,SNR=15
YKA PKiKP **PKiKP 19 31 33.3 +0.1**
comp=Z,0.7nm,0.7s,baz=309,slow=1.8,SNR=7.3
YKA PKKPbc **PKKPbc 19 43 30.4 -4.9**
comp=Z,1.1nm,0.9s,baz=113,slow=2.9,SNR=11
KRLC Kraliky 98.38 322 *e*P **P 19 27 01.0 -1.0**
KRLC Kraliky 98.38 322 *e*P **P 19 27 01.0 -1.0**
KSP Ksiaz 98.42 323 *e*P **P 19 27 01.1 -1.0**
KSP Ksiaz 98.42 323 *e*P **P 19 27 01.1 -1.0**
DPC Dobruska-Polom 98.57 323 *e*PDIFF **P 19 27 02.0 -0.8**
DPC *ep*P **pP 19 27 13.3 -3.6**
DPC *e*PP **PP 19 31 06.7 +3.2**
DPC Dobruska-Polom 98.57 323 *e*P **P 19 27 02.0 -0.8**
DPC *e* 19 27 13.3
DPC *e* 19 31 06.7
KONO Kongsberg 98.58 333 *e*P **P 19 27 00.9 -1.6**
KONO Kongsberg 98.58 333 *e*P **P 19 27 00.9 -1.6**
VRAC Vranov 98.74 321⇑*i*P **P 19 27 01.9 -1.6**
TREC Trest 99.43 322 *e*PDIFF **Pdif 19 27 03.8 -2.8**
TREC *ep*P pP 19 27 17.0 -3.7
TREC Trest 99.43 322 *e*P **Pdif 19 27 03.8 -2.8**
TREC *e* 19 27 17.0
PVCC Panska Ves 99.56 323 *e*PDIFF **Pdif 19 27 07.4 +0.2**
PVCC Panska Ves 99.56 323 *e*P **Pdif 19 27 07.4 +0.2**
PRU Pruhonice 99.77 323 *e*PDIFF **Pdif 19 27 07.1 -1.0**
PRU Pruhonice 99.77 323 *e*P **Pdif 19 27 07.1 -1.0**
BRG Berggiesshubel 99.81 324 *e*P **Pdif 19 27 06.4 -1.9**
comp=Z,8.1nm,0.8s
BRG Berggiesshubel 99.81 324 S **SKSac 19 37 51.0 +7.9**
BRG Berggiesshubel 99.81 324 *e*P **Pdif 19 27 06.4 -1.9**
comp=Z,8.1nm,0.8s
BRG Berggiesshubel 99.81 324 *e*P **Pdif 19 27 06.4 -1.9**
BRG pmax pmax
comp=Z,8.0nm,0.8s
RKT Rikitea 99.91 112 *e*LR LR 19 59 34.3
comp=Z,684nm,25.0s
CLL Collm 100.20 324 *i* Pdif **Pdif 19 27 08.9 -1.1**
comp=Z,10.0nm,1.2s
CLL *i* 19 27 20.1
comp=Z,18nm,1.2s
CLL *e*PP **PP 19 31 20.0 +4.1**
CLL *e*SKSac **SKSac 19 37 53.0 +8.0**
CLL *e*Sdif **Sdif 19 38 46.0 +4.1**
CLL Collm 100.20 324 *i* P **Pdif 19 27 08.9 -1.1**
CLL pmax pmax
comp=Z,10.0nm,1.2s
KHC Kasperske Hory 100.66 322 *e*PDIFF **Pdif 19 27 11.3 -0.8**
KHC *ep*P pP 19 27 17.1 -9.2
KHC *es*P sP 19 27 22.8 -8.8
KHC Kasperske Hory 100.66 322 *e*P **Pdif 19 27 11.3 -0.8**
GERES GERESS Array B 100.69 322 P **Pdif 19 27 11.2 -1.1**
comp=Z,2.0nm,0.9s,baz=72,slow=5.7,SNR=12
CUC Castrocucco 102.18 313 PFAKE 19 27 30.0 +11
CUC LR LR
comp=Z,1μm,19.0s
HAWA Hanford 102.32 40 PFAKE 19 27 30.0 +10
HAWA LR LR
comp=Z,2μm,19.0s
CEL Celeste 102.64 311 PFAKE 19 27 30.0 +8.8
CEL LR LR
comp=Z,1μm,21.0s
AQU L'Aquila 103.15 316 PFAKE 19 27 30.0 +6.6
AQU LR LR
comp=Z,2μm,19.0s
BFO Black Forest 104.17 323 PFAKE 19 27 40.0 +12
BFO LR LR
comp=Z,1μm,20.0s
BMO Blue Mountains 104.34 41 PFAKE 19 27 40.0 +11
BMO LR LR
comp=Z,2μm,20.0s
CLTB Caltabellotta 104.86 311 PFAKE 19 27 40.0 +8.8
CLTB LR LR
comp=Z,714nm,20.0s
BORG Borgarnes 106.14 346 PFAKE 19 32 00.0
BORG LR LR
comp=Z,2μm,20.0s
BNI Bardonecchia 106.60 320 PFAKE 19 32 00.0
BNI LR LR
comp=Z,3μm,22.0s
ESK Eskdalemuir 106.72 333 PFAKE 19 32 00.0
ESK LR LR
comp=Z,2μm,21.0s
HLID Hailey 106.77 42 PFAKE 19 32 00.0
HLID LR LR
comp=Z,1μm,20.0s
EGMT Eagleton 107.63 36 PFAKE 19 32 00.0
EGMT LR LR
comp=Z,2μm,20.0s
BOZ Bozeman (W) 107.64 39 PFAKE 19 32 00.0
BOZ LR LR
comp=Z,1μm,21.0s
LKWY Lake 108.91 39 PFAKE 19 32 00.0

LKWY LR LR
comp=Z,2μm,21.0s
DUG Dugway, Tooele 109.26 44 PFAKE 19 32 10.0
DUG LR LR
comp=Z,1μm,19.0s
AHID Auburn Hatcher 109.30 41 PFAKE 19 32 10.0
AHID LR LR
comp=Z,1μm,19.0s
HWUT Hardware Ranch 109.51 42 PFAKE 19 32 10.0
HWUT LR LR
comp=Z,2μm,21.0s
BW06 Boulder Array 110.30 41 PFAKE 19 32 10.0
BW06 LR LR
comp=Z,2μm,19.0s
PDAR Pinedale Array 110.30 41 PKKPbc PKKPbc 19 43 02.4 +3.9
comp=Z,1.8nm,0.8s,baz=101,slow=4.7,SNR=7.9
ISCO Idaho Springs 114.34 42 PFAKE 19 32 20.0 +16
ISCO LR LR
comp=Z,2μm,19.0s
ANMO Albuquerque 116.11 47 PFAKE 19 32 20.0 +12
ANMO LR LR
comp=Z,798nm,19.0s
EYMN Ely 117.33 28 PFAKE 19 32 20.0 +11
EYMN LR LR
comp=Z,2μm,19.0s
ECSD EROS Data Cent 117.60 34 PFAKE 19 32 20.0 +10
ECSD LR LR
comp=Z,2μm,20.0s
MTE Manteigas 117.96 322 PFAKE 19 32 20.0 +9.1
MTE LR LR
comp=Z,3μm,22.0s
CBKS Cedar Bluff 118.71 40 PFAKE 19 32 20.0 +7.6
CBKS LR LR
comp=Z,1μm,20.0s
SCHQ Schefferville 119.02 9 PKP **PKPdf 19 32 11.9 -0.6**
comp=Z,6.7nm,0.7s,baz=12,slow=3.8,SNR=4.2
COWI Conover 119.78 28 PFAKE 19 32 30.0 +16
COWI LR LR
comp=Z,2μm,20.0s
TXAR Lajitas Array 120.79 51 PKP **PKPdf 19 32 17.1 +0.4**
comp=Z,0.9nm,0.6s,baz=211,slow=1.2,SNR=8.8
TXAR PKKPbc **PKKPbc 19 42 21.4 -0.2**
comp=Z,0.8nm,0.7s,baz=130,slow=6.8,SNR=7.7
Q35A Mercer Eighty, 121.01 38 P **PKPdf 19 32 15.1 -1.7**
baz=308
JFWS Jewell Farm 121.56 31 PFAKE 19 32 30.0 +12
JFWS LR LR
comp=Z,2μm,19.0s
TORD Torodi Ar. Bea 122.19 289 PKP **PKPdf 19 32 18.4 -1.3**
comp=Z,15nm,0.9s,baz=55,slow=1.7,SNR=49
TORD PKKPbc **PKKPab 19 42 24.3 +7.7**
comp=Z,1.4nm,0.9s,baz=254,slow=6.7,SNR=4.2
T36A Boggs Farm, Ca 122.21 40 P **PKPdf 19 32 18.6 -0.5**
baz=308
X34A Smith Ranch, M 122.37 43 P **PKPdf 19 32 19.7 +0.2**
baz=305
S37A Fort Scott 122.43 38 P **PKPdf 19 32 18.8 -0.7**
baz=309
Q39A Willow Grove F 122.72 36 P **PKPdf 19 32 19.5 -0.6**
baz=311
R39A Chumby, Stover 123.17 37 P **PKPdf 19 32 20.1 -0.8**
baz=311
S39A Bolivar 123.40 37 P **PKPdf 19 32 20.5 -0.9**
baz=310
R40A Maddies Statio 123.64 36 P **PKPdf 19 32 20.7 -1.1**
baz=312
W37B Quinton 123.66 41 P **PKPdf 19 32 21.5 -0.5**
baz=307
HDIL Hopedale 123.75 32 PFAKE 19 32 30.0 +8.0
HDIL LR LR
comp=Z,2μm,19.0s
T39A Clever 123.79 38 P **PKPdf 19 32 21.8 -0.3**
baz=310
V38A Canehill 123.88 40 P **PKPdf 19 32 21.3 -1.1**
baz=308
S40A Lebanon 123.95 37 P **PKPdf 19 32 22.0 -0.5**
baz=311
Q42A Golden Eagle 124.22 35 P **PKPdf 19 32 22.7 -0.2**
baz=314
T40A Mansfield 124.23 37 P **PKPdf 19 32 22.4 -0.7**
baz=311
V39A Pettigrew 124.38 39 P **PKPdf 19 32 22.6 -0.8**
baz=309
U40A Yellville 124.54 38 P **PKPdf 19 32 23.0 -0.6**
baz=310
W39A Magazine 124.69 40 P **PKPdf 19 32 23.7 -0.2**
baz=309
T41A Mountain View 124.76 37 P **PKPdf 19 32 23.6 -0.4**
baz=312
X39A Fountain Ranch 124.90 41 P **PKPdf 19 32 24.2 -0.2**
baz=308
V40A Witts Springs 124.92 39 P **PKPdf 19 32 23.7 -0.7**
baz=310
AAM Ann Arbor 125.22 27 PFAKE 19 32 40.0 +15
AAM LR LR
comp=Z,2μm,21.0s
MIAR Mount Ida 125.23 41 P **PKPdf 19 32 25.2 +0.3**
baz=308
ACSO Alum Creek Sta 127.17 28 PFAKE 19 32 40.0 +11
ACSO LR LR
comp=Z,2μm,20.0s
CMLA Cha da Macela 129.83 331 PFAKE 19 32 40.0 +6.3
CMLA LR LR
comp=Z,3μm,20.0s
KIC Kosan Boka 129.95 283 *e*PKIKP **PKPdf 19 32 34.7 +0.2**
comp=Z,49nm,1.0s
KIC Kosan Boka 129.95 283 *e*PKP1 SKPab 19 35 53.8 +0.7
comp=Z,218nm,1.3s
DBIC Dimbokro 130.00 283 PKP **PKPdf 19 32 33.9 -0.7**
comp=Z,16nm,1.0s,baz=163,slow=1.5,SNR=8.9
TIC Toumodi 130.16 283 *e*PKIKP **PKPdf 19 32 34.9 0.0**
TIC Toumodi 130.16 283 *e*PKP1 **SKPab 19 35 54.8 +0.8**
LIC Lamto 130.26 283 *e*PKIKP **PKPdf 19 32 35.3 +0.2**
comp=Z,27nm,0.9s
LIC Lamto 130.26 283 *e*PKP1 **SKPab 19 35 54.8 +0.4**
comp=Z,113nm,1.6s
BLA Blacksburg 130.78 29 PFAKE 19 32 50.0 +14
BLA LR LR
comp=Z,1μm,20.0s
CBN Corbin Frederi 131.33 25 PFAKE 19 32 50.0 +14
CBN LR LR
comp=Z,2μm,20.0s
BRAL Brewton 131.59 39 PFAKE 19 32 50.0 +13
BRAL LR LR
comp=Z,1μm,20.0s
GOGA Godfrey 132.14 34 PFAKE 19 32 50.0 +12
GOGA LR LR
comp=Z,1μm,20.0s
BBSR BB Station 141.02 15 PFAKE 19 33 10.0 +15
BBSR LR LR
comp=Z,1μm,19.0s
ASCN Ascension 141.04 264 PFAKE 19 33 10.0 +15
ASCN LR LR
comp=Z,1μm,20.0s
PLCA Paso Flores 141.58 159 PKP **PKPdf 19 32 55.4 -0.1**
comp=Z,7.8nm,0.8s,baz=156,slow=3.0,SNR=12
PLCA SKP 19 36 32.1
comp=Z,11nm,0.9s,baz=211,slow=4.4,SNR=9.1
JTS JuntasAbangare 145.04 64 *c i*PKIKP **PKPdf 19 33 02.4 +0.2**
JTS JuntasAbangare 145.04 64 PFAKE 19 33 10.0 +7.8
JTS LR LR
comp=Z,525nm,19.0s
GTBY Guantanamo Bay 147.11 40 PFAKE 19 33 20.0 +11
GTBY LR LR
comp=Z,806nm,20.0s
GRTK Grand Turk 148.21 32 PFAKE 19 33 20.0 +6.4
GRTK LR LR
comp=Z,911nm,20.0s
BCIP Isla Barro Col 150.06 61 PFAKE 19 33 20.0 -1.4
BCIP LR LR
comp=Z,811nm,20.0s
BCIP Isla Barro Col 150.06 61 *e*P **PKPdf 19 33 10.6 +0.1**
MOTC Monteria, Cord 153.83 58 *e*P **PKPdf 19 33 12.0 -4.2**
OTAV Otavalo 154.48 78 *e*P **PKPbc 19 33 25.5 -0.6**
ANWB Willy Bob 155.72 20 PFAKE 19 33 30.0 +11
ANWB LR LR
comp=Z,752nm,21.0s
NORC Norcasia 156.08 63 *e*P **PKPab 19 33 47.5 +0.6**
GRMC Gramalote, San 156.79 56 *e*P **PKPdf 19 33 22.7 +2.4**
BARC Barichara 157.06 59 *e*P PKPab 19 33 39.5 -12
PAMC Pamplona, Colo 157.08 57 *e*P **PKPab 19 33 47.0 -4.7**
RUSC La Rusia 157.49 61 *e*P **PKPdf 19 33 20.4 -1.3**
SDV Santo Domingo 157.84 50 PKP **PKPdf 19 33 21.4 -0.4**
comp=Z,16nm,0.7s,baz=302,slow=1.9,SNR=11
SDV Santo Domingo 157.84 50 *e*P **PKPdf 19 33 19.5 -2.3**
SJAC San Juan de Ar 157.86 68 *e*P PKPdf 19 33 35.3 +14
FDF Fort de France 158.67 21 PFAKE 19 33 30.0 +7.5
FDF LR LR
comp=Z,621nm,19.0s
CPUP Villa Florida 158.81 170 PKP **PKPdf 19 33 21.4 -1.0**
comp=Z,2.9nm,0.8s,baz=125,slow=2.8,SNR=7.3
CPUP PKPab **PKPab 19 33 56.6 -1.3**
comp=Z,7.3nm,1.2s,baz=277,slow=0.7,SNR=3.3
BBGH Gun Hill 160.68 18 PFAKE 19 33 40.0 +15
BBGH LR LR
comp=Z,1μm,20.0s
GRGR Grenville 160.84 25 PFAKE 19 33 40.0 +15
GRGR LR LR
comp=Z,622nm,21.0s
LPAZ La Paz 162.00 128 PKP **PKPdf 19 33 26.3 -0.6**
comp=Z,4.9nm,1.0s,baz=124,slow=0.4,SNR=9.1
SIV San Ignacio 167.07 146 PKP **PKPdf 19 33 30.1 -0.5**
comp=Z,7.0nm,0.9s,baz=172,slow=1.6,SNR=11
PTGA Pitinga 172.09 55 PKP **PKPdf 19 33 31.7 -2.0**
comp=Z,3.3nm,0.7s,baz=150,slow=1.7,SNR=6.4

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*DDA **09** 19:14:36.7,39.°92N×40.°01E,h5km,Md3.0*
*ISK **09** 19:14:36.9,39.°92N×40.°03E,h5km,MD3.0*
*CSEM **09** 19:14:37.6±0.2,39.°89N×39.°99E,h2km,ML3.0,Error ellipse: s-maj=4.4km s-min=3.9km az=163.0*
ISC 09 19:14:37.5±1.0,39.°90N±0.°02×40.°00E±0.°02,h5km±9km, n57,σ0°87/87,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EUZM	**Uzumlu**	**0.30**	**230**	P	**Pg**	**19 14 43.6**	**+0.2**
EUZM				S	**Sg**	**19 14 48.3**	**+0.9**
EUZM	**Uzumlu**	**0.30**	**230**	*i* P	**Pg**	**19 14 43.6**	**+0.2**
EUZM				*i* S	**Sg**	**19 14 48.3**	**+0.9**
ERZN	**Erzincan**	**0.38**	**215**	*e*PG	**Pg**	**19 14 45.2**	**+0.3**
ERZN				*e*SG	**Sg**	**19 14 51.1**	**+1.2**
KOPT	**Kop Dagi**	**0.40**	**73**	P	**Pg**	**19 14 45.4**	**+0.1**
KOPT	**Kop Dagi**	**0.40**	**73**	*i* P	**Pg**	**19 14 45.4**	**+0.1**
KOPT				*i* S	**Sb**	**19 14 53.6**	**-0.1**
BAYT	**Ayd¨–ntepe-Bay**	**0.50**	**12**	*e*PG	**Pg**	**19 14 47.1**	**-0.1**
BAYT				*e*SG	**Sg**	**19 14 54.0**	**+0.2**
BAYT	**Ayd¨–ntepe-Bay**	**0.50**	**12**	*e*Pg	**Pg**	**19 14 47.1**	**-0.1**
BAYT				*e*Sg	**Sg**	**19 14 54.0**	**+0.2**
EZC	**Erzincan**	**0.52**	**254**	*e*Pg	**Pg**	**19 14 45.2**	**-2.3**
EZC				*e*Sg	**Sg**	**19 14 51.1**	**-3.2**
KELT	**Kelkit**	**0.62**	**294**	P	**Pg**	**19 14 49.9**	**+0.4**
KELT				S	**Sb**	**19 14 59.3**	**-0.9**
KELT	**Kelkit**	**0.62**	**294**	*i* P	**Pg**	**19 14 49.9**	**+0.4**
KELT				*i* S	**Sb**	**19 14 59.3**	**-0.9**
YEDI	**Yedisu-Bingol**	**0.62**	**138**	*e*PG	**Pg**	**19 14 49.1**	**-0.4**
YEDI	**Yedisu-Bingol**	**0.62**	**138**	*e*Pg	**Pg**	**19 14 49.1**	**-0.4**
GUMT	**Gumushane**	**0.69**	**325**	*e*PG	**Pg**	**19 14 50.8**	**+0.1**
GUMT	**Gumushane**	**0.69**	**325**	*e*Pg	**Pg**	**19 14 50.8**	**+0.1**
TNCL	**Tunceli-Merkez**	**0.86**	**204**	P	**Pg**	**19 14 53.5**	**-0.5**
TNCL	**Tunceli-Merkez**	**0.86**	**204**	*i* P	**Pg**	**19 14 53.5**	**-0.5**
EZM	**Erzurum**	**1.05**	**89**	*e*PG	**Pg**	**19 14 57.6**	**0.0**
BNGB	**Bing¶||**	**1.05**	**150**	*e*PG	**Pg**	**19 14 57.5**	**-0.2**
BINT	**Bingol**	**1.09**	**160**	*e*Pg	**Pg**	**19 14 57.5**	**-0.9**
KTUT	**Trabzon**	**1.10**	**351**	*e*PN	**Pg**	**19 14 57.9**	**-0.7**
KTUT				*e*SN	**Sb**	**19 15 13.3**	**-0.3**
KTUT	**Trabzon**	**1.10**	**351**	*e*Pn	**Pg**	**19 14 57.9**	**-0.7**
KTUT				*e*Sn	**Sb**	**19 15 13.3**	**-0.3**
PTK	**Pertek**	**1.11**	**205**	*e*PN	**Pg**	**19 14 59.0**	**+0.2**
PTK				*e*SN	**Sn**	**19 15 15.3**	**-0.4**
PTK	**Pertek**	**1.11**	**205**	*e*Pn	**Pg**	**19 14 59.0**	**+0.2**
PTK				*e*Sn	**Sn**	**19 15 15.3**	**-0.4**
ILIC	**ilic-Erzincan**	**1.19**	**248**	*e*PN	**Pn**	**19 15 01.3**	**+0.3**
ILIC				*e*SN	**Sn**	**19 15 17.8**	**+0.2**
ILIC	**ilic-Erzincan**	**1.19**	**248**	*e*Pn	**Pn**	**19 15 01.3**	**+0.3**
ILIC				*e*Sn	**Sn**	**19 15 17.8**	**+0.2**
KEMA	**Kemaliye**	**1.33**	**242**	P	**Pn**	**19 15 02.1**	**-0.7**
KEMA				S	**Sn**	**19 15 21.5**	**+0.6**
KEMA	**Kemaliye**	**1.33**	**242**	*i* P	**Pn**	**19 15 02.1**	**-0.7**
KEMA				*i* S	**Sn**	**19 15 21.5**	**+0.6**
ESPY	**Espiye-Giresun**	**1.41**	**317**	*e*PN	**Pn**	**19 15 03.8**	**0.0**
ESPY				*e*SN	**Sn**	**19 15 23.3**	**+0.6**
ESPY	**Espiye-Giresun**	**1.41**	**317**	*e*Pn	**Pn**	**19 15 03.8**	**0.0**
ESPY				*e*Sn	**Sn**	**19 15 23.3**	**+0.6**
SUSE	**Susehri**	**1.42**	**283**	P	**Pn**	**19 15 03.7**	**-0.4**
SUSE				S	**Sn**	**19 15 23.9**	**+0.7**
SUSE	**Susehri**	**1.42**	**283**	*i* P	**Pn**	**19 15 03.7**	**-0.4**
SUSE				*i* S	**Sn**	**19 15 23.9**	**+0.7**
ELZG	**Elazig**	**1.61**	**210**	P	**Pn**	**19 15 07.3**	**+0.6**
ELZG				S	**Sg**	**19 15 29.4**	**+0.2**
ELZG	**Elazig**	**1.61**	**210**	*i* P	**Pn**	**19 15 07.3**	**+0.6**
ELZG				*i* S	**Sg**	**19 15 29.4**	**+0.2**
SVRC	**Sivrice-ELAZID**	**1.61**	**200**	*e*PN	**Pn**	**19 15 07.2**	**+0.4**
SVRC	**Sivrice-ELAZID**	**1.61**	**200**	*e*Pn	**Pn**	**19 15 07.2**	**+0.4**
DDEM	**Demirkent**	**1.66**	**53**	P	**Pn**	**19 15 07.6**	**+0.2**
DDEM	**Demirkent**	**1.66**	**53**	*i* P	**Pn**	**19 15 07.6**	**+0.2**
GRSN	**GIRESUNGRSN**	**1.67**	**308**	P	**Pn**	**19 15 08.1**	**+0.6**
GRSN				S	**Sb**	**19 15 30.4**	**+0.2**
GRSN	**GIRESUNGRSN**	**1.67**	**308**	*i* P	**Pn**	**19 15 08.1**	**+0.6**
GRSN				*i* S	**Sb**	**19 15 30.4**	**+0.2**
DBAD	**Bademkaya**	**1.71**	**49**	P	**Pn**	**19 15 08.6**	**+0.6**
DBAD	**Bademkaya**	**1.71**	**49**	*i* P	**Pn**	**19 15 08.6**	**+0.6**
CUZAR	**Zara_SIVAS**	**1.72**	**270**	P	**Pb**	**19 15 09.1**	**-0.5**
CUZAR				S	**Sg**	**19 15 35.8**	**+3.1**
CUZAR	**Zara_SIVAS**	**1.72**	**270**	*i* P	**Pb**	**19 15 09.1**	**-0.5**
CUZAR				*i* S	**Sg**	**19 15 35.8**	**+3.1**
EKAR	**Karacoban**	**1.72**	**111**	P	**Pb**	**19 15 09.2**	**-0.5**
EKAR	**Karacoban**	**1.72**	**111**	*i* P	**Pb**	**19 15 09.2**	**-0.5**
DAGI	**Agillar**	**1.87**	**51**	*i* P	**Pb**	**19 15 11.8**	**-0.4**
EATA	**Eleskirt**	**1.92**	**90**	P	**Pb**	**19 15 13.2**	**+0.1**
EATA	**Eleskirt**	**1.92**	**90**	*i* P	**Pb**	**19 15 13.2**	**+0.1**
ARTV	**Artvin**	**1.95**	**48**	P	**Pb**	**19 15 13.2**	**-0.4**
ARTV				S	**Sg**	**19 15 39.6**	**-0.5**
ARTV	**Artvin**	**1.95**	**48**	*i* P	**Pb**	**19 15 13.2**	**-0.4**
ARTV				*i* S	**Sg**	**19 15 39.6**	**-0.5**
ORDU	**Ordu-Boztepe**	**1.97**	**304**	P	**Pb**	**19 15 13.3**	**-0.5**
ORDU	**Ordu-Boztepe**	**1.97**	**304**	*i* P	**Pb**	**19 15 13.3**	**-0.5**
CUKAN	**kangal_SIVAS**	**2.04**	**254**	*i* P	**Pb**	**19 15 15.4**	**+0.2**
CUKAN				*i* S	**Sg**	**19 15 43.2**	**+0.1**
SVSK	**Karacayir**	**2.31**	**271**	*e*PN	**Pn**	**19 15 17.2**	**+1.0**
SVSK	**Karacayir**	**2.31**	**271**	*e*Pn	**Pn**	**19 15 17.2**	**+1.0**
ERBA	**Erbaa**	**2.60**	**288**	P	**Pb**	**19 15 22.7**	**-2.0**
ERBA	**Erbaa**	**2.60**	**288**	*i* P	**Pb**	**19 15 22.7**	**-2.0**

SJA 09 19:29:41.0±0.8,22.°92S×67.°11W,h283km±20km,ML3.0, MW4.0,Chile-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HJA	**Humahuaca**	**1.59**	**101**	*i* P	Pn	19 30 24.2	+0.6
YJA	**Yavi**	**1.65**	**64**	*i* P	Pn	19 30 24.2	+0.1
YJA				IAML		19 30 25.7	
	comp=Z,43nm,0.5s						
YJA				*i* S	S	19 30 57.4	-0.9
AZAP	**Zapla**	**2.29**	**125**	*i* P	Pn	19 30 29.5	+0.6
ASTB	**Santa Barbara**	**2.65**	**113**	*i* P	Pn	19 30 32.9	+0.6
ASTB				*i* S	S	19 31 10.6	-2.5
ALOL	**LOMAS DE OLMED**	**3.01**	**108**	*i* P	Pn	19 30 36.1	+0.4

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*IDC **09** 19:48:44.6±0.7,21.°09S×174.°24W,h0km,mb4.4/13, mb1 4.6/14,mb1mx4.4/31,mbtmp4.4/14,ML4.5/1,Error ellipse: s-maj=26.4km s-min=16.2km az=137.0*
*ISCJB **09** 19:48:48.1±0.6,21.°17S±0.°09×174.°2W±0.°1,h33km, mb4.5/19,Error ellipse: s-maj=17.2km s-min=11.2km az=36.3*
*NEIC **09** 19:48:50.1±0.4,21.°12S×174.°22W,h35km,mb4.8/6,Error ellipse: s-maj=14.7km s-min=10.0km az=138.0*
ISC 09 19:48:48.8±0.6,20.°9S±0.°1×174.°2W±0.°1,h27km,n63, σ1°61/66,mb4.6/19,11C-2D,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**7.32**	**19**	Pn	**Pn**	**19 50 31.2**	**-2.8**
	11nm,0.3s,baz=159,slow=14,SNR=11						
AFI				Sn	**Sn**	**19 51 53.9**	**-2.4**
	7.5nm,0.3s,baz=98,slow=19,SNR=5.6						
RAR	**Rarotonga**	**13.44**	**94**	Pn	Pn	19 51 49.7	-8.1
	3.8nm,0.3s,baz=264,slow=9.1,SNR=4.1						
DZM	**Mont Dzumac**	**18.09**	**263**	P	**P**	**19 52 60.0**	**+1.4**
	0.8nm,0.3s,baz=83,slow=18,SNR=8.1						
URZ	**Urewera**	**18.87**	**202**	P	**P**	**19 53 04.6**	**-2.3**
	1.5nm,0.3s,baz=72,slow=4.3,SNR=9.2						
URZ				Sn	Sn	19 56 20.7	-17
	0.7nm,0.3s,baz=216,slow=22,SNR=3.7						
RPZ	**Rata Peaks**	**25.87**	**205**	P	**P**	**19 54 16.7**	**-1.6**
	10nm,0.7s,baz=39,slow=1.6,SNR=6.7						
CTA	**Charters Tower**	**37.02**	**264**	P	**P**	**19 55 55.4**	**-1.2**
	2.8nm,0.4s,baz=301,slow=19,SNR=10						
CTAO	**Charters Tower**	**37.02**	**264**	*e*P	**P**	**19 55 55.8**	**-0.8**
PMG	**Port Moresby**	**38.94**	**281**	P	**P**	**19 56 12.1**	**-0.7**
	11nm,0.9s,baz=22,slow=19,SNR=3.4						
STKA	**Stephens Creek**	**40.86**	**245**	P	**P**	**19 56 26.9**	**-1.7**
	3.4nm,0.8s,baz=89,slow=13,SNR=8.5						
ASAR	**Alice Springs**	**47.92**	**257**	P	**P**	**19 57 23.9**	**-1.4**
	12nm,0.7s,baz=99,slow=7.5,SNR=154						
ASAR				PcP	**PcP**	**19 58 52.6**	**-0.8**
	2.1nm,0.8s,baz=96,slow=5.1,SNR=5.4						
WRAB	**Tennant Creek**	**48.09**	**262**	*e*P	**P**	**19 57 24.6**	**-1.9**
	6.3nm,0.8s						
WRA	**Warramunga Arr**	**48.10**	**262**	P	**P**	**19 57 24.8**	**-1.8**
	3.1nm,0.5s,baz=100,slow=8.6,SNR=42						
SBA	**Scott Base**	**57.74**	**185**	P	**P**	**19 58 36.1**	**-0.7**
	12nm,1.4s						
MJAR	**Matsushiro Arr**	**72.71**	**321**	P	**P**	**20 00 14.5**	**0.0**
	3.7nm,0.6s,baz=156,slow=6.1,SNR=12						
MAT	**Matsushiro**	**72.71**	**321**	P	**P**	**20 00 15.9**	**+1.4**
KSM	**Kuching**	**77.03**	**277**	*e*P	**P**	**20 00 40.6**	**+0.7**
	3.8nm,0.6s						
PETK	**Petropavlovsk-**	**77.64**	**343**	P	**P**	**20 00 43.4**	**+0.9**
	4.4nm,0.8s,baz=115,slow=7.3,SNR=6.5						
NVAR	**Mina Array Bea**	**78.90**	**41**	P	**P**	**20 00 50.9**	**+0.8**
	4.1nm,0.8s,baz=224,slow=8.1,SNR=14						
KSRS	**Korea Array**	**79.60**	**317**	P	**P**	**20 00 55.6**	**+2.0**
	2.1nm,1.0s,baz=123,slow=4.6,SNR=7.6						
KSAR	**Wonju Array Be**	**79.62**	**317**	P	**P**	**20 00 55.6**	**+1.9**
TRF	**Thorofare Moun**	**86.14**	**11**	*e*P	**P**	**20 01 27.6**	**+0.4**
	8.6nm,0.9s						
IPM	**Ipoh**	**86.75**	**276**	*e*P	**P**	**20 01 32.7**	**+1.5**
	6.5nm,0.8s						
PDAR	**Pinedale Array**	**86.83**	**42**	P	**P**	**20 01 31.7**	**+0.5**
	1.8nm,0.9s,baz=166,slow=3.1,SNR=7.2						
ILAR	**Eielson Array**	**87.95**	**11**	P	**P**	**20 01 36.5**	**+0.7**
	0.4nm,0.6s,baz=203,slow=6.6,SNR=4.9						
GSI	**Gunungsitoli**	**88.83**	**272**	*e*P	**P**	**20 01 43.3**	**+2.2**
	14nm,0.8s						
YKA	**Yellowknife Ar**	**95.40**	**24**	P	**P**	**20 02 11.5**	**+1.2**
	0.8nm,0.9s,baz=238,slow=4.3,SNR=9.5						
ZALV	**Zalesovo Beam**	**113.06**	**321**	PKiKP	**PKiKP**	**20 07 23.5**	**+0.2**
	0.6nm,0.5s,baz=169,slow=1.5,SNR=3.5						
MKAR	**Makanchi Array**	**114.09**	**313**	PKP	**PKiKP**	**20 07 25.1**	**-0.4**
	0.5nm,0.8s,baz=77,slow=6.4,SNR=4.8						
FINES	**FINESS Array B**	**137.10**	**346**	PKP	**PKPdf**	**20 08 10.3**	**+1.5**
	1.2nm,0.8s,baz=66,slow=4.6,SNR=4.9						
KBZ	**Khabaz**	**141.74**	**315**	PKP	**PKPdf**	**20 08 20.2**	**+2.4**
	1.4nm,0.8s,baz=98,slow=9.3,SNR=3.7						
AKASG	**Malin Array Be**	**145.03**	**334**	PKPbc	**PKPdf**	**20 08 23.6**	**+0.1**
	15nm,0.7s,baz=40,slow=4.2,SNR=58						
KIEV	**Kiev**	**145.04**	**334**	*e*PKPdf	**PKPdf**	**20 08 23.6**	**+0.1**
KWP	**Kalwaria Pacla**	**148.35**	**339**	*i*P	**PKPab**	**20 08 34.3**	**-1.4**
STHS	**Stebnicka Huta**	**149.01**	**340**	*e*	**PKPab**	**20 08 41.2**	**+2.8**
BURAR	**Bucovina Array**	**149.09**	**334**	*i*P	**PKPab**	**20 08 37.2**	**-1.7**
KOLS	**Kolonicke sedl**	**149.09**	**339**	*e*	**PKPab**	**20 08 41.2**	**+2.4**
CLL	**Collm**	**149.14**	**351**	*i* P	**PKPab**	**20 08 36.2**	**-2.6**
CLL				*i*		20 08 39.3	
	comp=Z,30nm,1.6s						
CLL				*i*		20 08 56.1	
CRVS	**Cervenica-Dubn**	**149.39**	**340**	*e*P	**PKPbc**	**20 08 35.8**	**+0.5**
CRVS				*e*		20 08 41.0	
BRG	**Berggiesshubel**	**149.42**	**350**	*e*PKP	**PKPab**	**20 08 38.5**	**-1.5**
	comp=Z,9.9nm,1.1s						
BRG	**Berggiesshubel**	**149.42**	**350**	*e*PKP	**PKPab**	**20 08 38.5**	**-1.5**
	comp=Z,9.9nm,1.1s						
DPC	**Dobruska-Polom**	**149.47**	**347**	*e*PKP	**PKPbc**	**20 08 37.2**	**+1.8**
DPC				*ep*PKP	**PKPab**	**20 08 41.3**	**+1.0**
DPC				*es*PKP		20 08 50.3	
CFR	**Carcaliu**	**149.61**	**328**	*i*P	**PKPbc**	**20 08 36.1**	**+0.2**
KRLC	**Kraliky**	**149.62**	**346**	*e*PKP	**PKPbc**	**20 08 37.6**	**+1.8**
KRLC				*ep*PKP	**PKPab**	**20 08 41.9**	**+1.0**
MORC	**Moravsky Berou**	**149.72**	**345**	*i*P	**PKPab**	**20 08 40.3**	**-1.0**
BRTR	**Keskin Array B**	**149.73**	**314**	PKPbc	**PKPbc**	**20 08 37.5**	**+1.0**
	comp=Z,3.2nm,0.7s,baz=122,slow=3.1,SNR=23						
VRI	**Vrincioaia**	**149.78**	**330**	*i*P	**PKPbc**	**20 08 37.0**	**+0.7**
LANS	**Liptovska Anna**	**149.78**	**342**	*e*P	**PKPab**	**20 08 38.7**	**-2.9**
KECS	**Kecovo**	**150.07**	**340**	*e*P	**PKPbc**	**20 08 39.0**	**+2.1**
PRU	**Pruhonice**	**150.16**	**349**	*e*PKP	**PKPbc**	**20 08 38.6**	**+1.5**
VRAC	**Vranov**	**150.38**	**346**	*i*P	**PKPab**	**20 08 44.4**	**+0.4**
MLR	**Muntele Rosu**	**150.42**	**331**	*i*P	**PKPbc**	**20 08 39.6**	**+1.6**
VYHS	**Vyhne**	**150.56**	**342**	*e*	**PKPab**	**20 08 42.2**	**-2.6**
DRGR		**150.75**	**336**	*i*P	**PKPab**	**20 08 46.8**	**+1.1**
PSZ	**Piszkesteto**	**150.76**	**340**	*e*PKPbc	**PKPbc**	**20 08 39.9**	**+1.2**
VOIR		**150.87**	**332**	*i*P	**PKPbc**	**20 08 41.1**	**+2.1**
ARR	**Arges**	**151.11**	**332**	*i*P	**PKPbc**	**20 08 42.3**	**+2.7**
KHC	**Kasperske Hory**	**151.16**	**349**	*e*PKP	**PKPbc**	**20 08 42.4**	**+2.9**
KHC				*ep*PKP	**pPKPab**	**20 08 55.0**	**-1.1**
KHC	**Kasperske Hory**	**151.16**	**349**	*e*PKPbc	**PKPbc**	**20 08 41.2**	**+1.6**
GERES	**GERESS Array B**	**151.42**	**349**	PKPbc	**PKPbc**	**20 08 39.8**	**-0.5**
	comp=Z,2.2nm,1.0s,baz=45,slow=0.4,SNR=7.5						
BZS	**Buzias**	**152.15**	**336**	*i*P	**PKPbc**	**20 08 43.1**	**+1.3**
MDVR	**Moldovita**	**152.81**	**335**	*i*P	**PKPab**	**20 08 53.7**	**-0.6**
PDG	**Podgorica**	**155.75**	**335**	*i*P	PKPab	20 08 53.7	-13
TORD	**Torodi Ar. Bea**	**171.33**	**152**	PKPab	**PKPab**	**20 10 14.6**	**-1.1**
	comp=Z,0.9nm,0.8s,baz=205,slow=4.5,SNR=4.0						

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*ATH **09** 19:54:47.5,36.°79N×27.°24E,h20km±3km,ML2.4/2,Error ellipse: s-maj=4.1km s-min=1.2km az=241.0*
*ISK **09** 19:54:47.2,36.°86N×27.°19E,h5km,MD2.8*
*ISCJB **09** 19:54:48.4±0.5,36.°84N±0.°02×27.°22E±0.°04,h5km±4km, Error ellipse: s-maj=5.1km s-min=3.3km az=9.6*
*CSEM **09** 19:54:48.5±0.2,36.°84N×27.°24E,h5km,ML2.4,Error ellipse: s-maj=5.3km s-min=3.6km az=98.0*
*DDA **09** 19:54:49.1,36.°86N×27.°29E,h7km,Md3.0*
ISC 09 19:54:48.5±0.9,36.°85N±0.°02×27.°22E±0.°03,h10km±7km, n37,σ0°89/60,Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BODT	**Bodrum**	**0.22**	**18**	*e*PG	**Pg**	**19 54 52.8**	**-0.3**
BODT				*e*SG	**Sg**	**19 54 57.1**	**+1.0**
BODT	**Bodrum**	**0.22**	**18**	*e*Pg	**Pg**	**19 54 52.8**	**-0.3**
B

AYDB			*e*SN	**Sn**	**19 55 29.2**	**+0.9**
AYDB	**Zeytinkoy-Aydi**	**1.22 26**	*e*Pn	**Pg**	**19 55 11.1**	**-0.8**
AYDB			*e*Sn	**Sn**	**19 55 29.2**	**+0.9**
DGB	**˜zmir**	**1.23 347**	*i* P	**Pb**	**19 55 10.6**	**-1.2**
KARP	**Karpathos**	**1.30 182**	*e*PN	**Pn**	**19 55 12.5**	**-0.3**
KARP	**Karpathos**	**1.30 182**	*e*Pn	**Pn**	**19 55 12.5**	**-0.3**
KARP			S	**Sb**	**19 55 29.8**	**-0.1**
KARP	**Karpathos**	**1.30 182**	P	Pn	19 55 09.5	-3.3
KARP			S	**Sb**	**19 55 29.8**	**-0.1**
APE	**Apeiranthos**	**1.37 280**	P	**Pg**	**19 55 15.1**	**+0.3**
APE	**Apeiranthos**	**1.37 280**	P	**Pg**	**19 55 15.1**	**+0.3**
ZEY	**˜zmir**	**1.50 338**	*i* P	**Pn**	**19 55 13.2**	**-2.2**
FETY	**Fethiye**	**1.51 98**	*e*PN	**Pg**	**19 55 17.1**	**-0.3**
FETY			*e*SN	**Sg**	**19 55 38.3**	**+1.2**
FETY	**Fethiye**	**1.51 98**	*e*Pn	**Pg**	**19 55 17.1**	**-0.3**
FETY			*e*Sn	**Sg**	**19 55 38.3**	**+1.2**
URLA	**Izmir**	**1.59 342**	P	**Pb**	**19 55 18.1**	**+0.1**
URLA	**Izmir**	**1.59 342**	*i* P	**Pb**	**19 55 18.1**	**+0.1**
CHOS	**Chios island**	**1.79 329**	P	**Pb**	**19 55 21.8**	**+0.3**
CHOS	**Chios island**	**1.79 329**	P	**Pb**	**19 55 21.8**	**+0.3**

IDC 09 20:15:12.0±3.1, 33˚.05S×178˚.32W, h0km, mb4.1/2, mb1 4.3/3, mb1mx3.9/38, mbtmp4.1/3, ML3.7/1, Error ellipse: s-maj=71.1km s-min=36.3km az=117.0, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**6.39**	**214**	Pn	Pn	20 16 47.6	+0.3
	1.6nm,0.3s,baz=246,slow=4.1,SNR=12						
URZ				Sn	Sn	20 18 00.2	-0.7
	3.0nm,0.3s,baz=174,slow=23,SNR=8.6						
ASAR	**Alice Springs**	**42.76**	**270**	P	P	20 23 11.4	+0.1
	2.0nm,0.9s,baz=109,slow=7.7,SNR=19						
WRA	**Warramunga Arr**	**43.99**	**275**	P	P	20 23 21.1	-0.1
	2.0nm,0.5s,baz=116,slow=7.9,SNR=27						
FINES	**FINESS Array B**	**147.52**	**338**	PKPbc	PKPbc	20 34 56.2	-1.0
	4.4nm,0.9s,baz=50,slow=3.2,SNR=5.4						

NIED ***09*** *20:15:00, 37˚.80N×143˚.60E, h8km, Mw5.6 Best double couple: M₀2.70000×10¹⁷ NP1:φs37.00000°, δ34.00000°, λ-93.00000°. NP2:φs220.00000°, δ56.00000°, λ-88.00000°.*

IDC ***09*** *20:15:51.4±0.3, 37˚.72N×143˚.67E, h0km, mb5.6/50, mb1 5.6/57, mb1mx5.5/65, mbtmp5.6/57, ML5.0/6, MS5.1/40, Ms1 5.1/40, ms1mx4.9/62, Error ellipse: s-maj=10.1km s-min=7.8km az=69.0*

ISCJB ***09*** *20:15:51.5±0.5, 37˚.71N±0˚.02×143˚.57E±0˚.01, h8km±3km, mb5.9/369, MS5.2/217, Error ellipse: s-maj=2.8km s-min=1.7km az=166.9*

NEIC ***09*** *20:15:53.6±0.1, 37˚.74N×143˚.54E, h11km, mb6.0/164, ME5.8, MS5.2/137, Error ellipse: s-maj=3.1km s-min=2.0km az=145.0 Broadband fault plane solution: P waves. NP1:φs35.00000°, δ25.00000°, λ-90.00000°. NP2:φs215.00000°, δ65.00000°, λ-90.00000°. Principal axes: T Plg20.0000°, Azm305.0000°; N Plg0.0000°, Azm0.0000°; P Plg70.0000°, Azm125.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from BB mechanism.*

NEIC Recorded [2 JMA] in Fukushima, Iwate and Miyagi.

GCMT ***09*** *20:15:53.4±0.1, 37˚.85N×143˚.67E, h13km, MW5.6/122, Moment Tensor Solution. s77,c153; s122,c328; Duration: 1†6 Moment tensor: Scale 10¹⁷Nm; Mrr-3.13±.06; Mθθ1.17±.04; Mφφ1.96±.04; Mrθ0.30±.10; Mrφ1.84±.03; Mθφ0.61±.10; Best double couple: M₀3.35800×10¹⁷ NP1:φs216.00000°, δ51.00000°, λ-94.00000°. NP2:φs42.00000°, δ39.00000°, λ-86.00000°. Principal axes: T 3.5130, Plg6.0000°, Azm309.0000°; N -0.3100, Plg3.0000°, Azm218.0000°; P -3.2030, Plg84.0000°, Azm102.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*

JMA ***09*** *20:15:53.8±0.2, 37˚.80N×143˚.62E, h45km, M5.6*

JMA Felt II J1.

MOS ***09*** *20:15:56.5±1.2, 38˚.10N×143˚.48E, h33km, mb6.1/99, MS5.2/77, Error ellipse: s-maj=8.0km s-min=5.0km az=95.5*

BJI ***09*** *20:15:58.1, 37˚.89N×142˚.95E, h30km, mb5.6/61, mB5.6/61, Ms5.6/95, Ms7 5.5/87*

ISC 09 20:15:55.7±0.3, 37˚.80N±0˚.03×143˚.55E±0˚.03, h27km±1km, h26km; pP-P, n1862, σ1942/1988, mb5.9/413, MS5.2/220, 55C-161D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.85**	**291**	⇑P	**Pn**	**20 16 24.9**	**-0.8**
JIO				S	**Sn**	**20 16 47.5**	**-0.7**
OFUJ	**Ofunato**	**1.95**	**312**	⇑P	**Pn**	**20 16 26.0**	**-1.0**
OFUJ				S	**Sn**	**20 16 50.3**	**-0.4**
JMK	**Ichinoseki**	**2.16**	**303**	⇑P	**Pn**	**20 16 29.2**	**-0.7**
JMK				*e*S	**Sn**	**20 16 56.3**	**+0.5**
JOM	**Ohasama**	**2.43**	**314**	⇑P	**Pn**	**20 16 33.1**	**-0.5**
JOM				*e*S	**Sn**	**20 17 02.6**	**+0.1**
JFT	**Otama**	**2.56**	**265**	P	**Pn**	**20 16 35.6**	**+0.2**
JFT				S	**Sn**	**20 17 05.3**	**-0.5**
JYK	**Kaneyama**	**2.74**	**295**	⇑P	**Pn**	**20 16 38.0**	**+0.1**
JYK				S	**Sn**	**20 17 10.7**	**+0.5**
JANG	**Nango**	**3.02**	**329**	P	**Pn**	**20 16 40.2**	**-1.5**
JANG				*e*S	**Sn**	**20 17 16.0**	**-1.0**
JNS	**Sasagawa**	**3.35**	**272**	P	**Pn**	**20 16 46.9**	**+0.7**
JAW	**Awa shima**	**3.45**	**282**	P	**Pn**	**20 16 48.3**	**+0.7**
JAG	**Ashikaga**	**3.55**	**249**	P	**Pn**	**20 16 48.4**	**-0.6**
BSO1	**Boso 1**	**3.76**	**214**	P	**Pn**	**20 16 49.9**	**-1.5**
JOT	**Ohata**	**4.07**	**332**	P	**Pn**	**20 16 56.0**	**-0.1**
JRY	**Ryogami san**	**4.12**	**246**	P	**Pn**	**20 16 56.4**	**-0.6**
JRY				S	**Sn**	**20 17 41.4**	**-2.9**
ERM	**Erimo**	**4.22**	**356**	*de*P	**Pn**	**20 16 56.2**	**-2.0**
ERM				pmax	pmax		
	comp=Z,2μm,1.7s						
ERM	**Erimo**	**4.22**	**356**	*e*Pn	**Pn**	**20 16 56.3**	**-2.0**
JOD2	**Odawara 2**	**4.39**	**236**	P	**Pn**	**20 16 59.5**	**-1.1**
JOD2				*e*S	**Sn**	**20 17 48.9**	**-2.0**
MJAR	**Matsushiro Arr**	**4.44**	**255**	Pn	**Pn**	**20 17 01.9**	**+0.5**
	comp=Z,223nm,0.3s,baz=80,slow=15,SNR=867						
MJAR				LR	LR	20 18 50.1	
	comp=Z,9μm,21.2s,baz=75,slow=40						
MAJO	**Matsushiro**	**4.44**	**255**	*e*P	**Pn**	**20 17 02.2**	**+0.9**
MAJO	**Matsushiro**	**4.44**	**255**	*e*Pn	**Pn**	**20 17 02.2**	**+0.9**
MAT	**Matsushiro**	**4.44**	**255**	P	**Pn**	**20 17 02.0**	**+0.7**
MAT				S	**Sn**	**20 17 51.0**	**-1.2**
MJB9	**Matsu-Tunnel**	**4.45**	**255**	*e*Pn	**Pn**	**20 17 02.5**	**+1.2**
JKB	**Kayabe**	**4.52**	**335**	P	**Pn**	**20 17 02.2**	**-0.1**
JKB				*e*S	**Sn**	**20 17 51.3**	**-2.6**
JCH	**Churui**	**4.81**	**358**	P	**Pn**	**20 17 04.4**	**-1.9**
JCH				*e*S	**Sn**	**20 17 55.9**	**-5.3**
JOSM	**Okushiri--Mats**	**5.30**	**325**	P	**Pn**	**20 17 13.2**	**+0.2**
JHJ2	**Mitsune**	**5.58**	**214**	*e*Pn	**Pn**	**20 17 13.8**	**-3.1**
JHJ	**Hachijo jima 2**	**5.59**	**214**	Pn	**Pn**	**20 17 14.6**	**-2.4**
	comp=Z,186nm,0.3s,baz=333,slow=21,SNR=69						
JHJ				Sn	**Sn**	**20 18 14.6**	**-5.7**
	comp=Z,1μm,0.3s,baz=92,slow=23,SNR=13						
JHJ				LR	LR	20 18 57.1	
	comp=Z,3μm,19.8s,baz=28,slow=33						
INU	**Inuyama**	**5.79**	**247**	*e*Pn	**Pn**	**20 17 20.5**	**+0.6**
ASAJ	**Asahikawa**	**6.35**	**354**	Pn	**Pn**	**20 17 27.0**	**-0.5**
	comp=Z,114nm,0.3s,baz=183,slow=9.1,SNR=306						
ASAJ				Sn	**Sn**	**20 18 36.3**	**-2.8**
	comp=Z,44nm,0.3s,baz=195,slow=21,SNR=6.4						
ASAJ				LR	LR	20 20 24.0	
	comp=Z,15μm,19.8s,baz=173,slow=42						
ASAJ	**Asahikawa**	**6.35**	**354**	*e*Pn	**Pn**	**20 17 26.2**	**-1.3**
ASAJ				Sn	**Sn**	**20 18 36.3**	**-2.8**
YUK	**Yuzh-Kuril'sk**	**6.47**	**15**	*d i*P	**Pn**	**20 17 25.5**	**-3.6**
YUK				*i* S	**Sn**	**20 18 34.7**	**-7.3**
YUK				pmax	pmax		
	comp=Z,4μm,0.3s						
YUK				pmax	pmax		
	comp=N,976nm,0.2s						
YUK				pmax	pmax		
	comp=E,1μm,0.3s						
YUK				MLR	MLR		
	comp=Z,10μm,9.0s						
SHO	**Shikotan**	**6.56**	**21**	*d i*P	**Pn**	**20 17 26.4**	**-3.9**
SHO				*i* S	**Sn**	**20 18 36.3**	**-7.8**
SHO				pmax	pmax		
	comp=Z,2μm,0.7s						
SHO				pmax	pmax		
	comp=N,1μm,0.6s						
SHO				pmax	pmax		
	comp=E,1μm,0.4s						
KUR	**Kuril'sk**	**8.10**	**22**	*d i*P	**Pn**	**20 17 49.2**	**-2.3**
KUR				*e*S	**Sn**	**20 19 16.8**	**-5.4**
KUR				pmax	pmax		
	comp=Z,957nm,0.5s						
KUR				pmax	pmax		
	comp=N,481nm,0.6s						
KUR				pmax	pmax		
	comp=E,354nm,0.5s						
KUR				MLR	MLR		
	comp=E,13μm,11.0s						
KUR				MLR	MLR		
	comp=Z,20μm,11.0s						
KUR				MLR	MLR		
	comp=N,11μm,10.0s						
YSS	**Yuzh-Sakhalins**	**9.17**	**357**	*e*P	**Pn**	**20 18 04.8**	**-1.3**
YSS				*e*S	**Sn**	**20 19 45.5**	**-2.8**
YSS				pmax	pmax		
	comp=Z,370nm,0.8s						
YSS				smax	smax		
	comp=N,710nm,1.0s						
YSS				MLR	MLR		
	comp=Z,16μm,15.0s						
YSS				MLR	MLR		
	comp=N,16μm,16.0s						
YSS				MLR	MLR		
	comp=E,10μm,17.0s						
VLA	**Vladivostok**	**10.35**	**305**	*c i*P	**Pn**	**20 18 22.6**	**+0.3**
MSHR	**Mys Shultsa**	**10.61**	**301**	*ce*P	**Pn**	**20 18 26.3**	**+0.4**
CBIJ	**Chichi jima**	**10.73**	**187**	*e*Pn	Pn	20 18 21.9	-5.7
CBIJ				Sn	Sn	20 20 13.2	-14
JCJ	**Chichijima**	**10.73**	**187**	Pn	Pn	20 18 22.1	-5.5
	baz=270,slow=20						
JCJ				Sn	Sn	20 20 13.2	-14
	comp=E,211nm,0.3s,baz=291,slow=21,SNR=9.5						
USRK	**Ussuriysk Ar.**	**10.82**	**310**	Pn	**Pn**	**20 18 30.1**	**+1.4**
	comp=E,5.1nm,0.3s,baz=119,slow=13,SNR=71						
USRK				LR	LR	20 22 31.1	
	comp=E,13μm,19.9s,baz=109,slow=36						
UGL	**Uglegorsk**	**11.33**	**355**	*e*P	**Pn**	**20 18 34.0**	**-1.6**
UGL				pmax	pmax		
	comp=Z,180nm,0.8s						
UGL				pmax	pmax		
	comp=Z,2μm,9.0s						
UGL				MLR	MLR		
	comp=N,16μm,16.0s						
UGL				MLR	MLR		
	comp=Z,19μm,16.0s						
UGL				MLR	MLR		
	comp=E,40μm,17.0s						
JNU	**Nakatsue**	**11.33**	**249**	Pn	**Pn**	**20 18 36.1**	**+0.3**
	comp=E,5.6nm,0.3s,baz=62,slow=8.8,SNR=86						
JNU				LR	LR	20 23 26.4	
	comp=E,14μm,18.5s,baz=56,slow=40						
JNU	**Nakatsue**	**11.33**	**249**	*e*Pn	**Pn**	**20 18 36.0**	**+0.1**
HABR	**Khabarovsk**	**12.33**	**333**	*c i*P	**Pn**	**20 18 46.7**	**-2.7**
HABR				*e*S	**Sn**	**20 21 01.6**	**-4.2**
HABR				pmax	pmax		
	comp=N,222nm,1.5s						
HABR				pmax	pmax		
	comp=E,208nm,1.5s						
HABR				pmax	pmax		
	comp=Z,514nm,1.5s						
HABR				MLR	MLR		
	comp=N,7μm,14.0s						
HABR				MLR	MLR		
	comp=E,16μm,14.0s						
HABR				MLR	MLR		
	comp=Z,10μm,14.0s						
KSRS	**Korea Array**	**12.39**	**273**	Pn	**Pn**	**20 18 52.8**	**+2.5**
	comp=Z,3.7nm,0.3s,baz=82,slow=13,SNR=110						
KSRS				LR	LR	20 23 30.6	
	comp=Z,7μm,19.0s,baz=72,slow=37						
KS01	**Wonju Array Si**	**12.41**	**273**	*e*Pn	**Pn**	**20 18 51.2**	**+0.7**
KS15	**Wonju Array Si**	**12.43**	**273**	*e*Pn	**Pn**	**20 18 53.6**	**+2.8**
KSAR	**Wonju Array Be**	**12.43**	**273**	P	**Pn**	**20 18 52.8**	**+2.0**
KSAR	**Wonju Array Be**	**12.43**	**273**	Pn	**Pn**	**20 18 52.8**	**+2.0**
MDJ	**Mudanjiang**	**12.51**	**307**	P	**Pn**	**20 18 51.9**	**0.0**
MDJ				S	**Sn**	**20 21 09.3**	**-1.0**
MDJ				PcP	**PcP**	**20 24 32.4**	**+2.2**
MDJ				ScP	**ScP**	**20 28 05.1**	**+3.8**
MDJ				ScS	**ScS**	**20 31 37.8**	**+0.5**
MDJ				pmax	pmax		
	comp=Z,70nm,1.5s						
MDJ				pmax	pmax		
	comp=Z,2μm,9.7s						
MDJ				LR	LR		
	comp=Z,5μm,12.2s						
MDJ				LR	LR		
	comp=Z,5μm,13.3s						
MDJ				LR	LR		
	comp=Z,12μm,14.1s						
MDJ	**Mudanjiang**	**12.51**	**307**	*e*Pn	**Pn**	**20 18 52.2**	**+0.3**
	comp=Z,150nm,0.8s						
TJN	**Taejon**	**13.00**	**269**	*ce*P	**Pn**	**20 19 00.8**	**+2.2**
TYV	**Tymovskoe**	**13.08**	**358**	*e*P	**Pn**	**20 18 57.8**	**-1.7**
TYV				*e*S	**Sn**	**20 21 19.0**	**-5.0**
TYV				pmax	pmax		
	comp=E,242nm,1.0s						
TYV				pmax	pmax		
	comp=Z,396nm,1.0s						
TYV				pmax	pmax		
	comp=N,2μm,6.0s						
TYV				pmax	pmax		
	comp=Z,2μm,9.0s						
TYV				smax	smax		
	comp=E,4μm,8.0s						
TYV				MLR	MLR		
	comp=N,14μm,17.0s						
TYV				MLR	MLR		
	comp=Z,15μm,16.0s						
INCN	**Inchon**	**13.41**	**274**	Pn	**Pn**	**20 19 06.6**	**+2.4**
	SNR=21						
INCN	**Inchon**	**13.41**	**274**	*e*Pn	**Pn**	**20 19 06.3**	**+2.1**
KLR	**Kul'dur**	**14.26**	**327**	Pn	**Pn**	**20 19 13.4**	**-2.2**
	comp=Z,5.0nm,0.3s,baz=135,slow=12,SNR=163						
KLR				LR	LR	20 25 10.8	
	comp=Z,4μm,21.3s,baz=143,slow=39						
CN2	**Changchun**	**14.95**	**299**	⇑P	**Pn**	**20 19 23.1**	**-2.0**
CN2				pmax	pmax		
	comp=Z,200nm,5.0s						
CN2				LR	LR		
	comp=Z,6μm,12.0s						
CN2				LR	LR		
	comp=Z,7μm,12.0s						
CN2				LR	LR		
	comp=Z,7μm,13.0s						
NKL	**Nikolayevsk**	**15.48**	**354**	*e*P	**Pn**	**20 19 28.0**	**-4.0**
NKL				pmax	pmax		
	comp=N,500nm,2.0s						
NKL				pmax	pmax		
	comp=Z,900nm,2.0s						
NKL				pmax	pmax		
	comp=E,240nm,1.8s						
NKL				pmax	pmax		
	comp=N,280nm,1.6s						
NKL				pmax	pmax		
	comp=Z,700nm,1.6s						
NKL				MLR	MLR		
	comp=E,10μm,18.0s						
SKR	**Severo-Kuril's**	**15.69**	**31**	*e*P	**Pn**	**20 19 32.5**	**-2.2**
SKR				pmax	pmax		
	comp=N,400nm,1.0s						
SKR				pmax	pmax		
	comp=E,670nm,1.0s						
SKR				pmax	pmax		
	comp=Z,1μm,1.0s						
SKR				MLR	MLR		
	comp=N,11μm,12.0s						
SKR				MLR	MLR		
	comp=E,13μm,12.0s						
SKR				MLR	MLR		
	comp=Z,11μm,12.0s						
OKH	**Okha**	**15.76**	**359**	*e*P	**Pn**	**20 19 36.2**	**+0.6**
SNY	**Shenyang**	**15.86**	**291**	⇑P	**Pn**	**20 19 35.1**	**-1.8**
SNY				S	**Sn**	**20 22 26.8**	**-5.0**
SNY				pmax	pmax		
	comp=Z,900nm,3.5s						
SNY				LR	LR		
	comp=Z,18μm,13.1s						
SNY				LR	LR		
	comp=Z,14μm,16.7s						
SNY				LR	LR		
	comp=Z,22μm,17.1s						
JOW	**Kunigami**	**16.89**	**234**	*e*Pn	**P**	**20 19 51.5**	**-0.6**
	comp=Z,571nm,1.4s						
DL2	**Dalian**	**17.23**	**280**	⇑*i*P	**Pn**	**20 19 53.9**	**-0.4**
DL2				pmax	pmax		
	comp=Z,530nm,1.6s						
DL2				pmax	pmax		
	comp=Z,2μm,7.2s						
DL2				LR	LR		
	comp=Z,8μm,15.7s						
DL2				LR	LR		
	comp=Z,6μm,18.6s						
DL2				LR	LR		
	comp=Z,10μm,17.6s						
PEA0	**Petropavlovsk-**	**18.19**	**28**	*e*Pn	**Pn**	**20 20 05.3**	**-0.8**
PEA0B	**Petropavlovsk-**	**18.19**	**28**	*e*Pn	**P**	**20 20 07.5**	**+1.3**
	comp=Z,600nm,1.3s						
PETK	**Petropavlovsk-**	**18.19**	**28**	P	**Pn**	**20 20 05.5**	**-0.6**
	comp=Z,3.8nm,0.3s,baz=200,slow=8.2,SNR=49						
PETK				LR	LR	20 28 58.1	
	comp=Z,3μm,18.8s,baz=225,slow=43						
PET	**Petropavlovsk**	**18.49**	**30**	*e*P	**P**	**20 20 08.7**	**-0.8**
PET				*e*S	**Sn**	**20 23 29.5**	**-6.0**
PET				pmax	pmax		
	comp=Z,1μm,6.4s						
PET				pmax	pmax		
	comp=Z,216nm,1.1s						
PET				pmax	pmax		
	comp=Z,3μm,9.0s						
PET				MLR	MLR		
	comp=Z,5μm,18.0s						
PET				MLR	MLR		
	comp=Z,5μm,17.0s						
PET	**Petropavlovsk**	**18.49**	**30**	*e*P	**Pn**	**20 20 10.5**	**+0.7**
	comp=Z,406nm,1.3s						
SSE	**Sheshan**	**19.59**	**257**	P	**P**	**20 20 22.2**	**+0.5**
SSE				sP	**sP**	**20 20 32.9**	**+0.5**
SSE				pmax	pmax		
	comp=Z,980nm,8.1s						
SSE				LR	LR		
	comp=Z,14μm,18.8s						
SSE				LR	LR		
	comp=Z,5μm,18.8s						
SSE				LR	LR		
	comp=Z,7μm,15.4s						
HIA	**Hailar**	**20.62**	**311**	*e*P	**P**	**20 20 29.6**	**-3.3**
HIA				pmax	pmax		
	comp=Z,156nm,0.6s						
HIA				MLR	MLR		
	comp=Z,7μm,20.0s						
HIA	**Hailar**	**20.62**	**311**	*e*P	**P**	**20 20 29.6**	**-3.3**
	comp=Z,156nm,0.6s						
HIA				LR	LR		
	comp=Z,7μm,20.0s						
NJ2	**Nanjing**	**21.01**	**262**	*e*P	**P**	**20 20 35.6**	**-1.6**
NJ2				LR	LR		
	comp=Z,14μm,17.4s						
NJ2				LR	LR		
	comp=Z,12μm,12.5s						
NJ2				LR	LR		
	comp=Z,12μm,14.6s						
TIA	**Tai'an**	**21.14**	**274**	⇓P	**P**	**20 20 38.2**	**-0.3**
TIA				pP	**sP**	**20 20 48.3**	**-0.9**
TIA				S	**S**	**20 24 28.4**	**-3.9**
TIA				pmax	pmax		
	comp=Z,840nm,4.0s						
TIA				LR	LR		
	comp=Z,5μm,17.0s						
TIA				LR	LR		
	comp=Z,8μm,18.0s						
TIA				LR	LR		
	comp=Z,9μm,17.0s						
BJI	**Beijing**	**21.39**	**285**	P	**P**	**20 20 39.7**	**-1.4**
BJI				sP	**sP**	**20 20 51.1**	**-0.7**
BJI				S	**S**	**20 24 31.8**	**-5.3**
BJI				sS	Sn	20 24 44.2	-1.2
BJI				pmax	pmax		
	comp=Z,400nm,1.3s						
BJI				LR	LR		
	comp=Z,9μm,18.1s						
BJI				LR	LR		
	comp=Z,3μm,21.5s						
BJI				LR	LR		
	comp=Z,4μm,29.3s						
BJT	**Baijiatuau**	**21.39**	**284**	*e*P	**P**	**20 20 39.4**	**-1.8**
BJT				pmax	pmax		
	comp=Z,452nm,0.8s						
BJT				MLR	MLR		
	comp=Z,5μm,19.0s						
BJT	**Baijiatuau**	**21.39**	**284**	*e*P	**P**	**20 20 39.4**	**-1.8**
	comp=Z,452nm,0.8s						
BJT				LR	LR		
	comp=Z,5μm,19.0s						
MA2	**Magadan**	**22.28**	**10**	*e*P	**P**	**20 20 50.4**	**-0.2**
MA2				pmax	pmax		
	comp=Z,9μm,1.9s						
MA2				MLR	MLR		
	comp=Z,4μm,22.0s						
MA2	**Magadan**	**22.28**	**10**	*e*P	**P**	**20 20 50.4**	**-0.2**
	comp=Z,9μm,1.9s						
MA2				LR	LR		
	comp=Z,4μm,22.0s						
TATO	**Taipei**	**22.69**	**242**	*e*P	**P**	**20 20 54.8**	**-0.4**
	comp=Z,286nm,1.2s						
TATO				LR	LR		
	comp=Z,3μm,21.0s						
CLNS	**Chul'man**	**22.72**	**333**	*e*P	**P**	**20 20 55.4**	**+0.1**
CLNS				*e**PP	**pP**	**20 21 04.3**	**+1.6**
CLNS				*e*		20 21 18.4	
CLNS				*e*SS	Sn	20 25 33.9	+17
CLNS				*e*		20 32 06.6	
CLNS				pmax	pmax		
	comp=N,297nm,1.4s						
CLNS				pmax	pmax		
	comp=E,98nm,1.1s						
CLNS				pmax	pmax		
	comp=Z,249nm,1.2s						
CLNS				pmax	pmax		
	comp=Z,178nm,0.9s						
CLNS				pmax	pmax		
	comp=E,118nm,0.9s						
CLNS				pmax	pmax		
	comp=N,266nm,1.2s						
CLNS				MLR	MLR		
	comp=E,2μm,15.0s						
CLNS				MLR	MLR		
	comp=Z,7μm,20.0s						
CLNS				MLR	MLR		
	comp=N,6μm,17.0s						
YHNB	**Yeheng**	**22.96**	**242**	*e*P	**P**	**20 20 56.1**	**-2.1**
	comp=N,120nm,0.9s						
YHNB				LR	LR		
	comp=Z,3μm,20.0s						
NACB	**Ninganchiao**	**23.14**	**240**	*e*P	**P**	**20 20 58.1**	**-1.7**
	comp=Z,140nm,0.8s						
SSLB	**Suanglung**	**23.83**	**241**	*e*P	**P**	**20 21 03.7**	**-2.9**
	comp=Z,122nm,1.0s						
YULB	**Yu-li**	**23.86**	**239**	*e*P	**P**	**20 21 05.2**	**-1.7**
	comp=Z,687nm,1.7s						
GUMO	**Guam**	**24.14**	**177**	*e*P	**P**	**20 21 07.5**	**-2.0**
GUMO				pmax	pmax		
	comp=Z,493nm,1.2s						
GUMO				MLR	MLR		
	comp=Z,6μm,19.0s						
GUMO	**Guam**	**24.14**	**177**	*e*P	**P**	**20 21 07.5**	**-2.0**
	comp=Z,493nm,1.2s						
GUMO				LR	LR		
	comp=Z,6μm,19.0s						
TPUB	**Ta-pu**	**24.37**	**240**	*e*P	**P**	**20 21 09.2**	**-2.4**
	comp=Z,342nm,0.8s						
TWG	**Pinlang**	**24.39**	**239**	*e*P	**P**	**20 21 11.2**	**-0.6**
	comp=Z,753nm,0.8s						
TIY	**Taiyuan**	**24.55**	**279**	*e*P	**P**	**20 21 14.5**	**+1.3**
TIY				S	**S**	**20 25 33.1**	**+0.8**
TIY				pmax	pmax		
	comp=Z,600nm,1.5s						
TIY				pmax	pmax		
	comp=Z,760nm,3.5s						
TIY				LR	LR		
	comp=Z,3μm,11.9s						
TIY				LR	LR		
	comp=Z,5μm,12.3s						
TIY				LR	LR		
	comp=Z,7μm,16.9s						
QZH	**Quanzhou**	**24.78**	**246**	⇓*i*P	**P**	**20 21 09.7**	**-5.5**
QZH				S	**S**	**20 25 26.3**	**-10**
QZH				pmax	pmax		
	comp=Z,390nm,1.1s						

QZH pmax pmax
comp=Z,2μm,5.4s
QZH LR LR
comp=N,6μm,14.1s
QZH LR LR
comp=E,10μm,13.4s
QZH LR LR
comp=Z,12μm,15.2s
HHC Hu-ho-hao-te 24.86 287 *e*P **P 20 21 15.1 -0.9**
HHC PP **PnPn 20 21 48.9 0.0**
HHC S S 20 25 23.7 -14
HHC pmax pmax
comp=Z,1μm,4.1s
HHC LR LR
comp=Z,2μm,11.6s
HHC LR LR
comp=Z,9μm,12.2s
HHC LR LR
comp=Z,9μm,13.4s
WHN Wuhan 25.15 262⇓ *i*P **P 20 21 18.9 +0.3**
WHN pP **sP 20 21 30.5 +0.8**
WHN S **S 20 25 42.7 +0.8**
WHN pmax pmax
comp=Z,270nm,0.8s
WHN LR LR
comp=Z,19μm,13.1s
WHN LR LR
comp=Z,12μm,14.5s
WHN LR LR
comp=Z,27μm,14.4s
CIT Chita 25.34 314 *e*P **P 20 21 20.2 0.0**
CIT *e* 20 21 33.8
CIT *e* 20 21 57.1
CIT *e*S **S 20 25 46.1 +1.4**
CIT pmax pmax
comp=Z,2μm,1.6s
YAK Yakutsk 25.73 345 P **P 20 21 23.8 +0.2**
comp=Z,427nm,0.7s,baz=355,slow=1.6,SNR=177
YAK LR LR 20 32 13.6
comp=Z,5μm,19.1s,baz=152,slow=38
YAK Yakutsk 25.73 345 *de*P **P 20 21 23.1 -0.5**
YAK *e**PP **pP 20 21 28.8 -2.6**
YAK *e* 20 24 52.3
YAK *e*S **S 20 25 51.1 +0.5**
YAK *e*SS **SnSn 20 26 45.5 -1.0**
YAK *e*SSS SSS 20 26 58.0
YAK *e* 20 32 14.6
YAK pmax pmax
comp=E,36nm,0.8s
YAK pmax pmax
comp=Z,456nm,0.9s
YAK pmax pmax
comp=N,245nm,1.3s
YAK pmax pmax
comp=Z,389nm,0.9s
YAK pmax pmax
comp=N,677nm,1.3s
YAK pmax pmax
comp=E,436nm,1.5s
YAK smax smax
comp=E,458nm,2.3s
YAK smax smax
comp=N,1μm,2.8s
YAK MLR MLR
comp=E,5μm,18.0s
YAK MLR MLR
comp=Z,7μm,16.0s
YAK MLR MLR
comp=N,6μm,15.0s
YAK Yakutsk 25.73 345 *e*P **P 20 21 23.4 -0.2**
comp=N,704nm,0.8s
SEY Seymchan 25.74 9 P **P 20 21 24.6 +0.9**
comp=N,230nm,0.8s,baz=190,slow=6.5,SNR=310
SMY Shemya 25.93 45 *e*P **P 20 21 27.0 +1.6**
SMY pmax pmax
comp=Z,583nm,1.1s
SMY Shemya 25.93 45 *e*P **P 20 21 27.0 +1.6**
comp=Z,582nm,1.1s
BTO Baotou 26.04 287 *e*P **P 20 21 26.3 -0.5**
H11N2 WAKE ISLAND Hy 27.14 125 T T 20 49 57.2
baz=317,slow=75,SNR=367
H11N1 WAKE ISLAND Hy 27.14 125 T T 20 49 56.3
baz=317,slow=75,SNR=279
H11N3 WAKE ISLAND Hy 27.16 125 T T 20 49 59.0
baz=317,slow=75,SNR=336
BOD Bodaibo 27.82 326⇓ *i*P **P 20 21 42.8 +0.3**
H11S1 WAKE ISLAND Hy 27.91 127 T T 20 50 57.7
baz=318,slow=76,SNR=19
H11S3 WAKE ISLAND Hy 27.91 127 T T 20 51 01.8
baz=318,slow=76,SNR=54
H11S2 WAKE ISLAND Hy 27.92 127 T T 20 50 57.4
baz=318,slow=76,SNR=16
XAN Xi'an 28.19 273 P **P 20 21 46.3 +0.2**
XAN pP pP 20 21 54.8 +0.8
XAN S **S 20 26 30.9 +0.8**
XAN pmax pmax
comp=Z,110nm,1.0s
XAN pmax pmax
comp=Z,1μm,7.8s
XAN LR LR
comp=Z,7μm,14.6s
XAN LR LR
comp=Z,6μm,12.8s
ULN Ulaanbaatar 28.35 303 *de*P **P 20 21 48.8 +1.3**
ULN pmax pmax
comp=Z,177nm,1.0s
ULN Ulaanbaatar 28.35 303 P **P 20 21 49.6 +2.1**
SNR=104
ULN Ulaanbaatar 28.35 303 *e*P **P 20 21 47.7 +0.2**
comp=Z,120nm,0.7s
ULN LR LR
comp=Z,5μm,19.0s
SONA1 Songino Array 28.79 302 *e*P **P 20 21 52.1 +0.7**
SONM Songino Array 28.79 302 P **P 20 21 52.9 +1.5**
comp=Z,22nm,0.6s,baz=95,slow=7.7,SNR=106
SONM PcP **PcP 20 25 01.4 +0.7**
comp=Z,21nm,1.1s,baz=106,slow=3.2,SNR=3.7
SONM LR LR 20 33 50.7
comp=Z,6μm,18.5s,baz=116,slow=37
ENH Enshi 29.09 265 *e*P **P 20 21 54.3 +0.2**
comp=Z,372nm,0.8s
ENH LR LR
comp=Z,5μm,20.0s
GZH Guangzhou 29.73 249 P **P 20 21 55.8 -3.9**
GZH PP **PnPn 20 22 50.3 -5.2**
GZH S **S 20 26 47.3 -6.9**
GZH pmax pmax
comp=Z,2μm,10.2s
IRK Irkutsk 30.87 311 *e*P **P 20 22 10.9 +1.4**
IRK *e*S **S 20 27 18.2 +6.5**
IRK pmax pmax
comp=Z,388nm,1.4s
TLY Talaya 31.14 309 P **P 20 22 13.1 +1.2**
comp=Z,55nm,0.6s,baz=107,slow=2.8,SNR=50
TLY PcP **PcP 20 25 07.7 +1.1**
comp=Z,21nm,0.8s,baz=209,slow=2.1,SNR=3.1
TLY LR LR 20 35 07.5
comp=Z,5μm,20.0s,baz=107,slow=37
TLY Talaya 31.14 309 *d i*P **P 20 22 12.9 +1.0**
TLY *e* 20 23 22.9
TLY *e*S **S 20 27 20.3 +4.4**
TLY pmax pmax
comp=Z,302nm,1.5s
TLY MLR MLR
comp=Z,6μm,15.0s
TLY Talaya 31.14 309 *e*P **P 20 22 13.5 +1.6**
comp=Z,161nm,1.0s
TLY PcP **PcP 20 25 07.7 +1.1**
ZAK Zakamensk 31.15 307 *e*P **P 20 22 13.7 +1.5**
ZAK pmax pmax
comp=Z,164nm,1.4s
LZH Lanzhou 31.62 279 *e*P **P 20 22 17.7 +1.2**
LZH pP sP 20 22 26.1 -1.6
LZH sP pP 20 22 30.1 +5.7
LZH PP **PnPn 20 23 21.4 +1.0**
LZH *e*S **S 20 27 23.6 -0.4**
LZH sS sS 20 27 37.0 -0.1
LZH SS **SnSn 20 29 07.2 -3.4**
LZH pmax pmax
comp=Z,160nm,1.0s
LZH pmax pmax
comp=Z,830nm,5.0s
LZH LR LR
comp=Z,5μm,12.2s
LZH LR LR
comp=Z,4μm,12.5s

LZH LR LR
comp=Z,7μm,15.2s
MOY Mondy 32.76 309 *e*P **P 20 22 27.7 +1.4**
MOY pmax pmax
comp=Z,216nm,2.0s
BILL Biilibino 32.83 16 *d i*P **P 20 22 26.1 -0.4**
BILL *e* 20 23 36.1
BILL pmax pmax
comp=Z,169nm,1.0s
BILL Biilibino 32.83 16 *e*P **P 20 22 25.8 -0.7**
comp=Z,175nm,1.1s
BILL *e*PcP **PcP 20 25 14.0 +3.2**
BILL LR LR
comp=Z,3μm,21.0s
GYA Guiyang 33.02 261⇓ *i*P **P 20 22 28.4 -0.4**
GYA pP sP 20 22 38.8 -1.2
GYA PP **PP 20 23 41.5 -2.2**
GYA PcP **PcP 20 25 14.0 +1.7**
GYA S **S 20 27 39.8 -6.1**
GYA sS sS 20 28 01.2 +2.2
GYA ScP **ScP 20 28 55.0 +0.4**
GYA ScS **ScS 20 32 54.6 -0.5**
GYA pmax pmax
comp=Z,170nm,0.9s
GYA pmax pmax
comp=Z,600nm,11.5s
GYA LR LR
comp=Z,2μm,14.3s
GYA LR LR
comp=Z,4μm,17.4s
GYA LR LR
comp=Z,5μm,15.9s
CD2 Chengdu 33.37 270 P **P 20 22 32.0 +0.2**
CD2 sP sP 20 22 44.7 +1.7
CD2 PP **PP 20 23 47.6 +0.2**
CD2 S **S 20 27 45.4 -5.8**
CD2 sS sS 20 28 06.3 +2.1
CD2 pmax pmax
comp=Z,130nm,0.9s
CD2 pmax pmax
comp=Z,570nm,6.1s
CD2 LR LR
comp=Z,11μm,15.6s
CD2 LR LR
comp=Z,7μm,19.2s
GTA Gaotai 33.97 287⇓ P **P 20 22 38.4 +1.4**
GTA pP pP 20 22 45.0 +0.1
GTA sP sP 20 22 48.4 +0.2
GTA PcP **PcP 20 25 16.3 +1.5**
GTA S **S 20 28 02.8 +2.4**
GTA sS sS 20 28 15.0 +1.5
GTA ScP **ScP 20 28 57.7 0.0**
GTA PcS **PcS 20 29 01.7 +0.8**
GTA ScS **ScS 20 32 58.7 -1.0**
GTA pmax pmax
comp=Z,93nm,1.2s
GTA pmax pmax
comp=Z,1μm,6.2s
GTA LR LR
comp=Z,8μm,20.9s
GTA LR LR
comp=Z,7μm,19.5s
GTA LR LR
comp=Z,8μm,19.5s
DAV Davao City (W) 34.66 213 *e*P P 20 22 35.1 -8.0
comp=Z,481nm,0.4s
DAV LR LR
comp=Z,2μm,20.0s
TIXI Tiksi 34.75 352 P **P 20 22 42.7 -0.5**
comp=Z,29nm,0.9s,baz=145,slow=7.5,SNR=101
TIXI LR LR 20 38 47.0
comp=Z,3μm,19.3s,baz=166,slow=40
TIXI Tiksi 34.75 352 *e*P **P 20 22 42.2 -1.0**
comp=Z,55nm,0.8s
QIZ Qiongzhong 34.79 247 P **P 20 22 46.1 +2.0**
QIZ S **S 20 28 16.0 +2.8**
QIZ LR LR
comp=Z,2μm,21.1s
QIZ LR LR
comp=Z,2μm,20.6s
CTBH Cotabato--PC H 35.12 215⇑ *i*P **P 20 22 48.2 +1.3**
KMI Kunming 36.75 262 P **P 20 23 01.8 +0.6**
KMI pP pP 20 23 09.5 +0.3
KMI sP sP 20 23 13.0 +0.6
KMI PP **PnPn 20 24 29.0 +4.0**
KMI S **S 20 28 43.3 -0.3**
KMI sS sS 20 28 56.5 -0.3
KMI pmax pmax
comp=Z,520nm,5.6s
KMI LR LR
comp=Z,6μm,14.8s
KMI LR LR
comp=Z,3μm,14.8s
KMI LR LR
comp=Z,6μm,16.0s
GAMB Gambell 37.18 31 *e*P **P 20 23 05.1 +1.0**
comp=Z,38nm,1.0s
KRAR Krasnoyarsk 38.10 315 *c i*P **P 20 23 13.0 +1.0**
KRAR pmax pmax
comp=Z,101nm,1.8s
TNA Tin City 39.35 29 *e*P **P 20 23 23.5 +1.2**
comp=Z,158nm,1.0s
MYLDM Lahad Datu 39.69 221 *e*P **P 20 23 27.2 +1.5**
comp=Z,147nm,1.0s
MANU Manus Island 39.80 174 *e*P **P 20 23 25.6 -1.0**
comp=Z,145nm,1.4s
PANO Nakornpanom 39.83 250 P **P 20 23 28.7 +1.9**
comp=Z,51nm,1.2s
SWI Sorong 40.11 199 P **P 20 23 29.3 +0.2**
comp=Z,161nm,1.1s,comp=Z,1μm
JAY Jayapura 40.20 184 P **P 20 23 29.9 0.0**
comp=Z,14nm,0.9s,baz=269,slow=23,SNR=27
JAY LR LR 20 38 38.4
comp=Z,39nm,19.6s,baz=1.0,slow=34
JAY Jayapura 40.20 184 P **P 20 23 30.3 +0.4**
comp=Z,295nm,1.0s,comp=Z,2μm
KKM Kota Kinabalu 40.21 225 *e*P **P 20 23 32.5 +2.4**
comp=Z,79nm,1.1s
KKM LR LR
comp=Z,2μm,21.0s
GENI Genyem 40.31 185 P **P 20 23 31.4 +0.6**
comp=Z,542nm,1.2s,comp=Z,6μm
SKNT Sakolnakorn 40.40 250 P **P 20 23 32.5 +0.9**
comp=Z,78nm,1.0s
LBMI Labuha 41.02 205 P **P 20 23 37.1 +0.4**
comp=Z,330nm,1.2s,comp=Z,5μm
SDPT Sand Point 41.05 46 *e*P **P 20 23 35.7 -0.8**
comp=Z,110nm,0.8s
CRAI Chiangrai 41.21 257 P **P 20 23 39.2 +0.9**
comp=Z,512nm,0.7s,comp=Z,94μm
KHON Khomkaen 41.66 250 P **P 20 23 43.1 +1.1**
comp=Z,27nm,1.0s,comp=Z,990nm
FAKI Fak Fak 41.85 197 P **P 20 23 43.0 -0.4**
comp=Z,90nm,0.9s,comp=Z,2μm
FAKI Fak Fak 41.85 197 *e*P **P 20 23 42.6 -0.8**
comp=Z,57nm,0.7s
WMQ Urumqi 42.02 296 P **P 20 23 46.6 +1.9**
WMQ pP pP 20 23 54.1 +1.3
WMQ sP sP 20 24 00.1 +4.1
WMQ PP **PP 20 25 29.6 +7.6**
WMQ S **S 20 30 00.8 -1.2**
WMQ ScS **ScS 20 33 38.9 -6.5**
WMQ pmax pmax
comp=Z,44nm,0.6s
WMQ pmax pmax
comp=Z,680nm,6.4s
WMQ LR LR
comp=Z,2μm,20.6s
WMQ LR LR
comp=Z,810nm,26.6s
LOEI Loei 42.12 253 P **P 20 23 43.6 -2.1**
comp=Z,79nm,0.9s
MRSI Marisa 42.14 213 P **P 20 23 43.4 -2.4**
comp=Z,308nm,1.2s,comp=Z,3μm
CHGN Chignik 42.23 45 *e*P **P 20 23 42.4 -3.8**
CMAI Chiengmai2 42.41 258 P **P 20 23 49.4 +1.2**
comp=Z,92nm,1.7s
UTTA Uttaradit 42.52 254 P **P 20 23 49.7 +0.8**
comp=Z,23nm,0.9s,comp=Z,188nm
CHAI Chaiyaphum 42.56 251 P **P 20 23 49.8 +0.4**
comp=Z,28nm,1.2s,comp=Z,228nm
ZALV Zalesovo Beam 42.66 312 P **P 20 23 50.2 +0.5**
comp=Z,50nm,0.9s,baz=87,slow=7.0,SNR=165
ZALV PcP **PcP 20 25 41.6 +0.4**
comp=Z,103nm,1.0s,baz=95,slow=3.6,SNR=6.7
ZALV LR LR 20 42 21.2

comp=Z,3μm,19.4s,baz=70,slow=37
LAMP Lampang 42.76 256 P **P 20 23 52.0 +1.0**
comp=Z,47nm,0.9s,comp=Z,335nm
SANI Sanana 42.85 206 P **P 20 23 51.8 +0.2**
comp=Z,195nm,0.7s,comp=Z,2μm
PBKT Sadao Pong 42.91 252 P **P 20 23 53.0 +0.8**
comp=Z,110nm,1.4s,comp=Z,1μm
CMMT Chiang Mai 43.12 257 P **P 20 23 54.6 +0.7**
comp=Z,89nm,1.3s,comp=Z,1μm
CHTO Chiang Mai 43.12 257 P **P 20 23 54.6 +0.7**
comp=Z,407nm,1.0s,comp=Z,4μm
CHTO Chiang Mai 43.12 257 *e*P **P 20 23 54.7 +0.8**
CHTO pmax pmax
comp=Z,91nm,1.0s
CHTO MLR MLR
comp=Z,2μm,19.0s
CHTO Chiang Mai 43.12 257 P **P 20 23 55.1 +1.2**
SNR=17
CHTO Chiang Mai 43.12 257 *e*P **P 20 23 54.7 +0.8**
comp=Z,91nm,1.0s
CHTO LR LR
comp=Z,2μm,19.0s
MSAI Masohi 43.13 202 P **P 20 23 54.0 +0.1**
comp=Z,77nm,1.2s,comp=Z,834nm
LUWI Luwuk 43.15 211 P **P 20 23 50.7 -3.4**
comp=Z,133nm,1.8s,comp=Z,1μm
LUWI Luwuk 43.15 211 *e*P **P 20 23 53.6 -0.5**
comp=Z,156nm,1.1s
NRIK Noril'sk 43.30 335 P **P 20 23 55.1 +0.5**
comp=Z,47nm,1.0s,baz=110,slow=9.3,SNR=40
NRIK LR LR 20 43 38.5
comp=Z,8μm,18.1s,baz=104,slow=38
CM31 Chiang Mai Arr 43.33 256 *e*P **P 20 23 56.7 +1.1**
CMAR Chiang Mai Arr 43.33 256 P **P 20 23 56.6 +1.0**
CM01 Chiang Mai Arr 43.34 256 *e*P **P 20 23 55.5 -0.2**
SUKH Sukhothai 43.38 255 P **P 20 23 56.9 +1.0**
comp=Z,41nm,0.9s,comp=Z,299nm
NVS Novosibirsk 43.55 313⇑ *i*P **P 20 23 58.1 +1.2**
NVS *e* 20 25 44.1
NVS *e*S **S 20 30 19.3 -4.8**
NVS pmax pmax
comp=Z,245nm,1.3s
NVS pmax pmax
comp=N,28nm,1.2s
NVS pmax pmax
comp=E,186nm,1.3s
NVS pmax pmax
comp=N,42nm,1.3s
NVS pmax pmax
comp=Z,80nm,1.3s
NVS pmax pmax
comp=E,126nm,1.8s
NVS smax smax
comp=E,36nm,1.5s
NVS smax smax
comp=N,10.0nm,1.3s
ZSN Zaisan 43.62 302 *i* P **P 20 23 55.9 -1.7**
comp=N,954nm,1.3s
ZSN *e*S **S 20 30 23.5 -1.9**
ZSN LR LR 20 42 14.8
comp=N,1μm,13.5s
SRAK Srakaew 43.72 249 P **P 20 23 56.6 -2.1**
comp=N,221nm,1.0s,comp=N,2μm
TT01 Tatalina 43.82 35 *e*P **P 20 23 59.0 +0.1**
TTA Tatalina 43.82 35 *e*P **P 20 23 59.6 +0.5**
TTA pmax pmax
comp=Z,101nm,1.1s
TTA Tatalina 43.82 35 *e*P **P 20 23 59.6 +0.5**
comp=Z,100nm,1.1s
LSA Lhasa 43.83 276 P **P 20 24 01.5 +1.5**
LSA S S 20 30 20.4 -9.3
LSA LR LR
comp=Z,860nm,19.3s
LSA LR LR
comp=Z,2μm,19.3s
LSA LR LR
comp=Z,4μm,18.6s
LSA Lhasa 43.83 276 *e*P **P 20 24 01.6 +1.5**
LSA pmax pmax
comp=Z,50nm,0.6s
LSA MLR MLR
comp=Z,3μm,19.0s
LSA Lhasa 43.83 276 *e*P **P 20 24 01.6 +1.5**
comp=Z,50nm,0.6s
LSA LR LR
comp=Z,3μm,19.0s
SVW2 Sparrevohn 43.88 38 *e*P **P 20 24 01.6 +2.1**
comp=Z,102nm,1.0s
BNDI Bandanaira 43.97 200 P **P 20 23 59.0 -1.7**
comp=Z,726nm,1.1s,comp=Z,7μm
NAYO Nakonayok 44.06 250 P **P 20 24 02.7 +1.2**
comp=Z,124nm,1.1s,comp=Z,7μm
MHMT Maesarieng 44.27 257 P **P 20 24 04.6 +1.5**
comp=Z,61nm,1.1s,comp=Z,669nm
CHBT CHBT 44.34 247 P **P 20 24 05.0 +1.4**
comp=Z,146nm,1.1s
OHAK Old Harbor 45.04 43 *e*P **P 20 24 07.9 -0.9**
comp=Z,217nm,1.2s
SHL Shillong 45.11 270 *e*P **P 20 24 09.9 -0.1**
SHL IAmb IAmb 20 24 11.7
comp=Z,41nm,0.8s
SHL *i* x x 20 30 53.0
MK01 Makanchi Array 45.15 302 *e*P **P 20 24 10.0 +0.1**
MK31 Makanchi Array 45.16 302 *e*P **P 20 24 10.8 +0.9**
MK31 Makanchi Array 45.16 302 *e*P **P 20 24 10.8 +0.9**
MKAR Makanchi Array 45.16 302 P **P 20 24 10.8 +0.8**
comp=Z,70nm,0.9s,baz=86,slow=8.6,SNR=295
MKAR LR LR 20 43 49.3
comp=Z,3μm,19.2s,baz=62,slow=37
MKAR P4KPbc 21 02 00.3
comp=Z,0.3nm,0.7s,baz=54,slow=5.1,SNR=3.6
TARA Tarawa 45.22 136 *e*P **P 20 24 11.3 +0.7**
comp=Z,213nm,1.0s
TARA LR LR
comp=Z,370nm,19.0s
RSO Redoubt South 45.25 39 *e*P **P 20 24 11.5 +0.8**
MAKZ Makanchi 45.36 302 *e*P **P 20 24 12.5 +1.0**
MAKZ pmax pmax
comp=Z,183nm,1.0s
MAKZ Makanchi 45.36 302 *e*P **P 20 24 12.5 +1.0**
comp=Z,183nm,1.0s
KDAK Kodiak Island 45.39 42 *i* P **P 20 24 11.3 -0.2**
KDAK Kodiak Island 45.39 42 *e*P **P 20 24 11.7 +0.1**
comp=Z,629nm,1.1s
KDAK LR LR
comp=Z,3μm,19.0s
SBUM Sibu 45.41 227 *e*P **P 20 24 12.3 +0.1**
comp=Z,115nm,1.1s
PPLA Purkeypile 45.57 35 *e*P **P 20 24 14.8 +1.7**
comp=Z,511nm,1.3s
SPU Mount Spurr 45.59 38 *e*P **P 20 24 14.3 +1.1**
CAST Castle Rocks 45.64 35 *e*P **P 20 24 15.0 +1.6**
comp=Z,513nm,1.7s
SRDT SRDT 45.68 251 P **P 20 24 16.0 +1.6**
comp=Z,295nm,1.9s
SEM Semipalatinsk 45.83 307 *i* P P 20 24 24.5 +9.4
comp=Z,967nm,1.0s
SEM *i* PP **PP 20 26 00.7 -1.8**
SEM *e*S S 20 31 06.5 +9.2
SEM LR LR 20 43 06.9
comp=Z,3μm,14.7s
JOHN Johnston Islan 46.13 104 PFAKE 20 24 30.0 +12
JOHN LR LR
comp=Z,417nm,19.0s
BPAW Bear Paw Mtn. 46.15 34 *e*P **P 20 24 18.7 +1.2**
comp=Z,361nm,1.7s
KTH Kantishna Hill 46.16 34 *e*P **P 20 24 18.8 +1.1**
comp=Z,382nm,1.1s
TTSI Tana Toraja 46.21 214 P **P 20 24 16.5 -2.0**
comp=Z,31nm,1.1s,comp=Z,904nm
MLY Manley 46.30 32 *e*P **P 20 24 20.2 +1.5**
comp=Z,222nm,1.0s
TRF Thorofare Moun 46.45 35 *e*P **P 20 24 20.7 +0.7**
comp=Z,86nm,0.8s
COLD Coldfoot 46.66 29 *e*P **P 20 24 22.4 +0.9**
comp=Z,200nm,1.8s
RC01 Rabbit Creek A 46.72 38 *e*P **P 20 24 22.8 +0.8**
comp=Z,304nm,1.0s
MTKI Muara Teweh, K 46.76 221 P **P 20 24 21.9 -0.9**
comp=Z,137nm,0.9s
KURK Kurchatov 46.80 308 P **P 20 24 23.8 +1.0**
KURK pmax pmax
comp=Z,148nm,0.8s
KURK Kurchatov 46.80 308 *e*P **P 20 24 23.2 +0.5**
comp=Z,504nm,0.9s
KURK LR LR
comp=Z,5μm,21.0s

BWN	**Browne**	46.82	34	*e*P	P	20 24 24.6 +1.9
	comp=Z,824nm,1.1s					
KURBB	**Kurchatov Arra**	46.87	308	P	P	20 24 23.8 +0.5
	comp=Z,148nm,0.8s,baz=82,slow=8.1,SNR=1020					
SEW	**Seward**	46.90	39	*e*P	P	20 24 23.5 +0.1
	comp=Z,253nm,1.0s					
PMR	**Palmer**	47.00	37	*e*P	P	20 24 23.8 -0.3
PMR				pmax	pmax	
	comp=Z,273nm,1.0s					
PMR	**Palmer**	47.00	37	*e*P	P	20 24 23.8 -0.3
	comp=Z,273nm,1.0s					
MCK	**McKinley**	47.05	34	*e*P	P	20 24 25.2 +0.6
MCK				pmax	pmax	
	comp=Z,195nm,1.0s					
MCK	**McKinley**	47.05	34	*e*P	P	20 24 25.2 +0.6
	comp=Z,195nm,1.0s					
SPSI	**Sidrap Palu**	47.05	213	P	P	20 24 22.8 -2.3
	comp=Z,68nm,0.9s,comp=Z,762nm					
PMG	**Port Moresby**	47.08	175	P	P	20 24 24.5 -0.7
	comp=Z,97nm,1.0s,baz=5.8,slow=6.8,SNR=26					
PMG	**Port Moresby**	47.08	175	*de*P	P	20 24 24.7 -0.5
PMG				pmax	pmax	
	comp=Z,611nm,1.2s					
PMG	**Port Moresby**	47.08	175	*e*P	P	20 24 24.9 -0.3
	comp=Z,111nm,0.9s					
PMG				LR	LR	
	comp=Z,1μm,20.0s					
RND	**Reindeer**	47.09	35	*e*P	P	20 24 25.2 +0.3
RND				pmax	pmax	
	comp=Z,581nm,1.4s					
RND	**Reindeer**	47.09	35	*e*P	P	20 24 25.2 +0.3
	comp=Z,581nm,1.4s					
KSM	**Kuching**	47.32	228	*e*P	P	20 24 28.4 +1.2
	comp=Z,142nm,0.9s					
KSM				LR	LR	
	comp=Z,739nm,20.0s					
MDM	**Murphy Dome**	47.36	32	*e*P	P	20 24 28.0 +1.0
	comp=Z,412nm,1.0s					
SML	**Sawmill**	47.37	37	*e*P	P	20 24 27.8 +0.7
SML				pmax	pmax	
	comp=Z,333nm,1.0s					
SML	**Sawmill**	47.37	37	*e*P	P	20 24 27.8 +0.7
	comp=Z,333nm,1.0s					
WRH	**Wood River Hil**	47.42	33	*e*P	P	20 24 28.0 +0.6
	comp=Z,76nm,0.8s					
COLA	**College**	47.52	33	*d i*P	P	20 24 28.8 +0.6
COLA				pmax	pmax	
	comp=Z,110nm,1.0s					
COLA	**College**	47.52	33	*e*P	P	20 24 29.3 +1.2
	comp=Z,104nm,0.8s					
COLA				LR	LR	
	comp=Z,1μm,19.0s					
CCB	**Clear Creek Bu**	47.54	33	*e*P	P	20 24 28.6 +0.3
	comp=Z,83nm,1.2s					
SHLS	**Shalkode**	47.69	298	*i* P	P	20 24 29.8 -0.3
	comp=Z,554nm,1.1s					
SHLS				*e*S	S	20 31 24.3 -0.3
SHLS				LR	LR	20 44 45.4
	comp=Z,1μm,14.4s					
STKI	**Sintang**	47.78	226	P	P	20 24 30.4 -0.4
	comp=Z,247nm,1.1s					
SCM	**Sheep Creek Mo**	47.84	37	*e*P	P	20 24 31.7 +0.9
SCM				pmax	pmax	
	comp=Z,377nm,1.0s					
SCM	**Sheep Creek Mo**	47.84	37	*e*P	P	20 24 31.7 +0.9
	comp=Z,377nm,1.0s					
PDGK	**Podgornoye**	47.92	298	*i* P	P	20 24 32.0 +0.4
PDGK				pmax	pmax	
	comp=Z,268nm,1.1s					
IL1	**Eielson Array**	47.94	33	*e*P	P	20 24 30.4 -1.0
ILAR	**Eielson Array**	47.94	33	P	P	20 24 31.4 0.0
	comp=Z,123nm,0.8s,baz=264,slow=6.3,SNR=662					
ILB	**Eielson Array**	47.94	33	*e*P	P	20 24 31.5 0.0
KAPI	**Kappang**	48.00	213	*e*P	P	20 24 32.7 +0.2
	comp=Z,103nm,0.9s					
KAPI				LR	LR	
	comp=Z,708nm,19.0s					
UZB	**Uzynbulak**	48.30	298	*i* P	P	20 24 34.5 -0.2
	comp=Z,587nm,1.4s					
UZB				*e*S	S	20 31 32.2 -0.8
UZB				LR	LR	20 45 17.6
	comp=Z,1μm,13.4s					
KPKS	**Kokpek**	48.44	298	*i* P	P	20 24 35.9 +0.1
	comp=Z,2μm,1.3s					
KPKS				*e*S	S	20 31 35.1 +0.1
KPKS				LR	LR	20 45 21.7
	comp=Z,2μm,14.8s					
KLU	**Klutina**	48.54	37	*e*P	P	20 24 37.3 +1.1
	comp=Z,319nm,1.0s					
PAX	**Paxson**	48.64	35	*e*P	P	20 24 37.4 +0.4
PAX				pmax	pmax	
	comp=Z,111nm,1.1s					
PAX	**Paxson**	48.64	35	*e*P	P	20 24 37.4 +0.4
	comp=Z,111nm,1.1s					
DIV	**Divide**	48.64	38	*e*P	P	20 24 38.1 +1.1
	comp=Z,547nm,1.0s					
ZHN	**Zhinishke**	48.70	298	*i* P	P	20 24 37.9 +0.1
	comp=Z,452nm,1.2s					
ZHN				*e*S	S	20 31 39.1 +0.4
ZHN				LR	LR	20 45 27.6
	comp=Z,1μm,13.6s					
EYAK	**Cordova Ski Ar**	48.71	38	*e*P	P	20 24 38.1 +0.8
	comp=Z,293nm,1.0s					
BSSI	**Bau Bau, Buton**	48.71	211	P	P	20 24 36.7 -1.2
	comp=Z,144nm,1.1s,comp=Z,1μm					
SATY	**Saty**	48.76	298	*i* P	P	20 24 37.6 -0.6
	comp=Z,728nm,1.2s					
SATY				*i* PP	PP	20 26 30.6 -0.6
SATY				*e*S	S	20 31 38.9 -0.6
SATY				LR	LR	20 45 57.0
	comp=Z,2μm,13.8s					
BBKI	**Banjar Baru**	48.93	219	P	P	20 24 38.0 -1.6
BMRM	**Bremner River**	49.22	38	*e*P	P	20 24 42.6 +1.1
	comp=Z,340nm,1.1s					
DOT	**Dot Lake**	49.22	34	*e*P	P	20 24 41.5 +0.1
	comp=Z,221nm,0.9s					
RAGM	**Ragged Mountai**	49.25	39	*e*P	P	20 24 40.4 -1.3
	comp=Z,432nm,1.2s					
SKLT	**Songkhla**	49.36	243	P	P	20 24 44.5 +1.5
	comp=Z,153nm,1.1s					
HNR	**Honiara**	49.43	158	P	P	20 24 42.4 -0.9
	comp=Z,18nm,0.3s,baz=148,slow=20,SNR=4.9					
HNR				LR	LR	20 47 09.5
	comp=Z,2μm,18.4s,baz=334,slow=38					
HNR	**Honiara**	49.43	158	P	P	20 24 42.0 -1.3
HNR	**Honiara**	49.43	158	P	P	20 24 42.4 -0.9
HNR				pmax	pmax	
	comp=Z,23nm,0.3s					
HNR				MLR	MLR	
	comp=Z,2μm,18.4s					
HNR	**Honiara**	49.43	158	*e*P	P	20 24 47.4 +4.0
MENT	**Mentasta**	49.44	35	*e*P	P	20 24 44.6 +1.6
	comp=Z,191nm,1.0s					
SURT	**Suratani**	49.44	246	P	P	20 24 45.8 +2.2
	comp=Z,45nm,1.5s					
TRTT	**Trang**	49.56	244	P	P	20 24 45.9 +1.4
	comp=Z,104nm,1.1s					
KRAB	**Krabi**	49.65	245	P	P	20 24 46.6 +1.4
	comp=Z,238nm,0.7s,comp=Z,2μm					
MDOK	**Medeo**	49.67	298	⇑*i*P	P	20 24 45.8 +0.6
	comp=Z,1μm,1.4s					
MDOK				*e*S	S	20 31 52.3 0.0
MDOK				*i* SS	SS	20 35 23.3 -1.2
MDOK				LR	LR	20 46 10.2
	comp=Z,1μm,13.9s					
AAA	**Alma-Ata**	49.71	299	*i* P	P	20 24 47.2 +1.8
AAA				*i* S	S	20 31 51.8 -0.9
AAA				pmax	pmax	
	comp=Z,600nm,2.3s					
AAA				smax	smax	
	comp=N,2μm,8.2s					
AAA				MLR	MLR	
	comp=Z,3μm,14.0s					
AAA	**Alma-Ata**	49.71	299	*i* P	P	20 24 46.0 +0.6
	comp=Z,947nm,1.2s					
AAA				*e*S	S	20 31 52.8 +0.1
AAA				*i* SS	SS	20 35 30.1 +5.2
AAA				LR	LR	20 46 07.3
	comp=Z,1μm,13.8s					
KUU	**Kurty**	49.95	299	*i* P	P	20 24 46.9 -0.3
	comp=Z,2μm,1.1s					
KUU				*i* PP	PP	20 26 43.4 +1.5
KUU				*e*S	S	20 31 55.8 -0.1
KUU				LR	LR	20 45 59.4
	comp=Z,958nm,12.6s					
PBKI	**Pangkalan Bun**	49.96	224	P	P	20 24 48.2 +0.7
MMRI	**Maumere**	50.30	208	P	P	20 24 47.4 -2.6
	comp=Z,148nm,1.6s,comp=Z,2μm					
MMRI	**Maumere**	50.30	208	*e*P	P	20 24 49.6 -0.4
	comp=Z,143nm,1.0s					
BALM	**Baldy**	50.30	37	*e*P	P	20 24 50.6 +0.9
BALM				pmax	pmax	
	comp=Z,210nm,1.0s					
BALM	**Baldy**	50.30	37	*e*P	P	20 24 50.6 +0.9
	comp=Z,210nm,1.0s					
EGAK	**Eagle**	50.39	33	*e*P	P	20 24 50.0 -0.1
	comp=Z,124nm,1.3s					
EGAK				LR	LR	
	comp=Z,1μm,19.0s					
PKDT	**Phuket**	50.50	246	P	P	20 24 53.6 +2.0
	comp=Z,218nm,1.2s					
EDFI	**Ende, Flores**	50.61	208	P	P	20 24 48.7 -3.8
	comp=Z,105nm,1.4s,comp=Z,2μm					
SOEI	**Soe**	50.63	205	P	P	20 24 51.2 -1.5
	comp=Z,274nm,1.1s,comp=Z,3μm					
SOEI	**Soe**	50.63	205	*e*P	P	20 24 51.1 -1.5
	comp=Z,212nm,0.9s					
KULM	**Kulim**	50.67	241	*e*P	P	20 24 53.6 +0.7
	comp=Z,152nm,1.2s					
KULM				LR	LR	
	comp=Z,1μm,20.0s					
BRZS	**Berezniki**	50.68	308	*i* P	P	20 24 52.9 +0.3
	comp=Z,145nm,1.1s					
BRZS				*e*S	S	20 32 05.9 +0.1
BOK	**Bokaro**	50.73	271	*e*P	P	20 24 53.8 +0.5
BOK				IAmb	IAmb	20 24 55.4
	comp=Z,73nm,0.4s					
TKM2	**Tokmak 2**	50.76	298	*e*P	P	20 24 55.3 +1.7
TKM2				pmax	pmax	
	comp=Z,397nm,1.0s					
TKM2				MLR	MLR	
	comp=Z,2μm,20.0s					
TKM2	**Tokmak 2**	50.76	298	*e*P	P	20 24 55.3 +1.7
	comp=Z,397nm,1.0s					
TKM2				LR	LR	
	comp=Z,2μm,20.0s					
IPM	**Ipoh**	50.99	240	*e*P	P	20 24 55.9 +0.5
	comp=Z,139nm,0.9s					
MYKOM	**Kota Tinggi**	51.09	235	*e*P	P	20 24 57.1 +1.1
DGPR	**DIGLIPUR**	51.11	255	*e*P	P	20 24 55.9 -0.3
DGPR				IAmb	IAmb	20 24 58.4
	comp=Z,712nm,1.7s					
TPRI	**Tanjung Pinang**	51.31	234	P	P	20 24 57.3 -0.4
	comp=Z,134nm,1.2s,comp=Z,2μm					
BVAR	**Borovoye Array**	51.32	312	P	P	20 24 58.1 +0.7
	comp=Z,57nm,0.9s,baz=79,slow=7.9,SNR=260					
BVAR				PcP	PcP	20 26 12.9 +0.9
	comp=Z,35nm,0.8s,baz=117,slow=1.7,SNR=5.2					
BVAR				P4KPbc		21 02 27.0
	comp=Z,0.9nm,0.8s,baz=113,slow=3.4,SNR=6.9					
BRVK	**Borovoye**	51.37	312	*ce*P	P	20 24 58.4 +0.7
BRVK				pmax	pmax	
	comp=Z,84nm,0.8s					
BRVK				pmax	pmax	
	comp=Z,230nm,0.9s					
BRVK	**Borovoye**	51.37	312	*e*P	P	20 24 58.5 +0.7
	comp=Z,145nm,0.9s					
BRVK				LR	LR	
	comp=Z,3μm,19.0s					
FRU	**Bishkek**	51.47	299	⇓*i*P	P	20 25 00.0 +1.3
FRU				*i*		20 25 11.5
FRU				*e*		20 27 01.0
FRU				*e*S	S	20 32 21.0 +3.9
FRU				pmax	pmax	
	comp=Z,430nm,1.8s					
FRU				MLR	MLR	
	comp=E,4μm,13.0s					
COEN	**Coen**	51.48	180	*e*P	P	20 24 58.9 +0.1
	comp=E,211nm,1.0s					
AAK	**Ala-Archa**	51.62	298	P	P	20 25 01.0 +1.1
	comp=E,53nm,0.8s,baz=98,slow=5.1,SNR=106					
AAK	**Ala-Archa**	51.62	298	*d i*P	P	20 25 00.7 +0.7
AAK				pmax	pmax	
	comp=Z,136nm,0.9s					
AAK	**Ala-Archa**	51.62	298	*e*P	P	20 25 01.1 +1.1
	comp=Z,135nm,0.9s					
AAK				LR	LR	
	comp=Z,3μm,19.0s					
KSH	**Kashi**	51.64	294	P	P	20 25 05.1 +5.0
KSH				*es*P	sP	20 25 19.2 +7.6
KSH				PcS	PcS	20 30 15.0 +3.4
KSH				S	S	20 32 25.0 +5.3
KSH				ScS	ScS	20 34 49.2 +0.5
KSH				pmax	pmax	
	comp=Z,460nm,4.5s					
KSH				LR	LR	
	comp=Z,1μm,13.9s					
KSH				LR	LR	
	comp=Z,2μm,15.9s					
KSH				LR	LR	
	comp=Z,2μm,21.2s					
MTN	**Manton Dam**	51.70	195	*e*P	P	20 24 59.8 -0.7
	comp=Z,329nm,0.9s					
EKS2	**Erkin-Say**	52.11	299	*e*P	P	20 25 04.7 +1.1
EKS2				pmax	pmax	
	comp=Z,124nm,0.9s					
EKS2				MLR	MLR	
	comp=Z,2μm,21.0s					
EKS2	**Erkin-Say**	52.11	299	*e*P	P	20 25 04.7 +1.1
	comp=Z,124nm,0.9s					
EKS2				LR	LR	
	comp=Z,2μm,21.0s					
ZRNK	**Zerenda**	52.15	312	*i* P	P	20 25 03.7 +0.2
ZRNK				pmax	pmax	
	comp=Z,196nm,1.3s					
ZRNK	**Zerenda**	52.15	312	*e*P	P	20 25 04.3 +0.8
PLAI	**Plampang**	52.27	213	P	P	20 25 01.6 -3.2
	comp=Z,142nm,0.9s					
BASI	**Baing, Sumba**	52.38	209	P	P	20 25 15.6 +10
OPA	**Opana**	52.42	90	*e*P	P	20 25 07.7 +1.7
OPA				pmax	pmax	
	comp=Z,375nm,1.1s					
OPA	**Opana**	52.42	90	*e*P	P	20 25 07.7 +1.7
	comp=Z,375nm,1.1s					
JOSI	**Joshimath**	52.52	282	*e*P	P	20 25 07.7 +0.8
KIP	**Kipapa**	52.56	91	*e*P	P	20 25 07.2 +0.2
KIP				pmax	pmax	
	comp=Z,2μm,2.5s					
KIP	**Kipapa**	52.56	91	*e*P	P	20 25 08.2 +1.2
	comp=Z,318nm,1.3s					
TWSI	**Taliwang, Sumb**	52.58	214	P	P	20 25 03.5 -3.6
	comp=Z,187nm,1.0s,comp=Z,1μm					
PPBI	**Pangkal Pinang**	52.70	230	P	P	20 25 07.2 -0.9
	comp=Z,90nm,1.2s,comp=Z,1μmcomp=Z,71μm					
SRBI	**Singaraja**	52.76	216	P	P	20 25 07.1 -1.3
INK	**Inuvik**	52.93	28	P	P	20 25 09.8 +0.8
	comp=Z,49nm,0.7s,baz=282,slow=7.6,SNR=118					
INK	**Inuvik**	52.93	28	*e*P	P	20 25 09.7 +0.7
ABJI	**Asem Bagus**	52.97	217	P	P	20 25 08.7 -1.3
	comp=Z,174nm,1.1s					
MNAS	**Manas**	53.05	299	*i* P	P	20 25 11.8 +1.2
MNAS				pmax	pmax	
	comp=Z,277nm,0.9s					
SFK	**Sufi-Kurgan**	53.24	296	*i* P	P	20 25 13.3 +1.2
SFK				pmax	pmax	
	comp=Z,279nm,1.1s					
DNP	**Denpasar**	53.28	216	P	P	20 25 10.4 -1.8
	comp=Z,511nm,1.0s,comp=Z,12μm					
TSI	**Tuntungan**	53.39	242	P	P	20 25 12.3 -0.9
	comp=Z,103nm,1.0s					
JAGI	**Jajag, Banyuwa**	53.60	217	P	P	20 25 11.3 -3.3
	comp=Z,77nm,1.0s					
JAGI	**Jajag, Banyuwa**	53.60	217	*e*P	P	20 25 12.7 -1.9
	comp=Z,95nm,1.0s					
PSI	**Prapat**	53.65	241	*e*P	P	20 25 15.6 +0.4
PSI	**Prapat**	53.65	241	*e*P	P	20 25 15.6 +0.4
GMJI	**Gumukmas**	53.77	218	P	P	20 25 14.0 -1.8
	comp=Z,53nm,1.0s					
DDI	**Dehra Dun**	53.79	283	*e*P	P	20 25 17.3 +1.2
NGJI	**Ngawi**	53.99	221	P	P	20 25 17.0 -0.4
	comp=Z,164nm,1.0s					
BKNI	**Bangkinang**	54.02	237	P	P	20 25 17.4 -0.4
	comp=Z,530nm,1.1s,comp=Z,5μm					
BKNI	**Bangkinang**	54.02	237	*e*P	P	20 25 19.0 +1.2
	comp=Z,585nm,1.1s					
SKAG	**Skagway**	54.05	39	*e*P	P	20 25 19.4 +2.0
	comp=Z,135nm,1.2s					
SMLA	**Simla**	54.12	284	*e*P	P	20 25 18.8 +0.4
PMBI	**Palembang**	54.14	231	P	P	20 25 17.6 -1.0
	comp=Z,351nm,1.1s					
KK31	**Karatay Array**	54.21	300	*i* P	P	20 25 19.6 +0.7
KK31				pmax	pmax	
	comp=Z,179nm,1.1s					
KKAR	**Karatay Array**	54.21	300	*e*P	P	20 25 19.6 +0.7
KKAR	**Karatay Array**	54.21	300	*e*P	P	20 25 19.6 +0.7
DHRM	**DHARAMSHALA**	54.29	286	*e*P	P	20 25 20.2 +0.4
CMBY	**CAMPBELL BAY**	54.31	249	*e*P	P	20 25 19.7 -0.2
CMBY				IAmb	IAmb	20 25 21.6
	comp=Z,4μm,3.2s					
HLK	**Haleakala**	54.31	90	*e*P	P	20 25 22.2 +2.0
	comp=Z,319nm,1.1s					
PWJI	**Pagerwojo**	54.37	220	P	P	20 25 16.6 -3.6
	comp=Z,403nm,0.9s,comp=Z,3μm					
MLSI	**Meulaboh, Aceh**	54.38	244	P	P	20 25 16.2 -4.2
	comp=Z,114nm,1.0s					
MNSI	**Mandailing Nat**	54.65	238	P	P	20 25 20.0 -2.4
	comp=Z,69nm,0.9s					
SDSI	**Sungai Dareh**	54.71	235	P	P	20 25 21.4 -1.4
	comp=Z,307nm,1.2s					
PCJI	**Pacitan**	54.84	220	P	P	20 25 22.5 -1.1
	comp=Z,125nm,1.0s					
IUG	**Iuzhnay**	54.89	299	*i* P	P	20 25 24.4 +0.5
	comp=Z,3μm,1.1s					
IUG				*e*S	S	20 33 04.0 +0.3
IUG				LR	LR	20 48 53.2
	comp=Z,904nm,13.3s					
BRLS	**Borolday**	54.89	300	*i* P	P	20 25 23.8 0.0
	comp=Z,120nm,1.1s					
BRLS				*i* PP	PP	20 27 28.0 +1.4
BRLS				*e*S	S	20 33 03.6 +0.1
BRLS				LR	LR	20 49 17.3
	comp=Z,229nm,12.9s					
UGM	**Wanagama**	54.94	221	P	P	20 25 22.2 -2.2
	comp=Z,533nm,1.0s,comp=Z,4μm					
UGM	**Wanagama**	54.94	221	*e*P	P	20 25 23.7 -0.7
CHLP	**Challavanipeta**	54.96	267	*e*P	P	20 25 24.9 +0.3
CHLP				IAmb	IAmb	20 25 26.9
	comp=Z,75nm,1.0s					
CHLP				*e*S	S	20 33 08.0 +3.1
CHLP				IVMs_BB	IVMs_BB	20 49 19.2
	comp=Z,597nm,19.7s					
NDI	**New Delhi**	55.19	281	*e*P	P	20 25 26.5 +0.3
PDSI	**Padang**	55.33	236	P	P	20 25 25.5 -1.8
	comp=Z,24nm,1.2s					
POHA	**Pohakuloa**	55.41	91	*e*P	P	20 25 29.4 +1.2
	comp=Z,387nm,0.9s					
POHA				LR	LR	
	comp=Z,1μm,19.0s					
MLOA	**Mauna Loa Obse**	55.49	91	*e*P	P	20 25 30.4 +1.4
LEM	**Lembang**	55.60	225	P	P	20 25 32.7 +3.3
	comp=Z,3μm,1.1s,comp=Z,29μm					
LHSI	**Lahat**	55.61	231	P	P	20 25 28.0 -1.2
	comp=Z,428nm,1.1s,comp=Z,4μm					
KLI	**Kotabumi**	55.62	229	P	P	20 25 27.4 -1.9
	comp=Z,194nm,1.2s,comp=Z,2μm					
GSI	**Gunungsitoli**	55.65	241	P	P	20 25 28.3 -1.3
	comp=Z,322nm,1.1s					
GSI	**Gunungsitoli**	55.65	241	*e*P	P	20 25 29.9 +0.4
SVE	**Sverdlovsk**	55.70	319	*c i*P	P	20 25 30.3 +0.9
SVE				*e*S	S	20 33 12.3 -1.6
SVE				pmax	pmax	
	comp=Z,302nm,1.1s					
SVE				MLR	MLR	
	comp=Z,5μm,14.0s					
SVE				MLR	MLR	
	comp=E,4μm,14.0s					
SVE				MLR	MLR	
	comp=N,2μm,15.0s					
CBJI	**Citeko**	55.70	226	P	P	20 25 28.7 -1.2
	comp=N,233nm,1.0s,comp=N,9μm					
UWE	**Uwekahuna**	55.78	91	*e*P	P	20 25 32.5 +1.8
	comp=N,198nm,1.0s					
BLSI	**Bandar Lampung**	55.79	228	P	P	20 25 28.6 -1.9
	comp=N,201nm,1.0s,comp=N,9μm					
MASI	**Maura Aman, Be**	55.88	233	P	P	20 25 29.9 -1.3
	comp=N,580nm,1.3s,comp=N,5μm					
VIS	**Vishakhapatnam**	55.97	267	*e*P	P	20 25 32.9 +1.1
KUDL	**Kundal**	56.01	281	*e*P	P	20 25 31.4 -0.6
KUDL				IAmb	IAmb	20 25 33.2
	comp=Z,53nm,0.8s					
CISI	**Cisompet, Garu**	56.09	224	*e*P	P	20 25 29.9 -2.8
	comp=Z,95nm,0.9s					
LWLI	**Liwa**	56.22	230	P	P	20 25 30.9 -2.8
	comp=Z,119nm,0.8s					
CNJI	**Cibinong**	56.27	225	P	P	20 25 30.0 -4.0
	comp=Z,163nm,1.0s,comp=Z,2μm					
CRAG	**Craig**	56.35	43	*e*P	P	20 25 35.4 +1.4
	comp=Z,115nm,1.1s					
KASI	**Kota Agung**	56.36	229	P	P	20 25 31.6 -3.0
	comp=Z,101nm,1.1s					
MNAI	**Manna**	56.38	231	P	P	20 25 34.2 -0.5
	comp=Z,249nm,1.1s					
MNAI	**Manna**	56.38	231	*e*P	P	20 25 34.6 -0.1
	comp=Z,268nm,1.1s					
WRAK	**Wrangell Islan**	56.45	42	*e*P	P	20 25 36.6 +1.8
	comp=Z,74nm,1.0s					
WRAK				LR	LR	
	comp=Z,2μm,21.0s					
CGJI	**Cibinong**	56.53	227	P	P	20 25 30.9 -4.9
	comp=Z,57nm,1.1s					
KHET	**Khetri**	56.57	282	*e*P	P	20 25 36.2 +0.2
KHET				IAmb	IAmb	20 25 38.0
	comp=Z,120nm,1.1s					
FUNA	**Funafuti**	56.85	136	PFAKE		20 25 50.0 +12
FUNA				LR	LR	
	comp=Z,6μm,19.0s					
ARU	**Arti**	56.91	319	P	P	20 25 38.9 +0.8
	comp=Z,75nm,0.7s,baz=75,slow=4.3,SNR=157					
ARU	**Arti**	56.91	319	*d i*P	P	20 25 38.8 +0.8
ARU				*PP	sP	20 25 49.7 +0.2
ARU						20 27 43.6
ARU				S	S	20 33 31.6 +1.6
ARU						20 35 19.3
ARU				pmax	pmax	
	comp=Z,354nm,1.7s					
ARU				MLR	MLR	
	comp=Z,3μm,16.0s					
ARU	**Arti**	56.91	319	*e*P	P	20 25 38.2 +0.2
ARU				LR	LR	
	comp=Z,3μm,20.0s					
DLBC	**Dease Lake**	56.97	39	P	P	20 25 40.2 +1.6
	comp=Z,63nm,1.0s,baz=293,slow=6.9,SNR=80					
DLBC	**Dease Lake**	56.97	39	*e*P	P	20 25 40.5 +2.0
PPSI	**Pulau Pagai**	57.02	235	P	P	20 25 37.1 -2.2
	comp=Z,372nm,1.0s					
DZET	**Dzherino**	57.04	296	*i* P	P	20 25 40.0 +0.6
DZET				pmax	pmax	
	comp=Z,290nm,0.8s					
NGP	**Nagpur**	57.50	273	*e*P	P	20 25 42.8 +0.1
NGP				IAmb	IAmb	20 25 43.8
PVM	**Polavaram**	57.58	267	*e*P	P	20 25 43.2 -0.1
PVM				IAmb	IAmb	20 25 45.2
	comp=Z,67nm,0.9s					
PVM				*e*S	S	20 33 42.0 +2.3
PVM				IVMs_BB	IVMs_BB	20 52 59.5
	comp=Z,495nm,15.0s					
CTA	**Charters Tower**	57.63	177	P	P	20 25 42.4 -1.1
	comp=Z,16nm,1.0s,baz=346,slow=8.8,SNR=7.7					
CTAO	**Charters Tower**	57.63	177	*e*P	P	20 25 35.5 -8.0
CTAO				MLR	MLR	
	comp=Z,1μm,20.0s					
CTAO	**Charters Tower**	57.63	177	*e*P	P	20 25 35.5 -8.0
CTAO				LR	LR	
	comp=Z,1μm,20.0s					
BHPL	**Bhopal**	57.70	276	*e*P	P	20 25 44.0 -0.1
BHPL				IAmb	IAmb	20 25 44.5
	comp=Z,284nm,1.7s					
KNTN	**Kanton**	57.81	124	*e*P	P	20 25 45.3 +0.4
WRAB	**Tennant Creek**	58.07	190	*ce*P	P	20 25 45.3 -1.2
WRAB				pmax	pmax	
	comp=Z,840nm,1.2s					
WRAB	**Tennant Creek**	58.07	190	*e*P	P	20 25 45.6 -0.9
WRAB				LR	LR	
	comp=Z,913nm,20.0s					
WB2	**Warramunga Arr**	58.08	190	*e*P	P	20 25 45.7 -0.9
WRA	**Warramunga Arr**	58.08	190	P	P	20 25 45.8 -0.9
	comp=Z,172nm,0.9s,baz=9.6,slow=7.4,SNR=309					
WRA				PKP2bc		20 55 40.8

comp=Z,94nm,0.7s
ABKAR Akbulak array 58.74 310 *e*P **P 20 25 51.6 +0.6**
SRSP Sriramsagar 59.25 271 *e*P **P 20 25 54.3 -0.7**
SRSP IAmb IAmb 20 25 56.4
comp=Z,268nm,1.0s
SRSP *e*S **S 20 34 02.8 +1.2**
SRSP IVMs_BB IVMs_BB 20 53 10.5
comp=Z,638nm,12.5s
AKTO Aktyubinsk 59.42 312 P **P 20 25 56.1 +0.4**
comp=Z,52nm,0.9s,baz=69,slow=6.1,SNR=108
ADKI Addanki 59.68 267 *e*P **P 20 25 58.2 +0.3**
ADKI IAmb IAmb 20 25 59.5
comp=Z,55nm,1.0s
ADKI *e*S **S 20 34 09.8 +2.8**
ADKI IVMs_BB IVMs_BB 20 54 03.8
comp=Z,628nm,21.9s
NJS Nagarjunasagar 59.80 268 *e*P **P 20 25 58.5 -0.3**
NJS IAmb IAmb 20 26 00.2
comp=Z,65nm,1.1s
NJS *e*S **S 20 34 10.4 +1.7**
NJS IVMs_BB IVMs_BB 20 56 38.5
comp=Z,581nm,11.5s
HYB Hyderabad 59.92 269⇓*i*P **P 20 26 00.0 +0.4**
comp=Z,190nm,1.0s
HYB *es*P **pP 20 26 05.0 -2.9**
HYB *e*PcP **PcP 20 26 46.0 +0.2**
HYB *e*PP **PP 20 28 12.0 +0.1**
HYB *e*S **S 20 34 10.0 -0.2**
HYB Hyderabad 59.92 269 *e*P **P 20 25 59.7 +0.1**
HYBB Hyderabad (bro 59.92 269 *e*P **P 20 25 59.6 0.0**
HYBB IAmb IAmb 20 26 00.9
comp=Z,120nm,0.9s
HYBB *e*S **S 20 34 11.1 +0.8**
HYBB IVMs_BB IVMs_BB 20 57 53.9
comp=Z,503nm,14.2s
SPA0 Spitsbergen Ar 60.10 349 *e*P **P 20 26 00.9 +0.9**
SPITS Spitsbergen Ar 60.10 349 P **P 20 26 00.3 +0.3**
comp=Z,48nm,0.8s,baz=85,slow=10,SNR=27
KBS Kingsbay 60.19 350 *e*P **P 20 26 01.9 +1.3**
KBS MLR MLR
comp=Z,2μm,21.0s
KBS Kingsbay 60.19 350 *e*P **P 20 26 01.9 +1.3**
KBS LR LR
comp=Z,2μm,21.0s
SRLM Srisailam 60.38 268 *e*P **P 20 26 02.2 -0.6**
SRLM IAmb IAmb 20 26 04.0
comp=Z,76nm,1.1s
SRLM *e*S **S 20 34 17.1 +0.9**
SRLM IVMs_BB IVMs_BB 20 52 50.2
comp=Z,514nm,19.3s
RCLA Racherla 60.70 267 *e*P **P 20 26 04.5 -0.5**
RCLA IAmb IAmb 20 26 06.5
comp=Z,87nm,0.9s
RCLA *e*S **S 20 34 22.2 +2.0**
RCLA IVMs_BB IVMs_BB 20 54 53.1
comp=Z,644nm,19.3s
HSPB Hornsund (broa 61.05 348 *e*P **P 20 26 07.5 +1.1**
MDRS Chennai 61.06 264 *e*P **P 20 26 09.2 +1.9**
SKHT Srikalahasti 61.09 265 *e*P **P 20 26 08.1 +0.6**
SKHT IAmb IAmb 20 26 09.7
comp=Z,91nm,0.8s
SKHT *e*S **S 20 34 26.7 +1.6**
SKHT IVMs_BB IVMs_BB 20 55 52.7
comp=Z,296nm,10.4s
KLRI Killari 61.10 271 *e*P **P 20 26 06.5 -1.2**
KLRI IAmb IAmb 20 26 08.7
comp=Z,208nm,0.9s
KLRI *e*S **S 20 34 25.7 +0.2**
KLRI IVMs_BB IVMs_BB 20 54 48.1
comp=Z,697nm,11.1s
RES Resolute Bay 61.43 15 *e*P **P 20 26 09.2 +0.2**
RES Resolute Bay 61.43 15 *e*P **P 20 26 09.2 +0.2**
AS01 Alice Springs 61.80 190 *e*P **P 20 26 10.4 -1.7**
AS31 Alice Springs 61.80 190 *e*P **P 20 26 11.4 -0.7**
ASAR Alice Springs 61.81 190 P **P 20 26 11.4 -0.7**
comp=Z,41nm,0.8s,baz=11,slow=5.2,SNR=202
ASAR PKPPKP P'P'df 20 55 24.8 +9.2
comp=Z,2.6nm,1.0s,baz=177,slow=2.5,SNR=8.2
LVZ Lovozero 62.11 336*ce*P **P 20 26 14.3 +0.6**
LVZ pmax pmax
comp=Z,214nm,1.7s
LVZ Lovozero 62.11 336 *e*P **P 20 26 13.5 -0.2**
LVZ LR LR
comp=Z,2μm,20.0s
YKA Yellowknife Ar 62.29 31 P **P 20 26 15.0 0.0**
comp=Z,34nm,0.8s,baz=302,slow=6.7,SNR=280
YKA PKPPKP **P'P'df 20 55 23.1 -4.5**
comp=Z,1.7nm,0.9s,baz=126,slow=2.3,SNR=8.2
YKA Yellowknife Ar 62.29 31 P **P 20 26 15.0 0.0**
APA Apatity 62.68 336⇑*i*P **P 20 26 18.0 +0.5**
APA pmax pmax
comp=Z,13nm,1.0s
APA MLR MLR
comp=Z,2μm,14.0s
TMCR Tamitsa 62.88 332 *e*P **P 20 26 19.8 +0.9**
TMCR *e*S **S 20 34 52.1 +5.6**
TMCR pmax pmax
comp=Z,281nm,1.0s
POO Poona 63.03 273 *e*P **P 20 26 20.6 0.0**
EIDS Eidsvold 63.23 172 *e*P **P 20 26 21.7 +0.2**
KEV Kevo 63.32 340 *e*P **P 20 26 22.8 +1.1**
KEV MLR MLR
comp=Z,2μm,20.0s
KEV Kevo 63.32 340 *e*P **P 20 26 22.8 +1.1**
KEV LR LR
comp=Z,2μm,20.0s
DZM Mont Dzumac 63.33 156 P **P 20 26 22.3 -0.1**
comp=Z,179nm,1.2s,baz=11,slow=7.7,SNR=28
DZM LR LR 20 55 16.7
comp=Z,2μm,18.4s,baz=340,slow=37
HAMF Hammerfest 63.65 341 *e*P **P 20 26 24.3 +0.4**
BHJ Bhuj 63.79 280 *e*P **P 20 26 26.5 +0.9**
BHJ IAmb IAmb 20 26 27.4
comp=Z,119nm,0.5s
ARA0 ARCESS Array S 63.87 340 *e*P **P 20 26 26.0 +0.6**
ARCES ARCESS Array B 63.87 340 P **P 20 26 26.0 +0.6**
comp=Z,68nm,0.9s,baz=55,slow=7.1,SNR=52
ARCES LR LR 20 58 53.9
comp=Z,2μm,18.1s,baz=43,slow=40
ARCES ARCESS Array B 63.87 340 P **P 20 26 26.0 +0.6**
ARE0 ARCESS Array S 63.87 340 *e*P **P 20 26 26.6 +1.1**
KLMR Klimovskoe 64.01 328*d*i*P* **P 20 26 26.4 0.0**
KLMR *i* 20 28 45.9
KLMR pmax pmax
comp=Z,120nm,1.0s
MSVF Nonsavu 64.06 143 *e*P **P 20 26 28.5 +1.2**
MSVF MLR MLR
comp=Z,3μm,19.0s
MSVF Nonsavu 64.06 143 *e*P **P 20 26 28.5 +1.2**
MSVF LR LR
comp=Z,3μm,19.0s
PALK Pallekele 64.19 259 *i*P **P 20 26 29.8 +1.5**
PALK Pallekele 64.19 259 *e*P **P 20 26 29.4 +1.1**
PGC Sidney 64.58 47 *e*P **P 20 26 31.2 +0.9**
XMAS Kiritimati 64.58 108 *e*P **P 20 26 31.5 +0.7**
XMAS LR LR
comp=Z,7.0nm,22.0s
GOA Goa 64.74 270 *e*P **P 20 26 32.0 +0.1**
GOA IAmb IAmb 20 26 33.1
comp=Z,238nm,1.2s
KTK1 Kautokeino 64.83 340 *e*P **P 20 26 32.2 +0.6**
KTK1 *es*P **sP 20 26 45.3 +2.1**
NLWA Neilton Lookou 64.94 49 *e*P **P 20 26 34.6 +1.8**
NLWA LR LR
comp=Z,2μm,20.0s
GEYT Alibeck 64.94 300 P **P 20 26 33.9 +0.9**
comp=Z,118nm,0.9s,baz=29,slow=3.4,SNR=290
GEYT PKPPKP **P'P'df 20 55 19.6 -2.5**
comp=Z,1.1nm,0.8s,baz=278,slow=10,SNR=4.5
GEYT LR LR 20 56 48.3
comp=Z,2μm,19.6s,baz=45,slow=38
A04D Lummi Island 64.97 47 P **P 20 26 33.8 +0.9**
baz=299,SNR=14
DAG Danmarks Havn 65.15 356⇓*i*P **P 20 26 33.6 0.0**
comp=Z,129nm,0.9s
DAG Danmarks Havn 65.15 356⇓*i*P **P 20 26 33.6 0.0**
DAG pmax pmax
comp=Z,110nm,0.9s
TRO Tromso 65.53 342 *e*P **P 20 26 36.5 +0.3**
E03A Lebam 65.54 49 P **P 20 26 38.2 +1.6**
B05A Bryant 65.55 47 P **P 20 26 37.8 +1.1**
baz=300,SNR=21
B06A Marblemount 65.78 47 *e*P **P 20 26 39.4 +1.2**
F03A Seaside 65.85 50 *e*P **P 20 26 40.5 +1.9**
F04D Rainier, OR 66.10 49 P **P 20 26 41.7 +1.5**
baz=300
D05A Enumclaw 66.16 48 *e*P **P 20 26 42.3 +1.7**
GSM Grass Mountain 66.26 48 P **P 20 26 42.6 +1.1**
GSM Grass Mountain 66.26 48 P **P 20 26 42.6 +1.1**
AFI Afiamalu 66.35 132 LR LR 20 51 41.4
comp=Z,925nm,18.7s,baz=313,slow=32
TRD Trivandrum 66.36 262 *e*P **P 20 26 42.2 -0.1**
G03D McMinnville, O 66.39 50 P **P 20 26 43.4 +1.3**
baz=300,SNR=9.3
OBSR Observation Ro 66.40 48 P **P 20 26 43.8 +1.3**
C06D Leavenworth 66.42 47 P **P 20 26 43.7 +1.4**
baz=301
TDL Tradedollar La 66.44 49 P **P 20 26 44.0 +1.3**
WRW Wenatchee Ridg 66.46 47 P **P 20 26 43.7 +1.0**
RCS Mount Rainier- 66.47 48 P **P 20 26 44.3 +1.3**
LON Longmire 66.48 48 *e*P **P 20 26 43.6 +0.8**
LON Longmire 66.48 48 *e*P **P 20 26 43.6 +0.8**
F04A Amboy 66.53 49 *e*P **P 20 26 44.2 +1.2**
MTMW Mount Mitchell 66.61 49 P **P 20 26 45.1 +1.4**
NLW Nelson Butte 66.66 47 P **P 20 26 44.9 +0.8**
COR Corvallis 66.68 51 *e*P **P 20 26 46.3 +2.3**
COR Corvallis 66.68 51 *e*P **P 20 26 46.3 +2.3**
ETW Entiat 66.91 47 *e*P **P 20 26 46.4 +0.8**
KULLO Kullorsuaq 67.05 6⇓*i*P **P 20 26 45.7 -0.2**
comp=Z,191nm,1.2s
KULLO Kullorsuaq 67.05 6⇓*i*P **P 20 26 45.7 -0.2**
KULLO pmax pmax
comp=Z,190nm,1.2s
B08A Colville Reser 67.09 46 *e*P **P 20 26 47.3 +0.7**
I03D Drain, OR 67.11 52 P **P 20 26 48.2 +1.5**
baz=301,SNR=30
H04A Detroit Lake 67.32 50 *e*P **P 20 26 49.2 +1.1**
VFP Flag Point 67.42 50 P **P 20 26 50.1 +1.1**
G05D Wamic, OR 67.55 50 P **P 20 26 50.9 +1.3**
baz=301,SNR=11
I04A Tendick Farm, 67.64 51 P **P 20 26 51.1 +0.9**
baz=301,SNR=37
MOS Moscow 67.64 324*ke*P **P 20 26 50.6 +0.7**
MOS *e* 20 27 02.3
MOS *e* 20 27 18.1
MOS *e* 20 29 23.7
MOS *i*S **S 20 35 46.0 +1.0**
MOS *e* 20 36 43.3
MOS pmax pmax
comp=Z,297nm,1.4s
MOS pmax pmax
comp=E,53nm,1.1s
MOS pmax pmax
comp=N,110nm,1.5s
MOS pmax pmax
comp=Z,600nm,1.9s
MOS smax smax
comp=E,1μm,4.7s
MOS smax smax
comp=N,800nm,4.5s
MOS MLR MLR
comp=E,3μm,16.0s
MOS MLR MLR
comp=Z,3μm,16.0s
MOS MLR MLR
comp=N,900nm,19.0s
E07A Sunnyside 67.73 48 *e*P **P 20 26 52.2 +1.5**
L02D Cave Junction, 67.74 53 P **P 20 26 52.1 +1.3**
baz=301,SNR=15
CROR Criterion Ridg 67.89 50 P **P 20 26 52.7 +1.0**
HUMO Hull Mountain 67.92 53 *e*P **P 20 26 53.7 +1.8**
G06A Carlson Farm, 67.97 49 *e*P **P 20 26 53.1 +0.9**
C09A Chrisman Ranch 67.99 46 *e*P **P 20 26 53.0 +0.7**
HAWA Hanford 68.01 48 *e*P **P 20 26 53.4 +1.0**
HAWA LR LR
comp=Z,935nm,21.0s
I05D Terrebonne, OR 68.01 50 P **P 20 26 53.5 +0.9**
baz=302,SNR=20
D08A Wollman Farm, 68.02 47 P **P 20 26 53.0 +0.6**
VTHM Trough 68.04 49 P **P 20 26 53.8 +1.1**
VRH Novokhopyorsk 68.14 318 *e*P **P 20 26 52.8 -0.3**
VRH *e**PP **sP 20 27 05.5 +0.8**
VRH *e*S **S 20 35 49.5 -1.7**
VRH pmax pmax
comp=Z,140nm,0.9s
VRH smax smax
comp=E,570nm,4.7s
VRH MLR MLR
comp=Z,3μm,14.0s
JCC Jacoby Creek, 68.16 55 *e*P **P 20 26 55.6 +2.2**
ARMA Armidale 68.28 172 *e*P **P 20 26 55.2 +1.0**
KHMM Horse Mountain 68.33 55 *e*P **P 20 26 56.9 +2.2**
PUL Pulkovo 68.39 330*ce*P **P 20 26 55.6 +1.1**
PUL pmax pmax
comp=Z,350nm,1.2s
NEW Newport 68.39 45 P **P 20 26 55.2 +0.4**
baz=303,SNR=43
NEW Newport 68.39 45 *e*P **P 20 26 55.4 +0.6**
NEW MLR MLR
comp=Z,1μm,20.0s
NEW Newport 68.39 45 *e*P **P 20 26 55.4 +0.6**
NEW LR LR
comp=Z,1μm,20.0s
OBN Obninsk 68.49 324 P **P 20 26 55.8 +0.6**
comp=Z,94nm,0.9s,baz=41,slow=2.1,SNR=58
OBN Obninsk 68.49 324*d*i*P* **P 20 26 55.5 +0.3**
OBN *e* 20 29 32.2
OBN pmax pmax
comp=Z,299nm,1.7s
OBN MLR MLR
comp=Z,3μm,16.0s
OBN Obninsk 68.49 324 *e*P **P 20 26 55.8 +0.6**
OBN LR LR
comp=Z,1μm,20.0s
YBH Yreka Blue Hor 68.53 53 *e*P **P 20 26 57.3 +1.4**
YBH Yreka Blue Hor 68.53 53 *e*P **P 20 26 57.3 +1.4**
M02C Callahan 68.62 54 P **P 20 26 57.9 +1.5**
baz=302,SNR=20
J05D Fort Rock, OR 68.63 51 P **P 20 26 57.8 +1.2**
baz=302,SNR=26
K04D Chiloquin, OR 68.66 52 P **P 20 26 57.8 +1.0**
baz=302,SNR=6.9
KMRM Mail Ridge 68.68 55 *e*P **P 20 26 59.5 +2.7**
E09A Wood Farm, Sta 68.76 47 P **P 20 26 57.9 +0.8**
LPSR Galich'ya Gora 68.80 321 *e*P **P 20 26 57.3 +0.1**
LPSR *e**PP **sP 20 27 09.7 +0.9**
LPSR *e*S **S 20 35 57.1 -1.8**
LPSR pmax pmax
comp=Z,170nm,1.0s
LPSR smax smax
comp=N,170nm,2.0s
LPSR MLR MLR
comp=Z,2μm,16.0s
FIA1 FINESS Array S 68.92 333 *e*P **P 20 26 58.2 +0.4**
FINES FINESS Array B 68.92 333 P **P 20 26 58.2 +0.4**
comp=Z,105nm,0.8s,baz=47,slow=8.4,SNR=231
FINES LR LR 21 00 25.7
comp=Z,3μm,18.3s,baz=42,slow=39
N02D Trinity Center 68.93 54 P **P 20 26 59.9 +1.5**
baz=302,SNR=19
G08A Pilot Rock 68.94 49 *e*P **P 20 26 58.8 +0.4**
M04C Macdoel 69.06 53 P **P 20 27 00.2 +1.1**
baz=302,SNR=32
K05A Summer Lake 69.14 52 *e*P **P 20 27 01.4 +1.6**
VORR Voronezh 69.18 320 P **P 20 26 58.0 -1.6**
VORR pmax pmax
comp=Z,250nm,1.4s
MOR8 Moi Rana 69.23 340 *e*P **P 20 26 58.5 -1.1**
MOR8 IAmb IAmb 20 26 59.7
comp=Z,165nm,1.0s
STKA Stephens Creek 69.34 182 P **P 20 27 00.2 -0.4**
comp=Z,29nm,1.0s,baz=353,slow=7.8,SNR=35
STKA LR LR 20 57 39.5
comp=Z,504nm,21.0s,baz=2.2,slow=36
VSR Storozhevoye 69.47 319 *e*P **P 20 27 01.6 +0.2**
VSR *e**PP **sP 20 27 14.0 +1.0**
VSR *e*S **S 20 36 04.7 -2.2**
VSR pmax pmax
comp=Z,180nm,1.2s
VSR smax smax
comp=E,680nm,5.6s
VSR MLR MLR
comp=Z,4μm,14.0s
WALA Waterton Lakes 69.72 43 *e*P **P 20 27 03.8 +0.6**
HOPS Hopland Field 69.75 56 *e*P **P 20 27 04.7 +1.3**
O03D Paynes Creek 69.88 54 P **P 20 27 04.6 +0.4**
baz=303,SNR=36
SUMG Summit 69.91 1⇓*i*P **P 20 27 05.3 +1.0**
comp=Z,215nm,0.9s
SUMG Summit 69.91 1⇓*i*P **P 20 27 05.3 +1.0**
SUMG pmax pmax
comp=Z,220nm,0.9s
SUMG Summit 69.91 1 *e*P **P 20 27 04.6 +0.3**
BSMT Bassoo Peak 69.93 45 *e*P **P 20 27 05.4 +0.8**
MOD Modoc Plateau 69.96 52 *e*P **P 20 27 05.8 +1.0**
BLMT Blacktail Moun 70.07 44 *e*P **P 20 27 06.3 +0.9**
BMO Blue Mountains 70.16 48 *e*P **P 20 27 06.4 +0.5**
BMO pmax pmax
comp=Z,86nm,1.1s
BMO MLR MLR
comp=Z,1μm,22.0s
BMO Blue Mountains 70.16 48 *e*P **P 20 27 06.4 +0.5**
comp=Z,86nm,1.1s
BMO LR LR
comp=Z,1μm,22.0s
JTMT Jette 70.27 44 *e*P **P 20 27 07.4 +0.8**
YBMT Yellow Bay 70.35 44 *e*P **P 20 27 07.8 +0.8**
LHI Lord Howe Isla 70.47 166 *e*P **P 20 27 08.6 +1.1**
ORV Oroville 70.47 55 *e*P **P 20 27 08.2 +0.4**
ORV Oroville 70.47 55 *e*P **P 20 27 08.2 +0.4**
SWMT Swartz Lake 70.56 45 *e*P **P 20 27 08.9 +0.5**
BBOO Buckleboo 70.59 187 *e*P **P 20 27 08.1 -0.3**
VSU Vasula 70.65 330*ce*P **P 20 27 09.1 +0.7**
VSU pmax pmax
comp=Z,794nm,1.2s
WVOR Wild Horse Val 70.70 51 *e*P **P 20 27 10.7 +1.4**
WVOR MLR MLR
comp=Z,1μm,19.0s
WVOR Wild Horse Val 70.70 51 *e*P **P 20 27 10.7 +1.4**
WVOR LR LR
comp=Z,1μm,19.0s
GOF Gofitskoye 70.84 312⇓*i*P **P 20 27 11.1 +1.2**
GOF *e*S **S 20 36 25.4 +2.2**
GOF pmax pmax
comp=Z,512nm,1.1s
GOF smax smax
comp=E,55nm,1.6s
MSO Missoula 70.98 45 P **P 20 27 10.9 0.0**
baz=305,SNR=25
MSO Missoula 70.98 45 *e*P **P 20 27 11.1 +0.2**
AFDM Forest Hills D 71.15 55 *e*P **P 20 27 12.5 +0.6**
CHMT Chamberlain Mo 71.32 45 *e*P **P 20 27 13.1 +0.1**
NCK Nalchik 71.40 311*d*i*P* **P 20 27 14.4 +1.0**
NCK pmax pmax
comp=Z,185nm,1.2s
GUDG Gudauri 71.45 310 P **P 20 27 16.0 +2.1**
DGRG David-gareji 71.47 308 P **P 20 27 14.8 +0.9**
DGRG David-gareji 71.47 308 P **P 20 27 14.8 +0.9**
SCO Scoresbysund 71.51 355⇓*i*P **P 20 27 14.4 +0.9**
comp=Z,107nm,1.1s
SCO Scoresbysund 71.51 355⇓*i*P **P 20 27 14.4 +0.9**
SCO pmax pmax
comp=Z,110nm,1.1s
DUS Dusheti 71.52 309 P **P 20 27 17.9 +3.7**
DUS Dusheti 71.52 309 P **P 20 27 17.9 +3.7**
ZEI Tsey 71.62 310 *e*P **P 20 27 15.1 +0.2**
ZEI *e*S **S 20 36 29.9 -2.8**
ZEI *e*SS **SS 20 41 10.4 +2.9**
ZEI pmax pmax
comp=Z,348nm,1.1s
ZEI pmax pmax
comp=N,220nm,0.9s
ZEI pmax pmax
comp=E,362nm,0.9s
KVAR Kislovodsk Arr 71.67 312 P **P 20 27 16.6 +1.4**
comp=E,655nm,1.2s
KIV Kislovodsk 71.68 312 *e*P **P 20 27 16.5 +1.3**
KIV Kislovodsk 71.68 312 *i*P **P 20 27 16.7 +1.6**
SNR=166
KIV Kislovodsk 71.68 312 *e*P **P 20 27 16.4 +1.3**
KIV *e* 20 29 55.4
KIV *e*S **S 20 36 33.6 +0.4**
KIV pmax pmax
comp=Z,621nm,1.1s
KIV pmax pmax
comp=Z,139nm,3.4s
KIV MLR MLR
comp=Z,3μm,18.0s
KIV Kislovodsk 71.68 312 *e*P **P 20 27 16.5 +1.3**
KIV LR LR
comp=Z,1μm,20.0s
KBZ Khabaz 71.68 311 P **P 20 27 16.4 +1.4**
comp=Z,190nm,0.9s,baz=61,slow=4.8,SNR=265
KBZ LR LR 21 01 05.4
comp=Z,1μm,19.7s,baz=40,slow=38
TBLG Delisi 71.70 309 *e*P **P 20 27 16.8 +1.6**
TBLG Delisi 71.70 309 P **P 20 27 16.2 +1.0**
TBLG Delisi 71.70 309 P **P 20 27 16.2 +1.0**
MFID Camas Ranch 71.85 49 *e*P **P 20 27 17.0 +0.8**
ONI Oni 72.00 310 P **P 20 27 18.7 +1.6**
ONI Oni 72.00 310 P **P 20 27 18.7 +1.6**
CMB Columbia Colle 72.04 56 *e*P **P 20 27 18.0 +0.7**
CMB Columbia Colle 72.04 56 *e*P **P 20 27 18.0 +0.7**
NEY Neytrino 72.06 311*c*i*P* **P 20 27 19.8 +2.2**
NEY pmax pmax
comp=Z,30nm,1.2s
HRY Holter Researc 72.23 44 *e*P **P 20 27 19.1 +0.7**
WSAR Wadi Sarin 72.30 286 P **P 20 27 20.0 +0.9**
comp=Z,36nm,1.0s,baz=76,slow=4.4,SNR=16
WSAR LR LR 21 02 25.8
comp=Z,871nm,19.8s,baz=100,slow=39
HBMT Mount Humbug 72.34 45 *e*P **P 20 27 19.8 +0.6**
WAKR Walker 72.39 55 *e*P **P 20 27 20.6 +1.0**
LRM Limekiln Ridge 72.41 45 *e*P **P 20 27 20.3 +0.6**
BIDO Bidbid 72.53 286 P **P 20 27 22.2 +1.8**
SNR=12
BIDO Bidbid 72.53 286 P **P 20 27 22.2 +1.8**
SNR=12
FCC Fort Churchill 72.55 27 *e*P **P 20 27 19.5 -0.4**
FCC pmax pmax
comp=Z,250nm,1.3s
FCC Fort Churchill 72.55 27 *e*P **P 20 27 19.5 -0.4**
comp=Z,250nm,1.3s
BANOM Banah 72.56 289 *i*P **P 20 27 21.7 +1.0**
SNR=29
BANOM Banah 72.56 289 P **P 20 27 21.9 +1.3**
SNR=20
BANOM Banah 72.56 289 P **P 20 27 21.9 +1.3**
SNR=20
EGMT Eagleton 72.57 42 P **P 20 27 20.5 +0.1**
baz=307,SNR=16
EGMT Eagleton 72.57 42 *e*P **P 20 27 20.8 +0.4**
EGMT LR LR
comp=Z,1μm,20.0s
DLMT Dillon 72.60 46 *e*P **P 20 27 21.2 +0.5**
GNI Garni 72.60 307 *i*P **P 20 27 22.6 +1.8**
SNR=64
GNI Garni 72.60 307*ce*P **P 20 27 22.5 +1.7**
GNI pmax pmax
comp=Z,673nm,1.2s
GNI Garni 72.60 307 P **P 20 27 23.0 +2.2**
SNR=53
GNI Garni 72.60 307 P **P 20 27 23.0 +2.2**
SNR=53
GNI Garni 72.60 307 *e*P **P 20 27 22.3 +1.5**
GNI LR LR
comp=Z,2μm,22.0s
HLID Hailey 72.60 48 P **P 20 27 21.5 +0.8**
baz=306,SNR=93
HLID Hailey 72.60 48 *e*P **P 20 27 21.6 +0.8**
HLID LR LR
comp=Z,1μm,19.0s
AKH Akhalkalaki 72.65 309⇑*i*P **P 20 27 23.3 +2.2**
AKH Akhalkalaki 72.65 309 P **P 20 27 22.9 +1.8**
AKH Akhalkalaki 72.65 309 P **P 20 27 22.9 +1.8**
IZAR Zarasai 72.66 328 *e*P **P 20 27 21.1 +0.4**
IZAR IAmb IAmb 20 27 22.7
comp=Z,41nm,0.9s
BGD Bogdanovka 72.67 309 P **P 20 27 23.3 +2.0**
CHVG Ch'k'valeri 72.75 311 *e*P **P 20 27 22.9 +1.4**
CHVG Ch'k'valeri 72.75 311⇓*i*P **P 20 27 23.2 +1.7**
CHVG Ch'k'valeri 72.75 311 P **P 20 27 23.2 +1.7**
IDID Didziasalis 72.75 328 *e*P **P 20 27 21.7 +0.5**
IDID IAmb IAmb 20 27 23.3
comp=Z,60nm,0.9s
ILULI Ilulissat 72.75 5⇓*i*P **P 20 27 21.2 +0.3**
comp=Z,152nm,1.1s
ILULI Ilulissat 72.75 5⇓*i*P **P 20 27 21.2 +0.3**
ILULI pmax pmax
comp=Z,150nm,1.1s
MCMT McKenzie Canyo 72.77 46 *e*P **P 20 27 21.3 -0.6**
MICGM Minsk 72.80 327⇓*e*P **P 20 27 23.0 +1.5**
MICGM PM 20 27 24.0
comp=Z,0.3nm,1.0s
MICGM *e*PcP **sP 20 27 34.0 +0.8**

MICGM *e*PP **PP** **20 30 02.0 -1.1**
MICGM *e*PPP PPP 20 31 23.0
MICGM *e*S **S** **20 36 46.0 +0.5**
MICGM *e*PS **PnS** **20 37 06.0 -12**
MICGM *e*SS SS 20 40 20.0 -65
MICGM *e*SSS SSS 20 44 00.0
MICGM *e*LQ LQ 20 53 00.0
MICGM *e*LR LR 20 56 20.0
MICGM LRM MLR 21 02 52.0
comp=Z,5.2nm,14.0s
MICGM LRM MLR 21 02 54.0
comp=E,5.4nm,14.0s
MNK Minsk 72.80 327⇓ *e*P **P** **20 27 23.0 +1.5**
MNK *e* 20 27 34.0
MNK *e* 20 30 02.0
MNK *e*S **S** **20 36 46.0 +0.5**
MNK pmax pmax
comp=Z,310nm,1.0s
MNK MLR MLR
comp=Z,5μm,14.0s
MNK MLR MLR
comp=E,5μm,14.0s
SMDO Samad 72.84 286 P **P** **20 27 23.7 +1.3**
SNR=12
SMDO Samad 72.84 286 P **P** **20 27 23.7 +1.3**
SNR=12
CAN Canberra 72.93 175 *e*P **P** **20 27 22.3 0.0**
CAN pmax pmax
comp=Z,139nm,1.3s
CAN MLR MLR
comp=Z,812nm,19.0s
CAN Canberra 72.93 175 *e*P **P** **20 27 22.3 0.0**
comp=Z,139nm,1.3s
CAN LR LR
comp=Z,812nm,19.0s
BOZ Bozeman (W) 72.97 45 P **P** **20 27 23.8 +0.8**
baz=307,SNR=55
BOZ Bozeman (W) 72.97 45 *e*P **P** **20 27 23.4 +0.5**
BOZ pmax pmax
comp=Z,109nm,1.0s
BOZ MLR MLR
comp=Z,1μm,22.0s
BOZ Bozeman (W) 72.97 45 *e*P **P** **20 27 23.4 +0.5**
comp=Z,109nm,1.0s
BOZ LR LR
comp=Z,1μm,22.0s
BGMT Barton Gulch 72.99 46 *e*P **P** **20 27 23.8 +0.7**
EAK Akyaka 73.00 308 *i*P **P** **20 27 24.7 +1.5**
NACGM Naroch 73.01 327 *e*P **P** **20 27 23.0 +0.3**
NACGM PM 20 27 24.0
comp=Z,0.6nm,1.0s
NACGM *e*LQ LQ 20 55 09.0
NACGM *e*LR LR 21 02 08.0
EPOS Posof 73.07 310 *i*P **P** **20 27 25.2 +1.7**
NVAR Mina Array Bea 73.17 54 P **P** **20 27 24.6 +0.4**
comp=Z,35nm,0.9s,baz=284,slow=6.3,SNR=101
NVAR LR LR 20 51 42.3
comp=Z,544nm,21.1s,baz=48,slow=29
UOSS Minazif 73.18 289 *e*P **P** **20 27 24.8 +0.5**
MLAC Mammoth, Mammo 73.28 55 P **P** **20 27 26.0 +1.0**
baz=305,SNR=6.2
HATD Hatta, Dubai 73.30 289 *i*P **P** **20 27 25.8 +0.7**
SNR=49
KARS Kars 73.36 309 *e*P **P** **20 27 27.5 +2.2**
ASHO Ashiyiah 73.44 289 *i*P **P** **20 27 26.5 +0.7**
SNR=48
ASHO Ashiyiah 73.44 289 P **P** **20 27 26.8 +0.9**
SNR=39
ASHO Ashiyiah 73.44 289 P **P** **20 27 26.8 +0.9**
SNR=39
NAZ Nazwa, Dubai 73.56 289 *i*P **P** **20 27 27.0 +0.5**
SNR=20
QLMT Earthquake Lak 73.58 46 *e*P **P** **20 27 27.3 +0.8**
DYDN Diyadin 73.61 307 *i*P **P** **20 27 27.8 +1.0**
SOC Sochi 73.64 313 *d*/*i*P **P** **20 27 27.4 +0.7**
SOC *e**PP **pP** **20 27 35.7 +0.5**
SOC *e**SP **sP** **20 27 39.4 +1.1**
SOC *e* 20 30 18.2
SOC *e*PPP PPP 20 31 57.3
SOC *e*S **S** **20 36 56.0 +0.7**
SOC pmax pmax
comp=Z,161nm,1.1s
SOC MLR MLR
comp=Z,2μm,18.0s
CLDR Caldiran 73.70 307 *e*P **P** **20 27 29.3 +1.9**
ARTV Artvin 73.74 310 *i*P **P** **20 27 29.2 +1.6**
FAQ Al Faqa, Dubai 73.75 289 *i*P **P** **20 27 27.9 +0.3**
SNR=30
ELK Elko 73.75 51 *e*P **P** **20 27 28.7 +1.0**
ELK Elko 73.75 51 *e*P **P** **20 27 28.7 +1.0**
YHB Horse Butte 73.76 46 *e*P **P** **20 27 28.7 +1.0**
RCTC Rector, Farmer 73.77 57 P **P** **20 27 28.0 +0.4**
baz=305
DBOC Borcka 73.81 310 *i*P **P** **20 27 27.7 0.0**
DAGI Agillar 73.81 310 *i*P **P** **20 27 27.9 +0.1**
SMMC Simmler 73.84 58 P **P** **20 27 29.4 +1.4**
baz=305
ARQ Araqi 73.85 287 P **P** **20 27 29.6 +1.3**
SNR=28
ARQ Araqi 73.85 287 P **P** **20 27 29.6 +1.3**
SNR=28
SENK Senkaya-Erzuru 73.85 309 *e*P **P** **20 27 30.2 +1.9**
MOL Molde 73.92 340 *e*P **P** **20 27 28.8 +0.9**
MOL IAmb IAmb 20 27 29.6
comp=Z,45nm,0.9s
YMR Madison River 73.94 46 *e*P **P** **20 27 29.8 +1.1**
GCMT Greycliff 73.98 44 *e*P **P** **20 27 29.7 +0.9**
DBAD Bademkaya 73.98 310 *i*P **P** **20 27 29.2 +0.3**
TIN Tinemaha, Big 74.01 55 P **P** **20 27 29.8 +0.7**
baz=305
DDEM Demirkent 74.02 309 *i*P **P** **20 27 29.2 +0.1**
MCID Moose Creek 74.11 46 *e*P **P** **20 27 31.4 +1.7**
NB2 NORSAR Subarra 74.13 338 P **P** **20 27 29.4 +0.1**
comp=Z,160nm,1.1s,baz=38,slow=5.9
NB2 NORSAR Subarra 74.13 338 P **P** **20 27 29.4 +0.1**
baz=38,slow=5.9
NOA NORSAR Array B 74.13 338 P **P** **20 27 29.7 +0.4**
comp=Z,53nm,0.9s,baz=39,slow=5.8,SNR=164
NOA PP **PP** **20 30 18.2 +4.0**
comp=Z,5.3nm,0.9s,baz=36,slow=7.5,SNR=3.7
NOA LR LR 21 05 37.0
comp=Z,3μm,19.3s,baz=40,slow=40
VES Vestal, Richgr 74.14 57 P **P** **20 27 29.6 -0.2**
baz=305,SNR=6.2
YFT Old Faithful 74.15 46 *e*P **P** **20 27 32.4 +2.5**
EATA Eleskirt 74.17 308 *i*P **P** **20 27 29.8 -0.5**
PKM Mcpherson Peak 74.20 58 P **P** **20 27 31.2 +0.8**
baz=305,SNR=8.8
ANN Anapa 74.21 315 *e*P **P** **20 27 28.4 -1.6**
ANN *e**PP **pP** **20 27 39.7 +1.2**
ANN *i* 20 27 41.6
ANN *e* 20 30 13.3
ANN *e*PPP PPP 20 31 58.4
ANN *e*S **S** **20 36 58.7 -3.0**
ANN *e*SSS SSS 20 45 00.6
ANN pmax pmax
comp=Z,195nm,1.2s
NC602 NORSAR Array S 74.27 338 *e*P **P** **20 27 30.3 +0.3**
NC602 IAmb IAmb 20 27 31.2
comp=Z,69nm,1.2s
LKWY Lake 74.32 46 *e*P **P** **20 27 32.6 +1.6**
LKWY MLR MLR
comp=Z,2μm,20.0s
LKWY Lake 74.32 46 *e*P **P** **20 27 32.6 +1.6**
LKWY LR LR
comp=Z,2μm,20.0s
H17A Grant Village 74.33 46 P **P** **20 27 33.0 +2.0**
baz=308,SNR=164
H17A Grant Village 74.33 46 *e*P **P** **20 27 33.2 +2.1**
comp=Z,242nm,1.0s
VANB Van 74.35 307 *e*P **P** **20 27 34.2 +3.1**
AKN Aaknes 74.39 340 *e*P **P** **20 27 31.5 +0.8**
IMW Indian Meadow 74.42 46 *e*P **P** **20 27 33.1 +1.4**
FLWY Flagg Ranch 74.45 46 *e*P **P** **20 27 33.3 +1.6**
CWC Cottonwood Cre 74.46 56 P **P** **20 27 32.0 +0.2**
baz=306
YTP The Promontory 74.49 46 *e*P **P** **20 27 33.8 +1.8**
NWAO Narrogin (SRO) 74.51 203 *e*P **P** **20 27 31.3 -0.4**
NWAO Narrogin (SRO) 74.51 203 *e*P **P** **20 27 31.2 -0.4**
SBC Santa Barbara 74.53 58 P **P** **20 27 32.9 +0.9**
baz=305
NPI North Pocatell 74.56 48 *e*P **P** **20 27 33.4 +1.0**
GRAC Grapevine Rang 74.60 55 P **P** **20 27 33.4 +0.9**
baz=306,SNR=10.0
RLMT Red Lodge 74.61 45 P **P** **20 27 33.6 +1.0**
baz=308,SNR=77
RLMT Red Lodge 74.61 45 *e*P **P** **20 27 33.4 +0.8**
RLMT LR LR
comp=Z,1μm,20.0s
MOOW Moose Ponds 74.63 46 *e*P **P** **20 27 34.0 +1.3**
HVU Hansel Valley 74.63 49 *e*P **P** **20 27 33.8 +1.1**
HVU Hansel Valley 74.63 49 *e*P **P** **20 27 33.8 +1.1**
ISA Isabella, Lake 74.65 57 P **P** **20 27 32.1 -0.7**
baz=306,SNR=6.8
ISA Isabella, Lake 74.65 57 *e*P **P** **20 27 33.1 +0.3**
ISA Isabella, Lake 74.65 57 *e*P **P** **20 27 33.1 +0.3**
AKASG Malin Array Be 74.72 323 P **P** **20 27 33.2 +0.4**
comp=Z,43nm,0.6s,baz=44,slow=6.3,SNR=206
AKASG PP **PP** **20 30 24.3 +4.9**
comp=Z,6.8nm,0.8s,baz=43,slow=8.6,SNR=4.2
AKASG LR LR 21 03 49.1
comp=Z,1μm,20.5s,baz=40,slow=38
ARVC Arvin 74.73 57 P **P** **20 27 33.0 -0.1**
baz=306
KIEV Kiev 74.73 323 *e*P **P** **20 27 32.9 0.0**
KIEV pmax pmax
comp=Z,115nm,0.9s
KIEV MLR MLR
comp=Z,1μm,19.0s
KIEV Kiev 74.73 323 *e*P **P** **20 27 32.9 0.0**
comp=Z,116nm,0.9s
KIEV LR LR
comp=Z,1μm,19.0s
HAKT HAKKARI 74.76 306 *i*P **P** **20 27 34.2 +0.6**
LOHW Long Hollow 74.79 46 *e*P **P** **20 27 34.9 +1.2**
SNOW Snow King Moun 74.80 47 *e*P **P** **20 27 35.0 +1.3**
EKAR Karacoban 74.80 308 *i*P **P** **20 27 34.9 +1.1**
REDW Red Top Meadow 74.80 47 *e*P **P** **20 27 34.9 +1.2**
SCZ2 Santa Cruz Isl 74.84 59 P **P** **20 27 34.7 +0.8**
baz=306
ERZM Erzurum 74.85 309 *i*P **P** **20 27 35.7 +1.6**
EZM Erzurum 74.85 309 *e*P **P** **20 27 36.7 +2.5**
MTUT Morton Thiokol 74.87 49 *e*P **P** **20 27 35.3 +1.2**
DAC Darwin (Calif) 74.87 56 *e*P **P** **20 27 34.6 +0.3**
DAC Darwin (Calif) 74.87 56 *e*P **P** **20 27 34.5 +0.3**
R11A Troy Canyon, C 74.95 53 P **P** **20 27 35.3 +0.7**
baz=306,SNR=68
R11A Troy Canyon, C 74.95 53 *e*P **P** **20 27 35.0 +0.4**
comp=Z,90nm,1.3s
SFJD Kangerlussuaq 74.97 6 LR LR 21 02 44.9
comp=Z,1μm,20.4s,baz=332,slow=38
SFJD Kangerlussuaq 74.97 6⇓ *i*P **P** **20 27 34.3 +0.4**
comp=Z,118nm,1.0s
SFJD Kangerlussuaq 74.97 6⇓ *i*P **P** **20 27 34.3 +0.4**
SFJD pmax pmax
comp=Z,120nm,1.0s
SFJD Kangerlussuaq 74.97 6 *e*P **P** **20 27 34.1 +0.1**
comp=Z,137nm,1.0s
BGU Big Grassy Mou 74.99 50 *e*P **P** **20 27 35.8 +0.9**
CUKT Cukurca 75.01 306 *e*P **P** **20 27 35.9 +1.0**
AHID Auburn Hatcher 75.02 47 *e*P **P** **20 27 35.7 +0.7**
AHID LR LR
comp=Z,1μm,21.0s
MPMC Manual Prospec 75.07 56 P **P** **20 27 35.7 +0.3**
baz=306,SNR=32
OSI Osito Audit: C 75.09 58 P **P** **20 27 36.0 +0.6**
baz=306
OSI Osito Audit: C 75.09 58 *e*P **P** **20 27 36.6 +1.3**
SPUT South Promonto 75.11 49 *e*P **P** **20 27 37.1 +1.6**
SUW Suwalki 75.15 328 *e*P **P** **20 27 35.6 +0.4**
SUW *e*PcP **PcP** **20 27 47.9 -0.8**
SUW *e*PP **PP** **20 30 22.8 -0.2**
SUW *e*S **S** **20 37 06.5 -5.3**
SUW LMZ LR 21 00 54.9
comp=Z,2μm,23.6s
SUW Suwalki 75.15 328 *e*P **P** **20 27 35.6 +0.4**
SUW *e* 20 27 47.9
SUW *e* 20 30 22.8
SUW *e*S **S** **20 37 06.5 -5.3**
SUW MLR MLR
comp=Z,2μm,23.6s
OSL Oslo 75.16 338 *e*P **P** **20 27 36.0 +0.9**
OSL IAmb IAmb 20 27 36.9
comp=Z,108nm,1.0s
BLG Laguna Peak, P 75.16 58 P **P** **20 27 35.9 +0.2**
baz=306
FURC Furnace Creek, 75.24 55 P **P** **20 27 36.8 +0.8**
baz=306,SNR=6.3
LAO LASA Array 75.28 42 P **P** **20 27 36.6 +0.3**
baz=310,SNR=9.8
LAO LASA Array 75.28 42 *e*P **P** **20 27 37.4 +1.2**
LAO LR LR
comp=Z,1μm,20.0s
LRMC Laurel Mtn Rad 75.28 57 P **P** **20 27 36.9 +0.3**
baz=306,SNR=8.6
BAYT Ayd¨–ntepe-Bay 75.30 310 *e*P **P** **20 27 38.5 +1.9**
KOPT Kop Dagi 75.31 309 *i*P **P** **20 27 36.6 -0.2**
SNCC San Nicolas Is 75.35 59 P **P** **20 27 37.0 +0.2**
baz=306
TPNV Topopah Spring 75.35 55 P **P** **20 27 37.4 +0.5**
baz=306,SNR=26
TPNV Topopah Spring 75.35 55 *e*P P 20 27 31.9 -5.1
TPNV Topopah Spring 75.35 55 *e*P P 20 27 31.9 -5.1
FOO Floro 75.38 341 *e*P **P** **20 27 36.9 +0.5**
FOO IAmb IAmb 20 27 38.0
comp=Z,46nm,1.0s
A25A Svangstu Ranch 75.41 39 P **P** **20 27 37.1 +0.2**
baz=311,SNR=11
EDW2 Edwards Air Fo 75.43 57 P **P** **20 27 37.9 +0.6**
baz=306,SNR=15
BMUT Black Mountain 75.44 48 *e*P **P** **20 27 38.0 +0.5**
HYA Hoyanger 75.44 340 *e*P **P** **20 27 37.2 +0.5**
HYA IAmb IAmb 20 27 38.5
comp=Z,82nm,0.9s
HWUT Hardware Ranch 75.46 48 *e*P **P** **20 27 38.3 +0.8**
HWUT LR LR
comp=Z,1μm,19.0s
FSU Fish Springs 75.50 51 *e*P **P** **20 27 38.7 +1.0**
RSUT Red Spur Mount 75.53 48 *e*P **P** **20 27 39.1 +1.0**
DECC Green Verdugo 75.57 58 P **P** **20 27 38.2 +0.2**
baz=306
DUG Dugway, Tooele 75.57 50 P **P** **20 27 38.8 +0.7**
baz=307,SNR=70
DUG Dugway, Tooele 75.57 50 *e*P **P** **20 27 38.0 -0.1**
DUG MLR MLR
comp=Z,1μm,20.0s
DUG Dugway, Tooele 75.57 50 *e*P **P** **20 27 38.0 -0.1**
DUG LR LR
comp=Z,1μm,20.0s
SIRT Sirnak 75.61 306 *e*P **P** **20 27 39.7 +1.4**
SIRN S¨–rnak 75.62 306 *i*P **P** **20 27 39.2 +0.8**
YEDI Yedisu-Bingol 75.63 309 *e*P **P** **20 27 40.3 +1.7**
GUMT Gumushane 75.66 310 *e*P **P** **20 27 40.9 +2.3**
PASC Pasadena Art C 75.71 58 *e*P **P** **20 27 39.5 +0.6**
comp=Z,71nm,1.4s
KONO Kongsberg 75.72 338 *e*P **P** **20 27 39.0 +0.6**
KONO IAmb IAmb 20 27 40.0
comp=Z,78nm,1.2s
KONO Kongsberg 75.72 338 *e*P **P** **20 27 38.9 +0.5**
KONO MLR MLR
comp=Z,3μm,20.0s
KONO Kongsberg 75.72 338 *e*P **P** **20 27 38.9 +0.5**
KONO LR LR
comp=Z,3μm,20.0s
MWC Mount Wilson 75.77 58 *e*P **P** **20 27 40.1 +0.7**
MWC Mount Wilson 75.77 58 *e*P **P** **20 27 40.1 +0.7**
BNGB Bing¶l 75.82 308 *e*P **P** **20 27 41.5 +2.0**
B25A Knox Farm, Ray 75.83 39 P **P** **20 27 39.8 +0.5**
baz=311,SNR=8.2
RAO Raoul Island 75.83 146 LR LR 20 57 35.1
comp=Z,552nm,20.2s,baz=20,slow=33
ESPY Espiye-Giresun 75.84 311 *e*P **P** **20 27 40.0 +0.5**
TCUT Toone Canyon 75.85 49 *e*P **P** **20 27 41.1 +1.2**
FMP Fort Macarthur 75.91 58 P **P** **20 27 40.5 +0.6**
baz=306
SUE Sulen 75.91 341 *e*P **P** **20 27 40.2 +0.8**
SUE IAmb IAmb 20 27 41.2
comp=Z,100nm,1.3s
BW06 Boulder Array 75.92 47 P **P** **20 27 40.1 -0.1**
baz=309,SNR=43
BW06 Boulder Array 75.92 47 *e*P **P** **20 27 40.4 +0.2**
BW06 LR LR
comp=Z,1μm,20.0s
PDAR Pinedale Array 75.92 47 P **P** **20 27 40.3 +0.1**
comp=Z,39nm,0.8s,baz=270,slow=2.7,SNR=278
PSUT Pine Spring 75.93 52 *e*P **P** **20 27 38.5 -1.7**
SHOC Shoshone, Teco 75.96 55 P **P** **20 27 40.0 -0.3**
baz=307
SIM Simferopol' 75.96 316 *d*/*i*P **P** **20 27 40.7 +0.6**
SIM *i* 20 27 54.0
SIM *e*PPP PPP 20 32 24.0
SIM *e*S **S** **20 37 22.3 +1.1**
SIM pmax pmax
comp=Z,107nm,1.0s
GSC Goldstone, Bar 75.97 56 P **P** **20 27 40.8 +0.5**
baz=306,SNR=12
GSC Goldstone, Bar 75.97 56 *e*P **P** **20 27 40.9 +0.5**
GSC Goldstone, Bar 75.97 56 *e*P **P** **20 27 40.9 +0.5**
A26A Wade Farm, Ken 75.97 38 P **P** **20 27 40.3 +0.2**
baz=312,SNR=16
EUZM Uzumlu 75.99 309 *i*P **P** **20 27 41.8 +1.3**
KELT Kelkit 75.99 310 *i*P **P** **20 27 41.7 +1.1**
CIS Catalina Islan 76.01 59 P **P** **20 27 41.0 +0.4**
baz=306
BFSC Mount Baldy Ra 76.03 58 P **P** **20 27 41.1 +0.3**
baz=306,SNR=13
RRX Edison Barstow 76.09 57 P **P** **20 27 42.0 +1.0**
baz=306
GRSN GIRESUNGRSN 76.11 311 *i*P **P** **20 27 41.1 0.0**
BTMN Batman 76.11 307 *i*P **P** **20 27 42.6 +1.4**
JLU Jordanelle 76.14 49 *e*P **P** **20 27 42.4 +0.9**
C25A Freed Ranch, W 76.15 40 P **P** **20 27 41.5 +0.3**
baz=312
NLU North Lily Min 76.16 50 *e*P **P** **20 27 42.5 +0.9**
SCI2 San Clemente I 76.17 59 P P 20 27 49.0 +7.5
baz=306
B26A Jensen Ranch, 76.22 39 P **P** **20 27 42.2 +0.7**
baz=312,SNR=7.9
ASK Askoy 76.28 340 *e*P **P** **20 27 42.6 +1.0**
ASK IAmb IAmb 20 27 43.5
comp=Z,90nm,1.2s
ORDU Ordu-Boztepe 76.31 311 *i*P **P** **20 27 43.5 +1.3**
SHPR Sheep Range 76.32 54 *e*P **P** **20 27 43.4 +0.9**
BER Bergen 76.33 340 *e*P **P** **20 27 42.8 +0.9**
BER IAmb IAmb 20 27 43.6
comp=Z,68nm,0.9s
ODD1 Odda 76.37 339 *e*P **P** **20 27 43.2 +1.1**
TNCL Tunceli-Merkez 76.45 309 *i*P **P** **20 27 44.0 +0.9**
TUQ Turquoise Moun 76.46 56 P **P** **20 27 44.0 +0.7**
baz=307,SNR=6.5
D25A Fairfield 76.49 40 P **P** **20 27 43.3 +0.2**
baz=312,SNR=14
BBRC Big Bear Solar 76.50 57 P **P** **20 27 43.7 +0.1**
baz=307
HEC Hector,Ludlow 76.56 56 P **P** **20 27 44.2 +0.4**
baz=307,SNR=14
SUSE Susehri 76.59 311 *i*P **P** **20 27 44.3 +0.3**
C26A Wahner Farm, P 76.66 39 P **P** **20 27 44.4 +0.3**
baz=312,SNR=6.6
PTK Pertek 76.68 309 *e*P **P** **20 27 46.6 +2.1**
B27A Peters Farms, 76.68 38 P **P** **20 27 44.6 +0.5**
baz=313,SNR=9.3
MURC Murrieta 76.72 58 P **P** **20 27 44.4 -0.2**
baz=307
REFA Refahiye_ERZ¨ 76.75 310 *i*P **P** **20 27 43.8 -1.0**
MARD Mardin 76.77 307 *i*P **P** **20 27 46.2 +1.2**
DYBB Diyarbakir 76.79 308 *e*P **P** **20 27 46.9 +2.0**
A28A Rude Farm, Bot 76.82 37 P **P** **20 27 45.4 +0.5**
baz=313,SNR=33
BLS5 Blasjo 76.83 339 *e*P **P** **20 27 45.3 +0.6**
BLS5 IAmb IAmb 20 27 46.7
comp=Z,110nm,1.2s
ILIC ilic-Erzincan 76.84 310 *e*P **P** **20 27 47.5 +2.2**
E25A Miller Ranch, 76.88 41 P **P** **20 27 45.7 +0.4**
baz=312,SNR=43
MAZI Mazidag 76.89 307 *e*P **P** **20 27 47.2 +1.5**
MSU Marysvale 76.98 51 *e*P **P** **20 27 46.4 +0.1**
MSU Marysvale 76.98 51 *e*P **P** **20 27 46.4 +0.1**
KEMA Kemaliye 77.00 310 *i*P **P** **20 27 48.0 +1.9**
RSDY Resadiye-TOKAT 77.00 311 *e*P **P** **20 27 47.7 +1.7**
D26A Manning 77.02 40 P **P** **20 27 46.3 +0.2**
baz=312,SNR=16
GMRC Granite Mounta 77.03 56 P **P** **20 27 46.8 +0.3**
baz=307,SNR=18
C27A Sayler Ranch, 77.03 39 P **P** **20 27 46.4 +0.3**
baz=313,SNR=14
SVRC Sivrice-ELAZID 77.04 309 *e*P **P** **20 27 48.8 +2.2**
CUZAR Zara_SIVAS 77.05 311 *i*P **P** **20 27 47.3 +0.8**
B28A Dugan Ranch, T 77.09 38 P **P** **20 27 46.7 +0.3**
baz=313,SNR=13
BORG Borgarnes 77.10 353 *i*P **P** **20 27 48.8 +2.7**
BORG Borgarnes 77.10 353 *e*P **P** **20 27 48.6 +2.5**
ERBA Erbaa 77.16 312 *i*P **P** **20 27 47.4 +0.4**
ELZG Elazig 77.17 309 *i*P **P** **20 27 49.3 +2.1**
HOMB Homborsund 77.18 337 *e*P **P** **20 27 47.3 +0.6**
HOMB IAmb IAmb 20 27 48.3
comp=Z,103nm,1.2s
109C Camp Elliot, M 77.20 58 P **P** **20 27 47.8 +0.5**
baz=307
PFO Pinyon Flats O 77.20 57 *e*P **P** **20 27 48.1 +0.6**
PFO MLR MLR
comp=Z,2μm,20.0s
PFO Pinyon Flats O 77.20 57 *e*P **P** **20 27 48.1 +0.6**
PFO LR LR
comp=Z,2μm,20.0s
SNOP Sinop 77.22 314 *e*P **P** **20 27 48.3 +1.1**
F25A Bowman 77.23 41 P **P** **20 27 47.7 +0.3**
baz=312,SNR=23
LCMT Little Creek M 77.24 53 *e*P **P** **20 27 48.7 +1.0**
P17A Butcher Ranch, 77.27 50 *e*P **P** **20 27 48.8 +1.0**
MTPU Mount Pierson 77.27 52 *e*P **P** **20 27 49.4 +1.3**
BELC Belle Mtn. Jos 77.27 57 P **P** **20 27 47.8 -0.1**
baz=307,SNR=7.8
A29A Manning Farm, 77.31 37 P **P** **20 27 47.6 0.0**
baz=314,SNR=125
KVT Kavak 77.32 312 *e*P **P** **20 27 49.8 +1.9**
KMY Karmoy 77.34 339 *e*P **P** **20 27 48.6 +1.1**
KMY IAmb IAmb 20 27 51.0
comp=Z,44nm,0.8s
E26A Carlson Angus 77.38 40 P **P** **20 27 48.1 0.0**
baz=312,SNR=12
KIS Kishinev 77.40 320⇑ *i*P **P** **20 27 49.0 +0.9**
comp=Z,400nm,1.4s
KIS Kishinev 77.40 320 *i* PcP **PcP** **20 28 01.0 +2.4**
KIS Kishinev 77.40 320 *e*PP PP 20 30 48.0 +5.9
KIS *e*S **S** **20 37 38.0 +1.2**
KIS Kishinev 77.40 320 *e*PS 20 38 06.0
KIS LRM MLR 21 05 20.0
comp=Z,4μm,16.0s
KIS Kishinev 77.40 320⇑ *i*P **P** **20 27 49.0 +0.9**
KIS *i* 20 28 01.0
KIS *e* 20 30 48.0
KIS *e*S **S** **20 37 38.0 +1.2**
KIS *e*PS **PnS** **20 38 06.0 -12**
KIS pmax pmax
comp=Z,400nm,1.4s
KIS MLR MLR
comp=Z,4μm,15.0s
KIS MLR MLR
comp=N,3μm,16.0s
KIS MLR MLR
comp=E,2μm,15.0s
KIS MLR MLR
comp=Z,4μm,16.0s
D27A Center, 77.43 39 P **P** **20 27 48.7 +0.4**
baz=313,SNR=13
STAV Stavanger 77.45 339 *e*P **P** **20 27 48.7 +0.5**
STAV IAmb IAmb 20 27 49.9
comp=Z,89nm,1.1s
P18A Preston Nutter 77.47 49 *e*P **P** **20 27 50.0 +0.9**
SVSK Karacayir 77.49 311 *e*P **P** **20 27 50.8 +2.0**
KNB Kanab 77.50 53 *e*P **P** **20 27 50.3 +1.2**
KNB Kanab 77.50 53 *e*P **P** **20 27 50.3 +1.2**
TOKT Tokat 77.51 312 *e*P **P** **20 27 51.0 +2.1**
SNART Snartemo 77.51 338 *e*P **P** **20 27 49.2 +0.7**
SNART IAmb IAmb 20 27 50.4
comp=Z,45nm,0.7s
HAVZ Havza 77.52 313 *i*P **P** **20 27 49.2 +0.2**
TOKA Tokat 77.55 312 *i*P **P** **20 27 50.2 +1.0**
BSD Bornholm Skovb 77.56 333⇓ *i*P **P** **20 27 49.1 +0.2**
comp=Z,198nm,1.1s
BSD Bornholm Skovb 77.56 333⇓ *i*P **P** **20 27 49.1 +0.2**
BSD pmax pmax
comp=Z,200nm,1.1s
B29A Wagenman Farm, 77.57 37 P **P** **20 27 49.5 +0.4**
baz=314,SNR=52
C28A Hausauer Farms 77.58 38 P **P** **20 27 49.3 +0.1**
baz=313,SNR=12
CUKAN kangal_SIVAS 77.59 310 *i*P **P** **20 27 51.2 +1.7**
BAR Barrett 77.62 58 *e*P **P** **20 27 50.5 +0.8**
SRU San Rafael Swe 77.63 50 *e*P **P** **20 27 50.6 +0.8**
SRU San Rafael Swe 77.63 50 *e*P **P** **20 27 50.6 +0.8**
MONP2 Monument Peak 77.66 58 P **P** **20 27 50.3 +0.2**
baz=307,SNR=5.7
F26A Lodgepole 77.69 41 P **P** **20 27 50.2 +0.3**

baz=312,SNR=12
K22A Casper 77.72 45 P **P 20 27 50.3 +0.1**
baz=310,SNR=33
K22A Casper 77.72 45 *e*P **P 20 27 50.0 -0.2**
comp=Z,170nm,1.1s
BEL Belsk 77.72 328 *e*P **P 20 27 51.2 +1.4**
BEL *e*PcP **sP 20 28 03.6 +2.1**
BEL *e*S **S 20 37 42.7 +2.6**
BEL LMZ LR 21 02 35.9
comp=Z,2µm,24.9s
BEL Belsk 77.72 328 *e*P **P 20 27 51.2 +1.4**
BEL *e* 20 28 03.6
BEL *e*S **S 20 37 42.7 +2.6**
BEL MLR MLR
comp=Z,2µm,24.9s
A30A Hoffart Farm, 77.74 37 P **P 20 27 50.4 +0.4**
baz=314,SNR=86
G25A Newell 77.74 42 P **P 20 27 50.2 0.0**
baz=312,SNR=21
SFNV Sufian 77.74 307 *i* P **P 20 27 51.6 +1.2**
IRM Iron Mountain 77.74 56 P **P 20 27 50.8 +0.4**
baz=307,SNR=18
LVV L'vov 77.75 325 *e*P **P 20 27 49.3 -0.8**
LVV *e* 20 30 46.2
LVV *e*S **S 20 37 40.3 -0.2**
LVV MLR MLR
comp=N,2µm,16.0s
LVV MLR MLR
comp=E,3µm,16.0s
LVV MLR MLR
comp=Z,3µm,15.0s
MZRK Al-Mazaregh 77.76 306 *i* P **P 20 27 52.0 +1.6**
BOYT Boyabat 77.77 313 *i* P **P 20 27 52.1 +1.6**
OUZ Omahuta 77.82 155 *e*P **P 20 27 52.2 +1.9**
BC3 Big Chuckawall 77.84 57 P **P 20 27 51.2 +0.2**
baz=307,SNR=14
D28A Regan 77.85 39 P **P 20 27 50.9 +0.2**
baz=313,SNR=19
E27A Carson 77.87 40 P **P 20 27 50.9 0.0**
baz=313,SNR=9.2
MDND Maddock 77.87 38 P **P 20 27 51.1 +0.3**
baz=314,SNR=6.0
MDND Maddock 77.87 38 *e*P **P 20 27 51.1 +0.3**
comp=Z,457nm,1.3s
IAS Iasi 77.90 321⇑*i*P **P 20 27 52.3 +1.4**
ULM Lac du Bonnet 77.92 34 P **P 20 27 50.7 -0.3**
comp=Z,80nm,0.9s,baz=312,slow=6.4,SNR=61
URFA Urfa 77.92 308 *e*P **P 20 27 53.5 +2.1**
BZK Bozkurt 77.94 314 *e*P **P 20 27 52.6 +1.4**
AKCD Akcadag 77.95 309 *i* P **P 20 27 52.8 +1.2**
COP Copenhagen 77.99 334⇓*i*P **P 20 27 52.1 +0.8**
comp=Z,80nm,1.0s
COP Copenhagen 77.99 334⇓*i*P **P 20 27 52.1 +0.8**
COP pmax pmax
comp=Z,80nm,1.0s
IKP In-Ko-Pah, Jac 78.01 58 P **P 20 27 52.6 +0.6**
baz=307,SNR=7.8
H25A Fruitdale 78.02 42 P **P 20 27 51.9 +0.1**
baz=312,SNR=26
CUALT Altinyayla-SIV 78.04 311 *i* P **P 20 27 54.0 +1.9**
SWSC Sam W. Stewart 78.04 58 P **P 20 27 52.4 +0.4**
baz=307
DARE Darende-Malaty 78.05 310 *e*P **P 20 27 54.5 +2.4**
LEOM Leova 78.05 320⇑*i*P **P 20 27 53.0 +1.3**
B30A Myrvik Farm, E 78.07 37 P **P 20 27 51.9 +0.1**
baz=314,SNR=60
CUGUR Gurin_S^VAS 78.08 310 *i* P **P 20 27 54.5 +2.2**
G26A Maurine 78.10 41 P **P 20 27 52.3 +0.1**
baz=312,SNR=66
RSSD Black Hills 78.12 43 P **P 20 27 52.9 +0.4**
baz=312
RSSD Black Hills 78.12 43 *e*P **P 20 27 52.2 -0.4**
RSSD pmax pmax
comp=Z,67nm,0.9s
RSSD Black Hills 78.12 43 *e*P **P 20 27 52.2 -0.4**
comp=Z,67nm,0.9s
E28A Huff 78.21 39 P **P 20 27 52.8 +0.1**
baz=313
ATAB Bozova 78.23 308 *i* P **P 20 27 54.9 +1.8**
CUSAR Sarkisla-SIVAS 78.26 311 *i* P **P 20 27 54.5 +1.2**
A31A Linda, St. Vin 78.26 36 P **P 20 27 52.4 -0.5**
baz=315
PDMCI Parker Dam,Lak 78.31 56 P **P 20 27 53.8 +0.3**
baz=308,SNR=13
O20A White River Ci 78.34 48 P **P 20 27 53.9 +0.1**
baz=310,SNR=24
O20A White River Ci 78.34 48 *e*P **P 20 27 54.2 +0.4**
comp=Z,186nm,1.3s
I25A Rochford 78.35 43 P **P 20 27 53.8 0.0**
baz=312,SNR=44
Y12C Blythe 78.40 56 P **P 20 27 54.7 +0.7**
baz=308,SNR=8.3
SURC SANLIURFA_SURC 78.40 308 *i* P **P 20 27 53.0 -1.0**
B31A Greenbush Farm 78.41 37 P **P 20 27 53.9 +0.2**
baz=315
D29A Pettibone, Tap 78.42 39 P **P 20 27 54.0 +0.1**
baz=314
PRAR RASCA 78.44 322⇑*i*P **P 20 27 55.2 +1.3**
MUD Monsted U'grnd 78.46 336⇓*i*P **P 20 27 54.7 +0.9**
comp=Z,64nm,1.1s
MUD Monsted U'grnd 78.46 336⇓*i*P **P 20 27 54.7 +0.9**
MUD pmax pmax
comp=Z,64nm,1.1s
H26A Fairpoint 78.46 42 P **P 20 27 54.5 +0.3**
baz=312,SNR=14
COAL Corum-Alaca 78.47 312 *i* P **P 20 27 55.7 +1.3**
KWP Kalwaria Pacla 78.48 325 *e*P **P 20 27 55.5 +1.3**
KWP *e*pP **pP 20 28 00.9 -1.8**
KWP *e*PcP **sP 20 28 08.2 +2.4**
KWP *e*PP **PP 20 30 51.7 +0.6**
KWP *e*S **S 20 37 51.5 +3.0**
KWP LMZ LR 21 06 37.6
comp=Z,5µm,16.0s
KWP Kalwaria Pacla 78.48 325⇓*i*P **P 20 27 55.5 +1.3**
KWP Kalwaria Pacla 78.48 325 *e*P **P 20 27 55.5 +1.3**
KWP *e**PP **pP 20 28 00.9 -1.8**
KWP *e* 20 28 08.2
KWP *e* 20 30 51.7
KWP *e*S **S 20 37 51.5 +3.0**
KWP MLR MLR
comp=Z,5µm,16.0s
C30A Mose, Pekin 78.52 37 P **P 20 27 54.0 -0.4**
baz=314,SNR=30
TOS Tosya 78.53 313 *e*P **P 20 27 56.6 +1.9**
RGN Rugen 78.58 333 *e*P **P 20 27 55.4 +0.9**
comp=Z,364nm,1.4s
A32A Rocking H Ranc 78.60 36 P **P 20 27 54.2 -0.6**
baz=316,SNR=35
GLA Glamis 78.63 57 P **P 20 27 55.9 +0.7**
baz=308,SNR=5.6
TLCR 78.63 319⇑*i*P **P 20 27 55.6 +0.6**
ILGA Ilgaz 78.69 313 *i* P **P 20 27 56.9 +1.2**
CORM Corum 78.73 312 *e*P **P 20 27 57.7 +1.9**
J25A Sunshine Ranch 78.73 43 P **P 20 27 55.2 -0.6**
baz=312,SNR=13
E29A Napoleon 78.74 39 P **P 20 27 54.9 -0.7**
baz=314
BURAR Bucovina Array 78.75 323⇓*i*P **P 20 27 56.8 +1.0**
GZT Gaziantep 78.76 309 *i* P **P 20 27 57.2 +1.1**
D30A Buchanan 78.80 38 P **P 20 27 55.6 -0.3**
baz=314,SNR=32
C31A Landman Farms, 78.81 37 P **P 20 27 55.6 -0.4**
baz=315,SNR=17
H27A Howes 78.82 42 P **P 20 27 56.4 +0.2**
baz=313,SNR=26
TESR Tescani 78.82 321⇓*i*P **P 20 27 56.8 +0.7**
B32A Ashes, Strandq 78.95 36 P **P 20 27 56.3 -0.4**
baz=316,SNR=28
CFR Carcaliu 78.99 319⇓*i*P **P 20 27 57.7 +0.8**
PV04 Paradox Valley 79.06 50 *e*P **P 20 27 58.4 +0.6**
PETR Petresti 79.08 320⇓*i*P **P 20 27 59.6 +2.2**
A33A Warroad 79.09 35 P **P 20 27 57.1 -0.4**
baz=316,SNR=91
GAZ Gaziantep 79.09 309 *e*P **P 20 27 59.8 +2.0**
ODBI Odobesti 79.14 320⇓*i*P **P 20 28 00.7 +2.9**
BTIN Bart¯–n 79.15 315 *i* P **P 20 27 58.2 +0.3**
E30A Jud 79.15 39 P **P 20 27 57.9 0.0**
baz=314,SNR=17
F29A Eureka 79.16 40 P **P 20 27 57.8 -0.1**
baz=314,SNR=12
HCB Kahramanmara¯ 79.17 309 *i* P **P 20 27 59.3 +1.2**
J26A Sides Ranch, S 79.18 43 P **P 20 27 58.1 -0.1**
baz=312,SNR=20
KOLS Kolonicke sedl 79.19 325 *e*P **P 20 27 59.1 +1.1**
KOLS pmax pmax
comp=Z,56nm,1.1s
KOLS Kolonicke sedl 79.19 325 *e*P **P 20 27 59.1 +1.1**
KOLS *e*PP **PP 20 30 57.5 +0.5**
KOLS *e*L L 21 07 04.2
N23A Red Feather La 79.19 46 P **P 20 27 59.5 +0.9**
baz=311,SNR=45
PHWY Pilot Hill 79.20 46 *e*P **P 20 27 59.1 +0.5**
comp=Z,107nm,1.4s
ELDT Eldivan 79.23 313 *i* P **P 20 27 58.7 +0.1**
VRI Vrincioaia 79.23 321⇓*i*P **P 20 27 59.5 +1.2**
CDAG Cicekdag 79.24 312 *i* P **P 20 27 59.2 +0.6**
RAR Rarotonga 79.25 127 LR LR 21 03 58.2
comp=Z,594nm,18.2s,baz=290,slow=36
PLOR Plostina 79.28 321⇓*i*P **P 20 27 59.7 +1.1**
STHS Stebnicka Huta 79.30 326 *e*P **P 20 28 00.2 +1.6**
STHS pmax pmax
comp=Z,64nm,0.9s
STHS Stebnicka Huta 79.30 326 *e*P **P 20 28 00.2 +1.6**
TIRR Tirgusor 79.34 319⇑*i*P **P 20 27 59.5 +0.6**
TIRR Tirgusor 79.34 319 *e*P **P 20 27 59.2 +0.3**
TIRR pmax pmax
comp=Z,92nm,1.4s
TIRR Tirgusor 79.34 319 *e*P **P 20 27 59.2 +0.3**
comp=Z,92nm,1.4s
OJC Ojcow 79.34 327 *e*P **P 20 28 00.0 +1.2**
OJC *e*pP **PcP 20 28 05.3 -1.7**
OJC *e*PcP **sP 20 28 12.3 +1.8**
OJC *e*S **S 20 37 58.3 +0.8**
OJC LMZ LR 21 03 53.1
comp=Z,2µm,23.2s
OJC Ojcow 79.34 327 *e*P **P 20 28 00.0 +1.2**
OJC *e**PP **PcP 20 28 05.3 -1.7**
OJC *e* 20 28 12.3
OJC *e*S **S 20 37 58.3 +0.8**
OJC MLR MLR
comp=Z,2µm,23.2s
D31A Mcclaflin, Tow 79.34 38 P **P 20 27 58.7 -0.2**
baz=315,SNR=18
WUAZ Wupatki 79.35 53 P **P 20 28 00.3 +0.9**
baz=309,SNR=19
WUAZ Wupatki 79.35 53 *e*P **P 20 28 00.4 +1.0**
comp=Z,133nm,1.2s
WUAZ LR LR
comp=Z,908nm,19.0s
C32A Crookston 79.36 36 P **P 20 27 58.5 -0.5**
baz=316,SNR=9.7
ANDN Andirin 79.37 309 *i* P **P 20 28 00.5 +1.1**
UZH Uzhgorod 79.40 325 *e*P **P 20 28 00.0 +0.9**
UZH *e* 20 28 08.2
UZH *e* 20 28 17.6
UZH *e* 20 31 08.1
UZH *e*S **S 20 38 04.9 +6.7**
UZH MLR MLR
comp=N,1µm,16.0s
UZH MLR MLR
comp=E,1µm,16.0s
KAMA Osmaniye 79.42 309 *i* P **P 20 28 00.8 +1.2**
HARR Harsova 79.43 319⇑*i*P **P 20 28 01.0 +1.6**
PV01 Paradox Valley 79.43 50 *e*P **P 20 28 00.6 +0.8**
KUZU Kuzuini 79.43 308 *i* P **P 20 28 00.8 +1.2**
GRER 79.44 320⇑*i*P **P 20 28 02.4 +2.9**
B33A Robert and Kas 79.48 36 P **P 20 27 58.9 -0.7**
baz=316,SNR=13
AVNS Nevsehir-Avano 79.48 311 *i* P **P 20 28 00.6 +0.7**
BMR Baia Mare 79.53 323⇑*i*P **P 20 28 01.8 +1.9**
ARCR ARCALIA 79.54 323⇓*i*P **P 20 28 01.9 +1.9**
G29A Hoven 79.55 40 P **P 20 27 59.9 -0.2**
baz=314
F30A Leola 79.56 39 P **P 20 27 59.7 -0.4**
baz=314,SNR=5.8
CRVS Cervenica-Dubn 79.58 325 *e*P **P 20 28 01.3 +1.1**
CRVS Cervenica-Dubn 79.58 325 *e*P **P 20 28 01.3 +1.1**
BRTR Keskin Array B 79.60 313 P **P 20 28 01.4 +0.8**
comp=E,53nm,1.1s,baz=90,slow=3.7,SNR=146
BRTR PP **PP 20 31 05.5 +4.5**
comp=E,12nm,1.1s,baz=68,slow=6.7,SNR=4.4
BRTR PKKPbc **PKKPbc 20 46 47.0 -0.2**
comp=E,0.9nm,0.8s,baz=194,slow=4.7,SNR=5.0
BRTR LR LR 21 08 31.3
comp=E,681nm,18.6s,baz=18,slow=40
E31A Nome 79.61 38 P **P 20 28 00.1 -0.3**
baz=315,SNR=16
D32A Dogwood Acres, 79.62 37 P **P 20 28 00.0 -0.4**
baz=316,SNR=8.0
TRPA Tarpa 79.65 324⇓*e*P **P 20 28 01.9 +1.4**
SMCO Snowmass 79.71 48 *e*P **P 20 28 01.9 +0.3**
comp=E,139nm,1.4s
NIE Niedzica 79.71 326 *e*P **P 20 28 02.2 +1.4**
NIE *e*PcP **sP 20 28 14.8 +2.1**
NIE *e*PP **PP 20 31 04.8 +3.4**
NIE LMZ LR 21 00 53.2
comp=E,700nm,23.9s
NIE Niedzica 79.71 326 *e*P **P 20 28 02.3 +1.4**
NIE *e* 20 28 14.8
NIE *e* 20 31 04.8
NIE MLR MLR
comp=Z,700nm,23.9s
I28A Midland 79.73 42 P **P 20 28 01.2 +0.1**
baz=313,SNR=61
B34A Aery, Baudette 79.75 35 P **P 20 28 00.3 -0.8**
baz=317,SNR=35
C33A Trail 79.76 36 P **P 20 28 00.5 -0.7**
baz=316,SNR=11
PGOR Pogoanele 79.77 320⇑*i*P **P 20 28 03.3 +2.1**
DRWC Darouich 79.78 309 *i* P **P 20 28 03.1 +1.5**
AMRR Amara 79.79 319⇑*i*P **P 20 28 03.3 +2.0**
KAMT Kaman 79.79 312 *e*P **P 20 28 03.1 +1.4**
BCAM Yenicaga 79.79 314 *i* P **P 20 28 02.3 +0.7**
J27A Elkhorn Farm, 79.80 43 P **P 20 28 02.1 +0.6**
baz=313,SNR=14
H29A Onida 79.80 41 P **P 20 28 01.5 0.0**
baz=314,SNR=20
DGAR Diego Garcia 79.84 252 PFAKE 20 28 10.0 +8.0
DGAR LR LR
comp=Z,848nm,19.0s
ISR Istrita 79.84 320⇑*i*P **P 20 28 03.4 +1.7**
MLR Muntele Rosu 79.89 321 P **P 20 28 02.9 +0.8**
comp=Z,18nm,1.2s,baz=4.9,slow=4.5,SNR=43
MLR Muntele Rosu 79.89 321⇓*i*P **P 20 28 02.9 +0.8**
F31A Hecla 79.92 39 P **P 20 28 01.9 -0.2**
baz=315,SNR=18
E32A Braaten, Kindr 79.98 38 P **P 20 28 02.2 -0.2**
baz=316
PSN Preselentsi 79.99 318 *i* P **P 20 28 03.7 +1.3**
G30A Faulkton 79.99 40 P **P 20 28 02.0 -0.5**
baz=314,SNR=16
MVCO Mesa Verde 80.06 50 P **P 20 28 03.8 +0.4**
baz=310,SNR=29
MVCO Mesa Verde 80.06 50 *e*P **P 20 28 03.7 +0.4**
comp=Z,135nm,1.2s
MVCO LR LR
comp=Z,1µm,19.0s
NIG Nigde 80.08 311 *e*P **P 20 28 05.1 +1.7**
ISCO Idaho Springs 80.10 47 P **P 20 28 04.3 +0.7**
baz=311,SNR=28
ISCO Idaho Springs 80.10 47 *e*P **P 20 28 04.2 +0.7**
ISCO pmax pmax
comp=Z,122nm,1.5s
ISCO MLR MLR
comp=Z,1µm,21.0s
ISCO Idaho Springs 80.10 47 *e*P **P 20 28 04.2 +0.6**
comp=Z,122nm,1.5s
ISCO LR LR
comp=Z,1µm,21.0s
CEYT Ceyhan 80.10 309 *e*P **P 20 28 05.2 +2.1**
RAC Raciborz 80.12 328 *e*P **P 20 28 03.6 +0.5**
RAC MLR MLR
comp=Z,4µm,15.7s
I29A Vivian Onida 80.17 41 P **P 20 28 03.4 -0.1**
baz=314,SNR=35
CJR Cluj-Napoca 80.17 323⇓*i*P **P 20 28 05.1 +1.6**
D33A AnnSam, Waubun 80.18 37 P **P 20 28 03.0 -0.5**
baz=316,SNR=5.3
AKSY AKSARAY - Alti 80.23 312 *i* P **P 20 28 05.0 +1.0**
C34A RKJ Ranch, Bem 80.24 36 P **P 20 28 03.1 -0.7**
baz=317
B35A Bob, Littlefor 80.26 35 P **P 20 28 03.4 -0.4**
baz=318,SNR=24
LANS Liptovska Anna 80.28 327 *e*P **P 20 28 05.9 +1.9**
LANS *e* 20 31 06.9
LANS Liptovska Anna 80.28 327 *e*P **P 20 28 05.8 +1.8**
LANS *e*PP **PP 20 31 06.9 +0.8**
BIGH Upper Bighouse 80.29 343 *e*P **P 20 28 04.6 +0.9**
SULR 80.30 320⇑*i*P **P 20 28 05.0 +0.9**
KECS Kecovo 80.32 326 *e*P **P 20 28 04.7 +0.5**
KECS pmax pmax
comp=Z,19nm,1.0s
KECS Kecovo 80.32 326 *e*P **P 20 28 04.7 +0.5**
OKC Ostrava-Krasne 80.33 328⇓*e*P **P 20 28 05.3 +1.1**
OKC *e*x x 20 28 15.8
OKC *e*x x 20 28 18.2
OKC AMS AMS 21 11 20.0
comp=Z,2µm,15.9s
OKC Ostrava-Krasne 80.33 328 *e*P **P 20 28 05.3 +1.1**
OKC *e* 20 28 15.8
OKC *e* 20 28 18.2
OKC MLR MLR
comp=Z,2µm,15.9s
KSP Ksiaz 80.33 329 *e*P **P 20 28 05.3 +1.1**
KSP *e*pP **PcP 20 28 10.6 -0.7**
KSP *e*PcP **sP 20 28 17.6 +1.7**
KSP *e*S **S 20 38 11.1 +3.1**
KSP LMZ LR 21 05 44.0
comp=Z,2µm,21.5s
KSP Ksiaz 80.33 329 *e*P **P 20 28 05.3 +1.1**
KSP *e**PP **PcP 20 28 10.6 -0.7**
KSP *e* 20 28 17.6
KSP *e*S **S 20 38 11.1 +3.1**
KSP MLR MLR
comp=Z,2µm,21.5s
MLA1 Latheron 80.33 343⇓*e*P **P 20 28 04.5 +0.5**
KARA Karaisali 80.36 310 *e*P **P 20 28 06.2 +1.6**
VOIR 80.37 321⇑*i*P **P 20 28 06.0 +1.4**
KKUL Konya-Kulu 80.39 312 *i* P **P 20 28 06.2 +1.3**
G31A Conde 80.39 39 P **P 20 28 04.4 -0.3**
baz=315,SNR=11
TAU Tasmania Unive 80.40 177 PFAKE 20 28 10.0 +5.7
TAU LR LR
comp=Z,516nm,21.0s
SAHE Sakarya_HENDEK 80.45 315 *i* P **P 20 28 03.3 -1.8**
F32A Veblen 80.47 38 P **P 20 28 04.7 -0.3**
baz=316,SNR=5.9
YAYL Yayladag 80.50 308 *i* P **P 20 28 05.8 +0.3**
D34A Park Rapids 80.52 36 P **P 20 28 04.7 -0.6**
baz=317,SNR=35
DRGR 80.53 323⇓*i*P **P 20 28 06.4 +0.9**
E33A Westby DABS, E 80.56 37 P **P 20 28 05.5 -0.1**
baz=316,SNR=27
BTAS Taskesti 80.56 315 *i* P **P 20 28 06.1 +0.4**
SUSD Miller 80.57 40 P **P 20 28 05.3 -0.3**
baz=315,SNR=7.9
KFRA Kufra 80.59 307 *i* P **P 20 28 06.4 +0.5**
ARR Arges 80.63 321⇑*i*P **P 20 28 07.9 +1.9**
MORC Moravsky Berou 80.63 328⇓*i*P **P 20 28 06.9 +1.0**
C35A Jirik Farms, M 80.64 35 P **P 20 28 05.0 -0.9**
baz=317,SNR=27
W18A Petrified Fore 80.64 53 P **P 20 28 07.2 +0.8**
baz=310
214A Organ Pipe Nat 80.64 57 P **P 20 28 06.8 +0.5**
baz=309,SNR=9.3
214A Organ Pipe Nat 80.64 57 *e*P **P 20 28 05.6 -0.6**
comp=Z,216nm,1.3s
WRDH Warideh 80.65 308 *i* P **P 20 28 08.2 +2.0**
KAND Kocaeli-Kandir 80.66 315 *i* P **P 20 28 06.3 +0.2**
ARNB Al Arnab 80.70 308 *i* P **P 20 28 08.9 +2.3**
I30A Oacoma 80.70 41 P **P 20 28 06.1 -0.2**
baz=314,SNR=22
DPC Dobruska-Polom 80.70 329⇓*e*P **P 20 28 07.7 +1.5**
DPC *e*x x 20 28 16.7
DPC *e*x x 20 28 20.8
DPC *e*PP **PP 20 31 08.1 -1.4**
DPC AMS AMS 21 14 00.0
comp=Z,2µm,15.1s
DPC Dobruska-Polom 80.70 329⇓*e*P **P 20 28 07.7 +1.5**
DPC *e* 20 28 16.7
DPC *e* 20 28 20.8
DPC *e* 20 31 08.1
DPC MLR MLR
comp=Z,2µm,15.1s
RSC Scourie 80.70 344⇓*e*P **P 20 28 06.8 +0.8**
UPC Upice 80.70 329⇓*e*P **P 20 28 07.5 +1.3**
UPC *e*x x 20 28 15.9
UPC *e*PP **PP 20 31 13.3 +3.8**
UPC AMS AMS 21 08 40.0
comp=Z,3µm,15.3s
UPC Upice 80.70 329 *e*P **P 20 28 07.5 +1.3**
UPC *e* 20 28 15.9
UPC *e* 20 31 13.3
UPC MLR MLR
comp=Z,3µm,15.3s
SLNF Slenfeh 80.71 308 *i* P **P 20 28 08.0 +1.3**
KRLC Kraliky 80.72 328⇓*e*P **P 20 28 07.5 +1.1**
KRLC *e*x x 20 28 18.0
KRLC *e*x x 20 28 20.7
KRLC *e*PP **PP 20 31 14.0 +4.3**
KRLC Kraliky 80.72 328 *e*P **P 20 28 07.5 +1.1**
KRLC *e* 20 28 18.0
KRLC *e* 20 28 20.7
KRLC *e* 20 31 14.0
G32A Webster 80.73 39 P **P 20 28 06.3 -0.1**
baz=315,SNR=8.5
S22A 4UR Ranch, Cre 80.73 49 P **P 20 28 08.1 +1.1**
baz=311,SNR=60
PRD Provadia 80.73 318 *i* P **P 20 28 07.6 +1.2**
AUMIH MIHALICIK 80.75 314 *i* P **P 20 28 07.5 +0.7**
H31A Wolsey 80.78 40 P **P 20 28 06.3 -0.5**
baz=315,SNR=5.3
YESY Yesilyurt 80.81 311 *e*P **P 20 28 08.8 +1.6**
KERG Konya-Eregli 80.82 310 *i* P **P 20 28 06.2 -1.1**
RABH Abou Rabah 80.83 307 *i* P **P 20 28 08.5 +1.3**
MVH1 Achvaich 80.86 343⇓*e*P **P 20 28 07.5 +0.7**
F33A 5 Mile Ranch, 80.90 38 P **P 20 28 07.1 -0.2**
baz=316,SNR=51
MERS Mersin 80.94 310 *e*P **P 20 28 08.9 +1.2**
ROOS tl_alroos 80.95 306 *i* P **P 20 28 09.1 +1.2**
E34A Wadena 80.95 37 P **P 20 28 07.0 -0.6**
baz=317,SNR=9.2
MCD Coleburn Disti 80.96 343⇓*e*P **P 20 28 07.8 +0.4**
LOT Lotru 80.99 322⇓*i*P **P 20 28 09.1 +1.1**
PSZ Piszkesteto 81.01 325⇓*i*P **P 20 28 09.1 +1.1**
PSZ Piszkesteto 81.01 325⇓*e*P **P 20 28 09.4 +1.4**
PSZ Piszkesteto 81.01 325 *e*P **P 20 28 09.0 +1.1**
PSZ pmax pmax
comp=Z,136nm,1.0s
PSZ MLR MLR
comp=Z,3µm,22.0s
PSZ Piszkesteto 81.01 325 *e*P **P 20 28 09.0 +1.0**
comp=Z,136nm,1.0s
PSZ LR LR
comp=Z,3µm,22.0s
BIDA Albida 81.02 307 *i* P **P 20 28 09.4 +1.1**
VYHS Vyhne 81.05 326 *e*P **P 20 28 09.4 +1.3**
VYHS *e* 20 28 19.9
VYHS *e* 20 31 09.3
VYHS *e*S **S 20 38 20.3 +4.7**
VYHS pmax pmax
comp=Z,74nm,1.4s
VYHS Vyhne 81.05 326 *e*P **P 20 28 09.3 +1.2**
VYHS *e* 20 28 19.9
VYHS *e*PP **PP 20 31 09.3 -3.1**
VYHS *e*S **S 20 38 20.3 +4.7**
VYHS *e*L L 21 09 22.7
HUMR Humele 81.05 321⇑*i*P **P 20 28 08.5 +0.4**
D35A Remer 81.06 36 P **P 20 28 07.2 -1.0**
baz=317,SNR=16
I31A Royce, Wessing 81.07 40 P **P 20 28 08.1 -0.2**
baz=315
J30A Dallas 81.07 41 P **P 20 28 08.3 -0.1**
baz=314
DEV Deva 81.10 323⇑*i*P **P 20 28 09.9 +1.5**
C36A Pine Crest Far 81.11 35 P **P 20 28 07.7 -0.7**
baz=318,SNR=30
NRS Narsarsuaq 81.12 4⇓*i*P **P 20 28 08.0 -0.2**
comp=Z,54nm,1.1s
NRS Narsarsuaq 81.12 4⇓*e*P **P 20 28 08.0 -0.2**
NRS pmax pmax
comp=Z,54nm,1.1s
MME1 Meikle Cairn 81.13 342⇓*e*P **P 20 28 08.7 +0.4**
BRG Berggiesshubel 81.24 330⇓*i*P **P 20 28 09.9 +0.8**
comp=Z,99nm,1.2s
BRG *i* PP PP 20 31 04.3 -10
comp=Z,29nm,1.4s
BRG S S 20 37 49.0 -29
BRG SS **SS 20 43 33.0 +1.1**
comp=N,2µm,14.2s
comp=E,2µm,14.6s
comp=Z,4µm,15.3s
BRG Berggiesshubel 81.24 330⇓*i*P **P 20 28 09.9 +0.8**
comp=Z,99nm,1.2s

BRG PP PP 20 31 04.3 -10
comp=Z,29nm,1.4s
BRG S S 20 37 49.0 -29
BRG SS **SS** **20 43 33.0 +1.1**
BRG *e* 20 46 29.6
comp=Z,3.2nm,1.1s
BRG *e*PKPPKP P'P'df 20 54 44.2 -10
comp=Z,13nm,1.8s
comp=N,2μm,14.2s
comp=E2μm,14.6s
comp=Z,4μm,15.3s
BRG Berggiesshubel 81.24 330⇓*i*P P 20 28 09.9 +0.8
BRG SS SS 20 43 33.0 +1.1
BRG pmax pmax
comp=Z,99nm,1.2s
BRG MLR MLR
comp=N,2μm,14.2s
BRG MLR MLR
comp=E,2μm,14.6s
BRG MLR MLR
comp=Z,4μm,15.3s
CLL Collm 81.26 331⇓*i*P P 20 28 09.7 +0.6
comp=Z,143nm,1.0s
CLL *i* 20 28 21.6
CLL *e*PP **PP** **20 31 13.0 -1.1**
CLL *e*S **S** **20 38 16.0 -1.7**
comp=N,800nm,12.0s
CLL *e*S **S** **20 38 16.0 -1.7**
comp=E,900nm,17.2s
CLL LmH 21 01 00.0
comp=N,2μm,19.6s
CLL LmH 21 01 00.0
comp=E,3μm,21.0s
CLL L L 21 09 00.0
comp=Z,2μm,19.3s
CLL Collm 81.26 331⇓*i*P P 20 28 09.7 +0.6
CLL *i* 20 28 21.6
CLL *e*S **S** **20 38 16.0 -1.7**
CLL pmax pmax
comp=Z,143nm,1.0s
CLL MLR MLR
comp=Z,2μm,19.3s
PVCC Panska Ves 81.27 330⇓*e*P P 20 28 10.5 +1.3
PVCC *e*PP **PP** **20 31 13.1 -1.0**
PVCC AMS AMS 21 09 30.0
comp=Z,3μm,15.0s
PVCC Panska Ves 81.27 330 *e*P P 20 28 10.5 +1.3
PVCC *e* 20 31 13.1
PVCC MLR MLR
comp=Z,3μm,15.0s
E35A Pequot Lakes 81.28 36 P P 20 28 08.7 -0.6
baz=317,SNR=7.2
HAWK Haweek 81.28 307 *i*P P 20 28 10.7 +1.0
KDHN Kadinhani 81.28 312 *i*P P 20 28 10.5 +0.8
RRR Rubha Reidh 81.29 344⇓*e*P P 20 28 09.9 +0.8
G33A Ortonville 81.29 38 P P 20 28 09.4 0.0
baz=316,SNR=24
H32A Carlson Farm, 81.29 39 P P 20 28 08.9 -0.6
baz=316,SNR=6.2
ISK Istanbul-Kandi 81.31 316 P P 20 28 10.1 +0.5
BORA Eskisehir 81.33 314 *i*P P 20 28 10.2 +0.4
MDO Dochfour 81.34 343⇓*e*P P 20 28 10.0 +0.5
ESKT Eskisehir 81.35 314 *i*P P 20 28 10.2 +0.2
OGNE Ogallala 81.35 44 P P 20 28 10.0 +0.1
baz=313,SNR=7.7
OGNE Ogallala 81.35 44 *e*P P 20 28 10.2 +0.2
comp=Z,319nm,1.2s
OGNE LR LR
comp=Z,1μm,20.0s
VRAC Vranov 81.39 328⇓*i*P P 20 28 11.1 +1.2
D36A Goodland 81.39 35 P P 20 28 09.1 -0.9
baz=318,SNR=16
SIRR Siria 81.41 323⇓*i*P P 20 28 11.4 +1.3
KIZK Mersin 81.42 310 *i*P P 20 28 11.2 +0.9
BUY Buyukada 81.42 316 *i*P P 20 28 10.8 +0.6
RRH Rhenigidale 81.42 344⇓*e*P P 20 28 10.4 +0.6
C37A Embarrass 81.42 34 P P 20 28 09.4 -0.7
baz=319,SNR=28
F34A Alexandria 81.43 37 P P 20 28 09.8 -0.4
baz=317,SNR=18
SZH Strazhica 81.45 319 *i*P P 20 28 11.0 +0.7
K30A Basset 81.47 42 P P 20 28 10.6 +0.1
baz=314,SNR=18
ZIMR 81.47 320⇑*i*P P 20 28 11.5 +1.1
J31A Geddes 81.49 41 P P 20 28 10.2 -0.3
baz=315
KAC Achnashellach 81.50 344 *e*P P 20 28 11.2 +0.9
H33A Prehn Over Nor 81.51 39 P P 20 28 10.4 -0.3
baz=316,SNR=24
SDCO Great Sand Dun 81.52 48 P P 20 28 11.8 +0.6
baz=312,SNR=14
SDCO Great Sand Dun 81.52 48 *e*P P 20 28 11.9 +0.8
comp=Z,85nm,1.3s
SDCO LR LR
comp=Z,963nm,21.0s
AUKUT KUTAHYA 81.53 315 *i*P P 20 28 14.1 +3.2
AUBOZ BOZOYUK 81.55 315 *i*P P 20 28 11.6 +0.6
EYMN Ely 81.57 34 P P 20 28 10.3 -0.5
baz=319,SNR=23
EYMN Ely 81.57 34 *e*P P 20 28 10.0 -0.8
comp=Z,202nm,1.3s
EYMN LR LR
comp=Z,865nm,20.0s
I32A Karley and Nic 81.62 40 P P 20 28 10.6 -0.6
baz=316
KMER Konya-Meram 81.64 312 *i*P P 20 28 11.9 +0.4
SMOL Smolenice 81.64 327 *e*P P 20 28 12.9 +1.7
SMOL Smolenice 81.64 327 *e*P P 20 28 12.9 +1.7
G34A Benson 81.65 38 P P 20 28 11.2 -0.1
baz=317,SNR=17
GOPC GO Pecny, Ondr 81.66 329⇓*e*P P 20 28 12.5 +1.2
GOPC *ex* x 20 28 25.3
GOPC *e*PP **PP** **20 31 17.7 +0.3**
GOPC AMS AMS 21 10 10.0
comp=Z,3μm,17.9s
GOPC GO Pecny, Ondr 81.66 329 *e*P P 20 28 12.5 +1.2
GOPC *e* 20 28 25.3
GOPC *e* 20 31 17.7
GOPC MLR MLR
comp=Z,3μm,17.9s
JMB Yambol 81.67 318 *i*P P 20 28 12.6 +1.1
PRU Pruhonice 81.70 330⇓*e*P P 20 28 12.5 +1.0
PRU *e*pP **PcP** **20 28 18.5 +1.2**
PRU *ex* x 20 28 22.8
PRU *e*PP **PP** **20 31 18.1 +0.4**
PRU AMS AMS 21 08 50.0
comp=Z,2μm,16.4s
PRU Pruhonice 81.70 330 *e*P P 20 28 12.5 +1.0
PRU *e* 20 28 22.8
PRU *e* 20 31 18.1
PRU MLR MLR
comp=Z,2μm,16.4s
F35A Swanville 81.71 37 P P 20 28 11.2 -0.4
baz=317,SNR=16
ZALF Zalf 81.71 305 *i*P P 20 28 11.9 -0.1
BUD Budapest 81.72 326⇓*e*P P 20 28 12.8 +1.2
KPL Plockton 81.73 344⇓*e*P P 20 28 12.6 +1.2
KPL AMB AMB 20 28 13.9
comp=Z,231nm,1.0s
KPL Plockton 81.73 344 *e*P P 20 28 12.7 +1.2
D37A Cotton 81.74 35 P P 20 28 10.9 -0.9
baz=318,SNR=10
TUC Tucson 81.75 55 P P 20 28 13.1 +0.9
baz=310
TUC Tucson 81.75 55 *e*P P 20 28 12.1 -0.1
TUC pmax pmax
comp=Z,45nm,1.4s
TUC MLR MLR
comp=Z,1μm,19.0s
TUC Tucson 81.75 55 *e*P P 20 28 12.1 -0.1
comp=Z,45nm,1.4s
TUC LR LR
comp=Z,1μm,19.0s
URZ Urewera 81.76 154 P P 20 28 09.5 -2.1
comp=Z,31nm,0.9s,baz=7.3,slow=4.9,SNR=4.3
URZ LR LR 21 01 54.3
comp=Z,578nm,18.3s,baz=340,slow=34
IGD Bursa 81.78 315 *i*P P 20 28 10.5 -1.6
KSB Sheil Bridge 81.80 344⇓*e*P P 20 28 12.8 +1.0
BOLV Bolvadin 81.83 313 *i*P P 20 28 13.6 +1.0
EDU Dundee 81.83 342⇓*e*P P 20 28 12.7 +0.6
C38A Sawbill Land. 81.84 34 P P 20 28 11.5 -0.8
baz=319,SNR=31
E36A McGregor 81.84 36 P P 20 28 11.6 -0.7
baz=318,SNR=32

IKL Isikli 81.86 310 *e*P P 20 28 13.4 +0.9
TREC Trest 81.86 329⇓*e*P P 20 28 13.4 +1.0
TREC *ex* x 20 28 24.7
TREC *ex* x 20 28 26.4
TREC *e*PP **PP** **20 31 17.6 -1.5**
TREC *e*PKKP **PKKPbc** **20 46 42.4 +0.1**
TREC AMS AMS 21 09 30.0
comp=Z,4μm,15.4s
TREC Trest 81.86 329 *e*P P 20 28 13.4 +1.0
TREC *e* 20 28 24.7
TREC *e* 20 28 26.4
TREC *e* 20 31 17.6
TREC MLR MLR
comp=Z,4μm,15.4s
J32A Parkston 81.89 40 P P 20 28 11.9 -0.8
baz=315
BZS Buzias 81.91 323⇓*i*P P 20 28 13.1 +0.4
I33A Coleman 81.94 39 P P 20 28 12.6 -0.3
baz=316,SNR=16
K31A O'Neill 81.95 41 P P 20 28 12.8 -0.2
baz=315,SNR=27
H34A Spellman Lake, 82.00 38 P P 20 28 13.0 -0.1
baz=317,SNR=8.8
EDRB Edirne 82.02 318 P P 20 28 14.8 +1.5
ERMK Ermenek 82.06 311 *i*P P 20 28 13.7 -0.3
CSKK Cs˙‡kako 82.15 326⇑*e*P P 20 28 15.3 +1.4
BHL Bhannes 82.16 307 *e*P P 20 28 15.1 +0.8
E37A Wrenshall 82.20 35 P P 20 28 13.2 -1.0
baz=319
F36A Milaca 82.20 36 P P 20 28 13.3 -0.9
baz=318,SNR=14
G35A Watkins 82.22 37 P P 20 28 14.3 0.0
baz=317,SNR=17
L31A Butterfield Fa 82.22 42 P P 20 28 14.3 -0.1
baz=315,SNR=24
SALA Sala 82.24 305 *i*P P 20 28 15.9 +1.1
ECSD EROS Data Cent 82.26 39 P P 20 28 14.3 -0.3
baz=316,SNR=54
ECSD EROS Data Cent 82.26 39 *e*P P 20 28 14.1 -0.5
comp=Z,119nm,1.0s
ECSD LR LR
comp=Z,1μm,21.0s
C39A Grand Marais 82.26 33 P P 20 28 13.3 -1.2
baz=320,SNR=11
BRBR Barbar 82.29 306 *i*P P 20 28 16.4 +1.3
ESY Stoneypath 82.30 342⇓*e*P P 20 28 15.3 +0.8
RCY Rachaya 82.31 307 *e*P P 20 28 16.2 +1.1
K32A Verdigre 82.33 41 P P 20 28 14.4 -0.6
baz=315,SNR=7.7
NKC Novy Kostel 82.33 331⇓*e*P P 20 28 15.7 +0.9
NKC *ex* x 20 28 29.2
NKC AMS AMS 21 12 00.0
comp=Z,2μm,15.4s
NKC Novy Kostel 82.33 331 *e*P P 20 28 15.7 +0.9
NKC *e* 20 28 29.2
NKC MLR MLR
comp=Z,2μm,15.4s
DQRL Deir Qamar 82.34 307 *e*P P 20 28 16.2 +1.0
KSCO Kaye Shedlock' 82.34 46 P P 20 28 15.1 -0.1
baz=313
KSCO Kaye Shedlock' 82.34 46 *e*P P 20 28 15.4 +0.2
comp=Z,44nm,0.4s
J33A Davis 82.38 40 P P 20 28 14.7 -0.5
baz=316,SNR=5.4
BAGO Egridir - ISPA 82.42 313 *i*P P 20 28 16.0 +0.4
GDZ Gediz 82.42 314 *i*P P 20 28 15.8 +0.1
EDI Edinburgh 82.44 342 *e*P P 20 28 15.7 +0.5
H35A Sunnyside Ranc 82.44 38 P P 20 28 15.6 +0.2
baz=317,SNR=36
PHNC Paralimni 82.46 309 P P 20 28 15.3 -0.4
ASF Jabal al Asfar 82.48 305 P P 20 28 16.5 +0.5
comp=Z,32nm,1.0s,baz=300,slow=0.6,SNR=41
ASF PP **PP** **20 31 26.3 +1.4**
comp=Z,8.8nm,0.9s,baz=49,slow=2.7,SNR=3.8
EAB Aberfoyle 82.48 343⇓*e*P P 20 28 16.3 +0.9
MDVR Moldovita 82.48 322⇓*i*P P 20 28 16.3 +0.6
MPEP Malo Peshtene 82.51 320 *i*P P 20 28 16.5 +0.6
DIM Dimitrovgrad 82.52 318 *i*P P 20 28 17.4 +1.5
G36A St. Michael 82.56 37 P P 20 28 15.9 -0.2
baz=318,SNR=6.9
T25A Trinidad 82.57 48 P P 20 28 17.3 +0.7
baz=312,SNR=59
LFK Lefkose 82.58 309 *e*P P 20 28 17.5 +1.0
DURS Dursunbey 82.64 315 *i*P P 20 28 16.7 0.0
SOP Sopron 82.65 327⇓*e*P P 20 28 18.0 +1.5
ISP Isparta 82.69 313⇓*i*P P 20 28 17.3 +0.3
ISP Isparta 82.69 313 P P 20 28 16.9 -0.1
ISP Isparta 82.69 313 *e*P P 20 28 17.5 +0.5
ISP pmax pmax
comp=Z,33nm,0.8s
ISP MLR MLR
comp=Z,948nm,20.0s
ISP Isparta 82.69 313 *e*P P 20 28 17.5 +0.5
comp=Z,33nm,0.8s
ISP LR LR
comp=Z,948nm,20.0s
GAZI Gazipasa 82.69 311 *i*P P 20 28 14.8 -2.1
KNL Bal˙–kesir 82.70 316 *i*P P 20 28 16.1 -0.8
M31A Lambtecht Ranc 82.74 42 P P 20 28 16.5 -0.7
baz=315
TCHB Talchebab 82.76 306 *i*P P 20 28 18.5 +1.1
CONA Conrad Observa 82.76 328 *i*pP P 20 28 18.7 +1.5
comp=Z,154nm,1.2s,SNR=90
KHC Kasperske Hory 82.76 330⇓*e*P P 20 28 18.1 +0.9
KHC *ex* x 20 28 31.1
KHC *e*PP **PP** **20 31 26.3 -0.2**
KHC *e*PKKP **PKKPbc** **20 46 39.7 -0.5**
KHC *ex* x 20 46 52.4
KHC AMS AMS 21 11 40.0
comp=Z,3μm,15.5s
KHC Kasperske Hory 82.76 330⇓*e*P P 20 28 18.1 +0.9
KHC *e* 20 28 31.1
KHC *e* 20 31 26.3
KHC MLR MLR
comp=Z,3μm,15.5s
KHC Kasperske Hory 82.76 330 *e*P P 20 28 18.0 +0.9
comp=Z,39nm,1.0s
KESN Edirne-Kesan 82.77 317 *i*P P 20 28 17.9 +0.2
L32A Elgin 82.78 41 P P 20 28 16.9 -0.4
baz=316
ANMO Albuquerque 82.79 51 LR LR 21 05 30.6
comp=Z,654nm,18.4s,baz=31,slow=36
ANMO Albuquerque 82.79 51 P P 20 28 18.8 +1.1
baz=312
ANMO Albuquerque 82.79 51 *ce*P P 20 28 18.2 +0.4
ANMO pmax pmax
comp=Z,132nm,1.2s
ANMO Albuquerque 82.79 51 *e*P P 20 28 18.6 +0.8
comp=Z,143nm,1.3s
MAMC Mammari 82.85 309 P P 20 28 17.7 -0.1
PGBU Glenifferbraes 82.85 342 *e*P P 20 28 18.5 +1.2
PGBU AMB AMB 20 28 19.9
comp=Z,169nm,1.5s
KDZ Kurdzhali 82.87 318 *i*P P 20 28 19.2 +1.4
K33A Hardington 82.87 40 P P 20 28 17.6 -0.2
baz=316
PGB Panagyurishte 82.88 320 *i*P P 20 28 18.9 +1.0
MMAI Mount Meron Ar 82.89 306 P P 20 28 19.3 +1.2
comp=Z,104nm,0.9s,baz=40,slow=6.8,SNR=97
KHAL Karahalli 82.91 314 *i*P P 20 28 17.2 -0.9
J34A George 82.91 39 P P 20 28 17.3 -0.7
baz=317
CSS Mathiatis 82.92 309 P P 20 28 18.7 +0.6
CSS Mathiatis 82.92 309 *e*P P 20 28 18.8 +0.6
comp=Z,25nm,0.7s
CSS LR LR
comp=Z,186nm,21.0s
GERES GERESS Array B 82.94 329 P P 20 28 18.7 +0.5
comp=Z,20nm,0.8s,baz=36,slow=5.0,SNR=114
GERES PP **PP** **20 31 25.3 -2.8**
comp=Z,4.9nm,0.8s,baz=55,slow=10.0,SNR=4.8
GERES PKKPbc **PKKPbc** **20 46 39.2 -0.7**
comp=Z,2.6nm,1.0s,baz=326,slow=0.5,SNR=10
GERES PKPPKP **P'P'df** **20 54 46.9 -4.3**
comp=Z,0.5nm,0.9s,baz=187,slow=6.7,SNR=3.7
GERES LR LR 21 08 17.2
comp=Z,2μm,20.3s,baz=20,slow=38
PMOR Pomariorio Ree 82.94 115 *e*T T 21 59 28.3
comp=Z,5.3nm,0.2s
WTSB Winterswijk 82.96 335 *e*P P 20 28 17.7 -0.3
comp=Z,84nm,1.0s
H36A Jessenland, He 82.96 37 P P 20 28 18.2 0.0
baz=318,SNR=18
I35A Creekview Farm 82.98 38 P P 20 28 17.7 -0.6
baz=317,SNR=5.7

ESK Eskdalemuir 82.99 342⇓*e*P P 20 28 18.7 +0.6
ESK Eskdalemuir 82.99 342 *ce*P P 20 28 19.4 +1.3
ESK Eskdalemuir 82.99 342 *e*P P 20 28 18.7 +0.6
comp=Z,122nm,1.4s
ESK LR LR
comp=Z,2μm,21.0s
BALY Balya 83.02 316 *i*P P 20 28 19.4 +0.8
SPMN Marine on St. 83.02 36 P P 20 28 18.2 -0.2
baz=318,SNR=6.7
SPMN Marine on St. 83.02 36 *e*P P 20 28 18.6 +0.1
comp=Z,45nm,0.8s
L33A Hoskins 83.05 41 P P 20 28 18.5 -0.2
baz=316
ALN Alexandroupoli 83.06 317 P P 20 28 19.3 +0.5
Y22D IRIS PASSCAL I 83.08 52 P P 20 28 20.4 +1.2
baz=311
ECK Cauldkaine Hil 83.09 341⇓*e*P P 20 28 19.1 +0.5
N31A Bailey Ranch, 83.12 43 P P 20 28 18.9 -0.2
baz=315,SNR=7.1
ENEZ Enez 83.12 317 P P 20 28 19.8 +0.7
BGNE Belgrade 83.13 42 P P 20 28 18.8 -0.3
baz=315,SNR=12
BGNE Belgrade 83.13 42 *e*P P 20 28 19.0 -0.1
comp=Z,490nm,1.1s
RZN Rozhen 83.21 319 *i*P P 20 28 20.9 +1.1
J35A Milford 83.23 39 P P 20 28 19.0 -0.6
baz=317
ALFC Alefka 83.24 310 P P 20 28 19.4 -0.4
GRFO Grafenberg 83.24 331 *e*P P 20 28 20.3 +0.7
GRFO pmax pmax
comp=Z,154nm,1.1s
GRFO Grafenberg 83.24 331 *e*P P 20 28 20.3 +0.7
comp=Z,154nm,1.1s
K34A Le Mars 83.28 40 P P 20 28 19.3 -0.6
baz=317,SNR=5.4
KULA Kula-Manisa 83.28 314 P P 20 28 20.5 +0.4
SZAC Souni 83.33 309 P P 20 28 20.2 -0.1
I36A Fitzsimmons Fa 83.33 38 P P 20 28 19.9 -0.2
baz=318,SNR=6.5
KORT Korkueli 83.34 312 *i*P P 20 28 20.4 0.0
MANT Manisa 83.36 314 *i*P P 20 28 19.4 -1.2
O31A Woolen Ranch, 83.39 43 P P 20 28 19.8 -0.8
baz=315,SNR=5.4
ARSA Arzberg 83.43 327 *i*pP P 20 28 21.8 +1.2
comp=Z,111nm,1.8s,SNR=30
H37A Dierke Farm, C 83.44 37 P P 20 28 20.6 -0.1
baz=318,SNR=14
PPT Papeete 83.47 118 LR LR 20 58 18.9
comp=Z,571nm,20.5s,baz=351,slow=31
AKMC Akamas 83.49 310 P P 20 28 20.5 -0.6
PPT2 Papeete2 83.49 118 *e*S S 20 38 43.9 +2.5
comp=Z,2μm,30.2s
PPT2 Papeete2 83.49 118 *e*LR LR 20 54 00.5
comp=Z,2μm,25.0s,baz=317
BEHE Becsehely 83.49 326⇑*e*P P 20 28 21.9 +1.0
MOA Molln 83.50 328 *i*pP P 20 28 21.9 +1.0
comp=Z,116nm,1.2s,SNR=46
AKHS Akhisar 83.51 315 *i*P P 20 28 21.6 +0.5
N32A Stulken Farm, 83.51 42 P P 20 28 20.4 -0.8
baz=315
M33A Taylor Creek F 83.52 41 P P 20 28 20.7 -0.4
baz=316,SNR=13
GMK Mull of Kintyr 83.54 343⇓*e*P P 20 28 21.6 +0.7
121A Cookes Peak, D 83.54 54 P P 20 28 22.7 +1.1
baz=311,SNR=29
121A Cookes Peak, D 83.54 54 *e*P P 20 28 22.1 +0.5
comp=Z,122nm,1.1s
KESW Keswick, Cumbr 83.62 341⇓*e*P P 20 28 21.2 -0.1
KESW AMB AMB 20 28 24.1
comp=Z,225nm,1.3s
DNZL Cakiroluk 83.63 313 *i*P P 20 28 22.3 +0.3
I37A Lemond, Waseca 83.64 37 P P 20 28 21.8 +0.1
baz=318,SNR=15
GOLH Golhisar 83.64 313 *i*P P 20 28 21.5 -0.4
L34A Svendsen Farm, 83.66 40 P P 20 28 21.5 -0.4
baz=316,SNR=11
EZN Ezine 83.67 316 P P 20 28 22.5 +0.6
J36A Seneca 1, Swea 83.69 38 P P 20 28 21.3 -0.6
baz=318,SNR=7.2
K35A Storm Lake 83.69 39 P P 20 28 21.0 -1.0
baz=317
SNZO South Karori 83.72 157 PFAKE 20 28 30.0 +8.2
SNZO LR LR
comp=Z,1μm,20.0s
KOGS Kog 83.74 326 *e*P P 20 28 22.2 +0.1
GAL1 Galloway 83.77 342⇓*e*P P 20 28 22.6 +0.5
GAL1 AMB AMB 20 28 23.7
comp=Z,79nm,1.1s
MMB Musomiste 83.79 319 *i*P P 20 28 23.7 +1.1
BOZC Bozcaada 83.81 317 *i*P P 20 28 21.6 -1.0
KAVA Kavala 83.81 318 P P 20 28 23.1 +0.5
DIVS Divibare 83.81 323 P P 20 28 23.1 +0.4
O32A Brockman Farm, 83.88 43 P P 20 28 22.2 -0.8
baz=316
M34A Aspy Farms, Fr 83.88 41 P P 20 28 22.6 -0.4
baz=316
NVR Nevrokopi 83.90 319 P P 20 28 23.9 +0.8
KKB Krupnik 83.92 320 *i*P P 20 28 24.4 +1.2
L35A Bielow Farm, R 83.97 40 P P 20 28 23.0 -0.4
baz=317
N33A J Bar K, Exete 83.98 42 P P 20 28 22.0 -1.6
baz=316
COWI Conover 84.02 34 *e*P P 20 28 23.3 -0.3
comp=Z,115nm,1.3s
COWI LR LR
comp=Z,835nm,20.0s
J37A Redenius Farm, 84.08 38 P P 20 28 23.7 -0.3
baz=318,SNR=11
PERS Pernice 84.09 327 *i*P P 20 28 24.5 +0.5
SOKA Soboth 84.09 327 *i*pP P 20 28 24.8 +0.8
comp=Z,288nm,1.6s,SNR=76
CBKS Cedar Bluff 84.10 45 P P 20 28 23.4 -0.8
baz=315,SNR=7.1
CBKS Cedar Bluff 84.10 45 *e*P P 20 28 23.8 -0.4
CBKS pmax pmax
comp=Z,184nm,1.2s
CBKS MLR MLR
comp=Z,998nm,19.0s
CBKS Cedar Bluff 84.10 45 *e*P P 20 28 23.8 -0.4
comp=Z,184nm,1.2s
CBKS LR LR
comp=Z,998nm,19.0s
PRK Paraskevi 84.11 316 P P 20 28 24.4 +0.3
SCHQ Schefferville 84.12 17 P P 20 28 23.4 -0.6
comp=Z,29nm,1.0s,baz=16,slow=5.4,SNR=12
SCHQ LR LR 21 10 08.5
comp=Z,834nm,19.3s,baz=354,slow=39
I38A Scanlan Farm, 84.13 37 P P 20 28 23.5 -0.7
baz=319,SNR=21
P32A Huiting Farm, 84.16 43 P P 20 28 23.7 -0.7
baz=315
SRS Serrai 84.20 319 P P 20 28 25.0 +0.3
LHO Holmfirth 84.23 340⇓*e*P P 20 28 25.4 +0.8
LIA Limnos Island 84.24 317 P P 20 28 25.0 +0.2
HGN Heimansgroeve 84.27 335 *e*P P 20 28 24.2 -0.5
comp=Z,96nm,1.1s
AKAS Kas 84.30 312 *i*P P 20 28 24.3 -1.1
AYDN Tasoluk 84.32 314 *i*P P 20 28 26.4 +1.0
BEBN Eben Emael 84.33 335 P P 20 28 25.6 +0.6
comp=Z,33nm,1.5s
FETY Fethiye 84.33 313 P P 20 28 25.8 +0.4
GOLS Golise 84.36 326 *e*P P 20 28 25.7 +0.4
SIGR SIGRI 84.36 316 P P 20 28 25.9 +0.5
M35A Neola 84.37 40 P P 20 28 25.1 -0.4
baz=317,SNR=6.1
KSL Kastellorizon 84.37 312 P P 20 28 25.7 +0.1
MEM Membach 84.37 334 P P 20 28 25.8 +0.5
comp=Z,54nm,1.4s
O33A Hebron 84.38 42 P P 20 28 24.5 -1.1
baz=316
N34A Lincoln 84.41 41 P P 20 28 24.6 -1.1
baz=316,SNR=7.1
WIM Isle of Man 84.41 342⇓*e*P P 20 28 26.3 +0.9
L36A Harm Buss Farm 84.43 39 P P 20 28 25.4 -0.4
baz=318,SNR=6.3
OBKA Obir 84.43 327 *i*P P 20 28 26.2 +0.4
comp=Z,44nm,0.8s,SNR=13
SISC Sisak 84.44 326 *i*P P 20 28 26.6 +0.8
K37A Belmond 84.45 38 P P 20 28 25.4 -0.5
baz=318,SNR=19
YER Yerkesik 84.45 313 P P 20 28 27.1 +1.1
KBA Koelnbreinsper 84.49 328 *i*P P 20 28 26.7 +0.5
comp=Z,104nm,1.0s,SNR=65
KNT Kendrikon 84.53 319 P P 20 28 26.9 +0.6
SOH Sokhos 84.54 319 P P 20 28 26.6 +0.2
URLA Izmir 84.55 315 *i*P P 20 28 26.5 0.0

OUR	Ouranopolis	84.57	318	P		P	20 28 25.9	-0.5
VAY	Valandovo	84.59	320	*i* P		P	20 28 27.6	+1.0
J38A	Wedel Dairy, R	84.60	37	P		P	20 28 26.0	-0.6
	baz=319,SNR=11							
Q32A	Meitler Ranch,	84.63	44	P		P	20 28 26.2	-0.7
	baz=315,SNR=14							
BLY	Banja Luka	84.63	325⇑	*i* P		P	20 28 27.6	+0.9
GCAM	G?zelcaml?	84.66	314	*i* P		P	20 28 26.8	-0.1
PLE	Pljevlja	84.68	323⇓	*i* P		P	20 28 27.3	+0.2
MYKA	Terra Mystica	84.72	328	*i* P		P	20 28 27.2	0.0
	comp=Z,134nm,1.6s,SNR=29							
TAOE	Nuku Hiva Isla	84.72	105	*e*LR		LR	20 54 44.4	
	comp=Z,3μm,34.0s,baz=317							
STU	Stuttgart	84.76	332	*e*P		P	20 28 27.6	+0.3
STU				pmax	pmax			
	comp=Z,265nm,1.3s							
STU	Stuttgart	84.76	332	*e*P		P	20 28 27.6	+0.3
	comp=Z,265nm,1.3s							
UCC	Uccle	84.77	335	P		P	20 28 27.9	+0.6
BCLA	Clavier	84.77	335	P		P	20 28 27.7	+0.4
	comp=Z,68nm,1.5s							
IVA	Berane	84.78	322⇓	*i* P		P	20 28 28.3	+0.7
O34A	Beatrice	84.78	42	P		P	20 28 26.7	-0.9
	baz=316,SNR=12							
P33A	Williams Farm,	84.78	43	P		P	20 28 27.0	-0.7
	baz=316,SNR=18							
CWF	Charnwood Fore	84.80	339⇓	*e*P		P	20 28 27.9	+0.5
CWF				AMB	AMB		20 28 29.4	
	comp=Z,108nm,1.3s							
LJU	Ljubljana	84.81	327	*i* P		P	20 28 27.7	+0.1
LJU				*e*S		S	20 38 53.9	0.0
PLG	Polygyros	84.82	318	P		P	20 28 28.3	+0.5
M36A	Felix, Anita	84.83	40	P		P	20 28 27.8	-0.1
	baz=318,SNR=16							
N35A	Tabor	84.84	41	P		P	20 28 27.4	-0.4
	baz=317,SNR=9.5							
HORT	Hortiatis	84.84	319	P		P	20 28 27.9	-0.1
L37A	Phoenix Point,	84.87	39	P		P	20 28 27.7	-0.3
	baz=318							
RPZ	Rata Peaks	84.88	160	P		P	20 28 26.8	-0.8
	comp=Z,20nm,1.0s,baz=250,slow=23,SNR=5.5							
RPZ				LR		LR	21 05 17.1	
	comp=Z,940nm,18.3s,baz=338,slow=35							
THE	Thessaloniki	84.88	319	P		P	20 28 27.9	-0.1
BOJS	Bojanci	84.91	326	*e*P		P	20 28 28.5	+0.3
GRG	Griva	84.94	319	P		P	20 28 28.6	+0.2
R32A	Long Quarter,	84.95	44	P		P	20 28 27.8	-0.7
	baz=315							
PVY	Plav	84.95	322⇓	*i* P		P	20 28 28.7	+0.1
K38A	Parkersburg	84.96	38	P		P	20 28 28.0	-0.4
	baz=319							
BDRM	Kayabasi	84.98	314	*i* P		P	20 28 29.2	+0.6
WME	Myndd Eilian	85.00	341⇓	*e*P		P	20 28 29.1	+0.7
UPM	Unac-Piva	85.01	323⇓	*i* P		P	20 28 28.9	0.0
Q33A	Connelly Farm,	85.02	43	P		P	20 28 28.2	-0.6
	baz=316,SNR=30							
PAIG	Paliouri	85.02	318	P		P	20 28 29.0	+0.2
WPM1	Penmaenmawr	85.03	341⇓	*e*P		P	20 28 29.4	+0.8
WTTA	Wattenberg	85.04	329	*i* PcP		P	20 28 29.7	+0.7
	comp=Z,48nm,1.0s,SNR=15							
SNF	Seneffe	85.04	335	P		P	20 28 29.2	+0.6
BODT	Bodrum	85.06	314	P		P	20 28 29.4	+0.4
ABTA	Abfaltersbach	85.10	329	*i* P		P	20 28 28.9	-0.3
	comp=Z,83nm,1.0s,SNR=26							
LANF	Langenberg	85.10	333⇓	*e*P		P	20 28 29.7	+0.7
WLF	Walferdange	85.12	334	P		P	20 28 30.2	+1.1
	comp=Z,98nm,1.6s							
WLF	Walferdange	85.12	334	*e*P		P	20 28 30.3	+1.2
WLF				pmax	pmax			
	comp=Z,219nm,1.4s							
WLF				MLR	MLR			
	comp=Z,3μm,21.0s							
WLF	Walferdange	85.12	334	*e*P		P	20 28 30.3	+1.2
	comp=Z,219nm,1.4s							
WLF				LR	LR			
	comp=Z,3μm,21.0s							
WLF1	Llynfaes	85.12	341⇓	*e*P		P	20 28 29.5	+0.5
WLF1				AMB	AMB		20 28 31.2	
	comp=Z,110nm,1.3s							
O35A	Humboldt	85.13	41	P		P	20 28 28.4	-1.0
	baz=317							
P34A	Walnut Farm, R	85.17	42	P		P	20 28 28.6	-1.0
	baz=316,SNR=33							
FOEL	Foel Wylfa	85.17	341⇓	*e*P		P	20 28 30.4	+1.1
FOEL				AMB	AMB		20 28 31.7	
	comp=Z,250nm,1.2s							
ARG	Arkhangelos	85.18	313	P		P	20 28 30.3	+0.7
MOTA	Moosalm	85.19	330	*i* PcP		P	20 28 30.2	+0.5
	comp=Z,129nm,1.0s,SNR=90							
RETA	Reutte	85.21	330	*i* PcP		P	20 28 30.5	+0.8
	comp=Z,239nm,1.0s,SNR=74							
N36A	Muff Farm, Cla	85.22	40	P		P	20 28 29.9	+0.1
	baz=317,SNR=11							
L38A	Oak Wood Farm,	85.25	38	P		P	20 28 29.4	-0.5
	baz=319,SNR=7.9							
M37A	Trindle Farm,	85.25	40	P		P	20 28 29.9	0.0
	baz=318,SNR=5.6							
DOU	Dourbes	85.29	335	P		P	20 28 30.2	+0.3
	comp=Z,34nm,1.4s							
SCIA	State Center	85.30	39	*e*P		P	20 28 30.6	+0.4
	comp=Z,414nm,1.4s							
SCIA				LR	LR			
	comp=Z,1μm,22.0s							
NKME	Niksic	85.31	323⇓	*i* P		P	20 28 30.5	+0.2
S32A	Newby Ranch, P	85.33	45	P		P	20 28 30.2	-0.3
	baz=315,SNR=7.4							
EIL	Elat	85.37	304	P		P	20 28 31.2	+0.5
	comp=Z,33nm,0.9s,baz=25,slow=1.4,SNR=21							
TRI	Trieste	85.40	327	*e*P		P	20 28 30.2	-0.3
TRI				pmax	pmax			
	comp=Z,140nm,1.3s							
TRI	Trieste	85.40	327	*e*P		P	20 28 30.2	-0.3
	comp=Z,140nm,1.3s							
BRY	Bratogost	85.41	323⇓	*i* P		P	20 28 30.7	-0.2
YRE	Yr Eifl	85.41	341⇓	*e*P		P	20 28 30.9	+0.4
PDG	Podgorica	85.42	322⇓	*i* P		P	20 28 31.0	+0.4
PDG	Podgorica	85.42	322	P		P	20 28 31.1	+0.4
TTG	Podgorica	85.42	322⇓	*i* P		P	20 28 31.2	+0.5
R33A	Olander Ranch,	85.43	44	P		P	20 28 30.1	-0.8
	baz=316,SNR=19							
BIA	Bitola	85.44	320	*i* P		P	20 28 31.5	+0.5
BFO	Black Forest	85.45	332	*i* P		P	20 28 31.3	+0.5
BFO	Black Forest	85.45	332	*e*P		P	20 28 31.1	+0.3
	comp=Z,366nm,1.3s							
BFO				LR	LR			
	comp=Z,1μm,22.0s							
CEME	Cevo	85.50	322⇓	*i* P		P	20 28 31.3	+0.1
LIT	Litokhoron	85.52	319	P		P	20 28 31.1	-0.2
Q34A	Chapman	85.56	43	P		P	20 28 31.0	-0.5
	baz=316,SNR=28							
SKP1	Kophill	85.56	339⇓	*e*P		P	20 28 31.4	+0.1
FNA	Florina	85.59	320	P		P	20 28 31.6	-0.1
FETA	Feichten	85.60	330	*i* PcP		P	20 28 32.3	+0.6
	comp=Z,129nm,1.0s,SNR=52							
KSU1	Kansas State U	85.61	43	P		P	20 28 30.9	-0.8
	baz=316,SNR=12							
KSU1	Kansas State U	85.61	43	*e*P		P	20 28 30.9	-0.8
	comp=Z,143nm,0.9s							
KSU1				LR	LR			
	comp=Z,956nm,20.0s							
P35A	Duane Minner,	85.61	42	P		P	20 28 31.2	-0.5
	baz=317,SNR=20							
MNTX	Cornudas Mount	85.62	53	P		P	20 28 32.1	+0.1
	baz=312,SNR=28							
SSW	Stow on the Wo	85.64	339⇓	*e*P		P	20 28 32.3	+0.7
DRME	Dracevica, Mon	85.64	322⇓	*i* P		P	20 28 32.5	+0.7
OHR	Ohrid	85.64	320	*i* P		P	20 28 32.4	+0.4
N37A	Lee Faris, Mou	85.65	40	P		P	20 28 31.8	-0.1
	baz=318,SNR=7.0							
M38A	Pleasantville	85.67	39	P		P	20 28 31.9	-0.1
	baz=318,SNR=26							
SKIA	Skiathos	85.69	318	P		P	20 28 31.6	-0.5
XOR	Xorichti	85.69	318	P		P	20 28 31.9	-0.2
BUM	Brajici-Budva	85.69	322⇓	*i* P		P	20 28 32.3	+0.1
MSTX	Muleshoe	85.70	50	P		P	20 28 32.2	-0.2
	baz=313,SNR=25							
MSTX	Muleshoe	85.70	50	*e*P		P	20 28 32.1	-0.3
	comp=Z,93nm,1.2s							
T32A	Huddler Ranch,	85.71	45	P		P	20 28 32.4	0.0
	baz=315,SNR=37							
DAVA	Damuels	85.72	330	*i* PcP		P	20 28 33.0	+0.7
	comp=Z,232nm,0.9s,SNR=73							
AMTX	Amarillo	85.72	48	P		P	20 28 33.1	+0.6
	baz=314							
AMTX	Amarillo	85.72	48	*e*P		P	20 28 33.1	+0.6
	comp=Z,219nm,1.0s							
O36A	Bolckow	85.72	41	P		P	20 28 32.1	-0.2
	baz=317,SNR=20							
KZN	Kozani	85.74	319	P		P	20 28 32.1	-0.4
HCY	Herceg Novi	85.78	323⇓	*i* P		P	20 28 32.1	-0.4
ULC	Ulcinj	85.78	322⇓	*i* P		P	20 28 32.7	+0.1
FYTO	Fytoko, Volos	85.79	318	P		P	20 28 32.6	0.0
STON	Ston	85.83	323	*i* P		P	20 28 32.0	-0.7
R34A	Isabella, Hill	85.84	44	P		P	20 28 32.7	-0.2
	baz=316,SNR=13							
STRD	Stroud	85.89	339⇓	*e*P		P	20 28 33.6	+0.8
STRD				AMB	AMB		20 28 35.0	
	comp=Z,356nm,1.7s							
MCH1	Michaelchurch	85.92	340⇓	*e*P		P	20 28 33.6	+0.6
MCH1				AMB	AMB		20 28 34.5	
	comp=Z,142nm,1.2s							
S33A	Kaszmaul Farm,	85.93	44	P		P	20 28 33.3	-0.1
	baz=316,SNR=29							
TIR	Tirane	85.93	321⇑	*i* P		P	20 28 34.2	+0.9
TIR	Tirane	85.93	321	*e*P		P	20 28 33.7	+0.4
TIR				pmax	pmax			
	comp=Z,110nm,1.0s							
TIR				MLR	MLR			
	comp=Z,2μm,19.0s							
TIR	Tirane	85.93	321	*e*P		P	20 28 33.7	+0.4
	comp=Z,110nm,1.0s							
TIR				LR	LR			
	comp=Z,2μm,19.0s							
JFWS	Jewell Farm	85.97	36	*e*P		P	20 28 31.6	-1.9
JFWS				pmax	pmax			
	comp=Z,48nm,0.8s							
JFWS				MLR	MLR			
	comp=Z,1μm,19.0s							
JFWS	Jewell Farm	85.97	36	*e*P		P	20 28 31.6	-1.9
	comp=Z,48nm,0.8s							
JFWS				LR	LR			
	comp=Z,1μm,19.0s							
P36A	Good Intent, A	85.97	41	P		P	20 28 33.1	-0.5
	baz=317,SNR=29							
HMNX	Herstmonceux	85.98	338⇓	*e*P		P	20 28 34.5	+1.2
HMNX				AMB	AMB		20 28 35.4	
	comp=Z,296nm,1.1s							
ECH	Echery	85.98	332⇓	*e*P		P	20 28 34.0	+0.6
SWN1	Swindon	86.03	339⇓	*e*P		P	20 28 34.2	+0.7
SWN1				AMB	AMB		20 28 35.9	
	comp=Z,328nm,1.5s							
SMIA	Simia	86.03	318	P		P	20 28 33.7	-0.2
NEST	Nestorio	86.03	320	P		P	20 28 34.2	+0.3
WOL	Wolverton	86.04	339⇓	*e*P		P	20 28 33.9	+0.2
WOL				AMB	AMB		20 28 34.9	
	comp=Z,188nm,1.1s							
Q35A	Mercer Eighty,	86.09	42	P		P	20 28 33.8	-0.3
	baz=317,SNR=48							
LPW	Lampeter	86.11	341⇓	*e*P		P	20 28 35.3	+1.4
N38A	Joes South For	86.12	40	P		P	20 28 33.9	-0.3
	baz=318							
O37A	Wolven Farm, M	86.12	40	P		P	20 28 34.3	0.0
	baz=318,SNR=16							
DAVOX	Davos/Dischmat	86.13	330	P		P	20 28 34.9	+0.4
	comp=Z,74nm,0.9s,baz=47,slow=15,SNR=12							
PENT	Pentalofos	86.15	320	P		P	20 28 34.4	-0.1
T33A	Patterson Ranc	86.16	45	P		P	20 28 34.3	-0.2
	baz=316,SNR=11							
THL	Klokotos Trika	86.16	319	P		P	20 28 33.2	-1.2
KARP	Karpathos	86.21	313	P		P	20 28 34.8	0.0
KPRO	Kipourio	86.21	319	P		P	20 28 34.2	-0.6
U32A	Winter Ranch,	86.23	46	P		P	20 28 35.1	+0.1
	baz=315,SNR=9.4							
MOF	Molkenrain	86.29	332⇓	*e*P		P	20 28 35.6	+0.5
LKR	Lokris	86.31	317	P		P	20 28 34.2	-1.0
Q36A	Arnold C. Orve	86.32	42	P		P	20 28 34.8	-0.5
	baz=317,SNR=8.8							
S34A	Willow Spring	86.34	44	P		P	20 28 35.2	-0.3
	baz=316,SNR=13							
R35A	Emporia Munici	86.39	43	P		P	20 28 35.6	0.0
	baz=317,SNR=32							
N39A	Derby Farms, D	86.42	39	P		P	20 28 35.6	-0.1
	baz=319,SNR=23							
P37A	Lathrop	86.44	41	P		P	20 28 35.3	-0.5
	baz=318,SNR=20							
O38A	Galt	86.50	40	P		P	20 28 35.9	-0.2
	baz=318,SNR=10							
TUE	Stuetta	86.59	330	*e*P		P	20 28 36.9	+0.2
	comp=Z,94nm,1.0s							
TUE				LR	LR			
	comp=Z,1μm,21.0s							
SANT	Santorini	86.60	314	PFAKE			20 28 50.0	+13
SANT				LR	LR			
	comp=Z,879nm,21.0s							
V32A	Arapaho	86.68	46	P		P	20 28 37.8	+0.7
	baz=315,SNR=28							
JAN	Janina	86.70	319	P		P	20 28 37.6	+0.5
U33A	Lingo Farm, Me	86.70	45	P		P	20 28 37.3	+0.1
	baz=316,SNR=18							
DSF	Desfina	86.74	318	P		P	20 28 35.9	-1.5
R36A	Gordon, Harris	86.76	43	P		P	20 28 37.3	-0.2
	baz=317,SNR=39							
T34A	McClaskey Farm	86.79	44	P		P	20 28 37.6	-0.1
	baz=316,SNR=22							
S35A	Otter Creek Ra	86.79	43	P		P	20 28 37.7	+0.1
	baz=317,SNR=39							
LOMF	Lomont	86.83	332⇓	*e*P		P	20 28 38.1	+0.4
P38A	Dawn	86.84	40	P		P	20 28 37.5	-0.3
	baz=318,SNR=17							
O39A	Kirksville	86.87	40	P		P	20 28 37.9	-0.1
	baz=319,SNR=9.6							
Q37A	Longview Farm,	86.92	42	P		P	20 28 37.5	-0.7
	baz=318							
ANX	Ano Chora	86.92	318	P		P	20 28 37.6	-0.8
KALE	Kalithea	86.96	318	P		P	20 28 37.4	-1.1
DSL	Palaion Diasel	86.96	319	P		P	20 28 36.7	-1.7
W32A	Sentinel	86.98	47	P		P	20 28 38.7	+0.1
	baz=315,SNR=36							
U34A	Anderson Ranch	87.02	45	P		P	20 28 38.9	+0.2
	baz=316,SNR=14							
U34A	Anderson Ranch	87.02	45	*e*P		P	20 28 39.2	+0.4
	comp=Z,314nm,1.3s							
V33A	Lossen Ranch,	87.04	46	P		P	20 28 38.6	-0.2
	baz=316,SNR=18							
SGD	Sagiada	87.05	320	P		P	20 28 38.1	-0.7
IGT	Igoumenitsa	87.06	320	P		P	20 28 38.7	-0.2
ZKR	Zakros	87.06	313	P		P	20 28 39.0	+0.1
R37A	Teagarden Farm	87.13	42	P		P	20 28 38.6	-0.6
	baz=318,SNR=16							
LAKA	Lakka	87.16	318	P		P	20 28 38.0	-1.4
S36A	Lake Cedric, C	87.16	43	P		P	20 28 39.0	-0.4
	baz=317,SNR=19							
KEK	Kerkira	87.19	320	P		P	20 28 39.5	0.0
T35A	Sooner Cattle	87.24	44	P		P	20 28 39.7	-0.1
	baz=317,SNR=17							
Q38A	Cooks Store, C	87.29	41	P		P	20 28 39.4	-0.6
	baz=318,SNR=16							
NPS	Neapolis	87.30	314	P		P	20 28 39.2	-0.9
O40A	La Belle	87.31	39	P		P	20 28 40.1	+0.1
	baz=319,SNR=27							
PDO	Prodromos	87.31	319	P		P	20 28 39.0	-1.1
LPIG	La Paz	87.33	61	LR		LR	21 06 47.2	
	comp=Z,744nm,18.0s,baz=301,slow=35							
W33A	Caddo, Fort Co	87.41	46	P		P	20 28 41.5	+0.9
	baz=316,SNR=21							
LAST	Lasithi	87.45	314⇓	*i* P		P	20 28 41.1	+0.1
LAST	Lasithi	87.45	314	P		P	20 28 41.0	+0.1
V34A	Guthrie	87.46	45	P		P	20 28 41.1	+0.2
	baz=316,SNR=26							
V34A	Guthrie	87.46	45	*e*P		P	20 28 41.1	+0.2
	comp=Z,394nm,1.4s							
T36A	Boggs Farm, Ca	87.48	44	P		P	20 28 41.0	0.0
	baz=317,SNR=18							
DRO	Drossia	87.51	318	P		P	20 28 40.0	-1.1
U35A	Pawnee	87.52	45	P		P	20 28 41.1	0.0
	baz=317,SNR=11							
WMOK	Wichita Mounta	87.52	47	*e*P		P	20 28 41.0	-0.2
WMOK				pmax	pmax			
	comp=Z,113nm,1.2s							
WMOK				MLR	MLR			
	comp=Z,894nm,19.0s							
WMOK	Wichita Mounta	87.52	47	*e*P		P	20 28 41.0	-0.2
	comp=Z,113nm,1.2s							
WMOK				LR	LR			
	comp=Z,894nm,19.0s							
S37A	Fort Scott	87.54	42	P		P	20 28 40.7	-0.5
	baz=318,SNR=30							
Q39A	Willow Grove F	87.56	41	P		P	20 28 41.2	0.0
	baz=319,SNR=26							
RLS	Riolos of Patr	87.56	318	P		P	20 28 41.4	+0.1
P40A	Paris	87.67	40	P		P	20 28 41.8	0.0
	baz=319,SNR=40							
IDI	Anoyia	87.69	314⇑	*i* P		P	20 28 41.4	-0.7
IDI	Anoyia	87.69	314	P		P	20 28 40.9	-1.2
IDI	Anoyia	87.69	314	*e*P		P	20 28 41.4	-0.7
	comp=Z,94nm,1.1s							
R38A	Fenwick Farm,	87.71	42	P		P	20 28 40.9	-1.1
	baz=318,SNR=18							
W34A	Bridge Creek,	87.75	46	P		P	20 28 42.6	+0.3
	baz=316,SNR=15							
W34A	Bridge Creek,	87.75	46	*e*P		P	20 28 42.9	+0.6
	comp=Z,214nm,1.2s							
X33A	Lawton	87.83	47	P		P	20 28 42.6	0.0
	baz=316,SNR=9.2							
V35A	Meyer Ranch, C	87.90	45	P		P	20 28 42.9	0.0
	baz=316,SNR=8.5							
SIVA	Sivas	87.94	314⇓	*i* P		P	20 28 43.3	+0.1
SIVA	Sivas	87.94	314	P		P	20 28 43.2	+0.1
VLS	Valsamata	87.94	319	P		P	20 28 42.4	-0.7
T37A	Cheneyville 18	87.96	43	P		P	20 28 43.2	-0.1
	baz=318,SNR=15							
ITM	Ithomi	87.96	317	P		P	20 28 42.6	-0.7
VAM	Vamos	88.00	315	P		P	20 28 43.6	+0.1
MATE	Matera	88.02	322⇓	*i* P		P	20 28 43.5	+0.1
U36A	Oologah	88.05	44	P		P	20 28 43.3	-0.4
	baz=317							
Q40A	Laux Farm, Aux	88.06	40	P		P	20 28 43.5	-0.2
	baz=319,SNR=22							
VLC	Villacollemand	88.07	328	PFAKE			20 28 50.0	+6.3
VLC				LR	LR			
	comp=Z,1μm,20.0s							
R39A	Chumby, Stover	88.07	41	P		P	20 28 42.8	-0.9
	baz=319,SNR=29							
IMMV	Iera Moni Meta	88.08	315	P		P	20 28 43.9	0.0
S38A	Stockton	88.12	42	P		P	20 28 43.1	-0.9
	baz=318,SNR=11							
Y33A	Hilltop Ranch,	88.13	47	P		P	20 28 43.9	-0.2
	baz=316,SNR=13							
JQE	Queens East	88.17	338⇓	*e*P		P	20 28 44.3	+0.4
JQE				⇓*e*P		P	20 28 44.3	+0.4
X34A	Smith Ranch, M	88.17	46	P		P	20 28 44.6	+0.3
	baz=316,SNR=18							
ANKY	Antikythira Is	88.17	315	P		P	20 28 43.6	-0.6
ZKS	Zakynthos	88.19	318	P		P	20 28 43.0	-1.3
AQU	L'Aquila	88.22	325	*e*P		P	20 28 45.3	+0.9
AQU				pmax	pmax			
	comp=Z,47nm,0.8s							
AQU				MLR	MLR			
	comp=Z,2μm,19.0s							
AQU	L'Aquila	88.22	325	*e*P		P	20 28 45.3	+0.9
	comp=Z,47nm,0.8s							
AQU				LR	LR			
	comp=Z,2μm,19.0s							
HDIL	Hopedale	88.24	37	P		P	20 28 44.4	-0.1
	baz=321,SNR=12							
HDIL	Hopedale	88.24	37	*e*P		P	20 28 44.6	+0.1
	comp=Z,402nm,1.3s							
HDIL				LR	LR			
	comp=Z,1μm,21.0s							
PYL	PYLOS	88.27	317	P		P	20 28 43.4	-1.3
RSL	Roselend	88.30	331	*e*P		P	20 28 45.1	+0.2
TXAR	Lajitas Array	88.31	54	P		P	20 28 45.2	+0.1
	comp=Z,24nm,0.9s,baz=296,slow=3.5,SNR=75							
TXAR				PKKPbc	**PKKPbc**		20 46 28.4	+1.5
	comp=Z,0.9nm,1.0s,baz=126,slow=2.2,SNR=4.2							
W35A	Tecumseh	88.32	45	P		P	20 28 44.8	-0.2
	baz=316,SNR=15							
TUL1	Leonard	88.37	44	P		P	20 28 45.2	0.0
	baz=317,SNR=13							
TUL1	Leonard	88.37	44	*e*P		P	20 28 45.3	0.0
	comp=Z,117nm,1.3s							
V36A	Jenks	88.38	44	P		P	20 28 45.3	0.0
	baz=317,SNR=19							
U37A	Salina	88.38	44	P		P	20 28 45.1	-0.1
	baz=318,SNR=18							
S39A	Bolivar	88.39	42	P		P	20 28 44.2	-1.1
	baz=318,SNR=36							
GVD	Gavdhos	88.47	314	P		P	20 28 45.0	-0.7
R40A	Maddies Statio	88.49	41	P		P	20 28 45.1	-0.6
	baz=319,SNR=48							
ABTX	Abilene, Hawle	88.51	49	P		P	20 28 46.1	+0.1
	baz=315,SNR=9.6							
ABTX	Abilene, Hawle	88.51	49	*e*P		P	20 28 46.0	0.0
	comp=Z,134nm,1.5s							
Z33A	Whitaker Ranch	88.56	48	P		P	20 28 46.2	0.0
	baz=316,SNR=7.8							
Y34A	Reagan Ranch,	88.67	47	P		P	20 28 46.4	-0.3
	baz=316,SNR=15							
W36A	Wetumka	88.69	45	P		P	20 28 46.6	-0.1
	baz=317,SNR=12							
V37A	Hulbert	88.75	44	P		P	20 28 46.7	-0.3
	baz=318,SNR=45							
U38A	Gravette	88.75	43	P		P	20 28 46.5	-0.6
	baz=318,SNR=27							
X35A	Drake	88.80	46	P		P	20 28 47.0	-0.3
	baz=316,SNR=19							
BNI	Bardonecchia	88.81	331	PFAKE			20 29 00.0	+13
BNI				LR	LR			
	comp=Z,2μm,20.0s							
T39A	Clever	88.86	42	P		P	20 28 46.7	-0.8
	baz=318,SNR=19							
S40A	Lebanon	88.89	41	P		P	20 28 47.0	-0.7
	baz=319,SNR=23							
GDM	Grand'Maison	88.90	331	*e*P		P	20 28 48.4	+0.7
GDM	Grand'Maison	88.90	331	*e*P		P	20 28 48.5	+0.7
CUC	Castrocucco	88.95	323	*e*P		P	20 28 46.4	-1.6
	comp=Z,46nm,1.3s							
CUC				LR	LR			
	comp=Z,772nm,19.0s							
133A	Hamilton Ranch	88.96	48	P		P	20 28 47.9	-0.2
	baz=316,SNR=8.4							
Z34A	Collier Ranch,	89.00	47	P		P	20 28 47.9	-0.3
	baz=316,SNR=11							
X36A	Centrahoma	89.03	46	P		P

135A Vickery Place, 89.88 48 P **P 20 28 52.5 +0.1**
baz=316,SNR=6.9
JCT Junction City 89.93 50 P **P 20 28 52.3 -0.4**
baz=315,SNR=11
Z36A Blue Ridge 89.93 47 P **P 20 28 52.3 -0.3**
baz=317,SNR=16
LBL Lubilhac 89.93 333⇓*e*P **P 20 28 54.7 +2.2**
W39A Magazine 90.00 44 P **P 20 28 52.4 -0.5**
baz=318,SNR=19
V40A Witts Springs 90.07 43 P **P 20 28 52.4 -0.8**
baz=319,SNR=14
433A Art 90.17 50 P **P 20 28 53.4 -0.3**
baz=315,SNR=16
CEL Celeste 90.26 321 ⇓*e*P **P 20 28 53.7 -0.5**
CEL comp=Z,141nm,1.0s LR LR
comp=Z,2µm,22.0s
334A Lometa 90.27 49 P **P 20 28 54.1 -0.1**
baz=316,SNR=29
X39A Fountain Ranch 90.33 44 P **P 20 28 54.8 +0.3**
baz=318,SNR=60
W40A Ferguson Farm, 90.39 43 P **P 20 28 54.5 -0.1**
baz=319,SNR=17
Y38A Idabel 90.42 45 P **P 20 28 53.9 -0.9**
baz=318
Z37A Pogue Cattle C 90.45 46 P **P 20 28 55.0 0.0**
baz=317,SNR=7.8
136A Ennis 90.45 47 P **P 20 28 54.6 -0.4**
baz=317
MIAR Mount Ida 90.60 44 P **P 20 28 56.0 +0.3**
baz=318,SNR=68
434A Burnet 90.62 49 P **P 20 28 55.3 -0.5**
baz=316,SNR=13
533A Kerrville 90.68 50 P **P 20 28 55.8 -0.4**
baz=315,SNR=7.2
Y39A Lockesburg 90.77 45 P **P 20 28 56.5 +0.1**
baz=318,SNR=19
Z38A Mt. Pleasant 90.77 46 P **P 20 28 56.2 -0.3**
baz=318
335A Moody 90.79 48 P **P 20 28 56.5 -0.1**
baz=316
236A Katherine and 90.80 47 P **P 20 28 56.5 -0.1**
baz=317,SNR=5.7
137A Heron Place, G 90.81 47 P **P 20 28 56.5 -0.2**
baz=317
W41B Gary Mavity, V 90.85 43 P **P 20 28 56.4 -0.4**
baz=319,SNR=30
LONY Lake Ozonia 91.02 26 *e*P **P 20 28 56.6 -0.9**
LONY comp=Z,64nm,1.3s LR LR
comp=Z,916nm,20.0s
633A Saathoff Ranch 91.03 51 P **P 20 28 58.0 +0.2**
baz=315,SNR=10
X40A Basin Creek Fa 91.05 43 P **P 20 28 57.5 -0.2**
baz=319,SNR=20
435B Jarrell 91.05 49 P **P 20 28 57.5 -0.3**
baz=316
534A Blanco 91.06 50 P **P 20 28 57.7 -0.2**
baz=316,SNR=16
336A Riesel 91.06 48 P **P 20 28 57.9 +0.1**
baz=317,SNR=14
138A Matatall Enter 91.15 46 P **P 20 28 58.5 +0.3**
baz=318,SNR=6.5
Y40A Okolona 91.16 44 P **P 20 28 58.1 -0.1**
baz=319,SNR=6.2
237A Washetta, Mont 91.22 47 P **P 20 28 58.6 0.0**
baz=317
X41A Kaden, Bauxite 91.22 43 P **P 20 28 58.4 -0.1**
baz=319
Z39A Irene McRaven, 91.23 45 P **P 20 28 59.0 +0.4**
baz=318,SNR=6.6
ACSO Alum Creek Sta 91.41 34 *e*P **P 20 28 59.1 -0.2**
ACSO comp=Z,71nm,1.0s LR LR
comp=Z,1µm,20.0s
WCI Wyandotte Cave 91.50 37 *e*P **P 20 28 59.9 +0.1**
WCI pmax pmax
comp=Z,188nm,0.9s
WCI Wyandotte Cave 91.50 37 *e*P **P 20 28 59.9 +0.1**
comp=Z,188nm,0.9s
139A Bunkhouse Ranc 91.53 46 P **P 20 28 60.0 0.0**
baz=318
436A Wall Ranch, Ga 91.53 48 P **P 20 29 00.3 +0.3**
baz=317,SNR=6.7
634A China Grove, S 91.59 50 P **P 20 29 00.5 +0.2**
baz=316
535A Dale 91.60 49 P **P 20 29 00.4 0.0**
baz=316
238A Jacksonville 91.61 47 P **P 20 29 00.9 +0.5**
baz=318
Y41A Eaglette Beard 91.63 44 P **P 20 29 00.5 +0.1**
baz=319,SNR=8.2
Z40A Long Farm, Mag 91.66 45 P **P 20 29 00.8 +0.2**
baz=318,SNR=17
337A Centerville 91.67 47 P **P 20 29 01.0 +0.3**
baz=317
833A Chaparral WMA, 91.70 52 P **P 20 29 01.0 +0.2**
baz=315,SNR=6.7
M54A Oil Creek Stat 91.76 31 P **P 20 29 00.7 -0.2**
baz=327,SNR=6.2
734A La Parita Cree 91.84 51 P **P 20 29 01.8 +0.3**
baz=316
536A Bastrop 91.87 49 P **P 20 29 02.0 +0.3**
baz=316,SNR=5.9
437A Phantom Ranch, 91.88 48 P **P 20 29 02.2 +0.6**
baz=317,SNR=5.4
635A Leesville 91.94 50 P **P 20 29 02.3 +0.4**
baz=316
239A Gary 91.97 46 P **P 20 29 02.3 +0.3**
baz=318
338A Crockett 91.97 47 P **P 20 29 02.5 +0.4**
baz=317
Z41A Richland Creek 91.99 44 P **P 20 29 02.4 +0.3**
baz=319
140A Cam and Jess, 92.02 45 P **P 20 29 02.5 +0.3**
baz=318
NATX Nacogdoches 92.05 46 P **P 20 29 02.4 -0.1**
baz=318
NATX Nacogdoches 92.05 46 *e*P **P 20 29 03.2 +0.7**
NATX comp=Z,19nm,0.5s LR LR
comp=Z,1µm,20.0s
N54A Moraine State 92.08 31 P **P 20 29 00.2 -2.3**
baz=327
N54A P **PcP 20 29 02.7 -0.6**
baz=327,SNR=7.3
CLTB Caltabellotta 92.10 323 PFAKE 20 29 10.0 +7.3
CLTB LR LR
comp=Z,776nm,21.0s
Y42A Garnett, Star 92.11 43 P **P 20 29 02.9 +0.2**
baz=319,SNR=5.7
LRDF Laroque-de-Fa 92.17 332⇓*e*P **P 20 29 03.9 +1.1**
PKME Peaks-Kenny Pk 92.17 23 PFAKE 20 29 10.0 +7.3
PKME LR LR
comp=Z,1µm,19.0s
933A Laredo 92.28 52 P **P 20 29 04.5 +1.0**
baz=315,SNR=18
735A Kenedy 92.30 50 P **P 20 29 04.6 +0.9**
baz=316
636A Smothers Creek 92.31 49 P **P 20 29 04.6 +0.9**
baz=316,SNR=8.9
537A Green Hill Far 92.31 49 P **P 20 29 04.2 +0.5**
baz=317
VSL Villasalto 92.32 326 PFAKE 20 29 10.0 +6.4
VSL LR LR
comp=Z,996nm,21.0s
438A Sam Houston St 92.32 48 P **P 20 29 04.2 +0.5**
baz=317
240A Hunter Patters 92.36 46 P **P 20 29 04.1 +0.2**
baz=318
834A Tilden 92.36 51 P **P 20 29 04.9 +1.0**
baz=316
141A Papa Simpson, 92.42 45 P **P 20 29 04.2 +0.1**
baz=319,SNR=8.6
339A Huntington 92.43 47 P **P 20 29 04.0 -0.1**
baz=318
Z42A Norrel Spur, H 92.45 44 P **P 20 29 04.7 +0.4**
baz=319,SNR=10
Y43A Makayla and Ka 92.51 43 P **P 20 29 04.8 +0.3**
baz=320
CARF Carcanieres 92.52 333⇓*e*P **P 20 29 05.3 +0.7**
736A Circle Diamond 92.68 50 P **P 20 29 06.7 +1.3**
baz=316,SNR=6.3
835A Beeville 92.69 51 P **P 20 29 06.3 +0.9**
baz=316
HKT Hockley 92.70 48 *e*P **P 20 29 06.0 +0.6**
HKT pmax pmax
comp=Z,86nm,1.5s

HKT Hockley 92.70 48 *e*P **P 20 29 06.0 +0.6**
comp=Z,86nm,1.5s
538A Harpers Horsep 92.70 48 P **P 20 29 05.6 +0.2**
baz=317
439A Center Grove, 92.70 47 P **P 20 29 05.6 +0.2**
baz=318
340A Bronson 92.75 46 P **P 20 29 05.3 -0.3**
baz=318
934A Benavides 92.75 52 P **P 20 29 07.2 +1.4**
baz=316,SNR=6.3
637A Eagle Lake 92.77 49 P **P 20 29 06.6 +0.8**
baz=317
WDD Wied Dalam 92.81 321 PFAKE 20 29 20.0 +14
WDD LR LR
comp=Z,1µm,21.0s
VALF Valcebollere 92.83 333⇓*e*P **P 20 29 06.9 +0.8**
241A Mo Tay, Goldon 92.85 45 P **P 20 29 06.7 +0.6**
baz=319
OXF Oxford 92.86 41 *e*P **P 20 29 06.1 0.0**
OXF pmax pmax
comp=Z,181nm,1.0s
OXF Oxford 92.86 41 *e*P **P 20 29 06.1 0.0**
comp=Z,181nm,1.0s
Y44A Strider, Charl 92.86 42 P **P 20 29 06.5 +0.4**
baz=320
MELF Melles 92.87 334 *e*P **P 20 29 06.9 +0.8**
Z43A Armstrong Fami 92.88 43 P **P 20 29 06.3 +0.1**
baz=320
034A Hebbronville 93.03 52 P **P 20 29 08.5 +1.5**
baz=316,SNR=14
VIEF Viey 93.12 334⇓*e*P **P 20 29 08.6 +1.3**
143A Socs Landing, 93.17 44 P **P 20 29 07.5 -0.1**
baz=320
KVTX Kingsville 93.18 51 PFAKE 20 29 20.0 +12
KVTX LR LR
comp=Z,1µm,21.0s
737A Port Lavaca 93.19 50 P **P 20 29 08.8 +1.1**
baz=317
341A Kurthwood 93.22 46 P **P 20 29 08.3 +0.5**
baz=319
539A Cross D Ranch, 93.23 48 P **P 20 29 09.4 +1.5**
baz=318
242A Grayson 93.25 45 P **P 20 29 07.6 -0.3**
baz=319
O56A Blue Knob Stat 93.25 31 P **P 20 29 07.4 -0.5**
baz=328,SNR=8.1
Z44A Pea Ridge, Bel 93.27 43 P **P 20 29 08.0 +0.1**
baz=320
Y45A Yeager Farm, C 93.29 42 P **P 20 29 08.4 +0.3**
baz=321,SNR=9.0
035A Encino 93.49 52 P **P 20 29 11.1 +1.9**
baz=316
Z45A Winona 93.59 42 P **P 20 29 09.3 -0.2**
baz=321
738A Farr-Stevens R 93.61 49 P **P 20 29 10.8 +1.1**
baz=317
Y46A Houston 93.63 41 P **P 20 29 09.2 -0.5**
baz=321,SNR=8.3
342A Flagon Creek P 93.67 45 P **P 20 29 10.3 +0.4**
baz=319
243A Waterproof 93.75 44 P **P 20 29 10.4 +0.1**
baz=320
144A Alexander Plac 93.77 43 P **P 20 29 10.8 +0.5**
baz=320
035Z Hargill 93.85 52 P **P 20 29 12.0 +1.2**
baz=316
VBMS Vicksburg 94.03 43 P **P 20 29 11.5 0.0**
baz=320
145A Houston Renfro 94.05 43 P **P 20 29 11.8 +0.2**
baz=320
244A Avery, Jackson 94.07 44 P **P 20 29 11.9 +0.2**
baz=320,SNR=7.0
442A Mamou 94.11 46 P **P 20 29 11.8 -0.1**
baz=319
Z46A Louisville 94.12 42 P **P 20 29 12.1 +0.2**
baz=321,SNR=6.3
343A Vidalia 94.13 45 P **P 20 29 12.3 +0.3**
baz=319
Y47A UCPARC, Winfie 94.14 41 P **P 20 29 11.2 -0.9**
baz=322,SNR=5.8
443A Delano Plantat 94.43 45 P **P 20 29 13.8 +0.4**
baz=319
542A Morse 94.48 46 P **P 20 29 13.8 +0.1**
baz=319
146A Union 94.49 42 P **P 20 29 13.9 +0.2**
baz=321
344A Westbrook Farm 94.50 44 P **P 20 29 13.9 +0.2**
baz=320
245A Little AP, Sta 94.51 43 P **P 20 29 13.6 -0.2**
baz=320
Z47A Carrollton 94.58 41 P **P 20 29 14.0 0.0**
baz=322
Z48A Northport 94.71 41 P **P 20 29 13.9 -0.7**
baz=322
147A Livingston 94.88 42 P **P 20 29 15.2 -0.2**
baz=321,SNR=5.6
246A Jackson Lee, B 94.94 43 P **P 20 29 15.8 +0.1**
baz=321
345A Thompson Farm, 94.99 44 P **P 20 29 16.2 +0.3**
baz=320
BLA Blacksburg 95.03 34 PFAKE 20 29 30.0 +14
BLA LR LR
comp=Z,769nm,19.0s
444A Pine Grove 95.05 45 P **P 20 29 16.5 +0.3**
baz=320
247A Quitman 95.18 42 P **P 20 29 16.7 -0.2**
baz=321
346A Big Creek Wild 95.24 43 P **P 20 29 16.3 -0.8**
baz=321
445A Amite 95.26 44 P **P 20 29 17.6 +0.3**
baz=320
544A White Castle 95.28 45 P **P 20 29 16.9 -0.4**
baz=320
KEST Kesra 95.42 324 P **P 20 29 18.6 +0.6**
comp=Z,30nm,0.9s,baz=326,slow=4.3,SNR=20
KEST LR LR 21 19 01.9
comp=Z,1µm,18.2s,baz=336,slow=40
CBN Corbin Frederi 95.49 31 PFAKE 20 29 30.0 +12
CBN LR LR
comp=Z,734nm,20.0s
248A Dixon Mills 95.61 42 P **P 20 29 17.9 -0.9**
baz=322
347A Saraland 95.73 43 P **P 20 29 19.4 +0.1**
baz=321,SNR=5.1
446A Poplarville 95.75 44 P **P 20 29 19.2 -0.2**
baz=321
546A Slidell 95.99 44 P **P 20 29 20.1 -0.4**
baz=320
447A Lucedale 96.14 43 P **P 20 29 21.0 -0.2**
baz=321
PBRG Braganca 96.26 338 *e*P **P 20 29 22.1 +0.5**
KMSC Kings Mountain 96.33 36 P **P 20 29 21.3 -0.7**
baz=326,SNR=7.9
646A Port Sulphur 96.43 45 P **P 20 29 22.2 -0.4**
baz=320
448A Bay Minette 96.46 43 P **P 20 29 22.4 -0.3**
baz=322
PGAV Gavieira, Arco 96.55 339 *e*LR LR 21 02 37.3
comp=Z,984nm,20.0s
BRAL Brewton 96.70 42 PFAKE 20 29 30.0 +6.2
BRAL LR LR
comp=Z,940nm,21.0s
GOGA Godfrey 96.74 38 PFAKE 20 29 30.0 +6.1
GOGA LR LR
comp=Z,782nm,20.0s
MVO Moncorvo 96.94 338 *e*P **P 20 29 25.3 +0.6**
MVO Moncorvo 96.94 338 *e*LR LR 21 03 02.0
comp=Z,2µm,20.0s
POLO Lamas de Olo 96.97 339 *e*P **P 20 29 25.3 +0.4**
POLO Lamas de Olo 96.97 339 *e*LR LR 21 03 12.7
PVRL Vila Real 97.03 339 *e*P Pdif 20 29 25.7 +0.5
ESDC Sonseca Array 97.33 335 P Pdif 20 29 27.0 +0.4
comp=Z,6.4nm,0.8s,baz=19,slow=4.2,SNR=37
ESDC PKKPbc **PKKPdf 20 46 04.8 +0.3**
comp=Z,0.1nm,0.3s,baz=202,slow=2.9,SNR=7.1
ESDC LR LR 21 17 26.0
comp=Z,2µm,20.0s,baz=20,slow=38
RKT Rikitea 97.48 113 *e*PP PP 20 33 28.1 +3.1
comp=Z,369nm,26.2s
RKT *e*SKSac **SKSac 20 40 06.6 +3.7**
comp=Z,279nm,27.6s
RKT *e*SP **SP 20 42 12.1 -0.7**
comp=Z,459nm,33.5s
RKT *e*SS **SS 20 47 29.0 -1.3**
comp=Z,510nm,28.5s
RKT Rikitea 97.48 113 *e*LR LR 21 00 35.8
comp=Z,2µm,27.2s,baz=308
PAB San Pablo 97.57 336 *e*P **P 20 29 27.5 -0.2**

PAB pmax pmax
comp=Z,8.0nm,1.0s
PAB MLR MLR
comp=Z,2µm,20.0s
PAB San Pablo 97.57 336 *e*P **P 20 29 27.5 -0.2**
comp=Z,7.6nm,1.0s
PAB LR LR
comp=Z,2µm,20.0s
PVIS Viseu 97.60 338 *e*P **P 20 29 27.1 -0.6**
MTE Manteigas 97.79 338 *e*P Pdif 20 29 29.1 +0.4
MTE Manteigas 97.79 338 *e*LR LR 21 03 02.0
comp=Z,2µm,20.0s
MTE Manteigas 97.79 338 PFAKE 20 29 40.0 +11
MTE LR LR
comp=Z,2µm,21.0s
PCAS Casmilo, Conde 98.39 339 *e*LR LR 21 03 51.5
NHSC New Hope 98.55 36 PFAKE 20 29 40.0 +7.9
NHSC LR LR
comp=Z,1µm,21.0s
PESTR Estremoz 99.22 338 *e*LR LR 21 04 02.1
PMTG Montargil 99.22 338 *e*LR LR 21 04 09.2
PBAR Barrancos 99.68 337 *e*P **Pdif 20 29 38.3 +1.3**
PNCL Nicolau / Gran 100.19 338 *e*LR LR 21 03 51.5
PCVE Castro Verde 100.49 337 *e*LR LR 21 03 55.1
PVAQ Vaqueiros 100.60 337 *e*LR LR 21 04 23.3
comp=Z,2µm,20.0s
KMBO Kilima Mbogo 103.54 279 PFAKE 20 30 10.0 +15
KMBO LR LR
comp=Z,639nm,19.0s
TEIG Tepich 104.48 50 PKKPbc PKKPbc 20 45 44.5 +1.4
comp=Z,11nm,1.0s,baz=270,slow=23,SNR=5.4
TEIG Tepich 104.48 50 PKKPbc PKKPbc 20 45 44.5 +1.4
TEIG LR LR
comp=Z,298nm,20.0s
BBSR BB Station 105.39 25 PFAKE 20 34 30.0
BBSR LR LR
comp=Z,582nm,19.0s
PMOZ Porto Moniz, M 107.48 343 *e*LR LR 21 05 02.2
TAM Tamanrasset 107.96 320 PFAKE 20 34 30.0
TAM LR LR
comp=Z,695nm,21.0s
GTBY Guantanamo Bay 112.04 39 PFAKE 20 34 40.0
GTBY LR LR
comp=Z,555nm,20.0s
MTDJ Mount Denham 112.20 42 PFAKE 20 34 40.0
MTDJ LR LR
comp=Z,501nm,19.0s
GRTK Grand Turk 112.59 35 PFAKE 20 34 40.0
GRTK LR LR
comp=Z,655nm,20.0s
JTS JuntasAbangare 114.10 54 PFAKE 20 34 40.0 +7.0
JTS LR LR
comp=Z,521nm,22.0s
SDDR Presa de Saban 114.71 37 PFAKE 20 34 40.0 +5.9
SDDR LR LR
comp=Z,682nm,19.0s
VNDA Vanda 115.60 176 PKP **PKPdf 20 34 33.2 -0.7**
comp=Z,3.6nm,1.0s,baz=309,slow=1.2,SNR=7.7
SJG San Juan 117.77 32 PFAKE 20 34 50.0 +10
SJG LR LR
comp=Z,536nm,21.0s
TORD Torodi Ar. Bea 117.96 317 PKP **PKPdf 20 34 39.7 -0.7**
comp=Z,3.6nm,0.9s,baz=10,slow=1.3,SNR=11
TORD PP **PP 20 35 52.8 -1.0**
comp=Z,9.6nm,0.9s,baz=42,slow=6.6,SNR=10
TORD PKKPbc **PKKPbc 20 45 00.1 +1.0**
comp=Z,3.1nm,0.8s,baz=207,slow=3.7,SNR=8.9
BCIP Isla Barro Col 118.16 50 PFAKE 20 34 50.0 +9.2
BCIP LR LR
comp=Z,430nm,22.0s
PAYG Puerto Ayora 118.33 67 PFAKE 20 34 50.0 +8.8
PAYG LR LR
comp=Z,655nm,20.0s
LSZ Lusaka 119.16 273 *e*PKIKP **PKPdf 20 34 42.3 -0.4**
LSZ MLR MLR
comp=Z,851nm,20.0s
LSZ Lusaka 119.16 273 *e*PKPdf **PKPdf 20 34 42.3 -0.4**
LSZ LR LR
comp=Z,851nm,20.0s
ANWB Willy Bob 119.90 28 PFAKE 20 34 50.0 +6.0
ANWB LR LR
comp=Z,471nm,19.0s
CAPC Capurgana 120.07 48 *e*P **PKPdf 20 34 43.4 -1.1**
MOTC Monteria, Cord 120.94 47 *e*P **PKPdf 20 34 44.6 -1.5**
MAW Mawson 120.97 206 PKP **PKPdf 20 34 43.6 -0.9**
comp=Z,10nm,0.8s,baz=51,slow=1.4,SNR=8.8
CXM Morne La Croix 122.75 29 *e*P **PKPdf 20 34 49.5 -0.3**
FDF Fort de France 122.83 29 *e*P **PKPdf 20 34 49.6 -0.2**
FDF Fort de France 122.83 29 PFAKE 20 35 00.0 +10
FDF LR LR
comp=Z,760nm,22.0s
BRRC Barranca, Sant 123.42 46 *e*P **PKPdf 20 34 50.8 -0.1**
GRMC Gramalote, San 123.43 45 *e*P **PKPdf 20 34 50.6 -0.6**
CBRI Barrientos, No 123.43 45 *e*P **PKPdf 20 34 47.7 -3.5**
SDV Santo Domingo 123.64 42 *e*PKPdf **PKPdf 20 34 51.5 -0.1**
SDV LR LR
comp=Z,546nm,19.0s
SDV Santo Domingo 123.64 42 *e*P **PKPdf 20 34 52.4 +0.9**
BTLC Betulia, Santa 123.82 46 *e*P **PKPdf 20 34 52.9 +0.9**
NORC Norcasia 123.99 48 *e*P **PKPdf 20 34 51.2 -0.9**
BARC Barichara 124.14 46 *e*P **PKPdf 20 34 52.9 +0.2**
RUSC La Rusia 124.76 46 *e*P **PKPdf 20 34 52.9 -1.3**
ROSC El Rosal 124.89 48 PKP **PKPdf 20 34 54.7 +0.5**
comp=Z,16nm,0.6s,baz=335,slow=2.2,SNR=11
GRGR Grenville 125.00 31 PFAKE 20 35 00.0 +6.1
GRGR LR LR
comp=Z,748nm,21.0s
POPC Popayan, Colom 125.27 52 *e*P **PKPdf 20 34 54.9 +0.1**
PRAC Prado 125.45 50 *e*P **PKPdf 20 34 52.4 -2.4**
OTAV Otavalo 125.89 56 *e*PKPdf **PKPdf 20 34 56.4 +0.2**
OTAV LR LR
comp=Z,364nm,20.0s
OTAV Otavalo 125.89 56 *e*P **PKPdf 20 34 55.3 -0.9**
BETC Betania 125.92 51 *e*P **PKPdf 20 34 55.7 -0.1**
SJAC San Juan de Ar 126.36 49 *e*P **PKPdf 20 34 55.4 -1.4**
DBIC Dimbokro 126.86 319 PKP **PKPdf 20 34 56.8 -0.7**
comp=Z,15nm,1.0s,baz=332,slow=2.9,SNR=6.6
DBIC PP **PP 20 36 52.4 -1.7**
comp=Z,30nm,1.0s,baz=5.1,slow=8.8,SNR=8.8
TIC Toumodi 126.96 320 *e*P **PP 20 36 52.2 -2.6**
TIC Toumodi 126.96 320 *e*P **PKPdf 20 34 57.5 -0.2**
KIC Kosan Boka 127.06 319 *e*P **PP 20 36 53.4 -2.1**
comp=Z,91nm,1.1s
KIC Kosan Boka 127.06 319 *e*P **PKPdf 20 34 54.6 -3.3**
comp=Z,46nm,1.1s
LIC Lamto 127.32 319 *e*P **PP 20 36 55.1 -2.1**
comp=Z,68nm,1.4s
LIC Lamto 127.32 319 *e*P **PKPdf 20 34 58.1 -0.3**
comp=Z,53nm,1.4s
QSPA South Pole Qui 127.54 180 PFAKE 20 35 10.0 +13
QSPA LR LR
comp=Z,573nm,20.0s
BOSA Boshof 128.38 261 PKP **PKPdf 20 34 58.1 -2.0**
comp=Z,17nm,1.1s,baz=145,slow=0.7,SNR=8.5
TSUM Tsumeb 129.73 276 *e*PKPdf **PKPdf 20 35 02.9 0.0**
TSUM LR LR
comp=Z,589nm,19.0s
ATAH Atahualpa 131.30 62 PKP **PKPdf 20 35 07.0 +0.5**
comp=Z,32nm,1.0s,baz=320,slow=2.6,SNR=6.2
NNA Nana 135.75 65 PKP **PKPdf 20 35 13.9 -0.4**
comp=Z,19nm,0.7s,baz=311,slow=4.3,SNR=5.9
NNA Nana 135.75 65 *e*PKPdf **PKPdf 20 35 14.0 -0.3**
NNA LR LR
comp=Z,302nm,20.0s
PTGA Pitinga 137.23 36 PKP **PKPdf 20 35 16.5 -0.6**
comp=Z,19nm,0.9s,baz=18,slow=2.7,SNR=19
NVL N'lazarevskaya 138.63 202 *e*PKIKP PKPpre 20 35 12.6
SNAA Sanae 141.97 197 PKP PKPpre 20 35 17.1
SNAA Sanae 141.97 197 *e*PKHKP PKPpre 20 35 16.5
SNAA Sanae 141.97 197 *e*PKPpre PKPpre 20 35 16.5
SAML Samuel 142.50 47 *e*PKPpre PKPpre 20 35 22.3
SAML LR LR
comp=Z,535nm,19.0s
VNA2 Neumayer--Watz 143.52 196 PKP PKPbc 20 35 23.6 -0.5
baz=118,slow=3.6
VNA3 Neumayer Olymp 143.73 194 PKP PKPbc 20 35 24.3 -0.4
VNA1 Neumayer--Stat 143.91 196 PKP PKPbc 20 35 25.0 -0.1
ASCN Ascension 144.17 320 *e*PKPdf PKPbc 20 35 28.5 +0.8
ASCN LR LR
comp=Z,971nm,21.0s
LPAZ La Paz 144.84 61 PKP **PKPab 20 35 30.4 0.0**
comp=Z,29nm,0.8s,baz=344,slow=4.7,SNR=66
SHEL Horse Pasture 145.28 300 *e*PKIKP **PKPdf 20 35 32.0 +0.6**
SHEL Horse Pasture 145.28 300 *e*PKPdf **PKPdf 20 35 32.0 +0.6**
RCBR Riachuelo 148.17 359 PKPbc **PKPbc 20 35 40.1 +0.4**

comp=Z,92nm,0.9s,baz=29,slow=2.2,SNR=27
RCBR Riachuelo 148.17 359 *e*PKPdf **PKPdf 20 35 37.3 +0.9**
RCBR PKPbc **PKPbc 20 35 40.1 +0.4**
RCBR LR LR
comp=Z,485nm,19.0s
LVC Limon Verde 148.32 71 PKPbc **PKPbc 20 35 38.5 -1.7**
comp=Z,174nm,0.9s,baz=252,slow=3.1,SNR=19
LVC Limon Verde 148.32 71 *e*PKPdf **PKPdf 20 35 37.3 +0.5**
LVC PKPbc **PKPbc 20 35 38.5 -1.7**
LVC LR LR
comp=Z,806nm,19.0s
PMSA Palmer Station 148.46 158 PKPbc **PKPbc 20 35 37.8 -0.9**
comp=Z,53nm,1.0s,baz=199,slow=6.2,SNR=4.9
SIV San Ignacio 149.29 52 PKPbc **PKPbc 20 35 42.3 -0.1**
comp=Z,120nm,1.0s,baz=308,slow=2.4,SNR=32
LCO Las Campanas 150.23 83 *e*PKPdf **PKPdf 20 35 40.5 +1.0**
LCO LR LR
comp=Z,922nm,19.0s
YJA Yavi 150.56 66⇑*iP* **PKPbc 20 35 45.7 -0.1**
YJA ⇑*iP* **PKiKP 20 35 46.1 -0.4**
HJA Humahuaca 151.26 68⇓*iP* **PKPbc 20 35 44.5 -2.9**
VCA Vinchina 152.06 81 *i* P **PKPdf 20 35 44.5 +2.3**
VCA *i* P **PKiKP 20 35 49.8 +0.7**
USHA Ushuaia 152.44 139 PKPbc **PKPbc 20 35 48.4 -0.2**
comp=Z,353nm,0.9s,baz=263,slow=0.7,SNR=19
USHA PKPab **PKPab 20 35 59.1 +0.1**
comp=Z,336nm,1.0s,baz=143,slow=2.5,SNR=7.1
RTLS Leoncito 152.47 87⇓*iP* **PKPdf 20 35 44.1 +1.2**
FSA Cafayete 152.49 74⇓*iP* **PKPdf 20 35 45.7 +2.8**
AUSP Uspallata 152.55 88 *i* P **PKPdf 20 35 45.3 +2.3**
CANA Caviahue 152.76 101 *i* P **PKPbc 20 35 49.0 -1.1**
RTLL Cerro Villicun 152.94 86 *i* P **PKPdf 20 35 45.7 +2.4**
ASAL Salagasta 153.11 89 *i* P **PKPdf 20 35 47.0 +3.4**
AHML Horco Molle 153.33 74 *i* P **PKPdf 20 35 47.8 +3.8**
AVFE Valle Fertil 153.48 84 *i* P **PKPbc 20 35 49.4 -2.4**
PLCA Paso Flores 153.53 107 PKP **PKPdf 20 35 43.5 -0.3**
comp=Z,9.7nm,1.2s,baz=252,slow=3.4,SNR=3.8
PLCA PKPbc **PKPbc 20 35 51.6 0.0**
comp=Z,44nm,1.1s,baz=283,slow=2.6,SNR=19
PLCA PKPab **PKPab 20 36 03.8 -0.4**
comp=Z,56nm,1.0s,baz=262,slow=2.9,SNR=15
CYA Choya 153.80 78⇓*iP* **PKPbc 20 35 52.2 -0.3**
AMAR Marayes 153.89 85 *i* P **PKPbc 20 35 49.8 -2.8**
APLL PUNTA DE LOS L 154.10 82⇑*iP* **PKPdf 20 35 44.1 -0.9**
CPUP Villa Florida 158.99 63 PKP **PKPdf 20 35 50.3 -1.1**
comp=Z,16nm,1.1s,baz=348,slow=0.7,SNR=7.8
CPUP PKPab **PKPab 20 36 25.8 -2.0**
comp=Z,18nm,1.0s,baz=315,slow=4.0,SNR=6.1
EFI East Falkland 159.41 139 PFAKE 20 36 00.0 +9.0
EFI LR LR
comp=Z,874nm,19.0s
TRQA Tornquist 159.88 99 PFAKE 20 36 00.0 +7.9
TRQA LR LR
comp=Z,747nm,19.0s

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*IDC **09** 20:18:36.8±2.1, 32.°96S×178.°49W, h0km, mb4.5/2, mb1 4.7/3, mb1mx4.0/39, mbtmp4.5/3, ML4.2/1, Error ellipse: s-maj=60.4km s-min=31.8km az=128.0*
*ISCJB **09** 20:18:39.8±2.6, 33.°1S±0.°1×178.°5W±0.°4, h32km, mb4.4/2, Error ellipse: s-maj=50.3km s-min=11.5km az=12.9*
ISC 09 20:18:42.9±1.8, 33.°0S±0.°1×178.°7W±0.°3, h32km, n13, σ2°27/16, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWGZ	**Tauwhareparae**	**5.79**	**207**	PN	**Pn**	**20 20 08.6**	**+2.0**
TWGZ				SN	**Sn**	**20 21 16.2**	**+4.3**
URZ	**Urewera**	**6.22**	**212**	Pn	**Pn**	**20 20 12.6**	**+0.2**
	5.0nm,0.3s,baz=273,slow=2.9,SNR=12						
URZ				Sn	**Sn**	**20 21 24.2**	**+1.9**
	3.2nm,0.3s,baz=242,slow=21,SNR=11						
RAGZ	**Rawiri**	**6.29**	**209**	PN	**Pn**	**20 20 12.6**	**-0.8**
RAGZ				SN	**Sn**	**20 21 26.0**	**+1.8**
RIGZ	**Rimuhau**	**6.34**	**206**	PN	**Pn**	**20 20 13.5**	**-0.5**
KAHZ	**Kahuranaki**	**7.62**	**206**	SN	**Sn**	**20 21 57.2**	**+0.3**
BFZ	**Birch Farm**	**8.63**	**206**	SN	**Sn**	**20 22 19.4**	**-2.3**
MRZ	**Mangatainoka R**	**8.87**	**209**	SN	**Sn**	**20 22 24.0**	**-3.7**
HOWZ	**Holdsworth Sta**	**9.10**	**209**	SN	**Sn**	**20 22 29.5**	**-3.7**
ASAR	**Alice Springs**	**42.42**	**270**	P	**P**	**20 26 34.1**	**-0.7**
	8.1nm,0.9s,baz=112,slow=7.4,SNR=5.5						
WRA	**Warramunga Arr**	**43.65**	**275**	P	**P**	**20 26 45.8**	**+1.0**
	4.5nm,0.6s,baz=114,slow=8.1,SNR=1.5						
FINES	**FINESS Array B**	**147.38**	**338**	PKPbc	**PKPdf**	**20 38 20.8**	**+0.8**
	3.3nm,0.5s,baz=42,slow=3.2,SNR=28						
NB2	**NORSAR Subarra**	**151.24**	**350**	PKP	**PKPbc**	**20 38 31.7**	**-0.6**
	comp=Z,1.3nm,0.6s,baz=14,slow=4.1						
NOA	**NORSAR Array B**	**151.24**	**350**	PKPbc	**PKPbc**	**20 38 31.1**	**-1.2**
	comp=Z,0.7nm,0.7s,baz=19,slow=4.6,SNR=4.4						

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*ISCJB **09** 20:20:24.8±0.4, 50.°22N±0.°03×18.°60E±0.°02, h0km, Error ellipse: s-maj=4.7km s-min=2.2km az=6.0*
*IPEC **09** 20:20:25.8±0.2, 50.°21N×18.°70E, h1km±2km, ML1.7/3, Error ellipse: s-maj=2.4km s-min=1.1km az=166.0*
*CSEM **09** 20:20:25.8±0.2, 50.°24N×18.°62E, h2km, ML2.5/10, Error ellipse: s-maj=6.4km s-min=3.0km az=4.0*
*PRU **09** 20:20:26.7, 50.°22N×18.°60E, h0km*
*WAR **09** 20:20:26.1, 50.°21N×18.°70E, h1km, Mw2.3*
ISC 09 20:20:25.4±0.8, 50.°16N±0.°03×18.°64E±0.°01, h0km, n43, σ0°62/74, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHZP	**Chorzow**	**0.26**	**60**	*e*Pg	**Pg**	**20 20 30.7**	**+0.2**
CHZP				*e*Sg	**Sg**	**20 20 33.9**	**0.0**
CHZP	**Chorzow**	**0.26**	**60**	*e*Pg	**Pg**	**20 20 30.7**	**+0.2**
CHZP				*e*Sg	**Sg**	**20 20 33.9**	**0.0**
CHZP	**Chorzow**	**0.26**	**60**	*e*Pg	**Pg**	**20 20 30.7**	**+0.2**
CHZP				*e*Sg	**Sg**	**20 20 33.9**	**0.0**
OKC	**Ostrava-Krasne**	**0.45**	**225**	*e*PG	**Pb**	**20 20 36.5**	**+0.3**
OKC				*e*SG	**Sb**	**20 20 44.1**	**+0.6**
	comp=Z,20nm,0.4s						
OKC	**Ostrava-Krasne**	**0.45**	**225**	Pg	**Pb**	**20 20 36.5**	**+0.3**
OKC				Sg	**Sb**	**20 20 44.1**	**+0.6**
	20nm,0.4s						
OJC	**Ojcow**	**0.75**	**85**	*e*Pg	**Pg**	**20 20 39.4**	**-0.3**
OJC				*e*Sg	**Sg**	**20 20 49.1**	**-0.3**
OJC	**Ojcow**	**0.75**	**85**	*e*Pg	**Pg**	**20 20 39.4**	**-0.3**
OJC				*e*Sg	**Sg**	**20 20 49.1**	**-0.3**
OJC	**Ojcow**	**0.75**	**85**	*e*Pg	**Pg**	**20 20 39.4**	**-0.4**
OJC				*e*Sg	**Sg**	**20 20 49.1**	**-0.4**
MORC	**Moravsky Berou**	**0.80**	**242**	*e*Pg	**Pb**	**20 20 42.2**	**-0.1**
MORC				*e*Sg	**Sb**	**20 20 52.9**	**-0.8**
	14nm,0.3s						
LANS	**Liptovska Anna**	**1.15**	**152**	*e*Pg	**Pn**	**20 20 48.6**	**-0.1**
LANS				*e*Sg	**Sn**	**20 21 05.1**	**0.0**
LANS	**Liptovska Anna**	**1.15**	**152**	*e*PG	**Pn**	**20 20 48.6**	**-0.1**
LANS				*e*SG	**Sn**	**20 21 05.1**	**0.0**
KRLC	**Kraliky**	**1.20**	**267**	*e*PG	**Pg**	**20 20 48.4**	**+0.1**
KRLC				*e*SG	**Sg**	**20 21 04.3**	**+0.5**
KRLC	**Kraliky**	**1.20**	**267**	Pg	**Pg**	**20 20 48.4**	**+0.1**
KRLC				Sg	**Sg**	**20 21 04.3**	**+0.5**
NIE	**Niedzica**	**1.31**	**124**	*e*Pg	**Pb**	**20 20 50.9**	**+0.1**
NIE				*e*Sg	**Sn**	**20 21 08.8**	**-0.3**
NIE	**Niedzica**	**1.31**	**124**	*e*Pg	**Pb**	**20 20 50.9**	**+0.1**
NIE				*e*Sg	**Sn**	**20 21 08.8**	**-0.3**
NIE	**Niedzica**	**1.31**	**124**	*e*Pg	**Pb**	**20 20 50.9**	**0.0**
NIE				*e*Sg	**Sn**	**20 21 08.8**	**-0.3**
DPC	**Dobruska-Polom**	**1.50**	**278**	*e*PG	**Pn**	**20 20 53.9**	**+0.3**
DPC				*e*SG	**Sn**	**20 21 14.4**	**+0.5**
	comp=Z,9.5nm,0.4s						
DPC	**Dobruska-Polom**	**1.50**	**278**	Pg	**Pn**	**20 20 53.9**	**+0.3**
DPC				Sg	**Sn**	**20 21 14.4**	**+0.5**
	9.5nm,0.4s						
VRAC	**Vranov**	**1.57**	**238**	*e*Pn	**Pg**	**20 20 55.8**	**+0.2**
VRAC				*e*Sg	**Sg**	**20 21 17.2**	**+1.2**
	7.2nm,0.4s						
KSP	**Ksiaz**	**1.65**	**295**	*e*Pg	**Pg**	**20 20 57.2**	**+0.3**
KSP				*e*Sg	**Sg**	**20 21 18.5**	**+0.2**
KSP	**Ksiaz**	**1.65**	**295**	*e*Pg	**Pg**	**20 20 57.2**	**+0.3**
KSP				*e*Sg	**Sg**	**20 21 18.5**	**+0.2**
KSP	**Ksiaz**	**1.65**	**295**	*e*Pg	**Pg**	**20 20 57.2**	**+0.3**
KSP				*e*Sg	**Sg**	**20 21 18.5**	**+0.2**
VYHS	**Vyhne**	**1.67**	**175**	*e*Pn	**Pb**	**20 20 56.8**	**-0.2**
VYHS				*e*Sn	**Sg**	**20 21 20.2**	**+1.1**
VYHS	**Vyhne**	**1.67**	**175**	*e*PN	**Pb**	**20 20 56.8**	**-0.2**
VYHS				*e*SN	**Sg**	**20 21 20.2**	**+1.1**
VYHS				*e*LG	Lg	20 21 28.1	
UPC	**Upice**	**1.72**	**283**	*e*SG	**Sg**	**20 21 21.4**	**+0.8**
	comp=Z,5.0nm,0.4s						
UPC	**Upice**	**1.72**	**283**	Sg	**Sg**	**20 21 21.4**	**+0.8**
	5.0nm,0.4s						
KRUC	**Moravsky**	**1.82**	**234**	*e*Pn	**Pb**	**20 20 59.2**	**-0.5**
KRUC				*e*Sg	**Sg**	**20 21 24.6**	**+0.6**
	4.4nm,0.4s						
STHS	**Stebnicka Huta**	**1.85**	**113**	*e*Pn	**Pb**	**20 21 00.3**	**+0.3**
STHS				*e*Sn	**Sb**	**20 21 23.4**	**-0.3**
STHS	**Stebnicka Huta**	**1.85**	**113**	*e*PN	**Pb**	**20 21 00.3**	**+0.3**
STHS				*e*SN	**Sb**	**20 21 23.4**	**-0.3**
STHS				*e*LG	Lg	20 21 30.1	
KECS	**Kecovo**	**2.07**	**143**	*e*Pn	**Pg**	**20 21 05.2**	**+0.2**
KECS	**Kecovo**	**2.07**	**143**	*e*PN	**Pg**	**20 21 05.2**	**+0.2**
TREC	**Trest**	**2.22**	**248**	*e*SG	**Sg**	**20 21 36.0**	**-0.7**
	comp=Z,3.3nm,0.4s						
TREC	**Trest**	**2.22**	**248**	Sg	**Sg**	**20 21 36.0**	**-0.7**
	3.3nm,0.4s						
CRVS	**Cervenica-Dubn**	**2.23**	**123**	*e*Pn	**Pg**	**20 21 07.8**	**-0.3**
CRVS				*e*Sn	**Sn**	**20 21 32.6**	**+0.8**
CRVS	**Cervenica-Dubn**	**2.23**	**123**	*e*PN	**Pg**	**20 21 07.8**	**-0.3**
CRVS				*e*SN	**Sn**	**20 21 32.6**	**+0.8**
GOPC	**GO Pecny, Ondr**	**2.49**	**266**	*e*SG	**Sg**	**20 21 44.1**	**-1.4**
GOPC	**GO Pecny, Ondr**	**2.49**	**266**	Sg	**Sg**	**20 21 44.1**	**-1.4**
PVCC	**Panska Ves**	**2.63**	**280**	*e*SG	**Sg**	**20 21 49.7**	**-0.2**
	comp=Z,6.5nm,0.4s						
PVCC	**Panska Ves**	**2.63**	**280**	Sg	**Sg**	**20 21 49.7**	**-0.2**
	6.5nm,0.4s						
PRU	**Pruhonice**	**2.64**	**268**	*e*SG	**Sg**	**20 21 48.8**	**-1.5**
	comp=Z,3.3nm,0.5s						
PRU	**Pruhonice**	**2.64**	**268**	Sg	**Sg**	**20 21 48.8**	**-1.5**
	3.3nm,0.5s						
KHC	**Kasperske Hory**	**3.44**	**255**	*e*PG	**Pg**	**20 21 30.7**	**-0.7**
KHC				*e*SG	**Sg**	**20 22 14.5**	**-1.5**
	comp=Z,5.2nm,0.5s						
KHC	**Kasperske Hory**	**3.44**	**255**	Pg	**Pg**	**20 21 30.7**	**-0.7**
KHC				Sg	**Sg**	**20 22 14.5**	**-1.5**
	5.2nm,0.5s						

IDC 09 20:23:57.3±3.1, 33.°10S×178.°23W, h0km, mb4.1/2, mb1 4.3/3, mb1mx3.8/42, mbtmp4.1/3, ML3.9/1, MS4.7/4, Ms1 4.7/4, ms1mx3.9/42, Error ellipse: s-maj=71.8km s-min=36.3km az=118.0, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**6.39**	**215**	Pn	Pn	20 25 33.4	+0.7
	2.6nm,0.3s,baz=263,slow=3.2,SNR=9.8						
URZ				Sn	Sn	20 26 45.5	-0.9
	3.4nm,0.3s,baz=175,slow=18,SNR=14						
ASAR	**Alice Springs**	**42.84**	**270**	P	P	20 31 57.3	0.0
	0.8nm,0.5s,baz=111,slow=7.9,SNR=12						
WRA	**Warramunga Arr**	**44.07**	**275**	P	P	20 32 06.8	-0.4
	1.4nm,0.3s,baz=116,slow=6.5,SNR=34						
WRA				LR	LR	20 50 16.2	
	comp=Z,342nm,18.3s,baz=20,slow=36						
PLCA	**Paso Flores**	**80.82**	**133**	LR	LR	21 02 55.9	
	comp=Z,489nm,20.1s,baz=7.5,slow=29						
LVC	**Limon Verde**	**92.80**	**119**	LR	LR	21 08 05.1	
	comp=Z,1μm,21.9s,baz=294,slow=28						
ELK	**Elko**	**93.66**	**43**	LR	LR	21 11 36.5	
	comp=Z,410nm,21.6s,baz=46,slow=30						
FINES	**FINESS Array B**	**147.59**	**338**	PKPbc	PKPbc	20 43 42.2	-0.5
	3.9nm,1.0s,baz=29,slow=4.4,SNR=5.9						

MEX 09 20:24:37.8±0.5, 16.°63N×98.°78W, h10km±5km, MD3.6, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PNIG	**Pinotepa**	**0.67**	**110**	*i* P	Pg	20 24 49.0	-1.7
PNIG				*e*S	Sg	20 24 58.5	-1.1
TLIG	**Tlapa**	**0.95**	**12**	*e*P	Pg	20 24 53.2	-3.0
TLIG				*e*S	Sg	20 25 05.6	-3.1
CAIG	**El Cayaco**	**1.48**	**287**	*e*P	Pn	20 25 00.9	-3.6
CAIG				*e*S	Sn	20 25 18.8	-5.2
MEIG	**Mezcala**	**1.52**	**328**	*e*P	Pn	20 25 01.9	-3.2
MEIG				*e*S	Sn	20 25 19.6	-5.4
ARIG	**Puente Sto Nin**	**2.22**	**318**	*e*P	Pn	20 25 11.9	-2.8
ARIG				*i* S	Sn	20 25 37.6	-4.6
TPIG	**Tehuac#an**	**2.24**	**37**	*e*P	Pn	20 25 11.5	-3.6
TPIG				*i* S	Sn	20 25 38.8	-4.1
YAIG	**Yautepec**	**2.24**	**353**	*e*P	Pn	20 25 12.4	-2.7
YAIG				*e*S	Sn	20 25 38.7	-4.2

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*ISCJB **09** 20:27:59.3±0.4, 56.°34N±0.°03×118.°05E±0.°03, h10km, Error ellipse: s-maj=4.4km s-min=2.4km az=173.2*
*BYKL **09** 20:28:02.9±0.2, 56.°39N×118.°13E*
*MOS **09** 20:28:03.1±1.7, 56.°41N×118.°11E, h10km, mb4.2/1, Error ellipse: s-maj=27.9km s-min=20.6km az=89.1*
ISC 09 20:28:00.9±0.7, 56.°38N±0.°03×118.°14E±0.°02, h10km, n27, σ2°39/59, 5C-1D, East of Lake Baykal

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRS	**Chara**	**0.53**	**8**	⇑*iPg*	**Pb**	**20 28 12.6**	**+0.3**
CRS				*e*Sg	**Sb**	**20 28 19.4**	**-0.6**
CRS				Pmax			
	97nm,0.1s						
CRS				Smax			
	2μm,0.2s						
CRS	**Chara**	**0.53**	**8**	⇑*iPG*	**Pb**	**20 28 12.6**	**+0.3**
CRS				*e*		20 28 19.4	
CRS				pmax	pmax		
	comp=Z,107nm,0.1s						
CRS				smax	smax		
	comp=E,2μm,0.2s						
KHNR	**Khani**	**1.15**	**61**	⇓*iPg*	**Pn**	**20 28 23.9**	**+0.7**
KHNR				*e*Sg	**Sn**	**20 28 39.1**	**+0.1**
NLYR	**Nelyaty**	**1.36**	**276**	⇑*iPg*	**Pg**	**20 28 27.1**	**+0.1**
NLYR				*e*Sg	**Sg**	**20 28 44.6**	**+0.1**
NLYR				Pmax			
	comp=E,71nm,0.3s						
NLYR				Smax			
	comp=E,954nm,0.6s						
NLYR	**Nelyaty**	**1.36**	**276**	*e*PG	**Pg**	**20 28 27.0**	**+0.1**
NLYR				*e*		20 28 44.6	
NLYR				pmax	pmax		
	comp=Z,140nm,1.4s						
NLYR				smax	smax		
	comp=N,954nm,0.4s						
YKLR	**Yuktali**	**1.96**	**82**	*e*Pg	**Pg**	**20 28 37.7**	**-0.8**
YKLR				*e*Sg	**Sg**	**20 29 04.3**	**+0.4**
TUP	**Tupik**	**2.21**	**151**	*e*Pn	**Pb**	**20 28 40.3**	**-0.7**
TUP				⇑*iPg*	**Pg**	**20 28 42.9**	**-0.4**
TUP				*e*Sg	**Sg**	**20 29 12.3**	**+0.3**
TUP				Pmax			
	comp=N,114nm,0.2s						
TUP				Smax			
	comp=N,205nm,0.3s						
TUP	**Tupik**	**2.21**	**151**	⇑*e*PN	**Pb**	**20 28 40.4**	**-0.6**
TUP				*i*		20 28 42.9	
TUP				*e*		20 29 12.5	
TUP				pmax	pmax		
	comp=Z,113nm,0.2s						
TUP				smax	smax		
	comp=E,202nm,0.2s						
SVKR	**Severomuysk**	**2.57**	**266**	*e*Pg	**Pg**	**20 28 49.3**	**-0.8**
SVKR				*e*Sg	**Sg**	**20 29 22.9**	**-0.4**
SVKR				Pmax			
	comp=E,73nm,0.2s						
SVKR				Smax			
	comp=E,790nm,0.4s						
SVKR	**Severomuysk**	**2.57**	**266**	*e*PN	**Pg**	**20 28 48.8**	**-1.3**
SVKR				*e*		20 29 22.1	
SVKR				pmax	pmax		
	comp=Z,90nm,1.5s						
SVKR				smax	smax		
	comp=E,784nm,0.6s						
BOD	**Bodaibo**	**2.68**	**304**	*e*Pn	**Pn**	**20 28 45.8**	**+1.8**
BOD				*e*Pg	**Pg**	**20 28 50.7**	**-1.5**
BOD				*e*Sg	**Sg**	**20 29 24.7**	**-2.1**
BOD				Pmax			
	comp=E,66nm,0.3s						
BOD				Smax			
	comp=E,258nm,0.4s						
BOD	**Bodaibo**	**2.68**	**304**	*e*PN	**Pn**	**20 28 45.4**	**+1.4**
BOD				*e*		20 28 50.6	
BOD				*e*		20 29 24.1	
BOD				pmax	pmax		
	comp=Z,59nm,0.2s						
BOD				smax	smax		
	comp=N,318nm,0.8s						
UKT	**Uakit**	**2.69**	**253**	*e*Pn	**Pb**	**20 28 47.2**	**-1.9**
UKT				*e*Pg	**Pg**	**20 28 51.0**	**-1.4**
UKT				*e*Sg	**Sg**	**20 29 26.1**	**-1.1**
UKT				Pmax			
	comp=N,31nm,0.3s						
UKT				Smax			
	comp=N,176nm,0.4s						
YOA	**Uoyan**	**3.59**	**269**	*e*Pg	**Pb**	**20 29 07.0**	**+2.6**
YOA				*e*Sn	**Sn**	**20 29 40.3**	**+1.4**
YOA				*e*Sg	**Sg**	**20 29 54.6**	**-1.4**
YOA				Pmax			
	comp=N,38nm,0.2s						
YOA				Smax			
	comp=N,807nm,0.6s						
IENR	**Iengra**	**3.75**	**90**	*e*Pn	**Pn**	**20 29 01.1**	**+2.3**
IENR				*e*Sn	**Sn**	**20 29 43.6**	**+0.6**
IENR				*e*Sg	**Sg**	**20 29 58.0**	**-3.2**
CLNS	**Chul'man**	**3.76**	**80**	*e*Pg	**Pg**	**20 29 10.4**	**-2.5**
CLNS				*e*Sn	**Sn**	**20 29 44.6**	**+1.3**
CLNS				*e*Sg	**Sg**	**20 29 58.9**	**-2.7**
KMO	**Kumora**	**3.91**	**266**	*e*Pn	**Pn**	**20 29 03.7**	**+2.7**
KMO				*e*Pg	**Pb**	**20 29 12.3**	**+2.4**
KMO				*e*Sg	**Sg**	**20 30 02.8**	**-3.6**
KMO				Pmax			
	comp=N,18nm,0.4s						
KMO				Smax			
	comp=N,144nm,0.5s						
TNDR	**Tynda**	**3.92**	**106**	*e*Pn	**Pn**	**20 29 03.9**	**+2.8**
TNDR				*e*Sn	**Sn**	**20 29 48.6**	**+1.5**
TNDR				*e*Sg	**Sg**	**20 30 04.4**	**-2.2**
YLYR	**Ulyunkhan**	**4.23**	**252**	*e*Pn	**Pn**	**20 29 08.9**	**+3.5**
YLYR				*e*Pg	**Pg**	**20 29 19.5**	**-2.4**
YLYR				*e*Sg	**Sg**	**20 30 14.4**	**-2.2**
YLYR				Pmax			
	comp=N,10.0nm,0.6s						
YLYR				Smax			
	comp=N,90nm,0.5s						
YLYR	**Ulyunkhan**	**4.23**	**252**	*e*PN	Pb	20 29 10.6	-4.8
YLYR				*e*		20 29 20.8	
YLYR				*e*S	**Sn**	**20 29 58.6**	**+3.8**
YLYR				*e*		20 30 14.5	
YLYR				pmax	pmax		
	comp=Z,18nm,0.3s						
YLYR				smax	smax		
	comp=N,89nm,0.5s						
NIZ	**Nizh Angarsk**	**4.85**	**266**	*e*Pn	**Pn**	**20 29 16.5**	**+2.6**
NIZ				*e*Pg	**Pg**	**20 29 31.3**	**-2.5**
NIZ				*e*Sn	**Sn**	**20 30 12.1**	**+2.0**
NIZ				*e*Sg	**Sg**	**20 30 33.5**	**-3.1**
NIZ				Pmax			
	comp=N,48nm,0.2s						
NIZ				Smax			
	comp=N,76nm,1.3s						
CIT	**Chita**	**5.13**	**214**	*e*Pn	**Pn**	**20 29 19.5**	**+1.8**
CIT				*e*Sn	**Sn**	**20 30 18.8**	**+1.8**
CIT				*e*Sg	**Sg**	**20 30 43.0**	**-2.4**
CIT				*e*		20 30 48.4	
CIT				max			
	comp=N,107nm,0.2s						
SYVR	**Suvo**	**5.42**	**243**	*e*Pn	**Pn**	**20 29 24.3**	**+2.6**
SYVR				*e*Pg	**Pb**	**20 29 39.9**	**+4.4**
SYVR				*e*Sg	**Sg**	**20 30 51.5**	**-3.2**
SYVR				Pmax			
	comp=N,9.0nm,0.2s						
SYVR				Smax			
	comp=N,69nm,0.5s						
SYVR	**Suvo**	**5.42**	**243**	*e*PN	**Pg**	**20 29 40.5**	**-4.1**
SYVR				*e*		20 30 51.4	
SYVR				pmax	pmax		
	comp=Z,7.0nm,0.3s						
SYVR				smax	smax		
	comp=N,185nm,1.8s						
OGRR	**Ongureny**	**6.65**	**250**	*e*Pn	**Pn**	**20 29 40.5**	**+1.9**
OGRR				*e*Sn	**Sn**	**20 30 52.7**	**-1.8**
OGRR				*e*Sg	**Sg**	**20 31 28.0**	**-6.3**
OGRR				Smax			
	comp=N,24nm,0.1s						
KPC	**Khapcheranga**	**7.53**	**210**	*e*Pn	**Pn**	**20 29 52.8**	**+2.1**
KPC				*e*Pg	Pb	20 30 18.6	+7.0
KPC				*e*Sg	Sg	20 31 54.1	-8.3
KPC				Pmax			
	comp=N,3.0nm,0.2s						
KPC				Smax			
	comp=N,43nm,1.5s						
HRMR	**Khuramsha**	**8.12**	**239**	*e*Sg	**Sg**	**20 32 15.5**	**-5.8**
HRMR				Smax			
	comp=N,110nm,1.1s						

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*SJA **09** 20:28:40.3±1.0, 31.°71S×68.°32W, h126km±11km, ML4.0*
*ISCJB **09** 20:28:41.1±0.9, 31.°70S±0.°08×68.°31W±0.°09, h123km±11km, Error ellipse: s-maj=14.4km s-min=11.4km az=44.7*
*IDC **09** 20:28:43.1±10.0, 31.°46S×68.°95W, h121km±82km, mb1 3.7/3, mb1mx3.4/38, mbtmp4.2/3, ML3.9/2, Error ellipse: s-maj=124.5km s-min=63.5km az=114.0*
ISC 09 20:28:41.3±0.9, 31.°60S±0.°07×68.°32W±0.°08, h114km±9km, n14, σ1°34/19, San Juan Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SJA	**San Juan**	**0.22**	**290**	*i* P	**Pn**	**20 28 58.4**	**+1.1**
RTLL	**Cerro Villicun**	**0.30**	**334**	*i* P	**Pn**	**20 28 58.8**	**+1.1**
RTCV	**Cerro Valdivia**	**0.32**	**216**	*i* P	**Pn**	**20 28 58.3**	**+0.6**
RTLS	**Leoncito**	**0.86**	**256**	*i* P	**Pn**	**20 29 02.7**	**+0.9**
ASAL	**Salagasta**	**1.08**	**204**	*i* P	**Pn**	**20 29 03.9**	**+0.1**
ASAL				*i* S	**Sn**	**20 29 21.1**	**+0.4**
AUSP	**Uspallata**	**1.10**	**235**	*i* P	**Pn**	**20 29 04.5**	**+0.3**
ACAN	**Cantantal**	**1.17**	**125**	*i* P	**Pn**	**20 29 04.1**	**-0.6**
ACAN				*i* S	**Sn**	**20 29 23.1**	**+0.7**
ARCO	**CERRO ARCO**	**1.34**	**203**	*i* P	**Pn**	**20 29 06.8**	**+0.1**
ARCO				*i* S	**Sn**	**20 29 24.7**	**-1.2**
ARCO				IAML		20 29 26.6	
	comp=Z,2μm,0.2s						
AAGR	**Agrelo**	**1.54**	**196**	*i* P	**Pn**	**20 29 08.6**	**-0.4**
AAGR				*i* S	**Sn**	**20 29 28.8**	**-1.2**
LVC	**Limon Verde**	**8.97**	**356**	P	**Pn**	**20 30 48.4**	**+0.1**
	comp=Z,140nm,0.3s,baz=151,slow=14,SNR=21						
LVC				S	**Sn**	**20 32 24.5**	**-3.4**
	comp=Z,24nm,0.3s,baz=308,slow=17,SNR=3.4						
LPAZ	**La Paz**	**15.25**	**1**	P	**P**	**20 32 12.5**

7.8nm,0.3s,baz=343,slow=19,SNR=2.9
JHJ Sn **Sn** **20 31 05.8 -3.7**
20nm,0.3s,baz=254,slow=24,SNR=4.0
ASAJ Asahikawa 6.49 355 Pn **Pn** **20 30 20.4 -2.5**
2.2nm,0.3s,baz=188,slow=7.0,SNR=13
ASAJ Sn **Sn** **20 31 37.1 +1.5**
0.4nm,0.3s,baz=88,slow=28,SNR=2.1
JCJ Chichijima 10.58 186 Pn Pn 20 31 12.2 -6.9
2.0nm,0.3s,baz=287,slow=19,SNR=3.6
USRK Ussuriysk Ar. 10.85 311 Pn **Pn** **20 31 23.9 +1.2**
0.1nm,0.3s,baz=121,slow=14,SNR=4.3
ZALV Zalesovo Beam 42.70 312 P **P** **20 36 45.3 +2.1**
1.7nm,0.7s,baz=79,slow=7.9,SNR=4.8
MKAR Makanchi Array 45.16 302 P **P** **20 37 05.8 +2.7**
0.6nm,0.6s,baz=84,slow=12,SNR=5.8
KURBB Kurchatov Arra 46.90 308 P **P** **20 37 16.6 -0.1**
2.1nm,0.5s,baz=81,slow=8.3,SNR=12
ILAR Eielson Array 48.10 33 P **P** **20 37 27.4 +1.5**
0.5nm,0.9s,baz=278,slow=6.7,SNR=2.8
WRA Warramunga Arr 57.93 190 P **P** **20 38 37.8 -0.9**
1.5nm,0.7s,baz=9.0,slow=7.2,SNR=9.4
ASAR Alice Springs 61.65 190 P **P** **20 39 03.1 -1.1**
0.3nm,0.7s,baz=360,slow=6.2,SNR=5.3

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*IDC **09** 20:31:48.9±0.8, 37.°68N×143.°68E, h0km, mb4.0/11, mb1 4.2/16, mb1mx3.9/60, mbtmp4.1/16, ML4.1/4, Error ellipse: s-maj=19.8km s-min=16.5km az=96.0*
*ISCJB **09** 20:31:50.3±0.5, 37.°78N±0.°04×143.°56E±0.°05, h19km, mb4.1/13, Error ellipse: s-maj=5.6km s-min=5.4km az=35.0*
*JMA **09** 20:31:52.5±0.2, 37.°80N×143.°50E, h51km, M4.1*
*NEIC **09** 20:31:54.3±0.7, 37.°80N×143.°65E, h35km, mb4.5/2, Error ellipse: s-maj=14.8km s-min=10.5km az=133.0*
ISC 09 20:31:52.3±0.8, 37.°81N±0.°05×143.°55E±0.°08, h19km, n45, σ1§85/49, mb4.2/13, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.85**	**291**	P	**Pn**	**20 32 22.4**	**-0.6**
JIO				eS	**Sn**	**20 32 44.5**	**-1.4**
OFUJ	**Ofunato**	**1.95**	**311**	P	**Pn**	**20 32 23.4**	**-1.0**
OFUJ				S	**Sn**	**20 32 46.5**	**-1.8**
JMK	**Ichinoseki**	**2.16**	**303**	P	**Pn**	**20 32 26.7**	**-0.5**
JMK				eS	**Sn**	**20 32 53.2**	**-0.3**
JOM	**Ohasama**	**2.43**	**314**	P	**Pn**	**20 32 30.4**	**-0.6**
JOM				S	**Sn**	**20 32 59.5**	**-0.7**
JFT	**Otama**	**2.57**	**265**	P	**Pn**	**20 32 32.7**	**-0.2**
JFT				S	**Sn**	**20 33 02.8**	**-0.8**
JYK	**Kaneyama**	**2.74**	**295**	P	**Pn**	**20 32 35.4**	**+0.1**
JYK				S	**Sn**	**20 33 07.6**	**-0.3**
JANG	**Nango**	**3.01**	**329**	P	**Pn**	**20 32 39.0**	**0.0**
JANG				eS	**Sn**	**20 33 12.2**	**-2.4**
JAG	**Ashikaga**	**3.55**	**248**	P	**Pn**	**20 32 46.3**	**-0.1**
BSO1	**Boso 1**	**3.77**	**214**	P	**Pn**	**20 32 47.6**	**-1.3**
JOT	**Ohata**	**4.06**	**332**	P	**Pn**	**20 32 53.3**	**-0.1**
JOT				eS	**Sn**	**20 33 37.3**	**-3.1**
JRY	**Ryogami san**	**4.13**	**246**	P	**Pn**	**20 32 54.1**	**-0.3**
JRY				S	**Sn**	**20 33 39.8**	**-2.4**
ERM	**Erimo**	**4.21**	**356**	ePn	**Pn**	**20 32 54.3**	**-1.2**
MJAR	**Matsushiro Arr**	**4.45**	**255**	Pn	**Pn**	**20 32 59.6**	**+0.9**
	12nm,0.3s,baz=90,slow=15,SNR=58						
MAJO	**Matsushiro**	**4.45**	**255**	ePn	**Pn**	**20 32 59.9**	**+1.2**
MAT	**Matsushiro**	**4.45**	**255**	P	**Pn**	**20 33 00.4**	**+1.6**
MAT				eS	**Sn**	**20 33 49.7**	**-0.3**
JHJ	**Hachijo jima 2**	**5.59**	**214**	Pn	**Pn**	**20 33 11.4**	**-3.1**
	41nm,0.3s,baz=85,slow=22,SNR=11						
JHJ				Sn	**Sn**	**20 34 11.7**	**-6.6**
	11nm,0.3s,baz=301,slow=23,SNR=3.3						
ASAJ	**Asahikawa 6.35**	**354**		Pn	**Pn**	**20 33 24.6**	**-0.2**
	7.5nm,0.3s,baz=200,slow=8.5,SNR=30						
ASAJ				Sn	**Sn**	**20 34 32.1**	**-4.5**
	1.4nm,0.3s,baz=27,slow=28,SNR=1.9						
ASAJ	**Asahikawa 6.35**	**354**		ePn	**Pn**	**20 33 23.8**	**-1.0**
	5.5nm,0.4s						
ASAJ				Sn	**Sn**	**20 34 32.1**	**-4.5**
CBIJ	**Chichi jima 10.74**	**187**		Pn	Pn	20 34 19.8	-5.3
CBIJ				Sn	Sn	20 36 11.5	-13
JCJ	**Chichijima 10.74**	**187**		Pn	Pn	20 34 19.8	-5.3
	7.4nm,0.3s,baz=267,slow=22,SNR=13						
JCJ				Sn	Sn	20 36 11.5	-13
	3.6nm,0.3s,baz=291,slow=22,SNR=5.5						
USRK	**Ussuriysk Ar. 10.82**	**310**		Pn	**Pn**	**20 34 27.6**	**+1.5**
	0.5nm,0.3s,baz=119,slow=16,SNR=10						
KSRS	**Korea Array 12.40**	**273**		Pn	**Pn**	**20 34 49.4**	**+1.7**
	0.1nm,0.3s,baz=82,slow=14,SNR=8.0						
KSAR	**Wonju Array Be 12.43**	**273**		Pn	**Pn**	**20 34 49.4**	**+1.3**
MDJ	**Mudanjiang 12.51**	**307**		Pn	Pn	20 34 44.6	-4.7
H11N2	**WAKE ISLAND Hy 27.14**	**125**		T	T	21 05 54.3	
	baz=317,slow=74,SNR=26						
H11N1	**WAKE ISLAND Hy 27.15**	**125**		T	T	21 05 48.7	
	baz=317,slow=74,SNR=25						
H11N3	**WAKE ISLAND Hy 27.16**	**125**		T	T	21 05 56.2	
	baz=317,slow=74,SNR=26						
H11S1	**WAKE ISLAND Hy 27.91**	**127**		T	T	21 06 48.7	
	baz=319,slow=76,SNR=10						
H11S3	**WAKE ISLAND Hy 27.91**	**127**		T	T	21 06 50.4	
	baz=319,slow=76,SNR=9.1						
H11S2	**WAKE ISLAND Hy 27.92**	**127**		T	T	21 06 53.8	
	baz=319,slow=76,SNR=10						
ULN	**Ulaanbaatar 28.35**	**303**		eP	**P**	**20 37 48.2**	**+3.1**
SONM	**Songino Array 28.79**	**302**		P	**P**	**20 37 50.4**	**+1.3**
	2.0nm,0.6s,baz=98,slow=9.2,SNR=12						
ZALV	**Zalesovo Beam 42.66**	**312**		P	**P**	**20 39 48.3**	**+0.9**
	3.2nm,0.5s,baz=88,slow=7.9,SNR=4.7						
MKAR	**Makanchi Array 45.15**	**302**		P	**P**	**20 40 08.2**	**+0.6**
	1.6nm,0.6s,baz=87,slow=9.3,SNR=5.1						
KURK	**Kurchatov 46.80**	**308**		eP	**P**	**20 40 20.4**	**0.0**
KURBB	**Kurchatov Arra 46.87**	**308**		P	**P**	**20 40 21.4**	**+0.4**
	2.0nm,0.5s,baz=82,slow=7.9,SNR=31						
ILAR	**Eielson Array 47.93**	**33**		P	**P**	**20 40 29.0**	**-0.1**
	1.1nm,0.7s,baz=268,slow=6.9,SNR=7.5						
TKM2	**Tokmak 2 50.76**	**298**		eP	**P**	**20 40 52.7**	**+1.4**
	3.4nm,0.6s						
WRA	**Warramunga Arr 58.09**	**190**		P	**P**	**20 41 43.1**	**-1.3**
	1.2nm,0.3s,baz=7.5,slow=7.0,SNR=51						
ABKAR	**Akbulak array 58.74**	**310**		eP	**P**	**20 41 48.1**	**-0.6**
	1.5nm,0.4s						
ASAR	**Alice Springs 61.81**	**190**		P	**P**	**20 42 09.2**	**-0.8**
	0.6nm,0.4s,baz=3.4,slow=6.6,SNR=14						
YKA	**Yellowknife Ar 62.28**	**31**		P	**P**	**20 42 13.5**	**+0.8**
	0.3nm,0.7s,baz=303,slow=6.2,SNR=5.8						
GEYT	**Alibeck 64.94**	**300**		P	**P**	**20 42 31.1**	**+0.4**
	0.8nm,0.6s,baz=52,slow=2.4,SNR=3.5						
FINES	**FINESS Array B 68.92**	**333**		P	**P**	**20 42 55.9**	**+0.4**
	1.6nm,0.8s,baz=101,slow=3.9,SNR=4.4						
PDAR	**Pinedale Array 75.91**	**47**		P	**P**	**20 43 37.6**	**-0.3**
	0.2nm,0.4s,baz=20,slow=4.7,SNR=4.0						

IDC 09 20:54:05.6±2.8, 38.°80S×92.°33W, h0km, mb3.9/4, mb1 4.3/4, mb1mx3.9/38, mbtmp3.9/4, MS4.1/2, Ms1 4.1/2, ms1mx3.7/21, Error ellipse: s-maj=85.2km s-min=47.3km az=157.0, West Chile Rise

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NNA	**Nana 30.05**	**31**		LR	LR	21 08 55.1	
	comp=Z,483nm,21.8s,baz=306,slow=30						
LPAZ	**La Paz 30.86**	**50**		P	P	21 00 24.4	0.0
	0.9nm,0.6s,baz=219,slow=14,SNR=4.1						
CPUP	**Villa Florida 31.82**	**78**		LR	LR	21 11 53.3	
	comp=Z,331nm,21.2s,baz=32,slow=34						
TXAR	**Lajitas Array 68.60**	**349**		P	P	21 05 09.8	-0.6
	1.0nm,0.8s,baz=176,slow=7.5,SNR=6.2						
NVAR	**Mina Array Bea 80.47**	**340**		P	P	21 06 20.1	+0.8
	0.6nm,0.5s,baz=164,slow=6.1,SNR=3.8						
PDAR	**Pinedale Array 82.68**	**347**		P	P	21 06 31.1	+0.2
	0.7nm,0.8s,baz=182,slow=6.0,SNR=5.4						
KSRS	**Korea Array 148.48**	**280**		PKPbc	PKPbc	21 13 53.4	-0.7
	0.8nm,0.7s,baz=114,slow=4.0,SNR=3.5						

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*IDC **09** 21:04:18.8±3.3, 36.°92N×144.°18E, h0km, mb3.5/3, mb1 3.6/9, mb1mx3.4/52, mbtmp3.7/9, ML3.6/5, Error ellipse: s-maj=62.0km s-min=25.2km az=94.0*
*ISCJB **09** 21:04:24.9±1.0, 37.°08N±0.°05×143.°66E±0.°07, h33km, mb3.3/3, Error ellipse: s-maj=8.8km s-min=6.2km az=35.5*
*JMA **09** 21:04:26.6±0.3, 37.°04N×143.°52E, h45km, M3.5*
ISC 09 21:04:26.5±1.9, 37.°09N±0.°09×143.°7E±0.°1, h35km, n20, σ1§39/30, mb3.5/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi 2.27**	**278**		P	**Pn**	**21 05 01.0**	**-0.6**
JFK				eS	**Sn**	**21 05 26.4**	**-2.0**
ONAJ	**Iwakimizuishiy 2.32**	**271**		P	**Pn**	**21 05 01.6**	**-0.7**
ONAJ				eS	**Sn**	**21 05 28.2**	**-1.4**
JHO	**Hitachi 2.56**	**260**		P	**Pn**	**21 05 04.4**	**-1.1**
JMK	**Ichinoseki 2.71**	**314**		P	**Pn**	**21 05 07.9**	**+0.4**
JMK				eS	**Sn**	**21 05 38.8**	**-0.2**
JFT	**Otama 2.72**	**280**		P	**Pn**	**21 05 07.8**	**+0.1**
JFT				eS	**Sn**	**21 05 38.6**	**-0.8**
JOM	**Ohasama 3.05**	**322**		P	**Pn**	**21 05 13.6**	**+1.4**
JOM				eS	**Sn**	**21 05 46.8**	**-0.6**
JYK	**Kaneyama 3.21**	**306**		P	**Pn**	**21 05 15.3**	**+0.8**
JYK				eS	**Sn**	**21 05 51.3**	**-0.2**
JAG	**Ashikaga 3.48**	**260**		P	**Pn**	**21 05 17.5**	**-0.6**
JAG				eS	**Sn**	**21 05 55.9**	**-2.1**
JANG	**Nango 3.70**	**333**		P	**Pn**	**21 05 21.9**	**+0.7**
JANG				eS	**Sn**	**21 06 02.7**	**-0.9**
MJAR	**Matsushiro Arr 4.44**	**265**		Pn	**Pn**	**21 05 32.0**	**+0.6**
	4.5nm,0.3s,baz=89,slow=15,SNR=25						
MAT	**Matsushiro 4.44**	**265**		P	**Pn**	**21 05 32.3**	**+0.9**
MAT				eS	**Sn**	**21 06 21.3**	**-0.6**
JHJ	**Hachijo jima 2 5.10**	**220**		Pn	**Pn**	**21 05 37.9**	**-2.4**
	5.9nm,0.3s,baz=108,slow=19,SNR=2.3						
JHJ				Sn	Sn	21 06 31.4	-6.5
	9.8nm,0.3s,baz=90,slow=20,SNR=3.2						
JCH	**Churui 5.53**	**357**		P	**Pn**	**21 05 45.3**	**-1.0**
JCH				eS	**Sn**	**21 06 44.8**	**-3.8**
ASAJ	**Asahikawa 7.08**	**354**		Pn	**Pn**	**21 06 06.9**	**-0.6**
	0.9nm,0.3s,baz=223,slow=12,SNR=3.6						
ASAJ				Sn	**Sn**	**21 07 25.1**	**-1.6**
	0.3nm,0.3s,baz=252,slow=20,SNR=2.6						
JCJ	**Chichijima 10.04**	**188**		Pn	Pn	21 06 43.0	-5.3
	1.5nm,0.3s,baz=287,slow=19,SNR=2.6						
JCJ				Sn	Sn	21 08 26.9	-13
	baz=105,slow=20						
USRK	**Ussuriysk Ar. 11.38**	**312**		Pn	**Pn**	**21 07 07.1**	**+0.6**
	0.1nm,0.3s,baz=119,slow=12,SNR=2.6						
KLR	**Kul'dur 14.92**	**328**		Pn	**Pn**	**21 07 54.5**	**-0.3**
	0.1nm,0.3s,baz=225,slow=20,SNR=2.9						
SONM	**Songino Array 29.28**	**303**		P	**P**	**21 10 27.7**	**+2.2**
	0.8nm,0.8s,baz=105,slow=8.3,SNR=5.9						
ZALV	**Zalesovo Beam 43.23**	**312**		P	**P**	**21 12 23.3**	**-0.8**
	0.5nm,0.5s,baz=77,slow=6.4,SNR=2.6						
MKAR	**Makanchi Array 45.64**	**302**		P	**P**	**21 12 45.0**	**+1.5**
	0.1nm,0.4s,baz=83,slow=11,SNR=2.2						

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*IDC **09** 21:05:48.9±2.6, 25.°85N×128.°63E, h0km, mb3.7/6, mb1 3.8/6, mb1mx3.5/39, mbtmp3.7/6, Error ellipse: s-maj=165.1km s-min=20.8km az=68.0*
*ISCJB **09** 21:05:51.9±0.9, 26.°08N±0.°04×128.°68E±0.°04, h29km±6km, mb3.5/6, Error ellipse: s-maj=7.0km s-min=5.5km az=159.1*
*JMA **09** 21:05:53.6±0.2, 26.°14N×128.°61E, h37km±3km, M2.9*
ISC 09 21:05:51.7±1.7, 26.°07N±0.°05×128.°66E±0.°04, h17km±10km, n19, σ1§11/30, mb3.7/6, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JNTH	**Nagotoyohara 0.73**	**308**		P	**Pg**	**21 06 06.0**	**+0.1**
JNTH				eS	**Sg**	**21 06 15.2**	**-0.4**
JJT2	**Tamagusuku 2 0.83**	**275**		P	**Pn**	**21 06 08.3**	**-0.3**
JJT2				S	**Sb**	**21 06 18.6**	**+0.1**
JOW	**Kunigami 0.83**	**335**		P	**Pb**	**21 06 07.9**	**+0.2**
JOW				eS	**Sb**	**21 06 18.2**	**-0.5**
JIH	**Iheya 1.14**	**327**		P	**Pn**	**21 06 12.7**	**-0.2**
JIH				eS	**Sb**	**21 06 27.0**	**-0.6**
JOKE	**Okinoerabujima 1.29**	**356**		P	**Pn**	**21 06 14.8**	**-0.1**
JOKE				eS	**Sb**	**21 06 29.7**	**-2.0**
JAGN	**Aguni-jima 1.38**	**292**		P	**Pn**	**21 06 16.3**	**+0.2**
JAGN				eS	**Sn**	**21 06 32.5**	**-1.4**
JKE	**Kume jima 2 1.71**	**279**		P	**Pn**	**21 06 20.2**	**-0.4**
JKE				eS	**Sn**	**21 06 39.9**	**-2.2**
JTK	**Tokunoshima 1.73**	**8**		P	**Pn**	**21 06 20.8**	**-0.1**
JTK				eS	**Sn**	**21 06 41.1**	**-1.5**
JAMN	**Amaminishikomi 2.21**	**12**		P	**Pn**	**21 06 27.9**	**+0.3**
JMZ	**Minamidaito 2 2.32**	**96**		P	**Pn**	**21 06 28.5**	**-0.5**
JMZ				eS	**Sn**	**21 06 54.8**	**-2.3**
JAM	**Amami Oshima 2.48**	**20**		P	**Pn**	**21 06 31.2**	**0.0**
JAM				eS	**Sn**	**21 06 59.7**	**-1.4**
JZK	**Kikaishima 2.52**	**27**		P	**Pn**	**21 06 33.5**	**+1.7**
JZK				eS	**Sn**	**21 07 01.8**	**-0.3**
JTAJ	**Takarajima 3.11**	**9**		P	**Pn**	**21 06 39.8**	**-0.1**
JTAJ				eS	**Sn**	**21 07 15.2**	**-1.4**
SONM	**Songino Array 27.90**	**327**		P	**P**	**21 11 42.5**	**+1.7**
	0.3nm,0.5s,baz=122,slow=11,SNR=4.6						
MKAR	**Makanchi Array 41.93**	**312**		P	**P**	**21 13 41.5**	**0.0**
	0.4nm,0.6s,baz=94,slow=9.1,SNR=4.6						
WRA	**Warramunga Arr 46.07**	**173**		P	P	21 14 11.4	-3.4
	0.6nm,0.7s,baz=351,slow=8.3,SNR=7.5						
ASAR	**Alice Springs 49.70**	**174**		P	**P**	**21 14 42.5**	**-0.5**
	0.4nm,0.5s,baz=3.4,slow=14,SNR=7.2						
FINES	**FINESS Array B 73.19**	**331**		P	**P**	**21 17 22.1**	**+0.8**
	1.4nm,0.9s,baz=64,slow=4.4,SNR=4.0						
BRTR	**Keskin Array B 77.44**	**308**		P	**P**	**21 17 47.8**	**+1.4**
	0.4nm,0.5s,baz=102,slow=3.4,SNR=3.5						

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*IDC **09** 21:06:20.8±1.0, 4.°20S×122.°94E, h0km, mb3.6/4, mb1 3.7/6, mb1mx3.6/35, mbtmp3.6/6, ML3.3/2, Error ellipse: s-maj=42.5km s-min=21.3km az=62.0*
*ISCJB **09** 21:06:25.3±0.6, 4.°21S±0.°05×122.°81E±0.°05, h33km, mb3.8/4, Error ellipse: s-maj=8.2km s-min=5.4km az=41.5*
*DJA **09** 21:06:27.2±0.8, 4.°S±3.°×12.°3E±.°, h29km±9km, M3.8/10, mB4.9/1, mb3.9/1, MLv3.7/10, Mw(mB)4.2/1*
ISC 09 21:06:26.8±0.9, 4.°20S±0.°06×122.°75E±0.°06, h35km, n16, σ1§64/19, mb3.8/4, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSSI	**Bau Bau, Buton 2.96**	**229**		P	**Pn**	**21 07 12.6**	**+1.2**
BSSI				S	**Sn**	**21 07 48.8**	**+3.0**
SPSI	**Sidrap Palu 2.98**	**274**		P	**Pn**	**21 07 11.3**	**-0.4**
SPSI				S	**Sn**	**21 07 47.2**	**+1.0**
KAPI	**Kappang 3.10**	**255**		Pn	**Pn**	**21 07 13.5**	**+0.3**
	5.8nm,0.3s,baz=115,slow=6.6,SNR=26						
KAPI				Sn	**Sn**	**21 07 51.0**	**+2.0**
	3.6nm,0.3s,baz=221,slow=23,SNR=9.1						
LUWI	**Luwuk 3.14**	**0**		P	**Pn**	**21 07 14.5**	**+0.7**
LUWI				S	**Sn**	**21 07 51.8**	**+1.7**
SANI	**Sanana 3.88**	**57**		P	**Pn**	**21 07 25.6**	**+1.7**
MMRI	**Maumere 4.43**	**187**		P	**Pn**	**21 07 29.9**	**-1.7**
EDFI	**Ende, Flores 4.64**	**193**		P	**Pn**	**21 07 36.6**	**+2.1**
MRSI	**Marisa 4.72**	**350**		P	**Pn**	**21 07 35.5**	**0.0**
SOEI	**Soe 5.72**	**165**		P	Pn	21 07 54.1	+4.7
LBMI	**Labuha 5.92**	**53**		P	**Pn**	**21 07 52.9**	**+0.8**
WRA	**Warramunga Arr 19.30**	**145**		P	**P**	**21 10 46.1**	**-2.7**
	0.1nm,0.3s,baz=316,slow=13,SNR=4.9						
ASAR	**Alice Springs 22.14**	**152**		P	**P**	**21 11 17.9**	**-1.8**
	1.7nm,0.7s,baz=335,slow=13,SNR=11						
SONM	**Songino Array 53.77**	**346**		P	**P**	**21 15 45.2**	**-0.7**
	1.2nm,0.9s,baz=166,slow=6.2,SNR=5.0						
MKAR	**Makanchi Array 62.06**	**330**		P	**P**	**21 16 44.9**	**+0.9**
	0.3nm,0.6s,baz=140,slow=7.3,SNR=4.2						
ZALV	**Zalesovo Beam 66.03**	**337**		P	**P**	**21 17 09.1**	**-0.7**
	1.6nm,0.8s,baz=134,slow=6.2,SNR=6.0						
TORD	**Torodi Ar. Bea 121.17**	**283**		PKP	**PKPdf**	**21 25 16.3**	**-0.8**
	0.3nm,0.7s,baz=47,slow=1.6,SNR=2.4						

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*NEIC **09** 21:09:19.5, 43.°59S×172.°40E, h15km, ML4.1(WEL), After WEL.*
NEIC Felt in Canterbury.
WEL 09 21:09:19.7±0.1, 43.°59S×172.°39E, h12km, ML4.1/26, 11C-5D, Error ellipse: s-maj=0.6km s-min=0.6km az=0.0, South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRLZ	**Canterbury Las 0.17**	**84**		↓PG	Pg	21 09 23.5	0.0
CRLZ				SG	Sg	21 09 26.1	0.0
CRLZ				AML	AML	21 09 26.4	
CRLZ				AML	AML	21 09 26.5	
CRLZ				AML	AML	21 09 26.7	
MQZ	**McQueen's Vall 0.22**	**121**		↓P*	Pg	21 09 24.5	+0.1
MQZ				S*	Sg	21 09 27.9	+0.3
MQZ				AML	AML	21 09 28.2	
OXZ	**Oxford 0.37**	**316**		↓P*	Pg	21 09 26.7	-0.4
OXZ				S*	Sg	21 09 32.2	+0.1
LTZ	**Lake Taylor 0.81**	**354**		P*	Pg	21 09 35.2	-0.2
LTZ				S*	Sg	21 09 46.3	+0.2
LTZ				AML	AML	21 09 46.8	
RPZ	**Rata Peaks 0.98**	**262**		⇑P*	Pg	21 09 38.0	-0.6
RPZ				AML	AML	21 09 52.3	
RPZ				AML	AML	21 09 57.4	
RPZ	**Rata Peaks 0.98**	**262**		ePn	Pg	21 09 38.0	-0.6
RPZ				eSn	Sb	21 09 52.3	+0.7
RPZ				eSg	Sn	21 09 57.4	+4.2
INZ	**Inchbonnie 1.11**	**321**		⇑P*	Pb	21 09 39.5	-1.3
WVZ	**Waitaha Valley 1.31**	**293**		⇑PN	Pn	21 09 43.0	-0.9
WVZ				AML	AML	21 10 05.1	
WVZ				AML	AML	21 10 09.3	
KHZ	**Kahutara 1.44**	**36**		ePn	Pn	21 09 43.8	-1.8
LBZ	**Lake Benmore 1.78**	**243**		PN	Pn	21 09 49.4	-0.9
LBZ				AML	AML	21 10 23.6	
LBZ				AML	AML	21 10 23.6	
LBZ				AML	AML	21 10 24.3	
LBZ				AML	AML	21 10 24.4	
THZ	**Tophouse 1.87**	**12**		⇑PN	Pn	21 09 49.9	-1.6
THZ				AML	AML	21 10 25.7	
THZ				AML	AML	21 10 27.6	
THZ	**Tophouse 1.87**	**12**		ePn	Pn	21 09 49.9	-1.6
FOZ	**Fox Glacier 1.88**	**271**		↓PN	Pn	21 09 52.2	+0.6
FOZ				AML	AML	21 10 23.2	
FOZ				AML	AML	21 10 23.2	
FOZ				AML	AML	21 10 26.5	
FOZ				AML	AML	21 10 26.5	
FOZ	**Fox Glacier 1.88**	**271**		ePn	Pb	21 09 53.0	-0.8
FOZ				eSn	Sg	21 10 23.2	+3.2
DSZ	**Denniston Nort 1.90**	**347**		⇑PN	Pn	21 09 51.1	-0.8
DSZ				AML	AML	21 10 22.8	
DSZ				AML	AML	21 10 22.8	
DSZ				AML	AML	21 10 25.3	
DSZ				AML	AML	21 10 25.3	
DSZ	**Denniston Nort 1.90**	**347**		ePn	Pn	21 09 51.1	-0.8
DSZ				eSn	Sg	21 10 22.8	+2.2
ODZ	**Otahua Downs 1.92**	**220**		⇑PN	Pn	21 09 50.8	-1.3
ODZ				AML	AML	21 10 28.1	
ODZ				AML	AML	21 10 28.1	
ODZ				AML	AML	21 10 33.6	
ODZ				AML	AML	21 10 33.6	
ODZ	**Otahua Downs 1.92**	**220**		ePn	Pn	21 09 50.8	-1.3
BSWZ	**Blackbirch Sta 2.17**	**31**		PN	Pn	21 09 54.7	-0.9
BSWZ				AML	AML	21 10 24.3	
BSWZ				AML	AML	21 10 28.6	
TUWZ	**Tuamarina 2.44**	**28**		PN	Pn	21 09 58.3	-1.1
TUWZ				AML	AML	21 10 29.5	
TUWZ				AML	AML	21 10 48.8	
TUWZ	**Tuamarina 2.44**	**28**		ePn	Pn	21 09 58.3	-1.1
TUWZ				eSn	Sn	21 10 29.6	+0.4
TUWZ				eLg	Lg	21 10 48.8	
NNZ	**Nelson 2.48**	**17**		⇑PN	Pn	21 09 58.9	-1.0
NNZ				AML	AML	21 10 35.3	
NNZ				AML	AML	21 10 48.9	
JCZ	**Jackson Bay 2.66**	**258**		⇑PN	Pn	21 10 01.7	-0.7
JCZ				AML	AML	21 10 50.9	
JCZ				AML	AML	21 10 53.7	
JCZ	**Jackson Bay 2.66**	**258**		eSg	Sg	21 10 50.9	+5.9
JCZ				eLg	Lg	21 10 53.7	
WKZ	**Wanaka 2.72**	**242**		PN	Pn	21 10 02.0	-1.3
WKZ				AML	AML	21 10 50.6	
WKZ				AML	AML	21 10 50.6	
WKZ				AML	AML	21 10 51.6	
WKZ				AML	AML	21 10 51.7	
WKZ	**Wanaka 2.72**	**242**		ePn	Pn	21 10 02.0	-1.3
WKZ				ePg	Pg	21 10 10.2	-1.7
WKZ				eLg	Lg	21 10 51.7	
EAZ	**Earnscleugh 2.75**	**232**		⇑PN	Pn	21 10 02.4	-1.3
EAZ				AML	AML	21 10 48.9	
EAZ				AML	AML	21 10 49.9	
EAZ				AML	AML	21 10 49.9	
EAZ				AML	AML	21 10 50.0	
EAZ	**Earnscleugh 2.75**	**232**		eLg	Lg	21 10 49.9	
TCW	**Tory Channel 2.76**	**31**		PN	Pn	21 10 02.1	-1.6
TCW				AML	AML	21 10 42.7	
TCW				AML	AML	21 10 48.9	
TCW	**Tory Channel 2.76**	**31**		eSg	Sb	21 10 42.7	+0.1
TCW				eLg	Lg	21 10 48.9	
QRZ	**Quartz Range 2.77**	**2**		PN	Pn	21 10 02.6	-1.2
QRZ				AML	AML	21 10 53.4	
QRZ				AML	AML	21 10 53.4	
QRZ				AML	AML	21 10 53.5	
QRZ				AML	AML	21 10 53.5	
QRZ	**Quartz Range 2.77**	**2**		eLg	Lg	21 10 53.5	
SNZO	**South Karori 2.85**	**38**		ePn	Pn	21 10 02.5	-2.5
SNZO				eSn	Sn	21 10 35.7	-3.4
PLWZ	**Palliser 2.92**	**47**		PN	Pn	21 10 03.5	-2.5
DUWZ	**D'Urville Isla 3.01**	**23**		PN	Pn	21 10 05.6	-1.6
DUWZ	**D'Urville Isla 3.01**	**23**		ePn	Pn	21 10 05.6	-1.6
MSWZ	**Moikau Station 3.03**

TGV				*e*Sg		**Sb**	**21 18 04.0**	**-3.3**
TGV				AML		AML	21 18 12.3	
	comp=N,280nm,0.5s							
TGV				AML		AML	21 18 20.0	
	comp=E,339nm,0.7s							
HBVN	**Hoa-Binh**	**5.40**	**88**	*e*Sg		**Sb**	**21 19 00.6**	**+3.9**
HBVN				AML		AML	21 19 06.1	
	comp=E,118nm,0.4s							
BGV	**Bac-Giang**	**6.24**	**83**	*e*Sg		**Sb**	**21 19 27.7**	**+6.9**
MTZV	**Met**	**6.37**	**81**	*e*Sg		**Sb**	**21 19 30.7**	**+6.3**
SONM	**Songino Array**	**27.62**	**10**	P		**P**	**21 22 07.4**	**+2.4**
	comp=E,0.3nm,0.6s,baz=188,slow=9.7,SNR=2.9							
MKAR	**Makanchi Array**	**29.59**	**336**	P		**P**	**21 22 22.2**	**-0.3**
	comp=E,0.7nm,0.9s,baz=148,slow=9.9,SNR=3.5							
ZALV	**Zalesovo Beam**	**35.05**	**345**	P		**P**	**21 23 09.1**	**-1.0**
	comp=E,1.4nm,0.7s,baz=152,slow=9.6,SNR=2.6							
GEYT	**Alibeck**	**39.65**	**305**	P		**P**	**21 23 50.6**	**+1.1**
	comp=E,0.8nm,0.5s,baz=60,slow=6.8,SNR=3.0							
WRA	**Warramunga Arr**	**52.82**	**138**	P		**P**	**21 25 33.7**	**+0.5**
	comp=E,0.5nm,0.9s,baz=326,slow=8.0,SNR=3.2							
ASAR	**Alice Springs**	**55.35**	**141**	P		**P**	**21 25 51.6**	**-0.1**
	comp=E,0.3nm,0.5s,baz=321,slow=7.9,SNR=3.3							
NWAO	**Narrogin (SRO)**	**55.94**	**162**	LR		LR	21 51 28.4	
	comp=E,142nm,21.6s,baz=201,slow=38							

JMA 09 21:37:15.3±0.1, 38°.46N×142°.28E, h35km±2km, M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.73**	**270**	P	Pn	21 37 29.2	+0.1
JIO				S	Sn	21 37 38.8	-0.2
OFUJ	**Ofunato**	**0.78**	**323**	P	Pn	21 37 29.9	+0.1
OFUJ				S	Sn	21 37 40.1	-0.2
JMK	**Ichinoseki**	**0.96**	**301**	P	Pn	21 37 32.7	+0.4
JMK				S	Sn	21 37 45.3	+0.5
MIYJ	**Miyakonagasawa**	**1.17**	**342**	P	Pn	21 37 35.0	-0.2
MIYJ				S	Sn	21 37 49.7	-0.2
JOM	**Ohasama**	**1.27**	**323**	P	Pn	21 37 37.4	+0.8
JOM				S	Sn	21 37 53.2	+0.8
JOU	**Okura**	**1.27**	**266**	P	Pn	21 37 37.6	+1.0
JOU				S	Sn	21 37 53.7	+1.2
JMM	**Marumori**	**1.31**	**244**	P	Pn	21 37 37.4	+0.3
JMM				*e*S	Sn	21 37 53.5	+0.1
JYK	**Kaneyama**	**1.57**	**288**	P	Pn	21 37 41.8	+1.1
JRG	**Rokugo**	**1.59**	**307**	P	Pn	21 37 42.7	+1.8
JKZ	**Kuzumaki**	**1.69**	**334**	P	Pn	21 37 44.0	+1.6
JKZ				*e*S	Sn	21 38 04.1	+1.2
JFT	**Otama**	**1.80**	**239**	P	Pn	21 37 44.3	+0.4
JFT				*e*S	Sn	21 38 06.4	+0.9

ISCJB ***09*** *21:39:28.4±0.2, 1°.43N±0°.03×68°.11E±0°.03, h10km, mb4.7/106, MS4.2/25, Error ellipse: s-maj=5.0km s-min=4.0km az=144.0*

IDC ***09*** *21:39:28.6±0.5, 1°.42N×68°.15E, h0km, mb4.5/29, mb1 4.6/29, mb1mx4.4/51, mbtmp4.5/29, ML5.9/1, MS4.1/18, Ms1 4.1/18, ms1mx3.9/40, Error ellipse: s-maj=14.0km s-min=12.0km az=155.0*

MOS ***09*** *21:39:28.3±1.2, 1°.44N×68°.09E, h10km, mb5.0/34, Error ellipse: s-maj=9.2km s-min=5.8km az=96.2*

GCMT ***09*** *21:39:30.2±0.4, 1°.34N×68°.23E, h29km±2km, MW5.0/71, Moment Tensor Solution. s16,c16; s71,c99; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr=0.85±.34; Mθθ=3.00±.20; Mφφ=-2.16±.20; Mrθ=1.13±.26; Mφθ=1.00±.14; Mφr=-3.08±.48; Best double couple: M0=4.12400×10^16 NP1:φs=302.00000°, δ74.00000°, λ=-39.00000°. NP2: φs=44.00000°, δ53.00000°, λ=-159.00000°. Principal axes: T 3.3150, Plg13.0000°, Azm357.0000°; N 1.6090, Plg48.0000°, Azm102.0000°; P -4.9330, Plg39.0000°, Azm256.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

NEIC ***09*** *21:39:30.2±0.2, 1°.41N×68°.12E, h10km, mb4.9/34 Error ellipse: s-maj=5.7km s-min=5.4km az=188.0*

ISC 09 21:39:30.7±0.3, 1°.53N±0°.04×68°.18E±0°.05, h10km, n252, σ1§98/250, mb4.8/113, MS4.2/25, 18C-2D, Carlsberg Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08N2	**Diego Garcia H**	**8.30**	**160**	T	T	21 49 43.1	
	baz=340,slow=75,SNR=149						
H08N3	**Diego Garcia H**	**8.31**	**160**	T	T	21 49 45.3	
	baz=340,slow=75,SNR=148						
H08N1	**Diego Carcia H**	**8.32**	**160**	T	T	21 49 44.5	
	baz=340,slow=75,SNR=146						
DGAR	**Diego Garcia**	**9.85**	**154**	*e*P	**Pn**	**21 41 51.2**	**-1.4**
DGAR	**Diego Garcia**	**9.85**	**154**	*e*Pn	**Pn**	**21 41 52.2**	**-0.4**
DGAR				*e*Sn	**Sn**	**21 43 41.6**	**-1.7**
PALK	**Pallekele**	**13.72**	**65**	Pn	**Pn**	**21 42 47.0**	**+1.5**
	56nm,0.3s,baz=294,slow=10,SNR=239						
PALK				Sn	Sn	21 45 11.0	-7.2
	7.9nm,0.3s,baz=116,slow=17,SNR=6.4						
PALK				LR	LR	21 47 10.1	
	comp=Z,2μm,18.4s,baz=296,slow=33						
PALK	**Pallekele**	**13.72**	**65**	*i* P	**Pn**	**21 42 47.3**	**+1.8**
GOA	**Goa**	**14.95**	**22**	*e*P	**P**	**21 43 06.7**	**-1.1**
GOA				IAmb	IAmb	21 43 09.8	
	comp=Z,629nm,0.1s						
SKHT	**Srikalahasti**	**16.65**	**43**	*e*P	**Pn**	**21 43 25.3**	**+1.0**
SKHT				IAmb	IAmb	21 43 32.9	
	comp=Z,36nm,0.6s						
SKHT				Sn	**Sn**	**21 46 22.8**	**-6.7**
SKHT				IVMs_BB	IVMs_BB	21 48 40.5	
	comp=Z,625nm,19.5s						
RCLA	**Racherla**	**17.45**	**37**	*e*P	**P**	**21 43 36.8**	**+1.2**
RCLA				IAmb	IAmb	21 43 38.4	
	comp=Z,30nm,0.9s						
RCLA				Sn	**Sn**	**21 46 41.0**	**-7.8**
RCLA				IVMs_BB	IVMs_BB	21 49 50.7	
	comp=Z,601nm,16.1s						
SRLM	**Srisailam**	**17.91**	**36**	*e*P	**P**	**21 43 42.0**	**+1.2**
SRLM				IAmb	IAmb	21 43 49.1	
	comp=Z,17nm,0.7s						
SRLM				Sn	**Sn**	**21 46 57.6**	**-2.5**
SRLM				IVMs_BB	IVMs_BB	21 49 51.8	
	comp=Z,651nm,16.2s						
ADKI	**Addanki**	**18.36**	**39**	*e*P	**Pn**	**21 43 47.7**	**+2.0**
ADKI				IAmb	IAmb	21 43 52.6	
	comp=Z,137nm,1.5s						
ADKI				Sn	**Sn**	**21 47 04.1**	**-6.9**
ADKI				IVMs_BB	IVMs_BB	21 49 52.3	
	comp=Z,464nm,12.4s						
KLRI	**Killari**	**18.39**	**26**	*e*P	**P**	**21 43 46.9**	**+0.8**
KLRI				IAmb	IAmb	21 43 48.6	
	comp=Z,51nm,1.0s						
KLRI				Sn	**Sn**	**21 47 05.8**	**-6.0**
KLRI				IVMs_BB	IVMs_BB	21 50 06.4	
	comp=Z,809nm,12.3s						
NJS	**Nagarjunasagar**	**18.52**	**36**	*e*P	**P**	**21 43 48.6**	**+1.2**
NJS				IAmb	IAmb	21 43 51.2	
	comp=Z,35nm,0.9s						
NJS				Sn	Sn	21 47 05.3	-9.3
NJS				IVMs_BB	IVMs_BB	21 50 02.9	
	comp=Z,552nm,16.1s						
HYB	**Hyderabad**	**18.79**	**32**	*i* P	**Pn**	**21 43 52.5**	**+1.6**
HYB				*e*S	**Sn**	**21 47 17.0**	**-4.4**
HYBB	**Hyderabad (bro**	**18.79**	**32**	*e*P	**P**	**21 43 51.5**	**+1.0**
HYBB				IAmb	IAmb	21 43 54.0	
	comp=Z,18nm,0.9s						
HYBB				Sn	**Sn**	**21 47 16.1**	**-5.3**
HYBB				IVMs_BB	IVMs_BB	21 51 15.7	
	comp=Z,547nm,9.7s						
SRSP	**Sriramsagar**	**19.95**	**29**	*e*Pn	Pn	21 44 05.4	+0.6
SRSP				IAmb	IAmb	21 44 06.6	
	comp=Z,20nm,0.9s						
SRSP				Sn	**S**	**21 47 40.9**	**-6.9**
SRSP				IVMs_BB	IVMs_BB	21 51 06.1	
	comp=Z,472nm,11.5s						
RPR	**Rampur**	**20.37**	**32**	*e*P	**P**	**21 44 09.5**	**+1.7**
RPR				IAmb	IAmb	21 44 10.8	
	comp=Z,42nm,0.9s						
RPR				*e*S	**S**	**21 47 53.3**	**-2.9**
RPR				IVMs_BB	IVMs_BB	21 51 07.5	
	comp=Z,669nm,13.9s						
PVM	**Polavaram**	**20.46**	**39**	*e*P	**P**	**21 44 10.8**	**+2.2**
PVM				IAmb	IAmb	21 44 15.9	
	comp=Z,15nm,1.1s						
PVM				Sn	**S**	**21 47 55.4**	**-2.5**
PVM				IVMs_BB	IVMs_BB	21 51 08.5	
	comp=Z,283nm,10.8s						
BHJ	**Bhuj**	**21.64**	**4**	*e*P	**P**	**21 44 22.4**	**+1.0**
BHJ				IAmb	IAmb	21 44 42.8	
	comp=Z,333nm,1.3s						
VIS	**Vishakhapatnam**	**21.91**	**42**	*e*P	**P**	**21 44 23.8**	**-0.5**
NGP	**Nagpur**	**22.19**	**28**	*e*P	**P**	**21 44 29.0**	**+1.7**
NGP				IAmb	IAmb	21 44 32.2	
	comp=Z,34nm,1.1s						
CHLP	**Challavanipeta**	**22.96**	**42**	*e*P	**P**	**21 44 37.1**	**+1.7**
CHLP				IAmb	IAmb	21 44 43.8	
	comp=Z,46nm,1.1s						
CHLP				IVMs_BB	IVMs_BB	21 52 04.8	
	comp=Z,337nm,19.8s						
BHPL	**Bhopal**	**23.37**	**22**	*e*P	**P**	**21 44 42.2**	**+2.5**
BHPL				IAmb	IAmb	21 44 43.5	
	comp=Z,44nm,1.0s						
WSAR	**Wadi Sarin**	**23.48**	**337**	P	**P**	**21 44 42.5**	**+1.7**
	comp=Z,12nm,0.8s,baz=192,slow=5.1,SNR=7.9						
WSAR				LR	LR	21 52 41.7	
	comp=Z,331nm,19.0s,baz=202,slow=34						
MRIV	**Mauritius Mete**	**24.09**	**205**	*e*P	**P**	**21 44 42.8**	**-3.9**
BWNR	**Bhubaneshwar**	**25.38**	**42**	*e*P	**P**	**21 45 01.8**	**+3.4**
UOSS	**Minazif**	**25.99**	**335**	*e*P	**P**	**21 45 02.6**	**-1.2**
	comp=Z,1.4nm,1.4s						
DAMY	**Dhamar**	**26.84**	**300**	*e*P	**P**	**21 45 12.4**	**+0.4**
	comp=Z,16nm,1.2s						
ATD	**Arta Tunnel**	**27.03**	**293**	P	**P**	**21 45 14.9**	**+1.4**
	comp=Z,13nm,0.9s,baz=144,slow=16,SNR=2.9						
ATD				LR	LR	21 54 00.5	
	comp=Z,247nm,19.8s,baz=92,slow=32						
DGPR	**DIGLIPUR**	**27.09**	**64**	*e*P	**P**	**21 45 13.7**	**-0.3**
OPO	**Ambohidratompo**	**28.73**	**225**	LR	LR	21 54 05.4	
	comp=Z,608nm,19.7s,baz=20,slow=31						
FURI	**Furi**	**30.26**	**285**	*e*P	**P**	**21 45 45.6**	**+3.0**
	comp=Z,27nm,1.0s						
SMLA	**Simla**	**30.64**	**15**	*e*P	**P**	**21 45 47.5**	**+2.2**
SMLA				IAmb	IAmb	21 45 55.6	
	comp=Z,4.6nm,0.7s						
KMBO	**Kilima Mbogo**	**31.04**	**265**	*e*P	**P**	**21 45 49.3**	**-0.1**
KMBO				pmax	pmax		
	comp=Z,8.0nm,0.9s						
KMBO	**Kilima Mbogo**	**31.04**	**265**	*e*P	**P**	**21 45 49.3**	**-0.1**
	comp=Z,7.7nm,0.9s						
DHRM	**DHARAMSHALA**	**31.50**	**13**	*e*P	**P**	**21 45 55.7**	**+2.6**
DHRM				IAmb	IAmb	21 45 56.1	
	comp=Z,17nm,0.7s						
KULM	**Kulim**	**32.62**	**83**	*e*P	**P**	**21 46 02.9**	**-0.1**
	comp=Z,12nm,0.7s						
KBL	**Kabul**	**32.85**	**1**	*e*P	**P**	**21 46 07.8**	**+2.8**
KBL	**Kabul**	**32.85**	**1**	*e*P	**P**	**21 46 07.8**	**+2.8**
BKNI	**Bangkinang**	**32.88**	**92**	*e*P	**P**	**21 46 07.0**	**+1.8**
	comp=Z,55nm,0.5s						
SHL	**Shillong**	**33.06**	**42**	*e*P	**P**	**21 46 08.4**	**+1.5**
SHL				IAmb	IAmb	21 46 13.3	
	comp=Z,16nm,0.5s						
CM01	**Chiang Mai Arr**	**34.54**	**59**	*e*P	**P**	**21 46 23.9**	**+4.3**
CHTO	**Chiang Mai**	**34.70**	**58**	P	P	21 46 27.2	+6.2
	comp=Z,84nm,1.3s						
CHTO	**Chiang Mai**	**34.70**	**58**	*e*P	**P**	**21 46 23.3**	**+2.3**
CHTO				pmax	pmax		
	comp=Z,24nm,1.3s						
CHTO	**Chiang Mai**	**34.70**	**58**	*e*P	**P**	**21 46 23.3**	**+2.3**
	comp=Z,24nm,1.3s						
CMMT	**Chiang Mai**	**34.70**	**58**	P	P	21 46 27.2	+6.1
	comp=Z,19nm,1.2s						
SUKH	**Sukhothai**	**34.73**	**61**	P	P	21 46 27.5	+6.2
	comp=Z,5.4nm,0.9s						
LAMP	**Lampang**	**35.16**	**59**	P	P	21 46 33.3	+8.3
	comp=Z,2.7nm,1.1s						
CMAI	**Chiengmai2**	**35.28**	**57**	P	P	21 46 32.6	+6.3
	comp=Z,136nm,1.4s						
LSA	**Lhasa**	**35.52**	**36**	P	**P**	**21 46 31.1**	**+2.5**
LSA				pmax	pmax		
	comp=Z,20nm,1.0s						
LSA	**Lhasa**	**35.52**	**36**	*e*P	**P**	**21 46 31.2**	**+2.7**
LSA				pmax	pmax		
	comp=Z,30nm,0.8s						
LSA	**Lhasa**	**35.52**	**36**	*e*P	**P**	**21 46 31.2**	**+2.7**
	comp=Z,30nm,0.8s						
PBKT	**Sadao Pong**	**35.57**	**63**	P	P	21 46 34.8	+6.3
	comp=Z,17nm,1.0s,comp=Z,2μm						
UTTA	**Uttaradit**	**35.64**	**61**	P	P	21 46 36.3	+7.1
	comp=Z,2.7nm,0.8s						
LOEI	**Loei**	**36.18**	**62**	P	P	21 46 42.6	+8.8
	comp=Z,43nm,1.1s						
CHAI	**Chaiyaphum**	**36.24**	**65**	P	P	21 46 40.5	+6.1
	comp=Z,10nm,0.9s,comp=Z,76nm						
CRAI	**Chiangrai**	**36.53**	**57**	P	P	21 46 42.7	+5.9
	comp=Z,157nm,1.2s						
GEYT	**Alibeck**	**37.38**	**347**	P	**P**	**21 46 45.1**	**+1.2**
	comp=Z,6.0nm,1.1s,baz=170,slow=9.0,SNR=12						
GEYT				LR	LR	22 01 23.9	
	comp=Z,262nm,21.8s,baz=195,slow=35						
NONG	**Nongkai**	**38.04**	**62**	P	P	21 46 55.2	+5.5
	comp=Z,74nm,0.8s,comp=Z,15μm						
SKNT	**Sakolnakorn**	**38.41**	**64**	P	P	21 46 58.5	+5.8
	comp=Z,34nm,0.8s						
KSH	**Kashi**	**38.47**	**10**	P	**P**	**21 46 50.9**	**-2.2**
KSH				*e*pP	pP	21 46 55.4	-0.8
KSH				*e*PP	**PP**	**21 48 22.4**	**+1.2**
KSH				S	**S**	**21 52 42.4**	**-6.2**
KSH				*e*ScP	**ScP**	**21 52 52.6**	**-1.9**
KSH				SS	SnSn	21 55 18.0	-17
KSH	**Kashi**	**38.47**	**10**	ScS	ScS	21 56 59.5	-5.1
KSH				pmax	pmax		
	comp=Z,20nm,1.3s						
KSH				pmax	pmax		
	comp=Z,78nm,4.1s						
KSH				LR	LR		
	comp=N,340nm,12.6s						
KSH				LR	LR		
	comp=E,290nm,13.3s						
KSH				LR	LR		
	comp=Z,470nm,13.7s						
KMI	**Kunming**	**40.76**	**52**	P	**P**	**21 47 14.0**	**+1.5**
KMI				pP	sP	21 47 18.5	+1.6
KMI				sP	pP	21 47 20.5	+4.9
KMI				S	**S**	**21 53 25.3**	**+1.8**
KMI				sS	sS	21 53 34.0	+5.3
KMI				pmax	pmax		
	comp=Z,5.0nm,0.8s						
KMI				pmax	pmax		
	comp=Z,81nm,4.2s						
KMI				LR	LR		
	comp=N,280nm,16.2s						
KMI				LR	LR		
	comp=E,160nm,19.8s						
KMI				LR	LR		
	comp=Z,330nm,16.2s						
EKS2	**Erkin-Say**	**41.25**	**6**	*e*P	**P**	**21 47 18.1**	**+1.9**
EKS2				pmax	pmax		
	comp=Z,30nm,1.5s						
EKS2	**Erkin-Say**	**41.25**	**6**	*e*P	**P**	**21 47 18.1**	**+1.9**
	comp=Z,30nm,1.5s						
AAK	**Ala-Archa**	**41.31**	**7**	P	**P**	**21 47 18.0**	**+1.3**
	comp=Z,2.9nm,0.7s,baz=158,slow=5.6,SNR=8.4						
AAK	**Ala-Archa**	**41.31**	**7**	*i* P	**P**	**21 47 17.4**	**+0.7**
AAK				pmax	pmax		
	comp=Z,9.0nm,1.0s						
AAK	**Ala-Archa**	**41.31**	**7**	*e*P	**P**	**21 47 18.4**	**+1.7**
FRU	**Bishkek**	**41.52**	**7**	*e*P	**P**	**21 47 19.0**	**+0.7**
FRU				pmax	pmax		
	comp=Z,29nm,1.9s						
TKM2	**Tokmak 2**	**41.74**	**8**	*e*P	**P**	**21 47 21.8**	**+1.5**
TKM2				pmax	pmax		
	comp=Z,13nm,1.4s						
TKM2	**Tokmak 2**	**41.74**	**8**	*e*P	**P**	**21 47 21.8**	**+1.5**
	comp=Z,13nm,1.4s						
PDGK	**Podgornoye**	**42.82**	**12**	*i* P	**P**	**21 47 29.3**	**+0.5**
PDGK				pmax	pmax		
	comp=Z,18nm,0.8s						
LSZ	**Lusaka**	**42.93**	**246**	P	**P**	**21 47 29.3**	**-1.0**
	comp=Z,31nm,0.8s,baz=66,slow=7.5,SNR=63						
LSZ				PcP	**PcP**	**21 49 20.4**	**-0.7**
	comp=Z,6.5nm,0.7s,baz=50,slow=4.9,SNR=5.9						
LSZ	**Lusaka**	**42.93**	**246**	*e*P	**P**	**21 47 29.3**	**-1.0**
LSZ				*e*		21 49 20.4	
LSZ				pmax	pmax		
	comp=Z,37nm,0.8s						
LSZ	**Lusaka**	**42.93**	**246**	*e*P	**P**	**21 47 29.3**	**-1.0**
	comp=Z,37nm,0.8s						
LSZ				*e*PcP	**PcP**	**21 49 20.4**	**-0.7**
UGM	**Wanagama**	**43.26**	**103**	*e*P	**P**	**21 47 32.1**	**-0.8**
	comp=Z,160nm,1.4s						
STKI	**Sintang**	**43.31**	**92**	P	**P**	**21 47 35.0**	**+1.7**
GNI	**Garni**	**43.94**	**334**	*e*P	**P**	**21 47 39.1**	**+0.9**
GNI				pmax	pmax		
	comp=Z,31nm,0.8s						
GNI	**Garni**	**43.94**	**334**	*e*P	**P**	**21 47 40.1**	**+2.0**
	comp=Z,14nm,0.9s						
SBUM	**Sibu**	**44.02**	**88**	*e*P	**P**	**21 47 43.8**	**+4.8**
	comp=Z,9.8nm,1.1s						
QIZ	**Qiongzhong**	**44.35**	**64**	P	**P**	**21 47 41.2**	**-0.3**
QIZ				S	**S**	**21 54 18.0**	**+1.8**
QIZ				LR	LR		
	comp=N,160nm,16.1s						
QIZ				LR	LR		
	comp=E,68nm,18.0s						
GYA	**Guiyang**	**44.50**	**53**	*e*P	**P**	**21 47 44.0**	**+1.2**
GYA				pmax	pmax		
	comp=Z,10.0nm,1.0s						
CD2	**Chengdu**	**44.57**	**45**	P	**P**	**21 47 43.7**	**+0.5**
CD2				pmax	pmax		
	comp=Z,11nm,0.6s						
MATP	**Matopo**	**44.58**	**239**	P	**P**	**21 47 42.1**	**-1.4**
	comp=Z,12nm,0.6s,baz=67,slow=8.2,SNR=32						
MATP				PcP	**PcP**	**21 49 25.1**	**-1.5**
	comp=Z,4.2nm,0.8s,baz=213,slow=1.0,SNR=4.1						
WMQ	**Urumqi**	**45.55**	**20**	P	**P**	**21 47 52.4**	**+1.6**
WMQ				pP	sP	21 47 56.8	+1.6
WMQ				sP	pP	21 47 58.5	+4.6
WMQ				pmax	pmax		
	comp=Z,4.0nm,0.8s						
WMQ				pmax	pmax		
	comp=Z,43nm,5.4s						
WMQ				LR	LR		
	comp=N,88nm,15.0s						
WMQ				LR	LR		
	comp=E,160nm,15.0s						
WMQ				LR	LR		
	comp=Z,150nm,19.4s						
ZEI	**Tsey**	**46.47**	**335**	*e*P	**P**	**21 47 57.8**	**-0.4**
ZEI				pmax	pmax		
	comp=Z,8.0nm,0.9s						
MAKZ	**Makanchi**	**46.67**	**13**	*e*P	**P**	**21 47 59.5**	**-0.1**
MAKZ				pmax	pmax		
	comp=Z,14nm,1.4s						
MAKZ	**Makanchi**	**46.67**	**13**	*e*P	**P**	**21 47 59.5**	**-0.1**
	comp=Z,14nm,1.4s						
MK01	**Makanchi Array**	**46.71**	**13**	*e*P	**P**	**21 47 59.6**	**-0.2**
MK31	**Makanchi Array**	**46.73**	**13**	*e*P	**P**	**21 48 00.3**	**+0.3**
MK31	**Makanchi Array**	**46.73**	**13**	*e*P	**P**	**21 48 00.3**	**+0.3**
MK32	**Makanchi Array**	**46.73**	**13**	*e*P	**P**	**21 47 59.9**	**-0.1**
MKAR	**Makanchi Array**	**46.73**	**13**	P	**P**	**21 47 59.9**	**-0.2**
	comp=Z,2.7nm,0.8s,baz=205,slow=7.5,SNR=21						
NEY	**Neytrino**	**47.34**	**335**	*e*P	**P**	**21 48 07.5**	**+2.5**
GTA	**Gaotai**	**47.45**	**33**	*e*P	**P**	**21 48 06.4**	**+0.5**
GTA				pP	sP	21 48 10.8	+0.5
GTA				sP	pP	21 48 13.7	+4.6
GTA				S	**S**	**21 55 01.5**	**+0.9**
GTA				pmax	pmax		
	comp=Z,4.0nm,0.9s						
GTA				LR	LR		
	comp=N,220nm,13.8s						
GTA				LR	LR		
	comp=E,180nm,15.7s						
GTA				LR	LR		
	comp=Z,330nm,16.2s						
KBZ	**Khabaz**	**47.66**	**335**	P	**P**	**21 48 06.7**	**-0.6**
	comp=Z,4.6nm,0.9s,baz=141,slow=4.6,SNR=11						
KIV	**Kislovodsk**	**47.93**	**335**	*e*P	**P**	**21 48 09.9**	**+0.4**
KIV				pmax	pmax		
	comp=Z,7.0nm,1.0s						
AB31	**Akbulak array**	**48.06**	**353**	*i* P	**P**	**21 48 10.4**	**+0.1**
AB31				pmax	pmax		
	comp=Z,15nm,0.9s						
ABKAR	**Akbulak array**	**48.06**	**353**	*e*P	**P**	**21 48 10.9**	**+0.6**
ENH	**Enshi**	**48.47**	**50**	*e*P	P	21 48 18.8	+5.0
	comp=Z,21nm,1.3s						
GOF	**Gofitskoye**	**48.69**	**336⇑**	*e*P	**P**	**21 48 16.2**	**+1.0**
LBTB	**Lobatse**	**48.96**	**234**	*e*P	**P**	**21 48 16.9**	**-0.9**
LBTB				pmax	pmax		
	comp=Z,24nm,0.8s						
LBTB	**Lobatse**	**48.96**	**234**	*e*P	**P**	**21 48 16.9**	**-0.9**
	comp=Z,24nm,0.8s						
BR101	**Keskin Array S**	**49.31**	**325**	*e*P	**P**	**21 48 19.8**	**-0.5**
BR131	**Keskin Array S**	**49.31**	**325**	*e*P	**P**	**21 48 21.1**	**+0.8**
BRTR	**Keskin Array B**	**49.31**	**325**	P	**P**	**21 48 19.8**	**-0.5**
	comp=Z,1.1nm,0.7s,baz=139,slow=12,SNR=8.6						
BRTR				LR	LR	22 09 28.3	
	comp=Z,93nm,18.4s,baz=142,slow=36						
AKTO	**Aktyubinsk**	**49.48**	**351**	*i* P	**P**	**21 48 19.8**	**-1.4**
AKTO				pmax	pmax		
	comp=Z,12nm,0.9s						
KURK	**Kurchatov**	**49.80**	**9**	*e*P	**P**	**21 48 23.8**	**+0.2**
KURK				pmax	pmax		
	comp=Z,18nm,1.1s						
KURK	**Kurchatov**	**49.80**	**9**	*e*P	**P**	**21 48 23.8**	**+0.2**
	comp=Z,18nm,1.1s						
BR231	**Keskin MP Arra**	**49.89**	**324**	*e*P	**P**	**21 48 20.8**	**-3.8**
XAN	**Xi'an**	**49.93**	**45**	P	**P**	**21 48 25.2**	**+0.2**
XAN				pP	sP	21 48 34.4	+5.0
XAN				pmax	pmax		
	comp=Z,64nm,0.8s						
BOSA	**Boshof**	**50.88**	**231**	P	**P**	**21 48 30.7**	**-1.7**
	comp=Z,13nm,0.9s,baz=64,slow=8.3,SNR=14						
BOSA				LR	LR	22 07 16.3	
	comp=Z,426nm,18.8s,baz=34,slow=33						
BOSA	**Boshof**	**50.88**	**231**	*e*P	**P**	**21 48 31.1**	**-1.3**
BOSA	**Boshof**	**50.88**	**231**	*e*P	**P**	**21 48 31.1**	**-1.3**
ZRNK	**Zerenda**	**51.25**	**1**	*i* P	**P**	**21 48 33.5**	**-1.0**
ZRNK				pmax	pmax		
	comp=Z,8.0nm,1.0s						
ZRNK	**Zerenda**	**51.25**	**1**	*e*P	**P**	**21 48 34.9**	**+0.4**
	comp=Z,8.8nm,1.1s						
BRVK	**Borovoye**	**51.38**	**2**	*c*eP	**P**	**21 48 36.5**	**+1.0**
BRVK				pmax	pmax		
	comp=Z,6.0nm,2.5s						
LAST	**Lasithi**	**51.89**	**315⇑**	*i* P	**P**	**21 48 40.5**	**+0.7**
WHN	**Wuhan**	**52.36**	**52**	⇓P	P	21 48 48.4	+5.2
WHN				pP	sP	21 48 56.4	+8.8
TSUM	**Tsumeb**	**53.77**	**245**	*e*P	**P**	**21 48 53.5**	**-0.5**
	comp=Z,22nm,1.2s						
ZAA0	**Zalesovo Array**	**54.01**	**12**	*e*P	**P

SONA0 **Songino Array** 56.71 30 *eP* P 21 49 15.7 +0.9
comp=Z,9.1nm,1.0s
SONM **Songino Array** 56.71 30 P P 21 49 15.7 +0.9
comp=Z,6.2nm,0.9s,baz=226,slow=7.1,SNR=36
SONM LR LR 22 14 06.1
comp=Z,750nm,18.5s,baz=234,slow=37
SONA1 **Songino Array** 56.73 30 *eP* P 21 49 15.7 +0.8
TIA **Tai'an** 56.86 47 ⇓P P 21 49 20.7 +4.8
TIA pmax pmax
comp=Z,40nm,1.0s
ULN **Ulaanbaatar** 57.06 30 *ceP* P 21 49 18.1 +0.8
ULN pmax pmax
comp=Z,6.0nm,1.2s
ULN **Ulaanbaatar** 57.06 30 *eP* P 21 49 17.6 +0.3
comp=Z,8.2nm,1.4s
VRI **Vrincioaia** 57.15 327⇑ *iP* P 21 49 18.8 +1.1
PLOR **Plostina** 57.18 327⇑ *iP* P 21 49 19.0 +1.0
MLR **Muntele Rosu** 57.35 326⇑ *iP* P 21 49 20.5 +1.2
MLR **Muntele Rosu** 57.35 326 *eP* P 21 49 20.3 +1.0
MLR pmax pmax
comp=Z,10.0nm,1.1s
MLR **Muntele Rosu** 57.35 326 *eP* P 21 49 20.3 +1.0
comp=Z,9.8nm,1.1s
TESR **Tescani** 57.59 327⇑ *iP* P 21 49 21.0 +0.2
VOIR 57.83 325⇑ *iP* P 21 49 22.3 -0.3
BJT **Baijiatuau** 57.94 42 *eP* P 21 49 29.0 +5.6
BJT pmax pmax
comp=Z,18nm,0.8s
BJT **Baijiatuau** 57.94 42 *eP* P 21 49 29.0 +5.6
comp=Z,18nm,0.8s
BJI **Beijing** 57.95 42 P P 21 49 24.6 +1.1
BJI sP sP 21 49 28.9 +1.0
BJI S S 21 57 27.1 +3.3
BJI **Beijing** 57.95 42 SS SS 22 01 07.5 -7.5
BJI pmax pmax
comp=Z,11nm,1.3s
BJI LR LR
comp=N,130nm,12.5s
BJI LR LR
comp=E,240nm,14.2s
BJI LR LR
comp=Z,160nm,27.8s
PRAR **RASCA** 58.34 328⇑ *iP* P 21 49 25.6 -0.5
AKASG **Malin Array Be** 59.01 332 P P 21 49 30.2 -0.5
comp=Z,0.3nm,0.3s,baz=133,slow=5.8,SNR=4.1
AKBB **Malin Array Si** 59.01 332 *eP* P 21 49 30.2 -0.5
AKBB pmax pmax
comp=Z,6.0nm,0.5s
AKBB **Malin Array Si** 59.01 332 *eP* P 21 49 30.2 -0.5
comp=Z,6.3nm,0.5s
BURAR **Bucovina Array** 59.04 327⇑ *iP* P 21 49 32.2 +1.2
LBMI **Labuha** 59.35 92 P P 21 49 36.2 +2.5
comp=Z,29nm,1.2s
MDVR **Moldovita** 59.40 323⇑ *iP* P 21 49 32.7 -0.9
BZS **Buzias** 59.91 324⇑ *iP* P 21 49 36.5 -0.5
KOLS **Kolonicke sedl** 61.40 327 *eP* P 21 49 47.3 +0.2
KOLS pmax pmax
comp=Z,7.0nm,1.2s
KOLS **Kolonicke sedl** 61.40 327 *eP* P 21 49 47.3 +0.2
KOLS *e* 21 49 57.8
CRVS **Cervenica-Dubn** 61.83 327 *eP* P 21 49 49.7 -0.3
CRVS *e* 21 49 58.9
CRVS **Cervenica-Dubn** 61.83 327 *eP* P 21 49 49.7 -0.3
CRVS *e* 21 49 58.9
NACGM **Naroch** 62.95 335 *e* P 21 50 01.0 +3.7
LANS **Liptovska Anna** 63.06 326 *eP* P 21 49 58.6 +0.4
LANS **Liptovska Anna** 63.06 326 *eP* P 21 49 58.6 +0.4
LANS *e* 21 50 08.7
VYHS **Vyhne** 63.06 326 *eP* P 21 49 57.1 -1.1
VYHS pmax pmax
comp=Z,11nm,2.0s
VYHS **Vyhne** 63.06 326 *eP* P 21 49 57.1 -1.1
VYHS *e* 21 50 08.0
KLMR **Klimovskoe** 63.09 345 *eP* P 21 49 56.1 -2.0
KLMR pmax pmax
comp=Z,21nm,1.3s
TAM **Tamanrasset** 64.28 295 *eP* P 21 50 07.0 0.0
TAM pmax pmax
comp=Z,16nm,1.6s
TAM **Tamanrasset** 64.28 295 *eP* P 21 50 07.0 0.0
comp=Z,16nm,1.6s
CONA **Conrad Observa** 64.49 324 *eP* P 21 50 06.9 -0.9
comp=Z,3.4nm,0.7s
TJN **Taejon** 64.60 50 *ceP* P 21 50 09.6 +1.0
KRLC **Kraliky** 65.03 326 *eP* P 21 50 06.1 -5.1
KRLC **Kraliky** 65.03 326 *eP* P 21 50 06.1 -5.1
KS15 **Wonju Array Si** 65.32 49 *eP* P 21 50 13.1 -0.2
KSAR **Wonju Array Be** 65.32 49 P P 21 50 13.1 -0.2
KSAR **Wonju Array Be** 65.32 49 P P 21 50 13.1 -0.2
KS01 **Wonju Array Si** 65.34 49 *eP* P 21 50 17.3 +3.9
KSRS **Korea Array** 65.36 49 P P 21 50 13.1 -0.4
comp=Z,5.4nm,0.8s,baz=252,slow=7.1,SNR=6.5
KSRS LR LR 22 19 44.9
comp=Z,79nm,21.4s,baz=270,slow=37
MOA **Molln** 65.41 323 *eP* P 21 50 12.5 -1.2
comp=Z,5.4nm,1.2s
DPC **Dobruska-Polom** 65.42 326 *eP* P 21 50 13.1 -0.7
DPC *ep*P sP 21 50 19.8 +1.6
DPC **Dobruska-Polom** 65.42 326 *eP* P 21 50 13.1 -0.7
DPC *e* 21 50 19.8
KHC **Kasperske Hory** 66.40 324 *eP* P 21 50 18.2 -1.9
KHC *ep*P sP 21 50 25.1 +0.6
KHC **Kasperske Hory** 66.40 324 *eP* P 21 50 18.2 -1.9
KHC *e* 21 50 25.1
TORD **Torodi Ar. Bea** 66.77 284 P P 21 50 22.1 -0.9
comp=Z,6.8nm,1.0s,baz=95,slow=5.9,SNR=24
TORD LR LR 22 18 03.6
comp=Z,206nm,20.6s,baz=215,slow=35
TOA1 **Torodi Ar. Sit** 66.77 284 *eP* P 21 50 22.1 -1.0
FUORN **Ofenpass-Fuorn** 67.34 321 *eP* P 21 50 26.2 -0.2
comp=Z,5.8nm,0.8s
NKC **Novy Kostel** 67.55 325 *eP* P 21 50 27.1 -0.3
NKC *ex* x 21 50 33.9
NKC **Novy Kostel** 67.55 325 *eP* P 21 50 27.1 -0.3
NKC *e* 21 50 33.9
FIA0 **FINESS Array S** 67.69 340 *eP* P 21 50 27.2 -0.7
FIA0 **FINESS Array S** 67.69 340 *eP* P 21 50 27.2 -0.7
FINES **FINESS Array B** 67.69 340 P P 21 50 27.2 -0.7
comp=Z,1.8nm,0.9s,baz=144,slow=12,SNR=2.7
CLL **Collm** 67.73 326 *iP* P 21 50 28.1 -0.3
comp=Z,7.0nm,1.3s
CLL *i* 21 50 38.6
comp=Z,8.0nm,1.2s
CLL **Collm** 67.73 326 *iP* P 21 50 28.1 -0.3
CLL pmax pmax
comp=Z,7.0nm,1.3s
DAVA **Damuels** 67.85 321 *eP* P 21 50 28.3 -1.2
comp=Z,7.0nm,0.9s
WRA **Warramunga Arr** 68.21 112 P P 21 50 31.2 -0.9
comp=Z,10nm,0.9s,baz=290,slow=6.0,SNR=13
WR1 **Warramunga Arr** 68.22 112 *eP* P 21 50 31.2 -0.8
comp=Z,19nm,1.2s
WB2 **Warramunga Arr** 68.22 112 *eP* P 21 50 31.6 -0.6
comp=Z,31nm,1.4s
ASAR **Alice Springs** 68.52 116 P P 21 50 32.8 -1.2
comp=Z,3.7nm,0.9s,baz=289,slow=5.9,SNR=10
AS31 **Alice Springs** 68.52 116 *eP* P 21 50 32.8 -1.2
comp=Z,1.9nm,0.6s
AS01 **Alice Springs** 68.56 116 *eP* P 21 50 33.3 -0.9
NRIK **Noril'sk** 68.93 7 LR LR 22 22 29.7
comp=Z,170nm,18.4s,baz=112,slow=37
SENIN **Lac Senin/Sane** 69.14 320 *eP* P 21 50 36.5 -1.2
comp=Z,7.0nm,0.9s
BFO **Black Forest** 69.22 322 *iP* P 21 50 37.9 +0.1
USRK **Ussuriysk Ar.** 70.38 43 P P 21 50 44.1 -0.9
comp=Z,1.5nm,0.6s,baz=255,slow=5.6,SNR=8.9
USRK LR LR 22 23 42.0
comp=Z,127nm,18.6s,baz=186,slow=38
KLR **Kul'dur** 71.83 38 P P 21 50 53.0 -0.8
comp=Z,3.2nm,0.8s,baz=272,slow=7.9,SNR=11
KLR **Kul'dur** 71.83 38 *eP* P 21 50 53.0 -0.8
INU **Inuyama** 71.92 53 *eP* P 21 50 58.5 +4.0
comp=Z,20nm,0.9s
KIC **Kosan Boka** 72.86 276 *eP* P 21 51 00.0 -0.6
comp=Z,68nm,0.8s
DBIC **Dimbokro** 72.98 276 P P 21 51 01.0 -0.3
comp=Z,27nm,0.8s,baz=68,slow=5.6,SNR=23
DBIC **Dimbokro** 72.98 276 *eP* P 21 51 01.0 -0.3
DBIC pmax pmax
comp=Z,33nm,0.9s
DBIC **Dimbokro** 72.98 276 *eP* P 21 51 01.0 -0.3
comp=Z,33nm,0.9s
MJAR **Matsushiro Arr** 73.10 52 P P 21 51 02.7 +1.1
comp=Z,5.8nm,0.9s,baz=252,slow=4.3,SNR=11
MJAR LR LR 22 23 37.8
comp=Z,70nm,21.9s,baz=325,slow=36
TIC **Toumodi** 73.14 276 *eP* P 21 51 01.8 -0.5
LIC **Lamto** 73.14 276 *eP* P 21 51 01.8 -0.5
comp=Z,28nm,0.8s
NB2 **NORSAR Subarra** 73.24 335 P P 21 51 04.6 +2.7
comp=Z,3.9nm,1.2s,baz=119,slow=6.2
NB200 **NORSAR Array S** 73.24 335 *eP* P 21 51 01.9 0.0
NOA **NORSAR Array B** 73.24 335 P P 21 51 01.9 0.0
comp=Z,1.1nm,0.8s,baz=104,slow=5.5,SNR=2.9
NOA LR LR 22 25 22.6
comp=Z,41nm,20.4s,baz=105,slow=38
KONO **Kongsberg** 73.29 333 *eP* P 21 51 03.6 +1.4
KONO pmax pmax
comp=Z,100nm,1.7s
ARA0 **ARCESS Array S** 73.54 346 *eP* P 21 51 03.7 +0.2
ARCES **ARCESS Array B** 73.54 346 P P 21 51 03.7 +0.2
comp=Z,5.9nm,0.9s,baz=309,slow=7.7,SNR=2.9
ARCES LR LR 22 25 04.8
comp=Z,77nm,19.1s,baz=172,slow=37
ES19 **SONSECA Array** 75.27 311 *eP* P 21 51 13.9 -0.4
ESDC **Sonseca Array** 75.32 311 P P 21 51 13.4 -1.1
comp=Z,2.6nm,0.8s,baz=86,slow=5.5,SNR=14
STKA **Stephens Creek** 76.77 123 LR LR 22 24 56.4
comp=Z,182nm,18.0s,baz=211,slow=36
PMG **Port Moresby** 79.38 100 P P 21 51 39.1 +1.4
comp=Z,4.1nm,0.6s,baz=302,slow=12,SNR=4.3
TIXI **Tiksi** 79.62 16 P P 21 51 37.7 -0.1
comp=Z,4.5nm,0.9s,baz=199,slow=1.2,SNR=9.8
TIXI **Tiksi** 79.62 16 *ceP* P 21 51 37.6 -0.2
TIXI pmax pmax
comp=Z,22nm,2.5s
TIXI **Tiksi** 79.62 16 *eP* P 21 51 37.0 -0.8
comp=Z,8.8nm,1.1s
SNAA **Sanae** 85.55 197 P P 21 52 05.4 -3.5
SEY **Seymchan** 86.00 27 P P 21 52 12.9 +1.8
comp=Z,4.4nm,0.7s,baz=300,slow=1.9,SNR=6.1
SEY **Seymchan** 86.00 27 *eP* P 21 52 13.0 +1.8
VNA2 **Neumayer--Watz** 86.75 199 P P 21 52 14.0 -0.7
baz=43,slow=5.7
VNA3 **Neumayer Olymp** 87.54 198 P P 21 52 17.8 -0.8
PETK **Petropavlovsk-** 88.49 37 LR LR 22 35 12.3
comp=Z,90nm,19.9s,baz=263,slow=38
BILL **Bilibino** 91.62 22⇑ *eP* P 21 52 40.3 +2.5
BILL *e* 21 56 13.2
BILL *e*PPP PPP 21 58 17.7
BILL *e*S S 22 03 34.3 -3.5
BILL pmax pmax
comp=Z,2.0nm,1.2s
BILL MLR MLR
comp=Z,119nm,18.0s
VNDA **Vanda** 92.28 167 P P 21 52 40.3 -0.3
comp=Z,2.5nm,0.9s,baz=278,slow=6.6,SNR=6.7
YKA **Yellowknife Ar** 116.11 1 PKP PKPdf 21 58 12.3 -1.6
comp=Z,0.3nm,0.7s,baz=357,slow=2.0,SNR=6.6
YKA PKKPbc PKKPbc 22 08 42.8 -3.6
comp=Z,0.3nm,0.7s,baz=172,slow=3.3,SNR=6.3
YKB5 **Yellowknife Ar** 116.11 1 *e*PKPdf PKPdf 21 58 12.3 -1.6
YKB5 *e*PKKPbc PKKPbc 22 08 42.8 -3.6
SAML **Samuel** 131.06 260 *e*PKPdf PKPdf 21 58 43.4 -0.5
PD31 **Pinedale Array** 135.85 358 *e*PKPdf PKPdf 21 58 51.6 -0.9
PDAR **Pinedale Array** 135.85 358 PKP PKPdf 21 58 51.6 -0.9
comp=Z,0.4nm,0.7s,baz=2.6,slow=3.3,SNR=3.6
OGNE **Ogallala** 136.79 349 *e*PKPpre PKPpre 21 58 47.6
PFO **Pinyon Flats O** 144.77 7 *i*PKIKP PKPdf 21 59 13.1 +4.3
MNTX **Cornudas Mount** 146.39 350 *e*PKPdf PKPab 21 59 14.7 +1.2
LTX **Lajitas** 148.33 346 *e*PKP2 PKPbc 21 59 18.2 0.0
LTX **Lajitas** 148.33 346 *e*PKPbc PKPbc 21 59 18.2 0.0
TX31 **Lajitas Ar. Si** 148.33 346 *e*PKPdf PKPdf 21 59 14.8 -0.1
TX31 *e*PKPbc PKPbc 21 59 18.1 -0.1
TXAR **Lajitas Array** 148.33 346 PKPbc PKPbc 21 59 18.2 0.0
comp=Z,2.7nm,0.8s,baz=76,slow=1.8,SNR=19
SRIG **Santa Rosalia** 151.31 1 *e*PKPab PKPab 21 59 38.5 +5.2

*IDC **09** 21:44:10.2±0.8, 37.°66N×143.°84E, h0km, mb3.7/9, mb1 3.9/16, mb1mx3.7/49, mbtmp3.8/16, ML3.6/6, Error ellipse: s-maj=21.5km s-min=15.6km az=107.0*
*ISCJB **09** 21:44:11.8±0.6, 37.°85N±0.°04×143.°60E±0.°04, h19km, mb3.7/9, Error ellipse: s-maj=5.4km s-min=4.9km az=138.9*
*JMA **09** 21:44:13.8±0.2, 37.°86N×143.°55E, h38km, M3.8*
ISC 09 21:44:12.4±0.7, 37.84N±0.°04×143.54E±0.°06, h19km, n35, σ2.9 06/50, mb3.8/9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	1.84	290	P	Pb	21 44 44.0	-1.3
JIO				*e*S	Sn	21 45 05.5	-0.1
OFUJ	**Ofunato**	1.92	311	P	Pb	21 44 44.9	-1.9
OFUJ				*e*S	Sb	21 45 08.4	-2.0
JMK	**Ichinoseki**	2.14	302	P	Pb	21 44 48.3	-2.2
JMK				*e*S	Sb	21 45 14.2	-2.4
JFK	**Kawauchi**	2.17	258	P	Pn	21 44 48.0	+0.5
JMM	**Marumori**	2.18	272	P	Pn	21 44 48.7	+1.1
JMM				S	Sn	21 45 15.0	+1.0
JOU	**Okura**	2.33	284	P	Pb	21 44 51.7	-2.1
JOM	**Ohasama**	2.40	313	P	Pn	21 44 52.0	+1.3
JOM				*e*S	Sn	21 45 20.7	+1.2
JTH	**Tanohata**	2.47	328	P	Pn	21 44 52.9	+1.3
JFT	**Otama**	2.56	264	P	Pn	21 44 54.8	+1.9
JFT				*e*S	Sn	21 45 24.3	+0.7
JYK	**Kaneyama**	2.72	294	P	Pn	21 44 57.1	+2.0
JYK				*e*S	Sn	21 45 28.6	+1.1
JRG	**Rokugo**	2.76	305	P	Pb	21 44 58.1	-3.0
JRG				*e*S	Sn	21 45 29.8	+1.4
JANG	**Nango**	2.98	329	P	Pn	21 45 00.4	+1.7
JANG				*e*S	Sn	21 45 32.6	-1.3
JTM	**Tenmabayashi**	3.51	328	*e*S	Sn	21 45 46.0	-1.0
JOT	**Ohata**	4.03	332	P	Pn	21 45 15.4	+2.4
JRY	**Ryogami san**	4.14	245	P	Pn	21 45 16.0	+1.4
JRY				*e*S	Sn	21 46 00.3	-2.2
MJAR	**Matsushiro Arr**	4.45	255	Pn	Pn	21 45 21.8	+2.9
	4.7nm,0.3s,baz=81,slow=15,SNR=36						
MAT	**Matsushiro**	4.45	255	P	Pn	21 45 21.7	+2.8
MAT				*e*S	Sn	21 46 12.6	+2.4
JNBK	**Urakawa-nobuka**	4.48	352	P	Pn	21 45 20.8	+1.6
JNBK				*e*S	Sn	21 46 09.1	-1.6
JKB	**Kayabe**	4.48	335	P	Pn	21 45 20.9	+1.7
JKB				S	Sn	21 46 08.7	-2.1
JCH	**Churui**	4.77	358	P	Pn	21 45 23.2	0.0
JCH				*e*S	Sn	21 46 14.5	-3.5
JHJ	**Hachijo jima 2**	5.62	214	Pn	Pn	21 45 34.9	-0.1
	5.0nm,0.3s,baz=229,slow=20,SNR=3.0						
JHJ				Sn	Sn	21 46 35.3	-3.7
	17nm,0.3s,baz=233,slow=20,SNR=3.2						
ASAJ	**Asahikawa**	6.31	354	Pn	Pn	21 45 45.9	+1.5
	2.6nm,0.3s,baz=204,slow=6.6,SNR=19						
ASAJ				Sn	Sn	21 46 57.2	+1.3
	0.5nm,0.3s,baz=270,slow=20,SNR=4.4						
JCJ	**Chichijima**	10.78	186	Pn	Pn	21 46 41.5	-4.1
	0.5nm,0.3s,baz=254,slow=20,SNR=4.6						
JCJ				Sn	Sn	21 48 33.8	-12
	baz=287,slow=19						
USRK	**Ussuriysk Ar.**	10.79	310	Pn	Pn	21 46 48.5	+2.7
	0.1nm,0.3s,baz=108,slow=12,SNR=3.1						
KSRS	**Korea Array**	12.39	273	Pn	Pn	21 47 11.1	+3.4
	0.1nm,0.3s,baz=91,slow=15,SNR=5.1						
KLR	**Kul'dur**	14.22	327	Pn	P	21 47 36.5	-3.4
	0.1nm,0.3s,baz=146,slow=15,SNR=3.8						
ZALV	**Zalesovo Beam**	42.63	312	P	P	21 52 11.9	+4.7
	0.8nm,0.3s,baz=82,slow=7.4,SNR=4.8						
MKAR	**Makanchi Array**	45.13	302	P	P	21 52 30.4	+2.8
	1.0nm,0.8s,baz=82,slow=9.7,SNR=6.3						
ILAR	**Eielson Array**	47.90	33	P	P	21 52 49.2	+0.2
	0.9nm,0.7s,baz=256,slow=6.5,SNR=10.0						
INK	**Inuvik**	52.89	28	P	P	21 53 28.5	+1.9
	0.4nm,0.5s,baz=298,slow=7.7,SNR=3.7						
WRA	**Warramunga Arr**	58.12	190	P	P	21 54 04.7	-0.1
	1.0nm,0.6s,baz=8.1,slow=6.7,SNR=8.7						
ASAR	**Alice Springs**	61.85	190	P	P	21 54 30.1	-0.2
	0.2nm,0.4s,baz=4.4,slow=9.0,SNR=3.4						
YKA	**Yellowknife Ar**	62.25	31	P	P	21 54 33.3	+0.7
	0.3nm,0.7s,baz=302,slow=6.4,SNR=4.7						
FINES	**FINESS Array B**	68.88	333	P	P	21 55 17.2	+1.9
	1.1nm,0.8s,baz=23,slow=10,SNR=4.2						
PDAR	**Pinedale Array**	75.89	47	P	P	21 55 59.5	+1.6
	0.4nm,0.6s,baz=333,slow=1.7,SNR=4.5						

*MOS **09** 22:02:19.4±1.1, 19.°29S×169.°01E, h140km, mb4.9/7, Error ellipse: s-maj=12.2km s-min=9.2km az=164.6*
*ISCJB **09** 22:02:20.3±1.0, 19.°16S±0.°04×168.°94E±0.°04, h147km±9km, mb4.7/65, Error ellipse: s-maj=6.9km s-min=6.2km az=7.0*

*IDC **09** 22:02:20.5±0.8, 19.°16S×168.°98E, h136km±6km, mb4.1/18, mb1 4.3/20, mb1mx4.1/34, mbtmp4.5/20, MS3.3/1, Ms1 3.3/1, ms1mx2.8/37, Error ellipse: s-maj=14.2km s-min=9.9km az=134.0*
*NEIC **09** 22:02:21.3±0.8, 19.°15S×169.°00E, h146km±7km, mb4.9/49, Error ellipse: s-maj=5.9km s-min=5.6km az=192.0*
ISC 09 22:02:20.6±0.5, 19.°19S±0.°05×169.°01E±0.°05, h141km±4km, h141km:pP-P, n186, σ1.962/202, mb4.8/65, 2C-3D, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	3.74	220	P	Pn	22 03 17.7	+0.4
	57nm,0.3s,baz=156,slow=23,SNR=230						
DZM				S	Sn	22 04 00.5	-0.8
	97nm,0.3s,baz=337,slow=22,SNR=21						
DZM				LR	LR	22 04 39.5	
	comp=Z,402nm,19.7s,baz=29,slow=37						
MSVF	**Nonsavu**	8.70	82	*eP*	Pn	22 04 24.1	+0.6
MSVF	**Nonsavu**	8.70	82	*e*Pn	Pn	22 04 24.1	+0.6
HNR	**Honiara**	13.08	317	P	P	22 05 27.5	+1.3
	27nm,0.3s,baz=180,slow=1.7,SNR=11						
HNR				S	Sn	22 07 49.3	+3.6
	12nm,0.3s,baz=36,slow=22,SNR=4.0						
HNR	**Honiara**	13.08	317	*eP*	Pn	22 05 21.6	+0.4
HNR				*e*		22 07 49.3	
HNR	**Honiara**	13.08	317	*e*Pn	Pn	22 05 21.6	+0.4
HNR				*e*Sn	Sn	22 07 49.3	+3.6
OUZ	**Omahuta**	16.48	167	*e*Pn	P	22 06 06.0	+2.3
	37nm,0.7s						
EIDS	**Eidsvold**	17.69	246	P	Pn	22 06 19.6	+1.3
	baz=18,SNR=18						
EIDS	**Eidsvold**	17.69	246	*eP*	Pn	22 06 19.6	+1.3
	38nm,0.6s						
AFI	**Afiamalu**	19.15	77	P	P	22 06 33.1	-0.1
	2.4nm,0.3s,baz=60,slow=15,SNR=3.1						
AFI	**Afiamalu**	19.15	77	*eP*	P	22 06 32.5	-0.7
AFI				pmax	pmax		
	comp=Z,87nm,1.3s						
AFI	**Afiamalu**	19.15	77	*eP*	P	22 06 32.5	-0.7
	comp=Z,87nm,1.3s						
ARMA	**Armidale**	19.31	231	P	Pn	22 06 37.7	+0.3
	baz=19,SNR=11						
ARMA	**Armidale**	19.31	231	*eP*	Pn	22 06 37.7	+0.3
	comp=Z,34nm,0.8s						
HIZ	**Hauiti**	19.92	166	*eP*	Pn	22 06 44.2	-0.1
	comp=Z,42nm,0.6s						
RMQ	**Roma**	20.01	245	P	Pn	22 06 44.7	-0.9
	baz=20,SNR=6.9						
URZ	**Urewera**	20.27	161	P	Pn	22 06 46.7	-1.7
	comp=Z,26nm,0.6s,baz=336,slow=3.1,SNR=15						
URZ	**Urewera**	20.27	161	*eP*	P	22 06 45.4	+0.4
	comp=Z,39nm,0.9s						
BKZ	**Black Stump Fm**	20.94	164	*eP*	P	22 06 54.0	+1.7
	comp=Z,66nm,1.7s						
MGCD	**Mangrove Creek**	21.24	225	P	P	22 06 58.5	+3.1
	baz=21,SNR=7.4						
CTA	**Charters Tower**	21.45	264	P	P	22 06 59.3	+1.4
	comp=Z,22nm,0.4s,baz=90,slow=12,SNR=36						
CTAO	**Charters Tower**	21.45	264	*eP*	P	22 06 59.5	+1.6
CTAO				pmax	pmax		
	comp=Z,176nm,0.6s						
CTAO	**Charters Tower**	21.45	264	*eP*	P	22 06 59.5	+1.6
	comp=Z,176nm,0.6s						
BFZ	**Birch Farm**	22.30	165	*eP*	P	22 07 06.7	+0.3
	comp=Z,228nm,1.7s						
SNZO	**South Karori**	22.58	169	*eP*	P	22 07 10.7	+1.6
	comp=Z,45nm,1.0s						
THZ	**Tophouse**	22.75	172	*eP*	P	22 07 12.0	+1.2
	comp=Z,30nm,0.7s						
PMG	**Port Moresby**	23.27	292	P	P	22 07 16.2	+0.4
	comp=Z,39nm,0.8s,baz=101,slow=6.6,SNR=26						
PMG	**Port Moresby**	23.27	292	*d iP*	P	22 07 15.9	+0.1
PMG				pmax	pmax		
	comp=Z,157nm,0.8s						
PMG	**Port Moresby**	23.27	292	*eP*	P	22 07 16.2	+0.4
	comp=Z,37nm,0.8s						
MTSU	**Mount Surprise**	23.41	269	P	P	22 07 18.0	+0.8
	baz=23,SNR=104						
KHZ	**Kahutara**	23.47	172	*eP*	P	22 07 17.8	+0.4
	comp=Z,32nm,0.7s						
CNB	**Canberra Magne**	23.66	223	P	P	22 07 20.9	+1.6
	baz=24,SNR=14						
LTZ	**Lake Taylor**	23.68	174	*eP*	P	22 07 20.5	+1.2
	comp=Z,23nm,0.7s						
YNG	**Young**	23.71	226	P	P	22 07 21.4	+1.7
	baz=24,SNR=19						
CAN	**Canberra**	23.90	224	*eP*	P	22 07 21.0	-0.4
CAN				pmax	pmax		
	comp=Z,18nm,0.6s						
CAN	**Canberra**	23.90	224	*eP*	P	22 07 21.0	-0.4
	comp=Z,18nm,0.6s						
QLP	**Quilpie**	23.95	248	P	P	22 07 22.4	+0.4
	baz=24,SNR=53						
OXZ	**Oxford**	24.20	175	*eP*	P	22 07 25.0	+1.0
	comp=Z,114nm,1.6s						
FOZ	**Fox Glacier**	24.28	179	*eP*	P	22 07 26.1	+1.4
	comp=Z,27nm,1.0s						
CMSA	**Cobar Meteorol**	24.34	235	P	P	22 07 26.1	+0.8
	baz=24,SNR=63						
RPZ	**Rata Peaks**	24.51	176	P	P	22 07 27.3	+0.5
	comp=Z,6.4nm,0.3s,baz=20,slow=5.9,SNR=4.2						
MQZ	**McQueen's Vall**	24.64	174	*eP*	P	22 07 29.3	+1.4
	comp=Z,43nm,1.6s						
LBZ	**Lake Benmore**	25.14	178	*eP*	P	22 07 32.2	-0.4
	comp=Z,50nm,1.9s						
COEN	**Coen**	25.29	278	P	P	22 07 36.4	+2.2
	baz=25,SNR=14						
COEN	**Coen**	25.29	278	*eP*	P	22 07 35.0	+0.8
	comp=Z,17nm,0.9s						
ODZ	**Otahua Downs**	25.82	177	*eP*	P	22 07 37.6	-1.0
	comp=Z,68nm,1.7s						
DCZ	**Deep Cove**	26.25	183	*eP*	P	22 07 43.6	+1.1
	comp=Z,86nm,1.6s						
WHZ	**Wether Hill Ro**	26.65	182	*eP*	P	22 07 44.8	-1.2
	comp=Z,37nm,1.5s						
QIS	**Mount Isa**	27.67	262	P	P	22 07 55.5	0.0
	baz=28,SNR=6.4						
STKA	**Stephens Creek**	27.69	237	P	P	22 07 56.5	+0.9
	comp=Z,22nm,0.6s,baz=69,slow=9.1,SNR=64						
STKA	**Stephens Creek**	27.69	237	P	P	22 07 56.5	+0.9
	baz=28,SNR=34						
STKA	**Stephens Creek**	27.69	237	*eP*	P	22 07 56.5	+0.9
STKA				pmax	pmax		
	comp=Z,6.0nm,0.6s						
STKA	**Stephens Creek**	27.69	237	*eP*	P	22 07 56.5	+0.9
	comp=Z,5.5nm,0.6s						
ARPS	**Mount Arapiles**	29.55	228	P	P	22 08 13.0	+1.0
	baz=30,SNR=6.2						
HTT	**Hallett**	30.34	236	P	P	22 08 19.8	+0.7
	baz=30,SNR=14						
JAY	**Jayapura**	32.27	297	P	P	22 08 35.8	-0.4
	comp=Z,0.9nm,0.6s,baz=91,slow=23,SNR=5.0						
BBOO	**Buckleboo**	32.43	239	P	P	22 08 37.5	+0.1
	baz=32,SNR=25						
BBOO	**Buckleboo**	32.43	239	*eP*	P	22 08 37.5	+0.1
	comp=Z,22nm,0.5s						
WB2	**Warramunga Arr**	32.63	263	*eP*	P	22 08 38.4	-1.0
	comp=Z,18nm,0.8s						
WRAB	**Tennant Creek**	32.63	263	*d iP*	P	22 08 38.0	-1.3
WRAB				pmax	pmax		
	comp=Z,32nm,1.0s						
WRAB	**Tennant Creek**	32.63	263	*eP*	P	22 08 38.3	-1.0
	comp=Z,14nm,0.8s						
WR1	**Warramunga Arr**	32.64	263	*eP*	P	22 08 38.3	-1.1
	comp=Z,19nm,0.9s						
WR1				*e*pP	pP	22 09 08.7	-0.9
WR1				*e*ScP	ScP	22 14 55.1	+1.9
WRA	**Warramunga Arr**	32.64	263	P	P	22 08 38.3	-1.1
	comp=Z,8.4nm,0.4s,baz=90,slow=8.2,SNR=238						
WRA				pP	pP	22 09 08.7	-0.9
	comp=Z,3.6nm,0.9s,baz=92,slow=8.4,SNR=2.3						
WRA				ScP	ScP	22 14 55.1	+1.9
	comp=Z,1.2nm,0.9s,baz=99,slow=3.

comp=Z,388nm,1.7s
MCQ Macquarie Isla 36.08 190 *e*P **P 22 09 06.0 -2.4**
comp=Z,388nm,1.7s
MTN Manton Dam 36.89 274 P **P 22 09 15.9 0.0**
baz=37,SNR=5.2
MTN Manton Dam 36.89 274 *e*P **P 22 09 15.8 -0.1**
comp=Z,28nm,0.7s
WRKA Warakurna 38.06 254 P **P 22 09 25.5 -0.2**
baz=38,SNR=57
FAKI Fak Fak 39.40 290 *e*P **P 22 09 36.0 -0.9**
comp=Z,34nm,0.4s
FITZ Fitzroy Crossi 41.03 264 P **P 22 09 50.8 +0.5**
baz=41,SNR=36
FITZ Fitzroy Crossi 41.03 264 *e*P **P 22 09 50.8 +0.5**
comp=Z,52nm,0.6s
KMBL Kambalda 44.01 244 P **P 22 10 13.9 -0.3**
baz=44,SNR=16
KLBR Kellerberrin 47.54 244 P **P 22 10 41.4 -0.6**
baz=48,SNR=13
NWAO Narrogin (SRO) 48.04 243 *e*P **P 22 10 45.5 -0.4**
NWAO pmax pmax
comp=Z,271nm,1.6s
NWAO Narrogin (SRO) 48.04 243 *e*P **P 22 10 45.5 -0.4**
comp=Z,271nm,1.6s
RKGY Rocky Gully 48.37 240 P **P 22 10 48.6 +0.3**
baz=48,SNR=6.7
BLDU Ballidu 48.41 246 P **P 22 10 48.1 -0.6**
baz=48,SNR=7.6
LUWI Luwuk 48.74 286 *e*P **P 22 10 52.3 +0.9**
comp=Z,40nm,0.5s
MORW Morawa 48.99 248 P **P 22 10 53.0 -0.1**
baz=49,SNR=3.3
GIRL Giralia 51.05 256 P **P 22 11 09.4 +0.6**
baz=51,SNR=4.0
MLOA Mauna Loa Obse 51.84 44 *e*P **P 22 11 15.4 +0.3**
JAGI Jajag, Banyuwa 54.13 273 *e*P **P 22 11 30.3 -1.3**
comp=Z,13nm,0.6s
UGM Wanagama 57.72 273 *e*P **P 22 11 56.5 -0.6**
comp=Z,155nm,1.5s
VNDA Vanda 58.48 182 P **P 22 12 01.8 +0.5**
comp=Z,1.2nm,0.5s,baz=341,slow=6.5,SNR=5.7
VNDA Vanda 58.48 182 *e*P **P 22 12 01.4 +0.1**
VNDA pmax pmax
comp=Z,14nm,1.8s
VNDA Vanda 58.48 182 *e*P **P 22 12 01.4 +0.1**
comp=Z,14nm,1.8s
SBA Scott Base 58.71 181 *e*P **P 22 12 04.4 +1.4**
SBA pmax pmax
comp=Z,28nm,1.3s
SBA Scott Base 58.71 181 *e*P **P 22 12 04.4 +1.4**
comp=Z,28nm,1.3s
NJ2 Nanjing 70.02 316 *e*P **P 22 13 15.3 -1.9**
NJ2 pmax pmax
comp=Z,14nm,0.8s
PETK Petropavlovsk- 72.66 353 P **P 22 13 33.2 +0.7**
comp=Z,5.2nm,0.8s,baz=136,slow=5.0,SNR=4.7
PEA1 Petropavlovsk- 72.66 353 *e*P **P 22 13 33.2 +0.6**
GYA Guiyang 75.61 305 P **P 22 13 51.4 +0.9**
GYA pP sP 22 14 36.8 -3.6
GYA sP pP 22 14 56.0 +31
GYA PP **PP 22 16 45.2 +3.1**
GYA S **S 22 23 16.6 -3.8**
GYA SKS **SKSac 22 23 38.4 -9.4**
GYA Guiyang 75.61 305 sS sS 22 24 34.0 +13
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,120nm,5.8s
BJI Beijing 76.76 321 P **P 22 13 57.4 +0.9**
BJI pmax pmax
comp=Z,4.0nm,1.2s
KMI Kunming 78.06 302 P **P 22 14 06.0 +1.6**
KMI pmax pmax
comp=Z,7.0nm,0.6s
KMI pmax pmax
comp=Z,98nm,5.1s
CM01 Chiang Mai Arr 78.26 294 *e*P **P 22 14 06.0 +0.7**
CM31 Chiang Mai Arr 78.28 294 *e*P **P 22 14 07.0 +1.5**
CMAR Chiang Mai Arr 78.28 294 P **P 22 14 07.0 +1.5**
comp=Z,2.7nm,0.9s,baz=133,slow=4.6
CMAR Chiang Mai Arr 78.28 294 P **P 22 14 07.0 +1.5**
CD2 Chengdu 80.03 308 P **P 22 14 13.4 -1.4**
CD2 pP sP 22 14 58.4 -6.5
CD2 sP pP 22 15 18.2 +28
CD2 PP **PP 22 17 17.9 -1.0**
CD2 S **S 22 24 02.9 -4.7**
CD2 SKS **SKSac 22 24 12.0 -7.2**
CD2 Chengdu 80.03 308 sS sS 22 25 21.8 +13
CD2 Chengdu 80.03 308 SS SS 22 29 18.3 -3.0
CD2 pmax pmax
comp=Z,20nm,0.5s
CD2 pmax pmax
comp=Z,130nm,5.7s
HHC Hu-ho-hao-te 80.04 320 *e*P **P 22 14 16.2 +1.5**
HHC PP **PP 22 17 23.9 +5.0**
HHC S **S 22 23 59.8 -7.6**
HHC pmax pmax
comp=Z,23nm,1.2s
HHC pmax pmax
comp=Z,110nm,7.2s
HHC LR LR
comp=N,130nm,17.3s
HHC LR LR
comp=E,150nm,17.3s
HHC LR LR
comp=Z,180nm,17.6s
KDAK Kodiak Island 83.06 20 P P 22 14 46.1 +16
comp=Z,3.9nm,0.7s,baz=195,slow=4.5,SNR=5.9
KDAK Kodiak Island 83.06 20 *i*P **P 22 14 30.6 +0.7**
YAK Yakutsk 86.76 343 *e*P **P 22 14 49.2 +0.9**
YAK pmax pmax
comp=Z,5.0nm,0.9s
GTA Gaotai 86.93 314 *e*P **P 22 14 50.6 +0.7**
GTA pP pP 22 15 27.5 +1.9
GTA sP sP 22 15 45.2 +4.7
GTA pmax pmax
comp=Z,3.0nm,1.0s
BILL Bilibino 87.00 359‖ *e*P **P 22 14 49.4 0.0**
BILL *e* 22 18 23.3
BILL pmax pmax
comp=Z,4.0nm,0.9s
BILL Bilibino 87.00 359 *e*P **P 22 14 49.5 +0.1**
comp=Z,3.7nm,0.8s
SONA0 Songino Array 87.05 323 *e*P **P 22 14 50.9 +0.6**
SONA0 *e*pP **pP 22 15 25.1 -0.9**
SONA0 *e*sP **sP 22 15 36.4 -4.4**
SONM Songino Array 87.05 323 P **P 22 14 50.9 +0.6**
comp=Z,0.9nm,0.8s,baz=150,slow=5.5,SNR=5.7
SONM pP **pP 22 15 25.1 -0.9**
comp=Z,1.7nm,0.9s,baz=137,slow=4.3,SNR=6.8
SONM sP **sP 22 15 36.4 -4.4**
comp=Z,2.2nm,0.9s,baz=134,slow=4.6,SNR=6.8
YBH Yreka Blue Hor 87.41 44 P **P 22 14 53.5 +1.4**
comp=Z,2.3nm,0.4s,baz=176,slow=4.0,SNR=11
YBH Yreka Blue Hor 87.41 44 *e*P **P 22 14 53.5 +1.4**
YBH pmax pmax
comp=Z,27nm,1.9s
YBH Yreka Blue Hor 87.41 44 *e*P **P 22 14 53.5 +1.4**
comp=Z,26nm,1.9s
CAST Castle Rocks 87.76 16 *e*P **P 22 14 51.7 -1.5**
comp=Z,22nm,2.0s
NV01 Mina Array Sit 88.93 49 *e*P **P 22 15 00.5 +0.9**
NVAR Mina Array Bea 88.93 49 P **P 22 15 00.5 +0.9**
comp=Z,1.1nm,0.7s,baz=232,slow=8.5,SNR=4.9
SNAA Sanae 89.20 183 P **P 22 14 59.8 -0.4**
TPNV Topopah Spring 89.79 51 *e*P **P 22 15 02.9 -0.6**
TPNV pmax pmax
comp=Z,6.0nm,0.9s
TPNV Topopah Spring 89.79 51 *e*P **P 22 15 02.9 -0.6**
comp=Z,5.8nm,0.9s
VNA3 Neumayer Olymp 89.80 180 P **P 22 15 02.3 -0.5**
COLA College 90.06 17 *e*P **P 22 15 05.3 +1.5**
COLA College 90.06 17 *e*P **P 22 15 05.3 +1.5**
comp=Z,70nm,0.4s
VNA2 Neumayer--Watz 90.09 181 P **P 22 15 03.9 -0.2**
baz=188,slow=3.6
ILAR Eielson Array 90.25 17 P **P 22 15 03.4 -1.4**
comp=Z,1.1nm,0.7s,baz=234,slow=5.3,SNR=11
ILB Eielson Array 90.25 17 *e*P **P 22 15 03.4 -1.4**
WVOR Wild Horse Val 90.43 45 *e*P **P 22 15 07.3 +1.0**
WVOR pmax pmax
comp=Z,11nm,1.2s
WVOR Wild Horse Val 90.43 45 *e*P **P 22 15 07.3 +1.0**
comp=Z,11nm,1.2s
COLD Coldfoot 91.28 15 *e*P **P 22 15 09.9 +0.3**
comp=Z,5.1nm,1.4s
G08A Pilot Rock 91.47 42 *e*P **P 22 15 11.9 +0.8**
comp=Z,4.9nm,0.8s
DLBC Dease Lake 92.10 27 P **P 22 15 13.8 +0.2**
comp=Z,1.4nm,0.3s,baz=193,slow=15,SNR=2.6
DLBC Dease Lake 92.10 27 *e*P **P 22 15 13.8 +0.2**
comp=Z,3.6nm,0.9s
X16A Lo Mia Camp, P 92.41 54 *e*P **P 22 15 17.2 +1.4**
comp=Z,8.3nm,1.0s
319A Douglas 93.02 58 *e*P **P 22 15 16.5 -2.1**
comp=Z,27nm,0.8s
SWMT Swartz Lake 95.50 42 *e*P **P 22 15 29.2 -0.3**
CHMT Chamberlain Mo 95.75 42 *e*P **P 22 15 30.7 -0.1**
INK Inuvik 96.56 18 P **P 22 15 32.8 -0.9**
comp=Z,0.7nm,0.8s,baz=240,slow=5.6,SNR=3.5
PD31 Pinedale Array 96.74 47 *e*P **P 22 15 35.4 -0.1**
PDAR Pinedale Array 96.74 47 P **P 22 15 35.3 -0.1**
comp=Z,0.2nm,0.5s,baz=245,slow=8.6,SNR=3.8
LTX Lajitas 96.93 61 *e*P **P 22 15 37.2 +0.7**
LTX Lajitas 96.93 61 *e*P **P 22 15 37.1 +0.7**
TXAR Lajitas Array 96.93 61 P **P 22 15 37.1 +0.7**
comp=Z,0.3nm,0.5s,baz=235,slow=4.3,SNR=5.3
WMQ Urumqi 97.01 314 P **P 22 15 35.2 -1.3**
WMQ pmax pmax
comp=Z,4.0nm,0.6s
WMQ pmax pmax
comp=Z,60nm,9.2s
GCMT Greycliff 97.68 44 *e*P **P 22 15 36.9 -2.6**
YKA Yellowknife Ar 100.72 27 P **Pdif 22 15 53.4 +0.9**
comp=Z,0.5nm,0.5s,baz=254,slow=4.8,SNR=12
YKB5 Yellowknife Ar 100.72 27 *e*Pdif **Pdif 22 15 53.4 +1.0**
ARA0 ARCESS Array S 124.96 345 *e*PKPdf **PKPdf 22 21 02.8 -0.6**
ARCES ARCESS Array B 124.96 345 PKP **PKPdf 22 21 02.8 -0.6**
comp=Z,5.1nm,0.9s,baz=71,slow=2.5,SNR=17
KIV Kislovodsk 129.07 311‖ *e*PKIKP **PKPdf 22 21 11.7 -0.4**
KIV *e* 22 22 01.1
KIV *e* 22 23 23.1
KIV *e*SS SS 22 40 48.1 +18
KIV pmax pmax
comp=Z,3.0nm,1.1s
OBN Obninsk 129.33 327‖ *e*PKIKP **PKPdf 22 21 13.3 +1.3**
OBN *e* 22 23 22.0
OBN pmax pmax
comp=Z,6.0nm,0.9s
FIA0 FINESS Array S 130.46 338 *e*PKIKP **PKPdf 22 21 14.1 +0.1**
FIA0 FINESS Array S 130.46 338 *e*PKPdf **PKPdf 22 21 14.1 +0.1**
FIA0 *e*SKPbc **SKPbc 22 24 24.0 -0.6**
FINES FINESS Array B 130.46 338 PKP **PKPdf 22 21 14.1 +0.1**
comp=Z,0.6nm,0.5s,baz=132,slow=36,SNR=8.1
FINES SKPbc **SKPbc 22 24 24.0 -0.6**
comp=Z,1.6nm,0.8s,baz=253,slow=2.0,SNR=4.7
AKASG Malin Array Be 135.32 324 SKPbc **SKPbc 22 24 41.6 +0.1**
comp=Z,1.8nm,0.8s,baz=41,slow=3.4,SNR=5.8
AKBB Malin Array Si 135.32 324 *e*SKPbc **SKPbc 22 24 41.6 +0.1**
NB200 NORSAR Array S 135.34 345 *e*PKPdf **PKPdf 22 21 23.4 +0.1**
NOA NORSAR Array B 135.34 345 PKP **PKPdf 22 21 23.4 +0.1**
comp=Z,0.4nm,0.6s,baz=37,slow=2.8,SNR=3.0
CONA Conrad Observa 143.99 329 *i*PKPdf **PKPdf 22 21 39.2 -0.2**
comp=Z,1.9nm,0.5s
KHC Kasperske Hory 144.19 332 *e*PKP PKPbc 22 21 38.5 +0.3
KHC Kasperske Hory 144.19 332 *e*PKIKP PKPbc 22 21 38.5 +0.3
GEC2 GERESS Array S 144.34 332 *e*PKIKP PKPbc 22 21 39.1 +0.3
GEC2 GERESS Array S 144.34 332 *e*PKPdf PKPbc 22 21 39.1 +0.4
GERES GERESS Array B 144.34 332 PKP **PKPab 22 21 38.8 +0.3**
comp=Z,1.8nm,0.7s,baz=36,slow=3.5,SNR=16
GERES pPKP **pPKPdf 22 22 17.3 -0.4**
comp=Z,0.6nm,0.7s,baz=52,slow=2.2,SNR=2.5
GERES SKPbc **SKPbc 22 25 07.0 +0.9**
comp=Z,0.6nm,0.7s,baz=90,slow=4.0,SNR=6.6
GEA0 GERESS Array S 144.35 332 *e*PKPdf **PKPab 22 21 38.5 +0.1**
MOA Molln 144.81 330 *i*PKPdf **PKPab 22 21 40.4 +0.3**
comp=Z,6.8nm,0.6s
SOKA Soboth 145.25 328 *i*PKPab **PKPdf 22 21 41.5 -0.1**
comp=Z,4.0nm,0.8s
KBA Koelnbreinsper 145.80 330 *i*PKPab **PKPbc 22 21 43.4 0.0**
comp=Z,3.0nm,0.6s
ABTA Abfaltersbach 146.43 330 *i*PKPbc **PKPdf 22 21 44.3 +0.7**
comp=Z,2.4nm,0.5s
MOTA Moosalm 146.62 332 *i*PKPbc **PKPdf 22 21 45.1 +1.1**
comp=Z,1.7nm,0.5s
WLF Walferdange 146.63 340 PKPab **PKPbc 22 21 46.5 +0.9**
WLF Walferdange 146.63 340 *e*PKP2 **PKPbc 22 21 46.5 +0.9**
WLF Walferdange 146.63 340 *e*PKPdf **PKPbc 22 21 46.5 +0.9**
RETA Reutte 146.66 333 *i*PKPab **PKPbc 22 21 45.7 -0.2**
comp=Z,1.5nm,0.4s
DOU Dourbes 146.75 342 PKPab **PKPbc 22 21 46.1 +0.3**
BFO Black Forest 146.98 336 *i*PKP2 **PKPbc 22 21 47.6 +0.9**
BFO Black Forest 146.98 336 *e*PKPdf **PKPbc 22 21 46.4 -0.3**
FETA Feichten 147.03 332 *i*PKPab **PKPbc 22 21 47.0 0.0**
comp=Z,5.2nm,0.6s
DAVA Damuels 147.19 333 *i*PKPbc **PKPbc 22 21 46.9 -0.5**
comp=Z,3.6nm,0.6s
FUORN Ofenpass-Fuorn 147.55 332 *e*PKPbc **PKPbc 22 21 49.0 +0.4**
TUE Stuetta 148.06 333 *e*PKPbc **PKPbc 22 21 49.7 -0.2**
TORD Torodi Ar. Bea 166.42 246 PKP **PKPdf 22 22 10.4 +0.4**
comp=Z,0.8nm,0.9s,baz=137,slow=1.5,SNR=3.3
TOA1 Torodi Ar. Sit 166.42 246 *e*PKPdf **PKPdf 22 22 10.4 +0.4**

MEX 09 22:03:02.4±0.4, 17°.97N×102°.36W, h5km±4km, MD4.0, Near coast of Michoacan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZIIG	**Zihuatanejo**	**0.92**	**113**	*i* P	Pg	22 03 18.2	-1.8
ZIIG				*e*S	Sg	22 03 29.9	-2.1
MMIG	**Aquila**	**0.99**	**289**	*i* P	Pg	22 03 18.8	-2.7
MMIG				*e*S	Sg	22 03 31.5	-3.0
EZ5V		**1.92**	**322**	*e*P	Pn	22 03 33.0	-3.0
EZ5V				*e*S	Sn	22 03 55.7	-4.9
ARIG	**Puente Sto Nin**	**1.94**	**80**	*e*P	Pn	22 03 32.9	-3.2
ARIG				*e*S	Sn	22 03 55.9	-4.9
R15V		**1.96**	**308**	*e*P	Pn	22 03 32.6	-3.8
R15V				*e*S	Sn	22 03 57.1	-4.2

MEX 09 22:17:31.0±0.4, 13°.68N×91°.90W, h15km, MD3.6, Near coast of Guatemala

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		**2.38**	**328**	*e*P	Pn	22 18 06.9	-2.6
PCIG				*i* S	Sn	22 18 33.6	-4.8
CCIG	**Comitan**	**2.59**	**355**	*i* P	Pn	22 18 09.6	-3.0
CCIG				*i* S	Sn	22 18 40.5	-3.5

*NEIC **09** 22:24:46.3±1.1, 24°.30S×68°.61W, h39km±10km, mb4.3/1, Error ellipse: s-maj=17.8km s-min=10.1km az=90.0*
*IDC **09** 22:24:48.8±3.4, 24°.25S×68°.45W, h58km±28km, mb3.9/6, mb1 4.0/9, mb1mx3.8/24, mbtmp4.0/9, ML3.8/3, MS3.5/5, Ms1 3.5/5, ms1mx3.3/20, Error ellipse: s-maj=33.3km s-min=22.3km az=61.0*
ISC 09 22:24:41.8±1.9, 24°.31S±0°.04×68°.63W±0°.05, h5km±12km, n32, σ1§55/42, mb4.4/7, 1D, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB14	**IPOC Station P**	**1.65**	**259**	*e*P	**Pn**	**22 25 11.3**	**-0.3**
PB14				*e*S	**Sb**	**22 25 34.4**	**+0.5**
PB14				IAML		22 25 41.5	
comp=N,7μm,0.7s							
LVC	**Limon Verde**	**1.71**	**351**	P	**Pb**	**22 25 13.1**	**-0.9**
LVC				S	**Sg**	**22 25 37.4**	**+0.6**
comp=N,16μm,0.3s,baz=162,slow=12,SNR=2536							
LVC	**Limon Verde**	**1.71**	**351**	‖ *i*Pn	**Pb**	**22 25 13.4**	**-0.5**
LVC				*e*Sn	**Sg**	**22 25 37.1**	**+0.3**
ANCH	**Antofagasta**	**1.74**	**291**	*e*P	**Pb**	**22 25 13.7**	**-0.6**
ANCH				*e*S	**Sg**	**22 25 38.6**	**+0.8**
PB06	**IPOC Station P**	**1.81**	**331**	*e*P	**Pb**	**22 25 15.4**	**-0.2**
PB06				*e*S	**Sg**	**22 25 41.3**	**+1.2**
PB06				IAML		22 25 46.9	
comp=E,6μm,0.7s							
PB10	**IPOC Station P**	**1.93**	**294**	*e*P	**Pb**	**22 25 16.5**	**-0.9**
PB10				*e*S	**Sg**	**22 25 43.6**	**-0.2**
PB10				IAML		22 25 50.5	
comp=N,27μm,0.7s							
PB04	**IPOC Station P**	**2.41**	**324**	*e*P	**Pb**	**22 25 24.9**	**-0.9**
PB04				*e*S	**Sg**	**22 25 57.8**	**-1.5**
PB04				IAML		22 26 06.0	
comp=E,11μm,0.5s							
PB09	**IPOC Station P**	**2.56**	**347**	*e*P	**Pb**	**22 25 27.5**	**-0.8**
PB09				*e*S	**Sg**	**22 26 02.9**	**-1.4**
PB07	**IPOC Station P**	**2.82**	**336**	*e*P	**Pb**	**22 25 30.4**	**-2.4**
PB07				*e*S	**Sb**	**22 26 08.2**	**+0.6**
PB07				IAML		22 26 13.9	
comp=N,6μm,0.4s							
PB01	**IPOC Station P**	**3.34**	**346**	*e*P	**Pn**	**22 25 37.8**	**+2.9**
PB01				*e*S	**Sb**	**22 26 21.1**	**-1.6**
LCO	**Las Campanas**	**5.04**	**201**	*e*Pn	**Pn**	**22 25 57.5**	**-0.7**
comp=N,331nm,0.9s							
LCO				*e*Sn	**Sn**	**22 27 00.5**	**+3.6**
LPAZ	**La Paz**	**7.99**	**3**	P	**Pn**	**22 26 43.0**	**+3.8**
comp=N,0.9nm,0.3s,baz=195,slow=7.0,SNR=36							
LPAZ				LR	LR	22 30 05.9	
comp=N,322nm,18.8s,baz=196,slow=40							
ARE	**Arequipa**	**8.25**	**341**	P	Pn	22 26 49.0	+6.5
ARE				*e*S	**Sn**	**22 28 19.0**	**+2.7**
CPUP	**Villa Florida**	**10.42**	**104**	P	**Pn**	**22 27 14.1**	**+2.2**
comp=N,0.1nm,0.3s,baz=270,slow=9.9,SNR=4.2							
CPUP				LR	LR	22 31 22.4	
comp=N,226nm,20.3s,baz=289,slow=38							
SIV	**San Ignacio**	**10.90**	**42**	P	**Pn**	**22 27 17.1**	**-1.5**
comp=N,2.9nm,0.3s,baz=240,slow=11,SNR=30							
SIV				LR	LR	22 31 07.8	
comp=N,50nm,19.2s,baz=202,slow=35							
TRQA	**Tornquist**	**14.83**	**159**	*e*Pn	**Pn**	**22 28 14.2**	**+2.0**
comp=N,4.4nm,0.8s							
PLCA	**Paso Flores**	**16.46**	**185**	P	**P**	**22 28 35.9**	**-0.4**
comp=N,0.1nm,0.3s,baz=346,slow=11,SNR=3.7							
PLCA				LR	LR	22 35 05.5	
comp=N,431nm,20.2s,baz=29,slow=37							
PTGA	**Pitinga**	**24.90**	**21**	P	**P**	**22 30 04.5**	**-1.2**
comp=N,7.6nm,0.6s,baz=224,slow=13,SNR=17							
ROSC	**El Rosal**	**29.50**	**348**	LR	LR	22 44 19.9	
comp=N,124nm,21.1s,baz=192,slow=40							
TXAR	**Lajitas Array**	**63.08**	**326**	P	**P**	**22 35 10.3**	**0.0**
comp=N,0.5nm,0.7s,baz=137,slow=8.0,SNR=5.3							
PDAR	**Pinedale Array**	**76.66**	**330**	P	**P**	**22 36 34.0**	**+0.1**
comp=N,0.3nm,0.5s,baz=138,slow=6.9,SNR=3.9							
TORD	**Torodi Ar. Bea**	**78.07**	**70**	P	**P**	**22 36 39.8**	**-2.3**
comp=N,2.2nm,0.7s,baz=252,slow=5.1,SNR=12							
FLWY	**Flagg Ranch**	**78.21**	**330**	*e*P	**P**	**22 36 41.9**	**-0.6**
comp=N,2.5nm,0.7s							
BOSA	**Boshof**	**81.92**	**118**	P	**P**	**22 37 03.6**	**+0.6**
comp=N,4.0nm,1.0s,baz=216,slow=8.7,SNR=3.0							
YKA	**Yellowknife Ar**	**93.91**	**340**	P	**P**	**22 37 59.4**	**-0.5**
comp=N,0.9nm,0.8s,baz=136,slow=4.5,SNR=17							
WRA	**Warramunga Arr**	**130.65**	**209**	PKP	**PKPdf**	**22 43 52.6**	**-2.0**
comp=N,0.4nm,0.8s,baz=148,slow=1.7,SNR=3.8							
KURK	**Kurchatov**	**143.50**	**35**	PKP	**PKPdf**	**22 44 15.9**	**-1.3**
KURBB	**Kurchatov Arra**	**143.50**	**36**	PKP	**PKPdf**	**22 44 15.9**	**-1.4**
comp=N,0.3nm,0.4s,baz=308,slow=2.9,SNR=2.6							
ZALV	**Zalesovo Beam**	**144.35**	**27**	PKP	**PKPab**	**22 44 16.6**	**-0.1**
comp=N,1.2nm,0.6s,baz=311,slow=5.2,SNR=7.3							
AAK	**Ala-Archa**	**144.57**	**50**	PKP	**PKPdf**	**22 44 19.0**	**-0.7**
comp=N,0.5nm,0.3s,baz=225,slow=4.3,SNR=2.4							
MKAR	**Makanchi Array**	**147.70**	**39**	PKPbc	**PKPbc**	**22 44 26.6**	**-0.8**
comp=N,1.8nm,0.7s,baz=301,slow=2.8,SNR=10							
SONM	**Songino Array**	**156.19**	**8**	PKPab	**PKPab**	**22 45 06.2**	**+1.1**
comp=N,0.5nm,0.9s,baz=325,slow=4.3,SNR=3.6							

MAN 09 22:29:44, 18°.56N×120°.81E, h32km, mb4.4, ML3.3, MS3.1, 2C, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PIP	**Pasuquin**	**0.29**	**218**‖	*i* P	Pn	22 29 52.9	+0.8
PIP				*e*S	Sn	22 29 59.4	+2.0
SIPP	**Brgy, Tapao**	**0.71**	**208**‖	*e*P	Pb	22 30 00.1	+2.0
SIPP				*e*S	Sn	22 30 14.2	+6.5
APYP	**Conner**	**0.81**	**149**	*e*P	Pn	22 29 59.3	+0.2
APYP				*e*S	Sb	22 30 10.4	+0.2
ABRA	**Dolores**	**0.91**	**186**	*e*P	Pb	22 30 01.9	+0.6
ABRA				*e*S	Sb	22 30 15.7	+2.6
SGCP	**Mt. Cagua**	**1.22**	**105**	*e*P	Pn	22 30 05.0	+0.2

MAN 09 22:44:08, 17°.78N×120°.61E, h19km, mb3.8, ML2.6, MS2.2, 1D, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ABRA	**Dolores**	**0.16**	**144**	*e*P	Pg	22 44 12.1	-0.5
PIP	**Pasuquin**	**0.54**	**1**‖	*i* P	Pn	22 44 20.3	-0.4
PIP				*e*S	Sn	22 44 30.2	+1.0
APYP	**Conner**	**0.61**	**82**	*e*P	Pg	22 44 20.6	+0.5
CAUP	**Cauayan**	**1.43**	**126**	*e*P	Pb	22 44 34.7	+0.7
BOLP	**Bolinao**	**1.55**	**206**	*e*P	Pn	22 44 35.0	+0.5
BALP	**Baler**	**2.23**	**155**	*e*P	Pn	22 44 44.2	+0.3

*ISCJB **09** 22:51:54.2±0.7, 51°.43N±0°.04×16°.15E±0°.03, h0km, Error ellipse: s-maj=5.2km s-min=2.9km az=9.8*
*CSEM **09** 22:51:55.2±0.4, 51°.44N×16°.16E, h2km, ML3.0/9, Error ellipse: s-maj=6.3km s-min=3.5km az=179.0*
*WAR **09** 22:51:55.6, 51°.46N×16°.16E, h1km, Mw2.3*
ISC 09 22:51:55.5±1.1, 51°.45N±0°.05×16°.15E±0°.02, h0km, n33, σ0§77/66, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.62**	**172**	*e*Pg	**Pg**	**22 52 07.5**	**+0.2**
KSP				*e*Sg	**Sg**	**22 52 15.7**	**+0.4**
KSP	**Ksiaz**	**0.62**	**172**	*e*Pg	**Pg**	**22 52 07.5**	**+0.2**
KSP				*e*Sg	**Sg**	**22 52 15.7**	**+0.4**
KSP	**Ksiaz**	**0.62**	**172**	*e*Pg	**Pg**	**22 52 07.5**	**+0.2**
KSP				*e*Sg	**Sg**	**22 52 15.7**	**+0.4**
UPC	**Upice**	**0.95**	**185**	*e*PG	**Pg**	**22 52 13.8**	**+0.1**
UPC				*e*SG	**Sg**	**22 52 26.7**	**+0.7**
comp=Z,34nm,0.3s							
UPC	**Upice**	**0.95**	**185**	Pg	**Pg**	**22 52 13.8**	**+0.1**
1.1nm,0.2s							
UPC				Sg	**Sg**	**22 52 26.7**	**+0.7**
34nm,0.3s							
DPC	**Dobruska-Polom**	**1.11**	**174**	*e*PG	**Pg**	**22 52 16.5**	**-0.2**
DPC				*e*SG	**Sg**	**22 52 31.3**	**+0.2**
comp=Z,14nm,0.3s							
DPC	**Dobruska-Polom**	**1.11**	**174**	Pg	**Pg**	**22 52 16.5**	**-0.2**
DPC				Sg	**Sg**	**22 52 31.3**	**+0.2**
14nm,0.3s							
PVCC	**Panska Ves**	**1.36**	**228**	*e*PG	**Pn**	**22 52 21.7**	**0.0**
PVCC				*e*SG	**Sn**	**22 52 40.2**	**-0.3**
comp=Z,41nm,0.3s							
PVCC	**Panska Ves**	**1.36**	**228**	Pg	**Pn**	**22 52 21.7**	**0.0**
PVCC				Sg	**Sn**	**22 52 40.2**	**-0.3**
41nm,0.3s							
KRLC	**Kraliky**	**1.44**	**164**	*e*PG	Pn	22 52 22.5	-0.3
KRLC				*e*SG	**Sg**	**22 52 41.4**	**-0.2**
KRLC	**Kraliky**	**1.44**	**164**	Pg	Pn	22 52 22.5	-0.3
KRLC				Sg	**Sg**	**22 52 41.4**	**-0.2**
BRG	**Berggiesshubel**	**1.51**	**248**	PG	**Pg**	**22 52 24.4**	**+0.1**
BRG				SG	**Sn**	**22 52 44.2**	**+0.2**
17nm,0.3s							
BRG	**Berggiesshubel**	**1.51**	**248**	PG	**Pg**	**22 52 24.4**	**+0.1**
BRG				SG	**Sn**	**22 52 44.2**	**+0.2**
17nm,0.3s							
GOPC	**GO Pecny, Ondr**	**1.77**	**210**	*e*PN	**Pn**	**22 52 27.2**	**-0.1**
GOPC				*e*PG	**Pb**	**22 52 28.4**	**-0.4**
GOPC				*e*SG	**Sg**	**22 52 52.1**	**-0.1**
comp=Z,8.1nm,0.2s							
GOPC	**GO Pecny, Ondr**	**1.77**	**210**	Pn	**Pn**	**22 52 27.2**	**-0.1**
PRU	**Pruhonice**	**1.79**	**215**	*e*PN	**Pn**	**22 52 27.4**	**-0.2**
PRU				*e*PG	**Pb**	**22 52 28.3**	**-0.8**
PRU				*e*SG	**Sg**	**22 52 52.5**	**-0.3**
comp=Z,9.1nm,0.4s							
PRU	**Pruhonice**	**1.79**	**215**	Pn	**Pn**	**22 52 27.4**	**-0.2**
MORC	**Moravsky Berou**	**1.90**	**152**	*e*Pn	**Pn**	**22 52 28.0**	**-1.1**
MORC				*e*Sg	**Sn**	**22 52 53.0**	**-0.8**
CLL	**Collm**	**1.98**	**267**	*i* Pg	**Pg**	**22 52 33.3**	**0.0**
CLL				*i*		22 52 36.3	
CLL				*i* Sg	**Sg**	**22 52 59.7**	**+0.8**
comp=Z,6.0nm,0.7s							
OKC	**Ostrava-Krasne**	**2.06**	**141**	*e*PN	**Pn**	**22 52 30.1**	**-1.2**
OKC				*e*PG	**Pb**	**22 52 33.8**	**+0.1**
OKC				*e*SG	**Sb**	**22 53 00.1**	**+0.3**
comp=Z,9.8nm,0.6s							
OKC	**Ostrava-Krasne**	**2.06**	**141**	Pn	**Pn**	**22 52 30.1**	**-1.2**
VRAC	**Vranov**	**2.17**	**172**	*e*Pn	**Pn**	**22 52 33

OJC	**Ojcow**	**2.62 117**	*e*Pg	**Pg**	**22 52 45.5**	**-0.2**
OJC			*e*Sg	**Sg**	**22 53 19.9**	**+0.2**
OJC	**Ojcow**	**2.62 117**	*e*Pg	**Pg**	**22 52 45.5**	**-0.2**
OJC			*e*Sg	**Sg**	**22 53 19.9**	**+0.2**
NKC	**Novy Kostel**	**2.65 244**	*e*PN	**Pn**	**22 52 39.2**	**-0.2**
NKC			*e*PG	**Pg**	**22 52 45.8**	**-0.3**
NKC			*e*SG	**Sg**	**22 53 20.3**	**-0.1**
	comp=Z,11nm,0.3s					
NKC	**Novy Kostel**	**2.65 244**	Pn	**Pn**	**22 52 39.2**	**-0.2**
KHC	**Kasperske Hory**	**2.85 216**	*e*PN	**Pn**	**22 52 42.4**	**+0.2**
KHC			*e*PG	**Pb**	**22 52 47.9**	**+0.7**
KHC			*e*SN	**Sn**	**22 53 16.6**	**-0.6**
KHC			*e*SG	**Sg**	**22 53 25.7**	**-1.3**
	comp=Z,4.2nm,0.3s					
KHC	**Kasperske Hory**	**2.85 216**	Pn	**Pn**	**22 52 42.4**	**+0.2**
STHS	**Stebnicka Huta**	**3.84 120**	*e*Pg	**Pg**	**22 53 08.0**	**-1.1**
STHS	**Stebnicka Huta**	**3.84 120**	*e*PG	**Pg**	**22 53 08.0**	**-1.1**
STHS			*e*SG	**Sg**	**22 54 03.4**	**+4.6**
STHS			*e*LG	Lg	22 54 09.9	

NIED ***09*** *22:54:00,37.°50N×142.°00E,h38km,Mw4.2 Best double couple: M₀1.90000×10¹⁵ NP1:φs195.00000°,δ20.00000°, λ40.00000°. NP2:φs67.00000°,δ78.00000°,λ105.00000°.*
ISCJB ***09*** *22:54:16.4±0.7,37.°47N±0.°03×142.°08E±0.°05,h34km±6km, mb4.1/31,MS3.6/4,Error ellipse: s-maj=7.0km s-min=5.1km az=14.0*
JMA ***09*** *22:54:17.3±0.2,37.°54N×141.°97E,h28km±4km,M4.1*
NEIC ***09*** *22:54:19.9±0.8,37.°51N×142.°02E,h47km±8km,mb4.4/10, Error ellipse: s-maj=8.6km s-min=7.3km az=141.0*
IDC ***09*** *22:54:20.4±0.7,37.°44N×141.90E,h52km±6km,mb3.8/20, mb1 4.0/24,mb1mx3.9/40,mbtmp4.0/24,MS3.4/8, Ms1 3.4/8,ms1mx3.1/39,Error ellipse: s-maj=14.5km s-min=10.4km az=101.0*
ISC 09 22:54:17.5±0.6,37.°41N±0.°04×141.°99E±0.°05,h32km±3km, n83,σ1§74/91,mb4.1/31,MS3.5/4,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.89**	**268**	P	**Pn**	**22 54 33.7**	**-0.1**
JFK				S	**Sn**	**22 54 45.0**	**-0.6**
ONAJ	**Iwakimizuishiy**	**1.00**	**253**	P	**Pn**	**22 54 35.6**	**+0.3**
ONAJ				S	**Sn**	**22 54 48.3**	**0.0**
JMM	**Marumori**	**1.06**	**296**	P	**Pn**	**22 54 35.4**	**-0.6**
JMM				S	**Sn**	**22 54 48.1**	**-1.5**
JIO	**Ouri**	**1.16**	**334**	P	**Pn**	**22 54 36.0**	**-1.5**
JIO				S	**Sn**	**22 54 49.1**	**-3.1**
JFT	**Otama**	**1.32**	**275**	P	**Pb**	**22 54 40.6**	**-1.1**
JFT				S	**Sb**	**22 54 56.9**	**-1.4**
JOU	**Okura**	**1.42**	**313**	P	**Pn**	**22 54 40.7**	**-0.4**
JOU				*e*S	**Sn**	**22 54 58.3**	**-0.4**
JMK	**Ichinoseki**	**1.66**	**339**	P	**Pn**	**22 54 43.4**	**-0.9**
JYS	**Shirataka**	**1.73**	**299**	P	**Pn**	**22 54 46.2**	**+0.9**
JYS				*e*S	**Sb**	**22 55 07.1**	**-2.8**
JFY	**Yanaizu**	**1.82**	**271**	P	**Pn**	**22 54 47.9**	**+1.3**
JFY				*e*S	**Sb**	**22 55 10.6**	**-2.0**
JYK	**Kaneyama**	**1.98**	**320**	P	**Pn**	**22 54 48.5**	**-0.3**
MJAR	**Matsushiro Arr**	**3.15**	**255**	P	**Pn**	**22 55 07.6**	**+2.8**
	6.5nm,0.3s,baz=74,slow=18,SNR=16						
MJAR				S	**Sb**	**22 55 49.6**	**-1.1**
	8.5nm,0.3s,baz=266,slow=16,SNR=4.7						
MJAR				LR	LR	22 56 40.9	
	comp=Z,112nm,20.6s,baz=105,slow=46						
MAJO	**Matsushiro**	**3.15**	**255**	*e*Pn	**Pb**	**22 55 09.4**	**-3.4**
MAT	**Matsushiro**	**3.15**	**255**	P	**Pn**	**22 55 08.2**	**+3.3**
MAT				*e*S	**Sb**	**22 55 48.4**	**-2.4**
MJB9	**Matsu-Tunnel**	**3.15**	**255**	*e*Pn	**Pb**	**22 55 09.4**	**-3.4**
INU	**Inuyama**	**4.51**	**244**	*e*Pn	**Pn**	**22 55 28.1**	**+4.6**
JHJ2	**Mitsune**	**4.64**	**203**	*e*Pn	**Pn**	**22 55 26.4**	**+1.1**
JHJ2				*e*Sn	**Sn**	**22 56 17.5**	**-0.6**
JHJ	**Hachijo jima 2**	**4.64**	**204**	P	**Pn**	**22 55 28.1**	**+2.7**
	39nm,0.3s,baz=294,slow=22,SNR=8.9						
JHJ				S	**Sn**	**22 56 19.8**	**+1.6**
	49nm,0.3s,baz=253,slow=22,SNR=5.6						
ERM	**Erimo**	**4.69**	**11**	*e*Pn	**Pn**	**22 55 24.0**	**-1.9**
ERM				*e*Sn	**Sn**	**22 56 16.6**	**-2.5**
ASAJ	**Asahikawa**	**6.72**	**4**	P	**Pn**	**22 55 52.8**	**-1.0**
	3.1nm,0.3s,baz=227,slow=11,SNR=14						
ASAJ	**Asahikawa**	**6.72**	**4**	*e*Pn	**Pn**	**22 55 52.7**	**-1.1**
JNU	**Nakatsue**	**10.04**	**248**	P	**Pn**	**22 56 36.4**	**-3.0**
	0.5nm,0.3s,baz=280,slow=3.0,SNR=4.1						
USRK	**Ussuriysk Ar.**	**10.17**	**315**	P	**Pn**	**22 56 43.1**	**+2.0**
	0.6nm,0.3s,baz=130,slow=14,SNR=25						
USRK				LR	LR	23 00 30.4	
	comp=Z,220nm,18.4s,baz=157,slow=37						
CBIJ	**Chichi jima**	**10.28**	**179**	*e*Pn	**Pn**	**22 56 41.4**	**-1.3**
CBIJ				*e*Sn	**Sn**	**22 58 30.4**	**-6.6**
JCJ	**Chichijima**	**10.28**	**179**	P	**Pn**	**22 56 42.1**	**-0.7**
JCJ				S	**Sn**	**22 58 30.4**	**-6.6**
KSRS	**Korea Array**	**11.19**	**275**	P	Pn	22 57 01.2	+6.1
	0.2nm,0.3s,baz=87,slow=14,SNR=6.4						
KSRS				LR	LR	23 00 45.7	
	comp=Z,117nm,18.2s,baz=107,slow=35						
KS15	**Wonju Array Si**	**11.22**	**274**	*e*Pn	Pn	22 57 00.3	+4.8
KSAR	**Wonju Array Be**	**11.22**	**274**	P	Pn	22 57 01.2	+5.7
KLR	**Kul'dur**	**13.95**	**331**	P	**Pn**	**22 57 33.4**	**+0.5**
	0.2nm,0.3s,baz=142,slow=17,SNR=4.0						
KLR				LR	LR	23 02 52.1	
	comp=Z,170nm,18.3s,baz=148,slow=37						
YAK	**Yakutsk**	**25.81**	**347**	P	**P**	**22 59 46.6**	**+1.3**
	18nm,0.4s,baz=172,slow=0.7,SNR=3.2						
YAK	**Yakutsk**	**25.81**	**347**	*e*P	**P**	**22 59 46.6**	**+1.3**
	16nm,0.6s						
SEY	**Seymchan**	**26.34**	**11**	P	**P**	**22 59 51.6**	**+1.5**
	3.3nm,0.7s,baz=194,slow=6.6,SNR=6.3						
ULN	**Ulaanbaatar**	**27.53**	**303**	*e*P	**P**	**23 00 01.9**	**+0.6**
	2.1nm,0.8s						
ENH	**Enshi**	**27.82**	**265**	*e*P	**P**	**23 00 04.8**	**+0.9**
	11nm,1.0s						
H11N2	**WAKE ISLAND Hy**	**27.95**	**122**	T	T	23 29 37.7	
	baz=315,slow=75,SNR=432						
H11N1	**WAKE ISLAND Hy**	**27.96**	**122**	T	T	23 29 20.0	
	baz=315,slow=75,SNR=360						
SONA1	**Songino Array**	**27.96**	**303**	*e*P	**P**	**23 00 05.7**	**+0.6**
SONA0	**Songino Array**	**27.96**	**303**	*e*P	**P**	**23 00 05.7**	**+0.6**
	3.6nm,0.8s						
SONM	**Songino Array**	**27.96**	**303**	P	**P**	**23 00 05.7**	**+0.6**
	2.0nm,0.6s,baz=98,slow=9.0,SNR=21						
H11N3	**WAKE ISLAND Hy**	**27.97**	**122**	T	T	23 29 33.1	
	baz=315,slow=75,SNR=338						
H11S1	**WAKE ISLAND Hy**	**28.68**	**124**	T	T	23 30 30.4	
	baz=317,slow=76,SNR=326						
H11S3	**WAKE ISLAND Hy**	**28.68**	**124**	T	T	23 30 30.5	
	baz=317,slow=76,SNR=382						
H11S2	**WAKE ISLAND Hy**	**28.70**	**124**	T	T	23 30 15.5	
	baz=317,slow=76,SNR=225						
ZAA1	**Zalesovo Array**	**42.01**	**312**	*e*P	**P**	**23 02 05.6**	**+0.2**
ZALV	**Zalesovo Beam**	**42.01**	**312**	P	**P**	**23 02 05.6**	**+0.2**
	2.1nm,0.6s,baz=92,slow=6.7,SNR=8.7						
ZALV				pP	**sP**	**23 02 19.0**	**+0.2**
	2.2nm,0.7s,baz=81,slow=7.3,SNR=4.8						
ZALV				LR	LR	23 20 13.0	
	comp=Z,35nm,18.4s,baz=72,slow=37						
NRIK	**Noril'sk**	**43.12**	**335**	P	**P**	**23 02 14.8**	**+0.4**
	0.8nm,0.5s,baz=90,slow=8.1,SNR=2.4						
MK01	**Makanchi Array**	**44.31**	**302**	*e*P	**P**	**23 02 24.1**	**-0.1**
MK31	**Makanchi Array**	**44.31**	**302**	*e*P	**P**	**23 02 24.6**	**+0.4**
MK32	**Makanchi Array**	**44.31**	**302**	*e*P	**P**	**23 02 24.6**	**+0.3**
MKAR	**Makanchi Array**	**44.31**	**302**	P	**P**	**23 02 24.6**	**+0.3**
	2.5nm,0.7s,baz=85,slow=8.8,SNR=12						
MKAR				pP	**sP**	**23 02 36.7**	**-1.0**
	7.3nm,1.1s,baz=83,slow=9.2,SNR=4.9						
MAKZ	**Makanchi**	**44.52**	**302**	*e*P	**P**	**23 02 26.0**	**+0.1**
	5.8nm,1.0s						
KURK	**Kurchatov**	**46.07**	**308**	*e*P	**P**	**23 02 37.5**	**-0.6**
	7.4nm,0.6s						
KDAK	**Kodiak Island**	**46.51**	**42**	P	P	23 02 56.6	+15
	2.6nm,0.5s,baz=306,slow=3.8,SNR=7.0						
ILAR	**Eielson Array**	**48.93**	**33**	P	**P**	**23 03 00.3**	**+0.2**
	1.4nm,0.7s,baz=266,slow=6.4,SNR=10						
ILAR				pP	**sP**	**23 03 15.5**	**+1.9**
	0.7nm,0.7s,baz=264,slow=6.0,SNR=4.2						
ILB	**Eielson Array**	**48.93**	**33**	*e*P	**P**	**23 03 00.3**	**+0.2**
TKM2	**Tokmak 2**	**49.86**	**298**	*e*P	**P**	**23 03 08.9**	**+1.1**
	3.3nm,0.8s						
AAK	**Ala-Archa**	**50.72**	**298**	*e*P	**P**	**23 03 12.3**	**-2.0**
	4.0nm,1.1s						
ZRNK	**Zerenda**	**51.49**	**312**	*e*P	**P**	**23 03 19.8**	**+0.1**
	2.0nm,0.8s						
INK	**Inuvik**	**53.84**	**27**	P	**P**	**23 03 37.4**	**+0.6**
	1.0nm,0.6s,baz=292,slow=6.6,SNR=4.9						
ARU	**Arti**	**56.39**	**318**	P	**P**	**23 03 55.3**	**-0.1**
	3.5nm,0.4s,baz=84,slow=4.9,SNR=8.8						
WR1	**Warramunga Arr**	**57.50**	**189**	*e*P	**P**	**23 04 04.0**	**+0.4**
	22nm,1.5s						
WRA	**Warramunga Arr**	**57.50**	**189**	P	**P**	**23 04 04.0**	**+0.4**
	1.0nm,0.7s,baz=7.9,slow=7.0,SNR=6.0						
ABKAR	**Akbulak array**	**58.05**	**310**	*e*P	**P**	**23 04 07.0**	**-0.2**
ASAR	**Alice Springs**	**61.22**	**188**	P	**P**	**23 04 30.7**	**+1.4**
	0.9nm,0.7s,baz=12,slow=7.8,SNR=9.1						
ASAR				pP	**sP**	**23 04 45.1**	**+2.2**
	0.9nm,0.7s,baz=9.8,slow=8.3,SNR=4.1						
YKA	**Yellowknife Ar**	**63.25**	**30**	P	**P**	**23 04 42.5**	**+0.1**
	0.7nm,0.6s,baz=303,slow=6.8,SNR=13						
YKB5	**Yellowknife Ar**	**63.25**	**30**	*e*P	**P**	**23 04 42.5**	**+0.1**
FIA0	**FINESS Array S**	**68.70**	**332**	*e*P	**P**	**23 05 17.2**	**-0.3**
FINES	**FINESS Array B**	**68.70**	**332**	P	**P**	**23 05 17.2**	**-0.3**
	1.3nm,0.3s,baz=30,slow=8.7,SNR=19						
KBZ	**Khabaz**	**71.01**	**311**	P	**P**	**23 05 32.7**	**+0.8**
	1.1nm,0.5s,baz=36,slow=4.9,SNR=4.3						
NB2	**NORSAR Subarra**	**74.02**	**337**	P	**P**	**23 05 49.4**	**-0.2**
	comp=Z,0.8nm,0.6s,baz=36,slow=6.2						
NB200	**NORSAR Array S**	**74.02**	**337**	*e*P	**P**	**23 05 49.5**	**-0.2**
NOA	**NORSAR Array B**	**74.02**	**337**	P	**P**	**23 05 49.5**	**-0.2**
	comp=Z,1.7nm,0.7s,baz=38,slow=5.8,SNR=8.6						
NOA				LR	LR	23 41 59.6	
	comp=Z,23nm,19.7s,baz=230,slow=39						
AKASG	**Malin Array Be**	**74.28**	**322**	P	**P**	**23 05 51.0**	**-0.3**
	comp=Z,0.7nm,0.4s,baz=45,slow=6.3,SNR=6.0						
NV01	**Mina Array Sit**	**74.39**	**53**	*e*P	**P**	**23 05 53.9**	**+1.4**
NVAR	**Mina Array Bea**	**74.39**	**53**	P	**P**	**23 05 53.9**	**+1.4**
	comp=Z,1.7nm,0.9s,baz=292,slow=6.2,SNR=3.9						
ELK	**Elko**	**74.95**	**50**	LR	LR	23 34 27.5	
	comp=Z,104nm,22.0s,baz=312,slow=32						
PD31	**Pinedale Array**	**77.08**	**46**	*e*P	**P**	**23 06 08.3**	**+0.6**
PDAR	**Pinedale Array**	**77.08**	**46**	P	**P**	**23 06 08.3**	**+0.6**
	comp=Z,0.7nm,0.6s,baz=248,slow=2.0,SNR=8.7						
PDAR				LR	LR	23 34 21.1	
	comp=Z,23nm,21.2s,baz=132,slow=31						
BR101	**Keskin Array S**	**78.95**	**312**	*e*P	**P**	**23 06 19.5**	**+1.4**
BRTR	**Keskin Array B**	**78.95**	**312**	P	**P**	**23 06 19.5**	**+1.4**
	comp=Z,0.6nm,0.8s,baz=104,slow=5.2,SNR=4.9						
GERES	**GERESS Array B**	**82.64**	**328**	P	**P**	**23 06 37.9**	**+0.4**
	comp=Z,0.5nm,0.8s,baz=19,slow=6.2,SNR=2.8						
LTX	**Lajitas**	**89.53**	**53**	*e*P	**P**	**23 07 12.7**	**+0.8**
TXAR	**Lajitas Array**	**89.53**	**53**	P	**P**	**23 07 12.7**	**+0.8**
	comp=Z,0.4nm,0.8s,baz=308,slow=4.4,SNR=3.5						
LPAZ	**La Paz**	**146.11**	**60**	PKPbc	**PKPbc**	**23 13 55.7**	**+0.3**
	comp=Z,0.5nm,0.5s,baz=357,slow=7.4,SNR=5.6						

SKHL ***09*** *23:03:37.7±0.2,42.°60N×146.°90E,h35km±5km,mb4.5/3*
JMA ***09*** *23:03:39.1±0.5,42.°86N×146.°96E,h60km,M3.0*
ISC 09 23:03:38.6±2.9,42.°8N±0.°1×146.°78E±0.°09,h8km±14km, n11,σ0§69/16,1C,Off southeast coast of Hokkaido

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NEM2	**Nemuro 2**	**0.95**	**307**	P	**Pn**	**23 03 57.7**	**-0.5**
NEM2				*e*S	**Sn**	**23 04 11.7**	**-0.3**
SHO	**Shikotan**	**1.08**	**2**	*i* P	**Pg**	**23 03 58.7**	**-0.5**
SHO				AMB	AMB	23 04 00.0	
	260nm,0.5s						
SHO				*i* S	**Sb**	**23 04 14.4**	**+0.7**
SHO				A	A	23 04 15.3	
	1μm,0.5s						
SHO				A	A	23 04 15.3	
	860nm,0.5s						
YUK	**Yuzh-Kuril'sk**	**1.41**	**332⇑**	*i* P	**Pn**	**23 04 04.3**	**-0.2**
YUK				AMB	AMB	23 04 06.4	
	180nm,0.3s						
YUK				*i* S	**Sg**	**23 04 24.4**	**+0.5**
YUK				A	A	23 04 27.7	
	390nm,0.3s						
YUK				A	A	23 04 27.7	
	220nm,0.3s						
JAK	**Akkeshi**	**1.54**	**278**	P	**Pn**	**23 04 06.4**	**0.0**
JRA	**Rausu**	**1.66**	**314**	P	**Pn**	**23 04 07.7**	**-0.3**
JNK	**Nakash**	**1.70**	**298**	P	**Pn**	**23 04 08.1**	**-0.5**
JNK				*e*S	**Sn**	**23 04 29.4**	**-1.2**
JAR	**Ashorobuto**	**2.26**	**284**	P	**Pn**	**23 04 16.6**	**+0.3**
JTKR	**Abashiri--Toko**	**2.40**	**300**	P	**Pn**	**23 04 18.8**	**+0.6**
JCH	**Churui**	**2.53**	**267**	P	**Pn**	**23 04 20.5**	**+0.6**
KUR	**Kuril'sk**	**2.56**	**17**	*e*P	**Pn**	**23 04 20.1**	**-0.3**
KUR				*e*S	**Sn**	**23 04 51.8**	**+0.1**
KUR				A	A	23 04 53.5	
	50nm,0.1s						
YSS	**Yuzh-Sakhalins**	**5.05**	**327**	*e*P	**Pn**	**23 04 55.8**	**+1.3**
YSS				AMB	AMB	23 04 57.2	
	20nm,0.4s						

ISCJB ***09*** *23:04:06.2±0.8,4.°75N±0.°08×124.°8E±0.°2,h200km, mb3.6/8,Error ellipse: s-maj=23.2km s-min=10.6km az=175.6*
IDC ***09*** *23:04:09.7±1.3,4.°91N×125.°05E,h212km±12km,mb3.3/8, mb1 3.4/10,mb1mx3.2/31,mbtmp3.9/10,Error ellipse: s-maj=34.0km s-min=10.9km az=75.0*
ISC 09 23:04:08.3±0.8,4.°85N±0.°10×124.°9E±0.°2,h200km,n11, σ1§01/13,mb3.7/8,Celebes Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DAV	**Davao City (W)**	**2.31**	**18**	P	**Pn**	**23 04 50.4**	**+0.2**
	33nm,0.3s,baz=146,slow=10,SNR=1.5						
DAV				S	**Sn**	**23 05 24.3**	**+1.4**
	26nm,0.3s,baz=122,slow=22,SNR=4.5						
JAY	**Jayapura**	**17.43**	**114**	P	**P**	**23 07 57.3**	**-0.8**
	0.1nm,0.3s,baz=267,slow=22,SNR=4.5						
FITZ	**Fitzroy Crossi**	**22.82**	**178**	P	**P**	**23 08 56.1**	**+1.9**
	1.0nm,0.4s,baz=354,slow=6.0,SNR=7.5						
WRA	**Warramunga Arr**	**26.34**	**160**	P	**P**	**23 09 25.6**	**-0.4**
	0.3nm,0.3s,baz=336,slow=10.0,SNR=8.4						
ASAR	**Alice Springs**	**29.68**	**163**	P	**P**	**23 09 56.0**	**+0.2**
	0.3nm,0.4s,baz=341,slow=7.3,SNR=6.3						
KSRS	**Korea Array**	**32.57**	**5**	P	**P**	**23 10 20.8**	**+0.1**
	0.4nm,0.5s,baz=170,slow=8.6,SNR=3.9						
USRK	**Ussuriysk Ar.**	**39.69**	**8**	P	**P**	**23 11 21.1**	**+0.1**
	1.5nm,0.5s,baz=187,slow=6.1,SNR=4.7						
MKAR	**Makanchi Array**	**55.59**	**326**	P	**P**	**23 13 24.2**	**+0.9**
	0.6nm,0.4s,baz=117,slow=7.4,SNR=17						
MKAR				PcP	**PcP**	**23 14 19.6**	**-0.8**
	0.3nm,0.4s,baz=118,slow=4.8,SNR=6.7						
NRIK	**Noril'sk**	**68.91**	**347**	P	**P**	**23 14 50.4**	**-0.8**
	0.9nm,0.4s,baz=154,slow=4.5,SNR=3.2						
FINES	**FINESS Array B**	**89.97**	**332**	P	**P**	**23 16 43.5**	**-1.3**
	2.5nm,1.1s,baz=46,slow=8.2,SNR=5.0						
TORD	**Torodi Ar. Bea**	**120.81**	**288**	PKP	**PKPdf**	**23 22 37.6**	**-0.1**
	0.5nm,0.6s,baz=61,slow=1.8,SNR=7.6						

ISK ***09*** *23:08:19.8,40.°81N×28.°00E,h8km,MD2.9*
DDA ***09*** *23:08:19.9,40.°80N×27.°97E,h3km,Md2.9*
CSEM ***09*** *23:08:20.1±0.1,40.°83N×28.°00E,h5km,MD2.9,Error ellipse: s-maj=2.7km s-min=2.1km az=162.0*
ISC 09 23:08:20.0±1.0,40.°81N±0.°02×28.°00E±0.°01,h6km±9km, n82,σ0§57/123,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MRMT	**Marmara Adasi**	**0.37**	**236**	*e*PG	**Pg**	**23 08 27.1**	**-0.1**
MRMT	**Marmara Adasi**	**0.37**	**236**	*e*Pg	**Pg**	**23 08 27.1**	**-0.1**
CRLT	**Corlu**	**0.38**	**328**	*e*PG	**Pb**	**23 08 28.2**	**-0.9**
CRLT	**Corlu**	**0.38**	**328**	*e*Pg	**Pb**	**23 08 28.2**	**-0.9**
TKR	**Tekirdag**	**0.39**	**297**	*e*PG	**Pg**	**23 08 27.9**	**+0.2**
TKR				*e*SG	**Sg**	**23 08 33.9**	**+1.1**
TKR	**Tekirdag**	**0.39**	**297**	*e*Pg	**Pg**	**23 08 27.9**	**+0.2**
TKR				*e*Sg	**Sg**	**23 08 33.9**	**+1.1**
SLVT	**Silivri**	**0.45**	**21**	P	**Pg**	**23 08 26.8**	**-1.9**
SLVT				S	**Sg**	**23 08 31.8**	**-2.8**
EDC	**Edincik**	**0.47**	**192**	*e*PG	**Pg**	**23 08 29.6**	**+0.4**
EDC	**Edincik**	**0.47**	**192**	*e*Pg	**Pg**	**23 08 29.6**	**+0.4**
CTKS	**Kestanelik-??a**	**0.57**	**42**	*e*PG	**Pg**	**23 08 31.5**	**+0.4**
CTKS				*e*SG	**Sg**	**23 08 39.5**	**+0.9**
CTKS	**Kestanelik-??a**	**0.57**	**42**	*e*Pg	**Pg**	**23 08 31.5**	**+0.4**
CTKS				*e*Sg	**Sg**	**23 08 39.5**	**+0.9**
KCTX	**Karacabey (Bur**	**0.61**	**153**	*e*PG	**Pg**	**23 08 32.2**	**+0.5**
KCTX	**Karacabey (Bur**	**0.61**	**153**	*e*Pg	**Pg**	**23 08 32.2**	**+0.5**
SART	**Tekirdag**	**0.63**	**259**	P	**Pg**	**23 08 31.7**	**-0.5**
SART				S	**Sg**	**23 08 40.6**	**+0.2**
SART	**Tekirdag**	**0.63**	**259**	*i* P	**Pg**	**23 08 31.7**	**-0.5**
SART				*i* S	**Sg**	**23 08 40.6**	**+0.2**
RKY	**Sarkoy-Tekirda**	**0.64**	**259**	*e*PG	**Pg**	**23 08 32.6**	**+0.4**
RKY	**Sarkoy-Tekirda**	**0.64**	**259**	*e*Pg	**Pg**	**23 08 32.6**	**+0.4**
KNL	**Bal¨--kesir**	**0.65**	**214**	*i* P	**Pg**	**23 08 31.5**	**-1.0**
KNL				*i* S	**Sb**	**23 08 42.2**	**-0.8**
KRBG	**Karabiga-Canak**	**0.68**	**232**	*e*PG	**Pg**	**23 08 33.4**	**+0.4**
KRBG	**Karabiga-Canak**	**0.68**	**232**	*e*Pg	**Pg**	**23 08 33.4**	**+0.4**
BGKT	**Bogazkoy**	**0.69**	**57**	*e*PG	**Pg**	**23 08 33.6**	**+0.2**
BGKT	**Bogazkoy**	**0.69**	**57**	*e*Pg	**Pg**	**23 08 33.6**	**+0.2**
CTYL	**Yalikoy Yolu**	**0.70**	**18**	*e*PG	**Pg**	**23 08 33.9**	**+0.4**
CTYL	**Yalikoy Yolu**	**0.70**	**18**	*e*Pg	**Pg**	**23 08 33.9**	**+0.4**
GONE	**Gonen-Balikesi**	**0.80**	**197**	*e*PG	**Pb**	**23 08 36.0**	**-0.3**
GONE	**Gonen-Balikesi**	**0.80**	**197**	*e*Pg	**Pb**	**23 08 36.0**	**-0.3**
MDNY	**Mudanya-Bursa**	**0.81**	**123**	*e*PG	**Pg**	**23 08 35.5**	**0.0**
MDNY				*e*SG	**Sb**	**23 08 48.0**	**+0.5**
MDNY	**Mudanya-Bursa**	**0.81**	**123**	*e*Pg	**Pg**	**23 08 35.5**	**0.0**
MDNY				*e*Sg	**Sb**	**23 08 48.1**	**+0.5**
ISK	**Istanbul-Kandi**	**0.84**	**72**	*e*PG	**Pg**	**23 08 36.3**	**+0.1**
ISK	**Istanbul-Kandi**	**0.84**	**72**	*e*Pg	**Pg**	**23 08 36.3**	**+0.1**
BUY	**Buyukada**	**0.85**	**87**	P	**Pg**	**23 08 36.7**	**+0.3**
BUY				S	**Sb**	**23 08 49.9**	**+1.0**
BUY	**Buyukada**	**0.85**	**87**	*i* P	**Pg**	**23 08 36.7**	**+0.3**
BUY				*i* S	**Sb**	**23 08 49.9**	**+1.0**
KESN	**Edirne-Kesan**	**1.00**	**271**	P	**Pg**	**23 08 38.8**	**-0.4**
KESN				S	**Sg**	**23 08 52.2**	**0.0**
KESN	**Edirne-Kesan**	**1.00**	**271**	*i* P	**Pg**	**23 08 38.8**	**-0.4**
KESN				*i* S	**Sg**	**23 08 52.2**	**0.0**
IGD	**Bursa**	**1.07**	**120**	*i* P	**Pg**	**23 08 39.9**	**-0.6**
IGD				*i* S	**Sb**	**23 08 54.9**	**-0.3**
ULDT	**Uludag**	**1.09**	**127**	P	**Pb**	**23 08 41.4**	**-0.1**
ULDT				S	**Sn**	**23 08 57.0**	**-0.7**
ULDT	**Uludag**	**1.09**	**127**	*i* P	**Pb**	**23 08 41.4**	**-0.1**
ULDT				*i* S	**Sn**	**23 08 57.0**	**-0.7**
BALY	**Balya**	**1.11**	**195**	P	**Pb**	**23 08 41.8**	**+0.2**
BALY				S	**Sb**	**23 08 56.6**	**+0.3**
BALY	**Balya**	**1.11**	**195**	*i* P	**Pb**	**23 08 41.8**	**+0.2**
BALY				*i* S	**Sb**	**23 08 56.6**	**+0.3**
BALB	**Balikesir**	**1.17**	**184**	*e*PN	**Pb**	**23 08 42.7**	**0.0**
BALB	**Balikesir**	**1.17**	**184**	*e*Pn	**Pb**	**23 08 42.7**	**0.0**
IZI	**Iznik**	**1.22**	**112**	*e*PN	**Pg**	**23 08 43.0**	**-0.4**
IZI	**Iznik**	**1.22**	**112**	*e*Pn	**Pg**	**23 08 43.0**	**-0.4**
GELI	**Tayfur-Gelibol**	**1.23**	**251**	*e*PN	**Pn**	**23 08 43.8**	**0.0**
GELI	**Tayfur-Gelibol**	**1.23**	**251**	*e*Pn	**Pn**	**23 08 43.8**	**0.0**
DURS	**Dursunbey**	**1.26**	**163**	P	**Pn**	**23 08 44.5**	**+0.2**
DURS				S	**Sn**	**23 09 01.5**	**-0.1**
DURS	**Dursunbey**	**1.26**	**163**	*i* P	**Pn**	**23 08 44.5**	**+0.2**
DURS				*i* S	**Sn**	**23 09 01.5**	**-0.1**
HRT	**Hereke**	**1.27**	**89**	*e*PN	**Pg**	**23 08 44.3**	**-0.1**
HRT				*e*SN	**Sn**	**23 09 01.4**	**-0.3**
HRT	**Hereke**	**1.27**	**89**	*e*Pn	**Pg**	**23 08 44.3**	**-0.1**
HRT				*e*Sn	**Sn**	**23 09 01.5**	**-0.3**
SILT	**Sile**	**1.29**	**74**	*e*PN	**Pn**	**23 08 44.3**	**-0.3**
SILT				*e*SN	**Sn**	**23 09 03.1**	**+0.9**
SILT	**Sile**	**1.29**	**74**	*e*Pn	**Pn**	**23 08 44.3**	**-0.3**
SILT				*e*Sn	**Sn**	**23 09 03.1**	**+0.9**
ADVT	**Abdul

JCJ Sn Sn 23 21 20.7 -11
6.4nm,0.3s,baz=70,slow=23,SNR=4.2
JCJ LR LR 23 24 11.1
comp=Z,48nm,20.9s,baz=338,slow=40
USRK Ussuriysk Ar. 10.84 310 Pn **Pn 23 19 36.0 +1.6**
0.5nm,0.3s,baz=98,slow=13,SNR=7.1
JNU Nakatsue 11.31 250 Pn **Pn 23 19 39.9 -1.2**
0.2nm,0.3s,baz=205,slow=1.8,SNR=3.1
JNU LR LR 23 25 15.2
comp=Z,76nm,18.5s,baz=116,slow=43
KSRS Korea Array 12.39 273 Pn **Pn 23 19 58.0 +2.3**
0.2nm,0.3s,baz=86,slow=14,SNR=8.4
KSRS LR LR 23 24 52.0
comp=Z,78nm,19.1s,baz=38,slow=38
KSAR Wonju Array Be 12.42 273 Pn **Pn 23 19 58.0 +1.8**
KLR Kul'dur 14.28 327 Pn **Pn 23 20 19.1 -2.4**
0.2nm,0.3s,baz=120,slow=13,SNR=8.2
PETK Petropavlovsk- 18.23 28 P **P 23 21 13.6 +1.4**
0.1nm,0.3s,baz=141,slow=20,SNR=2.6
YAK Yakutsk 25.77 345 P **P 23 22 30.5 +1.1**
23nm,0.5s,baz=254,slow=1.3,SNR=3.4
SEY Seymchan 25.77 9 P **P 23 22 30.4 +1.0**
2.9nm,0.7s,baz=174,slow=7.1,SNR=6.6
H11N2 WAKE ISLAND Hy 27.12 125 T T 23 50 58.0
baz=317,slow=76,SNR=54
H11N1 WAKE ISLAND Hy 27.13 125 T T 23 50 59.7
baz=317,slow=76,SNR=32
H11N3 WAKE ISLAND Hy 27.14 125 T T 23 50 59.9
baz=317,slow=76,SNR=36
H11S1 WAKE ISLAND Hy 27.89 127 T T 23 51 55.2
baz=318,slow=76,SNR=4.4
H11S3 WAKE ISLAND Hy 27.89 127 T T 23 51 59.6
baz=318,slow=76,SNR=3.9
H11S2 WAKE ISLAND Hy 27.90 127 T T 23 51 57.5
baz=318,slow=76,SNR=4.3
SONM Songino Array 28.80 302 P **P 23 22 58.3 +1.2**
1.5nm,0.6s,baz=97,slow=8.8,SNR=8.8
SONM LR LR 23 34 41.1
comp=Z,73nm,18.8s,baz=68,slow=37
ENH Enshi 29.08 265 *e*P **P 23 22 59.8 +0.3**
13nm,0.9s
ZALV Zalesovo Beam 42.68 312 P **P 23 24 56.3 +0.9**
3.1nm,0.6s,baz=82,slow=7.9,SNR=10
ZALV PcP **PcP 23 26 47.1 +0.2**
0.8nm,0.5s,baz=85,slow=1.4,SNR=3.0
ZALV pPcP 23 26 57.7
1.1nm,0.5s,baz=51,slow=3.3,SNR=5.0
MKAR Makanchi Array 45.17 302 P **P 23 25 16.2 +0.6**
2.4nm,0.7s,baz=87,slow=9.6,SNR=10
KURK Kurchatov 46.82 308 *e*P **P 23 25 28.3 -0.1**
16nm,0.8s
ILAR Eielson Array 47.97 33 P **P 23 25 36.9 -0.3**
1.7nm,0.7s,baz=264,slow=6.2,SNR=16
ILAR pP **sP 23 25 47.7 -0.3**
4.7nm,0.7s,baz=264,slow=6.5,SNR=22
DOT Dot Lake 49.26 34 *e*P **P 23 25 46.5 -0.6**
5.3nm,0.7s
TKM2 Tokmak 2 50.77 298 *e*P **P 23 26 00.1 +0.9**
7.7nm,1.0s
BRVK Borovoye 51.39 312 *e*P **P 23 26 03.2 -0.2**
4.0nm,1.0s
INK Inuvik 52.97 28 P **P 23 26 14.3 -0.5**
0.5nm,0.5s,baz=292,slow=7.7,SNR=3.6
INK pP **sP 23 26 26.0 +0.3**
1.3nm,0.6s,baz=284,slow=6.6,SNR=5.2
KKAR Karatay Array 54.22 300 *e*P **P 23 26 25.3 +0.8**
7.7nm,1.2s
WRA Warramunga Arr 58.05 190 P **P 23 26 50.5 -1.4**
6.3nm,0.8s,baz=9.7,slow=7.6,SNR=27
WRA pP **sP 23 27 01.7 -1.1**
3.5nm,0.7s,baz=8.9,slow=7.2,SNR=8.6
ABKAR Akbulak array 58.76 310 *e*P **P 23 26 55.8 -0.8**
1.1nm,0.4s
ASAR Alice Springs 61.77 190 P **P 23 27 16.4 -1.1**
0.6nm,0.4s,baz=8.9,slow=6.9,SNR=9.1
ASAR pP **pP 23 27 26.9 +1.5**
0.8nm,0.7s,baz=19,slow=5.9,SNR=5.2
YKA Yellowknife Ar 62.32 31 P **P 23 27 19.9 -0.8**
0.5nm,0.7s,baz=301,slow=6.7,SNR=11
YKA pP **sP 23 27 31.0 -0.7**
1.0nm,0.7s,baz=302,slow=6.8,SNR=13
GEYT Alibeck 64.96 300 P **P 23 27 39.3 +0.7**
2.0nm,0.8s,baz=42,slow=2.4,SNR=6.5
GEYT pP **sP 23 27 50.0 +0.4**
3.7nm,0.8s,baz=48,slow=2.2,SNR=6.4
FINES FINESS Array B 68.95 333 P **P 23 28 04.0 +0.5**
1.4nm,0.7s,baz=38,slow=9.6,SNR=6.9
FINES pP **sP 23 28 14.8 +0.2**
2.2nm,0.8s,baz=35,slow=10,SNR=3.5
KIV Kislovodsk 71.70 312 *e*P **P 23 28 21.0 +0.2**
11nm,1.1s
KBZ Khabaz 71.70 311 P **P 23 28 21.6 +0.9**
2.6nm,0.8s,baz=23,slow=11,SNR=6.5
KBZ pP **sP 23 28 32.5 +0.8**
6.4nm,0.9s,baz=181,slow=12,SNR=8.1
NVAR Mina Array Bea 73.19 54 P **P 23 28 30.1 +0.1**
0.4nm,0.6s,baz=277,slow=7.2,SNR=2.9
NVAR pP **sP 23 28 41.6 +0.5**
0.7nm,0.7s,baz=293,slow=5.0,SNR=3.3
NB2 NORSAR Subarra 74.16 338 P **P 23 28 35.2 +0.2**
comp=Z,4.5nm,1.1s,baz=38,slow=6.2
NOA NORSAR Array B 74.16 338 P **P 23 28 35.0 0.0**
comp=Z,1.3nm,1.0s,baz=37,slow=5.9,SNR=3.8
NOA pP **sP 23 28 46.0 -0.1**
comp=Z,1.6nm,0.9s,baz=38,slow=5.9,SNR=5.0
AKASG Malin Array Be 74.75 323 P **P 23 28 39.1 +0.6**
comp=Z,0.3nm,0.4s,baz=43,slow=6.2,SNR=3.7
AKASG pP **sP 23 28 49.3 -0.3**
comp=Z,0.9nm,0.5s,baz=44,slow=6.1,SNR=3.1
PDAR Pinedale Array 75.94 47 P **P 23 28 45.6 -0.3**
comp=Z,0.6nm,0.6s,baz=273,slow=2.1,SNR=7.4
PDAR pP **sP 23 28 56.9 -0.1**
comp=Z,1.2nm,0.6s,baz=282,slow=2.2,SNR=9.3
BRTR Keskin Array B 79.62 313 P **P 23 29 07.8 +1.5**
comp=Z,0.4nm,0.7s,baz=68,slow=5.4,SNR=4.7
BRTR pP **sP 23 29 17.6 +0.2**
comp=Z,0.6nm,0.7s,baz=79,slow=6.4,SNR=4.7
TXAR Lajitas Array 88.33 54 P **P 23 29 50.3 -0.5**
comp=Z,0.4nm,0.8s,baz=308,slow=6.2,SNR=3.7
TXAR pP **sP 23 30 01.5 -0.5**
comp=Z,0.5nm,0.8s,baz=307,slow=4.2,SNR=3.6
LPAZ La Paz 144.86 61 PKP **PKPdf 23 36 34.4 -0.6**
comp=Z,0.7nm,0.8s,baz=26,slow=2.6,SNR=3.0

NEIC ***09*** *23:28:52.8±0.5, 37°.02N×104°.78W, h5km, mb4.0/1, ML3.9, MW3.7, Error ellipse: s-maj=7.5km s-min=6.2km az=171.0, Moment Tensor Solution. s31 Moment tensor: Scale 10¹⁴Nm; Mrr~4.81; Mθθ0.09; Mφφ4.72; Mrθ1.30; Mθφ1.72; Mφr~0.91; Best double couple: M₀5.30000×10¹⁴ NP1: φs215.00000°, δ45.00000°, λ-65.00000°. NP2:φs2.00000°, δ50.00000°, λ-113.00000°. Principal axes: T 5.3100, Plg3.0000°, Azm108.0000°; N 0.0000, Plg17.0000°, Azm17.0000°; P -5.3100, Plg72.0000°, Azm206.0000°;*
NEIC Felt [III] at Weston and [II] at Trinidad. Also felt at Aguilar, Boncarbo, La Junta, La Veta and Walsenburg.
ISCJB ***09*** *23:28:53.1±0.2, 37°.12N±0°.02×104°.71W±0°.02, h10km, mb3.8/4, MS3.3/3 Error ellipse: s-maj=3.5km s-min=2.4km az=32.9*
IDC ***09*** *23:28:53.2±0.8, 37°.20N×104°.75W, h0km, mb3.8/4, mb1 3.9/9, mb1mx3.6/51, mbtmp3.7/9, ML3.4/5, MS3.2/9, Ms1 3.2/9, ms1mx2.8/44, Error ellipse: s-maj=15.3km s-min=9.3km az=72.0*
ISC 09 23:28:53.0±0.6,**37.14N**±0°.02×**104.84W**±0°.02,**h10**km, **n107**,σ2§**18**/108,**mb3.7**/4,**MS3.1**/3,**Colorado**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
T25A	**Trinidad**	**0.34**	**90**	P	**Pg**	**23 28 57.5**	**-2.4**
T25A	baz=272						
				S	**Sg**	**23 29 01.2**	**-3.2**
	baz=272						
T25A	**Trinidad**	**0.34**	**90**	*e*Pg	**Pg**	**23 28 57.5**	**-2.4**
SDCO	**Great Sand Dun**	**0.80**	**319**	P	**Pb**	**23 29 08.6**	**-0.7**
SDCO	baz=136						
				S	**Sb**	**23 29 20.2**	**-0.1**
SDCO	baz=136						
SDCO	**Great Sand Dun**	**0.80**	**319**	*e*Pg	**Pb**	**23 29 08.5**	**-0.7**
SDCO				*e*Sg	**Sb**	**23 29 20.3**	**0.0**
S22A	**4UR Ranch, Cre**	**1.70**	**292**	Pb	**Pg**	**23 29 25.1**	**-0.3**
S22A	baz=109						
				Sb	**Sg**	**23 29 49.0**	**+1.4**
S22A	baz=109						
S22A	**4UR Ranch, Cre**	**1.70**	**292**	*e*Pn	**Pg**	**23 29 24.4**	**-1.1**
S22A				*e*Pg	**Pg**	**23 29 25.2**	**-0.3**
S22A				*e*Sn	**Sg**	**23 29 48.2**	**+0.6**
Q24A	**Divide**	**1.84**	**352**	Pb	**Pg**	**23 29 27.3**	**-1.1**
Q24A	baz=170						
				Sb	**Sg**	**23 29 51.9**	**-0.2**
Q24A	baz=170						
Q24A	**Divide**	**1.84**	**352**	*e*Pn	**Pg**	**23 29 27.2**	**-1.1**
Q24A				*e*Sn	**Sb**	**23 29 49.7**	**-0.4**
ANMO	**Albuquerque**	**2.55**	**211**	Pn	**Pb**	**23 29 35.7**	**-3.3**
ANMO	2.1nm,0.3s,baz=38,slow=13,SNR=24						
				Sn	**Sb**	**23 30 11.0**	**+0.6**
ANMO	4.2nm,0.3s,baz=51,slow=15,SNR=5.9						
				LR	LR	23 30 35.9	
ANMO	comp=Z,99nm,18.9s,baz=44,slow=39						
ANMO	**Albuquerque**	**2.55**	**211**	P	**Pn**	**23 29 35.4**	**+0.8**
KSCO	**Kaye Shedlock'**	**2.56**	**42**	Sb	**Sb**	**23 30 11.5**	**+0.9**
KSCO	**Kaye Shedlock'**	**2.56**	**42**	*e*Pn	**Pb**	**23 29 36.9**	**-2.2**
KSCO				*e*Lg	Lg	23 30 10.4	
SMCO	**Snowmass**	**2.64**	**321**	*e*Pn	**Pb**	**23 29 39.4**	**-1.3**
SMCO				*e*Sn	**Sn**	**23 30 06.1**	**-2.2**
SMCO				*e*Sn	**Sg**	**23 30 15.0**	**-2.8**
ISCO	**Idaho Springs**	**2.73**	**347**	Pb	**Pb**	**23 29 40.8**	**-1.2**
ISCO	baz=166						
				Sb	**Sg**	**23 30 18.2**	**-2.4**
ISCO	baz=166						
ISCO	**Idaho Springs**	**2.73**	**347**	*e*Pn	**Pb**	**23 29 40.4**	**-1.6**
ISCO				*e*Sn	**Sb**	**23 30 15.1**	**-0.5**
MVCO	**Mesa Verde**	**2.92**	**273**	Pb	**Pg**	**23 29 46.3**	**-2.7**
MVCO	baz=90						
				Sb	**Sg**	**23 30 25.5**	**-1.4**
MVCO	baz=90						
MVCO	**Mesa Verde**	**2.92**	**273**	*e*Pn	**Pb**	**23 29 43.7**	**-1.6**
MVCO				*e*Sn	**Sg**	**23 30 25.0**	**-1.9**
PV01	**Paradox Valley**	**3.12**	**208**	*e*Pn	**Pb**	**23 29 44.9**	**-3.9**
PV01				*e*Sn	**Sg**	**23 30 32.9**	**-0.4**
LPM	**Los Pinos Moun**	**3.17**	**208**	*e*Pn	**Pb**	**23 29 45.6**	**-3.9**
LPM				*e*Pg	**Pg**	**23 29 51.1**	**-2.7**
LAZ	**Ladron**	**3.31**	**215**	*e*Pn	**Pn**	**23 29 45.6**	**+0.6**
BNM	**Barren Site**	**3.32**	**207**	*e*Pn	**Pb**	**23 29 48.1**	**-3.9**
AMTX	**Amarillo**	**3.41**	**130**	Pb	**Pb**	**23 29 51.6**	**-1.9**
AMTX	baz=313						
AMTX	**Amarillo**	**3.41**	**130**	*e*Pn	**Pn**	**23 29 44.7**	**-1.6**
AMTX				*e*Sn	**Sn**	**23 30 26.6**	**-0.2**
PV05	**Paradox Valley**	**3.51**	**287**	*e*Pg	**Pg**	**23 29 58.0**	**-2.3**
PV10	**Paradox Valley**	**3.55**	**292**	*e*Pg	**Pg**	**23 29 60.0**	**-1.0**
MSTX	**Muleshoe**	**3.58**	**151**	Pb	**Pb**	**23 29 55.7**	**-0.7**
MSTX	baz=334						
MSTX	**Muleshoe**	**3.58**	**151**	*e*Pg	**Pb**	**23 29 56.2**	**-0.2**
PV09	**Paradox Valley**	**3.66**	**293**	*e*Pn	**Pn**	**23 29 48.4**	**-1.6**
N23A	**Red Feather La**	**3.85**	**347**	*e*Pn	**Pn**	**23 29 51.8**	**-0.7**
N23A				*e*Sn	**Sb**	**23 30 45.5**	**-2.4**
O20A	**White River Ci**	**4.01**	**319**	*e*Pn	**Pn**	**23 29 58.0**	**+3.4**
PHWY	**Pilot Hill**	**4.18**	**354**	*e*Pn	**Pn**	**23 29 58.7**	**+1.6**
CBKS	**Cedar Bluff**	**4.37**	**66**	*e*Pn	**Pn**	**23 29 59.5**	**+0.1**
OGNE	**Ogallala**	**4.38**	**29**	P	**Pn**	**23 30 01.1**	**+1.4**
OGNE	baz=210						
OGNE	**Ogallala**	**4.38**	**29**	*e*Pn	**Pn**	**23 30 01.6**	**+2.0**
W18A	**Petrified Fore**	**4.45**	**244**	Pb	**Pb**	**23 30 12.3**	**+1.0**
W18A	baz=62						
W18A	**Petrified Fore**	**4.45**	**244**	*e*Pg	**Pg**	**23 30 14.1**	**-4.0**
S32A	**Newby Ranch, P**	**4.73**	**81**	Pb	**Pb**	**23 30 15.5**	**-0.5**
S32A	baz=265						
				Sb	**Sb**	**23 31 17.3**	**+4.2**
S32A	baz=265						
U32A	**Winter Ranch,**	**4.75**	**97**	Pb	**Pb**	**23 30 15.7**	**-0.6**
U32A	baz=281						
V32A	**Arapaho**	**4.88**	**105**	Pb	**Pb**	**23 30 17.7**	**-0.9**
V32A	baz=289						
SRU	**San Rafael Swe**	**4.89**	**295**	*e*Pn	**Pb**	**23 30 18.2**	**-0.7**
SRU				*e*Pg	**Pg**	**23 30 24.2**	**-2.6**
X18A	**Snowflake**	**4.90**	**239**	*e*Pg	**Pg**	**23 30 24.5**	**-2.4**
W32A	**Sentinel**	**4.95**	**112**	Pb	**Pb**	**23 30 18.6**	**-1.2**
W32A	baz=296						
R32A	**Long Quarter,**	**5.02**	**73**	Sb	**Sb**	**23 31 25.4**	**+4.0**
R32A	baz=257						
P17A	**Butcher Ranch,**	**5.19**	**298**	*e*Pg	**Pg**	**23 30 29.2**	**-3.2**
Q16A	**Castle Valley**	**5.30**	**291**	*e*Pn	Pb	23 30 20.9	-5.0
TMUT	**Trail Mountain**	**5.46**	**295**	*e*Pn	**Pb**	**23 30 24.6**	**-3.9**
WMOK	**Wichita Mounta**	**5.47**	**114**	*e*Pn	**Pn**	**23 30 14.3**	**-0.2**
WUAZ	**Wupatki**	**5.52**	**255**	*e*Pg	**Pb**	**23 30 32.2**	**+2.7**
MTPU	**Mount Pierson**	**5.90**	**281**	*e*Pn	Pn	23 30 27.2	+6.4
U34A	**Anderson Ranch**	**5.90**	**95**	*e*Pn	Pn	23 30 25.0	+4.5
PKCU	**Pink Cliffs**	**5.96**	**275**	*e*Pn	Pn	23 30 26.4	+4.8
MSU	**Marysvale**	**5.97**	**286**	*e*Pn	**Pn**	**23 30 23.1**	**+1.5**
W34A	**Bridge Creek,**	**6.02**	**106**	*e*Pg	**Pb**	**23 30 39.4**	**+1.4**
V34A	**Guthrie**	**6.04**	**100**	*e*Pn	**Pn**	**23 30 22.0**	**-0.3**
MPU	**Maple Canyon**	**6.05**	**300**	*e*Pg	**Pg**	**23 30 46.5**	**-2.3**
T34A	**McClaskey Farm**	**6.12**	**89**	P	**Pn**	**23 30 22.0**	**-1.4**
T34A	baz=274						
ABTX	**Abilene, Hawle**	**6.21**	**135**	*e*Pg	**Pb**	**23 30 42.8**	**+1.7**
JLU	**Jordanelle**	**6.21**	**306**	*e*Pn	Pn	23 30 31.2	+6.3
NLU	**North Lily Min**	**6.33**	**299**	*e*Pg	**Pg**	**23 30 54.2**	**+0.1**
KNB	**Kanab**	**6.38**	**271**	*e*Pg	**Pb**	**23 30 48.0**	**+3.7**
TCUT	**Toone Canyon**	**6.47**	**310**	*e*Pn	Pn	23 30 36.2	+7.7
BW06	**Boulder Array**	**6.69**	**329**	*e*Pn	Pn	23 30 36.5	+5.1
PD31	**Pinedale Array**	**6.69**	**329**	*e*Pn	**Pn**	**23 30 34.7**	**+3.3**
PD31				*e*Lg	Lg	23 32 27.0	
PDAR	**Pinedale Array**	**6.69**	**329**	Pn	**Pn**	**23 30 34.7**	**+3.3**
PDAR	0.6nm,0.3s,baz=130,slow=14,SNR=14						
				Pg	**Pb**	**23 30 49.0**	**-0.4**
PDAR	2.6nm,0.3s,baz=66,slow=23,SNR=43						
				Lg	Lg	23 32 27.0	
PDAR	0.5nm,0.3s,baz=344,slow=31,SNR=2.1						
BGNE	**Belgrade**	**6.72**	**49**	*e*Pg	Pg	23 30 56.2	-5.3
HWUT	**Hardware Ranch**	**6.86**	**313**	*e*Pn	Pn	23 30 38.0	+4.2
TUC	**Tucson**	**6.87**	**227**	*e*Pg	**Pg**	**23 31 04.5**	**+0.1**
DUG	**Dugway, Tooele**	**6.94**	**299**	*e*Pg	**Pg**	**23 31 02.3**	**-3.6**
Y14A	**Wickenburg**	**7.38**	**247**	*e*Pg	**Pg**	**23 31 12.8**	**-1.5**
TUL1	**Leonard**	**7.39**	**97**	*e*Pn	**Pn**	**23 30 41.1**	**+0.2**
TUL1				*e*Pg	Pb	23 31 05.7	+4.5
AHID	**Auburn Hatcher**	**7.39**	**321**	*e*Pn	Pn	23 30 46.7	+5.6
BGU	**Big Grassy Mou**	**7.41**	**303**	*e*Pg	**Pg**	**23 31 10.4**	**-4.4**
W13A	**Hualapai Mount**	**7.60**	**257**	*e*Pg	**Pg**	**23 31 16.8**	**-1.6**
REDW	**Red Top Meadow**	**7.73**	**325**	*e*Pn	Pb	23 30 57.1	-10
LOHW	**Long Hollow**	**7.82**	**328**	*e*Pn	**Pn**	**23 30 49.4**	**+2.5**
TX31	**Lajitas Ar. Si**	**7.84**	**172**	*e*Pn	**Pn**	**23 30 50.4**	**+3.1**
LTX	**Lajitas**	**7.84**	**172**	*e*Pn	**Pn**	**23 30 50.3**	**+3.1**
TXAR	**Lajitas Array**	**7.84**	**172**	Pn	**Pn**	**23 30 50.3**	**+3.1**
TXAR	0.2nm,0.3s,baz=359,slow=10,SNR=9.4						
				Lg	Lg	23 32 59.4	
TXAR	1.1nm,0.3s,baz=358,slow=28,SNR=13						
				LR	LR	23 34 07.6	
TXAR	comp=Z,52nm,18.6s,baz=0.0,slow=40						
MOOW	**Moose Ponds**	**7.99**	**328**	*e*Pn	Pn	23 30 56.1	+6.8
FXWY	**Fox Creek**	**8.03**	**326**	*e*Pn	**Pn**	**23 30 53.2**	**+3.4**
IMW	**Indian Meadow**	**8.19**	**327**	*e*Pn	**Pn**	**23 30 53.8**	**+1.6**
FLWY	**Flagg Ranch**	**8.24**	**329**	*e*Pn	**Pn**	**23 30 49.8**	**-3.0**
H17A	**Grant Village**	**8.45**	**331**	*e*Pn	Pn	23 30 49.7	-6.0
LKWY	**Lake**	**8.53**	**332**	*e*Pn	**Pn**	**23 30 55.0**	**-1.7**
YFT	**Old Faithful**	**8.60**	**330**	*e*Pn	Pn	23 31 01.8	+4.1
HHAR	**Hobbs**	**8.80**	**92**	*e*Pn	**Pn**	**23 31 01.6**	**+1.4**
ECSD	**EROS Data Cent**	**9.09**	**41**	*e*Pn	**Pn**	**23 31 05.2**	**+1.0**
QLMT	**Earthquake Lak**	**9.15**	**329**	*e*Pn	Pn	23 31 12.6	+7.3
MIAR	**Mount Ida**	**9.50**	**102**	*e*Pn	**Pn**	**23 31 08.4**	**-1.4**
PFO	**Pinyon Flats O**	**10.12**	**253**	LR	LR	23 35 40.1	
PFO	comp=Z,102nm,20.4s,baz=114,slow=40						
X301	**Greenbrier Sit**	**10.23**	**97**	*e*Pn	**Pn**	**23 31 21.3**	**+1.5**
NVAR	**Mina Array Bea**	**10.73**	**281**	Pg	Pg	23 32 17.0	
NVAR	0.1nm,0.3s,baz=93,slow=16,SNR=5.8						
				Sn	**Sn**	**23 33 21.9**	**-5.4**
NVAR	0.0nm,0.3s,baz=243,slow=23,SNR=1.9						
				Lg	Lg	23 34 34.5	
NVAR	0.1nm,0.3s,baz=96,slow=20,SNR=3.0						
				LR	LR	23 36 07.2	
NVAR	comp=Z,140nm,20.9s,baz=88,slow=41						
CHMT	**Chamberlain Mo**	**11.59**	**330**	*e*Pn	Pn	23 31 43.8	+5.2
YBH	**Yreka Blue Hor**	**14.55**	**294**	LR	LR	23 38 41.9	
YBH	comp=Z,99nm,19.1s,baz=116,slow=40						
BLO	**Bloomington**	**14.56**	**76**	*e*Pn	**Pn**	**23 32 17.0**	**-1.9**
ULM	**Lac du Bonnet**	**14.61**	**23**	Pn	**Pn**	**23 32 17.3**	**-2.3**
ULM	0.3nm,0.3s,baz=246,slow=6.1,SNR=2.9						
				Lg	Lg	23 36 29.2	
ULM	0.8nm,0.3s,baz=123,slow=20,SNR=4.5						
TKL	**Tuckaleechee C**	**17.03**	**89**	Pn	**Pn**	**23 32 50.5**	**-0.6**
TKL	0.3nm,0.3s,baz=252,slow=2.0,SNR=3.5						
				Lg	Lg	23 37 39.5	
TKL	0.6nm,0.3s,baz=38,slow=20,SNR=4.7						
				LR	LR	23 39 24.6	
TKL	comp=Z,193nm,18.4s,baz=327,slow=37						
TKL	**Tuckaleechee C**	**17.03**	**89**	*e*Pn	**Pn**	**23 32 50.5**	**-0.6**
TKL	22nm,1.8s						
SADO	**Sadowa**	**20.80**	**60**	LR	LR	23 41 52.4	
SADO	comp=Z,81nm,19.1s,baz=330,slow=38						
BBB	**Bella Bella**	**22.23**	**320**	LR	LR	23 42 53.8	
BBB	comp=Z,62nm,19.9s,baz=14,slow=38						
YKA	**Yellowknife Ar**	**26.09**	**350**	P	**P**	**23 34 28.1**	**+1.6**
YKA	1.2nm,1.0s,baz=161,slow=9.4,SNR=7.3						
YKB5	**Yellowknife Ar**	**26.09**	**350**	*e*P	**P**	**23 34 28.1**	**+1.6**
INK	**Inuvik**	**35.04**	**342**	P	**P**	**23 35 47.4**	**+1.9**
INK	1.6nm,1.2s,baz=134,slow=2.3,SNR=2.5						
ILAR	**Eielson Array**	**37.11**	**332**	P	**P**	**23 36 06.0**	**+2.8**
ILAR	1.3nm,1.0s,baz=129,slow=7.5,SNR=10						
ILB	**Eielson Array**	**37.11**	**332**	*e*P	**P**	**23 36 06.0**	**+2.8**
FINES	**FINESS Array B**	**74.00**	**22**	P	**P**	**23 40 29.0**	**+0.7**
FINES	2.1nm,0.9s,baz=336,slow=8.8,SNR=3.8						
KBZ	**Khabaz**	**94.35**	**23**	LR	LR	00 24 25.3	
KBZ	comp=Z,35nm,19.0s,baz=146,slow=35						

IDC ***09*** *23:38:07.4±1.3, 6°.74S×131°.18E, h0km, mb4.0/2, mb1 4.2/8, mb1mx3.9/31, mbtmp4.1/8, ML4.2/3, Error ellipse: s-maj=32.5km s-min=22.2km az=66.0*
ISCJB ***09*** *23:38:10.5±0.5, 6°.82S±0°.04×131°.62E±0°.05, h35km, mb4.5/5, Error ellipse: s-maj=7.9km s-min=5.5km az=168.2*
NEIC ***09*** *23:38:12.1±0.6, 6°.74S×131°.29E, h35km, mb4.6/5, Error ellipse: s-maj=14.6km s-min=9.4km az=83.0*
DJA ***09*** *23:38:19.7±0.5, 6°.S±3°.×13°.2E±°., h10km, M4.6/7, mB5.5/2, mb5.0/2, MLv4.4/7, Mw(mB)5.0/2*
ISC 09 23:38:10.8±0.6,**6.80S**±0°.05×**131.72E**±0°.06,**h35**km,**n31**, σ3§**37**/39,**mb4.9**/5,**Tanimbar Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SAUI	**Saumlaki**	**1.25**	**199**	*e*Pn	Pn	23 38 39.2	+7.4
BNDI	**Bandanaira**	**2.89**	**321**	P	**Pn**	**23 38 56.2**	**+1.8**
FAKI	**Fak Fak**	**3.89**	**8**	P	**Pn**	**23 39 08.6**	**+0.5**
FAKI				S	**Sn**	**23 39 46.7**	**-5.8**
FAKI	**Fak Fak**	**3.89**	**8**	*e*Pn	**Pn**	**23 39 09.4**	**+1.3**
FAKI				*e*Sn	Sn	23 39 44.0	-8.5
MSAI	**Masohi**	**4.41**	**321**	P	**Pn**	**23 39 17.4**	**+2.1**
MTN	**Manton Dam**	**6.04**	**185**	*e*Pn	Pn	23 39 43.8	+6.1
MTN				*e*Sn	**Sn**	**23 40 47.4**	**+1.7**
SANI	**Sanana**	**7.41**	**309**	P	Pn	23 40 03.0	+6.5
LBMI	**Labuha**	**7.42**	**325**	P	**Pn**	**23 39 58.3**	**+1.6**
LBMI	49nm,0.9s,709nm0.2nm						
SOEI	**Soe**	**7.94**	**248**	*e*Pn	**Pn**	**23 40 06.2**	**+2.3**
SOEI				*e*Sn	**Sn**	**23 41 34.0**	**+1.4**
JAY	**Jayapura**	**9.91**	**65**	Pn	Pn	23 40 37.1	+6.2
JAY	0.1nm,0.3s,baz=275,slow=23,SNR=3.7						
FITZ	**Fitzroy Crossi**	**12.71**	**207**	Pn	**Pn**	**23 41 09.0**	**-0.1**
FITZ	7.0nm,0.3s,baz=33,slow=11,SNR=102						
				Sn	**Sn**	**23 43 21.5**	**-7.9**
FITZ	4.6nm,0.3s,baz=258,slow=21,SNR=12						
WRAB	**Tennant Creek**	**13.31**	**169**	*e*Pn	**Pn**	**23 41 20.0**	**+2.7**
WRAB				*e*Sn	**Sn**	**23 43 41.6**	**-2.6**
WR1	**Warramunga Arr**	**13.31**	**169**	*e*Pn	**Pn**	**23 41 18.9**	**+1.5**
WR1				*e*Sn	**Sn**	**23 43 40.8**	**-3.5**
WRA	**Warramunga Arr**	**13.31**	**169**	Pn	**Pn**	**23 41 18.9**	**+1.5**
WRA	2.2nm,0.3s,baz=345,slow=14,SNR=23						
				Sn	**Sn**	**23 43 40.8**	**-3.5**
WRA	9.2nm,0.3s,baz=341,slow=24,SNR=16						
WB2	**Warramunga Arr**	**13.32**	**169**	*e*Pn	**Pn**	**23 41 18.9**	**+1.4**
WB2				*e*Sn	**Sn**	**23 43 40.5**	**-3.9**
COEN	**Coen**	**13.32**	**123**	*e*Pn	**Pn**	**23 41 21.3**	**+3.7**
COEN				*e*Sn	**Sn**	**23 43 41.2**	**-3.4**
PMG	**Port Moresby**	**15.50**	**101**	Pn	**P**	**23 41 52.7**	**+1.7**
PMG	0.9nm,0.3s,baz=204,slow=7.9,SNR=2.4						
AS31	**Alice Springs**	**16.91**	**173**	*e*Pn	**P**	**23 42 06.4**	**-0.1**
AS31	3.8nm,0.5s						
				*e*Sn	**Sn**	**23 45 05.7**	**-6.0**
ASAR	**Alice Springs**	**16.91**	**173**	P	**P**	**23 42 06.4**	**-0.1**
ASAR	0.9nm,0.3s,baz=344,slow=8.4,SNR=41						
				S	**Sn**	**23 45 05.7**	**-6.0**
ASAR	1.5nm,0.3s,baz=355,slow=28,SNR=10						
AS01	**Alice Springs**	**16.91**	**173**	*e*Pn	**P**	**23 42 06.8**	**+0.2**
AS01				*e*Sn	**Sn**	**23 45 06.6**	**-5.2**
MBWA	**Marble Bar**	**18.40**	**218**	*e*P	**P**	**23 42 22.8**	**-0.2**
CTA	**Charters Tower**	**19.33**	**135**	P	**Pn**	**23 42 40.0**	**+5.5**
CTA	0.3nm,0.3s,baz=316,slow=17,SNR=3.9						
CTAO	**Charters Tower**	**19.33**	**135**	P	**Pn**	**23 42 40.0**	**+5.5**
BBOO	**Buckleboo**	**26.20**	**172**	*e*P	**P**	**23 43 44.5**	**+2.2**
BBOO

SHO Shikotan 8.60 32 P Pn 23 40 23.5 -3.9
SHO *e*S Sn 23 41 56.1 -8.5
SHO pmax pmax
comp=Z,46nm,0.8s
SHO pmax pmax
comp=N,28nm,0.7s
SHO pmax pmax
comp=E,36nm,0.6s
JNU Nakatsue 8.70 248 Pn Pn 23 40 36.5 +7.6
comp=E,0.3nm,0.3s,baz=109,slow=8.5,SNR=4.1
VLA Vladivostok 9.20 317⇓*i*P Pn 23 40 41.7 +6.1
VLA *i* S Sn 23 42 27.3 +8.0
VLA pmax pmax
comp=Z,24nm,0.7s
CBIJ Chichi jima 9.71 171 *e*Pn **Pn 23 40 42.5 -0.2**
JCJ Chichijima 9.71 171 Pn **Pn 23 40 42.5 -0.2**
comp=Z,4.8nm,0.3s,baz=319,slow=23,SNR=3.6
USRK Ussuriysk Ar. 9.89 322 Pn **Pn 23 40 42.8 -2.3**
comp=Z,0.3nm,0.3s,baz=203,slow=16,SNR=3.8
KSRS Korea Array 10.09 278 Pn Pn 23 40 53.4 +5.5
comp=Z,0.3nm,0.3s,baz=92,slow=14,SNR=5.7
KSRS LR LR 23 44 29.6
comp=Z,192nm,19.5s,baz=86,slow=36
KS15 Wonju Array Si 10.12 278 *e*Pn Pn 23 40 53.4 +5.1
KSAR Wonju Array Be 10.12 278 P Pn 23 40 53.4 +5.1
KSAR Wonju Array Be 10.12 278 Pn Pn 23 40 53.4 +5.1
KUR Kuril'sk 10.14 31 P **Pn 23 40 46.9 -1.6**
KUR *e*S **Sn 23 42 37.1 -5.3**
KUR pmax pmax
comp=Z,47nm,0.7s
KUR pmax pmax
comp=N,38nm,0.3s
KUR pmax pmax
comp=E,45nm,0.9s
KLR Kul'dur 14.03 336 Pn **Pn 23 41 43.8 +2.1**
comp=E,0.1nm,0.3s,baz=134,slow=7.4,SNR=3.5
PETK Petropavlovsk- 20.31 31 P Pn 23 43 01.9 +0.9
comp=E,7.3nm,1.0s,baz=162,slow=5.6,SNR=3.6
PETK LR LR 23 50 22.0
comp=E,73nm,19.4s,baz=201,slow=35
PEA1 Petropavlovsk- 20.31 31 *e*P Pn 23 43 01.9 +0.9
MA2 Magadan 23.80 13 *e*P **P 23 43 36.4 +0.7**
YAK Yakutsk 26.21 348 *e*P **P 23 43 57.8 +0.1**
YAK pmax pmax
comp=Z,19nm,1.0s
YAK pmax pmax
comp=N,7.0nm,1.0s
YAK pmax pmax
comp=E,5.0nm,1.1s
ENH Enshi 26.59 265 *e*P **P 23 44 03.0 +1.5**
comp=E,7.7nm,0.7s
ULN Ulaanbaatar 26.93 305 *ce*P **P 23 44 05.2 +0.6**
ULN pmax pmax
comp=Z,7.0nm,1.0s
ULN Ulaanbaatar 26.93 305 *e*P **P 23 44 04.8 +0.2**
comp=Z,4.6nm,0.8s
SEY Seymchan 27.23 12 P **P 23 44 07.4 +0.6**
comp=Z,5.0nm,0.8s,baz=218,slow=7.1,SNR=7.8
SEY Seymchan 27.23 12 *e*P **P 23 44 07.1 +0.3**
SONA1 Songino Array 27.36 305 *e*P **P 23 44 07.4 -1.0**
SONA0 Songino Array 27.36 305 *e*P **P 23 44 07.4 -1.0**
comp=Z,5.8nm,0.8s
SONM Songino Array 27.36 305 P **P 23 44 07.4 -1.0**
comp=Z,5.4nm,0.7s,baz=110,slow=8.2,SNR=28
SONM LR LR 23 54 18.1
comp=Z,50nm,19.4s,baz=222,slow=35
BOD Bodaibo 27.41 329 *e*P **P 23 44 07.6 -0.9**
BOD pmax pmax
comp=Z,4.0nm,1.3s
H11N2 WAKE ISLAND Hy 28.62 119 T T 00 14 02.6
baz=312,slow=75,SNR=2692
H11N1 WAKE ISLAND Hy 28.63 119 T T 00 14 03.2
baz=312,slow=75,SNR=4105
H11N3 WAKE ISLAND Hy 28.64 119 T T 00 14 03.9
baz=312,slow=75,SNR=3085
H11S1 WAKE ISLAND Hy 29.31 121 T T 00 14 53.8
baz=314,slow=75,SNR=9072
H11S3 WAKE ISLAND Hy 29.31 121 T T 00 14 53.9
baz=314,slow=75,SNR=6677
H11S2 WAKE ISLAND Hy 29.32 121 T T 00 14 55.1
baz=314,slow=75,SNR=4476
ZAK Zakamensk 29.90 309 *e*P **P 23 44 29.5 -1.4**
ZAK pmax pmax
comp=Z,2.0nm,0.8s
TLY Talaya 29.99 312 P **P 23 44 32.3 +0.7**
comp=Z,2.7nm,0.6s,baz=100,slow=2.4,SNR=6.4
TLY Talaya 29.99 312 *e*P **P 23 44 31.1 -0.5**
TLY pmax pmax
comp=Z,3.0nm,0.6s
BILL Bilibino 34.52 17⇑*e*P **P 23 45 10.4 -0.6**
BILL *e* 23 46 25.9
BILL pmax pmax
comp=Z,9.0nm,1.7s
BILL MLR MLR
comp=Z,47nm,18.0s
BILL Bilibino 34.52 17 *e*P **P 23 45 10.5 -0.6**
comp=Z,5.7nm,1.1s
TIXI Tiksi 35.51 354 P **P 23 45 18.7 -0.8**
comp=Z,2.3nm,0.7s,baz=146,slow=6.0,SNR=5.5
TIXI Tiksi 35.51 354 *e*P **P 23 45 19.2 -0.3**
TIXI pmax pmax
comp=Z,4.0nm,1.0s
TIXI Tiksi 35.51 354 *e*P **P 23 45 18.5 -1.0**
comp=Z,5.5nm,1.1s
ZAA0 Zalesovo Array 41.59 313 *e*P **P 23 46 10.8 0.0**
ZAA1 Zalesovo Array 41.59 313 *e*P **P 23 46 11.3 +0.5**
ZAA1 *e*PcP **PcP 23 48 07.7 -0.2**
ZALV Zalesovo Beam 41.59 313 P **P 23 46 11.3 +0.5**
comp=Z,7.2nm,0.6s,baz=93,slow=6.4,SNR=28
ZALV PcP **PcP 23 48 07.7 -0.2**
comp=Z,1.2nm,0.5s,baz=94,slow=2.1,SNR=5.1
NVS Novosibirsk 42.53 314 *e*P **P 23 46 18.8 +0.3**
NRIK Noril'sk 43.24 336 P **P 23 46 23.8 -0.3**
comp=Z,1.2nm,0.7s,baz=119,slow=13,SNR=4.0
NRIK PcP **PcP 23 48 12.8 -0.2**
comp=Z,3.5nm,1.0s,baz=97,slow=3.0,SNR=5.3
NRIK LR LR 00 05 55.7
comp=Z,51nm,19.1s,baz=112,slow=38
MK32 Makanchi Array 43.67 302 *e*P **P 23 46 28.7 +0.8**
MKAR Makanchi Array 43.67 302 P **P 23 46 28.7 +0.8**
comp=Z,1.8nm,0.9s,baz=85,slow=9.6,SNR=7.5
KURK Kurchatov 45.55 308 *e*P **P 23 46 42.2 -0.6**
KURK pmax pmax
comp=Z,15nm,0.8s
KURK Kurchatov 45.55 308 *e*P **P 23 46 42.2 -0.6**
comp=Z,15nm,0.8s
KAPI Kappang 45.84 209 P **P 23 46 45.9 +0.4**
comp=Z,3.7nm,0.3s,baz=347,slow=18,SNR=3.8
KAPI Kappang 45.84 209 *e*P **P 23 46 45.9 +0.4**
comp=Z,6.0nm,0.9s
KDAK Kodiak Island 47.80 42 P P 23 47 15.3 +15
comp=Z,3.2nm,0.7s,baz=290,slow=8.6,SNR=4.5
TKM2 Tokmak 2 49.14 298 *e*P **P 23 47 12.3 +1.1**
TKM2 pmax pmax
comp=Z,6.0nm,0.9s
TKM2 Tokmak 2 49.14 298 *e*P **P 23 47 12.2 +1.1**
comp=Z,5.9nm,0.9s
MDM Murphy Dome 49.55 32 *e*P **P 23 47 14.9 +1.2**
comp=Z,9.7nm,1.5s
AAK Ala-Archa 50.00 298 *e*P **P 23 47 17.1 -0.6**
AAK pmax pmax
comp=Z,4.0nm,1.0s
ILAR Eielson Array 50.13 32 P **P 23 47 18.2 +0.1**
comp=Z,1.1nm,0.7s,baz=266,slow=6.7,SNR=12
ILB Eielson Array 50.13 32 *e*P **P 23 47 18.2 +0.1**
IL1 Eielson Array 50.13 32 *e*P **P 23 47 18.2 +0.1**
BRVK Borovoye 50.30 312 *ce*P **P 23 47 20.1 +0.6**
BRVK pmax pmax
comp=Z,7.0nm,1.0s
BRVK Borovoye 50.30 312 *e*P **P 23 47 19.5 0.0**
comp=Z,5.2nm,0.7s
ZRNK Zerenda 51.08 312 *e*P **P 23 47 25.4 0.0**
ZRNK pmax pmax
comp=Z,9.0nm,0.8s
ZRNK Zerenda 51.08 312 *e*P **P 23 47 25.4 0.0**
comp=Z,8.9nm,0.8s
KKAR Karatay Array 52.66 300 *e*P **P 23 47 38.1 +0.7**
KKAR Karatay Array 52.66 300 *e*P **P 23 47 38.1 +0.7**
SVE Sverdlovsk 54.90 319⇓*e*P **P 23 47 53.6 +0.1**
SVE pmax pmax
comp=Z,12nm,0.9s
ARU Arti 56.11 318 *d i*P **P 23 48 01.7 -0.5**
ARU 23 48 57.4
ARU 23 50 04.6
ARU S **S 23 55 49.1 -2.0**
ARU SS **SS 23 59 33.0 -3.8**
ARU pmax pmax
comp=Z,12nm,1.0s
ARU Arti 56.11 318 *e*P **P 23 48 02.0 -0.2**
comp=Z,9.5nm,0.8s
WR1 Warramunga Arr 56.67 187 *e*P **P 23 48 05.5 -1.1**
comp=Z,7.4nm,0.6s
WRA Warramunga Arr 56.67 187 P **P 23 48 05.4 -1.1**
comp=Z,4.9nm,0.7s,baz=5.7,slow=7.5,SNR=8.7
ABKAR Akbulak array 57.58 310 *e*P **P 23 48 12.7 -0.1**
AS01 Alice Springs 60.39 187 *e*P **P 23 48 33.5 +1.0**
AS31 Alice Springs 60.40 187 *e*P **P 23 48 32.2 -0.4**
comp=Z,1.4nm,0.8s
ASAR Alice Springs 60.40 187 P **P 23 48 32.2 -0.4**
comp=Z,3.2nm,0.8s,baz=12,slow=6.6,SNR=7.0
SPITS Spitsbergen Ar 60.68 349 LR LR 00 15 30.1
comp=Z,18nm,20.6s,baz=305,slow=37
RES Resolute Bay 63.07 14 LR LR 00 18 01.7
comp=Z,17nm,20.3s,baz=40,slow=38
RES Resolute Bay 63.07 14 *e*P **P 23 48 49.8 -0.1**
RES pmax pmax
comp=Z,13nm,1.6s
RES Resolute Bay 63.07 14 *e*P **P 23 48 49.8 -0.1**
comp=Z,13nm,1.6s
GEYT Alibeck 63.35 299 P **P 23 48 50.5 -2.0**
comp=Z,1.3nm,0.7s,baz=26,slow=3.8,SNR=5.5
KLMR Klimovskoe 63.63 328 *e*P **P 23 48 52.3 -1.5**
KLMR pmax pmax
comp=Z,6.0nm,0.7s
ARA0 ARCESS Array S 64.02 339 *e*P **P 23 48 57.8 +1.5**
ARCES ARCESS Array B 64.02 339 P **P 23 48 57.8 +1.5**
comp=Z,10nm,1.0s,baz=56,slow=11,SNR=4.5
YKA Yellowknife Ar 64.42 30 P **P 23 48 59.0 0.0**
comp=Z,0.9nm,0.7s,baz=303,slow=6.8,SNR=15
YKA PcP **PcP 23 49 34.0 +0.6**
comp=Z,0.5nm,0.6s,baz=301,slow=3.9,SNR=7.6
YKB5 Yellowknife Ar 64.42 30 *e*P **P 23 48 59.0 0.0**
YKB5 *e*PcP **PcP 23 49 34.0 +0.6**
DAG Danmarks Havn 66.01 355 *i*P **P 23 49 08.7 -0.4**
comp=Z,3.4nm,0.7s
DAG Danmarks Havn 66.01 355 *i*P **P 23 49 08.7 -0.4**
DAG pmax pmax
comp=Z,2.0nm,0.7s
OBN Obninsk 67.91 323⇓*e*P **P 23 49 22.8 +1.3**
OBN *e* 23 51 56.0
OBN pmax pmax
comp=Z,6.0nm,0.6s
OBN MLR MLR
comp=Z,30nm,16.0s
STKA Stephens Creek 68.26 179 P **P 23 49 25.3 +1.4**
comp=Z,2.0nm,0.7s,baz=23,slow=14,SNR=3.3
STKA Stephens Creek 68.26 179 *e*P **P 23 49 25.3 +1.4**
STKA pmax pmax
comp=Z,3.0nm,1.6s
STKA Stephens Creek 68.26 179 *e*P **P 23 49 25.3 +1.4**
comp=Z,3.2nm,1.6s
FIA1 FINESS Array S 68.74 332 *e*P **P 23 49 26.6 0.0**
FIA0 FINESS Array S 68.74 332 *e*P **P 23 49 26.5 -0.2**
FIA0 FINESS Array S 68.74 332 *e*P **P 23 49 26.5 -0.2**
FINES FINESS Array B 68.74 332 P **P 23 49 26.5 -0.2**
comp=Z,7.2nm,0.9s,baz=46,slow=8.2,SNR=14
KBZ Khabaz 70.55 310 P **P 23 49 38.5 +0.4**
comp=Z,1.2nm,0.6s,baz=358,slow=5.1,SNR=6.1
KIV Kislovodsk 70.56 311⇓*e*P **P 23 49 39.3 +1.0**
KIV *e* 23 52 13.2
KIV pmax pmax
comp=Z,9.0nm,1.0s
KIV MLR MLR
comp=Z,23nm,17.0s
KIV Kislovodsk 70.56 311 *e*P **P 23 49 38.7 +0.4**
comp=Z,6.9nm,0.8s
SUMG Summit 70.98 360 *i*P **P 23 49 41.1 +0.3**
comp=Z,9.4nm,0.9s
SUMG Summit 70.98 360 *i*P **P 23 49 41.1 +0.3**
SUMG pmax pmax
comp=Z,9.0nm,0.9s
SUMG Summit 70.98 360 *e*P **P 23 49 41.6 +0.9**
comp=Z,8.4nm,0.9s
GNI Garni 71.31 306 *e*P P 23 49 46.4 +3.4
GNI pmax pmax
comp=Z,9.0nm,1.0s
NWAO Narrogin (SRO) 72.64 200 P **P 23 49 50.5 -0.1**
comp=Z,14nm,1.0s,baz=115,slow=4.1,SNR=2.8
PCMT Pistol Creek 73.15 43 *e*P P 23 49 58.0 +4.0
NC405 NORSAR Array S 73.97 337 *e*P **P 23 49 58.5 +0.1**
AKASG Malin Array Be 74.09 322 P **P 23 49 58.4 -0.8**
comp=Z,3.2nm,0.7s,baz=48,slow=6.2,SNR=15
AKBB Malin Array Si 74.09 322 *e*P **P 23 49 58.4 -0.8**
AKBB pmax pmax
comp=Z,20nm,1.5s
AKBB Malin Array Si 74.09 322 *e*P **P 23 49 58.4 -0.8**
comp=Z,20nm,1.5s
KIEV Kiev 74.11 322 *e*P **P 23 49 58.9 -0.3**
KIEV pmax pmax
comp=Z,4.0nm,0.8s
KIEV Kiev 74.11 322 *e*P **P 23 49 58.2 -1.0**
comp=Z,5.1nm,0.9s
NC204 NORSAR Array S 74.14 337 *e*P **P 23 49 59.1 -0.2**
NB2 NORSAR Subarra 74.18 337 P **P 23 49 59.2 -0.3**
comp=Z,5.4nm,0.9s,baz=40,slow=6.2
NB200 NORSAR Array S 74.18 337 *e*P **P 23 49 59.3 -0.3**
NOA NORSAR Array B 74.18 337 P **P 23 49 59.3 -0.3**
comp=Z,3.0nm,0.8s,baz=38,slow=5.8,SNR=16
LRM Limekiln Ridge 74.86 44 *e*P **P 23 50 05.1 +1.0**
DLMT Dillon 75.06 44 *e*P **P 23 50 04.3 -0.8**
comp=Z,12nm,0.9s
NV01 Mina Array Sit 75.74 53 *e*P **P 23 50 10.4 +1.2**
NVAR Mina Array Bea 75.74 53 P **P 23 50 10.4 +1.1**
comp=Z,2.5nm,0.7s,baz=296,slow=5.6,SNR=8.0
H17A Grant Village 76.78 44 *e*P **P 23 50 18.0 +2.9**
comp=Z,12nm,1.4s
IMW Indian Meadow 76.89 45 *e*P **P 23 50 17.6 +1.8**
comp=Z,6.1nm,1.2s
FLWY Flagg Ranch 76.91 44 *e*P **P 23 50 18.6 +2.8**
comp=Z,18nm,1.7s
FXWY Fox Creek 77.00 45 *e*P **P 23 50 18.0 +1.7**
comp=Z,2.7nm,1.0s
MOOW Moose Ponds 77.09 45 *e*P **P 23 50 18.4 +1.6**
comp=Z,2.1nm,0.9s
R11A Troy Canyon, C 77.51 51 *e*P **P 23 50 20.3 +1.1**
comp=Z,5.0nm,1.2s
TPNV Topopah Spring 77.93 53 *e*P **P 23 50 22.6 +1.1**
TPNV pmax pmax
comp=Z,5.0nm,1.0s
TPNV Topopah Spring 77.93 53 *e*P **P 23 50 22.6 +1.1**
comp=Z,5.3nm,1.0s
KWP Kalwaria Pacla 77.95 324⇑*i*P **P 23 50 21.6 +0.4**
KWP Kalwaria Pacla 77.95 324⇑P **P 23 50 21.6 +0.4**
HWUT Hardware Ranch 77.96 47 *e*P **P 23 50 23.0 +1.4**
comp=Z,6.5nm,1.2s
BUR08 Bucovina Ar. S 78.09 321 *e*P **P 23 50 22.6 +0.4**
DUG Dugway, Tooele 78.09 49 *e*P **P 23 50 23.2 +0.9**
DUG pmax pmax
comp=Z,8.0nm,1.4s
DUG Dugway, Tooele 78.09 49 *e*P **P 23 50 23.2 +0.9**
comp=Z,8.2nm,1.4s
BURAR Bucovina Array 78.10 321⇓*i*P **P 23 50 22.0 -0.2**
BURAR Bucovina Array 78.10 321⇓P **P 23 50 22.0 -0.2**
TESR Tescani 78.10 320⇑*i*P **P 23 50 21.1 -1.0**
CFR Carcaliu 78.19 318⇑*i*P **P 23 50 22.0 -0.6**
CFR Carcaliu 78.19 318⇑P **P 23 50 22.0 -0.6**
BW06 Boulder Array 78.39 45 *e*P **P 23 50 24.0 -0.1**
PD31 Pinedale Array 78.39 45 *e*P **P 23 50 24.4 +0.4**
PDAR Pinedale Array 78.39 45 P **P 23 50 24.4 +0.4**
comp=Z,0.9nm,0.5s,baz=274,slow=1.7,SNR=13
VRI Vrincioaia 78.49 319⇑*i*P **P 23 50 23.4 -0.9**
VRI Vrincioaia 78.49 319⇑P **P 23 50 23.4 -0.9**
BR101 Keskin Array S 78.51 311 *e*P **P 23 50 24.7 0.0**
BR131 Keskin Array S 78.51 311 *e*P **P 23 50 25.9 +1.2**
BRTR Keskin Array B 78.51 311 P **P 23 50 24.7 0.0**
comp=Z,1.6nm,0.8s,baz=116,slow=4.3,SNR=9.3
KOLS Kolonicke sedl 78.64 324 *e*P **P 23 50 25.1 0.0**
KOLS Kolonicke sedl 78.64 324 *e*P **P 23 50 25.1 0.0**
STHS Stebnicka Huta 78.79 324 *e*P **P 23 50 27.2 +1.3**
STHS pmax pmax
comp=Z,2.0nm,0.9s
STHS Stebnicka Huta 78.79 324 *e*P **P 23 50 27.2 +1.3**
OJC Ojcow 78.89 326 *e*P **P 23 50 26.9 +0.5**
OJC pmax pmax
comp=Z,7.0nm,1.0s
OJC Ojcow 78.89 326 *e*P **P 23 50 26.9 +0.5**
comp=Z,6.5nm,1.0s
BR231 Keskin MP Arra 78.96 312 *e*P **P 23 50 25.6 -1.5**
CRVS Cervenica-Dubn 79.05 324 *e*P **P 23 50 28.9 +1.6**
CRVS Cervenica-Dubn 79.05 324 *e*P **P 23 50 28.9 +1.6**
P17A Butcher Ranch, 79.79 48 *e*P **P 23 50 33.1 +1.4**
comp=Z,16nm,1.4s
MTPU Mount Pierson 79.81 50 *e*P **P 23 50 33.9 +1.7**
comp=Z,2.8nm,0.9s
KNB Kanab 80.06 51 *e*P **P 23 50 35.4 +2.2**
KNB pmax pmax
comp=Z,10.0nm,1.4s
KNB Kanab 80.06 51 *e*P **P 23 50 35.4 +2.2**
comp=Z,9.6nm,1.4s
ULM Lac du Bonnet 80.14 33 P **P 23 50 34.6 +1.4**
comp=Z,3.3nm,0.7s,baz=231,slow=3.1,SNR=4.6
SRU San Rafael Swe 80.15 48 *e*P **P 23 50 34.7 +1.0**
SRU pmax pmax
comp=Z,9.0nm,1.2s
SRU San Rafael Swe 80.15 48 *e*P **P 23 50 34.7 +1.0**
comp=Z,9.4nm,1.2s
MORC Moravsky Berou 80.22 327⇓*i*P **P 23 50 34.0 +0.3**
MORC Moravsky Berou 80.22 327⇓P **P 23 50 34.0 +0.3**
MORC Moravsky Berou 80.22 327 *e*P **P 23 50 34.2 +0.6**
comp=Z,15nm,1.0s
DPC Dobruska-Polom 80.33 327 *e*P **P 23 50 35.3 +1.0**
DPC Dobruska-Polom 80.33 327 *e*P **P 23 50 35.3 +1.0**
KRLC Kraliky 80.33 327 *e*P **P 23 50 34.7 +0.4**
KRLC Kraliky 80.33 327 *e*P **P 23 50 34.7 +0.4**
VYHS Vyhne 80.56 325 *e*P **P 23 50 36.0 +0.5**
VYHS Vyhne 80.56 325 *e*P **P 23 50 36.0 +0.5**
BRG Berggiesshubel 80.94 329 *e*P **P 23 50 37.6 +0.2**
comp=Z,4.5nm,0.9s
BRG Berggiesshubel 80.94 329 *e*P **P 23 50 37.6 +0.2**
comp=Z,4.5nm,0.9s
BRG Berggiesshubel 80.94 329 *e*P **P 23 50 37.7 +0.2**
BRG pmax pmax
comp=Z,5.0nm,0.9s
CLL Collm 81.00 330 *i*P **P 23 50 37.7 0.0**
comp=Z,7.0nm,0.9s
CLL *i* 23 50 39.3
comp=Z,8.0nm,0.8s
CLL Collm 81.00 330 *i*P **P 23 50 37.7 0.0**
CLL pmax pmax
comp=Z,7.0nm,0.9s
CLL Collm 81.00 330 *e*P **P 23 50 37.5 -0.2**
comp=Z,7.4nm,0.8s
GOPC GO Pecny, Ondr 81.31 328 *e*P **P 23 50 40.0 +0.5**
GOPC GO Pecny, Ondr 81.31 328 *e*P **P 23 50 40.0 +0.5**
PRU Pruhonice 81.36 328 *e*P **P 23 50 40.1 +0.4**
PRU Pruhonice 81.36 328 *e*P **P 23 50 40.1 +0.4**
TREC Trest 81.47 327 *e*P **P 23 50 40.8 +0.4**
TREC Trest 81.47 327 *e*P **P 23 50 40.8 +0.4**
PV10 Paradox Valley 81.51 48 *e*P **P 23 50 42.6 +1.5**
KHC Kasperske Hory 82.42 328 *e*P **P 23 50 45.7 +0.3**
KHC *e*PCP **pP 23 50 47.5 -0.6**
KHC Kasperske Hory 82.42 328 *e*P **P 23 50 45.7 +0.3**
KHC Kasperske Hory 82.42 328 *e*P **P 23 50 45.8 +0.3**
comp=Z,1.6nm,0.9s
GERES GERESS Array B 82.58 328 P **P 23 50 45.5 -0.8**
comp=Z,0.9nm,0.5s,baz=41,slow=5.6,SNR=10.0
GEA0 GERESS Array S 82.59 328 *e*P **P 23 50 45.9 -0.4**
GRFO Grafenberg 82.97 330 *e*P **P 23 50 48.9 +0.7**
GRFO pmax pmax
comp=Z,29nm,1.6s
GRFO Grafenberg 82.97 330 *e*P **P 23 50 48.9 +0.7**
comp=Z,29nm,1.6s
S22A 4UR Ranch, Cre 83.24 47 *e*P **P 23 50 51.6 +1.5**
comp=Z,5.9nm,1.3s
BFO Black Forest 85.21 330 *ce*P **P 23 51 00.0 +0.3**
BFO Black Forest 85.21 330 *e*P **P 23 50 57.7 -1.9**
comp=Z,5.6nm,0.8s
ANMO Albuquerque 85.33 49 *ce*P **P 23 51 00.8 +0.1**
ANMO pmax pmax
comp=Z,2.0nm,1.0s
FUORN Ofenpass-Fuorn 85.78 328 *e*P **P 23 51 03.0 +0.2**
comp=Z,5.1nm,0.8s
SCHQ Schefferville 85.82 15 P **P 23 51 02.1 -0.5**
comp=Z,4.5nm,0.9s,baz=281,slow=3.6,SNR=3.5
SCHQ Schefferville 85.82 15 *e*P **P 23 51 02.1 -0.5**
comp=Z,15nm,1.4s
TX31 Lajitas Ar. Si 90.87 52 *e*P **P 23 51 27.8 +0.5**
LTX Lajitas 90.87 52 *e*P **P 23 51 27.7 +0.5**
LTX Lajitas 90.87 52 *e*P **P 23 51 27.7 +0.5**
TXAR Lajitas Array 90.87 52 P **P 23 51 27.7 +0.5**
comp=Z,0.9nm,0.7s,baz=310,slow=2.9,SNR=11
TOA1 Torodi Ar. Sit 117.03 314 *e*PKPdf **PKPdf 23 57 08.2 -0.6**
TORD Torodi Ar. Bea 117.03 314 PKP **PKPdf 23 57 08.2 -0.6**
comp=Z,0.6nm,1.1s,baz=58,slow=3.2,SNR=5.2
LPAZ La Paz 147.46 59 PKPbc **PKPbc 23 58 09.2 +0.7**
comp=Z,1.5nm,0.6s,baz=22,slow=5.3,SNR=9.4

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*ISCJB **09** 23:49:44.6±0.9, 7°.8S±0°.2×68°.1E±0°.2, h15km, mb3.8/7, Error ellipse: s-maj=29.8km s-min=21.8km az=16.3*
*IDC **09** 23:49:44.3±0.9, 7°.88S×68°.01E, h0km, mb3.8/7, mb1 3.9/7, mb1mx3.6/46, mbtmp3.8/7, Error ellipse: s-maj=33.3km s-min=23.2km az=27.0*

ISC 09 23:49:46.6±1.0, 7°.9S±0°.2×68°.0E±0°.2, h15km, n9, σ0s66/9, mb3.9/7, Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LSZ	**Lusaka**	**39.63**	**256**	P	P	**23 57 18.0**	**-0.2**
	3.7nm,0.9s,baz=100,slow=12,SNR=4.0						
BRTR	**Keskin Array B**	**57.03**	**329**	P	P	**23 59 31.9**	**-0.2**
	1.2nm,0.9s,baz=128,slow=9.6,SNR=4.7						
ZALV	**Zalesovo Beam**	**63.20**	**11**	P	P	**00 00 13.2**	**-0.8**
	0.4nm,0.3s,baz=209,slow=6.3,SNR=2.7						
ASAR	**Alice Springs**	**64.85**	**112**	P	P	**00 00 25.6**	**0.0**
	0.7nm,0.9s,baz=245,slow=6.1,SNR=3.3						
SONM	**Songino Array**	**65.00**	**28**	P	P	**00 00 26.7**	**+0.5**
	0.8nm,0.9s,baz=215,slow=7.0,SNR=3.3						
WRA	**Warramunga Arr**	**65.17**	**108**	P	P	**00 00 27.3**	**-0.4**
	1.9nm,1.1s,baz=279,slow=5.6,SNR=3.5						
ESDC	**Sonseca Array**	**81.35**	**312**	P	P	**00 02 03.1**	**+0.2**
	0.1nm,0.2s,baz=132,slow=17,SNR=3.3						
PDAR	**Pinedale Array**	**145.17**	**357**	PKPbc	**PKPdf**	**00 09 24.4**	**+0.1**
	0.6nm,0.6s,baz=48,slow=2.2,SNR=4.3						
NVAR	**Mina Array Bea**	**149.05**	**10**	PKPbc	**PKPbc**	**00 09 36.1**	**+1.2**
	0.9nm,0.7s,baz=359,slow=1.2,SNR=3.6						

IDC 09 23:51:50.9±0.8, 8°.00S×67°.97E, h0km, mb3.8/10, mb1 3.9/10, mb1mx3.6/43, mbtmp3.8/10, MS3.8/5, Ms1 3.8/5, ms1mx3.4/21, Error ellipse: s-maj=24.5km s-min=19.3km az=170.0, Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08N3	**Diego Garcia H**	**3.42**	**61**	T	T	23 56 14.5	
	baz=241,slow=75,SNR=4.6						
H08N2	**Diego Garcia H**	**3.44**	**61**	T	T	23 56 13.9	
	baz=241,slow=75,SNR=6.6						
H08N1	**Diego Garcia H**	**3.44**	**62**	T	T	23 56 14.4	
	baz=241,slow=75,SNR=4.7						
PALK	**Pallekele**	**19.78**	**40**	LR	LR	00 02 19.2	
	comp=Z,456nm,18.4s,baz=296,slow=32						
OPO	**Ambohidratompo**	**22.77**	**240**	LR	LR	00 03 42.0	
	comp=Z,413nm,18.4s,baz=14,slow=31						
ATD	**Arta Tunnel**	**31.64**	**308**	LR	LR	00 08 31.4	
	comp=Z,85nm,19.5s,baz=118,slow=32						
LSZ	**Lusaka**	**39.58**	**256**	P	P	23 59 24.0	-0.4
	3.3nm,0.8s,baz=67,slow=5.0,SNR=4.7						
MATP	**Matopo**	**40.09**	**248**	P	P	23 59 29.0	+0.3
	2.9nm,0.9s,baz=260,slow=1.5,SNR=3.4						
CMAR	**Chiang Mai Arr**	**40.31**	**49**	P	P	23 59 30.5	+0.2
	0.5nm,0.5s,baz=230,slow=7.0,SNR=2.9						
BOSA	**Boshof**	**45.12**	**237**	LR	LR	00 17 57.0	
	comp=Z,275nm,18.4s,baz=61,slow=35						
MKAR	**Makanchi Array**	**56.02**	**12**	P	P	00 01 30.7	-0.7
	0.9nm,0.7s,baz=214,slow=9.9,SNR=3.3						
BRTR	**Keskin Array B**	**57.13**	**329**	P	P	00 01 39.1	-0.5
	1.2nm,1.0s,baz=140,slow=9.2,SNR=3.4						
ZALV	**Zalesovo Beam**	**63.34**	**11**	P	P	00 02 21.7	0.0
	0.8nm,0.7s,baz=214,slow=6.4,SNR=1.9						
ASAR	**Alice Springs**	**64.82**	**112**	P	P	00 02 32.0	-0.2
	0.6nm,0.9s,baz=268,slow=6.1,SNR=3.5						
SONM	**Songino Array**	**65.13**	**27**	P	P	00 02 34.1	+0.4
	0.7nm,0.8s,baz=222,slow=5.6,SNR=3.1						
WRA	**Warramunga Arr**	**65.14**	**108**	P	P	00 02 34.1	-0.2
	1.4nm,1.0s,baz=279,slow=6.3,SNR=4.8						
MJAR	**Matsushiro Arr**	**79.18**	**50**	LR	LR	00 33 42.3	
	comp=Z,20nm,21.9s,baz=160,slow=32						
ESDC	**Sonseca Array**	**81.42**	**312**	P	P	00 04 10.0	-0.1
	0.6nm,0.7s,baz=106,slow=3.2,SNR=2.9						
PDAR	**Pinedale Array**	**145.31**	**357**	PKPbc	PKPbc	00 11 30.3	-0.7
	0.2nm,0.3s,baz=43,slow=1.8,SNR=3.5						
TXAR	**Lajitas Array**	**157.37**	**341**	PKPab	PKPab	00 12 21.2	+0.4
	0.7nm,0.9s,baz=76,slow=5.3,SNR=3.6						

*NIED **09** 23:52:00, 36°.20N×141°.10E, h20km, Mw3.6 Best double couple: M₀2.99000×10¹⁴ NP1:φ=40.00000°, δ40.00000°, λ-77.00000°. NP2:φ=203.00000°, δ51.00000°, λ-101.00000°.*
*IDC **09** 23:52:39.7±0.7, 36°.17N×141°.17E, h0km, mb3.7/10, mb1 3.9/14, mb1mx3.8/43, mbtmp3.8/14, ML3.8/4, Error ellipse: s-maj=18.6km s-min=16.1km az=111.0*
*ISCJB **09** 23:52:40.4±0.8, 36°.25N±0°.03×141°.19E±0°.05, h20km±5km, mb3.9/14, Error ellipse: s-maj=6.4km s-min=4.5km az=7.3*
*JMA **09** 23:52:42.2, 36°.24N×141°.05E, h40km±1km, M3.9*
JMA Felt II J1.
*NEIC **09** 23:52:44.8±0.3, 36°.14N×141°.10E, h35km, mb4.7/5, Error ellipse: s-maj=7.6km s-min=6.3km az=162.0*
NEIC Recorded [2 JMA] in Ibaraki.

ISC 09 23:52:39.2±1.6, 36°.20N±0°.04×141°.21E±0°.05, h3km±10km, n48, σ1§99/54, mb3.8/14, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	0.57	210	P	Pb	23 52 53.6	+1.7
CHOJ				eS	Sb	23 53 01.3	+0.9
JHO	Hitachi	0.66	309	P	Pg	23 52 53.2	+1.3
JHO				S	Sg	23 53 01.2	+0.8
JYT	Yasato	0.82	272	P	Pg	23 52 55.6	+0.7
JYT				S	Sg	23 53 04.8	-0.8
ONAJ	Iwakimizuishiy	0.96	340	P	Pg	23 52 58.0	+0.4
ONAJ				eS	Sg	23 53 09.0	-1.0
JFK	Kawauchi	1.20	347	P	Pg	23 53 01.2	-0.9
JFK				S	Sg	23 53 14.5	-3.1
JAG	Ashikaga	1.44	280	P	Pn	23 53 04.4	-1.8
JAG				S	Sg	23 53 20.4	-4.9
JFT	Otama	1.49	332	P	Pn	23 53 06.6	-0.3
JFT				S	Sn	23 53 23.6	-3.3
MJAR	Matsushiro Arr	2.44	279	Pn	Pn	23 53 19.8	-0.2
9.7nm,0.3s,baz=85,slow=11,SNR=39							
MJAR				Sn	Sn	23 53 49.8	-0.7
12nm,0.3s,baz=208,slow=21,SNR=6.8							
MAJO	Matsushiro	2.45	279	ePn	Pn	23 53 20.2	+0.2
MAT	Matsushiro	2.45	279	P	Pn	23 53 19.9	-0.2
MAT				S	Sn	23 53 48.2	-2.3
MJB9	Matsu-Tunnel	2.45	279	ePn	Pn	23 53 20.3	+0.1
JHJ2	Mitsune	3.29	201	ePn	Pn	23 53 31.7	+0.1
JHJ	Hachijo jima 2	3.29	201	Pn	Pn	23 53 33.2	+1.6
20nm,0.3s,baz=79,slow=23,SNR=2.8							
INU	Inuyama	3.51	257	ePn	Pn	23 53 37.3	+2.6
ERM	Erimo	6.00	14	ePn	Pn	23 54 06.8	-2.1
ERM				eSn	Sn	23 55 16.5	-1.6
ASAJ	Asahikawa	7.98	7	Pn	Pn	23 54 36.5	+0.4
1.0nm,0.3s,baz=253,slow=30,SNR=2.5							
JNU	Nakatsue	9.05	253	ePn	Pn	23 54 49.6	-1.2
CBIJ	Chichi jima	9.12	175	ePn	Pn	23 54 51.1	-0.6
CBIJ				eSn	Sn	23 56 28.5	-6.3
JCJ	Chichijima	9.12	175	Pn	Pn	23 54 52.0	+0.3
4.6nm,0.3s,baz=289,slow=23,SNR=4.5							
JCJ				Sn	Sn	23 56 28.5	-6.3
INCN	Inchon	11.75	281	ePn	Pn	23 55 26.9	-0.9
H11N2	WAKE ISLAND Hy	27.87	119	T	T	00 27 45.6	
baz=312							
H11N1	WAKE ISLAND Hy	27.88	119	T	T	00 27 45.6	
baz=312							
H11N3	WAKE ISLAND Hy	27.89	119	T	T	00 27 47.7	
baz=312							
SONA0	Songino Array	28.12	305	eP	P	23 58 33.8	+1.3
6.0nm,1.8s							
SONM	Songino Array	28.12	305	P	P	23 58 33.8	+1.3
0.3nm,0.4s,baz=109,slow=7.8,SNR=2.7							
H11S1	WAKE ISLAND Hy	28.56	121	T	T	00 28 38.0	
baz=314							
H11S3	WAKE ISLAND Hy	28.56	121	T	T	00 28 38.0	
baz=314							
H11S2	WAKE ISLAND Hy	28.57	121	T	T	00 28 38.0	
baz=314							
ZAA1	Zalesovo Array	42.36	313	eP	P	00 00 34.9	+0.4
ZALV	Zalesovo Beam	42.36	313	P	P	00 00 34.9	+0.5
0.7nm,0.4s,baz=90,slow=2.9,SNR=3.1							
MK32	Makanchi Array	44.43	303	eP	P	00 00 52.4	+1.2
MKAR	Makanchi Array	44.43	303	P	P	00 00 52.4	+1.2
0.6nm,0.9s,baz=89,slow=9.3,SNR=3.8							
OHAK	Old Harbor	47.48	42	eP	P	00 01 12.9	-2.2
48nm,1.8s							
ILAR	Eielson Array	50.29	32	P	P	00 01 37.8	+1.2
0.9nm,0.8s,baz=265,slow=6.5,SNR=9.0							
ILB	Eielson Array	50.29	32	eP	P	00 01 37.8	+1.2
INK	Inuvik	55.20	27	P	P	00 02 14.2	+1.4
0.7nm,0.5s,baz=299,slow=6.2,SNR=5.2							
INK	Inuvik	55.20	27	eP	P	00 02 14.2	+1.4
14nm,1.9s							
WR1	Warramunga Arr	56.21	188	eP	P	00 02 20.8	+0.1
36nm,1.8s							
WRA	Warramunga Arr	56.21	188	P	P	00 02 20.8	+0.1
0.6nm,0.4s,baz=4.6,slow=7.2,SNR=12							
AS31	Alice Springs	59.94	188	eP	P	00 02 47.1	+0.4
4.1nm,1.8s							
ASAR	Alice Springs	59.94	188	P	P	00 02 47.1	+0.4
0.5nm,0.6s,baz=356,slow=5.8,SNR=4.1							
YKA	Yellowknife Ar	64.61	30	P	P	00 03 18.3	+0.7
0.3nm,0.7s,baz=304,slow=6.4,SNR=7.1							
YKB5	Yellowknife Ar	64.61	30	eP	P	00 03 18.3	+0.7
PD31	Pinedale Array	78.37	45	eP	P	00 04 42.6	+1.3
PDAR	Pinedale Array	78.37	45	P	P	00 04 42.6	+1.3
0.2nm,0.4s,baz=258,slow=0.8,SNR=3.7							
LTX	Lajitas	90.76	52	eP	P	00 05 45.5	+1.5
TXAR	Lajitas Array	90.76	52	P	P	00 05 45.5	+1.5
0.3nm,0.7s,baz=328,slow=4.5,SNR=3.5							
LPAZ	La Paz	147.25	60	PKPbc	PKPdf	00 12 25.9	+2.8
0.6nm,0.4s,baz=271,slow=1.4,SNR=4.7							

IDC 09 23:53:34.3±1.1, 8°.12S×68°.03E, h0km, mb3.8/5, mb1 4.0/5, mb1mx3.5/42, mbtmp3.8/5, Error ellipse: s-maj=38.4km s-min=26.1km az=20.0, Chagos Archipelago region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LSZ	Lusaka	39.60	256	P	P	00 01 08.6	+0.5
3.0nm,0.8s,baz=100,slow=9.9,SNR=4.3							
BRTR	Keskin Array B	57.26	329	P	P	00 03 22.9	-1.1
0.8nm,0.9s,baz=138,slow=6.5,SNR=3.9							
ASAR	Alice Springs	64.72	112	P	P	00 04 13.2	-1.7
0.7nm,0.8s,baz=289,slow=5.8,SNR=4.0							
WRA	Warramunga Arr	65.05	108	P	P	00 04 18.6	+1.5
1.9nm,1.0s,baz=275,slow=5.9,SNR=4.3							
SONM	Songino Array	65.21	27	P	P	00 04 18.3	+0.6
0.2nm,0.3s,baz=207,slow=6.0,SNR=2.8							

IDC 09 23:56:11.7±14.0, 7°.71S×68°.23E, h0km, mb3.6/3, mb1 3.6/3, mb1mx3.3/43, mbtmp3.6/3, Error ellipse: s-maj=342.6km s-min=63.5km az=179.0, Chagos Archipelago region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MKAR	Makanchi Array	55.68	12	P	P	00 05 49.8	-0.1
0.9nm,0.9s,baz=179,slow=5.8,SNR=2.6							
BRTR	Keskin Array B	57.02	329	P	P	00 05 59.5	-0.1
0.4nm,0.7s,baz=126,slow=7.3,SNR=2.7							
SONM	Songino Array	64.75	27	P	P	00 06 52.1	0.0
0.2nm,0.3s,baz=216,slow=7.1,SNR=5.6							

JMA 09 23:56:36.2±0.2, 37°.78N×142°.85E, h31km±5km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	1.36	300	P	Pn	23 56 59.9	+0.8
JIO				S	Sn	23 57 16.9	+0.9
OFUJ	Ofunato	1.59	325	P	Pn	23 57 03.1	+0.8
OFUJ				S	Sn	23 57 22.8	+1.0
JMM	Marumori	1.63	274	S	Sn	23 57 23.0	+0.3
JFT	Otama	2.01	263	eS	Sn	23 57 33.2	+1.1

*IDC **09** 23:58:04.0±1.9, 36°.78N×140°.79E, h0km, mb3.5/3, mb1 3.7/4, mb1mx3.3/33, mbtmp3.5/4, ML3.3/1, Error ellipse: s-maj=38.4km s-min=24.7km az=66.0*
*ISCJB **09** 23:58:05.6±0.9, 36°.70N±0°.04×140°.71E±0°.07, h14km±5km, mb3.4/3, Error ellipse: s-maj=10.4km s-min=4.7km az=33.7*
*JMA **09** 23:58:06.7, 36°.75N×140°.58E, h7km±1km, M3.2*
JMA Felt II J1.

ISC 09 23:58:06.2±1.0, 36°.73N±0°.04×140°.59E±0°.07, h13km±7km, n18, σ0§55/21, mb3.5/3, 1C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	Hitachi	0.12	189	P	Pg	23 58 09.6	+0.2
JHO				S	Sg	23 58 11.8	+0.1
ONAJ	Iwakimizuishiy	0.40	24	P	Pg	23 58 14.3	0.0
ONAJ				S	Sg	23 58 20.2	+0.4
JSB	Shiboa	0.59	294	P	Pb	23 58 18.5	0.0
JSB				S	Sb	23 58 26.8	0.0
JYT	Yasato	0.60	213	⇑P	Pb	23 58 18.3	-0.3
JYT				S	Sb	23 58 26.7	-0.2
JFK	Kawauchi	0.67	19	P	Pg	23 58 19.0	-0.3
JFK				S	Sg	23 58 28.0	-0.2
JFT	Otama	0.81	345	P	Pb	23 58 22.0	-0.3
JFT				S	Sg	23 58 32.2	-0.4
JAG	Ashikaga	0.97	252	P	Pb	23 58 24.6	-0.3
JAG				S	Sb	23 58 37.1	-0.5
MJAR	Matsushiro Arr	1.93	265	Pn	Pb	23 58 40.2	-1.1
9.4nm,0.3s,baz=89,slow=15,SNR=25							
MJAR				Sn	Sb	23 59 06.3	+1.0
21nm,0.3s,baz=79,slow=31,SNR=15							
MAT	Matsushiro	1.93	265	P	Pb	23 58 40.6	-0.7
MAT				S	Sb	23 59 06.0	+0.7
H11N2	WAKE ISLAND Hy	28.57	119	T	T	00 33 46.7	
baz=309							
H11N1	WAKE ISLAND Hy	28.57	119	T	T	00 33 48.0	
baz=309							
H11N3	WAKE ISLAND Hy	28.58	119	T	T	00 33 48.8	
baz=309							
H11S1	WAKE ISLAND Hy	29.26	121	T	T	00 34 37.7	
baz=307							
H11S3	WAKE ISLAND Hy	29.26	121	T	T	00 34 37.7	
baz=307							
H11S2	WAKE ISLAND Hy	29.27	121	T	T	00 34 37.7	
baz=307							
ZALV	Zalesovo Beam	41.63	313	P	P	00 05 54.8	+0.8
0.7nm,0.5s,baz=95,slow=7.2,SNR=2.9							
MKAR	Makanchi Array	43.72	302	P	P	00 06 11.6	+0.5
0.4nm,0.7s,baz=91,slow=11,SNR=2.5							
WRA	Warramunga Arr	56.68	187	P	P	00 07 49.1	-0.3
0.4nm,0.8s,baz=2.6,slow=7.1,SNR=3.0							

MAN 10 00:02:14, 13°.63N×120°.59E, h83km, mb3.5, ML2.2, MS1.6, 1C, Mindoro

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LUBP	Lubang	0.34	287	eP	Pn	00 02 29.5	+2.6
LUBP				eS	Sn	00 02 40.4	+4.0
PGP	Puerto Galera	0.38	110	⇑eP	Pn	00 02 29.6	+2.4
PGP				eS	Sn	00 02 40.4	+3.5
SJMP	San Jose	1.27	156	eP	Pn	00 02 38.7	+2.1
SJMP				eS	Sn	00 02 56.4	+2.9
BUSP	Coron	1.66	193	eP	Pn	00 02 42.7	+1.1
BUSP				eS	Sn	00 03 04.0	+1.5
OTRP	Odiongan	1.89	132	eP	Pn	00 02 45.8	+1.4
ENPP	El Nido	2.67	205	eP	Pn	00 02 56.4	+1.5

*ISCJB **10** 00:11:57.9±0.7, 30°.84S±0°.03×72°.26W±0°.07, h12km, mb3.9/3, Error ellipse: s-maj=9.0km s-min=3.8km az=8.4*
*IDC **10** 00:11:58.2±1.2, 30°.91S×72°.13W, h0km, mb4.0/3, mb1 4.0/8, mb1mx3.8/26, mbtmp3.9/8, ML4.0/5, MS2.9/2, Ms1 2.9/2, ms1mx2.7/20, Error ellipse: s-maj=33.5km s-min=26.6km az=83.0*
*GUC **10** 00:11:59.9±0.3, 30°.83S×72°.19W, h45km, ML4.5*

ISC 10 00:11:58.9±0.8, 30°.85S±0°.03×72°.13W±0°.07, h12km, n30, σ2§07/37, mb4.2/3, Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LSCH	La Serena	1.21	39	eP	Pg	00 12 21.3	-1.0
LSCH				eS	Sg	00 12 37.5	-0.5
TLL	Tololo Astrono	1.33	60	eP	Pg	00 12 23.9	-0.7
TLL				eS	Sg	00 12 42.1	+0.1
TLL				IAML		00 12 47.7	
comp=N,8μm,0.5s							
LCO	Las Campanas	2.22	35	eP	Pb	00 12 35.6	-3.4
LCO				i S	Sn	00 13 02.7	-0.5
ROCH	El Roble	2.32	156	eP	Pb	00 12 37.4	-3.5
ROCH				i S	Sn	00 13 06.0	+0.3
ROC1	El Roble	2.32	156	i P	Pn	00 12 37.3	+0.1
ROC1				i S	Sg	00 13 14.9	+1.3
VACH	Vallenar	2.56	28	eP	Pn	00 12 39.9	-0.4
VACH				eS	Sn	00 13 10.0	-1.5
PEL	Peldehue	2.60	152	eP	Pb	00 12 41.6	-3.9
PEL				eS	Sn	00 13 12.0	-0.3
PEL				IAML		00 13 19.4	
comp=N,2μm,0.4s							
RTLS	Leoncito	2.60	112	i P	Pb	00 12 44.8	-0.9
AUSP	Uspallata	2.71	121	i P	Pb	00 12 46.2	-1.4
RCDM	Rinconada Maip	2.86	157	eP	Pn	00 12 44.6	+0.2
RCDM				i S	Sn	00 13 18.0	-0.8
CLCH	Cerro Calan	2.88	152	i P	Pn	00 12 45.2	+0.5
CLCH				eS	Sn	00 13 18.6	-0.6
CLCH				i S	Sn	00 13 18.8	-0.5
CLCH				IAML		00 13 29.3	
comp=N,2μm,0.2s							
RTLL	Cerro Villicun	3.17	100	i P	Pb	00 12 52.1	-3.2
ASAL	Salagasta	3.30	123	i P	Pb	00 12 54.0	-3.5
ASAL				i S	Sg	00 13 45.3	+0.2
ARCO	CERRO ARCO	3.37	127	i P	Pb	00 12 54.9	-3.9
ARCO				i S	Sg	00 13 45.6	-1.6
ARCO				IAML		00 13 50.7	
comp=Z,279nm,0.6s							
AAGR	Agrelo	3.58	129	i P	Pb	00 12 57.5	-4.8
LVC	Limon Verde	8.70	20	Pn	Pn	00 14 05.5	+0.6
comp=Z,8.9nm,0.3s,baz=143,slow=8.9,SNR=2.5							
PLCA	Paso Flores	9.94	173	Pn	Pn	00 14 22.2	+0.5
comp=Z,0.3nm,0.3s,baz=0.2,slow=11,SNR=12							
CPUP	Villa Florida	13.76	75	Pn	Pn	00 15 14.7	+0.8
comp=Z,0.2nm,0.3s,baz=262,slow=12,SNR=3.4							
CPUP				Sn	Sn	00 17 51.0	+4.3
comp=Z,0.2nm,0.3s,baz=266,slow=14,SNR=3.1							
CPUP				LR	LR	00 20 21.0	
comp=Z,62nm,19.6s,baz=322,slow=36							
LPAZ	La Paz	14.95	15	Pn	P	00 15 34.1	-2.2
comp=Z,0.1nm,0.3s,baz=168,slow=5.7,SNR=6.4							
SIV	San Ignacio	17.92	37	P	P	00 16 10.1	+1.4
comp=Z,0.2nm,0.3s,baz=230,slow=7.9,SNR=4.6							
SIV				LR	LR	00 22 35.9	
comp=Z,27nm,18.6s,baz=16,slow=36							
TXAR	Lajitas Array	66.96	330	P	P	00 22 53.2	+1.6
comp=Z,0.1nm,0.4s,baz=161,slow=5.7,SNR=3.2							
BOSA	Boshof	81.61	118	P	P	00 24 18.6	+1.3
comp=Z,7.3nm,1.2s,baz=156,slow=2.3,SNR=3.5							
TORD	Torodi Ar. Bea	83.22	70	P	P	00 24 26.4	+0.9
comp=Z,0.9nm,0.6s,baz=254,slow=3.4,SNR=12							
H11S2	WAKE ISLAND Hy	125.67	271	T	T	02 49 49.6	
baz=116,slow=74,SNR=18							
H11S1	WAKE ISLAND Hy	125.69	271	T	T	02 49 45.9	
baz=116,slow=74,SNR=18							
H11S3	WAKE ISLAND Hy	125.69	271	T	T	02 49 50.8	
baz=116,slow=74,SNR=19							
H11N3	WAKE ISLAND Hy	126.01	273	T	T	02 50 08.8	
baz=117,slow=74,SNR=4.4							
H11N1	WAKE ISLAND Hy	126.02	273	T	T	02 50 13.7	
baz=117							
H11N2	WAKE ISLAND Hy	126.02	273	T	T	02 50 09.7	
baz=117,slow=74,SNR=9.2							
ZALV	Zalesovo Beam	151.57	29	PKPbc	PKPbc	00 31 53.9	+1.4
comp=Z,1.5nm,0.5s,baz=295,slow=3.6,SNR=8.8							

*ISCJB **10** 00:33:14.8±0.2, 14°.14N±0°.04×147°.73E±0°.03, h10km, mb4.7/115, MS3.5/8, Error ellipse: s-maj=5.5km s-min=4.6km az=169.4*
*IDC **10** 00:33:14.2±0.5, 14°.17N×147°.81E, h0km, mb4.5/23, mb1 4.6/24, mb1mx4.5/35, mbtmp4.4/24, ML4.6/1, MS3.4/9, Ms1 3.4/9, ms1mx3.1/35, Error ellipse: s-maj=17.7km s-min=13.1km az=86.0*
*NEIC **10** 00:33:17.6±3.3, 14°.11N×147°.74E, h20km±23km, mb4.9/75, Error ellipse: s-maj=6.8km s-min=4.8km az=80.0*
*MOS **10** 00:33:18.0±1.0, 14°.14N×147°.67E, h33km, mb4.8/28, Error ellipse: s-maj=12.9km s-min=8.0km az=104.9*

ISC 10 00:33:18.3±1.1, 14°.08N±0°.06×147°.86E±0°.06, h26km±7km, n212, σ1§21/207, mb4.8/113, MS3.5/8, 1C-1D, Mariana

Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	Guam	2.94	261	Pn	Pn	00 34 01.2	-2.2
93nm,0.3s,baz=116,slow=7.2,SNR=19							
GUMO				Sn	Sn	00 34 36.9	-1.0
210nm,0.3s,baz=2.1,slow=22,SNR=4.9							
GUMO				LR	LR	00 36 28.7	
comp=Z,434nm,18.1s,baz=86,slow=67							
GUMO	Guam	2.94	261	ePn	Pn	00 34 01.6	-1.7
GUMO				eSn	Sn	00 34 36.2	-1.7
PATS	Pohnpei	12.54	124	ePn	Pn	00 36 09.7	-5.4
PATS				eSn	Sn	00 38 18.9	-15
CBIJ	Chichi jima	13.99	339	ePn	Pn	00 36 32.2	-2.7
H11S3	WAKE ISLAND Hy	18.60	74	T	T	00 56 32.0	
baz=248,slow=73,SNR=58							
H11S1	WAKE ISLAND Hy	18.61	74	T	T	00 56 33.2	
baz=248,slow=73,SNR=51							
H11S2	WAKE ISLAND Hy	18.61	74	T	T	00 56 33.1	
baz=248,slow=73,SNR=49							
H11N1	WAKE ISLAND Hy	19.05	70	T	T	00 57 09.5	
baz=256,slow=75,SNR=21							
H11N2	WAKE ISLAND Hy	19.06	70	T	T	00 57 09.9	
baz=256,slow=75,SNR=17							
H11N3	WAKE ISLAND Hy	19.07	70	T	T	00 57 09.7	
baz=256,slow=75,SNR=38							
JOW	Kunigami	22.27	308	eP	P	00 38 12.0	-1.4
139nm,1.5s							
FAKI	Fak Fak	22.91	224	eP	P	00 38 22.0	+1.7
23nm,0.8s							
PMG	Port Moresby	23.34	182	P	P	00 38 25.2	+0.6
6.2nm,0.4s,baz=320,slow=6.5,SNR=4.2							
PMG				LR	LR	00 46 20.1	
comp=Z,55nm,20.7s,baz=25,slow=34							
PMG	Port Moresby	23.34	182	eP	P	00 38 25.0	+0.3
PMG				pmax	pmax		
comp=Z,93nm,1.7s							
PMG	Port Moresby	23.34	182	eP	P	00 38 25.2	+0.6
comp=Z,14nm,0.9s							
MJAR	Matsushiro Arr	23.98	341	P	P	00 38 28.8	-1.9
comp=Z,4.6nm,0.8s,baz=168,slow=9.7,SNR=7.7							
MAJO	Matsushiro	23.98	341	eP	P	00 38 28.5	-2.2
MAJO				pmax	pmax		
comp=Z,43nm,0.8s							
JNU	Nakatsue	24.46	324	P	P	00 38 33.2	-2.0
comp=Z,11nm,1.0s,baz=149,slow=10,SNR=4.4							
YULB	Yu-li	26.77	294	eP	P	00 38 56.1	0.0
comp=Z,93nm,2.0s							
SSLB	Suanglung	27.18	295	eP	P	00 38 59.6	-0.2
comp=Z,28nm,1.1s							
COEN	Coen	28.24	190	eP	P	00 39 10.8	+1.5
comp=Z,67nm,1.9s							
KSRS	Korea Array	29.27	326	P	P	00 39 16.6	-1.7
comp=Z,5.0nm,0.9s,baz=145,slow=9.0,SNR=14							
KSRS				LR	LR	00 50 08.0	
comp=Z,54nm,21.3s,baz=168,slow=35							
KS15	Wonju Array Si	29.29	326	eP	P	00 39 16.6	-1.9
KSAR	Wonju Array Be	29.29	326	P	P	00 39 16.6	-1.9
KS01	Wonju Array Si	29.30	326	eP	P	00 39 16.8	-1.8
MTN	Manton Dam	31.47	213	eP	P	00 39 37.6	-0.3
comp=Z,39nm,1.3s							
USRK	Ussuriysk Ar.	32.94	339	P	P	00 39 51.0	+0.4
comp=Z,2.2nm,0.7s,baz=141,slow=9.6,SNR=6.1							
WRAB	Tennant Creek	36.32	202	ceP	P	00 40 20.6	+0.6
WRAB				pmax	pmax		
comp=Z,41nm,1.2s							
WRAB	Tennant Creek	36.32	202	eP	P	00 40 20.1	+0.1
comp=Z,20nm,0.8s							
WRAB				ePP	PnPn	00 41 40.5	-2.0
WB2	Warramunga Arr	36.33	202	eP	P	00 40 20.2	+0.1
comp=Z,29nm,0.9s							
WR1	Warramunga Arr	36.33	202	eP	P	00 40 20.1	0.0
comp=Z,26nm,0.8s							
WR1				ePcP	PcP	00 42 45.9	+1.3
WRA	Warramunga Arr	36.33	202	P	P	00 40 20.1	-0.1
comp=Z,16nm,0.7s,baz=25,slow=9.5,SNR=30							
WRA				PcP	PcP	00 42 45.9	+1.2
comp=Z,1.5nm,0.9s,baz=0.6,slow=3.3,SNR=6.3							
BJI	Beijing	37.93	319	P	P	00 40 34.5	+1.0
AS01	Alice Springs	39.90	200	eP	P	00 40 50.0	-0.2
AS31	Alice Springs	39.92	200	eP	P	00 40 50.4	0.0
comp=Z,1.9nm,1.0s							
AS31				ePcP	PcP	00 42 56.5	+0.8
ASAR	Alice Springs	39.92	200	P	P	00 40 50.4	0.0
comp=Z,2.4nm,0.7s,baz=18,slow=7.5,SNR=30							
ASAR				PcP	PcP	00 42 56.5	+0.8
comp=Z,1.0nm,0.8s,baz=17,slow=3.1,SNR=4.2							
HHC	Hu-ho-hao-te	41.34	317	eP	P	00 41 02.5	+0.4
HHC				S	S	00 47 15.9	+0.7
MSVF	Nonsavu	43.43	136	eP	P	00 41 19.2	-0.1
comp=Z,19nm,1.3s							
KMI	Kunming	43.72	292	P	P	00 41 22.9	+1.1
CD2	Chengdu	43.74	300	P	P	00 41 20.5	-1.2
CHAI	Chaiyaphum	44.28	278	P	P	00 41 30.5	+4.4
comp=Z,6.0nm,0.8s,comp=Z,101nm							
LOEI	Loei	44.88	281	P	P	00 41 33.9	+3.0
comp=Z,7.4nm,1.1s							
LZH	Lanzhou	45.01	307	eP	P	00 41 34.0	+2.1
LZH				pP	sP	00 41 44.3	+1.1
LZH				sP	pP	00 41 48.2	+8.3
LZH				PP	PP	00 43 20.7	+3.4
LZH				eS	S	00 48 08.1	-1.1
LZH				sS	sS	00 48 26.2	+3.7
LZH				SS	ScS	00 51 23.7	-4.1
PBKT	Sadao Pong	45.21	279	P	P	00 41 39.2	+5.7
comp=Z,20nm,1.1s							
UTTA	Uttaradit	45.55	281	P	P	00 41 41.3	+5.1
comp=Z,3.0nm,0.9s							
CRAI	Chiangrai	45.66	285	P	P	00 41 43.5	+6.4
comp=Z,302nm,1.3s							
SUKH	Sukhothai	46.44	281	P	P	00 41 49.0	+5.8
comp=Z,3.5nm,1.1s							
CMAI	Chiengmai2	46.91	284	P	P	00 41 52.5	+5.3
CHTO	Chiang Mai	47.04	283	eP	P	00 41 46.0	-1.9
comp=Z,6.5nm,0.9s							
CM01	Chiang Mai Arr	47.04	282	eP	P	00 41 48.7	+0.8
ULN	Ulaanbaatar	47.68	323	eP	P	00 41 53.5	+0.8
ULN				pmax	pmax		
comp=Z,5.0nm,1.0s							
ULN	Ulaanbaatar	47.68	323	eP	P	00 41 52.8	+0.1
comp=Z,3.8nm,0.8s							
BBOO	Buckleboo	47.97	193	eP	P	00 41 54.5	-0.3
comp=Z,68nm,2.0s							
SONA0

	comp=Z,29nm,0.7s						
PKIN	Phulchoki	59.37	294	*e*Pn		P	00 43 21.4 +2.5
	comp=Z,7.4nm,0.6s						
KKN	Kakani	59.47	294	*e*Pn		P	00 43 21.4 +1.8
DMN	Daman	59.62	294	*e*Pn		P	00 43 21.6 +0.9
	comp=Z,12nm,0.5s						
GKN	Gorkha	60.04	294	*e*Pn		P	00 43 23.7 +0.3
KOLN	Koldanda	60.96	294	*e*Pn		P	00 43 30.0 +0.2
	comp=Z,14nm,0.9s						
PYUN	Piuthan	61.49	294	*e*Pn		P	00 43 33.3 -0.1
ZAA0	Zalesovo Array	62.94	324	*e*P		P	00 43 42.3 0.0
ZALV	Zalesovo Beam	62.94	324	P		P	00 43 41.7 -0.6
	comp=Z,2.2nm,0.7s,baz=115,slow=6.7,SNR=9.4						
ZAA1	Zalesovo Array	62.94	324	*e*P		P	00 43 41.7 -0.6
MK01	Makanchi Array	63.16	315	*e*P		P	00 43 44.4 +0.4
MK31	Makanchi Array	63.17	315	P		P	00 43 44.7 +0.7
MK31	Makanchi Array	63.17	315	*e*P		P	00 43 44.8 +0.7
MK32	Makanchi Array	63.17	315	*e*P		P	00 43 44.4 +0.3
MKAR	Makanchi Array	63.17	315	P		P	00 43 44.4 +0.3
	comp=Z,3.6nm,0.5s,baz=90,slow=8.3,SNR=73						
MKAR				LR		LR	01 13 21.6
	comp=Z,27nm,18.4s,baz=156,slow=38						
MKAR	Makanchi Array	63.17	315	*e*P		P	00 43 44.8 +0.7
MAKZ	Makanchi	63.38	315	*e*P		P	00 43 46.0 +0.5
	comp=Z,10nm,1.1s						
NVS	Novosibirsk	64.04	324	*e*P		P	00 43 50.0 +0.4
NVS				pmax		pmax	
	comp=Z,8.0nm,1.0s						
NVS				pmax		pmax	
	comp=N,3.0nm,0.8s						
NVS				pmax		pmax	
	comp=E,5.0nm,1.0s						
CAST	Castle Rocks	64.30	26	*e*P		P	00 43 51.9 +0.8
	comp=E,11nm,1.1s						
RC01	Rabbit Creek A	64.55	28	*e*P		P	00 43 53.5 +0.6
	comp=E,14nm,1.0s						
KTH	Kantishna Hill	64.83	26	*e*P		P	00 43 54.9 +0.2
	comp=E,16nm,1.2s						
BPAW	Bear Paw Mtn.	64.99	25	*e*P		P	00 43 56.2 +0.5
	comp=E,12nm,1.2s						
MLY	Manley	65.42	24	*e*P		P	00 43 59.3 +0.8
MLY				*ep*P		pP	00 44 06.0 -0.8
RND	Reindeer	65.66	26	*e*P		P	00 43 58.6 -1.4
	comp=E,7.2nm,1.1s						
KURK	Kurchatov	66.09	319	*e*P		P	00 44 03.6 +0.6
KURK				pmax		pmax	
	comp=Z,24nm,1.7s						
KURK	Kurchatov	66.09	319	*e*P		P	00 44 03.9 +0.9
	comp=Z,12nm,0.9s						
WRH	Wood River Hil	66.31	25	*e*P		P	00 44 03.5 -0.6
	comp=Z,7.4nm,1.1s						
MDM	Murphy Dome	66.40	25	*e*P		P	00 44 06.5 +1.7
	comp=Z,4.1nm,0.8s						
COLD	Coldfoot	66.40	22	*e*P		P	00 44 05.6 +0.9
	comp=Z,4.0nm,0.9s						
CCB	Clear Creek Bu	66.48	25	*e*P		P	00 44 04.7 -0.6
	comp=Z,4.6nm,0.8s						
NRIK	Noril'sk	66.64	340	P		P	00 44 06.0 -0.2
	comp=Z,5.3nm,0.6s,baz=106,slow=7.6,SNR=10						
NRIK				LR		LR	01 12 40.6
	comp=Z,29nm,21.9s,baz=120,slow=36						
NRIK	Noril'sk	66.64	340	P		P	00 44 06.0 -0.2
NRIK				pmax		pmax	
	comp=Z,5.0nm,0.6s						
IL1	Eielson Array	66.89	25	*e*P		P	00 44 05.8 -2.0
ILAR	Eielson Array	66.89	25	P		P	00 44 06.7 -1.2
	comp=Z,3.8nm,1.1s,baz=253,slow=5.0,SNR=16						
ILAR	Eielson Array	66.89	25	P		P	00 44 06.7 -1.2
ILAR				pmax		pmax	
	comp=Z,2.0nm,0.7s						
ILB	Eielson Array	66.89	25	*e*P		P	00 44 06.7 -1.2
PAX	Paxson	67.01	27	P		P	00 44 09.2 +0.5
PAX	Paxson	67.01	27	*e*P		P	00 44 09.3 +0.5
	comp=Z,5.6nm,1.0s						
KSH	Kashi	67.26	307	*e*P		P	00 44 12.8 +1.9
KSH				*ep*P		sP	00 44 23.5 +1.1
KSH				*e*PP		PP	00 46 42.3 +3.1
KSH				PcS			00 48 43.8
KSH				S		S	00 53 03.6 -0.9
KSH				ScS		SKSac	00 54 05.4 -1.6
DOT	Dot Lake	67.79	27	*e*P		P	00 44 13.3 -0.3
	comp=Z,11nm,0.8s						
FYU	Fort Yukon	68.05	23	*e*P		P	00 44 16.3 +1.1
	comp=Z,20nm,1.1s						
AAK	Ala-Archa	68.40	310	*e*P		P	00 44 18.0 -0.1
AAK				pmax		pmax	
	comp=Z,3.0nm,1.1s						
PPT	Papeete	69.27	115	LR		LR	01 09 28.5
	comp=Z,89nm,21.2s,baz=203,slow=31						
EGAK	Eagle	69.28	26	*e*P		P	00 44 23.5 +0.6
	comp=Z,10.0nm,1.1s						
DAWY	Dawson	69.90	27	*e*P		P	00 44 27.6 +0.8
	comp=Z,7.7nm,1.1s						
BRVK	Borovoye	71.42	322	*e*P		P	00 44 36.5 +0.4
BRVK				pmax		pmax	
	comp=Z,11nm,1.7s						
BRVK	Borovoye	71.42	322	*e*P		P	00 44 36.5 +0.4
	comp=Z,25nm,1.8s						
ZRNK	Zerenda	72.19	321	P		P	00 44 40.5 -0.3
ZRNK	Zerenda	72.19	321	*e*P		P	00 44 40.5 -0.3
	comp=Z,3.0nm,0.8s						
INK	Inuvik	72.81	22	*e*P		P	00 44 44.3 +0.2
	comp=Z,5.7nm,0.8s						
DLBC	Dease Lake	74.00	33	*e*P		P	00 44 52.5 +1.0
	comp=Z,10nm,1.1s						
SVE	Sverdlovsk	76.83	326	*e*P		P	00 45 07.6 -0.1
ARU	Arti	78.02	325	*d i*P		P	00 45 14.8 +0.5
ARU				S		S	00 55 06.2 -0.2
ARU				pmax		pmax	
	comp=Z,8.0nm,1.7s						
ABKAR	Akbulak array	78.13	318	*e*P		P	00 45 14.5 -0.5
YKW3	Yellowknife Ar	81.06	28	*e*P		P	00 45 30.6 -0.2
	comp=Z,6.0nm,1.0s						
YKA	Yellowknife Ar	81.08	28	P		P	00 45 30.7 -0.2
	comp=Z,3.1nm,0.8s,baz=286,slow=5.3,SNR=44						
YKB5	Yellowknife Ar	81.08	28	*e*P		P	00 45 30.7 -0.2
GEYT	Alibeck	81.29	307	P		P	00 45 33.6 +1.1
	comp=Z,1.8nm,0.7s,baz=70,slow=1.7,SNR=6.4						
GEYT				LR		LR	01 26 05.9
	comp=Z,37nm,18.4s,baz=200,slow=39						
B08A	Colville Reser	81.47	42	*e*P		P	00 45 34.0 +0.7
	comp=Z,6.3nm,1.0s						
K05A	Summer Lake	81.50	48	*e*P		P	00 45 35.1 +1.3
	comp=Z,7.4nm,0.8s						
AFDM	Forest Hills D	82.19	52	*e*P		P	00 45 38.7 +1.4
	comp=Z,6.5nm,1.0s						
C09A	Chrisman Ranch	82.28	43	*e*P		P	00 45 38.0 +0.5
	comp=Z,29nm,0.1s						
G08A	Pilot Rock	82.35	45	*e*P		P	00 45 39.2 +1.1
	comp=Z,3.7nm,0.9s						
CMB	Columbia Colle	82.83	53	P		P	00 45 41.6 +0.9
CMB	Columbia Colle	82.83	53	*e*P		P	00 45 41.6 +0.9
	comp=Z,7.2nm,0.8s						
NEW	Newport	82.93	42	P		P	00 45 41.3 +0.4
NEW	Newport	82.93	42	*e*P		P	00 45 41.3 +0.4
	comp=Z,4.5nm,0.9s						
WVOR	Wild Horse Val	83.19	48	*e*P		P	00 45 43.5 +0.9
	comp=Z,7.3nm,0.9s						
RES	Resolute Bay	83.40	14	*e*P		P	00 45 42.9 +0.2
	comp=Z,3.7nm,0.9s						
NV01	Mina Array Sit	84.34	52	*e*P		P	00 45 49.0 +0.4
NVAR	Mina Array Bea	84.34	52	P		P	00 45 49.0 +0.4
	comp=Z,4.9nm,0.7s,baz=266,slow=6.0,SNR=23						
BSMT	Bassoo Peak	84.55	42	*e*P		P	00 45 50.4 +0.9
WALA	Waterton Lakes	84.80	41	*e*P		P	00 45 51.8 +1.2
	comp=Z,11nm,1.4s						
DAC	Darwin (Calif)	85.40	54	*e*P		P	00 45 54.8 +0.9
	comp=Z,4.7nm,0.8s						
HLID	Hailey	85.92	46	*e*P		P	00 45 56.8 +0.4
	comp=Z,3.4nm,0.8s						
ELK	Elko	86.07	49	*e*P		P	00 45 58.4 +1.1
	comp=Z,6.2nm,0.8s						
R11A	Troy Canyon, C	86.43	52	*e*P		P	00 45 59.7 +0.7
	comp=Z,2.3nm,0.9s						
LRM	Limekiln Ridge	86.64	44	*e*P		P	00 46 00.5 +0.5
MCMT	McKenzie Canyo	86.66	45	*e*P		P	00 46 00.9 +0.8
PFO	Pinyon Flats O	86.96	56	*e*P		P	00 46 02.8 +1.2
SHPR	Sheep Range	87.24	53	*e*P		P	00 46 04.3 +1.3
	comp=Z,3.4nm,0.8s						
ARA0	ARCESS Array S	87.50	343	*e*P		P	00 46 02.7 -0.6
ARCES	ARCESS Array B	87.50	343	P		P	00 46 02.7 -0.6
	comp=Z,3.2nm,0.7s,baz=68,slow=8.0,SNR=7.4						
HVU	Hansel Valley	87.57	48	*e*P		P	00 46 05.6 +1.2
	comp=Z,6.8nm,0.8s						
QLMT	Earthquake Lak	87.62	44	*e*P		P	00 46 06.1 +1.4
BGU	Big Grassy Mou	87.63	48	*e*P		P	00 46 05.5 +0.7
	comp=Z,18nm,1.9s						
PSUT	Pine Spring	87.69	51	*e*P		P	00 46 05.8 +0.6
	comp=Z,9.1nm,0.8s						
DUG	Dugway, Tooele	88.00	49	*e*P		P	00 46 07.2 +0.7
	comp=Z,11nm,0.8s						
IMW	Indian Meadow	88.24	45	*e*P		P	00 46 09.0 +1.2
	comp=Z,3.7nm,0.8s						
FXWY	Fox Creek	88.26	45	*e*P		P	00 46 08.6 +0.8
	comp=Z,3.7nm,1.1s						
FLWY	Flagg Ranch	88.35	45	*e*P		P	00 46 09.8 +1.6
	comp=Z,6.5nm,0.8s						
MOOW	Moose Ponds	88.42	45	*e*P		P	00 46 09.5 +0.9
	comp=Z,11nm,1.9s						
AHID	Auburn Hatcher	88.47	46	*e*P		P	00 46 09.6 +0.8
	comp=Z,6.2nm,0.8s						
HWUT	Hardware Ranch	88.49	48	*e*P		P	00 46 09.6 +0.7
	comp=Z,8.0nm,0.8s						
LCMT	Little Creek M	88.58	52	*e*P		P	00 46 10.8 +1.4
	comp=Z,4.3nm,1.0s						
NLU	North Lily Min	88.61	49	*e*P		P	00 46 10.4 +0.9
	comp=Z,6.9nm,0.8s						
TCUT	Toone Canyon	88.75	48	*e*P		P	00 46 10.9 +0.7
	comp=Z,12nm,0.7s						
JLU	Jordanelle	88.88	48	*e*P		P	00 46 11.4 +0.6
	comp=Z,8.6nm,0.8s						
KNB	Kanab	88.90	52	*e*P		P	00 46 12.6 +1.7
	comp=Z,10nm,0.9s						
MSU	Marysvale	88.96	51	*e*P		P	00 46 12.6 +1.4
RLMT	Red Lodge	88.99	44	*e*P		P	00 46 12.7 +1.5
	comp=Z,2.6nm,0.7s						
PKCU	Pink Cliffs	89.17	52	*e*P		P	00 46 18.1 +5.8
U15A	North Rim	89.48	53	*e*P		P	00 46 15.4 +1.6
	comp=Z,7.9nm,0.8s						
PD31	Pinedale Array	89.55	46	*e*P		P	00 46 13.5 -0.4
PDAR	Pinedale Array	89.55	46	P		P	00 46 13.5 -0.4
	comp=Z,0.4nm,0.5s,baz=275,slow=1.9,SNR=3.6						
Y14A	Wickenburg	89.64	55	*e*P		P	00 46 15.2 +1.0
	comp=Z,34nm,0.7s						
SRU	San Rafael Swe	90.01	50	*e*P		P	00 46 16.8 +0.7
	comp=Z,6.1nm,0.7s						
OBN	Obninsk	90.26	328	*i* P		P	00 46 14.8 -1.8
OBN				pmax		pmax	
	comp=Z,4.0nm,0.8s						
WUAZ	Wupatki	90.46	53	*e*P		P	00 46 19.9 +1.7
	comp=Z,11nm,0.8s						
ZEI	Tsey	90.50	314	*e*P		P	00 46 15.8 -2.5
ZEI				pmax		pmax	
	comp=Z,6.0nm,0.8s						
VNDA	Vanda	91.78	177	P		P	00 46 22.8 -0.3
	comp=Z,1.8nm,0.9s,baz=318,slow=3.2,SNR=5.6						
FIA1	FINESS Array S	91.92	336	*e*P		P	00 46 22.3 -1.9
FIA0	FINESS Array S	91.92	336	*e*P		P	00 46 22.3 -1.9
FINES	FINESS Array B	91.92	336	P		P	00 46 22.3 -1.9
	comp=Z,4.4nm,0.5s,baz=70,slow=4.7,SNR=50						
SMCO	Snowmass	92.59	49	*e*P		P	00 46 29.2 +0.9
	comp=Z,4.7nm,0.8s						
N23A	Red Feather La	92.73	47	*e*P		P	00 46 30.1 +1.4
	comp=Z,9.2nm,1.3s						
ANMO	Albuquerque	94.45	52	*e*P		P	00 46 38.1 +1.4
ANMO				pmax		pmax	
	comp=Z,7.0nm,2.5s						
ULM	Lac du Bonnet	95.18	35	P		P	00 46 39.1 -0.3
	comp=Z,2.8nm,0.6s,baz=289,slow=3.9,SNR=3.4						
AKASG	Malin Array Be	96.27	326	LR		LR	01 34 10.3
	comp=Z,20nm,18.2s,baz=225,slow=38						
MNTX	Cornudas Mount	96.44	55	*e*P		P	00 46 46.8 +1.1
	comp=Z,2.5nm,0.7s						
NB2	NORSAR Subarra	97.60	340	P		P	00 46 48.6 -1.6
	comp=Z,0.7nm,0.6s,baz=54,slow=5.1						
NB200	NORSAR Array S	97.60	340	*e*P		P	00 46 48.7 -1.6
NOA	NORSAR Array B	97.60	340	P		P	00 46 48.7 -1.6
	comp=Z,0.3nm,0.8s,baz=51,slow=4.2,SNR=5.8						
HPIG		97.86	60	*e*P		Pdif	00 46 54.6 +2.2
	comp=Z,28nm,0.4s						
LTX	Lajitas	98.67	57	*e*P		Pdif	00 46 56.4 +0.6
TXAR	Lajitas Array	98.67	57	P		Pdif	00 46 56.4 +0.6
	comp=Z,0.4nm,0.8s,baz=256,slow=3.7,SNR=4.2						
BR101	Keskin Array S	98.81	315	*e*P		P	00 46 55.3 -0.9
BRTR	Keskin Array B	98.81	315	P		P	00 46 55.3 -0.9
	comp=Z,0.5nm,0.9s,baz=228,slow=3.1,SNR=4.2						
SNAA	Sanae	119.80	190	PKP		PKPdf	00 52 04.3 -1.3
VNA2	Neumayer--Watz	121.20	189	PKP		PKPdf	00 52 07.6 -0.6
	baz=178,slow=1.3						
VNA3	Neumayer Olymp	121.25	188	PKP		PKPdf	00 52 07.3 -1.0
TOA1	Torodi Ar. Sit	136.93	307	*e*PKPpre		PKPpre	00 52 33.4
TORD	Torodi Ar. Bea	136.93	307	PKhKP		PKPpre	00 52 33.4
	comp=Z,0.3nm,0.8s,baz=34,slow=3.5,SNR=3.1						
PB01	IPOC Station P	143.79	106	*e*PKPdf		PKPbc	00 52 50.4 +0.7
LVC	Limon Verde	144.16	109	*e*PKPdf		PKPdf	00 52 52.6 -0.4
LPAZ	La Paz	145.22	98	PKPbc		PKPdf	00 52 56.1 +0.8
	comp=Z,7.0nm,0.5s,baz=318,slow=2.6,SNR=49						
DBIC	Dimbokro	145.97	306	PKPbc		PKPbc	00 52 56.5 -0.1
	comp=Z,10nm,0.6s,baz=38,slow=3.6,SNR=24						
KIC	Kosan Boka	146.06	305	*e*P		PKPdf	00 52 56.2 +0.1
	comp=Z,78nm,1.3s						
TIC	Toumodi	146.11	306	*e*P		PKPab	00 52 58.0 +0.3
LIC	Lamto	146.37	305	*e*P		PKPbc	00 52 57.8 0.0
	comp=Z,147nm,2.3s						
SAML	Samuel	149.18	84	*e*PKPdf		PKPdf	00 53 01.8 +0.6
PTGA	Pitinga	149.44	67	PKPbc		PKPbc	00 53 06.3 +0.1
	comp=Z,4.7nm,0.5s,baz=322,slow=23,SNR=11						
CPUP	Villa Florida	153.46	121	PKPbc		PKPbc	00 53 15.3 +0.3

IDC 10 00:42:29.8±1.1, 25°.16N×45°.48W, h0km, mb3.6/7, mb1 3.8/7, mb1mx3.6/33, mbtmp3.6/7, Error ellipse: s-maj=31.9km s-min=24.3km az=8.0, Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H10N2	ASCENSION HYDR	44.56	133	T	T	01 38 27.9	
	baz=318,slow=75,SNR=30						
H10N3	ASCENSION HYDR	44.56	133	T	T	01 38 27.9	
	baz=318,slow=75,SNR=24						
H10N1	ASCENSION HYDR	44.58	133	T	T	01 38 29.1	
	baz=318,slow=75,SNR=27						
H10S1	ASCENSION HYDR	45.28	135	T	T	01 39 17.3	
	baz=319,slow=74,SNR=8.1						
H10S3	ASCENSION HYDR	45.28	135	T	T	01 39 17.4	
	baz=319,slow=74,SNR=8.8						
H10S2	ASCENSION HYDR	45.30	135	T	T	01 39 18.5	
	baz=319,slow=74,SNR=6.9						
TORD	Torodi Ar. Bea	45.92	96	P	P	00 50 54.4	-0.2
	0.4nm,0.9s,baz=297,slow=9.5,SNR=2.4						
LPAZ	La Paz	46.73	211	P	P	00 51 01.5	-0.1
	0.8nm,0.8s,baz=328,slow=2.0,SNR=3.9						
PDAR	Pinedale Array	54.71	306	P	P	00 52 01.4	+0.1
	0.5nm,0.8s,baz=69,slow=8.1,SNR=4.7						
YKA	Yellowknife Ar	58.38	329	P	P	00 52 26.3	-0.4
	0.5nm,0.8s,baz=96,slow=7.6,SNR=8.6						
AKASG	Malin Array Be	61.43	44	P	P	00 52 47.9	+0.1
	0.2nm,0.3s,baz=278,slow=6.5,SNR=4.3						
BRTR	Keskin Array B	66.36	56	P	P	00 53 20.8	+0.1
	0.8nm,0.8s,baz=271,slow=5.2,SNR=7.3						
ILAR	Eielson Array	72.23	334	P	P	00 53 56.6	+0.1
	0.5nm,0.7s,baz=83,slow=6.8,SNR=6.5						

DDA ***10*** *00:46:07.3, 41°.23N×43°.76E, h7km, Md3.2*
TIF ***10*** *00:46:07.2, 41°.20N×43°.79E, h13km±1km*
ISCJB ***10*** *00:46:08.3±0.5, 41°.22N±0°.02×43°.78E±0°.02, h5km±4km, Error ellipse: s-maj=4.4km s-min=2.7km az=150.9*
CSEM ***10*** *00:46:08.3±0.1, 41°.23N×43°.77E, h5km, ML2.7, Error ellipse: s-maj=2.8km s-min=1.6km az=146.0*
ISK ***10*** *00:46:08.4, 41°.15N×43°.87E, h9km, MD3.0*
ISC 10 00:46:08.4±0.9, 41°.22N±0°.02×43°.78E±0°.02, h11km±6km, n40, σ0°.41/74, Turkey-Georgia-Armenia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BGD	Bogdanovka	0.14	288	P	Pg	00 46 12.0	+0.1
BGD				S	Sg	00 46 14.7	+0.3
BGD	Bogdanovka	0.14	288	P	Pg	00 46 12.0	+0.1
BGD				S	Sg	00 46 14.6	+0.3
AKH	Akhalkalaki	0.29	312	P	Pg	00 46 14.2	-0.2
AKH				S	Sg	00 46 18.3	0.0
AKH	Akhalkalaki	0.29	312	P	Pg	00 46 14.2	-0.2
AKH				S	Sg	00 46 18.3	0.0
KZR	Kazreti	0.51	71	P	Pg	00 46 18.2	-0.1
KZR				S	Sg	00 46 25.0	-0.1
KZR	Kazreti	0.51	71	P	Pg	00 46 18.2	-0.1
KZR				S	Sg	00 46 24.9	-0.1
EAK	Akyaka	0.55	194	P	Pg	00 46 18.9	-0.3
EAK				S	Sg	00 46 26.2	-0.2
EAK	Akyaka	0.55	194	*i* P	Pg	00 46 18.9	-0.3
EAK				*i* S	Sg	00 46 26.2	-0.2
KARS	Kars	0.79	222	*e*PG	Pb	00 46 24.2	-0.2
KARS				*e*SG	Sb	00 46 35.3	+0.1
KARS	Kars	0.79	222	*e*Pg	Pb	00 46 24.2	-0.2
KARS				*e*Sg	Sb	00 46 35.3	+0.1
EPOS	Posof	0.84	290	P	Pg	00 46 24.2	-0.4
EPOS				S	Sg	00 46 35.5	-0.1
EPOS	Posof	0.84	290	*i* P	Pg	00 46 24.2	-0.4
EPOS				*i* S	Sg	00 46 35.5	-0.1
TBLG	Delisi	0.88	54	*e*PG	Pb	00 46 25.9	+0.1
TBLG				*e*SG	Sb	00 46 38.1	+0.4
TBLG	Delisi	0.88	54	P	Pg	00 46 24.8	-0.7
TBLG				S	Sg	00 46 37.0	0.0
TBLG	Delisi	0.88	54	P	Pg	00 46 24.9	-0.6
TBLG	Delisi	0.88	54	*e*Pg	Pb	00 46 25.9	+0.1
TBLG				S	Sg	00 46 36.9	-0.1
TBLG				*e*Sg	Sb	00 46 38.1	+0.4
SEAG	Tbilisi Sea	0.94	54	P	Sg	00 46 38.9	0.0
DUS	Dusheti	1.11	38	P	Pb	00 46 29.8	0.0
DUS				S	Sn	00 46 46.0	+0.6
DUS	Dusheti	1.11	38	P	Pb	00 46 29.8	0.0
DUS				S	Sn	00 46 46.0	+0.6
DGRG	David-gareji	1.22	79	P	Pn	00 46 31.2	-0.4
DGRG				S	Sb	00 46 47.5	0.0
SENK	Senkaya-Erzuru	1.27	239	*e*PN	Pg	00 46 32.9	+0.1
SENK				*e*SN	Sn	00 46 50.6	+1.2
SENK	Senkaya-Erzuru	1.27	239	*e*Pn	Pg	00 46 32.9	+0.1
SENK				*e*Sn	Sn	00 46 50.6	+1.2
GUDG	Gudauri	1.35	23	P	Pg	00 46 34.1	-0.2
GUDG				S	Sg	00 46 52.0	+0.1
GUDG	Gudauri	1.35	23	P	Pg	00 46 34.1	-0.2
GUDG				S	Sg	00 46 52.0	+0.1
ONI	Oni	1.39	350	P	Pn	00 46 33.8	-0.1
ONI				S	Sg	00 46 53.3	+0.1
ONI	Oni	1.39	350	P	Pn	00 46 33.8	-0.1
ONI				S	Sg	00 46 52.9	-0.3
ARTV	Artvin	1.40	269	P	Pn	00 46 34.1	0.0
ARTV				S	Sb	00 46 52.0	-0.6
ARTV	Artvin	1.40	269	*i* P	Pn	00 46 34.1	0.0
ARTV				*i* S	Sb	00 46 52.0	-0.6
DAGI	Agillar	1.41	265	*i* P	Pn	00 46 34.4	+0.1
DAGI				*i* S	Sb	00 46 53.3	+0.3
DDEM	Demirkent	1.57	259	P	Pn	00 46 36.1	-0.3
DDEM				S	Sb	00 46 57.4	0.0
DDEM	Demirkent	1.57	259	*i* P	Pn	00 46 36.1	-0.3
DDEM				*i* S	Sb	00 46 57.4	0.0
DBAD	Bademkaya	1.59	263	P	Pn	00 46 37.2	+0.6
DBAD				S	Sb	00 46 58.2	+0.3
DBAD	Bademkaya	1.59	263	*i* P	Pn	00 46 37.2	+0.6
DBAD				*i* S	Sb	00 46 58.2	+0.3
EATA	Eleskirt	1.67	216	P	Pb	00 46 39.6	+0.1
EATA				S	Sg	00 47 02.0	-0.3
EATA	Eleskirt	1.67	216	*i* P	Pb	00 46 39.6	+0.1
EATA				*i* S	Sg	00 47 02.0	-0.3
CHVG	Ch'k'valeri	1.96	320	*e*PN	Pn	00 46 42.1	+0.5
CHVG	Ch'k'valeri	1.96	320	P	Pb	00 46 43.2	-0.9
CHVG	Ch'k'valeri	1.96	320	P	Pn	00 46 41.1	-0.5
CHVG	Ch'k'valeri	1.96	320	*e*Pn	Pn	00 46 42.1	+0.5
EZM	Erzurum	2.26	235	*e*PN	Pb	00 46 48.0	-1.5

NIED ***10*** *00:55:00.35°.40N×142°.70E, h5km, Mw3.7 Best double couple: M0=4.47000×10^14 NP1:φs=24.00000°, δ=25.00000°, λ=-101.00000°. NP2:φs=216.00000°, δ=65.00000°, λ=-85.00000°.*
IDC ***10*** *00:55:49.5±0.8, 35°.14N×142°.73E, h0km, mb3.6/10, mb1 3.9/13, mb1mx3.7/33, mbtmp3.7/13, ML3.5/3, MS2.7/3, Ms1 2.7/3, ms1mx2.4/40, Error ellipse: s-maj=21.7km s-min=18.1km az=130.0*
ISCJB ***10*** *00:55:51.6±2.2, 35°.32N±0°.05×142°.60E±0°.05, h17km±17km, mb3.5/10, MS4.4/1, Error ellipse: s-maj=8.8km s-min=6.2km az=153.9*
JMA ***10*** *00:55:52.1±0.4, 35°.36N×142°.70E, h51km, M3.6*
ISC 10 00:55:49.6±2.0, 35°.26N±0°.05×142°.63E±0°.05, h2km±12km, n28, σ2°.30/35, mb3.6/10, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	Boso 1	1.48	247	P	Pg	00 56 17.9	-0.1
BSO1				*e*S	Sg	00 56 38.3	+1.0
CHOJ	Chosi	1.51	288	*e*S	Sb	00 56 37.1	-0.9
BSO3	Boso 3	1.80	256	P	Pb	00 56 23.0	-0.1
BSO3				*e*S	Sb	00 56 44.9	-1.1
BSO4	Boso 4	1.90	263	P	Pb	00 56 24.5	-0.4
BSO4				*e*S	Sb	00 56 47.2	-1.8
JAG	Ashikaga	2.83	295	*e*S	Sn	00 57 07.7	-2.8
JOD2	Odawara 2	2.90	271	P	Pn	00 56 36.5	-0.3
JOD2				*e*S	Sn

BOZC				*i* S	**Sb**	**01 05 50.8**	**-0.6**
SIGR	**SIGRI**	**0.48**	**237**	*e*PG	**Pg**	**01 05 44.0**	**-0.4**
SIGR	**SIGRI**	**0.48**	**237**	*e*Pg	**Pg**	**01 05 44.0**	**-0.4**
GELI	**Tayfur-Gelibol**	**0.92**	**5**	*e*PG	**Pb**	**01 05 53.0**	**0.0**
GELI				*e*SG	**Sg**	**01 06 04.9**	**+0.2**
GELI	**Tayfur-Gelibol**	**0.92**	**5**	*e*Pg	**Pb**	**01 05 53.0**	**0.0**
GELI				*e*Sg	**Sg**	**01 06 04.9**	**+0.2**
LPK	**Lapseki**	**0.94**	**18**	*e*PG	**Pg**	**01 05 52.6**	**-0.4**
LPK	**Lapseki**	**0.94**	**18**	*e*Pg	**Pg**	**01 05 52.6**	**-0.4**
KRBG	**Karabiga-Canak**	**1.16**	**37**	*e*PN	**Pg**	**01 05 56.4**	**-0.7**
KRBG	**Karabiga-Canak**	**1.16**	**37**	*e*Pn	**Pg**	**01 05 56.4**	**-0.7**
ENEZ	**Enez**	**1.27**	**352**	*e*PN	**Pg**	**01 05 59.8**	**+0.5**
ENEZ	**Enez**	**1.27**	**352**	*e*Pn	**Pg**	**01 05 59.8**	**+0.5**
RKY	**Sarkoy-Tekirda**	**1.35**	**27**	*e*PN	**Pb**	**01 06 00.4**	**0.0**
RKY	**Sarkoy-Tekirda**	**1.35**	**27**	*e*Pn	**Pb**	**01 06 00.4**	**0.0**
SART	**Tekirdag**	**1.36**	**27**	P	**Pn**	**01 06 00.2**	**+0.2**
SART				S	**Sb**	**01 06 17.4**	**-0.5**
SART	**Tekirdag**	**1.36**	**27**	*i* P	**Pn**	**01 06 00.1**	**+0.2**
SART				*i* S	**Sb**	**01 06 17.4**	**-0.5**
KESN	**Edirne-Kesan**	**1.37**	**10**	P	**Pg**	**01 06 00.9**	**-0.3**
KESN				S	**Sb**	**01 06 18.3**	**-0.1**
KESN	**Edirne-Kesan**	**1.37**	**10**	*i* P	**Pg**	**01 06 00.9**	**-0.3**
KESN				*i* S	**Sb**	**01 06 18.3**	**-0.1**
EDC	**Edincik**	**1.44**	**52**	*e*PN	**Pg**	**01 06 02.2**	**-0.2**
EDC				*e*SN	**Sb**	**01 06 20.3**	**+0.3**
EDC	**Edincik**	**1.44**	**52**	*e*Pn	**Pg**	**01 06 02.2**	**-0.2**
EDC				*e*Sn	**Sb**	**01 06 20.3**	**+0.3**
ALN	**Alexandroupoli**	**1.44**	**350**	*e*PN	**Pb**	**01 06 01.8**	**0.0**
ALN	**Alexandroupoli**	**1.44**	**350**	*e*Pn	**Pb**	**01 06 01.8**	**0.0**
MRMT	**Marmara Adasi**	**1.46**	**39**	*e*PN	**Pb**	**01 06 02.2**	**0.0**
MRMT	**Marmara Adasi**	**1.46**	**39**	*e*Pn	**Pb**	**01 06 02.2**	**0.0**
DURS	**Dursunbey**	**1.63**	**85**	P	**Pb**	**01 06 04.5**	**-0.5**
DURS				S	**Sn**	**01 06 24.7**	**+0.1**
DURS	**Dursunbey**	**1.63**	**85**	*i* P	**Pb**	**01 06 04.5**	**-0.5**
DURS				*i* S	**Sn**	**01 06 24.7**	**+0.1**
DEMI	**Demirci**	**1.87**	**103**	*i* P	**Pg**	**01 06 11.1**	**+0.3**
DEMI				*i* S	**Sg**	**01 06 34.9**	**0.0**

IDC 10 01:12:51.7±1.0, 25°.14N×45°.50W, h0km, mb3.7/8, mb1 4.0/8, mb1mx3.7/45, mbtmp3.7/8, MS3.4/13, Ms1 3.4/13, ms1mx3.2/37, Error ellipse: s-maj=29.6km s-min=21.2km az=179.0, Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SJG	**San Juan**	**20.42**	**254**	LR	LR	01 23 40.3	
	comp=Z,101nm,21.7s,baz=84,slow=32						
PTGA	**Pitinga**	**29.28**	**211**	LR	LR	01 29 33.2	
	comp=Z,32nm,18.9s,baz=36,slow=34						
SCHQ	**Schefferville**	**33.59**	**338**	LR	LR	01 32 31.4	
	comp=Z,48nm,20.6s,baz=31,slow=35						
ROSC	**El Rosal**	**34.23**	**239**	LR	LR	01 32 55.4	
	comp=Z,31nm,21.4s,baz=56,slow=35						
DBIC	**Dimbokro**	**42.96**	**108**	LR	LR	01 35 47.9	
	comp=Z,96nm,18.9s,baz=243,slow=32						
H10N2	**ASCENSION HYDR**	**44.56**	**133**	T	T	02 08 42.4	
	baz=318,slow=75,SNR=48						
H10N3	**ASCENSION HYDR**	**44.56**	**133**	T	T	02 08 22.6	
	baz=318,slow=75,SNR=46						
H10N1	**ASCENSION HYDR**	**44.58**	**133**	T	T	02 08 22.9	
	baz=318,slow=75,SNR=68						
H10S3	**ASCENSION HYDR**	**45.29**	**135**	T	T	02 09 39.0	
	baz=319,slow=75,SNR=13						
H10S1	**ASCENSION HYDR**	**45.29**	**135**	T	T	02 09 39.1	
	baz=319,slow=75,SNR=11						
H10S2	**ASCENSION HYDR**	**45.30**	**135**	T	T	02 09 40.3	
	baz=319,slow=75,SNR=13						
ATAH	**Atahualpa**	**45.32**	**229**	LR	LR	01 41 24.2	
	comp=Z,44nm,20.8s,baz=17,slow=38						
TORD	**Torodi Ar. Bea**	**45.94**	**96**	P	P	01 21 15.7	-1.0
	1.1nm,0.9s,baz=293,slow=8.4,SNR=5.6						
TORD				LR	LR	01 38 04.9	
	comp=Z,111nm,21.9s,baz=295,slow=33						
ULM	**Lac du Bonnet**	**45.97**	**317**	LR	LR	01 38 08.3	
	comp=Z,79nm,19.8s,baz=78,slow=33						
LPAZ	**La Paz**	**46.71**	**211**	P	P	01 21 23.4	+0.1
	2.9nm,1.1s,baz=18,slow=8.7,SNR=7.4						
LPAZ				LR	LR	01 39 55.6	
	comp=Z,38nm,20.2s,baz=24,slow=35						
NNA	**Nana**	**47.91**	**223**	LR	LR	01 41 03.9	
	comp=Z,20nm,19.6s,baz=320,slow=35						
GERES	**GERESS Array B**	**51.41**	**47**	P	P	01 21 59.2	+0.7
	0.4nm,0.8s,baz=270,slow=5.8,SNR=3.3						
TXAR	**Lajitas Array**	**51.44**	**288**	P	P	01 21 59.2	+0.2
	0.3nm,0.8s,baz=91,slow=4.9,SNR=2.6						
PDAR	**Pinedale Array**	**54.70**	**306**	P	P	01 22 23.2	+0.2
	1.7nm,1.0s,baz=79,slow=7.7,SNR=8.9						
PDAR				LR	LR	01 44 27.5	
	comp=Z,57nm,19.6s,baz=106,slow=35						
YKA	**Yellowknife Ar**	**58.38**	**329**	P	P	01 22 47.5	-1.0
	0.6nm,1.0s,baz=99,slow=7.9,SNR=6.0						
LPIG	**La Paz**	**58.39**	**284**	LR	LR	01 46 36.2	
	comp=Z,22nm,20.4s,baz=51,slow=35						
NVAR	**Mina Array Bea**	**61.84**	**302**	LR	LR	01 48 16.8	
	comp=Z,84nm,20.9s,baz=90,slow=34						
BRTR	**Keskin Array B**	**66.38**	**56**	P	P	01 23 43.0	+0.3
	1.4nm,1.0s,baz=265,slow=6.1,SNR=9.2						
ILAR	**Eielson Array**	**72.24**	**334**	P	P	01 24 18.4	-0.1
	0.4nm,0.9s,baz=58,slow=5.4,SNR=4.5						

*ATH **10** 01:18:20.4, 36°.49N×28°.78E, h20km±1km, ML1.6/1, Error ellipse: s-maj=2.8km s-min=1.1km az=187.0*
*ISCJB **10** 01:18:21.1±0.5, 36°.49N±0°.03×28°.78E±0°.03, h6km±4km, Error ellipse: s-maj=4.8km s-min=3.7km az=170.4*
*DDA **10** 01:18:21.2, 36°.53N×28°.78E, h7km, Md2.8*
*CSEM **10** 01:18:21.3±0.2, 36°.50N×28°.78E, h5km, MD3.0, Error ellipse: s-maj=3.9km s-min=2.7km az=177.0*
*ISK **10** 01:18:21.9, 36°.56N×28°.80E, h9km, MD3.0*

ISC 10 01:18:21.5±1.0, 36°.50N±0°.02×28°.79E±0°.02, h11km±8km, n41, σ0.91/65, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FETY	**Fethiye**	**0.27**	**61**	*e*PG	**Pg**	**01 18 27.3**	**+0.2**
FETY				*e*SG	**Sg**	**01 18 31.1**	**+0.3**
FETY	**Fethiye**	**0.27**	**61**	*e*Pg	**Pg**	**01 18 27.3**	**+0.2**
FETY				*e*Sg	**Sg**	**01 18 31.1**	**+0.3**
DALY	**Dalyan (Mu¨la**	**0.33**	**341**	*e*PG	**Pg**	**01 18 27.5**	**-0.6**
DALY				*e*SG	**Sb**	**01 18 32.8**	**-2.0**
DALY	**Dalyan (Mu¨la**	**0.33**	**341**	*e*Pg	**Pg**	**01 18 27.5**	**-0.6**
DALY				*e*Sg	**Sb**	**01 18 32.8**	**-2.0**
TURN	**Turunc**	**0.40**	**338**	*i* P	**Pb**	**01 18 30.4**	**-0.2**
TURN				*i* S	**Sb**	**01 18 38.7**	**+2.0**
ARG	**Arkhangelos**	**0.60**	**242**	P	**Pg**	**01 18 32.2**	**-1.0**
ARG				S	**Sg**	**01 18 40.9**	**-0.3**
AKAS	**Kas**	**0.71**	**112**	P	**Pg**	**01 18 34.3**	**-1.0**
AKAS				S	**Sb**	**01 18 46.2**	**+0.2**
AKAS	**Kas**	**0.71**	**112**	*i* P	**Pg**	**01 18 34.3**	**-1.0**
AKAS				*i* S	**Sb**	**01 18 46.2**	**+0.2**
KSL	**Kastellorizon**	**0.73**	**118**	P	**Pg**	**01 18 34.6**	**-1.1**
KSL				S	**Sg**	**01 18 44.8**	**-0.5**
KSL				AML	AML	01 18 51.9	
	comp=N,76μm,0.4s						
KSL				AML	AML	01 18 52.4	
	comp=E,161μm,0.4s						
YER	**Yerkesik**	**0.75**	**328**	*e*PG	**Pg**	**01 18 35.5**	**-0.5**
YER	**Yerkesik**	**0.75**	**328**	*e*Pg	**Pg**	**01 18 35.5**	**-0.5**
GLHS	**Glhisar (BURDU**	**0.87**	**41**	*e*PG	**Pb**	**01 18 38.0**	**-0.7**
GLHS	**Glhisar (BURDU**	**0.87**	**41**	*e*Pg	**Pb**	**01 18 38.0**	**-0.7**
ELL	**Elmali**	**0.94**	**75**	*e*PG	**Pn**	**01 18 40.5**	**-0.3**
ELL	**Elmali**	**0.94**	**75**	*e*Pg	**Pn**	**01 18 40.5**	**-0.3**
GOLH	**Golhisar**	**0.96**	**40**	P	**Pg**	**01 18 39.2**	**-0.8**
GOLH				S	**Sb**	**01 18 52.2**	**-0.9**
GOLH	**Golhisar**	**0.96**	**40**	*i* P	**Pg**	**01 18 39.1**	**-0.8**
GOLH				*i* S	**Sb**	**01 18 52.2**	**-0.9**
BDRM	**Kayabasi**	**1.22**	**298**	P	**Pg**	**01 18 44.5**	**-0.3**
BDRM				S	**Sn**	**01 19 00.6**	**-0.4**
BDRM	**Kayabasi**	**1.22**	**298**	*i* P	**Pg**	**01 18 44.5**	**-0.3**
BDRM				*i* S	**Sn**	**01 19 00.6**	**-0.4**
DENT	**Denizli**	**1.26**	**9**	*e*PN	**Pg**	**01 18 45.8**	**0.0**
DENT	**Denizli**	**1.26**	**9**	*e*Pn	**Pg**	**01 18 45.8**	**0.0**
NIS1	**Nisyros Isl.**	**1.30**	**275**	*e*PN	**Pg**	**01 18 47.3**	**+0.9**
NIS1	**Nisyros Isl.**	**1.30**	**275**	P	**Pn**	**01 18 45.1**	**-0.6**
NIS1	**Nisyros Isl.**	**1.30**	**275**	*e*Pn	**Pg**	**01 18 47.3**	**+0.9**
NIS1				S	**Sb**	**01 19 02.6**	**-0.1**
NIS1	**Nisyros Isl.**	**1.30**	**275**	P	**Pn**	**01 18 45.1**	**-0.6**
NIS1				S	**Sb**	**01 19 02.6**	**-0.1**
BODT	**Bodrum**	**1.31**	**296**	*e*PN	**Pg**	**01 18 46.8**	**+0.1**
BODT				*e*SN	**Sn**	**01 19 04.3**	**+1.0**
BODT	**Bodrum**	**1.31**	**296**	*e*Pn	**Pg**	**01 18 46.8**	**+0.1**
BODT				*e*Sn	**Sn**	**01 19 04.3**	**+1.0**
KORT	**Korkueli**	**1.35**	**68**	P	**Pg**	**01 18 48.3**	**+0.9**
KORT	**Korkueli**	**1.35**	**68**	*i* P	**Pg**	**01 18 48.3**	**+0.9**
KORT				*i* S	**Sg**	**01 19 09.2**	**+4.2**
AYDB	**Zeytinkoy-Aydi**	**1.61**	**334**	*e*PN	**Pb**	**01 18 51.1**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**1.61**	**334**	*e*Pn	**Pb**	**01 18 51.1**	**-0.2**
KARP	**Karpathos**	**1.63**	**235**	*e*PN	**Pb**	**01 18 52.1**	**+0.5**
KARP	**Karpathos**	**1.63**	**235**	P	**Pn**	**01 18 50.4**	**+0.2**
KARP	**Karpathos**	**1.63**	**235**	*e*Pn	**Pb**	**01 18 52.1**	**+0.5**
KARP				S	**Sn**	**01 19 11.1**	**-0.1**
KARP	**Karpathos**	**1.63**	**235**	P	**Pn**	**01 18 50.4**	**+0.2**
KARP				S	**Sn**	**01 19 11.1**	**-0.1**
SMG	**Samos**	**1.97**	**308**	P	**Pn**	**01 18 55.4**	**+0.5**
SMG				S	**Sn**	**01 19 18.5**	**-1.1**
SMG	**Samos**	**1.97**	**308**	P	**Pn**	**01 18 55.4**	**+0.5**
SMG				S	**Sn**	**01 19 18.5**	**-1.1**
MANT	**Manisa**	**1.99**	**355**	P	**Pn**	**01 18 55.9**	**+0.5**
MANT				S	**Sn**	**01 19 20.5**	**0.0**
MANT	**Manisa**	**1.99**	**355**	*e*P	**Pn**	**01 18 55.9**	**+0.5**
MANT				*i* S	**Sn**	**01 19 20.5**	**0.0**
KULA	**Kula-Manisa**	**2.01**	**357**	*e*PN	**Pn**	**01 18 55.7**	**+0.2**
KULA	**Kula-Manisa**	**2.01**	**357**	*e*Pn	**Pn**	**01 18 55.7**	**+0.2**

*SKHL **10** 01:19:02.8±0.2, 42°.60N×146°.90E, h30km±3km, mb4.8/3*
*JMA **10** 01:19:03.8±0.4, 42°.83N×146°.96E, h60km, M3.4*

ISC 10 01:19:03.0±2.6, 42°.77N±0°.10×146°.76E±0°.09, h3km±14km, n12, σ0.86/17, 1C, Off southeast coast of Hokkaido

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NEM2	**Nemuro 2**	**0.96**	**309**	P	**Pb**	**01 19 22.5**	**+0.2**
NEM2				*e*S	**Sb**	**01 19 36.6**	**+1.2**
SHO	**Shikotan**	**1.10**	**2**	*i* P	**Pg**	**01 19 23.5**	**-0.7**
SHO				AMB	AMB	01 19 24.8	
	620nm,0.5s						
SHO				*i* S	**Sg**	**01 19 39.2**	**+0.7**
SHO				A	A	01 19 40.2	
	3μm,0.6s						
SHO				A	A	01 19 40.2	
	2μm,0.6s						
YUK	**Yuzh-Kuril'sk**	**1.43**	**333**	⇑*i* P	**Pn**	**01 19 29.3**	**-0.6**
YUK				AMB	AMB	01 19 31.2	
	100nm,0.2s						
YUK				AMB	AMB	01 19 31.2	
	130nm,0.2s						
YUK				AMB	AMB	01 19 31.2	
	250nm,0.2s						
YUK				*i* S	**Sn**	**01 19 49.0**	**-0.2**
YUK				A	A	01 19 50.4	
	530nm,0.4s						
YUK				A	A	01 19 50.4	
	860nm,0.4s						
JAK	**Akkeshi**	**1.54**	**279**	P	**Pn**	**01 19 31.1**	**-0.2**
JRA	**Rausu**	**1.68**	**315**	P	**Pn**	**01 19 32.4**	**-0.8**
JNK	**Nakash**	**1.71**	**299**	P	**Pn**	**01 19 32.8**	**-0.9**
JNK				*e*S	**Sn**	**01 19 54.2**	**-1.8**
JAR	**Ashorobuto**	**2.26**	**285**	P	**Pn**	**01 19 41.3**	**0.0**
JTKR	**Abashiri--Toko**	**2.41**	**301**	P	**Pn**	**01 19 43.7**	**+0.4**
JCH	**Churui**	**2.51**	**268**	P	**Pn**	**01 19 45.1**	**+0.3**
KUR	**Kuril'sk**	**2.59**	**17**	*e*P	**Pn**	**01 19 45.6**	**-0.2**
KUR				*e*S	**Sn**	**01 20 18.0**	**+0.2**
KUR				A	A	01 20 21.4	
	350nm,0.5s						
KUR				A	A	01 20 21.4	
	430nm,0.5s						
JNBK	**Urakawa-nobuka**	**3.00**	**262**	P	**Pn**	**01 19 51.9**	**+0.4**
YSS	**Yuzh-Sakhalins**	**5.06**	**327**	*e*P	**Pn**	**01 20 21.0**	**+1.2**
YSS				AMB	AMB	01 20 22.2	
	30nm,0.4s						

*NIED **10** 01:56:00, 39°.00N×142°.40E, h35km, Mw3.7 Best double couple: M0=4.67000×10^14 NP1:φs=284.00000°, δ37.00000°, λ-141.00000°. NP2:φs=162.00000°, δ68.00000°, λ-59.00000°.*
*ISCJB **10** 01:56:36.8±1.3, 38°.99N±0°.04×142°.52E±0°.08, h18km±8km, mb3.6/5, Error ellipse: s-maj=10.5km s-min=6.0km az=23.2*
*JMA **10** 01:56:38.7±0.1, 39°.04N×142°.42E, h34km±2km, M3.9*
JMA Felt I J1.
*IDC **10** 01:56:42.3±3.2, 38°.96N×142°.46E, h57km±32km, mb3.3/5, mb1 3.6/7, mb1mx3.2/36, mbtmp3.6/7, ML3.4/2, Error ellipse: s-maj=42.1km s-min=15.0km az=110.0*

ISC 10 01:56:37.7±2.0, 39°.01N±0°.05×142°.43E±0°.07, h13km±11km, n21, σ1.64/24, mb3.6/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.60**	**277**	P	**Pb**	**01 56 50.6**	**+0.5**
OFUJ				S	**Sb**	**01 56 58.6**	**+0.1**
MIYJ	**Miyakonagasawa**	**0.74**	**320**	P	**Pg**	**01 56 52.1**	**+0.1**
MIYJ				S	**Sg**	**01 57 01.6**	**-0.1**
JMK	**Ichinoseki**	**0.95**	**267**	P	**Pb**	**01 56 55.7**	**-0.3**
JMK				S	**Sb**	**01 57 07.8**	**-0.7**
JOM	**Ohasama**	**1.00**	**298**	P	**Pb**	**01 56 56.5**	**-0.4**
JOM				S	**Sb**	**01 57 09.0**	**-1.0**
JIO	**Ouri**	**1.02**	**237**	P	**Pb**	**01 56 56.3**	**-0.9**
JIO				*e*S	**Sb**	**01 57 08.8**	**-1.6**
JTH	**Tanohata**	**1.02**	**335**	P	**Pb**	**01 56 56.3**	**-1.0**
JTH				*e*S	**Sb**	**01 57 10.1**	**-0.6**
JRG	**Rokugo**	**1.45**	**286**	P	**Pn**	**01 57 04.0**	**+0.3**
JRG				*e*S	**Sn**	**01 57 22.1**	**-0.5**
MJAR	**Matsushiro Arr**	**4.16**	**235**	P	**Pn**	**01 57 44.1**	**+3.1**
	3.6nm,0.3s,baz=38,slow=12,SNR=24						
MAT	**Matsushiro**	**4.16**	**235**	P	**Pn**	**01 57 43.1**	**+2.2**
MAT				S	**Sn**	**01 58 32.9**	**+3.5**
ASAJ	**Asahikawa**	**5.10**	**1**	P	**Pn**	**01 57 56.5**	**+2.7**
	1.1nm,0.3s,baz=242,slow=34,SNR=4.1						
ASAJ				S	**Sn**	**01 58 55.1**	**+2.5**
	0.5nm,0.3s,baz=115,slow=32,SNR=2.4						
H11N2	**WAKE ISLAND Hy**	**28.55**	**125**	T	T	02 32 57.4	
	baz=318,slow=75,SNR=64						
H11N1	**WAKE ISLAND Hy**	**28.56**	**125**	T	T	02 32 58.0	
	baz=318,slow=75,SNR=55						
H11N3	**WAKE ISLAND Hy**	**28.57**	**125**	T	T	02 33 01.5	
	baz=318,slow=75,SNR=51						
H11S1	**WAKE ISLAND Hy**	**29.34**	**127**	T	T	02 33 56.1	
	baz=319,slow=76,SNR=9.5						
H11S3	**WAKE ISLAND Hy**	**29.34**	**127**	T	T	02 33 56.9	
	baz=319,slow=76,SNR=9.6						
H11S2	**WAKE ISLAND Hy**	**29.35**	**127**	T	T	02 33 58.3	
	baz=319,slow=76,SNR=9.3						
MKAR	**Makanchi Array**	**43.78**	**301**	P	**P**	**02 04 42.5**	**-0.5**
	0.4nm,0.6s,baz=87,slow=8.6,SNR=4.0						
ILAR	**Eielson Array**	**47.40**	**33**	P	**P**	**02 05 11.0**	**-0.3**
	0.5nm,0.8s,baz=269,slow=6.7,SNR=5.6						
WRA	**Warramunga Arr**	**59.13**	**189**	P	**P**	**02 06 36.1**	**-2.0**
	1.5nm,0.7s,baz=6.4,slow=7.1,SNR=7.5						
YKA	**Yellowknife Ar**	**61.70**	**31**	P	**P**	**02 06 54.7**	**-0.4**
	0.3nm,0.9s,baz=297,slow=6.9,SNR=3.5						
ASAR	**Alice Springs**	**62.86**	**189**	P	**P**	**02 07 01.9**	**-1.5**
	0.5nm,0.7s,baz=10,slow=6.3,SNR=5.8						

NNC 10 02:06:09.8±3.0, 36°.85N×70°.81E, h0km, mb3.7, mpv3.3, 4C-4D, Error ellipse: s-maj=24.3km s-min=10.8km az=177.0, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**2.50**	**322**	⇓Pn	Pn	02 06 52.1	+0.2
	2.6nm,0.3s						
DZET				⇓Sn	Sn	02 07 24.5	+1.3
	21nm,0.5s						
SFK	**Sufi-Kurgan**	**3.80**	**33**	⇑Pn	Pn	02 07 09.5	-0.3
	6.6nm,0.3s						
SFK				⇑Sn	Sn	02 07 57.8	+2.5
	1.7nm,0.2s						
MNAS	**Manas**	**5.78**	**13**	⇑Pn	Pn	02 07 36.1	-0.8
MNAS				⇓Sn	Sn	02 08 43.2	-0.8
	1.2nm,0.4s						
KK31	**Karatay Array**	**6.25**	**358**	⇓Pn	Pn	02 07 42.2	-1.1
	0.7nm,0.2s,baz=172,slow=11,SNR=45						
KK31				⇑Sn	Sn	02 08 55.9	+0.6
	0.5nm,0.4s,baz=180,slow=24,SNR=4.0						

CASC 10 02:11:33.3±3.8, 12°.65N×88°.19W, h60km±387km, MD3.6, ML2.5, 2C-2D, Off coast of central America

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CSGN	**Cosiguina Volc**	**0.69**	**62**	*e*P	Pn	02 11 49.3	+1.7
CNCH	**Conchagua**	**0.71**	**29**	⇑*i*P	Pn	02 11 49.4	+1.6
LCY	**Lacayo**	**0.78**	**352**	⇓*e*P	Pn	02 11 49.4	+0.7
LCY				*e*S	Sn	02 12 01.0	+1.1
VSM	**San Miguel**	**0.78**	**354**	*e*P	Pn	02 11 49.9	+1.0
PACA	**Pacayal**	**0.82**	**351**	*e*P	Pn	02 11 50.0	+0.8
PACA				*e*S	Sn	02 12 01.8	+0.9
TECA	**Tecapa**	**0.90**	**340**	⇓*e*P	Pn	02 11 50.4	+0.2
TECA				*e*S	Sn	02 12 02.6	0.0
LFRS	**El Faro**	**1.29**	**319**	⇑*e*P	Pn	02 11 54.9	-0.4
LFRS				*e*S	Sn	02 12 10.4	-1.3
LBRS	**Las Brisas**	**1.37**	**322**	*e*P	Pn	02 11 56.6	+0.3
LFU	**La Fuente**	**1.42**	**320**	*e*P	Pn	02 11 56.9	0.0
CNGN	**Cerro Negro**	**1.46**	**96**	*e*P	Pn	02 11 59.0	+1.5
CNGN				*e*S	Sn	02 12 12.8	-2.9
CNGN				AML	AML	02 12 20.5	
	comp=N,56nm,0.1s						

*IDC **10** 02:18:32.4±0.7, 36°.25N×142°.73E, h0km, mb3.9/15, mb1 4.0/20, mb1mx3.9/43, mbtmp3.9/20, ML4.1/4, MS3.1/2, Ms1 3.2/2, ms1mx2.7/34, Error ellipse: s-maj=17.4km s-min=16.6km az=93.0*
*NEIC **10** 02:18:33.9±0.5, 36°.33N×142°.75E, h10km, mb4.0/2, Error ellipse: s-maj=10.4km s-min=9.2km az=126.0*
*ISCJB **10** 02:18:36.1±0.5, 36°.41N±0°.04×142°.57E±0°.04, h33km, mb3.9/19, MS3.8/1, Error ellipse: s-maj=5.8km s-min=4.5km az=140.0*
*JMA **10** 02:18:36.0±0.2, 36°.39N×142°.54E, h74km, M3.5*

ISC 10 02:18:36.8±0.6, 36°.31N±0°.05×142°.73E±0°.06, h35km, n51, σ2.53/59, mb3.9/19, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.64**	**249**	P	**Pn**	**02 19 02.0**	**-1.1**
ONAJ	**Iwakimizuishiy**	**1.75**	**297**	P	**Pn**	**02 19 02.4**	**-2.2**
ONAJ				*e*S	**Sn**	**02 19 21.3**	**-4.4**
JHO	**Hitachi**	**1.77**	**280**	P	**Pn**	**02 19 02.6**	**-2.3**
JHO				S	**Sn**	**02 19 23.6**	**-2.6**
JFK	**Kawauchi**	**1.83**	**306**	P	**Pn**	**02 19 03.1**	**-2.6**
BSO1	**Boso 1**	**2.19**	**221**	P	**Pn**	**02 19 09.9**	**-0.2**
BSO1				S	**Sn**	**02 19 37.1**	**+1.4**
JMM	**Marumori**	**2.19**	**316**	P	**Pn**	**02 19 08.3**	**-2.4**
JFT	**Otama**	**2.27**	**303**	P	**Pn**	**02 19 10.2**	**-1.6**
JAG	**Ashikaga**	**2.65**	**273**	P	**Pn**	**02 19 15.5**	**-1.5**
JAG				S	**Sn**	**02 19 44.4**	**-3.5**
JMK	**Ichinoseki**	**2.90**	**336**	P	**Pn**	**02 19 18.2**	**-2.2**
JMK				S	**Sn**	**02 19 50.5**	**-3.5**
JRY	**Ryogami san**	**3.12**	**266**	P	**Pn**	**02 19 21.9**	**-1.5**
JRY				*e*S	**Sn**	**02 19 56.3**	**-3.1**
JOD2	**Odawara 2**	**3.14**	**252**	P	**Pn**	**02 19 22.6**	**-1.2**
JYK	**Kaneyama**	**3.21**	**325**	P	**Pn**	**02 19 23.1**	**-1.7**
JOM	**Ohasama**	**3.36**	**341**	P	**Pn**	**02 19 25.1**	**-1.6**
JOM				*e*S	**Sn**	**02 20 02.0**	**-3.3**
JYN	**Shimob**	**3.50**	**258**	P	**Pn**	**02 19 28.4**	**-0.3**
JYN				*e*S	**Sn**	**02 20 07.5**	**-1.4**
MJAR	**Matsushiro Arr**	**3.66**	**275**	Pn	**Pn**	**02 19 30.1**	**-0.8**
	4.8nm,0.3s,baz=103,slow=9.0,SNR=34						
MAJO	**Matsushiro**	**3.66**	**275**	*e*Pn	**Pn**	**02 19 30.5**	**-0.4**
MAJO				*e*S	Sn	02 20 19.9	+7.0
MAT	**Matsushiro**	**3.66**	**275**	P	**Pn**	**02 19 30.0**	**-0.9**
MAT				S	**Sn**	**02 20 09.7**	**-3.1**
ERM	**Erimo**	**5.71**	**3**	*e*Pn	**Pn**	**02 19 55.6**	**-3.4**
ASAJ	**Asahikawa**	**7.80**	**359**	Pn	**Pn**	**02 20 25.9**	**-1.7**
	8.4nm,0.3s,baz=244,slow=15,SNR=20						
ASAJ				Sn	**Sn**	**02 21 49.6**	**-5.0**
	0.6nm,0.3s,baz=274,slow=33,SNR=4.8						
ASAJ	**Asahikawa**	**7.80**	**359**	*e*Pn	**Pn**	**02 20 25.0**	**-2.7**
	12nm,0.7s						
ASAJ				Sn	**Sn**	**02 21 49.6**	**-5.0**
CBIJ	**Chichi jima**	**9.20**	**183**	*e*Pn	**Pn**	**02 20 45.7**	**-1.3**
CBIJ				Sn	**Sn**	**02 22 21.8**	**-7.5**
JCJ	**Chichijima**	**9.20**	**183**	Pn	**Pn**	**02 20 44.4**	**-2.6**
	5.1nm,0.3s,baz=97,slow=22,SNR=12						
JCJ				Sn	**Sn**	**02 22 21.8**	**-7.5**
	6.1nm,0.3s,baz=165,slow=21,SNR=2.6						
JCJ				LR

PB07 IAML 02 20 33.6
comp=E,176nm,0.2s
PB01 IPOC Station P 3.29 331 ⇑*i*P Pn 02 19 56.8 +1.9
PB01 *i* S S 02 20 39.7 +2.2
PB01 IAML 02 20 40.4
comp=E,84nm,0.2s

NIED ***10*** *02:19:00, 36.°40N×142.°50E, h26km, Mw4.1 Best double couple: M01.43000×1015 NP1:φ=73.00000°, δ=18.00000°, λ=131.00000°. NP2:φ=210.00000°, δ=76.00000°, λ=78.00000°.*
IDC ***10*** *02:19:22.2±0.6, 36.°19N×142.°78E, h0km, mb4.0/18, mb1 4.2/23, mb1mx4.1/42, mbtmp4.0/23, ML3.4/4, MS3.3/5, Ms1 3.3/5, ms1mx2.9/33, Error ellipse: s-maj=17.1km s-min=15.5km az=178.0*
ISCJB ***10*** *02:19:23.4±0.3, 36.°12N±0.°05×142.°66E±0.°04, h18km, mb4.2/37, MS3.5/1, Error ellipse: s-maj=7.5km s-min=4.9km az=171.2*
NEIC ***10*** *02:19:24.0±0.4, 36.°22N×142.°77E, h10km, mb4.5/18, Error ellipse: s-maj=8.9km s-min=7.6km az=172.0*
JMA ***10*** *02:19:26.5±0.3, 36.°38N×142.°49E, h82km, M3.7*
ISC 10 02:19:25.0±0.5, 36.°15N±0.°05×142.°71E±0.°06, h18km, n79, σ1§87/76, mb4.2/37, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.56**	**254**	P	**Pn**	**02 19 51.9**	**+0.1**
CHOJ				*e*S	**Sn**	**02 20 10.7**	**-0.9**
JHO	**Hitachi**	**1.79**	**286**	P	**Pn**	**02 19 52.8**	**-2.1**
BSO1	**Boso 1**	**2.05**	**224**	*e*S	**Sb**	**02 20 27.4**	**+1.1**
JAG	**Ashikaga**	**2.64**	**277**	P	**Pn**	**02 20 05.5**	**-1.2**
JMK	**Ichinoseki**	**3.04**	**338**	*e*S	**Sn**	**02 20 40.7**	**-7.3**
JOD2	**Odawara 2**	**3.07**	**254**	P	**Pn**	**02 20 12.7**	**+0.1**
JRY	**Ryogami san**	**3.08**	**269**	*e*S	**Sn**	**02 20 46.4**	**-2.8**
JYK	**Kaneyama**	**3.34**	**327**	P	**Pn**	**02 20 13.2**	**-3.0**
MJAR	**Matsushiro Arr**	**3.65**	**278**	Pn	**Pn**	**02 20 20.4**	**-0.2**
	10nm,0.3s,baz=222,slow=14,SNR=6.6						
MJAR				LR	LR	02 21 28.7	
	comp=Z,100nm,21.3s,baz=125,slow=34						
MAT	**Matsushiro**	**3.65**	**278**	P	**Pn**	**02 20 19.5**	**-1.1**
MAT				*e*S	**Sn**	**02 20 59.7**	**-3.5**
ERM	**Erimo**	**5.87**	**3**	*e*Pn	Pn	02 20 46.3	-4.7
ASAJ	**Asahikawa**	**7.96**	**359**	Pn	Pn	02 21 15.4	-4.3
	10.0nm,0.3s,baz=231,slow=9.4,SNR=9.4						
ASAJ				Sn	Sn	02 22 40.1	-9.1
	1.1nm,0.3s,baz=74,slow=26,SNR=4.0						
ASAJ				LR	LR	02 24 23.3	
	comp=Z,215nm,21.6s,baz=162,slow=38						
CBIJ	**Chichi jima**	**9.04**	**183**	*e*Pn	**Pn**	**02 21 33.1**	**-1.4**
CBIJ				*e*S	**Sn**	**02 23 11.1**	**-4.7**
JCJ	**Chichijima**	**9.04**	**183**	Pn	**Pn**	**02 21 34.4**	**-0.2**
	10.0nm,0.3s,baz=98,slow=23,SNR=5.5						
JCJ				Sn	**Sn**	**02 23 11.8**	**-3.9**
	8.0nm,0.3s,baz=272,slow=23,SNR=3.6						
JNU	**Nakatsue**	**10.20**	**256**	Pn	**Pn**	**02 21 52.1**	**+1.6**
	0.3nm,0.3s,baz=31,slow=17,SNR=2.2						
USRK	**Ussuriysk Ar.**	**11.48**	**318**	Pn	**Pn**	**02 22 09.1**	**+1.3**
	0.3nm,0.3s,baz=123,slow=14,SNR=4.4						
KSRS	**Korea Array**	**11.92**	**281**	Pn	**Pn**	**02 22 16.3**	**+2.3**
	0.2nm,0.3s,baz=87,slow=13,SNR=5.8						
KSRS				LR	LR	02 26 58.4	
	comp=Z,178nm,18.3s,baz=84,slow=38						
KS15	**Wonju Array Si**	**11.96**	**281**	*e*Pn	**Pn**	**02 22 16.3**	**+1.9**
KSAR	**Wonju Array Be**	**11.96**	**281**	Pn	**Pn**	**02 22 16.3**	**+1.9**
KLR	**Kul'dur**	**15.33**	**332**	Pn	**Pn**	**02 23 02.6**	**+2.3**
	0.2nm,0.3s,baz=117,slow=11,SNR=5.1						
KLR				LR	LR	02 29 27.6	
	comp=Z,143nm,18.8s,baz=108,slow=40						
H11N2	**WAKE ISLAND Hy**	**26.80**	**121**	T	T	02 53 27.7	
	baz=313,slow=74						
H11N1	**WAKE ISLAND Hy**	**26.81**	**121**	T	T	02 53 22.8	
	baz=313,slow=74						
H11N3	**WAKE ISLAND Hy**	**26.82**	**121**	T	T	02 53 13.9	
	baz=313						
SEY	**Seymchan**	**27.47**	**10**	P	**P**	**02 25 14.6**	**+4.8**
	2.2nm,0.5s,baz=147,slow=4.3,SNR=4.4						
H11S1	**WAKE ISLAND Hy**	**27.50**	**123**	T	T	02 54 20.5	
	baz=310						
H11S3	**WAKE ISLAND Hy**	**27.51**	**123**	T	T	02 54 11.5	
	baz=310						
H11S2	**WAKE ISLAND Hy**	**27.52**	**123**	T	T	02 54 12.4	
	baz=310						
ULN	**Ulaanbaatar**	**28.71**	**305**	*e*P	**P**	**02 25 20.9**	**-0.2**
	3.2nm,0.8s						
SONA1	**Songino Array**	**29.14**	**305**	*e*P	**P**	**02 25 24.7**	**-0.3**
SONA0	**Songino Array**	**29.14**	**305**	*e*P	**P**	**02 25 25.1**	**+0.1**
	18nm,1.4s						
SONM	**Songino Array**	**29.14**	**305**	P	**P**	**02 25 25.1**	**+0.1**
	2.8nm,0.8s,baz=101,slow=9.3,SNR=7.8						
ZAA1	**Zalesovo Array**	**43.28**	**313**	*e*P	**P**	**02 27 24.7**	**-0.6**
ZALV	**Zalesovo Beam**	**43.28**	**313**	P	**P**	**02 27 24.7**	**-0.6**
	1.7nm,0.5s,baz=89,slow=6.5,SNR=4.5						
ZALV				LR	LR	02 46 43.4	
	comp=Z,57nm,19.6s,baz=244,slow=38						
MK01	**Makanchi Array**	**45.47**	**303**	*e*P	**P**	**02 27 44.3**	**+1.4**
MK31	**Makanchi Array**	**45.47**	**303**	*e*P	**P**	**02 27 44.4**	**+1.4**
MK32	**Makanchi Array**	**45.47**	**303**	*e*P	**P**	**02 27 44.4**	**+1.4**
MKAR	**Makanchi Array**	**45.47**	**303**	P	**P**	**02 27 44.4**	**+1.4**
	4.6nm,0.8s,baz=88,slow=10,SNR=9.2						
MAKZ	**Makanchi**	**45.68**	**303**	*e*P	**P**	**02 27 47.6**	**+3.0**
	7.4nm,1.0s						
KURK	**Kurchatov**	**47.30**	**309**	P	**P**	**02 27 56.3**	**-0.9**
	5.5nm,0.8s						
KURBB	**Kurchatov Arra**	**47.37**	**309**	P	**P**	**02 27 56.6**	**-1.1**
	4.1nm,1.0s,baz=83,slow=8.3,SNR=7.2						
ILAR	**Eielson Array**	**49.69**	**32**	P	**P**	**02 28 14.8**	**-0.6**
	1.4nm,0.8s,baz=257,slow=5.7,SNR=7.4						
ILB	**Eielson Array**	**49.69**	**32**	*e*P	**P**	**02 28 14.8**	**-0.6**
TKM2	**Tokmak 2**	**50.97**	**299**	P	**P**	**02 28 25.7**	**0.0**
	5.2nm,0.8s						
AAK	**Ala-Archa**	**51.83**	**299**	P	**P**	**02 28 36.5**	**+4.4**
	1.5nm,0.6s,baz=295,slow=3.5,SNR=3.8						
AAK	**Ala-Archa**	**51.83**	**299**	*e*P	**P**	**02 28 35.9**	**+3.8**
	2.7nm,0.8s						
AAK				*e*pP	**pP**	**02 28 37.5**	**-0.3**
BVAR	**Borovoye Array**	**51.94**	**313**	P	**P**	**02 28 32.9**	**+0.4**
	0.6nm,0.4s,baz=80,slow=16,SNR=3.1						
KKAR	**Karatay Array**	**54.47**	**301**	*e*P	**P**	**02 28 50.8**	**-0.5**
	0.5nm,0.5s						
INK	**Inuvik**	**54.70**	**27**	P	**P**	**02 28 52.4**	**-0.2**
	1.2nm,0.5s,baz=315,slow=8.0,SNR=8.7						
WR1	**Warramunga Arr**	**56.34**	**189**	*e*P	**P**	**02 29 04.7**	**-0.2**
	9.3nm,1.0s						
WRA	**Warramunga Arr**	**56.34**	**189**	P	**P**	**02 29 04.7**	**-0.2**
	2.1nm,0.9s,baz=6.3,slow=7.3,SNR=3.2						
ABKAR	**Akbulak array**	**59.30**	**311**	*e*P	**P**	**02 29 24.5**	**-1.0**
AS31	**Alice Springs**	**60.07**	**189**	*e*P	**P**	**02 29 31.7**	**+0.8**
	1.0nm,0.9s						
ASAR	**Alice Springs**	**60.07**	**189**	P	**P**	**02 29 31.7**	**+0.8**
	0.4nm,0.4s,baz=7.8,slow=7.4,SNR=3.2						
RES	**Resolute Bay**	**63.20**	**15**	*e*P	**P**	**02 29 51.3**	**-0.2**
	3.6nm,1.0s						
YKA	**Yellowknife Ar**	**64.05**	**30**	P	**P**	**02 29 56.4**	**-0.8**
	0.5nm,0.7s,baz=300,slow=6.4,SNR=6.9						
YKB5	**Yellowknife Ar**	**64.05**	**30**	*e*P	**P**	**02 29 56.4**	**-0.8**
KBZ	**Khabaz**	**72.27**	**311**	P	**P**	**02 30 49.7**	**+0.6**
	2.4nm,0.9s,baz=98,slow=3.6,SNR=4.2						
KIV	**Kislovodsk**	**72.27**	**312**	*e*P	**P**	**02 30 50.2**	**+1.0**
	15nm,1.3s						
NV01	**Mina Array Sit**	**74.68**	**54**	*e*P	**P**	**02 31 04.4**	**+0.7**
NVAR	**Mina Array Bea**	**74.68**	**54**	P	**P**	**02 31 04.4**	**+0.7**
	1.3nm,0.7s,baz=292,slow=6.7,SNR=6.7						
NB200	**NORSAR Array S**	**75.40**	**338**	*e*P	**P**	**02 31 07.2**	**0.0**
NOA	**NORSAR Array B**	**75.40**	**338**	P	**P**	**02 31 07.2**	**0.0**
	2.2nm,1.1s,baz=37,slow=6.1,SNR=3.2						
AKASG	**Malin Array Be**	**75.63**	**323**	P	**P**	**02 31 07.6**	**-1.1**
	0.5nm,0.4s,baz=48,slow=6.4,SNR=5.1						
AKBB	**Malin Array Si**	**75.63**	**323**	*e*P	**P**	**02 31 07.6**	**-1.0**
	11nm,1.1s						
R11A	**Troy Canyon, C**	**76.48**	**52**	*e*P	**P**	**02 31 14.7**	**+0.6**
	4.9nm,1.4s						
PSUT	**Pine Spring**	**77.48**	**51**	*e*P	**P**	**02 31 21.0**	**+1.3**
	3.0nm,1.0s						
PD31	**Pinedale Array**	**77.54**	**46**	*e*P	**P**	**02 31 19.6**	**-0.4**
PDAR	**Pinedale Array**	**77.54**	**46**	P	**P**	**02 31 19.6**	**-0.4**
	0.1nm,0.3s,baz=323,slow=2.8,SNR=2.9						
LCMT	**Little Creek M**	**78.77**	**52**	*e*P	**P**	**02 31 28.3**	**+1.5**
	4.0nm,1.2s						
KNB	**Kanab**	**79.04**	**52**	*e*P	**P**	**02 31 30.0**	**+1.7**
	3.8nm,1.0s						
SRU	**San Rafael Swe**	**79.21**	**49**	*e*P	**P**	**02 31 30.3**	**+1.1**
	3.2nm,0.9s						
BR101	**Keskin Array S**	**80.22**	**312**	*e*P	**P**	**02 31 34.9**	**+0.3**
BRTR	**Keskin Array B**	**80.22**	**312**	P	**P**	**02 31 34.9**	**+0.3**
	0.9nm,0.8s,baz=98,slow=6.4,SNR=5.4						
BR231	**Keskin MP Arra**	**80.66**	**313**	*e*P	**P**	**02 31 35.4**	**-1.5**
GERES	**GERESS Array B**	**84.01**	**329**	P	**P**	**02 31 54.9**	**+0.6**
	0.2nm,0.3s,baz=50,slow=6.8,SNR=3.0						
ANMO	**Albuquerque**	**84.36**	**50**	*e*P	**P**	**02 31 57.9**	**+1.5**
	4.4nm,1.4s						
LTX	**Lajitas**	**89.83**	**53**	*e*P	**P**	**02 32 23.2**	**+0.3**
TXAR	**Lajitas Array**	**89.83**	**53**	P	**P**	**02 32 23.2**	**+0.3**
	0.4nm,0.5s,baz=332,slow=3.0,SNR=7.7						
LPAZ	**La Paz**	**146.21**	**62**	PKPbc	**PKPdf**	**02 39 05.3**	**+0.8**
	1.3nm,0.5s,baz=295,slow=2.0,SNR=6.3						

JMA 10 02:33:06.6±0.3, 37.°19N×143.°65E, h25km, M3.8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.22**	**305**	P	Pn	02 33 43.0	+1.2
JIO				S	Sn	02 34 09.6	+1.3
JFK	**Kawauchi**	**2.22**	**275**	P	Pn	02 33 43.2	+1.3
JFK				S	Sn	02 34 09.4	+0.9
ONAJ	**Iwakimizuishiy**	**2.28**	**269**	*e*S	Sn	02 34 10.8	+0.8
JMM	**Marumori**	**2.37**	**287**	P	Pn	02 33 45.0	+1.1
JMM				*e*S	Sn	02 34 13.6	+1.5
JMK	**Ichinoseki**	**2.60**	**313**	P	Pn	02 33 48.0	+0.9
JMK				*e*S	Sn	02 34 19.9	+2.0
JFT	**Otama**	**2.66**	**278**	P	Pn	02 33 49.9	+2.0
JFT				*e*S	Sn	02 34 22.0	+2.7
JOM	**Ohasama**	**2.94**	**322**	P	Pn	02 33 54.1	+2.4
JOM				*e*S	Sn	02 34 27.0	+0.8
JYK	**Kaneyama**	**3.12**	**305**	P	Pn	02 33 57.4	+3.2
JAG	**Ashikaga**	**3.45**	**258**	P	Pn	02 33 59.9	+1.1
JAG				S	Sn	02 34 39.8	+0.9
JANG	**Nango**	**3.59**	**333**	*e*S	Sn	02 34 41.9	-0.3
JRY	**Ryogami san**	**4.00**	**254**	P	Pn	02 34 07.0	+0.7
JRY				*e*S	Sn	02 34 52.0	-0.3
JOD2	**Odawara 2**	**4.16**	**244**	*e*S	Sn	02 34 55.2	-1.1
MAT	**Matsushiro**	**4.41**	**263**	P	Pn	02 34 14.7	+2.7
MAT				S	Sn	02 35 05.5	+2.9

ISCJB ***10*** *02:46:16.7±0.5, 40.°73N±0.°03×30.°67E±0.°03, h12km±4km, Error ellipse: s-maj=5.3km s-min=4.4km az=7.9*
DDA ***10*** *02:46:16.2, 40.°70N×30.°65E, h7km, Md2.6*
CSEM ***10*** *02:46:16.3±0.1, 40.°73N×30.°68E, h15km, MD2.6, Error ellipse: s-maj=3.1km s-min=2.4km az=21.0*
ISK ***10*** *02:46:16.0, 40.°71N×30.°65E, h19km, MD2.4*
ISC 10 02:46:16.2±0.9, 40.°71N±0.°03×30.°66E±0.°02, h17km±6km, n18, σ0§32/36, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SAHE	**Sakarya_HENDEK**	**0.20**	**47**	P	**Pg**	**02 46 21.2**	**+0.1**
SAHE				S	**Sg**	**02 46 24.7**	**+0.3**
SAHE	**Sakarya_HENDEK**	**0.20**	**47**	*i* P	**Pg**	**02 46 21.2**	**+0.1**
SAHE				*i* S	**Sg**	**02 46 24.7**	**+0.3**
SPNC	**Sapanca-Adapaz**	**0.27**	**264**	*e*PG	**Pg**	**02 46 22.2**	**+0.1**
SPNC				*e*SG	**Sb**	**02 46 27.0**	**0.0**
SPNC	**Sapanca-Adapaz**	**0.27**	**264**	*e*Pg	**Pg**	**02 46 22.2**	**+0.1**
SPNC				*e*Sg	**Sb**	**02 46 27.0**	**0.0**
BTAS	**Taskesti**	**0.30**	**119**	P	**Pg**	**02 46 22.9**	**+0.2**
BTAS				S	**Sg**	**02 46 26.4**	**-0.6**
BTAS	**Taskesti**	**0.30**	**119**	*i* P	**Pg**	**02 46 22.9**	**+0.2**
BTAS				*i* S	**Sg**	**02 46 26.4**	**-0.6**
GULT	**Gulveren**	**0.30**	**201**	*e*PG	**Pb**	**02 46 23.0**	**-0.3**
GULT				*e*SG	**Sb**	**02 46 27.9**	**-0.1**
GULT	**Gulveren**	**0.30**	**201**	*e*Pg	**Pb**	**02 46 23.0**	**-0.3**
GULT				*e*Sg	**Sb**	**02 46 27.9**	**-0.1**
MDUB	**Mudurnu**	**0.48**	**120**	*e*PG	**Pb**	**02 46 26.3**	**+0.1**
MDUB				*e*SG	**Sb**	**02 46 33.4**	**+0.4**
MDUB	**Mudurnu**	**0.48**	**120**	*e*Pg	**Pb**	**02 46 26.3**	**+0.1**
MDUB				*e*Sg	**Sb**	**02 46 33.4**	**+0.4**
KAND	**Kocaeli-Kandir**	**0.52**	**317**	P	**Pg**	**02 46 26.7**	**+0.1**
KAND				S	**Sb**	**02 46 34.1**	**-0.1**
KAND	**Kocaeli-Kandir**	**0.52**	**317**	*i* P	**Pg**	**02 46 26.7**	**+0.1**
KAND				*i* S	**Sb**	**02 46 34.1**	**-0.1**
BORA	**Eskisehir**	**0.85**	**191**	P	**Pb**	**02 46 32.6**	**0.0**
BORA				S	**Sn**	**02 46 45.6**	**0.0**
BORA	**Eskisehir**	**0.85**	**191**	*i* P	**Pb**	**02 46 32.6**	**0.0**
BORA				*i* S	**Sn**	**02 46 45.6**	**0.0**
AUMIH	**MIHALICIK**	**1.05**	**143**	P	**Pb**	**02 46 36.1**	**0.0**
AUMIH				S	**Sn**	**02 46 51.2**	**+0.4**
AUMIH	**MIHALICIK**	**1.05**	**143**	*i* P	**Pb**	**02 46 36.1**	**0.0**
AUMIH				*i* S	**Sn**	**02 46 51.2**	**+0.4**
BCAM	**Yenicaga**	**1.07**	**84**	P	**Pn**	**02 46 36.7**	**0.0**
BCAM				S	**Sb**	**02 46 49.4**	**-0.9**
BCAM	**Yenicaga**	**1.07**	**84**	*i* P	**Pn**	**02 46 36.7**	**0.0**
BCAM				*i* S	**Sb**	**02 46 49.4**	**-0.9**

NIED ***10*** *02:49:00, 35.°90N×141.°40E, h8km, Mw4.6 Best double couple: M01.03000×1016 NP1:φ=15.00000°, δ=30.00000°, λ=-17.00000°. NP2:φ=120.00000°, δ=81.00000°, λ=-119.00000°.*
ISCJB ***10*** *02:49:41.4±0.2, 35.°55N±0.°03×141.°93E±0.°03, h22km, mb4.5/69, MS4.0/28, Error ellipse: s-maj=4.9km s-min=3.8km az=168.9*
NEIC ***10*** *02:49:42.8±3.2, 35.°62N×141.°84E, h19km±19km, mb4.7/21, Error ellipse: s-maj=8.1km s-min=6.3km az=135.0*
MOS ***10*** *02:49:42.7±1.1, 35.°55N×141.°93E, h32km, mb4.8/31, Error ellipse: s-maj=9.9km s-min=5.6km az=117.9*
IDC ***10*** *02:49:44.1±3.7, 35.°56N×141.°82E, h25km±24km, mb4.2/22, mb1 4.3/27, mb1mx4.2/40, mbtmp4.3/27, ML3.9/3, MS3.7/22, Ms1 3.8/22, ms1mx3.6/39, Error ellipse: s-maj=16.0km s-min=12.5km az=87.0*
JMA ***10*** *02:49:54.4±0.2, 35.°85N×141.°39E, h0km, M4.5*
ISC 10 02:49:43.0±0.4, 35.°63N±0.°04×141.°93E±0.°04, h22km, n200, σ1§54/206, mb4.6/69, MS4.0/30, 10C-3D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.87**	**275**	P	Pn	02 50 03.7	+3.8
CHOJ				S	**Sn**	**02 50 10.6**	**-1.3**
JYT	**Yasato**	**1.53**	**294**	P	Pb	02 50 14.0	+3.4
JYT				*e*S	**Sb**	**02 50 29.3**	**-0.2**
JHJ	**Hachijo jima 2**	**3.07**	**216**	Pn	**Pn**	**02 50 30.0**	**-0.1**
	120nm,0.3s,baz=221,slow=15,SNR=5.9						
JHJ				Sn	**Sn**	**02 51 07.7**	**+1.6**
	181nm,0.3s,baz=57,slow=20,SNR=7.1						
JHJ				LR	LR	02 52 04.5	
	comp=Z,2μm,18.5s,baz=82,slow=48						
MJAR	**Matsushiro Arr**	**3.15**	**288**	Pn	**Pn**	**02 50 31.2**	**0.0**
	8.0nm,0.3s,baz=94,slow=11,SNR=30						
MJAR				LR	LR	02 51 52.7	
	comp=Z,624nm,20.0s,baz=105,slow=42						
MAJO	**Matsushiro**	**3.15**	**288**	*c i*P	**Pn**	**02 50 32.5**	**+1.3**
MAJO	**Matsushiro**	**3.15**	**288**	*e*Pn	**Pn**	**02 50 32.1**	**+0.9**
MAT	**Matsushiro**	**3.15**	**288**	P	**Pn**	**02 50 31.5**	**+0.3**
MAT				*e*S	**Sb**	**02 51 12.5**	**-3.6**
MJB9	**Matsu-Tunnel**	**3.15**	**288**	*e*Pn	**Pn**	**02 50 32.2**	**+0.9**
INU	**Inuyama**	**4.01**	**267**	*e*Pn	**Pn**	**02 50 42.8**	**-0.3**
ERM	**Erimo**	**6.45**	**8**	*e*P	**Pn**	**02 51 13.6**	**-2.9**
ERM	**Erimo**	**6.45**	**8**	*e*Pn	Pn	02 51 12.3	-4.2
ERM				*e*Sn	**Sn**	**02 52 23.7**	**-5.7**
ASAJ	**Asahikawa**	**8.49**	**3**	Pn	**Pn**	**02 51 42.2**	**-2.3**
	6.3nm,0.3s,baz=204,slow=9.9,SNR=12						
ASAJ				Sn	**Sn**	**02 53 17.7**	**-2.0**
	0.9nm,0.3s,baz=14,slow=28,SNR=2.5						
ASAJ				LR	LR	02 55 36.0	
	comp=Z,784nm,21.1s,baz=170,slow=41						
ASAJ	**Asahikawa**	**8.49**	**3**	*e*Pn	**Pn**	**02 51 43.3**	**-1.3**
ASAJ				Sn	**Sn**	**02 53 17.7**	**-2.0**
CBIJ	**Chichi jima**	**8.51**	**178**	*e*Pn	**Pn**	**02 51 42.1**	**-2.8**
CBIJ				*e*Sn	**Sn**	**02 53 17.1**	**-3.1**
JCJ	**Chichijima**	**8.51**	**178**	Pn	**Pn**	**02 51 42.6**	**-2.3**
	53nm,0.3s,baz=106,slow=22,SNR=44						
JCJ				Sn	**Sn**	**02 53 16.4**	**-3.8**
	15nm,0.3s,baz=259,slow=21,SNR=3.9						
JCJ				LR	LR	02 55 52.3	
	comp=Z,249nm,18.9s,baz=42,slow=44						
YUK	**Yuzh-Kuril'sk**	**8.92**	**19**	*e*P	**Pn**	**02 51 50.8**	**+0.3**
YUK				pmax	pmax		
	comp=Z,86nm,0.7s						
YUK				MLR	MLR		
	comp=Z,791nm,15.0s						
SHO	**Shikotan**	**9.05**	**23**	*e*P	**Pn**	**02 51 51.5**	**-0.8**
SHO				pmax	pmax		
	comp=Z,39nm,0.5s						
SHO				pmax	pmax		
	comp=N,21nm,0.4s						
SHO				pmax	pmax		
	comp=E,25nm,0.4s						
JNU	**Nakatsue**	**9.47**	**258**	Pn	**Pn**	**02 51 59.5**	**+1.5**
	comp=E,1.0nm,0.3s,baz=71,slow=8.1,SNR=9.4						
JNU				LR	LR	02 55 36.2	
	comp=E,817nm,20.9s,baz=116,slow=38						
JNU	**Nakatsue**	**9.47**	**258**	*e*Pn	**Pn**	**02 51 59.1**	**+1.0**
KUR	**Kuril'sk**	**10.60**	**23**	*e*P	Pn	02 52 05.4	-8.1
KUR				pmax	pmax		
	comp=Z,59nm,0.9s						
VLA	**Vladivostok**	**10.78**	**317**	⇓*i*P	Pn	02 52 22.9	+7.0
VLA				*e*S	Sn	02 54 25.9	+10
VLA				pmax	pmax		
	comp=Z,27nm,1.2s						
MSHR	**Mys Shultsa**	**10.87**	**313**	*ce*P	Pn	02 52 21.8	+4.7
YSS	**Yuzh-Sakhalins**	**11.33**	**3**	⇑*e*P	**Pn**	**02 52 21.4**	**-2.0**
YSS				pmax	pmax		
	comp=Z,15nm,0.8s						
YSS				MLR	MLR		
	comp=Z,700nm,15.0s						
YSS				MLR	MLR		
	comp=N,3μm,17.0s						
YSS				MLR	MLR		
	comp=E,1μm,15.0s						
KSRS	**Korea Array**	**11.41**	**283**	Pn	Pn	02 52 27.6	+3.0
	comp=E,0.1nm,0.3s,baz=99,slow=14,SNR=9.5						
KSRS				LR	LR	02 57 05.9	
	comp=E,584nm,18.7s,baz=92,slow=39						
KS01	**Wonju Array Si**	**11.44**	**283**	*e*Pn	**Pn**	**02 52 21.9**	**-3.0**
KSAR	**Wonju Array Be**	**11.44**	**283**	P	Pn	02 52 27.6	+2.6
KSAR	**Wonju Array Be**	**11.44**	**283**	Pn	Pn	02 52 27.6	+2.6
USRK	**Ussuriysk Ar.**	**11.46**	**321**	Pn	**Pn**	**02 52 26.0**	**+0.8**
	comp=E,0.1nm,0.3s,baz=125,slow=14,SNR=3.1						
USRK				LR	LR	02 56 24.3	
	comp=E,148nm,21.4s,baz=125,slow=35						
MDJ	**Mudanjiang**	**13.01**	**317**	P	**P**	**02 52 53.8**	**-2.9**
MDJ				pmax	pmax		
	comp=Z,10.0nm,1.4s						
MDJ				pmax	pmax		
	comp=Z,72nm,3.8s						
MDJ				LR	LR		
	comp=N,380nm,20.6s						
MDJ				LR	LR		
	comp=E,190nm,19.7s						
MDJ				LR	LR		
	comp=Z,240nm,17.0s						
CN2	**Changchun**	**15.06**	**308**	*e*P	**Pn**	**02 53 14.7**	**+0.4**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.6s						
CN2				pmax	pmax		
	comp=Z,200nm,4.0s						
CN2				LR	LR		
	comp=N,900nm,14.0s						
CN2				LR	LR		
	comp=E,600nm,14.0s						
CN2				LR	LR		
	comp=Z,500nm,15.0s						
TYV	**Tymovskoe**	**15.24**	**2**	*e*P	**P**	**02 53 20.0**	**-1.4**
TYV				pmax	pmax		
	comp=Z,11nm,0.8s						
TYV				MLR	MLR		
	comp=N,1μm,14.0s						
TYV				MLR	MLR		
	comp=Z,1μm,14.0s						
KLR	**Kul'dur**	**15.51**	**334**	Pn	**Pn**	**02 53 17.9**	**-2.3**
	comp=Z,0.1nm,0.3s,baz=130,slow=9.7,SNR=4.5						
NKL	**Nikolayevsk**	**17.54**	**358**	*e*P	**P**	**02 53 48.8**	**+2.0**
NJ2	**Nanjing**	**19.48**	**266**	*e*P	**Pn**	**02 54 11.9**	**+2.2**
NJ2				pmax	pmax		
	comp=Z,30nm,0.5s						
PETK	**Petropavlovsk-**	**20.72**	**28**	P	**P**	**02 54 21.2**	**-0.4**
	comp=Z,8.3nm,1.0s,baz=171,slow=12,SNR=4.1						
PETK				LR	LR	03 01 57.8	
	comp=Z,260nm,22.0s,baz=223,slow=35						
BJI	**Beijing**	**20.78**	**290**	P	**P**	**02 54 22.7**	**+0.2**
BJI				S	Sn	02 58 15.8	-3.1
BJI				pmax	pmax		
	comp=Z,14nm,1.0s						
BJI				pmax	pmax		
	comp=Z,80nm,3.0s						
BJI				LR	LR		
	comp=N,220nm,10.8s						
BJI				LR	LR		
	comp=E,370nm,12.0s						
BJI				LR	LR		
	comp=Z,180nm,14.7s						
BJT	**Baijiatuau**	**20.79**	**290**	*e*P	**P**	**02 54 19.4**	**-3.1**
BJT				pmax	pmax		
	comp=Z,22nm,1.0s						
BJT	**Baijiatuau**	**20.79**	**290**	*e*P	**P**	**02 54 19.4**	**-3.1**
	comp=Z,22nm,1.0s						
QZH	**Quanzhou**	**22.74**	**248**	*e*P	**P**	**02 54 43.7**	**+0.2**
QZH				S	**S**

SONA1	**Songino Array**	**28.92 306**	*e*P	**P**	**02 55 40.3**	**-0.2**
SONM	**Songino Array**	**28.93 306**	P	**P**	**02 55 40.7**	**+0.2**
	comp=Z,3.8nm,0.9s,baz=104,slow=7.6,SNR=18					
SONM			ScP	**ScP**	**03 02 29.0**	**-0.2**
	comp=Z,0.9nm,0.8s,baz=229,slow=5.6,SNR=5.7					
SONM			LR	LR	03 07 20.1	
	comp=Z,163nm,20.0s,baz=125,slow=36					
BOD	**Bodaibo**	**28.94 329**	*e*P	**P**	**02 55 40.2**	**-0.1**
BOD			pmax	pmax		
	comp=Z,9.0nm,1.3s					
LZH	**Lanzhou**	**30.74 282**	*e*P	**P**	**02 55 56.4**	**-0.3**
LZH			pP	pP	02 56 01.1	-2.3
LZH			sP	sP	02 56 04.5	-1.6
LZH			PP	**PnPn**	**02 56 57.1**	**+0.4**
LZH			*e*S	**S**	**03 00 56.0**	**-2.7**
LZH			sS	sS	03 01 10.1	+0.5
LZH			SS	**SnSn**	**03 02 43.7**	**+6.4**
LZH			pmax	pmax		
	comp=Z,30nm,1.2s					
LZH			pmax	pmax		
	comp=Z,110nm,4.2s					
LZH			LR	LR		
	comp=N,2μm,15.2s					
LZH			LR	LR		
	comp=E,1μm,14.8s					
LZH			LR	LR		
	comp=Z,2μm,16.0s					
GYA	**Guiyang**	**31.43 263**	*e*P	**P**	**02 56 04.2**	**+1.4**
GYA			pmax	pmax		
	comp=Z,10.0nm,0.8s					
ZAK	**Zakamensk**	**31.48 310**	*e*P	**P**	**02 56 02.6**	**-0.4**
ZAK			*e*		02 57 14.0	
ZAK			pmax	pmax		
	comp=Z,7.0nm,1.5s					
ZAK			pmax	pmax		
	comp=Z,4.0nm,1.6s					
TLY	**Talaya**	**31.57 313**	*e*P	**P**	**02 56 04.7**	**+1.0**
TLY			pmax	pmax		
	comp=Z,17nm,1.4s					
TLY			MLR	MLR		
	comp=Z,210nm,15.0s					
CD2	**Chengdu**	**32.12 273**	P	**P**	**02 56 09.1**	**+0.3**
CD2			pmax	pmax		
	comp=Z,10.0nm,0.6s					
QIZ	**Qiongzhong**	**32.76 248**	P	**P**	**02 56 15.8**	**+1.4**
QIZ			S	**S**	**03 01 32.7**	**+2.6**
QIZ			LR	LR		
	comp=N,190nm,21.2s					
QIZ			LR	LR		
	comp=E,120nm,16.7s					
MOY	**Mondy**	**33.17 312**	*e*P	**P**	**02 56 18.1**	**+0.3**
GTA	**Gaotai**	**33.39 289**	⇑P	**P**	**02 56 20.1**	**+0.1**
GTA			pP	pP	02 56 26.5	-0.1
GTA			sP	sP	02 56 29.7	+0.3
GTA			S	**S**	**03 01 39.0**	**-0.9**
GTA			sS	sS	03 01 49.2	-1.7
GTA			SS	**SnSn**	**03 03 43.0**	**+1.3**
GTA			pmax	pmax		
	comp=Z,8.0nm,1.2s					
GTA			pmax	pmax		
	comp=Z,42nm,5.2s					
GTA			LR	LR		
	comp=N,310nm,15.7s					
GTA			LR	LR		
	comp=E,270nm,18.5s					
GTA			LR	LR		
	comp=Z,220nm,18.1s					
KMI	**Kunming**	**35.19 264**	P	**P**	**02 56 36.3**	**+0.6**
KMI			pmax	pmax		
	comp=Z,8.0nm,0.7s					
KMI			pmax	pmax		
	comp=Z,97nm,4.3s					
BILL	**Bilibino**	**35.26 16**	*i* P	**P**	**02 56 35.4**	**-0.2**
BILL			*i* SS	SS	03 04 33.2	-8.0
BILL			pmax	pmax		
	comp=Z,11nm,1.2s					
BILL	**Bilibino**	**35.26 16**	*e*P	**P**	**02 56 34.1**	**-1.5**
	comp=Z,11nm,1.0s					
TIXI	**Tiksi**	**36.73 353**	P	**P**	**02 56 48.6**	**+0.5**
	comp=Z,1.9nm,0.5s,baz=146,slow=8.5,SNR=5.4					
TIXI	**Tiksi**	**36.73 353**	*e*P	**P**	**02 56 48.4**	**+0.3**
TIXI			pmax	pmax		
	comp=Z,11nm,1.7s					
TIXI	**Tiksi**	**36.73 353**	*e*P	**P**	**02 56 47.5**	**-0.6**
	comp=Z,15nm,1.3s					
WMQ	**Urumqi**	**41.85 298**	P	**P**	**02 57 32.0**	**+0.6**
WMQ			pP	pP	02 57 38.5	+0.3
WMQ			sP	sP	02 57 43.6	+2.7
WMQ			pmax	pmax		
	comp=Z,14nm,1.2s					
WMQ			pmax	pmax		
	comp=Z,60nm,3.6s					
WMQ			LR	LR		
	comp=N,200nm,17.4s					
WMQ			LR	LR		
	comp=E,72nm,17.4s					
WMQ			LR	LR		
	comp=Z,150nm,19.6s					
ZAA0	**Zalesovo Array**	**43.17 313**	*e*P	**P**	**02 57 40.7**	**-1.1**
ZALV	**Zalesovo Beam**	**43.17 313**	P	**P**	**02 57 41.4**	**-0.4**
	comp=Z,1.5nm,0.4s,baz=90,slow=7.4,SNR=10.0					
NVS	**Novosibirsk**	**44.11 315**	*e*P	**P**	**02 57 48.0**	**-1.4**
NVS			pmax	pmax		
	comp=Z,14nm,1.5s					
NVS			pmax	pmax		
	comp=E,5.0nm,0.9s					
NRIK	**Noril'sk**	**44.71 336**	P	**P**	**02 57 55.2**	**+1.2**
	comp=E,1.9nm,0.4s,baz=122,slow=6.5,SNR=5.3					
NRIK			LR	LR	03 18 12.5	
	comp=E,211nm,18.4s,baz=108,slow=38					
PMG	**Port Moresby**	**45.06 173**	*e*P	**P**	**02 57 56.5**	**-0.8**
PMG			pmax	pmax		
	comp=Z,24nm,1.3s					
PMG	**Port Moresby**	**45.06 173**	*e*P	**P**	**02 57 56.5**	**-0.8**
	comp=Z,24nm,1.3s					
MK01	**Makanchi Array**	**45.22 303**	*e*P	**P**	**02 57 58.4**	**-0.1**
MK31	**Makanchi Array**	**45.23 303**	*e*P	**P**	**02 57 58.8**	**+0.4**
MK31	**Makanchi Array**	**45.23 303**	*e*P	**P**	**02 57 58.8**	**+0.4**
MKAR	**Makanchi Array**	**45.23 303**	P	**P**	**02 57 58.5**	**+0.1**
	comp=Z,5.9nm,0.8s,baz=90,slow=9.6,SNR=22					
MKAR			LR	LR	03 16 09.2	
	comp=Z,118nm,19.0s,baz=90,slow=35					
MKAR	**Makanchi Array**	**45.23 303**	*e*P	**P**	**02 57 58.8**	**+0.4**
MAKZ	**Makanchi**	**45.44 303**	*e*P	**P**	**02 58 00.5**	**+0.4**
MAKZ			pmax	pmax		
	comp=Z,10.0nm,1.0s					
MAKZ	**Makanchi**	**45.44 303**	*e*P	**P**	**02 58 00.5**	**+0.4**
	comp=Z,9.5nm,1.0s					
GUN	**Gumba**	**47.72 277**	*e*P	**P**	**02 58 18.7**	**0.0**
	comp=Z,49nm,1.0s					
KDAK	**Kodiak Island**	**47.88 41**	*c*eP	**P**	**02 58 20.2**	**+1.2**
SPU	**Mount Spurr**	**48.11 36**	*e*P	**P**	**02 58 22.9**	**+2.0**
KKN	**Kakani**	**48.26 277**	*e*P	**P**	**02 58 22.8**	**+0.2**
DMN	**Daman**	**48.47 277**	*e*P	**P**	**02 58 24.1**	**-0.2**
GKN	**Gorkha**	**48.69 278**	*e*P	**P**	**02 58 25.9**	**0.0**
	comp=Z,82nm,0.9s					
COEN	**Coen**	**49.33 178**	*e*P	**P**	**02 58 30.9**	**+0.4**
	comp=Z,34nm,1.1s					
KOLN	**Koldanda**	**49.62 278**	*e*P	**P**	**02 58 33.3**	**+0.2**
PYUN	**Piuthan**	**49.98 279**	*e*P	**P**	**02 58 35.8**	**0.0**
	comp=Z,99nm,1.0s					
ILAR	**Eielson Array**	**50.46 32**	P	**P**	**02 58 39.5**	**+0.8**
	comp=Z,3.3nm,0.7s,baz=265,slow=6.1,SNR=45					
ILAR			LR	LR	03 22 16.2	
	comp=Z,45nm,19.6s,baz=260,slow=39					
ILB	**Eielson Array**	**50.46 32**	*e*P	**P**	**02 58 39.7**	**+1.0**
IL1	**Eielson Array**	**50.46 32**	*e*P	**P**	**02 58 39.2**	**+0.5**
TKM2	**Tokmak 2**	**50.67 300**	*e*P	**P**	**02 58 42.1**	**+1.2**
TKM2			pmax	pmax		
	comp=Z,14nm,1.1s					
TKM2	**Tokmak 2**	**50.67 300**	*e*P	**P**	**02 58 42.1**	**+1.2**
	comp=Z,14nm,1.1s					
FYU	**Fort Yukon**	**51.12 29**	*e*P	**P**	**02 58 45.9**	**+2.2**
	comp=Z,43nm,1.5s					
KSH	**Kashi**	**51.37 295**	*e*P	P	02 58 52.4	+6.4
KSH			*es*P	sP	02 59 01.1	+5.5
KSH			PcS	**PcS**	**03 04 01.6**	**+3.1**
KSH			S	S	03 06 13.3	+9.0
KSH			pmax	pmax		
	comp=Z,89nm,3.8s					
KSH			LR	LR		
	comp=N,180nm,6.6s					
KSH			LR	LR		
	comp=E,370nm,15.5s					
FRU	**Bishkek**	**51.39 300**	*e*P	**P**	**02 58 46.0**	**-0.1**
AAK	**Ala-Archa**	**51.53 299**	*e*P	**P**	**02 58 48.2**	**+0.9**
AAK			pmax	pmax		
	comp=Z,3.0nm,0.8s					
AAK	**Ala-Archa**	**51.53 299**	*e*P	**P**	**02 58 46.2**	**-1.0**
BRVK	**Borovoye**	**51.88 313**	*c*eP	**P**	**02 58 50.4**	**+0.9**
BRVK			pmax	pmax		
	comp=Z,7.0nm,1.2s					
EKS2	**Erkin-Say**	**52.03 300**	*e*P	**P**	**02 58 51.2**	**+0.2**
EKS2	**Erkin-Say**	**52.03 300**	*e*P	**P**	**02 58 51.2**	**+0.2**
UGM	**Wanagama**	**52.45 221**	*e*P	**P**	**02 58 54.1**	**-0.1**
	comp=Z,206nm,1.3s					
ZRNK	**Zerenda**	**52.66 313**	*e*P	**P**	**02 58 55.4**	**+0.1**
ZRNK			pmax	pmax		
	comp=Z,12nm,1.0s					
ZRNK	**Zerenda**	**52.66 313**	*e*P	**P**	**02 58 55.4**	**+0.1**
	comp=Z,12nm,1.0s					
EGAK	**Eagle**	**52.91 32**	*e*P	**P**	**02 58 58.7**	**+1.7**
	comp=Z,18nm,1.8s					
GSI	**Gunungsitoli**	**53.45 240**	*e*P	**P**	**02 59 01.2**	**-0.4**
	comp=Z,47nm,1.1s					
KKAR	**Karatay Array**	**54.19 301**	*e*P	**P**	**02 59 07.1**	**+0.4**
KKAR	**Karatay Array**	**54.19 301**	*e*P	**P**	**02 59 07.1**	**+0.4**
WRAB	**Tennant Creek**	**55.72 189**	*c*eP	**P**	**02 59 18.0**	**+0.1**
WRAB			pmax	pmax		
	comp=Z,141nm,1.2s					
WRA	**Warramunga Arr**	**55.73 189**	P	**P**	**02 59 17.7**	**-0.3**
	comp=Z,30nm,0.9s,baz=7.8,slow=7.5,SNR=80					
ARU	**Arti**	**57.69 319**	*d i* P	**P**	**02 59 31.7**	**+0.2**
ARU					03 00 18.8	
ARU			S	**S**	**03 07 30.2**	**+1.6**
ARU			SS	**SS**	**03 11 17.6**	**-0.9**
ARU			pmax	pmax		
	comp=Z,23nm,1.7s					
HYB	**Hyderabad**	**58.59 270**	*i* P	**P**	**02 59 39.0**	**+0.6**
ABKAR	**Akbulak array**	**59.16 311**	*e*P	**P**	**02 59 41.9**	**-0.1**
AS01	**Alice Springs**	**59.45 188**	*e*P	**P**	**02 59 43.9**	**-0.2**
AS31	**Alice Springs**	**59.46 189**	*e*P	**P**	**02 59 42.3**	**-1.9**
	comp=Z,3.0nm,0.8s					
ASAR	**Alice Springs**	**59.46 189**	P	**P**	**02 59 44.0**	**-0.1**
	comp=Z,12nm,1.0s,baz=11,slow=5.3,SNR=49					
YKA	**Yellowknife Ar**	**64.81 30**	P	**P**	**03 00 20.4**	**+0.7**
	comp=Z,1.9nm,1.0s,baz=298,slow=6.5,SNR=15					
YKB5	**Yellowknife Ar**	**64.81 30**	*e*P	**P**	**03 00 20.0**	**+0.4**
GEYT	**Alibeck**	**64.88 300**	P	**P**	**03 00 21.3**	**+0.7**
	comp=Z,0.9nm,0.4s,baz=120,slow=2.1,SNR=3.9					
KLMR	**Klimovskoe**	**65.16 328**	*e*P	**P**	**03 00 20.8**	**-1.1**
KLMR			pmax	pmax		
	comp=Z,9.0nm,1.2s					
ARCES	**ARCESS Array B**	**65.45 340**	LR	LR	03 34 44.8	
	comp=Z,154nm,18.6s,baz=42,slow=41					
AFI	**Afiamalu**	**65.92 130**	LR	LR	03 25 10.2	
	comp=Z,41nm,21.3s,baz=214,slow=32					
STKA	**Stephens Creek**	**67.15 180**	P	**P**	**03 00 35.0**	**+0.1**
	comp=Z,2.0nm,0.7s,baz=317,slow=18,SNR=3.5					
OBN	**Obninsk**	**69.47 324**	*i* P	**P**	**03 00 48.5**	**-0.8**
OBN			*i* S	**SKiKP**	**03 10 42.7**	**+6.1**
OBN			pmax	pmax		
	comp=Z,8.0nm,0.9s					
OBN			MLR	MLR		
	comp=Z,150nm,17.0s					
FINES	**FINESS Array B**	**70.25 333**	P	**P**	**03 00 54.7**	**+0.7**
	comp=Z,2.7nm,0.8s,baz=46,slow=8.2,SNR=8.3					
ZEI	**Tsey**	**72.01 310**	*e*P	**P**	**03 01 04.5**	**-0.8**
ZEI			pmax	pmax		
	comp=Z,15nm,1.5s					
SUMG	**Summit**	**72.09 0**	*e*P	**P**	**03 01 04.4**	**-1.0**
SUMG			pmax	pmax		
	comp=Z,12nm,1.1s					
SUMG	**Summit**	**72.09 0**	*e*P	**P**	**03 01 04.4**	**-1.0**
	comp=Z,12nm,1.1s					
KBZ	**Khabaz**	**72.13 311**	P	**P**	**03 01 06.4**	**+0.7**
	comp=Z,1.7nm,0.8s,baz=39,slow=9.4,SNR=4.7					
KIV	**Kislovodsk**	**72.14 312**	*e*P	**P**	**03 01 06.6**	**+0.7**
KIV			pmax	pmax		
	comp=Z,7.0nm,1.1s					
JTMT	**Jette**	**72.73 43**	*e*P	**P**	**03 01 09.8**	**+0.4**
GNI	**Garni**	**72.88 307**	*e*P	**P**	**03 01 10.0**	**-0.5**
GNI			pmax	pmax		
	comp=Z,11nm,1.1s					
SWMT	**Swartz Lake**	**73.02 43**	*e*P	**P**	**03 01 12.5**	**+1.4**
LRM	**Limekiln Ridge**	**74.86 44**	*e*P	**P**	**03 01 23.7**	**+1.6**
EGMT	**Eagleton**	**75.05 41**	*e*P	**P**	**03 01 24.0**	**+1.0**
	comp=Z,7.2nm,1.0s					
NC405	**NORSAR Array S**	**75.43 337**	*e*P	**P**	**03 01 25.2**	**+0.5**
NV01	**Mina Array Sit**	**75.50 53**	*e*P	**P**	**03 01 27.3**	**+1.4**
NVAR	**Mina Array Bea**	**75.50 53**	P	**P**	**03 01 27.3**	**+1.4**
	comp=Z,1.2nm,0.7s,baz=291,slow=4.6,SNR=4.8					
NVAR			LR	LR	03 28 31.0	
	comp=Z,66nm,22.0s,baz=263,slow=31					
NC204	**NORSAR Array S**	**75.60 338**	*e*P	**P**	**03 01 26.7**	**+0.9**
NB2	**NORSAR Subarra**	**75.64 338**	P	**P**	**03 01 25.7**	**-0.3**
	comp=Z,4.0nm,0.9s,baz=41,slow=5.9					
NOA	**NORSAR Array B**	**75.64 338**	P	**P**	**03 01 26.3**	**+0.3**
	comp=Z,2.0nm,0.7s,baz=40,slow=5.7,SNR=14					
NOA			LR	LR	03 37 55.8	
	comp=Z,74nm,19.3s,baz=45,slow=38					
AKASG	**Malin Array Be**	**75.66 323**	P	**P**	**03 01 25.9**	**-0.4**
	comp=Z,2.0nm,0.6s,baz=46,slow=6.3,SNR=13					
AKASG			LR	LR	03 37 52.1	
	comp=Z,76nm,18.1s,baz=50,slow=38					
H17A	**Grant Village**	**76.78 45**	*e*P	P	03 01 36.5	+3.4
	comp=Z,6.7nm,1.1s					
R11A	**Troy Canyon, C**	**77.30 52**	*e*P	**P**	**03 01 36.8**	**+0.8**
	comp=Z,4.3nm,1.3s					
HWUT	**Hardware Ranch**	**77.88 47**	*e*P	**P**	**03 01 40.0**	**+0.8**
	comp=Z,15nm,1.5s					
DUG	**Dugway, Tooele**	**77.96 49**	*e*P	**P**	**03 01 41.2**	**+1.5**
DUG			pmax	pmax		
	comp=Z,4.0nm,1.0s					
DUG	**Dugway, Tooele**	**77.96 49**	*e*P	**P**	**03 01 41.2**	**+1.5**
	comp=Z,4.0nm,1.0s					
BW06	**Boulder Array**	**78.36 45**	*e*P	**P**	**03 01 42.4**	**+0.5**
PDAR	**Pinedale Array**	**78.36 45**	P	**P**	**03 01 43.5**	**+1.6**
	comp=Z,0.8nm,0.6s,baz=279,slow=2.6,SNR=8.7					
PDAR			LR	LR	03 31 30.2	
	comp=Z,30nm,21.9s,baz=358,slow=32					
RAR	**Rarotonga**	**79.00 126**	LR	LR	03 31 03.2	
	comp=Z,27nm,19.3s,baz=104,slow=31					
BUR08	**Bucovina Ar. S**	**79.66 322**	*e*P	**P**	**03 01 49.5**	**+0.8**
BR131	**Keskin Array S**	**80.09 312**	*e*P	**P**	**03 01 52.0**	**+0.7**
BRTR	**Keskin Array B**	**80.09 312**	P	**P**	**03 01 52.0**	**+0.7**
	comp=Z,2.7nm,0.9s,baz=105,slow=3.7,SNR=14					
STHS	**Stebnicka Huta**	**80.34 325**	*e*P	**P**	**03 01 53.1**	**+0.8**
STHS			pmax	pmax		
	comp=Z,3.0nm,1.0s					
STHS	**Stebnicka Huta**	**80.34 325**	*e*P	**P**	**03 01 53.1**	**+0.8**
ULM	**Lac du Bonnet**	**80.45 33**	LR	LR	03 40 11.8	
	comp=Z,24nm,20.2s,baz=338,slow=38					
BR231	**Keskin MP Arra**	**80.54 312**	*e*P	**P**	**03 01 52.1**	**-1.6**
CRVS	**Cervenica-Dubn**	**80.61 325**	*e*P	**P**	**03 01 54.8**	**+1.1**
CRVS	**Cervenica-Dubn**	**80.61 325**	*e*P	**P**	**03 01 54.8**	**+1.1**
OKC	**Ostrava-Krasne**	**81.45 327**	*e*P	**P**	**03 01 59.9**	**+1.7**
OKC	**Ostrava-Krasne**	**81.45 327**	⇓*e*P	**P**	**03 01 59.9**	**+1.7**
DPC	**Dobruska-Polom**	**81.87 328**	*e*P	**P**	**03 02 01.5**	**+1.0**
DPC			*ep*P	**sP**	**03 02 08.3**	**-2.0**
DPC			AMS	AMS	03 43 30.0	
	comp=Z,200nm,16.7s					
DPC	**Dobruska-Polom**	**81.87 328**	*e*P	**P**	**03 02 01.5**	**+1.0**
DPC			*e*		03 02 08.3	
DPC			MLR	MLR		
	comp=Z,200nm,16.7s					
KRLC	**Kraliky**	**81.87 328**	*e*P	**P**	**03 02 01.1**	**+0.6**
KRLC			*ep*P	**pP**	**03 02 07.4**	**-0.3**
KRLC	**Kraliky**	**81.87 328**	*e*P	**P**	**03 02 01.1**	**+0.6**
KRLC			*e*		03 02 07.4	
VYHS	**Vyhne**	**82.11 326**	*e*P	**P**	**03 02 01.8**	**0.0**
VYHS			pmax	pmax		
	comp=Z,2.0nm,1.2s					
VYHS	**Vyhne**	**82.11 326**	*e*P	**P**	**03 02 01.8**	**0.0**
BRG	**Berggiesshubel**	**82.47 330**	*e*(P)	**P**	**03 02 05.1**	**+1.6**
	comp=Z,2.4nm,0.9s					
BRG	**Berggiesshubel**	**82.47 330**	*e*P	**P**	**03 02 05.1**	**+1.6**
BRG			pmax	pmax		
	comp=Z,6.0nm,0.9s					
PVCC	**Panska Ves**	**82.47 329**	*e*P	**P**	**03 02 04.7**	**+1.1**
PVCC			AMS	AMS	03 42 00.0	
	comp=Z,200nm,18.8s					
PVCC	**Panska Ves**	**82.47 329**	*e*P	**P**	**03 02 04.7**	**+1.1**
PVCC			MLR	MLR		
	comp=Z,200nm,18.8s					
CLL	**Collm**	**82.52 330**	*i* P	**P**	**03 02 03.9**	**+0.1**
	comp=Z,7.0nm,1.0s					
CLL			*i*		03 02 10.6	
CLL			L	L	03 44 00.0	
	comp=Z,100nm,19.2s					
CLL	**Collm**	**82.52 330**	*i* P	**P**	**03 02 03.9**	**+0.1**
CLL			pmax	pmax		
	comp=Z,7.0nm,1.0s					
CLL	**Collm**	**82.52 330**	*e*P	**P**	**03 02 03.5**	**-0.2**
	comp=Z,4.7nm,0.7s					
PRU	**Pruhonice**	**82.89 329**	*e*P	**P**	**03 02 07.0**	**+1.2**
PRU	**Pruhonice**	**82.89 329**	*e*P	**P**	**03 02 07.0**	**+1.2**
KHC	**Kasperske Hory**	**83.95 329**	*e*P	**P**	**03 02 11.9**	**+0.6**
KHC			*ep*P	**pP**	**03 02 17.8**	**-0.7**
KHC	**Kasperske Hory**	**83.95 329**	*e*P	**P**	**03 02 11.9**	**+0.6**
KHC			*e*		03 02 17.8	
KHC	**Kasperske Hory**	**83.95 329**	*e*P	**P**	**03 02 12.0**	**+0.7**
	comp=Z,1.2nm,0.8s					
TUC	**Tucson**	**84.06 54**	*e*P	**P**	**03 02 12.3**	**+0.1**
TUC			pmax	pmax		
	comp=Z,10.0nm,1.6s					
TUC	**Tucson**	**84.06 54**	*e*P	**P**	**03 02 12.3**	**+0.1**
	comp=Z,9.5nm,1.6s					
GERES	**GERESS Array B**	**84.12 329**	P	**P**	**03 02 12.3**	**+0.1**
	comp=Z,0.9nm,0.6s,baz=35,slow=4.9,SNR=11					
GEA0	**GERESS Array S**	**84.13 329**	*e*P	**P**	**03 02 11.9**	**-0.3**
ANMO	**Albuquerque**	**85.17 50**	*e*P	**P**	**03 02 17.6**	**-0.4**
ANMO			pmax	pmax		
	comp=Z,5.0nm,1.3s					
ANMO	**Albuquerque**	**85.17 50**	*e*P	**P**	**03 02 17.6**	**-0.4**
	comp=Z,5.4nm,1.3s					
SCHQ	**Schefferville**	**86.57 16**	P	**P**	**03 02 26.0**	**+1.8**
	comp=Z,3.6nm,0.9s,baz=10,slow=11,SNR=3.5					
BFO	**Black Forest**	**86.73 331**	*c*eP	**P**	**03 02 25.9**	**+0.7**
BFO	**Black Forest**	**86.73 331**	*e*P	**P**	**03 02 25.4**	**+0.2**
	comp=Z,9.8nm,1.2s					
TX31	**Lajitas Ar. Si**	**90.64 53**	*e*P	**P**	**03 02 44.1**	**0.0**
TXAR	**Lajitas Array**	**90.65 53**	P	**P**	**03 02 45.6**	**+1.5**
	comp=Z,1.2nm,0.8s,baz=291,slow=3.4,SNR=13					
TXAR			LR	LR	03 38 21.5	
	comp=Z,60nm,20.7s,baz=0.0,slow=32					
TORD	**Torodi Ar. Bea**	**118.61 315**	PKP	**PKPdf**	**03 08 30.8**	**+1.1**
	comp=Z,0.3nm,0.6s,baz=344,slow=0.8,SNR=5.3					
LPAZ	**La Paz**	**147.01 62**	PKPbc	**PKPab**	**03 09 26.2**	**-0.5**
	comp=Z,3.9nm,1.1s,baz=276,slow=2.2,SNR=8.6					

KRNET ***10*** *02:50:04.0±0.1, 39°.74N×72°.62E, h14km, mb2.6*
NNC ***10*** *02:50:05.8±1.4, 39°.85N×72°.66E, h0km, mb3.5, mpv3.0,*
Error ellipse: s-maj=15.1km s-min=5.8km az=1.0
ISC 10 02:50:05.2±1.4, 39°.74N±0°.06×72°.65E±0°.04, h2km±12km, n15, σ1°.07/26, 19C-11D, Kyrgyzstan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFK	**Sufi-Kurgan**	**0.71**	**67**	⇓*i*P	**Pg**	**02 50 18.5**	**-0.4**
	baz=68						
SFK				⇓*i*S	**Sg**	**02 50 28.5**	**+0.3**
	baz=68						
SFK	**Sufi-Kurgan**	**0.71**	**67**	⇑P	**Pg**	**02 50 18.3**	**-0.6**
	2.2nm,0.2s						
SFK				⇑S	**Sg**	**02 50 28.8**	**+0.7**
	37nm,0.2s						
OHH	**Osh**	**0.79**	**8**	⇓*i*P	**Pg**	**02 50 19.4**	**-1.0**
	baz=9.0						
OHH				⇓*i*S	**Sg**	**02 50 30.8**	**+0.1**
	baz=9.0						
BTK	**Batken**	**1.44**	**283**	⇓*i*P	**Pn**	**02 50 31.0**	**-1.5**
	baz=283						
BTK				⇓*i*S	**Sb**	**02 50 50.2**	**-1.6**
	baz=283						
ARSB	**Arslanbob**	**1.61**	**9**	⇑*e*P	**Pn**	**02 50 34.4**	**-0.4**
	baz=10.0						
ARSB				⇑*e*S	**Sn**	**02 50 56.1**	**0.0**
	baz=10.0						
TOKL	**Toktogul**	**2.21**	**4**	⇑*e*P	**Pn**	**02 50 43.6**	**+0.6**
	baz=5.0						
TOKL				⇑*i*S	**Sb**	**02 51 12.8**	**-0.9**
	baz=5.0						
AML	**Almayashu**	**2.52**	**18**	⇑*i*P	**Pb**	**02 50 50.7**	**-0.7**
	baz=18						
AML				⇑*i*S	**Sb**	**02 51 23.7**	**+0.7**
	baz=18						
MNAS	**Manas**	**2.75**	**358**	⇓*e*P	**Pn**	**02 50 51.4**	**+0.9**
	baz=358						
MNAS				⇓*i*S	**Sn**	**02 51 25.0**	**+0.6**
	baz=358						
MNAS	**Manas**	**2.75**	**358**	⇑Pg	**Pn**	**02 50 51.9**	**+1.4**
	4.2nm,0.4s						
MNAS				⇑Lg	Lg	02 51 30.4	
	24nm,0.5s						
UCH	**Uchtor**	**2.86**	**29**	⇑*i*P	**Pb**	**02 50 56.6**	**-0.7**
	baz=29						
UCH				⇑*i*S	**Sb**	**02 51 30.8**	**-2.1**
	baz=29						
NRN	**Naryn**	**3.06**	**55**	⇑*e*P	**Pn**	**02 50 55.1**	**+0.2**
	baz=56						
NRN				⇑*e*S	**Sn**	**02 51 32.1**	**-0.2**
	baz=56						
DZET	**Dzherino**	**3.11**	**254**	⇓Pg	**Pg**	**02 51 05.3**	**+0.5**
	13nm,0.6s						
DZET				⇓Lg	Lg	02 51 47.6	
	114nm,0.6s						
AAK	**Ala-Archa**	**3.21**	**25**	⇑Pg	**Pb**	**02 51 02.9**	**-0.1**
	4.8nm,0.5s						
AAK				⇑Lg	Lg	02 51 44.3	
	21nm,0.7s						
KK31	**Karatay Array**	**3.73**	**335**	⇑Pn	**Pn**	**02 51 05.2**	**+1.4**
	1.1nm,0.6s,baz=162,slow=15,SNR=9.1						
KK31				Pg	**Pb**	**02 51 12.9**	**+1.1**
	1.6nm,0.3s,baz=146,slow=13,SNR=15						
KK31				⇓Lg	Lg	02 51 58.8	
	3.9nm,0.3s,baz=168,slow=26,SNR=5.0						
TKM2	**Tokmak 2**	**3.88**	**34**	⇑Pg	**Pb**	**02 51 16.6**	**+2.1**
	5.6nm,1.0s						
TKM2				⇑Lg	Lg	02 52 06.4	
	9.9nm,0.6s						

JMA 10 02:52:21.9±0.1, 38°.15N×141°.98E, h37km±1km, M4.0,
Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.58**	**302**	P	Pn	02 52 33.7	-0.1
JIO				S	Sn	02 52 41.8	-0.2
OFUJ	**Ofunato**	**0.96**	**345**	P	Pn	02 52 38.6	-0.2
OFUJ				S	Sn	02 52 50.3	-1.

σ2°43/70, **mb4.0**/10, **South of Fiji Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**5.22**	**163**	P	**P**	**03 13 19.7**	**-0.8**
	2μm,0.3s,baz=87,slow=7.6,SNR=56						
RAO				S	**S**	**03 14 31.4**	**-1.3**
	830nm,0.3s,baz=104,slow=15,SNR=4.6						
AFI	**Afiamalu**	**12.73**	**37**	P	P	03 14 29.3	-10
	10nm,0.3s,baz=34,slow=20,SNR=11						
AFI				S	S	03 16 43.0	-13
	7.9nm,0.3s,baz=61,slow=15,SNR=5.8						
DZM	**Mont Dzumac**	**12.92**	**277**	P	**P**	**03 14 41.1**	**+0.3**
	3.1nm,0.3s,baz=103,slow=16,SNR=29						
MKAZ	**Moumakai**	**13.53**	**198**	PN	**P**	**03 14 48.7**	**+1.8**
WMGZ	**Waiomatatini S**	**13.61**	**186**	PN	**P**	**03 14 47.4**	**-0.3**
HAZ	**Te Kaha**	**13.62**	**188**	*e*PN	**P**	**03 14 46.7**	**-1.1**
PKGZ	**Pakihiroa**	**13.71**	**187**	PN	**P**	**03 14 46.0**	**-2.8**
PUZ	**Puketiti**	**13.87**	**187**	PN	**P**	**03 14 49.2**	**-1.3**
PUZ				SN	**S**	**03 17 15.8**	**-1.9**
TWGZ	**Tauwhareparae**	**14.01**	**188**	*e*PN	**P**	**03 14 51.2**	**-0.8**
TWGZ				SN	**S**	**03 17 21.2**	**+0.9**
URZ	**Urewera**	**14.21**	**190**	P	**P**	**03 14 52.1**	**-2.0**
	9.7nm,0.3s,baz=258,slow=4.5,SNR=29						
URZ				S	S	03 17 30.5	+6.4
	10nm,0.3s,baz=276,slow=23,SNR=11						
URZ	**Urewera**	**14.21**	**190**	*e*PN	**P**	**03 14 50.5**	**-3.6**
URZ				SN	**S**	**03 17 23.2**	**-0.9**
MWZ	**Matawai**	**14.22**	**189**	PN	**P**	**03 14 51.6**	**-2.6**
TKGZ	**Te Karaka**	**14.28**	**188**	PN	**P**	**03 14 54.4**	**-0.4**
RAGZ	**Rawiri**	**14.40**	**189**	PN	**P**	**03 14 54.0**	**-2.1**
RIGZ	**Rimuhau**	**14.56**	**188**	PN	**P**	**03 14 57.0**	**-0.8**
RTZ	**Ruatahuna**	**14.58**	**190**	*e*PN	**P**	**03 14 58.1**	**0.0**
KNZ	**Kokohu**	**14.88**	**188**	PN	**P**	**03 14 59.7**	**-1.4**
HIZ	**Hauiti**	**14.94**	**197**	PN	**P**	**03 15 03.6**	**+1.9**
WHHZ	**Waihua**	**14.99**	**189**	*e*PN	**P**	**03 15 04.6**	**+2.3**
BKZ	**Black Stump Fm**	**15.20**	**191**	*e*PN	**P**	**03 15 01.6**	**-3.0**
MCHZ	**McNeill Hill**	**15.44**	**191**	*e*PN	**P**	**03 15 06.9**	**-0.1**
MOVZ	**Moawhango**	**15.58**	**193**	PN	**P**	**03 15 07.5**	**-1.0**
BHHZ	**Black Hill Sta**	**15.59**	**192**	PN	**P**	**03 15 05.5**	**-3.1**
KRHZ	**Kereru**	**15.69**	**191**	PN	**P**	**03 15 08.2**	**-1.4**
PNHZ	**Pukenui**	**15.98**	**191**	*e*PN	**P**	**03 15 11.1**	**-1.6**
PXZ	**Pawanui**	**15.98**	**190**	*e*PN	**P**	**03 15 09.4**	**-3.2**
TSZ	**Takapari Road**	**16.16**	**192**	*e*PN	**P**	**03 15 13.8**	**-0.9**
ANWZ	**Angora Road**	**16.46**	**190**	PN	**P**	**03 15 15.7**	**-2.0**
BFZ	**Birch Farm**	**16.72**	**191**	SN	**S**	**03 18 14.2**	**+2.7**
MRZ	**Mangatainoka R**	**16.82**	**192**	PN	**P**	**03 15 17.5**	**-4.0**
MRZ				SN	**S**	**03 18 14.2**	**+0.8**
TIWZ	**Tintock**	**16.87**	**192**	PN	**P**	**03 15 21.8**	**-0.3**
KIW	**Kapiti Island**	**17.15**	**194**	PN	**P**	**03 15 21.9**	**-2.9**
DUWZ	**D'Urville Isla**	**17.33**	**196**	PN	**P**	**03 15 26.0**	**-0.6**
CAW	**Cannon Point**	**17.35**	**193**	PN	**P**	**03 15 25.1**	**-1.7**
TCW	**Tory Channel**	**17.63**	**195**	PN	**P**	**03 15 26.8**	**-2.6**
QRZ	**Quartz Range**	**17.75**	**200**	PN	**P**	**03 15 30.7**	**+0.2**
PLWZ	**Palliser**	**17.76**	**192**	PN	**P**	**03 15 28.2**	**-2.5**
KHZ	**Kahutara**	**18.95**	**196**	PN	**P**	**03 15 40.3**	**-1.3**
LTZ	**Lake Taylor**	**19.62**	**198**	PN	**P**	**03 15 47.6**	**-0.2**
INZ	**Inchbonnie**	**19.81**	**200**	PN	**P**	**03 15 49.2**	**-0.2**
WVZ	**Waitaha Valley**	**20.35**	**200**	PN	**P**	**03 15 54.2**	**-0.1**
MQZ	**McQueen's Vall**	**20.38**	**196**	PN	**P**	**03 15 59.5**	**+4.9**
RPZ	**Rata Peaks**	**20.83**	**199**	P	**P**	**03 15 59.5**	**+0.8**
	27nm,0.5s,baz=279,slow=4.3,SNR=12						
STKA	**Stephens Creek**	**34.84**	**249**	P	**P**	**03 18 03.1**	**+1.7**
	4.1nm,0.7s,baz=95,slow=10,SNR=8.6						
PMG	**Port Moresby**	**34.86**	**289**	P	**P**	**03 18 01.3**	**-0.6**
	21nm,0.7s,baz=130,slow=7.4,SNR=4.5						
ASAR	**Alice Springs**	**42.24**	**261**	P	**P**	**03 19 02.5**	**+0.6**
	1.6nm,0.7s,baz=95,slow=6.8,SNR=19						
ASAR				pP	**pP**	**03 20 26.9**	**-5.1**
	1.2nm,0.9s,baz=93,slow=8.4,SNR=2.7						
ASAR				ScP	**ScP**	**03 23 55.5**	**+7.0**
	1.4nm,0.9s,baz=98,slow=4.3,SNR=4.9						
WRA	**Warramunga Arr**	**42.65**	**266**	P	**P**	**03 19 05.0**	**-0.1**
	2.4nm,0.4s,baz=104,slow=8.4,SNR=28						
WRA				pP	**pP**	**03 20 27.8**	**-7.7**
	0.7nm,0.6s,baz=104,slow=7.3,SNR=1.2						
WRA				ScP	**ScP**	**03 23 56.8**	**+6.7**
	0.9nm,0.7s,baz=93,slow=3.7,SNR=4.6						
VNDA	**Vanda**	**54.04**	**185**	P	P	03 20 33.0	+3.7
	4.2nm,0.7s,baz=8.5,slow=8.1,SNR=20						
MAW	**Mawson**	**77.50**	**200**	P	**P**	**03 22 59.1**	**+3.0**
	4.1nm,0.6s,baz=123,slow=6.4,SNR=6.4						
PLCA	**Paso Flores**	**87.82**	**134**	P	**P**	**03 23 50.8**	**+1.8**
	2.5nm,0.8s,baz=327,slow=5.1,SNR=3.8						
SEY	**Seymchan**	**89.68**	**348**	P	**P**	**03 23 56.5**	**-0.2**
	0.6nm,0.3s,baz=154,slow=20,SNR=3.9						
TXAR	**Lajitas Array**	**90.40**	**58**	P	**P**	**03 24 02.0**	**+0.9**
	1.2nm,0.8s,baz=215,slow=6.5,SNR=20						
ILAR	**Eielson Array**	**92.32**	**13**	P	**P**	**03 24 07.2**	**-1.8**
	0.7nm,0.8s,baz=225,slow=5.7,SNR=7.9						
ARCES	**ARCESS Array B**	**132.30**	**348**	PKP	**PKPdf**	**03 30 09.2**	**-0.1**
	4.3nm,0.8s,baz=48,slow=1.3,SNR=4.0						
FINES	**FINESS Array B**	**138.88**	**341**	SKP	**SKiKP**	**03 33 13.7**	**+0.4**
	1.8nm,0.7s,baz=20,slow=6.1,SNR=5.8						
NB2	**NORSAR Subarra**	**142.48**	**351**	PKP	**PKPdf**	**03 30 23.8**	**-4.5**
	comp=Z,0.6nm,0.6s,baz=18,slow=3.5						
NOA	**NORSAR Array B**	**142.48**	**351**	PKhKP	PKPpre	03 30 24.7	
	comp=Z,1.4nm,0.8s,baz=22,slow=3.8,SNR=6.7						
AKASG	**Malin Array Be**	**145.42**	**327**	PKPbc	**PKPbc**	**03 30 34.4**	**-0.4**
	comp=Z,1.9nm,0.6s,baz=38,slow=3.5,SNR=7.0						
BRTR	**Keskin Array B**	**148.01**	**307**	PKPbc	**PKPbc**	**03 30 42.9**	**+0.6**
	comp=Z,0.7nm,0.7s,baz=90,slow=3.7,SNR=5.8						
CLL	**Collm**	**151.28**	**343**	*i* P	**PKPbc**	**03 30 49.3**	**-0.2**
	comp=Z,4.0nm,0.6s						
BRG	**Berggiesshubel**	**151.41**	**342**	*e*P	**PKPbc**	**03 30 50.2**	**+0.4**
	comp=Z,3.0nm,0.6s						
GERES	**GERESS Array B**	**153.29**	**340**	PKPbc	**PKPbc**	**03 30 54.8**	**+0.6**
	comp=Z,0.4nm,0.6s,baz=60,slow=4.0,SNR=3.0						
TORD	**Torodi Ar. Bea**	**168.86**	**187**	PKP	**PKPdf**	**03 31 03.5**	**+0.2**
	comp=Z,1.0nm,1.0s,baz=234,slow=1.5,SNR=4.8						
TORD				PKPab	**PKPab**	**03 32 18.0**	**+0.9**
	comp=Z,0.6nm,0.7s,baz=187,slow=4.3,SNR=6.6						

*ISCJB **10** 03:14:56.9±0.5, 24°.66N±0°.03×121°.85E±0°.03, h74km±4km, Error ellipse: s-maj=5.2km s-min=3.4km az=150.9*
*TAP **10** 03:14:56.8, 24°.67N×121°.79E, h74km, ML3.4, B*
*JMA **10** 03:14:56.2±0.1, 24°.62N×121°.80E, h75km±2km*
ISC 10 03:14:56.9±1.4, 24°.67N±0°.04×121°.84E±0°.03, h76km±8km, n41, σ0°61/75, 4C, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWC	**Suao**	**0.06**	**175**	P	**Pn**	**03 15 08.2**	**+0.4**
	baz=124						
TWC				S	**Sn**	**03 15 16.6**	**+0.8**
	baz=124						
ILA	**Ilan**	**0.13**	**319**	*e*P	**Pn**	**03 15 08.6**	**+0.6**
	baz=330						
ILA				*e*S	**Sn**	**03 15 17.2**	**+1.1**
	baz=330						
TWE	**Neicheng**	**0.17**	**289**	*i* P	**Pn**	**03 15 08.5**	**+0.4**
	baz=287						
TWE				S	**Sn**	**03 15 16.6**	**+0.3**
	baz=287						
EGS		**0.20**	**24**	*e*P	**Pn**	**03 15 08.6**	**+0.4**
	baz=38						
ENTT	**Nioudou**	**0.25**	**264**	⇑*i*P	**Pn**	**03 15 08.7**	**+0.1**
	baz=261						
ENTT				*i* S	**Sn**	**03 15 17.1**	**+0.1**
	baz=261						
ENA	**Nanau**	**0.26**	**201**	*e*P	**Pn**	**03 15 09.1**	**+0.6**
	baz=198						
ENA				*e*S	**Sn**	**03 15 17.5**	**+0.5**
	baz=198						
TWB1	**Santiao Chiao**	**0.36**	**21**	*i* P	**Pn**	**03 15 09.4**	**+0.2**
	baz=35						
TWB1				S	**Sn**	**03 15 17.9**	**-0.3**
	baz=35						
TWA	**Mucha**	**0.39**	**323**	*e*P	**Pn**	**03 15 09.1**	**-0.3**
	baz=322						
TWA				*e*S	**Sn**	**03 15 18.3**	**-0.3**
	baz=322						
NWF	**Wu-fen Shan**	**0.41**	**352**	P	**Pn**	**03 15 09.6**	**0.0**
	baz=352						
NWF				*e*S	**Sn**	**03 15 18.9**	**-0.1**
	baz=352						
NSK	**Sanguang**	**0.44**	**271**	⇑*i*P	**Pn**	**03 15 09.4**	**-0.5**
	baz=271						
NSK				S	**Sn**	**03 15 17.9**	**-1.5**
	baz=271						
TAP1	**Taipei**	**0.47**	**322**	*e*P	**Pn**	**03 15 09.8**	**-0.2**
	baz=319						
TAP1				*e*S	**Sn**	**03 15 19.3**	**-0.3**
	baz=319						
TAP	**Taipei**	**0.48**	**321**	*e*P	**Pn**	**03 15 10.9**	**+0.8**
	baz=319						
TAP				*e*S	**Sn**	**03 15 19.5**	**-0.3**
	baz=319						
NNS	**Nan Shan**	**0.48**	**242**	*e*P	**Pn**	**03 15 10.3**	**0.0**
	baz=242						
NNS				S	**Sn**	**03 15 19.3**	**-0.8**
	baz=242						
TWS1	**Kuangyinshan**	**0.58**	**318**	⇑*i*P	**Pn**	**03 15 11.2**	**+0.1**
	baz=311						
TWS1				S	**Sn**	**03 15 21.4**	**0.0**
	baz=311						
TWD	**Chiawan**	**0.63**	**201**	*e*P	**Pn**	**03 15 10.7**	**-0.8**
	baz=205						
TWD				*e*S	**Sn**	**03 15 20.9**	**-1.4**
	baz=205						
TWY	**Chenhua**	**0.65**	**340**	P	**Pn**	**03 15 11.8**	**+0.1**
	baz=336						
TWY				S	**Sn**	**03 15 22.7**	**+0.1**
	baz=336						
NCU	**National Centr**	**0.67**	**297**	*e*P	**Pn**	**03 15 11.7**	**-0.2**
	baz=290						
NCU				*e*S	**Sn**	**03 15 22.8**	**-0.3**
	baz=290						
TWT	**Tachien**	**0.73**	**236**	P	**Pn**	**03 15 13.5**	**+0.6**
	baz=228						
TWT				S	**Sn**	**03 15 24.3**	**-0.3**
	baz=228						
WHF	**Hehuan Shan**	**0.74**	**226**	P	**Pn**	**03 15 13.1**	**0.0**
	baz=216						
WHF				S	**Sn**	**03 15 24.4**	**-0.8**
	baz=216						
NSTT	**Nanjuang**	**0.77**	**268**	⇑*i*P	**Pn**	**03 15 12.6**	**-0.4**
	baz=266						
NSTT				S	**Sn**	**03 15 23.8**	**-1.2**
	baz=266						
NSY	**Sanyi**	**1.02**	**256**	*e*P	**Pn**	**03 15 16.1**	**+0.1**
	baz=254						
NSY				S	**Sn**	**03 15 29.9**	**-0.3**
	baz=254						
TWQ1	**Liyutan**	**1.02**	**252**	*e*P	**Pn**	**03 15 16.3**	**+0.2**
	baz=250						
TWQ1				*e*S	**Sn**	**03 15 29.4**	**-0.9**
	baz=250						
JYNG	**Yonagunijimaku**	**1.03**	**102**	P	**Pn**	**03 15 15.8**	**-0.2**
JYNG				S	**Sn**	**03 15 30.1**	**-0.2**
YOJ	**Yonaguni jima**	**1.08**	**101**	P	**Pn**	**03 15 16.7**	**0.0**
YOJ				S	**Sn**	**03 15 31.0**	**-0.6**
WDT	**Danda**	**1.11**	**216**	P	**Pn**	**03 15 17.2**	**-0.2**
	baz=206						
WDT				*e*S	**Sn**	**03 15 32.7**	**-0.1**
	baz=206						
SMLT	**Sun Moon Lake**	**1.16**	**228**	*e*P	**Pn**	**03 15 18.5**	**+0.6**
	baz=233						
SMLT				*e*S	**Sn**	**03 15 33.6**	**+0.1**
	baz=233						
TYC	**Yuchr**	**1.18**	**230**	*e*P	**Pn**	**03 15 18.5**	**+0.6**
	baz=235						
TYC				*e*S	**Sn**	**03 15 33.9**	**+0.3**
	baz=235						
TCU	**Taichung**	**1.18**	**244**	*e*P	**Pn**	**03 15 18.4**	**+0.4**
	baz=242						
EHY	**Hungye**	**1.25**	**203**	*e*P	**Pn**	**03 15 18.8**	**-0.1**
	baz=199						
EHY				*e*S	**Sn**	**03 15 33.8**	**-1.5**
	baz=199						
TWF1	**Yuli**	**1.40**	**201**	*e*P	**Pn**	**03 15 19.3**	**-1.5**
	baz=199						
YUS	**Yu-Shan**	**1.43**	**215**	*e*P	**Pn**	**03 15 22.3**	**+0.7**
	baz=205						
YUS				*e*S	**Sn**	**03 15 40.0**	**-0.1**
	baz=205						
ALS	**Alishan**	**1.49**	**220**	*e*P	**Pn**	**03 15 23.3**	**+1.0**
	baz=226						
ALS				*e*S	**Sn**	**03 15 42.2**	**+0.8**
	baz=226						
CHN5	**Tsauling**	**1.50**	**225**	P	**Pn**	**03 15 22.5**	**+0.2**
	baz=231						
CHN5				S	**Sn**	**03 15 41.6**	**+0.3**
	baz=231						
ELDTW	**Lidau**	**1.65**	**207**	*e*P	**Pn**	**03 15 24.6**	**+0.4**
	baz=198						
ELDTW				*e*S	**Sn**	**03 15 45.0**	**+0.2**
	baz=198						
CHN4	**Tsaushan**	**1.74**	**221**	*e*P	**Pn**	**03 15 25.7**	**+0.4**
	baz=219						
CHN4				*e*S	**Sn**	**03 15 47.9**	**+1.2**
	baz=219						
STYT	**Tauyuan**	**1.80**	**214**	*e*P	**Pn**	**03 15 26.8**	**+0.7**
	baz=212						
WTP	**Ta-pu**	**1.81**	**219**	*e*P	**Pn**	**03 15 27.0**	**+0.8**
	baz=227						
TWG	**Pinlang**	**1.97**	**201**	*e*P	**Pn**	**03 15 28.7**	**+0.4**
	baz=192						
JKRS	**Kuro-shima**	**2.02**	**102**	P	**Pn**	**03 15 29.4**	**+0.4**
JKRS				S	**Sn**	**03 15 53.8**	**+0.4**
JIJ	**Ishigaki jima**	**2.12**	**98**	P	**Pn**	**03 15 30.0**	**-0.3**
JIJ				S	**Sn**	**03 15 55.2**	**-0.5**
JISG	**Ishigakijimahi**	**2.25**	**91**	P	**Pn**	**03 15 32.1**	**+0.1**

*IDC **10** 03:18:53.3±0.9, 36°.14N×142°.01E, h0km, mb3.5/7, mb1 3.7/11, mb1mx3.6/41, mbtmp3.5/11, ML3.5/3, Error ellipse: s-maj=22.5km s-min=20.4km az=124.0*
*ISCJB **10** 03:18:55.7±1.9, 36°.25N±0°.03×141°.93E±0°.06, h28km±15km, mb3.4/7, Error ellipse: s-maj=8.7km s-min=5.6km az=12.8*
*JMA **10** 03:18:56.4±0.2, 36°.25N×141°.88E, h62km, M3.3*
ISC 10 03:18:55.8±3.5, 36°.28N±0°.04×141°.88E±0°.07, h16km±22km, n29, σ1°31/32, mb3.6/7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.01**	**236**	P	**Pb**	**03 19 14.8**	**-0.1**
CHOJ				*e*S	**Sb**	**03 19 28.6**	**+0.7**
JHO	**Hitachi**	**1.11**	**288**	P	**Pb**	**03 19 15.5**	**-1.1**
ONAJ	**Iwakimizuishiy**	**1.20**	**314**	P	**Pn**	**03 19 17.6**	**-0.4**
ONAJ				S	**Sb**	**03 19 30.3**	**-3.1**
JFK	**Kawauchi**	**1.35**	**324**	P	**Pn**	**03 19 20.2**	**+0.1**
JFK				S	**Sn**	**03 19 35.4**	**-2.4**
JFT	**Otama**	**1.75**	**315**	P	**Pn**	**03 19 26.4**	**+0.9**
BSO1	**Boso 1**	**1.78**	**205**	P	**Pn**	**03 19 24.4**	**-1.0**
BSO1				S	**Sn**	**03 19 46.9**	**-0.5**
JMM	**Marumori**	**1.81**	**331**	P	**Pn**	**03 19 27.1**	**+0.8**
BSO3	**Boso 3**	**1.85**	**218**	P	**Pn**	**03 19 26.2**	**-0.4**
BSO3				S	**Sn**	**03 19 49.4**	**-0.1**
JAG	**Ashikaga**	**1.97**	**275**	P	**Pn**	**03 19 28.5**	**0.0**
JAG				*e*S	**Sn**	**03 19 52.2**	**-0.6**
JFY	**Yanaizu**	**2.08**	**303**	P	**Pn**	**03 19 31.7**	**+1.7**
MJAR	**Matsushiro Arr**	**2.98**	**276**	Pn	**Pn**	**03 19 43.1**	**+0.8**
	6.0nm,0.3s,baz=86,slow=16,SNR=45						
MAT	**Matsushiro**	**2.98**	**276**	P	**Pn**	**03 19 43.1**	**+0.7**
MAT				S	**Sn**	**03 20 19.1**	**+1.3**
JHJ	**Hachijo jima 2**	**3.59**	**209**	Pn	**Pn**	**03 19 49.9**	**-1.0**
	20nm,0.3s,baz=321,slow=23,SNR=7.4						
JHJ				Sn	**Sn**	**03 20 30.0**	**-2.9**
	41nm,0.3s,baz=59,slow=22,SNR=6.7						
ASAJ	**Asahikawa**	**7.85**	**4**	Pn	**Pn**	**03 20 50.2**	**+1.0**
	0.5nm,0.3s,baz=184,slow=7.8,SNR=3.5						
ASAJ				Sn	**Sn**	**03 22 16.2**	**-1.5**
	0.4nm,0.3s,baz=46,slow=32,SNR=6.0						
USRK	**Ussuriysk Ar.**	**10.94**	**319**	Pn	**Pn**	**03 21 31.8**	**+0.3**
	0.2nm,0.3s,baz=102,slow=13,SNR=2.8						
H11N2	**WAKE ISLAND Hy**	**27.44**	**120**	T	T	03 53 25.3	
	baz=312,slow=75,SNR=4.5						
H11N1	**WAKE ISLAND Hy**	**27.45**	**120**	T	T	03 53 21.0	
	baz=312,slow=75,SNR=5.9						
H11N3	**WAKE ISLAND Hy**	**27.46**	**120**	T	T	03 53 22.8	
	baz=312,slow=75,SNR=5.1						
H11S1	**WAKE ISLAND Hy**	**28.13**	**122**	T	T	03 54 06.8	
	baz=314,slow=76,SNR=10.0						
H11S3	**WAKE ISLAND Hy**	**28.14**	**122**	T	T	03 54 06.6	
	baz=314,slow=76,SNR=10.0						
H11S2	**WAKE ISLAND Hy**	**28.15**	**122**	T	T	03 54 09.0	
	baz=314,slow=76,SNR=7.8						
SONM	**Songino Array**	**28.52**	**305**	P	**P**	**03 24 52.2**	**+1.5**
	0.7nm,0.6s,baz=65,slow=7.0,SNR=3.6						
ZALV	**Zalesovo Beam**	**42.70**	**313**	P	**P**	**03 26 53.2**	**+1.5**
	0.4nm,0.3s,baz=84,slow=7.5,SNR=2.3						
MKAR	**Makanchi Array**	**44.84**	**303**	P	**P**	**03 27 10.5**	**+1.4**
	0.5nm,0.8s,baz=111,slow=6.6,SNR=4.0						
ILAR	**Eielson Array**	**49.93**	**32**	P	**P**	**03 27 49.0**	**+0.5**
	0.5nm,0.8s,baz=265,slow=6.5,SNR=6.7						
WRA	**Warramunga Arr**	**56.37**	**189**	P	**P**	**03 28 34.8**	**-1.5**
	0.8nm,0.8s,baz=5.5,slow=7.6,SNR=4.9						
YKA	**Yellowknife Ar**	**64.27**	**30**	P	**P**	**03 29 30.3**	**+0.5**
	0.1nm,0.8s,baz=78,slow=27,SNR=3.1						
TXAR	**Lajitas Array**	**90.28**	**53**	P	**P**	**03 31 56.2**	**0.0**
	0.1nm,0.7s,baz=298,slow=3.9,SNR=2.2						
LPAZ	**La Paz**	**146.74**	**61**	PKPbc	**PKPbc**	**03 38 38.0**	**-0.2**
	0.8nm,0.6s,baz=274,slow=3.5,SNR=5.8						

IDC 10 03:22:07.2±5.6, 25°.88S×179°.94W, h508km±63km, mb3.2/6, mb1 3.5/7, mb1mx3.2/30, mbtmp4.1/7, Error ellipse: s-maj=29.2km s-min=27.6km az=63.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**12.59**	**191**	P	P	03 24 44.5	-7.3
	6.9nm,0.3s,baz=9.4,slow=3.1,SNR=11						
URZ				S	S	03 27 02.3	-5.2
	2.7nm,0.3s,baz=80,slow=22,SNR=11						
DZM	**Mont Dzumac**	**13.01**	**284**	P	P	03 24 56.1	-0.5
	0.9nm,0.3s,baz=96,slow=12,SNR=11						
STKA	**Stephens Creek**	**34.08**	**251**	P	P	03 28 09.1	+0.2
	2.6nm,0.9s,baz=109,slow=13,SNR=5.3						
ASAR	**Alice Springs**	**41.80**	**263**	P	P	03 29 12.2	0.0
	3.2nm,0.4s,baz=92,slow=8.2,SNR=56						
WRA	**Warramunga Arr**	**42.36**	**268**	P	P	03 29 16.3	-0.3
	2.8nm,0.4s,baz=102,slow=7.7,SNR=26						
VNDA	**Vanda**	**52.42**	**185**	P	P	03 30 31.1	-0.2
	0.7nm,0.7s,baz=30,slow=6.8,SNR=1.6						
NVAR	**Mina Array Bea**	**86.14**	**44**	P	P	03 33 54.4	0.0
	0.8nm,0.7s,baz=228,slow=7.2,SNR=4.6						
TXAR	**Lajitas Array**	**91.43**	**58**	P	P	03 34 19.3	+0.2
	0.1nm,0.6s,baz=224,slow=7.6,SNR=2.4						
NB2	**NORSAR Subarra**	**144.03**	**351**	PKP	PKPbc	03 40 42.6	-0.8
	comp=Z,0.9nm,0.6s,baz=18,slow=3.2						
NOA	**NORSAR Array B**	**144.03**	**351**	PKP	PKPbc	03 40 42.9	-0.5
	comp=Z,1.7nm,0.7s,baz=20,slow=2.5,SNR=10						

*SJA **10** 03:24:39.7±0.7, 23°.96S×66°.82W, h213km±16km, ML2.8, MW3.1*
*ISCJB **10** 03:24:42.3±0.5, 23°.95S±0°.05×66°.88W±0°.05, h181km, Error ellipse: s-maj=8.8km s-min=4.7km az=37.5*
*GUC **10** 03:24:42.9±0.4, 23°.74S×67°.22W, h230km, ML4.0*
ISC 10 03:24:42.3±1.3, 23°.94S±0°.06×66°.85W±0°.06, h181km, n14, σ0°84/22, 5C-2D, Jujuy Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SLA	**San Lorenzo**	**1.45**	**123**	*i* P	**Pn**	**03 25 14.9**	**+0.9**
HJA	**Humahuaca**	**1.51**	**61**	*i* P	**Pn**	**03 25 15.4**	**+0.6**
AZAP	**Zapla**	**1.65**	**100**	*i* P	**Pn**	**03 25 16.6**	**+0.6**
YJA	**Yavi**	**2.15**	**35**	*i* P	**Pn**	**03 25 22.2**	**+0.7**
FSA	**Cafayete**	**2.30**	**160**	*i* P	**Pn**	**03 25 23.0**	**+0.1**
FSA				IAML		03 25 24.0	
	comp=Z,28nm,0.9s						
FSA				*i* S	**Sn**	**03 25 54.6**	**+0.1**
PB06	**IPOC Station P**	**2.79**	**296**	⇑*i*P	**Pn**	**03 25 29.8**	**+1.1**
PB06				*i* S	**Sn**	**03 26 05.3**	**+0.6**
PB06				IAML		03 26 07.1	
	comp=E,293nm,0.1s						
PB09	**IPOC Station P**	**3.07**	**314**	⇑*i*P	**Pn**	**03 25 33.2**	**+1.2**
PB09				IAML		03 26 15.0	
	comp=E,318nm,0.4s						
AHML	**Horco Molle**	**3.14**	**154**	*i* P	**Pn**	**03 25 31.7**	**-1.0**
ANCH	**Antofagasta**	**3.27**	**274**	⇑*i*P	**Pn**	**03 25 35.1**	**+0.8**
ANCH				*i* S	**Sn**	**03 26 14.9**	**0.0**
PB10	**IPOC Station P**	**3.42**	**276**	⇑*i*P	**Pn**	**03 25 36.7**	**+0.5**
PB10				*i* S	**Sn**	**03 26 18.3**	**0.0**
PB10				IAML		03 26 20.8	
	comp=N,192nm,0.4s						
PB04	**IPOC Station P**	**3.44**	**297**	*e*P	**Pn**	**03 25 36.8**	**+0.2**
PB04				*i* S	**Sn**	**03 26 18.1**	**-0.7**
PB04				IAML		03 26 24.0	
	comp=N,135nm,0.1s						
PB07	**IPOC Station P**	**3.57**	**308**	⇑*i*P	**Pn**	**03 25 38.3**	**+0.1**
PB07				*i* S	**Sn**	**03 26 20.6**	**-1.2**
PB07				IAML		03 26 23.0	
	comp=N,186nm,0.0s						
PB01	**IPOC Station P**	**3.78**	**319**	⇓*i*P	**Pn**	**03 25 40.4**	**-0.4**
PB01				*i* S	**Sn**	**03 26 24.6**	**-1.9**
PB01				IAML		03 26 28.5	
	comp=N,109nm,0.2s						
PB08	**IPOC Station P**	**4.35**	**330**	⇓*i*P	**Pn**	**03 25 48.6**	**+0.4**
PB08				*i* S	**Sn**	**03 26 39.2**	**-0.7**

*NIED **10** 03:29:00, 37°.80N×143°.60E, h5km, Mw3.6 Best double couple: M0:3.05000×10^14 NP1:φs=354.00000°, δ24.00000°, λ-100.00000°. NP2:φs=185.00000°, δ66.00000°, λ-86.00000°.*
*IDC **10** 03:29:02.1±0.8

IDC 10 03:34:47.4±1.5, 13°29S×66°52E, h0km, mb3.9/7, mb1 4.0/7, mb1mx3.7/34, mbtmp3.9/7, MS3.7/2, Ms1 3.6/2, ms1mx2.9/35, Error ellipse: s-maj=58.9km s-min=24.2km az=47.0, Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08S1	**Diego Carcia H**	**8.11**	**47**	T	T	03 45 07.3	
	baz=226,slow=76,SNR=377						
H08S2	**Diego Garcia H**	**8.12**	**47**	T	T	03 45 08.4	
	baz=226,slow=76,SNR=414						
H08S3	**Diego Garcia H**	**8.13**	**47**	T	T	03 45 08.6	
	baz=226,slow=76,SNR=425						
H08N3	**Diego Garcia H**	**8.19**	**33**	T	T	03 45 05.4	
	baz=204,slow=74,SNR=70						
H08N2	**Diego Garcia H**	**8.21**	**33**	T	T	03 45 07.1	
	baz=200,slow=74,SNR=60						
PALK	**Pallekele**	**24.82**	**35**	LR	LR	03 47 27.7	
	comp=Z,193nm,21.9s,baz=296,slow=31						
BOSA	**Boshof**	**41.21**	**242**	LR	LR	03 57 29.1	
	comp=Z,78nm,18.7s,baz=28,slow=33						
H01W3	**Cape Leeuwin H**	**47.97**	**125**	T	T	04 34 44.3	
	baz=284,slow=74,SNR=4.6						
H01W2	**Cape Leeuwin H**	**47.97**	**125**	T	T	04 34 43.1	
	baz=284,slow=74,SNR=7.0						
H01W1	**Cape Leeuwin H**	**47.98**	**125**	T	T	04 34 46.8	
	baz=284,slow=74,SNR=5.8						
BRTR	**Keskin Array B**	**60.98**	**331**	P	P	03 45 03.4	+0.7
	0.4nm,0.6s,baz=147,slow=7.2,SNR=3.6						
MKAR	**Makanchi Array**	**61.46**	**12**	P	P	03 45 05.0	-0.7
	0.7nm,0.7s,baz=193,slow=5.0,SNR=3.7						
ASAR	**Alice Springs**	**64.25**	**110**	P	P	03 45 24.6	-0.3
	1.2nm,0.8s,baz=273,slow=6.3,SNR=9.2						
WRA	**Warramunga Arr**	**64.96**	**106**	P	P	03 45 29.9	+0.4
	1.9nm,0.8s,baz=273,slow=6.1,SNR=6.8						
ZALV	**Zalesovo Beam**	**68.77**	**11**	P	P	03 45 52.8	-0.2
	0.8nm,0.4s,baz=235,slow=5.1,SNR=4.1						
SONM	**Songino Array**	**70.45**	**27**	P	P	03 46 04.3	+0.6
	0.3nm,0.4s,baz=210,slow=8.3,SNR=3.6						
AKASG	**Malin Array Be**	**71.56**	**336**	P	P	03 46 09.9	-0.3
	0.4nm,0.3s,baz=133,slow=5.3,SNR=3.3						
YKA	**Yellowknife Ar**	**130.86**	**1**	PKP	PKPdf	03 53 59.8	-0.6
	0.3nm,0.7s,baz=348,slow=2.3,SNR=9.9						
PDAR	**Pinedale Array**	**150.43**	**354**	PKPbc	PKPbc	03 54 41.6	+0.1
	1.6nm,0.8s,baz=75,slow=1.7,SNR=12						
TXAR	**Lajitas Array**	**161.62**	**332**	PKP	PKPdf	03 54 49.9	-1.3
	1.4nm,1.3s,baz=22,slow=1.3,SNR=3.6						

MAN 10 03:50:07, 17°65N×120°92E, h19km, mb4.3, ML3.1, MS3.1, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ABRA	**Dolores**	**0.20**	**269**	*e*P	Pg	03 50 13.8	+1.8
ABRA				*e*S	Sg	03 50 17.6	+2.2
APYP	**Conner**	**0.37**	**56**	*e*P	Pb	03 50 16.3	+1.1
APYP				*e*S	Sn	03 50 23.0	-1.2
CVP	**Callao Caves**	**0.86**	**86**	*e*P	Pg	03 50 23.7	-0.2
CVP				*e*S	Sn	03 50 36.0	-0.2
SGCP	**Mt. Cagua**	**1.22**	**61**	*e*P	Pb	03 50 29.9	+0.4
BOLP	**Bolinao**	**1.59**	**217**	*e*P	Pb	03 50 35.3	-0.5
BOLP				*e*S	Sb	03 50 56.1	+0.7
BALP	**Baler**	**2.00**	**162**	*e*P	Pn	03 50 41.1	+1.2
BALP				*e*S	Sb	03 51 05.9	-1.4
SCZP	**Santa Cruz**	**2.10**	**207**	*e*P	Pn	03 50 37.9	-3.2

*NEIC **10** 03:54:53.6, 19°04N×65°56W, h15km, MD3.2(RSPR), After RSPR.*
*RSPR **10** 03:54:53.6, 19°04N×65°56W, h15km±3km, MD3.2/8*
ISC 10 03:54:51.9±1.5, 18°98N±0°07×65°52W±0°03, h21km±5km, n33, σ0°61/53, 12C-17D, Puerto Rico region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBYP	**Canovanas**	**0.77**	**204**	⇑*e*P	**Pb**	**03 55 07.1**	**+0.5**
CBYP	**Canovanas**	**0.77**	**204**	⇑*e*P	**Pb**	**03 55 07.1**	**+0.5**
CBYP				*e*S	**Sn**	**03 55 18.0**	**-0.5**
CBYP	**Canovanas**	**0.77**	**204**	⇑*e*P	**Pb**	**03 55 07.1**	**+0.5**
CBYP				*e*S	**Sn**	**03 55 18.0**	**-0.5**
STVI	**Saint Thomas**	**0.83**	**139**	⇑*e*P	**Pn**	**03 55 08.4**	**+0.1**
STVI	**Saint Thomas**	**0.83**	**139**	⇑*e*P	**Pn**	**03 55 08.4**	**+0.1**
STVI				*e*S	**Sn**	**03 55 20.4**	**+0.6**
STVI	**Saint Thomas**	**0.83**	**139**	⇑*e*P	**Pn**	**03 55 08.4**	**+0.1**
STVI				*e*S	**Sn**	**03 55 20.4**	**+0.6**
MTP	**Monte Pirata**	**0.88**	**182**	⇓*e*P	**Pn**	**03 55 08.9**	**0.0**
MTP	**Monte Pirata**	**0.88**	**182**	⇓*e*P	**Pn**	**03 55 08.9**	**0.0**
MTP				*e*S	**Sn**	**03 55 21.4**	**+0.3**
MTP	**Monte Pirata**	**0.88**	**182**	⇓*e*P	**Pn**	**03 55 08.9**	**0.0**
MTP				*e*S	**Sn**	**03 55 21.4**	**+0.3**
HUMP	**Col San Antoni**	**0.89**	**200**	⇑*e*P	**Pb**	**03 55 08.8**	**+0.3**
HUMP	**Col San Antoni**	**0.89**	**200**	⇑*e*P	**Pb**	**03 55 08.8**	**+0.3**
HUMP				*e*S	**Sn**	**03 55 21.1**	**-0.2**
HUMP	**Col San Antoni**	**0.89**	**200**	⇑*e*P	**Pb**	**03 55 08.8**	**+0.3**
HUMP				*e*S	**Sn**	**03 55 21.1**	**-0.2**
SJG	**San Juan**	**1.05**	**215**	⇓*e*P	**Pn**	**03 55 19.9**	**-0.4**
SJG				*e*S	**Sb**	**03 55 25.1**	**+0.5**
SJG	**San Juan**	**1.05**	**215**	⇓*e*P	**Pn**	**03 55 10.9**	**-0.4**
SJG				*e*S	**Sb**	**03 55 25.1**	**+0.5**
SJG	**San Juan**	**1.05**	**215**	*e*Pg	**Pn**	**03 55 11.1**	**-0.2**
SJG				*e*S	**Sb**	**03 55 22.7**	**-1.9**
ABV	**Anegada**	**1.16**	**102**	⇑*e*P	**Pn**	**03 55 11.9**	**-0.8**
ABV	**Anegada**	**1.16**	**102**	⇑*e*P	**Pn**	**03 55 11.9**	**-0.8**
ABV				*e*S	**Sb**	**03 55 27.7**	**+0.1**
ABVI	**Anegada Island**	**1.16**	**102**	⇑*e*P	**Pn**	**03 55 11.9**	**-0.8**
ABVI				*e*S	**Sb**	**03 55 27.7**	**+0.1**
AOPR	**Arecibo Observ**	**1.33**	**242**	*e*S	**Sn**	**03 55 31.3**	**-0.9**
AOPR	**Arecibo Observ**	**1.33**	**242**	*e*S	**Sn**	**03 55 31.3**	**-0.9**
OBIP	**Obispado Ponce**	**1.39**	**228**	⇓*e*P	**Pn**	**03 55 16.1**	**+0.1**
OBIP	**Obispado Ponce**	**1.39**	**228**	⇓*e*P	**Pn**	**03 55 16.1**	**+0.1**
OBIP				*e*S	**Sn**	**03 55 32.7**	**-0.9**
OBIP	**Obispado Ponce**	**1.39**	**228**	⇓*e*P	**Pn**	**03 55 16.1**	**+0.1**
OBIP				*e*S	**Sn**	**03 55 32.7**	**-0.9**
CDVI	**St. Croix**	**1.42**	**149**	⇓*e*P	**Pb**	**03 55 17.3**	**-0.3**
CDVI	**St. Croix**	**1.42**	**149**	⇓*e*P	**Pb**	**03 55 17.3**	**-0.3**
CDVI				*e*S	**Sn**	**03 55 34.9**	**+0.5**
CDVI	**St. Croix**	**1.42**	**149**	⇓*e*P	**Pb**	**03 55 17.3**	**-0.3**
CDVI				*e*S	**Sn**	**03 55 34.9**	**+0.5**
GBPR	**Guanica, Bosqu**	**1.63**	**232**	⇓*e*P	**Pn**	**03 55 19.4**	**+0.2**
GBPR	**Guanica, Bosqu**	**1.63**	**232**	⇓*e*P	**Pn**	**03 55 19.4**	**+0.2**
GBPR				*e*S	**Sn**	**03 55 38.8**	**-0.9**
GBPR	**Guanica, Bosqu**	**1.63**	**232**	⇓*e*P	**Pn**	**03 55 19.4**	**+0.2**
GBPR				*e*S	**Sn**	**03 55 38.8**	**-0.9**
CRPR	**Cabo Rojo, PR**	**1.79**	**237**	⇓*e*P	**Pn**	**03 55 21.3**	**-0.1**
CRPR	**Cabo Rojo, PR**	**1.79**	**237**	⇓*e*P	**Pn**	**03 55 21.3**	**-0.1**
CRPR	**Cabo Rojo, PR**	**1.79**	**237**	⇓*e*P	**Pn**	**03 55 21.3**	**-0.1**
SDDR	**Presa de Saban**	**5.46**	**271**	*e*Pn	**Pn**	**03 56 13.8**	**+1.9**
SDDR				*e*S	**Sn**	**03 57 13.8**	**-0.3**

*ISCJB **10** 03:57:53.5±2.0, 19°2N±0°1×65°58W±0°05, h21km±19km, Error ellipse: s-maj=18.0km s-min=5.9km az=164.4*
*NEIC **10** 03:57:56.0, 19°15N×65°59W, h16km, MD2.9(RSPR), After RSPR.*
*RSPR **10** 03:57:56.0, 19°15N×65°59W, h16km±5km, MD2.9/3*
ISC 10 03:57:56.2±1.7, 19°03N±0°08×65°54W±0°04, h32km±13km, n17, σ0°70/29, 9C-6D, Puerto Rico region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBYP	**Canovanas**	**0.82**	**202**	⇓*e*P	**Pb**	**03 58 11.3**	**-0.6**
CBYP	**Canovanas**	**0.82**	**202**	⇓*e*P	**Pb**	**03 58 11.3**	**-0.6**
CBYP				*e*S	**Sn**	**03 58 22.8**	**+0.3**
CBYP	**Canovanas**	**0.82**	**202**	⇓*e*P	**Pb**	**03 58 11.3**	**-0.6**
CBYP				*e*S	**Sn**	**03 58 22.8**	**+0.3**
STVI	**Saint Thomas**	**0.87**	**141**	⇑*e*P	**Pn**	**03 58 12.3**	**0.0**
STVI	**Saint Thomas**	**0.87**	**141**	⇑*e*P	**Pn**	**03 58 12.3**	**0.0**
STVI				*e*S	**Sb**	**03 58 25.3**	**+1.0**
STVI	**Saint Thomas**	**0.87**	**141**	⇑*e*P	**Pn**	**03 58 12.3**	**0.0**
STVI				*e*S	**Sb**	**03 58 25.3**	**+1.0**
MTP	**Monte Pirata**	**0.93**	**181**	⇑*e*P	**Pn**	**03 58 13.2**	**+0.2**
MTP	**Monte Pirata**	**0.93**	**181**	⇑*e*P	**Pn**	**03 58 13.2**	**+0.2**
MTP				*e*S	**Sb**	**03 58 26.6**	**+0.7**
MTP	**Monte Pirata**	**0.93**	**181**	⇑*e*P	**Pn**	**03 58 13.2**	**+0.2**
MTP				*e*S	**Sb**	**03 58 26.6**	**+0.7**
HUMP	**Col San Antoni**	**0.94**	**199**	⇓*e*P	**Pn**	**03 58 12.9**	**-0.1**
HUMP	**Col San Antoni**	**0.94**	**199**	⇓*e*P	**Pn**	**03 58 12.9**	**-0.1**
HUMP				*e*S	**Sb**	**03 58 26.2**	**+0.3**
HUMP	**Col San Antoni**	**0.94**	**199**	⇓*e*P	**Pn**	**03 58 12.9**	**-0.1**
HUMP				*e*S	**Sb**	**03 58 26.2**	**+0.3**
SJG	**San Juan**	**1.09**	**213**	*e*Pn	**Pb**	**03 58 15.3**	**-1.1**
SJG				*e*S	**Sn**	**03 58 28.9**	**-0.2**
ABV	**Anegada**	**1.18**	**105**	⇑*e*P	**Pn**	**03 58 16.2**	**-0.2**
ABV	**Anegada**	**1.18**	**105**	⇑*e*P	**Pn**	**03 58 16.2**	**-0.2**
ABV				*e*S	**Sn**	**03 58 31.5**	**+0.1**
ABVI	**Anegada Island**	**1.18**	**105**	⇑*e*P	**Pn**	**03 58 16.2**	**-0.2**
ABVI				*e*S	**Sn**	**03 58 31.5**	**+0.1**
SDDR	**Presa de Saban**	**5.44**	**270**	*e*Pn	**Pn**	**03 59 17.0**	**+1.8**
SDDR				*e*S	**Sn**	**04 00 15.1**	**-1.6**

*ISCJB **10** 04:02:19.9±1.3, 35°88N±0°07×140°45E±0°08, h35km, mb3.2/3, Error ellipse: s-maj=10.8km s-min=9.1km az=155.3*
*IDC **10** 04:02:19.4±6.8, 37°26N×140°44E, h103km±49km, mb3.1/3, mb1 3.2/3, mb1mx2.9/33, mbtmp3.4/3, Error ellipse: s-maj=66.2km s-min=25.7km az=65.0*
*JMA **10** 04:02:20.9±0.1, 35°90N×140°36E, h37km±1km, M3.3*
JMA Felt I J1.
ISC 10 04:02:21.4±1.6, 36°00N±0°1×140°42E±0°08, h35km, n11, σ0°87/11, mb3.2/3, 3D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JYT	**Yasato**	**0.33**	**327**	⇓P	**Pn**	**04 02 29.7**	**0.0**
JYT				S	**Sn**	**04 02 35.6**	**+0.2**
JHO	**Hitachi**	**0.67**	**10**	⇓P	**Pn**	**04 02 34.4**	**0.0**
JHO				S	**Sn**	**04 02 43.8**	**+0.2**
JAG	**Ashikaga**	**0.91**	**301**	⇓P	**Pn**	**04 02 36.9**	**-0.8**
JAG				S	**Sn**	**04 02 48.3**	**-1.3**
MJAR	**Matsushiro Arr**	**1.88**	**289**	P	**Pn**	**04 02 50.9**	**-0.1**
	6.5nm,0.3s,baz=96,slow=8.8,SNR=35						
MJAR				S	**Sn**	**04 03 15.2**	**+1.7**
	3.8nm,0.3s,baz=95,slow=16,SNR=5.9						
MAT	**Matsushiro**	**1.88**	**289**	P	**Pn**	**04 02 51.0**	**0.0**
MAT				S	**Sn**	**04 03 14.4**	**+0.8**
SONM	**Songino Array**	**27.75**	**306**	P	P	04 07 51.9	-15
	0.4nm,0.7s,baz=87,slow=29,SNR=2.9						
H11N2	**WAKE ISLAND Hy 28.32**	**118**		T	T	04 38 41.3	
	baz=318,slow=75,SNR=7.5						
H11N1	**WAKE ISLAND Hy 28.34**	**118**		T	T	04 38 41.3	
	baz=318,slow=75,SNR=2.9						
H11N3	**WAKE ISLAND Hy 28.34**	**118**		T	T	04 38 51.9	
	baz=318,slow=75,SNR=4.1						
MKAR	**Makanchi Array**	**44.02**	**303**	P	P	04 10 10.9	-15
	0.1nm,0.5s,baz=74,slow=11,SNR=2.1						
WRA	**Warramunga Arr**	**55.89**	**187**	P	**P**	**04 11 55.5**	**-0.1**
	0.6nm,0.9s,baz=5.1,slow=7.4,SNR=3.5						

*JMA **10** 04:06:48.8±0.2, 43°66N×147°25E, h32km, M3.5*
*SKHL **10** 04:06:49.4±0.1, 43°80N×147°40E, h36km±4km, mb4.5/5*
ISC 10 04:06:45.0±2.4, 43°65N±0°08×147°43E±0°09, h6km±12km, n16, σ1°83/26, 1D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHO	**Shikotan**	**0.48**	**297**	*e*P	**Pb**	**04 06 58.7**	**+2.8**
SHO				AMB	AMB	04 06 59.1	
	310nm,0.3s						
SHO				*i* S	**Sb**	**04 07 05.6**	**+2.4**
SHO				A	A	04 07 06.0	
	3μm,0.5s						
SHO				A	A	04 07 06.0	
	6μm,0.5s						
YUK	**Yuzh-Kuril'sk**	**1.20**	**289**	⇓*i*P	**Pg**	**04 07 07.3**	**-0.6**
YUK				AMB	AMB	04 07 07.8	
	100nm,0.2s						
YUK				AMB	AMB	04 07 07.8	
	150nm,0.2s						
YUK				AMB	AMB	04 07 07.8	
	530nm,0.2s						
YUK				*i* S	**Sg**	**04 07 20.6**	**-2.8**
YUK				A	A	04 07 22.3	
	510nm,0.2s						
YUK				A	A	04 07 22.3	
	630nm,0.2s						
NEM2	**Nemuro 2**	**1.26**	**257**	P	**Pg**	**04 07 08.9**	**-0.2**
NEM2				*e*S	**Sg**	**04 07 23.5**	**-1.9**
KUR	**Kuril'sk**	**1.61**	**11**	*e*P	**Pn**	**04 07 13.5**	**-0.4**
KUR				AMB	AMB	04 07 14.0	
	40nm,0.3s						
KUR				*i* S	**Sn**	**04 07 31.7**	**-3.3**
KUR				A	A	04 07 33.9	
	160nm,0.2s						
KUR				A	A	04 07 33.9	
	300nm,0.2s						
JRA	**Rausu**	**1.69**	**281**	P	**Pn**	**04 07 15.0**	**0.0**
JRA				*e*S	**Sn**	**04 07 34.4**	**-2.5**
JNK	**Nakash**	**1.97**	**269**	P	**Pn**	**04 07 18.8**	**0.0**
JNK				*e*S	**Sn**	**04 07 41.3**	**-2.5**
JAK	**Akkeshi**	**2.10**	**253**	P	**Pn**	**04 07 21.0**	**+0.4**
JAK				*e*S	**Sn**	**04 07 44.7**	**-2.2**
JTKR	**Abashiri--Toko**	**2.57**	**278**	P	**Pn**	**04 07 27.5**	**+0.5**
JAR	**Ashorobuto**	**2.69**	**264**	P	**Pn**	**04 07 29.7**	**+1.0**
JAR				*e*S	**Sn**	**04 08 00.3**	**-1.2**
JOB	**Onbets**	**2.73**	**255**	P	**Pn**	**04 07 30.0**	**+0.8**
JOB				*e*S	**Sn**	**04 08 00.3**	**-2.2**
JMP	**Maruseppu**	**2.96**	**278**	P	**Pn**	**04 07 33.4**	**+0.9**
HRK	**Horoka**	**3.13**	**268**	*e*P	**Pn**	**04 07 36.4**	**+1.6**
JCH	**Churui**	**3.15**	**252**	P	**Pn**	**04 07 35.7**	**+0.7**
JCH				*e*S	**Sn**	**04 08 11.1**	**-1.8**
JNBK	**Urakawa-nobuka**	**3.69**	**250**	P	**Pn**	**04 07 43.3**	**+0.8**
YSS	**Yuzh-Sakhalins**	**4.66**	**317**	*e*P	**Pn**	**04 07 56.9**	**+1.0**
YSS				AMB	AMB	04 07 58.2	
	20nm,0.4s						
TYV	**Tymovskoe**	**7.91**	**337**	*e*P	**Pn**	**04 08 42.2**	**+1.8**
TYV				AMB	AMB	04 08 42.9	
	10.0nm,0.3s						

IDC 10 04:11:35.0±2.1, 4°62N×127°39E, h0km, mb3.6/4, mb1 3.8/4, mb1mx3.4/35, mbtmp3.6/4, Error ellipse: s-maj=165.7km s-min=24.3km az=66.0, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**25.35**	**165**	P	P	04 17 02.4	-1.5
	1.0nm,0.7s,baz=344,slow=10,SNR=7.3						
ASAR	**Alice Springs**	**28.82**	**168**	P	P	04 17 36.2	+1.1
	0.2nm,0.5s,baz=353,slow=6.9,SNR=2.9						
STKA	**Stephens Creek**	**38.73**	**161**	P	P	04 19 01.4	+0.4
	1.5nm,0.7s,baz=325,slow=16,SNR=3.0						
MKAR	**Makanchi Array**	**57.21**	**325**	P	P	04 21 24.0	-0.1
	0.2nm,0.5s,baz=130,slow=7.5,SNR=3.3						

*NIED **10** 04:11:00, 37°80N×143°50E, h32km, Mw3.8 Best double couple: M0=4.79000×10^14 NP1:φ=328.00000°, δ78.00000°, λ170.00000°. NP2:φ=60.00000°, δ80.00000°, λ12.00000°.*
*IDC **10** 04:11:51.4±0.9, 37°46N×143°85E, h0km, mb3.6/7, mb1 3.8/11, mb1mx3.6/37, mbtmp3.7/11, ML3.7/3, MS2.6/1, Ms1 2.6/1, ms1mx2.3/40, Error ellipse: s-maj=23.3km s-min=19.6km az=96.0*
*JMA **10** 04:11:53.3±0.3, 37°76N×143°50E, h36km, M3.9*
*ISCJB **10** 04:11:54.1±0.7, 37°66N±0°06×143°48E±0°06, h33km, mb3.7/7, Error ellipse: s-maj=9.0km s-min=6.1km az=151.9*
ISC 10 04:11:57.0±1.0, 37°65N±0°08×143°42E±0°08, h35km, n28, σ1°42/24, mb3.6/7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.82**	**297**	P	**Pn**	**04 12 23.7**	**-2.1**
OFUJ	**Ofunato**	**1.98**	**317**	P	Pn	04 12 24.8	-3.2
JFK	**Kawauchi**	**2.04**	**263**	P	**Pn**	**04 12 27.3**	**-1.6**
JMM	**Marumori**	**2.09**	**277**	P	**Pn**	**04 12 28.0**	**-1.5**
JMM				S	**Sn**	**04 12 52.9**	**-1.4**
JMK	**Ichinoseki**	**2.16**	**308**	P	**Pn**	**04 12 28.2**	**-2.3**
JFT	**Otama**	**2.45**	**268**	P	**Pn**	**04 12 34.1**	**-0.4**
JFT				*e*S	**Sn**	**04 13 03.4**	**+0.1**
JOM	**Ohasama**	**2.47**	**318**	P	Pn	04 12 31.9	-2.8
JYK	**Kaneyama**	**2.72**	**299**	P	**Pn**	**04 12 37.0**	**-1.1**
JYK				S	**Sn**	**04 13 09.3**	**-0.5**
JAG	**Ashikaga**	**3.40**	**250**	P	**Pn**	**04 12 47.3**	**-0.2**
JAG				*e*S	**Sn**	**04 13 27.3**	**+0.6**
JRY	**Ryogami san**	**3.98**	**247**	P	**Pn**	**04 12 55.1**	**-0.3**
JRY				*e*S	**Sn**	**04 13 39.9**	**-0.9**
MJAR	**Matsushiro Arr**	**4.31**	**257**	Pn	**Pn**	**04 13 00.8**	**+0.8**
	6.1nm,0.3s,baz=88,slow=15,SNR=19						
MAT	**Matsushiro**	**4.31**	**257**	P	**Pn**	**04 13 00.6**	**+0.5**
MAT				*e*S	**Sn**	**04 13 50.6**	**+1.5**
ASAJ	**Asahikawa**	**6.49**	**355**	Pn	**Pn**	**04 13 30.9**	**+1.0**
	2.7nm,0.3s,baz=190,slow=28,SNR=4.7						
USRK	**Ussuriysk Ar.**	**10.84**	**311**	Pn	**Pn**	**04 14 31.0**	**+1.5**
	0.3nm,0.3s,baz=100,slow=12,SNR=5.4						
KSRS	**Korea Array**	**12.30**	**274**	**Pn**	**Pn**	**04 14 52.2**	**+2.7**
	0.1nm,0.3s,baz=77,slow=15,SNR=3.3						
KSRS				LR	LR	04 19 48.5	
	comp=Z,27nm,19.1s,baz=186,slow=38						
H11N2	**WAKE ISLAND Hy 27.14**	**125**		T	T	04 43 23.6	
	baz=330,slow=76,SNR=34						
H11N1	**WAKE ISLAND Hy 27.14**	**125**		T	T	04 43 31.5	
	baz=330,slow=76,SNR=26						
H11N3	**WAKE ISLAND Hy 27.15**	**125**		T	T	04 43 31.9	
	baz=330,slow=76,SNR=32						
H11S1	**WAKE ISLAND Hy 27.90**	**127**		T	T	04 44 38.2	
	baz=332,slow=76,SNR=50						
H11S3	**WAKE ISLAND Hy 27.90**	**127**		T	T	04 44 40.2	
	baz=332,slow=76,SNR=49						
H11S2	**WAKE ISLAND Hy 27.91**	**127**		T	T	04 44 39.5	
	baz=332,slow=76,SNR=39						
SONM	**Songino Array**	**28.78**	**303**	P	P	04 17 55.2	+3.6
	0.6nm,0.7s,baz=95,slow=9.4,SNR=3.7						
ZALV	**Zalesovo Beam**	**42.69**	**312**	P	P	04 19 54.1	+4.0
	1.5nm,0.5s,baz=87,slow=9.2,SNR=4.6						
MKAR	**Makanchi Array**	**45.15**	**302**	P	**P**	**04 20 12.4**	**+2.4**
	0.4nm,0.5s,baz=83,slow=11,SNR=5.0						
ILAR	**Eielson Array**	**48.11**	**33**	P	**P**	**04 20 32.5**	**-0.5**
	0.4nm,1.0s,baz=276,slow=8.1,SNR=3.0						
WRA	**Warramunga Arr**	**57.92**	**190**	P	**P**	**04 21 44.2**	**-1.4**
	1.9nm,0.6s,baz=10,slow=7.4,SNR=8.5						
ASAR	**Alice Springs**	**61.65**	**190**	P	**P**	**04 22 10.2**	**-1.0**
	0.3nm,0.5s,baz=4.4,slow=6.9,SNR=3.6						
YKA	**Yellowknife Ar**	**62.46**	**31**	P	**P**	**04 22 15.4**	**-0.9**
	0.2nm,0.8s,baz=314,slow=7.1,SNR=3.1						

*NIED **10** 09:19:00, 37°40N×143°50E, h35km, Mw3.7 Best double couple: M0=3.63000×10^14 NP1:φ=59.00000°, δ78.00000°, λ8.00000°. NP2:φ=327.00000°, δ82.00000°, λ168.00000°.*
*ISCJB **10** 04:19:06.2±1.0, 37°44N±0°05×143°52E±0°07, h33km, mb3.6/3, Error ellipse: s-maj=8.5km s-min=6.1km az=24.3*
*JMA **10** 04:19:06.4±0.2, 37°42N×143°49E, h45km, M3.8*
*IDC **10** 04:19:07.3±1.4, 38°64N×142°80E, h0km, mb3.4/3, mb1 3.7/4, mb1mx3.3/30, mbtmp3.4/4, ML3.6/1, Error ellipse: s-maj=56.1km s-min=24.2km az=128.0*
ISC 10 04:19:06.8±1.7, 37°42N±0°06×143°6E±0°1, h35km, n19, σ1°26/30, mb3.4/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.04**	**301**	P	**Pn**	**04 19 38.5**	**-0.1**
JIO				S	**Sn**	**04 20 02.4**	**-0.5**
JFK	**Kawauchi**	**2.15**	**269**	P	**Pn**	**04 19 39.9**	**-0.3**
JFK				S	**Sn**	**04 20 04.6**	**-1.1**
ONAJ	**Iwakimizuishiy**	**2.24**	**263**	P	**Pn**	**04 19 41.2**	**-0.2**
ONAJ				*e*S	**Sn**	**04 20 06.9**	**-0.9**
JMM	**Marumori**	**2.25**	**282**	P	**Pn**	**04 19 41.3**	**-0.2**
JMK	**Ichinoseki**	**2.41**	**310**	P	**Pn**	**04 19 43.5**	**-0.2**
JMK				*e*S	**Sn**	**04 20 11.5**	**-0.4**
JFT	**Otama**	**2.58**	**273**	P	**Pn**	**04 19 47.0**	**+0.9**
JFT				S	**Sn**	**04 20 16.5**	**+0.3**
JOM	**Ohasama**	**2.72**	**320**	P	**Pn**	**04 19 48.1**	**+0.1**
JOM				S	**Sn**	**04 20 19.0**	**-0.8**
JYK	**Kaneyama**	**2.94**	**302**	P	**Pn**	**04 19 51.5**	**+0.4**
JYK				*e*S	**Sn**	**04 20 25.7**	**+0.5**
JANG	**Nango**	**3.36**	**332**	P	**Pn**	**04 19 57.8**	**+1.0**
JANG				*e*S	**Sn**	**04 20 33.4**	**-2.1**
JAG	**Ashikaga**	**3.45**	**255**	P	**Pn**	**04 19 58.3**	**+0.3**
JAG				S	**Sn**	**04 20 36.1**	**-1.5**
JRY	**Ryogami san**	**4.00**	**251**	P	**Pn**	**04 20 05.7**	**0.0**
JRY				S	**Sn**	**04 20 48.9**	**-2.5**
JOD2	**Odawara 2**	**4.21**	**241**	P	**Pn**	**04 20 08.4**	**-0.1**
JOD2				S	**Sn**	**04 20 53.8**	**-2.7**
MJAR	**Matsushiro Arr**	**4.38**	**260**	Pn	**Pn**	**04 20 12.7**	**+1.8**
	3.3nm,0.3s,baz=91,slow=16,SNR=15						
MJAR				Sn	**Sn**	**04 21 02.3**	**+1.5**
	1.9nm,0.3s,baz=111,slow=24,SNR=7.7						
MAT	**Matsushiro**	**4.38**	**260**	P	**Pn**	**04 20 12.3**	**+1.4**
MAT				S	**Sn**	**04 21 01.9**	**+1.1**
MAT	**Matsushiro**	**4.38**	**260**	P	**Pn**	**04 20 12.8**	**+1.9**
JYN	**Shimob**	**4.48**	**246**	P	**Pn**	**04 20 14.5**	**+2.2**
ILAR	**Eielson

PLCA	**Paso Flores**	**6.18**	**170**	Pn	**Pn**	**04 33 15.6**	**+2.3**
	comp=Z,3.2nm,0.3s,baz=12,slow=10,SNR=29						
PLCA				Lg	Lg	04 34 52.9	
	comp=Z,1.6nm,0.3s,baz=292,slow=21,SNR=4.6						
PLCA				LR	LR	04 35 58.5	
	comp=Z,161nm,19.3s,baz=360,slow=41						
PLCA	**Paso Flores**	**6.18**	**170**	*e*Pn	**Pn**	**04 33 16.5**	**+3.1**
PLCA				Lg	Lg	04 34 52.9	
TRQA	**Tornquist**	**8.78**	**116**	*e*Pn	**Pn**	**04 33 49.3**	**+0.3**
TRQA				*e*S	Sg	04 36 01.5	-22
CPUP	**Villa Florida**	**15.12**	**61**	Pn	**Pn**	**04 35 17.5**	**+1.7**
	comp=Z,0.1nm,0.3s,baz=103,slow=1.9,SNR=2.6						
CPUP				LR	LR	04 40 37.5	
	comp=Z,31nm,21.1s,baz=242,slow=36						
LPAZ	**La Paz**	**18.62**	**12**	P	**Pn**	**04 36 00.8**	**+0.1**
	comp=Z,0.2nm,0.3s,baz=190,slow=7.9,SNR=24						
LPAZ	**La Paz**	**18.62**	**12**	*e*P	**Pn**	**04 36 01.8**	**+1.2**
USHA	**Ushuaia**	**20.33**	**174**	P	Pn	04 36 19.9	-0.4
	comp=Z,43nm,0.8s,baz=339,slow=10.0,SNR=5.7						
SIV	**San Ignacio**	**21.02**	**31**	P	**P**	**04 36 25.7**	**-0.4**
	comp=Z,2.8nm,0.9s,baz=225,slow=14,SNR=11						
NNA	**Nana**	**22.99**	**348**	P	**P**	**04 36 44.9**	**-2.2**
	comp=Z,8.4nm,0.8s,baz=231,slow=1.5,SNR=2.3						
SAML	**Samuel**	**26.84**	**20**	*e*P	**P**	**04 37 21.3**	**-1.6**
HOPE	**Hope Point**	**31.58**	**139**	*e*P	**P**	**04 38 02.1**	**-2.5**
	comp=Z,33nm,0.7s						
VNA3	**Neumayer Olymp**	**48.75**	**158**	P	**P**	**04 40 31.2**	**+4.6**
VNA2	**Neumayer--Watz**	**49.40**	**157**	P	**P**	**04 40 30.4**	**-1.2**
	baz=297,slow=7.6						
SNAA	**Sanae**	**50.97**	**158**	P	**P**	**04 40 44.9**	**+1.3**
JCT	**Junction City**	**69.89**	**335**	*e*P	**P**	**04 42 54.2**	**+1.0**
	comp=Z,6.9nm,0.9s						
TXAR	**Lajitas Array**	**70.32**	**331**	P	**P**	**04 42 57.0**	**+1.0**
	comp=Z,1.3nm,0.6s,baz=154,slow=8.6,SNR=25						
TXAR				LR	LR	05 09 20.8	
	comp=Z,26nm,18.2s,baz=0.0,slow=32						
TX31	**Lajitas Ar. Si**	**70.32**	**331**	*e*P	**P**	**04 42 56.7**	**+0.7**
WVT	**Waverly**	**71.95**	**347**	*e*P	**P**	**04 43 05.5**	**-0.1**
	comp=Z,21nm,0.8s						
X301	**Greenbrier Sit**	**72.10**	**343**	*e*P	**P**	**04 43 04.5**	**-2.0**
	comp=Z,11nm,1.0s						
WHAR	**Wooly Hollow**	**72.12**	**343**	*e*P	**P**	**04 43 06.8**	**+0.1**
	comp=Z,13nm,1.5s						
MNTX	**Cornudas Mount**	**73.09**	**331**	*e*P	**P**	**04 43 12.5**	**-0.1**
	comp=Z,4.7nm,0.9s						
TUL1	**Leonard**	**73.63**	**340**	*e*P	**P**	**04 43 16.0**	**+0.4**
	comp=Z,8.4nm,0.8s						
MSTX	**Muleshoe**	**74.10**	**334**	*e*P	**P**	**04 43 17.9**	**-0.6**
	comp=Z,5.3nm,0.7s						
ANMO	**Albuquerque**	**76.37**	**331**	*e*P	**P**	**04 43 31.1**	**-0.6**
	comp=Z,3.9nm,1.0s						
T25A	**Trinidad**	**77.53**	**334**	*e*P	**P**	**04 43 39.6**	**+1.4**
	comp=Z,10nm,0.9s						
W18A	**Petrified Fore**	**77.86**	**329**	*e*P	**P**	**04 43 38.2**	**-1.8**
	comp=Z,14nm,0.9s						
X16A	**Lo Mia Camp, P**	**78.00**	**328**	*e*P	**P**	**04 43 42.8**	**+1.9**
	comp=Z,6.8nm,1.0s						
SDCO	**Great Sand Dun**	**78.47**	**333**	*e*P	**P**	**04 43 42.6**	**-0.9**
	comp=Z,2.2nm,0.8s						
S22A	**4UR Ranch, Cre**	**78.96**	**333**	*e*P	**P**	**04 43 47.5**	**+1.2**
	comp=Z,2.9nm,1.0s						
BOSA	**Boshof**	**79.75**	**118**	P	**P**	**04 43 51.0**	**+0.2**
	comp=Z,2.9nm,0.8s,baz=231,slow=3.9,SNR=5.2						
SMCO	**Snowmass**	**80.27**	**333**	*e*P	**P**	**04 43 52.6**	**-0.9**
	comp=Z,4.2nm,0.9s						
ISCO	**Idaho Springs**	**80.32**	**334**	*e*P	**P**	**04 43 54.9**	**+1.3**
	comp=Z,2.2nm,0.9s						
KNB	**Kanab**	**80.79**	**328**	*e*P	**P**	**04 43 58.1**	**+2.0**
	comp=Z,6.7nm,0.9s						
ECSD	**EROS Data Cent**	**81.18**	**342**	*e*P	**P**	**04 43 55.4**	**-2.3**
	comp=Z,9.2nm,0.8s						
SHPR	**Sheep Range**	**81.41**	**326**	*e*P	**P**	**04 44 01.5**	**+2.1**
	comp=Z,3.1nm,0.9s						
SRU	**San Rafael Swe**	**81.59**	**331**	*e*P	**P**	**04 44 01.7**	**+1.4**
	comp=Z,3.7nm,0.9s						
Q16A	**Castle Valley**	**81.69**	**330**	*e*P	**P**	**04 44 02.8**	**+2.0**
	comp=Z,3.3nm,0.8s						
P18A	**Preston Nutter**	**81.92**	**331**	*e*P	**P**	**04 44 03.6**	**+1.5**
	comp=Z,6.1nm,1.0s						
PSUT	**Pine Spring**	**82.50**	**328**	*e*P	**P**	**04 44 07.3**	**+2.2**
	comp=Z,3.9nm,1.1s						
R11A	**Troy Canyon, C**	**83.12**	**327**	*e*P	**P**	**04 44 07.4**	**-0.8**
	comp=Z,2.5nm,0.8s						
JLU	**Jordanelle**	**83.23**	**331**	*e*P	**P**	**04 44 10.1**	**+1.2**
	comp=Z,2.5nm,0.7s						
HWUT	**Hardware Ranch**	**84.13**	**331**	*e*P	**P**	**04 44 11.6**	**-1.8**
	comp=Z,4.4nm,0.8s						
BW06	**Boulder Array**	**84.36**	**333**	*e*P	**P**	**04 44 15.6**	**+1.0**
PDAR	**Pinedale Array**	**84.36**	**333**	P	**P**	**04 44 14.8**	**+0.3**
	comp=Z,1.0nm,0.7s,baz=150,slow=4.2,SNR=9.0						
TOA0	**Torodi Ar. Sit**	**84.41**	**70**	*e*P	**P**	**04 44 15.4**	**+0.2**
TORD	**Torodi Ar. Bea**	**84.41**	**70**	P	**P**	**04 44 15.1**	**-0.2**
	comp=Z,1.7nm,0.9s,baz=244,slow=3.7,SNR=7.9						
NV01	**Mina Array Sit**	**84.43**	**325**	*e*P	**P**	**04 44 16.3**	**+1.2**
NVAR	**Mina Array Bea**	**84.43**	**325**	P	**P**	**04 44 16.6**	**+1.6**
	comp=Z,1.6nm,0.8s,baz=160,slow=6.1,SNR=8.9						
HVU	**Hansel Valley**	**84.76**	**331**	*e*P	**P**	**04 44 17.3**	**+0.7**
	comp=Z,3.5nm,0.7s						
LOHW	**Long Hollow**	**85.47**	**333**	*e*P	**P**	**04 44 18.1**	**-2.1**
	comp=Z,1.6nm,0.7s						
FLWY	**Flagg Ranch**	**85.91**	**333**	*e*P	**P**	**04 44 21.3**	**-1.0**
	comp=Z,5.4nm,0.7s						
RLMT	**Red Lodge**	**86.29**	**335**	*e*P	**P**	**04 44 22.9**	**-1.2**
	comp=Z,14nm,1.5s						
YMR	**Madison River**	**86.51**	**333**	*e*P	**P**	**04 44 26.9**	**+1.7**
	comp=Z,5.7nm,0.8s						
HLID	**Hailey**	**86.92**	**331**	*e*P	**P**	**04 44 28.7**	**+1.5**
	comp=Z,3.0nm,1.0s						
ULM	**Lac du Bonnet**	**87.14**	**345**	P	**P**	**04 44 27.2**	**-0.6**
	comp=Z,4.9nm,1.1s,baz=77,slow=4.4,SNR=3.4						
DLMT	**Dillon**	**87.71**	**333**	*e*P	**P**	**04 44 28.3**	**-2.7**
	comp=Z,7.2nm,0.5s						
MOD	**Modoc Plateau**	**88.12**	**326**	*e*P	**P**	**04 44 34.9**	**+1.9**
	comp=Z,3.3nm,0.8s						
YKA	**Yellowknife Ar**	**102.68**	**341**	P	**Pdif**	**04 45 38.4**	**-0.3**
	comp=Z,0.2nm,0.7s,baz=139,slow=4.3,SNR=4.8						
H11S2	**WAKE ISLAND Hy**	**25.78**	**269**	T	T	07 09 04.1	
	baz=118,slow=75,SNR=29						
H11S1	**WAKE ISLAND Hy**	**25.79**	**269**	T	T	07 09 00.3	
	baz=118,slow=75,SNR=61						
H11S3	**WAKE ISLAND Hy**	**25.80**	**269**	T	T	07 09 01.6	
	baz=118,slow=75,SNR=30						
H11N3	**WAKE ISLAND Hy**	**26.21**	**270**	T	T	07 09 29.3	
	baz=115,slow=78,SNR=37						
H11N1	**WAKE ISLAND Hy**	**26.22**	**270**	T	T	07 09 33.3	
	baz=115,slow=78,SNR=119						
H11N2	**WAKE ISLAND Hy**	**26.23**	**270**	T	T	07 09 32.0	
	baz=115,slow=78,SNR=67						
BVAR	**Borovoye Array**	**147.74**	**44**	PKPbc	**PKPbc**	**04 51 27.6**	**+1.0**
	comp=Z,1.4nm,0.7s,baz=276,slow=2.8,SNR=5.6						
KURBB	**Kurchatov Arra**	**153.33**	**44**	PKPbc	**PKPbc**	**04 51 39.2**	**-0.8**
	comp=Z,0.6nm,0.4s,baz=297,slow=2.6,SNR=8.7						
KURK	**Kurchatov**	**153.34**	**44**	PKPbc	**PKPbc**	**04 51 39.2**	**-0.8**
ZALV	**Zalesovo Beam**	**154.76**	**33**	PKPbc	**PKPbc**	**04 51 43.1**	**0.0**
	comp=Z,1.1nm,0.4s,baz=340,slow=3.9,SNR=3.7						
MKAR	**Makanchi Array**	**157.17**	**50**	PKP	**PKPdf**	**04 51 38.4**	**+0.5**
	comp=Z,0.2nm,0.4s,baz=201,slow=17,SNR=3.0						
MKAR				PKPab	**PKPab**	**04 52 08.6**	**-0.1**
	comp=Z,0.6nm,0.8s,baz=318,slow=3.3,SNR=3.3						
CD2	**Chengdu**	**174.84**	**135**	PKP	**PKPdf**	**04 51 52.8**	**+0.3**
LZH	**Lanzhou**	**176.32**	**66**	*e*PKP	**PKPdf**	**04 51 55.9**	**+3.0**
LZH				pPKP	pPKPdf	04 52 06.2	+11
LZH				sPKP		04 52 10.8	

RSPR 10 04:32:35.2, 19.11N×65.63W, h26km±8km, MD2.9/3, 4C-2D, Puerto Rico region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBYP	**Canovanas**	**0.86**	**195⇓**	*e*P	Pb	04 32 49.3	-2.1
CBYP	**Canovanas**	**0.86**	**195**	*e*S	Sb	04 33 00.4	-2.2
CBYP	**Canovanas**	**0.86**	**195⇓**	*e*P	Pb	04 32 49.3	-2.1
CBYP				*e*S	Sb	04 33 00.4	-2.2
HUMP	**Col San Antoni**	**0.98**	**192⇑**	*e*P	Pn	04 32 51.1	-2.2
HUMP	**Col San Antoni**	**0.98**	**192⇑**	*e*P	Pn	04 32 51.1	-2.2
HUMP				*e*S	Sb	04 33 03.2	-2.9
MTP	**Monte Pirata**	**1.00**	**176⇑**	*e*P	Pn	04 32 51.4	-2.2
MTP	**Monte Pirata**	**1.00**	**176⇑**	*e*P	Pn	04 32 51.4	-2.2
MTP				*e*S	Sb	04 33 04.1	-2.6

*IDC **10** 04:35:31.7±2.3, 7.76S×68.89E, h0km, mb3.8/8, mb1 3.9/8, mb1mx3.7/42, mbtmp3.8/8, MS3.8/21, Ms1 3.8/21, ms1mx3.6/47, Error ellipse: s-maj=66.5km s-min=39.4km az=152.0*

ISC 10 04:35:31.6±2.5, 8.0S±0.4×69.1E±0.3, h10km, n36, σ1§29/11, mb3.8/9, MS3.8/20, Chagos Archipelago region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08N3	**Diego Garcia H**	**2.53**	**49**	T	T	04 39 47.3	
	baz=244,slow=75,SNR=78						
H08N1	**Diego Carcia H**	**2.55**	**50**	T	T	04 39 50.9	
	baz=244,slow=75,SNR=73						
H08N2	**Diego Garcia H**	**2.55**	**49**	T	T	04 39 54.3	
	baz=244,slow=75,SNR=18						
PALK	**Pallekele**	**19.11**	**38**	LR	LR	04 45 37.0	
	comp=Z,444nm,21.5s,baz=297,slow=32						
OPO	**Ambohidratompo**	**23.70**	**242**	LR	LR	04 47 14.4	
	comp=Z,503nm,20.8s,baz=1.0,slow=30						
WSAR	**Wadi Sarin**	**32.68**	**342**	LR	LR	04 52 25.8	
	comp=Z,141nm,18.6s,baz=171,slow=31						
BOSA	**Boshof**	**46.02**	**238**	LR	LR	05 02 56.2	
	comp=Z,163nm,18.1s,baz=48,slow=36						
GEYT	**Alibeck**	**46.82**	**348**	LR	LR	05 01 19.7	
	comp=Z,85nm,20.4s,baz=110,slow=33						
H01W3	**Cape Leeuwin H**	**49.18**	**130**	T	T	05 38 21.5	
	baz=311,slow=74,SNR=5.6						
H01W1	**Cape Leeuwin H**	**49.20**	**130**	T	T	05 38 37.2	
	baz=297,slow=74,SNR=5.3						
EIL	**Elat**	**49.79**	**320**	LR	LR	05 00 40.0	
	comp=Z,64nm,21.1s,baz=198,slow=30						
MMAI	**Mount Meron Ar**	**51.86**	**324**	LR	LR	05 01 53.8	
	comp=Z,37nm,21.8s,baz=210,slow=31						
MKAR	**Makanchi Array**	**55.82**	**11**	P	**P**	**04 45 08.7**	**-0.4**
	0.4nm,0.6s,baz=191,slow=5.9,SNR=3.8						
KBZ	**Khabaz**	**56.69**	**338**	P	**P**	**04 45 14.2**	**-1.1**
	0.3nm,0.3s,baz=345,slow=14,SNR=2.5						
BRTR	**Keskin Array B**	**57.70**	**328**	P	P	04 45 18.2	-4.5
	0.6nm,0.8s,baz=163,slow=9.0,SNR=5.4						
BRTR				LR	LR	05 08 17.4	
	comp=Z,42nm,20.1s,baz=146,slow=34						
DAV	**Davao City (W)**	**58.31**	**77**	LR	LR	05 10 49.9	
	comp=Z,65nm,18.1s,baz=176,slow=36						
BVAR	**Borovoye Array**	**60.80**	**1**	P	**P**	**04 45 43.5**	**-0.3**
	1.0nm,0.5s,baz=278,slow=40,SNR=2.4						
ZALV	**Zalesovo Beam**	**63.14**	**10**	P	**P**	**04 45 59.3**	**-0.1**
	0.6nm,0.4s,baz=350,slow=39,SNR=2.4						
ASAR	**Alice Springs**	**63.82**	**112**	LR	LR	05 10 05.9	
	comp=Z,68nm,21.9s,baz=299,slow=32						
WRA	**Warramunga Arr**	**64.12**	**108**	LR	LR	05 11 24.2	
	comp=Z,139nm,21.2s,baz=265,slow=33						
SONM	**Songino Array**	**64.64**	**27**	P	**P**	**04 46 11.3**	**+1.6**
	1.1nm,0.7s,baz=226,slow=6.3,SNR=3.6						
AKASG	**Malin Array Be**	**67.86**	**334**	P	**P**	**04 46 30.9**	**+0.9**
	0.3nm,0.3s,baz=133,slow=5.6,SNR=4.1						
TORD	**Torodi Ar. Bea**	**70.12**	**287**	P	**P**	**04 46 44.4**	**-0.4**
	0.7nm,1.1s,baz=97,slow=10,SNR=3.2						
TORD				LR	LR	05 16 53.2	
	comp=Z,73nm,18.4s,baz=70,slow=36						
STKA	**Stephens Creek**	**71.00**	**121**	LR	LR	05 17 46.7	
	comp=Z,74nm,18.0s,baz=211,slow=36						
KSRS	**Korea Array**	**71.11**	**46**	LR	LR	05 17 51.1	
	comp=Z,54nm,19.6s,baz=244,slow=36						
DBIC	**Dimbokro**	**75.13**	**279**	LR	LR	05 17 39.5	
	comp=Z,63nm,21.7s,baz=83,slow=34						
USRK	**Ussuriysk Ar.**	**76.82**	**41**	LR	LR	05 20 52.3	
	comp=Z,39nm,21.7s,baz=206,slow=35						
FINES	**FINESS Array B**	**76.89**	**340**	LR	LR	05 21 24.6	
	comp=Z,46nm,20.2s,baz=186,slow=36						
NRIK	**Noril'sk**	**78.23**	**7**	LR	LR	05 22 46.7	
	comp=Z,51nm,18.0s,baz=145,slow=36						
NOA	**NORSAR Array B**	**82.20**	**335**	LR	LR	05 24 58.5	
	comp=Z,11nm,20.0s,baz=130,slow=36						
ESDC	**Sonseca Array**	**82.23**	**312**	P	**P**	**04 47 55.1**	**+1.7**
	0.2nm,0.4s,baz=90,slow=4.4,SNR=4.7						
VNDA	**Vanda**	**82.85**	**167**	LR	LR	05 18 28.8	
	comp=Z,55nm,18.7s,baz=269,slow=31						
TIXI	**Tiksi**	**88.48**	**16**	LR	LR	05 29 35.2	
	comp=Z,56nm,18.8s,baz=250,slow=37						
YKA	**Yellowknife Ar**	**125.55**	**2**	PKP	**PKPdf**	**04 54 32.9**	**0.0**
	0.1nm,0.8s,baz=336,slow=2.7,SNR=3.5						
PDAR	**Pinedale Array**	**145.36**	**358**	PKPbc	**PKPbc**	**04 55 09.4**	**-0.8**
	0.2nm,0.5s,baz=222,slow=2.0,SNR=3.4						
NVAR	**Mina Array Bea**	**148.99**	**11**	PKPbc	**PKPab**	**04 55 22.4**	**-2.2**
	1.2nm,0.8s,baz=187,slow=2.4,SNR=6.4						

IDC 10 04:43:57.7±1.0, 19.06N×145.48E, h0km, mb3.9/9, mb1 4.1/9, mb1mx3.7/54, mbtmp3.9/9, Error ellipse: s-maj=32.2km s-min=26.2km az=116.0, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H11S3	**WAKE ISLAND Hy**	**20.09**	**88**	T	T	05 09 36.3	
	baz=287,slow=74,SNR=3.3						
H11S2	**WAKE ISLAND Hy**	**20.11**	**88**	T	T	05 09 38.6	
	baz=281,slow=74,SNR=3.3						
WRA	**Warramunga Arr**	**40.27**	**196**	P	P	04 51 36.8	0.0
	0.4nm,0.3s,baz=20,slow=8.9,SNR=2.6						
MKAR	**Makanchi Array**	**58.06**	**14**	P	P	04 53 54.2	+1.4
	0.4nm,0.6s,baz=95,slow=8.2,SNR=4.3						
KURBB	**Kurchatov Arra**	**60.91**	**318**	P	P	04 54 11.7	-0.6
	0.5nm,0.4s,baz=98,slow=7.2,SNR=8.1						
ILAR	**Eielson Array**	**63.41**	**26**	P	P	04 54 29.1	+0.1
	0.6nm,0.6s,baz=255,slow=4.9,SNR=5.9						
BVAR	**Borovoye Array**	**66.06**	**320**	P	P	04 54 46.9	+0.4
	1.4nm,0.5s,baz=102,slow=7.9,SNR=7.1						
INK	**Inuvik**	**69.12**	**23**	P	P	04 55 06.5	+1.1
	1.0nm,0.8s,baz=270,slow=9.0,SNR=5.2						
YKA	**Yellowknife Ar**	**77.77**	**28**	P	P	04 55 56.2	-0.3
	0.6nm,0.6s,baz=290,slow=5.4,SNR=16						
NVAR	**Mina Array Bea**	**83.08**	**52**	P	P	04 56 25.9	0.0
	1.0nm,0.7s,baz=272,slow=5.6,SNR=4.6						
FINES	**FINESS Array B**	**86.47**	**335**	P	P	04 56 40.4	-1.8
	0.8nm,0.3s,baz=70,slow=4.9,SNR=10						

*NIED **10** 04:48:00, 36.30N×142.40E, h11km, Mw3.6 Best double couple: M0=3.00000×10^14 NP1:φ=189.00000°, δ=44.00000°, λ=-108.00000°. NP2:φ=32.00000°, δ=48.00000°, λ=-74.00000°.*

*IDC **10** 04:48:02.3±0.8, 35.53N×142.67E, h0km, mb3.5/9, mb1 3.8/10, mb1mx3.5/54, mbtmp3.5/10, ML3.6/1, MS2.4/1, Ms1 2.4/1, ms1mx2.1/40, Error ellipse: s-maj=21.8km s-min=21.1km az=117.0*

*JMA **10** 04:48:09.4±0.2, 36.30N×142.38E, h20km, M3.5*

ISC 10 04:48:06.4±2.5, 36.22N±0.09×142.50E±0.07, h7km±17km, n26, σ1§23/24, mb3.6/9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.43**	**249**	*e*S	**Sb**	**04 48 51.8**	**+0.1**
JHO	**Hitachi**	**1.61**	**285**	P	**Pn**	**04 48 35.5**	**+0.3**
JHO				*e*S	**Sn**	**04 48 54.4**	**-1.7**
ONAJ	**Iwakimizuishiy**	**1.63**	**303**	*e*S	**Sn**	**04 48 55.0**	**-1.7**
JFK	**Kawauchi**	**1.74**	**312**	*e*S	**Sn**	**04 48 57.3**	**-2.1**
BSO1	**Boso 1**	**2.00**	**219**	P	**Pg**	**04 48 44.0**	**-0.7**
BSO1				*e*S	**Sb**	**04 49 07.3**	**-0.3**
BSO3	**Boso 3**	**2.16**	**229**	P	**Pb**	**04 48 45.3**	**-0.3**
BSO3				*e*S	**Sb**	**04 49 11.8**	**-0.6**
JFT	**Otama**	**2.17**	**307**	P	**Pn**	**04 48 43.4**	**+0.5**
JFT				*e*S	**Sn**	**04 49 09.1**	**-0.8**
JAG	**Ashikaga**	**2.47**	**276**	P	**Pn**	**04 48 48.1**	**+1.1**
JAG				*e*S	**Sn**	**04 49 15.9**	**-1.5**
MJAR	**Matsushiro Arr**	**3.48**	**277**	Pn	**Pn**	**04 49 02.8**	**+1.9**
	4.9nm,0.3s,baz=114,slow=8.4,SNR=14						
MAT	**Matsushiro**	**3.48**	**277**	P	**Pn**	**04 49 03.3**	**+2.4**
MAT				S	**Sn**	**04 49 42.2**	**-0.2**
ASAJ	**Asahikawa**	**7.89**	**0**	LR	LR	04 54 14.8	
	comp=Z,25nm,18.1s,baz=176,slow=43						
H11N2	**WAKE ISLAND Hy**	**26.98**	**121**	T	T	05 22 02.4	
	baz=313,slow=75,SNR=6.2						
H11N1	**WAKE ISLAND Hy**	**26.99**	**121**	T	T	05 22 02.9	
	baz=313,slow=75,SNR=6.2						
H11N3	**WAKE ISLAND Hy**	**27.00**	**121**	T	T	05 22 07.9	
	baz=313,slow=75,SNR=4.3						
H11S1	**WAKE ISLAND Hy**	**27.68**	**123**	T	T	05 22 56.3	
	baz=315,slow=74,SNR=4.3						
H11S3	**WAKE ISLAND Hy**	**27.68**	**123**	T	T	05 22 58.1	
	baz=130,slow=74,SNR=4.4						
SONM	**Songino Array**	**28.97**	**305**	P	**P**	**04 54 08.3**	**+1.8**
	0.5nm,0.6s,baz=104,slow=8.7,SNR=2.8						
MKAR	**Makanchi Array**	**45.29**	**303**	P	**P**	**04 56 25.4**	**+0.7**
	0.6nm,0.7s,baz=98,slow=9.1,SNR=5.0						
KURBB	**Kurchatov Arra**	**47.19**	**309**	P	**P**	**04 56 39.9**	**+0.4**
	0.7nm,0.5s,baz=82,slow=7.7,SNR=6.5						
ILAR	**Eielson Array**	**49.71**	**32**	P	**P**	**04 56 58.8**	**+0.1**
	0.3nm,0.7s,baz=243,slow=6.0,SNR=2.5						
WRA	**Warramunga Arr**	**56.39**	**189**	P	P	04 57 39.9	-8.5
	1.0nm,0.6s,baz=12,slow=8.6,SNR=8.6						
ASAR	**Alice Springs**	**60.12**	**189**	P	P	04 58 06.8	-7.6
	0.5nm,0.8s,baz=16,slow=17,SNR=4.0						
YKA	**Yellowknife Ar**	**64.07**	**30**	P	**P**	**04 58 40.1**	**-0.4**
	0.2nm,0.7s,baz=301,slow=6.4,SNR=3.0						
NVAR	**Mina Array Bea**	**74.77**	**53**	P	**P**	**04 59 46.5**	**-0.9**
	0.5nm,0.7s,baz=289,slow=3.5,SNR=3.9						
TXAR	**Lajitas Array**	**89.92**	**53**	P	**P**	**05 01 06.5**	**-0.1**
	0.2nm,0.7s,baz=334,slow=6.0,SNR=1.9						
LPAZ	**La Paz**	**146.32**	**62**	PKPbc	**PKPdf**	**05 07 47.6**	**-0.2**
	1.3nm,1.0s,baz=184,slow=8.3,SNR=3.2						

*IDC **10** 04:58:21.8±1.1, 22.11N×145.67E, h0km, mb3.5/5, mb1 3.8/6, mb1mx3.5/42, mbtmp3.6/6, ML3.8/1, MS3.7/2, Ms1 3.7/2, ms1mx2.7/34, Error ellipse: s-maj=34.2km s-min=28.8km az=95.0*

*ISCJB **10** 04:58:25.7±0.9, 22.2N±0.1×145.5E±0.2, h36km, mb3.4/5, MS3.7/2, Error ellipse: s-maj=28.7km s-min=11.7km az=150.0*

ISC 10 04:58:27.4±1.0, 22.2N±0.1×145.5E±0.2, h36km, n8, σ1§07/8, mb3.4/5, North Pacific Ocean

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCJ	**Chichijima**	**5.72**	**329**	Pn	**Pn**	**04 59 50.0**	**+0.2**
	2.5nm,0.3s,baz=266,slow=24,SNR=5.4						
JCJ				Sn	**Sn**	**05 00 53.1**	**-1.1**
	9.5nm,0.3s,baz=98,slow=23,SNR=7.0						
PMG	**Port Moresby**	**31.45**	**177**	LR	LR	05 17 54.5	
	comp=Z,79nm,18.1s,baz=191,slow=37						
WRA	**Warramunga Arr**	**43.27**	**195**	P	**P**	**05 06 24.9**	**-0.8**
	0.4nm,0.5s,baz=19,slow=9.1,SNR=6.3						
MKAR	**Makanchi Array**	**55.93**	**312**	P	**P**	**05 08 02.9**	**+1.0**
	0.2nm,0.4s,baz=103,slow=5.0,SNR=2.6						
MKAR				PcP	**PcP**	**05 09 01.3**	**+1.1**
	0.3nm,0.4s,baz=79,slow=7.5,SNR=4.0						
RPZ	**Rata Peaks**	**69.67**	**160**	LR	LR	05 33 56.7	
	comp=Z,96nm,21.9s,baz=67,slow=31						
YKA	**Yellowknife Ar**	**75.02**	**28**	P	**P**	**05 10 05.0**	**0.0**
	0.2nm,0.6s,baz=290,slow=5.9,SNR=5.1						
NVAR	**Mina Array Bea**	**81.17**	**52**	P	**P**	**05 10 40.3**	**+0.5**
	0.9nm,0.8s,baz=284,slow=6.0,SNR=4.8						
PDAR	**Pinedale Array**	**85.54**	**46**	P	**P**	**05 11 01.1**	**-1.2**
	0.1nm,0.5s,baz=73,slow=40,SNR=3.3						

JMA 10 05:03:18.3±0.1, 36.75N×141.27E, h48km±2km, M2.9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.52**	**313**	P	Pn	05 03 29.3	-0.4
ONAJ				S	Sn	05 03 37.0	-0.8
JHO	**Hitachi**	**0.58**	**256**	P	Pn	05 03 30.1	-0.3
JHO				S	Sn	05 03 38.8	-0.3
JFK	**Kawauchi**	**0.69**	**333**	P	Pn	05 03 31.6	-0.3
JFK				S	Sn	05 03 41.1	-0.6
JFT	**Otama**	**1.07**	**316**	P	Pn	05 03 38.0	+1.1
JFT				S	Sn	05 03 52.2	+1.5
JMM	**Marumori**	**1.18**	**341**	P	Pn	05 03 38.4	0.0
JMM				*e*S	Sn	05 03 53.4	+0.1
MAT	**Matsushiro**	**2.47**	**266**	P	Pn	05 03 58.5	+2.4
MAT				*e*S	Sn	05 04 27.9	+2.8

**IDC 10 05:15:35.2±2.4, 25.05S×179.61W, h0km, mb4.2/4, mb1 4.4/4, mb1mx3.9/30, mbtmp4.2/4, MS3.1/1, Ms1 3.1/1, ms1mx2.6/27, Error ellipse: s-ma

YKA	Yellowknife Ar	89.97	23	P	P	05 44 30.1	+1.0
	0.2nm,0.9s,baz=260,slow=3.6,SNR=4.0							
BRTR	Keskin Array B	146.27	321	PKPbc	PKPab	05 51 12.3	+0.3
	0.4nm,0.5s,baz=134,slow=3.6,SNR=4.1							

NIED ***10*** *05:32:00,37.°80N×143.°60E,h5km,Mw3.9 Best double couple: M0=7.65000×10^14 NP1:φ=27.00000°,δ=21.00000°, λ=-61.00000°. NP2:φ=177.00000°,δ=72.00000°, λ=-100.00000°.*
IDC ***10*** *05:32:38.6±0.8,37.°64N×143.°85E,h0km,mb3.8/13, mb1 3.9/17,mb1mx3.7/74,mbtmp3.8/17,ML4.1/2,Error ellipse: s-maj=19.2km s-min=17.4km az=143.0*
ISCJB ***10*** *05:32:40.3±0.6,37.°82N±0.°05×143.°61E±0.°05,h19km, mb3.7/13,Error ellipse: s-maj=6.8km s-min=5.5km az=167.1*
JMA ***10*** *05:32:41.5±0.2,37.°80N×143.°58E,h44km,M3.7*
ISC 10 05:32:41.8±0.8,37.°81N±0.°06×143.°47E±0.°06,h19km,n33, σ1§96/32,mb3.8/13,1C,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.79**	**292**	P	**Pb**	**05 33 12.3**	**-1.7**
JIO				*eS*	**Sb**	**05 33 34.9**	**-1.1**
OFUJ	**Ofunato**	**1.90**	**312**	P	**Pb**	**05 33 13.3**	**-2.5**
JMK	**Ichinoseki**	**2.10**	**304**	P	**Pb**	**05 33 16.6**	**-2.7**
JMK				*eS*	**Sn**	**05 33 42.4**	**+0.8**
JOM	**Ohasama**	**2.38**	**315**	⇑P	**Pb**	**05 33 20.3**	**-3.7**
JOM				*eS*	**Sn**	**05 33 49.4**	**+1.0**
JFT	**Otama**	**2.50**	**264**	P	**Pb**	**05 33 22.9**	**-3.2**
JFT				*eS*	**Sn**	**05 33 52.7**	**+1.2**
JYK	**Kaneyama**	**2.68**	**295**	P	**Pb**	**05 33 25.4**	**-3.8**
JYK				S	**Sn**	**05 33 58.0**	**+2.1**
JAG	**Ashikaga**	**3.49**	**248**	P	**Pn**	**05 33 35.9**	**+0.8**
JRY	**Ryogami san**	**4.07**	**245**	P	**Pn**	**05 33 43.8**	**+0.7**
JRY				S	**Sn**	**05 34 29.5**	**-0.8**
MJAR	**Matsushiro Arr**	**4.38**	**255**	Pn	**Pn**	**05 33 49.8**	**+2.4**
MJAR	4.5nm,0.3s,baz=80,slow=15,SNR=14			Sn	**Sn**	**05 34 42.1**	**+4.2**
MAT	**Matsushiro**	**4.39**	**255**	P	**Pn**	**05 33 49.6**	**+2.2**
MAT	0.9nm,0.3s,baz=70,slow=23,SNR=5.1			S	**Sn**	**05 34 36.4**	**-1.6**
ASAJ	**Asahikawa**	**6.33**	**354**	Pn	**Pn**	**05 34 15.2**	**+1.0**
ASAJ	4.4nm,0.3s,baz=217,slow=9.4,SNR=11			Sn	**Sn**	**05 35 26.9**	**+1.0**
USRK	**Ussuriysk Ar.**	**10.76**	**310**	Pn	Pn	05 35 19.9	+5.0
USRK	0.8nm,0.3s,baz=16,slow=33,SNR=4.1						
KSRS	**Korea Array**	**12.33**	**273**	Pn	P	05 35 42.2	-6.2
KLR	0.2nm,0.3s,baz=108,slow=12,SNR=3.4						
H11N2	**Kul'dur**	**14.21**	**327**	Pn	**Pn**	**05 36 01.2**	**-0.7**
H11N1	0.1nm,0.3s,baz=176,slow=6.1,SNR=3.0						
H11N3	**WAKE ISLAND Hy 27.20 125**			T	T	06 06 41.3	
H11S1	baz=317,slow=75,SNR=14						
H11S3	**WAKE ISLAND Hy 27.20 125**			T	T	06 06 42.0	
H11S2	baz=317,slow=75,SNR=7.2						
ZALV	**WAKE ISLAND Hy 27.21 125**			T	T	06 06 42.0	
MKAR	baz=317,slow=75,SNR=9.2						
ILAR	**WAKE ISLAND Hy 27.96 127**			T	T	06 07 39.2	
INK	baz=319,slow=76,SNR=5.0						
SONM	**WAKE ISLAND Hy 27.98 127**			T	T	06 07 47.5	
ZALV	baz=319,slow=76,SNR=5.9						
MKAR	**WAKE ISLAND Hy 27.98 127**			T	T	06 07 40.4	
ILAR	baz=319,slow=76,SNR=4.0						
INK	**Songino Array**	**28.73**	**302**	P	**P**	**05 38 40.4**	**+2.4**
ZALV	0.4nm,0.5s,baz=174,slow=40,SNR=3.1						
MKAR	**Zalesovo Beam**	**42.61**	**312**	P	P	05 40 40.6	+4.1
ILAR	1.0nm,0.6s,baz=86,slow=9.1,SNR=4.6						
INK	**Makanchi Array**	**45.10**	**302**	P	P	05 40 59.8	+3.1
SONM	0.4nm,0.5s,baz=88,slow=12,SNR=4.7						
ZALV	**Kurchatov Arra**	**46.82**	**308**	P	**P**	**05 41 11.1**	**+1.0**
MKAR	0.8nm,0.7s,baz=81,slow=7.8,SNR=9.3						
ILAR	**Eielson Array**	**47.96**	**33**	P	**P**	**05 41 18.6**	**-0.2**
INK	1.2nm,0.7s,baz=264,slow=6.5,SNR=14						
WRA	**Nuuvik**	**52.95**	**28**	P	**P**	**05 41 56.0**	**-0.4**
ZALV	0.5nm,0.5s,baz=309,slow=5.2,SNR=7.6						
MKAR	**Warramunga Arr**	**58.08**	**190**	P	**P**	**05 42 32.9**	**-1.0**
ILAR	1.4nm,0.8s,baz=11,slow=7.0,SNR=6.0						
INK	**Alice Springs**	**61.81**	**190**	P	**P**	**05 42 58.2**	**-1.2**
ZALV	0.5nm,0.7s,baz=7.1,slow=7.2,SNR=3.6						
MKAR	**Yellowknife Ar**	**62.31**	**31**	P	**P**	**05 43 02.0**	**-0.3**
ILAR	0.4nm,0.7s,baz=302,slow=6.8,SNR=9.1						
INK	**FINESS Array B**	**68.88**	**333**	P	**P**	**05 43 45.7**	**+0.8**
ZALV	1.0nm,0.7s,baz=229,slow=35,SNR=2.8						
MKAR	**Hagfors**	**74.04**	**336**	P	**P**	**05 44 17.5**	**+1.5**
ILAR	0.7nm,0.5s,baz=40,slow=7.7,SNR=4.5						
INK	**Pinedale Array**	**75.95**	**47**	P	**P**	**05 44 27.6**	**0.0**
ZALV	0.5nm,0.7s,baz=267,slow=3.0,SNR=5.7						
MKAR	**Lajitas Array**	**88.35**	**54**	P	**P**	**05 45 32.5**	**-0.2**
ILAR	0.3nm,0.8s,baz=297,slow=5.5,SNR=3.2						

CASC 10 05:32:55.8±1.1,12.°85N×88.°34W,h60km±15km,MD3.6, ML3.2,1C-1D,Off coast of central America

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LCY	**Lacayo**	**0.57**	**4**	⇑*eP*	Pn	05 33 08.8	+0.1
LCY				*eS*	Sn	05 33 19.0	+1.0
VSM	**San Miguel**	**0.58**	**6**	*eP*	Pn	05 33 09.1	+0.2
VSM				*eP*	Pn	05 33 09.3	+0.4
PACA	**Pacayal**	**0.61**	**1**	⇓*eP*	Pn	05 33 09.3	+0.1
PACA				*eS*	Sn	05 33 19.6	+0.7
CNCH	**Conchagua**	**0.65**	**49**	*eP*	Pn	05 33 09.5	0.0
CNCH				*eP*	Pn	05 33 09.6	+0.1
CNCH				*eS*	Sn	05 33 20.1	+0.5
CNCH				*eS*	Sn	05 33 20.3	+0.8
TECA	**Tecapa**	**0.66**	**346**	*eP*	Pn	05 33 09.7	-0.1
TECA				*eS*	Sn	05 33 20.5	+0.6
CSGN	**Cosiguina Volc**	**0.77**	**81**	*eP*	Pn	05 33 10.2	-0.8
CSGN				*eS*	Sn	05 33 22.0	0.0
CAHU	**Cacacuatique**	**0.92**	**8**	*eP*	Pn	05 33 13.3	+0.3
LFRS	**El Faro**	**1.04**	**317**	*eP*	Pn	05 33 14.3	-0.2
LFRS				*eS*	Sn	05 33 28.4	0.0
LBRS	**Las Brisas**	**1.12**	**322**	*eP*	Pn	05 33 15.8	+0.3
SNET	**Serv Nac Est T**	**1.20**	**314**	AML	AML	05 33 37.2	
	comp=Z,456nm,0.2s						
COLS	**Colinas**	**1.24**	**311**	*eP*	Pn	05 33 17.9	+0.8
CRIN	**San Cristobal**	**1.26**	**97**	*eS*	Sn	05 33 34.4	+0.8
BOQS	**Boqueron**	**1.27**	**314**	*eP*	Pn	05 33 17.9	+0.3
BOQS				*eS*	Sn	05 33 34.3	+0.3
TGUH	**Tegucigalpa,Un**	**1.58**	**41**	*eP*	Pn	05 33 21.7	+0.1
MONT	**Ecomontaæa**	**1.62**	**308**	*eP*	Pn	05 33 23.4	+1.0
ESTN	**Estel**	**1.93**	**82**	*eP*	Pn	05 33 26.3	-0.2

NIED ***10*** *05:40:00,37.°60N×141.°50E,h53km,Mw4.0 Best double couple: M0=9.63000×10^14 NP1:φ=219.00000°,δ=24.00000°, λ=106.00000°. NP2:φ=21.00000°,δ=67.00000°,λ=83.00000°.*
ISCJB ***10*** *05:40:31.3±0.8,37.°58N±0.°04×141.°52E±0.°09,h56km±5km, mb4.0/19,MS3.8/1,Error ellipse: s-maj=12.1km s-min=6.1km az=13.7*
JMA ***10*** *05:40:32.2±0.1,37.°60N×141.°52E,h45km±2km,M4.0*
JMA Felt I J1.
IDC ***10*** *05:40:33.1±0.6,37.°60N×141.°41E,h53km±6km,mb3.6/18, mb1 3.8/20,mb1mx3.6/62,mbtmp3.9/20,MS3.0/4, Ms1 3.0/4,ms1mx2.7/38,Error ellipse: s-maj=15.4km s-min=14.5km az=112.0*
ISC 10 05:40:32.6±0.7,37.°61N±0.°04×141.°52E±0.°07,h48km±6km, n44,σ1§03/45,mb3.9/19,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.57**	**245**	P	**Pn**	**05 40 44.0**	**-0.6**
JFK				S	**Sn**	**05 40 51.8**	**-1.4**
JMM	**Marumori**	**0.63**	**294**	P	**Pn**	**05 40 44.9**	**-0.4**
JMM				S	**Sn**	**05 40 53.8**	**-0.7**
ONAJ	**Iwakimizuishiy**	**0.77**	**229**	P	**Pn**	**05 40 46.5**	**-0.7**
ONAJ				S	**Sn**	**05 40 56.2**	**-1.6**
JIO	**Ouri**	**0.85**	**351**	P	**Pn**	**05 40 48.0**	**-0.3**
JIO				S	**Sn**	**05 40 58.8**	**-0.9**
JFT	**Otama**	**0.94**	**265**	P	**Pn**	**05 40 49.7**	**+0.2**
JFT				S	**Sn**	**05 41 02.0**	**+0.1**
JOU	**Okura**	**1.01**	**318**	P	**Pn**	**05 40 50.1**	**-0.3**
JOU				S	**Sn**	**05 41 03.7**	**+0.1**
JYS	**Shirataka**	**1.30**	**298**	P	**Pn**	**05 40 54.5**	**+0.2**
JMK	**Ichinoseki**	**1.36**	**350**	P	**Pn**	**05 40 55.4**	**+0.3**
JMK				S	**Sn**	**05 41 11.7**	**-0.3**
JYK	**Kaneyama**	**1.59**	**325**	P	**Pn**	**05 40 58.4**	**+0.1**
MJAR	**Matsushiro Arr**	**2.85**	**249**	P	**Pn**	**05 41 16.6**	**+0.9**
	4.1nm,0.3s,baz=57,slow=11,SNR=23						
MAT	**Matsushiro**	**2.85**	**249**	P	**Pn**	**05 41 15.7**	**+0.1**
MAT				*eS*	**Sn**	**05 41 53.3**	**+4.5**
ASAJ	**Asahikawa**	**6.55**	**7**	LR	LR	05 44 41.8	
	comp=Z,41nm,21.9s,baz=185,slow=38						
USRK	**Ussuriysk Ar.**	**9.76**	**315**	P	Pn	05 42 54.8	+4.5
USRK	0.3nm,0.3s,baz=134,slow=14,SNR=6.4						
JCJ	**Chichijima**	**10.50**	**177**	P	**Pn**	**05 42 59.2**	**-1.3**
JCJ	2.4nm,0.3s,baz=275,slow=22,SNR=6.1						
KSRS	**Korea Array**	**10.80**	**273**	P	Pn	05 43 09.7	+5.2
KSRS	0.3nm,0.3s,baz=88,slow=14,SNR=7.1						
KSRS				LR	LR	05 47 07.1	
KLR	comp=Z,48nm,18.1s,baz=169,slow=37						
SONM	**Kul'dur**	**13.60**	**332**	LR	LR	05 48 35.3	
H11N2	comp=Z,55nm,18.8s,baz=173,slow=36						
H11N1	**Songino Array**	**27.54**	**303**	P	**P**	**05 46 15.0**	**+0.2**
H11N3	1.5nm,0.6s,baz=98,slow=8.5,SNR=9.2						
H11S1	**WAKE ISLAND Hy 28.38 122**			T	T	06 16 38.4	
H11S3	baz=314,slow=75,SNR=310						
H11S2	**WAKE ISLAND Hy 28.39 122**			T	T	06 16 42.3	
ZALV	baz=314,slow=75,SNR=284						
MKAR	**WAKE ISLAND Hy 28.39 122**			T	T	06 16 34.8	
ILAR	baz=314,slow=75,SNR=247						
INK	**WAKE ISLAND Hy 29.11 124**			T	T	06 17 28.9	
SONM	baz=316,slow=76,SNR=137						
ZALV	**WAKE ISLAND Hy 29.11 124**			T	T	06 17 27.4	
MKAR	baz=316,slow=76,SNR=158						
ILAR	**WAKE ISLAND Hy 29.12 124**			T	T	06 17 28.0	
INK	baz=316,slow=76,SNR=105						
WRA	**Zalesovo Beam**	**41.59**	**312**	P	**P**	**05 48 15.2**	**-0.3**
ZALV	3.5nm,0.8s,baz=90,slow=8.2,SNR=9.4						
MKAR	**Makanchi Array**	**43.88**	**302**	P	**P**	**05 48 34.1**	**-0.1**
ILAR	3.0nm,0.9s,baz=87,slow=10.0,SNR=16						
INK	**Kurchatov Arra**	**45.71**	**308**	P	**P**	**05 48 48.1**	**-0.5**
SONM	4.1nm,0.8s,baz=83,slow=8.2,SNR=25						
ZALV	**Eielson Array**	**48.96**	**33**	P	**P**	**05 49 14.5**	**+0.7**
MKAR	0.5nm,0.8s,baz=267,slow=7.7,SNR=5.1						
ILAR	**Borovoye Array**	**50.25**	**312**	P	**P**	**05 49 22.7**	**-1.0**
INK	0.6nm,0.5s,baz=98,slow=6.1,SNR=5.0						
SONM	**Ala-Archa**	**50.29**	**298**	P	**P**	**05 49 23.7**	**-0.7**
ZALV	0.5nm,0.3s,baz=44,slow=2.1,SNR=5.0						
MKAR	**Inuvik**	**53.84**	**27**	P	**P**	**05 49 50.8**	**+0.7**
ILAR	0.6nm,0.6s,baz=304,slow=6.8,SNR=5.7						
INK	**Arti**	**55.98**	**318**	P	**P**	**05 50 05.4**	**-0.4**
SONM	7.3nm,0.2s,baz=160,slow=4.1,SNR=4.4						
ZALV	**Warramunga Arr**	**57.64**	**188**	P	**P**	**05 50 18.1**	**+0.2**
MKAR	0.7nm,0.6s,baz=5.8,slow=7.2,SNR=6.0						
ILAR				pP	**pP**	**05 50 31.1**	**-0.3**
INK	0.8nm,0.4s,baz=6.1,slow=7.4,SNR=4.8						
SONM	**Aktyubinsk**	**58.35**	**312**	P	**P**	**05 50 21.4**	**-1.2**
ZALV	2.5nm,0.8s,baz=69,slow=12,SNR=6.7						
MKAR	**Alice Springs**	**61.37**	**188**	P	**P**	**05 50 43.5**	**0.0**
ILAR	0.3nm,0.5s,baz=17,slow=7.8,SNR=3.8						
INK				pP	**pP**	**05 50 58.4**	**+1.3**
SONM	0.8nm,0.8s,baz=10,slow=7.6,SNR=4.0						
ZALV	**Yellowknife Ar**	**63.27**	**30**	P	**P**	**05 50 56.3**	**+0.5**
MKAR	0.3nm,0.8s,baz=289,slow=11,SNR=5.4						
ILAR	**FINESS Array B**	**68.34**	**332**	P	**P**	**05 51 28.5**	**0.0**
INK	2.9nm,0.7s,baz=49,slow=7.9,SNR=6.9						
SONM	**Khabaz**	**70.59**	**311**	P	**P**	**05 51 42.6**	**-0.1**
ZALV	0.6nm,0.4s,baz=306,slow=7.5,SNR=4.1						
MKAR	**NORSAR Subarra**	**73.69**	**337**	P	**P**	**05 52 00.3**	**-0.6**
ILAR	comp=Z,1.3nm,0.9s,baz=40,slow=5.9						
INK	**NORSAR Array B**	**73.69**	**337**	P	**P**	**05 52 00.6**	**-0.4**
SONM	comp=Z,1.3nm,0.8s,baz=39,slow=5.8,SNR=4.8						
ZALV	**Malin Array Be**	**73.89**	**322**	P	**P**	**05 52 00.6**	**-1.7**
MKAR	comp=Z,1.3nm,0.4s,baz=48,slow=6.0,SNR=6.3						
ILAR	**Pinedale Array**	**77.20**	**46**	P	**P**	**05 52 22.1**	**+0.5**
INK	comp=Z,0.1nm,0.3s,baz=250,slow=8.7,SNR=2.8						
SONM				pP	**pP**	**05 52 36.8**	**+1.1**
ZALV	comp=Z,0.4nm,0.7s,baz=255,slow=2.3,SNR=4.4						
MKAR	**GERESS Array B**	**82.27**	**328**	LR	LR	06 33 44.5	
ILAR	comp=Z,42nm,19.2s,baz=2.5,slow=39						
INK	**Lajitas Array**	**89.70**	**52**	P	**P**	**05 53 26.4**	**+0.5**
SONM	comp=Z,0.2nm,0.6s,baz=289,slow=3.8,SNR=4.1						
ZALV				pP	**pP**	**05 53 41.4**	**+1.3**
MKAR	comp=Z,0.2nm,0.5s,baz=298,slow=3.6,SNR=3.8						
ILAR	**La Paz**	**146.33**	**59**	PKPbc	**PKPdf**	**06 00 08.5**	**+0.6**
INK	comp=Z,0.5nm,0.6s,baz=349,slow=2.1,SNR=4.1						
SONM				pPKPbc	pPKPbc	06 00 25.1	+1.4
ZALV	comp=Z,1.1nm,0.7s,baz=267,slow=2.7,SNR=3.5						

IDC ***10*** *05:42:34.8±7.9,33.°87S×179.°43E,h163km±55km,mb3.9/3, mb1 4.2/4,mb1mx3.6/28,mbtmp4.6/4,Error ellipse: s-maj=77.3km s-min=29.0km az=51.0*
ISC 10 05:42:41.7±1.9,34.°55S±0.°1×178.°9E±0.°1,h200km,n100, σ2§32/111,mb4.0/3,South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MXZ	**Matakaoa Point**	**3.10**	**189**	PN	**Pn**	**05 43 32.9**	**+0.5**
MXZ				SN	**Sn**	**05 44 18.2**	**+6.0**
WMGZ	**Waiomatatini S**	**3.34**	**187**	PN	**Pn**	**05 43 36.0**	**+0.7**
WMGZ				SN	**Sn**	**05 44 18.9**	**+1.5**
HAZ	**Te Kaha**	**3.38**	**195**	PN	**Pn**	**05 43 37.7**	**+2.0**
HAZ				SN	**Sn**	**05 44 25.4**	**+7.2**
PUZ	**Puketiti**	**3.61**	**188**	PN	**Pn**	**05 43 38.4**	**-0.2**
PUZ				SN	**Sn**	**05 44 27.7**	**+4.4**
TWGZ	**Tauwhareparae**	**3.75**	**191**	PN	**Pn**	**05 43 40.8**	**+0.5**
OPRZ	**Ohinepanea**	**3.84**	**209**	PN	**Pn**	**05 43 44.0**	**+2.6**
MARZ	**Manawahe**	**3.92**	**207**	PN	**Pn**	**05 43 46.2**	**+3.8**
MARZ				SN	Sn	05 44 40.4	+10
MWZ	**Matawai**	**3.99**	**196**	PN	**Pn**	**05 43 44.1**	**+0.8**
MWZ				SN	**Sn**	**05 44 35.7**	**+3.9**
MKAZ	**Moumakai**	**4.00**	**228**	PN	Pn	05 43 48.1	+4.7
CNGZ	**Carnagh Statio**	**4.02**	**188**	PN	**Pn**	**05 43 43.7**	**+0.1**
URZ	**Urewera**	**4.03**	**201**	P	**Pn**	**05 43 45.6**	**+1.9**
URZ	106nm,0.3s,baz=274,slow=2.8,SNR=223			S	**Sn**	**05 44 40.7**	**+8.2**
URZ	**Urewera**	**4.03**	**201**	PN	**Pn**	**05 43 45.4**	**+1.7**
URZ	100nm,0.3s,baz=105,slow=23,SNR=23			SN	**Sn**	**05 44 36.8**	**+4.3**
TKGZ	**Te Karaka**	**4.03**	**192**	PN	**Pn**	**05 43 43.8**	**+0.1**
KARZ	**Kaharoa**	**4.12**	**211**	*e*PN	**Pn**	**05 43 48.6**	**+3.7**
RAGZ	**Rawiri**	**4.17**	**196**	PN	**Pn**	**05 43 45.9**	**+0.4**
TARZ	**Mount Tarawera**	**4.21**	**207**	*e*PN	**Pn**	**05 43 49.9**	**+3.9**
TOZ	**Tahuroa Road**	**4.25**	**220**	PN	Pn	05 43 51.3	+4.8
RRRZ	**Republican Roa**	**4.29**	**206**	PN	**Pn**	**05 43 50.7**	**+3.6**
RIGZ	**Rimuhau**	**4.30**	**192**	PN	**Pn**	**05 43 46.7**	**-0.5**
MUGZ	**Murupara**	**4.33**	**203**	*e*PN	**Pn**	**05 43 49.3**	**+1.8**
RTZ	**Ruatahuna**	**4.39**	**200**	*e*PN	**Pn**	**05 43 48.2**	**-0.1**
RTZ				SN	**Sn**	**05 44 44.2**	**+3.2**
HRRZ	**Handcock Road**	**4.42**	**208**	*e*PN	**Pn**	**05 43 52.0**	**+3.3**
SNGZ	**Shannon Statio**	**4.46**	**196**	PN	**Pn**	**05 43 49.4**	**+0.2**
PRRZ	**Plateau Road**	**4.48**	**206**	*e*PN	**Pn**	**05 43 51.1**	**+1.7**
PRGZ	**Paritu Road**	**4.49**	**190**	*e*PN	**Pn**	**05 43 49.1**	**-0.5**
ALRZ	**Allen Road**	**4.55**	**206**	*e*PN	**Pn**	**05 43 52.0**	**+1.7**
KNZ	**Kokohu**	**4.62**	**192**	PN	**Pn**	**05 43 50.0**	**-1.1**
RAHZ	**Arahi**	**4.65**	**198**	*e*PN	**Pn**	**05 43 52.2**	**+0.7**
RAHZ				SN	**Sn**	**05 44 49.7**	**+3.1**
MHGZ	**Mahia Peninsul**	**4.72**	**190**	PN	**Pn**	**05 43 51.5**	**-0.9**
WHHZ	**Waihua**	**4.76**	**196**	*e*PN	**Pn**	**05 43 52.8**	**-0.2**
MRHZ	**Matea Rd**	**4.77**	**204**	*e*PN	**Pn**	**05 43 53.5**	**+0.4**
NMHZ	**Naumai**	**4.89**	**200**	*e*PN	**Pn**	**05 43 54.7**	**0.0**
ARHZ	**Aropaoanui**	**5.00**	**197**	*e*PN	**Pn**	**05 43 55.6**	**-0.4**
RATZ	**Rangitukua**	**5.04**	**209**	PN	**Pn**	**05 43 59.4**	**+2.9**
HIZ	**Hauiti**	**5.17**	**218**	PN	Pn	05 44 02.5	+4.4
MCHZ	**McNeill Hill**	**5.25**	**199**	*e*PN	**Pn**	**05 43 58.9**	**-0.2**
KWHZ	**Kaweka Forest**	**5.30**	**201**	*e*PN	**Pn**	**05 43 59.4**	**-0.6**
KWHZ				SN	**Sn**	**05 45 04.9**	**+3.0**
OTVZ	**Oturere**	**5.33**	**208**	PN	**Pn**	**05 44 01.1**	**+0.7**
CKHZ	**Cape Kidnapper**	**5.36**	**195**	*e*PN	**Pn**	**05 43 59.8**	**-0.7**
NGZ	**Ngauruhoe**	**5.37**	**209**	PN	**Pn**	**05 44 02.3**	**+1.4**
TUVZ	**Tukino**	**5.43**	**208**	*e*PN	**Pn**	**05 44 03.0**	**+1.4**
WHVZ	**Whangaehu Hut**	**5.47**	**208**	*e*PN	**Pn**	**05 44 04.2**	**+2.0**
BHHZ	**Black Hill Sta**	**5.48**	**204**	*e*PN	**Pn**	**05 44 01.9**	**-0.3**
TRVZ	**Turoa**	**5.50**	**208**	PN	**Pn**	**05 44 04.2**	**+1.6**
WNVZ	**Wahianoa**	**5.50**	**208**	*e*PN	**Pn**	**05 44 02.8**	**+0.2**
MOVZ	**Moawhango**	**5.51**	**206**	*e*PN	**Pn**	**05 44 02.6**	**0.0**
KRHZ	**Kereru**	**5.52**	**201**	*e*PN	**Pn**	**05 44 02.1**	**-0.6**
KAHZ	**Kahuranaki**	**5.53**	**196**	PN	**Pn**	**05 44 02.0**	**-0.9**
PKVZ	**Pokaka**	**5.57**	**210**	PN	**Pn**	**05 44 04.9**	**+1.5**
PXZ	**Pawanui**	**5.76**	**196**	*e*PN	**Pn**	**05 44 04.0**	**-1.7**
PNHZ	**Pukenui**	**5.82**	**201**	*e*PN	**Pn**	**05 44 05.1**	**-1.5**
PNHZ				SN	**Sn**	**05 45 14.2**	**+0.4**
WPHZ	**Waipukurau**	**5.89**	**199**	*e*PN	**Pn**	**05 44 07.2**	**-0.2**
TSZ	**Takapari Road**	**6.03**	**202**	PN	**Pn**	**05 44 07.9**	**-1.3**
PRHZ	**Porangahau**	**6.04**	**197**	*e*PN	**Pn**	**05 44 08.5**	**-0.9**
PRHZ				SN	**Sn**	**05 45 19.8**	**+1.1**
WAZ	**Wanganui**	**6.11**	**210**	*e*PN	**Pn**	**05 44 11.5**	**+1.3**
KHEZ	**Kahui Hut**	**6.19**	**218**	PN	Pn	05 44 16.2	+4.8
DVHZ	**Dannevirke**	**6.19**	**200**	*e*PN	**Pn**	**05 44 10.1**	**-1.2**
ANWZ	**Angora Road**	**6.26**	**197**	*e*PN	**Pn**	**05 44 10.7**	**-1.5**
POWZ	**Post Office Ro**	**6.39**	**202**	PN	**Pn**	**05 44 12.9**	**-1.0**
PRWZ	**Pori Road**	**6.48**	**200**	*e*PN	**Pn**	**05 44 14.6**	**-0.4**
BFZ	**Birch Farm**	**6.53**	**198**	*e*PN	**Pn**	**05 44 14.5**	**-1.1**
MRZ	**Mangatainoka R**	**6.70**	**202**	*e*PN	**Pn**	**05 44 15.5**	**-2.3**
TIWZ	**Tintock**	**6.71**	**200**	*e*PN	**Pn**	**05 44 16.2**	**-1.8**
CPWZ	**Castlepoint**	**6.75**	**198**	*e*PN	**Pn**	**05 44 18.2**	**-0.4**
HOWZ	**Holdsworth Sta**	**6.93**	**202**	*e*PN	**Pn**	**05 44 18.7**	**-2.2**
OGWZ	**Otaki Gorge**	**6.97**	**204**	*e*PN	**Pn**	**05 44 19.4**	**-2.0**
TMWZ	**Te Maipa**	**7.02**	**199**	*e*PN	**Pn**	**05 44 20.6**	**-1.4**
KIW	**Kapiti Island**	**7.10**	**205**	*e*PN	**Pn**	**05 44 20.9**	**-2.2**
MTW	**Mount Morrison**	**7.17**	**201**	*e*PN	**Pn**	**05 44 21.4**	**-2.7**
CAW	**Cannon Point**	**7.26**	**204**	*e*PN	**Pn**	**05 44 22.9**	**-2.4**
TRWZ	**Traveller**	**7.34**	**199**	PN	**Pn**	**05 44 24.2**	**-2.1**
PAWZ	**Paruwai Farm**	**7.40**	**201**	*e*PN	**Pn**	**05 44 24.9**	**-2.1**
DUWZ	**D'Urville Isla**	**7.43**	**211**	*e*PN	**Pn**	**05 44 25.5**	**-1.9**
MSWZ	**Moikau Station**	**7.49**	**202**	*e*PN	**Pn**	**05 44 25.9**	**-2.3**
BHW	**Baring Head**	**7.60**	**204**	*e*PN	**Pn**	**05 44 27.5**	**-2.1**
PLWZ	**Palliser**	**7.63**	**201**	*e*PN	**Pn**	**05 44 26.8**	**-3.1**
TCW	**Tory Channel**	**7.64**	**207**	*e*PN	**Pn**	**05 44 27.9**	**-2.2**
TUWZ	**Tuamarina**	**7.95**	**208**	PN	**Pn**	**05 44 31.5**	**-2.6**
NNZ	**Nelson**	**8.01**	**211**	PN	**Pn**	**05 44 32.9**	**-2.0**
QRZ	**Quartz Range**	**8.09**	**217**	*e*PN	**Pn**	**05 44 34.7**	**-1.3**
BSWZ	**Blackbirch Sta**	**8.22**	**207**	*e*PN	**Pn**	**05 44 36.0**	**-1.7**
THZ	**Tophouse**	**8.66**	**211**	*e*PN	**Pn**	**05 44 41.5**	**-1.9**
THZ				SN	**Sn**	**05 46 18.8**	**-1.8**
KHZ	**Kahutara**	**8.96**	**206**	*e*PN	**Pn**	**05 44 44.5**	**-2.7**
KHZ				SN	**Sn**	**05 46 23.2**	**-4.4**
DSZ	**Denniston Nort**	**9.14**	**216**	*e*PN	**Pn**	**05 44 47.6**	**-2.1**
DSZ				SN	**Sn**	**05 46 30.4**	**-1.7**
LTZ	**Lake Taylor**	**9.76**	**210**	PN	**Pn**	**05 44 55.4**	**-2.4**
CTZ	**Chatham Island**	**9.86**	**161**	*e*PN	**Pn**	**05 44 58.4**	**-0.4**
CTZ				SN	**Sn**	**05 46 46.4**	**-2.6**
INZ	**Inchbonnie**	**10.07**	**213**	*e*PN	**Pn**	**05 44 59.1**	**-2.6**
OXZ	**Oxford**	**10.31**	**209**	PN	**Pn**	**05 45 01.1**	**-3.7**
OXZ				SN	Sn	05 46 51.7	-8.1
MQZ	**McQueen's Vall**	**10.40**	**206**	PN	**Pn**	**05 45 02.7**	**-3.1**
WVZ	**Waitaha Valley**	**10.67**	**214**	PN	**Pn**	**05 45 07.1**	**-2.3**
WVZ				SN	**Sn**	**05 47 05.2**	**-3.2**
RPZ	**Rata Peaks**	**11.04**	**211**	P	**Pn**	**05 45 12.7**	**-1.4**
RPZ	2.5nm,0.3s,baz=58,slow=4.5,SNR=5.3			S	**Sn**	**05 47 16.0**	**-1.2**
FOZ	**Fox Glacier**	**11.46**	**215**	*e*PN	**Pn**	**05 45 16.9**	**-2.6**
ODZ	**Otahua Downs**	**12.29**	**209**	*

UDBI				Sg	Sg	06 01 00.3	+0.4
GCIS	**Gornji Cirnik**	**0.73**	**336**	*i* Pg	Pg	06 00 51.0	-0.1
GCIS				*i* Sg	Sb	06 01 01.8	+0.2
	comp=Z,22nm,0.2s						
GCIS	**Gornji Cirnik**	**0.73**	**336**	*i* Pg	Pg	06 00 51.0	-0.1
GCIS				*i* Sg	Sb	06 01 01.8	+0.2
	comp=Z,22nm,0.2s						
CRES	**Cresnjev**	**0.75**	**326**	*i* Pg	Pg	06 00 51.5	-0.1
CRES				*i* Sg	Sb	06 01 02.7	+0.5
	comp=Z,16nm,0.1s						
CRES	**Cresnjev**	**0.75**	**326**	⇑ *i* Pg	Pg	06 00 51.2	-0.3
CRES				*e*Sg	Sg	06 01 01.1	-0.2
BLY	**Banja Luka**	**0.93**	**119**	⇑ *i* Pg	Pn	06 00 56.1	+0.2
BLY				*e*Sg	Sn	06 01 09.2	+0.1
VISS	**Visnje**	**1.04**	**306**	*i* Pg	Pg	06 00 57.3	+0.2
VISS				*i* Sg	Sn	06 01 12.2	+0.2
	comp=Z,24nm,0.2s						
VISS	**Visnje**	**1.04**	**306**	*i* Pg	Pg	06 00 57.3	+0.2
VISS				*i* Sg	Sn	06 01 12.2	+0.2
	comp=Z,24nm,0.2s						
NVLJ	**Novalja**	**1.05**	**233**	*e*Pg	Pn	06 00 57.8	+0.1
NVLJ				Sg	Sn	06 01 12.6	+0.4
NVLJ	**Novalja**	**1.05**	**233**	*e*Pg	Pn	06 00 57.7	+0.1
NVLJ				Sg	Sn	06 01 12.6	+0.4
CEY	**Cerknica**	**1.26**	**296**	*e*Pg	Pn	06 01 00.1	-0.4
CEY				*e*Sg	Sb	06 01 16.6	-0.4
VNDS	**Vrh nad Dolski**	**1.30**	**314**	*i* Pg	Pg	06 01 02.2	+0.1
VNDS				*i* Sg	Sg	06 01 20.2	+1.2
VNDS	**Vrh nad Dolski**	**1.30**	**314**	*i* Pg	Pg	06 01 02.2	+0.1
VNDS				*i* Sg	Sg	06 01 20.2	+1.2
LJU	**Ljubljana**	**1.36**	**309**	*e*Pg	Pn	06 01 01.9	0.0
LJU				*e*Sg	Sb	06 01 19.7	-0.1
BEHE	**Becsehely**	**1.36**	**22**	*e*Pg	Pg	06 01 03.0	-0.2
BEHE				*e*Sg	Sg	06 01 21.4	+0.4
SOKA	**Soboth**	**1.64**	**335**	*i* Pn	Pb	06 01 06.6	-0.6
	comp=Z,1.1nm,0.1s						
SOKA	**Soboth**	**1.64**	**335**	*i* Pg	Pb	06 01 06.6	-0.6
	comp=Z,1.1nm,0.1s						
SOKA	**Soboth**	**1.64**	**335**	Pg	Pb	06 01 06.6	-0.6
	comp=Z,1.1nm,0.1s						
OBKA	**Obir**	**1.67**	**322**	*i* Pn	Pn	06 01 05.8	-0.5
OBKA				*i* Sn	Sg	06 01 31.1	+0.2
	comp=Z,1.1nm,0.2s						
OBKA	**Obir**	**1.67**	**322**	*i* Pg	Pn	06 01 05.8	-0.5
	comp=Z,1.0nm,0.2s						
OBKA				*i* Sg	Sg	06 01 31.1	+0.2
	comp=Z,1.1nm,0.2s						
OBKA	**Obir**	**1.67**	**322**	Pn	Pn	06 01 05.8	-0.5
	comp=Z,1.0nm,0.2s						
OBKA				Sn	Sg	06 01 31.1	+0.2
	comp=Z,1.1nm,0.2s						
STON	**Ston**	**2.62**	**152**	*e*Pn	Pn	06 01 20.9	+1.8
STON				Sn	Sb	06 01 55.5	-0.4
STON	**Ston**	**2.62**	**152**	*e*Pn	Pb	06 01 22.4	-1.5
STON				*e*Sn	Sb	06 01 54.0	-2.0

*ISCJB **10** 06:10:37.2±0.7, 20°.34N±0°.06×121°.7E±0°.1, h40km, mb3.9/10, MS3.7/1, Error ellipse: s-maj=15.5km s-min=6.2km az=27.4*
*JMA **10** 06:10:42.1±0.7, 20°.63N×121°.74E, h21km*
*IDC **10** 06:10:45.4±7.5, 20°.39N×121°.80E, h106km±72km, mb3.6/10, mb1 3.7/11, mb1mx3.5/46, mbtmp4.0/11, ML3.9/1, MS3.7/1, Ms1 3.7/1, ms1mx2.6/32, Error ellipse: s-maj=35.4km s-min=14.6km az=69.0*
ISC 10 06:10:38.5±0.9, 20°.29N±0°.10×121°.7E±0°.1, h40km, n19, σ1§54/22, mb3.9/10, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JYNG	**Yonagunijimaku**	**4.31**	**16**	P	**Pn**	**06 11 43.8**	**+2.3**
JYNG				*e*S	**Sn**	**06 12 30.1**	**-0.4**
YOJ	**Yonaguni jima**	**4.33**	**16**	*e*S	**Sn**	**06 12 31.0**	**-0.2**
IRIF	**Iriomote-Funau**	**4.46**	**25**	P	**Pn**	**06 11 46.5**	**+2.9**
JKRS	**Kuro-shima**	**4.49**	**28**	P	**Pn**	**06 11 46.1**	**+2.1**
JKRS				*e*S	**Sn**	**06 12 35.2**	**+0.2**
JIJ	**Ishigaki jima**	**4.66**	**29**	P	**Pn**	**06 11 48.5**	**+2.2**
JIJ				*e*S	**Sn**	**06 12 37.1**	**-2.0**
JISG	**Ishigakijimahi**	**4.93**	**29**	P	**Pn**	**06 11 51.7**	**+1.7**
JISG				S	**Sn**	**06 12 43.4**	**-2.4**
JTJ	**Tarama**	**5.16**	**32**	*e*S	**Sn**	**06 12 51.5**	**0.0**
KSRS	**Korea Array**	**17.95**	**16**	P	**P**	**06 14 45.0**	**-0.3**
	0.4nm,0.3s,baz=199,slow=11,SNR=9.1						
SONM	**Songino Array**	**30.14**	**339**	P	**P**	**06 16 45.9**	**+1.2**
	0.8nm,0.6s,baz=152,slow=9.5,SNR=5.2						
TLY	**Talaya**	**34.36**	**340**	P	**P**	**06 17 21.1**	**-0.4**
	2.6nm,0.5s,baz=78,slow=14,SNR=3.6						
MKAR	**Makanchi Array**	**41.50**	**319**	P	**P**	**06 18 22.6**	**+0.8**
	1.2nm,0.6s,baz=116,slow=9.5,SNR=19						
WRA	**Warramunga Arr**	**41.86**	**162**	P	**P**	**06 18 25.1**	**+0.1**
	1.2nm,0.5s,baz=344,slow=9.1,SNR=7.7						
ZALV	**Zalesovo Beam**	**43.78**	**329**	P	**P**	**06 18 39.3**	**-0.8**
	1.0nm,0.3s,baz=116,slow=10,SNR=4.2						
ASAR	**Alice Springs**	**45.29**	**164**	P	**P**	**06 18 53.6**	**+1.1**
	0.6nm,0.4s,baz=351,slow=8.2,SNR=12						
KURBB	**Kurchatov Arra**	**45.41**	**322**	P	**P**	**06 18 52.9**	**-0.3**
	1.0nm,0.8s,baz=118,slow=7.7,SNR=7.1						
CTA	**Charters Tower**	**46.79**	**148**	LR	LR	06 40 47.5	
	comp=Z,77nm,19.2s,baz=68,slow=38						
ILAR	**Eielson Array**	**72.46**	**27**	P	**P**	**06 21 60.0**	**-0.7**
	0.4nm,0.9s,baz=294,slow=6.8,SNR=3.7						
FINES	**FINESS Array B**	**75.03**	**330**	P	**P**	**06 22 14.8**	**-0.9**
	1.4nm,0.8s,baz=62,slow=6.5,SNR=3.2						
YKA	**Yellowknife Ar**	**86.37**	**23**	P	**P**	**06 23 14.3**	**-2.0**
	0.6nm,0.6s,baz=308,slow=4.6,SNR=26						

*FUNV **10** 06:13:14.6, 10°.66N×62°.26W, h69km, MW2.8*
*TRN **10** 06:13:16.5, 10°.78N×62°.27W, h73km, MD3.4*
ISC 10 06:13:13.9±1.3, 10°.77N±0°.04×62°.42W±0°.03, h21km±5km, n24, σ1§23/37, 1D, Near coast of Venezuela

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TCE	**Chacachacare**	**0.66**	**97**	*e*P	**Pn**	**06 13 29.3**	**+1.3**
TCE				*e*S	**Sn**	**06 13 39.4**	**+1.7**
GUNV	**Guanoco**	**0.80**	**221**	⇓ *i*P	**Pn**	**06 13 31.3**	**+1.3**
GUNV				*e*S	**Sn**	**06 13 43.4**	**+2.1**
CRUV	**Carupano**	**0.81**	**263**	*e*P	**Pn**	**06 13 31.2**	**+1.1**
CRUV				*e*S	**Sn**	**06 13 43.9**	**+2.3**
TRN	**Trinidad (W)**	**1.00**	**97**	*e*P	**Pn**	**06 13 33.2**	**+0.5**
TRN	**Trinidad (W)**	**1.00**	**97**	*e*P	**Pn**	**06 13 33.3**	**+0.5**
TRN				*e*S	**Sb**	**06 13 45.6**	**+0.3**
TPP	**Pointe-a-Pierr**	**1.05**	**115**	*e*P	**Pn**	**06 13 34.9**	**+1.5**
TPP				*e*S	**Sn**	**06 13 48.3**	**+0.8**
TBH	**Brigand Hill**	**1.36**	**102**	*e*P	**Pn**	**06 13 38.1**	**+0.4**
TBH				*e*S	**Sn**	**06 13 54.4**	**-0.6**
GRGR	**Grenville**	**1.54**	**29**	*e*P	**Pn**	**06 13 40.8**	**+0.6**
GRGR				*e*S	**Sb**	**06 14 00.7**	**-0.3**
GRW	**Mount Saint Ca**	**1.56**	**28**	*e*P	**Pb**	**06 13 42.5**	**+0.2**
GRW				*e*S	**Sn**	**06 14 00.6**	**+0.3**
GRHS	**Sauteurs**	**1.63**	**28**	*e*P	**Pn**	**06 13 42.4**	**+1.0**
GRHS				*e*S	**Sn**	**06 14 02.6**	**+0.9**
GRSS	**Sisters**	**1.71**	**27**	*e*P	**Pb**	**06 13 44.5**	**-0.1**
GRSS				*e*S	**Sn**	**06 14 03.3**	**-0.4**
TOSP	**Speyside**	**1.92**	**74**	*e*	**Pn**	**06 13 45.2**	**-0.1**
TOSP	**Speyside**	**1.92**	**74**	*e*P	**Pn**	**06 13 45.6**	**+0.3**
TOSP				*e*S	**Sn**	**06 14 06.6**	**-2.2**
ORIV	**Oritupano**	**1.96**	**210**	*e*P	**Pn**	**06 13 45.5**	**-0.4**
SVB	**Belmont**	**2.73**	**24**	*e*P	**Pn**	**06 13 57.3**	**+0.7**
SVB				*e*S	**Sn**	**06 14 27.8**	**-1.2**
SVV	**Soufriere Volc**	**2.79**	**25**	*e*P	**Pn**	**06 13 58.4**	**+1.0**
SVV				*e*S	**Sn**	**06 14 28.3**	**-2.1**
GURV	**El Guri**	**3.07**	**193**	*e*P	**Pn**	**06 13 58.6**	**-2.6**
GURV				*e*S	Sn	06 14 31.1	-6.2
CUPV	**Cœpira**	**3.39**	**258**	*e*P	**Pn**	**06 14 06.1**	**+0.3**
CUPV				*e*S	**Sn**	**06 14 44.4**	**-1.0**
BIRV	**Birongo**	**3.80**	**266**	*e*P	**Pn**	**06 14 12.2**	**+0.9**
MERV	**Las Mercedes**	**4.11**	**249**	*e*P	**Pn**	**06 14 14.7**	**-0.9**
LUEV	**Luepa**	**4.99**	**169**	*e*P	Pn	06 14 24.0	-3.8
LUEV				*e*S	Sn	06 15 14.8	-10
TURV	**Turiamo**	**5.34**	**267**	*e*P	**Pn**	**06 14 32.9**	**+0.4**
BAUV	**El Baul**	**5.83**	**252**	*e*P	**Pn**	**06 14 37.6**	**-1.7**
MAPV	**Macapo**	**6.02**	**262**	*e*P	**Pn**	**06 14 40.8**	**-1.1**

MEX 10 06:17:23.2±0.5, 17°.89N×98°.40W, h52km±4km, MD3.8, Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HMTT	**Tlapaneco**	**0.18**	**241**	*i* P	Pn	06 17 30.4	-1.4
HMTT				*e*S	Sn	06 17 36.2	-1.8
TLIG	**Tlapa**	**0.36**	**207**	*i* P	Pn	06 17 31.7	-1.6
TLIG				*e*S	Sn	06 17 38.5	-2.0
TPIG	**Tehuac#an**	**1.12**	**62**	*e*P	Pn	06 17 40.8	-2.0
TPIG				*e*S	Sn	06 17 54.9	-2.3
YAIG	**Yautepec**	**1.16**	**327**	*i* P	Pn	06 17 42.0	-1.3
YAIG				*e*S	Sn	06 17 55.7	-2.6
MEIG	**Mezcala**	**1.17**	**272**	*e*P	Pn	06 17 41.8	-1.6
MEIG				*e*S	Sn	06 17 56.1	-2.2
PPM	**Popocatepetl**	**1.19**	**349**	*e*P	Pn	06 17 43.1	-1.0
PPM				*e*S	Sn	06 17 57.3	-2.2
MAVM	**Malinalco, Edo**	**1.49**	**316**	*e*P	Pn	06 17 46.9	-0.9
MAVM				*e*S	Sn	06 18 04.7	-1.6
MZVM		**1.52**	**329**	*e*P	Pn	06 17 47.3	-0.7
MZVM				*e*S	Sn	06 18 04.9	-1.8
VHO	**Vista Hermosa**	**1.78**	**117**	*e*P	Pn	06 17 50.9	-0.9
VHO				*e*S	Sn	06 18 12.3	-1.1
TOVM	**TOLUCA**	**1.85**	**319**	*e*P	Pn	06 17 51.3	-1.5
TOVM				*e*S	Sn	06 18 13.6	-1.6
ARIG	**Puente Sto Nin**	**1.90**	**282**	*e*P	Pn	06 17 52.1	-1.1
ARIG				*e*S	Sn	06 18 13.3	-2.7

IDC 10 06:25:39.5±1.6, 7°.01S×67°.92E, h0km, mb3.7/7, mb1 3.7/7, mb1mx3.5/53, mbtmp3.7/7, MS3.8/4, Ms1 3.8/4, ms1mx3.2/41, Error ellipse: s-maj=59.2km s-min=22.9km az=48.0, Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08N3	**Diego Garcia H**	**3.12**	**78**	T	T	06 29 55.3	
	baz=244,slow=75,SNR=10						
H08N2	**Diego Garcia H**	**3.13**	**78**	T	T	06 29 58.0	
	baz=244,slow=75,SNR=17						
H08N1	**Diego Carcia H**	**3.14**	**78**	T	T	06 29 56.6	
	baz=244,slow=75,SNR=9.7						
PALK	**Pallekele**	**19.07**	**42**	LR	LR	06 35 51.4	
	comp=Z,195nm,18.7s,baz=116,slow=32						
LEM	**Lembang**	**39.40**	**92**	LR	LR	06 45 44.7	
	comp=Z,128nm,20.5s,baz=132,slow=31						
MATP	**Matopo**	**40.43**	**247**	LR	LR	06 48 15.7	
	comp=Z,143nm,18.8s,baz=104,slow=34						
MKAR	**Makanchi Array**	**55.07**	**12**	P	P	06 35 13.1	-0.1
	0.4nm,0.7s,baz=196,slow=8.4,SNR=4.0						
BRTR	**Keskin Array B**	**56.26**	**329**	P	P	06 35 22.8	+0.7
	0.3nm,0.4s,baz=148,slow=9.6,SNR=3.1						
ZALV	**Zalesovo Beam**	**62.38**	**11**	P	P	06 36 03.4	-0.5
	0.9nm,0.5s,baz=192,slow=21,SNR=2.2						
SONM	**Songino Array**	**64.28**	**28**	P	P	06 36 17.1	+0.3
	0.6nm,0.4s,baz=218,slow=6.8,SNR=2.0						
ASAR	**Alice Springs**	**65.24**	**113**	P	P	06 36 23.4	-0.2
	0.2nm,0.3s,baz=274,slow=6.6,SNR=3.2						
WRA	**Warramunga Arr**	**65.50**	**109**	P	P	06 36 26.1	+0.9
	0.4nm,0.7s,baz=276,slow=5.7,SNR=3.2						
AKASG	**Malin Array Be**	**66.48**	**334**	P	P	06 36 31.3	+0.5
	0.3nm,0.3s,baz=136,slow=9.8,SNR=1.9						
TIXI	**Tiksi**	**87.84**	**16**	LR	LR	07 19 20.0	
	comp=Z,85nm,21.4s,baz=200,slow=37						
PDAR	**Pinedale Array**	**144.32**	**357**	PKP	PKPbc	06 45 16.6	0.0
	0.4nm,0.6s,baz=15,slow=3.7,SNR=2.6						
NVAR	**Mina Array Bea**	**148.22**	**9**	PKPbc	PKPdf	06 45 25.8	+0.8
	0.5nm,0.8s,baz=347,slow=3.7,SNR=2.9						

*ISCJB **10** 06:29:23.2±0.8, 7°.7S±0°.2×68°.01E±0°.07, h12km, mb3.9/11, MS3.2/1, Error ellipse: s-maj=23.4km s-min=9.3km az=9.5*
*IDC **10** 06:29:23.4±0.9, 7°.74S×67°.89E, h0km, mb3.9/11, mb1 4.0/11, mb1mx3.8/53, mbtmp3.9/11, MS3.3/1, Ms1 3.3/1, ms1mx2.9/35, Error ellipse: s-maj=28.7km s-min=21.9km az=21.0*
ISC 10 06:29:25.0±0.9, 7°.8S±0°.2×67°.98E±0°.09, h12km, n20, σ1§00/16, mb4.0/11, Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08N3	**Diego Garcia H**	**3.30**	**65**	T	T	06 33 48.7	
	baz=243,slow=75,SNR=26						
H08N2	**Diego Garcia H**	**3.32**	**65**	T	T	06 33 48.6	
	baz=243,slow=75,SNR=30						
H08N1	**Diego Carcia H**	**3.32**	**65**	T	T	06 33 50.3	
	baz=243,slow=75,SNR=24						
H08S1	**Diego Carcia H**	**4.46**	**89**	Pn	**Pn**	**06 30 32.6**	**+0.4**
H08S1				Sn	**Sn**	**06 31 22.0**	**-1.9**
H08S1				T	T	06 35 37.4	
	baz=263						
H08S3	**Diego Garcia H**	**4.47**	**89**	T	T	06 35 32.8	
	baz=263						
H08S2	**Diego Garcia H**	**4.47**	**89**	T	T	06 35 26.5	
	baz=263						
ATD	**Arta Tunnel**	**31.50**	**307**	LR	LR	06 47 07.1	
	comp=Z,51nm,18.1s,baz=87,slow=34						
LSZ	**Lusaka**	**39.65**	**255**	P	**P**	**06 36 56.5**	**-0.8**
	2.3nm,0.8s,baz=75,slow=7.1,SNR=4.2						
MKAR	**Makanchi Array**	**55.78**	**12**	P	**P**	**06 39 01.9**	**0.0**
	0.9nm,0.8s,baz=178,slow=7.2,SNR=7.9						
MKAR				PcP	**PcP**	**06 40 00.8**	**-0.1**
	0.4nm,0.7s,baz=221,slow=5.7,SNR=3.2						
KBZ	**Khabaz**	**56.06**	**338**	P	**P**	**06 39 03.4**	**-0.4**
	0.5nm,0.3s,baz=124,slow=11,SNR=2.7						
BRTR	**Keskin Array B**	**56.92**	**329**	P	**P**	**06 39 10.6**	**+0.2**
	1.3nm,0.7s,baz=150,slow=11,SNR=8.7						
ZALV	**Zalesovo Beam**	**63.09**	**11**	P	**P**	**06 39 52.2**	**0.0**
	0.9nm,0.5s,baz=212,slow=5.3,SNR=4.3						
ASAR	**Alice Springs**	**64.90**	**112**	P	**P**	**06 40 05.1**	**+0.2**
	0.6nm,0.6s,baz=282,slow=7.5,SNR=6.3						
SONM	**Songino Array**	**64.91**	**28**	P	**P**	**06 40 06.1**	**+1.6**
	1.3nm,0.6s,baz=213,slow=5.6,SNR=5.9						
WRA	**Warramunga Arr**	**65.21**	**108**	P	**P**	**06 40 08.7**	**+1.8**
	0.8nm,0.8s,baz=276,slow=6.7,SNR=4.0						
AKASG	**Malin Array Be**	**67.17**	**334**	P	**P**	**06 40 17.7**	**-1.0**
	0.9nm,0.5s,baz=132,slow=6.0,SNR=3.0						
TORD	**Torodi Ar. Bea**	**69.02**	**287**	P	**P**	**06 40 30.9**	**-0.3**
	0.7nm,0.8s,baz=101,slow=7.7,SNR=4.7						
KLR	**Kul'dur**	**79.28**	**37**	P	**P**	**06 41 29.7**	**-0.7**
	0.9nm,0.8s,baz=259,slow=6.5,SNR=3.5						
PDAR	**Pinedale Array**	**145.06**	**357**	PKPbc	**PKPdf**	**06 49 03.1**	**+0.1**
	0.7nm,0.7s,baz=85,slow=3.1,SNR=6.2						
TXAR	**Lajitas Array**	**157.14**	**341**	PKPab	**PKPab**	**06 49 52.8**	**+0.8**
	0.6nm,0.8s,baz=70,slow=4.1,SNR=6.3						

*IDC **10** 06:36:57.7±0.7, 7°.36S×68°.14E, h0km, mb4.0/15, mb1 4.1/15, mb1mx3.9/40, mbtmp4.0/15, MS4.1/15, Ms1 4.1/15, ms1mx3.9/42, Error ellipse: s-maj=22.2km s-min=19.4km az=164.0*
*ISCJB **10** 06:37:03.3±0.7, 7°.2S±0°.1×68°.45E±0°.05, h10km, mb4.6/63, MS4.2/21, Error ellipse: s-maj=16.6km s-min=5.8km az=16.3*
*MOS **10** 06:37:05.8±1.5, 6°.74S×68°.66E, h10km, mb5.0/23, Error ellipse: s-maj=14.9km s-min=7.6km az=97.9*
*NEIC **10** 06:37:05.3±0.5, 7°.00S×68°.33E, h10km, mb4.9/15, Error ellipse: s-maj=17.3km s-min=15.0km az=224.0*
*GCMT **10** 06:37:05.3±0.2, 7°.86S×67°.89E, h12km, MW5.0/91, Moment Tensor Solution. s28,c32; s91,c129; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-0.88±.10; $M_{\theta\theta}$-2.55±.08; $M_{\phi\phi}$3.43±.09; $M_{r\theta}$-0.93±.28; $M_{\theta\phi}$-1.09±.10; $M_{\phi r}$-0.59±.27; Best double couple: $M_0$3.42900×10^{16} NP1:ϕ_s32.00000°, δ77.00000°, λ-21.00000°. NP2: ϕ_s127.00000°, δ69.00000°, λ-166.00000°. Principal axes: T 3.6620, Plg5.0000°, Azm81.0000°; N -0.4640, Plg65.0000°, Azm183.0000°; P -3.1960, Plg24.0000°, Azm348.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
ISC 10 06:37:05.0±0.6, 7°.10S±0°.09×68°.36E±0°.07, h10km, n181, σ2§07/162, mb4.8/63, MS4.3/21, 8C-2D, Chagos Archipelago region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08N3	**Diego Garcia H**	**2.72**	**74**	T	T	06 41 18.9	
	baz=244,slow=75,SNR=193						
H08N2	**Diego Garcia H**	**2.73**	**74**	T	T	06 41 20.0	
	baz=244,slow=75,SNR=261						
H08N1	**Diego Carcia H**	**2.74**	**74**	T	T	06 41 14.9	
	baz=244,slow=75,SNR=167						
DGAR	**Diego Garcia**	**4.07**	**95**	P	**Pn**	**06 38 04.6**	**-2.8**
H08S1	**Diego Carcia H**	**4.12**	**98**	Pn	**Pn**	**06 38 04.9**	**-2.9**
	baz=293,slow=17,SNR=11						
H08S1				T	T	06 42 46.3	
	baz=267,slow=75,SNR=14						
H08S3	**Diego Garcia H**	**4.13**	**98**	Pn	**Pn**	**06 38 05.2**	**-2.7**
	baz=293,slow=17,SNR=5.6						
H08S3				T	T	06 42 47.5	
	baz=267,slow=75,SNR=14						
H08S2	**Diego Garcia H**	**4.14**	**98**	Pn	**Pn**	**06 38 05.4**	**-2.6**
	baz=293,slow=17,SNR=8.1						
H08S2				Sn	**Sn**	**06 38 56.2**	**-0.2**
	SNR=3.3						
H08S2				T	T	06 42 48.6	
	baz=267,slow=75,SNR=13						
PALK	**Pallekele**	**18.85**	**41**	LR	LR	06 47 12.4	
	comp=Z,866nm,19.9s,baz=296,slow=32						
OPO	**Ambohidratompo**	**23.55**	**239**	LR	LR	06 48 40.3	
	comp=Z,1μm,21.1s,baz=40,slow=30						
ATD	**Arta Tunnel**	**31.41**	**306**	P	**P**	**06 43 26.3**	**-0.3**
	3.6nm,0.5s,baz=63,slow=6.5,SNR=3.9						
UOSS	**Minazif**	**33.98**	**340**	*e*P	**P**	**06 43 48.7**	**-0.2**
	2.3nm,1.5s						
KULM	**Kulim**	**34.49**	**70**	*e*P	**P**	**06 43 54.0**	**+0.4**
	20nm,1.1s						
KOLN	**Koldanda**	**37.66**	**22**	*e*P	**P**	**06 44 23.5**	**+2.7**
PYUN	**Piuthan**	**37.74**	**21**	*e*P	**P**	**06 44 23.7**	**+2.3**
	95nm,1.3s						
DMN	**Daman**	**38.12**	**24**	*e*P	**P**	**06 44 25.8**	**+1.2**
	94nm,1.3s						
KKN	**Kakani**	**38.35**	**25**	*e*P	**P**	**06 44 28.2**	**+1.7**
GUN	**Gumba**	**38.70**	**25**	*e*P	**P**	**06 44 31.4**	**+1.7**
	115nm,1.3s						
CHTO	**Chiang Mai**	**39.65**	**49**	P	P	06 44 45.6	+8.2
	34nm,1.2s						
CHTO	**Chiang Mai**	**39.65**	**49**	*e*P	**P**	**06 44 37.5**	**+0.1**
CHTO	**Chiang Mai**	**39.65**	**49**	*e*P	**P**	**06 44 37.5**	**+0.1**
PBKT	**Sadao Pong**	**39.92**	**54**	P	P	06 44 46.4	+6.8
	13nm,1.4s						
CHAI	**Chaiyaphum**	**40.38**	**55**	P	P	06 44 52.0	+8.5
	3.8nm,1.3s						
MATP	**Matopo**	**40.79**	**247**	P	P	06 44 40.5	-6.5
	2.6nm,0.9s,baz=98,slow=10,SNR=3.4						
PANO	**Nakornpanom**	**43.18**	**56**	P	P	06 45 13.1	+6.8
	32nm,1.3s						
JAGI	**Jajag, Banyuwa**	**45.37**	**95**	*e*P	**P**	**06 45 27.3**	**+3.2**
	36nm,1.1s						
GEYT	**Alibeck**	**45.80**	**349**	LR	LR	07 02 57.3	
	comp=Z,96nm,21.5s,baz=110,slow=34						
BOSA	**Boshof**	**45.93**	**237**	P	P	06 45 20.8	-7.6
	3.8nm,0.8s,baz=65,slow=12,SNR=3.8						
BOSA				LR	LR	07 04 05.2	
	comp=Z,363nm,18.4s,baz=44,slow=36						
KMI	**Kunming**	**46.32**	**45**	P	**P**	**06 45 33.2**	**+1.6**
KMI				pmax	pmax		
	comp=Z,17nm,0.5s						
KMI				pmax	pmax		
	comp=Z,140nm,4.5s						
KSH	**Kashi**	**46.91**	**8**	P	**P**	**06 45 34.1**	**-1.8**
KSH				*e*pP	pP	06 45 38.8	-0.2
KSH				*e*sP	sP	06 45 41.2	+1.0
KSH				*e*PP	**PP**	**06 47 24.7**	**-1.6**
KSH				PcS	**PcS**	**06 51 01.8**	**-1.8**
KSH				S	**S**	**06 52 22.0**	**-5.0**
KSH				ScS	**ScS**	**06 55 27.4**	**-3.5**
KSH				pmax	pmax		
	comp=Z,26nm,1.2s						
KSH				pmax	pmax		
	comp=Z,99nm,2.9s						
KSH				LR	LR		
	comp=N,500nm,15.8s						
KSH				LR	LR		
	comp=E,210nm,10.6s						
KSH				LR	LR		
	comp=Z,260nm,15.7s						
QIZ	**Qiongzhong**	**48.43**	**57**	P	**P**	**06 45 47.4**	**-0.4**
QIZ				S	**S**	**06 52 49.2**	**+0.3**
QIZ				LR	LR		
	comp=N,110nm,16.1s						
QIZ				LR	LR		
	comp=E,130nm,17.3s						
MNAS	**Manas**	**49.49**	**4**	P	**P**	**06 45 52.8**	**-3.0**
EKS2	**Erkin-Say**	**49.77**	**5**	*e*P	**P**	**06 45 58.8**	**+1.0**
EKS2				pmax	pmax		
	comp=Z,27nm,1.8s						
EKS2	**Erkin-Say**	**49.77**	**5**	*e*P	**P**	**06 45 58.8**	**+1.0**
	comp=Z,27nm,1.8s						
AAK	**Ala-Archa**	**49.81**	**6** ⇑	*e*P	P	06 46 03.9	+5.7
AAK				pmax	pmax		
	comp=Z,16nm,1.2s						
AAK	**Ala-Archa**	**49.81**	**6**	*e*P	**P**	**06 45 58.8**	**+0.6**
	comp=Z,12nm,1.3s						
FRU	**Bishkek**	**50.02**	**6**	*e*P	**P**	**06 46 00.0**	**+0.4**
TKM2	**Tokmak 2**	**50.21**	**7**	*e*P	**P**	**06 46 02.0**	**+0.7**
TKM2	**Tokmak 2**	**50.21**	**7**	*e*P	**P**	**06 46 02.1**	**+0.7**
	comp=Z,14nm,1.4s						
H01W3	**Cape Leeuwin H**	**50.29**	**130**	T	T	07 39 46.7	
	baz=291,slow=75,SNR=4.2						
H01W2	**Cape Leeuwin H**

KIV	Kislovodsk	55.87	338	eP	P	06 46 46.4	+3.5
KIV				pmax	pmax		
comp=Z,6.0nm,1.1s							
BR131	Keskin Array S	56.56	328	eP	P	06 46 49.1	+1.1
BRTR	Keskin Array B	56.56	328	P	P	06 46 43.5	-4.5
comp=Z,1.3nm,1.0s,baz=134,slow=8.9,SNR=6.5							
BRTR				LR	LR	07 10 23.8	
comp=Z,89nm,18.3s,baz=143,slow=35							
ABKAR	Akbulak array	56.60	353	eP	P	06 46 45.5	-2.4
KURK	Kurchatov	58.26	8	eP	P	06 46 57.6	-1.9
KURK				pmax	pmax		
comp=Z,15nm,1.1s							
KURK	Kurchatov	58.26	8	eP	P	06 46 57.6	-1.9
comp=Z,15nm,1.1s							
ZRNK	Zerenda	59.82	0	eP	P	06 47 09.5	-0.9
ZRNK				pmax	pmax		
comp=Z,18nm,1.5s							
ZRNK	Zerenda	59.82	0	eP	P	06 47 09.5	-0.9
comp=Z,18nm,1.5s							
BRVK	Borovoye	59.95	1c	iP	P	06 47 15.4	+4.2
BRVK				pmax	pmax		
comp=Z,6.0nm,1.0s							
BRVK	Borovoye	59.95	1	P	P	06 47 10.1	-1.1
comp=Z,1.0nm,0.4s							
MAW	Mawson	60.53	182	LR	LR	07 06 34.1	
comp=Z,104nm,19.2s,baz=36,slow=30							
NJ2	Nanjing	61.88	48	eP	P	06 47 25.2	+0.4
NJ2				pmax	pmax		
comp=Z,20nm,0.5s							
HHC	Hu-ho-hao-te	62.04	36	eP	P	06 47 27.2	+1.3
HHC				S	S	06 55 47.9	-2.9
HHC				pmax	pmax		
comp=Z,23nm,1.1s							
HHC				pmax	pmax		
comp=Z,85nm,7.0s							
HHC				LR	LR		
comp=N,130nm,16.2s							
HHC				LR	LR		
comp=E,240nm,16.2s							
HHC				LR	LR		
comp=Z,290nm,16.8s							
ZAA0	Zalesovo Array	62.38	11	eP	P	06 47 27.2	-0.5
ZALV	Zalesovo Beam	62.38	11	P	P	06 47 24.0	-3.7
comp=Z,0.9nm,0.4s,baz=205,slow=9.8,SNR=3.7							
ZALV	Zalesovo Beam	62.38	11	P	P	06 47 24.0	-3.7
VRH	Novokhopyorsk	62.44	341	eP	P	06 47 29.6	+1.5
VRH				pmax	pmax		
comp=Z,10.0nm,1.5s							
VSR	Storozhevoye	63.29	340	eP	P	06 47 34.0	+0.2
VSR				pmax	pmax		
comp=Z,7.0nm,0.7s							
ARU	Arti	63.82	354c	iP	P	06 47 41.3	+4.1
ARU						06 49 57.3	
ARU				S	S	06 56 16.7	+4.5
ARU				SS	SS	07 00 19.0	-1.6
ARU				pmax	pmax		
comp=Z,19nm,1.7s							
ARU	Arti	63.82	354	eP	P	06 47 35.9	-1.3
SONM	Songino Array	64.15	27	P	P	06 47 37.3	-2.5
comp=Z,1.8nm,0.7s,baz=196,slow=9.2,SNR=9.2							
SONA1	Songino Array	64.17	27	eP	P	06 47 40.1	+0.2
ULN	Ulaanbaatar	64.48	28⇓	eP	P	06 47 47.9	+5.9
ULN				pmax	pmax		
comp=Z,4.0nm,1.4s							
LPSR	Galich'ya Gora	64.53	341	eP	P	06 47 43.2	+1.2
LPSR				pmax	pmax		
comp=Z,9.0nm,1.0s							
MLR	Muntele Rosu	64.65	328	eP	P	06 47 43.4	+0.3
MLR				pmax	pmax		
comp=Z,21nm,1.4s							
MLR	Muntele Rosu	64.65	328	eP	P	06 47 43.4	+0.3
comp=Z,21nm,1.4s							
ASAR	Alice Springs	64.81	113	P	P	06 47 38.9	-5.6
comp=Z,0.8nm,0.7s,baz=290,slow=4.5,SNR=4.5							
ASAR				LR	LR	07 12 06.2	
comp=Z,157nm,21.7s,baz=284,slow=32							
WRA	Warramunga Arr	65.06	109	P	P	06 47 40.4	-5.8
comp=Z,2.5nm,1.0s,baz=279,slow=5.8,SNR=4.7							
WRA				LR	LR	07 12 50.2	
comp=Z,327nm,21.4s,baz=280,slow=33							
TLY	Talaya	65.90	23	eP	P	06 47 52.8	+1.9
TLY				pmax	pmax		
comp=Z,3.0nm,0.8s							
TLY				MLR	MLR		
comp=Z,89nm,18.0s							
AKASG	Malin Array Be	66.75	334	P	P	06 47 50.6	-5.7
comp=Z,0.3nm,0.3s,baz=118,slow=5.7,SNR=2.6							
AKASG				LR	LR	07 19 16.2	
comp=Z,28nm,18.1s,baz=85,slow=38							
KIEV	Kiev	66.75	334ce	P	P	06 47 57.7	+1.4
KIEV				pmax	pmax		
comp=Z,5.0nm,0.8s							
UZH	Uzhgorod	68.59	329	eP	P	06 48 09.1	+1.0
UZH				e		06 48 28.1	
KOLS	Kolonicke sedl	68.80	329	eP	P	06 48 11.6	+2.2
KOLS				pmax	pmax		
comp=Z,6.0nm,1.3s							
KOLS	Kolonicke sedl	68.80	329	eP	P	06 48 11.6	+2.2
TORD	Torodi Ar. Bea	69.19	287	P	P	06 48 04.4	-8.1
comp=Z,0.7nm,1.0s,baz=105,slow=6.0,SNR=3.5							
TORD				LR	LR	07 17 16.1	
comp=Z,259nm,19.2s,baz=115,slow=35							
STHS	Stebnicka Huta	69.63	329	eP	P	06 48 16.7	+2.2
STHS				pmax	pmax		
comp=Z,3.0nm,1.0s							
STHS	Stebnicka Huta	69.63	329	eP	P	06 48 16.7	+2.2
VYHS	Vyhne	70.31	327	eP	P	06 48 20.2	+1.5
VYHS				pmax	pmax		
comp=Z,6.0nm,1.2s							
VYHS	Vyhne	70.31	327	eP	P	06 48 20.1	+1.4
LANS	Liptovska Anna	70.37	328	eP	P	06 48 21.4	+2.3
LANS	Liptovska Anna	70.37	328	eP	P	06 48 21.4	+2.3
KLMR	Klimovskoe	71.42	346	eP	P	06 48 26.4	+1.2
KLMR				pmax	pmax		
comp=Z,27nm,1.2s							
STKA	Stephens Creek	72.06	121	LR	LR	07 18 09.6	
comp=Z,232nm,18.9s,baz=254,slow=34							
VSU	Vasula	73.41	339⇓	eP	P	06 48 39.9	+2.8
VSU				pmax	pmax		
comp=Z,34nm,1.0s							
KHC	Kasperske Hory	73.54	326	eP	P	06 48 39.5	+1.4
KHC	Kasperske Hory	73.54	326	eP	P	06 48 39.5	+1.4
FUORN	Ofenpass-Fuorn	74.18	323	eP	P	06 48 44.3	+2.1
comp=Z,11nm,1.1s							
BRG	Berggiesshubel	74.28	328	eP	P	06 48 45.2	+2.8
comp=Z,14nm,1.6s							
BRG	Berggiesshubel	74.28	328	eP	P	06 48 45.2	+2.8
BRG				pmax	pmax		
comp=Z,15nm,1.6s							
DBIC	Dimbokro	74.30	279	P	P	06 48 39.2	-4.1
comp=Z,8.7nm,1.0s,baz=110,slow=5.6,SNR=3.8							
DBIC				LR	LR	07 19 35.6	
comp=Z,155nm,19.6s,baz=88,slow=34							
CLL	Collm	75.01	328	iP	P	06 48 49.0	+2.4
comp=Z,19nm,1.5s							
CLL	Collm	75.01	328	iP	P	06 48 49.0	+2.4
CLL				pmax	pmax		
comp=Z,19nm,1.5s							
FINES	FINESS Array B	75.81	341	P	P	06 48 45.6	-5.3
comp=Z,2.1nm,0.9s,baz=14,slow=24,SNR=3.4							
SENIN	Lac Senin/Sane	75.88	321	eP	P	06 48 53.7	+1.7
comp=Z,7.2nm,0.9s							
NRIK	Noril'sk	77.41	7	P	P	06 48 57.2	-2.7
comp=Z,0.6nm,0.3s,baz=181,slow=3.8,SNR=4.6							
PMG	Port Moresby	77.87	98⇑	eP	P	06 49 07.1	+3.5
PMG				pmax	pmax		
comp=Z,40nm,1.0s							
KLR	Kul'dur	78.54	37	P	P	06 49 02.8	-3.8
comp=Z,0.6nm,0.6s,baz=243,slow=16,SNR=2.7							
ES19	SONSECA Array	81.07	312	eP	P	06 49 21.6	+1.0
ESDC	Sonseca Array	81.11	312	P	P	06 49 15.2	-5.7
comp=Z,0.2nm,0.3s,baz=72,slow=4.8,SNR=3.6							
ARCES	ARCESS Array B	81.89	346	P	P	06 49 25.6	+1.3
comp=Z,11nm,1.0s,baz=50,slow=1.9,SNR=5.2							
YAK	Yakutsk	83.32	25	eP	P	06 49 35.6	+3.8
YAK				pmax	pmax		
comp=Z,6.0nm,0.8s							
ERM	Erimo	83.56	46⇑	eP	P	06 49 38.8	+5.3
ERM				pmax	pmax		
comp=Z,34nm,0.9s							
VNDA	Vanda	83.88	167	LR	LR	07 21 21.4	
comp=Z,123nm,18.1s,baz=262,slow=32							
TIXI	Tiksi	87.80	16⇑	eP	P	06 49 56.8	+2.9
TIXI				pmax	pmax		
comp=Z,7.0nm,1.2s							
TIXI	Tiksi	87.80	16	eP	P	06 49 53.0	-0.9
comp=Z,11nm,1.3s							
MA2	Magadan	92.23	30	eP	P	06 50 19.6	+4.7
PET	Petropavlovsk	95.79	37	eP	P	06 50 36.6	+5.2
PET				pmax	pmax		
comp=Z,73nm,1.7s							
AFI	Afiamalu	116.78	109	ePKIKP	PKPdf	06 55 52.4	+1.5
AFI	Afiamalu	116.78	109	ePKPdf	PKPdf	06 55 52.4	+1.5
YKA	Yellowknife Ar	124.67	2	PKP	PKPdf	06 55 58.7	-5.9
comp=Z,0.3nm,0.8s,baz=0,0,slow=2.7,SNR=3.5							
YKB5	Yellowknife Ar	124.67	2	ePKPdf	PKPdf	06 56 04.5	-0.1
K05A	Summer Lake	143.59	12	ePKPdf	PKPdf	06 56 41.7	+1.0
HLID	Hailey	143.60	3	ePKPdf	PKPdf	06 56 42.3	+1.7
LOHW	Long Hollow	143.62	359	ePKPdf	PKPbc	06 56 38.0	0.0
REDW	Red Top Meadow	143.87	359	ePKPdf	PKPdf	06 56 42.9	+1.6
BW06	Boulder Array	144.43	357	ePKPdf	PKPdf	06 56 42.7	+0.4
PD31	Pinedale Array	144.43	357	ePKPdf	PKPab	06 56 38.5	-1.8
PDAR	Pinedale Array	144.43	357	PKP	PKPab	06 56 36.1	-4.2
comp=Z,2.7nm,1.0s,baz=126,slow=2.6,SNR=6.2							
MOD	Modoc Plateau	144.50	11	ePKPdf	PKPab	06 56 38.0	-2.5
MOD				epPKPdf	PKPdf	06 56 43.8	+1.5
PHWY	Pilot Hill	145.50	352	ePKPbc	PKPbc	06 56 41.7	-2.5
HWUT	Hardware Ranch	145.63	360	ePKPdf	PKPdf	06 56 40.3	-4.0
SPUT	South Promonto	145.92	1	ePKPdf	PKPdf	06 56 44.1	-0.6
N23A	Red Feather La	145.96	352	ePKPdf	PKPdf	06 56 41.5	-3.5
BGU	Big Grassy Mou	146.29	2	ePKPdf	PKPdf	06 56 42.6	-2.7
ELK	Elko	146.34	5	ePKIKP	PKPdf	06 56 44.5	-1.1
ELK	Elko	146.34	5	ePKPdf	PKPdf	06 56 44.5	-1.1
CBKS	Cedar Bluff	146.64	343	ePKIKP	PKPdf	06 56 45.8	-0.1
CBKS	Cedar Bluff	146.64	343	ePKPdf	PKPdf	06 56 45.8	-0.1
HHAR	Hobbs	146.75	333	ePKPdf	PKPab	06 56 48.8	-0.1
O20A	White River Ci	146.96	355	ePKPdf	PKPdf	06 56 46.3	-0.3
ISCO	Idaho Springs	146.99	351	ePKIKP	PKPdf	06 56 46.0	-0.8
ISCO	Idaho Springs	146.99	351	ePKPdf	PKPdf	06 56 46.0	-0.8
DUG	Dugway, Tooele	147.03	2	ePKHKP	PKPdf	06 56 44.7	-1.9
DUG	Dugway, Tooele	147.03	2	ePKPdf	PKPdf	06 56 44.7	-1.9
AFDM	Forest Hills D	147.19	13	ePKPdf	PKPdf	06 56 46.2	-0.6
KSCO	Kaye Shedlock'	147.20	347	ePKPdf	PKPdf	06 56 46.9	0.0
UALR	University of	147.22	330	ePKPdf	PKPdf	06 56 45.6	-1.3
NLU	North Lily Min	147.28	1	ePKPdf	PKPdf	06 56 47.0	-0.2
SMCO	Snowmass	147.78	353	ePKPdf	PKPdf	06 56 46.1	-2.2
TUL1	Leonard	147.85	335	ePKPdf	PKPdf	06 56 47.5	-0.4
SRU	San Rafael Swe	148.11	358	ePKIKP	PKPdf	06 56 48.9	+0.4
SRU	San Rafael Swe	148.11	358	ePKPdf	PKPdf	06 56 48.9	+0.4
NV01	Mina Array Sit	148.23	10	ePKPdf	PKPdf	06 56 47.8	-1.0
NVAR	Mina Array Bea	148.23	10	PKPbc	PKPdf	06 56 48.6	-0.2
comp=Z,1.6nm,0.8s,baz=277,slow=2.8,SNR=7.4							
PSUT	Pine Spring	148.64	3	ePKPdf	PKPdf	06 56 49.3	-0.1
MSU	Marysvale	148.72	1	ePKIKP	PKPdf	06 56 51.7	+2.1
MSU	Marysvale	148.72	1	ePKPdf	PKPdf	06 56 51.7	+2.1
PV01	Paradox Valley	148.98	355	ePKPdf	PKPdf	06 56 49.5	-0.6
MTPU	Mount Pierson	149.19	1	ePKPdf	PKPdf	06 56 51.3	+0.7
W34A	Bridge Creek,	149.23	337	ePKPdf	PKPdf	06 56 49.9	-0.3
T25A	Trinidad	149.38	349	ePKPdf	PKPdf	06 56 50.3	-0.4
DAC	Darwin (Calif)	150.45	10	ePKIKP	PKPdf	06 56 53.0	+0.6
DAC	Darwin (Calif)	150.45	10	ePKPdf	PKPdf	06 56 53.0	+0.6
SHPR	Sheep Range	150.55	6	ePKPdf	PKPdf	06 56 54.7	+2.3
GSC	Goldstone, Bar	151.53	9	ePKIKP	PKPdf	06 56 53.4	-0.5
GSC	Goldstone, Bar	151.53	9	ePKPdf	PKPdf	06 56 53.4	-0.5
WUAZ	Wupatki	151.71	360	ePKPdf	PKPbc	06 56 57.8	-2.8
MNTX	Cornudas Mount	154.83	347	ePKPdf	PKPdf	06 57 00.2	+1.5
TX31	Lajitas Ar. Si	156.64	342	ePKPdf	PKPdf	06 57 01.3	0.0
TXAR	Lajitas Array	156.64	342	PKPab	PKPab	06 57 23.9	-6.2
comp=Z,0.2nm,0.5s,baz=222,slow=1.7,SNR=3.5							

IDC ***10*** *06:37:02.1±0.7,27.°12N×143.°61E,h0km,mb3.9/12, mb1 4.2/15,mb1mx4.0/41,mbtmp4.0/15,ML3.4/3,MS2.8/4, Ms1 2.8/4,ms1mx2.5/37,Error ellipse: s-maj=18.6km s-min=16.9km az=92.0*

ISCJB ***10*** *06:37:05.1±0.7,27.°10N±0.°10×143.°60E±0.°08,h33km, mb3.9/12,MS2.7/1,Error ellipse: s-maj=14.2km s-min=9.6km az=170.6*

ISC 10 06:37:07.5±0.8,27.°2N±0.°1×143.°49E±0.°09,h35km,n22, σ0.°97/19,mb3.9/12,Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCJ	Chichijima	1.17	266	Pn	Pn	06 37 26.3	-1.0
125nm,0.3s,baz=286,slow=23,SNR=109							
JCJ				Sn	Sn	06 37 42.5	+0.5
140nm,0.3s,baz=289,slow=23,SNR=26							
MJAR	Matsushiro Arr	10.36	336	Pn	Pn	06 39 31.8	-1.8
1.2nm,0.3s,baz=150,slow=11,SNR=20							
JNU	Nakatsue	12.42	302	LR	LR	06 44 42.8	
comp=Z,61nm,19.0s,baz=116,slow=37							
KSRS	Korea Array	16.66	312	Pn	P	06 41 00.0	-0.3
0.2nm,0.3s,baz=120,slow=11,SNR=15							
KSRS				LR	LR	06 47 44.5	
comp=Z,36nm,18.9s,baz=295,slow=38							
ASAJ	Asahikawa	16.92	358	LR	LR	06 47 09.9	
comp=Z,27nm,20.8s,baz=249,slow=36							
USRK	Ussuriysk Ar.	19.35	334	P	P	06 41 29.8	-0.1
0.2nm,0.3s,baz=155,slow=12,SNR=6.0							
H11N2	WAKE ISLAND Hy	22.69	104	T	T	07 04 01.9	
SNR=5.3							
KLR	Kul'dur	23.82	341	P	P	06 42 16.9	-0.2
1.3nm,0.8s,baz=126,slow=9.9,SNR=2.9							
PETK	Petropavlovsk-	27.98	18	LR	LR	06 57 45.9	
comp=Z,17nm,18.4s,baz=221,slow=44							
SONM	Songino Array	35.47	316	P	P	06 44 01.6	+1.0
1.1nm,0.9s,baz=117,slow=9.0,SNR=4.5							
WRA	Warramunga Arr	47.67	192	P	P	06 45 40.0	-0.7
6.1nm,0.6s,baz=12,slow=8.5,SNR=48							
ZALV	Zalesovo Beam	50.19	319	P	P	06 46 01.0	+1.4
0.6nm,0.3s,baz=104,slow=6.3,SNR=3.4							
MKAR	Makanchi Array	51.32	310	P	P	06 46 09.5	+1.2
1.1nm,0.8s,baz=94,slow=9.7,SNR=5.7							
ASAR	Alice Springs	51.39	191	P	P	06 46 08.1	-0.8
0.7nm,0.6s,baz=2.9,slow=5.7,SNR=9.6							
ILAR	Eielson Array	57.08	29	P	P	06 46 49.1	-0.8
1.0nm,0.8s,baz=258,slow=5.5,SNR=8.9							
INK	Inuvik	62.47	25	P	P	06 47 26.7	-0.2
0.8nm,0.7s,baz=282,slow=2.3,SNR=6.1							
YKA	Yellowknife Ar	71.52	29	P	P	06 48 24.1	-0.3
0.7nm,0.7s,baz=293,slow=5.8,SNR=14							
FINES	FINESS Array B	78.39	334	P	P	06 49 03.8	-0.3
1.1nm,0.9s,baz=306,slow=35,SNR=3.1							
KBZ	Khabaz	78.80	313	P	P	06 49 08.6	+1.8
2.2nm,0.7s,baz=52,slow=3.6,SNR=6.5							
NVAR	Mina Array Bea	79.55	52	P	P	06 49 12.1	+0.8
1.6nm,0.8s,baz=329,slow=4.8,SNR=8.2							
TORD	Torodi Ar. Bea	125.40	312	PKP	PKPdf	06 56 05.5	-0.1
0.3nm,0.6s,baz=108,slow=1.8,SNR=3.5							
LPAZ	La Paz	148.77	76	PKPbc	PKPbc	06 56 52.6	-0.1
1.5nm,0.6s,baz=258,slow=5.1,SNR=8.0							

KRSC 10 06:39:10.1±1.5,47.°93N×156.°39E,h15km±10km,ML3.9, East of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	Severo-Kuril's	2.76	356	P	Pn	06 39 55.3	+1.6
SKR				S	Sb	06 40 30.0	-2.7
PAU	Pauzhetka	3.55	4	S	Sn	06 40 49.8	+3.6
ASAK	Asacha	4.56	12	eP	Pn	06 40 22.3	+3.7
RUS	Russkaya	4.71	16	P	Pn	06 40 23.9	+3.4
RUS				S	Sn	06 41 20.0	+5.2
UGLR	Uglovaya	5.51	15	P	Pn	06 40 35.9	+4.3
AVH	Avacha	5.55	15	P	Pn	06 40 38.2	+6.1
SMAR	Somma	5.56	15	P	Pn	06 40 36.9	+4.6
SDLR	Sedlovina	5.59	16	P	Pn	06 40 36.4	+3.7
KRER	Koryakskii	5.59	15	P	Pn	06 40 37.9	+5.2
GNL	Ganaly	5.86	9	eP	Pn	06 40 40.5	+4.1

DDA ***10*** *06:46:45.8,38.°87N×26.°91E,h7km,Md2.7*

ISK ***10*** *06:46:45.9,38.°86N×26.°82E,h16km,MD2.5*

CSEM ***10*** *06:46:46.4±0.2,38.°86N×26.°83E,h12km,MD2.5,Error ellipse: s-maj=5.4km s-min=4.2km az=108.0*

ISC 10 06:46:46.0±1.2,38.°85N±0.°03×26.°82E±0.°04,h18km±6km, n19,σ0.°37/29,Aegean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DKL	Dikili	0.23	16	PG	Pg	06 46 51.4	0.0
DKL	Dikili	0.23	16	iPg	Pg	06 46 51.4	0.0
BLCB	Balcova	0.49	160	ePG	Pg	06 46 55.9	-0.1
BLCB	Balcova	0.49	160	ePg	Pg	06 46 55.9	-0.1
URLA	Izmir	0.52	200	P	Pb	06 46 57.2	+0.5
URLA				S	Sb	06 47 04.2	+0.3
URLA	Izmir	0.52	200	iP	Pb	06 46 57.2	+0.5
URLA				iS	Sb	06 47 04.2	+0.3
IZM	Izmir	0.57	143	ePG	Pb	06 46 57.9	+0.5
IZM	Izmir	0.57	143	ePg	Pb	06 46 57.9	+0.5
CHOS	Chios island	0.76	233	ePG	Pg	06 47 01.1	+0.2
CHOS				eSG	Sn	06 47 12.6	-0.4
CHOS	Chios island	0.76	233	ePg	Pg	06 47 01.1	+0.2
CHOS				eSg	Sn	06 47 12.6	-0.4
SIGR	SIGRI	0.84	296	ePG	Pg	06 47 02.3	0.0
SIGR				eSG	Sn	06 47 14.3	-0.4
SIGR	SIGRI	0.84	296	ePg	Pg	06 47 02.3	0.0
SIGR				eSg	Sn	06 47 14.3	-0.4
EZN	Ezine	1.05	339	ePG	Pg	06 47 06.5	+0.1
EZN	Ezine	1.05	339	ePg	Pg	06 47 06.5	+0.1
BALY	Balya	1.08	35	P	Pg	06 47 07.4	+0.4
BALY				S	Sg	06 47 21.5	+0.3
BALY	Balya	1.08	35	iP	Pg	06 47 07.4	+0.4
BALY				iS	Sg	06 47 21.5	+0.3
BOZC	Bozcaada	1.16	329	iP	Pg	06 47 08.7	+0.3
DURS	Dursunbey	1.48	59	P	Pn	06 47 11.3	-0.6
DURS				S	Sg	06 47 33.9	-0.1
DURS	Dursunbey	1.48	59	iP	Pn	06 47 11.3	-0.6
DURS				iS	Sg	06 47 33.9	-0.1

NIED ***10*** *06:52:00,38.°20N×142.°20E,h5km,Mw3.5 Best double couple: M0 1.83000×10^14 NP1:φs176.00000°,δ45.00000°, λ-69.00000°. NP2:φs328.00000°,δ49.00000°, λ-109.00000°.*

ISCJB ***10*** *06:52:20.8±0.9,38.°18N±0.°04×142.°10E±0.°07,h10km, mb3.5/4,Error ellipse: s-maj=7.7km s-min=5.7km az=15.2*

JMA ***10*** *06:52:20.2±0.1,38.°18N×142.°15E,h14km±1km,M4.0*

IDC ***10*** *06:52:21.4±1.2,37.°96N×142.°24E,h0km,mb3.4/4, mb1 3.7/5,mb1mx3.4/35,mbtmp3.4/5,ML2.6/1,MS2.8/1, Ms1 2.8/1,ms1mx2.3/28,Error ellipse: s-maj=37.0km s-min=26.7km az=133.0*

ISC 10 06:52:22.3±1.0,38.°18N±0.°05×142.°00E±0.°06,h10km,n18, σ1.°62/19,mb3.4/4,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.58	298	P	Pg	06 52 33.3	-0.3
JIO				S	Sg	06 52 42.0	+0.7
OFUJ	Ofunato	0.93	344	P	Pg	06 52 38.2	-2.1
OFUJ				eS	Sg	06 52 50.7	-1.8
JMK	Ichinoseki	0.98	322	P	Pg	06 52 40.2	-1.1
JMK				S	Sb	06 52 54.4	-0.1
JMM	Marumori	1.01	252	P	Pg	06 52 40.6	-1.1
JMM				S	Sb	06 52 55.5	+0.4
JOU	Okura	1.07	280	P	Pg	06 52 42.3	-0.6
JOU				eS	Sn	06 52 57.8	-0.5
JFK	Kawauchi	1.21	228	P	Pn	06 52 43.0	-2.3
JFK				eS	Sb	06 52 59.5	-1.5
MJAR	Matsushiro Arr	3.44	243	Pn	Pn	06 53 18.2	+2.2
0.6nm,0.3s,baz=86,slow=16,SNR=3.2							
MAT	Matsushiro	3.44	243	P	Pb	06 53 21.6	-1.7
MAT				eS	Sb	06 54 06.2	+1.0
KSRS	Korea Array	11.16	271	LR	LR	06 58 55.5	
comp=Z,43nm,18.8s,baz=221,slow=35							
H11N2	WAKE ISLAND Hy	28.36	123	T	T	07 27 49.8	
baz=316,slow=75,SNR=28							
H11N1	WAKE ISLAND Hy	28.37	123	T	T	07 27 58.5	
baz=316,slow=75,SNR=22							
H11N3	WAKE ISLAND Hy	28.38	123	T	T	07 27 54.5	
baz=316,slow=75,SNR=18							
H11S1	WAKE ISLAND Hy	29.12	125	T	T	07 28 55.7	
baz=7.5,slow=74,SNR=9.1							
H11S2	WAKE ISLAND Hy	29.13	125	T	T	07 28 51.5	
baz=322,slow=74,SNR=9.9							
MKAR	Makanchi Array	43.92	301	P	P	07 00 31.7	+2.5
0.3nm,0.7s,baz=84,slow=8.3,SNR=2.4							
WRA	Warramunga Arr	58.26	188	P	P	07 02 15.9	-1.2
0.3nm,0.6s,baz=5.7,slow=7.3,SNR=6.8							
YKA	Yellowknife Ar	62.58	31	P	P	07 02 46.7	+0.6
0.2nm,0.9s,baz=296,slow=5.2,SNR=2.9							
TXAR	Lajitas Array	89.05	53	P	P	07 05 20.3	+2.3
0.4nm,0.6s,baz=241,slow=5.2,SNR=4.0							

IDC 10 06:59:22.8±4.5,27.°62S×60.°97E,h0km,mb3.5/3, mb1 3.7/3,mb1mx3.4/32,mbtmp3.5/3,Error ellipse: s-maj=174.4km s-min=42.1km az=47.0,South Indian Ocean

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	Alice Springs	64.99	105	P	P	07 10 03.5	-1.5
0.2nm,0.4s,baz=239,slow=5.9,SNR=4.4							
WRA	Warramunga Arr	66.72	101	P	P	07 10 17.4	+1.3
0.4nm,0.7s,baz=238,slow=5.4,SNR=4.9							
MKAR	Makanchi Array	76.53	15	P	P	07 11 12.9	-1.6
0.1nm,0.5s,baz=198,slow=1.9,SNR=3.8							
YKA	Yellowknife Ar	145.00	356	PKPbc	PKPdf	07 19 01.8	+0.5
0.2nm,0.6s,baz=12,slow=2.1,SNR=7.3							

**IDC 10 07:13:49.8±1.5,29.°77S×177.°43W,h0km,mb3.7/3, mb1 4.1/3,mb1mx3.8/28,mbtmp3.7/3,Error ellipse: s-maj=35.1km s

ONAJ	**Iwakimizuishiy**	**2.36 267**	⇑P	**Pn**	**07 16 48.3**	**-1.8**
ONAJ			S	**Sn**	**07 17 14.8**	**-3.2**
JMM	**Marumori**	**2.42 285**	⇑P	**Pn**	**07 16 49.0**	**-1.8**
JMM			S	**Sn**	**07 17 16.4**	**-2.9**
JMK	**Ichinoseki**	**2.60 311**	⇑P	**Pn**	**07 16 51.7**	**-1.6**
JFT	**Otama**	**2.73 276**	⇑P	**Pn**	**07 16 54.5**	**-0.5**
JFT			S	**Sn**	**07 17 26.1**	**-0.8**
JOM	**Ohasama**	**2.92 319**	⇑P	**Pn**	**07 16 56.1**	**-1.6**
JOM			S	**Sn**	**07 17 28.6**	**-3.1**
JYK	**Kaneyama**	**3.13 303**	P	**Pn**	**07 16 59.5**	**-1.1**
BSO1	**Boso 1**	**3.45 221**	P	**Pn**	**07 17 03.3**	**-1.2**
BSO1			S	**Sn**	**07 17 42.9**	**-1.1**
JAG	**Ashikaga**	**3.55 257**	P	**Pn**	**07 17 05.2**	**-1.1**
JAG			S	**Sn**	**07 17 44.2**	**-3.0**
JANG	**Nango**	**3.55 331**	P	**Pn**	**07 17 04.9**	**-1.4**
JANG			S	**Sn**	**07 17 43.3**	**-3.9**
JNS	**Sasagawa**	**3.56 280**	P	**Pn**	**07 17 05.9**	**-0.6**
JAW	**Awa shima**	**3.75 290**	P	**Pn**	**07 17 08.8**	**-0.3**
JRY	**Ryogami san**	**4.09 254**	P	**Pn**	**07 17 12.8**	**-1.1**
JRY			S	**Sn**	**07 17 57.5**	**-3.2**
JOD2	**Odawara 2**	**4.27 243**	P	**Pn**	**07 17 14.9**	**-1.3**
MJAR	**Matsushiro Arr**	**4.50 262**	Pn	**Pn**	**07 17 19.4**	**0.0**
	102nm,0.3s,baz=89,slow=15,SNR=370					
MJAR			Sn	**Sn**	**07 18 10.8**	**+0.1**
	73nm,0.3s,baz=93,slow=26,SNR=9.2					
MJAR			LR	LR	07 19 38.5	
	comp=Z,5μm,19.2s,baz=85,slow=47					
MAJO	**Matsushiro**	**4.50 262**	*c iP*	**Pn**	**07 17 19.7**	**+0.3**
MAJO	**Matsushiro**	**4.50 262**	*e*Pn	**Pn**	**07 17 19.8**	**+0.4**
MAJO			*e*Sn	**Sn**	**07 18 12.9**	**+2.2**
MAT	**Matsushiro**	**4.50 262**	P	**Pn**	**07 17 19.6**	**+0.2**
MAT			S	**Sn**	**07 18 09.5**	**-1.2**
MJB9	**Matsu-Tunnel**	**4.50 262**	*e*Pn	**Pn**	**07 17 19.9**	**+0.4**
MJB9			*e*Sn	**Sn**	**07 18 13.4**	**+2.6**
JOT	**Ohata**	**4.60 334**	P	**Pn**	**07 17 19.4**	**-1.4**
ERM	**Erimo**	**4.75 355**	*d iP*	**Pn**	**07 17 20.2**	**-2.6**
ERM			pmax	pmax		
	comp=Z,847nm,1.2s					
ERM	**Erimo**	**4.75 355**	*e*Pn	**Pn**	**07 17 20.1**	**-2.8**
ERM			*e*Sn	**Sn**	**07 18 12.3**	**-4.5**
JKB	**Kayabe**	**5.06 336**	P	**Pn**	**07 17 26.0**	**-1.0**
JHJ2	**Mitsune**	**5.26 219**	P	**Pn**	**07 17 27.6**	**-2.2**
JHJ2			*e*S	**Sn**	**07 18 22.0**	**-7.3**
JHJ2	**Mitsune**	**5.26 219**	*e*Pn	**Pn**	**07 17 27.2**	**-2.6**
JHJ2			*e*Sn	**Sn**	**07 18 26.0**	**-3.3**
JHJ	**Hachijo jima 2**	**5.27 219**	Pn	**Pn**	**07 17 27.4**	**-2.5**
	comp=Z,264nm,0.3s,baz=340,slow=21,SNR=15					
JHJ			Sn	**Sn**	**07 18 25.3**	**-4.3**
	comp=Z,1μm,0.3s,baz=49,slow=22,SNR=9.4					
JCH	**Churui**	**5.34 357**	P	**Pn**	**07 17 27.8**	**-3.1**
JCH			S	**Sn**	**07 18 24.0**	**-7.3**
INU	**Inuyama**	**5.76 252**	*e*Pn	**Pn**	**07 17 37.1**	**+0.3**
INU			*e*Sn	**Sn**	**07 18 42.6**	**+0.8**
JOSM	**Okushiri--Mats**	**5.82 327**	P	**Pn**	**07 17 36.6**	**-0.9**
JOSM			S	**Sn**	**07 18 38.6**	**-4.5**
NEM2	**Nemuro 2**	**6.27 13**	P	**Pn**	**07 17 39.5**	**-4.1**
NEM2			S	Sn	07 18 44.7	-9.4
ASAJ	**Asahikawa**	**6.89 353**	Pn	**Pn**	**07 17 50.1**	**-2.0**
	comp=Z,26nm,0.3s,baz=208,slow=12,SNR=92					
ASAJ			Sn	**Sn**	**07 19 04.0**	**-5.4**
	comp=Z,12nm,0.3s,baz=263,slow=31,SNR=6.3					
ASAJ	**Asahikawa**	**6.89 353**	*e*Pn	**Pn**	**07 17 49.9**	**-2.2**
ASAJ			*e*Sn	**Sn**	**07 19 03.0**	**-6.5**
YUK	**Yuzh-Kuril'sk**	**6.94 13**	*e*P	**Pn**	**07 17 48.9**	**-3.9**
YUK			*e*S	Sn	07 19 00.9	-10
YUK			pmax	pmax		
	comp=Z,624nm,0.7s					
YUK			pmax	pmax		
	comp=E,215nm,0.3s					
YUK			pmax	pmax		
	comp=N,332nm,0.2s					
YUK			MLR	MLR		
	comp=Z,3μm,14.0s					
YUK			MLR	MLR		
	comp=E,323nm,12.0s					
YUK			MLR	MLR		
	comp=N,3μm,9.0s					
SHO	**Shikotan**	**6.99 19**	*e*P	**Pn**	**07 17 49.1**	**-4.5**
SHO			pmax	pmax		
	comp=Z,556nm,0.6s					
SHO			pmax	pmax		
	comp=N,247nm,0.4s					
SHO			pmax	pmax		
	comp=E,220nm,0.4s					
KUR	**Kuril'sk**	**8.53 20**	*e*P	**Pn**	**07 18 11.8**	**-2.9**
KUR			*e*S	Sn	07 19 39.7	-10
KUR			pmax	pmax		
	comp=Z,879nm,3.8s					
KUR			smax	smax		
	comp=N,37nm,0.5s					
KUR			smax	smax		
	comp=E,133nm,0.5s					
KUR			pmax	pmax		
	comp=N,914nm,4.1s					
KUR			pmax	pmax		
	comp=E,1μm,4.1s					
KUR			MLR	MLR		
	comp=N,1μm,9.0s					
KUR			MLR	MLR		
	comp=E,1μm,9.0s					
KUR			MLR	MLR		
	comp=Z,1μm,9.0s					
YSS	**Yuzh-Sakhalins**	**9.70 356**	*e*P	**Pn**	**07 18 27.8**	**-2.9**
YSS			*e*S	**Sn**	**07 20 11.3**	**-7.1**
YSS			pmax	pmax		
	comp=Z,70nm,0.7s					
YSS			smax	smax		
	comp=N,150nm,1.1s					
YSS			MLR	MLR		
	comp=Z,2μm,15.0s					
YSS			MLR	MLR		
	comp=N,2μm,18.0s					
YSS			MLR	MLR		
	comp=E,1μm,18.0s					
CBIJ	**Chichi jima**	**10.24 188**	*e*Pn	Pn	07 18 32.2	-6.0
CBIJ			*e*Sn	Sn	07 20 21.1	-11
JCJ	**Chichijima**	**10.24 188**	Pn	Pn	07 18 32.7	-5.5
	comp=E,71nm,0.3s,baz=89,slow=23,SNR=71					
JCJ			Sn	Sn	07 20 19.1	-13
JCJ			LR	LR	07 23 08.7	
	comp=E,430nm,20.5s,baz=348,slow=41					
VLA	**Vladivostok**	**10.78 306**	*d iP*	**Pn**	**07 18 45.5**	**0.0**
MSHR	**Mys Shultsa**	**11.02 303**	*c iP*	**Pn**	**07 18 48.7**	**-0.1**
USRK	**Ussuriysk Ar.**	**11.28 311**	Pn	**Pn**	**07 18 52.4**	**+0.1**
	comp=E,2.5nm,0.3s,baz=122,slow=14,SNR=50					
USRK			LR	LR	07 23 47.2	
	comp=E,3μm,18.1s,baz=117,slow=40					
JNU	**Nakatsue**	**11.31 252**	Pn	**Pn**	**07 18 53.4**	**+0.4**
	comp=E,1.0nm,0.3s,baz=48,slow=9.6,SNR=19					
UGL	**Uglegorsk**	**11.86 355**	*e*P	**Pn**	**07 18 56.7**	**-3.5**
UGL			pmax	pmax		
	comp=Z,110nm,0.8s					
UGL			MLR	MLR		
	comp=N,2μm,17.0s					
UGL			MLR	MLR		
	comp=E,1μm,17.0s					
UGL			MLR	MLR		
	comp=Z,3μm,17.0s					
KSRS	**Korea Array**	**12.59 276**	Pn	**Pn**	**07 19 12.1**	**+1.7**
	comp=Z,1.2nm,0.3s,baz=88,slow=13,SNR=76					
KSRS			LR	LR	07 24 20.3	
	comp=Z,2μm,18.4s,baz=78,slow=39					
KSRS			PcP	**PcP**	**07 24 48.0**	**+0.5**
	comp=Z,0.1nm,0.3s,baz=146,slow=1.1,SNR=9.5					
KS01	**Wonju Array Si**	**12.62 276**	*e*Pn	**Pn**	**07 19 10.8**	**+0.1**
KS15	**Wonju Array Si**	**12.62 276**	*e*Pn	**Pn**	**07 19 12.1**	**+1.3**
KSAR	**Wonju Array Be**	**12.62 276**	P	**Pn**	**07 19 12.1**	**+1.3**
KSAR	**Wonju Array Be**	**12.62 276**	Pn	**Pn**	**07 19 12.1**	**+1.3**
KSAR			PcP	**PcP**	**07 24 48.0**	**+0.5**
HABR	**Khabarovsk**	**12.87 333**	*e*P	**Pn**	**07 19 11.3**	**-2.7**
HABR			*e*S	**Sn**	**07 21 33.7**	**-2.3**
HABR			pmax	pmax		
	comp=N,64nm,1.3s					
HABR			pmax	pmax		
	comp=E,37nm,1.3s					
HABR			pmax	pmax		
	comp=Z,101nm,1.3s					
HABR			MLR	MLR		
	comp=Z,2μm,15.0s					
MDJ	**Mudanjiang**	**12.96 309**	P	**Pn**	**07 19 15.1**	**-0.2**
MDJ			S	**Sn**	**07 21 39.3**	**+1.0**
MDJ			PcP	**PcP**	**07 24 47.5**	**-0.2**
MDJ			ScP	**ScP**	**07 28 18.0**	**-0.6**
MDJ			PcS	**PcS**	**07 28 21.7**	**-0.3**
MDJ			pmax	pmax		
	comp=Z,47nm,1.1s					
MDJ			pmax	pmax		
	comp=Z,390nm,6.2s					
MDJ			LR	LR		
	comp=Z,1μm,19.3s					
MDJ			LR	LR		
	comp=Z,1μm,16.8s					
MDJ			LR	LR		
	comp=Z,3μm,15.8s					
MDJ	**Mudanjiang**	**12.96 309**	*e*Pn	**Pn**	**07 19 15.1**	**-0.2**
TJN	**Taejon**	**13.16 271**	⇑*iP*	**Pn**	**07 19 19.1**	**+1.0**
TYV	**Tymovskoe**	**13.60 357**	*e*P	**Pn**	**07 19 20.5**	**-3.5**
TYV			pmax	pmax		
	comp=N,66nm,1.0s					
TYV			pmax	pmax		
	comp=Z,110nm,1.0s					
TYV			pmax	pmax		
	comp=Z,700nm,7.0s					
TYV			MLR	MLR		
	comp=E,1μm,18.0s					
TYV			MLR	MLR		
	comp=Z,3μm,18.0s					
INCN	**Inchon**	**13.62 276**	*e*Pn	**Pn**	**07 19 24.8**	**+0.5**
KLR	**Kul'dur**	**14.78 328**	Pn	**Pn**	**07 19 36.2**	**-3.9**
	comp=Z,1.4nm,0.3s,baz=133,slow=12,SNR=100					
KLR			PcP	**PcP**	**07 24 50.7**	**+0.6**
	comp=Z,0.2nm,0.3s,baz=348,slow=0.9,SNR=4.4					
KLR			LR	LR	07 25 52.6	
	comp=Z,4μm,18.5s,baz=140,slow=39					
CN2	**Changchun**	**15.35 301**	*e*P	**Pn**	**07 19 46.0**	**-1.7**
CN2			*e*pP	P	07 19 53.4	+1.4
CN2			*e*S	**Sn**	**07 22 34.0**	**-2.6**
CN2			pmax	pmax		
	comp=Z,200nm,7.0s					
CN2			LR	LR		
	comp=Z,2μm,15.0s					
CN2			LR	LR		
	comp=Z,2μm,15.0s					
CN2			LR	LR		
	comp=Z,2μm,17.0s					
NKL	**Nikolayevsk**	**16.02 353**	*e*P	**Pn**	**07 19 54.0**	**-2.2**
NKL			pmax	pmax		
	comp=Z,450nm,3.5s					
NKL			pmax	pmax		
	comp=N,40nm,1.1s					
NKL			pmax	pmax		
	comp=E,40nm,1.1s					
NKL			pmax	pmax		
	comp=Z,90nm,1.1s					
SKR	**Severo-Kuril's**	**16.06 30**	*e*P	**Pn**	**07 19 53.0**	**-3.7**
SKR			pmax	pmax		
	comp=Z,220nm,1.0s					
SKR			MLR	MLR		
	comp=Z,3μm,18.0s					
SNY	**Shenyang**	**16.20 293**	⇓P	**Pn**	**07 19 57.0**	**-1.6**
SNY			S	**Sn**	**07 22 57.6**	**+0.4**
SNY			pmax	pmax		
	comp=Z,510nm,10.6s					
SNY			LR	LR		
	comp=Z,1μm,11.4s					
SNY			LR	LR		
	comp=Z,4μm,17.5s					
SNY			LR	LR		
	comp=Z,6μm,16.7s					
JOW	**Kunigami**	**16.73 236**	*e*Pn	**P**	**07 20 07.8**	**+0.4**
	comp=Z,76nm,1.2s					
DL2	**Dalian**	**17.48 282**	P	**Pn**	**07 20 13.9**	**-0.9**
DL2			S	**Sn**	**07 23 27.1**	**-1.4**
DL2			pmax	pmax		
	comp=Z,170nm,1.1s					
DL2			pmax	pmax		
	comp=Z,500nm,5.3s					
DL2			LR	LR		
	comp=Z,370nm,10.5s					
DL2			LR	LR		
	comp=Z,2μm,14.7s					
DL2			LR	LR		
	comp=Z,2μm,15.3s					
PEA0	**Petropavlovsk-**	**18.58 27**	*e*P	**P**	**07 20 27.4**	**-0.3**
PEA0B	**Petropavlovsk-**	**18.58 27**	*e*P	**Pn**	**07 20 28.7**	**+0.6**
	comp=Z,148nm,1.4s					
PETK	**Petropavlovsk-**	**18.58 27**	P	**P**	**07 20 27.2**	**-0.4**
	comp=Z,0.4nm,0.3s,baz=202,slow=6.5,SNR=12					
PETK			LR	LR	07 29 45.7	
	comp=Z,588nm,18.2s,baz=233,slow=44					
PET	**Petropavlovsk**	**18.87 29**	*e*P	**Pn**	**07 20 35.0**	**+3.4**
PET			*e*S	**Sn**	**07 24 01.2**	**-0.5**
PET			pmax	pmax		
	comp=Z,700nm,8.0s					
PET			MLR	MLR		
	comp=Z,1μm,18.0s					
PET	**Petropavlovsk**	**18.87 29**	*e*P	**P**	**07 20 30.6**	**-0.3**
	comp=Z,111nm,1.4s					
SSE	**Sheshan**	**19.64 258**	P	**P**	**07 20 37.3**	**-2.1**
SSE			S	**S**	**07 24 17.3**	**-1.9**
SSE			pmax	pmax		
	comp=Z,54nm,1.0s					
SSE			pmax	pmax		
	comp=Z,250nm,6.4s					
SSE			LR	LR		
	comp=Z,2μm,21.7s					
SSE			LR	LR		
	comp=Z,870nm,21.7s					
SSE			LR	LR		
	comp=Z,2μm,17.8s					
HIA	**Hailar**	**21.09 312**	*e*P	**P**	**07 20 52.7**	**-2.4**
HIA			pmax	pmax		
	comp=Z,52nm,0.8s					
HIA	**Hailar**	**21.09 312**	*e*P	**P**	**07 20 52.7**	**-2.4**
	comp=Z,52nm,0.8s					
NJ2	**Nanjing**	**21.10 263**	*e*P	**P**	**07 20 56.5**	**+1.2**
NJ2			pmax	pmax		
	comp=Z,65nm,0.9s					
NJ2			pmax	pmax		
	comp=Z,420nm,11.4s					
NJ2			LR	LR		
	comp=Z,2μm,16.8s					
NJ2			LR	LR		
	comp=Z,1μm,17.3s					
NJ2			LR	LR		
	comp=Z,1μm,17.3s					
TIA	**Tai'an**	**21.34 275**	⇓P	**P**	**07 20 57.0**	**-0.9**
TIA			S	**S**	**07 24 52.5**	**-0.7**
TIA			pmax	pmax		
	comp=Z,60nm,1.1s					
TIA			pmax	pmax		
	comp=Z,310nm,4.0s					
TIA			LR	LR		
	comp=Z,1μm,16.0s					
TIA			LR	LR		
	comp=Z,2μm,17.0s					
TIA			LR	LR		
	comp=Z,2μm,17.0s					
BJI	**Beijing**	**21.68 286**	P	**P**	**07 21 00.8**	**-0.6**
BJI			S	**S**	**07 24 56.5**	**-3.1**
BJI			pmax	pmax		
	comp=Z,31nm,0.9s					
BJI			pmax	pmax		
	comp=Z,400nm,3.6s					
BJI			LR	LR		
	comp=Z,970nm,14.0s					
BJI			LR	LR		
	comp=Z,900nm,17.2s					
BJI			LR	LR		
	comp=Z,800nm,18.1s					
BJT	**Baijiatuau**	**21.68 286**	*e*P	**P**	**07 21 00.8**	**-0.7**
BJT			pmax	pmax		
	comp=Z,212nm,1.8s					
BJT	**Baijiatuau**	**21.68 286**	*e*P	**P**	**07 21 00.8**	**-0.7**
	comp=Z,212nm,1.8s					
MA2	**Magadan**	**22.77 9**	P	**P**	**07 21 13.9**	**+1.0**
	comp=Z,29nm,0.8s,baz=212,slow=10.0,SNR=7.8					
MA2	**Magadan**	**22.77 9**	*e*P	**P**	**07 21 12.3**	**-0.6**
	comp=Z,458nm,1.4s					
YHNB	**Yeheng**	**22.87 243**	*e*P	**P**	**07 21 13.2**	**-1.1**
	comp=Z,70nm,1.2s					
NACB	**Ninganchiao**	**23.02 242**	*e*P	**P**	**07 21 14.5**	**-1.3**
	comp=Z,51nm,1.0s					
CLNS	**Chul'man**	**23.26 333**	*e*P	**P**	**07 21 17.5**	**-0.5**
CLNS			pmax	pmax		
	comp=Z,75nm,1.3s					
CLNS			pmax	pmax		
	comp=E,35nm,1.1s					
CLNS			pmax	pmax		
	comp=N,99nm,0.9s					
GUMO	**Guam**	**23.61 177**	LR	LR	07 29 53.1	
	comp=N,404nm,20.4s,baz=18,slow=35					
SSLB	**Suanglung**	**23.72 242**	*e*P	**P**	**07 21 22.1**	**-0.7**
YULB	**Yu-li**	**23.73 241**	*e*P	**P**	**07 21 22.6**	**-0.3**
	comp=N,62nm,1.0s					
TPUB	**Ta-pu**	**24.26 241**	*e*P	**P**	**07 21 27.6**	**-0.2**
	comp=N,102nm,0.7s					
TWG	**Pinlang**	**24.27 240**	*e*P	**P**	**07 21 28.2**	**+0.4**
	comp=N,248nm,0.8s					
QZH	**Quanzhou**	**24.72 247**	⇑*iP*	**P**	**07 21 26.4**	**-5.5**
QZH			sP	**pP**	**07 21 39.5**	**-1.4**
QZH			S	**S**	**07 25 44.1**	**-7.7**
QZH			pmax	pmax		
	comp=Z,70nm,0.8s					
QZH			LR	LR		
	comp=N,800nm,14.8s					
QZH			LR	LR		
	comp=E,2μm,14.6s					
QZH			LR	LR		
	comp=Z,3μm,16.4s					
TIY	**Taiyuan**	**24.79 281**	*e*P	**P**	**07 21 34.0**	**+1.4**
TIY			pP	**sP**	**07 21 44.0**	**-1.5**
TIY			PP	**PnPn**	**07 22 12.0**	**+6.6**
TIY			SS	SS	07 26 46.5	
TIY			pmax	pmax		
	comp=Z,76nm,0.9s					
TIY			pmax	pmax		
	comp=Z,340nm,4.6s					
TIY			LR	LR		
	comp=Z,160nm,9.5s					
TIY			LR	LR		
	comp=Z,1μm,12.1s					
TIY			LR	LR		
	comp=Z,2μm,16.2s					
HHC	**Hu-ho-hao-te**	**25.16 288**	*e*P	**P**	**07 21 36.9**	**+0.9**
HHC			sP	sP	07 21 49.0	+0.2
HHC			PP	**PnPn**	**07 22 12.4**	**+1.9**
HHC			S	**S**	**07 25 57.8**	**-1.3**
HHC			pmax	pmax		
	comp=Z,51nm,0.8s					
HHC			pmax	pmax		
	comp=Z,390nm,4.1s					
HHC			LR	LR		
	comp=Z,7μm,12.6s					
HHC			LR	LR		
	comp=Z,8μm,13.5s					
HHC			LR	LR		
	comp=Z,10μm,13.1s					
WHN	**Wuhan**	**25.24 263**	⇑P	**P**	**07 21 37.0**	**+0.4**
WHN			pP	**pP**	**07 21 42.4**	**-3.2**
WHN			sP	**sP**	**07 21 50.3**	**+0.9**
WHN			LR	LR		
	comp=Z,6μm,17.3s					
WHN			LR	LR		
	comp=Z,3μm,17.9s					
WHN			LR	LR		
	comp=Z,3μm,19.7s					
CIT	**Chita**	**25.81 314**	*e*P	**P**	**07 21 42.4**	**+0.7**
CIT			*e*		07 21 53.6	
CIT			*e*		07 21 55.5	
CIT			*e*		07 22 22.1	
CIT			pmax	pmax		
	comp=Z,249nm,2.6s					
SEY	**Seymchan**	**26.23 9**	P	**P**	**07 21 46.1**	**+0.9**
	comp=Z,125nm,0.9s,baz=190,slow=6.5,SNR=129					
YAK	**Yakutsk**	**26.28 345**	P	**P**	**07 21 45.3**	**-0.4**
	comp=Z,114nm,0.7s,baz=2.1,slow=1.2,SNR=22					
YAK			LR	LR	07 34 15.6	
	comp=Z,1μm,18.2s,baz=140,slow=41					
YAK	**Yakutsk**	**26.28 345**	*de*P	**P**	**07 21 44.8**	**-0.8**
YAK			*e*		07 22 30.3	
YAK			*e*		07 25 11.0	
YAK			*e*S	**S**	**07 26 20.2**	**+4.3**
YAK			*e*SS	**SnSn**	**07 27 25.5**	**+8.6**
YAK			*e*		07 32 34.1	
YAK			pmax	pmax		
	comp=E,11nm,0.9s					
YAK			pmax	pmax		
	comp=Z,132nm,0.9s					
YAK			pmax	pmax		
	comp=N,38nm,1.0s					
YAK			pmax	pmax		
	comp=Z,105nm,1.5s					
YAK			pmax	pmax		
	comp=N,108nm,1.5s					
YAK			pmax	pmax		
	comp=E,88nm,1.5s					
YAK			smax	smax		
	comp=N,865nm,2.7s					
YAK			smax	smax		
	comp=E,190nm,1.8s					
YAK			MLR	MLR		
	comp=Z,1μm,19.0s					
YAK			MLR	MLR		
	comp=N,667nm,16.0s					
YAK			MLR	MLR		
	comp=E,809nm,17.0s					
YAK	**Yakutsk**	**26.28 345**	*e*P	**P**	**07 21 45.2**	**-0.4**
	comp=E,135nm,0.7s					
BTO	**Baotou**	**26.35 288**	*e*P	**P**	**07 21 47.5**	**+0.8**
H11N2	**WAKE ISLAND Hy**	**26.71 125**	T	T	07 48 52.8	
	baz=317,slow=75,SNR=91					
H11N1	**WAKE ISLAND Hy**	**26.72 125**	T	T	07 48 52.2	
	baz=317,slow=75,SNR=52					
H11N3	**WAKE ISLAND Hy**	**26.73 125**	T	T	07 49 13.0	
	baz=317,slow=75,SNR=56					
H11S1	**WAKE ISLAND Hy**	**27.47 127**	T	T	07 50 33.6	
	baz=318,slow=76,SNR=14					
H11S3	**WAKE ISLAND Hy**	**27.47 127**	T	T	07 50 38.4	
	baz=318,slow=76,SNR=13					
H11S2	**WAKE ISLAND Hy**	**27.48 127**	T	T	07 50 45.4	
	baz=318,slow=76,SNR=13					
BOD	**Bodaibo**	**28.34 326**	*e*P	**P**	**07 22 03.5**	**-0.7**
BOD			pmax	pmax		
	comp=Z,73nm,1.2s					
XAN	**Xi'an**	**28.38 274**	P	**P**	**07 22 07.0**	**+2.1**
XAN			pP	pP	07 22 15.3	+1.3
XAN			S	**S**	**07 26 52.8**	**+2.9**
XAN			pmax	pmax		
	comp=Z,25nm,0.9s					
XAN			pmax	pmax		
	comp=Z,310nm,5.8s					
XAN			LR	LR		
	comp=Z,780nm,17.9s					
XAN			LR	LR		
	comp=Z,730nm,15.9s					
ULN	**Ulaanbaatar**	**28.77 303**	*d iP*	**P**	**07 22 09.3**	**+0.9**
ULN			pmax	pmax		
	comp=Z,49nm,1.2s					
ULN	**Ulaanbaatar**	**28.77 303**	P	**P**	**07 22 09.7**	**+1.3**
	SNR=23					
ULN	**Ulaanbaatar**	**28.77 303**	P	**P**	**07 22 09.7**	**+1.3**
	SNR=23					
ULN	**Ulaanbaatar**	**28.77 303**	*e*P	**P**	**07 22 09.5**	**+1.2**
	comp=Z,42nm,1.0s					
SONA1	**Songino Array**	**29.20 303**	*e*P	**P**	**07 22 13.1**	**+1.0**
SONM	**Songino Array**	**29.20 303**	P	**P**	**07 22 13.4**	**+1.2**
	comp=Z,22nm,0.9s,baz=106,slow=8.6,SNR=38					
SONM			PcP	**PcP**	**07 25 19.3**	**+0.5**
	comp=Z,8.7nm,0.9s,baz=151,slow=4.6,SNR=5.2					
SONM			LR	LR	07 35 02.3	
	comp=Z,871nm,18.7s,baz=62,slow=39					
ENH	**Enshi**	**29.21 266**	*e*P	**P**	**07 22 12.5**	**+0.2**
	comp=Z,192nm,1.0s					
IRK	**Irkutsk**	**31.33 311**	*e*P	**P**	**07 22 35.5**	**+4.8**
IRK			*e*S	**S**	**07 27 42.1**	**+6.5**
IRK			pmax	pmax		
	comp=Z,123nm,0.7s					
TLY	**Talaya**	**31.59 310**	*e*P	**P**	**07 22 31.3**	**-1.8**
TLY			*e*S	**S**	**07 27 40.9**	**+1.1**
TLY			*e*SS	**SnSn**	**07 29 22.0**	**-4.5**
TLY			pmax	pmax		
	comp=Z,22nm,0.8s					
TLY			MLR	MLR		
	comp=Z,2μm,15.0s					
TLY	**Talaya**	**31.59 310**	*e*P	**P**	**07 22 34.1**	**+1.0**
	comp=Z,32nm,1.0s					
ZAK	**Zakamensk**	**31.59 308**	*e*P	**P**	**07 22 34.0**	**+0.8**
ZAK			*e*		07 25 24.9	
ZAK			pmax	pmax		
	comp=Z,30nm,1.4s					
ZAK			pmax	pmax		
	comp=Z,9.0nm,1.1s					
LZH	**Lanzhou**	**31.86 280**	*e*P	**P**	**07 22 35.9**	**+0.1**
LZH			pP	pP	07 22 45.5	+0.6
LZH			sP	sP	07 22 49.3	+0.6
LZH			PP	**PnPn**	**07 23 41.5**	**+0.7**

LZH eS S 07 27 44.2 -0.4
LZH sS sS 07 27 59.4 -0.2
LZH pmax pmax
comp=Z,28nm,1.0s
LZH pmax pmax
comp=Z,110nm,4.5s
LZH LR LR
comp=Z,440nm,12.2s
LZH LR LR
comp=Z,1μm,15.4s
LZH LR LR
comp=Z,3μm,16.8s
GYA Guiyang 33.10 262⇑ iP P 07 22 46.5 -0.2
GYA pP pP 07 22 57.4 +1.6
GYA PP PP 07 23 59.8 -2.0
GYA PcP PcP 07 25 31.0 +1.4
GYA S S 07 28 04.2 +0.2
GYA sS sS 07 28 19.6 +0.6
GYA ScP ScP 07 29 12.4 +1.0
GYA SS SnSn 07 30 05.5 +1.5
GYA ScS ScS 07 33 11.0 -1.1
GYA pmax pmax
comp=Z,50nm,0.8s
GYA pmax pmax
comp=Z,140nm,5.3s
GYA LR LR
comp=Z,2μm,14.3s
GYA LR LR
comp=Z,2μm,17.4s
GYA LR LR
comp=Z,2μm,15.9s
MOY Mondy 33.21 309 eP P 07 22 48.2 +0.8
MOY pmax pmax
comp=Z,33nm,2.2s
BILL Bilibino 33.28 15 eP P 07 22 47.2 -0.5
BILL pmax pmax
comp=Z,90nm,1.0s
BILL Bilibino 33.28 15 eP P 07 22 47.2 -0.5
comp=Z,90nm,1.0s
CD2 Chengdu 33.53 271 P P 07 22 50.3 -0.1
CD2 sP sP 07 23 03.4 +0.1
CD2 PP PP 07 24 06.3 -0.2
CD2 S S 07 28 10.6 +0.1
CD2 sS sS 07 28 26.2 +0.6
CD2 pmax pmax
comp=Z,30nm,1.0s
CD2 pmax pmax
comp=Z,180nm,4.9s
CD2 LR LR
comp=Z,1μm,16.2s
CD2 LR LR
comp=Z,1μm,16.8s
GTA Gaotai 34.27 287 ⇓P P 07 22 57.5 +0.7
GTA pP pP 07 23 06.6 +0.7
GTA sP sP 07 23 10.5 +0.8
GTA PcP PcP 07 25 33.1 +0.4
GTA S S 07 28 22.1 +0.2
GTA sS sS 07 28 37.3 +0.3
GTA PcS PcS 07 29 19.5 +0.4
GTA pmax pmax
comp=Z,21nm,1.1s
GTA pmax pmax
comp=Z,420nm,6.4s
GTA LR LR
comp=Z,610nm,19.0s
GTA LR LR
comp=Z,1μm,18.1s
GTA LR LR
comp=Z,1μm,18.1s
DAV Davao City (W) 34.31 213 LR LR 07 34 50.3
comp=Z,338nm,19.9s,baz=26,slow=33
QIZ Qiongzhong 34.74 248 P P 07 23 01.3 +0.5
QIZ S S 07 28 30.3 +1.2
QIZ pmax pmax
comp=Z,9.0nm,1.3s
QIZ LR LR
comp=Z,250nm,15.7s
QIZ LR LR
comp=Z,240nm,16.2s
TIXI Tiksi 35.29 352 P P 07 23 03.5 -1.5
comp=Z,8.5nm,0.7s,baz=143,slow=6.0,SNR=22
TIXI PcP PcP 07 25 35.6 +0.7
comp=Z,4.6nm,0.8s,baz=130,slow=5.0,SNR=3.5
TIXI Tiksi 35.29 352 *d* iP P 07 23 04.2 -0.8
TIXI pmax pmax
comp=Z,27nm,1.7s
TIXI MLR MLR
comp=Z,667nm,18.0s
TIXI Tiksi 35.29 352 eP P 07 23 04.1 -0.9
comp=Z,12nm,0.9s
TIXI PcP PcP 07 25 35.6 +0.7
NIKH Nikolski High 36.21 49 eP P 07 23 12.9 -0.2
comp=Z,282nm,1.4s
KMI Kunming 36.84 263 P P 07 23 19.6 +0.5
KMI pP pP 07 23 29.7 +1.4
KMI sP sP 07 23 32.9 +0.8
KMI PP PnPn 07 24 46.1 +2.7
KMI S S 07 29 00.3 -1.4
KMI sS sS 07 29 17.3 +0.4
KMI SS SnSn 07 31 28.5 -6.3
KMI pmax pmax
comp=Z,35nm,1.3s
KMI pmax pmax
comp=Z,180nm,4.7s
KMI LR LR
comp=Z,790nm,16.7s
KMI LR LR
comp=Z,690nm,17.4s
KMI LR LR
comp=Z,870nm,20.0s
KRAR Krasnoyarsk 38.58 316 eP P 07 23 33.9 +0.7
KRAR pmax pmax
comp=Z,23nm,0.4s
SWI Sorong 39.67 200 P P 07 23 42.1 -0.6
comp=Z,36nm,1.1s
JAY Jayapura 39.69 185 LR LR 07 39 01.9
comp=Z,7.2nm,19.0s,slow=35
JAY Jayapura 39.69 185 P P 07 23 40.7 -2.2
comp=Z,64nm,0.9s,comp=Z,496nm
PANO Nakornpanom 39.80 251 P P 07 23 52.4 +8.6
GENI Genyem 39.81 186 P P 07 23 44.4 +0.6
comp=Z,127nm,1.1s,comp=Z,4μm
NONG Nongkai 40.36 253 P P 07 23 50.0 +1.6
comp=Z,28nm,0.8s,comp=Z,14μm
SKNT Sakolnakorn 40.38 251 P P 07 23 49.9 +1.3
comp=Z,27nm,1.2s
CRAI Chiangrai 41.25 258 P P 07 23 56.9 +1.1
comp=Z,200nm,1.3s
FAKI Fak Fak 41.40 198 P P 07 23 56.5 -0.4
comp=Z,30nm,2.1s
FAKI Fak Fak 41.40 198 eP P 07 23 56.5 -0.4
comp=Z,33nm,1.1s
MRSI Marisa 41.79 214 P P 07 24 00.7 +0.5
comp=Z,107nm,1.4s,comp=Z,1μm
LOEI Loei 42.12 254 P P 07 24 00.7 -2.2
comp=Z,13nm,1.0s,comp=Z,341nm
WMQ Urumqi 42.39 297 ⇓*i* P P 07 24 05.8 +0.9
WMQ pP pP 07 24 13.6 -0.6
WMQ sP sP 07 24 18.5 +0.5
WMQ S S 07 30 25.7 +1.4
WMQ sS sS 07 30 41.8 +2.2
WMQ ScS ScS 07 34 00.1 -4.2
WMQ pmax pmax
comp=Z,18nm,0.8s
WMQ pmax pmax
comp=Z,130nm,4.2s
WMQ LR LR
comp=Z,340nm,16.2s
WMQ LR LR
comp=Z,110nm,18.2s
CMAI Chiengmai2 42.46 259 P P 07 24 07.2 +1.4
comp=Z,36nm,1.2s,comp=Z,899nm
SANI Sanana 42.46 207 P P 07 24 06.7 +1.1
comp=Z,184nm,0.8s,comp=Z,1μm
UTTA Uttaradit 42.53 255 P P 07 24 07.6 +1.4
comp=Z,6.7nm,1.0s,comp=Z,86nm
CHAI Chaiyaphum 42.55 251 P P 07 24 06.8 +0.4
comp=Z,8.2nm,1.0s,comp=Z,112nm
MSAI Masohi 42.70 202 P P 07 24 09.6 +2.0
comp=Z,33nm,1.2s,comp=Z,1μm
LAMP Lampang 42.79 256 P P 07 24 09.6 +1.2
comp=Z,20nm,0.8s
LUWI Luwuk 42.80 212 P P 07 24 07.4 -0.9
comp=Z,75nm,0.8s
LUWI Luwuk 42.80 212 eP P 07 24 07.4 -0.9
comp=Z,99nm,1.2s

PBKT Sadao Pong 42.91 253 P P 07 24 10.1 +0.8
comp=Z,24nm,1.0s
ZAA0 Zalesovo Array 43.13 312 eP P 07 24 10.1 -0.6
ZALV Zalesovo Beam 43.13 312 P P 07 24 11.1 +0.4
comp=Z,32nm,1.0s,baz=76,slow=6.3,SNR=51
ZALV PcP PcP 07 25 59.8 -0.1
comp=Z,35nm,0.7s,baz=93,slow=2.9,SNR=14
ZALV LR LR 07 43 37.7
comp=Z,1μm,18.2s,baz=68,slow=38
CMMT Chiang Mai 43.16 257 P P 07 24 12.0 +0.7
comp=Z,42nm,1.1s
CHTO Chiang Mai 43.16 257 P P 07 24 12.1 +0.7
comp=Z,186nm,1.1s
CHTO Chiang Mai 43.16 257 eP P 07 24 11.0 -0.3
CHTO pmax pmax
comp=Z,34nm,0.9s
CHTO Chiang Mai 43.16 257 P P 07 24 12.9 +1.5
SNR=7.4
CHTO Chiang Mai 43.16 257 P P 07 24 12.9 +1.5
SNR=7.4
CHTO Chiang Mai 43.16 257 eP P 07 24 11.0 -0.3
comp=Z,34nm,0.9s
CM01 Chiang Mai Arr 43.37 257 eP P 07 24 13.8 +0.7
SUKH Sukhothai 43.40 255 P P 07 24 14.5 +1.3
comp=Z,9.9nm,0.9s,comp=Z,81nm
BNDI Bandanaira 43.54 200 P P 07 24 12.8 -1.5
comp=Z,213nm,1.3s
SRAK Srakaew 43.69 249 P P 07 24 13.2 -2.4
comp=Z,65nm,1.2s
NRIK Noril'sk 43.83 335 P P 07 24 15.8 -0.3
comp=Z,16nm,1.0s,baz=109,slow=8.5,SNR=23
NRIK PcP PcP 07 26 02.3 +0.3
comp=Z,14nm,0.8s,baz=101,slow=5.3,SNR=6.1
NRIK LR LR 07 44 24.5
comp=Z,1μm,18.4s,baz=103,slow=39
NVS Novosibirsk 44.02 314 eP P 07 24 18.2 +0.4
NVS *e* 07 26 03.3
NVS eS S 07 30 55.6 +7.9
NVS pmax pmax
comp=Z,71nm,1.6s
NVS pmax pmax
comp=E,52nm,1.3s
NVS pmax pmax
comp=Z,39nm,1.4s
NVS pmax pmax
comp=N,12nm,1.1s
NVS smax smax
comp=E,22nm,1.5s
NAYO Nakonayok 44.03 250 P P 07 24 19.9 +1.5
comp=E,18nm,1.0s
LSA Lhasa 44.04 276 P P 07 24 20.4 +1.5
LSA Lhasa 44.04 276 eP P 07 24 20.3 +1.5
LSA pmax pmax
comp=Z,38nm,1.1s
LSA Lhasa 44.04 276 eP P 07 24 20.3 +1.5
comp=Z,38nm,1.1s
TT01 Tatalina 44.15 35 eP P 07 24 19.6 +0.8
TTA Tatalina 44.16 35 eP P 07 24 19.5 +0.6
TTA pmax pmax
comp=Z,37nm,1.0s
TTA Tatalina 44.16 35 eP P 07 24 19.5 +0.6
comp=Z,37nm,1.0s
SVW2 Sparrevohn 44.20 37 eP P 07 24 20.9 +1.7
comp=Z,33nm,1.1s
SBUM Sibu 45.18 227 eP P 07 24 28.0 +0.5
comp=Z,30nm,1.1s
OHAK Old Harbor 45.31 43 eP P 07 24 27.7 -0.3
comp=Z,22nm,0.7s
RSO Redoubt South 45.55 38 eP P 07 24 31.0 +0.8
MK01 Makanchi Array 45.56 302 eP P 07 24 30.0 -0.3
MK31 Makanchi Array 45.57 302 *i* P P 07 24 30.7 +0.4
MK31 pmax pmax
comp=Z,36nm,0.9s
MK31 Makanchi Array 45.57 302 eP P 07 24 30.6 +0.3
MKAR Makanchi Array 45.57 302 P P 07 24 30.6 +0.3
comp=Z,28nm,0.8s,baz=83,slow=9.9,SNR=120
MKAR PcP PcP 07 26 08.4 0.0
comp=Z,6.7nm,0.9s,baz=73,slow=8.1,SNR=2.1
MKAR LR LR 07 44 50.3
comp=Z,399nm,18.9s,baz=74,slow=38
KDAK Kodiak Island 45.67 42 *i* P P 07 24 30.3 -0.6
KDAK Kodiak Island 45.67 42 eP P 07 24 30.8 -0.1
comp=Z,294nm,1.6s
MAKZ Makanchi 45.77 302 eP P 07 24 32.3 +0.3
MAKZ pmax pmax
comp=Z,33nm,0.9s
MAKZ Makanchi 45.77 302 eP P 07 24 32.3 +0.3
comp=Z,33nm,0.9s
PPLA Purkeypile 45.90 35 eP P 07 24 34.3 +1.5
comp=Z,170nm,1.5s
SPU Mount Spurr 45.91 37 eP P 07 24 33.6 +0.8
CAST Castle Rocks 45.98 34 eP P 07 24 34.5 +1.3
comp=Z,211nm,1.8s
PHET Kaeng Krachan 46.19 250 P P 07 24 37.1 +1.6
comp=Z,38nm,0.8s,comp=Z,288nm
BPAW Bear Paw Mtn. 46.50 33 eP P 07 24 38.2 +0.9
comp=Z,96nm,1.7s
KTH Kantishna Hill 46.50 34 eP P 07 24 38.5 +1.0
comp=Z,116nm,1.2s
PMG Port Moresby 46.55 175 *d* iP P 07 24 37.8 -0.4
PMG pmax pmax
comp=Z,141nm,1.1s
PMG Port Moresby 46.55 175 eP P 07 24 38.2 0.0
comp=Z,68nm,1.4s
MLY Manley 46.65 32 eP P 07 24 39.8 +1.2
comp=Z,88nm,0.9s
SPSI Sidrap Palu 46.71 214 P P 07 24 39.0 -0.5
comp=Z,22nm,1.1s,comp=Z,1μm
TRF Thorofare Moun 46.78 34 eP P 07 24 40.5 +0.7
comp=Z,35nm,1.1s
COLD Coldfoot 47.03 29 eP P 07 24 42.4 +0.9
comp=Z,15nm,0.8s
RC01 Rabbit Creek A 47.03 38 eP P 07 24 41.9 +0.3
comp=Z,59nm,1.1s
KSM Kuching 47.09 229 eP P 07 24 43.9 +1.3
comp=Z,35nm,0.8s
BWN Browne 47.16 33 eP P 07 24 44.6 +2.0
comp=Z,241nm,1.0s
SEW Seward 47.21 39 eP P 07 24 42.9 0.0
comp=Z,46nm,1.0s
KURK Kurchatov 47.25 308 eP P 07 24 43.3 -0.1
KURK pmax pmax
comp=Z,65nm,0.9s
KURK Kurchatov 47.25 308 eP P 07 24 43.2 -0.1
comp=Z,65nm,0.9s
PMR Palmer 47.31 37 eP P 07 24 43.6 -0.1
PMR pmax pmax
comp=Z,81nm,1.2s
PMR Palmer 47.31 37 eP P 07 24 43.6 -0.1
comp=Z,81nm,1.2s
MCK McKinley 47.39 34 eP P 07 24 44.6 +0.2
MCK pmax pmax
comp=Z,63nm,1.0s
MCK McKinley 47.39 34 eP P 07 24 44.6 +0.2
comp=Z,63nm,1.0s
RND Reindeer 47.43 34 eP P 07 24 44.6 -0.1
RND pmax pmax
comp=Z,112nm,1.2s
RND Reindeer 47.43 34 eP P 07 24 44.6 -0.1
comp=Z,112nm,1.2s
STKI Sintang 47.53 226 P P 07 24 47.3 +1.3
comp=Z,92nm,0.7s
KAPI Kappang 47.65 213 eP P 07 24 47.5 +0.6
comp=Z,44nm,1.1s
SML Sawmill 47.69 37 eP P 07 24 47.1 +0.4
SML pmax pmax
comp=Z,56nm,0.7s
SML Sawmill 47.69 37 eP P 07 24 47.0 +0.4
comp=Z,56nm,0.7s
MDM Murphy Dome 47.72 32 eP P 07 24 47.8 +0.9
comp=Z,141nm,0.9s
WRH Wood River Hil 47.77 33 eP P 07 24 47.5 +0.3
comp=Z,55nm,0.8s
COLA College 47.88 32 *d* iP P 07 24 48.4 +0.4
COLA pmax pmax
comp=Z,48nm,0.8s
COLA College 47.88 32 eP P 07 24 48.7 +0.6
comp=Z,52nm,0.8s
CCB Clear Creek Bu 47.89 33 eP P 07 24 48.7 +0.5
SCM Sheep Creek Mo 48.16 36 eP P 07 24 50.9 +0.5
SCM pmax pmax
comp=Z,95nm,1.0s
SCM Sheep Creek Mo 48.16 36 eP P 07 24 50.9 +0.5
comp=Z,95nm,1.0s
HDA Harding Lake 48.27 33 eP P 07 24 51.7 +0.6
comp=Z,128nm,1.0s
ILAR Eielson Array 48.29 32 P P 07 24 51.0 -0.2
comp=Z,54nm,0.8s,baz=265,slow=6.4,SNR=128
ILAR PcP PcP 07 26 16.8 -0.9
comp=Z,7.1nm,0.9s,baz=288,slow=4.8,SNR=4.2
ILAR LR LR 07 49 05.4
comp=Z,198nm,19.0s,baz=298,slow=41
ILB Eielson Array 48.29 32 eP P 07 24 51.1 -0.1
IL1 Eielson Array 48.29 32 eP P 07 24 51.4 +0.1
PDGK Podgornoye 48.31 298 P P 07 24 51.5 -0.2
PDGK pmax pmax
comp=Z,38nm,1.4s
BBKI Banjar Baru 48.64 220 P P 07 24 54.9 +0.4
comp=Z,89nm,0.8s,comp=Z,9μm
KLU Klutina 48.85 37 eP P 07 24 56.4 +0.7
comp=Z,69nm,1.0s
DIV Divide 48.95 37 eP P 07 24 57.4 +0.9
comp=Z,107nm,1.0s
PAX Paxson 48.97 35 eP P 07 24 57.6 +0.9
PAX pmax pmax
comp=Z,40nm,0.8s
PAX Paxson 48.97 35 eP P 07 24 57.6 +0.9
comp=Z,40nm,0.8s
GUN Gumba 48.98 277 eP P 07 24 58.1 +0.6
EYAK Cordova Ski Ar 49.01 38 eP P 07 24 57.6 +0.8
comp=Z,54nm,0.8s
TRTT Trang 49.48 245 P P 07 25 03.3 +2.3
comp=Z,48nm,1.3s
KKN Kakani 49.51 277 eP P 07 25 01.7 +0.3
BMRM Bremner River 49.53 37 eP P 07 25 01.8 +0.8
comp=Z,64nm,1.0s
RAGM Ragged Mountai 49.56 38 eP P 07 25 02.3 +1.2
comp=Z,120nm,1.3s
DOT Dot Lake 49.56 34 eP P 07 25 01.0 -0.1
comp=Z,70nm,0.8s
DMN Daman 49.73 277 eP P 07 25 03.4 +0.3
MENT Mentasta 49.77 35 eP P 07 25 03.7 +1.0
comp=Z,36nm,0.8s
GKN Gorkha 49.92 277 eP P 07 25 04.8 +0.3
SOEI Soe 50.23 205 P P 07 25 06.2 -0.5
comp=Z,84nm,1.1s,comp=Z,1μm
SOEI Soe 50.23 205 eP P 07 25 06.3 -0.5
comp=Z,72nm,0.9s
EDFI Ende, Flores 50.23 209 P P 07 25 06.1 -0.7
comp=Z,39nm,1.0s
KULM Kulim 50.56 242 eP P 07 25 09.8 +0.6
comp=Z,23nm,0.7s
BALM Baldy 50.62 37 eP P 07 25 09.9 +0.7
BALM pmax pmax
comp=Z,48nm,0.8s
BALM Baldy 50.62 37 eP P 07 25 09.9 +0.7
comp=Z,48nm,0.8s
EGAK Eagle 50.74 32 eP P 07 25 10.0 +0.1
comp=Z,118nm,1.9s
KOLN Koldanda 50.85 278 eP P 07 25 12.0 +0.5
IPM Ipoh 50.87 241 eP P 07 25 11.8 +0.2
comp=Z,42nm,0.9s
MYKOM Kota Tinggi 50.92 236 eP P 07 25 12.6 +0.7
comp=Z,47nm,1.5s
COEN Coen 50.96 181 eP P 07 25 12.2 +0.1
comp=Z,28nm,1.0s
TKM2 Tokmak 2 51.15 299 eP P 07 25 14.6 +1.0
TKM2 pmax pmax
comp=Z,130nm,1.4s
TKM2 Tokmak 2 51.15 299 eP P 07 25 14.6 +1.0
comp=Z,130nm,1.4s
PYUN Piuthan 51.18 278 eP P 07 25 14.5 +0.4
MTN Manton Dam 51.25 196 eP P 07 25 13.5 -0.8
comp=Z,76nm,0.8s
DAWY Dawson 51.58 33 eP P 07 25 17.2 +0.9
comp=Z,25nm,1.1s
BVA0 Borovoye Array 51.78 313 P P 07 25 18.0 +0.1
BVA0 pmax pmax
comp=Z,25nm,1.0s
BVAR Borovoye Array 51.78 313 P P 07 25 18.1 +0.2
comp=Z,14nm,0.8s,baz=81,slow=9.2,SNR=66
BVAR PcP PcP 07 26 31.0 +0.2
comp=Z,16nm,0.8s,baz=90,slow=4.4,SNR=7.2
OTUK Ortayu 51.79 306 P P 07 25 17.8 -0.3
OTUK pmax pmax
comp=Z,28nm,1.0s
BRVK Borovoye 51.84 313 *d* iP P 07 25 18.3 0.0
BRVK pmax pmax
comp=Z,45nm,1.2s
BRVK Borovoye 51.84 313 eP P 07 25 18.7 +0.4
comp=Z,37nm,0.9s
FRU Bishkek 51.86 299⇓eP P 07 25 18.0 -0.7
FRU *i* 07 25 33.0
FRU *i* 07 27 24.0
FRU eS S 07 32 40.0 +0.8
FRU pmax pmax
comp=Z,100nm,2.0s
FRU smax smax
comp=E,70nm,2.1s
PLAI Plampang 51.92 213 P P 07 25 17.9 -1.4
comp=E,33nm,1.3s
KSH Kashi 52.00 295 eP P 07 25 23.1 +3.2
KSH eSP sP 07 25 37.2 +4.0
KSH PcS PcS 07 30 31.9 +1.6
KSH S S 07 32 43.4 +2.0
KSH ScS ScS 07 35 06.7 -1.1
KSH pmax pmax
comp=E,250nm,5.2s
KSH LR LR
comp=E,1μm,17.1s
KSH LR LR
comp=E,1μm,18.5s
KSH LR LR
comp=E,970nm,15.6s
AAK Ala-Archa 52.01 299 *d* iP P 07 25 20.1 +0.1
AAK pmax pmax
comp=Z,32nm,1.0s
AAK Ala-Archa 52.01 299 eP P 07 25 20.5 +0.5
comp=Z,19nm,0.9s
TWSI Taliwang, Sumb 52.24 214 P P 07 25 20.5 -1.2
comp=Z,33nm,1.1s
SRBI Singaraja 52.44 217 P P 07 25 23.6 +0.5
comp=Z,172nm,1.1s,comp=Z,2μm
PPBI Pangkal Pinang 52.49 230 P P 07 25 24.5 +0.9
comp=Z,128nm,0.4s,comp=Z,47μm
EKS2 Erkin-Say 52.50 299 eP P 07 25 24.2 +0.6
EKS2 pmax pmax
comp=Z,15nm,0.8s
EKS2 Erkin-Say 52.50 299 eP P 07 25 24.2 +0.6
comp=Z,15nm,0.8s
ZRNK Zerenda 52.61 313 P P 07 25 24.1 0.0
ZRNK pmax pmax
comp=Z,36nm,1.0s
ZRNK Zerenda 52.61 313 eP P 07 25 24.3 +0.2
comp=Z,50nm,0.9s
ABJI Asem Bagus 52.66 218 P P 07 25 24.9 +0.1
comp=Z,71nm,1.1s
INK Inuvik 53.32 27 P P 07 25 29.6 +0.6
comp=Z,52nm,0.9s,baz=293,slow=6.9,SNR=254
INK PcP PcP 07 26 36.3 +0.1
comp=Z,11nm,1.0s,baz=288,slow=5.7,SNR=2.4
MNAS Manas 53.45 299 P P 07 25 31.1 +0.5
MNAS pmax pmax
comp=Z,69nm,0.9s
PSI Prapat 53.53 241 eP P 07 25 30.8 -0.7
PSI pmax pmax
comp=Z,33nm,0.9s
PSI Prapat 53.53 241 eP P 07 25 30.8 -0.7
comp=Z,32nm,0.9s
NGJI Ngawi 53.70 221 P P 07 25 33.4 +0.9
comp=Z,61nm,1.5s
KCSI Kotacane, Aceh 53.84 243 P P 07 25 32.5 -1.1
comp=Z,19nm,1.0s
BKNI Bangkinang 53.88 237 P P 07 25 35.5 +1.7
comp=Z,210nm,1.1s,comp=Z,3μm
BKNI Bangkinang 53.88 237 eP P 07 25 34.2 +0.4
comp=Z,127nm,0.7s
SMRI Semarang 53.98 222 P P 07 25 36.2 +1.7
comp=Z,120nm,1.0s
SMRI Semarang 53.98 222 eP P 07 25 35.4 +0.8
comp=Z,130nm,1.1s
PWJI Pagerwojo 54.08 220 P P 07 25 34.2 -1.0
comp=Z,134nm,0.8s
SKAG Skagway 54.35 38 eP P 07 25 38.0 +1.3
comp=Z,32nm,1.0s
MNSI Mandailing Nat 54.52 239 P P 07 25 38.1 -0.4
comp=Z,26nm,0.8s
KK31 Karatay Array 54.61 301 *i* P P 07 25 38.9 0.0
KK31 pmax pmax
comp=Z,37nm,1.0s
KKAR Karatay Array 54.61 301 eP P 07 25 39.3 +0.4
KKAR Karatay Array 54.61 301 eP P 07 25 39.2 +0.4
UGM Wanagama 54.65 222 P P 07 25 38.8 -0.7
comp=Z,191nm,1.2s

UGM	**Wanagama**	54.65	222	*e*P		P	07 25 38.6	-0.9
	comp=Z,227nm,1.2s							
MLOA	**Mauna Loa Obse**	55.33	91	*e*P		P	07 25 46.0	+1.1
LHSI	**Lahat**	55.41	232	P		P	07 25 45.8	+0.9
	comp=Z,134nm,1.0s							
GSI	**Gunungsitoli**	55.54	241	P		P	07 25 46.8	+0.9
	comp=Z,122nm,1.2s							
GSI	**Gunungsitoli**	55.54	241	*e*P		P	07 25 46.4	+0.5
	comp=Z,129nm,1.1s							
MASI	**Maura Aman, Be**	55.69	233	P		P	07 25 47.6	+0.6
	comp=Z,138nm,0.9s							
LWLI	**Liwa**	56.01	230	P		P	07 25 48.4	-0.9
	comp=Z,96nm,0.7s							
CNJI	**Cibinong**	56.02	226	P		P	07 25 46.7	-2.6
SVE	**Sverdlovsk**	56.19	319⇑	*e*P		P	07 25 50.3	+0.3
SVE				pmax	pmax			
	comp=Z,119nm,1.0s							
CGJI	**Cibinong**	56.29	227	P		P	07 25 48.2	-3.0
CTAO	**Charters Tower**	57.11	177	*e*P		P	07 25 56.2	-0.7
CTAO				pmax	pmax			
	comp=Z,65nm,1.0s							
CTAO	**Charters Tower**	57.11	177	*e*P		P	07 25 56.2	-0.7
	comp=Z,65nm,1.0s							
DLBC	**Dease Lake**	57.28	39	*e*P		P	07 25 59.5	+1.6
	comp=Z,41nm,1.2s							
KNTN	**Kanton**	57.39	124	*e*P		P	07 25 59.9	+0.9
	comp=Z,95nm,1.1s							
ARU	**Arti**	57.41	319*c*	*i*P		P	07 25 58.6	-0.1
ARU							07 26 48.4	
ARU							07 28 04.1	
ARU				PPP	PPP		07 29 21.6	
ARU				S	**S**		07 33 55.3	+2.1
ARU				SS	**SS**		07 37 44.5	+2.1
ARU				pmax	pmax			
	comp=Z,116nm,1.2s							
ARU				MLR	MLR			
	comp=Z,2μm,18.0s							
ARU	**Arti**	57.41	319	*e*P		P	07 25 58.9	+0.2
	comp=Z,78nm,0.9s							
WRAB	**Tennant Creek**	57.59	190	*e*P		P	07 25 59.2	-1.1
WRAB				pmax	pmax			
	comp=Z,57nm,0.7s							
WRAB	**Tennant Creek**	57.59	190	*e*P		P	07 25 59.2	-1.1
	comp=Z,57nm,0.7s							
WB2	**Warramunga Arr**	57.60	190	*e*P		P	07 25 59.4	-0.9
	comp=Z,66nm,0.7s							
WRA	**Warramunga Arr**	57.60	190	P		P	07 25 59.3	-1.1
	comp=Z,52nm,0.6s,baz=12,slow=7.4,SNR=200							
WRA				PcP		PcP	07 26 53.5	+0.1
	comp=Z,24nm,0.8s,baz=2.4,slow=4.2,SNR=10							
WRA				LR	LR		07 49 51.6	
	comp=Z,76nm,21.5s,baz=25,slow=35							
FITZ	**Fitzroy Crossi**	57.67	200	*e*P		P	07 26 01.0	+0.2
	comp=Z,84nm,1.5s							
KBL	**Kabul**	59.06	292	*e*P		P	07 26 10.5	-0.4
KBL				pmax	pmax			
	comp=Z,32nm,0.9s							
KBL	**Kabul**	59.06	292	*e*P		P	07 26 10.5	-0.4
	comp=Z,32nm,0.9s							
ABKAR	**Akbulak array**	59.20	311	*e*P		P	07 26 11.2	-0.1
AKTO	**Aktyubinsk**	59.89	313	P		P	07 26 15.7	-0.4
	comp=Z,28nm,0.8s,baz=74,slow=6.8,SNR=49							
HYB	**Hyderabad**	60.07	270⇓	*i*P		P	07 26 18.0	+0.2
	comp=Z,90nm,1.0s							
HYB				*es*P		sP	07 26 31.5	+0.4
AS01	**Alice Springs**	61.32	190	*e*P		P	07 26 25.4	-0.5
AS31	**Alice Springs**	61.32	190	*e*P		P	07 26 25.4	-0.7
	comp=Z,9.6nm,0.7s							
ASAR	**Alice Springs**	61.32	190	P		P	07 26 25.4	-0.7
	comp=Z,27nm,0.7s,baz=13,slow=7.2,SNR=184							
ASAR				PcP		PcP	07 27 08.6	+0.4
	comp=Z,10nm,0.8s,baz=10,slow=5.5,SNR=5.0							
ASAR				LR	LR		07 51 14.5	
	comp=Z,96nm,22.0s,baz=353,slow=34							
ASAR				PKPPKP	P'P'df		07 55 43.1	+9.4
	comp=Z,0.5nm,0.7s,baz=178,slow=2.2,SNR=4.1							
ASAR				PKP2bc			07 55 49.5	
	comp=Z,4.3nm,1.0s,baz=178,slow=3.0,SNR=12							
ASAR				PKP2ab			07 55 56.8	
	comp=Z,2.4nm,1.1s,baz=194,slow=3.0,SNR=4.0							
HSPB	**Hornsund (broa**	61.59	348	*e*P		P	07 26 27.5	+0.3
RES	**Resolute Bay**	61.89	15	*e*P		P	07 26 29.1	-0.1
RES	**Resolute Bay**	61.89	15	*e*P		P	07 26 29.1	-0.1
YKW3	**Yellowknife Ar**	62.62	31	*e*P		P	07 26 33.9	-0.4
	comp=Z,30nm,1.2s							
YKA	**Yellowknife Ar**	62.65	31	P		P	07 26 34.1	-0.4
	comp=Z,10nm,0.9s,baz=301,slow=6.7,SNR=96							
YKA				PcP		PcP	07 27 13.0	-0.1
	comp=Z,6.7nm,0.9s,baz=304,slow=5.2,SNR=4.6							
YKA				PP		PP	07 28 50.0	-2.0
	comp=Z,1.5nm,1.0s,baz=303,slow=8.0,SNR=2.7							
YKA				PKPPKP	P'P'df		07 55 28.3	-16
	comp=Z,0.5nm,0.9s,baz=124,slow=2.0,SNR=5.7							
YKA				PKP2bc			07 55 45.8	
	comp=Z,0.9nm,1.0s,baz=128,slow=3.0,SNR=4.8							
YKA	**Yellowknife Ar**	62.65	31	P		P	07 26 34.1	-0.4
YKA							07 27 13.0	
YKA							07 28 50.0	
YKA				pmax	pmax			
	comp=Z,10.0nm,0.9s							
YKA				pmax	pmax			
	comp=Z,7.0nm,0.9s							
YKB5	**Yellowknife Ar**	62.65	31	*e*P		P	07 26 33.2	-1.3
DZM	**Mont Dzumac**	62.79	156	P		P	07 26 37.0	+1.1
	comp=Z,23nm,1.1s,baz=89,slow=20,SNR=6.9							
APA	**Apatity**	63.22	336⇓	*i*P		P	07 26 38.0	-0.2
APA				MLR	MLR			
	comp=Z,1μm,16.0s							
TMCR	**Tamitsa**	63.42	332	*e*P		P	07 26 39.6	+0.1
TMCR				pmax	pmax			
	comp=Z,84nm,1.0s							
MSVF	**Nonsavu**	63.55	143	*e*P		P	07 26 42.1	+1.0
MSVF				pmax	pmax			
	comp=Z,47nm,1.5s							
MSVF	**Nonsavu**	63.55	143	*e*P		P	07 26 42.1	+1.0
	comp=Z,47nm,1.5s							
ARA0	**ARCESS Array S**	64.42	340	*e*P		P	07 26 46.3	+0.3
ARCES	**ARCESS Array B**	64.42	340	P		P	07 26 46.3	+0.2
	comp=Z,10nm,0.9s,baz=44,slow=7.1,SNR=6.7							
ARCES				LR	LR		08 00 47.7	
	comp=Z,570nm,18.2s,baz=51,slow=42							
KLMR	**Klimovskoe**	64.54	328	*e*P		P	07 26 46.5	-0.5
KLMR				*e**SP		sP	07 26 59.8	-0.6
KLMR				*e*			07 27 19.4	
KLMR				pmax	pmax			
	comp=Z,32nm,0.9s							
NLWA	**Neilton Lookou**	65.17	48	*e*P		P	07 26 52.9	+1.5
	comp=Z,108nm,1.3s							
A04D	**Lummi Island**	65.21	47	P		P	07 26 51.9	+0.3
	baz=299							
GEYT	**Alibeck**	65.34	300	P		P	07 26 52.9	+0.2
	comp=Z,28nm,1.0s,baz=29,slow=3.4,SNR=34							
ON2	**Olympics--Nort**	65.47	49	P		P	07 26 55.1	+1.9
DAG	**Danmarks Havn**	65.68	356⇓	*i*P		P	07 26 53.5	-0.7
	comp=Z,20nm,0.9s							
DAG	**Danmarks Havn**	65.68	356⇓	*i*P		P	07 26 53.5	-0.7
DAG				pmax	pmax			
	comp=Z,17nm,0.9s							
E03A	**Lebam**	65.76	49	*e*P		P	07 26 56.8	+1.6
	comp=Z,48nm,1.1s							
B05A	**Bryant**	65.79	47	P		P	07 26 56.0	+0.7
	baz=299							
B06A	**Marblemount**	66.02	46	*e*P		P	07 26 57.5	+0.7
	comp=Z,71nm,1.7s							
KMOR	**Kings Mountain**	66.25	50	P		P	07 26 59.8	+1.4
F04D	**Rainier, OR**	66.32	49	P		P	07 26 59.9	+1.2
	baz=300							
D05A	**Enumclaw**	66.38	48	*e*P		P	07 27 00.7	+1.5
	comp=Z,123nm,1.7s							
G03D	**McMinnville, O**	66.60	50	P		P	07 27 01.6	+1.0
	baz=300							
C06D	**Leavenworth**	66.66	47	P		P	07 27 01.4	+0.5
	baz=300							
TDL	**Tradedollar La**	66.67	49	P		P	07 27 02.2	+1.0
LON	**Longmire**	66.71	48	*e*P		P	07 27 01.8	+0.5
LON				pmax	pmax			
	comp=Z,13nm,1.3s							
LON	**Longmire**	66.71	48	*e*P		P	07 27 01.8	+0.5
	comp=Z,13nm,1.3s							
VALT	**Mount Saint He**	66.75	49	P		P	07 27 03.1	+1.3
F04A	**Amboy**	66.75	49	*e*P		P	07 27 02.5	+1.0
	comp=Z,60nm,1.2s							
COR	**Corvallis**	66.88	51	*e*P		P	07 27 04.4	+2.0
COR				pmax	pmax			
	comp=Z,82nm,1.1s							
COR	**Corvallis**	66.88	51	*e*P		P	07 27 04.4	+2.0
	comp=Z,82nm,1.1s							
NLW	**Nelson Butte**	66.90	46	P		P	07 27 03.5	+0.8
I03D	**Drain, OR**	67.30	52	P		P	07 27 05.9	+0.8
	baz=300,SNR=11							
B08A	**Colville Reser**	67.34	46	*e*P		P	07 27 05.6	+0.3
	comp=Z,15nm,1.1s							
H04A	**Detroit Lake**	67.52	50	*e*P		P	07 27 07.2	+0.7
	comp=Z,67nm,1.3s							
KULLO	**Kullorsuaq**	67.55	6⇓	*i*P		P	07 27 05.6	-0.5
	comp=Z,45nm,1.0s							
KULLO	**Kullorsuaq**	67.55	6⇓	*i*P		P	07 27 05.6	-0.5
KULLO				pmax	pmax			
	comp=Z,45nm,1.0s							
G05D	**Wamic, OR**	67.77	49	P		P	07 27 08.9	+0.8
	baz=301							
I04A	**Tendick Farm,**	67.84	51	P		P	07 27 09.2	+0.7
	baz=301,SNR=11							
L02D	**Cave Junction,**	67.92	53	P		P	07 27 09.9	+0.9
	baz=301							
E07A	**Sunnyside**	67.97	48	*e*P		P	07 27 10.5	+1.3
	comp=Z,70nm,1.6s							
HUMO	**Hull Mountain**	68.10	53	*e*P		P	07 27 11.5	+1.3
	comp=Z,32nm,1.4s							
MOS	**Moscow**	68.15	324	*e*P		P	07 27 09.0	-1.2
MOS				*e*			07 27 23.0	
MOS				*e*			07 27 34.4	
MOS				*e*			07 29 40.1	
MOS				pmax	pmax			
	comp=Z,96nm,1.3s							
MOS				pmax	pmax			
	comp=Z,200nm,2.2s							
MOS				MLR	MLR			
	comp=Z,800nm,18.0s							
G06A	**Carlson Farm,**	68.19	49	*e*P		P	07 27 11.8	+1.1
	comp=Z,73nm,1.6s							
KTRM	**Thompson Ridge**	68.19	53	P		P	07 27 12.6	+1.6
I05D	**Terrebonne, OR**	68.22	50	P		P	07 27 11.4	+0.4
	baz=301,SNR=8.6							
C09A	**Chrisman Ranch**	68.24	46	*e*P		P	07 27 11.2	+0.3
	comp=Z,14nm,0.8s							
HAWA	**Hanford**	68.24	48	*e*P		P	07 27 11.5	+0.5
	comp=Z,45nm,1.6s							
D08A	**Wollman Farm,**	68.25	47	*e*P		P	07 27 11.3	+0.3
	comp=Z,15nm,0.9s							
VTHM	**Trough**	68.26	49	P		P	07 27 11.8	+0.6
JCC	**Jacoby Creek,**	68.33	55	*e*P		P	07 27 13.8	+2.2
	comp=Z,230nm,1.5s							
KHMM	**Horse Mountain**	68.50	55	*e*P		P	07 27 14.9	+2.1
	comp=Z,41nm,0.8s							
VRH	**Novokhopyorsk**	68.64	319	*e*P		P	07 27 12.8	-0.5
VRH				*e**PP		sP	07 27 27.1	+0.3
VRH				pmax	pmax			
	comp=Z,30nm,0.7s							
VRH				MLR	MLR			
	comp=Z,2μm,17.0s							
NEW	**Newport**	68.64	45	P		P	07 27 13.6	+0.1
	baz=302							
NEW	**Newport**	68.64	45	*e*P		P	07 27 13.7	+0.2
NEW				pmax	pmax			
	comp=Z,20nm,1.1s							
NEW	**Newport**	68.64	45	*e*P		P	07 27 13.7	+0.2
	comp=Z,20nm,1.1s							
YBH	**Yreka Blue Hor**	68.71	53	*e*P		P	07 27 15.3	+1.2
YBH				pmax	pmax			
	comp=Z,31nm,1.0s							
YBH	**Yreka Blue Hor**	68.71	53	*e*P		P	07 27 15.3	+1.2
	comp=Z,31nm,1.0s							
M02C	**Callahan**	68.80	54	P		P	07 27 15.9	+1.3
	baz=301,SNR=8.2							
STKA	**Stephens Creek**	68.83	182	P		P	07 27 14.1	-0.5
	comp=Z,7.7nm,0.8s,baz=343,slow=5.7,SNR=9.4							
STKA				LR	LR		07 57 54.9	
	comp=Z,125nm,20.4s,baz=12,slow=36							
STKA	**Stephens Creek**	68.83	182	*e*P		P	07 27 14.2	-0.3
	comp=Z,13nm,1.8s							
J05D	**Fort Rock, OR**	68.83	51	P		P	07 27 16.1	+1.2
	baz=302,SNR=21							
KMRM	**Mail Ridge**	68.85	55	*e*P		P	07 27 17.0	+2.0
	comp=Z,41nm,1.0s							
K04D	**Chiloquin, OR**	68.85	52	P		P	07 27 15.7	+0.7
	baz=302							
E09A	**Wood Farm, Sta**	68.99	47	*e*P		P	07 27 15.6	0.0
	comp=Z,94nm,1.8s							
OBN	**Obninsk**	69.00	324*d*	*i*P		P	07 27 15.3	-0.2
OBN				*i*			07 27 28.0	
OBN				pmax	pmax			
	comp=Z,47nm,1.1s							
OBN				MLR	MLR			
	comp=Z,542nm,17.0s							
OBN	**Obninsk**	69.00	324	*e*P		P	07 27 15.8	+0.3
	comp=Z,104nm,1.2s							
N02D	**Trinity Center**	69.11	54	P		P	07 27 17.7	+1.2
	baz=302,SNR=10							
G08A	**Pilot Rock**	69.16	49	*e*P		P	07 27 17.8	+0.9
	comp=Z,18nm,1.4s							
M04C	**Macdoel**	69.24	53	P		P	07 27 18.3	+0.8
	baz=302,SNR=13							
LPSR	**Galich'ya Gora**	69.30	321	*e*P		P	07 27 17.3	-0.1
LPSR				*e**PP		sP	07 27 32.0	+1.2
LPSR				pmax	pmax			
	comp=Z,40nm,1.0s							
LPSR				MLR	MLR			
	comp=Z,830nm,17.0s							
K05A	**Summer Lake**	69.34	52	*e*P		P	07 27 19.4	+1.2
	comp=Z,95nm,1.1s							
FIA1	**FINESS Array S**	69.45	333	*e*P		P	07 27 18.3	+0.1
	comp=Z,89nm,0.9s							
FINES	**FINESS Array B**	69.45	333	P		P	07 27 18.2	0.0
	comp=Z,56nm,0.8s,baz=54,slow=7.5,SNR=128							
FINES				LR	LR		08 01 15.9	
	comp=Z,1μm,18.0s,baz=34,slow=39							
F10A	**Beach Ranch, E**	69.82	47	*e*P		P	07 27 21.5	+0.6
	comp=Z,13nm,1.2s							
VSR	**Storozhevoye**	69.96	320	*e*P		P	07 27 21.1	-0.4
VSR				*e**PP		sP	07 27 36.2	+1.2
VSR				pmax	pmax			
	comp=Z,30nm,0.8s							
VSR				MLR	MLR			
	comp=Z,1μm,15.0s							
WALA	**Waterton Lakes**	69.99	43	*e*P		P	07 27 22.0	+0.1
	comp=Z,14nm,0.9s							
O03D	**Paynes Creek**	70.05	54	P		P	07 27 22.7	+0.3
	baz=302							
BBOO	**Buckleboo**	70.10	187	*e*P		P	07 27 22.4	0.0
	comp=Z,30nm,1.0s							
MOD	**Modoc Plateau**	70.15	52	*e*P		P	07 27 23.7	+0.6
	comp=Z,30nm,1.1s							
BSMT	**Basoo Peak**	70.18	45	*e*P		P	07 27 24.1	+0.9
BLMT	**Blacktail Moun**	70.33	44	*e*P		P	07 27 25.1	+0.9
BMO	**Blue Mountains**	70.39	48	*e*P		P	07 27 24.7	+0.3
BMO				pmax	pmax			
	comp=Z,34nm,1.4s							
BMO	**Blue Mountains**	70.39	48	*e*P		P	07 27 24.7	+0.3
	comp=Z,34nm,1.4s							
SUMG	**Summit**	70.43	1⇓	*i*P		P	07 27 25.1	+0.5
	comp=Z,48nm,0.8s							
SUMG	**Summit**	70.43	1⇓	*i*P		P	07 27 25.1	+0.5
SUMG				pmax	pmax			
	comp=Z,48nm,0.8s							
SUMG	**Summit**	70.43	1	*e*P		P	07 27 25.0	+0.5
	comp=Z,47nm,0.8s							
JTMT	**Jette**	70.53	44	*e*P		P	07 27 25.8	+0.5
YBMT	**Yellow Bay**	70.61	44	*e*P		P	07 27 26.3	+0.5
ORV	**Oroville**	70.64	55	*e*P		P	07 27 26.2	+0.3
ORV				pmax	pmax			
	comp=Z,31nm,1.1s							
ORV	**Oroville**	70.64	55	*e*P		P	07 27 26.2	+0.3
	comp=Z,31nm,1.1s							
SWMT	**Swartz Lake**	70.82	45	*e*P		P	07 27 27.2	+0.2
WVOR	**Wild Horse Val**	70.90	51	*e*P		P	07 27 28.7	+1.1
WVOR				pmax	pmax			
	comp=Z,40nm,1.4s							
WVOR	**Wild Horse Val**	70.90	51	*e*P		P	07 27 28.6	+1.1
	comp=Z,40nm,1.4s							
VSU	**Vasula**	71.18	330*d*	*i*P		P	07 27 28.9	+0.1
VSU				pmax	pmax			
	comp=Z,225nm,1.0s							
MSO	**Missoula**	71.23	45	P		P	07 27 29.5	-0.1
	baz=305							
MSO	**Missoula**	71.23	45	*e*P		P	07 27 29.3	-0.2
	comp=Z,17nm,1.1s							
GOF	**Gofitskoye**	71.31	313⇑	*e*P		P	07 27 29.3	-0.6
GOF				pmax	pmax			
	comp=Z,82nm,0.9s							
AFDM	**Forest Hills D**	71.32	55	*e*P		P	07 27 30.8	+0.7
	comp=Z,19nm,1.2s							
CHMT	**Chamberlain Mo**	71.57	45	*e*P		P	07 27 31.7	0.0
GUDG	**Gudauri**	71.90	310	P		P	07 27 35.2	+1.4
MFID	**Camas Ranch**	72.07	49	*e*P		P	07 27 35.0	+0.3
	comp=Z,52nm,1.5s							
ZEI	**Tsey**	72.07	310	*e*P		P	07 27 31.6	-3.2
ZEI				pmax	pmax			
	comp=Z,45nm,0.8s							
KIV	**Kislovodsk**	72.14	312	*i*P		P	07 27 35.7	+0.7
	SNR=17							
KIV	**Kislovodsk**	72.14	312	*e*P		P	07 27 35.4	+0.4
KIV				*e*			07 27 51.3	
KIV				*e*S		S	07 36 55.7	+0.5
KIV				*e*SS		SS	07 41 34.3	+2.2
KIV				pmax	pmax			
	comp=Z,142nm,1.1s							
KIV				pmax	pmax			
	comp=Z,37nm,2.9s							
KIV	**Kislovodsk**	72.14	312	*e*P		P	07 27 36.0	+1.0
	comp=Z,129nm,1.0s							
KBZ	**Khabaz**	72.15	312	P		P	07 27 35.6	+0.8
	comp=Z,54nm,0.9s,baz=46,slow=3.0,SNR=85							
KBZ				LR	LR		08 02 23.3	
	comp=Z,327nm,18.2s,baz=30,slow=38							
TBLG	**Delisi**	72.15	309	P		P	07 27 35.6	+0.6
TBLG	**Delisi**	72.15	309	P		P	07 27 35.6	+0.6
CMB	**Columbia Colle**	72.20	56	*e*P		P	07 27 36.0	+0.6
CMB				pmax	pmax			
	comp=Z,54nm,1.4s							
CMB	**Columbia Colle**	72.20	56	*e*P		P	07 27 36.0	+0.6
	comp=Z,54nm,1.4s							
ONI	**Oni**	72.46	310	P		P	07 27 38.0	+1.1
ONI	**Oni**	72.46	310	P		P	07 27 38.0	+1.1
HRY	**Holter Researc**	72.49	44	*e*P		P	07 27 37.5	+0.5
WAKR	**Walker**	72.56	55	*e*P		P	07 27 38.5	+0.8
LRM	**Limekiln Ridge**	72.66	45	*e*P		P	07 27 38.5	+0.3
WBK	**Wadi Bani Khal**	72.68	285	P		P	07 27 41.0	+2.5
	SNR=6.3							
WBK	**Wadi Bani Khal**	72.68	285	P		P	07 27 41.0	+2.5
	SNR=6.3							
BIDO	**Bidbid**	72.83	287	P		P	07 27 41.0	+1.7
	SNR=5.9							
BIDO	**Bidbid**	72.83	287	P		P	07 27 41.0	+1.7
	SNR=5.9							
HLID	**Hailey**	72.83	48	P		P	07 27 39.7	+0.5
	baz=305,SNR=18							
HLID	**Hailey**	72.83	48	*e*P		P	07 27 39.7	+0.5
	comp=Z,9.9nm,0.9s							
DLMT	**Dillon**	72.84	46	*e*P		P	07 27 39.3	+0.1
	comp=Z,26nm,0.8s							
EGMT	**Eagleton**	72.84	42	P		P	07 27 39.0	-0.2
	baz=307,SNR=12							
EGMT	**Eagleton**	72.84	42	*e*P		P	07 27 39.0	-0.2
	comp=Z,27nm,1.2s							
BANOM	**Banah**	72.89	290	*i*P		P	07 27 40.1	+0.4
	SNR=11							
BANOM	**Banah**	72.89	290	P		P	07 27 40.7	+1.0
	SNR=7.8							
BANOM	**Banah**	72.89	290	P		P	07 27 40.7	+1.0
	SNR=7.8							
FCC	**Fort Churchill**	72.94	27	*e*P		P	07 27 38.7	-0.6
FCC				pmax	pmax			
	comp=Z,56nm,1.1s							
FCC	**Fort Churchill**	72.94	27	*e*P		P	07 27 38.7	-0.6
	comp=Z,56nm,1.1s							
MCMT	**McKenzie Canyo**	73.01	46	*e*P		P	07 27 40.6	+0.2
GNI	**Garni**	73.04	308	*i*P		P	07 27 41.9	+1.4
	SNR=5.8							
GNI	**Garni**	73.04	308*d*	*i*P		P	07 27 41.5	+1.0
GNI				pmax	pmax			
	comp=Z,86nm,1.1s							
GNI	**Garni**	73.04	308	P		P	07 27 42.2	+1.6
	SNR=11							
GNI	**Garni**	73.04	308	P		P	07 27 42.2	+1.6
	SNR=11							
GNI	**Garni**	73.04	308	*e*P		P	07 27 42.3	+1.7
	comp=Z,38nm,1.1s							
AKH	**Akhalkalaki**	73.11	309⇑	*i*P		P	07 27 42.5	+1.6
AKH	**Akhalkalaki**	73.11	309	P		P	07 27 42.1	+1.2
AKH	**Akhalkalaki**	73.11	309	P		P	07 27 42.1	+1.2
CHVG	**Ch'k'valeri**	73.21	311⇑	*i*P		P	07 27 42.4	+1.1
CHVG	**Ch'k'valeri**	73.21	311	P		P	07 27 41.2	-0.1
BOZ	**Bozeman (W)**	73.23	45	P		P	07 27 42.0	+0.5
	baz=306							
BOZ	**Bozeman (W)**	73.23	45	*e*P		P	07 27 42.0	+0.5
BOZ				pmax	pmax			
	comp=Z,27nm,0.9s							
BOZ	**Bozeman (W)**	73.23	45	*e*P		P	07 27 42.0	+0.5
	comp=Z,27nm,0.9s							
ILULI	**Ilulissat**	73.25	5⇓	*i*P		P	07 27 40.9	-0.1
	comp=Z,47nm,1.0s							
ILULI	**Ilulissat**	73.25	5⇓	*i*P		P	07 27 40.9	-0.1
ILULI				pmax	pmax			
	comp=Z,47nm,1.0s							
MICGM	**Minsk**	73.32	327	*e*		P	07 27 38.0	-3.7
MICGM				*e*LR	LR		08 02 24.0	
MNK	**Minsk**	73.32	327	*e*P		P	07 27 38.0	-3.7
NV01	**Mina Array Sit**	73.34	54	*e*P		P	07 27 43.0	+0.6
NVAR	**Mina Array Bea**	73.34	54	P		P	07 27 43.0	+0.6
	comp=Z,18nm,0.9s,baz=284,slow=6.4,SNR=80							
NVAR				PP		PP	07 30 23.2	-2.3
	comp=Z,0.9nm,0.9s,baz=288,slow=6.1,SNR=3.3							
NVAR				LR	LR		07 54 29.8	
	comp=Z,86nm,20.4s,baz=271,slow=31							
NV11	**Mina Array Sit**	73.44	54	*e*P		P	07 27 43.5	+0.7
	comp=Z,29nm,1.3s							
MLAC	**Mammoth, Mammo**	73.44	55	P		P	07 27 43.8	+0.7
	baz=304							
UOSS	**Minazif**	73.50	289	*e*P		P	07 27 43.5	+0.3
	comp=Z,1.7nm,0.9s							
NACGM	**Naroch**	73.53	328	*e*		P	07 27 42.0	-0.9
NACGM				*e*LR	LR		08 02 20.0	
HATD	**Hatta, Dubai**	73

LKWY **Lake** 74.57 46 eP P 07 27 51.3 +1.7
LKWY pmax pmax
comp=Z,30nm,1.1s
LKWY **Lake** 74.57 46 eP P 07 27 51.3 +1.7
comp=Z,30nm,1.1s
H17A **Grant Village** 74.58 46 P P 07 27 51.5 +2.0
baz=307,SNR=55
H17A **Grant Village** 74.58 46 eP P 07 27 51.8 +2.2
comp=Z,55nm,0.9s
NC204 **NORSAR Array S** 74.61 338 eP P 07 27 49.3 +0.1
EATA **Eleskirt** 74.62 308 i P P 07 27 51.4 +1.4
NB201 **NORSAR Array S** 74.64 338 eP P 07 27 49.5 +0.2
SBC **Santa Barbara** 74.67 58 P P 07 27 52.2 +2.3
baz=305
IMW **Indian Meadow** 74.67 46 eP P 07 27 51.2 +1.1
comp=Z,35nm,0.9s
NB2 **NORSAR Subarra** 74.67 338 P P 07 27 49.2 -0.3
comp=Z,48nm,1.0s,baz=40,slow=6.2
NB2 **NORSAR Subarra** 74.67 338 P P 07 27 49.2 -0.3
baz=40,slow=6.2
NOA **NORSAR Array B** 74.67 338 P P 07 27 49.5 0.0
comp=Z,23nm,0.8s,baz=39,slow=5.8,SNR=69
NOA LR LR 08 05 02.0
comp=Z,505nm,19.1s,baz=40,slow=39
ANN **Anapa** 74.69 315 eP P 07 27 49.5 -0.3
ANN e 07 28 03.0
ANN eS S 07 37 21.9 -1.8
ANN pmax pmax
comp=Z,64nm,1.3s
FLWY **Flagg Ranch** 74.69 46 eP P 07 27 51.6 +1.4
comp=Z,38nm,1.1s
NBO02 **NORSAR Array S** 74.77 338 eP P 07 27 49.8 -0.3
GRAC **Grapevine Rang** 74.77 55 P P 07 27 51.4 +0.8
baz=305,SNR=8.9
ISA **Isabella, Lake** 74.80 57 P P 07 27 50.2 -0.6
baz=305
ISA **Isabella, Lake** 74.80 57 eP P 07 27 50.9 +0.1
ISA pmax pmax
comp=Z,11nm,0.9s
ISA **Isabella, Lake** 74.80 57 eP P 07 27 50.9 +0.1
comp=Z,11nm,0.9s
NBO00 **NORSAR Array S** 74.80 338 eP P 07 27 50.4 +0.1
NC602 **NORSAR Array S** 74.81 338 eP P 07 27 50.0 -0.3
HVU **Hansel Valley** 74.85 49 eP P 07 27 51.9 +0.8
HVU pmax pmax
comp=Z,16nm,1.0s
HVU **Hansel Valley** 74.85 49 eP P 07 27 51.9 +0.8
comp=Z,16nm,1.0s
MOOW **Moose Ponds** 74.87 46 eP P 07 27 52.1 +0.9
comp=Z,27nm,1.1s
ARVC **Arvin** 74.87 57 P P 07 27 51.1 0.0
baz=305,SNR=7.6
RLMT **Red Lodge** 74.87 45 P P 07 27 51.6 +0.4
baz=308
RLMT **Red Lodge** 74.87 45 eP P 07 27 51.7 +0.4
comp=Z,46nm,1.5s
NAO01 **NORSAR Array S** 74.92 338 eP P 07 27 51.2 +0.3
SCZ2 **Santa Cruz Isl** 74.97 59 P P 07 27 51.5 -0.3
baz=305
LOHW **Long Hollow** 75.03 46 eP P 07 27 52.8 +0.7
comp=Z,11nm,0.9s
DAC **Darwin (Calif)** 75.03 56 eP P 07 27 52.5 +0.2
DAC pmax pmax
comp=Z,24nm,1.3s
DAC **Darwin (Calif)** 75.03 56 eP P 07 27 52.5 +0.2
comp=Z,24nm,1.3s
SNOW **Snow King Moun** 75.04 47 eP P 07 27 53.1 +0.8
comp=Z,22nm,0.9s
REDW **Red Top Meadow** 75.04 47 eP P 07 27 53.0 +0.8
comp=Z,27nm,1.0s
R11A **Troy Canyon, C** 75.13 53 P P 07 27 53.2 +0.4
baz=306,SNR=35
R11A **Troy Canyon, C** 75.13 53 eP P 07 27 53.3 +0.4
comp=Z,63nm,1.6s
BGU **Big Grassy Mou** 75.21 50 eP P 07 27 53.5 +0.4
comp=Z,10nm,1.0s
MPMC **Manual Prospec** 75.23 56 P P 07 27 53.7 +0.3
baz=306,SNR=13
AKASG **Malin Array Be** 75.23 323 P P 07 27 52.8 -0.1
comp=Z,25nm,0.8s,baz=44,slow=6.1,SNR=69
AKASG LR LR 08 04 32.8
comp=Z,765nm,18.1s,baz=65,slow=39
AKBB **Malin Array Si** 75.23 323 eP P 07 27 52.8 -0.1
AKBB pmax pmax
comp=Z,45nm,0.9s
AKBB **Malin Array Si** 75.23 323 eP P 07 27 52.8 -0.1
comp=Z,45nm,0.9s
OSI **Osito Audit: C** 75.24 58 P P 07 27 53.7 +0.5
baz=305
OSI **Osito Audit: C** 75.24 58 eP P 07 27 54.2 +0.9
comp=Z,31nm,0.9s
KIEV **Kiev** 75.24 323 d iP P 07 27 52.4 -0.5
KIEV pmax pmax
comp=Z,44nm,1.0s
KIEV **Kiev** 75.24 323 eP P 07 27 52.7 -0.2
comp=Z,48nm,1.0s
AHID **Auburn Hatcher** 75.26 47 eP P 07 27 53.9 +0.5
comp=Z,14nm,0.8s
AK11 **Malin Array Si** 75.27 323 eP P 07 27 52.9 -0.2
BLG **Laguna Peak, P** 75.30 58 P P 07 27 53.7 +0.1
baz=305
SPUT **South Promonto** 75.33 49 eP P 07 27 55.0 +1.1
comp=Z,13nm,1.1s
FURC **Furnace Creek,** 75.40 55 P P 07 27 54.7 +0.6
baz=306,SNR=19
LRMC **Laurel Mtn Rad** 75.44 56 P P 07 27 54.7 +0.2
baz=306
SFJD **Kangerlussuaq** 75.47 6 ⇓ iP P 07 27 53.8 -0.1
comp=Z,36nm,0.9s
SFJD **Kangerlussuaq** 75.47 6 ⇓ iP P 07 27 53.8 -0.1
SFJD pmax pmax
comp=Z,36nm,0.9s
SFJD **Kangerlussuaq** 75.47 6 eP P 07 27 54.0 +0.1
comp=Z,43nm,1.0s
DGMT **Dagmar** 75.47 40 P P 07 27 54.1 -0.2
baz=310
DGMT **Dagmar** 75.47 40 eP P 07 27 54.2 -0.2
comp=Z,80nm,1.5s
SNCC **San Nicolas Is** 75.48 59 P P 07 27 54.9 +0.3
baz=305
TPNV **Topopah Spring** 75.52 55 P P 07 27 55.6 +0.5
baz=306,SNR=17
TPNV **Topopah Spring** 75.52 55 eP P 07 27 55.4 +0.4
TPNV pmax pmax
comp=Z,31nm,1.2s
TPNV **Topopah Spring** 75.52 55 eP P 07 27 55.4 +0.4
comp=Z,31nm,1.2s
LAO **LASA Array** 75.56 42 P P 07 27 54.9 -0.1
baz=309
LAO **LASA Array** 75.56 42 eP P 07 27 55.9 +1.0
comp=Z,61nm,1.1s
EDW2 **Edwards Air Fo** 75.57 57 P P 07 27 55.8 +0.6
baz=306,SNR=12
SUW **Suwalki** 75.67 328 eP P 07 27 55.4 +0.1
SUW **Suwalki** 75.67 328 eP P 07 27 55.4 +0.1
HWUT **Hardware Ranch** 75.68 48 eP P 07 27 56.5 +0.6
comp=Z,40nm,1.3s
DECC **Green Verdugo** 75.71 58 P P 07 27 56.0 0.0
baz=306
A25A **Svangstu Ranch** 75.72 39 P P 07 27 55.9 +0.1
baz=311
DUG **Dugway, Tooele** 75.78 50 P P 07 27 56.9 +0.6
baz=307
DUG **Dugway, Tooele** 75.78 50 eP P 07 27 57.0 +0.6
DUG pmax pmax
comp=Z,19nm,0.8s
DUG **Dugway, Tooele** 75.78 50 eP P 07 27 57.0 +0.6
comp=Z,19nm,0.8s
PASC **Pasadena Art C** 75.86 58 eP P 07 27 57.4 +0.7
comp=Z,62nm,1.4s
MWC **Mount Wilson** 75.91 58 eP P 07 27 57.9 +0.6
MWC pmax pmax
comp=Z,46nm,1.3s
MWC **Mount Wilson** 75.91 58 eP P 07 27 57.9 +0.6
comp=Z,46nm,1.3s
FMP **Fort Macarthur** 76.05 58 P P 07 27 58.0 +0.2
baz=306
TCUT **Toone Canyon** 76.07 49 eP P 07 27 59.0 +0.8
comp=Z,24nm,0.8s
GSC **Goldstone, Bar** 76.12 56 P P 07 27 58.5 +0.2
baz=306,SNR=10
GSC **Goldstone, Bar** 76.12 56 eP P 07 27 59.0 +0.6
GSC pmax pmax
comp=Z,30nm,1.3s
GSC **Goldstone, Bar** 76.12 56 eP P 07 27 59.0 +0.6
comp=Z,30nm,1.3s
SHOC **Shoshone, Teco** 76.12 55 P P 07 27 58.4 +0.1
baz=306
PSUT **Pine Spring** 76.12 52 eP P 07 27 59.0 +0.5
comp=Z,21nm,1.1s
B25A **Knox Farm, Ray** 76.13 39 P P 07 27 57.8 -0.3
baz=311
CIS **Catalina Islan** 76.14 59 P P 07 27 58.6 +0.1
baz=306
BW06 **Boulder Array** 76.16 47 P P 07 27 58.1 -0.5
baz=308
BW06 **Boulder Array** 76.16 47 eP P 07 27 58.5 -0.2
PD31 **Pinedale Array** 76.16 47 eP P 07 27 58.6 -0.1
PDAR **Pinedale Array** 76.16 47 P P 07 27 58.5 -0.1
comp=Z,8.9nm,0.8s,baz=270,slow=3.0,SNR=74
BFSC **Mount Baldy Ra** 76.17 58 P P 07 27 58.9 +0.1
baz=306,SNR=7.5
KONO **Kongsberg** 76.27 338 eP P 07 27 59.2 +0.6
KONO pmax pmax
comp=Z,26nm,1.0s
KONO **Kongsberg** 76.27 338 eP P 07 27 59.2 +0.6
comp=Z,26nm,1.0s
A26A **Wade Farm, Ken** 76.28 38 P P 07 27 58.9 0.0
baz=312
JLU **Jordanelle** 76.36 49 eP P 07 28 00.4 +0.5
comp=Z,21nm,1.2s
NLU **North Lily Min** 76.37 50 eP P 07 28 00.6 +0.7
comp=Z,13nm,0.9s
C25A **Freed Ranch, W** 76.45 40 P P 07 27 59.9 0.0
baz=311,SNR=5.8
SIM **Simferopol'** 76.45 317 eP P 07 27 59.9 0.0
SIM e 07 28 16.0
SIM eS S 07 37 46.0 +2.8
SIM pmax pmax
comp=Z,26nm,0.7s
SIM MLR MLR
comp=Z,300nm,17.0s
KELT **Kelkit** 76.45 310 i P P 07 28 01.0 +0.7
KLNR **Kaliningrad** 76.46 330 i P P 07 27 59.7 -0.1
KLNR pmax pmax
comp=Z,112nm,1.0s
SHPR **Sheep Range** 76.49 54 eP P 07 28 01.2 +0.6
comp=Z,53nm,1.6s
B26A **Jensen Ranch,** 76.52 39 P P 07 28 00.6 +0.2
baz=312
TUQ **Turquoise Moun** 76.62 56 P P 07 28 01.4 +0.1
baz=306,SNR=17
A27A **Ledoux Ranch,** 76.63 38 P P 07 28 01.0 +0.1
baz=312
BBRC **Big Bear Solar** 76.65 57 P P 07 28 01.4 -0.2
baz=306
HEC **Hector,Ludlow** 76.71 56 P P 07 28 01.7 0.0
baz=306
D25A **Fairfield** 76.78 40 P P 07 28 02.0 +0.1
baz=311,SNR=7.4
MURC **Murrieta** 76.86 58 P P 07 28 02.3 -0.2
baz=306,SNR=5.2
C26A **Wahner Farm, P** 76.96 39 P P 07 28 02.8 0.0
baz=312
B27A **Peters Farms,** 76.99 38 P P 07 28 02.5 -0.5
baz=312
A28A **Rude Farm, Bot** 77.14 37 P P 07 28 03.8 0.0
baz=313,SNR=6.2
E25A **Miller Ranch,** 77.17 41 P P 07 28 04.0 0.0
baz=311,SNR=31
GMRC **Granite Mounta** 77.18 56 P P 07 28 04.8 +0.3
baz=307,SNR=11
MSU **Marysvale** 77.19 51 eP P 07 28 05.4 +0.9
MSU **Marysvale** 77.19 51 eP P 07 28 05.4 +0.9
TMUT **Trail Mountain** 77.31 50 eP P 07 28 05.8 +0.5
comp=Z,34nm,1.6s
D26A **Manning** 77.32 40 P P 07 28 04.9 +0.1
baz=312
C27A **Sayler Ranch,** 77.33 39 P P 07 28 04.8 -0.2
baz=312
109C **Camp Elliot, M** 77.33 58 P P 07 28 05.6 +0.4
baz=306
PFO **Pinyon Flats O** 77.34 57 P P 07 28 05.6 +0.2
baz=306
PFO **Pinyon Flats O** 77.34 57 eP P 07 28 05.5 +0.2
PFO pmax pmax
comp=Z,24nm,1.1s
PFO **Pinyon Flats O** 77.34 57 eP P 07 28 05.5 +0.1
comp=Z,24nm,1.1s
TPFO **Pinon Flats** 77.35 57 P P 07 28 05.7 +0.2
baz=306,SNR=6.5
LDFC **Landfair** 77.37 56 eP P 07 28 06.0 +0.5
comp=Z,51nm,1.3s
B28A **Dugan Ranch, T** 77.40 38 P P 07 28 05.3 0.0
baz=313
LCMT **Little Creek M** 77.42 53 eP P 07 28 06.6 +0.8
comp=Z,79nm,1.7s
BELC **Belle Mtn. Jos** 77.42 57 P P 07 28 05.7 -0.2
baz=307
KEMA **Kemaliye** 77.45 310 i P P 07 28 07.0 +1.2
MTPU **Mount Pierson** 77.47 52 eP P 07 28 07.3 +1.1
comp=Z,17nm,0.9s
P17A **Butcher Ranch,** 77.48 50 eP P 07 28 06.8 +0.7
comp=Z,41nm,1.0s
F25A **Bowman** 77.52 41 P P 07 28 06.1 +0.1
baz=311,SNR=7.2
Q16A **Castle Valley** 77.56 50 eP P 07 28 07.4 +0.8
comp=Z,86nm,1.7s
A29A **Manning Farm,** 77.63 37 P P 07 28 06.3 -0.2
baz=313,SNR=21
BORG **Borgarnes** 77.63 354 P P 07 28 08.1 +2.0
comp=Z,31nm,0.9s,baz=29,slow=3.3,SNR=4.1
BORG **Borgarnes** 77.63 354 i P P 07 28 09.5 +3.3
E26A **Carlson Angus** 77.67 40 P P 07 28 06.6 -0.3
baz=312,SNR=6.0
KNB **Kanab** 77.69 53 eP P 07 28 08.3 +1.0
KNB pmax pmax
comp=Z,99nm,1.6s
KNB **Kanab** 77.69 53 eP P 07 28 08.3 +1.0
comp=Z,99nm,1.6s
P18A **Preston Nutter** 77.69 49 eP P 07 28 08.0 +0.6
comp=Z,14nm,0.9s
D27A **Center** 77.73 39 P P 07 28 07.1 0.0
baz=312
PKCU **Pink Cliffs** 77.75 52 eP P 07 28 09.4 +1.5
comp=Z,55nm,1.7s
BAR **Barrett** 77.75 58 eP P 07 28 08.1 +0.5
comp=Z,24nm,1.0s
MONP2 **Monument Peak** 77.80 58 P P 07 28 08.0 0.0
baz=307,SNR=5.1
SRU **San Rafael Swe** 77.84 50 eP P 07 28 08.5 +0.4
SRU pmax pmax
comp=Z,40nm,0.9s
SRU **San Rafael Swe** 77.84 50 eP P 07 28 08.5 +0.4
comp=Z,40nm,0.9s
B29A **Wagenman Farm,** 77.88 37 P P 07 28 07.7 -0.2
baz=313,SNR=10
C28A **Hausauer Farms** 77.89 38 P P 07 28 08.0 0.0
baz=313
IRM **Iron Mountain** 77.90 56 P P 07 28 08.4 +0.1
baz=307
KIS **Kishinev** 77.90 321 eP P 07 28 16.0 +8.0
KIS **Kishinev** 77.90 321 ePP PP 07 31 10.0 +6.5
KIS LRM MLR 08 05 18.0
comp=Z,900nm,22.0s
KIS **Kishinev** 77.90 321 eP P 07 28 16.0 +8.0
KIS e 07 28 24.0
KIS e 07 31 10.0
KIS MLR MLR
comp=Z,1μm,20.0s
KIS MLR MLR
comp=Z,900nm,22.0s
MMU **Miners Mountai** 77.92 51 eP P 07 28 09.6 +0.8
K22A **Casper** 77.97 45 P P 07 28 08.6 -0.1
baz=310,SNR=14
K22A **Casper** 77.97 45 eP P 07 28 08.6 -0.1
comp=Z,41nm,1.1s
F26A **Lodgepole** 77.98 41 P P 07 28 08.4 -0.2
baz=312,SNR=15
BC3 **Big Chuckawall** 77.99 57 P P 07 28 09.1 +0.1
baz=307,SNR=7.2
G25A **Newell** 78.02 42 P P 07 28 08.3 -0.6
baz=311,SNR=6.7
CUKAN **kangal_SIVAS** 78.05 310 i P P 07 28 10.5 +1.3
A30A **Hoffart Farm,** 78.06 37 P P 07 28 08.9 0.0
baz=314,SNR=16
BSD **Bornholm Skovb** 78.10 333 ⇓ iP P 07 28 09.0 +0.1
comp=Z,107nm,1.0s
BSD **Bornholm Skovb** 78.10 333 ⇓ iP P 07 28 09.0 +0.1
BSD pmax pmax
comp=Z,110nm,1.0s
D28A **Regan** 78.15 39 P P 07 28 09.5 0.0
baz=313
IKP **In-Ko-Pah, Jac** 78.15 58 P P 07 28 09.9 0.0
baz=307
E27A **Carson** 78.16 40 P P 07 28 09.6 0.0
baz=312,SNR=6.1
W13A **Hualapai Mount** 78.16 55 eP P 07 28 10.3 +0.3
comp=Z,21nm,1.4s
MDND **Maddock** 78.18 38 P P 07 28 09.5 -0.1
baz=313
MDND **Maddock** 78.18 38 eP P 07 28 10.1 +0.5
comp=Z,102nm,1.3s
SWSC **Sam W. Stewart** 78.19 58 P P 07 28 09.8 -0.1
baz=307
BEL **Belsk** 78.25 328 eP P 07 28 10.9 +1.1
BEL **Belsk** 78.25 328 eP P 07 28 10.9 +1.1
ULM **Lac du Bonnet** 78.26 34 P P 07 28 09.7 -0.3
comp=Z,11nm,1.0s,baz=311,slow=7.6,SNR=10
ULM PP PP 07 31 06.2 -0.2
comp=Z,1.6nm,0.5s,baz=181,slow=15,SNR=2.2
ULM **Lac du Bonnet** 78.26 34 eP P 07 28 09.2 -0.8
comp=Z,33nm,1.3s
ULM PP PP 07 31 06.2 -0.2
LVV **L'vov** 78.27 325 eP P 07 28 10.2 +0.2
LVV MLR MLR
comp=N,300nm,14.0s
LVV MLR MLR
comp=E,200nm,14.0s
LVV MLR MLR
comp=Z,300nm,14.0s
H25A **Fruitdale** 78.30 42 P P 07 28 10.2 -0.2
baz=311
B30A **Myrvik Farm, E** 78.39 37 P P 07 28 10.6 -0.1
baz=314,SNR=14
G26A **Maurine** 78.39 41 P P 07 28 10.7 -0.2
baz=312,SNR=7.0
RSSD **Black Hills** 78.39 43 P P 07 28 10.6 -0.5
baz=311
RSSD **Black Hills** 78.39 43 eP P 07 28 10.8 -0.3
RSSD pmax pmax
comp=Z,17nm,0.8s
RSSD **Black Hills** 78.39 43 eP P 07 28 10.8 -0.3
comp=Z,17nm,0.8s
PDMCI **Parker Dam,Lak** 78.47 56 P P 07 28 11.7 +0.3
baz=307
E28A **Huff** 78.51 39 P P 07 28 11.2 -0.3
baz=313
COP **Copenhagen** 78.53 334 ⇓ iP P 07 28 11.9 +0.6
comp=Z,42nm,0.7s
COP **Copenhagen** 78.53 334 ⇓ iP P 07 28 11.9 +0.6
COP pmax pmax
comp=Z,42nm,0.7s
Y12C **Blythe** 78.56 56 P P 07 28 12.3 +0.4
baz=307,SNR=5.8
Y12C **Blythe** 78.56 56 eP P 07 28 12.7 +0.8
comp=Z,27nm,1.0s
O20A **White River Ci** 78.57 48 P P 07 28 12.1 -0.1
baz=309,SNR=16
O20A **White River Ci** 78.57 48 eP P 07 28 12.1 -0.1
comp=Z,30nm,1.1s
A31A **Linda, St. Vin** 78.59 36 P P 07 28 11.4 -0.4
baz=315
I25A **Rochford** 78.62 43 P P 07 28 11.8 -0.6
baz=311,SNR=14
G27A **Dupree** 78.68 41 P P 07 28 12.2 -0.3
baz=312
B31A **Greenbush Farm** 78.73 37 P P 07 28 12.5 -0.1
baz=314,SNR=7.7
H26A **Fairpoint** 78.74 42 P P 07 28 12.4 -0.4
baz=312,SNR=13
GLA **Glamis** 78.78 57 P P 07 28 13.0 -0.2
baz=307
GLA **Glamis** 78.78 57 eP P 07 28 14.1 +0.9
GLA pmax pmax
comp=Z,43nm,1.3s
GLA **Glamis** 78.78 57 eP P 07 28 14.1 +0.9
comp=Z,42nm,1.3s
RAR **Rarotonga** 78.81 128 LR LR 07 57 33.8
comp=Z,156nm,19.3s,baz=284,slow=32
C30A **Mose, Pekin** 78.83 38 P P 07 28 12.7 -0.5
baz=314,SNR=8.6
A32A **Rocking H Ranc** 78.92 36 P P 07 28 12.9 -0.7
baz=315,SNR=9.4
COAL **Corum-Alaca** 78.94 312 i P P 07 28 14.8 +0.7
PRAR **RASCA** 78.94 322 ⇓ iP P 07 28 15.0 +1.2
MUD **Monsted U'grnd** 79.00 336 ⇓ iP P 07 28 14.3 +0.4
MUD **Monsted U'grnd** 79.00 336 ⇓ eP P 07 28 14.3 +0.4
J25A **Sunshine Ranch** 79.00 43 P P 07 28 13.5 -0.9
baz=311
KWP **Kalwaria Pacla** 79.00 325 eP P 07 28 15.1 +1.0
KWP **Kalwaria Pacla** 79.00 325 ⇑ iP P 07 28 15.5 +1.4
KWP **Kalwaria Pacla** 79.00 325 eP P 07 28 15.1 +1.0
E29A **Napoleon** 79.04 39 P P 07 28 13.7 -0.7
baz=314
PV09 **Paradox Valley** 79.07 50 eP P 07 28 15.7 +0.6
H27A **Howes** 79.10 42 P P 07 28 14.4 -0.4
baz=312,SNR=16
D30A **Buchanan** 79.11 38 P P 07 28 14.1 -0.7
baz=314
RGN **Rugen** 79.12 333 eP P 07 28 15.8 +1.2
comp=Z,96nm,0.9s
C31A **Landman Farms,** 79.13 37 P P 07 28 14.1 -0.7
baz=315,SNR=14
ILGA **Ilgaz** 79.17 314 i P P 07 28 17.0 +1.6
PV10 **Paradox Valley** 79.20 50 eP P 07 28 16.6 +0.8
GZT **Gaziantep** 79.21 309 i P P 07 28 16.6 +0.9
BUR08 **Bucovina Ar. S** 79.25 323 eP P 07 28 15.6 0.0
BURAR **Bucovina Array** 79.26 323 ⇑ iP P 07 28 16.6 +0.9
PV04 **Paradox Valley** 79.27 50 eP P 07 28 16.3 +0.3
B32A **Ashes, Strandq** 79.28 36 P P 07 28 14.7 -0.9
baz=315,SNR=20
TESR **Tescani** 79.33 321 ⇑ iP P 07 28 16.3 +0.4
PV05 **Paradox Valley** 79.35 50 eP P 07 28 17.2 +0.7
A33A **Warroad** 79.42 35 P P 07 28 15.6 -0.7
baz=316,SNR=15
N23A **Red Feather La** 79.43 46 P P 07 28 17.4 +0.4
baz=311,SNR=14
N23A **Red Feather La** 79.43 46 eP P 07 28 17.8 +0.8
comp=Z,45nm,1.1s
PHWY **Pilot Hill** 79.44 46 eP P 07 28 17.4 +0.3
comp=Z,16nm,1.3s
Y14A **Wickenburg** 79.44 55 eP P 07 28 17.2 +0.3
comp=Z,203nm,1.5s
J26A **Sides Ranch, S** 79.45 43 P P 07 28 16.7 -0.1
baz=312
E30A **Jud** 79.45 39 P P 07 28 15.7 -0.9
baz=314
F29A **Eureka** 79.45 40 P P 07 28 16.1 -0.5
baz=314,SNR=6.3
CFR **Carcaliu** 79.48 320 ⇑ iP P 07 28 17.2 +0.4
WUAZ **Wupatki** 79.53 53 P P 07 28 18.0 +0.5
baz=308,SNR=20
WUAZ **Wupatki** 79.53 53 eP P 07 28 18.1 +0.7
comp=Z,53nm,1.4s
PV01 **Paradox Valley** 79.64 50 eP P 07 28 18.4 +0.3
113A **Mohawk Valley,** 79.66 57 eP P 07 28 18.1 +0.2
comp=Z,26nm,1.3s
D31A **Mcclaflin, Tow** 79.66 38 P P 07 28 17.3 -0.4
baz=315
C32A **Crookston** 79.68 36 P P 07 28 17.1 -0.8
baz=315
KOLS **Kolonicke sedl** 79.70 325 eP P 07 28 18.9 +1.0
KOLS pmax pmax
comp=Z,29nm,1.1s
KOLS **Kolonicke sedl** 79.70 325 eP P 07 28 18.9 +1.0
KOLS ePP PP 07 31 19.8 +1.4
VRI **Vrincioaia** 79.73 321 ⇑ iP P 07 28 20.0 +1.8
PLOR **Plostina** 79.78 321 ⇑ iP P 07 28 19.5 +1.0
B33A **Robert and Kas** 79.81 36 P P 07 28 17.6 -0.9
baz=316
STHS **Stebnicka Huta** 79.81 326 eP P 07 28 19.8 +1.2
STHS pmax pmax
comp=Z,39nm,1.0s
STHS **Stebnicka Huta** 79.81 326 eP P 07 28 19.8 +1.2
TIRR **Tirgusor** 79.83 319 ⇑ iP P 07 28 19.2 +0.5
TIRR **Tirgusor** 79.83 319 eP P 07 28 18.7 +0.1
TIRR pmax pmax
comp=Z,16nm,1.0s
TIRR **Tirgusor** 79.83 319 eP P 07 28 18.7 +0.1
comp=Z,16nm,1.0s
G29A **Hoven** 79.85 40 P P 07 28 18.4 -0.4
baz=314
F30A **Leola** 79.86 39 P P 07 28 18.1 -0.8
baz=314
OJC **Ojcow** 79.86 327 eP P 07 28 19.5 +0.8
OJC **Ojcow** 79.86 327 eP P 07 28 19.5 +0.8
OJC **Ojcow** 79.86 327 eP P 07 28 19.3 +0.6
comp=Z,113nm,1.0s
UZH **Uzhgorod** 79.91 325 eP P 07 28 17.9 -1.1

UZH e 07 28 32.3
UZH i S **S** **07 38 15.1 -5.2**
UZH i 07 39 03.1
E31A Nome 79.92 38 P **P** **07 28 18.7 -0.5**
baz=315,SNR=7.0
SMCO Snowmass 79.94 48 eP **P** **07 28 20.4 +0.5**
comp=Z,13nm,0.9s
D32A Dogwood Acres, 79.94 37 P **P** **07 28 18.6 -0.6**
baz=315
I28A Midland 80.01 42 P **P** **07 28 19.6 -0.2**
baz=313,SNR=31
ARCR ARCALIA 80.05 323⇑iP **P** **07 28 21.7 +1.9**
J27A Elkhorn Farm, 80.07 43 P **P** **07 28 20.3 +0.1**
baz=312,SNR=11
BR131 Keskin Array S 80.07 313 eP **P** **07 28 20.9 +0.6**
BRTR Keskin Array B 80.07 313 P **P** **07 28 20.4 +0.1**
comp=Z,12nm,1.0s,baz=101,slow=4.0,SNR=47
BRTR PP PP 07 31 30.8 +8.8
comp=Z,2.7nm,1.0s,baz=101,slow=5.2,SNR=3.8
BRTR LR LR 08 09 10.2
comp=Z,156nm,18.7s,baz=79,slow=40
B34A Aery, Baudette 80.08 35 P **P** **07 28 18.6 -1.4**
baz=316,SNR=7.8
H29A Onida 80.08 41 P **P** **07 28 19.6 -0.5**
baz=313,SNR=13
C33A Trail 80.09 36 P **P** **07 28 19.1 -0.9**
baz=316,SNR=5.3
CRVS Cervenica-Dubn 80.09 326 eP **P** **07 28 21.2 +1.1**
CRVS Cervenica-Dubn 80.09 326 eP **P** **07 28 21.2 +1.1**
TRPA Tarpa 80.16 324⇓eP **P** **07 28 21.3 +0.9**
F31A Hecla 80.23 39 P **P** **07 28 20.0 -0.9**
baz=314,SNR=5.9
NIE Niedzica 80.23 326 eP **P** **07 28 21.8 +0.9**
NIE Niedzica 80.23 326 eP **P** **07 28 21.8 +0.9**
MVCO Mesa Verde 80.27 50 P **P** **07 28 21.5 0.0**
baz=310,SNR=13
MVCO Mesa Verde 80.27 50 eP **P** **07 28 21.8 +0.3**
comp=Z,55nm,1.4s
G30A Faulkton 80.29 40 P **P** **07 28 20.4 -0.8**
baz=314,SNR=9.8
E32A Braaten, Kindr 80.30 38 P **P** **07 28 20.7 -0.5**
baz=315
ISCO Idaho Springs 80.33 47 P **P** **07 28 22.2 +0.3**
baz=311,SNR=14
ISCO Idaho Springs 80.33 47 eP **P** **07 28 22.4 +0.5**
ISCO pmax pmax
comp=Z,10.0nm,0.9s
ISCO Idaho Springs 80.33 47 eP **P** **07 28 22.4 +0.5**
comp=Z,10nm,0.9s
ISR Istrita 80.34 320⇑iP **P** **07 28 23.1 +1.6**
MLR Muntele Rosu 80.39 321⇑iP **P** **07 28 22.7 +0.8**
MLR Muntele Rosu 80.39 321 eP **P** **07 28 22.6 +0.8**
MLR pmax pmax
comp=Z,35nm,1.2s
MLR Muntele Rosu 80.39 321 eP **P** **07 28 22.6 +0.8**
comp=Z,35nm,1.2s
I29A Vivian Onida 80.45 41 P **P** **07 28 21.5 -0.7**
baz=313,SNR=13
ANTO Ankara 80.47 313 eP **P** **07 28 23.5 +1.2**
ANTO pmax pmax
comp=Z,41nm,1.2s
ANTO Ankara 80.47 313 eP **P** **07 28 23.5 +1.2**
comp=Z,40nm,1.2s
D33A AnnSam, Waubun 80.50 37 P **P** **07 28 21.3 -0.9**
baz=316
BR231 Keskin MP Arra 80.50 313 eP **P** **07 28 21.2 -1.4**
C34A RKJ Ranch, Bem 80.57 36 P **P** **07 28 21.7 -0.9**
baz=316
B35A Bob, Littlefor 80.60 35 P **P** **07 28 22.1 -0.6**
baz=317,SNR=7.9
CJR Cluj-Napoca 80.68 323⇑iP **P** **07 28 24.8 +1.5**
HIZ Hauiti 80.69 156 eP **P** **07 28 24.2 +1.1**
comp=Z,40nm,1.0s
G31A Conde 80.70 39 P **P** **07 28 22.8 -0.5**
baz=315
F32A Veblen 80.78 38 P **P** **07 28 23.4 -0.4**
baz=315
214A Organ Pipe Nat 80.79 57 P **P** **07 28 24.3 +0.2**
baz=308
214A Organ Pipe Nat 80.79 57 eP **P** **07 28 24.2 +0.1**
comp=Z,149nm,1.3s
SULR 80.80 320⇑iP **P** **07 28 25.2 +1.3**
LANS Liptovska Anna 80.80 327 eP **P** **07 28 25.6 +1.7**
LANS Liptovska Anna 80.80 327 eP **P** **07 28 25.6 +1.7**
W18A Petrified Fore 80.82 53 P **P** **07 28 24.8 +0.3**
baz=309,SNR=6.2
W18A Petrified Fore 80.82 53 eP **P** **07 28 25.3 +0.9**
comp=Z,13nm,1.0s
KECS Kecovo 80.84 326 eP **P** **07 28 24.4 +0.3**
KECS pmax pmax
comp=Z,10.0nm,1.0s
KECS Kecovo 80.84 326 eP **P** **07 28 24.4 +0.3**
KECS ePP **PP** **07 31 28.4 +0.6**
D34A Park Rapids 80.84 36 P **P** **07 28 23.4 -0.7**
baz=316
OKC Ostrava-Krasne 80.85 328⇓iP **P** **07 28 24.9 +0.8**
OKC AMS AMS 08 07 10.0
comp=Z,800nm,18.0s
OKC Ostrava-Krasne 80.85 328⇓iP **P** **07 28 24.9 +0.8**
OKC MLR MLR
comp=Z,800nm,18.0s
KKUL Konya-Kulu 80.86 313 iP **P** **07 28 25.1 +0.6**
KSP Ksiaz 80.86 329 eP **P** **07 28 24.8 +0.7**
KSP Ksiaz 80.86 329 eP **P** **07 28 24.8 +0.7**
SUSD Miller 80.86 40 P **P** **07 28 24.0 -0.3**
baz=314
VOIR 80.87 321⇓iP **P** **07 28 25.9 +1.5**
E33A Westby DABS, E 80.88 37 P **P** **07 28 24.0 -0.3**
baz=316
S22A 4UR Ranch, Cre 80.94 49 P **P** **07 28 26.0 +0.8**
baz=310,SNR=22
S22A 4UR Ranch, Cre 80.94 49 eP **P** **07 28 26.1 +0.9**
comp=Z,32nm,1.1s
C35A Jirik Farms, M 80.97 35 P **P** **07 28 23.6 -1.2**
baz=317,SNR=6.5
I30A Oacoma 80.98 41 P **P** **07 28 24.4 -0.5**
baz=314,SNR=26
G32A Webster 81.03 39 P **P** **07 28 24.4 -0.8**
baz=315
DRGR 81.05 323⇓iP **P** **07 28 25.6 +0.3**
X18A Snowflake 81.06 53 eP **P** **07 28 26.3 +0.5**
comp=Z,29nm,1.4s
H31A Wolsey 81.08 40 P **P** **07 28 25.0 -0.4**
baz=314
ARR Arges 81.13 321⇑iP **P** **07 28 27.5 +1.8**
Q24A Divide 81.15 47 P **P** **07 28 26.6 +0.3**
baz=311,SNR=6.0
Q24A Divide 81.15 47 eP **P** **07 28 26.9 +0.5**
comp=Z,14nm,1.0s
MORC Moravsky Berou 81.16 328⇑iP **P** **07 28 26.8 +1.0**
MORC Moravsky Berou 81.16 328 eP **P** **07 28 26.5 +0.7**
MORC pmax pmax
comp=Z,285nm,1.0s
MORC Moravsky Berou 81.16 328 eP **P** **07 28 26.5 +0.7**
comp=Z,285nm,1.0s
F33A 5 Mile Ranch, 81.21 38 P **P** **07 28 25.8 -0.3**
baz=316,SNR=13
DPC Dobruska-Polom 81.22 329 eP **P** **07 28 27.0 +0.9**
DPC AMS AMS 08 07 30.0
comp=Z,600nm,18.4s
DPC Dobruska-Polom 81.22 329 eP **P** **07 28 27.0 +0.9**
DPC MLR MLR
comp=Z,600nm,18.4s
PRD Provadia 81.23 318 P **P** **07 28 26.0 -0.2**
UPC Upice 81.23 329⇓eP **P** **07 28 27.0 +0.9**
UPC AMS AMS 08 07 40.0
comp=Z,900nm,16.4s
UPC Upice 81.23 329 eP **P** **07 28 27.0 +0.9**
UPC MLR MLR
comp=Z,900nm,16.4s
KRLC Kraliky 81.25 329⇓eP **P** **07 28 27.5 +1.3**
KRLC Kraliky 81.25 329 eP **P** **07 28 27.5 +1.3**
E34A Wadena 81.27 37 P **P** **07 28 25.8 -0.6**
baz=316
KERG Konya-Eregli 81.28 311 iP **P** **07 28 26.9 +0.1**
J30A Dallas 81.36 41 P **P** **07 28 26.4 -0.5**
baz=314,SNR=14
I31A Royce, Wessing 81.37 40 P **P** **07 28 26.4 -0.5**
baz=314
D35A Remer 81.38 36 P **P** **07 28 26.1 -0.9**
baz=317
C36A Pine Crest Far 81.45 35 P **P** **07 28 26.7 -0.6**
baz=318
PSZ Piszkesteto 81.53 326⇑iP **P** **07 28 29.0 +1.2**
PSZ Piszkesteto 81.53 326⇓eP **P** **07 28 28.6 +0.8**
PSZ Piszkesteto 81.53 326 eP **P** **07 28 28.7 +0.9**
PSZ pmax pmax
comp=Z,70nm,1.0s
PSZ Piszkesteto 81.53 326 eP **P** **07 28 28.7 +0.9**
comp=Z,70nm,1.0s
VYHS Vyhne 81.57 327 eP **P** **07 28 28.8 +0.9**
VYHS pmax pmax
comp=Z,26nm,1.2s
VYHS Vyhne 81.57 327 eP **P** **07 28 28.8 +0.9**
H32A Carlson Farm, 81.59 39 P **P** **07 28 27.4 -0.8**
baz=315
G33A Ortonville 81.60 38 P **P** **07 28 27.7 -0.4**
baz=316
E35A Pequot Lakes 81.60 36 P **P** **07 28 27.3 -0.8**
baz=317
OGNE Ogallala 81.61 44 P **P** **07 28 28.4 0.0**
baz=313
D36A Goodland 81.73 35 P **P** **07 28 27.7 -1.1**
baz=318
SDCO Great Sand Dun 81.74 49 P **P** **07 28 29.7 +0.3**
baz=311,SNR=13
SDCO Great Sand Dun 81.74 49 eP **P** **07 28 29.9 +0.5**
comp=Z,24nm,1.3s
K30A Basset 81.75 42 P **P** **07 28 28.7 -0.3**
baz=314,SNR=9.7
F34A Alexandria 81.75 37 P **P** **07 28 28.4 -0.6**
baz=316
C37A Embarrass 81.76 34 P **P** **07 28 27.3 -1.7**
baz=318
BRG Berggiesshubel 81.77 331 iP **P** **07 28 29.3 +0.4**
comp=Z,59nm,1.0s
BRG i 07 28 42.4
comp=Z,21nm,1.1s
BRG e 07 31 35.5
comp=Z,11nm,1.5s
BRG Berggiesshubel 81.77 331 iP **P** **07 28 29.3 +0.4**
BRG i 07 28 42.4
BRG e 07 31 35.5
BRG pmax pmax
comp=Z,15nm,1.0s
BRG pmax pmax
comp=Z,59nm,1.1s
BRG pmax pmax
comp=Z,21nm,1.5s
J31A Geddes 81.78 41 P **P** **07 28 28.3 -0.8**
baz=314
CLL Collm 81.80 331⇓iP **P** **07 28 29.1 +0.1**
comp=Z,127nm,0.9s
CLL i 07 28 42.6
CLL L L 08 11 00.0
comp=Z,500nm,18.2s
CLL Collm 81.80 331⇓iP **P** **07 28 29.1 +0.1**
CLL pmax pmax
comp=Z,127nm,0.9s
CLL MLR MLR
comp=Z,500nm,18.2s
CLL Collm 81.80 331 eP **P** **07 28 29.7 +0.7**
comp=Z,135nm,0.9s
PVCC Panska Ves 81.80 330⇓iP **P** **07 28 30.1 +1.0**
PVCC epP **sP** **07 28 43.0 +0.3**
PVCC AMS AMS 08 08 10.0
comp=Z,1μm,17.7s
PVCC Panska Ves 81.80 330⇓iP **P** **07 28 30.1 +1.0**
PVCC e 07 28 43.0
PVCC MLR MLR
comp=Z,1μm,17.7s
H33A Prehn Over Nor 81.82 39 P **P** **07 28 29.0 -0.3**
baz=316,SNR=18
BKZ Black Stump Fm 81.83 155 eP **P** **07 28 29.1 -0.1**
comp=Z,40nm,1.5s
KIZK Mersin 81.88 310 iP **P** **07 28 28.6 -1.2**
EYMN Ely 81.91 34 P **P** **07 28 29.0 -0.7**
baz=319
EYMN Ely 81.91 34 eP **P** **07 28 29.4 -0.3**
comp=Z,38nm,1.1s
VRAC Vranov 81.91 328⇑iP **P** **07 28 31.1 +1.4**
TUC Tucson 81.91 56 P **P** **07 28 30.6 +0.5**
baz=309
TUC Tucson 81.91 56 eP **P** **07 28 30.4 +0.3**
TUC pmax pmax
comp=Z,39nm,1.7s
TUC Tucson 81.91 56 eP **P** **07 28 30.4 +0.3**
comp=Z,40nm,1.7s
I32A Karley and Nic 81.92 40 P **P** **07 28 29.1 -0.8**
baz=315
SIRR Siria 81.93 324⇑iP **P** **07 28 30.9 +1.0**
SZH Strazhica 81.95 319 P **P** **07 28 30.0 0.0**
G34A Benson 81.96 38 P **P** **07 28 29.8 -0.3**
baz=316
F35A Swanville 82.03 37 P **P** **07 28 29.9 -0.6**
baz=317
D37A Cotton 82.08 35 P **P** **07 28 29.6 -1.1**
baz=318
KMER Konya-Meram 82.10 312 iP **P** **07 28 29.9 -1.1**
SMOL Smolenice 82.16 327 eP **P** **07 28 32.6 +1.5**
SMOL Smolenice 82.16 327 eP **P** **07 28 32.6 +1.5**
E36A McGregor 82.17 36 P **P** **07 28 30.3 -0.8**
baz=318,SNR=8.5
C38A Sawbill Land. 82.18 34 P **P** **07 28 30.5 -0.7**
baz=319
J32A Parkston 82.18 40 P **P** **07 28 30.4 -0.9**
baz=315,SNR=7.9
GOPC GO Pecny, Ondr 82.19 330⇓iP **P** **07 28 32.0 +0.8**
GOPC epP **sP** **07 28 45.2 +0.4**
GOPC GO Pecny, Ondr 82.19 330⇓iP **P** **07 28 32.0 +0.8**
GOPC e 07 28 45.2
PRU Pruhonice 82.23 330⇓eP **P** **07 28 32.0 +0.6**
PRU AMS AMS 08 08 20.0
comp=Z,800nm,16.8s
PRU Pruhonice 82.23 330 eP **P** **07 28 32.0 +0.6**
PRU MLR MLR
comp=Z,800nm,16.8s
K31A O'Neill 82.24 41 P **P** **07 28 31.2 -0.4**
baz=315,SNR=9.1
I33A Coleman 82.24 39 P **P** **07 28 31.2 -0.3**
baz=316
H34A Spellman Lake, 82.31 38 P **P** **07 28 31.7 -0.2**
baz=316
TREC Trest 82.38 329⇓eP **P** **07 28 33.3 +1.1**
TREC AMS AMS 08 08 20.0
comp=Z,600nm,16.9s
TREC Trest 82.38 329 eP **P** **07 28 33.3 +1.1**
TREC MLR MLR
comp=Z,600nm,16.9s
BZS Buzias 82.42 323⇑iP **P** **07 28 32.8 +0.3**
L31A Butterfield Fa 82.50 42 P **P** **07 28 32.5 -0.6**
baz=314,SNR=13
EDRB Edirne 82.52 318 P **P** **07 28 32.7 -0.3**
EDRB Edirne 82.52 318 P **P** **07 28 32.7 -0.3**
F36A Milaca 82.53 36 P **P** **07 28 32.2 -0.8**
baz=318
E37A Wrenshall 82.53 35 P **P** **07 28 31.6 -1.4**
baz=318
G35A Watkins 82.54 37 P **P** **07 28 32.8 -0.3**
baz=317,SNR=7.7
ECSD EROS Data Cent 82.56 39 P **P** **07 28 32.4 -0.8**
baz=316,SNR=24
ECSD EROS Data Cent 82.56 39 eP **P** **07 28 32.6 -0.7**
comp=Z,32nm,1.0s
KSCO Kaye Shedlock' 82.58 46 P **P** **07 28 33.6 0.0**
baz=313,SNR=6.0
KSCO Kaye Shedlock' 82.58 46 eP **P** **07 28 33.9 +0.2**
comp=Z,46nm,1.3s
K32A Verdigre 82.62 41 P **P** **07 28 32.8 -0.8**
baz=315
J33A Davis 82.67 40 P **P** **07 28 33.2 -0.7**
baz=316
H35A Sunnyside Ranc 82.75 38 P **P** **07 28 34.0 -0.2**
baz=317,SNR=18
T25A Trinidad 82.80 48 P **P** **07 28 35.2 +0.4**
baz=312,SNR=22
T25A Trinidad 82.80 48 eP **P** **07 28 35.3 +0.4**
comp=Z,35nm,0.9s
NKC Novy Kostel 82.86 331⇓eP **P** **07 28 35.5 +0.8**
NKC epP **sP** **07 28 48.5 +0.2**
NKC Novy Kostel 82.86 331 eP **P** **07 28 35.5 +0.8**
NKC e 07 28 48.5
G36A St. Michael 82.88 37 P **P** **07 28 34.5 -0.3**
baz=317
GDZ Gediz 82.90 314 iP **P** **07 28 35.3 0.0**
LAZ Ladron 82.92 52 eP **P** **07 28 36.2 +0.7**
MDVR Moldovita 82.99 323⇑iP **P** **07 28 35.9 +0.4**
ANMO Albuquerque 82.99 51 P **P** **07 28 36.3 +0.4**
baz=311
ANMO Albuquerque 82.99 51 diP **P** **07 28 36.1 +0.2**
ANMO pmax pmax
comp=Z,25nm,1.1s
ANMO Albuquerque 82.99 51 eP **P** **07 28 36.4 +0.4**
comp=Z,36nm,1.2s
M31A Lambtecht Ranc 83.01 42 P **P** **07 28 34.7 -1.0**
baz=314
MPEP Malo Peshtene 83.01 320 P **P** **07 28 36.0 +0.4**
THZ Tophouse 83.05 158 eP **P** **07 28 35.4 -0.2**
comp=Z,46nm,1.2s
L32A Elgin 83.06 41 P **P** **07 28 35.5 -0.5**
baz=315
PPT Papeete 83.09 118 LR LR 08 04 45.1
comp=Z,209nm,19.5s,baz=348,slow=35
PPT2 Papeete2 83.10 118 eLR LR 07 54 07.6
comp=Z,356nm,30.5s
ISP Isparta 83.15 313 eP **P** **07 28 36.5 0.0**
ISP pmax pmax
comp=Z,18nm,0.8s
ISP Isparta 83.15 313 eP **P** **07 28 36.5 0.0**
comp=Z,18nm,0.8s
K33A Hardington 83.17 40 P **P** **07 28 36.0 -0.5**
baz=316
SOP Sopron 83.18 327⇓eP **P** **07 28 37.2 +0.9**
J34A George 83.21 39 P **P** **07 28 36.2 -0.4**
baz=316
Y22D IRIS PASSCAL I 83.27 52 P **P** **07 28 37.4 +0.1**
baz=311
H36A Jessenland, He 83.28 37 P **P** **07 28 36.9 0.0**
baz=317,SNR=14
CONA Conrad Observa 83.29 328 iPcP **P** **07 28 38.0 +1.0**
comp=Z,58nm,0.9s,SNR=34
I35A Creekview Farm 83.29 39 P **P** **07 28 36.7 -0.3**
baz=317
KHC Kasperske Hory 83.29 330⇓iP **P** **07 28 37.4 +0.4**
KHC epP **sP** **07 28 50.4 -0.2**
KHC AMS AMS 08 09 00.0
comp=Z,900nm,15.4s
KHC Kasperske Hory 83.29 330 eP **P** **07 28 37.4 +0.4**
KHC pmax pmax
comp=Z,28nm,0.9s
KHC Kasperske Hory 83.29 330 eP **P** **07 28 37.4 +0.4**
comp=Z,28nm,0.9s
LPM Los Pinos Moun 83.30 52 eP **P** **07 28 37.9 +0.5**
L33A Hoskins 83.34 41 P **P** **07 28 36.7 -0.6**
baz=316
SPMN Marine on St. 83.34 36 P **P** **07 28 36.7 -0.6**
baz=318
SPMN Marine on St. 83.34 36 eP **P** **07 28 37.0 -0.2**
comp=Z,22nm,1.0s
KDZ Kurdzhali 83.36 318 P **P** **07 28 38.0 +0.6**
CSS Mathiatis 83.37 309 P **P** **07 28 37.5 -0.1**
CSS Mathiatis 83.37 309 eP **P** **07 28 38.2 +0.6**
comp=Z,7.2nm,0.8s
KHAL Karahalli 83.38 314 iP **P** **07 28 37.7 0.0**
N31A Bailey Ranch, 83.39 43 P **P** **07 28 36.9 -0.7**
baz=315
BNM Barren Site 83.41 52 eP **P** **07 28 38.5 +0.4**
BGNE Belgrade 83.41 42 P **P** **07 28 36.9 -0.8**
baz=315,SNR=6.0
BGNE Belgrade 83.41 42 eP **P** **07 28 37.1 -0.6**
comp=Z,79nm,1.0s
GEC2 GERESS Array S 83.47 329 eP **P** **07 28 38.1 +0.1**
GEC2 pmax pmax
comp=Z,34nm,0.9s
GEC2 GERESS Array S 83.47 329 eP **P** **07 28 38.0 +0.1**
comp=Z,34nm,0.9s
GERES GERESS Array B 83.47 329 P **P** **07 28 38.1 +0.1**
comp=Z,20nm,0.8s,baz=35,slow=4.9,SNR=107
GERES LR LR 08 09 52.0
comp=Z,605nm,18.4s,baz=18,slow=39
GEA0 GERESS Array 32 83.47 329 eP **P** **07 28 38.2 +0.2**
319A Douglas 83.49 55 eP **P** **07 28 38.9 +0.5**
comp=Z,49nm,0.9s
ESK Eskdalemuir 83.53 342 iP **P** **07 28 40.3 +2.3**
ESK Eskdalemuir 83.53 342 eP **P** **07 28 39.0 +1.0**
comp=Z,52nm,1.3s
J35A Milford 83.53 39 P **P** **07 28 37.7 -0.6**
baz=317
K34A Le Mars 83.57 40 P **P** **07 28 37.6 -0.9**
baz=316,SNR=12
I36A Fitzsimmons Fa 83.65 38 P **P** **07 28 38.4 -0.4**
baz=317
O31A Woolen Ranch, 83.66 43 P **P** **07 28 38.2 -0.8**
baz=314
KULA Kula-Manisa 83.76 314 P **P** **07 28 39.7 +0.1**
KULA Kula-Manisa 83.76 314 P **P** **07 28 39.7 +0.1**
H37A Dierke Farm, C 83.76 37 P **P** **07 28 39.1 -0.3**
baz=318,SNR=5.8
GRFO Grafenberg 83.77 331 eP **P** **07 28 40.3 +0.9**
GRFO pmax pmax
comp=Z,120nm,1.2s
GRFO Grafenberg 83.77 331 eP **P** **07 28 40.3 +0.9**
comp=Z,120nm,1.2s
N32A Stulken Farm, 83.79 42 P **P** **07 28 38.6 -1.1**
baz=315
M33A Taylor Creek F 83.80 41 P **P** **07 28 39.1 -0.6**
baz=316
KORT Korkueli 83.81 312 iP **P** **07 28 40.0 0.0**
LTZ Lake Taylor 83.81 159 eP **P** **07 28 40.1 +0.7**
comp=Z,77nm,1.8s
HSIG 83.88 58 eP **P** **07 28 40.9 +0.7**
comp=Z,48nm,1.3s
L34A Svendsen Farm, 83.94 41 P **P** **07 28 39.7 -0.7**
baz=316
I37A Lemond, Waseca 83.95 38 P **P** **07 28 40.3 -0.1**
baz=318,SNR=14
ARSA Arzberg 83.96 327 iP **P** **07 28 40.8 +0.4**
comp=Z,21nm,0.8s,SNR=10
K35A Storm Lake 83.99 39 P **P** **07 28 39.8 -0.8**
baz=317
J36A Seneca 1, Swea 83.99 39 P **P** **07 28 39.8 -0.8**
baz=317,SNR=5.8
MOA Molln 84.02 328 iP **P** **07 28 41.2 +0.5**
comp=Z,36nm,1.1s,SNR=18
GOLH Golhisar 84.11 313 iP **P** **07 28 41.3 -0.2**
O32A Brockman Farm, 84.15 43 P **P** **07 28 40.3 -1.2**
baz=315
M34A Aspy Farms, Fr 84.17 41 P **P** **07 28 40.8 -0.8**
baz=316
OXZ Oxford 84.25 160 eP **P** **07 28 41.3 -0.3**
comp=Z,52nm,1.1s
N33A J Bar K, Exete 84.26 42 P **P** **07 28 41.0 -1.1**
baz=316
L35A Bielow Farm, R 84.27 40 P **P** **07 28 41.0 -1.1**
baz=317
MMB Musomiste 84.29 319 P **P** **07 28 42.0 -0.2**
DIVS Divibare 84.32 323 P **P** **07 28 42.1 -0.3**
CBKS Cedar Bluff 84.36 45 P **P** **07 28 41.5 -1.1**
baz=314
CBKS Cedar Bluff 84.36 45 eP **P** **07 28 41.9 -0.7**
CBKS pmax pmax
comp=Z,40nm,1.1s
CBKS Cedar Bluff 84.36 45 eP **P** **07 28 41.9 -0.7**
comp=Z,40nm,1.1s
COWI Conover 84.36 34 eP **P** **07 28 41.9 -0.5**
comp=Z,22nm,1.2s
NVR Nevrokopi 84.39 319 P **P** **07 28 43.0 +0.3**
NVR Nevrokopi 84.39 319 P **P** **07 28 43.0 +0.3**
J37A Redenius Farm, 84.39 38 P **P** **07 28 42.3 -0.3**
baz=318
P32A Huiting Farm, 84.42 43 P **P** **07 28 41.7 -1.2**
baz=315,SNR=12
K36A Gilmore City 84.44 39 P **P** **07 28 42.2 -0.7**
baz=317
I38A Scanlan Farm, 84.45 37 P **P** **07 28 42.3 -0.6**
baz=318,SNR=8.8
SCHQ Schefferville 84.57 17 P **P** **07 28 43.9 +0.5**
comp=Z,9.7nm,0.9s,baz=357,slow=5.2,SNR=9.1
SCHQ PKKPbc **PKKPbc** **07 46 51.0 -2.3**
comp=Z,3.6nm,0.9s,baz=52,slow=3.1,SNR=3.6
SCHQ LR LR 08 09 28.7
comp=Z,169nm,20.0s,baz=27,slow=38
SCHQ Schefferville 84.57 17 eP **P** **07 28 43.5 +0.1**
comp=Z,16nm,1.0s
SCHQ PKKPbc **PKKPbc** **07 46 51.0 -2.3**
PERS Pernice 84.61 327 eP **P** **07 28 43.8 0.0**
SOKA Soboth 84.61 327 iP **P** **07 28 44.1 +0.3**
comp=Z,70nm,1.2s,SNR=22
O33A Hebron 84.66 43 P **P** **07 28 42.9 -1.2**
baz=316
M35A Neola 84.66 41 P **P** **07 28 43.7 -0.3**
baz=316
N34A Lincoln 84.69 41 P **P** **07 28 43.0 -1.2**
baz=316
L36A Harm Buss Farm 84.72 40 P **P** **07 28 43.8 -0.6**
baz=317
LBZ Lake Benmore 84.74 161 eP **P** **07 28 44.3 +0.3**
comp=Z,124nm,1.9s
K37A Belmond 84.75 39 P **P** **07 28 43.9 -0.6**

baz=318,SNR=7.2
AKAS Kas 84.77 312 *i* P P 07 28 43.4 -1.5
FETY Fethiye 84.80 313 P P 07 28 44.6 -0.3
FETY Fethiye 84.80 313 P P 07 28 44.6 -0.3
HGN Heimansgroeve 84.81 335 *eP* P 07 28 44.7 +0.1
comp=Z,89nm,1.2s
KSL Kastellorizon 84.84 312 P P 07 28 44.5 -0.5
KSL Kastellorizon 84.84 312 P P 07 28 44.5 -0.5
BEBN Eben Emael 84.86 335 P P 07 28 45.4 +0.6
comp=Z,27nm,1.1s
Q32A Meitler Ranch, 84.89 44 P P 07 28 44.6 -0.7
baz=315
MEM Membach 84.91 335 P P 07 28 45.1 +0.1
comp=Z,44nm,1.1s
J38A Wedel Dairy, R 84.92 38 P P 07 28 44.5 -0.8
baz=318,SNR=6.0
OBKA Obir 84.95 327 *i* P P 07 28 45.0 -0.5
comp=Z,14nm,0.8s
KBA Koelnbreinsper 85.01 329 *i* P P 07 28 45.9 0.0
comp=Z,33nm,0.9s,SNR=15
KNT Kendrikon 85.03 319 P P 07 28 46.0 +0.1
KNT Kendrikon 85.03 319 P P 07 28 46.0 +0.1
KNT Kendrikon 85.03 319 P P 07 28 46.0 +0.1
P33A Williams Farm, 85.05 43 P P 07 28 44.5 -1.6
baz=315
O34A Beatrice 85.06 42 P P 07 28 44.9 -1.2
baz=316
N35A Tabor 85.12 41 P P 07 28 45.7 -0.7
baz=317,SNR=10
M36A Felix, Anita 85.13 40 P P 07 28 45.8 -0.6
baz=317,SNR=7.6
BLY Banja Luka 85.15 325⇑ *iP* P 07 28 46.7 +0.3
L37A Phoenix Point, 85.17 39 P P 07 28 46.2 -0.3
baz=318
R32A Long Quarter, 85.21 44 P P 07 28 46.2 -0.7
baz=315
MYKA Terra Mystica 85.24 328 *i* P P 07 28 46.3 -0.6
comp=Z,52nm,1.8s,SNR=8.1
K38A Parkersburg 85.27 38 P P 07 28 46.7 -0.3
baz=318
Q33A Connelly Farm, 85.29 43 P P 07 28 46.3 -0.9
baz=315,SNR=8.7
STU Stuttgart 85.29 332 *eP* P 07 28 47.8 +0.7
STU pmax pmax
comp=Z,103nm,0.8s
STU Stuttgart 85.29 332 *eP* P 07 28 47.8 +0.7
comp=Z,103nm,0.8s
BCLA Clavier 85.31 335 P P 07 28 47.2 +0.1
comp=Z,48nm,1.3s
BCLA AP sP 07 29 00.6 -0.1
PLG Polygyros 85.31 319 P P 07 28 47.2 -0.2
PLG Polygyros 85.31 319 P P 07 28 47.2 -0.2
PLG Polygyros 85.31 319 P P 07 28 47.2 -0.2
CWF Charnwood Fore 85.34 340 *eP* P 07 28 48.0 +0.8
comp=Z,83nm,1.1s
O35A Humboldt 85.41 41 P P 07 28 46.8 -1.1
baz=316
P34A Walnut Farm, R 85.44 42 P P 07 28 47.0 -1.1
baz=316,SNR=21
PAIG Paliouri 85.51 318 P P 07 28 48.0 -0.3
PAIG Paliouri 85.51 318 P P 07 28 48.0 -0.3
PAIG Paliouri 85.51 318 P P 07 28 48.0 -0.3
N36A Muff Farm, Cla 85.51 41 P P 07 28 48.0 -0.3
baz=317,SNR=6.4
M37A Trindle Farm, 85.55 40 P P 07 28 48.3 -0.2
baz=318,SNR=6.0
L38A Oak Wood Farm, 85.55 39 P P 07 28 48.3 -0.2
baz=318
WTTA Wattenberg 85.57 330 *i* PcP P 07 28 48.9 +0.2
comp=Z,16nm,0.8s
SNF Seneffe 85.58 335 P P 07 28 48.5 +0.1
S32A Newby Ranch, P 85.59 45 P P 07 28 48.2 -0.6
baz=315,SNR=13
SCIA State Center 85.60 39 *eP* P 07 28 49.2 +0.5
comp=Z,70nm,1.2s
ABTA Abfaltersbach 85.62 329 *i* P P 07 28 48.0 -0.9
comp=Z,34nm,1.1s,SNR=5.7
LANF Langenberg 85.64 333⇓ *eP* P 07 28 49.3 +0.5
WLF Walferdange 85.66 334 P P 07 28 49.4 +0.6
comp=Z,51nm,1.6s
WLF Walferdange 85.66 334 *eP* P 07 28 49.8 +1.0
WLF pmax pmax
comp=Z,50nm,1.0s
WLF Walferdange 85.66 334 *eP* P 07 28 49.8 +1.0
comp=Z,50nm,1.0s
R33A Olander Ranch, 85.69 44 P P 07 28 48.3 -1.0
baz=315
MOTA Moosalm 85.72 330 *i* PcP P 07 28 49.4 0.0
comp=Z,46nm,1.0s,SNR=17
RETA Reutte 85.74 330 *i* PcP P 07 28 49.8 +0.4
comp=Z,87nm,1.0s,SNR=26
MNTX Cornudas Mount 85.81 53 P P 07 28 50.0 0.0
baz=312
MNTX Cornudas Mount 85.81 53 *eP* P 07 28 50.0 0.0
comp=Z,25nm,1.0s
DOU Dourbes 85.83 335 P P 07 28 49.8 +0.1
comp=Z,21nm,1.5s
DOU AP sP 07 29 02.1 -1.2
DOU XP pP 07 29 05.9 +6.2
Q34A Chapman 85.83 43 P P 07 28 49.3 -0.7
baz=316,SNR=12
KSU1 Kansas State U 85.88 43 P P 07 28 49.3 -0.9
baz=316,SNR=11
KSU1 Kansas State U 85.88 43 *eP* P 07 28 49.6 -0.5
comp=Z,39nm,0.8s
P35A Duane Minner, 85.89 42 P P 07 28 49.5 -0.7
baz=316
MSTX Muleshoe 85.91 50 P P 07 28 50.4 -0.1
baz=313
MSTX Muleshoe 85.91 50 *eP* P 07 28 50.3 -0.3
comp=Z,29nm,1.3s
PDG Podgorica 85.93 322⇑ *iP* P 07 28 50.8 +0.5
PDG Podgorica 85.93 322 P P 07 28 50.4 +0.1
TTG Podgorica 85.93 322 P P 07 28 50.4 +0.1
TTG Podgorica 85.93 322 P P 07 28 50.4 +0.1
SKDS Skadanscina 85.94 327 *i* P P 07 28 49.9 -0.4
N37A Lee Faris, Mou 85.94 40 P P 07 28 50.5 0.0
baz=317
AMTX Amarillo 85.95 49 P P 07 28 51.3 +0.6
baz=314
AMTX Amarillo 85.95 49 *eP* P 07 28 51.1 +0.4
comp=Z,61nm,1.0s
T32A Huddler Ranch, 85.96 45 P P 07 28 50.2 -0.4
baz=315,SNR=16
M38A Pleasantville 85.97 39 P P 07 28 50.3 -0.3
baz=318,SNR=9.4
BFO Black Forest 85.98 332 *i* P P 07 28 50.6 +0.1
BFO Black Forest 85.98 332 *eP* P 07 28 50.8 +0.2
comp=Z,100nm,1.0s
O36A Bolckow 86.01 41 P P 07 28 50.1 -0.7
baz=317,SNR=12
R34A Isabella, Hill 86.10 44 P P 07 28 50.9 -0.5
baz=316
FETA Feichten 86.13 330 *i* PcP P 07 28 51.5 0.0
comp=Z,42nm,1.0s,SNR=17
S33A Kaszmaul Farm, 86.19 45 P P 07 28 51.5 -0.3
baz=315,SNR=18
DSB Dublin 86.19 343 *eP* P 07 28 51.9 +0.4
comp=Z,44nm,1.2s
KZN Kozani 86.24 319 P P 07 28 51.3 -0.7
KZN Kozani 86.24 319 P P 07 28 51.3 -0.7
KZN Kozani 86.24 319 P P 07 28 51.3 -0.7
DAVA Damuels 86.25 331 *i* PcP P 07 28 52.2 +0.2
comp=Z,86nm,0.9s,SNR=26
P36A Good Intent, A 86.25 42 P P 07 28 51.1 -0.9
baz=317,SNR=14
JFWS Jewell Farm 86.29 37 *eP* P 07 28 51.6 -0.5
JFWS pmax pmax
comp=Z,20nm,0.9s
JFWS Jewell Farm 86.29 37 *eP* P 07 28 51.6 -0.5
comp=Z,20nm,0.9s
Q35A Mercer Eighty, 86.36 43 P P 07 28 51.9 -0.7
baz=316,SNR=15
O37A Wolven Farm, M 86.41 41 P P 07 28 52.3 -0.4
baz=318,SNR=7.2
T33A Patterson Ranc 86.41 45 P P 07 28 52.4 -0.4
baz=315
N38A Joes South For 86.42 40 P P 07 28 52.6 -0.2
baz=318,SNR=11
TIR Tirane 86.44 321 *eP* P 07 28 54.7 +1.8
TIR pmax pmax
comp=Z,38nm,1.0s
TIR Tirane 86.44 321 *eP* P 07 28 54.7 +1.8
comp=Z,38nm,1.0s
U32A Winter Ranch, 86.48 46 P P 07 28 53.0 -0.2
baz=315,SNR=8.1
ECH Echery 86.51 333⇓ *eP* P 07 28 53.2 0.0

Q36A Arnold C. Orve 86.60 42 P P 07 28 53.0 -0.7
baz=317
S34A Willow Spring 86.61 44 P P 07 28 53.3 -0.6
baz=316,SNR=13
FUORN Ofenpass-Fuorn 86.64 330 *eP* P 07 28 54.5 +0.3
comp=Z,66nm,0.9s
R35A Emporia Munici 86.66 43 P P 07 28 53.9 -0.2
baz=316,SNR=11
N39A Derby Farms, D 86.72 39 P P 07 28 53.7 -0.6
baz=318,SNR=14
P37A Lathrop 86.73 41 P P 07 28 53.5 -0.8
baz=317
O38A Galt 86.79 40 P P 07 28 54.3 -0.3
baz=318
MOF Molkenrain 86.83 332⇓ *eP* P 07 28 54.7 -0.1
V32A Arapaho 86.92 46 P P 07 28 55.4 +0.1
baz=315,SNR=11
U33A Lingo Farm, Me 86.95 45 P P 07 28 55.3 -0.2
baz=315,SNR=8.8
R36A Gordon, Harris 87.04 43 P P 07 28 55.3 -0.6
baz=317,SNR=23
T34A McClaskey Farm 87.05 44 P P 07 28 55.7 -0.3
baz=316,SNR=18
S35A Otter Creek Ra 87.06 44 P P 07 28 55.9 -0.1
baz=316,SNR=22
TUE Stuetta 87.12 330 *eP* P 07 28 56.7 +0.3
comp=Z,30nm,1.1s
P38A Dawn 87.13 41 P P 07 28 55.9 -0.4
baz=318,SNR=12
O39A Kirksville 87.17 40 P P 07 28 56.0 -0.5
baz=318
Q37A Longview Farm, 87.20 42 P P 07 28 55.9 -0.7
baz=317
W32A Sentinel 87.22 47 P P 07 28 57.0 +0.2
baz=315,SNR=14
U34A Anderson Ranch 87.27 45 P P 07 28 57.1 +0.1
baz=316,SNR=13
U34A Anderson Ranch 87.27 45 *eP* P 07 28 57.6 +0.5
comp=Z,73nm,0.9s
V33A Lossen Ranch, 87.28 46 P P 07 28 56.8 -0.3
baz=315,SNR=7.7
LOMF Lomont 87.36 332 *eP* P 07 28 57.7 +0.3
R37A Teagarden Farm 87.41 42 P P 07 28 57.1 -0.6
baz=317
S36A Lake Cedric, C 87.42 43 P P 07 28 57.2 -0.5
baz=317,SNR=5.9
T35A Sooner Cattle 87.50 44 P P 07 28 57.9 -0.3
baz=316,SNR=8.7
Q38A Cooks Store, C 87.58 41 P P 07 28 57.5 -0.9
baz=318,SNR=9.6
O40A La Belle 87.61 39 P P 07 28 58.1 -0.4
baz=319,SNR=12
W33A Caddo, Fort Co 87.65 47 P P 07 28 59.2 +0.3
baz=315,SNR=13
X32A Elmer 87.69 48 P P 07 28 58.9 -0.2
baz=315,SNR=13
V34A Guthrie 87.71 45 P P 07 28 59.1 0.0
baz=316,SNR=6.3
V34A Guthrie 87.71 45 *eP* P 07 28 59.3 +0.1
comp=Z,69nm,0.9s
T36A Boggs Farm, Ca 87.75 44 P P 07 28 59.0 -0.3
baz=317,SNR=17
WMOK Wichita Mounta 87.76 47 *eP* P 07 28 59.5 0.0
WMOK pmax pmax
comp=Z,30nm,1.2s
WMOK Wichita Mounta 87.76 47 *eP* P 07 28 59.5 0.0
comp=Z,30nm,1.2s
U35A Pawnee 87.77 45 P P 07 28 59.0 -0.4
baz=316,SNR=10
S37A Fort Scott 87.81 43 P P 07 28 59.1 -0.5
baz=317,SNR=8.5
Q39A Willow Grove F 87.85 41 P P 07 28 59.3 -0.4
baz=318,SNR=25
LAST Lasithi 87.92 314⇑ *iP* P 07 29 00.3 0.0
LAST Lasithi 87.92 314 *eP* P 07 29 00.2 0.0
comp=Z,39nm,1.0s
SLBS Sierra La Lagu 87.96 62 *eP* P 07 29 01.7 +1.0
comp=Z,28nm,1.0s
P40A Paris 87.96 40 P P 07 28 59.7 -0.6
baz=319,SNR=13
W34A Bridge Creek, 87.99 46 P P 07 29 00.2 -0.3
baz=316,SNR=8.0
W34A Bridge Creek, 87.99 46 *eP* P 07 29 01.1 +0.6
comp=Z,64nm,1.1s
R38A Fenwick Farm, 87.99 42 P P 07 28 58.8 -1.7
baz=318,SNR=10
SENIN Lac Senin/Sane 88.01 331 *eP* P 07 29 00.4 -0.2
comp=Z,19nm,1.0s
X33A Lawton 88.06 47 P P 07 29 00.3 -0.5
baz=315,SNR=6.5
V35A Meyer Ranch, C 88.15 45 P P 07 29 00.8 -0.4
baz=316,SNR=7.1
T37A Cheneyville 18 88.23 43 P P 07 29 01.1 -0.6
baz=317,SNR=6.7
U36A Oologah 88.31 44 P P 07 29 01.9 -0.1
baz=317
Q40A Laux Farm, Aux 88.35 40 P P 07 29 01.4 -0.7
baz=319,SNR=16
R39A Chumby, Stover 88.36 41 P P 07 29 01.1 -1.1
baz=318,SNR=14
Y33A Hilltop Ranch, 88.37 47 P P 07 29 01.5 -0.8
baz=315,SNR=8.4
S38A Stockton 88.40 42 P P 07 29 01.1 -1.3
baz=318,SNR=10.0
X34A Smith Ranch, M 88.41 47 P P 07 29 02.8 +0.3
baz=316
TX31 Lajitas Ar. Si 88.48 54 *eP* P 07 29 03.0 -0.1
TXAR Lajitas Array 88.48 54 P P 07 29 03.0 0.0
comp=Z,20nm,0.7s,baz=297,slow=3.5,SNR=205
TXAR LR LR 08 05 37.2
comp=Z,180nm,19.2s,baz=0.0,slow=34
HDIL Hopedale 88.56 38 P P 07 29 03.1 0.0
baz=320
HDIL Hopedale 88.56 38 *eP* P 07 29 02.9 -0.2
comp=Z,75nm,1.0s
W35A Tecumseh 88.57 46 P P 07 29 03.1 -0.2
baz=316,SNR=9.9
TUL1 Leonard 88.63 44 P P 07 29 03.3 -0.1
baz=317,SNR=13
TUL1 Leonard 88.63 44 *eP* P 07 29 03.4 -0.1
comp=Z,39nm,1.1s
T38A Diamond 88.63 43 P P 07 29 02.8 -0.7
baz=318,SNR=30
V36A Jenks 88.64 45 P P 07 29 03.4 -0.2
baz=317,SNR=11
U37A Salina 88.64 44 P P 07 29 03.0 -0.6
baz=317,SNR=12
S39A Bolivar 88.67 42 P P 07 29 02.6 -1.1
baz=318,SNR=19
ABTX Abilene, Hawle 88.73 49 P P 07 29 03.9 -0.2
baz=315,SNR=5.8
ABTX Abilene, Hawle 88.73 49 *eP* P 07 29 04.2 +0.1
comp=Z,28nm,1.0s
AQU L'Aquila 88.74 326 *eP* P 07 29 04.3 +0.3
AQU pmax pmax
comp=Z,29nm,0.7s
AQU L'Aquila 88.74 326 *eP* P 07 29 04.3 +0.3
comp=Z,28nm,0.7s
HPIG 88.78 57 *eP* P 07 29 03.6 -1.0
comp=Z,25nm,1.0s
R40A Maddies Statio 88.78 41 P P 07 29 03.2 -0.9
baz=319,SNR=24
Z33A Whitaker Ranch 88.79 48 P P 07 29 03.9 -0.4
baz=315,SNR=12
Y34A Reagan Ranch, 88.91 47 P P 07 29 04.3 -0.6
baz=316
W36A Wetumka 88.94 45 P P 07 29 04.6 -0.4
baz=316,SNR=9.6
V37A Hulbert 89.01 44 P P 07 29 04.8 -0.5
baz=317,SNR=14
U38A Gravette 89.02 43 P P 07 29 05.0 -0.3
baz=318,SNR=14
X35A Drake 89.05 46 P P 07 29 05.1 -0.4
baz=316,SNR=5.6
T39A Clever 89.14 42 P P 07 29 05.1 -0.8
baz=318,SNR=10
S40A Lebanon 89.17 41 P P 07 29 05.2 -0.8
baz=319,SNR=14
133A Hamilton Ranch 89.18 49 P P 07 29 06.1 -0.1
baz=315
Z34A Collier Ranch, 89.23 47 P P 07 29 06.1 -0.3
baz=316,SNR=8.8
X36A Centrahoma 89.28 46 P P 07 29 06.6 0.0
baz=316,SNR=19
Y35A Marietta 89.36 47 P P 07 29 06.7 -0.3
baz=316
HHAR Hobbs 89.38 43 *eP* P 07 29 06.8 -0.3
comp=Z,22nm,1.0s

W37B Quinton 89.39 45 P P 07 29 07.1 -0.1
baz=317,SNR=6.5
V38A Canehill 89.43 44 P P 07 29 07.0 -0.3
baz=318,SNR=33
T40A Mansfield 89.50 42 P P 07 29 06.7 -0.9
baz=319,SNR=28
U39A Green Forest 89.56 43 P P 07 29 07.3 -0.6
baz=318,SNR=30
SLM Saint Louis 89.56 39 *eP* P 07 29 08.0 +0.2
SLM pmax pmax
comp=Z,83nm,1.1s
SLM Saint Louis 89.56 39 *eP* P 07 29 08.0 +0.2
comp=Z,83nm,1.1s
SADO Sadowa 89.60 29 *eP* P 07 29 07.5 -0.3
comp=Z,24nm,1.3s
233A Rising Star 89.61 49 P P 07 29 08.2 -0.1
baz=315,SNR=11
TIP Timpagrande 89.63 322 *eP* P 07 29 08.6 +0.4
comp=Z,65nm,1.5s
Z35A Perchaven, San 89.65 47 P P 07 29 07.8 -0.5
baz=316,SNR=13
PLDF La Plantade 89.70 333⇓ *eP* P 07 29 08.9 +0.5
134A White-Moore Ra 89.70 48 P P 07 29 08.5 -0.2
baz=316,SNR=7.2
SFIN Lafayette 89.75 36 P P 07 29 08.8 +0.1
baz=322
SFIN Lafayette 89.75 36 *eP* P 07 29 08.9 +0.2
comp=Z,32nm,0.9s
AGO Saint Agoulin 89.80 334⇓ *eP* P 07 29 09.4 +0.6
Y36A Durant 89.80 46 P P 07 29 08.6 -0.4
baz=316,SNR=5.8
X37A Clayton 89.83 45 P P 07 29 09.2 +0.1
baz=317
V39A Pettigrew 89.87 43 P P 07 29 08.4 -1.0
baz=318,SNR=20
U40A Yellville 89.91 42 P P 07 29 08.8 -0.7
baz=318,SNR=53
W38A Poteau 89.95 44 P P 07 29 09.5 -0.2
baz=317
SSB Saint Sauveur 89.96 333 *eP* P 07 29 09.4 -0.2
SSB pmax pmax
comp=Z,12nm,1.1s
SSB Saint Sauveur 89.96 333 *eP* P 07 29 09.4 -0.2
comp=Z,12nm,1.1s
TRQ Mont Tremblant 90.03 25 *eP* P 07 29 09.7 -0.3
333A Richland Sprin 90.04 50 P P 07 29 10.0 -0.3
baz=315,SNR=26
X38A Whitesboro 90.07 45 P P 07 29 10.2 -0.1
baz=317,SNR=19
234A Clairette 90.07 49 P P 07 29 10.3 -0.1
baz=315
PYM Petit Puy Mans 90.11 334 *eP* P 07 29 10.8 +0.5
135A Vickery Place, 90.11 48 P P 07 29 10.5 0.0
baz=316,SNR=5.4
Y37A Hugo 90.13 46 P P 07 29 10.5 -0.1
baz=317
JCT Junction City 90.13 51 P P 07 29 10.3 -0.4
baz=315,SNR=19
JCT Junction City 90.13 51 *eP* P 07 29 10.3 -0.4
JCT pmax pmax
comp=Z,25nm,0.8s
JCT Junction City 90.13 51 *eP* P 07 29 10.3 -0.4
comp=Z,25nm,0.8s
Z36A Blue Ridge 90.17 47 P P 07 29 10.4 -0.4
baz=316,SNR=9.3
LMQ La Malbaie 90.23 22 *eP* P 07 29 10.9 +0.1
comp=Z,56nm,1.1s
W39A Magazine 90.27 44 P P 07 29 10.7 -0.4
baz=318,SNR=7.8
V40A Witts Springs 90.34 43 P P 07 29 10.6 -1.0
baz=318,SNR=9.3
433A Art 90.38 50 P P 07 29 10.9 -0.9
baz=315,SNR=12
LBL Lubilhac 90.47 333 *eP* P 07 29 12.8 +0.8
334A Lometa 90.49 49 P P 07 29 11.8 -0.6
baz=315,SNR=17
WHTX Lake Whitney, 90.49 48 P P 07 29 12.1 -0.2
baz=316,SNR=7.5
WHTX Lake Whitney, 90.49 48 *eP* P 07 29 12.4 +0.2
comp=Z,60nm,1.0s
OLIL Olney 90.55 38 *eP* P 07 29 12.8 +0.4
comp=Z,60nm,1.1s
X39A Fountain Ranch 90.59 44 P P 07 29 12.5 -0.2
baz=318,SNR=30
W40A Ferguson Farm, 90.66 43 P P 07 29 12.6 -0.4
baz=318,SNR=14
Y38A Idabel 90.67 45 P P 07 29 12.8 -0.3
baz=317
136A Ennis 90.69 47 P P 07 29 12.8 -0.4
baz=316
Z37A Pogue Cattle C 90.69 46 P P 07 29 12.9 -0.3
baz=317,SNR=6.6
SIUC Southern Illin 90.78 39 *eP* P 07 29 13.9 +0.3
comp=Z,46nm,0.9s
434A Burnet 90.84 49 P P 07 29 13.3 -0.7
baz=315,SNR=12
MIAR Mount Ida 90.86 44 P P 07 29 13.8 -0.2
baz=318,SNR=42
MIAR Mount Ida 90.86 44 *eP* P 07 29 13.9 -0.1
MIAR pmax pmax
comp=Z,76nm,1.1s
MIAR Mount Ida 90.86 44 *eP* P 07 29 13.9 -0.1
comp=Z,76nm,1.1s
PBMO Poplar Bluff 90.88 41 *eP* P 07 29 13.8 -0.1
comp=Z,63nm,1.0s
533A Kerrville 90.89 50 P P 07 29 13.4 -0.8
baz=315,SNR=5.4
X201 Greenbrier Sit 90.97 43 *eP* P 07 29 13.9 -0.5
comp=Z,51nm,1.1s
X301 Greenbrier Sit 90.99 43 *eP* P 07 29 14.3 -0.3
comp=Z,29nm,1.0s
335A Moody 91.01 49 P P 07 29 14.7 -0.1
baz=316
WHAR Wooly Hollow 91.01 43 *eP* P 07 29 14.1 -0.5
comp=Z,65nm,1.0s
Z38A Mt. Pleasant 91.02 46 P P 07 29 14.5 -0.2
baz=317
Y39A Lockesburg 91.02 45 P P 07 29 14.5 -0.2
baz=318,SNR=26
236A Katherine and 91.03 48 P P 07 29 14.7 -0.1
baz=316
137A Heron Place, G 91.05 47 P P 07 29 14.7 -0.2
baz=317
W41B Gary Mavity, V 91.12 43 P P 07 29 14.8 -0.3
baz=319
633A Saathoff Ranch 91.23 51 P P 07 29 15.5 -0.3
baz=315
534A Blanco 91.27 50 P P 07 29 15.4 -0.6
baz=315,SNR=20
435B Jarrell 91.27 49 P P 07 29 15.5 -0.4
baz=316
336A Riesel 91.28 48 P P 07 29 15.8 -0.2
baz=316,SNR=7.6
X40A Basin Creek Fa 91.31 44 P P 07 29 15.7 -0.3
baz=318,SNR=7.7
UALR University of 91.37 43 *eP* P 07 29 16.4 +0.1
comp=Z,17nm,0.9s
138A Matatall Enter 91.39 46 P P 07 29 16.9 +0.4
baz=317
Y40A Okolona 91.42 44 P P 07 29 16.2 -0.3
baz=318,SNR=6.7
237A Washetta, Mont 91.45 47 P P 07 29 17.1 +0.3
baz=317
ERPA Erie 91.48 31 *eP* P 07 29 17.1 +0.4
comp=Z,29nm,1.1s
Z39A Irene McRaven, 91.48 45 P P 07 29 17.2 +0.3
baz=318
X41A Kaden, Bauxite 91.48 43 P P 07 29 16.9 0.0
baz=319
832A Faith Ranch, C 91.56 52 P P 07 29 17.3 0.0
baz=314,SNR=8.8
733A Divot King Ran 91.68 52 P P 07 29 17.9 0.0
baz=315,SNR=5.1
ACSO Alum Creek Sta 91.75 34 *eP* P 07 29 17.8 -0.2
comp=Z,24nm,1.0s
436A Wall Ranch, Ga 91.75 49 P P 07 29 18.6 +0.4
baz=316
WLAR White Oak Lake 91.75 44 *eP* P 07 29 18.7 +0.6
comp=Z,84nm,1.0s
139A Bunkhouse Ranc 91.78 46 P P 07 29 18.3 +0.1
baz=318
634A China Grove, S 91.80 51 P P 07 29 18.2 -0.2
baz=315
535A Dale 91.82 50 P P 07 29 18.4 0.0
baz=316
WCI Wyandotte Cave 91.82 37 *eP* P 07 29 18.5 +0.1
WCI pmax pmax
comp=Z,30nm,1.1s

WCI	Wyandotte Cave	91.82	37	eP		P	07 29 18.5	+0.1
	comp=Z,30nm,1.1s							
238A	Jacksonville	91.85	47	P		P	07 29 18.9	+0.3
	baz=317							
Y41A	Eaglette Beard	91.89	44	P		P	07 29 19.1	+0.4
	baz=318							
833A	Chaparral WMA,	91.89	52	P		P	07 29 18.9	0.0
	baz=315,SNR=6.5							
337A	Centerville	91.90	48	P		P	07 29 19.5	+0.7
	baz=317							
Z40A	Long Farm, Mag	91.91	45	P		P	07 29 19.3	+0.4
	baz=318,SNR=12							
UTMT	University of	92.02	40	eP		P	07 29 19.7	+0.5
	comp=Z,100nm,1.1s							
734A	La Parita Cree	92.05	51	P		P	07 29 19.9	+0.3
	baz=315							
536A	Bastrop	92.09	49	P		P	07 29 19.9	+0.2
	baz=316							
437A	Phantom Ranch,	92.10	48	P		P	07 29 20.2	+0.4
	baz=316							
HALT	Halls	92.11	41	eP		P	07 29 19.7	+0.1
	comp=Z,62μm,1.0s							
M54A	Oil Creek Stat	92.12	31	P		P	07 29 18.8	-0.9
	baz=327							
635A	Leesville	92.15	50	P		P	07 29 20.2	+0.2
	baz=316							
338A	Crockett	92.21	47	P		P	07 29 20.4	+0.2
	baz=317							
239A	Gary	92.22	46	P		P	07 29 20.6	+0.3
	baz=317							
Z41A	Richland Creek	92.25	44	P		P	07 29 20.5	+0.2
	baz=318							
140A	Cam and Jess,	92.27	45	P		P	07 29 20.4	-0.1
	baz=318							
NATX	Nacogdoches	92.30	47	P		P	07 29 20.9	+0.3
	baz=317							
CCAR	Cane Creek	92.32	43	eP		P	07 29 21.3	+0.6
	comp=Z,133nm,1.3s							
Y42A	Garnett, Star	92.38	43	P		P	07 29 21.4	+0.4
	baz=319							
N54A	Moraine State	92.44	32	P		P	07 29 21.1	-0.1
	baz=327							
933A	Laredo	92.47	52	P		P	07 29 22.3	+0.7
	baz=315,SNR=13							
735A	Kenedy	92.51	51	P		P	07 29 22.1	+0.5
	baz=316							
636A	Smothers Creek	92.52	50	P		P	07 29 22.4	+0.7
	baz=316,SNR=5.6							
537A	Green Hill Far	92.54	49	P		P	07 29 21.7	-0.1
	baz=316							
438A	Sam Houston St	92.56	48	P		P	07 29 21.8	-0.1
	baz=317							
240A	Hunter Patters	92.61	46	P		P	07 29 22.2	+0.2
	baz=318							
141A	Papa Simpson,	92.67	45	P		P	07 29 22.8	+0.4
	baz=318							
WVT	Waverly	92.71	39	eP		P	07 29 22.1	-0.4
WVT				pmax		pmax		
	comp=Z,15nm,0.8s							
WVT	Waverly	92.71	39	eP		P	07 29 22.1	-0.4
	comp=Z,15nm,0.8s							
Z42A	Norrel Spur, H	92.71	44	P		P	07 29 22.8	+0.3
	baz=319							
Y43A	Makayla and Ka	92.79	43	P		P	07 29 23.6	+0.8
	baz=320							
736A	Circle Diamond	92.89	50	P		P	07 29 24.1	+0.7
	baz=316							
835A	Beeville	92.89	51	P		P	07 29 24.2	+0.7
	baz=316							
HKT	Hockley	92.92	49	eP		P	07 29 24.0	+0.5
HKT				pmax		pmax		
	comp=Z,37nm,1.6s							
HKT	Hockley	92.92	49	eP		P	07 29 24.0	+0.5
	comp=Z,37nm,1.6s							
637A	Eagle Lake	92.99	49	P		P	07 29 24.6	+0.7
	baz=316							
241A	Mo Tay, Goldon	93.10	45	P		P	07 29 25.1	+0.8
	baz=318							
Y44A	Strider, Charl	93.14	42	P		P	07 29 24.4	-0.1
	baz=320							
OXF	Oxford	93.14	41	eP		P	07 29 24.5	0.0
OXF				pmax		pmax		
	comp=Z,81nm,1.0s							
OXF	Oxford	93.14	41	eP		P	07 29 24.5	0.0
	comp=Z,81nm,1.0s							
Z43A	Armstrong Fami	93.14	43	P		P	07 29 24.7	+0.1
	baz=319							
034A	Hebbronville	93.22	52	P		P	07 29 25.5	+0.5
	baz=315							
142A	Monroe	93.25	44	P		P	07 29 25.2	+0.1
	baz=319							
LMN	Caledonia Moun	93.34	20	eP		P	07 29 25.6	+0.3
	comp=Z,46nm,1.2s							
143A	Socs Landing,	93.44	44	P		P	07 29 25.9	0.0
	baz=319							
440A	Kirbyville	93.45	47	P		P	07 29 25.9	-0.1
	baz=318							
539A	Cross D Ranch,	93.46	48	P		P	07 29 26.4	+0.3
	baz=317							
341A	Kurthwood	93.47	46	P		P	07 29 26.1	0.0
	baz=318							
242A	Grayson	93.50	45	P		P	07 29 26.5	+0.3
	baz=319							
Z44A	Pea Ridge, Bel	93.54	43	P		P	07 29 26.6	+0.2
	baz=320							
Y45A	Yeager Farm, C	93.57	42	P		P	07 29 26.7	+0.2
	baz=320							
O56A	Blue Knob Stat	93.61	31	P		P	07 29 26.4	-0.2
	baz=328							
ZAIG	Zacatecas	93.65	58	eP		P	07 29 28.2	+0.7
	comp=Z,24nm,1.0s							
Z45A	Winona	93.87	42	P		P	07 29 28.0	+0.1
	baz=320							
Y46A	Houston	93.92	41	P		P	07 29 27.9	-0.2
	baz=321							
243A	Waterproof	94.01	44	P		P	07 29 29.1	+0.5
	baz=319							
144A	Alexander Plac	94.03	43	P		P	07 29 28.5	-0.1
	baz=320							
035Z	Hargill	94.04	52	P		P	07 29 28.8	+0.1
	baz=315							
N59A	State Game Lan	94.18	29	P		P	07 29 29.0	-0.2
	baz=330							
VBMS	Vicksburg	94.29	44	P		P	07 29 30.1	+0.2
	baz=320							
145A	Houston Renfro	94.32	43	P		P	07 29 29.8	-0.2
	baz=320							
244A	Avery, Jackson	94.33	44	P		P	07 29 29.9	-0.1
	baz=320							
SWET	Sewanee	94.38	39	eP		P	07 29 29.8	-0.5
	comp=Z,6.9nm,0.9s							
343A	Vidalia	94.39	45	P		P	07 29 30.5	+0.2
	baz=319							
Z46A	Louisville	94.40	42	P		P	07 29 30.5	+0.2
	baz=321							
Y47A	UCPARC, Winfie	94.43	41	P		P	07 29 30.3	-0.2
	baz=321							
TZTN	Tazewell	94.48	36	eP		P	07 29 30.7	0.0
	comp=Z,14nm,0.9s							
344A	Westbrook Farm	94.76	44	P		P	07 29 32.2	+0.2
	baz=320							
146A	Union	94.77	42	P		P	07 29 32.1	+0.1
	baz=320							
245A	Little AP, Sta	94.78	43	P		P	07 29 32.1	+0.1
	baz=320							
Z47A	Carrollton	94.86	41	P		P	07 29 32.5	+0.1
	baz=321							
CPCT	Cooper Cave	94.89	38	eP		P	07 29 32.3	-0.3
	comp=Z,9.5nm,1.0s							
Z48A	Northport	94.99	41	P		P	07 29 32.2	-0.8
	baz=322							
TKL	Tuckaleechee C	95.09	37	eP		P	07 29 32.8	-0.7
TKL				pmax		pmax		
	comp=Z,12nm,0.8s							
TKL	Tuckaleechee C	95.09	37	eP		P	07 29 32.8	-0.7
	comp=Z,12nm,0.8s							
147A	Livingston	95.16	42	P		P	07 29 33.6	-0.2
	baz=321							
345A	Thompson Farm,	95.25	44	P		P	07 29 34.5	+0.2
	baz=320							
BLA	Blacksburg	95.37	34	eP		P	07 29 34.0	-0.8
BLA				pmax		pmax		
	comp=Z,10.0nm,1.1s							
BLA	Blacksburg	95.37	34	eP		P	07 29 34.0	-0.8
	comp=Z,10nm,1.1s							
247A	Quitman	95.46	42	P		P	07 29 35.4	+0.2
	baz=321							
346A	Big Creek Wild	95.51	43	P		P	07 29 35.3	-0.1
	baz=320							
445A	Amite	95.52	44	P		P	07 29 35.6	+0.1
	baz=320							
248A	Dixon Mills	95.89	42	P		P	07 29 37.1	-0.1
	baz=321							
KEST	Kesra	95.94	324	P		P	07 29 36.4	-1.0
	comp=Z,6.2nm,1.0s,baz=284,slow=16,SNR=3.2							
KEST				LR		LR	08 18 22.1	
	comp=Z,697nm,18.1s,baz=340,slow=39							
545A	Edgard	95.96	45	P		P	07 29 37.8	+0.3
	baz=320							
347A	Saraland	96.00	43	P		P	07 29 37.8	+0.2
	baz=321							
348A	Jackson	96.33	42	P		P	07 29 38.8	-0.3
	baz=321							
KMSC	Kings Mountain	96.66	36	P		P	07 29 40.2	-0.5
	baz=326							
KMSC	Kings Mountain	96.66	36	eP		P	07 29 40.1	-0.5
	comp=Z,12nm,1.0s							
GOGA	Godfrey	97.05	38	eP		P	07 29 41.0	-1.4
GOGA				pmax		pmax		
	comp=Z,18nm,1.4s							
GOGA	Godfrey	97.05	38	eP		P	07 29 41.0	-1.4
	comp=Z,18nm,1.4s							
RKT	Rikitea	97.13	113	eLR		LR	08 00 46.5	
	comp=Z,237nm,25.8s							
JSC	Jenkinsville	97.40	36	eP		P	07 29 43.5	-0.5
JSC				pmax		pmax		
	comp=Z,7.0nm,1.1s							
JSC	Jenkinsville	97.40	36	eP		P	07 29 43.5	-0.5
	comp=Z,7.4nm,1.1s							
ES19	SONSECA Array	97.82	335	eP		Pdif	07 29 45.9	0.0
ESDC	Sonseca Array	97.87	335	P		Pdif	07 29 46.4	+0.3
	comp=Z,2.2nm,0.7s,baz=15,slow=4.2,SNR=6.6							
ESDC				PP		PP	07 33 44.0	+0.5
	comp=Z,0.3nm,0.3s,baz=19,slow=5.5,SNR=4.4							
ESDC				LR		LR	08 19 26.9	
	comp=Z,353nm,18.8s,baz=355,slow=39							
TIGA	Tifton	98.57	39	Pdiff		P	07 29 48.7	-0.6
	baz=324							
VNDA	Vanda	115.07	176	PKP		PKPdf	07 34 50.0	0.0
	comp=Z,2.6nm,0.9s,baz=311,slow=3.1,SNR=9.1							
VNDA				PP		PP	07 35 47.7	-2.9
	comp=Z,1.2nm,1.1s,baz=272,slow=5.1,SNR=4.1							
VNDA				PKKPab		PKKPab	07 45 30.4	+1.7
	comp=Z,1.0nm,0.7s,baz=172,slow=4.5,SNR=3.9							
TOA0	Torodi Ar. Sit	118.45	317	ePKPdf		PKPdf	07 34 57.2	-1.2
TORD	Torodi Ar. Bea	118.45	317	PKP		PKPdf	07 34 57.4	-1.1
	comp=Z,2.4nm,0.6s,baz=26,slow=1.7,SNR=18							
TORD				PP		PP	07 36 10.9	-3.4
	comp=Z,2.9nm,0.9s,baz=31,slow=5.5,SNR=7.3							
TORD				PKKPbc		PKKPbc	07 45 15.4	+1.0
	comp=Z,2.4nm,0.9s,baz=217,slow=3.0,SNR=11							
MAW	Mawson	120.57	206	PKP		PKPdf	07 35 00.9	+0.2
	comp=Z,4.6nm,0.6s,baz=158,slow=3.4,SNR=7.9							
SDV	Santo Domingo	123.92	42	ePKPdf		PKPdf	07 35 09.1	-0.1
ROSC	El Rosal	125.12	49	PKP		PKPdf	07 35 11.4	-0.4
	comp=Z,6.0nm,0.8s,baz=33,slow=8.8,SNR=5.1							
ROSC	El Rosal	125.12	49	ePKPdf		PKPdf	07 35 12.3	+0.6
OTAV	Otavalo	126.05	56	ePKPdf		PKPdf	07 35 13.7	+0.1
LBTB	Lobatse	126.52	264	ePKIKP		PKPdf	07 35 13.7	0.0
LBTB	Lobatse	126.52	264	ePKPdf		PKPdf	07 35 13.7	0.0
QSPA	South Pole Qui	127.02	180	ePKPdf		PKPdf	07 35 12.7	-0.6
DBIC	Dimbokro	127.35	319	PKP		PKPdf	07 35 16.0	+0.5
	comp=Z,4.5nm,0.6s,baz=23,slow=4.0,SNR=6.4							
DBIC				PP		PP	07 37 12.7	-1.8
	comp=Z,11nm,1.0s,baz=37,slow=8.0,SNR=4.8							
BOSA	Boshof	128.45	261	PKP		PKPdf	07 35 16.7	-0.6
	comp=Z,8.1nm,1.1s,baz=110,slow=2.4,SNR=3.8							
SYO	Syowa Base	129.26	207	⇓eX		PKPdf	07 35 15.8	-1.6
PTGA	Pitinga	137.55	37	ePKPdf		PKPdf	07 35 35.1	+0.3
SNAA	Sanae	141.52	196	PKP		PKPpre	07 35 33.2	
SNAA	Sanae	141.52	196	ePKHKP		PKPpre	07 35 33.6	
SNAA	Sanae	141.52	196	ePKPpre		PKPpre	07 35 33.5	
SAML	Samuel	142.73	48	ePKPpre		PKPpre	07 35 40.2	
VNA2	Neumayer--Watz	143.06	195	PKP		PKPab	07 35 38.6	+0.3
	baz=125,slow=2.9							
VNA3	Neumayer Olymp	143.27	194	PKP		PKPab	07 35 39.6	+0.4
VNA1	Neumayer--Stat	143.46	195	PKP		PKPbc	07 35 41.0	+0.1
ASCN	Ascension	144.67	320	ePKPdf		PKPdf	07 35 47.0	-0.5
LPAZ	La Paz	144.95	62	PKP		PKPab	07 35 47.4	-0.5
	comp=Z,12nm,0.8s,baz=304,slow=2.9,SNR=56							
PB01	IPOC Station P	146.99	70	ePKPdf		PKPdf	07 35 52.1	+0.8
PB04	IPOC Station P	147.23	73	ePKPbc		PKPbc	07 35 53.8	-0.3
PB10	IPOC Station P	147.58	75	ePKPbc		PKPbc	07 35 55.8	+1.0
LVC	Limon Verde	148.33	72	ePKPdf		PKPdf	07 35 55.5	+1.6
RCBR	Riachuelo	148.69	359	ePKPbc		PKPbc	07 35 58.0	-0.1
LCO	Las Campanas	150.13	84	ePKPbc		PKPbc	07 36 01.4	-0.1
ROC1	El Roble	151.35	92	ePKPbc		PKPbc	07 36 04.0	-0.2
PLCA	Paso Flores	153.23	108	PKP		PKPdf	07 36 00.2	-0.3
	comp=Z,2.3nm,0.8s,baz=319,slow=17,SNR=2.4							
PLCA				PKPbc		PKiKP	07 36 09.0	+0.9
	comp=Z,17nm,1.0s,baz=275,slow=4.2,SNR=10							
PLCA				PKPab		PKPab	07 36 20.8	+0.8
	comp=Z,18nm,0.8s,baz=276,slow=4.2,SNR=12							
PLCA	Paso Flores	153.23	108	PKP		PKPdf	07 36 00.2	-0.3
PLCA				ePKPbc		PKiKP	07 36 09.1	+0.9
PLCA				ePKPab		PKPab	07 36 21.1	+1.1
CPUP	Villa Florida	159.07	65	PKP		PKPdf	07 36 10.4	+1.9
	comp=Z,2.5nm,1.0s,baz=102,slow=6.0,SNR=3.8							
CPUP				PKPab		PKPab	07 36 43.1	-2.2
	comp=Z,12nm,1.0s,baz=315,slow=5.2,SNR=12							
CPUP	Villa Florida	159.07	65	PKiKP		PKPdf	07 36 10.4	+1.9
CPUP				e			07 36 44.8	
CPUP	Villa Florida	159.07	65	PKP		PKPdf	07 36 10.4	+1.9
CPUP				ePKPab		PKPab	07 36 44.8	-0.5
TRQA	Tornquist	159.63	100	ePKPab		PKPab	07 36 47.6	0.0

NNC ***10*** *07:19:43.0±0.8, 44°.76N×79°.22E, h0km, mb2.9, mpv2.6, Error ellipse: s-maj=10.9km s-min=4.1km az=107.0*
SOME ***10*** *07:19:44.8, 44°.73N×79°.15E, h15km*
ISC 10 07:19:43.9±1.1, 44°.74N±0°.03×79°.17E±0°.03, h6km±10km, n25, σ0°55/47, 8C-6D, Eastern Kazakhstan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAPS	Kapalarasan	0.57	14	eP	Pg	07 19 54.8	+0.1
KAPS	58nm,0.1s			eS	Sg	07 20 01.9	-0.3
DJR	Jarkent	0.60	132	eP	Pg	07 19 55.7	+0.3
DJR	48nm,0.1s			eS	Sg	07 20 03.7	+0.4
TDK	Taldyqorghan	0.60	297	eP	Pg	07 19 55.4	-0.1
TDK	269nm,0.1s			eS	Sg	07 20 02.6	-0.8
MNBS	Baschi	0.85	220	eP	Pb	07 20 01.2	+0.1
MNBS	190nm,0.1s			eS	Sb	07 20 13.1	+0.2
ARXS	Arharly	1.09	242	eP	Pg	07 20 04.7	-0.1
ARXS	100nm,0.1s			eS	Sg	07 20 19.0	+0.1
KPKS	Kokpek	1.32	195	eP	Pn	07 20 08.6	-0.3
KPKS	242nm,0.2s			eS	Sb	07 20 25.6	-0.6
PDGK	Podgornoye	1.43	171	⇓P	Pn	07 20 10.1	-0.2
PDGK	86nm,0.2s			⇓S	Sb	07 20 29.3	+0.1
KURS	Kuram	1.44	210	eP	Pg	07 20 11.4	0.0
KURS	34nm,0.5s			eS	Sg	07 20 30.4	+0.3
KTMS	Ketmen	1.55	146	eP	Pb	07 20 12.8	-0.2
KTMS	57nm,0.3s			eS	Sb	07 20 32.9	0.0
UZB	Uzynbulak	1.59	184	eP	Pn	07 20 13.0	+0.3
UZB	32nm,0.2s			eS	Sn	07 20 33.6	-0.1
ZHN	Zhinishke	1.65	199	eP	Pb	07 20 14.4	-0.5
ZHN	51nm,0.2s			eS	Sn	07 20 35.5	+0.3
SHLS	Shalkode	1.66	162	eP	Pb	07 20 14.5	-0.5
SHLS	104nm,0.2s			eS	Sb	07 20 36.0	-0.2
SATY	Saty	1.76	198	eP	Pb	07 20 16.1	-0.6
SATY	41nm,0.1s			eS	Sb	07 20 39.1	0.0
CHKK	Chushkaly	1.78	242	eP	Pb	07 20 16.1	-0.8
CHKK	56nm,0.1s			eS	Sn	07 20 38.5	+0.4
KOTS	Kotyrbulak	2.11	225	eP	Pb	07 20 21.9	-0.7
KOTS	16nm,0.2s			eS	Sb	07 20 48.7	-0.4
TNSS	Tian-Shan	2.33	224	eP	Pb	07 20 25.7	-0.8
TNSS	20nm,0.2s			eS	Sb	07 20 55.6	-0.2
IZV	Izvestkoviy	2.51	228	eP	Pb	07 20 29.3	-0.2
IZV	4.4nm,0.2s			eS	Sb	07 21 01.4	+0.8
MTBS	Maitube	2.55	232	eP	Pb	07 20 29.7	-0.3
MTBS	2.2nm,0.1s			eS	Sb	07 21 01.8	+0.1
MAKZ	Makanchi	2.86	43	⇑Pn	Pn	07 20 31.0	+1.0
MAKZ	4.6nm,0.1s			⇑Pg	Pb	07 20 35.3	+0.1
MAKZ	0.3nm,0.5s			⇑Lg	Lg	07 21 10.9	
KST	Kastek	2.87	235	eP	Pb	07 20 34.8	-0.7
KST	1.8nm,0.6s			eS	Sb	07 21 10.5	-0.4
DGS	Degeres	2.87	240	eP	Pb	07 20 35.5	0.0
DGS	1.3nm,0.2s			eS	Sb	07 21 11.9	+1.0
MK31	Makanchi Array	3.00	46	⇑Pn	Pn	07 20 32.6	+0.6
MK31	3.9nm,0.3s			⇓Pg	Pb	07 20 37.5	-0.3
MK31	0.2nm,0.3s,baz=217,slow=14,SNR=53			⇑Sn	Sn	07 21 07.0	-1.3
MK31	1.9nm,0.3s,baz=224,slow=15,SNR=26			⇓Lg	Lg	07 21 16.1	
TKM2	Tokmak 2	3.16	236	⇓Pg	Pb	07 20 41.8	+1.3
TKM2	0.7nm,0.4s,baz=220,slow=25,SNR=4.4			⇓Lg	Lg	07 21 21.9	
AAK	Ala-Archa	3.99	240	⇑Pg	Pb	07 20 55.5	+0.8
AAK	1.3nm,0.2s,baz=226,slow=26,SNR=8.7			⇑Lg	Lg	07 21 49.3	
KURK	Kurchatov	6.00	357	⇑Lg	Lg	07 22 51.2	
	1.5nm,0.6s						
	6.7nm,0.5s						
	10nm,0.9s						

KRNET ***10*** *07:24:41.3±0.1, 39°.91N×75°.14E, mb3.1*
ISC 10 07:24:38.3±1.5, 39°.72N±0°.05×75°.33E±0°.04, h10km±14km, n8, σ1°07/16, 10C-4D, Southern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSH	Kashi	0.54	113	Pg	Pg	07 24 49.1	+0.4
KSH				Sg	Sb	07 24 57.2	-0.5
KSH				smax	smax		
	comp=N,500nm,0.3s						
KSH				smax	smax		
	comp=E,340nm,0.2s						
SFK	Sufi-Kurgan	1.44	282	⇑iP	Pg	07 25 06.2	+0.3
SFK	baz=276			⇑iS	Sn	07 25 23.7	0.0
NRN	Naryn	1.78	16	⇑iP	Pg	07 25 12.3	-0.2
NRN	baz=23			⇑iS	Sg	07 25 35.3	-0.3
UCH	Uchtor	2.58	346	⇑iP	Pb	07 25 24.5	-0.4
UCH	baz=349			⇑iS	Sb	07 25 58.1	+1.3
ULHL	Ulahol	2.61	15	⇑eP	Pb	07 25 25.9	+0.6
ULHL	baz=19			⇑iS	Sb	07 25 59.6	+2.1
AML	Almayashu	2.71	333	⇓iP	Pb	07 26 26.6	-0.5
AML	baz=334			⇓iS	Sb	07 26 00.7	+0.2
KDJ	Kajisay	2.78	30	⇑iP	Pb	07 25 28.3	+0.1
KDJ	baz=34			⇑iS	Sb	07 26 03.1	+0.7
BOOM	Boomskoye usch	2.80	9	⇓eP	Pb	07 25 27.4	-1.1
BOOM	baz=13			⇓iS	Sb	07 26 00.8	-2.2
	baz=13						

BUC 10 07:27:21.6±0.1, 46°.05N×22°.84E, h8km±1km, MD2.2/2, 4C-4D, Error ellipse: s-maj=1.9km s-min=1.1km az=78.0, Romania

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEV	Deva	0.17	166	⇑iP	Pg	07 27 25.4	+0.2
DEV				S	Sg	07 27 28.3	+0.7
DEV	Deva	0.17	166	⇑iP	Pg	07 27 25.4	+0.2
DEV				i S	Sg	07 27 28.3	+0.7
DRGR		0.74	353	⇓iP	Pb	07 27 36.8	-0.1
DRGR		0.74	353	⇓iP	Pb	07 27 36.8	-0.1
DRGR				i S	Sb	07 27 48.2	+1.0
BZS	Buzias	0.96	243	⇑iP	Pb	07 27 40.8	+0.3
BZS	Buzias	0.96	243	⇑iP	Pb	07 27 40.8	+0.3
BZS				i S	Sn	07 27 54.5	-0.7
VOIR		1.66	111	⇓iP	Pb	07 27 52.2	-0.3
VOIR		1.66	111	⇓iP	Pb	07 27 52.2	-0.3
VOIR				i S	Sb	07 28 14.1	+0.4

IDC ***10*** *07:27:35.1±0.9, 37°.20N×143°.83E, h0km, mb3.7/7, mb1 3.9/9, mb1mx3.6/37, mbtmp3.7/9, ML3.9/2, Error ellipse: s-maj=26.6km s-min=19.1km az=111.0*
ISCJB ***10*** *07:27:38.6±0.7, 37°.32N±0°.05×143°.67E±0°.05, h33km, mb3.8/7, Error ellipse: s-maj=7.2km s-min=5.5km az=1.5*
JMA ***10*** *07:27:39.9±0.2, 37°.31N×143°.57E, h48km, M4.1*
ISC 10 07:27:39.4±0.8, 37°.25N±0°.05×143°.73E±0°.07, h35km, n21, σ1°54/30, mb3.8/7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	2.23	303	P	Pn	07 28 13.7	-0.2
JIO				S	Sn	07 28 38.1	-2.1
JFK	Kawauchi	2.28	274	P	Pn	07 28 14.7	+0.1
JFK				S	Sn	07 28 40.0	-1.4
ONAJ	Iwakimizuishiy	2.34	267	eS	Sn	07 28 40.7	-2.4
JMM	Marumori	2.41	286	P	Pn	07 28 16.2	-0.1
JMM				S	Sn	07 28 42.9	-1.7
OFUJ	Ofunato	2.44	319	P	Pn	07 28 16.1	-0.7
OFUJ				S	Sn	07 28 43.1	-2.3
JMK	Ichinoseki	2.61	311	S	Sn	07 28 48.1	-1.3
JHO	Hitachi	2.61	257	P	Pn	07 28 19.2	+0.1
JOU	Okura	2.67	296	P	Pn	07 28 20.4	+0.5
JOU				S	Sn	07 28 50.4	-0.6
JFT	Otama	2.71	277	S	Sn	07 28 52.2	0.0
JOM	Ohasama	2.93	320	P	Pn	07 28 23.7	+0.2
JOM				S	Sn	07 28 55.5	-1.9
MJAR	Matsushiro Arr	4.48	263	Pn	Pn	07 28 46.7	+1.9
MJAR	4.9nm,0.3s,baz=87,slow=15,SNR=18			Sn	Sn	07 29 37.6	+1.9
MAT	Matsushiro	4.48	263	P	Pn	07 28 46.9	+2.1
MAT	1.8nm,0.3s,baz=93,slow=28,SNR=6.6			S	Sn	07 29 35.4	-0.4
ASAJ	Asahikawa	6.91	353	Pn	Pn	07 29 17.8	-0.3
ASAJ	2.5nm,0.3s,baz=206,slow=10,SNR=12						
JCJ	Chichijima	10.21	188	Pn	Pn	07 29 59.5	-3.9
JCJ	1.8nm,0.3s,baz=346,slow=19,SNR=4.7			Sn	Sn	07 31 55.1	-1.6
MKAR	Makanchi Array	45.57	302	P	P	07 35 56.9	+1.1
ILAR	Eielson Array	48.32	32	P	P	07 36 18.2	+1.3
INK	Inuvik	53.35	27	P	P	07 36 55.4	+0.6
WRA	Warramunga Arr	57.57	190	P	P	07 37 26.2	+0.5

1.1nm,0.5s,baz=8.5,slow=7.4,SNR=15
ASAR Alice Springs 61.30 190 P **P 07 37 52.0 +0.7**
0.5nm,0.5s,baz=11,slow=8.0,SNR=6.2
FINES FINESS Array B 69.47 333 P **P 07 38 45.4 +1.7**
1.1nm,0.8s,baz=31,slow=20,SNR=2.8
TXAR Lajitas Array 88.51 54 P **P 07 40 29.5 +0.9**
0.4nm,0.8s,baz=298,slow=2.7,SNR=3.8

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*IDC **10** 07:30:36.6±0.7,27.°16N×143.°51E,h0km,mb3.9/10, mb1 4.1/10,mb1mx3.9/32,mbtmp3.8/10,MS3.6/1, Ms1 3.6/1,ms1mx2.7/38,Error ellipse: s-maj=23.7km s-min=16.0km az=146.0*
*ISCJB **10** 07:30:39.8±0.7,27.°1N±0.°1×143.°59E±0.°08,h33km, mb3.9/10,MS3.6/1,Error ellipse: s-maj=19.0km s-min=9.6km az=169.5*
ISC 10 07:30:41.8±0.8,27.°1N±0.°2×143.°50E±0.°10,h35km,n13, σ0§74/13,mb3.8/10,Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCJ	**Chichijima**	**1.18**	**269**	Pn	**Pn**	**07 31 00.8**	**-0.9**
JCJ	56nm,0.3s,baz=279,slow=22,SNR=36			Sn	**Sn**	**07 31 17.6**	**+1.0**
WRA	**Warramunga Arr**	**47.62**	**192**	P	**P**	**07 39 14.5**	**-0.1**
ASAR	**Alice Springs**	**51.34**	**191**	P	**P**	**07 39 42.6**	**-0.3**
MKAR	**Makanchi Array**	**51.36**	**310**	LR	LR	08 00 44.2	
ILAR	**Eielson Array**	**57.12**	**29**	P	**P**	**07 40 23.6**	**-1.0**
INK	**Inuvik**	**62.52**	**25**	P	**P**	**07 41 01.4**	**-0.1**
YKA	**Yellowknife Ar**	**71.56**	**29**	P	**P**	**07 41 58.6**	**-0.4**
FINES	**FINESS Array B**	**78.44**	**334**	P	**P**	**07 42 39.3**	**+0.6**
NVAR	**Mina Array Bea**	**79.58**	**52**	P	**P**	**07 42 46.5**	**+0.8**
AKASG	**Malin Array Be**	**83.28**	**324**	P	**P**	**07 43 04.7**	**-0.2**
PDAR	**Pinedale Array**	**83.36**	**45**	P	**P**	**07 43 05.5**	**-0.2**
TXAR	**Lajitas Array**	**94.64**	**54**	P	**P**	**07 44 00.1**	**+0.4**
LPAZ	**La Paz**	**148.78**	**76**	PKPbc	**PKPbc**	**07 50 28.1**	**+1.1**

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*NIED **10** 07:31:00,35.°20N×141.°30E,h23km,Mw4.1 Best double couple: M0 1.74000×10^15 NP1:φs285.00000°,δ28.00000°, λ134.00000°. NP2:φs57.00000°,δ70.00000°,λ70.00000°.*
*IDC **10** 07:31:53.4±0.6,35.°14N×141.°17E,h0km,mb4.0/17, mb1 4.3/21,mb1mx4.1/39,mbtmp4.1/21,ML3.6/3,MS3.5/2, Ms1 3.5/2,ms1mx3.0/39,Error ellipse: s-maj=18.4km s-min=13.6km az=103.0*
*JMA **10** 07:31:55.3±0.2,35.°18N×141.°33E,h27km±3km,M3.7*
*ISCJB **10** 07:31:55.3±0.3,35.°15N±0.°03×141.°33E±0.°06,h27km, mb4.3/35,Error ellipse: s-maj=6.6km s-min=4.6km az=0.9*
*MOS **10** 07:31:56.2±1.4,35.°28N×141.°37E,h33km,mb4.7/10,Error ellipse: s-maj=11.0km s-min=6.4km az=107.4*
*NEIC **10** 07:31:58.4±0.3,35.°08N×141.°19E,h35km,mb4.7/8,Error ellipse: s-maj=7.0km s-min=5.7km az=72.0*
ISC 10 07:31:56.7±0.4,35.°18N±0.°04×141.°37E±0.°06,h27km,n79, σ1§70/84,mb4.2/35,10C-2D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**0.62**	**212**	P	**Pb**	**07 32 06.9**	**-1.7**
CHOJ	**Chosi**	**0.67**	**321**	P	**Pb**	**07 32 07.8**	**-2.0**
CHOJ				eS	**Sb**	**07 32 17.4**	**-1.3**
BSO3	**Boso 3**	**0.80**	**242**	P	**Pb**	**07 32 10.1**	**-1.7**
BSO4	**Boso 4**	**0.87**	**258**	P	**Pn**	**07 32 11.2**	**-1.8**
JHO	**Hitachi**	**1.57**	**336**	P	**Pn**	**07 32 22.4**	**-0.4**
JHJ2	**Mitsune**	**2.43**	**212**	ePn	**Pn**	**07 32 34.4**	**-0.3**
JHJ	**Hachijo jima 2**	**2.44**	**213**	Pn	**Pn**	**07 32 34.0**	**-0.8**
JHJ	42nm,0.3s,baz=60,slow=20,SNR=5.7			Sn	**Sn**	**07 33 03.3**	**-0.4**
MJAR	**Matsushiro Arr**	**2.90**	**299**	Pn	**Pn**	**07 32 40.9**	**-0.3**
MJAR	8.0nm,0.3s,baz=97,slow=12,SNR=43			LR	LR	07 34 06.6	
MAJO	**Matsushiro**	**2.91**	**299⇑**	eP	**Pn**	**07 32 41.8**	**+0.6**
MAJO	**Matsushiro**	**2.91**	**299**	ePn	**Pn**	**07 32 42.2**	**+1.0**
MAT	**Matsushiro**	**2.91**	**299**	P	**Pn**	**07 32 41.8**	**+0.6**
MAT				eS	**Sb**	**07 33 21.5**	**-1.4**
ERM	**Erimo**	**6.96**	**11⇑**	eP	**Pn**	**07 33 35.8**	**-1.1**
ERM	**Erimo**	**6.96**	**11**	ePn	**Pn**	**07 33 35.5**	**-1.4**
ERM				eSn	**Sn**	**07 34 53.1**	**-2.0**
CBIJ	**Chichi jima**	**8.09**	**175**	Pn	**Pn**	**07 33 50.6**	**-1.8**
CBIJ				Sn	**Sn**	**07 35 19.6**	**-3.4**
JCJ	**Chichijima**	**8.09**	**175**	Pn	**Pn**	**07 33 50.6**	**-1.9**
JCJ				Sn	**Sn**	**07 35 19.6**	**-3.4**
ASAJ	**Asahikawa**	**8.97**	**6**	Pn	**Pn**	**07 34 01.9**	**-2.5**
ASAJ	2.8nm,0.3s,baz=211,slow=11,SNR=15			Sn	**Sn**	**07 35 42.1**	**-2.5**
ASAJ	**Asahikawa**	**8.97**	**6**	ePn	**Pn**	**07 34 02.0**	**-2.5**
ASAJ	6.3nm,0.8s			Sn	**Sn**	**07 35 42.1**	**-2.5**
SHO	**Shikotan**	**9.64**	**24**	eP	**Pn**	**07 34 11.5**	**-2.1**
SHO				eS	**Sn**	**07 35 53.2**	**-7.8**
SHO	comp=Z,36nm,0.6s			pmax	pmax		
KSRS	**Korea Array**	**11.08**	**286**	Pn	**Pn**	**07 34 34.5**	**+1.2**
KSRS	comp=Z,0.2nm,0.3s,baz=111,slow=15,SNR=7.7			LR	LR	07 38 41.9	
KSAR	**Wonju Array Be**	**11.11**	**286**	P	**Pn**	**07 34 34.6**	**+0.8**
KSAR	**Wonju Array Be**	**11.11**	**286**	Pn	**Pn**	**07 34 34.5**	**+0.8**
USRK	**Ussuriysk Ar.**	**11.54**	**324**	Pn	**Pn**	**07 34 40.9**	**+1.4**
YSS	**Yuzh-Sakhalins**	**11.81**	**5**	eP	**Pn**	**07 34 40.8**	**-2.4**
YSS	comp=Z,20nm,0.8s			pmax	pmax		
KLR	**Kul'dur**	**15.72**	**336**	Pn	**Pn**	**07 35 37.4**	**+1.2**
PETK	**Petropavlovsk-**	**21.32**	**28**	P	**P**	**07 36 43.5**	**+2.2**
H11N2	**WAKE ISLAND Hy**	**27.28**	**118**	T	T	08 06 45.9	
H11N1	**WAKE ISLAND Hy**	**27.28**	**118**	T	T	08 06 45.7	
H11N3	**WAKE ISLAND Hy**	**27.29**	**118**	T	T	08 06 42.1	
YAK	**Yakutsk**	**27.87**	**348**	eP	**P**	**07 37 44.1**	**+0.3**
YAK	comp=Z,20nm,1.1s			pmax	pmax		
YAK	comp=E,2.0nm,1.0s			pmax	pmax		
H11S1	**WAKE ISLAND Hy**	**27.93**	**120**	T	T	08 07 15.6	
H11S3	**WAKE ISLAND Hy**	**27.93**	**120**	T	T	08 07 30.0	
H11S2	**WAKE ISLAND Hy**	**27.94**	**120**	T	T	08 07 16.9	
ULN	**Ulaanbaatar**	**28.40**	**307⇑**	iP	**P**	**07 37 48.1**	**-0.8**
ULN	comp=Z,2.0nm,1.0s			pmax	pmax		
BOD	**Bodaibo**	**29.09**	**330**	eP	**P**	**07 37 53.7**	**-1.0**
BOD	comp=Z,4.0nm,1.0s			pmax	pmax		
BILL	**Bilibino**	**35.81**	**16**	eP	**P**	**07 38 53.4**	**0.0**
BILL	comp=Z,2.0nm,0.9s			pmax	pmax		
TIXI	**Tiksi**	**37.12**	**353⇓**	eP	**P**	**07 39 04.8**	**+0.3**
TIXI	comp=Z,3.0nm,1.0s			pmax	pmax		
KRAR	**Krasnoyarsk**	**38.79**	**318⇑**	eP	**P**	**07 39 20.6**	**+1.8**
ZALV	**Zalesovo Beam**	**43.15**	**314**	P	**P**	**07 39 54.5**	**-0.2**
	comp=Z,3.0nm,0.7s,baz=104,slow=7.0,SNR=5.2						
PMG	**Port Moresby**	**44.68**	**172**	ceP	**P**	**07 40 08.9**	**+1.6**
PMG	comp=Z,24nm,1.0s			pmax	pmax		
MKAR	**Makanchi Array**	**45.09**	**304**	P	**P**	**07 40 10.3**	**-0.1**
	comp=Z,1.5nm,0.6s,baz=87,slow=10,SNR=11						
KURK	**Kurchatov**	**47.06**	**309**	eP	**P**	**07 40 25.6**	**-0.2**
KURK	comp=Z,19nm,0.8s			pmax	pmax		
KURK	**Kurchatov**	**47.06**	**309**	eP	**P**	**07 40 25.6**	**-0.2**
	comp=Z,19nm,0.8s						
COEN	**Coen**	**48.90**	**178**	eP	**P**	**07 40 40.2**	**-0.1**
	comp=Z,8.3nm,0.9s						
TKM2	**Tokmak 2**	**50.50**	**300**	eP	**P**	**07 40 52.8**	**+0.2**
TKM2	comp=Z,8.0nm,1.1s			pmax	pmax		
TKM2	**Tokmak 2**	**50.50**	**300**	eP	**P**	**07 40 52.8**	**+0.2**
	comp=Z,7.9nm,1.1s						
ILAR	**Eielson Array**	**51.08**	**32**	P	**P**	**07 40 57.8**	**+1.4**
	comp=Z,1.3nm,0.8s,baz=268,slow=5.9,SNR=14						
AAK	**Ala-Archa**	**51.36**	**300⇑**	eP	**P**	**07 40 58.8**	**-0.2**
AAK	comp=Z,5.0nm,0.9s			pmax	pmax		
AAK	**Ala-Archa**	**51.36**	**300**	eP	**P**	**07 40 58.5**	**-0.5**
	comp=Z,1.7nm,0.7s						
BRVK	**Borovoye**	**51.86**	**313**	ceP	**P**	**07 41 03.1**	**+0.7**
BRVK	comp=Z,2.0nm,0.7s			pmax	pmax		
KKAR	**Karatay Array**	**54.04**	**301**	eP	**P**	**07 41 18.9**	**+0.2**
KKAR	comp=Z,5.0nm,0.9s			pmax	pmax		
KKAR	**Karatay Array**	**54.04**	**301**	eP	**P**	**07 41 18.9**	**+0.2**
	comp=Z,5.2nm,0.9s						
WRAB	**Tennant Creek**	**55.22**	**188⇑**	eP	**P**	**07 41 26.9**	**-0.4**
WRAB	comp=Z,55nm,1.7s			pmax	pmax		
WRAB	**Tennant Creek**	**55.22**	**188**	eP	**P**	**07 41 26.7**	**-0.6**
	comp=Z,18nm,1.1s						
WRA	**Warramunga Arr**	**55.23**	**188**	P	**P**	**07 41 26.9**	**-0.4**
	comp=Z,9.8nm,0.8s,baz=5.0,slow=7.6,SNR=21						
WRA	**Warramunga Arr**	**55.23**	**188**	P	**P**	**07 41 27.0**	**-0.4**
INK	**Inuvik**	**56.05**	**27**	P	**P**	**07 41 35.2**	**+2.5**
	comp=Z,1.3nm,0.8s,baz=280,slow=7.2,SNR=5.5						
ARU	**Arti**	**57.73**	**319**	diP	**P**	**07 41 44.6**	**-0.2**
ARU						07 43 48.3	
ARU				S	**S**	**07 49 42.4**	**+0.6**
ARU				SS	**SS**	**07 53 28.0**	**-3.8**
ARU	comp=Z,12nm,1.2s			pmax	pmax		
ARU	**Arti**	**57.73**	**319**	eP	**P**	**07 41 44.8**	**0.0**
	comp=Z,9.9nm,1.1s						
ASAR	**Alice Springs**	**58.95**	**188**	P	**P**	**07 41 54.7**	**+1.0**
	comp=Z,1.8nm,0.7s,baz=20,slow=11,SNR=21						
ABKAR	**Akbulak array**	**59.11**	**311**	eP	**P**	**07 41 54.1**	**-0.5**
	comp=Z,0.9nm,0.6s						
YKA	**Yellowknife Ar**	**65.43**	**30**	P	**P**	**07 42 38.1**	**+1.5**
	comp=Z,0.9nm,0.8s,baz=299,slow=6.5,SNR=9.1						
FINES	**FINESS Array B**	**70.44**	**333**	P	**P**	**07 43 08.8**	**+0.7**
	comp=Z,2.5nm,0.9s,baz=72,slow=12,SNR=4.4						
KBZ	**Khabaz**	**72.08**	**311**	P	**P**	**07 43 19.2**	**+0.8**
	comp=Z,0.7nm,0.5s,baz=54,slow=3.4,SNR=3.6						
KIV	**Kislovodsk**	**72.10**	**311**	eP	**P**	**07 43 20.2**	**+1.5**
KIV	comp=Z,7.0nm,1.1s			pmax	pmax		
AKASG	**Malin Array Be**	**75.74**	**323**	P	**P**	**07 43 39.8**	**+0.1**
	comp=Z,0.7nm,0.5s,baz=49,slow=6.1,SNR=3.3						
KIEV	**Kiev**	**75.75**	**323⇑**	eP	**P**	**07 43 40.3**	**+0.5**
KIEV	comp=Z,3.0nm,0.9s			pmax	pmax		
NB2	**NORSAR Subarra**	**75.88**	**337**	P	**P**	**07 43 40.7**	**+0.3**
	comp=Z,3.7nm,1.0s,baz=39,slow=6.2						
NOA	**NORSAR Array B**	**75.88**	**337**	P	**P**	**07 43 40.7**	**+0.3**
	comp=Z,1.7nm,0.8s,baz=40,slow=5.7,SNR=5.1						
NVAR	**Mina Array Bea**	**76.13**	**53**	P	**P**	**07 43 45.3**	**+2.8**
	comp=Z,1.5nm,0.8s,baz=282,slow=5.4,SNR=7.4						
PDAR	**Pinedale Array**	**78.99**	**45**	P	**P**	**07 44 00.1**	**+1.7**
	comp=Z,0.9nm,0.7s,baz=250,slow=1.8,SNR=9.6						
BRTR	**Keskin Array B**	**80.05**	**312**	P	**P**	**07 44 03.8**	**-0.3**
	comp=Z,0.9nm,0.9s,baz=89,slow=5.1,SNR=4.4						
PV10	**Paradox Valley**	**82.02**	**48**	eP	**P**	**07 44 17.6**	**+2.9**
	comp=Z,64nm,0.7s						
CLL	**Collm**	**82.68**	**330**	iP	**P**	**07 44 18.2**	**+0.6**
	comp=Z,6.0nm,0.9s						
CLL				i		07 47 12.4	
	comp=Z,4.0nm,0.7s						
CLL	**Collm**	**82.68**	**330**	iP	**P**	**07 44 18.2**	**+0.6**
CLL				pmax	pmax		
	comp=Z,6.0nm,0.9s						
GERES	**GERESS Array B**	**84.26**	**328**	P	**P**	**07 44 26.2**	**+0.3**
	comp=Z,0.6nm,0.6s,baz=48,slow=6.0,SNR=5.1						
ANMO	**Albuquerque**	**85.81**	**50**	ceP	**P**	**07 44 37.2**	**+3.1**
ANMO	comp=Z,2.0nm,1.7s			pmax	pmax		
TXAR	**Lajitas Array**	**91.28**	**52**	P	**P**	**07 45 01.5**	**+1.4**
	comp=Z,0.4nm,0.7s,baz=290,slow=3.7,SNR=5.1						
TORD	**Torodi Ar. Bea**	**118.60**	**314**	PKP	**PKPdf**	**07 50 42.8**	**+0.1**
	comp=Z,0.4nm,0.7s,baz=283,slow=34,SNR=2.3						
LPAZ	**La Paz**	**147.62**	**62**	PKPbc	**PKPab**	**07 51 41.6**	**-0.4**
	comp=Z,0.7nm,0.7s,baz=263,slow=2.5,SNR=5.8						

IDC 10 07:47:06.7±3.7,23.°14S×178.°41W,h0km,mb4.6/4, mb1 4.7/4,mb1mx4.0/21,mbtmp4.5/4,Error ellipse: s-maj=147.2km s-min=41.5km az=143.0,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**36.36**	**247**	P	P	07 54 12.6	-0.1
	3.5nm,0.5s,baz=94,slow=7.6,SNR=13						
ASAR	**Alice Springs**	**43.60**	**259**	P	P	07 55 12.7	-0.3
	1.5nm,0.5s,baz=95,slow=7.2,SNR=18						
WRA	**Warramunga Arr**	**43.92**	**265**	P	P	07 55 15.7	+0.1
	3.6nm,0.3s,baz=98,slow=8.4,SNR=93						
SONM	**Songino Array**	**97.48**	**319**	P	P	08 00 42.2	-0.4
	1.0nm,0.5s,baz=115,slow=9.7,SNR=2.9						
MKAR	**Makanchi Array**	**112.71**	**313**	PKiKP	PKiKP	08 05 45.0	-0.3
	0.1nm,0.4s,baz=94,slow=1.7,SNR=2.3						
BRTR	**Keskin Array B**	**148.26**	**309**	PKPbc	PKPbc	08 06 54.8	-0.4
	0.7nm,0.5s,baz=134,slow=3.6,SNR=4.2						

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*NSSP **10** 07:56:38.8,41.°75N×46.°53E,h10km,Ms2.9*
*CSEM **10** 07:56:40.2±0.7,42.°05N×46.°61E,h20km,ML2.9,Error ellipse: s-maj=15.4km s-min=7.8km az=26.0*
ISC 10 07:56:39.3±1.8,41.°87N±0.°07×46.°62E±0.°08,h12km±11km, n18,σ0§70/32,8C-1D,Eastern Caucasus

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DGRG	**David-gareji**	**1.02**	**246**	P	**Pn**	**07 56 59.4**	**-0.1**
DGRG				S	**Sn**	**07 57 14.9**	**+1.0**
DGRG	**David-gareji**	**1.02**	**246**	P	**Pn**	**07 56 59.8**	**+0.3**
DGRG				S	**Sn**	**07 57 14.7**	**+0.9**
SEAG	**Tbilisi Sea**	**1.36**	**266**	P	**Sb**	**07 57 22.7**	**+0.5**
TBLG	**Delisi**	**1.42**	**265**	P	**Pn**	**07 57 05.2**	**+0.3**
TBLG				S	**Sb**	**07 57 23.8**	**+0.1**
TBLG	**Delisi**	**1.42**	**265**	P	**Pn**	**07 57 05.2**	**+0.3**
TBLG				S	**Sb**	**07 57 23.8**	**+0.1**
DUS	**Dusheti**	**1.45**	**279**	P	**Pg**	**07 57 07.2**	**+0.1**
DUS				S	**Sg**	**07 57 26.5**	**+0.5**
MTKZ	**Martakert**	**1.67**	**175⇑**	iP	**Pg**	**07 57 11.4**	**0.0**
MTKZ				⇓iS	**Sg**	**07 57 33.8**	**+0.7**
MTKZ	**Martakert**	**1.67**	**175⇑**	iP	**Pg**	**07 57 11.4**	**0.0**
MTKZ				S	**Sg**	**07 57 33.8**	**+0.7**
GUDG	**Gudauri**	**1.70**	**291**	P	**Pg**	**07 57 11.7**	**-0.3**
GUDG				S	**Sg**	**07 57 34.3**	**+0.2**
STEZ	**Stepenevan**	**1.88**	**243**	eP	**Pn**	**07 57 10.0**	**-1.4**
STEZ				eS	**Sn**	**07 57 35.4**	**+0.2**
STE	**Stepanavan**	**1.90**	**244**	S	**Sn**	**07 57 35.4**	**-0.2**
STKZ		**2.06**	**177⇑**	iP	**Pb**	**07 57 15.9**	**-0.7**
STKZ				iS	**Sb**	**07 57 42.1**	**+0.1**
STKZ		**2.06**	**177⇑**	iP	**Pb**	**07 57 15.9**	**-0.7**
STKZ				S	**Sb**	**07 57 42.2**	**+0.1**
GNI	**Garni**	**2.23**	**220⇑**	iP	**Pb**	**07 57 18.5**	**-1.1**
GNI				iS	**Sb**	**07 57 48.3**	**+1.1**
GNI	**Garni**	**2.23**	**220⇑**	P	**Pb**	**07 57 18.5**	**-1.1**
GNI				S	**Sb**	**07 57 48.3**	**+1.1**
BGD	**Bogdanovka**	**2.35**	**256**	P	**Sb**	**07 57 49.8**	**-0.9**
AKH	**Akhalkalaki**	**2.39**	**260**	P	**Sb**	**07 50 57.0**	**-1.2**
ONI	**Oni**	**2.46**	**288**	P	**Pb**	**07 57 23.8**	**+0.2**
ONI				S	**Sb**	**07 57 54.0**	**+0.1**

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*ISCJB **10** 08:00:25.7±0.4,7.°73S±0.°07×68.°08E±0.°03,h15km, mb4.3/34,MS4.0/9,Error ellipse: s-maj=9.9km s-min=4.5km az=2.1*
*IDC **10** 08:00:25.2±0.5,7.°70S×67.°93E,h0km,mb4.1/22, mb1 4.2/22,mb1mx4.1/46,mbtmp4.1/22,MS4.0/9, Ms1 3.9/9,ms1mx3.7/50,Error ellipse: s-maj=16.6km s-min=14.3km az=7.0*
*NEIC **10** 08:00:26.6±0.2,7.°74S×67.°92E,h10km,mb4.8/9,Error ellipse: s-maj=8.4km s-min=7.0km az=161.0*
ISC 10 08:00:27.4±0.4,7.°77S±0.°09×68.°02E±0.°06,h15km,n117, σ1§00/111,mb4.3/34,MS4.0/9,1D,Chagos Archipelago region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08N3	**Diego Garcia H**	**3.27**	**65**	Pn	**Pn**	**08 01 18.1**	**+0.2**
H08N3				T	T	08 04 45.6	
	baz=244,slow=76,SNR=288						
H08N2	**Diego Garcia H**	**3.29**	**64**	Pn	**Pn**	**08 01 18.2**	**+0.1**
H08N2				T	T	08 04 49.0	
	baz=244,slow=76,SNR=256						
H08N1	**Diego Garcia H**	**3.29**	**65**	Pn	**Pn**	**08 01 18.5**	**+0.3**
H08N1				T	T	08 04 51.6	
	baz=244,slow=76,SNR=212						
DGAR	**Diego Garcia**	**4.41**	**86**	ePn	**Pn**	**08 01 33.1**	**-0.7**
DGAR				eSn	**Sn**	**08 02 22.9**	**-2.2**
H08S1	**Diego Garcia H**	**4.42**	**89**	Pn	**Pn**	**08 01 32.1**	**-1.7**
H08S1	baz=292,slow=16,SNR=34			Sn	**Sn**	**08 02 23.4**	**-1.5**
H08S1				T	T	08 06 21.1	
	baz=258,SNR=16						
H08S3	**Diego Garcia H**	**4.43**	**89**	Pn	**Pn**	**08 01 32.0**	**-1.9**
H08S3	baz=292,slow=16,SNR=26			Sn	**Sn**	**08 02 23.0**	**-2.1**
H08S3				T	T	08 06 15.5	
	baz=258,SNR=17						
H08S2	**Diego Garcia H**	**4.44**	**89**	Pn	**Pn**	**08 01 31.5**	**-2.5**
H08S2	baz=292,slow=16,SNR=36			Sn	**Sn**	**08 02 23.7**	**-1.7**
	SNR=3.0						
H08S2				T	T	08 06 25.9	
	baz=258,SNR=22						
OPO	**Ambohidratompo**	**22.92**	**240**	P	**P**	**08 05 31.0**	**-0.2**
	2.1nm,0.3s,baz=84,slow=9.2,SNR=4.6						
OPO				LR	LR	08 12 16.6	
	comp=Z,713nm,19.2s,baz=45,slow=31						
KULM	**Kulim**	**35.04**	**69**	eP	**P**	**08 07 22.0**	**+2.0**
	10nm,0.7s						
LEM	**Lembang**	**39.28**	**91**	LR	LR	08 21 38.7	
	comp=Z,128nm,19.3s,baz=222,slow=32						
LSZ	**Lusaka**	**39.68**	**255**	P	**P**	**08 07 58.8**	**-0.7**
	4.9nm,0.8s,baz=56,slow=9.1,SNR=5.7						
CMAR	**Chiang Mai Arr**	**40.12**	**49**	P	**P**	**08 08 03.4**	**+0.4**
	1.1nm,0.4s,baz=238,slow=10,SNR=6.0						
CHTO	**Chiang Mai**	**40.34**	**49**	eP	**P**	**08 08 06.6**	**+1.8**
	5.0nm,1.0s						
BOSA	**Boshof**	**45.28**	**237**	P	**P**	**08 08 45.2**	**+0.2**
	5.9nm,0.9s,baz=330,slow=11,SNR=3.9						
BOSA				LR	LR	08 24 44.0	
	comp=Z,187nm,18.9s,baz=62,slow=32						
GEYT	**Alibeck**	**46.39**	**349**	P	**P**	**08 08 53.3**	**0.0**
	0.8nm,0.4s,baz=206,slow=12,SNR=2.5						
GEYT				LR	LR	08 28 27.0	
	comp=Z,86nm,18.1s,baz=355,slow=36						
AAK	**Ala-Archa**	**50.50**	**6**	eP	**P**	**08 09 26.1**	**+1.0**
	13nm,1.4s						
TKM2	**Tokmak 2**	**50.91**	**7**	eP	**P**	**08 09 28.9**	**+0.6**
	13nm,1.3s						
NWAO	**Narrogin (SRO)**	**51.90**	**126**	LR	LR	08 26 41.3	
	comp=Z,184nm,20.7s,slow=30						
MKAR	**Makanchi Array**	**55.78**	**12**	P	**P**	**08 10 02.8**	**-1.1**
	1.4nm,0.7s,baz=194,slow=7.4,SNR=12						
KBZ	**Khabaz**	**56.08**	**338**	P	**P**	**08 10 05.2**	**-0.7**
	1.1nm,0.6s,baz=126,slow=2.5,SNR=3.4						
FITZ	**Fitzroy Crossi**	**56.90**	**106**	LR	LR	08 31 57.4	
	comp=Z,142nm,20.0s,baz=277,slow=33						
BRTR	**Keskin Array B**	**56.95**	**329**	P	**P**	**08 10 11.1**	**-1.3**
	1.1nm,0.7s,baz=135,slow=12,SNR=8.8						
BRTR				LR	LR	08 33 59.4	
	comp=Z,65nm,18.5s,baz=124,slow=35						
ABKAR	**Akbulak array**	**57.22**	**354**	eP	**P**	**08 10 13.4**	**-0.5**
	15nm,1.3s						
KURK	**Kurchatov**	**58.96**	**8**	eP	**P**	**08 10 26.0**	**-0.1**
	17nm,0.9s						
MAW	**Mawson**	**59.86**	**182**	LR	LR	08 32 23.2	
	comp=Z,65nm,18.7s,baz=11,slow=32						
BRVK	**Borovoye**	**60.62**	**2**	eP	**P**	**08 10 36.5**	**-1.0**
	15nm,1.5s						
ZALV	**Zalesovo Beam**	**63.10**	**11**	P	**P**	**08 10 52.8**	**-1.3**
	0.9nm,0.4s,baz=251,slow=9.2,SNR=4.1						
SYO	**Syowa Base**	**63.95**	**191⇓**	eP	**P**	**08 11 02.0**	**+2.4**
ARU	**Arti**	**64.44**	**354**	eP	**P**	**08 11 02.1**	**-0.9**
	24nm,1.4s						
ASAR	**Alice Springs**	**64.86**	**112**	P	**P**	**08 11 06.9**	**+0.4**
	0.9nm,0.6s,baz=278,slow=6.4,SNR=6.1						
SONM	**Songino Array**	**64.90**	**28**	P	**P**	**08 11 06.6**	**+0.3**
	2.1nm,0.7s,baz=261,slow=8.7,SNR=4.7						
WRA	**Warramunga Arr**	**65.17**	**108**	P	**P**	**08 11 08.8**	**+0.3**
	3.7nm,1.2s,baz=276,slow=6.0,SNR=5.6						
ULN	**Ulaanbaatar**	**65.22**	**28**	eP	**P**	**08 11 09.8**	**+1.3**
	2.3nm,0.8s						
AKASG	**Malin Array Be**	**67.20**	**334**	P	**P**	**08 11 19.1**	**-1.8**
	0.6nm,0.3s,baz=124,slow=5.7,SNR=4.8						
TORD	**Torodi Ar. Bea**	**69.06**	**287**	P	**P**	**08 11 32.3**	**-1.1**
	0.7nm,0.9s,baz=133,slow=4.5,SNR=3.6						
TORD				LR	LR	08 40 22.3	
	comp=Z,216nm,19.4s,baz=65,slow=35						
KOLS	**Kolonicke sedl**	**69.20**	**330**	eP	P	08 11 40.1	+6.6
CRVS	**Cervenica-Dubn**	**69.59**	**329**	eP	P	08 11 41.3	+5.4
STHS	**Stebnicka Huta**	**70.03**	**330**	eP	P	08 11 44.5	+5.9
VYHS	**Vyhne**	**70.69**	**328**	eP	P	08 11 48.1	+5.4
KSAR	**Wonju Array Be**	**71.66**	**46**	P	**P**	**08 11 49.8**	**+1.1**
KSRS	**Korea Array**	**71.69**	**46**	P	**P**	**08 11 49.8**	**+0.9**
	0.3nm,0.3s,baz=244,slow=7.8,SNR=2.8						
GERES	**GERESS Array B**	**73.67**	**326**	P	**P**	**08 12 01.8**	**+1.2**
	0.4nm,0.6s,baz=102,slow=7.1,SNR=3.0						
KHC	**Kasperske Hory**	**73.90**	**326**	eP	**P**	**08 12 00.0**	**-1.9**
BRG	**Berggiesshubel**	**74.66**	**328**	eP	P	08 12 12.4	+6.2
	13nm,1.5s						
CLL	**Collm**	**75.39**	**328**	iP	P	08 12 16.6	+6.2
	comp=Z,13nm,1.4s						
CTA	**Charters Tower**	**76.37**	**109**	P	**P**	**08 12 18.4**	**+1.6**
	comp=Z,2.6nm,0.7s,baz=220,slow=15,SNR=2.2						
SNAA	**Sanae**	**76.69**	**198**	eP	**P**	**08 12 17.2**	**-0.5**
	comp=Z,168nm,0.8s						
NRIK	**Noril'sk**	**78.11**	**7**	P	**P**	**08 12 26.0**	**+0.5**
	comp=Z,1.8nm,0.6s

baz=28
OXF Oxford 146.23 325 ePKPbc PKPbc 08 20 07.4 -0.4
HWUT Hardware Ranch 146.30 359 ePKPbc PKPbc 08 20 08.0 -0.1
S37A Fort Scott 146.34 335 P PKPbc 08 20 08.3 +0.2
baz=32
Y46A Houston 146.37 324 P PKPdf 08 20 07.2 +0.1
baz=45
Z47A Carrollton 146.38 322 P PKPdf 08 20 07.4 +0.3
baz=46
U40A Yellville 146.61 331 P PKPdf 08 20 07.6 +0.2
baz=36,SNR=5.3
T38A Diamond 146.72 334 P PKPbc 08 20 09.2 0.0
baz=33,SNR=5.5
147A Livingston 146.86 322 P PKPab 08 20 10.6 -0.4
baz=47
U39A Green Forest 146.89 332 P PKPdf 08 20 08.1 +0.2
baz=35,SNR=6.1
T37A Cheneyville 18 146.91 335 P PKPdf 08 20 08.0 +0.1
baz=32,SNR=5.4
ELK Elko 147.03 5 ePKPbc PKPab 08 20 11.5 -0.2
V40A Witts Springs 147.04 331 P PKPdf 08 20 08.1 -0.1
baz=37,SNR=5.7
U38A Gravette 147.25 333 P PKPdf 08 20 09.1 +0.6
baz=34
T36A Boggs Farm, Ca 147.37 336 P PKPbc 08 20 11.6 +0.5
baz=31
V39A Pettigrew 147.41 332 P PKPdf 08 20 08.3 -0.5
baz=35,SNR=5.7
ISCO Idaho Springs 147.59 351 ePKPbc PKPbc 08 20 12.2 +0.2
DUG Dugway, Tooele 147.70 1 ePKPbc PKPbc 08 20 11.4 -0.6
V38A Canehill 147.74 333 P PKPdf 08 20 09.2 -0.1
baz=34
KSCO Kaye Shedlock' 147.77 346 ePKPbc PKPbc 08 20 12.2 -0.1
Y42A Garnett, Star 148.05 327 P PKPab 08 20 15.0 -0.6
baz=40
X40A Basin Creek Fa 148.09 329 P PKPbc 08 20 13.7 +0.6
baz=38
U35A Pawnee 148.31 336 P PKPbc 08 20 14.9 +1.2
baz=30
TUL1 Leonard 148.31 334 ePKPdf PKPdf 08 20 10.3 0.0
SMCO Snowmass 148.40 353 ePKPbc PKPbc 08 20 13.5 -0.8
MIAR Mount Ida 148.42 330 P PKPbc 08 20 13.1 -0.9
baz=37,SNR=7.1
W38A Poteau 148.44 332 P PKPbc 08 20 13.9 -0.1
baz=35
Y41A Eaglette Beard 148.45 328 P PKPbc 08 20 14.6 +0.5
baz=39
X39A Fountain Ranch 148.71 331 P PKPbc 08 20 13.7 -1.0
baz=36,SNR=6.4
X38A Whitesboro 148.92 332 P PKPbc 08 20 14.9 -0.4
baz=34
NVAR Mina Array Bea 148.94 10 PKPbc PKPbc 08 20 15.1 -0.4
comp=Z,0.9nm,0.7s,baz=247,slow=2.1,SNR=6.3
PV04 Paradox Valley 149.38 355 ePKPbc PKPbc 08 20 17.7 +1.1
SDCO Great Sand Dun 149.58 350 ePKPbc PKPbc 08 20 17.4 +0.2
PV01 Paradox Valley 149.61 355 ePKPbc PKPbc 08 20 17.1 -0.1
W34A Bridge Creek, 149.71 337 ePKPbc PKPbc 08 20 17.1 -0.2
W34A ePKPab PKPab 08 20 22.4 +0.1
W32A Sentinel 150.37 339 P PKPbc 08 20 18.2 -0.7
baz=26
MVCO Mesa Verde 150.52 354 ePKPab PKPab 08 20 25.6 -0.3
WMOK Wichita Mounta 150.54 338 ePKPab PKPab 08 20 24.5 -1.3
341A Kurthwood 150.70 326 P PKPbc 08 20 18.8 -0.9
baz=41
DAC Darwin (Calif) 151.16 9 ePKPbc PKPbc 08 20 21.1 +0.2
WUAZ Wupatki 152.37 359 ePKPbc PKPbc 08 20 23.2 -0.4
WUAZ ePKPab PKPab 08 20 30.3 -3.2
ANMO Albuquerque 152.47 350 ePKPbc PKPbc 08 20 23.1 -0.8
TXAR Lajitas Array 157.16 341 PKPab PKPab 08 20 53.7 -0.3
comp=Z,0.4nm,0.8s,baz=71,slow=3.1,SNR=4.0

IDC 10 08:05:31.3±3.2, 7°.10S×155°.99E, h99km±29km, mb3.6/3, mb1 3.8/5, mb1mx3.4/33, mbtmp4.1/5, MS3.9/2, Ms1 3.9/2, ms1mx3.0/37, Error ellipse: s-maj=42.8km s-min=22.4km az=170.0, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	Honiara	4.55	121	P	Pn	08 06 38.0	0.0
2.9nm,0.3s,baz=276,slow=5.7,SNR=2.5							
HNR				S	Sn	08 07 34.1	+4.3
7.6nm,0.3s,baz=23,slow=24,SNR=2.6							
PMG	Port Moresby	9.04	255	P	Pn	08 07 39.0	0.0
2.3nm,0.3s,baz=64,slow=11,SNR=7.3							
PMG				S	Sn	08 09 19.2	+0.2
0.6nm,0.3s,baz=93,slow=19,SNR=2.2							
WRA	Warramunga Arr	24.58	237	P	P	08 10 42.7	+0.4
1.8nm,0.6s,baz=62,slow=9.4,SNR=31							
SIJI	Sorong	25.42	283	LR	LR	08 22 00.8	
comp=Z,252nm,20.5s,baz=354,slow=39							
ASAR	Alice Springs	26.85	230	P	P	08 11 02.8	-0.1
0.8nm,0.5s,baz=61,slow=9.5,SNR=16							
KAPI	Kappang	36.09	271	LR	LR	08 29 39.7	
comp=Z,183nm,19.9s,baz=271,slow=40							
MKAR	Makanchi Array	84.13	318	P	P	08 17 52.0	+0.4
0.8nm,0.5s,baz=108,slow=5.1,SNR=7.1							
TORD	Torodi Ar. Bea	154.00	285	PKPbc	PKPbc	08 25 19.6	-0.9
0.3nm,0.5s,baz=62,slow=2.0,SNR=4.9							

MAN 10 08:05:49, 7°.45N×127°.33E, h137km, mb4.1, ML2.9, MS2.6, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MATI	Mati	1.17	245	eP	Pn	08 06 15.7	+1.6
MATI				eS	Sn	08 06 34.8	+1.5
DMPH	Davao City--Mi	1.84	259	eP	Pn	08 06 25.2	+3.7
DMPH				eS	Sn	08 06 38.2	-8.0
BUKP	Musuan	2.28	281	eP	Pn	08 06 27.6	+0.8
BUKP				eS	Sn	08 06 57.7	+1.8
GSPH	General Santos	2.72	240	eP	Pn	08 06 30.6	-1.8

*ISCJB **10** 08:07:29.5±0.9, 10°.49S±0°.07×118°.82E±0°.10, h10km, mb3.8/1, Error ellipse: s-maj=15.8km s-min=6.8km az=150.5*
*IDC **10** 08:07:31.3±1.8, 10°.50S×119°.13E, h0km, mb3.7/1, mb1 3.9/5, mb1mx3.7/33, mbtmp3.8/5, ML3.6/4, Error ellipse: s-maj=53.2km s-min=12.5km az=53.0*
*DJA **10** 08:08:05.4±0.9, 11°.5±7°.×11°.4E±°, h10km, M4.2/9, MLv4.2/9*

ISC 10 08:07:30.9±0.8, 10°.57S±0°.08×118°.93E±0°.09, h10km, n7, σ2°.50/11, South of Sumbawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DNP	Denpasar	4.12	297	P	Pb	08 08 42.8	-0.7
DNP				S	Sn	08 09 13.2	-9.0
ABJI	Asem Bagus	5.39	300	P	Pn	08 08 50.1	-1.3
KAPI	Kappang	5.58	8	Pn	Pn	08 08 53.5	-0.5
2.2nm,0.3s,baz=220,slow=14,SNR=4.4							
KAPI				Sn	Sn	08 09 57.7	-0.4
10nm,0.3s,baz=113,slow=22,SNR=17							
FITZ	Fitzroy Crossi	9.92	140	Pn	Pn	08 09 55.0	+1.5
0.5nm,0.3s,baz=323,slow=12,SNR=17							
FITZ				Sn	Sn	08 11 45.3	+0.4
1.4nm,0.3s,baz=196,slow=18,SNR=6.9							
WRA	Warramunga Arr	17.53	124	P	P	08 11 37.6	+0.9
0.3nm,0.3s,baz=303,slow=13,SNR=4.8							
WRA				S	S	08 14 52.9	-6.2
0.2nm,0.3s,baz=287,slow=21,SNR=4.0							
ASAR	Alice Springs	19.33	134	P	Pn	08 11 57.5	0.0
0.1nm,0.3s,baz=307,slow=11,SNR=6.3							
ASAR				S	S	08 15 34.5	-0.9
0.2nm,0.3s,baz=302,slow=21,SNR=7.8							
MKAR	Makanchi Array	65.81	333	P	P	08 18 18.7	+2.3
0.7nm,0.7s,baz=140,slow=9.1,SNR=3.8							

MEX 10 08:13:37.3±0.3, 16°.37N×98°.84W, h11km±4km, MD3.6, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PNIG	Pinotepa	0.69	88	eP	Pg	08 13 48.9	-1.7
PNIG				eS	Sg	08 13 58.2	-1.4
TLIG	Tlapa	1.21	12	eP	Pn	08 13 56.5	-3.8
TLIG				eS	Sb	08 14 11.4	-4.6
CAIG	El Cayaco	1.52	296	eP	Pn	08 14 01.2	-3.2
CAIG				eS	Sn	08 14 19.1	-5.2
MEIG	Mezcala	1.71	334	eP	Pn	08 14 04.3	-2.9
MEIG				eS	Sn	08 14 24.7	-4.4
VHO	Vista Hermosa	2.14	71	eP	Pn	08 14 09.8	-3.4
VHO				eS	Sn	08 14 35.8	-3.9
ARIG	Puente Sto Nin	2.38	323	i P	Pn	08 14 14.0	-2.3
ARIG				i S	Sn	08 14 41.4	-4.2
YAIG	Yautepec	2.48	355	i P	Pn	08 14 14.9	-2.9
YAIG				i S	Sn	08 14 44.7	-3.6

NIED 10 08:15:00, 27°.00N×143°.60E, h14km, Mw3.5 Best double couple: M0 2.06000×10^14 NP1:φs 292.00000°, δ73.00000°, λ-164.00000°. NP2:φs 198.00000°, δ75.00000°, λ-18.00000°., Bonin Islands region

IDC 10 08:18:22.3±7.7, 2°.93N×127°.39E, h0km, mb3.8/4, mb1 4.0/4, mb1mx3.6/38, mbtmp3.9/4, MS3.7/1, Ms1 3.7/1, ms1mx2.8/53, Error ellipse: s-maj=127.5km s-min=100.8km az=130.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	Fitzroy Crossi	20.97	185	P	P	08 23 08.1	+1.0
3.3nm,0.8s,baz=18,slow=9.6,SNR=3.6							
WRA	Warramunga Arr	23.73	164	P	P	08 23 36.4	0.0
2.5nm,0.7s,baz=341,slow=10,SNR=21							
ASAR	Alice Springs	27.19	167	P	P	08 24 07.4	-0.4
0.5nm,0.6s,baz=353,slow=7.7,SNR=8.5							
ASAR				LR	LR	08 34 47.0	
comp=Z,161nm,19.5s,baz=289,slow=36							
STKA	Stephens Creek	37.16	160	P	P	08 25 34.7	-0.3
2.2nm,0.7s,baz=346,slow=9.0,SNR=3.8							

*NIED **10** 08:30:00, 37°.80N×143°.60E, h8km, Mw5.1 Best double couple: M0 5.78000×10^16 NP1:φs 22.00000°, δ32.00000°, λ-91.00000°. NP2:φs 203.00000°, δ58.00000°, λ-89.00000°.*
*IDC **10** 08:30:26.1±0.4, 37°.73N×143°.71E, h0km, mb5.0/43, mb1 5.1/50, mb1mx5.1/55, mbtmp5.0/50, ML4.5/6, MS4.5/15, Ms1 4.5/15, ms1mx4.3/71, Error ellipse: s-maj=11.7km s-min=10.8km az=136.0*
*ISCJB **10** 08:30:27.2±0.7, 37°.83N±0°.02×143°.59E±0°.02, h12km±4km, mb5.2/375, MS4.8/25, Error ellipse: s-maj=3.3km s-min=1.9km az=169.7*
*JMA **10** 08:30:29.2±0.2, 37°.85N×143°.60E, h47km, M5.1*
JMA Felt I J1.
*NEIC **10** 08:30:30.9±0.9, 37°.80N×143°.56E, h25km±6km, mb5.4/268, Error ellipse: s-maj=3.0km s-min=2.0km az=142.0*
NEIC Recorded [1 JMA] in Fukushima, Ibaraki, Iwate and Miyagi.
*GCMT **10** 08:30:30.9±0.2, 37°.91N×143°.61E, h15km, MW5.3/62, Moment Tensor Solution. s54,c82; s62,c124; Duration: 1±0 Moment tensor: Scale 10^17Nm; Mrr=0.71±.03; Mθθ=0.13±.02; Mφφ=0.58±.02; Mrθ=0.27±.07; Mφθ=0.39±.01; Mφr=0.48±.06; Best double couple: M0=0.94200×10^17 NP1:φs=210.00000°, δ63.00000°, λ-90.00000°. NP2: φs=31.00000°, δ27.00000°, λ-89.00000°. Principal axes: T 0.9890, Plg18.0000°, Azm300.0000°; N -0.0950, Plg0.0000°, Azm210.0000°; P -0.8940, Plg72.0000°, Azm119.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*MOS **10** 08:30:31.5±0.9, 38°.06N×143°.54E, h33km, mb5.5/101, MS4.4/12 Error ellipse: s-maj=5.6km s-min=3.6km az=102.0*
*BJI **10** 08:30:33.9, 38°.04N×142°.86E, h25km, mb5.1/84, mB5.1/60, Ms5.0/88, Ms7 4.8/83*

ISC 10 08:30:31.3±0.4, 37°.86N±0°.03×143°.65E±0°.03, h30km±2km, h29km: pP-P, n1222, σ1°.36/1305, mb5.3/381, MS4.8/26, 46C-31D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	1.91	289	⇑P	Pn	08 30 59.7	-2.1
JIO				eS	Sn	08 31 22.4	-2.4
OFUJ	Ofunato	1.97	309	⇑P	Pn	08 31 00.8	-1.9
OFUJ				S	Sn	08 31 23.5	-3.0
JMK	Ichinoseki	2.20	301	⇑P	Pn	08 31 04.0	-1.8
JMK				eS	Sn	08 31 29.5	-2.5
JOM	Ohasama	2.45	312	⇑P	Pn	08 31 07.9	-1.4
JOM				eS	Sn	08 31 36.3	-1.9
JFT	Otama	2.65	264	⇑P	Pn	08 31 10.4	-1.6
JFT				eS	Sn	08 31 40.4	-2.7
JYK	Kaneyama	2.79	293	⇑P	Pn	08 31 12.8	-1.2
JANG	Nango	3.01	327	P	Pn	08 31 14.8	-2.2
JANG				eS	Sn	08 31 48.7	-3.3
JNS	Sasagawa	3.43	271	P	Pn	08 31 21.6	-1.1
JAW	Awa shima	3.52	281	P	Pn	08 31 23.0	-0.9
JAG	Ashikaga	3.64	248	P	Pn	08 31 23.4	-2.3
BSO1	Boso 1	3.86	215	P	Pn	08 31 25.0	-3.2
JOT	Ohata	4.05	331	P	Pn	08 31 30.7	-0.6
ERM	Erimo	4.17	355	⇑eP	Pn	08 31 31.6	-1.3
ERM				pmax	pmax		
comp=Z,350nm,1.2s							
ERM	Erimo	4.17	355	ePn	Pn	08 31 31.3	-1.6
JRY	Ryogami san	4.22	246	P	Pn	08 31 31.6	-2.1
JKB	Kayabe	4.50	334	P	Pn	08 31 36.4	-1.0
MJAR	Matsushiro Arr	4.54	255	Pn	Pn	08 31 37.4	-0.6
comp=Z,64nm,0.3s,baz=64,slow=12,SNR=331							
MJAR				Sn	Sn	08 32 29.3	-0.5
comp=Z,17nm,0.3s,baz=315,slow=51,SNR=3.7							
MAJO	Matsushiro	4.54	255c	iP	Pn	08 31 37.0	-1.0
MAJO	Matsushiro	4.54	255	ePn	Pn	08 31 37.2	-0.8
MAT	Matsushiro	4.54	255	P	Pn	08 31 36.9	-1.1
MAT				eS	Sn	08 32 26.7	-3.1
MJB9	Matsu-Tunnel	4.54	255	ePn	Pn	08 31 37.2	-0.8
JCH	Churui	4.75	357	P	Pn	08 31 38.8	-2.1
JHJ2	Mitsune	5.67	215	ePn	Pn	08 31 50.4	-3.2
JHJ	Hachijo jima 2	5.68	215	Pn	Pn	08 31 49.4	-4.3
comp=Z,106nm,0.3s,baz=93,slow=23,SNR=32							
JHJ				Sn	Sn	08 32 47.5	-10
comp=Z,281nm,0.3s,baz=62,slow=22,SNR=4.6							
JHJ				LR	LR	08 34 14.2	
comp=Z,2μm,18.4s,baz=44,slow=41							
INU	Inuyama	5.89	247	ePn	Pn	08 31 55.4	-1.2
ASAJ	Asahikawa	6.30	353	Pn	Pn	08 32 01.0	-1.2
comp=Z,36nm,0.3s,baz=203,slow=13,SNR=85							
ASAJ				Sn	Sn	08 33 09.5	-3.6
comp=Z,32nm,0.3s,baz=227,slow=30,SNR=7.1							
ASAJ				LR	LR	08 34 58.3	
comp=Z,6μm,21.6s,baz=194,slow=42							
ASAJ	Asahikawa	6.30	353	ePn	Pn	08 32 00.1	-2.1
ASAJ				Sn	Sn	08 33 09.6	-3.6
YUK	Yuzh-Kuril'sk	6.39	14	eP	Pn	08 32 00.9	-2.5
YUK				i S	Sn	08 33 08.7	-6.7
YUK				pmax	pmax		
comp=Z,490nm,0.5s							
YUK				pmax	pmax		
comp=N,417nm,0.6s							
YUK				pmax	pmax		
comp=E,303nm,0.2s							
YUK				MLR	MLR		
comp=Z,3μm,19.0s							
YUK				MLR	MLR		
comp=N,4μm,17.0s							
YUK				MLR	MLR		
comp=E,3μm,12.0s							
SHO	Shikotan	6.47	21	eP	Pn	08 32 01.4	-3.1
SHO				i S	Sn	08 33 09.8	-7.5
SHO				pmax	pmax		
comp=Z,555nm,0.5s							
SHO				pmax	pmax		
comp=N,222nm,0.6s							
SHO				pmax	pmax		
comp=E,391nm,0.4s							
KUR	Kuril'sk	8.02	22	eP	Pn	08 32 23.6	-2.1
KUR				eS	Sn	08 33 48.9	-6.4
KUR				pmax	pmax		
comp=E,308nm,0.4s							
KUR				pmax	pmax		
comp=Z,245nm,0.4s							
KUR				pmax	pmax		
comp=N,106nm,0.3s							
KUR				MLR	MLR		
comp=E,3μm,11.0s							
KUR				MLR	MLR		
comp=Z,5μm,11.0s							
KUR				MLR	MLR		
comp=N,3μm,10.0s							
YSS	Yuzh-Sakhalins	9.11	356	⇑eP	Pn	08 32 39.3	-1.4
YSS				eS	Sn	08 34 18.3	-3.9
YSS				pmax	pmax		
comp=Z,60nm,1.1s							
YSS				smax	smax		
comp=N,700nm,3.2s							
YSS				smax	smax		
comp=E,500nm,2.7s							
YSS				MLR	MLR		
comp=Z,4μm,13.0s							
VLA	Vladivostok	10.38	304	⇑eP	Pn	08 32 58.5	+0.4
MSHR	Mys Shultsa	10.65	300	dePn	Pn	08 33 01.5	-0.3
CBIJ	Chichi jima	10.80	187	ePn	Pn	08 32 57.8	-6.2
CBIJ				eSn	Sn	08 34 51.1	-13
JCJ	Chichijima	10.80	187	Pn	Pn	08 32 57.8	-6.2
comp=Z,55nm,0.3s,baz=53,slow=18,SNR=64							
JCJ				Sn	Sn	08 34 48.8	-15
comp=Z,39nm,0.3s,baz=87,slow=23,SNR=5.8							
JCJ				LR	LR	08 38 15.2	
comp=Z,794nm,20.7s,baz=354,slow=44							
USRK	Ussuriysk Ar.	10.84	309	Pn	Pn	08 33 04.3	-0.1
comp=Z,2.6nm,0.3s,baz=118,slow=13,SNR=67							
USRK				LR	LR	08 37 08.7	
comp=Z,3μm,21.0s,baz=111,slow=37							
UGL	Uglegorsk	11.27	355	P	Pn	08 33 09.3	-1.0
UGL				pmax	pmax		
comp=Z,90nm,0.8s							
UGL				MLR	MLR		
comp=Z,6μm,16.0s							
UGL				MLR	MLR		
comp=N,4μm,17.0s							
UGL				MLR	MLR		
comp=E,12μm,17.0s							
JNU	Nakatsue	11.43	249	Pn	Pn	08 33 11.2	-1.3
comp=E,1.3nm,0.3s,baz=49,slow=11,SNR=17							
JNU				LR	LR	08 38 00.6	
comp=E,3μm,18.2s,baz=324,slow=40							
JNU	Nakatsue	11.43	249	ePn	Pn	08 33 11.6	-0.9
HABR	Khabarovsk	12.31	332	dePn	Pn	08 33 22.0	-2.5
HABR				eS	Sn	08 35 40.7	0.0
HABR				pmax	pmax		
comp=N,48nm,1.1s							
HABR				pmax	pmax		
comp=E,54nm,1.1s							
HABR				pmax	pmax		
comp=Z,119nm,1.1s							
HABR				MLR	MLR		
comp=Z,3μm,16.0s							
KSRS	Korea Array	12.47	273	Pn	Pn	08 33 26.9	+0.2
comp=Z,1.8nm,0.3s,baz=88,slow=13,SNR=64							
KSRS				LR	LR	08 38 06.5	
comp=Z,2μm,18.9s,baz=76,slow=37							
KS01	Wonju Array Si	12.49	273	ePn	Pn	08 33 26.8	-0.2
KS15	Wonju Array Si	12.50	273	ePn	Pn	08 33 28.2	+1.0
KSAR	Wonju Array Be	12.50	273	P	Pn	08 33 26.9	-0.3
KSAR	Wonju Array Be	12.50	273	Pn	Pn	08 33 26.9	-0.3
MDJ	Mudanjiang	12.54	307	P	Pn	08 33 27.8	+0.2
MDJ				S	Sn	08 35 47.1	+0.9
MDJ				PcP	PcP	08 39 05.8	+0.4
MDJ				ScP	ScP	08 42 36.4	+0.1
MDJ				PcS	PcS	08 42 40.3	+0.8
MDJ				ScS	ScS	08 46 12.5	+0.2
MDJ				pmax	pmax		
comp=Z,56nm,0.9s							
MDJ				pmax	pmax		
comp=Z,1μm,9.8s							
MDJ				LR	LR		
comp=Z,1μm,12.1s							
MDJ				LR	LR		
comp=Z,2μm,24.9s							
MDJ				LR	LR		
comp=Z,2μm,17.3s							
MDJ	Mudanjiang	12.54	307	ePn	Pn	08 33 27.8	+0.2
TYV	Tymovskoe	13.02	357	eP	Pn	08 33 33.0	-1.2
TYV				pmax	pmax		
comp=Z,112nm,1.2s							
TJN	Taejon	13.08	268	i P	Pn	08 33 33.9	-1.2
INCN	Inchon	13.49	274	Pn	Pn	08 33 41.4	+0.8
SNR=5.5							
INCN	Inchon	13.49	274	P	Pn	08 33 41.4	+0.8
SNR=5.5							
INCN	Inchon	13.49	274	ePn	Pn	08 33 41.0	+0.3
KLR	Kul'dur	14.25	327	Pn	Pn	08 33 48.7	-2.2
comp=Z,1.4nm,0.3s,baz=135,slow=12,SNR=157							
KLR				LR	LR	08 39 32.4	
comp=Z,3μm,19.6s,baz=144,slow=38							
CN2	Changchun	14.99	299	eP	Pn	08 33 58.3	-2.7
CN2				epP	P	08 34 05.8	-0.4
CN2				pmax	pmax		
comp=Z,30nm,0.8s							
CN2				pmax	pmax		
comp=Z,200nm,7.0s							
CN2				LR	LR		
comp=Z,2μm,14.0s							
CN2				LR	LR		
comp=Z,2μm,14.0s							
CN2				LR	LR		
comp=Z,2μm,18.0s							
NKL	Nikolayevsk	15.43	353	eP	Pn	08 34 04.0	-2.7
NKL				pmax	pmax		
comp=N,43nm,1.0s							
NKL				pmax	pmax		
comp=Z,69nm,1.0s							
NKL				MLR	MLR		
comp=N,1μm,15.0s							
NKL				MLR	MLR		
comp=E,900nm,15.0s							
NKL				MLR	MLR		
comp=Z,2μm,15.0s							
SKR	Severo-Kuril's	15.60	31	eP	Pn	08 34 06.0	-2.9
SKR				pmax	pmax		
comp=N,220nm,1.0s							
SKR				pmax	pmax		
comp=E,270nm,1.0s							
SKR				pmax	pmax		
comp=Z,360nm,1.0s							
SKR				MLR	MLR		
comp=Z,3μm,18.0s							
SKR				MLR	MLR		
comp=N,3μm,14.0s							
SKR				MLR	MLR		
comp=E,5μm,14.0s							
SNY	Shenyang	15.91	291	⇑P	Pn	08 34 11.7	-1.3
SNY				pmax	pmax		
comp=E,26nm,1.0s							
SNY				pmax	pmax		
comp=E,940nm,10.0s							
SNY				LR	LR		
comp=E,2μm,12.8s							
SNY				LR	LR		
comp=E,5μm,17.5s							
SNY				LR	LR		
comp=E,7μm,17.5s							
JOW	Kunigami	16.99	234	ePn	Pn	08 34 25.7	-1.1
comp=E,66nm,0.9s							
DL2	Dalian	17.29	280	P	Pn	08 34 28.3	-2.2
DL2				S	Sn	08 37 38.2	-3.8
DL2				pmax	pmax		
comp=E,170nm,1.3s							
DL2				pmax	pmax		
comp=E,540nm,4.7s							
DL2				LR	LR		
comp=E,2μm,18.4s							
DL2				LR	LR		
comp=E,3μm,18.5s							
PEA0	Petropavlovsk-	18.10	28	eP	P	08 34 42.0	+1.4
PEA0B	Petropavlovsk-	18.10	28	ePn	P	08 34 42.1	+1.5
comp=E,72nm,0.9s							
PETK	Petropavlovsk-	18.10	28	P	P	08 34 41.1	+0.5
comp=E,1.1nm,0.3s,baz=193,slow=9.6,SNR=24							
PETK				LR	LR	08 43 21.9	
comp=E,848nm,18.9s,baz=215,slow=43							
PET	Petropavlovsk	18.40	30	eP	Pn	08 34 44.4	+0.4
PET				eS	Sn	08 38 04.0	-4.5
PET				pmax	pmax		
comp=Z,54nm,0.9s							
PET				MLR	MLR		
comp=Z,2μm,16.0s							
PET				MLR	MLR		
comp=Z,2μm,14.0s							
PET	Petropavlovsk	18.40	30	eP	Pn	08 34 44.8	+0.8
comp=Z,184nm,1.7s							
SSE	Sheshan	19.68	257	P	P	08 34 55.7	-2.3
SSE				S	S	08 38 35.0	-3.4
SSE				pmax	pmax		
comp=Z,70nm,1.2s							
SSE				pmax	pmax		

	comp=Z,410nm,10.3s					
SSE			LR	LR		
	comp=Z,3μm,20.1s					
SSE			LR	LR		
	comp=Z,1μm,20.1s					
SSE			LR	LR		
	comp=Z,2μm,15.4s					
HIA	**Hailar**	**20.64 311**	*e*P	**P**	**08 35 05.6**	**-2.8**
HIA			pmax	pmax		
	comp=Z,81nm,0.8s					
HIA	**Hailar**	**20.64 311**	*e*P	**P**	**08 35 05.5**	**-2.8**
	comp=Z,81nm,0.8s					
NJ2	**Nanjing**	**21.10 262**	*e*P	**P**	**08 35 13.0**	**-0.4**
NJ2			pP	**pP**	**08 35 22.2**	**+0.8**
NJ2			pmax	pmax		
	comp=Z,12nm,0.5s					
NJ2			pmax	pmax		
	comp=Z,440nm,5.4s					
NJ2			LR	LR		
	comp=Z,4μm,20.6s					
NJ2			LR	LR		
	comp=Z,3μm,16.3s					
NJ2			LR	LR		
	comp=Z,3μm,14.1s					
TIA	**Tai'an**	**21.22 274**	⇓P	**P**	**08 35 12.6**	**-2.1**
TIA			PP	**PnPn**	**08 35 30.5**	**-3.9**
TIA			S	**S**	**08 39 02.0**	**-7.0**
TIA			pmax	pmax		
	comp=Z,90nm,1.0s					
TIA			pmax	pmax		
	comp=Z,630nm,5.0s					
TIA			LR	LR		
	comp=Z,1μm,13.0s					
TIA			LR	LR		
	comp=Z,2μm,15.5s					
TIA			LR	LR		
	comp=Z,3μm,15.0s					
BJI	**Beijing**	**21.45 284**	P	**P**	**08 35 14.1**	**-3.0**
BJI			pP	**pP**	**08 35 24.8**	**-0.2**
BJI			sP	**sP**	**08 35 29.0**	**+0.2**
BJI			S	**S**	**08 39 06.4**	**-7.0**
BJI			sS	Sn	08 39 19.1	-3.0
BJI			pmax	pmax		
	comp=Z,55nm,1.2s					
BJI			LR	LR		
	comp=Z,900nm,17.0s					
BJI			LR	LR		
	comp=Z,1μm,15.4s					
BJI			LR	LR		
	comp=Z,1μm,23.4s					
BJT	**Baijiatuau**	**21.45 284**	*e*P	**P**	**08 35 16.2**	**-0.9**
BJT			pmax	pmax		
	comp=Z,162nm,0.9s					
BJT	**Baijiatuau**	**21.45 284**	*e*P	**P**	**08 35 16.2**	**-0.9**
	comp=Z,162nm,0.9s					
MA2	**Magadan**	**22.21 10**	P	**P**	**08 35 25.6**	**+0.5**
	comp=Z,26nm,0.7s,baz=219,slow=8.7,SNR=7.1					
MA2			LR	LR	08 46 07.3	
	comp=Z,683nm,18.4s,baz=226,slow=42					
MA2	**Magadan**	**22.21 10**	P	**P**	**08 35 25.6**	**+0.5**
MA2			pmax	pmax		
	comp=Z,16nm,0.6s					
MA2			MLR	MLR		
	comp=Z,683nm,18.4s					
MA2	**Magadan**	**22.21 10**	*e*P	**P**	**08 35 25.3**	**+0.2**
	comp=Z,355nm,1.0s					
CLNS	**Chul'man**	**22.71 333**	*e*P	**P**	**08 35 29.8**	**-0.7**
CLNS			*e**PP	**pP**	**08 35 38.3**	**-0.2**
CLNS			*e*		08 35 51.4	
CLNS			*e*		08 39 22.4	
CLNS			*e*S	**S**	**08 39 34.9**	**-2.0**
CLNS			*e*SS	**SnSn**	**08 40 09.6**	**+1.6**
CLNS			pmax	pmax		
	comp=E,28nm,1.1s					
CLNS			pmax	pmax		
	comp=N,84nm,1.1s					
CLNS			pmax	pmax		
	comp=Z,103nm,1.0s					
CLNS			pmax	pmax		
	comp=N,95nm,0.9s					
CLNS			pmax	pmax		
	comp=E,81nm,0.8s					
CLNS			pmax	pmax		
	comp=Z,73nm,0.8s					
CLNS			smax	smax		
	comp=E,396nm,10.7s					
CLNS			smax	smax		
	comp=N,609nm,11.8s					
CLNS			MLR	MLR		
	comp=Z,1μm,16.0s					
CLNS			MLR	MLR		
	comp=N,2μm,16.0s					
CLNS			MLR	MLR		
	comp=E,836nm,17.0s					
YHNB	**Yeheng**	**23.06 242**	*e*P	**P**	**08 35 33.6**	**-0.8**
	comp=E,58nm,1.0s					
NACB	**Ninganchiao**	**23.23 240**	*e*P	**P**	**08 35 34.3**	**-1.8**
	comp=E,42nm,0.8s					
SSLB	**Suanglung**	**23.93 241**	*e*P	**P**	**08 35 41.0**	**-1.8**
	comp=E,76nm,1.0s					
YULB	**Yu-li**	**23.95 239**	*e*P	**P**	**08 35 41.6**	**-1.5**
	comp=E,45nm,0.9s					
GUMO	**Guam**	**24.20 177**	LR	LR	08 44 08.9	
	comp=E,688nm,21.1s,baz=10,slow=34					
TPUB	**Ta-pu**	**24.47 240**	*e*P	**P**	**08 35 46.1**	**-1.7**
	comp=E,134nm,0.8s					
TIY	**Taiyuan**	**24.61 279**	*e*P	**P**	**08 35 50.5**	**+1.4**
TIY			sP	**sP**	**08 36 02.6**	**+1.3**
TIY			sS	**S**	**08 40 16.1**	**+7.6**
TIY			pmax	pmax		
	comp=E,64nm,0.8s					
TIY			pmax	pmax		
	comp=E,430nm,7.3s					
TIY			LR	LR		
	comp=E,630nm,12.1s					
TIY			LR	LR		
	comp=E,1μm,12.6s					
TIY			LR	LR		
	comp=E,2μm,17.1s					
QZH	**Quanzhou**	**24.87 246**	P	**P**	**08 35 46.3**	**-5.1**
QZH			S	**S**	**08 40 04.3**	**-8.3**
QZH			LR	LR		
	comp=N,2μm,12.7s					
QZH			LR	LR		
	comp=E,1μm,13.9s					
QZH			LR	LR		
	comp=Z,2μm,14.7s					
HHC	**Hu-ho-hao-te**	**24.91 287**	*e*P	**P**	**08 35 50.0**	**-1.8**
HHC			pP	pP	08 35 53.6	-6.8
HHC			PP	**PnPn**	**08 36 20.5**	**-4.6**
HHC			pmax	pmax		
	comp=Z,52nm,0.7s					
HHC			pmax	pmax		
	comp=Z,310nm,4.3s					
HHC			LR	LR		
	comp=Z,2μm,12.8s					
HHC			LR	LR		
	comp=Z,2μm,12.7s					
HHC			LR	LR		
	comp=Z,2μm,12.6s					
WHN	**Wuhan**	**25.24 262**	⇑*i*P	**P**	**08 35 55.6**	**+0.9**
WHN			pP	**sP**	**08 36 05.4**	**-1.4**
WHN			pmax	pmax		
	comp=Z,110nm,0.9s					
WHN			LR	LR		
	comp=Z,2μm,10.8s					
WHN			LR	LR		
	comp=Z,4μm,11.9s					
WHN			LR	LR		
	comp=Z,6μm,14.6s					
CIT	**Chita**	**25.35 314**	*e*P	**P**	**08 35 54.6**	**-1.0**
CIT			*e*		08 36 07.1	
CIT			*e*		08 36 38.0	
CIT			*e*		08 40 21.2	
CIT			pmax	pmax		
	comp=Z,291nm,1.0s					
SEY	**Seymchan**	**25.66 9**	P	**P**	**08 35 58.8**	**+0.6**
	comp=Z,53nm,0.9s,baz=190,slow=6.2,SNR=64					
SEY	**Seymchan**	**25.66 9**	⇓*e*P	**P**	**08 35 57.8**	**-0.4**
YAK	**Yakutsk**	**25.70 345**	P	**P**	**08 35 59.1**	**+0.6**
	comp=Z,60nm,0.5s,baz=225,slow=0.3,SNR=12					
YAK			LR	LR	08 47 20.0	
	comp=Z,864nm,19.1s,baz=144,slow=39					
YAK	**Yakutsk**	**25.70 345**	*e*P	**P**	**08 35 58.8**	**+0.3**
YAK			*e*		08 36 37.2	
YAK			*e*		08 39 24.4	
YAK			*e*S	**S**	**08 40 29.6**	**+4.5**
YAK			*e*SS	**SnSn**	**08 41 30.4**	**+10**
YAK			*e*		08 46 49.9	
YAK			pmax	pmax		
	comp=Z,165nm,1.0s					
YAK			pmax	pmax		
	comp=E,24nm,1.0s					
YAK			pmax	pmax		
	comp=N,53nm,1.0s					
YAK			pmax	pmax		
	comp=Z,97nm,0.9s					
YAK			pmax	pmax		
	comp=N,92nm,1.0s					
YAK			pmax	pmax		
	comp=E,78nm,1.3s					
YAK			smax	smax		
	comp=N,482nm,2.3s					
YAK			smax	smax		
	comp=E,289nm,2.3s					
YAK			MLR	MLR		
	comp=Z,2μm,16.0s					
YAK			MLR	MLR		
	comp=E,763nm,15.0s					
YAK			MLR	MLR		
	comp=N,1μm,14.0s					
YAK	**Yakutsk**	**25.70 345**	*e*P	**P**	**08 35 58.8**	**+0.3**
	comp=N,305nm,0.9s					
H11N2	**WAKE ISLAND Hy 27.11 125**		T	T	09 04 39.1	
	baz=317,slow=75,SNR=273					
H11N1	**WAKE ISLAND Hy 27.12 125**		T	T	09 04 33.8	
	baz=317,slow=75,SNR=17					
H11N3	**WAKE ISLAND Hy 27.12 125**		T	T	09 04 35.3	
	baz=317,slow=75,SNR=16					
BOD	**Bodaibo**	**27.82 325**	⇑*i*P	**P**	**08 36 17.7**	**0.0**
BOD			*e*		08 36 32.6	
H11S1	**WAKE ISLAND Hy 27.88 127**		T	T	09 05 33.5	
	baz=319,slow=76,SNR=73					
H11S3	**WAKE ISLAND Hy 27.88 127**		T	T	09 05 31.0	
	baz=319,slow=76,SNR=73					
H11S2	**WAKE ISLAND Hy 27.90 127**		T	T	09 05 32.4	
	baz=319,slow=76,SNR=54					
XAN	**Xi'an**	**28.27 273**	P	**P**	**08 36 21.5**	**-0.6**
XAN			pP	pP	08 36 30.0	-0.7
XAN			S	**S**	**08 41 04.5**	**-1.9**
XAN			pmax	pmax		
	comp=N,15nm,0.6s					
XAN			pmax	pmax		
	comp=N,420nm,11.3s					
XAN			LR	LR		
	comp=N,2μm,15.9s					
XAN			LR	LR		
	comp=N,1μm,16.9s					
ULN	**Ulaanbaatar**	**28.39 302**	*c i*P	**P**	**08 36 24.4**	**+1.3**
ULN			pmax	pmax		
	comp=Z,103nm,1.2s					
ULN	**Ulaanbaatar**	**28.39 302**	P	**P**	**08 36 24.9**	**+1.8**
	SNR=44					
ULN	**Ulaanbaatar**	**28.39 302**	P	**P**	**08 36 24.9**	**+1.8**
	SNR=44					
ULN	**Ulaanbaatar**	**28.39 302**	*e*P	**P**	**08 36 25.2**	**+2.1**
	comp=Z,76nm,1.0s					
SONA1	**Songino Array**	**28.82 302**	*e*P	**P**	**08 36 28.7**	**+1.8**
SONM	**Songino Array**	**28.82 302**	P	**P**	**08 36 28.2**	**+1.2**
	comp=Z,26nm,0.7s,baz=99,slow=10,SNR=20					
SONM			LR	LR	08 48 26.2	
	comp=Z,1μm,19.2s,baz=130,slow=37					
ENH	**Enshi**	**29.17 265**	*e*P	**P**	**08 36 30.7**	**+0.7**
	comp=Z,136nm,0.9s					
IRK	**Irkutsk**	**30.89 311**	*e*P	P	08 36 50.7	+5.7
IRK			pmax	pmax		
	comp=Z,105nm,1.2s					
TLY	**Talaya**	**31.16 309**	LR	LR	08 49 44.4	
	comp=Z,1μm,20.5s,baz=103,slow=37					
TLY	**Talaya**	**31.16 309**	*c i*P	**P**	**08 36 49.8**	**+2.4**
TLY			*e*S	**S**	**08 41 53.1**	**+1.8**
TLY			pmax	pmax		
	comp=Z,54nm,1.2s					
TLY			MLR	MLR		
	comp=Z,914nm,15.0s					
TLY	**Talaya**	**31.16 309**	*e*P	**P**	**08 36 47.1**	**-0.3**
	comp=Z,41nm,0.9s					
ZAK	**Zakamensk**	**31.18 307**	*e*P	**P**	**08 36 48.4**	**+0.7**
ZAK			pmax	pmax		
	comp=Z,46nm,1.0s					
LZH	**Lanzhou**	**31.68 279**	*e*P	**P**	**08 36 52.7**	**+0.3**
LZH			pP	pP	08 37 01.1	+0.1
LZH			sP	sP	08 37 05.6	+1.0
LZH			PP	**PnPn**	**08 37 56.3**	**-0.3**
LZH			*e*S	**S**	**08 41 57.5**	**-2.6**
LZH			pmax	pmax		
	comp=Z,45nm,1.0s					
LZH			pmax	pmax		
	comp=Z,260nm,4.1s					
LZH			LR	LR		
	comp=Z,350nm,14.2s					
LZH			LR	LR		
	comp=Z,1μm,14.9s					
LZH			LR	LR		
	comp=Z,2μm,16.9s					
BILL	**Bilibino**	**32.75 16**	*d i*P	**P**	**08 37 00.7**	**-0.4**
BILL			*i*		08 37 19.4	
BILL			*i* S	**S**	**08 42 07.9**	**-7.7**
BILL			pmax	pmax		
	comp=Z,23nm,1.1s					
BILL	**Bilibino**	**32.75 16**	*e*P	**P**	**08 37 00.8**	**-0.3**
	comp=Z,35nm,1.2s					
MOY	**Mondy**	**32.78 309**	*e*P	**P**	**08 37 04.4**	**+2.6**
MOY			pmax	pmax		
	comp=Z,33nm,2.0s					
GYA	**Guiyang**	**33.11 261**	⇑*i*P	**P**	**08 37 05.6**	**+0.7**
GYA			pP	pP	08 37 15.0	+1.4
GYA			PcP	**PcP**	**08 39 49.4**	**+1.7**
GYA			S	**S**	**08 42 19.5**	**-2.9**
GYA			sS	sS	08 42 37.0	+0.4
GYA			ScP	**ScP**	**08 43 30.3**	**+0.5**
GYA			ScS	**ScS**	**08 47 28.6**	**-1.9**
GYA			pmax	pmax		
	comp=Z,90nm,0.9s					
GYA			pmax	pmax		
	comp=Z,150nm,6.6s					
GYA			LR	LR		
	comp=Z,740nm,16.2s					
GYA			LR	LR		
	comp=Z,1μm,17.1s					
GYA			LR	LR		
	comp=Z,1μm,15.8s					
CD2	**Chengdu**	**33.45 270**	P	**P**	**08 37 07.3**	**-0.4**
CD2			sP	sP	08 37 21.0	+1.0
CD2			PP	**PP**	**08 38 23.0**	**-0.6**
CD2			S	**S**	**08 42 26.5**	**-0.9**
CD2			pmax	pmax		
	comp=Z,60nm,0.9s					
CD2			pmax	pmax		
	comp=Z,260nm,7.1s					
CD2			LR	LR		
	comp=Z,3μm,16.8s					
CD2			LR	LR		
	comp=Z,2μm,18.0s					
GTA	**Gaotai**	**34.03 287**	⇑P	**P**	**08 37 13.6**	**+0.8**
GTA			pP	pP	08 37 22.9	+1.4
GTA			sP	sP	08 37 26.8	+1.7
GTA			PcP	**PcP**	**08 39 51.0**	**+0.9**
GTA			S	**S**	**08 42 37.4**	**+1.0**
GTA			pmax	pmax		
	comp=Z,31nm,1.0s					
GTA			pmax	pmax		
	comp=Z,280nm,5.5s					
GTA			LR	LR		
	comp=Z,950nm,18.5s					
GTA			LR	LR		
	comp=Z,2μm,20.4s					
GTA			LR	LR		
	comp=Z,3μm,18.5s					
TIXI	**Tiksi**	**34.70 352**	P	**P**	**08 37 16.9**	**-1.1**
	comp=Z,6.8nm,0.7s,baz=169,slow=3.3,SNR=7.5					
TIXI			LR	LR	08 53 19.8	
	comp=Z,950nm,18.8s,baz=158,slow=39					
TIXI	**Tiksi**	**34.70 352**	⇑*e*P	**P**	**08 37 17.6**	**-0.5**
TIXI			pmax	pmax		
	comp=Z,13nm,1.0s					
TIXI	**Tiksi**	**34.70 352**	*e*P	**P**	**08 37 16.9**	**-1.1**
	comp=Z,23nm,1.0s					
KMI	**Kunming**	**36.84 262**	P	**P**	**08 37 37.7**	**+0.5**
KMI			pP	pP	08 37 47.0	+1.1
KMI			sP	sP	08 37 51.3	+1.8
KMI			PP	**PnPn**	**08 39 03.1**	**+1.6**
KMI			S	**S**	**08 43 18.5**	**-1.5**
KMI			sS	sS	08 43 33.5	-0.9
KMI			pmax	pmax		
	comp=Z,21nm,1.0s					
KMI			pmax	pmax		
	comp=Z,160nm,5.2s					
KMI			LR	LR		
	comp=Z,1μm,17.3s					
KMI			LR	LR		
	comp=Z,1μm,16.1s					
KMI			LR	LR		
	comp=Z,1μm,15.9s					
KRAR	**Krasnoyarsk**	**38.12 315**	⇑*e*P	**P**	**08 37 51.1**	**+3.7**
TNA	**Tin City**	**39.26 29**	*e*P	**P**	**08 37 58.3**	**+1.5**
	comp=Z,26nm,0.8s					
PANO	**Nakornpanom**	**39.92 250**	P	P	08 38 10.3	+7.4
SDKM	**Sandakan**	**40.10 223**	⇓P	**P**	**08 38 04.1**	**-0.3**
KKM	**Kota Kinabalu**	**40.31 225**	⇓P	**P**	**08 38 06.2**	**0.0**
NONG	**Nongkai**	**40.45 252**	P	**P**	**08 38 08.8**	**+1.5**
	comp=Z,43nm,1.7s					
SKNT	**Sakolnakorn**	**40.50 250**	P	**P**	**08 38 11.6**	**+3.9**
	comp=Z,20nm,1.4s					
TSM	**Tawau**	**40.87 222**	⇑P	**P**	**08 38 10.5**	**-0.2**
CRAI	**Chiangrai**	**41.30 257**	P	**P**	**08 38 14.9**	**+0.6**
	comp=Z,248nm,1.1s					
WMQ	**Urumqi**	**42.06 296**	P	**P**	**08 38 22.2**	**+1.9**
WMQ			pP	pP	08 38 30.5	+1.3
WMQ			sP	sP	08 38 35.1	+2.4
WMQ			PP	**PP**	**08 40 01.6**	**+3.8**
WMQ			S	**S**	**08 44 39.6**	**+1.9**
WMQ			ScS	**ScS**	**08 48 16.5**	**-4.1**
WMQ			pmax	pmax		
	comp=Z,24nm,0.8s					
WMQ			pmax	pmax		
	comp=Z,220nm,6.6s					
WMQ			LR	LR		
	comp=Z,430nm,27.2s					
WMQ			LR	LR		
	comp=Z,190nm,17.4s					
CHGN	**Chignik**	**42.13 45**	*e*P	**P**	**08 38 19.8**	**-0.8**
LOEI	**Loei**	**42.21 253**	P	**P**	**08 38 19.5**	**-2.3**
	comp=Z,16nm,1.2s					
MRSI	**Marisa**	**42.23 213**	P	**P**	**08 38 22.0**	**+0.1**
	comp=Z,62nm,1.2s,comp=Z,873nm					
UTTA	**Uttaradit**	**42.61 254**	P	**P**	**08 38 25.3**	**+0.3**
	comp=Z,8.8nm,0.9s,comp=Z,66nm					
CHAI	**Chaiyaphum**	**42.66 251**	P	**P**	**08 38 27.8**	**+2.4**
	comp=Z,12nm,1.0s,comp=Z,274nm					
ZAA0	**Zalesovo Array**	**42.68 312**	*e*P	**P**	**08 38 25.9**	**+0.7**
ZALV	**Zalesovo Beam**	**42.68 312**	P	**P**	**08 38 25.8**	**+0.6**
	comp=Z,43nm,0.6s,baz=87,slow=7.7,SNR=42					
ZALV			PcP	**PcP**	**08 40 16.5**	**0.0**
	comp=Z,8.3nm,0.5s,baz=98,slow=3.1,SNR=5.1					
LAMP	**Lampang**	**42.85 256**	P	**P**	**08 38 27.6**	**+0.6**
	comp=Z,27nm,1.0s,comp=Z,193nm					
SANI	**Sanana**	**42.94 206**	P	**P**	**08 38 28.0**	**+0.4**
	comp=Z,37nm,0.7s					
PBKT	**Sadao Pong**	**43.01 252**	P	**P**	**08 38 29.6**	**+1.4**
	comp=Z,35nm,1.3s					
CMMT	**Chiang Mai**	**43.21 257**	P	**P**	**08 38 31.1**	**+1.2**
	comp=Z,38nm,1.0s,comp=Z,644nm					
CHTO	**Chiang Mai**	**43.21 257**	P	**P**	**08 38 31.2**	**+1.3**
	comp=Z,169nm,1.0s					
CHTO	**Chiang Mai**	**43.21 257**	*e*P	**P**	**08 38 30.1**	**+0.2**
CHTO			pmax	pmax		
	comp=Z,32nm,0.9s					
CHTO	**Chiang Mai**	**43.21 257**	*e*P	**P**	**08 38 30.1**	**+0.2**
	comp=Z,32nm,0.9s					
NRIK	**Noril'sk**	**43.27 335**	P	**P**	**08 38 30.5**	**+0.8**
	comp=Z,8.0nm,0.7s,baz=104,slow=14,SNR=14					
NRIK			LR	LR	08 58 03.3	
	comp=Z,2μm,18.5s,baz=105,slow=38					
CMAR	**Chiang Mai Arr**	**43.42 256**	P	**P**	**08 38 31.6**	**0.0**
	comp=Z,7.8nm,0.8s,baz=47,slow=6.7,SNR=1.9					
CM01	**Chiang Mai Arr**	**43.43 256**	*e*P	**P**	**08 38 31.5**	**-0.2**
SUKH	**Sukhothai**	**43.47 255**	P	**P**	**08 38 32.8**	**+0.9**
	comp=Z,13nm,0.9s,comp=Z,96nm					
NVS	**Novosibirsk**	**43.56 313**	*e*P	**P**	**08 38 32.6**	**+0.3**
NVS			*e*		08 40 19.1	
NVS			*e*		08 44 58.7	
NVS			pmax	pmax		
	comp=E,19nm,0.6s					
NVS			pmax	pmax		
	comp=Z,29nm,0.6s					
TT01	**Tatalina**	**43.72 35**	*e*P	**P**	**08 38 34.6**	**+1.1**
TTA	**Tatalina**	**43.73 35**	*e*P	**P**	**08 38 34.6**	**+1.0**
TTA			pmax	pmax		
	comp=Z,98nm,1.9s					
TTA	**Tatalina**	**43.73 35**	*e*P	**P**	**08 38 34.6**	**+1.0**
	comp=Z,98nm,1.9s					
SVW2	**Sparrevohn**	**43.78 38**	*e*P	**P**	**08 38 34.9**	**+0.9**
	comp=Z,24nm,0.7s					
SRAK	**Srakaew**	**43.82 249**	P	**P**	**08 38 34.8**	**0.0**
	comp=Z,70nm,0.9s,comp=Z,688nm					
LSA	**Lhasa**	**43.90 275**	P	**P**	**08 38 39.9**	**+4.0**
LSA			pmax	pmax		
	comp=Z,16nm,0.8s					
NAYO	**Nakonayok**	**44.16 250**	P	**P**	**08 38 41.2**	**+3.7**
	comp=Z,25nm,1.0s					
OHAK	**Old Harbor**	**44.94 43**	*e*P	**P**	**08 38 43.6**	**+0.4**
	comp=Z,48nm,0.7s					
RSO	**Redoubt South**	**45.15 39**	*e*P	**P**	**08 38 46.0**	**+0.9**
MK01	**Makanchi Array**	**45.19 302**	*e*P	**P**	**08 38 45.5**	**+0.1**
SHL	**Shillong**	**45.19 270**	*e*P	**P**	**08 38 46.0**	**+0.1**
SHL			*ex*	x	08 45 31.0	
MK31	**Makanchi Array**	**45.19 302**	*i* P	**P**	**08 38 45.6**	**+0.1**
MK31			pmax	pmax		
	comp=Z,69nm,1.0s					
MK31	**Makanchi Array**	**45.19 302**	*e*P	**P**	**08 38 45.8**	**+0.3**
MKAR	**Makanchi Array**	**45.19 302**	P	**P**	**08 38 45.6**	**+0.1**
	comp=Z,52nm,0.9s,baz=85,slow=9.3,SNR=41					
MKAR	**Makanchi Array**	**45.19 302**	*e*P	**P**	**08 38 45.8**	**+0.3**
MKAR	**Makanchi Array**	**45.19 302**	*e*P	**P**	**08 38 45.8**	**+0.3**
KDAK	**Kodiak Island**	**45.29 43**	*i* P	**P**	**08 38 47.1**	**+1.1**
KDAK	**Kodiak Island**	**45.29 43**	*e*P	**P**	**08 38 47.3**	**+1.3**
	comp=Z,82nm,0.8s					
MAKZ	**Makanchi**	**45.40 302**	*e*P	**P**	**08 38 47.4**	**+0.3**
MAKZ			pmax	pmax		
	comp=Z,55nm,0.9s					
MAKZ	**Makanchi**	**45.40 302**	*e*P	**P**	**08 38 47.4**	**+0.3**
	comp=Z,55nm,0.9s					
PPLA	**Purkeypile**	**45.47 35**	*e*P	**P**	**08 38 49.5**	**+1.9**
	comp=Z,166nm,1.6s					
SPU	**Mount Spurr**	**45.50 38**	*e*P	**P**	**08 38 49.0**	**+1.2**
SBUM	**Sibu**	**45.51 227**	*e*P	**P**	**08 38 48.0**	**-0.3**
	comp=Z,22nm,1.0s					
CAST	**Castle Rocks**	**45.54 35**	*e*P	**P**	**08 38 49.6**	**+1.6**
	comp=Z,188nm,1.8s					
BPAW	**Bear Paw Mtn.**	**46.06 34**	*e*P	**P**	**08 38 53.2**	**+1.2**
	comp=Z,102nm,1.8s					
KTH	**Kantishna Hill**	**46.07 34**	*e*P	**P**	**08 38 53.6**	**+1.4**
	comp=Z,100nm,1.3s					
MLY	**Manley**	**46.20 32**	*e*P	**P**	**08 38 54.7**	**+1.4**
	comp=Z,36nm,0.8s					
PHET	**Kaeng Krachan**	**46.32 250**	P	**P**	**08 38 55.9**	**+1.3**
	comp=Z,38nm,1.0s,comp=Z,272nm					
TRF	**Thorofare Moun**	**46.35 35**	*e*P	**P**	**08 38 55.2**	**+0.7**
	comp=Z,28nm,0.9s					
COLD	**Coldfoot**	**46.57 29**	*e*P	**P**	**08 38 57.1**	**+1.1**
	comp=Z,68nm,1.9s					
RC01	**Rabbit Creek A**	**46.62 38**	*e*P	**P**	**08 38 57.4**	**+0.8**
	comp=Z,64nm,0.8s					
BWN	**Browne**	**46.73 34**	*e*P	**P**	**08 38 58.7**	**+1.4**
	comp=Z,190nm,1.1s					
SEW	**Seward**	**46.81 39**	*e*P	**P**	**08 38 58.3**	**+0.4**
	comp=Z,139nm,1.6s					
KURK	**Kurchatov**	**46.83 308**	P	**P**	**08 38 58.5**	**+0.3**
KURK			pmax	pmax		
	comp=Z,260nm,0.7s					
KURK	**Kurchatov**	**46.83 308**	*e*P	**P**	**08 38 58.8**	**+0.5**
	comp=Z,142nm,0.6s					
PMR	**Palmer**	**46.90 37**	*e*P	**P**	**08 38 59.0**	**+0.4**
PMR			pmax	pmax		
	comp=Z,53nm,0.9s					
PMR	**Palmer**	**46.90 37**	*e*P	**P**	**08 38 59.0**	**+0.4**
	comp=Z,53nm,0.9s					
KURBB	**Kurchatov Arra**	**46.90 308**	P	**P**	**08 38 58.7**	**-0.1**
	comp=Z,43nm,0.9s,baz=82,slow=8.0,SNR=167					
MCK	**McKinley**	**46.96 34**	*e*P	**P**	**08 38 59.8**	**+0.7**
MCK			pmax	pmax		
	comp=Z,30nm,1.0s					
MCK	**McKinley**	**46.96 34**	*e*P	**P**	**08 38 59.8**	**+0.7**
	comp=Z,30nm,1.0s					
RND	**Reindeer**	**46.99 35**	*e*P	**P**	**08 38 59.7**	**+0.2**
RND			pmax	pmax		
	comp=Z,106nm,1.3s					

RND	Reindeer	46.99	35	eP	P	08 38 59.7	+0.2
	comp=Z,106nm,1.3s						
PMG	Port Moresby	47.13	175	ceP	P	08 38 59.6	-1.3
PMG				pmax	pmax		
	comp=Z,162nm,1.2s						
MDM	Murphy Dome	47.27	33	eP	P	08 39 02.9	+1.3
	comp=Z,74nm,0.9s						
SML	Sawmill	47.27	37	eP	P	08 39 02.5	+0.9
SML				pmax	pmax		
	comp=Z,77nm,0.9s						
SML	Sawmill	47.27	37	eP	P	08 39 02.5	+0.9
	comp=Z,77nm,0.9s						
WRH	Wood River Hil	47.33	33	eP	P	08 39 02.5	+0.6
	comp=Z,24nm,0.8s						
KSM	Kuching	47.42	228	⇑P	P	08 39 02.7	-0.5
KSM	Kuching	47.42	228	eP	P	08 39 03.6	+0.4
	comp=Z,28nm,0.8s						
COLA	College	47.43	33	d iP	P	08 39 03.4	+0.7
COLA				pmax	pmax		
	comp=Z,23nm,0.9s						
COLA	College	47.43	33	eP	P	08 39 03.8	+1.1
	comp=Z,38nm,0.8s						
CCB	Clear Creek Bu	47.45	33	eP	P	08 39 03.3	+0.5
	comp=Z,14nm,0.8s						
SCM	Sheep Creek Mo	47.75	37	eP	P	08 39 06.4	+1.0
SCM				pmax	pmax		
	comp=Z,76nm,0.9s						
SCM	Sheep Creek Mo	47.75	37	eP	P	08 39 06.4	+1.0
	comp=Z,76nm,0.9s						
ILAR	Eielson Array	47.84	33	P	P	08 39 06.2	+0.2
	comp=Z,30nm,0.7s,baz=263,slow=6.6,SNR=318						
ILB	Eielson Array	47.84	33	eP	P	08 39 06.4	+0.5
IL1	Eielson Array	47.84	33	eP	P	08 39 06.6	+0.7
PDGK	Podgornoye	47.96	298	P	P	08 39 08.2	+1.0
PDGK				pmax	pmax		
	comp=Z,78nm,1.2s						
KAPI	Kappang	48.10	213	eP	P	08 39 08.2	-0.2
	comp=Z,32nm,1.0s						
KLU	Klutina	48.44	37	eP	P	08 39 11.9	+1.1
	comp=Z,63nm,1.0s						
FYU	Fort Yukon	48.50	30	eP	P	08 39 13.0	+2.0
	comp=Z,257nm,1.7s						
DIV	Divide	48.54	38	eP	P	08 39 12.8	+1.3
	comp=Z,93nm,0.9s						
PAX	Paxson	48.54	35	eP	P	08 39 12.4	+0.9
PAX				pmax	pmax		
	comp=Z,28nm,1.1s						
PAX	Paxson	48.54	35	eP	P	08 39 12.4	+0.9
	comp=Z,28nm,1.1s						
EYAK	Cordova Ski Ar	48.61	38	eP	P	08 39 13.3	+1.4
	comp=Z,57nm,0.9s						
GUN	Gumba	48.84	276	eP	P	08 39 14.6	0.0
	comp=Z,476nm,1.0s						
KTGM	Kuala Trenggan	49.04	239	⇓P	P	08 39 14.3	-1.4
BMRM	Bremner River	49.12	38	eP	P	08 39 17.3	+1.4
	comp=Z,101nm,1.1s						
DOT	Dot Lake	49.13	34	eP	P	08 39 16.3	+0.4
	comp=Z,63nm,0.7s						
RAGM	Ragged Mountai	49.16	39	eP	P	08 39 18.1	+2.0
	comp=Z,67nm,0.8s						
MENT	Mentasta	49.34	35	eP	P	08 39 19.2	+1.6
	comp=Z,37nm,0.9s						
KKN	Kakani	49.37	276	eP	P	08 39 18.7	+0.3
	comp=Z,257nm,1.0s						
PKIN	Phulchoki	49.37	276	eP	P	08 39 19.1	+0.5
SKLT	Songkhla	49.46	243	P	P	08 39 23.2	+4.2
	comp=Z,31nm,1.1s						
DMN	Daman	49.59	276	eP	P	08 39 20.3	+0.1
	comp=Z,137nm,1.0s						
AAA	Alma-Ata	49.75	298	eP	P	08 39 18.2	-2.8
AAA				pmax	pmax		
	comp=Z,700nm,9.0s						
GKN	Gorkha	49.77	277	eP	P	08 39 21.5	0.0
	comp=Z,504nm,1.0s						
BALM	Baldy	50.21	38	eP	P	08 39 25.4	+1.1
BALM				pmax	pmax		
	comp=Z,43nm,1.0s						
BALM	Baldy	50.21	38	eP	P	08 39 25.4	+1.1
	comp=Z,43nm,1.0s						
EGAK	Eagle	50.29	33	eP	P	08 39 25.2	+0.5
	comp=Z,19nm,1.0s						
KOLN	Koldanda	50.70	277	eP	P	08 39 28.6	+0.1
EDFI	Ende, Flores	50.70	209	P	P	08 39 26.6	-1.9
	comp=Z,24nm,1.4s						
TKM2	Tokmak 2	50.80	298	i P	P	08 39 29.8	+0.7
TKM2				pmax	pmax		
	comp=Z,76nm,1.0s						
TKM2	Tokmak 2	50.80	298	eP	P	08 39 30.1	+1.0
	comp=Z,124nm,0.9s						
PYUN	Piuthan	51.02	278	eP	P	08 39 32.1	+1.1
	comp=Z,634nm,1.0s						
CHKZ	Chkalovo	51.05	313	i P	P	08 39 30.2	-0.3
CHKZ				pmax	pmax		
	comp=Z,42nm,0.9s						
IPM	Ipoh	51.09	240	eP	P	08 39 30.9	-0.4
	comp=Z,25nm,0.9s						
DAWY	Dawson	51.14	33	eP	P	08 39 32.0	+0.9
	comp=Z,53nm,1.8s						
BVA0	Borovoye Array	51.33	312	i P	P	08 39 32.6	-0.1
BVA0				pmax	pmax		
	comp=Z,38nm,0.9s						
BVAR	Borovoye Array	51.33	312	P	P	08 39 32.9	+0.2
	comp=Z,15nm,0.9s,baz=81,slow=9.2,SNR=28						
BVAR				PcP	PcP	08 40 47.6	+0.3
	comp=Z,12nm,0.8s,baz=101,slow=2.9,SNR=3.9						
OTUK	Ortayu	51.38	306	P	P	08 39 33.1	-0.1
OTUK				pmax	pmax		
	comp=Z,26nm,1.4s						
BRVK	Borovoye	51.39	312	deP	P	08 39 33.0	-0.1
BRVK				pmax	pmax		
	comp=Z,24nm,1.0s						
BRVK	Borovoye	51.39	312	eP	P	08 39 33.5	+0.4
	comp=Z,40nm,0.8s						
FRU	Bishkek	51.51	299	⇑eP	P	08 39 34.0	-0.2
FRU				i		08 41 34.0	
FRU				eS	S	08 46 56.0	+3.4
FRU				pmax	pmax		
	comp=Z,110nm,2.0s						
COEN	Coen	51.54	181	eP	P	08 39 34.0	-0.6
	comp=Z,206nm,1.9s						
AAK	Ala-Archa	51.66	298	i P	P	08 39 36.1	+0.6
AAK				pmax	pmax		
	comp=Z,33nm,1.1s						
AAK	Ala-Archa	51.66	298	eP	P	08 39 36.2	+0.6
	comp=Z,34nm,1.0s						
KSH	Kashi	51.69	294	P	P	08 39 40.4	+4.6
KSH				epP	sP	08 39 50.7	+2.4
KSH				PcS	PcS	08 44 50.3	+3.2
KSH				S	S	08 46 59.7	+4.3
KSH				ScS	ScS	08 49 24.4	+0.4
KSH				pmax	pmax		
	comp=Z,17nm,0.9s						
KSH				pmax	pmax		
	comp=Z,190nm,3.0s						
KSH				LR	LR		
	comp=Z,780nm,16.0s						
KSH				LR	LR		
	comp=Z,1μm,16.4s						
KSH				LR	LR		
	comp=Z,900nm,17.5s						
MTN	Manton Dam	51.78	196	eP	P	08 39 35.3	-1.1
	comp=Z,66nm,0.9s						
EKS2	Erkin-Say	52.15	299	eP	P	08 39 39.8	+0.7
EKS2				pmax	pmax		
	comp=Z,41nm,1.0s						
EKS2	Erkin-Say	52.15	299	eP	P	08 39 39.8	+0.7
	comp=Z,41nm,1.0s						
ZRNK	Zerenda	52.16	312	eP	P	08 39 39.2	+0.3
ZRNK				pmax	pmax		
	comp=Z,44nm,0.8s						
ZRNK	Zerenda	52.16	312	eP	P	08 39 39.2	+0.3
	comp=Z,44nm,0.8s						
OPA	Opana	52.35	91	eP	P	08 39 41.6	+0.9
OPA				pmax	pmax		
	comp=Z,375nm,1.5s						
OPA	Opana	52.35	91	eP	P	08 39 41.6	+0.9
	comp=Z,375nm,1.5s						
KIP	Kipapa	52.48	91	eP	P	08 39 42.9	+1.2
KIP				pmax	pmax		
	comp=Z,468nm,1.9s						
KIP	Kipapa	52.48	91	eP	P	08 39 42.9	+1.2
	comp=Z,468nm,1.9s						
TWSI	Taliwang, Sumb	52.67	214	P	P	08 39 40.2	-2.8
	comp=Z,31nm,1.1s,comp=Z,852nm						
BWNR	Bhubaneshwar	52.69	268	eP	P	08 39 42.8	-0.4
BWNR				IAmb	IAmb	08 39 54.6	
	comp=Z,18nm,0.9s						
INK	Inuvik	52.84	28	eP	P	08 39 44.5	+0.9
INK				pmax	pmax		
	comp=Z,64nm,1.7s						
INK	Inuvik	52.84	28	eP	P	08 39 44.5	+0.9
	comp=Z,64nm,1.7s						
MNAS	Manas	53.09	299	P	P	08 39 46.9	+0.8
MNAS				pmax	pmax		
	comp=Z,170nm,1.0s						
SFK	Sufi-Kurgan	53.28	296	P	P	08 39 48.4	+0.7
SFK				pmax	pmax		
	comp=Z,52nm,0.9s						
PSI	Prapat	53.74	241	eP	P	08 39 50.4	-0.8
PSI				pmax	pmax		
	comp=Z,16nm,0.8s						
PSI	Prapat	53.74	241	eP	P	08 39 50.4	-0.8
	comp=Z,16nm,0.8s						
SKAG	Skagway	53.95	39	eP	P	08 39 54.2	+2.3
	comp=Z,27nm,1.0s						
SMLA	Simla	54.18	284	eP	P	08 39 53.8	-0.3
KK31	Karatay Array	54.25	300	i P	P	08 39 54.2	-0.2
KK31				pmax	pmax		
	comp=Z,74nm,1.2s						
KKAR	Karatay Array	54.25	300	eP	P	08 39 54.4	0.0
KKAR	Karatay Array	54.25	300	eP	P	08 39 54.4	0.0
MNSI	Mandailing Nat	54.75	238	P	P	08 39 59.2	+0.9
	comp=Z,25nm,0.5s						
NDI	New Delhi	55.26	281	ex	P	08 39 55.5	-6.4
POHA	Pohakuloa	55.33	91	eP	P	08 40 04.7	+1.9
	comp=Z,115nm,1.0s						
LEM	Lembang	55.70	225	P	P	08 40 08.8	+3.4
	comp=Z,20nm,0.5s,baz=95,slow=7.7,SNR=9.8						
SVE	Sverdlovsk	55.70	319	eP	P	08 40 07.6	+2.9
SVE				pmax	pmax		
	comp=Z,63nm,0.9s						
LHSI	Lahat	55.71	231	P	P	08 40 05.5	+0.3
GSI	Gunungsitoli	55.75	241	eP	P	08 40 05.2	-0.4
	comp=Z,67nm,1.1s						
DLBC	Dease Lake	56.88	39	eP	P	08 40 15.1	+1.9
	comp=Z,27nm,1.0s						
ARU	Arti	56.92	319	P	P	08 40 13.7	+0.3
	comp=Z,28nm,0.9s,baz=74,slow=3.9,SNR=18						
ARU	Arti	56.92	319	d iP	P	08 40 13.5	+0.2
ARU						08 41 08.8	
ARU						08 42 23.6	
ARU				S	S	08 48 10.8	+5.7
ARU				SS	SS	08 51 55.4	+2.4
ARU				pmax	pmax		
	comp=Z,51nm,1.0s						
ARU				MLR	MLR		
	comp=Z,1μm,17.0s						
ARU	Arti	56.92	319	eP	P	08 40 13.8	+0.4
	comp=Z,50nm,0.8s						
NGP	Nagpur	57.58	273	eP	P	08 40 18.0	-0.6
NGP				IAmb	IAmb	08 40 22.4	
	comp=Z,257nm,2.4s						
WRAB	Tennant Creek	58.15	190	d iP	P	08 40 20.5	-1.8
WRAB				pmax	pmax		
	comp=Z,230nm,1.7s						
WRAB	Tennant Creek	58.15	190	eP	P	08 40 20.4	-1.9
	comp=Z,57nm,0.9s						
WB2	Warramunga Arr	58.15	190	eP	P	08 40 20.9	-1.5
	comp=Z,52nm,0.9s						
WRA	Warramunga Arr	58.16	190	P	P	08 40 20.5	-1.9
	comp=Z,41nm,0.8s,baz=9.0,slow=7.1,SNR=154						
FITZ	Fitzroy Crossi	58.18	200	eP	P	08 40 22.3	-0.3
	comp=Z,66nm,1.4s						
AB31	Akbulak array	58.76	310	i P	P	08 40 26.2	-0.2
AB31				pmax	pmax		
	comp=Z,14nm,0.5s						
ABKAR	Akbulak array	58.76	310	eP	P	08 40 26.3	-0.1
KBL	Kabul	58.77	291	eP	P	08 40 26.7	-0.3
KBL				pmax	pmax		
	comp=Z,85nm,1.0s						
KBL	Kabul	58.77	291	eP	P	08 40 26.7	-0.3
	comp=Z,85nm,1.0s						
AKTO	Aktyubinsk	59.44	312	P	P	08 40 30.7	-0.4
	comp=Z,16nm,0.8s,baz=75,slow=9.5,SNR=17						
HYB	Hyderabad	60.00	269	i P	P	08 40 35.0	-0.4
	comp=Z,50nm,1.0s						
HYB				esP	sP	08 40 47.0	-1.0
SPA0	Spitsbergen Ar	60.05	349	eP	P	08 40 35.6	+0.6
SPITS	Spitsbergen Ar	60.05	349	P	P	08 40 34.1	-0.9
	comp=Z,14nm,0.8s,baz=68,slow=11,SNR=12						
KBS	Kingsbay	60.14	350	eP	P	08 40 36.5	+1.0
KBS				pmax	pmax		
	comp=Z,44nm,1.0s						
KBS	Kingsbay	60.14	350	eP	P	08 40 36.5	+1.0
	comp=Z,44nm,1.0s						
RES	Resolute Bay	61.35	15	eP	P	08 40 43.8	0.0
RES				pmax	pmax		
	comp=Z,21nm,0.8s						
RES	Resolute Bay	61.35	15	eP	P	08 40 43.8	0.0
	comp=Z,21nm,0.8s						
AS01	Alice Springs	61.87	190	eP	P	08 40 46.6	-1.2
AS31	Alice Springs	61.88	190	eP	P	08 40 46.5	-1.5
	comp=Z,3.8nm,0.6s						
ASAR	Alice Springs	61.88	190	P	P	08 40 46.4	-1.5
	comp=Z,5.0nm,0.5s,baz=2.9,slow=6.5,SNR=103						
LVZ	Lovozero	62.08	336	eP	P	08 40 49.7	+0.9
LVZ				pmax	pmax		
	comp=Z,131nm,1.5s						
LVZ	Lovozero	62.08	336	eP	P	08 40 49.7	+0.9
	comp=Z,131nm,1.5s						
YKW3	Yellowknife Ar	62.16	31	eP	P	08 40 50.0	+0.6
	comp=Z,72nm,1.9s						
YKA	Yellowknife Ar	62.20	31	P	P	08 40 49.6	0.0
	comp=Z,7.1nm,0.7s,baz=302,slow=6.7,SNR=134						
YKB5	Yellowknife Ar	62.20	31	eP	P	08 40 48.8	-0.8
APA	Apatity	62.66	336	i P	P	08 40 52.6	0.0
APA				MLR	MLR		
	comp=Z,1μm,10.0s						
TMCR	Tamitsa	62.87	332	eP	P	08 40 54.6	+0.6
TMCR				pmax	pmax		
	comp=Z,58nm,0.9s						
POO	Poona	63.10	273	eP	P	08 40 56.0	-0.4
EIDS	Eidsvold	63.28	172	eP	P	08 40 57.1	-0.1
	comp=Z,92nm,1.9s						
KEV	Kevo	63.30	340	eP	P	08 40 57.3	+0.5
KEV				pmax	pmax		
	comp=Z,42nm,0.9s						
KEV	Kevo	63.30	340	eP	P	08 40 57.3	+0.5
	comp=Z,42nm,0.9s						
ARA0	ARCESS Array S	63.84	340	eP	P	08 41 01.0	+0.5
ARCES	ARCESS Array B	63.84	340	P	P	08 40 59.4	-1.1
	comp=Z,9.7nm,0.7s,baz=46,slow=5.4,SNR=12						
ARE0	ARCESS Array S	63.84	340	eP	P	08 41 01.1	+0.7
	comp=Z,165nm,1.8s						
KLMR	Klimovskoe	64.00	328	eP	P	08 41 00.1	-1.5
KLMR				e		08 41 34.8	
KLMR				pmax	pmax		
	comp=Z,23nm,1.0s						
MSVF	Nonsavu	64.06	143	eP	P	08 41 03.9	+1.3
MSVF				pmax	pmax		
	comp=Z,52nm,1.5s						
MSVF	Nonsavu	64.06	143	eP	P	08 41 03.9	+1.3
	comp=Z,52nm,1.5s						
NLWA	Neilton Lookou	64.84	49	eP	P	08 41 09.2	+1.8
	comp=Z,138nm,1.6s						
A04D	Lummi Island	64.88	47	P	P	08 41 08.4	+0.9
	baz=299						
GEYT	Alibeck	64.98	300	P	P	08 41 08.8	+0.2
	comp=Z,35nm,0.9s,baz=26,slow=3.8,SNR=23						
DAG	Danmarks Havn	65.10	356	i P	P	08 41 08.2	-0.3
	comp=Z,19nm,0.9s						
DAG	Danmarks Havn	65.10	356	i P	P	08 41 08.2	-0.3
DAG				pmax	pmax		
	comp=Z,16nm,0.9s						
CMW	Cultus Mountai	65.36	47	P	P	08 41 12.1	+1.3
B05A	Bryant	65.45	47	P	P	08 41 12.2	+0.9
	baz=300,SNR=5.6						
B06A	Marblemount	65.68	47	eP	P	08 41 13.8	+1.1
	comp=Z,14nm,0.8s						
F03A	Seaside	65.75	50	eP	P	08 41 15.1	+1.8
	comp=Z,94nm,1.4s						
HTW	Haystack Looko	65.87	47	P	P	08 41 15.1	+1.0
F04D	Rainier, OR	66.00	50	P	P	08 41 15.7	+0.8
	baz=300						
D05A	Enumclaw	66.06	48	eP	P	08 41 17.0	+1.8
	comp=Z,174nm,1.9s						
G03D	McMinnville, O	66.29	50	P	P	08 41 17.0	+0.2
	baz=300						
OBSR	Observation Ro	66.30	48	P	P	08 41 18.4	+1.2
C06D	Leavenworth	66.32	47	P	P	08 41 17.5	+0.5
	baz=301						
TDL	Tradedollar La	66.34	49	P	P	08 41 18.6	+1.3
LON	Longmire	66.38	48	eP	P	08 41 18.6	+1.2
LON				pmax	pmax		
	comp=Z,13nm,1.3s						
LON	Longmire	66.38	48	eP	P	08 41 18.6	+1.2
	comp=Z,13nm,1.3s						
F04A	Amboy	66.44	49	eP	P	08 41 18.9	+1.2
	comp=Z,26nm,0.9s						
COR	Corvallis	66.58	51	eP	P	08 41 20.1	+1.5
COR				pmax	pmax		
	comp=Z,173nm,1.7s						
COR	Corvallis	66.58	51	eP	P	08 41 20.1	+1.5
	comp=Z,173nm,1.7s						
ETW	Entiat	66.81	47	P	P	08 41 21.0	+0.8
KULLO	Kullorsuaq	66.98	6	i P	P	08 41 20.3	-0.4
KULLO	Kullorsuaq	66.98	6	eP	P	08 41 20.3	-0.4
B08A	Colville Reser	66.99	46	eP	P	08 41 21.9	+0.6
	comp=Z,47nm,1.5s						
I03D	Drain, OR	67.01	52	P	P	08 41 22.9	+1.6
	baz=301,SNR=5.5						
H04A	Detroit Lake	67.22	51	P	P	08 41 23.8	+1.1
VT2	Vantage 2	67.33	48	eP	P	08 41 23.2	-0.2
G05D	Wamic, OR	67.45	50	P	P	08 41 24.7	+0.5
	baz=302						
I04A	Tendick Farm,	67.54	51	P	P	08 41 25.9	+1.1
	baz=301,SNR=6.5						
MOS	Moscow	67.64	324	eP	P	08 41 24.7	-0.4
MOS				e		08 41 51.0	
L02D	Cave Junction,	67.64	53	P	P	08 41 26.2	+0.8
	baz=301						
CROR	Criterion Ridg	67.79	50	P	P	08 41 27.3	+0.9
HUMO	Hull Mountain	67.81	53	eP	P	08 41 28.2	+1.7
	comp=Z,39nm,1.8s						
G06A	Carlson Farm,	67.87	49	eP	P	08 41 28.4	+1.6
	comp=Z,33nm,1.4s						
C09A	Chrisman Ranch	67.89	46	eP	P	08 41 27.6	+0.7
	comp=Z,84nm,1.7s						
HAWA	Hanford	67.91	48	eP	P	08 41 28.3	+1.3
	comp=Z,15nm,1.1s						
I05D	Terrebonne, OR	67.91	50	P	P	08 41 28.0	+0.9
	baz=302,SNR=6.7						
D08A	Wollman Farm,	67.92	47	eP	P	08 41 27.9	+0.8
	comp=Z,84nm,1.9s						
VTHM	Trough	67.94	49	P	P	08 41 28.5	+1.2
VRH	Novokhopyorsk	68.15	318	eP	P	08 41 27.6	-0.8
VRH				e*SP	sP	08 41 39.9	-1.2
VRH				pmax	pmax		
	comp=Z,10.0nm,0.9s						
KHMM	Horse Mountain	68.23	55	eP	P	08 41 31.6	+2.3
	comp=Z,41nm,1.1s						
NEW	Newport	68.29	45	P	P	08 41 30.1	+0.6
	baz=303,SNR=16						
NEW	Newport	68.29	45	eP	P	08 41 30.5	+1.0
NEW				pmax	pmax		
	comp=Z,36nm,1.4s						
NEW	Newport	68.29	45	eP	P	08 41 30.5	+1.0
	comp=Z,36nm,1.4s						
ARMA	Armidale	68.33	173	eP	P	08 41 30.1	+0.3
	comp=Z,207nm,1.9s						
YBH	Yreka Blue Hor	68.43	53	eP	P	08 41 31.7	+1.2
YBH				pmax	pmax		
	comp=Z,24nm,1.3s						
YBH	Yreka Blue Hor	68.43	53	eP	P	08 41 31.7	+1.2
	comp=Z,24nm,1.3s						
OBN	Obninsk	68.49	324	P	P	08 41 29.1	-1.3
	comp=Z,12nm,0.3s,baz=57,slow=4.3,SNR=6.9						
OBN	Obninsk	68.49	324	i P	P	08 41 29.3	-1.1
OBN				i		08 41 42.3	
OBN				i		08 41 54.1	
OBN				i S	S	08 50 21.6	-8.6
OBN				pmax	pmax		
	comp=Z,29nm,1.0s						
M02C	Callahan	68.52	54	P	P	08 41 32.2	+1.2
	baz=302						
J05D	Fort Rock, OR	68.53	51	P	P	08 41 31.7	+0.5
	baz=302,SNR=11						
K04D	Chiloquin, OR	68.56	52	P	P	08 41 32.0	+0.7
	baz=302						
E09A	Wood Farm, Sta	68.66	47	eP	P	08 41 33.0	+1.3
	comp=Z,28nm,1.2s						
LPSR	Galich'ya Gora	68.80	321	eP	P	08 41 32.6	+0.2
LPSR				e*SP	sP	08 41 44.6	-0.6
LPSR				pmax	pmax		
	comp=Z,20nm,0.9s						
N02D	Trinity Center	68.83	54	P	P	08 41 34.1	+1.1
	baz=302						
G08A	Pilot Rock	68.84	49	eP	P	08 41 33.8	+0.8
	comp=Z,50nm,2.0s						
FIA1	FINESS Array S	68.90	333	eP	P	08 41 33.0	+0.1
	comp=Z,44nm,0.9s						
FINES	FINESS Array B	68.90	333	P	P	08 41 33.0	0.0
	comp=Z,16nm,0.6s,baz=46,slow=8.2,SNR=65						
FINES	FINESS Array B	68.90	333	P	P	08 41 33.0	0.0
M04C	Macdoel	68.95	53	P	P	08 41 35.0	+1.1
	baz=302,SNR=8.9						
K05A	Summer Lake	69.04	52	eP	P	08 41 35.8	+1.4
	comp=Z,164nm,1.8s						
STKA	Stephens Creek	69.40	182	P	P	08 41 34.2	-2.0
	comp=Z,4.1nm,0.6s,baz=348,slow=7.3,SNR=15						
STKA	Stephens Creek	69.40	182	eP	P	08 41 35.7	-0.6
	comp=Z,1.8nm,0.8s						
VSR	Storozhevoye	69.47	319	eP	P	08 41 36.3	-0.3
VSR				e*SP	sP	08 41 48.4	-1.0
VSR				pmax	pmax		
	comp=Z,30nm,1.7s						
F10A	Beach Ranch, E	69.48	47	eP	P	08 41 38.0	+1.0
	comp=Z,7.7nm,0.9s						
WALA	Waterton Lakes	69.63	43	eP	P	08 41 38.5	+0.6
	comp=Z,69nm,1.6s						
O03D	Paynes Creek	69.78	54	P	P	08 41 39.1	+0.2
	baz=303,SNR=8.0						
BSMT	Bassoo Peak	69.83	45	eP	P	08 41 40.0	+0.8
SUMG	Summit	69.85	1	⇓i P	P	08 41 39.9	+0.7
	comp=Z,35nm,0.9s						
SUMG	Summit	69.85	1	⇓i P	P	08 41 39.9	+0.7
SUMG				pmax	pmax		
	comp=Z,35nm,0.9s						
SUMG	Summit	69.85	1	eP	P	08 41 39.8	+0.7
	comp=Z,31nm,0.8s						
MOD	Modoc Plateau	69.86	52	eP	P	08 41 40.3	+0.9
	comp=Z,12nm,1.0s						
BLMT	Blacktail Moun	69.97	44	eP	P	08 41 41.0	+0.9
BMO	Blue Mountains	70.06	48	eP	P	08 41 41.3	+0.8
BMO				pmax	pmax		
	comp=Z,19nm,1.3s						
BMO	Blue Mountains	70.06	48	eP	P	08 41 41.3	+0.8
	comp=Z,19nm,1.3s						
JTMT	Jette	70.17	45	eP	P	08 41 42.0	+0.8
YBMT	Yellow Bay	70.25	44	eP	P	08 41 42.4	+0.7
SWMT	Swartz Lake	70.46	45	eP	P	08 41 43.5	+0.5
WVOR	Wild Horse Val	70.60	51	eP	P	08 41 44.8	+0.9
WVOR				pmax	pmax		
	comp=Z,12nm,0.9s						
WVOR	Wild Horse Val	70.60	51	eP	P	08 41 44.8	+0.9
	comp=Z,12nm,0.9s						
VSU	Vasula	70.63	330	d iP	P	08 41 43.6	0.0
VSU				pmax	pmax		
	comp=Z,124nm,1.2s						
BBOO	Buckleboo	70.66	187	eP	P	08 41 43.3	-0.7
	comp=Z,54nm,1.4s						
GOF	Gofitskoye	70.86	312	⇑eP	P	08 41 45.2	-0.1
GOF				pmax	pmax		
	comp=Z,100nm,0.9s						
MSO	Missoula	70.88	45	P	P	08 41 45.7	+0.1
	baz=305,SNR=7.1						
MSO	Missoula	70.88	45	eP	P	08 41 45.8	+0.3
	comp=Z,43nm,1.8s						
AFDM	Forest Hills D	71.05	55	eP	P	08 41 47.7	+1

comp=Z,119nm,6.8s
KIV MLR MLR
comp=Z,4µm,17.0s
KIV Kislovodsk 71.70 312 *e*P **P 08 41 50.8 +0.3**
comp=Z,158nm,1.0s
KBZ Khabaz 71.70 311 P **P 08 41 51.1 +0.8**
comp=Z,40nm,1.0s,baz=62,slow=4.5,SNR=37
TBLG Delisi 71.73 309 P **P 08 41 51.0 +0.4**
TBLG Delisi 71.73 309 P **P 08 41 51.0 +0.4**
MFID Camas Ranch 71.75 49 *e*P **P 08 41 51.3 +0.4**
comp=Z,63nm,1.6s
CMB Columbia Colle 71.94 56 *e*P **P 08 41 52.8 +0.8**
CMB pmax pmax
comp=Z,16nm,1.0s
CMB Columbia Colle 71.94 56 *e*P **P 08 41 52.8 +0.8**
comp=Z,16nm,1.0s
ONI Oni 72.02 310 P **P 08 41 53.1 +0.7**
ONI Oni 72.02 310 P **P 08 41 53.2 +0.7**
HRY Holter Researc 72.13 44 *e*P **P 08 41 54.1 +1.1**
WAKR Walker 72.29 55 *e*P **P 08 41 55.3 +1.0**
LRM Limekiln Ridge 72.31 45 *e*P **P 08 41 54.9 +0.6**
FCC Fort Churchill 72.46 28 *e*P **P 08 41 54.3 -0.3**
FCC pmax pmax
comp=Z,105nm,1.7s
FCC Fort Churchill 72.46 28 *e*P **P 08 41 54.3 -0.3**
comp=Z,105nm,1.7s
EGMT Eagleton 72.47 42 P **P 08 41 55.3 +0.3**
baz=307,SNR=12
EGMT Eagleton 72.47 42 *e*P **P 08 41 55.4 +0.3**
comp=Z,18nm,1.0s
DLMT Dillon 72.50 46 *e*P **P 08 41 56.2 +0.9**
comp=Z,23nm,0.9s
HLID Hailey 72.50 48 P **P 08 41 56.1 +0.7**
baz=306,SNR=17
HLID Hailey 72.50 48 *e*P **P 08 41 56.3 +0.8**
comp=Z,12nm,1.0s
BANOM Banah 72.62 290 *i* P **P 08 41 56.8 +0.6**
SNR=20
BANOM Banah 72.62 290 P **P 08 41 58.7 +2.5**
SNR=14
BANOM Banah 72.62 290 P **P 08 41 58.7 +2.5**
SNR=14
GNI Garni 72.63 307 P **P 08 41 56.9 +0.7**
comp=Z,13nm,0.5s,baz=200,slow=0.5,SNR=13
GNI Garni 72.63 307 *c i*P **P 08 41 57.7 +1.5**
GNI pmax pmax
comp=Z,135nm,1.2s
GNI Garni 72.63 307 P **P 08 41 57.7 +1.5**
SNR=11
GNI Garni 72.63 307 P **P 08 41 57.7 +1.5**
SNR=11
GNI Garni 72.63 307 *e*P **P 08 41 56.5 +0.3**
comp=Z,48nm,0.9s
AKH Akhalkalaki 72.68 309⇑ *i*P **P 08 41 58.1 +1.6**
AKH Akhalkalaki 72.68 309 P **P 08 41 57.8 +1.3**
AKH Akhalkalaki 72.68 309 P **P 08 41 57.8 +1.3**
BGD Bogdanovka 72.70 309 P **P 08 41 58.3 +1.6**
CHVG Ch'k'valeri 72.77 311⇑ *i*P **P 08 41 57.5 +0.7**
MICGM Minsk 72.80 327 *e* **P 08 41 57.0 +0.3**
MNK Minsk 72.80 327 *e*P **P 08 41 57.0 +0.3**
BOZ Bozeman (W) 72.88 45 P **P 08 41 58.3 +0.7**
baz=307,SNR=29
BOZ Bozeman (W) 72.88 45 *e*P **P 08 41 58.6 +1.0**
BOZ pmax pmax
comp=Z,20nm,0.9s
BOZ Bozeman (W) 72.88 45 *e*P **P 08 41 58.6 +1.0**
comp=Z,20nm,0.9s
NACGM Naroch 73.00 327 *e* **P 08 41 58.0 +0.1**
NV01 Mina Array Sit 73.07 54 *e*P **P 08 42 00.1 +1.1**
NVAR Mina Array Bea 73.07 54 P **P 08 41 59.8 +0.9**
comp=Z,7.2nm,0.8s,baz=285,slow=6.2,SNR=45
NV11 Mina Array Sit 73.16 54 *e*P **P 08 42 00.4 +1.0**
comp=Z,15nm,1.2s
MLAC Mammoth, Mammo 73.18 55 P **P 08 42 00.5 +0.9**
baz=305
UOSS Minazif 73.24 289 *e*P **P 08 41 59.8 0.0**
comp=Z,2.3nm,0.9s
HATD Hatta, Dubai 73.36 289 *i* P **P 08 42 00.6 0.0**
SNR=11
HATD Hatta, Dubai 73.36 289 P **P 08 42 02.0 +1.4**
SNR=11
HATD Hatta, Dubai 73.36 289 P **P 08 42 02.0 +1.4**
SNR=11
QLMT Earthquake Lak 73.48 46 *e*P **P 08 42 02.1 +0.8**
ASHO Ashiyiah 73.49 289 P **P 08 42 01.4 -0.1**
ELK Elko 73.66 51 *e*P **P 08 42 03.3 +0.9**
ELK pmax pmax
comp=Z,9.0nm,1.1s
ELK Elko 73.66 51 *e*P **P 08 42 03.3 +0.9**
comp=Z,8.8nm,1.1s
SMMC Simmler 73.74 58 P **P 08 42 03.2 +0.5**
baz=305
ARTV Artvin 73.77 310 *i* P **P 08 42 04.1 +1.1**
ARTV *i* S **sP 08 42 18.6 +2.8**
FAQ Al Faqa, Dubai 73.81 289 P **P 08 42 02.7 -0.5**
DAGI Agillar 73.84 310 *i* P **P 08 42 04.3 +1.1**
DAGI *i* S **sP 08 42 15.9 -0.1**
YMR Madison River 73.84 46 *e*P **P 08 42 04.4 +1.1**
comp=Z,16nm,0.9s
GCMT Greycliff 73.88 44 *e*P **P 08 42 04.3 +0.8**
NC405 NORSAR Array S 73.89 338 *e*P **P 08 42 03.2 +0.1**
ARQ Araqi 73.91 287 P **P 08 42 06.0 +2.2**
SNR=10.0
ARQ Araqi 73.91 287 P **P 08 42 06.0 +2.2**
SNR=10.0
NC303 NORSAR Array S 73.91 338 *e*P **P 08 42 03.5 +0.4**
NC204 NORSAR Array S 74.04 338 *e*P **P 08 42 04.2 +0.2**
VES Vestal, Richgr 74.04 57 P **P 08 42 04.5 +0.1**
baz=305
YFT Old Faithful 74.05 46 *e*P **P 08 42 06.7 +2.1**
comp=Z,21nm,1.0s
HFS Hagfors 74.06 336 P **P 08 42 04.2 +0.2**
comp=Z,12nm,0.7s,baz=39,slow=5.7,SNR=26
NB201 NORSAR Array S 74.07 338 *e*P **P 08 42 04.5 +0.4**
NB2 NORSAR Subarra 74.10 338 P **P 08 42 04.0 -0.3**
comp=Z,130nm,2.0s,baz=38,slow=5.9
NB2 NORSAR Subarra 74.10 338 P **P 08 42 04.0 -0.3**
baz=38,slow=5.9
NOA NORSAR Array B 74.10 338 P **P 08 42 04.4 0.0**
comp=Z,16nm,0.9s,baz=39,slow=5.8,SNR=37
NOA PP **PP 08 44 45.1 -4.2**
comp=Z,1.4nm,0.8s,baz=36,slow=7.4,SNR=3.1
PKM Mcpherson Peak 74.11 58 P **P 08 42 05.8 +0.7**
baz=305
NBO02 NORSAR Array S 74.20 338 *e*P **P 08 42 05.0 +0.1**
EATA Eleskirt 74.20 308 *i* P **P 08 42 07.4 +1.8**
LKWY Lake 74.22 46 *e*P **P 08 42 07.9 +2.2**
LKWY pmax pmax
comp=Z,13nm,1.0s
LKWY Lake 74.22 46 *e*P **P 08 42 07.9 +2.2**
comp=Z,13nm,1.0s
ANN Anapa 74.23 315 *e*P **P 08 42 05.3 0.0**
ANN *e* 08 42 17.2
ANN *e*S **S 08 51 37.7 +0.9**
ANN pmax pmax
comp=Z,43nm,1.3s
H17A Grant Village 74.23 46 P **P 08 42 08.2 +2.5**
baz=308,SNR=39
H17A Grant Village 74.23 46 *e*P **P 08 42 08.2 +2.5**
comp=Z,38nm,0.8s
NBO00 NORSAR Array S 74.23 338 *e*P **P 08 42 05.5 +0.4**
NC602 NORSAR Array S 74.25 338 *e*P **P 08 42 05.2 +0.1**
IMW Indian Meadow 74.33 46 *e*P **P 08 42 07.7 +1.4**
comp=Z,26nm,0.8s
FLWY Flagg Ranch 74.35 46 *e*P **P 08 42 08.0 +1.6**
comp=Z,74nm,1.5s
NAO01 NORSAR Array S 74.35 338 *e*P **P 08 42 06.0 +0.2**
GRAC Grapevine Rang 74.50 55 P **P 08 42 08.1 +1.0**
baz=306
RLMT Red Lodge 74.52 45 P **P 08 42 07.9 +0.6**
baz=308,SNR=17
RLMT Red Lodge 74.52 45 *e*P **P 08 42 08.2 +0.9**
comp=Z,45nm,1.6s
MOOW Moose Ponds 74.53 46 *e*P **P 08 42 08.7 +1.3**
comp=Z,20nm,1.0s
HVU Hansel Valley 74.53 49 *e*P **P 08 42 08.5 +1.1**
HVU pmax pmax
comp=Z,18nm,1.0s
HVU Hansel Valley 74.53 49 *e*P **P 08 42 08.5 +1.1**
comp=Z,18nm,1.0s
ISA Isabella, Lake 74.55 57 P **P 08 42 07.1 -0.4**
baz=306
NWAO Narrogin (SRO) 74.60 203 *e*P **P 08 42 07.6 +0.2**
NWAO pmax pmax
comp=Z,426nm,1.8s
NWAO Narrogin (SRO) 74.60 203 *e*P **P 08 42 07.6 +0.2**
comp=Z,426nm,1.8s
ARVC Arvin 74.63 57 P **P 08 42 08.0 +0.2**
baz=306
LOHW Long Hollow 74.69 46 *e*P **P 08 42 09.4 +1.0**
comp=Z,11nm,0.9s
SNOW Snow King Moun 74.70 47 *e*P **P 08 42 09.7 +1.2**
comp=Z,18nm,0.8s
REDW Red Top Meadow 74.70 47 *e*P **P 08 42 09.5 +1.1**
comp=Z,23nm,1.0s
AKASG Malin Array Be 74.72 323 P **P 08 42 07.9 -0.2**
comp=Z,8.9nm,0.7s,baz=45,slow=6.0,SNR=22
AKBB Malin Array Si 74.72 323 *e*P **P 08 42 08.4 +0.3**
AKBB pmax pmax
comp=Z,22nm,0.9s
AKBB Malin Array Si 74.72 323 *e*P **P 08 42 08.3 +0.3**
comp=Z,22nm,0.9s
KIEV Kiev 74.73 323 *d i*P **P 08 42 07.6 -0.5**
KIEV pmax pmax
comp=Z,19nm,1.0s
KIEV Kiev 74.73 323 *e*P **P 08 42 07.7 -0.4**
comp=Z,19nm,0.8s
SCZ2 Santa Cruz Isl 74.74 59 P **P 08 42 08.3 -0.2**
baz=306
AK11 Malin Array Si 74.76 323 *e*P **P 08 42 08.3 0.0**
DAC Darwin (Calif) 74.77 56 *e*P **P 08 42 09.7 +0.8**
DAC pmax pmax
comp=Z,7.0nm,0.9s
DAC Darwin (Calif) 74.77 56 *e*P **P 08 42 09.7 +0.8**
comp=Z,7.1nm,0.9s
EKAR Karacoban 74.82 308 *i* P **P 08 42 11.6 +2.4**
R11A Troy Canyon, C 74.85 53 P **P 08 42 09.6 +0.3**
baz=306,SNR=22
R11A Troy Canyon, C 74.85 53 *e*P **P 08 42 09.9 +0.6**
comp=Z,16nm,1.1s
ERZM Erzurum 74.87 309 *i* P **P 08 42 11.6 +2.1**
ERZM *i* S **sP 08 42 24.1 +1.8**
EZM Erzurum 74.87 309 *e*PG **P 08 42 10.7 +1.2**
EZM *e*SG **sP 08 42 22.8 +0.5**
BGU Big Grassy Mou 74.89 50 *e*P **P 08 42 10.4 +0.9**
comp=Z,8.7nm,1.0s
SFJD Kangerlussuaq 74.90 6⇓ *i*P **P 08 42 09.0 +0.2**
comp=Z,26nm,0.9s
SFJD Kangerlussuaq 74.90 6⇓ *i*P **P 08 42 09.0 +0.2**
SFJD pmax pmax
comp=Z,26nm,0.9s
SFJD Kangerlussuaq 74.90 6 *e*P **P 08 42 09.2 +0.4**
comp=Z,30nm,1.0s
AHID Auburn Hatcher 74.92 47 *e*P **P 08 42 10.3 +0.6**
comp=Z,16nm,0.9s
MPMC Manual Prospec 74.97 56 P **P 08 42 10.4 +0.3**
baz=306,SNR=8.2
OSI Osito Audit: C 75.00 58 P **P 08 42 10.7 +0.6**
baz=306
SPUT South Promonto 75.01 49 *e*P **P 08 42 11.3 +1.1**
comp=Z,67nm,1.9s
DGMT Dagmar 75.08 40 P **P 08 42 10.4 +0.2**
baz=311
DGMT Dagmar 75.08 40 *e*P **P 08 42 10.9 +0.6**
comp=Z,47nm,1.1s
FURC Furnace Creek, 75.14 55 P **P 08 42 11.3 +0.6**
baz=306,SNR=11
LAO LASA Array 75.18 42 P **P 08 42 11.1 +0.1**
baz=310
LRMC Laurel Mtn Rad 75.18 57 P **P 08 42 11.1 -0.1**
baz=306
SNCC San Nicolas Is 75.25 59 P **P 08 42 12.2 +0.7**
baz=306
TPNV Topopah Spring 75.25 55 P **P 08 42 12.0 +0.3**
baz=306,SNR=12
TPNV Topopah Spring 75.25 55 *e*P **P 08 42 12.3 +0.6**
TPNV pmax pmax
comp=Z,17nm,1.0s
TPNV Topopah Spring 75.25 55 *e*P **P 08 42 12.3 +0.6**
comp=Z,16nm,1.0s
A25A Svangstu Ranch 75.31 39 P **P 08 42 11.9 +0.3**
baz=311,SNR=5.2
EDW2 Edwards Air Fo 75.33 57 P **P 08 42 12.6 +0.6**
baz=306,SNR=5.1
HWUT Hardware Ranch 75.36 49 *e*P **P 08 42 13.1 +0.9**
comp=Z,59nm,1.4s
DUG Dugway, Tooele 75.47 50 P **P 08 42 13.5 +0.7**
baz=307,SNR=22
DUG Dugway, Tooele 75.47 50 *e*P **P 08 42 13.7 +0.9**
DUG pmax pmax
comp=Z,19nm,0.9s
DUG Dugway, Tooele 75.47 50 *e*P **P 08 42 13.7 +0.9**
comp=Z,20nm,0.9s
GUMT Gumushane 75.69 310 PG **P 08 42 14.1 +0.1**
GUMT Gumushane 75.69 310 *i* Pg **P 08 42 14.1 +0.1**
KONO Kongsberg 75.70 338 *e*P **P 08 42 13.2 -0.3**
KONO pmax pmax
comp=Z,18nm,1.1s
KONO Kongsberg 75.70 338 *e*P **P 08 42 13.2 -0.3**
comp=Z,18nm,1.1s
B25A Knox Farm, Ray 75.73 39 P **P 08 42 13.9 -0.1**
baz=311
TCUT Toone Canyon 75.75 49 *e*P **P 08 42 15.6 +1.1**
comp=Z,213nm,1.9s
FMP Fort Macarthur 75.81 58 P **P 08 42 14.1 -0.5**
baz=306
BW06 Boulder Array 75.81 47 P **P 08 42 14.7 -0.2**
baz=309,SNR=21
BW06 Boulder Array 75.81 47 *e*P **P 08 42 15.0 +0.2**
comp=Z,14nm,0.9s
PD31 Pinedale Array 75.81 47 *e*P **P 08 42 15.1 +0.3**
PDAR Pinedale Array 75.81 47 P **P 08 42 14.9 +0.1**
comp=Z,9.2nm,0.7s,baz=263,slow=2.5,SNR=107
PSUT Pine Spring 75.83 52 *e*P **P 08 42 15.7 +0.7**
comp=Z,20nm,1.2s
BNGB Bing'¶ll 75.84 308 *e*PG **P 08 42 10.4 -4.5**
GSC Goldstone, Bar 75.86 56 P **P 08 42 15.3 +0.2**
baz=306
GSC Goldstone, Bar 75.86 56 *e*P **P 08 42 15.9 +0.8**
GSC pmax pmax
comp=Z,11nm,1.0s
GSC Goldstone, Bar 75.86 56 *e*P **P 08 42 15.9 +0.8**
comp=Z,11nm,1.0s
A26A Wade Farm, Ken 75.87 38 P **P 08 42 15.1 +0.3**
baz=312
BFSC Mount Baldy Ra 75.93 58 P **P 08 42 15.7 +0.2**
baz=306
SIM Simferopol' 75.97 316 *e*P **P 08 42 15.7 +0.3**
SIM 08 42 28.0
SIM *e*S **S 08 51 58.0 +1.7**
SIM pmax pmax
comp=Z,21nm,1.0s
RRX Edison Barstow 75.99 57 P **P 08 42 16.1 +0.4**
baz=306
BINT Bingol 76.03 308 *e*Pg P 08 42 10.4 -5.6
JLU Jordanelle 76.04 49 *e*P **P 08 42 17.3 +1.1**
comp=Z,92nm,2.0s
C25A Freed Ranch, W 76.05 40 P **P 08 42 16.0 +0.2**
baz=312
NLU North Lily Min 76.06 50 *e*P **P 08 42 17.2 +0.9**
comp=Z,13nm,1.0s
B26A Jensen Ranch, 76.12 39 P **P 08 42 16.6 +0.4**
baz=312,SNR=5.6
SHPR Sheep Range 76.22 54 *e*P **P 08 42 18.1 +0.9**
comp=Z,50nm,1.8s
A27A Ledoux Ranch, 76.22 38 P **P 08 42 17.0 +0.2**
baz=312
TUQ Turquoise Moun 76.36 56 P **P 08 42 18.3 +0.4**
baz=307,SNR=11
D25A Fairfield 76.39 40 P **P 08 42 18.1 +0.3**
baz=312,SNR=6.9
BBRC Big Bear Solar 76.41 57 P **P 08 42 18.5 +0.1**
baz=307
HEC Hector,Ludlow 76.46 56 P **P 08 42 18.6 +0.2**
baz=307
C26A Wahner Farm, P 76.56 39 P **P 08 42 18.8 0.0**
baz=312
B27A Peters Farms, 76.58 38 P **P 08 42 19.0 +0.2**
baz=313
MURC Murrieta 76.61 58 P **P 08 42 19.7 +0.4**
baz=307
PTK Pertek 76.70 309 *e*PN **P 08 42 17.0 -2.9**
PTK Pertek 76.70 309 *e*Pn **P 08 42 17.0 -2.9**
A28A Rude Farm, Bot 76.72 38 P **P 08 42 19.9 +0.3**
baz=313,SNR=8.2
E25A Miller Ranch, 76.78 41 P **P 08 42 20.3 +0.2**
baz=312,SNR=8.1
MSU Marysvale 76.89 51 *e*P **P 08 42 22.2 +1.2**
MSU Marysvale 76.89 51 *e*P **P 08 42 22.2 +1.2**
D26A Manning 76.92 40 P **P 08 42 21.2 +0.4**
baz=312
GMRC Granite Mounta 76.93 56 P **P 08 42 21.7 +0.5**
baz=307,SNR=5.8
C27A Sayler Ranch, 76.93 39 P **P 08 42 21.2 +0.4**
baz=313
B28A Dugan Ranch, T 76.99 38 P **P 08 42 21.3 +0.2**
baz=313,SNR=5.2
TMUT Trail Mountain 77.00 50 *e*P **P 08 42 22.5 +0.8**
comp=Z,35nm,1.6s
BORG Borgarnes 77.05 353 *e*P **P 08 42 23.4 +2.3**
BORG pmax pmax
comp=Z,137nm,1.4s
BORG Borgarnes 77.05 353 *e*P **P 08 42 23.4 +2.3**
comp=Z,137nm,1.4s
109C Camp Elliot, M 77.10 58 P **P 08 42 21.9 0.0**
baz=307
PFO Pinyon Flats O 77.10 58 P **P 08 42 22.8 +0.6**
baz=307
PFO Pinyon Flats O 77.10 58 *e*P **P 08 42 22.8 +0.6**
PFO pmax pmax
comp=Z,15nm,1.3s
PFO Pinyon Flats O 77.10 58 *e*P **P 08 42 22.8 +0.6**
comp=Z,15nm,1.3s
TPFO Pinon Flats 77.11 58 P **P 08 42 22.2 0.0**
baz=307
F25A Bowman 77.13 41 P **P 08 42 22.3 +0.2**
baz=312
LCMT Little Creek M 77.14 53 *e*P **P 08 42 23.4 +1.1**
comp=Z,17nm,1.0s
P17A Butcher Ranch, 77.17 50 *e*P **P 08 42 23.5 +1.0**
comp=Z,29nm,0.9s
MTPU Mount Pierson 77.17 52 *e*P **P 08 42 24.1 +1.4**
comp=Z,16nm,0.9s
BELC Belle Mtn. Jos 77.17 57 P **P 08 42 22.6 0.0**
baz=307
A29A Manning Farm, 77.21 37 P **P 08 42 22.6 +0.3**
baz=314,SNR=18
Q16A Castle Valley 77.25 51 *e*P **P 08 42 24.0 +1.0**
comp=Z,53nm,1.5s
E26A Carlson Angus 77.28 40 P **P 08 42 22.9 0.0**
baz=312,SNR=10.0
D27A Center 77.33 39 P **P 08 42 23.2 +0.2**
baz=313
P18A Preston Nutter 77.37 49 *e*P **P 08 42 24.6 +0.8**
comp=Z,39nm,1.3s
KNB Kanab 77.40 53 *e*P **P 08 42 25.0 +1.2**
KNB pmax pmax
comp=Z,31nm,1.1s
KNB Kanab 77.40 53 *e*P **P 08 42 25.0 +1.2**
comp=Z,31nm,1.1s
PKCU Pink Cliffs 77.46 52 *e*P **P 08 42 26.7 +2.3**
comp=Z,9.6nm,1.0s
B29A Wagenman Farm, 77.47 37 P **P 08 42 23.8 +0.1**
baz=314,SNR=12
C28A Hausauer Farms 77.48 38 P **P 08 42 23.8 -0.1**
baz=313
SRU San Rafael Swe 77.53 50 *e*P **P 08 42 25.2 +0.7**
SRU pmax pmax
comp=Z,30nm,0.8s
SRU San Rafael Swe 77.53 50 *e*P **P 08 42 25.1 +0.7**
comp=Z,30nm,0.8s
BSD Bornholm Skovb 77.54 333 *i* P **P 08 42 23.7 -0.3**
comp=Z,37nm,1.1s
BSD Bornholm Skovb 77.54 333 *i* P **P 08 42 23.7 -0.3**
BSD pmax pmax
comp=Z,37nm,1.1s
MONP2 Monument Peak 77.56 58 P **P 08 42 24.5 -0.3**
baz=307
F26A Lodgepole 77.59 41 P **P 08 42 24.5 -0.1**
baz=312,SNR=6.7
K22A Casper 77.61 45 P **P 08 42 24.8 -0.1**
baz=310,SNR=10
K22A Casper 77.61 45 *e*P **P 08 42 25.2 +0.3**
comp=Z,34nm,1.1s
MMU Miners Mountai 77.62 51 *e*P **P 08 42 26.2 +1.0**
A30A Hoffart Farm, 77.64 37 P **P 08 42 24.8 0.0**
baz=314,SNR=25
G25A Newell 77.64 42 P **P 08 42 24.5 -0.4**
baz=312,SNR=8.1
IRM Iron Mountain 77.64 56 P **P 08 42 25.2 +0.1**
baz=308
BC3 Big Chuckawall 77.74 57 P **P 08 42 25.8 0.0**
baz=307
LVV L'vov 77.75 325 *e*P **P 08 42 25.6 +0.3**
D28A Regan 77.75 39 P **P 08 42 25.7 +0.3**
baz=313
E27A Carson 77.77 40 P **P 08 42 25.3 -0.2**
baz=313,SNR=8.5
MDND Maddock 77.78 38 P **P 08 42 25.7 +0.2**
baz=314
ULM Lac du Bonnet 77.83 34 P **P 08 42 25.0 -0.7**
comp=Z,19nm,1.0s,baz=309,slow=6.2,SNR=15
ULM Lac du Bonnet 77.83 34 P **P 08 42 25.0 -0.7**
ULM pmax pmax
comp=Z,13nm,0.8s
ULM Lac du Bonnet 77.83 34 *e*P **P 08 42 25.4 -0.3**
comp=Z,19nm,0.9s
W13A Hualapai Mount 77.89 55 *e*P **P 08 42 27.6 +0.9**
comp=Z,19nm,1.6s
IKP In-Ko-Pah, Jac 77.91 58 P **P 08 42 26.7 +0.1**
baz=307
H25A Fruitdale 77.92 42 P **P 08 42 26.2 -0.3**
baz=312
SWSC Sam W. Stewart 77.94 58 P **P 08 42 26.4 -0.3**
baz=307
B30A Myrvik Farm, E 77.97 37 P **P 08 42 26.5 -0.1**
baz=314,SNR=22
G26A Maurine 78.00 41 P **P 08 42 26.6 -0.3**
baz=312,SNR=20
RSSD Black Hills 78.02 43 P **P 08 42 26.8 -0.5**
baz=312
RSSD Black Hills 78.02 43 *e*P **P 08 42 27.0 -0.2**
RSSD pmax pmax
comp=Z,16nm,0.9s
RSSD Black Hills 78.02 43 *e*P **P 08 42 27.0 -0.2**
comp=Z,16nm,0.9s
E28A Huff 78.11 39 P **P 08 42 26.8 -0.6**
baz=313
A31A Linda, St. Vin 78.17 36 P **P 08 42 27.1 -0.5**
baz=315
PDMCI Parker Dam,Lak 78.21 56 P **P 08 42 28.2 +0.1**
baz=308
O20A White River Ci 78.24 48 P **P 08 42 28.5 0.0**
baz=310,SNR=13
O20A White River Ci 78.24 48 *e*P **P 08 42 28.9 +0.4**
comp=Z,22nm,1.0s
I25A Rochford 78.25 43 P **P 08 42 28.1 -0.4**
baz=312,SNR=14
G27A Dupree 78.29 41 P **P 08 42 28.5 0.0**
baz=313,SNR=9.4
Y12C Blythe 78.30 56 P **P 08 42 29.0 +0.3**
baz=308
B31A Greenbush Farm 78.31 37 P **P 08 42 28.1 -0.3**
baz=315,SNR=7.8
D29A Pettibone, Tap 78.32 39 P **P 08 42 27.6 -1.0**
baz=314
H26A Fairpoint 78.37 42 P **P 08 42 28.8 -0.1**
baz=312,SNR=12
C30A Mose, Pekin 78.42 38 P **P 08 42 28.8 -0.3**
baz=314
KWP Kalwaria Pacla 78.48 325 *e*P **P 08 42 30.4 +1.0**
KWP Kalwaria Pacla 78.48 325⇑ *i*P **P 08 42 30.8 +1.4**
KWP Kalwaria Pacla 78.48 325 *e*P **P 08 42 30.4 +1.0**
A32A Rocking H Ranc 78.50 36 P **P 08 42 28.9 -0.6**
baz=316,SNR=14
GLA Glamis 78.53 57 P **P 08 42 30.1 +0.1**
baz=308
J25A Sunshine Ranch 78.64 43 P **P 08 42 29.9 -0.6**
baz=312
E29A Napoleon 78.64 39 P **P 08 42 29.9 -0.5**
baz=314
D30A Buchanan 78.70 38 P **P 08 42 30.1 -0.6**
baz=314
C31A Landman Farms, 78.72 37 P **P 08 42 30.3 -0.5**
baz=315,SNR=6.5
H27A Howes 78.72 42 P **P 08 42 30.6 -0.2**
baz=313,SNR=24
BUR08 Bucovina Ar. S 78.74 323 *e*P **P 08 42 31.8 +0.8**
PV09 Paradox Valley 78.75 50 *e*P **P 08 42 32.2 +0.8**
TESR Tescani 78.82 321⇑ *i*P **P 08 42 32.0 +0.7**
B32A Ashes, Strandq 78.85 36 P **P 08 42 30.9 -0.6**
baz=316,SNR=24
PV10 Paradox Valley 78.89 50 *e*P **P 08 42 33.1 +1.0**
PV04 Paradox Valley 78.96 50 *e*P **P 08 42 33.1 +0.7**
A33A Warroad 78.99 35 P **P 08 42 31.6 -0.6**
baz=316,SNR=21
CFR Carcaliu 78.99 319⇑ *i*P **P 08 42 32.0 -0.2**
PV05 Paradox Valley 79.04 50 *e*P **P 08 42 34.5 +1.5**
E30A Jud 79.05 39 P **P 08 42 32.5 -0.1**
baz=314

F29A	Eureka	79.06	40	P	P	08 42 32.6	-0.1
	baz=314						
J26A	Sides Ranch, S	79.08	43	P	P	08 42 32.7	-0.2
	baz=312,SNR=8.4						
N23A	Red Feather La	79.09	46	P	P	08 42 34.0	+0.7
	baz=311,SNR=23						
N23A	Red Feather La	79.09	46	eP	P	08 42 34.2	+1.0
	comp=Z,34nm,1.0s						
PHWY	Pilot Hill	79.10	46	eP	P	08 42 33.9	+0.6
	comp=Z,54nm,1.9s						
KOLS	Kolonicke sedl	79.18	325	eP	P	08 42 33.6	+0.3
KOLS				e		08 42 47.6	
KOLS				e		08 45 37.1	
KOLS				pmax	pmax		
	comp=Z,12nm,1.2s						
KOLS	Kolonicke sedl	79.18	325	eP	P	08 42 33.6	+0.3
KOLS				e		08 42 47.5	
KOLS				ePP	PP	08 45 37.1	+4.9
Y14A	Wickenburg	79.18	55	eP	P	08 42 34.0	+0.5
	comp=Z,34nm,0.8s						
VRI	Vrincioaia	79.23	321⇑	iP	P	08 42 35.4	+1.8
D31A	Mcclaflin, Tow	79.25	38	P	P	08 42 33.3	-0.3
	baz=315						
WUAZ	Wupatki	79.25	53	P	P	08 42 34.6	+0.5
	baz=309,SNR=18						
WUAZ	Wupatki	79.25	53	eP	P	08 42 34.9	+0.8
	comp=Z,22nm,1.1s						
PV15	Paradox Valley	79.25	50	eP	P	08 42 35.3	+1.1
C32A	Crookston	79.27	37	P	P	08 42 33.1	-0.6
	baz=316						
PLOR	Plostina	79.28	321⇑	iP	P	08 42 48.3	+14
STHS	Stebnicka Huta	79.29	326	eP	P	08 42 35.3	+1.5
PV01	Paradox Valley	79.33	50	eP	P	08 42 35.0	+0.5
OJC	Ojcow	79.33	327	eP	P	08 42 34.9	+0.8
OJC	Ojcow	79.33	327	eP	P	08 42 34.8	+0.8
OJC				pmax	pmax		
	comp=Z,71nm,1.3s						
OJC	Ojcow	79.33	327	eP	P	08 42 34.8	+0.8
	comp=Z,71nm,1.3s						
TIRR	Tirgusor	79.34	319	eP	P	08 42 34.8	+0.7
TIRR				pmax	pmax		
	comp=Z,9.0nm,0.9s						
TIRR	Tirgusor	79.34	319	eP	P	08 42 34.8	+0.7
	comp=Z,9.1nm,0.9s						
B33A	Robert and Kas	79.38	36	P	P	08 42 33.6	-0.7
	baz=316						
UZH	Uzhgorod	79.39	325	eP	P	08 42 34.1	-0.3
UZH				e		08 42 45.5	
UZH				e		08 42 52.3	
UZH				eS	S	08 52 29.3	-3.8
UZH				e		08 53 10.9	
G29A	Hoven	79.45	40	P	P	08 42 34.5	-0.4
	baz=314						
F30A	Leola	79.46	39	P	P	08 42 34.9	0.0
	baz=314						
E31A	Nome	79.51	38	P	P	08 42 34.8	-0.3
	baz=315,SNR=7.8						
D32A	Dogwood Acres,	79.53	37	P	P	08 42 34.9	-0.2
	baz=316						
ARCR	ARCALIA	79.54	323⇑	iP	P	08 42 36.5	+1.3
CRVS	Cervenica-Dubn	79.57	325	eP	P	08 42 35.6	+0.2
CRVS	Cervenica-Dubn	79.57	325	eP	P	08 42 35.6	+0.2
SMCO	Snowmass	79.61	48	eP	P	08 42 36.8	+0.6
	comp=Z,71nm,1.9s						
BR131	Keskin Array S	79.62	313	eP	P	08 42 36.7	+0.7
BRTR	Keskin Array B	79.62	313	P	P	08 42 36.1	+0.1
	comp=Z,5.3nm,0.8s,baz=73,slow=2.2,SNR=17						
BRTR				PP	PP	08 45 41.5	+5.2
	comp=Z,3.0nm,1.0s,baz=72,slow=5.6,SNR=3.9						
I28A	Midland	79.63	42	P	P	08 42 35.7	-0.1
	baz=313,SNR=36						
B34A	Aery, Baudette	79.66	35	P	P	08 42 35.2	-0.6
	baz=317,SNR=6.2						
C33A	Trail	79.67	36	P	P	08 42 35.2	-0.7
	baz=316,SNR=14						
J27A	Elkhorn Farm,	79.70	43	P	P	08 42 36.3	+0.1
	baz=313,SNR=12						
H29A	Onida	79.70	41	P	P	08 42 35.6	-0.6
	baz=314,SNR=6.1						
NIE	Niedzica	79.71	326	eP	P	08 42 37.5	+1.3
NIE	Niedzica	79.71	326	eP	P	08 42 37.4	+1.3
F31A	Hecla	79.83	39	P	P	08 42 36.6	-0.2
	baz=315						
ISR	Istrita	79.85	320⇑	iP	P	08 42 38.4	+1.4
E32A	Braaten, Kindr	79.89	38	P	P	08 42 36.7	-0.5
	baz=316						
MLR	Muntele Rosu	79.89	321	P	P	08 42 37.0	-0.3
	comp=Z,2.1nm,1.0s,baz=150,slow=5.0,SNR=9.9						
MLR	Muntele Rosu	79.89	321⇓	iP	P	08 42 37.6	+0.3
MLR	Muntele Rosu	79.89	321	eP	P	08 42 37.5	+0.3
	comp=Z,13nm,0.9s						
G30A	Faulkton	79.89	40	P	P	08 42 36.7	-0.5
	baz=314,SNR=7.4						
X16A	Lo Mia Camp, P	79.89	54	eP	P	08 42 38.5	+0.8
	comp=Z,12nm,1.0s						
MVCO	Mesa Verde	79.96	51	P	P	08 42 38.3	+0.3
	baz=310,SNR=15						
MVCO	Mesa Verde	79.96	51	eP	P	08 42 38.5	+0.5
	comp=Z,86nm,1.8s						
ISCO	Idaho Springs	80.00	47	P	P	08 42 38.7	+0.4
	baz=311,SNR=16						
ISCO	Idaho Springs	80.00	47	eP	P	08 42 38.9	+0.7
ISCO				pmax	pmax		
	comp=Z,74nm,2.0s						
ISCO	Idaho Springs	80.00	47	eP	P	08 42 38.9	+0.7
	comp=Z,74nm,2.0s						
ANTO	Ankara	80.02	313	eP	P	08 42 38.6	+0.6
ANTO				pmax	pmax		
	comp=Z,20nm,0.8s						
ANTO	Ankara	80.02	313	eP	P	08 42 38.6	+0.6
	comp=Z,20nm,0.8s						
BR231	Keskin MP Arra	80.04	313	eP	P	08 42 37.0	-1.3
I29A	Vivian Onida	80.07	41	P	P	08 42 37.7	-0.5
	baz=314,SNR=14						
D33A	AnnSam, Waubun	80.08	37	P	P	08 42 37.6	-0.6
	baz=316						
C34A	RKJ Ranch, Bem	80.15	36	P	P	08 42 37.8	-0.7
	baz=317						
B35A	Bob, Littlefor	80.17	35	P	P	08 42 38.1	-0.5
	baz=318,SNR=8.0						
LANS	Liptovska Anna	80.27	327	eP	P	08 42 40.8	+1.6
LANS	Liptovska Anna	80.27	327	eP	P	08 42 40.8	+1.6
G31A	Conde	80.30	39	P	P	08 42 38.8	-0.6
	baz=315						
KECS	Kecovo	80.32	326	eP	P	08 42 38.3	-1.1
KECS				pmax	pmax		
	comp=Z,4.0nm,1.0s						
KECS	Kecovo	80.32	326	eP	P	08 42 38.3	-1.1
KECS				ePP	PP	08 45 49.9	+8.3
KSP	Ksiaz	80.32	329	eP	P	08 42 40.5	+1.1
KSP	Ksiaz	80.32	329	eP	P	08 42 40.5	+1.1
OKC	Ostrava-Krasne	80.32	328	eP	P	08 42 40.0	+0.6
OKC				esP	sP	08 42 53.3	+1.1
OKC				eS	S	08 52 45.7	+2.8
OKC	Ostrava-Krasne	80.32	328	eP	P	08 42 40.0	+0.6
OKC				e		08 42 53.3	
OKC				eS	S	08 52 45.7	+2.8
VOIR		80.37	321⇑	iP	P	08 42 40.8	+0.9
F32A	Veblen	80.37	38	P	P	08 42 39.3	-0.5
	baz=316						
D34A	Park Rapids	80.42	36	P	P	08 42 39.4	-0.6
	baz=317,SNR=6.0						
E33A	Westby DABS, E	80.46	37	P	P	08 42 39.9	-0.4
	baz=316						
SUSD	Miller	80.47	40	P	P	08 42 40.0	-0.4
	baz=315,SNR=5.6						
DRGR		80.53	323⇓	iP	P	08 42 41.5	+0.8
W18A	Petrified Fore	80.54	53	P	P	08 42 41.5	+0.4
	baz=310						
214A	Organ Pipe Nat	80.54	57	P	P	08 42 41.1	+0.1
	baz=309						
C35A	Jirik Farms, M	80.54	35	P	P	08 42 39.8	-0.9
	baz=317,SNR=8.7						
BVCR	Bucharest-Old	80.55	320⇑	iP	P	08 42 31.5	-9.2
I30A	Oacoma	80.60	41	P	P	08 42 40.8	-0.2
	baz=314,SNR=21						
MORC	Moravsky Berou	80.62	328⇑	iP	P	08 42 42.2	+1.1
MORC	Moravsky Berou	80.62	328	eP	P	08 42 41.8	+0.7
MORC				pmax	pmax		
	comp=Z,132nm,1.1s						
MORC	Moravsky Berou	80.62	328	eP	P	08 42 41.8	+0.7
	comp=Z,132nm,1.1s						
S22A	4UR Ranch, Cre	80.63	49	P	P	08 42 42.2	+0.6
	baz=311,SNR=14						
S22A	4UR Ranch, Cre	80.63	49	eP	P	08 42 42.8	+1.1
	comp=Z,77nm,1.8s						
ARR	Arges	80.63	321⇑	iP	P	08 42 43.1	+1.9
G32A	Webster	80.63	39	P	P	08 42 40.7	-0.5
	baz=316						
DPC	Dobruska-Polom	80.69	329	i P	P	08 42 42.2	+0.8
DPC				esP	sP	08 42 55.8	+1.5
DPC				eS	S	08 52 49.4	+2.6
DPC	Dobruska-Polom	80.69	329	i P	P	08 42 42.2	+0.8
DPC				e		08 42 55.8	
DPC				eS	S	08 52 49.4	+2.6
H31A	Wolsey	80.69	40	P	P	08 42 40.9	-0.6
	baz=315,SNR=5.2						
UPC	Upice	80.69	329	eP	P	08 42 42.5	+1.1
UPC				esP	sP	08 42 55.9	+1.7
UPC	Upice	80.69	329	eP	P	08 42 42.5	+1.1
UPC				e		08 42 55.9	
KRLC	Kraliky	80.71	329	eP	P	08 42 42.2	+0.7
KRLC				esP	sP	08 42 54.5	+0.1
KRLC	Kraliky	80.71	329	eP	P	08 42 42.2	+0.7
KRLC				e		08 42 54.5	
X18A	Snowflake	80.78	53	eP	P	08 42 43.1	+0.7
	comp=Z,28nm,1.5s						
F33A	5 Mile Ranch,	80.80	38	P	P	08 42 41.7	-0.3
	baz=316,SNR=7.6						
Q24A	Divide	80.82	47	P	P	08 42 42.4	-0.3
	baz=312						
Q24A	Divide	80.82	47	eP	P	08 42 43.5	+0.8
	comp=Z,11nm,1.0s						
E34A	Wadena	80.85	37	P	P	08 42 41.6	-0.7
	baz=317						
D35A	Remer	80.96	36	P	P	08 42 42.3	-0.6
	baz=318						
I31A	Royce, Wessing	80.97	40	P	P	08 42 42.9	-0.1
	baz=315						
J30A	Dallas	80.98	41	P	P	08 42 42.8	-0.3
	baz=314,SNR=11						
PSZ	Piszkesteto	81.00	326⇑	iP	P	08 42 43.6	+0.4
PSZ	Piszkesteto	81.00	326⇓	eP	P	08 42 44.0	+0.8
PSZ	Piszkesteto	81.00	326	eP	P	08 42 43.3	+0.1
PSZ				pmax	pmax		
	comp=Z,140nm,2.0s						
PSZ	Piszkesteto	81.00	326	eP	P	08 42 43.3	+0.1
	comp=Z,140nm,2.0s						
C36A	Pine Crest Far	81.02	35	P	P	08 42 42.4	-0.8
	baz=318,SNR=5.3						
VYHS	Vyhne	81.04	326	eP	P	08 42 43.7	+0.4
VYHS				pmax	pmax		
	comp=Z,9.0nm,1.1s						
VYHS	Vyhne	81.04	326	eP	P	08 42 43.7	+0.4
E35A	Pequot Lakes	81.18	36	P	P	08 42 43.2	-0.9
	baz=317						
G33A	Ortonville	81.20	38	P	P	08 42 43.8	-0.4
	baz=316,SNR=16						
H32A	Carlson Farm,	81.20	39	P	P	08 42 43.7	-0.5
	baz=316						
BRG	Berggiesshubel	81.23	330	eP	P	08 42 44.4	+0.2
	comp=Z,13nm,1.0s						
BRG				e		08 42 57.4	
	comp=Z,20nm,1.0s						
BRG				ePP	PP	08 45 48.4	-0.7
	comp=Z,5.6nm,1.0s						
BRG				S	S	08 52 54.0	+1.7
BRG	Berggiesshubel	81.23	330	eP	P	08 42 44.4	+0.2
BRG				e		08 42 57.4	
BRG				e		08 45 48.4	
BRG				S	S	08 52 54.0	+1.7
BRG				pmax	pmax		
	comp=Z,13nm,1.0s						
BRG				pmax	pmax		
	comp=Z,13nm,1.0s						
BRG				pmax	pmax		
	comp=Z,21nm,1.0s						
CLL	Collm	81.25	331⇓	iP	P	08 42 44.5	+0.2
	comp=Z,23nm,1.0s						
CLL				i		08 42 56.8	
CLL				ePP	PP	08 45 52.0	+2.8
CLL				eS	S	08 52 55.0	+2.5
CLL				e(LmV)		09 12 18.0	
	comp=Z,300nm,20.9s						
CLL	Collm	81.25	331⇓	iP	P	08 42 44.5	+0.2
CLL				i		08 42 56.8	
CLL				pmax	pmax		
	comp=Z,23nm,1.0s						
CLL	Collm	81.25	331	eP	P	08 42 44.2	-0.1
	comp=Z,54nm,1.0s						
HIZ	Hauiti	81.25	156	eP	P	08 42 44.8	+0.5
	comp=Z,39nm,1.0s						
OGNE	Ogallala	81.25	44	P	P	08 42 44.5	-0.2
	baz=313						
OGNE	Ogallala	81.25	44	eP	P	08 42 45.7	+1.0
	comp=Z,96nm,1.4s						
PVCC	Panska Ves	81.25	330	eP	P	08 42 45.5	+1.1
PVCC	Panska Ves	81.25	330	eP	P	08 42 45.5	+1.1
D36A	Goodland	81.30	35	P	P	08 42 43.7	-1.0
	baz=318						
C37A	Embarrass	81.33	34	P	P	08 42 44.0	-0.9
	baz=319,SNR=5.5						
F34A	Alexandria	81.33	37	P	P	08 42 44.5	-0.4
	baz=317						
K30A	Basset	81.37	42	P	P	08 42 44.9	-0.3
	baz=314,SNR=7.6						
VRAC	Vranov	81.38	328	P	P	08 42 46.5	+1.4
	comp=Z,15nm,0.9s,baz=40,slow=6.0,SNR=17						
VRAC	Vranov	81.38	328⇑	iP	P	08 42 46.4	+1.4
J31A	Geddes	81.39	41	P	P	08 42 44.8	-0.5
	baz=315,SNR=6.6						
H33A	Prehn Over Nor	81.42	39	P	P	08 42 45.0	-0.4
	baz=316,SNR=16						
SDCO	Great Sand Dun	81.42	49	P	P	08 42 46.4	+0.6
	baz=312,SNR=12						
SDCO	Great Sand Dun	81.42	49	eP	P	08 42 46.6	+0.7
	comp=Z,31nm,1.6s						
EYMN	Ely	81.47	34	P	P	08 42 45.0	-0.6
	baz=319						
EYMN	Ely	81.47	34	eP	P	08 42 45.5	-0.1
	comp=Z,22nm,1.0s						
I32A	Karley and Nic	81.52	40	P	P	08 42 44.9	-1.0
	baz=316						
G34A	Benson	81.55	38	P	P	08 42 45.9	-0.1
	baz=317						
F35A	Swanville	81.61	37	P	P	08 42 46.1	-0.2
	baz=317						
D37A	Cotton	81.65	35	P	P	08 42 45.7	-0.9
	baz=318						
TUC	Tucson	81.65	56	P	P	08 42 46.7	-0.2
	baz=310						
PRU	Pruhonice	81.69	330	i P	P	08 42 47.2	+0.5
PRU				esP	sP	08 43 00.3	+0.8
PRU				eS	S	08 52 57.4	+0.3
PRU	Pruhonice	81.69	330	i P	P	08 42 47.2	+0.5
PRU				e		08 43 00.3	
PRU				eS	S	08 52 57.4	+0.3
C38A	Sawbill Land.	81.74	34	P	P	08 42 46.5	-0.5
	baz=319,SNR=6.4						
E36A	McGregor	81.75	36	P	P	08 42 46.6	-0.5
	baz=318,SNR=5.2						
J32A	Parkston	81.79	40	P	P	08 42 46.8	-0.6
	baz=316,SNR=5.5						
I33A	Coleman	81.84	39	P	P	08 42 47.4	-0.3
	baz=316,SNR=5.3						
TREC	Trest	81.85	329	eP	P	08 42 48.5	+0.9
TREC				esP	sP	08 43 01.4	+1.0
TREC	Trest	81.85	329	eP	P	08 42 48.5	+0.9
TREC				e		08 43 01.4	
K31A	O'Neill	81.85	41	P	P	08 42 47.3	-0.4
	baz=315,SNR=7.2						
H34A	Spellman Lake,	81.90	38	P	P	08 42 47.4	-0.5
	baz=317						
BZS	Buzias	81.91	323⇑	iP	P	08 42 48.3	+0.4
F36A	Milaca	82.11	36	P	P	08 42 48.2	-0.7
	baz=318						
G35A	Watkins	82.12	37	P	P	08 42 49.1	0.0
	baz=317						
L31A	Butterfield Fa	82.12	42	P	P	08 42 48.8	-0.4
	baz=315,SNR=24						
ECSD	EROS Data Cent	82.16	39	P	P	08 42 48.8	-0.5
	baz=316,SNR=19						
ECSD	EROS Data Cent	82.16	39	eP	P	08 42 49.0	-0.4
	comp=Z,19nm,0.8s						
C39A	Grand Marais	82.17	33	P	P	08 42 48.0	-1.3
	baz=320						
K32A	Verdigre	82.23	41	P	P	08 42 49.1	-0.6
	baz=316						
KSCO	Kaye Shedlock'	82.24	46	P	P	08 42 49.6	-0.4
	baz=313,SNR=5.6						
KSCO	Kaye Shedlock'	82.24	46	eP	P	08 42 50.5	+0.5
	comp=Z,48nm,1.4s						
J33A	Davis	82.28	40	P	P	08 42 49.6	-0.4
	baz=316						
NKC	Novy Kostel	82.32	331	eP	P	08 42 50.8	+0.8
NKC				esP	sP	08 43 04.0	+1.1
NKC	Novy Kostel	82.32	331	eP	P	08 42 50.8	+0.8
NKC				e		08 43 04.0	
H35A	Sunnyside Ranc	82.34	38	P	P	08 42 50.5	+0.2
	baz=317,SNR=18						
BKZ	Black Stump Fm	82.38	155	eP	P	08 42 49.0	-1.3
	comp=Z,37nm,1.5s						
G36A	St. Michael	82.47	37	P	P	08 42 50.8	0.0
	baz=318						
T25A	Trinidad	82.47	48	P	P	08 42 51.7	+0.4
	baz=312,SNR=16						
T25A	Trinidad	82.47	48	eP	P	08 42 51.3	0.0
	comp=Z,23nm,0.9s						
MDVR	Moldovita	82.48	322⇓	iP	P	08 42 51.3	+0.3
MPEP	Malo Peshtene	82.52	320	P	P	08 42 50.5	-0.7
LAZ	Ladron	82.63	52	eP	P	08 42 52.8	+0.6
M31A	Lambtecht Ranc	82.64	42	P	P	08 42 51.2	-0.7
	baz=315						
L32A	Elgin	82.68	41	P	P	08 42 51.8	-0.3
	baz=316						
ANMO	Albuquerque	82.69	51	P	P	08 42 52.8	+0.3
	comp=Z,12nm,1.1s,baz=307,slow=6.0,SNR=28						
ANMO	Albuquerque	82.69	51	P	P	08 42 52.6	+0.1
	baz=312						
ANMO	Albuquerque	82.69	51	i P	P	08 42 52.5	+0.1
ANMO				pmax	pmax		
	comp=Z,17nm,1.2s						
ANMO	Albuquerque	82.69	51	eP	P	08 42 53.3	+0.8
	comp=Z,35nm,1.4s						
KHC	Kasperske Hory	82.75	330	i P	P	08 42 52.8	+0.5
KHC				ex	x	08 43 05.7	
KHC				eS	S	08 53 09.7	+1.5
KHC	Kasperske Hory	82.75	330	i P	P	08 42 52.8	+0.5
KHC				e		08 43 05.7	
KHC				eS	S	08 53 09.7	+1.5
KHC	Kasperske Hory	82.75	330	eP	P	08 42 52.9	+0.5
	comp=Z,12nm,1.2s						
CONA	Conrad Observa	82.75	328	i P	P	08 42 53.3	+0.9
	comp=Z,29nm,1.4s,SNR=8.2						
K33A	Hardington	82.78	40	P	P	08 42 52.1	-0.4
	baz=316						
J34A	George	82.81	39	P	P	08 42 52.0	-0.8
	baz=317						
H36A	Jessenland, He	82.87	37	P	P	08 42 53.2	+0.2
	baz=318,SNR=6.1						
KDZ	Kurdzhali	82.87	318	P	P	08 42 54.0	+0.9
I35A	Creekview Farm	82.88	38	P	P	08 42 52.4	-0.6
	baz=317						
SPMN	Marine on St.	82.92	36	P	P	08 42 52.3	-0.9
	baz=318						
SPMN	Marine on St.	82.92	36	eP	P	08 42 53.2	0.0
	comp=Z,42nm,1.5s						
GEC2	GERESS Array S	82.93	329	eP	P	08 42 53.7	+0.4
GEC2				pmax	pmax		
	comp=Z,20nm,1.2s						
GEC2	GERESS Array S	82.93	329	eP	P	08 42 53.7	+0.4
	comp=Z,20nm,1.2s						
GERES	GERESS Array B	82.93	329	P	P	08 42 53.4	0.0
	comp=Z,4.3nm,0.9s,baz=35,slow=4.9,SNR=19						
GERES				PP	PP	08 45 56.4	-6.8
	comp=Z,1.2nm,0.7s,baz=37,slow=5.5,SNR=3.4						
GEA0	GERESS Array S	82.94	329	eP	P	08 42 52.8	-0.5
CSS	Mathiatis	82.94	309	eP	P	08 42 53.0	-0.5
	comp=Z,6.8nm,0.7s						
L33A	Hoskins	82.95	41	P	P	08 42 52.9	-0.5
	baz=316						
ESK	Eskdalemuir	82.95	342	eP	P	08 42 54.3	+1.1
ESK				pmax	pmax		
	comp=Z,161nm,2.0s						
ESK	Eskdalemuir	82.95	342	eP	P	08 42 54.3	+1.1
	comp=Z,161nm,2.0s						
Y22D	IRIS PASSCAL I	82.98	52	P	P	08 42 54.4	+0.5
	baz=311						
LPM	Los Pinos Moun	83.00	52	eP	P	08 42 54.6	+0.5
N31A	Bailey Ranch,	83.02	43	P	P	08 42 53.3	-0.5
	baz=315						
BGNE	Belgrade	83.03	42	P	P	08 42 53.4	-0.5
	baz=316						
BGNE	Belgrade	83.03	42	eP	P	08 42 53.5	-0.4
	comp=Z,64nm,0.8s						
BNM	Barren Site	83.11	52	eP	P	08 42 55.3	+0.6
J35A	Milford	83.13	39	P	P	08 42 53.8	-0.5
	baz=317						
K34A	Le Mars	83.18	40	P	P	08 42 54.0	-0.6
	baz=317,SNR=9.0						
GRFO	Grafenberg	83.23	331	eP	P	08 42 57.5	+2.8
GRFO				pmax	pmax		
	comp=Z,44nm,1.1s						
GRFO	Grafenberg	83.23	331	eP	P	08 42 57.5	+2.8
	comp=Z,44nm,1.1s						
319A	Douglas	83.23	55	eP	P	08 42 56.1	+0.9
	comp=Z,21nm,0.9s						
I36A	Fitzsimmons Fa	83.24	38	P	P	08 42 54.6	-0.3
	baz=318						
O31A	Woolen Ranch,	83.29	43	P	P	08 42 54.5	-0.8
	baz=315						
H37A	Dierke Farm, C	83.35	37	P	P	08 42 55.2	-0.3
	baz=318,SNR=7.1						
N32A	Stulken Farm,	83.41	42	P	P	08 42 55.1	-0.8
	baz=315						
M33A	Taylor Creek F	83.42	41	P	P	08 42 55.0	-0.9
	baz=316						
ARSA	Arzberg	83.42	327	i P	P	08 42 55.7	-0.1
	comp=Z,11nm,1.1s						
MOA	Molln	83.48	328	i P	P	08 42 56.6	+0.5
	comp=Z,30nm,1.6s,SNR=9.9						
I37A	Lemond, Waseca	83.54	38	P	P	08 42 56.2	-0.3
	baz=318,SNR=12						
L34A	Svendsen Farm,	83.56	41	P	P	08 42 55.8	-0.8
	baz=316						
J36A	Seneca 1, Swea	83.59	39	P	P	08 42 56.1	-0.6
	baz=318						
K35A	Storm Lake	83.59	39	P	P	08 42 56.2	-0.5
	baz=317						
THZ	Tophouse	83.62	158	eP	P	08 42 56.2	-0.4
	comp=Z,34nm,1.1s						
O32A	Brockman Farm,	83.78	43	P	P	08 42 56.6	-1.2
	baz=316						
M34A	Aspy Farms, Fr	83.78	41	P	P	08 42 57.2	-0.5
	baz=316						
MMB	Musomiste	83.80	319	P	P	08 42 57.5	-0.4
L35A	Bielow Farm, R	83.88	40	P	P	08 42 57.6	-0.6
	baz=317						
N33A	J Bar K, Exete	83.88	42	P	P	08 42 57.1	-1.1
	baz=316						
COWI	Conover	83.92	34	eP	P	08 42 58.2	-0.2
	comp=Z,8.7nm,0.8s						
KKB	Krupnik	83.93	320	P	P	08 42 57.8	-0.7
J37A	Redenius Farm,	83.99	38	P	P	08 42 58.3	-0.4
	baz=318						
CBKS	Cedar Bluff	84.00	45	P	P	08 42 58.3	-0.7
	baz=315						
I38A	Scanlan Farm,	84.03	37	P	P	08 42 58.2	-0.8
	baz=319,SNR=5.9						
SCHQ	Schefferville	84.04	17	P	P	08 42 58.2	-0.6
	comp=Z,6.3nm,0.9s,baz=15,slow=3.8,SNR=6.8						
SCHQ	Schefferville	84.04	17	eP	P	08 42 59.1	+0.3
	comp=Z,68nm,1.9s						
K36A	Gilmore City	84.04	39	P	P	08 42 58.1	-0.9
	baz=318						
P32A	Huiting Farm,	84.06	43	P	P	08 42 58.2	-1.0
	baz=315,SNR=12						
PERS	Pernice	84.08	327	eP	P	08 42 59.1	-0.1
SOKA	Soboth	84.08	327	i P	P	08 42 59.5	+0.2
	comp=Z,47nm,1.5s,SNR=21						

Q32A	Meitler Ranch,	84.53	44	P		P	08 43 00.7	-0.9
	baz=315							
VAY	Valandovo	84.59	320	*i* P		P	08 43 02.2	+0.4
MOZS	Mozjanca	84.64	327	*i* P		P	08 43 01.0	-1.0
O34A	Beatrice	84.68	42	P		P	08 43 01.3	-1.0
	baz=316							
P33A	Williams Farm,	84.68	43	P		P	08 43 01.3	-1.0
	baz=316							
SKO	Skopje	84.69	321	*i* P		P	08 43 03.2	+0.9
MYKA	Terra Mystica	84.71	328	*i* P		P	08 43 01.3	-1.1
	comp=Z,13nm,0.8s							
M36A	Felix, Anita	84.74	40	P		P	08 43 02.3	-0.3
	baz=318							
N35A	Tabor	84.74	41	P		P	08 43 02.2	-0.4
	baz=317,SNR=6.7							
BCLA	Clavier	84.75	335	P		P	08 43 02.8	+0.4
	comp=Z,18nm,1.9s							
CWF	Charnwood Fore	84.77	339	*e*P		P	08 43 03.8	+1.3
	comp=Z,38nm,1.3s							
L37A	Phoenix Point,	84.77	39	P		P	08 43 02.4	-0.3
	baz=318,SNR=5.5							
OXZ	Oxford	84.82	160	*e*P		P	08 43 02.3	-0.2
	comp=Z,138nm,2.0s							
R32A	Long Quarter,	84.85	44	P		P	08 43 02.2	-1.0
	baz=315							
K38A	Parkersburg	84.86	38	P		P	08 43 02.5	-0.7
	baz=319							
Q33A	Connelly Farm,	84.92	43	P		P	08 43 02.9	-0.6
	baz=316,SNR=5.7							
O35A	Humboldt	85.03	41	P		P	08 43 03.3	-0.8
	baz=317							
P34A	Walnut Farm, R	85.07	42	P		P	08 43 03.3	-1.0
	baz=316,SNR=13							
LANF	Langenberg	85.09	333	‖*e*P		P	08 43 04.3	+0.1
N36A	Muff Farm, Cla	85.12	41	P		P	08 43 04.4	-0.2
	baz=317,SNR=6.5							
L38A	Oak Wood Farm,	85.15	39	P		P	08 43 04.2	-0.4
	baz=319							
M37A	Trindle Farm,	85.15	40	P		P	08 43 04.9	+0.2
	baz=318							
MOTA	Moosalm	85.17	330	*i* P		P	08 43 04.8	-0.1
	comp=Z,15nm,0.9s,SNR=8.3							
RETA	Reutte	85.19	330	*i* PcP		P	08 43 05.2	+0.3
	comp=Z,28nm,0.8s,SNR=20							
S32A	Newby Ranch, P	85.23	45	P		P	08 43 04.7	-0.5
	baz=315,SNR=6.7							
DOU	Dourbes	85.27	335	P		P	08 43 04.8	-0.2
LBZ	Lake Benmore	85.31	161	*e*P		P	08 43 06.0	+0.9
	comp=Z,44nm,1.4s							
R33A	Olander Ranch,	85.33	44	P		P	08 43 04.9	-0.8
	baz=316,SNR=6.5							
MQZ	McQueen's Vall	85.34	159	*e*P		P	08 43 06.1	+1.0
	comp=Z,68nm,1.3s							
PDG	Podgorica	85.42	322	⇑*i*P		P	08 43 06.4	+0.5
BFO	Black Forest	85.43	332	*i* P		P	08 43 06.4	+0.4
BFO	Black Forest	85.43	332	*e*P		P	08 43 05.4	-0.5
	comp=Z,69nm,1.1s							
BIA	Bitola	85.45	320	*i* P		P	08 43 06.0	-0.2
Q34A	Chapman	85.46	43	P		P	08 43 05.7	-0.5
	baz=316,SNR=8.1							
KSU1	Kansas State U	85.51	43	P		P	08 43 05.7	-0.8
	baz=317,SNR=10							
KSU1	Kansas State U	85.51	43	*e*P		P	08 43 06.0	-0.5
	comp=Z,26nm,0.8s							
P35A	Duane Minner,	85.51	42	P		P	08 43 06.1	-0.4
	baz=317							
MNTX	Cornudas Mount	85.52	53	P		P	08 43 06.6	-0.1
	baz=312,SNR=15							
MNTX	Cornudas Mount	85.52	53	*e*P		P	08 43 06.8	+0.1
	comp=Z,47nm,1.8s							
N37A	Lee Faris, Mou	85.55	40	P		P	08 43 06.8	+0.1
	baz=318,SNR=6.7							
M38A	Pleasantville	85.57	39	P		P	08 43 07.0	+0.2
	baz=318							
FETA	Feichten	85.59	330	*i* PcP		P	08 43 07.0	+0.1
	comp=Z,25nm,1.0s,SNR=11							
MSTX	Muleshoe	85.60	50	P		P	08 43 06.9	-0.2
	baz=313,SNR=6.2							
MSTX	Muleshoe	85.60	50	*e*P		P	08 43 07.3	+0.1
	comp=Z,21nm,1.3s							
DCZ	Deep Cove	85.61	164	*e*P		P	08 43 06.5	+0.1
	comp=Z,175nm,2.0s							
T32A	Huddler Ranch,	85.61	45	P		P	08 43 06.7	-0.4
	baz=315,SNR=11							
DSB	Dublin	85.62	342	*e*P		P	08 43 08.2	+1.5
	comp=Z,170nm,1.9s							
AMTX	Amarillo	85.62	49	P		P	08 43 07.2	-0.1
	baz=314							
AMTX	Amarillo	85.62	49	*e*P		P	08 43 08.2	+0.9
	comp=Z,30nm,0.9s							
O36A	Bolckow	85.62	41	P		P	08 43 06.6	-0.4
	baz=318,SNR=9.0							
OHR	Ohrid	85.65	320	*i* P		P	08 43 06.8	-0.4
DAVA	Damuels	85.70	330	*i* PcP		P	08 43 07.6	+0.1
	comp=Z,29nm,0.8s,SNR=16							
MLZ	Mavora Lakes	85.73	163	*e*P		P	08 43 07.1	0.0
	comp=Z,104nm,1.7s							
R34A	Isabella, Hill	85.74	44	P		P	08 43 06.9	-0.8
	baz=316							
S33A	Kaszmaul Farm,	85.83	44	P		P	08 43 07.7	-0.4
	baz=316,SNR=12							
JFWS	Jewell Farm	85.87	37	*e*P		P	08 43 08.1	-0.1
JFWS				pmax		pmax		
	comp=Z,19nm,1.0s							
JFWS	Jewell Farm	85.87	37	*e*P		P	08 43 08.1	-0.1
	comp=Z,19nm,1.0s							
P36A	Good Intent, A	85.87	42	P		P	08 43 07.6	-0.7
	baz=317,SNR=7.6							
ECH	Echery	85.96	333	‖*e*P		P	08 43 08.5	-0.1
Q35A	Mercer Eighty,	85.99	43	P		P	08 43 08.4	-0.5
	baz=317,SNR=9.7							
N38A	Joes South For	86.02	40	P		P	08 43 08.7	-0.3
	baz=318,SNR=6.7							
O37A	Wolven Farm, M	86.02	41	P		P	08 43 08.7	-0.3
	baz=318							
T33A	Patterson Ranc	86.06	45	P		P	08 43 08.9	-0.4
	baz=316,SNR=6.2							
FUORN	Ofenpass-Fuorn	86.10	330	*e*P		P	08 43 10.0	+0.4
	comp=Z,70nm,1.0s							
U32A	Winter Ranch,	86.13	46	P		P	08 43 09.8	+0.1
	baz=315							
WHZ	Wether Hill Ro	86.19	163	*e*P		P	08 43 09.7	+0.4
	comp=Z,113nm,1.8s							
Q36A	Arnold C. Orve	86.22	42	P		P	08 43 09.1	-0.9
	baz=317							
S34A	Willow Spring	86.25	44	P		P	08 43 10.0	-0.2
	baz=316							
MOF	Molkenrain	86.28	332	‖*e*P		P	08 43 10.2	0.0
R35A	Emporia Munici	86.29	43	P		P	08 43 10.4	0.0
	baz=317,SNR=15							
N39A	Derby Farms, D	86.33	39	P		P	08 43 10.2	-0.3
	baz=319,SNR=11							
P37A	Lathrop	86.34	41	P		P	08 43 10.0	-0.7
	baz=318,SNR=9.8							
O38A	Galt	86.40	40	P		P	08 43 10.7	-0.2
	baz=318							
V32A	Arapaho	86.58	46	P		P	08 43 12.2	+0.3
	baz=315,SNR=9.1							
TUE	Stuetta	86.58	330	*e*P		P	08 43 11.8	-0.1
	comp=Z,27nm,1.0s							
U33A	Lingo Farm, Me	86.60	45	P		P	08 43 11.7	-0.3
	baz=316,SNR=7.4							
R36A	Gordon, Harris	86.67	43	P		P	08 43 12.1	-0.2
	baz=317,SNR=9.9							
T34A	McClaskey Farm	86.69	44	P		P	08 43 12.2	-0.2
	baz=316,SNR=8.7							
S35A	Otter Creek Ra	86.69	43	P		P	08 43 12.1	-0.3
	baz=317,SNR=12							
P38A	Dawn	86.74	41	P		P	08 43 12.1	-0.4
	baz=318,SNR=5.5							
O39A	Kirksville	86.77	40	P		P	08 43 12.3	-0.4
	baz=319							
LOMF	Lomont	86.81	332	*e*P		P	08 43 12.8	0.0
Q37A	Longview Farm,	86.82	42	P		P	08 43 12.0	-0.9
	baz=318							
W32A	Sentinel	86.88	47	P		P	08 43 13.3	0.0
	baz=315,SNR=11							
U34A	Anderson Ranch	86.92	45	P		P	08 43 13.6	+0.1
	baz=316,SNR=11							
U34A	Anderson Ranch	86.92	45	*e*P		P	08 43 13.8	+0.2
	comp=Z,152nm,1.8s							
V33A	Lossen Ranch,	86.94	46	P		P	08 43 13.5	-0.2
	baz=316,SNR=6.6							
R37A	Teagarden Farm	87.03	42	P		P	08 43 12.9	-1.2
	baz=318							
S36A	Lake Cedric, C	87.06	43	P		P	08 43 13.7	-0.4
	baz=317							
T35A	Sooner Cattle	87.14	44	P		P	08 43 14.3	-0.3
	baz=317,SNR=5.4							
Q38A	Cooks Store, C	87.19	41	P		P	08 43 14.1	-0.7
	baz=318,SNR=6.4							
O40A	La Belle	87.21	39	P		P	08 43 14.6	-0.2
	baz=319,SNR=8.8							
W33A	Caddo, Fort Co	87.31	46	P		P	08 43 16.0	+0.6
	baz=316,SNR=7.6							
X32A	Elmer	87.36	47	P		P	08 43 15.3	-0.4
	baz=315,SNR=10							
V34A	Guthrie	87.36	45	P		P	08 43 15.6	0.0
	baz=316,SNR=11							
V34A	Guthrie	87.36	45	*e*P		P	08 43 15.9	+0.2
	comp=Z,30nm,0.8s							
T36A	Boggs Farm, Ca	87.39	44	P		P	08 43 15.6	-0.1
	baz=317,SNR=8.1							
U35A	Pawnee	87.42	45	P		P	08 43 15.6	-0.3
	baz=317,SNR=7.5							
WMOK	Wichita Mounta	87.42	47	*e*P		P	08 43 16.3	+0.3
WMOK				pmax		pmax		
	comp=Z,18nm,1.0s							
WMOK	Wichita Mounta	87.42	47	*e*P		P	08 43 16.2	+0.3
	comp=Z,18nm,1.0s							
S37A	Fort Scott	87.44	43	P		P	08 43 15.3	-0.6
	baz=318,SNR=7.7							
Q39A	Willow Grove F	87.46	41	P		P	08 43 15.5	-0.5
	baz=319,SNR=14							
SENIN	Lac Senin/Sane	87.46	331	*e*P		P	08 43 16.5	+0.3
	comp=Z,27nm,1.4s							
LAST	Lasithi	87.47	314	⇑*i*P		P	08 43 16.4	+0.2
LAST	Lasithi	87.47	314	*e*P		P	08 43 16.4	+0.2
	comp=Z,68nm,1.3s							
P40A	Paris	87.57	40	P		P	08 43 16.4	-0.2
	baz=319,SNR=14							
R38A	Fenwick Farm,	87.61	42	P		P	08 43 15.3	-1.5
	baz=318							
W34A	Bridge Creek,	87.65	46	P		P	08 43 16.8	-0.3
	baz=316							
W34A	Bridge Creek,	87.65	46	*e*P		P	08 43 17.9	+0.9
	comp=Z,38nm,1.1s							
X33A	Lawton	87.73	47	P		P	08 43 17.2	-0.3
	baz=316							
V35A	Meyer Ranch, C	87.80	45	P		P	08 43 17.3	-0.4
	baz=317							
T37A	Cheneyville 18	87.86	43	P		P	08 43 17.5	-0.5
	baz=318,SNR=5.9							
SIVA	Sivas	87.95	314	⇑*i*P		P	08 43 18.4	0.0
U36A	Oologah	87.95	44	P		P	08 43 17.6	-0.9
	baz=317							
Q40A	Laux Farm, Aux	87.96	40	P		P	08 43 18.0	-0.4
	baz=319,SNR=8.1							
R39A	Chumby, Stover	87.97	41	P		P	08 43 17.7	-0.8
	baz=319,SNR=8.2							
S38A	Stockton	88.03	42	P		P	08 43 17.9	-0.9
	baz=318,SNR=5.9							
Y33A	Hilltop Ranch,	88.03	47	P		P	08 43 18.4	-0.5
	baz=316,SNR=7.4							
X34A	Smith Ranch, M	88.07	46	P		P	08 43 19.2	+0.1
	baz=316,SNR=8.2							
HDIL	Hopedale	88.14	37	P		P	08 43 19.0	-0.3
	baz=321,SNR=6.3							
HDIL	Hopedale	88.14	37	*e*P		P	08 43 19.2	-0.1
	comp=Z,37nm,0.9s							
TX31	Lajitas Ar. Si	88.20	54	*e*P		P	08 43 19.8	-0.1
TXAR	Lajitas Array	88.21	54	P		P	08 43 19.9	-0.1
	comp=Z,4.3nm,0.8s,baz=299,slow=3.1,SNR=43							
W35A	Tecumseh	88.22	46	P		P	08 43 19.5	-0.3
	baz=317,SNR=6.6							
T38A	Diamond	88.26	43	P		P	08 43 19.4	-0.6
	baz=318,SNR=17							
TUL1	Leonard	88.27	44	P		P	08 43 19.8	-0.2
	baz=317							
TUL1	Leonard	88.27	44	*e*P		P	08 43 19.8	-0.2
	comp=Z,53nm,1.8s							
V36A	Jenks	88.28	45	P		P	08 43 19.5	-0.5
	baz=317							
U37A	Salina	88.28	44	P		P	08 43 19.6	-0.4
	baz=318,SNR=6.0							
S39A	Bolivar	88.29	42	P		P	08 43 19.0	-1.1
	baz=318,SNR=9.6							
R40A	Maddies Statio	88.39	41	P		P	08 43 19.8	-0.7
	baz=319,SNR=12							
ABTX	Abilene, Hawle	88.41	49	P		P	08 43 20.7	0.0
	baz=315							
ABTX	Abilene, Hawle	88.41	49	*e*P		P	08 43 20.8	+0.1
	comp=Z,22nm,1.3s							
Z33A	Whitaker Ranch	88.46	48	P		P	08 43 20.6	-0.4
	baz=316,SNR=5.6							
HPIG		88.53	57	*e*P		P	08 43 21.7	+0.1
	comp=Z,9.1nm,1.0s							
Y34A	Reagan Ranch,	88.57	47	P		P	08 43 20.9	-0.5
	baz=316							
W36A	Wetumka	88.59	45	P		P	08 43 20.9	-0.7
	baz=317							
V37A	Hulbert	88.65	44	P		P	08 43 21.5	-0.3
	baz=318,SNR=11							
U38A	Gravette	88.65	43	P		P	08 43 21.0	-0.8
	baz=318,SNR=5.3							
X35A	Drake	88.70	46	P		P	08 43 21.5	-0.5
	baz=316							
T39A	Clever	88.76	42	P		P	08 43 21.5	-0.8
	baz=316,SNR=7.7							
S40A	Lebanon	88.79	41	P		P	08 43 21.5	-0.9
	baz=319,SNR=10							
133A	Hamilton Ranch	88.86	49	P		P	08 43 22.4	-0.4
	baz=316							
Z34A	Collier Ranch,	88.90	47	P		P	08 43 22.5	-0.5
	baz=316,SNR=5.2							
X36A	Centrahoma	88.93	46	P		P	08 43 23.0	-0.1
	baz=317,SNR=12							
HHAR	Hobbs	89.01	43	*e*P		P	08 43 23.2	-0.3
	comp=Z,14nm,1.0s							
Y35A	Marietta	89.02	46	P		P	08 43 23.2	-0.4
	baz=316							
W37B	Quinton	89.04	45	P		P	08 43 23.6	0.0
	baz=317							
V38A	Canehill	89.07	44	P		P	08 43 23.1	-0.7
	baz=318,SNR=13							
T40A	Mansfield	89.12	42	P		P	08 43 23.1	-0.8
	baz=319,SNR=11							
TIP	Timpagrande	89.13	322	⇑*i*P		P	08 43 24.4	+0.4
TIP	Timpagrande	89.13	322	*e*P		P	08 43 24.3	+0.3
	comp=Z,78nm,1.5s							
SADO	Sadowa	89.13	29	P		P	08 43 23.0	-0.8
	comp=Z,1.9nm,0.6s,baz=299,slow=9.1,SNR=3.2							
PLDF	La Plantade	89.14	333	‖*e*P		P	08 43 24.5	+0.5
SLM	Saint Louis	89.16	39	*e*P		P	08 43 24.0	-0.1
SLM				pmax		pmax		
	comp=Z,30nm,0.8s							
SLM	Saint Louis	89.16	39	*e*P		P	08 43 24.0	-0.1
	comp=Z,30nm,0.8s							
U39A	Green Forest	89.18	43	P		P	08 43 23.6	-0.7
	baz=318,SNR=13							
AGO	Saint Agoulin	89.25	334	*e*P		P	08 43 24.4	0.0
233A	Rising Star	89.28	49	P		P	08 43 24.6	-0.3
	baz=316,SNR=7.1							
Z35A	Perchaven, San	89.31	47	P		P	08 43 24.3	-0.6
	baz=316,SNR=5.6							
SFIN	Lafayette	89.33	36	P		P	08 43 24.6	-0.2
	baz=322							
134A	White-Moore Ra	89.38	48	P		P	08 43 24.9	-0.4
	baz=316							
Y36A	Durant	89.46	46	P		P	08 43 25.0	-0.6
	baz=317,SNR=6.3							
X37A	Clayton	89.47	45	P		P	08 43 25.4	-0.3
	baz=317							
V39A	Pettigrew	89.50	43	P		P	08 43 25.2	-0.6
	baz=318,SNR=9.6							
U40A	Yellville	89.54	42	P		P	08 43 25.4	-0.6
	baz=319,SNR=29							
TRQ	Mont Tremblant	89.54	25	*e*P		P	08 43 26.5	+0.7
PYM	Petit Puy Mans	89.55	334	*e*P		P	08 43 26.3	+0.4
W38A	Poteau	89.59	44	P		P	08 43 25.7	-0.5
	baz=318,SNR=5.7							
X38A	Whitesboro	89.72	45	P		P	08 43 26.7	0.0
	baz=318,SNR=9.0							
LMQ	La Malbaie	89.72	22	*e*P		P	08 43 27.5	+0.9
	comp=Z,118nm,1.8s							
333A	Richland Sprin	89.73	49	P		P	08 43 26.8	-0.2
	baz=316,SNR=12							
234A	Clairette	89.75	48	P		P	08 43 26.6	-0.4
	baz=316,SNR=11							
Y37A	Hugo	89.78	46	P		P	08 43 27.1	0.0
	baz=317							
135A	Vickery Place,	89.78	48	P		P	08 43 27.0	-0.2
	baz=316							
JCT	Junction City	89.83	51	P		P	08 43 26.9	-0.6
	baz=315							
JCT	Junction City	89.83	51	*e*P		P	08 43 27.1	-0.4
JCT				pmax		pmax		
	comp=Z,9.0nm,0.8s							
JCT	Junction City	89.83	51	*e*P		P	08 43 27.1	-0.4
	comp=Z,8.8nm,0.8s							
Z36A	Blue Ridge	89.83	47	P		P	08 43 26.7	-0.6
	baz=317,SNR=7.1							
W39A	Magazine	89.90	44	P		P	08 43 27.1	-0.5
	baz=318							
LBL	Lubilhac	89.91	333	*e*P		P	08 43 27.8	+0.2
V40A	Witts Springs	89.97	43	P		P	08 43 27.1	-0.9
	baz=319,SNR=7.7							
433A	Art	90.07	50	P		P	08 43 28.0	-0.5
	baz=315							
OLIL	Olney	90.14	38	*e*P		P	08 43 29.1	+0.4
	comp=Z,27nm,0.9s							
WHTX	Lake Whitney,	90.16	48	P		P	08 43 28.6	-0.3
	baz=316,SNR=6.1							
WHTX	Lake Whitney,	90.16	48	*e*P		P	08 43 29.5	+0.6
	comp=Z,32nm,0.9s							
334A	Lometa	90.17	49	P		P	08 43 28.7	-0.3
	baz=316,SNR=14							
X39A	Fountain Ranch	90.23	44	P		P	08 43 29.1	-0.1
	baz=318,SNR=14							
W40A	Ferguson Farm,	90.29	43	P		P	08 43 29.0	-0.4
	baz=319,SNR=8.0							
Y38A	Idabel	90.32	45	P		P	08 43 28.7	-0.9
	baz=318							
Z37A	Pogue Cattle C	90.35	46	P		P	08 43 29.6	-0.2
	baz=317							
136A	Ennis	90.35	47	P		P	08 43 29.6	-0.1
	baz=317							
PBMO	Poplar Bluff	90.49	41	*e*P		P	08 43 30.3	0.0
	comp=Z,35nm,1.1s							
MIAR	Mount Ida	90.50	44	P		P	08 43 30.5	0.0
	baz=318,SNR=18							
MIAR	Mount Ida	90.50	44	*e*P		P	08 43 30.5	0.0
MIAR				pmax		pmax		
	comp=Z,23nm,0.8s							
MIAR	Mount Ida	90.50	44	*e*P		P	08 43 30.5	0.0
	comp=Z,23nm,0.8s							
434A	Burnet	90.52	49	P		P	08 43 30.0	-0.7
	baz=316							
533A	Kerrville	90.58	50	P		P	08 43 30.5	-0.4
	baz=315							
X201	Greenbrier Sit	90.60	43	*e*P		P	08 43 30.8	-0.1
	comp=Z,27nm,1.0s							
X301	Greenbrier Sit	90.62	43	*e*P		P	08 43 30.5	-0.5
	comp=Z,46nm,1.6s							
WHAR	Wooly Hollow	90.64	43	*e*P		P	08 43 31.1	0.0
	comp=Z,32nm,0.9s							
Y39A	Lockesburg	90.67	45	P		P	08 43 30.8	-0.4
	baz=318,SNR=9.8							
Z38A	Mt. Pleasant	90.67	46	P		P	08 43 30.4	-0.8
	baz=318							
335A	Moody	90.69	49	P		P	08 43 30.9	-0.5
	baz=316							
236A	Katherine and	90.70	47	P		P	08 43 31.0	-0.4
	baz=317							
137A	Heron Place, G	90.71	47	P		P	08 43 30.8	-0.6
	baz=317							
W41B	Gary Mavity, V	90.75	43	P		P	08 43 30.9	-0.7
	baz=319,SNR=8.4							
633A	Saathoff Ranch	90.93	51	P		P	08 43 32.2	-0.4
	baz=315							
X40A	Basin Creek Fa	90.95	44	P		P	08 43 32.3	-0.2
	baz=319,SNR=6.5							
435B	Jarrell	90.95	49	P		P	08 43 32.5	-0.1
	baz=316							
534A	Blanco	90.95	50	P		P	08 43 32.3	-0.4
	baz=316,SNR=6.6							
336A	Riesel	90.96	48	P		P	08 43 32.8	+0.2
	baz=317							
UALR	University of	91.00	43	*e*P		P	08 43 33.0	+0.2
	comp=Z,13nm,1.0s							
ERPA	Erie	91.02	31	*e*P		P	08 43 33.3	+0.6
	comp=Z,62nm,1.6s							
138A	Matatall Enter	91.05	46	P		P	08 43 33.2	+0.2
	baz=318							
Y40A	Okolona	91.06	44	P		P	08 43 32.6	-0.4
	baz=319							
237A	Washetta, Mont	91.11	47	P		P	08 43 32.7	-0.6
	baz=317							
X41A	Kaden, Bauxite	91.12	43	P		P	08 43 33.1	-0.2
	baz=319,SNR=6.9							
832A	Faith Ranch, C	91.27	52	P		P	08 43 34.4	+0.3
	baz=315							
ACSO	Alum Creek Sta	91.31	34	*e*P		P	08 43 33.9	-0.2
	comp=Z,11nm,0.8s							
WLAR	White Oak Lake	91.40	44	*e*P		P	08 43 35.3	+0.7
	comp=Z,37nm,0.9s							
WCI	Wyandotte Cave	91.41	37	*e*P		P	08 43 34.9	+0.3
WCI				pmax		pmax		
	comp=Z,8.0nm,0.8s							
WCI	Wyandotte Cave	91.41	37	*e*P		P	08 43 34.9	+0.3
	comp=Z,7.7nm,0.8s							
634A	China Grove, S	91.49	50	P		P	08 43 35.5	+0.4
	baz=316							
238A	Jacksonville	91.51	47	P		P	08 43 35.4	+0.2
	baz=318							
Y41A	Eaglette Beard	91.53	44	P		P	08 43 35.0	-0.2
	baz=319,SNR=6.1							
Z40A	Long Farm, Mag	91.56	45	P		P	08 43 35.4	+0.1
	baz=318							
337A	Centerville	91.57	48	P		P	08 43 35.2	-0.3
	baz=317							
833A	Chaparral WMA,	91.60	52	P		P	08 43 36.0	+0.4
	baz=315							
536A	Bastrop	91.77	49	P		P	08 43 36.1	-0.3
	baz=316							
635A	Leesville	91.84	50	P		P	08 43 36.5	-0.3
	baz=316							
338A	Crockett	91.88	47	P		P	08 43 36.8	0.0
	baz=317							
Z41A	Richland Creek	91.89	44	P		P	08 43 36.6	-0.3
	baz=319							
140A	Cam and Jess,	91.92	45	P		P	08 43 37.2	+0.2
	baz=318							
N54A	Moraine State	91.99	32	P		P	08 43 36.6	-0.7
	baz=327							
Y42A	Garnett, Star	92.01	43	P		P	08 43 37.5	+0.1
	baz=319,SNR=6.1							
933A	Laredo	92.17	52	P		P	08 43 38.8	+0.5
	baz=315							
636A	Smothers Creek	92.20	50	P		P	08 43 38.5	+0.1
	baz=316							
537A	Green Hill Far	92.22	49	P		P	08 43 38.2	-0.3
	baz=317							
WVT	Waverly	92.31	39	*e*P		P	08 43 38.9	+0.1
WVT				pmax		pmax		
	comp=Z,8.0nm,0.9s							
WVT	Waverly	92.31	39	*e*P		P	08 43 38.9	+0.

baz=321
Y47A UCPARC, Winfie 94.05 41 P **P 08 43 46.2 -0.6**
baz=322
TZTN Tazewell 94.06 36 *e*P **P 08 43 47.2 +0.3**
comp=Z,26nm,1.7s
Z47A Carrollton 94.48 41 P **P 08 43 48.3 -0.5**
baz=322
CPCT Cooper Cave 94.48 38 *e*P **P 08 43 48.6 -0.2**
comp=Z,7.4nm,1.2s
TKL Tuckaleechee C 94.67 37 P **P 08 43 49.3 -0.4**
comp=Z,5.9nm,0.7s,baz=185,slow=0.4,SNR=12
TKL Tuckaleechee C 94.67 37 *e*P **P 08 43 49.6 -0.1**
comp=Z,8.8nm,0.9s
KEST Kesra 95.42 324 P **P 08 43 52.9 -0.3**
comp=Z,8.2nm,0.9s,baz=211,slow=7.0,SNR=4.0
347A Saraland 95.63 43 P **P 08 43 54.1 0.0**
baz=321
ES19 SONSECA Array 97.26 335 *e*P **P 08 44 01.6 +0.1**
ESDC Sonseca Array 97.31 335 P **P 08 44 00.7 -1.0**
comp=Z,0.3nm,0.3s,baz=19,slow=4.4,SNR=6.4
TORD Torodi Ar. Bea 117.97 317 PKP **PKPdf 08 49 14.1 -1.5**
comp=Z,0.4nm,0.4s,baz=19,slow=2.1,SNR=6.0
TORD PP **PP 08 50 23.9 -5.2**
comp=Z,2.1nm,0.9s,baz=27,slow=7.1,SNR=6.3
TORD PKKPbc **PKKPbc 08 59 34.7 +0.4**
comp=Z,1.0nm,1.0s,baz=252,slow=2.7,SNR=4.7
SOLC Bahia Solano 121.84 50 *e*P **PKPdf 08 49 28.8 +5.7**
BRRC Barranca, Sant 123.32 46 *e*P **PKPdf 08 49 26.1 +0.2**
BTLC Betulia, Santa 123.72 46 *e*P **PKPdf 08 49 25.4 -1.6**
RUSC La Rusia 124.66 46 *e*P **PKPdf 08 49 28.1 -1.1**
POPC Popayan, Colom 125.17 52 *e*P **PKPdf 08 49 24.4 -5.4**
OTAV Otavalo 125.79 56 *e*PKPdf **PKPdf 08 49 30.9 -0.3**
ATAH Atahualpa 131.21 62 PKP **PKPdf 08 49 41.6 +0.1**
comp=Z,2.1nm,0.4s,baz=342,slow=8.7,SNR=4.0
PTGA Pitinga 137.13 36 *e*PKPdf **PKPdf 08 49 52.1 0.0**
SNAA Sanae 142.05 197 PKP PKPpre 08 49 54.2
SNAA Sanae 142.05 197 *e*PKHKP PKPpre 08 49 52.8
SNAA Sanae 142.05 197 *e*PKPpre PKPpre 08 49 52.8
SAML Samuel 142.40 47 *e*PKPdf **PKPdf 08 49 59.8 -1.8**
VNA2 Neumayer--Watz 143.60 196 PKP PKPab 08 49 58.9 +0.2
baz=108,slow=2.2
VNA3 Neumayer Olymp 143.81 194 PKP PKPab 08 49 59.2 -0.3
VNA1 Neumayer--Stat 143.99 195 PKP PKPab 08 49 59.9 -0.2
LPAZ La Paz 144.74 61 PKP **PKPab 08 50 04.9 -0.4**
comp=Z,11nm,0.8s,baz=343,slow=4.8,SNR=22
SHEL Horse Pasture 145.32 301 *e*PKIKP **PKPdf 08 50 07.6 +0.9**
SHEL Horse Pasture 145.32 301 *e*PKPbc **PKPdf 08 50 07.6 +0.9**
PB01 IPOC Station P 146.86 69 *e*PKPdf **PKPdf 08 50 10.1 +0.9**
PB04 IPOC Station P 147.13 72 *e*PKPbc **PKPbc 08 50 11.7 -0.3**
RCBR Riachuelo 148.11 359 *e*PKPbc **PKPbc 08 50 15.0 +0.3**
LVC Limon Verde 148.22 71 *e*PKPdf **PKPdf 08 50 13.2 +1.4**
PMSA Palmer Station 148.49 158 *e*PKPbc **PKPab 08 50 16.6 -0.9**
LCO Las Campanas 150.14 83 *e*PKPbc **PKPbc 08 50 19.9 +0.2**
ROC1 El Roble 151.44 91 *e*PKPbc **PKPbc 08 50 22.5 -0.2**
ROCH El Roble 151.44 91 *e*P **PKPbc 08 50 21.5 -1.1**
PEL Peldehue 151.76 91 *i*P **PKPbc 08 50 23.0 -0.1**
CLCH Cerro Calan 151.96 91⇑*i*P **PKPbc 08 50 22.4 -1.2**
PLCA Paso Flores 153.48 107 PKPbc **PKPbc 08 50 26.3 -0.5**
comp=Z,9.0nm,1.0s,baz=269,slow=3.3,SNR=5.9
PLCA Paso Flores 153.48 107 *e*PKPbc **PKPbc 08 50 27.8 +1.1**
CPUP Villa Florida 158.89 63 PKP **PKPdf 08 50 25.7 -0.7**
comp=Z,4.2nm,1.1s,baz=41,slow=1.7,SNR=4.9
CPUP Villa Florida 158.89 63 *e*PKPdf **PKPdf 08 50 26.1 -0.3**

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*IDC **10** 08:33:09.1±1.6, 11°.84N×87°.67W, h0km, mb3.8/5, mb1 4.1/6, mb1mx3.7/40, mbtmp3.8/6, ML3.0/1, MS3.0/1, Ms1 3.0/1, ms1mx2.6/47, Error ellipse: s-maj=46.6km s-min=25.0km az=59.0*
*ISCJB **10** 08:33:17.4±0.7, 12°.19N±0°.05×88°.04W±0°.04, h36km±11km, mb3.8/5, MS2.8/1, Error ellipse: s-maj=10.0km s-min=3.8km az=30.3*
*CASC **10** 08:33:17.5±3.7, 12°.19N×88°.03W, h35km±999km, MD4.0, ML3.2*

ISC 10 08:33:17.8±1.9, 12°.30N±0°.08×87°.97W±0°.05, h26km±13km, n27, σ1≝47/41, mb3.9/5, Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CSGN	**Cosiguina Volc**	**0.78**	**31**	*e*P	**Pb**	**08 33 32.8**	**-0.1**
CSGN				*e*S	**Sn**	**08 33 46.7**	**+2.5**
CRIN	**San Cristobal**	**0.99**	**66**	*e*P	**Pn**	**08 33 36.6**	**+0.5**
CRIN				*e*S	**Sn**	**08 33 52.2**	**+3.0**
TEL3	**Telica 3**	**1.14**	**76**	*e*P	**Pn**	**08 33 37.9**	**-0.1**
TELN	**Telica**	**1.16**	**75**	*e*P	**Pn**	**08 33 38.0**	**-0.3**
TELN				*e*S	**Sn**	**08 33 56.1**	**+2.7**
VSM	**San Miguel**	**1.16**	**345**	*e*P	**Pn**	**08 33 38.4**	**-0.2**
LCY	**Lacayo**	**1.16**	**344**	*e*P	**Pn**	**08 33 38.5**	**0.0**
LCY				*e*S	**Sn**	**08 33 54.8**	**+1.2**
PACA	**Pacayal**	**1.21**	**344**	*e*P	**Pn**	**08 33 38.9**	**-0.3**
PACA				*e*S	**Sb**	**08 33 55.2**	**-0.2**
COPN	**Copaltepe**	**1.36**	**95**	*e*P	**Pn**	**08 33 40.5**	**-0.6**
COPN				*e*P	**Pn**	**08 33 40.5**	**-0.6**
COPN				*e*S	**Sn**	**08 33 57.6**	**-0.6**
COPN				*e*S	**Sb**	**08 33 59.0**	**-0.5**
MOMN	**Momotombo**	**1.41**	**85**	*e*P	**Pn**	**08 33 41.0**	**-0.8**
MOMN				*e*S	**Sn**	**08 33 59.2**	**-0.3**
SNVI	**San Vicente**	**1.55**	**327**	*e*P	**Pn**	**08 33 44.4**	**+0.5**
SNVI				*e*S	**Sn**	**08 34 04.1**	**+0.8**
APYN	**Apoyeque**	**1.59**	**92**	*e*P	**Pn**	**08 33 44.0**	**-0.2**
XAVN	**Gruta Xavier**	**1.62**	**95**	*e*P	**Pn**	**08 33 44.2**	**-0.4**
XAVN				*e*S	**Sn**	**08 34 04.9**	**+0.2**
TISN	**Laguna Tiscapa**	**1.67**	**95**	*e*P	**Pn**	**08 33 45.4**	**0.0**
TISN				*e*S	**Sn**	**08 34 06.7**	**+0.5**
LFRS	**El Faro**	**1.69**	**321**	*e*P	**Pn**	**08 33 45.7**	**0.0**
LFRS				*e*S	**Sn**	**08 34 07.0**	**+0.4**
MGAN	**Managua**	**1.69**	**95**	*e*P	**Pn**	**08 33 45.8**	**0.0**
MGAN				*e*S	**Sn**	**08 34 07.5**	**+0.8**
MGAN				AML	AML	08 34 11.0	
comp=N,287nm,0.4s							
LBRS	**Las Brisas**	**1.77**	**324**	*e*P	**Pn**	**08 33 47.0**	**+0.1**
LFU	**La Fuente**	**1.82**	**322**	*e*P	**Pn**	**08 33 47.1**	**-0.4**
JCR	**Jicaral**	**3.72**	**131**	*e*P	**Pn**	**08 34 14.3**	**+0.7**
CGA2	**Cerro Gallo 2**	**4.12**	**123**	*e*P	**Pn**	**08 34 22.6**	**+3.3**
BUS	**Buena Vista**	**4.96**	**123**	*e*P	**Pn**	**08 34 33.2**	**+2.1**
BUS				*e*S	**Sn**	**08 35 23.8**	**-4.1**
CMIG	**Matias Romero**	**8.21**	**306**	Pn	**Pn**	**08 35 17.1**	**+1.8**
comp=N,0.2nm,0.3s,baz=69,slow=8.6,SNR=4.3							
CMIG				Sn	**Sn**	**08 36 49.9**	**+2.6**
comp=N,0.1nm,0.3s,baz=42,slow=16,SNR=2.5							
ATAH	**Atahualpa**	**21.53**	**153**	P	P	08 37 54.8	-11
comp=N,3.5nm,0.8s,baz=295,slow=17,SNR=2.7							
SJG	**San Juan**	**21.83**	**72**	LR	LR	08 46 15.3	
comp=N,39nm,18.9s,baz=210,slow=36							
TXAR	**Lajitas Array**	**22.37**	**322**	P	**P**	**08 38 13.9**	**-0.3**
comp=N,4.6nm,0.8s,baz=138,slow=11,SNR=28							
TKL	**Tuckaleechee C**	**23.56**	**9**	P	**P**	**08 38 26.4**	**+0.1**
comp=N,3.6nm,0.8s,baz=181,slow=11,SNR=5.0							
PDAR	**Pinedale Array**	**35.66**	**332**	P	**P**	**08 40 14.7**	**+0.5**
comp=N,0.6nm,0.8s,baz=129,slow=9.8,SNR=5.2							
SCHQ	**Schefferville**	**45.57**	**17**	P	**P**	**08 41 32.6**	**-2.9**
comp=N,1.6nm,0.7s,baz=231,slow=6.5,SNR=4.0							

JMA 10 08:35:10.0±0.2, 37°.89N×143°.50E, h32km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.79**	**289**	P	Pn	08 35 39.7	+1.1
JIO				*e*S	Sn	08 36 01.6	+1.4
OFUJ	**Ofunato**	**1.86**	**310**	P	Pn	08 35 40.8	+1.1
OFUJ				*e*S	Sn	08 36 03.7	+1.6
JMK	**Ichinoseki**	**2.08**	**301**	P	Pn	08 35 44.1	+1.4
JMK				*e*S	Sn	08 36 09.0	+1.5
JMM	**Marumori**	**2.14**	**270**	P	Pn	08 35 44.5	+1.0
JMM				S	Sn	08 36 10.3	+1.3
JOU	**Okura**	**2.29**	**283**	P	Pn	08 35 47.4	+1.9
JOU				S	Sn	08 36 15.1	+2.5
JOM	**Ohasama**	**2.34**	**313**	P	Pn	08 35 47.7	+1.4
JOM				S	Sn	08 36 16.1	+2.2
JFT	**Otama**	**2.54**	**263**	P	Pn	08 35 50.5	+1.6
JFT				*e*S	Sn	08 36 20.2	+1.5
JYK	**Kaneyama**	**2.67**	**294**	P	Pn	08 35 53.0	+2.2
JYK				*e*S	Sn	08 36 25.0	+2.9
JRG	**Rokugo**	**2.70**	**305**	P	Pn	08 35 54.0	+2.8
JRG				*e*S	Sn	08 36 26.3	+3.5

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*ISCJB **10** 08:45:01.4±0.8, 6°.79N±0°.05×73°.07W±0°.06, h159km±6km, Error ellipse: s-maj=12.1km s-min=5.2km az=37.6*
*FUNV **10** 08:45:01.7, 6°.72N×73°.12W, h169km, MW2.5*
*RSNC **10** 08:45:04.0±0.7, 6°.77N×73°.11W, h143km±5km, ML2.1*

ISC 10 08:45:01.4±1.5, 6°.78N±0°.05×73°.06W±0°.06, h159km±9km, n18, σ1≝02/30, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BARC	**Barichara**	**0.22**	**213**	*e*P	**Pn**	**08 45 23.2**	**0.0**
BARC				*e*S	**Sn**	**08 45 38.1**	**-1.7**
BARC				*i*		08 45 40.9	
comp=Z,37nm,0.3s							
BTLC	**Betulia, Santa**	**0.25**	**304**	*e*P	**Pn**	**08 45 23.6**	**+0.3**
GIRC	**Giron, Santand**	**0.33**	**336**	*e*P	**Pn**	**08 45 23.4**	**+0.1**
PAMC	**Pamplona, Colo**	**0.66**	**33**	*e*P	**Pn**	**08 45 26.0**	**+0.7**
PAMC				*e*S	**Sn**	**08 45 42.9**	**-0.6**
BRRC	**Barranca, Sant**	**0.72**	**297**	*e*P	**Pn**	**08 45 25.1**	**0.0**
BRRC				*e*S	**Sn**	**08 45 42.1**	**-1.1**
BRRC				*i*		08 45 44.7	
comp=Z,32nm,0.2s							
RUSC	**La Rusia**	**0.88**	**181**	*e*P	**Pn**	**08 45 27.1**	**+0.3**
RUSC				*e*S	**Sn**	**08 45 45.7**	**-0.5**
RUSC				*i*		08 45 46.9	
comp=Z,12nm,0.3s							
CBRI	**Barrientos, No**	**0.97**	**16**	*e*P	**Pn**	**08 45 27.7**	**+0.6**
GRMC	**Gramalote, San**	**0.97**	**15**	*e*P	**Pn**	**08 45 29.1**	**+2.1**
GRMC				*e*S	**Sn**	**08 45 48.2**	**+1.5**
GRMC				*i*		08 45 51.3	
comp=Z,9.8nm,0.4s							
CAPV	**Capacho**	**1.31**	**34**	*e*P	**Pn**	**08 45 31.2**	**+1.1**
CAPV				*e*S	**Sn**	**08 45 53.0**	**+0.9**
OCAC	**Ocana**	**1.47**	**350**	*e*P	**Pn**	**08 45 32.4**	**+0.8**
OCAC				*e*S	**Sn**	**08 45 54.6**	**-0.3**
OCAC				*i*		08 45 59.5	
comp=Z,21nm,0.2s							
NORC	**Norcasia**	**2.17**	**236**	*e*P	**Pn**	**08 45 39.3**	**+0.2**
NORC				*e*S	**Sn**	**08 46 06.9**	**-1.3**
HELC	**Santa Helena**	**2.52**	**257**	*e*P	**Pn**	**08 45 45.0**	**+1.3**
HELC				*i*		08 46 22.1	
comp=Z,11nm,0.3s							
SOCV	**Socops**	**2.65**	**55**	*e*P	**Pn**	**08 45 45.5**	**+0.7**
SOCV				*e*S	**Sn**	**08 46 17.7**	**-0.8**
VIGV	**El Vigia**	**2.65**	**39**	*e*P	**Pn**	**08 45 45.8**	**+0.9**
VIGV				*e*S	**Sn**	**08 46 18.3**	**-0.3**
PRAC	**Prado**	**3.55**	**211**	*e*P	**Pn**	**08 45 57.0**	**+0.8**
PRAC				*e*S	**Sn**	**08 46 39.4**	**+0.6**
VIRV	**Villa del Rosa**	**3.76**	**10**	*e*P	**Pn**	**08 45 58.5**	**-0.3**
VIRV				*e*S	**Sn**	**08 46 41.2**	**-2.3**
CURV	**Curarigua**	**4.44**	**43**	*e*P	**Pn**	**08 46 08.1**	**+0.3**
BAUV	**El Baul**	**5.42**	**66**	*e*P	**Pn**	**08 46 20.1**	**-0.5**

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*CSEM **10** 08:49:51.4±0.4, 59°.32N×27°.17E, h2km, ML1.7, Error ellipse: s-maj=8.7km s-min=4.6km az=88.0, Mining explosion.*

HEL 10 08:49:52.0±0.3, 59°.30N×27°.31E, h0km, ML1.7, Explosion, Baltic States-Belarus-Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ARBE	**Arbavere**	**0.69**	**282**	Sg	Sg	08 50 11.3	-2.9
VSU	**Vasula**	**0.90**	**200**	*e*P	Pg	08 50 07.4	-1.7
SNR=90							
VSU				*e*S	Sg	08 50 20.3	-0.4
SNR=90							
VSU				Sb	Sb	08 50 21.2	-1.6
VJF	**Virojoki**	**1.25**	**6**	*e*P	Pb	08 50 16.2	-0.2
VJF				*e*SB	Sb	08 50 33.3	+0.4
VJF	**Virojoki**	**1.25**	**6**	Pn	Pg	08 50 16.1	+0.2
VJF				Sn	Sb	08 50 33.3	+0.4
PVF	**Pernaja**	**1.44**	**330**	*e*P	Pn	08 50 18.8	-0.6
PVF				MSG		08 50 35.5	
comp=Z,9.4nm,0.2s							
PVF				*e*S	Sg	08 50 37.1	-1.2
PVF	**Pernaja**	**1.44**	**330**	Pn	Pn	08 50 19.1	-0.3
PVF				Sg	Sg	08 50 37.2	-1.2
MEF	**Metsahovi**	**1.74**	**303**	*e*PG	Pn	08 50 23.4	0.0
MEF				*e*SG	Sn	08 50 44.8	-1.4
MEF	**Metsahovi**	**1.74**	**303**	Pg	Pn	08 50 23.4	0.0
MEF				Sg	Sn	08 50 44.8	-1.4
MTSE	**Matsula**	**1.90**	**253**	*e*P	Pn	08 50 25.8	+0.2
MTSE				*e*SN	Sn	08 50 49.6	-0.7
MTSE	**Matsula**	**1.90**	**253**	*e*P	Pn	08 50 25.8	+0.2
SNR=50							
MTSE				*e*S	Sn	08 50 48.6	-1.7
SNR=50							
MTSE				Sg	Sb	08 50 49.6	-2.2
FIA0	**FINESS Array S**	**2.23**	**345**	*e*PB	Pb	08 50 32.5	-0.7
FIA0				*e*S	Sn	08 50 59.4	+1.0
FIA0				*e*SG	Sb	08 51 01.8	+0.4
FIA0				MSG		08 51 02.4	
comp=Z,3.6nm,0.2s							
FIA0	**FINESS Array S**	**2.23**	**345**	Pg	Pb	08 50 32.5	-0.7
FIA0				Sg	Sb	08 51 00.8	-0.5
KAF	**Kangasniemi**	**2.86**	**350**	*e*S	Sn	08 51 15.1	+1.1
KAF				MSG		08 51 16.2	
comp=Z,1.8nm,0.2s							
KEF	**Keuruu**	**3.11**	**338**	*e*S	Sn	08 51 21.4	+1.3
KEF				MSG		08 51 23.5	
comp=Z,1.8nm,0.2s							
KEF	**Keuruu**	**3.11**	**338**	Sg	Sb	08 51 27.8	+1.1
RAF	**Rauma**	**3.27**	**304**	*e*P	Pn	08 50 46.2	+1.8
SNR=50							
RAF				*e*S	Sn	08 51 24.4	+0.5
comp=Z,3.3nm,0.2s,SNR=50							
AAL	**Aland**	**3.81**	**286**	Sg	Sb	08 51 49.8	+3.3
JOF	**Joensuu**	**4.11**	**26**	*e*P	Pn	08 50 58.6	+2.6
VAF	**Ylistaro**	**4.37**	**331**	*e*SG	Sg	08 52 08.2	-4.1
VAF	**Ylistaro**	**4.37**	**331**	Sg	Sg	08 52 08.6	-3.7

JMA 10 08:54:11.5, 36°.74N×140°.64E, h5km±1km, M1.4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.14**	**204**	P	Pg	08 54 14.4	+0.1
JHO				S	Sg	08 54 16.6	+0.4
ONAJ	**Iwakimizuishiy**	**0.38**	**19**	P	Pg	08 54 19.1	+0.2
JYT	**Yasato**	**0.62**	**215**	P	Pg	08 54 23.4	-0.1
JYT				S	Sg	08 54 32.1	+0.5
JFK	**Kawauchi**	**0.65**	**17**	P	Pg	08 54 23.9	-0.2
JFT	**Otama**	**0.81**	**343**	P	Pg	08 54 27.4	+0.3
JFT				S	Sg	08 54 38.4	+0.7
JAG	**Ashikaga**	**1.01**	**252**	S	Sg	08 54 43.6	-0.2

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*MOS **10** 08:54:14.6±1.5, 44°.12N×144°.88E, h116km, mb4.0/7, Error ellipse: s-maj=13.9km s-min=10.6km az=105.5*
*ISCJB **10** 08:54:15.0±0.4, 43°.66N±0°.06×145°.31E±0°.05, h136km±2km, mb3.8/15, Error ellipse: s-maj=9.7km s-min=4.8km az=163.6*
*SKHL **10** 08:54:15.9±0.2, 44°.30N×144°.80E, h108km±6km, mb4.9/3, msha5.6/3*
*JMA **10** 08:54:16.5±0.1, 43°.63N×145°.34E, h130km±1km, M3.4*
*IDC **10** 08:54:18.0±2.4, 43°.84N×145°.20E, h143km±12km, mb3.4/13, mb1 3.7/13, mb1mx3.4/50, mbtmp3.8/13, Error ellipse: s-maj=61.3km s-min=15.6km az=177.0*

ISC 10 08:54:16.0±0.6, 43°.71N±0°.05×145°.28E±0°.04, h131km±5km, n58, σ1≝40/65, mb3.7/15, 6C, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JRA	**Rausu**	**0.25**	**334**	P	**Pn**	**08 54 34.8**	**+0.7**
JRA				*e*S	**Sn**	**08 54 48.6**	**+0.7**
JNK	**Nakash**	**0.42**	**253**	P	**Pn**	**08 54 35.4**	**+0.6**
JNK				*e*S	**Sn**	**08 54 49.1**	**+0.1**
NEM2	**Nemuro 2**	**0.48**	**135**	P	**Pn**	**08 54 34.7**	**-0.4**
NEM2				*e*S	**Sn**	**08 54 48.3**	**-1.2**
YUK	**Yuzh-Kuril'sk**	**0.53**	**52***c*	*i*PN	**Pn**	**08 54 36.1**	**+0.7**
YUK				*i* S	**Sn**	**08 54 51.4**	**+1.3**
YUK				pmax	pmax		
comp=Z,2μm,0.4s							
YUK				pmax	pmax		
comp=E,231nm,0.2s							
YUK				pmax	pmax		
comp=N,118nm,0.1s							
YUK				smax	smax		
comp=E,715nm,0.6s							
YUK				smax	smax		
comp=N,453nm,0.5s							
YUK	**Yuzh-Kuril'sk**	**0.53**	**52**⇑*i*P	**Pn**	**08 54 36.1**	**+0.7**
YUK				AMB	AMB	08 54 36.6	
comp=N,2μm,0.4s							
YUK				AMB	AMB	08 54 36.6	
comp=N,120nm,0.2s							
YUK				AMB	AMB	08 54 36.6	
comp=N,230nm,0.2s							
YUK				*e*S	**Sn**	**08 54 51.4**	**+1.3**
YUK				A	A	08 54 52.3	
comp=N,450nm,0.5s							
YUK				A	A	08 54 52.3	
comp=N,720nm,0.5s							
JAK	**Akkeshi**	**0.83**	**211**	P	**Pn**	**08 54 37.5**	**0.0**
JAK				*e*S	**Sn**	**08 54 53.4**	**-0.4**
JTKR	**Abashiri--Toko**	**1.02**	**285**	P	**Pn**	**08 54 40.1**	**+0.9**
JTKR				*e*S	**Sn**	**08 54 57.3**	**+0.5**
SHO	**Shikotan**	**1.14**	**81***c*	*i*PN	**Pn**	**08 54 40.2**	**0.0**
SHO				*i* S	**Sn**	**08 54 58.2**	**-0.5**
SHO				pmax	pmax		
comp=Z,474nm,0.3s							
SHO				pmax	pmax		
comp=N,100nm,0.2s							
SHO				pmax	pmax		
comp=E,213nm,0.3s							
SHO				smax	smax		
comp=N,4μm,0.4s							
SHO				smax	smax		
comp=E,2μm,0.4s							
SHO	**Shikotan**	**1.14**	**81**⇑*i*P	**Pn**	**08 54 40.3**	**0.0**
SHO				AMB	AMB	08 54 40.5	
comp=E,100nm,0.3s							
SHO				AMB	AMB	08 54 40.5	
comp=E,210nm,0.3s							
SHO				AMB	AMB	08 54 40.5	
comp=E,470nm,0.3s							
SHO				*i* S	**Sn**	**08 54 58.4**	**-0.3**
SHO				A	A	08 54 59.5	
comp=E,4μm,0.4s							
SHO				A	A	08 54 59.5	
comp=E,2μm,0.4s							
JAR	**Ashorobuto**	**1.17**	**250**	P	**Pn**	**08 54 41.5**	**+0.8**
JAR				*e*S	**Sn**	**08 55 00.1**	**+0.7**
JOB	**Onbets**	**1.33**	**233**	P	**Pn**	**08 54 42.8**	**+0.5**
JOB				*e*S	**Sn**	**08 55 02.0**	**-0.2**
JMP	**Maruseppu**	**1.42**	**283**	P	**Pn**	**08 54 44.2**	**+0.9**
JMP				*e*S	**Sn**	**08 55 04.8**	**+0.7**
JCH	**Churui**	**1.78**	**233**	P	**Pn**	**08 54 47.5**	**+0.1**
JCH				*e*S	**Sn**	**08 55 09.8**	**-1.5**
JKK2	**Kamakawa 2**	**1.84**	**276**	P	**Pn**	**08 54 49.2**	**+1.1**
JKK2				*e*S	**Sn**	**08 55 13.4**	**+0.8**
ASAJ	**Asahikawa**	**1.98**	**283**	P	**Pn**	**08 54 51.5**	**+1.7**
comp=E,48nm,0.3s,baz=98,slow=8.4,SNR=345							
ASAJ				S	**Sn**	**08 55 17.5**	**+1.9**
comp=E,1.3nm,0.3s,baz=21,slow=29,SNR=9.5							
ASAJ	**Asahikawa**	**1.98**	**283**	P	**Pn**	**08 54 51.4**	**+1.7**
ASAJ				*e*S	**Sn**	**08 55 17.4**	**+1.8**
JFR	**Furan**	**2.03**	**255**	P	**Pn**	**08 54 51.1**	**+0.7**
JFR				*e*S	**Sn**	**08 55 17.0**	**+0.3**
ERM	**Erimo**	**2.30**	**223***c*	*i*PN	**Pn**	**08 54 54.5**	**+0.7**
ERM	**Erimo**	**2.30**	**223**⇑*i*P	**Pn**	**08 54 54.5**	**+0.7**
KUR	**Kuril'sk**	**2.40**	**50**	*e*PN	**Pn**	**08 54 56.4**	**+1.5**
KUR				*i* S	**Sn**	**08 55 27.8**	**+2.9**
KUR				smax	smax		
comp=N,25nm,0.1s							
KUR				smax	smax		
comp=E,97nm,0.2s							
KUR	**Kuril'sk**	**2.40**	**50**	*e*P	**Pn**	**08 54 56.1**	**+1.2**
KUR				*i* S	**Sn**	**08 55 26.2**	**+1.3**
KUR				A	A	08 55 31.4	
comp=E,250nm,0.2s							
KUR				A	A	08 55 31.4	
comp=E,100nm,0.2s							
YSS	**Yuzh-Sakhalins**	**3.70**	**332**	*e*PN	**Pn**	**08 55 09.8**	**-2.0**
YSS	**Yuzh-Sakhalins**	**3.70**	**332**	*e*P	Pn	08 55 01.8	-10
UGL	**Uglegorsk**	**5.81**	**339**	*e*P	Pn	08 55 30.8	-9.1
TYV	**Tymovskoe**	**7.38**	**347**	*e*P	Pn	08 55 52.4	-8.5
HABR	**Khabarovsk**	**8.55**	**307**	*e*PN	Pn	08 56 09.5	-7.3
HABR				*e*S	Sn	08 57 39.9	-12
HABR				pmax	pmax		
comp=N,3.0nm,0.3s							
HABR				pmax	pmax		
comp=E,17nm,0.7s							
HABR				pmax	pmax		
comp=Z,6.0nm,0.7s							
HABR				MLR	MLR		
comp=Z,79nm,13.0s							
HABR	**Khabarovsk**	**8.55**	**307**	*e*P	Pn	08 56 09.5	-7.3
HABR				AMB	AMB	08 56 10.0	
comp=Z,20nm,0.7s							
HABR				AMB	AMB	08 56 10.0	
comp=Z,10.0nm,0.7s							
HABR				AMS	AMS	08 59 54.0	
comp=Z,100nm,13.0s							
EKMR	**Ekimchan**	**12.43**	**323**	*e*P	Pn	08 57 01.6	-6.7
SEY	**Seymchan**	**19.70**	**10**	*i* P	**P**	**08 58 30.9**	**-3.8**
SEY	**Seymchan**	**19.70**	**10**	*i* P	**P**	**08 58 30.9**	**-3.8**
YAK	**Yakutsk**	**20.52**	**339**	*e*P	**P**	**08 58 40.8**	**-2.8**
ULN	**Ulaanbaatar**	**26.79**	**292**	*i* P	**P**	**08 59 42.8**	**-0.9**
ULN	**Ulaanbaatar**	**26.79**	**292**	*i* P	**P**	**08 59 42.8**	**-0.9**
BILL	**Bilibino**	**26.79**	**17**	*e*P	**P**	**08 59 43.3**	**0.0**
H11N2	**WAKE ISLAND Hy**	**29.99**	**136**	T	T	09 31 27.0	
baz=328,slow=75,SNR=25							
H11N1	**WAKE ISLAND Hy**	**30.00**	**136**	T	T	09 31 27.7	
baz=328,slow=75,SNR=27							
H11N3	**WAKE ISLAND Hy**	**30.00**	**136**	T	T	09 31 28.3	
baz=328,slow=75,SNR=30							
H11S1	**WAKE ISLAND Hy**	**30.93**	**138**	T	T	09 32 33.5	
baz=330,slow=76,SNR=70							
H11S3	**WAKE ISLAND Hy**	**30.93**	**138**	T	T	09 32 42.7	
baz=330,slow=76,SNR=53							
H11S2	**WAKE ISLAND Hy**	**30.94**	**138**	T	T	09 32 38.3	
baz=330,slow=76,SNR=52							
ILAR	**Eielson Array**	**42.32**	**36**	P	**P**	**09 01 56.2**	**-0.2**
comp=Z,0.9nm,0.6s,baz=252,slow=5.7,SNR=19							
MKAR	**Makanchi Array**	**43.40**	**297**	P	**P**	**09 02 05.7**	**+0.3**
comp=Z,1.1nm,0.6s,baz=85,slow=8.5,SNR=7.

λ-139.00000°. NP2:φ±222.00000°, δ71.00000°, λ-67.00000°.
IDC **10** 08:54:32.6±1.0, 37.′69N×143.′70E, h0km, mb3.9/21, mb1 4.1/27, mb1mx4.1/58, mbtmp4.0/27, ML3.9/5, MS3.6/2, Ms1 3.6/2, ms1mx3.4/65, Error ellipse: s-maj=25.2km s-min=15.0km az=157.0
JMA **10** 08:54:34.9±0.3, 37.′75N×143.′47E, h29km, M4.5
MOS **10** 08:54:46.4±2.0, 38.′60N×142.′28E, h31km, mb4.7/21, Error ellipse: s-maj=9.4km s-min=7.5km az=105.3
BJI **10** 08:54:47.4, 38.′04N×142.′28E, h54km, mb4.7/38, mB5.1/23, Ms5.4/13, Ms7 5.3/12
NEIC **10** 08:54:50.0±0.8, 38.′19N×142.′14E, h59km±8km, mb5.0/39, Error ellipse: s-maj=8.8km s-min=5.8km az=162.0
ISC 10 08:54:38.4±0.6, 37.′74N±0.′06×143.′45E±0.′06, h35km, n199, σ2.38/156, **mb4.7**/79, **MS5.1**/4, **1C-1D, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.81**	**294**	P	**Pn**	**08 55 05.2**	**-1.8**
JFK	**Kawauchi**	**2.08**	**261**	P	**Pn**	**08 55 09.0**	**-1.8**
JMM	**Marumori**	**2.11**	**274**	P	**Pn**	**08 55 09.8**	**-1.4**
JMM				S	**Sn**	**08 55 35.0**	**-1.2**
JMK	**Ichinoseki**	**2.13**	**305**	P	**Pn**	**08 55 09.7**	**-1.8**
ONAJ	**Iwakimizuishiy**	**2.21**	**254**	P	**Pn**	**08 55 11.0**	**-1.6**
ONAJ				S	**Sn**	**08 55 37.4**	**-1.3**
JOM	**Ohasama**	**2.42**	**316**	P	**Pn**	**08 55 13.6**	**-1.9**
JFT	**Otama**	**2.48**	**266**	P	**Pn**	**08 55 15.9**	**-0.4**
JFT				S	**Sn**	**08 55 45.6**	**+0.2**
JYK	**Kaneyama**	**2.70**	**297**	P	**Pn**	**08 55 18.5**	**-0.9**
JAG	**Ashikaga**	**3.46**	**249**	P	**Pn**	**08 55 28.9**	**-0.8**
JAG				*e*S	**Sn**	**08 56 09.5**	**+0.1**
BSO1	**Boso 1**	**3.67**	**214**	P	**Pn**	**08 55 30.0**	**-2.2**
BSO1				S	**Sn**	**08 56 13.5**	**-0.4**
JRY	**Ryogami san**	**4.03**	**246**	P	**Pn**	**08 55 36.8**	**-0.9**
JRY				S	**Sn**	**08 56 21.1**	**-2.6**
JOD2	**Odawara 2**	**4.30**	**236**	P	**Pn**	**08 55 40.2**	**-1.1**
MJAR	**Matsushiro Arr**	**4.36**	**256**	Pn	**Pn**	**08 55 42.7**	**+0.6**
	22nm,0.3s,baz=90,slow=15,SNR=101						
MJAR				Sn	**Sn**	**08 56 34.2**	**+2.6**
	4.4nm,0.3s,baz=73,slow=24,SNR=3.3						
MJAR				LR	LR	08 57 27.6	
	comp=Z,637nm,18.5s,baz=75,slow=39						
MJAR	**Matsushiro Arr**	**4.36**	**256**	P	**Pn**	**08 55 42.7**	**+0.6**
MJAR						08 56 34.2	
MJAR	**Matsushiro Arr**	**4.36**	**256**	Pn	**Pn**	**08 55 42.7**	**+0.6**
MJAR				Sn	**Sn**	**08 56 34.2**	**+2.6**
MAJO	**Matsushiro**	**4.36**	**256**	*e*P	**Pn**	**08 55 43.0**	**+0.9**
MAJO	**Matsushiro**	**4.36**	**256**	*e*Pn	**Pn**	**08 55 43.0**	**+0.9**
MAT	**Matsushiro**	**4.36**	**256**	P	**Pn**	**08 55 42.7**	**+0.6**
MAT				*e*S	**Sn**	**08 56 31.3**	**-0.4**
MAT	**Matsushiro**	**4.36**	**256**	P	**Pn**	**08 55 43.1**	**+1.0**
MJB9	**Matsu-Tunnel**	**4.36**	**256**	*e*Pn	**Pn**	**08 55 42.9**	**+0.7**
JYN	**Shimob**	**4.54**	**242**	P	**Pn**	**08 55 44.5**	**-0.1**
JHJ	**Hachijo jima 2**	**5.50**	**214**	Pn	**Pn**	**08 55 55.0**	**-2.7**
	23nm,0.3s,baz=99,slow=21,SNR=9.1						
JHJ				Sn	**Sn**	**08 56 53.5**	**-6.2**
	65nm,0.3s,baz=82,slow=22,SNR=6.3						
INU	**Inuyama**	**5.70**	**247**	*e*Pn	**Pn**	**08 56 01.7**	**+1.1**
ASAJ	**Asahikawa**	**6.41**	**354**	Pn	**Pn**	**08 56 07.8**	**-2.4**
	1.9nm,0.3s,baz=217,slow=14,SNR=2.5						
ASAJ				Sn	**Sn**	**08 57 22.7**	**+0.6**
	0.5nm,0.3s,baz=126,slow=19,SNR=4.0						
ASAJ				LR	LR	08 58 51.5	
	comp=Z,554nm,19.3s,baz=192,slow=40						
ASAJ	**Asahikawa**	**6.41**	**354**	P	**Pn**	**08 56 07.8**	**-2.4**
ASAJ				pmax	pmax		
	comp=Z,2.0nm,0.3s						
ASAJ				MLR	MLR		
	comp=Z,555nm,19.3s						
ASAJ	**Asahikawa**	**6.41**	**354**	Pn	**Pn**	**08 56 07.8**	**-2.4**
ASAJ				Sn	**Sn**	**08 57 22.7**	**+0.6**
YUK	**Yuzh-Kuril'sk**	**6.55**	**15**	*e*P	**Pn**	**08 56 12.7**	**+0.5**
YUK				*e*S	**Sn**	**08 57 18.6**	**-7.0**
YUK				pmax	pmax		
	comp=Z,103nm,0.5s						
SHO	**Shikotan**	**6.64**	**22**	P	**Pn**	**08 56 12.4**	**-1.0**
SHO				pmax	pmax		
	comp=Z,31nm,0.5s						
KUR	**Kuril'sk**	**8.19**	**22**	P	**Pn**	**08 56 33.7**	**-0.9**
KUR				pmax	pmax		
	comp=Z,41nm,0.8s						
JCJ	**Chichijima**	**10.66**	**186**	Pn	Pn	08 57 02.6	-6.1
	baz=0.0,slow=10						
JCJ				Sn	Sn	08 58 53.5	-13
	comp=Z,6.8nm,0.3s,baz=342,slow=20,SNR=4.1						
USRK	**Ussuriysk Ar.**	**10.80**	**310**	Pn	**Pn**	**08 57 10.3**	**-0.2**
	comp=Z,0.6nm,0.3s,baz=116,slow=13,SNR=12						
JNU	**Nakatsue**	**11.24**	**250**	Pn	**Pn**	**08 57 17.0**	**+0.4**
	comp=Z,0.7nm,0.3s,baz=90,slow=6.1,SNR=3.2						
JNU	**Nakatsue**	**11.24**	**250**	*e*Pn	**Pn**	**08 57 17.5**	**+0.9**
KSRS	**Korea Array**	**12.32**	**273**	Pn	**Pn**	**08 57 33.2**	**+1.9**
	comp=Z,0.2nm,0.3s,baz=86,slow=14,SNR=16						
KSRS	**Korea Array**	**12.32**	**273**	P	**Pn**	**08 57 33.2**	**+1.9**
KS01	**Wonju Array Si**	**12.35**	**274**	*e*Pn	**Pn**	**08 57 27.9**	**-3.7**
KS15	**Wonju Array Si**	**12.36**	**273**	*e*Pn	**Pn**	**08 57 28.9**	**-2.9**
KSAR	**Wonju Array Be**	**12.36**	**273**	Pn	**Pn**	**08 57 33.2**	**+1.5**
KSAR	**Wonju Array Be**	**12.36**	**273**	*e*P	**Pn**	**08 57 33.2**	**+1.5**
KLR	**Kul'dur**	**14.27**	**327**	Pn	**Pn**	**08 57 54.0**	**-3.7**
	comp=Z,0.3nm,0.3s,baz=132,slow=11,SNR=12						
KLR	**Kul'dur**	**14.27**	**327**	P	**Pn**	**08 57 54.1**	**-3.7**
KLR	**Kul'dur**	**14.27**	**327**	Pn	**Pn**	**08 57 54.0**	**-3.7**
CN2	**Changchun**	**14.92**	**300**	*e*P	**Pn**	**08 58 02.1**	**-4.5**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
DL2	**Dalian**	**17.16**	**281**	P	P	08 58 45.7	+9.0
DL2				pmax	pmax		
	comp=Z,39nm,1.3s						
PEA0	**Petropavlovsk-**	**18.28**	**28**	*e*P	Pn	08 59 00.4	+11
NJ2	**Nanjing**	**20.93**	**262**	*e*P	Pn	08 59 21.3	+0.6
NJ2				S	**S**	**09 03 02.9**	**-6.5**
NJ2				pmax	pmax		
	comp=Z,20nm,0.5s						
NJ2				pmax	pmax		
	comp=Z,440nm,5.4s						
NJ2				LR	LR		
	comp=Z,4μm,18.6s						
NJ2				LR	LR		
	comp=Z,3μm,15.3s						
NJ2				LR	LR		
	comp=Z,2μm,15.6s						
BJI	**Beijing**	**21.33**	**285**	P	**P**	**08 59 21.1**	**-1.1**
BJI				pP	**pP**	**08 59 31.4**	**-0.1**
BJI				sP	**sP**	**08 59 36.3**	**+0.4**
BJI				S	S	09 03 03.8	-13
BJI				pmax	pmax		
	comp=Z,25nm,1.1s						
BJI				LR	LR		
	comp=Z,10μm,14.4s						
BJI				LR	LR		
	comp=Z,7μm,14.4s						
BJI				LR	LR		
	comp=Z,12μm,18.6s						
YULB	**Yu-li**	**23.76**	**239**	*e*P	**P**	**08 59 51.0**	**+3.4**
	comp=Z,33nm,1.3s						
HHC	**Hu-ho-hao-te**	**24.80**	**287**	*e*P	**P**	**08 59 56.5**	**-0.7**
HHC				pP	pP	09 00 07.7	+0.5
HHC				sP	sP	09 00 16.3	+4.9
HHC				S	S	09 04 06.6	-11
HHC				pmax	pmax		
	comp=Z,27nm,0.8s						
HHC				pmax	pmax		
	comp=Z,250nm,4.2s						
YAK	**Yakutsk**	**25.77**	**345**	*e*P	P	09 00 17.3	+12
YAK				pmax	pmax		
	comp=Z,32nm,0.9s						
YAK				pmax	pmax		
	comp=N,13nm,1.1s						
YAK				pmax	pmax		
	comp=E,6.0nm,0.9s						
SEY	**Seymchan**	**25.81**	**9**	P	**P**	**09 00 06.6**	**+0.6**
	comp=E,3.3nm,0.8s,baz=179,slow=9.6,SNR=5.2						
SEY	**Seymchan**	**25.81**	**9**	P	**P**	**09 00 06.6**	**+0.6**
SEY	**Seymchan**	**25.81**	**9**	P	**P**	**09 00 06.6**	**+0.6**
H11N2	**WAKE ISLAND Hy 27.16**	**125**		T	T	09 28 32.0	
	baz=317,slow=74,SNR=35						
H11N1	**WAKE ISLAND Hy 27.17**	**125**		T	T	09 28 32.6	
	baz=317,slow=74,SNR=31						
H11N3	**WAKE ISLAND Hy 27.18**	**125**		T	T	09 28 35.5	
	baz=317,slow=74,SNR=39						
BOD	**Bodaibo**	**27.83**	**326**	*e*P	**P**	**09 00 23.2**	**-1.0**
BOD				pmax	pmax		
	comp=Z,14nm,1.6s						
H11S1	**WAKE ISLAND Hy 27.93**	**127**		T	T	09 29 33.6	
	baz=319,slow=76,SNR=17						
H11S3	**WAKE ISLAND Hy 27.93**	**127**		T	T	09 29 36.0	
	baz=319,slow=76,SNR=18						
H11S2	**WAKE ISLAND Hy 27.95**	**127**		T	T	09 29 34.2	
	baz=319,slow=76,SNR=16						
XAN	**Xi'an**	**28.12**	**273**	P	P	09 00 41.8	+15
XAN				pP	sP	09 00 48.1	+6.7
XAN				pmax	pmax		
	comp=Z,7.0nm,1.0s						
ULN	**Ulaanbaatar**	**28.32**	**303**	*d*P	**P**	**09 00 31.0**	**+2.1**
ULN				pmax	pmax		
	comp=Z,11nm,1.2s						
ULN	**Ulaanbaatar**	**28.32**	**303**	*e*P	**P**	**09 00 30.4**	**+1.5**
	comp=Z,10nm,1.1s						
ENH	**Enshi**	**29.01**	**265**	*e*P	**P**	**09 00 37.0**	**+2.0**
	comp=Z,26nm,1.0s						
TLY	**Talaya**	**31.12**	**310**	P	**P**	**09 00 55.8**	**+2.4**
	comp=Z,2.9nm,0.7s,baz=70,slow=12,SNR=2.6						
TLY	**Talaya**	**31.12**	**310**	P	**P**	**09 00 55.8**	**+2.4**
TLY				pmax	pmax		
	comp=Z,3.0nm,0.7s						
TLY	**Talaya**	**31.12**	**310**	*e*P	**P**	**09 00 54.9**	**+1.4**
	comp=Z,11nm,1.1s						
ZAK	**Zakamensk**	**31.13**	**307**	*e*P	**P**	**09 00 55.5**	**+1.9**
ZAK				pmax	pmax		
	comp=Z,7.0nm,1.4s						
LZH	**Lanzhou**	**31.55**	**279**	*e*P	**P**	**09 00 57.2**	**-0.4**
LZH				pP	pP	09 01 08.4	+0.7
LZH				sP	sP	09 01 14.5	+2.6
LZH				PP	**PnPn**	**09 01 57.8**	**-3.7**
LZH				*e*S	**S**	**09 05 59.2**	**-4.8**
LZH				sS	sS	09 06 20.2	-0.4
LZH				SS	**ScP**	**09 07 40.1**	**+10**
LZH				pmax	pmax		
	comp=Z,22nm,1.0s						
LZH				pmax	pmax		
	comp=Z,160nm,4.6s						
LZH				LR	LR		
	comp=Z,7μm,15.5s						
LZH				LR	LR		
	comp=Z,3μm,13.1s						
LZH				LR	LR		
	comp=Z,8μm,16.0s						
GYA	**Guiyang**	**32.94**	**261**	P	**P**	**09 01 12.5**	**+2.7**
GYA				pP	sP	09 01 25.4	+1.3
GYA				PP	**PnPn**	**09 02 20.0**	**+0.7**
GYA				PcP	PcP	09 04 01.6	+8.1
GYA				S	**S**	**09 06 20.9**	**-4.7**
GYA				sS	sS	09 06 41.4	-0.9
GYA				ScP	**ScP**	**09 07 39.8**	**+4.9**
GYA				SS	**SnSn**	**09 08 14.0**	**-10**
GYA				ScS	**ScS**	**09 11 37.3**	**+2.0**
GYA				pmax	pmax		
	comp=Z,20nm,0.9s						
GYA				pmax	pmax		
	comp=Z,120nm,6.0s						
GYA				LR	LR		
	comp=Z,740nm,16.8s						
GYA				LR	LR		
	comp=Z,650nm,17.0s						
GYA				LR	LR		
	comp=Z,660nm,16.2s						
CD2	**Chengdu**	**33.30**	**270**	P	**P**	**09 01 12.1**	**-0.7**
CD2				sP	sP	09 01 31.1	+4.0
CD2				PP	**PnPn**	**09 02 25.7**	**+2.0**
CD2				S	**S**	**09 06 23.0**	**-7.9**
CD2				sS	sS	09 06 45.3	-2.3
CD2				pmax	pmax		
	comp=Z,10.0nm,0.4s						
CD2				pmax	pmax		
	comp=Z,330nm,3.9s						
GTA	**Gaotai**	**33.91**	**287**	*e*P	**P**	**09 01 19.6**	**+1.4**
GTA				pP	pP	09 01 28.7	+0.4
GTA				pmax	pmax		
	comp=Z,8.0nm,0.8s						
TIXI	**Tiksi**	**34.80**	**352**	⇑*i*P	**P**	**09 01 24.8**	**-0.5**
TIXI				pmax	pmax		
	comp=Z,4.0nm,1.5s						
KMI	**Kunming**	**36.67**	**262**	P	**P**	**09 01 44.6**	**+2.5**
KMI				pmax	pmax		
	comp=Z,8.0nm,0.5s						
KMI				pmax	pmax		
	comp=Z,350nm,10.0s						
WMQ	**Urumqi**	**41.98**	**297**	*e*P	**P**	**09 02 27.0**	**+1.0**
WMQ				pmax	pmax		
	comp=Z,4.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,200nm,11.8s						
ZAA0	**Zalesovo Array**	**42.65**	**312**	*e*P	**P**	**09 02 34.2**	**+3.0**
ZALV	**Zalesovo Beam**	**42.65**	**312**	P	**P**	**09 02 31.0**	**-0.2**
	comp=Z,0.8nm,0.4s,baz=102,slow=13,SNR=3.0						
ZALV				PcP	**PcP**	**09 04 22.8**	**+0.1**
	comp=Z,0.7nm,0.4s,baz=108,slow=4.7,SNR=2.7						
ZALV	**Zalesovo Beam**	**42.65**	**312**	P	**P**	**09 02 31.0**	**-0.2**
ZALV						09 04 22.8	
ZALV				pmax	pmax		
	comp=Z,1.0nm,0.4s						
ZALV				pmax	pmax		
	comp=Z,1.0nm,0.4s						
ZALV	**Zalesovo Beam**	**42.65**	**312**	P	**P**	**09 02 31.1**	**-0.2**
ZALV				PcP	**PcP**	**09 04 22.8**	**+0.1**
CMAR	**Chiang Mai Arr**	**43.24**	**256**	P	**P**	**09 02 37.6**	**+1.1**
	comp=Z,0.6nm,0.4s,baz=45,slow=7.8,SNR=2.7						
CMAR	**Chiang Mai Arr**	**43.24**	**256**	P	**P**	**09 02 37.6**	**+1.1**
CMAR	**Chiang Mai Arr**	**43.24**	**256**	P	**P**	**09 02 37.6**	**+1.1**
NRIK	**Noril'sk**	**43.32**	**335**	P	**P**	**09 02 36.8**	**+0.3**
	comp=Z,1.9nm,0.5s,baz=180,slow=1.0,SNR=2.8						
NRIK	**Noril'sk**	**43.32**	**335**	P	**P**	**09 02 36.8**	**+0.3**
NRIK				pmax	pmax		
	comp=Z,2.0nm,0.5s						
BNDI	**Bandanaira**	**43.89**	**200**	P	P	09 02 49.7	+8.1
	comp=Z,3μm,1.7s,comp=Z,43μmcomp=Z,104μm						
TT01	**Tatalina**	**43.91**	**35**	*e*P	P	09 02 52.2	+11
TTA	**Tatalina**	**43.92**	**35**	*e*P	P	09 02 51.6	+10
TTA	**Tatalina**	**43.92**	**35**	*e*P	P	09 02 51.6	+10
	comp=Z,14nm,1.6s						
MK01	**Makanchi Array**	**45.12**	**302**	*e*P	**P**	**09 02 51.5**	**+0.3**
MK31	**Makanchi Array**	**45.12**	**302**	*e*P	**P**	**09 02 52.0**	**+0.7**
MK31	**Makanchi Array**	**45.12**	**302**	*e*P	**P**	**09 02 52.0**	**+0.7**
MKAR	**Makanchi Array**	**45.12**	**302**	P	**P**	**09 02 51.8**	**+0.5**
	comp=Z,2.7nm,0.6s,baz=89,slow=10,SNR=13						
MKAR	**Makanchi Array**	**45.12**	**302**	*e*P	**P**	**09 02 52.0**	**+0.7**
MKAR	**Makanchi Array**	**45.12**	**302**	*e*P	**P**	**09 02 52.0**	**+0.7**
MAKZ	**Makanchi**	**45.33**	**302**	*e*P	**P**	**09 02 53.3**	**+0.4**
MAKZ				pmax	pmax		
	comp=Z,8.0nm,1.2s						
MAKZ	**Makanchi**	**45.33**	**302**	*e*P	**P**	**09 02 53.3**	**+0.4**
	comp=Z,8.4nm,1.2s						
RSO	**Redoubt South**	**45.34**	**39**	*e*P	P	09 03 04.4	+11
PPLA	**Purkeypile**	**45.66**	**35**	*e*P	P	09 03 07.7	+12
	comp=Z,27nm,1.4s						
SPU	**Mount Spurr**	**45.69**	**38**	*e*P	P	09 03 06.9	+11
BPAW	**Bear Paw Mtn.**	**46.24**	**34**	*e*P	P	09 03 11.5	+12
	comp=Z,12nm,1.5s						
KTH	**Kantishna Hill**	**46.26**	**34**	*e*P	P	09 03 11.8	+12
	comp=Z,16nm,1.2s						
MLY	**Manley**	**46.39**	**32**	*e*P	P	09 03 12.6	+12
	comp=Z,6.6nm,1.1s						
KURK	**Kurchatov**	**46.78**	**308**	*e*P	**P**	**09 03 04.3**	**+0.1**
KURK				pmax	pmax		
	comp=Z,14nm,0.7s						
KURK	**Kurchatov**	**46.78**	**308**	*e*P	**P**	**09 03 04.3**	**+0.1**
	comp=Z,14nm,0.7s						
RC01	**Rabbit Creek A**	**46.81**	**38**	*e*P	P	09 03 15.2	+11
	comp=Z,9.8nm,1.0s						
KURBB	**Kurchatov Arra**	**46.85**	**308**	P	**P**	**09 03 04.8**	**0.0**
	comp=Z,2.8nm,0.6s,baz=83,slow=8.0,SNR=21						
BWN	**Browne**	**46.91**	**34**	*e*P	P	09 03 17.6	+13
	comp=Z,44nm,1.3s						
PMR	**Palmer**	**47.09**	**37**	*e*P	P	09 03 17.2	+11
PMR				pmax	pmax		
	comp=Z,12nm,1.1s						
PMR	**Palmer**	**47.09**	**37**	*e*P	P	09 03 17.1	+11
	comp=Z,12nm,1.1s						
RND	**Reindeer**	**47.18**	**35**	*e*P	P	09 03 18.1	+11
RND	**Reindeer**	**47.18**	**35**	*e*P	P	09 03 18.1	+11
	comp=Z,15nm,1.2s						
MDM	**Murphy Dome**	**47.45**	**32**	*e*P	P	09 03 20.5	+11
	comp=Z,13nm,1.0s						
WRH	**Wood River Hil**	**47.51**	**33**	*e*P	P	09 03 20.9	+11
	comp=Z,22nm,1.9s						
ILAR	**Eielson Array**	**48.03**	**33**	P	**P**	**09 03 12.4**	**-1.3**
	comp=Z,1.4nm,0.9s,baz=266,slow=6.5,SNR=9.2						
ILAR	**Eielson Array**	**48.03**	**33**	P	**P**	**09 03 12.4**	**-1.3**
ILAR				pmax	pmax		
	comp=Z,1.0nm,0.8s						
ILB	**Eielson Array**	**48.03**	**33**	*e*P	P	09 03 24.1	+10
IL1	**Eielson Array**	**48.03**	**33**	*e*P	P	09 03 24.2	+10
DIV	**Divide**	**48.73**	**38**	*e*P	P	09 03 31.0	+12
	comp=Z,40nm,1.4s						
MENT	**Mentasta**	**49.53**	**35**	*e*P	P	09 03 36.3	+11
	comp=Z,8.6nm,1.2s						
BALM	**Baldy**	**50.40**	**37**	*e*P	P	09 03 43.4	+11
BALM				pmax	pmax		
	comp=Z,11nm,1.2s						
BALM	**Baldy**	**50.40**	**37**	*e*P	P	09 03 43.4	+11
	comp=Z,11nm,1.2s						
TKM2	**Tokmak 2**	**50.72**	**298**	*e*P	**P**	**09 03 36.2**	**+1.3**
TKM2				pmax	pmax		
	comp=Z,26nm,1.6s						
TKM2	**Tokmak 2**	**50.72**	**298**	*e*P	**P**	**09 03 36.2**	**+1.3**
	comp=Z,26nm,1.6s						
BVAR	**Borovoye Array**	**51.30**	**312**	P	**P**	**09 03 38.8**	**0.0**
	comp=Z,0.8nm,0.5s,baz=72,slow=9.8,SNR=4.4						
BVAR	**Borovoye Array**	**51.30**	**312**	P	**P**	**09 03 38.8**	**0.0**
BVAR	**Borovoye Array**	**51.30**	**312**	P	**P**	**09 03 38.8**	**0.0**
BRVK	**Borovoye**	**51.36**	**312**	*i* P	**P**	**09 03 39.3**	**+0.1**
BRVK				pmax	pmax		
	comp=Z,3.0nm,1.2s						
AAK	**Ala-Archa**	**51.59**	**298**	*i* P	**P**	**09 03 41.5**	**+0.2**
AAK				pmax	pmax		
	comp=Z,2.0nm,0.8s						
AAK	**Ala-Archa**	**51.59**	**298**	*e*P	**P**	**09 03 45.2**	**+3.9**
	comp=Z,6.8nm,1.4s						
KSH	**Kashi**	**51.60**	**294**	*e*P	**P**	**09 03 46.1**	**+4.7**
KSH				*es*P	sP	09 04 04.6	+8.6
KSH				*e*PP	**PP**	**09 05 43.8**	**+5.0**
KSH				S	**S**	**09 10 57.3**	**-2.7**
KSH				pmax	pmax		
	comp=Z,340nm,9.2s						
ZRNK	**Zerenda**	**52.13**	**312**	*e*P	**P**	**09 03 45.3**	**+0.3**
ZRNK				pmax	pmax		
	comp=Z,5.0nm,0.8s						
ZRNK	**Zerenda**	**52.13**	**312**	*e*P	**P**	**09 03 45.3**	**+0.3**
	comp=Z,4.8nm,0.8s						
INK	**Inuvik**	**53.02**	**28**	P	**P**	**09 03 50.8**	**-0.5**
	comp=Z,3.2nm,1.3s,baz=310,slow=7.2,SNR=4.2						
INK	**Inuvik**	**53.02**	**28**	P	**P**	**09 03 50.8**	**-0.5**
INK				pmax	pmax		
	comp=Z,3.0nm,1.3s						
ARU	**Arti**	**56.91**	**319**	P	P	09 04 31.5	+12
ABKAR	**Akbulak array**	**58.73**	**310**	*e*P	**P**	**09 04 35.7**	**+3.2**
AKTO	**Aktyubinsk**	**59.41**	**312**	P	**P**	**09 04 37.6**	**+0.4**
	comp=Z,1.0nm,0.6s,baz=56,slow=11,SNR=3.5						
AKTO	**Aktyubinsk**	**59.41**	**312**	P	**P**	**09 04 37.6**	**+0.4**
AKTO	**Aktyubinsk**	**59.41**	**312**	P	**P**	**09 04 37.6**	**+0.4**
RES	**Resolute Bay**	**61.51**	**15**	*e*P	P	09 05 02.1	+11
RES				pmax	pmax		
	comp=Z,4.0nm,1.0s						
RES	**Resolute Bay**	**61.51**	**15**	*e*P	P	09 05 02.1	+11
	comp=Z,3.8nm,1.0s						
YKA	**Yellowknife Ar**	**62.38**	**31**	P	**P**	**09 04 55.6**	**-1.5**
	comp=Z,0.2nm,0.7s,baz=302,slow=6.4,SNR=4.4						
YKA	**Yellowknife Ar**	**62.38**	**31**	P	**P**	**09 04 55.6**	**-1.5**
YKB5	**Yellowknife Ar**	**62.38**	**31**	*e*P	P	09 05 07.8	+11
KLMR	**Klimovskoe**	**64.03**	**328**	P	**P**	**09 05 11.4**	**+3.3**
KLMR				*e*		09 07 29.5	
KLMR				pmax	pmax		
	comp=Z,14nm,1.5s						
GEYT	**Alibeck**	**64.91**	**300**	P	**P**	**09 05 16.0**	**+1.7**
	comp=Z,2.0nm,0.6s,baz=80,slow=7.9,SNR=3.2						
NEW	**Newport**	**68.49**	**45**	*e*P	P	09 05 48.5	+12
NEW				pmax	pmax		
	comp=Z,6.0nm,1.2s						
NEW	**Newport**	**68.49**	**45**	*e*P	P	09 05 48.5	+12
	comp=Z,6.0nm,1.2s						
FINES	**FINESS Array B**	**68.94**	**333**	P	**P**	**09 05 39.8**	**+0.4**
	comp=Z,1.3nm,0.8s,baz=32,slow=7.9,SNR=4.3						
FINES	**FINESS Array B**	**68.94**	**333**	P	**P**	**09 05 39.8**	**+0.4**
FINES	**FINESS Array B**	**68.94**	**333**	P	**P**	**09 05 39.8**	**+0.4**
JTMT	**Jette**	**70.36**	**44**	*e*P	P	09 05 59.5	+11
SWMT	**Swartz Lake**	**70.66**	**45**	*e*P	P	09 06 01.7	+11
ZEI	**Tsey**	**71.60**	**310**	*e*P	P	09 06 06.7	+10
ZEI				pmax	pmax		
	comp=Z,13nm,1.1s						
KIV	**Kislovodsk**	**71.66**	**312**	*e*P	**P**	**09 05 58.3**	**+1.7**
KIV				pmax	pmax		
	comp=Z,17nm,1.1s						
KBZ	**Khabaz**	**71.67**	**311**	P	**P**	**09 05 57.7**	**+1.3**
	comp=Z,1.7nm,0.7s,baz=57,slow=1.6,SNR=4.4						
KBZ	**Khabaz**	**71.67**	**311**	P	**P**	**09 05 57.7**	**+1.3**
KBZ	**Khabaz**	**71.67**	**311**	P	**P**	**09 05 57.7**	**+1.3**
BOZ	**Bozeman (W)**	**73.07**	**45**	*e*P	P	09 06 16.1	+11
BOZ				pmax	pmax		
	comp=Z,53nm,1.1s						
BOZ	**Bozeman (W)**	**73.07**	**45**	*e*P	P	09 06 16.1	+11
	comp=Z,53nm,1.1s						
NVAR	**Mina Array Bea**	**73.26**	**54**	P	**P**	**09 06 05.5**	**-0.9**
	comp=Z,0.2nm,0.4s,baz=74,slow=1.3,SNR=2.3						
NOA	**NORSAR Array B**	**74.16**	**338**	P	**P**	**09 06 10.9**	**0.0**
	comp=Z,0.7nm,0.7s,baz=38,slow=6.0,SNR=2.8						
NOA	**NORSAR Array B**	**74.16**	**338**	P	**P**	**09 06 10.9**	**0.0**
NOA	**NORSAR Array B**	**74.16**	**338**	P	**P**	**09 06 10.9**	**0.0**
ANN	**Anapa**	**74.20**	**315**	*e*P	P	09 06 21.2	+10
ANN				pmax	pmax		
	comp=Z,54nm,1.3s						
H17A	**Grant Village**	**74.42**	**46**	*e*P	P	09 06 26.3	+13
	comp=Z,82nm,1.3s						
IMW	**

VOIR		**0.31 309**	S	Sg	08 55 06.6	+1.1
VOIR		**0.31 309** ⇓	iP	Pg	08 55 02.0	+0.5
VOIR			*i* S	Sg	08 55 06.6	+1.1
MLR	**Muntele Rosu**	**0.46 58** ⇑	iP	Pg	08 55 05.1	+0.6
MLR	**Muntele Rosu**	**0.46 58**	S	Sb	08 55 12.3	-1.4
MLR	**Muntele Rosu**	**0.46 58** ⇑	iP	Pg	08 55 05.1	+0.6
MLR			*i* S	Sb	08 55 12.3	-1.4
ARR	**Arges**	**0.55 283** ⇑	iP	Pb	08 55 07.0	-0.7
ARR	**Arges**	**0.55 283** ⇑	iP	Pb	08 55 07.0	-0.7
ARR			*i* S	Sg	08 55 14.1	+1.0
PLOR	**Plostina**	**1.07 55** ⇑	iP	Pb	08 55 16.9	+0.2
PLOR	**Plostina**	**1.07 55** ⇑	iP	Pb	08 55 16.9	+0.2
PLOR			*i* S	Sn	08 55 32.7	-0.1
PLOR	**Plostina**	**1.07 55**	S	Sn	08 55 32.7	-0.1
VRI	**Vrincioaia**	**1.13 56** ⇑	iP	Pn	08 55 18.9	+0.8
VRI	**Vrincioaia**	**1.13 56** ⇑	iP	Pn	08 55 18.9	+0.8
VRI			*i* S	Sn	08 55 34.9	+0.8
VRI	**Vrincioaia**	**1.13 56**	S	Sn	08 55 34.9	+0.8
LOT	**Lotru**	**1.16 281** ⇑	iP	Pn	08 55 18.6	0.0
LOT	**Lotru**	**1.16 281** ⇑	iP	Pn	08 55 18.6	0.0
LOT			*i* S	Sn	08 55 34.8	-0.2

*IDC **10** 08:55:07.1±0.3,20°.31S×168°.27E,h0km,mb6.0/39, mb1 6.0/42,mb1mx5.9/43,mbtmp6.0/42,ML5.1/3,MS6.7/28, Ms1 6.7/28,ms1mx6.6/41,Error ellipse: s-maj=11.3km s-min=9.7km az=53.0*

*NEIC **10** 08:55:08.9±0.1,20°.24S×168°.23E,h11km,mb6.4/285, ME6.8,MS6.8/220,MW6.7,MW6.8,Error ellipse: s-maj=3.7km s-min=3.2km az=141.0,Moment Tensor Solution. s30 Moment tensor: Scale 1019Nm; Mrr=0.78; Mθθ=0.34; Mφφ 1.13; Mrθ=0.07; Mrφ=-0.40; Mθφ=-0.51; Best double couple: M0=1.20000×1019 NP1:φs=352.00000°, δ59.00000°,λ=-82.00000°. NP2:φs=157.00000°,δ32.00000°, λ=-102.00000°. Principal axes: T 1.3500, Plg14.0000°, Azm76.0000°; N -0.4400, Plg7.0000°, Azm168.0000°; P -0.9100, Plg75.0000°, Azm283.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from CMT mechanism.*

NEIC Felt at Tadine and We. Felt [II] at Dumbea and Noumea, New Caledonia. Also felt at Bourail, Mont-Dore and Yate. Felt [II] at Port-Vila, Vanuatu. Also felt at Isangel.

*GCMT **10** 08:55:08.9±0.0,20°.29S×168°.15E,h18km,MW6.8/144, Moment Tensor Solution. s140,c357; s144,c674; Duration: 6s1 Moment tensor: Scale 1019Nm; Mrr=1.71±.01; Mθθ=0.17±.01; Mφφ 1.88±.01; Mrθ=0.34±.02; Mrφ=0.66±.01; Mθφ=0.21±.02; Best double couple: M0=1.94100×1019 NP1:φs=153.00000°,δ50.00000°, λ=-104.00000°. NP2:φs=354.00000°,δ42.00000°, λ=-74.00000°. Principal axes: T 2.0980, Plg4.0000°, Azm253.0000°; N -0.3170, Plg11.0000°, Azm162.0000°; P -1.7830, Plg78.0000°, Azm6.0000°; nsta1 refers to body waves, cutoff=50s. nsta2 refers to surface/mantle waves, cutoff=50s.*

*NEIC **10** 08:55:09.0±0.0,20°.25S×167°.87E,h15km,Moment Tensor Solution. s42 Moment tensor: Scale 1019Nm; Mrr=1.70; Mθθ=0.27; Mφφ 1.96; Mrθ=0.10; Mθφ=-0.66; Mφr=0.10; Best double couple: M0=2.00000×1019 NP1: φs=350.00000°,δ46.00000°,λ=-82.00000°. NP2: φs=159.00000°,δ44.00000°,λ=-97.00000°. Principal axes: T 2.1400, Plg1.0000°, Azm74.0000°; N -0.4300, Plg5.0000°, Azm164.0000°; P -1.7100, Plg84.0000°, Azm333.0000°;*

*ISCJB **10** 08:55:09.8±1.3,20°.27S±0°.02×168°.26E±0°.02,h25km±8km, mb6.4/395,MS6.8/322 Error ellipse: s-maj=3.7km s-min=2.6km az=19.5*

*BJI **10** 08:55:10.0,20°.20S×168°.20E,h20km,mb6.1/72,mB6.9/84, Ms6.9/98,Ms7 6.6/89*

*MOS **10** 08:55:10.7±1.1,20°.32S×168°.21E,h33km,mb6.6/91, MS6.8/84,Error ellipse: s-maj=6.6km s-min=6.0km az=90.6*

ISC 10 08:55:12.5±0.4,20°.34S±0°.03×168°.28E±0°.03,h33km±1km, h33km;pP-P,n2481,σ1°51/2331,mb6.4/401,MS6.8/328, 64C-77D,Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.43**	**224**	Pn	**Pn**	**08 55 46.6**	**-3.4**
291nm,0.3s,baz=83,slow=8.3,SNR=1191							
DZM				LR	LR	08 56 42.1	
comp=Z,1647μm,19.2s,baz=320,slow=39							
NFK	**Norfolk Island**	**8.68**	**182**	P	**Pn**	**08 57 15.6**	**-0.1**
baz=8.8,SNR=116							
MSVF	**Nonsavu**	**9.60**	**76**	*e*P	**Pn**	**08 57 30.8**	**+2.3**
MSVF	**Nonsavu**	**9.60**	**76**	*e*Pn	**Pn**	**08 57 30.8**	**+2.3**
HNR	**Honiara**	**13.49**	**322**	Pn	**Pn**	**08 58 19.5**	**-2.2**
41nm,0.3s,baz=216,slow=5.0,SNR=22							
HNR				Sn	**Sn**	**09 00 46.5**	**-4.1**
22nm,0.3s,baz=9.5,slow=18,SNR=3.2							
HNR				LR	LR	09 02 54.3	
comp=Z,264μm,18.8s,baz=148,slow=35							
HNR	**Honiara**	**13.49**	**322**	*e*P	**Pn**	**08 58 20.0**	**-1.7**
HNR				*e*S	Sn	09 00 25.0	-26
HNR	**Honiara**	**13.49**	**322**	*e*Pn	**Pn**	**08 58 21.2**	**-0.5**
HNR				Sn	**Sn**	**09 00 46.5**	**-4.1**
LHI	**Lord Howe Isla**	**13.87**	**215**	P	**Pn**	**08 58 29.9**	**+3.1**
baz=14,SNR=4.0							
RAO	**Raoul Island**	**15.35**	**128**	Pn	**P**	**08 58 50.5**	**-0.6**
92nm,0.3s,baz=165,slow=7.4,SNR=11							
RAO	**Raoul Island**	**15.35**	**128**	*e*P	**Pn**	**08 58 48.6**	**+1.9**
RAO	**Raoul Island**	**15.35**	**128**	*e*P	**P**	**08 58 49.2**	**-1.9**
3μm,0.9s							
OUZ	**Omahuta**	**15.55**	**164**	*e*Pn	**P**	**08 58 51.5**	**-1.7**
975nm,0.9s							
OUZ	**Omahuta**	**15.55**	**164**	PN	**Pn**	**08 58 50.2**	**+0.9**
OUZ	**Omahuta**	**15.55**	**164**	PN	**Pn**	**08 58 50.2**	**+0.9**
FUNA	**Funafuti**	**15.79**	**44**	*e*Pn	**Pn**	**08 58 50.9**	**-1.6**
4μm,1.6s							
WCZ	**Waipu Caves**	**16.43**	**162**	PN	**P**	**08 59 02.9**	**-0.1**
WCZ	**Waipu Caves**	**16.43**	**162**	PN	**P**	**08 59 03.0**	**0.0**
EIDS	**Eidsvold**	**16.62**	**249**	*e*Pn	**Pn**	**08 59 03.9**	**+0.9**
2μm,1.6s							
GRZ	**Great Barrier**	**17.06**	**160**	PN	**P**	**08 59 11.1**	**+1.1**
WIAZ	**Waiheke Island**	**17.46**	**161**	*e*PN	**P**	**08 59 15.2**	**+0.7**
WIAZ	**Waiheke Island**	**17.46**	**161**	*e*PN	**P**	**08 59 15.1**	**+0.7**
AWAZ	**Awhitu Peninsu**	**17.57**	**163**	*e*PN	**P**	**08 59 17.4**	**+1.8**
AWAZ	**Awhitu Peninsu**	**17.57**	**163**	PN	**P**	**08 59 17.4**	**+1.8**
KUZ	**Kuaotunu**	**17.60**	**160**	PN	**P**	**08 59 16.8**	**+0.9**
KUZ	**Kuaotunu**	**17.60**	**160**	PN	**P**	**08 59 16.8**	**+0.9**
MKAZ	**Moumakai**	**17.76**	**162**	PN	**P**	**08 59 17.8**	**+0.2**
MKAZ	**Moumakai**	**17.76**	**162**	PN	**P**	**08 59 17.9**	**+0.3**
ARMA	**Armidale**	**18.06**	**233**	P	**P**	**08 59 23.3**	**+2.0**
baz=18,SNR=91							
ARMA	**Armidale**	**18.06**	**233**	*e*Pn	**P**	**08 59 22.9**	**+1.6**
944nm,1.0s							
TOZ	**Tahuroa Road**	**18.44**	**162**	P*	**Pn**	**08 59 26.6**	**+1.2**
TOZ	**Tahuroa Road**	**18.44**	**162**	P*	**Pn**	**08 59 26.5**	**+1.2**
RMQ	**Roma**	**18.92**	**247**	P	**Pn**	**08 59 32.2**	**+0.8**
baz=19,SNR=124							
HIZ	**Hauiti**	**18.99**	**164**	*e*P	**Pn**	**08 59 33.8**	**+1.7**
2μm,1.3s							
HIZ	**Hauiti**	**18.99**	**164**	P*	**Pn**	**08 59 33.0**	**+0.9**
HIZ	**Hauiti**	**18.99**	**164**	P*	**Pn**	**08 59 33.3**	**+1.2**
TLZ	**Tolley Road**	**19.00**	**162**	P*	**Pn**	**08 59 33.5**	**+1.2**
TLZ	**Tolley Road**	**19.00**	**162**	P*	**Pn**	**08 59 33.5**	**+1.2**
HLRZ	**Highlands Stat**	**19.18**	**160**	*e*P*	**Pn**	**08 59 38.0**	**+3.6**
MXZ	**Matakaoa Point**	**19.26**	**155**	*e*P	**Pn**	**08 59 37.0**	**+1.7**
1μm,1.3s							
PRRZ	**Plateau Road**	**19.42**	**161**	*e*P*	**Pn**	**08 59 39.5**	**+2.2**
URZ	**Urewera**	**19.43**	**159**	P	**Pn**	**08 59 36.9**	**-0.5**
2.5nm,0.3s,baz=345,slow=8.9,SNR=43							
URZ				LR	LR	09 06 01.2	
comp=Z,268μm,20.3s,baz=349,slow=34							
URZ	**Urewera**	**19.43**	**159**	*e*P	**Pn**	**08 59 38.6**	**+1.2**
3μm,1.3s							
URZ	**Urewera**	**19.43**	**159**	P*	**Pn**	**08 59 37.6**	**+0.2**
URZ	**Urewera**	**19.43**	**159**	*e*P*	**Pn**	**08 59 37.6**	**+0.2**
PKGZ	**Pakihiroa**	**19.45**	**156**	*e*P*	**Pn**	**08 59 37.9**	**+0.2**
WMGZ	**Waiomatatini S**	**19.52**	**155**	*e*P*	**Pn**	**08 59 40.1**	**+1.6**
WMGZ	**Waiomatatini S**	**19.52**	**155**	P*	**Pn**	**08 59 40.1**	**+1.6**
VRZ	**Vera Road**	**19.54**	**165**	P*	**Pn**	**08 59 39.5**	**+0.8**
VRZ	**Vera Road**	**19.54**	**165**	P*	**Pn**	**08 59 39.5**	**+0.8**
RATZ	**Rangitukua**	**19.57**	**162**	*e*P*	**Pn**	**08 59 38.9**	**-0.2**
TWGZ	**Tauwhareparae**	**19.67**	**157**	P*	**Pn**	**08 59 40.9**	**+0.6**
PUZ	**Puketiti**	**19.68**	**156**	*e*P*	**P**	**08 59 33.2**	**-5.6**
PUZ				SN	Sn	09 03 41.4	+21
RTZ	**Ruatahuna**	**19.71**	**159**	*e*P*	**Pn**	**08 59 41.2**	**+0.4**
RTZ	**Ruatahuna**	**19.71**	**159**	*e*P*	**Pn**	**08 59 41.2**	**+0.4**
MRHZ	**Matea Rd**	**19.73**	**161**	*e*P*	**Pn**	**08 59 41.4**	**+0.3**
RAGZ	**Rawiri**	**19.75**	**158**	P*	**Pn**	**08 59 41.3**	**+0.1**
NGZ	**Ngauruhoe**	**19.81**	**163**	*e*P*	**Pn**	**08 59 42.4**	**+0.3**
NGZ	**Ngauruhoe**	**19.81**	**163**	P*	**Pn**	**08 59 42.9**	**+0.8**
OTVZ	**Oturere**	**19.82**	**163**	P*	**Pn**	**08 59 44.5**	**+2.3**
FWVZ	**Far West T-bar**	**19.87**	**163**	*e*P*	**Pn**	**08 59 44.6**	**+1.7**
WHVZ	**Whangaehu Hut**	**19.91**	**163**	P*	**Pn**	**08 59 45.1**	**+1.8**
MGCD	**Mangrove Creek**	**19.95**	**226**	P	**Pn**	**08 59 44.2**	**+0.7**
baz=20,SNR=20							
WNVZ	**Wahianoa**	**19.95**	**163**	P*	**Pn**	**08 59 44.2**	**+0.4**
WNVZ	**Wahianoa**	**19.95**	**163**	P*	**Pn**	**08 59 44.5**	**+0.7**
SNGZ	**Shannon Statio**	**19.98**	**159**	*e*P*	**Pn**	**08 59 43.8**	**-0.1**
SNGZ	**Shannon Statio**	**19.98**	**159**	*e*P*	**Pn**	**08 59 43.9**	**-0.1**
CNGZ	**Carnagh Statio**	**20.02**	**157**	*e*P*	Pn	08 59 43.9	-0.6
CNGZ	**Carnagh Statio**	**20.02**	**157**	P*	Pn	08 59 43.8	-0.6
BKZ	**Black Stump Fm**	**20.06**	**161**	*e*P	Pn	08 59 44.2	-0.7
766nm,0.9s							
BKZ				LR	LR		
comp=Z,112μm,18.0s							
BKZ	**Black Stump Fm**	**20.06**	**161**	P*	Pn	08 59 44.3	-0.6
BKZ	**Black Stump Fm**	**20.06**	**161**	P*	Pn	08 59 44.3	-0.6
RIGZ	**Rimuhau**	**20.06**	**158**	*e*P*	Pn	08 59 44.4	-0.5
RIGZ	**Rimuhau**	**20.06**	**158**	*e*P*	Pn	08 59 44.5	-0.4
MOVZ	**Moawhango**	**20.07**	**163**	*e*P*	Pn	08 59 45.1	+0.1
MOVZ	**Moawhango**	**20.07**	**163**	*e*P*	Pn	08 59 45.1	0.0
NMHZ	**Naumai**	**20.09**	**160**	*e*P*	Pn	08 59 45.7	+0.3
NMHZ	**Naumai**	**20.09**	**160**	P*	Pn	08 59 45.8	+0.5
NMHZ				SN	Sn	09 03 50.3	+20
AFI	**Afiamalu**	**20.10**	**75**	P	**P**	**08 59 42.2**	**-1.3**
comp=Z,287nm,0.9s,baz=16,slow=2.3,SNR=20							
AFI				LR	LR	09 06 21.6	
comp=Z,296μm,21.3s,baz=254,slow=34							
AFI	**Afiamalu**	**20.10**	**75**	*e*P	**P**	**08 59 42.1**	**-1.5**
AFI				pmax	pmax		
comp=Z,760nm,0.8s							
AFI	**Afiamalu**	**20.10**	**75**	*e*P	**P**	**08 59 42.1**	**-1.5**
comp=Z,758nm,0.8s							
WAZ	**Wanganui**	**20.20**	**165**	P*	Pn	08 59 47.1	+0.7
WAZ	**Wanganui**	**20.20**	**165**	P*	Pn	08 59 47.1	+0.7
WHHZ	**Waihua**	**20.21**	**159**	*e*P*	Pn	08 59 45.9	-0.7
BHHZ	**Black Hill Sta**	**20.23**	**162**	*e*P*	Pn	08 59 46.5	-0.4
KWHZ	**Kaweka Forest**	**20.28**	**162**	*e*P*	Pn	08 59 47.1	-0.3
KWHZ	**Kaweka Forest**	**20.28**	**162**	P*	Pn	08 59 47.1	-0.4
ARHZ	**Aropaoanui**	**20.30**	**160**	P*	Pn	08 59 51.3	+3.6
KNZ	**Kokohu**	**20.31**	**159**	P*	**P**	**08 59 46.5**	**+0.9**
KNZ	**Kokohu**	**20.31**	**159**	P*	**P**	**08 59 46.5**	**+0.9**
MCHZ	**McNeill Hill**	**20.38**	**161**	P*	Pn	08 59 48.3	-0.3
MCHZ	**McNeill Hill**	**20.38**	**161**	P*	Pn	08 59 48.3	-0.3
MHGZ	**Mahia Peninsul**	**20.51**	**158**	P*	**P**	**08 59 48.6**	**+0.8**
NIUE	**Niue**	**20.56**	**90**	P	**P**	**08 59 48.3**	**-0.2**
baz=20,SNR=13							
PNHZ	**Pukenui**	**20.66**	**163**	P*	**P**	**08 59 50.6**	**+1.1**
CTA	**Charters Tower**	**20.67**	**267**	P	**P**	**08 59 49.2**	**-0.5**
comp=Z,156nm,1.0s,baz=91,slow=12,SNR=50							
CTA				LR	LR	09 07 18.4	
comp=Z,163μm,18.3s,baz=87,slow=35							
CTAO	**Charters Tower**	**20.67**	**267**	*e*P	**P**	**08 59 49.2**	**-0.5**
CTAO	**Charters Tower**	**20.67**	**267**	*e*P	**P**	**08 59 49.1**	**-0.5**
comp=Z,42μm,1.9s							
CTAO				LR	LR		
comp=Z,1609μm,21.0s							
TSZ	**Takapari Road**	**20.73**	**163**	P*	Pn	08 59 51.5	-1.3
QRZ	**Quartz Range**	**20.75**	**171**	P*	Pn	08 59 51.7	-1.2
KAHZ	**Kahuranaki**	**20.75**	**161**	P*	**P**	**08 59 51.6**	**+1.1**
WPHZ	**Waipukurau**	**20.87**	**162**	P*	**P**	**08 59 52.4**	**+0.7**
DUWZ	**D'Urville Isla**	**20.96**	**168**	P*	Pn	08 59 54.0	-1.4
PXZ	**Pawanui**	**20.97**	**161**	P*	**P**	**08 59 53.2**	**+0.5**
POWZ	**Post Office Ro**	**20.99**	**164**	P*	**P**	**08 59 53.9**	**+0.9**
DVHZ	**Dannevirke**	**21.01**	**163**	P*	**P**	**08 59 53.7**	**+0.4**
PRHZ	**Porangahau**	**21.12**	**162**	P*	**P**	**08 59 54.6**	**+0.3**
MRZ	**Mangatainoka R**	**21.20**	**164**	P*	**P**	**08 59 54.8**	**-0.4**
PRWZ	**Pori Road**	**21.20**	**164**	P*	**P**	**08 59 55.9**	**+0.6**
OGWZ	**Otaki Gorge**	**21.25**	**165**	P*	**P**	**08 59 56.6**	**+0.9**
ANWZ	**Angora Road**	**21.25**	**163**	P*	**P**	**08 59 56.1**	**+0.4**
BFZ	**Birch Farm**	**21.39**	**163**	*e*P	**P**	**08 59 56.6**	**-0.7**
comp=Z,2μm,1.3s							
BFZ				LR	LR		
comp=Z,285μm,20.0s							
BFZ	**Birch Farm**	**21.39**	**163**	P*	**P**	**08 59 57.2**	**-0.1**
TCW	**Tory Channel**	**21.43**	**168**	P*	**P**	**08 59 59.0**	**+1.4**
DSZ	**Denniston Nort**	**21.55**	**173**	P*	**P**	**09 00 00.6**	**+1.6**
TUWZ	**Tuamarina**	**21.57**	**168**	P*	**P**	**09 00 00.5**	**+1.3**
SNZO	**South Karori**	**21.61**	**167**	*e*P	**P**	**09 00 00.0**	**+0.4**
comp=Z,3μm,1.7s							
SNZO				LR	LR		
comp=Z,280μm,19.0s							
THZ	**Tophouse**	**21.72**	**171**	*e*P	**P**	**09 00 02.1**	**+1.3**
comp=Z,1μm,0.9s							
THZ				LR	LR		
comp=Z,200μm,18.0s							
THZ	**Tophouse**	**21.72**	**171**	*e*P*	**P**	**09 00 01.8**	**+1.0**
BSWZ	**Blackbirch Sta**	**21.84**	**169**	*e*P*	**P**	**09 00 02.8**	**+0.8**
TRWZ	**Traveller**	**21.92**	**165**	*e*P*	**P**	**09 00 03.1**	**+0.1**
TARA	**Tarawa**	**22.03**	**12**	*e*P	**P**	**09 00 01.0**	**-3.3**
comp=Z,2μm,1.0s							
TARA				LR	LR		
comp=Z,265μm,18.0s							
CNB	**Canberra Magne**	**22.36**	**224**	P	**P**	**09 00 10.2**	**+2.4**
baz=22,SNR=318							
YNG	**Young**	**22.43**	**228**	P	**P**	**09 00 10.8**	**+2.3**
baz=22,SNR=101							
RABL	**Rabaul**	**22.44**	**314**	*e*P	**P**	**09 00 07.1**	**-1.6**
comp=Z,1μm,0.8s							
KHZ	**Kahutara**	**22.46**	**170**	*e*P	**P**	**09 00 09.2**	**+0.6**
comp=Z,1μm,1.2s							
KHZ				LR	LR		
comp=Z,238μm,18.0s							
KHZ	**Kahutara**	**22.46**	**170**	P*	**P**	**09 00 08.5**	**-0.1**
INZ	**Inchbonnie**	**22.48**	**174**	P*	**P**	**09 00 09.7**	**+0.8**
CAN	**Canberra**	**22.60**	**225**	*e*P	**P**	**09 00 10.5**	**+0.1**
CAN				pmax	pmax		
comp=Z,2μm,1.3s							
CAN	**Canberra**	**22.60**	**225**	*e*P	**P**	**09 00 10.5**	**+0.1**
comp=Z,2μm,1.3s							
CAN				LR	LR		
comp=Z,242μm,20.0s							
LTZ	**Lake Taylor**	**22.63**	**172**	*e*P	**P**	**09 00 11.6**	**+0.9**
comp=Z,1μm,1.2s							
LTZ				LR	LR		
comp=Z,293μm,18.0s							
LTZ	**Lake Taylor**	**22.63**	**172**	P*	**P**	**09 00 11.7**	**+1.1**
MTSU	**Mount Surprise**	**22.72**	**271**	P	**P**	**09 00 11.2**	**-0.6**
baz=23,SNR=121							
QLP	**Quilpie**	**22.89**	**250**	P	**P**	**09 00 12.7**	**-0.8**
baz=23,SNR=134							
PMG	**Port Moresby**	**23.09**	**295**	P	**P**	**09 00 14.2**	**-1.3**
comp=Z,238nm,1.1s,baz=112,slow=6.6,SNR=48							
PMG	**Port Moresby**	**23.09**	**295**	*e*P	**P**	**09 00 14.6**	**-1.0**
PMG				MLR	MLR		
comp=Z,719μm,16.0s							
PMG	**Port Moresby**	**23.09**	**295**	*e*P	**P**	**09 00 14.3**	**-1.3**
comp=Z,1μm,1.1s							
PMG				LR	LR		
comp=Z,212μm,18.0s							
CMSA	**Cobar Meteorol**	**23.12**	**237**	P	**P**	**09 00 16.0**	**+0.2**
baz=23,SNR=180							
OXZ	**Oxford**	**23.14**	**173**	*e*P	**P**	**09 00 16.1**	**+0.3**
comp=Z,2μm,1.3s							
OXZ				LR	LR		
comp=Z,372μm,18.0s							
OXZ	**Oxford**	**23.14**	**173**	P*	**P**	**09 00 15.7**	**-0.1**
FOZ	**Fox Glacier**	**23.17**	**177**	*e*P	**P**	**09 00 17.4**	**+1.3**
comp=Z,2μm,1.3s							
FOZ				LR	LR		
comp=Z,263μm,18.0s							
FOZ	**Fox Glacier**	**23.17**	**177**	P*	**P**	**09 00 17.0**	**+1.0**
RPZ	**Rata Peaks**	**23.43**	**175**	P	**P**	**09 00 18.4**	**-0.3**
comp=Z,337nm,1.3s,baz=305,slow=3.2,SNR=34							
RPZ	**Rata Peaks**	**23.43**	**175**	*e*P	**P**	**09 00 19.2**	**+0.6**
comp=Z,3μm,1.6s							
RPZ				LR	LR		
comp=Z,304μm,18.0s							
CRLZ	**Canterbury Las**	**23.46**	**172**	*e*P	**P**	**09 00 20.1**	**+1.2**
comp=Z,5μm,1.9s							
CRLZ				LR	LR		
comp=Z,214μm,18.0s							
MQZ	**McQueen's Vall**	**23.59**	**172**	*e*P	**P**	**09 00 20.5**	**+0.3**
comp=Z,704nm,1.0s							
MQZ				LR	LR		
comp=Z,210μm,18.0s							
MQZ	**McQueen's Vall**	**23.59**	**172**	P*	**P**	**09 00 20.3**	**+0.1**
JCZ	**Jackson Bay**	**23.68**	**179**	P*	**P**	**09 00 22.5**	**+1.4**
LBZ	**Lake Benmore**	**24.04**	**177**	*e*P	**P**	**09 00 24.9**	**+0.5**
comp=Z,475nm,1.0s							
LBZ				LR	LR		
comp=Z,213μm,18.0s							
MSZ	**Milford Sound**	**24.27**	**181**	P*	**P**	**09 00 27.7**	**+1.1**
WKZ	**Wanaka**	**24.43**	**179**	*e*P	**P**	**09 00 29.3**	**+1.2**
comp=Z,1μm,1.4s							
WKZ				LR	LR		
comp=Z,220μm,20.0s							
ODZ	**Otahua Downs**	**24.72**	**176**	*e*P	**P**	**09 00 30.6**	**-0.1**
comp=Z,695nm,1.5s							
ODZ				LR	LR		
comp=Z,193μm,18.0s							
COEN	**Coen**	**24.79**	**281**	P	**P**	**09 00 31.3**	**-0.3**
baz=25,SNR=25							
COEN	**Coen**	**24.79**	**281**	*e*P	**P**	**09 00 31.3**	**-0.3**
comp=Z,4μm,1.6s							
MLZ	**Mavora Lakes**	**24.96**	**180**	*e*P	**P**	**09 00 34.0**	**+1.1**
comp=Z,403nm,1.1s							
MLZ				LR	LR		
comp=Z,331μm,18.0s							
MLZ	**Mavora Lakes**	**24.96**	**180**	P*	**P**	**09 00 33.3**	**+0.4**
DCZ	**Deep Cove**	**25.08**	**182**	*e*P	**P**	**09 00 34.7**	**+0.8**
comp=Z,969nm,1.0s							
DCZ				LR	LR		
comp=Z,242μm,18.0s							
DCZ	**Deep Cove**	**25.08**	**182**	P*	**P**	**09 00 34.4**	**+0.5**
WHZ	**Wether Hill Ro**	**25.49**	**181**	*e*P	**P**	**09 00 38.0**	**+0.3**
comp=Z,877nm,1.4s							
WHZ				LR	LR		
comp=Z,304μm,18.0s							
TUZ	**Tuapeka**	**25.58**	**178**	P*	**P**	**09 00 38.5**	**+0.1**
PYZ	**Puysegur Point**	**25.80**	**183**	*e*P	**P**	**09 00 43.1**	**+2.7**
comp=Z,362nm,1.0s							
PYZ				LR	LR		
comp=Z,179μm,19.0s							
SYZ	**Scrubby Hill**	**26.14**	**179**	P*	**P**	**09 00 44.0**	**+0.5**
KNTN	**Kanton**	**26.18**	**51**	*e*P	**P**	**09 00 43.0**	**-1.2**
comp=Z,1μm,1.8s							
KNTN				LR	LR		
comp=Z,190μm,19.0s							
TOO	**Toolangi**	**26.20**	**224**	P	**P**	**09 00 44.9**	**+0.7**
baz=26,SNR=43							
STKA	**Stephens Creek**	**26.50**	**239**	P	**P**	**09 00 47.0**	**+0.1**
comp=Z,334nm,0.8s,baz=83,slow=9.3,SNR=118							
STKA				LR	LR	09 10 37.5	
comp=Z,214μm,19.2s,baz=64,slow=35							
STKA	**Stephens Creek**	**26.50**	**239**	P	**P**	**09 00 46.9**	**-0.1**
baz=26,SNR=281							
STKA	**Stephens Creek**	**26.50**	**239**	*e*P	**P**	**09 00 47.1**	**+0.1**
STKA				pmax	pmax		
comp=Z,550nm,1.4s							
STKA	**Stephens Creek**	**26.50**	**239**	*e*P	**P**	**09 00 47.1**	**+0.1**
comp=Z,551nm,1.4s							
CTZ	**Chatham Island**	**26.53**	**155**	P*	**P**	**09 00 47.9**	**+0.9**
QIS	**Mount Isa**	**26.85**	**264**	P	**P**	**09 00 49.4**	**-0.9**
baz=27,SNR=28							
MANU	**Manus Island**	**27.34**	**309**	*e*P	**P**	**09 00 53.9**	**-0.7**
comp=Z,1μm,0.9s							
MANU				LR	LR		
comp=Z,124μm,18.0s							
ARPS	**Mount Arapiles**	**28.28**	**229**	P	**P**	**09 01 03.4**	**+0.6**
baz=28,SNR=23							
MOO	**Moorlands**	**28.31**	**214**	P	**P**	**09 01 03.9**	**+0.8**
baz=28,SNR=44							
TAU	**Tasmania Unive**	**28.57**	**213**	*e*P	**P**	**09 01 06.0**	**+0.7**
TAU				pmax	pmax		
comp=Z,560nm,1.4s							
TAU	**Tasmania Unive**	**28.57**	**213**	*e*P	**P**	**09 01 06.0**	**+0.7**
comp=Z,557nm,1.4s							
TAU				LR	LR		
comp=Z,118μm,18.0s							
PATS	**Pohnpei**	**28.72**	**339**	P	**P**	**09 01 07.1**	**+0.2**
baz=29,SNR=10							
PATS	**Pohnpei**	**28.72**	**339**	*e*P	**P**	**09 01 06.9**	**0.0**
comp=Z,1μm,1.1s							
PATS				LR	LR		
comp=Z,228μm,18.0s							
KWAJ	**Kwajalein Atol**	**28.96**	**359**	PFAKE		09 01 20.0	+11
KWAJ				LR	LR		
comp=Z,92μm,18.0s							
HTT	**Hallett**	**29.14**	**237**	P	**P**	**09 01 10.6**	**0.0**
baz=29,SNR=56							
MMPI	**Merauke**	**29.42**	**290**	P	**P**	**09 01 13.9**	**+0.7**
comp=Z,843nm,0.9s,comp=Z,21μm							
RAR	**Rarotonga**	**29.86**	**97**	P	**P**	**09 01 17.8**	**+0.8**
comp=Z,201nm,1.1s,baz=241,slow=4.5,SNR=9

comp=Z,435nm,0.9s
FAKI LR LR
comp=Z,94µm,21.0s
H11N1 WAKE ISLAND Hy 39.82 358 T T 09 46 03.6
H11N3 WAKE ISLAND Hy 39.83 358 T T 09 46 27.6
baz=186
H11N2 WAKE ISLAND Hy 39.84 358 T T 09 45 33.4
baz=186,slow=74
PAE Paea 39.86 93 *e*P **P** **09 02 40.9 -2.4**
comp=Z,197nm,1.2s
PPT2 Papeete2 39.88 93 *e*P **P** **09 02 41.5 -2.0**
comp=Z,1µm,1.2s
PPT2 *e*S **S** **09 08 46.2 -0.2**
comp=Z,87µm,27.0s
PPT2 *e*LQ LQ 09 11 57.0
comp=Z,541µm,28.8s
PPT2 *e*LR LR 09 13 35.3
comp=Z,339µm,33.8s,baz=258
PPT Papeete 39.88 93 P **P** **09 02 41.6 -1.9**
comp=Z,770nm,0.8s,baz=46,slow=1.1,SNR=48
PPT LR LR 09 18 15.1
comp=Z,62µm,18.3s,baz=257,slow=35
PPT Papeete 39.88 93 P **P** **09 02 41.6 -1.9**
PPT pmax pmax
comp=Z,810nm,0.7s
PPT MLR MLR
comp=Z,62µm,18.3s
PPT Papeete 39.88 93 *e*P **P** **09 02 44.2 +0.8**
TIAR Tiarei 40.10 93 *e*P **P** **09 02 43.3 -2.0**
comp=Z,587nm,1.0s
TVO Taravao 40.15 94 *e*P **P** **09 02 43.6 -2.1**
comp=Z,350nm,1.1s
FITZ Fitzroy Crossi 40.24 266 P **P** **09 02 45.3 -1.2**
baz=40,SNR=170
FITZ Fitzroy Crossi 40.24 266 *e*P **P** **09 02 45.4 -1.0**
comp=Z,1µm,1.1s
FITZ LR LR
comp=Z,141µm,20.0s
XMAS Kiritimati 40.30 60 *e*P **P** **09 02 47.7 +0.8**
comp=Z,392nm,1.0s
XMAS LR LR
comp=Z,135µm,18.0s
GUMO Guam 40.82 324 P **P** **09 02 50.8 -0.3**
comp=Z,42nm,0.5s,baz=43,slow=1.3,SNR=6.3
GUMO Guam 40.82 324 *e*P **P** **09 02 51.7 +0.6**
comp=Z,3µm,1.9s
GUMO LR LR
comp=Z,34µm,20.0s
SWI Sorong 41.03 294 P **P** **09 02 51.2 -1.7**
comp=Z,1µm,0.9s,comp=Z,37µm
MEH Mehetia 41.24 94 *e*P **P** **09 02 52.6 -2.1**
comp=Z,370nm,1.2s
PMOR Pomariorio Ree 42.01 90 *e*P **P** **09 02 58.8 -2.2**
comp=Z,2µm,1.2s
VAH Vaihoa 42.20 90 *e*P **P** **09 03 00.1 -2.5**
comp=Z,1µm,1.2s
JOHN Johnston Islan 42.80 32 *e*P **P** **09 03 07.2 -0.1**
comp=Z,535nm,1.0s
JOHN LR LR
comp=Z,75µm,18.0s
KMBL Kambalda 42.90 246 P **P** **09 03 07.0 -1.1**
baz=43,SNR=30
SOEI Soe 43.66 277 P **P** **09 03 15.0 +0.5**
comp=Z,1µm,1.6s,comp=Z,39µm
SOEI Soe 43.66 277 *e*P **P** **09 03 14.6 0.0**
comp=Z,2µm,1.2s
SOEI LR LR
comp=Z,101µm,19.0s
SANI Sanana 45.08 288 P **P** **09 03 26.5 +0.7**
comp=Z,2µm,1.2s,comp=Z,51µmcomp=Z,136µm
MBWA Marble Bar 45.26 260 *e*P **P** **09 03 24.6 -2.6**
comp=Z,4µm,1.2s
MBWA LR LR
comp=Z,177µm,22.0s
MMRI Maumere 45.92 278 P **P** **09 03 31.0 -1.4**
comp=Z,1µm,1.2s,comp=Z,31µmcomp=Z,139µm
MMRI Maumere 45.92 278 *e*P **P** **09 03 30.6 -1.8**
comp=Z,1µm,1.2s
EDFI Ende, Flores 46.39 277 P **P** **09 03 34.9 -1.3**
comp=Z,318nm,1.9s,comp=Z,19µm
KLBR Kellerberrin 46.43 245 P **P** **09 03 34.7 -1.5**
baz=46,SNR=68
NWAO Narrogin (SRO) 46.91 244 P **P** **09 03 38.9 -1.1**
baz=47,SNR=17
NWAO Narrogin (SRO) 46.91 244 *e*P **P** **09 03 38.6 -1.4**
NWAO pmax pmax
comp=Z,4µm,0.9s
NWAO Narrogin (SRO) 46.91 244 *e*P **P** **09 03 38.6 -1.4**
comp=Z,4µm,0.9s
NWAO LR LR
comp=Z,1014µm,19.0s
BASI Baing, Sumba 46.95 275 P **P** **09 03 42.9 +2.4**
comp=Z,2µm,1.6s,comp=Z,44µmcomp=Z,115µm
RKGY Rocky Gully 47.21 241 P **P** **09 03 42.4 +0.1**
baz=47,SNR=15
BLDU Ballidu 47.32 247 P **P** **09 03 41.8 -1.4**
baz=47,SNR=39
MORW Morawa 47.92 249 P **P** **09 03 46.7 -1.2**
baz=48,SNR=34
LUWI Luwuk 48.41 288 P **P** **09 03 53.5 +1.7**
comp=Z,2µm,1.6s,comp=Z,41µmcomp=Z,117µm
LUWI Luwuk 48.41 288 *e*P **P** **09 03 51.5 -0.3**
comp=Z,1µm,0.9s
BSSI Bau Bau, Buton 48.42 280 P **P** **09 03 54.7 +2.8**
comp=Z,359nm,1.7s,comp=Z,19µmcomp=Z,82µm
MATI Mati 49.41 299 *e*P **P** **09 03 58.3 -1.2**
KAPI Kappang 49.52 281 P **P** **09 03 59.6 -0.7**
comp=Z,188nm,1.0s,baz=119,slow=5.0,SNR=38
KAPI Kappang 49.52 281 *e*P **P** **09 03 59.7 -0.6**
comp=Z,2µm,1.6s
KAPI LR LR
comp=Z,34µm,19.0s
MRSI Marisa 49.83 289 P **P** **09 04 03.2 +0.5**
comp=Z,433nm,1.8s,comp=Z,18µm
SPSI Sidrap Palu 49.91 282 P **P** **09 04 02.1 -1.2**
comp=Z,1µm,1.1s,comp=Z,18µmcomp=Z,76µm
PLAI Plampang 50.01 276 P **P** **09 04 03.2 -0.9**
comp=Z,870nm,1.9s,comp=Z,29µmcomp=Z,161µm
DAV Davao City (W) 50.04 299 P **P** **09 04 04.0 -0.3**
comp=Z,342nm,0.5s,baz=94,slow=4.8,SNR=9.2
DAV Davao City (W) 50.04 299⇓*e*P **P** **09 04 04.5 +0.2**
DAV Davao City (W) 50.04 299 P **P** **09 04 04.0 -0.3**
DAV LR LR
comp=Z,32µm,20.0s
TTSI Tana Toraja 50.23 283 P **P** **09 04 07.1 +1.4**
comp=Z,663nm,1.9s,comp=Z,24µmcomp=Z,73µm
TWSI Taliwang, Sumb 50.88 275 P **P** **09 04 10.1 -0.5**
comp=Z,785nm,1.4s,comp=Z,24µm
BUKP Musuan 50.91 299 *e*P **P** **09 04 12.0 +1.1**
TAOE Nuku Hiva Isla 51.01 85 *e*P **P** **09 04 09.8 -2.0**
comp=Z,891nm,0.9s
TAOE *e*S **S** **09 11 24.7 -2.5**
comp=Z,91µm,27.0s
TAOE *e*SS SS 09 14 47.8 -15
comp=Z,36µm,27.5s
TAOE *e*LQ LQ 09 16 11.3
comp=Z,71µm,25.1s
TAOE *e*LR LR 09 18 43.9
comp=Z,145µm,32.8s,baz=250
TAOE Nuku Hiva Isla 51.01 85 *e*P **P** **09 04 11.3 -0.5**
comp=Z,374nm,0.7s
TAOE LR LR
comp=Z,63µm,19.0s
CTBH Cotabato--PC H 51.22 298⇑*i*P **P** **09 04 13.9 +0.7**
PAGZ Pagadian 52.28 298 *e*P **P** **09 04 20.4 -0.7**
KEKH Kekaha 52.41 38 *e*P **P** **09 04 22.0 +0.1**
comp=Z,339nm,0.9s
KEKH LR LR
comp=Z,80µm,18.0s
DNP Denpasar 52.46 275 P **P** **09 04 25.0 +2.5**
comp=Z,2µm,1.4s,comp=Z,56µmcomp=Z,187µm
RKT Rikitea 52.52 104 *e*P **P** **09 04 21.8 -1.0**
comp=Z,396nm,1.1s
RKT *e*S **S** **09 11 47.3 -0.2**
comp=Z,95µm,31.0s
RKT *e*SS **SS** **09 15 27.0 +1.1**
comp=Z,30µm,29.5s
RKT *e*LQ LQ 09 17 00.9
comp=Z,69µm,32.3s
RKT *e*LR LR 09 19 27.2
comp=Z,116µm,32.2s,baz=259
SRBI Singaraja 52.65 275 P **P** **09 04 25.1 +1.2**
comp=Z,915nm,1.7s,comp=Z,32µm
BESP Borongan 52.75 303 *e*P **P** **09 04 26.0 +1.5**
PLP Palo 52.86 302⇑*e*P **P** **09 04 25.2 -0.2**
IPIL Ipil 52.92 297 *e*P **P** **09 04 26.4 +0.6**
HON Honolulu 52.93 40 PFAKE 09 04 40.0 +14
HON LR LR
comp=Z,190µm,18.0s
KIP Kipapa 52.99 40⇑*e*P **P** **09 04 25.5 -0.7**
KIP pmax pmax
comp=Z,1µm,1.0s
KIP Kipapa 52.99 40 *e*P **P** **09 04 25.7 -0.5**
comp=Z,264nm,1.0s
KIP LR LR
comp=Z,148µm,18.0s
OCLP Ormoc 53.09 302 *e*P **P** **09 04 28.5 +1.4**
MLOA Mauna Loa Obse 53.14 44 *e*P **P** **09 04 27.5 -0.4**
MLOA Mauna Loa Obse 53.14 44 *e*P **P** **09 04 27.9 0.0**
LLP Lapu-Lapu 53.18 301 *e*P **P** **09 04 28.1 +0.4**
OPA Opana 53.20 40 *e*P **P** **09 04 27.5 -0.2**
OPA Opana 53.20 40 *e*P **P** **09 04 27.5 -0.2**
comp=Z,399nm,0.9s
OPA LR LR
comp=Z,164µm,18.0s
SNPH Sibulan 53.22 299⇑*e*P P 09 04 38.5 +10
UWE Uwekahuna 53.24 44 *e*P **P** **09 04 28.4 +0.2**
comp=Z,303nm,1.0s
UWE Uwekahuna 53.24 44 *e*P **P** **09 04 28.4 +0.2**
comp=Z,303nm,1.0s
UWE LR LR
comp=Z,69µm,19.0s
POHA Pohakuloa 53.33 44 *e*P **P** **09 04 27.8 -1.2**
comp=Z,375nm,0.9s
POHA Pohakuloa 53.33 44 *e*P **P** **09 04 28.8 -0.2**
comp=Z,375nm,0.9s
POHA LR LR
comp=Z,85µm,19.0s
HPAH Hawaii Prepara 53.42 44 *e*P **P** **09 04 28.8 -0.7**
comp=Z,613nm,1.3s
HPAH Hawaii Prepara 53.42 44 *e*P **P** **09 04 29.3 -0.2**
comp=Z,613nm,1.3s
HPAH LR LR
comp=Z,84µm,19.0s
CBIJ Chichi jima 53.50 331 *e*P **P** **09 04 29.1 -0.7**
comp=Z,1µm,1.0s
CBIJ LR LR
comp=Z,26µm,21.0s
JCJ Chichijima 53.50 331 P **P** **09 04 29.4 -0.4**
comp=Z,854nm,0.9s,baz=110,slow=4.8,SNR=36
JAGI Jajag, Banyuwa 53.52 274 P **P** **09 04 28.7 -1.6**
comp=Z,996nm,2.0s,comp=Z,22µmcomp=Z,124µm
JAGI Jajag, Banyuwa 53.52 274 *e*P **P** **09 04 29.9 -0.3**
comp=Z,4µm,2.0s
HLK Haleakala 53.59 42 *e*P **P** **09 04 31.2 +0.3**
comp=Z,341nm,1.0s
HLK LR LR
comp=Z,96µm,19.0s
ABJI Asem Bagus 53.66 275 P **P** **09 04 33.0 +1.7**
comp=Z,842nm,1.1s,comp=Z,35µm
GMJI Gumukmas 54.24 274 P **P** **09 04 36.5 +0.9**
comp=Z,575nm,1.2s,comp=Z,22µm
GUIM Jordan 54.47 300 *e*P **P** **09 04 36.3 -0.8**
BBKI Banjar Baru 54.63 281 P **P** **09 04 39.3 +0.8**
comp=Z,1µm,1.6s,comp=Z,41µm
RCP Roxas 54.87 301⇓*e*P **P** **09 04 41.1 +1.1**
PVCP Virac 54.95 304 *e*P **P** **09 04 40.4 -0.2**
MYLDM Lahad Datu 55.07 292 *e*P **P** **09 04 44.4 +2.8**
comp=Z,2µm,1.8s
TSM Tawau 55.19 291⇑P **P** **09 04 45.0 +2.5**
MTKI Muara Teweh, K 55.57 283 P **P** **09 04 48.1 +2.9**
comp=Z,1µm,1.4s,comp=Z,28µm
PWJI Pagerwojo 55.86 274 P **P** **09 04 46.7 -0.6**
comp=Z,470nm,1.0s,comp=Z,20µmcomp=Z,84µm
CUYO Cuyo Island 55.87 299 *e*P **P** **09 04 48.2 +1.0**
OTRP Odiongan 55.91 302 *e*P **P** **09 04 48.5 +1.0**
AUQP San Andres 55.94 303 *e*P **P** **09 04 50.8 +3.0**
PCJI Pacitan 56.39 274 P **P** **09 04 50.9 -0.2**
comp=Z,2µm,1.8s,comp=Z,28µmcomp=Z,84µm
NGJI Ngawi 56.39 275 P **P** **09 04 54.7 +3.6**
comp=Z,1µm,1.5s,comp=Z,41µm
SDKM Sandakan 56.43 292⇓P **P** **09 04 52.7 +1.3**
PTCN Pitcairn Islan 56.63 107 PFAKE 09 05 10.0 +17
PTCN LR LR
comp=Z,26µm,19.0s
BOAC Boac 56.68 302 *e*P **P** **09 04 54.1 +1.1**
SJMP San Jose 56.69 301 *e*P **P** **09 04 54.0 +1.0**
UGM Wanagama 57.09 274 P **P** **09 04 57.2 +1.1**
comp=Z,1µm,1.3s,comp=Z,28µmcomp=Z,112µm
UGM Wanagama 57.09 274 *e*P **P** **09 04 55.4 -0.8**
comp=Z,1µm,1.2s
UGM LR LR
comp=Z,44µm,20.0s
LQP Lukban 57.30 303⇓*e*P **P** **09 04 59.3 +1.7**
VNDA Vanda 57.31 182 P **P** **09 04 55.5 -1.2**
comp=Z,34nm,0.8s,baz=0.3,slow=7.0,SNR=34
VNDA LR LR 09 28 24.3
comp=Z,42µm,18.2s,baz=14,slow=35
VNDA Vanda 57.31 182 *e*P **P** **09 04 56.4 -0.2**
comp=Z,174nm,0.9s
POLP Polilio Island 57.34 304 *e*P **P** **09 04 58.0 +0.4**
KDM Kudat 57.36 293⇑P **P** **09 05 00.4 +2.6**
ENPP El Nido 57.37 299 *e*P **P** **09 04 59.0 +1.1**
SMRI Semarang 57.45 275 P **P** **09 05 01.0 +2.4**
comp=Z,937nm,1.4s,comp=Z,36µmcomp=Z,143µm
SMRI Semarang 57.45 275 *e*P **P** **09 04 59.9 +1.2**
comp=Z,941nm,1.1s
BATP Bataraza 57.46 295 *e*P **P** **09 04 58.2 -0.5**
KKM Kota Kinabalu 57.47 292⇓P **P** **09 04 59.1 +0.3**
KKM Kota Kinabalu 57.47 292 *e*P **P** **09 04 58.2 -0.6**
comp=Z,4µm,1.9s
KKM LR LR
comp=Z,31µm,22.0s
SBA Scott Base 57.57 180 *e*P **P** **09 04 58.3 -0.1**
SBA Scott Base 57.57 180 *e*P **P** **09 04 59.0 +0.6**
comp=Z,512nm,0.9s
SBA LR LR
comp=Z,59µm,18.0s
PBKI Pangkalan Bun 57.85 280 P **P** **09 05 04.7 +3.3**
comp=Z,1µm,1.4s,comp=Z,23µmcomp=Z,216µm
LUBP Lubang 58.10 302 *e*P **P** **09 05 02.6 -0.5**
BALP Baler 58.22 304 *e*P **P** **09 05 04.2 +0.4**
CAUP Cauayan 58.75 306 *e*P **P** **09 05 09.4 +1.9**
CASY Casey 58.76 204 *e*P **P** **09 05 05.9 -1.0**
comp=Z,127nm,1.4s
CASY LR LR
comp=Z,43µm,21.0s
CMJI Cimerak 59.08 273 P **P** **09 05 10.9 +0.9**
comp=Z,794nm,1.0s,comp=Z,20µm
STKI Sintang 59.10 283 P **P** **09 05 10.4 +0.2**
comp=Z,935nm,1.6s,comp=Z,31µmcomp=Z,60µm
SGCP Mt. Cagua 59.37 307 *e*P **P** **09 05 11.8 0.0**
SBUM Sibu 59.41 286 *e*P **P** **09 05 12.1 -0.2**
comp=Z,1µm,1.9s
JCJI Jatiwangi 59.67 274 P **P** **09 05 15.6 +1.5**
comp=Z,2µm,1.9s,comp=Z,59µm
JHJ2 Mitsune 59.69 332 *e*P **P** **09 05 09.2 -4.5**
comp=Z,1µm,1.1s
JHJ Hachijo jima 2 59.72 332 P **P** **09 05 13.9 0.0**
comp=Z,552nm,0.9s,baz=173,slow=8.5,SNR=9.2
APYP Conner 59.74 306 *e*P **P** **09 05 15.1 +0.7**
CISI Cisompet, Garu 59.75 273 P **P** **09 05 14.5 -0.2**
comp=Z,1µm,1.4s,comp=Z,25µmcomp=Z,116µm
CISI Cisompet, Garu 59.75 273 *e*P **P** **09 05 13.3 -1.4**
comp=Z,1µm,1.0s
CISI LR LR
comp=Z,74µm,18.0s
ABRA Dolores 60.02 306 *e*P **P** **09 05 16.9 +0.6**
CNJI Cibinong 60.47 273 P **P** **09 05 19.0 -0.5**
comp=Z,1µm,1.1s,comp=Z,23µm
KSM Kuching 60.74 284 *e*P **P** **09 05 20.3 -1.1**
comp=Z,674nm,1.0s
KSM LR LR
comp=Z,30µm,20.0s
JOW Kunigami 60.84 319 *e*P **P** **09 05 23.8 +2.1**
comp=Z,502nm,1.0s
JOW LR LR
comp=Z,31µm,20.0s
XMIS Christmas Isla 60.87 269 *e*P **P** **09 05 24.3 +2.1**
comp=Z,1µm,1.6s
XMIS LR LR
comp=Z,96µm,18.0s
CBJI Citeko 61.02 274 P **P** **09 05 23.6 +0.3**
comp=Z,4µm,1.0s,comp=Z,108µm
SKJI Sukabumi 61.10 273 P **P** **09 05 28.1 +4.2**
comp=Z,1µm,1.1s,comp=Z,30µmcomp=Z,59µm
SBJI Serang 61.80 274 P **P** **09 05 29.7 +1.1**
comp=Z,3µm,1.4s,comp=Z,31µm
CGJI Cibinong 62.04 273 P **P** **09 05 28.9 -1.3**
comp=Z,2µm,1.2s,comp=Z,24µmcomp=Z,68µm
YOJ Yonaguni jima 62.63 313 *e*P **P** **09 05 35.4 +1.5**
YOJ pmax pmax
comp=Z,460nm,1.0s
YOJ MLR MLR
comp=Z,34µm,19.0s
YOJ Yonaguni jima 62.63 313 *e*P **P** **09 05 35.4 +1.5**
comp=Z,460nm,1.0s
YOJ LR LR
comp=Z,34µm,19.0s
INU Inuyama 62.82 332 *e*P **P** **09 05 36.2 +1.3**
comp=Z,405nm,1.0s
INU LR LR
comp=Z,25µm,19.0s
BLSI Bandar Lampung 62.88 274 P **P** **09 05 36.5 +0.7**
comp=Z,782nm,1.1s,comp=Z,17µm
TWG Pinlang 62.93 311 *e*P **P** **09 05 36.4 +0.4**
comp=Z,842nm,1.1s
YULB Yu-li 63.13 311 *e*P **P** **09 05 37.5 +0.2**
comp=Z,322nm,1.4s
MJAR Matsushiro Arr 63.30 333 P **P** **09 05 36.2 -2.0**
comp=Z,275nm,0.9s,baz=166,slow=7.3,SNR=132
MJAR PKP2bc 09 34 30.9
comp=Z,2.0nm,0.9s,baz=315,slow=2.7,SNR=5.2
MJAR PKP2ab 09 34 48.5
comp=Z,29nm,1.3s,baz=325,slow=2.8,SNR=13
MJAR LR LR 09 35 30.9
comp=Z,10µm,18.0s,baz=140,slow=38
MAJO Matsushiro 63.30 333 *d*P **P** **09 05 38.8 +0.7**
MAJO pmax pmax
comp=Z,2µm,0.9s
MAJO MLR MLR
comp=Z,158µm,18.0s
MAJO Matsushiro 63.30 333 *e*P **P** **09 05 39.0 +0.9**
comp=Z,416nm,0.9s
MAJO LR LR
comp=Z,20µm,19.0s
MAT Matsushiro 63.30 333 P **P** **09 05 35.8 -2.3**
MAT S S 09 13 55.6 -12
MJB9 Matsu-Tunnel 63.31 333 *e*P **P** **09 05 38.7 +0.5**
comp=Z,102nm,0.9s
KLI Kotabumi 63.41 275 P **P** **09 05 40.2 +0.8**
comp=Z,582nm,1.2s,comp=Z,9µm
NACB Ningnchiao 63.43 312 *e*P **P** **09 05 39.2 0.0**
comp=Z,493nm,1.2s
KASI Kota Agung 63.53 274 P **P** **09 05 38.8 -1.3**
comp=Z,1µm,1.0s,comp=Z,21µmcomp=Z,66µm
TPUB Ta-pu 63.55 311 *e*P **P** **09 05 39.5 -0.5**
comp=Z,513nm,1.0s
TPUB LR LR
comp=Z,25µm,20.0s
SSLB Suanglung 63.63 311 *e*P **P** **09 05 40.2 -0.3**
comp=Z,321nm,1.1s
SSLB LR LR
comp=Z,33µm,20.0s
YHNB Yeheng 63.90 312 *e*P **P** **09 05 42.8 +0.5**
comp=Z,1µm,1.3s
YHNB LR LR
comp=Z,27µm,21.0s
TATO Taipei 64.02 313 *e*P **P** **09 05 43.7 +0.7**
comp=Z,1µm,1.2s
TATO LR LR
comp=Z,35µm,19.0s
JNU Nakatsue 64.04 325 P **P** **09 05 42.8 -0.3**
comp=Z,279nm,0.9s,baz=107,slow=5.6,SNR=18
JNU Nakatsue 64.04 325 *e*P **P** **09 05 44.3 +1.3**
comp=Z,640nm,1.1s
LWLI Liwa 64.11 274 P **P** **09 05 44.8 +0.7**
comp=Z,1µm,1.4s,comp=Z,18µm
PMBI Palembang 64.17 277 P P 09 05 49.2 +4.8
comp=Z,2µm,1.3s,comp=Z,29µm
LHSI Lahat 65.02 275 P **P** **09 05 50.7 +0.8**
comp=Z,1µm,0.8s,comp=Z,20µmcomp=Z,63µm
MNAI Manna 65.37 275 P **P** **09 05 54.5 +2.3**
comp=Z,2µm,1.5s,comp=Z,41µm
MNAI Manna 65.37 275 *e*P **P** **09 05 53.0 +0.8**
comp=Z,5µm,1.6s
MNAI LR LR
comp=Z,35µm,20.0s
MIR Mirnyy 65.66 205 *d*P **P** **09 05 53.0 -0.1**
MIR pmax pmax
comp=Z,17µm,7.0s
MIR MLR MLR
comp=N,32µm,18.0s
MIR MLR MLR
comp=Z,87µm,18.0s
TPRI Tanjung Pinang 65.83 281 P **P** **09 05 57.3 +2.2**
comp=Z,923nm,1.8s,comp=Z,22µmcomp=Z,66µm
QZH Quanzhou 66.03 311⇓*i*P **P** **09 05 53.1 -3.0**
QZH sP **pP** **09 06 06.2 -0.2**
QZH PP **PP** **09 08 21.5 -0.4**
QZH S **S** **09 14 39.7 -2.3**
QZH pmax pmax
comp=Z,240nm,1.0s
QZH pmax pmax
comp=Z,45µm,7.2s
QZH LR LR
comp=Z,28µm,17.5s
QZH LR LR
comp=Z,14µm,16.7s
QZH LR LR
comp=Z,29µm,21.4s
ERM Erimo 66.25 340 *c*P **P** **09 05 56.6 -0.5**
ERM pmax pmax
comp=Z,32nm,0.9s
ERM MLR MLR
comp=Z,50µm,18.0s
ERM Erimo 66.25 340 *e*P **P** **09 05 58.5 +1.4**
comp=Z,133nm,1.0s
ERM LR LR
comp=Z,57µm,18.0s
MASI Maura Aman, Be 66.46 276 P **P** **09 05 59.8 +0.6**
comp=Z,1µm,1.6s,comp=Z,35µm
MYKOM Kota Tinggi 66.78 281 *e*P **P** **09 06 01.0 -0.3**
comp=Z,371nm,1.3s
MYKOM LR LR
comp=Z,53µm,18.0s
YUK Yuzh-Kuril'sk 67.27 343 *d*P **P** **09 06 05.2 +1.6**
YUK *i* 09 06 33.1
YUK *i*S **S** **09 14 59.0 +2.8**
YUK *e*SS **SS** **09 19 13.5 -3.3**
YUK pmax pmax
comp=Z,23µm,7.4s
YUK pmax pmax
comp=Z,802nm,1.3s
YUK pmax pmax
comp=N,438nm,1.0s
YUK pmax pmax
comp=E,59nm,0.6s
YUK MLR MLR
comp=Z,70µm,19.0s
YUK MLR MLR
comp=N,32µm,18.0s
YUK MLR MLR
comp=E,760nm,19.0s
HKC Hong Kong Obse 67.71 306⇓*i*P **P** **09 06 09.0 +2.1**
KUR Kuril'sk 67.85 345 *d*P **P** **09 06 09.6 +2.4**
KUR *e* 09 08 40.1
KUR *e*PPP PPP 09 10 12.5
KUR *e*SS SS 09 19 25.1 -0.7
KUR pmax pmax
comp=Z,15µm,6.4s
KUR pmax pmax
comp=E,124nm,1.1s
KUR pmax pmax
comp=Z,717nm,1.1s
KUR pmax pmax
comp=N,269nm,1.4s
KUR MLR MLR
comp=E,31µm,18.0s
KUR MLR MLR
comp=Z,77µm,18.0s
KUR MLR MLR
comp=N,106µm,17.0s
SDSI Sungai Dareh 68.01 277 P **P** **09 06 09.3 +0.3**
comp=N,242nm,1.3s,comp=N,43µm
MCO Taipa Grande 68.08 305 P **P** **09 06 12.0 +2.8**
SSE Sheshan 68.25 317 P **P** **09 06 10.8 +0.7**
SSE S **S** **09 15 10.3 +1.8**
SSE sS **sS** **09 15 24.4 -1.2**
SSE pmax pmax
comp=N,130nm,1.0s
SSE pmax pmax
comp=N,13µm,8.8s
SSE LR LR
comp=N,29µm,30.4s
SSE LR LR
comp=N,35µm,30.4s
SSE LR LR
comp=N,19µm,18.9s
ASAJ Asahikawa 68.31 340 PKP2bc **P'P'ab** **09 34 28.4 +3.0**
comp=N,66nm,1.3s,baz=286,slow=6.1,SNR=12
ASAJ Asahikawa 68.31 340 *e*P **P** **09 06 11.2 +1.0**

comp=N,654nm,1.0s
ASAJ ⇑e 09 34 28.4
ASAJ LR LR
comp=Z,84μm,20.0s
TJN Taejon 68.39 325 d iP **P 09 06 12.1 +1.3**
COCO West Island 68.62 264 eP **P 09 06 15.3 +2.5**
COCO pmax pmax
comp=Z,2μm,1.7s
COCO MLR MLR
comp=Z,59μm,19.0s
COCO West Island 68.62 264 eP **P 09 06 15.2 +2.5**
comp=Z,2μm,1.7s
COCO LR LR
comp=Z,59μm,19.0s
PPSI Pulau Pagai 68.68 275 P P 09 06 18.6 +5.4
GZH Guangzhou 68.79 306 P **P 09 06 16.2 +2.6**
GZH PP **PP 09 08 48.2 +2.2**
GZH S **S 09 15 21.4 +6.2**
GZH pmax pmax
comp=Z,37μm,7.0s
BKNI Bangkinang 68.83 279 P **P 09 06 16.2 +2.1**
comp=Z,2μm,1.2s,comp=Z,35μmcomp=Z,95μm
BKNI Bangkinang 68.83 279 eP **P 09 06 16.3 +2.2**
comp=Z,2μm,1.2s
BKNI LR LR
comp=Z,48μm,19.0s
KSRS Korea Array 68.90 326 P **P 09 06 14.1 +0.1**
comp=Z,79nm,0.9s,baz=144,slow=6.4,SNR=88
KSRS PKP2bc **P'P'ab 09 34 25.4 +1.2**
comp=Z,11nm,1.1s,baz=322,slow=2.9,SNR=15
KSRS LR LR 09 36 41.1
comp=Z,14μm,18.4s,baz=141,slow=36
PDSI Padang 68.91 277 P **P 09 06 15.8 +1.1**
comp=Z,327nm,0.9s
KS15 Wonju Array Si 68.92 326 eP **P 09 06 15.9 +1.8**
KSAR Wonju Array Be 68.92 326 P **P 09 06 14.1 0.0**
KSAR Wonju Array Be 68.92 326 P **P 09 06 14.1 0.0**
KSAR ⇑e 09 34 25.4
KS01 Wonju Array Si 68.94 326 eP **P 09 06 12.8 -1.4**
QIZ Qiongzhong 69.34 301 P **P 09 06 19.8 +2.6**
QIZ pP **pP 09 06 21.8 -5.7**
QIZ S **S 09 15 22.7 +0.7**
QIZ pmax pmax
comp=Z,9μm,8.6s
QIZ LR LR
comp=Z,3μm,16.2s
QIZ LR LR
comp=Z,6μm,19.1s
INCN Inchon 69.60 326 eP **P 09 06 20.5 +2.1**
comp=Z,619nm,1.1s
INCN LR LR
comp=Z,21μm,20.0s
QSPA South Pole Qui 69.72 180 eP **P 09 06 17.8 -1.2**
comp=Z,335nm,0.9s
QSPA LR LR
comp=Z,34μm,20.0s
MNSI Mandailing Nat 70.36 278 P **P 09 06 23.2 -0.4**
comp=Z,547nm,1.5s,comp=Z,23μm
NJ2 Nanjing 70.37 317 eP **P 09 06 24.6 +1.4**
NJ2 PcP **sP 09 06 40.3 +2.8**
NJ2 S **S 09 15 39.0 +5.4**
NJ2 pmax pmax
comp=Z,220nm,1.5s
NJ2 pmax pmax
comp=Z,21μm,8.4s
NJ2 LR LR
comp=Z,34μm,20.1s
NJ2 LR LR
comp=Z,20μm,23.3s
NJ2 LR LR
comp=Z,37μm,23.3s
IPM Ipoh 70.43 283 eP **P 09 06 22.1 -2.0**
comp=Z,415nm,1.0s
IPM LR LR
comp=Z,53μm,18.0s
YSS Yuzh-Sakhalins 70.82 342 c iP **P 09 06 26.4 +0.8**
YSS e*SP **sP 09 06 42.0 +2.1**
YSS e 09 09 10.0
YSS i S **S 09 15 42.2 +4.0**
YSS eSS **SS 09 20 16.0 +4.4**
YSS pmax pmax
comp=Z,40nm,0.9s
YSS pmax pmax
comp=Z,32μm,7.0s
YSS smax smax
comp=E,21μm,10.0s
YSS smax smax
comp=N,24μm,11.0s
YSS MLR MLR
comp=Z,81μm,17.0s
YSS MLR MLR
comp=N,69μm,18.0s
YSS MLR MLR
comp=E,17μm,19.0s
KULM Kulim 71.09 283 eP **P 09 06 26.8 -1.2**
comp=E,389nm,1.1s
KULM LR LR
comp=Z,40μm,19.0s
MSHR Mys Shultsa 71.35 332 d iP **P 09 06 30.8 +1.9**
VLA Vladivostok 71.47 333 d iP **P 09 06 30.7 +1.1**
VLA pmax pmax
comp=Z,304nm,1.0s
SKR Severo-Kuril's 71.52 352 ⇓iP P 09 06 24.0 -5.7
SKR e 09 06 36.0
SKR e 09 09 12.0
SKR eS **S 09 15 42.0 -4.0**
SKR pmax pmax
comp=N,10μm,6.0s
SKR pmax pmax
comp=E,15μm,6.0s
SKR pmax pmax
comp=Z,25μm,6.0s
SKR pmax pmax
comp=N,2μm,2.0s
SKR pmax pmax
comp=E,4μm,2.0s
SKR pmax pmax
comp=Z,4μm,2.0s
SKR MLR MLR
comp=N,29μm,18.0s
SKR MLR MLR
comp=E,9μm,18.0s
SKR MLR MLR
comp=Z,24μm,18.0s
PSI Prapat 71.71 280 eP **P 09 06 30.1 -1.9**
PSI pmax pmax
comp=Z,495nm,1.1s
PSI MLR MLR
comp=Z,58μm,18.0s
PSI Prapat 71.71 280 eP **P 09 06 30.1 -1.9**
comp=Z,495nm,1.1s
PSI LR LR
comp=Z,58μm,18.0s
USRK Ussuriysk Ar. 72.30 333 P **P 09 06 34.4 -0.2**
comp=Z,548nm,0.9s,baz=121,slow=5.6,SNR=173
USRK LR LR 09 36 42.5
comp=Z,30μm,19.6s,baz=135,slow=34
TSI Tuntungan 72.31 281 P **P 09 06 37.0 +1.6**
comp=Z,606nm,1.2s,comp=Z,24μm
GSI Gunungsitoli 72.41 278 P **P 09 06 36.4 +0.4**
comp=Z,940nm,1.1s,comp=Z,32μmcomp=Z,86μm
GSI Gunungsitoli 72.41 278 eP **P 09 06 35.4 -0.6**
comp=Z,852nm,1.0s
GSI LR LR
comp=Z,48μm,20.0s
WHN Wuhan 72.42 313 ⇓P **P 09 06 37.2 +1.6**
WHN PP **PP 09 09 19.5 +2.3**
WHN S **S 09 16 01.0 +3.7**
WHN pmax pmax
comp=Z,40μm,8.0s
WHN LR LR
comp=Z,50μm,18.2s
WHN LR LR
comp=Z,39μm,16.0s
WHN LR LR
comp=Z,75μm,19.0s
CHBT CHBT 72.70 291 P **P 09 06 39.7 +2.1**
comp=Z,1μm,1.7s,comp=Z,29μm
PANO Nakornpanom 72.73 296 P **P 09 06 39.2 +1.5**
comp=Z,319nm,1.0s,comp=Z,13μm
SMY Shemya 72.93 4 eP **P 09 06 39.3 +1.2**
SMY pmax pmax
comp=Z,1μm,1.0s
SMY MLR MLR
comp=Z,47μm,18.0s
SMY Shemya 72.93 4 eP **P 09 06 39.3 +1.2**
comp=Z,1μm,1.0s
SMY LR LR
comp=Z,47μm,18.0s
TRTT Trang 72.98 285 P **P 09 06 41.1 +1.8**
comp=Z,862nm,1.4s,comp=Z,18μm
KCSI Kotacane, Aceh 73.05 280 P **P 09 06 39.6 -0.2**
comp=Z,242nm,1.4s,comp=Z,13μm
SKNT Sakolnakorn 73.18 296 P **P 09 06 39.8 -0.6**
comp=Z,1μm,1.0s,comp=Z,24μm
DL2 Dalian 73.35 324 ⇓iP **P 09 06 43.1 +2.2**
DL2 S **SKiKP 09 16 10.5 +0.7**
DL2 pmax pmax
comp=Z,300nm,0.9s
DL2 pmax pmax
comp=Z,24μm,6.2s
DL2 LR LR
comp=Z,16μm,19.0s
DL2 LR LR
comp=Z,14μm,20.6s
DL2 LR LR
comp=Z,27μm,22.5s
SRAK Srakaew 73.50 292 P **P 09 06 41.8 -0.5**
comp=Z,203nm,1.2s,comp=Z,4μm
PET Petropavlovsk 73.53 354 ⇓iP **P 09 06 42.4 +0.8**
PET e 09 09 21.6
PET eS **S 09 16 09.0 +0.1**
PET ePS **PnS 09 16 39.0 -5.8**
PET ePPS PPS 09 16 58.1
PET pmax pmax
comp=Z,265nm,1.2s
PET pmax pmax
comp=Z,19μm,8.6s
PET pmax pmax
comp=Z,26μm,6.0s
PET smax smax
comp=E,28μm,17.2s
PET Petropavlovsk 73.53 354 eP **P 09 06 43.5 +1.8**
comp=E,183nm,0.8s
PET LR LR
comp=Z,68μm,20.0s
MDJ Mudanjiang 73.66 332 P **P 09 06 44.5 +1.9**
MDJ pP pP 09 06 47.8 -5.3
MDJ PcP **PcP 09 06 59.3 +1.0**
MDJ PP **PP 09 09 29.8 +2.3**
MDJ S **S 09 16 16.4 +5.6**
MDJ pmax pmax
comp=Z,690nm,1.0s
MDJ pmax pmax
comp=Z,20μm,7.5s
MDJ LR LR
comp=Z,22μm,21.3s
MDJ LR LR
comp=Z,9μm,19.2s
MDJ LR LR
comp=Z,26μm,18.2s
MDJ Mudanjiang 73.66 332 eP **P 09 06 42.5 -0.2**
comp=Z,749nm,1.0s
MDJ LR LR
comp=Z,27μm,19.0s
PEA0 Petropavlovsk- 73.71 353 eP **P 09 06 41.8 -0.9**
PEA0B Petropavlovsk- 73.71 353 eP **P 09 06 43.1 +0.4**
comp=Z,2μm,1.6s
PEA0B LR LR
comp=Z,81μm,20.0s
PETK Petropavlovsk- 73.71 353 P **P 09 06 42.7 0.0**
comp=Z,231nm,0.9s,baz=136,slow=6.1,SNR=82
PETK LR LR 09 35 36.1
comp=Z,69μm,19.9s,baz=158,slow=33
KHON Khomkaen 73.87 295 P **P 09 06 46.9 +2.4**
comp=Z,183nm,1.0s,comp=Z,2μm
TIA Tai'an 74.17 319 ⇓P **P 09 06 47.2 +1.4**
TIA S **S 09 16 18.5 +1.6**
TIA pmax pmax
comp=Z,270nm,1.2s
TIA pmax pmax
comp=Z,29μm,8.3s
TIA LR LR
comp=Z,16μm,21.0s
TIA LR LR
comp=Z,16μm,19.0s
TIA LR LR
comp=Z,25μm,18.0s
SURT Suratani 74.24 286 P **P 09 06 49.6 +2.9**
comp=Z,182nm,1.4s,comp=Z,8μm
NAYO Nakonayok 74.26 292 P **P 09 06 48.7 +1.9**
comp=Z,629nm,1.5s,comp=Z,12μm
CHAI Chaiyaphum 74.39 294 P **P 09 06 49.0 +1.5**
comp=Z,98nm,0.9s,comp=Z,766nm
SNY Shenyang 74.39 327 ⇓P **P 09 06 48.5 +1.5**
SNY PP **PP 09 09 31.1 -2.7**
SNY S **S 09 16 21.2 +2.0**
SNY pmax pmax
comp=Z,24μm,7.7s
SNY LR LR
comp=Z,20μm,18.0s
SNY LR LR
comp=Z,10μm,17.9s
SNY LR LR
comp=Z,27μm,18.6s
TYV Tymovskoe 74.39 343 eP **P 09 06 48.5 +1.7**
TYV pmax pmax
comp=Z,339nm,1.0s
NONG Nongkai 74.39 296 P **P 09 06 47.6 +0.1**
comp=Z,375nm,0.9s,comp=Z,13μm
RPN Rapa Nui 74.49 114 eP **P 09 06 49.8 +1.8**
RPN MLR MLR
comp=Z,22μm,18.0s
RPN Rapa Nui 74.49 114 eP **P 09 06 49.8 +1.8**
comp=Z,7μm,1.5s
RPN LR LR
comp=Z,22μm,18.0s
MLSI Meulaboh, Aceh 74.59 281 P **P 09 06 50.1 +1.3**
comp=Z,2μm,1.0s,comp=Z,25μm
HABR Khabarovsk 74.66 338 c iP **P 09 06 47.2 -1.2**
HABR e*SP **pP 09 06 58.2 -0.6**
HABR e 09 07 01.5
HABR e 09 09 33.6
HABR PPP PPP 09 11 18.9
HABR eS **S 09 16 21.6 -0.3**
HABR e 09 16 56.4
HABR pmax pmax
comp=N,501nm,2.7s
HABR pmax pmax
comp=Z,2μm,2.7s
HABR pmax pmax
comp=E,361nm,2.7s
HABR pmax pmax
comp=Z,25μm,7.3s
HABR MLR MLR
comp=N,22μm,21.0s
HABR MLR MLR
comp=E,29μm,21.0s
HABR MLR MLR
comp=Z,37μm,21.0s
CN2 Changchun 74.93 329 eP **P 09 06 49.4 -0.6**
CN2 PcP **sP 09 07 06.3 +1.9**
CN2 PP **PP 09 09 34.8 -3.5**
CN2 eS **S 09 16 25.8 +0.7**
CN2 SS **SS 09 21 17.2 +2.7**
CN2 LR LR
comp=Z,17μm,16.0s
CN2 LR LR
comp=Z,15μm,16.0s
CN2 LR LR
comp=Z,17μm,18.0s
PHET Kaeng Krachan 75.14 290 P **P 09 06 55.1 +3.2**
comp=Z,81nm,1.2s,comp=Z,838nm
PBKT Sadao Pong 75.56 294 P **P 09 06 55.1 +0.8**
comp=Z,321nm,2.2s,comp=Z,20μm
NIKH Nikolski High 75.65 14 eP **P 09 06 53.2 -0.8**
comp=Z,2μm,0.7s
NIKH LR LR
comp=Z,42μm,20.0s
ENH Enshi 75.67 310 eP **P 09 06 53.5 -1.2**
comp=Z,425nm,0.9s
ENH LR LR
comp=Z,24μm,21.0s
GYA Guiyang 75.71 306 ⇑iP **P 09 06 54.3 -0.8**
GYA PcP **sP 09 07 10.0 +0.6**
GYA PP **PP 09 09 49.6 +4.2**
GYA S **S 09 16 37.8 +3.1**
GYA SKS **SKSac 09 17 03.2 0.0**
GYA SS **SS 09 21 32.4 +5.2**
GYA pmax pmax
comp=Z,170nm,1.0s
GYA pmax pmax
comp=Z,15μm,9.0s
GYA LR LR
comp=Z,16μm,18.6s
GYA LR LR
comp=Z,13μm,17.7s
GYA LR LR
comp=Z,19μm,20.1s
LOEI Loei 75.73 295 P **P 09 06 53.3 -2.0**
comp=Z,724nm,1.5s,comp=Z,13μm
UTTA Uttaradit 76.44 295 P **P 09 07 00.3 +1.0**
comp=Z,103nm,1.0s,comp=Z,772nm
KLR Kul'dur 76.50 336 P **P 09 06 58.9 0.0**
comp=Z,129nm,0.9s,baz=124,slow=2.6,SNR=76
NANT Nan 76.79 296 P **P 09 07 01.3 0.0**
comp=Z,135nm,0.7s,comp=Z,963nm
KHLT Khaolaem Dam 76.85 291 P **P 09 07 04.6 +3.0**
comp=Z,386nm,2.2s,comp=Z,9μm
NKL Nikolayevsk 76.99 343 eP **P 09 07 02.0 +0.5**
NKL e 09 07 17.0
NKL i S **S 09 16 55.0 +7.7**
NKL pmax pmax
comp=N,86nm,1.0s
NKL pmax pmax
comp=Z,410nm,1.0s
NKL pmax pmax
comp=N,8μm,8.0s
NKL pmax pmax
comp=E,5μm,8.0s
NKL pmax pmax
comp=Z,35μm,11.0s
NKL smax smax
comp=N,19μm,16.0s
NKL smax smax
comp=E,17μm,16.0s
NKL MLR MLR
comp=Z,65μm,17.0s
UNV Unalaska Valle 77.01 15 eP **P 09 07 00.0 -1.6**
comp=Z,733nm,1.0s
MAW Mawson 77.08 202 P **P 09 07 02.2 +0.1**
comp=Z,119nm,0.8s,baz=115,slow=10,SNR=49
MAW LR LR 09 38 14.4
comp=Z,34μm,19.2s,baz=98,slow=34
MAW Mawson 77.08 202 P **P 09 07 02.3 +0.2**
baz=77,SNR=93
MAW Mawson 77.08 202 eP **P 09 07 02.5 +0.4**
comp=Z,74nm,0.9s
BJT Baijiatuau 77.21 322 eP **P 09 07 03.8 +0.7**
BJT pmax pmax
comp=Z,172nm,0.9s
BJT MLR MLR
comp=Z,20μm,20.0s
BJT Baijiatuau 77.21 322 eP **P 09 07 03.8 +0.7**
comp=Z,172nm,0.9s
BJT LR LR
comp=Z,20μm,20.0s
BJI Beijing 77.22 322 P **P 09 07 05.2 +2.0**
BJI PP **PP 09 09 56.6 -1.1**
BJI S **S 09 16 53.2 +2.7**
BJI pmax pmax
comp=Z,30μm,8.2s
BJI LR LR
comp=Z,17μm,26.2s
BJI LR LR
comp=Z,14μm,30.0s
BJI LR LR
comp=Z,19μm,29.7s
AKUT Akutan 77.45 15 eP **P 09 07 04.1 0.0**
comp=Z,3μm,2.0s
AKUT LR LR
comp=Z,40μm,19.0s
LAMP Lampang 77.57 295 P **P 09 07 06.6 +0.9**
comp=Z,388nm,1.0s,comp=Z,3μm
CRAI Chiangrai 77.72 297 P **P 09 07 06.3 -0.1**
comp=Z,2μm,1.3s,comp=Z,97μm
CMBY CAMPBELL BAY 77.91 282 eP **P 09 07 07.8 +0.2**
CMBY IAmb IAmb 09 07 12.3
comp=Z,335nm,1.2s
TIY Taiyuan 78.03 318 eP **P 09 07 10.0 +2.1**
TIY S **S 09 17 07.9 +8.4**
TIY sS **sS 09 17 16.4 -0.5**
TIY SS **SS 09 22 03.3 +1.5**
TIY pmax pmax
comp=Z,110nm,0.9s
TIY pmax pmax
comp=Z,20μm,7.0s
TIY LR LR
comp=Z,15μm,15.8s
TIY LR LR
comp=Z,5μm,13.8s
TIY LR LR
comp=Z,22μm,20.0s
KMI Kunming 78.09 303 P **P 09 07 09.9 +1.2**
KMI pP PcP 09 07 15.0 -3.2
KMI sP pP 09 07 16.9 -2.3
KMI PP **PP 09 10 08.8 +3.2**
KMI S **S 09 17 00.3 -0.7**
KMI pmax pmax
comp=Z,440nm,0.9s
KMI pmax pmax
comp=Z,18μm,7.7s
KMI LR LR
comp=Z,13μm,18.7s
KMI LR LR
comp=Z,19μm,18.7s
KMI LR LR
comp=Z,18μm,19.5s
CM01 Chiang Mai Arr 78.10 295 eP **P 09 07 07.7 -0.9**
CM31 Chiang Mai Arr 78.13 295 eP **P 09 07 11.3 +2.6**
XAN Xi'an 78.19 313 P **P 09 07 07.5 -1.3**
XAN pP PcP 09 07 17.8 -0.4
XAN PP **PP 09 10 08.2 +2.2**
XAN S **S 09 17 07.2 +5.9**
XAN pmax pmax
comp=Z,190nm,1.1s
XAN pmax pmax
comp=Z,20μm,8.5s
XAN LR LR
comp=Z,7μm,16.9s
XAN LR LR
comp=Z,23μm,17.8s
XAN LR LR
comp=Z,31μm,16.9s
CMMT Chiang Mai 78.28 295 P **P 09 07 09.6 0.0**
comp=Z,850nm,1.0s,comp=Z,22μm
CHTO Chiang Mai 78.29 295 P **P 09 07 09.7 +0.1**
comp=Z,4μm,0.8s,comp=Z,100μm
CHTO Chiang Mai 78.29 295 eP **P 09 07 10.0 +0.4**
CHTO pmax pmax
comp=Z,697nm,0.9s
CHTO MLR MLR
comp=Z,19μm,22.0s
CHTO Chiang Mai 78.29 295 eP **P 09 07 10.0 +0.4**
comp=Z,697nm,0.9s
CHTO LR LR
comp=Z,19μm,22.0s
CMAI Chiengmai2 78.70 296 P **P 09 07 12.8 +0.7**
comp=Z,469nm,1.1s,comp=Z,16μm
FALS False Pass 78.70 16 eP **P 09 07 11.0 0.0**
comp=Z,294nm,0.6s
FALS LR LR
comp=Z,47μm,19.0s
PAF Port-aux-Franc 79.91 221 eP **P 09 07 18.2 +0.3**
PAF pmax pmax
comp=Z,1μm,1.2s
PAF MLR MLR
comp=Z,28μm,18.0s
PAF Port-aux-Franc 79.91 221 eP **P 09 07 18.2 +0.3**
comp=Z,1μm,1.2s
PAF LR LR
comp=Z,28μm,18.0s
SDPT Sand Point 79.94 18 eP **P 09 07 17.3 -0.5**
comp=Z,650nm,0.9s
CD2 Chengdu 80.19 308 P **P 09 07 19.2 -0.6**
CD2 sP pP 09 07 31.0 +0.6
CD2 PP **PP 09 10 21.5 -1.3**
CD2 S **S 09 17 28.2 +5.5**
CD2 sS SKKSac 09 17 37.7 +0.6
CD2 SS **SS 09 22 35.2 +0.7**
CD2 pmax pmax
comp=Z,450nm,1.1s
CD2 pmax pmax
comp=Z,29μm,8.2s
CD2 LR LR
comp=Z,16μm,16.2s
CD2 LR LR
comp=Z,16μm,24.0s
HHC Hu-ho-hao-te 80.47 320 eP **P 09 07 20.7 -0.5**
HHC sP PcP 09 07 28.9 +0.8

HHC				PP	PP	09 10 20.6	-4.3
HHC				S	S	09 17 24.0	-1.4
HHC				sS	SKSac	09 17 37.4	+0.6
HHC				pmax	pmax		
	comp=Z,220nm,1.3s						
HHC				pmax	pmax		
	comp=Z,20μm,7.8s						
HHC				LR	LR		
	comp=Z,20μm,18.0s						
HHC				LR	LR		
	comp=Z,16μm,17.4s						
HHC				LR	LR		
	comp=Z,20μm,17.2s						
PBA	**Port Blair**	**80.77**	**286**	*e*P	P	09 07 22.2	-1.0
PBA				IAmb	IAmb	09 07 32.8	
MA2	**Magadan**	**80.90**	**351**	P	**P**	**09 07 23.4**	**+0.5**
	comp=Z,117nm,0.9s,baz=187,slow=6.3,SNR=27						
MA2	**Magadan**	**80.90**	**351**	*e*P	**P**	**09 07 23.5**	**+0.6**
MA2				pmax	pmax		
	comp=Z,688nm,1.0s						
MA2				MLR	MLR		
	comp=Z,74μm,21.0s						
MA2	**Magadan**	**80.90**	**351**	*e*P	**P**	**09 07 23.5**	**+0.6**
	comp=Z,688nm,1.0s						
MA2				LR	LR		
	comp=Z,74μm,21.0s						
DGPR	**DIGLIPUR**	**81.20**	**288**	*e*P	**P**	**09 07 26.3**	**+0.8**
DGPR				IAmb	IAmb	09 07 32.0	
	comp=Z,577nm,0.7s						
BTO	**Baotou**	**81.26**	**319**	*e*P	**P**	**09 07 24.5**	**-0.9**
BTO				S	**S**	**09 17 37.2**	**+3.5**
CHGN	**Chignik**	**81.35**	**18**	*e*P	**P**	**09 07 25.5**	**+0.2**
HIA	**Hailar**	**81.60**	**330**	*e*P	**P**	**09 07 28.7**	**+1.8**
HIA				pmax	pmax		
	comp=Z,275nm,1.2s						
HIA				MLR	MLR		
	comp=Z,28μm,19.0s						
HIA	**Hailar**	**81.60**	**330**	*e*P	**P**	**09 07 28.6**	**+1.8**
	comp=Z,275nm,1.2s						
HIA				LR	LR		
	comp=Z,28μm,19.0s						
LZH	**Lanzhou**	**82.79**	**313**	*e*P	**P**	**09 07 34.3**	**+0.7**
LZH				pP	PcP	09 07 39.4	+1.0
LZH				sP	pP	09 07 41.3	-2.9
LZH				PP	**PP**	**09 10 46.0**	**+1.7**
LZH				SKS	**S**	**09 17 50.0**	**+0.3**
LZH				*e*S	**SKSac**	**09 17 51.7**	**-1.2**
LZH				sS	SKKSac	09 17 59.7	+2.9
LZH				SS	**SS**	**09 23 15.7**	**+2.4**
LZH				pmax	pmax		
	comp=Z,410nm,1.1s						
LZH				pmax	pmax		
	comp=Z,17μm,5.4s						
LZH				LR	LR		
	comp=Z,14μm,17.0s						
LZH				LR	LR		
	comp=Z,27μm,16.8s						
LZH				LR	LR		
	comp=Z,34μm,19.0s						
SYO	**Syowa Base**	**83.63**	**196**⇑	*e*P	**P**	**09 07 35.0**	**-2.2**
SYO	**Syowa Base**	**83.63**	**196**⇓	*i*X	**P**	**09 07 37.1**	**-0.1**
OHAK	**Old Harbor**	**83.69**	**20**	*e*P	**P**	**09 07 36.8**	**-0.6**
	comp=Z,1μm,1.4s						
OHAK				LR	LR		
	comp=Z,64μm,19.0s						
SEY	**Seymchan**	**83.93**	**353**	P	**P**	**09 07 38.9**	**+0.3**
	comp=Z,111nm,1.0s,baz=159,slow=4.8,SNR=30						
SEY	**Seymchan**	**83.93**	**353**	*de*P	**P**	**09 07 39.3**	**+0.7**
KDAK	**Kodiak Island**	**84.36**	**20**	P	P	09 07 55.4	+15
	comp=Z,234nm,0.9s,baz=215,slow=4.3,SNR=39						
KDAK	**Kodiak Island**	**84.36**	**20**	*i* P	**P**	**09 07 41.5**	**+0.6**
KDAK	**Kodiak Island**	**84.36**	**20**	*e*P	**P**	**09 07 41.8**	**+0.9**
	comp=Z,722nm,1.0s						
KDAK				LR	LR		
	comp=Z,76μm,19.0s						
CLNS	**Chul'man**	**85.05**	**338**	*e*P	**P**	**09 07 46.3**	**+1.8**
CLNS				*e**PP	**sP**	**09 08 01.3**	**+2.3**
CLNS				*e*		09 11 09.3	
CLNS				*e*PPP	PPP	09 13 02.4	
CLNS				*e*S	**S**	**09 18 08.6**	**-2.7**
CLNS				pmax	pmax		
	comp=Z,369nm,1.0s						
CLNS				pmax	pmax		
	comp=N,78nm,0.8s						
CLNS				pmax	pmax		
	comp=E,39nm,0.8s						
CLNS				pmax	pmax		
	comp=Z,28nm,1.0s						
CLNS				pmax	pmax		
	comp=N,18nm,0.8s						
CLNS				pmax	pmax		
	comp=E,20nm,0.9s						
CLNS				smax	smax		
	comp=E,2μm,9.3s						
CLNS				smax	smax		
	comp=N,11μm,14.3s						
CLNS				MLR	MLR		
	comp=Z,14μm,19.0s						
CLNS				MLR	MLR		
	comp=N,22μm,18.0s						
CLNS				MLR	MLR		
	comp=E,10μm,16.0s						
GAMB	**Gambell**	**85.28**	**9**	*e*P	**P**	**09 07 45.5**	**+0.1**
	comp=E,528nm,1.3s						
HOM	**Homer**	**86.16**	**19**	*e*P	**P**	**09 07 50.6**	**+0.7**
	comp=E,1μm,0.9s						
PMSA	**Palmer Station**	**86.20**	**160**	P	**P**	**09 07 50.3**	**+0.2**
	comp=E,144nm,1.1s,baz=230,slow=3.8,SNR=14						
PMSA	**Palmer Station**	**86.20**	**160**	*e*P	**P**	**09 07 51.8**	**+1.6**
	comp=E,967nm,1.6s						
PMSA				LR	LR		
	comp=Z,36μm,19.0s						
SVW2	**Sparrevohn**	**86.20**	**17**	*e*P	**P**	**09 07 51.7**	**+1.6**
	comp=Z,76nm,1.0s						
CIT	**Chita**	**86.37**	**330**	*e*P	**P**	**09 07 53.2**	**+2.0**
CIT				*e*		09 08 07.9	
CIT				pmax	pmax		
	comp=Z,1μm,2.3s						
MCCM	**Marconi Confer**	**86.87**	**47**	*e*P	**P**	**09 07 53.9**	**0.0**
	comp=Z,668nm,1.0s						
SNCC	**San Nicolas Is**	**87.03**	**53**	P	**P**	**09 07 55.4**	**+0.6**
	baz=244						
SNCC	**San Nicolas Is**	**87.03**	**53**	*e*P	**P**	**09 07 56.7**	**+1.9**
	comp=Z,733nm,1.0s						
SHL	**Shillong**	**87.07**	**298**	*e*P	**P**	**09 07 54.0**	**-1.4**
	comp=Z,94nm,1.8s						
SHL				IAmb	IAmb	09 08 02.6	
	comp=Z,5μm,2.4s						
SHL				*i* x	x	09 18 24.0	
HOPS	**Hopland Field**	**87.15**	**47**	*e*P	**P**	**09 07 55.2**	**0.0**
	comp=Z,832nm,1.0s						
SEW	**Seward**	**87.20**	**20**	*e*P	**P**	**09 07 55.3**	**+0.4**
	comp=Z,231nm,1.2s						
ULN	**Ulaanbaatar**	**87.20**	**324**	*de*P	**P**	**09 07 54.7**	**-0.8**
ULN				pmax	pmax		
	comp=Z,121nm,1.0s						
ULN				MLR	MLR		
	comp=Z,18μm,18.0s						
ULN	**Ulaanbaatar**	**87.20**	**324**	*e*P	**P**	**09 07 55.2**	**-0.3**
	comp=Z,371nm,1.1s						
ULN				LR	LR		
	comp=Z,18μm,20.0s						
GTA	**Gaotai**	**87.22**	**314**	⇑P	**P**	**09 07 55.5**	**-0.3**
GTA				pP	PcP	09 08 01.8	+4.0
GTA				sP	pP	09 08 05.3	-1.1
GTA				PP	**PP**	**09 11 23.2**	**+2.9**
GTA				SKS	**SKSac**	**09 18 19.6**	**-1.3**
GTA				S	**S**	**09 18 31.9**	**-1.6**
GTA				sS	sS	09 18 46.9	-4.2
GTA				SS	**SS**	**09 24 19.2**	**+0.8**
GTA				pmax	pmax		
	comp=Z,18μm,7.6s						
GTA				LR	LR		
	comp=Z,9μm,19.5s						
GTA				LR	LR		
	comp=Z,11μm,18.5s						
GTA				LR	LR		
	comp=Z,12μm,20.0s						
SAO	**San Andreas Ge**	**87.22**	**49**	*e*P	**P**	**09 07 55.5**	**-0.2**
SAO				pmax	pmax		
	comp=Z,455nm,1.0s						
SAO	**San Andreas Ge**	**87.22**	**49**	*e*P	**P**	**09 07 55.5**	**-0.2**
	comp=Z,455nm,1.0s						
SPU	**Mount Spurr**	**87.26**	**18**	*e*P	**P**	**09 07 54.2**	**-1.1**
KIPM	**Iron Peak**	**87.27**	**46**	*e*P	**P**	**09 07 56.3**	**+0.3**
SCZ2	**Santa Cruz Isl**	**87.28**	**52**	P	**P**	**09 07 56.3**	**+0.3**
	baz=243						
KMRM	**Mail Ridge**	**87.32**	**45**	*e*P	**P**	**09 07 56.2**	**+0.1**
	comp=Z,1μm,1.0s						
JCC	**Jacoby Creek,**	**87.40**	**45**	*e*P	**P**	**09 07 58.1**	**+1.8**
	comp=Z,802nm,1.1s						
SBC	**Santa Barbara**	**87.42**	**52**	P	**P**	**09 07 56.9**	**+0.3**
	baz=243						
TNA	**Tin City**	**87.53**	**10**	*e*P	**P**	**09 07 57.2**	**+0.8**
	comp=Z,462nm,1.4s						
PKM	**Mcpherson Peak**	**87.55**	**51**	P	**P**	**09 07 57.9**	**+0.4**
	baz=243						
PKM				SKSac	**SKSac**	**09 18 24.9**	**+1.6**
	baz=243						
SONM	**Songino Array**	**87.55**	**324**	P	**P**	**09 07 56.8**	**-0.4**
	comp=Z,119nm,0.9s,baz=157,slow=5.2,SNR=38						
SONM				LR	LR	09 45 12.4	
	comp=Z,17μm,21.6s,baz=125,slow=34						
SONA1	**Songino Array**	**87.55**	**324**	*e*P	**P**	**09 07 56.2**	**-1.0**
SMMC	**Simmler**	**87.60**	**51**	P	**P**	**09 07 57.9**	**+0.3**
	baz=243,SNR=26						
TT01	**Tatalina**	**87.60**	**16**	*e*P	**P**	**09 07 56.9**	**+0.1**
KHMM	**Horse Mountain**	**87.62**	**45**	*e*P	**P**	**09 07 58.1**	**+0.4**
	comp=Z,1μm,1.0s						
TTA	**Tatalina**	**87.63**	**16**	*e*P	**P**	**09 07 57.7**	**+0.6**
TTA				pmax	pmax		
	comp=Z,333nm,1.7s						
TTA	**Tatalina**	**87.63**	**16**	*e*P	**P**	**09 07 57.7**	**+0.6**
	comp=Z,333nm,1.7s						
YAK	**Yakutsk**	**87.64**	**343**	P	**P**	**09 07 56.8**	**-0.2**
	comp=Z,440nm,0.8s,baz=0.9,slow=0.6,SNR=31						
YAK	**Yakutsk**	**87.64**	**343**	*e*P	**P**	**09 07 55.2**	**-1.8**
YAK				*e*S	**SKSac**	**09 18 18.7**	**-3.3**
YAK				*e*		09 18 40.2	
YAK				pmax	pmax		
	comp=Z,507nm,0.9s						
YAK				pmax	pmax		
	comp=N,147nm,1.0s						
YAK				pmax	pmax		
	comp=E,132nm,1.4s						
YAK				pmax	pmax		
	comp=Z,2μm,4.4s						
YAK				pmax	pmax		
	comp=N,2μm,4.3s						
YAK				pmax	pmax		
	comp=E,914nm,4.4s						
YAK				smax	smax		
	comp=N,8μm,6.3s						
YAK				smax	smax		
	comp=E,4μm,5.7s						
YAK				MLR	MLR		
	comp=Z,93μm,21.0s						
YAK				MLR	MLR		
	comp=N,64μm,18.0s						
YAK				MLR	MLR		
	comp=E,29μm,18.0s						
YAK	**Yakutsk**	**87.64**	**343**	*e*P	**P**	**09 07 56.5**	**-0.5**
	comp=E,582nm,0.9s						
YAK				LR	LR		
	comp=Z,81μm,19.0s						
SCI2	**San Clemente I**	**87.64**	**54**	P	**P**	**09 07 57.8**	**+0.1**
	baz=244						
NVL	**N'lazarevskaya**	**87.66**	**188**⇑	*i* P	**P**	**09 07 57.9**	**+0.7**
NVL				*e**SP	**pP**	**09 08 09.1**	**+1.2**
NVL				*e*PPP	PPP	09 13 18.2	
NVL				*e*S	**SKSac**	**09 18 23.1**	**+0.7**
NVL				*e*SSS	SSS	09 28 02.3	
NVL				MLR	MLR		
	comp=Z,38μm,16.0s						
MID	**Middleton Isla**	**87.71**	**21**	*e*P	**P**	**09 07 57.0**	**-0.4**
MID				pmax	pmax		
	comp=Z,343nm,1.0s						
MID	**Middleton Isla**	**87.71**	**21**	*e*P	**P**	**09 07 57.0**	**-0.4**
	comp=Z,342nm,1.0s						
BLG	**Laguna Peak, P**	**87.75**	**52**	P	**P**	**09 07 58.3**	**+0.1**
	baz=244						
RC01	**Rabbit Creek A**	**87.88**	**19**	*e*P	**P**	**09 07 58.0**	**-0.2**
	comp=Z,313nm,1.3s						
CIS	**Catalina Islan**	**87.93**	**53**	P	**P**	**09 07 59.0**	**-0.1**
	baz=244,SNR=11						
SNAA	**Sanae**	**88.03**	**183**	*d* iP	**P**	**09 07 57.6**	**-1.5**
SNAA	**Sanae**	**88.03**	**183**	*e*P	**P**	**09 07 58.0**	**-1.1**
	comp=Z,25μm,1.2s						
BILL	**Bilibino**	**88.13**	**359**	*d i*P	**P**	**09 07 57.8**	**-1.4**
BILL				*i*		09 08 14.7	
BILL				*e*S	**SKSac**	**09 18 28.8**	**+4.0**
BILL				pmax	pmax		
	comp=Z,192nm,0.9s						
BILL	**Bilibino**	**88.13**	**359**	*e*P	**P**	**09 07 57.4**	**-1.8**
	comp=Z,539nm,1.0s						
BILL				LR	LR		
	comp=Z,27μm,19.0s						
FMP	**Fort Macarthur**	**88.15**	**53**	P	**P**	**09 07 59.9**	**-0.3**
	baz=244,SNR=9.3						
OSI	**Osito Audit: C**	**88.23**	**52**	P	**P**	**09 08 00.4**	**-0.2**
	baz=244,SNR=18						
OSI	**Osito Audit: C**	**88.23**	**52**	*e*P	**P**	**09 08 01.1**	**+0.5**
	comp=Z,611nm,1.4s						
L02D	**Cave Junction,**	**88.34**	**44**	P	**P**	**09 08 01.0**	**+0.1**
	baz=241,SNR=57						
N02D	**Trinity Center**	**88.35**	**45**	P	**P**	**09 08 01.3**	**+0.2**
	baz=241,SNR=130						
DECC	**Green Verdugo**	**88.36**	**53**	P	**P**	**09 08 00.7**	**-0.5**
	baz=244,SNR=17						
ARVC	**Arvin**	**88.37**	**52**	P	**P**	**09 08 00.7**	**-0.5**
	baz=244,SNR=39						
PASC	**Pasadena Art C**	**88.43**	**53**	*e*P	**P**	**09 08 00.5**	**-1.0**
	comp=Z,273nm,1.0s						
PMR	**Palmer**	**88.45**	**19**	*e*P	**P**	**09 08 00.5**	**-0.4**
PMR				pmax	pmax		
	comp=Z,297nm,1.5s						
PMR	**Palmer**	**88.45**	**19**	*e*P	**P**	**09 08 00.5**	**-0.4**
	comp=Z,297nm,1.5s						
M02C	**Callahan**	**88.45**	**45**	P	**P**	**09 08 02.0**	**+0.5**
	baz=241,SNR=166						
ORV	**Oroville**	**88.49**	**47**	*e*P	**P**	**09 08 01.0**	**-0.6**
ORV				pmax	pmax		
	comp=Z,836nm,1.3s						
ORV	**Oroville**	**88.49**	**47**	*e*P	**P**	**09 08 01.0**	**-0.6**
	comp=Z,836nm,1.3s						
VES	**Vestal, Richgr**	**88.50**	**51**	P	**P**	**09 08 01.5**	**-0.2**
	baz=244,SNR=61						
MWC	**Mount Wilson**	**88.55**	**53**	*e*P	**P**	**09 08 00.8**	**-1.5**
MWC				pmax	pmax		
	comp=Z,638nm,1.3s						
MWC	**Mount Wilson**	**88.55**	**53**	*e*P	**P**	**09 08 00.8**	**-1.5**
	comp=Z,638nm,1.3s						
CMB	**Columbia Colle**	**88.56**	**48**	*e*P	**P**	**09 08 00.4**	**-1.6**
CMB				pmax	pmax		
	comp=Z,484nm,1.0s						
CMB	**Columbia Colle**	**88.56**	**48**	*e*P	**P**	**09 08 00.4**	**-1.6**
	comp=Z,484nm,1.0s						
AFDM	**Forest Hills D**	**88.57**	**47**	*e*P	**P**	**09 08 01.3**	**-0.7**
	comp=Z,789nm,1.2s						
RCTC	**Rector, Farmer**	**88.59**	**50**	P	**P**	**09 08 01.7**	**-0.5**
	baz=244,SNR=35						
PPLA	**Purkeypile**	**88.60**	**17**	*e*P	**P**	**09 08 01.1**	**-0.7**
	comp=Z,94nm,1.1s						
O03D	**Paynes Creek**	**88.63**	**46**	P	**P**	**09 08 02.1**	**-0.3**
	baz=242,SNR=138						
109C	**Camp Elliot, M**	**88.70**	**54**	P	**P**	**09 08 02.2**	**-0.6**
	baz=245,SNR=28						
YBH	**Yreka Blue Hor**	**88.71**	**44**	P	**P**	**09 08 02.5**	**-0.2**
	comp=Z,155nm,0.8s,baz=144,slow=0.7,SNR=77						
YBH				PKKPbc	**PKKPdf**	**09 25 41.0**	**+1.0**
	comp=Z,2.6nm,1.0s,baz=232,slow=19,SNR=3.1						
YBH				LR	LR	09 44 24.8	
	comp=Z,66μm,18.1s,baz=240,slow=33						
YBH	**Yreka Blue Hor**	**88.71**	**44**	*e*P	**P**	**09 08 02.6**	**-0.2**
YBH				pmax	pmax		
	comp=Z,515nm,1.0s						
YBH	**Yreka Blue Hor**	**88.71**	**44**	*e*P	**P**	**09 08 02.6**	**-0.2**
	comp=Z,515nm,1.0s						
YBH				PKKPbc	**PKKPdf**	**09 25 41.0**	**+1.0**
EYAK	**Cordova Ski Ar**	**88.74**	**21**	*e*P	**P**	**09 08 02.1**	**-0.2**
	comp=Z,197nm,1.2s						
BFSC	**Mount Baldy Ra**	**88.86**	**53**	P	**P**	**09 08 03.1**	**-0.6**
	baz=244,SNR=57						
SML	**Sawmill**	**88.86**	**19**	*e*P	**P**	**09 08 03.3**	**+0.4**
SML				pmax	pmax		
	comp=Z,204nm,1.0s						
SML	**Sawmill**	**88.86**	**19**	*e*P	**P**	**09 08 03.3**	**+0.4**
	comp=Z,204nm,1.0s						
ISA	**Isabella, Lake**	**88.87**	**51**	P	**P**	**09 08 03.3**	**-0.4**
	baz=244,SNR=60						
ISA	**Isabella, Lake**	**88.87**	**51**	*e*P	**P**	**09 08 02.8**	**-0.8**
ISA				pmax	pmax		
	comp=Z,469nm,1.0s						
ISA	**Isabella, Lake**	**88.87**	**51**	*e*P	**P**	**09 08 02.8**	**-0.8**
	comp=Z,469nm,1.0s						
EDW2	**Edwards Air Fo**	**88.88**	**52**	P	**P**	**09 08 03.4**	**-0.3**
	baz=244,SNR=76						
MURC	**Murrieta**	**88.93**	**54**	P	**P**	**09 08 03.4**	**-0.5**
	baz=245,SNR=41						
BAR	**Barrett**	**88.94**	**55**	*e*P	**P**	**09 08 03.4**	**-0.6**
	comp=Z,136nm,1.0s						
HUMO	**Hull Mountain**	**88.97**	**43**	*e*P	**P**	**09 08 03.8**	**-0.1**
	comp=Z,917nm,1.1s						
RAGM	**Ragged Mountai**	**88.98**	**21**	*e*P	**P**	**09 08 04.1**	**+0.6**
	comp=Z,92nm,0.9s						
DBO	**Dodson Butte**	**89.04**	**43**	*e*P	**P**	**09 08 04.5**	**+0.2**
CAST	**Castle Rocks**	**89.05**	**17**	*e*P	**P**	**09 08 02.5**	**-1.3**
	comp=Z,118nm,0.8s						
DIV	**Divide**	**89.16**	**20**	*e*P	**P**	**09 08 04.7**	**+0.3**
	comp=Z,233nm,1.2s						
SCM	**Sheep Creek Mo**	**89.19**	**19**	*e*P	**P**	**09 08 03.9**	**-0.6**
SCM				pmax	pmax		
	comp=Z,151nm,0.9s						
SCM	**Sheep Creek Mo**	**89.19**	**19**	*e*P	**P**	**09 08 03.9**	**-0.6**
	comp=Z,151nm,0.9s						
MONP2	**Monument Peak**	**89.22**	**54**	P	**P**	**09 08 05.4**	**-0.2**
	baz=245,SNR=53						
I03D	**Drain, OR**	**89.25**	**42**	P	**P**	**09 08 05.3**	**+0.2**
	baz=241,SNR=61						
M04C	**Macdoel**	**89.31**	**45**	P	**P**	**09 08 05.4**	**-0.2**
	baz=242,SNR=84						
LSA	**Lhasa**	**89.33**	**302**	P	**P**	**09 08 06.8**	**+0.4**
LSA				pmax	pmax		
	comp=Z,120nm,1.4s						
LSA				pmax	pmax		
	comp=Z,9μm,9.5s						
LSA				LR	LR		
	comp=Z,6μm,25.0s						
LSA				LR	LR		
	comp=Z,7μm,25.0s						
LSA				LR	LR		
	comp=Z,11μm,21.4s						
LSA	**Lhasa**	**89.33**	**302**	*e*P	**P**	**09 08 08.4**	**+2.0**
LSA				pmax	pmax		
	comp=Z,122nm,1.0s						
LSA				MLR	MLR		
	comp=Z,12μm,21.0s						
LSA	**Lhasa**	**89.33**	**302**	*e*P	**P**	**09 08 08.4**	**+2.0**
	comp=Z,122nm,1.0s						
LSA				LR	LR		
	comp=Z,12μm,21.0s						
IKP	**In-Ko-Pah, Jac**	**89.36**	**55**	P	**P**	**09 08 05.6**	**-0.4**
	baz=245,SNR=65						
LRMC	**Laurel Mtn Rad**	**89.37**	**52**	P	**P**	**09 08 06.1**	**0.0**
	baz=244,SNR=40						
KLU	**Klutina**	**89.39**	**20**	*e*P	**P**	**09 08 05.7**	**+0.3**
	comp=Z,174nm,1.2s						
BBRC	**Big Bear Solar**	**89.42**	**53**	P	**P**	**09 08 06.3**	**-0.1**
	baz=245						
BMRM	**Bremner River**	**89.43**	**21**	*e*P	**P**	**09 08 06.1**	**+0.4**
	comp=Z,168nm,1.1s						
WAKR	**Walker**	**89.44**	**48**	*e*P	**P**	**09 08 06.0**	**-0.4**
KTH	**Kantishna Hill**	**89.47**	**17**	*e*P	**P**	**09 08 05.9**	**+0.1**
	comp=Z,118nm,1.0s						
MLAC	**Mammoth, Mammo**	**89.47**	**49**	P	**P**	**09 08 06.7**	**+0.1**
	baz=244,SNR=49						
PFO	**Pinyon Flats O**	**89.49**	**54**	LR	LR	09 40 17.9	
	comp=Z,37μm,21.0s,baz=254,slow=30						
PFO	**Pinyon Flats O**	**89.49**	**54**	P	**P**	**09 08 06.5**	**-0.1**
	baz=245						
PFO	**Pinyon Flats O**	**89.49**	**54**	*e*P	**P**	**09 08 06.2**	**-0.5**
PFO				pmax	pmax		
	comp=Z,403nm,1.3s						
PFO	**Pinyon Flats O**	**89.49**	**54**	*e*P	**P**	**09 08 06.2**	**-0.5**
	comp=Z,403nm,1.3s						
TPFO	**Pinon Flats**	**89.49**	**54**	P	**P**	**09 08 06.4**	**-0.3**
	baz=245,SNR=49						
TRF	**Thorofare Moun**	**89.57**	**17**	*e*P	**P**	**09 08 05.4**	**-1.0**
	comp=Z,93nm,0.8s						
RRX	**Edison Barstow**	**89.62**	**52**	P	**P**	**09 08 07.0**	**-0.1**
	baz=245						
TIN	**Tinemaha, Big**	**89.66**	**50**	P	**P**	**09 08 07.2**	**-0.1**
	baz=244,SNR=40						
COR	**Corvallis**	**89.72**	**42**	*e*P	**P**	**09 08 03.9**	**-3.3**
COR	**Corvallis**	**89.72**	**42**	*e*P	**P**	**09 08 03.9**	**-3.3**
SWSC	**Sam W. Stewart**	**89.72**	**55**	P	**P**	**09 08 07.3**	**-0.2**
	baz=246,SNR=51						
MPMC	**Manual Prospec**	**89.76**	**51**	P	**P**	**09 08 07.4**	**-0.5**
	baz=245,SNR=144						
K04D	**Chiloquin, OR**	**89.76**	**44**	P	**P**	**09 08 07.4**	**-0.3**
	baz=242,SNR=53						
DAC	**Darwin (Calif)**	**89.78**	**51**	*e*P	**P**	**09 08 07.4**	**-0.7**
DAC				pmax	pmax		
	comp=Z,364nm,1.0s						
DAC	**Darwin (Calif)**	**89.78**	**51**	*e*P	**P**	**09 08 07.3**	**-0.7**
	comp=Z,364nm,1.0s						
BPAW	**Bear Paw Mtn.**	**89.89**	**17**	*e*P	**P**	**09 08 06.5**	**-1.2**
	comp=Z,61nm,1.2s						
I04A	**Tendick Farm,**	**89.90**	**43**	P	**P**	**09 08 07.8**	**-0.4**
	baz=241,SNR=89						
BOD	**Bodaibo**	**89.92**	**334**	*e*P	**P**	**09 08 06.8**	**-1.1**
BOD				*e*S	**SKSac**	**09 18 39.8**	**+4.0**
RND	**Reindeer**	**89.94**	**18**	*e*P	**P**	**09 08 07.1**	**-0.9**
RND				pmax	pmax		
	comp=Z,153nm,1.0s						
RND	**Reindeer**	**89.94**	**18**	*e*P	**P**	**09 08 07.1**	**-0.9**
	comp=Z,153nm,1.0s						
GSC	**Goldstone, Bar**	**89.94**	**52**	P	**P**	**09 08 08.1**	**-0.6**
	baz=245,SNR=89						
GSC	**Goldstone, Bar**	**89.94**	**52**	*e*P	**P**	**09 08 07.9**	**-0.8**
GSC				pmax	pmax		
	comp=Z,766nm,1.4s						
GSC	**Goldstone, Bar**	**89.94**	**52**	*e*P	**P**	**09 08 07.9**	**-0.8**
	comp=Z,766nm,1.4s						
TCBU	**Trout Butte**	**89.95**	**42**	*e*P	**P**	**09 08 12.1**	**+3.5**
BELC	**Belle Mtn. Jos**	**90.00**	**54**	P	**P**	**09 08 08.7**	**-0.4**
	baz=245,SNR=58						
G03D	**McMinnville, O**	**90.05**	**41**	P	**P**	**09 08 08.8**	**+0.1**
	baz=241,SNR=48						
HEC	**Hector,Ludlow**	**90.10**	**53**	P	**P**	**09 08 09.1**	**-0.3**
	baz=245,SNR=86						
MCK	**McKinley**	**90.17**	**18**	*e*P	**P**	**09 08 07.9**	**-1.1**
MCK				pmax	pmax		
	comp=Z,100nm,0.9s						
MCK	**McKinley**	**90.17**	**18**	*e*P	**P**	**09 08 07.9**	**-1.1**
	comp=Z,100nm,0.9s						
NV01	**Mina Array Sit**	**90.20**	**49**	*e*P	**P**	**09 08 08.5**	**-1.5**
NVAR	**Mina Array Bea**	**90.20**	**49**	P	**P**	**09 08 09.2**	**-0.7**
	comp=Z,132nm,0.8s,baz=228,slow=8.0,SNR=139						
NVAR				PKKPbc	**PKKPbc**	**09 25 43.4**	**+2.6**
	comp=Z,2.6nm,0.8s,baz=60,slow=5.3,SNR=6.8						
NVAR				PKPPKP	**P'P'df**	**09 33 48.9**	**+1.6**
	comp=Z,1.0nm,0.8s,baz=87,slow=2.6,SNR=4.5						
NVAR				LR	LR	09 43 53.6	
	comp=Z,69μm,18.6s,baz=258,slow=32						
F03A	**Seaside**	**90.22**	**40**	*e*P	**P**	**09 08 09.6**	**0.0**
	comp=Z,1μm,1.1s						
PALK	**Pallekele**	**90.23**	**278**	LR	LR	09 49 38.0	
	comp=Z,26μm,19.9s,baz=130,slow=36						
PALK	**Pallekele**	**90.23**	**278**	*i* P	**P**	**09 08 13.1**	**+2.6**
	SNR=10						
PALK	**Pallekele**	**90.23**	**278**	*i* P	**P**	**09 08 13.1**	**+2.6**
	SNR=10						
PALK	**Pallekele**

baz=245,SNR=172
WIFE Three Sisters- 90.40 43 *e*P **P 09 08 10.3 -0.4**
J05D Fort Rock, OR 90.41 43 P **P 09 08 10.4 -0.4**
baz=242,SNR=451
H04A Detroit Lake 90.46 42 *e*P **P 09 08 09.4 -1.4**
comp=Z,752nm,1.2s
GLA Glamis 90.51 55 P **P 09 08 11.0 -0.3**
baz=246,SNR=61
GLA Glamis 90.51 55 *e*P **P 09 08 11.2 -0.1**
GLA pmax pmax
comp=Z,741nm,1.1s
GLA Glamis 90.51 55 *e*P **P 09 08 11.2 -0.1**
comp=Z,741nm,1.1s
E03A Lebam 90.52 40 *e*P **P 09 08 10.6 -0.3**
comp=Z,2μm,1.1s
G04A Mulino 90.53 41 *e*P **P 09 08 12.3 +1.3**
GMRC Granite Mounta 90.58 53 P **P 09 08 11.0 -0.8**
baz=246,SNR=88
SHOC Shoshone, Teco 90.59 52 P **P 09 08 11.1 -0.5**
baz=245,SNR=61
PAX Paxson 90.62 19 *e*P **P 09 08 11.0 -0.2**
PAX pmax pmax
comp=Z,85nm,1.4s
PAX Paxson 90.62 19 *e*P **P 09 08 11.0 -0.2**
comp=Z,85nm,1.4s
F04D Rainier, OR 90.63 40 P **P 09 08 11.4 0.0**
baz=241,SNR=46
TUQ Turquoise Moun 90.66 52 P **P 09 08 11.4 -0.6**
baz=246,SNR=161
ZAK Zakamensk 90.66 325 *e*P **P 09 08 10.8 -0.8**
ZAK pmax pmax
comp=Z,178nm,1.7s
MLY Manley 90.69 16 *e*P **P 09 08 10.7 -0.7**
comp=Z,54nm,1.0s
LPIG La Paz 90.70 65 LR LR 09 41 25.7
comp=Z,74μm,19.3s,baz=244,slow=31
IRM Iron Mountain 90.71 54 P **P 09 08 11.8 -0.4**
baz=246,SNR=49
NLWA Neilton Lookou 90.75 39 *e*P **P 09 08 11.9 -0.2**
comp=Z,612nm,1.1s
NLWA LR LR
comp=Z,34μm,20.0s
I05D Terrebonne, OR 90.83 43 P **P 09 08 12.1 -0.5**
baz=242,SNR=90
SLBS Sierra La Lagu 90.86 65 *e*P **P 09 08 13.2 0.0**
comp=Z,377nm,1.3s
F04A Amboy 90.91 41 *e*P **P 09 08 12.2 -0.7**
comp=Z,1μm,1.0s
USHA Ushuaia 90.93 151 P **P 09 08 14.1 +1.2**
comp=Z,535nm,1.2s,baz=212,slow=7.0,SNR=16
WRH Wood River Hil 90.98 17 *e*P **P 09 08 12.5 -0.2**
comp=Z,155nm,1.1s
Y12C Blythe 91.02 54 P **P 09 08 13.0 -0.6**
baz=246,SNR=70
Y12C Blythe 91.02 54 *e*P **P 09 08 13.2 -0.4**
comp=Z,477nm,1.1s
TPNV Topopah Spring 91.04 51 P **P 09 08 13.4 -0.5**
baz=245,SNR=208
TPNV Topopah Spring 91.04 51 *e*P **P 09 08 12.9 -1.0**
TPNV pmax pmax
comp=Z,492nm,1.1s
TPNV Topopah Spring 91.04 51 *e*P **P 09 08 12.9 -1.0**
comp=Z,492nm,1.1s
CHLP Challavanipeta 91.10 289 *e*P **P 09 08 14.3 0.0**
CHLP IAmb IAmb 09 08 20.4
comp=Z,376nm,1.0s
CHLP *e*SKSac **SKSac 09 18 45.4 +1.0**
CHLP IVMs_BB IVMs_BB 09 43 05.2
comp=Z,6μm,28.1s
LDFC Landfair 91.11 53 *e*P **P 09 08 14.4 +0.2**
comp=Z,1μm,1.0s
IRK Irkutsk 91.12 326 *e*P **P 09 08 12.2 -1.4**
IRK *e*S **S 09 19 11.7 +2.6**
IRK pmax pmax
comp=Z,582nm,2.8s
TLY Talaya 91.15 326 P **P 09 08 13.0 -0.8**
comp=Z,76nm,0.8s,baz=190,slow=3.1,SNR=34
TLY Talaya 91.15 326 *d i*P **P 09 08 12.0 -1.8**
TLY *e*SS SS 09 25 23.6 +8.9
TLY pmax pmax
comp=Z,250nm,1.9s
TLY Talaya 91.15 326 *e*P **P 09 08 13.1 -0.8**
comp=Z,122nm,0.9s
TLY LR LR
comp=Z,17μm,20.0s
MENT Mentasta 91.15 20 *e*P **P 09 08 13.6 0.0**
comp=Z,111nm,1.4s
SWFL Southwest Flan 91.17 41 *e*P **P 09 08 14.3 0.0**
CCB Clear Creek Bu 91.19 17 *e*P **P 09 08 13.2 -0.4**
comp=Z,72nm,0.8s
113A Mohawk Valley, 91.21 56 *e*P **P 09 08 14.4 -0.1**
comp=Z,481nm,1.3s
WRAK Wrangell Islan 91.24 29 *e*P **P 09 08 15.4 +1.4**
comp=Z,385nm,0.9s
WRAK LR LR
comp=Z,34μm,20.0s
HDA Harding Lake 91.25 18 *e*P **P 09 08 14.2 +0.3**
comp=Z,143nm,0.9s
G05D Wamic, OR 91.27 42 P **P 09 08 14.5 0.0**
baz=242,SNR=47
MDM Murphy Dome 91.31 17 *e*P **P 09 08 13.9 -0.3**
comp=Z,111nm,0.9s
COLA College 91.35 17 *e*P **P 09 08 13.6 -0.7**
COLA pmax pmax
comp=Z,89nm,0.8s
COLA MLR MLR
comp=Z,43μm,19.0s
COLA College 91.35 17 *e*P **P 09 08 13.6 -0.7**
comp=Z,89nm,0.8s
COLA LR LR
comp=Z,43μm,19.0s
BOK Bokaro 91.42 295 *e*P **P 09 08 13.8 -2.0**
BOK IAmb IAmb 09 08 21.3
comp=Z,499nm,1.4s
GNW Green Mountain 91.45 39 *e*P **P 09 08 14.8 -0.4**
VIS Vishakhapatnam 91.47 288 *e*P **P 09 08 14.9 -1.1**
VIS IAmb IAmb 09 08 21.8
comp=Z,104nm,0.7s
PDMCI Parker Dam,Lak 91.53 54 P **P 09 08 15.6 -0.4**
baz=246,SNR=73
IL1 Eielson Array 91.54 18 *e*P **P 09 08 14.1 -1.2**
ILAR Eielson Array 91.54 18 P **P 09 08 13.2 -2.1**
comp=Z,37nm,0.8s,baz=236,slow=5.3,SNR=58
ILAR PKKPbc **PKKPdf 09 25 34.3 -1.5**
comp=Z,2.2nm,0.8s,baz=356,slow=2.2,SNR=8.7
ILAR PKPPKP **P'P'df 09 33 41.0 -0.9**
comp=Z,0.9nm,0.9s,baz=351,slow=2.6,SNR=5.3
ILAR LR LR 09 49 14.4
comp=Z,43μm,18.0s,baz=232,slow=36
ILB Eielson Array 91.54 18 *e*P **P 09 08 14.5 -0.8**
DOT Dot Lake 91.55 19 *e*P **P 09 08 14.5 -0.9**
comp=Z,265nm,1.1s
PGC Sidney 91.62 38 *e*P **P 09 08 15.8 -0.2**
comp=Z,436nm,0.9s
214A Organ Pipe Nat 91.64 57 P **P 09 08 16.8 +0.2**
baz=247
214A Organ Pipe Nat 91.64 57 *e*P **P 09 08 16.2 -0.4**
comp=Z,2μm,1.2s
SHPR Sheep Range 91.66 52 *e*P **P 09 08 16.4 -0.3**
comp=Z,364nm,1.2s
LON Longmire 91.67 40 *e*P **P 09 08 15.9 -0.5**
LON pmax pmax
comp=Z,236nm,1.1s
LON Longmire 91.67 40 *e*P **P 09 08 15.9 -0.5**
comp=Z,236nm,1.1s
G06A Carlson Farm, 91.69 42 *e*P **P 09 08 15.9 -0.7**
comp=Z,340nm,1.3s
WVOR Wild Horse Val 91.73 45 *e*P **P 09 08 15.7 -1.1**
WVOR pmax pmax
comp=Z,455nm,1.0s
WVOR MLR MLR
comp=Z,79μm,19.0s
WVOR Wild Horse Val 91.73 45 *e*P **P 09 08 15.7 -1.1**
comp=Z,455nm,1.0s
WVOR LR LR
comp=Z,79μm,19.0s
OBSR Observation Ro 91.74 40 *e*P **P 09 08 17.2 +0.2**
D05A Enumclaw 91.77 40 *e*P **P 09 08 16.2 -0.6**
comp=Z,1μm,1.1s
SKAG Skagway 91.82 25 *e*P **P 09 08 15.7 -0.9**
comp=Z,300nm,1.0s
HSIG 92.00 60 *e*P **P 09 08 17.3 -1.0**
comp=Z,237nm,1.0s
W13A Hualapai Mount 92.04 53 *e*P **P 09 08 17.6 -1.0**
comp=Z,333nm,1.2s
A04D Lummi Island 92.08 38 P **P 09 08 18.5 +0.4**
baz=241,SNR=36

R11A Troy Canyon, C 92.10 50 P **P 09 08 18.0 -0.8**
baz=246,SNR=162
R11A Troy Canyon, C 92.10 50 *e*P **P 09 08 17.6 -1.1**
comp=Z,263nm,1.6s
B05A Bryant 92.22 39 P **P 09 08 18.9 +0.1**
baz=242,SNR=78
Y14A Wickenburg 92.26 55 *e*P **P 09 08 18.6 -0.8**
comp=Z,587nm,1.0s
MOY Mondy 92.55 325 *e*P **P 09 08 18.1 -2.3**
MOY pmax pmax
comp=Z,1μm,4.6s
COLD Coldfoot 92.56 15 *e*P **P 09 08 19.8 -0.1**
comp=Z,115nm,1.0s
MDRS Chennai 92.65 283 *e*P **P 09 08 21.6 +0.1**
MDRS IAmb IAmb 09 08 26.1
comp=Z,91nm,0.4s
B06A Marblemount 92.70 39 *e*P **P 09 08 20.2 -0.8**
comp=Z,171nm,0.9s
C06D Leavenworth 92.77 39 P **P 09 08 21.9 +0.5**
baz=243
G08A Pilot Rock 92.78 42 *e*P **P 09 08 20.7 -0.9**
comp=Z,919nm,1.8s
E07A Sunnyside 92.78 41 *e*P **P 09 08 20.6 -0.8**
comp=Z,600nm,1.4s
PVM Polavaram 92.83 287 *e*P **P 09 08 21.4 -0.9**
PVM IAmb IAmb 09 08 27.2
comp=Z,87nm,0.9s
PVM *e*SKSac **SKSac 09 18 54.9 +0.8**
PVM IVMs_BB IVMs_BB 09 43 02.1
comp=Z,7μm,37.5s
DGAR Diego Garcia 92.88 261 *de*P **P 09 08 21.5 -1.2**
DGAR Diego Garcia 92.88 261 PFAKE 09 08 30.0 +7.3
DGAR LR LR
comp=Z,38μm,20.0s
HAWA Hanford 92.91 41 *e*P **P 09 08 21.7 -0.3**
comp=Z,864nm,1.5s
HAWA LR LR
comp=Z,62μm,19.0s
GUN Gumba 92.92 299 *e*P **P 09 08 22.5 -0.5**
comp=Z,427nm,0.9s
ETW Entiat 92.97 40 *e*P **P 09 08 21.8 -0.7**
PKIN Phulchoki 93.20 298 *e*P **P 09 08 24.8 +0.6**
comp=Z,170nm,0.9s
EGAK Eagle 93.25 19 *e*P **P 09 08 21.5 -1.7**
comp=Z,184nm,0.9s
EGAK LR LR
comp=Z,35μm,20.0s
LCMT Little Creek M 93.27 52 *e*P **P 09 08 23.5 -0.6**
comp=Z,286nm,1.2s
ELK Elko 93.32 48 *e*P **P 09 08 23.4 -1.0**
ELK pmax pmax
comp=Z,145nm,1.3s
ELK Elko 93.32 48 *e*P **P 09 08 23.4 -1.0**
comp=Z,145nm,1.3s
DAWY Dawson 93.33 20 *e*P **P 09 08 22.7 -1.0**
CHRN Cochrane 93.35 143 *e*P **P 09 08 24.5 +0.3**
comp=Z,56nm,1.5s
TUC Tucson 93.36 57 P **P 09 08 25.0 +0.4**
baz=248
TUC Tucson 93.36 57 *e*P **P 09 08 24.2 -0.4**
TUC pmax pmax
comp=Z,242nm,1.0s
TUC MLR MLR
comp=Z,40μm,19.0s
TUC Tucson 93.36 57 *e*P **P 09 08 24.2 -0.4**
comp=Z,242nm,1.0s
TUC LR LR
comp=Z,40μm,19.0s
SKHT Srikalahasti 93.37 283 *e*P **P 09 08 24.2 -0.7**
SKHT IAmb IAmb 09 08 31.0
comp=Z,158nm,1.1s
SKHT *e*SKSac **SKSac 09 19 02.5 +5.3**
SKHT IVMs_BB IVMs_BB 09 42 09.6
comp=Z,12μm,42.2s
KKN Kakani 93.37 298 *e*P **P 09 08 24.5 -0.4**
comp=Z,474nm,0.9s
PSUT Pine Spring 93.42 50 *e*P **P 09 08 24.3 -0.6**
comp=Z,101nm,0.8s
DLBC Dease Lake 93.43 28 P **P 09 08 23.5 -0.8**
comp=Z,31nm,0.8s,baz=229,slow=5.9,SNR=42
DLBC LR LR 09 47 57.0
comp=Z,64μm,18.1s,baz=262,slow=34
DLBC Dease Lake 93.43 28 *e*P **P 09 08 23.4 -0.8**
comp=Z,263nm,1.1s
DMN Daman 93.45 298 *e*P **P 09 08 25.1 -0.2**
comp=Z,817nm,1.0s
D08A Wollman Farm, 93.58 41 *e*P **P 09 08 25.1 0.0**
comp=Z,142nm,1.0s
KNB Kanab 93.58 52 *e*P **P 09 08 25.5 -0.2**
KNB pmax pmax
comp=Z,529nm,1.3s
KNB Kanab 93.58 52 *e*P **P 09 08 25.4 -0.2**
comp=Z,529nm,1.3s
X16A Lo Mia Camp, P 93.64 55 *e*P **P 09 08 25.6 -0.3**
comp=Z,291nm,1.1s
BMO Blue Mountains 93.64 43 *e*P **P 09 08 24.2 -1.4**
BMO pmax pmax
comp=Z,84nm,1.1s
BMO MLR MLR
comp=Z,80μm,19.0s
BMO Blue Mountains 93.64 43 *e*P **P 09 08 24.2 -1.4**
comp=Z,84nm,1.1s
BMO LR LR
comp=Z,80μm,19.0s
E09A Wood Farm, Sta 93.82 42 *e*P **P 09 08 25.6 -0.7**
comp=Z,252nm,1.4s
ADKI Addanki 93.84 285 *e*P **P 09 08 26.9 -0.1**
ADKI IAmb IAmb 09 08 33.0
comp=Z,183nm,1.0s
ADKI *e*SKSac **SKSac 09 19 05.3 +5.5**
ADKI IVMs_BB IVMs_BB 09 54 52.6
comp=Z,8μm,20.3s
B08A Colville Reser 93.90 40 *e*P **P 09 08 25.4 -1.2**
comp=Z,227nm,1.4s
GKN Gorkha 93.98 298 *e*P **P 09 08 26.6 -1.0**
comp=Z,421nm,0.9s
MFID Camas Ranch 94.01 45 *e*P **P 09 08 26.1 -1.3**
comp=Z,134nm,1.0s
WUAZ Wupatki 94.10 54 P **P 09 08 28.6 +0.6**
baz=248
WUAZ Wupatki 94.10 54 *e*P **P 09 08 27.8 -0.2**
comp=Z,306nm,1.3s
WUAZ LR LR
comp=Z,26μm,20.0s
PKCU Pink Cliffs 94.12 52 *e*P **P 09 08 28.7 +0.4**
comp=Z,200nm,1.2s
TRD Trivandrum 94.14 277 *e*P **P 09 08 27.4 -1.0**
TRD IAmb IAmb 09 08 38.6
comp=Z,1μm,3.0s
319A Douglas 94.21 58 *e*P **P 09 08 28.5 -0.1**
comp=Z,385nm,1.0s
C09A Chrisman Ranch 94.30 40 *e*P **P 09 08 27.5 -0.9**
comp=Z,69nm,0.8s
MTPU Mount Pierson 94.44 51 *e*P **P 09 08 29.7 -0.1**
comp=Z,144nm,1.0s
BTU Barney Top 94.56 52 *e*P **P 09 08 30.5 +0.1**
MSU Marysvale 94.63 51 *e*P **P 09 08 30.1 -0.4**
MSU Marysvale 94.63 51 *e*P **P 09 08 30.1 -0.4**
RCLA Racherla 94.63 285 *e*P **P 09 08 31.1 +0.5**
RCLA IAmb IAmb 09 08 36.8
comp=Z,117nm,1.1s
RCLA *e*SKSac **SKSac 09 19 05.5 +1.4**
RCLA IVMs_BB IVMs_BB 09 42 49.9
comp=Z,11μm,41.6s
NJS Nagarjunasagar 94.68 286 *e*P **P 09 08 30.1 -0.8**
NJS IAmb IAmb 09 08 37.1
comp=Z,435nm,1.0s
NJS *e*SKSac **SKSac 09 19 05.3 +1.0**
NJS IVMs_BB IVMs_BB 09 55 32.1
comp=Z,7μm,15.9s
KOLN Koldanda 94.76 298 *e*P **P 09 08 29.8 -1.5**
comp=Z,131nm,0.7s
DUG Dugway, Tooele 94.81 49 P **P 09 08 31.9 +0.8**
baz=248
DUG Dugway, Tooele 94.81 49 *e*P **P 09 08 30.0 -1.2**
DUG pmax pmax
comp=Z,148nm,1.3s
DUG MLR MLR
comp=Z,61μm,20.0s
DUG Dugway, Tooele 94.81 49 *e*P **P 09 08 30.0 -1.2**
comp=Z,148nm,1.3s
DUG LR LR
comp=Z,61μm,20.0s
X18A Snowflake 94.82 55 *e*P **P 09 08 31.1 -0.3**
comp=Z,115nm,1.0s
SRLM Srisailam 94.91 285 *e*P **P 09 08 30.6 -1.3**
SRLM IAmb IAmb 09 08 38.2
comp=Z,537nm,1.1s
SRLM *e*SKSac **SKSac 09 19 06.7 +1.1**
SRLM IVMs_BB IVMs_BB 09 42 40.0
comp=Z,8μm,41.5s
BGU Big Grassy Mou 94.94 48 *e*P **P 09 08 30.8 -1.0**
comp=Z,37nm,0.8s
HLID Hailey 95.01 45 P **P 09 08 32.2 +0.2**
baz=247,SNR=93
HLID Hailey 95.01 45 *e*P **P 09 08 31.0 -1.0**
comp=Z,128nm,1.1s
HLID LR LR
comp=Z,76μm,19.0s
NEW Newport 95.19 40 P **P 09 08 33.0 +0.4**
baz=245,SNR=44
NEW Newport 95.19 40 *e*P **P 09 08 32.3 -0.3**
NEW pmax pmax
comp=Z,48nm,0.9s
NEW MLR MLR
comp=Z,21μm,19.0s
NEW Newport 95.19 40 *e*P **P 09 08 32.3 -0.3**
comp=Z,48nm,0.9s
NEW LR LR
comp=Z,21μm,19.0s
W18A Petrified Fore 95.20 55 P **P 09 08 33.4 +0.3**
baz=249
W18A Petrified Fore 95.20 55 *e*P **P 09 08 33.6 +0.5**
comp=Z,165nm,1.3s
NLU North Lily Min 95.24 49 *e*P **P 09 08 32.5 -0.7**
comp=Z,118nm,1.3s
PYUN Piuthan 95.38 298 *e*P **P 09 08 31.9 -2.2**
comp=Z,480nm,0.9s
HVU Hansel Valley 95.44 48 *e*P **P 09 08 33.2 -0.8**
HVU pmax pmax
comp=Z,121nm,0.8s
HVU Hansel Valley 95.44 48 *e*P **P 09 08 33.2 -0.8**
comp=Z,121nm,0.8s
RPR Rampur 95.46 288 *e*P **P 09 08 32.8 -1.6**
RPR IAmb IAmb 09 08 39.4
comp=Z,142nm,1.3s
RPR *e*SKSac **SKSac 09 19 11.9 +3.5**
RPR IVMs_BB IVMs_BB 09 44 36.3
comp=Z,8μm,31.5s
SPUT South Promonto 95.49 48 *e*P **P 09 08 33.4 -0.9**
comp=Z,89nm,0.9s
SAIU Southern Antel 95.50 49 *e*P **P 09 08 31.9 -2.4**
Q16A Castle Valley 95.51 51 *e*P **P 09 08 34.3 -0.2**
comp=Z,231nm,1.2s
TMUT Trail Mountain 95.62 50 *e*P **P 09 08 34.7 -0.4**
comp=Z,144nm,1.1s
TIXI Tiksi 95.62 348 P **P 09 08 32.4 -1.5**
comp=Z,50nm,0.9s,baz=142,slow=1.1,SNR=36
TIXI Tiksi 95.62 348 *d i*P **P 09 08 33.5 -0.4**
TIXI pmax pmax
comp=Z,43nm,0.9s
TIXI MLR MLR
comp=Z,27μm,19.0s
TIXI Tiksi 95.62 348 *e*P **P 09 08 33.8 -0.1**
comp=Z,71nm,1.0s
TIXI LR LR
comp=Z,27μm,20.0s
HPIG 95.63 64 *e*P **P 09 08 35.7 +0.5**
comp=Z,35nm,1.1s
MTUT Morton Thiokol 95.63 48 *e*P **P 09 08 33.6 -1.3**
HYB Hyderabad 95.65 286 *i*P **P 09 08 34.5 -0.9**
HYB *e*PP **PP 09 12 26.0 -1.2**
HYB *e*SKS **SKSac 09 19 16.0 +6.5**
HYB *e*SS **SS 09 26 24.0 +3.5**
HYB LR LR 09 56 08.0
comp=Z,25nm,20.0s
HYB Hyderabad 95.65 286 *e*P **P 09 08 34.4 -0.9**
HYB IAmb IAmb 09 08 40.7
HYBB Hyderabad (bro 95.65 286 *e*P **P 09 08 35.7 +0.3**
HYBB IAmb IAmb 09 08 40.5
comp=Z,134nm,1.0s
HYBB *e*SKSac **SKSac 09 19 12.7 +3.1**
HYBB IVMs_BB IVMs_BB 09 56 03.9
comp=Z,6μm,19.3s
GMU Granite Mounta 95.69 49 *e*P **P 09 08 34.4 -0.8**
LTU Little Mountai 95.73 48 *e*P **P 09 08 34.3 -1.0**
GZU Grizzly Peak 95.86 48 *e*P **P 09 08 35.1 -1.0**
JLU Jordanelle 95.93 49 *e*P **P 09 08 35.6 -0.8**
comp=Z,208nm,1.7s
P17A Butcher Ranch, 96.02 50 *e*P **P 09 08 36.5 -0.3**
comp=Z,96nm,1.2s
SRU San Rafael Swe 96.05 51 *e*P **P 09 08 36.0 -0.9**
SRU pmax pmax
comp=Z,98nm,1.1s
SRU San Rafael Swe 96.05 51 *e*P **P 09 08 36.0 -0.9**
comp=Z,98nm,1.1s
TCUT Toone Canyon 96.14 49 *e*P **P 09 08 36.5 -0.8**
comp=Z,209nm,0.9s
HWUT Hardware Ranch 96.21 48 *e*P **P 09 08 35.8 -1.7**
comp=Z,59nm,0.8s
HWUT LR LR
comp=Z,34μm,19.0s
SRSP Sriramsagar 96.33 288 *e*P **P 09 08 37.2 -1.2**
SRSP IAmb IAmb 09 08 42.8
comp=Z,89nm,0.9s
SRSP *e*SKSac **SKSac 09 19 13.8 +0.8**
SRSP IVMs_BB IVMs_BB 09 45 11.2
comp=Z,8μm,27.7s
P18A Preston Nutter 96.43 50 *e*P **P 09 08 38.3 -0.5**
comp=Z,84nm,1.2s
BSMT Bassoo Peak 96.46 41 *e*P **P 09 08 39.0 +0.5**
MCMT McKenzie Canyo 96.54 45 *e*P **P 09 08 38.1 -0.9**
MSO Missoula 96.59 42 P **P 09 08 38.9 -0.2**
baz=247,SNR=16
MSO Missoula 96.59 42 *e*P **P 09 08 39.4 +0.3**
comp=Z,64nm,1.4s
PV05 Paradox Valley 96.72 52 *e*P **P 09 08 40.2 +0.2**
JTMT Jette 96.73 42 *e*P **P 09 08 39.5 -0.2**
BLMT Blacktail Moun 96.78 41 *e*P **P 09 08 40.4 +0.4**
SWMT Swartz Lake 96.82 42 *e*P **P 09 08 39.7 -0.4**
PV09 Paradox Valley 96.85 52 *e*P **P 09 08 40.8 +0.1**
MVCO Mesa Verde 96.87 53 P **P 09 08 40.8 +0.1**
baz=250
MVCO Mesa Verde 96.87 53 *e*P **P 09 08 41.7 +0.9**
comp=Z,134nm,1.6s
MVCO LR LR
comp=Z,45μm,19.0s
PV10 Paradox Valley 96.87 52 *e*P **P 09 08 41.2 +0.5**
DLMT Dillon 96.90 44 *e*P **P 09 08 39.6 -0.9**
comp=Z,156nm,1.4s
ZAIG Zacatecas 96.90 68 *e*P **P 09 08 42.8 +1.5**
comp=Z,54nm,1.2s
YBMT Yellow Bay 96.94 42 *e*P **P 09 08 41.0 +0.3**
LAZ Ladron 96.95 56 *e*P **P 09 08 41.6 +0.5**
AHID Auburn Hatcher 96.96 47 *e*P **P 09 08 40.2 -0.7**
comp=Z,221nm,1.9s
AHID LR LR
comp=Z,23μm,20.0s
PV04 Paradox Valley 96.98 52 *e*P **P 09 08 41.2 +0.1**
Y22D IRIS PASSCAL I 97.01 56 P Pdif 09 08 42.2 +0.7
baz=250
CHMT Chamberlain Mo 97.06 43 *e*P Pdif 09 08 41.5 0.0
PV01 Paradox Valley 97.14 52 *e*P **P 09 08 41.5 -0.4**
LRM Limekiln Ridge 97.17 44 *e*P Pdif 09 08 42.1 +0.2
BNM Barren Site 97.27 56 *e*P Pdif 09 08 42.8 +0.1
WMQ Urumqi 97.31 314 ⇑ *i*P **P 09 08 41.5 -0.8**
WMQ pP pP 09 08 47.9 -5.1
WMQ sP sP 09 08 54.2 -2.6
WMQ PP **PP 09 12 40.2 +0.7**
WMQ SKS **SKSac 09 19 20.0 +2.8**
WMQ S **S 09 19 57.6 -6.4**
WMQ SS **SS 09 26 38.6 -4.5**
WMQ pmax pmax
comp=Z,38nm,2.1s
WMQ pmax pmax
comp=Z,4μm,5.8s
WMQ LR LR
comp=Z,3μm,15.8s
WMQ LR LR
comp=Z,6μm,22.8s
WMQ LR LR
comp=Z,6μm,20.4s
LPM Los Pinos Moun 97.32 56 *e*P Pdif 09 08 43.7 +0.8
REDW Red Top Meadow 97.34 47 *e*P **P 09 08 41.6 -1.1**
comp=Z,170nm,1.3s
SNOW Snow King Moun 97.44 46 *e*P **P 09 08 42.3 -0.9**
comp=Z,57nm,0.9s
MNTX Cornudas Mount 97.45 59 P Pdif 09 08 43.5 +0.2
baz=251,SNR=36
MNTX Cornudas Mount 97.45 59 *e*P **P 09 08 42.2 -0.9**
comp=Z,61nm,1.3s
WALA Waterton Lakes 97.46 40 *e*P Pdif 09 08 44.1 +1.1
comp=Z,58nm,1.1s

IMW	**Indian Meadow**	**97.47**	**46**	*e*P	**P**	**09 08 42.5**	**-0.9**
	comp=Z,108nm,1.0s						
QLMT	**Earthquake Lak**	**97.48**	**45**	*e*P	Pdif	09 08 44.2	+0.9
MOOW	**Moose Ponds**	**97.55**	**46**	*e*P	**P**	**09 08 42.5**	**-1.2**
	comp=Z,62nm,1.2s						
LOHW	**Long Hollow**	**97.60**	**46**	*e*P	**P**	**09 08 42.7**	**-1.1**
	comp=Z,107nm,1.5s						
KLRI	**Killari**	**97.62**	**286**	*e*P	**P**	**09 08 43.4**	**-0.9**
KLRI				IAmb	IAmb	09 08 49.0	
	comp=Z,150nm,1.3s						
KLRI				*e*SKSac	**SKSac**	**09 19 18.7**	**-1.1**
KLRI				IVMs_BB	IVMs_BB	09 59 16.0	
	comp=Z,11μm,16.8s						
BOZ	**Bozeman (W)**	**97.64**	**44**	P	Pdif	09 08 44.3	+0.3
	baz=249,SNR=79						
BOZ	**Bozeman (W)**	**97.64**	**44**	*e*P	**P**	**09 08 42.6**	**-1.3**
BOZ				pmax	pmax		
	comp=Z,58nm,1.1s						
BOZ				MLR	MLR		
	comp=Z,103μm,19.0s						
BOZ	**Bozeman (W)**	**97.64**	**44**	*e*P	**P**	**09 08 42.6**	**-1.3**
	comp=Z,58nm,1.1s						
BOZ				LR	LR		
	comp=Z,103μm,19.0s						
EFI	**East Falkland**	**97.65**	**153**	*de*P	Pdif	09 08 44.3	+0.5
EFI				pmax	pmax		
	comp=Z,185nm,1.9s						
EFI				MLR	MLR		
	comp=Z,17μm,18.0s						
EFI	**East Falkland**	**97.65**	**153**	*e*P	Pdif	09 08 44.1	+0.3
	comp=Z,172nm,1.1s						
EFI				LR	LR		
	comp=Z,20μm,22.0s						
ANMO	**Albuquerque**	**97.67**	**56**	LR	LR	09 46 51.2	
	comp=Z,26μm,19.3s,baz=258,slow=32						
ANMO	**Albuquerque**	**97.67**	**56**	P	Pdif	09 08 44.8	+0.4
	baz=251						
ANMO	**Albuquerque**	**97.67**	**56⇑**	*e*P	**P**	**09 08 42.9**	**-1.4**
ANMO				pmax	pmax		
	comp=Z,117nm,3.2s						
ANMO				MLR	MLR		
	comp=Z,24μm,16.0s						
ANMO	**Albuquerque**	**97.67**	**56**	*e*P	**P**	**09 08 43.1**	**-1.2**
	comp=Z,68nm,1.5s						
FLWY	**Flagg Ranch**	**97.70**	**46**	*e*P	Pdif	09 08 44.9	+0.5
	comp=Z,115nm,1.3s						
YMR	**Madison River**	**97.73**	**45**	*e*P	**P**	**09 08 44.1**	**-0.3**
	comp=Z,194nm,1.7s						
YFT	**Old Faithful**	**97.74**	**46**	*e*P	Pdif	09 08 45.3	+0.8
	comp=Z,36nm,0.8s						
INK	**Inuvik**	**97.87**	**19**	P	**P**	**09 08 42.4**	**-1.7**
	comp=Z,22nm,0.9s,baz=241,slow=5.2,SNR=30						
INK				PKKPbc	**PKKPbc**	**09 25 19.9**	**-1.4**
	comp=Z,2.9nm,0.6s,baz=76,slow=1.3,SNR=12						
INK				PKPPKP	**P'P'df**	**09 33 33.9**	**+3.7**
	comp=Z,2.9nm,1.0s,baz=50,slow=8.6,SNR=6.8						
INK				LR	LR	09 52 58.8	
	comp=Z,27μm,18.1s,baz=228,slow=36						
INK	**Inuvik**	**97.87**	**19**	*e*P	**P**	**09 08 43.3**	**-0.8**
INK				pmax	pmax		
	comp=Z,184nm,1.4s						
INK	**Inuvik**	**97.87**	**19**	*e*P	**P**	**09 08 43.3**	**-0.8**
	comp=Z,184nm,1.4s						
INK				PKKPbc	**PKKPbc**	**09 25 19.9**	**-1.4**
INK				P'P'		09 33 33.9	
H17A	**Grant Village**	**97.89**	**46**	P	Pdif	09 08 46.5	+1.3
	baz=249,SNR=44						
H17A	**Grant Village**	**97.89**	**46**	*e*P	Pdif	09 08 45.5	+0.2
	comp=Z,82nm,1.3s						
HRY	**Holter Researc**	**97.89**	**43**	*e*P	**P**	**09 08 44.4**	**-0.5**
BW06	**Boulder Array**	**98.02**	**47**	P	Pdif	09 08 46.0	+0.1
	baz=250,SNR=54						
BW06	**Boulder Array**	**98.02**	**47**	*e*P	**P**	**09 08 44.0**	**-1.8**
	comp=Z,43nm,1.0s						
BW06				LR	LR		
	comp=Z,38μm,19.0s						
PD31	**Pinedale Array**	**98.02**	**47**	*e*P	**P**	**09 08 44.4**	**-1.4**
PDAR	**Pinedale Array**	**98.02**	**47**	P	**P**	**09 08 44.2**	**-1.6**
	comp=Z,2.6nm,0.6s,baz=204,slow=3.3,SNR=18						
PDAR				PKKPbc	**PKKPbc**	**09 25 18.1**	**-2.3**
	comp=Z,2.1nm,0.8s,baz=76,slow=3.7,SNR=6.0						
PDAR				PKPPKP	**P'P'df**	**09 33 32.8**	**+0.2**
	comp=Z,3.7nm,1.2s,baz=234,slow=1.3,SNR=3.9						
PDAR				LR	LR	09 48 56.2	
	comp=Z,34μm,19.0s,baz=268,slow=33						
O20A	**White River Ci**	**98.06**	**50**	P	Pdif	09 08 46.6	+0.6
	baz=250,SNR=42						
O20A	**White River Ci**	**98.06**	**50**	*e*P	**P**	**09 08 45.5**	**-0.5**
	comp=Z,56nm,0.8s						
LKWY	**Lake**	**98.07**	**46**	*e*P	Pdif	09 08 46.4	+0.4
LKWY				pmax	pmax		
	comp=Z,69nm,1.3s						
LKWY				MLR	MLR		
	comp=Z,90μm,19.0s						
LKWY	**Lake**	**98.07**	**46**	*e*P	Pdif	09 08 46.4	+0.3
	comp=Z,69nm,1.3s						
LKWY				LR	LR		
	comp=Z,90μm,19.0s						
TX31	**Lajitas Ar. Si**	**98.08**	**62**	*e*P	**P**	**09 08 45.0**	**-1.3**
TXAR	**Lajitas Array**	**98.08**	**62**	P	**P**	**09 08 45.3**	**-0.9**
	comp=Z,3.3nm,0.9s,baz=216,slow=6.2,SNR=20						
TXAR				PKKP	**PKKPdf**	**09 25 22.7**	**+0.1**
	comp=Z,5.5nm,0.8s,baz=110,slow=3.3,SNR=7.2						
TXAR				PKPPKP	**P'P'df**	**09 33 30.2**	**-3.5**
	comp=Z,0.6nm,1.0s,baz=90,slow=2.1,SNR=3.6						
TXAR				LR	LR	09 48 17.1	
	comp=Z,46μm,18.0s,baz=0.0,slow=32						
S22A	**4UR Ranch, Cre**	**98.30**	**53**	P	Pdif	09 08 48.2	+0.9
	baz=251,SNR=27						
S22A	**4UR Ranch, Cre**	**98.30**	**53**	*e*P	**P**	**09 08 46.6**	**-0.6**
	comp=Z,29nm,0.9s						
PLCA	**Paso Flores**	**98.31**	**139**	P	Pdif	09 08 47.5	+0.4
	comp=Z,18nm,1.1s,baz=245,slow=5.9,SNR=9.1						
PLCA				PKKPbc	**PKKPbc**	**09 25 18.3**	**-0.5**
	comp=Z,6.1nm,0.9s,baz=82,slow=7.6,SNR=2.1						
PLCA	**Paso Flores**	**98.31**	**139**	P	Pdif	09 08 47.5	+0.4
PLCA				pmax	pmax		
	comp=Z,15nm,1.0s						
PLCA	**Paso Flores**	**98.31**	**139**	*e*P	Pdif	09 08 48.5	+1.4
	comp=Z,104nm,1.5s						
PLCA				PKKPbc	**PKKPbc**	**09 25 18.3**	**-0.5**
BHPL	**Bhopal**	**98.53**	**292**	*e*P	**P**	**09 08 47.2**	**-1.1**
BHPL				IAmb	IAmb	09 08 51.1	
	comp=Z,1μm,3.3s						
SMCO	**Snowmass**	**98.66**	**52**	*e*P	**P**	**09 08 48.6**	**-0.3**
	comp=Z,80nm,1.4s						
TLIG	**Tlapa**	**98.80**	**75**	*e*P	Pdif	09 08 51.0	+1.3
	comp=Z,79nm,1.7s						
KRAR	**Krasnoyarsk**	**98.80**	**327⇓**	*e*P	Pdif	09 08 49.9	+1.3
KRAR				pmax	pmax		
	comp=Z,22nm,0.8s						
KRAR				MLR	MLR		
	comp=Z,15μm,20.0s						
GCMT	**Greycliff**	**98.98**	**45**	*e*P	Pdif	09 08 50.8	+0.9
RLMT	**Red Lodge**	**99.02**	**45**	P	**Pdif**	**09 08 51.0**	**+0.8**
	baz=250,SNR=19						
RLMT	**Red Lodge**	**99.02**	**45**	*e*P	**Pdif**	**09 08 49.9**	**-0.3**
	comp=Z,33nm,1.1s						
RLMT				LR	LR		
	comp=Z,89μm,19.0s						
SDCO	**Great Sand Dun**	**99.30**	**53**	P	**Pdif**	**09 08 52.2**	**+0.5**
	baz=252,SNR=9.5						
SDCO	**Great Sand Dun**	**99.30**	**53**	*e*P	**Pdif**	**09 08 52.3**	**+0.5**
	comp=Z,34nm,1.3s						
SDCO				LR	LR		
	comp=Z,23μm,19.0s						
GOA	**Goa**	**99.32**	**283**	*e*P	**Pdif**	**09 08 49.8**	**-2.0**
GOA				IAmb	IAmb	09 08 55.3	
	comp=Z,998nm,3.2s						
EGMT	**Eagleton**	**99.67**	**42**	P	**Pdif**	**09 08 53.4**	**+0.6**
	baz=250,SNR=24						
EGMT	**Eagleton**	**99.67**	**42**	*e*Pdif	**Pdif**	**09 08 53.2**	**+0.3**
	comp=Z,42nm,0.8s						
EGMT				LR	LR		
	comp=Z,32μm,20.0s						
ISCO	**Idaho Springs**	**99.86**	**51**	P	**Pdif**	**09 08 54.6**	**+0.4**
	baz=252,SNR=9.6						
ISCO	**Idaho Springs**	**99.86**	**51**	*e*P	**Pdif**	**09 08 55.3**	**+1.1**
ISCO				pmax	pmax		
	comp=Z,22nm,1.2s						
ISCO				MLR	MLR		
	comp=Z,36μm,19.0s						
ISCO	**Idaho Springs**	**99.86**	**51**	*e*Pdif	**Pdif**	**09 08 55.3**	**+1.1**
	comp=Z,22nm,1.2s						
ISCO				LR	LR		
	comp=Z,36μm,19.0s						
T25A	**Trinidad**	**99.94**	**54**	P	**Pdif**	**09 08 55.0**	**+0.6**
	baz=252,SNR=6.0						
T25A	**Trinidad**	**99.94**	**54**	*e*Pdif	**Pdif**	**09 08 55.5**	**+1.0**
Q24A	**Divide**	**99.94**	**52**	P	**Pdif**	**09 08 55.3**	**+0.7**
	baz=252						
N23A	**Red Feather La**	**99.96**	**50**	P	**Pdif**	**09 08 55.6**	**+1.1**
	baz=252,SNR=15						
N23A	**Red Feather La**	**99.96**	**50**	*e*Pdif	**Pdif**	**09 08 55.9**	**+1.4**
	comp=Z,73nm,1.3s						
K22A	**Casper**	**100.09**	**48**	P	**Pdif**	**09 08 54.9**	**-0.1**
	baz=252,SNR=16						
K22A	**Casper**	**100.09**	**48**	*e*Pdif	**Pdif**	**09 08 54.8**	**-0.1**
	comp=Z,60nm,1.2s						
DDI	**Dehra Dun**	**100.17**	**299**	*e*P	**Pdif**	**09 08 54.7**	**-0.7**
DDI				IAmb	IAmb	09 09 00.2	
	comp=Z,125nm,0.4s						
POO	**Poona**	**100.24**	**286⇓**	*i*P	**Pdif**	**09 08 54.0**	**-2.0**
	comp=Z,833nm,1.8s						
POO				*e*P	**Pdif**	**09 08 54.0**	**-2.0**
POO				IAmb	IAmb	09 09 01.8	
	comp=Z,72nm,1.1s						
POO				*i* S	**SKSac**	**09 19 35.0**	**+2.1**
MSTX	**Muleshoe**	**100.25**	**58**	P	**Pdif**	**09 08 55.9**	**+0.1**
	baz=252,SNR=27						
MSTX	**Muleshoe**	**100.25**	**58**	*e*Pdif	**Pdif**	**09 08 54.3**	**-1.5**
PHWY	**Pilot Hill**	**100.43**	**50**	*e*Pdif	**Pdif**	**09 08 57.3**	**+0.6**
PAYG	**Puerto Ayora**	**100.49**	**95**	PFAKE		09 09 10.0	+13
PAYG				LR	LR		
	comp=Z,19μm,22.0s						
ZSN	**Zaisan**	**100.70**	**317**	*i* Pdif	**Pdif**	**09 08 57.0**	**-0.3**
	comp=Z,282nm,2.8s						
ZSN				*i* PP	**PP**	**09 13 04.7**	**-0.7**
ZSN				LRM	MLR	09 54 51.8	
	comp=Z,4μm,17.7s						
832A	**Faith Ranch, C**	**100.84**	**64**	P	**Pdif**	**09 08 59.0**	**+0.6**
	baz=253,SNR=12						
SMLA	**Simla**	**101.14**	**299**	*e*P	**Pdif**	**09 08 57.3**	**-2.4**
SMLA				IAmb	IAmb	09 09 04.2	
933A	**Laredo**	**101.24**	**65**	P	**Pdif**	**09 09 01.1**	**+0.9**
	baz=253						
833A	**Chaparral WMA,**	**101.34**	**64**	P	**Pdif**	**09 09 01.6**	**+0.9**
	baz=253						
AMTX	**Amarillo**	**101.38**	**57**	P	**Pdif**	**09 09 01.1**	**+0.4**
	baz=253						
AMTX	**Amarillo**	**101.38**	**57**	*e*Pdif	**Pdif**	**09 09 03.2**	**+2.5**
	comp=Z,45nm,0.9s						
LAO	**LASA Array**	**101.53**	**44**	P	**Pdif**	**09 09 02.6**	**+1.5**
	baz=253						
LAO	**LASA Array**	**101.53**	**44**	*e*Pdif	**Pdif**	**09 09 00.3**	**-0.8**
LAO				LR	LR		
	comp=Z,74μm,19.0s						
733A	**Divot King Ran**	**101.54**	**64**	P	**Pdif**	**09 09 01.8**	**+0.3**
	baz=253						
034A	**Hebbronville**	**101.58**	**65**	P	**Pdif**	**09 09 02.5**	**+0.8**
	baz=253						
JCT	**Junction City**	**101.63**	**62**	P	**Pdif**	**09 09 02.0**	**+0.1**
	baz=253						
JCT	**Junction City**	**101.63**	**62**	*e*P	**Pdif**	**09 09 02.7**	**+0.8**
JCT	**Junction City**	**101.63**	**62**	*e*Pdif	**Pdif**	**09 09 02.7**	**+0.8**
KSCO	**Kaye Shedlock'**	**101.83**	**53**	P	**Pdif**	**09 09 03.2**	**+0.4**
	baz=254						
KSCO	**Kaye Shedlock'**	**101.83**	**53**	*e*Pdif	**Pdif**	**09 09 03.0**	**+0.2**
633A	**Saathoff Ranch**	**101.85**	**63**	P	**Pdif**	**09 09 04.0**	**+1.1**
	baz=253,SNR=9.7						
MK01	**Makanchi Array**	**101.87**	**316**	*e*Pdif	**Pdif**	**09 09 01.8**	**-0.8**
934A	**Benavides**	**101.88**	**65**	P	**Pdif**	**09 09 02.9**	**-0.1**
	baz=253						
MKAR	**Makanchi Array**	**101.88**	**316**	P	**Pdif**	**09 09 02.6**	**0.0**
	comp=Z,6.9nm,0.8s,baz=98,slow=4.7,SNR=18						
MKAR				PP	**PP**	**09 13 14.5**	**+0.3**
	comp=Z,15nm,0.9s,baz=110,slow=7.1,SNR=6.8						
MKAR				PKKPbc	**PKKPbc**	**09 25 07.1**	**-2.1**
	comp=Z,9.7nm,1.0s,baz=282,slow=3.4,SNR=8.1						
MKAR				PKPPKP	**P'P'df**	**09 33 26.0**	**+1.2**
	comp=Z,1.7nm,1.0s,baz=341,slow=2.6,SNR=6.7						
035Z	**Hargill**	**101.93**	**66**	P	**Pdif**	**09 09 03.6**	**+0.3**
	baz=253						
834A	**Tilden**	**102.00**	**64**	P	**Pdif**	**09 09 04.2**	**+0.7**
	baz=253						
035A	**Encino**	**102.04**	**66**	P	**Pdif**	**09 09 04.4**	**+0.7**
	baz=253						
YKA	**Yellowknife Ar**	**102.05**	**28**	P	**Pdif**	**09 09 03.4**	**+0.5**
	comp=Z,11nm,0.7s,baz=255,slow=4.7,SNR=118						
YKA				PP	**PP**	**09 13 17.2**	**+2.2**
	comp=Z,6.3nm,1.0s,baz=252,slow=7.4,SNR=4.1						
YKA				PKKPbc	**PKKPbc**	**09 25 04.0**	**-5.1**
	comp=Z,1.2nm,0.8s,baz=46,slow=3.8,SNR=4.9						
YKA				PKPPKP	**P'P'df**	**09 33 21.6**	**-1.3**
	comp=Z,0.4nm,0.9s,baz=46,slow=1.6,SNR=3.3						
YKB5	**Yellowknife Ar**	**102.05**	**28**	*e*Pdif	**Pdif**	**09 09 03.5**	**+0.6**
YKW3	**Yellowknife Ar**	**102.07**	**28**	*e*Pdif	**Pdif**	**09 09 03.2**	**+0.2**
MAKZ	**Makanchi**	**102.09**	**315**	*e*P	**Pdif**	**09 09 05.4**	**+1.9**
MAKZ	**Makanchi**	**102.09**	**315**	*e*Pdif	**Pdif**	**09 09 05.4**	**+1.9**
533A	**Kerrville**	**102.15**	**62**	P	**Pdif**	**09 09 04.9**	**+0.7**
	baz=254						
DHRM	**DHARAMSHALA**	**102.17**	**300**	*e*P	**Pdif**	**09 09 04.7**	**+0.2**
DHRM				IAmb	IAmb	09 09 08.6	
	comp=Z,508nm,1.9s						
734A	**La Parita Cree**	**102.20**	**64**	P	**Pdif**	**09 09 05.9**	**+1.5**
	baz=254						
RER	**Riviere de l'E**	**102.22**	**242**	PFAKE		09 09 20.0	+15
RER				LR	LR		
	comp=Z,51μm,20.0s						
J25A	**Sunshine Ranch**	**102.22**	**48**	P	**Pdif**	**09 09 04.8**	**+0.5**
	baz=254						
RSSD	**Black Hills**	**102.26**	**47**	P	**Pdif**	**09 09 04.9**	**+0.2**
	baz=254						
RSSD	**Black Hills**	**102.26**	**47**	*e*P	**Pdif**	**09 09 03.3**	**-1.4**
RSSD	**Black Hills**	**102.26**	**47**	*e*Pdif	**Pdif**	**09 09 03.3**	**-1.4**
433A	**Art**	**102.29**	**62**	P	**Pdif**	**09 09 04.8**	**0.0**
	baz=254,SNR=9.8						
ABTX	**Abilene, Hawle**	**102.36**	**60**	P	**Pdif**	**09 09 05.4**	**+0.3**
	baz=254						
ABTX	**Abilene, Hawle**	**102.36**	**60**	*e*Pdif	**Pdif**	**09 09 04.8**	**-0.3**
KVTX	**Kingsville**	**102.39**	**65**	PFAKE		09 09 20.0	+15
KVTX				LR	LR		
	comp=Z,31μm,19.0s						
ZALV	**Zalesovo Beam**	**102.44**	**323**	P	**Pdif**	**09 09 05.1**	**+0.3**
	comp=Z,18nm,0.8s,baz=114,slow=4.5,SNR=16						
ZALV				PP	**PP**	**09 13 17.7**	**-0.4**
	comp=Z,5.1nm,1.0s,baz=123,slow=5.3,SNR=3.6						
I25A	**Rochford**	**102.44**	**48**	P	**Pdif**	**09 09 06.0**	**+0.6**
	baz=254,SNR=26						
SHLS	**Shalkode**	**102.48**	**311**	*e*Pdif	**Pdif**	**09 09 04.3**	**-1.4**
	comp=Z,64nm,2.0s						
SHLS				*i* PP	**PP**	**09 13 17.5**	**-1.6**
SHLS				LRM	MLR	09 55 48.5	
	comp=Z,813nm,16.3s						
634A	**China Grove, S**	**102.52**	**63**	P	**Pdif**	**09 09 06.8**	**+1.0**
	baz=254						
333A	**Richland Sprin**	**102.54**	**61**	P	**Pdif**	**09 09 06.5**	**+0.6**
	baz=254						
CLCH	**Cerro Calan**	**102.55**	**133**	*i* P	**PP**	**09 13 17.0**	**-1.8**
PEL	**Peldehue**	**102.59**	**133**	*i* P	**PP**	**09 13 18.3**	**-0.9**
534A	**Blanco**	**102.60**	**63**	P	**Pdif**	**09 09 06.7**	**+0.4**
	baz=254						
835A	**Beeville**	**102.66**	**64**	P	**Pdif**	**09 09 07.6**	**+1.2**
	baz=254						
HOPE	**Hope Point**	**102.70**	**165**	*e*Pdif	**Pdif**	**09 09 07.4**	**+1.3**
HOPE				LR	LR		
	comp=Z,15μm,20.0s						
H25A	**Fruitdale**	**102.70**	**47**	P	**Pdif**	**09 09 07.4**	**+1.0**
	baz=254,SNR=11						
J26A	**Sides Ranch, S**	**102.71**	**48**	P	**Pdif**	**09 09 07.3**	**+0.9**
	baz=254						
233A	**Rising Star**	**102.80**	**60**	P	**Pdif**	**09 09 07.6**	**+0.5**
	baz=254						
OGNE	**Ogallala**	**102.81**	**51**	P	**Pdif**	**09 09 08.0**	**+1.0**
	baz=254						
OGNE	**Ogallala**	**102.81**	**51**	PFAKE		09 09 20.0	+13
OGNE				LR	LR		
	comp=Z,27μm,20.0s						
735A	**Kenedy**	**102.83**	**64**	P	**Pdif**	**09 09 07.8**	**+0.6**
	baz=254						
936A	**North Padre Is**	**102.85**	**65**	P	**Pdif**	**09 09 08.9**	**+1.6**
	baz=254						
133A	**Hamilton Ranch**	**102.95**	**60**	P	**Pdif**	**09 09 08.3**	**+0.6**
	baz=254,SNR=6.8						
G25A	**Newell**	**102.98**	**46**	P	**Pdif**	**09 09 08.6**	**+0.9**
	baz=254,SNR=8.8						
434A	**Burnet**	**102.99**	**62**	P	**Pdif**	**09 09 08.1**	**+0.2**
	baz=254						
635A	**Leesville**	**103.01**	**63**	P	**Pdif**	**09 09 09.1**	**+1.1**
	baz=254						
UZB	**Uzynbulak**	**103.09**	**311**	*i* Pdif	**Pdif**	**09 09 06.5**	**-1.8**
	comp=Z,77nm,2.8s						
UZB				*i* PP	**PP**	**09 13 20.6**	**-2.9**
UZB				LRM	MLR	09 56 03.7	
	comp=Z,3μm,18.6s						
X32A	**Elmer**	**103.14**	**58**	P	**Pdif**	**09 09 09.2**	**+0.7**
	baz=254						
F25A	**Bowman**	**103.15**	**46**	P	**Pdif**	**09 09 09.3**	**+0.9**
	baz=254						
334A	**Lometa**	**103.16**	**61**	P	**Pdif**	**09 09 09.1**	**+0.5**
	baz=254						
Z33A	**Whitaker Ranch**	**103.26**	**59**	P	**Pdif**	**09 09 09.7**	**+0.7**
	baz=254						
H26A	**Fairpoint**	**103.27**	**47**	P	**Pdif**	**09 09 09.7**	**+0.8**
	baz=255,SNR=9.6						
E25A	**Miller Ranch,**	**103.34**	**45**	P	**Pdif**	**09 09 10.5**	**+1.3**
	baz=255						
DGMT	**Dagmar**	**103.35**	**43**	P	**Pdif**	**09 09 10.2**	**+1.1**
	baz=255						
DGMT	**Dagmar**	**103.35**	**43**	*e*Pdif	**Pdif**	**09 09 09.8**	**+0.7**
DGMT				LR	LR		
	comp=Z,40μm,19.0s						
535A	**Dale**	**103.35**	**63**	P	**Pdif**	**09 09 10.4**	**+0.8**
	baz=254						
W32A	**Sentinel**	**103.36**	**57**	P	**Pdif**	**09 09 10.3**	**+0.8**
	baz=254,SNR=25						
KPKS	**Kokpek**	**103.41**	**312**	*i* Pdif	**Pdif**	**09 09 08.7**	**-0.9**
	comp=Z,140nm,2.0s						
KPKS				*i* PP	**PP**	**09 13 24.1**	**-1.8**
KPKS				LR	LR	09 57 20.0	
	comp=Z,3μm,16.0s						
234A	**Clairette**	**103.42**	**61**	P	**Pdif**	**09 09 10.3**	**+0.5**
	baz=254						
J27A	**Elkhorn Farm,**	**103.44**	**49**	P	**Pdif**	**09 09 10.8**	**+1.1**
	baz=255,SNR=20						
736A	**Circle Diamond**	**103.48**	**64**	P	**Pdif**	**09 09 11.7**	**+1.6**
	baz=254						
SATY	**Saty**	**103.50**	**311**	*e*Pdif	**Pdif**	**09 09 10.5**	**+0.4**
	comp=Z,104nm,1.7s						
SATY				*i* PP	**PP**	**09 13 25.3**	**-1.3**
ZHN	**Zhinishke**	**103.51**	**311**	*i* Pdif	**Pdif**	**09 09 10.8**	**+0.7**
	comp=Z,55nm,0.9s						
ZHN				*i* PP	**PP**	**09 13 26.6**	**0.0**
ZHN				LRM	MLR	09 56 32.3	
	comp=Z,1μm,15.8s						
435B	**Jarrell**	**103.55**	**62**	P	**Pdif**	**09 09 11.4**	**+1.0**
	baz=254						
Y33A	**Hilltop Ranch,**	**103.56**	**59**	P	**Pdif**	**09 09 10.9**	**+0.6**
	baz=255						
G26A	**Maurine**	**103.57**	**47**	P	**Pdif**	**09 09 10.9**	**+0.7**
	baz=255,SNR=8.3						
D25A	**Fairfield**	**103.57**	**45**	P	**Pdif**	**09 09 11.8**	**+1.6**
	baz=255,SNR=8.0						
NVS	**Novosibirsk**	**103.58**	**324**	*e*P	**Pdif**	**09 09 11.2**	**+1.3**
NVS				pmax	pmax		
	comp=Z,157nm,2.8s						
NVS				pmax	pmax		
	comp=N,19nm,1.7s						
NVS				pmax	pmax		
	comp=E,44nm,2.0s						
134A	**White-Moore Ra**	**103.62**	**60**	P	**Pdif**	**09 09 11.7**	**+1.0**
	baz=254						
WMOK	**Wichita Mounta**	**103.63**	**58**	*e*P	**Pdif**	**09 09 10.5**	**-0.2**
WMOK				pmax	pmax		
	comp=Z,6.0nm,0.9s						
WMOK				MLR	MLR		
	comp=Z,48μm,19.0s						
WMOK	**Wichita Mounta**	**103.63**	**58**	*e*Pdif	**Pdif**	**09 09 10.4**	**-0.2**
	comp=Z,5.9nm,0.9s						
WMOK				LR	LR		
	comp=Z,48μm,19.0s						
636A	**Smothers Creek**	**103.64**	**63**	P	**Pdif**	**09 09 12.1**	**+1.3**
	baz=254						
F26A	**Lodgepole**	**103.67**	**46**	P	**Pdif**	**09 09 11.3**	**+0.7**
	baz=255						
V32A	**Arapaho**	**103.68**	**57**	P	**Pdif**	**09 09 11.8**	**+0.9**
	baz=255						
H27A	**Howes**	**103.75**	**47**	P	**Pdif**	**09 09 11.8**	**+0.8**
	baz=255,SNR=7.7						
C25A	**Freed Ranch, W**	**103.76**	**44**	P	**Pdif**	**09 09 12.4**	**+1.4**
	baz=255						
536A	**Bastrop**	**103.79**	**63**	P	**Pdif**	**09 09 12.7**	**+1.2**
	baz=254						
X33A	**Lawton**	**103.80**	**58**	P	**Pdif**	**09 09 11.9**	**+0.4**
	baz=255						
335A	**Moody**	**103.81**	**62**	P	**Pdif**	**09 09 12.2**	**+0.6**
	baz=254						
U32A	**Winter Ranch,**	**103.89**	**56**	P	**Pdif**	**09 09 12.5**	**+0.7**
	baz=255						
CBKS	**Cedar Bluff**	**103.95**	**54**	P	**Pdif**	**09 09 13.2**	**+1.1**
	baz=255						
CBKS	**Cedar Bluff**	**103.95**	**54**	PFAKE		09 09 20.0	+8.0
CBKS				LR	LR		
	comp=Z,23μm,22.0s						
737A	**Port Lavaca**	**103.96**	**64**	P	**Pdif**	**09 09 13.3**	**+1.1**
	baz=254						
Z34A	**Collier Ranch,**	**103.96**	**59**	P	**Pdif**	**09 09 13.1**	**+0.9**
	baz=255						
E26A	**Carlson Angus**	**103.96**	**45**	P	**Pdif**	**09 09 12.9**	**+1.0**
	baz=255						
B25A	**Knox Farm, Ray**	**103.97**	**43**	P	**Pdif**	**09 09 12.5**	**+0.7**
	baz=255						
WHTX	**Lake Whitney,**	**103.97**	**61**	P	**Pdif**	**09 09 12.9**	**+0.6**
	baz=255						
W33A	**Caddo, Fort Co**	**103.99**	**57**	P	**Pdif**	**09 09 13.7**	**+1.4**
	baz=255,SNR=7.2						
G27A	**Dupree**	**104.05**	**47**	P	**Pdif**	**09 09 12.8**	**+0.4**
	baz=255						
D26A	**Manning**	**104.12**	**45**	P	**Pdif**	**09 09 14.0**	**+1.4**
	baz=255						

I29A	Vivian Onida	104.83	48	P	Pdif	09 09 16.1 +0.3
	baz=256					
A26A	Wade Farm, Ken	104.84	43	P	Pdif	09 09 16.5 +0.8
	baz=256					
136A	Ennis	104.86	61	P	Pdif	09 09 16.7 +0.5
	baz=255					
Q32A	Meitler Ranch,	104.88	54	P	Pdif	09 09 16.4 +0.3
	baz=256					
LCO	Las Campanas	104.89	129	PFAKE		09 09 30.0 +13
LCO				LR	LR	
	comp=Z,24μm,19.0s					
C27A	Sayler Ranch,	104.91	44	P	Pdif	09 09 16.6 +0.5
	baz=256					
V34A	Guthrie	104.91	57	P	Pdif	09 09 16.5 +0.2
	baz=256					
V34A	Guthrie	104.91	57	*e*Pdif	Pdif	09 09 16.7 +0.4
S33A	Kaszmaul Farm,	104.97	55	P	Pdif	09 09 16.3 -0.2
	baz=256					
638A	Rosharon	104.97	64	P	Pdif	09 09 16.3 -0.4
	baz=255					
X35A	Drake	104.98	59	P	Pdif	09 09 16.6 -0.1
	baz=256					
K30A	Basset	105.00	50	P	Pdif	09 09 17.0 +0.4
	baz=256					
P32A	Huiting Farm,	105.01	53	P	Pdif	09 09 17.1 +0.4
	baz=256					
N31A	Bailey Ranch,	105.03	52	P	Pdif	09 09 17.4 +0.6
	baz=256					
H29A	Onida	105.04	48	P	Pdif	09 09 16.8 +0.1
	baz=256					
U34A	Anderson Ranch	105.04	56	P	Pdif	09 09 17.1 +0.2
	baz=256					
337A	Centerville	105.09	62	P	Pdif	09 09 17.8 +0.6
	baz=255					
Z36A	Blue Ridge	105.14	60	P	Pdif	09 09 17.6 +0.2
	baz=256					
M31A	Lambtecht Ranc	105.14	51	P	Pdif	09 09 17.6 +0.4
	baz=256					
538A	Harpers Horsep	105.14	63	P	Pdif	09 09 17.6 +0.2
	baz=255					
R33A	Olander Ranch,	105.15	54	P	Pdif	09 09 17.9 +0.5
	baz=256					
TRQA	Tornquist	105.16	141	PFAKE		09 13 40.0
TRQA				LR	LR	
	comp=Z,16μm,19.0s					
KUU	Kurty	105.17	312	*i* Pdif	Pdif	09 09 18.0 +0.8
	comp=Z,126nm,1.7s					
KUU				*i* PP	PP	09 13 39.0 +0.2
E28A	Huff	105.17	46	P	Pdif	09 09 17.5 +0.2
	baz=256					
B27A	Peters Farms,	105.23	44	P	Pdif	09 09 18.2 +0.7
	baz=257					
J30A	Dallas	105.24	49	P	Pdif	09 09 18.2 +0.5
	baz=256					
W35A	Tecumseh	105.25	58	P	Pdif	09 09 17.8 0.0
	baz=256					
KURK	Kurchatov	105.25	319	*e*P	Pdif	09 09 18.3 +0.9
KURK				MLR	MLR	
	comp=Z,28μm,20.0s					
KURK	Kurchatov	105.25	319	*e*Pdif	Pdif	09 09 18.3 +0.9
KURK				LR	LR	
	comp=Z,28μm,20.0s					
438A	Sam Houston St	105.29	63	P	Pdif	09 09 18.1 0.0
	baz=255					
237A	Washetta, Mont	105.33	61	P	Pdif	09 09 18.3 +0.1
	baz=256					
A27A	Ledoux Ranch,	105.37	43	P	Pdif	09 09 18.7 +0.6
	baz=257					
BHJ	Bhuj	105.37	289	*e*P	Pdif	09 09 18.0 -0.6
BHJ				IAmb	IAmb	09 09 54.5
	comp=Z,42nm,1.1s					
G29A	Hoven	105.38	47	P	Pdif	09 09 17.8 -0.4
	baz=257					
D28A	Regan	105.40	45	P	Pdif	09 09 19.0 +0.7
	baz=257					
O32A	Brockman Farm,	105.40	52	P	Pdif	09 09 19.0 +0.5
	baz=256					
Y36A	Durant	105.41	59	P	Pdif	09 09 19.1 +0.5
	baz=256					
I30A	Oacoma	105.42	49	P	Pdif	09 09 18.8 +0.3
	baz=257					
V35A	Meyer Ranch, C	105.43	57	P	Pdif	09 09 19.2 +0.5
	baz=256					
Q33A	Connelly Farm,	105.44	54	P	Pdif	09 09 18.9 +0.3
	baz=256					
L31A	Butterfield Fa	105.44	50	P	Pdif	09 09 18.8 +0.2
	baz=257					
T34A	McClaskey Farm	105.46	56	P	Pdif	09 09 19.0 +0.2
	baz=256					
TKM2	Tokmak 2	105.46	310	*e*P	Pdif	09 09 19.6 +0.7
TKM2				MLR	MLR	
	comp=Z,14μm,20.0s					
TKM2	Tokmak 2	105.46	310	*e*Pdif	Pdif	09 09 19.6 +0.7
TKM2				LR	LR	
	comp=Z,14μm,20.0s					
N32A	Stulken Farm,	105.50	52	P	Pdif	09 09 19.2 +0.3
	baz=256					
137A	Heron Place, G	105.52	61	P	Pdif	09 09 19.7 +0.6
	baz=256					
X36A	Centrahoma	105.52	59	P	Pdif	09 09 18.7 -0.4
	baz=256					
338A	Crockett	105.58	62	P	Pdif	09 09 19.8 +0.4
	baz=256					
F29A	Eureka	105.59	47	P	Pdif	09 09 19.5 +0.3
	baz=257					
K31A	O'Neill	105.60	50	P	Pdif	09 09 19.4 +0.1
	baz=257					
NRIK	Noril'sk	105.62	339	Pdiff	Pdif	09 09 18.5 -0.2
	comp=Z,19nm,0.9s,baz=110,slow=4.9,SNR=21					
NRIK				PP	PKiKP	09 13 33.0 +1.4
	comp=Z,18nm,0.9s,baz=128,slow=6.8,SNR=5.4					
NRIK				PKKPbc	PKKPbc	09 24 57.5 -1.0
	comp=Z,2.0nm,0.6s,baz=258,slow=4.3,SNR=5.4					
NRIK				PKKP	PKKPab	09 25 12.0 +0.5
	comp=Z,7.7nm,0.7s,baz=258,slow=2.4,SNR=6.1					
C28A	Hausauer Farms	105.64	45	P	Pdif	09 09 19.7 +0.4
	baz=257					
P33A	Williams Farm,	105.64	53	P	Pdif	09 09 19.7 +0.2
	baz=256					
U35A	Pawnee	105.66	57	P	Pdif	09 09 20.5 +0.9
	baz=256					
S34A	Willow Spring	105.68	55	P	Pdif	09 09 20.2 +0.5
	baz=256					
R34A	Isabella, Hill	105.72	55	P	Pdif	09 09 20.3 +0.4
	baz=256					
539A	Cross D Ranch,	105.76	63	P	Pdif	09 09 20.1 -0.1
	baz=256					
W36A	Wetumka	105.76	58	P	Pdif	09 09 20.1 0.0
	baz=256					
BGNE	Belgrade	105.76	51	P	Pdif	09 09 20.7 +0.7
	baz=257					
BGNE	Belgrade	105.76	51	*e*Pdif	Pdif	09 09 25.9 +5.9
J31A	Geddes	105.77	49	P	Pdif	09 09 20.4 +0.4
	baz=257					
Z37A	Pogue Cattle C	105.78	60	P	Pdif	09 09 20.4 +0.1
	baz=256					
B28A	Dugan Ranch, T	105.82	44	P	Pdif	09 09 19.5 -0.6
	baz=257					
O33A	Hebron	105.87	53	P	Pdif	09 09 20.4 -0.2
	baz=257					
SUSD	Miller	105.88	48	P	Pdif	09 09 20.6 +0.1
	baz=257					
E29A	Napoleon	105.88	46	P	Pdif	09 09 20.0 -0.4
	baz=257					
439A	Center Grove,	105.89	63	P	Pdif	09 09 20.2 -0.6
	baz=256					
238A	Jacksonville	105.90	61	P	Pdif	09 09 21.0 +0.2
	baz=256					
G30A	Faulkton	105.90	47	P	Pdif	09 09 20.4 -0.1
	baz=257					
T35A	Sooner Cattle	105.96	56	P	Pdif	09 09 21.9 +0.9
	baz=256					
Y37A	Hugo	105.97	59	P	Pdif	09 09 21.9 +0.8
	baz=256					
A28A	Rude Farm, Bot	105.98	43	P	Pdif	09 09 21.5 +0.7
	baz=257					
L32A	Elgin	106.00	51	P	Pdif	09 09 21.4 +0.3
	baz=257					
D29A	Pettibone, Tap	106.02	45	P	Pdif	09 09 20.6 -0.4
	baz=257					
I31A	Royce, Wessing	106.08	49	P	Pdif	09 09 21.9 +0.6
	baz=257					
138A	Matatall Enter	106.08	61	P	Pdif	09 09 22.9 +1.3
	baz=256					
Q34A	Chapman	106.09	54	P	Pdif	09 09 22.5 +1.0
	baz=257					
N33A	J Bar K, Exete	106.12	52	P	Pdif	09 09 22.4 +0.8
	baz=257					
F30A	Leola	106.14	47	P	Pdif	09 09 21.8 +0.3
	baz=257					
V36A	Jenks	106.14	57	P	Pdif	09 09 22.2 +0.4
	baz=256					
FRU	Bishkek	106.14	310	*e*P	Pdif	09 09 21.0 -0.7
FRU				*i*		09 13 41.0
FRU				*e*		09 24 00.0
FRU				pmax	pmax	
	comp=E,3μm,8.2s					
K32A	Verdigre	106.17	50	P	Pdif	09 09 21.9 +0.1
	baz=257					
MDND	Maddock	106.19	44	P	Pdif	09 09 22.3 +0.6
	baz=258					
AAK	Ala-Archa	106.19	310	PKKPbc	PKKPbc	09 24 55.2 -1.0
	comp=E,6.9nm,0.9s,baz=207,slow=5.4,SNR=5.3					
AAK	Ala-Archa	106.19	310	*e*P	Pdif	09 09 21.4 -0.7
AAK				MLR	MLR	
	comp=Z,22μm,20.0s					
AAK	Ala-Archa	106.19	310	*e*Pdif	Pdif	09 09 21.4 -0.7
AAK				PKKPbc	PKKPbc	09 24 55.2 -1.0
AAK				LR	LR	
	comp=Z,22μm,20.0s					
339A	Huntington	106.20	62	P	Pdif	09 09 23.3 +1.2
	baz=256					
NATX	Nacogdoches	106.22	62	P	Pdif	09 09 23.3 +1.1
	baz=256					
NATX	Nacogdoches	106.22	62	PFAKE		09 13 50.0
NATX				LR	LR	
	comp=Z,58μm,19.0s					
H31A	Wolsey	106.22	48	P	Pdif	09 09 22.2 +0.2
	baz=257					
S35A	Otter Creek Ra	106.28	55	P	Pdif	09 09 23.1 +0.7
	baz=257					
TUL1	Leonard	106.29	57	P	Pdif	09 09 23.7 +1.2
	baz=257					
TUL1	Leonard	106.29	57	*e*Pdif	Pdif	09 09 22.2 -0.3
Z38A	Mt. Pleasant	106.31	60	P	Pdif	09 09 23.7 +1.1
	baz=256					
X37A	Clayton	106.31	59	P	Pdif	09 09 23.1 +0.5
	baz=256					
P34A	Walnut Farm, R	106.32	53	P	Pdif	09 09 23.1 +0.6
	baz=257					
E30A	Jud	106.36	46	P	Pdif	09 09 22.0 -0.5
	baz=258					
KSU1	Kansas State U	106.39	54	P	Pdif	09 09 23.9 +1.1
	baz=257					
KSU1	Kansas State U	106.39	54	PFAKE		09 13 50.0
KSU1				LR	LR	
	comp=Z,30μm,20.0s					
W37B	Quinton	106.39	58	P	Pdif	09 09 24.5 +1.5
	baz=256					
540A	Vidor	106.41	63	P	Pdif	09 09 23.9 +0.8
	baz=256					
J32A	Parkston	106.42	49	P	Pdif	09 09 22.7 -0.1
	baz=258					
239A	Gary	106.44	61	P	Pdif	09 09 24.1 +1.0
	baz=256					
U36A	Oologah	106.45	57	P	Pdif	09 09 23.8 +0.6
	baz=257					
B29A	Wagenman Farm,	106.48	44	P	Pdif	09 09 22.5 -0.5
	baz=258					
T36A	Boggs Farm, Ca	106.48	56	P	Pdif	09 09 24.4 +1.1
	baz=257					
M33A	Taylor Creek F	106.50	51	P	Pdif	09 09 23.3 0.0
	baz=257					
R35A	Emporia Munici	106.52	55	P	Pdif	09 09 24.3 +0.9
	baz=257					
440A	Kirbyville	106.55	63	P	Pdif	09 09 24.6 +0.8
	baz=256					
O34A	Beatrice	106.56	53	P	Pdif	09 09 24.4 +0.8
	baz=257					
G31A	Conde	106.56	47	P	Pdif	09 09 23.4 0.0
	baz=258					
L33A	Hoskins	106.57	51	P	Pdif	09 09 24.0 +0.4
	baz=258					
D30A	Buchanan	106.59	45	P	Pdif	09 09 23.5 -0.1
	baz=258					
A29A	Manning Farm,	106.65	43	P	Pdif	09 09 24.6 +0.8
	baz=258					
139A	Bunkhouse Ranc	106.66	61	P	Pdif	09 09 25.3 +1.2
	baz=256					
F31A	Hecla	106.67	47	P	Pdif	09 09 24.0 +0.1
	baz=258					
Y38A	Idabel	106.67	59	P	Pdif	09 09 24.6 +0.4
	baz=256					
EKS2	Erkin-Say	106.71	310	*e*P	Pdif	09 09 25.5 +1.1
EKS2				MLR	MLR	
	comp=Z,24μm,21.0s					
EKS2	Erkin-Say	106.71	310	*e*Pdif	Pdif	09 09 25.5 +1.1
EKS2				LR	LR	
	comp=Z,24μm,21.0s					
Q35A	Mercer Eighty,	106.77	54	P	Pdif	09 09 24.4 -0.2
	baz=257					
X38A	Whitesboro	106.77	59	P	Pdif	09 09 25.1 +0.5
	baz=257					
340A	Bronson	106.77	62	P	Pdif	09 09 25.4 +0.7
	baz=256					
V37A	Hulbert	106.80	57	P	Pdif	09 09 25.2 +0.5
	baz=257					
I32A	Karley and Nic	106.83	49	P	Pdif	09 09 24.7 0.0
	baz=258					
N34A	Lincoln	106.85	52	P	Pdif	09 09 25.3 +0.5
	baz=258					
S36A	Lake Cedric, C	106.86	55	P	Pdif	09 09 25.7 +0.8
	baz=257					
K33A	Hardington	106.86	50	P	Pdif	09 09 25.5 +0.7
	baz=258					
C30A	Mose, Pekin	106.90	45	P	Pdif	09 09 24.6 -0.3
	baz=258					
P35A	Duane Minner,	106.93	54	P	Pdif	09 09 25.3 0.0
	baz=258					
M34A	Aspy Farms, Fr	106.93	51	P	Pdif	09 09 25.1 -0.1
	baz=258					
U37A	Salina	106.93	57	P	Pdif	09 09 25.7 +0.4
	baz=257					
H32A	Carlson Farm,	106.95	48	P	Pdif	09 09 24.7 -0.5
	baz=258					
Z39A	Irene McRaven,	106.96	60	P	Pdif	09 09 26.3 +0.8
	baz=257					
240A	Hunter Patters	107.02	62	P	Pdif	09 09 25.8 0.0
	baz=256					
J33A	Davis	107.04	50	P	Pdif	09 09 25.7 +0.1
	baz=258					
R36A	Gordon, Harris	107.06	55	P	Pdif	09 09 26.3 +0.5
	baz=257					
E31A	Nome	107.06	46	P	Pdif	09 09 25.7 +0.1
	baz=258					
G32A	Webster	107.06	47	P	Pdif	09 09 24.3 -1.4
	baz=258					
W38A	Poteau	107.11	58	P	Pdif	09 09 25.6 -0.5
	baz=257					
B30A	Myrvik Farm, E	107.14	44	P	Pdif	09 09 26.1 +0.1
	baz=259					
O35A	Humboldt	107.17	53	P	Pdif	09 09 27.3 +1.0
	baz=258					
L34A	Svendsen Farm,	107.18	51	P	Pdif	09 09 26.1 -0.2
	baz=258					
Y39A	Lockesburg	107.19	60	P	Pdif	09 09 27.5 +1.0
	baz=257					
441A	DeRidder	107.20	63	P	Pdif	09 09 26.7 +0.1
	baz=256					
Q36A	Arnold C. Orve	107.23	54	P	Pdif	09 09 27.0 +0.4
	baz=258					
T37A	Cheneyville 18	107.25	56	P	Pdif	09 09 27.4 +0.7
	baz=257					
A30A	Hoffart Farm,	107.26	44	P	Pdif	09 09 26.7 +0.2
	baz=259					
D31A	Mcclaflin, Tow	107.27	46	P	Pdif	09 09 26.1 -0.4
	baz=259					
I33A	Coleman	107.30	49	P	Pdif	09 09 26.7 -0.1
	baz=258					
X39A	Fountain Ranch	107.31	59	P	Pdif	09 09 27.5 +0.5
	baz=257					
140A	Cam and Jess,	107.32	61	P	Pdif	09 09 28.7 +1.7
	baz=257					
341A	Kurthwood	107.35	62	P	Pdif	09 09 27.8 +0.5
	baz=256					
ECSD	EROS Data Cent	107.37	49	P	Pdif	09 09 27.3 +0.2
	baz=258					
ECSD	EROS Data Cent	107.37	49	*e*Pdif	Pdif	09 09 26.9 -0.2
ECSD				LR	LR	
	comp=Z,36μm,20.0s					
V38A	Canehill	107.37	58	P	Pdif	09 09 27.1 -0.2
	baz=257					
C31A	Landman Farms,	107.41	45	P	Pdif	09 09 27.1 0.0
	baz=259					
F32A	Veblen	107.44	47	P	Pdif	09 09 27.2 -0.1
	baz=259					
S37A	Fort Scott	107.45	56	P	Pdif	09 09 28.2 +0.6
	baz=258					
H33A	Prehn Over Nor	107.47	48	P	Pdif	09 09 27.8 +0.3
	baz=259					
N35A	Tabor	107.49	52	P	Pdif	09 09 28.3 +0.6
	baz=258					
U38A	Gravette	107.52	57	P	Pdif	09 09 28.1 +0.2
	baz=258					
K34A	Le Mars	107.53	50	P	Pdif	09 09 27.2 -0.7
	baz=258					
P36A	Good Intent, A	107.56	54	P	Pdif	09 09 28.8 +0.8
	baz=258					
R37A	Teagarden Farm	107.57	55	P	Pdif	09 09 28.6 +0.5
	baz=258					
M35A	Neola	107.58	52	P	Pdif	09 09 27.8 -0.2
	baz=258					
B31A	Greenbush Farm	107.58	44	P	Pdif	09 09 27.7 -0.2
	baz=259					
Z40A	Long Farm, Mag	107.60	60	P	Pdif	09 09 28.7 +0.3
	baz=257					
E32A	Braaten, Kindr	107.62	46	P	Pdif	09 09 27.7 -0.4
	baz=259					
T38A	Diamond	107.72	56	P	Pdif	09 09 28.9 +0.1
	baz=258					
241A	Mo Tay, Goldon	107.72	62	P	Pdif	09 09 28.3 -0.6
	baz=257					
W39A	Magazine	107.72	58	P	Pdif	09 09 28.7 -0.1
	baz=257					
MIAR	Mount Ida	107.75	59	P	Pdif	09 09 29.9 +1.0
	baz=257					
J34A	George	107.75	50	P	Pdif	09 09 27.8 -1.0
	baz=259					
D32A	Dogwood Acres,	107.76	46	P	Pdif	09 09 28.8 +0.1
	baz=259					
G33A	Ortonville	107.78	48	P	Pdif	09 09 28.4 -0.4
	baz=259					
L35A	Bielow Farm, R	107.82	51	P	Pdif	09 09 28.9 -0.2
	baz=259					
442A	Mamou	107.82	63	P	Pdif	09 09 30.3 +0.9
	baz=257					
HHAR	Hobbs	107.83	57	*e*Pdif	Pdif	09 09 28.5 -0.8
O36A	Bolckow	107.85	53	P	Pdif	09 09 29.5 +0.2
	baz=258					
141A	Papa Simpson,	107.86	61	P	Pdif	09 09 30.1 +0.6
	baz=257					
Y40A	Okolona	107.87	60	P	Pdif	09 09 29.9 +0.5
	baz=257					
V39A	Pettigrew	107.97	58	P	Pdif	09 09 30.3 +0.3
	baz=258					
A31A	Linda, St. Vin	107.98	44	P	Pdif	09 09 28.6 -1.0
	baz=260					
Q37A	Longview Farm,	107.98	54	P	Pdif	09 09 30.0 +0.1
	baz=258					
N36A	Muff Farm, Cla	107.99	52	P	Pdif	09 09 29.4 -0.5
	baz=258					
F33A	5 Mile Ranch,	108.01	47	P	Pdif	09 09 29.2 -0.6
	baz=259					
342A	Flagon Creek P	108.06	63	P	Pdif	09 09 30.3 -0.1
	baz=257					
Z41A	Richland Creek	108.09	61	P	Pdif	09 09 31.0 +0.5
	baz=257					
S38A	Stockton	108.14	56	P	Pdif	09 09 30.7 0.0
	baz=258					
H34A	Spellman Lake,	108.14	48	P	Pdif	09 09 30.3 -0.2
	baz=259					
543A	St. Martinvill	108.16	64	P	Pdif	09 09 32.1 +1.2
	baz=257					
K35A	Storm Lake	108.16	50	P	Pdif	09 09 30.7 +0.1
	baz=259					
P37A	Lathrop	108.20	54	P	Pdif	09 09 31.0 +0.1
	baz=258					
C32A	Crookston	108.21	45	P	Pdif	09 09 30.4 -0.3
	baz=260					
U39A	Green Forest	108.22	57	P	Pdif	09 09 31.2 +0.2
	baz=258					
M36A	Felix, Anita	108.23	52	P	Pdif	09 09 31.2 +0.2
	baz=259					
R38A	Fenwick Farm,	108.26	55	P	Pdif	09 09 31.7 +0.5
	baz=258					
W40A	Ferguson Farm,	108.29	59	P	Pdif	09 09 31.9 +0.6
	baz=258					
J35A	Milford	108.30	50	P	Pdif	09 09 31.2 -0.1
	baz=259					
B32A	Ashes, Strandq	108.31	44	P	Pdif	09 09 30.8 -0.3
	baz=260					
E33A	Westby DABS, E	108.32	46	P	Pdif	09 09 31.4 +0.1
	baz=260					
X40A	Basin Creek Fa	108.33	59	P	Pdif	09 09 32.2 +0.6
	baz=258					
G34A	Benson	108.35	48	P	Pdif	09 09 31.6 +0.3
	baz=260					
242A	Grayson	108.36	62	P	Pdif	09 09 32.6 +0.9
	baz=257					
NNA	Nana	108.36	111	PFAKE		09 13 50.0
NNA				LR	LR	
	comp=Z,14μm,19.0s					
443A	Delano Plantat	108.38	63	P	Pdif	09 09 32.3 +0.4
	baz=257					
Y41A	Eaglette Beard	108.38	60	P	Pdif	09 09 31.7 -0.1
	baz=258					
A32A	Rocking H Ranc	108.43	44	P	Pdif	09 09 31.0 -0.6
	baz=260					
T39A	Clever	108.43	57	P	Pdif	09 09 32.6 +0.6
	baz=258					
L36A	Harm Buss Farm	108.45	51	P	Pdif	09 09 31.2 -0.7
	baz=259					
O37A	Wolven Farm, M	108.47	53	P	Pdif	09 09 31.9 -0.2
	baz=259					
N37A	Lee Faris, Mou	108.54	53	P	Pdif	09 09 32.2 -0.1
	baz=259					
D33A	AnnSam, Waubun	108.55	46	P	Pdif	09 09 31.8 -0.4
	baz=260					
I35A	Creekview Farm	108.56	49	P	Pdif	09 09 32.2 -0.1
	baz=260					
X41A	Kaden, Bauxite	108.59	59	P	Pdif	09 09 33.3 +0.6
	baz=258					
S39A	Bolivar	108.61	56	P	Pdif	09 09 32.1 -0.6
	baz=258					
V40A	Witts Springs	108.62	58	P	Pdif	09 09 32.7 -0.1
	baz=259					
343A	Vidalia	108.63	63	P	Pdif	09 09 33.3 +0.4
	baz=257					
Q38A	Cooks Store, C	108.63	55	P	Pdif	09 09 33.0 +0.2
	baz=259					
142A	Monroe	108.64	61	P	Pdif	09 09 33.9 +1.0
	baz=258					
C33A	Trail	108.70	45	P	Pdif	09 09 32.5 -0.4
	baz=260					
U40A	Yellville	108.71	57	P	Pdif	09 09 33.1 -0.1
	baz=258					
F34A	Alexandria	108.71	47	P	Pdif	09 09 33.1 +0.1
	baz=260					
K36A	Gilmore City	108.71	51	P	Pdif	09 09 33.9 +0.8
	baz=259					
544A	White Castle	108.75	64	P	Pdif	09 09 34.7 +1.2
	baz=257					
M37A	Trindle Farm,	108.77	52	P	Pdif	09 09 34.2 +0.8
	baz=259					
Z42A	Norrel Spur, H	108.79	61	P	Pdif	09 09 34.8 +1.2
	baz=258					
H35A	Sunnyside Ranc	108.81	48	P	Pdif	09 09 33.9 +0.4
	baz=260					
P38A	Dawn	108.83	54	P	Pdif	09 09 33.9 +0.3
	baz=259					
BRZS	Berezniki	108.84	317	*i* Pdif	Pdif	09 09 27.9 -5.6
	comp=Z,20nm,1.2s					
BRZS				*i* PP	PP	09 13 59.3 -6.3
BRZS				*i* PS	PS	09 23 24.7 -7.0
243A	Waterproof	108.88	62	P	Pdif	09 09 35.6 +1.6
	baz=258					
TEIG	Tepich	108.89	75	PFAKE		09 13 50.0
TEIG				LR	LR	
	comp=Z,18μm,20.0s					
E34A	Wadena	108.89	46	P	Pdif	09 09 34.4 +0.6
	baz=260					
B33A	Robert and Kas	108.91	45	P	Pdif	09 09 34.5 +0.7
	baz=261					
J36A	Seneca 1, Swea	108.92	50	P	Pdif	09 09 34.3 +0.3
	baz=260					
W41B	Gary Mavity, V	108.95	59	P	Pdif	09 09 35.5 +1.2
	baz=258					
R39A	Chumby, Stover	108.95	55	P	Pdif	09 09 34.9 +0.7
	baz=259					
O38A	Galt	108.97	53	P	Pdif	09 09 35.0 +0.7
	baz=259					
D34A	Park Rapids	108.97	46	P	Pdif	09 09 34.4 +0.2
	baz=260					
ULM	Lac du Bonnet	109.04	43	Pdiff	Pdif	09 09 35.9 +1.6

comp=Z,3.3nm,0.6s,baz=328,slow=6.9,SNR=4.5
ULM PKiKP **PKiKP** **09 13 35.1 -3.4**
comp=Z,2.7nm,0.7s,baz=293,slow=7.4,SNR=2.4
ULM PKKPbc **PKKPbc** **09 24 45.2 -2.0**
comp=Z,2.5nm,0.6s,baz=162,slow=6.4,SNR=2.2
ULM Lac du Bonnet 109.04 43 *e*P **Pdif** **09 09 34.2 -0.1**
ULM Lac du Bonnet 109.04 43 *e*Pdif **Pdif** **09 09 34.2 -0.1**
ULM PKiKP **PKiKP** **09 13 35.1 -3.4**
ULM PKKPbc **PKKPbc** **09 24 45.2 -2.0**
Y42A Garnett, Star 109.04 60 P **Pdif** **09 09 36.1 +1.4**
baz=258
645A Chauvin 109.09 65 P **Pdif** **09 09 36.2 +1.2**
baz=257
143A Socs Landing, 109.12 61 P **Pdif** **09 09 36.2 +1.1**
baz=258
L37A Phoenix Point, 109.13 51 P **Pdif** **09 09 34.9 -0.1**
baz=260
T40A Mansfield 109.13 57 P **Pdif** **09 09 36.0 +1.0**
baz=259
JTS JuntasAbangare 109.14 86 PFAKE 09 13 50.0
JTS LR LR
comp=Z,40μm,19.0s
Q39A Willow Grove F 109.14 55 P **Pdif** **09 09 35.9 +0.8**
baz=259
A33A Warroad 109.15 44 P **Pdif** **09 09 35.1 +0.3**
baz=261
G35A Watkins 109.15 48 P **Pdif** **09 09 35.3 +0.4**
baz=260
KKAR Karatay Array 109.15 310 *e*PKiKP **PKiKP** **09 13 35.7 -3.3**
F35A Swanville 109.19 47 P **Pdif** **09 09 35.8 +0.7**
baz=260
S40A Lebanon 109.23 56 P **Pdif** **09 09 35.6 +0.1**
baz=259
444A Pine Grove 109.24 64 P **Pdif** **09 09 35.7 0.0**
baz=257
C34A RKJ Ranch, Bem 109.26 45 P **Pdif** **09 09 35.3 -0.1**
baz=261
N38A Joes South For 109.27 53 P **Pdif** **09 09 36.1 +0.5**
baz=260
I36A Fitzsimmons Fa 109.27 49 P **Pdif** **09 09 35.9 +0.4**
baz=260
545A Edgard 109.31 64 P **Pdif** **09 09 37.6 +1.6**
baz=257
K37A Belmond 109.33 51 P **Pdif** **09 09 35.8 0.0**
baz=260
IUG Iuzhnay 109.33 309 *i* Pdif **Pdif** **09 09 37.0 +1.0**
IUG *i* PP **PP** **09 14 04.0 -5.6**
IUG *i* PS **PS** **09 23 31.6 -5.6**
Z43A Armstrong Fami 109.36 61 P **Pdif** **09 09 36.9 +0.7**
baz=258
344A Westbrook Farm 109.41 63 P **Pdif** **09 09 37.7 +1.3**
baz=258
M38A Pleasantville 109.41 52 P **Pdif** **09 09 36.6 +0.4**
baz=260
E35A Pequot Lakes 109.42 47 P **Pdif** **09 09 35.0 -1.1**
baz=261
H36A Jessenland, He 109.43 49 P **Pdif** **09 09 36.6 +0.4**
baz=260
J37A Redenius Farm, 109.48 50 P **Pdif** **09 09 36.5 0.0**
baz=260
SCIA State Center 109.48 52 PFAKE 09 13 50.0
SCIA LR LR
comp=Z,31μm,19.0s
R40A Maddies Statio 109.54 55 P **Pdif** **09 09 36.2 -0.6**
baz=259
B34A Aery, Baudette 109.56 44 P **Pdif** **09 09 36.9 +0.2**
baz=261
244A Avery, Jackson 109.57 62 P **Pdif** **09 09 37.9 +0.7**
baz=258
445A Amite 109.58 64 P **Pdif** **09 09 39.1 +1.9**
baz=258
G36A St. Michael 109.66 48 P **Pdif** **09 09 37.6 +0.4**
baz=261
LPA La Plata 109.69 141 *de*PDIFF **Pdif** **09 09 42.0 +4.3**
LPA PP **PP** **09 14 11.0 -0.1**
LPA PPP PPP 09 16 32.0
LPA PKIKS 09 17 17.0
LPA PS **PS** **09 23 40.0 0.0**
comp=Z,14μm,20.0s
O39A Kirksville 109.69 53 P **Pdif** **09 09 37.1 -0.4**
baz=260
BRLS Borolday 109.70 309 *e*Pdif **Pdif** **09 09 33.0 -4.5**
BRLS *i* PP **PP** **09 14 06.0 -6.0**
BRLS *i* SS SS 09 29 29.0 -4.5
I37A Lemond, Waseca 109.71 49 P **Pdif** **09 09 38.5 +1.0**
baz=261
L38A Oak Wood Farm, 109.71 51 P **Pdif** **09 09 38.3 +0.8**
baz=260
D35A Remer 109.74 46 P **Pdif** **09 09 37.4 -0.2**
baz=261
LVC Limon Verde 109.75 124 Pdiff **Pdif** **09 09 38.9 +0.2**
comp=Z,12nm,1.0s,baz=236,slow=6.6,SNR=2.9
LVC PP **PP** **09 14 13.2 +0.6**
comp=Z,85nm,1.2s,baz=230,slow=7.8,SNR=7.4
LVC Limon Verde 109.75 124 Pdif **Pdif** **09 09 38.9 +0.2**
LVC PP **PP** **09 14 13.2 +0.6**
LVC LR LR
comp=Z,13μm,19.0s
VBMS Vicksburg 109.75 62 P **Pdif** **09 09 39.0 +1.1**
baz=258
Y43A Makayla and Ka 109.76 60 P **Pdif** **09 09 39.8 +1.9**
baz=258
646A Port Sulphur 109.77 65 P **Pdif** **09 09 38.8 +0.8**
baz=257
Q40A Laux Farm, Aux 109.82 55 P **Pdif** **09 09 39.1 +1.0**
baz=260
N39A Derby Farms, D 109.83 53 P **Pdif** **09 09 38.5 +0.5**
baz=260
C35A Jirik Farms, M 109.89 45 P **Pdif** **09 09 38.5 +0.3**
baz=262
144A Alexander Plac 109.91 62 P **Pdif** **09 09 39.5 +0.9**
baz=258
F36A Milaca 109.92 47 P **Pdif** **09 09 38.9 +0.6**
baz=261
K38A Parkersburg 109.94 51 P **Pdif** **09 09 38.1 -0.3**
baz=260
P40A Paris 109.94 54 P **Pdif** **09 09 38.9 +0.4**
baz=260
345A Thompson Farm, 109.96 63 P **Pdif** **09 09 40.4 +1.5**
baz=258
546A Slidell 110.00 64 P **Pdif** **09 09 40.2 +1.2**
baz=258
Z44A Pea Ridge, Bel 110.03 61 P **Pdif** **09 09 40.5 +1.4**
baz=258
H37A Dierke Farm, C 110.14 49 P **Pdif** **09 09 39.7 +0.4**
baz=261
B35A Bob, Littlefor 110.15 45 P **Pdif** **09 09 38.8 -0.6**
baz=262
O40A La Belle 110.17 54 P **Pdif** **09 09 39.6 0.0**
baz=260
E36A McGregor 110.20 47 P **Pdif** **09 09 38.8 -0.7**
baz=262
245A Little AP, Sta 110.23 62 P **Pdif** **09 09 41.1 +1.0**
baz=258
J38A Wedel Dairy, R 110.26 50 P **Pdif** **09 09 40.1 +0.2**
baz=261
145A Houston Renfro 110.31 62 P **Pdif** **09 09 41.6 +1.2**
baz=258
SPMN Marine on St. 110.32 48 P **Pdif** **09 09 40.6 +0.5**
baz=261
SPMN Marine on St. 110.32 48 *e*Pdif **Pdif** **09 09 40.9 +0.8**
Y44A Strider, Charl 110.35 60 P **Pdif** **09 09 41.7 +1.2**
baz=259
D36A Goodland 110.36 46 P **Pdif** **09 09 39.7 -0.5**
baz=262
446A Poplarville 110.42 64 P **Pdif** **09 09 41.0 +0.1**
baz=258
346A Big Creek Wild 110.45 63 P **Pdif** **09 09 42.1 +1.0**
baz=258
I38A Scanlan Farm, 110.47 49 P **Pdif** **09 09 40.1 -0.7**
baz=261
OPO Ambohidratompo 110.50 240 PKKPbc PKKPbc 09 24 43.2 +1.5
comp=Z,4.6nm,1.0s,baz=90,slow=16,SNR=2.3
OPO PKKP **PKKPdf** **09 24 57.2 -1.4**
comp=Z,8.5nm,1.0s,baz=352,slow=2.1,SNR=5.1
C36A Pine Crest Far 110.66 45 P **Pdif** **09 09 40.9 -0.7**
baz=262
Z45A Winona 110.66 61 P **Pdif** **09 09 41.9 -0.1**
baz=259
BVAR Borovoye Array 110.68 320 Pdiff **Pdif** **09 09 42.7 +1.2**
comp=Z,1.3nm,0.6s,baz=102,slow=5.1,SNR=8.7
BVAR PKiKP **PKiKP** **09 13 40.0 -1.5**
comp=Z,8.2nm,0.8s,baz=48,slow=2.1,SNR=8.8
BVAR PKKPbc **PKKPbc** **09 24 40.1 -1.9**
comp=Z,3.2nm,0.6s,baz=290,slow=4.4,SNR=7.2
BRVK Borovoye 110.74 320 *e*P **Pdif** **09 09 41.5 -0.3**
BRVK MLR MLR
comp=Z,21μm,20.0s
BRVK Borovoye 110.74 320 *e*Pdif **Pdif** **09 09 41.5 -0.3**
BRVK *e*PKiKP **PKiKP** **09 13 43.0 +1.3**
BRVK LR LR
comp=Z,21μm,20.0s
E37A Wrenshall 110.79 47 P **Pdif** **09 09 42.1 -0.1**
baz=262
D37A Cotton 110.85 46 P **Pdif** **09 09 43.0 +0.5**
baz=262
246A Jackson Lee, B 110.86 63 P **Pdif** **09 09 42.6 -0.2**
baz=259
Y45A Yeager Farm, C 110.88 61 P **Pdif** **09 09 44.1 +1.2**
baz=259
447A Lucedale 111.02 64 P **Pdif** **09 09 44.7 +1.2**
baz=258
146A Union 111.04 62 P **Pdif** **09 09 44.6 +0.9**
baz=259
C37A Embarrass 111.09 46 P **Pdif** **09 09 43.7 +0.1**
baz=263
FCC Fort Churchill 111.09 34 *e*P **Pdif** **09 09 50.9 +7.7**
FCC Fort Churchill 111.09 34 *e*Pdif **Pdif** **09 09 50.9 +7.7**
FCC *e*PKiKP **PKiKP** **09 13 43.5 +1.4**
347A Saraland 111.23 63 P **Pdif** **09 09 45.3 +0.8**
baz=259
Z46A Louisville 111.24 61 P **Pdif** **09 09 45.5 +1.0**
baz=259
RES Resolute Bay 111.26 16 *e*P **Pdif** **09 09 44.8 +1.2**
RES Resolute Bay 111.26 16 *e*Pdif **Pdif** **09 09 44.8 +1.2**
247A Quitman 111.30 63 P **Pdif** **09 09 46.2 +1.4**
baz=259
Y46A Houston 111.44 61 P **Pdif** **09 09 46.3 +0.9**
baz=259
ZRNK Zerenda 111.50 320 PKIKP **PKiKP** **09 13 41.0 -2.1**
ZRNK pmax pmax
comp=Z,55nm,1.4s
ZRNK Zerenda 111.50 320 *e*Pdif **Pdif** **09 09 44.2 -1.0**
ZRNK *e*PKiKP **PKiKP** **09 13 43.1 0.0**
EYMN Ely 111.58 45 P **Pdif** **09 09 44.8 -0.9**
baz=263
EYMN Ely 111.58 45 PFAKE 09 14 00.0
EYMN LR LR
comp=Z,58μm,19.0s
C38A Sawbill Land. 111.70 46 P **Pdif** **09 09 45.8 -0.4**
baz=263
147A Livingston 111.70 62 P **Pdif** **09 09 47.4 +0.8**
baz=259
448A Bay Minette 111.71 64 P **Pdif** **09 09 47.2 +0.6**
baz=259
348A Jackson 111.77 63 P **Pdif** **09 09 47.9 +1.0**
baz=259
JFWS Jewell Farm 111.81 51 PFAKE 09 14 00.0
JFWS LR LR
comp=Z,42μm,20.0s
OTAV Otavalo 111.85 98 *e*PKPdf **PKiKP** **09 13 46.0 +0.5**
OTAV LR LR
comp=Z,17μm,19.0s
OTAV Otavalo 111.85 98 *e*P **PKKPbc** **09 24 39.4 +1.9**
Z47A Carrollton 111.96 61 P **Pdif** **09 09 47.1 -0.6**
baz=260
248A Dixon Mills 112.03 63 P **Pdif** **09 09 47.4 -0.6**
baz=259
HDIL Hopedale 112.19 53 P **Pdif** **09 09 49.3 +0.7**
baz=262
HDIL Hopedale 112.19 53 PFAKE 09 14 00.0
HDIL LR LR
comp=Z,36μm,19.0s
Y47A UCPARC, Winfie 112.27 61 P **Pdif** **09 09 49.1 0.0**
baz=260
Z48A Northport 112.42 61 P **Pdif** **09 09 49.5 -0.2**
baz=260
BRAL Brewton 112.44 64 PFAKE 09 14 00.0
BRAL LR LR
comp=Z,36μm,21.0s
C39A Grand Marais 112.48 46 P **Pdif** **09 09 49.6 0.0**
baz=264
COWI Conover 112.98 48 PFAKE 09 14 00.0
COWI LR LR
comp=Z,54μm,19.0s
BCIP Isla Barro Col 113.58 89 PFAKE 09 14 00.0
BCIP LR LR
comp=Z,17μm,19.0s
LPAZ La Paz 113.73 119 Pdiff **Pdif** **09 09 58.0 +1.2**
comp=Z,0.9nm,0.8s,baz=352,slow=7.1,SNR=2.0
LPAZ PKiKP **PKiKP** **09 13 50.4 +1.1**
comp=Z,4.9nm,0.9s,baz=324,slow=6.7,SNR=5.9
LPAZ PP **PP** **09 14 41.3 -0.3**
comp=Z,17nm,1.1s,baz=261,slow=7.5,SNR=5.3
LPAZ PKKPbc **PKKPbc** **09 24 30.4 -1.3**
comp=Z,8.0nm,0.9s,baz=344,slow=1.7,SNR=4.1
LPAZ PKKPab **PKKPab** **09 24 41.7 +1.5**
comp=Z,18nm,0.9s,baz=61,slow=7.2,SNR=14
LPAZ PKKP **PKKPdf** **09 24 53.1 -0.2**
comp=Z,13nm,0.9s,baz=55,slow=9.3,SNR=3.9
SFIN Lafayette 113.83 54 P **Pdif** **09 09 56.1 +0.3**
baz=263
WCI Wyandotte Cave 114.17 56 *e*PKiKP PKPdf 09 13 46.0 -2.7
WCI Wyandotte Cave 114.17 56 *e*PKiKP PKPdf 09 13 46.0 -2.7
POPC Popayan, Colom 114.34 97|| *e*P PKPdf 09 14 02.5 +12
POPC Popayan, Colom 114.34 97 *e*P **PKKPbc** **09 24 29.8 +0.9**
WSAR Wadi Sarin 115.20 287 PKP **PKPdf** **09 13 51.4 +0.3**
comp=Z,19nm,1.1s,baz=234,slow=1.5,SNR=5.4
WSAR PKKPbc **PKKPbc** **09 24 25.8 -0.2**
comp=Z,13nm,1.1s,baz=286,slow=4.0,SNR=5.6
WSAR PKKP **PKKPdf** **09 24 46.1 -4.3**
comp=Z,8.9nm,0.7s,baz=210,slow=6.6,SNR=5.3
TIGA Tifton 115.40 64 P **Pdif** **09 10 02.5 -0.6**
baz=261
GOGA Godfrey 115.80 62 *e*PKiKP **PKPdf** **09 13 53.5 +1.5**
GOGA MLR MLR
comp=Z,37μm,19.0s
GOGA Godfrey 115.80 62 *e*PKPdf **PKPdf** **09 13 53.5 +1.5**
GOGA LR LR
comp=Z,37μm,19.0s
TKL Tuckaleechee C 115.85 59 *e*PKiKP **PKPdf** **09 13 51.5 -0.5**
TKL Tuckaleechee C 115.85 59 *e*PKPdf **PKPdf** **09 13 51.5 -0.5**
CPUP Villa Florida 115.90 135 PKP **PKPdf** **09 13 52.7 +0.3**
comp=Z,8.3nm,1.0s,baz=261,slow=1.1,SNR=5.6
CPUP PP **PP** **09 14 54.2 -1.4**
comp=Z,2.3nm,0.6s,baz=256,slow=10,SNR=2.8
CPUP PKKPbc **PKKPbc** **09 24 21.7 -2.0**
comp=Z,7.7nm,0.9s,baz=43,slow=2.9,SNR=8.1
CPUP Villa Florida 115.90 135 *e*PKPdf **PKPdf** **09 13 47.2 -5.2**
CPUP PKP **PKPdf** **09 13 52.7 +0.3**
CPUP PP **PP** **09 14 54.2 -1.4**
CPUP PKKPbc **PKKPbc** **09 24 21.7 -2.0**
DBBC Dabeiba 116.31 92 *e*P **PKPdf** **09 13 56.3 +2.7**
DBBC Dabeiba 116.31 92|| *e*P **PKKPbc** **09 24 26.4 +4.4**
TOLC Tolima 116.32 95 *e*P **PKPdf** **09 13 52.3 -1.6**
TOLC Tolima 116.32 95 *e*P **PKKPbc** **09 24 25.8 +3.6**
SVE Sverdlovsk 116.42 324 *i* PKIKP **PKPdf** **09 13 53.0 +0.6**
SVE pmax pmax
comp=Z,78nm,1.4s
PRAC Prado 116.42 96 *e*P **PKPdf** **09 13 54.9 +1.1**
PRAC Prado 116.42 96 *e*P **PKKPbc** **09 24 23.6 +2.1**
AAM Ann Arbor 116.59 52 PFAKE 09 14 00.0 +6.8
AAM LR LR
comp=Z,46μm,19.0s
HELC Santa Helena 116.67 93|| *e*P **PKPdf** **09 13 53.8 -0.9**
HELC Santa Helena 116.67 93 *e*P **PKKPbc** **09 24 23.0 +2.0**
ACSO Alum Creek Sta 116.94 54 PFAKE 09 14 10.0 +16
ACSO LR LR
comp=Z,39μm,19.0s
AB31 Akbulak array 117.02 316 *i* PKIKP **PKPdf** **09 13 54.8 +1.0**
AB31 pmax pmax
comp=Z,36nm,1.2s
ABKAR Akbulak array 117.02 316 *e*PKPdf **PKPdf** **09 13 54.3 +0.5**
NORC Norcasia 117.08 94 *e*P **PKPdf** **09 13 56.8 +1.8**
NORC Norcasia 117.08 94 *e*P **PKKPbc** **09 24 21.9 +2.7**
SJAC San Juan de Ar 117.14 97 *e*P **PKKPbc** **09 24 20.1 +1.1**
ROSC El Rosal 117.35 95 PKP **PKPdf** **09 13 54.9 -1.1**
comp=Z,3.6nm,0.4s,baz=225,slow=19,SNR=3.2
ROSC PP **PP** **09 15 07.7 +0.3**
comp=Z,3.8nm,0.4s,baz=97,slow=8.8,SNR=5.8
ROSC PKKPbc **PKKPbc** **09 24 19.6 +1.0**
comp=Z,5.8nm,0.6s,baz=72,slow=19,SNR=2.3
ROSC El Rosal 117.35 95 *e*PKPdf **PKPdf** **09 13 55.7 -0.3**
ROSC PP **PP** **09 15 07.7 +0.3**
ROSC PKKPbc **PKKPbc** **09 24 19.6 +1.0**
ARU Arti 117.59 324 PKKPbc PKKPbc 09 24 16.9 -1.5
comp=Z,4.0nm,0.4s,baz=241,slow=4.4,SNR=5.3
ARU Arti 117.59 324 *i* PKIKP **PKPdf** **09 13 55.2 +0.6**
ARU 09 15 07.0
ARU PPP PPP 09 17 32.6
ARU 09 21 05.5
ARU PS **PS** **09 24 50.5 -2.0**
ARU SS SS 09 31 03.8 -13
ARU SSS SSS 09 35 27.5
ARU Arti 117.59 324 *e*PKPdf **PKPdf** **09 13 53.9 -0.7**
ARU PKKPbc **PKKPbc** **09 24 16.9 -1.5**
ARU LR LR
comp=Z,18μm,19.0s
UOSS Minazif 117.71 288 *e*PKPdf **PKPdf** **09 13 54.5 -1.4**
KMSC Kings Mountain 117.77 60 P **Pdif** **09 10 14.3 +0.8**
baz=264
KMSC Kings Mountain 117.77 60 *e*PKPdf **PKPdf** **09 13 56.5 +0.8**
ASHO Ashiyiah 117.79 288 *i* P **PKPdf** **09 13 55.5 -0.6**
SNR=24
ASHO Ashiyiah 117.79 288 *i* PKPdf **PKPdf** **09 13 55.5 -0.6**
SNR=24
BANOM Banah 117.80 289 *i* P **PKPdf** **09 13 55.8 -0.3**
SNR=6.3
BANOM Banah 117.80 289 *i* PKPdf **PKPdf** **09 13 55.8 -0.3**
SNR=6.3
GEYT Alibeck 117.85 303 PKP **PKPdf** **09 13 55.2 -0.6**
comp=Z,17nm,0.9s,baz=264,slow=2.8,SNR=18
GEYT PKKPbc **PKKPbc** **09 24 17.8 +0.8**
comp=Z,1.2nm,0.4s,baz=8.3,slow=31,SNR=2.5
NAZ Nazwa, Dubai 118.20 288 *i* P **PKPdf** **09 13 57.9 +1.1**
SNR=11
NAZ Nazwa, Dubai 118.20 288 *i* PKPdf **PKPdf** **09 13 57.9 +1.1**
SNR=11
FAQ Al Faqa, Dubai 118.22 288 *i* P **PKPdf** **09 13 57.5 +0.7**
SNR=7.3
FAQ Al Faqa, Dubai 118.22 288 *i* PKPdf **PKPdf** **09 13 57.5 +0.7**
SNR=7.3
MTDJ Mount Denham 118.22 80 PFAKE 09 14 10.0 +13
MTDJ LR LR
comp=Z,21μm,19.0s
AKTO Aktyubinsk 118.25 317 PKP **PKPdf** **09 13 55.3 -0.8**
comp=Z,31nm,0.9s,baz=326,slow=0.5,SNR=19
AKTO PKKPbc **PKKPbc** **09 24 14.7 -1.1**
comp=Z,3.4nm,0.6s,baz=290,slow=3.1,SNR=4.8
AKTO Aktyubinsk 118.25 317 PKIKP **PKPdf** **09 13 56.6 +0.5**
AKTO pmax pmax
comp=Z,39nm,0.9s
NHSC New Hope 118.49 63 PFAKE 09 14 10.0 +13
NHSC LR LR
comp=Z,31μm,19.0s
BLA Blacksburg 118.70 58 *e*PKIKP **PKPdf** **09 13 55.7 -1.8**
BLA MLR MLR
comp=Z,38μm,19.0s
BLA Blacksburg 118.70 58 *e*PKPdf **PKPdf** **09 13 55.7 -1.8**
BLA LR LR
comp=Z,38μm,19.0s
RUSC La Rusia 118.86 95 *e*P **PKPdf** **09 13 56.8 -2.2**
BARC Barichara 119.00 94 *e*P **PKPdf** **09 13 58.5 -0.4**
BTLC Betulia, Santa 119.03 93 *e*P **PKPdf** **09 13 57.0 -2.0**
SUR Sutherland 119.03 211 PKP **PKPdf** **09 13 58.2 -0.3**
comp=Z,1.1nm,0.9s,baz=96,slow=10,SNR=4.0
SUR PKKPbc **PKKPbc** **09 24 12.1 -0.9**
comp=Z,2.1nm,1.0s,baz=325,slow=3.1,SNR=6.5
SUR Sutherland 119.03 211 *e*PKPdf **PKPdf** **09 13 59.1 +0.5**
SUR PKKPbc **PKKPbc** **09 24 12.1 -0.9**
SUR LR LR
comp=Z,27μm,19.0s
GIRC Giron, Santand 119.15 93 *e*P **PKPdf** **09 13 58.5 -0.6**
N54A Moraine State 119.26 54 P **Pdif** **09 10 21.3 +1.2**
baz=268
OCAC Ocana 119.41 92 *e*P **PKPdf** **09 14 00.2 +0.6**
M54A Oil Creek Stat 119.52 53 P **Pdif** **09 10 22.2 +1.0**
baz=268
SIV San Ignacio 119.57 123 PKP **PKPdf** **09 13 59.6 -0.1**
comp=Z,8.6nm,1.0s,baz=230,slow=3.2,SNR=8.8
SIV PP **PP** **09 15 20.3 -1.3**
comp=Z,5.3nm,0.9s,baz=250,slow=13,SNR=3.7
SIV PKKPbc **PKKPbc** **09 24 10.2 -0.3**
comp=Z,6.2nm,1.1s,baz=135,slow=9.3,SNR=5.9
BOSA Boshof 119.64 217 PKP **PKPdf** **09 13 59.5 -0.2**
comp=Z,5.7nm,0.5s,baz=94,slow=1.6,SNR=14
BOSA PKKPbc **PKKPbc** **09 24 10.2 -0.5**
comp=Z,14nm,0.9s,baz=300,slow=2.3,SNR=8.8
BOSA Boshof 119.64 217 *e*PKPdf **PKPdf** **09 14 01.3 +1.5**
BOSA PKKPbc **PKKPbc** **09 24 10.2 -0.5**
PAMC Pamplona, Colo 119.70 93 *e*P **PKPdf** **09 14 02.5 +1.9**
GRMC Gramalote, San 119.73 93 *e*P **PKPdf** **09 14 00.8 +0.5**
CBRI Barrientos, No 119.73 93 *e*P **PKPdf** **09 14 00.8 +0.5**
SADO Sadowa 119.94 49 *e*PKPdf **PKPdf** **09 13 58.9 -0.7**
O56A Blue Knob Stat 120.32 55 P **Pdif** **09 10 25.6 +0.8**
baz=268
KBS Kingsbay 120.34 355 *e*PP PP 09 15 26.4 +0.7
KBS *e*SS SS 09 31 52.5 +1.5
KBS Kingsbay 120.34 355 *e*PKIKP **PKPdf** **09 14 00.6 +1.2**
KBS MLR MLR
comp=Z,13μm,19.0s
KBS Kingsbay 120.34 355 *e*PKPdf **PKPdf** **09 14 00.6 +1.2**
KBS LR LR
comp=Z,13μm,19.0s
SPA0 Spitsbergen Ar 120.58 354 *e*P **PKPdf** **09 13 58.8 -1.1**
SPA0 IAmb IAmb 09 14 04.7
comp=Z,824nm,1.6s
SPA0 *e*PP **PP** **09 15 27.0 -0.5**
SPA0 Spitsbergen Ar 120.58 354 *e*PKPdf **PKPdf** **09 13 59.1 -0.8**
SPITS Spitsbergen Ar 120.58 354 PKKPbc PKKPbc 09 24 05.8 -2.1
comp=Z,19nm,1.0s,baz=167,slow=7.7,SNR=8.0
KULLO Kullorsuaq 120.59 13 *i* P **PKPdf** **09 13 58.6 -1.3**
KULLO *i* 09 15 24.1
comp=Z,28μm,19.0s
KULLO Kullorsuaq 120.59 13 *e*PKIKP **PKPdf** **09 13 58.6 -1.3**
KULLO *i* 09 15 24.1
KULLO MLR MLR
comp=Z,28μm,19.0s
GTBY Guantanamo Bay 120.83 78 PFAKE 09 14 10.0 +8.0
GTBY LR LR
comp=Z,24μm,20.0s
SSPA Standing Stone 120.85 54 *e*PKPdf **PKPdf** **09 14 00.9 -0.5**
CBN Corbin Frederi 121.17 57 PFAKE 09 14 10.0 +7.9
CBN LR LR
comp=Z,47μm,20.0s
SAML Samuel 121.62 115 *e*PKPdf **PKPdf** **09 14 02.5 -1.2**
SAML LR LR
comp=Z,26μm,20.0s
HSPB Hornsund (broa 121.69 353 *e*P **PKPdf** **09 14 02.7 +0.8**
HSPB *e*PP **PP** **09 15 34.6 -0.4**
HSPB Hornsund (broa 121.69 353 *e*PKIKP **PKPdf** **09 14 02.8 +0.8**
HSPB *e* 09 15 34.7
HSPB *e*SS SS 09 32 12.4 +4.1
URIC Uribia, Colomb 121.70 89 *e*P **PKPdf** **09 14 05.9 +2.1**
LBTB Lobatse 122.13 221 PKP **PKPdf** **09 14 04.2 -0.4**
comp=Z,17nm,0.6s,baz=173,slow=2.7,SNR=17
LBTB PKKPbc **PKKPbc** **09 24 00.5 -0.7**
comp=Z,14nm,1.0s,baz=314,slow=5.4,SNR=6.0
LBTB Lobatse 122.13 221 PKIKP **PKPdf** **09 14 04.2 -0.4**
LBTB pmax pmax
comp=Z,23nm,0.8s
LBTB Lobatse 122.13 221 *e*PKPdf **PKPdf** **09 14 04.7 +0.1**
LBTB PKKPbc **PKKPbc** **09 24 00.5 -0.7**
SDV Santo Domingo 122.13 92 PKP **PKPdf** **09 14 04.5 -0.4**
comp=Z,25nm,0.8s,baz=205,slow=3.5,SNR=11
SDV PKKPbc **PKKPbc** **09 24 01.0 +0.2**
comp=Z,2.9nm,0.5s,baz=90,slow=15,SNR=3.3
SDV Santo Domingo 122.13 92 *e*PKPdf **PKPdf** **09 14 04.7 -0.2**
SDV PKKPbc **PKKPbc** **09 24 01.0 +0.2**
SDV LR LR
comp=Z,12μm,22.0s
SDV Santo Domingo 122.13 92 *e*P **PKPdf** **09 14 01.9 -3.0**
N59A State Game Lan 122.45 54 P **Pdif** **09 10 35.8 +1.6**
baz=270
TRIS Tristan da Cun 122.90 179 PFAKE 09 14 20.0 +14
TRIS LR LR
comp=Z,15μm,19.0s
LONY Lake Ozonia 123.20 49 *e*PKPdf **PKPdf** **09 14 07.5 +1.6**
LONY LR LR
comp=Z,43μm,20.0s
ODNJ Ogdensburg 123.33 54 *e*PKPdf **PKPdf** **09 14 06.0 -0.2**
DAG Danmarks Havn 123.42 2 *i* P **PKPdf** **09 14 04.6 -0.7**
DAG *i* 09 15 45.5
DAG Danmarks Havn 123.42 2 *i* PKIKP **PKPdf** **09 14 04.6 -0.7**
DAG *i* 09 15 45.5
MATP Matopo 123.52 227 PKP **PKPdf** **09 14 06.9 -0.5**
comp=Z,19nm,0.7s,baz=141,slow=2.1,SNR=17
MATP PKKPbc **PKKPbc** **09 23 52.9 -2.9**
comp=Z,4.8nm,1.0s,baz=235,slow=1.9,SNR=3.0
PAL Palisades 123.86 54 *e*PKIKP **PKPdf** **09 14 05.2 -2.0**
PAL Palisades 123.86 54 *e*PKPdf **PKPdf** **09 14 05.2 -2.0**
TRY Troy 123.97 52 *e*PKPdf **PKPdf** **09 14 08.1 +0.8**
SDDR Presa de Saban 124.16 80 *e*PKPdf **PKPdf** **09 14 09.0 +0.5**
SDDR LR LR
comp=Z,45μm,19.0s
SPB Sao Paulo 124.17 140 *e*PKPdf **PKPdf** **09 14 10.1 +1.7**
SPB LR LR

comp=Z,14µm,20.0s
MDV Middlebury 124.25 50 *e*PKPdf **PKPdf 09 14 07.7 -0.2**
LVZ Lovozero 124.39 341 *d i*PKIKP **PKPdf 09 14 08.0 +0.5**
LVZ pmax pmax
comp=Z,194nm,1.0s
LVZ Lovozero 124.39 341 *e*PKPdf **PKPdf 09 14 06.6 -0.8**
LVZ LR LR
comp=Z,34µm,20.0s
GRTK Grand Turk 124.80 77 PFAKE 09 14 20.0 +10
GRTK LR LR
comp=Z,24µm,20.0s
APA Apatity 124.97 341 ⇑ *i*PKIKP **PKPdf 09 14 09.4 +0.9**
APA *i* 09 15 55.0
APA pmax pmax
comp=Z,265nm,1.0s
APA MLR MLR
comp=Z,40µm,22.0s
TMCR Tamitsa 125.18 336 *e*PKIKP **PKPdf 09 14 09.1 +0.1**
TMCR pmax pmax
comp=Z,234nm,1.2s
KEV Kevo 125.36 345 *e*PKIKP **PKPdf 09 14 09.5 +0.3**
KEV MLR MLR
comp=Z,23µm,19.0s
KEV Kevo 125.36 345 *e*PKPdf **PKPdf 09 14 09.5 +0.3**
KEV LR LR
comp=Z,23µm,19.0s
HAMF Hammerfest 125.50 346 *e*P **PKPdf 09 14 09.8 +0.4**
ILULI Ilulissat 125.57 16 *i* P **PKPdf 09 14 09.7 +0.1**
comp=Z,36µm,18.0s
ILULI Ilulissat 125.57 16 *i* PKIKP **PKPdf 09 14 09.7 +0.1**
ILULI MLR MLR
comp=Z,36µm,18.0s
SUMG Summit 125.58 10 *i* P **PKPdf 09 14 10.2 +0.1**
comp=Z,12µm,17.0s
SUMG Summit 125.58 10 *i* PKIKP **PKPdf 09 14 10.2 +0.1**
SUMG MLR MLR
comp=Z,12µm,17.0s
SUMG Summit 125.58 10 *e*PKPdf **PKPdf 09 14 09.1 -1.0**
LMQ La Malbaie 125.83 45 *e*PKPdf **PKPdf 09 14 10.3 -0.5**
ARA0 ARCESS Array S 125.89 345 *e*PKPdf **PKPdf 09 14 09.5 -0.7**
ARCES ARCESS Array B 125.89 345 PKP **PKPdf 09 14 09.4 -0.9**
comp=Z,98nm,1.0s,baz=48,slow=1.8,SNR=27
ARE0 ARCESS Array S 125.89 345 *e*P **PKPdf 09 14 10.0 -0.3**
ARE0 *e*PP **PP 09 16 01.5 -1.8**
ARE0 IVMs_BB IVMs_BB 10 08 03.3
comp=N,5µm,19.3s
ARE0 ARCESS Array S 125.89 345 *e*PKPdf **PKPdf 09 14 09.9 -0.3**
KLMR Klimovskoe 126.07 332 *e*PKIKP **PKPdf 09 14 09.4 -1.4**
KLMR *e* 09 14 18.7
KLMR *e*PPP PPP 09 18 41.4
KLMR pmax pmax
comp=Z,431nm,1.3s
SCHQ Schefferville 126.32 36 PKP **PKPdf 09 14 11.7 +0.2**
comp=Z,18nm,1.0s,baz=24,slow=3.8,SNR=11
SCHQ Schefferville 126.32 36 *e*PKPdf **PKPdf 09 14 11.4 -0.1**
DAMY Dhamar 126.37 273 *e*PKPdf **PKPdf 09 14 14.5 +1.3**
DODT Dodoma, Tanzan 126.42 246 *i* P **PKPdf 09 14 15.7 +2.6**
DODT *e*P **PP 09 16 10.6 +2.2**
KTK1 Kautokeino 126.82 345 *e*P **PKPdf 09 14 11.7 -0.4**
KTK1 *e*PP **PP 09 16 08.5 -1.0**
PKME Peaks-Kenny Pk 126.87 48 *e*PKPdf **PKPdf 09 14 15.2 +2.4**
PKME LR LR
comp=Z,66µm,19.0s
LSZ Lusaka 127.17 231 PKP **PKPdf 09 14 14.8 +0.3**
comp=Z,15nm,0.6s,baz=190,slow=1.2,SNR=16
LSZ Lusaka 127.17 231 PKIKP **PKPdf 09 14 14.8 +0.3**
LSZ MLR MLR
comp=Z,37µm,20.0s
LSZ Lusaka 127.17 231 PKP **PKPdf 09 14 14.8 +0.3**
LSZ LR LR
comp=Z,37µm,20.0s
SFJD Kangerlussuaq 127.21 18 *i* P **PKPdf 09 14 11.1 -1.7**
SFJD *i* 09 16 08.8
comp=Z,27µm,18.0s
SFJD Kangerlussuaq 127.21 18 *i* PKIKP **PKPdf 09 14 11.1 -1.7**
SFJD *i* 09 16 08.8
SFJD MLR MLR
comp=Z,27µm,18.0s
SFJD Kangerlussuaq 127.21 18 *e*PKPdf **PKPdf 09 14 12.9 +0.1**
SFJD LR LR
comp=Z,26µm,20.0s
TRO Tromso 127.32 347 *e*P **PKPdf 09 14 12.7 -0.2**
TRO *e*PP **PP 09 16 11.9 -0.8**
KMBO Kilima Mbogo 127.52 252 *e*PKIKP **PKPdf 09 14 14.2 -1.2**
KMBO MLR MLR
comp=Z,24µm,22.0s
KMBO Kilima Mbogo 127.52 252 *e*PKPdf **PKPdf 09 14 14.2 -1.2**
KMBO LR LR
comp=Z,24µm,22.0s
PQI Presque Isle 127.53 46 *e*Pdif **Pdif 09 10 53.2 -3.4**
DGRG David-gareji 127.66 307 P **PKPdf 09 14 15.5 +0.9**
DGRG David-gareji 127.66 307 PKIKP **PKPdf 09 14 15.5 +0.9**
NBI Nairobi 127.86 252 *i* P **PKPdf 09 14 19.2 +3.2**
NBI 09 16 18.5
TBLG Delisi 128.11 308 *e*P **PKPdf 09 14 17.0 +1.6**
TBLG Delisi 128.11 308 P **PKPdf 09 14 14.6 -0.8**
TBLG Delisi 128.11 308 PKIKP **PKPdf 09 14 14.6 -0.8**
GUDG Gudauri 128.22 308 P **PKPdf 09 14 17.0 +1.2**
GNI Garni 128.26 306 *i* P **PKPdf 09 14 18.1 +2.2**
SNR=9.6
GNI Garni 128.26 306 *i* PKPdf **PKPdf 09 14 18.1 +2.2**
SNR=9.6
GNI Garni 128.26 306 *c i*PKIKP **PKPdf 09 14 16.0 +0.1**
GNI pmax pmax
comp=Z,766nm,2.5s
GNI Garni 128.26 306 *e*PKPdf **PKPdf 09 14 15.5 -0.4**
GNI LR LR
comp=Z,16µm,20.0s
VRH Novokhopyorsk 128.33 320 *i* PKIKP **PKPdf 09 14 16.1 +0.7**
VRH *e* 09 16 15.8
VRH pmax pmax
comp=Z,190nm,2.2s
PTGA Pitinga 128.36 108 PKP **PKPdf 09 14 15.8 -0.9**
comp=Z,62nm,1.1s,baz=246,slow=2.0,SNR=19
PTGA Pitinga 128.36 108 *e*PKPdf **PKPdf 09 14 15.5 -1.2**
PTGA LR LR
comp=Z,39µm,19.0s
ZEI Tsey 128.60 309 *i* PKIKP **PKPdf 09 14 15.9 -0.6**
ZEI *e* 09 16 18.6
ZEI *e*PPP PPP 09 19 07.2
ZEI *e*PS **PS 09 26 26.2 -5.0**
ZEI pmax pmax
comp=Z,166nm,1.3s
ZEI pmax pmax
comp=E,68nm,0.9s
ZEI pmax pmax
comp=N,140nm,1.1s
SJG San Juan 128.75 83 PKP **PKPdf 09 14 17.0 -0.2**
comp=N,50nm,0.7s,baz=281,slow=1.6,SNR=16
SJG San Juan 128.75 83 PKIKP **PKPdf 09 14 17.0 -0.2**
SJG pmax pmax
comp=Z,50nm,0.7s
SJG San Juan 128.75 83 *e*PKPdf **PKPdf 09 14 17.3 +0.1**
SJG LR LR
comp=Z,12µm,20.0s
SJG San Juan 128.75 83 ‖ *e*P PKPpre 09 14 12.7
ONI Oni 128.95 309 P **PKPdf 09 14 17.2 +0.2**
ONI Oni 128.95 309 PKIKP **PKPdf 09 14 17.2 +0.2**
CLDR Caldiran 128.98 304 *e*P **PKPdf 09 14 19.6 +2.3**
BGD Bogdanovka 129.01 307 P **PKPdf 09 14 20.3 +3.0**
CBYP Canovanas 129.06 83 *e*PKPdf **PKPdf 09 14 18.2 +0.4**
AKH Akhalkalaki 129.07 307 ⇑ *i*P **PKPdf 09 14 17.8 +0.4**
AKH Akhalkalaki 129.07 307 P **PKPdf 09 14 18.0 +0.6**
AKH Akhalkalaki 129.07 307 PKIKP **PKPdf 09 14 18.0 +0.6**
MOS Moscow 129.10 326 ∝ *i*P **Pdif 09 11 05.0 +1.6**
MOS *i* 09 14 18.0
MOS *i* 09 16 26.0
MOS *i* 09 27 55.8
MOS pmax pmax
comp=Z,2µm,4.1s
MOS pmax pmax
comp=Z,410nm,1.7s
KBZ Khabaz 129.19 310 PKP **PKPdf 09 14 17.8 +0.6**
comp=Z,21nm,1.1s,baz=64,slow=2.0,SNR=19
KVAR Kislovodsk Arr 129.29 311 PKP **PKPdf 09 14 18.1 +0.5**
comp=Z,72nm,1.2s,baz=332,slow=2.5,SNR=6.1
KIV Kislovodsk 129.30 311 *i* P **PKPdf 09 14 19.1 +1.4**
SNR=44
KIV Kislovodsk 129.30 311 *i* PKPdf **PKPdf 09 14 19.1 +1.4**
SNR=44
KIV Kislovodsk 129.30 311 *i* P **Pdif 09 11 03.4 -1.3**
KIV *i* 09 14 17.3
KIV *e* 09 16 26.0
KIV *e* 09 21 23.0
KIV pmax pmax
comp=Z,139nm,1.1s
KIV Kislovodsk 129.30 311 *e*PKPdf **PKPdf 09 14 18.2 +0.6**
KIV LR LR
comp=Z,18µm,19.0s
VANB Van 129.44 304 *e*P **PKPdf 09 14 17.8 -0.4**
SCO Scoresbysund 129.47 4 *i* P **PKPdf 09 14 18.1 +1.1**
comp=Z,22µm,20.0s
SCO Scoresbysund 129.47 4 *i* PKIKP **PKPdf 09 14 18.1 +1.1**
SCO MLR MLR
comp=Z,22µm,20.0s
KARS Kars 129.48 306 *e*P **PKPdf 09 14 18.7 +0.5**
STEI Steigen 129.49 347 *e*P **PKPdf 09 14 18.0 +0.9**
LPSR Galich'ya Gora 129.54 322 *i* PKIKP **PKPdf 09 14 17.6 -0.1**
LPSR *e* 09 16 24.4
LPSR pmax pmax
comp=Z,180nm,1.3s
VORR Voronezh 129.69 321 ⇑ *i*PKIKP **PKPdf 09 14 17.0 -1.0**
VORR pmax pmax
comp=Z,560nm,2.2s
VSR Storozhevoye 129.86 321 *i* PKIKP **PKPdf 09 14 18.9 +0.6**
VSR *e* 09 16 25.3
VSR pmax pmax
comp=Z,200nm,2.0s
LMN Caledonia Moun 129.87 47 *e*PKPdf **PKPdf 09 14 18.6 +0.1**
OBN Obninsk 129.90 326 PKP **PKPdf 09 14 18.6 +0.4**
comp=Z,44nm,0.7s,baz=52,slow=2.6,SNR=24
OBN Obninsk 129.90 326 *d i*PKIKP **PKPdf 09 14 18.7 +0.4**
OBN *e* 09 14 31.7
OBN *i* 09 16 28.0
OBN *i* SS SS 09 34 17.7 +25
OBN pmax pmax
comp=Z,258nm,1.4s
OBN Obninsk 129.90 326 *e*PKPdf **PKPdf 09 14 18.5 +0.2**
OBN LR LR
comp=Z,23µm,19.0s
STVI Saint Thomas 129.91 83 *e*PKPdf **PKPdf 09 14 19.0 -0.4**
CHVG Ch'k'valeri 129.93 309 ‖ *i*P **PKPdf 09 14 19.8 +1.0**
CHVG Ch'k'valeri 129.93 309 P **PKPdf 09 14 21.4 +2.7**
CDVI St. Croix 129.97 84 *e*PKPdf **PKPdf 09 14 18.5 -1.0**
SENK Senkaya-Erzuru 130.03 306 *e*P **PKPdf 09 14 20.9 +1.6**
KMZ Kasempa 130.08 231 *i* P PKPpre 09 14 08.9
KMZ *i* P **PKiKP 09 14 19.8 -1.1**
KMZ *i* P **PKiKP 09 14 26.1 +5.3**
ABVI Anegada Island 130.57 82 *e*PKPdf **PKPdf 09 14 18.7 -1.9**
PUL Pulkovo 130.59 333 ⇑ *i*PKIKP **PKPdf 09 14 21.4 +2.0**
EZM Erzurum 130.87 306 *e*P **PKPdf 09 14 21.2 +0.2**
MOR8 Moi Rana 131.14 346 *e*P **PKPdf 09 14 21.2 +0.9**
TPP Pointe-a-Pierr 131.18 94 *e* **PKPdf 09 14 22.2 +0.3**
TPP Pointe-a-Pierr 131.18 94 *e* **PKSab 09 17 48.5 -0.1**
SVAN Silvan-Diyarba 131.19 303 *e*P **PKPdf 09 14 22.8 +1.4**
FIA1 FINESS Array S 131.24 337 *e*PKPdf **PKPdf 09 14 19.7 -0.9**
FIA1 *e*PKPdf **PKiKP 09 14 19.9 -1.7**
FINES FINESS Array B 131.24 337 PKhKP PKPpre 09 14 12.3
comp=Z,1.5nm,0.4s,baz=44,slow=5.6,SNR=6.6
FINES PKP **PKPdf 09 14 20.0 -0.6**
comp=Z,34nm,0.9s,baz=108,slow=3.1,SNR=24
FINES SKPab **SKiKP 09 17 50.2 -5.0**
comp=Z,38nm,0.9s,baz=85,slow=4.2,SNR=7.5
STOK Stokkvaagen 131.31 347 *e*PP PP 09 16 37.9 -0.9
TRN Trinidad (W) 131.33 94 *e* **PKPdf 09 14 25.4 +3.2**
TRN Trinidad (W) 131.33 94 *e* **PKSab 09 17 47.2 -1.9**
TSUM Tsumeb 131.33 218 PKP **PKPdf 09 14 22.5 +0.2**
comp=Z,14nm,1.0s,baz=224,slow=12,SNR=3.8
TSUM PP **PP 09 16 38.1 -1.5**
comp=Z,17nm,1.1s,baz=111,slow=13,SNR=3.5
TSUM Tsumeb 131.33 218 *e*PKPdf **PKPdf 09 14 21.3 -1.0**
TSUM PP **PP 09 16 38.1 -1.5**
TSUM LR LR
comp=Z,33µm,19.0s
SABA Saba 131.36 84 *e* **PKPdf 09 14 22.9 +0.7**
SABA Saba 131.36 84 *e* **PKSab 09 17 48.4 -0.8**
BBSR BB Station 131.48 64 PFAKE 09 14 30.0 +8.0
BBSR LR LR
comp=Z,21µm,19.0s
BNGB Bing¨ll 131.50 304 *e*P **PKPdf 09 14 23.4 +1.4**
GRGR Grenville 131.52 92 *e* **PKPdf 09 14 21.8 -0.7**
GRGR Grenville 131.52 92 *e*P **PKPdf 09 14 21.9 -0.7**
GRGR Grenville 131.52 92 *e* 09 17 44.0
GRGR Grenville 131.52 92 *e*PKPdf **PKPdf 09 14 22.2 -0.4**
GRGR LR LR
comp=Z,16µm,19.0s
YEDI Yedisu-Bingol 131.55 305 *e*P **PKPdf 09 14 22.8 +0.7**
SEUS St. Eustatius 131.58 84 *e* **PKPdf 09 14 21.9 -0.7**
SEUS St. Eustatius 131.58 84 *e* **PKSab 09 17 48.9 -1.2**
TBH Brigand Hill 131.59 94 *e* **PKPdf 09 14 25.5 +2.8**
SMRT St. Maarten 131.61 84 *e* **PKPdf 09 14 22.9 +0.2**
SMRT St. Maarten 131.61 84 *e* **PKSab 09 17 46.9 -3.3**
SMRT St. Maarten 131.61 84 *e*PKPdf **PKPdf 09 14 22.3 -0.3**
BAYT Ayd¨–ntepe-Bay 131.73 306 *e*P **PKPdf 09 14 23.1 +0.6**
MAZI Mazidag 131.85 302 *e*P **PKPdf 09 14 23.4 +0.7**
KTUT Trabzon 131.92 307 *e*P **PKPdf 09 14 24.1 +1.5**
DYBB Diyarbakir 132.04 303 *e*P **PKPdf 09 14 23.1 +0.1**
MLYT Lee's Yard 132.16 86 *e* **PKPdf 09 14 22.4 -1.3**
MLYT Lee's Yard 132.16 86 *e* **PKSab 09 17 50.8 -1.9**
ERZN Erzincan 132.16 305 *e*P **PKPdf 09 14 24.4 +1.1**
SVB Belmont 132.21 90 *e* **PKPdf 09 14 23.9 0.0**
SVB Belmont 132.21 90 *e* **SKPab 09 17 48.4 -0.7**
SVB Belmont 132.21 90 *e*PKPdf **PKPdf 09 14 22.6 -1.3**
GUMT Gumushane 132.22 307 *e*P **PKPdf 09 14 26.0 +2.6**
SVV Soufriere Volc 132.26 90 *e* **PKSab 09 17 51.0 -2.1**
TOSP Speyside 132.33 93 *e* **PKPdf 09 14 26.3 +2.2**
TOSP Speyside 132.33 93 *e* **PKSab 09 17 52.7 -0.7**
GDHS Morne Mazeau, 132.46 86 *e*PKPdf **PKPdf 09 14 23.9 -0.5**
TBG Guadaloupe-3 132.48 87 *e* **PKPdf 09 14 25.5 +1.2**
SSG Sans Toucher 132.50 87 *e*P **PKPdf 09 14 25.7 +1.2**
PTK Pertek 132.51 305 *e*P **PKPdf 09 14 24.4 +0.4**
BPA Boggy Peak 132.54 85 *e* **PKPdf 09 14 23.4 -1.0**
BPA Boggy Peak 132.54 85 *e* **PKSab 09 17 53.4 -0.9**
MDN Morne-Daniel 132.59 88 *e* **PKPdf 09 14 27.1 +2.5**
MDN Morne-Daniel 132.59 88 *e* **PKSab 09 17 54.7 +0.2**
MCLT Moule a Chique 132.62 90 *e* **PKPdf 09 14 23.4 -1.3**
MCLT Moule a Chique 132.62 90 *e* **SKPbc 09 17 48.4 -1.0**
SVRC Sivrice-ELAZID 132.64 304 *e*P **PKPdf 09 14 26.6 +2.3**
FDF Fort de France 132.68 88 *e* **PKPdf 09 14 23.8 -0.9**
FDF Fort de France 132.68 88 *e*P **PKPdf 09 14 24.2 -0.6**
FDF Fort de France 132.68 88 *e* **PKSab 09 17 52.7 -2.3**
FDF Fort de France 132.68 88 *e*PKIKP **PKPdf 09 14 25.6 +0.8**
FDF MLR MLR
comp=Z,18µm,20.0s
FDF Fort de France 132.68 88 *e*PKPdf **PKPdf 09 14 25.6 +0.8**
FDF LR LR
comp=Z,18µm,20.0s
ESPY Espiye-Giresun 132.70 307 *e*P **PKPdf 09 14 23.1 -1.0**
DWS Wesley 132.72 87 *e* **PKPdf 09 14 25.3 +0.5**
DWS Wesley 132.72 87 *e* **PKSab 09 17 53.7 -1.3**
DLPL La Plaine 132.73 88 *e* **PKPdf 09 14 25.3 +0.5**
DLPL La Plaine 132.73 88 *e* **PKSab 09 17 54.7 -0.5**
ANWB Willy Bob 132.73 84 *e*P **PKPdf 09 14 24.8 0.0**
ANWB Willy Bob 132.73 84 *e*P **PKPdf 09 14 25.2 +0.5**
ANWB Willy Bob 132.73 84 *e* **PKPdf 09 14 25.8 +1.1**
ANWB Willy Bob 132.73 84 *e* **PKSab 09 17 52.7 -2.3**
ANWB Willy Bob 132.73 84 PFAKE 09 14 40.0 +15
ANWB LR LR
comp=Z,12µm,19.0s
MGG Marie-Galante 132.80 87 *e* **PKPdf 09 14 21.5 -3.4**
ANN Anapa 132.81 313 *i* P **Pdif 09 11 23.3 +3.2**
ANN *e* 09 14 26.1
ANN *e* 09 16 49.6
ANN pmax pmax
comp=E,25nm,2.2s
ANN pmax pmax
comp=Z,164nm,2.1s
ANN pmax pmax
comp=N,69nm,2.2s
ANN pmax pmax
comp=N,2µm,7.9s
ANN pmax pmax
comp=E,784nm,7.9s
ANN pmax pmax
comp=Z,5µm,8.0s
VSU Vasula 132.85 334 *d i*PKIKP **PKPdf 09 14 24.2 +0.5**
VSU pmax pmax
comp=Z,548nm,1.7s
VSU MLR MLR
comp=Z,60µm,21.0s
NRS Narsarsuaq 132.90 22 *i* P **PKPdf 09 14 23.2 -0.6**
comp=Z,34µm,17.0s
NRS Narsarsuaq 132.90 22 *i* PKIKP **PKPdf 09 14 23.2 -0.6**
NRS MLR MLR
comp=Z,34µm,17.0s
ILIC ilic-Erzincan 133.06 305 *e*P **PKPdf 09 14 25.7 +0.7**
NSS Namsos 133.08 346 *e*P **PKPdf 09 14 24.9 +0.9**
NSS IAmb IAmb 09 14 30.8
comp=Z,116nm,0.9s
NSS *e*PP **PP 09 16 48.3 -1.8**
NSS IVMs_BB IVMs_BB 10 15 08.2
comp=Z,5µm,18.4s
DEG La Desirade 133.13 86 *e* **PKPdf 09 14 26.2 +0.6**
URFA Urfa 133.14 303 *e*P **PKPdf 09 14 25.0 -0.1**
BBGH Gun Hill 133.77 91 *e*P **PKPdf 09 14 29.1 +2.3**
BBGH Gun Hill 133.77 91 *e* **PKPdf 09 14 29.7 +2.9**
BBGH Gun Hill 133.77 91 *e* **PKSab 09 18 00.5 +0.8**
BBGH Gun Hill 133.77 91 PFAKE 09 14 40.0 +13
BBGH LR LR
comp=Z,27µm,22.0s
RSDY Resadiye-TOKAT 133.84 307 *e*P **PKPdf 09 14 26.6 +0.3**
BBSP Saint Philip 133.85 91 *e* **PKSab 09 18 05.4 +5.4**
DARE Darende-Malaty 134.03 304 *e*P **PKPdf 09 14 27.9 +1.1**
SVSK Karacayir 134.18 306 *e*P **PKPdf 09 14 28.2 +1.3**
GAZ Gaziantep 134.45 302 *e*P **PKPdf 09 14 28.2 +0.6**
TBLU Trondheim 134.57 346 *e*P **PKPdf 09 14 25.3 -1.6**
TBLU IVmB_BB 09 14 37.6
comp=Z,5µm,6.4s
TBLU *e*PP **PP 09 16 56.8 -2.8**
MICGM Minsk 134.61 329 ⇓ *i*PKP **PKPdf 09 14 27.0 -0.2**
MICGM ⇓ *i*PKP **PKPdf 09 14 27.0 -0.2**
MICGM PKPM 09 14 30.0
comp=Q,0.3nm,1.5s
MICGM PKPM 09 14 30.0
comp=Z,15nm,6.0s
MICGM PKPM 09 14 32.0
comp=Z,12nm,8.0s
MICGM *e*PP **PP 09 16 58.0 -2.3**
MICGM PPM 09 17 00.0
comp=Z,24nm,7.0s
MICGM *e*SKP 09 17 58.0
MICGM *e*SKKS 09 23 25.0
MICGM *e*SKSP 09 27 20.0
MICGM *e*PS PS 09 27 50.0 +28
MICGM *e*SS SS 09 35 40.0 +51
MICGM *e*LQ LQ 09 54 32.0
MICGM *e*LR LR 10 07 24.0
MICGM LRM MLR 10 15 24.0
comp=Z,78nm,20.0s
MICGM LRM MLR 10 15 34.0
comp=E,22nm,18.0s
MICGM LRM MLR 10 15 40.0
comp=Z,57nm,18.0s
MICGM LRM MLR 10 15 44.0
comp=N,8.4nm,20.0s
MNK Minsk 134.61 329 *d i*PKIKP **PKPdf 09 14 27.0 -0.2**
MNK *e* 09 16 58.0
MNK *e* 09 27 20.0
MNK pmax pmax
comp=Z,15µm,6.0s
MNK pmax pmax
comp=Z,320nm,1.5s
MNK pmax pmax
comp=Z,12µm,8.0s
MNK pmax pmax
comp=Z,24µm,7.0s
MNK MLR MLR
comp=Z,79µm,20.0s
MNK MLR MLR
comp=E,22µm,18.0s
MNK MLR MLR
comp=Z,57µm,18.0s
MNK MLR MLR
comp=N,8µm,20.0s
KMRS Kahramanmaras 134.65 303 *e*P **PKPdf 09 14 29.1 +1.2**
KVT Kavak 134.66 308 *e*P **PKPdf 09 14 30.1 +2.3**
IZAR Zarasai 134.69 331 *e*P **PKPdf 09 14 26.7 -0.5**
IZAR IAmb IAmb 09 14 34.9
comp=Z,77nm,1.1s
IDID Didziasalis 134.71 330 *e*P **PKPdf 09 14 26.6 -0.7**
IDID IAmb IAmb 09 14 34.9
comp=Z,108nm,1.1s
NACGM Naroch 134.92 329 *e*PKHKP PKPpre 09 14 28.0
NACGM *e*PKIKP **PKiKP 09 14 29.0 -0.2**
NACGM PKIKPM 09 14 34.0
comp=Q,0.8nm,1.0s
NACGM *e*PP **PP 09 17 02.0 -0.2**
NACGM *e*SKP 09 17 59.0
NACGM *e*SKS SKSdf 09 22 00.0 +24
NACGM *e*SKKS SKKSac 09 23 35.0 -20
NACGM *e*SKKKS 09 25 02.0
NACGM *e*PS PS 09 27 06.0 -19
NACGM *e*SS **SS 09 34 56.0 +3.0**
NACGM *e*SSS SSS 09 40 02.0
NACGM *e*LQ LQ 09 59 11.0
NACGM *e*LR LR 10 10 30.0
NACGM LRM MLR 10 16 44.0
comp=Z,60nm,20.0s
SIM Simferopol' 135.03 314 *de*P **Pdif 09 11 29.4 -0.6**
SIM *i* 09 14 29.9
SIM *e* 09 17 04.0
SIM pmax pmax
comp=Z,110nm,14.2s
SIM pmax pmax
comp=Z,5µm,7.5s
SNOP Sinop 135.06 310 *e*P **PKPdf 09 14 28.2 -0.3**
BORG Borgarnes 135.15 6 SKP **SKiKP 09 18 03.7 +0.6**
comp=Z,50nm,1.0s,baz=265,slow=0.9,SNR=4.4
BORG Borgarnes 135.15 6 *e*PKIKP **PKPdf 09 14 34.0 +6.1**
BORG MLR MLR
comp=Z,22µm,20.0s
BORG Borgarnes 135.15 6 *e*PKPdf **PKPdf 09 14 34.0 +6.1**
BORG SKP 09 18 03.7
BORG LR LR
comp=Z,22µm,20.0s
ASF Jabal al Asfar 135.16 296 PKhKP PKPpre 09 14 23.9
comp=Z,4.8nm,0.9s,baz=15,slow=1.1,SNR=4.3
ASF PKP **PKiKP 09 14 30.7 +0.1**
comp=Z,32nm,1.1s,baz=57,slow=0.8,SNR=14
ASF PP **PP 09 17 04.5 -0.6**
comp=Z,5.8nm,0.8s,baz=285,slow=6.5,SNR=2.2
TAHT Tahtakopru-Hat 135.37 302 *e*P **PKPdf 09 14 31.3 +2.1**
BYBT Boyabat 135.52 309 *e*P **PKPdf 09 14 28.2 -1.1**
CEYT Ceyhan 135.63 302 *e*P **PKPdf 09 14 29.1 -0.5**
MOL Molde 135.76 347 *e*P **PKPdf 09 14 29.5 +0.4**
MOL IVmB_BB 09 14 40.7
comp=Z,5µm,6.7s
MOL *e*PP **PP 09 17 06.8 -0.2**
AKASG Malin Array Be 135.84 323 PKhKP PKPpre 09 14 23.4
comp=Z,1.4nm,0.4s,baz=80,slow=2.4,SNR=5.6
AKASG PKP **PKPdf 09 14 29.7 +0.2**
comp=Z,35nm,0.8s,baz=56,slow=2.4,SNR=22
AKASG PP **PP 09 17 07.5 -0.8**
comp=Z,2.4nm,0.5s,baz=50,slow=4.7,SNR=5.1
AKASG SKP 09 18 09.6
comp=Z,17nm,0.8s,baz=42,slow=4.1,SNR=7.5
AKBB Malin Array Si 135.84 323 *e*PKIKP **PKPdf 09 14 28.5 -1.1**
AKBB Malin Array Si 135.84 323 *e*PKPdf **PKPdf 09 14 28.5 -1.1**
KIEV Kiev 135.85 323 *d i*PKIKP **PKPdf 09 14 30.3 +0.7**
KIEV Kiev 135.85 323 *e*PKPdf **PKPdf 09 14 28.4 -1.2**
KIEV LR LR
comp=Z,26µm,22.0s
CORM Corum 135.91 307 *e*P **PKPdf 09 14 31.0 +0.8**
BZK Bozkurt 135.95 310 *e*P **PKPdf 09 14 30.7 +0.6**
NC303 NORSAR Array S 136.06 344 *e*PKPdf **PKPdf 09 14 31.1 +1.3**
NC405 NORSAR Array S 136.06 344 *e*PKPpre PKPpre 09 14 22.8
KARA Karaisali 136.14 303 *e*P **PKPdf 09 14 31.3 +0.7**
TOS Tosya 136.16 309 *e*P **PKPdf 09 14 30.4 -0.3**
NC204 NORSAR Array S 136.16 345 *e*PKPpre PKPpre 09 14 21.5
NB201 NORSAR Array S 136.22 344 *e*PKPpre PKPpre 09 14 23.4
AKN Aaknes 136.22 347 *e*P PKPpre 09 14 24.6
AKN IVmB_BB 09 14 41.6
comp=Z,7µm,5.9s
AKN *e*PP **PP 09 17 08.7 -1.3**
NB2 NORSAR Subarra 136.25 344 PKPdf PKPpre 09 14 18.9
comp=Z,337nm,2.0s,baz=31,slow=1.9
NB2 NORSAR Subarra 136.25 344 PKPdf PKPpre 09 14 18.9
baz=31,slow=1.9
NOA NORSAR Array B 136.25 344 PKPdf PKPpre 09 14 18.6
comp=Q,6.7nm,0.9s,baz=29,slow=3.0,SNR=11
NOA PKP **PKPdf 09 14 30.2 0.0**
comp=Z,17nm,1.0s,baz=39,slow=2.1,SNR=16
NOA SKP 09 18 09.1
comp=Z,13nm,0.9s,baz=32,slow=2.7,SNR=3.5
NOA NORSAR Array B 136.25 344 PKIKP **PKPdf 09 14 30.7 +0.6**
NOA 09 17 11.7
NOA pmax pmax
comp=Z,90nm,1.0s
NOA pmax pmax
comp=Z,7.0nm,0.9s
NOA pmax pmax

comp=N,13nm,0.9s
HFS Hagfors 136.33 342 PKhKP PKPpre 09 14 17.8
comp=N,10nm,0.8s,baz=82,slow=3.1,SNR=12
HFS PKP **PKPdf 09 14 30.7 +0.5**
comp=N,90nm,1.0s,baz=63,slow=0.3,SNR=11
HFS PP **PP 09 17 11.7 +0.9**
comp=N,7.4nm,0.9s,baz=81,slow=8.9,SNR=2.4
HFS SKP 09 18 07.9
comp=N,12nm,0.9s,baz=240,slow=14,SNR=2.7
NBO02 NORSAR Array S 136.34 344 *e*PKPpre PKPpre 09 14 18.9
NIG Nigde 136.34 304 *e*P **PKPdf 09 14 31.3 0.0**
MMAI Mount Meron Ar 136.37 297 PKP **PKPdf 09 14 32.8 +1.5**
comp=N,47nm,1.0s,baz=60,slow=3.4,SNR=12
NBO00 NORSAR Array S 136.37 344 *e*PKPpre PKPpre 09 14 21.6
NC602 NORSAR Array S 136.43 344 *e*P PKPpre 09 14 25.3
NC602 *e*P **PKPdf 09 14 29.9 -0.5**
NC602 IVmB_BB 09 14 37.6
comp=Z,6μm,7.0s
NC602 *e*PP **PP 09 17 10.8 -0.5**
NC602 IVMs_BB IVMs_BB 10 15 16.4
comp=N,5μm,19.9s
NC602 IVMs_BB IVMs_BB 10 17 12.0
comp=Z,11μm,20.8s
NAO01 NORSAR Array S 136.50 344 *e*PKPpre PKPpre 09 14 22.9
CANT Cankiri 136.56 308 *e*P **PKPdf 09 14 30.1 -1.3**
MERS Mersin 136.62 302 *e*P **PKPdf 09 14 32.0 +0.4**
BR131 Keskin Array S 136.75 307 *e*PKPpre PKPpre 09 14 24.8
BRTR Keskin Array B 136.75 307 PKhKP PKPpre 09 14 23.5
comp=Z,4.6nm,0.8s,baz=123,slow=2.1,SNR=11
BRTR PKP **PKPdf 09 14 32.2 +0.3**
comp=Z,11nm,0.9s,baz=138,slow=3.1,SNR=19
BRTR PP **PP 09 17 14.8 0.0**
comp=Z,8.7nm,0.9s,baz=96,slow=7.9,SNR=3.8
KAMT Kaman 136.78 306 *e*P **PKPdf 09 14 32.0 +0.1**
EIL Elat 136.93 292 PKP **PKPdf 09 14 32.3 0.0**
comp=Z,83nm,1.1s,baz=48,slow=1.9,SNR=23
SERE Sereflikochisa 136.98 306 *e*P **PKPdf 09 14 33.0 +0.7**
FOO Floro 137.14 348 *e*P PKPpre 09 14 26.8
FOO IVmB_BB 09 14 43.0
comp=Z,6μm,6.5s
FOO *e*PP **PP 09 17 15.9 +0.2**
SUW Suwalki 137.15 330 *e*PKPdf **PKPdf 09 14 33.0 +1.1**
SUW *e*PP **PP 09 17 15.4 -0.8**
SUW *e*PKS **PKSdf 09 18 07.2 -0.7**
SUW LMZ LR 10 14 43.2
comp=Z,32μm,23.2s
SUW Suwalki 137.15 330 *e*PKIKP **PKPdf 09 14 33.0 +1.1**
SUW *e* 09 17 15.4
SUW MLR MLR
comp=Z,32μm,23.2s
AFSR Af´ar-Bala (A 137.24 307 *e*P **PKPdf 09 14 33.6 +0.8**
HYA Hoyanger 137.31 347 *e*P **PKPdf 09 14 33.6 +1.7**
HYA IVmB_BB 09 14 43.8
comp=Z,4μm,8.1s
OSL Oslo 137.32 344 *e*P **PKPdf 09 14 32.6 +0.6**
OSL IVmB_BB 09 14 43.6
comp=Z,5μm,6.8s
OSL *e*PP **PP 09 17 17.1 +0.2**
ANTO Ankara 137.35 307 *e*PKIKP **PKPdf 09 14 33.4 +0.5**
ANTO Ankara 137.35 307 *e*PKPdf **PKPdf 09 14 33.4 +0.5**
LOD Lodumlu 137.37 307 *e*P **PKPdf 09 14 31.3 -1.6**
BR231 Keskin MP Arra 137.37 307 *e*PKPpre PKPpre 09 14 24.4
IKL Isikli 137.39 302 *e*P **PKPdf 09 14 30.4 -2.5**
CHBY Cihanbeyli 137.57 305 *e*P **PKPdf 09 14 33.1 -0.3**
SUE Sulen 137.69 348 *e*P PKPpre 09 14 23.9
SUE IVmB_BB 09 14 44.2
comp=Z,7μm,6.2s
KIS Kishinev 137.73 319 ⇓*i*PKP PKPpre 09 14 26.0
KIS M M 09 14 40.0
comp=Z,13μm,20.0s
KIS Kishinev 137.73 319 *i* PsP 09 14 58.0
KIS *i* SKP 09 17 40.0
KIS Kishinev 137.73 319 PPM 09 18 10.0
comp=Z,10μm,8.0s
KIS Kishinev 137.73 319 *i* PKKP 09 23 10.0
KIS *i* SKKS 09 24 50.0
KIS Kishinev 137.73 319 *i* PPS PPS 09 31 30.0
KIS LRM MLR 10 24 00.0
comp=Z,38μm,20.0s
KIS Kishinev 137.73 319 ⇓*i*PKIKP PKPpre 09 14 26.0
KIS pmax pmax
comp=Z,13μm,20.0s
KIS pmax pmax
comp=Z,8μm,12.0s
KIS pmax pmax
comp=N,6μm,8.0s
KIS pmax pmax
comp=E,10μm,8.0s
KONO Kongsberg 137.86 344 *e*P PKPpre 09 14 27.4
KONO *e*PP **PP 09 17 20.3 0.0**
KONO Kongsberg 137.86 344 *e*PKIKP PKPpre 09 14 26.6
KONO MLR MLR
comp=Z,24μm,20.0s
KONO Kongsberg 137.86 344 *e*PKPpre PKPpre 09 14 26.6
KONO LR LR
comp=Z,24μm,20.0s
CSS Mathiatis 137.86 300 P PKPpre 09 14 22.2
CSS Mathiatis 137.86 300 P PKPpre 09 14 22.2
CSS *e*PKPpre PKPpre 09 14 25.8
CSS *e*PKPdf **PKPdf 09 14 33.0 -1.0**
CSS LR LR
comp=Z,5μm,20.0s
KDZE Karadeniz Ereo 137.97 310 *e*P **PKPdf 09 14 33.6 -0.3**
LADK Ladik-KONYA 138.06 305 *e*P **PKPdf 09 14 35.1 +0.8**
KONT Konya--Tatoy 138.11 305 *e*P **PKPdf 09 14 34.2 -0.1**
ASK Askoy 138.13 348 *e*P **PKPdf 09 14 33.6 +0.1**
ASK IAmb IAmb 09 14 40.6
comp=Z,106nm,1.1s
ASK *e*PP **PP 09 17 23.4 +1.5**
SOFL Sornfelli, Far 138.17 357 AMS AMS 10 23 59.0
comp=Z,13μm,18.0s
BER Bergen 138.20 347 *e*P PKPpre 09 14 25.3
BER IVmB_BB 09 14 45.3
comp=Z,7μm,6.1s
BER *e*PP **PP 09 17 20.4 -1.9**
KIZT Kizilcal 138.28 306 *e*P PKPpre 09 14 27.9
ODD1 Odda 138.35 346 *e*P PKPpre 09 14 28.1
ODD1 IVmB_BB 09 14 45.5
comp=Z,7μm,5.8s
MDUB Mudurnu 138.38 309 *e*P PKPpre 09 14 29.1
SVRH Sivrihisar-ESK 138.41 307 *e*P **PKPdf 09 14 34.2 -0.7**
BLS5 Blasjo 138.82 346 *e*P PKPpre 09 14 29.1
BLS5 *e*PP **PP 09 17 25.6 -0.6**
GULT Gulveren 138.89 309 *e*P **PKPdf 09 14 36.1 +0.4**
CFR Carcaliu 138.91 316 ⇓*i*P PKPpre 09 14 28.0
CFR Carcaliu 138.91 316 ⇓PKIKP PKPpre 09 14 28.0
SPNC Sapanca-Adapaz 138.97 309 *e*P **PKPdf 09 14 35.8 0.0**
TIRR Tirgusor 139.01 315 ⇑*i*P PKPpre 09 14 27.9
TIRR Tirgusor 139.01 315 ⇑PKHKP PKPpre 09 14 27.9
TIRR Tirgusor 139.01 315 *e*PKPdf **PKPdf 09 14 35.0 -0.6**
LVV L'vov 139.15 325 *e*PKIKP PKPpre 09 14 31.6
LVV *e* 09 17 25.6
HARR Harsova 139.24 316 ⇓*i*P **PKPdf 09 14 34.5 -1.6**
HARR Harsova 139.24 316 ⇓PKIKP **PKPdf 09 14 34.5 -1.6**
SUTC Sutluce-Ispart 139.27 304 *e*P PKPpre 09 14 27.2
TESR Tescani 139.28 319 ⇑*i*P PKPpre 09 14 28.6
KMY Karmoy 139.28 347 *e*P PKPpre 09 14 29.1
KMY IVmB_BB 09 14 47.5
comp=Z,6μm,6.5s
SILT Sile 139.31 310 *e*P PKPpre 09 14 28.8
HOMB Homborsund 139.34 344 *e*P PKPpre 09 14 30.2
HOMB IAmb IAmb 09 14 44.5
comp=Z,264nm,1.3s
HOMB *e*PP **PP 09 17 29.2 -0.2**
HOMB IVMs_BB IVMs_BB 10 16 55.2
comp=Z,7μm,19.0s
HRT Hereke 139.40 310 *e*P **PKPdf 09 14 33.2 -3.3**
STAV Stavanger 139.44 346 *e*P PKPpre 09 14 29.4
STAV IVmB_BB 09 14 47.7
comp=Z,9μm,7.8s
STAV *e*PP **PP 09 17 31.0 +1.1**
CAVI Cavuskoy 139.45 309 *e*P **PKPdf 09 14 37.0 +0.4**
ADVT Abdulvahap 139.46 309 *e*P PKPpre 09 14 32.6
VRI Vrincioaia 139.52 318 ⇓*i*P PKPpre 09 14 29.6
VRI Vrincioaia 139.52 318 ⇓PKIKP PKPpre 09 14 29.6
LRW Lerwick 139.53 352 AMS AMS 10 26 11.0
comp=Z,14μm,18.1s
ISP Isparta 139.56 305 *e*P PKPpre 09 14 30.4
ISP Isparta 139.56 305 P PKPpre 09 14 28.3
ISP Isparta 139.56 305 PKHKP PKPpre 09 14 28.3
ISP MLR MLR
comp=Z,19μm,20.0s
ISP Isparta 139.56 305 P PKPpre 09 14 28.3
ISP LR LR
comp=Z,19μm,20.0s
PLOR Plostina 139.58 318 ⇓*i*P PKPpre 09 14 29.2
PLOR Plostina 139.58 318 ⇓PKHKP PKPpre 09 14 29.2
BCK Bucak 139.59 304 *e*P PKPpre 09 14 32.3
SNART Snartemo 139.61 345 *e*P PKPpre 09 14 31.2
SNART IVmB_BB 09 14 47.8
comp=Z,5μm,7.5s
SNART *e*PP **PP 09 17 30.2 -0.9**
BUR08 Bucovina Ar. S 139.62 321 *e*PKPpre PKPpre 09 14 32.5
BUR08 *e*PKPdf **PKiKP 09 14 39.1 -0.1**
BURAR Bucovina Array 139.63 321 ⇑*i*P PKPpre 09 14 30.7
BURAR Bucovina Array 139.63 321 ⇑PKIKP PKPpre 09 14 30.7
BEL Belsk 139.63 329 *e*PKPdf PKPpre 09 14 30.0
BEL *e*PP **PP 09 17 32.0 +0.3**
BEL *e*PKS **PKSdf 09 18 15.9 +3.6**
BEL LMZ LR 10 17 19.5
comp=Z,33μm,20.9s
BEL Belsk 139.63 329 *e*PKIKP PKPpre 09 14 30.0
BEL *e* 09 17 32.0
BEL MLR MLR
comp=Z,33μm,20.9s
ANTB Antalya 139.66 303 *e*P **PKPdf 09 14 37.0 -0.1**
IZI Iznik 139.68 309 *e*P **PKPdf 09 14 37.0 -0.1**
KLYT Kilyos 139.71 310 *e*P PKPpre 09 14 30.1
ISK Istanbul-Kandi 139.76 310 *e*P **PKPdf 09 14 34.2 -3.0**
ISK Istanbul-Kandi 139.76 310 P PKPpre 09 14 28.8
ISK Istanbul-Kandi 139.76 310 PKHKP PKPpre 09 14 28.8
ISK Istanbul-Kandi 139.76 310 P PKPpre 09 14 28.8
GEMT Gemlik 139.86 309 *e*P PKPpre 09 14 33.2
BSD Bornholm Skovb 139.88 336 *i* P PKPpre 09 14 28.8
comp=Z,32μm,19.0s
BSD Bornholm Skovb 139.88 336 *i* PKHKP PKPpre 09 14 28.8
BSD MLR MLR
comp=Z,32μm,19.0s
BGKT Bogazkoy 139.93 310 *e*P PKPpre 09 14 30.1
TVSB Tavsanli 139.95 308 *e*P PKPpre 09 14 30.4
ISR Istrita 139.96 317 ⇑*i*P PKPpre 09 14 31.7
ISR Istrita 139.96 317 ⇑PKIKP PKPpre 09 14 31.7
KWP Kalwaria Pacla 139.97 325 *e*PKPdf PKPpre 09 14 31.1
KWP *e*PP **PP 09 17 35.6 +1.6**
KWP LMZ LR 10 16 37.0
comp=Z,29μm,23.9s
KWP Kalwaria Pacla 139.97 325 ⇑*i*P PKPpre 09 14 31.3
KWP Kalwaria Pacla 139.97 325 ⇑PKIKP PKPpre 09 14 31.3
ARMT Armutlu 140.06 309 *e*P PKPpre 09 14 31.7
CTKS Kestanelik-??a 140.10 311 *e*P PKPpre 09 14 32.0
MDNY Mudanya-Bursa 140.10 309 *e*P PKPpre 09 14 30.1
PRD Provadia 140.18 314 P PKPpre 09 14 33.0
CTYL Yalikoy Yolu 140.18 311 *e*P PKPpre 09 14 30.1
MLR Muntele Rosu 140.18 318 PKhKP PKPpre 09 14 32.2
comp=Z,1.7nm,0.8s,baz=122,slow=18,SNR=7.7
MLR PKP **PKPdf 09 14 38.4 +0.4**
comp=Z,15nm,1.2s,baz=56,slow=2.5,SNR=23
MLR Muntele Rosu 140.18 318 ⇓*i*P PKPpre 09 14 29.2
MLR Muntele Rosu 140.18 318 ⇓PKHKP PKPpre 09 14 29.2
ELL Elmali 140.28 303 *e*P PKPpre 09 14 30.1
COP Copenhagen 140.32 339 *i* P PKPpre 09 14 29.7
comp=Z,17μm,20.0s
COP Copenhagen 140.32 339 *i* PKHKP PKPpre 09 14 29.7
COP MLR MLR
comp=Z,17μm,20.0s
ARCR ARCALIA 140.40 321 ⇑*i*P PKPpre 09 14 33.3
GLHS Glhisar (BURDU 140.51 304 *e*P PKPpre 09 14 35.1
KCTX Karacabey (Bur 140.52 309 *e*P PKPpre 09 14 32.3
KOLS Kolonicke sedl 140.60 324 *e*PKIKP PKPpre 09 14 34.1
KOLS *e* 09 14 43.7
KOLS *e* 09 17 34.6
KOLS MLR MLR
comp=Z,18μm,21.8s
KOLS Kolonicke sedl 140.60 324 *e*PKP PKPpre 09 14 34.1
KOLS *e* 09 14 43.7
KOLS *e*PP **PP 09 17 34.6 -3.2**
KOLS *e* 09 18 16.2
KSL Kastellorizon 140.66 303 P PKPpre 09 14 31.8
KSL Kastellorizon 140.66 303 P PKPpre 09 14 31.8
PHSR Pinarhisar 140.66 312 *e*P PKPpre 09 14 33.6
MUD Monsted U'grnd 140.72 342 *i* P PKPpre 09 14 31.6
comp=Z,32μm,20.0s
MUD Monsted U'grnd 140.72 342 *i* PHKKP PKPpre 09 14 31.6
MUD MLR MLR
comp=Z,32μm,20.0s
DENT Denizli 140.72 305 *e*P PKPpre 09 14 35.8
UZH Uzhgorod 140.76 324 *e*PKIKP PKPpre 09 14 34.7
UZH *e* 09 14 44.3
UZH *i* 09 17 32.7
UZH *e* 09 20 49.1
UZH *e* 09 21 38.7
VOIR 140.76 318 ⇓*i*P PKPpre 09 14 32.8
VOIR 140.76 318 ⇓PKIKP PKPpre 09 14 32.8
KULA Kula-Manisa 140.80 306 *e*P PKPpre 09 14 34.2
KULA Kula-Manisa 140.80 306 P PKPpre 09 14 30.4
KULA Kula-Manisa 140.80 306 P PKPpre 09 14 30.4
TKR Tekirdag 140.88 311 *e*P PKPpre 09 14 34.2
STHS Stebnicka Huta 140.88 326 *e*PKIKP PKPpre 09 14 36.7
STHS Stebnicka Huta 140.88 326 *e*PKP PKPpre 09 14 36.6
TRPA Tarpa 140.90 323 ⇓*e*PKIKP PKPpre 09 14 33.4
RGN Rugen 140.91 337 *e*PKPdf PKPpre 09 14 37.5
FETY Fethiye 140.95 303 *e*P PKPpre 09 14 31.7
FETY Fethiye 140.95 303 P PKPpre 09 14 33.5
FETY Fethiye 140.95 303 P PKPpre 09 14 33.5
JMB Yambol 141.01 313 P PKPpre 09 14 32.5
CJR Cluj-Napoca 141.03 321 ⇓*i*P PKPpre 09 14 34.5
CJR Cluj-Napoca 141.03 321 ⇓PKIKP PKPpre 09 14 34.5
ARR Arges 141.06 318 ⇑*i*P PKPpre 09 14 34.6
BALB Balikesir 141.06 308 *e*P PKPpre 09 14 33.6
CRVS Cervenica-Dubn 141.06 325 *e*PKIKP PKPpre 09 14 35.1
CRVS *e* 09 14 44.4
CRVS *e* 09 17 44.0
CRVS Cervenica-Dubn 141.06 325 *e*PKP PKPpre 09 14 35.1
CRVS *e* 09 14 44.4
CRVS *e*PP **PP 09 17 43.9 +3.3**
CRVS *e* 09 18 19.5
EDRB Edirne 141.13 312 *e*P PKPpre 09 14 32.9
OJC Ojcow 141.13 328 *e*PKPdf PKPpre 09 14 34.0
OJC *e*PP **PP 09 17 35.1 -5.8**
OJC *e*PKS **PKSdf 09 18 20.6 +5.5**
OJC *e*PPS PPS 09 30 04.2
OJC *e*SS SS 09 36 13.7 +7.0
OJC LMZ LR 10 17 56.2
comp=Z,28μm,21.8s
OJC Ojcow 141.13 328 *e*PKIKP PKPpre 09 14 34.0
OJC *e* 09 17 35.1
OJC *e*PPS PPS 09 30 04.2
OJC MLR MLR
comp=Z,28μm,21.8s
OJC Ojcow 141.13 328 *e*PKPdf PKPpre 09 14 36.0
HUMR Humele 141.22 317 ⇑*i*P PKPpre 09 14 34.8
RKY Sarkoy-Tekirda 141.23 310 *e*P PKPpre 09 14 32.6
DALY Dalyan (Mu´la 141.24 304 *e*P PKPpre 09 14 36.1
KRBG Karabiga-Canak 141.25 310 *e*P PKPpre 09 14 35.5
AKS Akhisar 141.34 307 *e*P PKPpre 09 14 36.7
NIE Niedzica 141.37 326 *e*PKPdf PKPpre 09 14 36.3
NIE *e*PP **PP 09 17 44.6 +2.2**
NIE *e*PKS PKSdf 09 18 23.6 +7.9
NIE *e*PPS PPS 09 30 08.7
NIE *e*SS SS 09 36 26.4 +17
NIE LMZ LR 10 20 33.1
comp=Z,35μm,20.1s
NIE Niedzica 141.37 326 *e*PKIKP **PKPdf 09 14 36.3 -3.6**
NIE *e* 09 17 44.6
YER Yerkesik 141.45 304 *e*P PKPpre 09 14 34.5
YER Yerkesik 141.45 304 P PKPpre 09 14 34.1
YER Yerkesik 141.45 304 PKIKP PKPpre 09 14 34.1
YER Yerkesik 141.45 304 P PKPpre 09 14 34.1
BIGH Upper Bighouse 141.47 353 AMS AMS 10 18 55.9
comp=Z,20μm,20.3s
DRGR 141.52 321 ⇑*i*P PKPpre 09 14 36.0
DRGR 141.52 321 ⇑PKIKP PKPpre 09 14 36.0
AYDB Zeytinkoy-Aydi 141.54 306 *e*P PKPpre 09 14 35.1
LOT Lotru 141.56 319 ⇑*i*P PKPpre 09 14 35.0
LPK Lapseki 141.64 310 *e*P PKPpre 09 14 36.1
ARG Arkhangelos 141.80 303 P PKPpre 09 14 37.2
ARG Arkhangelos 141.80 303 PKIKP PKPpre 09 14 37.2
ARG Arkhangelos 141.80 303 P PKPpre 09 14 37.2
KECS Kecovo 141.83 325 *e*PKIKP PKPpre 09 14 36.0
KECS Kecovo 141.83 325 *e*PKP PKPpre 09 14 36.0
GELI Tayfur-Gelibol 141.84 310 *e*P PKPpre 09 14 37.0
DEV Deva 141.87 320 ⇑*i*P PKPpre 09 14 36.8
DEV Deva 141.87 320 ⇑PKIKP PKPpre 09 14 36.8
IZM Izmir 141.89 307 *e*P PKPpre 09 14 35.1
ENEZ Enez 141.95 311 *e*P PKPpre 09 14 38.3
ENEZ Enez 141.95 311 P PKPpre 09 14 35.4
DKL Dikili 141.95 308 *e*P PKPpre 09 14 36.1
ALN Alexandroupoli 141.97 311 P PKPpre 09 14 35.2
ALN Alexandroupoli 141.97 311 PKIKP PKPpre 09 14 35.2
ALN Alexandroupoli 141.97 311 P PKPpre 09 14 35.2
LANS Liptovska Anna 141.97 327 *e*PKIKP PKPpre 09 14 37.7
LANS *e* 09 14 47.4
LANS Liptovska Anna 141.97 327 *e*PKP PKPpre 09 14 37.6
LANS *e* 09 14 47.4
RAC Raciborz 142.02 329 *e*PKIKP PKPpre 09 14 35.9
RAC *e* 09 17 46.5
RAC MLR MLR
comp=Z,26μm,20.8s
BLCB Balcova 142.06 307 *e*P PKPpre 09 14 33.2
KDZ Kurdzhali 142.12 313 P PKPpre 09 14 32.5
EZN Ezine 142.14 309 *e*P PKPpre 09 14 35.1
EZN Ezine 142.14 309 P PKPpre 09 14 36.4
EZN Ezine 142.14 309 PKIKP PKPpre 09 14 36.4
EZN Ezine 142.14 309 P PKPpre 09 14 36.4
OKC Ostrava-Krasne 142.20 328 *e*PKP PKPpre 09 14 38.6
OKC *e*pPKP **PKiKP 09 14 46.5 +2.2**
OKC *e*PP **PP 09 17 48.6 +1.2**
OKC *e*SKP 09 18 20.4
OKC AMS AMS 10 19 10.0
comp=Z,20μm,20.5s
OKC Ostrava-Krasne 142.20 328 *e*PKIKP **PKPdf 09 14 38.6 -2.7**
OKC *e* 09 14 46.5
OKC *e* 09 17 48.6
OKC MLR MLR
comp=Z,20μm,20.5s
BODT Bodrum 142.22 305 *e*P PKPpre 09 14 34.2
BODT Bodrum 142.22 305 P PKPpre 09 14 37.1
BODT Bodrum 142.22 305 P PKPpre 09 14 37.1
PRK Paraskevi 142.37 308 P PKPpre 09 14 37.7
PRK Paraskevi 142.37 308 PKIKP PKPpre 09 14 37.7
PRK Paraskevi 142.37 308 P PKPpre 09 14 37.7
KSP Ksiaz 142.41 331 *e*PKPdf PKPpre 09 14 37.6
KSP *e*PP **PP 09 17 48.4 -0.1**
KSP *e*PPS PPS 09 30 23.0
KSP *e*SS SS 09 36 48.4 +27
KSP LMZ LR 10 18 47.7
comp=Z,34μm,22.9s
KSP Ksiaz 142.41 331 *e*PKIKP PKPpre 09 14 37.6
KSP *e* 09 17 48.4
KSP *e*SS SS 09 36 48.4 +27
KSP MLR MLR
comp=Z,34μm,22.9s
SMG Samos 142.41 306 P PKPpre 09 14 36.1
SMG Samos 142.41 306 P PKPpre 09 14 36.1
SIRR Siria 142.41 321 ⇓*i*P PKPpre 09 14 37.9
NIS1 Nisyros Isl. 142.44 304 *e*P PKPpre 09 14 37.7
NIS1 Nisyros Isl. 142.44 304 P PKPpre 09 14 37.8
NIS1 Nisyros Isl. 142.44 304 P PKPpre 09 14 37.8
NISR Nisiros 142.48 304 P PKPpre 09 14 39.8
NISR Nisiros 142.48 304 P PKPpre 09 14 39.8
PSZ Piszkesteto 142.48 325 ⇓*i*P PKPpre 09 14 35.8
PSZ Piszkesteto 142.48 325 ⇓*e*PKIKP PKPpre 09 14 38.6
PSZ Piszkesteto 142.48 325 ⇓PKHKP PKPpre 09 14 35.9
PSZ Piszkesteto 142.48 325 *e*PKPdf PKPpre 09 14 39.7
PSZ LR LR
comp=Z,44μm,20.0s
SMTH Samothraki Isl 142.48 311 P PKPpre 09 14 36.7
SMTH Samothraki Isl 142.48 311 P PKPpre 09 14 36.7
MME1 Meikle Cairn 142.51 352 *e*P PKPpre 09 14 39.3
MORC Moravsky Berou 142.54 329 ⇑*i*P PKPpre 09 14 37.5
MORC Moravsky Berou 142.54 329 ⇑PKIKP PKPpre 09 14 37.5
MORC Moravsky Berou 142.54 329 *e*PKPdf PKPpre 09 14 39.4
MPEP Malo Peshtene 142.54 316 P PKPpre 09 14 37.5
MDO Dochfour 142.55 353 *e*P PKPpre 09 14 38.6
SIGR SIGRI 142.68 309 P PKPpre 09 14 37.7
SIGR SIGRI 142.68 309 P PKPpre 09 14 37.7
VYHS Vyhne 142.70 326 *e*PKIKP PKPpre 09 14 38.2
VYHS *e* 09 14 44.0
VYHS *e* 09 17 43.0
VYHS Vyhne 142.70 326 *e*PKP PKPpre 09 14 38.2
VYHS *e* 09 14 44.0
VYHS *e*PP **PP 09 17 43.0 -7.5**
VYHS *e*L L 09 22 05.9
KRLC Kraliky 142.71 330 *e*PKP PKPpre 09 14 38.0
KRLC *e*pPKP **PKiKP 09 14 47.3 +1.9**
KRLC Kraliky 142.71 330 *e*PKIKP PKPpre 09 14 38.0
KRLC *e* 09 14 47.3
KARP Karpathos 142.72 302 P PKPpre 09 14 39.3
KARP Karpathos 142.72 302 *e*PKPdf PKPpre 09 14 40.6
DPC Dobruska-Polom 142.74 330 *e*PKP PKPpre 09 14 37.9
DPC *e*x x 09 14 41.6
DPC *e*PP **PP 09 17 53.5 +2.9**
DPC *e*x x 09 36 39.7
DPC AMS AMS 10 18 30.0
comp=Z,32μm,21.5s
DPC Dobruska-Polom 142.74 330 *e*PKIKP PKPpre 09 14 37.9
DPC *e* 09 17 53.5
DPC MLR MLR
comp=Z,32μm,21.5s
UPC Upice 142.77 331 *e*PKP PKPpre 09 14 39.5
UPC *e*SKP 09 18 23.5
UPC AMS AMS 10 20 00.0
comp=Z,38μm,21.3s
UPC Upice 142.77 331 *e*PKIKP PKPpre 09 14 39.5
UPC MLR MLR
comp=Z,38μm,21.3s
KPL Plockton 142.77 355 AMS AMS 10 23 21.5
comp=Z,19μm,18.7s
BZS Buzias 142.78 320 ⇓*i*P PKPpre 09 14 36.9
BZS Buzias 142.78 320 ⇓PKIKP PKPpre 09 14 36.9
CHOS Chios island 142.80 307 P PKPpre 09 14 39.0
CHOS Chios island 142.80 307 P PKPpre 09 14 39.0
DRUM Mains of Drumt 142.84 352 AMS AMS 10 23 46.4
comp=Z,12μm,21.6s
KSB Sheil Bridge 142.88 354 *e*P PKPpre 09 14 40.0
LIA Limnos Island 142.94 310 P PKPpre 09 14 39.3
LIA Limnos Island 142.94 310 P PKPpre 09 14 39.3
KAVA Kavala 143.00 312 P PKPpre 09 14 39.6
KAVA Kavala 143.00 312 P PKPpre 09 14 39.6
MDVR Moldovita 143.15 319 ⇑*i*P PKPab 09 14 39.4 +0.6
EDU Dundee 143.26 352 *e*P PKPab 09 14 38.6 -0.1
MMB Musomiste 143.31 313 P PKPab 09 14 39.0 -0.5
VRAC Vranov 143.31 329 PKP PKPbc 09 14 40.9 +0.5
comp=Z,33nm,0.8s,baz=63,slow=3.0,SNR=29
VRAC Vranov 143.31 329 ⇓*i*P PKPab 09 14 38.1 -1.1
VRAC Vranov 143.31 329 ⇓PKIKP PKPab 09 14 38.1 -1.1
NVR Nevrokopi 143.32 313 P PKPab 09 14 36.7 -2.8
NVR Nevrokopi 143.32 313 P PKPab 09 14 36.7 -2.8
PVCC Panska Ves 143.41 332 *e*PKP **PKPdf 09 14 42.7 -0.7**
PVCC *e*pPKP **PKiKP 09 14 47.2 +0.5**
PVCC *e*PP **PP 09 17 59.3 +4.7**
PVCC *e*SKP 09 18 20.5
PVCC *e*x x 09 36 50.7
PVCC AMS AMS 10 24 10.0
comp=Z,31μm,18.5s
PVCC Panska Ves 143.41 332 *e*PKIKP **PKPdf 09 14 42.7 -0.7**
PVCC *e* 09 14 47.2
PVCC *e* 09 17 59.3
PVCC MLR MLR
comp=Z,31μm,18.5s
SMOL Smolenice 143.41 327 *e*PKIKP PKPbc 09 14 41.7 +1.0
SMOL Smolenice 143.41 327 *e*PKP PKPbc 09 14 41.7 +1.0
SMOL *e* 09 14 45.8
BRG Berggiesshubel 143.44 333 *e*PKP PKPab 09 14 39.3 -0.3
comp=Z,264nm,1.2s
BRG PP **PP 09 18 01.0 +6.3**
comp=N,32μm,18.8s
comp=E,13μm,18.4s
comp=Z,45μm,18.6s
BRG Berggiesshubel 143.44 333 *e*PKIKP PKPab 09 14 39.3 -0.3
BRG 09 18 01.0
BRG MLR MLR
comp=E,32μm,18.4s
BRG MLR MLR
comp=Z,13μm,18.6s
SHEL Horse Pasture 143.46 190 *i* PKIKP **PKPdf 09 14 45.1 +0.5**
SHEL Horse Pasture 143.46 190 *e*PKPdf PKPbc 09 14 43.1 +1.3
SHEL LR LR
comp=Z,8μm,19.0s
CLL Collm 143.51 334 *e*PKPpre PKPpre 09 14 40.0
CLL *i* PKPdf **PKPdf 09 14 42.7 -0.8**
comp=Z,510nm,1.8s
CLL *i* 09 14 47.7
CLL *i* 09 14 55.3
CLL *e*PKPlp 09 15 07.0
comp=Z,18μm,13.6s

CLL			*e*PP	**PP**	09 18 02.0	+6.9
CLL			*e*PKSdf	**PKSdf**	09 18 21.0	+2.0
CLL			*e*SS	SS	09 36 48.0	+14
CLL			L	L	10 25 00.0	
	comp=Z,23µm,19.4s					
CLL			Lmax		10 25 00.0	
CLL	**Collm**	**143.51 334**	*i* PKIKP	PKPpre	09 14 42.7	
CLL			pmax	pmax		
	comp=Z,510nm,1.8s					
CLL	**Collm**	**143.51 334**	*e*PKPpre	PKPpre	09 14 41.0	
ZKR	**Zakros**	**143.57 302**	P	PKPbc	09 14 41.9	+0.3
ZKR	**Zakros**	**143.57 302**	P	PKPbc	09 14 41.9	+0.3
APE	**Apeiranthos**	**143.59 305**	⇑*i*P	PKPab	09 14 39.8	-1.0
APE	**Apeiranthos**	**143.59 305**	P	PKPab	09 14 41.1	+0.3
APE	**Apeiranthos**	**143.59 305**	⇑PKIKP	PKPab	09 14 39.8	-1.0
APE	**Apeiranthos**	**143.59 305**	P	PKPab	09 14 41.1	+0.3
SRS	**Serrai**	**143.60 313**	P	PKPab	09 14 38.4	-2.2
SRS	**Serrai**	**143.60 313**	PKHKP	PKPab	09 14 38.4	-2.2
SRS	**Serrai**	**143.60 313**	P	PKPab	09 14 38.4	-2.2
KKB	**Krupnik**	**143.63 314**	P	PKPab	09 14 40.0	-0.7
CSKK	**Cs̄‡kako**	**143.70 325**‖	*e*PKiKP	**PKPdf**	**09 14 43.4**	**-0.6**
EAB	**Aberfoyle**	**143.78 353**	*e*P	PKPbc	09 14 41.8	+0.3
PRU	**Pruhonice**	**143.81 331**	*e*PKP	PKPbc	09 14 42.0	+0.2
PRU			*ep*PKP	**PKiKP**	**09 14 47.7**	**+0.1**
PRU			*ex*	x	09 14 58.9	
PRU			*e*PP	**PP**	**09 18 01.2**	**+4.2**
PRU			*ex*	x	09 18 32.2	
PRU			*ex*	x	09 36 55.5	
PRU			AMS	AMS	10 18 50.0	
	comp=Z,29µm,22.6s					
PRU	**Pruhonice**	**143.81 331**	*e*PKIKP	PKPbc	09 14 42.0	+0.2
PRU			*e*		09 14 47.7	
PRU			*e*		09 18 01.2	
PRU			MLR	MLR		
	comp=Z,29µm,22.6s					
ESY	**Stoneypath**	**143.82 351**	*e*P	PKPbc	09 14 41.7	+0.1
SANT	**Santorini**	**143.84 304**	⇑*i*P	PKPab	09 14 41.0	-0.7
SANT	**Santorini**	**143.84 304**	P	PKPab	09 14 42.1	+0.4
SANT	**Santorini**	**143.84 304**	*e*PKPpre	PKPpre	09 14 41.7	
SANT			LR	LR		
	comp=Z,17µm,19.0s					
TREC	**Trest**	**143.85 330**	*e*PKP	**PKPdf**	**09 14 43.3**	**-1.0**
TREC			*ep*PKP	**PKiKP**	**09 14 47.3**	**-0.4**
TREC			AMS	AMS	10 20 00.0	
	comp=Z,34µm,21.7s					
TREC	**Trest**	**143.85 330**	*e*PKIKP	**PKPdf**	**09 14 43.3**	**-1.0**
TREC			MLR	MLR		
	comp=Z,34µm,21.7s					
CMBO	**Columbo, Santo**	**143.85 304**	P	PKPbc	09 14 42.2	-0.2
SOH	**Sokhos**	**143.88 312**	P	PKPab	09 14 40.0	-1.8
SOH	**Sokhos**	**143.88 312**	PKIKP	PKPab	09 14 40.0	-1.8
SOH	**Sokhos**	**143.88 312**	P	PKPab	09 14 40.0	-1.8
EDI	**Edinburgh**	**143.89 352**	*e*P	PKPab	09 14 40.9	-0.3
EDI			AMS	AMS	10 24 47.3	
	comp=Z,14µm,20.7s					
PLG	**Polygyros**	**144.00 312**	P	**PKPab**	**09 14 41.3**	**-0.9**
PLG	**Polygyros**	**144.00 312**	PKIKP	**PKPab**	**09 14 41.3**	**-0.9**
PLG	**Polygyros**	**144.00 312**	P	**PKPab**	**09 14 41.3**	**-0.9**
PAIG	**Paliouri**	**144.00 311**	P	**PKPab**	**09 14 38.7**	**-3.5**
PAIG	**Paliouri**	**144.00 311**	PKHKP	**PKPab**	**09 14 38.7**	**-3.5**
PAIG	**Paliouri**	**144.00 311**	P	**PKPab**	**09 14 38.7**	**-3.5**
NPS	**Neapolis**	**144.01 302**	P	**PKPab**	**09 14 40.8**	**-1.6**
NPS	**Neapolis**	**144.01 302**	PKIKP	**PKPab**	**09 14 40.8**	**-1.6**
NPS	**Neapolis**	**144.01 302**	P	**PKPab**	**09 14 40.8**	**-1.6**
KNT	**Kendrikon**	**144.06 313**	P	**PKPab**	**09 14 41.8**	**-0.6**
KNT	**Kendrikon**	**144.06 313**	PKIKP	**PKPab**	**09 14 41.8**	**-0.6**
KNT	**Kendrikon**	**144.06 313**	P	**PKPab**	**09 14 41.8**	**-0.6**
AOS	**Alonnisos**	**144.14 309**	P	**PKPab**	**09 14 42.6**	**-0.1**
AOS	**Alonnisos**	**144.14 309**	P	**PKPab**	**09 14 42.6**	**-0.1**
LAST	**Lasithi**	**144.14 302**	⇑*i*P	**PKPab**	**09 14 42.3**	**-0.7**
LAST	**Lasithi**	**144.14 302**	P	**PKPab**	**09 14 43.1**	**+0.1**
LAST	**Lasithi**	**144.14 302**	*e*PKPdf	**PKPab**	**09 14 42.8**	**-0.2**
HORT	**Hortiatis**	**144.15 312**	P	**PKPab**	**09 14 40.7**	**-2.1**
HORT	**Hortiatis**	**144.15 312**	P	**PKPab**	**09 14 40.7**	**-2.1**
VAY	**Valandovo**	**144.21 313**	P	**PKPab**	**09 14 42.2**	**-0.7**
VAY	**Valandovo**	**144.21 313**	*i* PKP	**PKPab**	**09 14 42.3**	**-0.6**
VAY	**Valandovo**	**144.21 313**	PKIKP	**PKPab**	**09 14 42.2**	**-0.7**
VAY	**Valandovo**	**144.21 313**	P	**PKPab**	**09 14 42.2**	**-0.7**
THE	**Thessaloniki**	**144.23 312**	P	**PKPab**	**09 14 40.1**	**-2.9**
THE	**Thessaloniki**	**144.23 312**	PKIKP	**PKPab**	**09 14 40.1**	**-2.9**
THE	**Thessaloniki**	**144.23 312**	P	**PKPab**	**09 14 40.1**	**-2.9**
EREA	**Eretria**	**144.36 308**	P	**PKPab**	**09 14 43.6**	**0.0**
SOP	**Sopron**	**144.40 327**‖	*e*PKiKP	**PKPdf**	**09 14 45.9**	**+0.7**
SKIA	**Skiathos**	**144.44 310**	P	**PKPab**	**09 14 43.4**	**-0.5**
EKA	**Eskdalemuir Ar**	**144.46 352**	PKP	**PKPab**	**09 14 42.5**	**-0.8**
	comp=Z,159nm,0.9s,baz=2.0,slow=2.5,SNR=35					
GRG	**Griva**	**144.48 313**	P	**PKPab**	**09 14 42.0**	**-2.0**
GRG	**Griva**	**144.48 313**	PKIKP	**PKPab**	**09 14 42.0**	**-2.0**
GRG	**Griva**	**144.48 313**	P	**PKPab**	**09 14 42.0**	**-2.0**
ESK	**Eskdalemuir**	**144.49 352**	*e*P	**PKPab**	**09 14 43.1**	**-0.3**
ESK			AMS	AMS	10 24 36.0	
	comp=Z,20µm,18.3s					
ESK	**Eskdalemuir**	**144.49 352**	*i* PKIKP	**PKPdf**	**09 14 45.4**	**+0.3**
ESK	**Eskdalemuir**	**144.49 352**	*e*PKPdf	**PKPab**	**09 14 43.6**	**+0.1**
ESK			LR	LR		
	comp=Z,24µm,19.0s					
PTL	**Penteli**	**144.54 308**	P	**PKPab**	**09 14 43.1**	**-1.2**
PTL	**Penteli**	**144.54 308**	P	**PKPab**	**09 14 43.1**	**-1.2**
NKC	**Novy Kostel**	**144.55 333**	*e*PKP	**PKPab**	**09 14 43.6**	**-0.3**
NKC			*ex*	x	09 15 00.9	
NKC			AMS	AMS	10 22 50.0	
	comp=Z,24µm,20.0s					
NKC	**Novy Kostel**	**144.55 333**	*e*PKIKP	**PKPab**	**09 14 43.6**	**-0.3**
NKC			MLR	MLR		
	comp=Z,24µm,20.0s					
DIVS	**Divibare**	**144.56 319**	P	**PKPab**	**09 14 42.8**	**-1.4**
NEO	**Neokhori**	**144.56 310**	P	**PKPab**	**09 14 43.8**	**-0.5**
NEO	**Neokhori**	**144.56 310**	P	**PKPab**	**09 14 43.8**	**-0.5**
XOR	**Xorichti**	**144.56 310**	P	**PKPab**	**09 14 43.0**	**-1.3**
XOR	**Xorichti**	**144.56 310**	P	**PKPab**	**09 14 43.0**	**-1.3**
MHLO	**Agia Marina, M**	**144.57 305**	P	PKPbc	09 14 45.1	+0.5
IDI	**Anoyia**	**144.58 303**	PKP	**PKPab**	**09 14 43.6**	**-0.9**
	comp=Z,118nm,0.7s,baz=126,slow=5.7,SNR=26					
IDI	**Anoyia**	**144.58 303**	‖*i*P	**PKPdf**	**09 14 45.9**	**-0.1**
IDI	**Anoyia**	**144.58 303**	P	PKPbc	09 14 45.0	+0.2
IDI	**Anoyia**	**144.58 303**	*e*PKPdf	**PKPab**	**09 14 43.9**	**-0.6**
CONA	**Conrad Observa**	**144.59 327**	*i* PKPdf	**PKPab**	**09 14 44.0**	**-0.2**
	comp=Z,1µm,1.8s,SNR=304					
ECK	**Cauldkaine Hil**	**144.61 351**	*e*P	**PKPab**	**09 14 43.4**	**-0.5**
ATHU	**Athens Univers**	**144.63 308**	P	**PKPab**	**09 14 44.1**	**-0.5**
ATHU	**Athens Univers**	**144.63 308**	P	**PKPab**	**09 14 44.1**	**-0.5**
VLY	**Voula,Athens**	**144.66 307**	P	PKPbc	09 14 44.9	+0.1
VLY	**Voula,Athens**	**144.66 307**	P	PKPbc	09 14 44.9	+0.1
ATH	**Athens Observa**	**144.68 308**	P	PKPbc	09 14 45.0	+0.1
ATH	**Athens Observa**	**144.68 308**	PKIKP	PKPbc	09 14 45.0	+0.1
ATH	**Athens Observa**	**144.68 308**	P	PKPbc	09 14 45.0	+0.1
BWH	**Wardlaw**	**144.68 352**	*e*P	**PKPdf**	**09 14 45.1**	**-0.4**
SKO	**Skopje**	**144.68 315**	P	**PKPab**	**09 14 43.7**	**-1.0**
SKO	**Skopje**	**144.68 315**	*i* PKP	PKPbc	09 14 44.9	+0.1
SKO	**Skopje**	**144.68 315**	PKIKP	**PKPab**	**09 14 43.7**	**-1.0**
SKO	**Skopje**	**144.68 315**	P	**PKPab**	**09 14 43.7**	**-1.0**
BHH	**Howats Hill**	**144.70 352**	*e*P	**PKPab**	**09 14 44.3**	**0.0**
SIVA	**Sivas**	**144.71 302**	⇑*i*P	**PKPab**	**09 14 43.7**	**-1.2**
SIVA	**Sivas**	**144.71 302**	P	**PKPab**	**09 14 44.4**	**-0.6**
SIVA	**Sivas**	**144.71 302**	P	**PKPab**	**09 14 44.4**	**-0.6**
FYTO	**Fytoko, Volos**	**144.73 310**	P	**PKPab**	**09 14 42.5**	**-2.4**
FYTO	**Fytoko, Volos**	**144.73 310**	P	**PKPab**	**09 14 42.5**	**-2.4**
SMIA	**Simia**	**144.73 309**	P	**PKPdf**	**09 14 46.8**	**+0.7**
GMK	**Mull of Kintyr**	**144.74 354**	*e*P	**PKPab**	**09 14 44.0**	**-0.4**
LIT	**Litokhoron**	**144.77 312**	P	**PKPab**	**09 14 43.1**	**-2.0**
LIT	**Litokhoron**	**144.77 312**	PKIKP	**PKPab**	**09 14 43.1**	**-2.0**
LIT	**Litokhoron**	**144.77 312**	P	**PKPab**	**09 14 43.1**	**-2.0**
RCBR	**Riachuelo**	**144.78 135**	PKP	**PKPab**	**09 14 44.6**	**-1.3**
	comp=Z,339nm,1.1s,baz=209,slow=3.1,SNR=44					
RCBR	**Riachuelo**	**144.78 135**	*e*PKPdf	**PKPab**	**09 14 44.7**	**-1.1**
RCBR			LR	LR		
	comp=Z,29µm,19.0s					
LCP	**Cassop**	**144.78 350**	*e*P	PKPbc	09 14 45.0	+0.3
KHC	**Kasperske Hory**	**144.86 331**	*e*PKP	**PKPab**	**09 14 44.3**	**-0.8**
KHC			*ep*PKP	**PKiKP**	**09 14 51.5**	**+1.7**
KHC			*ex*	x	09 15 02.9	
KHC			*e*PP	**PP**	**09 18 06.0**	**+2.7**
KHC			*ex*	x	09 18 33.9	
KHC			*ex*	x	09 37 10.5	
KHC			AMS	AMS	10 26 00.0	
	comp=Z,32µm,18.2s					
KHC	**Kasperske Hory**	**144.86 331**	*e*PKIKP	**PKPab**	**09 14 44.3**	**-0.8**
KHC	**Kasperske Hory**	**144.86 331**	*e*PKPdf	**PKPab**	**09 14 44.2**	**-0.8**
VILL	**Villia**	**144.91 308**	P	**PKPab**	**09 14 44.8**	**-0.9**
LKR	**Lokris**	**144.97 309**	P	**PKPab**	**09 14 42.8**	**-3.0**
LKR	**Lokris**	**144.97 309**	P	**PKPab**	**09 14 42.8**	**-3.0**
GEC2	**GERESS Array S**	**145.01 330**	*e*PKIKP	**PKPbc**	**09 14 45.5**	**-0.2**
GEC2	**GERESS Array S**	**145.01 330**	*e*PKPdf	**PKPbc**	**09 14 45.5**	**-0.2**
GERES	**GERESS Array B**	**145.01 330**	PKP	**PKPbc**	**09 14 45.1**	**-0.6**
	comp=Z,136nm,0.9s,baz=31,slow=3.4,SNR=97					
GEA0	**GERESS Array S**	**145.01 330**	*e*PKPdf	**PKPbc**	**09 14 45.5**	**-0.3**
BEHE	**Becsehely**	**145.05 325**‖	*e*PKiKP	**PKPdf**	**09 14 48.0**	**+1.6**
BBO1	**Bothel**	**145.06 351**	*e*P	**PKPbc**	**09 14 45.5**	**0.0**
VAM	**Vamos**	**145.09 303**	P	**PKPab**	**09 14 46.6**	**+0.2**
VAM	**Vamos**	**145.09 303**	PKIKP	**PKPab**	**09 14 46.6**	**+0.2**
VAM	**Vamos**	**145.09 303**	P	**PKPab**	**09 14 46.6**	**+0.2**
GAL1	**Galloway**	**145.12 353**	*e*P	**PKPbc**	**09 14 44.6**	**-1.1**
IDGL	**Inch Island, C**	**145.17 356**	*e*P	**PKPbc**	**09 14 45.2**	**-0.7**
KESW	**Keswick, Cumbr**	**145.18 351**	*e*P	**PKPbc**	**09 14 42.9**	**-3.1**
BIA	**Bitola**	**145.19 314**	P	**PKPdf**	**09 14 47.5**	**+0.6**
BIA	**Bitola**	**145.19 314**	*i* PKP	**PKPbc**	**09 14 45.8**	**-0.7**
BIA	**Bitola**	**145.19 314**	P	**PKPdf**	**09 14 47.5**	**+0.6**
DID	**Didima**	**145.19 307**	P	**PKPbc**	**09 14 45.4**	**-1.2**
DID	**Didima**	**145.19 307**	P	**PKPbc**	**09 14 45.4**	**-1.2**
KZN	**Kozani**	**145.19 312**	P	**PKPbc**	**09 14 44.5**	**-2.1**
KZN	**Kozani**	**145.19 312**	PKIKP	**PKPbc**	**09 14 44.5**	**-2.1**
KZN	**Kozani**	**145.19 312**	P	**PKPbc**	**09 14 44.5**	**-2.1**
ARSA	**Arzberg**	**145.21 327**	*i* PKPdf	**PKPbc**	**09 14 45.8**	**-0.6**
	comp=Z,699nm,1.2s,SNR=203					
LTK	**Loutraki**	**145.22 308**	P	**PKPbc**	**09 14 43.9**	**-2.8**
LTK	**Loutraki**	**145.22 308**	P	**PKPbc**	**09 14 43.9**	**-2.8**
IMMV	**Iera Moni Meta**	**145.25 303**	P	**PKPdf**	**09 14 48.8**	**+1.7**
IVA	**Berane**	**145.25 317**⇑	*i*PKP	**PKPbc**	**09 14 45.9**	**-0.8**
FNA	**Florina**	**145.26 313**	P	**PKPbc**	**09 14 43.6**	**-3.2**
FNA	**Florina**	**145.26 313**	PKIKP	**PKPbc**	**09 14 43.6**	**-3.2**
FNA	**Florina**	**145.26 313**	P	**PKPbc**	**09 14 43.6**	**-3.2**
WTSB	**Winterswijk**	**145.28 340**	*e*P	**PKPbc**	**09 14 42.0**	**-4.3**
	comp=Z,9µm,2.6s					
KRND	**KRANIDI**	**145.30 307**	P	**PKPbc**	**09 14 45.3**	**-1.6**
AGG	**Agios Georgios**	**145.31 310**	P	**PKPbc**	**09 14 44.5**	**-2.5**
AGG	**Agios Georgios**	**145.31 310**	*e*PKIKP	**PKPbc**	**09 14 45.6**	**-1.4**
AGG	**Agios Georgios**	**145.31 310**	*e*PKPbc	**PKPbc**	**09 14 45.6**	**-1.4**
THL	**Klokotos Trika**	**145.32 311**	P	**PKPbc**	**09 14 43.6**	**-3.3**
GVD	**Gavdhos**	**145.33 302**	P	**PKPbc**	**09 14 45.6**	**-1.5**
GVD	**Gavdhos**	**145.33 302**	P	**PKPbc**	**09 14 45.6**	**-1.5**
PLE	**Pljevlja**	**145.33 318**⇑	*i*PKP	**PKPab**	**09 14 48.2**	**+1.0**
PVY	**Plav**	**145.35 317**⇑	*i*PKP	**PKPbc**	**09 14 46.5**	**-0.6**
DSF	**Desfina**	**145.40 309**	P	**PKPbc**	**09 14 44.8**	**-2.5**
DSF	**Desfina**	**145.40 309**	P	**PKPbc**	**09 14 44.8**	**-2.5**
THAL	**Thalero**	**145.43 308**	P	**PKPdf**	**09 14 46.0**	**-1.3**
MOA	**Molln**	**145.44 329**	*i* PKPdf	**PKPdf**	**09 14 46.1**	**-0.9**
	comp=Z,1µm,1.1s,SNR=341					
GRFO	**Grafenberg**	**145.48 333**	*e*PKIKP	**PKPdf**	**09 14 46.9**	**-0.2**
GRFO	**Grafenberg**	**145.48 333**	*e*PKPbc	**PKPdf**	**09 14 46.9**	**-0.2**
OHR	**Ohrid**	**145.50 314**	*i* PKP	**PKPdf**	**09 14 47.1**	**-0.3**
HPK	**Haverah Park**	**145.55 349**	*e*P	**PKPdf**	**09 14 46.5**	**-0.4**
HPK			AMS	AMS	10 23 29.9	
	comp=Z,24µm,19.1s					
KPRO	**Kipourio**	**145.62 312**	P	**PKPdf**	**09 14 45.8**	**-1.9**
NEST	**Nestorio**	**145.64 313**	P	**PKPdf**	**09 14 44.9**	**-2.8**
ANKY	**Antikythira Is**	**145.66 304**	P	**PKPbc**	**09 14 48.1**	**0.0**
ANKY	**Antikythira Is**	**145.66 304**	P	**PKPbc**	**09 14 48.1**	**0.0**
VLI	**Veliai**	**145.68 306**	P	**PKPdf**	**09 14 46.8**	**-1.0**
VLI	**Veliai**	**145.68 306**	P	**PKPdf**	**09 14 46.8**	**-1.0**
PENT	**Pentalofos**	**145.68 313**	P	**PKPdf**	**09 14 47.1**	**-0.7**
KALE	**Kalithea**	**145.69 309**	P	**PKPdf**	**09 14 46.0**	**-1.8**
KALE	**Kalithea**	**145.69 309**	P	**PKPdf**	**09 14 46.0**	**-1.8**
UPM	**Unac-Piva**	**145.70 319**⇑	*i*PKP	**PKPdf**	**09 14 48.0**	**+0.1**
GUR	**Goura**	**145.71 308**	P	**PKPdf**	**09 14 46.3**	**-1.6**
GUR	**Goura**	**145.71 308**	P	**PKPdf**	**09 14 46.3**	**-1.6**
EVR	**Evrytania**	**145.73 310**	P	**PKPdf**	**09 14 46.4**	**-1.5**
EVR	**Evrytania**	**145.73 310**	P	**PKPdf**	**09 14 46.4**	**-1.5**
KYTH	**Kithira**	**145.74 305**	P	**PKPdf**	**09 14 47.8**	**-0.1**
KYTH	**Kithira**	**145.74 305**	P	**PKPdf**	**09 14 47.8**	**-0.1**
ANX	**Ano Chora**	**145.77 309**	P	**PKPdf**	**09 14 47.1**	**-0.9**
LMK	**Market Rasen**	**145.79 348**	*e*P	**PKPdf**	**09 14 47.1**	**-0.3**
KLV	**Kalavryta, Ach**	**145.81 308**	P	**PKPdf**	**09 14 46.7**	**-1.4**
KLV	**Kalavryta, Ach**	**145.81 308**	P	**PKPdf**	**09 14 46.7**	**-1.4**
WIM	**Isle of Man**	**145.82 353**	*e*P	**PKPdf**	**09 14 46.4**	**-1.0**
PERS	**Pernice**	**145.82 326**	*e*PKPdf	**PKPdf**	**09 14 47.8**	**0.0**
SOKA	**Soboth**	**145.84 326**	*i* PKPab	**PKPdf**	**09 14 47.4**	**-0.4**
	comp=Z,760nm,1.2s,SNR=185					
EFP	**Efpalio**	**145.85 309**	P	**PKPab**	**09 14 50.1**	**+1.1**
NKY	**Niksic**	**145.85 318**⇑	*i*PKP	**PKPdf**	**09 14 48.3**	**+0.3**
LAKA	**Lakka**	**145.86 309**	P	**PKPdf**	**09 14 47.5**	**-0.6**
LAKA	**Lakka**	**145.86 309**	P	**PKPdf**	**09 14 47.5**	**-0.6**
GMM	**Mts of Mourne**	**145.87 354**	*e*P	**PKPdf**	**09 14 47.0**	**-0.6**
BLY	**Banja Luka**	**145.87 322**⇑	*i*P	**PKPbc**	**09 14 48.2**	**-0.3**
VLX	**Vlachokerasia**	**145.88 307**	P	**PKPdf**	**09 14 47.6**	**-0.6**
VLX	**Vlachokerasia**	**145.88 307**	P	**PKPdf**	**09 14 47.6**	**-0.6**
PDG	**Podgorica**	**145.88 317**⇑	*i*P	**PKPdf**	**09 14 47.3**	**-0.6**
PDG	**Podgorica**	**145.88 317**	P	**PKPdf**	**09 14 47.4**	**-0.5**
TTG	**Podgorica**	**145.88 317**⇑	*i*PKP	**PKPdf**	**09 14 48.1**	**+0.2**
TTG	**Podgorica**	**145.88 317**	PKIKP	**PKPdf**	**09 14 47.4**	**-0.5**
TTG	**Podgorica**	**145.88 317**	P	**PKPdf**	**09 14 47.4**	**-0.5**
SISC	**Sisak**	**145.89 324**	P	**PKPab**	**09 14 48.9**	**-0.1**
LHO	**Holmfirth**	**145.99 349**	*e*P	**PKPdf**	**09 14 47.7**	**-0.1**
TIR	**Tirane**	**146.02 315**⇑	*i*P	**PKPdf**	**09 14 48.3**	**+0.1**
TIR	**Tirane**	**146.02 315**⇑	PKIKP	**PKPdf**	**09 14 48.4**	**+0.2**
TIR	**Tirane**	**146.02 315**	*e*PKPdf	**PKPbc**	**09 14 49.1**	**+0.1**
TIR			LR	LR		
	comp=Z,32µm,22.0s					
PVO	**Paravola**	**146.05 310**	P	**PKPdf**	**09 14 47.4**	**-0.9**
BRY	**Bratogost**	**146.09 318**⇑	*i*PKP	**PKPdf**	**09 14 48.8**	**+0.3**
JAN	**Janina**	**146.11 312**	P	**PKPdf**	**09 14 48.7**	**+0.2**
JAN	**Janina**	**146.11 312**	PKIKP	**PKPdf**	**09 14 48.7**	**+0.2**
JAN	**Janina**	**146.11 312**	P	**PKPdf**	**09 14 48.7**	**+0.2**
ULC	**Ulcinj**	**146.12 316**⇑	*i*PKP	**PKPdf**	**09 14 48.8**	**+0.4**
DSL	**Palaion Diasel**	**146.15 311**	P	**PKPdf**	**09 14 48.3**	**-0.3**
DSL	**Palaion Diasel**	**146.15 311**	P	**PKPdf**	**09 14 48.3**	**-0.3**
DRO	**Drossia**	**146.17 309**	P	**PKPdf**	**09 14 48.3**	**-0.3**
BUM	**Brajici-Budva**	**146.18 317**⇑	*i*PKP	**PKPdf**	**09 14 48.8**	**+0.2**
OBKA	**Obir**	**146.20 327**	*i* PKPdf	**PKPdf**	**09 14 47.3**	**-1.2**
	comp=Z,296nm,1.1s,SNR=65					
ITM	**Ithomi**	**146.28 307**	P	**PKPdf**	**09 14 48.5**	**-0.3**
ITM	**Ithomi**	**146.28 307**	P	**PKPdf**	**09 14 48.5**	**-0.3**
PDO	**Prodromos**	**146.30 310**	P	**PKPdf**	**09 14 47.3**	**-1.5**
RLS	**Riolos of Patr**	**146.31 309**	P	**PKPbc**	**09 14 50.3**	**+0.3**
RLS	**Riolos of Patr**	**146.31 309**	P	**PKPbc**	**09 14 50.3**	**+0.3**
AXS	**Araxos**	**146.32 309**	P	**PKPbc**	**09 14 50.0**	**0.0**
AMT	**Artemida-Makis**	**146.32 308**	P	**PKPab**	**09 14 51.8**	**+0.9**
HCY	**Herceg Novi**	**146.36 318**⇑	*i*PKP	**PKPdf**	**09 14 47.9**	**-0.9**
MOZS	**Mozjanca**	**146.40 326**	*e*PKPdf	**PKPbc**	**09 14 49.5**	**-0.5**
KBA	**Koelnbreinsper**	**146.42 328**	*i* PKPdf	**PKPdf**	**09 14 47.6**	**-1.4**
	comp=Z,257nm,0.8s,SNR=113					
STNC	**Stoke**	**146.49 350**	*e*P	**PKPbc**	**09 14 49.8**	**-0.2**
STNC			AMS	AMS	10 25 07.8	
	comp=Z,20µm,19.4s					
WME	**Myndd Eilian**	**146.50 352**	*e*P	**PKPdf**	**09 14 49.3**	**+0.7**
IGT	**Igoumenitsa**	**146.52 312**	P	**PKPdf**	**09 14 49.2**	**+0.1**
IGT	**Igoumenitsa**	**146.52 312**	PKP2	**PKPdf**	**09 14 49.2**	**+0.1**
IGT	**Igoumenitsa**	**146.52 312**	P	**PKPdf**	**09 14 49.2**	**+0.1**
PYL	**PYLOS**	**146.52 307**	P	**PKPab**	**09 14 51.8**	**+0.1**
PYL	**PYLOS**	**146.52 307**	P	**PKPab**	**09 14 51.8**	**+0.1**
LJU	**Ljubljana**	**146.52 326**	*e*PKPdf	**PKPdf**	**09 14 48.0**	**-0.9**
SGD	**Sagiada**	**146.56 312**	P	**PKPab**	**09 14 52.6**	**+0.9**
MYKA	**Terra Mystica**	**146.58 328**	*i* PKPdf	**PKPdf**	**09 14 48.6**	**-0.5**
	comp=Z,239nm,1.2s,SNR=98					
WPM1	**Penmaenmawr**	**146.59 351**	*e*P	**PKPdf**	**09 14 47.7**	**-1.1**
HGN	**Heimansgroeve**	**146.59 340**	*e*P	**PKPdf**	**09 14 46.9**	**-1.9**
	comp=Z,15µm,3.4s					
LKD2	**Lefkada island**	**146.60 311**	P	**PKPdf**	**09 14 49.6**	**+0.3**
LKD2	**Lefkada island**	**146.60 311**	P	**PKPdf**	**09 14 49.6**	**+0.3**
WLF1	**Llynfaes**	**146.62 352**	*e*P	**PKPdf**	**09 14 49.0**	**+0.2**
WLF1			AMS	AMS	10 23 22.2	
	comp=Z,18µm,20.7s					
BEBN	**Eben Emael**	**146.64 340**	PKP	**PKPdf**	**09 14 49.7**	**+0.8**
CWF	**Charnwood Fore**	**146.66 348**	*e*P	**PKPdf**	**09 14 49.0**	**+0.1**
CWF			AMS	AMS	10 22 12.1	
	comp=Z,13µm,20.8s					
CWF	**Charnwood Fore**	**146.66 348**	*e*PKPdf	**PKPdf**	**09 14 49.5**	**+0.6**
YRC	**Rhoscolyn**	**146.68 352**	*e*P	**PKPdf**	**09 14 49.7**	**+0.8**
MEM	**Membach**	**146.70 339**	PKP	**PKPab**	**09 14 51.5**	**-0.4**
YLL	**Llanberis**	**146.74 352**	*e*P	**PKPab**	**09 14 51.7**	**-0.2**
KFL	**Anninata**	**146.78 309**	P	**PKPab**	**09 14 53.2**	**+0.5**
UDBI	**Udbina**	**146.81 323**	P	**PKPdf**	**09 14 49.0**	**-0.6**
KEK	**Kerkira**	**146.81 313**	P	**PKPdf**	**09 14 49.9**	**+0.3**
KEK	**Kerkira**	**146.81 313**	P	**PKPdf**	**09 14 49.9**	**+0.3**
FOEL	**Foel Wylfa**	**146.84 351**	*e*P	**PKPdf**	**09 14 48.8**	**-0.5**
FOEL			AMS	AMS	10 23 52.4	
	comp=Z,17µm,21.0s					
DSB	**Dublin**	**146.89 354**	*e*PKPdf	**PKPbc**	**09 14 51.2**	**0.0**
VLS	**Valsamata**	**146.90 310**	P	**PKPdf**	**09 14 50.5**	**+0.7**
VLS	**Valsamata**	**146.90 310**	PKP2	**PKPdf**	**09 14 50.5**	**+0.7**
VLS	**Valsamata**	**146.90 310**	P	**PKPdf**	**09 14 50.5**	**+0.7**
IGLA	**Glengowla, Co**	**146.93 357**	*e*P	**PKPbc**	**09 14 51.2**	**0.0**
ZKS	**Zakynthos**	**146.94 309**	P	**PKPdf**	**09 14 49.7**	**-0.2**
STU	**Stuttgart**	**147.03 334**	*e*PKP2	**PKPbc**	**09 14 51.4**	**-0.4**
STU	**Stuttgart**	**147.03 334**	*e*PKPdf	**PKPbc**	**09 14 51.4**	**-0.4**
UCC	**Uccle**	**147.06 341**	PKP	**PKPab**	**09 14 53.7**	**+0.4**
ABTA	**Abfaltersbach**	**147.06 329**	*i* PKPdf	**PKPdf**	**09 14 48.6**	**-1.3**
	comp=Z,367nm,1.3s,SNR=58					
BCLA	**Clavier**	**147.09 340**	PKP	**PKPbc**	**09 14 51.6**	**-0.2**
WTTA	**Wattenberg**	**147.11 330**	*i* PKPbc	**PKPdf**	**09 14 51.0**	**+0.9**
	comp=Z,660nm,1.3s,SNR=69					
TRI	**Trieste**	**147.14 326**	*e*PKP2	**PKPbc**	**09 14 51.3**	**-0.9**
TRI	**Trieste**	**147.14 326**	*e*PKPdf	**PKPbc**	**09 14 51.2**	**-0.9**
HLM1	**Long Mynd**	**147.15 350**	*e*P	**PKPdf**	**09 14 49.3**	**-0.5**
HLM1			AMS	AMS	10 24 59.2	
	comp=Z,20µm,20.1s					
NVLJ	**

PCED	Cedros	156.60	35	ePKP	PKPdf	09 15 10.6 +6.2
PGRA	Graciosa	156.69	33	ePKP	PKPdf	09 15 08.5 +4.0
CMAH	Djebel Manchou	156.69	318	P	PKPdf	09 15 05.7 +1.1
ROSA	Rosais	156.78	34	ePKP	PKPdf	09 15 08.5 +3.9
PCAN	Candelaria	156.84	35	ePKP	PKPdf	09 15 10.4 +5.7
ABSA	Djebel Ababsia	156.87	317	P	PKPdf	09 15 06.9 +2.0
PMAN	Manadas	156.93	34	ePKP	PKPdf	09 15 09.0 +4.2
CAEH	`Ain El Ouahch	156.95	319	P	PKPdf	09 15 06.5 +1.6
PPNO	Prainha do Nor	156.95	35	ePKP	PKPdf	09 15 10.6 +5.7
CKFL	Kef-Lekhel	157.27	319	P	PKPdf	09 15 07.5 +2.0
ADH	Angra Heroismo	157.35	33	ePKP	PKPdf	09 15 08.1 +2.8
CASM	Ain Smara	157.50	319	P	PKPdf	09 15 07.3 +1.6
CTEI	Djebel Teioual	157.68	318	P	PKPdf	09 15 07.1 +1.1
DFRA	Djebel Bou Aff	157.69	320	P	PKPdf	09 15 08.3 +2.3
PBRG	Braganca	158.18	350	ePKPdf	PKPdf	09 15 07.5 +1.2
PBRG	Braganca	158.18	350	ePP	PP	09 19 20.7 +1.7
PBRG	Braganca	158.18	350	eLR	LR	10 12 48.7
	comp=Z,25μm,20.0s					
SET	Setif	158.21	320	P	PKPdf	09 15 09.0 +2.4
PGAV	Gavieira, Arco	158.24	353	ePKPdf	PKPdf	09 15 07.7 +1.3
PGAV	Gavieira, Arco	158.24	353	ePP	PP	09 19 21.4 +2.0
PGAV	Gavieira, Arco	158.24	353	eLR	LR	10 11 35.2
	comp=Z,31μm,20.0s					
CKHR	Kef el Ahmar	158.26	320	P	PKPdf	09 15 08.8 +2.1
PCAB	Cabril	158.46	352	ePKPdf	PKPdf	09 15 07.2 +0.6
PCAB	Cabril	158.46	352	ePP	PP	09 19 23.8 +3.3
PSET	Sete Cidades	158.75	32	ePKP	PKPdf	09 15 11.0 +3.9
POLO	Lamas de Olo	158.76	352	ePKPdf	PKPdf	09 15 08.3 +1.2
POLO	Lamas de Olo	158.76	352	ePKPab	PKPab	09 15 14.1 +0.4
POLO	Lamas de Olo	158.76	352	ePP	PP	09 19 24.1 +1.9
POLO	Lamas de Olo	158.76	352	eLR	LR	10 13 36.9
	comp=Z,15μm,18.0s					
PDA	Ponta Delgada	158.84	32	ePKP	PKPdf	09 15 09.4 +2.3
PVRL	Vila Real	158.85	352	ePKPdf	PKPdf	09 15 08.2 +1.1
PVRL	Vila Real	158.85	352	ePKPab	PKPab	09 15 44.7 +1.7
PVRL	Vila Real	158.85	352	ePP	PP	09 19 26.6 +4.0
MVO	Moncorvo	158.85	350	ePKPdf	PKPdf	09 15 08.7 +1.5
MVO	Moncorvo	158.85	350	ePKPab	PKPab	09 15 43.1 +0.1
MVO	Moncorvo	158.85	350	ePP	PP	09 19 24.6 +1.9
MVO	Moncorvo	158.85	350	eLR	LR	10 13 28.3
CMLA	Cha da Macela	158.90	32	ePKP	PKPdf	09 15 10.6 +3.4
CMLA	Cha da Macela	158.90	32	PFAKE		09 15 20.0 +13
CMLA				LR	LR	
	comp=Z,24μm,19.0s					
BART	Pico Bartolome	159.06	31	ePKP	PKPdf	09 15 10.2 +2.7
ATAF	Djebel Tarf	159.10	321	P	PKPdf	09 15 07.5 -0.2
ABA	Alger-Bouzarea	159.13	325	P	PKPdf	09 15 08.9 +1.3
ADJB	Djebel Djouab	159.38	323	P	PKPdf	09 15 09.6 +1.6
PVIS	Viseu	159.42	352	ePKPdf	PKPdf	09 15 08.6 +0.8
PVIS	Viseu	159.42	352	ePKPab	PKPab	09 15 48.0 +2.5
PVIS	Viseu	159.42	352	ePP	PP	09 19 29.7 +3.9
ES19	SONSECA Array	159.56	342	ePKPdf	PKPdf	09 15 08.0 -0.1
ESDC	Sonseca Array	159.60	343	PKP	PKPdf	09 15 09.1 +1.0
	comp=Z,4.2nm,0.8s,baz=345,slow=2.6,SNR=18					
ESDC				PKPab	PKPab	09 15 47.7 +1.4
	comp=Z,56nm,0.9s,baz=17,slow=3.8,SNR=14					
ESDC				PP	PP	09 19 20.8 -6.2
	comp=Z,7.1nm,0.9s,baz=18,slow=6.6,SNR=4.5					
ESLA	Sonseca Array	159.60	343	ePKPdf	PKPdf	09 15 08.7 +0.6
EMHD	Djebel Mahouad	159.62	324	P	PKPdf	09 15 10.2 +1.9
MTE	Manteigas	159.68	351	ePKPdf	PKPdf	09 15 09.5 +1.3
MTE	Manteigas	159.68	351	ePKPab	PKPab	09 15 44.5 -2.1
MTE	Manteigas	159.68	351	ePP	PP	09 19 29.6 +2.4
MTE	Manteigas	159.68	351	eLR	LR	10 12 29.0
	comp=Z,23μm,18.0s					
MTE	Manteigas	159.68	351	ePKPdf	PKPdf	09 15 08.3 +0.2
MTE				LR	LR	
	comp=Z,17μm,19.0s					
PSMA	Santa Maria	159.69	32	ePKP	PKPdf	09 15 12.9 +4.7
PSMN	Pico do Norte,	159.72	32	ePKP	PKPdf	09 15 11.0 +2.8
PAB	San Pablo	159.83	343	ePKIKP	PKPdf	09 15 09.2 +0.8
PAB				MLR	MLR	
	comp=Z,17μm,20.0s					
PAB	San Pablo	159.83	343	ePKPdf	PKPdf	09 15 09.2 +0.8
PAB				ePKPab	PKPab	09 15 48.7 +1.4
PAB				LR	LR	
	comp=Z,17μm,20.0s					
PCAS	Casmilo, Conde	160.15	353	ePKPdf	PKPdf	09 15 09.8 +1.2
PCAS	Casmilo, Conde	160.15	353	ePKPab	PKPab	09 15 50.4 +1.8
PCAS	Casmilo, Conde	160.15	353	ePP	PP	09 19 32.2 +2.6
PCAS	Casmilo, Conde	160.15	353	eLR	LR	10 12 26.1
	comp=Z,26μm,20.0s					
PCBR	Castelo Branco	160.22	350	ePKPdf	PKPdf	09 15 09.8 +1.1
PCBR	Castelo Branco	160.22	350	ePKPab	PKPab	09 15 49.8 +0.9
PCBR	Castelo Branco	160.22	350	ePP	PP	09 19 33.8 +3.8
EBNR	Beni Rached	160.31	327	P	PKPdf	09 15 11.5 +2.5
PTOM	Tomar	160.57	352	ePP	PP	09 19 32.8 +0.9
PMRV	Marv??o	160.61	350	ePKPdf	PKPdf	09 15 10.8 +1.6
PMRV	Marv??o	160.61	350	ePKPab	PKPab	09 15 52.7 +2.1
PMRV	Marv??o	160.61	350	ePP	PP	09 19 33.4 +1.2
PMRV	Marv??o	160.61	350	eLR	LR	10 11 20.6
	comp=Z,25μm,20.0s					
EANR	`Ain N'Sour	160.80	327	P	PKPdf	09 15 11.5 +2.0
OKGL	Djebel Kef Gue	160.96	328	P	PKPdf	09 15 14.0 +4.3
ALMR	Almeirim	161.05	352	eP	PKPdf	09 15 09.0 -0.7
ALMR	Almeirim	161.05	352	ePKIKP	PKPdf	09 15 08.9 -0.7
PMTG	Montargil	161.09	352	ePKPdf	PKPdf	09 15 10.2 +0.6
PMTG	Montargil	161.09	352	ePKPab	PKPab	09 15 54.5 +1.8
PMTG	Montargil	161.09	352	ePP	PP	09 19 36.9 +2.2
PMTG	Montargil	161.09	352	eLR	LR	10 10 38.0
	comp=Z,27μm,18.0s					
ETRT	Tiaret	161.12	325	P	PKPdf	09 15 11.4 +1.4
PESTR	Estremoz	161.19	350	ePKPdf	PKPdf	09 15 10.8 +1.0
PESTR	Estremoz	161.19	350	ePKPab	PKPab	09 15 54.8 +1.6
PESTR	Estremoz	161.19	350	ePP	PP	09 19 37.6 +2.3
PESTR	Estremoz	161.19	350	eLR	LR	10 14 00.8
	comp=Z,31μm,18.0s					
OJGS	Djebel Guires	161.32	327	P	PKPdf	09 15 14.0 +3.9
PMAFR	Mafra	161.32	354	ePKPdf	PKPdf	09 15 11.4 +1.5
PMAFR	Mafra	161.32	354	ePKPab	PKPab	09 15 55.6 +1.9
PMAFR	Mafra	161.32	354	ePP	PP	09 19 36.3 +0.4
OJBR	Djebel Berber	161.47	328	P	PKPdf	09 15 14.5 +4.2
PMST	Lisbon--Monsan	161.53	354	ePKPdf	PKPdf	09 15 11.6 +1.5
PMST	Lisbon--Monsan	161.53	354	ePKPab	PKPab	09 15 56.6 +2.0
PMST	Lisbon--Monsan	161.53	354	ePP	PP	09 19 45.7 +8.7
LIS	Lisbon	161.55	354	eP	PKPdf	09 15 09.4 -0.7
LIS				ePP	PP	09 19 37.8 +0.7
LIS				AMS	AMS	10 31 49.8
	comp=Z,49μm,17.4s					
LIS	Lisbon	161.55	354	ePKPdf	PKPdf	09 15 11.0 +0.9
LIS	Lisbon	161.55	354	ePKPab	PKPab	09 15 56.5 +1.8
LIS	Lisbon	161.55	354	ePP	PP	09 19 46.4 +9.3
LIS	Lisbon	161.55	354	ePKIKP	PKPdf	09 15 09.4 -0.7
LIS				e		09 19 37.7
EVO	Evora	161.58	351	ePKPdf	PKPdf	09 15 11.5 +1.3
EVO	Evora	161.58	351	ePKPab	PKPab	09 15 56.8 +1.9
EVO	Evora	161.58	351	ePP	PP	09 19 39.7 +2.4
PBAR	Barrancos	161.76	348	ePKPdf	PKPdf	09 15 10.7 +0.3
PBAR	Barrancos	161.76	348	ePKPab	PKPab	09 15 57.4 +1.7
PBAR	Barrancos	161.76	348	ePP	PP	09 19 39.9 +1.6
PBAR	Barrancos	161.76	348	eLR	LR	10 13 41.4
	comp=Z,72μm,18.0s					
ODJA	Bouhanifia	161.91	328	P	PKPdf	09 15 13.0 +2.3
PBEJ	Beja	162.06	350	ePKPdf	PKPdf	09 15 11.7 +1.0
PBEJ	Beja	162.06	350	ePKPab	PKPab	09 15 58.6 +1.6
PBEJ	Beja	162.06	350	ePP	PP	09 19 41.2 +1.3
PNCL	Nicolau / Gran	162.07	352	ePKPdf	PKPdf	09 15 12.2 +1.5
PNCL	Nicolau / Gran	162.07	352	ePKPab	PKPab	09 15 55.6 -1.4
PNCL	Nicolau / Gran	162.07	352	ePP	PP	09 19 42.4 +2.5
OTSS	Djebel Tessala	162.27	329	P	PKPdf	09 15 15.0 +3.9
MESJ	Messejana	162.29	351	eP	PKPdf	09 15 10.3 -0.7
MESJ				ePP	PP	09 19 42.0 +0.9
MESJ				AMS	AMS	10 35 13.7
	comp=Z,26μm,13.8s					
MESJ	Messejana	162.29	351	ePKPdf	PKPdf	09 15 11.8 +0.9
MESJ	Messejana	162.29	351	ePKPab	PKPab	09 15 54.3 -3.7
MESJ	Messejana	162.29	351	ePP	PP	09 19 43.5 +2.4
MESJ	Messejana	162.29	351	ePKIKP	PKPdf	09 15 10.2 -0.7
MESJ				e		09 19 41.9
PCVE	Castro Verde	162.47	350	ePKPdf	PKPdf	09 15 12.7 +1.6
PCVE	Castro Verde	162.47	350	ePKPab	PKPab	09 15 59.6 +0.8
PCVE	Castro Verde	162.47	350	ePP	PP	09 19 43.0 +0.9
PCVE	Castro Verde	162.47	350	eLR	LR	10 12 25.8
	comp=Z,33μm,18.0s					
OLHC	Oulhaca	162.59	331	P	PKPdf	09 15 15.0 +3.6
PVAQ	Vaqueiros	162.64	349	ePKPdf	PKPdf	09 15 12.3 +1.0
PVAQ	Vaqueiros	162.64	349	ePKPab	PKPab	09 15 57.3 -2.2
PVAQ	Vaqueiros	162.64	349	ePP	PP	09 19 46.2 +3.2
PTEO	Sao Teotonio	162.65	352	ePKPdf	PKPdf	09 15 13.7 +2.4
PTEO	Sao Teotonio	162.65	352	ePKPab	PKPab	09 16 01.3 +1.7
PTEO	Sao Teotonio	162.65	352	ePP	PP	09 19 47.3 +4.3
PBDV	Barranco-do-Ve	162.83	350	ePKPdf	PKPdf	09 15 13.9 +2.4
PBDV	Barranco-do-Ve	162.83	350	ePKPab	PKPab	09 16 00.9 +0.5
PBDV	Barranco-do-Ve	162.83	350	ePP	PP	09 19 47.9 +3.9
PBDV	Barranco-do-Ve	162.83	350	eLR	LR	10 15 20.3
	comp=Z,42μm,18.0s					
MORF	Marmelete	162.88	352	eP	PKPdf	09 15 10.9 -0.7
MORF				ePP	PP	09 19 45.0 +0.7
MORF				AMS	AMS	10 37 31.7
	comp=Z,27μm,23.0s					
MORF	Marmelete	162.88	352	ePKPdf	PKPdf	09 15 12.6 +1.0
MORF	Marmelete	162.88	352	ePKPab	PKPab	09 16 00.1 -0.5
MORF	Marmelete	162.88	352	ePP	PP	09 19 46.3 +2.0
MORF	Marmelete	162.88	352	eLR	LR	10 13 43.2
	comp=Z,27μm,18.0s					
MORF	Marmelete	162.88	352	ePKIKP	PKPdf	09 15 10.9 -0.7
MORF				e		09 19 45.0
PFVI	Vila Bisbo	163.07	352	ePKPdf	PKPdf	09 15 13.4 +1.7
PFVI	Vila Bisbo	163.07	352	ePP	PP	09 19 51.3 +6.1
TAM	Tamanrasset	163.77	282	ePKIKP	PKPdf	09 15 13.2 +0.2
TAM				MLR	MLR	
	comp=Z,27μm,19.0s					
TAM	Tamanrasset	163.77	282	ePKPdf	PKPdf	09 15 13.2 +0.2
TAM				ePKPab	PKPab	09 16 06.1 +0.7
TAM				LR	LR	
	comp=Z,27μm,19.0s					
LIC	Lamto	164.54	206	ePKP1	PKPdf	09 15 13.2 -0.6
	comp=Z,433nm,2.1s					
KIC	Kosan Boka	164.54	207	ePKP1	PKPdf	09 15 13.1 -0.7
	comp=Z,817nm,1.7s					
DBIC	Dimbokro	164.87	207	PKP	PKPdf	09 15 14.5 +0.5
	comp=Z,85nm,1.3s,baz=155,slow=1.3,SNR=14					
DBIC				PKPab	PKPab	09 16 09.5 -0.4
	comp=Z,20nm,0.8s,baz=122,slow=5.5,SNR=4.1					
DBIC				PP	PP	09 19 52.1 -3.0
	comp=Z,7.9nm,0.8s,baz=82,slow=8.8,SNR=3.4					
DBIC	Dimbokro	164.87	207	ePKIKP	PKPdf	09 15 13.4 -0.7
DBIC						09 16 09.5
DBIC						09 19 52.1
DBIC	Dimbokro	164.87	207	ePKPdf	PKPdf	09 15 13.3 -0.7
DBIC				PKPab	PKPab	09 16 09.5 -0.4
DBIC				PP	PP	09 19 52.1 -3.0
TIC	Toumodi	164.92	206	ePKP1	PKPdf	09 15 12.3 -1.8
TOA0	Torodi Ar. Sit	165.30	243	ePKPdf	PKPdf	09 15 13.5 -0.8
TOA0				ePKPdf	PKPdf	09 15 13.8 -0.6
TORD	Torodi Ar. Bea	165.30	243	PKP	PKPdf	09 15 13.8 -0.6
	comp=Z,51nm,1.0s,baz=13,slow=0.3,SNR=61					
TORD				PKPab	PKPab	09 16 12.7 +0.6
	comp=Z,42nm,0.8s,baz=116,slow=2.7,SNR=13					
TORD				PP	PP	09 19 58.9 +0.1
	comp=Z,12nm,0.9s,baz=136,slow=7.1,SNR=4.4					
MDT	Midelt	166.04	334	PKP	PKPdf	09 15 15.3 +0.6
	comp=Z,14nm,1.1s,baz=67,slow=0.7,SNR=18					
MDT				PKPab	PKPab	09 16 16.0 +1.2
	comp=Z,47nm,1.0s,baz=34,slow=4.7,SNR=12					
PMOZ	Porto Moniz, M	166.64	20	ePKPdf	PKPdf	09 15 15.9 +0.8
PMOZ	Porto Moniz, M	166.64	20	ePP	PP	09 20 11.1 +6.9
PMOZ	Porto Moniz, M	166.64	20	eLR	LR	10 12 57.4
	comp=Z,23μm,20.0s					
PMPS	Porto Santo	166.68	17	ePKPdf	PKPdf	09 15 16.1 +1.2
PMPS	Porto Santo	166.68	17	ePKPab	PKPab	09 16 20.2 +2.8
PMPS	Porto Santo	166.68	17	ePP	PP	09 20 11.5 +7.3
PMAR	Madeira	166.82	20	ePKPdf	PKPdf	09 15 17.8 +2.5
PMAR	Madeira	166.82	20	ePP	PP	09 20 13.1 +7.9
FUL	Funchal	166.90	20	ePKPdf	PKPdf	09 15 17.6 +2.5

DDA 10 08:58:01.2, 41°.09N×41°.80E, h7km, Md2.0, Turkey-Georgia-Armenia border region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
DAGI	Agillar	0.09	96	i P		Pg	08 58 03.6	+0.1
ARTV	Artvin	0.14	46	i P		Pg	08 58 04.6	+0.3
ARTV				i S		Sg	08 58 07.0	+0.6
DDEM	Demirkent	0.20	190	i P		Pg	08 58 05.7	+0.5
DDEM				i S		Sg	08 58 08.8	+0.9
DBOC	Borcka	0.28	339	i P		Pg	08 58 02.0	-4.7
DBOC				i S		Sg	08 58 11.4	+1.0

IDC 10 09:02:29.4±10.0, 20°.29S×167°.83E, h0km, mb4.7/3, mb1 4.9/4, mb1mx4.2/33, mbtmp4.7/4, Error ellipse: s-maj=178.1km s-min=42.5km az=97.0, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	2.20	216	Pn		Pn	09 03 06.1	-1.2
	baz=280,slow=17							
DZM				Sn		Sn	09 03 36.5	+1.2
	71nm,0.3s,baz=342,slow=20,SNR=3.1							
STKA	Stephens Creek	26.17	239	P		P	09 08 06.5	+0.8
	25nm,1.0s,baz=86,slow=13,SNR=3.4							
WRA	Warramunga Arr	31.42	265	P		P	09 08 51.8	-0.8
	4.8nm,0.8s,baz=92,slow=8.3,SNR=3.1							
ASAR	Alice Springs	31.60	258	P		P	09 08 54.6	+0.5
	7.9nm,0.7s,baz=87,slow=9.2,SNR=4.9							

*ISCJB **10** 09:02:37.2±0.8, 32°.19N±0°.09×131°.31E±0°.07, h77km±5km, mb3.8/2, Error ellipse: s-maj=16.2km s-min=7.1km az=154.5*

*JMA **10** 09:02:39.4±0.1, 32°.24N×131°.29E, h63km±1km, M3.3 Broadband fault plane solution: P waves. NP1: ϕ_s=25.00000°, δ87.00000°, λ101.00000°. NP2: ϕ_s=131.00000°, δ11.00000°, λ16.00000°. Principal axes: T Plg47.0000°, Azm306.0000°; N Plg11.0000°, Azm204.0000°; P Plg41.0000°, Azm105.0000°;*

JMA Felt II J1.

*IDC **10** 09:02:39.7±1.1, 33°.95N×130°.37E, h0km, mb3.9/2, mb1 3.8/3, mb1mx3.6/65, mbtmp3.8/3, ML3.3/1 Error ellipse: s-maj=47.5km s-min=10.5km az=62.0*

ISC 10 09:02:38.1±1.1, 32°.20N±0°.08×131°.30E±0°.06, h72km±7km, n10, σ0°.75/16, 1C-4D, Kyushu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
JTSN	Tsuno	0.18	74	⇑P		Pn	09 02 49.0	+0.1
JTSN				eS		Sn	09 02 56.5	-0.3
JTZ	Takazaki	0.34	211	⇓P		Pn	09 02 50.4	+0.6
JTZ				eS		Sn	09 02 58.5	+0.2
JIU2	Izumi 2	0.54	311	⇓P		Pn	09 02 51.8	+0.3
JIU2				eS		Sn	09 03 00.9	-0.4
JNU	Nakatsue	0.99	339	Pg		Pn	09 02 57.3	+0.7
	68nm,0.3s,baz=180,slow=3.0,SNR=408							
JNU				Lg		Lg	09 03 10.8	
	95nm,0.3s,baz=45,slow=20,SNR=29							
JTO	Tosashimizu	1.44	62	⇓P		Pn	09 03 02.3	0.0
JTO				S		Sn	09 03 19.5	-1.0
JSJ	Shimokoshiki	1.44	249	⇓P		Pn	09 03 02.6	+0.3
JSJ				S		Sn	09 03 20.5	-0.1
UWA2	Uwa jima 2	1.51	47	P		Pn	09 03 03.4	+0.1
UWA2				S		Sn	09 03 22.1	-0.2
MJAR	Matsushiro Arr	7.17	51	Pn		Pn	09 04 22.2	+1.9
	0.5nm,0.3s,baz=245,slow=14,SNR=4.6							
FINES	FINESS Array B	69.02	330	P		P	09 13 35.8	+0.2
	0.7nm,0.4s,baz=73,slow=6.1,SNR=11							
AKASG	Malin Array Be	72.75	319	P		P	09 13 57.6	-0.9
	0.4nm,0.3s,baz=53,slow=4.7,SNR=2.9							

*IDC **10** 09:07:48.4±1.7, 20°.25S×168°.22E, h0km, mb4.3/5, mb1 4.5/6, mb1mx4.1/34, mbtmp4.3/6, Error ellipse: s-maj=58.4km s-min=24.7km az=144.0*

*ISCJB **10** 09:07:51.4±1.5, 20°.1S±0°.1×168°.0E±0°.2, h27km, mb4.6/4, Error ellipse: s-maj=35.1km s-min=13.5km az=31.2*

ISC 10 09:07:52.6±1.6, 20°.2S±0°.2×168°.2E±0°.2, h27km, n6, σ0°.72/7, mb4.6/4, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	2.45	221	Pn		Pn	09 08 31.3	+0.4
	baz=135,slow=20,SNR=1.3							
DZM				Sn		Sn	09 08 59.8	-0.2
	37nm,0.3s,baz=73,slow=19,SNR=5.9							
CTA	Charters Tower	20.57	267	P		P	09 12 29.6	+0.1
	7.6nm,1.0s,baz=86,slow=13,SNR=1.7							
STKA	Stephens Creek	26.47	239	P		P	09 13 26.5	-1.2
	5.5nm,0.5s,baz=70,slow=9.9,SNR=6.2							
WRA	Warramunga Arr	31.74	265	P		P	09 14 14.6	-0.1
	37nm,0.9s,baz=93,slow=8.3,SNR=5.7							
ASAR	Alice Springs	31.92	257	P		P	09 14 16.9	+0.7
	7.2nm,0.7s,baz=87,slow=9.0,SNR=9.6							
NVAR	Mina Array Bea	90.20	49	P		P	09 20 51.1	0.0
	0.9nm,0.8s,baz=232,slow=6.5,SNR=2.9							

IDC 10 09:11:26.1±2.2, 19°.49S×167°.78E, h0km, mb4.0/4, mb1 4.2/4, mb1mx3.8/32, mbtmp4.0/4, Error ellipse: s-maj=121.9km s-min=35.2km az=154.0, Vanuatu Islands region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
STKA	Stephens Creek	26.55	237	P		P	09 17 04.8	-1.0
	4.6nm,1.0s,baz=84,slow=10,SNR=3.2							
WRA	Warramunga Arr	31.46	263	P		P	09 17 50.1	+0.4
	0.2nm,0.4s,baz=90,slow=8.5,SNR=4.3							
ASAR	Alice Springs	31.73	256	P		P	09 17 52.4	+0.3
	1.9nm,0.7s,baz=84,slow=8.6,SNR=4.1							
NVAR	Mina Array Bea	90.00	49	P		P	09 24 28.0	+0.1
	0.8nm,0.8s,baz=236,slow=6.4,SNR=2.9							

IDC 10 09:13:12.3±51.0, 22°.39S×172°.97W, h0km, mb4.3/3, mb1 4.4/3, mb1mx3.9/32, mbtmp4.3/3, Error ellipse: s-maj=980.4km s-min=184.1km az=87.0, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
STKA	Stephens Creek	41.28	247	P		P	09 20 59.8	+0.1
	3.1nm,0.7s,baz=83,slow=8.1,SNR=4.2							
ASAR	Alice Springs	48.67	258	P		P	09 21 58.7	0.0
	2.3nm,0.7s,baz=99,slow=6.9,SNR=11							
WRA	Warramunga Arr	49.00	263	P		P	09 22 00.7	-0.5
	2.9nm,0.5s,baz=103,slow=8.2,SNR=35							

IDC 10 09:14:03.2±10.0, 20°.08S×168°.89E, h0km, mb4.0/4, mb1 4.2/5, mb1mx3.9/29, mbtmp4.1/5, ML3.8/1, Error ellipse: s-maj=175.2km s-min=70.2km az=88.0, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	3.02	229	Pn		Pn	09 14 50.4	-2.0
	14nm,0.3s,baz=120,slow=20,SNR=4.5							
DZM				Sn		Sn	09 15 20.2	-9.2
	17nm,0.3s,baz=101,slow=23,SNR=6.1							
CTA	Charters Tower	21.26	266	P		P	09 18 52.8	+1.6
	3.8nm,0.7s,baz=95,slow=16,SNR=4.1							
STKA	Stephens Creek	27.12	239	P		P	09 19 49.2	+1.1
	2.1nm,0.5s,baz=69,slow=13,SNR=7.5							
WRA	Warramunga Arr	32.43	264	P		P	09 20 34.1	-1.1
	0.5nm,0.5s,baz=93,slow=8.4,SNR=5.9							
ASAR	Alice Springs	32.61	257	P		P	09 20 36.5	-0.3
	3.2nm,0.7s,baz=86,slow=8.9,SNR=15							

IDC 10 09:16:09.5±10.0, 20°.31S×167°.76E, h0km, mb4.1/3, mb1 4.3/4, mb1mx3.9/29, mbtmp4.1/4, ML3.3/1, Error ellipse: s-maj=180.8km s-min=41.9km az=96.0, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	2.14	215	Pn		Pn	09 16 45.9	-0.7
	8.5nm,0.3s,baz=134,slow=18,SNR=3.5							
DZM				Sn		Sn	09 17 14.6	+0.6
	38nm,0.3s,baz=269,slow=23,SNR=3.7							
STKA	Stephens Creek	26.10	239	P		P	09 21 45.8	+0.6
	2.4nm,0.6s,baz=88,slow=11,SNR=6.3							
WRA	Warramunga Arr	31.36	265	P		P	09 22 31.6	-0.5
	0.5nm,0.4s,baz=93,slow=8.4,SNR=5.0							
ASAR	Alice Springs	31.53	258	P		P	09 22 33.9	+0.2
	5.0nm,0.7s,baz=87,slow=9.1,SNR=14							

IDC 10 09:19:48.4±6.9, 20°.07S×168°.68E, h0km, mb3.9/4, mb1 4.1/5, mb1mx3.8/36, mbtmp4.0/5, ML3.9/1, Error ellipse: s-maj=118.8km s-min=49.7km az=105.0, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	2.88	226	Pn		Pn	09 20 33.9	-1.9
	16nm,0.3s,baz=116,slow=16,SNR=5.8							
DZM				Sn		Sn	09 21 11.4	+0.2
	31nm,0.3s,baz=186,slow=22,SNR=3.1							
CTA	Charters Tower	21.07	266	P		P	09 24 36.2	+1.9
	2.2nm,0.7s,baz=62,slow=15,SNR=2.8							
STKA	Stephens Creek	26.96	239	P		P	09 25 33.1	+1.3
	1.7nm,0.6s,baz=85,slow=12,SNR=7.4							
WRA	Warramunga Arr	32.24	264	P		P	09 26 16.9	-1.9
	0.9nm

18nm,0.8s
KAPI Kappang 49.39 281 P **P 09 31 05.8 +0.3**
3.7nm,0.3s,baz=126,slow=3.7,SNR=4.8
SBA Scott Base 57.77 180 *e*P **P 09 32 06.7 +0.7**
4.7nm,0.7s
CASY Casey 58.91 204 *e*P **P 09 32 13.3 -0.9**
0.9nm,0.8s
MJAR Matsushiro Arr 63.08 333 P **P 09 32 42.4 -0.5**
1.7nm,0.8s,baz=155,slow=4.0,SNR=3.8
KULM Kulim 70.95 283 *e*P **P 09 33 33.7 +0.2**
2.3nm,0.5s
USRK Ussuriysk Ar. 72.07 333 P **P 09 33 40.8 +1.3**
5.1nm,0.9s,baz=133,slow=7.2,SNR=5.9
MAW Mawson 77.23 202 P **P 09 34 08.8 -0.3**
4.9nm,0.8s,baz=141,slow=6.7,SNR=5.2
CHTO Chiang Mai 78.11 295 *e*P **P 09 34 16.7 +1.7**
41nm,1.8s
SYO Syowa Base 83.80 196⇑*e*X P 09 34 39.4 -5.0
YBH Yreka Blue Hor 88.64 44 P **P 09 35 09.4 +0.7**
2.1nm,0.8s,baz=213,slow=2.7,SNR=5.5
NVAR Mina Array Bea 90.14 49 P **P 09 35 16.6 +0.6**
1.9nm,0.8s,baz=223,slow=7.8,SNR=4.1
COLA College 91.19 17 *e*P **P 09 35 21.0 +1.1**
1.2nm,0.6s
ILAR Eielson Array 91.38 18 P **P 09 35 20.6 -0.3**
0.7nm,0.7s,baz=240,slow=6.2,SNR=3.3
PDAR Pinedale Array 97.95 47 P **P 09 35 51.3 -0.5**
0.3nm,0.6s,baz=180,slow=2.3,SNR=3.2
YKA Yellowknife Ar 101.92 28 P **Pdif 09 36 09.5 +0.9**
0.1nm,0.6s,baz=261,slow=4.6,SNR=4.4
GERES GERESS Array B 144.78 330 PKP PKPbc 09 41 51.8 +0.4
1.1nm,0.6s,baz=57,slow=4.9,SNR=5.4
TORD Torodi Ar. Bea 165.31 244 PKP **PKPdf 09 42 20.6 -0.1**
1.5nm,1.0s,baz=224,slow=1.3,SNR=4.6
TORD PKPab **PKPab 09 43 16.9 -1.4**
1.1nm,1.0s,baz=114,slow=6.2,SNR=3.8

*IDC **10** 09:23:32.3±0.8,20°.38S×168°.23E, h0km, mb4.5/12, mb1 4.6/14, mb1mx4.4/40, mbtmp4.5/14, ML4.0/1, Error ellipse: s-maj=26.3km s-min=16.5km az=140.0*
*NEIC **10** 09:23:33.9±0.4,20°.42S×168°.29E, h10km, mb5.0/7, Error ellipse: s-maj=12.1km s-min=8.2km az=148.0*
*ISCJB **10** 09:23:35.0±0.3,20°.39S±0°.07×168°.20E±0°.07, h26km, mb4.7/18, Error ellipse: s-maj=11.6km s-min=6.5km az=138.3*
ISC 10 09:23:36.4±0.5,20°.40S±0°.08×168°.23E±0°.09, h26km, n40, σ0§92/42, mb4.7/18, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.35**	**225**			Pn	**Pn**	**09 24 12.0**	**-1.5**
DZM	baz=53,slow=19,SNR=2.0					Sn	**Sn**	**09 24 41.8**	**+0.2**
FUNA	**Funafuti**	**15.87**	**44**	*e*Pn			**Pn**	**09 27 18.2**	**+0.1**
URZ	**Urewera**	**19.39**	**159**	P			**Pn**	**09 28 01.1**	**-0.6**
	0.4nm,0.3s,baz=321,slow=6.5,SNR=4.4								
URZ	**Urewera**	**19.39**	**159**	*e*P			**Pn**	**09 28 04.4**	**+2.7**
CTA	**Charters Tower**	**20.62**	**267**	P			**P**	**09 28 15.4**	**+1.5**
	7.7nm,1.0s,baz=77,slow=13,SNR=4.6								
CTAO	**Charters Tower**	**20.62**	**267**	*e*P			Pn	09 28 16.1	-0.2
	540nm,1.4s								
SNZO	**South Karori**	**21.56**	**167**	*e*P			**P**	**09 28 23.2**	**-0.7**
	86nm,1.2s								
PMG	**Port Moresby**	**23.07**	**295**	*e*P			**P**	**09 28 41.5**	**+1.3**
STKA	**Stephens Creek**	**26.43**	**239**	P			**P**	**09 29 12.1**	**+0.9**
	9.6nm,0.9s,baz=60,slow=10,SNR=7.0								
WRA	**Warramunga Arr**	**31.78**	**265**	P			**P**	**09 29 57.4**	**-1.5**
	1.3nm,0.9s,baz=96,slow=8.5,SNR=5.1								
ASAR	**Alice Springs**	**31.94**	**258**	P			**P**	**09 30 00.1**	**-0.2**
	13nm,0.7s,baz=87,slow=9.0,SNR=9.1								
FITZ	**Fitzroy Crossi**	**40.19**	**266**	P			**P**	**09 31 11.0**	**+0.1**
	7.5nm,0.8s,baz=138,slow=8.3,SNR=3.9								
FITZ	**Fitzroy Crossi**	**40.19**	**266**	*e*P			**P**	**09 31 11.2**	**+0.3**
MBWA	**Marble Bar**	**45.20**	**260**	*e*P			**P**	**09 31 52.0**	**+0.4**
KAPI	**Kappang**	**49.49**	**281**	P			**P**	**09 32 24.6**	**-0.5**
	4.1nm,0.3s,baz=106,slow=6.1,SNR=6.8								
KKM	**Kota Kinabalu**	**57.45**	**292**	*e*P			**P**	**09 33 24.1**	**+0.4**
	3.3nm,0.3s								
SBA	**Scott Base**	**57.50**	**180**	*e*P			**P**	**09 33 24.6**	**+1.6**
KSM	**Kuching**	**60.71**	**284**	*e*P			**P**	**09 33 46.6**	**+0.5**
	5.0nm,0.5s								
USRK	**Ussuriysk Ar.**	**72.33**	**333**	P			**P**	**09 35 00.1**	**+0.3**
	4.2nm,0.9s,baz=130,slow=4.1,SNR=4.7								
PETK	**Petropavlovsk-**	**73.77**	**353**	P			**P**	**09 35 08.2**	**+0.1**
	3.9nm,0.8s,baz=116,slow=8.2,SNR=3.4								
MAW	**Mawson**	**77.01**	**202**	P			**P**	**09 35 26.4**	**-0.2**
	6.0nm,0.8s,baz=87,slow=5.1,SNR=4.9								
SNAA	**Sanae**	**87.97**	**183**	*e*P			**P**	**09 36 23.2**	**-0.7**
	184nm,0.8s								
N02D	**Trinity Center**	**88.43**	**45**	P			**P**	**09 36 26.8**	**+0.3**
	baz=241								
PMR	**Palmer**	**88.53**	**19**	*e*P			**P**	**09 36 25.9**	**-0.3**
	1.5nm,0.6s								
M02C	**Callahan**	**88.53**	**45**	P			**P**	**09 36 27.9**	**+0.9**
	baz=241								
YBH	**Yreka Blue Hor**	**88.79**	**44**	P			**P**	**09 36 28.2**	**0.0**
	3.4nm,0.8s,baz=270,slow=7.0,SNR=5.7								
HUMO	**Hull Mountain**	**89.05**	**44**	*e*P			**P**	**09 36 29.8**	**+0.5**
	52nm,1.2s								
M04C	**Macdoel**	**89.39**	**45**	P			**P**	**09 36 31.3**	**+0.3**
	baz=242								
MPMC	**Manual Prospec**	**89.84**	**51**	P			**P**	**09 36 33.6**	**+0.2**
	baz=244								
NVAR	**Mina Array Bea**	**90.28**	**49**	P			**P**	**09 36 35.5**	**+0.1**
	2.8nm,0.7s,baz=227,slow=8.6,SNR=9.5								
GRAC	**Grapevine Rang**	**90.33**	**50**	P			**P**	**09 36 35.6**	**+0.1**
	baz=244								
MOD	**Modoc Plateau**	**90.46**	**45**	*e*P			**P**	**09 36 36.0**	**0.0**
	7.2nm,1.1s								
FURC	**Furnace Creek,**	**90.47**	**51**	P			**P**	**09 36 36.4**	**+0.4**
	baz=245								
J05D	**Fort Rock, OR**	**90.49**	**44**	P			**P**	**09 36 36.8**	**+0.7**
	baz=242								
TPNV	**Topopah Spring**	**91.12**	**51**	P			**P**	**09 36 39.7**	**+0.4**
	baz=245								
ILAR	**Eielson Array**	**91.62**	**18**	P			**P**	**09 36 38.8**	**-1.9**
	0.6nm,0.7s,baz=231,slow=6.0,SNR=3.0								
YKA	**Yellowknife Ar**	**102.13**	**28**	P			**Pdif**	**09 37 28.8**	**+0.5**
	0.3nm,0.6s,baz=255,slow=4.5,SNR=6.7								
GERES	**GERESS Array B**	**145.04**	**330**	PKPbc			**PKPab**	**09 43 11.2**	**+0.3**
	1.1nm,0.6s,baz=8.1,slow=2.1,SNR=4.4								
TUE	**Stuetta**	**148.78**	**331**	*e*PKPbc			**PKPbc**	**09 43 20.2**	**-1.6**
TUE				*e*PKPab			**PKiKP**	**09 43 23.3**	**0.0**
TORD	**Torodi Ar. Bea**	**165.23**	**243**	PKP			**PKPdf**	**09 43 39.3**	**-0.1**
	1.9nm,1.0s,baz=96,slow=4.3,SNR=5.8								
TORD				PKPab			**PKPab**	**09 44 35.1**	**-1.7**
	2.6nm,1.3s,baz=145,slow=5.3,SNR=2.8								

*IDC **10** 09:25:01.4±1.0,20°.19S×167°.12E, h0km, mb4.4/7, mb1 4.6/8, mb1mx4.2/42, mbtmp4.4/8, ML3.8/1, MS5.5/1, Ms1 5.5/1, ms1mx4.3/37, Error ellipse: s-maj=30.0km s-min=19.4km az=120.0*
*NEIC **10** 09:25:03.1±0.8,20°.22S×167°.14E, h10km, mb4.4/2, Error ellipse: s-maj=18.8km s-min=14.9km az=86.0*
*ISCJB **10** 09:25:04.6±0.7,20°.12S±0°.07×167°.1E±0°.1, h33km, mb4.3/9, MS5.5/1, Error ellipse: s-maj=17.4km s-min=9.3km az=9.1*
ISC 10 09:25:06.5±0.8,20°.18S±0°.08×167°.1E±0°.1, h35km, n15, σ1§70/15, mb4.2/9, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**1.98**	**198**			Pn	**Pn**	**09 25 34.7**	**-3.0**
DZM	baz=120,slow=22,SNR=2.0					Sn	**Sn**	**09 26 02.8**	**+1.4**
HNR	**Honiara**	**12.73**	**326**	*e*Pn			**Pn**	**09 28 03.2**	**-1.9**
URZ	**Urewera**	**19.99**	**156**	P			**P**	**09 29 35.5**	**-0.5**
	0.3nm,0.3s,baz=27,slow=6.3,SNR=4.2								
STKA	**Stephens Creek**	**25.65**	**238**	P			**P**	**09 30 33.8**	**+0.7**
	5.0nm,0.8s,baz=51,slow=12,SNR=2.6								
WRA	**Warramunga Arr**	**30.76**	**265**	P			**P**	**09 31 17.6**	**-1.2**
	2.0nm,0.8s,baz=91,slow=8.9,SNR=2.5								
ASAR	**Alice Springs**	**30.96**	**257**	P			**P**	**09 31 22.2**	**+1.6**
	8.9nm,0.8s,baz=84,slow=9.0,SNR=4.2								
FITZ	**Fitzroy Crossi**	**39.16**	**266**	*e*P			**P**	**09 32 33.7**	**+2.4**
	2.7nm,0.6s								
GUMO	**Guam**	**40.06**	**325**	LR			LR	09 48 21.4	
	comp=Z,7μm,19.4s,baz=61,slow=35								
USRK	**Ussuriysk Ar.**	**71.68**	**334**	P			**P**	**09 36 23.1**	**-1.5**
	2.1nm,0.8s,baz=138,slow=9.0,SNR=2.8								
CHTO	**Chiang Mai**	**77.23**	**296**	*e*P			**P**	**09 36 58.1**	**+0.5**
	1.7nm,0.3s								
YBH	**Yreka Blue Hor**	**89.37**	**45**	P			**P**	**09 37 60.0**	**+0.3**
	2.2nm,0.9s,baz=303,slow=5.1,SNR=4.1								
YBH	**Yreka Blue Hor**	**89.37**	**45**	P			**P**	**09 38 00.0**	**+0.3**
NVAR	**Mina Array Bea**	**90.93**	**49**	P			**P**	**09 38 07.0**	**-0.1**
	1.8nm,0.8s,baz=226,slow=8.8,SNR=6.2								
ILAR	**Eielson Array**	**91.73**	**18**	P			**P**	**09 38 11.8**	**+1.8**
	0.6nm,0.8s,baz=225,slow=4.9,SNR=3.5								
YKA	**Yellowknife Ar**	**102.42**	**28**	P			**Pdif**	**09 38 60.0**	**+1.6**
	0.3nm,0.8s,baz=254,slow=4.8,SNR=4.1								

*CSEM **10** 09:27:26.1,39°.67N×29°.46E, h13km, MD2.6*
DDA 10 09:27:26.1,39°.67N×29°.46E, h13km, Md2.6, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.58**	**178**			P	Pg	09 27 37.2	-0.4
GDZ						S	Sb	09 27 45.9	-0.6
GDZ	**Gediz**	**0.58**	**178**		*i*	P	Pg	09 27 37.1	-0.4
GDZ					*i*	S	Sg	09 27 45.9	+0.6
DURS	**Dursunbey**	**0.77**	**265**			P	Pg	09 27 40.4	-0.6
DURS						S	Sb	09 27 52.5	+0.8
DURS	**Dursunbey**	**0.77**	**265**		*i*	P	Pg	09 27 40.4	-0.6
DURS					*i*	S	Sb	09 27 52.5	+0.8
BORA	**Eskisehir**	**0.79**	**74**			P	Pg	09 27 40.7	-0.8
BORA						S	Sb	09 27 53.0	+0.5
BORA	**Eskisehir**	**0.79**	**74**		*i*	P	Pg	09 27 40.7	-0.8
BORA					*i*	S	Sb	09 27 53.0	+0.5
ESKT	**Eskisehir**	**1.08**	**98**		*i*	P	Pn	09 27 47.9	+0.8
ESKT					*i*	S	Sn	09 28 06.0	+4.0
SEYT	**Eskypehyr**	**1.08**	**98**			P	Pn	09 27 47.9	+0.8
SEYT						S	Sn	09 28 06.1	+4.0
AKAS	**Kas**	**3.44**	**178**			P	Pn	09 28 16.9	-2.6
AKAS	**Kas**	**3.44**	**178**		*i*	P	Pn	09 28 16.9	-2.6
AKAS					*i*	S	Sn	09 28 43.6	-16

IDC 10 09:27:33.9±2.0,19°.69S×167°.93E, h0km, mb4.0/4, mb1 4.2/5, mb1mx3.8/48, mbtmp4.0/5, ML3.3/1, Error ellipse: s-maj=62.7km s-min=32.5km az=141.0, Vanuatu Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.75**	**210**			Pn	Pn	09 28 20.0	+0.7
DZM	5.2nm,0.3s,baz=308,slow=23,SNR=2.8					Sn	Sn	09 28 41.9	-11
STKA	**Stephens Creek**	**26.56**	**238**	P			P	09 33 12.8	-0.9
	3.0nm,0.9s,baz=87,slow=17,SNR=2.8								
WRA	**Warramunga Arr**	**31.57**	**264**	P			P	09 33 58.2	-0.2
	0.5nm,0.5s,baz=94,slow=8.5,SNR=3.7								
ASAR	**Alice Springs**	**31.82**	**257**	P			P	09 34 01.0	+0.4
	3.3nm,0.7s,baz=88,slow=9.2,SNR=6.1								
NVAR	**Mina Array Bea**	**90.03**	**49**	P			P	09 40 35.9	0.0
	0.5nm,0.9s,baz=224,slow=7.6,SNR=2.0								

*CSEM **10** 09:27:45.8,37°.30N×28°.30E, h11km, MD2.6*
*ISK **10** 09:27:45.8,37°.30N×28°.30E, h11km, MD2.6*
*ISCJB **10** 09:27:46.9±0.8,37°.20N±0°.04×28°.15E±0°.06, h11km±15km, Error ellipse: s-maj=9.3km s-min=5.3km az=137.3*
ISC 10 09:27:46.7±1.0,37°.28N±0°.05×28°.28E±0°.05, h9km±9km, n15, σ0§94/21, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.14**	**178**			PG	**Pg**	**09 27 49.9**	**0.0**
YER						*e*SG	**Sg**	**09 27 52.6**	**+0.5**
YER	**Yerkesik**	**0.14**	**178**		*i*	Pg	**Pg**	**09 27 49.9**	**0.0**
YER						*e*Sg	**Sg**	**09 27 52.6**	**+0.5**
TURN	**Turunc**	**0.48**	**147**		*i*	P	**Pb**	**09 27 56.7**	**-0.6**
AYDN	**Tasoluk**	**0.50**	**321**	P			**Pb**	**09 27 57.3**	**-0.3**
AYDN	**Tasoluk**	**0.50**	**321**		*i*	P	**Pb**	**09 27 57.3**	**-0.3**
AYDN					*i*	S	**Sb**	**09 28 04.4**	**-0.6**
DALY	**Dalyan (Mu¨la**	**0.55**	**147**	*e*PG			**Pb**	**09 27 57.4**	**-1.1**
DALY				*e*SG			**Sb**	**09 28 06.2**	**-0.2**
DALY	**Dalyan (Mu¨la**	**0.55**	**147**	*e*Pg			**Pb**	**09 27 57.4**	**-1.1**
DALY				*e*Sg			**Sb**	**09 28 06.2**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**0.73**	**335**	*e*PG			**Pb**	**09 28 00.3**	**-1.4**
AYDB	**Zeytinkoy-Aydi**	**0.73**	**335**	*e*Pg			**Pb**	**09 28 00.3**	**-1.4**
DNZL	**Cakiroluk**	**0.74**	**56**	P			**Pn**	**09 28 04.3**	**+0.8**
DNZL	**Cakiroluk**	**0.74**	**56**		*i*	P	**Pn**	**09 28 04.3**	**+0.8**
DNZL					*i*	S	**Sn**	**09 28 16.7**	**+1.8**
BODT	**Bodrum**	**0.80**	**255**	*e*PG			**Pb**	**09 28 02.1**	**-0.7**
BODT	**Bodrum**	**0.80**	**255**	*e*Pg			**Pb**	**09 28 02.1**	**-0.7**
FETY	**Fethiye**	**0.91**	**135**	*e*PG			**Pg**	**09 28 03.2**	**-0.9**
FETY	**Fethiye**	**0.91**	**135**	*e*Pg			**Pg**	**09 28 03.3**	**-0.9**

IDC 10 09:28:33.4±1.6,8°.01S×67°.91E, h0km, mb4.0/5, mb1 4.3/5, mb1mx3.7/60, mbtmp4.0/5, Error ellipse: s-maj=55.0km s-min=30.1km az=49.0, Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
H08N3	**Diego Garcia H**	**3.48**	**62**			T	T	09 32 52.2	
	baz=238,slow=75,SNR=171								
H08N2	**Diego Garcia H**	**3.50**	**62**			T	T	09 32 59.4	
	baz=238,slow=75,SNR=252								
H08N1	**Diego Garcia H**	**3.50**	**62**			T	T	09 32 59.8	
	baz=238,slow=75,SNR=262								
H08S1	**Diego Garcia H**	**4.54**	**86**			Pn	Pn	09 29 38.6	-4.6
H08S3	**Diego Garcia H**	**4.55**	**86**			Pn	Pn	09 29 38.6	-4.8
H08S2	**Diego Garcia H**	**4.56**	**86**			Pn	Pn	09 29 38.6	-4.8
CMAR	**Chiang Mai Arr**	**40.37**	**49**	P			P	09 36 13.3	0.0
	0.7nm,0.3s,baz=236,slow=9.7,SNR=2.9								
MKAR	**Makanchi Array**	**56.05**	**12**	P			P	09 38 13.7	-0.3
	0.2nm,0.3s,baz=198,slow=7.5,SNR=3.8								
ASAR	**Alice Springs**	**64.87**	**112**	P			P	09 39 14.8	-0.2
	1.4nm,0.7s,baz=279,slow=6.7,SNR=6.9								
WRA	**Warramunga Arr**	**65.20**	**108**	P			P	09 39 17.2	0.0
	1.9nm,0.8s,baz=278,slow=6.5,SNR=6.1								
ARCES	**ARCESS Array B**	**82.67**	**346**	P			P	09 40 58.0	-0.4
	3.8nm,1.0s,baz=121,slow=3.5,SNR=5.1								
YKA	**Yellowknife Ar**	**125.59**	**1**	PKP			PKPdf	09 47 35.8	-0.6
	0.2nm,0.6s,baz=18,slow=0.8,SNR=2.5								
PDAR	**Pinedale Array**	**145.31**	**357**	PKPbc			PKPbc	09 48 13.4	-0.1
	0.4nm,0.7s,baz=46,slow=2.6,SNR=3.8								
NVAR	**Mina Array Bea**	**149.20**	**10**	PKPbc			PKPbc	09 48 24.7	0.0
	0.3nm,0.5s,baz=264,slow=0.9,SNR=3.1								

IDC 10 09:29:18.0±1.8,20°.20S×168°.23E, h0km, mb4.0/4, mb1 4.3/5, mb1mx3.8/48, mbtmp4.0/5, Error ellipse: s-maj=61.5km s-min=25.6km az=146.0, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.50**	**222**			Pn	Pn	09 29 59.4	-0.6
DZM	baz=61,slow=19,SNR=2.8					Sn	Sn	09 30 31.5	+0.2
CTA	**Charters Tower**	**20.63**	**267**	P			P	09 33 59.2	0.0
	14nm,0.3s,baz=342,slow=20,SNR=4.3								
WRA	**Warramunga Arr**	**31.80**	**265**	P			P	09 35 44.1	-0.4
	7.5nm,0.9s,baz=72,slow=6.4,SNR=6.2								
ASAR	**Alice Springs**	**31.98**	**257**	P			P	09 35 46.8	+0.6
	0.4nm,0.4s,baz=90,slow=8.5,SNR=4.7								
NVAR	**Mina Array Bea**	**90.15**	**49**	P			P	09 42 20.5	-0.1
	2.9nm,0.7s,baz=86,slow=8.8,SNR=9.2								
	0.6nm,0.8s,baz=243,slow=6.0,SNR=2.6								

*IDC **10** 09:30:16.8±0.9,20°.33S×168°.31E, h0km, mb4.4/13, mb1 4.6/14, mb1mx4.3/49, mbtmp4.4/14, ML4.1/1, Error ellipse: s-maj=26.5km s-min=16.3km az=136.0*
*NEIC **10** 09:30:18.7±0.6,20°.29S×168°.30E, h10km, mb4.7/5, Error ellipse: s-maj=17.0km s-min=11.6km az=143.0*
*ISCJB **10** 09:30:19.5±0.7,20°.27S±0°.09×168°.2E±0°.1, h26km, mb4.4/16, Error ellipse: s-maj=18.0km s-min=8.7km az=36.5*
ISC 10 09:30:20.4±0.8,20°.4S±0°.1×168°.4E±0°.1, h26km, n24, σ1§42/26, mb4.5/16, 1D, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.44**	**227**			Pn	**Pn**	**09 30 58.0**	**-0.7**
DZM	46nm,0.3s,baz=18,slow=19,SNR=4.7					Sn	**Sn**	**09 31 28.0**	**+0.3**
CTA	**Charters Tower**	**20.75**	**267**	P			**P**	**09 35 00.3**	**+0.8**
	216nm,0.3s,baz=118,slow=21,SNR=12								
CTAO	**Charters Tower**	**20.75**	**267**	*e*P			**P**	**09 35 00.6**	**+1.1**
	17nm,0.9s,baz=96,slow=12,SNR=7.9								
	68nm,0.9s								
STKA	**Stephens Creek**	**26.54**	**239**	P			**P**	**09 35 57.4**	**+1.2**
	10nm,0.6s,baz=71,slow=11,SNR=22								
BBOO	**Buckleboo**	**31.29**	**240**	*e*P			**P**	**09 36 39.7**	**+1.2**
	11nm,0.7s								
WRAB	**Tennant Creek**	**31.91**	**265**	*e*P			**P**	**09 36 42.9**	**-1.2**
	2.7nm,0.4s								
WRA	**Warramunga Arr**	**31.91**	**265**	P			**P**	**09 36 42.4**	**-1.7**
	9.1nm,0.9s,baz=92,slow=8.5,SNR=21								
ASAR	**Alice Springs**	**32.07**	**258**	P			**P**	**09 36 44.9**	**-0.6**
	14nm,0.7s,baz=87,slow=9.0,SNR=23								
FITZ	**Fitzroy Crossi**	**40.33**	**266**	P			**P**	**09 37 56.1**	**0.0**
	14nm,0.8s,baz=127,slow=9.4,SNR=11								
FITZ	**Fitzroy Crossi**	**40.33**	**266**	*e*P			**P**	**09 37 56.2**	**+0.2**
KAPI	**Kappang**	**49.62**	**281**	P			**P**	**09 39 10.3**	**+0.2**
	8.8nm,0.3s,baz=165,slow=5.1,SNR=5.2								
VNDA	**Vanda**	**57.24**	**182**	P			**P**	**09 40 06.2**	**+1.1**
	1.4nm,0.7s,baz=12,slow=5.3,SNR=2.9								
SBA	**Scott Base**	**57.49**	**180**	*e*P			**P**	**09 40 10.5**	**+3.7**
	4.4nm,0.7s								
KSRS	**Korea Array**	**69.02**	**326**	P			**P**	**09 41 23.7**	**0.0**
	0.7nm,0.8s,baz=142,slow=6.0,SNR=3.2								
KSAR	**Wonju Array Be**	**69.03**	**326**	P			**P**	**09 41 23.7**	**-0.1**
USRK	**Ussuriysk Ar.**	**72.41**	**333**	P			**P**	**09 41 43.6**	**-0.7**
	4.0nm,0.8s,baz=161,slow=4.8,SNR=5.9								
KLR	**Kul'dur**	**76.61**	**336**	P			**P**	**09 42 09.1**	**+0.5**
	1.6nm,0.8s,baz=31,slow=1.0,SNR=4.1								
CHTO	**Chiang Mai**	**78.40**	**295**	*e*P			**P**	**09 42 20.4**	**+1.1**
	4.8nm,1.0s								
SYO	**Syowa Base**	**83.58**	**196**‖	*e*X			**P**	**09 42 42.0**	**-4.0**
YBH	**Yreka Blue Hor**	**88.71**	**44**	P			**P**	**09 43 12.6**	**+0.8**
	1.7nm,0.7s,baz=207,slow=6.8,SNR=2.5								
NVAR	**Mina Array Bea**	**90.19**	**49**	P			**P**	**09 43 19.8**	**+0.9**
	1.1nm,0.8s,baz=223,slow=8.1,SNR=5.1								
ILAR	**Eielson Array**	**91.59**	**18**	P			**P**	**09 43 23.6**	**-0.9**
	0.4nm,0.6s,baz=258,slow=4.9,SNR=4.8								
GERES	**GERESS Array B**	**145.12**	**330**	PKPbc			**PKPdf**	**09 49 55.6**	**0.0**
	0.8nm,0.6s,baz=50,slow=2.1,SNR=4.0								
TORD	**Torodi Ar. Bea**	**165.34**	**243**	PKP			**PKPdf**	**09 50 23.0**	**-0.5**
	0.9nm,0.9s,baz=192,slow=1.8,SNR=3.6								
TORD				PKPab			**PKPab**	**09 51 20.3**	**-1.0**
	1.5nm,1.0s,baz=109,slow=4.6,SNR=4.4								

*ISCJB **10** 09:35:13.2±0.6,7°.9S±0°.1×68°.05E±0°.06, h15km, mb4.2/12, Error ellipse: s-maj=17.3km s-min=9.2km az=179.5*
*NEIC **10** 09:35:15.2±0.7,7°.85S×67°.94E, h10km, mb4.5/3, Error ellipse: s-maj=23.1km s-min=16.0km az=170.0*
*IDC **10** 09:35:16.9±1.3,7°.54S×67°.32E, h0km, mb4.0/9, mb1 4.1/9, mb1mx3.8/53, mbtmp4.0/9, Error ellipse: s-maj=44.7km s-min=20.3km az=141.0*
ISC 10 09:35:15.9±0.6,7°.9S±0°.1×68°.0E±0°.1, h15km, n27, σ1§61/23, mb4.3/12, 1C, Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
H08N3	**Diego Garcia H**	**3.37**	**63**			T	T	09 39 39.5	
	baz=244,slow=76,SNR=422								
H08N2	**Diego Garcia H**	**3.38**	**63**			T	T	09 39 40.5	
	baz=244,slow=76,SNR=553								
H08N1	**Diego Garcia H**	**3.39**	**63**			T	T	09 39 40.4	
	baz=244,slow=76,SNR=448								
DGAR	**Diego Garcia**	**4.46**	**84**	*e*Pn			**Pn**	**09 36 21.1**	**-1.9**
H08S1	**Diego Garcia H**	**4.46**	**87**	Pn			**Pn**	**09 36 20.5**	**-2.3**
	baz=289,slow=16,SNR=45								
H08S1						T	T	09 41 06.1	
	baz=277,slow=75,SNR=20								
H08S3	**Diego Garcia H**	**4.47**	**87**	Pn			**Pn**	**09 36 21.0**	**-1.9**
	baz=289,slow=16,SNR=20								
H08S3						T	T	09 41 34.5	
	baz=277,slow=75,SNR=15								
H08S2	**Diego Garcia H**	**4.48**	**87**	Pn			**Pn**	**09 36 20.9**	**-2.1**
	baz=289,slow=16,SNR=50								
H08S2						T	T	09 41 11.7	
	baz=277,slow=75,SNR=18								
LSZ	**Lusaka**	**39.61**	**256**	P			**P**	**09 42 46.6**	**-0.8**
	6.3nm,0.8s,baz=89,slow=6.9,SNR=8.7								
LSZ	**Lusaka**	**39.61**	**256**	*e*P			**P**	**09 42 46.8**	**-0.6**
	6.3nm,0.9s								
CMAR	**Chiang Mai Arr**	**40.24**	**49**	P			P	09 42 57.8	+

RC01	Rabbit Creek A	87.92	19	eP	P		09 50 20.9	-1.4
	5.4nm,0.6s							
SNAA	Sanae	88.00	183	eP	P		09 50 22.5	-0.3
	196nm,0.9s							
CMB	Columbia Colle	88.62	48	eP	P		09 50 26.6	+0.4
	47nm,1.2s							
HUMO	Hull Mountain	89.03	44	eP	P		09 50 28.0	0.0
	37nm,1.0s							
NVAR	Mina Array Bea	90.26	49	P	P		09 50 34.0	-0.2
	4.2nm,0.8s,baz=227,slow=7.1,SNR=20							
ILAR	Eielson Array	91.59	18	P	P		09 50 37.7	-1.6
	0.7nm,0.7s,baz=235,slow=5.1,SNR=5.6							
DLBC	Dease Lake	93.48	28	P	P		09 50 48.4	+0.1
	2.5nm,1.0s,baz=18,slow=3.2,SNR=2.6							
MFID	Camas Ranch	94.07	45	eP	P		09 50 51.9	+0.4
	1.9nm,0.8s							
PDAR	Pinedale Array	98.08	47	P	Pdif		09 51 10.3	+0.4
	0.3nm,0.7s,baz=202,slow=1.0,SNR=3.3							
YKA	Yellowknife Ar	102.11	28	P	Pdif		09 51 26.3	-0.8
	0.3nm,0.7s,baz=254,slow=4.7,SNR=4.3							
BRTR	Keskin Array B	136.73	307	PKP	PKPdf		09 56 57.5	+1.8
	0.2nm,0.4s,baz=20,slow=4.6,SNR=3.1							
GERES	GERESS Array B	145.01	330	PKP	PKPdf		09 57 10.0	-0.2
	1.2nm,0.7s,baz=57,slow=3.6,SNR=7.8							
TORD	Torodi Ar. Bea	165.24	243	PKP	PKPdf		09 57 37.7	-0.4
	1.5nm,1.0s,baz=151,slow=1.8,SNR=5.3							
TORD				PKPab	PKPab		09 58 36.0	+0.4
	1.4nm,1.1s,baz=123,slow=5.3,SNR=4.3							

*IDC **10** 09:39:20.4±1.4,20°.22S×168°.17E,h0km,mb4.2/8, mb1 4.4/9,mb1mx4.1/45,mbtmp4.2/9,Error ellipse: s-maj=51.2km s-min=20.5km az=143.0*
*NEIC **10** 09:39:21.6±0.9,20°.23S×168°.23E,h10km,mb4.5/4,Error ellipse: s-maj=25.4km s-min=11.5km az=137.0*
*ISCJB **10** 09:39:22.5±1.0,20°.3S±0°.1×168°.2E±0°.2,h27km,mb4.3/11, Error ellipse: s-maj=26.7km s-min=8.9km az=37.5*

ISC 10 09:39:24.0±1.1,20°.3S±0°.2×168°.2E±0°.2,h27km,n16, σ1§26/16,mb4.4/11,Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM				Sn			
DZM	**Mont Dzumac**	**2.39**	**223**	Pn	**Pn**	**09 40 00.9**	**-0.6**
	baz=145,slow=19,SNR=4.3						
DZM				Sn	**Sn**	**09 40 28.3**	**-1.5**
	136nm,0.3s,baz=343,slow=22,SNR=9.2						
CTA	**Charters Tower**	**20.60**	**267**	P	**P**	**09 44 02.5**	**+1.2**
	4.8nm,0.8s,baz=88,slow=18,SNR=2.7						
TARA	**Tarawa**	**22.04**	**13**	eP	**P**	**09 44 15.0**	**-1.6**
PMG	**Port Moresby**	**23.03**	**295**	eP	**P**	**09 44 25.6**	**-1.6**
	1.3nm,0.3s						
STKA	**Stephens Creek**	**26.44**	**239**	P	**P**	**09 45 00.5**	**+1.7**
	5.7nm,0.9s,baz=68,slow=7.9,SNR=5.8						
WRA	**Warramunga Arr**	**31.77**	**265**	P	**P**	**09 45 45.7**	**-0.6**
	4.6nm,0.8s,baz=91,slow=8.4,SNR=5.9						
ASAR	**Alice Springs**	**31.93**	**258**	P	**P**	**09 45 48.0**	**+0.3**
	6.5nm,0.7s,baz=86,slow=8.8,SNR=8.8						
FITZ	**Fitzroy Crossi**	**40.18**	**266**	P	**P**	**09 46 57.5**	**-0.7**
	4.3nm,0.7s,baz=80,slow=6.1,SNR=3.4						
FITZ	**Fitzroy Crossi**	**40.18**	**266**	eP	**P**	**09 46 59.1**	**+0.9**
USRK	**Ussuriysk Ar.**	**72.27**	**334**	P	**P**	**09 50 46.9**	**+0.1**
	3.9nm,0.9s,baz=162,slow=2.9,SNR=5.5						
CHTO	**Chiang Mai**	**78.22**	**295**	eP	**P**	**09 51 23.5**	**+1.8**
	2.4nm,0.6s						
PMR	**Palmer**	**88.47**	**19**	eP	**P**	**09 52 11.8**	**-1.6**
	3.0nm,0.9s						
COR	**Corvallis**	**89.76**	**42**	eP	P	09 52 25.7	+5.8
	23nm,1.1s						
NVAR	**Mina Array Bea**	**90.25**	**49**	P	**P**	**09 52 23.1**	**+0.5**
	1.1nm,1.0s,baz=213,slow=8.2,SNR=3.8						
ILAR	**Eielson Array**	**91.56**	**18**	P	**P**	**09 52 28.0**	**+0.2**
	0.3nm,0.7s,baz=234,slow=4.3,SNR=3.3						
GERES	**GERESS Array B**	**144.97**	**330**	PKP	**PKPdf**	**09 58 59.1**	**+0.3**
	0.4nm,0.2s,baz=64,slow=4.6,SNR=3.9						

*IDC **10** 09:41:12.6±1.6,20°.48S×168°.45E,h0km,mb4.1/7, mb1 4.3/8,mb1mx4.0/40,mbtmp4.1/8,Error ellipse: s-maj=55.8km s-min=20.1km az=141.0*
*NEIC **10** 09:41:13.7±0.5,20°.59S×168°.54E,h10km,mb4.4/3,Error ellipse: s-maj=19.1km s-min=10.6km az=143.0*

ISC 10 09:41:16.2±0.8,20°.6S±0°.1×168°.5E±0°.1,h26km,n14, σ0§75/15,mb4.4/10,Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.44**	**232**	Pn	**Pn**	**09 41 54.4**	**0.0**
	baz=99,slow=19,SNR=4.2						
DZM				Sn	**Sn**	**09 42 24.0**	**+0.5**
	34nm,0.3s,baz=136,slow=23,SNR=7.2						
CTA	**Charters Tower**	**20.88**	**267**	P	**P**	**09 45 57.0**	**+0.5**
	2.1nm,0.7s,baz=98,slow=17,SNR=2.4						
WRA	**Warramunga Arr**	**32.03**	**265**	P	**P**	**09 47 39.7**	**-1.1**
	0.5nm,0.6s,baz=93,slow=8.2,SNR=4.9						
ASAR	**Alice Springs**	**32.16**	**258**	P	**P**	**09 47 42.1**	**+0.1**
	3.6nm,0.8s,baz=83,slow=9.0,SNR=5.7						
SBA	**Scott Base**	**57.34**	**180**	eP	**P**	**09 51 00.1**	**-1.4**
	0.5nm,0.3s						
USRK	**Ussuriysk Ar.**	**72.60**	**333**	P	**P**	**09 52 40.3**	**-0.8**
	1.8nm,0.8s,baz=162,slow=7.5,SNR=4.6						
PETK	**Petropavlovsk-**	**73.96**	**353**	P	**P**	**09 52 49.4**	**+0.5**
	4.2nm,1.0s,baz=180,slow=5.3,SNR=3.1						
SNAA	**Sanae**	**87.81**	**183**	eP	**P**	**09 54 04.0**	**+1.2**
	64nm,0.7s						
PMR	**Palmer**	**88.60**	**19**	eP	**P**	**09 54 05.8**	**-0.5**
	1.1nm,0.6s						
HUMO	**Hull Mountain**	**88.99**	**43**	eP	**P**	**09 54 09.2**	**+0.5**
	22nm,1.0s						
NVAR	**Mina Array Bea**	**90.19**	**49**	P	**P**	**09 54 14.9**	**+0.2**
	1.9nm,0.8s,baz=228,slow=7.2,SNR=5.5						
ILAR	**Eielson Array**	**91.69**	**18**	P	**P**	**09 54 21.1**	**+0.4**
	0.8nm,0.9s,baz=218,slow=4.5,SNR=5.0						
GERES	**GERESS Array B**	**145.31**	**330**	PKPbc	**PKPbc**	**10 00 51.5**	**0.0**
	0.2nm,0.3s,baz=318,slow=1.3,SNR=3.7						
TORD	**Torodi Ar. Bea**	**165.39**	**242**	PKP	**PKPdf**	**10 01 19.5**	**+0.2**
	0.6nm,0.8s,baz=2.4,slow=3.5,SNR=2.9						

IDC 10 09:42:09.2±2.3,8°.37S×67°.90E,h0km,mb4.1/4,mb1 4.3/4, mb1mx3.7/47,mbtmp4.1/4,Error ellipse: s-maj=73.6km s-min=33.1km az=34.0,Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08N3	**Diego Garcia H**	**3.67**	**57**	T	T	09 46 27.8	
	baz=237,slow=76,SNR=125						
H08N2	**Diego Garcia H**	**3.69**	**57**	T	T	09 46 38.0	
	baz=237,slow=76,SNR=161						
H08N1	**Diego Garcia H**	**3.69**	**57**	T	T	09 46 34.9	
	baz=237,slow=76,SNR=131						
CMAR	**Chiang Mai Arr**	**40.61**	**49**	P	P	09 49 51.1	0.0
	0.7nm,0.3s,baz=225,slow=8.9,SNR=5.3						
BRTR	**Keskin Array B**	**57.40**	**329**	P	P	09 51 59.7	-0.1
	1.0nm,0.8s,baz=132,slow=8.5,SNR=5.7						
WRA	**Warramunga Arr**	**65.10**	**108**	P	P	09 52 52.4	0.0
	1.7nm,1.0s,baz=282,slow=6.8,SNR=5.6						
ARCES	**ARCESS Array B**	**83.01**	**346**	P	P	09 54 36.1	0.0
	4.4nm,0.9s,baz=121,slow=3.5,SNR=4.5						

IDC 10 09:45:56.2±2.0,19°.94S×167°.83E,h0km,mb3.8/4, mb1 4.0/5,mb1mx3.7/33,mbtmp3.8/5,ML3.5/1,Error ellipse: s-maj=56.2km s-min=28.7km az=133.0,Vanuatu Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.48**	**211**	Pn	Pn	09 46 38.5	+0.5
	9.3nm,0.3s,baz=90,slow=20,SNR=3.5						
DZM				Sn	Sn	09 47 09.2	+0.1
	27nm,0.3s,baz=62,slow=20,SNR=4.0						
STKA	**Stephens Creek**	**26.35**	**238**	P	P	09 51 33.9	-0.1
	3.2nm,0.7s,baz=73,slow=12,SNR=3.7						
WRA	**Warramunga Arr**	**31.45**	**264**	P	P	09 52 19.1	-0.5
	0.2nm,0.5s,baz=95,slow=8.4,SNR=4.5						
ASAR	**Alice Springs**	**31.67**	**257**	P	P	09 52 21.9	+0.3
	1.1nm,0.7s,baz=86,slow=8.3,SNR=18						
NVAR	**Mina Array Bea**	**90.26**	**49**	P	P	09 58 59.2	0.0
	0.2nm,0.4s,baz=224,slow=9.8,SNR=2.1						

*IDC **10** 09:48:11.9±1.0,20°.13S×168°.11E,h0km,mb4.2/7, mb1 4.4/9,mb1mx4.1/32,mbtmp4.2/9,ML3.7/2,Error ellipse: s-maj=31.8km s-min=22.3km az=145.0*
*NEIC **10** 09:48:13.6±0.7,20°.12S×168°.08E,h10km,mb4.6/2,Error ellipse: s-maj=16.5km s-min=13.5km az=142.0*
*ISCJB **10** 09:48:14.5±0.7,20°.19S±0°.10×168°.1E±0°.1,h27km, mb4.2/9,Error ellipse: s-maj=18.1km s-min=10.3km az=41.3*

ISC 10 09:48:16.1±0.9,20°.2S±0°.1×168°.1E±0°.1,h27km,n11, σ0§90/12,mb4.3/9,Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.41**	**219**	Pn	**Pn**	**09 48 52.9**	**-1.0**
	13nm,0.3s,baz=81,slow=19,SNR=2.3						
DZM				Sn	**Sn**	**09 49 22.4**	**-0.1**
	58nm,0.3s,baz=72,slow=19,SNR=6.5						
URZ	**Urewera**	**19.61**	**158**	P	**Pn**	**09 52 44.1**	**+0.2**
	0.3nm,0.3s,baz=346,slow=4.9,SNR=5.3						
STKA	**Stephens Creek**	**26.42**	**239**	P	**P**	**09 53 51.9**	**+1.2**
	4.5nm,0.8s,baz=44,slow=10,SNR=5.6						
WRAB	**Tennant Creek**	**31.66**	**265**	eP	**P**	**09 54 38.1**	**+0.6**
	12nm,1.4s						
WRA	**Warramunga Arr**	**31.67**	**265**	P	**P**	**09 54 37.1**	**-0.5**
	1.4nm,1.0s,baz=91,slow=8.4,SNR=7.3						
ASAR	**Alice Springs**	**31.85**	**257**	P	**P**	**09 54 39.5**	**+0.3**
	4.4nm,0.8s,baz=86,slow=8.9,SNR=12						
VNDA	**Vanda**	**57.43**	**182**	P	**P**	**09 58 01.2**	**-0.8**
	1.1nm,0.9s,baz=20,slow=5.5,SNR=3.4						
SBA	**Scott Base**	**57.69**	**180**	eP	**P**	**09 58 05.5**	**+1.6**
	4.3nm,0.8s						
NVAR	**Mina Array Bea**	**90.25**	**49**	P	**P**	**10 01 14.6**	**-0.2**
	1.5nm,0.8s,baz=227,slow=8.0,SNR=6.1						
ILAR	**Eielson Array**	**91.48**	**18**	P	**P**	**10 01 19.6**	**0.0**
	0.5nm,0.8s,baz=237,slow=5.0,SNR=3.6						
PDAR	**Pinedale Array**	**98.06**	**47**	P	**P**	**10 01 49.8**	**-0.8**
	1.2nm,1.1s,baz=297,slow=0.2,SNR=4.1						

IDC 10 09:48:35.3±1.8,20°.05S×168°.09E,h0km,mb4.3/5, mb1 4.5/5,mb1mx4.0/30,mbtmp4.3/5,Error ellipse: s-maj=100.8km s-min=26.1km az=155.0,Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**20.51**	**266**	P	Pn	09 53 17.2	-0.1
	6.0nm,0.8s,baz=78,slow=12,SNR=4.6						
STKA	**Stephens Creek**	**26.49**	**238**	P	P	09 54 15.0	+0.5
	4.2nm,0.6s,baz=74,slow=9.3,SNR=11						
WRA	**Warramunga Arr**	**31.68**	**264**	P	P	09 54 59.5	-1.3
	7.4nm,1.0s,baz=91,slow=8.4,SNR=7.6						
ASAR	**Alice Springs**	**31.88**	**257**	P	P	09 55 02.0	-0.6
	5.6nm,0.6s,baz=89,slow=8.9,SNR=13						
NVAR	**Mina Array Bea**	**90.15**	**49**	P	P	10 01 37.2	-0.7
	1.3nm,0.7s,baz=228,slow=8.0,SNR=5.7						
YKA	**Yellowknife Ar**	**101.89**	**28**	P	Pdif	10 02 31.4	+1.0
	0.1nm,0.5s,baz=250,slow=4.9,SNR=2.4						
GERES	**GERESS Array B**	**144.68**	**330**	PKP	PKPdf	10 08 14.5	+0.4
	0.7nm,0.7s,baz=20,slow=3.1,SNR=3.8						

*IDC **10** 09:49:10.3±1.4,20°.23S×168°.26E,h0km,mb4.2/9, mb1 4.4/10,mb1mx4.1/30,mbtmp4.2/10,ML4.1/1,Error ellipse: s-maj=43.3km s-min=19.4km az=136.0*
*ISCJB **10** 09:49:12.7±0.6,20°.31S±0°.09×168°.27E±0°.09,h27km, mb4.3/13,Error ellipse: s-maj=16.0km s-min=8.1km az=139.7*
*NEIC **10** 09:49:12.3±0.6,20°.20S×168°.23E,h10km,mb4.5/6,Error ellipse: s-maj=20.0km s-min=12.2km az=156.0*

ISC 10 09:49:14.6±0.6,20°.3S±0°.1×168°.27E±0°.08,h27km,n22, σ1§34/24,mb4.3/13,Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.45**	**224**	Pn	**Pn**	**09 49 51.9**	**-1.1**
	36nm,0.3s,baz=325,slow=19,SNR=2.6						
DZM				Sn	**Sn**	**09 50 20.3**	**-1.8**
	98nm,0.3s,baz=24,slow=20,SNR=5.7						
MSVF	**Nonsavu**	**9.59**	**76**	ePn	**Pn**	**09 51 32.3**	**+1.3**
MSVF				eSn	**Sn**	**09 53 15.9**	**-2.2**
CTA	**Charters Tower**	**20.67**	**267**	P	**P**	**09 53 52.1**	**-0.4**
	11nm,0.9s,baz=83,slow=11,SNR=5.3						
CTAO	**Charters Tower**	**20.67**	**267**	eP	**P**	**09 53 54.3**	**+1.8**
	55nm,0.8s						
STKA	**Stephens Creek**	**26.52**	**239**	P	**P**	**09 54 51.1**	**+1.1**
	7.8nm,0.7s,baz=64,slow=10,SNR=11						
WRA	**Warramunga Arr**	**31.83**	**265**	P	**P**	**09 55 36.1**	**-1.3**
	1.4nm,0.6s,baz=91,slow=8.6,SNR=6.5						
ASAR	**Alice Springs**	**32.00**	**258**	P	**P**	**09 55 38.5**	**-0.4**
	12nm,0.7s,baz=88,slow=9.0,SNR=11						
FITZ	**Fitzroy Crossi**	**40.24**	**266**	eP	**P**	**09 56 50.4**	**+1.1**
	7.4nm,0.7s						
KAPI	**Kappang**	**49.51**	**281**	eP	**P**	**09 58 04.3**	**+1.0**
	7.7nm,0.8s						
KKM	**Kota Kinabalu**	**57.46**	**292**	eP	**P**	**09 59 02.4**	**+0.7**
	1.8nm,0.3s						
SBA	**Scott Base**	**57.60**	**180**	eP	**P**	**09 59 04.4**	**+2.8**
	2.4nm,0.7s						
CASY	**Casey**	**58.80**	**204**	eP	**P**	**09 59 09.4**	**-0.7**
	2.0nm,1.1s						
MJAR	**Matsushiro Arr**	**63.27**	**333**	P	**P**	**09 59 38.9**	**-2.0**
	1.3nm,0.8s,baz=166,slow=6.6,SNR=2.7						
KSRS	**Korea Array**	**68.87**	**326**	P	**P**	**10 00 17.3**	**+0.5**
	0.9nm,0.7s,baz=134,slow=5.2,SNR=3.6						
KSAR	**Wonju Array Be**	**68.88**	**326**	P	**P**	**10 00 17.4**	**+0.5**
USRK	**Ussuriysk Ar.**	**72.27**	**333**	P	**P**	**10 00 38.4**	**+1.1**
	1.7nm,0.5s,baz=120,slow=5.2,SNR=7.0						
NVAR	**Mina Array Bea**	**90.18**	**49**	P	**P**	**10 02 13.0**	**+0.1**
	0.4nm,0.4s,baz=248,slow=4.8,SNR=4.0						
NVAR	**Mina Array Bea**	**90.18**	**49**	P	**P**	**10 02 13.0**	**+0.1**
ILAR	**Eielson Array**	**91.51**	**18**	P	**P**	**10 02 17.3**	**-0.9**
	0.3nm,0.6s,baz=251,slow=2.8,SNR=3.2						
YKA	**Yellowknife Ar**	**102.02**	**28**	P	**Pdif**	**10 03 06.2**	**+0.3**
	0.1nm,0.7s,baz=249,slow=5.0,SNR=3.5						
BRTR	**Keskin Array B**	**136.73**	**307**	PKP	**PKPdf**	**10 08 33.2**	**-1.7**
	0.4nm,0.5s,baz=157,slow=4.7,SNR=3.6						
GERES	**GERESS Array B**	**144.98**	**330**	PKP	**PKPbc**	**10 08 48.4**	**-0.3**
	0.5nm,0.5s,baz=32,slow=3.8,SNR=4.3						

*IDC **10** 09:49:20.2±1.2,37°.56N×143°.81E,h0km,mb3.6/4, mb1 3.8/7,mb1mx3.6/45,mbtmp3.6/7,ML3.7/2,Error ellipse: s-maj=28.4km s-min=23.5km az=137.0*
*ISCJB **10** 09:49:21.6±0.9,37°.76N±0°.06×143°.54E±0°.07,h19km, mb3.6/4,Error ellipse: s-maj=9.2km s-min=7.3km az=43.4*
*JMA **10** 09:49:22.7±0.2,37°.78N×143°.53E,h37km,M3.3*

ISC 10 09:49:23.7±1.1,37°.77N±0°.08×143°.53E±0°.09,h19km,n18, σ1§71/20,mb3.6/4,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.85**	**292**	P	**Pn**	**09 49 53.3**	**-1.1**
OFUJ	**Ofunato**	**1.96**	**312**	P	**Pn**	**09 49 54.4**	**-1.6**
OFUJ				eS	**Sn**	**09 50 18.2**	**-1.8**
JMK	**Ichinoseki**	**2.17**	**304**	P	**Pn**	**09 49 57.5**	**-1.3**
JOM	**Ohasama**	**2.44**	**315**	P	**Pn**	**09 50 01.7**	**-0.9**
JOM				eS	**Sn**	**09 50 30.7**	**-1.2**
JFT	**Otama**	**2.55**	**265**	P	**Pn**	**09 50 03.9**	**-0.2**
JYK	**Kaneyama**	**2.75**	**296**	P	**Pn**	**09 50 06.5**	**-0.2**
JAG	**Ashikaga**	**3.53**	**249**	P	**Pn**	**09 50 17.1**	**-0.4**
JAG				eS	**Sn**	**09 50 57.5**	**-1.2**
MJAR	**Matsushiro Arr**	**4.43**	**256**	Pn	**Pn**	**09 50 29.1**	**-0.7**
	1.1nm,0.3s,baz=77,slow=14,SNR=11						
MJAR				Sn	**Sn**	**09 51 23.8**	**+3.0**
	0.2nm,0.3s,baz=58,slow=23,SNR=2.7						
MAT	**Matsushiro**	**4.43**	**256**	P	**Pn**	**09 50 30.5**	**+0.6**
MAT				eS	**Sn**	**09 51 18.9**	**-2.0**
ASAJ	**Asahikawa**	**6.38**	**354**	Pn	**Pn**	**09 50 56.8**	**+0.2**
	2.1nm,0.3s,baz=203,slow=10,SNR=18						
USRK	**Ussuriysk Ar.**	**10.83**	**310**	Pn	**Pn**	**09 52 00.5**	**+2.9**
	0.2nm,0.3s,baz=125,slow=13,SNR=2.9						
H11N2	**WAKE ISLAND Hy**	**27.13**	**125**	T	T	10 23 24.1	
	baz=317,slow=75,SNR=13						
H11N1	**WAKE ISLAND Hy**	**27.14**	**125**	T	T	10 23 20.1	
	baz=317,slow=75,SNR=6.2						
H11N3	**WAKE ISLAND Hy**	**27.15**	**125**	T	T	10 23 24.5	
	baz=317,slow=75,SNR=7.6						
MKAR	**Makanchi Array**	**45.16**	**302**	P	**P**	**09 57 42.5**	**+3.4**
	0.8nm,0.8s,baz=98,slow=6.0,SNR=5.3						
ILAR	**Eielson Array**	**47.97**	**33**	P	**P**	**09 58 00.6**	**-0.2**
	0.3nm,0.7s,baz=258,slow=7.0,SNR=4.2						
WRA	**Warramunga Arr**	**58.05**	**190**	P	**P**	**09 59 13.8**	**-1.8**
	1.6nm,0.8s,baz=9.9,slow=7.6,SNR=7.1						
PDAR	**Pinedale Array**	**75.94**	**47**	P	**P**	**10 01 08.9**	**-0.6**
	0.2nm,0.7s,baz=289,slow=2.8,SNR=3.8						

*ISCJB **10** 09:49:41.7±0.7,6°.84N±0°.05×73°.11W±0°.06,h159km±6km, Error ellipse: s-maj=11.9km s-min=5.2km az=41.7*
*FUNV **10** 09:49:41.8,6°.71N×73°.14W,h169km,MW3.0*
*RSNC **10** 09:49:44.4±0.8,6°.80N±73°.15W,h142km±5km,ML2.7*

ISC 10 09:49:41.2±1.4,6°.80N±0°.05×73°.06W±0°.06,h162km±8km, n23,σ1§40/37,1D,Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BARC	**Barichara**	**0.23**	**210**	iP	**Pn**	**09 50 03.6**	**+0.3**
BARC				eS	**Sn**	**09 50 18.0**	**-2.1**
BARC				i		09 50 19.9	
	comp=Z,158nm,0.3s						
BTLC	**Betulia, Santa**	**0.24**	**301**	eP	**Pn**	**09 50 03.7**	**+0.4**
GIRC	**Giron, Santand**	**0.31**	**336**	eP	**Pn**	**09 50 03.6**	**+0.2**
GIRC				eS	**Sn**	**09 50 18.1**	**-2.3**
PAMC	**Pamplona, Colo**	**0.65**	**34**	eP	**Pn**	**09 50 06.4**	**+1.1**
PAMC				eS	**Sn**	**09 50 23.3**	**-0.4**
BRRC	**Barranca, Sant**	**0.71**	**296**	eP	**Pn**	**09 50 05.4**	**+0.3**
BRRC				eS	**Sn**	**09 50 22.1**	**-1.2**
BRRC				i		09 50 26.5	
	comp=Z,152nm,0.1s						
RUSC	**La Rusia**	**0.90**	**181**	eP	**Pn**	**09 50 07.6**	**+0.7**
RUSC				i		09 50 27.1	
	comp=Z,46nm,0.2s						
CBRI	**Barrientos, No**	**0.95**	**16**	iP	**Pn**	**09 50 08.1**	**+1.2**
CBRI				eS	**Sn**	**09 50 26.8**	**0.0**
GRMC	**Gramalote, San**	**0.95**	**16**	iP	**Pn**	**09 50 09.4**	**+2.4**
GRMC				eS	**Sn**	**09 50 28.2**	**+1.5**
GRMC				i		09 50 30.0	
	comp=Z,48nm,0.4s						
GUEC	**Guerrero, Nort**	**1.04**	**8**	eP	**Pn**	**09 50 08.8**	**+1.0**
CAPV	**Capacho**	**1.30**	**35**	⇓iP	**Pn**	**09 50 11.6**	**+1.6**
CAPV				eS	**Sn**	**09 50 33.2**	**+1.0**
OCAC	**Ocana**	**1.46**	**350**	eP	**Pn**	**09 50 12.1**	**+0.6**
OCAC				eS	**Sn**	**09 50 34.0**	**-0.8**
OCAC				i		09 50 37.2	
	comp=Z,107nm,0.2s						
NORC	**Norcasia**	**2.17**	**236**	eP	**Pn**	**09 50 19.6**	**+0.5**
NORC				eS	**Sn**	**09 50 47.1**	**-1.3**
VIGV	**El Vigia**	**2.64**	**40**	eP	**Pn**	**09 50 26.2**	**+1.5**
VIGV				eS	**Sn**	**09 50 58.9**	**+0.6**
SOCV	**Socops**	**2.64**	**56**	eP	**Pn**	**09 50 26.0**	**+1.3**
SOCV				eS	**Sn**	**09 50 58.4**	**+0.1**
DBBC	**Dabeiba**	**3.13**	**274**	eP	**Pn**	**09 50 31.4**	**+0.6**
TOLC	**Tolima**	**3.14**	**226**	eP	**Pn**	**09 50 33.0**	**+1.8**
PRAC	**Prado**	**3.56**	**211**	eP	**Pn**	**09 50 37.6**	**+1.4**
SJAC	**San Juan de Ar**	**3.61**	**194**	eP	**Pn**	**09 50 38.6**	**+1.7**
VIRV	**Villa del Rosa**	**3.74**	**10**	eP	**Pn**	**09 50 38.7**	**+0.2**
VIRV				eS	**Sn**	**09 51 21.9**	**-1.2**
SANV	**Sanarito**	**4.41**	**52**	eP	**Pn**	**09 50 48.2**	**+1.0**
CURV	**Curarigua**	**4.43**	**44**	eP	**Pn**	**09 50 48.3**	**+0.8**
CURV				eS	**Sn**	**09 51 36.8**	**-2.5**
BAUV	**El Baul**	**5.41**	**66**	eP	**Pn**	**09 50 59.8**	**-0.6**
BAUV				eS	**Sn**	**09 51 59.0**	**-3.3**
MAPV	**Macapo**	**5.47**	**56**	eP	**Pn**	**09 51 01.7**	**+0.6**

IDC 10 09:51:25.3±8.1,20°.30S×167°.88E,h0km,mb4.1/4, mb1 4.2/5,mb1mx3.9/32,mbtmp4.1/5,Error ellipse: s-maj=132.9km s-min=42.1km az=95.0,Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.22**	**217**	Pn	Pn	09 52 03.7	+0.2
	baz=72,slow=20,SNR=2.2						
DZM				Sn	Sn	09 52 31.5	-0.2
	82nm,0.3s,baz=172,slow=18,SNR=5.9						
CTA	**Charters Tower**	**20.30**	**267**	P	P	09 56 03.9	+0.9
	3.7nm,0.8s,baz=100,slow=11,SNR=2.5						
STKA	**Stephens Creek**	**26.21**	**239**	P	P	09 57 02.5	+0.5
	3.3nm,0.7s,baz=71,slow=15,SNR=4.1						
WRA	**Warramunga Arr**	**31.47**	**265**	P	P	09 57 48.3	-0.7
	0.9nm,0.7s,baz=95,slow=8.3,SNR=5.2						
ASAR	**Alice Springs**	**31.64**	**258**	P	P	09 57 50.2	-0.3
	4.4nm,0.7s,baz=85,slow=9.1,SNR=5.9						

IDC 10 09:55:00.2±1.7,20°.25S×167°.52E,h0km,mb4.1/4, mb1 4.3/5,mb1mx3.9/28,mbtmp4.0/5,ML3.3/1,Error ellipse: s-maj=48.3km s-min=25.2km az=133.0,Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.07**	**209**	Pn	Pn	09 55 35.9	-0.5
	11nm,0.3s,baz=114,slow=19,SNR=3.1						
DZM				Sn	Sn	09 56 02.7	-0.3
	42nm,0.3s,baz=345,slow=22,SNR=5.7						
STKA	**Stephens Creek**	**25.94**	**238**	P	P	10 00 35.3	+0.9
	2.2nm,0.5s,baz=73,slow=11,SNR=6.0						
WRA	**Warramunga Arr**	**31.13**	**265**	P	P	10 01 20.2	-0.7
	0.4nm,0.4s,baz=92,slow=8.4,SNR=7.8						
ASAR	**Alice Springs**	**31.32**	**258**	P	P	10 01 22.7	+0.1
	3.4nm,0.6s,baz=88,slow=9.1,SNR=20						
NVAR	**

4.8nm,0.9s
CMB Columbia Colle 88.58 48 *e*P **P 10 09 43.9 +0.4**
16nm,0.7s
NVAR Mina Array Bea 90.22 49 P **P 10 09 52.0 +0.6**
1.3nm,0.7s,baz=228,slow=8.3,SNR=8.5
COLA College 91.38 17 *e*P **P 10 09 54.0 -1.8**
0.9nm,0.3s
ILAR Eielson Array 91.57 18 P **P 10 09 54.8 -1.9**
0.4nm,0.7s,baz=225,slow=5.6,SNR=3.4
YKA Yellowknife Ar 102.08 28 P **Pdif 10 10 44.9 +0.5**
0.1nm,0.6s,baz=250,slow=4.3,SNR=3.9
GERES GERESS Array B 145.03 330 PKPbc **PKPbc 10 16 27.4 +0.2**
0.5nm,0.4s,baz=11,slow=1.4,SNR=7.0
TORD Torodi Ar. Bea 165.29 243 PKP **PKPdf 10 16 56.1 +0.4**
1.6nm,1.0s,baz=329,slow=1.7,SNR=6.1

IDC 10 10:02:14.5±1.9, 19°.69S×168°.08E, h0km, mb4.0/4, mb1 4.3/4, mb1mx3.8/40, mbtmp4.0/4, MS5.0/1, Ms1 5.0/1, ms1mx4.3/44, Error ellipse: s-maj=116.8km s-min=30.2km az=154.0, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**26.68**	**238**	P	P	10 07 54.3	-1.0
3.9nm,0.9s,baz=74,slow=5.6,SNR=4.0							
WRA	**Warramunga Arr**	**31.71**	**264**	P	P	10 08 40.5	+0.2
0.4nm,0.4s,baz=91,slow=8.5,SNR=5.9							
ASAR	**Alice Springs**	**31.96**	**257**	P	P	10 08 42.9	+0.5
4.2nm,0.7s,baz=83,slow=9.1,SNR=15							
DAV	**Davao City (W)**	**49.57**	**298**	LR	LR	10 31 31.7	
comp=Z,2μm,18.0s,baz=84,slow=35							
NVAR	**Mina Array Bea**	**89.92**	**49**	P	P	10 15 16.0	0.0
0.4nm,0.7s,baz=206,slow=8.0,SNR=2.3							

IDC 10 10:07:18.9±10.0, 20°.28S×167°.65E, h0km, mb3.9/3, mb1 4.0/4, mb1mx3.7/43, mbtmp3.9/4, ML1.9/1, Error ellipse: s-maj=184.3km s-min=40.1km az=93.0, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**2.11**	**212**	Pn	Pn	10 07 54.9	-0.7
0.4nm,0.3s,baz=78,slow=19,SNR=2.4							
DZM				Sn	Sn	10 08 23.1	+0.5
38nm,0.3s,baz=165,slow=20,SNR=5.5							
STKA	**Stephens Creek**	**26.03**	**238**	P	P	10 12 54.5	+0.7
1.8nm,0.6s,baz=65,slow=10.0,SNR=5.2							
WRA	**Warramunga Arr**	**31.25**	**265**	P	P	10 13 40.1	-0.5
0.5nm,0.7s,baz=92,slow=8.5,SNR=6.5							
ASAR	**Alice Springs**	**31.43**	**258**	P	P	10 13 42.4	+0.2
2.3nm,0.7s,baz=88,slow=9.1,SNR=13							

IDC 10 10:07:27.3±39.0, 20°.19S×167°.83E, h0km, mb3.9/3, mb1 4.0/4, mb1mx3.7/43, mbtmp3.8/4, ML3.4/1, Error ellipse: s-maj=657.7km s-min=57.3km az=84.0, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**2.27**	**214**	Pn	Pn	10 08 05.2	-1.0
9.9nm,0.3s,baz=162,slow=20,SNR=4.2							
STKA	**Stephens Creek**	**26.22**	**238**	P	P	10 13 04.8	+0.9
1.9nm,0.8s,baz=82,slow=14,SNR=5.0							
WRA	**Warramunga Arr**	**31.43**	**265**	P	P	10 13 50.0	-0.6
0.2nm,0.5s,baz=92,slow=8.4,SNR=4.6							
ASAR	**Alice Springs**	**31.62**	**257**	P	P	10 13 52.2	+0.1
1.7nm,0.6s,baz=86,slow=8.9,SNR=7.6							

IDC 10 10:07:35.6±40.0, 19°.95S×167°.96E, h0km, mb4.0/3, mb1 4.2/4, mb1mx3.8/43, mbtmp4.0/4, ML3.8/1, Error ellipse: s-maj=680.2km s-min=57.6km az=83.0, Vanuatu Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**2.54**	**214**	Pn	Pn	10 08 17.2	-1.0
18nm,0.3s,baz=144,slow=19,SNR=3.3							
STKA	**Stephens Creek**	**26.44**	**238**	P	P	10 13 15.2	+0.8
3.3nm,0.9s,baz=65,slow=7.6,SNR=3.9							
WRA	**Warramunga Arr**	**31.57**	**264**	P	P	10 13 59.8	-0.4
0.5nm,0.6s,baz=90,slow=8.6,SNR=6.1							
ASAR	**Alice Springs**	**31.79**	**257**	P	P	10 14 02.1	+0.1
3.7nm,0.8s,baz=87,slow=9.1,SNR=10							

*ISCJB **10** 10:09:29.1±0.8, 20°.29S±0°.10×168°.1E±0°.1, h32km, mb3.9/7, Error ellipse: s-maj=17.2km s-min=10.9km az=41.9*
*IDC **10** 10:09:31.8±0.8, 20°.32S×168°.12E, h37km±6km, mb3.7/8, mb1 4.0/10, mb1mx3.8/44, mbtmp4.0/10, ML3.6/2, Error ellipse: s-maj=25.0km s-min=15.3km az=151.0*
ISC 10 10:09:30.4±0.8, 20°.3S±0°.1×168°.1E±0°.1, h32km, n12, σ1§35/16, mb4.0/7, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**2.37**	**221**	Pn	**Pn**	**10 10 06.4**	**-0.7**
8.7nm,0.3s,baz=96,slow=19,SNR=8.7							
DZM				Sn	**Sn**	**10 10 34.8**	**-0.4**
29nm,0.3s,baz=325,slow=20,SNR=4.4							
URZ	**Urewera**	**19.55**	**158**	P	**Pn**	**10 13 57.6**	**+0.8**
0.3nm,0.3s,baz=330,slow=16,SNR=4.1							
CTA	**Charters Tower**	**20.52**	**267**	P	Pn	10 14 06.9	-1.5
1.0nm,0.3s,baz=82,slow=16,SNR=1.7							
STKA	**Stephens Creek**	**26.40**	**239**	P	**P**	**10 15 04.1**	**0.0**
1.5nm,0.6s,baz=76,slow=9.9,SNR=5.7							
WRA	**Warramunga Arr**	**31.69**	**265**	P	**P**	**10 15 51.9**	**+0.7**
0.5nm,0.7s,baz=91,slow=8.5,SNR=5.2							
WRA				pP	**sP**	**10 16 02.1**	**-2.3**
1.9nm,0.9s,baz=91,slow=8.4,SNR=5.5							
ASAR	**Alice Springs**	**31.86**	**258**	P	**P**	**10 15 53.9**	**+1.1**
2.7nm,0.6s,baz=86,slow=8.8,SNR=16							
ASAR				pP	**sP**	**10 16 04.5**	**-1.4**
8.0nm,1.0s,baz=82,slow=9.0,SNR=10							
FITZ	**Fitzroy Crossi**	**40.09**	**266**	P	**P**	**10 17 05.0**	**+1.8**
2.1nm,0.7s,baz=111,slow=16,SNR=3.7							
VNDA	**Vanda**	**57.37**	**182**	P	**P**	**10 19 15.2**	**0.0**
0.9nm,0.7s,baz=8.5,slow=9.4,SNR=3.5							
NVAR	**Mina Array Bea**	**90.28**	**49**	P	**P**	**10 22 28.9**	**+0.5**
1.8nm,0.7s,baz=226,slow=8.4,SNR=11							
NVAR				pP	**sP**	**10 22 40.2**	**-2.1**
1.7nm,0.7s,baz=226,slow=8.2,SNR=8.7							
ILAR	**Eielson Array**	**91.53**	**18**	P	**P**	**10 22 33.2**	**-0.1**
0.2nm,0.6s,baz=224,slow=6.2,SNR=3.1							
ILAR				pP	**sP**	**10 22 46.3**	**-0.9**
0.5nm,0.7s,baz=231,slow=5.4,SNR=4.2							
YKA	**Yellowknife Ar**	**102.07**	**28**	P	**Pdif**	**10 23 23.2**	**+2.1**
0.2nm,0.6s,baz=254,slow=4.6,SNR=4.2							
YKA				pP		10 23 34.0	
0.2nm,0.5s,baz=252,slow=4.5,SNR=4.6							
TORD	**Torodi Ar. Bea**	**165.19**	**244**	PKP	**PKPdf**	**10 29 32.8**	**+0.5**
1.3nm,1.0s,baz=178,slow=4.5,SNR=4.8							

*IDC **10** 10:09:34.5±2.0, 37°.61N×143°.79E, h0km, mb3.6/2, mb1 3.7/4, mb1mx3.4/50, mbtmp3.6/4, ML3.6/2, Error ellipse: s-maj=40.9km s-min=29.8km az=80.0*
*ISCJB **10** 10:09:36.4±1.1, 37°.74N±0°.05×143°.50E±0°.09, h19km, mb3.9/2, Error ellipse: s-maj=10.1km s-min=7.1km az=15.9*
*JMA **10** 10:09:37.8±0.3, 37°.75N×143°.48E, h40km, M3.3*
ISC 10 10:09:37.5±1.6, 37°.78N±0°.06×143°.6E±0°.1, h19km, n15, σ1§67/23, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.87**	**292**	P	**Pn**	**10 10 07.8**	**-0.6**
JIO				S	**Sn**	**10 10 29.5**	**-1.9**
OFUJ	**Ofunato**	**1.97**	**312**	P	**Pn**	**10 10 08.9**	**-0.9**
JMK	**Ichinoseki**	**2.18**	**303**	P	**Pn**	**10 10 12.2**	**-0.4**
JOM	**Ohasama**	**2.45**	**314**	P	**Pn**	**10 10 16.0**	**-0.4**
JOM				S	**Sn**	**10 10 45.2**	**-0.6**
JFT	**Otama**	**2.57**	**265**	P	**Pn**	**10 10 18.4**	**+0.4**
JYK	**Kaneyama**	**2.76**	**295**	P	**Pn**	**10 10 21.1**	**+0.5**
JYK				S	**Sn**	**10 10 53.4**	**0.0**
JAG	**Ashikaga**	**3.54**	**249**	P	**Pn**	**10 10 31.7**	**+0.2**
JAG				S	**Sn**	**10 11 11.5**	**-1.3**
JRY	**Ryogami san**	**4.12**	**246**	P	**Pn**	**10 10 39.3**	**-0.1**
JRY				S	**Sn**	**10 11 23.5**	**-3.6**
JOD2	**Odawara 2**	**4.38**	**236**	P	**Pn**	**10 10 42.8**	**-0.2**
JOD2				S	**Sn**	**10 11 30.6**	**-3.0**
MJAR	**Matsushiro Arr**	**4.44**	**256**	Pn	**Pn**	**10 10 45.0**	**+1.1**
2.8nm,0.3s,baz=90,slow=16,SNR=18							
MJAR				Sn	**Sn**	**10 11 38.2**	**+3.1**
1.0nm,0.3s,baz=86,slow=27,SNR=4.2							
MAT	**Matsushiro**	**4.44**	**256**	P	**Pn**	**10 10 45.1**	**+1.2**
MAT				*e*S	**Sn**	**10 11 34.3**	**-0.8**
JKB	**Kayabe**	**4.54**	**335**	S	**Sn**	**10 11 35.2**	**-2.2**
ASAJ	**Asahikawa**	**6.38**	**354**	Pn	**Pn**	**10 11 10.9**	**+0.6**
1.1nm,0.3s,baz=180,slow=14,SNR=11							
MKAR	**Makanchi Array**	**45.17**	**302**	P	**P**	**10 17 55.5**	**+2.6**
0.3nm,0.5s,baz=92,slow=9.9,SNR=2.5							
WRA	**Warramunga Arr**	**58.06**	**190**	P	**P**	**10 19 28.3**	**-1.0**
4.1nm,0.9s,baz=6.9,slow=7.1,SNR=7.1							

IDC 10 10:10:53.7±39.0, 19°.76S×169°.08E, h0km, mb4.1/4, mb1 4.3/4, mb1mx3.9/39, mbtmp4.1/4, Error ellipse: s-maj=666.9km s-min=107.5km az=79.0, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**27.44**	**238**	P	P	10 16 42.3	+0.8
2.0nm,1.0s,baz=85,slow=14,SNR=4.1							
WRA	**Warramunga Arr**	**32.64**	**264**	P	P	10 17 26.6	-1.1
0.5nm,0.5s,baz=96,slow=8.4,SNR=4.6							
ASAR	**Alice Springs**	**32.86**	**257**	P	P	10 17 28.7	-0.9
2.0nm,0.5s,baz=84,slow=8.9,SNR=6.0							
FITZ	**Fitzroy Crossi**	**41.04**	**265**	P	P	10 18 39.9	+0.7
3.1nm,0.8s,baz=121,slow=8.9,SNR=3.8							

IDC 10 10:10:53.5±34.0, 20°.06S×167°.88E, h0km, mb4.0/4, mb1 4.2/5, mb1mx3.8/41, mbtmp4.0/5, Error ellipse: s-maj=595.0km s-min=51.8km az=84.0, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**2.41**	**214**	Pn	Pn	10 11 32.5	-1.7
baz=106,slow=20,SNR=1.1							
STKA	**Stephens Creek**	**26.33**	**238**	P	P	10 16 32.2	+1.0
2.2nm,0.5s,baz=77,slow=14,SNR=6.7							
WRA	**Warramunga Arr**	**31.49**	**264**	P	P	10 17 16.7	-0.6
2.4nm,0.9s,baz=90,slow=8.4,SNR=5.5							
ASAR	**Alice Springs**	**31.70**	**257**	P	P	10 17 18.9	-0.1
1.8nm,0.5s,baz=86,slow=8.8,SNR=5.5							
FITZ	**Fitzroy Crossi**	**39.90**	**266**	P	P	10 18 29.7	+0.2
2.2nm,0.7s,baz=121,slow=12,SNR=2.6							

*IDC **10** 10:11:29.5±1.2, 37°.68N×143°.73E, h0km, mb3.8/5, mb1 3.9/10, mb1mx3.6/54, mbtmp3.8/10, ML3.8/4, Error ellipse: s-maj=26.9km s-min=20.3km az=121.0*
*ISCJB **10** 10:11:30.8±0.6, 37°.76N±0°.04×143°.55E±0°.06, h19km, mb3.9/6, Error ellipse: s-maj=6.4km s-min=5.5km az=18.3*
*NEIC **10** 10:11:31.4±0.9, 37°.79N×143°.61E, h10km, mb4.6/1, Error ellipse: s-maj=16.6km s-min=9.6km az=119.0*
*JMA **10** 10:11:31.8±0.2, 37°.84N×143°.61E, h40km, M3.5*
ISC 10 10:11:32.5±1.1, 37°.80N±0°.06×143°.52E±0°.10, h19km, n32, σ1§46/41, mb3.7/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.83**	**291**	P	**Pn**	**10 12 02.7**	**-0.2**
JIO				S	**Sn**	**10 12 25.2**	**-0.4**
OFUJ	**Ofunato**	**1.94**	**312**	P	**Pn**	**10 12 03.7**	**-0.6**
OFUJ				*e*S	**Sn**	**10 12 27.2**	**-0.9**
JMK	**Ichinoseki**	**2.14**	**303**	P	**Pn**	**10 12 07.0**	**-0.2**
JFK	**Kawauchi**	**2.15**	**259**	P	**Pn**	**10 12 06.8**	**-0.5**
JMM	**Marumori**	**2.16**	**272**	P	**Pn**	**10 12 07.4**	**-0.1**
JMM				*e*S	**Sn**	**10 12 32.5**	**-1.2**
JOU	**Okura**	**2.33**	**285**	P	**Pn**	**10 12 10.4**	**+0.7**
JOM	**Ohasama**	**2.42**	**314**	P	**Pn**	**10 12 10.8**	**-0.1**
JOM				*e*S	**Sn**	**10 12 39.7**	**-0.3**
JFT	**Otama**	**2.54**	**265**	P	**Pn**	**10 12 13.4**	**+0.7**
JFT				*e*S	**Sn**	**10 12 43.3**	**+0.1**
JYK	**Kaneyama**	**2.73**	**295**	P	**Pn**	**10 12 15.7**	**+0.5**
JYK				S	**Sn**	**10 12 48.6**	**+1.0**
JRG	**Rokugo**	**2.77**	**306**	P	**Pn**	**10 12 16.0**	**+0.2**
JANG	**Nango**	**3.00**	**329**	P	**Pn**	**10 12 19.1**	**0.0**
ERM	**Erimo**	**4.22**	**356**	*e*Pn	**Pn**	**10 12 37.0**	**+1.3**
ERM				*e*Sn	**Sn**	**10 13 21.1**	**-3.3**
MJAR	**Matsushiro Arr**	**4.43**	**255**	Pn	**Pn**	**10 12 40.7**	**+2.1**
3.8nm,0.3s,baz=90,slow=16,SNR=13							
MAJO	**Matsushiro**	**4.43**	**255**	*e*Pn	**Pn**	**10 12 38.9**	**+0.3**
MAT	**Matsushiro**	**4.43**	**255**	P	**Pn**	**10 12 40.5**	**+1.9**
MAT				*e*S	**Sn**	**10 13 29.4**	**-0.3**
JHJ2	**Mitsune**	**5.57**	**214**	*e*Pn	**Pn**	**10 12 54.8**	**+0.5**
JHJ2				*e*Sn	**Sn**	**10 13 56.7**	**-1.1**
JHJ	**Hachijo jima 2**	**5.58**	**214**	Pn	**Pn**	**10 12 53.8**	**-0.7**
13nm,0.3s,baz=72,slow=20,SNR=2.5							
JHJ				Sn	**Sn**	**10 13 53.4**	**-4.7**
20nm,0.3s,baz=244,slow=18,SNR=4.5							
ASAJ	**Asahikawa**	**6.35**	**354**	Pn	**Pn**	**10 13 04.4**	**-0.5**
2.6nm,0.3s,baz=202,slow=9.2,SNR=11							
ASAJ				Sn	**Sn**	**10 14 14.9**	**-2.0**
baz=284,slow=19,SNR=2.3							
ASAJ	**Asahikawa**	**6.35**	**354**	*e*Pn	**Pn**	**10 13 04.9**	**-0.1**
ASAJ				Sn	**Sn**	**10 14 14.9**	**-2.0**
USRK	**Ussuriysk Ar.**	**10.80**	**310**	Pn	**Pn**	**10 14 08.5**	**+2.5**
0.2nm,0.3s,baz=150,slow=15,SNR=2.9							
KSRS	**Korea Array**	**12.38**	**273**	Pn	**Pn**	**10 14 29.4**	**+1.8**
0.2nm,0.3s,baz=82,slow=14,SNR=3.5							
KSAR	**Wonju Array Be**	**12.41**	**273**	Pn	**Pn**	**10 14 29.4**	**+1.3**
KLR	**Kul'dur**	**14.24**	**327**	Pn	**Pn**	**10 14 50.9**	**-2.1**
0.1nm,0.3s,baz=126,slow=14,SNR=4.2							
H11N2	**WAKE ISLAND Hy**	**27.15**	**125**	T	T	10 45 29.0	
baz=317,slow=74,SNR=9.8							
H11N1	**WAKE ISLAND Hy**	**27.16**	**125**	T	T	10 45 28.7	
baz=317,slow=74,SNR=8.5							
H11N3	**WAKE ISLAND Hy**	**27.17**	**125**	T	T	10 45 30.8	
baz=317,slow=74,SNR=10							
ZALV	**Zalesovo Beam**	**42.65**	**312**	P	**P**	**10 19 29.1**	**+1.6**
0.7nm,0.5s,baz=95,slow=8.7,SNR=2.3							
MKAR	**Makanchi Array**	**45.14**	**302**	P	**P**	**10 19 48.8**	**+1.1**
0.7nm,0.7s,baz=90,slow=10,SNR=4.6							
KURK	**Kurchatov**	**46.78**	**308**	*e*P	**P**	**10 20 01.7**	**+1.2**
2.6nm,0.4s							
ILAR	**Eielson Array**	**47.94**	**33**	P	**P**	**10 20 09.7**	**+0.3**
0.5nm,0.8s,baz=257,slow=6.2,SNR=4.9							
INK	**Inuvik**	**52.93**	**28**	P	**P**	**10 20 47.6**	**+0.6**
1.1nm,1.2s,baz=270,slow=4.5,SNR=4.1							
WRA	**Warramunga Arr**	**58.08**	**190**	P	**P**	**10 21 23.4**	**-1.1**
2.3nm,0.7s,baz=8.6,slow=7.0,SNR=7.1							

MEX 10 10:13:40.3±1.0, 17°.17N×94°.96W, h145km±21km, MD3.6, Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
VHO	**Vista Hermosa**	**1.70**	**267**	*e*P	Pn	10 14 10.6	-1.2
VHO				*e*S	Sn	10 14 34.4	-1.5
HUIG	**Huatulco**	**1.78**	**218**	*e*P	Pn	10 14 10.7	-1.9
HUIG				*e*S	Sn	10 14 36.0	-1.3
TGIG		**1.80**	**102**	*i* P	Pn	10 14 12.2	-0.7
TGIG				*e*S	Sn	10 14 35.5	-2.4
PCIG		**2.22**	**131**	*e*P	Pn	10 14 16.9	-0.9
PCIG				*e*S	Sn	10 14 45.4	-1.1
TPIG	**Tehuac#an**	**2.60**	**299**	*i* P	Pn	10 14 21.3	-1.3
TPIG				*e*S	Sn	10 14 50.6	-4.6

JMA 10 10:14:07.0±0.4, 37°.33N×141°.84E, h0km, M2.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.86**	**255**	P	Pb	10 14 24.5	-0.4
ONAJ				S	Sb	10 14 36.5	-0.5
JMM	**Marumori**	**0.99**	**303**	*e*S	Sb	10 14 39.8	-0.8
JFT	**Otama**	**1.21**	**279**	P	Pb	10 14 30.8	0.0
JFT				S	Sb	10 14 46.7	-0.3

*NEIC **10** 10:14:20.1±0.3, 20°.25S×168°.20E, h10km, mb4.8/24, Error ellipse: s-maj=9.2km s-min=8.2km az=55.0*
*ISCJB **10** 10:14:21.6±0.3, 20°.31S±0°.04×168°.17E±0°.05, h32km, mb4.8/36, MS4.9/1, Error ellipse: s-maj=6.8km s-min=5.7km az=161.1*
*IDC **10** 10:14:23.9±0.8, 20°.32S×168°.20E, h39km±5km, mb4.3/13, mb1 4.5/15, mb1mx4.3/41, mbtmp4.6/15, ML4.0/2, Error ellipse: s-maj=17.1km s-min=14.6km az=128.0*

ISC 10 10:14:23.3±0.4, 20°.35S±0°.06×168°.20E±0°.07, h32km, n79, σ1§32/84, mb4.8/36, 1D, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**2.37**	**223**	Pn	**Pn**	**10 14 59.0**	**-1.1**
32nm,0.3s,baz=109,slow=11,SNR=11							
DZM				Sn	**Sn**	**10 15 27.8**	**-0.3**
220nm,0.3s,baz=316,slow=19,SNR=11							
MSVF	**Nonsavu**	**9.67**	**76**	*e*Pn	**Pn**	**10 16 41.6**	**+1.3**
HNR	**Honiara**	**13.46**	**323**	*e*Pn	**Pn**	**10 17 31.9**	**-0.3**
HNR				*e*Sn	**Sn**	**10 20 00.6**	**-0.2**
HIZ	**Hauiti**	**19.00**	**164**	*e*P	**Pn**	**10 18 44.9**	**+1.8**
95nm,1.2s							
URZ	**Urewera**	**19.45**	**159**	P	**Pn**	**10 18 48.6**	**+0.1**
0.6nm,0.3s,baz=347,slow=7.9,SNR=18							
URZ	**Urewera**	**19.45**	**159**	*e*P	**Pn**	**10 18 49.3**	**+0.9**
129nm,1.1s							
BKZ	**Black Stump Fm**	**20.07**	**161**	*e*P	**P**	**10 18 54.8**	**+0.8**
51nm,1.0s							
CTA	**Charters Tower**	**20.60**	**267**	P	Pn	10 19 01.4	-0.9
37nm,0.9s,baz=88,slow=15,SNR=8.6							
CTAO	**Charters Tower**	**20.60**	**267**	*e*P	**P**	**10 19 00.8**	**+0.9**
362nm,1.0s							
SNZO	**South Karori**	**21.61**	**167**	*e*P	**P**	**10 19 11.3**	**+0.7**
83nm,0.9s							
THZ	**Tophouse**	**21.72**	**170**	*e*P	**P**	**10 19 14.0**	**+2.2**
43nm,0.9s							
LTZ	**Lake Taylor**	**22.63**	**172**	*e*P	**P**	**10 19 23.4**	**+1.9**
25nm,0.9s							
PMG	**Port Moresby**	**23.03**	**295**	P	**P**	**10 19 25.9**	**0.0**
8.7nm,0.7s,baz=140,slow=5.1,SNR=6.9							
PMG				pP	**sP**	**10 19 36.6**	**-2.0**
18nm,0.9s,baz=126,slow=2.6,SNR=6.3							
PMG	**Port Moresby**	**23.03**	**295**	*e*P	**P**	**10 19 25.9**	**0.0**
24nm,1.0s							
RPZ	**Rata Peaks**	**23.42**	**175**	P	**P**	**10 19 30.6**	**+1.1**
14nm,0.9s,baz=76,slow=3.7,SNR=3.6							
COEN	**Coen**	**24.73**	**281**	*e*P	**P**	**10 19 42.8**	**+0.8**
15nm,0.8s							
STKA	**Stephens Creek**	**26.43**	**239**	P	**P**	**10 19 57.9**	**+0.6**
5.4nm,0.7s,baz=84,slow=9.8,SNR=14							
STKA				pP	**pP**	**10 20 08.1**	**+1.5**
12nm,0.8s,baz=69,slow=9.2,SNR=9.4							
STKA	**Stephens Creek**	**26.43**	**239**	*e*P	**P**	**10 19 57.6**	**+0.2**
4.1nm,0.9s							
WRAB	**Tennant Creek**	**31.75**	**265**	*e*P	**P**	**10 20 44.4**	**-0.4**
2.2nm,0.6s							
WRA	**Warramunga Arr**	**31.76**	**265**	P	**P**	**10 20 43.9**	**-1.0**
4.0nm,1.0s,baz=91,slow=8.4,SNR=12							
WRA				pP	**pP**	**10 20 54.2**	**+0.1**
2.1nm,0.5s,baz=92,slow=8.4,SNR=8.2							
AS01	**Alice Springs**	**31.88**	**258**	*e*P	**P**	**10 20 45.1**	**-0.8**
AS31	**Alice Springs**	**31.92**	**258**	*e*P	**P**	**10 20 45.9**	**-0.3**
6.2nm,0.6s							
ASAR	**Alice Springs**	**31.93**	**258**	P	**P**	**10 20 45.9**	**-0.4**
10nm,0.7s,baz=87,slow=9.0,SNR=35							
ASAR				pP	**pP**	**10 20 56.6**	**+1.1**
20nm,0.9s,baz=87,slow=8.3,SNR=18							
FITZ	**Fitzroy Crossi**	**40.17**	**266**	P	**P**	**10 21 56.4**	**-0.4**
7.5nm,0.8s,baz=130,slow=6.0,SNR=9.0							
FITZ				pP	**pP**	**10 22 06.7**	**+0.4**
10nm,0.7s,baz=135,slow=7.7,SNR=6.6							
FITZ	**Fitzroy Crossi**	**40.17**	**266**	*e*P	**P**	**10 21 57.5**	**+0.6**
42nm,1.5s							
SWI	**Sorong**	**40.97**	**294**	P	**P**	**10 22 00.9**	**-2.5**
MBWA	**Marble Bar**	**45.19**	**260**	*e*P	**P**	**10 22 39.0**	**+1.4**
43nm,0.8s							
NGJI	**Ngawi**	**56.33**	**275**	P	P	10 24 09.8	+8.2
UGM	**Wanagama**	**57.03**	**274**	P	**P**	**10 24 04.5**	**-2.1**
VNDA	**Vanda**	**57.30**	**182**	P	**P**	**10 24 06.8**	**-0.7**
4.2nm,1.1s,baz=347,slow=6.6,SNR=8.7							
VNDA	**Vanda**	**57.30**	**182**	*e*P	**P**	**10 24 07.1**	**-0.4**
8.3nm,1.3s							
SMRI	**Semarang**	**57.39**	**275**	P	**P**	**10 24 09.3**	**+0.2**
SBA	**Scott Base**	**57.55**	**180**	*e*P	**P**	**10 24 09.6**	**+0.3**
48nm,1.6s							
CASY	**Casey**	**58.72**	**204**	*e*P	**P**	**10 24 17.1**	**-0.6**
1.7nm,0.5s							
KSM	**Kuching**	**60.68**	**284**	*e*P	**P**	**10 24 33.2**	**+1.2**
QSPA	**South Pole Qui**	**69.71**	**180**	*e*P	**P**	**10 25 29.2**	**-0.6**
KULM	**Kulim**	**71.03**	**283**	*e*P	**P**	**10 25 36.8**	**-1.8**
9.5nm,1.1s							
PETK	**Petropavlovsk-**	**73.71**	**353**	P	**P**	**10 25 52.2**	**-1.5**
2.8nm,0.7s,baz=107,slow=1.8,SNR=4.5							
CN2	**Changchun**	**74.90**	**329**	*e*P	**P**	**10 26 00.9**	**0.0**
CN2				pmax	pmax		
comp=Z,10.0nm,0.6s							
GYA	**Guiyang**	**75.66**	**306**	P	**P**	**10 26 08.9**	**+3.1**
GYA				pP	sP	10 26 18.8	-0.8
GYA				PP	**PP**	**10 29 01.2**	**+5.3**
GYA				S	**S**	**10 35 47.0**	**+1.7**
GYA				sS	sS	10 36 04.5	+2.5
GYA	**Guiyang**	**75.66**	**306**	SS	SS	10 40 41.6	+4.0
GYA				pmax	pmax		
comp=Z,20nm,1.0s							
GYA				pmax	pmax		
comp=Z,120nm,5.6s							
GYA				LR	LR		
comp=N,480nm,18.8s							
GYA				LR	LR		
comp=E,450nm,19.0s							
G

comp=Z,7.6nm,0.8s
RETA Reutte 147.32 331 *i* PKPdf **PKPdf 10 34 01.4 +0.1**
comp=Z,4.5nm,0.8s
WLF Walferdange 147.44 338 PKP **PKPbc 10 34 04.1 +0.3**
WLF Walferdange 147.44 338 *e*PKPbc **PKPbc 10 34 04.0 +0.1**
DOU Dourbes 147.59 340 PKP **PKPbc 10 34 03.5 -0.7**
FETA Feichten 147.69 331 *i* pPKPdf **PKPbc 10 34 04.5 -0.3**
comp=Z,8.2nm,0.9s
FUORN Ofenpass-Fuorn 148.20 331 *e*PKPdf **PKPbc 10 34 06.2 -0.1**
DAVOX Davos/Dischmat 148.25 331 PKPbc **PKPbc 10 34 06.1 -0.3**
comp=Z,15nm,0.9s,baz=119,slow=3.6,SNR=17
DAVOX pPKPbc **pPKPbc 10 34 18.5 +1.6**
comp=Z,6.7nm,0.6s,baz=313,slow=12,SNR=4.9
TUE Stuetta 148.73 331 *e*PKPbc **PKPbc 10 34 06.7 -1.0**
SSB Saint Sauveur 151.71 335 *e*PKPbc **PKPbc 10 34 14.2 -0.4**
TORD Torodi Ar. Bea 165.23 243 PKP **PKPdf 10 34 23.6 -1.7**
comp=Z,2.9nm,1.1s,baz=226,slow=1.2,SNR=6.2

NIED ***10*** *10:14:00, 36.°30N×142.°00E, h20km, Mw5.3 Best double couple: M0 1.08000×10^17 NP1:φs 198.00000°, δ18.00000°, λ89.00000°. NP2:φs 19.00000°, δ72.00000°, λ90.00000°.*
IDC ***10*** *10:14:36.7±0.4, 36.°22N×141.°77E, h0km, mb4.8/34, mb1 4.9/40, mb1mx4.8/58, mbtmp4.8/40, ML4.3/5, MS5.0/8, Ms1 5.0/8, ms1mx4.6/72, Error ellipse: s-maj=12.8km s-min=9.3km az=95.0*
JMA ***10*** *10:14:38.8±0.3, 36.°23N×141.°86E, h58km, M5.4*
JMA Felt III J1.
BJI ***10*** *10:14:38.8, 36.°32N×141.°60E, h24km, mb5.1/69, mB5.7/21, Ms5.4/38, Ms7 5.3/36*
ISCJB ***10*** *10:14:40.0±0.7, 36.°25N±0.°02×141.°66E±0.°02, h29km±5km, mb5.0/242, MS5.3/11, Error ellipse: s-maj=3.7km s-min=2.6km az=148.2*
MOS ***10*** *10:14:41.7±0.8, 36.°60N×141.°62E, h29km, mb5.4/85, Error ellipse: s-maj=6.0km s-min=3.9km az=108.3*
NEIC ***10*** *10:14:43.2±0.5, 36.°24N×141.°61E, h41km±4km, mb5.1/152, Error ellipse: s-maj=4.0km s-min=2.8km az=137.0*
NEIC Recorded [3 JMA] in Ibaraki.
ISC 10 10:14:41.2±0.5, 36.°28N±0.°03×141.°70E±0.°04, h27km±3km, h27km:pP-P, n750, σ1°08/777, mb5.1/242, MS5.4/11, 27C-15D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.90**	**230**	⇓P			**Pn**	**10 14 56.5**	**-1.5**
CHOJ				*e*S			**Sn**	**10 15 10.1**	**+0.1**
JHO	**Hitachi**	**0.97**	**290**	⇓P			**Pn**	**10 14 58.1**	**-1.0**
ONAJ	**Iwakimizuishiy**	**1.09**	**319**	P			**Pn**	**10 14 59.9**	**-0.9**
JFK	**Kawauchi**	**1.27**	**329**	P			**Pn**	**10 15 02.4**	**-0.8**
JFT	**Otama**	**1.65**	**319**	⇓P			**Pn**	**10 15 08.9**	**+0.5**
JFT				*e*S			**Sb**	**10 15 31.8**	**+0.5**
BSO1	**Boso 1**	**1.73**	**200**	P			**Pn**	**10 15 07.6**	**-1.4**
JMM	**Marumori**	**1.74**	**336**	⇑P			**Pn**	**10 15 09.1**	**-0.6**
BSO3	**Boso 3**	**1.77**	**214**	P			**Pn**	**10 15 08.5**	**-1.3**
JAG	**Ashikaga**	**1.82**	**275**	P			**Pn**	**10 15 10.5**	**-0.3**
JFY	**Yanaizu**	**1.96**	**306**	P			**Pn**	**10 15 13.4**	**+0.7**
JKT	**Katashina**	**2.04**	**285**	P			**Pn**	**10 15 14.4**	**+0.6**
MJAR	**Matsushiro Arr**	**2.83**	**276**	Pn			**Pn**	**10 15 25.5**	**+0.8**
	228nm,0.3s,baz=100,slow=8.8,SNR=520								
MJAR				Sn			**Sn**	**10 16 00.4**	**+2.5**
	81nm,0.3s,baz=88,slow=16,SNR=6.8								
MJAR				LR			LR	10 16 40.4	
	comp=Z,17μm,21.2s,baz=110,slow=43								
MAJO	**Matsushiro**	**2.83**	**276**	*c i*P			**Pn**	**10 15 25.9**	**+1.2**
MAJO	**Matsushiro**	**2.83**	**276**	*e*Pn			**Pn**	**10 15 26.1**	**+1.5**
MAJO				*e*Sn			**Sn**	**10 15 59.0**	**+1.1**
MAT	**Matsushiro**	**2.83**	**276**	P			**Pn**	**10 15 25.2**	**+0.5**
MAT				S			**Sb**	**10 16 02.5**	**-2.8**
MJB9	**Matsu-Tunnel**	**2.83**	**276**	*e*Pn			**Pn**	**10 15 26.0**	**+1.3**
JHJ2	**Mitsune**	**3.52**	**207**	*e*Pn			**Pn**	**10 15 33.6**	**-0.6**
JHJ2				*e*Sn			**Sn**	**10 16 13.1**	**-1.8**
JHJ	**Hachijo jima 2**	**3.53**	**207**	Pn			**Pn**	**10 15 32.5**	**-1.7**
	63nm,0.3s,baz=353,slow=20,SNR=38								
JHJ				Sn			**Sn**	**10 16 12.6**	**-2.5**
	434nm,0.3s,baz=70,slow=22,SNR=4.2								
INU	**Inuyama**	**3.92**	**258**	*e*Pn			**Pn**	**10 15 41.0**	**+1.4**
ERM	**Erimo**	**5.84**	**11**	⇓*e*P			**Pn**	**10 16 03.9**	**-2.0**
ERM				pmax			pmax		
	comp=Z,67nm,1.0s								
ERM	**Erimo**	**5.84**	**11**	*e*Pn			**Pn**	**10 16 05.1**	**-0.8**
ERM				*e*Sn			**Sn**	**10 17 11.5**	**-0.4**
ASAJ	**Asahikawa**	**7.86**	**5**	Pn			**Pn**	**10 16 32.2**	**-1.4**
	comp=Z,9.0nm,0.3s,baz=207,slow=15,SNR=19								
ASAJ				Sn			**Sn**	**10 17 58.0**	**-3.7**
	comp=Z,3.1nm,0.3s,baz=30,slow=20,SNR=2.8								
ASAJ				LR			LR	10 19 46.0	
	comp=Z,4μm,20.6s,baz=182,slow=39								
ASAJ	**Asahikawa**	**7.86**	**5**	*e*Pn			**Pn**	**10 16 31.9**	**-1.8**
YUK	**Yuzh-Kuril'sk**	**8.37**	**21**	*e*P			**Pn**	**10 16 39.3**	**-1.4**
YUK				pmax			pmax		
	comp=Z,192nm,0.4s								
YUK				pmax			pmax		
	comp=E,64nm,0.2s								
YUK				pmax			pmax		
	comp=N,165nm,0.3s								
SHO	**Shikotan**	**8.54**	**26**	*e*P			**Pn**	**10 16 41.1**	**-1.8**
SHO				pmax			pmax		
	comp=N,65nm,0.4s								
SHO				pmax			pmax		
	comp=Z,108nm,0.4s								
SHO				pmax			pmax		
	comp=E,50nm,0.3s								
CBIJ	**Chichi jima**	**9.17**	**177**	*e*Pn			Pn	10 16 46.3	-5.4
CBIJ				*e*Sn			Sn	10 18 22.4	-12
JCJ	**Chichijima**	**9.17**	**177**	Pn			Pn	10 16 46.6	-5.1
	comp=E,32nm,0.3s,baz=298,slow=21,SNR=36								
JCJ				Sn			Sn	10 18 22.4	-12
	comp=E,55nm,0.3s,baz=266,slow=19,SNR=3.8								
JNU	**Nakatsue**	**9.45**	**254**	Pn			**Pn**	**10 16 56.5**	**+0.9**
	comp=E,1.0nm,0.3s,baz=63,slow=9.8,SNR=12								
JNU				LR			LR	10 20 44.5	
	comp=E,5μm,20.7s,baz=350,slow=39								
JNU	**Nakatsue**	**9.45**	**254**	*e*Pn			**Pn**	**10 16 57.3**	**+1.7**
JNU				*e*Sn			Sn	10 18 29.3	-12
KUR	**Kuril'sk**	**10.09**	**26**	P			**Pn**	**10 17 03.2**	**-1.0**
KUR				*e*S			**Sn**	**10 18 49.4**	**-7.0**
KUR				pmax			pmax		
	comp=Z,40nm,0.8s								
KUR				pmax			pmax		
	comp=E,15nm,0.4s								
KUR				pmax			pmax		
	comp=N,29nm,0.8s								
KUR				smax			smax		
	comp=E,77nm,0.6s								
KUR				smax			smax		
	comp=N,54nm,0.5s								
VLA	**Vladivostok**	**10.19**	**315**	⇓*e*P			**Pn**	**10 17 08.4**	**+2.8**
MSHR	**Mys Shultsa**	**10.30**	**311**	⇓*e*P			**Pn**	**10 17 09.5**	**+2.4**
YSS	**Yuzh-Sakhalins**	**10.69**	**4**	⇑*e*P			**Pn**	**10 17 11.2**	**-1.3**
YSS				*e*S			**Sn**	**10 19 11.4**	**+0.2**
YSS				pmax			pmax		
	comp=Z,90nm,1.0s								
USRK	**Ussuriysk Ar.**	**10.84**	**320**	Pn			**Pn**	**10 17 16.1**	**+1.6**
	comp=Z,1.2nm,0.3s,baz=130,slow=12,SNR=16								
USRK				LR			LR	10 21 20.7	
	comp=Z,11μm,18.9s,baz=103,slow=37								
KSRS	**Korea Array**	**11.10**	**280**	Pn			**Pn**	**10 17 22.1**	**+4.0**
	comp=Z,1.1nm,0.3s,baz=93,slow=13,SNR=59								
KSRS				LR			LR	10 21 35.8	
	comp=Z,7μm,20.4s,baz=40,slow=37								
KS01	**Wonju Array Si**	**11.13**	**280**	*e*Pn			**Pn**	**10 17 21.4**	**+3.0**
KS15	**Wonju Array Si**	**11.13**	**280**	*e*Pn			**Pn**	**10 17 22.5**	**+4.0**
KSAR	**Wonju Array Be**	**11.13**	**280**	P			**Pn**	**10 17 22.1**	**+3.5**
KSAR	**Wonju Array Be**	**11.13**	**280**	Pn			**Pn**	**10 17 22.1**	**+3.5**
TJN	**Taejon**	**11.57**	**275**	⇑*e*P			**Pn**	**10 17 27.2**	**+2.7**
MDJ	**Mudanjiang**	**12.41**	**316**	P			**Pn**	**10 17 36.4**	**+0.3**
MDJ				pmax			pmax		
	comp=Z,12nm,1.2s								
MDJ				LR			LR		
	comp=Z,10μm,18.2s								
MDJ				LR			LR		
	comp=Z,3μm,28.2s								
MDJ				LR			LR		
	comp=Z,11μm,19.1s								
MDJ	**Mudanjiang**	**12.41**	**316**	*e*Pn			**Pn**	**10 17 37.7**	**+1.6**
HABR	**Khabarovsk**	**13.13**	**340**	*e*P			**Pn**	**10 17 43.8**	**-2.0**
HABR				*e*S			**Sn**	**10 20 09.0**	**-1.8**
HABR				pmax			pmax		
	comp=Z,34nm,1.6s								
HABR				pmax			pmax		
	comp=N,31nm,1.7s								
HABR				pmax			pmax		
	comp=E,48nm,1.7s								
HABR				MLR			MLR		
	comp=Z,7μm,15.0s								
CN2	**Changchun**	**14.53**	**306**	*e*P			**Pn**	**10 18 03.9**	**-1.0**
CN2				*es*P			P	10 18 13.8	+2.6
CN2				pmax			pmax		
	comp=Z,10.0nm,0.8s								
CN2				LR			LR		
	comp=Z,8μm,14.0s								
CN2				LR			LR		
	comp=Z,10μm,14.0s								
CN2				LR			LR		
	comp=Z,8μm,15.0s								
TYV	**Tymovskoe**	**14.59**	**2**	*e*P			**Pn**	**10 18 07.0**	**+1.3**
TYV				pmax			pmax		
	comp=Z,62nm,1.0s								
JOW	**Kunigami**	**14.81**	**234**	*e*Pn			**Pn**	**10 18 09.2**	**+0.4**
JOW				*e*Sn			**Sn**	**10 20 50.6**	**-1.5**
KLR	**Kul'dur**	**14.85**	**334**	Pn			**Pn**	**10 18 07.3**	**-1.9**
	comp=Z,0.9nm,0.3s,baz=151,slow=15,SNR=20								
KLR				LR			LR	10 23 49.3	
	comp=Z,7μm,19.0s,baz=125,slow=37								
SNY	**Shenyang**	**15.12**	**297**	⇑P			**Pn**	**10 18 12.5**	**-0.4**
SNY				pmax			pmax		
	comp=Z,37nm,1.2s								
DL2	**Dalian**	**16.13**	**285**	P			**Pn**	**10 18 26.1**	**+0.2**
DL2				*e*S			**Sn**	**10 21 21.6**	**-2.3**
DL2				pmax			pmax		
	comp=Z,77nm,0.9s								
DL2				LR			LR		
	comp=Z,7μm,11.4s								
DL2				LR			LR		
	comp=Z,14μm,13.7s								
DL2				LR			LR		
	comp=Z,16μm,15.1s								
NKL	**Nikolayevsk**	**16.88**	**358**	*e*P			**Pn**	**10 18 29.0**	**-6.4**
NKL				pmax			pmax		
	comp=Z,43nm,1.3s								
SKR	**Severo-Kuril's**	**17.75**	**31**	*e*P			**Pn**	**10 18 45.5**	**-0.6**
SKR				pmax			pmax		
	comp=Z,180nm,1.0s								
NJ2	**Nanjing**	**19.36**	**264**	*e*P			**Pn**	**10 19 08.1**	**+2.2**
NJ2				S			**S**	**10 22 39.8**	**-2.4**
NJ2				pmax			pmax		
	comp=Z,16nm,0.5s								
NJ2				pmax			pmax		
	comp=Z,960nm,9.4s								
NJ2				LR			LR		
	comp=Z,8μm,16.8s								
NJ2				LR			LR		
	comp=Z,6μm,15.7s								
NJ2				LR			LR		
	comp=Z,6μm,9.2s								
TIA	**Tai'an**	**19.82**	**277**	⇓P			**P**	**10 19 07.9**	**-1.8**
TIA				pmax			pmax		
	comp=Z,30nm,0.8s								
PEA0	**Petropavlovsk-**	**20.23**	**29**	*e*P			**P**	**10 19 14.3**	**+0.3**
PETK	**Petropavlovsk-**	**20.23**	**29**	P			**P**	**10 19 14.5**	**+0.5**
	comp=Z,27nm,1.1s,baz=233,slow=5.5,SNR=10.0								
PEA1	**Petropavlovsk-**	**20.23**	**29**	*e*P			**P**	**10 19 14.5**	**+0.5**
BJI	**Beijing**	**20.40**	**288**	P			**P**	**10 19 13.6**	**-2.3**
BJI				S			**S**	**10 23 02.3**	**-0.7**
BJI				pmax			pmax		
	comp=Z,23nm,1.2s								
BJI				LR			LR		
	comp=Z,7μm,15.8s								
BJI				LR			LR		
	comp=Z,4μm,13.8s								
BJI				LR			LR		
	comp=Z,3μm,15.4s								
BJT	**Baijiatuau**	**20.40**	**288**	*e*P			**P**	**10 19 14.8**	**-1.2**
BJT				pmax			pmax		
	comp=Z,75nm,0.9s								
BJT	**Baijiatuau**	**20.40**	**288**	*e*P			**P**	**10 19 14.8**	**-1.2**
	comp=Z,75nm,0.9s								
PET	**Petropavlovsk**	**20.54**	**30**	*e*P			Pn	10 19 18.7	-1.0
PET				pmax			pmax		
	comp=Z,19nm,0.8s								
HIA	**Hailar**	**20.60**	**316**	*e*P			**P**	**10 19 18.8**	**+0.6**
HIA	**Hailar**	**20.60**	**316**	*e*P			**P**	**10 19 18.8**	**+0.6**
SSLB	**Suanglung**	**21.80**	**241**	*e*P			**P**	**10 19 28.1**	**-3.1**
	comp=Z,28nm,0.9s								
SSLB				*e*S			Sn	10 23 37.0	-4.1
YULB	**Yu-li**	**21.82**	**240**	*e*P			**P**	**10 19 27.6**	**-3.7**
	comp=Z,9.3nm,0.6s								
TPUB	**Ta-pu**	**22.34**	**240**	*e*P			**P**	**10 19 34.3**	**-2.7**
	comp=Z,54nm,1.0s								
TIY	**Taiyuan**	**23.38**	**282**	*e*P			**P**	**10 19 48.3**	**+0.5**
TIY				pmax			pmax		
	comp=Z,21nm,0.6s								
TIY				LR			LR		
	comp=Z,3μm,13.9s								
TIY				LR			LR		
	comp=Z,14μm,14.1s								
TIY				LR			LR		
	comp=Z,16μm,14.5s								
CLNS	**Chul'man**	**23.46**	**336**	*e*P			**P**	**10 19 46.8**	**-1.6**
CLNS				pmax			pmax		
	comp=Z,26nm,1.4s								
CLNS				pmax			pmax		
	comp=N,67nm,1.2s								
CLNS				pmax			pmax		
	comp=E,86nm,1.1s								
WHN	**Wuhan**	**23.50**	**264**	⇓P			**P**	**10 19 47.8**	**-1.0**
HHC	**Hu-ho-hao-te**	**23.94**	**290**	*e*P			**P**	**10 19 53.3**	**+0.1**
HHC				pP			sP	10 20 04.1	-0.2
HHC				sP			pP	10 20 08.2	+7.2
HHC				pmax			pmax		
	comp=E,32nm,0.9s								
HHC				pmax			pmax		
	comp=E,1μm,4.1s								
MA2	**Magadan**	**24.04**	**11**	P			**P**	**10 19 54.1**	**+0.3**
	comp=E,25nm,1.0s,baz=211,slow=9.2,SNR=7.2								
MA2	**Magadan**	**24.04**	**11**	*e*P			**P**	**10 19 53.6**	**-0.2**
MA2				pmax			pmax		
	comp=Z,124nm,1.0s								
MA2	**Magadan**	**24.04**	**11**	*e*P			**P**	**10 19 53.6**	**-0.2**
	comp=Z,124nm,1.0s								
CIT	**Chita**	**25.38**	**317**	*e*P			**P**	**10 20 06.4**	**+0.3**
CIT				*e*				10 20 50.7	
CIT				pmax			pmax		
	comp=Z,134nm,1.7s								
XAN	**Xi'an**	**26.83**	**275**	P			**P**	**10 20 18.0**	**-1.3**
XAN				pP			pP	10 20 27.9	+0.7
XAN				pmax			pmax		
	comp=Z,39nm,1.4s								
YAK	**Yakutsk**	**26.85**	**347**	P			**P**	**10 20 19.5**	**+0.3**
	comp=Z,80nm,0.6s,baz=169,slow=2.6,SNR=35								
YAK	**Yakutsk**	**26.85**	**347**	*c i*P			**P**	**10 20 18.5**	**-0.7**
YAK				*e*				10 21 00.9	
YAK				*e*S			**S**	**10 24 55.8**	**+2.0**
YAK				*e*SS			SnSn	10 26 15.0	+16
YAK				*e*				10 31 06.7	
YAK				pmax			pmax		
	comp=Z,240nm,1.1s								
YAK				pmax			pmax		
	comp=N,189nm,1.3s								
YAK				pmax			pmax		
	comp=E,62nm,1.4s								
YAK				pmax			pmax		
	comp=Z,77nm,1.2s								
YAK				pmax			pmax		
	comp=N,58nm,1.4s								
YAK				pmax			pmax		
	comp=E,62nm,1.5s								
YAK				smax			smax		
	comp=N,872nm,5.2s								
YAK				smax			smax		
	comp=E,645nm,4.4s								
YAK				MLR			MLR		
	comp=Z,4μm,16.0s								
YAK				MLR			MLR		
	comp=N,4μm,15.0s								
YAK				MLR			MLR		
	comp=E,3μm,16.0s								
YAK	**Yakutsk**	**26.85**	**347**	*e*P			**P**	**10 20 19.0**	**-0.2**
	comp=E,195nm,0.9s								
SEY	**Seymchan**	**27.48**	**11**	P			**P**	**10 20 25.5**	**+0.6**
	comp=E,19nm,1.1s,baz=179,slow=10,SNR=9.6								
SEY	**Seymchan**	**27.48**	**11**	⇑*e*P			**P**	**10 20 26.6**	**+1.7**
ENH	**Enshi**	**27.51**	**267**	*e*P			**P**	**10 20 24.2**	**-1.3**
	comp=E,94nm,0.6s								
H11N2	**WAKE ISLAND Hy**	**27.57**	**120**	T			T	10 49 07.9	
	baz=312,slow=75,SNR=53								
H11N1	**WAKE ISLAND Hy**	**27.57**	**120**	T			T	10 49 10.6	
	baz=312,slow=75,SNR=80								
H11N3	**WAKE ISLAND Hy**	**27.59**	**120**	T			T	10 49 32.4	
	baz=312,slow=75,SNR=58								
ULN	**Ulaanbaatar**	**27.97**	**305**	*c*P			**P**	**10 20 30.0**	**+0.4**
ULN				pmax			pmax		
	comp=Z,50nm,1.2s								
ULN	**Ulaanbaatar**	**27.97**	**305**	P			**P**	**10 20 30.6**	**+0.9**
	SNR=37								
ULN	**Ulaanbaatar**	**27.97**	**305**	P			**P**	**10 20 30.6**	**+0.9**
	SNR=37								
ULN	**Ulaanbaatar**	**27.97**	**305**	*e*P			**P**	**10 20 29.3**	**-0.3**
	comp=Z,83nm,1.1s								
H11S1	**WAKE ISLAND Hy**	**28.26**	**122**	T			T	10 50 49.8	
	baz=295,slow=74,SNR=110								
H11S3	**WAKE ISLAND Hy**	**28.26**	**122**	T			T	10 49 52.7	
	baz=295,SNR=90								
H11S2	**WAKE ISLAND Hy**	**28.27**	**122**	T			T	10 50 37.7	
	baz=295,slow=74,SNR=87								
BOD	**Bodaibo**	**28.29**	**328**	*e*P			**P**	**10 20 31.8**	**-0.3**
BOD				pmax			pmax		
	comp=Z,44nm,1.3s								
SONA1	**Songino Array**	**28.40**	**305**	*e*P			**P**	**10 20 33.2**	**-0.2**
SONA0	**Songino Array**	**28.40**	**305**	*e*P			**P**	**10 20 33.8**	**+0.4**
	comp=Z,52nm,1.0s								
SONM	**Songino Array**	**28.40**	**305**	P			**P**	**10 20 33.8**	**+0.4**
	comp=Z,52nm,1.1s,baz=104,slow=8.6,SNR=16								
LZH	**Lanzhou**	**30.43**	**281**	*e*P			**P**	**10 20 51.3**	**-0.3**
LZH				pP			pP	10 20 59.6	+0.1
LZH				sP			sP	10 21 02.6	-0.2
LZH				pmax			pmax		
	comp=Z,35nm,1.0s								
IRK	**Irkutsk**	**30.78**	**313**	*e*P			**P**	**10 20 54.4**	**+0.1**
IRK				pmax			pmax		
	comp=E,56nm,1.4s								
ZAK	**Zakamensk**	**30.92**	**309**	*e*P			**P**	**10 20 54.7**	**-1.0**
ZAK				pmax			pmax		
	comp=Z,41nm,1.2s								
ZAK				pmax			pmax		
	comp=Z,9.0nm,1.2s								
TLY	**Talaya**	**31.00**	**312**	P			**P**	**10 20 57.2**	**+0.9**
	comp=Z,43nm,1.0s,baz=116,slow=4.9,SNR=34								
TLY				LR			LR	10 34 01.7	
	comp=Z,7μm,18.7s,baz=86,slow=38								
TLY	**Talaya**	**31.00**	**312**	*e*P			**P**	**10 20 56.6**	**+0.3**
TLY				pmax			pmax		
	comp=Z,70nm,1.1s								
TLY				MLR			MLR		
	comp=Z,7μm,16.0s								
TLY	**Talaya**	**31.00**	**312**	*e*P			**P**	**10 20 56.9**	**+0.7**
	comp=Z,77nm,1.2s								
GYA	**Guiyang**	**31.33**	**262**	⇑*i*P			**P**	**10 20 57.7**	**-1.9**
GYA				pP			pP	10 21 08.4	+0.9
GYA				PP			**PnPn**	**10 22 05.0**	**+2.7**
GYA				PcP			**PcP**	**10 23 55.6**	**+2.4**
GYA				S			**S**	**10 26 05.8**	**+0.6**
GYA				sS			sS	10 26 17.2	-1.1
GYA				SS			**SnSn**	**10 27 51.0**	**+1.6**
GYA				ScS			**ScS**	**10 31 31.4**	**-0.7**
GYA				pmax			pmax		
	comp=Z,70nm,1.0s								
GYA				pmax			pmax		
	comp=Z,140nm,4.9s								
GYA				LR			LR		
	comp=Z,880nm,16.8s								
GYA				LR			LR		
	comp=Z,750nm,17.7s								
GYA				LR			LR		
	comp=Z,720nm,17.2s								
CD2	**Chengdu**	**31.92**	**271**	⇓P			**P**	**10 21 03.6**	**-1.0**
CD2				pmax			pmax		
	comp=Z,50nm,0.8s								
MOY	**Mondy**	**32.60**	**311**	*e*P			**P**	**10 21 10.5**	**0.0**
MOY				pmax			pmax		
	comp=Z,50nm,1.1s								
QIZ	**Qiongzhong**	**32.84**	**247**	P			**P**	**10 21 13.8**	**+1.1**
QIZ				S			**S**	**10 26 27.6**	**-0.9**
QIZ				LR			LR		
	comp=Z,2μm,14.2s								
QIZ				LR			LR		
	comp=Z,1μm,16.7s								
GTA	**Gaotai**	**33.01**	**288**	*e*P			**P**	**10 21 14.4**	**+0.2**
GTA				pP			pP	10 21 20.6	-1.5
GTA				sP			sP	10 21 24.1	-1.3
GTA				PcP			**PcP**	**10 23 57.8**	**+0.2**
GTA				pmax			pmax		
	comp=Z,31nm,1.0s								
BILL	**Bilibino**	**34.68**	**16**	*i* P			**P**	**10 21 27.9**	**-0.3**
BILL				*i*				10 21 33.2	
BILL				*i*				10 23 58.8	
BILL				pmax			pmax		
	comp=Z,16nm,1.2s								
BILL	**Bilibino**	**34.68**	**16**	*e*P			**P**	**10 21 28.0**	**-0.3**
	comp=Z,22nm,1.2s								
KMI	**Kunming**	**35.09**	**263**	P			**P**	**10 21 31.5**	**-0.9**
KMI				pmax			pmax		
	comp=Z,39nm,1.0s								
TIXI	**Tiksi**	**36.06**	**353**	P			**P**	**10 21 40.1**	**+0.1**
	comp=Z,13nm,1.0s,baz=147,slow=8.1,SNR=17								
TIXI	**Tiksi**	**36.06**	**353**	⇓*e*P			**P**	**10 21 39.8**	**-0.2**
TIXI				pmax			pmax		
	comp=Z,18nm,1.0s								
MYLDM	**Lahad Datu**	**37.58**	**220**	*e*P			**P**	**10 21 53.3**	**-0.2**
	comp=Z,48nm,1.1s								
PANO	**Nakornpanom**	**37.92**	**250**	P			**P**	**10 21 57.9**	**+1.5**
	comp=Z,25nm,1.4s								
KRAR	**Krasnoyarsk**	**38.17**	**317**	⇑*e*P			**P**	**10 21 57.7**	**-0.3**
KRAR				pmax			pmax		
	comp=Z,21nm,0.8s								
NONG	**Nongkai**	**38.49**	**252**	P			**P**	**10 22 01.3**	**+0.1**
	comp=Z,55nm,1.3s								
SKNT	**Sakolnakorn**	**38.50**	**250**	P			**P**	**10 22 01.8**	**+0.5**
	comp=Z,64nm,1.9s								
LBMI	**Labuha**	**39.03**	**203**	P			**P**	**10 22 06.6**	**+0.9**
CRAI	**Chiangrai**	**39.44**	**257**	P			**P**	**10 22 09.0**	**-0.1**
	comp=Z,341nm,0.7s								
FAKI	**Fak Fak**	**39.98**	**195**	P			**P**	**10 22 15.0**	**+1.4**
MRSI	**Marisa**	**40.07**	**212**	P			**P**	**10 22 13.9**	**-0.4**
LOEI	**Loei**	**40.27**	**253**	P			**P**	**10 22 12.7**	**-3.4**
	comp=Z,79nm,0.9s								
CMAI	**Chiengmai2**	**40.65**	**258**	P			**P**	**10 22 19.5**	**+0.1**
	comp=

ZAA1 **Zalesovo Array** 42.59 313 *e*P **P** 10 22 34.0 -0.7
ZAA1 *e*PcP **PcP** 10 24 26.6 0.0
ZALV **Zalesovo Beam** 42.59 313 P **P** 10 22 34.0 -0.7
comp=Z,47nm,1.0s,baz=93,slow=6.2,SNR=54
ZALV PcP **PcP** 10 24 26.6 0.0
comp=Z,3.5nm,0.5s,baz=83,slow=5.7,SNR=2.7
SBUM **Sibu** 43.30 226 *e*P **P** 10 22 40.7 -0.1
comp=Z,12nm,1.0s
NVS **Novosibirsk** 43.53 314⇑ *i*P **P** 10 22 42.4 +0.2
NVS pmax pmax
comp=N,19nm,1.2s
NVS pmax pmax
comp=E,50nm,1.2s
NVS pmax pmax
comp=Z,89nm,1.2s
NRIK **Noril'sk** 44.05 336 P **P** 10 22 46.0 -0.2
comp=Z,8.7nm,0.8s,baz=118,slow=7.9,SNR=15
MK01 **Makanchi Array** 44.72 303 *e*P **P** 10 22 51.8 -0.1
MK31 **Makanchi Array** 44.72 303 P **P** 10 22 52.0 +0.1
MK31 pmax pmax
comp=Z,53nm,1.1s
MK31 **Makanchi Array** 44.72 303 *e*P **P** 10 22 52.1 +0.1
MK32 **Makanchi Array** 44.72 303 *e*P **P** 10 22 52.0 0.0
MKAR **Makanchi Array** 44.72 303 P **P** 10 22 52.0 0.0
comp=Z,21nm,0.7s,baz=82,slow=8.7,SNR=76
MKAR LR LR 10 42 14.6
comp=Z,4μm,18.4s,baz=357,slow=37
MKAR **Makanchi Array** 44.72 303 *e*P **P** 10 22 52.1 +0.1
MKAR **Makanchi Array** 44.72 303 *e*P **P** 10 22 52.1 +0.1
MAKZ **Makanchi** 44.93 303 P **P** 10 22 52.9 -0.7
MAKZ pmax pmax
comp=Z,60nm,1.2s
SPSI **Sidrap Palu** 44.98 212 P **P** 10 22 55.8 +1.5
comp=Z,39nm,1.0s
KSM **Kuching** 45.21 227 *e*P **P** 10 22 55.9 -0.2
comp=Z,4.2nm,0.3s
STKI **Sintang** 45.67 225 P **P** 10 22 59.9 +0.2
comp=Z,54nm,0.9s
PMG **Port Moresby** 45.73 172 P **P** 10 22 58.2 -1.9
comp=Z,7.0nm,0.8s,baz=14,slow=12,SNR=3.0
PMG **Port Moresby** 45.73 172⇑ *e*P **P** 10 23 00.2 0.0
PMG pmax pmax
comp=Z,38nm,1.1s
PMG **Port Moresby** 45.73 172 *e*P **P** 10 23 00.5 +0.4
comp=Z,57nm,1.5s
TT01 **Tatalina** 45.90 34 *e*P **P** 10 23 01.9 +0.8
KAPI **Kappang** 45.94 211 P **P** 10 23 01.8 0.0
comp=Z,29nm,0.9s,baz=33,slow=8.9,SNR=30
KAPI **Kappang** 45.94 211 *e*P **P** 10 23 01.8 0.0
comp=Z,77nm,1.1s
KURK **Kurchatov** 46.58 309 *e*P **P** 10 23 06.0 -0.5
KURK pmax pmax
comp=Z,70nm,0.8s
KURK **Kurchatov** 46.58 309 *e*P **P** 10 23 06.0 -0.5
comp=Z,70nm,0.8s
PDGK **Podgornoye** 47.34 299 P **P** 10 23 12.5 -0.1
PDGK pmax pmax
comp=Z,189nm,1.1s
RSO **Redoubt South** 47.35 38 *e*P **P** 10 23 13.9 +1.2
GUN **Gumba** 47.47 276 *e*P **P** 10 23 14.3 +0.1
comp=Z,328nm,1.0s
KDAK **Kodiak Island** 47.51 41 *i*P **P** 10 23 14.2 +0.6
PPLA **Purkeypile** 47.65 35 *e*P **P** 10 23 16.0 +1.1
comp=Z,51nm,1.4s
SPU **Mount Spurr** 47.69 37 *e*P **P** 10 23 16.0 +0.8
CAST **Castle Rocks** 47.72 34 *e*P **P** 10 23 16.6 +1.3
comp=Z,21nm,1.3s
PKIN **Phulchoki** 47.99 276 *e*P **P** 10 23 17.8 -0.4
comp=Z,80nm,0.9s
KKN **Kakani** 48.00 277 *e*P **P** 10 23 18.4 +0.2
comp=Z,225nm,1.1s
DMN **Daman** 48.21 277 *e*P **P** 10 23 19.8 -0.1
comp=Z,243nm,1.3s
BPAW **Bear Paw Mtn.** 48.23 33 *e*P **P** 10 23 20.2 +1.0
comp=Z,19nm,1.4s
KTH **Kantishna Hill** 48.24 34 *e*P **P** 10 23 20.1 +0.7
comp=Z,19nm,1.0s
MLY **Manley** 48.37 32 *e*P **P** 10 23 21.4 +1.1
comp=Z,22nm,1.2s
GKN **Gorkha** 48.42 277 *e*P **P** 10 23 21.4 0.0
comp=Z,660nm,1.1s
EDFI **Ende, Flores** 48.59 207 P **P** 10 23 24.3 +1.7
KULM **Kulim** 48.64 241 *e*P **P** 10 23 22.4 -0.6
comp=Z,25nm,1.3s
SOEI **Soe** 48.65 203 *e*P **P** 10 23 22.6 -0.5
comp=Z,179nm,1.2s
COLD **Coldfoot** 48.70 29 *e*P **P** 10 23 23.2 +0.4
comp=Z,6.6nm,1.0s
RC01 **Rabbit Creek A** 48.82 37 *e*P **P** 10 23 23.7 -0.1
comp=Z,28nm,1.2s
BWN **Browne** 48.90 33 *e*P **P** 10 23 26.0 +1.7
comp=Z,145nm,1.4s
IPM **Ipoh** 48.95 240 *e*P **P** 10 23 24.1 -1.3
comp=Z,52nm,1.3s
SEW **Seward** 49.01 38 *e*P **P** 10 23 24.9 -0.3
comp=Z,26nm,1.1s
PMR **Palmer** 49.09 36 *e*P **P** 10 23 26.0 +0.2
PMR pmax pmax
comp=Z,18nm,1.0s
PMR **Palmer** 49.09 36 *e*P **P** 10 23 26.0 +0.2
comp=Z,18nm,1.0s
MCK **McKinley** 49.13 33 *e*P **P** 10 23 26.6 +0.4
MCK pmax pmax
comp=Z,34nm,1.5s
MCK **McKinley** 49.13 33 *e*P **P** 10 23 26.6 +0.4
comp=Z,34nm,1.5s
RND **Reindeer** 49.17 34 *e*P **P** 10 23 25.3 -1.3
RND pmax pmax
comp=Z,27nm,1.1s
RND **Reindeer** 49.17 34 *e*P **P** 10 23 25.2 -1.3
comp=Z,27nm,1.1s
KOLN **Koldanda** 49.35 277 *e*P **P** 10 23 28.6 0.0
comp=Z,162nm,1.0s
MDM **Murphy Dome** 49.43 32 *e*P **P** 10 23 29.5 +1.1
comp=Z,50nm,1.2s
SML **Sawmill** 49.46 36 *e*P **P** 10 23 28.6 -0.2
SML pmax pmax
comp=Z,24nm,0.9s
SML **Sawmill** 49.46 36 *e*P **P** 10 23 28.6 -0.2
comp=Z,24nm,0.9s
WRH **Wood River Hil** 49.49 32 *e*P **P** 10 23 29.6 +0.7
comp=Z,10nm,0.9s
COLA **College** 49.59 32 *e*P **P** 10 23 30.7 +1.1
COLA pmax pmax
comp=Z,18nm,1.1s
COLA **College** 49.59 32 *e*P **P** 10 23 30.6 +1.1
comp=Z,18nm,1.1s
CCB **Clear Creek Bu** 49.62 32 *e*P **P** 10 23 31.4 +1.6
comp=Z,6.0nm,1.0s
PYUN **Piuthan** 49.70 278 *e*P **P** 10 23 31.3 0.0
comp=Z,717nm,1.1s
MTN **Manton Dam** 49.87 194 *e*P **P** 10 23 32.1 -0.1
comp=Z,52nm,0.8s
COEN **Coen** 49.98 178 *e*P **P** 10 23 33.9 +0.8
comp=Z,29nm,0.9s
HDA **Harding Lake** 49.99 32 *e*P **P** 10 23 32.9 +0.2
comp=Z,18nm,0.9s
IL1 **Eielson Array** 50.01 32 *e*P **P** 10 23 32.7 -0.1
ILAR **Eielson Array** 50.01 32 P **P** 10 23 32.4 -0.4
comp=Z,7.3nm,0.9s,baz=267,slow=6.0,SNR=41
ILB **Eielson Array** 50.01 32 *e*P **P** 10 23 32.7 -0.1
TKM2 **Tokmak 2** 50.20 299 *i*P **P** 10 23 35.2 +0.4
TKM2 pmax pmax
comp=Z,65nm,1.4s
TKM2 **Tokmak 2** 50.20 299 *e*P **P** 10 23 35.6 +0.7
comp=Z,69nm,1.1s
PLAI **Plampang** 50.20 211 P **P** 10 23 35.0 +0.2
comp=Z,52nm,0.9s
TWSI **Taliwang, Sumb** 50.50 213 P **P** 10 23 36.7 -0.4
FYU **Fort Yukon** 50.65 30 *e*P **P** 10 23 39.3 +1.8
comp=Z,38nm,1.3s
DIV **Divide** 50.74 37 *e*P **P** 10 23 39.5 +1.0
comp=Z,47nm,1.0s
EYAK **Cordova Ski Ar** 50.81 37 *e*P **P** 10 23 39.5 +0.6
comp=Z,19nm,0.9s
FRU **Bishkek** 50.91 299⇑ *e*P **P** 10 23 40.0 0.0
FRU *e* 10 30 50.0
FRU *e* 10 31 13.0
FRU pmax pmax
comp=Z,135nm,1.8s
KSH **Kashi** 50.93 295 P **P** 10 23 44.4 +4.1
KSH *es*P sP 10 23 55.2 +3.5
KSH *e*PcP **PcP** 10 25 00.4 +4.0
KSH S **S** 10 30 58.9 +3.5
KSH SS **SS** 10 34 33.1 +3.0
KSH pmax pmax
comp=Z,28nm,1.4s
KSH pmax pmax
comp=Z,2μm,11.9s
KSH LR LR
comp=Z,3μm,15.2s
KSH LR LR
comp=Z,3μm,18.1s
KSH LR LR
comp=Z,4μm,16.2s
CHKZ **Chkalovo** 51.00 314 *i*P **P** 10 23 39.4 -1.0
CHKZ pmax pmax
comp=Z,52nm,1.2s
AAK **Ala-Archa** 51.05 299 P **P** 10 23 40.9 -0.4
AAK pmax pmax
comp=Z,18nm,0.9s
AAK **Ala-Archa** 51.05 299 *e*P **P** 10 23 41.6 +0.3
BVA0 **Borovoye Array** 51.25 313 *i*P **P** 10 23 41.9 -0.5
BVA0 pmax pmax
comp=Z,34nm,1.3s
DOT **Dot Lake** 51.30 33 *e*P **P** 10 23 42.5 -0.1
comp=Z,32nm,1.0s
BRVK **Borovoye** 51.31 313 *e*P **P** 10 23 42.7 -0.1
BRVK pmax pmax
comp=Z,32nm,1.1s
BRVK **Borovoye** 51.31 313 *e*P **P** 10 23 42.7 -0.1
comp=Z,32nm,1.1s
BMRM **Bremner River** 51.32 37 *e*P **P** 10 23 43.4 +0.6
comp=Z,32nm,1.1s
EKS2 **Erkin-Say** 51.55 299 *e*P **P** 10 23 45.2 +0.3
EKS2 pmax pmax
comp=Z,16nm,0.9s
EKS2 **Erkin-Say** 51.55 299 *e*P **P** 10 23 45.2 +0.3
comp=Z,16nm,0.9s
BKNI **Bangkinang** 51.96 236 P **P** 10 23 47.7 -0.4
BKNI **Bangkinang** 51.96 236 *e*P **P** 10 23 48.3 +0.2
comp=Z,124nm,0.9s
ZRNK **Zerenda** 52.09 313 *i*P **P** 10 23 48.1 -0.5
ZRNK pmax pmax
comp=Z,50nm,1.2s
ZRNK **Zerenda** 52.09 313 *e*P **P** 10 23 48.6 0.0
comp=Z,56nm,1.2s
PWJI **Pagerwojo** 52.26 219 P **P** 10 23 49.3 -1.0
BALM **Baldy** 52.40 37 *e*P **P** 10 23 51.6 +0.6
BALM pmax pmax
comp=Z,21nm,1.2s
BALM **Baldy** 52.40 37 *e*P **P** 10 23 51.6 +0.6
comp=Z,21nm,1.2s
EGAK **Eagle** 52.45 32 *e*P **P** 10 23 51.7 +0.5
comp=Z,6.6nm,0.8s
MNAS **Manas** 52.50 299 P **P** 10 23 52.4 +0.4
MNAS pmax pmax
comp=Z,39nm,1.1s
MNSI **Mandailing Nat** 52.60 238 P **P** 10 23 51.9 -0.9
SDSI **Sungai Dareh** 52.64 234 P **P** 10 23 52.1 -1.0
comp=Z,52nm,1.0s,comp=Z,20μm
UGM **Wanagama** 52.83 220 *e*P **P** 10 23 54.1 -0.3
comp=Z,194nm,1.1s
DAWY **Dawson** 53.31 33 *e*P **P** 10 23 59.7 +2.2
comp=Z,3.8nm,0.9s
LHSI **Lahat** 53.51 230 P **P** 10 23 59.4 -0.1
comp=Z,111nm,1.1s
GSI **Gunungsitoli** 53.62 240 P **P** 10 23 59.2 -1.2
comp=Z,107nm,1.1s
GSI **Gunungsitoli** 53.62 240 *e*P **P** 10 23 60.0 -0.4
comp=Z,124nm,1.1s
KK31 **Karatay Array** 53.70 301 P **P** 10 24 00.8 +0.1
KK31 pmax pmax
comp=Z,52nm,1.2s
KKAR **Karatay Array** 53.70 301 *e*P **P** 10 24 01.2 +0.5
KKAR **Karatay Array** 53.70 301 *e*P **P** 10 24 01.2 +0.5
INK **Inuvik** 54.95 27 P **P** 10 24 09.7 +0.4
comp=Z,7.5nm,0.6s,baz=305,slow=8.0,SNR=54
INK **Inuvik** 54.95 27 *e*P **P** 10 24 09.7 +0.4
INK pmax pmax
comp=Z,33nm,1.4s
INK **Inuvik** 54.95 27 *e*P **P** 10 24 09.7 +0.4
comp=Z,33nm,1.4s
SVE **Sverdlovsk** 55.87 319⇑ *i*P **P** 10 24 16.6 +0.5
SVE pmax pmax
comp=Z,65nm,1.2s
SVE MLR MLR
comp=Z,9μm,16.0s
NGP **Nagpur** 56.09 273 *e*P **P** 10 24 15.0 -3.2
FITZ **Fitzroy Crossi** 56.18 198 P **P** 10 24 18.7 0.0
comp=Z,4.4nm,0.7s,baz=27,slow=10,SNR=5.3
CTA **Charters Tower** 56.23 175 P **P** 10 24 18.7 -0.3
comp=Z,3.5nm,0.8s,baz=11,slow=13,SNR=4.2
WRAB **Tennant Creek** 56.34 188⇑ *e*P **P** 10 24 19.0 -0.8
WRAB pmax pmax
comp=Z,37nm,0.9s
WRAB **Tennant Creek** 56.34 188 *e*P **P** 10 24 18.6 -1.2
comp=Z,39nm,0.9s
WB2 **Warramunga Arr** 56.35 188 *e*P **P** 10 24 18.1 -1.8
comp=Z,42nm,0.9s
WR1 **Warramunga Arr** 56.35 188 *e*P **P** 10 24 17.8 -2.1
comp=Z,39nm,0.8s
WRA **Warramunga Arr** 56.35 188 P **P** 10 24 17.8 -2.2
comp=Z,11nm,0.8s,baz=7.3,slow=7.2,SNR=28
DZET **Dzherino** 56.39 296 P **P** 10 24 19.6 -0.7
DZET pmax pmax
comp=Z,58nm,1.0s
ARU **Arti** 57.08 319 *e*P **P** 10 24 24.6 -0.1
ARU pmax pmax
comp=Z,64nm,1.1s
ARU **Arti** 57.08 319 *e*P **P** 10 24 24.6 -0.1
comp=Z,64nm,1.1s
KBL **Kabul** 57.91 292 *e*P **P** 10 24 30.8 -0.4
KBL pmax pmax
comp=Z,23nm,0.9s
KBL **Kabul** 57.91 292 *e*P **P** 10 24 30.8 -0.4
comp=Z,23nm,0.9s
HYB **Hyderabad** 58.42 269 *i*P **P** 10 24 34.5 -0.3
AB31 **Akbulak array** 58.60 311 *i*P **P** 10 24 34.8 -0.8
AB31 pmax pmax
comp=Z,34nm,1.4s
ABKAR **Akbulak array** 58.60 311 *e*P **P** 10 24 35.1 -0.5
DLBC **Dease Lake** 59.08 38 *e*P **P** 10 24 40.2 +1.4
comp=Z,19nm,1.4s
AS01 **Alice Springs** 60.07 188 *e*P **P** 10 24 44.1 -1.8
AS31 **Alice Springs** 60.08 188 *e*P **P** 10 24 44.6 -1.3
comp=Z,4.6nm,0.8s
ASAR **Alice Springs** 60.08 188 P **P** 10 24 44.5 -1.4
comp=Z,4.1nm,0.7s,baz=12,slow=7.4,SNR=24
KBS **Kingsbay** 61.44 350 *e*P **P** 10 24 56.4 +1.9
KBS **Kingsbay** 61.44 350 *e*P **P** 10 24 56.4 +1.9
RES **Resolute Bay** 63.27 14 P **P** 10 25 06.5 -0.4
comp=Z,21nm,1.0s,baz=309,slow=6.8,SNR=39
RES **Resolute Bay** 63.27 14 *e*P **P** 10 25 06.5 -0.4
RES pmax pmax
comp=Z,28nm,1.1s
RES **Resolute Bay** 63.27 14 *e*P **P** 10 25 06.5 -0.4
comp=Z,28nm,1.1s
TMCR **Tamitsa** 63.52 332 *e*P **P** 10 25 09.3 +0.7
TMCR pmax pmax
comp=Z,73nm,1.0s
MSVF **Nonsavu** 63.77 141 *e*P **P** 10 25 15.1 +4.2
MSVF pmax pmax
comp=Z,17nm,1.0s
MSVF **Nonsavu** 63.77 141 *e*P **P** 10 25 15.1 +4.2
comp=Z,17nm,1.0s
YKW3 **Yellowknife Ar** 64.30 30 *e*P **P** 10 25 14.1 +0.2
comp=Z,10nm,1.2s
YKA **Yellowknife Ar** 64.34 30 P **P** 10 25 13.9 -0.2
comp=Z,5.8nm,1.0s,baz=297,slow=6.4,SNR=38
YKB5 **Yellowknife Ar** 64.34 30 *e*P **P** 10 25 13.7 -0.4
GEYT **Alibeck** 64.40 299 P **P** 10 25 15.2 +0.2
comp=Z,12nm,1.1s,baz=54,slow=3.8,SNR=14
KLMR **Klimovskoe** 64.52 328 *e*P **P** 10 25 12.4 -2.8
KLMR 10 27 34.5
KLMR pmax pmax
comp=Z,37nm,1.2s
ARA0 **ARCESS Array S** 64.78 340 *e*P **P** 10 25 16.9 0.0
ARCES **ARCESS Array B** 64.78 340 P **P** 10 25 16.9 0.0
comp=Z,15nm,0.9s,baz=56,slow=7.0,SNR=17
DAG **Danmarks Havn** 66.54 355 *i*P **P** 10 25 27.7 -0.4
comp=Z,26nm,1.3s
DAG **Danmarks Havn** 66.54 355 *i*P **P** 10 25 27.7 -0.4
DAG pmax pmax
comp=Z,49nm,1.3s
OSR **Olympics--Salm** 66.94 47 P **P** 10 25 33.2 +2.0
NLWA **Neilton Lookou** 67.05 47 *e*P **P** 10 25 33.8 +1.9
comp=Z,45nm,1.1s
E03A **Lebam** 67.65 48 *e*P **P** 10 25 35.5 -0.1
comp=Z,44nm,1.1s
E03A *es*P **sP** 10 25 47.1 -0.1
B05A **Bryant** 67.67 46 P **P** 10 25 36.7 +1.0
baz=300
STKA **Stephens Creek** 67.80 180 P **P** 10 25 36.5 0.0
comp=Z,5.2nm,0.8s,baz=329,slow=6.8,SNR=9.0
STKA **Stephens Creek** 67.80 180 *e*P **P** 10 25 36.4 -0.2
STKA pmax pmax
comp=Z,2.0nm,0.9s
STKA **Stephens Creek** 67.80 180 *e*P **P** 10 25 36.4 -0.2
comp=Z,2.3nm,0.9s
MOS **Moscow** 67.99 324 *e*P **P** 10 25 36.5 -1.1
MOS pmax pmax
comp=Z,81nm,1.1s
HTW **Haystack Looko** 68.09 46 P **P** 10 25 39.3 +0.8
D05A **Enumclaw** 68.27 47 *e*P **P** 10 25 40.9 +1.4
comp=Z,38nm,1.2s
VRH **Novokhopyorsk** 68.29 318 *e*P **P** 10 25 38.8 -0.8
VRH pmax pmax
comp=Z,50nm,1.3s
G03D **McMinnville, O** 68.49 49 P **P** 10 25 41.7 +0.7
baz=300
TDL **Tradedollar La** 68.55 48 P **P** 10 25 42.6 +1.1
LON **Longmire** 68.59 47 *e*P **P** 10 25 41.6 0.0
LON pmax pmax
comp=Z,11nm,1.2s
LON **Longmire** 68.59 47 *e*P **P** 10 25 41.6 0.0
comp=Z,11nm,1.2s
F04A **Amboy** 68.64 48 *e*P **P** 10 25 41.3 -0.6
comp=Z,32nm,1.1s
OBN **Obninsk** 68.84 324 *e*P **P** 10 25 42.5 -0.4
OBN pmax pmax
comp=Z,37nm,1.2s
ETW **Entiat** 69.02 46 *e*P **P** 10 25 45.0 +0.6
LPSR **Galich'ya Gora** 69.03 320 *e*P **P** 10 25 44.0 -0.1
LPSR *e**PP **pP** 10 25 53.8 +1.2
LPSR pmax pmax
comp=Z,30nm,0.8s
WTV **Waterville** 69.19 46 *e*P **P** 10 25 46.0 +0.6
I03D **Drain, OR** 69.20 51 P **P** 10 25 46.7 +1.3
baz=301
B08A **Colville Reser** 69.21 45 *e*P **P** 10 25 45.9 +0.4
comp=Z,22nm,1.2s
EBG **Ellensburg** 69.24 47 P **P** 10 25 46.6 +0.9
H04A **Detroit Lake** 69.42 49 *e*P **P** 10 25 47.1 +0.3
comp=Z,40nm,1.3s
SAW **Saint Andrews** 69.51 45 P **P** 10 25 48.0 +0.7
FIA1 **FINESS Array S** 69.59 332 *e*P **P** 10 25 47.1 -0.3
FIA0 **FINESS Array S** 69.59 332 *e*P **P** 10 25 47.6 +0.1
FIA0 **FINESS Array S** 69.59 332 *e*P **P** 10 25 47.5 +0.1
FINES **FINESS Array B** 69.59 332 P **P** 10 25 47.5 +0.1
comp=Z,33nm,1.1s,baz=46,slow=8.2,SNR=31
VSR **Storozhevoye** 69.65 319 *e*P **P** 10 25 47.3 -0.7
VSR *e**PP **pP** 10 25 57.3 +0.8
VSR pmax pmax
comp=Z,30nm,1.2s
G05D **Wamic, OR** 69.66 48 P **P** 10 25 48.4 +0.2
baz=301
I04A **Tendick Farm,** 69.74 50 P **P** 10 25 49.5 +0.7
baz=301
L02D **Cave Junction,** 69.83 52 P **P** 10 25 49.8 +0.5
baz=301
C09A **Chrisman Ranch** 70.10 45 *e*P **P** 10 25 51.6 +0.7
comp=Z,35nm,1.3s
I05D **Terrebonne, OR** 70.12 49 P **P** 10 25 50.5 -0.6
baz=302
D08A **Wollman Farm,** 70.13 46 *e*P **P** 10 25 51.7 +0.6
comp=Z,17nm,1.1s
NEW **Newport** 70.51 44 P **P** 10 25 53.6 +0.2
baz=303,SNR=6.9
NEW **Newport** 70.51 44 *e*P **P** 10 25 54.0 +0.6
NEW pmax pmax
comp=Z,20nm,1.2s
NEW **Newport** 70.51 44 *e*P **P** 10 25 54.0 +0.6
comp=Z,20nm,1.2s
M02C **Callahan** 70.71 53 P **P** 10 25 54.6 -0.2
baz=302
J05D **Fort Rock, OR** 70.73 50 P **P** 10 25 54.9 -0.1
baz=302
E09A **Wood Farm, Sta** 70.87 46 *e*P **P** 10 25 56.8 +1.2
comp=Z,44nm,1.3s
N02D **Trinity Center** 71.02 53 P **P** 10 25 56.6 -0.1
baz=302
G08A **Pilot Rock** 71.05 47 *e*P **P** 10 25 58.2 +1.4
comp=Z,19nm,1.4s
M04C **Macdoel** 71.15 52 P **P** 10 25 57.5 -0.1
baz=302
VSU **Vasula** 71.22 330⇓ *e*P **P** 10 25 57.7 +0.3
VSU pmax pmax
comp=Z,84nm,1.1s
K05A **Summer Lake** 71.24 51 *e*P **P** 10 25 59.7 +1.5
comp=Z,48nm,1.1s
WBK **Wadi Bani Khal** 71.36 285 P **P** 10 26 00.0 +1.1
SNR=5.3
WBK **Wadi Bani Khal** 71.36 285 P **P** 10 26 00.0 +1.1
SNR=5.3
SUMG **Summit** 71.44 0 *i*P **P** 10 25 59.7 +0.6
comp=Z,30nm,1.3s
SUMG **Summit** 71.44 0 *i*P **P** 10 25 59.7 +0.6
SUMG pmax pmax
comp=Z,30nm,1.3s
SUMG **Summit** 71.44 0 *e*P **P** 10 25 59.6 +0.5
comp=Z,28nm,1.1s
ZEI **Tsey** 71.46 310 *e*P **P** 10 25 57.5 -2.0
ZEI pmax pmax
comp=Z,27nm,0.9s
KBZ **Khabaz** 71.57 311 P **P** 10 26 00.0 +0.2
comp=Z,18nm,1.0s,baz=46,slow=4.4,SNR=22
KIV **Kislovodsk** 71.58 311 *e*P **P** 10 26 00.5 +0.5
KIV pmax pmax
comp=Z,50nm,1.1s
KIV **Kislovodsk** 71.58 311 *e*P **P** 10 26 01.0 +0.9
comp=Z,60nm,1.0s
BANOM **Banah** 71.67 289 *i*P **P** 10 26 01.1 +0.3
SNR=7.3
BANOM **Banah** 71.67 289 P **P** 10 26 01.8 +1.0
SNR=5.2
BANOM **Banah** 71.67 289 P **P** 10 26 01.8 +1.0
SNR=5.2
F10A **Beach Ranch, E** 71.70 46 *e*P **P** 10 26 01.0 +0.2
comp=Z,11nm,1.1s
WALA **Waterton Lakes** 71.84 42 *e*P **P** 10 26 02.2 +0.6
comp=Z,16nm,1.1s
O03D **Paynes Creek** 71.96 53 P **P** 10 26 01.9 -0.5
baz=302
UOSS **Minazif** 72.26 288 *e*P **P** 10 26 04.4 +0.1
comp=Z,1.9nm,1.0s
GNI **Garni** 72.34 307⇓ *e*P **P** 10 26 05.3 +0.5
GNI pmax pmax
comp=Z,40nm,1.2s
HATD **Hatta, Dubai** 72.38 288 *i*P **P** 10 26 05.4 +0.4
SNR=8.4
HATD **Hatta, Dubai** 72.38 288 P **P** 10 26 06.0 +0.9
SNR=8.9
HATD **Hatta, Dubai** 72.38 288 P **P** 10 26 06.0 +0.9
SNR=8.9
JTMT **Jette** 72.38 43 *e*P **P** 10 26 05.6 +0.7
AKH **Akhalkalaki** 72.46 309⇑ *i*P **P** 10 26 07.0 +1.5
YBMT **Yellow Bay** 72.46 43 *e*P **P** 10 26 06.3 +1.0
ASHO **Ashiyiah** 72.51 288 *i*P **P** 10 26 06.0 +0.1
SNR=8.9
ASHO **Ashiyiah** 72.51 288 P **P** 10 26 06.7 +0.8
SNR=5.7
ASHO **Ashiyiah** 72.51 288 P **P** 10 26 06.7 +0.8
SNR=5.7
BSY **Bisya** 72.67 286 P **P** 10 26 07.8 +0.9
SNR=6.5
BSY **Bisya** 72.67 286 P **P** 10 26 07.8 +0.9
SNR=6.5
SWMT **Swartz Lake** 72.67 43 *e*P **P** 10 26 07.0 +0.4
WVOR **Wild Horse Val** 72.80 50 *e*P **P** 10 26 09.0 +1.6
WVOR pmax pmax
comp=Z,20nm,1.4s
WVOR **Wild Horse Val** 72.80 50 *e*P **P** 10 26 09.0 +1.6
comp=Z,20nm,1.4s
ARQ **Araqi** 72.88 287 P **P** 10 26 08.7 +0.7
SNR=9.9
ARQ **Araqi** 72.88 287 P **P** 10 26 08.7 +0.7
SNR=9.9
MSO **Missoula** 73.10 44 P **P** 10 26 08.8 -0.2
baz=305
MSO **Missoula** 73.10 44 *e*P **P** 10 26 09.5 +0.4
comp=Z,16nm,1.2s
MICGM **Minsk** 73.25 326 *e* **P** 10 26 10.0 +0.3
MNK **Minsk** 73.25 326 *e*P **P** 10 26 10.0 +0.3
CHMT **Chamberlain Mo** 73.43 44 *e*P **P** 10 26 11.6 +0.4
NACGM **Naroch** 73.48 327 *e* **P** 10 26 11.0 0.0
MFID **Camas Ranch** 73.96 48 *e*P **P** 10 26 15.0 +0.8
comp=Z,27nm,1.4s
CMB **Columbia Colle** 74.12 54 *e*P **P** 10 26 17.5 +2.3

CMB pmax pmax
comp=Z,107nm,1.2s
CMB Columbia Colle 74.12 54 *eP* **P 10 26 17.5 +2.3**
comp=Z,107nm,1.2s
ANN Anapa 74.22 314 *eP* **P 10 26 15.2 -0.3**
ANN *e* 10 26 26.8
ANN pmax pmax
comp=Z,36nm,1.4s
HRY Holter Researc 74.34 43 *eP* **P 10 26 17.5 +1.1**
LRM Limekiln Ridge 74.52 44 *eP* **P 10 26 18.4 +0.7**
FCC Fort Churchill 74.57 27 *eP* **P 10 26 17.0 -0.3**
FCC pmax pmax
comp=Z,25nm,1.2s
FCC Fort Churchill 74.57 27 *eP* **P 10 26 17.0 -0.3**
comp=Z,24nm,1.2s
EGMT Eagleton 74.68 41 P **P 10 26 18.7 +0.4**
baz=308,SNR=9.1
EGMT Eagleton 74.68 41 *eP* **P 10 26 19.1 +0.7**
comp=Z,48nm,1.3s
DLMT Dillon 74.71 45 *eP* **P 10 26 18.5 -0.2**
comp=Z,28nm,1.2s
HLID Hailey 74.71 47 P **P 10 26 18.5 -0.2**
baz=306
HLID Hailey 74.71 47 *eP* **P 10 26 20.0 +1.3**
comp=Z,9.3nm,1.1s
NC405 NORSAR Array S 74.76 337 *eP* **P 10 26 18.5 +0.1**
NC303 NORSAR Array S 74.78 338 *eP* **P 10 26 18.2 -0.3**
NC204 NORSAR Array S 74.92 338 *eP* **P 10 26 19.3 -0.1**
NB201 NORSAR Array S 74.94 337 *eP* **P 10 26 19.3 -0.2**
NB2 NORSAR Subarra 74.97 337 P **P 10 26 19.6 -0.1**
comp=Z,18nm,0.8s,baz=40,slow=5.9
NB2 NORSAR Subarra 74.97 337 P **P 10 26 19.6 -0.1**
baz=40,slow=5.9
NB200 NORSAR Array S 74.97 337 *eP* **P 10 26 19.5 -0.2**
NOA NORSAR Array B 74.97 337 P **P 10 26 19.5 -0.2**
comp=Z,24nm,1.0s,baz=40,slow=5.7,SNR=26
AKASG Malin Array Be 75.03 323 P **P 10 26 19.8 -0.3**
comp=Z,4.8nm,0.5s,baz=46,slow=6.2,SNR=30
AKBB Malin Array Si 75.03 323 *eP* **P 10 26 19.8 -0.3**
AKBB pmax pmax
comp=Z,38nm,1.3s
AKBB Malin Array Si 75.03 323 *eP* **P 10 26 19.8 -0.3**
comp=Z,38nm,1.3s
KIEV Kiev 75.05 323 ⇓*eP* **P 10 26 20.1 -0.1**
KIEV pmax pmax
comp=Z,26nm,1.1s
KIEV Kiev 75.05 323 *eP* **P 10 26 19.7 -0.5**
comp=Z,23nm,1.0s
NBO02 NORSAR Array S 75.07 338 *eP* **P 10 26 20.2 0.0**
AK11 Malin Array Si 75.08 323 *eP* **P 10 26 19.8 -0.6**
BOZ Bozeman (W) 75.09 44 P **P 10 26 21.5 +0.7**
baz=307
NC602 NORSAR Array S 75.10 337 *eP* **P 10 26 20.0 -0.4**
NBO00 NORSAR Array S 75.11 338 *eP* **P 10 26 20.7 +0.3**
NV01 Mina Array Sit 75.25 53 *eP* **P 10 26 22.1 +0.2**
NVAR Mina Array Bea 75.25 53 P **P 10 26 22.1 +0.2**
comp=Z,3.0nm,0.8s,baz=279,slow=6.4,SNR=11
MLAC Mammoth, Mammo 75.36 54 P **P 10 26 23.6 +0.9**
baz=305
SUW Suwalki 75.65 328 *eP* **P 10 26 23.8 +0.2**
SUW Suwalki 75.65 328 *eP* **P 10 26 23.8 +0.2**
QLMT Earthquake Lak 75.69 45 *eP* **P 10 26 23.8 -0.6**
SMMC Simmler 75.90 57 P **P 10 26 25.9 +0.4**
baz=305
SIM Simferopol' 76.03 316 *eP* **P 10 26 26.0 0.0**
SIM *e* 10 26 41.0
SIM pmax pmax
comp=Z,18nm,1.0s
YMR Madison River 76.05 45 *eP* **P 10 26 27.5 +1.0**
comp=Z,15nm,1.0s
GCMT Greycliff 76.09 43 *eP* **P 10 26 26.9 +0.4**
VES Vestal, Richgr 76.21 56 P **P 10 26 27.5 +0.3**
baz=305
YFT Old Faithful 76.26 45 *eP* **P 10 26 30.9 +3.2**
LKWY Lake 76.44 44 *eP* **P 10 26 30.9 +2.2**
LKWY pmax pmax
comp=Z,15nm,1.0s
LKWY Lake 76.44 44 *eP* **P 10 26 30.9 +2.2**
comp=Z,15nm,1.0s
H17A Grant Village 76.44 45 P **P 10 26 31.2 +2.6**
baz=308
H17A Grant Village 76.44 45 *eP* **P 10 26 31.3 +2.6**
comp=Z,36nm,1.1s
KLNR Kaliningrad 76.49 329 *eP* **P 10 26 28.9 +0.5**
KLNR pmax pmax
comp=Z,45nm,0.8s
IMW Indian Meadow 76.54 45 *eP* **P 10 26 30.8 +1.5**
comp=Z,23nm,1.2s
KONO Kongsberg 76.56 337 *eP* **P 10 26 28.8 +0.1**
KONO pmax pmax
comp=Z,28nm,1.4s
KONO Kongsberg 76.56 337 *eP* **P 10 26 28.8 +0.1**
comp=Z,28nm,1.4s
FLWY Flagg Ranch 76.56 45 *eP* **P 10 26 31.4 +2.0**
comp=Z,40nm,1.4s
GRAC Grapevine Rang 76.68 54 P **P 10 26 30.8 +0.8**
baz=306
RLMT Red Lodge 76.73 43 P **P 10 26 30.3 0.0**
baz=308
RLMT Red Lodge 76.73 43 *eP* **P 10 26 31.5 +1.2**
comp=Z,21nm,1.2s
MOOW Moose Ponds 76.74 45 *eP* **P 10 26 31.6 +1.3**
comp=Z,16nm,1.2s
HVU Hansel Valley 76.74 48 *eP* **P 10 26 31.2 +0.9**
HVU pmax pmax
comp=Z,12nm,1.0s
HVU Hansel Valley 76.74 48 *eP* **P 10 26 31.2 +0.9**
comp=Z,12nm,1.0s
LOHW Long Hollow 76.90 45 *eP* **P 10 26 32.6 +1.4**
comp=Z,8.9nm,1.2s
SNOW Snow King Moun 76.91 45 *eP* **P 10 26 33.0 +1.6**
comp=Z,17nm,1.2s
REDW Red Top Meadow 76.91 46 *eP* **P 10 26 32.7 +1.3**
comp=Z,16nm,1.1s
DAC Darwin (Calif) 76.95 55 *eP* **P 10 26 33.6 +2.0**
DAC pmax pmax
comp=Z,6.0nm,0.9s
DAC Darwin (Calif) 76.95 55 *eP* **P 10 26 33.6 +2.0**
comp=Z,5.8nm,0.9s
R11A Troy Canyon, C 77.04 52 P **P 10 26 33.0 +0.9**
baz=306
R11A Troy Canyon, C 77.04 52 *eP* **P 10 26 33.2 +1.1**
comp=Z,24nm,1.3s
BGU Big Grassy Mou 77.10 49 *eP* **P 10 26 32.7 +0.4**
comp=Z,12nm,1.2s
AHID Auburn Hatcher 77.14 46 *eP* **P 10 26 33.6 +1.1**
comp=Z,13nm,1.2s
MPMC Manual Prospec 77.14 55 P **P 10 26 32.9 +0.2**
baz=306
FURC Furnace Creek, 77.32 54 P **P 10 26 34.6 +1.2**
baz=306
HWUT Hardware Ranch 77.57 47 *eP* **P 10 26 35.9 +0.9**
comp=Z,34nm,1.3s
DUG Dugway, Tooele 77.67 49 P **P 10 26 35.7 +0.2**
baz=307
DUG Dugway, Tooele 77.67 49 *eP* **P 10 26 36.5 +1.0**
DUG pmax pmax
comp=Z,26nm,1.1s
DUG Dugway, Tooele 77.67 49 *eP* **P 10 26 36.5 +1.0**
comp=Z,26nm,1.1s
TCUT Toone Canyon 77.96 48 *eP* **P 10 26 36.2 -1.0**
comp=Z,36nm,1.2s
PSUT Pine Spring 78.03 51 *eP* **P 10 26 38.2 +0.6**
comp=Z,16nm,1.1s
BW06 Boulder Array 78.03 45 P **P 10 26 37.2 -0.4**
baz=309
BW06 Boulder Array 78.03 45 *eP* **P 10 26 37.7 +0.1**
PD31 Pinedale Array 78.03 45 *eP* **P 10 26 37.2 -0.4**
PDAR Pinedale Array 78.03 45 P **P 10 26 37.6 0.0**
comp=Z,1.1nm,0.6s,baz=280,slow=1.8,SNR=14
GSC Goldstone, Bar 78.04 55 P **P 10 26 36.6 -1.0**
baz=306
LVV L'vov 78.12 324 *eP* **P 10 26 38.2 +0.5**
LVV MLR MLR
comp=E,2μm,16.0s
LVV MLR MLR
comp=N,2μm,17.0s
LVV MLR MLR
comp=Z,4μm,16.0s
BEL Belsk 78.20 327 *eP* **P 10 26 39.7 +1.7**
BEL Belsk 78.20 327 *eP* **P 10 26 39.7 +1.7**
BSD Bornholm Skovb 78.22 332 *i P* **P 10 26 37.1 -0.9**
comp=Z,25nm,1.1s
BSD Bornholm Skovb 78.22 332 *eP* **P 10 26 37.1 -0.9**
BSD pmax pmax
comp=Z,25nm,1.1s
JLU Jordanelle 78.25 48 *eP* **P 10 26 39.8 +0.9**
comp=Z,22nm,1.3s
NLU North Lily Min 78.27 49 *eP* **P 10 26 40.1 +1.1**
comp=Z,16nm,1.2s
SHPR Sheep Range 78.41 53 *eP* **P 10 26 41.9 +2.2**
comp=Z,18nm,1.4s
BORG Borgarnes 78.42 353 *i P* **P 10 26 42.8 +3.8**
MPU Maple Canyon 78.50 49 *eP* **P 10 26 41.4 +1.2**
comp=Z,22nm,1.1s
KWP Kalwaria Pacla 78.88 325 *eP* **P 10 26 42.8 +1.0**
KWP Kalwaria Pacla 78.88 325 ⇑*iP* **P 10 26 42.6 +0.8**
KWP Kalwaria Pacla 78.88 325 *eP* **P 10 26 42.8 +1.0**
A28A Rude Farm, Bot 78.92 36 P **P 10 26 42.1 0.0**
baz=314
E25A Miller Ranch, 78.99 40 P **P 10 26 43.0 +0.4**
baz=312
BUR08 Bucovina Ar. S 79.03 322 *eP* **P 10 26 43.1 +0.2**
BURAR Bucovina Array 79.05 322 ⇑*iP* **P 10 26 43.3 +0.4**
TESR Tescani 79.06 320 ⇓*iP* **P 10 26 42.0 -0.9**
MSU Marysvale 79.09 50 *eP* **P 10 26 44.5 +1.0**
MSU Marysvale 79.09 50 *eP* **P 10 26 44.5 +1.0**
GMRC Granite Mounta 79.10 55 P **P 10 26 43.1 -0.4**
baz=307
C27A Sayler Ranch, 79.13 38 P **P 10 26 43.1 -0.2**
baz=313
CFR Carcaliu 79.16 319 ⇑*iP* **P 10 26 43.8 +0.4**
109C Camp Elliot, M 79.25 57 P **P 10 26 44.9 +0.7**
baz=306
PFO Pinyon Flats O 79.26 56 P **P 10 26 45.6 +1.2**
baz=306
TPFO Pinon Flats 79.27 56 P **P 10 26 45.7 +1.2**
baz=306
LCMT Little Creek M 79.33 52 *eP* **P 10 26 45.7 +1.0**
comp=Z,14nm,1.1s
F25A Bowman 79.34 40 P **P 10 26 45.2 +0.6**
baz=312
MTPU Mount Pierson 79.37 51 *eP* **P 10 26 46.8 +1.6**
comp=Z,18nm,1.2s
P17A Butcher Ranch, 79.38 49 *eP* **P 10 26 45.3 +0.3**
comp=Z,25nm,1.0s
A29A Manning Farm, 79.40 36 P **P 10 26 45.2 +0.4**
baz=314
VRI Vrincioaia 79.45 320 ⇑*iP* **P 10 26 46.4 +1.3**
Q16A Castle Valley 79.46 49 *eP* **P 10 26 46.4 +0.9**
comp=Z,29nm,1.3s
E26A Carlson Angus 79.49 39 P **P 10 26 45.5 +0.2**
baz=312
PLOR Plostina 79.50 320 ⇑*iP* **P 10 26 47.6 +2.2**
BR101 Keskin Array S 79.53 312 *eP* **P 10 26 46.2 +0.5**
BR131 Keskin Array S 79.53 312 *eP* **P 10 26 46.1 +0.4**
BRTR Keskin Array B 79.53 312 P **P 10 26 46.2 +0.4**
comp=Z,11nm,1.0s,baz=103,slow=3.9,SNR=36
BRTR PP **PP 10 29 43.1 -2.7**
comp=Z,1.6nm,1.0s,baz=85,slow=4.9,SNR=3.5
KOLS Kolonicke sedl 79.57 324 *eP* **P 10 26 45.4 -0.2**
KOLS pmax pmax
comp=Z,15nm,1.1s
KOLS Kolonicke sedl 79.57 324 *eP* **P 10 26 45.4 -0.2**
KOLS *e* 10 27 03.1
P18A Preston Nutter 79.58 48 *eP* **P 10 26 47.0 +0.7**
comp=Z,23nm,1.3s
KNB Kanab 79.59 52 *eP* **P 10 26 45.6 -0.6**
KNB pmax pmax
comp=Z,33nm,1.3s
KNB Kanab 79.59 52 *eP* **P 10 26 45.6 -0.6**
comp=Z,33nm,1.3s
STHS Stebnicka Huta 79.71 325 *eP* **P 10 26 47.5 +1.1**
STHS *e* 10 27 02.9
STHS pmax pmax
comp=Z,15nm,1.1s
STHS Stebnicka Huta 79.71 325 *eP* **P 10 26 47.5 +1.1**
STHS *e* 10 27 02.9
SRU San Rafael Swe 79.73 49 *eP* **P 10 26 47.5 +0.6**
SRU pmax pmax
comp=Z,23nm,1.1s
SRU San Rafael Swe 79.73 49 *eP* **P 10 26 47.5 +0.6**
comp=Z,23nm,1.1s
UZH Uzhgorod 79.77 324 *eP* **P 10 26 46.9 +0.2**
UZH *e* 10 26 54.1
OJC Ojcow 79.79 326 *eP* **P 10 26 47.1 +0.3**
OJC Ojcow 79.79 326 *eP* **P 10 26 47.1 +0.3**
OJC pmax pmax
comp=Z,26nm,1.1s
OJC Ojcow 79.79 326 *eP* **P 10 26 47.1 +0.3**
comp=Z,26nm,1.1s
F26A Lodgepole 79.80 40 P **P 10 26 46.8 -0.3**
baz=312
A30A Hoffart Farm, 79.83 35 P **P 10 26 47.0 0.0**
baz=315
K22A Casper 79.83 44 P **P 10 26 47.5 +0.1**
baz=310
G25A Newell 79.85 41 P **P 10 26 46.4 -0.9**
baz=312
CRVS Cervenica-Dubn 79.97 325 *eP* **P 10 26 48.0 +0.2**
CRVS *e* 10 27 04.5
CRVS Cervenica-Dubn 79.97 325 *eP* **P 10 26 48.0 +0.2**
CRVS *e* 10 27 04.5
E27A Carson 79.97 39 P **P 10 26 47.7 -0.2**
baz=313
ULM Lac du Bonnet 80.00 33 P **P 10 26 47.9 -0.1**
comp=Z,2.8nm,0.7s,baz=304,slow=7.2,SNR=3.3
ULM Lac du Bonnet 80.00 33 *eP* **P 10 26 47.7 -0.2**
comp=Z,24nm,1.4s
IKP In-Ko-Pah, Jac 80.07 57 P **P 10 26 48.9 +0.2**
baz=307
H25A Fruitdale 80.14 41 P **P 10 26 48.4 -0.5**
baz=312
NIE Niedzica 80.14 326 *eP* **P 10 26 49.4 +0.7**
NIE Niedzica 80.14 326 *eP* **P 10 26 49.4 +0.7**
B30A Myrvik Farm, E 80.16 36 P **P 10 26 49.1 +0.2**
baz=315
G26A Maurine 80.21 40 P **P 10 26 49.2 0.0**
baz=312
RSSD Black Hills 80.23 42 P **P 10 26 49.4 -0.2**
baz=312
RSSD Black Hills 80.23 42 *eP* **P 10 26 49.9 +0.3**
RSSD pmax pmax
comp=Z,17nm,1.4s
RSSD Black Hills 80.23 42 *eP* **P 10 26 49.9 +0.3**
comp=Z,17nm,1.4s
O20A White River Ci 80.45 47 P **P 10 26 50.9 +0.1**
baz=310
O20A White River Ci 80.45 47 *eP* **P 10 26 51.2 +0.4**
comp=Z,20nm,1.1s
I25A Rochford 80.47 42 P **P 10 26 50.9 0.0**
baz=312
Y12C Blythe 80.47 55 P **P 10 26 50.6 -0.2**
baz=307
B31A Greenbush Farm 80.50 36 P **P 10 26 50.7 0.0**
baz=315
G27A Dupree 80.50 40 P **P 10 26 50.3 -0.5**
baz=313
H26A Fairpoint 80.58 41 P **P 10 26 51.2 0.0**
baz=312
C30A Mose, Pekin 80.62 36 P **P 10 26 50.6 -0.7**
baz=315
A32A Rocking H Ranc 80.68 35 P **P 10 26 51.2 -0.4**
baz=316
LANS Liptovska Anna 80.71 326 *eP* **P 10 26 52.9 +1.1**
LANS Liptovska Anna 80.71 326 *eP* **P 10 26 52.9 +1.1**
KECS Kecovo 80.72 325 *eP* **P 10 26 50.8 -1.1**
KECS pmax pmax
comp=Z,4.0nm,1.3s
KECS Kecovo 80.72 325 *eP* **P 10 26 50.8 -1.1**
OKC Ostrava-Krasne 80.81 327 *eP* **P 10 26 52.9 +0.6**
OKC Ostrava-Krasne 80.81 327 *eP* **P 10 26 52.9 +0.6**
DRGR 80.85 323 ⇑*iP* **P 10 26 52.9 +0.2**
KSP Ksiaz 80.86 328 *eP* **P 10 26 53.1 +0.5**
KSP Ksiaz 80.86 328 *eP* **P 10 26 53.1 +0.5**
ARR Arges 80.87 321 ⇑*iP* **P 10 26 53.9 +1.1**
D30A Buchanan 80.90 37 P **P 10 26 52.6 -0.2**
baz=315
C31A Landman Farms, 80.91 36 P **P 10 26 52.6 -0.2**
baz=315
H27A Howes 80.93 40 P **P 10 26 53.0 -0.1**
baz=313,SNR=12
PV09 Paradox Valley 80.96 49 *eP* **P 10 26 54.8 +1.1**
B32A Ashes, Strandq 81.04 35 P **P 10 26 52.7 -0.9**
baz=316
PV10 Paradox Valley 81.10 49 *eP* **P 10 26 55.6 +1.2**
MORC Moravsky Berou 81.12 327 ⇑*iP* **P 10 26 55.2 +1.2**
MORC Moravsky Berou 81.12 327 *eP* **P 10 26 54.1 +0.1**
MORC pmax pmax
comp=Z,42nm,1.0s
MORC Moravsky Berou 81.12 327 *eP* **P 10 26 54.1 +0.1**
comp=Z,42nm,1.0s
A33A Warroad 81.17 34 P **P 10 26 53.3 -0.9**
baz=317
DPC Dobruska-Polom 81.22 328 *eP* **P 10 26 54.9 +0.4**
DPC *ep*P **sP 10 27 05.8 -0.5**
DPC Dobruska-Polom 81.22 328 *eP* **P 10 26 54.9 +0.4**
DPC *e* 10 27 05.8
KRLC Kraliky 81.23 328 *eP* **P 10 26 54.4 -0.2**
KRLC Kraliky 81.23 328 *eP* **P 10 26 54.4 -0.2**
UPC Upice 81.23 328 *eP* **P 10 26 55.2 +0.7**
UPC Upice 81.23 328 *eP* **P 10 26 55.2 +0.7**
PV05 Paradox Valley 81.25 49 *eP* **P 10 26 56.2 +1.0**
E30A Jud 81.25 38 P **P 10 26 54.3 -0.5**
baz=315
J26A Sides Ranch, S 81.29 42 P **P 10 26 54.8 -0.3**
baz=312
N23A Red Feather La 81.30 45 P **P 10 26 55.8 +0.4**
baz=311
N23A Red Feather La 81.30 45 *eP* **P 10 26 56.5 +1.0**
comp=Z,35nm,1.3s
PHWY Pilot Hill 81.31 45 *eP* **P 10 26 56.3 +0.7**
comp=Z,9.3nm,1.1s
PSZ Piszkesteto 81.40 325 ⇑*iP* **P 10 26 56.6 +1.0**
PSZ Piszkesteto 81.40 325 *eP* **P 10 26 56.3 +0.7**
PSZ pmax pmax
comp=Z,28nm,1.2s
PSZ Piszkesteto 81.40 325 *eP* **P 10 26 56.3 +0.7**
comp=Z,28nm,1.2s
WUAZ Wupatki 81.44 52 P **P 10 26 56.8 +0.6**
baz=309
WUAZ Wupatki 81.44 52 *eP* **P 10 26 57.8 +1.7**
comp=Z,18nm,1.1s
VYHS Vyhne 81.48 326 *eP* **P 10 26 56.2 +0.3**
VYHS pmax pmax
comp=Z,98nm,3.4s
VYHS Vyhne 81.48 326 *eP* **P 10 26 56.2 +0.3**
PV01 Paradox Valley 81.53 49 *eP* **P 10 26 57.6 +1.0**
BRG Berggiesshubel 81.82 330 *eP* **P 10 26 57.2 -0.4**
comp=Z,13nm,1.2s
BRG Berggiesshubel 81.82 330 *eP* **P 10 26 57.2 -0.4**
BRG pmax pmax
comp=Z,45nm,1.3s
SMCO Snowmass 81.82 47 *eP* **P 10 26 59.0 +0.6**
comp=Z,14nm,1.1s
PVCC Panska Ves 81.82 329 *eP* **P 10 26 58.3 +0.7**
PVCC Panska Ves 81.82 329 *eP* **P 10 26 58.3 +0.7**
B34A Aery, Baudette 81.84 34 P **P 10 26 56.2 -1.6**
baz=317
I28A Midland 81.84 40 P **P 10 26 58.0 +0.1**
baz=314,SNR=7.7
CLL Collm 81.86 330 *i P* **P 10 26 57.4 -0.4**
comp=Z,16nm,1.0s
CLL Collm 81.86 330 *i P* **P 10 26 57.4 -0.4**
CLL pmax pmax
comp=Z,16nm,1.0s
CLL Collm 81.86 330 *eP* **P 10 26 57.9 0.0**
comp=Z,43nm,1.1s
VRAC Vranov 81.88 327 ⇓*iP* **P 10 26 58.5 +0.5**
H29A Onida 81.90 40 P **P 10 26 57.6 -0.7**
baz=314
J27A Elkhorn Farm, 81.91 41 P **P 10 26 58.7 +0.4**
baz=313
F31A Hecla 82.03 38 P **P 10 26 58.8 0.0**
baz=315
G30A Faulkton 82.10 39 P **P 10 26 59.0 -0.2**
baz=315
MVCO Mesa Verde 82.17 49 P **P 10 27 00.5 +0.5**
baz=310
MVCO Mesa Verde 82.17 49 *eP* **P 10 27 01.0 +1.0**
comp=Z,12nm,1.0s
ISCO Idaho Springs 82.21 46 P **P 10 26 60.0 -0.3**
baz=311
ISCO Idaho Springs 82.21 46 *eP* **P 10 27 01.5 +1.2**
ISCO pmax pmax
comp=Z,13nm,1.4s
ISCO Idaho Springs 82.21 46 *eP* **P 10 27 01.5 +1.2**
comp=Z,13nm,1.4s
PRU Pruhonice 82.25 329 *eP* **P 10 27 00.2 +0.3**
PRU *ep*P **sP 10 27 13.0 +1.4**
PRU Pruhonice 82.25 329 *eP* **P 10 27 00.2 +0.3**
PRU *e* 10 27 13.0
I29A Vivian Onida 82.28 40 P **P 10 26 58.6 -1.6**
baz=314
B35A Bob, Littlefor 82.34 34 P **P 10 26 59.7 -0.7**
baz=318
TREC Trest 82.37 328 *eP* **P 10 27 01.1 +0.5**
TREC *ep*P **sP 10 27 14.2 +1.8**
TREC Trest 82.37 328 *eP* **P 10 27 01.1 +0.5**
TREC *e* 10 27 14.2
G31A Conde 82.50 38 P **P 10 27 00.9 -0.4**
baz=315
SUSD Miller 82.67 39 P **P 10 27 02.5 +0.2**
baz=315
C35A Jirik Farms, M 82.72 34 P **P 10 27 01.9 -0.5**
baz=318
I30A Oacoma 82.81 40 P **P 10 27 02.9 0.0**
baz=315
S22A 4UR Ranch, Cre 82.83 48 P **P 10 27 04.6 +1.1**
baz=311
S22A 4UR Ranch, Cre 82.83 48 *eP* **P 10 27 04.9 +1.3**
comp=Z,16nm,1.3s
NKC Novy Kostel 82.92 330 *eP* **P 10 27 03.5 +0.1**
NKC Novy Kostel 82.92 330 *eP* **P 10 27 03.5 +0.1**
F33A 5 Mile Ranch, 83.00 37 P **P 10 27 03.9 0.0**
baz=316
Q24A Divide 83.03 46 P **P 10 27 04.7 +0.1**
baz=312
KHC Kasperske Hory 83.31 329 *eP* **P 10 27 05.8 +0.3**
KHC *ep*P **sP 10 27 18.1 +0.8**
KHC Kasperske Hory 83.31 329 *eP* **P 10 27 05.8 +0.3**
KHC *e* 10 27 18.1
G33A Ortonville 83.39 37 P **P 10 27 05.9 0.0**
baz=316
GERES GERESS Array B 83.47 328 P **P 10 27 06.3 -0.1**
comp=Z,1.9nm,0.6s,baz=46,slow=5.8,SNR=16
GEA0 GERESS Array S 83.48 328 *eP* **P 10 27 05.9 -0.5**
C37A Embarrass 83.50 33 P **P 10 27 06.2 -0.3**
baz=319
K30A Basset 83.58 41 P **P 10 27 07.4 +0.4**
baz=315
H33A Prehn Over Nor 83.61 38 P **P 10 27 06.9 -0.3**
baz=316
SDCO Great Sand Dun 83.63 47 P **P 10 27 08.1 +0.4**
baz=312
SDCO Great Sand Dun 83.63 47 *eP* **P 10 27 08.8 +1.1**
comp=Z,11nm,1.3s
F35A Swanville 83.81 36 P **P 10 27 08.5 +0.4**
baz=318
TUC Tucson 83.83 54 P **P 10 27 09.3 +0.8**
baz=309
GRFO Grafenberg 83.84 330 *eP* **P 10 27 08.6 +0.4**
GRFO pmax pmax
comp=Z,32nm,1.3s
GRFO Grafenberg 83.84 330 *eP* **P 10 27 08.6 +0.4**
comp=Z,32nm,1.3s
I33A Coleman 84.04 38 P **P 10 27 09.1 -0.3**
baz=316
K31A O'Neill 84.06 40 P **P 10 27 10.1 +0.6**
baz=315
H34A Spellman Lake, 84.10 37 P **P 10 27 10.2 +0.6**
baz=317
G35A Watkins 84.32 36 P **P 10 27 11.1 +0.4**
baz=318
L31A Butterfield Fa 84.33 41 P **P 10 27 10.8 0.0**
baz=315,SNR=5.9
ECSD EROS Data Cent 84.36 38 P **P 10 27 10.7 -0.3**
baz=316
ECSD EROS Data Cent 84.36 38 *eP* **P 10 27 10.9 -0.1**
comp=Z,24nm,1.5s
KSCO Kaye Shedlock' 84.45 45 P **P 10 27 12.2 +0.5**
baz=313
H35A Sunnyside Ranc 84.54 37 P **P 10 27 12.4 +0.6**
baz=318
T25A Trinidad 84.68 47 P **P 10 27 13.2 +0.2**
baz=312
T25A Trinidad 84.68 47 *eP* **P 10 27 13.4 +0.5**
comp=Z,30nm,1.3s
VAY Valandovo 84.77 319 *i P* **P 10 27 13.4 +0.4**
LAZ Ladron 84.83 51 *eP* **P 10 27 14.8 +1.1**
ANMO Albuquerque 84.89 50 P **P 10 27 15.0 +1.0**
baz=311
ANMO Albuquerque 84.89 50 *eP* **P 10 27 15.1 +1.0**
ANMO pmax pmax
comp=Z,14nm,1.3s
ANMO Albuquerque 84.89 50 *eP* **P 10 27 15.1 +1.0**
comp=Z,14nm,1.3s
SKO Skopje 84.90 320 *i P* **P 10 27 14.0 +0.3**

H36A	Jessenland, He baz=318	85.06	36	P	P	10 27 15.3	+0.8
MEM	Membach comp=Z,9.1nm,1.4s	85.09	333	P	P	10 27 15.0	+0.6
SPMN	Marine on St. baz=319	85.11	35	P	P	10 27 14.4	-0.3
J35A	Milford baz=317	85.33	38	P	P	10 27 15.8	-0.1
K34A	Le Mars baz=317	85.38	39	P	P	10 27 15.4	-0.7
I36A	Fitzsimmons Fa baz=318	85.43	37	P	P	10 27 15.6	-0.7
BCLA	Clavier	85.50	334	P	P	10 27 16.2	-0.2
H37A	Dierke Farm, C baz=319	85.54	36	P	P	10 27 16.5	-0.3
BIA	Bitola	85.64	319	*i* P	P	10 27 17.4	-0.1
PDG	Podgorica	85.69	321	*i* P	P	10 27 18.0	+0.4
I37A	Lemond, Waseca baz=318	85.73	36	P	P	10 27 18.0	+0.2
L34A	Svendsen Farm, baz=317	85.76	39	P	P	10 27 18.4	+0.4
J36A	Seneca 1, Swea baz=318	85.79	37	P	P	10 27 18.2	+0.2
K35A	Storm Lake baz=317	85.79	38	P	P	10 27 17.6	-0.5
WLF	Walferdange	85.81	333	P	P	10 27 18.8	+0.7
OHR	Ohrid	85.85	319	*i* P	P	10 27 17.8	-0.7
M34A	Aspy Farms, Fr baz=317	85.99	40	P	P	10 27 18.7	-0.5
BFO	Black Forest	86.07	331	*i* P	P	10 27 19.2	-0.2
BFO	Black Forest comp=Z,25nm,1.3s	86.07	331	*e*P	P	10 27 19.3	-0.1
I38A	Scanlan Farm, baz=319	86.22	36	P	P	10 27 20.1	-0.1
P32A	Huiting Farm, baz=315	86.27	42	P	P	10 27 20.5	0.0
M35A	Neola baz=317	86.48	39	P	P	10 27 21.3	-0.3
K37A	Belmond baz=318	86.55	37	P	P	10 27 22.0	+0.2
FUORN	Ofenpass-Fuorn comp=Z,27nm,1.1s	86.66	329	*e*P	P	10 27 22.5	-0.2
DAVOX	Davos/Dischmat comp=Z,1.0nm,0.3s,baz=62,slow=4.4,SNR=4.1	86.69	329	P	P	10 27 22.2	-0.5
J38A	Wedel Dairy, R baz=319	86.70	36	P	P	10 27 22.9	+0.4
M36A	Felix, Anita baz=318	86.94	39	P	P	10 27 23.7	-0.1
N35A	Tabor baz=317	86.95	40	P	P	10 27 24.0	+0.2
O35A	Humboldt baz=317	87.24	40	P	P	10 27 25.2	0.0
P34A	Walnut Farm, R baz=316	87.28	41	P	P	10 27 24.6	-0.9
M37A	Trindle Farm, baz=318	87.36	39	P	P	10 27 26.0	+0.2
Q34A	Chapman baz=316	87.67	42	P	P	10 27 27.1	-0.2
N37A	Lee Faris, Mou baz=318	87.76	39	P	P	10 27 27.7	0.0
M38A	Pleasantville baz=319	87.78	38	P	P	10 27 28.2	+0.4
T32A	Huddler Ranch, baz=315	87.82	44	P	P	10 27 28.6	+0.4
O36A	Bolckow baz=318	87.83	40	P	P	10 27 27.9	-0.3
R34A	Isabella, Hill baz=316	87.95	42	P	P	10 27 28.9	+0.2
S33A	Kaszmaul Farm, baz=316	88.05	43	P	P	10 27 29.6	+0.4
P36A	Good Intent, A baz=318	88.08	40	P	P	10 27 29.9	+0.6
Q35A	Mercer Eighty, baz=317,SNR=6.0	88.20	41	P	P	10 27 29.6	-0.3
N38A	Joes South For baz=319	88.22	38	P	P	10 27 30.1	+0.2
R35A	Emporia Munici baz=317	88.50	42	P	P	10 27 31.5	+0.2
N39A	Derby Farms, D baz=319	88.53	38	P	P	10 27 31.5	+0.2
P37A	Lathrop baz=318	88.55	40	P	P	10 27 31.0	-0.5
S35A	Otter Creek Ra baz=317	88.91	42	P	P	10 27 32.1	-1.1
T34A	McClaskey Farm baz=316	88.91	43	P	P	10 27 33.5	+0.2
W32A	Sentinel baz=315	89.09	46	P	P	10 27 34.2	0.0
U34A	Anderson Ranch baz=316	89.13	44	P	P	10 27 34.8	+0.4
R37A	Teagarden Farm baz=318	89.24	41	P	P	10 27 34.1	-0.7
T35A	Sooner Cattle baz=317	89.36	43	P	P	10 27 36.4	+1.1
Q38A	Cooks Store, C baz=318	89.40	40	P	P	10 27 35.2	-0.3
O40A	La Belle baz=320	89.41	38	P	P	10 27 35.7	+0.2
W33A	Caddo, Fort Co baz=316	89.52	45	P	P	10 27 36.6	+0.4
X32A	Elmer baz=315	89.57	46	P	P	10 27 36.2	-0.2
V34A	Guthrie baz=316	89.58	44	P	P	10 27 36.9	+0.4
T36A	Boggs Farm, Ca baz=317	89.60	42	P	P	10 27 36.5	0.0
U35A	Pawnee baz=317	89.63	43	P	P	10 27 37.7	+1.1
S37A	Fort Scott baz=318	89.65	41	P	P	10 27 36.2	-0.5
Q39A	Willow Grove F baz=319	89.67	39	P	P	10 27 36.7	0.0
P40A	Paris baz=320	89.77	39	P	P	10 27 37.2	-0.1
R38A	Fenwick Farm, baz=318	89.82	41	P	P	10 27 36.8	-0.7
T37A	Cheneyville 18 baz=318	90.07	42	P	P	10 27 38.0	-0.7
Q40A	Laux Farm, Aux baz=320	90.16	39	P	P	10 27 38.8	-0.3
R39A	Chumby, Stover baz=319	90.18	40	P	P	10 27 38.2	-0.9
S38A	Stockton baz=318	90.24	41	P	P	10 27 37.9	-1.6
TX31	Lajitas Ar. Si	90.39	53	*e*P	P	10 27 40.4	-0.1
LTX	Lajitas	90.39	53	*e*P	P	10 27 40.9	+0.4
LTX	Lajitas	90.39	53	*e*P	P	10 27 40.9	+0.4
TXAR	Lajitas Array comp=Z,2.2nm,0.9s,baz=300,slow=2.7,SNR=8.1	90.39	53	P	P	10 27 40.9	+0.4
T38A	Diamond baz=318,SNR=6.4	90.47	42	P	P	10 27 40.2	-0.4
TUL1	Leonard baz=317	90.48	43	P	P	10 27 40.6	0.0
U37A	Salina baz=318	90.49	42	P	P	10 27 40.4	-0.3
S39A	Bolivar baz=319	90.50	41	P	P	10 27 40.0	-0.7
R40A	Maddies Statio baz=319	90.60	40	P	P	10 27 40.4	-0.7
Z33A	Whitaker Ranch baz=316	90.67	47	P	P	10 27 41.6	0.0
W36A	Wetumka baz=317	90.81	44	P	P	10 27 42.6	+0.4
V37A	Hulbert baz=318	90.86	43	P	P	10 27 41.9	-0.5
U38A	Gravette baz=318	90.86	42	P	P	10 27 42.4	-0.1
X35A	Drake baz=316	90.92	45	P	P	10 27 42.2	-0.5
T39A	Clever baz=319	90.97	41	P	P	10 27 42.2	-0.7
S40A	Lebanon baz=319	91.00	40	P	P	10 27 42.0	-1.0
X36A	Centrahoma baz=317	91.15	44	P	P	10 27 43.7	0.0
V38A	Canehill baz=318,SNR=7.2	91.28	42	P	P	10 27 44.1	-0.3
T40A	Mansfield baz=319	91.33	40	P	P	10 27 43.6	-1.0
U39A	Green Forest baz=319,SNR=8.1	91.39	42	P	P	10 27 44.2	-0.7
233A	Rising Star baz=315	91.49	48	P	P	10 27 45.6	+0.2
134A	White-Moore Ra baz=316	91.59	47	P	P	10 27 44.7	-1.1
Y36A	Durant baz=317	91.67	45	P	P	10 27 45.7	-0.5
V39A	Pettigrew baz=318	91.71	42	P	P	10 27 46.1	-0.4
U40A	Yellville baz=319,SNR=9.0	91.75	41	P	P	10 27 45.9	-0.6
X38A	Whitesboro baz=318	91.93	43	P	P	10 27 47.1	-0.3
333A	Richland Sprin baz=315	91.93	48	P	P	10 27 47.5	0.0
234A	Clairette baz=316	91.96	47	P	P	10 27 47.8	+0.2
W39A	Magazine baz=318	92.11	42	P	P	10 27 48.2	0.0
V40A	Witts Springs baz=319	92.18	41	P	P	10 27 48.7	+0.1
433A	Art baz=315	92.27	49	P	P	10 27 49.5	+0.4
WHTX	Lake Whitney, baz=316	92.37	47	P	P	10 27 48.8	-0.7
X39A	Fountain Ranch baz=318,SNR=5.8	92.44	43	P	P	10 27 49.3	-0.4
W40A	Ferguson Farm, baz=319	92.51	42	P	P	10 27 49.7	-0.3
MIAR	Mount Ida baz=318,SNR=7.4	92.71	43	P	P	10 27 50.9	0.0
MIAR	Mount Ida comp=Z,15nm,1.2s	92.71	43	*e*P	P	10 27 51.5	+0.5
MIAR				pmax	pmax		
MIAR	Mount Ida comp=Z,15nm,1.2s	92.71	43	*e*P	P	10 27 51.5	+0.5
X201	Greenbrier Sit comp=Z,18nm,1.3s	92.81	42	*e*P	P	10 27 51.9	+0.4
WHAR	Wooly Hollow comp=Z,20nm,1.3s	92.85	41	*e*P	P	10 27 51.8	+0.2
Y39A	Lockesburg baz=318	92.88	44	P	P	10 27 51.3	-0.5
W41B	Gary Mavity, V baz=319	92.96	42	P	P	10 27 51.8	-0.3
534A	Blanco baz=316	93.16	49	P	P	10 27 53.4	+0.2
X40A	Basin Creek Fa baz=319	93.16	42	P	P	10 27 53.0	-0.1
TOA1	Torodi Ar. Sit	118.02	315	*e*PKPdf	PKPdf	10 33 25.3	-0.7
TORD	Torodi Ar. Bea comp=Z,0.4nm,0.7s,baz=26,slow=2.9,SNR=3.7	118.03	315	PKP	PKPdf	10 33 25.3	-0.7
QSPA	South Pole Qui	126.03	180	*e*PKPdf	PKPdf	10 33 39.6	-0.3
SAML	Samuel	144.61	46	*e*PKPdf	PKPab	10 34 13.9	-0.5
LPAZ	La Paz comp=Z,4.1nm,0.6s,baz=349,slow=2.0,SNR=36	146.86	61	PKPbc	PKPbc	10 34 21.5	-0.7
LVC	Limon Verde	150.20	71	*e*PKPbc	PKPbc	10 34 30.4	0.0

*IDC **10** 10:18:37.3±0.6,36°.18N×141°.88E,h0km,mb4.2/17, mb1 4.4/21,mb1mx4.1/65,mbtmp4.2/21,ML3.4/3,Error ellipse: s-maj=16.8km s-min=15.0km az=91.0*
*ISCJB **10** 10:18:38.6±0.4,36°.18N±0°.04×141°.96E±0°.05,h23km, mb4.2/23,Error ellipse: s-maj=6.1km s-min=4.4km az=40.7*
*JMA **10** 10:18:40.3±0.3,36°.24N×141°.85E,h56km,M4.0*
*NEIC **10** 10:18:42.3±0.4,36°.14N×141°.87E,h35km,mb4.4/6,Error ellipse: s-maj=9.3km s-min=7.3km az=112.0*

ISC 10 10:18:40.1±0.5,36°.11N±0°.05×142°.00E±0°.06,h23km,n49,
σ1°95/57,mb4.3/23,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	1.01	247	P	Pn	10 18 58.0	-0.8
CHOJ				*e*S	Sb	10 19 11.5	-0.2
JHO	Hitachi	1.26	294	P	Pn	10 18 59.3	-3.0
ONAJ	Iwakimizuishiy	1.38	316	P	Pn	10 19 00.7	-3.4
JFK	Kawauchi	1.55	325	P	Pn	10 19 03.8	-2.5
JFT	Otama	1.94	317	P	Pn	10 19 10.1	-1.6
JMM	Marumori	2.00	332	P	Pn	10 19 10.9	-1.6
JAG	Ashikaga	2.08	280	P	Pn	10 19 11.8	-1.8
JKT	Katashina	2.31	287	P	Pn	10 19 15.4	-1.4
JRY	Ryogami san	2.51	269	P	Pn	10 19 18.0	-1.5
JOD2	Odawara 2	2.51	251	P	Pn	10 19 19.2	-0.3
MJAR	Matsushiro Arr 11nm,0.3s,baz=100,slow=9.4,SNR=6.0	3.09	279	Pn	Pn	10 19 26.2	-1.3
MJAR				Sn	Sn	10 20 04.2	+0.5
MAJO	Matsushiro 8.6nm,0.3s,baz=97,slow=9.0,SNR=3.4	3.09	279	*e*Pn	Pn	10 19 27.1	-0.4
MAT	Matsushiro	3.09	279	P	Pn	10 19 26.9	-0.6
MAT				*e*S	Sn	10 20 02.6	-1.1
JHJ2	Mitsune	3.49	212	*e*Pn	Pn	10 19 33.6	+0.7
JHJ	Hachijo jima 2 35nm,0.3s,baz=154,slow=23,SNR=11	3.49	212	Pn	Pn	10 19 33.3	+0.2
JHJ				Sn	Sn	10 20 13.3	-0.3
ERM	Erimo 94nm,0.3s,baz=44,slow=23,SNR=5.8	5.97	8	*e*Pn	Pn	10 20 05.7	-1.3
ERM				*e*Sn	Sn	10 21 12.9	-1.7
ASAJ	Asahikawa	8.01	3	*e*Pn	Pn	10 20 35.2	+0.1
ASAJ				Sn	Sn	10 21 59.1	-5.9
CBIJ	Chichi jima	8.98	179	Pn	Pn	10 20 47.2	-1.2
CBIJ				Sn	Sn	10 22 22.6	-6.3
JCJ	Chichijima 17nm,0.3s,baz=282,slow=20,SNR=2.9	8.98	179	Pn	Pn	10 20 47.2	-1.2
JCJ				Sn	Sn	10 22 22.6	-6.3
USRK	Ussuriysk Ar. 19nm,0.3s,baz=278,slow=23,SNR=7.3	11.13	320	Pn	Pn	10 21 17.7	0.0
KSRS	Korea Array 0.4nm,0.3s,baz=122,slow=14,SNR=3.8	11.37	281	Pn	Pn	10 21 23.6	+2.5
KSAR	Wonju Array Be 0.1nm,0.3s,baz=93,slow=14,SNR=7.1	11.40	281	Pn	Pn	10 21 23.6	+2.1
ENH	Enshi	27.74	267	*e*P	P	10 24 25.6	-1.4
SONM	Songino Array 9.9nm,0.9s,baz=81,slow=8.9,SNR=3.6	28.70	305	P	P	10 24 36.0	+0.6
ZALV	Zalesovo Beam 6.6nm,0.9s,baz=116,slow=5.4,SNR=3.6	42.89	313	P	P	10 26 35.5	-1.0
MKAR	Makanchi Array 4.8nm,0.7s,baz=92,slow=9.1,SNR=4.9	45.01	303	P	P	10 26 53.6	-0.1
KAPI	Kappang 8.0nm,0.8s,baz=23,slow=3.2,SNR=4.4	45.91	212	P	P	10 27 03.1	+2.1
KURK	Kurchatov	46.88	309	P	P	10 27 08.0	-0.3
KURBB	Kurchatov Arra 8.5nm,0.7s,baz=84,slow=8.1	46.94	309	P	P	10 27 08.0	-0.8
MCK	McKinley 1.8nm,0.6s	49.15	33	*e*P	P	10 27 28.0	+2.3
TKM2	Tokmak 2 5.4nm,0.8s	50.49	299	*e*P	P	10 27 35.4	-1.1
INK	Inuvik 2.0nm,0.7s,baz=302,slow=7.4,SNR=4.8	55.00	27	P	P	10 28 09.9	+0.8
FITZ	Fitzroy Crossi 5.9nm,0.9s	56.09	199	*e*P	P	10 28 18.7	+1.2
WRA	Warramunga Arr 3.1nm,0.9s,baz=5.8,slow=7.5,SNR=4.0	56.21	189	P	P	10 28 18.8	+0.4
ABKAR	Akbulak array 2.5nm,0.7s	58.90	311	*e*P	P	10 28 36.2	-0.8
ASAR	Alice Springs 0.6nm,0.8s,baz=14,slow=8.6,SNR=2.9	59.94	189	P	P	10 28 46.0	+1.5
RES	Resolute Bay 3.8nm,1.1s	63.38	14	*e*P	P	10 29 07.2	+0.1
YKA	Yellowknife Ar 1.2nm,0.9s,baz=303,slow=6.5,SNR=4.5	64.37	30	P	P	10 29 14.4	+0.7
FINES	FINESS Array B 4.8nm,0.8s,baz=76,slow=8.0,SNR=4.6	69.85	333	P	P	10 29 48.0	-0.5
SUMG	Summit 1.4nm,0.6s	71.61	0	*e*P	P	10 30 00.5	+0.9
NVAR	Mina Array Bea 0.9nm,0.9s,baz=297,slow=5.9,SNR=2.9	75.17	53	P	P	10 30 23.0	+2.1
NB2	NORSAR Subarra comp=Z,1.9nm,0.8s,baz=39,slow=5.9	75.22	338	P	P	10 30 20.3	-0.3
NOA	NORSAR Array B comp=Z,3.6nm,0.9s,baz=39,slow=5.8,SNR=6.3	75.22	338	P	P	10 30 20.4	-0.3
AKASG	Malin Array Be comp=Z,1.4nm,0.6s,baz=46,slow=6.1,SNR=4.2	75.32	323	P	P	10 30 20.6	-0.7
PDAR	Pinedale Array comp=Z,0.4nm,0.6s,baz=263,slow=3.5,SNR=3.4	77.98	46	P	P	10 30 37.6	+0.8
BRTR	Keskin Array B comp=Z,1.8nm,0.8s,baz=102,slow=5.2,SNR=4.2	79.82	312	P	P	10 30 47.2	+0.4
GERES	GERESS Array B comp=Z,1.0nm,0.7s,baz=32,slow=5.8,SNR=2.9	83.75	329	P	P	10 31 07.1	-0.2
TXAR	Lajitas Array comp=Z,0.4nm,0.8s,baz=303,slow=4.0,SNR=2.6	90.31	53	P	P	10 31 41.1	+1.6
LPAZ	La Paz comp=Z,1.3nm,0.6s,baz=297,slow=3.8,SNR=6.8	146.74	62	PKPbc	PKPbc	10 38 21.9	+0.6

*IDC **10** 10:22:40.4±0.8,37°.61N×143°.71E,h0km,mb3.9/11, mb1 4.0/17,mb1mx3.8/72,mbtmp4.0/17,ML4.0/5,Error ellipse: s-maj=20.9km s-min=15.9km az=131.0*
*JMA **10** 10:22:42.6±0.3,37°.84N×143°.50E,h22km,M3.9*
*ISCJB **10** 10:22:43.9±0.5,37°.71N±0°.04×143°.47E±0°.05,h33km, mb4.0/16,Error ellipse: s-maj=5.9km s-min=5.1km az=140.3*
*NEIC **10** 10:22:45.9±0.5,37°.65N×143°.62E,h35km,mb4.1/5,Error ellipse: s-maj=12.0km s-min=7.7km az=134.0*

ISC 10 10:22:45.7±0.7,37°.70N±0°.06×143°.46E±0°.07,h35km,n43,
σ1°47/43,mb4.0/16,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	1.83	295	P	Pn	10 23 13.2	-1.4
OFUJ	Ofunato	1.97	315	P	Pn	10 23 14.6	-2.0
OFUJ				S	Sn	10 23 38.2	-1.9
JMM	Marumori	2.12	275	P	Pn	10 23 17.6	-1.0
JMM				*e*S	Sn	10 23 42.7	-1.1
JMK	Ichinoseki	2.16	306	P	Pn	10 23 17.7	-1.5
JOU	Okura	2.31	288	P	Pn	10 23 21.0	-0.2
JOM	Ohasama	2.45	317	P	Pn	10 23 21.6	-1.6
JOM				*e*S	Sn	10 23 51.0	-1.0
JFT	Otama	2.49	267	P	Pn	10 23 23.7	0.0
JYK	Kaneyama	2.73	297	P	Pn	10 23 26.5	-0.5
JRG	Rokugo	2.79	308	P	Pn	10 23 27.1	-0.7
ERM	Erimo	4.32	357	*e*Pn	Pn	10 23 47.3	-1.5
ERM				*e*Sn	Sn	10 24 40.6	+2.8
MJAR	Matsushiro Arr 5.7nm,0.3s,baz=90,slow=15,SNR=12	4.35	256	Pn	Pn	10 23 50.8	+1.4
MAJO	Matsushiro	4.36	256	*e*Pn	Pn	10 23 50.8	+1.4
MAT	Matsushiro	4.36	256	P	Pn	10 23 49.9	+0.5
MAT				*e*S	Sn	10 24 39.0	0.0
JHJ2	Mitsune	5.46	214	*e*Pn	Pn	10 24 05.1	+0.5
JHJ	Hachijo jima 2 9.6nm,0.3s,baz=178,slow=23,SNR=6.1	5.47	214	Pn	Pn	10 24 05.1	+0.4
JHJ				Sn	Sn	10 25 02.5	-3.9
ASAJ	Asahikawa 10.0nm,0.3s,baz=65,slow=19,SNR=2.8	6.44	354	Pn	Pn	10 24 16.9	-1.1
ASAJ	Asahikawa 5.5nm,0.3s,baz=217,slow=8.8,SNR=18	6.44	354	P	Pn	10 24 28.1	-2.2
ASAJ				Sn	Sn	10 25 28.1	-2.2
ASAJ	Asahikawa 0.2nm,0.3s,baz=72,slow=20,SNR=2.5	6.44	354	*e*Pn	Pn	10 24 18.4	+0.3
ASAJ				*e*Sn	Sn	10 25 32.2	+1.9
CBIJ	Chichi jima	10.63	186	Pn	Pn	10 25 11.1	-4.4
JCJ	Chichijima 3.3nm,0.3s,baz=270,slow=20,SNR=4.8	10.63	186	Pn	Pn	10 25 11.1	-4.4
USRK	Ussuriysk Ar. 0.2nm,0.3s,baz=101,slow=12,SNR=5.6	10.83	310	Pn	Pn	10 25 19.4	+1.3
KSRS	Korea Array 0.1nm,0.3s,baz=82,slow=12,SNR=4.2	12.33	274	Pn	Pn	10 25 41.5	+2.8
KSAR	Wonju Array Be	12.37	274	Pn	Pn	10 25 41.5	+2.4
KLR	Kul'dur 0.1nm,0.3s,baz=116,slow=14,SNR=4.1	14.30	327	Pn	Pn	10 26 02.9	-2.7
SEY	Seymchan 2.3nm,0.8s,baz=205,slow=16,SNR=3.0	25.84	9	P	P	10 28 14.1	+0.5
H11N2	WAKE ISLAND Hy baz=317,slow=75,SNR=11	27.14	125	T	T	10 56 41.3	
H11N1	WAKE ISLAND Hy baz=317,slow=75,SNR=8.6	27.14	125	T	T	10 56 41.5	
H11N3	WAKE ISLAND Hy baz=317,slow=75,SNR=12	27.15	125	T	T	10 56 41.7	
ZALV	Zalesovo Beam 1.6nm,0.3s,baz=82,slow=6.5,SNR=5.1	42.68	312	P	P	10 30 41.3	+2.5
MKAR	Makanchi Array 2.6nm,0.9s,baz=85,slow=8.1,SNR=8.3	45.15	302	P	P	10 30 59.7	+0.9
KURK	Kurchatov	46.81	308	*e*P	P	10 31 13.9	+2.2
KURBB	Kurchatov Arra 0.8nm,0.3s,baz=82,slow=8.1,SNR=5.6	46.88	308	P	P	10 31 12.9	+0.6
ILAR	Eielson Array 0.8nm,0.8s,baz=260,slow=5.9,SNR=7.3	48.05	33	P	P	10 31 20.7	-0.5
INK	Inuvik 0.5nm,0.6s,baz=315,slow=4.7,SNR=3.8	53.05	28	P	P	10 32 00.1	+1.3
WRAB	Tennant Creek 7.6nm,0.7s	57.96	190	*e*P	P	10 32 33.1	-1.5
WRA	Warramunga Arr 4.4nm,0.8s,baz=10.0,slow=7.2,SNR=3.9	57.98	190	P	P	10 32 34.1	-0.6
ABKAR	Akbulak array 0.7nm,0.6s	58.75	310	*e*P	P	10 32 41.5	+1.5
RES	Resolute Bay 0.8nm,0.8s,baz=281,slow=16,SNR=2.8	61.54	15	P	P	10 32 58.1	-0.5
YKA	Yellowknife Ar 0.3nm,0.8s,baz=307,slow=7.5,SNR=5.5	62.41	31	P	P	10 33 04.6	0.0
SUMG	Summit 2.0nm,0.6s	70.01	1	*e*P	P	10 33 56.4	+2.7
NVAR	Mina Array Bea 0.4nm,0.5s,baz=270,slow=3.3,SNR=3.1	73.28	54	P	P	10 34 13.8	0.0
IMW	Indian Meadow 1.4nm,0.9s	74.54	46	*e*P	P	10 34 22.1	+0.9
PDAR	Pinedale Array 0.5nm,0.6s,baz=246,slow=2.9,SNR=4.0	76.03	47	P	P	10 34 29.3	-0.4
WUAZ	Wupatki 0.6nm,0.3s	79.46	53	*e*P	P	10 34 48.6	-0.2

*ISCJB **10** 10:22:52.0±0.5,20°.35S±0°.07×168°.12E±0°.09,h26km, mb4.4/19,MS4.8/1,Error ellipse: s-maj=13.7km s-min=8.2km az=31.3*
*NEIC **10** 10:22:51.1±0.4,20°.27S×168°.18E,h10km,mb4.7/6,Error ellipse: s-maj=12.5km s-min=10.2km az=120.0*
*IDC **10** 10:22:54.2±1.1,20°.33S×168°.18E,h29km±5km,mb4.2/14, mb1 4.3/16,mb1mx4.1/43,mbtmp4.3/16,ML3.8/2,MS4.8/1, Ms1 4.8/1,ms1mx3.8/44,Error ellipse: s-maj=21.9km s-min=16.5km az=110.0*

ISC 10 10:22:53.7±0.6,20°.36S±0°.10×168°.2E±0°.1,h26km,n28,
σ0°89/32,mb4.5/19,Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac 30nm,0.3s,baz=124,slow=18,SNR=13	2.33	223	Pn	Pn	10 23 29.8	-0.7
DZM				Sn	Sn	10 23 56.6	-1.8
URZ	Urewera 0.2nm,0.3s,baz=342,slow=7.0,SNR=5.2	19.45	158	P	Pn	10 27 20.1	+0.5
CTA	Charters Tower 9.2nm,1.0s,baz=117,slow=12,SNR=3.8	20.55	267	P	P	10 27 30.4	-0.2
STKA	Stephens Creek 8.3nm,0.7s,baz=75,slow=11,SNR=8.1	26.39	239	P	P	10 28 29.4	+1.2
STKA				pP	sP	10 28 38.6	-0.4
WRAB	Tennant Creek 12nm,0.6s,baz=77,slow=10,SNR=7.9	31.71	265	*e*P	P	10 29 15.4	-0.2
WRA	Warramunga Arr 3.7nm,0.8s	31.72	265	P	P	10 29 14.8	-0.9
WRA	Warramunga Arr 1.9nm,0.9s,baz=91,slow=8.5,SNR=4.7	31.72	265	P	P	10 29 23.4	0.0
WRA				pP	pP	10 29 23.4	0.0
ASAR	Alice Springs 1.6nm,0.5s,baz=92,slow=8.4,SNR=5.9	31.88	258	P	P	10 29 16.8	-0.3
ASAR				pP	pP	10 29 25.5	+0.7
NWAO	Narrogin (SRO) 7.0nm,0.8s,baz=88,slow=9.1,SNR=26	46.80	244	P	P	10 31 22.1	+0.8
NWAO				pP	pP	10 31 30.2	+0.9
DAV	Davao City (W) 13nm,1.0s,baz=104,slow=5.8,SNR=3.6	49.95	299	LR	LR	10 50 22.4	
VNDA	Vanda comp=Z,979nm,21.4s,baz=94,slow=33	57.28	182	P	P	10 32 38.2	-0.5
SBA	Scott Base 1.4nm,0.9s,baz=359,slow=9.4,SNR=6.2	57.54	180	*e*P	P	10 32 41.6	+1.1
ASAJ	Asahikawa 7.5nm,0.9s	68.30	340	P	P	10 33 53.0	+0.6
KSRS	Korea Array 4.5nm,0.8s,baz=265,slow=17,SNR=4.1	68.86	327	P	P	10 33 56.6	+0.6
KSAR	Wonju Array Be 0.6nm,0.7s,baz=125,slow=3.4,SNR=3.3	68.88	327	P	P	10 33 56.6	+0.5
USRK	Ussuriysk Ar. 4.6nm,0.8s,baz=96,slow=3.9,SNR=8.3	72.27	334	P	P	10 34 16.9	+0.2
KLR	Kul'dur 1.1nm,0.7s,baz=128,slow=9.2,SNR=3.9	76.48	336	P	P	10 34 41.5	+0.4
MAW	Mawson 5.0nm,0.9s,baz=62,slow=2.5,SNR=3.9	77.01	202	P	P	10 34 44.8	+0.8
CMAR	Chiang Mai Arr 1.8nm,0.8s,baz=141,slow=4.4,SNR=5.9	78.04	295	P	P	10 34 51.8	+1.3
CHTO	Chiang Mai 2.8nm,0.8s	78.20	295	*e*P	P	10 34 51.7	+0.2
BILL	Bilibino 6.0nm,1.1s	88.15	359	*e*P	P	10 35 40.9	-0.8
CMB	Columbia Colle 35

TORD PKPab **PKPab** **10 43 53.2 -0.7**
1.3nm,1.0s,baz=183,slow=4.1,SNR=4.5

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*IDC **10** 10:24:14.9±0.8, 36°.13N×141°.82E, h0km, mb4.1/13, mb1 4.1/16, mb1mx3.9/69, mbtmp4.1/16, ML4.2/3, Error ellipse: s-maj=20.9km s-min=17.1km az=120.0*
*ISCJB **10** 10:24:15.4±0.4, 36°.14N±0°.03×142°.08E±0°.05, h23km, mb4.2/17, Error ellipse: s-maj=5.9km s-min=3.9km az=25.2*
*JMA **10** 10:24:17.5±0.2, 36°.21N×141°.89E, h59km, M4.3*
*NEIC **10** 10:24:19.5±0.4, 36°.12N×141°.94E, h35km, mb4.7/6, Error ellipse: s-maj=9.8km s-min=7.4km az=116.0*
ISC 10 10:24:17.1±0.5, 36°.07N±0°.04×142°.07E±0°.06, h23km, n47, σ1§98/58, mb4.3/17, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.05**	**250**	P		**Pn**	**10 24 35.6**	**-0.9**
CHOJ				S		**Sb**	**10 24 49.4**	**-0.6**
JHO	**Hitachi**	**1.33**	**294**	P		**Pn**	**10 24 36.9**	**-3.4**
ONAJ	**Iwakimizuishiy**	**1.45**	**315**	P		**Pn**	**10 24 39.2**	**-2.8**
JFK	**Kawauchi**	**1.61**	**324**	P		**Pn**	**10 24 41.7**	**-2.5**
BSO1	**Boso 1**	**1.68**	**213**	P		**Pb**	**10 24 46.8**	**-0.1**
BSO1				S		**Sb**	**10 25 08.8**	**+1.4**
BSO3	**Boso 3**	**1.80**	**226**	P		**Pn**	**10 24 47.1**	**+0.6**
JFT	**Otama**	**2.01**	**317**	P		**Pn**	**10 24 48.0**	**-1.6**
JMM	**Marumori**	**2.06**	**331**	P		**Pn**	**10 24 49.1**	**-1.3**
JAG	**Ashikaga**	**2.15**	**280**	P		**Pn**	**10 24 49.5**	**-2.0**
JFY	**Yanaizu**	**2.32**	**306**	P		**Pn**	**10 24 52.4**	**-1.6**
JOD2	**Odawara 2**	**2.56**	**253**	P		**Pn**	**10 24 56.8**	**-0.4**
JRY	**Ryogami san**	**2.57**	**270**	P		**Pn**	**10 24 55.7**	**-1.7**
MJAR	**Matsushiro Arr**	**3.16**	**280**	Pn		**Pn**	**10 25 04.3**	**-1.1**
	29nm,0.3s,baz=106,slow=8.5,SNR=49							
MJAR				Sn		**Sn**	**10 25 43.6**	**+1.2**
	11nm,0.3s,baz=57,slow=47,SNR=4.5							
MAJO	**Matsushiro**	**3.16**	**280**	*e*Pn		**Pn**	**10 25 04.8**	**-0.6**
MAT	**Matsushiro**	**3.16**	**280**	P		**Pn**	**10 25 04.4**	**-1.1**
MAT				S		**Sn**	**10 25 41.9**	**-0.6**
JHJ2	**Mitsune**	**3.49**	**213**	*e*Sn		**Pn**	**10 25 07.2**	**-2.8**
JHJ2				*e*Pn		**Pn**	**10 25 10.8**	**+0.8**
JHJ2				*e*Sn		**Sn**	**10 25 51.4**	**+0.9**
JHJ	**Hachijo jima 2**	**3.50**	**213**	Pn		**Pn**	**10 25 11.6**	**+1.5**
	41nm,0.3s,baz=71,slow=22,SNR=7.4							
JHJ				Sn		**Sn**	**10 25 49.6**	**-1.2**
	129nm,0.3s,baz=59,slow=23,SNR=8.8							
ERM	**Erimo**	**6.00**	**8**	*e*Pn		**Pn**	**10 25 43.6**	**-0.7**
ERM				*e*Sn		**Sn**	**10 26 50.6**	**-1.7**
ASAJ	**Asahikawa**	**8.05**	**3**	Sn		**Sn**	**10 27 35.8**	**-7.0**
	0.2nm,0.3s,baz=240,slow=20,SNR=2.2							
ASAJ	**Asahikawa**	**8.05**	**3**	*e*Pn		**Pn**	**10 26 11.6**	**-1.0**
ASAJ				*e*Sn		**Sn**	**10 27 43.5**	**+0.8**
CBIJ	**Chichi jima**	**8.95**	**179**	Pn		**Pn**	**10 26 25.0**	**0.0**
CBIJ				Sn		**Sn**	**10 27 59.1**	**-6.0**
JCJ	**Chichijima**	**8.95**	**179**	Pn		**Pn**	**10 26 25.0**	**0.0**
	4.7nm,0.3s,baz=288,slow=23,SNR=7.1							
JCJ				Sn		**Sn**	**10 27 59.1**	**-6.0**
	baz=282,slow=20							
USRK	**Ussuriysk Ar.**	**11.20**	**320**	Pn		**Pn**	**10 26 56.3**	**+0.6**
	0.3nm,0.3s,baz=128,slow=12,SNR=3.8							
KSRS	**Korea Array**	**11.44**	**281**	Pn		**Pn**	**10 27 01.2**	**+2.2**
	0.2nm,0.3s,baz=92,slow=14,SNR=6.6							
KSAR	**Wonju Array Be**	**11.47**	**281**	Pn		**Pn**	**10 27 01.2**	**+1.8**
PET	**Petropavlovsk**	**20.57**	**29**	*e*P		**P**	**10 28 54.1**	**0.0**
	3.1nm,0.3s							
SONM	**Songino Array**	**28.77**	**305**	P		**P**	**10 30 12.9**	**-0.2**
	4.8nm,0.6s,baz=115,slow=10,SNR=2.1							
CMAR	**Chiang Mai Arr**	**41.78**	**257**	P		**P**	**10 32 04.1**	**-0.8**
	baz=59,slow=7.5							
ZALV	**Zalesovo Beam**	**42.96**	**313**	P		**P**	**10 32 13.8**	**-0.3**
	2.1nm,0.6s,baz=92,slow=7.6,SNR=4.9							
MKAR	**Makanchi Array**	**45.08**	**303**	P		**P**	**10 32 31.4**	**0.0**
	2.3nm,0.6s,baz=88,slow=9.2,SNR=7.7							
KURK	**Kurchatov**	**46.95**	**309**	*e*P		**P**	**10 32 45.2**	**-0.7**
	5.6nm,0.4s							
KURBB	**Kurchatov Arra**	**47.02**	**309**	P		**P**	**10 32 45.2**	**-1.2**
	3.4nm,0.6s,baz=82,slow=7.7,SNR=4.4							
ILAR	**Eielson Array**	**50.02**	**32**	P		**P**	**10 33 11.1**	**+1.7**
	0.6nm,0.7s,baz=269,slow=5.6,SNR=4.5							
TKM2	**Tokmak 2**	**50.56**	**299**	*e*P		**P**	**10 33 14.5**	**+0.4**
	3.7nm,0.6s							
INK	**Inuvik**	**55.00**	**27**	P		**P**	**10 33 48.6**	**+2.4**
	1.0nm,0.5s,baz=309,slow=7.1,SNR=7.3							
WRAB	**Tennant Creek**	**56.18**	**189**	*e*P		**P**	**10 33 56.5**	**+1.3**
	52nm,1.4s							
WRA	**Warramunga Arr**	**56.19**	**189**	P		**P**	**10 33 56.5**	**+1.3**
	1.7nm,0.8s,baz=4.8,slow=7.4,SNR=3.0							
ABKAR	**Akbulak array**	**58.97**	**311**	*e*P		**P**	**10 34 13.5**	**-1.1**
	1.2nm,0.5s							
RES	**Resolute Bay**	**63.40**	**14**	P		**P**	**10 34 45.5**	**+1.3**
	0.4nm,0.4s,baz=310,slow=9.2,SNR=5.9							
YKA	**Yellowknife Ar**	**64.37**	**30**	P		**P**	**10 34 52.5**	**+1.7**
	0.3nm,0.8s,baz=293,slow=12,SNR=4.4							
FINES	**FINESS Array B**	**69.91**	**333**	P		**P**	**10 35 26.2**	**+0.3**
	2.7nm,1.0s,baz=28,slow=6.3,SNR=3.6							
NB2	**NORSAR Subarra**	**75.28**	**338**	P		**P**	**10 35 57.9**	**0.0**
	comp=Z,0.6nm,0.5s,baz=41,slow=6.2							
NOA	**NORSAR Array B**	**75.28**	**338**	P		**P**	**10 35 58.2**	**+0.3**
	comp=Z,1.2nm,0.8s,baz=39,slow=5.7,SNR=4.5							
AKASG	**Malin Array Be**	**75.38**	**323**	P		**P**	**10 35 58.5**	**-0.1**
	comp=Z,1.4nm,0.5s,baz=44,slow=6.3,SNR=4.4							
BRTR	**Keskin Array B**	**79.89**	**312**	P		**P**	**10 36 24.8**	**+0.6**
	comp=Z,0.8nm,0.7s,baz=99,slow=3.9,SNR=3.8							
LPAZ	**La Paz**	**146.70**	**62**	PKPbc		**PKPab**	**10 44 00.2**	**+0.8**
	comp=Z,1.0nm,0.5s,baz=337,slow=3.8,SNR=5.8							
RCBR	**Riachuelo**	**149.84**	**356**	*e*PKPbc		**PKPbc**	**10 44 05.9**	**-0.1**

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*NEIC **10** 10:24:17.5±0.1, 20°.27S×168°.40E, h10km, mb5.7/199, MS5.8/156, Error ellipse: s-maj=3.5km s-min=2.8km az=135.0*
*GCMT **10** 10:24:17.5±0.4, 20°.51S×168°.39E, h22km±1km, MW5.9/81, Moment Tensor Solution. s36,c44; s81,c111; Duration: 2s2 Moment tensor: Scale 10^{18}Nm; M_{rr}-1.03±.06; $M_{\theta\theta}$0.24±.04; $M_{\phi\phi}$0.79±.04; $M_{r\theta}$-0.17±.07; $M_{\theta\phi}$-0.13±.02; $M_{\phi r}$-0.04±.06; Best double couple: $M_0$0.93800×10^{18} NP1:ϕ_s356.00000°, δ46.00000°, λ-79.00000°. NP2: ϕ_s160.00000°, δ45.00000°, λ-101.00000°. Principal axes: T 0.8220, Plg0.0000°, Azm78.0000°; N 0.2360, Plg8.0000°, Azm168.0000°; P -1.0550, Plg82.0000°, Azm347.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*
*ISCJB **10** 10:24:18.3±1.8, 20°.28S±0°.03×168°.36E±0°.02, h23km±13km, mb5.5/285, MS5.8/174 Error ellipse: s-maj=5.2km s-min=3.4km az=15.8*
*MOS **10** 10:24:19.0±1.0, 20°.37S×168°.38E, h33km, mb5.7/67, MS5.9/10, Error ellipse: s-maj=10.5km s-min=8.4km az=36.8*
*IDC **10** 10:24:22.0±0.4, 20°.38S×168°.36E, h40km±3km, mb5.0/31, mb1 5.1/33, mb1mx5.0/43, mbtmp5.2/33, ML4.6/2, MS5.3/9, Ms1 5.3/9, ms1mx4.8/41, Error ellipse: s-maj=12.2km s-min=11.0km az=120.0*
*BJI **10** 10:24:21.9, 19°.76S×168°.42E, h33km, mb5.2/59, mB5.9/15, Ms5.8/24, Ms7 5.5/25*
ISC 10 10:24:21.2±0.4, 20°.31S±0°.04×168°.43E±0°.04, h34km±1km, h34km:pP-P, n960, σ1§09/873, mb5.6/275, MS5.8/173, 17C-12D, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.55**	**226**	Pn		**Pn**	**10 24 57.8**	**-2.4**
	109nm,0.3s,baz=121,slow=10,SNR=22							
DZM				Sn		**Sn**	**10 25 25.1**	**-5.0**
	440nm,0.3s,baz=346,slow=17,SNR=7.2							
DZM				LR		LR	10 25 57.7	
	comp=Z,128μm,18.1s,baz=344,slow=39							
NFK	**Norfolk Island**	**8.70**	**183**	P		**Pn**	**10 26 23.7**	**-1.0**
	baz=8.7,SNR=12							
MSVF	**Nonsavu**	**9.46**	**76**	*e*P		Pn	10 26 40.8	+5.7
MSVF	**Nonsavu**	**9.46**	**76**	*e*Pn		Pn	10 26 40.8	+5.7
MSVF				*e*Sn		**Sn**	**10 28 16.6**	**-3.7**
HNR	**Honiara**	**13.57**	**322**	Pn		**Pn**	**10 27 30.9**	**-0.4**
	3.3nm,0.3s,baz=228,slow=7.3,SNR=8.8							
HNR	**Honiara**	**13.57**	**322**	*e*P		**Pn**	**10 27 31.0**	**-0.3**
HNR	**Honiara**	**13.57**	**322**	*e*P		**Pn**	**10 27 31.3**	**0.0**
HNR				e			10 29 57.6	
HNR	**Honiara**	**13.57**	**322**	*e*Pn		**Pn**	**10 27 31.3**	**0.0**
HNR				*e*Sn		**Sn**	**10 29 57.5**	**-3.4**
RAO	**Raoul Island**	**15.25**	**128**	*e*P		**Pn**	**10 27 53.1**	**-0.9**
RAO				pmax		pmax		
	comp=Z,2μm,0.6s							
OUZ	**Omahuta**	**15.53**	**164**	*e*Pn		**Pn**	**10 27 58.5**	**+0.9**
	comp=Z,890nm,1.9s							
OUZ	**Omahuta**	**15.53**	**164**	PN		**Pn**	**10 27 59.3**	**+1.7**
WCZ	**Waipu Caves**	**16.41**	**163**	PN		**P**	**10 28 11.5**	**+0.2**
EIDS	**Eidsvold**	**16.76**	**249**	P		**P**	**10 28 14.7**	**-0.6**
	baz=17,SNR=3.5							
EIDS	**Eidsvold**	**16.76**	**249**	*e*Pn		**Pn**	**10 28 12.1**	**-1.3**
	comp=Z,586nm,1.8s							
ARMA	**Armidale**	**18.19**	**233**	P		**P**	**10 28 33.6**	**+2.4**
	baz=18,SNR=24							
ARMA	**Armidale**	**18.19**	**233**	*e*Pn		**P**	**10 28 33.2**	**+2.0**
	comp=Z,844nm,1.8s							
HIZ	**Hauiti**	**18.97**	**164**	*e*P		**Pn**	**10 28 40.2**	**-0.2**
	comp=Z,996nm,1.6s							
HIZ	**Hauiti**	**18.97**	**164**	P*		**Pn**	**10 28 41.9**	**+1.4**
RMQ	**Roma**	**19.06**	**247**	P		**Pn**	**10 28 42.0**	**+0.3**
	baz=19,SNR=13							
HAZ	**Te Kaha**	**19.19**	**157**	P*		**Pn**	**10 28 44.7**	**+1.7**
URZ	**Urewera**	**19.40**	**159**	P		**Pn**	**10 28 47.7**	**+2.0**
	comp=Z,1.8nm,0.3s,baz=14,slow=6.9,SNR=40							
URZ	**Urewera**	**19.40**	**159**	*e*P		**Pn**	**10 28 47.6**	**+2.0**
	comp=Z,2μm,1.7s							
URZ	**Urewera**	**19.40**	**159**	P*		**Pn**	**10 28 47.5**	**+1.9**
PKGZ	**Pakihiroa**	**19.41**	**156**	P*		**Pn**	**10 28 47.9**	**+2.0**
MWZ	**Matawai**	**19.61**	**158**	P*		**Pn**	**10 28 50.0**	**+1.8**
TWGZ	**Tauwhareparae**	**19.63**	**157**	P*		**Pn**	**10 28 49.7**	**+1.3**
PUZ	**Puketiti**	**19.64**	**156**	P*		**Pn**	**10 28 48.7**	**+0.2**
AFI	**Afiamalu**	**19.95**	**75**	P		**Pn**	**10 28 51.9**	**-0.5**
	comp=Z,107nm,1.0s,baz=199,slow=6.0,SNR=5.6							
AFI				LR		LR	10 35 04.9	
	comp=Z,9μm,21.9s,baz=268,slow=32							
AFI	**Afiamalu**	**19.95**	**75**	*e*P		**Pn**	**10 28 51.9**	**-0.5**
AFI				pmax		pmax		
	comp=Z,355nm,1.5s							
AFI	**Afiamalu**	**19.95**	**75**	*e*P		**Pn**	**10 28 51.9**	**-0.5**
	comp=Z,355nm,1.5s							
RIGZ	**Rimuhau**	**20.02**	**158**	P*		Pn	10 28 52.2	-0.8
BKZ	**Black Stump Fm**	**20.03**	**161**	*e*P		P	10 28 43.9	-7.4
	comp=Z,1μm,1.7s							
BKZ	**Black Stump Fm**	**20.03**	**161**	P*		Pn	10 28 52.6	-0.6
KNZ	**Kokohu**	**20.28**	**159**	P*		**P**	**10 28 54.3**	**+0.5**
MCHZ	**McNeill Hill**	**20.35**	**161**	P*		Pn	10 28 57.1	+0.3
KAHZ	**Kahuranaki**	**20.73**	**161**	P*		Pn	10 29 00.4	-0.8
QRZ	**Quartz Range**	**20.74**	**171**	P*		Pn	10 29 01.0	-0.4
CTA	**Charters Tower**	**20.81**	**267**	P		**P**	**10 29 00.1**	**+0.3**
	comp=Z,33nm,0.8s,baz=83,slow=13,SNR=26							
CTA				LR		LR	10 36 05.6	
	comp=Z,6μm,20.0s,baz=101,slow=34							
CTAO	**Charters Tower**	**20.81**	**267**	*e*P		**P**	**10 29 00.5**	**+0.6**
CTAO				pmax		pmax		
	comp=Z,2μm,1.1s							
CTAO	**Charters Tower**	**20.81**	**267**	*e*P		**P**	**10 29 00.5**	**+0.6**
	comp=Z,2μm,1.1s							
CTAO				LR		LR		
	comp=Z,10μm,19.0s							
DUWZ	**D'Urville Isla**	**20.95**	**168**	P*		**P**	**10 29 02.6**	**+1.4**
MRZ	**Mangatainoka R**	**21.18**	**165**	P*		**P**	**10 29 04.4**	**+0.8**
NNZ	**Nelson**	**21.26**	**170**	P*		**P**	**10 29 06.4**	**+2.0**
BFZ	**Birch Farm**	**21.37**	**164**	*e*P		**P**	**10 29 06.0**	**+0.3**
	comp=Z,325nm,1.3s							
DSZ	**Denniston Nort**	**21.56**	**173**	P*		**P**	**10 29 09.8**	**+2.2**
SNZO	**South Karori**	**21.60**	**167**	*e*P		**P**	**10 29 09.1**	**+1.0**
	comp=Z,332nm,1.3s							
SNZO				LR		LR		
	comp=Z,9μm,20.0s							
THZ	**Tophouse**	**21.72**	**171**	*e*P		**P**	**10 29 10.4**	**+1.0**
	comp=Z,258nm,1.1s							
THZ	**Tophouse**	**21.72**	**171**	P*		**P**	**10 29 11.2**	**+1.8**
TARA	**Tarawa**	**21.98**	**12**	*e*P		**P**	**10 29 14.2**	**+1.9**
	comp=Z,295nm,1.4s							
TARA				LR		LR		
	comp=Z,461nm,22.0s							
KHZ	**Kahutara**	**22.45**	**170**	*e*P		**P**	**10 29 17.7**	**+0.5**
	comp=Z,610nm,1.7s							
KHZ	**Kahutara**	**22.45**	**170**	P*		**P**	**10 29 17.7**	**+0.5**
CNB	**Canberra Magne**	**22.47**	**224**	P		**P**	**10 29 19.6**	**+2.0**
	baz=22,SNR=29							
INZ	**Inchbonnie**	**22.49**	**174**	P*		**P**	**10 29 18.9**	**+1.3**
RABL	**Rabaul**	**22.53**	**313**	*e*P		**P**	**10 29 21.8**	**+3.5**
	comp=Z,494nm,1.4s							
YNG	**Young**	**22.55**	**228**	P		**P**	**10 29 20.6**	**+2.3**
	baz=22,SNR=13							
LTZ	**Lake Taylor**	**22.63**	**173**	*e*P		**P**	**10 29 20.5**	**+1.3**
	comp=Z,428nm,1.5s							
CAN	**Canberra**	**22.71**	**225**	*e*P		**P**	**10 29 21.5**	**+1.3**
CAN				pmax		pmax		
	comp=Z,570nm,1.6s							
CAN	**Canberra**	**22.71**	**225**	*e*P		**P**	**10 29 21.5**	**+1.3**
	comp=Z,570nm,1.6s							
CAN				LR		LR		
	comp=Z,7μm,21.0s							
MTSU	**Mount Surprise**	**22.87**	**271**	P		**P**	**10 29 21.5**	**-0.4**
	baz=23,SNR=19							
QLP	**Quilpie**	**23.04**	**250**	P		**P**	**10 29 24.6**	**+1.1**
	baz=23,SNR=17							
OXZ	**Oxford**	**23.14**	**173**	*e*P		**P**	**10 29 25.7**	**+1.3**
	comp=Z,517nm,1.6s							
FOZ	**Fox Glacier**	**23.18**	**177**	*e*P		**P**	**10 29 26.3**	**+1.5**
	comp=Z,552nm,1.5s							
FOZ	**Fox Glacier**	**23.18**	**177**	P*		**P**	**10 29 25.7**	**+1.0**
PMG	**Port Moresby**	**23.21**	**295**	P		**P**	**10 29 24.9**	**-0.5**
	comp=Z,56nm,0.8s,baz=79,slow=5.6,SNR=15							
PMG				LR		LR	10 36 20.8	
	comp=Z,2μm,20.3s,baz=162,slow=31							
PMG	**Port Moresby**	**23.21**	**295**	*e*P		**P**	**10 29 25.9**	**+0.5**
PMG				pmax		pmax		
	comp=Z,1μm,1.7s							
PMG	**Port Moresby**	**23.21**	**295**	*e*P		**P**	**10 29 24.7**	**-0.6**
	comp=Z,286nm,1.4s							
PMG				LR		LR		
	comp=Z,5μm,19.0s							
CMSA	**Cobar Meteorol**	**23.26**	**237**	P		**P**	**10 29 25.6**	**-0.1**
	baz=23,SNR=21							
RPZ	**Rata Peaks**	**23.44**	**175**	P		**P**	**10 29 27.9**	**+0.6**
	comp=Z,74nm,1.2s,baz=355,slow=2.8,SNR=13							
RPZ				LR		LR	10 38 26.3	
	comp=Z,13μm,18.1s,baz=342,slow=36							
RPZ	**Rata Peaks**	**23.44**	**175**	*e*P		**P**	**10 29 28.3**	**+0.9**
	comp=Z,340nm,1.4s							
CRLZ	**Canterbury Las**	**23.46**	**172**	*e*P		**P**	**10 29 27.2**	**-0.3**
	comp=Z,327nm,1.4s							
MQZ	**McQuen's Vall**	**23.59**	**172**	*e*P		**P**	**10 29 28.3**	**-0.5**
	comp=Z,176nm,1.2s							
JCZ	**Jackson Bay**	**23.69**	**179**	P*		**P**	**10 29 32.0**	**+2.1**
LBZ	**Lake Benmore**	**24.05**	**177**	*e*P		**P**	**10 29 33.6**	**+0.5**
	comp=Z,212nm,1.4s							
ODZ	**Otahua Downs**	**24.73**	**176**	*e*P		**P**	**10 29 39.4**	**+0.1**
	comp=Z,116nm,1.3s							
COEN	**Coen**	**24.93**	**281**	P		**P**	**10 29 41.4**	**-0.1**
	baz=25,SNR=23							
COEN	**Coen**	**24.93**	**281**	*e*P		**P**	**10 29 41.1**	**-0.3**
	comp=Z,497nm,1.8s							
MLZ	**Mavora Lakes**	**24.99**	**181**	*e*P		**P**	**10 29 40.8**	**-0.8**
	comp=Z,179nm,1.4s							
DCZ	**Deep Cove**	**25.11**	**182**	*e*P		**P**	**10 29 43.2**	**+0.6**
	comp=Z,346nm,1.5s							
DCZ	**Deep Cove**	**25.11**	**182**	P*		**P**	**10 29 43.0**	**+0.4**
WHZ	**Wether Hill Ro**	**25.51**	**181**	*e*P		**P**	**10 29 46.6**	**+0.2**
	comp=Z,458nm,1.8s							
WHZ	**Wether Hill Ro**	**25.51**	**181**	P*		**P**	**10 29 46.1**	**-0.3**
TOO	**Toolangi**	**26.32**	**224**	P		**P**	**10 29 54.2**	**+0.3**
	baz=26,SNR=12							
STKA	**Stephens Creek**	**26.64**	**239**	P		**P**	**10 29 56.6**	**-0.1**
	comp=Z,68nm,0.8s,baz=65,slow=9.5,SNR=23							
STKA				LR		LR	10 39 53.3	
	comp=Z,10μm,19.3s,baz=63,slow=35							
STKA	**Stephens Creek**	**26.64**	**239**	P		**P**	**10 29 56.8**	**+0.1**
	baz=27,SNR=31							
STKA	**Stephens Creek**	**26.64**	**239**	*e*P		**P**	**10 29 57.0**	**+0.3**
STKA				pmax		pmax		
	comp=Z,110nm,1.4s							
STKA	**Stephens Creek**	**26.64**	**239**	*e*P		**P**	**10 29 56.6**	**-0.1**
	comp=Z,109nm,1.4s							
QIS	**Mount Isa**	**27.00**	**264**	P		**P**	**10 30 00.6**	**+0.5**
	baz=27,SNR=7.0							
ARPS	**Mount Arapiles**	**28.40**	**229**	P		**P**	**10 30 12.8**	**+0.3**
	baz=28,SNR=4.5							
MOO	**Moorlands**	**28.41**	**214**	P		**P**	**10 30 13.2**	**+0.7**
	baz=28,SNR=4.7							
TAU	**Tasmania Unive**	**28.67**	**213**	*e*P		**P**	**10 30 13.6**	**-1.2**
TAU				pmax		pmax		
	comp=Z,107nm,1.4s							
TAU				MLR		MLR		
	comp=Z,7μm,20.0s							
TAU	**Tasmania Unive**	**28.67**	**213**	*e*P		**P**	**10 30 13.6**	**-1.2**
	comp=Z,107nm,1.4s							
TAU				LR		LR		
	comp=Z,7μm,20.0s							
HTT	**Hallett**	**29.27**	**237**	P		**P**	**10 30 20.6**	**+0.2**
	baz=29,SNR=9.6							
MMPI	**Merauke**	**29.55**	**289**	P		**P**	**10 30 23.6**	**+0.7**
	comp=Z,352nm,1.0s							
RAR	**Rarotonga**	**29.72**	**97**	LR		LR	10 41 23.5	
	comp=Z,2μm,19.9s,baz=274,slow=34							
RAR	**Rarotonga**	**29.72**	**97**	PFAKE			10 30 40.0	+16
RAR				LR		LR		
	comp=Z,5μm,19.0s							
BBOO	**Buckleboo**	**31.39**	**240**	P		**P**	**10 30 38.7**	**-0.3**
	baz=31,SNR=6.1							
BBOO	**Buckleboo**	**31.39**	**240**	*e*P		**P**	**10 30 38.2**	**-0.8**
	comp=Z,300nm,1.5s							
WB2	**Warramunga Arr**	**31.97**	**265**	*e*P		**P**	**10 30 42.0**	**-2.3**
	comp=Z,101nm,1.4s							
WRAB	**Tennant Creek**	**31.97**	**265**	⇓*e*P		**P**	**10 30 43.3**	**-1.0**
WRAB				pmax		pmax		
	comp=Z,60nm,1.4s							
WRAB	**Tennant Creek**	**31.97**	**265**	*e*P		**P**	**10 30 41.9**	**-2.3**
	comp=Z,71nm,1.3s							
WRAB				LR		LR		
	comp=Z,8μm,21.0s							
WR1	**Warramunga Arr**	**31.98**	**265**	*e*P		**P**	**10 30 42.0**	**-2.4**
	comp=Z,88nm,1.2s							
WRA	**Warramunga Arr**	**31.98**	**265**	P		**P**	**10 30 42.0**	**-2.4**
	comp=Z,12nm,0.9s,baz=94,slow=8.8,SNR=17							
WRA	**Warramunga Arr**	**31.98**	**265**	P		**P**	**10 30 42.0**	**-2.4**
WRA				pmax		pmax		
	comp=Z,12nm,0.9s							
AS01	**Alice Springs**	**32.10**	**258**	*e*P		**P**	**10 30 43.4**	**-2.0**
AS31	**Alice Springs**	**32.14**	**258**	*e*P		**P**	**10 30 44.0**	**-1.8**
	comp=Z,35nm,1.0s							
AS31				*e*PcP		**PcP**	**10 33 34.6**	**+0.2**
ASAR	**Alice Springs**	**32.14**	**258**	P		**P**	**10 30 44.0**	**-1.8**
	comp=Z,53nm,0.8s,baz=82,slow=9.0,SNR=37							
ASAR				PcP		**PcP**	**10 33 34.6**	**+0.2**
	comp=Z,12nm,1.0s,baz=97,slow=3.3,SNR=4.4							
ASAR				LR		LR	10 43 05.1	
	comp=Z,11μm,19.8s,baz=105,slow=35							
JAY	**Jayapura**	**32.32**	**300**	P		**P**	**10 30 45.4**	**-2.0**
	comp=Z,7.6nm,1.1s,baz=270,slow=23,SNR=8.4							
JAY				LR		LR	10 42 32.7	
	comp=Z,116nm,20.1s,baz=98,slow=34							
JAY	**Jayapura**	**32.32**	**300**	P		**P**	**10 30 45.9**	**-1.5**
	comp=Z,81nm,1.2s,comp=Z,2μm							
GENI	**Genyem**	**32.72**	**299**	P		**P**	**10 30 51.4**	**+0.6**
	comp=Z,320nm,1.3s,comp=Z,5μm							
MTN	**Manton Dam**	**36.45**	**276**	P		**P**	**10 31 22.9**	**-0.1**
	baz=36,SNR=4.3							
MTN	**Manton Dam**	**36.45**	**276**	*e*P		**P**	**10 31 21.5**	**-1.5**
	comp=Z,161nm,1.4s							
WRKA	**Warakurna**	**37.23**	**255**	P		**P**	**10 31 28.7**	**-1.1**
	baz=37,SNR=16							
FAKI	**Fak Fak**	**39.28**	**291**	P		**P**	**10 31 45.1**	**-1.9**
	comp=Z,66nm,0.8s							
FAKI	**Fak Fak**	**39.28**	**291**	*e*P		**P**	**10 31 45.2**	**-1.8**
	comp=Z,63nm,1.0s							
PAE	**Paea**	**39.72**	**93**	*e*P		**P**	**10 31 50.4**	**-0.2**
	comp=Z,34nm,1.2s							
PPT2	**Papeete2**	**39.74**	**93**	*e*P		**P**	**10 31 50.9**	**0.0**
	comp=Z,182nm,1.1s							
PPT2				*e*LQ		LQ	10 41 08.7	
	comp=Z,9μm,26.5s							
PPT2				*e*LR		LR	10 42 45.3	
	comp=Z,14μm,32.2s							
PPT	**Papeete**	**39.74**	**93**	P		**P**	**10 31 49.9**	**-1.0**
	comp=Z,250nm,1.1s,baz=301,slow=3.6,SNR=10							
TIAR	**Tiarei**	**39.96**	**93**	*e*P		**P**	**10 31 52.6**	**-0.1**
	comp=Z,71nm,1.1s							
TVO	**Taravao**	**40.00**	**94**	*e*P		**P**	**10 31 52.9**	**-0.2**
	com

comp=Z,67nm,0.9s,baz=150,slow=4.5,SNR=5.3
CBIJ Chichi jima 53.55 331 *e*P **P 10 33 38.1 -0.6**
comp=Z,121nm,1.0s
JAGI Jajag, Banyuwa 53.66 274 P **P 10 33 39.3 -0.6**
comp=Z,165nm,1.4s
JAGI Jajag, Banyuwa 53.66 274 *e*P **P 10 33 39.2 -0.6**
comp=Z,304nm,1.4s
BKB Balikpapan 53.76 284 P P 10 33 47.4 +6.8
ABJI Asem Bagus 53.80 275 P **P 10 33 42.0 +1.1**
comp=Z,163nm,0.9s
BBKI Banjar Baru 54.77 280 P **P 10 33 48.7 +0.7**
comp=Z,131nm,1.4s
RCP Roxas 54.98 301⇑*e*P **P 10 33 50.0 +0.6**
MYLDM Lahad Datu 55.19 292 *e*P **P 10 33 52.7 +1.7**
comp=Z,234nm,1.6s
PWJI Pagerwojo 56.00 274 P **P 10 33 56.8 0.0**
comp=Z,86nm,1.2s
PTCN Pitcairn Islan 56.50 107 PFAKE 10 34 10.0 +10
PTCN LR LR
comp=Z,3μm,19.0s
PCJI Pacitan 56.53 274 P **P 10 34 01.3 +0.7**
comp=Z,245nm,1.9s,comp=Z,4μm
WOJI Wonogiri, Jawa 56.89 274 P **P 10 34 04.4 +1.3**
comp=Z,294nm,1.1s,comp=Z,9μm
UGM Wanagama 57.24 274 P **P 10 34 06.7 +1.0**
comp=Z,341nm,1.8s
UGM Wanagama 57.24 274 *e*P **P 10 34 05.3 -0.4**
comp=Z,889nm,1.9s
VNDA Vanda 57.34 182 P **P 10 34 05.0 -0.4**
comp=Z,14nm,1.1s,baz=358,slow=8.0,SNR=16
VNDA Vanda 57.34 182 *e*P **P 10 34 05.0 -0.4**
VNDA pmax pmax
comp=Z,110nm,1.8s
VNDA Vanda 57.34 182 *e*P **P 10 34 05.0 -0.4**
comp=Z,109nm,1.8s
SBA Scott Base 57.59 180 *e*P **P 10 34 07.9 +0.8**
SBA pmax pmax
comp=Z,170nm,1.3s
SBA Scott Base 57.59 180 *e*P **P 10 34 07.8 +0.8**
comp=Z,174nm,1.4s
SBA LR LR
comp=Z,2μm,19.0s
KKM Kota Kinabalu 57.60 291 *e*P **P 10 34 08.2 -0.1**
comp=Z,393nm,1.7s
KKM LR LR
comp=Z,2μm,19.0s
CASY Casey 58.84 204 *e*P **P 10 34 14.8 -1.3**
comp=Z,91nm,1.4s
CASY LR LR
comp=Z,665nm,20.0s
CMJI Cimerak 59.22 273 P **P 10 34 19.9 +0.4**
comp=Z,120nm,1.0s
STKI Sintang 59.24 283 P **P 10 34 20.6 +0.9**
comp=Z,162nm,1.5s
SBUM Sibu 59.55 286 *e*P **P 10 34 22.9 +1.1**
comp=Z,148nm,1.7s
CISI Cisompet, Garu 59.89 273 P **P 10 34 24.0 -0.2**
comp=Z,234nm,1.3s,comp=Z,4μm
CISI Cisompet, Garu 59.89 273 *e*P **P 10 34 23.9 -0.2**
comp=Z,366nm,1.3s
LEM Lembang 60.31 274 P P 10 34 32.7 +5.5
baz=315,slow=19
LEM Lembang 60.31 274 P P 10 34 32.7 +5.5
CNJI Cibinong 60.61 273 P **P 10 34 29.1 0.0**
comp=Z,209nm,1.1s
KSM Kuching 60.88 284 *e*P **P 10 34 31.0 +0.1**
comp=Z,112nm,1.0s
KSM LR LR
comp=Z,2μm,19.0s
SBJI Serang 61.94 274 P **P 10 34 42.6 +4.5**
CGJI Cibinong 62.19 273 P **P 10 34 38.9 -0.8**
comp=Z,290nm,1.3s
MJAR Matsushiro Arr 63.35 333 P **P 10 34 46.5 -0.5**
comp=Z,19nm,0.9s,baz=166,slow=6.9,SNR=17
MAJO Matsushiro 63.35 333 *e*P **P 10 34 47.1 +0.1**
MAJO pmax pmax
comp=Z,44nm,1.0s
MAJO Matsushiro 63.35 333 *e*P **P 10 34 46.6 -0.4**
comp=Z,44nm,1.0s
MAJO LR LR
comp=Z,1μm,20.0s
MAT Matsushiro 63.35 333 P **P 10 34 45.4 -1.6**
MJB9 Matsu-Tunnel 63.36 333 *e*P **P 10 34 46.6 -0.4**
comp=Z,11nm,1.0s
TPUB Ta-pu 63.65 311 *e*P **P 10 34 48.0 -1.2**
comp=Z,66nm,1.1s
KASI Kota Agung 63.67 274 P **P 10 34 49.3 -0.3**
comp=Z,203nm,1.1s
YHNB Yeheng 63.99 312 *e*P **P 10 34 50.6 -0.9**
comp=Z,42nm,0.9s
YHNB LR LR
comp=Z,3μm,20.0s
JNU Nakatsue 64.10 325 P **P 10 34 52.7 +0.6**
comp=Z,26nm,0.8s,baz=147,slow=2.6,SNR=9.9
JNU Nakatsue 64.10 325 *e*P **P 10 34 52.2 +0.2**
comp=Z,118nm,1.3s
TATO Taipei 64.11 313 PFAKE 10 35 00.0 +7.8
TATO LR LR
comp=Z,2μm,20.0s
LWLI Liwa 64.25 274 P P 10 35 07.6 +14
LHSI Lahat 65.16 275 P **P 10 35 03.4 +4.0**
MIR Mirnyy 65.74 205 *i* P **P 10 35 02.0 -0.2**
MIR pmax pmax
comp=Z,10.0nm,1.2s
ERM Erimo 66.28 340 PFAKE 10 35 20.0 +14
ERM LR LR
comp=Z,3μm,19.0s
MASI Maura Aman, Be 66.60 276 P **P 10 35 09.6 +0.9**
comp=Z,232nm,1.2s,comp=Z,10μm
MYKOM Kota Tinggi 66.92 281 *e*P **P 10 35 11.1 +0.4**
comp=Z,79nm,1.4s
ASAJ Asahikawa 68.34 340 P **P 10 35 19.6 +0.6**
comp=Z,28nm,0.9s,baz=220,slow=12,SNR=14
ASAJ Asahikawa 68.34 340 *e*P **P 10 35 19.5 +0.6**
comp=Z,109nm,1.3s
TJN Taejon 68.45 325*ce*P **P 10 35 20.5 +0.7**
COCO West Island 68.77 264 *i* P **P 10 35 22.5 +0.2**
COCO West Island 68.77 264 PFAKE 10 35 30.0 +7.7
COCO LR LR
comp=Z,3μm,19.0s
KSRS Korea Array 68.97 326 P **P 10 35 23.6 +0.6**
comp=Z,9.2nm,1.0s,baz=145,slow=6.5,SNR=26
KSRS PKP2bc 11 03 32.3
comp=Z,3.3nm,1.1s,baz=336,slow=4.1,SNR=6.2
BKNI Bangkinang 68.97 279 P **P 10 35 26.0 +2.4**
comp=Z,344nm,1.3s
KS15 Wonju Array Si 68.98 326 *e*P **P 10 35 23.6 +0.6**
KS01 Wonju Array Si 69.00 326 *e*P **P 10 35 23.0 -0.2**
QIZ Qiongzhong 69.46 300 P **P 10 35 27.9 +1.5**
QIZ S **S 10 44 32.8 +1.0**
INCN Inchon 69.67 326 *e*P **P 10 35 28.4 +1.0**
comp=Z,127nm,1.4s
INCN LR LR
comp=Z,2μm,19.0s
QSPA South Pole Qui 69.75 180 *e*P **P 10 35 27.2 -0.5**
QSPA LR LR
comp=Z,3μm,21.0s
NJ2 Nanjing 70.45 317 *e*P **P 10 35 35.7 +3.4**
NJ2 pmax pmax
comp=Z,26nm,1.2s
MNSI Mandailing Nat 70.50 278 P **P 10 35 31.9 -1.1**
comp=Z,71nm,1.3s
IPM Ipoh 70.56 283 *e*P **P 10 35 33.0 -0.4**
comp=Z,63nm,1.1s
YSS Yuzh-Sakhalins 70.85 342⇑*e*P **P 10 35 35.2 +0.9**
YSS *e* 10 35 46.4
YSS pmax pmax
comp=Z,40nm,0.9s
KULM Kulim 71.23 283 *e*P **P 10 35 36.9 -0.5**
comp=Z,93nm,1.3s
KULM LR LR
comp=Z,2μm,20.0s
VLA Vladivostok 71.51 333*ce*P **P 10 35 39.1 +0.7**
VLA pmax pmax
comp=Z,62nm,1.2s
SKR Severo-Kuril's 71.52 352 *e*P **P 10 35 37.4 -0.8**
PSI Prapat 71.85 280 *e*P **P 10 35 40.2 -1.2**
PSI pmax pmax
comp=Z,120nm,1.3s
PSI Prapat 71.85 280 *e*P **P 10 35 40.2 -1.2**
comp=Z,122nm,1.3s
SKLT Songkhla 72.00 285 P **P 10 35 42.9 +0.8**
comp=Z,66nm,1.7s
USRK Ussuriysk Ar. 72.34 333 P **P 10 35 43.7 +0.3**
comp=Z,40nm,0.8s,baz=131,slow=4.1,SNR=52
USRK pP **sP 10 35 56.2 -1.9**
comp=Z,59nm,1.0s,baz=142,slow=4.4,SNR=17

WHN Wuhan 72.51 313⇑P **P 10 35 45.4 +0.7**
WHN pP **pP 10 35 55.5 +0.1**
GSI Gunungsitoli 72.55 278 P **P 10 35 46.7 +1.4**
comp=Z,101nm,0.8s
GSI Gunungsitoli 72.55 278 *e*P **P 10 35 45.8 +0.5**
comp=Z,237nm,1.3s
PANO Nakornpanom 72.85 296 P **P 10 35 47.8 +0.8**
comp=Z,102nm,1.0s
TRTT Trang 73.11 285 P P 10 35 53.9 +5.2
comp=Z,54nm,1.5s
SKNT Sakolnakorn 73.31 296 P **P 10 35 50.3 +0.6**
comp=Z,128nm,1.0s
DL2 Dalian 73.42 324 P **P 10 35 50.9 +1.0**
DL2 *e*S **SKiKP 10 45 18.0 -0.4**
DL2 pmax pmax
comp=Z,66nm,0.9s
DL2 LR LR
comp=Z,2μm,17.5s
DL2 LR LR
comp=Z,2μm,17.1s
PET Petropavlovsk 73.52 354 *e*P **P 10 35 49.1 -1.0**
PET pmax pmax
comp=Z,60nm,1.5s
PET Petropavlovsk 73.52 354 PFAKE 10 36 00.0 +10
PET LR LR
comp=Z,3μm,20.0s
PEA0 Petropavlovsk- 73.70 353 *e*P **P 10 35 51.6 +0.4**
PEA0B Petropavlovsk- 73.70 353 *e*P **P 10 35 52.0 +0.7**
comp=Z,112nm,1.3s
PETK Petropavlovsk- 73.70 353 P **P 10 35 51.5 +0.3**
comp=Z,16nm,0.7s,baz=137,slow=6.5,SNR=18
PETK pP **sP 10 36 04.5 -1.5**
comp=Z,23nm,0.7s,baz=138,slow=7.9,SNR=9.6
PETK Petropavlovsk- 73.70 353 P **P 10 35 51.6 +0.3**
PETK *PP **sP 10 36 04.5 -1.5**
PETK pmax pmax
comp=Z,15nm,0.7s
PETK pmax pmax
comp=Z,23nm,0.7s
MDJ Mudanjiang 73.71 332 P **P 10 35 52.6 +1.1**
MDJ pmax pmax
comp=Z,68nm,1.2s
MDJ pmax pmax
comp=Z,5μm,14.9s
MDJ Mudanjiang 73.71 332 *e*P **P 10 35 52.6 +1.1**
comp=Z,103nm,1.1s
MDJ LR LR
comp=Z,2μm,19.0s
PEA1 Petropavlovsk- 73.71 353 *e*P **P 10 35 51.5 +0.3**
KHON Khomkaen 74.00 295 P **P 10 35 55.5 +1.7**
comp=Z,20nm,1.0s
TIA Tai'an 74.24 319⇑P **P 10 35 55.2 +0.4**
TIA pmax pmax
comp=Z,20nm,1.1s
NAYO Nakonayok 74.39 292 P **P 10 35 57.8 +1.7**
comp=Z,24nm,1.1s
TYV Tymovskoe 74.42 343 *e*P **P 10 35 55.0 -0.4**
TYV pmax pmax
comp=Z,26nm,1.0s
CHAI Chaiyaphum 74.52 294 P **P 10 35 57.5 +0.7**
comp=Z,9.4nm,1.0s,comp=Z,112nm
NONG Nongkai 74.52 296 P **P 10 35 57.5 +0.7**
comp=Z,44nm,1.0s,comp=Z,11μm
HABR Khabarovsk 74.69 338 *e*P **P 10 35 55.9 -1.2**
HABR *e**PP **pP 10 36 06.2 -1.7**
HABR *e* 10 36 10.1
HABR *e* 10 38 42.3
HABR *e*PPP PPP 10 40 27.9
HABR *e*S **S 10 45 29.3 -1.4**
HABR *e* 10 46 04.2
HABR *e*SS **SS 10 50 17.3 -1.9**
HABR *e*SSS SSS 10 53 39.5
HABR pmax pmax
comp=Z,166nm,2.5s
HABR pmax pmax
comp=N,88nm,2.5s
HABR pmax pmax
comp=E,28nm,1.5s
HABR MLR MLR
comp=Z,1μm,15.0s
MLSI Meulaboh, Aceh 74.73 280 P **P 10 35 59.4 +1.2**
comp=Z,117nm,1.3s
CN2 Changchun 74.98 329 *e*P **P 10 35 59.8 +0.9**
CN2 *e*pP pP 10 36 10.2 +0.5
CN2 pmax pmax
comp=Z,50nm,0.9s
CN2 pmax pmax
comp=Z,200nm,7.0s
CN2 LR LR
comp=Z,2μm,16.0s
CN2 LR LR
comp=Z,2μm,16.0s
CN2 LR LR
comp=Z,2μm,15.0s
PBKT Sadao Pong 75.69 294 P **P 10 36 04.8 +1.3**
comp=Z,43nm,1.9s
ENH Enshi 75.77 310 *e*P **P 10 36 04.1 +0.3**
comp=Z,38nm,1.0s
ENH LR LR
comp=Z,2μm,20.0s
GYA Guiyang 75.81 305 SKS 10 36 12.0
GYA Guiyang 75.81 305 P **P 10 36 06.4 +2.1**
GYA pP PcP 10 36 17.0 +0.3
GYA PP **PP 10 38 59.4 +4.6**
GYA S **S 10 45 45.8 +1.4**
GYA sS sS 10 46 03.2 +1.1
GYA SKS **SKSac 10 46 09.0 -3.5**
GYA pmax pmax
comp=Z,60nm,1.0s
GYA pmax pmax
comp=Z,190nm,6.6s
GYA LR LR
comp=Z,8μm,18.8s
GYA LR LR
comp=Z,8μm,19.0s
GYA LR LR
comp=Z,8μm,19.4s
LOEI Loei 75.86 295 P **P 10 36 03.6 -0.9**
comp=Z,25nm,1.5s
SRDT SRDT 76.32 291 P **P 10 36 09.7 +2.5**
comp=Z,244nm,1.2s
KLR Kul'dur 76.54 336 P **P 10 36 08.2 +0.5**
comp=Z,14nm,0.9s,baz=131,slow=4.9,SNR=14
UTTA Uttaradit 76.56 295 P **P 10 36 10.0 +1.5**
comp=Z,9.7nm,1.0s,comp=Z,91nm
NANT Nan 76.92 296 P **P 10 36 11.2 +0.7**
comp=Z,17nm,0.8s,comp=Z,168nm
UNV Unalaska Valle 76.95 15 *e*P **P 10 36 09.2 -0.7**
comp=Z,93nm,0.8s
NKL Nikolayevsk 77.01 343 *e*P **P 10 36 11.0 +0.8**
NKL pmax pmax
comp=N,13nm,1.0s
NKL pmax pmax
comp=Z,40nm,1.0s
MAW Mawson 77.16 202 P **P 10 36 11.0 0.0**
comp=Z,34nm,1.0s,baz=110,slow=7.2,SNR=20
MAW Mawson 77.16 202 P **P 10 36 11.3 +0.3**
baz=77,SNR=11
MAW Mawson 77.16 202 *e*P **P 10 36 11.0 0.0**
MAW pmax pmax
comp=Z,16nm,1.2s
MAW Mawson 77.16 202 *e*P **P 10 36 11.0 0.0**
comp=Z,16nm,1.2s
BJT Baijiatuau 77.28 321 PFAKE 10 36 20.0 +7.9
BJT LR LR
comp=Z,3μm,20.0s
BJI Beijing 77.29 322 P **P 10 36 12.2 +0.1**
BJI pmax pmax
comp=Z,19nm,2.0s
BJI LR LR
comp=Z,2μm,19.0s
LAMP Lampang 77.69 295 P **P 10 36 16.4 +1.5**
comp=Z,39nm,0.8s,comp=Z,310nm
CRAI Chiangrai 77.83 297 P **P 10 36 16.6 +1.0**
comp=Z,609nm,1.0s
KMI Kunming 78.20 302 P **P 10 36 19.3 +1.5**
KMI pP sP 10 36 30.8 -1.8
KMI sP pP 10 36 34.6 +6.0
KMI PP **PP 10 39 18.8 +3.8**
KMI S **S 10 46 08.0 -2.6**
KMI sS SKSac 10 46 27.1 -3.1
KMI SS **SS 10 51 10.1 -3.5**
KMI pmax pmax
comp=Z,57nm,1.4s
KMI LR LR
comp=Z,2μm,17.0s

KMI LR LR
comp=Z,2μm,18.0s
KMI LR LR
comp=Z,2μm,18.0s
CM01 Chiang Mai Arr 78.22 295 *e*P **P 10 36 18.5 +0.7**
CM31 Chiang Mai Arr 78.25 295 *e*P **P 10 36 19.4 +1.4**
CMAR Chiang Mai Arr 78.25 295 P **P 10 36 18.7 +0.7**
comp=Z,40nm,0.9s,baz=133,slow=3.7,SNR=95
XAN Xi'an 78.28 313 P **P 10 36 18.2 +0.3**
XAN pP pP 10 36 28.8 +0.2
XAN pmax pmax
comp=Z,17nm,1.0s
CMMT Chiang Mai 78.41 295 P **P 10 36 19.8 +1.0**
comp=Z,104nm,1.1s
CHTO Chiang Mai 78.41 295 P **P 10 36 19.8 +0.9**
comp=Z,372nm,0.9s
CHTO Chiang Mai 78.41 295 *e*P **P 10 36 19.5 +0.7**
CHTO pmax pmax
comp=Z,67nm,0.9s
CHTO Chiang Mai 78.41 295 *e*P **P 10 36 19.5 +0.7**
comp=Z,67nm,0.9s
CHTO LR LR
comp=Z,2μm,19.0s
CMAI Chiengmai2 78.82 296 P **P 10 36 22.6 +1.3**
comp=Z,52nm,1.1s
CD2 Chengdu 80.29 308 P **P 10 36 28.9 0.0**
CD2 sP sP 10 36 44.3 +0.6
CD2 PP **PP 10 39 31.9 -0.3**
CD2 S **S 10 46 32.9 +0.6**
CD2 sS ScS 10 46 51.7 -0.6
CD2 SS **SS 10 51 45.9 +1.4**
CD2 pmax pmax
comp=Z,30nm,0.8s
CD2 LR LR
comp=Z,2μm,16.8s
CD2 LR LR
comp=Z,2μm,20.4s
HHC Hu-ho-hao-te 80.54 320 *e*P **P 10 36 31.2 +1.1**
HHC pmax pmax
comp=Z,57nm,1.3s
HHC pmax pmax
comp=Z,1μm,7.4s
MA2 Magadan 80.91 351 *e*P **P 10 36 31.2 -0.3**
MA2 Magadan 80.91 351 PFAKE 10 36 40.0 +8.5
MA2 LR LR
comp=Z,3μm,20.0s
HIA Hailar 81.66 330 PFAKE 10 36 50.0 +14
HIA LR LR
comp=Z,3μm,19.0s
LZH Lanzhou 82.88 312 *e*P **P 10 36 44.8 +2.1**
LZH pP pP 10 36 52.9 -0.6
LZH sP sP 10 36 56.3 -1.2
LZH pmax pmax
comp=Z,39nm,1.3s
LZH pmax pmax
comp=Z,150nm,4.5s
LZH LR LR
comp=Z,990nm,16.0s
LZH LR LR
comp=Z,3μm,16.8s
LZH LR LR
comp=Z,3μm,17.9s
OHAK Old Harbor 83.62 20 *e*P **P 10 36 46.4 +0.7**
comp=Z,112nm,1.0s
SYO Syowa Base 83.69 196⇓*e*P **P 10 36 44.0 -2.1**
SYO Syowa Base 83.69 196⇑*e*pP **P 10 36 47.6 +1.5**
SEY Seymchan 83.93 353 P **P 10 36 47.7 +0.6**
comp=Z,20nm,1.1s,baz=142,slow=5.5,SNR=13
SEY pP **sP 10 36 59.8 -2.2**
comp=Z,33nm,1.0s,baz=172,slow=6.8,SNR=11
SEY Seymchan 83.93 353⇑*e*P **P 10 36 48.0 +0.8**
KDAK Kodiak Island 84.30 20 P P 10 37 03.3 +14
comp=Z,68nm,1.1s,baz=205,slow=3.3,SNR=14
KDAK Kodiak Island 84.30 20 *i* P **P 10 36 50.3 +1.2**
KDAK Kodiak Island 84.30 20 *e*P **P 10 36 50.4 +1.3**
comp=Z,99nm,1.1s
KDAK LR LR
comp=Z,4μm,20.0s
GAMB Gambell 85.24 9 *e*P **P 10 36 54.2 +0.5**
comp=Z,55nm,1.1s
HOM Homer 86.10 19 *e*P **P 10 36 59.2 +1.1**
comp=Z,241nm,1.2s
PMSA Palmer Station 86.17 160 PFAKE 10 37 10.0 +11
PMSA LR LR
comp=Z,4μm,19.0s
RSO Redoubt South 86.41 18 *e*P **P 10 37 00.1 +0.2**
SNCC San Nicolas Is 86.90 53 P **P 10 37 03.6 +0.9**
baz=243
HOPS Hopland Field 87.03 47 *e*P **P 10 37 03.9 +0.6**
comp=Z,126nm,1.1s
SAO San Andreas Ge 87.10 49 *e*P **P 10 37 04.2 +0.6**
SAO pmax pmax
comp=Z,50nm,1.0s
SAO San Andreas Ge 87.10 49 *e*P **P 10 37 04.2 +0.6**
comp=Z,50nm,1.0s
SEW Seward 87.13 20 *e*P **P 10 37 04.8 +1.6**
comp=Z,29nm,1.1s
SCZ2 Santa Cruz Isl 87.15 52 P **P 10 37 04.5 +0.5**
baz=243
SHL Shillong 87.19 298⇓*i*P **P 10 37 06.0 +1.5**
KMRM Mail Ridge 87.20 45 *e*P **P 10 37 04.8 +0.6**
comp=Z,137nm,1.0s
ULN Ulaanbaatar 87.27 324*d i*P **P 10 37 05.2 +0.8**
ULN pmax pmax
comp=Z,56nm,1.2s
ULN Ulaanbaatar 87.27 324 *e*P **P 10 37 05.3 +0.9**
comp=Z,103nm,1.5s
ULN LR LR
comp=Z,3μm,19.0s
SBC Santa Barbara 87.29 52 P **P 10 37 05.8 +1.2**
baz=243
GTA Gaotai 87.31 314⇑P **P 10 37 05.8 +1.1**
GTA pP pP 10 37 16.1 +0.4
GTA sP sP 10 37 20.4 +0.8
GTA pmax pmax
comp=Z,13nm,1.2s
PKM Mcpherson Peak 87.42 51 P **P 10 37 06.2 +0.7**
baz=243,SNR=9.3
SMMC Simmler 87.48 51 P **P 10 37 06.2 +0.7**
baz=243,SNR=6.0
KHMM Horse Mountain 87.51 45 *e*P **P 10 37 06.0 +0.3**
comp=Z,124nm,1.1s
SCI2 San Clemente I 87.52 54 P **P 10 37 06.1 +0.4**
baz=244
TT01 Tatalina 87.55 15 *e*P **P 10 37 05.4 +0.3**
TTA Tatalina 87.57 15 *e*P **P 10 37 06.2 +0.9**
SONA0 Songino Array 87.62 323 *e*P **P 10 37 06.6 +0.6**
comp=Z,28nm,0.9s
SONM Songino Array 87.62 323 P **P 10 37 06.6 +0.6**
comp=Z,15nm,1.0s,baz=143,slow=5.2,SNR=6.0
BLG Laguna Peak, P 87.62 52 P **P 10 37 06.9 +0.6**
baz=244
SONA1 Songino Array 87.62 323 *e*P **P 10 37 06.4 +0.3**
YAK Yakutsk 87.67 343 P **P 10 37 05.8 +0.2**
comp=Z,33nm,0.6s,baz=58,slow=0.6,SNR=9.5
YAK Yakutsk 87.67 343*d i*P **P 10 37 05.8 +0.2**
YAK *e*S **SKSac 10 47 30.0 -0.6**
YAK *e* 10 47 49.8
YAK *e*SSS SSS 10 57 10.2
YAK pmax pmax
comp=Z,50nm,1.0s
YAK pmax pmax
comp=E,14nm,1.5s
YAK pmax pmax
comp=N,14nm,1.3s
YAK pmax pmax
comp=Z,994nm,9.8s
YAK pmax pmax
comp=N,447nm,7.3s
YAK pmax pmax
comp=E,813nm,9.8s
YAK smax smax
comp=N,264nm,4.0s
YAK smax smax
comp=E,158nm,4.2s
YAK MLR MLR
comp=Z,5μm,19.0s
YAK MLR MLR
comp=N,2μm,19.0s
YAK MLR MLR
comp=E,1μm,19.0s
YAK Yakutsk 87.67 343 *e*P **P 10 37 05.9 +0.2**
comp=E,107nm,1.2s
YAK LR LR
comp=Z,5μm,19.0s
NVL N'lazarevskaya 87.70 188 *e*P **P 10 37 05.9 -0.1**

NVL				MLR	MLR		
	comp=Z,3μm,17.0s						
CIS	Catalina Islan	87.80	53	P	P	10 37 07.5	+0.5
	baz=244						
RC01	Rabbit Creek A	87.81	19	eP	P	10 37 05.7	-0.7
	comp=Z,29nm,1.1s						
FMP	Fort Macarthur	88.03	53	P	P	10 37 08.6	+0.5
	baz=244						
SNAA	Sanae	88.06	183	PKP	P	10 37 06.5	-1.2
SNAA	Sanae	88.06	183	d iP	P	10 37 07.1	-0.7
SNAA	Sanae	88.06	183	eP	P	10 37 06.7	-1.1
	comp=Z,92nm,1.2s						
OSI	Osito Audit: C	88.10	52	P	P	10 37 09.1	+0.6
	baz=244						
OSI	Osito Audit: C	88.10	52	eP	P	10 37 09.8	+1.2
	comp=Z,108nm,1.4s						
BILL	Bilibino	88.11	359	d iP	P	10 37 07.4	-0.3
BILL				i		10 37 19.1	
BILL				i		10 40 34.3	
BILL				pmax	pmax		
	comp=Z,61nm,1.1s						
BILL				MLR	MLR		
	comp=Z,3μm,17.0s						
BILL	Bilibino	88.11	359	PFAKE		10 37 20.0	+12
BILL				LR	LR		
	comp=Z,3μm,20.0s						
L02D	Cave Junction,	88.22	44	P	P	10 37 09.8	+0.9
	baz=240,SNR=8.6						
DECC	Green Verdugo	88.23	53	P	P	10 37 09.2	+0.1
	baz=244						
N02D	Trinity Center	88.23	45	P	P	10 37 09.8	+0.8
	baz=241,SNR=38						
ARVC	Arvin	88.25	52	P	P	10 37 09.6	+0.4
	baz=244,SNR=12						
PASC	Pasadena Art C	88.31	53	eP	P	10 37 09.2	-0.2
	comp=Z,52nm,1.1s						
M02C	Callahan	88.34	45	P	P	10 37 10.2	+0.7
	baz=241,SNR=32						
ORV	Oroville	88.37	47	eP	P	10 37 09.7	+0.1
ORV				e*PP	pP	10 37 21.7	+1.1
ORV				pmax	pmax		
	comp=Z,140nm,1.5s						
ORV	Oroville	88.37	47	eP	P	10 37 09.5	-0.1
	comp=Z,144nm,1.5s						
VES	Vestal, Richgr	88.38	51	P	P	10 37 09.7	0.0
	baz=244,SNR=15						
PMR	Palmer	88.39	19	eP	P	10 37 08.5	-0.6
PMR				pmax	pmax		
	comp=Z,19nm,1.0s						
PMR	Palmer	88.39	19	eP	P	10 37 08.5	-0.6
	comp=Z,19nm,1.0s						
MWC	Mount Wilson	88.42	53	eP	P	10 37 09.9	-0.4
MWC				pmax	pmax		
	comp=Z,220nm,1.7s						
MWC	Mount Wilson	88.42	53	eP	P	10 37 10.8	+0.5
	comp=Z,219nm,1.8s						
CMB	Columbia Colle	88.44	48	eP	P	10 37 09.5	-0.5
CMB				pmax	pmax		
	comp=Z,65nm,1.0s						
CMB	Columbia Colle	88.44	48	eP	P	10 37 09.6	-0.4
	comp=Z,66nm,1.0s						
AFDM	Forest Hills D	88.45	47	eP	P	10 37 09.9	-0.1
	comp=Z,101nm,1.2s						
RCTC	Rector, Farmer	88.47	50	P	P	10 37 10.3	+0.1
	baz=243,SNR=11						
O03D	Paynes Creek	88.51	46	P	P	10 37 10.8	+0.4
	baz=242,SNR=40						
109C	Camp Elliot, M	88.57	54	P	P	10 37 10.7	0.0
	baz=245						
YBH	Yreka Blue Hor	88.60	44	eP	P	10 37 10.9	+0.1
YBH				pmax	pmax		
	comp=Z,69nm,1.1s						
YBH	Yreka Blue Hor	88.60	44	eP	P	10 37 10.9	+0.1
	comp=Z,69nm,1.1s						
VNA3	Neumayer Olymp	88.68	181	PKP	P	10 37 09.4	-1.2
BFSC	Mount Baldy Ra	88.73	53	P	P	10 37 11.8	+0.2
	baz=244,SNR=10						
ISA	Isabella, Lake	88.75	51	P	P	10 37 11.9	+0.3
	baz=244,SNR=20						
ISA	Isabella, Lake	88.75	51	eP	P	10 37 11.4	-0.2
ISA				pmax	pmax		
	comp=Z,84nm,1.1s						
ISA	Isabella, Lake	88.75	51	eP	P	10 37 11.4	-0.2
	comp=Z,84nm,1.1s						
EDW2	Edwards Air Fo	88.76	52	P	P	10 37 11.8	+0.2
	baz=244,SNR=15						
SML	Sawmill	88.80	19	eP	P	10 37 12.5	+1.4
SML				pmax	pmax		
	comp=Z,42nm,1.3s						
SML	Sawmill	88.80	19	eP	P	10 37 12.5	+1.4
	comp=Z,42nm,1.3s						
MURC	Murrieta	88.80	54	P	P	10 37 12.0	+0.2
	baz=245,SNR=9.3						
BAR	Barrett	88.81	55	eP	P	10 37 12.1	+0.2
	comp=Z,32nm,1.1s						
HUMO	Hull Mountain	88.86	43	eP	P	10 37 12.1	+0.2
	comp=Z,96nm,1.0s						
VNA2	Neumayer--Watz	88.96	181	PKP	P	10 37 11.1	-0.8
	baz=181,slow=4.0						
CAST	Castle Rocks	88.99	17	eP	P	10 37 10.4	-1.6
	comp=Z,28nm,1.1s						
MONP2	Monument Peak	89.09	54	P	P	10 37 13.6	+0.1
	baz=245,SNR=11						
DIV	Divide	89.09	20	eP	P	10 37 12.4	-0.2
	comp=Z,21nm,1.1s						
SCM	Sheep Creek Mo	89.13	19	eP	P	10 37 12.8	+0.1
SCM				pmax	pmax		
	comp=Z,18nm,0.8s						
SCM	Sheep Creek Mo	89.13	19	eP	P	10 37 12.8	+0.1
	comp=Z,18nm,0.8s						
I03D	Drain, OR	89.14	42	P	P	10 37 13.6	+0.5
	baz=241,SNR=12						
M04C	Macdoel	89.19	45	P	P	10 37 14.2	+0.6
	baz=242,SNR=22						
IKP	In-Ko-Pah, Jac	89.23	55	P	P	10 37 14.1	+0.2
	baz=245						
LRMC	Laurel Mtn Rad	89.25	52	P	P	10 37 14.7	+0.7
	baz=244,SNR=9.9						
VNA1	Neumayer--Stat	89.25	181	PKP	P	10 37 13.2	-0.1
BBRC	Big Bear Solar	89.29	53	P	P	10 37 14.3	-0.1
	baz=245						
KLU	Klutina	89.31	20	eP	P	10 37 13.8	+0.2
	comp=Z,13nm,1.1s						
WAKR	Walker	89.31	48	eP	P	10 37 14.7	+0.4
MLAC	Mammoth, Mammo	89.35	49	P	P	10 37 14.9	+0.3
	baz=244						
BMRM	Bremner River	89.36	21	eP	P	10 37 13.0	-0.8
	comp=Z,22nm,1.1s						
PFO	Pinyon Flats O	89.36	54	P	P	10 37 14.9	+0.3
	baz=245						
PFO	Pinyon Flats O	89.36	54	eP	P	10 37 15.0	+0.4
PFO				pmax	pmax		
	comp=Z,76nm,1.4s						
PFO	Pinyon Flats O	89.36	54	eP	P	10 37 15.0	+0.4
	comp=Z,76nm,1.4s						
PFO				LR	LR		
	comp=Z,4μm,19.0s						
TPFO	Pinon Flats	89.36	54	P	P	10 37 14.9	+0.3
	baz=245,SNR=9.9						
KTH	Kantishna Hill	89.41	17	eP	P	10 37 12.5	-1.5
	comp=Z,19nm,1.0s						
LSA	Lhasa	89.44	302	PFAKE		10 37 30.0	+14
LSA				LR	LR		
	comp=Z,3μm,20.0s						
RRX	Edison Barstow	89.49	52	P	P	10 37 15.6	+0.6
	baz=245						
TIN	Tinemaha, Big	89.53	50	P	P	10 37 16.0	+0.7
	baz=244,SNR=5.5						
SWSC	Sam W. Stewart	89.59	55	P	P	10 37 15.9	+0.4
	baz=245,SNR=9.0						
COR	Corvallis	89.61	42	eP	P	10 37 15.3	+0.1
COR				pmax	pmax		
	comp=Z,80nm,1.1s						
COR	Corvallis	89.61	42	eP	P	10 37 15.3	+0.1
	comp=Z,80nm,1.1s						
MPMC	Manual Prospec	89.64	51	P	P	10 37 16.6	+0.6
	baz=244,SNR=41						
K04D	Chiloquin, OR	89.65	44	P	P	10 37 16.7	+1.0
	baz=242,SNR=9.1						
DAC	Darwin (Calif)	89.65	51	eP	P	10 37 16.0	0.0
DAC				pmax	pmax		
	comp=Z,56nm,1.1s						
DAC	Darwin (Calif)	89.65	51	eP	P	10 37 16.0	0.0
	comp=Z,56nm,1.1s						
I04A	Tendick Farm,	89.78	43	P	P	10 37 16.9	+0.6
	baz=241,SNR=18						
GSC	Goldstone, Bar	89.82	52	P	P	10 37 17.3	+0.6
	baz=245,SNR=14						
GSC	Goldstone, Bar	89.82	52	eP	P	10 37 17.0	+0.4
GSC				pmax	pmax		
	comp=Z,71nm,1.3s						
GSC	Goldstone, Bar	89.82	52	eP	P	10 37 17.0	+0.4
	comp=Z,71nm,1.4s						
BPAW	Bear Paw Mtn.	89.83	17	eP	P	10 37 16.1	+0.2
	comp=Z,7.1nm,1.1s						
BELC	Belle Mtn. Jos	89.88	54	P	P	10 37 17.4	+0.4
	baz=245,SNR=16						
RND	Reindeer	89.88	18	eP	P	10 37 15.2	-1.0
RND				pmax	pmax		
	comp=Z,17nm,0.9s						
RND	Reindeer	89.88	18	eP	P	10 37 15.2	-1.0
	comp=Z,17nm,0.9s						
G03D	McMinnville, O	89.94	41	P	P	10 37 17.8	+1.0
	baz=241,SNR=9.3						
BOD	Bodaibo	89.96	334	eP	P	10 37 15.4	-1.2
BOD				pmax	pmax		
	comp=Z,41nm,1.3s						
HEC	Hector,Ludlow	89.97	53	P	P	10 37 17.7	+0.4
	baz=245,SNR=27						
NV01	Mina Array Sit	90.08	49	eP	P	10 37 17.5	-0.4
NVAR	Mina Array Bea	90.08	49	P	P	10 37 17.9	-0.1
	comp=Z,44nm,1.0s,baz=228,slow=7.0,SNR=65						
NVAR				pP	sP	10 37 30.6	-2.2
	comp=Z,31nm,0.9s,baz=226,slow=8.1,SNR=12						
NVAR				PP	PP	10 40 44.6	-7.2
	comp=Z,2.2nm,0.9s,baz=227,slow=8.9,SNR=4.5						
MCK	McKinley	90.11	18	eP	P	10 37 18.0	+0.8
MCK				pmax	pmax		
	comp=Z,16nm,1.2s						
MCK	McKinley	90.11	18	eP	P	10 37 18.0	+0.8
	comp=Z,16nm,1.2s						
F03A	Seaside	90.11	40	eP	P	10 37 18.5	+0.8
	comp=Z,168nm,1.1s						
GRAC	Grapevine Rang	90.13	50	P	P	10 37 18.5	+0.5
	baz=245,SNR=13						
BC3	Big Chuckawall	90.14	54	P	P	10 37 18.8	+0.5
	baz=246,SNR=14						
BALM	Baldy	90.18	22	eP	P	10 37 17.9	+0.2
BALM				pmax	pmax		
	comp=Z,50nm,1.8s						
BALM	Baldy	90.18	22	eP	P	10 37 17.9	+0.2
	comp=Z,50nm,1.8s						
NV11	Mina Array Sit	90.19	49	eP	P	10 37 18.3	0.0
	comp=Z,75nm,1.1s						
K05A	Summer Lake	90.26	44	eP	P	10 37 18.7	0.0
	comp=Z,98nm,1.1s						
MOD	Modoc Plateau	90.27	45	eP	P	10 37 18.3	-0.3
	comp=Z,63nm,1.0s						
FURC	Furnace Creek,	90.27	51	P	P	10 37 19.0	+0.5
	baz=245,SNR=38						
J05D	Fort Rock, OR	90.29	43	P	P	10 37 19.6	+0.8
	baz=242,SNR=72						
BWN	Browne	90.30	17	eP	P	10 37 17.8	-0.3
	comp=Z,36nm,1.0s						
H04A	Detroit Lake	90.35	42	P	P	10 37 18.2	-0.7
GLA	Glamis	90.38	55	P	P	10 37 19.7	+0.5
	baz=246,SNR=22						
GLA	Glamis	90.38	55	eP	P	10 37 19.7	+0.5
GLA				pmax	pmax		
	comp=Z,115nm,1.2s						
GLA	Glamis	90.38	55	eP	P	10 37 19.7	+0.5
	comp=Z,115nm,1.2s						
E03A	Lebam	90.41	40	eP	P	10 37 19.1	+0.1
	comp=Z,165nm,1.0s						
GMRC	Granite Mounta	90.45	53	P	P	10 37 20.2	+0.5
	baz=246,SNR=19						
SHOC	Shoshone, Teco	90.46	52	P	P	10 37 19.8	+0.2
	baz=245,SNR=30						
F04D	Rainier, OR	90.52	40	P	P	10 37 20.5	+1.0
	baz=241,SNR=6.2						
TUQ	Turquoise Moun	90.53	52	P	P	10 37 20.4	+0.4
	baz=245,SNR=23						
IRM	Iron Mountain	90.58	54	P	P	10 37 20.8	+0.6
	baz=246,SNR=26						
OOW	Octopus West	90.63	39	eP	P	10 37 20.8	+0.8
MLY	Manley	90.63	16	eP	P	10 37 18.6	-1.1
	comp=Z,11nm,1.1s						
NLWA	Neilton Lookou	90.64	39	eP	P	10 37 20.5	+0.3
	comp=Z,68nm,1.1s						
NLWA				LR	LR		
	comp=Z,10μm,21.0s						
SLBS	Sierra La Lagu	90.72	65	eP	P	10 37 21.9	+0.8
	comp=Z,48nm,1.0s						
I05D	Terrebonne, OR	90.72	42	P	P	10 37 21.2	+0.6
	baz=242,SNR=28						
ZAK	Zakamensk	90.72	324	eP	P	10 37 20.0	-0.5
ZAK				e		10 42 55.2	
ZAK				pmax	pmax		
	comp=Z,23nm,1.6s						
ZAK				pmax	pmax		
	comp=Z,6.0nm,1.2s						
F04A	Amboy	90.80	41	eP	P	10 37 20.8	-0.1
	comp=Z,104nm,1.0s						
LVP	Lakeview Peak	90.88	41	eP	P	10 37 21.0	-0.4
Y12C	Blythe	90.89	54	P	P	10 37 21.6	0.0
	baz=246,SNR=16						
Y12C	Blythe	90.89	54	eP	P	10 37 21.1	-0.5
	comp=Z,64nm,1.0s						
WRH	Wood River Hil	90.91	17	eP	P	10 37 19.3	-1.6
	comp=Z,13nm,0.9s						
TPNV	Topopah Spring	90.92	51	P	P	10 37 22.0	+0.2
	baz=245,SNR=36						
TPNV	Topopah Spring	90.92	51	eP	P	10 37 21.6	-0.2
TPNV				pmax	pmax		
	comp=Z,74nm,1.1s						
TPNV	Topopah Spring	90.92	51	eP	P	10 37 21.6	-0.2
	comp=Z,74nm,1.1s						
LDFC	Landfair	90.99	53	eP	P	10 37 22.3	+0.2
	comp=Z,109nm,1.0s						
SEPW	September Lobe	91.07	41	eP	P	10 37 22.5	+0.1
113A	Mohawk Valley,	91.08	55	eP	P	10 37 21.9	-0.5
	comp=Z,53nm,1.2s						
CCB	Clear Creek Bu	91.13	17	eP	P	10 37 20.2	-1.7
	comp=Z,14nm,1.2s						
WRAK	Wrangell Islan	91.15	29	PFAKE		10 37 30.0	+7.8
WRAK				LR	LR		
	comp=Z,4μm,20.0s						
G05D	Wamic, OR	91.16	42	P	P	10 37 23.4	+0.8
	baz=242,SNR=7.1						
HDA	Harding Lake	91.19	18	eP	P	10 37 20.4	-1.8
	comp=Z,22nm,1.0s						
TLY	Talaya	91.21	326	P	P	10 37 22.4	-0.2
	comp=Z,7.4nm,0.7s,baz=155,slow=4.8,SNR=7.1						
TLY	Talaya	91.21	326	eP	P	10 37 23.5	+0.9
TLY				pmax	pmax		
	comp=Z,35nm,1.8s						
TLY	Talaya	91.21	326	eP	P	10 37 22.3	-0.4
	comp=Z,24nm,1.2s						
TLY				LR	LR		
	comp=Z,3μm,19.0s						
MDM	Murphy Dome	91.25	17	eP	P	10 37 20.5	-2.1
	comp=Z,20nm,1.1s						
COLA	College	91.29	17⇑	eP	P	10 37 21.3	-1.3
COLA				pmax	pmax		
	comp=Z,12nm,1.0s						
COLA	College	91.29	17	eP	P	10 37 21.6	-1.0
	comp=Z,17nm,0.8s						
COLA				LR	LR		
	comp=Z,4μm,19.0s						
PDMCI	Parker Dam,Lak	91.40	54	P	P	10 37 24.5	+0.5
	baz=246,SNR=17						
ILAR	Eielson Array	91.48	18	P	P	10 37 20.9	-2.6
	comp=Z,3.5nm,0.9s,baz=246,slow=4.9,SNR=11						
ILAR	Eielson Array	91.48	18	P	P	10 37 21.0	-2.6
ILB	Eielson Array	91.48	18	eP	P	10 37 21.8	-1.7
IL1	Eielson Array	91.48	18	eP	P	10 37 25.1	+1.5
DOT	Dot Lake	91.48	19	eP	P	10 37 23.3	-0.3
	comp=Z,24nm,0.9s						
214A	Organ Pipe Nat	91.50	57	P	P	10 37 24.8	+0.3
	baz=247,SNR=12						
PGC	Sidney	91.51	38	eP	P	10 37 24.0	0.0
	comp=Z,80nm,1.0s						
SHPR	Sheep Range	91.53	52	eP	P	10 37 25.0	+0.3
LON	Longmire	91.56	40	eP	P	10 37 24.1	-0.4
LON				pmax	pmax		
	comp=Z,92nm,1.6s						
LON	Longmire	91.56	40	eP	P	10 37 24.1	-0.4
	comp=Z,92nm,1.7s						
G06A	Carlson Farm,	91.58	42	eP	P	10 37 24.4	-0.2
	comp=Z,56nm,1.3s						
WVOR	Wild Horse Val	91.61	45	eP	P	10 37 24.6	-0.3
WVOR				pmax	pmax		
	comp=Z,70nm,1.1s						
WVOR	Wild Horse Val	91.61	45	eP	P	10 37 24.6	-0.3
	comp=Z,70nm,1.1s						
WVOR				LR	LR		
	comp=Z,8μm,19.0s						
D05A	Enumclaw	91.67	40	eP	P	10 37 25.1	+0.3
	comp=Z,305nm,1.4s						
FMW	Mount Fremont	91.73	40	eP	P	10 37 25.2	-0.2
SKAG	Skagway	91.74	25	eP	P	10 37 23.9	-1.0
	comp=Z,45nm,1.1s						
HSIG		91.87	60	eP	P	10 37 27.1	+0.9
	comp=Z,41nm,1.0s						
W13A	Hualapai Mount	91.91	53	eP	P	10 37 26.6	0.0
	comp=Z,37nm,1.0s						
A04D	Lummi Island	91.98	38	P	P	10 37 26.4	+0.2
	baz=241,SNR=5.2						
R11A	Troy Canyon, C	91.98	50	P	P	10 37 26.8	0.0
	baz=246,SNR=18						
R11A	Troy Canyon, C	91.98	50	eP	P	10 37 26.0	-0.7
	comp=Z,16nm,0.9s						
B05A	Bryant	92.11	39	P	P	10 37 27.2	+0.3
	baz=242,SNR=18						
Y14A	Wickenburg	92.13	55	eP	P	10 37 27.0	-0.4
	comp=Z,81nm,0.9s						
COLD	Coldfoot	92.50	15	eP	P	10 37 28.3	+0.1
	comp=Z,19nm,1.2s						
RPW	Rockport	92.54	39	eP	P	10 37 28.3	-0.6
B06A	Marblemount	92.59	39	eP	P	10 37 29.0	0.0
	comp=Z,34nm,1.2s						
MOY	Mondy	92.62	325	eP	P	10 37 30.0	+0.7
MOY				pmax	pmax		
	comp=Z,148nm,2.3s						
G08A	Pilot Rock	92.66	42	eP	P	10 37 29.3	-0.4
	comp=Z,28nm,0.9s						
HAWA	Hanford	92.80	41	eP	P	10 37 30.8	+0.7
	comp=Z,69nm,1.3s						
HAWA				LR	LR		
	comp=Z,7μm,19.0s						
DGAR	Diego Garcia	93.02	261	PFAKE		10 37 40.0	+8.1
DGAR				LR	LR		
	comp=Z,5μm,20.0s						
LCMT	Little Creek M	93.14	52	eP	P	10 37 31.9	-0.3
	comp=Z,36nm,1.0s						
EGAK	Eagle	93.18	19	eP	P	10 37 30.0	-1.5
	comp=Z,42nm,1.4s						
EGAK				LR	LR		
	comp=Z,5μm,20.0s						
ELK	Elko	93.20	48	eP	P	10 37 32.1	-0.3
ELK				pmax	pmax		
	comp=Z,18nm,1.1s						
ELK	Elko	93.20	48	eP	P	10 37 32.1	-0.3
	comp=Z,18nm,1.1s						
TUC	Tucson	93.23	57	P	P	10 37 32.9	+0.4
	baz=248						
TUC	Tucson	93.23	57	eP	P	10 37 32.7	+0.1
TUC				pmax	pmax		
	comp=Z,41nm,1.1s						
TUC				MLR	MLR		
	comp=Z,6μm,19.0s						
TUC	Tucson	93.23	57	eP	P	10 37 32.7	+0.1
	comp=Z,41nm,1.1s						
TUC				LR	LR		
	comp=Z,6μm,19.0s						
DAWY	Dawson	93.26	20	eP	P	10 37 31.7	-0.2
	comp=Z,22nm,1.2s						
PSUT	Pine Spring	93.30	50	eP	P	10 37 32.5	-0.4
	comp=Z,14nm,0.9s						
DLBC	Dease Lake	93.34	28	P	P	10 37 32.1	-0.3
	comp=Z,21nm,1.1s,baz=223,slow=6.3,SNR=14						
DLBC	Dease Lake	93.34	28	eP	P	10 37 32.5	+0.1
	comp=Z,42nm,1.3s						
KNB	Kanab	93.46	52	eP	P	10 37 33.7	+0.1
KNB				pmax	pmax		
	comp=Z,93nm,1.4s						
KNB	Kanab	93.46	52	eP	P	10 37 33.7	+0.1
	comp=Z,93nm,1.4s						
D08A	Wollman Farm,	93.47	41	eP	P	10 37 33.9	+0.7
	comp=Z,36nm,1.2s						
X16A	Lo Mia Camp, P	93.51	55	eP	P	10 37 34.3	+0.4
	comp=Z,33nm,0.9s						
BMO	Blue Mountains	93.53	43	PFAKE		10 37 40.0	+6.4
BMO				LR	LR		
	comp=Z,9μm,20.0s						
U15A	North Rim	93.62	53	eP	P	10 37 34.9	+0.4
	comp=Z,37nm,1.1s						
B08A	Colville Reser	93.79	40	eP	P	10 37 34.1	-0.6
	comp=Z,15nm,1.0s						
MFID	Camas Ranch	93.89	45	eP	P	10 37 35.0	-0.4
	comp=Z,16nm,0.9s						
WUAZ	Wupatki	93.97	54	P	P	10 37 36.4	+0.4
	baz=248						
WUAZ	Wupatki	93.97	54	eP	P	10 37 36.2	+0.2
	comp=Z,37nm,1.1s						
WUAZ				LR	LR		
	comp=Z,5μm,20.0s						
PKCU	Pink Cliffs	94.00	52	eP	P	10 37 38.0	+1.7
	comp=Z,30nm,1.1s						
F10A	Beach Ranch, E	94.05	42	eP	P	10 37 35.6	-0.4
	comp=Z,16nm,1.0s						
319A	Douglas	94.08	58	eP	P	10 37 36.9	+0.4
	comp=Z,46nm,0.9s						
MTPU	Mount Pierson	94.32	51	eP	P	10 37 38.2	+0.4
	comp=Z,18nm,0.9s						
MSU	Marysvale	94.50	51	eP	P	10 37 38.7	+0.3
MSU	Marysvale	94.50	51	eP	P	10 37 38.7	+0.3
DUG	Dugway, Tooele	94.69	49	P	P	10 37 39.4	+0.3
	baz=248						
DUG	Dugway, Tooele	94.69	49	eP	P	10 37 38.6	-0.6
DUG				pmax	pmax		
	comp=Z,14nm,1.3s						
DUG				MLR	MLR		
	comp=Z,10μm,20.0s						
DUG	Dugway, Tooele	94.69	49	eP	P	10 37 38.5	-0.6
	comp=Z,14nm,1.3s						
DUG				LR	LR		
	comp=Z,10μm,20.0s						
X18A	Snowflake	94.69	55	eP	P	10 37 39.4	0.0
	comp=Z,18nm,1.0s						
BGU	Big Grassy Mou	94.81	48	eP	P	10 37 39.0	-0.7
	comp=Z,7.4nm,1.0s						
HLID	Hailey	94.89	45	P	P	10 37 40.3	+0.2
	baz=247						
HLID	Hailey	94.89	45	eP	P	10 37 39.4	-0.7
	comp=Z,11nm,1.0s						
HLID				LR	LR		
	comp=Z,9μm,19.0s						
W18A	Petrified Fore	95.07	55	P	P	10 37 41.5	+0.4
	baz=249						
W18A	Petrified Fore	95.07	55	eP	P	10 37 41.9	+0.9
	comp=Z,32nm,1.4s						
NEW	Newport	95.08	40	P	P	10 37 41.4	+0.8
	baz=245						
NEW	Newport	95.08	40	eP	P	10 37 39.1	-1.5
NEW				pmax	pmax		
	comp=Z,10.0nm,1.1s						
NEW				MLR	MLR		
	comp=Z,8μm,20.0s						
NEW	Newport	95.08	40	eP	P	10 37 39.1	-1.5
	comp=Z,10nm,1.1s						
NEW				LR	LR		
	comp=Z,8μm,20.0s						
NLU	North Lily Min	95.12	49	eP	P	10 37 40.9	-0.3
	comp=Z,11nm,1.0s						
HVU	Hansel Valley	95.32	47	eP	P	10 37 41.3	-0.7
HVU				pmax	pmax		
	comp=Z,16nm,0.9s						
HVU	Hansel Valley	95.32	47	eP	P	10 37 41.3	-0.7
	comp=Z,16nm,0.9s						
Q16A	Castle Valley	95.38	51	eP	P	10 37 42.7	+0.3
	comp=Z,19nm,1.0s						
MPU	Maple Canyon	95.46	49	eP	P	10 37 42.8	+0.1
	comp=Z,12nm,1.1s						
TMUT	Trail Mountain	95.50	50	eP	P	10 37 43.7	+0.6
	comp=Z,24nm,1.1s						
TIXI	Tiksi	95.63	348⇓	eP	P	10 37 41.3	-1.2
TIXI				pmax	pmax		
	comp=Z,10.0nm,1.3s						
TIXI	Tiksi	95.63	348	PFAKE		10 37 50.0	+7.5
TIXI				LR	LR		
	comp=Z,2μm,20.0s						
HYB	Hyderabad	95.78	286	i P	P	10 37 45.0	+0.5
JLU	Jordanelle	95.80	49	eP	P	10 37 44.8	+0.5
	comp=Z,9.5nm,1.0s						
P17A	Butcher Ranch

TCUT Toone Canyon 96.02 48 *e*P **P 10 37 45.4 0.0**
comp=Z,30nm,1.1s
HWUT Hardware Ranch 96.09 48 *e*P **P 10 37 44.5 -1.1**
comp=Z,6.3nm,0.9s
HWUT LR LR
comp=Z,10µm,19.0s
P18A Preston Nutter 96.31 50 *e*P **P 10 37 47.1 +0.3**
comp=Z,12nm,1.3s
BSMT Bassoo Peak 96.35 41 *e*P **P 10 37 46.4 -0.2**
MCMT McKenzie Canyo 96.42 45 *e*P **P 10 37 47.4 +0.3**
MSO Missoula 96.48 42 P **P 10 37 47.0 -0.1**
baz=247
PV05 Paradox Valley 96.60 52 *e*P **P 10 37 48.7 +0.7**
JTMT Jette 96.62 42 *e*P **P 10 37 48.0 +0.2**
PV09 Paradox Valley 96.72 52 *e*P **P 10 37 49.4 +0.8**
MVCO Mesa Verde 96.74 53 PFAKE 10 38 00.0 +11
MVCO LR LR
comp=Z,5µm,20.0s
PV10 Paradox Valley 96.75 52 *e*P **P 10 37 49.7 +1.0**
ZAIG Zacatecas 96.76 68 *e*P **P 10 37 50.6 +1.4**
DLMT Dillon 96.79 44 *e*P **P 10 37 49.1 +0.5**
comp=Z,14nm,0.8s
LAZ Ladron 96.82 56 *e*P **P 10 37 49.9 +0.8**
AHID Auburn Hatcher 96.84 47 PFAKE 10 38 00.0 +11
AHID LR LR
comp=Z,11µm,19.0s
CHMT Chamberlain Mo 96.95 43 *e*P **P 10 37 49.1 -0.3**
PV01 Paradox Valley 97.01 52 *e*P **P 10 37 50.0 +0.1**
LRM Limekiln Ridge 97.05 44 *e*P **P 10 37 49.5 -0.4**
REDW Red Top Meadow 97.22 47 *e*P **P 10 37 50.6 -0.1**
comp=Z,18nm,1.3s
MNTX Cornudas Mount 97.31 59 P **P 10 37 50.5 -0.6**
baz=251
MNTX Cornudas Mount 97.31 59 *e*P **P 10 37 50.9 -0.2**
comp=Z,10nm,1.1s
SNOW Snow King Moun 97.32 46 *e*P Pdif 10 37 51.7 +0.5
comp=Z,9.7nm,1.1s
WALA Waterton Lakes 97.35 40 *e*P Pdif 10 37 52.3 +1.2
comp=Z,7.8nm,1.2s
IMW Indian Meadow 97.35 46 *e*P **P 10 37 51.2 -0.2**
comp=Z,12nm,1.0s
WMQ Urumqi 97.40 314 *e*P Pdif 10 37 52.3 +0.9
MOOW Moose Ponds 97.43 46 *e*P **P 10 37 50.7 -1.0**
comp=Z,8.7nm,1.2s
LOHW Long Hollow 97.48 46 *e*P Pdif 10 37 52.1 +0.1
comp=Z,4.4nm,0.9s
BOZ Bozeman (W) 97.53 44 P **P 10 37 51.5 -0.4**
baz=249
BOZ Bozeman (W) 97.53 44 PFAKE 10 38 00.0 +8.0
BOZ LR LR
comp=Z,8µm,19.0s
ANMO Albuquerque 97.53 56 P **P 10 37 51.4 -0.9**
baz=251
ANMO Albuquerque 97.53 56⇓ *e*P **P 10 37 51.8 -0.5**
ANMO pmax pmax
comp=Z,7.0nm,1.3s
ANMO Albuquerque 97.53 56 *e*P **P 10 37 52.0 -0.3**
comp=Z,8.9nm,1.2s
ANMO LR LR
comp=Z,5µm,21.0s
EFI East Falkland 97.60 153 PFAKE 10 38 00.0 +7.9
EFI LR LR
comp=Z,7µm,19.0s
YMR Madison River 97.61 45 *e*P Pdif 10 37 53.1 +0.6
comp=Z,41nm,1.9s
H17A Grant Village 97.78 46 P **P 10 37 53.1 -0.1**
baz=249
H17A Grant Village 97.78 46 *e*P Pdif 10 37 54.1 +0.8
comp=Z,6.5nm,1.0s
INK Inuvik 97.80 19 P **P 10 37 51.6 -0.8**
comp=Z,10nm,1.1s,baz=214,slow=6.7,SNR=10
INK Inuvik 97.80 19 *e*P **P 10 37 51.8 -0.6**
INK pmax pmax
comp=Z,33nm,1.4s
INK Inuvik 97.80 19 *e*P **P 10 37 51.6 -0.8**
comp=Z,33nm,1.4s
BW06 Boulder Array 97.90 47 P **P 10 37 53.1 -0.7**
baz=250
BW06 Boulder Array 97.90 47 *e*P **P 10 37 53.5 -0.2**
BW06 LR LR
comp=Z,12µm,19.0s
PD31 Pinedale Array 97.90 47 *e*P **P 10 37 52.5 -1.2**
PDAR Pinedale Array 97.90 47 P **P 10 37 52.6 -1.1**
comp=Z,7.9nm,1.2s,baz=207,slow=3.0,SNR=15
O20A White River Ci 97.93 50 P **P 10 37 53.7 -0.2**
baz=250
O20A White River Ci 97.93 50 *e*P Pdif 10 37 54.5 +0.5
comp=Z,10nm,1.0s
LTX Lajitas 97.94 62 *e*P **P 10 37 54.1 0.0**
LTX Lajitas 97.94 62 *e*P **P 10 37 54.1 0.0**
TX31 Lajitas Ar. Si 97.94 62 *e*P Pdif 10 37 54.8 +0.6
TXAR Lajitas Array 97.94 62 P **P 10 37 54.1 0.0**
comp=Z,3.0nm,1.1s,baz=232,slow=4.1,SNR=10
TXAR PKKPbc **PKKPbc 10 54 27.2 -1.1**
comp=Z,0.5nm,0.7s,baz=20,slow=2.9,SNR=4.6
LKWY Lake 97.95 45 PFAKE 10 38 10.0 +16
LKWY LR LR
comp=Z,15µm,20.0s
S22A 4UR Ranch, Cre 98.17 53 P **P 10 37 54.7 -0.6**
baz=251
SMCO Snowmass 98.54 51 *e*P Pdif 10 37 57.6 +0.6
comp=Z,6.2nm,1.1s
KRAR Krasnoyarsk 98.86 327⇑ *e*P Pdif 10 37 57.7 +0.3
KRAR pmax pmax
comp=Z,10.0nm,0.8s
RLMT Red Lodge 98.90 45 P **P 10 37 57.6 -0.6**
baz=250
RLMT Red Lodge 98.90 45 *e*P Pdif 10 37 58.8 +0.6
comp=Z,8.1nm,1.3s
RLMT LR LR
comp=Z,11µm,19.0s
SDCO Great Sand Dun 99.17 53 P **Pdif 10 37 58.8 -0.9**
baz=252
SDCO Great Sand Dun 99.17 53 *e*P **Pdif 10 37 59.3 -0.4**
comp=Z,2.6nm,1.0s
SDCO LR LR
comp=Z,7µm,21.0s
EGMT Eagleton 99.56 42 P **Pdif 10 38 01.0 +0.1**
baz=250
EGMT Eagleton 99.56 42 PFAKE 10 38 10.0 +9.1
EGMT LR LR
comp=Z,8µm,19.0s
ISCO Idaho Springs 99.73 51 PFAKE 10 38 10.0 +7.8
ISCO LR LR
comp=Z,10µm,19.0s
N23A Red Feather La 99.83 50 *e*Pdif **Pdif 10 38 03.4 +0.9**
comp=Z,8.8nm,1.2s
K22A Casper 99.97 48 P **Pdif 10 38 02.3 -0.7**
baz=252
MSTX Muleshoe 100.11 58 P **Pdif 10 38 02.8 -0.9**
baz=252
MSTX Muleshoe 100.11 58 *e*Pdif **Pdif 10 38 03.7 0.0**
PAYG Puerto Ayora 100.35 95 PFAKE 10 38 20.0 +15
PAYG LR LR
comp=Z,3µm,20.0s
832A Faith Ranch, C 100.70 64 P **Pdif 10 38 06.3 -0.1**
baz=253
AMTX Amarillo 101.25 57 P **Pdif 10 38 07.7 -1.0**
baz=253
LAO LASA Array 101.42 44 PFAKE 10 38 20.0 +11
LAO LR LR
comp=Z,7µm,20.0s
MK32 Makanchi Array 101.97 316 *e*Pdif **Pdif 10 38 12.9 +1.3**
MK32 *e*PKiKP **PKiKP 10 42 33.1 -1.1**
MKAR Makanchi Array 101.97 316 P **Pdif 10 38 12.9 +1.3**
comp=Z,1.0nm,0.7s,baz=94,slow=4.9,SNR=4.7
MKAR PKiKP **PKiKP 10 42 33.1 -1.1**
comp=Z,1.1nm,0.8s,baz=127,slow=4.9,SNR=5.0
MKAR PKKPbc **PKKPbc 10 54 14.0 -3.5**
comp=Z,1.8nm,1.0s,baz=219,slow=1.8,SNR=7.0
YKA Yellowknife Ar 101.97 28 P **Pdif 10 38 10.6 -0.5**
comp=Z,3.4nm,1.1s,baz=252,slow=4.6,SNR=19
YKA pP pP 10 38 23.6 +1.3
comp=Z,4.0nm,1.0s,baz=257,slow=4.8,SNR=9.1
YKB5 Yellowknife Ar 101.97 28 *e*Pdif **Pdif 10 38 11.2 +0.1**
YKW3 Yellowknife Ar 101.99 27 *e*Pdif **Pdif 10 38 11.7 +0.5**
KVTX Kingsville 102.25 65 PFAKE 10 38 20.0 +6.8
KVTX LR LR
comp=Z,7µm,21.0s
RER Riviere de l'E 102.36 242 PFAKE 10 38 30.0 +16
RER LR LR
comp=Z,9µm,19.0s
ZAA0 Zalesovo Array 102.51 323 *e*Pdif **Pdif 10 38 13.2 -0.5**
ZALV Zalesovo Beam 102.51 323 P **Pdif 10 38 13.9 +0.2**
comp=Z,0.6nm,0.3s,baz=67,slow=5.0,SNR=4.1
ZALV pP 10 38 25.7
comp=Z,0.7nm,0.4s,baz=104,slow=6.3,SNR=2.3
ZAA1 Zalesovo Array 102.51 323 *e*Pdif **Pdif 10 38 13.9 +0.1**
HOPE Hope Point 102.68 165 PFAKE 10 38 30.0 +15
HOPE LR LR
comp=Z,3µm,20.0s
OGNE Ogallala 102.68 51 PFAKE 10 38 30.0 +15
OGNE LR LR
comp=Z,7µm,20.0s
W32A Sentinel 103.23 57 P **Pdif 10 38 17.3 -0.2**
baz=254
DGMT Dagmar 103.24 43 PFAKE 10 38 30.0 +13
DGMT LR LR
comp=Z,7µm,19.0s
WMOK Wichita Mounta 103.50 58 PFAKE 10 38 30.0 +11
WMOK LR LR
comp=Z,5µm,20.0s
CBKS Cedar Bluff 103.82 54 PFAKE 10 38 30.0 +10
CBKS LR LR
comp=Z,7µm,19.0s
W33A Caddo, Fort Co 103.85 57 P **Pdif 10 38 20.5 +0.3**
baz=255
A25A Svangstu Ranch 104.05 43 P **Pdif 10 38 22.0 +1.2**
baz=255
C26A Wahner Farm, P 104.43 44 P **Pdif 10 38 23.9 +1.4**
baz=256
E27A Carson 104.44 46 P **Pdif 10 38 23.7 +1.1**
baz=256
R32A Long Quarter, 104.50 54 P **Pdif 10 38 23.8 +0.8**
baz=256
LCO Las Campanas 104.79 129 PFAKE 10 38 40.0 +15
LCO LR LR
comp=Z,4µm,19.0s
M31A Lambtecht Ranc 105.02 51 P **Pdif 10 38 26.2 +0.9**
baz=256
R33A Olander Ranch, 105.03 54 P **Pdif 10 38 26.2 +0.8**
baz=256
TRQA Tornquist 105.09 141 PFAKE 10 42 50.0
TRQA LR LR
comp=Z,4µm,19.0s
KURK Kurchatov 105.33 319 *e*PP PP 10 42 45.7 -2.6
KURK LR LR
comp=Z,8µm,20.0s
KURBB Kurchatov Arra 105.37 319 PP PP 10 42 45.7 -2.9
comp=Z,0.6nm,0.2s,baz=100,slow=5.0,SNR=5.4
KURBB PKKPbc PKKPbc 10 54 06.7 -0.6
comp=Z,1.0nm,0.9s,baz=278,slow=3.9,SNR=2.9
TKM2 Tokmak 2 105.56 310 PFAKE 10 42 50.0
TKM2 LR LR
comp=Z,3µm,19.0s
R34A Isabella, Hill 105.59 55 P **Pdif 10 38 28.5 +0.6**
baz=256
NRIK Noril'sk 105.65 339 Pdiff **Pdif 10 38 27.6 +0.3**
comp=Z,1.4nm,0.4s,baz=113,slow=5.6,SNR=4.8
NATX Nacogdoches 106.08 62 PFAKE 10 42 50.0
NATX LR LR
comp=Z,6µm,19.0s
P34A Walnut Farm, R 106.19 53 P **Pdif 10 38 30.8 +0.3**
baz=257
KSU1 Kansas State U 106.26 54 PFAKE 10 42 50.0
KSU1 LR LR
comp=Z,10µm,21.0s
AAK Ala-Archa 106.29 310 PFAKE 10 42 50.0
AAK LR LR
comp=Z,3µm,19.0s
EKS2 Erkin-Say 106.81 310 PFAKE 10 43 00.0
EKS2 LR LR
comp=Z,4µm,19.0s
ECSD EROS Data Cent 107.25 49 PFAKE 10 43 00.0
ECSD LR LR
comp=Z,11µm,19.0s
NNA Nana 108.24 111 PFAKE 10 43 00.0
NNA LR LR
comp=Z,2µm,19.0s
TEIG Tepich 108.74 75 PFAKE 10 43 00.0
TEIG LR LR
comp=Z,5µm,20.0s
JTS JuntasAbangare 108.99 86 PFAKE 10 43 00.0
JTS LR LR
comp=Z,6µm,19.0s
SCIA State Center 109.36 52 PFAKE 10 43 00.0
SCIA LR LR
comp=Z,8µm,20.0s
LVC Limon Verde 109.64 124 PFAKE 10 43 00.0
LVC LR LR
comp=Z,2µm,19.0s
BRVK Borovoye 110.82 320⇑ *i*PKIKP **PKiKP 10 42 49.9 -0.4**
BRVK Borovoye 110.82 320 PFAKE 10 43 00.0
BRVK LR LR
comp=Z,3µm,19.0s
EYMN Ely 111.46 45 PFAKE 10 43 00.0
EYMN LR LR
comp=Z,6µm,19.0s
JFWS Jewell Farm 111.69 51 PFAKE 10 43 00.0
JFWS LR LR
comp=Z,8µm,19.0s
OTAV Otavalo 111.71 98 PFAKE 10 43 10.0
OTAV LR LR
comp=Z,4µm,19.0s
HDIL Hopedale 112.06 53 PFAKE 10 43 00.0
HDIL LR LR
comp=Z,4µm,19.0s
BRAL Brewton 112.30 64 PFAKE 10 43 10.0
BRAL LR LR
comp=Z,7µm,19.0s
COWI Conover 112.86 48 PFAKE 10 43 10.0
COWI LR LR
comp=Z,6µm,19.0s
BCIP Isla Barro Col 113.44 89 PFAKE 10 43 10.0
BCIP LR LR
comp=Z,2µm,19.0s
GOGA Godfrey 115.66 62 PFAKE 10 43 10.0 +10
GOGA LR LR
comp=Z,4µm,19.0s
AAM Ann Arbor 116.46 52 PFAKE 10 43 10.0 +8.5
AAM LR LR
comp=Z,3µm,19.0s
ACSO Alum Creek Sta 116.81 54 PFAKE 10 43 10.0 +7.8
ACSO LR LR
comp=Z,3µm,20.0s
ABKAR Akbulak array 117.11 316 *e*PKPdf **PKPdf 10 43 03.2 +0.7**
ARU Arti 117.66 324 *e*PKIKP **PKPdf 10 43 03.3 0.0**
ARU MLR MLR
comp=Z,1µm,19.0s
ARU Arti 117.66 324 *e*PKPdf **PKPdf 10 43 03.3 0.0**
ARU LR LR
comp=Z,1µm,19.0s
GEYT Alibeck 117.96 303 PKP **PKPdf 10 43 05.6 +1.0**
comp=Z,2.2nm,0.5s,baz=245,slow=3.1,SNR=5.8
MTDJ Mount Denham 118.08 80 PFAKE 10 43 20.0 +15
MTDJ LR LR
comp=Z,3µm,19.0s
NHSC New Hope 118.36 63 PFAKE 10 43 20.0 +15
NHSC LR LR
comp=Z,4µm,19.0s
BLA Blacksburg 118.57 58 PFAKE 10 43 20.0 +14
BLA LR LR
comp=Z,4µm,19.0s
SUR Sutherland 119.12 211 PFAKE 10 43 20.0 +13
SUR LR LR
comp=Z,7µm,19.0s
BOSA Boshof 119.74 217 PKP **PKPdf 10 43 08.8 +0.3**
comp=Z,7.0nm,1.1s,baz=158,slow=1.3,SNR=4.1
KBS Kingsbay 120.33 355 PFAKE 10 43 20.0 +12
KBS LR LR
comp=Z,2µm,19.0s
GTBY Guantanamo Bay 120.69 78 PFAKE 10 43 20.0 +10
GTBY LR LR
comp=Z,3µm,19.0s
CBN Corbin Frederi 121.04 57 PFAKE 10 43 20.0 +10
CBN LR LR
comp=Z,3µm,19.0s
SAML Samuel 121.50 115 *e*PKPdf **PKPdf 10 43 11.4 -0.6**
SAML LR LR
comp=Z,4µm,19.0s
SDV Santo Domingo 121.99 92 *e*PKPdf **PKPdf 10 43 12.4 -0.8**
SDV LR LR
comp=Z,2µm,19.0s
LONY Lake Ozonia 123.08 49 PFAKE 10 43 30.0 +16
LONY LR LR
comp=Z,3µm,20.0s
DAG Danmarks Havn 123.39 2 *i*P **PKPdf 10 43 11.6 -2.2**
comp=Z,8.5nm,1.0s
DAG Danmarks Havn 123.39 2 *e*PKIKP **PKPdf 10 43 11.6 -2.2**
DAG pmax pmax
comp=Z,9.0nm,1.0s
SDDR Presa de Saban 124.02 80 PFAKE 10 43 30.0 +13
SDDR LR LR
comp=Z,3µm,19.0s
SPB Sao Paulo 124.09 140 PFAKE 10 43 30.0 +13
SPB LR LR
comp=Z,3µm,19.0s
LVZ Lovozero 124.42 341 PFAKE 10 43 30.0 +14
LVZ LR LR
comp=Z,2µm,20.0s
GRTK Grand Turk 124.65 77 PFAKE 10 43 30.0 +12
GRTK LR LR
comp=Z,3µm,19.0s
APA Apatity 124.99 341⇑ *i*PKIKP PKPdf 10 43 27.0 +10
KEV Kevo 125.38 345 PFAKE 10 43 30.0 +12
KEV LR LR
comp=Z,2µm,19.0s
SUMG Summit 125.54 10 *i* P **PKPdf 10 43 18.9 +0.3**
comp=Z,10nm,1.1s
SUMG Summit 125.54 10 *e*PKIKP **PKPdf 10 43 18.9 +0.3**
SUMG pmax pmax
comp=Z,10.0nm,1.1s
SUMG Summit 125.54 10 *e*PKPdf **PKPdf 10 43 18.9 +0.3**
ARA0 ARCESS Array S 125.90 345 *e*PKPdf **PKPdf 10 43 18.1 -0.8**
ARA0 *ep*PKPdf **pPKPdf 10 43 30.7 +0.6**
ARCES ARCESS Array B 125.90 345 PKP **PKPdf 10 43 18.1 -0.8**
comp=Z,10nm,0.8s,baz=60,slow=0.8,SNR=16
ARCES pPKP **pPKPdf 10 43 30.7 +0.6**
comp=Z,19nm,0.9s,baz=325,slow=1.9,SNR=6.7
KLMR Klimovskoe 126.12 332 *e*PKIKP **PKPdf 10 43 17.3 -2.1**
KLMR *e* 10 43 29.0
KLMR pmax pmax
comp=Z,54nm,1.4s
PKME Peaks-Kenny Pk 126.75 48 PFAKE 10 43 30.0 +8.9
PKME LR LR
comp=Z,4µm,20.0s
SFJD Kangerlussuaq 127.14 18 PFAKE 10 43 30.0 +8.8
SFJD LR LR
comp=Z,1µm,19.0s
LSZ Lusaka 127.30 231 *e*PKIKP **PKPdf 10 43 23.9 +0.6**
LSZ MLR MLR
comp=Z,3µm,19.0s
LSZ Lusaka 127.30 231 *e*PKPdf **PKPdf 10 43 23.9 +0.6**
LSZ LR LR
comp=Z,3µm,19.0s
KMBO Kilima Mbogo 127.67 252 PFAKE 10 43 40.0 +16
KMBO LR LR
comp=Z,3µm,19.0s
PTGA Pitinga 128.23 108 *e*PKPdf **PKPdf 10 43 25.0 0.0**
PTGA LR LR
comp=Z,40µm,21.0s
GNI Garni 128.37 306⇑ *i*PKIKP **PKPdf 10 43 25.7 +1.1**
GNI Garni 128.37 306 PFAKE 10 43 40.0 +15
GNI LR LR
comp=Z,1µm,20.0s
VRH Novokhopyorsk 128.40 320 *e*PKIKP **PKPdf 10 43 24.1 0.0**
VRH pmax pmax
comp=Z,40nm,1.5s
SJG San Juan 128.61 83 *e*PKIKP **PKPdf 10 43 24.3 -1.2**
SJG MLR MLR
comp=Z,2µm,19.0s
SJG San Juan 128.61 83 *e*PKPdf **PKPdf 10 43 24.3 -1.2**
SJG LR LR
comp=Z,2µm,19.0s
ZEI Tsey 128.70 309 *i* PKIKP **PKPdf 10 43 24.8 -0.4**
ZEI pmax pmax
comp=Z,36nm,1.3s
HUMP Col San Antoni 128.89 83 *e*PKPdf **PKPdf 10 43 25.2 -0.8**
MOS Moscow 129.16 326 *e*PKIKP PKPdf 10 43 37.1 +12
KBZ Khabaz 129.28 310 PKP **PKPdf 10 43 27.4 +1.4**
comp=Z,5.2nm,1.1s,baz=65,slow=2.3,SNR=7.3
KIV Kislovodsk 129.40 311 *e*PKIKP **PKPdf 10 43 25.7 -0.7**
KIV pmax pmax
comp=Z,14nm,1.0s
KIV Kislovodsk 129.40 311 PFAKE 10 43 40.0 +14
KIV LR LR
comp=Z,928nm,19.0s
NEY Neytrino 129.49 310⇑ *i*PKIKP **PKPdf 10 43 27.9 +1.2**
LPSR Galich'ya Gora 129.62 322 *e*PKIKP **PKPdf 10 43 26.8 +0.4**
LPSR pmax pmax
comp=Z,40nm,1.1s
VSR Storozhevoye 129.93 321 *e*PKIKP **PKPdf 10 43 27.1 +0.1**
VSR pmax pmax
comp=Z,20nm,1.2s
OBN Obninsk 129.96 326 *i* PKIKP **PKPdf 10 43 27.1 +0.2**
OBN *i* 10 43 37.1
OBN pmax pmax
comp=Z,27nm,1.4s
OBN Obninsk 129.96 326 PFAKE 10 43 40.0 +13
OBN LR LR
comp=Z,1µm,20.0s
FIA1 FINESS Array S 131.28 337 *e*PKPdf **PKPdf 10 43 29.4 +0.2**
FIA1 *e*PKPdf **PKPdf 10 43 30.1 +0.8**
FIA0 FINESS Array S 131.28 337 *e*PKIKP **PKPdf 10 43 29.2 -0.1**
FIA0 FINESS Array S 131.28 337 *e*PKPdf **PKPdf 10 43 29.2 -0.1**
FINES FINESS Array B 131.28 337 PKP **PKPdf 10 43 29.2 -0.1**
comp=Z,6.9nm,0.9s,baz=108,slow=6.2,SNR=12
FINES pPKP **pPKPdf 10 43 42.7 +2.2**
comp=Z,12nm,0.9s,baz=57,slow=7.0,SNR=8.8
BBSR BB Station 131.34 64 PFAKE 10 43 40.0 +10
BBSR LR LR
comp=Z,2µm,19.0s
GRGR Grenville 131.38 92 PFAKE 10 43 40.0 +9.2
GRGR LR LR
comp=Z,2µm,20.0s
TSUM Tsumeb 131.44 218 PFAKE 10 43 40.0 +8.9
TSUM LR LR
comp=Z,3µm,19.0s
FDF Fort de France 132.53 88 PFAKE 10 43 40.0 +7.0
FDF LR LR
comp=Z,1µm,19.0s
ANWB Willy Bob 132.59 84 PFAKE 10 43 40.0 +7.0
ANWB LR LR
comp=Z,2µm,20.0s
ANN Anapa 132.90 313 *i* P **Pdif 10 40 20.7 -8.4**
ANN *i* 10 43 33.3
ANN pmax pmax
comp=Z,26nm,1.3s
VSU Vasula 132.90 334⇓ *i*PKIKP **PKPdf 10 43 34.1 +1.7**
BBGH Gun Hill 133.62 91 PFAKE 10 43 50.0 +15
BBGH LR LR
comp=Z,3µm,20.0s
NACGM Naroch 134.98 330 *e* **PKPdf 10 43 36.0 -0.4**
AKASG Malin Array Be 135.91 323 PKP **PKPdf 10 43 38.0 -0.3**
comp=Z,1.3nm,0.4s,baz=60,slow=2.2,SNR=13
AKASG pPKP **pPKPdf 10 43 50.1 +0.6**
comp=Z,14nm,1.1s,baz=55,slow=2.7,SNR=4.9
AKBB Malin Array Si 135.91 323 *e*PKIKP **PKPdf 10 43 38.7 +0.4**
AKBB Malin Array Si 135.91 323 *e*PKPdf **PKPdf 10 43 38.7 +0.4**
KIEV Kiev 135.92 323⇑ *i*PKIKP **PKPdf 10 43 38.5 +0.2**
KIEV Kiev 135.92 323 *e*PKPdf **PKPdf 10 43 38.7 +0.4**
KIEV LR LR
comp=Z,1µm,20.0s
AK11 Malin Array Si 135.95 323 *e*PKPdf **PKPdf 10 43 38.0 -0.4**
NC303 NORSAR Array S 136.07 344 *e*PKPdf **PKPdf 10 43 38.4 +0.1**
NB2 NORSAR Subarra 136.27 344 PKPdf **PKPdf 10 43 38.6 -0.1**
comp=Z,14nm,1.2s,baz=31,slow=1.9
NB2 NORSAR Subarra 136.27 344 PKPdf **PKPdf 10 43 38.6 -0.1**
baz=31,slow=1.9
NB200 NORSAR Array S 136.27 344 *e*PKPdf **PKPdf 10 43 38.6 -0.1**
NOA NORSAR Array B 136.27 344 PKP **PKPdf 10 43 38.6 -0.1**
comp=Z,3.7nm,0.8s,baz=32,slow=2.0,SNR=12
NOA pPKP **pPKPdf 10 43 50.7 +0.7**
comp=Z,5.9nm,0.9s,baz=32,slow=2.0,SNR=10
HFS Hagfors 136.35 342 PKP **PKPdf 10 43 38.4 -0.5**
comp=Z,6.3nm,0.8s,baz=54,slow=2.8,SNR=9.1
HFS pPKP **pPKPdf 10 43 50.8 +0.7**
comp=Z,5.8nm,0.9s,baz=243,slow=8.2,SNR=5.7
NBO02 NORSAR Array S 136.35 344 *e*PKPdf **PKPdf 10 43 39.1 +0.3**
NBO00 NORSAR Array S 136.39 344 *e*PKPdf **PKPdf 10 43 39.7 +0.8**
MMAI Mount Meron Ar 136.49 297 PKP **PKPdf 10 43 41.2 +1.2**
comp=Z,2.4nm,0.6s,baz=93,slow=5.0,SNR=5.7
BR101 Keskin Array S 136.86 307 *e*PKPpre PKPpre 10 43 36.8
BR101 *e*PKPdf **PKiKP 10 43 41.7 -0.7**
BR131 Keskin Array S 136.86 307 *e*PKPdf **PKPdf 10 43 40.3 -0.3**
BRTR Keskin Array B 136.86 307 PKhKP PKPpre 10 43 36.8
comp=Z,0.4nm,0.4s,baz=203,slow=3.3,SNR=3.6
BRTR PKP **PKiKP 10 43 41.7 -0.7**
comp=Z,5.3nm,1.1s,baz=140,slow=4.0,SNR=16
BR231 Keskin MP Arra 137.48 307 *e*PKPdf **PKPdf 10 43 41.8 0.0**
KONO Kongsberg 137.88 344 PFAKE 10 43 50.0 +8.3
KONO LR LR
comp=Z,2µm,19.0s
CSS Mathiatis 137.98 300 PFAKE 10 43 50.0 +7.3
CSS LR LR
comp=Z,337nm,19.0s
LVV L'vov 139.22 325 *e*PKIKP **PKPdf 10 43 45.6 +1.2**

ISP	**Isparta**	**139.66 305**	PFAKE		10 44 00.0	+14	
ISP			LR	LR			
comp=Z,828nm,19.0s							
BUR08	**Bucovina Ar. S**	**139.70 321**	*e*PKPdf	**PKPdf**	**10 43 44.7**	**-0.8**	
MLR	**Muntele Rosu**	**140.26 318**	PKP	**PKPdf**	**10 43 43.9**	**-2.7**	
comp=Z,0.3nm,0.3s,baz=40,slow=0.1,SNR=7.4							
KOLS	**Kolonicke sedl**	**140.67 325**	*e*PKIKP	**PKPdf**	**10 43 48.5**	**+1.4**	
KOLS	**Kolonicke sedl**	**140.67 325**	*e*PKP	**PKPdf**	**10 43 48.5**	**+1.4**	
UZH	**Uzhgorod**	**140.83 324**	*i*PKIKP	**PKPdf**	**10 43 42.9**	**-4.5**	
UZH			*i*		10 43 50.5		
UZH			*e*		10 43 54.9		
CRVS	**Cervenica-Dubn**	**141.13 325**	*e*PKIKP	**PKPdf**	**10 43 49.0**	**+1.0**	
CRVS	**Cervenica-Dubn**	**141.13 325**	*e*PKP	**PKPdf**	**10 43 49.0**	**+1.0**	
OJC	**Ojcow**	**141.19 328**	*e*PKP	**PKPdf**	**10 43 48.2**	**+0.2**	
OJC	**Ojcow**	**141.19 328**	*e*PKIKP	**PKPdf**	**10 43 47.9**	**-0.1**	
OJC	**Ojcow**	**141.19 328**	*e*PKPdf	**PKPdf**	**10 43 47.9**	**-0.1**	
NIE	**Niedzica**	**141.43 326**	*e*PKP	**PKPdf**	**10 43 49.4**	**+0.9**	
NIE	**Niedzica**	**141.43 326**	*e*PKIKP	**PKPdf**	**10 43 49.4**	**+0.9**	
KECS	**Kecovo**	**141.90 325**	*e*PKIKP	**PKPdf**	**10 43 50.1**	**+0.8**	
KECS	**Kecovo**	**141.90 325**	*e*PKP	**PKPdf**	**10 43 50.1**	**+0.8**	
LANS	**Liptovska Anna**	**142.03 327**	*e*PKIKP	**PKPdf**	**10 43 51.0**	**+1.4**	
LANS	**Liptovska Anna**	**142.03 327**	*e*PKP	**PKPdf**	**10 43 51.0**	**+1.4**	
OKC	**Ostrava-Krasne**	**142.26 328**	*e*PKP	**PKPdf**	**10 43 50.8**	**+0.9**	
OKC			*ex*	x	10 44 03.3		
OKC	**Ostrava-Krasne**	**142.26 328**	*e*PKIKP	**PKPdf**	**10 43 50.8**	**+0.9**	
OKC			*e*		10 44 03.3		
KSP	**Ksiaz**	**142.46 331**	*e*PKP	**PKPdf**	**10 43 51.6**	**+1.3**	
KSP	**Ksiaz**	**142.46 331**	*e*PKIKP	**PKPdf**	**10 43 51.6**	**+1.3**	
PSZ	**Piszkesteto**	**142.55 325**	*e*PKPdf	**PKPdf**	**10 43 48.2**	**-2.4**	
PSZ	**Piszkesteto**	**142.55 325**	*e*PKIKP	**PKPdf**	**10 43 50.5**	**-0.1**	
PSZ			MLR	MLR			
comp=Z,1μm,19.0s							
PSZ	**Piszkesteto**	**142.55 325**	*e*PKPdf	**PKPdf**	**10 43 50.5**	**-0.1**	
PSZ			LR	LR			
comp=Z,1μm,19.0s							
MORC	**Moravsky Berou**	**142.59 329**	*e*PKIKP	**PKPdf**	**10 43 48.0**	**-2.6**	
MORC	**Moravsky Berou**	**142.59 329**	*e*PKPdf	**PKPdf**	**10 43 48.0**	**-2.6**	
KRLC	**Kraliky**	**142.76 330**	*e*PKP	**PKPdf**	**10 43 49.2**	**-1.7**	
KRLC	**Kraliky**	**142.76 330**	*e*PKIKP	**PKPdf**	**10 43 49.2**	**-1.7**	
VYHS	**Vyhne**	**142.76 326**	*e*PKIKP	**PKPdf**	**10 43 48.7**	**-2.2**	
VYHS	**Vyhne**	**142.76 326**	*e*PKP	**PKPdf**	**10 43 48.7**	**-2.2**	
DPC	**Dobruska-Polom**	**142.79 330**	*e*PKP	**PKPdf**	**10 43 49.5**	**-1.4**	
DPC	**Dobruska-Polom**	**142.79 330**	*e*PKIKP	**PKPdf**	**10 43 49.5**	**-1.4**	
VRAC	**Vranov**	**143.37 329**	PKP	PKPbc	10 43 50.0	+0.9	
comp=Z,2.3nm,0.3s,baz=273,slow=0.3,SNR=8.4							
PVCC	**Panska Ves**	**143.46 332**	*e*PKP	**PKPdf**	**10 43 51.5**	**-0.5**	
PVCC			*ex*	x	10 44 03.8		
PVCC	**Panska Ves**	**143.46 332**	*e*PKIKP	**PKPdf**	**10 43 51.5**	**-0.5**	
PVCC			*e*		10 44 03.8		
BRG	**Berggiesshubel**	**143.48 333**	*e*PKP	PKPbc	10 43 49.8	+0.5	
comp=Z,27nm,1.3s							
BRG			*i*		10 44 01.4		
comp=Z,44nm,1.4s							
BRG	**Berggiesshubel**	**143.48 333**	*e*PKIKP	PKPbc	10 43 49.8	+0.5	
BRG			*i*		10 44 01.4		
BRG			pmax	pmax			
comp=Z,13nm,1.3s							
BRG			pmax	pmax			
comp=Z,27nm,1.4s							
SHEL	**Horse Pasture**	**143.50 189**	PFAKE		10 44 10.0	+17	
SHEL			LR	LR			
comp=Z,1μm,20.0s							
CLL	**Collm**	**143.56 334**	*i* PKPdf	PKPbc	10 43 49.9	+0.4	
comp=Z,20nm,1.0s							
CLL			*i*		10 44 02.1		
CLL	**Collm**	**143.56 334**	*i* PKIKP	PKPbc	10 43 49.9	+0.4	
CLL			pmax	pmax			
comp=Z,20nm,1.0s							
CLL	**Collm**	**143.56 334**	*e*PKPdf	PKPbc	10 43 50.8	+1.2	
PRU	**Pruhonice**	**143.86 331**	*e*PKP	PKPbc	10 43 51.2	+0.7	
PRU	**Pruhonice**	**143.86 331**	*e*PKIKP	PKPbc	10 43 51.2	+0.7	
SANT	**Santorini**	**143.95 304**	PFAKE		10 44 10.0	+17	
SANT			LR	LR			
comp=Z,979nm,19.0s							
KNT	**Kendrikon**	**144.15 313**	P	**PKPab**	**10 43 51.4**	**+0.2**	
LAST	**Lasithi**	**144.25 302**	P	PKPbc	10 43 53.1	+0.8	
LAST	**Lasithi**	**144.25 302**	*e*PKPdf	PKPbc	10 43 52.7	+0.4	
VAY	**Valandovo**	**144.30 314**	*i* PKP	**PKPab**	**10 43 52.1**	**+0.3**	
EKA	**Eskdalemuir Ar**	**144.46 352**	PKP	**PKPab**	**10 43 51.7**	**-0.2**	
comp=Z,22nm,1.0s,baz=17,slow=3.5,SNR=15							
EKA			pPKP	**PKiKP**	**10 44 04.0**	**+6.7**	
comp=Z,27nm,1.0s,baz=15,slow=3.5,SNR=8.5							
ESK	**Eskdalemuir**	**144.49 352**	*e*PKIKP	**PKPdf**	**10 43 55.9**	**+2.2**	
ESK	**Eskdalemuir**	**144.49 352**	*e*PKPdf	**PKPdf**	**10 43 55.0**	**+1.3**	
ESK			LR	LR			
comp=Z,1μm,19.0s							
NKC	**Novy Kostel**	**144.60 333**	*e*PKP	PKPbc	10 43 53.0	+0.2	
NKC			*ex*	x	10 44 05.6		
NKC	**Novy Kostel**	**144.60 333**	*e*PKIKP	PKPbc	10 43 53.0	+0.2	
NKC			*e*		10 44 05.6		
DIVS	**Divibare**	**144.64 319**	P	**PKPab**	**10 43 52.9**	**-0.2**	
CONA	**Conrad Observa**	**144.65 328**	*i* PKPdf	**PKPdf**	**10 43 54.4**	**+0.1**	
comp=Z,105nm,1.3s,SNR=36							
IDI	**Anoyia**	**144.69 303**	PKP	PKPbc	10 43 53.8	+0.2	
comp=Z,39nm,0.9s,baz=85,slow=7.6,SNR=8.9							
IDI	**Anoyia**	**144.69 303**	*e*PKPdf	PKPbc	10 43 53.9	+0.3	
RCBR	**Riachuelo**	**144.69 135**	*e*PKPdf	**PKPab**	**10 43 53.8**	**-0.2**	
RCBR			LR	LR			
comp=Z,1μm,20.0s							
SKO	**Skopje**	**144.77 315**	P	**PKPdf**	**10 43 54.4**	**-0.2**	
SKO	**Skopje**	**144.77 315**	*i* PKP	PKPbc	10 43 53.8	+0.2	
SKO	**Skopje**	**144.77 315**	*e*PKIKP	**PKPdf**	**10 43 54.4**	**-0.2**	
SKO	**Skopje**	**144.77 315**	*e*PKPdf	**PKPdf**	**10 43 54.4**	**-0.2**	
LIT	**Litokhoron**	**144.87 312**	P	**PKPab**	**10 43 53.5**	**-0.5**	
LIT	**Litokhoron**	**144.87 312**	*e*PKIKP	**PKPab**	**10 43 53.5**	**-0.5**	
LIT	**Litokhoron**	**144.87 312**	*e*PKPdf	**PKPab**	**10 43 53.5**	**-0.5**	
KHC	**Kasperske Hory**	**144.91 331**	*e*PKP	**PKPdf**	**10 43 54.6**	**-0.1**	
KHC			*ex*	x	10 44 07.9		
KHC			*ex*	x	10 44 25.0		
KHC	**Kasperske Hory**	**144.91 331**	*e*PKIKP	**PKPdf**	**10 43 54.6**	**-0.1**	
KHC			*e*		10 44 07.9		
KHC	**Kasperske Hory**	**144.91 331**	*e*PKPbc	**PKPdf**	**10 43 54.6**	**-0.1**	
GEC2	**GERESS Array S**	**145.06 330**	*e*PKIKP	**PKPdf**	**10 43 55.0**	**0.0**	
GEC2	**GERESS Array S**	**145.06 330**	*e*PKPbc	**PKPdf**	**10 43 55.0**	**0.0**	
GERES	**GERESS Array B**	**145.06 330**	PKPbc	**PKPdf**	**10 43 55.0**	**0.0**	
comp=Z,18nm,0.9s,baz=37,slow=3.3,SNR=32							
LKR	**Lokris**	**145.06 309**	P	**PKPbc**	**10 43 54.2**	**-0.5**	
GEA0	**GERESS Array S**	**145.07 330**	*e*PKPbc	**PKPbc**	**10 43 54.0**	**-0.4**	
VAM	**Vamos**	**145.20 303**	P	**PKPdf**	**10 43 56.2**	**+0.7**	
ARSA	**Arzberg**	**145.27 327**	*i* PKPdf	**PKPdf**	**10 43 55.8**	**+0.5**	
comp=Z,147nm,1.6s,SNR=20							
BIA	**Bitola**	**145.28 314**	*i* PKP	**PKPbc**	**10 43 55.3**	**-0.1**	
LTK	**Loutraki**	**145.31 308**	P	**PKPbc**	**10 43 54.2**	**-1.3**	
LTK	**Loutraki**	**145.31 308**	*e*PKPbc	**PKPbc**	**10 43 54.2**	**-1.3**	
FNA	**Florina**	**145.35 313**	P	**PKPbc**	**10 43 55.3**	**-0.3**	
IMMV	**Iera Moni Meta**	**145.35 303**	P	**PKPbc**	**10 43 54.8**	**-0.9**	
KRND	**KRANIDI**	**145.40 307**	P	**PKPbc**	**10 43 54.5**	**-1.3**	
AGG	**Agios Georgios**	**145.41 310**	*e*PKP2	**PKPbc**	**10 43 55.0**	**-0.8**	
AGG	**Agios Georgios**	**145.41 310**	*e*PKPbc	**PKPbc**	**10 43 55.0**	**-0.8**	
KOGS	**Kog**	**145.41 325**	*e*PKPdf	**PKPab**	**10 43 56.3**	**+0.6**	
MOA	**Molln**	**145.49 329**	*i* PKPab	**PKPdf**	**10 43 55.8**	**+0.1**	
comp=Z,160nm,1.4s,SNR=32							
GRFO	**Grafenberg**	**145.53 334**	*e*PKIKP	**PKPdf**	**10 43 55.5**	**-0.2**	
GRFO	**Grafenberg**	**145.53 334**	*e*PKPdf	**PKPab**	**10 43 56.3**	**+0.3**	
THAL	**Thalero**	**145.53 308**	P	**PKPdf**	**10 43 55.9**	**-0.1**	
OHR	**Ohrid**	**145.59 314**	*i* PKP	**PKPab**	**10 43 56.9**	**+0.2**	
KPRO	**Kipourio**	**145.72 312**	P	**PKPbc**	**10 43 56.8**	**0.0**	
NEST	**Nestorio**	**145.74 313**	P	**PKPbc**	**10 43 56.9**	**0.0**	
KALE	**Kalithea**	**145.79 309**	P	**PKPbc**	**10 43 57.4**	**+0.3**	
KALE	**Kalithea**	**145.79 309**	*e*PKPdf	**PKPbc**	**10 43 57.4**	**+0.3**	
GUR	**Goura**	**145.81 308**	P	**PKPdf**	**10 43 56.9**	**+0.2**	
GUR	**Goura**	**145.81 308**	*e*PKPdf	**PKPdf**	**10 43 56.9**	**+0.2**	
EVR	**Evrytania**	**145.82 310**	P	**PKPbc**	**10 43 57.4**	**+0.2**	
ANX	**Ano Chora**	**145.87 310**	P	**PKPab**	**10 43 58.0**	**+0.2**	
PERS	**Pernice**	**145.89 327**	*i* PKPdf	**PKPab**	**10 43 57.6**	**0.0**	
SOKA	**Soboth**	**145.90 327**	*i* PKPab	**PKPdf**	**10 43 56.8**	**+0.3**	
comp=Z,76nm,1.3s,SNR=24							
KLV	**Kalavryta, Ach**	**145.91 309**	P	**PKPdf**	**10 43 55.9**	**-0.9**	
KLV	**Kalavryta, Ach**	**145.91 309**	*e*PKPdf	**PKPdf**	**10 43 55.9**	**-0.9**	
EFP	**Efpalio**	**145.94 309**	P	**PKPab**	**10 43 58.4**	**+0.4**	
LAKA	**Lakka**	**145.96 309**	P	**PKPbc**	**10 43 57.5**	**-0.1**	
LAKA	**Lakka**	**145.96 309**	*e*PKPdf	**PKPbc**	**10 43 57.5**	**-0.1**	
PDG	**Podgorica**	**145.97 317**	P	**PKPab**	**10 43 57.8**	**-0.1**	
VLX	**Vlachokerasia**	**145.98 307**	P	**PKPdf**	**10 43 57.2**	**+0.2**	
VLX	**Vlachokerasia**	**145.98 307**	*e*PKPdf	**PKPdf**	**10 43 57.2**	**+0.2**	
TIR	**Tirane**	**146.10 315**	*e*PKP2	**PKPab**	**10 43 58.8**	**+0.3**	
TIR	**Tirane**	**146.10 315**	PFAKE		10 44 10.0	+12	
TIR			LR	LR			
comp=Z,1μm,20.0s							
PVO	**Paravola**	**146.15 310**	P	**PKPab**	**10 43 59.1**	**+0.4**	
JAN	**Janina**	**146.20 312**	P	**PKPab**	**10 43 59.0**	**0.0**	
DSL	**Palaion Diasel**	**146.25 311**	P	**PKPbc**	**10 43 58.2**	**-0.2**	
DSL	**Palaion Diasel**	**146.25 311**	*e*PKPdf	**PKPbc**	**10 43 58.2**	**-0.2**	
OBKA	**Obir**	**146.26 327**	*i* PKPab	**PKPbc**	**10 43 58.0**	**-0.3**	
comp=Z,30nm,1.1s,SNR=8.3							
DRO	**Drossia**	**146.27 309**	P	**PKPab**	**10 43 59.5**	**+0.2**	
ITM	**Ithomi**	**146.39 307**	P	**PKPbc**	**10 43 58.6**	**-0.3**	
PDO	**Prodromos**	**146.40 310**	P	**PKPab**	**10 43 59.6**	**-0.1**	
RLS	**Riolos of Patr**	**146.40 309**	P	**PKPab**	**10 43 59.9**	**+0.2**	
KBA	**Koelnbreinsper**	**146.48 329**	*i* PKPbc	**PKPdf**	**10 43 58.0**	**+0.4**	
comp=Z,45nm,1.3s,SNR=9.9							
PYL	**PYLOS**	**146.62 307**	P	**PKPbc**	**10 43 59.3**	**-0.2**	
PYL	**PYLOS**	**146.62 307**	*e*PKPdf	**PKPbc**	**10 43 59.3**	**-0.2**	
MYKA	**Terra Mystica**	**146.64 328**	*i* PKPab	**PKPbc**	**10 43 59.4**	**0.0**	
comp=Z,37nm,1.3s,SNR=8.2							
CWF	**Charnwood Fore**	**146.67 349**	*e*PKPdf	**PKPdf**	**10 43 58.4**	**+0.9**	
BEBN	**Eben Emael**	**146.67 340**	PKP	**PKPab**	**10 44 01.6**	**+1.2**	
BEBN			APKP	PKiKP	10 44 13.8	+12	
LKD2	**Lefkada island**	**146.70 311**	P	**PKPbc**	**10 44 00.3**	**+0.6**	
MEM	**Membach**	**146.73 339**	PKP	**PKPdf**	**10 43 58.5**	**+0.9**	
MEM			APKP	PKiKP	10 44 12.2	+10	
STU	**Stuttgart**	**147.07 334**	*e*PKP2	**PKPab**	**10 44 01.5**	**-0.5**	
STU	**Stuttgart**	**147.07 334**	*e*PKPbc	**PKPab**	**10 44 01.5**	**-0.5**	
ABTA	**Abfaltersbach**	**147.12 329**	*i* PKPdf	**PKPdf**	**10 43 57.9**	**-0.7**	
comp=Z,35nm,0.9s,SNR=14							
BCLA	**Clavier**	**147.12 340**	PKP	**PKPbc**	**10 44 00.4**	**-0.1**	
BCLA			APKP	PKiKP	10 44 13.3	+10	
WTTA	**Wattenberg**	**147.16 330**	*e*PKPbc	**PKPdf**	**10 43 59.4**	**+0.6**	
comp=Z,74nm,1.5s,SNR=16							
SKDS	**Skadanscina**	**147.18 326**	*e*PKPdf	**PKPdf**	**10 43 59.0**	**+0.3**	
TRI	**Trieste**	**147.21 326**	*e*PKIKP	**PKPdf**	**10 43 57.9**	**-0.7**	
TRI			*e*		10 44 00.7		
TRI	**Trieste**	**147.21 326**	*e*PKPdf	**PKPdf**	**10 43 57.9**	**-0.7**	
TRI			*e*PKPbc	**PKPbc**	**10 44 00.7**	**-0.2**	
MOTA	**Moosalm**	**147.35 331**	*i* PKPbc	**PKPdf**	**10 43 59.6**	**+0.6**	
comp=Z,59nm,1.0s,SNR=13							
SNF	**Seneffe**	**147.36 341**	PKP	**PKPbc**	**10 44 01.2**	**+0.1**	
SNF			APKP	PKiKP	10 44 13.7	+10	
RETA	**Reutte**	**147.40 331**	*i* pPKPdf	**PKPbc**	**10 44 01.3**	**-0.2**	
comp=Z,38nm,1.1s,SNR=12							
LANF	**Langenberg**	**147.45 336**	PKP	**PKPbc**	**10 44 01.8**	**+0.3**	
WLF	**Walferdange**	**147.48 338**	PKP	**PKPbc**	**10 44 02.4**	**+0.8**	
WLF			APKP	PKiKP	10 44 15.2	+12	
WLF	**Walferdange**	**147.48 338**	*e*PKP2	**PKPbc**	**10 44 01.6**	**+0.1**	
WLF	**Walferdange**	**147.48 338**	*e*PKPbc	**PKPbc**	**10 44 02.4**	**+0.8**	
WLF			LR	LR			
comp=Z,1μm,19.0s							
DOU	**Dourbes**	**147.63 340**	PKP	**PKPbc**	**10 44 01.6**	**-0.3**	
DOU			APKP	PKPab	10 44 14.3	+10	
FETA	**Feichten**	**147.76 331**	*i* PKPdf	**PKPdf**	**10 43 59.6**	**-0.1**	
comp=Z,66nm,1.0s,SNR=23							
BFO	**Black Forest**	**147.77 335**	*i* PKIKP	**PKPdf**	**10 44 00.3**	**+0.8**	
BFO	**Black Forest**	**147.77 335**	*e*PKPbc	**PKPbc**	**10 44 02.2**	**-0.2**	
BFO			LR	LR			
comp=Z,1μm,19.0s							
DAVA	**Damuels**	**147.94 332**	*i* pPKPdf	**PKPbc**	**10 44 02.7**	**-0.4**	
comp=Z,61nm,1.1s,SNR=16							
FUORN	**Ofenpass-Fuorn**	**148.27 331**	*e*PKPbc	**PKPbc**	**10 44 04.3**	**+0.2**	
DAVOX	**Davos/Dischmat**	**148.32 331**	PKPbc	**PKPbc**	**10 44 04.4**	**+0.3**	
comp=Z,63nm,0.8s,baz=272,slow=0.9,SNR=39							
DAVOX			pPKPbc	**pPKPbc**	**10 44 17.0**	**+1.7**	
comp=Z,81nm,0.9s,baz=322,slow=1.7,SNR=10							
DAVOX	**Davos/Dischmat**	**148.32 331**	PKP2	**PKPbc**	**10 44 04.4**	**+0.3**	
DAVOX			pmax	pmax			
comp=Z,93nm,1.0s							
ECH	**Echery**	**148.33 336**	PKP	**PKPbc**	**10 44 03.5**	**-0.4**	
MOF	**Molkenrain**	**148.63 335**	PKP	**PKPbc**	**10 44 04.9**	**+0.1**	
TUE	**Stuetta**	**148.80 332**	*e*PKPbc	**PKPbc**	**10 44 05.9**	**+0.5**	
TUE			LR	LR			
comp=Z,1μm,19.0s							
LOMF	**Lomont**	**149.16 335**	PKP	**PKPbc**	**10 44 06.3**	**+0.2**	
TIP	**Timpagrande**	**149.24 314**	P	**PKPbc**	**10 44 07.4**	**+0.9**	
TIP	**Timpagrande**	**149.24 314**	*e*PKPbc	**PKPbc**	**10 44 07.1**	**+0.5**	
TIP			LR	LR			
comp=Z,1μm,19.0s							
DYA	**Yadsworthy**	**149.34 350**	*e*PKPbc	**PKPbc**	**10 44 05.6**	**-0.7**	
CUC	**Castrocucco**	**149.45 316**	PFAKE		10 44 10.0	-1.9	
CUC			LR	LR			
comp=Z,888nm,19.0s							
AQU	**L'Aquila**	**149.58 322**	*e*PKP2	**PKPbc**	**10 44 06.9**	**-0.4**	
AQU	**L'Aquila**	**149.58 322**	*e*PKPbc	**PKPbc**	**10 44 06.9**	**-0.4**	
AQU			LR	LR			
comp=Z,1μm,20.0s							
SENIN	**Lac Senin/Sane**	**149.77 334**	*e*PKPbc	**PKPbc**	**10 44 07.7**	**-0.1**	
VLC	**Villacollemand**	**150.01 327**	*e*PKPbc	**PKPbc**	**10 44 08.2**	**0.0**	
VLC			LR	LR			
comp=Z,509nm,20.0s							
OG01	**Vacheresse**	**150.05 334**	PKP	**PKPbc**	**10 44 08.4**	**+0.1**	
CEL	**Celeste**	**150.27 313**	*e*PKPbc	**PKPbc**	**10 44 08.3**	**-0.7**	
CEL			LR	LR			
comp=Z,1μm,20.0s							
BNI	**Bardonecchia**	**151.07 333**	PFAKE		10 44 20.0	+1.5	
BNI			LR	LR			
comp=Z,1μm,19.0s							
GDM	**Grand'Maison**	**151.19 334**	PKP	**PKPbc**	**10 44 11.5**	**+0.3**	
GRN	**Grenoble**	**151.31 334**	PKP	**PKPbc**	**10 44 12.3**	**+0.9**	
PLDF	**La Plantade**	**151.53 337**	PKP	**PKPbc**	**10 44 12.4**	**+0.6**	
AUTN	**L'Aution**	**151.57 330**	PKP	**PKPbc**	**10 44 13.3**	**+1.1**	
AGO	**Saint Agoulin**	**151.63 338**	PKP	**PKPbc**	**10 44 12.3**	**+0.3**	
LUCF	**Luceram**	**151.68 330**	PKP	**PKPbc**	**10 44 12.4**	**+0.1**	
SSB	**Saint Sauveur**	**151.77 336**	PKP	**PKPbc**	**10 44 12.6**	**+0.3**	
SSB	**Saint Sauveur**	**151.77 336**	*e*PKIKP	**PKPbc**	**10 44 11.9**	**-0.5**	
SSB	**Saint Sauveur**	**151.77 336**	*e*PKPbc	**PKPbc**	**10 44 11.9**	**-0.5**	
SSB			LR	LR			
comp=Z,1μm,19.0s							
MVIF	**Mont Vial**	**151.77 331**	PKP	**PKPbc**	**10 44 12.2**	**-0.3**	
REVF	**Revere**	**151.79 330**	PKP	**PKPbc**	**10 44 13.1**	**+0.7**	
ASCN	**Ascension**	**151.80 174**	PFAKE		10 44 20.0	-2.0	
ASCN			LR	LR			
comp=Z,2μm,19.0s							
PYM	**Petit Puy Mans**	**151.93 338**	PKP	**PKPbc**	**10 44 13.0**	**+0.2**	
CALN	**Calern**	**152.00 331**	PKP	**PKPbc**	**10 44 13.5**	**+0.4**	
LBL	**Lubilhac**	**152.29 337**	PKP	**PKPbc**	**10 44 14.0**	**+0.4**	
WDD	**Wied Dalam**	**152.37 310**	PFAKE		10 44 20.0	-4.0	
WDD			LR	LR			
comp=Z,2μm,19.0s							
CLTB	**Caltabellotta**	**152.44 314**	PFAKE		10 44 20.0	-4.4	
CLTB			LR	LR			
comp=Z,639nm,20.0s							
VSL	**Villasalto**	**153.75 321**	PFAKE		10 44 20.0	+3.1	
VSL			LR	LR			
comp=Z,978nm,19.0s							
PBRG	**Braganca**	**158.19 350**	*e*PKPab	**PKPab**	**10 44 49.3**	**+0.7**	
PBRG			*ep*PKPab	**pPKPab**	**10 45 00.3**	**+0.6**	
PCAB	**Cabril**	**158.46 353**	*e*PKPab	**PKPab**	**10 44 50.2**	**+0.4**	
PCAB			*ep*PKPab	**pPKPab**	**10 45 02.0**	**+1.2**	
POLO	**Lamas de Olo**	**158.76 352**	*e*PKPab	**PKPab**	**10 44 51.4**	**+0.2**	
POLO			*ep*PKPab	**pPKPab**	**10 45 03.8**	**+1.6**	
PVRL	**Vila Real**	**158.85 352**	*e*PKPab	**PKPab**	**10 44 52.1**	**+0.6**	
PVRL			*ep*PKPab	**pPKPab**	**10 45 03.8**	**+1.3**	
PVIS	**Viseu**	**159.42 352**	*e*PKPab	**PKPab**	**10 44 54.6**	**+0.6**	
PVIS			*ep*PKPab	**pPKPab**	**10 45 06.4**	**+1.4**	
ES19	**SONSECA Array**	**159.59 343**	*e*PKPab	**PKPab**	**10 44 55.3**	**+0.5**	
ESDC	**Sonseca Array**	**159.63 343**	PKPab	**PKPab**	**10 44 55.2**	**+0.2**	
comp=Z,3.1nm,0.8s,baz=17,slow=3.7,SNR=10							
ESDC			pPKPab	**pPKPab**	**10 45 07.0**	**+1.0**	
comp=Z,5.2nm,0.9s,baz=19,slow=3.8,SNR=4.7							
MTE	**Manteigas**	**159.69 351**	*e*PKPab	**PKPab**	**10 44 56.1**	**+0.9**	
MTE			*ep*PKPab	**pPKPab**	**10 45 07.9**	**+1.7**	
MTE	**Manteigas**	**159.69 351**	*e*PKPab	**PKPab**	**10 44 55.9**	**+0.7**	
MTE			LR	LR			
comp=Z,1μm,20.0s							
PAB	**San Pablo**	**159.85 344**	PFAKE		10 44 30.0	+13	
PAB			LR	LR			
comp=Z,1μm,20.0s							
PCAS	**Casmilo, Conde**	**160.15 353**	*e*PKPab	**PKPab**	**10 44 58.0**	**+0.9**	
PCAS			*ep*PKPab	**pPKPab**	**10 45 08.3**	**+0.2**	
PMTG	**Montargil**	**161.09 352**	*e*PKPab	**PKPab**	**10 45 01.8**	**+0.6**	
PMTG			*ep*PKPab	**pPKPab**	**10 45 13.3**	**+1.1**	
PBEJ	**Beja**	**162.06 350**	*e*PKPab	**PKPab**	**10 45 06.6**	**+1.1**	
PBEJ			*ep*PKPab	**pPKPab**	**10 45 18.3**	**+1.8**	
PCVE	**Castro Verde**	**162.47 351**	*e*PKPab	**PKPab**	**10 45 07.9**	**+0.6**	
TAM	**Tamanrasset**	**163.91 282**	*e*PKIKP	**PKPdf**	**10 44 22.9**	**+1.2**	
TAM	**Tamanrasset**	**163.91 282**	PFAKE		10 44 30.0	+8.3	
TAM			LR	LR			
comp=Z,1μm,20.0s							
DBIC	**Dimbokro**	**164.95 207**	PKP	**PKPdf**	**10 44 23.8**	**+1.1**	
comp=Z,15nm,1.2s,baz=223,slow=2.0,SNR=3.3							
DBIC			PKPab	**PKPab**	**10 45 18.0**	**-0.9**	
comp=Z,8.8nm,1.1s,baz=131,slow=8.0,SNR=3.1							
DBIC			pPKPab	**pPKPab**	**10 45 30.3**	**+0.5**	
comp=Z,11nm,0.9s,baz=76,slow=4.7,SNR=3.9							
TOA0	**Torodi Ar. Sit**	**165.44 243**	*e*PKPdf	**PKPdf**	**10 44 22.3**	**-0.7**	
TOA0			*e*PKPdf	**PKPdf**	**10 44 22.9**	**-0.1**	
TOA0			*e*PKPab	**PKPab**	**10 45 20.6**	**-0.6**	
TORD	**Torodi Ar. Bea**	**165.44 243**	PKP	**PKPdf**	**10 44 22.5**	**-0.5**	
comp=Z,13nm,1.1s,baz=52,slow=0.2,SNR=31							
TORD			pPKP	**pPKPdf**	**10 44 35.3**	**+1.0**	
comp=Z,14nm,1.1s,baz=84,slow=0.6,SNR=13							
TORD			PKPab	**PKPab**	**10 45 21.0**	**-0.2**	
comp=Z,8.8nm,1.2s,baz=103,slow=3.6,SNR=4.6							
TORD			pPKPab	**pPKPab**	**10 45 32.2**	**0.0**	
comp=Z,7.5nm,1.1s,baz=106,slow=3.3,SNR=3.1							
TOA1	**Torodi Ar. Sit**	**165.44 243**	*e*PKPdf	**PKPdf**	**10 44 22.5**	**-0.5**	
TOA1			*e*PKPab	**PKPab**	**10 45 21.0**	**-0.2**	
MDT	**Midelt**	**166.09 335**	PKPab	**PKPab**	**10 45 24.5**	**+0.9**	
comp=Z,5.6nm,0.9s,baz=34,slow=3.1,SNR=4.2							
MDT			pPKPab	**pPKPab**	**10 45 36.9**	**+2.4**	

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*ISCJB **10** 10:26:08.7±0.9,37°.0N±0°.1×142°.47E±0°.06, h9km, mb3.8/5, Error ellipse: s-maj=14.7km s-min=7.3km az=3.0*
*IDC **10** 10:26:08.7±1.2,36°.85N×142°.81E, h0km, mb3.7/5, mb1 3.8/8, mb1mx3.6/72, mbtmp3.6/8, ML2.7/3, Error ellipse: s-maj=27.8km s-min=23.5km az=157.0*
*JMA **10** 10:26:09.9±0.4,37°.12N×142°.40E, h14km, M4.3*
ISC 10 10:26:10.6±1.1, 37°.1N±0°.1×142°.32E±0°.06, h9km, n16, σ1ª54/17, mb3.6/5, Off east coast of Honshu

| Code | Station Name | Δ° | AZ° | Phase

WRA	Warramunga Arr	31.85	265	P	P	10 41 36.6	-0.7
	1.4nm,0.6s,baz=96,slow=9.2,SNR=3.4						
WRA				pP	sP	10 41 47.5	-0.7
	1.2nm,0.4s,baz=86,slow=8.5,SNR=2.7						
ASAR	Alice Springs	32.01	258	P	P	10 41 38.3	-0.4
	6.5nm,0.9s,baz=85,slow=9.1,SNR=21						
ASAR				pP	sP	10 41 49.4	-0.3
	11nm,0.8s,baz=84,slow=9.0,SNR=18						
FITZ	Fitzroy Crossi	40.26	266	P	P	10 42 49.3	+0.1
	7.3nm,0.9s,baz=135,slow=4.3,SNR=4.0						
KAPI	Kappang	49.53	281	P	P	10 44 03.3	+0.1
	4.4nm,0.4s,baz=76,slow=12,SNR=7.7						
VNDA	Vanda	57.31	182	P	P	10 44 59.6	+0.2
	2.0nm,0.8s,baz=1.8,slow=7.5,SNR=5.7						
KKM	Kota Kinabalu	57.49	292	eP	P	10 45 02.5	+0.9
	66nm,1.6s						
KSM	Kuching	60.75	284	eP	P	10 45 26.6	+2.4
	34nm,1.3s						
QSPA	South Pole Qui	69.72	180	eP	P	10 46 21.8	+0.1
	68nm,1.2s						
USRK	Ussuriysk Ar.	72.30	333	P	P	10 46 38.8	+1.4
	5.0nm,1.0s,baz=129,slow=2.7,SNR=4.9						
PETK	Petropavlovsk-	73.71	353	P	P	10 46 46.1	+0.6
	3.2nm,0.9s,baz=122,slow=5.5,SNR=4.1						
KLR	Kul'dur	76.50	336	P	P	10 47 02.3	+0.6
	1.3nm,0.9s,baz=114,slow=14,SNR=2.5						
KLR				pP	sP	10 47 13.2	+0.1
	3.5nm,1.1s,baz=74,slow=6.4,SNR=4.4						
MAW	Mawson	77.09	202	P	P	10 47 06.0	+1.2
	7.5nm,1.0s,baz=99,slow=14,SNR=5.3						
SYO	Syowa Base	83.64	196¶	eX	P	10 47 36.4	-3.6
SNAA	Sanae	88.03	183	eP	P	10 48 01.1	-0.8
	474nm,0.9s						
BILL	Bilibino	88.13	359	eP	P	10 48 02.0	0.0
	6.8nm,0.9s						
N02D	Trinity Center	88.34	45	P	P	10 48 04.0	+0.2
	baz=241						
ARVC	Arvin	88.36	52	P	P	10 48 03.7	-0.2
	baz=244						
M02C	Callahan	88.44	45	P	P	10 48 04.4	+0.1
	baz=241						
CMB	Columbia Colle	88.55	48	eP	P	10 48 04.0	-0.8
	10nm,0.4s						
O03D	Paynes Creek	88.62	46	P	P	10 48 04.6	-0.5
	baz=242						
ISA	Isabella, Lake	88.86	51	P	P	10 48 05.2	-1.1
	baz=244						
EDW2	Edwards Air Fo	88.87	52	P	P	10 48 05.0	-1.4
	baz=244						
HUMO	Hull Mountain	88.97	43	eP	P	10 48 06.5	-0.1
	41nm,1.0s						
MONP2	Monument Peak	89.21	54	P	P	10 48 06.7	-1.5
	baz=245						
I03D	Drain, OR	89.25	42	P	P	10 48 07.7	-0.1
	baz=241						
M04C	Macdoel	89.30	45	P	P	10 48 08.2	-0.1
	baz=242						
LRMC	Laurel Mtn Rad	89.36	52	P	P	10 48 08.3	-0.5
	baz=244						
PFO	Pinyon Flats O	89.48	54	P	P	10 48 09.0	-0.4
	baz=245						
TPFO	Pinon Flats	89.48	54	P	P	10 48 08.9	-0.5
	baz=245						
MPMC	Manual Prospec	89.75	51	P	P	10 48 10.1	-0.6
	baz=244						
DAC	Darwin (Calif)	89.77	51	eP	P	10 48 10.0	-0.7
	12nm,1.5s						
I04A	Tendick Farm,	89.89	43	P	P	10 48 09.8	-1.1
	baz=241						
BELC	Belle Mtn. Jos	89.99	54	P	P	10 48 11.2	-0.6
	baz=245						
HEC	Hector,Ludlow	90.08	53	P	P	10 48 11.4	-0.7
	baz=245						
NVAR	Mina Array Bea	90.19	49	P	P	10 48 12.1	-0.6
	5.4nm,0.9s,baz=224,slow=7.7,SNR=18						
NVAR				pP	sP	10 48 24.4	+0.2
	4.7nm,0.8s,baz=222,slow=7.9,SNR=10						
GRAC	Grapevine Rang	90.24	50	P	P	10 48 12.4	-0.4
	baz=245						
BC3	Big Chuckawall	90.26	54	P	P	10 48 13.2	+0.2
	baz=246						
FURC	Furnace Creek,	90.38	51	P	P	10 48 12.9	-0.4
	baz=245						
J05D	Fort Rock, OR	90.40	43	P	P	10 48 13.2	-0.3
	baz=242						
GLA	Glamis	90.50	55	P	P	10 48 13.8	-0.2
	baz=246						
GMRC	Granite Mounta	90.57	53	P	P	10 48 13.7	-0.8
	baz=246						
SHOC	Shoshone, Teco	90.58	52	P	P	10 48 13.7	-0.6
	baz=245						
IRM	Iron Mountain	90.70	54	P	P	10 48 14.6	-0.3
	baz=246						
I05D	Terrebonne, OR	90.83	43	P	P	10 48 14.7	-0.6
	baz=242						
Y12C	Blythe	91.01	54	P	P	10 48 16.1	-0.2
	baz=246						
TPNV	Topopah Spring	91.03	51	P	P	10 48 15.9	-0.7
	baz=245						
PDMCI	Parker Dam,Lak	91.52	54	P	P	10 48 17.7	-1.0
	baz=246						
ILAR	Eielson Array	91.54	18	P	P	10 48 16.8	-1.3
	1.4nm,0.8s,baz=234,slow=5.4,SNR=7.8						
R11A	Troy Canyon, C	92.09	50	P	P	10 48 20.5	-1.0
	baz=246						
TUC	Tucson	93.35	57	P	P	10 48 27.0	-0.3
	baz=248						
DUG	Dugway, Tooele	94.80	49	eP	P	10 48 33.6	-0.3
	0.7nm,0.7s						
HLID	Hailey	95.00	45	P	P	10 48 34.2	-0.6
	baz=247						
HLID	Hailey	95.00	45	eP	P	10 48 34.0	-0.8
	0.9nm,0.6s						
TXAR	Lajitas Array	98.07	62	P	P	10 48 48.7	-0.2
	0.4nm,0.9s,baz=197,slow=3.9,SNR=3.6						
YKA	Yellowknife Ar	102.05	28	P	Pdif	10 49 05.6	0.0
	0.4nm,0.5s,baz=257,slow=5.0,SNR=8.5						
ARCES	ARCESS Array B	125.89	345	PKP	PKPdf	10 54 12.3	-0.8
	1.9nm,0.8s,baz=64,slow=2.8,SNR=5.1						
GERES	GERESS Array B	145.01	330	PKP	PKPdf	10 54 49.3	+0.1
	1.1nm,0.6s,baz=70,slow=1.6,SNR=8.4						
DAVOX	Davos/Dischmat	148.28	331	PKPbc	PKPbc	10 54 58.6	+0.3
	12nm,0.9s,baz=354,slow=3.0,SNR=8.4						
TORD	Torodi Ar. Bea	165.31	243	PKP	PKPdf	10 55 16.7	-0.4
	1.5nm,1.1s,baz=157,slow=1.1,SNR=4.2						

*ISK **10** 10:35:46.6, 39.°32N×40.°86E, h5km, MD2.6*
*DDA **10** 10:35:46.9, 39.°32N×40.°85E, h7km, Md2.7*
*ISCJB **10** 10:35:47.1±0.5, 39.°31N±0.°03×40.°87E±0.°03, h4km±5km, Error ellipse: s-maj=4.9km s-min=3.8km az=42.1*
*CSEM **10** 10:35:47.0±0.2, 39.°31N×40.°87E, h8km, MD2.6, Error ellipse: s-maj=4.8km s-min=3.4km az=152.0*
ISC 10 10:35:47.0±0.9, **39.°31N**±0.°02×**40.°84E**±0.°02, **h14**km±7km, **n28**, σ0°91/45, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YEDI	Yedisu-Bingol	0.26	299	PG	Pg	10 35 52.4	-0.3
YEDI				eSG	Sg	10 35 56.7	+0.2
YEDI	Yedisu-Bingol	0.26	299	i Pg	Pg	10 35 52.4	-0.3
YEDI				eSg	Sg	10 35 56.7	+0.2
ECAT	Cat-ERZURUM	0.31	20	P	Pg	10 35 53.4	-0.2
ECAT				S	Sg	10 35 57.9	-0.2
ECAT	Cat-ERZURUM	0.31	20	i P	Pg	10 35 53.4	-0.2
ECAT				i S	Sg	10 35 57.9	-0.2
BNGB	Bing¶	0.34	201	ePG	Pg	10 35 54.0	-0.1
BNGB				eSG	Sg	10 35 59.4	+0.5
BGOL	Bingol	0.35	202	P	Pg	10 35 53.5	-0.7
BGOL				S	Sb	10 36 00.0	-0.4
BGOL	Bingol	0.35	202	i P	Pg	10 35 53.5	-0.7
BGOL				i S	Sb	10 36 00.0	-0.4
BNGL	BINGOL	0.43	146	i P	Pg	10 35 55.7	0.0
BNGL				i S	Sn	10 36 05.8	-1.0
EZM	Erzurum	0.72	34	ePG	Pg	10 36 00.6	-0.4
ERZM	Erzurum	0.72	34	P	Pg	10 36 00.8	-0.3
ERZM				S	Sb	10 36 11.5	+0.2
ERZM	Erzurum	0.72	34	i P	Pg	10 36 00.8	-0.3
ERZM				i S	Sb	10 36 11.5	+0.2
ERZN	Erzincan	0.91	288	ePG	Pn	10 36 05.2	-0.3
EKAR	Karacoban	0.95	93	P	Pn	10 36 05.9	-0.3
EKAR				S	Sn	10 36 18.3	-1.4
EKAR	Karacoban	0.95	93	i P	Pn	10 36 05.9	-0.3
EKAR				i S	Sn	10 36 18.3	-1.4
TNCL	Tunceli-Merkez	1.03	259	P	Pn	10 36 07.1	0.0
TNCL	Tunceli-Merkez	1.03	259	i P	Pn	10 36 07.1	0.0
TNCL				i S	Sn	10 36 21.7	+0.4
PTK	Pertek	1.20	250	ePN	Pg	10 36 10.4	+0.2
PTK	Pertek	1.20	250	ePn	Pg	10 36 10.4	+0.2
BAYT	Ayd¯–ntepe-Bay	1.21	334	ePN	Pg	10 36 10.2	-0.1
BAYT	Ayd¯–ntepe-Bay	1.21	334	ePn	Pg	10 36 10.2	-0.1
EATA	Eleskirt	1.39	66	P	Pn	10 36 11.5	-0.8
EATA				S	Sg	10 36 35.2	+3.3
EATA	Eleskirt	1.39	66	i P	Pn	10 36 11.5	-0.8
EATA				i S	Sg	10 36 35.2	+3.3
KELT	Kelkit	1.48	305	P	Pb	10 36 14.4	0.0
KELT				S	Sg	10 36 35.9	+1.2
KELT	Kelkit	1.48	305	i P	Pb	10 36 14.4	0.0
KELT				i S	Sg	10 36 35.9	+1.2
SVRC	Sivrice-ELAZID	1.52	233	ePN	Pb	10 36 15.6	+0.6
SVRC	Sivrice-ELAZID	1.52	233	ePn	Pb	10 36 15.6	+0.6
GUMT	Gumushane	1.55	318	ePN	Pb	10 36 15.6	0.0
GUMT	Gumushane	1.55	318	ePn	Pb	10 36 15.6	0.0

*IDC **10** 10:36:36.1±0.7, 36.°12N×141.°81E, h0km, mb4.1/16, mb1 4.2/20, mb1mx4.0/68, mbtmp4.1/20, ML3.9/4, Error ellipse: s-maj=19.0km s-min=14.9km az=96.0*
*JMA **10** 10:36:38.3±0.2, 36.°23N×141.°93E, h41km, M4.4*
*NEIC **10** 10:36:39.7±2.7, 36.°11N×141.°88E, h24km±19km, mb5.0/7, Error ellipse: s-maj=10.5km s-min=9.0km az=75.0*
ISC 10 10:36:35.9±1.8, **36.°14N**±0.°04×**141.°95E**±0.°05, **h0**km±11km, **n56**, σ1°40/61, **mb4.3**/23, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	0.98	244	P	Pn	10 36 56.7	-0.2
CHOJ				S	Sn	10 37 10.5	-1.0
JHO	Hitachi	1.21	293	P	Pg	10 36 58.3	-0.7
JHO				S	Sg	10 37 14.3	-0.3
JFK	Kawauchi	1.49	325	P	Pn	10 37 02.9	-1.1
BSO1	Boso 1	1.68	208	P	Pb	10 37 07.4	0.0
BSO1				S	Sg	10 37 29.9	0.0
BSO3	Boso 3	1.78	222	P	Pb	10 37 08.6	-0.6
JFT	Otama	1.88	317	P	Pn	10 37 09.4	+0.1
JFT				S	Sn	10 37 32.4	-1.4
JMM	Marumori	1.95	332	P	Pn	10 37 10.2	0.0
JAG	Ashikaga	2.03	279	P	Pn	10 37 10.6	-0.8
JAG				S	Sn	10 37 34.8	-2.6
JFY	Yanaizu	2.20	306	P	Pn	10 37 13.6	0.0
JKT	Katashina	2.26	287	P	Pn	10 37 14.5	-0.1
JKT				S	Sn	10 37 42.1	-1.1
JRY	Ryogami san	2.47	268	P	Pn	10 37 16.9	-0.5
JOD2	Odawara 2	2.48	250	P	Pn	10 37 18.0	+0.4
MJAR	Matsushiro Arr	3.04	279	Pn	Pn	10 37 25.5	+0.2
	33nm,0.3s,baz=98,slow=9.0,SNR=266						
MJAR				Sn	Sn	10 38 04.1	+1.7
	17nm,0.3s,baz=76,slow=16,SNR=8.5						
MAJO	Matsushiro	3.04	279	ePn	Pn	10 37 26.1	+0.8
MAT	Matsushiro	3.04	279	P	Pn	10 37 25.4	+0.1
MAT				S	Sn	10 38 01.1	-1.3
JHJ	Hachijo jima 2	3.50	211	Pn	Pn	10 37 31.9	+0.3
	56nm,0.3s,baz=97,slow=23,SNR=16						
JHJ				Sn	Sn	10 38 10.5	-3.2
	174nm,0.3s,baz=343,slow=22,SNR=16						
ASAJ	Asahikawa	7.98	3	Pn	Pn	10 38 32.3	-0.8
	0.7nm,0.3s,baz=222,slow=12,SNR=7.1						
ASAJ				Sn	Sn	10 39 58.0	-6.0
	0.5nm,0.3s,baz=90,slow=20,SNR=3.0						
ASAJ	Asahikawa	7.98	3	ePn	Pn	10 38 33.6	+0.6
ASAJ				eSn	Sn	10 40 04.5	+0.5
CBIJ	Chichi jima	9.02	179	Pn	Pn	10 38 47.0	-0.4
CBIJ				Sn	Sn	10 40 19.6	-10
JCJ	Chichijima	9.02	179	Pn	Pn	10 38 47.0	-0.4
	4.8nm,0.3s,baz=299,slow=18,SNR=9.3						
JCJ				Sn	Sn	10 40 19.6	-10
	19nm,0.3s,baz=302,slow=20,SNR=6.8						
USRK	Ussuriysk Ar.	11.07	320	Pn	Pn	10 39 17.3	+1.9
	0.2nm,0.3s,baz=129,slow=14,SNR=3.7						
KSRS	Korea Array	11.32	281	Pn	Pn	10 39 22.1	+3.3
	0.2nm,0.3s,baz=92,slow=14,SNR=15						
KSAR	Wonju Array Be	11.35	281	Pn	Pn	10 39 22.1	+2.9
H11N2	WAKE ISLAND Hy	27.33	120	T	T	11 11 47.5	
	baz=311,slow=75,SNR=25						
H11N1	WAKE ISLAND Hy	27.34	120	T	T	11 11 45.9	
	baz=311,slow=75,SNR=21						
H11N3	WAKE ISLAND Hy	27.35	120	T	T	11 11 47.2	
	baz=311,slow=75,SNR=20						
ENH	Enshi	27.70	267	eP	P	10 42 24.6	-1.2
	22nm,0.6s						
H11S1	WAKE ISLAND Hy	28.02	122	T	T	11 12 42.0	
	baz=313,slow=76,SNR=43						
H11S3	WAKE ISLAND Hy	28.02	122	T	T	11 12 42.2	
	baz=313,slow=76,SNR=31						
H11S2	WAKE ISLAND Hy	28.04	122	T	T	11 12 43.5	
	baz=313,slow=76,SNR=22						
TLY	Talaya	31.24	312	P	P	10 42 57.0	-0.1
	4.8nm,0.8s,baz=180,slow=5.1,SNR=4.8						
TLY	Talaya	31.24	312	eP	P	10 42 57.2	+0.2
TIXI	Tiksi	36.22	353	P	P	10 43 40.5	+0.5
	1.4nm,0.3s,baz=104,slow=9.4,SNR=3.6						
ZALV	Zalesovo Beam	42.83	313	P	P	10 44 34.6	-0.7
	3.8nm,0.6s,baz=84,slow=6.5,SNR=8.5						
MKAR	Makanchi Array	44.96	303	P	P	10 44 52.2	-0.4
	3.3nm,0.6s,baz=88,slow=9.6,SNR=13						
KURK	Kurchatov	46.82	309	eP	P	10 45 05.7	-1.5
	27nm,1.0s						
KURBB	Kurchatov Arra	46.89	309	P	P	10 45 07.0	-0.7
	5.6nm,0.6s,baz=83,slow=7.7,SNR=22						
ILAR	Eielson Array	50.02	32	P	P	10 45 32.9	+1.2
	1.0nm,0.8s,baz=265,slow=5.9,SNR=6.9						
TKM2	Tokmak 2	50.43	299	eP	P	10 45 35.8	+0.4
	4.8nm,0.6s						
KKAR	Karatay Array	53.94	301	eP	P	10 46 01.2	-0.1
	6.0nm,0.9s						
INK	Inuvik	54.99	27	P	P	10 46 09.8	+1.4
	1.3nm,0.6s,baz=300,slow=7.1,SNR=9.7						
WRA	Warramunga Arr	56.24	189	P	P	10 46 17.7	-0.3
	0.6nm,0.5s,baz=6.1,slow=7.9,SNR=4.8						
ASAR	Alice Springs	59.97	189	P	P	10 46 43.7	-0.4
	0.9nm,0.8s,baz=22,slow=5.1,SNR=3.0						
RES	Resolute Bay	63.36	14	eP	P	10 47 07.0	+0.7
	4.1nm,1.3s						
YKA	Yellowknife Ar	64.36	30	P	P	10 47 14.0	+0.9
	0.5nm,0.8s,baz=298,slow=6.3,SNR=5.6						
FINES	FINESS Array B	69.80	333	P	P	10 47 47.9	+0.2
	3.1nm,0.8s,baz=82,slow=10.0,SNR=3.1						
FCC	Fort Churchill	74.61	27	eP	P	10 48 16.5	0.0
NB2	NORSAR Subarra	75.17	338	P	P	10 48 19.6	-0.2
	comp=Z,2.4nm,0.7s,baz=40,slow=6.2						
NOA	NORSAR Array B	75.17	338	P	P	10 48 19.8	0.0
	comp=Z,0.5nm,0.3s,baz=39,slow=5.8,SNR=6.2						
AKASG	Malin Array Be	75.26	323	P	P	10 48 19.3	-1.1
	comp=Z,0.5nm,0.3s,baz=45,slow=6.4,SNR=4.7						
PDAR	Pinedale Array	77.98	46	P	P	10 48 37.6	+1.3
	comp=Z,0.7nm,0.9s,baz=259,slow=1.5,SNR=4.3						
BRTR	Keskin Array B	79.76	312	P	P	10 48 45.8	-0.3
	comp=Z,1.2nm,0.8s,baz=87,slow=4.2,SNR=3.9						
THZ	Tophouse	82.55	157	eP	P	10 49 02.7	+2.3
	comp=Z,119nm,1.4s						
SNZO	South Karori	82.73	156	eP	P	10 49 00.5	-0.7
	comp=Z,45nm,0.9s						
TXAR	Lajitas Array	90.32	53	P	P	10 49 38.3	-0.9
	comp=Z,0.3nm,0.7s,baz=305,slow=7.5,SNR=3.7						
LPAZ	La Paz	146.76	61	PKPbc	PKPbc	10 56 21.5	+0.4
	comp=Z,0.7nm,0.6s,baz=33,slow=14,SNR=3.8						

*IDC **10** 10:37:09.2±0.5, 20.°32S×168.°47E, h0km, mb4.9/28, mb1 4.9/29, mb1mx4.9/40, mbtmp4.8/29, ML4.5/1, Error ellipse: s-maj=15.4km s-min=12.8km az=128.0*
*NEIC **10** 10:37:11.2±0.1, 20.°24S×168.°35E, h10km, mb5.3/103, Error ellipse: s-maj=4.4km s-min=3.5km az=143.0*
*ISCJB **10** 10:37:12.7±2.1, 20.°28S±0.°04×168.°31E±0.°03, h29km±15km, mb5.2/150, MS5.0/1, Error ellipse: s-maj=6.2km s-min=4.4km az=3.8*
*MOS **10** 10:37:12.7±1.0, 20.°38S×168.°35E, h33km, mb5.4/39, Error ellipse: s-maj=14.4km s-min=10.3km az=173.3*
*BJI **10** 10:37:13.8, 19.°97S×168.°56E, h34km, mb5.0/43, mB5.6/10, Ms5.6/10, Ms7 5.3/10*
ISC 10 10:37:15.4±0.3, **20.°34S**±0.°06×**168.°33E**±0.°05, **h39**km±3km, **h38**km:**pP-P**, **n466**, σ1°04/465, **mb5.2**/150, **10C-8D, Loyalty Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	2.46	225	Pn	Pn	10 37 50.9	-2.2
	91nm,0.3s,baz=106,slow=12,SNR=8.7						
DZM				Sn	Sn	10 38 20.5	-1.5
	310nm,0.3s,baz=40,slow=20,SNR=5.9						
NFK	Norfolk Island	8.68	182	P	Pn	10 39 17.8	-0.5
	baz=8.7,SNR=3.1						
MSVF	Nonsavu	9.55	76	eP	Pn	10 39 32.4	+1.9
MSVF	Nonsavu	9.55	76	ePn	Pn	10 39 32.4	+1.9
HNR	Honiara	13.53	322	P	Pn	10 40 25.0	+0.2
OUZ	Omahuta	15.54	164	PN	Pn	10 40 53.0	+1.4
WCZ	Waipu Caves	16.42	162	PN	P	10 41 18.3	+13
EIDS	Eidsvold	16.66	249	P	Pn	10 41 06.4	+0.4
	baz=17,SNR=4.0						
EIDS	Eidsvold	16.66	249	ePn	Pn	10 41 07.1	+1.0
	53nm,1.3s						
ARMA	Armidale	18.10	233	P	Pn	10 41 25.2	+1.2
	baz=18,SNR=8.9						
ARMA	Armidale	18.10	233	ePn	Pn	10 41 26.3	+2.3
	52nm,1.0s						
RMQ	Roma	18.97	247	P	Pn	10 41 36.3	+1.9
	baz=19,SNR=7.1						
HIZ	Hauiti	18.97	164	eP	Pn	10 41 35.9	+1.5
	172nm,1.4s						
URZ	Urewera	19.41	159	P	Pn	10 41 40.0	+0.4
	0.9nm,0.3s,baz=357,slow=7.4,SNR=18						
URZ	Urewera	19.41	159	P*	Pn	10 41 41.4	+1.8
URZ				pP	sP	10 41 52.2	-0.8
BKZ	Black Stump Fm	20.04	161	eP	Pn	10 41 46.5	-0.6
	108nm,1.1s						
AFI	Afiamalu	20.05	75	P	P	10 41 45.5	+0.1
	0.9nm,0.3s,baz=276,slow=19,SNR=2.8						
AFI	Afiamalu	20.05	75	eP	P	10 41 45.5	+0.1
AFI				pmax	pmax		
	comp=Z,87nm,1.2s						
AFI	Afiamalu	20.05	75	eP	P	10 41 45.5	+0.1
	comp=Z,87nm,1.2s						
CTA	Charters Tower	20.72	267	P	Pn	10 41 54.7	-0.4
	comp=Z,47nm,0.8s,baz=89,slow=13,SNR=13						
CTAO	Charters Tower	20.72	267	eP	Pn	10 41 54.6	-0.5
CTAO				pmax	pmax		
	comp=Z,772nm,1.2s						
CTAO	Charters Tower	20.72	267	eP	Pn	10 41 54.6	-0.5
	comp=Z,772nm,1.2s						
BFZ	Birch Farm	21.38	163	eP	P	10 41 59.1	-0.3
	comp=Z,140nm,1.3s						
SNZO	South Karori	21.60	167	eP	P	10 42 02.9	+1.1
	comp=Z,152nm,1.5s						
THZ	Tophouse	21.71	171	eP	P	10 42 04.8	+1.7
	comp=Z,62nm,0.9s						
CNB	Canberra Magne	22.39	224	P	P	10 42 12.9	+2.4
	baz=22,SNR=7.3						
KHZ	Kahutara	22.45	170	eP	P	10 42 11.9	+1.0
	comp=Z,177nm,1.7s						
YNG	Young	22.46	228	P	P	10 42 12.5	+1.3
	baz=22,SNR=8.3						
LTZ	Lake Taylor	22.62	172	eP	P	10 42 13.9	+1.1
	comp=Z,305nm,1.6s						
LTZ	Lake Taylor	22.62	172	P*	P	10 42 13.5	+0.6
CAN	Canberra	22.63	225	eP	P	10 42 11.5	-1.6
CAN				pmax	pmax		
	comp=Z,67nm,1.2s						
CAN	Canberra	22.63	225	eP	P	10 42 11.5	-1.6
	comp=Z,67nm,1.2s						
WVZ	Waitaha Valley	22.76	175	eP*	P	10 42 16.2	+2.0
MTSU	Mount Surprise	22.77	271	P	P	10 42 15.8	+1.1
	baz=23,SNR=25						
QLP	Quilpie	22.94	250	P	P	10 42 17.0	+0.7
	baz=23,SNR=13						
OXZ	Oxford	23.13	173	eP	P	10 42 18.8	+0.7
	comp=Z,248nm,1.6s						
OXZ	Oxford	23.13	173	P*	P	10 42 19.7	+1.6
PMG	Port Moresby	23.14	295	P	P	10 42 18.4	+0.1
	comp=Z,25nm,0.9s,baz=124,slow=5.5,SNR=8.8						
PMG	Port Moresby	23.14	295¶	eP	P	10 42 18.5	+0.1
PMG				pmax	pmax		
	comp=Z,101nm,0.9s						
PMG	Port Moresby	23.14	295	eP	P	10 42 18.6	+0.3
	comp=Z,39nm,1.0s						
FOZ	Fox Glacier	23.16	177	P*	P	10 42 19.8	+1.5
CMSA	Cobar Meteorol	23.16	237	P	P	10 42 19.7	+1.2
	baz=23,SNR=27						
RPZ	Rata Peaks	23.42	175	P	P	10 42 21.9	+1.0
	comp=Z,15nm,0.7s,baz=39,slow=4.5,SNR=4.7						
MQZ	McQueen's Vall	23.58	172	P*	P	10 42 22.4	0.0
COEN	Coen	24.84	281	P	P	10 42 35.5	+1.2
	baz=25,SNR=12						
COEN	Coen	24.84	281	eP	P	10 42 35.4	+1.2
	comp=Z,22nm,0.9s						
DCZ	Deep Cove	25.08	182	eP	P	10 42 36.8	+0.7
	comp=Z,248nm,1.6s						
TOO	Toolangi	26.24	224	P	P	10 42 48.2	+1.4
	baz=26,SNR=9.6						
STKA	Stephens Creek	26.54	239	P	P	10 42 50.5	+1.0
	comp=Z,20nm,0.9s,baz=73,slow=10,SNR=18						
STKA	Stephens Creek	26.54	239	P	P	10 42 50.6	+1.0
	baz=26,SNR=17						
STKA	Stephens Creek	26.54	239	eP	P	10 42 50.1	+0.5
STKA				pmax	pmax		
	comp=Z,12nm,1.1s						
STKA	Stephens Creek	26.54	239	eP	P	10 42 50.1	+0.5
	comp=Z,12nm,1.1s						
ARPS	Mount Arapiles	28.32	229	P	P	10 43 06.4	+0.9
	baz=28,SNR=5.7						
HTT	Hallett	29.18	237	P	P	10 43 14.4	+1.1
	baz=29,SNR=3.9						
MMPI	Merauke	29.47	290	P	P	10 43 15.6	-0.3
BBOO	Buckleboo	31.29	240	P	P	10 43 32.7	+0.8
	baz=31,SNR=4.9						
BBOO	Buckleboo	31.29	240	eP	P	10 43 30

VNDA	Vanda	57.31	182	P	P	10 46 58.6 -0.2
	comp=Z,5.0nm,1.0s,baz=5.8,slow=3.5,SNR=7.5					
KKM	Kota Kinabalu	57.52	291	eP	P	10 47 01.6 +0.2
	comp=Z,104nm,1.4s					
SBA	Scott Base	57.56	180	eP	P	10 47 01.5 +0.9
SBA				pmax	pmax	
	comp=Z,64nm,1.3s					
SBA	Scott Base	57.56	180	eP	P	10 47 01.5 +0.9
	comp=Z,64nm,1.3s					
SBUM	Sibu	59.46	286	eP	P	10 47 15.6 +0.8
	comp=Z,50nm,1.4s					
CISI	Cisompet, Gary	59.80	273	eP	P	10 47 15.8 -1.4
	comp=Z,128nm,1.2s					
LEM	Lembang	60.22	274	P	P	10 47 26.2 +6.0
	comp=Z,70nm,0.8s,baz=359,slow=23,SNR=13					
KSM	Kuching	60.79	284	eP	P	10 47 24.4 +0.5
	comp=Z,53nm,1.1s					
MJAR	Matsushiro Arr	63.33	333	P	P	10 47 39.9 -0.6
	comp=Z,10nm,0.9s,baz=167,slow=7.4,SNR=11					
MAJO	Matsushiro	63.33	333	ceP	P	10 47 40.5 0.0
MAT	Matsushiro	63.33	333	P	P	10 47 39.3 -1.2
TPUB	Ta-pu	63.59	311	eP	P	10 47 41.8 -0.7
	comp=Z,50nm,1.4s					
JNU	Nakatsue	64.07	325	P	P	10 47 45.5 +0.1
	comp=Z,13nm,0.8s,baz=87,slow=6.1,SNR=4.7					
JNU	Nakatsue	64.07	325	eP	P	10 47 44.2 -1.2
	comp=Z,47nm,1.2s					
MNAI	Manna	65.42	275	eP	P	10 47 54.1 -0.5
	comp=Z,509nm,1.3s					
ASAJ	Asahikawa	68.33	340	P	P	10 48 12.8 +0.3
	comp=Z,14nm,0.9s,baz=192,slow=11,SNR=6.2					
ASAJ	Asahikawa	68.33	340	eP	P	10 48 12.8 +0.3
	comp=Z,22nm,1.0s					
TJN	Taejon	68.42	325⇑	eP	P	10 48 13.5 +0.3
KSRS	Korea Array	68.93	326	P	P	10 48 17.1 +0.8
	comp=Z,2.9nm,0.9s,baz=138,slow=6.1,SNR=9.6					
KS15	Wonju Array Si	68.94	326	eP	P	10 48 17.2 +0.7
KSAR	Wonju Array Be	68.94	326	P	P	10 48 17.2 +0.7
KSAR	Wonju Array Be	68.94	326	P	P	10 48 17.1 +0.7
KS01	Wonju Array Si	68.97	326	eP	P	10 48 16.4 -0.2
QIZ	Qiongzhong	69.39	300	P	P	10 48 20.2 +0.6
QIZ				S	S	10 57 24.9 +0.7
QSPA	South Pole Qui	69.72	180	eP	P	10 48 21.2 +0.1
IPM	Ipoh	70.48	283	eP	P	10 48 26.5 0.0
	comp=Z,54nm,1.3s					
YSS	Yuzh-Sakhalins	70.84	342	eP	P	10 48 29.2 +1.3
VLA	Vladivostok	71.49	333⇓	iP	P	10 48 31.8 -0.1
VLA				e		10 48 49.2
VLA				eS	S	10 57 48.0 +0.2
VLA				pmax	pmax	
	comp=Z,34nm,1.3s					
SKLT	Songkhla	71.92	285	P	P	10 48 35.9 +0.8
	comp=Z,128nm,1.4s					
USRK	Ussuriysk Ar.	72.32	333	P	P	10 48 38.0 +1.1
	comp=Z,20nm,0.8s,baz=137,slow=4.5,SNR=27					
PANO	Nakornpanom	72.78	296	P	P	10 48 41.4 +1.2
	comp=Z,56nm,1.2s					
SKNT	Sakolnakorn	73.23	296	P	P	10 48 43.5 +0.6
	comp=Z,48nm,1.0s					
MDJ	Mudanjiang	73.68	332	P	P	10 48 45.8 +0.9
MDJ				pmax	pmax	
	comp=Z,28nm,1.0s					
PEA0	Petropavlovsk-	73.72	353	eP	P	10 48 46.4 +1.4
PETK	Petropavlovsk-	73.72	353	P	P	10 48 45.1 +0.2
	comp=Z,6.7nm,0.7s,baz=139,slow=5.8,SNR=10					
PEA1	Petropavlovsk-	73.72	353	eP	P	10 48 45.1 +0.2
CN2	Changchun	74.95	329	eP	P	10 48 52.9 +0.5
CN2				pmax	pmax	
	comp=Z,20nm,0.8s					
GYA	Guiyang	75.75	306	P	P	10 48 59.8 +2.3
GYA				pP	PcP	10 49 10.0 -0.1
GYA				PP	PP	10 51 51.6 +3.6
GYA				S	S	10 58 37.4 +0.5
GYA				sS	sS	10 58 55.2 -1.3
GYA				SKS	SKSac	10 59 01.9 -3.2
GYA				SS	SS	11 03 32.0 +2.4
GYA				pmax	pmax	
	comp=Z,20nm,1.0s					
GYA				pmax	pmax	
	comp=Z,140nm,5.8s					
GYA				LR	LR	
	comp=Z,580nm,18.8s					
GYA				LR	LR	
	comp=Z,550nm,19.6s					
GYA				LR	LR	
	comp=Z,620nm,19.2s					
LOEI	Loei	75.78	295	P	P	10 48 57.3 -0.4
	comp=Z,30nm,0.7s					
UTTA	Uttaradit	76.49	295	P	P	10 49 03.5 +1.8
	comp=Z,4.5nm,1.0s					
KLR	Kul'dur	76.52	336	P	P	10 49 01.6 +0.4
	comp=Z,8.9nm,1.1s,baz=130,slow=3.8,SNR=15					
NANT	Nan	76.84	296	P	P	10 49 04.8 +1.1
	comp=Z,9.2nm,0.7s					
MAW	Mawson	77.10	202	P	P	10 49 04.9 +0.6
	comp=Z,15nm,0.9s,baz=118,slow=7.6,SNR=11					
MAW	Mawson	77.10	202	P	P	10 49 05.4 +1.1
	baz=77,SNR=7.3					
MAW	Mawson	77.10	202	eP	P	10 49 05.2 +0.9
MAW				e		10 49 17.3
MAW				pmax	pmax	
	comp=Z,10.0nm,1.4s					
MAW	Mawson	77.10	202	eP	P	10 49 05.2 +0.9
	comp=Z,9.8nm,1.4s					
MAW				ePcP	pP	10 49 17.3 +1.1
BJI	Beijing	77.25	322	P	P	10 49 05.9 +0.4
BJI				pmax	pmax	
	comp=Z,12nm,0.7s					
LAMP	Lampang	77.62	295	P	P	10 49 09.8 +1.7
	comp=Z,18nm,0.8s					
CRAI	Chiangrai	77.76	297	P	P	10 49 09.9 +1.1
	comp=Z,241nm,1.3s					
KMI	Kunming	78.13	302	P	P	10 49 12.5 +1.4
KMI				pmax	pmax	
	comp=Z,33nm,0.8s					
KMI				pmax	pmax	
	comp=Z,890nm,11.9s					
CM01	Chiang Mai Arr	78.15	295	eP	P	10 49 12.4 +1.4
CM31	Chiang Mai Arr	78.18	295	eP	P	10 49 13.0 +1.8
CMAR	Chiang Mai Arr	78.18	295	P	P	10 49 12.8 +1.7
	comp=Z,16nm,0.9s,baz=134,slow=4.3,SNR=50					
XAN	Xi'an	78.22	313	P	P	10 49 11.3 +0.1
XAN				pP	PcP	10 49 22.1 +1.6
XAN				pmax	pmax	
	comp=Z,7.0nm,0.9s					
CMMT	Chiang Mai	78.33	295	P	P	10 49 13.2 +1.2
	comp=Z,42nm,1.2s					
CHTO	Chiang Mai	78.33	295	P	P	10 49 13.3 +1.3
	comp=Z,186nm,1.2s					
CHTO	Chiang Mai	78.33	295	eP	P	10 49 13.4 +1.3
CHTO				pmax	pmax	
	comp=Z,29nm,0.8s					
CHTO	Chiang Mai	78.33	295	eP	P	10 49 13.4 +1.3
	comp=Z,29nm,0.8s					
CMAI	Chiengmai2	78.74	296	P	P	10 49 15.8 +1.3
	comp=Z,39nm,0.6s					
CD2	Chengdu	80.23	308	P	P	10 49 22.5 +0.3
CD2				pmax	pmax	
	comp=Z,2.0nm,0.9s					
HHC	Hu-ho-hao-te	80.50	320	eP	P	10 49 25.4 +1.9
HHC				pmax	pmax	
	comp=Z,36nm,1.3s					
HHC				pmax	pmax	
	comp=Z,1μm,7.4s					
LZH	Lanzhou	82.83	313	eP	P	10 49 37.8 +1.8
LZH				pP	pP	10 49 50.2 +2.2
LZH				sP	sP	10 49 55.0 +2.6
LZH				pmax	pmax	
	comp=Z,15nm,1.0s					
SYO	Syowa Base	83.64	196⇑	eP	pP	10 49 55.0 +3.6
SYO	Syowa Base	83.64	196⇓	eP	P	10 49 38.0 -1.4
OHAK	Old Harbor	83.67	20	eP	P	10 49 39.4 -0.1
	comp=Z,67nm,1.1s					
SEY	Seymchan	83.94	353	P	P	10 49 40.4 -0.5
	comp=Z,7.9nm,1.1s,baz=136,slow=1.8,SNR=5.0					
SEY	Seymchan	83.94	353⇑	eP	P	10 49 41.1 +0.3
KDAK	Kodiak Island	84.35	20	P	P	10 49 57.2 +14
	comp=Z,25nm,1.0s,baz=136,slow=4.5,SNR=5.6					
KDAK	Kodiak Island	84.35	20	iP	P	10 49 44.7 +1.7
KDAK	Kodiak Island	84.35	20	eP	P	10 49 43.8 +0.8
	comp=Z,42nm,1.1s					
RSO	Redoubt South	86.46	18	eP	P	10 49 53.5 -0.3
ULN	Ulaanbaatar	87.23	324	diP	P	10 49 57.5 -0.3
ULN				pmax	pmax	
	comp=Z,14nm,1.1s					
GTA	Gaotai	87.26	314	eP	P	10 49 58.9 +0.8
GTA				pP	pP	10 50 07.8 -2.3
GTA				sP	sP	10 50 11.9 -2.6
GTA				pmax	pmax	
	comp=Z,6.0nm,1.2s					
KMRM	Mail Ridge	87.28	45	eP	P	10 49 58.5 +0.4
	comp=Z,50nm,0.9s					
PKM	Mcpherson Peak	87.51	51	P	P	10 49 59.6 +0.1
	baz=243					
SONA0	Songino Array	87.58	323	eP	P	10 49 59.6 +0.2
	comp=Z,27nm,0.8s					
SONM	Songino Array	87.58	323	P	P	10 49 59.6 +0.2
	comp=Z,7.2nm,0.8s,baz=149,slow=6.7,SNR=2.9					
YAK	Yakutsk	87.66	343	P	P	10 49 58.7 -0.5
	comp=Z,21nm,0.6s,baz=170,slow=0.8,SNR=5.3					
YAK	Yakutsk	87.66	343	eP	P	10 49 59.2 0.0
YAK				pmax	pmax	
	comp=Z,22nm,0.9s					
YAK				pmax	pmax	
	comp=N,9.0nm,1.5s					
YAK				pmax	pmax	
	comp=E,5.0nm,1.5s					
YAK	Yakutsk	87.66	343	eP	P	10 49 59.4 +0.2
	comp=E,27nm,0.7s					
CIS	Catalina Islan	87.89	53	P	P	10 50 00.5 -0.6
	baz=244					
SNAA	Sanae	88.03	183	deP	P	10 49 59.8 -1.4
SNAA	Sanae	88.03	183	eP	P	10 50 00.3 -0.9
	comp=E,27nm,1.1s					
BILL	Bilibino	88.13	359	diP	P	10 50 00.9 -0.5
BILL				i		10 50 08.1
BILL				pmax	pmax	
	comp=Z,28nm,1.1s					
BILL	Bilibino	88.13	359	eP	P	10 50 01.2 -0.2
	comp=Z,37nm,1.1s					
L02D	Cave Junction,	88.31	44	P	P	10 50 03.0 +0.1
	baz=240					
N02D	Trinity Center	88.32	45	P	P	10 50 03.5 +0.5
	baz=241,SNR=17					
ARVC	Arvin	88.34	52	P	P	10 50 02.8 -0.4
	baz=244,SNR=6.4					
M02C	Callahan	88.42	45	P	P	10 50 03.9 +0.3
	baz=241,SNR=13					
PMR	Palmer	88.44	19	eP	P	10 50 02.5 -0.4
PMR				pmax	pmax	
	comp=Z,18nm,1.3s					
PMR	Palmer	88.44	19	eP	P	10 50 02.5 -0.4
	comp=Z,18nm,1.3s					
ORV	Oroville	88.45	47	eP	P	10 50 03.8 +0.2
ORV				pmax	pmax	
	comp=Z,59nm,1.4s					
ORV	Oroville	88.45	47	eP	P	10 50 03.8 +0.2
	comp=Z,59nm,1.4s					
VES	Vestal, Richgr	88.47	51	P	P	10 50 03.0 -0.7
	baz=244,SNR=6.0					
MWC	Mount Wilson	88.51	53	eP	P	10 50 03.9 -0.3
MWC				pmax	pmax	
	comp=Z,131nm,1.9s					
MWC	Mount Wilson	88.51	53	eP	P	10 50 03.9 -0.3
	comp=Z,131nm,1.9s					
CMB	Columbia Colle	88.52	48	eP	P	10 50 04.0 0.0
CMB				pmax	pmax	
	comp=Z,32nm,1.1s					
CMB	Columbia Colle	88.52	48	eP	P	10 50 04.0 0.0
	comp=Z,32nm,1.1s					
AFDM	Forest Hills D	88.53	47	eP	P	10 50 04.1 +0.1
	comp=Z,51nm,1.3s					
RCTC	Rector, Farmer	88.56	50	P	P	10 50 03.7 -0.4
	baz=244					
O03D	Paynes Creek	88.60	46	P	P	10 50 03.8 -0.6
	baz=242,SNR=18					
109C	Camp Elliot, M	88.66	54	P	P	10 50 04.4 -0.3
	baz=245					
YBH	Yreka Blue Hor	88.68	44	eP	P	10 50 05.0 +0.3
YBH				pmax	pmax	
	comp=Z,39nm,1.2s					
YBH	Yreka Blue Hor	88.68	44	eP	P	10 50 05.0 +0.3
	comp=Z,39nm,1.2s					
BFSC	Mount Baldy Ra	88.82	53	P	P	10 50 04.8 -0.9
	baz=244,SNR=5.8					
ISA	Isabella, Lake	88.83	51	P	P	10 50 05.4 -0.2
	baz=244,SNR=6.9					
ISA	Isabella, Lake	88.83	51	eP	P	10 50 05.8 +0.2
ISA				pmax	pmax	
	comp=Z,51nm,1.3s					
ISA	Isabella, Lake	88.83	51	eP	P	10 50 05.8 +0.2
	comp=Z,51nm,1.3s					
EDW2	Edwards Air Fo	88.85	52	P	P	10 50 05.3 -0.4
	baz=244,SNR=8.3					
MURC	Murrieta	88.89	54	P	P	10 50 05.5 -0.4
	baz=245					
HUMO	Hull Mountain	88.94	43	eP	P	10 50 06.3 +0.4
	comp=Z,38nm,1.0s					
CAST	Castle Rocks	89.04	17	eP	P	10 50 03.5 -2.3
	comp=Z,8.2nm,1.1s					
MONP2	Monument Peak	89.18	54	P	P	10 50 06.8 -0.6
	baz=245					
I03D	Drain, OR	89.22	42	P	P	10 50 07.4 +0.3
	baz=241					
BUOR	Burton Butte	89.25	44	P	P	10 50 07.7 +0.2
M04C	Macdoel	89.28	45	P	P	10 50 07.2 -0.4
	baz=242,SNR=8.9					
IKP	In-Ko-Pah, Jac	89.32	55	P	P	10 50 07.4 -0.6
	baz=245					
WAKR	Walker	89.40	48	eP	P	10 50 08.3 0.0
MLAC	Mammoth, Mammo	89.44	49	P	P	10 50 08.6 0.0
	baz=244					
PFO	Pinyon Flats O	89.45	54	P	P	10 50 08.1 -0.5
	baz=245					
PFO	Pinyon Flats O	89.45	54	eP	P	10 50 08.4 -0.2
PFO				pmax	pmax	
	comp=Z,33nm,1.4s					
PFO	Pinyon Flats O	89.45	54	eP	P	10 50 08.4 -0.2
	comp=Z,33nm,1.4s					
TPFO	Pinon Flats	89.45	54	P	P	10 50 08.0 -0.6
	baz=245,SNR=5.3					
MPOR	Mary's Peak	89.49	42	P	P	10 50 09.0 +0.5
RRX	Edison Barstow	89.58	52	P	P	10 50 09.1 0.0
	baz=245					
TIN	Tinemaha, Big	89.62	50	P	P	10 50 09.4 +0.1
	baz=244					
SWSC	Sam W. Stewart	89.68	55	P	P	10 50 09.3 -0.2
	baz=246					
MPMC	Manual Prospec	89.72	51	P	P	10 50 09.3 -0.6
	baz=244,SNR=19					
K04D	Chiloquin, OR	89.73	44	P	P	10 50 09.4 -0.3
	baz=242					
DAC	Darwin (Calif)	89.74	51	eP	P	10 50 10.0 0.0
DAC				pmax	pmax	
	comp=Z,28nm,1.1s					
DAC	Darwin (Calif)	89.74	51	eP	P	10 50 10.0 0.0
	comp=Z,28nm,1.1s					
I04A	Tendick Farm,	89.86	43	P	P	10 50 09.5 -0.7
	baz=241,SNR=9.1					
GSC	Goldstone, Bar	89.91	52	P	P	10 50 09.9 -0.8
	baz=245,SNR=6.1					
GSC	Goldstone, Bar	89.91	52	eP	P	10 50 10.7 0.0
GSC				pmax	pmax	
	comp=Z,26nm,1.3s					
GSC	Goldstone, Bar	89.91	52	eP	P	10 50 10.7 0.0
	comp=Z,26nm,1.3s					
BOD	Bodaibo	89.94	334	eP	P	10 50 03.6 -6.5
BOD				pmax	pmax	
	comp=Z,12nm,1.5s					
BELC	Belle Mtn. Jos	89.97	54	P	P	10 50 10.4 -0.7
	baz=245,SNR=7.4					
G03D	McMinnville, O	90.02	41	P	P	10 50 10.8 +0.1
	baz=241					
HEC	Hector,Ludlow	90.06	53	P	P	10 50 10.6 -0.8
	baz=245,SNR=9.0					
NV01	Mina Array Sit	90.17	49	eP	P	10 50 11.5 -0.5
NVAR	Mina Array Bea	90.17	49	P	P	10 50 11.7 -0.3
	comp=Z,16nm,0.9s,baz=228,slow=8.7,SNR=38					
GRAC	Grapevine Rang	90.22	50	P	P	10 50 11.8 -0.2
	baz=245,SNR=11					
BC3	Big Chuckawall	90.23	54	P	P	10 50 12.0 -0.3
	baz=246,SNR=9.5					
NV11	Mina Array Sit	90.27	49	eP	P	10 50 11.7 -0.7
	comp=Z,35nm,1.1s					
K05A	Summer Lake	90.34	44	eP	P	10 50 12.7 +0.1
	comp=Z,42nm,1.0s					
MOD	Modoc Plateau	90.35	45	eP	P	10 50 12.2 -0.4
	comp=Z,32nm,1.0s					
FURC	Furnace Creek,	90.36	51	P	P	10 50 12.3 -0.2
	baz=245,SNR=20					
J05D	Fort Rock, OR	90.38	43	P	P	10 50 12.5 -0.2
	baz=242,SNR=34					
H04A	Detroit Lake	90.43	42	eP	P	10 50 12.2 -0.5
	comp=Z,40nm,1.1s					
GLA	Glamis	90.47	55	P	P	10 50 12.9 -0.3
	baz=246,SNR=8.3					
GLA	Glamis	90.47	55	eP	P	10 50 13.8 +0.6
GLA				pmax	pmax	
	comp=Z,52nm,1.2s					
GLA	Glamis	90.47	55	eP	P	10 50 13.8 +0.6
	comp=Z,52nm,1.2s					
E03A	Lebam	90.49	40	eP	P	10 50 13.2 +0.3
	comp=Z,83nm,1.1s					
GMRC	Granite Mounta	90.54	53	P	P	10 50 12.9 -0.8
	baz=246,SNR=9.7					
SHOC	Shoshone, Teco	90.55	52	P	P	10 50 13.1 -0.4
	baz=245,SNR=10					
F04D	Rainier, OR	90.59	40	P	P	10 50 13.8 +0.3
	baz=241					
TUQ	Turquoise Moun	90.62	52	P	P	10 50 13.5 -0.5
	baz=245,SNR=11					
IRM	Iron Mountain	90.67	54	P	P	10 50 14.2 0.0
	baz=246,SNR=13					
ZAK	Zakamensk	90.69	325	eP	P	10 50 12.2 -1.7
ZAK				pmax	pmax	
	comp=Z,9.0nm,1.4s					
OOW	Octopus West	90.71	39	eP	P	10 50 14.9 +0.9
NLWA	Neilton Lookou	90.72	39	eP	P	10 50 14.6 +0.5
	comp=Z,39nm,1.1s					
NLWA				epP	pP	10 50 24.0 -2.2
I05D	Terrebonne, OR	90.80	43	P	P	10 50 14.5 -0.1
	baz=242					
F04A	Amboy	90.88	41	eP	P	10 50 14.5 -0.3
	comp=Z,45nm,1.0s					
Y12C	Blythe	90.98	54	P	P	10 50 15.2 -0.4
	baz=246,SNR=8.6					
Y12C	Blythe	90.98	54	eP	P	10 50 15.9 +0.3
	comp=Z,29nm,1.0s					
TPNV	Topopah Spring	91.01	51	P	P	10 50 15.4 -0.5
	baz=245,SNR=17					
TPNV	Topopah Spring	91.01	51	eP	P	10 50 15.5 -0.3
TPNV				pmax	pmax	
	comp=Z,32nm,1.0s					
TPNV	Topopah Spring	91.01	51	eP	P	10 50 15.5 -0.3
	comp=Z,32nm,1.0s					
LDFC	Landfair	91.08	53	eP	P	10 50 16.6 +0.4
	comp=Z,47nm,1.0s					
ERK	Elk Rock	91.11	40	P	P	10 50 16.4 +0.4
113A	Mohawk Valley,	91.17	55	eP	P	10 50 16.3 -0.1
	comp=Z,31nm,1.3s					
TLY	Talaya	91.18	326	eP	P	10 50 15.5 -0.6
TLY				pmax	pmax	
	comp=Z,11nm,1.4s					
TDL	Tradedollar La	91.21	40	P	P	10 50 16.6 +0.1
G05D	Wamic, OR	91.24	42	P	P	10 50 16.3 -0.3
	baz=242					
COLA	College	91.34	17⇑	eP	P	10 50 17.1 +0.7
COLA				pmax	pmax	
	comp=Z,5.0nm,1.0s					
PDMCI	Parker Dam,Lak	91.49	54	P	P	10 50 17.8 -0.1
	baz=246,SNR=6.9					
ILAR	Eielson Array	91.53	18	P	P	10 50 15.1 -2.3
	comp=Z,1.9nm,0.7s,baz=231,slow=5.6,SNR=9.3					
ILB	Eielson Array	91.53	18	eP	P	10 50 15.1 -2.3
IL1	Eielson Array	91.53	18	eP	P	10 50 18.2 +0.8
214A	Organ Pipe Nat	91.60	57	P	P	10 50 18.1 -0.4
	baz=247					
SHPR	Sheep Range	91.62	52	eP	P	10 50 19.0 +0.3
LON	Longmire	91.64	40	eP	P	10 50 18.0 -0.4
LON				pmax	pmax	
	comp=Z,16nm,1.2s					
LON	Longmire	91.64	40	eP	P	10 50 18.0 -0.4
	comp=Z,16nm,1.2s					
G06A	Carlson Farm,	91.66	42	eP	P	10 50 18.3 -0.3
	comp=Z,9.6nm,0.9s					
VTHM	Trough	91.68	42	P	P	10 50 18.1 -0.5
WVOR	Wild Horse Val	91.69	45	eP	P	10 50 18.6 -0.2
WVOR				pmax	pmax	
	comp=Z,34nm,1.1s					
WVOR	Wild Horse Val	91.69	45	eP	P	10 50 18.6 -0.2
	comp=Z,34nm,1.1s					
D05A	Enumclaw	91.74	40	eP	P	10 50 19.3 +0.6
	comp=Z,103nm,1.4s					
FMW	Mount Fremont	91.81	40	eP	P	10 50 19.4 0.0
W13A	Hualapai Mount	92.00	53	eP	P	10 50 20.8 +0.2
	comp=Z,19nm,1.1s					
A04D	Lummi Island	92.05	38	P	P	10 50 20.9 +0.8
	baz=241					
R11A	Troy Canyon, C	92.07	50	P	P	10 50 19.9 -0.9
	baz=246,SNR=8.6					
R11A	Troy Canyon, C	92.07	50	eP	P	10 50 20.1 -0.7
	comp=Z,6.0nm,1.0s					
B05A	Bryant	92.19	39	P	P	10 50 21.0 +0.2
	baz=242					
Y14A	Wickenburg	92.22	55	eP	P	10 50 21.1 -0.3
	comp=Z,46nm,1.0s					
COLD	Coldfoot	92.55	15	eP	P	10 50 22.0 0.0
	comp=Z,4.9nm,1.2s					
MOY	Mondy	92.58	325	eP	P	10 50 23.1 +0.4
G08A	Pilot Rock	92.74	42	eP	P	10 50 23.5 -0.1
	comp=Z,11nm,0.9s					
HAWA	Hanford	92.87	41	eP	P	10 50 24.2 +0.1
	comp=Z,42nm,1.5s					
LCMT	Little Creek M	93.23	52	eP	P	10 50 26.0 -0.1
	comp=Z,14nm,1.0s					
EGAK	Eagle	93.24	19	eP	P	10 50 24.5 -0.7
	comp=Z,8.8nm,1.1s					
DAWY	Dawson	93.32	20	eP	P	10 50 25.2 -0.5
	comp=Z,9.9nm,1.4s					
TUC	Tucson	93.32	57	P	P	10 50 26.4 -0.1
	baz=248					
TUC	Tucson	93.32	57	eP	P	10 50 26.8 +0.3
TUC				pmax	pmax	
	comp=Z,19nm,1.1s					
TUC	Tucson	93.32	57	eP	P	10 50 26.8 +0.3
	comp=Z,19nm,1.1s					
PSUT	Pine Spring	93.38	50	eP	P	10 50 26.1 -0.7
	comp=Z,4.9nm,1.0s					
DLBC	Dease Lake	93.41	28	eP	P	10 50 26.0 -0.3
	comp=Z,17nm,1.2s					
D08A	Wollman Farm,	93.55	41	eP	P	10 50 27.1 -0.1
	comp=Z,7.6nm,1.0s					
KNB	Kanab	93.55	52	eP	P	10 50 27.5 -0.1
KNB				pmax	pmax	
	comp=Z,12nm,1.1s					
KNB	Kanab	93.55	52	eP	P	10 50 27.5 -0.1
	comp=Z,12nm,1.1s					
X16A	Lo Mia Camp, P	93.60	55	eP	P	10 50 28.2 +0.3
	comp=Z,14nm,1.0s					
U15A	North Rim	93.71	53	eP	P	10 50 28.2 -0.3
	comp=Z,16nm,1.2s					
B08A	Colville Reser	93.87	40	eP	P	10 50 28.4 -0.3
	comp=Z,9.7nm,1.3s					
MFID	Camas Ranch	93.98	45	eP	P	10 50 29.0 -0.3
	comp=Z,6.9nm,0.9s					
WUAZ	Wupatki	94.06	54	P	P	10 50 29.2 -0.8
	baz=248					
WUAZ	Wupatki	94.06	54	eP	P	10 50 30.2 +0.2
	comp=Z,11nm,1.0s					
MTPU	Mount Pierson	94.41	51	eP	P	10 50 32.4 +0.6
	comp=Z,9.4nm,1.0s					
MSU	Marysvale	94.59	51	eP	P	10 50 32.8 +0.3
MSU	Marysvale	94.59	51	eP	P	10 50 32.8 +0.3
DUG	Dugway, Tooele	94.77	49	P	P	10 50 32.8 -0.4
	baz=248					
DUG	Dugway, Tooele	94.77	49	eP	P	10 50 32.5 -0.6
DUG				pmax	pmax	
	comp=Z,8.0nm,1.3s					
DUG	Dugway, Tooele	94.77	49	eP	P	10 50 32.5 -0.6
	comp=Z,7.6nm,1.3s					
X18A	Snowflake	94.78	55	eP	P	10 50 33.9 +0.5
	comp=Z,13nm,1.4s					
HLID	Hailey	94.98	45	P	P	10 50 33.6 -0.4
	baz=247					
HLID	Hailey	94.98	45	eP	P	10 50 33.8 -0.2
	comp=Z,4.6nm,0.9s					
NLU	North Lily Min	95.21	49	eP	P	10 50 34.0 -1.2
	comp=Z,4.6nm,1.2s					
HVU	Hansel Valley	95.40	47	eP	P	10 50 35.2 -0.8
HVU				pmax	pmax	

TIXI					pmax	pmax		
	comp=Z,2.0nm,1.2s							
SRU	**San Rafael Swe**	**96.01**	**51**	*e*P		**P**	**10 50 38.8**	**0.0**
SRU					pmax	pmax		
	comp=Z,6.0nm,1.2s							
SRU	**San Rafael Swe**	**96.01**	**51**	*e*P		**P**	**10 50 38.8**	**0.0**
	comp=Z,6.0nm,1.2s							
REDW	**Red Top Meadow**	**97.31**	**47**	*e*P		**P**	**10 50 44.5**	**-0.2**
	comp=Z,13nm,1.5s							
WMQ	**Urumqi**	**97.34**	**314**	*e*P		Pdif	10 50 45.4	+0.7
MNTX	**Cornudas Mount**	**97.41**	**59**	P		**P**	**10 50 44.4**	**-0.7**
	baz=251							
IMW	**Indian Meadow**	**97.44**	**46**	*e*P		**P**	**10 50 44.9**	**-0.5**
	comp=Z,4.1nm,1.0s							
BOZ	**Bozeman (W)**	**97.61**	**44**	P		**P**	**10 50 45.5**	**-0.4**
	baz=249							
ANMO	**Albuquerque**	**97.62**	**56**	P		**P**	**10 50 45.8**	**-0.5**
	baz=251							
ANMO	**Albuquerque**	**97.62**	**56**	*e*P		**P**	**10 50 45.3**	**-1.0**
ANMO					pmax	pmax		
	comp=Z,1.0nm,1.0s							
INK	**Inuvik**	**97.85**	**19**	P		**P**	**10 50 44.2**	**-1.9**
	comp=Z,3.7nm,1.2s,baz=245,slow=5.6,SNR=4.7							
INK	**Inuvik**	**97.85**	**19**	*e*P		**P**	**10 50 44.3**	**-1.9**
INK					pmax	pmax		
	comp=Z,12nm,1.5s							
INK	**Inuvik**	**97.85**	**19**	*e*P		**P**	**10 50 44.3**	**-1.9**
	comp=Z,12nm,1.5s							
H17A	**Grant Village**	**97.86**	**46**	P		Pdif	10 50 47.1	-0.1
	baz=249							
BW06	**Boulder Array**	**97.98**	**47**	P		**P**	**10 50 47.7**	**-0.1**
	baz=250							
BW06	**Boulder Array**	**97.98**	**47**	*e*P		**P**	**10 50 47.3**	**-0.5**
	comp=Z,6.0nm,1.4s							
PD31	**Pinedale Array**	**97.98**	**47**	*e*P		**P**	**10 50 47.3**	**-0.5**
PDAR	**Pinedale Array**	**97.98**	**47**	P		**P**	**10 50 46.0**	**-1.7**
	comp=Z,1.1nm,1.0s,baz=224,slow=4.1,SNR=5.6							
LTX	**Lajitas**	**98.04**	**62**	*e*P		**P**	**10 50 47.4**	**-0.8**
LTX	**Lajitas**	**98.04**	**62**	*e*P		**P**	**10 50 47.4**	**-0.8**
TXAR	**Lajitas Array**	**98.04**	**62**	P		**P**	**10 50 47.4**	**-0.8**
	comp=Z,0.9nm,0.9s,baz=243,slow=4.9,SNR=5.5							
TXAR					PKKPbc	**PKKPbc**	**11 07 20.5**	**-1.1**
	comp=Z,1.0nm,1.1s,baz=160,slow=2.9,SNR=4.6							
SDCO	**Great Sand Dun**	**99.26**	**53**	P		**Pdif**	**10 50 52.7**	**-1.0**
	baz=252							
N23A	**Red Feather La**	**99.92**	**50**	P		**Pdif**	**10 50 55.8**	**-0.8**
	baz=252							
MSTX	**Muleshoe**	**100.20**	**58**	P		**Pdif**	**10 50 56.7**	**-1.0**
	baz=252							
MKAR	**Makanchi Array**	**101.92**	**316**	PKKP			11 07 30.8	
	comp=Z,0.7nm,0.7s,baz=323,slow=2.2,SNR=4.4							
035A	**Encino**	**102.00**	**66**	P		**Pdif**	**10 51 05.4**	**-0.3**
	baz=253							
YKA	**Yellowknife Ar**	**102.03**	**28**	P		**Pdif**	**10 51 05.3**	**+0.4**
	comp=Z,1.0nm,1.0s,baz=257,slow=5.1,SNR=9.1							
YKB5	**Yellowknife Ar**	**102.03**	**28**	*e*Pdif		**Pdif**	**10 51 05.4**	**+0.4**
I25A	**Rochford**	**102.41**	**48**	P		**Pdif**	**10 51 07.5**	**+0.1**
	baz=254							
W32A	**Sentinel**	**103.32**	**57**	P		**Pdif**	**10 51 11.3**	**-0.2**
	baz=254							
F26A	**Lodgepole**	**103.63**	**46**	P		**Pdif**	**10 51 12.9**	**+0.3**
	baz=255							
E26A	**Carlson Angus**	**103.93**	**45**	P		**Pdif**	**10 51 13.8**	**-0.2**
	baz=255							
BVAR	**Borovoye Array**	**110.71**	**320**	PKiKP		**PKiKP**	**10 55 43.1**	**-0.6**
	comp=Z,0.8nm,0.6s,baz=134,slow=4.2,SNR=4.2							
BRVK	**Borovoye**	**110.78**	**320**	*i*PKiKP		**PKiKP**	**10 55 42.7**	**-1.1**
ARU	**Arti**	**117.62**	**324**	PKP		**PKPdf**	**10 55 55.7**	**-1.1**
	comp=Z,1.2nm,0.3s,baz=117,slow=2.3,SNR=3.8							
ARU	**Arti**	**117.62**	**324**	*e*PKP		**PKPdf**	**10 55 55.9**	**-0.9**
ARU	**Arti**	**117.62**	**324**	*e*PKPdf		**PKPdf**	**10 55 55.9**	**-0.9**
AKTO	**Aktyubinsk**	**118.29**	**317**	PKP		**PKPdf**	**10 55 58.2**	**-0.1**
	comp=Z,1.2nm,0.5s,baz=60,slow=2.8,SNR=5.8							
MATP	**Matopo**	**123.55**	**227**	PKP		**PKPdf**	**10 56 09.5**	**-0.1**
	comp=Z,6.7nm,0.9s,baz=67,slow=1.9,SNR=7.2							
ARA0	**ARCESS Array S**	**125.90**	**345**	*e*PKPdf		**PKPdf**	**10 56 12.2**	**-0.2**
ARCES	**ARCESS Array B**	**125.90**	**345**	PKP		**PKPdf**	**10 56 12.2**	**-0.2**
	comp=Z,5.6nm,0.7s,baz=122,slow=1.9,SNR=7.7							
KLMR	**Klimovskoe**	**126.10**	**332**	*e*PKIKP		**PKPdf**	**10 56 10.2**	**-2.8**
KLMR					pmax	pmax		
	comp=Z,25nm,1.3s							
LSZ	**Lusaka**	**127.21**	**231**	PKP		**PKPdf**	**10 56 16.6**	**0.0**
	comp=Z,2.8nm,0.5s,baz=152,slow=1.1,SNR=6.3							
GNI	**Garni**	**128.30**	**306**	*i*PKIKP		**PKPdf**	**10 56 19.5**	**+1.4**
VRH	**Novokhopyorsk**	**128.36**	**320**	*e*PKIKP		**PKPdf**	**10 56 17.7**	**+0.1**
VRH					pmax	pmax		
	comp=Z,20nm,1.1s							
ZEI	**Tsey**	**128.64**	**309**	*i*PKIKP		**PKPdf**	**10 56 21.2**	**+2.5**
ZEI					pmax	pmax		
	comp=Z,20nm,1.5s							
KBZ	**Khabaz**	**129.22**	**310**	PKP		**PKPdf**	**10 56 19.5**	**+0.1**
	comp=Z,0.9nm,0.4s,baz=331,slow=3.0,SNR=4.4							
KIV	**Kislovodsk**	**129.34**	**311**	*e*PKIKP		**PKPdf**	**10 56 20.4**	**+0.6**
KIV					pmax	pmax		
	comp=Z,6.0nm,0.9s							
NEY	**Neytrino**	**129.43**	**310**	*i*PKIKP		**PKPdf**	**10 56 22.0**	**+1.9**
LPSR	**Galich'ya Gora**	**129.57**	**322**	*e*PKIKP		**PKPdf**	**10 56 20.8**	**+1.0**
LPSR					pmax	pmax		
	comp=Z,30nm,1.6s							
VSR	**Storozhevoye**	**129.89**	**321**	*e*PKIKP		**PKPdf**	**10 56 20.2**	**-0.3**
VSR					pmax	pmax		
	comp=Z,10.0nm,1.8s							
OBN	**Obninsk**	**129.93**	**326**	*i* PKIKP		**PKPdf**	**10 56 20.8**	**+0.4**
OBN					pmax	pmax		
	comp=Z,9.0nm,0.9s							
FIA1	**FINESS Array S**	**131.26**	**337**	*e*PKPdf		**PKPdf**	**10 56 21.9**	**-0.9**
FIA0	**FINESS Array S**	**131.26**	**337**	*e*PKIKP		**PKPdf**	**10 56 22.1**	**-0.7**
FIA0	**FINESS Array S**	**131.26**	**337**	*e*PKPdf		**PKPdf**	**10 56 22.1**	**-0.7**
FINES	**FINESS Array B**	**131.26**	**337**	PKP		**PKPdf**	**10 56 22.1**	**-0.7**
	comp=Z,5.0nm,0.9s,baz=66,slow=6.5,SNR=6.6							
AKASG	**Malin Array Be**	**135.87**	**323**	PKP		**PKPdf**	**10 56 31.1**	**-0.6**
	comp=Z,0.3nm,0.2s,baz=62,slow=1.9,SNR=5.6							
KIEV	**Kiev**	**135.88**	**323**	*i*PKIKP		**PKPdf**	**10 56 31.8**	**0.0**
AK11	**Malin Array Si**	**135.91**	**323**	*e*PKPdf		**PKPdf**	**10 56 31.6**	**-0.3**
NB2	**NORSAR Subarra**	**136.27**	**344**	PKPdf		**PKPdf**	**10 56 31.0**	**-1.3**
	comp=Z,3.2nm,1.1s,baz=31,slow=1.9							
NB200	**NORSAR Array S**	**136.27**	**344**	*e*PKPdf		**PKPdf**	**10 56 31.3**	**-1.0**
NOA	**NORSAR Array B**	**136.27**	**344**	PKP		**PKPdf**	**10 56 31.3**	**-1.0**
	comp=Z,2.4nm,0.8s,baz=34,slow=2.0,SNR=7.4							
HFS	**Hagfors**	**136.34**	**342**	PKP		**PKPdf**	**10 56 32.0**	**-0.3**
	comp=Z,2.9nm,0.8s,baz=157,slow=4.2,SNR=5.2							
BR101	**Keskin Array S**	**136.79**	**307**	*e*PKPdf		**PKPdf**	**10 56 34.5**	**+0.5**
BRTR	**Keskin Array B**	**136.79**	**307**	PKP		**PKPdf**	**10 56 34.5**	**+0.5**
	comp=Z,1.7nm,0.9s,baz=191,slow=2.5,SNR=4.7							
BR231	**Keskin MP Arra**	**137.41**	**307**	*e*PKPdf		**PKPdf**	**10 56 34.3**	**-0.9**
MLR	**Muntele Rosu**	**140.21**	**318**	PKP		**PKPdf**	**10 56 40.1**	**-0.1**
	comp=Z,0.3nm,0.7s,baz=258,slow=6.8,SNR=4.3							
MLR	**Muntele Rosu**	**140.21**	**318**	*e*PKPdf		**PKPdf**	**10 56 40.3**	**+0.2**
KOLS	**Kolonicke sedl**	**140.63**	**325**	*e*PKIKP		**PKPdf**	**10 56 41.5**	**+0.9**
KOLS	**Kolonicke sedl**	**140.63**	**325**	*e*PKP		**PKPdf**	**10 56 41.5**	**+0.9**
STHS	**Stebnicka Huta**	**140.91**	**326**	*e*PKIKP		**PKPdf**	**10 56 42.0**	**+0.9**
STHS	**Stebnicka Huta**	**140.91**	**326**	*e*PKP		**PKPdf**	**10 56 42.0**	**+0.9**
VYHS	**Vyhne**	**142.73**	**326**	*e*PKIKP		**PKPdf**	**10 56 41.5**	**-2.9**
VYHS	**Vyhne**	**142.73**	**326**	*e*PKP		**PKPdf**	**10 56 41.5**	**-2.9**
KRLC	**Kraliky**	**142.73**	**330**	*e*PKP		**PKPdf**	**10 56 43.2**	**-1.2**
KRLC	**Kraliky**	**142.73**	**330**	*e*PKIKP		**PKPdf**	**10 56 43.2**	**-1.2**
DPC	**Dobruska-Polom**	**142.76**	**330**	*e*PKP		**PKPdf**	**10 56 40.3**	**-4.1**
DPC	**Dobruska-Polom**	**142.76**	**330**	*e*PKIKP		**PKPdf**	**10 56 40.3**	**-4.1**
PVCC	**Panska Ves**	**143.44**	**332**	*e*PKP		**PKPdf**	**10 56 45.3**	**-0.3**
PVCC	**Panska Ves**	**143.44**	**332**	*e*PKIKP		**PKPdf**	**10 56 45.3**	**-0.3**
BRG	**Berggiesshubel**	**143.46**	**333**	*e*PKP		PKPbc	10 56 43.0	+0.1
	comp=Z,16nm,1.3s							
BRG	**Berggiesshubel**	**143.46**	**333**	*e*PKIKP		PKPbc	10 56 43.0	+0.1
BRG					pmax	pmax		
	comp=Z,44nm,1.3s							
CLL	**Collm**	**143.53**	**334**	*i* PKPdf		PKPbc	10 56 43.2	+0.2
	comp=Z,15nm,1.3s							
CLL	**Collm**	**143.53**	**334**	*i* PKIKP		PKPbc	10 56 43.2	+0.2
CLL					pmax	pmax		
	comp=Z,15nm,1.3s							
PRU	**Pruhonice**	**143.83**	**331**	*e*PKP		PKPbc	10 56 45.0	+1.0
PRU	**Pruhonice**	**143.83**	**331**	*e*PKIKP		PKPbc	10 56 45.0	+1.0
TREC	**Trest**	**143.88**	**330**	*e*PKP		PKPbc	10 56 45.1	+0.9
TREC	**Trest**	**143.88**	**330**	*e*PKIKP		PKPbc	10 56 45.1	+0.9
LAST	**Lasithi**	**144.19**	**302**	*e*PKPdf		PKPbc	10 56 46.1	+0.4
VAY	**Valandovo**	**144.25**	**313**	*i* PKP		**PKPab**	**10 56 45.2**	**0.0**
EKA	**Eskdalemuir Ar**	**144.47**	**352**	PKP		**PKPab**	**10 56 45.2**	**-0.3**
	comp=Z,3.6nm,0.6s,baz=357,slow=2.8,SNR=8.8							
NKC	**Novy Kostel**	**144.57**	**333**	*e*PKP		**PKPdf**	**10 56 46.9**	**-0.7**
NKC	**Novy Kostel**	**144.57**	**333**	*e*PKIKP		**PKPdf**	**10 56 46.9**	**-0.7**
IDI	**Anoyia**	**144.62**	**303**	PKP		**PKPab**	**10 56 46.7**	**-0.2**
	comp=Z,53nm,1.3s,baz=131,slow=3.2,SNR=6.1							
CONA	**Conrad Observa**	**144.62**	**328**	*i* PKPdf		**PKPdf**	**10 56 47.6**	**-0.2**
	comp=Z,49nm,1.3s,SNR=20							
SKO	**Skopje**	**144.72**	**315**	*i* PKP		PKPbc	10 56 47.5	+0.4
KHC	**Kasperske Hory**	**144.89**	**331**	*e*PKP		PKPbc	10 56 47.6	+0.2
KHC				*ex*		x	10 57 00.0	
KHC				*ex*		x	10 57 07.7	
KHC	**Kasperske Hory**	**144.89**	**331**	*e*PKIKP		PKPbc	10 56 47.6	+0.2
KHC				*e*			10 57 00.0	
GEC2	**GERESS Array S**	**145.03**	**330**	*e*PKIKP		**PKPdf**	**10 56 48.5**	**0.0**
GEC2	**GERESS Array S**	**145.03**	**330**	*e*PKPbc		**PKPdf**	**10 56 48.5**	**0.0**
GERES	**GERESS Array B**	**145.03**	**330**	PKPbc		**PKPab**	**10 56 48.1**	**+0.2**
	comp=Z,9.2nm,0.9s,baz=56,slow=3.4,SNR=19							
GERES					SKPbc	**SKiKP**	**11 00 33.5**	**+7.9**
	comp=Z,0.9nm,0.7s,baz=90,slow=0.7,SNR=4.7							
GEA0	**GERESS Array S**	**145.04**	**330**	*e*PKPbc		**PKPab**	**10 56 48.0**	**0.0**
BIA	**Bitola**	**145.23**	**314**	*i* PKP		**PKPbc**	**10 56 48.4**	**-0.4**
ARSA	**Arzberg**	**145.24**	**327**	*i* PKPdf		**PKPdf**	**10 56 49.2**	**+0.4**
	comp=Z,37nm,1.5s,SNR=11							
MOA	**Molln**	**145.46**	**329**	*i* PKPdf		**PKPab**	**10 56 49.9**	**+0.4**
	comp=Z,63nm,1.4s,SNR=17							
OHR	**Ohrid**	**145.54**	**314**	*i* PKP		**PKPab**	**10 56 49.8**	**-0.2**
PERS	**Pernice**	**145.85**	**326**	*e*PKPdf		**PKPbc**	**10 56 50.5**	**-0.1**
SOKA	**Soboth**	**145.87**	**327**	*i* PKPab		**PKPbc**	**10 56 50.4**	**-0.2**
	comp=Z,41nm,1.5s,SNR=13							
CWF	**Charnwood Fore**	**146.68**	**349**	*e*PKPdf		**PKPbc**	**10 56 52.5**	**-0.2**
MEM	**Membach**	**146.72**	**339**	PKP		**PKPbc**	**10 56 53.2**	**+0.3**
MEM					APKP	**pPKPdf**	**10 57 05.4**	**+1.7**
STU	**Stuttgart**	**147.05**	**334**	*e*PKP2		**PKPab**	**10 56 54.9**	**-0.6**
STU	**Stuttgart**	**147.05**	**334**	*e*PKPbc		**PKPab**	**10 56 54.9**	**-0.6**
ABTA	**Abfaltersbach**	**147.09**	**329**	*i* PKPdf		**PKPdf**	**10 56 51.1**	**-1.0**
	comp=Z,20nm,1.0s,SNR=5.4							
BCLA	**Clavier**	**147.11**	**340**	PKP		**PKPbc**	**10 56 54.4**	**+0.4**
BCLA					APKP	**pPKPdf**	**10 57 02.0**	**-2.3**
SKDS	**Skadanscina**	**147.15**	**326**	*e*PKPdf		**PKPbc**	**10 56 54.3**	**-0.1**
MOTA	**Moosalm**	**147.32**	**331**	*i* pPKPdf		**PKPbc**	**10 56 54.7**	**-0.2**
	comp=Z,25nm,0.9s,SNR=9.5							
SNF	**Seneffe**	**147.35**	**341**	PKP		**PKPbc**	**10 56 55.3**	**+0.6**
RETA	**Reutte**	**147.37**	**331**	*i* pPKPdf		**PKPbc**	**10 56 54.9**	**-0.1**
	comp=Z,20nm,1.1s,SNR=6.8							
LANF	**Langenberg**	**147.44**	**336**	PKP		**PKPbc**	**10 56 55.5**	**+0.5**
WLF	**Walferdange**	**147.47**	**338**	PKP		**PKPab**	**10 56 56.1**	**-1.0**
WLF	**Walferdange**	**147.47**	**338**	*e*PKP2		**PKPab**	**10 56 56.1**	**-1.0**
WLF	**Walferdange**	**147.47**	**338**	*e*PKPbc		**PKPab**	**10 56 56.1**	**-1.0**
DOU	**Dourbes**	**147.62**	**340**	PKP		**PKPbc**	**10 56 55.8**	**+0.3**
DOU					APKP	**pPKPdf**	**10 57 08.0**	**+2.8**
FETA	**Feichten**	**147.73**	**331**	*i* PKPdf		**PKPdf**	**10 56 53.4**	**+0.1**
	comp=Z,31nm,0.9s,SNR=8.7							
BFO	**Black Forest**	**147.75**	**335**	*i* PKP2		**PKPbc**	**10 56 56.2**	**+0.3**
BFO	**Black Forest**	**147.75**	**335**	*e*PKPbc		**PKPbc**	**10 56 56.0**	**+0.1**
DAVA	**Damuels**	**147.91**	**332**	*i* sPKPdf		**PKPbc**	**10 56 56.9**	**+0.3**
	comp=Z,28nm,1.0s,SNR=8.6							
FUORN	**Ofenpass-Fuorn**	**148.25**	**331**	*e*PKPbc		**PKPbc**	**10 56 58.2**	**+0.6**
ECH	**Echery**	**148.31**	**336**	PKP		**PKPbc**	**10 56 57.3**	**-0.1**
MOF	**Molkenrain**	**148.62**	**335**	PKP		**PKPbc**	**10 56 58.3**	**0.0**
TUE	**Stuetta**	**148.77**	**331**	*e*PKPbc		**PKPbc**	**10 56 59.1**	**+0.2**
LOMF	**Lomont**	**149.14**	**335**	PKP		**PKPbc**	**10 57 00.1**	**+0.5**
AQU	**L'Aquila**	**149.54**	**322**	*e*PKP2		**PKPbc**	**10 57 02.1**	**+1.3**
AQU	**L'Aquila**	**149.54**	**322**	*e*PKPbc		**PKPbc**	**10 57 02.1**	**+1.3**
SENIN	**Lac Senin/Sane**	**149.75**	**333**	*e*PKPdf		**PKPdf**	**10 56 56.5**	**-0.1**
SENIN				*e*PKPbc		**PKPbc**	**10 57 01.1**	**-0.2**
SENIN				*e*PKPab		**PKPab**	**10 57 05.3**	**-1.3**
OG01	**Vacheresse**	**150.03**	**334**	PKP		**PKPbc**	**10 57 02.2**	**+0.4**
PLDF	**La Plantade**	**151.51**	**337**	PKP		**PKPbc**	**10 57 06.6**	**+1.3**
AGO	**Saint Agoulin**	**151.62**	**338**	PKP		**PKPbc**	**10 57 06.6**	**+1.1**
SSB	**Saint Sauveur**	**151.75**	**335**	*e*PKIKP		**PKPdf**	**10 56 59.7**	**+0.2**
SSB				*e*			10 57 05.9	
SSB				*e*			10 57 15.3	
SSB	**Saint Sauveur**	**151.75**	**335**	*e*PKPdf		**PKPdf**	**10 56 59.7**	**+0.2**
SSB				*e*PKPbc		**PKPbc**	**10 57 05.9**	**0.0**
SSB				*e*PKPab		**PKPab**	**10 57 15.3**	**+0.6**
PYM	**Petit Puy Mans**	**151.92**	**338**	PKP		**PKPbc**	**10 57 08.0**	**+1.7**
LBL	**Lubilhac**	**152.28**	**337**	PKP		**PKPbc**	**10 57 08.6**	**+1.5**
ES19	**SONSECA Array**	**159.58**	**343**	*e*PKPab		**PKPab**	**10 57 48.5**	**+0.2**
ESDC	**Sonseca Array**	**159.62**	**343**	PKPab		**PKPab**	**10 57 48.6**	**+0.1**
	comp=Z,0.2nm,0.3s,baz=31,slow=4.8,SNR=4.7							
TOA0	**Torodi Ar. Sit**	**165.34**	**243**	*e*PKPdf		**PKPdf**	**10 57 16.0**	**-0.5**
TOA0				*e*PKPdf		**PKPdf**	**10 57 16.4**	**-0.1**
TORD	**Torodi Ar. Bea**	**165.34**	**243**	PKP		**PKPdf**	**10 57 16.3**	**-0.2**
	comp=Z,9.3nm,1.2s,baz=352,slow=1.2,SNR=16							
TORD					PKPab	**PKPab**	**10 58 13.9**	**-0.5**
	comp=Z,1.8nm,0.8s,baz=99,slow=2.3,SNR=5.5							
TOA1	**Torodi Ar. Sit**	**165.35**	**243**	*e*PKPdf		**PKPdf**	**10 57 16.3**	**-0.2**
TOA1				*e*PKPab		**PKPab**	**10 58 13.9**	**-0.5**

IDC 10 10:39:28.9±2.8, 17°.95S×167°.08E, h0km, mb4.0/3, mb1 4.3/3, mb1mx3.8/42, mbtmp4.0/3, Error ellipse: s-maj=224.9km s-min=31.9km az=158.0, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**31.00**	**261**	P		10 45 49.5	+1.1
	0.8nm,0.9s,baz=90,slow=7.6,SNR=2.6						
ASAR	**Alice Springs**	**31.48**	**254**	P		10 45 51.4	-1.2
	2.3nm,0.7s,baz=81,slow=8.9,SNR=3.6						
NVAR	**Mina Array Bea**	**89.50**	**49**	P		10 52 28.4	0.0
	1.0nm,0.8s,baz=230,slow=7.0,SNR=4.3						

*IDC **10** 10:40:54.3±1.3, 36°.19N×141°.96E, h0km, mb3.6/5, mb1 3.7/8, mb1mx3.5/67, mbtmp3.6/8, ML3.6/3, Error ellipse: s-maj=34.4km s-min=22.5km az=155.0*
*ISCJB **10** 10:40:55.8±0.8, 36°.19N±0°.06×141°.99E±0°.07, h23km, mb3.6/6, Error ellipse: s-maj=9.9km s-min=6.7km az=45.0*
*JMA **10** 10:40:56.4±0.2, 36°.20N×141°.98E, h53km, M3.6*
ISC 10 10:40:57.0±1.0, 36°.19N±0°.07×141°.94E±0°.09, h23km, n22, σ1§17/23, mb3.7/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.01**	**241**	P		**Pb**	**10 41 14.9**	**-0.8**
CHOJ				*e*S		**Sn**	**10 41 28.8**	**-0.3**
JHO	**Hitachi**	**1.18**	**291**	P		**Pn**	**10 41 17.1**	**-1.0**
ONAJ	**Iwakimizuishiy**	**1.29**	**315**	P		**Pn**	**10 41 18.7**	**-0.9**
JFK	**Kawauchi**	**1.45**	**324**	P		**Pn**	**10 41 21.1**	**-0.7**
BSO1	**Boso 1**	**1.73**	**207**	P		**Pn**	**10 41 25.0**	**-0.1**
JFT	**Otama**	**1.84**	**316**	P		**Pn**	**10 41 27.3**	**+0.1**
JMM	**Marumori**	**1.91**	**331**	P		**Pn**	**10 41 28.1**	**+0.1**
JAG	**Ashikaga**	**2.02**	**277**	P		**Pn**	**10 41 29.4**	**-0.3**
JRY	**Ryogami san**	**2.47**	**267**	P		**Pn**	**10 41 35.6**	**-0.2**
MJAR	**Matsushiro Arr**	**3.03**	**278**	Pn		**Pn**	**10 41 44.2**	**+0.6**
	7.6nm,0.3s,baz=89,slow=16,SNR=34							
MAT	**Matsushiro**	**3.03**	**278**	P		**Pn**	**10 41 44.0**	**+0.4**
MAT				*e*S		**Sn**	**10 42 19.7**	**+0.5**
JHJ	**Hachijo jima 2**	**3.55**	**211**	Pn		**Pn**	**10 41 49.9**	**-0.8**
	27nm,0.3s,baz=60,slow=20,SNR=7.6							
JHJ					Sn	**Sn**	**10 42 28.9**	**-3.0**
	36nm,0.3s,baz=246,slow=23,SNR=6.7							
ASAJ	**Asahikawa**	**7.93**	**3**	Pn		**Pn**	**10 42 49.8**	**-1.0**
	0.7nm,0.3s,baz=217,slow=8.7,SNR=6.2							
ASAJ					Sn	**Sn**	**10 44 16.9**	**-2.8**
	0.7nm,0.3s,baz=132,slow=16,SNR=3.0							
USRK	**Ussuriysk Ar.**	**11.03**	**319**	Pn		Pn	10 43 39.3	+6.0
	0.3nm,0.3s,baz=134,slow=13,SNR=10							
KSRS	**Korea Array**	**11.31**	**281**	Pn		Pn	10 43 41.5	+4.4
	0.0nm,0.3s,baz=98,slow=15,SNR=3.4							
ZALV	**Zalesovo Beam**	**42.80**	**313**	P		P	10 48 57.2	+4.6
	0.7nm,0.3s,baz=99,slow=8.9,SNR=2.4							
MKAR	**Makanchi Array**	**44.93**	**303**	P		**P**	**10 49 11.1**	**+1.2**
	0.7nm,0.7s,baz=82,slow=8.7,SNR=4.0							
KURBB	**Kurchatov Arra**	**46.85**	**309**	P		**P**	**10 49 25.5**	**+0.5**
	0.5nm,0.4s,baz=82,slow=7.8,SNR=5.7							
ILAR	**Eielson Array**	**49.98**	**32**	P		**P**	**10 49 49.9**	**+1.0**
	0.5nm,0.7s,baz=270,slow=6.3,SNR=3.6							
INK	**Inuvik**	**54.94**	**27**	P		**P**	**10 50 26.2**	**+0.7**
	0.5nm,0.6s,baz=293,slow=8.4,SNR=3.9							
PDAR	**Pinedale Array**	**77.95**	**46**	P		**P**	**10 52 54.9**	**+1.4**
	0.3nm,0.7s,baz=15,slow=1.0,SNR=3.3							
LPAZ	**La Paz**	**146.74**	**61**	PKPbc		**PKPbc**	**11 00 38.2**	**0.0**
	1.0nm,0.6s,baz=303,slow=2.7,SNR=4.9							

*IDC **10** 10:40:57.5±1.1, 20°.07S×168°.23E, h0km, mb4.2/5, mb1 4.5/7, mb1mx4.0/42, mbtmp4.3/7, ML3.8/2, Error ellipse: s-maj=36.4km s-min=22.9km az=142.0*
*NEIC **10** 10:40:58.9±0.7, 20°.14S×168°.23E, h10km, mb4.6/7, Error ellipse: s-maj=16.3km s-min=15.2km az=179.0*
*ISCJB **10** 10:41:00.0±0.6, 20°.25S±0°.09×168°.23E±0°.09, h27km, mb4.5/12, Error ellipse: s-maj=14.9km s-min=9.9km az=43.3*
ISC 10 10:41:01.5±0.8, 20°.25S±0°.1×168°.2E±0°.1, h27km, n17, σ1§31/17, mb4.5/12, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.46**	**222**	Pn		**Pn**	**10 41 38.9**	**-1.1**
	15nm,0.3s,baz=47,slow=19,SNR=5.1						
DZM					Sn	**Sn**	**10 42 08.7**	**-0.5**
	65nm,0.3s,baz=294,slow=20,SNR=7.7						
URZ	**Urewera**	**19.55**	**159**	P		**Pn**	**10 45 29.4**	**+1.0**
	0.3nm,0.3s,baz=356,slow=8.0,SNR=5.1						
CTA	**Charters Tower**	**20.61**	**267**	P		Pn	10 45 42.8	+1.6
	4.2nm,0.8s,baz=93,slow=13,SNR=3.0						
CTAO	**Charters Tower**	**20.61**	**267**	*e*P		**P**	**10 45 39.7**	**+0.9**
	36nm,0.9s						
PMG	**Port Moresby**	**22.99**	**295**	*e*P		**P**	**10 46 01.4**	**-2.9**
	2.4nm,0.6s						
STKA	**Stephens Creek**	**26.50**	**239**	P		**P**	**10 46 38.4**	**+1.6**
	3.6nm,0.8s,baz=59,slow=9.1,SNR=3.1						
WRA	**Warramunga Arr**	**31.78**	**265**	P		**P**	**10 47 24.1**	**+0.3**
	1.0nm,0.8s,baz=95,slow=9.1,SNR=3.1						
ASAR	**Alice Springs**	**31.96**	**258**	P		**P**	**10 47 26.1**	**+0.7**
	5.4nm,0.9s,baz=86,slow=8.8,SNR=5.8						
FITZ	**Fitzroy Crossi**	**40.19**	**266**	*e*P		**P**	**10 48 37.1**	**+1.3**
	5.0nm,0.9s						
SBA	**Scott Base**	**57.66**	**180**	*e*P		**P**	**10 50 49.5**

BBOO	Buckleboo	31.36	240	eP	P	10 50 28.6 -0.1
	comp=Z,38nm,0.9s					
WB2	Warramunga Arr	31.94	265	eP	P	10 50 33.2 -0.8
	comp=Z,41nm,1.2s					
WRAB	Tennant Creek	31.94	265μ	eP	P	10 50 33.1 -0.9
WRAB				pmax	pmax	
	comp=Z,16nm,1.0s					
WRAB	Tennant Creek	31.94	265	eP	P	10 50 32.7 -1.3
	comp=Z,38nm,1.3s					
WR1	Warramunga Arr	31.95	265	eP	P	10 50 32.8 -1.3
WRA	Warramunga Arr	31.95	265	P	P	10 50 32.8 -1.3
	comp=Z,5.2nm,0.9s,baz=94,slow=8.4,SNR=25					
WRA				pP	pP	10 50 43.5 +0.9
	comp=Z,7.1nm,0.8s,baz=88,slow=8.2,SNR=11					
WRA				PcP	PcP	10 53 23.2 -0.9
	comp=Z,3.3nm,0.9s,baz=95,slow=3.0,SNR=4.1					
WRA				LR	LR	11 02 57.2
	comp=Z,3μm,18.2s,baz=115,slow=35					
AS01	Alice Springs	32.07	258	eP	P	10 50 34.3 -0.8
AS31	Alice Springs	32.11	258	eP	P	10 50 34.5 -1.0
	comp=Z,20nm,1.0s					
ASAR	Alice Springs	32.11	258	P	P	10 50 34.2 -1.3
	comp=Z,18nm,0.7s,baz=88,slow=8.7,SNR=45					
ASAR				pP	sP	10 50 45.4 -2.3
	comp=Z,34nm,0.8s,baz=83,slow=9.1,SNR=21					
ASAR				PKiKP	PKiKP	11 00 51.5 -1.1
	comp=Z,0.3nm,0.6s,baz=76,slow=2.3,SNR=4.1					
ASAR				LR	LR	11 04 01.2
	comp=Z,3μm,18.6s,baz=118,slow=37					
GENI	Genyem	32.69	299	P	P	10 50 42.2 +1.6
	comp=Z,104nm,1.2s					
MTN	Manton Dam	36.41	276	P	P	10 51 12.6 -0.3
	baz=36,SNR=5.8					
WRKA	Warakurna	37.21	255	P	P	10 51 19.2 -0.4
	baz=37,SNR=6.5					
FAKI	Fak Fak	39.25	291	P	sP	10 51 51.9 +2.9
FAKI	Fak Fak	39.25	291	eP	P	10 51 35.9 -0.9
	comp=Z,22nm,0.9s					
PAE	Paea	39.75	93	eP	P	10 51 39.6 -1.3
	comp=Z,12nm,1.0s					
PPT2	Papeete2	39.77	93	eP	P	10 51 39.9 -1.3
	comp=Z,113nm,1.1s					
PPT	Papeete	39.77	93	P	P	10 51 39.5 -1.6
	comp=Z,124nm,1.0s,baz=328,slow=4.8,SNR=8.4					
TIAR	Tiarei	39.99	93	eP	P	10 51 41.7 -1.2
	comp=Z,51nm,1.0s					
TVO	Taravao	40.03	94	eP	P	10 51 42.1 -1.3
	comp=Z,15nm,0.7s					
FITZ	Fitzroy Crossi	40.36	266	P	P	10 51 46.1 +0.2
	baz=40,SNR=9.4					
FITZ	Fitzroy Crossi	40.36	266	eP	P	10 51 46.2 +0.2
	comp=Z,83nm,1.1s					
SWI	Sorong	41.12	293	P	P	10 51 52.5 +0.2
	comp=Z,58nm,0.9s					
MEH	Mehetia	41.13	94	eP	P	10 51 51.1 -1.3
	comp=Z,38nm,1.0s					
PMOR	Pomariorio Ree	41.89	90	eP	P	10 51 57.2 -1.4
	comp=Z,223nm,1.2s					
VAH	Vaihoa	42.09	90	eP	P	10 51 58.8 -1.4
	comp=Z,171nm,1.3s					
LBMI	Labuha	44.50	291	P	P	10 52 22.2 +2.5
	comp=Z,90nm,1.2s					
SANI	Sanana	45.18	288	P	P	10 52 27.5 +2.3
	comp=Z,74nm,1.4s,comp=Z,1μm					
MMRI	Maumere	46.03	278	P	P	10 52 34.8 +2.9
	comp=Z,71nm,0.9s					
MMRI	Maumere	46.03	278	eP	P	10 52 32.2 +0.3
	comp=Z,43nm,0.8s					
KLBR	Kellerberrin	46.54	245	P	P	10 52 35.0 -0.7
	baz=46,SNR=10					
NWAO	Narrogin (SRO)	47.02	244	P	P	10 52 39.1 -0.4
	comp=Z,12nm,0.8s,baz=345,slow=9.5,SNR=6.7					
NWAO				pP	sP	10 52 49.5 -2.4
	comp=Z,39nm,0.8s,baz=320,slow=9.2,SNR=10					
NWAO	Narrogin (SRO)	47.02	244	P	P	10 52 40.0 +0.5
	baz=47,SNR=4.9					
NWAO	Narrogin (SRO)	47.02	244	eP	P	10 52 39.8 +0.3
BLDU	Ballidu	47.43	247	P	P	10 52 42.4 -0.3
	baz=47,SNR=4.1					
KAPI	Kappang	49.63	281	eP	P	10 53 00.5 +0.7
	comp=Z,146nm,1.9s					
SPSI	Sidrap Palu	50.02	282	P	P	10 53 13.7 +11
PLAI	Plampang	50.12	275	P	P	10 53 15.1 +12
TTSI	Tana Toraja	50.33	283	P	P	10 53 13.7 +8.6
TWSI	Taliwang, Sumb	50.99	275	P	P	10 53 11.8 +1.7
	comp=Z,45nm,0.9s					
JAGI	Jajag, Banyuwa	53.63	274	P	P	10 53 30.5 +0.8
	comp=Z,77nm,1.0s					
JAGI	Jajag, Banyuwa	53.63	274	eP	P	10 53 29.1 -0.6
	comp=Z,49nm,1.1s					
BBKI	Banjar Baru	54.74	280	P	P	10 53 40.2 +2.4
	comp=Z,40nm,1.0s,comp=Z,5μm					
PWJI	Pagerwojo	55.97	274	P	sP	10 54 02.4 +3.3
VNDA	Vanda	57.34	182	P	P	10 53 54.5 -0.9
	comp=Z,3.0nm,0.8s,baz=350,slow=7.5,SNR=12					
VNDA	Vanda	57.34	182	eP	P	10 53 54.6 -0.9
VNDA				pmax	pmax	
	comp=Z,11nm,1.2s					
VNDA	Vanda	57.34	182	eP	P	10 53 54.5 -0.9
	comp=Z,11nm,1.2s					
KKM	Kota Kinabalu	57.57	291	eP	P	10 53 58.1 0.0
	comp=Z,103nm,1.5s					
SBA	Scott Base	57.59	180	eP	P	10 53 57.6 +0.4
SBA				pmax	pmax	
	comp=Z,25nm,1.1s					
SBA	Scott Base	57.59	180	eP	P	10 53 57.6 +0.4
	comp=Z,25nm,1.1s					
SBUM	Sibu	59.51	286	eP	P	10 54 13.1 +1.5
	comp=Z,22nm,1.3s					
LEM	Lembang	60.28	274	P	P	10 54 23.2 +6.2
	comp=Z,34nm,0.6s,baz=71,slow=4.4,SNR=9.5					
KSM	Kuching	60.84	284	eP	P	10 54 21.1 +0.4
	comp=Z,122nm,2.0s					
CGJI	Cibinong	62.16	273	P	P	10 54 29.5 -0.1
	comp=Z,69nm,1.0s,comp=Z,3μm					
INU	Inuyama	62.85	331	eP	P	10 54 33.5 -0.2
	comp=Z,103nm,1.6s					
MJAR	Matsushiro Arr	63.33	333	P	P	10 54 36.6 -0.2
	comp=Z,13nm,1.0s,baz=168,slow=7.0,SNR=16					
MJAR	Matsushiro Arr	63.33	333	P	P	10 54 36.7 -0.2
MJAR				pmax	pmax	
	comp=Z,11nm,1.0s					
MAJO	Matsushiro	63.33	333	d iP	P	10 54 36.2 -0.7
MAJO	Matsushiro	63.33	333	eP	P	10 54 36.9 0.0
	comp=Z,52nm,1.4s					
MAT	Matsushiro	63.33	333	P	P	10 54 36.2 -0.7
MJB9	Matsu-Tunnel	63.34	333	eP	P	10 54 36.9 0.0
	comp=Z,14nm,1.4s					
TPUB	Ta-pu	63.62	311	eP	P	10 54 38.2 -0.9
	comp=Z,25nm,1.0s					
JNU	Nakatsue	64.08	325	P	P	10 54 42.1 +0.1
	comp=Z,21nm,1.0s,baz=66,slow=9.9,SNR=4.6					
JNU	Nakatsue	64.08	325	eP	P	10 54 42.1 +0.1
	comp=Z,66nm,1.3s					
ASAJ	Asahikawa	68.33	340	P	P	10 55 10.4 +1.5
	comp=Z,21nm,1.0s,baz=217,slow=11,SNR=7.7					
ASAJ	Asahikawa	68.33	340	eP	P	10 55 09.4 +0.5
	comp=Z,64nm,1.4s					
TJN	Taejon	68.43	325⇑	eP	P	10 55 09.5 -0.2
KSRS	Korea Array	68.94	326	P	P	10 55 13.3 +0.4
	comp=Z,6.9nm,1.1s,baz=145,slow=6.1,SNR=17					
KS15	Wonju Array Si	68.95	326	eP	P	10 55 14.2 +1.3
KS01	Wonju Array Si	68.98	326	eP	P	10 55 12.8 -0.3
QSPA	South Pole Qui	69.75	180	eP	P	10 55 17.3 -0.4
NJ2	Nanjing	70.43	317	eP	P	10 55 21.1 -1.1
NJ2				pmax	pmax	
	comp=Z,18nm,0.8s					
YSS	Yuzh-Sakhalins	70.83	342⇑	eP	P	10 55 24.8 +0.5
YSS				pmax	pmax	
	comp=Z,220nm,1.2s					
SKR	Severo-Kuril's	71.50	352	eP	P	10 55 28.1 -0.1
USRK	Ussuriysk Ar.	72.33	333	P	P	10 55 34.5 +1.2
	comp=Z,34nm,1.0s,baz=128,slow=4.5,SNR=28					
USRK				pP	sP	10 55 45.1 -0.9
	comp=Z,12nm,0.8s,baz=117,slow=5.5,SNR=8.7					
SKNT	Sakoikorn	73.28	296	P	P	10 55 40.1 +0.5
	comp=Z,39nm,1.1s					
DL2	Dalian	73.39	324	P	P	10 55 40.2 +0.4
DL2				S	S	11 05 06.7 -0.4
DL2				pmax	pmax	
	comp=Z,31nm,0.8s					
DL2				LR	LR	
	comp=Z,1μm,17.1s					
DL2				LR	LR	
	comp=Z,870nm,16.1s					
DL2				LR	LR	
	comp=Z,800nm,15.7s					
PET	Petropavlovsk	73.51	354	eP	P	10 55 40.2 +0.1
PET				pmax	pmax	
	comp=Z,28nm,1.5s					
MDJ	Mudanjiang	73.69	332	P	P	10 55 42.7 +1.3
MDJ				pmax	pmax	
	comp=Z,43nm,1.3s					
MDJ				pmax	pmax	
	comp=Z,1μm,13.5s					
MDJ	Mudanjiang	73.69	332	eP	P	10 55 42.7 +1.3
	comp=Z,81nm,1.3s					
PEA0	Petropavlovsk-	73.69	353	eP	P	10 55 41.7 +0.5
PEA0B	Petropavlovsk-	73.69	353	eP	P	10 55 41.4 +0.1
	comp=Z,170nm,1.6s					
PETK	Petropavlovsk-	73.69	353	P	P	10 55 42.5 +1.3
	comp=Z,15nm,0.7s,baz=137,slow=7.6,SNR=13					
PEA1	Petropavlovsk-	73.70	353	eP	P	10 55 42.5 +1.2
NONG	Nongkai	74.49	296	P	P	10 55 47.3 +0.6
	comp=Z,58nm,0.5s					
HABR	Khabarovsk	74.68	338	eP	P	10 55 45.4 -1.7
HABR				e*PP	pP	10 55 55.6 -0.7
HABR				e		10 56 00.0
HABR				e		10 58 31.7
HABR				ePPP	PPP	11 00 17.7
HABR				eS	S	11 05 18.6 -2.5
HABR				e		11 05 53.9
HABR				eSS	SS	11 10 07.0 -2.4
HABR				eSSS	SSS	11 13 29.4
HABR				pmax	pmax	
	comp=E,40nm,1.7s					
HABR				pmax	pmax	
	comp=N,51nm,2.3s					
HABR				pmax	pmax	
	comp=Z,77nm,2.3s					
HABR				MLR	MLR	
	comp=Z,1μm,17.0s					
CN2	Changchun	74.96	329	eP	P	10 55 49.5 +0.6
CN2				pmax	pmax	
	comp=Z,30nm,1.2s					
NIKH	Nikolski High	75.60	14	eP	P	10 55 51.5 -0.7
	comp=Z,206nm,0.7s					
PBKT	Sadao Pong	75.66	294	P	P	10 55 55.2 +1.8
	comp=Z,15nm,1.4s					
ENH	Enshi	75.74	310	eP	P	10 55 53.2 -0.5
	comp=Z,26nm,1.0s					
GYA	Guiyang	75.78	305	P	P	10 55 56.2 +2.0
GYA				pP	PcP	10 56 07.0 +0.3
GYA				PP	PP	10 58 48.8 +4.2
GYA				S	S	11 05 35.3 +0.7
GYA				sS	sS	11 05 52.4 +2.5
GYA				SKS	SKSac	11 05 59.2 -3.7
GYA				pmax	pmax	
	comp=Z,50nm,1.0s					
GYA				pmax	pmax	
	comp=Z,180nm,6.6s					
GYA				LR	LR	
	comp=Z,7μm,19.4s					
LOEI	Loei	75.83	295	P	P	10 55 54.5 +0.1
	comp=Z,9.4nm,2.1s,comp=Z,776nm					
KLR	Kul'dur	76.52	336	P	P	10 55 58.4 +0.8
	comp=Z,8.6nm,1.0s,baz=140,slow=6.7					
UTTA	Uttaradit	76.53	295	P	P	10 55 59.9 +1.5
	comp=Z,3.7nm,1.2s					
UNV	Unalaska Valle	76.95	15	eP	P	10 55 58.8 -1.2
	comp=Z,79nm,0.8s					
NKL	Nikolayevsk	77.00	343	eP	P	10 56 00.5 +0.3
NKL				pmax	pmax	
	comp=Z,70nm,1.3s					
MAW	Mawson	77.15	202	P	P	10 56 01.6 +0.5
	comp=Z,9.6nm,0.9s,baz=102,slow=6.7,SNR=7.8					
MAW				pP	sP	10 56 13.3 -0.4
	comp=Z,13nm,0.9s,baz=81,slow=10.0,SNR=7.3					
MAW	Mawson	77.15	202	eP	P	10 56 02.6 +1.6
MAW				e		10 56 14.1
MAW	Mawson	77.15	202	eP	P	10 56 02.4 +1.3
	comp=Z,5.5nm,1.1s					
SUKH	Sukhothai	77.21	294	P	P	10 56 06.3 +4.1
	comp=Z,4.0nm,0.9s					
BJI	Beijing	77.27	322	P	P	10 56 02.2 +0.1
BJI				pmax	pmax	
	comp=Z,10.0nm,0.9s					
LAMP	Lampang	77.67	295	P	P	10 56 06.5 +1.7
	comp=Z,15nm,0.9s					
CRAI	Chiangrai	77.80	297	P	P	10 56 06.7 +1.1
	comp=Z,93nm,1.2s					
KMI	Kunming	78.17	302	P	P	10 56 09.5 +1.8
KMI				pmax	pmax	
	comp=Z,25nm,0.9s					
CM01	Chiang Mai Arr	78.19	295	eP	P	10 56 08.5 +0.8
CM31	Chiang Mai Arr	78.22	295	eP	P	10 56 09.8 +1.9
CMAR	Chiang Mai Arr	78.22	295	P	P	10 56 08.3 +0.4
	baz=134,slow=4.2					
XAN	Xi'an	78.25	313	P	P	10 56 07.7 -0.1
XAN				pP	sP	10 56 18.6 -1.9
XAN				pmax	pmax	
	comp=Z,5.0nm,1.3s					
CMMT	Chiang Mai	78.38	295	P	P	10 56 09.9 +1.1
	comp=Z,36nm,1.1s,comp=Z,846nm					
CHTO	Chiang Mai	78.38	295	P	P	10 56 10.0 +1.2
	comp=Z,161nm,1.1s					
CHTO	Chiang Mai	78.38	295	eP	P	10 56 09.7 +0.9
CHTO				pmax	pmax	
	comp=Z,24nm,0.9s					
CHTO	Chiang Mai	78.38	295	eP	P	10 56 10.3 +1.6
	comp=Z,24nm,0.8s					
CMAI	Chiengmai2	78.79	296	P	P	10 56 12.5 +1.3
	comp=Z,20nm,1.1s					
CD2	Chengdu	80.26	308	P	P	10 56 18.7 -0.1
CD2				pmax	pmax	
	comp=Z,10.0nm,0.6s					
HHC	Hu-ho-hao-te	80.52	320	eP	P	10 56 21.5 +1.4
HHC				pmax	pmax	
	comp=Z,21nm,1.4s					
HHC				pmax	pmax	
	comp=Z,750nm,7.4s					
MA2	Magadan	80.89	351	eP	P	10 56 21.3 -0.2
LZH	Lanzhou	82.86	313	eP	P	10 56 34.2 +1.6
LZH				pP	sP	10 56 46.2 +0.8
LZH				sP	pP	10 56 52.0 +10
LZH				pmax	pmax	
	comp=Z,30nm,1.0s					
OHAK	Old Harbor	83.62	20	eP	P	10 56 35.9 +0.1
	comp=Z,105nm,1.0s					
SYO	Syowa Base	83.69	196⇑	eP	P	10 56 33.4 -2.8
SEY	Seymchan	83.92	353	P	P	10 56 37.4 +0.2
	comp=Z,13nm,1.0s,baz=149,slow=7.6,SNR=8.9					
SEY	Seymchan	83.92	353⇑	eP	P	10 56 37.6 +0.4
KDAK	Kodiak Island	84.30	20	P	P	10 56 54.2 +15
	comp=Z,56nm,1.0s,baz=202,slow=1.5,SNR=15					
KDAK	Kodiak Island	84.30	20	eP	P	10 56 40.5 +1.3
KDAK				pmax	pmax	
	comp=Z,110nm,1.1s					
KDAK	Kodiak Island	84.30	20	eP	P	10 56 40.5 +1.3
	comp=Z,110nm,1.1s					
GAMB	Gambell	85.24	9	eP	P	10 56 44.8 +1.0
	comp=Z,52nm,1.1s					
HOM	Homer	86.10	19	eP	P	10 56 48.5 +0.3
	comp=Z,120nm,1.0s					
RSO	Redoubt South	86.42	18	eP	P	10 56 48.8 -1.3
SHL	Shillong	87.16	298	eP	P	10 56 55.0 +0.5
KMRM	Mail Ridge	87.22	45	eP	P	10 56 55.4 +1.1
	comp=Z,98nm,1.0s					
ULN	Ulaanbaatar	87.25	324	d iP	P	10 56 54.2 -0.1
ULN				pmax	pmax	
	comp=Z,23nm,1.4s					
ULN	Ulaanbaatar	87.25	324	eP	P	10 56 54.3 -0.1
	comp=Z,55nm,1.5s					
GTA	Gaotai	87.28	314	eP	P	10 56 55.6 +0.9
GTA				pP	sP	10 57 06.4 -1.1
GTA				sP	pP	10 57 10.4 +6.3
GTA				pmax	pmax	
	comp=Z,6.0nm,1.1s					
PKM	Mcpherson Peak	87.44	51	P	P	10 56 56.1 +0.4
	baz=243					
SMMC	Simmler	87.50	51	P	P	10 56 56.0 +0.3
	baz=243					
KHMM	Horse Mountain	87.52	45	eP	P	10 56 56.5 +0.6
	comp=Z,101nm,1.1s					
TT01	Tatalina	87.55	15	eP	P	10 56 54.9 -0.4
TTA	Tatalina	87.57	15	eP	P	10 56 54.5 -0.9
TTA				pmax	pmax	
	comp=Z,13nm,1.2s					
TTA	Tatalina	87.57	15	eP	P	10 56 54.8 -0.6
	comp=Z,13nm,1.3s					
SONA1	Songino Array	87.60	323	eP	P	10 56 56.6 +0.6
YAK	Yakutsk	87.65	343	P	P	10 56 56.0 +0.3
	comp=Z,13nm,0.3s,baz=218,slow=0.5,SNR=6.4					
YAK	Yakutsk	87.65	343	eP	P	10 56 55.6 -0.1
YAK				pmax	pmax	
	comp=Z,25nm,0.9s					
YAK				pmax	pmax	
	comp=E,6.0nm,1.3s					
YAK				pmax	pmax	
	comp=N,12nm,1.5s					
YAK	Yakutsk	87.65	343	eP	P	10 56 56.0 +0.3
	comp=N,180nm,1.8s					
RC01	Rabbit Creek A	87.81	19	eP	P	10 56 55.8 -0.7
	comp=N,30nm,1.2s					
FMP	Fort Macarthur	88.05	53	P	P	10 56 58.3 0.0
	baz=244					
SNAA	Sanae	88.06	183	d iP	P	10 56 57.1 -0.8
SNAA	Sanae	88.06	183	eP	P	10 56 56.8 -1.1
	comp=N,2μm,1.2s					
BILL	Bilibino	88.10	359⇑	iP	P	10 56 57.1 -0.7
BILL				i		10 57 06.7
BILL				pmax	pmax	
	comp=Z,48nm,1.2s					
BILL	Bilibino	88.10	359	eP	P	10 56 57.8 +0.1
	comp=Z,66nm,1.2s					
OSI	Osito Audit: C	88.12	52	P	P	10 56 59.0 +0.3
	baz=244					
L02D	Cave Junction,	88.24	44	P	P	10 56 59.7 +0.6
	baz=240,SNR=5.8					
DECC	Green Verdugo	88.25	53	P	P	10 56 59.5 +0.2
	baz=244					
N02D	Trinity Center	88.25	45	P	P	10 57 00.1 +0.9
	baz=241,SNR=27					
ARVC	Arvin	88.27	52	P	P	10 56 59.5 +0.2
	baz=244,SNR=7.3					
PASC	Pasadena Art C	88.33	53	eP	P	10 56 58.7 -1.0
	comp=Z,56nm,1.4s					
M02C	Callahan	88.36	45	P	P	10 57 00.2 +0.5
	baz=241,SNR=20					
ORV	Oroville	88.39	47	eP	P	10 56 59.8 0.0
ORV				pmax	pmax	
	comp=Z,81nm,1.3s					
ORV	Oroville	88.39	47	eP	P	10 56 59.8 0.0
	comp=Z,81nm,1.4s					
VES	Vestal, Richgr	88.40	51	P	P	10 56 59.7 -0.2
	baz=244,SNR=10					
MWC	Mount Wilson	88.44	53	eP	P	10 57 00.0 -0.4
MWC				pmax	pmax	
	comp=Z,130nm,1.6s					
MWC	Mount Wilson	88.44	53	eP	P	10 57 00.4 0.0
	comp=Z,135nm,1.6s					
CMB	Columbia Colle	88.45	48	eP	P	10 56 59.5 -0.7
CMB				pmax	pmax	
	comp=Z,68nm,1.3s					
CMB	Columbia Colle	88.45	48	eP	P	10 56 59.5 -0.7
	comp=Z,68nm,1.3s					
AFDM	Forest Hills D	88.47	47	eP	P	10 56 59.5 -0.7
	comp=Z,86nm,1.2s					
RCTC	Rector, Farmer	88.49	50	P	P	10 57 00.2 -0.2
	baz=244					
O03D	Paynes Creek	88.53	46	P	P	10 57 00.8 +0.2
	baz=242,SNR=24					
109C	Camp Elliot, M	88.59	54	P	P	10 57 00.8 0.0
	baz=245					
YBH	Yreka Blue Hor	88.61	44	eP	P	10 57 00.9 0.0
YBH				pmax	pmax	
	comp=Z,60nm,1.1s					
YBH	Yreka Blue Hor	88.61	44	eP	P	10 57 00.9 0.0
	comp=Z,60nm,1.1s					
BFSC	Mount Baldy Ra	88.75	53	P	P	10 57 01.4 -0.4
	baz=244,SNR=10					
ISA	Isabella, Lake	88.76	51	P	P	10 57 01.9 +0.2
	baz=244,SNR=6.5					
EDW2	Edwards Air Fo	88.78	52	P	P	10 57 02.0 +0.2
	baz=244,SNR=16					
SML	Sawmill	88.80	19	eP	P	10 57 01.9 +0.6
SML				pmax	pmax	
	comp=Z,14nm,1.0s					
SML	Sawmill	88.80	19	eP	P	10 57 01.9 +0.6
	comp=Z,14nm,1.0s					
MURC	Murrieta	88.82	54	P	P	10 57 01.8 -0.2
	baz=245,SNR=9.0					
BAR	Barrett	88.83	55	eP	P	10 57 02.4 +0.3
	comp=Z,72nm,1.8s					
HUMO	Hull Mountain	88.88	43	eP	P	10 57 02.0 -0.1
	comp=Z,52nm,0.9s					
CAST	Castle Rocks	88.99	17	eP	P	10 57 00.2 -1.9
	comp=Z,17nm,1.1s					
MONP2	Monument Peak	89.11	54	P	P	10 57 03.5 -0.1
	baz=245,SNR=9.7					
I03D	Drain, OR	89.16	42	P	P	10 57 03.6 +0.3
	baz=241,SNR=6.9					
M04C	Macdoel	89.21	45	P	P	10 57 03.9 +0.1
	baz=242,SNR=18					
IKP	In-Ko-Pah, Jac	89.25	55	P	P	10 57 04.4 +0.3
	baz=245,SNR=5.7					
LRMC	Laurel Mtn Rad	89.27	52	P	P	10 57 04.5 +0.3
	baz=244					
BBRC	Big Bear Solar	89.31	53	P	P	10 57 04.6 0.0
	baz=245					
WAKR	Walker	89.33	48	eP	P	10 57 04.4 -0.1
MLAC	Mammoth, Mammo	89.37	49	P	P	10 57 05.2 +0.4
	baz=244					
PFO	Pinyon Flats O	89.39	54	P	P	10 57 04.9 +0.2
	baz=245					
PFO	Pinyon Flats O	89.39	54	eP	P	10 57 04.6 -0.2
PFO				e		10 57 17.2
PFO				pmax	pmax	
	comp=Z,72nm,1.5s					
PFO	Pinyon Flats O	89.39	54	eP	P	10 57 04.6 -0.2
	comp=Z,72nm,1.5s					
TPFO	Pinon Flats	89.39	54	P	P	10 57 04.6 -0.2
	baz=245,SNR=12					
RRX	Edison Barstow	89.51	52	P	P	10 57 05.3 +0.1
	baz=245					
TIN	Tinemaha, Big	89.55	50	P	P	10 57 05.5 0.0
	baz=244					
SWSC	Sam W. Stewart	89.61	55	P	P	10 57 05.7 +0.1
	baz=246,SNR=5.7					
COR	Corvallis	89.62	42	eP	P	10 57 06.5 +1.1
COR				pmax	pmax	
	comp=Z,110nm,1.4s					
COR	Corvallis	89.62	42	eP	P	10 57 06.5 +1.1
	comp=Z,114nm,1.4s					
MPMC	Manual Prospec	89.66	51	P	P	10 57 06.1 0.0
	baz=244,SNR=28					
K04D	Chiloquin, OR	89.66	44	P	P	10 57 06.0 +0.1
	baz=242,SNR=7.0					
DAC	Darwin (Calif)	89.67	51	eP	P	10 57 05.8 -0.4
DAC				pmax	pmax	
	comp=Z,47nm,1.1s					
DAC	Darwin (Calif)	89.67	51	eP	P	10 57 05.8 -0.4
	comp=Z,47nm,1.1s					
I04A	Tendick Farm,	89.80	43	P	P	10 57 06.2 -0.1
	baz=241,SNR=13					
GSC	Goldstone, Bar	89.84	52	P	P	10 57 06.8 0.0
	baz=245,SNR=14					
GSC	Goldstone, Bar	89.84	52	eP	P	10 57 06.7 -0.1
GSC				pmax	pmax	
	comp=Z,70nm,1.5s					
GSC	Goldstone, Bar	89.84	52	eP	P	10 57 07.4 +0.6
	comp=Z,70nm,1.5s					
RND	Reindeer	89.88	18	eP	P	10 57 05.6 -0.7
RND				pmax	pmax	
	comp=Z,10.0nm,0.8s					
RND	Reindeer	89.88	18	eP	P	10 57 05.9 -0.5
	comp=Z,9.8nm,0.8s					
BELC	Belle Mtn. Jos	89.90	54	P	P	10 57 07.5 +0.3
	baz=245,SNR=18					
BOD	Bodaibo	89.94	334	eP	P	10 57 04.1 -2.5
BOD				pmax	pmax	
	comp=Z,18nm,1.4s					
G03D	McMinnville, O	89.95	41	P	P	10 57 07.5 +0.5
	baz=241					
HEC	Hector,Ludlow	89.99	53	P	P	10 57 07.4 -0.1
	baz=245,SNR=6.6					
NV01	Mina Array Sit	90.10	49	eP	P	10 57 07.3 -0.9
NVAR	Mina Array Bea	90.10	49	P	P	10 57 07.6 -0.5
	comp=Z,37nm,1.1s,baz=228,slow=7.1,SNR=81					
F03A	Sea

NV11	Mina Array Sit	90.20	49	eP		P	10 57 08.6	0.0
	comp=Z,57nm,1.1s							
K05A	Summer Lake	90.27	44	eP		P	10 57 08.6	-0.2
	comp=Z,78nm,1.1s							
MOD	Modoc Plateau	90.28	45	eP		P	10 57 08.3	-0.6
	comp=Z,55nm,1.0s							
FURC	Furnace Creek,	90.29	51	P		P	10 57 08.8	+0.1
	baz=245,SNR=27							
J05D	Fort Rock, OR	90.31	43	P		P	10 57 09.2	+0.3
	baz=242,SNR=65							
H04A	Detroit Lake	90.37	42	eP		P	10 57 07.8	-1.2
	comp=Z,161nm,1.5s							
GLA	Glamis	90.40	55	P		P	10 57 10.1	+0.7
	baz=246,SNR=16							
GLA	Glamis	90.40	55	eP		P	10 57 10.0	+0.5
GLA					pmax	pmax		
	comp=Z,86nm,1.2s							
GLA	Glamis	90.40	55	eP		P	10 57 10.0	+0.5
	comp=Z,86nm,1.2s							
E03A	Lebam	90.42	40	eP		P	10 57 08.9	-0.2
	comp=Z,149nm,1.1s							
GMRC	Granite Mounta	90.47	53	P		P	10 57 09.8	-0.1
	baz=246,SNR=15							
SHOC	Shoshone, Teco	90.48	52	P		P	10 57 09.8	+0.1
	baz=245,SNR=18							
F04D	Rainier, OR	90.53	40	P		P	10 57 10.3	+0.6
	baz=241							
TUQ	Turquoise Moun	90.55	52	P		P	10 57 10.1	-0.1
	baz=245,SNR=17							
IRM	Iron Mountain	90.61	54	P		P	10 57 10.7	+0.4
	baz=246,SNR=20							
NLWA	Neilton Lookou	90.66	39	eP		P	10 57 10.2	-0.1
	comp=Z,79nm,1.3s							
ZAK	Zakamensk	90.70	324	eP		P	10 57 08.6	-1.9
ZAK					pmax	pmax		
	comp=Z,12nm,1.5s							
I05D	Terrebonne, OR	90.74	42	P		P	10 57 11.1	+0.3
	baz=242,SNR=18							
SLBS	Sierra La Lagu	90.74	65	eP		P	10 57 11.8	+0.5
	comp=Z,38nm,1.0s							
F04A	Amboy	90.82	41	eP		P	10 57 10.7	-0.3
	comp=Z,81nm,1.0s							
LVP	Lakeview Peak	90.89	41	eP		P	10 57 10.8	-0.7
Y12C	Blythe	90.91	54	P		P	10 57 12.2	+0.4
	baz=246,SNR=13							
Y12C	Blythe	90.91	54	eP		P	10 57 11.5	-0.3
	comp=Z,61nm,1.1s							
WRH	Wood River Hil	90.92	17	eP		P	10 57 09.7	-1.3
	comp=Z,8.2nm,1.0s							
TPNV	Topopah Spring	90.94	51	P		P	10 57 12.2	+0.2
	baz=245,SNR=30							
TPNV	Topopah Spring	90.94	51	eP		P	10 57 11.2	-0.8
TPNV					pmax	pmax		
	comp=Z,55nm,1.0s							
TPNV	Topopah Spring	90.94	51	eP		P	10 57 11.2	-0.8
	comp=Z,55nm,1.0s							
LDFC	Landfair	91.01	53	eP		P	10 57 12.3	0.0
	comp=Z,82nm,1.0s							
113A	Mohawk Valley,	91.10	55	eP		P	10 57 12.7	+0.1
	comp=Z,108nm,1.7s							
CCB	Clear Creek Bu	91.13	17	eP		P	10 57 07.8	-4.2
	comp=Z,5.0nm,0.8s							
G05D	Wamic, OR	91.17	42	P		P	10 57 13.0	+0.3
	baz=242,SNR=6.9							
TLY	Talaya	91.19	326	eP		P	10 57 13.1	+0.5
TLY					pmax	pmax		
	comp=Z,17nm,1.3s							
MDM	Murphy Dome	91.25	17	eP		P	10 57 10.8	-1.8
	comp=Z,7.7nm,0.9s							
COLA	College	91.29	17	c iP		P	10 57 11.5	-1.2
COLA					pmax	pmax		
	comp=Z,8.0nm,1.1s							
COLA	College	91.29	17	eP		P	10 57 11.6	-1.1
	comp=Z,11nm,0.9s							
PDMCI	Parker Dam,Lak	91.42	54	P		P	10 57 14.4	+0.3
	baz=246,SNR=12							
ILAR	Eielson Array	91.48	18	P		P	10 57 11.8	-1.8
	comp=Z,4.4nm,0.8s,baz=234,slow=5.0,SNR=16							
ILB	Eielson Array	91.48	18	eP		P	10 57 11.7	-1.9
IL1	Eielson Array	91.48	18	eP		P	10 57 10.7	-3.0
PGC	Sidney	91.52	38	eP		P	10 57 14.3	+0.2
	comp=Z,54nm,1.0s							
214A	Organ Pipe Nat	91.53	57	P		P	10 57 14.7	0.0
	baz=247							
SHPR	Sheep Range	91.55	52	eP		P	10 57 15.0	+0.1
	comp=Z,60nm,1.4s							
LON	Longmire	91.58	40	eP		P	10 57 13.6	-1.0
LON					pmax	pmax		
	comp=Z,72nm,1.7s							
LON	Longmire	91.58	40	eP		P	10 57 13.6	-1.0
	comp=Z,72nm,1.8s							
G06A	Carlson Farm,	91.60	42	eP		P	10 57 14.6	-0.1
	comp=Z,69nm,1.7s							
WVOR	Wild Horse Val	91.63	45	eP		P	10 57 15.0	0.0
WVOR					pmax	pmax		
	comp=Z,78nm,1.3s							
WVOR	Wild Horse Val	91.63	45	eP		P	10 57 15.0	0.0
	comp=Z,78nm,1.3s							
OBSR	Observation Ro	91.65	40	eP		P	10 57 15.3	+0.1
D05A	Enumclaw	91.68	40	eP		P	10 57 15.0	0.0
	comp=Z,178nm,1.4s							
SKAG	Skagway	91.75	25	eP		P	10 57 14.9	0.0
	comp=Z,37nm,1.1s							
FMW	Mount Fremont	91.75	40	eP		P	10 57 14.9	-0.6
HSIG		91.89	60	eP		P	10 57 16.9	+0.5
	comp=Z,39nm,1.1s							
W13A	Hualapai Mount	91.94	53	eP		P	10 57 16.4	-0.4
	comp=Z,26nm,1.0s							
A04D	Lummi Island	91.99	38	P		P	10 57 17.0	+0.7
	baz=241							
R11A	Troy Canyon, C	92.00	50	P		P	10 57 16.6	-0.3
	baz=246,SNR=16							
R11A	Troy Canyon, C	92.00	50	eP		P	10 57 15.9	-1.0
	comp=Z,7.8nm,0.9s							
B05A	Bryant	92.13	39	P		P	10 57 17.6	+0.7
	baz=242							
Y14A	Wickenburg	92.15	55	eP		P	10 57 17.0	-0.6
	comp=Z,64nm,0.9s							
COLD	Coldfoot	92.51	15	eP		P	10 57 18.6	+0.3
	comp=Z,17nm,1.3s							
B06A	Marblemount	92.61	39	eP		P	10 57 19.3	+0.1
	comp=Z,15nm,0.8s							
G08A	Pilot Rock	92.68	42	eP		P	10 57 19.2	-0.6
	comp=Z,18nm,0.9s							
C06D	Leavenworth	92.68	39	P		P	10 57 20.2	+0.6
	baz=242							
E07A	Sunnyside	92.69	41	eP		P	10 57 19.7	0.0
	comp=Z,72nm,1.5s							
HAWA	Hanford	92.81	41	eP		P	10 57 20.8	+0.6
	comp=Z,50nm,1.4s							
LCMT	Little Creek M	93.16	52	eP		P	10 57 21.8	-0.5
	comp=Z,22nm,1.0s							
EGAK	Eagle	93.19	19	eP		P	10 57 20.8	-0.8
	comp=Z,13nm,0.9s							
ELK	Elko	93.22	48	eP		P	10 57 22.2	-0.4
ELK					pmax	pmax		
	comp=Z,15nm,1.3s							
ELK	Elko	93.22	48	eP		P	10 57 22.2	-0.4
	comp=Z,15nm,1.3s							
TUC	Tucson	93.25	57	P		P	10 57 22.8	+0.1
	baz=248							
TUC	Tucson	93.25	57	eP		P	10 57 22.5	-0.2
TUC					pmax	pmax		
	comp=Z,31nm,1.1s							
TUC	Tucson	93.25	57	eP		P	10 57 22.5	-0.2
	comp=Z,31nm,1.1s							
DAWY	Dawson	93.27	20	eP		P	10 57 20.8	-1.2
	comp=Z,12nm,1.1s							
PSUT	Pine Spring	93.31	50	eP		P	10 57 22.6	-0.4
	comp=Z,25nm,1.4s							
DLBC	Dease Lake	93.35	28	P		P	10 57 22.3	-0.2
	comp=Z,18nm,1.0s,baz=230,slow=6.6,SNR=8.9							
DLBC	Dease Lake	93.35	28	eP		P	10 57 22.0	-0.5
	comp=Z,30nm,1.1s							
KNB	Kanab	93.48	52	eP		P	10 57 24.0	+0.2
KNB					pmax	pmax		
	comp=Z,26nm,1.2s							
KNB	Kanab	93.48	52	eP		P	10 57 24.0	+0.2
	comp=Z,26nm,1.2s							
D08A	Wollman Farm,	93.48	41	eP		P	10 57 24.2	+0.8
	comp=Z,63nm,1.8s							
X16A	Lo Mia Camp, P	93.53	55	eP		P	10 57 24.4	+0.3
	comp=Z,27nm,1.0s							
GCAZ	Grand Canyon	93.62	53	eP		P	10 57 20.8	-3.8
U15A	North Rim	93.64	53	eP		P	10 57 25.5	+0.8
	comp=Z,22nm,1.1s							
B08A	Colville Reser	93.81	40	eP		P	10 57 24.4	-0.4
	comp=Z,15nm,1.3s							
MFID	Camas Ranch	93.91	45	eP		P	10 57 25.5	0.0
	comp=Z,14nm,0.9s							
WUAZ	Wupatki	93.99	54	P		P	10 57 26.6	+0.4
	baz=248							
WUAZ	Wupatki	93.99	54	eP		P	10 57 26.2	+0.1
	comp=Z,24nm,1.1s							
PKCU	Pink Cliffs	94.02	52	eP		P	10 57 27.7	+1.3
	comp=Z,53nm,1.7s							
F10A	Beach Ranch, E	94.07	42	eP		P	10 57 25.5	-0.7
	comp=Z,8.0nm,0.9s							
319A	Douglas	94.10	58	eP		P	10 57 27.4	+0.7
	comp=Z,38nm,1.0s							
MTPU	Mount Pierson	94.34	51	eP		P	10 57 28.6	+0.7
	comp=Z,12nm,0.9s							
MSU	Marysvale	94.52	51	eP		P	10 57 28.6	0.0
MSU	Marysvale	94.52	51	eP		P	10 57 28.6	0.0
DUG	Dugway, Tooele	94.70	49	P		P	10 57 29.2	0.0
	baz=248							
DUG	Dugway, Tooele	94.70	49	eP		P	10 57 29.3	0.0
DUG					pmax	pmax		
	comp=Z,17nm,1.6s							
DUG	Dugway, Tooele	94.70	49	eP		P	10 57 29.3	0.0
	comp=Z,17nm,1.6s							
BGU	Big Grassy Mou	94.83	48	eP		P	10 57 29.8	-0.1
	comp=Z,4.4nm,1.0s							
HLID	Hailey	94.91	45	P		P	10 57 30.2	0.0
	baz=247							
HLID	Hailey	94.91	45	eP		P	10 57 30.5	+0.3
	comp=Z,8.7nm,0.9s							
W18A	Petrified Fore	95.09	55	P		P	10 57 31.1	-0.2
	baz=249							
NEW	Newport	95.10	40	P		P	10 57 31.1	+0.3
	baz=245							
NEW	Newport	95.10	40	eP		P	10 57 30.9	+0.1
NEW					pmax	pmax		
	comp=Z,10.0nm,1.3s							
NEW	Newport	95.10	40	eP		P	10 57 30.9	+0.1
	comp=Z,9.6nm,1.4s							
NLU	North Lily Min	95.14	49	eP		P	10 57 31.4	0.0
	comp=Z,7.8nm,1.1s							
HVU	Hansel Valley	95.33	47	eP		P	10 57 31.3	-0.9
HVU					pmax	pmax		
	comp=Z,12nm,0.9s							
HVU	Hansel Valley	95.33	47	eP		P	10 57 31.3	-0.9
	comp=Z,12nm,0.9s							
MPU	Maple Canyon	95.47	49	eP		P	10 57 32.0	-0.9
	comp=Z,18nm,1.5s							
TIXI	Tiksi	95.62	348⇑	eP		P	10 57 31.4	-1.1
TIXI					pmax	pmax		
	comp=Z,7.0nm,1.4s							
JLU	Jordanelle	95.82	49	eP		P	10 57 34.2	-0.3
	comp=Z,5.9nm,0.9s							
TCUT	Toone Canyon	96.04	48	eP		P	10 57 35.5	0.0
	comp=Z,12nm,0.8s							
HWUT	Hardware Ranch	96.11	48	eP		P	10 57 35.3	-0.5
	comp=Z,4.5nm,0.8s							
BSMT	Bassoo Peak	96.36	41	eP		P	10 57 35.9	-0.9
MCMT	McKenzie Canyo	96.44	45	eP		P	10 57 37.3	0.0
PV09	Paradox Valley	96.74	52	eP		P	10 57 39.1	+0.3
PV10	Paradox Valley	96.77	52	eP		P	10 57 38.4	-0.5
DLMT	Dillon	96.81	44	eP		P	10 57 38.7	-0.1
	comp=Z,9.7nm,0.6s							
CHMT	Chamberlain Mo	96.97	43	eP		P	10 57 38.8	-0.8
PV01	Paradox Valley	97.03	52	eP		P	10 57 39.8	-0.3
REDW	Red Top Meadow	97.24	47	eP		P	10 57 40.6	-0.2
	comp=Z,16nm,1.4s							
MNTX	Cornudas Mount	97.33	59	P		P	10 57 40.9	-0.4
	baz=251							
MNTX	Cornudas Mount	97.33	59	eP		P	10 57 39.4	-1.9
	comp=Z,6.0nm,1.1s							
WMQ	Urumqi	97.37	314	eP		Pdif	10 57 42.3	+1.0
IMW	Indian Meadow	97.37	46	eP		Pdif	10 57 41.6	0.0
	comp=Z,5.2nm,0.9s							
LOHW	Long Hollow	97.50	46	eP		P	10 57 41.8	-0.3
	comp=Z,3.0nm,0.8s							
BOZ	Bozeman (W)	97.54	44	P		P	10 57 41.8	-0.3
	baz=249							
ANMO	Albuquerque	97.56	56	P		P	10 57 41.6	-0.8
	baz=251							
ANMO	Albuquerque	97.56	56⇑	eP		P	10 57 41.1	-1.4
ANMO					pmax	pmax		
	comp=Z,3.0nm,1.1s							
ANMO	Albuquerque	97.56	56	eP		P	10 57 41.8	-0.7
	comp=Z,8.4nm,1.5s							
H17A	Grant Village	97.79	46	P		Pdif	10 57 43.5	+0.1
	baz=249							
H17A	Grant Village	97.79	46	eP		Pdif	10 57 44.4	+1.0
	comp=Z,3.3nm,0.9s							
INK	Inuvik	97.80	19	P		P	10 57 41.1	-1.3
	comp=Z,8.6nm,1.2s,baz=236,slow=4.3,SNR=10							
INK	Inuvik	97.80	19	eP		P	10 57 41.3	-1.2
INK					pmax	pmax		
	comp=Z,21nm,1.4s							
INK	Inuvik	97.80	19	eP		P	10 57 41.1	-1.3
	comp=Z,21nm,1.4s							
BW06	Boulder Array	97.92	47	eP		P	10 57 43.1	-0.9
PD31	Pinedale Array	97.92	47	eP		P	10 57 42.8	-1.2
PDAR	Pinedale Array	97.92	47	P		P	10 57 42.8	-1.2
	comp=Z,1.1nm,0.8s,baz=204,slow=3.3,SNR=9.6							
O20A	White River Ci	97.95	50	eP		P	10 57 43.5	-0.7
	comp=Z,8.4nm,0.9s							
TX31	Lajitas Ar. Si	97.97	62	eP		P	10 57 44.0	-0.4
LTX	Lajitas	97.97	62	eP		P	10 57 44.0	-0.4
LTX	Lajitas	97.97	62	eP		P	10 57 44.0	-0.4
TXAR	Lajitas Array	97.97	62	P		P	10 57 44.0	-0.4
	comp=Z,1.4nm,0.8s,baz=240,slow=4.2,SNR=15							
TXAR	Lajitas Array	97.97	62	P		P	10 57 44.0	-0.4
TXAR					pmax	pmax		
	comp=Z,1.0nm,0.8s							
S22A	4UR Ranch, Cre	98.19	53	P		Pdif	10 57 45.2	-0.2
	baz=251							
SMCO	Snowmass	98.56	51	eP		P	10 57 46.9	-0.3
	comp=Z,3.3nm,0.6s							
RLMT	Red Lodge	98.92	45	P		Pdif	10 57 48.4	0.0
	baz=250							
MSTX	Muleshoe	100.14	58	P		Pdif	10 57 53.2	-0.7
	baz=252							
MSTX	Muleshoe	100.14	58	ePdif		Pdif	10 57 53.3	-0.6
MK32	Makanchi Array	101.94	316	ePdif		Pdif	10 58 02.8	+1.3
MK32				eP		PP	11 02 15.0	+1.8
MK32				ePKiKP		PKiKP	11 02 24.5	+0.3
MKAR	Makanchi Array	101.94	316	P		Pdif	10 58 02.8	+1.3
	comp=Z,0.5nm,0.6s,baz=94,slow=5.9,SNR=2.4							
MKAR				PP		PP	11 02 15.0	+1.8
	comp=Z,0.8nm,1.0s,baz=119,slow=8.9,SNR=2.7							
MKAR				PKiKP		PKiKP	11 02 24.5	+0.3
	comp=Z,1.6nm,1.0s,baz=151,slow=3.8,SNR=3.7							
MKAR				PKKP		PKKPdf	11 14 26.8	+12
	comp=Z,1.0nm,0.9s,baz=277,slow=4.8,SNR=3.9							
YKA	Yellowknife Ar	101.98	28	P		Pdif	10 58 01.2	0.0
	comp=Z,2.1nm,0.9s,baz=254,slow=4.5,SNR=12							
YKB5	Yellowknife Ar	101.98	28	ePdif		Pdif	10 57 58.2	-3.0
KURK	Kurchatov	105.31	319	ePKiKP		PKiKP	11 02 29.5	-0.7
KURBB	Kurchatov Arra	105.34	319	PKiKP		PKiKP	11 02 29.5	-0.8
	comp=Z,0.6nm,0.8s,baz=76,slow=3.7,SNR=4.3							
BVAR	Borovoye Array	110.73	320	PKiKP		PKiKP	11 02 39.5	-0.8
	comp=Z,0.9nm,0.6s,baz=64,slow=3.4,SNR=4.6							
BRVK	Borovoye	110.80	320	i PKIKP			11 02 39.0	
ARU	Arti	117.63	324	PKP		PKPdf	11 02 52.7	-0.8
	comp=Z,1.8nm,0.3s,baz=101,slow=5.2,SNR=4.0							
ARU	Arti	117.63	324	i PKIKP		PKPdf	11 02 52.6	-0.8
ARU							11 04 05.3	
ARU							11 10 02.0	
ARU					SP	SP	11 13 44.7	-2.3
ARU					SS	SS	11 20 10.2	-6.2
AKTO	Aktyubinsk	118.31	317	PKP		PKPdf	11 02 54.6	-0.3
	comp=Z,1.5nm,0.6s,baz=72,slow=9.6,SNR=4.2							
AKTO				pPKP		pPKPdf	11 03 06.7	+2.1
	comp=Z,1.0nm,0.2s,baz=8.5,slow=2.9,SNR=4.1							
SPITS	Spitsbergen Ar	120.56	354	PKP		PKPdf	11 02 57.4	-1.1
	comp=Z,13nm,1.0s,baz=104,slow=6.1,SNR=4.8							
ARA0	ARCESS Array S	125.89	345	ePKPdf		PKPdf	11 03 08.9	0.0
ARCES	ARCESS Array B	125.89	345	PKP		PKPdf	11 03 08.9	0.0
	comp=Z,12nm,0.9s,baz=13,slow=1.6,SNR=21							
ARCES	ARCESS Array B	125.89	345	PKIKP		PKPdf	11 03 09.0	0.0
ARCES					pmax	pmax		
	comp=Z,12nm,0.9s							
KLMR	Klimovskoe	126.10	332	ePKIKP		PKPdf	11 03 07.0	-2.5
KLMR					pmax	pmax		
	comp=Z,37nm,1.5s							
GNI	Garni	128.34	306⇓	i PKIKP		PKPdf	11 03 15.8	+1.1
VRH	Novokhopyorsk	128.38	320	ePKIKP		PKPdf	11 03 14.2	+0.1
VRH					pmax	pmax		
	comp=Z,20nm,1.3s							
ZEI	Tsey	128.67	309	i PKIKP		PKPdf	11 03 15.4	+0.1
ZEI					pmax	pmax		
	comp=Z,18nm,1.3s							
KBZ	Khabaz	129.25	310	PKP		PKPdf	11 03 15.6	-0.4
	comp=Z,0.8nm,0.6s,baz=161,slow=1.5,SNR=4.0							
KIV	Kislovodsk	129.37	311	ePKIKP		PKPdf	11 03 17.5	+1.1
KIV					pmax	pmax		
	comp=Z,7.0nm,1.0s							
NEY	Neytrino	129.46	310⇑	i PKIKP		PKPdf	11 03 16.3	-0.4
LPSR	Galich'ya Gora	129.59	322	ePKIKP		PKPdf	11 03 17.2	+0.8
LPSR					pmax	pmax		
	comp=Z,40nm,1.8s							
VSR	Storozhevoye	129.91	321	ePKIKP		PKPdf	11 03 16.5	-0.6
VSR					pmax	pmax		
	comp=Z,20nm,1.9s							
OBN	Obninsk	129.94	326	i PKIKP		PKPdf	11 03 17.5	+0.5
OBN					pmax	pmax		
	comp=Z,22nm,1.4s							
FIA1	FINESS Array S	131.26	337	ePKPdf		PKPdf	11 03 18.8	-0.5
FIA0	FINESS Array S	131.26	337	ePKIKP		PKPdf	11 03 17.0	-2.3
FIA0	FINESS Array S	131.26	337	ePKPdf		PKPdf	11 03 17.0	-2.3
FINES	FINESS Array B	131.26	337	PKP		PKPdf	11 03 17.0	-2.3
	comp=Z,3.2nm,0.8s,baz=1.9,slow=5.7,SNR=6.3							
FINES	FINESS Array B	131.26	337	PKIKP		PKPdf	11 03 17.0	-2.3
FINES					pmax	pmax		
	comp=Z,3.0nm,0.8s							
ANN	Anapa	132.87	313	i PKIKP		PKPdf	11 03 19.3	-3.6
ANN					pmax	pmax		
	comp=Z,31nm,1.3s							
AKASG	Malin Array Be	135.88	323	PKhKP		PKPpre	11 03 21.4	
	comp=Z,1.0nm,0.5s,baz=54,slow=1.6,SNR=4.5							
AKASG				PKP		PKPdf	11 03 26.9	-1.4
	comp=Z,4.3nm,0.8s,baz=57,slow=2.1,SNR=6.2							
KIEV	Kiev	135.89	323⇑	i PKIKP		PKPdf	11 03 28.0	-0.4
AK11	Malin Array Si	135.92	323	ePKPdf		PKPdf	11 03 28.1	-0.3
NC303	NORSAR Array S	136.06	344	ePKPdf		PKPdf	11 03 29.0	+0.6
NB2	NORSAR Subarra	136.26	344	PKPdf		PKPdf	11 03 28.8	0.0
	comp=Z,5.5nm,1.2s,baz=31,slow=1.9							
NB200	NORSAR Array S	136.26	344	ePKPdf		PKPdf	11 03 28.6	-0.2
NOA	NORSAR Array B	136.26	344	PKP		PKPdf	11 03 28.6	-0.2
	comp=Z,2.4nm,0.8s,baz=31,slow=2.0,SNR=9.5							
HFS	Hagfors	136.34	342	PKP		PKPdf	11 03 28.8	-0.1
	comp=Z,2.3nm,0.7s,baz=90,slow=1.9,SNR=4.8							
HFS				pPKP		pPKPdf	11 03 41.2	+2.6
	comp=Z,4.0nm,0.8s,baz=350,slow=4.5,SNR=4.5							
NBO02	NORSAR Array S	136.34	344	ePKPdf		PKPdf	11 03 29.1	+0.1
BR101	Keskin Array S	136.83	307	ePKPdf		PKPdf	11 03 28.3	-2.4
BRTR	Keskin Array B	136.83	307	PKP		PKPdf	11 03 28.3	-2.4
	comp=Z,2.3nm,1.1s,baz=151,slow=2.8,SNR=6.3							
BRTR	Keskin Array B	136.83	307	PKIKP		PKPdf	11 03 28.3	-2.4
BRTR					pmax	pmax		
	comp=Z,1.0nm,0.9s							
BR231	Keskin MP Arra	137.45	307	ePKPdf		PKPdf	11 03 31.6	-0.2
KWP	Kalwaria Pacla	140.02	325	ePKP		PKPdf	11 03 36.7	+0.7
KWP	Kalwaria Pacla	140.02	325	ePKIKP		PKPdf	11 03 36.7	+0.7
MLR	Muntele Rosu	140.24	318	PKP		PKPdf	11 03 35.8	-0.9
	comp=Z,0.3nm,0.3s,baz=242,slow=1.1,SNR=5.6							
MLR	Muntele Rosu	140.24	318	ePKIKP		PKPdf	11 03 36.3	-0.4
MLR	Muntele Rosu	140.24	318	ePKPdf		PKPdf	11 03 38.4	+1.6
KOLS	Kolonicke sedl	140.65	325	ePKIKP		PKPdf	11 03 38.2	+1.0
KOLS	Kolonicke sedl	140.65	325	ePKP		PKPdf	11 03 38.1	+0.9
UZH	Uzhgorod	140.81	324	ePKIKP		PKPdf	11 03 34.1	-3.3
UZH				e			11 03 40.7	
UZH				e			11 03 46.7	
STHS	Stebnicka Huta	140.92	326	ePKIKP		PKPdf	11 03 38.3	+0.6
STHS	Stebnicka Huta	140.92	326	ePKP		PKPdf	11 03 38.2	+0.6
CRVS	Cervenica-Dubn	141.10	325	ePKIKP		PKPdf	11 03 38.7	+0.7
CRVS	Cervenica-Dubn	141.10	325	ePKP		PKPdf	11 03 38.7	+0.7
NIE	Niedzica	141.41	326	ePKP		PKPdf	11 03 39.4	+0.8
NIE	Niedzica	141.41	326	ePKIKP		PKPdf	11 03 39.4	+0.8
LANS	Liptovska Anna	142.01	327	ePKIKP		PKPdf	11 03 41.1	+1.4
LANS	Liptovska Anna	142.01	327	ePKP		PKPdf	11 03 41.1	+1.4
PSZ	Piszkesteto	142.53	325	ePKIKP		PKPdf	11 03 38.2	-2.5
PSZ	Piszkesteto	142.53	325	ePKPdf		PKPdf	11 03 38.2	-2.5
KRLC	Kraliky	142.74	330	ePKP		PKPdf	11 03 41.2	+0.2
KRLC	Kraliky	142.74	330	ePKIKP		PKPdf	11 03 41.2	+0.2
VYHS	Vyhne	142.74	326	ePKIKP		PKPdf	11 03 38.5	-2.5
VYHS	Vyhne	142.74	326	ePKP		PKPdf	11 03 38.5	-2.5
VRAC	Vranov	143.35	329	PKP		PKPbc	11 03 39.5	+0.4
	comp=Z,2.4nm,0.3s,baz=331,slow=2.4,SNR=6.7							
PVCC	Panska Ves	143.44	332	ePKP		PKPdf	11 03 41.3	-0.8
PVCC	Panska Ves	143.44	332	ePKIKP		PKPdf	11 03 41.3	-0.8
BRG	Berggiesshubel	143.46	333	ePKP		PKPbc	11 03 40.0	+0.6
	comp=Z,20nm,1.2s							
BRG	Berggiesshubel	143.46	333	ePKIKP		PKPbc	11 03 40.0	+0.6
BRG					pmax	pmax		
	comp=

MEM	Membach	146.71	339	PKP	PKPbc	11 03 49.5	+0.1
STU	Stuttgart	147.06	334	*e*PKP2	PKPab	11 03 51.5	-0.5
STU	Stuttgart	147.06	334	*e*PKPbc	PKPab	11 03 51.5	-0.5
ABTA	Abfaltersbach	147.10	329	*i* PKPdf	PKPdf	11 03 48.2	-0.4
	comp=Z,18nm,0.9s,SNR=7.5						
BCLA	Clavier	147.10	340	PKP	PKPbc	11 03 50.7	+0.2
WTTA	Wattenberg	147.14	330	*i* PKPbc	PKPdf	11 03 49.2	+0.4
	comp=Z,56nm,1.5s,SNR=10						
SKDS	Skadanscina	147.16	326	*i* PKPdf	PKPbc	11 03 50.8	-0.1
MOTA	Moosalm	147.33	331	*i* PKPdf	PKPdf	11 03 49.1	0.0
	comp=Z,28nm,0.9s,SNR=12						
SNF	Seneffe	147.34	341	PKP	PKPbc	11 03 51.8	+0.6
RETA	Reutte	147.38	331	*i* pPKPdf	PKPbc	11 03 51.5	0.0
	comp=Z,32nm,1.2s,SNR=8.1						
LANF	Langenberg	147.44	336	PKP	PKPbc	11 03 51.9	+0.4
WLF	Walferdange	147.47	338	PKP	PKPab	11 03 53.0	-0.6
WLF	Walferdange	147.47	338	*e*PKIKP	PKPdf	11 03 48.4	-0.6
WLF	Walferdange	147.47	338	*e*PKPdf	PKPdf	11 03 48.4	-0.6
WLF				*e*PKPbc	PKPbc	11 03 52.5	+1.0
WLF				*e*PKPab	PKiKP	11 03 54.7	+1.0
DOU	Dourbes	147.61	340	PKP	PKPbc	11 03 51.8	-0.2
FETA	Feichten	147.74	331	*i* PKPbc	PKPdf	11 03 50.3	+0.5
	comp=Z,56nm,1.5s,SNR=9.4						
BFO	Black Forest	147.76	335	*i* PKP2	PKPbc	11 03 52.3	-0.2
BFO	Black Forest	147.76	335	*e*PKPdf	PKPbc	11 03 51.9	-0.5
BFO				*e*PKPbc	PKPab	11 03 55.8	+1.0
DAVA	Damuels	147.92	332	*i* pPKPdf	PKPbc	11 03 52.7	-0.5
	comp=Z,24nm,0.8s,SNR=7.7						
FUORN	Ofenpass-Fuorn	148.25	331	*e*PKPdf	PKPdf	11 03 51.0	+0.2
FUORN				*e*PKPbc	PKPbc	11 03 54.0	-0.2
FUORN				*e*PKPab	PKPab	11 03 57.4	+0.2
DAVOX	Davos/Dischmat	148.31	331	PKPbc	PKPbc	11 03 54.1	-0.1
	comp=Z,33nm,0.8s,baz=238,slow=1.6,SNR=29						
ECH	Echery	148.31	336	PKP	PKPbc	11 03 53.4	-0.5
MOF	Molkenrain	148.62	335	PKP	PKPbc	11 03 54.5	-0.3
TUE	Stuetta	148.78	332	*e*PKPdf	PKPdf	11 03 51.8	+0.2
TUE				*e*PKPbc	PKPbc	11 03 55.5	0.0
TUE				*e*PKPab	PKPab	11 03 58.9	-0.3
LOMF	Lomont	149.14	335	PKP	PKPbc	11 03 56.0	-0.2
TIP	Timpagrande	149.21	314	*e*PKPbc	PKPbc	11 03 55.7	-0.9
SENIN	Lac Senin/Sane	149.75	334	*e*PKPbc	PKPbc	11 03 57.8	-0.1
OG01	Vacheresse	150.03	334	PKP	PKPbc	11 03 58.7	+0.3
PLDF	La Plantade	151.51	337	PKP	PKPbc	11 04 02.4	+0.5
AGO	Saint Agoulin	151.61	338	PKP	PKPbc	11 04 01.8	-0.2
SSB	Saint Sauveur	151.75	335	PKP	PKPbc	11 04 02.1	-0.3
SSB	Saint Sauveur	151.75	335	*e*PKIKP	PKPbc	11 04 02.6	+0.2
SSB	Saint Sauveur	151.75	335	*e*PKPbc	PKPbc	11 04 02.4	0.0
PYM	Petit Puy Mans	151.92	338	PKP	PKPbc	11 04 03.8	+1.0
LBL	Lubilhac	152.28	337	PKP	PKPbc	11 04 03.8	+0.2
ES19	SONSECA Array	159.57	343	*e*PKPab	PKPab	11 04 45.2	+0.4
ESDC	Sonseca Array	159.61	343	PKPab	PKPab	11 04 45.2	+0.2
	comp=Z,0.4nm,0.3s,baz=19,slow=4.6,SNR=6.3						
TOA0	Torodi Ar. Sit	165.41	243	*e*PKPdf	PKPdf	11 04 12.3	-0.8
TOA0				*e*PKPdf	PKPdf	11 04 13.4	+0.3
TORD	Torodi Ar. Bea	165.41	243	PKP	PKPdf	11 04 12.1	-1.1
	comp=Z,4.4nm,1.0s,baz=335,slow=0.7,SNR=14						
TORD				pPKP	pPKPdf	11 04 24.1	+1.3
	comp=Z,3.1nm,1.0s,baz=324,slow=1.9,SNR=6.1						
TORD				PKPab	PKPab	11 05 10.9	-0.2
	comp=Z,1.5nm,0.7s,baz=102,slow=3.9,SNR=5.1						
TOA1	Torodi Ar. Sit	165.42	243	*e*PKPdf	PKPdf	11 04 12.1	-1.1
TOA1				*e*PKPab	PKPab	11 05 10.9	-0.3

MEX 10 10:45:51.7±0.5, 16°.30N×97°.89W, h5km, MD3.6, Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PNIG	Pinotepa	0.24	292	*i* P	Pg	10 45 56.1	-0.4
PNIG				*e*S	Sg	10 45 59.7	0.0
VHO	Vista Hermosa	1.35	55	*e*P	Pn	10 46 13.4	-4.0
VHO				*e*S	Sg	10 46 30.1	-5.0
TLIG	Tlapa	1.41	333	*e*P	Pn	10 46 15.1	-3.1
TLIG				*e*S	Sb	10 46 31.8	-5.2
MEIG	Mezcala	2.31	315	*i* P	Pn	10 46 28.3	-2.3
MEIG				*i* S	Sn	10 46 55.8	-3.6
YAIG	Yautepec	2.78	336	*e*P	Pn	10 46 33.3	-3.8
YAIG				*i* S	Sn	10 47 06.6	-4.6
ARIG	Puente Sto Nin	3.06	310	*i* P	Pn	10 46 38.0	-2.8
ARIG				*i* S	Sn	10 47 14.9	-3.0

*IDC **10** 10:50:36.7±0.8, 7°.24S×67°.65E, h0km, mb4.1/14, mb1 4.1/14, mb1mx3.9/70, mbtmp4.1/14, MS5.5/1, Ms1 5.5/1, ms1mx4.1/49, Error ellipse: s-maj=27.2km s-min=19.3km az=43.0*
*ISCJB **10** 10:50:37.7±0.9, 7°.0S±0°.2×68°.1E±0°.2, h12km, mb4.1/17, MS5.5/1, Error ellipse: s-maj=26.0km s-min=16.8km az=43.8*
*NEIC **10** 10:50:38.1±0.7, 7°.26S×67°.79E, h10km, mb4.4/2, Error ellipse: s-maj=22.3km s-min=16.8km az=38.0*

ISC 10 10:50:39.6±1.1, 7°.0S±0°.2×68°.1E±0°.2, h12km, n32, σ1§00/21, mb4.2/17, Chagos Archipelago region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08N3	Diego Garcia H	2.98	78	T	T	10 54 53.6	
	baz=244,slow=75,SNR=441						
H08N2	Diego Garcia H	2.99	78	T	T	10 54 55.3	
	baz=244,slow=75,SNR=438						
H08N1	Diego Carcia H	3.00	78	T	T	10 55 00.4	
	baz=244,slow=75,SNR=428						
H08S1	Diego Carcia H	4.43	99	T	T	10 56 27.5	
	baz=267,slow=75,SNR=20						
H08S3	Diego Garcia H	4.44	99	T	T	10 56 17.1	
	baz=267,slow=75						
H08S2	Diego Garcia H	4.45	99	T	T	10 56 25.4	
	baz=267,slow=75,SNR=18						
AKL	Akola	28.87	18	*e*P	P	10 56 37.6	-0.7
LSZ	Lusaka	39.93	255	P	P	10 58 07.8	-6.4
	7.2nm,1.0s,baz=84,slow=8.9,SNR=6.7						
MATP	Matopo	40.57	247	LR	LR	11 14 44.1	
	comp=Z,5μm,18.0s,baz=332,slow=36						
H01W3	Cape Leeuwin H	50.60	130	T	T	11 53 20.9	
	baz=291,slow=75,SNR=6.2						
H01W2	Cape Leeuwin H	50.61	130	T	T	11 53 26.4	
	baz=291,slow=75,SNR=6.4						
H01W1	Cape Leeuwin H	50.62	130	T	T	11 53 22.7	
	baz=291,slow=75,SNR=6.1						
MKAR	Makanchi Array	55.00	12	P	P	11 00 11.8	+1.0
	1.5nm,0.9s,baz=205,slow=8.0,SNR=7.1						
BRTR	Keskin Array B	56.30	328	P	P	11 00 20.8	+0.4
	2.0nm,0.9s,baz=163,slow=11,SNR=5.5						
ABKAR	Akbulak array	56.43	354	*e*P	P	11 00 21.8	+0.7
	1.8nm,0.8s						
AKTO	Aktyubinsk	57.82	352	P	P	11 00 31.8	+0.9
	3.9nm,1.0s,baz=165,slow=8.4,SNR=6.3						
KURBB	Kurchatov Arra	58.06	8	P	P	11 00 33.4	+0.9
	3.8nm,1.0s,baz=203,slow=7.0,SNR=13						
KURK	Kurchatov	58.17	8	*e*P	P	11 00 34.1	+0.8
BVAR	Borovoye Array	59.79	2	P	P	11 00 45.1	+0.6
	1.8nm,1.0s,baz=157,slow=8.0,SNR=4.4						
ZALV	Zalesovo Beam	62.31	11	P	P	11 01 01.9	+0.3
	0.4nm,0.3s,baz=218,slow=9.1,SNR=3.5						
ARU	Arti	63.65	354	P	P	11 01 10.7	+0.2
	1.2nm,0.3s,baz=153,slow=16,SNR=3.0						
MLR	Muntele Rosu	64.38	328	P	P	11 01 14.5	-1.2
	0.5nm,0.7s,baz=180,slow=12,SNR=2.5						
ASAR	Alice Springs	65.13	113	P	P	11 01 21.5	+0.6
	1.0nm,0.7s,baz=281,slow=6.1,SNR=10						
WRA	Warramunga Arr	65.39	109	P	P	11 01 23.9	+1.3
	2.1nm,0.8s,baz=279,slow=6.6,SNR=9.4						
WRAB	Tennant Creek	65.39	109	*e*P	P	11 01 20.2	-2.5
	4.3nm,0.8s						
AKASG	Malin Array Be	66.50	334	P	P	11 01 28.9	-0.1
	0.6nm,0.3s,baz=134,slow=5.7,SNR=3.2						
TORD	Torodi Ar. Bea	68.87	287	P	P	11 01 45.5	+0.7
	1.7nm,1.0s,baz=98,slow=7.0,SNR=6.0						
HFS	Hagfors	79.33	336	P	P	11 02 44.5	-0.4
	2.3nm,0.8s,baz=150,slow=3.3,SNR=4.3						
ESDC	Sonseca Array	80.80	312	P	P	11 02 52.8	-0.7
	0.2nm,0.3s,baz=82,slow=4.1,SNR=5.1						
YKA	Yellowknife Ar	124.55	2	PKP	PKPdf	11 09 39.5	+0.9
	0.2nm,0.6s,baz=344,slow=2.3,SNR=5.3						
NVAR	Mina Array Bea	148.15	9	PKPbc	PKPbc	11 10 26.2	+0.1
	0.5nm,0.4s,baz=294,slow=1.5,SNR=5.6						
TXAR	Lajitas Array	156.42	342	PKPab	PKPab	11 11 02.3	-1.2
	0.8nm,0.9s,baz=28,slow=3.0,SNR=5.6						

CASC 10 10:51:24.6±13.0, 12°.03N×87°.92W, h39km±999km, MD3.5, ML3.1, Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CSGN	Cosiguina Volc	1.01	20	*e*P	Pn	10 51 58.9	+17
CSGN				*e*S	Sn	10 52 16.6	+21
TELN	Telica	1.21	61	*e*P	Pn	10 51 51.5	+6.4
TELN				*e*S	Sn	10 52 02.7	+2.5
CNGN	Cerro Negro	1.28	68	*e*P	Pn	10 51 49.8	+3.8
CNGN				*e*S	Sn	10 52 00.0	-1.9
CNGN				AML	AML	10 52 03.7	
	comp=N,313nm,0.2s						
MOMN	Momotombo	1.40	74	*e*P	Pn	10 51 48.8	+1.2
LCY	Lacayo	1.44	345	*e*P	Pn	10 51 54.4	+6.2
VSM	San Miguel	1.44	346	*e*P	Pn	10 51 54.8	+6.4
PACA	Pacayal	1.49	345	*e*P	Pn	10 51 54.5	+5.6
PACA				*e*S	Sn	10 52 07.2	0.0
APYN	Apoyeque	1.54	82	*e*P	Pn	10 51 49.1	-0.5
XAVN	Gruta Xavier	1.56	85	*e*P	Pn	10 51 48.8	-1.1
TISN	Laguna Tiscapa	1.61	86	*e*P	Pn	10 51 49.2	-1.4
MGAN	Managua	1.64	86	*e*P	Pn	10 51 49.3	-1.6
MGAN				*e*S	Sn	10 51 59.6	-11
LFRS	El Faro	1.94	325	*e*P	Pn	10 51 54.2	-0.9
LFU	La Fuente	2.07	326	*e*P	Pn	10 51 56.5	-0.5
COLS	Colinas	2.11	321	*e*P	Pn	10 51 56.8	-0.8
BOQS	Boqueron	2.16	322	*e*P	Pn	10 51 57.0	-1.2
BOQS				*e*S	Sn	10 52 11.7	-12

IDC 10 10:51:37.9±1.8, 20°.15S×168°.32E, h0km, mb3.8/3, mb1 4.1/4, mb1mx3.7/47, mbtmp3.8/4, ML3.6/1, Error ellipse: s-maj=77.4km s-min=29.0km az=146.0, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	2.60	222	Pn	Pn	10 52 19.3	-1.9
	12nm,0.3s,baz=119,slow=19,SNR=3.3						
DZM				Sn	Sn	10 52 48.0	-5.5
	20nm,0.3s,baz=162,slow=20,SNR=3.5						
WRA	Warramunga Arr	31.89	264	P	P	10 58 05.4	+0.2
	0.2nm,0.4s,baz=90,slow=8.4,SNR=3.2						
ASAR	Alice Springs	32.08	257	P	Pn	10 58 07.5	+0.6
	2.0nm,0.7s,baz=84,slow=8.9,SNR=5.7						
NVAR	Mina Array Bea	90.05	49	P	P	11 04 39.8	-0.1
	0.6nm,0.6s,baz=229,slow=8.2,SNR=4.5						
DAVOX	Davos/Dischmat	148.13	331	PKPbc	PKPbc	11 11 25.2	-0.6
	3.5nm,0.8s,baz=18,slow=3.2,SNR=4.3						

*ISK **10** 10:54:53.7, 40°.96N×40°.65E, h19km, MD2.6*
*DDA **10** 10:54:57.4, 41°.00N×40°.27E, h7km, Md2.7*
*CSEM **10** 10:54:58.0±0.6, 40°.93N×40°.33E, h2km, MD2.6, Error ellipse: s-maj=15.9km s-min=9.2km az=160.0*

ISC 10 10:54:57.1±1.3, 40°.95N±0°.05×40°.34E±0°.04, h3km±13km, n16, σ0§61/24, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KTUT	Trabzon	0.43	275	PG	Pb	10 55 07.3	-0.1
KTUT	Trabzon	0.43	275	*i* Pg	Pb	10 55 07.3	-0.1
BAYT	Ayd¯–ntepe-Bay	0.57	195	*e*PG	Pg	10 55 08.1	+0.1
BAYT				*e*SG	Sb	10 55 17.4	-1.0
BAYT	Ayd¯–ntepe-Bay	0.57	195	*e*Pg	Pg	10 55 08.1	+0.1
BAYT				*e*Sg	Sb	10 55 17.5	-1.0
GUMT	Gumushane	0.81	234	*e*PG	Pb	10 55 13.4	-0.6
GUMT	Gumushane	0.81	234	*e*Pg	Pb	10 55 13.4	-0.6
DBAD	Bademkaya	1.03	86	*i* P	Pn	10 55 18.9	+0.4
DBAD				*i* S	Sn	10 55 33.1	-0.5
DBOC	Borcka	1.08	68	*i* P	Pg	10 55 17.7	-0.1
DBOC				*i* S	Sg	10 55 31.2	-0.5
KELT	Kelkit	1.15	226	*i* P	Pb	10 55 19.8	+0.1
KELT				*i* S	Sg	10 55 34.3	+0.4
DAGI	Agillar	1.20	83	*i* P	Pn	10 55 21.9	+1.0
DAGI				*i* S	Sn	10 55 38.1	+0.3
ESPY	Espiye-Giresun	1.22	269	*e*PN	Pg	10 55 20.0	-0.4
ESPY	Espiye-Giresun	1.22	269	*e*Pn	Pg	10 55 20.0	-0.4
ARTV	Artvin	1.23	78	*i* P	Pn	10 55 21.7	+0.4
ARTV				*i* S	Sn	10 55 39.3	+0.8
SUSE	Susehri	1.79	246	P	Pg	10 55 31.1	-0.2
SUSE				S	Sg	10 55 55.3	+0.9
SUSE	Susehri	1.79	246	*i* P	Pg	10 55 31.1	-0.2
SUSE				*i* S	Sg	10 55 55.3	+0.9
BNGB	Bing¯¶l	1.97	172	*e*PN	Pn	10 55 26.8	-4.7

JMA 10 10:57:37.1±0.1, 37°.09N×141°.29E, h30km±1km, M2.2, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.39	272	P	Pb	10 57 45.7	-0.2
ONAJ				S	Sb	10 57 51.6	-0.3
JFK	Kawauchi	0.43	310	P	Pb	10 57 46.1	-0.4
JFK				S	Sb	10 57 52.5	-0.4
JHO	Hitachi	0.75	231	P	Pn	10 57 51.3	-0.4
JMM	Marumori	0.87	333	P	Pn	10 57 52.8	-0.5
JMM				*e*S	Sn	10 58 04.5	-0.5
JFT	Otama	0.87	300	P	Pb	10 57 53.7	0.0
JFT				S	Sb	10 58 05.4	+0.3

*IDC **10** 10:57:59.8±0.8, 37°.53N×143°.67E, h0km, mb3.8/13, mb1 3.9/15, mb1mx3.8/66, mbtmp3.7/15, ML3.5/2, Error ellipse: s-maj=21.0km s-min=17.2km az=118.0*
*JMA **10** 10:58:01.5±0.3, 37°.83N×143°.44E, h16km, M3.6*
*NEIC **10** 10:58:01.6±0.5, 37°.63N×143°.67E, h10km, mb4.4/7, Error ellipse: s-maj=10.9km s-min=7.6km az=125.0*
*ISCJB **10** 10:58:03.4±0.4, 37°.71N±0°.03×143°.44E±0°.04, h33km, mb3.9/20, Error ellipse: s-maj=5.0km s-min=4.7km az=158.0*

ISC 10 10:58:05.7±0.7, 37°.71N±0°.05×143°.47E±0°.07, h35km, n49, σ2§20/54, mb3.8/20, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	1.83	295	*e*S	Sn	10 58 54.6	-1.9
OFUJ	Ofunato	1.97	315	*e*S	Sn	10 58 57.3	-2.6
JFK	Kawauchi	2.09	261	*e*S	Sn	10 59 01.9	-1.1
JMM	Marumori	2.12	275	P	Pn	10 58 36.7	-1.9
JMM				S	Sn	10 59 01.8	-2.0
JMK	Ichinoseki	2.16	306	S	Sn	10 59 02.7	-1.9
JOU	Okura	2.31	287	P	Pn	10 58 39.8	-1.4
JOM	Ohasama	2.45	317	P	Pn	10 58 40.5	-2.6
JOM				*e*S	Sn	10 59 09.7	-2.1
JFT	Otama	2.49	267	P	Pn	10 58 43.4	-0.3
JFT				S	Sn	10 59 12.5	-0.4
JYK	Kaneyama	2.73	297	P	Pn	10 58 45.3	-1.6
JRG	Rokugo	2.79	308	P	Pn	10 58 45.0	-2.8
JANG	Nango	3.06	331	P	Pn	10 58 49.2	-2.4
JANG				S	Sn	10 59 25.0	-2.0
ERM	Erimo	4.30	357	*e*Pn	Pn	10 59 09.2	+0.6
ERM				*e*Sn	Sn	10 59 54.2	-3.4
MJAR	Matsushiro Arr	4.36	256	Pn	Pn	10 59 09.7	+0.3
	6.6nm,0.3s,baz=89,slow=15,SNR=48						
MAJO	Matsushiro	4.36	256	*e*Pn	Pn	10 59 10.3	+0.8
MAJO				*e*Sn	Sn	10 59 56.9	-2.2
MAT	Matsushiro	4.36	256	P	Pn	10 59 09.6	+0.2
MAT				*e*S	Sn	10 59 53.1	-6.0
JHJ2	Mitsune	5.47	214	*e*Pn	Pn	10 59 23.8	-0.9
JHJ2				*e*Sn	Sn	11 00 24.8	-1.5
JHJ	Hachijo jima 2	5.48	214	Sn	Sn	11 00 21.5	-5.1
	10nm,0.3s,baz=44,slow=18,SNR=2.8						
ASAJ	Asahikawa	6.43	354	Pn	Pn	10 59 34.9	-2.9
	2.5nm,0.3s,baz=188,slow=8.2,SNR=14						
ASAJ				Sn	Sn	11 00 43.9	-6.1
	baz=190,slow=12,SNR=2.8						
ASAJ	Asahikawa	6.43	354	*e*Pn	Pn	10 59 35.6	-2.3
ASAJ				*e*Sn	Sn	11 00 50.5	+0.5
USRK	Ussuriysk Ar.	10.83	310	Pn	Pn	11 00 41.6	+3.5
	0.2nm,0.3s,baz=105,slow=17,SNR=4.0						
KSRS	Korea Array	12.34	274	Pn	Pn	11 01 01.1	+2.3
	0.1nm,0.3s,baz=80,slow=16,SNR=4.1						
KSAR	Wonju Array Be	12.37	274	Pn	Pn	11 01 01.1	+1.9
SEY	Seymchan	25.83	9	P	P	11 03 34.4	+1.0
	2.1nm,0.9s,baz=135,slow=20,SNR=2.9						
H11N2	WAKE ISLAND Hy 27.14 125			T	T	11 32 00.1	
	baz=317,slow=74,SNR=30						
H11N1	WAKE ISLAND Hy 27.15 125			T	T	11 32 01.7	
	baz=317,slow=74,SNR=18						
H11N3	WAKE ISLAND Hy 27.16 125			T	T	11 32 02.4	
	baz=317,slow=74,SNR=29						
H11S1	WAKE ISLAND Hy 27.90 127			T	T	11 32 59.5	
	baz=319,slow=76,SNR=9.9						
H11S3	WAKE ISLAND Hy 27.91 127			T	T	11 32 59.6	
	baz=319,slow=76,SNR=8.8						
H11S2	WAKE ISLAND Hy 27.92 127			T	T	11 33 02.5	
	baz=319,slow=76,SNR=11						
ENH	Enshi	29.02	265	*e*P	P	11 04 04.3	+1.9
	15nm,1.1s						
ZALV	Zalesovo Beam	42.67	312	P	P	11 06 00.7	+2.0
	1.1nm,0.6s,baz=104,slow=11,SNR=3.9						
ZALV				PcP	PcP	11 07 52.6	+2.5
	0.8nm,0.5s,baz=90,slow=3.0,SNR=2.7						
MKAR	Makanchi Array	45.15	302	P	P	11 06 19.8	+1.1
	1.1nm,0.8s,baz=86,slow=10.0,SNR=5.8						
KURK	Kurchatov	46.80	308	*e*P	P	11 06 31.0	-0.7
	3.6nm,0.6s						
KURBB	Kurchatov Arra	46.88	308	P	P	11 06 31.6	-0.7
	2.4nm,0.8s,baz=81,slow=8.0,SNR=12						
ILAR	Eielson Array	48.05	33	P	P	11 06 40.1	-1.0
	1.0nm,0.9s,baz=279,slow=7.3,SNR=7.0						
TKM2	Tokmak 2	50.75	299	*e*P	P	11 07 02.8	+0.5
	5.2nm,1.2s						
BVAR	Borovoye Array	51.33	312	P	P	11 07 05.9	-0.4
	0.6nm,0.6s,baz=91,slow=6.3,SNR=2.6						
INK	Inuvik	53.04	28	P	P	11 07 17.9	-0.8
	0.5nm,0.5s,baz=328,slow=5.7,SNR=6.1						
CTAO	Charters Tower	57.55	177	P	P	11 07 51.2	-0.5
	14nm,0.8s						
WRAB	Tennant Creek	57.98	190	*e*P	P	11 07 53.7	-1.0
	1.4nm,0.4s						
WRA	Warramunga Arr	57.98	190	P	P	11 07 52.8	-2.0
	1.0nm,0.4s,baz=9.3,slow=7.3,SNR=22						
ASAR	Alice Springs	61.71	190	P	P	11 08 18.6	-1.8
	0.3nm,0.5s,baz=3.7,slow=6.5,SNR=7.5						
YKA	Yellowknife Ar	62.40	31	P	P	11 08 26.2	+1.7
	0.1nm,0.7s,baz=302,slow=7.1,SNR=4.2						
FINES	FINESS Array B	68.97	333	P	P	11 09 06.8	0.0
	2.0nm,1.0s,baz=50,slow=13,SNR=2.7						
SUMG	Summit	70.00	1	P	P	11 09 13.5	-0.1
HLID	Hailey	72.71	48	*e*P	P	11 09 29.9	-0.3
	0.2nm,0.2s						
NOA	NORSAR Array B	74.18	338	P	P	11 09 40.7	+2.3
	0.8nm,0.8s,baz=39,slow=5.7,SNR=2.4						
PDAR	Pinedale Array	76.02	47	P	P	11 09 48.7	-0.9
	0.2nm,0.5s,baz=263,slow=3.5,SNR=3.0						
SMCO	Snowmass	79.81	48	*e*P	P	11 10 11.4	+0.5
	0.3nm,0.5s						

*IDC **10** 10:58:10.0±0.9, 37°.71N×143°.64E, h0km, mb4.2/15, mb1 4.3/18, mb1mx4.1/66, mbtmp4.1/18, ML3.4/2, MS5.1/1, Ms1 5.1/1, ms1mx3.6/58, Error ellipse: s-maj=25.2km s-min=16.6km az=156.0*
*NEIC **10** 10:58:11.6±0.3, 37°.68N×143°.64E, h10km, mb4.2/12, Error ellipse: s-maj=8.1km s-min=5.1km az=141.0*
*ISCJB **10** 10:58:12.9±0.4, 37°.69N±0°.05×143°.54E±0°.06, h33km, mb4.2/26, MS5.1/1, Error ellipse: s-maj=8.7km s-min=5.1km az=42.9*

ISC 10 10:58:15.2±0.7, 37°.72N±0°.07×143°.58E±0°.09, h35km, n39, σ1§15/43, mb4.2/26, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ERM	Erimo	4.30	356	*e*Pn	Pn	10 59 16.9	-1.2
ERM				*e*Sn	Sn	11 00 07.5	+0.5
MJAR	Matsushiro Arr	4.45	256	Pn	Pn	10 59 20.6	+0.4
	5.4nm,0.3s,baz=86,slow=15,SNR=16						
MAJO	Matsushiro	4.45	256	*e*Pn	Pn	10 59 17.9	-2.2
MAJO				*e*Sn	Sn	11 00 09.8	-1.0
JHJ2	Mitsune	5.53	215	*e*Pn	Pn	10 59 34.0	-1.0
JHJ2				*e*Sn	Sn	11 00 35.1	-2.2
ASAJ	Asahikawa	6.43	354	*e*Pn	Pn	10 59 47.4	0.0
ASAJ				*e*Sn	Sn	11 00 54.7	-4.9
KSRS	Korea Array	12.43	274	Pn	Pn	11 01 10.7	+1.2
	0.1nm,0.3s,baz=87,slow=13,SNR=9.8						
KSAR	Wonju Array Be	12.46	274	Pn	Pn	11 01 10.7	+0.7
PETK	Petropavlovsk-	18.25	28	P	P	11 02 25.6	+0.2
	baz=205,slow=11,SNR=4.1						
PET	Petropavlovsk	18.55	30	*e*P	P	11 02 28.2	-0.5
	7.6nm,0.6s						
HIA	Hailar	20.70	311	*e*P	P	11 02 52.9	+0.7
SEY	Seymchan	25.81	9	P	P	11 03 41.9	-0.8
	6.5nm,0.8s,baz=196,slow=6.7,SNR=7.9						
BILL	Bilibino	32.89	15	*e*P	P	11 04 44.9	-0.7
	6.0nm,1.3s						
ZALV	Zalesovo Beam	42.74	312	PcP	PcP	11 07 59.6	-0.2
	1.5nm,0.6s,baz=94,slow=4.5,SNR=4.1						
KURK	Kurchatov	46.87	308	*e*P	P	11 06 42.1	+0.4
	14nm,0.8s				

ellipse: s-maj=32.2km s-min=17.5km az=149.0
ISC 10 11:03:20.1±0.9,**20°.29S**±0°.1×**168°.2E**±0°.1,**h32**km,**n17,**
σ1$**24**/22,**mb4.3**/12,**Loyalty Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.45**	**221**	Pn	**Pn**	**11 03 56.4**	**-1.6**
	11nm,0.3s,baz=68,slow=9.5,SNR=14						
DZM				Sn	**Sn**	**11 04 26.0**	**-0.9**
	17nm,0.3s,baz=101,slow=22,SNR=6.7						
CTA	**Charters Tower**	**20.57**	**267**	P	**P**	**11 07 57.8**	**+1.4**
	8.4nm,1.0s,baz=86,slow=12,SNR=7.2						
CTAO	**Charters Tower**	**20.57**	**267**	*eP*	**P**	**11 07 57.0**	**+0.6**
	228nm,1.4s						
TARA	**Tarawa**	**21.93**	**13**	*eP*	**P**	**11 08 07.7**	**-3.3**
	2.7nm,0.6s						
PMG	**Port Moresby**	**22.95**	**295**	*eP*	**P**	**11 08 22.3**	**+0.4**
	3.6nm,0.7s						
STKA	**Stephens Creek**	**26.48**	**239**	P	**P**	**11 08 55.7**	**+1.2**
	6.9nm,0.8s,baz=78,slow=10,SNR=13						
STKA				pP	**sP**	**11 09 06.0**	**-1.7**
	4.7nm,0.6s,baz=91,slow=14,SNR=4.7						
WRAB	**Tennant Creek**	**31.73**	**265**	*eP*	**P**	**11 09 41.6**	**+0.2**
	3.4nm,0.9s						
WRA	**Warramunga Arr**	**31.74**	**265**	P	**P**	**11 09 40.2**	**-1.3**
	2.2nm,0.9s,baz=91,slow=8.5,SNR=12						
WRA				pP	**pP**	**11 09 50.4**	**-0.4**
	1.5nm,0.7s,baz=92,slow=8.5,SNR=5.9						
ASAR	**Alice Springs**	**31.92**	**257**	P	**P**	**11 09 42.8**	**-0.3**
	7.8nm,0.7s,baz=88,slow=8.9,SNR=58						
ASAR				pP	**pP**	**11 09 52.8**	**+0.4**
	6.6nm,0.7s,baz=80,slow=8.6,SNR=16						
FITZ	**Fitzroy Crossi**	**40.15**	**266**	*eP*	**P**	**11 10 53.9**	**+0.5**
	5.1nm,0.7s						
KAPI	**Kappang**	**49.40**	**281**	*eP*	**P**	**11 12 08.0**	**+0.8**
	12nm,1.4s						
VNDA	**Vanda**	**57.44**	**182**	P	**P**	**11 13 05.8**	**+0.5**
	1.2nm,0.9s,baz=7.4,slow=6.4,SNR=3.0						
SBA	**Scott Base**	**57.69**	**180**	*eP*	**P**	**11 13 08.6**	**+1.5**
	2.1nm,0.7s						
CHTO	**Chiang Mai**	**78.14**	**295**	*eP*	**P**	**11 15 17.6**	**+0.9**
	2.5nm,0.6s						
CMB	**Columbia Colle**	**88.55**	**48**	*eP*	**P**	**11 16 09.9**	**+0.1**
NVAR	**Mina Array Bea**	**90.20**	**49**	P	**P**	**11 16 17.8**	**0.0**
	1.1nm,0.7s,baz=229,slow=7.3,SNR=7.0						
NVAR				pP	**pP**	**11 16 28.6**	**+0.5**
	1.2nm,0.8s,baz=230,slow=5.5,SNR=4.5						
YKA	**Yellowknife Ar**	**101.99**	**28**	P	**Pdif**	**11 17 11.7**	**+1.3**
	0.2nm,0.8s,baz=302,slow=11,SNR=4.0						
YKA				pP	pP	11 17 22.0	+1.0
	0.3nm,0.8s,baz=261,slow=4.2,SNR=4.7						

*IDC **10** 11:04:00.2*±*0.9,36°.23N*×*141°.99E,h0*km*,mb3.7/8,*
mb1 3.8/12,mb1mx3.6/66,mbtmp3.8/12,ML3.9/4,Error
ellipse: s-maj=25.2km s-min=16.9km az=90.0
*ISCJB **10** 11:04:01.3*±*0.7,36°.14N*±*0°.04*×*142°.01E*±*0°.07,h23*km*,*
mb3.7/8,Error ellipse: s-maj=8.7km s-min=6.4km
az=178.4
*JMA **10** 11:04:04.6*±*0.3,36°.24N*×*141°.78E,h47*km*,M3.7*
ISC 10 11:04:02.9±0.8,**36°.12N**±0°.06×**142°.04E**±0°.09,**h23**km,**n26,**
σ1$**85**/29,**mb3.8**/8,**Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.04**	**247**	P	**Pn**	**11 04 21.3**	**-0.8**
JHO	**Hitachi**	**1.29**	**293**	P	**Pn**	**11 04 22.8**	**-2.6**
ONAJ	**Iwakimizuishiy**	**1.40**	**315**	P	**Pn**	**11 04 24.7**	**-2.4**
JFK	**Kawauchi**	**1.56**	**323**	P	**Pn**	**11 04 27.3**	**-1.9**
BSO3	**Boso 3**	**1.81**	**224**	P	**Pn**	**11 04 33.4**	**+1.0**
JFT	**Otama**	**1.96**	**316**	P	**Pn**	**11 04 33.7**	**-1.0**
JMM	**Marumori**	**2.01**	**331**	P	**Pn**	**11 04 34.2**	**-1.2**
JAG	**Ashikaga**	**2.11**	**279**	P	**Pn**	**11 04 35.1**	**-1.7**
JFY	**Yanaizu**	**2.28**	**305**	P	**Pn**	**11 04 38.4**	**-0.7**
JKT	**Katashina**	**2.34**	**287**	P	**Pn**	**11 04 39.1**	**-0.9**
JRY	**Ryogami san**	**2.55**	**269**	P	**Pn**	**11 04 41.5**	**-1.3**
MJAR	**Matsushiro Arr**	**3.12**	**279**	Pn	**Pn**	**11 04 50.0**	**-0.7**
	18nm,0.3s,baz=113,slow=8.4,SNR=92						
MAT	**Matsushiro**	**3.12**	**279**	P	**Pn**	**11 04 49.8**	**-0.9**
MAT				S	**Sn**	**11 05 25.7**	**-1.7**
JHJ	**Hachijo jima 2**	**3.52**	**213**	Pn	**Pn**	**11 04 56.8**	**+0.7**
	31nm,0.3s,baz=303,slow=23,SNR=8.2						
JHJ				Sn	**Sn**	**11 05 36.3**	**-0.8**
	83nm,0.3s,baz=273,slow=23,SNR=11						
ASAJ	**Asahikawa**	**8.00**	**3**	Pn	**Pn**	**11 05 54.9**	**-2.8**
	0.9nm,0.3s,baz=233,slow=6.9,SNR=7.0						
JCJ	**Chichijima**	**8.99**	**179**	Pn	**Pn**	**11 06 11.0**	**-0.4**
	4.9nm,0.3s,baz=350,slow=20,SNR=9.3						
JCJ				Sn	**Sn**	**11 07 46.6**	**-5.3**
	8.4nm,0.3s,baz=258,slow=22,SNR=6.5						
USRK	**Ussuriysk Ar.**	**11.14**	**319**	Pn	**Pn**	**11 06 41.8**	**+1.1**
	0.1nm,0.3s,baz=139,slow=11,SNR=2.7						
KSRS	**Korea Array**	**11.40**	**281**	Pn	**Pn**	**11 06 47.1**	**+2.9**
	0.2nm,0.3s,baz=88,slow=14,SNR=3.2						
ZALV	**Zalesovo Beam**	**42.91**	**313**	P	**P**	**11 11 59.6**	**+0.2**
	0.9nm,0.4s,baz=104,slow=6.1,SNR=3.3						
MKAR	**Makanchi Array**	**45.04**	**303**	P	**P**	**11 12 16.8**	**+0.1**
	0.8nm,0.6s,baz=82,slow=9.1,SNR=8.3						
KURBB	**Kurchatov Arra**	**46.97**	**309**	P	**P**	**11 12 31.9**	**+0.1**
	1.6nm,0.4s,baz=83,slow=7.8,SNR=4.7						
BVAR	**Borovoye Array**	**51.56**	**313**	P	**P**	**11 13 06.1**	**-0.8**
	0.5nm,0.5s,baz=80,slow=7.9,SNR=2.9						
INK	**Inuvik**	**54.97**	**27**	P	**P**	**11 13 30.9**	**-0.8**
	0.6nm,0.7s,baz=353,slow=4.8,SNR=2.6						
WRA	**Warramunga Arr**	**56.23**	**189**	P	**P**	**11 13 42.4**	**+1.2**
	0.6nm,0.9s,baz=5.3,slow=7.5,SNR=5.3						
ASAR	**Alice Springs**	**59.95**	**189**	P	**P**	**11 14 09.8**	**+2.5**
	0.2nm,0.7s,baz=21,slow=12,SNR=3.9						
YKA	**Yellowknife Ar**	**64.35**	**30**	P	**P**	**11 14 38.3**	**+2.0**
	0.2nm,0.6s,baz=280,slow=8.1,SNR=4.5						

*IDC **10** 11:09:54.7*±*0.8,20°.41S*×*168°.28E,h0*km*,mb4.4/11,*
mb1 4.6/12,mb1mx4.3/26,mbtmp4.4/12,ML4.1/1,MS4.6/1,
Ms1 4.6/1,ms1mx3.5/43,Error ellipse: s-maj=26.7km
s-min=18.2km az=133.0
*NEIC **10** 11:09:56.9*±*0.5,20°.40S*×*168°.18E,h10*km*,mb4.7/9,Error*
ellipse: s-maj=15.9km s-min=10.3km az=161.0
*ISCJB **10** 11:09:58.2*±*0.5,20°.41S*±*0°.08×168°.18E*±*0°.08,h32*km*,*
mb4.6/18,MS4.4/1,Error ellipse: s-maj=13.7km
s-min=7.9km az=141.3
ISC 10 11:10:00.0±0.6,**20°.4S**±0°.1×**168°.14E**±0°.10,**h32**km,**n27,**
σ0$**95**/28,**mb4.4**/18,**Loyalty Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.27**	**224**	Pn	**Pn**	**11 10 34.9**	**-0.6**
	44nm,0.3s,baz=201,slow=18,SNR=14						
DZM				Sn	**Sn**	**11 11 02.9**	**+0.4**
	114nm,0.3s,baz=122,slow=24,SNR=7.2						
MSVF	**Nonsavu**	**9.75**	**76**	*eP*	**Pn**	**11 12 19.5**	**+1.3**
	112nm,1.7s						
CTA	**Charters Tower**	**20.53**	**267**	P	Pn	11 14 38.3	0.0
	16nm,0.9s,baz=99,slow=12,SNR=8.6						
CTA				LR	LR	11 21 48.0	
	comp=Z,2µm,20.1s,baz=270,slow=34						
CTAO	**Charters Tower**	**20.53**	**267**	*eP*	Pn	11 14 38.3	0.0
	42nm,0.7s						
PMG	**Port Moresby**	**23.01**	**295**	P	**P**	**11 15 03.1**	**+0.7**
	3.4nm,0.6s,baz=15,slow=2.2,SNR=3.9						
PMG	**Port Moresby**	**23.01**	**295**	*eP*	**P**	**11 15 02.5**	**0.0**
	3.4nm,0.6s						
STKA	**Stephens Creek**	**26.34**	**239**	P	**P**	**11 15 34.8**	**+1.5**
	11nm,0.6s,baz=67,slow=9.8,SNR=36						
BBOO	**Buckleboo**	**31.09**	**240**	*eP*	**P**	**11 16 16.3**	**+0.7**
	8.9nm,0.7s						
WRAB	**Tennant Creek**	**31.69**	**265**	*eP*	**P**	**11 16 19.8**	**-1.1**
	2.4nm,0.5s						
WRA	**Warramunga Arr**	**31.70**	**265**	P	**P**	**11 16 19.9**	**-1.1**
	2.6nm,0.5s,baz=92,slow=8.5,SNR=64						
WRA				PcP	**PcP**	**11 19 11.3**	**-1.2**
	0.6nm,0.7s,baz=116,slow=1.8,SNR=3.9						
ASAR	**Alice Springs**	**31.85**	**258**	P	**P**	**11 16 22.2**	**-0.1**
	22nm,0.7s,baz=87,slow=9.1,SNR=136						
FITZ	**Fitzroy Crossi**	**40.11**	**266**	*eP*	**P**	**11 17 33.6**	**+0.6**
	8.5nm,0.7s						
KAPI	**Kappang**	**49.41**	**281**	*eP*	**P**	**11 18 48.3**	**+1.1**
	15nm,1.4s						
VNDA	**Vanda**	**57.22**	**182**	P	**P**	**11 19 43.5**	**-0.2**
	1.1nm,0.8s,baz=7.7,slow=11,SNR=3.8						
SBA	**Scott Base**	**57.48**	**180**	*eP*	**P**	**11 19 46.4**	**+0.9**
KULM	**Kulim**	**70.98**	**283**	*eP*	**P**	**11 21 14.8**	**-0.3**
	11nm,1.1s						
USRK	**Ussuriysk Ar.**	**72.32**	**334**	P	**P**	**11 21 23.1**	**+0.7**
	2.0nm,0.5s,baz=126,slow=4.9,SNR=5.1						

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PETK	**Petropavlovsk-**	**73.78**	**353**	P	**P**	**11 21 30.9**	**-0.1**
	1.2nm,0.5s,baz=126,slow=7.5,SNR=4.7						
MAW	**Mawson**	**76.95**	**202**	P	**P**	**11 21 49.8**	**+0.8**
	2.3nm,0.6s,baz=107,slow=8.2,SNR=6.2						
CHTO	**Chiang Mai**	**78.21**	**295**	*eP*	**P**	**11 21 58.2**	**+1.3**
	4.3nm,0.9s						
SNAA	**Sanae**	**87.94**	**183**	*eP*	**P**	**11 22 45.5**	**-0.9**
	332nm,1.1s						
HUMO	**Hull Mountain**	**89.13**	**44**	*eP*	**P**	**11 22 51.9**	**-0.5**
	10nm,0.7s						
NVAR	**Mina Array Bea**	**90.36**	**49**	P	**P**	**11 22 58.0**	**-0.5**
	1.2nm,0.7s,baz=231,slow=8.5,SNR=7.7						
ILAR	**Eielson Array**	**91.67**	**18**	P	**P**	**11 23 01.6**	**-2.0**
	0.7nm,0.9s,baz=218,slow=8.0,SNR=4.8						
YKA	**Yellowknife Ar**	**102.19**	**28**	P	**Pdif**	**11 23 51.6**	**+0.3**
	0.2nm,0.8s,baz=254,slow=4.8,SNR=3.9						
GERES	**GERESS Array B**	**145.02**	**330**	PKPbc	**PKPbc**	**11 29 33.4**	**-0.2**
	0.8nm,0.6s,baz=46,slow=5.8,SNR=5.1						
TORD	**Torodi Ar. Bea**	**165.14**	**243**	PKP	**PKPdf**	**11 30 01.5**	**-0.5**
	1.0nm,1.0s,baz=345,slow=2.7,SNR=3.9						
TORD				PKPab	**PKPab**	**11 30 57.7**	**-1.4**
	0.5nm,0.7s,baz=121,slow=5.1,SNR=2.6						

*IDC **10** 11:12:54.1*±*2.6,37°.80N*×*142°.68E,h0*km*,mb3.6/3,*
mb1 3.7/4,mb1mx3.4/42,mbtmp3.5/4,ML3.3/1,MS4.6/1,
Ms1 4.6/1,ms1mx3.5/53,Error ellipse: s-maj=65.5km
s-min=32.3km az=66.0
*ISCJB **10** 11:12:57.9*±*1.1,37°.76N*±*0°.06×142°.26E*±*0°.08,h24*km*,*
mb3.6/3,Error ellipse: s-maj=9.6km s-min=8.8km az=5.4
*JMA **10** 11:12:58.5*±*0.2,37°.72N*×*142°.17E,h20*km*±*4*km*,M3.8*
ISC 10 11:12:59.5±1.5,**37°.71N**±0°.07×**142°.11E**±0°.10,**h24**km,**n13,**
σ1$**64**/17,**mb3.8**/3,**Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.96**	**321**	P	**Pb**	**11 13 16.4**	**-1.1**
JIO				S	**Sb**	**11 13 28.6**	**-1.1**
JFK	**Kawauchi**	**1.04**	**251**	P	**Pb**	**11 13 18.5**	**-0.4**
JFK				S	**Sn**	**11 13 32.2**	**-0.2**
JMM	**Marumori**	**1.05**	**279**	P	**Pb**	**11 13 18.6**	**-0.5**
JMM				*eS*	**Sn**	**11 13 32.8**	**0.0**
ONAJ	**Iwakimizuishiy**	**1.21**	**240**	P	**Pn**	**11 13 20.8**	**-0.2**
JOU	**Okura**	**1.32**	**300**	P	**Pb**	**11 13 22.8**	**-0.8**
JFT	**Otama**	**1.42**	**263**	P	**Pb**	**11 13 24.9**	**-0.5**
JFT				S	**Sb**	**11 13 43.9**	**+0.9**
JHO	**Hitachi**	**1.65**	**229**	P	**Pn**	**11 13 26.9**	**-0.1**
MJAR	**Matsushiro Arr**	**3.33**	**251**	Pn	**Pn**	**11 13 53.4**	**+3.3**
	2.1nm,0.3s,baz=82,slow=14,SNR=12						
MAT	**Matsushiro**	**3.33**	**251**	P	**Pn**	**11 13 52.9**	**+2.8**
MAT				*eS*	**Sb**	**11 14 34.5**	**-3.4**
PETK	**Petropavlovsk-**	**18.83**	**30**	LR	LR	11 24 16.4	
	comp=Z,2µm,20.9s,baz=6.6,slow=37						
MKAR	**Makanchi Array**	**44.23**	**302**	P	**P**	**11 21 08.4**	**+1.6**
	0.4nm,0.6s,baz=88,slow=7.4,SNR=4.1						
KURBB	**Kurchatov Arra**	**46.03**	**308**	P	**P**	**11 21 20.8**	**-0.2**
	0.6nm,0.5s,baz=82,slow=7.8,SNR=4.2						
WRA	**Warramunga Arr**	**57.80**	**189**	P	**P**	**11 22 48.3**	**-0.6**
	0.5nm,0.6s,baz=6.7,slow=7.4,SNR=6.6						

IDC 10 11:14:55.0±1.8,**20°.20S**×**168°.24E,h0**km,**mb3.7**/3,
mb1 4.0/4,**mb1mx3.7**/28,**mbtmp3.7**/4,**ML3.2**/1,**Error**
ellipse: s-maj=77.0km s-min=29.1km az=148.0,Loyalty
Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.51**	**222**	Pn	Pn	11 15 36.7	-0.4
	5.0nm,0.3s,baz=52,slow=19,SNR=3.8						
WRA	**Warramunga Arr**	**31.82**	**265**	P	P	11 21 21.5	-0.2
	0.6nm,1.0s,baz=94,slow=8.4,SNR=3.0						
ASAR	**Alice Springs**	**32.00**	**257**	P	P	11 21 23.6	+0.3
	0.5nm,0.7s,baz=83,slow=9.1,SNR=6.0						
NVAR	**Mina Array Bea**	**90.14**	**49**	P	P	11 27 57.5	-0.1
	0.6nm,0.7s,baz=246,slow=7.8,SNR=3.3						

*IDC **10** 11:15:59.5*±*3.4,36°.23N*×*141°.96E,h0*km*,mb3.3/2,*
mb1 3.5/3,mb1mx3.2/41,mbtmp3.3/3,ML3.5/1,Error
ellipse: s-maj=91.3km s-min=32.9km az=53.0
*ISCJB **10** 11:16:02.0*±*1.1,36°.23N*±*0°.05×141°.81E*±*0°.09,h23*km*,*
mb3.3/2,Error ellipse: s-maj=10.5km s-min=7.1km az=9.2
*JMA **10** 11:16:02.4*±*0.2,36°.22N*×*141°.84E,h53*km*,M3.4*
ISC 10 11:16:03.1±1.5,**36°.24N**±0°.06×**141°.8E**±0°.1,**h23**km,**n15,**
σ0$**63**/19,**Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.91**	**234**	P	**Pb**	**11 16 19.6**	**-0.6**
CHOJ				*eS*	**Sn**	**11 16 32.8**	**0.0**
JHO	**Hitachi**	**1.03**	**292**	P	**Pn**	**11 16 21.4**	**-0.8**
ONAJ	**Iwakimizuishiy**	**1.16**	**318**	P	**Pn**	**11 16 23.4**	**-0.7**
ONAJ				*eS*	**Sb**	**11 16 39.0**	**-0.3**
JFK	**Kawauchi**	**1.34**	**328**	P	**Pn**	**11 16 26.0**	**-0.4**
JFT	**Otama**	**1.72**	**319**	P	**Pn**	**11 16 32.5**	**+0.8**
BSO3	**Boso 3**	**1.76**	**216**	P	**Pn**	**11 16 31.7**	**-0.2**
JMM	**Marumori**	**1.80**	**335**	P	**Pn**	**11 16 32.8**	**0.0**
JAG	**Ashikaga**	**1.88**	**276**	P	**Pn**	**11 16 33.5**	**-0.3**
JKT	**Katashina**	**2.10**	**285**	P	**Pn**	**11 16 37.7**	**+0.8**
JRY	**Ryogami san**	**2.33**	**265**	P	**Pn**	**11 16 39.8**	**-0.3**
JRY				S	**Sn**	**11 17 08.2**	**+0.2**
JOD2	**Odawara 2**	**2.38**	**247**	P	**Pn**	**11 16 41.2**	**+0.4**
MJAR	**Matsushiro Arr**	**2.89**	**277**	Pn	**Pn**	**11 16 48.6**	**+0.9**
	6.2nm,0.3s,baz=102,slow=9.0,SNR=28						
MAT	**Matsushiro**	**2.89**	**277**	P	**Pn**	**11 16 48.7**	**+1.0**
MAT				*eS*	**Sn**	**11 17 21.1**	**-0.7**
MKAR	**Makanchi Array**	**44.78**	**303**	P	**P**	**11 24 15.8**	**+0.8**
	0.2nm,0.5s,baz=101,slow=7.1,SNR=2.7						
WRA	**Warramunga Arr**	**56.31**	**188**	P	**P**	**11 25 42.1**	**0.0**
	0.3nm,0.8s,baz=4.7,slow=7.3,SNR=2.9						

*ISK **10** 11:19:31.2,41°.02N*×*35°.89E,h5*km*,MD2.7*
*ISCJB **10** 11:19:32.7*±*0.5,41°.01N*±*0°.04×35°.95E*±*0°.04,h7*km*±*5*km*,*
Error ellipse: s-maj=6.3km s-min=4.3km az=13.7
*DDA **10** 11:19:32.4,40°.99N*×*35°.91E,h6*km*,Md2.6*
*CSEM **10** 11:19:32.5*±*0.2,41°.04N*×*35°.92E,h8*km*,MD2.7,Error*
ellipse: s-maj=5.2km s-min=4.3km az=3.0
ISC 10 11:19:32.6±0.8,**41°.03N**±0°.03×**35°.94E**±0°.02,**h10**km±6km,
n30,σ0$**82**/46,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KVT	**Kavak**	**0.10**	**59**	PG	**Pg**	**11 19 34.4**	**-0.8**
KVT				*e*SG	**Sg**	**11 19 37.7**	**+0.7**
KVT	**Kavak**	**0.10**	**59**	*i* Pg	**Pg**	**11 19 34.4**	**-0.8**
KVT				*e*Sg	**Sg**	**11 19 37.7**	**+0.7**
HAVZ	**Havza**	**0.17**	**284**	P	**Pg**	**11 19 35.7**	**-0.6**
HAVZ				S	**Sg**	**11 19 40.0**	**+1.1**
HAVZ	**Havza**	**0.17**	**284**	*i* P	**Pg**	**11 19 35.7**	**-0.6**
HAVZ				*i* S	**Sg**	**11 19 40.0**	**+1.1**
SAMS	**Samsun-Alacam**	**0.38**	**30**	P	**Pg**	**11 19 40.5**	**+0.4**
SAMS				S	**Sb**	**11 19 48.0**	**+0.6**
SAMS	**Samsun-Alacam**	**0.38**	**30**	*i* P	**Pg**	**11 19 40.5**	**+0.4**
SAMS				*i* S	**Sb**	**11 19 48.0**	**+0.6**
ERBA	**Erbaa**	**0.71**	**119**	P	**Pg**	**11 19 46.0**	**-0.3**
ERBA				S	**Sb**	**11 19 57.0**	**0.0**
ERBA	**Erbaa**	**0.71**	**119**	*i* P	**Pg**	**11 19 46.0**	**-0.3**
ERBA				*i* S	**Sb**	**11 19 57.0**	**0.0**
TOKT	**Tokat**	**0.85**	**147**	*e*PG	**Pg**	**11 19 48.3**	**-0.6**
TOKT	**Tokat**	**0.85**	**147**	*e*Pg	**Pg**	**11 19 48.3**	**-0.6**
BOYT	**Boyabat**	**0.87**	**297**	P	**Pg**	**11 19 48.9**	**-0.5**
BOYT				S	**Sn**	**11 20 03.2**	**-0.7**
BOYT	**Boyabat**	**0.87**	**297**	*i* P	**Pg**	**11 19 48.9**	**-0.5**
BOYT				*i* S	**Sn**	**11 20 03.2**	**-0.7**
BYBT	**Boyabat**	**0.98**	**297**	*e*PG	**Pg**	**11 19 50.3**	**-1.3**
BYBT	**Boyabat**	**0.98**	**297**	*e*Pg	**Pg**	**11 19 50.3**	**-1.3**
COAL	**Corum-Alaca**	**1.06**	**223**	P	**Pg**	**11 19 52.2**	**-0.8**
COAL				S	**Sn**	**11 20 08.2**	**-0.4**
COAL	**Corum-Alaca**	**1.06**	**223**	*i* P	**Pg**	**11 19 52.2**	**-0.8**
COAL				*i* S	**Sn**	**11 20 08.2**	**-0.4**
SNOP	**Sinop**	**1.13**	**331**	*e*PN	**Pb**	**11 19 53.6**	**-0.6**
SNOP	**Sinop**	**1.13**	**331**	*e*Pn	**Pb**	**11 19 53.6**	**-0.6**
CORM	**Corum**	**1.31**	**230**	*e*PN	**Pn**	**11 19 57.0**	**-0.1**
CORM				*e*SN	**Sn**	**11 20 15.2**	**+0.4**
CORM	**Corum**	**1.31**	**230**	*e*Pn	**Pn**	**11 19 57.0**	**-0.1**
CORM				*e*Sn	**Sn**	**11 20 15.2**	**+0.4**
SVSK	**Karacayir**	**1.38**	**144**	*e*PN	**Pg**	**11 19 58.8**	**-0.2**
SVSK	**Karacayir**	**1.38**	**144**	*e*Pn	**Pg**	**11 19 58.8**	**-0.2**
TOS	**Tosya**	**1.45**	**271**	*e*PN	**Pb**	**11 19 59.5**	**-0.3**
TOS	**Tosya**	**1.45**	**271**	*e*Pn	**Pb**	**11 19 59.5**	**-0.3**
ORDU	**Ordu-Boztepe**	**1.45**	**91**	S	**Sn**	**11 20 17.3**	**-0.8**
ORDU	**Ordu-Boztepe**	**1.45**	**91**	*i* S	**Sn**	**11 20 17.3**	**-0.8**
YOZ	**Yozgat**	**1.47**	**199**	*e*PN	**Pb**	**11 20 00.2**	**+0.1**
YOZ	**Yozgat**	**1.47**	**199**	*e*Pn	**Pb**	**11 20 00.2**	**+0.1**
ILGA	**Ilgaz**	**1.68**	**271**	P	**Pb**	**11 20 03.5**	**-0.3**
ILGA				S	**Sg**	**11 20 29.1**	**+2.4**
ILGA	**Ilgaz**	**1.68**	**271**	*i* P	**Pb**	**11 20 03.5**	**-0.3**
ILGA				*i* S	**Sg**	**11 20 29.1**	**+2.4**

IDC 10 11:22:57.1±17.0,**18°.97S**×**170°.56E,h0**km,**mb4.0**/4,
mb1 4.2/4,**mb1mx3.8**/38,**mbtmp4.0**/4,**Error ellipse:**
s-maj=284.1km s-min=103.8km az=63.0,Vanuatu
Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**22.93**	**263**	P	P	11 28 02.8	-0.3
	1.9nm,0.5s,baz=75,slow=12,SNR=2.9						
STKA	**Stephens Creek**	**29.04**	**238**	P	P	11 28 59.4	+0.2
	2.2nm,0.6s,baz=66,slow=10.0,SNR=7.0						
WRA	**Warramunga Arr**	**34.12**	**262**	P	P	11 29 44.1	+0.1
	0.5nm,0.5s,baz=94,slow=8.4,SNR=10						
ASAR	**Alice Springs**	**34.40**	**256**	P	P	11 29 46.2	-0.2
	2.7nm,0.7s,baz=85,slow=9.0,SNR=13						

IDC 10 11:26:18.8±1.9,**20°.09S**×**168°.11E,h0**km,**mb3.9**/4,
mb1 4.1/5,**mb1mx3.7**/39,**mbtmp3.9**/5,**ML3.3**/1,**Error**
ellipse: s-maj=68.3km s-min=30.3km az=144.0,Loyalty
Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.51**	**218**	Pn	Pn	11 26 59.6	-1.4
	6.9nm,0.3s,baz=132,slow=15,SNR=8.5						
DZM				Sn	Sn	11 27 26.5	-6.0
	28nm,0.3s,baz=355,slow=22,SNR=8.3						
STKA	**Stephens Creek**	**26.50**	**238**	P	P	11 31 58.8	+0.8
	1.9nm,0.7s,baz=77,slow=11,SNR=5.2						
WRA	**Warramunga Arr**	**31.70**	**264**	P	P	11 32 44.2	-0.3
	0.5nm,0.5s,baz=91,slow=8.5,SNR=6.1						
ASAR	**Alice Springs**	**31.90**	**257**	P	P	11 32 46.2	+0.1
	0.9nm,0.5s,baz=87,slow=9.2,SNR=15						
NVAR	**Mina Array Bea**	**90.16**	**49**	P	P	11 39 21.3	-0.1
	0.6nm,0.8s,baz=232,slow=9.5,SNR=4.0						

*IDC **10** 11:29:00.1*±*0.6,37°.56N*×*143°.77E,h0*km*,mb4.0/19,*
mb1 4.2/26,mb1mx4.1/61,mbtmp4.1/26,ML3.9/6,Error
ellipse: s-maj=17.0km s-min=13.6km az=132.0
*NEIC **10** 11:29:01.3*±*0.3,37°.54N*×*143°.80E,h10*km*,mb4.4/9,Error*
ellipse: s-maj=9.2km s-min=6.2km az=135.0
*ISCJB **10** 11:29:02.7*±*0.4,37°.47N*±*0°.05×143°.68E*±*0°.06,h33*km*,*
mb4.3/35,Error ellipse: s-maj=7.9km s-min=5.1km
az=139.3
*JMA **10** 11:29:04.7*±*0.8,37°.68N*×*143°.41E,h38*km*,M3.9*
ISC 10 11:29:04.6±0.5,**37°.53N**±0°.05×**143°.71E**±0°.06,**h35**km,**n75,**
σ1$**82**/59,**mb4.2**/30,**Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFT	**Otama**	**2.68**	**271**	P	**Pn**	**11 29 44.2**	**-1.0**
JYK	**Kaneyama**	**2.98**	**299**	P	**Pn**	**11 29 47.4**	**-1.9**
JYK				*e*S	**Sn**	**11 30 19.1**	**-4.8**
JAG	**Ashikaga**	**3.58**	**253**	P	**Pn**	**11 29 57.3**	**-0.3**
JRY	**Ryogami san**	**4.14**	**250**	P	**Pn**

1.3nm,0.8s,baz=309,slow=7.6,SNR=6.6
YKA Yellowknife Ar 62.46 31 P **P 11 39 24.2 +0.4**
0.4nm,0.7s,baz=300,slow=6.5,SNR=8.2
GEYT Alibeck 65.19 300 P **P 11 39 43.2 +0.9**
1.7nm,0.5s,baz=38,slow=5.6,SNR=3.7
GEYT Alibeck 65.19 300 P pP 11 39 54.0 +1.0
4.7nm,0.8s,baz=355,slow=3.3,SNR=5.8
FINES FINESS Array B 69.22 333 P **P 11 40 07.4 0.0**
2.0nm,0.7s,baz=64,slow=8.7,SNR=6.0
FINES FINESS Array B 69.22 333 P pP 11 40 18.1 0.0
3.0nm,0.6s,baz=53,slow=9.8,SNR=7.5
SUMG Summit 70.19 1 *eP* **P 11 40 13.5 -0.2**
1.8nm,0.6s
SUMG Summit 70.19 1 *eP* pP 11 40 25.3 +0.8
4.1nm,0.8s
KIV Kislovodsk 71.95 312 *eP* pP 11 40 37.5 +2.1
21nm,0.9s
KBZ Khabaz 71.96 312 P **P 11 40 26.5 +2.1**
3.4nm,0.8s,baz=29,slow=3.9,SNR=6.1
KBZ Khabaz 71.96 312 P pP 11 40 36.8 +1.6
8.6nm,0.9s,baz=36,slow=4.6,SNR=12
HLID Hailey 72.69 48 *eP* **P 11 40 30.1 +1.1**
0.2nm,0.3s
NVAR Mina Array Bea 73.22 54 P **P 11 40 32.3 0.0**
0.5nm,0.6s,baz=265,slow=5.2,SNR=4.2
NWAO Narrogin (SRO) 74.31 203 P **P 11 40 37.7 -0.5**
21nm,1.0s,baz=327,slow=8.1,SNR=5.9
NB2 NORSAR Subarra 74.43 338 P **P 11 40 38.9 +0.2**
comp=Z,5.5nm,1.1s,baz=39,slow=5.9
NOA NORSAR Array B 74.43 338 P **P 11 40 39.0 +0.2**
comp=Z,0.7nm,0.8s,baz=38,slow=5.6,SNR=2.8
NOA NORSAR Array B 74.43 338 P pP 11 40 49.7 +0.1
comp=Z,1.5nm,0.8s,baz=38,slow=5.8,SNR=4.0
DUG Dugway, Tooele 75.64 50 *eP* **P 11 40 46.1 -0.1**
comp=Z,0.7nm,0.7s
PDAR Pinedale Array 76.01 47 P **P 11 40 49.7 +1.3**
comp=Z,0.6nm,0.6s,baz=261,slow=1.4,SNR=8.8
WUAZ Wupatki 79.41 53 *eP* **P 11 41 06.8 -0.6**
comp=Z,1.0nm,0.2s
BRTR Keskin Array B 79.88 313 P **P 11 41 11.7 +1.8**
comp=Z,0.3nm,0.4s,baz=127,slow=3.8,SNR=1.7
BRTR Keskin Array B 79.88 313 P pP 11 41 21.6 +0.8
comp=Z,1.4nm,1.0s,baz=72,slow=4.0,SNR=4.7
SCIA State Center 85.43 39 *eP* **P 11 41 37.0 -1.5**
comp=Z,58nm,0.6s
TXAR Lajitas Array 88.36 54 P **P 11 41 54.4 +1.3**
comp=Z,0.5nm,0.9s,baz=321,slow=1.8,SNR=4.9

*IDC **10** 11:29:11.8±0.9,37°.73N×143°.66E,h0km,mb4.3/18, mb1 4.4/20,mb1mx4.2/56,mbtmp4.2/20,ML3.7/2,Error ellipse: s-maj=24.9km s-min=15.9km az=162.0*
*NEIC **10** 11:29:14.5±0.5,37°.93N×143°.57E,h10km,mb4.6/9,Error ellipse: s-maj=11.5km s-min=7.4km az=140.0*
*JMA **10** 11:29:19.1±0.1,38°.77N×142°.21E,h36km±2km,M3.0*
ISC 10 11:29:12.7±2.2,38°.57N±0°.05×142°.42E±0°.07,h0km±14km, n25,σ1°.98/32,mb4.2/10,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time h m s	Res ISC
				Op	ISC		
OFUJ	**Ofunato**	**0.77**	**311**	P	**Pn**	**11 29 30.1**	**-0.8**
OFUJ				S	**Sg**	**11 29 37.6**	**0.0**
JIO	**Ouri**	**0.85**	**262**	P	**Pn**	**11 29 33.0**	**+1.1**
JIO				S	**Sb**	**11 29 42.4**	**+0.2**
JMK	**Ichinoseki**	**1.01**	**292**	P	**Pn**	**11 29 34.0**	**-0.1**
JMK				*eS*	**Sg**	**11 29 44.2**	**-1.0**
JOM	**Ohasama**	**1.25**	**316**	P	**Pg**	**11 29 37.0**	**+0.2**
JOM				S	**Sg**	**11 29 49.8**	**-3.3**
JOU	**Okura**	**1.39**	**262**	P	**Pg**	**11 29 40.7**	**+1.3**
JOU				S	**Sb**	**11 29 57.1**	**-0.8**
JTH	**Tanohata**	**1.43**	**343**	P	**Pn**	**11 29 39.8**	**-0.1**
JRG	**Rokugo**	**1.61**	**301**	P	**Pn**	**11 29 42.8**	**+0.3**
JYK	**Kaneyama**	**1.65**	**283**	P	**Pb**	**11 29 43.9**	**0.0**
ERM	**Erimo**	**3.48**	**9**	Pn	**Pb**	**11 30 16.3**	**+1.0**
MJAR	**Matsushiro Arr**	**3.91**	**240**	Pn	**Pb**	**11 30 22.8**	**+0.2**
9.0nm,0.3s,baz=91,slow=15,SNR=20							
MAJO	**Matsushiro**	**3.91**	**240**	*e*Pn	**Pb**	**11 30 22.1**	**-0.4**
ASAJ	**Asahikawa**	**5.54**	**1**	*e*Pn	**Pb**	**11 30 47.1**	**-3.2**
ASAJ				*e*Sn	**Sb**	**11 31 56.4**	**-0.8**
JHJ2	**Mitsune**	**5.84**	**202**	*e*Pn	**Pn**	**11 30 40.8**	**+0.2**
JHJ2				*e*Sn	**Sn**	**11 31 41.6**	**-6.7**
KLR	**Kul'dur**	**13.12**	**328**	Pn	**P**	**11 32 33.2**	**+2.5**
0.1nm,0.3s,baz=135,slow=16,SNR=7.7							
COLA	**College**	**47.36**	**33**	*e*P	**P**	**11 37 49.1**	**+1.1**
2.9nm,0.9s							
ILAR	**Eielson Array**	**47.77**	**33**	P	**P**	**11 37 51.7**	**+0.5**
3.6nm,0.7s,baz=264,slow=6.5,SNR=22							
BVAR	**Borovoye Array**	**50.14**	**312**	PcP	**PcP**	**11 39 31.4**	**+2.4**
0.8nm,0.5s,baz=48,slow=2.2,SNR=3.5							
INK	**Inuvik**	**52.66**	**28**	P	**P**	**11 38 29.8**	**+1.6**
1.3nm,0.6s,baz=306,slow=7.3,SNR=14							
DLBC	**Dease Lake**	**56.93**	**39**	*e*P	**P**	**11 39 01.9**	**+2.5**
4.6nm,0.8s							
RES	**Resolute Bay**	**60.91**	**15**	P	**P**	**11 39 28.5**	**+1.8**
2.2nm,0.8s,baz=309,slow=7.8,SNR=7.6							
YKA	**Yellowknife Ar**	**62.08**	**31**	P	**P**	**11 39 35.1**	**+0.3**
0.9nm,0.7s,baz=301,slow=6.6,SNR=13							
FCC	**Fort Churchill**	**72.27**	**27**	*e*P	**P**	**11 40 39.8**	**+0.3**
8.5nm,1.3s							
NVAR	**Mina Array Bea**	**73.44**	**54**	P	**P**	**11 40 45.5**	**-1.6**
1.0nm,0.8s,baz=297,slow=6.5,SNR=4.2							
PDAR	**Pinedale Array**	**76.03**	**46**	P	**P**	**11 41 00.2**	**-1.8**
1.2nm,0.7s,baz=292,slow=2.3,SNR=9.2							
TXAR	**Lajitas Array**	**88.56**	**53**	P	**P**	**11 42 05.5**	**-2.2**
0.4nm,0.7s,baz=318,slow=3.6,SNR=5.1							

*BJI **10** 11:31:45.1,20°.20S×168°.30E,h10km,mb4.9/28,mB5.5/5, Ms5.4/8,Ms7 5.1/8*
*NEIC **10** 11:31:46.0±0.2,20°.17S×168°.36E,h10km,mb5.2/67,Error ellipse: s-maj=6.2km s-min=4.8km az=147.0*
*ISCJB **10** 11:31:47.8±2.6,20°.23S±0°.05×168°.26E±0°.04,h33km±18km, mb5.0/88,MS5.0/1,Error ellipse: s-maj=8.3km s-min=6.6km az=168.1*
*MOS **10** 11:31:48.3±1.2,20°.13S×168°.28E,h33km,mb5.3/27,Error ellipse: s-maj=11.4km s-min=10.3km az=149.0*
*IDC **10** 11:31:50.0±0.6,20°.28S×168°.27E,h38km±3km,mb4.2/21, mb1 4.3/24,mb1mx4.2/41,mbtmp4.5/24,ML4.0/3,Error ellipse: s-maj=16.5km s-min=12.5km az=138.0*
ISC 10 11:31:49.2±0.4,20°.27S±0°.06×168°.33E±0°.05,h31km±2km, h30km:pP-P,n256,σ1°.25/272,mb5.1/88,9C-1D,Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time h m s	Res ISC
				Op	ISC		
DZM	**Mont Dzumac**	**2.51**	**224**	Pn	**Pn**	**11 32 25.9**	**-2.0**
17nm,0.3s,baz=13,slow=9.6,SNR=4.2							
DZM				Sn	**Sn**	**11 32 54.5**	**-3.0**
79nm,0.3s,baz=115,slow=18,SNR=8.0							
MSVF	**Nonsavu**	**9.54**	**76**	*e*P	**Pn**	**11 34 07.6**	**+3.1**
MSVF				*e*		11 35 46.7	
MSVF	**Nonsavu**	**9.54**	**76**	*e*Pn	**Pn**	**11 34 07.6**	**+3.1**
MSVF				*e*Sn	**Sn**	**11 35 46.7**	**-4.0**
HNR	**Honiara**	**13.47**	**322**	Pn	**Pn**	**11 34 56.9**	**-1.4**
2.4nm,0.3s,baz=248,slow=13,SNR=5.4							
HNR	**Honiara**	**13.47**	**322**	P	**Pn**	**11 34 57.0**	**-1.4**
HNR	**Honiara**	**13.47**	**322**	*e*P	**Pn**	**11 34 58.3**	**-0.1**
HNR	**Honiara**	**13.47**	**322**	*e*Pn	**Pn**	**11 34 58.3**	**-0.1**
EIDS	**Eidsvold**	**16.69**	**249**	*e*Pn	**Pn**	**11 35 41.4**	**+0.7**
46nm,1.3s							
ARMA	**Armidale**	**18.14**	**233**	P	**P**	**11 36 03.6**	**+4.5**
baz=18,SNR=6.4							
URZ	**Urewera**	**19.48**	**159**	P	**Pn**	**11 36 14.6**	**-0.3**
0.2nm,0.3s,baz=1.9,slow=4.7,SNR=8.3							
URZ	**Urewera**	**19.48**	**159**	*e*P	**Pn**	**11 36 16.1**	**+1.2**
229nm,1.5s							
AFI	**Afiamalu**	**20.03**	**75**	P	Pn	11 36 25.6	+3.9
32nm,0.8s,baz=202,slow=19,SNR=2.0							
AFI	**Afiamalu**	**20.03**	**75**	*e*P	Pn	11 36 25.6	+3.9
AFI				pmax	pmax		
comp=Z,120nm,1.4s							
AFI	**Afiamalu**	**20.03**	**75**	*e*P	Pn	11 36 25.6	+3.9
comp=Z,120nm,1.4s							
BKZ	**Black Stump Fm**	**20.10**	**161**	*e*P	Pn	11 36 22.0	-0.4
comp=Z,137nm,1.4s							
CTA	**Charters Tower**	**20.72**	**267**	P	**P**	**11 36 27.0**	**-0.3**
comp=Z,7.5nm,0.9s,baz=78,slow=10.0,SNR=7.5							
CTA	**Charters Tower**	**20.72**	**267**	*e*P	**P**	**11 36 27.0**	**-0.3**
CTAO	**Charters Tower**	**20.72**	**267**	*e*P	Pn	11 36 29.1	-0.6
CTAO				pmax	pmax		
comp=Z,970nm,1.4s							
CTAO	**Charters Tower**	**20.72**	**267**	*e*P	Pn	11 36 29.1	-0.7
comp=Z,970nm,1.4s							
SNZO	**South Karori**	**21.66**	**167**	*e*P	**P**	**11 36 39.1**	**+2.0**
comp=Z,70nm,1.4s							
THZ	**Tophouse**	**21.77**	**171**	*e*P	**P**	**11 36 38.9**	**+0.5**
comp=Z,82nm,1.4s							
CNB	**Canberra Magne**	**22.44**	**224**	P	**P**	**11 36 45.8**	**+0.2**
baz=22,SNR=4.6							
YNG	**Young**	**22.50**	**228**	P	**P**	**11 36 47.3**	**+1.0**
baz=22							
CAN	**Canberra**	**22.68**	**225**	P	**P**	**11 36 49.1**	**+0.9**
baz=23							
CAN	**Canberra**	**22.68**	**225**	*e*P	**P**	**11 36 50.6**	**+2.4**
CAN				pmax	pmax		
comp=Z,77nm,1.3s							
CAN	**Canberra**	**22.68**	**225**	*e*P	**P**	**11 36 50.6**	**+2.4**
comp=Z,77nm,1.3s							
PMG	**Port Moresby**	**23.11**	**295**	P	**P**	**11 36 53.2**	**+0.5**
comp=Z,9.3nm,0.9s,baz=72,slow=7.0,SNR=10							
PMG	**Port Moresby**	**23.11**	**295**	*e*P	**P**	**11 36 52.3**	**-0.4**
PMG				pmax	pmax		
comp=Z,84nm,1.2s							
PMG	**Port Moresby**	**23.11**	**295**	*e*P	**P**	**11 36 53.1**	**+0.4**
comp=Z,53nm,1.1s							
CMSA	**Cobar Meteorol**	**23.20**	**237**	P	**P**	**11 36 54.8**	**+1.2**
baz=23,SNR=12							
COEN	**Coen**	**24.83**	**281**	P	P	11 37 20.6	+12
baz=26,SNR=5.3							
STKA	**Stephens Creek**	**26.57**	**239**	P	**P**	**11 37 25.6**	**+0.9**
comp=Z,14nm,1.1s,baz=81,slow=10,SNR=8.7							
STKA	**Stephens Creek**	**26.57**	**239**	P	**P**	**11 37 25.9**	**+1.3**
baz=27,SNR=5.5							
STKA	**Stephens Creek**	**26.57**	**239**	*e*P	**P**	**11 37 25.1**	**+0.5**
STKA				pmax	pmax		
comp=Z,27nm,1.8s							
STKA	**Stephens Creek**	**26.57**	**239**	*e*P	**P**	**11 37 25.1**	**+0.5**
comp=Z,27nm,1.8s							
WB2	**Warramunga Arr**	**31.88**	**265**	*e*P	**P**	**11 38 11.9**	**0.0**
comp=Z,29nm,1.4s							
WR1	**Warramunga Arr**	**31.89**	**265**	*e*P	**P**	**11 38 10.3**	**-1.7**
WRA	**Warramunga Arr**	**31.89**	**265**	P	**P**	**11 38 10.3**	**-1.7**
comp=Z,0.8nm,0.6s,baz=94,slow=8.2,SNR=11							
WRA				pP	**pP**	**11 38 21.4**	**+0.4**
comp=Z,9.0nm,1.0s,baz=94,slow=9.0,SNR=19							
AS01	**Alice Springs**	**32.01**	**258**	*e*P	**P**	**11 38 11.7**	**-1.4**
AS31	**Alice Springs**	**32.06**	**258**	*e*P	**P**	**11 38 12.1**	**-1.4**
ASAR	**Alice Springs**	**32.06**	**258**	P	**P**	**11 38 12.1**	**-1.4**
comp=Z,3.5nm,0.8s,baz=88,slow=8.8,SNR=27							
ASAR				pP	**sP**	**11 38 24.1**	**-2.1**
comp=Z,14nm,0.9s,baz=81,slow=8.9,SNR=21							
FITZ	**Fitzroy Crossi**	**40.30**	**266**	P	**P**	**11 39 23.6**	**-0.2**
comp=Z,8.4nm,1.0s,baz=100,slow=11,SNR=4.2							
FITZ	**Fitzroy Crossi**	**40.30**	**266**	*e*P	**P**	**11 39 23.5**	**-0.4**
comp=Z,59nm,1.4s							
VNDA	**Vanda**	**57.38**	**182**	P	**P**	**11 41 34.3**	**+0.2**
comp=Z,0.9nm,0.9s,baz=330,slow=8.2,SNR=3.6							
VNDA	**Vanda**	**57.38**	**182**	*e*P	**P**	**11 41 34.3**	**+0.2**
VNDA				pmax	pmax		
comp=Z,12nm,1.4s							
VNDA	**Vanda**	**57.38**	**182**	*e*P	**P**	**11 41 34.3**	**+0.2**
comp=Z,12nm,1.4s							
KKM	**Kota Kinabalu**	**57.50**	**291**	*e*P	**P**	**11 41 36.0**	**0.0**
comp=Z,42nm,1.2s							
SBA	**Scott Base**	**57.63**	**180**	*e*P	**P**	**11 41 37.3**	**+1.4**
SBA				pmax	pmax		
comp=Z,24nm,1.2s							
SBA	**Scott Base**	**57.63**	**180**	*e*P	**P**	**11 41 37.3**	**+1.4**
comp=Z,24nm,1.2s							
SBUM	**Sibu**	**59.44**	**286**	*e*P	**P**	**11 41 50.4**	**+0.9**
comp=Z,13nm,1.2s							
KSM	**Kuching**	**60.77**	**284**	*e*P	**P**	**11 41 58.4**	**-0.3**
comp=Z,22nm,0.9s							
MJAR	**Matsushiro Arr**	**63.27**	**333**	P	**P**	**11 42 13.7**	**-1.2**
comp=Z,3.3nm,0.8s,baz=162,slow=6.6,SNR=5.7							
MJAR				pP	**pP**	**11 42 24.9**	**+0.3**
comp=Z,6.1nm,0.8s,baz=169,slow=7.1,SNR=6.7							
MAJO	**Matsushiro**	**63.27**	**333**	*e*P	**P**	**11 42 13.9**	**-1.0**
JNU	**Nakatsue**	**64.01**	**325**	P	**P**	**11 42 19.1**	**-0.9**
comp=Z,4.9nm,0.5s,baz=215,slow=9.7,SNR=2.3							
JNU				pP	**sP**	**11 42 31.1**	**-2.1**
comp=Z,21nm,1.0s,baz=132,slow=3.9,SNR=4.0							
JNU	**Nakatsue**	**64.01**	**325**	*e*P	**P**	**11 42 19.6**	**-0.3**
comp=Z,65nm,1.3s							
ASAJ	**Asahikawa**	**68.27**	**340**	P	**P**	**11 42 48.0**	**+1.0**
comp=Z,9.5nm,1.0s,baz=218,slow=18,SNR=4.1							
ASAJ				pP	**sP**	**11 42 59.2**	**-1.0**
comp=Z,15nm,0.9s,baz=227,slow=9.7,SNR=5.3							
ASAJ	**Asahikawa**	**68.27**	**340**	*e*P	**P**	**11 42 45.6**	**-1.3**
comp=Z,22nm,1.0s							
KSRS	**Korea Array**	**68.88**	**326**	P	**P**	**11 42 51.5**	**+0.6**
comp=Z,1.0nm,0.8s,baz=151,slow=7.7,SNR=5.3							
KSRS				pP	**sP**	**11 43 02.5**	**-1.6**
comp=Z,4.9nm,1.0s,baz=141,slow=6.2,SNR=10.0							
KS15	**Wonju Array Si**	**68.89**	**326**	*e*P	**P**	**11 42 51.6**	**+0.7**
KS01	**Wonju Array Si**	**68.91**	**326**	*e*P	**P**	**11 42 50.2**	**-0.9**
QSPA	**South Pole Qui**	**69.79**	**180**	*e*P	**P**	**11 42 56.4**	**0.0**
VLA	**Vladivostok**	**71.43**	**333**	*e*P	**P**	**11 43 02.9**	**-3.5**
VLA				pmax	pmax		
comp=Z,51nm,1.1s							
USRK	**Ussuriysk Ar.**	**72.26**	**333**	P	**P**	**11 43 12.3**	**+1.0**
comp=Z,6.7nm,1.0s,baz=153,slow=2.1,SNR=7.8							
USRK				pP	**sP**	**11 43 23.6**	**-1.2**
comp=Z,12nm,0.8s,baz=142,slow=4.5,SNR=14							
MDJ	**Mudanjiang**	**73.62**	**332**	P	**P**	**11 43 20.2**	**+0.7**
MDJ				pmax	pmax		
comp=Z,19nm,1.8s							
PETK	**Petropavlovsk-**	**73.65**	**353**	P	**P**	**11 43 19.7**	**+0.3**
comp=Z,5.3nm,0.9s,baz=134,slow=8.5,SNR=3.8							
PETK				pP	**sP**	**11 43 31.2**	**-1.6**
comp=Z,8.1nm,0.8s,baz=108,slow=9.5,SNR=4.3							
PEA1	**Petropavlovsk-**	**73.66**	**353**	*e*P	**P**	**11 43 19.7**	**+0.2**
CN2	**Changchun**	**74.90**	**329**	*e*P	**P**	**11 43 26.6**	**-0.3**
CN2				pmax	pmax		
comp=Z,10.0nm,1.0s							
GYA	**Guiyang**	**75.71**	**305**	P	**P**	**11 43 34.2**	**+2.1**
GYA				PP	**PP**	**11 46 26.0**	**+3.6**
GYA				S	**S**	**11 53 14.4**	**+2.4**
GYA				SKS	**SKSac**	**11 53 38.8**	**-1.7**
GYA				SS	**SS**	**11 58 08.6**	**+4.1**
GYA				pmax	pmax		
comp=Z,20nm,1.0s							
GYA				pmax	pmax		
comp=Z,140nm,5.8s							
GYA				LR	LR		
comp=Z,590nm,18.8s							
GYA				LR	LR		
comp=Z,580nm,19.6s							
GYA				LR	LR		
comp=Z,620nm,19.2s							
KLR	**Kul'dur**	**76.46**	**336**	P	**P**	**11 43 36.2**	**+0.5**
comp=Z,9.7nm,1.4s,baz=156,slow=4.9,SNR=9.6							
KLR				pP	**PcP**	**11 43 47.4**	**+0.1**
comp=Z,2.6nm,0.8s,baz=131,slow=2.6,SNR=5.8							
NKL	**Nikolayevsk**	**76.94**	**343**	*e*P	P	11 43 49.0	+11
MAW	**Mawson**	**77.16**	**202**	pP	pP	11 43 51.5	+2.2
comp=Z,5.6nm,1.0s,baz=72,slow=11,SNR=3.8							
KMI	**Kunming**	**78.09**	**302**	P	**P**	**11 43 47.6**	**+1.9**
KMI				pmax	pmax		
comp=Z,16nm,0.7s							
CM01	**Chiang Mai Arr**	**78.12**	**295**	*e*P	**P**	**11 43 46.7**	**+0.9**
XAN	**Xi'an**	**78.18**	**313**	P	P	11 43 57.1	+11
XAN				pP	sP	11 44 06.1	+6.9
XAN				pmax	pmax		
comp=Z,4.0nm,0.8s							
CHTO	**Chiang Mai**	**78.31**	**295**	*e*P	**P**	**11 43 47.6**	**+0.8**
CHTO				pmax	pmax		
comp=Z,16nm,0.9s							
CHTO	**Chiang Mai**	**78.31**	**295**	*e*P	**P**	**11 43 47.6**	**+0.8**
comp=Z,16nm,0.9s							
CD2	**Chengdu**	**80.19**	**308**	P	**P**	**11 43 57.4**	**+0.6**
CD2				pmax	pmax		
comp=Z,10.0nm,0.5s							
HHC	**Hu-ho-hao-te**	**80.45**	**320**	*e*P	**P**	**11 43 59.4**	**+1.3**
HHC				pmax	pmax		
comp=Z,24nm,1.3s							
HHC				pmax	pmax		
comp=Z,870nm,7.6s							
LZH	**Lanzhou**	**82.78**	**313**	*e*P	**P**	**11 44 14.2**	**+3.6**
LZH				pmax	pmax		
comp=Z,22nm,1.0s							
SEY	**Seymchan**	**83.88**	**353**	*e*P	**P**	**11 44 14.0**	**-1.4**
RSO	**Redoubt South**	**86.40**	**18**	*e*P	**P**	**11 44 29.9**	**+1.6**
SHL	**Shillong**	**87.08**	**298**	*e*P	**P**	**11 44 33.0**	**+0.5**
ULN	**Ulaanbaatar**	**87.18**	**324**	*e*P	**P**	**11 44 31.3**	**-1.1**
ULN				pmax	pmax		
comp=Z,9.0nm,1.4s							
ULN	**Ulaanbaatar**	**87.18**	**324**	*e*P	**P**	**11 44 32.5**	**0.0**
comp=Z,38nm,1.6s							
GTA	**Gaotai**	**87.21**	**314**	*e*P	**P**	**11 44 33.2**	**+0.4**
GTA				pP	PcP	11 44 38.2	+3.4
GTA				sP	pP	11 44 41.2	-1.5
TTA	**Tatalina**	**87.55**	**15**	*e*P	**P**	**11 44 36.6**	**+2.8**
TTA				pmax	pmax		
comp=Z,11nm,1.3s							
TTA	**Tatalina**	**87.55**	**15**	*e*P	**P**	**11 44 36.6**	**+2.8**
comp=Z,11nm,1.3s							
YAK	**Yakutsk**	**87.60**	**343**	P	**P**	**11 44 33.2**	**-0.6**
comp=Z,8.8nm,0.5s,baz=56,slow=2.2,SNR=4.1							
YAK	**Yakutsk**	**87.60**	**343**	*e*P	**P**	**11 44 33.3**	**-0.5**
YAK				pmax	pmax		
comp=Z,12nm,1.2s							
YAK				pmax	pmax		
comp=N,6.0nm,1.3s							
YAK				pmax	pmax		
comp=E,3.0nm,1.3s							
YAK	**Yakutsk**	**87.60**	**343**	*e*P	**P**	**11 44 33.9**	**+0.1**
comp=E,38nm,1.3s							
BILL	**Bilibino**	**88.06**	**359**	*i* P	**P**	**11 44 34.2**	**-1.8**
BILL				pmax	pmax		
comp=Z,8.0nm,1.2s							
BILL	**Bilibino**	**88.06**	**359**	*e*P	**P**	**11 44 34.9**	**-1.0**
comp=Z,13nm,1.1s							
SNAA	**Sanae**	**88.10**	**183**	*e*P	**P**	**11 44 35.8**	**-0.7**
SNAA	**Sanae**	**88.10**	**183**	*e*P	**P**	**11 44 35.7**	**-0.7**
comp=Z,557nm,1.1s							
L02D	**Cave Junction,**	**88.26**	**44**	P	**P**	**11 44 37.2**	**-0.3**
baz=241							
N02D	**Trinity Center**	**88.27**	**45**	P	**P**	**11 44 37.7**	**0.0**
baz=241							
M02C	**Callahan**	**88.38**	**45**	P	**P**	**11 44 38.0**	**-0.2**
baz=241							
VES	**Vestal, Richgr**	**88.42**	**51**	P	**P**	**11 44 38.0**	**-0.5**
baz=244							
CMB	**Columbia Colle**	**88.48**	**48**	*e*P	**P**	**11 44 38.2**	**-0.6**
CMB				pmax	pmax		
comp=Z,14nm,1.1s							
CMB	**Columbia Colle**	**88.48**	**48**	*e*P	**P**	**11 44 38.2**	**-0.6**
comp=Z,14nm,1.1s							
AFDM	**Forest Hills D**	**88.49**	**47**	*e*P	**P**	**11 44 38.3**	**-0.4**
comp=Z,20nm,1.1s							
O03D	**Paynes Creek**	**88.55**	**46**	P	**P**	**11 44 38.7**	**-0.4**
baz=242							
YBH	**Yreka Blue Hor**	**88.63**	**44**	P	**P**	**11 44 39.5**	**+0.1**
comp=Z,5.4nm,0.9s,baz=172,slow=3.8,SNR=6.4							
YBH	**Yreka Blue Hor**	**88.63**	**44**	*e*P	**P**	**11 44 39.5**	**+0.1**
YBH				pmax	pmax		
comp=Z,71nm,2.0s							
YBH	**Yreka Blue Hor**	**88.63**	**44**	*e*P	**P**	**11 44 39.5**	**+0.1**
comp=Z,71nm,2.0s							
ISA	**Isabella, Lake**	**88.79**	**51**	P	**P**	**11 44 39.5**	**-0.7**
baz=244							
ISA	**Isabella, Lake**	**88.79**	**51**	*e*P	**P**	**11 44 40.0**	**-0.3**
ISA				pmax	pmax		
comp=Z,38nm,1.4s							
ISA	**Isabella, Lake**	**88.79**	**51**	*e*P	**P**	**11 44 40.0**	**-0.3**
comp=Z,38nm,1.4s							
EDW2	**Edwards Air Fo**	**88.81**	**52**	P	**P**	**11 44 40.0**	**-0.4**
baz=244							
HUMO	**Hull Mountain**	**88.89**	**43**	*e*P	**P**	**11 44 40.7**	**+0.1**
comp=Z,22nm,1.0s							
CAST	**Castle Rocks**	**88.98**	**17**	*e*P	**P**	**11 44 40.1**	**-0.4**
comp=Z,6.4nm,0.9s							
WAKR	**Walker**	**89.36**	**48**	*e*P	**P**	**11 44 42.4**	**-0.6**
MPMC	**Manual Prospec**	**89.68**	**51**	P	**P**	**11 44 44.4**	**-0.2**
baz=245							
DAC	**Darwin (Calif)**	**89.70**	**51**	*e*P	**P**	**11 44 44.8**	**+0.1**
DAC				pmax	pmax		
comp=Z,12nm,1.0s							
DAC	**Darwin (Calif)**	**89.70**	**51**	*e*P	**P**	**11 44 44.8**	**+0.1**
comp=Z,12nm,1.0s							
GSC	**Goldstone, Bar**	**89.87**	**52**	*e*P	**P**	**11 44 45.5**	**+0.1**
GSC				pmax	pmax		
comp=Z,59nm,1.9s							
GSC	**Goldstone, Bar**	**89.87**	**52**	*e*P	**P**	**11 44 45.5**	**+0.1**
comp=Z,59nm,1.9s							
BOD	**Bodaibo**	**89.88**	**334**	*e*P	**P**	**11 44 42.3**	**-2.4**
BOD				pmax	pmax		
comp=Z,8.0nm,1.6s							
BELC	**Belle Mtn. Jos**	**89.93**	**54**	P	**P**	**11 44 45.4**	**-0.4**
baz=245							
HEC	**Hector,Ludlow**	**90.02**	**53**	P	**P**	**11 44 45.6**	**-0.5**
baz=245							
NV01	**Mina Array Sit**	**90.12**	**49**	*e*P	**P**	**11 44 45.8**	**-0.9**
NVAR	**Mina Array Bea**	**90.12**	**49**	P	**P**	**11 44 46.2**	**-0.4**
comp=Z,4.8nm,0.9s,baz=230,slow=8.5,SNR=24							
GRAC	**Grapevine Rang**	**90.17**	**50**	P	**P**	**11 44 46.7**	**0.0**
baz=245							
BC3	**Big Chuckawall**	**90.20**	**54**	P	**P**	**11 44 46.2**	**-0.8**
baz=246							
NV11	**Mina Array Sit**	**90.23**	**49**	*e*P	**P**	**11 44 46.0**	**-1.0**
comp=Z,22nm,1.3s							
K05A	**Summer Lake**	**90.29**	**44**	*e*P	**P**	**11 44 47.4**	**0.0**
comp=Z,18nm,0.9s							
MOD	**Modoc Plateau**	**90.30**	**45**	*e*P	**P**	**11 44 46.9**	**-0.4**
comp=Z,13nm,1.0s					

comp=Z,76nm,1.4s
SKAG Skagway 91.74 25 *e*P **P 11 44 52.9 -0.4**
comp=Z,15nm,1.1s
B05A Bryant 92.14 39 P **P 11 44 55.5 0.0**
baz=242
COLD Coldfoot 92.49 15 *e*P **P 11 44 56.8 +0.1**
comp=Z,4.1nm,1.0s
G08A Pilot Rock 92.69 42 *e*P **P 11 44 58.1 -0.2**
comp=Z,27nm,1.8s
HAWA Hanford 92.83 41 *e*P **P 11 44 59.0 +0.3**
comp=Z,50nm,1.8s
EGAK Eagle 93.18 19 *e*P **P 11 44 59.0 -0.9**
comp=Z,12nm,1.4s
LCMT Little Creek M 93.19 52 *e*P **P 11 45 00.6 -0.3**
comp=Z,7.2nm,1.1s
ELK Elko 93.25 48 *e*P **P 11 45 00.6 -0.5**
ELK pmax pmax
comp=Z,16nm,1.8s
ELK Elko 93.25 48 *e*P **P 11 45 00.6 -0.5**
comp=Z,16nm,1.8s
DAWY Dawson 93.25 20 *e*P **P 11 44 58.0 -2.3**
comp=Z,13nm,1.8s
TUC Tucson 93.28 57 P **P 11 45 00.9 -0.3**
baz=248
TUC Tucson 93.28 57 *e*P **P 11 45 01.7 +0.4**
TUC pmax pmax
comp=Z,10.0nm,1.1s
TUC Tucson 93.28 57 *e*P **P 11 45 01.7 +0.4**
comp=Z,9.9nm,1.1s
PSUT Pine Spring 93.34 50 *e*P **P 11 45 01.9 +0.3**
comp=Z,3.9nm,0.6s
DLBC Dease Lake 93.35 28 P **P 11 45 00.7 -0.2**
comp=Z,3.1nm,0.9s,baz=230,slow=16,SNR=3.2
DLBC pP **pP 11 45 12.3 +1.5**
comp=Z,4.8nm,0.9s,baz=266,slow=9.2,SNR=3.9
DLBC Dease Lake 93.35 28 *e*P **P 11 45 00.3 -0.6**
comp=Z,19nm,1.3s
KNB Kanab 93.51 52 *e*P **P 11 45 02.1 -0.2**
KNB pmax pmax
comp=Z,29nm,1.6s
KNB Kanab 93.51 52 *e*P **P 11 45 02.1 -0.2**
comp=Z,29nm,1.6s
X16A Lo Mia Camp, P 93.56 55 *e*P **P 11 45 02.0 -0.6**
comp=Z,11nm,1.2s
GCAZ Grand Canyon 93.65 53 *e*P **P 11 45 02.3 -0.8**
MFID Camas Ranch 93.93 45 *e*P **P 11 45 03.3 -0.7**
comp=Z,4.7nm,1.0s
WUAZ Wupatki 94.02 54 P **P 11 45 04.5 -0.2**
baz=248
MTPU Mount Pierson 94.36 51 *e*P **P 11 45 06.6 +0.1**
comp=Z,10nm,1.3s
HLID Hailey 94.93 45 *e*P **P 11 45 08.6 -0.1**
comp=Z,3.9nm,1.2s
HVU Hansel Valley 95.36 47 *e*P **P 11 45 10.4 -0.3**
HVU pmax pmax
comp=Z,5.0nm,0.9s
HVU Hansel Valley 95.36 47 *e*P **P 11 45 10.4 -0.3**
comp=Z,5.0nm,0.9s
TMUT Trail Mountain 95.54 50 *e*P **P 11 45 12.2 +0.4**
comp=Z,7.4nm,0.6s
TIXI Tiksi 95.57 348⇑ *e*P **P 11 45 08.6 -2.1**
TIXI pmax pmax
comp=Z,1.0nm,1.2s
WMQ Urumqi 97.30 314 *e*P Pdif 11 45 20.5 +1.1
MNTX Cornudas Mount 97.37 59 P **P 11 45 18.6 -1.3**
baz=251
MNTX Cornudas Mount 97.37 59 *e*P **P 11 45 18.9 -1.0**
comp=Z,14nm,1.9s
INK Inuvik 97.79 19 P **P 11 45 17.8 -3.0**
comp=Z,2.6nm,1.2s,baz=181,slow=3.3,SNR=3.6
INK Inuvik 97.79 19 *e*P **P 11 45 17.8 -3.0**
INK pmax pmax
comp=Z,13nm,1.7s
INK Inuvik 97.79 19 *e*P **P 11 45 17.8 -3.0**
comp=Z,13nm,1.7s
PD31 Pinedale Array 97.94 47 *e*P **P 11 45 22.6 +0.1**
PDAR Pinedale Array 97.94 47 P **P 11 45 22.6 +0.1**
comp=Z,0.5nm,0.9s,baz=276,slow=4.4,SNR=2.7
PDAR pP **pP 11 45 33.7 +1.2**
comp=Z,1.1nm,1.0s,baz=197,slow=1.5,SNR=4.3
LTX Lajitas 98.01 62 *e*P **P 11 45 22.9 0.0**
LTX Lajitas 98.01 62 *e*P **P 11 45 22.9 0.0**
TXAR Lajitas Array 98.01 62 P **P 11 45 22.9 0.0**
comp=Z,0.7nm,1.0s,baz=257,slow=10,SNR=4.2
MK32 Makanchi Array 101.87 316 *e*PKiKP **PKiKP 11 50 00.6 -1.9**
MKAR Makanchi Array 101.87 316 PKiKP **PKiKP 11 50 00.6 -1.9**
comp=Z,1.0nm,0.9s,baz=115,slow=5.5,SNR=3.5
YKA Yellowknife Ar 101.97 28 P **Pdif 11 45 40.8 +1.2**
comp=Z,0.7nm,0.9s,baz=254,slow=4.9,SNR=7.1
YKA pP pP 11 45 51.9 +2.0
comp=Z,1.0nm,0.9s,baz=255,slow=5.1,SNR=9.1
YKB5 Yellowknife Ar 101.97 28 *e*Pdif **Pdif 11 45 40.2 +0.5**
BRVK Borovoye 110.73 320⇑ *i*PKIKP **PKiKP 11 50 17.4 -1.3**
ARA0 ARCESS Array S 125.84 345 *e*PKPdf **PKPdf 11 50 46.4 -0.8**
ARCES ARCESS Array B 125.84 345 PKP **PKPdf 11 50 46.4 -0.8**
comp=Z,6.7nm,1.0s,baz=78,slow=2.1,SNR=4.3
ARCES pPKP **pPKPdf 11 50 58.4 +0.9**
comp=Z,5.1nm,0.7s,baz=42,slow=2.0,SNR=3.2
KLMR Klimovskoe 126.04 332 *e*PKIKP **PKPdf 11 50 45.1 -2.7**
KLMR *e* 11 50 57.3
KLMR pmax pmax
comp=Z,13nm,1.4s
NEY Neytrino 129.38 310⇓ *i*PKIKP **PKPdf 11 50 55.9 +0.9**
NB2 NORSAR Subarra 136.21 344 PKPdf pPKPdf 11 51 19.3 +1.9
comp=Z,0.7nm,0.8s,baz=31,slow=1.9
NOA NORSAR Array B 136.21 344 pPKP pPKPdf 11 51 18.1 +0.7
comp=Z,1.2nm,0.8s,baz=32,slow=2.0,SNR=4.5
KOLS Kolonicke sedl 140.58 325 *e*PKIKP **PKPdf 11 51 16.8 +1.3**
KOLS Kolonicke sedl 140.58 325 *e*PKP **PKPdf 11 51 16.8 +1.3**
BRG Berggiesshubel 143.40 333 *e*PKP PKPab 11 51 16.7 +0.2
comp=Z,20nm,1.6s
BRG Berggiesshubel 143.40 333 *e*PKIKP PKPab 11 51 16.7 +0.2
BRG pmax pmax
comp=Z,20nm,1.6s
CLL Collm 143.47 334 *i*PKPdf PKPbc 11 51 18.9 +1.1
CLL Collm 143.47 334 *i*PKIKP PKPbc 11 51 18.9 +1.1
NKC Novy Kostel 144.52 333 *e*PKP **PKPab 11 51 21.0 +0.2**
NKC *ex* x 11 51 32.8
NKC Novy Kostel 144.52 333 *e*PKIKP **PKPab 11 51 21.0 +0.2**
NKC *e* 11 51 32.8
CONA Conrad Observa 144.56 328 *i*PKPdf PKPbc 11 51 21.6 +0.2
comp=Z,27nm,1.5s,SNR=9.4
KHC Kasperske Hory 144.83 331 *e*PKP **PKPdf 11 51 23.8 +0.8**
KHC *ex* x 11 51 33.6
KHC *ex* x 11 52 13.5
KHC Kasperske Hory 144.83 331 *e*PKIKP **PKPdf 11 51 23.8 +0.8**
KHC *e* 11 51 33.6
GEC2 GERESS Array S 144.98 330 *e*PKIKP **PKPdf 11 51 23.1 -0.3**
GEC2 GERESS Array S 144.98 330 *e*PKPbc **PKPdf 11 51 23.1 -0.3**
GERES GERESS Array B 144.98 330 PKP **PKPab 11 51 22.4 -0.2**
comp=Z,0.7nm,0.4s,baz=83,slow=4.2,SNR=10
GERES pPKP **pPKPdf 11 51 34.2 +0.6**
comp=Z,2.7nm,0.7s,baz=46,slow=3.9,SNR=5.5
GEA0 GERESS Array S 144.98 330 *e*PKPbc **PKPab 11 51 22.4 -0.2**
ARSA Arzberg 145.19 327 *i*PKPdf **PKPdf 11 51 23.9 +0.2**
comp=Z,23nm,1.6s,SNR=7.1
MOA Molln 145.41 329 *i*PKPdf **PKPbc 11 51 24.1 +0.1**
comp=Z,27nm,1.4s,SNR=11
PERS Pernice 145.80 326 *e*PKPdf **PKPbc 11 51 25.2 -0.1**
SOKA Soboth 145.81 327 *i*PKPab **PKPdf 11 51 25.0 +0.1**
comp=Z,25nm,1.7s,SNR=9.6
KBA Koelnbreinsper 146.39 329 *i*PKPbc **PKPdf 11 51 26.2 +0.3**
comp=Z,8.1nm,1.0s
KBA *i*PKPab **PKPbc 11 51 26.6 -0.6**
comp=Z,11nm,1.5s
BOJS Bojanci 146.46 325 *i*PKPdf **PKPdf 11 51 25.8 -0.1**
VISS Visnje 146.49 326 *e*PKPdf **PKPdf 11 51 26.1 +0.2**
MYKA Terra Mystica 146.56 328 *i*PKPdf **PKPab 11 51 28.2 -0.4**
comp=Z,10nm,1.3s
MYKA *i*PKPdf **PKPbc 11 51 28.5 +0.9**
comp=Z,13nm,1.3s
CWF Charnwood Fore 146.61 349 *e*PKPdf **PKPbc 11 51 27.4 0.0**
MEM Membach 146.66 339 PKP **PKPbc 11 51 27.7 +0.1**
MEM APKP **pPKPdf 11 51 39.2 +3.0**
JAVS Javornik 146.84 326 *e*PKPdf **PKPdf 11 51 26.8 +0.2**
ABTA Abfaltersbach 147.03 329 *i*PKPdf **PKPdf 11 51 26.2 -0.7**
comp=Z,2.2nm,0.6s
BCLA Clavier 147.05 340 PKP **PKPab 11 51 30.0 -0.3**
BCLA APKP **pPKPdf 11 51 40.1 +3.1**
WTTA Wattenberg 147.08 330 *i*PKPbc **PKPdf 11 51 27.8 +0.7**
comp=Z,10nm,1.1s
MOTA Moosalm 147.26 331 *i*PKPdf **PKPbc 11 51 29.7 0.0**
comp=Z,19nm,1.4s
MOTA *i*PKPdf **PKPab 11 51 30.0 -1.5**
comp=Z,19nm,1.4s
RETA Reutte 147.31 331 *i*PKPdf **PKPdf 11 51 25.9 -1.4**
comp=Z,9.9nm,1.3s
RETA *i*pPKPdf **PKPbc 11 51 29.5 -0.2**
comp=Z,9.9nm,1.3s
WLF Walferdange 147.41 338 PKP **PKPbc 11 51 30.4 +0.6**
WLF APKP **pPKPdf 11 51 42.1 +4.5**
WLF Walferdange 147.41 338 *e*PKP2 **PKPbc 11 51 30.2 +0.4**
WLF Walferdange 147.41 338 *e*PKPbc **PKPbc 11 51 30.2 +0.4**
DOU Dourbes 147.56 340 PKP **PKPbc 11 51 30.3 +0.1**
DOU APKP **pPKPdf 11 51 41.5 +3.7**
FETA Feichten 147.68 331 *i*PKPdf **PKPdf 11 51 28.3 +0.2**
comp=Z,16nm,1.6s
FETA *i*PKPbc **PKPbc 11 51 28.8 -2.0**
comp=Z,16nm,1.6s
BFO Black Forest 147.70 335 *i*PKP2 **PKPbc 11 51 30.4 -0.3**
BFO Black Forest 147.70 335 *e*PKPbc **PKPbc 11 51 30.0 -0.7**
DAVA Damuels 147.86 332 *i*PKPbc **PKPdf 11 51 29.1 +0.7**
comp=Z,15nm,1.4s
FUORN Ofenpass-Fuorn 148.19 331 *e*PKPbc **PKPbc 11 51 32.4 +0.1**
TUE Stuetta 148.72 331 *e*PKPbc **PKPbc 11 51 33.6 -0.1**
SENIN Lac Senin/Sane 149.69 334 *e*PKPbc **PKPbc 11 51 36.1 0.0**
SSB Saint Sauveur 151.69 335 *e*PKIKP **PKPdf 11 51 34.3 -0.1**
SSB *e* 11 51 40.7
SSB *e* 11 51 49.4
SSB Saint Sauveur 151.69 335 *e*PKPdf **PKPdf 11 51 34.3 -0.1**
SSB *e*PKPbc **PKPbc 11 51 40.7 0.0**
SSB *e*PKPab **PKPab 11 51 49.4 0.0**
TORD Torodi Ar. Bea 165.37 243 PKP **PKPdf 11 51 50.7 -0.8**
comp=Z,2.3nm,1.2s,baz=225,slow=1.7,SNR=5.7
TORD pPKP **pPKPdf 11 52 0.6 +0.9**
comp=Z,1.8nm,0.9s,baz=11,slow=1.0,SNR=8.8
TORD PKPab **PKPab 11 52 50.0 +0.6**
comp=Z,1.1nm,1.0s,baz=97,slow=5.3,SNR=2.5
TORD pPKPab **pPKPab 11 53 00.6 +1.2**
comp=Z,3.1nm,1.1s,baz=111,slow=2.0,SNR=5.2
TOA1 Torodi Ar. Sit 165.38 243 *e*PKPdf **PKPdf 11 51 50.7 -0.8**
TOA1 *e*PKPab **PKPab 11 52 50.0 +0.5**

NEIC ***10*** *11:33:12.9±0.5, 20°.08S×168°.15E, h10km, mb4.7/2, Error ellipse: s-maj=17.9km s-min=10.8km az=137.0*
ISCJB ***10*** *11:33:13.6±0.6, 20°.18S±0°.09×168°.1E±0°.1, h27km, mb4.5/9, MS4.9/1, Error ellipse: s-maj=17.9km s-min=8.4km az=41.4*
IDC ***10*** *11:33:16.5±0.9, 20°.26S×168°.29E, h40km±6km, mb4.3/7, mb1 4.5/8, mb1mx4.0/40, mbtmp4.4/8, ML3.3/1, MS4.6/2, Ms1 4.6/2, ms1mx3.9/43, Error ellipse: s-maj=61.5km s-min=15.6km az=149.0*

ISC 10 11:33:15.4±0.7, 20°.2S±0°.1×168°.1E±0°.1, h27km, n15, σ1§37/20, mb4.4/9, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.42**	**220**	Pn	**Pn**	**11 33 52.7**	**-0.6**
	6.5nm,0.3s,baz=126,slow=19,SNR=2.1						
DZM				Sn	**Sn**	**11 34 19.5**	**-2.7**
	51nm,0.3s,baz=24,slow=20,SNR=3.2						
DZM				LR	LR	11 34 42.0	
	comp=Z,5μm,18.2s,baz=348,slow=34						
URZ	**Urewera**	**19.61**	**158**	P	**Pn**	**11 37 44.2**	**+1.1**
	0.1nm,0.3s,baz=29,slow=4.9,SNR=3.6						
CTAO	**Charters Tower**	**20.52**	**267**	*e*P	Pn	11 37 53.5	-0.6
TARA	**Tarawa**	**21.94**	**13**	*e*P	**P**	**11 38 05.9**	**-1.1**
	1.8nm,0.3s						
STKA	**Stephens Creek**	**26.44**	**239**	P	**P**	**11 38 51.9**	**+1.8**
	8.0nm,0.8s,baz=69,slow=12,SNR=2.9						
STKA				pP	**sP**	**11 39 03.0**	**+1.7**
	11nm,0.7s,baz=66,slow=8.4,SNR=3.4						
WRA	**Warramunga Arr**	**31.69**	**265**	P	**P**	**11 39 36.6**	**-0.4**
	1.1nm,0.6s,baz=91,slow=8.3,SNR=2.7						
WRA				LR	LR	11 53 56.8	
	comp=Z,2μm,18.1s,baz=280,slow=39						
ASAR	**Alice Springs**	**31.87**	**257**	P	**P**	**11 39 38.9**	**+0.3**
	5.9nm,0.8s,baz=84,slow=8.7,SNR=4.2						
ASAR				pP	**sP**	**11 39 51.4**	**+1.5**
	12nm,0.7s,baz=88,slow=8.9,SNR=4.6						
CMB	**Columbia Colle**	**88.59**	**49**	*e*P	**P**	**11 46 05.4**	**-0.7**
YBH	**Yreka Blue Hor**	**88.73**	**44**	P	**P**	**11 46 06.0**	**-0.7**
	7.0nm,1.0s,baz=302,slow=4.9,SNR=2.4						
YBH				pP	**sP**	**11 46 17.9**	**-0.7**
	5.2nm,0.8s,baz=260,slow=2.2,SNR=3.4						
HUMO	**Hull Mountain**	**88.99**	**44**	*e*P	**P**	**11 46 08.0**	**+0.2**
	13nm,0.8s						
NVAR	**Mina Array Bea**	**90.23**	**49**	P	**P**	**11 46 12.5**	**-1.4**
	5.1nm,0.9s,baz=228,slow=7.5,SNR=5.0						
NVAR				pP	**pP**	**11 46 24.4**	**+1.7**
	10.0nm,1.1s,baz=229,slow=7.3,SNR=3.8						
ILAR	**Eielson Array**	**91.47**	**18**	P	**P**	**11 46 18.9**	**+0.1**
	1.5nm,0.8s,baz=224,slow=6.3,SNR=2.3						
ILAR				pP	**sP**	**11 46 30.3**	**-0.4**
	2.2nm,0.9s,baz=232,slow=6.6,SNR=3.7						
DLBC	**Dease Lake**	**93.39**	**28**	pP	pP	11 46 39.4	+2.8
	6.3nm,1.1s,baz=216,slow=8.4,SNR=4.2						
TXAR	**Lajitas Array**	**98.16**	**62**	P	**P**	**11 46 49.1**	**-1.2**
	0.5nm,0.9s,baz=242,slow=3.9,SNR=2.8						
TXAR				pP	**pP**	**11 47 00.5**	**+1.4**
	0.9nm,0.9s,baz=219,slow=4.5,SNR=4.0						
YKA	**Yellowknife Ar**	**102.01**	**28**	P	**Pdif**	**11 47 04.6**	**-1.9**
	0.3nm,0.8s,baz=260,slow=4.6,SNR=2.6						

IDC 10 11:40:36.5±11.0, 20°.25S×167°.51E, h0km, mb3.7/3, mb1 3.8/4, mb1mx3.5/35, mbtmp3.6/4, Error ellipse: s-maj=189.7km s-min=38.8km az=89.0, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.07**	**209**	Pn	Pn	11 41 11.8	-0.8
	baz=76,slow=19,SNR=2.9						
DZM				Sn	Sn	11 41 39.9	+0.8
	10nm,0.3s,baz=164,slow=22,SNR=8.2						
STKA	**Stephens Creek**	**25.93**	**238**	P	P	11 46 11.4	+0.8
	2.5nm,0.9s,baz=52,slow=9.6,SNR=3.5						
WRA	**Warramunga Arr**	**31.13**	**265**	P	P	11 46 56.9	-0.2
	0.7nm,0.9s,baz=90,slow=8.9,SNR=4.3						
ASAR	**Alice Springs**	**31.31**	**258**	P	P	11 46 58.5	-0.2
	0.7nm,0.8s,baz=96,slow=8.5,SNR=3.8						

ISCJB ***10*** *11:44:54.2±1.2, 20°.3S±0°.2×168°.3E±0°.2, h26km, mb3.9/5, Error ellipse: s-maj=37.9km s-min=11.2km az=41.0*
IDC ***10*** *11:44:57.0±1.3, 20°.32S×168°.38E, h38km±7km, mb3.7/6, mb1 4.0/7, mb1mx3.7/25, mbtmp3.9/7, ML3.4/1, Error ellipse: s-maj=53.8km s-min=17.4km az=147.0*

ISC 10 11:44:55.5±1.1, 20°.4S±0°.3×168°.4E±0°.2, h26km, n8, σ1§14/13, mb4.0/5, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.47**	**228**	Pn	**Pn**	**11 45 33.4**	**-0.9**
	7.7nm,0.3s,baz=136,slow=12,SNR=11						
DZM				Sn	**Sn**	**11 46 03.8**	**+0.1**
	32nm,0.3s,baz=122,slow=20,SNR=6.8						
CTA	**Charters Tower**	**20.79**	**267**	P	**P**	**11 49 35.7**	**+0.7**
	3.8nm,0.8s,baz=61,slow=10,SNR=3.5						
STKA	**Stephens Creek**	**26.57**	**239**	P	**P**	**11 50 32.4**	**+0.7**
	2.5nm,0.7s,baz=63,slow=11,SNR=5.3						
STKA				pP	**sP**	**11 50 44.1**	**+1.6**
	3.0nm,0.6s,baz=70,slow=10,SNR=3.2						
WRA	**Warramunga Arr**	**31.96**	**265**	P	**P**	**11 51 18.2**	**-1.4**
	0.4nm,0.7s,baz=99,slow=11,SNR=6.7						
WRA				pP	**sP**	**11 51 29.7**	**-0.8**
	1.4nm,0.9s,baz=92,slow=8.3,SNR=5.4						
ASAR	**Alice Springs**	**32.11**	**258**	P	**P**	**11 51 20.4**	**-0.5**
	2.1nm,0.7s,baz=83,slow=8.9,SNR=18						
ASAR				pP	**sP**	**11 51 32.0**	**+0.2**
	4.3nm,0.8s,baz=84,slow=9.0,SNR=10.0						
NVAR	**Mina Array Bea**	**90.15**	**49**	P	**P**	**11 57 53.4**	**-0.5**
	1.7nm,1.0s,baz=229,slow=9.6,SNR=5.6						
NVAR				pP	**sP**	**11 58 04.5**	**-0.9**
	1.4nm,0.8s,baz=219,slow=6.3,SNR=5.4						
ILAR	**Eielson Array**	**91.57**	**18**	P	**P**	**11 57 59.8**	**+0.2**
	0.5nm,0.7s,baz=225,slow=5.0,SNR=3.9						
GERES	**GERESS Array B**	**145.13**	**330**	PKPbc	**PKPdf**	**12 04 32.8**	**+2.0**
	0.4nm,0.2s,baz=11,slow=6.3,SNR=2.7						

IDC ***10*** *11:50:46.4±1.5, 20°.04S×168°.29E, h0km, mb4.0/5, mb1 4.3/6, mb1mx3.9/28, mbtmp4.0/6, ML3.6/1, Error ellipse: s-maj=72.1km s-min=22.6km az=144.0*
ISCJB ***10*** *11:50:48.7±1.3, 20°.2S±0°.2×168°.2E±0°.3, h25km, mb3.9/5, Error ellipse: s-maj=46.3km s-min=11.7km az=38.9*

ISC 10 11:50:50.0±1.3, 20°.3S±0°.3×168°.3E±0°.3, h25km, n7, σ1§01/8, mb3.9/5, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.53**	**224**	Pn	**Pn**	**11 51 29.6**	**+0.1**
	10nm,0.3s,baz=144,slow=10,SNR=9.5						
DZM				Sn	**Sn**	**11 51 58.7**	**-1.0**
	65nm,0.3s,baz=126,slow=22,SNR=8.8						
STKA	**Stephens Creek**	**26.59**	**239**	P	**P**	**11 56 27.4**	**+1.1**
	1.8nm,0.6s,baz=67,slow=12,SNR=4.2						
WRA	**Warramunga Arr**	**31.89**	**265**	P	**P**	**11 57 13.6**	**-0.1**
	0.4nm,0.5s,baz=94,slow=8.4,SNR=9.3						
ASAR	**Alice Springs**	**32.07**	**258**	P	**P**	**11 57 15.6**	**+0.4**
	2.9nm,0.6s,baz=84,slow=9.1,SNR=25						
NVAR	**Mina Array Bea**	**90.11**	**49**	P	**P**	**12 03 48.8**	**+0.5**
	1.1nm,0.8s,baz=222,slow=8.6,SNR=6.4						
ILAR	**Eielson Array**	**91.45**	**18**	P	**P**	**12 03 52.1**	**-1.5**
	0.2nm,0.5s,baz=232,slow=4.4,SNR=4.0						
ARCES	**ARCESS Array B**	**125.82**	**345**	PKP	**PKPdf**	**12 09 49.6**	**+0.7**
	0.9nm,0.6s,baz=102,slow=2.2,SNR=4.7						

IDC 10 11:52:38.0±25.0, 20°.07S×168°.01E, h33km±9km, mb4.0/3, mb1 4.1/4, mb1mx3.6/28, mbtmp4.1/4, Error ellipse: s-maj=420.6km s-min=52.1km az=83.0, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.48**	**216**	Pn	Pn	11 53 14.4	-1.8
	baz=84,slow=19,SNR=1.3						
STKA	**Stephens Creek**	**26.43**	**238**	P	P	11 58 12.8	+0.8
	2.2nm,0.7s,baz=70,slow=12,SNR=5.2						
STKA				pP	pP	11 58 22.7	+1.3
	3.5nm,0.7s,baz=64,slow=10,SNR=2.9						
WRA	**Warramunga Arr**	**31.61**	**264**	P	P	11 58 57.6	-0.6
	0.6nm,0.6s,baz=94,slow=8.5,SNR=4.8						
WRA				pP	pP	11 59 06.9	-0.9
	1.2nm,0.8s,baz=94,slow=9.0,SNR=3.8						
ASAR	**Alice Springs**	**31.81**	**257**	P	P	11 59 00.0	+0.1
	3.2nm,0.6s,baz=86,slow=8.8,SNR=8.6						
ASAR				pP	pP	11 59 09.4	-0.1
	3.3nm,0.6s,baz=86,slow=8.7,SNR=7.3						

WEL 10 11:53:19.3±1.1, 47°.77S×165°.30E, h33km, ML3.7/9, 3D, Error ellipse: s-maj=10.8km s-min=7.3km az=90.0, Off west coast of South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PYZ	**Puysegur Point**	**1.86**	**31**	PN	Pn	11 53 47.5	-1.4
PYZ				SN	Sn	11 54 09.2	-2.1
APZ	**The Paps**	**2.06**	**64**	PN	Pn	11 53 50.2	-1.4
APZ				SN	Sn	11 54 13.0	-3.1
APZ				AML	AML	11 54 14.2	
WHZ	**Wether Hill Ro**	**2.62**	**45**	⇓PN	Pn	11 53 58.5	-0.8
WHZ				SN	Sn	11 54 28.8	-1.0
WHZ				AML	AML	11 56 29.4	
DCZ	**Deep Cove**	**2.64**	**30**	*e*PN	Pn	11 53 59.9	+0.3
DCZ				AML	AML	11 56 31.5	
SYZ	**Scrubby Hill**	**2.90**	**66**	⇓PN	Pn	11 54 02.4	-0.6
SYZ				SN	Sn	11 54 34.1	-2.6
MLZ	**Mavora Lakes**	**3.09**	**40**	PN	Pn	11 54 05.9	+0.1
TUZ	**Tuapeka**	**3.48**	**60**	⇓PN	Pn	11 54 10.6	-0.5
TUZ				SN	Sn	11 54 50.6	-0.6
MSZ	**Milford Sound**	**3.60**	**31**	AML	AML	11 55 44.1	
EAZ	**Earnscleugh**	**3.76**	**49**	*e*PN	Pn	11 54 14.0	-0.9
WKZ	**Wanaka**	**3.91**	**43**	PN	Pn	11 54 18.3	+1.2
ODZ	**Otahua Downs**	**4.59**	**56**	*e*PN	Pn	11 54 24.2	-2.2

ISCJB ***10*** *11:56:15.7±1.1, 37°.19N±0°.07×28°.36E±0°.07, h26km±9km, Error ellipse: s-maj=13.9km s-min=6.3km az=35.3*
CSEM ***10*** *11:56:15.4±0.8, 37°.25N×28°.44E, h5km, MD2.7, Error ellipse: s-maj=18.3km s-min=10.6km az=36.0*
ISK ***10*** *11:56:16.4, 36°.96N×28°.30E, h6km, MD2.7*
DDA ***10*** *11:56:17.9, 37°.21N×28°.16E, h7km, Md2.6*

ISC 10 11:56:15.6±1.1, 37°.20N±0°.06×28°.38E±0°.05, h26km±6km, n11, σ0§76/20, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.10**	**231**	*e*PG	**Pb**	**11 56 20.7**	**+0.3**
YER				*e*SG	**Sb**	**11 56 23.2**	**-0.4**
YER	**Yerkesik**	**0.10**	**231**	*e*Pg	**Pb**	**11 56 20.7**	**+0.3**
YER				*e*Sg	**Sb**	**11 56 23.2**	**-0.4**
TURN	**Turunc**	**0.37**	**150**	*i*P	**Pn**	**11 56 25.4**	**+0.2**
TURN				*i*S	**Sn**	**11 56 33.4**	**+1.7**
AYDN	**Tasoluk**	**0.61**	**320**	P	**Pb**	**11 56 27.7**	**0.0**
AYDN				S	**Sb**	**11 56 35.5**	**-0.5**
AYDN	**Tasoluk**	**0.61**	**320**	*i*P	**Pb**	**11 56 27.7**	**0.0**
AYDN				*i*S	**Sb**	**11 56 35.5**	**-0.5**
BDRM	**Kayabasi**	**0.76**	**260**	P	**Pb**	**11 56 30.0**	**-0.2**
BDRM				S	**Sb**	**11 56 39.0**	**-1.0**
BDRM	**Kayabasi**	**0.76**	**260**	*i*P	**Pb**	**11 56 30.0**	**-0.2**
BDRM				*i*S	**Sb**	**11 56 39.0**	**-1.0**
FETY	**Fethiye**	**0.80**	**134**	*e*PG	**Pb**	**11 56 30.7**	**-0.1**
FETY				*e*SG	**Sb**	**11 56 40.0**	**-1.2**
FETY	**Fethiye**	**0.80**	**134**	*e*Pg	**Pb**	**11 56 30.7**	**-0.1**
FETY				*e*Sg	**Sb**	**11 56 40.0**	**-1.2**
BODT	**Bodrum**	**0.86**	**261**	*e*PG	**Pb**	**11 56 32.1**	**+0.2**
BODT	**Bodrum**	**0.86**	**261**	*e*Pg	**Pb**	**11 56 32.1**	**+0.2**

IDC ***10*** *12:00:27.2±0.5, 20°.18S×168°.35E, h0km, mb4.6/28, mb1 4.7/31, mb1mx4.7/41, mbtmp4.6/31, ML4.2/3, MS4.8/4, Ms1 4.7/4, ms1mx4.1/35, Error ellipse: s-maj=15.9km s-min=12.8km az=114.0*
NEIC ***10*** *12:00:29.8±0.2, 20°.13S×168°.26E, h10km, mb5.3/83, Error ellipse: s-maj=5.6km s-min=4.6km az=126.0*
ISCJB ***10*** *12:00:30.7±0.1, 20°.13S±0°.03×168°.29E±0°.03, h25km, mb5.0/124, MS4.8/5, Error ellipse: s-maj=4.5km s-min=3.4km az=147.5*
BJI ***10*** *12:00:31.0, 19°.84S×168°.60E, h24km, mb4.9/37, mB5.5/15, Ms5.3/10, MS7 4.9/10*
MOS ***10*** *12:00:32.5±1.3, 20°.10S×168°.25E, h33km, mb5.4/33, Error ellipse: s-maj=11.2km s-min=9.4km az=151.9*

ISC 10 12:00:32.2±0.3, 20°.20S±0°.05×168°.28E±0°.05, h25km, n350, σ1§26/350, mb5.2/124, MS4.8/5, 5C-7D, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.53**	**222**	Pn	**Pn**	**12 01 09.9**	**-1.9**
	50nm,0.3s,baz=48,slow=19,SNR=18						
DZM				Sn	**Sn**	**12 01 40.9**	**-1.0**
	113nm,0.3s,baz=18,slow=20,SNR=8.0						
DZM				LR	LR	12 02 10.1	
	comp=Z,14μm,19.1s,baz=346,slow=40						
MSVF	**Nonsavu**	**9.57**	**77**	*e*P	**Pn**	**12 02 50.2**	**+1.7**
MSVF	**Nonsavu**	**9.57**	**77**	*e*Pn	**Pn**	**12 02 50.2**	**+1.7**
HNR	**Honiara**	**13.39**	**322**	Pn	**Pn**

CTA	Charters Tower	20.68 266	P	P	12 05 10.1	-0.4
	11nm,1.0s,baz=77,slow=12,SNR=11					
CTA	Charters Tower	20.68 266	P	Pn	12 05 12.9	0.0
	baz=21					
CTAO	Charters Tower	20.68 266	eP	Pn	12 05 12.7	-0.2
CTAO			pmax	pmax		
	comp=Z,2μm,1.8s					
CTAO	Charters Tower	20.68 266	eP	Pn	12 05 12.7	-0.2
	comp=Z,2μm,1.8s					
BFZ	Birch Farm	21.52 163	eP	P	12 05 20.3	+0.9
	comp=Z,139nm,1.2s					
THZ	Tophouse	21.85 171	eP	P	12 05 25.6	+2.6
	comp=Z,251nm,1.7s					
CNB	Canberra Magne	22.45 224	P	P	12 05 32.4	+2.9
	baz=23,SNR=8.8					
YNG	Young	22.52 227	P	P	12 05 33.4	+3.2
	baz=23,SNR=8.0					
KHZ	Kahutara	22.59 170	eP	P	12 05 31.7	+0.9
	comp=Z,305nm,1.9s					
CAN	Canberra	22.69 224	P	P	12 05 34.9	+2.9
	baz=23					
CAN	Canberra	22.69 224	eP	P	12 05 34.6	+2.5
CAN			pmax	pmax		
	comp=Z,191nm,1.6s					
CAN	Canberra	22.69 224	eP	P	12 05 34.5	+2.5
	comp=Z,191nm,1.6s					
MTSU	Mount Surprise	22.72 271	P	P	12 05 33.2	+0.7
	baz=23,SNR=12					
LTZ	Lake Taylor	22.77 172	eP	P	12 05 34.4	+1.7
	comp=Z,185nm,1.7s					
QLP	Quilpie	22.94 249	P	P	12 05 35.9	+1.2
	baz=23,SNR=8.1					
PMG	Port Moresby	23.03 295	P	P	12 05 33.8	-1.9
	comp=Z,6.6nm,0.5s,baz=115,slow=6.8,SNR=13					
PMG	Port Moresby	23.03 295	ceP	P	12 05 36.2	+0.5
PMG			pmax	pmax		
	comp=Z,297nm,1.7s					
PMG	Port Moresby	23.03 295	eP	P	12 05 36.2	+0.5
	comp=Z,71nm,1.3s					
CMSA	Cobar Meteorol	23.20 236	P	P	12 05 38.2	+1.0
	baz=23,SNR=20					
OXZ	Oxford	23.27 173	eP	P	12 05 38.5	+0.7
	comp=Z,90nm,1.2s					
FOZ	Fox Glacier	23.30 177	eP	P	12 05 37.9	-0.2
	comp=Z,161nm,1.5s					
RPZ	Rata Peaks	23.56 175	P	P	12 05 39.9	-0.8
	comp=Z,21nm,1.0s,baz=303,slow=8.8,SNR=3.7					
LBZ	Lake Benmore	24.17 177	eP	P	12 05 47.1	+0.6
	comp=Z,154nm,1.7s					
COEN	Coen	24.77 281	P	P	12 05 52.9	+0.7
	baz=25,SNR=5.5					
COEN	Coen	24.77 281	eP	P	12 05 53.2	+1.1
	comp=Z,75nm,1.4s					
STKA	Stephens Creek	26.57 239	P	P	12 06 08.9	+0.5
	comp=Z,14nm,0.7s,baz=77,slow=10.0,SNR=25					
STKA			LR	LR	12 15 33.8	
	comp=Z,3μm,20.0s,baz=60,slow=34					
STKA	Stephens Creek	26.57 239	P	P	12 06 09.2	+0.8
	baz=27,SNR=15					
STKA	Stephens Creek	26.57 239	eP	P	12 06 08.9	+0.5
STKA			pmax	pmax		
	comp=Z,55nm,1.8s					
STKA	Stephens Creek	26.57 239	eP	P	12 06 08.9	+0.5
	comp=Z,55nm,1.8s					
WRAB	Tennant Creek	31.84 265	eP	P	12 06 53.9	-1.4
WRAB			pmax	pmax		
	comp=Z,29nm,1.3s					
WRAB	Tennant Creek	31.84 265	eP	P	12 06 53.9	-1.4
	comp=Z,29nm,1.3s					
WR1	Warramunga Arr	31.84 265	eP	P	12 06 53.8	-1.6
	comp=Z,30nm,1.3s					
WR1			ePcP	PcP	12 09 44.7	-1.4
WRA	Warramunga Arr	31.84 265	P	P	12 06 53.8	-1.6
	comp=Z,2.4nm,0.6s,baz=84,slow=7.8,SNR=23					
WRA			PcP	PcP	12 09 44.7	-1.4
	comp=Z,1.5nm,0.9s,baz=91,slow=3.3,SNR=2.9					
AS01	Alice Springs	31.98 257	eP	P	12 06 55.6	-1.0
AS31	Alice Springs	32.02 257	eP	P	12 06 56.8	-0.1
	comp=Z,12nm,1.0s					
ASAR	Alice Springs	32.02 257	P	P	12 06 56.1	-0.9
	comp=Z,8.7nm,0.5s,baz=87,slow=8.8,SNR=42					
ASAR			LR	LR	12 20 14.6	
	comp=Z,2μm,18.1s,baz=74,slow=37					
JAY	Jayapura	32.14 300	P	P	12 06 55.5	-2.5
	comp=Z,0.8nm,0.6s,baz=90,slow=20,SNR=2.7					
MTN	Manton Dam	36.29 276	P	P	12 07 33.5	-0.5
	baz=36,SNR=3.3					
WRKA	Warakurna	37.12 255	P	P	12 07 40.5	-0.5
	baz=37,SNR=6.9					
KNRA	Kununurra	37.80 270	P	P	12 07 47.1	+0.3
	baz=38					
FAKI	Fak Fak	39.10 291	P	P	12 07 56.6	-1.2
	comp=Z,28nm,1.3s					
FITZ	Fitzroy Crossi	40.25 266	P	P	12 08 07.6	+0.3
	baz=40,SNR=5.0					
FITZ	Fitzroy Crossi	40.25 266	eP	P	12 08 07.7	+0.3
	comp=Z,51nm,1.1s					
SWI	Sorong	40.97 293	P	P	12 08 11.8	-1.5
	comp=Z,26nm,1.1s					
LBMI	Labuha	44.35 291	P	P	12 08 42.0	+1.2
	comp=Z,52nm,2.0s,comp=Z,1μm					
SANI	Sanana	45.04 288	P	P	12 08 47.5	+1.2
	comp=Z,79nm,1.3s,comp=Z,1μm					
NWAO	Narrogin (SRO)	46.97 243	P	P	12 09 00.6	-0.7
	comp=Z,17nm,1.1s,baz=163,slow=20,SNR=3.7					
KAPI	Kappang	49.49 281	eP	P	12 09 21.9	+0.9
	comp=Z,112nm,1.6s					
SPSI	Sidrap Palu	49.88 282	P	P	12 09 35.0	+11
BBKI	Banjar Baru	54.61 280	P	P	12 09 59.8	+0.7
	comp=Z,38nm,1.7s,comp=Z,2μm					
KKM	Kota Kinabalu	57.42 291	eP	P	12 10 19.9	+0.5
	comp=Z,139nm,1.9s					
VNDA	Vanda	57.45 182	P	P	12 10 16.9	-1.6
	comp=Z,4.6nm,1.0s,baz=20,slow=8.1,SNR=11					
SBA	Scott Base	57.70 180	eP	P	12 10 21.1	+0.9
SBA			pmax	pmax		
	comp=Z,37nm,1.2s					
SBA	Scott Base	57.70 180	eP	P	12 10 21.1	+0.9
	comp=Z,37nm,1.2s					
STKI	Sintang	59.07 283	P	P	12 10 32.9	+2.1
	comp=Z,41nm,1.5s					
LEM	Lembang	60.16 274	P	P	12 10 42.5	+4.0
	comp=Z,16nm,0.5s,baz=176,slow=6.0,SNR=8.0					
MJAR	Matsushiro Arr	63.18 333	P	P	12 10 57.0	-1.2
	comp=Z,2.0nm,0.6s,baz=168,slow=7.6,SNR=7.0					
MAJO	Matsushiro	63.18 333	deP	P	12 10 59.0	+0.8
MAJO			pmax	pmax		
	comp=Z,41nm,1.4s					
ASAJ	Asahikawa	68.19 340	P	P	12 11 29.7	-0.6
	comp=Z,13nm,1.2s,baz=207,slow=6.8,SNR=3.3					
ASAJ	Asahikawa	68.19 340	eP	P	12 11 29.9	-0.4
	comp=Z,56nm,1.6s					
KSRS	Korea Array	68.79 326	P	P	12 11 33.5	-0.8
	comp=Z,1.2nm,0.9s,baz=142,slow=6.2,SNR=5.8					
KS15	Wonju Array Si	68.80 326	eP	P	12 11 32.8	-1.5
KS01	Wonju Array Si	68.82 326	eP	P	12 11 35.1	+0.6
QSPA	South Pole Qui	69.86 180	eP	P	12 11 40.2	-0.5
NJ2	Nanjing	70.27 317	eP	P	12 11 43.1	-0.4
NJ2			pmax	pmax		
	comp=Z,15nm,0.5s					
MNSI	Mandailing Nat	70.34 278	P	P	12 11 57.7	+13
YSS	Yuzh-Sakhalins	70.70 342	eP	P	12 11 59.6	+14
USRK	Ussuriysk Ar.	72.18 333	P	P	12 11 55.1	+0.3
	comp=Z,3.9nm,0.6s,baz=118,slow=6.2,SNR=13					
WHN	Wuhan	72.33 313	⇑P	P	12 11 56.2	+0.2
SKNT	Sakolnakorn	73.12 296	P	P	12 12 01.7	+0.7
	comp=Z,17nm,1.1s					
MDJ	Mudanjiang	73.54 332	P	P	12 12 03.8	+1.0
MDJ			pmax	pmax		
	comp=Z,21nm,1.2s					
MDJ			pmax	pmax		
	comp=Z,420nm,10.1s					
PETK	Petropavlovsk-	73.57 353	P	P	12 12 02.7	-0.2
	comp=Z,5.4nm,0.6s,baz=124,slow=5.3,SNR=11					
PEA1	Petropavlovsk-	73.58 353	eP	P	12 12 02.7	-0.2
NONG	Nongkai	74.33 296	P	P	12 12 09.6	+1.5
	comp=Z,19nm,1.4s,comp=Z,15μm					
CN2	Changchun	74.81 329	eP	P	12 12 10.4	+0.1
CN2			pmax	pmax		
	comp=Z,10.0nm,0.7s					
GYA	Guiyang	75.63 306	P	P	12 12 17.2	+1.6
GYA			pP	pP	12 12 24.8	+1.2
GYA			PP	PP	12 15 09.0	+3.5
GYA			S	S	12 21 57.6	+2.0
GYA			SKS	SKSac	12 22 21.4	-3.0
GYA			SS	SS	12 26 51.0	+3.4
GYA			pmax	pmax		
	comp=Z,30nm,1.0s					
GYA			pmax	pmax		
	comp=Z,140nm,5.8s					
GYA			LR	LR		
	comp=Z,620nm,18.9s					
GYA			LR	LR		
	comp=Z,560nm,19.0s					
GYA			LR	LR		
	comp=Z,590nm,19.2s					
LOEI	Loei	75.67 295	P	P	12 12 15.8	-0.1
	comp=Z,11nm,1.9s					
KLR	Kul'dur	76.37 336	P	P	12 12 17.0	-2.1
	comp=Z,3.6nm,1.0s,baz=168,slow=6.8,SNR=9.2					
NANT	Nan	76.73 296	P	P	12 12 23.4	+1.6
	comp=Z,4.2nm,0.6s					
BJI	Beijing	77.11 322	P	P	12 12 23.8	+0.3
BJI			pmax	pmax		
	comp=Z,7.0nm,0.9s					
BJI			LR	LR		
	comp=Z,560nm,19.9s					
MAW	Mawson	77.21 202	P	P	12 12 23.9	+0.3
	comp=Z,7.9nm,1.0s,baz=112,slow=9.4,SNR=5.1					
MAW	Mawson	77.21 202	eP	P	12 12 23.9	+0.3
MAW			pmax	pmax		
	comp=Z,6.0nm,1.3s					
MAW	Mawson	77.21 202	eP	P	12 12 23.9	+0.3
	comp=Z,5.5nm,1.3s					
LAMP	Lampang	77.52 295	P	P	12 12 28.9	+2.7
	comp=Z,6.8nm,0.8s					
CRAI	Chiangrai	77.65 297	P	P	12 12 28.4	+1.4
	comp=Z,174nm,1.5s,comp=Z,6μm					
KMI	Kunming	78.01 302	P	P	12 12 30.8	+1.6
KMI			pmax	pmax		
	comp=Z,20nm,0.8s					
KMI			pmax	pmax		
	comp=Z,390nm,6.6s					
CM01	Chiang Mai Arr	78.04 295	eP	P	12 12 28.6	-0.6
CMAR	Chiang Mai Arr	78.07 295	P	P	12 12 29.7	+0.4
	comp=Z,3.1nm,0.6s,baz=129,slow=4.6,SNR=15					
CMMT	Chiang Mai	78.22 295	P	P	12 12 31.7	+1.5
	comp=Z,15nm,1.1s					
CHTO	Chiang Mai	78.23 295	P	P	12 12 31.8	+1.6
	comp=Z,66nm,1.4s					
CHTO	Chiang Mai	78.23 295	eP	P	12 12 31.0	+0.8
CHTO			pmax	pmax		
	comp=Z,10.0nm,0.8s					
CHTO	Chiang Mai	78.23 295	eP	P	12 12 31.0	+0.8
	comp=Z,10nm,0.8s					
CMAI	Chiengmai2	78.64 296	P	P	12 12 34.8	+2.2
	comp=Z,8.9nm,1.3s,comp=Z,659nm					
MHMT	Maesarieng	78.82 294	P	P	12 12 36.3	+2.8
	comp=Z,11nm,0.9s					
HHC	Hu-ho-hao-te	80.36 320	eP	P	12 12 43.9	+2.4
HHC			pmax	pmax		
	comp=Z,38nm,1.3s					
HHC			pmax	pmax		
	comp=Z,800nm,7.9s					
LZH	Lanzhou	82.70 313	eP	P	12 12 55.7	+1.6
LZH			pP	pP	12 13 01.0	-1.2
LZH			sP	sP	12 13 04.2	-0.9
LZH			pmax	pmax		
	comp=Z,22nm,1.3s					
SYO	Syowa Base	83.76 196	⇑eX	P	12 12 53.0	-5.8
SEY	Seymchan	83.80 353	P	P	12 12 58.5	-0.3
	comp=Z,2.2nm,0.6s,baz=105,slow=2.3,SNR=7.8					
SEY	Seymchan	83.80 353	⇓eP	P	12 12 59.0	+0.1
KDAK	Kodiak Island	84.24 20	P	P	12 13 15.2	+14
	comp=Z,16nm,0.9s,baz=158,slow=4.8,SNR=7.3					
KDAK	Kodiak Island	84.24 20	iP	P	12 13 02.1	+0.9
SHL	Shillong	87.00 298	eP	P	12 13 17.5	+1.5
ULN	Ulaanbaatar	87.09 324	diP	P	12 13 15.2	-0.7
ULN			pmax	pmax		
	comp=Z,26nm,1.7s					
ULN	Ulaanbaatar	87.09 324	eP	P	12 13 15.8	-0.1
	comp=Z,41nm,1.7s					
GTA	Gaotai	87.13 314	eP	P	12 13 18.5	+2.3
GTA			pP	pP	12 13 24.0	-0.4
GTA			sP	sP	12 13 27.0	-0.3
GTA			pmax	pmax		
	comp=Z,3.0nm,0.9s					
SONA0	Songino Array	87.44 324	eP	P	12 13 17.3	-0.3
	comp=Z,60nm,1.3s					
SONM	Songino Array	87.44 324	P	P	12 13 17.3	-0.3
	comp=Z,5.4nm,0.5s,baz=113,slow=3.7,SNR=3.5					
PKM	Mcpherson Peak	87.46 51	P	P	12 13 18.6	+0.6
	baz=243					
TTA	Tatalina	87.50 16	eP	P	12 13 18.6	+1.2
TTA			pmax	pmax		
	comp=Z,7.0nm,1.1s					
TTA	Tatalina	87.50 16	eP	P	12 13 18.6	+1.2
	comp=Z,6.8nm,1.1s					
YAK	Yakutsk	87.51 343	P	P	12 13 17.0	-0.3
	comp=Z,5.3nm,0.3s,baz=107,slow=2.2,SNR=4.1					
YAK	Yakutsk	87.51 343	eP	P	12 13 16.7	-0.6
YAK			pmax	pmax		
	comp=Z,15nm,1.3s					
YAK			pmax	pmax		
	comp=N,6.0nm,1.2s					
YAK			pmax	pmax		
	comp=E,3.0nm,1.3s					
YAK	Yakutsk	87.51 343	eP	P	12 13 17.0	-0.3
	comp=E,15nm,0.7s					
BILL	Bilibino	87.99 359	iP	P	12 13 18.3	-1.2
BILL			i		12 13 30.5	
BILL			pmax	pmax		
	comp=Z,12nm,1.3s					
BILL	Bilibino	87.99 359	eP	P	12 13 19.2	-0.3
	comp=Z,17nm,1.2s					
SNAA	Sanae	88.17 183	ciP	P	12 13 19.9	-0.8
SNAA	Sanae	88.17 183	eP	P	12 13 19.6	-1.1
	comp=Z,32nm,1.4s					
N02D	Trinity Center	88.26 45	P	P	12 13 21.2	-0.3
	baz=241,SNR=11					
ARVC	Arvin	88.29 52	P	P	12 13 21.8	+0.1
	baz=244					
M02C	Callahan	88.36 45	P	P	12 13 22.1	+0.1
	baz=241,SNR=9.8					
ORV	Oroville	88.40 47	eP	P	12 13 23.1	+1.0
ORV			pmax	pmax		
	comp=Z,17nm,1.1s					
ORV	Oroville	88.40 47	eP	P	12 13 23.1	+1.0
	comp=Z,17nm,1.1s					
VES	Vestal, Richgr	88.42 51	P	P	12 13 22.1	-0.3
	baz=244					
CMB	Columbia Colle	88.47 48	eP	P	12 13 22.6	0.0
CMB			pmax	pmax		
	comp=Z,14nm,1.1s					
CMB	Columbia Colle	88.47 48	eP	P	12 13 22.6	0.0
	comp=Z,14nm,1.1s					
MWC	Mount Wilson	88.47 53	eP	P	12 13 22.8	-0.1
MWC			pmax	pmax		
	comp=Z,17nm,1.0s					
MWC	Mount Wilson	88.47 53	eP	P	12 13 22.8	-0.1
	comp=Z,17nm,1.0s					
AFDM	Forest Hills D	88.48 47	eP	P	12 13 22.8	+0.2
	comp=Z,25nm,1.2s					
O03D	Paynes Creek	88.54 46	P	P	12 13 22.7	-0.2
	baz=242,SNR=7.6					
YBH	Yreka Blue Hor	88.62 44	P	P	12 13 21.8	-1.5
	comp=Z,6.4nm,0.7s,baz=185,slow=1.8,SNR=14					
YBH	Yreka Blue Hor	88.62 44	eP	P	12 13 21.8	-1.5
YBH			pmax	pmax		
	comp=Z,87nm,1.9s					
YBH	Yreka Blue Hor	88.62 44	eP	P	12 13 21.8	-1.5
	comp=Z,87nm,1.9s					
BFSC	Mount Baldy Ra	88.78 53	P	P	12 13 23.5	-0.8
	baz=244					
ISA	Isabella, Lake	88.79 51	P	P	12 13 23.9	-0.3
	baz=244					
ISA	Isabella, Lake	88.79 51	eP	P	12 13 24.5	+0.3
ISA			pmax	pmax		
	comp=Z,27nm,1.3s					
ISA	Isabella, Lake	88.79 51	eP	P	12 13 24.5	+0.3
	comp=Z,27nm,1.3s					
EDW2	Edwards Air Fo	88.80 52	P	P	12 13 23.7	-0.5
	baz=244					
MURC	Murrieta	88.85 54	P	P	12 13 23.9	-0.5
	baz=245					
HUMO	Hull Mountain	88.88 43	eP	P	12 13 24.0	-0.4
	comp=Z,15nm,0.9s					
CAST	Castle Rocks	88.92 17	eP	P	12 13 23.0	-1.0
	comp=Z,5.4nm,0.8s					
MONP2	Monument Peak	89.14 54	P	P	12 13 25.2	-0.9
	baz=245					
I03D	Drain, OR	89.16 42	P	P	12 13 25.1	-0.5
	baz=241					
M04C	Macdoel	89.21 45	P	P	12 13 25.5	-0.6
	baz=242,SNR=7.2					
WAKR	Walker	89.35 48	eP	P	12 13 27.1	+0.1
MLAC	Mammoth, Mammo	89.39 49	P	P	12 13 27.0	-0.2
	baz=244					
PFO	Pinyon Flats O	89.41 54	P	P	12 13 25.5	-1.7
	comp=Z,3.5nm,0.9s,baz=232,slow=6.9,SNR=3.8					
PFO	Pinyon Flats O	89.41 54	eP	P	12 13 25.5	-1.7
PFO			pmax	pmax		
	comp=Z,18nm,1.4s					
PFO	Pinyon Flats O	89.41 54	eP	P	12 13 25.5	-1.7
	comp=Z,18nm,1.4s					
TPFO	Pinon Flats	89.42 54	P	P	12 13 26.8	-0.4
	baz=245					
SWSC	Sam W. Stewart	89.64 55	P	P	12 13 27.9	-0.3
	baz=246					
MPMC	Manual Prospec	89.68 51	P	P	12 13 27.5	-1.1
	baz=245,SNR=10.0					
DAC	Darwin (Calif)	89.70 51	eP	P	12 13 28.0	-0.6
DAC			pmax	pmax		
	comp=Z,18nm,1.3s					
DAC	Darwin (Calif)	89.70 51	eP	P	12 13 28.0	-0.6
	comp=Z,18nm,1.3s					
BOD	Bodaibo	89.80 334	eP	P	12 13 26.3	-1.9
BOD			pmax	pmax		
	comp=Z,10.0nm,1.6s					
I04A	Tendick Farm,	89.80 43	P	P	12 13 27.8	-0.8
	baz=241					
GSC	Goldstone, Bar	89.86 52	P	P	12 13 28.3	-0.9
	baz=245					
GSC	Goldstone, Bar	89.86 52	eP	P	12 13 29.3	+0.1
GSC			pmax	pmax		
	comp=Z,50nm,1.9s					
GSC	Goldstone, Bar	89.86 52	eP	P	12 13 29.3	+0.1
	comp=Z,50nm,1.9s					
BELC	Belle Mtn. Jos	89.92 54	P	P	12 13 28.6	-1.1
	baz=246,SNR=7.3					
G03D	McMinnville, O	89.94 41	P	P	12 13 28.8	-0.4
	baz=241					
HEC	Hector,Ludlow	90.02 53	P	P	12 13 28.9	-1.1
	baz=245,SNR=5.9					
NV01	Mina Array Sit	90.11 49	eP	P	12 13 29.5	-1.0
NVAR	Mina Array Bea	90.11 49	P	P	12 13 29.5	-1.0
	comp=Z,10nm,1.1s,baz=230,slow=7.2,SNR=25					
GRAC	Grapevine Rang	90.17 50	P	P	12 13 28.9	-1.7
	baz=245,SNR=7.1					
BC3	Big Chuckawall	90.20 54	P	P	12 13 30.1	-0.8
	baz=246,SNR=5.3					
NV11	Mina Array Sit	90.22 49	eP	P	12 13 31.2	+0.2
	comp=Z,19nm,1.1s					
K05A	Summer Lake	90.28 44	eP	P	12 13 30.6	-0.5
	comp=Z,30nm,1.1s					
MOD	Modoc Plateau	90.29 45	eP	P	12 13 30.3	-0.9
	comp=Z,13nm,0.9s					
FURC	Furnace Creek,	90.31 51	P	P	12 13 29.8	-1.4
	baz=245,SNR=10					
J05D	Fort Rock, OR	90.31 43	P	P	12 13 30.2	-1.0
	baz=242					
H04A	Detroit Lake	90.36 42	eP	P	12 13 30.1	-1.2
	comp=Z,70nm,1.7s					
E03A	Lebam	90.41 40	eP	P	12 13 30.5	-0.9
	comp=Z,62nm,1.1s					
GLA	Glamis	90.43 55	P	P	12 13 31.8	-0.1
	baz=246					
GLA	Glamis	90.43 55	eP	P	12 13 32.7	+0.8
GLA			pmax	pmax		
	comp=Z,32nm,1.2s					
GLA	Glamis	90.43 55	eP	P	12 13 32.7	+0.8
	comp=Z,32nm,1.2s					
GMRC	Granite Mounta	90.50 53	P	P	12 13 31.0	-1.3
	baz=246,SNR=7.0					
SHOC	Shoshone, Teco	90.50 52	P	P	12 13 31.4	-0.7
	baz=245					
ZAK	Zakamensk	90.54 325	eP	P	12 13 31.3	-0.8
ZAK			pmax	pmax		
	comp=Z,8.0nm,1.7s					
TUQ	Turquoise Moun	90.57 52	P	P	12 13 32.0	-0.6
	baz=246					
IRM	Iron Mountain	90.63 54	P	P	12 13 31.9	-0.9
	baz=246,SNR=8.0					
NLWA	Neilton Lookou	90.65 39	eP	P	12 13 32.1	-0.4
	comp=Z,23nm,1.1s					
I05D	Terrebonne, OR	90.73 43	P	P	12 13 32.3	-0.7
	baz=242					
LVP	Lakeview Peak	90.88 41	eP	P	12 13 32.9	-0.9
Y12C	Blythe	90.94 54	P	P	12 13 33.7	-0.5
	baz=246					
Y12C	Blythe	90.94 54	eP	P	12 13 34.7	+0.6
	comp=Z,22nm,1.3s					
TPNV	Topopah Spring	90.96 51	P	P	12 13 33.5	-0.9
	baz=245,SNR=9.3					
TPNV	Topopah Spring	90.96 51	eP	P	12 13 33.4	-1.0
TPNV			pmax	pmax		
	comp=Z,20nm,1.1s					
TPNV	Topopah Spring	90.96 51	eP	P	12 13 33.4	-1.0
	comp=Z,20nm,1.1s					
LDFC	Landfair	91.03 53	eP	P	12 13 35.4	+0.6
	comp=Z,41nm,1.1s					
TLY	Talaya	91.03 326	P	P	12 13 33.9	-0.3
	comp=Z,1.1nm,0.4s,baz=169,slow=9.3,SNR=3.9					
TLY	Talaya	91.03 326	eP	P	12 13 34.4	+0.2
TLY			pmax	pmax		
	comp=Z,8.0nm,1.3s					
113A	Mohawk Valley,	91.14 56	eP	P	12 13 35.3	+0.2
	comp=Z,38nm,1.5s					
G05D	Wamic, OR	91.17 42	P	P	12 13 34.2	-0.8
	baz=242					
COLA	College	91.22 17	⇓eP	P	12 13 34.3	-0.4
COLA			pmax	pmax		
	comp=Z,3.0nm,1.2s					
ILAR	Eielson Array	91.41 18	P	P	12 13 33.0	-2.7
	comp=Z,1.1nm,0.6s,baz=233,slow=5.1,SNR=9.1					
ILB	Eielson Array	91.41 18	eP	P	12 13 35.6	0.0
IL1	Eielson Array	91.42 18	eP	P	12 13 35.6	-0.1
PDMCI	Parker Dam,Lak	91.45 54	P	P	12 13 36.2	-0.4
	baz=246					
214A	Organ Pipe Nat	91.56 57	P	P	12 13 36.6	-0.5
	baz=247					
LON	Longmire	91.57 40	eP	P	12 13 35.6	-1.3
LON			pmax	pmax		
	comp=Z,6.0nm,0.9s					
LON	Longmire	91.57 40	eP	P	12 13 35.6	-1.3
	comp=Z,6.3nm,0.9s					
SHPR	Sheep Range	91.58 52	eP	P	12 13 37.2	0.0
	comp=Z,18nm,1.4s					
WVOR	Wild Horse Val	91.63 45	eP	P	12 13 36.5	-0.9
WVOR			pmax	pmax		
	comp=Z,23nm,1.2s					
WVOR	Wild Horse Val	91.63 45	eP	P	12 13 36.5	-0.9
	comp=Z,23nm,1.2s					
D05A	Enumclaw	91.67 40	eP	P	12 13 38.3	+1.0
	comp=Z,72nm,1.4s					
SKAG	Skagway	91.70 25	eP	P	12 13 37.6	+0.6
	comp=Z,12nm,1.0s					
W13A	Hualapai Mount	91.96 53	eP	P	12 13 39.4	+0.2
	comp=Z,36nm,1.8s					
R11A	Troy Canyon, C	92.02 50	P	P	12 13 37.7	-1.6
	baz=246,SNR=6.7					
R11A	Troy Canyon, C	92.02 50	eP	P	12 13 38.3	-1.0
	comp=Z,2.5nm,0.8s					
B05A	Bryant	92.11 39	P	P	12 13 38.8	-0.4
	baz=242					
COLD	Coldfoot	92.43 15	eP	P	12 13 40.7	+0.4
	comp=Z,8.2nm,1.2s					
G08A	Pilot Rock	92.68 42	eP	P	12 13 41.7	-0.4
	comp=Z,33nm,1.8s					
HAWA	Hanford	92.81 41	eP	P	12 13 43.6	+1.1
	comp=Z,32nm,1.6s					
EGAK	Eagle	93.12 19	eP	P	12 13 42.2	-1.3
	comp=Z,3.6nm,0.8s					
LCMT	Little Creek M	93.19 52	eP	P	12 13 43.9	-0.8
	comp=Z,7.8nm,1.1s					
TUC	Tucson	93.29 57	P	P	12 13 44.7	-0.5
	baz=248					
TUC	Tucson	93.29 57	eP	P	12 13 46.2	+1.0
TUC			pmax	pmax		
	comp=Z,22nm,1.4s					
TUC	Tucson	93.29 57	eP	P	12 13 46.2	+1.0
	comp=Z,22nm,1.4s					
DLBC	Dease Lake	93.31 28	P	P	12 13 43.7	-1.0
	comp=Z,4.4nm,1.0s,baz=223,slow=8.2,SNR=4

KNB	Kanab	93.50	52	eP		P	12 13 46.2	0.0
	comp=Z,29nm,1.7s							
X16A	Lo Mia Camp, P	93.56	55	eP		P	12 13 47.0	+0.4
	comp=Z,12nm,1.3s							
GCAZ	Grand Canyon	93.65	53	eP		P	12 13 43.2	-3.8
U15A	North Rim	93.67	53	eP		P	12 13 47.7	+0.6
	comp=Z,29nm,1.8s							
MFID	Camas Ranch	93.92	45	eP		P	12 13 47.7	-0.2
	comp=Z,4.4nm,0.8s							
WUAZ	Wupatki	94.02	54	P		P	12 13 48.1	-0.5
	baz=248							
WUAZ	Wupatki	94.02	54	eP		P	12 13 48.6	0.0
	comp=Z,15nm,1.4s							
319A	Douglas	94.14	58	eP		P	12 13 49.9	+0.7
	comp=Z,9.8nm,0.9s							
MTPU	Mount Pierson	94.36	51	eP		P	12 13 50.1	-0.3
	comp=Z,3.9nm,0.9s							
X18A	Snowflake	94.75	55	eP		P	12 13 52.0	0.0
	comp=Z,5.5nm,0.8s							
HLID	Hailey	94.92	45	P		P	12 13 52.3	-0.2
	baz=247							
HLID	Hailey	94.92	45	eP		P	12 13 52.5	-0.1
	comp=Z,1.7nm,0.8s							
NEW	Newport	95.09	40	P		P	12 13 53.0	0.0
	baz=245							
HVU	Hansel Valley	95.35	48	eP		P	12 13 53.9	-0.6
HVU				pmax		pmax		
	comp=Z,14nm,1.6s							
HVU	Hansel Valley	95.35	48	eP		P	12 13 53.9	-0.6
	comp=Z,14nm,1.6s							
WMQ	Urumqi	97.21	314	eP		Pdif	12 14 04.5	+1.6
MNTX	Cornudas Mount	97.38	59	P		P	12 14 02.8	-1.0
	baz=251							
IMW	Indian Meadow	97.38	46	eP		P	12 14 03.3	-0.6
	comp=Z,4.5nm,1.2s							
BOZ	Bozeman (W)	97.55	44	P		P	12 14 03.5	-0.9
	baz=249							
INK	Inuvik	97.74	19	P		P	12 14 01.8	-2.7
	comp=Z,3.7nm,1.2s,baz=262,slow=2.8,SNR=4.5							
INK	Inuvik	97.74	19	eP		P	12 14 03.5	-1.0
INK				pmax		pmax		
	comp=Z,11nm,1.5s							
INK	Inuvik	97.74	19	eP		P	12 14 03.5	-1.0
	comp=Z,11nm,1.5s							
PDAR	Pinedale Array	97.93	47	P		P	12 14 04.3	-2.0
	comp=Z,0.4nm,0.5s,baz=221,slow=3.8,SNR=4.4							
MSTX	Muleshoe	100.17	58	P		Pdif	12 14 15.2	-1.2
	baz=252							
YKA	Yellowknife Ar	101.94	28	P		Pdif	12 14 22.5	-0.8
	comp=Z,0.6nm,0.6s,baz=257,slow=4.6,SNR=14							
YKB5	Yellowknife Ar	101.94	28	ePdif		Pdif	12 14 23.8	+0.4
RSSD	Black Hills	102.17	47	P		Pdif	12 14 25.0	-0.2
	baz=254							
BRVK	Borovoye	110.64	320	⇓	iPKIKP	PKiKP	12 19 02.2	-0.2
BRVK				pmax		pmax		
	comp=Z,5.0nm,2.5s							
ARU	Arti	117.48	324	i	PKIKP	PKPdf	12 19 15.4	0.0
ARU							12 20 28.4	
ARU							12 26 24.8	
ARU				SS		SS	12 36 41.6	+4.6
ARA0	ARCESS Array S	125.76	345	ePKPdf		PKPdf	12 19 29.3	-1.7
ARCES	ARCESS Array B	125.76	345	PKP		PKPdf	12 19 29.3	-1.7
	comp=Z,3.2nm,0.5s,baz=75,slow=1.4,SNR=21							
KLMR	Klimovskoe	125.95	332	ePKIKP		PKPdf	12 19 30.5	-1.1
KLMR				pmax		pmax		
	comp=Z,15nm,1.5s							
GNI	Garni	128.18	306	⇑	iPKIKP	PKPdf	12 19 37.9	+1.2
KIV	Kislovodsk	129.21	311	ePKIKP		PKPdf	12 19 40.2	+1.7
KIV				pmax		pmax		
	comp=Z,5.0nm,1.0s							
NEY	Neytrino	129.30	310	⇓	iPKIKP	PKPdf	12 19 39.2	+0.4
OBN	Obninsk	129.79	326	i	PKIKP	PKPdf	12 19 39.4	+0.4
OBN				pmax		pmax		
	comp=Z,4.0nm,0.6s							
FIA0	FINESS Array S	131.12	337	ePKIKP		PKPdf	12 19 40.2	-1.2
FIA0	FINESS Array S	131.12	337	ePKPdf		PKPdf	12 19 40.2	-1.2
FINES	FINESS Array B	131.12	337	PKP		PKPdf	12 19 40.2	-1.2
	comp=Z,1.0nm,0.5s,baz=18,slow=2.4,SNR=9.2							
KIEV	Kiev	135.74	323	⇓	iPKIKP	PKPdf	12 19 50.0	-0.4
NB2	NORSAR Subarra	136.12	344	PKPdf		PKPdf	12 19 50.0	-0.9
	comp=Z,0.6nm,0.6s,baz=31,slow=1.9							
NB200	NORSAR Array S	136.12	344	ePKPdf		PKPdf	12 19 49.3	-1.6
NOA	NORSAR Array B	136.12	344	PKP		PKPdf	12 19 49.3	-1.6
	comp=Z,1.1nm,0.8s,baz=31,slow=2.0,SNR=4.2							
KOLS	Kolonicke sedl	140.49	325	ePKIKP		PKPdf	12 20 01.0	+1.8
KOLS	Kolonicke sedl	140.49	325	ePKP		PKPdf	12 20 01.0	+1.8
STHS	Stebnicka Huta	140.76	326	ePKIKP		PKPdf	12 20 01.3	+1.6
STHS	Stebnicka Huta	140.76	326	ePKP		PKPdf	12 20 01.3	+1.6
CRVS	Cervenica-Dubn	140.95	325	ePKIKP		PKPdf	12 20 00.8	+0.7
CRVS	Cervenica-Dubn	140.95	325	ePKP		PKPdf	12 20 00.8	+0.7
VYHS	Vyhne	142.59	326	ePKIKP		PKPdf	12 20 04.7	+1.7
VYHS	Vyhne	142.59	326	ePKP		PKPdf	12 20 04.7	+1.7
DPC	Dobruska-Polom	142.62	330	ePKP		PKPdf	12 20 07.7	+4.6
DPC				ex		x	12 20 23.1	
DPC	Dobruska-Polom	142.62	330	ePKIKP		PKPdf	12 20 07.7	+4.6
DPC				e			12 20 23.1	
BRG	Berggiesshubel	143.31	333	ePKP		PKPbc	12 20 02.2	+0.9
	comp=Z,13nm,1.4s							
BRG	Berggiesshubel	143.31	333	ePKIKP		PKPbc	12 20 02.2	+0.9
BRG				pmax		pmax		
	comp=Z,20nm,1.5s							
CLL	Collm	143.39	334	ePKPdf		PKPdf	12 20 05.0	+0.7
CLL	Collm	143.39	334	ePKIKP		PKPdf	12 20 05.0	+0.7
EKA	Eskdalemuir Ar	144.33	352	PKP		PKPab	12 20 02.9	-0.9
	comp=Z,2.2nm,0.5s,baz=11,slow=1.8,SNR=5.9							
NKC	Novy Kostel	144.43	333	ePKP		PKPbc	12 20 05.2	+0.5
NKC				ex		x	12 20 25.1	
NKC	Novy Kostel	144.43	333	ePKIKP		PKPbc	12 20 05.2	+0.5
CONA	Conrad Observa	144.48	328	i	PKPdf	PKPdf	12 20 06.1	-0.3
	comp=Z,33nm,1.6s,SNR=14							
KHC	Kasperske Hory	144.74	331	ePKP		PKPab	12 20 05.5	-0.1
KHC				ex		x	12 20 23.8	
KHC	Kasperske Hory	144.74	331	ePKIKP		PKPab	12 20 05.5	-0.1
KHC	Kasperske Hory	144.74	331	ePKPdf		PKPbc	12 20 05.8	+0.1
GERES	GERESS Array B	144.89	330	PKP		PKPab	12 20 05.6	-0.7
	comp=Z,1.9nm,0.6s,baz=15,slow=5.5,SNR=13							
GEA0	GERESS Array S	144.90	330	ePKPdf		PKPab	12 20 05.2	-1.1
ARSA	Arzberg	145.10	327	i	PKPdf	PKPab	12 20 07.2	+0.2
	comp=Z,22nm,1.4s,SNR=5.3							
MOA	Molln	145.32	329	i	PKPbc	PKPbc	12 20 05.2	-2.4
	comp=Z,40nm,1.5s,SNR=13							
PERS	Pernice	145.71	326	i	PKPdf	PKPbc	12 20 09.1	+0.2
SOKA	Soboth	145.73	327	i	PKPab	PKPdf	12 20 08.2	-0.4
	comp=Z,30nm,1.5s,SNR=14							
KBA	Koelnbreinsper	146.31	329	i	PKPbc	PKPdf	12 20 09.6	-0.1
	comp=Z,11nm,1.2s							
BOJS	Bojanci	146.38	325	ePKPdf		PKPdf	12 20 09.7	+0.1
VISS	Visnje	146.40	326	i	PKPdf	PKPdf	12 20 09.4	-0.3
MYKA	Terra Mystica	146.47	328	i	PKPab	PKPbc	12 20 11.6	+0.3
	SNR=5.6							
BEBN	Eben Emael	146.52	340	PKP		PKPab	12 20 11.7	-0.4
CWF	Charnwood Fore	146.53	348	ePKPdf		PKPdf	12 20 09.8	+0.1
MEM	Membach	146.57	339	PKP		PKPdf	12 20 10.0	+0.2
JAVS	Javornik	146.75	326	i	PKPdf	PKPdf	12 20 10.0	-0.4
ABTA	Abfaltersbach	146.94	329	i	PKPdf	PKPdf	12 20 10.0	-0.7
	comp=Z,4.6nm,0.9s							
BCLA	Clavier	146.96	340	PKP		PKPab	12 20 13.5	-0.4
WTTA	Wattenberg	146.99	330	i	PKPbc	PKPdf	12 20 11.3	+0.4
	comp=Z,18nm,1.5s							
MOTA	Moosalm	147.18	331	i	pPKPdf	PKPbc	12 20 13.1	-0.3
	comp=Z,21nm,1.1s							
RETA	Reutte	147.23	331	i	PKPab	PKPbc	12 20 14.1	+0.7
	comp=Z,15nm,1.3s,SNR=5.2							
LANF	Langenberg	147.29	336	PKP		PKPbc	12 20 13.9	+0.4
WLF	Walferdange	147.32	338	PKP		PKPbc	12 20 13.3	-0.2
WLF	Walferdange	147.32	338	ePKIKP		PKPdf	12 20 11.0	-0.1
WLF				e			12 20 14.4	
WLF	Walferdange	147.32	338	ePKPdf		PKPdf	12 20 11.0	-0.1
WLF				ePKPbc		PKPbc	12 20 14.4	+0.9
DOU	Dourbes	147.47	340	PKP		PKPbc	12 20 13.6	-0.3
FETA	Feichten	147.59	331	i	PKPdf	PKPdf	12 20 10.6	-1.3
	comp=Z,19nm,1.3s,SNR=5.5							
BFO	Black Forest	147.61	335	ePKIKP		PKPdf	12 20 11.5	-0.2
BFO				e			12 20 14.7	
BFO	Black Forest	147.61	335	ePKPdf		PKPdf	12 20 11.5	-0.2
BFO				ePKPbc		PKPbc	12 20 14.7	+0.3
DAVA	Damuels	147.77	332	i	PKPdf	PKPdf	12 20 12.1	0.0
	comp=Z,11nm,0.8s							
FUORN	Ofenpass-Fuorn	148.10	331	ePKPdf		PKPdf	12 20 12.9	0.0
FUORN				ePKPbc		PKPbc	12 20 15.9	-0.2
DAVOX	Davos/Dischmat	148.16	331	PKPbc		PKPbc	12 20 15.8	-0.3
	comp=Z,6.5nm,0.6s,baz=333,slow=3.2,SNR=13							
ECH	Echery	148.16	336	PKP		PKPbc	12 20 15.7	-0.2
MOF	Molkenrain	148.47	335	PKP		PKPbc	12 20 16.7	-0.1
TUE	Stuetta	148.63	331	ePKPbc		PKPbc	12 20 17.6	+0.3
TUE				ePKPab		PKPab	12 20 20.7	-0.2
LOMF	Lomont	149.00	335	PKP		PKPbc	12 20 18.3	+0.2
SENIN	Lac Senin/Sane	149.60	334	ePKPbc		PKPbc	12 20 19.9	+0.1
PLDF	La Plantade	151.37	337	PKP		PKPbc	12 20 25.1	+1.2
AGO	Saint Agoulin	151.47	338	PKP		PKPab	12 20 28.3	-4.0
SSB	Saint Sauveur	151.60	335	ePKIKP		PKPdf	12 20 17.9	-0.2
SSB				e			12 20 23.8	
SSB	Saint Sauveur	151.60	335	ePKPdf		PKPdf	12 20 17.9	-0.2
SSB				ePKPbc		PKPbc	12 20 23.8	-0.6
LBL	Lubilhac	152.13	337	PKP		PKPbc	12 20 27.4	+1.8
TOA0	Torodi Ar. Sit	165.36	243	ePKPdf		PKPdf	12 20 34.2	-1.2
TORD	Torodi Ar. Bea	165.36	243	PKP		PKPdf	12 20 34.3	-1.1
	comp=Z,5.2nm,1.2s,baz=21,slow=0.1,SNR=11							
TORD				PKPab		PKPab	12 21 31.1	-2.1
	comp=Z,1.2nm,0.7s,baz=117,slow=3.3,SNR=5.3							
TOA1	Torodi Ar. Sit	165.37	243	ePKPdf		PKPdf	12 20 34.3	-1.1
TOA1				ePKPab		PKPab	12 21 31.1	-2.1

IDC 10 12:00:45.4±412.0, 47°.49N×47°.93E, h0km, Error ellipse: s-maj=164.5km s-min=139.2km az=19.0, Ukraine-Moldova-Southwestern Russia region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I31KZ	AKTYUBINSK INF	7.26	63	i		12 46 40.0	
	baz=250,slow=318,SNR=16						
I43RU	DUBNA INFRASONI	1.34	329	i		13 09 20.0	
	baz=140,slow=320,SNR=0.7						
I26DE	FREYUNG INFRAS	22.75	286	i		14 20 40.0	
	baz=82,slow=320,SNR=0.4						

*IDC **10** 12:02:31.8±1.3, 20°.50S×168°.43E, h0km, mb4.4/10, mb1 4.6/11, mb1mx4.3/41, mbtmp4.4/11, Error ellipse: s-maj=42.7km s-min=20.4km az=144.0*
*NEIC **10** 12:02:33.2±0.5, 20°.54S×168°.45E, h10km, mb4.8/7, Error ellipse: s-maj=15.6km s-min=9.6km az=159.0*
*ISCJB **10** 12:02:34.3±0.6, 20°.52S±0°.10×168°.37E±0°.09, h26km, mb4.6/18, Error ellipse: s-maj=16.8km s-min=7.9km az=139.0*

ISC 10 12:02:35.4±0.7, 20°.6S±0°.1×168°.45E±0°.09, h26km, n25, σ1§11/25, mb4.6/18, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	2.38	231	Pn	Pn	12 03 14.1	+1.2
	baz=49,slow=19,SNR=1.3						
DZM				Sn	Sn	12 03 40.0	-1.4
	14nm,0.3s,baz=92,slow=17,SNR=4.2						
MSVF	Nonsavu	9.51	74	ePn	Pn	12 04 50.0	-0.8
HNR	Honiara	13.79	322	ePn	Pn	12 05 47.6	-1.7
PMG	Port Moresby	23.34	295	P	P	12 07 42.3	+0.4
	13nm,0.9s,baz=116,slow=6.3,SNR=3.4						
PMG	Port Moresby	23.34	295	eP	P	12 07 42.5	+0.7
STKA	Stephens Creek	26.51	239	P	P	12 08 12.2	+1.3
	8.2nm,0.9s,baz=55,slow=8.9,SNR=3.5						
WRA	Warramunga Arr	31.97	265	P	P	12 08 57.9	-1.7
	1.8nm,0.9s,baz=93,slow=9.3,SNR=3.3						
ASAR	Alice Springs	32.10	258	P	P	12 09 00.6	-0.2
	11nm,0.8s,baz=83,slow=9.1,SNR=5.0						
KAPI	Kappang	49.72	281	eP	P	12 11 26.2	+0.4
	7.6nm,0.8s						
LEM	Lembang	60.35	274	P	P	12 12 49.0	+6.2
	22nm,0.7s,baz=75,slow=9.2,SNR=4.3						
MJAR	Matsushiro Arr	63.59	333	P	P	12 13 03.3	-0.7
	2.6nm,0.9s,baz=165,slow=5.4,SNR=4.5						
USRK	Ussuriysk Ar.	72.59	333	P	P	12 14 01.1	+0.8
	5.2nm,0.9s,baz=132,slow=4.1,SNR=4.4						
PETK	Petropavlovsk-	73.97	353	P	P	12 14 09.6	+1.4
	2.4nm,0.6s,baz=123,slow=8.6,SNR=3.1						
CHTO	Chiang Mai	78.54	295	eP	P	12 14 36.4	+1.4
	5.6nm,0.9s						
SNAA	Sanae	87.79	183	eP	P	12 15 20.2	-1.8
BILL	Bilibino	88.38	359	eP	P	12 15 24.3	-0.1
	4.5nm,1.0s						
CMB	Columbia Colle	88.60	48	eP	P	12 15 26.9	+0.6
	13nm,0.6s						
PMR	Palmer	88.63	19	eP	P	12 15 26.9	+1.2
	0.9nm,0.4s						
YBH	Yreka Blue Hor	88.78	44	P	P	12 15 27.6	+0.5
	3.3nm,0.8s,baz=159,slow=3.8,SNR=3.8						
HUMO	Hull Mountain	89.04	43	eP	P	12 15 29.1	+0.9
	27nm,1.0s						
NVAR	Mina Array Bea	90.24	49	P	P	12 15 34.8	+0.6
	2.4nm,0.8s,baz=224,slow=8.1,SNR=5.5						
ILAR	Eielson Array	91.73	18	P	P	12 15 38.8	-1.4
	0.8nm,0.9s,baz=228,slow=6.7,SNR=2.5						
WVOR	Wild Horse Val	91.79	45	eP	P	12 15 41.9	+0.7
	4.6nm,0.9s						
YKA	Yellowknife Ar	102.20	28	P	Pdif	12 16 28.0	+0.4
	0.2nm,0.6s,baz=254,slow=4.3,SNR=3.2						
DAVOX	Davos/Dischmat	148.57	331	PKPbc	PKPbc	12 22 19.3	-0.9
	11nm,0.9s,baz=13,slow=6.7,SNR=4.0						

*IDC **10** 12:06:10.8±1.7, 20°.23S×168°.44E, h0km, mb4.1/7, mb1 4.3/8, mb1mx3.9/43, mbtmp4.1/8, ML3.7/1, MS4.6/5, Ms1 4.6/5, ms1mx4.1/36, Error ellipse: s-maj=65.0km s-min=22.9km az=140.0*
*NEIC **10** 12:06:12.4±0.9, 20°.22S×168°.43E, h10km, mb4.5/4, Error ellipse: s-maj=30.3km s-min=11.5km az=137.0*
*ISCJB **10** 12:06:13.2±1.0, 20°.3S±0°.1×168°.3E±0°.2, h26km, mb4.1/10, MS4.6/4, Error ellipse: s-maj=30.6km s-min=9.1km az=42.0*

ISC 10 12:06:14.6±1.3, 20°.3S±0°.2×168°.3E±0°.2, h26km, n18, σ1§41/13, mb4.1/10, MS4.6/4, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	2.50	225	Pn	Pn	12 06 53.3	-0.4
	13nm,0.3s,baz=46,slow=18,SNR=8.3						
DZM				Sn	Sn	12 07 21.4	-2.1
	25nm,0.3s,baz=21,slow=9.6,SNR=4.2						
RAO	Raoul Island	15.32	128	LR	LR	12 14 06.1	
	comp=Z,2μm,18.7s,baz=143,slow=31						
CTAO	Charters Tower	20.73	267	eP	Pn	12 10 55.9	0.0
	33nm,0.9s						
TARA	Tarawa	21.98	12	eP	P	12 11 04.4	-2.4
	1.1nm,0.2s						
PMG	Port Moresby	23.13	295	LR	LR	12 18 57.8	
	comp=Z,3μm,18.0s,baz=148,slow=33						
STKA	Stephens Creek	26.57	239	P	P	12 11 52.9	+2.2
	2.2nm,0.7s,baz=74,slow=12,SNR=3.4						
WRA	Warramunga Arr	31.90	265	P	P	12 12 38.0	-0.2
	0.6nm,0.8s,baz=96,slow=8.3,SNR=2.9						
ASAR	Alice Springs	32.06	258	P	P	12 12 40.8	+1.2
	1.8nm,0.7s,baz=87,slow=8.8,SNR=5.6						
KAPI	Kappang	49.58	281	eP	P	12 15 03.4	-0.5
JCJ	Chichijima	53.50	331	LR	LR	12 36 34.0	
	comp=Z,298nm,20.5s,baz=127,slow=34						
KSRS	Korea Array	68.91	326	LR	LR	12 43 24.2	
	comp=Z,404nm,20.6s,baz=152,slow=32						
PETK	Petropavlovsk-	73.68	353	P	P	12 17 45.6	-0.1
	2.0nm,0.7s,baz=134,slow=4.2,SNR=3.3						
CMAR	Chiang Mai Arr	78.17	295	P	P	12 18 13.3	+1.2
	0.8nm,0.4s,baz=139,slow=5.6,SNR=4.8						
CHTO	Chiang Mai	78.33	295	eP	P	12 18 14.2	+1.2
	1.0nm,0.3s						
HUMO	Hull Mountain	88.90	43	eP	P	12 19 07.5	+0.7
	11nm,0.8s						
NVAR	Mina Array Bea	90.13	49	P	P	12 19 12.6	-0.2
	1.4nm,0.8s,baz=238,slow=9.5,SNR=6.0						
ILAR	Eielson Array	91.49	18	P	P	12 19 18.1	-0.2
	0.6nm,0.7s,baz=214,slow=6.2,SNR=3.8						
PLCA	Paso Flores	98.30	139	LR	LR	12 57 21.6	
	comp=Z,181nm,18.2s,baz=172,slow=31						

*IDC **10** 12:07:32.6±0.6, 20°.11S×168°.35E, h0km, mb4.4/19, mb1 4.6/20, mb1mx4.4/43, mbtmp4.4/20, ML3.8/1, Error ellipse: s-maj=19.5km s-min=14.8km az=123.0*
*NEIC **10** 12:07:34.5±0.2, 20°.13S×168°.35E, h10km, mb5.0/27, Error ellipse: s-maj=5.6km s-min=5.0km az=135.0*
NEIC Felt at Houailu, New Caledonia.
*ISCJB **10** 12:07:35.3±0.2, 20°.15S±0°.04×168°.26E±0°.04, h25km, mb4.8/50, MS5.0/1, Error ellipse: s-maj=5.9km s-min=5.0km az=140.2*
*BJI **10** 12:07:35.2, 19°.53S×168°.82E, h16km, mb4.8/28, mB5.4/10, Ms5.3/4, Ms7 4.9/4*
*MOS **10** 12:07:36.6±1.2, 20°.07S×168°.32E, h33km, mb5.1/15, Error ellipse: s-maj=10.6km s-min=8.7km az=164.9*

ISC 10 12:07:36.7±0.3, 20°.21S±0°.06×168°.37E±0°.05, h25km, n186, σ1§30/182, mb4.8/50, 2C-7D, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	2.58	224	Pn	Pn	12 08 15.7	-1.3
	18nm,0.3s,baz=133,slow=15,SNR=7.0						
DZM				Sn	Sn	12 08 45.3	-2.3
	126nm,0.3s,baz=107,slow=19,SNR=7.0						
MSVF	Nonsavu	9.49	77	eP	Pn	12 09 51.7	-0.3
MSVF				e		12 11 36.7	
MSVF	Nonsavu	9.49	77	ePn	Pn	12 09 51.7	-0.3
MSVF				eSn	Sn	12 11 36.7	-1.3
HNR	Honiara	13.45	322	eP	Pn	12 10 45.5	-0.6
HNR				e		12 13 12.8	
HNR	Honiara	13.45	322	ePn	Pn	12 10 45.5	-0.6
HNR				eSn	Sn	12 13 12.8	-2.0
URZ	Urewera	19.52	159	P	Pn	12 12 05.5	+1.9
	baz=320,slow=11,SNR=6.6						
AFI	Afiamalu	19.98	75	eP	P	12 12 07.6	0.0
AFI				pmax	pmax		
	comp=Z,15nm,0.8s						
AFI	Afiamalu	19.98	75	eP	P	12 12 07.6	0.0
	comp=Z,15nm,0.8s						
CTA	Charters Tower	20.76	266	P	P	12 12 16.6	+0.7
	comp=Z,21nm,1.1s,baz=82,slow=12,SNR=7.8						
CTAO	Charters Tower	20.76	266	eP	Pn	12 12 17.4	-1.0
CTAO				pmax	pmax		
	comp=Z,189nm,0.9s						
CTAO	Charters Tower	20.76	266	eP	Pn	12 12 17.4	-1.0
	comp=Z,189nm,0.9s						
BFZ	Birch Farm	21.49	163	eP	P	12 12 22.3	-1.3
	comp=Z,173nm,1.7s						
SNZO	South Karori	21.72	167	eP	P	12 12 24.5	-1.5
	comp=Z,65nm,0.4s						
KHZ	Kahutara	22.57	170	eP	P	12 12 29.5	-5.6
	comp=Z,132nm,1.8s						
CAN	Canberra	22.75	225	eP	P	12 12 39.9	+2.7
CAN	Canberra	22.75	225	eP	P	12 12 39.9	+2.7
PMG	Port Moresby	23.11	295	P	P	12 12 40.3	-0.8
	comp=Z,8.2nm,0.9s,baz=106,slow=16,SNR=5.0						
PMG	Port Moresby	23.11	295	ceP	P	12 12 40.3	-0.8
PMG				pmax	pmax		
	comp=Z,50nm,1.2s						
PMG	Port Moresby	23.11	295	eP	P	12 12 40.9	-0.1
RPZ	Rata Peaks	23.55	175	P	P	12 12 46.8	+1.7
	comp=Z,15nm,0.8s,baz=31,slow=5.9,SNR=3.3						
RPZ	Rata Peaks	23.55	175	eP	P	12 12 46.9	+1.7
	comp=Z,143nm,1.9s						
LBZ	Lake Benmore	24.16	177	eP	P	12 12 52.5	+1.6
	comp=Z,73nm,1.6s						
STKA	Stephens Creek	26.64	239	P	P	12 13 14.1	+0.6
	comp=Z,14nm,1.0s,baz=60,slow=9.5,SNR=8.8						
STKA	Stephens Creek	26.64	239	eP	P	12 13 14.6	+1.1
STKA				pmax	pmax		
	comp=Z,9.0nm,1.3s						
STKA	Stephens Creek	26.64	239	eP	P	12 13 14.6	+1.1
	comp=Z,8.5nm,1.3s						
TAU	Tasmania Unive	28.72	213	eP	P	12 13 33.0	+0.9
TAU				pmax	pmax		
	comp=Z,15nm,0.9s						
TAU	Tasmania Unive	28.72	213	eP	P	12 13 33.0	+0.9
	comp=Z,15nm,0.9s						
RAR	Rarotonga	29.80	98	eP	P	12 13 45.5	+3.7
RAR				pmax	pmax		
	comp=Z,90nm,1.2s						
RAR	Rarotonga	29.80	98	eP	P	12 13 45.5	+3.7
	comp=Z,90nm,1.2s						
WRAB	Tennant Creek	31.92	265	⇓	eP	P	12 14 01.3	+0.7
WRAB				pmax	pmax		
	comp=Z,11nm,1.0s						
WRAB	Tennant Creek	31.92	265	eP	P	12 13 59.5	-1.1
	comp=Z,6.7nm,1.1s						
WRA	Warramunga Arr	31.93	264	P	P	12 13 59.4	-1.3
	comp=Z,0.8nm,0.5s,baz=82,slow=6.4,SNR=6.3						
WRA				PcP	PcP	12 16 50.0	-0.8
	comp=Z,0.6nm,0.7s,baz=83,slow=2.2,SNR=4.9						
AS31	Alice Springs	32.10	257	eP	P	12 14 01.1	-1.2
	comp=Z,8.6nm,0.9s						
ASAR	Alice Springs	32.10	257	P	P	12 14 01.4	-0.8
	comp=Z,7.1nm,0.8s,baz=87,slow=9.0,SNR=14						
FITZ	Fitzroy Crossi	40.34	266	eP	P	12 15 13.0	+0.4
	comp=Z,34nm,1.1s						
MBWA	Marble Bar	45.37	260	eP	P	12 15 52.5	-0.9
	comp=Z,94nm,1.0s						
KAPI	Kappang	49.58	281	eP	P	12 16 27.2	+1.0
	comp=Z,21nm,1.1s						
VNDA	Vanda	57.44	182	P	P	12 17 22.9	-0.1
	comp=Z,1.8nm,1.0s,baz=11,slow=6.8,SN

SYO	Syowa Base	83.78	196	‖eP		P	12 20 01.8	-1.7
SEY	Seymchan	83.82	353	‖eP		P	12 20 03.0	-0.5
PMSA	Palmer Station	86.29	160	eP		P	12 20 17.0	+0.9
	comp=Z,20nm,0.6s							
ULN	Ulaanbaatar	87.15	324	d iP		P	12 20 20.3	-0.4
ULN					pmax	pmax		
	comp=Z,9.0nm,1.2s							
ULN	Ulaanbaatar	87.15	324	eP		P	12 20 20.9	+0.1
	comp=Z,3.1nm,0.7s							
GTA	Gaotai	87.19	314	eP		P	12 20 21.4	+0.3
GTA					pmax	pmax		
	comp=Z,5.0nm,1.0s							
PKM	Mcpherson Peak	87.40	51	P		P	12 20 22.7	+0.4
	baz=243							
YAK	Yakutsk	87.55	343	eP		P	12 20 21.4	-0.6
YAK					pmax	pmax		
	comp=Z,8.0nm,0.9s							
BILL	Bilibino	88.00	359	i P		P	12 20 22.5	-1.6
BILL				i			12 20 33.3	
BILL				i			12 23 51.9	
BILL					pmax	pmax		
	comp=Z,7.0nm,1.1s							
BILL	Bilibino	88.00	359	eP		P	12 20 23.6	-0.5
SNAA	Sanae	88.16	183	d iP		P	12 20 24.2	-1.0
SNAA	Sanae	88.16	183	eP		P	12 20 24.7	-0.5
	comp=Z,291nm,0.8s							
N02D	Trinity Center	88.20	45	P		P	12 20 25.9	0.0
	baz=241							
M02C	Callahan	88.31	45	P		P	12 20 26.3	-0.1
	baz=241							
PMR	Palmer	88.31	19	eP		P	12 20 25.3	-0.4
PMR					pmax	pmax		
	comp=Z,1.0nm,0.4s							
PMR	Palmer	88.31	19	eP		P	12 20 25.3	-0.4
	comp=Z,0.9nm,0.4s							
VES	Vestal, Richgr	88.36	51	P		P	12 20 25.8	-0.8
	baz=244							
CMB	Columbia Colle	88.41	48	eP		P	12 20 26.7	-0.2
CMB					pmax	pmax		
	comp=Z,21nm,0.6s							
CMB	Columbia Colle	88.41	48	eP		P	12 20 26.7	-0.2
	comp=Z,20nm,0.6s							
AFDM	Forest Hills D	88.42	47	eP		P	12 20 26.8	-0.1
O03D	Paynes Creek	88.48	46	P		P	12 20 27.1	-0.1
	baz=242							
YBH	Yreka Blue Hor	88.56	44	P		P	12 20 27.2	-0.3
	comp=Z,4.9nm,0.8s,baz=167,slow=1.8,SNR=8.5							
YBH	Yreka Blue Hor	88.56	44	eP		P	12 20 28.0	+0.4
YBH	Yreka Blue Hor	88.56	44	eP		P	12 20 28.0	+0.4
ISA	Isabella, Lake	88.73	51	P		P	12 20 28.6	+0.2
	baz=244							
ISA	Isabella, Lake	88.73	51	eP		P	12 20 28.6	+0.2
ISA	Isabella, Lake	88.73	51	eP		P	12 20 28.6	+0.2
EDW2	Edwards Air Fo	88.74	52	P		P	12 20 27.5	-1.0
	baz=244							
HUMO	Hull Mountain	88.83	43	eP		P	12 20 29.1	+0.5
MONP2	Monument Peak	89.08	54	P		P	12 20 29.5	-0.9
	baz=245							
M04C	Macdoel	89.16	45	P		P	12 20 30.2	-0.2
	baz=242							
WAKR	Walker	89.29	48	eP		P	12 20 31.4	+0.3
CWC	Cottonwood Cre	89.35	51	P		P	12 20 31.5	0.0
	baz=244							
TPFO	Pinon Flats	89.35	54	P		P	12 20 31.7	+0.2
	baz=245							
MPMC	Manual Prospec	89.62	51	P		P	12 20 32.5	-0.3
	baz=245							
DAC	Darwin (Calif)	89.64	51	eP		P	12 20 33.2	+0.4
DAC	Darwin (Calif)	89.64	51	eP		P	12 20 33.2	+0.4
I04A	Tendick Farm,	89.75	43	P		P	12 20 32.2	-0.8
	baz=241							
BOD	Bodaibo	89.84	334	eP		P	12 20 29.2	-3.8
BOD					pmax	pmax		
	comp=Z,8.0nm,1.1s							
NVAR	Mina Array Bea	90.06	49	P		P	12 20 34.6	-0.2
	comp=Z,4.9nm,0.9s,baz=228,slow=8.0,SNR=18							
GRAC	Grapevine Rang	90.11	50	P		P	12 20 34.9	+0.1
	baz=245							
K05A	Summer Lake	90.22	44	eP		P	12 20 35.7	+0.3
MOD	Modoc Plateau	90.23	45	eP		P	12 20 35.4	-0.1
J05D	Fort Rock, OR	90.26	43	P		P	12 20 35.6	+0.1
	baz=242							
H04A	Detroit Lake	90.31	42	eP		P	12 20 35.2	-0.4
GLA	Glamis	90.37	55	P		P	12 20 36.8	+0.6
	baz=246							
E03A	Lebam	90.37	40	eP		P	12 20 36.5	+0.7
GMRC	Granite Mounta	90.44	53	P		P	12 20 36.1	-0.5
	baz=246							
SHOC	Shoshone, Teco	90.44	52	P		P	12 20 36.4	0.0
	baz=245							
IRM	Iron Mountain	90.57	54	P		P	12 20 37.3	+0.2
	baz=246							
ZAK	Zakamensk	90.60	325	eP		P	12 20 35.1	-1.8
ZAK					pmax	pmax		
	comp=Z,6.0nm,1.2s							
TPNV	Topopah Spring	90.90	51	P		P	12 20 38.8	+0.1
	baz=245							
TPNV	Topopah Spring	90.90	51	eP		P	12 20 38.7	0.0
TPNV	Topopah Spring	90.90	51	eP		P	12 20 38.7	0.0
ILAR	Eielson Array	91.40	18	P		P	12 20 38.7	-1.4
	comp=Z,1.4nm,0.6s,baz=222,slow=6.4,SNR=8.1							
IL1	Eielson Array	91.40	18	eP		P	12 20 40.8	+0.7
SHPR	Sheep Range	91.51	52	eP		P	12 20 42.0	+0.4
WVOR	Wild Horse Val	91.58	45	eP		P	12 20 41.7	0.0
WVOR	Wild Horse Val	91.58	45	eP		P	12 20 41.7	0.0
D05A	Enumclaw	91.62	40	eP		P	12 20 42.5	+0.9
R11A	Troy Canyon, C	91.96	50	P		P	12 20 43.1	-0.5
	baz=246							
R11A	Troy Canyon, C	91.96	50	eP		P	12 20 43.1	-0.5
B05A	Bryant	92.07	39	P		P	12 20 43.4	-0.2
	baz=242							
LCMT	Little Creek M	93.13	52	eP		P	12 20 49.4	+0.4
TUC	Tucson	93.22	57	P		P	12 20 49.0	-0.4
	baz=248							
DLBC	Dease Lake	93.28	28	P		P	12 20 48.5	-0.5
	comp=Z,2.3nm,1.1s,baz=184,slow=9.7,SNR=3.3							
MTPU	Mount Pierson	94.30	51	eP		P	12 20 55.5	+0.9
HLID	Hailey	94.86	45	P		P	12 20 56.3	-0.6
	baz=247							
TMUT	Trail Mountain	95.47	50	eP		P	12 21 00.3	+0.4
WMQ	Urumqi	97.28	314	eP		Pdif	12 21 09.4	+1.6
ANMO	Albuquerque	97.53	56	eP		Pdif	12 21 10.1	+0.8
ANMO	Albuquerque	97.53	56	eP		Pdif	12 21 10.1	+0.9
PDAR	Pinedale Array	97.87	47	P		P	12 21 10.3	-0.3
	comp=Z,0.2nm,0.6s,baz=213,slow=7.6,SNR=3.1							
TXAR	Lajitas Array	97.95	62	P		P	12 21 10.6	-0.5
	comp=Z,0.6nm,0.9s,baz=235,slow=4.4,SNR=4.2							
YKA	Yellowknife Ar	101.90	28	P		Pdif	12 21 27.7	-0.1
	comp=Z,0.7nm,0.8s,baz=250,slow=4.7,SNR=6.8							
ARU	Arti	117.53	324	i PKIKP		PKPdf	12 26 19.4	-0.7
ARU							12 27 31.9	
ARU							12 33 28.7	
ARU					SS	SS	12 43 38.0	-4.3
ARCES	ARCESS Array B	125.79	345		PKP	PKPdf	12 26 34.9	-0.7
	comp=Z,4.7nm,0.8s,baz=50,slow=2.1,SNR=11							
KLMR	Klimovskoe	126.00	332	ePKIKP		PKPdf	12 26 34.8	-1.4
KLMR				e			12 26 45.6	
KLMR					pmax	pmax		
	comp=Z,7.0nm,1.4s							
KIV	Kislovodsk	129.28	311	ePKIKP		PKPdf	12 26 43.1	0.0
KIV					pmax	pmax		
	comp=Z,5.0nm,0.9s							
NEY	Neytrino	129.37	310	⇑i PKIKP		PKPdf	12 26 40.8	-2.7
OBN	Obninsk	129.84	326	i PKIKP		PKPdf	12 26 44.7	+1.0
OBN					pmax	pmax		
	comp=Z,7.0nm,0.9s							
FINES	FINESS Array B	131.16	337		PKP	PKPdf	12 26 44.6	-1.4
	comp=Z,1.4nm,0.8s,baz=4.1,slow=2.7,SNR=4.3							
KIEV	Kiev	135.80	323	‖i PKIKP		PKPdf	12 26 54.4	-0.7
NOA	NORSAR Array B	136.15	344		PKP	PKPdf	12 26 54.0	-1.5
	comp=Z,0.7nm,0.6s,baz=39,slow=2.1,SNR=3.2							
BRTR	Keskin Array B	136.75	307		PKP	PKPdf	12 26 57.2	-0.2
	comp=Z,0.8nm,1.0s,baz=156,slow=4.3,SNR=4.1							
STHS	Stebnicka Huta	140.82	326	ePKIKP		PKPdf	12 27 05.8	+1.4
STHS	Stebnicka Huta	140.82	326	ePKP		PKPdf	12 27 05.8	+1.4
DPC	Dobruska-Polom	142.67	330	ePKP		PKPdf	12 27 08.0	+0.3
DPC	Dobruska-Polom	142.67	330	ePKIKP		PKPdf	12 27 08.0	+0.3
BRG	Berggiesshubel	143.36	333	ePKP		PKPab	12 27 04.7	-0.2
	comp=Z,9.6nm,1.3s							
BRG	Berggiesshubel	143.36	333	ePKIKP		PKPab	12 27 04.7	-0.2
BRG					pmax	pmax		
	comp=Z,13nm,1.3s							
CLL	Collm	143.43	334	i PKPdf		PKPbc	12 27 06.3	+0.2
CLL				i			12 27 20.2	
CLL	Collm	143.43	334	i PKIKP		PKPbc	12 27 06.3	+0.2
NKC	Novy Kostel	144.48	333	ePKP		PKPbc	12 27 09.6	+0.2
NKC				ex		x	12 27 21.3	
NKC	Novy Kostel	144.48	333	ePKIKP		PKPbc	12 27 09.6	+0.2
NKC				e			12 27 21.3	
CONA	Conrad Observa	144.53	328	i PKPdf		PKPbc	12 27 10.2	+0.4
	comp=Z,16nm,1.4s,SNR=6.6							
KHC	Kasperske Hory	144.79	331	ePKP		PKPbc	12 27 10.5	0.0
KHC				ex		x	12 27 22.0	
KHC	Kasperske Hory	144.79	331	ePKIKP		PKPbc	12 27 10.5	0.0
KHC				e			12 27 22.0	
GERES	GERESS Array B	144.94	331		PKP	PKPab	12 27 10.8	-0.2
	comp=Z,2.2nm,0.8s,baz=45,slow=2.8,SNR=4.9							
ARSA	Arzberg	145.15	327	i PKPdf		PKPdf	12 27 12.5	+0.3
	comp=Z,19nm,1.5s							
MOA	Molln	145.37	329	i PKPdf		PKPab	12 27 12.9	+0.4
	comp=Z,23nm,1.2s,SNR=9.4							
SOKA	Soboth	145.78	327	i PKPab		PKPbc	12 27 13.8	+0.1
	comp=Z,19nm,1.4s,SNR=7.4							
MYKA	Terra Mystica	146.52	328	i PKPab		PKPab	12 27 16.4	-0.5
	comp=Z,5.5nm,0.9s							
MEM	Membach	146.61	339		PKP	PKPbc	12 27 16.1	+0.1
ABTA	Abfaltersbach	147.00	329	i PKPdf		PKPdf	12 27 14.8	-0.5
	comp=Z,4.9nm,0.9s							
WTTA	Wattenberg	147.04	330	i PKPbc		PKPdf	12 27 16.4	+0.8
	comp=Z,12nm,1.1s							
MOTA	Moosalm	147.23	331	i PKPdf		PKPdf	12 27 14.2	-1.7
	comp=Z,7.8nm,1.0s							
RETA	Reutte	147.27	331	i PKPdf		PKPdf	12 27 15.6	-0.2
	comp=Z,10nm,1.3s							
WLF	Walferdange	147.36	338		PKP	PKPab	12 27 19.1	-0.9
WLF	Walferdange	147.36	338	ePKP2		PKPbc	12 27 18.8	+0.6
WLF	Walferdange	147.36	338	ePKPbc		PKPbc	12 27 18.8	+0.6
DOU	Dourbes	147.51	340		PKP	PKPbc	12 27 18.6	+0.1
FETA	Feichten	147.64	331	i PKPdf		PKPdf	12 27 15.7	-0.8
	comp=Z,20nm,1.6s,SNR=5.6							
BFO	Black Forest	147.65	335	i PKP2		PKPbc	12 27 19.1	0.0
BFO	Black Forest	147.65	335	ePKPbc		PKPbc	12 27 19.0	-0.1
DAVA	Damuels	147.82	332	i sPKPdf		PKPbc	12 27 20.1	+0.4
	comp=Z,10nm,1.1s							
DAVOX	Davos/Dischmat	148.20	331		PKPbc	PKPbc	12 27 20.4	-0.4
	comp=Z,13nm,1.0s,baz=118,slow=2.7,SNR=8.2							
TUE	Stuetta	148.68	332	ePKPdf		PKPdf	12 27 18.4	+0.1
TUE				ePKPbc		PKPbc	12 27 21.6	-0.4
TUE				ePKPab		PKPab	12 27 26.7	+1.0
TORD	Torodi Ar. Bea	165.43	243		PKP	PKPdf	12 27 39.1	-0.9
	comp=Z,1.5nm,1.0s,baz=74,slow=2.2,SNR=5.0							
TORD					PKPab	PKPab	12 28 37.5	-0.6
	comp=Z,0.7nm,0.8s,baz=102,slow=3.9,SNR=4.7							

*NEIC **10** 12:08:24.1, 43.54S×172.75E, h8km, ML3.9(WEL), After WEL.*
NEIC Felt [V] in the Christchurch area.

WEL 10 12:08:24.7±0.1, 43.54S×172.73E, h5km, ML3.8/24, 3C-3D, Error ellipse: s-maj=0.6km s-min=0.3km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRLZ	Canterbury Las	0.09	248	‖PG		Pg	12 08 26.5	0.0
CRLZ				SG		Sg	12 08 28.0	+0.2
CRLZ				SG			12 08 28.3	
CRLZ				AML		AML	12 08 28.8	
CRLZ				AML		AML	12 08 29.1	
CRLZ	Canterbury Las	0.09	248	Pg		Pg	12 08 26.5	0.0
CRLZ				Sg		Sg	12 08 28.0	+0.2
MQZ	McQueen's Vall	0.17	200	⇑PG		Pg	12 08 28.1	0.0
MQZ				SG		Sg	12 08 30.6	+0.2
MQZ				SG			12 08 30.8	
MQZ				AML		AML	12 08 31.8	
MQZ	McQueen's Vall	0.17	200	Pg		Pg	12 08 28.1	0.0
MQZ				Sg		Sg	12 08 30.6	+0.2
OXZ	Oxford	0.55	293	‖PG		Pg	12 08 35.1	-0.1
OXZ				SG		Sg	12 08 43.0	+0.6
OXZ	Oxford	0.55	293	P*		Pg	12 08 35.1	-0.1
LTZ	Lake Taylor	0.83	336	⇑P*		Pg	12 08 40.9	+0.3
LTZ				S*		Sg	12 08 51.7	+0.2
LTZ				AML		AML	12 08 52.9	
LTZ	Lake Taylor	0.83	336	P*		Pg	12 08 40.8	+0.2
RPZ	Rata Peaks	1.23	261	⇑P*		Pg	12 08 46.8	-1.5
RPZ				AML		AML	12 09 05.9	
RPZ				AML		AML	12 09 06.5	
RPZ	Rata Peaks	1.23	261	P*		Pg	12 08 46.8	-1.5
INZ	Inchbonnie	1.25	310	P*		Pg	12 08 46.8	-1.8
KHZ	Kahutara	1.27	28	P*		Pg	12 08 46.7	-2.3
KHZ	Kahutara	1.27	28	P*		Pg	12 08 46.7	-2.3
WVZ	Waitaha Valley	1.53	287	PN		Pn	12 08 51.5	-1.2
WVZ				AML		AML	12 09 19.2	
WVZ				AML		AML	12 09 24.7	
WVZ	Waitaha Valley	1.53	287	Pn		Pn	12 08 51.5	-1.2
THZ	Tophouse	1.78	4	PN		Pn	12 08 54.5	-1.7
THZ				AML		AML	12 09 19.6	
THZ				AML		AML	12 09 30.7	
THZ	Tophouse	1.78	4	Pn		Pn	12 08 54.5	-1.8
DSZ	Denniston Nort	1.92	339	‖PN		Pn	12 08 56.8	-1.3
DSZ				AML		AML	12 09 22.0	
DSZ				AML		AML	12 09 22.8	
DSZ				AML		AML	12 09 22.9	
DSZ				AML		AML	12 09 29.6	
DSZ	Denniston Nort	1.92	339	Pn		Pn	12 08 56.8	-1.3
BSWZ	Blackbirch Sta	2.01	25	PN		Pn	12 08 57.7	-1.6
BSWZ				AML		AML	12 09 25.4	
BSWZ				AML		AML	12 09 43.9	
BSWZ	Blackbirch Sta	2.01	25	Pn		Pn	12 08 57.7	-1.6
LBZ	Lake Benmore	2.02	245	PN		Pn	12 08 58.1	-1.4
LBZ				AML		AML	12 09 34.1	
LBZ				AML		AML	12 09 34.1	
LBZ				AML		AML	12 09 38.5	
LBZ				AML		AML	12 09 38.5	
LBZ	Lake Benmore	2.02	245	Pn		Pn	12 08 58.1	-1.4
FOZ	Fox Glacier	2.12	269	PN		Pn	12 09 00.4	-0.4
FOZ				AML		AML	12 09 43.5	
FOZ				AML		AML	12 09 43.5	
FOZ				AML		AML	12 09 44.7	
FOZ				AML		AML	12 09 44.7	
FOZ	Fox Glacier	2.12	269	Pn		Pn	12 09 00.4	-0.4
ODZ	Otahua Downs	2.12	224	PN		Pn	12 08 58.9	-1.9
ODZ				AML		AML	12 09 39.5	
ODZ				AML		AML	12 09 39.5	
ODZ				AML		AML	12 09 39.7	
ODZ				AML		AML	12 09 39.7	
ODZ	Otahua Downs	2.12	224	Pn		Pn	12 08 58.9	-1.9
TUWZ	Tuamarina	2.29	23	PN		Pn	12 09 01.1	-2.0
TUWZ	Tuamarina	2.29	23	Pn		Pn	12 09 01.1	-2.0
NNZ	Nelson	2.37	12	PN		Pn	12 09 03.0	-1.3
NNZ	Nelson	2.37	12	Pn		Pn	12 09 03.0	-1.3
TCW	Tory Channel	2.59	27	PN		Pn	12 09 05.0	-2.3
TCW				AML		AML	12 09 39.6	
TCW	Tory Channel	2.59	27	Pn		Pn	12 09 05.0	-2.3
BHW	Baring Head	2.66	37	PN		Pn	12 09 05.5	-2.6
BHW	Baring Head	2.66	37	Pn		Pn	12 09 05.8	-2.3
PLWZ	Palliser	2.71	44	PN		Pn	12 09 06.1	-2.8
PLWZ	Palliser	2.71	44	Pn		Pn	12 09 06.2	-2.8
WEL	Wellington	2.71	34	PN		Pn	12 09 06.5	-2.4
WEL	Wellington	2.71	34	Pn		Pn	12 09 06.7	-2.2
QRZ	Quartz Range	2.72	357	PN		Pn	12 09 07.4	-1.6
QRZ				AML		AML	12 09 42.4	
QRZ				AML		AML	12 09 55.2	
QRZ				AML		AML	12 09 59.3	
QRZ				AML		AML	12 09 59.3	
QRZ	Quartz Range	2.72	357	Pn		Pn	12 09 07.4	-1.6
HHSZ	Highcliff Hill	2.79	212	PN		Pn	12 09 08.0	-2.0
HHSZ	Highcliff Hill	2.79	212	Pn		Pn	12 09 08.0	-2.0
MSWZ	Moikau Station	2.82	42	PN		Pn	12 09 07.7	-2.8
MSWZ				AML		AML	12 09 41.3	
MSWZ	Moikau Station	2.82	42	Pn		Pn	12 09 07.9	-2.6
DUWZ	D'Urville Isla	2.88	18	PN		Pn	12 09 09.2	-2.0
DUWZ				AML		AML	12 12 21.5	
DUWZ				AML		AML	12 12 22.2	
DUWZ	D'Urville Isla	2.88	18	Pn		Pn	12 09 09.4	-1.8
JCZ	Jackson Bay	2.91	258	PN		Pn	12 09 10.1	-1.6
JCZ				AML		AML	12 10 04.7	
JCZ				AML		AML	12 10 09.7	
JCZ	Jackson Bay	2.91	258	Pn		Pn	12 09 10.5	-1.2
WKZ	Wanaka	2.97	243	PN		Pn	12 09 10.8	-1.7
WKZ				AML		AML	12 10 06.1	
WKZ				AML		AML	12 10 06.6	
WKZ	Wanaka	2.97	243	Pn		Pn	12 09 10.8	-1.7
EAZ	Earnscleugh	2.98	234	PN		Pn	12 09 11.0	-1.6
EAZ				AML		AML	12 10 03.9	
EAZ				AML		AML	12 10 04.0	
EAZ				AML		AML	12 10 05.9	
EAZ				AML		AML	12 10 12.2	
EAZ	Earnscleugh	2.98	234	Pn		Pn	12 09 11.0	-1.6
CAW	Cannon Point	2.98	36	PN		Pn	12 09 09.9	-2.7
CAW				AML		AML	12 09 49.0	
CAW				AML		AML	12 09 49.0	
CAW	Cannon Point	2.98	36	Pn		Pn	12 09 10.1	-2.6
KIW	Kapiti Island	3.13	32	PN		Pn	12 09 12.1	-2.6
KIW	Kapiti Island	3.13	32	Pn		Pn	12 09 12.3	-2.4
MTW	Mount Morrison	3.14	42	ePN		Pn	12 09 11.3	-3.6
MTW	Mount Morrison	3.14	42	Pn		Pn	12 09 12.0	-2.9
OGWZ	Otaki Gorge	3.27	34	PN		Pn	12 09 13.7	-2.9
OGWZ	Otaki Gorge	3.27	34	Pn		Pn	12 09 13.9	-2.7
TUZ	Tuapeka	3.27	221	PN		Pn	12 09 14.5	-2.1
TUZ				AML		AML	12 10 19.6	
TUZ				AML		AML	12 10 19.8	
TUZ	Tuapeka	3.27	221	Pn		Pn	12 09 14.8	-1.8
HOWZ	Holdsworth Sta	3.35	39	PN		Pn	12 09 15.2	-2.6
HOWZ	Holdsworth Sta	3.35	39	Pn		Pn	12 09 15.3	-2.5
MRZ	Mangatainoka R	3.57	37	PN		Pn	12 09 17.7	-3.1
MRZ	Mangatainoka R	3.57	37	Pn		Pn	12 09 17.7	-3.1
TIWZ	Tintock	3.62	41	ePN		Pn	12 09 18.3	-3.1
TIWZ				AML		AML	12 10 04.8	
TIWZ	Tintock	3.62	41	Pn		Pn	12 09 19.1	-2.3
MSZ	Milford Sound	3.64	250	AML		AML	12 10 26.9	
MSZ				AML		AML	12 10 29.4	
MSZ	Milford Sound	3.64	250	Pn		Pn	12 09 19.6	-2.0
MLZ	Mavora Lakes	3.77	240	PN		Pn	12 09 21.4	-2.2
MLZ	Mavora Lakes	3.77	240	Pn		Pn	12 09 21.5	-2.1
PRWZ	Pori Road	3.84	40	PN		Pn	12 09 22.0	-2.4
PRWZ	Pori Road	3.84	40	Pn		Pn	12 09 22.3	-2.1
SYZ	Scrubby Hill	3.93	219	PN		Pn	12 09 23.8	-1.8
SYZ	Scrubby Hill	3.93	219	Pn		Pn	12 09 24.1	-1.6
WAZ	Wanganui	4.14	25	Pn		Pn	12 09 28.2	-0.4
WHZ	Wether Hill Ro	4.14	234	PN		Pn	12 09 25.8	-2.8
WHZ				AML		AML	12 11 57.4	
WHZ	Wether Hill Ro	4.14	234	Pn		Pn	12 09 25.9	-2.7
TSZ	Takapari Road	4.24	36	Pn		Pn	12 09 26.5	-3.4
NEZ	North Egmont	4.39	14	ePN		Pn	12 09 31.4	-0.6
DCZ	Deep Cove	4.43	242	PN		Pn	12 09 30.2	-2.3
DCZ	Deep Cove	4.43	242	Pn		Pn	12 09 30.2	-2.3
VRZ	Vera Road	4.67	20	Pn		Pn	12 09 35.3	-0.5
APZ	The Paps	4.70	224	ePN		Pn	12 09 33.8	-2.4
APZ				AML		AML	12 12 05.4	
APZ	The Paps	4.70	224	Pn		Pn	12 09 34.0	-2.2
WNVZ	Wahianoa	4.73	28	ePN		Pn	12 09 33.0	-3.9
BHHZ	Black Hill Sta	4.76	33	Pn		Pn	12 09 34.5	-2.6
HIZ	Hauiti	5.27	18	PN		Pn	12 09 42.5	-1.6
HIZ	Hauiti	5.27	18	Pn		Pn	12 09 42.6	-1.5
MRHZ	Matea Rd	5.46	32	PN		Pn	12 09 43.4	-3.4
TLZ	Tolley Road	5.62	23	ePN		Pn	12 09 45.9	-3.0
TLZ	Tolley Road	5.62	23	Pn		Pn	12 09 47.0	-2.0
SNGZ	Shannon Statio	5.89	38	Pn		Pn	12 09 49.2	-3.5
MWZ	Matawai	6.34	37	ePN		Pn	12 09 53.4	-5.4
MWZ	Matawai	6.34	37	Pn		Pn	12 09 54.4	-4.4

WEL 10 12:11:57.8±0.1, 40.52S×174.55E, h57km±3km, ML2.8/5, 2C, Error ellipse: s-maj=1.3km s-min=0.8km az=90.0, Cook Strait

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KIW	Kapiti Island	0.44	142	⇑PN		Pn	12 12 08.5	-0.4
KIW				SN		Sn	12 12 17.0	+0.1
KIW				AML		AML	12 12 18.1	
OGWZ	Otaki Gorge	0.56	123	⇑PN		Pn	12 12 09.7	-0.5
OGWZ				SN		Sn	12 12 19.3	+0.2
OHWZ	Ohakea	0.66	62	PN		Pn	12 12 11.2	-0.2
OHWZ				SN		Sn	12 12 22.0	+0.8
CAW	Cannon Point	0.71	147	PN		Pn	12 12 11.6	-0.4
CAW				AML		AML	12 12 24.7	
CAW				AML		AML	12 12 25.4	
TCW	Tory Channel	0.72	197	PN		Pn	12 12 12.3	+0.1
TCW				SN		Sn	12 12 22.6	-0.1
TCW				AML		AML	12 12 23.7	
WEL	Wellington	0.78	168	PN		Pn	12 12 12.8	-0.1
MRZ	Mangatainoka R	0.80	101	PN		Pn	12 12 12.2	-0.8
HOWZ	Holdsworth Sta	0.82	118	PN		Pn	12 12 13.0	-0.5
WAZ	Wanganui	0.83	24	PN		Pn	12 12 12.8	-0.8
BHW	Baring Head	0.92	165	ePN		Pn	12 12 14.5	-0.2
MTW	Mount Morrison	0.96	132	PN		Pn	12 12 15.0	-0.3

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.39**	**224**	Pn	**Pn**	**12 28 13.7**	**+0.6**
	3.8nm,0.3s,baz=43,slow=19,SNR=1.8						
DZM				Sn	**Sn**	**12 28 41.0**	**-0.3**
	22nm,0.3s,baz=105,slow=22,SNR=5.9						
STKA	**Stephens Creek**	**26.45**	**239**	P	**P**	**12 33 10.1**	**-0.2**
	1.5nm,0.6s,baz=82,slow=7.6,SNR=3.1						
WRA	**Warramunga Arr**	**31.79**	**265**	P	**P**	**12 33 57.4**	**-0.5**
	0.6nm,0.8s,baz=90,slow=8.6,SNR=3.1						
ASAR	**Alice Springs**	**31.95**	**258**	P	**P**	**12 33 59.1**	**-0.2**
	1.3nm,0.7s,baz=82,slow=8.8,SNR=8.2						
PETK	**Petropavlovsk-**	**73.72**	**353**	P	**P**	**12 39 06.4**	**-0.2**
	2.8nm,0.9s,baz=154,slow=7.9,SNR=2.9						
NVAR	**Mina Array Bea**	**90.25**	**49**	P	**P**	**12 40 32.7**	**-1.3**
	0.8nm,0.8s,baz=227,slow=9.5,SNR=5.0						
ILAR	**Eielson Array**	**91.57**	**18**	P	**P**	**12 40 40.8**	**+1.6**
	0.4nm,0.8s,baz=229,slow=4.9,SNR=4.1						

IDC 10 12:29:52.3±6.1, 20°.24S×169°.33E, h0km, mb3.9/4, mb1 4.1/5, mb1mx3.7/29, mbtmp3.9/5, ML3.6/1, Error ellipse: s-maj=114.3km s-min=57.8km az=120.0, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**3.25**	**235**	Pn	Pn	12 30 44.7	-0.1
	6.0nm,0.3s,baz=68,slow=18,SNR=7.0						
DZM				Sn	Sn	12 31 25.0	+0.7
	18nm,0.3s,baz=124,slow=22,SNR=3.6						
CTA	**Charters Tower**	**21.66**	**266**	P	P	12 34 44.8	+0.1
	1.0nm,0.3s,baz=105,slow=12,SNR=3.2						
STKA	**Stephens Creek**	**27.40**	**239**	P	P	12 35 39.9	+0.2
	4.4nm,1.1s,baz=72,slow=9.6,SNR=3.6						
WRA	**Warramunga Arr**	**32.83**	**264**	P	P	12 36 27.1	-0.8
	0.4nm,0.5s,baz=97,slow=8.7,SNR=5.7						
ASAR	**Alice Springs**	**32.98**	**258**	P	P	12 36 29.6	+0.4
	2.3nm,0.7s,baz=86,slow=9.1,SNR=12						

*IDC **10** 12:38:03.6±0.7, 20°.24S×168°.39E, h0km, mb4.3/13, mb1 4.5/15, mb1mx4.4/27, mbtmp4.3/15, ML3.9/2, Error ellipse: s-maj=21.7km s-min=16.9km az=133.0*
*NEIC **10** 12:38:05.2±0.4, 20°.18S×168°.35E, h10km, mb5.1/7, Error ellipse: s-maj=11.5km s-min=8.9km az=149.0*
*ISCJB **10** 12:38:06.1±0.3, 20°.29S±0°.07×168°.32E±0°.07, h25km, mb4.5/20, Error ellipse: s-maj=11.6km s-min=6.3km az=140.6*
ISC 10 12:38:07.5±0.5, 20°.25S±0°.09×168°.31E±0°.09, h25km, n47, σ0°.93/45, mb4.5/19, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.51**	**223**	Pn	**Pn**	**12 38 46.4**	**-0.6**
	12nm,0.3s,baz=68,slow=18,SNR=6.3						
DZM				Sn	**Sn**	**12 39 15.9**	**-0.9**
	46nm,0.3s,baz=37,slow=20,SNR=6.5						
MSVF	**Nonsavu**	**9.55**	**76**	Pn	**Pn**	**12 40 23.9**	**+0.3**
	139nm,1.6s						
URZ	**Urewera**	**19.50**	**159**	P	**Pn**	**12 42 33.2**	**-1.0**
	0.8nm,0.3s,baz=324,slow=3.8,SNR=7.5						
CTA	**Charters Tower**	**20.70**	**267**	P	Pn	12 42 47.3	-1.3
	6.5nm,0.7s,baz=67,slow=9.6,SNR=4.1						
CTAO	**Charters Tower**	**20.70**	**267**	*e*P	Pn	12 42 48.4	-0.1
	192nm,1.4s						
TARA	**Tarawa**	**21.94**	**12**	*e*P	**P**	**12 42 56.1**	**-3.3**
	1.9nm,0.7s						
PMG	**Port Moresby**	**23.08**	**295**	P	**P**	**12 43 13.0**	**+1.5**
	5.6nm,0.7s,baz=67,slow=1.5,SNR=3.5						
STKA	**Stephens Creek**	**26.57**	**239**	P	**P**	**12 43 44.9**	**+1.2**
	5.0nm,0.7s,baz=65,slow=7.9,SNR=12						
WRA	**Warramunga Arr**	**31.87**	**265**	P	**P**	**12 44 30.2**	**-0.7**
	1.4nm,0.7s,baz=99,slow=8.2,SNR=9.6						
ASAR	**Alice Springs**	**32.05**	**258**	P	**P**	**12 44 32.1**	**-0.3**
	6.5nm,0.7s,baz=88,slow=8.8,SNR=40						
FITZ	**Fitzroy Crossi**	**40.28**	**266**	*e*P	**P**	**12 45 41.8**	**-1.1**
VNDA	**Vanda**	**57.40**	**182**	P	**P**	**12 47 53.7**	**+0.2**
	1.1nm,0.8s,baz=354,slow=6.6,SNR=5.1						
SBA	**Scott Base**	**57.65**	**180**	*e*P	**P**	**12 47 57.0**	**+1.7**
	3.9nm,0.7s						
MJAR	**Matsushiro Arr**	**63.24**	**333**	P	**P**	**12 48 33.2**	**-0.8**
	2.0nm,0.8s,baz=167,slow=6.6,SNR=5.8						
QSPA	**South Pole Qui**	**69.81**	**180**	*e*P	**P**	**12 49 16.1**	**+0.3**
	16nm,1.0s						
USRK	**Ussuriysk Ar.**	**72.23**	**333**	P	**P**	**12 49 31.4**	**+1.0**
	4.5nm,0.8s,baz=152,slow=5.4,SNR=7.5						
PETK	**Petropavlovsk-**	**73.62**	**353**	P	**P**	**12 49 39.8**	**+1.3**
	4.8nm,0.8s,baz=113,slow=5.4,SNR=5.3						
CMAR	**Chiang Mai Arr**	**78.12**	**295**	P	**P**	**12 50 06.5**	**+1.5**
	2.8nm,0.8s,baz=132,slow=4.4,SNR=12						
BILL	**Bilibino**	**88.04**	**359**	*e*P	**P**	**12 50 54.8**	**-0.3**
	7.2nm,1.5s						
SNAA	**Sanae**	**88.12**	**183**	*e*P	**P**	**12 50 55.4**	**-0.4**
	149nm,0.9s						
N02D	**Trinity Center**	**88.27**	**45**	P	**P**	**12 50 57.8**	**+0.8**
	baz=241						
CMB	**Columbia Colle**	**88.48**	**48**	*e*P	**P**	**12 50 58.0**	**0.0**
	18nm,0.7s						
HUMO	**Hull Mountain**	**88.89**	**43**	*e*P	**P**	**12 51 00.1**	**+0.3**
	21nm,0.7s						
M04C	**Macdoel**	**89.23**	**45**	P	**P**	**12 51 00.8**	**-0.7**
	baz=242						
MPMC	**Manual Prospec**	**89.68**	**51**	P	**P**	**12 51 04.4**	**+0.5**
	baz=245						
DAC	**Darwin (Calif)**	**89.70**	**51**	*e*P	P	12 50 59.8	-4.1
	5.5nm,1.1s						
I04A	**Tendick Farm,**	**89.81**	**43**	P	**P**	**12 51 03.9**	**-0.2**
	baz=241						
HEC	**Hector,Ludlow**	**90.02**	**53**	P	**P**	**12 51 05.4**	**+0.1**
	baz=245						
NVAR	**Mina Array Bea**	**90.12**	**49**	P	**P**	**12 51 06.2**	**+0.3**
	3.3nm,0.9s,baz=230,slow=8.8,SNR=16						
GRAC	**Grapevine Rang**	**90.17**	**50**	P	**P**	**12 51 05.9**	**-0.1**
	baz=245						
FURC	**Furnace Creek,**	**90.31**	**51**	P	**P**	**12 51 06.7**	**+0.2**
	baz=245						
J05D	**Fort Rock, OR**	**90.33**	**43**	P	**P**	**12 51 06.9**	**+0.3**
	baz=242						
GMRC	**Granite Mounta**	**90.50**	**53**	P	**P**	**12 51 08.1**	**+0.5**
	baz=246						
I05D	**Terrebonne, OR**	**90.75**	**43**	P	**P**	**12 51 08.6**	**+0.1**
	baz=242						
TPNV	**Topopah Spring**	**90.96**	**51**	P	**P**	**12 51 09.9**	**+0.1**
	baz=245						
ILAR	**Eielson Array**	**91.45**	**18**	P	**P**	**12 51 10.6**	**-0.6**
	1.4nm,0.8s,baz=238,slow=5.2,SNR=12						
PDMCI	**Parker Dam,Lak**	**91.46**	**54**	P	**P**	**12 51 12.6**	**+0.7**
	baz=246						
R11A	**Troy Canyon, C**	**92.02**	**50**	P	**P**	**12 51 14.4**	**-0.2**
	baz=246						
B05A	**Bryant**	**92.13**	**39**	P	**P**	**12 51 14.9**	**+0.2**
	baz=242						
TUC	**Tucson**	**93.29**	**57**	P	**P**	**12 51 21.1**	**+0.5**
	baz=248						
WUAZ	**Wupatki**	**94.02**	**54**	P	**P**	**12 51 25.0**	**+1.0**
	baz=248						
PDAR	**Pinedale Array**	**97.94**	**47**	P	Pdif	12 51 40.7	-1.1
	0.2nm,0.6s,baz=262,slow=4.4,SNR=2.3						
YKA	**Yellowknife Ar**	**101.96**	**28**	P	**Pdif**	**12 51 59.3**	**+0.5**
	0.3nm,0.7s,baz=250,slow=4.7,SNR=5.0						
ARCES	**ARCESS Array B**	**125.81**	**345**	PKP	**PKPdf**	**12 57 04.7**	**-1.8**
	2.5nm,0.8s,baz=90,slow=2.7,SNR=6.5						
FINES	**FINESS Array B**	**131.18**	**337**	PKP	**PKPdf**	**12 57 15.9**	**-0.9**
	0.7nm,0.7s,baz=7.6,slow=4.2,SNR=3.0						
GERES	**GERESS Array B**	**144.95**	**330**	PKP	**PKPdf**	**12 57 42.2**	**-0.3**
	0.4nm,0.2s,baz=72,slow=4.3,SNR=5.1						
TORD	**Torodi Ar. Bea**	**165.37**	**243**	PKP	**PKPdf**	**12 58 10.9**	**+0.2**
	1.0nm,1.0s,baz=96,slow=1.5,SNR=4.2						
TORD				PKPab	**PKPab**	**12 59 08.5**	**-0.1**
	0.5nm,0.7s,baz=94,slow=4.2,SNR=2.7						

*ISCJB **10** 12:38:39.9±0.8, 36°.32N±0°.07×142°.73E±0°.07, h15km, mb3.4/4, Error ellipse: s-maj=9.6km s-min=8.6km az=3.6*
*IDC **10** 12:38:39.8±1.2, 36°.17N×142°.77E, h0km, mb3.3/4, mb1 3.5/5, mb1mx3.4/37, mbtmp3.3/5, ML3.3/1, Error ellipse: s-maj=34.1km s-min=28.7km az=100.0*
*JMA **10** 12:38:40.9±0.4, 36°.36N×142°.75E, h33km, M3.5*
ISC 10 12:38:42.2±1.2, 36°.42N±0°.07×142°.61E±0°.08, h15km, n22, σ0°.99/22, mb3.5/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**1.61**	**296**	P	**Pn**	**12 39 10.0**	**-0.2**
JHO	**Hitachi**	**1.66**	**277**	P	**Pn**	**12 39 10.2**	**-0.6**
JHO				S	**Sn**	**12 39 31.8**	**0.0**
JYT	**Yasato**	**1.96**	**265**	P	**Pn**	**12 39 14.3**	**-0.6**
JYT				*e*S	**Sn**	**12 39 38.3**	**-1.0**
JMM	**Marumori**	**2.05**	**315**	P	**Pn**	**12 39 16.5**	**+0.3**
JFT	**Otama**	**2.13**	**302**	P	**Pn**	**12 39 17.6**	**+0.3**
JFT				*e*S	**Sb**	**12 39 45.8**	**-0.9**
JIO	**Ouri**	**2.27**	**334**	P	**Pn**	**12 39 18.2**	**-1.0**
JAG	**Ashikaga**	**2.55**	**271**	P	**Pn**	**12 39 22.9**	**-0.1**
JHU	**Hanno**	**2.75**	**259**	P	**Pn**	**12 39 25.6**	**-0.3**
JMK	**Ichinoseki**	**2.76**	**337**	P	**Pn**	**12 39 25.7**	**-0.2**
JRY	**Ryogami san**	**3.03**	**264**	P	**Pn**	**12 39 29.3**	**-0.3**
JYK	**Kaneyama**	**3.07**	**325**	P	**Pn**	**12 39 30.3**	**+0.1**
JOD2	**Odawara 2**	**3.08**	**249**	P	**Pn**	**12 39 30.5**	**+0.1**
MJAR	**Matsushiro Arr**	**3.55**	**273**	Pn	**Pn**	**12 39 37.4**	**+0.6**
	2.5nm,0.3s,baz=97,slow=10.0,SNR=22						
MAT	**Matsushiro**	**3.55**	**273**	P	**Pn**	**12 39 37.7**	**+0.8**
JNY	**Yasuok**	**4.00**	**256**	P	**Pn**	**12 39 45.1**	**+2.1**
H11N2	**WAKE ISLAND Hy**	**27.01**	**121**	T	T	13 12 27.6	
	baz=310,slow=74,SNR=4.5						
H11N1	**WAKE ISLAND Hy**	**27.01**	**121**	T	T	13 12 25.9	
	baz=310,slow=74,SNR=3.1						
H11N3	**WAKE ISLAND Hy**	**27.02**	**121**	T	T	13 12 30.9	
	baz=310						
MKAR	**Makanchi Array**	**45.26**	**303**	P	**P**	**12 47 00.9**	**+1.9**
	0.7nm,0.9s,baz=68,slow=8.8,SNR=4.9						
WRA	**Warramunga Arr**	**56.60**	**189**	P	**P**	**12 48 22.6**	**-1.9**
	0.6nm,1.1s,baz=8.4,slow=7.5,SNR=3.2						
ASAR	**Alice Springs**	**60.32**	**189**	P	**P**	**12 48 49.2**	**-1.2**
	0.3nm,0.8s,baz=3.6,slow=5.6,SNR=2.9						
YKA	**Yellowknife Ar**	**63.86**	**30**	P	**P**	**12 49 14.6**	**+0.9**
	0.2nm,0.7s,baz=295,slow=6.7,SNR=3.4						

IDC 10 12:40:09.5±10.0, 20°.29S×167°.90E, h0km, mb4.0/3, mb1 4.2/4, mb1mx3.8/28, mbtmp4.0/4, ML3.4/1, Error ellipse: s-maj=179.3km s-min=43.4km az=99.0, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.23**	**217**	Pn	Pn	12 40 47.6	-0.2
	11nm,0.3s,baz=20,slow=19,SNR=6.7						
DZM				Sn	Sn	12 41 17.1	+0.9
	41nm,0.3s,baz=140,slow=22,SNR=7.1						
STKA	**Stephens Creek**	**26.22**	**239**	P	P	12 45 46.5	+0.3
	1.8nm,0.7s,baz=68,slow=11,SNR=3.8						
WRA	**Warramunga Arr**	**31.48**	**265**	P	P	12 46 32.6	-0.6
	0.6nm,0.5s,baz=94,slow=8.9,SNR=5.2						
ASAR	**Alice Springs**	**31.66**	**258**	P	P	12 46 35.0	+0.3
	2.5nm,0.6s,baz=89,slow=9.3,SNR=8.6						

IDC 10 12:42:33.0±8.6, 20°.35S×167°.76E, h0km, mb3.9/3, mb1 4.0/4, mb1mx3.6/31, mbtmp3.9/4, ML3.0/1, MS3.6/1, Ms1 3.6/1, ms1mx3.0/38, Error ellipse: s-maj=150.3km s-min=41.6km az=96.0, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.10**	**215**	Pn	Pn	12 43 09.4	-0.2
	5.5nm,0.3s,baz=60,slow=20,SNR=4.6						
DZM				Sn	Sn	12 43 36.7	+0.1
	18nm,0.3s,baz=41,slow=14,SNR=7.7						
STKA	**Stephens Creek**	**26.07**	**239**	P	P	12 48 08.5	+0.1
	3.3nm,0.8s,baz=48,slow=9.5,SNR=4.6						
WRA	**Warramunga Arr**	**31.35**	**265**	P	P	12 48 55.5	0.0
	0.2nm,0.4s,baz=91,slow=8.4,SNR=5.4						
ASAR	**Alice Springs**	**31.52**	**258**	P	P	12 48 57.0	0.0
	2.8nm,0.7s,baz=87,slow=9.2,SNR=11						
GUMO	**Guam**	**40.55**	**324**	LR	LR	13 07 42.1	
	comp=Z,78nm,18.3s,baz=282,slow=37						

*IDC **10** 12:48:26.2±1.6, 20°.25S×168°.35E, h0km, mb4.1/7, mb1 4.4/8, mb1mx4.0/33, mbtmp4.1/8, ML3.4/1, Error ellipse: s-maj=60.3km s-min=22.7km az=145.0*
*ISCJB **10** 12:48:28.9±1.3, 20°.3S±0°.2×168°.3E±0°.2, h26km, mb4.0/6, Error ellipse: s-maj=41.1km s-min=17.2km az=138.6*
ISC 10 12:48:30.0±1.4, 20°.4S±0°.3×168°.4E±0°.2, h26km, n8, σ0°.95/8, mb4.0/6, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.48**	**227**	Pn	**Pn**	**12 49 08.6**	**-0.2**
	7.9nm,0.3s,baz=71,slow=19,SNR=6.0						
CTA	**Charters Tower**	**20.78**	**267**	P	**P**	**12 53 10.4**	**+1.1**
	4.2nm,0.7s,baz=79,slow=12,SNR=5.3						
STKA	**Stephens Creek**	**26.57**	**239**	P	**P**	**12 54 06.9**	**+0.8**
	4.7nm,0.7s,baz=69,slow=9.9,SNR=12						
WRA	**Warramunga Arr**	**31.94**	**265**	P	**P**	**12 54 52.6**	**-1.3**
	1.2nm,0.6s,baz=90,slow=8.5,SNR=11						
ASAR	**Alice Springs**	**32.10**	**258**	P	**P**	**12 54 54.9**	**-0.4**
	5.4nm,0.7s,baz=86,slow=8.9,SNR=57						
CMAR	**Chiang Mai Arr**	**78.25**	**295**	P	**P**	**13 00 27.7**	**-0.3**
	1.1nm,0.8s,baz=116,slow=4.1,SNR=4.4						
NVAR	**Mina Array Bea**	**90.15**	**49**	P	**P**	**13 01 27.9**	**-0.4**
	0.5nm,0.5s,baz=225,slow=8.3,SNR=4.5						
ILAR	**Eielson Array**	**91.55**	**18**	P	**P**	**13 01 34.6**	**+0.6**
	0.4nm,0.8s,baz=226,slow=4.7,SNR=2.9						

*IDC **10** 12:48:58.6±1.0, 20°.20S×168°.28E, h0km, mb4.2/7, mb1 4.5/9, mb1mx4.1/35, mbtmp4.3/9, ML3.8/2, Error ellipse: s-maj=33.0km s-min=20.2km az=138.0*
*ISCJB **10** 12:49:00.9±0.8, 20°.3S±0°.1×168°.2E±0°.1, h25km, mb4.2/7, Error ellipse: s-maj=19.9km s-min=10.3km az=38.6*
ISC 10 12:49:02.3±0.9, 20°.3S±0°.1×168°.2E±0°.2, h25km, n12, σ1°.15/12, mb4.1/7, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.41**	**223**	Pn	**Pn**	**12 49 39.3**	**-0.9**
	22nm,0.3s,baz=18,slow=20,SNR=9.5						
DZM				Sn	**Sn**	**12 50 07.9**	**-1.1**
	45nm,0.3s,baz=129,slow=22,SNR=3.9						
URZ	**Urewera**	**19.47**	**159**	P	**Pn**	**12 53 29.6**	**+1.1**
	0.2nm,0.3s,baz=12,slow=5.5,SNR=4.5						
CTA	**Charters Tower**	**20.62**	**267**	P	Pn	12 53 44.4	+2.1
	8.6nm,0.8s,baz=92,slow=13,SNR=6.1						
STKA	**Stephens Creek**	**26.47**	**239**	P	**P**	**12 54 38.4**	**+0.9**
	2.3nm,0.6s,baz=90,slow=7.7,SNR=2.2						
WRA	**Warramunga Arr**	**31.79**	**265**	P	**P**	**12 55 25.1**	**+0.1**
	0.8nm,0.6s,baz=92,slow=8.5,SNR=3.9						
ASAR	**Alice Springs**	**31.95**	**258**	P	**P**	**12 55 27.6**	**+1.2**
	5.3nm,0.7s,baz=86,slow=8.9,SNR=7.4						
PETK	**Petropavlovsk-**	**73.69**	**353**	P	**P**	**13 00 33.3**	**-0.3**
	10.0nm,1.2s,baz=125,slow=4.5,SNR=5.5						
CMAR	**Chiang Mai Arr**	**78.08**	**295**	P	**P**	**13 01 01.1**	**+1.7**
	1.3nm,0.7s,baz=132,slow=4.2,SNR=5.5						
NVAR	**Mina Array Bea**	**90.23**	**49**	P	**P**	**13 02 00.5**	**-0.6**
	2.5nm,0.8s,baz=222,slow=8.5,SNR=11						
ILAR	**Eielson Array**	**91.54**	**18**	P	**P**	**13 02 05.8**	**-0.6**
	0.7nm,0.7s,baz=234,slow=4.1,SNR=3.7						
YKA	**Yellowknife Ar**	**102.06**	**28**	P	**Pdif**	**13 02 54.1**	**+0.2**
	0.2nm,0.7s,baz=258,slow=4.6,SNR=4.5						
GERES	**GERESS Array B**	**144.97**	**330**	PKP	**PKPab**	**13 08 35.0**	**-1.6**
	0.4nm,0.4s,baz=96,slow=2.0,SNR=4.8						

*CSEM **10** 12:52:01.2±0.4, 33°.04N×47°.85E, h20km, ML2.9, Error ellipse: s-maj=11.6km s-min=9.4km az=161.0*
*ISN **10** 12:52:03.0±1.1, 32°.98N×47°.48E, h0km±4km, ML2.9*
TEH 10 12:52:01.0, 33°.06N×47°.81E, h18km, ML2.9, Western Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IBZA	**Bozab**	**1.41**	**2**	*e*Pn	Pn	12 52 26.3	+0.3
IBZA				*e*AMB	AMB	12 52 52.3	
	comp=Z,1μm,0.4s						
IBZA	**Bozab**	**1.41**	**2**	*e*Pn	Pn	12 52 26.3	+0.3
IGHG	**Ghaleghazi**	**1.64**	**321**	*e*Pn	Pn	12 52 29.6	+0.5
IGHG				*e*AMB	AMB	12 53 13.7	
	comp=Z,1μm,0.4s						
IGHG	**Ghaleghazi**	**1.64**	**321**	*e*Pn	Pn	12 52 29.6	+0.5
IVIS	**Veis**	**1.67**	**332**	*e*Pn	Pn	12 52 28.6	-0.8
IVIS				*e*AMB	AMB	12 53 01.4	
	comp=Z,473nm,0.2s						
IVIS	**Veis**	**1.67**	**332**	*e*Pn	Pn	12 52 28.6	-0.8
ILIN	**Lien**	**1.98**	**340**	*e*Pn	Pn	12 52 34.6	+0.7
ILIN				*e*AMB	AMB	12 53 16.8	
	comp=Z,273nm,0.1s						
ILIN	**Lien**	**1.98**	**340**	*e*Pn	Pn	12 52 34.6	+0.7
IDHR	**Dehrash**	**2.02**	**325**	*e*Pn	Pn	12 52 34.1	-0.3
IDHR				*e*AMB	AMB	12 53 10.2	
	comp=Z,518nm,0.2s						
IDHR	**Dehrash**	**2.02**	**325**	*e*Pn	Pn	12 52 34.1	-0.3
NSR	**Nassriya**	**2.48**	**215**	*e*Pn	Pn	12 52 40.5	0.0
	SNR=3.0						
NSR				*i* Sn	Sn	12 53 08.0	-2.4
	SNR=3.0						
BHD	**Baghdad**	**2.88**	**275**	*e*Pn	Pn	12 52 47.5	+1.5
	SNR=3.0						
BHD				*i* Sn	Sn	12 53 18.0	-2.2
	SNR=3.0						
IKRK	**Kirkuk**	**3.70**	**310**	*e*Pn	Pn	12 52 59.5	+2.2
	SNR=3.0						
IKRK				*i* Sn	Sn	12 53 40.0	-0.5
	SNR=3.0						
IVRN	**Varamin**	**3.79**	**58**	*e*Pn	Pn	12 52 58.0	-0.6
IVRN				*e*AMB	AMB	12 54 00.5	
	comp=N,360nm,0.0s						
IVRN	**Varamin**	**3.79**	**58**	*e*Pn	Pn	12 52 58.0	-0.6
IZEF	**Zefreh**	**3.81**	**91**	*e*Pn	Pn	12 52 58.8	-0.2
IZEF				*e*AMB	AMB	12 54 00.9	
	comp=Z,76nm,0.0s						
IZEF	**Zefreh**	**3.81**	**91**	*e*Pn	Pn	12 52 58.8	-0.2
RTB	**Rutbah**	**6.30**	**272**	*e*Pn	Pn	12 53 35.0	+2.0
	SNR=3.0						

*IDC **10** 13:01:29.9±1.4, 20°.36S×168°.27E, h0km, mb4.1/8, mb1 4.3/9, mb1mx4.0/34, mbtmp4.1/9, ML3.4/1, Error ellipse: s-maj=50.0km s-min=17.7km az=139.0*
*NEIC **10** 13:01:31.4±0.8, 20°.38S×168°.31E, h10km, mb4.4/2, Error ellipse: s-maj=27.8km s-min=10.3km az=145.0*
*ISCJB **10** 13:01:32.7±1.1, 20°.3S±0°.1×168°.2E±0°.2, h26km, mb4.1/8, Error ellipse: s-maj=33.4km s-min=9.9km az=36.8*
ISC 10 13:01:33.9±1.3, 20°.4S±0°.2×168°.3E±0°.2, h26km, n13, σ0°.72/13, mb4.2/8, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.39**	**225**	Pn	**Pn**	**13 02 11.3**	**-0.1**
	8.5nm,0.3s,baz=121,slow=14,SNR=10						
DZM				Sn	**Sn**	**13 02 40.1**	**+0.2**
	31nm,0.3s,baz=333,slow=18,SNR=12						
CTA	**Charters Tower**	**20.66**	**267**	P	**P**	**13 06 12.3**	**+0.4**
	1.7nm,0.7s,baz=86,slow=18,SNR=2.5						
CTAO	**Charters Tower**	**20.66**	**267**	*e*Pn	Pn	13 06 14.5	+0.2
	94nm,1.1s						
STKA	**Stephens Creek**	**26.47**	**239**	P	**P**	**13 07 09.5**	**+0.4**
	3.7nm,1.0s,baz=68,slow=7.8,SNR=4.1						
WRAB	**Tennant Creek**	**31.82**	**265**	*e*P	**P**	**13 07 56.9**	**+0.2**
	1.0nm,0.7s						
WRA	**Warramunga Arr**	**31.83**	**265**	P	**P**	**13 07 56.0**	**-0.8**
	1.4nm,0.9s,baz=90,slow=8.5,SNR=7.7						
ASAR	**Alice Springs**	**31.98**	**258**	P	**P**	**13 07 57.8**	**-0.4**
	2.2nm,0.6s,baz=87,slow=8.9,SNR=24						
USRK	**Ussuriysk Ar.**	**72.35**	**333**	P	**P**	**13 12 56.9**	**-0.4**
	3.2nm,0.8s,baz=150,slow=3.2,SNR=5.4						
PETK	**Petropavlovsk-**	**73.76**	**353**	P	**P**	**13 13 05.4**	**-0.1**
	3.9nm,0.8s,baz=130,slow=6.8,SNR=4.6						
NVAR	**Mina Array Bea**	**90.24**	**49**	P	**P**	**13 14 31.8**	**-0.9**
	2.8nm,0.9s,baz=229,slow=7.9,SNR=13						
ILAR	**Eielson Array**	**91.60**	**18**	P	**P**	**13 14 39.8**	**+1.7**
	0.7nm,0.8s,baz=236,slow=6.0,SNR=7.0						
YKA	**Yellowknife Ar**	**102.11**	**28**	P	**Pdif**	**13 15 25.5**	**-0.2**
	0.2nm,0.6s,baz=255,slow=4.4,SNR=3.0						
GERES	**GERESS Array B**	**145.06**	**330**	PKPbc	**PKPbc**	**13 21 08.1**	**-0.3**
	0.3nm,0.2s,baz=48,slow=1.5,SNR=3.8						

*BJI **10** 13:03:02.9, 55°.90S×27°.40W, h93km, mB5.2/3*
*NEIC **10** 13:03:02.9±0.1, 55°.96S×27°.41W, mb5.0/7, Error ellipse: s-maj=7.9km s-min=5.1km az=52.0*
*ISCJB **10** 13:03:03.6±0.4, 56°.01S±0°.07×27°.4W±0°.2, h112km, mb4.7/17, Error ellipse: s-maj=13.9km s-min=7.4km az=150.7*
*IDC **10** 13:03:07.0±1.6, 55°.99S×27°.50W, h125km±12km, mb4.4/12, mb1 4.5/13, mb1mx4.2/28, mbtmp4.8/13, Error ellipse: s-maj=17.6km s-min=13.3km az=59.0*
ISC 10 13:03:04.8±0.3, 56°.01S±0°.08×27°.73W±0°.09, h112km, n123, σ1°.22/137, mb4.7/15, 1C-2D, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HOPE	**Hope Point**	**5.32**	**285**	*e*Pn	**Pn**	**13 04 20.7**	**-1.1**
VNA1	**Neumayer--Stat**	**16.95**	**158**	P	**Pn**	**13 06 53.5**	**-1.2**
VNA3	**Neumayer Olymp**	**17.13**	**160**	P	**P**	**13 06 56.6**	**-0.2**
VNA2	**Neumayer--Watz**	**17.34**	**157**	P	**P**	**13 06 58.5**	**-0.6**
	baz=314,slow=12						
SNAA	**Sanae**	**18.90**	**156**	P	**P**	**

ASAR	Alice Springs	99.12 163	P	Pdif	13 16 32.6	-0.7
	5.2nm,0.9s,baz=186,slow=4.0,SNR=37					
ASAR			PP	PP	13 20 30.7	-5.3
	2.0nm,0.8s,baz=188,slow=6.4,SNR=13					
AS31	Alice Springs	99.12 163	eP	Pdif	13 16 32.8	-0.6
	1.7nm,0.7s					
AS01	Alice Springs	99.13 163	eP	Pdif	13 16 32.2	-1.1
FITZ	Fitzroy Crossi	102.82 154	P	Pdif	13 16 51.8	+2.0
	8.4nm,1.2s,baz=265,slow=11,SNR=2.5					
WRA	Warramunga Arr	102.83 163	P	Pdif	13 16 49.7	-0.2
	1.3nm,0.8s,baz=194,slow=4.2,SNR=8.1					
WRA			PP	PP	13 21 02.2	-1.8
	3.7nm,1.0s,baz=191,slow=6.6,SNR=9.0					
TXAR	Lajitas Array	106.51 298	PKKP	PKKPab	13 32 51.3	+1.8
	0.2nm,0.9s,baz=291,slow=3.8,SNR=3.7					
DUG	Dugway, Tooele	119.67 299	ePKPdif	PKPdif	13 21 40.7	-0.2
PDAR	Pinedale Array	120.07 303	PKP	PKPdf	13 21 41.7	0.0
	0.3nm,0.4s,baz=134,slow=3.9,SNR=3.4					
HWUT	Hardware Ranch	120.14 300	ePKPdif	PKPdif	13 21 41.2	-0.6
NVAR	Mina Array Bea	121.10 293	PKP	PKPdf	13 21 45.4	+1.6
	0.9nm,0.5s,baz=127,slow=3.2,SNR=6.8					
MOOW	Moose Ponds	121.38 303	ePKPdif	PKPdif	13 21 44.2	0.0
WVOR	Wild Horse Val	124.25 296	ePKPdif	PKPdif	13 21 50.7	+1.1
FINES	FINESS Array B	124.49 28	PKP	PKPdf	13 21 49.0	-0.2
	1.0nm,0.6s,baz=227,slow=7.2,SNR=3.7					
MSO	Missoula	125.17 303	ePKPdif	PKPdif	13 21 52.5	+1.3
CM01	Chiang Mai Arr	125.34 111	ePKPdif	PKPdif	13 21 52.0	-0.3
G08A	Pilot Rock	126.48 299	ePKPdif	PKPdif	13 21 54.4	+0.6
ABKAR	Akbulak array	127.60 56	ePKPdif	PKPdif	13 21 55.6	+0.1
KSH	Kashi	128.85 75	ePKP	PKPdif	13 21 59.5	+1.0
KSH			esPKP		13 22 37.4	
KSH			SKS	SKSdf	13 29 00.6	+1.1
KSH			SKKS	SKKSac	13 30 52.9	+0.2
KSH			AMB	AMB		
	comp=Z,59nm,5.7s					
KSH			LR	LR		
	comp=N,100nm,5.0s					
KSH			LR	LR		
	comp=E,84nm,5.5s					
KSH			LR	LR		
	comp=Z,170nm,5.4s					
EKS2	Erkin-Say	129.89 70	ePKPdif	PKPdif	13 22 00.7	+0.3
KMI	Kunming	132.82 110	PKP	PKPdf	13 22 07.7	+1.1
YKA	Yellowknife Ar	135.94 318	PKP	PKPdf	13 22 11.3	+0.5
	2.0nm,0.6s,baz=131,slow=3.4,SNR=4.2					
YKA			SKPbc	SKPbc	13 25 29.4	-2.7
	1.1nm,0.8s,baz=128,slow=2.1,SNR=10					
YKB5	Yellowknife Ar	135.94 318	ePKPdif	PKPdf	13 22 11.4	+0.5
GYA	Guiyang	135.96 113	ePdif	Pdif	13 19 15.7	-1.3
GYA			PKP	PKPdf	13 22 12.8	+0.5
GYA			sPKP		13 22 48.0	
GYA			PP	PP	13 24 56.4	+3.7
GYA			AMB	AMB		
	comp=Z,120nm,7.9s					
MKAR	Makanchi Array	137.16 72	PKP	PKPdf	13 22 13.3	-0.4
	1.0nm,0.8s,baz=264,slow=4.3,SNR=5.9					
MKAR			SKPbc	SKPbc	13 25 34.9	-1.5
	0.6nm,0.7s,baz=225,slow=1.4,SNR=5.0					
RES	Resolute Bay	137.71 339	PKP	PKPdf	13 22 13.6	-0.2
	2.6nm,0.9s,baz=151,slow=2.7,SNR=7.9					
RES	Resolute Bay	137.71 339	ePKPdif	PKPdf	13 22 14.6	+0.7
RES			eSKPbc	SKPbc	13 25 38.5	+1.5
CD2	Chengdu	137.96 106	PKP	PKPdf	13 22 15.1	-0.7
WMQ	Urumqi	138.19 79	ePKP	PKPdf	13 22 15.5	-0.3
LZH	Lanzhou	141.91 101	ePKP	PKPdf	13 22 24.4	+1.5
LZH			sPKP		13 23 01.6	
GTA	Gaotai	142.03 93	ePKP	PKPdf	13 22 23.0	0.0
ZAA0	Zalesovo Array	142.62 64	ePKPdif	PKPdf	13 22 22.4	-0.9
ZALV	Zalesovo Beam	142.62 64	PKhKP	PKPpre	13 22 18.8	
	1.4nm,0.6s,baz=236,slow=2.7,SNR=6.4					
XAN	Xi'an	143.14 108	PKP	PKPdf	13 22 28.1	+3.1
INK	Inuvik	145.58 321	PKPbc	PKPab	13 22 29.2	+0.2
	16nm,0.7s,baz=87,slow=3.0,SNR=92					
INK			SKPbc	SKPbc	13 25 56.4	-0.8
	4.4nm,0.9s,baz=100,slow=5.4,SNR=6.3					
DAWY	Dawson	146.54 312	ePKPdif	PKPbc	13 22 32.0	+0.3
NJ2	Nanjing	146.62 122	ePKPbc	PKPbc	13 22 32.6	-0.1
EGAK	Eagle	147.49 313	ePKPdif	PKPbc	13 22 33.6	-0.6
BMRM	Bremner River	147.79 305	ePKPbc	PKPbc	13 22 36.5	+1.3
MENT	Mentasta	148.03 309	ePKPbc	PKPbc	13 22 36.7	+1.0
DIV	Divide	148.38 305	ePKPbc	PKPbc	13 22 37.5	+0.8
DOT	Dot Lake	148.39 310	ePKPbc	PKPbc	13 22 37.4	+0.8
KLU	Klutina	148.57 306	ePKPbc	PKPbc	13 22 38.1	+0.9
PAX	Paxson	148.81 309	ePKPbc	PKPbc	13 22 38.7	+0.9
TIA	Tai'an	149.10 115	⇓PKPbc	PKPbc	13 22 39.6	+0.4
NRIK	Noril'sk	149.17 39	PKPbc	PKPbc	13 22 38.8	+0.5
	1.5nm,0.4s,baz=202,slow=1.6,SNR=4.5					
SCM	Sheep Creek Mo	149.31 306	ePKPbc	PKPbc	13 22 39.6	+0.5
HHC	Hu-ho-hao-te	149.55 103	ePKPbc	PKPdf	13 22 37.3	+1.6
SML	Sawmill	149.76 306	ePKPbc	PKPbc	13 22 40.6	+0.5
SEW	Seward	149.77 302	ePKPbc	PKPbc	13 22 40.7	+0.7
HDA	Harding Lake	149.81 311	ePKPbc	PKPbc	13 22 40.2	+0.1
IL1	Eielson Array	149.86 312	ePKPbc	PKPbc	13 22 40.5	+0.3
ILAR	Eielson Array	149.86 312	PKPbc	PKPbc	13 22 40.6	+0.4
	22nm,0.7s,baz=134,slow=1.9,SNR=149					
ILB	Eielson Array	149.86 312	ePKPbc	PKPbc	13 22 40.4	+0.2
PMR	Palmer	150.07 305	ePKPbc	PKPbc	13 22 41.4	+0.6
RC01	Rabbit Creek A	150.20 304	ePKPbc	PKPbc	13 22 41.9	+0.8
CCB	Clear Creek Bu	150.22 311	ePKPbc	PKPbc	13 22 41.1	+0.1
COLA	College	150.29 312	ePKPbc	PKPbc	13 22 41.6	+0.4
RND	Reindeer	150.40 309	ePKPbc	PKPbc	13 22 42.5	+0.8
MDM	Murphy Dome	150.46 312	ePKPbc	PKPbc	13 22 41.5	-0.2
MCK	McKinley	150.51 309	ePKPbc	PKPbc	13 22 42.3	+0.5
KDAK	Kodiak Island	150.53 297	ePKPbc	PKPbc	13 22 43.9	+1.9
HOM	Homer	150.68 301	ePKPbc	PKPbc	13 22 43.8	+1.5
OHAK	Old Harbor	150.69 295	ePKPbc	PKPbc	13 22 43.5	+1.2
BWN	Browne	150.83 310	ePKPbc	PKPbc	13 22 43.1	+0.6
SONM	Songino Array	151.03 87	PKPbc	PKPbc	13 22 43.2	-0.5
	14nm,0.6s,baz=233,slow=4.2,SNR=6.5					
TRF	Thorofare Moun	151.04 309	ePKPbc	PKPbc	13 22 43.9	+0.6
SPU	Mount Spurr	151.31 304	ePKPbc	PKPbc	13 22 43.9	+0.1
KTH	Kantishna Hill	151.34 309	ePKPbc	PKPbc	13 22 44.2	+0.4
ULN	Ulaanbaatar	151.41 87	ePKPbc	PKPbc	13 22 44.0	-0.6
RSO	Redoubt South	151.45 302	ePKPbc	PKPbc	13 22 44.5	+0.1
BJI	Beijing	151.47 109	PKPbc	PKPbc	13 22 45.1	+0.4
TLY	Talaya	151.47 78	PKPbc	PKPbc	13 22 44.9	+0.5
	6.8nm,0.7s,baz=276,slow=6.2,SNR=8.3					
BPAW	Bear Paw Mtn.	151.47 310	ePKPbc	PKPbc	13 22 44.2	+0.2
MLY	Manley	151.53 312	ePKPbc	PKPbc	13 22 43.8	-0.4
COLD	Coldfoot	151.58 316	ePKPbc	PKPbc	13 22 45.2	+1.0
PPLA	Purkeypile	151.77 307	ePKPbc	PKPbc	13 22 45.0	+0.1
CAST	Castle Rocks	151.83 308	ePKPbc	PKPbc	13 22 44.8	-0.1
JNU	Nakatsue	152.72 138	PKPbc	PKPbc	13 22 47.6	-0.2
	4.3nm,0.4s,baz=180,slow=18,SNR=3.7					
TTA	Tatalina	153.50 306	ePKPbc	PKPbc	13 22 49.3	+0.6
KSAR	Wonju Array Be	155.23 128	PKPab	PKPab	13 23 08.5	-1.1
KSRS	Korea Array	155.26 128	PKPab	PKPab	13 23 08.5	-1.2
	1.2nm,0.6s,baz=230,slow=3.3,SNR=4.6					
MJAR	Matsushiro Arr	158.32 148	PKPab	PKPab	13 23 22.9	0.0
	3.0nm,0.9s,baz=192,slow=4.9,SNR=4.8					
KLR	Kul'dur	165.84 110	PKPab	PKPab	13 23 54.6	-1.0
	0.9nm,0.8s,baz=232,slow=6.3,SNR=4.2					
PETK	Petropavlovsk-	175.71 230	PKP	PKPdf	13 23 00.9	+0.7
	1.3nm,0.7s,baz=103,slow=6.4,SNR=2.7					

*AZER **10** 13:04:24.4±13.0, 37°.73N×48°.61E, h11km±3km, Error ellipse: s-maj=4.7km s-min=3.9km az=339.0*
*ISCJB **10** 13:04:25.6±1.0, 37°.66N±0°.05×48°.40E±0°.07, h10km, Error ellipse: s-maj=8.6km s-min=6.5km az=44.1*
*CSEM **10** 13:04:25.1±0.4, 37°.66N×48°.45E, h2km, ML2.6, Error ellipse: s-maj=7.6km s-min=6.7km az=137.0*
*TEH **10** 13:04:26.5, 37°.63N×48°.44E, h5km, ML2.6*
ISC 10 13:04:25.7±1.2, 37°.70N±0°.05×48°.45E±0°.04, h10km, n18, σ0s75/23, 4C-3D, Northwestern Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ISRB	Sarab	0.63	282	ePg	Pg	13 04 38.0	+0.1
ISRB				eAMB	AMB	13 04 50.1	
	comp=Z,3μm,0.1s						
ISRB	Sarab	0.63	282	ePg	Pg	13 04 38.0	+0.1
ASTR	Astara	0.90	18	⇓P	Pg	13 04 42.2	-0.8
ASTR				⇑S	Sb	13 04 56.7	+1.3
ASTR	Astara	0.90	18	P	Pg	13 04 42.2	-0.8
ASTR				S	Sb	13 04 56.7	+1.3
LRK	Lerik	0.94	355	⇑P	Pb	13 04 44.4	+0.1
LRK				⇑S	Sn	13 04 58.5	-0.3
LRK	Lerik	0.94	355	P	Pb	13 04 44.4	+0.1
LRK				S	Sn	13 04 58.5	-0.3
LKRN	Lenkeran, Azer	1.04	15	⇓P	Pg	13 04 44.8	-0.9
LKRN				⇓S	Sb	13 05 00.0	+0.5
LKRN	Lenkeran, Azer	1.04	15	P	Pg	13 04 44.8	-0.9
				S	Sb	13 05 00.0	+0.5
IBST	Bostanabad	1.23	270	eAMB	AMB	13 05 12.5	
	comp=Z,965nm,0.1s						
IHRS	Heris	1.27	299	ePg	Pn	13 04 49.4	-0.3
IHRS				eAMB	AMB	13 04 57.1	
	comp=Z,1μm,0.1s						
IHRS	Heris	1.27	299	ePg	Pn	13 04 49.4	-0.3
GLBA	Ciilabad	1.54	358	⇑P	Pb	13 04 54.7	+0.4
GLBA	Ciilabad	1.54	358	P	Pb	13 04 54.7	+0.4
ISHB	Shabestar	2.31	285	eAMB	AMB	13 05 09.0	
	comp=Z,300nm,0.2s						
ISHB				ePn	Pb	13 05 06.5	-1.1
IMRD	Marand	2.38	296	eAMB	AMB	13 05 16.3	
	comp=Z,462nm,0.1s						
IMRD				ePn	Pn	13 05 06.5	+1.5
IMRD				eSg	Sg	13 05 41.8	-0.6
IRAZ	Razeghan	2.58	152	eAMB	AMB	13 05 48.9	
	comp=Z,637nm,0.2s						
IMHD	Mahdasht	2.69	138	ePn	Pn	13 05 09.4	+0.3
IMHD	Mahdasht	2.69	138	ePn	Pn	13 05 09.4	+0.3

*IDC **10** 13:06:11.5±1.8, 20°.52S×168°.22E, h0km, mb4.0/5, mb1 4.3/5, mb1mx3.9/36, mbtmp4.1/5, ML2.7/1, Error ellipse: s-maj=69.0km s-min=26.7km az=148.0*
ISC 10 13:06:16.0±1.6, 20°.6S±0°.3×168°.2E±0°.3, h32km, n7, σ1s15/8, mb4.1/4, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	2.22	228	Pn	Pn	13 06 49.2	-1.6
	2.0nm,0.3s,baz=12,slow=9.3,SNR=4.8						
DZM				Sn	Sb	13 07 23.5	+0.8
	12nm,0.3s,baz=83,slow=21,SNR=3.7						
CTA	Charters Tower	20.59	267	P	P	13 10 52.7	+0.1
	3.3nm,0.8s,baz=105,slow=12,SNR=3.1						
STKA	Stephens Creek	26.32	239	P	P	13 11 50.6	+1.5
	3.2nm,0.6s,baz=87,slow=9.4,SNR=5.8						
WRA	Warramunga Arr	31.75	265	P	P	13 12 36.7	-0.8
	0.7nm,0.6s,baz=96,slow=8.5,SNR=8.1						
ASAR	Alice Springs	31.88	258	P	P	13 12 39.2	+0.6
	3.1nm,0.6s,baz=87,slow=8.8,SNR=32						
NVAR	Mina Array Bea	90.41	49	P	P	13 19 15.0	+0.3
	1.2nm,1.0s,baz=206,slow=6.4,SNR=4.6						
GERES	GERESS Array B	145.18	330	PKPbc	PKPbc	13 25 49.7	-0.3
	0.3nm,0.3s,baz=44,slow=4.4,SNR=2.1						

*SOME **10** 13:07:56.5, 44°.75N×82°.18E, h5km*
*NNC **10** 13:07:58.2±1.3, 44°.72N×82°.14E, h0km, mb3.1, mpv2.7, Error ellipse: s-maj=19.6km s-min=3.2km az=116.0*
ISC 10 13:07:53.1±2.2, 44°.66N±0°.06×82°.5E±0°.1, h14km±19km, n12, σ0s87/24, 1C-4D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DJR	Jarkent	1.95	261	eP	Pb	13 08 29.1	+0.7
	4.8nm,0.1s						
DJR				eS	Sb	13 08 52.4	-0.2
	4.8nm,0.2s						
KTMS	Ketmen	1.95	232	eP	Pg	13 08 31.5	+1.0
	1.4nm,0.1s						
KTMS				eS	Sg	13 08 56.3	+0.4
	12nm,0.3s						
MK31	Makanchi Array	2.14	357	Pn	Pg	13 08 34.7	+0.5
	5.3nm,0.3s,baz=186,slow=16,SNR=77						
MK31				⇓Sn	Sg	13 09 02.2	+0.2
	1.9nm,0.2s,baz=183,slow=27,SNR=15						
MAKZ	Makanchi	2.18	351	⇓Pn	Pg	13 08 34.6	-0.4
	3.3nm,0.6s						
MAKZ				⇓Sn	Sg	13 09 02.2	-1.0
	2.0nm,0.5s						
KAPS	Kapalarasan	2.30	287	eP	Pb	13 08 34.7	+0.2
	1.6nm,0.1s						
KAPS				eS	Sb	13 09 01.8	-0.9
	4.2nm,0.3s						
SHLS	Shalkode	2.40	232	eP	Pg	13 08 38.8	-0.3
	2.0nm,0.1s						
SHLS				eS	Sg	13 09 08.6	-1.6
	10nm,0.2s						
PDGK	Podgornoye	2.53	239	⇓Pn	Pb	13 08 37.7	-0.6
	0.6nm,0.3s						
PDGK				⇑Sn	Sb	13 09 09.5	+0.1
	4.1nm,0.5s						
UZB	Uzynbulak	2.91	240	eP	Pb	13 08 45.2	+0.2
	0.9nm,0.2s						
UZB				eS	Sb	13 09 20.0	-0.6
	2.1nm,0.2s						
MNBS	Baschi	2.98	260	eP	Pb	13 08 46.3	+0.3
	0.6nm,0.3s						
MNBS				eS	Sb	13 09 21.2	-1.1
	12nm,0.4s						
KPKS	Kokpek	2.98	248	eP	Pb	13 08 46.1	+0.1
	5.5nm,0.2s						
KPKS				eS	Sb	13 09 21.2	-1.1
	9.2nm,0.3s						
ZHN	Zhinishke	3.27	244	eP	Pb	13 08 51.9	+0.8
	2.5nm,0.1s						
ZHN				eS	Sb	13 09 31.1	+0.2
	7.5nm,0.2s						
ARXS	Arharly	3.36	264	eP	Pb	13 08 53.9	+1.4
	1.4nm,0.1s						
ARXS				eS	Sb	13 09 34.8	+1.6
	6.2nm,0.2s						

*NIED **10** 13:13:00, 35°.60N×141°.00E, h11km, Mw3.7 Best double couple: M0=4.59000×10^14 NP1:φs=189.00000°, δ43.00000°, λ-42.00000°. NP2:φs=312.00000°, δ63.00000°, λ-125.00000°.*
*IDC **10** 13:13:43.2±1.7, 35°.57N×141°.01E, h0km, mb3.5/3, mb1 3.6/6, mb1mx3.5/56, mbtmp3.5/6, ML3.3/3, Error ellipse: s-maj=46.7km s-min=21.9km az=73.0*
*ISCJB **10** 13:13:44.3±1.1, 35°.65N±0°.05×141°.12E±0°.09, h24km±6km, mb3.6/3, Error ellipse: s-maj=12.0km s-min=7.7km az=170.1*
*JMA **10** 13:13:45.5±0.2, 35°.63N×141°.03E, h17km±1km, M3.7*
JMA Felt I J1.
ISC 10 13:13:43.6±1.9, 35°.67N±0°.05×141°.16E±0°.08, h18km±8km, n20, σ1s69/19, mb3.5/3, 5C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	0.25	278	⇑P	Pb	13 13 49.6	+0.1
CHOJ				S	Sg	13 13 52.5	-0.6
JCN	Nagara	0.82	252	⇑P	Pb	13 13 59.8	+0.5
JCN				S	Sg	13 14 10.5	0.0
KTR	Katsuura	0.86	233	⇑P	Pg	13 13 59.8	-0.6
BSO4	Boso 4	0.95	225	⇑P	Pn	13 14 02.3	+0.3
JYT	Yasato	0.96	306	⇑P	Pn	13 14 02.0	-0.2
JYT				S	Sg	13 14 13.9	-1.0
BSO3	Boso 3	1.02	212	P	Pb	13 14 02.8	+0.3
JHO	Hitachi	1.05	333	P	Pn	13 14 04.4	+0.9
MJAR	Matsushiro Arr	2.54	291	Pn	Pn	13 14 25.3	+1.3
	6.3nm,0.3s,baz=98,slow=8.9,SNR=20						
MAT	Matsushiro	2.55	291	P	Pn	13 14 25.3	+1.3
MAT				eS	Sn	13 14 54.0	-0.6
JHJ	Hachijo jima 2	2.79	205	Pn	Pn	13 14 27.4	+0.1
	8.0nm,0.3s,baz=65,slow=19,SNR=3.0						
JHJ				Sn	Sn	13 14 56.7	-3.8
	15nm,0.3s,baz=53,slow=20,SNR=3.4						
ASAJ	Asahikawa	8.51	7	Pn	Pn	13 15 49.9	+4.0
	0.4nm,0.3s,baz=200,slow=12,SNR=5.1						
ASAJ				Sn	Sn	13 17 17.6	-3.7
	0.2nm,0.3s,baz=138,slow=16,SNR=2.2						
H11N2	WAKE ISLAND Hy	27.66	118	T	T	13 48 26.8	
	baz=311,slow=75,SNR=205						
H11N1	WAKE ISLAND Hy	27.66	118	T	T	13 48 27.9	
	baz=311,slow=75,SNR=123						
H11N3	WAKE ISLAND Hy	27.67	118	T	T	13 48 29.7	
	baz=311,slow=75,SNR=183						
H11S1	WAKE ISLAND Hy	28.32	120	T	T	13 49 19.0	
	baz=312,slow=75,SNR=283						
H11S3	WAKE ISLAND Hy	28.32	120	T	T	13 49 19.5	
	baz=312,slow=75,SNR=237						
H11S2	WAKE ISLAND Hy	28.33	120	T	T	13 49 20.1	
	baz=312,slow=75,SNR=201						
MKAR	Makanchi Array	44.68	303	P	P	13 21 56.7	+1.4
	0.4nm,0.6s,baz=80,slow=7.8,SNR=3.1						
WRA	Warramunga Arr	55.68	188	P	P	13 23 20.1	+1.2
	1.2nm,0.8s,baz=4.0,slow=7.4,SNR=8.1						
ASAR	Alice Springs	59.41	188	P	P	13 23 47.0	+2.0
	0.3nm,0.8s,baz=0.8,slow=6.7,SNR=3.3						

IDC 10 13:22:30.8±5.7, 20°.37S×167°.91E, h0km, mb3.5/2, mb1 3.8/3, mb1mx3.5/27, mbtmp3.5/3, ML3.2/1, MS3.9/2, Ms1 3.9/2, ms1mx3.2/25, 1C, Error ellipse: s-maj=121.6km s-min=33.0km az=110.0, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	2.18	219	Pn	Pn	13 23 08.6	+0.2
	7.7nm,0.3s,baz=45,slow=20,SNR=16						
DZM				Sn	Sn	13 23 36.5	+0.3
	22nm,0.3s,baz=131,slow=19,SNR=13						
PMG	Port Moresby	22.79	296	LR	LR	13 33 55.1	
	comp=Z,184nm,19.4s,baz=184,slow=30						
WRA	Warramunga Arr	31.48	265	P	P	13 28 54.0	-0.5
	0.3nm,0.8s,baz=95,slow=8.4,SNR=4.6						
ASAR	Alice Springs	31.65	258	P	P	13 28 56.4	+0.3
	1.2nm,0.7s,baz=87,slow=8.9,SNR=11						
JHJ	Hachijo jima 2	59.58	333	LR	LR	13 57 16.4	
	comp=Z,171nm,19.6s,baz=80,slow=35						
CMAR	Chiang Mai Arr	77.83	295	P	P	13 34 30.8	+0.1
	baz=132,slow=5.4						
SYO	Syowa Base	83.50	197	⇑eP	P	13 35 05.2	+5.0

JMA 10 13:22:54.0±0.1, 38°.22N×141°.72E, h52km±1km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.37	309	P	Pn	13 23 04.1	+0.1
JIO				S	Sn	13 23 10.8	-0.4
JMM	Marumori	0.81	245	P	Pn	13 23 09.0	-0.3
JMM				S	Sn	13 23 19.6	-0.8
JMK	Ichinoseki	0.83	332	P	Pn	13 23 09.7	+0.2
JMK				S	Sn	13 23 20.5	-0.3
JOU	Okura	0.84	280	P	Pn	13 23 09.9	+0.2
JOU				S	Sn	13 23 21.2	0.0
OFUJ	Ofunato	0.86	357	P	Pn	13 23 09.8	-0.1
OFUJ				S	Sn	13 23 21.0	-0.6
JFK	Kawauchi	1.08	218	P	Pn	13 23 12.8	-0.1
JFK				S	Sn	13 23 26.3	-0.6
JYK	Kaneyama	1.27	304	P	Pn	13 23 15.8	+0.3
JYK				eS	Sn	13 23 32.1	+0.6
JOM	Ohasama	1.29	345	P	Pn	13 23 16.2	+0.4
JOM				S	Sn	13 23 32.5	+0.5
JFT	Otama	1.30	238	P	Pn	13 23 16.3	+0.5
JFT				S	Sn	13 23 32.4	+0.3
JYS	Shirataka	1.30	271	P	Pn	13 23 16.4	+0.5
JYS				S	Sn	13 23 32.6	+0.4
MIYJ	Miyakonagasawa	1.36	3	P	Pn	13 23 16.4	-0.2
MIYJ				S	Sn	13 23 33.0	-0.5
JRG	Rokugo	1.45	324	P	Pn	13 23 18.6	+0.8
JRG				S	Sn	13 23 37.2	+1.5

*IDC **10** 13:25:54.1±5.4, 20°.25S×167°.67E, h0km, mb4.1/4, mb1 4.3/5, mb1mx3.9/28, mbtmp4.1/5, ML3.4/1, Error ellipse: s-maj=112.6km s-min=30.9km az=103.0*
*NEIC **10** 13:25:55.9±3.9, 20°.32S×167°.66E, h10km, mb4.2/1, Error ellipse: s-maj=73.9km s-min=21.4km az=94.0*
ISC 10 13:25:56.5±4.8, 20°.4S±0°.3×168°.1E±0°.7, h35km, n6, σ0s97/7, mb4.0/5, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	2.27	223	Pn	Pn	13 26 30.9	-0.7
	12nm,0.3s,baz=53,slow=20,SNR=15						
DZM				Sn	Sn	13 26 59.4	+1.0
	36nm,0.3s,baz=342,slow=20,SNR=9.1						
STKA	Stephens Creek	26.33	239	P	P	13 31 29.2	0.0
	3.0nm,0.7s,baz=59,slow=10.0,SNR=7.5						
WRAB	Tennant Creek	31.66	265	eP	P	13 32 16.0	-0.7
	3.4nm,1.1s						
WRA	Warramunga Arr	31.67	265	P	P	13 32 15.8	-1.0
	1.0nm,0.9s,baz=91,slow=8.5,SNR=15						
ASAR	Alice Springs	31.83	258	P	P	13 32 18.1	-0.1
	3.7nm,0.7s,baz=87,slow=9.1,SNR=38						
CMAR	Chiang Mai Arr	78.01	295	P	P	13 37 52.8	+1.0
	0.3nm,0.3s,baz=123,slow=3.3,SNR=3.2						

*IDC **10** 13:28:37.5±1.5, 20°.23S×168°.37E, h0km, mb4.1/5, mb1 4.3/6, mb1mx3.9/33, mbtmp4.1/6, ML3.4/1, MS3.4/2, Ms1 3.4/2, ms1mx2.9/34, Error ellipse: s-maj=80.0km s-min=22.4km az=144.0*
*NEIC **10** 13:28:38.9±0.7, 20°.31S×168°.40E, h10km, mb4.3/2, Error ellipse: s-maj=17.9km s-min=14.7km az=147.0*
*ISCJB **10** 13:28:39.5±0.8, 20°.4S±0°.1×168°.4E±0°.1, h26km, mb4.1/6, MS3.3/1, Error ellipse: s-maj=19.5km s-min=11.0km az=139.1*
ISC 10 13:28:41.3±0.9, 20°.4S±0°.2×168°.4E±0°.1, h26km, n12, σ1s02/12, mb4.1/6, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	2.47	226	Pn	Pn	13 29 19.1	-1.0
	7.4nm,0.3s,baz=45,slow=19,SNR=13						
DZM				Sn	Sn	13 29 49.0	-0.5
	18nm,0.3s,baz=101,slow=23,SNR=6.4						
DZM				LR	LR	13 30 21.0	
	comp=Z,646nm,19.1s,baz=47,slow=40						
URZ	Urewera	19.39	159	P	P	13 33 04.9	-0.4
	2.8nm,0.6s						
AFI	Af

2.3nm,0.3s,baz=49,slow=19,SNR=4.5
DZM Sn Sn 13 35 17.2 -6.3
7.2nm,0.3s,baz=126,slow=19,SNR=5.7
WRA Warramunga Arr 32.22 264 P P 13 40 30.3 0.0
0.4nm,0.9s,baz=86,slow=8.2,SNR=3.2
ASAR Alice Springs 32.42 257 P P 13 40 32.6 +0.6
0.4nm,0.7s,baz=87,slow=8.5,SNR=4.3
ILAR Eielson Array 91.13 17 P P 13 47 06.1 -0.1
0.4nm,0.9s,baz=238,slow=5.2,SNR=3.1

*IDC **10** 13:41:33.8±1.1, 37°.63N×143°.85E, h0km, mb3.4/7, mb1 3.6/9, mb1mx3.5/59, mbtmp3.4/9, ML3.5/2, MS4.1/2, Ms1 4.1/2, ms1mx3.0/43, Error ellipse: s-maj=26.5km s-min=21.2km az=105.0*
*ISCJB **10** 13:41:35.0±0.8, 37°.78N±0°.06×143°.58E±0°.06, h19km, mb3.5/7, MS4.1/2, Error ellipse: s-maj=8.3km s-min=6.6km az=2.9*
*JMA **10** 13:41:37.3±0.2, 37°.88N×143°.44E, h20km, M3.2*
ISC 10 13:41:36.5±1.0, 37°.75N±0°.06×143°.60E±0°.08, h19km, n20, σ1§92/23, mb3.4/7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.02**	**312**	P	**Pn**	**13 42 08.4**	**-1.1**
OFUJ				*eS*	**Sn**	**13 42 31.3**	**-3.0**
JFK	**Kawauchi**	**2.20**	**261**	*eS*	**Sn**	**13 42 36.7**	**-2.1**
JMK	**Ichinoseki**	**2.23**	**303**	P	**Pn**	**13 42 11.5**	**-0.8**
JMK				*eS*	**Sn**	**13 42 37.8**	**-1.5**
JMM	**Marumori**	**2.23**	**274**	P	**Pn**	**13 42 12.0**	**-0.4**
JMM				S	**Sn**	**13 42 37.2**	**-2.2**
JOM	**Ohasama**	**2.50**	**314**	P	**Pn**	**13 42 15.5**	**-0.6**
JOM				*eS*	**Sn**	**13 42 44.3**	**-1.8**
JFT	**Otama**	**2.60**	**266**	S	**Sn**	**13 42 47.6**	**-1.1**
JYK	**Kaneyama**	**2.81**	**296**	P	**Pn**	**13 42 20.6**	**+0.3**
JYK				*eS*	**Sn**	**13 42 53.2**	**-0.5**
JRG	**Rokugo**	**2.85**	**306**	P	**Pn**	**13 42 21.5**	**+0.6**
MJAR	**Matsushiro Arr**	**4.47**	**256**	Pn	**Pn**	**13 42 44.8**	**+1.6**
	1.9nm,0.3s,baz=90,slow=16,SNR=14						
MJAR				Sn	**Sn**	**13 43 38.1**	**+3.3**
	0.6nm,0.3s,baz=82,slow=33,SNR=4.3						
JHJ	**Hachijo jima 2**	**5.57**	**215**	Sn	**Sn**	**13 43 56.7**	**-5.1**
	5.6nm,0.3s,baz=105,slow=20,SNR=2.0						
ASAJ	**Asahikawa**	**6.41**	**353**	Pn	**Pn**	**13 43 10.0**	**+0.2**
	1.0nm,0.3s,baz=213,slow=14,SNR=6.3						
TLY	**Talaya**	**31.20**	**309**	LR	LR	14 02 04.2	
	comp=Z,364nm,19.8s,baz=305,slow=39						
ZALV	**Zalesovo Beam**	**42.73**	**312**	P	P	13 49 35.5	+3.4
	0.7nm,0.4s,baz=72,slow=9.3,SNR=3.4						
MKAR	**Makanchi Array**	**45.22**	**302**	P	**P**	**13 49 54.6**	**+2.3**
	0.3nm,0.6s,baz=86,slow=8.0,SNR=3.7						
KURBB	**Kurchatov Arra**	**46.94**	**308**	P	**P**	**13 50 06.7**	**+1.0**
	0.6nm,0.6s,baz=84,slow=7.6,SNR=4.3						
ILAR	**Eielson Array**	**47.96**	**33**	P	**P**	**13 50 13.9**	**+0.4**
	0.3nm,0.7s,baz=263,slow=6.3,SNR=3.8						
WRA	**Warramunga Arr**	**58.04**	**190**	P	**P**	**13 51 27.6**	**-0.6**
	0.6nm,0.6s,baz=10,slow=7.7,SNR=5.6						
ASAR	**Alice Springs**	**61.76**	**190**	P	**P**	**13 51 53.7**	**-0.1**
	0.3nm,0.9s,baz=2.0,slow=6.6,SNR=4.8						
YKA	**Yellowknife Ar**	**62.31**	**31**	P	**P**	**13 51 57.1**	**0.0**
	0.1nm,0.4s,baz=306,slow=6.8,SNR=2.4						
WSAR	**Wadi Sarin**	**72.36**	**286**	LR	LR	14 27 44.8	
	comp=Z,93nm,18.3s,baz=284,slow=38						

IDC 10 13:47:37.0±416.0, 47°.38N×47°.68E, h0km, Error ellipse: s-maj=167.2km s-min=139.8km az=14.0, Ukraine-Moldova-Southwestern Russia region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I31KZ	**AKTYUBINSK INF**	**7.47**	**62**	*i*		14 35 20.0	
	baz=250,slow=320,SNR=11						
I43RU	**DUBNA INFRASONI**	**1.35**	**329**	*i*		14 57 50.0	
	baz=140,slow=318,SNR=1.1						
I26DE	**FREYUNG INFRAS**	**22.62**	**286**	*i*		16 06 00.0	
	baz=81,slow=321,SNR=0.9						

MAN 10 13:51:33, 16°.30N×121°.45E, h70km, mb4.2, ML3.1, MS2.8, 1D, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BALP	**Baler**	**0.57**	**168**	*eP*	Pn	13 51 49.6	+3.0
BALP				*eS*	Sn	13 52 00.7	+4.2
CAUP	**Cauayan**	**0.73**	**29**	*eP*	Pn	13 51 50.0	+1.7
CAUP				*eS*	Sn	13 52 02.9	+3.3
PCPH	**Palayan**	**0.81**	**205**	||*eP*	Pn	13 51 52.0	+2.8
PCPH				*eS*	Sn	13 52 04.6	+3.5
BOLP	**Bolinao**	**1.48**	**273**	*eP*	Pn	13 51 59.4	+1.7
BOLP				*eS*	Sn	13 52 18.7	+2.5
ABRA	**Dolores**	**1.51**	**332**	*eP*	Pn	13 51 59.6	+1.5
ABRA				*eS*	Sn	13 52 16.2	-0.9
APYP	**Conner**	**1.56**	**353**	*eP*	Pn	13 52 00.8	+2.0
APYP				*eS*	Sn	13 52 21.0	+2.7

*IDC **10** 13:56:03.1±1.4, 20°.17S×168°.35E, h0km, mb4.0/7, mb1 4.2/8, mb1mx3.9/34, mbtmp4.0/8, ML3.5/1, Error ellipse: s-maj=57.3km s-min=19.8km az=144.0*
*ISCJB **10** 13:56:05.5±1.2, 20°.2S±0°.2×168°.3E±0°.2, h25km, mb4.0/6, Error ellipse: s-maj=36.9km s-min=10.5km az=38.7*
ISC 10 13:56:06.6±1.3, 20°.3S±0°.2×168°.4E±0°.2, h25km, n10, σ1§02/11, mb4.1/6, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.53**	**226**	Pn	**Pn**	**13 56 45.9**	**-0.3**
	8.7nm,0.3s,baz=56,slow=17,SNR=15						
DZM				Sn	**Sn**	**13 57 15.6**	**-0.6**
	22nm,0.3s,baz=349,slow=19,SNR=9.4						
CTA	**Charters Tower**	**20.79**	**267**	P	**P**	**14 00 47.4**	**+1.3**
	1.4nm,0.4s,baz=94,slow=14,SNR=2.2						
STKA	**Stephens Creek**	**26.61**	**239**	P	**P**	**14 01 44.6**	**+1.5**
	1.6nm,0.7s,baz=68,slow=13,SNR=3.7						
WRA	**Warramunga Arr**	**31.95**	**265**	P	**P**	**14 02 29.7**	**-1.1**
	0.4nm,0.6s,baz=92,slow=8.5,SNR=9.8						
ASAR	**Alice Springs**	**32.12**	**258**	P	**P**	**14 02 31.9**	**-0.2**
	1.3nm,0.7s,baz=87,slow=8.8,SNR=16						
PETK	**Petropavlovsk-**	**73.71**	**353**	P	**P**	**14 07 38.2**	**+0.1**
	1.5nm,0.6s,baz=129,slow=6.7,SNR=5.0						
NVAR	**Mina Array Bea**	**90.10**	**49**	P	**P**	**14 09 05.8**	**+1.0**
	2.3nm,0.8s,baz=227,slow=8.4,SNR=9.0						
ILAR	**Eielson Array**	**91.49**	**18**	P	**P**	**14 09 09.1**	**-1.4**
	1.1nm,0.6s,baz=239,slow=6.0,SNR=4.5						
YKA	**Yellowknife Ar**	**101.98**	**28**	P	**Pdif**	**14 09 57.8**	**-0.2**
	0.2nm,0.5s,baz=254,slow=3.8,SNR=3.4						
GERES	**GERESS Array B**	**145.06**	**330**	PKP	**PKPdf**	**14 15 41.6**	**-0.2**
	0.3nm,0.3s,baz=45,slow=3.3,SNR=5.0						

IDC 10 14:00:32.1±1.8, 20°.57S×168°.43E, h0km, mb3.7/5, mb1 3.9/6, mb1mx3.7/26, mbtmp3.7/6, ML3.0/1, Error ellipse: s-maj=70.6km s-min=24.4km az=148.0, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.38**	**231**	Pn	Pn	14 01 13.8	+1.2
	3.2nm,0.3s,baz=98,slow=5.9,SNR=19						
DZM				Sn	Sb	14 01 44.8	-1.2
	13nm,0.3s,baz=153,slow=22,SNR=11						
CTA	**Charters Tower**	**20.80**	**267**	P	Pn	14 05 17.1	-0.5
	1.0nm,0.3s,baz=80,slow=19,SNR=2.3						
STKA	**Stephens Creek**	**26.51**	**239**	P	P	14 06 09.5	-1.9
	1.7nm,0.7s,baz=96,slow=10,SNR=2.9						
WRA	**Warramunga Arr**	**31.96**	**265**	P	P	14 06 58.4	-1.6
	1.0nm,1.2s,baz=94,slow=8.3,SNR=2.9						
ASAR	**Alice Springs**	**32.09**	**258**	P	P	14 07 02.0	+0.8
	0.4nm,0.6s,baz=91,slow=9.0,SNR=4.1						
NVAR	**Mina Array Bea**	**90.24**	**49**	P	P	14 13 35.5	+0.4
	0.2nm,0.3s,baz=222,slow=12,SNR=2.4						

JMA 10 14:01:47.3, 34°.20N×135°.19E, h5km±1km, M1.9, Near south coast of western Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAJ2	**Tsuna**	**0.33**	**311**	P	Pg	14 01 54.0	+0.2
JAJ2				S	Sg	14 01 59.2	+1.0
JWY	**Kouya**	**0.33**	**87**	P	Pg	14 01 53.8	0.0
JWY				S	Sg	14 01 58.7	+0.5
JWM	**Minabe**	**0.38**	**159**	P	Pg	14 01 54.8	+0.2
JWM				S	Sg	14 01 59.9	+0.4
JHE	**Heguri**	**0.61**	**42**	P	Pg	14 01 59.3	+0.3
JAI	**Aioi**	**0.74**	**237**	P	Pg	14 02 01.4	0.0
JWZ	**Kozaga**	**0.80**	**147**	P	Pg	14 02 02.6	0.0
JKS	**Kasai**	**0.83**	**340**	P	Pg	14 02 03.3	0.0
MAT	**Matsushiro**	**3.40**	**46**	P	Pb	14 02 48.1	+0.1
MAT				S	Sb	14 03 29.1	-0.5

*NIED **10** 14:01:00, 34°.20N×135°.20E, h5km, Mw4.0 Best double couple: M0 1.06000×10^15 NP1:φs357.00000°, δ47.00000°, λ47.00000°. NP2:φs231.00000°, δ57.00000°, λ127.00000°.*
*IDC **10** 14:01:52.5±0.7, 34°.16N×135°.23E, h0km, mb3.9/13, mb1 4.1/17, mb1mx3.9/55, mbtmp3.9/17, ML3.6/4, MS2.4/2, Ms1 2.4/2, ms1mx2.3/46, Error ellipse: s-maj=16.7km s-min=13.8km az=150.0*
*ISCJB **10** 14:01:53.2±0.5, 34°.20N±0°.03×135°.20E±0°.03, h11km±3km, mb4.0/24, Error ellipse: s-maj=4.8km s-min=3.5km az=25.3*
*JMA **10** 14:01:53.4, 34°.20N×135°.19E, h5km±1km, M4.2 Broadband fault plane solution: P waves. NP1: φs1.00000°, δ61.00000°, λ55.00000°. NP2:φs236.00000°, δ45.00000°, λ136.00000°. Principal axes: T Plg58.0000°, Azm220.0000°; N Plg30.0000°, Azm20.0000°; P Plg9.0000°, Azm115.0000°;*
JMA Felt IV J1.
*NEIC **10** 14:01:56.0±1.4, 34°.11N×135°.22E, h23km±10km, mb4.2/7 Error ellipse: s-maj=7.7km s-min=4.5km az=173.0*
NEIC Recorded [4 JMA] in Wakayama.
ISC 10 14:01:54.0±1.1, 34°.20N±0°.03×135°.20E±0°.03, h7km±7km, n54, σ1§06/63, mb4.1/24, 1C-2D, Near south coast of western Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JWY	**Kouya**	**0.33**	**87**	P	**Pg**	**14 01 59.8**	**-0.6**
JWY				S	**Sg**	**14 02 04.9**	**+0.1**
JAJ2	**Tsuna**	**0.34**	**310**	P	**Pg**	**14 02 00.1**	**-0.5**
JAJ2				S	**Sg**	**14 02 05.0**	**-0.1**
JWM	**Minabe**	**0.38**	**160**	P	**Pg**	**14 02 00.8**	**-0.5**
JWM				S	**Sg**	**14 02 06.0**	**-0.3**
JHE	**Heguri**	**0.60**	**42**	||P	**Pg**	**14 02 05.3**	**-0.3**
JHE				S	**Sg**	**14 02 13.6**	**+0.1**
JAI	**Aioi**	**0.74**	**237**	P	**Pg**	**14 02 07.4**	**-0.9**
JWZ	**Kozaga**	**0.80**	**147**	P	**Pg**	**14 02 08.6**	**-0.7**
JWZ				S	**Sg**	**14 02 19.8**	**+0.1**
JKS	**Kasai**	**0.83**	**339**	||P	**Pg**	**14 02 09.2**	**-0.8**
JKS				S	**Sg**	**14 02 20.3**	**-0.5**
JKN2	**Miekihoku**	**0.89**	**87**	||P	**Pg**	**14 02 10.3**	**-0.8**
INU	**Inuyama**	**1.88**	**52**	*e*Pn	**Pn**	**14 02 26.5**	**-0.1**
MAJO	**Matsushiro**	**3.39**	**46**	*e*Pn	**Pn**	**14 02 47.8**	**+0.4**
MJB9	**Matsu-Tunnel**	**3.39**	**46**	*e*Pn	**Pn**	**14 02 48.2**	**+0.8**
MJAR	**Matsushiro Arr**	**3.39**	**46**	Pn	**Pn**	**14 02 48.6**	**+1.3**
	4.5nm,0.3s,baz=247,slow=14,SNR=22						
MJAR				Lg	Lg	14 03 39.4	
	4.6nm,0.3s,baz=224,slow=26,SNR=4.6						
MJAR				LR	LR	14 04 29.6	
	comp=Z,97nm,21.0s,baz=255,slow=46						
JNU	**Nakatsue**	**3.76**	**255**	Pn	**Pn**	**14 02 52.4**	**-0.1**
	6.1nm,0.3s,baz=144,slow=4.8,SNR=14						
JNU				LR	LR	14 03 37.5	
	comp=Z,28nm,21.4s,baz=168,slow=28						
JNU				Sn	**Sn**	**14 03 39.3**	**+2.2**
	3.5nm,0.3s,baz=230,slow=9.9,SNR=3.6						
JHJ	**Hachijo jima 2**	**3.97**	**105**	Pn	**Pn**	**14 02 56.0**	**+0.7**
	28nm,0.3s,baz=194,slow=23,SNR=6.4						
JHJ				Sn	**Sn**	**14 03 43.1**	**+0.9**
	14nm,0.3s,baz=99,slow=17,SNR=3.7						
JHJ2	**Mitsune**	**4.00**	**105**	*e*Pn	**Pn**	**14 02 55.0**	**-0.7**
KSRS	**Korea Array**	**6.74**	**301**	Pn	**Pn**	**14 03 34.6**	**+1.3**
	0.9nm,0.3s,baz=121,slow=14,SNR=30						
KSRS				Sn	**Sn**	**14 04 49.7**	**-0.7**
	0.6nm,0.3s,baz=120,slow=24,SNR=7.1						
KS15	**Wonju Array Si**	**6.76**	**301**	*e*Pn	**Pn**	**14 03 34.7**	**+1.0**
KSAR	**Wonju Array Be**	**6.76**	**301**	Pn	**Pn**	**14 03 34.6**	**+0.9**
KSAR				Sn	**Sn**	**14 04 49.7**	**-1.3**
KS01	**Wonju Array Si**	**6.77**	**301**	*e*Pn	**Pn**	**14 03 34.6**	**+0.8**
CN2	**Changchun**	**12.21**	**325**	*e*P	**Pn**	**14 04 52.1**	**+3.7**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.6s						
CN2				pmax	pmax		
	comp=Z,200nm,4.0s						
CN2				LR	LR		
	comp=N,200nm,13.0s						
CN2				LR	LR		
	comp=E,200nm,13.0s						
CN2				LR	LR		
	comp=Z,200nm,14.0s						
KLR	**Kul'dur**	**15.23**	**351**	Pn	**P**	**14 05 32.3**	**-2.2**
	comp=Z,0.1nm,0.3s,baz=174,slow=10,SNR=9.0						
BJI	**Beijing**	**16.24**	**297**	P	**Pn**	**14 05 43.3**	**+0.7**
BJI				S	**Sn**	**14 08 44.4**	**+1.4**
BJI				pmax	pmax		
	comp=Z,4.0nm,1.0s						
BJI				LR	LR		
	comp=N,120nm,4.2s						
BJI				LR	LR		
	comp=E,160nm,4.9s						
BJI				LR	LR		
	comp=Z,63nm,19.2s						
HHC	**Hu-ho-hao-te**	**19.85**	**296**	*e*P	**Pn**	**14 06 29.1**	**+1.8**
HHC				S	**S**	**14 10 07.5**	**-2.0**
HHC				pmax	pmax		
	comp=Z,61nm,0.7s						
HHC				pmax	pmax		
	comp=Z,520nm,3.9s						
HHC				LR	LR		
	comp=N,550nm,10.7s						
HHC				LR	LR		
	comp=E,330nm,11.2s						
HHC				LR	LR		
	comp=Z,610nm,11.6s						
XAN	**Xi'an**	**21.74**	**277**	P	**P**	**14 06 48.8**	**+2.7**
XAN				pP	sP	14 06 59.0	+10
XAN				pmax	pmax		
	comp=Z,6.0nm,1.3s						
XAN				pmax	pmax		
	comp=Z,81nm,6.0s						
ENH	**Enshi**	**22.08**	**267**	*e*P	**P**	**14 06 51.1**	**+1.4**
	comp=Z,5.7nm,0.6s						
ULN	**Ulaanbaatar**	**25.07**	**311**	*e*P	**P**	**14 07 19.4**	**+0.2**
	comp=Z,9.6nm,1.4s						
CD2	**Chengdu**	**26.65**	**272**	P	**P**	**14 07 32.8**	**-0.7**
CD2				pmax	pmax		
	comp=Z,20nm,0.6s						
GTA	**Gaotai**	**28.68**	**291**	*e*P	**P**	**14 07 52.1**	**+0.3**
GTA				pP	sP	14 07 55.7	+1.0
GTA				sP	pP	14 07 58.5	+4.6
GTA				pmax	pmax		
	comp=Z,3.0nm,0.8s						
H11S3	**WAKE ISLAND Hy**	**32.10**	**111**	T	T	14 41 35.3	
	baz=305,slow=75,SNR=10						
H11S1	**WAKE ISLAND Hy**	**32.10**	**111**	T	T	14 41 33.7	
	baz=305,slow=75,SNR=14						
H11S2	**WAKE ISLAND Hy**	**32.12**	**111**	T	T	14 41 35.6	
	baz=305,slow=75,SNR=8.6						
TIXI	**Tiksi**	**37.66**	**357**	P	**P**	**14 09 08.2**	**-1.1**
	comp=Z,0.9nm,0.5s,baz=153,slow=6.8,SNR=6.1						
WMQ	**Urumqi**	**37.69**	**299**	*e*P	**P**	**14 09 10.5**	**+0.4**
WMQ				pmax	pmax		
	comp=Z,2.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,53nm,5.0s						
MK01	**Makanchi Array**	**41.41**	**304**	*e*P	**P**	**14 09 40.6**	**-0.4**
MK31	**Makanchi Array**	**41.41**	**304**	*e*P	**P**	**14 09 40.7**	**-0.4**
MKAR	**Makanchi Array**	**41.41**	**304**	P	**P**	**14 09 41.1**	**+0.1**
	comp=Z,1.0nm,0.7s,baz=85,slow=10.0,SNR=8.5						
MKAR	**Makanchi Array**	**41.41**	**304**	*e*P	**P**	**14 09 40.7**	**-0.4**
MAKZ	**Makanchi**	**41.63**	**304**	*e*P	**P**	**14 09 43.1**	**+0.3**
	comp=Z,3.3nm,1.0s						
KURK	**Kurchatov**	**43.77**	**310**	*e*P	**P**	**14 09 59.9**	**-0.2**
	comp=Z,2.5nm,0.8s						
KURBB	**Kurchatov Arra**	**43.83**	**310**	P	**P**	**14 10 00.8**	**+0.2**
	comp=Z,2.9nm,1.1s,baz=96,slow=8.2,SNR=10.0						
TKM2	**Tokmak 2**	**46.55**	**299**	*e*P	**P**	**14 10 22.4**	**-0.1**
	comp=Z,3.8nm,1.0s						
ZRNK	**Zerenda**	**49.62**	**313**	*e*P	**P**	**14 10 45.5**	**-0.3**
	comp=Z,2.3nm,0.9s						
BWN	**Browne**	**53.49**	**32**	*e*P	**P**	**14 11 15.7**	**+1.0**
WRA	**Warramunga Arr**	**53.85**	**181**	P	**P**	**14 11 16.6**	**-1.1**
	comp=Z,4.6nm,0.9s,baz=356,slow=7.8,SNR=24						
MDM	**Murphy Dome**	**53.97**	**31**	*e*P	**P**	**14 11 19.1**	**+0.8**
	comp=Z,2.6nm,0.8s						
ILAR	**Eielson Array**	**54.55**	**31**	P	**P**	**14 11 22.5**	**0.0**
	comp=Z,0.6nm,0.7s,baz=259,slow=6.1,SNR=7.6						
AKTO	**Aktyubinsk**	**56.79**	**312**	P	**P**	**14 11 38.5**	**-0.2**
	comp=Z,0.9nm,0.3s,baz=88,slow=11,SNR=4.1						
ASAR	**Alice Springs**	**57.56**	**181**	P	**P**	**14 11 43.3**	**-1.1**
	comp=Z,0.6nm,0.8s,baz=10,0,slow=13,SNR=8.8						
INK	**Inuvik**	**59.17**	**26**	P	**P**	**14 11 55.0**	**-0.1**
	comp=Z,0.9nm,0.5s,baz=330,slow=5.2,SNR=7.9						
YKA	**Yellowknife Ar**	**68.73**	**28**	P	**P**	**14 12 58.5**	**+0.4**
	comp=Z,0.2nm,0.4s,baz=304,slow=5.9,SNR=4.9						
FINES	**FINESS Array B**	**68.88**	**331**	P	**P**	**14 12 58.1**	**-1.0**
	comp=Z,1.8nm,0.8s,baz=55,slow=7.2,SNR=4.4						
BRTR	**Keskin Array B**	**76.82**	**309**	P	**P**	**14 13 46.8**	**0.0**
	comp=Z,0.6nm,0.8s,baz=119,slow=7.2,SNR=4.0						
NVAR	**Mina Array Bea**	**80.70**	**50**	P	**P**	**14 14 07.8**	**-0.5**
	comp=Z,1.0nm,0.7s,baz=277,slow=6.0,SNR=4.1						
TXAR	**Lajitas Array**	**95.82**	**49**	P	**P**	**14 15 21.6**	**0.0**
	comp=Z,0.2nm,0.8s,baz=14,slow=1.5,SNR=3.9						

IDC 10 14:03:20.3±1.6, 20°.23S×168°.17E, h0km, mb3.7/4, mb1 4.0/5, mb1mx3.7/30, mbtmp3.7/5, ML3.4/1, Error ellipse: s-maj=66.5km s-min=22.4km az=141.0, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.44**	**221**	Pn	Pn	14 04 01.7	+0.2
	9.3nm,0.3s,baz=118,slow=14,SNR=6.5						
DZM				Sn	Sn	14 04 31.9	-0.2
	13nm,0.3s,baz=115,slow=23,SNR=5.0						
WRA	**Warramunga Arr**	**31.74**	**265**	P	P	14 09 46.1	-0.2
	0.6nm,0.9s,baz=92,slow=8.1,SNR=3.5						
ASAR	**Alice Springs**	**31.92**	**258**	P	P	14 09 48.0	+0.2
	0.8nm,0.7s,baz=85,slow=9.3,SNR=5.7						
NVAR	**Mina Array Bea**	**90.21**	**49**	P	P	14 16 23.3	+0.2
	0.4nm,0.6s,baz=293,slow=4.7,SNR=3.0						
ILAR	**Eielson Array**	**91.47**	**18**	P	P	14 16 27.7	-0.3
	0.2nm,0.7s,baz=215,slow=5.0,SNR=3.0						

*NIED **10** 14:03:00, 39°.60N×142°.80E, h11km, Mw3.6 Best double couple: M0 3.25000×10^14 NP1:φs314.00000°, δ70.00000°, λ-171.00000°. NP2:φs221.00000°, δ82.00000°, λ-20.00000°.*
*JMA **10** 14:03:45.7±0.2, 39°.57N×142°.81E, h14km±2km, M3.5*
*IDC **10** 14:04:35.8±7.9, 39°.23N×141°.22E, h478km±99km, mb2.7/7, mb1 2.9/7, mb1mx2.7/49, mbtmp3.6/7, Error ellipse: s-maj=26.4km s-min=19.7km az=83.0*
ISC 10 14:03:45.3±2.7, 39°.6N±0°.1×142°.83E±0°.09, h10km±13km, n15, σ0§93/16, mb3.6/7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**0.78**	**269**	P	Pg	14 04 00.2	-0.3
MIYJ				S	**Sg**	**14 04 10.7**	**0.0**
JTH	**Tanohata**	**0.82**	**295**	P	**Pg**	**14 04 01.1**	**-0.1**
JTH				S	**Sg**	**14 04 12.2**	**+0.3**
OFUJ	**Ofunato**	**1.04**	**241**	P	Pg	14 04 04.8	-0.6
JOM	**Ohasama**	**1.20**	**265**	P	Pn	14 04 07.3	-0.9
JOM				S	**Sb**	**14 04 22.9**	**-0.8**
JKZ	**Kuzumaki**	**1.22**	**289**	P	**Pn**	**14 04 08.1**	**-0.4**
JKZ				S	**Sb**	**14 04 23.9**	**-0.5**
JANG	**Nango**	**1.27**	**308**	P	**Pn**	**14 04 08.6**	**-0.6**
JMK	**Ichinoseki**	**1.41**	**243**	P	Pn	14 04 10.3	-0.7
JMK				S	**Sn**	**14 04 28.0**	**-1.7**
JRG	**Rokugo**	**1.71**	**264**	P	**Pn**	**14 04 16.5**	**+1.2**
JRG				S	**Sn**	**14 04 38.8**	**+1.6**
ZALV	**Zalesovo Beam**	**41.06**	**310**	P	**P**	**14 11 29.9**	**+1.1**
	0.4nm,0.4s,baz=81,slow=8.9,SNR=2.4						
MKAR	**Makanchi Array**	**43.75**	**300**	P	**P**	**14 11 51.3**	**+0.5**
	0.3nm,0.6s,baz=94,slow=6.8,SNR=3.5						
KURBB	**Kurchatov Arra**	**45.35**	**306**	P	**P**	**14 12 03.4**	**-0.1**
	0.9nm,0.8s,baz=81,slow=8.6,SNR=4.6						
ILAR	**Eielson Array**	**46.74**	**34**	P	P	14 12 27.8	+14
	0.6nm,1.0s,baz=283,slow=8.2,SNR=2.7						
WRA	**Warramunga Arr**	**59.76**	**189**	P	**P**	**14 13 50.0**	**-0.5**
	0.7nm,1.1s,baz=5.4,slow=7.0,SNR=2.8						
FINES	**FINESS Array B**	**67.07**	**332**	P	**P**	**14 14 38.2**	**-0.2**
	0.9nm,0.7s,baz=48,slow=19,SNR=2.0						
NOA	**NORSAR Array B**	**72.25**	**338**	P	**P**	**14 15 10.9**	**+0.4**
	0.4nm,0.7s,baz=13,slow=1.8,SNR=3.1						

IDC 10 14:04:53.9±5.0, 38°.06N×142°.42E, h0km, mb3.5/2, mb1 3.5/5, mb1mx3.4/50, mbtmp3.6/5, ML2.9/3, Error ellipse: s-maj=92.2km s-min=33.3km az=91.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**3.68**	**247**	Pn	Pn	14 05 52.4	+0.3
	1.3nm,0.3s,baz=68,slow=14,SNR=7.4						
MAT	**Matsushiro**	**3.68**	**247**	P	Pn	14 05 53.5	+1.4
JHJ	**Hachijo jima 2**	**5.37**	**204**	Pn	Pn	14 06 14.8	-0.5
	8.1nm,0.3s,baz=81,slow=22,SNR=2.2						
ASAJ	**Asahikawa**	**6.06**	**1**	Pn	Pn	14 06 18.0	-6.7
	0.7nm,0.3s,baz=310,slow=27,SNR=3.6						
USRK	**Ussuriysk Ar.**	**9.97**	**311**	Pn	Pn	14 07 17.2	-1.2
	0.1nm,0.3s,baz=121,slow=14,SNR=2.3						
H11N2	**WAKE ISLAND Hy**	**28.02**	**124**	T	T	14 40 18.9	
	baz=318,slow=75,SNR=10						
H11N1	**WAKE ISLAND Hy**	**28.02**	**124**	T	T	14 40 20.3	
	baz=318,slow=75,SNR=10						
H11N3	**WAKE ISLAND Hy**	**28.04**	**124**	T	T	14 40 19.4	
	baz=318,slow=75,SNR=11						
MKAR	**Makanchi Array**	**44.

HIZ	Hauiti	18.99	164	eP	Pn	14 12 08.8 +1.3
	141nm,1.2s					
URZ	Urewera	19.44	159	P	Pn	14 12 15.2 +2.2
	0.8nm,0.3s,baz=359,slow=6.8,SNR=32					
URZ				LR	LR	14 18 50.9
	comp=Z,184nm,19.6s,baz=339,slow=34					
URZ	Urewera	19.44	159	eP	Pn	14 12 14.9 +2.0
	198nm,1.1s					
BKZ	Black Stump Fm	20.06	161	eP	Pn	14 12 19.9 -0.4
	83nm,1.1s					
CTA	Charters Tower	20.61	267	P	Pn	14 12 26.9 0.0
	29nm,0.8s,baz=89,slow=13,SNR=22					
CTAO	Charters Tower	20.61	267	eP	Pn	14 12 26.2 -0.7
CTAO				pmax	pmax	
	comp=Z,606nm,1.0s					
CTAO				MLR	MLR	
	comp=Z,6μm,21.0s					
CTAO	Charters Tower	20.61	267	eP	Pn	14 12 26.2 -0.7
	comp=Z,606nm,1.0s					
CTAO				LR	LR	
	comp=Z,6μm,21.0s					
THZ	Tophouse	21.71	170	eP	P	14 12 37.7 +1.5
	comp=Z,53nm,1.0s					
CAN	Canberra	22.54	225	eP	P	14 12 47.9 +2.7
CAN				pmax	pmax	
	comp=Z,68nm,1.1s					
CAN				MLR	MLR	
	comp=Z,900nm,20.0s					
CAN	Canberra	22.54	225	eP	P	14 12 47.9 +2.7
	comp=Z,68nm,1.1s					
CAN				LR	LR	
	comp=Z,900nm,20.0s					
LTZ	Lake Taylor	22.62	172	eP	P	14 12 47.1 +1.1
	comp=Z,115nm,1.3s					
PMG	Port Moresby	23.04	295	P	P	14 12 50.9 +0.3
	comp=Z,9.8nm,0.6s,baz=68,slow=5.4,SNR=7.5					
PMG				LR	LR	14 20 31.5
	comp=Z,473nm,18.2s,baz=140,slow=33					
PMG	Port Moresby	23.04	295	cePP	P	14 12 50.7 +0.2
PMG				pmax	pmax	
	comp=Z,109nm,1.2s					
PMG	Port Moresby	23.04	295	eP	P	14 12 50.5 -0.1
	comp=Z,81nm,1.3s					
OXZ	Oxford	23.13	173	eP	P	14 12 52.5 +1.4
	comp=Z,83nm,1.1s					
RPZ	Rata Peaks	23.41	175	P	P	14 12 55.6 +1.6
	comp=Z,17nm,0.9s,baz=290,slow=1.5,SNR=5.8					
RPZ				LR	LR	14 21 17.0
	comp=Z,844nm,18.6s,baz=340,slow=34					
RPZ	Rata Peaks	23.41	175	eP	P	14 12 54.3 +0.3
	comp=Z,177nm,1.6s					
CRLZ	Canterbury Las	23.45	172	eP	P	14 12 54.9 +0.6
	comp=Z,183nm,1.3s					
COEN	Coen	24.73	281	eP	P	14 13 06.9 +0.3
	comp=Z,40nm,0.8s					
DCZ	Deep Cove	25.06	182	eP	P	14 13 10.2 +1.1
	comp=Z,60nm,1.0s					
STKA	Stephens Creek	26.44	239	P	P	14 13 23.0 +1.2
	comp=Z,27nm,0.7s,baz=74,slow=8.9,SNR=42					
STKA				LR	LR	14 23 16.7
	comp=Z,1μm,19.5s,baz=56,slow=35					
STKA	Stephens Creek	26.44	239	eP	P	14 13 23.1 +1.2
STKA				pmax	pmax	
	comp=Z,49nm,1.5s					
STKA	Stephens Creek	26.44	239	eP	P	14 13 23.1 +1.2
	comp=Z,49nm,1.5s					
KWAJ	Kwajalein Atol	28.98	359	PFAKE		14 14 00.0 +15
KWAJ				LR	LR	
	comp=Z,800nm,19.0s					
BBOO	Buckleboo	31.19	240	eP	P	14 14 04.6 +0.4
	comp=Z,66nm,0.9s					
WR0	Warramunga Arr	31.58	265	PFAKE		14 14 20.0 +12
WR0				LR	LR	
	comp=Z,800nm,19.0s					
WB9	Warramunga Arr	31.75	265	PFAKE		14 14 20.0 +11
WB9				LR	LR	
	comp=Z,1μm,20.0s					
WB6	Warramunga Arr	31.75	265	PFAKE		14 14 20.0 +11
WB6				LR	LR	
	comp=Z,800nm,20.0s					
WB2	Warramunga Arr	31.76	265	eP	P	14 14 07.7 -1.6
	comp=Z,37nm,1.2s					
WRAB	Tennant Creek	31.76	265⇑	eP	P	14 14 07.9 -1.4
WRAB				pmax	pmax	
	comp=Z,31nm,1.2s					
WRAB	Tennant Creek	31.76	265	eP	P	14 14 08.2 -1.2
	comp=Z,33nm,1.2s					
WRAB				epP	pP	14 14 17.8 -1.4
WRAB				LR	LR	
	comp=Z,900nm,20.0s					
WRA	Warramunga Arr	31.77	265	P	P	14 14 08.1 -1.4
	comp=Z,7.2nm,0.9s,baz=90,slow=8.5,SNR=43					
WRA				pP	pP	14 14 17.9 -1.4
	comp=Z,14nm,0.9s,baz=90,slow=8.4,SNR=28					
WRA				PcP	PcP	14 17 00.3 0.0
	comp=Z,4.3nm,0.9s,baz=100,slow=2.5,SNR=6.0					
WRA				LR	LR	14 26 03.5
	comp=Z,508nm,20.7s,baz=105,slow=35					
WC1	Warramunga Arr	31.77	265	PFAKE		14 14 20.0 +11
WC1				LR	LR	
	comp=Z,800nm,19.0s					
AS01	Alice Springs	31.89	258	eP	P	14 14 09.6 -0.9
AS31	Alice Springs	31.93	258	eP	P	14 14 10.2 -0.6
	comp=Z,38nm,0.8s					
ASAR	Alice Springs	31.93	258	P	P	14 14 10.3 -0.5
	comp=Z,40nm,0.7s,baz=87,slow=9.1,SNR=369					
ASAR				pP	pP	14 14 20.6 -0.1
	comp=Z,94nm,0.8s,baz=87,slow=9.0,SNR=54					
ASAR				PcP	PcP	14 17 00.7 -0.1
	comp=Z,3.4nm,0.9s,baz=112,slow=2.5,SNR=4.7					
ASAR				LR	LR	14 27 18.2
	comp=Z,1μm,18.4s,baz=96,slow=37					
MTN	Manton Dam	36.25	276	eP	P	14 14 47.5 -0.8
	comp=Z,31nm,0.8s					
MTN				LR	LR	
	comp=Z,800nm,20.0s					
FAKI	Fak Fak	39.10	292	PFAKE		14 15 20.0 +7.6
FAKI				LR	LR	
	comp=Z,400nm,20.0s					
PPT2	Papeete2	39.94	93	eP	P	14 15 18.2 -1.3
	comp=Z,78nm,1.2s					
PPT2				epP	pP	14 15 30.3 +0.8
	comp=Z,104nm,1.1s					
PPT2				eS	S	14 21 19.8 -2.9
	comp=Z,242nm,26.8s					
PPT2				eLR	LR	14 26 12.7
	comp=Z,1μm,28.2s					
PPT	Papeete	39.94	93	P	P	14 15 18.0 -1.4
	comp=Z,44nm,0.7s,baz=98,slow=9.3,SNR=6.0					
PPT				pP	pP	14 15 29.3 -0.1
	comp=Z,84nm,0.9s,baz=277,slow=22,SNR=5.0					
PPT				LR	LR	14 31 28.7
	comp=Z,335nm,18.1s,baz=213,slow=36					
TIAR	Tiarei	40.16	93	eP	P	14 15 19.9 -1.3
	comp=Z,34nm,0.9s					
TIAR				epP	pP	14 15 31.2 -0.1
	comp=Z,43nm,0.8s					
FITZ	Fitzroy Crossi	40.18	266	eP	P	14 15 21.4 +0.1
	comp=Z,72nm,0.8s					
TVO	Taravao	40.21	94	eP	P	14 15 20.3 -1.4
	comp=Z,13nm,0.7s					
TVO				epP	pP	14 15 31.3 -0.4
	comp=Z,15nm,0.7s					
SWI	Sorong	40.98	294	P	P	14 15 27.6 -0.4
SOEI	Soe	43.60	277	epP	pP	14 16 00.8 +1.2
SANI	Sanana	45.03	288	P	P	14 16 03.1 +2.3
MMRI	Maumere	45.86	278	eP	P	14 16 07.0 -0.4
	comp=Z,44nm,0.7s					
MMRI				LR	LR	
	comp=Z,500nm,20.0s					
NWAO	Narrogin (SRO)	46.85	244	eP	P	14 16 14.8 -0.2
NWAO				pmax	pmax	
	comp=Z,293nm,0.9s					
NWAO	Narrogin (SRO)	46.85	244	eP	P	14 16 14.8 -0.2
	comp=Z,293nm,0.9s					
LUWI	Luwuk	48.35	288	PFAKE		14 16 40.0 +13
LUWI				LR	LR	
	comp=Z,6μm,19.0s					
KAPI	Kappang	49.46	281	eP	P	14 16 35.7 +0.4
	comp=Z,174nm,1.8s					
KAPI				LR	LR	
	comp=Z,3μm,22.0s					
DAV	Davao City (W)	49.99	299	PFAKE		14 16 50.0 +11
DAV				LR	LR	
	comp=Z,4μm,20.0s					
TAOE	Nuku Hiva Isla	51.07	85	eLR	LR	14 31 22.2
	comp=Z,661nm,28.6s					
RKT	Rikitea	52.57	104	eLR	LR	14 32 03.2
	comp=Z,340nm,32.0s					
JAGI	Jajag, Banyuwa	53.46	275	eP	P	14 17 04.4 -0.9
	comp=Z,41nm,0.9s					
PWJI	Pagerwojo	55.80	274	P	P	14 17 33.0 +11
VNDA	Vanda	57.29	182	P	P	14 17 32.1 +0.2
	comp=Z,6.4nm,0.9s,baz=358,slow=7.8,SNR=3.8					
VNDA				LR	LR	14 40 55.7
	comp=Z,87nm,18.0s,baz=28,slow=35					
VNDA	Vanda	57.29	182	eP	P	14 17 31.2 -0.8
VNDA				pmax	pmax	
	comp=Z,10.0nm,1.0s					
VNDA	Vanda	57.29	182	eP	P	14 17 31.2 -0.8
	comp=Z,9.5nm,1.0s					
SMRI	Semarang	57.40	275	PFAKE		14 17 50.0 +16
SMRI				LR	LR	
	comp=Z,4μm,20.0s					
KKM	Kota Kinabalu	57.42	292	eP	P	14 17 34.2 +0.3
	comp=Z,114nm,1.7s					
KKM				LR	LR	
	comp=Z,4μm,22.0s					
SBA	Scott Base	57.55	180	eP	P	14 17 34.8 +1.1
SBA				pmax	pmax	
	comp=Z,35nm,0.9s					
SBA	Scott Base	57.55	180	eP	P	14 17 34.8 +1.1
	comp=Z,35nm,0.9s					
SBUM	Sibu	59.36	286	eP	P	14 17 47.3 0.0
	comp=Z,29nm,1.3s					
SBUM				LR	LR	
	comp=Z,2μm,18.0s					
CISI	Cisompet, Garu	59.69	273	PFAKE		14 18 00.0 +10
CISI				LR	LR	
	comp=Z,2μm,18.0s					
KSM	Kuching	60.69	284	eP	P	14 17 56.6 +0.1
	comp=Z,34nm,0.8s					
KSM				LR	LR	
	comp=Z,2μm,20.0s					
TWG	Pinlang	62.90	311	PFAKE		14 18 20.0 +8.9
TWG				LR	LR	
	comp=Z,5μm,22.0s					
YULB	Yu-li	63.10	311	PFAKE		14 18 20.0 +7.5
YULB				LR	LR	
	comp=Z,900nm,20.0s					
MJAR	Matsushiro Arr	63.29	333	P	P	14 18 12.8 -0.7
	comp=Z,7.6nm,0.9s,baz=168,slow=6.9,SNR=15					
MAJO	Matsushiro	63.30	333⇑	eP	P	14 18 12.2 -1.3
MAJO				pmax	pmax	
	comp=Z,53nm,0.9s					
MAT	Matsushiro	63.30	333	P	P	14 18 12.8 -0.7
MJB9	Matsu-Tunnel	63.30	333	PFAKE		14 18 30.0 +16
MJB9				LR	LR	
	comp=Z,100nm,19.0s					
TPUB	Ta-pu	63.52	311	eP	P	14 18 14.1 -1.2
	comp=Z,24nm,0.8s					
TPUB				LR	LR	
	comp=Z,2μm,22.0s					
SSLB	Suanglung	63.60	311	PFAKE		14 18 30.0 +14
SSLB				LR	LR	
	comp=Z,2μm,21.0s					
YHNB	Yeheng	63.87	312	PFAKE		14 18 30.0 +12
YHNB				LR	LR	
	comp=Z,2μm,20.0s					
MNAI	Manna	65.31	275	PFAKE		14 18 40.0 +13
MNAI				LR	LR	
	comp=Z,2μm,20.0s					
MYKOM	Kota Tinggi	66.73	281	PFAKE		14 18 50.0 +14
MYKOM				LR	LR	
	comp=Z,1μm,21.0s					
TJN	Taejon	68.37	325⇓	eP	P	14 18 46.1 -0.1
BKNI	Bangkinang	68.77	279	PFAKE		14 19 00.0 +11
BKNI				LR	LR	
	comp=Z,2μm,21.0s					
KSRS	Korea Array	68.89	327	P	P	14 18 49.9 +0.5
	comp=Z,3.8nm,0.9s,baz=143,slow=5.7,SNR=14					
KSAR	Wonju Array Be	68.90	326	P	P	14 18 49.9 +0.4
KSAR	Wonju Array Be	68.90	326	P	P	14 18 49.9 +0.4
KS01	Wonju Array Si	68.92	327	eP	P	14 18 49.4 -0.1
INCN	Inchon	69.58	326	PFAKE		14 19 10.0 +16
INCN				LR	LR	
	comp=Z,400nm,20.0s					
QSPA	South Pole Qui	69.70	180	eP	P	14 18 54.7 +0.4
	comp=Z,54nm,1.1s					
IPM	Ipoh	70.37	283	eP	P	14 18 58.9 -0.2
	comp=Z,16nm,0.9s					
IPM				LR	LR	
	comp=Z,2μm,21.0s					
YSS	Yuzh-Sakhalins	70.83	342	eP	P	14 18 53.0 -8.1
PSI	Prapat	71.66	280	eP	P	14 19 06.4 -0.7
PSI				pmax	pmax	
	comp=Z,31nm,1.1s					
PSI				MLR	MLR	
	comp=Z,1μm,21.0s					
PSI	Prapat	71.66	280	eP	P	14 19 06.4 -0.7
	comp=Z,30nm,1.1s					
PSI				LR	LR	
	comp=Z,1μm,21.0s					
USRK	Ussuriysk Ar.	72.29	334	P	P	14 19 11.1 +1.1
	comp=Z,20nm,0.9s,baz=150,slow=4.4,SNR=27					
USRK				pP	pP	14 19 21.2 +0.6
	comp=Z,17nm,1.0s,baz=150,slow=4.3,SNR=8.9					
GSI	Gunungsitoli	72.35	278	P	P	14 19 12.2 +1.1
	comp=Z,97nm,2.1s					
GSI	Gunungsitoli	72.35	278	eP	P	14 19 11.5 +0.4
	comp=Z,49nm,1.0s					
WHN	Wuhan	72.39	313	⇓P	P	14 19 11.0 +0.1
WHN				pP	pP	14 19 21.1 -0.4
RUS	Russkaya	72.97	354	PFAKE		14 19 30.0 +16
RUS				LR	LR	
	comp=Z,800nm,21.0s					
SKNT	Sakolnakorn	73.14	296	P	P	14 19 16.3 +0.7
	comp=Z,28nm,0.9s					
MDJ	Mudanjiang	73.65	332	P	P	14 19 18.8 +0.8
MDJ				pmax	pmax	
	comp=Z,18nm,1.0s					
MDJ				pmax	pmax	
	comp=Z,120nm,4.1s					
MDJ	Mudanjiang	73.65	332	eP	P	14 19 18.6 +0.6
	comp=Z,24nm,1.1s					
PEA0	Petropavlovsk-	73.72	353	eP	P	14 19 18.8 +0.5
PETK	Petropavlovsk-	73.72	353	P	P	14 19 19.3 +1.0
	comp=Z,13nm,1.0s,baz=125,slow=5.9,SNR=9.2					
PETK				pP	pP	14 19 29.3 +0.4
	comp=Z,11nm,0.9s,baz=133,slow=6.5,SNR=5.4					
NONG	Nongkai	74.35	296	P	P	14 19 23.8 +1.1
	comp=Z,58nm,0.7s					
CN2	Changchun	74.91	329	eP	P	14 19 26.0 +0.6
CN2				pmax	pmax	
	comp=Z,20nm,0.7s					
ENH	Enshi	75.64	310	eP	P	14 19 29.6 -0.3
	comp=Z,22nm,0.9s					
ENH				LR	LR	
	comp=Z,1μm,20.0s					
GYA	Guiyang	75.67	306	P	P	14 19 32.0 +1.7
GYA				pP	sP	14 19 44.4 -0.6
GYA				PP	PP	14 22 23.8 +3.3
GYA				S	S	14 29 10.0 +0.3
GYA				sS	sS	14 29 28.5 +1.1
GYA				SKS	SKSac	14 29 33.6 -4.7
GYA				SS	SS	14 34 04.8 +2.8
GYA				pmax	pmax	
	comp=Z,30nm,1.0s					
GYA				pmax	pmax	
	comp=Z,140nm,5.9s					
GYA				LR	LR	
	comp=Z,580nm,18.9s					
GYA				LR	LR	
	comp=Z,560nm,19.0s					
GYA				LR	LR	
	comp=Z,540nm,19.2s					
LOEI	Loei	75.69	295	P	P	14 19 30.6 +0.2
	comp=Z,7.3nm,1.2s,comp=Z,641nm					
KLR	Kul'dur	76.49	336	iP	P	14 19 34.9 +0.6
NANT	Nan	76.75	296	P	P	14 19 38.0 +1.5
	comp=Z,6.6nm,0.9s					
NKL	Nikolayevsk	76.99	343	eP	P	14 19 38.0 +1.0
NKL				pmax	pmax	
	comp=Z,41nm,1.2s					
MAW	Mawson	77.04	202	P	P	14 19 38.6 +1.3
	comp=Z,18nm,0.9s,baz=102,slow=7.6,SNR=18					
MAW	Mawson	77.04	202	eP	P	14 19 38.5 +1.3
MAW				pmax	pmax	
	comp=Z,6.0nm,1.0s					
MAW	Mawson	77.04	202	eP	P	14 19 38.5 +1.2
	comp=Z,6.2nm,1.0s					
BJT	Baijiatuau	77.19	322	PFAKE		14 19 50.0 +12
BJT				LR	LR	
	comp=Z,500nm,20.0s					
BJI	Beijing	77.20	322	P	P	14 19 40.9 +2.4
BJI				S	S	14 29 28.9 +3.3
BJI				pmax	pmax	
	comp=Z,9.0nm,0.9s					
BJI				pmax	pmax	
	comp=Z,270nm,4.2s					
BJI				LR	LR	
	comp=Z,320nm,15.6s					
BJI				LR	LR	
	comp=Z,220nm,17.9s					
LAMP	Lampang	77.53	295	P	P	14 19 42.9 +2.1
	comp=Z,10nm,0.9s					
CRAI	Chiangrai	77.67	297	P	P	14 19 42.9 +1.3
	comp=Z,303nm,0.8s					
KMI	Kunming	78.05	303	P	P	14 19 43.9 0.0
KMI				pP	sP	14 19 57.1 -1.5
KMI				sP	pP	14 20 01.9 +7.3
KMI				PP	PP	14 22 44.0 +3.3
KMI				S	S	14 29 32.8 -3.1
KMI				sS	sS	14 29 53.3 -0.3
KMI				SS	SS	14 34 36.2 -2.0
KMI				pmax	pmax	
	comp=Z,27nm,0.9s					
KMI				pmax	pmax	
	comp=Z,220nm,6.6s					
KMI				LR	LR	
	comp=Z,760nm,20.1s					
KMI				LR	LR	
	comp=Z,780nm,19.1s					
KMI				LR	LR	
	comp=Z,1μm,21.1s					
CM01	Chiang Mai Arr	78.05	295	eP	P	14 19 44.9 +1.1
CM31	Chiang Mai Arr	78.08	295	eP	P	14 19 45.5 +1.5
CMAR	Chiang Mai Arr	78.08	295	P	P	14 19 45.3 +1.4
	comp=Z,11nm,0.9s,baz=133,slow=4.2,SNR=39					
XAN	Xi'an	78.16	313	P	P	14 19 44.1 0.0
XAN				pP	PcP	14 19 54.0 +0.5
XAN				pmax	pmax	
	comp=Z,9.0nm,1.2s					
XAN				pmax	pmax	
	comp=Z,98nm,4.9s					
CMMT	Chiang Mai	78.24	295	P	P	14 19 46.1 +1.3
	comp=Z,28nm,1.2s					
CHTO	Chiang Mai	78.24	295	P	P	14 19 46.3 +1.5
	comp=Z,123nm,1.3s					
CHTO	Chiang Mai	78.24	295	eP	P	14 19 46.1 +1.3
CHTO				pmax	pmax	
	comp=Z,20nm,0.9s					
CHTO				MLR	MLR	
	comp=Z,700nm,21.0s					
CHTO	Chiang Mai	78.24	295	eP	P	14 19 46.1 +1.3
	comp=Z,20nm,0.9s					
CHTO				LR	LR	
	comp=Z,700nm,21.0s					
CMAI	Chiengmai2	78.65	296	P	P	14 19 48.8 +1.6
	comp=Z,19nm,1.1s					
CD2	Chengdu	80.15	308	P	P	14 19 54.5 -0.6
CD2				pP	pP	14 20 06.5 +0.7
CD2				PP	PP	14 22 57.0 -0.9
CD2				S	S	14 29 57.2 -0.5
CD2				SS	SS	14 35 09.5 +0.2
CD2				pmax	pmax	
	comp=Z,120nm,0.5s					
CD2				pmax	pmax	
	comp=Z,180nm,6.4s					
CD2				LR	LR	
	comp=Z,1μm,18.0s					
CD2				LR	LR	
	comp=Z,2μm,21.0s					
HHC	Hu-ho-hao-te	80.44	320	eP	P	14 19 58.1 +1.6
HHC				S	S	14 30 05.9 +5.4
HHC				pmax	pmax	
	comp=Z,11nm,1.3s					
HHC				pmax	pmax	
	comp=Z,120nm,7.4s					
HHC				LR	LR	
	comp=Z,570nm,17.6s					
HHC				LR	LR	
	comp=Z,490nm,17.7s					
HHC				LR	LR	
	comp=Z,830nm,17.5s					
MA2	Magadan	80.91	351	eP	P	14 19 57.8 -0.6
HIA	Hailar	81.59	330	PFAKE		14 20 10.0 +7.7
HIA				LR	LR	
	comp=Z,600nm,21.0s					
LZH	Lanzhou	82.76	313	eP	P	14 20 10.3 +1.4
LZH				pP	sP	14 20 22.2 -1.5
LZH				sP	pP	14 20 27.3 +7.6
LZH				eS	S	14 30 25.0 +0.2
LZH				pmax	pmax	
	comp=Z,40nm,1.0s					
LZH				pmax	pmax	
	comp=Z,130nm,4.9s					
LZH				LR	LR	
	comp=Z,2μm,14.5s					
LZH				LR	LR	
	comp=Z,2μm,17.4s					
LZH				LR	LR	
	comp=Z,2μm,18.3s					
SYO	Syowa Base	83.59	196⇑	eP	P	14 20 10.6 -1.9
OHAK	Old Harbor	83.73	20	eP	P	14 20 13.2 +0.1
	comp=Z,24nm,0.9s					
SEY	Seymchan	83.94	353⇑	eP	P	14 20 14.5 +0.4
KDAK	Kodiak Island	84.41	20	iP	P	14 20 18.7 +2.1
KDAK	Kodiak Island	84.41	20	eP	P	14 20 16.5 0.0
	comp=Z,28nm,0.9s					
ULN	Ulaanbaatar	87.18	324	eP	P	14 20 31.1 +0.3
ULN				pmax	pmax	
	comp=Z,24nm,1.3s					
ULN				MLR	MLR	
	comp=Z,600nm,22.0s					
ULN	Ulaanbaatar	87.18	324	eP	P	14 20 31.1 +0.3
	comp=Z,24nm,1.3s					
ULN				LR	LR	
	comp=Z,600nm,22.0s					
GTA	Gaotai	87.19	314	⇑P	P	14 20 31.9 +0.8
GTA				pP	pP	14 20 41.8 -0.1
GTA				sP	sP	14 20 45.8 0.0
GTA				PP	PP	14 23 57.3 +1.8
GTA				SKS	SKSac	14 30 54.9 -1.2
GTA				S	S	14 31 08.2 -0.3
GTA				sS	sS	14 31 26.8 +0.3
GTA				pmax	pmax	
	comp=Z,5.0nm,1.2s					
GTA				pmax	pmax	
	comp=Z,59nm,6.4s					
GTA				LR	LR	
	comp=Z,560nm,18.5s					
GTA				LR	LR	
	comp=Z,750nm,18.5s					
GTA				LR	LR	
	comp=Z,1μm,19.0s					
HOPS	Hopland Field	87.21	47	eP	P	14 20 31.0 0.0
	comp=Z,43nm,1.1s					
KMRM	Mail Ridge	87.38	45	eP	P	14 20 32.6 +0.7
	comp=Z,55nm,0.8s					
PKM	Mcpherson Peak	87.61	51	P	P	14 20 33.3 0.0
	baz=243					
YAK	Yakutsk	87.64	343	eP	P	14 20 32.0 -0.5
YAK				pmax	pmax	
	comp=Z,21nm,1.0s					
YAK				pmax	pmax	
	comp=E,4.0nm,1.5s					
YAK				pmax	pmax	
	comp=N,7.0nm,1.3s					
YAK	Yakutsk	87.64	343	eP	P	14 20 32.4 -0.1
	comp=N,20nm,0.8s					
YAK				LR	LR	
	comp=Z,200nm,20.0s					
KHMM	Horse Mountain	87.68	45	eP	P	14 20 31.9 -1.5
	comp=Z,45nm,0.8s					
SCI2	San Clemente I	87.70	54	P	P	14 20 34.0 +0.5
	baz=244					
SNAA	Sanae	88.01	183	cePP	P	14 20 34.2 -0.2
SNAA	Sanae	88.01	183	eP	P	14 20 33.9 -0.5
	comp=Z,2μm,1.2s					
BILL	Bilibino	88.15	359	diP	P	14 20 34.5 -0.3
BILL				pmax	pmax	
	comp=Z,35nm,1.2s					
BILL	Bilibino	88.15	359	eP	P	14 20 34.3 -0.5
	comp=Z,25nm,1.0s					
L02D	Cave Junction,	88.39	44	P	P	14 20 37.7 +1.1
	baz=241					
N02D	Trinity Center	88.41	45	P	P	14 20 37.5 +0.7
	baz=241,SNR=12					

ARVC	Arvin	88.44	52	P	P	14 20 37.2	+0.3
	baz=244						
M02C	Callahan	88.51	45	P	P	14 20 38.0	+0.8
	baz=241,SNR=10						
ORV	Oroville	88.55	47	eP	P	14 20 37.0	-0.3
ORV				pmax	pmax		
	comp=Z,33nm,1.4s						
ORV	Oroville	88.55	47	eP	P	14 20 37.0	-0.3
	comp=Z,33nm,1.4s						
CMB	Columbia Colle	88.62	48	eP	P	14 20 37.6	-0.2
CMB				pmax	pmax		
	comp=Z,15nm,0.9s						
CMB	Columbia Colle	88.62	48	eP	P	14 20 37.6	-0.2
	comp=Z,15nm,0.9s						
AFDM	Forest Hills D	88.63	47	eP	P	14 20 37.5	-0.3
	comp=Z,25nm,1.1s						
O03D	Paynes Creek	88.69	46	P	P	14 20 37.9	-0.2
	baz=242,SNR=6.3						
YBH	Yreka Blue Hor	88.77	44	P	P	14 20 39.3	+0.8
	comp=Z,12nm,0.7s,baz=187,slow=1.2,SNR=22						
YBH				pP	pP	14 20 49.7	+0.3
	comp=Z,14nm,0.8s,baz=108,slow=22,SNR=11						
YBH	Yreka Blue Hor	88.77	44	eP	P	14 20 38.9	+0.4
YBH				*PP	pP	14 20 49.7	+0.3
YBH				pmax	pmax		
	comp=Z,17nm,0.8s						
YBH	Yreka Blue Hor	88.77	44	eP	P	14 20 38.9	+0.4
	comp=Z,17nm,0.8s						
YBH				pP	pP	14 20 49.6	+0.3
BFSC	Mount Baldy Ra	88.92	53	P	P	14 20 39.1	-0.3
	baz=244						
ISA	Isabella, Lake	88.93	51	P	P	14 20 39.2	-0.1
	baz=244,SNR=5.9						
ISA	Isabella, Lake	88.93	51	eP	P	14 20 39.4	0.0
ISA				pmax	pmax		
	comp=Z,17nm,0.8s						
ISA	Isabella, Lake	88.93	51	eP	P	14 20 39.4	0.0
	comp=Z,17nm,0.8s						
EDW2	Edwards Air Fo	88.94	52	P	P	14 20 39.3	-0.1
	baz=244,SNR=6.0						
MURC	Murrieta	88.99	54	P	P	14 20 39.7	0.0
	baz=245						
HUMO	Hull Mountain	89.03	44	eP	P	14 20 40.2	+0.6
	comp=Z,20nm,0.8s						
CAST	Castle Rocks	89.09	17	eP	P	14 20 37.0	-2.4
	comp=Z,4.5nm,0.8s						
DIV	Divide	89.20	20	PFAKE		14 20 50.0	+10
DIV				LR	LR		
	comp=Z,200nm,18.0s						
MONP2	Monument Peak	89.28	55	P	P	14 20 41.1	-0.1
	baz=245						
LSA	Lhasa	89.29	302	PFAKE		14 20 50.0	+8.3
LSA				LR	LR		
	comp=Z,500nm,19.0s						
I03D	Drain, OR	89.31	42	P	P	14 20 40.9	+0.1
	baz=241						
M04C	Macdoel	89.37	45	P	P	14 20 41.3	0.0
	baz=242,SNR=5.9						
IKP	In-Ko-Pah, Jac	89.42	55	P	P	14 20 41.9	+0.2
	baz=245						
LRMC	Laurel Mtn Rad	89.43	52	P	P	14 20 41.6	-0.1
	baz=244,SNR=5.3						
BMRM	Bremner River	89.47	21	eP	P	14 20 41.2	-0.1
WAKR	Walker	89.50	48	eP	P	14 20 41.8	-0.3
KTH	Kantishna Hill	89.51	17	eP	P	14 20 40.4	-1.0
PFO	Pinyon Flats O	89.56	54	P	P	14 20 42.5	+0.1
	comp=Z,3.8nm,0.9s,baz=250,slow=3.4,SNR=4.4						
TPFO	Pinon Flats	89.56	54	P	P	14 20 42.7	+0.3
	baz=245						
TRF	Thorofare Moun	89.61	17	eP	P	14 20 41.6	-0.3
	comp=Z,28nm,1.8s						
SWSC	Sam W. Stewart	89.78	55	P	P	14 20 43.5	+0.2
	baz=246						
K04D	Chiloquin, OR	89.82	44	P	P	14 20 43.5	+0.1
	baz=242						
MPMC	Manual Prospec	89.82	51	P	P	14 20 43.6	-0.1
	baz=245,SNR=16						
DAC	Darwin (Calif)	89.84	51	eP	P	14 20 43.7	0.0
DAC				pmax	pmax		
	comp=Z,12nm,0.9s						
DAC				MLR	MLR		
	comp=Z,400nm,18.0s						
DAC	Darwin (Calif)	89.84	51	eP	P	14 20 43.7	0.0
	comp=Z,12nm,0.9s						
DAC				LR	LR		
	comp=Z,400nm,18.0s						
BOD	Bodaibo	89.91	334	eP	P	14 20 41.6	-1.7
BOD				pmax	pmax		
	comp=Z,10.0nm,1.2s						
I04A	Tendick Farm,	89.95	43	P	P	14 20 43.7	-0.2
	baz=241						
RND	Reindeer	89.98	18	eP	P	14 20 42.6	-1.0
RND				pmax	pmax		
	comp=Z,7.0nm,1.0s						
RND	Reindeer	89.98	18	eP	P	14 20 42.6	-1.0
	comp=Z,6.9nm,1.0s						
GSC	Goldstone, Bar	90.00	52	P	P	14 20 44.5	+0.1
	baz=245						
GSC	Goldstone, Bar	90.00	52	eP	P	14 20 44.0	-0.4
GSC				pmax	pmax		
	comp=Z,15nm,1.3s						
GSC	Goldstone, Bar	90.00	52	eP	P	14 20 44.0	-0.4
	comp=Z,14nm,1.3s						
BELC	Belle Mtn. Jos	90.06	54	P	P	14 20 44.7	0.0
	baz=245,SNR=5.5						
G03D	McMinnville, O	90.10	41	P	P	14 20 44.7	+0.2
	baz=241						
HEC	Hector,Ludlow	90.16	53	P	P	14 20 45.1	0.0
	baz=245						
PALK	Pallekele	90.17	278	PFAKE		14 21 00.0	+14
PALK				LR	LR		
	comp=Z,900nm,20.0s						
NV01	Mina Array Sit	90.26	49	eP	P	14 20 45.5	-0.3
NVAR	Mina Array Bea	90.26	49	P	P	14 20 45.7	0.0
	comp=Z,9.7nm,0.7s,baz=227,slow=8.0,SNR=46						
NVAR				pP	pP	14 20 56.4	-0.3
	comp=Z,12nm,0.7s,baz=239,slow=8.4,SNR=18						
GRAC	Grapevine Rang	90.31	50	P	P	14 20 45.8	0.0
	baz=245,SNR=6.8						
BC3	Big Chuckawall	90.34	54	P	P	14 20 45.7	-0.4
	baz=246						
NV11	Mina Array Sit	90.37	49	eP	P	14 20 46.1	0.0
	comp=Z,15nm,0.8s						
BWN	Browne	90.40	17	eP	P	14 20 45.7	+0.3
	comp=Z,14nm,0.8s						
K05A	Summer Lake	90.43	44	eP	P	14 20 46.5	+0.1
	comp=Z,23nm,0.8s						
K05A				LR	LR		
	comp=Z,400nm,20.0s						
MOD	Modoc Plateau	90.44	45	eP	P	14 20 46.5	+0.1
	comp=Z,20nm,0.8s						
MOD				LR	LR		
	comp=Z,300nm,18.0s						
FURC	Furnace Creek,	90.45	51	P	P	14 20 46.4	+0.1
	baz=245,SNR=7.2						
J05D	Fort Rock, OR	90.47	44	P	P	14 20 47.0	+0.5
	baz=242						
H04A	Detroit Lake	90.52	42	P	P	14 20 46.0	-0.5
GLA	Glamis	90.57	55	P	P	14 20 47.2	+0.2
	baz=246						
GLA	Glamis	90.57	55	eP	P	14 20 47.5	+0.5
GLA				pmax	pmax		
	comp=Z,25nm,1.0s						
GLA	Glamis	90.57	55	eP	P	14 20 47.5	+0.5
	comp=Z,25nm,1.0s						
ZAK	Zakamensk	90.64	325	eP	P	14 20 45.3	-1.7
ZAK				pmax	pmax		
	comp=Z,8.0nm,1.4s						
GMRC	Granite Mounta	90.64	53	P	P	14 20 47.3	-0.2
	baz=246,SNR=6.3						
PAX	Paxson	90.66	19	PFAKE		14 21 00.0	+13
PAX				LR	LR		
	comp=Z,200nm,20.0s						
TUQ	Turquoise Moun	90.72	52	P	P	14 20 47.7	-0.1
	baz=246						
IRM	Iron Mountain	90.78	54	P	P	14 20 48.1	+0.1
	baz=246,SNR=6.6						
NLWA	Neilton Lookou	90.81	39	eP	P	14 20 48.0	+0.2
	comp=Z,18nm,0.9s						
I05D	Terrebonne, OR	90.89	43	P	P	14 20 48.6	+0.3
	baz=242						
F04A	Amboy	90.97	41	eP	P	14 20 48.4	-0.1
	comp=Z,30nm,1.0s						
Y12C	Blythe	91.08	54	P	P	14 20 49.4	0.0
	baz=246						
Y12C	Blythe	91.08	54	eP	P	14 20 49.5	+0.2
	comp=Z,19nm,1.0s						
TPNV	Topopah Spring	91.10	51	P	P	14 20 49.6	0.0
	baz=245,SNR=13						
TPNV	Topopah Spring	91.10	51	eP	P	14 20 49.6	0.0
TPNV				pmax	pmax		
	comp=Z,17nm,0.9s						
TPNV	Topopah Spring	91.10	51	eP	P	14 20 49.5	0.0
	comp=Z,17nm,0.9s						
TLY	Talaya	91.13	326	eP	P	14 20 49.6	+0.4
TLY				e		14 21 00.3	
TLY				pmax	pmax		
	comp=Z,6.0nm,0.8s						
TLY				MLR	MLR		
	comp=Z,437nm,20.0s						
TLY	Talaya	91.13	326	eP	P	14 20 49.5	+0.3
	comp=Z,5.8nm,0.8s						
TLY				LR	LR		
	comp=Z,300nm,20.0s						
TUM	Tumwater	91.19	40	PFAKE		14 21 00.0	+11
TUM				LR	LR		
	comp=Z,4μm,21.0s						
CCB	Clear Creek Bu	91.23	17	eP	P	14 20 48.2	-1.1
	comp=Z,3.4nm,0.8s						
HDA	Harding Lake	91.29	18	eP	P	14 20 50.8	+1.2
	comp=Z,13nm,1.2s						
COLA	College	91.39	17	eP	P	14 20 48.6	-1.4
COLA				pmax	pmax		
	comp=Z,2.0nm,1.0s						
IL1	Eielson Array	91.58	18	eP	P	14 20 48.7	-2.2
ILAR	Eielson Array	91.58	18	P	P	14 20 49.4	-1.5
	comp=Z,1.2nm,0.6s,baz=232,slow=5.0,SNR=15						
ILAR				pP	pP	14 21 00.8	-1.0
	comp=Z,4.2nm,0.8s,baz=232,slow=5.3,SNR=10						
ILAR				LR	LR	14 56 49.7	
	comp=Z,120nm,20.1s,baz=240,slow=32						
ILB	Eielson Array	91.58	18	eP	P	14 20 49.4	-1.5
PDMCI	Parker Dam,Lak	91.59	54	P	P	14 20 51.9	+0.2
	baz=246						
PGC	Sidney	91.67	38	PFAKE		14 21 00.0	+8.4
PGC				LR	LR		
	comp=Z,300nm,20.0s						
SHPR	Sheep Range	91.72	52	eP	P	14 20 53.0	+0.6
	comp=Z,9.9nm,1.0s						
LON	Longmire	91.73	40	eP	P	14 20 51.6	-0.5
LON				pmax	pmax		
	comp=Z,5.0nm,0.8s						
LON	Longmire	91.73	40	eP	P	14 20 51.6	-0.5
	comp=Z,4.8nm,0.8s						
G06A	Carlson Farm,	91.75	42	PFAKE		14 21 00.0	+7.8
G06A				LR	LR		
	comp=Z,400nm,18.0s						
WVOR	Wild Horse Val	91.78	45	eP	P	14 20 52.5	-0.1
WVOR				pmax	pmax		
	comp=Z,18nm,1.0s						
WVOR	Wild Horse Val	91.78	45	eP	P	14 20 52.5	-0.1
	comp=Z,18nm,1.0s						
D05A	Enumclaw	91.83	40	eP	P	14 20 53.1	+0.6
	comp=Z,81nm,1.6s						
W13A	Hualapai Mount	92.10	53	eP	P	14 20 54.4	0.0
	comp=Z,12nm,1.1s						
A04D	Lummi Island	92.14	38	P	P	14 20 54.2	+0.4
	baz=241						
R11A	Troy Canyon, C	92.16	50	P	P	14 20 54.0	-0.6
	baz=246,SNR=6.2						
R11A	Troy Canyon, C	92.16	50	eP	P	14 20 53.9	-0.6
	comp=Z,2.8nm,0.8s						
B05A	Bryant	92.28	39	P	P	14 20 54.7	+0.3
	baz=242						
COLD	Coldfoot	92.60	15	eP	P	14 20 55.4	-0.2
	comp=Z,18nm,0.9s						
G08A	Pilot Rock	92.83	42	eP	P	14 20 57.0	-0.3
	comp=Z,37nm,1.8s						
HAWA	Hanford	92.96	41	PFAKE		14 21 10.0	+12
HAWA				LR	LR		
	comp=Z,300nm,19.0s						
EGAK	Eagle	93.29	19	eP	P	14 20 58.1	-0.7
	comp=Z,4.9nm,0.8s						
LCMT	Little Creek M	93.33	52	eP	P	14 20 59.7	-0.2
	comp=Z,6.9nm,0.9s						
FYU	Fort Yukon	93.38	17	PFAKE		14 21 10.0	+11
FYU				LR	LR		
	comp=Z,300nm,20.0s						
TUC	Tucson	93.42	57	P	P	14 21 00.4	+0.1
	baz=248						
TUC	Tucson	93.42	57	eP	P	14 21 00.4	+0.1
TUC				pmax	pmax		
	comp=Z,23nm,1.5s						
TUC	Tucson	93.42	57	eP	P	14 21 00.4	+0.1
	comp=Z,23nm,1.5s						
PSUT	Pine Spring	93.48	50	eP	P	14 21 00.3	-0.3
	comp=Z,3.7nm,0.9s						
KNB	Kanab	93.64	52	eP	P	14 21 01.5	+0.2
KNB				pmax	pmax		
	comp=Z,11nm,1.1s						
KNB	Kanab	93.64	52	eP	P	14 21 01.5	+0.2
	comp=Z,11nm,1.1s						
BMO	Blue Mountains	93.70	43	PFAKE		14 21 10.0	+8.7
BMO				LR	LR		
	comp=Z,300nm,21.0s						
X16A	Lo Mia Camp, P	93.70	55	eP	P	14 21 01.9	+0.2
	comp=Z,8.2nm,0.9s						
U15A	North Rim	93.81	53	eP	P	14 21 02.1	-0.2
	comp=Z,11nm,0.9s						
E09A	Wood Farm, Sta	93.88	42	PFAKE		14 21 10.0	+8.1
E09A				LR	LR		
	comp=Z,200nm,19.0s						
MFID	Camas Ranch	94.07	45	eP	P	14 21 02.5	-0.6
MFID				LR	LR		
	comp=Z,7.7nm,1.0s						
	comp=Z,300nm,21.0s						
WUAZ	Wupatki	94.16	54	P	P	14 21 04.3	+0.5
	baz=248						
WUAZ	Wupatki	94.16	54	eP	P	14 21 03.5	-0.2
	comp=Z,9.2nm,1.1s						
F10A	Beach Ranch, E	94.22	42	PFAKE		14 21 10.0	+6.3
F10A				LR	LR		
	comp=Z,200nm,18.0s						
319A	Douglas	94.27	58	eP	P	14 21 04.6	+0.3
	comp=Z,12nm,0.8s						
MTPU	Mount Pierson	94.50	51	eP	P	14 21 06.1	+0.6
	comp=Z,30nm,1.7s						
DUG	Dugway, Tooele	94.87	49	PFAKE		14 21 20.0	+13
DUG				LR	LR		
	comp=Z,300nm,20.0s						
HLID	Hailey	95.07	45	P	P	14 21 07.6	-0.2
	baz=247						
HLID	Hailey	95.07	45	eP	P	14 21 07.5	-0.3
HLID				LR	LR		
	comp=Z,3.2nm,0.8s						
	comp=Z,300nm,19.0s						
NLU	North Lily Min	95.30	49	eP	P	14 21 08.2	-0.8
	comp=Z,3.9nm,1.1s						
HVU	Hansel Valley	95.50	48	eP	P	14 21 09.2	-0.5
HVU				pmax	pmax		
	comp=Z,4.0nm,0.8s						
HVU	Hansel Valley	95.50	48	eP	P	14 21 09.2	-0.5
	comp=Z,4.4nm,0.8s						
Q16A	Castle Valley	95.57	51	eP	P	14 21 10.2	+0.1
Q16A				LR	LR		
	comp=Z,6.8nm,1.1s						
	comp=Z,300nm,18.0s						
TIXI	Tiksi	95.63	348	eP	P	14 21 07.5	-1.9
TIXI				pmax	pmax		
	comp=Z,5.0nm,2.4s						
TIXI	Tiksi	95.63	348	PFAKE		14 21 20.0	+11
TIXI				LR	LR		
	comp=Z,200nm,20.0s						
TMUT	Trail Mountain	95.68	50	eP	P	14 21 11.4	+0.6
	comp=Z,4.1nm,0.8s						
TMUT				LR	LR		
	comp=Z,200nm,21.0s						
SRU	San Rafael Swe	96.11	51	eP	P	14 21 12.5	-0.1
SRU				pmax	pmax		
	comp=Z,4.0nm,0.8s						
SRU				MLR	MLR		
	comp=Z,300nm,18.0s						
SRU	San Rafael Swe	96.11	51	eP	P	14 21 12.5	-0.1
	comp=Z,3.7nm,0.8s						
SRU				LR	LR		
	comp=Z,300nm,18.0s						
MSO	Missoula	96.65	43	PFAKE		14 21 30.0	+15
MSO				LR	LR		
	comp=Z,300nm,18.0s						
DLMT	Dillon	96.96	44	PFAKE		14 21 30.0	+14
DLMT				LR	LR		
	comp=Z,300nm,21.0s						
ZAIG	Zacatecas	96.97	68	PFAKE		14 21 30.0	+13
ZAIG				LR	LR		
	comp=Z,300nm,18.0s						
WMQ	Urumqi	97.28	314	eP	P	14 21 17.0	-0.6
IMW	Indian Meadow	97.53	46	eP	P	14 21 18.6	-0.5
	comp=Z,2.7nm,0.8s						
IMW				LR	LR		
	comp=Z,200nm,20.0s						
BOZ	Bozeman (W)	97.70	44	P	P	14 21 19.5	-0.1
	baz=249						
BOZ	Bozeman (W)	97.70	44	PFAKE		14 21 30.0	+10
BOZ				LR	LR		
	comp=Z,300nm,20.0s						
FLWY	Flagg Ranch	97.76	46	PFAKE		14 21 30.0	+10
FLWY				LR	LR		
	comp=Z,200nm,20.0s						
YMR	Madison River	97.79	45	PFAKE		14 21 30.0	+10
YMR				LR	LR		
	comp=Z,200nm,20.0s						
H17A	Grant Village	97.95	46	eP	Pdif	14 21 21.9	+1.0
	comp=Z,16nm,0.2s						
BW06	Boulder Array	98.08	47	P	Pdif	14 21 21.8	+0.3
	baz=250						
BW06	Boulder Array	98.08	47	eP	P	14 21 19.9	-1.6
PDAR	Pinedale Array	98.08	47	P	Pdif	14 21 22.0	+0.5
	comp=Z,0.4nm,0.6s,baz=224,slow=4.1,SNR=5.7						
PDAR				pP	pP	14 21 32.2	-0.2
	comp=Z,0.7nm,0.6s,baz=224,slow=4.1,SNR=5.1						
TXAR	Lajitas Array	98.15	62	P	Pdif	14 21 24.1	+2.1
	comp=Z,0.2nm,0.5s,baz=220,slow=6.6,SNR=5.0						
TXAR				pP	pP	14 21 33.1	+0.2
	comp=Z,0.6nm,0.7s,baz=214,slow=4.8,SNR=6.5						
RLMT	Red Lodge	99.08	45	PFAKE		14 21 40.0	+14
RLMT				LR	LR		
	comp=Z,400nm,20.0s						
EGMT	Eagleton	99.73	42	PFAKE		14 21 40.0	+11
EGMT				LR	LR		
	comp=Z,200nm,18.0s						
N23A	Red Feather La	100.02	50	PFAKE		14 21 40.0	+10
N23A				LR	LR		
	comp=Z,300nm,21.0s						
PHWY	Pilot Hill	100.49	50	PFAKE		14 21 40.0	+7.6
PHWY				LR	LR		
	comp=Z,201nm,20.0s						
PAYG	Puerto Ayora	100.55	95	PFAKE		14 21 40.0	+7.1
PAYG				LR	LR		
	comp=Z,15μm,20.0s						
MKAR	Makanchi Array	101.85	316	P	Pdif	14 21 39.0	+1.1
	comp=Z,0.5nm,0.7s,baz=90,slow=6.1,SNR=4.7						
MKAR				PKKPbc	PKKPbc	14 37 41.8	-2.9
	comp=Z,1.0nm,0.8s,baz=315,slow=0.7,SNR=7.6						
MKAR				PKKP	PKKPdf	14 37 52.8	+1.1
	comp=Z,1.0nm,0.8s,baz=300,slow=3.4,SNR=6.0						
MAKZ	Makanchi	102.06	316	PFAKE		14 21 50.0	+11
MAKZ				LR	LR		
	comp=Z,800nm,22.0s						
YKA	Yellowknife Ar	102.10	28	P	Pdif	14 21 39.7	+1.1
	comp=Z,0.7nm,0.6s,baz=262,slow=4.6,SNR=3.8						
YKA				pP		14 21 49.9	
	comp=Z,1.0nm,0.6s,baz=249,slow=4.6,SNR=4.3						
ZALV	Zalesovo Beam	102.42	323	P	Pdif	14 21 39.6	-0.6
	comp=Z,0.8nm,0.5s,baz=111,slow=7.9,SNR=3.1						
CCIG	Comitan	104.33	78	PFAKE		14 22 00.0	+10
CCIG				LR	LR		
	comp=Z,5μm,22.0s						
KURBB	Kurchatov Arra	105.26	319	PP	PP	14 26 17.6	+2.9
	comp=Z,0.4nm,0.8s,baz=103,slow=1.9,SNR=5.1						
TKM2	Tokmak 2	105.43	310	PFAKE		14 26 20.0	
TKM2				LR	LR		
	comp=Z,600nm,22.0s						
AAK	Ala-Archa	106.16	310	PFAKE		14 26 20.0	
AAK				LR	LR		
	comp=Z,500nm,22.0s						
EKS2	Erkin-Say	106.68	310	PFAKE		14 26 20.0	
EKS2				LR	LR		
	comp=Z,600nm,22.0s						
TGUH	Tegucigalpa,Un	108.16	81	PFAKE		14 26 30.0	
TGUH				LR	LR		
	comp=Z,4μm,22.0s						
NNA	Nana	108.41	111	PFAKE		14 26 30.0	
NNA				LR	LR		
	comp=Z,8μm,21.0s						
X201	Greenbrier Sit	108.94	59	PFAKE		14 26 30.0	
X201				LR	LR		
	comp=Z,200nm,19.0s						
TEIG	Tepich	108.95	75	PFAKE		14 26 30.0	
TEIG				LR	LR		
	comp=Z,4μm,20.0s						
JTS	JuntasAbangare	109.20	86	PFAKE		14 26 30.0	
JTS				LR	LR		
	comp=Z,10μm,20.0s						
PB11	IPOC Station P	110.72	121	PFAKE		14 26 30.0	
PB11				LR	LR		
	comp=Z,600nm,18.0s						
OXF	Oxford	111.17	60	PFAKE		14 26 30.0	
OXF				LR	LR		
	comp=Z,900nm,21.0s						
ZRNK	Zerenda	111.48	320	PFAKE		14 26 30.0	
ZRNK				LR	LR		
	comp=Z,300nm,19.0s						
SIUC	Southern Illin	111.88	57	PFAKE		14 26 30.0	
SIUC				LR	LR		
	comp=Z,300nm,22.0s						
OTAV	Otavalo	111.91	98	PFAKE		14 26 30.0	
OTAV				LR	LR		
	comp=Z,6μm,22.0s						
LRAL	Lakeview Retre	112.88	62	PFAKE		14 26 30.0	
LRAL				LR	LR		
	comp=Z,400nm,21.0s						
BCIP	Isla Barro Col	113.65	89	PFAKE		14 26 40.0	
BCIP				LR	LR		
	comp=Z,9μm,19.0s						
SWET	Sewanee	114.11	60	PFAKE		14 26 40.0	+16
SWET				LR	LR		
	comp=Z,100nm,19.0s						
TIGA	Tifton	115.47	64	PFAKE		14 26 40.0	+13
TIGA				LR	LR		
	comp=Z,1μm,18.0s						
GOGA	Godfrey	115.86	62	PFAKE		14 26 40.0	+13
GOGA				LR	LR		
	comp=Z,500nm,19.0s						
DWPF	Disney Wildern	116.77	68	PFAKE		14 26 40.0	+11
DWPF				LR	LR		
	comp=Z,2μm,21.0s						
ROSC	El Rosal	117.41	95	PFAKE		14 26 40.0	+8.5
ROSC				LR	LR		
	comp=Z,200nm,18.0s						
ARU	Arti	117.57	324	i PKIKP	PKPdf	14 26 30.0	0.0
ARU						14 27 41.3	
ARU						14 33 39.3	
ARU				SS	SS	14 43 46.0	-6.0
JSC	Jenkinsville	117.80	61	PFAKE		14 26 40.0	+8.8
JSC				LR	LR		
	comp=Z,300nm,21.0s						
GEYT	Alibeck	117.81	303	PKP	PKPdf	14 26 31.8	+0.6
	comp=Z,2.3nm,0.6s,baz=134,slow=4.3,SNR=6.0						
KMSC	Kings Mountain	117.83	60	PFAKE		14 26 40.0	+8.8
KMSC				LR	LR		
	comp=Z,1μm,18.0s						
AKTO	Aktyubinsk	118.23	317	PKP	PKPdf	14 26 31.1	-0.4
	comp=Z,2.3nm,0.8s,baz=108,slow=0.8,SNR=7.0						
AKTO				pPKP	pPKPdf	14 26 41.9	-0.9
	comp=Z,1.6nm,0.6s,baz=352,slow=4.0,SNR=2.9						
MTDJ	Mount Denham	118.28	80	PFAKE		14 26 40.0	+7.3
MTDJ				LR	LR		
	comp=Z,2μm,18.0s						
NHSC	New Hope	118.56	63	PFAKE		14 26 40.0	+7.3
NHSC				LR	LR		
	comp=Z,400nm,18.0s						
BLA	Blacksburg	118.76	58	PFAKE		14 26 40.0	+7.0
BLA				LR	LR		
	comp=Z,400nm,18.0s						
GTBY	Guantanamo Bay	120.90	78	PFAKE		14 26 50.0	+12
GTBY				LR	LR		
	comp=Z,2μm,20.0s						
CBN	Corbin Frederi	121.23	57	PFAKE		14 26 50.0	+12
CBN				LR	LR		
	comp=Z,400nm,20.0s						
SAML	Samuel	121.67	115	PFAKE		14 26 50.0	+11
SAML				LR	LR		
	comp=Z,500nm,19.0s						
SDV	Santo Domingo	122.19	92	PFAKE		14 26 50.0	+10
SDV				LR	LR		
	comp=Z,5μm,22.0s						
LUPA	Lehigh Univers	122.82	54	PFAKE		14 26 50.0	+9.3
LUPA				LR	LR		
	comp=Z,400nm,20.0s						
PAPH	Port-au-Prince	123.19	81	PFAKE		14 26 50.0	+8.0

PAPH LR LR
comp=Z,2μm,19.0s
ACCN Adirondack Com 124.00 51 PFAKE 14 26 50.0 +7.2
ACCN LR LR
comp=Z,300nm,21.0s
SDDR Presa de Saban 124.23 80 PFAKE 14 27 00.0 +16
SDDR LR LR
comp=Z,2μm,18.0s
GRTK Grand Turk 124.86 77 PFAKE 14 27 00.0 +15
GRTK LR LR
comp=Z,3μm,21.0s
ARCES ARCESS Array B 125.89 345 PKP **PKPdf 14 26 46.3 +0.6**
comp=Z,4.5nm,0.7s,baz=94,slow=3.6,SNR=6.5
ARCES pPKP **pPKPdf 14 26 55.4 -1.6**
comp=Z,4.5nm,0.7s,baz=68,slow=6.7,SNR=3.0
KLMR Klimovskoe 126.06 332 *e*PKIKP **PKPdf 14 26 44.4 -1.8**
KLMR *e* 14 26 55.0
KLMR pmax pmax
comp=Z,13nm,1.1s
DAMY Dhamar 126.31 273 PFAKE 14 27 00.0 +12
DAMY LR LR
comp=Z,400nm,21.0s
SCHQ Schefferville 126.38 36 PFAKE 14 27 00.0 +13
SCHQ LR LR
comp=Z,300nm,19.0s
MPR Mayaguez 127.92 82 PFAKE 14 27 00.0 +9.0
MPR LR LR
comp=Z,1μm,19.0s
AGP Aguadilla 127.95 82 PFAKE 14 27 00.0 +8.9
AGP LR LR
comp=Z,2μm,18.0s
GNI Garni 128.22 306 ‖ *i*PKIKP **PKPdf 14 26 53.0 +1.8**
PTGA Pitinga 128.41 108 PFAKE 14 27 00.0 +7.8
PTGA LR LR
comp=Z,1μm,18.0s
ZEI Tsey 128.56 309 *i*PKIKP **PKPdf 14 26 52.0 +0.1**
ZEI pmax pmax
comp=Z,7.0nm,1.0s
SJG San Juan 128.82 83 PFAKE 14 27 00.0 +7.3
SJG LR LR
comp=Z,2μm,21.0s
CBYP Canovanas 129.12 83 PFAKE 14 27 10.0 +17
CBYP LR LR
comp=Z,2μm,22.0s
KBZ Khabaz 129.15 310 PKP **PKPdf 14 26 53.4 +0.7**
comp=Z,0.8nm,0.3s,baz=224,slow=4.3,SNR=3.4
KIV Kislovodsk 129.27 311 *e*PKIKP **PKPdf 14 26 53.7 +0.7**
KIV pmax pmax
comp=Z,6.0nm,1.1s
OBN Obninsk 129.88 326 *i*PKIKP **PKPdf 14 26 54.1 +0.5**
OBN pmax pmax
comp=Z,7.0nm,0.9s
ABVI Anegada Island 130.63 82 PFAKE 14 27 10.0 +14
ABVI LR LR
comp=Z,2μm,21.0s
SABA Saba 131.43 84 PFAKE 14 27 10.0 +12
SABA LR LR
comp=Z,2μm,22.0s
GRGR Grenville 131.58 92 PFAKE 14 27 10.0 +12
GRGR LR LR
comp=Z,1μm,22.0s
SEUS St. Eustatius 131.64 84 PFAKE 14 27 10.0 +12
SEUS LR LR
comp=Z,2μm,19.0s
SMRT St. Maarten 131.67 84 PFAKE 14 27 10.0 +12
SMRT LR LR
comp=Z,1μm,19.0s
SVB Belmont 132.27 90 PFAKE 14 27 10.0 +11
SVB LR LR
comp=Z,2μm,19.0s
HEL Helsinki 132.48 336 PFAKE 14 27 10.0 +12
HEL LR LR
comp=Z,13μm,22.0s
GDHS Morne Mazeau, 132.52 86 PFAKE 14 27 10.0 +10
GDHS LR LR
comp=Z,1μm,21.0s
FDF Fort de France 132.74 88 PFAKE 14 27 10.0 +10
FDF LR LR
comp=Z,2μm,22.0s
ANWB Willy Bob 132.80 84 PFAKE 14 27 10.0 +10
ANWB LR LR
comp=Z,1μm,21.0s
BBGH Gun Hill 133.83 91 PFAKE 14 27 10.0 +7.7
BBGH LR LR
comp=Z,2μm,21.0s
AKASG Malin Array Be 135.81 323 PKP **PKPdf 14 27 05.0 0.0**
comp=Z,2.1nm,0.7s,baz=66,slow=2.1,SNR=4.3
AKASG Malin Array Be 135.81 323 PKIKP **PKPdf 14 27 05.0 0.0**
KIEV Kiev 135.83 323 ‖ *i*PKIKP **PKPdf 14 27 06.3 +1.3**
KIEV Kiev 135.83 323 *e*PKPdf **PKPdf 14 27 05.3 +0.3**
AK11 Malin Array Si 135.86 323 *e*PKPdf **PKPdf 14 27 04.7 -0.4**
NOA NORSAR Array B 136.26 344 PKP **PKPdf 14 27 05.5 -0.1**
comp=Z,1.7nm,0.8s,baz=37,slow=2.1,SNR=4.8
NOA pPKP **pPKPdf 14 27 16.7 -0.1**
comp=Z,1.5nm,0.8s,baz=30,slow=2.0,SNR=4.8
HFS Hagfors 136.33 342 PKP **PKPdf 14 27 06.6 +0.9**
comp=Z,1.6nm,0.7s,baz=232,slow=4.9,SNR=4.4
BRTR Keskin Array B 136.72 307 PKP **PKPdf 14 27 08.0 +0.7**
comp=Z,1.6nm,0.9s,baz=142,slow=2.8,SNR=9.1
BRTR Keskin Array B 136.72 307 PKIKP **PKPdf 14 27 08.0 +0.7**
KONO Kongsberg 137.87 344 PFAKE 14 27 20.0 +11
KONO LR LR
comp=Z,300nm,20.0s
TIRR Tirgusor 138.99 315 PFAKE 14 27 20.0 +9.0
TIRR LR LR
comp=Z,200nm,21.0s
MLR Muntele Rosu 140.15 318 PFAKE 14 27 30.0 +17
MLR LR LR
comp=Z,300nm,21.0s
KOLS Kolonicke sedl 140.58 324 *e*PKIKP **PKPdf 14 27 14.9 +1.0**
KOLS Kolonicke sedl 140.58 324 *e*PKP **PKPdf 14 27 14.9 +1.0**
MORC Moravsky Berou 142.52 329 *e*PKIKP **PKPdf 14 27 17.8 +0.4**
MORC Moravsky Berou 142.52 329 *e*PKPdf **PKPdf 14 27 17.8 +0.4**
VYHS Vyhne 142.68 326 *e*PKIKP **PKPdf 14 27 15.7 -1.9**
VYHS Vyhne 142.68 326 *e* **PKPdf 14 27 15.7 -1.9**
KRLC Kraliky 142.69 329 *e*PKP **PKPdf 14 27 19.0 +1.3**
KRLC Kraliky 142.69 329 *e*PKIKP **PKPdf 14 27 19.0 +1.3**
DPC Dobruska-Polom 142.72 330 *e*PKP **PKPdf 14 27 15.1 -2.6**
DPC AMS AMS 15 35 00.0
comp=Z,200nm,14.8s
DPC Dobruska-Polom 142.72 330 *e*PKIKP **PKPdf 14 27 15.1 -2.6**
DPC MLR MLR
comp=Z,200nm,14.8s
UPC Upice 142.76 331 AMS AMS 15 34 20.0
comp=Z,300nm,16.3s
PVCC Panska Ves 143.40 332 AMS AMS 15 37 20.0
comp=Z,300nm,19.0s
BRG Berggiesshubel 143.43 333 *e*PKP PKPbc 14 27 16.9 +0.8
comp=Z,9.9nm,1.2s
BRG Berggiesshubel 143.43 333 *e*PKIKP PKPbc 14 27 16.9 +0.8
BRG pmax pmax
comp=Z,4.0nm,1.2s
CLL Collm 143.50 334 *i*PKPdf PKPbc 14 27 16.5 +0.2
comp=Z,33nm,1.9s
CLL L L 15 39 00.0
comp=Z,200nm,21.7s
CLL Collm 143.50 334 *i*PKIKP PKPbc 14 27 16.5 +0.2
CLL pmax pmax
comp=Z,33nm,1.9s
GOPC GO Pecny, Ondr 143.74 331 *e*PKP **PKPdf 14 27 18.6 -0.9**
GOPC AMS AMS 15 37 30.0
comp=Z,300nm,23.9s
GOPC GO Pecny, Ondr 143.74 331 *e*PKIKP **PKPdf 14 27 18.6 -0.9**
GOPC MLR MLR
comp=Z,300nm,23.9s
PRA Prague 143.79 331 PFAKE 14 27 30.0 +11
PRA LR LR
comp=Z,2μm,21.0s
PRU Pruhonice 143.80 331 AMS AMS 15 35 00.0
comp=Z,300nm,18.1s
TREC Trest 143.84 329 *e*PKP PKPbc 14 27 18.5 +1.1
TREC Trest 143.84 329 *e*PKIKP PKPbc 14 27 18.5 +1.1
LAST Lasithi 144.10 302 *e*PKPdf PKPbc 14 27 19.1 +0.4
VAY Valandovo 144.18 313 *i*PKP PKPbc 14 27 18.5 -0.1
DIVS Divibare 144.53 319 P **PKPab 14 27 19.1 -0.5**
IDI Anoyia 144.54 303 PKP PKPbc 14 27 20.4 +0.3
comp=Z,17nm,0.6s,baz=148,slow=3.1,SNR=12
IDI pPKP pPKPdf 14 27 31.8 -0.8
comp=Z,14nm,0.6s,baz=336,slow=3.9,SNR=3.4
NKC Novy Kostel 144.54 333 *e*PKP **PKPdf 14 27 20.4 -0.5**
NKC *ex* x 14 27 30.7
NKC Novy Kostel 144.54 333 *e*PKIKP **PKPdf 14 27 20.4 -0.5**
NKC *e* 14 27 30.7
CONA Conrad Observa 144.58 327 *i*PKPdf **PKPdf 14 27 20.7 -0.4**
comp=Z,27nm,1.1s
CONA *i*PKPdf PKPbc 14 27 20.9 +1.1
SNR=16
SKO Skopje 144.66 315 *i*PKP PKPbc 14 27 20.7 +0.6
SIVA Sivas 144.67 302 P **PKPdf 14 27 21.3 -0.2**
SIVA Sivas 144.67 302 P **PKPdf 14 27 21.3 -0.2**
LIT Litokhoron 144.74 312 P **PKPab 14 27 19.8 -0.6**
LIT Litokhoron 144.74 312 *e*PKIKP **PKPab 14 27 19.8 -0.6**
LIT Litokhoron 144.74 312 *e*PKPdf **PKPab 14 27 19.8 -0.6**
KHC Kasperske Hory 144.85 331 *e*PKP PKPbc 14 27 21.0 +0.4
KHC *ex* x 14 27 31.6
KHC *ex* x 14 28 15.5
KHC AMS AMS 15 35 10.0
comp=Z,300nm,20.0s
KHC Kasperske Hory 144.85 331 *e*PKIKP PKPbc 14 27 21.0 +0.4
KHC Kasperske Hory 144.85 331 *e*PKPdf PKPbc 14 27 21.0 +0.4
GEC2 GERESS Array S 145.00 330 *e*PKIKP **PKPab 14 27 21.3 +0.2**
GEC2 GERESS Array S 145.00 330 *e*PKPdf **PKPab 14 27 21.3 +0.2**
GERES GERESS Array B 145.00 330 PKP **PKPdf 14 27 21.6 -0.2**
comp=Z,4.0nm,0.8s,baz=45,slow=4.0,SNR=20
GERES pPKP **pPKPdf 14 27 31.7 -1.3**
comp=Z,4.7nm,0.7s,baz=34,slow=3.3,SNR=9.1
GEA0 GERESS Array S 145.00 330 *e*PKPdf **PKPbc 14 27 21.1 0.0**
VAM Vamos 145.05 303 P **PKPdf 14 27 22.7 +0.5**
VAM Vamos 145.05 303 PKIKP **PKPdf 14 27 22.7 +0.5**
VAM Vamos 145.05 303 P **PKPdf 14 27 22.7 +0.5**
KZN Kozani 145.16 312 P **PKPbc 14 27 20.8 -1.1**
KZN Kozani 145.16 312 PKP2 **PKPbc 14 27 20.8 -1.1**
KZN Kozani 145.16 312 P **PKPbc 14 27 20.8 -1.1**
BIA Bitola 145.16 314 *i*PKP **PKPbc 14 27 21.7 -0.1**
ARSA Arzberg 145.19 327 *i*PKPdf **PKPdf 14 27 22.2 +0.1**
ARSA *i*PKPdf **PKPab 14 27 22.8 +1.0**
SNR=7.0
IMMV Iera Moni Meta 145.21 303 P **PKPbc 14 27 21.6 -0.5**
FNA Florina 145.23 313 P **PKPbc 14 27 21.2 -0.9**
FNA Florina 145.23 313 PKIKP **PKPbc 14 27 21.2 -0.9**
FNA Florina 145.23 313 P **PKPbc 14 27 21.2 -0.9**
AGG Agios Georgios 145.28 310 *e*PKIKP **PKPbc 14 27 21.5 -0.8**
AGG MLR MLR
comp=Z,600nm,19.0s
AGG Agios Georgios 145.28 310 *e*PKPbc **PKPbc 14 27 21.5 -0.8**
AGG LR LR
comp=Z,600nm,19.0s
GVD Gavdhos 145.29 302 P **PKPbc 14 27 22.0 -0.4**
GVD Gavdhos 145.29 302 *e*PKPbc **PKPbc 14 27 22.0 -0.4**
MOA Molln 145.42 329 *i*PKPdf **PKPab 14 27 23.1 +0.4**
comp=Z,44nm,1.4s
MOA *i*PKPdf **PKPdf 14 27 23.2 +0.7**
SNR=16
GRFO Grafenberg 145.47 333 *e*PKIKP **PKPab 14 27 22.7 0.0**
GRFO Grafenberg 145.47 333 *e*PKPbc **PKPab 14 27 22.7 0.0**
OHR Ohrid 145.47 314 *i*PKP **PKPab 14 27 23.3 +0.2**
GUR Goura 145.67 308 P **PKPdf 14 27 23.4 +0.1**
GUR Goura 145.67 308 *e*PKPdf **PKPdf 14 27 23.4 +0.1**
ANX Ano Chora 145.74 309 P **PKPab 14 27 24.1 -0.1**
KLV Kalavryta, Ach 145.77 308 P **PKPdf 14 27 23.4 0.0**
KLV Kalavryta, Ach 145.77 308 *e*PKPdf **PKPdf 14 27 23.4 0.0**
SOKA Soboth 145.82 326 *i*PKPbc **PKPdf 14 27 22.9 -0.3**
comp=Z,24nm,1.4s
SOKA *i*PKPab **PKPbc 14 27 23.9 +0.1**
SNR=15
LAKA Lakka 145.83 309 P **PKPbc 14 27 24.2 +0.2**
LAKA Lakka 145.83 309 *e*PKPdf **PKPbc 14 27 24.2 +0.2**
VLX Vlachokerasia 145.84 307 P **PKPbc 14 27 24.2 0.0**
VLX Vlachokerasia 145.84 307 *e*PKPdf **PKPbc 14 27 24.2 0.0**
PVO Paravola 146.01 310 P **PKPbc 14 27 24.5 0.0**
JAN Janina 146.07 312 P **PKPab 14 27 25.2 -0.2**
JAN Janina 146.07 312 PKP2 **PKPab 14 27 25.2 -0.2**
JAN Janina 146.07 312 P **PKPab 14 27 25.2 -0.2**
DSL Palaion Diasel 146.12 311 P **PKPbc 14 27 25.0 +0.1**
DSL Palaion Diasel 146.12 311 *e*PKPdf **PKPbc 14 27 25.0 +0.1**
DRO Drossia 146.13 308 P **PKPab 14 27 26.0 +0.4**
OBKA Obir 146.19 327 *i*PKPab **PKPbc 14 27 25.1 +0.1**
comp=Z,12nm,0.9s
ITM Ithomi 146.25 307 P **PKPbc 14 27 25.2 -0.1**
ITM Ithomi 146.25 307 P **PKPbc 14 27 25.2 -0.1**
PDO Prodromos 146.27 310 P **PKPab 14 27 25.8 -0.3**
KBA Koelnbreinsper 146.41 328 *i*PKPdf **PKPdf 14 27 23.7 -0.7**
comp=Z,6.0nm,0.7s
MYKA Terra Mystica 146.57 328 *i*PKPab **PKPbc 14 27 25.9 -0.1**
comp=Z,6.2nm,0.6s
LKD2 Lefkada island 146.57 310 P **PKPbc 14 27 26.6 +0.4**
LKD2 Lefkada island 146.57 310 P **PKPbc 14 27 26.6 +0.4**
CWF Charnwood Fore 146.67 348 *e*PKPbc **PKPbc 14 27 26.1 +0.1**
MEM Membach 146.69 339 PKP **PKPab 14 27 26.8 -0.5**
ABTA Abfaltersbach 147.05 329 *i*PKPdf **PKPdf 14 27 25.4 0.0**
comp=Z,7.7nm,0.7s
BCLA Clavier 147.09 340 PKP **PKPbc 14 27 27.9 +0.6**
WTTA Wattenberg 147.10 330 *i*PKPdf **PKPdf 14 27 24.5 -1.1**
comp=Z,4.3nm,0.6s
MOTA Moosalm 147.28 331 *i*pPKPdf **PKPbc 14 27 28.6 +0.4**
comp=Z,8.7nm,0.6s
SNF Seneffe 147.33 341 PKP **PKPbc 14 27 28.7 +0.8**
RETA Reutte 147.33 331 *i*pPKPdf **PKPbc 14 27 28.7 +0.5**
comp=Z,8.7nm,1.0s
RETA *i*pPKPdf **PKPab 14 27 28.8 -1.3**
SNR=5.2
LANF Langenberg 147.41 336 PKP **PKPbc 14 27 29.1 +0.8**
WLF Walferdange 147.45 338 PKP **PKPab 14 27 29.8 -0.5**
WLF APKP **pPKPdf 14 27 40.0 +3.0**
WLF Walferdange 147.45 338 *e*PKP2 **PKPbc 14 27 29.3 +1.0**
WLF Walferdange 147.45 338 *e*PKPbc **PKPbc 14 27 29.3 +1.0**
DOU Dourbes 147.60 340 PKP **PKPbc 14 27 29.2 +0.5**
DOU APKP **pPKPdf 14 27 39.6 +2.4**
FETA Feichten 147.69 331 *i*PKPbc **PKPdf 14 27 27.4 +0.9**
comp=Z,18nm,0.9s
FETA *i*PKPbc **PKPdf 14 27 27.5 +0.9**
SNR=7.4
BFO Black Forest 147.72 335 *i*PKP2 **PKPbc 14 27 29.6 +0.4**
BFO Black Forest 147.72 335 *e*PKPbc **PKPbc 14 27 29.3 +0.1**
FUORN Ofenpass-Fuorn 148.21 331 *e*PKPbc **PKPbc 14 27 31.4 +0.6**
DAVOX Davos/Dischmat 148.26 331 PKPbc **PKPbc 14 27 31.4 +0.6**
comp=Z,15nm,0.6s,baz=345,slow=4.8,SNR=17
ECH Echery 148.28 336 PKP **PKPbc 14 27 30.6 0.0**
MOF Molkenrain 148.59 335 PKP **PKPbc 14 27 31.7 +0.2**
TUE Stuetta 148.74 331 *e*PKPbc **PKPbc 14 27 32.6 +0.4**
LOMF Lomont 149.11 335 PKP **PKPbc 14 27 33.2 +0.3**
TIP Timpagrande 149.12 314 *e*PKPbc **PKPbc 14 27 33.6 +0.4**
SENIN Lac Senin/Sane 149.71 333 *e*PKPbc **PKPbc 14 27 34.9 +0.3**
VLC Villacollemand 149.93 327 PFAKE 14 27 40.0 -0.6
VLC LR LR
comp=Z,300nm,19.0s
CEL Celeste 150.15 313 *e*PKPbc **PKPbc 14 27 35.5 -0.1**
PLDF La Plantade 151.49 337 PKP **PKPbc 14 27 39.7 +1.1**
AGO Saint Agoulin 151.59 338 PKP **PKPbc 14 27 40.2 +1.4**
SSB Saint Sauveur 151.72 335 *e*PKIKP **PKPbc 14 27 38.9 -0.2**
SSB Saint Sauveur 151.72 335 *e*PKPbc **PKPbc 14 27 38.9 -0.2**
LBL Lubilhac 152.25 337 PKP **PKPbc 14 27 42.5 +2.1**
ESDC Sonseca Array 159.60 342 PKPab **PKPab 14 28 21.9 +0.1**
comp=Z,0.1nm,0.3s,baz=9.4,slow=3.7,SNR=5.0
TOA0 Torodi Ar. Sit 165.24 243 *e*PKPdf **PKPdf 14 27 48.5 -1.3**
TOA0 *e*PKPdf **PKPdf 14 27 49.7 0.0**
TORD Torodi Ar. Bea 165.24 243 PKP **PKPdf 14 27 49.6 -0.1**
comp=Z,5.6nm,1.0s,baz=347,slow=1.0,SNR=23
TORD pPKP **pPKPdf 14 28 00.1 -0.9**
comp=Z,3.0nm,0.9s,baz=330,slow=0.6,SNR=9.3
TORD PKPab **PKPab 14 28 47.5 +0.3**
comp=Z,4.9nm,1.1s,baz=105,slow=5.3,SNR=9.5
TORD pPKPab **pPKPab 14 28 57.5 -0.7**
comp=Z,2.8nm,1.0s,baz=121,slow=4.0,SNR=3.5

*NEIC **10** 14:12:37.0±0.5, 20°.14S×168°.05E, h10km, mb4.6/3, Error ellipse: s-maj=16.8km s-min=10.1km az=160.0*
*ISCJB **10** 14:12:38.4±0.5, 20°.25S±0°.08×168°.10E±0°.08, h32km, mb4.2/11, Error ellipse: s-maj=13.8km s-min=7.6km az=142.1*
*IDC **10** 14:12:39.9±1.3, 20°.29S×168°.18E, h31km±7km, mb4.0/9, mb1 4.2/10, mb1mx4.0/28, mbtmp4.2/10, ML3.9/1, Error ellipse: s-maj=29.8km s-min=18.2km az=132.0*
ISC 10 14:12:40.9±0.6, 20°.3S±0°.1×168°.11E±0°.09, h32km, n21, σ1§28/25, mb4.2/11, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.32**	**222**	Pn		**Pn**	**14 13 15.4**	**-1.5**
	29nm,0.3s,baz=82,slow=12,SNR=13							
DZM				Sn		**Sn**	**14 13 44.6**	**+0.2**
	70nm,0.3s,baz=203,slow=21,SNR=15							
MSVF	**Nonsavu**	**9.75**	**76**	*e*Pn		**Pn**	**14 14 59.2**	**+0.1**
URZ	**Urewera**	**19.48**	**158**	P		**Pn**	**14 17 08.1**	**+1.5**
	0.3nm,0.3s,baz=348,slow=9.6,SNR=4.3							
AFI	**Afiamalu**	**20.25**	**75**	*e*P		**P**	**14 17 13.8**	**0.0**
	29nm,0.8s							
CTA	**Charters Tower**	**20.51**	**267**	P		**P**	**14 17 17.2**	**+0.7**
	4.2nm,0.6s,baz=116,slow=14,SNR=4.7							
CTAO	**Charters Tower**	**20.51**	**267**	*e*Pn		**P**	**14 17 18.6**	**+2.1**
STKA	**Stephens Creek**	**26.36**	**239**	P		**P**	**14 18 15.1**	**+0.8**
	3.8nm,0.7s,baz=77,slow=9.2,SNR=5.6							
STKA				pP		**pP**	**14 18 24.5**	**+1.1**
	9.5nm,0.8s,baz=78,slow=9.2,SNR=6.2							
WRAB	**Tennant Creek**	**31.67**	**265**	*e*P		**P**	**14 19 00.3**	**-1.3**
	2.0nm,0.7s							
WRA	**Warramunga Arr**	**31.68**	**265**	P		**P**	**14 19 00.4**	**-1.2**
	0.8nm,0.6s,baz=91,slow=8.5,SNR=7.9							
WRA				pP		**pP**	**14 19 09.4**	**-1.5**
	0.9nm,0.4s,baz=90,slow=8.6,SNR=4.4							
ASAR	**Alice Springs**	**31.84**	**258**	P		**P**	**14 19 02.5**	**-0.6**
	3.7nm,0.8s,baz=86,slow=8.3,SNR=15							
ASAR				pP		**pP**	**14 19 11.8**	**-0.6**
	13nm,0.7s,baz=86,slow=9.1,SNR=26							
VNDA	**Vanda**	**57.30**	**182**	P		**P**	**14 22 24.7**	**-0.4**
	0.8nm,0.8s,baz=19,slow=8.3,SNR=4.7							
QSPA	**South Pole Qui**	**69.72**	**180**	*e*P		**P**	**14 23 47.1**	**-0.4**
	9.8nm,0.7s							
USRK	**Ussuriysk Ar.**	**72.23**	**334**	P		**P**	**14 24 02.8**	**+0.1**
	2.8nm,0.9s,baz=56,slow=3.4,SNR=4.8							
USRK				pP		**pP**	**14 24 12.3**	**-0.5**
	1.2nm,0.6s,baz=128,slow=5.6,SNR=2.5							
CMAR	**Chiang Mai Arr**	**77.99**	**295**	P		**P**	**14 24 38.7**	**+2.2**
	0.3nm,0.3s,baz=131,slow=4.1,SNR=3.6							
CMAR				pP		**PcP**	**14 24 47.1**	**+0.8**
	0.4nm,0.4s,baz=278,slow=30,SNR=2.3							
NVAR	**Mina Array Bea**	**90.33**	**49**	P		**P**	**14 25 38.5**	**-0.6**
	2.5nm,0.7s,baz=225,slow=8.6,SNR=12							
ILAR	**Eielson Array**	**91.60**	**18**	P		P	14 25 41.5	-2.7
	0.8nm,0.8s,baz=234,slow=5.5,SNR=6.0							
COLD	**Coldfoot**	**92.61**	**15**	*e*P		**P**	**14 25 48.0**	**-0.7**
INK	**Inuvik**	**97.92**	**19**	P		P	14 26 09.7	-3.2
	1.3nm,1.0s,baz=174,slow=3.0,SNR=3.2							
ARCES	**ARCESS Array B**	**125.85**	**345**	PKP		**PKPdf**	**14 31 36.6**	**-2.2**
	3.3nm,0.9s,baz=46,slow=6.9,SNR=3.7							
GERES	**GERESS Array B**	**144.94**	**330**	PKP		**PKPab**	**14 32 13.3**	**-0.7**
	1.1nm,0.7s,baz=50,slow=4.2,SNR=5.1							
DAVOX	**Davos/Dischmat**	**148.20**	**331**	PKPbc		**PKPdf**	**14 32 23.1**	**+2.5**
	3.6nm,0.6s,baz=39,slow=6.4,SNR=4.4							

*NEIC **10** 14:14:59.5±0.7, 20°.25S×168°.21E, h10km, mb4.5/1, Error ellipse: s-maj=19.7km s-min=13.8km az=154.0*
*ISCJB **10** 14:15:01.1±0.8, 20°.2S±0°.1×168°.1E±0°.1, h32km, mb4.1/7, Error ellipse: s-maj=21.8km s-min=10.9km az=40.0*
*IDC **10** 14:15:03.1±1.3, 20°.25S×168°.12E, h31km±7km, mb3.9/7, mb1 4.1/8, mb1mx3.9/25, mbtmp4.0/8, ML3.7/1, MS3.5/1, Ms1 3.5/1, ms1mx3.1/37, Error ellipse: s-maj=32.9km s-min=19.7km az=139.0*
ISC 10 14:15:02.9±0.9, 20°.3S±0°.1×168°.1E±0°.1, h32km, n14, σ1§03/16, mb3.9/7, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.37**	**220**	Pn		**Pn**	**14 15 39.3**	**-0.3**
	19nm,0.3s,baz=108,slow=15,SNR=3.9							
DZM				Sn		**Sn**	**14 16 07.8**	**+0.1**
	61nm,0.3s,baz=213,slow=17,SNR=7.2							
HNR	**Honiara**	**13.32**	**323**	LR		LR	14 22 47.8	
	comp=Z,216nm,19.2s,baz=181,slow=35							
CTA	**Charters Tower**	**20.49**	**267**	P		Pn	14 19 40.9	+0.2
	4.9nm,0.8s,baz=74,slow=12,SNR=3.6							
CTAO	**Charters Tower**	**20.49**	**267**	*e*P		**P**	**14 19 38.6**	**+0.3**
	75nm,1.1s							
STKA	**Stephens Creek**	**26.39**	**239**	P		**P**	**14 20 38.5**	**+2.0**
	1.8nm,0.5s,baz=82,slow=13,SNR=4.7							
STKA				pP		**sP**	**14 20 48.0**	**-1.6**
	6.6nm,0.9s,baz=76,slow=7.5,SNR=4.4							
WRAB	**Tennant Creek**	**31.65**	**265**	*e*P		**P**	**14 21 23.3**	**-0.1**
	6.9nm,1.1s							
WRA	**Warramunga Arr**	**31.66**	**265**	P		**P**	**14 21 23.2**	**-0.3**
	0.7nm,0.5s,baz=91,slow=8.5,SNR=9.8							
WRA				pP		**pP**	**14 21 31.4**	**-1.4**
	0.9nm,0.4s,baz=90,slow=8.6,SNR=4.2							
ASAR	**Alice Springs**	**31.84**	**258**	P		**P**	**14 21 25.5**	**+0.4**
	3.2nm,0.6s,baz=88,slow=8.7,SNR=11							
ASAR				pP		**pP**	**14 21 34.8**	**+0.4**
	6.3nm,0.6s,baz=86,slow=9.1,SNR=14							
VNDA	**Vanda**	**57.39**	**182**	P		**P**	**14 24 47.6**	**-0.1**
	0.8nm,0.8s,baz=332,slow=6.1,SNR=3.9							
QSPA	**South Pole Qui**	**69.80**	**180**	*e*P		**P**	**14 26 09.8**	**-0.2**
NVAR	**Mina Array Bea**	**90.29**	**49**	P		**P**	**14 28 01.2**	**+0.3**
	1.4nm,0.6s,baz=229,slow=8.2,SNR=4.3							
ILAR	**Eielson Array**	**91.52**	**18**	P		**P**	**14 28 04.9**	**-0.9**
	0.4nm,0.8s,baz=247,slow=4.7,SNR=2.9							
YKA	**Yellowknife Ar**	**102.07**	**28**	P		**Pdif**	**14 28 55.1**	**+1.5**
	0.3nm,0.7s,baz=254,slow=5.1,SNR=3.8							
GERES	**GERESS Array B**	**144.85**	**330**	PKP		**PKPdf**	**14 34 37.7**	**+1.0**
	0.3nm,0.3s,baz=46,slow=3.9,SNR=3.2							

PGC 10 14:16:03.5, 59°.51N×122°.37W, h1km, ML3.5/19, 79km Nne of Fort Nelson, Bc British Columbia, Canada, British Columbia

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
FNBB	**Fort Nelson**	**0.71**	**208**	P		Pg	14 16 16.1	-0.9
FNBB				S		Sg	14 16 24.9	-1.2
HILA	**High Level**	**2.93**	**107**	Pn		Pn	14 16 50.0	-1.0
HILA				Sn		Sn	14 17 24.6	-2.2
HILA				Sg		Sg	14 17 35.4	-2.0
MANA	**Manning**	**3.66**	**135**	Sg		Sb	14 17 56.6	+2.9
DLBC	**Dease Lake**	**4.11**	**258**	Pn		Pn	14 17 07.0	-0.4
DLBC				Pg		Pb	14 17 18.1	+1.6
WAPA	**Wapiti River**	**4.66**	**157**	Pn		Pn	14 17 13.8	-1.1
YKR1	**Yellowknife Ar**	**4.69**	**47**	Pn		Pn	14 17 14.2	-1.0
YKR2	**Yellowknife Ar**	**4.71**	**47**	Pn		Pn	14 17 14.2	-1.3
YKR3	**Yellowknife Ar**	**4.72**	**48**	Pn		Pn	14 17 14.8	-0.9
YKR4	**Yellowknife Ar**	**4.74**	**48**	Pn		Pn	14 17 14.4	-1.6
YKB1	**Yellowknife Ar**	**4.76**	**49**	Pn		Pn	14 17 14.6	-1.7
YKB2	**Yellowknife Ar**	**4.78**	**49**	Pn		Pn	14 17 14.6	-1.9
YKR6	**Yellowknife Ar**	**4.78**	**48**	Pn		Pn	14 17 15.3	-1.2
YKR7	**Yellowknife Ar**	**4.80**	**48**	Pn		Pn	14 17 16.0	-0.7
YKR8	**Yellowknife Ar**	**4.82**	**48**	Pn		Pn	14 17 15.6	-1.4
YKB6	**Yellowknife Ar**	**4.83**	**48**	Pn		Pn	14 17 15.9	-1.3
YKB7	**Yellowknife Ar**	**4.84**	**48**	Pn		Pn	14 17 15.9	-1.5
YKW3	**Yellowknife Ar**	**4.85**	**48**	Pn		Pn	14 17 16.2	-1.3
YKW3				Sn		Sn	14 18 10.0	-4.2
YKB8	**Yellowknife Ar**	**4.86**	**48**	Pn		Pn	14 17 16.2	-1.3
YKB9	**Yellowknife Ar**	**4.87**	**47**	Pn		Pn	14 17 16.7	-1.0
WHY	**Whitehorse**	**6.37**	**286**	Pn		Pn	14 17 37.4	-1.0
WHY				Sn		Sn	14 18 45.9	-5.8
WHY				Sg		Sg	14 19 20.3	-7.4
UBRB	**Upper Baezaeko**	**6.71**	**189**	Sg		Sg	14 19 32.2	-6.4
HYT	**Haines Junctio**	**7.66**	**286**	Pn		Pn	14 17 55.9	-0.3
HYT				Sg		Sg	14 20 00.6	-8.7
MNB	**Mounoet Dainar**	**7.67**	**161**	Pn		Pn	14 17 55.8	-0.6
BLBC	**Blue River**	**7.69**	**165**	Pn		Pn	14 17 55.7	-1.0
YUK7	**Dusty Glacier**	**7.97**	**284**	Sg		Sg	14 20 10.4	-8.6
WHFN	**White Fish Lak**	**8.02**	**61**	Sn		Sn	14 19 26.3	-5.8
DOWB	**Downie Slide**	**8.30**	**163**	Pn		Pn	14 18 03.8	-1.2
SMPN	**Simpson Lake**	**8.93**	**350**	Sn		Sn	14 19 47.5	-7.0
KUKN	**Kugluktuk,NWT**	**8.94**

IDC 10 14:22:51.4±9.4, 20°.35S×167°.92E, h0km, mb3.7/3, mb1 3.8/4, mb1mx3.6/34, mbtmp3.7/4, ML3.1/1, 1D, Error ellipse: s-maj=170.0km s-min=43.0km az=100.0, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.20**	**219**	Pn	Pn	14 23 28.8	-0.5
	5.5nm,0.3s,baz=125,slow=15,SNR=8.7						
DZM				Sn	Sn	14 23 58.1	+0.8
	52nm,0.3s,baz=308,slow=22,SNR=13						
STKA	**Stephens Creek**	**26.21**	**239**	P	P	14 28 28.0	0.0
	1.2nm,0.6s,baz=86,slow=13,SNR=2.6						
WRA	**Warramunga Arr**	**31.50**	**265**	P	P	14 29 16.2	+0.9
	0.2nm,0.6s,baz=90,slow=8.8,SNR=12						
ASAR	**Alice Springs**	**31.67**	**258**	P	P	14 29 15.9	-0.8
	1.1nm,0.7s,baz=83,slow=8.9,SNR=11						
SHL	**Shillong**	**86.78**	**299**	*i* P	P	14 35 32.0	-6.2

*ISCJB **10** 14:24:05.5±1.1, 12°.02N±0°.06×43°.91E±0°.06, h3km±9km, Error ellipse: s-maj=12.7km s-min=5.2km az=140.0*
*DHMR **10** 14:24:07.1±1.3, 12°.11N×43°.92E, h20km±15km, ML4.4*
*ARO **10** 14:24:09.0, 12°N±5°×4°.4E±°, h11km±8km, ML3.8*

ISC 10 14:24:04.8±1.8, 11°.99N±0°.06×43°.98E±0°.06, h6km±15km, n15, σ1§15/22, Ethiopia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OBO	**Obock**	**0.67**	**269**	*e*P	**Pg**	**14 24 18.2**	**+0.5**
MCAD	**Mucha**	**0.79**	**251**	*e*P	**Pg**	**14 24 20.8**	**+0.7**
ATA	**Atar**	**0.93**	**235**	*e*P	**Pb**	**14 24 23.7**	**+0.4**
TDD	**Tadjoura Ara**	**1.06**	**260**	*e*P	**Pb**	**14 24 24.9**	**-0.7**
ATD	**Arta Tunnel**	**1.20**	**248**	*e*P	**Pn**	**14 24 27.7**	**-0.5**
ATD				*e*S	**Sb**	**14 24 42.7**	**-1.1**
TRBA	**At Turbah**	**1.24**	**6**	*i* P	**Pn**	**14 24 28.3**	**-0.5**
TRBA				*i* S	**Sb**	**14 24 43.0**	**-2.0**
TRBA				AML	AML	14 24 44.5	
	comp=E,12μm,0.5s						
ADEN	**Aden**	**1.25**	**52**	*i* P	**Pn**	**14 24 29.1**	**+0.3**
ADEN				*i* S	**Sn**	**14 24 46.3**	**+0.3**
ADEN				AML	AML	14 24 53.4	
	comp=N,12μm,0.4s						
SGH	**Sud-Ghoubbet**	**1.43**	**247**	*e*P	**Pn**	**14 24 31.4**	**0.0**
LDLD	**Lac de Lave**	**1.50**	**254**	*e*P	**Pn**	**14 24 31.9**	**-0.4**
GBR	**Grand-Bara**	**1.70**	**241**	*e*P	**Pn**	**14 24 35.0**	**-0.1**
MAOD	**Malaho**	**1.72**	**274**	*e*P	**Pn**	**14 24 34.9**	**-0.4**
UDYN	**Al 'Udayn**	**1.96**	**360**	*i* P	**Pn**	**14 24 39.1**	**+0.3**
UDYN				*i* S	**Sb**	**14 25 04.0**	**-1.8**
BDHA	**Al Bayda'**	**2.50**	**38**	*i* P	**Pb**	**14 24 49.1**	**-1.3**
BDHA				*i* S	**Sb**	**14 25 21.3**	**-0.3**
BDHA				AML	AML	14 25 28.8	
	comp=N,3μm,0.6s						
DHBB	**Dhamar BB**	**2.59**	**9**	*i* P	**Pn**	**14 24 49.3**	**+1.7**
DHBB				*i* S	**Sb**	**14 25 23.3**	**-0.8**
HAJJ	**Hajjah**	**3.70**	**354**	*i* P	**Pn**	**14 25 03.8**	**+1.1**
HAJJ				*i* S	**Sn**	**14 25 49.3**	**+2.5**
HAJJ				AML	AML	14 26 03.6	
	comp=Z,2μm,0.6s						

IDC 10 14:26:12.8±2.3, 20°.22S×167°.75E, h0km, mb3.5/3, mb1 3.7/4, mb1mx3.5/41, mbtmp3.4/4, ML3.0/1, Error ellipse: s-maj=64.5km s-min=26.6km az=125.0, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.21**	**213**	Pn	Pn	14 26 50.4	-0.5
	4.1nm,0.3s,baz=293,slow=20,SNR=4.3						
DZM				Sn	Sn	14 27 19.9	+1.1
	17nm,0.3s,baz=3.3,slow=22,SNR=12						
WRA	**Warramunga Arr**	**31.35**	**265**	P	P	14 32 35.0	-0.4
	0.4nm,0.7s,baz=93,slow=8.4,SNR=4.0						
ASAR	**Alice Springs**	**31.53**	**257**	P	P	14 32 37.5	+0.5
	0.6nm,0.7s,baz=84,slow=8.7,SNR=7.0						
ILAR	**Eielson Array**	**91.58**	**18**	P	P	14 39 21.1	0.0
	0.2nm,0.8s,baz=218,slow=6.8,SNR=2.5						

IDC 10 14:29:35.0±1.8, 20°.22S×168°.20E, h0km, mb3.5/3, mb1 3.9/4, mb1mx3.6/39, mbtmp3.5/4, ML3.4/1, Error ellipse: s-maj=66.8km s-min=25.7km az=142.0, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.46**	**221**	Pn	Pn	14 30 16.3	-0.3
	9.1nm,0.3s,baz=107,slow=9.1,SNR=5.2						
DZM				Sn	Sn	14 30 48.0	+0.5
	12nm,0.3s,baz=111,slow=19,SNR=4.1						
WRA	**Warramunga Arr**	**31.77**	**265**	P	P	14 36 01.3	0.0
	0.3nm,0.6s,baz=95,slow=8.2,SNR=3.0						
ASAR	**Alice Springs**	**31.95**	**257**	P	P	14 36 03.0	+0.1
	0.5nm,0.7s,baz=80,slow=9.0,SNR=4.0						
NVAR	**Mina Array Bea**	**90.18**	**49**	P	P	14 42 37.7	-0.1
	0.2nm,0.4s,baz=232,slow=10,SNR=2.2						

*IDC **10** 14:32:30.9±0.3, 1°.45N×126°.31E, h0km, mb5.1/34, mb1 5.0/36, mb1mx5.0/44, mbtmp5.0/36, ML4.4/2, MS4.3/16, Ms1 4.3/16, ms1mx4.0/53, Error ellipse: s-maj=16.6km s-min=7.2km az=83.0*
*KLM **10** 14:32:32.8, 1°.25N×126°.56E, h10km, mb5.1, ML5.4, MS5.6*
*BJI **10** 14:32:32.7, 1°.28N×126°.40E, h42km, mb5.0/70, mB5.1/45, Ms4.7/57, Ms7 4.6/56*
*MOS **10** 14:32:33.7±1.2, 1°.46N×126°.25E, h33km, mb5.4/57, MS4.3/4, Error ellipse: s-maj=9.6km s-min=4.7km az=112.2*
*ISCJB **10** 14:32:35.1±0.4, 1°.50N±0°.02×126°.43E±0°.02, h46km±3km, mb5.1/172, MS4.5/37, Error ellipse: s-maj=4.2km s-min=3.1km az=164.0*
*NEIC **10** 14:32:36.2±0.8, 1°.47N×126°.36E, h41km±7km, mb5.2/78, Error ellipse: s-maj=6.9km s-min=4.5km az=66.0*
*GCMT **10** 14:32:36.2±0.2, 1°.63N×126°.28E, h18km±1km, MW5.3/72, Moment Tensor Solution. s22,c23; s72,c108; Duration: 1§0 Moment tensor: Scale 10^{17}Nm; M_{rr}=0.38±.04; $M_{\theta\theta}$=0.32±.02; $M_{\phi\phi}$=0.70±.03; $M_{r\theta}$=0.05±.06; $M_{\theta\phi}$=0.36±.02; $M_{r\phi}$=0.69±.10; Best double couple: M_0=0.93900×10^{17} NP1:ϕ_s=177.00000°, δ73.00000°, λ-113.00000°. NP2: ϕ_s=52.00000°, δ28.00000°, λ-39.00000°. Principal axes: T 1.1250, Plg24.0000°, Azm285.0000°; N -0.3740, Plg22.0000°, Azm185.0000°; P -0.7520, Plg56.0000°, Azm58.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*DJA **10** 14:32:37.0±1.1, 2°N±2°×12°6E±°, h22km±12km, M5.2/30, mb5.3/30, mB5.6/18, MLv5.4/4, Mw(mB)5.0/18*

ISC 10 14:32:37.0±0.5, 1°.52N±0°.03×126°.41E±0°.04, h42km±3km, n432, σ1§83/497, mb5.1/171, MS4.5/39, 17C-15D, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SGSI	**Sangihe**	**2.32**	**338**	P	**Pn**	**14 33 12.9**	**+0.1**
SGSI				S	**Sn**	**14 33 42.6**	**+2.5**
LBMI	**Labuha**	**2.41**	**153**	P	**Pn**	**14 33 11.6**	**-2.4**
SANI	**Sanana**	**3.58**	**187**	P	**Pn**	**14 33 30.2**	**+0.2**
SANI				S	**Sn**	**14 34 14.8**	**+3.8**
LUWI	**Luwuk**	**4.44**	**235**	P	**Pn**	**14 33 41.7**	**-0.2**
LUWI	**Luwuk**	**4.44**	**235**	*e*Pn	**Pn**	**14 33 42.3**	**+0.3**
MRSI	**Marisa**	**4.59**	**257**	P	**Pn**	**14 33 44.3**	**+0.3**
GSPH	**General Santos**	**4.76**	**342**	*e*P	**Pn**	**14 33 46.5**	**+0.1**
MATI	**Mati**	**5.39**	**358**	*e*P	**Pn**	**14 33 55.3**	**+0.3**
SWI	**Sorong**	**5.40**	**116**	P	**Pn**	**14 33 54.1**	**-0.9**
SIJI	**Sorong**	**5.41**	**116**	Pn	**Pn**	**14 33 54.3**	**-0.9**
	3.7nm,0.3s,baz=3.9,slow=20,SNR=1.8						
MSAI	**Masohi**	**5.45**	**153**	P	**Pn**	**14 33 57.8**	**+2.0**
DAV	**Davao City (W)**	**5.57**	**351**	Pn	**Pn**	**14 34 00.3**	**+2.8**
	40nm,0.3s,baz=29,slow=2.3,SNR=3.2						
DAV				Sn	**Sn**	**14 35 06.5**	**+6.2**
	14nm,0.3s,baz=33,slow=21,SNR=2.1						
DMPH	**Davao City--Mi**	**5.59**	**351**	*e*P	Pn	14 33 50.7	-7.1
KCP	**Kidapawan**	**5.61**	**346**	⇓*e*P	**Pn**	**14 33 58.3**	**+0.3**
CTBH	**Cotabato--PC H**	**6.06**	**339**	⇓*e*P	**Pn**	**14 34 05.0**	**+0.8**
BUKP	**Musuan**	**6.46**	**348**	*e*P	**Pn**	**14 34 12.4**	**+2.7**
BNDI	**Bandanaira**	**6.95**	**150**	P	**Pn**	**14 34 19.2**	**+2.9**
	344nm,0.9s,5μm1.5nm						
PAGZ	**Pagadian**	**6.97**	**334**	*e*P	**Pn**	**14 34 15.8**	**-0.8**
PCI	**Palu**	**7.00**	**250**	P	**Pn**	**14 34 18.8**	**+1.7**
CGP	**Cagayan de Oro**	**7.09**	**346**	*e*P	**Pn**	**14 34 19.5**	**+1.2**
IPIL	**Ipil**	**7.30**	**329**	*e*P	**Pn**	**14 34 20.2**	**-1.1**
FAKI	**Fak Fak**	**7.32**	**127**	P	**Pn**	**14 34 21.0**	**-0.4**
FAKI	**Fak Fak**	**7.32**	**127**	*e*Pn	**Pn**	**14 34 22.0**	**+0.6**
TTSI	**Tana Toraja**	**8.00**	**235**	P	**Pn**	**14 34 31.1**	**+0.3**
SPSI	**Sidrap Palu**	**8.59**	**231**	P	**Pn**	**14 34 39.3**	**+0.4**
MYLDM	**Lahad Datu**	**8.69**	**295**	*e*Pn	**Pn**	**14 34 41.5**	**+1.3**
TSM	**Tawau**	**8.96**	**288**	⇓P	**Pn**	**14 34 43.7**	**-0.2**
KAPI	**Kappang**	**9.30**	**226**	Pn	**Pn**	**14 34 49.4**	**+0.8**
	11nm,0.3s,baz=42,slow=3.4,SNR=62						
KAPI				Sn	**Sn**	**14 36 34.4**	**+2.5**
	baz=95,slow=22,SNR=2.1						
KAPI	**Kappang**	**9.30**	**226**	*e*Pn	**Pn**	**14 34 48.4**	**-0.2**
KAPI				Sn	**Sn**	**14 36 34.4**	**+2.5**
OCLP	**Ormoc**	**9.63**	**349**	*e*P	**Pn**	**14 34 53.0**	**-0.2**
BSSI	**Bau Bau, Buton**	**9.64**	**218**	P	**Pn**	**14 34 55.5**	**+2.2**
	132nm,0.6s,2μm						
GUIM	**Jordan**	**9.81**	**337**	*e*P	**Pn**	**14 34 57.0**	**+1.4**
BESP	**Borongan**	**10.06**	**355**	*e*P	**Pn**	**14 34 57.4**	**-1.6**
SDKM	**Sandakan**	**10.06**	**294**	⇑P	**Pn**	**14 34 59.8**	**+0.6**
RCP	**Roxas**	**10.61**	**340**	⇑*e*P	**Pn**	**14 35 09.4**	**+2.8**
CUYO	**Cuyo Island**	**10.70**	**330**	*e*P	**Pn**	**14 35 08.8**	**+1.0**
MMRI	**Maumere**	**10.92**	**202**	P	**Pn**	**14 35 12.7**	**+1.9**
	94nm,1.3s,1μm						
MMRI	**Maumere**	**10.92**	**202**	*e*Pn	**Pn**	**14 35 08.2**	**-2.6**
KKM	**Kota Kinabalu**	**11.12**	**294**	⇓P	**Pn**	**14 35 15.2**	**+1.5**
KKM	**Kota Kinabalu**	**11.12**	**294**	*e*Pn	**Pn**	**14 35 12.3**	**-1.3**
BATP	**Bataraza**	**11.21**	**310**	*e*P	**Pn**	**14 35 15.3**	**+0.6**
SOEI	**Soe**	**11.41**	**191**	P	Pn	14 35 25.0	+7.4
SOEI	**Soe**	**11.41**	**191**	*e*Pn	**Pn**	**14 35 17.7**	**+0.1**
OTRP	**Odiongan**	**11.61**	**338**	*e*P	Pn	14 35 26.9	+6.5
ENPP	**El Nido**	**11.86**	**324**	*e*P	**Pn**	**14 35 24.1**	**+0.4**
SJMP	**San Jose**	**12.07**	**334**	*e*P	**P**	**14 35 34.1**	**-4.4**
BUSP	**Coron**	**12.10**	**330**	*e*P	**P**	**14 35 34.3**	**-4.5**
PVCP	**Virac**	**12.20**	**350**	*e*P	**Pn**	**14 35 29.5**	**+1.2**
BOAC	**Boac**	**12.69**	**339**	*e*P	**Pn**	**14 35 35.5**	**+0.5**
PLAI	**Plampang**	**13.41**	**220**	P	**Pn**	**14 35 48.3**	**+3.4**
	226nm,1.6s,4μm						
BTM	**Bintulu**	**13.42**	**277**	⇓P	**Pn**	**14 35 44.9**	**-0.2**
LUBP	**Lubang**	**13.58**	**334**	*e*P	**Pn**	**14 35 48.5**	**+1.3**
TWSI	**Taliwang, Sumb**	**13.93**	**223**	P	**Pn**	**14 35 53.9**	**+1.9**
	180nm,1.1s,2μm						
SBUM	**Sibu**	**14.21**	**274**	⇑P	**Pn**	**14 35 55.2**	**-0.6**
SBUM	**Sibu**	**14.21**	**274**	*e*Pn	**Pn**	**14 35 56.9**	**+1.1**
GENI	**Genyem**	**14.35**	**107**	P	**Pn**	**14 35 59.6**	**+2.0**
	152nm,1.5s,3μm						
SRBI	**Singaraja**	**14.69**	**229**	P	**Pn**	**14 36 03.7**	**+1.5**
	111nm,1.5s						
JAY	**Jayapura**	**14.84**	**106**	Pn	**P**	**14 36 09.8**	**+0.4**
	0.1nm,0.3s,baz=91,slow=23,SNR=6.5						
JAY				LR	LR	14 42 01.3	
	comp=Z,100nm,20.4s,baz=204,slow=38						
JAY	**Jayapura**	**14.84**	**106**	P	**P**	**14 36 07.5**	**-1.9**
	38nm,1.2s,981nm						
BALP	**Baler**	**14.91**	**342**	*e*P	**Pn**	**14 36 07.6**	**+2.5**
MTN	**Manton Dam**	**15.02**	**162**	*e*Pn	**Pn**	**14 36 04.7**	**-1.9**
	41nm,0.6s						
DNP	**Denpasar**	**15.08**	**228**	P	**P**	**14 36 11.6**	**-0.4**
	776nm,1.9s						
ABJI	**Asem Bagus**	**15.27**	**233**	P	**P**	**14 36 13.3**	**-0.8**
	102nm,1.2s						
JAGI	**Jajag, Banyuwa**	**15.75**	**231**	P	**P**	**14 36 18.8**	**-0.6**
	228nm,1.1s						
JAGI	**Jajag, Banyuwa**	**15.75**	**231**	*e*Pn	**P**	**14 36 17.7**	**-1.7**
	190nm,0.9s						
KSM	**Kuching**	**16.10**	**270**	⇓P	**P**	**14 36 25.2**	**+1.8**
KSM	**Kuching**	**16.10**	**270**	*e*Pn	**P**	**14 36 23.4**	**0.0**
	70nm,1.0s						
GMJI	**Gumukmas**	**16.18**	**233**	P	**P**	**14 36 29.8**	**+5.6**
ABRA	**Dolores**	**16.98**	**341**	*e*P	**Pn**	**14 36 32.1**	**+0.6**
APYP	**Conner**	**17.01**	**343**	*e*P	**Pn**	**14 36 32.5**	**+0.5**
SGCP	**Mt. Cagua**	**17.16**	**346**	*e*P	**Pn**	**14 36 32.1**	**-1.7**
NGJI	**Ngawi**	**17.34**	**239**	P	**P**	**14 36 37.2**	**+0.2**
	116nm,1.2s						
PWJI	**Pagerwojo**	**17.38**	**237**	P	**Pn**	**14 36 36.9**	**+0.3**
	106nm,0.8s						
PCJI	**Pacitan**	**18.00**	**237**	P	**P**	**14 36 45.0**	**+0.7**
	187nm,1.4s						
SMRI	**Semarang**	**18.07**	**242**	P	**P**	**14 36 49.7**	**+4.5**
	115nm,0.7s						
FITZ	**Fitzroy Crossi**	**19.52**	**182**	P	**P**	**14 36 58.7**	**-2.3**
	2.0nm,0.3s,baz=16,slow=8.1,SNR=50						
FITZ				S	**Sn**	**14 40 40.2**	**-0.6**
	0.1nm,0.3s,baz=163,slow=4.3,SNR=2.4						
FITZ	**Fitzroy Crossi**	**19.52**	**182**	*e*P	**P**	**14 36 58.4**	**-2.5**
	44nm,1.1s						
FITZ				S	**Sn**	**14 40 40.2**	**-0.6**
LEM	**Lembang**	**20.51**	**246**	P	Pn	14 37 16.9	+2.4
	16nm,0.6s,baz=116,slow=4.6,SNR=5.1						
LEM	**Lembang**	**20.51**	**246**	P	Pn	14 37 20.3	+5.8
CBJI	**Citeko**	**21.06**	**248**	P	P	14 37 27.0	+9.2
TWG	**Pinlang**	**21.80**	**347**	*e*P	**P**	**14 37 21.9**	**-3.6**
	219nm,0.7s						
CGJI	**Cibinong**	**22.20**	**248**	P	**P**	**14 37 29.1**	**-1.0**
YULB	**Yu-li**	**22.30**	**348**	*e*P	**P**	**14 37 26.1**	**-4.9**
	33nm,0.8s						
TPUB	**Ta-pu**	**22.36**	**346**	*e*P	**P**	**14 37 26.9**	**-4.8**
	102nm,0.8s						
MYKOM	**Kota Tinggi**	**22.55**	**271**	*e*P	**P**	**14 37 30.7**	**-3.1**
	149nm,1.4s						
COEN	**Coen**	**22.64**	**133**	*e*P	**P**	**14 37 32.4**	**-2.3**
	69nm,1.2s						
WRAB	**Tennant Creek**	**22.70**	**160**	*d i*P	**P**	**14 37 32.4**	**-2.9**
WRAB				pmax	pmax		
	comp=Z,285nm,1.2s						
WRAB	**Tennant Creek**	**22.70**	**160**	*e*P	**P**	**14 37 31.9**	**-3.4**
	comp=Z,216nm,1.1s						
WRA	**Warramunga Arr**	**22.71**	**160**	P	**P**	**14 37 32.4**	**-3.0**
	comp=Z,47nm,0.5s,baz=340,slow=11,SNR=394						
WRA				S	**S**	**14 41 41.1**	**0.0**
	comp=Z,5.8nm,0.9s,baz=342,slow=16,SNR=6.8						
WB2	**Warramunga Arr**	**22.71**	**160**	*e*P	**P**	**14 37 32.4**	**-3.0**
	comp=Z,146nm,0.8s						
SSLB	**Suanglung**	**22.75**	**347**	*e*P	**P**	**14 37 33.1**	**-2.8**
	comp=Z,47nm,0.7s						
PMG	**Port Moresby**	**23.35**	**118**	P	**P**	**14 37 40.9**	**-1.0**
	comp=Z,13nm,0.7s,baz=338,slow=8.3,SNR=9.0						
PMG	**Port Moresby**	**23.35**	**118**	*c i*P	**P**	**14 37 40.7**	**-1.2**
PMG				pmax	pmax		
	comp=Z,366nm,2.5s						
PMG	**Port Moresby**	**23.35**	**118**	*e*P	**P**	**14 37 38.9**	**-3.0**
	comp=Z,32nm,1.0s						
YHNB	**Yeheng**	**23.52**	**348**	*e*P	**P**	**14 37 40.7**	**-2.9**
	comp=Z,48nm,0.7s						
QIZ	**Qiongzhong**	**23.80**	**318**	P	**P**	**14 37 44.8**	**-1.3**
QIZ				S	**S**	**14 41 59.4**	**+0.3**
QIZ				pmax	pmax		
	comp=Z,17nm,1.9s						
QIZ				LR	LR		
	comp=Z,310nm,17.8s						
QIZ				LR	LR		
	comp=Z,440nm,16.6s						
HKC	**Hong Kong Obse**	**23.84**	**331**	P	**P**	**14 37 46.0**	**-0.5**
QZH	**Quanzhou**	**24.48**	**343**	P	**P**	**14 37 47.3**	**-5.0**
QZH				S	**S**	**14 42 05.0**	**-4.9**
QZH				LR	LR		
	comp=Z,4μm,20.5s						
GZH	**Guangzhou**	**24.91**	**330**	P	**P**	**14 37 58.3**	**+2.1**
SDSI	**Sungai Dareh**	**25.10**	**265**	P	**P**	**14 38 05.2**	**+7.1**
	comp=Z,434nm,1.0s,comp=Z,35μm						
JOW	**Kunigami**	**25.23**	**4**	*e*P	**P**	**14 37 56.0**	**-3.1**
	comp=Z,136nm,0.9s						
IPM	**Ipoh**	**25.52**	**277**	*e*P	**P**	**14 37 59.0**	**-2.9**
	comp=Z,18nm,0.7s						
KULM	**Kulim**	**25.98**	**279**	*e*P	**P**	**14 38 04.5**	**-1.6**
	comp=Z,36nm,1.4s						
AS31	**Alice Springs**	**26.08**	**164**	*e*P	**P**	**14 38 05.0**	**-2.0**
	comp=Z,27nm,0.5s						
AS31				*e*S	S	14 42 47.5	+12
ASAR	**Alice Springs**	**26.08**	**164**	P	**P**	**14 38 05.0**	**-2.0**
	comp=Z,22nm,0.7s,baz=343,slow=7.4,SNR=169						
ASAR				PcP	**PcP**	**14 41 33.5**	**-0.6**
	comp=Z,3.9nm,0.8s,baz=339,slow=2.5,SNR=4.5						
ASAR				S	S	14 42 46.4	+11
	comp=Z,8.8nm,0.9s,baz=345,slow=20,SNR=10						
ASAR				ScP	**ScP**	**14 45 14.9**	**+4.3**
	comp=Z,0.7nm,0.8s,baz=332,slow=3.2,SNR=3.3						
AS01	**Alice Springs**	**26.09**	**164**	*e*P	**P**	**14 38 04.7**	**-2.3**
RABL	**Rabaul**	**26.35**	**103**	*e*P	**P**	**14 38 07.3**	**-2.3**
	comp=Z,74nm,0.5s						
PANO	**Nakornpanom**	**26.47**	**307**	P	**P**	**14 38 12.0**	**+1.5**
	comp=Z,43nm,2.0s						
MNSI	**Mandailing Nat**	**26.84**	**269**	P	**P**	**14 38 13.7**	**-0.2**
SKNT	**Sakolnakorn**	**26.88**	**306**	P	**P**	**14 38 15.6**	**+1.4**
	comp=Z,20nm,0.8s						
SRAK	**Srakaew**	**27.10**	**298**	P	**P**	**14 38 21.0**	**+4.8**
	comp=Z,44nm,1.0s						
PSI	**Prapat**	**27.50**	**273**	*e*P	**P**	**14 38 17.0**	**-2.9**
PSI				pmax	pmax		
	comp=Z,22nm,0.9s						
PSI	**Prapat**	**27.50**	**273**	*e*P	**P**	**14 38 17.0**	**-2.9**
	comp=Z,22nm,0.9s						
NAYO	**Nakonayok**	**27.86**	**298**	P	**P**	**14 38 23.6**	**+0.6**
	comp=Z,37nm,1.2s						
CHAI	**Chaiyaphum**	**28.00**	**302**	P	**P**	**14 38 23.8**	**-0.4**
	comp=Z,9.3nm,0.8s,comp=Z,76nm						
NONG	**Nongkai**	**28.14**	**307**	P	**P**	**14 38 25.1**	**-0.4**
	comp=Z,20nm,0.8s						
GSI	**Gunungsitoli**	**28.83**	**270**	*e*P	**P**	**14 38 28.8**	**-2.9**
	comp=Z,38nm,0.9s						
CTA	**Charters Tower**	**28.98**	**139**	P	**P**	**14 38 31.0**	**-2.0**
	comp=Z,6.5nm,0.8s,baz=341,slow=14,SNR=4.8						
CTA				PcP	**PcP**	**14 41 43.0**	**+1.9**
	comp=Z,6.9nm,0.9s,baz=275,slow=8.1,SNR=3.7						
CTAO	**Charters Tower**	**28.98**	**139**	*e*P	**P**	**14 38 31.2**	**-1.7**
CTAO				pmax	pmax		
	comp=Z,265nm,1.5s						
CTAO	**Charters Tower**	**28.98**	**139**	*e*P	**P**	**14 38 31.2**	**-1.7**
	comp=Z,265nm,1.5s						
LOEI	**Loei**	**29.38**	**304**	P	**P**	**14 38 33.5**	**-3.0**
	comp=Z,20nm,1.3s,comp=Z,648nm						
JCJ	**Chichijima**	**29.59**	**29**	P	**P**	**14 38 36.2**	**-2.0**
	comp=Z,38nm,0.8s,baz=286,slow=18,SNR=5.1						
CBIJ	**Chichi jima**	**29.59**	**29**	P	**P**	**14 38 36.8**	**-1.5**
	comp=Z,50nm,1.1s						
UTTA	**Uttaradit**	**30.08**	**304**	P	**P**	**14 38 43.0**	**+0.3**
	comp=Z,4.8nm,0.9s						
NANT	**Nan**	**30.50**	**306**	P	**P**	**14 38 46.7**	**+0.3**
	comp=Z,11nm,0.7s,comp=Z,143nm						
SUKH	**Sukhothai**	**30.73**	**303**	P	**P**	**14 38 48.8**	**+0.4**
	comp=Z,6.8nm,0.7s						
WHN	**Wuhan**	**31.05**	**340**	⇓P	**P**	**14 38 51.3**	**+0.2**
NJ2	**Nanjing**	**31.19**	**348**	*e*P	P	14 39 01.2	+8.9
NJ2				pmax	pmax		
	comp=Z,24nm,0.8s						
GYA	**Guiyang**	**31.23**	**324**	⇑*i*P	**P**	**14 38 52.3**	**-0.6**
GYA				pP	pP	14 39 05.8	+1.5
GYA				sP	sP	14 39 11.6	+2.3
GYA				PP	**PnPn**	**14 39 59.0**	**+3.1**
GYA				PcP	**PcP**	**14 41 47.2**	**+0.2**
GYA				S	**S**	**14 43 57.8**	**+1.2**
GYA				sS	sS	14 44 17.2	+1.5
GYA				ScP	**ScP**	**14 45 26.0**	**-0.8**
GYA				SS	**SnSn**	**14 45 45.5**	**+3.7**
GYA				ScS	**ScS**	**14 49 22.6**	**-1.8**
GYA				pmax	pmax		
	comp=Z,20nm,0.9s						
GYA				pmax	pmax		
	comp=Z,130nm,5.3s						
GYA				LR	LR		
	comp=Z,620nm,17.0s						
GYA				LR	LR		
	comp=Z,580nm,17.0s						
GYA				LR	LR		
	comp=Z,560nm,17.2s						
CRAI	**Chiangrai**	**31.51**	**308**	P	**P**	**14 38 55.0**	**-0.3**
	comp=Z,71nm,1.3s						
JNU	**Nakatsue**	**31.71**	**7**	P	**P**	**14 38 56.5**	**-0.4**
	comp=Z,34nm,0.9s,baz=143,slow=5.7,SNR=14						
JNU	**Nakatsue**	**31.71**	**7**	*e*P	**P**	**14 38 54.5**	**-2.4**
CM01	**Chiang Mai Arr**	**31.73**	**304**	*e*P	**P**	**14 38 54.2**	**-3.1**
CMMT	**Chiang Mai**	**31.93**	**304**	P	**P**	**14 38 58.9**	**-0.2**
	comp=Z,18nm,1.6s						
CHTO	**Chiang Mai**	**31.94**	**304**	P	**P**	**14 38 59.0**	**-0.1**
	comp=Z,66nm,1.5s						
CHTO	**Chiang Mai**	**31.94**	**304**	*e*P	**P**	**14 38 56.9**	**-2.2**
CHTO				pmax	pmax		
	comp=Z,8.0nm,0.8s						
CHTO	**Chiang Mai**	**31.94**	**304**	*e*P	**P**	**14 38 56.9**	**-2.2**
	comp=Z,8.2nm,0.8s						
CMAI	**Chiengmai2**	**32.41**	**306**	P	**P**	**14 39 06.2**	**+2.7**
	comp=Z,13nm,1.0s						
KMI	**Kunming**	**32.74**	**318**	P	**P**	**14 39 07.3**	**+0.9**
KMI				pP	pP	14 39 19.0	+1.2
KMI				sP	sP	14 39 24.1	+1.3
KMI				PP	**PnPn**	**14 40 18.2**	**+2.6**
KMI				S	**S**	**14 44 19.5**	**-1.1**
KMI				sS	sS	14 44 39.8	+0.1
KMI				SS	**SnSn**	**14 46 20.7**	**+1.8**
KMI				pmax	pmax		
	comp=Z,18nm,1.3s						

comp=Z,180nm,3.7s
CD2 LR LR
comp=Z,1μm,18.0s
CD2 LR LR
comp=Z,2μm,21.0s
MJAR Matsushiro Arr 36.51 16 P **P 14 39 38.0 -0.5**
comp=Z,19nm,0.9s,baz=184,slow=9.3,SNR=20
MJAR ScP **ScP 14 45 49.4 +4.3**
comp=Z,2.3nm,1.1s,baz=210,slow=12,SNR=3.8
MJAR Matsushiro Arr 36.51 16 P **P 14 39 38.0 -0.5**
MAJO Matsushiro 36.52 16 *ce*P **P 14 39 38.3 -0.2**
MAJO pmax pmax
comp=Z,140nm,0.9s
MAJO Matsushiro 36.52 16 *e*P **P 14 39 37.2 -1.3**
comp=Z,49nm,1.3s
MAT Matsushiro 36.52 16 P **P 14 39 37.7 -0.8**
MJB9 Matsu-Tunnel 36.52 16 *e*P **P 14 39 37.2 -1.3**
comp=Z,14nm,1.3s
DL2 Dalian 37.46 354 P **P 14 39 46.6 +0.1**
DL2 S **S 14 45 36.5 +4.3**
DL2 pmax pmax
comp=Z,190nm,0.8s
DL2 pmax pmax
comp=Z,210nm,3.5s
DL2 LR LR
comp=Z,1μm,24.1s
DL2 LR LR
comp=Z,700nm,16.1s
TIY Taiyuan 38.24 342 *e*P **P 14 39 53.9 +0.7**
TIY S **S 14 45 43.3 -1.0**
TIY pmax pmax
comp=Z,25nm,0.8s
TIY LR LR
comp=Z,5μm,37.1s
TIY LR LR
comp=Z,760nm,19.0s
TIY LR LR
comp=Z,1μm,26.2s
BJT Baijiatuau 39.43 348 *e*P **P 14 40 02.1 -1.0**
BJT pmax pmax
comp=Z,32nm,0.9s
BJT Baijiatuau 39.43 348 *e*P **P 14 40 02.1 -1.0**
comp=Z,32nm,0.9s
BJI Beijing 39.45 348 P **P 14 40 03.0 -0.2**
BJI sP **sP 14 40 19.5 -0.3**
BJI PP **PP 14 41 35.5 +1.1**
BJI S **S 14 45 58.8 -3.5**
BJI sS **sS 14 46 23.7 +2.1**
BJI pmax pmax
comp=Z,36nm,0.8s
BJI LR LR
comp=Z,380nm,23.9s
BJI LR LR
comp=Z,530nm,21.8s
BJI LR LR
comp=Z,530nm,29.0s
ARMA Armidale 39.83 145 *e*P **P 14 40 05.7 -1.0**
comp=Z,102nm,1.8s
SNY Shenyang 40.20 357 ⇑P **P 14 40 10.1 +0.7**
SNY S **S 14 46 16.0 +2.5**
SNY pmax pmax
comp=Z,71nm,0.8s
SNY LR LR
comp=Z,300nm,18.8s
SNY LR LR
comp=Z,800nm,17.9s
SNY LR LR
comp=Z,980nm,25.9s
LZH Lanzhou 40.25 331 *e*P **P 14 40 09.9 -0.2**
LZH pP pP 14 40 21.9 +0.1
LZH sP sP 14 40 26.2 -0.6
LZH PP **PP 14 41 44.6 +1.2**
LZH PcP **PcP 14 42 11.1 -2.4**
LZH *e*S **S 14 46 13.5 -1.3**
LZH sS sS 14 46 34.3 +0.2
LZH SS **SS 14 49 09.0 -5.3**
LZH pmax pmax
comp=Z,40nm,1.0s
LZH pmax pmax
comp=Z,190nm,4.2s
LZH LR LR
comp=Z,2μm,16.4s
LZH LR LR
comp=Z,2μm,15.0s
LZH LR LR
comp=Z,2μm,18.3s
SHL Shillong 40.96 309 ⇑*i*P **P 14 40 16.5 +0.3**
SHL *i* x x 14 42 17.5
HHC Hu-ho-hao-te 41.39 343 *e*P **P 14 40 19.7 +0.3**
HHC S **S 14 46 34.3 +2.8**
HHC ScS **ScS 14 50 15.5 -4.5**
HHC pmax pmax
comp=Z,24nm,1.1s
HHC pmax pmax
comp=Z,130nm,6.0s
HHC LR LR
comp=Z,580nm,15.4s
HHC LR LR
comp=Z,990nm,14.3s
HHC LR LR
comp=Z,1μm,14.8s
CN2 Changchun 42.10 359 *e*P **P 14 40 24.4 -0.6**
CN2 *e*S **S 14 46 41.2 -0.5**
CN2 SS **SS 14 49 45.3 -5.2**
CN2 pmax pmax
comp=Z,10.0nm,0.5s
CN2 pmax pmax
comp=Z,200nm,5.0s
CN2 LR LR
comp=Z,300nm,18.0s
CN2 LR LR
comp=Z,400nm,18.0s
CN2 LR LR
comp=Z,400nm,21.0s
CAN Canberra 42.31 152 *e*P **P 14 40 26.0 -0.9**
CAN pmax pmax
comp=Z,33nm,1.2s
CAN Canberra 42.31 152 *e*P **P 14 40 26.0 -0.9**
comp=Z,33nm,1.2s
USRK Ussuriysk Ar. 42.78 6 P **P 14 40 31.9 +1.4**
comp=Z,27nm,0.7s,baz=192,slow=6.8,SNR=57
MDJ Mudanjiang 43.00 3 P **P 14 40 33.0 +0.7**
MDJ pP pP 14 40 44.2 +0.2
MDJ sP sP 14 40 49.5 +0.5
MDJ PP **PP 14 42 13.7 +0.9**
MDJ PcS **PcS 14 46 14.6 +0.3**
MDJ S **S 14 46 56.8 +1.9**
MDJ ScS **ScS 14 50 30.1 +0.6**
MDJ pmax pmax
comp=Z,36nm,1.1s
MDJ pmax pmax
comp=Z,130nm,4.1s
MDJ LR LR
comp=Z,330nm,27.8s
MDJ LR LR
comp=Z,380nm,29.3s
MDJ LR LR
comp=Z,530nm,30.4s
MDJ Mudanjiang 43.00 3 *e*P **P 14 40 32.9 +0.5**
comp=Z,52nm,1.0s
LSA Lhasa 43.68 313 P **P 14 40 38.3 -0.3**
LSA pmax pmax
comp=Z,7.0nm,0.8s
LSA Lhasa 43.68 313 *e*P **P 14 40 38.0 -0.6**
LSA pmax pmax
comp=Z,84nm,1.9s
LSA Lhasa 43.68 313 *e*P **P 14 40 38.0 -0.6**
comp=Z,84nm,1.9s
ASAJ Asahikawa 44.78 17 P **P 14 40 48.0 +1.4**
comp=Z,45nm,0.9s,baz=234,slow=13,SNR=15
ASAJ Asahikawa 44.78 17 *e*P **P 14 40 45.8 -0.8**
comp=Z,52nm,0.9s
GTA Gaotai 44.83 331 *e*P **P 14 40 46.9 -0.4**
GTA pP pP 14 40 56.2 -2.8
GTA sP sP 14 41 00.6 -3.4
GTA PcP **PcP 14 42 29.1 +0.5**
GTA S **S 14 47 22.4 +0.4**
GTA sS sS 14 47 39.7 -1.9
GTA SS **ScS 14 50 36.7 -4.9**
GTA pmax pmax
comp=Z,12nm,0.9s
GTA pmax pmax
comp=Z,130nm,6.9s
GTA LR LR
comp=Z,560nm,18.5s
GTA LR LR
comp=Z,750nm,19.5s
GTA LR LR
comp=Z,1μm,20.4s
PALK Pallekele 45.91 279 LR LR 15 01 46.7
comp=Z,428nm,21.0s,baz=116,slow=38
PKIN Phulchoki 47.02 307 *e*P **P 14 41 04.6 -0.3**
KKN Kakani 47.21 307 *e*P **P 14 41 04.8 -1.5**
HABR Khabarovsk 47.36 8 *ce*P **P 14 41 04.7 -2.1**
HABR *e* 14 42 34.9
HABR *e* 14 42 55.9
HABR *e*PPP PPP 14 43 40.6
HABR *e*S **S 14 47 59.7 +2.0**
HABR *e**SS sS 14 48 04.8 -13
HABR *e* 14 50 58.7
HABR *e*SSS SSS 14 52 30.9
HABR pmax pmax
comp=Z,137nm,1.8s
HABR MLR MLR
comp=Z,351nm,18.0s
YSS Yuzh-Sakhalins 47.44 15 *e*P **P 14 41 05.7 -1.8**
YSS pmax pmax
comp=Z,30nm,1.1s
KLR Kul'dur 47.75 5 P **P 14 41 10.4 +0.6**
comp=Z,25nm,0.9s,baz=195,slow=5.5,SNR=73
GKN Gorkha 47.81 307 *e*P **P 14 41 09.5 -1.4**
comp=Z,38nm,0.9s
HIA Hailar 47.91 354 *e*P **P 14 41 11.8 +0.7**
HIA pmax pmax
comp=Z,140nm,1.6s
HIA Hailar 47.91 354 *e*P **P 14 41 11.8 +0.7**
comp=Z,140nm,1.6s
KOLN Koldanda 48.54 307 *e*P **P 14 41 15.2 -1.4**
comp=Z,67nm,0.6s
ULN Ulaanbaatar 49.11 343 *d i*P **P 14 41 20.2 -0.4**
ULN pmax pmax
comp=Z,12nm,0.7s
ULN Ulaanbaatar 49.11 343 *e*P **P 14 41 19.4 -1.1**
comp=Z,13nm,0.7s
PYUN Piuthan 49.17 307 *e*P **P 14 41 20.1 -1.3**
comp=Z,154nm,0.9s
SONM Songino Array 49.28 342 LR LR 15 03 50.1
comp=Z,449nm,22.0s,baz=138,slow=38
HYB Hyderabad 49.59 292 *i* P **P 14 41 24.0 -0.6**
TYV Tymovskoe 51.05 13 *e*P **P 14 41 37.0 +2.0**
TYV pmax pmax
comp=Z,18nm,0.8s
CIT Chita 51.46 350 *e*P **P 14 41 38.7 +0.5**
CIT *e* 14 41 54.7
CIT pmax pmax
comp=Z,237nm,1.4s
ZAK Zakamensk 52.49 342 *e*P **P 14 41 45.6 -0.3**
ZAK pmax pmax
comp=Z,7.0nm,1.4s
NKL Nikolayevsk 52.80 11 *e*P **P 14 41 48.0 +0.1**
NKL pmax pmax
comp=N,22nm,1.0s
NKL pmax pmax
comp=Z,73nm,1.0s
TLY Talaya 53.52 343 P **P 14 41 54.1 +0.8**
comp=Z,7.5nm,0.7s,baz=220,slow=2.4,SNR=17
TLY Talaya 53.52 343 *e*P **P 14 41 53.8 +0.4**
TLY *e*S **S 14 49 31.6 +8.3**
TLY pmax pmax
comp=Z,14nm,1.1s
TLY MLR MLR
comp=Z,242nm,17.0s
TLY Talaya 53.52 343 *e*P **P 14 41 53.1 -0.2**
comp=Z,9.3nm,0.7s
IRK Irkutsk 53.83 343 *e*P **P 14 41 54.4 -1.2**
IRK pmax pmax
comp=Z,55nm,2.6s
MSVF Nonsavu 54.32 113 *e*P **P 14 41 59.1 -0.7**
MSVF pmax pmax
comp=Z,63nm,1.4s
MSVF Nonsavu 54.32 113 *e*P **P 14 41 59.1 -0.7**
comp=Z,63nm,1.4s
MOY Mondy 54.34 341 *e*P **P 14 42 00.2 +0.7**
MOY pmax pmax
comp=Z,49nm,2.9s
WMQ Urumqi 54.35 326 P **P 14 41 59.8 +0.1**
WMQ pP sP 14 42 14.8 -1.8
WMQ sP pP 14 42 18.7 +7.0
WMQ S **S 14 49 28.7 -6.3**
WMQ SS **SS 14 53 17.7 0.0**
WMQ pmax pmax
comp=Z,13nm,0.8s
WMQ pmax pmax
comp=Z,24nm,3.8s
WMQ LR LR
comp=Z,220nm,20.6s
WMQ LR LR
comp=Z,190nm,20.6s
WMQ LR LR
comp=Z,230nm,27.4s
CLNS Chul'man 55.16 359 *e*P **P 14 42 05.5 +0.3**
CLNS pmax pmax
comp=Z,51nm,0.9s
CLNS pmax pmax
comp=N,23nm,0.9s
CLNS pmax pmax
comp=E,14nm,0.8s
BOD Bodaibo 56.99 352 *e*P **P 14 42 18.0 -0.2**
BOD pmax pmax
comp=Z,40nm,0.9s
PEA0 Petropavlovsk- 57.58 22 *e*P **P 14 42 22.4 -0.1**
PETK Petropavlovsk- 57.58 22 P **P 14 42 23.3 +0.8**
comp=Z,14nm,0.7s,baz=179,slow=3.8,SNR=33
PET Petropavlovsk 57.87 22 *e*P **P 14 42 24.0 -0.5**
PET *e*S **S 14 50 21.1 -0.1**
PDGK Podgornoye 58.92 322 P **P 14 42 30.8 -1.2**
PDGK pmax pmax
comp=Z,22nm,0.9s
MK01 Makanchi Array 59.17 326 *e*P **P 14 42 32.2 -1.5**
MK31 Makanchi Array 59.19 326 *i* P **P 14 42 32.6 -1.3**
MK31 pmax pmax
comp=Z,22nm,0.9s
MK31 Makanchi Array 59.19 326 *e*P **P 14 42 32.5 -1.4**
MKAR Makanchi Array 59.19 326 P **P 14 42 33.0 -0.8**
comp=Z,10.0nm,0.4s,baz=122,slow=8.6,SNR=75
MKAR PcP **PcP 14 43 23.0 +1.0**
comp=Z,10nm,0.8s,baz=130,slow=4.9,SNR=5.2
MKAR ScP **ScP 14 47 23.9 +4.3**
comp=Z,1.0nm,0.9s,baz=125,slow=7.2,SNR=3.4
MKAR LR LR 15 08 58.5
comp=Z,618nm,20.5s,baz=115,slow=37
MKAR PKP2bc 15 12 18.0
comp=Z,1.6nm,1.0s,baz=291,slow=3.4,SNR=6.4
MKAR Makanchi Array 59.19 326 *e*P **P 14 42 32.5 -1.4**
MKAR 14 43 23.0
MKAR Makanchi Array 59.19 326 *e*P **P 14 42 32.5 -1.4**
MKAR PcP **PcP 14 43 23.0 +1.0**
MKAR ScP **ScP 14 47 23.9 +4.3**
MKAR ⇑*e* 15 12 18.0
MAKZ Makanchi 59.37 326 *e*P **P 14 42 33.5 -1.6**
MAKZ pmax pmax
comp=Z,22nm,0.8s
MAKZ Makanchi 59.37 326 *e*P **P 14 42 33.5 -1.6**
comp=Z,22nm,0.8s
KSH Kashi 59.39 316 P **P 14 42 36.3 +0.8**
KSH *e*pP pP 14 42 48.8 +1.1
KSH *e*PP **PP 14 44 48.5 +1.5**
KSH S **S 14 50 39.8 -1.9**
KSH pmax pmax
comp=Z,16nm,1.0s
KSH pmax pmax
comp=Z,150nm,3.2s
KSH LR LR
comp=Z,390nm,11.5s
KSH LR LR
comp=Z,580nm,16.2s
KSH LR LR
comp=Z,830nm,20.7s
LBZ Lake Benmore 60.06 145 *e*P **P 14 42 38.6 -1.3**
comp=Z,165nm,1.9s
RPZ Rata Peaks 60.16 144 P **P 14 42 40.7 +0.1**
comp=Z,22nm,0.8s,baz=3.3,slow=4.0,SNR=3.8
YAK Yakutsk 60.41 2 P **P 14 42 43.0 +1.1**
comp=Z,85nm,0.7s,baz=359,slow=1.2,SNR=33
YAK Yakutsk 60.41 2 *e*P **P 14 42 41.5 -0.3**
YAK *e* 14 43 24.4
YAK *e* 14 44 53.0
YAK *e*S **S 14 50 56.1 +2.4**
YAK *e* 14 52 29.4
YAK *e*SS **SS 14 54 57.8 +5.7**
YAK pmax pmax
comp=Z,96nm,0.8s
YAK pmax pmax
comp=N,36nm,1.3s
YAK pmax pmax
comp=E,11nm,1.1s
YAK pmax pmax
comp=Z,126nm,3.3s
YAK pmax pmax
comp=N,47nm,2.7s
YAK pmax pmax
comp=E,33nm,2.9s
YAK smax smax
comp=N,77nm,3.6s
YAK smax smax
comp=E,155nm,4.2s
YAK MLR MLR
comp=Z,399nm,25.0s
YAK MLR MLR
comp=N,306nm,24.0s
YAK MLR MLR
comp=E,297nm,21.0s
YAK Yakutsk 60.41 2 *e*P **P 14 42 41.6 -0.3**
comp=E,103nm,0.8s
MA2 Magadan 60.91 14 P **P 14 42 47.0 +1.7**
comp=E,54nm,0.8s,baz=219,slow=6.1,SNR=21
MA2 Magadan 60.91 14 *e*P **P 14 42 46.0 +0.6**
MA2 pmax pmax
comp=Z,221nm,0.8s
MA2 Magadan 60.91 14 *e*P **P 14 42 46.0 +0.6**
comp=Z,221nm,0.8s
URZ Urewera 61.17 136 P **P 14 42 47.2 -0.3**
comp=Z,10nm,0.7s,baz=56,slow=7.3,SNR=6.0
BKZ Black Stump Fm 61.18 137 *e*P **P 14 42 46.3 -1.4**
comp=Z,17nm,0.9s
TKM2 Tokmak 2 61.19 319 *i* P **P 14 42 46.7 -1.2**
TKM2 pmax pmax
comp=Z,9.0nm,0.8s
TKM2 Tokmak 2 61.19 319 *e*P **P 14 42 46.5 -1.4**
comp=Z,9.8nm,0.8s
SFK Sufi-Kurgan 61.32 316 P **P 14 42 48.2 -0.6**
SFK pmax pmax
comp=Z,15nm,0.9s
AAK Ala-Archa 61.78 319 *e*P **P 14 42 50.5 -1.3**
AAK pmax pmax
comp=Z,12nm,1.1s
AAK Ala-Archa 61.78 319 *e*P **P 14 42 50.5 -1.3**
comp=Z,12nm,1.1s
FRU Bishkek 61.79 319 *e*P **P 14 42 51.0 -0.7**
FRU *e* 14 43 08.0
EKS2 Erkin-Say 62.27 319 *e*P **P 14 42 54.0 -1.0**
EKS2 pmax pmax
comp=Z,10.0nm,0.8s
EKS2 Erkin-Say 62.27 319 *e*P **P 14 42 54.0 -1.0**
comp=Z,10nm,0.8s
ZAA0 Zalesovo Array 62.40 334 *e*P **P 14 42 53.6 -1.9**
ZALV Zalesovo Beam 62.40 334 P **P 14 42 54.0 -1.5**
comp=Z,8.1nm,0.6s,baz=127,slow=6.7,SNR=30
ZALV PP **PP 14 45 10.8 -2.4**
comp=Z,0.6nm,0.4s,baz=343,slow=41,SNR=2.9
ZALV LR LR 15 11 41.1
comp=Z,244nm,20.0s,baz=73,slow=38
ZALV PKP2bc 15 12 06.8
comp=Z,0.4nm,0.3s,baz=15,slow=12,SNR=3.8
KBL Kabul 62.62 308 *e*P **P 14 42 55.5 -2.1**
KBL pmax pmax
comp=Z,20nm,0.9s
KBL Kabul 62.62 308 *e*P **P 14 42 55.5 -2.1**
comp=Z,20nm,0.9s
MNAS Manas 63.04 318 P **P 14 42 58.8 -1.4**
MNAS pmax pmax
comp=Z,9.0nm,0.7s
AFI Afiamalu 63.11 106 LR LR 15 09 41.0
comp=Z,310nm,20.3s,baz=264,slow=35
KURK Kurchatov 63.43 328 *e*P **P 14 43 01.0 -1.4**
KURK pmax pmax
comp=Z,64nm,0.7s
KURK Kurchatov 63.43 328 *e*P **P 14 43 01.0 -1.4**
comp=Z,64nm,0.7s
NVS Novosibirsk 63.69 334 *i* P **P 14 43 02.6 -1.4**
NVS pmax pmax
comp=N,13nm,0.8s
NVS pmax pmax
comp=E,17nm,0.8s
NVS pmax pmax
comp=Z,24nm,0.8s
SEY Seymchan 64.24 13 P **P 14 43 09.4 +1.9**
comp=Z,22nm,0.9s,baz=219,slow=5.5,SNR=21
SEY Seymchan 64.24 13 ⇑*e*P **P 14 43 09.3 +1.8**
KK31 Karatay Array 64.63 318 P **P 14 43 09.7 -0.8**
KK31 pmax pmax
comp=Z,7.0nm,0.8s
KKAR Karatay Array 64.63 318 *e*P **P 14 43 09.2 -1.3**
KKAR Karatay Array 64.63 318 *e*P **P 14 43 09.2 -1.3**
OTUK Ortayu 65.69 324 P **P 14 43 15.8 -1.5**
OTUK pmax pmax
comp=Z,16nm,0.8s
BVA0 Borovoye Array 68.99 328 P **P 14 43 36.5 -1.6**
BVA0 pmax pmax
comp=Z,20nm,1.1s
BRVK Borovoye 69.06 328 *d i*P **P 14 43 37.3 -1.2**
BRVK pmax pmax
comp=Z,38nm,1.2s
BRVK Borovoye 69.06 328 *e*P **P 14 43 37.4 -1.2**
comp=Z,27nm,1.0s
CHKZ Chkalovo 69.17 328 *i* P **P 14 43 37.6 -1.5**
CHKZ pmax pmax
comp=Z,17nm,1.1s
ZRNK Zerenda 69.70 327 *i* P **P 14 43 40.5 -2.0**
ZRNK pmax pmax
comp=Z,15nm,0.5s
ZRNK Zerenda 69.70 327 *e*P **P 14 43 41.1 -1.3**
comp=Z,32nm,1.0s
TIXI Tiksi 70.04 1 *de*P **P 14 43 42.9 -1.2**
TIXI pmax pmax
comp=Z,25nm,1.0s
TIXI Tiksi 70.04 1 *e*P **P 14 43 43.1 -1.0**
comp=Z,54nm,1.5s
BILL Bilibino 71.75 15 *i* P **P 14 43 54.1 -0.5**
BILL *i* 14 44 09.3
BILL *i* S **S 14 53 16.5 +5.0**
BILL pmax pmax
comp=Z,5.0nm,1.2s
BILL Bilibino 71.75 15 *e*P **P 14 43 54.2 -0.4**
comp=Z,24nm,1.6s
GEYT Alibeck 72.03 309 P **P 14 43 57.0 +0.1**
comp=Z,13nm,0.8s,baz=129,slow=4.0,SNR=26
NRIK Noril'sk 72.48 346 P **P 14 43 58.9 -0.1**
comp=Z,62nm,0.8s,baz=131,slow=6.3,SNR=102
NRIK LR LR 15 17 41.1
comp=Z,369nm,20.8s,baz=133,slow=37
AB31 Akbulak array 73.65 321 P **P 14 44 04.8 -1.5**
AB31 pmax pmax
comp=Z,8.0nm,0.7s
ABKAR Akbulak array 73.65 321 *e*P **P 14 44 04.9 -1.4**
AKTO Aktyubinsk 75.19 322 P **P 14 44 13.9 -1.3**
AKTO pmax pmax
comp=Z,25nm,0.9s
SVE Sverdlovsk 75.67 329 *c i*P **P 14 44 16.6 -1.2**
SVE pmax pmax
comp=Z,88nm,0.9s
ARU Arti 76.62 328 *d i*P **P 14 44 21.7 -1.5**
ARU 14 47 09.4
ARU S **S 14 54 08.9 +2.3**
ARU SS **SS 14 59 01.8 -0.7**
ARU pmax pmax
comp=Z,67nm,1.0s
ARU Arti 76.62 328 *e*P **P 14 44 21.8 -1.5**
comp=Z,46nm,0.8s
VNDA Vanda 81.29 173 P **P 14 44 47.5 -0.9**
comp=Z,4.1nm,0.6s,baz=315,slow=5.9,SNR=22
VNDA Vanda 81.29 173 *e*P **P 14 44 47.5 -0.9**
VNDA pmax pmax
comp=Z,15nm,1.1s
VNDA Vanda 81.29 173 *e*P **P 14 44 47.5 -0.9**
comp=Z,15nm,1.1s
MAW Mawson 81.59 200 P **P 14 44 50.7 +0.6**
comp=Z,5.3nm,0.8s,baz=86,slow=5.9,SNR=8.6
MAW LR LR 15 15 33.6
comp=Z,261nm,21.9s,baz=59,slow=32
SBA Scott Base 82.21 172 *e*P **P 14 44 53.7 +0.4**
SBA pmax pmax
comp=Z,17nm,1.1s
SBA Scott Base 82.21 172 *e*P **P 14 44 53.7 +0.4**
comp=Z,17nm,1.1s
DGRG David-gareji 82.27 311 P **P 14 44 54.6 +0.2**
DGRG David-gareji 82.27 311 P **P 14 44 54.6 +0.2**

GNI	**Garni**	**82.65**	**310**	*c iP*		**P**	**14 44 57.0**	**+0.5**
GNI					pmax	pmax		
comp=Z,30nm,1.1s								
TBLG	**Delisi**	**82.77**	**312**	P		**P**	**14 44 56.8**	**-0.1**
TBLG	**Delisi**	**82.77**	**312**	P		**P**	**14 44 56.8**	**-0.1**
TT01	**Tatalina**	**82.99**	**27**	*eP*		**P**	**14 44 58.0**	**+0.4**
TTA	**Tatalina**	**83.00**	**27**	*eP*		**P**	**14 44 58.2**	**+0.5**
TTA					pmax	pmax		
comp=Z,50nm,1.3s								
TTA	**Tatalina**	**83.00**	**27**	*eP*		**P**	**14 44 58.2**	**+0.5**
comp=Z,50nm,1.3s								
GUDG	**Gudauri**	**83.02**	**312**	P		**P**	**14 45 00.1**	**+1.6**
ZEI	**Tsey**	**83.47**	**313**	*eP*		**P**	**14 45 01.2**	**+0.4**
ZEI					pmax	pmax		
comp=Z,102nm,0.9s								
AKH	**Akhalkalaki**	**83.68**	**311**	P		**P**	**14 45 03.1**	**+1.3**
AKH	**Akhalkalaki**	**83.68**	**311**	P		**P**	**14 45 03.1**	**+1.3**
ONI	**Oni**	**83.78**	**313**	P		**P**	**14 45 01.9**	**-0.3**
ONI	**Oni**	**83.78**	**313**	P		**P**	**14 45 01.9**	**-0.3**
KDAK	**Kodiak Island**	**83.91**	**32**	*eP*		**P**	**14 45 03.7**	**+1.3**
KDAK					pmax	pmax		
comp=Z,53nm,1.3s								
KDAK	**Kodiak Island**	**83.91**	**32**	*eP*		**P**	**14 45 03.7**	**+1.3**
comp=Z,53nm,1.3s								
RSO	**Redoubt South**	**84.15**	**29**	*eP*		**P**	**14 45 02.9**	**-1.0**
GOF	**Gofitskoye**	**84.23**	**315**	*cePP*		**P**	**14 45 03.1**	**-1.3**
KBZ	**Khabaz**	**84.26**	**314**	P		**P**	**14 45 04.6**	**+0.1**
comp=Z,13nm,0.8s,baz=105,slow=5.8,SNR=28								
KBZ					LR	LR	15 27 00.3	
comp=Z,93nm,21.8s,baz=79,slow=39								
KVAR	**Kislovodsk Arr**	**84.42**	**314**	LR		LR	15 30 33.0	
comp=Z,70nm,18.3s,slow=41								
KIV	**Kislovodsk**	**84.42**	**314**	*eP*		**P**	**14 45 05.3**	**-0.2**
KIV				*e*			14 55 27.9	
KIV					pmax	pmax		
comp=Z,28nm,1.0s								
KIV					pmax	pmax		
comp=Z,29nm,3.5s								
KIV					MLR	MLR		
comp=Z,172nm,19.0s								
KIV	**Kislovodsk**	**84.42**	**314**	*eP*		**P**	**14 45 03.4**	**-2.1**
comp=Z,22nm,0.9s								
SPU	**Mount Spurr**	**84.58**	**29**	*eP*		**P**	**14 45 04.3**	**-1.6**
CAST	**Castle Rocks**	**84.83**	**27**	*eP*		**P**	**14 45 06.0**	**-1.0**
comp=Z,26nm,1.8s								
VRH	**Novokhopyorsk**	**85.48**	**321**	*eP*		**P**	**14 45 09.6**	**-0.9**
VRH					pmax	pmax		
comp=Z,160nm,1.0s								
VRH					pmax	pmax		
comp=N,2μm,23.5s								
MLY	**Manley**	**85.60**	**25**	*eP*		**P**	**14 45 11.1**	**+0.2**
comp=N,9.9nm,1.2s								
RC01	**Rabbit Creek A**	**85.69**	**29**	*eP*		**P**	**14 45 11.2**	**-0.1**
comp=N,33nm,1.0s								
SEW	**Seward**	**85.76**	**30**	*eP*		**P**	**14 45 10.4**	**-1.2**
comp=N,54nm,1.2s								
PMR	**Palmer**	**86.02**	**28**	*eP*		**P**	**14 45 12.6**	**-0.3**
PMR					pmax	pmax		
comp=Z,22nm,1.0s								
PMR	**Palmer**	**86.02**	**28**	*eP*		**P**	**14 45 12.6**	**-0.3**
comp=Z,22nm,1.0s								
COLD	**Coldfoot**	**86.03**	**23**	*eP*		**P**	**14 45 13.5**	**+0.5**
comp=Z,15nm,0.9s								
MCK	**McKinley**	**86.27**	**26**	*eP*		**P**	**14 45 16.4**	**+2.2**
MCK	**McKinley**	**86.27**	**26**	*eP*		**P**	**14 45 16.4**	**+2.2**
RND	**Reindeer**	**86.28**	**27**	*eP*		**P**	**14 45 13.7**	**-0.6**
RND					pmax	pmax		
comp=Z,6.0nm,1.0s								
RND	**Reindeer**	**86.28**	**27**	*eP*		**P**	**14 45 13.7**	**-0.6**
comp=Z,6.4nm,1.0s								
SML	**Sawmill**	**86.42**	**28**	*eP*		**P**	**14 45 15.3**	**+0.3**
SML					pmax	pmax		
comp=Z,26nm,1.0s								
SML	**Sawmill**	**86.42**	**28**	*eP*		**P**	**14 45 15.3**	**+0.3**
comp=Z,26nm,1.0s								
MDM	**Murphy Dome**	**86.66**	**25**	*eP*		**P**	**14 45 15.1**	**-1.0**
comp=Z,4.3nm,1.0s								
WRH	**Wood River Hil**	**86.69**	**26**	*eP*		**P**	**14 45 15.3**	**-0.9**
comp=Z,6.1nm,0.9s								
COLA	**College**	**86.81**	**25**	*i P*		**P**	**14 45 17.8**	**+1.1**
COLA					pmax	pmax		
comp=Z,9.0nm,1.8s								
CCB	**Clear Creek Bu**	**86.82**	**25**	*eP*		**P**	**14 45 15.7**	**-1.1**
comp=Z,8.3nm,1.0s								
SCM	**Sheep Creek Mo**	**86.89**	**28**	*eP*		**P**	**14 45 18.6**	**+1.2**
SCM					pmax	pmax		
comp=Z,19nm,1.0s								
SCM	**Sheep Creek Mo**	**86.89**	**28**	*eP*		**P**	**14 45 18.6**	**+1.2**
comp=Z,19nm,1.0s								
VSR	**Storozhevoye**	**87.09**	**321**	*eP*		**P**	**14 45 16.9**	**-1.5**
VSR					pmax	pmax		
comp=Z,20nm,1.1s								
KLMR	**Klimovskoe**	**87.16**	**331**	*eP*		**P**	**14 45 15.0**	**-3.5**
KLMR					pmax	pmax		
comp=Z,28nm,1.0s								
HDA	**Harding Lake**	**87.18**	**26**	*eP*		**P**	**14 45 18.9**	**+0.3**
comp=Z,6.8nm,1.0s								
IL1	**Eielson Array**	**87.22**	**25**	*eP*		**P**	**14 45 17.2**	**-1.6**
ILAR	**Eielson Array**	**87.22**	**25**	P		**P**	**14 45 17.7**	**-1.0**
comp=Z,2.2nm,0.8s,baz=249,slow=4.2,SNR=15								
ILAR					PP	**PP**	**14 48 47.4**	**+4.5**
comp=Z,1.2nm,1.2s,baz=260,slow=6.3,SNR=4.3								
ILB	**Eielson Array**	**87.22**	**25**	*eP*		**P**	**14 45 17.8**	**-1.0**
LPSR	**Galich'ya Gora**	**87.27**	**322**	*eP*		**P**	**14 45 19.2**	**0.0**
LPSR					pmax	pmax		
comp=Z,70nm,1.2s								
KLU	**Klutina**	**87.55**	**29**	*eP*		**P**	**14 45 22.7**	**+2.1**
DIV	**Divide**	**87.62**	**29**	*eP*		**P**	**14 45 22.8**	**+2.0**
PAX	**Paxson**	**87.79**	**27**	*eP*		**P**	**14 45 21.2**	**-0.5**
PAX					pmax	pmax		
comp=Z,12nm,1.2s								
PAX	**Paxson**	**87.79**	**27**	*eP*		**P**	**14 45 21.1**	**-0.5**
comp=Z,12nm,1.2s								
TMCR	**Tamitsa**	**87.93**	**334**	*eP*		**P**	**14 45 21.6**	**-0.5**
TMCR					pmax	pmax		
comp=Z,45nm,1.1s								
FYU	**Fort Yukon**	**87.95**	**24**	*eP*		**P**	**14 45 23.1**	**+0.9**
comp=Z,18nm,1.2s								
MOS	**Moscow**	**88.06**	**326**	*eP*		**P**	**14 45 20.0**	**-3.0**
MOS					pmax	pmax		
comp=Z,51nm,0.8s								
ANN	**Anapa**	**88.21**	**315**	*eP*		**P**	**14 45 21.7**	**-2.2**
ANN				*e*			14 55 59.4	
ANN					pmax	pmax		
comp=Z,67nm,0.8s								
MENT	**Mentasta**	**88.59**	**27**	*eP*		**P**	**14 45 26.1**	**+0.7**
comp=Z,7.7nm,1.0s								
OBN	**Obninsk**	**88.67**	**325**	LR		LR	15 29 12.4	
comp=Z,158nm,19.2s,baz=86,slow=38								
OBN	**Obninsk**	**88.67**	**325**	*i P*		**P**	**14 45 24.3**	**-1.5**
OBN				*i*			14 45 34.3	
OBN					pmax	pmax		
comp=Z,53nm,1.2s								
OBN					MLR	MLR		
comp=Z,291nm,23.0s								
KMBO	**Kilima Mbogo**	**89.19**	**269**	*eP*		**P**	**14 45 30.9**	**+1.4**
KMBO	**Kilima Mbogo**	**89.19**	**269**	*eP*		**P**	**14 45 30.9**	**+1.4**
EGAK	**Eagle**	**89.67**	**25**	*eP*		**P**	**14 45 30.4**	**0.0**
comp=Z,4.1nm,0.9s								
MMAI	**Mount Meron Ar**	**90.03**	**303**	LR		LR	15 31 59.0	
comp=Z,140nm,19.7s,baz=85,slow=40								
SYO	**Syowa Base**	**90.27**	**201**	*eP*		**P**	**14 45 31.0**	**-2.0**
DAWY	**Dawson**	**90.48**	**26**	*eP*		**P**	**14 45 34.7**	**+0.5**
comp=Z,9.8nm,1.2s								
SIM	**Simferopol'**	**90.56**	**315**	*eP*		**P**	**14 45 34.9**	**-0.1**
SIM				*eS*		**S**	**14 56 33.0**	**+5.5**
SIM					pmax	pmax		
comp=Z,14nm,0.7s								
BR131	**Keskin Array S**	**91.17**	**310**	*eP*		**P**	**14 45 36.4**	**-1.7**
BRTR	**Keskin Array B**	**91.17**	**310**	P		**P**	**14 45 37.5**	**-0.6**
comp=Z,5.8nm,0.8s,baz=116,slow=5.6,SNR=31								
BRTR					PP	**PP**	**14 49 18.1**	**+2.8**
comp=Z,0.3nm,0.5s,baz=93,slow=2.7,SNR=2.5								
BRTR					LR	LR	15 34 54.4	
comp=Z,54nm,18.1s,baz=64,slow=41								
QSPA	**South Pole Qui**	**91.44**	**180**	*eP*		**P**	**14 45 39.6**	**+0.9**
CSS	**Mathiatis**	**91.67**	**305**	*eP*		**P**	**14 45 39.7**	**-0.6**
comp=Z,9.9nm,1.0s								
INK	**Inuvik**	**92.32**	**21**	P		**P**	**14 45 42.5**	**-0.1**
comp=Z,6.9nm,1.0s,baz=273,slow=7.4,SNR=16								
INK	**Inuvik**	**92.32**	**21**	*eP*		**P**	**14 45 42.3**	**-0.3**
INK	**Inuvik**	**92.32**	**21**	*eP*		**P**	**14 45 42.3**	**-0.3**
ARCES	**ARCESS Array B**	**92.39**	**340**	P		**P**	**14 45 42.4**	**-0.5**
comp=Z,15nm,0.8s,baz=78,slow=6.3,SNR=15								
AKASG	**Malin Array Be**	**93.39**	**321**	P		**P**	**14 45 46.1**	**-1.8**
comp=Z,1.9nm,0.6s,baz=73,slow=4.6,SNR=6.3								
AKASG					LR	LR	15 31 07.8	
comp=Z,120nm,19.0s,baz=85,slow=38								
KIEV	**Kiev**	**93.40**	**321**	*eP*		**P**	**14 45 46.9**	**-1.0**
KIEV					pmax	pmax		
comp=Z,3.0nm,0.9s								
FIA1	**FINESS Array S**	**93.61**	**332**	*eP*		**P**	**14 45 46.7**	**-1.9**
FINES	**FINESS Array B**	**93.61**	**332**	P		**P**	**14 45 47.6**	**-1.0**
comp=Z,4.2nm,0.7s,baz=67,slow=5.0,SNR=9.8								
FINES					LR	LR	15 32 09.3	
comp=Z,280nm,18.6s,baz=81,slow=38								
VSU	**Vasula**	**93.78**	**329**	*eP*		**P**	**14 45 49.1**	**-0.4**
VSU					pmax	pmax		
comp=Z,19nm,0.9s								
MLR	**Muntele Rosu**	**96.25**	**316**	*eP*		**P**	**14 45 59.8**	**-1.5**
MLR					pmax	pmax		
comp=Z,11nm,1.0s								
MLR	**Muntele Rosu**	**96.25**	**316**	*eP*		**P**	**14 45 59.8**	**-1.5**
comp=Z,11nm,1.0s								
BUR08	**Bucovina Ar. S**	**96.43**	**318**	*eP*		**P**	**14 46 01.1**	**-0.9**
MATP	**Matopo**	**97.94**	**250**	P		Pdif	14 46 10.6	+1.1
comp=Z,1.2nm,0.6s,baz=293,slow=2.3,SNR=3.2								
KOLS	**Kolonicke sedl**	**98.11**	**320**	*eP*		**P**	**14 46 09.2**	**-0.3**
KOLS					pmax	pmax		
comp=Z,9.0nm,1.4s								
KOLS	**Kolonicke sedl**	**98.11**	**320**	*eP*		**P**	**14 46 09.2**	**-0.3**
UZH	**Uzhgorod**	**98.16**	**319**	*i iP*		Pdif	14 46 09.9	+0.2
UZH				*eS*		**S**	**14 57 31.5**	**-2.5**
UZH					MLR	MLR		
comp=N,1μm,20.0s								
UZH					MLR	MLR		
comp=E,450nm,20.0s								
UZH					MLR	MLR		
comp=Z,2μm,20.0s								
LSZ	**Lusaka**	**98.33**	**255**	P		**P**	**14 46 11.0**	**-0.3**
comp=Z,1.2nm,0.2s,baz=94,slow=8.7,SNR=2.1								
LSZ	**Lusaka**	**98.33**	**255**	P		**P**	**14 46 11.0**	**-0.3**
CRVS	**Cervenica-Dubn**	**98.64**	**320**	*eP*		**P**	**14 46 11.7**	**-0.2**
CRVS	**Cervenica-Dubn**	**98.64**	**320**	*eP*		**P**	**14 46 11.7**	**-0.2**
KECS	**Kecovo**	**99.37**	**320**	*eP*		**Pdif**	**14 46 15.5**	**+0.4**
KECS					pmax	pmax		
comp=Z,3.0nm,0.8s								
KECS	**Kecovo**	**99.37**	**320**	*eP*		**Pdif**	**14 46 15.5**	**+0.4**
HFS	**Hagfors**	**99.81**	**332**	LR		LR	15 34 56.4	
comp=Z,372nm,21.4s,baz=72,slow=38								
RES	**Resolute Bay**	**100.03**	**10**	P		**Pdif**	**14 46 16.7**	**-0.7**
comp=Z,1.6nm,0.7s,baz=287,slow=5.7,SNR=9.6								
RES					PP	**PP**	**14 50 23.4**	**+0.8**
comp=Z,1.8nm,1.0s,baz=285,slow=4.2,SNR=5.0								
NB2	**NORSAR Subarra**	**100.61**	**333**	P		**Pdif**	**14 46 18.8**	**-1.6**
comp=Z,3.2nm,0.8s,baz=70,slow=4.6								
NOA	**NORSAR Array B**	**100.61**	**333**	P		**Pdif**	**14 46 18.9**	**-1.4**
comp=Z,2.8nm,0.9s,baz=69,slow=4.6,SNR=8.7								
YKA	**Yellowknife Ar**	**101.62**	**24**	P		**Pdif**	**14 46 25.2**	**+0.5**
comp=Z,1.1nm,0.9s,baz=298,slow=4.9,SNR=10								
YKA					PKiKP	**PKiKP**	**14 50 49.4**	**+1.2**
comp=Z,0.4nm,0.7s,baz=302,slow=1.7,SNR=6.2								
BRG	**Berggiesshubel**	**102.80**	**323**	*e*PKP		**Pdif**	**14 46 30.4**	**+0.1**
comp=Z,5.6nm,1.0s								
BRG	**Berggiesshubel**	**102.80**	**323**	*eP*		**Pdif**	**14 46 30.4**	**+0.1**
BRG					pmax	pmax		
comp=Z,10.0nm,1.0s								
GERES	**GERESS Array B**	**103.60**	**321**	Pdiff		**Pdif**	**14 46 34.4**	**+0.4**
comp=Z,0.2nm,0.3s,baz=86,slow=1.9,SNR=3.5								
PDAR	**Pinedale Array**	**113.21**	**42**	PKiKP		**PKiKP**	**14 51 12.9**	**+2.2**
comp=Z,0.4nm,0.8s,baz=104,slow=4.7,SNR=3.4								
PDAR					PKKPab	**PKKPab**	**15 02 05.5**	**+0.8**
comp=Z,1.2nm,0.9s,baz=107,slow=5.0,SNR=6.9								
I25A	**Rochford**	**116.35**	**38**	P		**PKPdf**	**14 51 16.2**	**-0.5**
baz=301								
G27A	**Dupree**	**116.72**	**36**	P		**PKPdf**	**14 51 17.3**	**+0.2**
baz=303								
ULM	**Lac du Bonnet**	**117.03**	**29**	PKP		**PKPdf**	**14 51 16.6**	**-0.9**
comp=Z,2.1nm,0.7s,baz=357,slow=6.0,SNR=3.8								
H27A	**Howes**	**117.03**	**37**	P		**PKPdf**	**14 51 17.4**	**-0.4**
baz=303								
C31A	**Landman Farms,**	**117.66**	**32**	P		**PKPdf**	**14 51 18.7**	**-0.1**
baz=308								
ECSD	**EROS Data Cent**	**120.77**	**35**	P		**PKPdf**	**14 51 24.5**	**-0.4**
baz=308								
ECSD	**EROS Data Cent**	**120.77**	**35**	*e*PKPdf		**PKPdf**	**14 51 24.1**	**-0.8**
MNTX	**Cornudas Mount**	**120.88**	**51**	P		**PKPdf**	**14 51 25.9**	**+0.4**
baz=294								
F36A	**Milaca**	**121.11**	**32**	P		**PKPdf**	**14 51 25.0**	**-0.6**
baz=312								
TX31	**Lajitas Ar. Si**	**123.18**	**53**	*e*PKPdf		**PKPdf**	**14 51 29.8**	**-0.3**
TXAR	**Lajitas Array**	**123.18**	**53**	PKP		**PKPdf**	**14 51 30.7**	**+0.6**
comp=Z,0.7nm,0.6s,baz=226,slow=0.8,SNR=9.1								
TOA0	**Torodi Ar. Sit**	**123.27**	**287**	*e*PKPdf		**PKPdf**	**14 51 29.8**	**-0.7**
TORD	**Torodi Ar. Bea**	**123.27**	**287**	PKP		**PKPdf**	**14 51 30.5**	**0.0**
comp=Z,4.2nm,0.9s,baz=86,slow=1.7,SNR=14								
TORD					PKKPbc	**PKKPab**	**15 01 21.1**	**+0.5**
comp=Z,1.4nm,0.8s,baz=273,slow=3.3,SNR=6.5								
S37A	**Fort Scott**	**125.43**	**40**	P		**PKPdf**	**14 51 34.1**	**+0.1**
baz=306								
USHA	**Ushuaia**	**125.49**	**170**	PKP		**PKPdf**	**14 51 35.0**	**+1.4**
comp=Z,51nm,0.9s,baz=46,slow=15,SNR=2.8								
JCT	**Junction City**	**125.72**	**50**	P		**PKPdf**	**14 51 35.7**	**+0.8**
baz=297								
JCT	**Junction City**	**125.72**	**50**	*e*PKIKP		**PKPdf**	**14 51 36.2**	**+1.3**
JCT	**Junction City**	**125.72**	**50**	*e*PKPdf		**PKPdf**	**14 51 36.2**	**+1.3**
R38A	**Fenwick Farm,**	**125.76**	**39**	P		**PKPdf**	**14 51 34.4**	**-0.2**
baz=307								
Q39A	**Willow Grove F**	**125.81**	**38**	P		**PKPdf**	**14 51 35.1**	**+0.3**
baz=309								
433A	**Art**	**126.14**	**49**	P		**PKPdf**	**14 51 35.7**	**0.0**
baz=298								
R39A	**Chumby, Stover**	**126.22**	**38**	P		**PKPdf**	**14 51 35.1**	**-0.5**
baz=308								
S39A	**Bolivar**	**126.42**	**39**	P		**PKPdf**	**14 51 36.1**	**+0.1**
baz=308								
R40A	**Maddies Statio**	**126.71**	**38**	P		**PKPdf**	**14 51 35.9**	**-0.6**
baz=309								
S40A	**Lebanon**	**127.00**	**39**	P		**PKPdf**	**14 51 36.8**	**-0.3**
baz=308								
T40A	**Mansfield**	**127.26**	**39**	P		**PKPdf**	**14 51 37.7**	**+0.1**
baz=308								
U40A	**Yellville**	**127.53**	**40**	P		**PKPdf**	**14 51 38.3**	**+0.1**
baz=307								
X39A	**Fountain Ranch**	**127.78**	**43**	P		**PKPdf**	**14 51 38.7**	**+0.1**
baz=305								
V40A	**Witts Springs**	**127.88**	**41**	P		**PKPdf**	**14 51 39.0**	**+0.2**
baz=307								
DBIC	**Dimbokro**	**130.69**	**280**	PKP		**PKPdf**	**14 51 45.8**	**+1.1**
comp=Z,4.7nm,1.0s,baz=33,slow=7.1,SNR=3.4								
TKL	**Tuckaleechee C**	**133.50**	**34**	*e*PKIKP		**PKPdf**	**14 51 50.1**	**+0.6**
TKL	**Tuckaleechee C**	**133.50**	**34**	*e*PKPdf		**PKPdf**	**14 51 50.1**	**+0.6**
PLCA	**Paso Flores**	**138.06**	**161**	PKP		**PKPdf**	**14 52 01.1**	**+3.2**
comp=Z,3.3nm,0.7s,baz=239,slow=6.1,SNR=3.9								
ROC1	**El Roble**	**144.69**	**154**	*e*PKPdf		PKPbc	14 52 09.3	+0.2
JTS	**JuntasAbangare**	**146.65**	**69**	*e*PKP2		**PKPdf**	**14 52 14.5**	**+0.7**
JTS	**JuntasAbangare**	**146.65**	**69**	*e*PKPdf		**PKPdf**	**14 52 14.5**	**+0.7**
LCO	**Las Campanas**	**148.17**	**151**	*e*PKPbc		**PKPbc**	**14 52 19.4**	**-0.1**
LVC	**Limon Verde**	**154.29**	**146**	PKP		**PKPdf**	**14 52 24.8**	**-1.1**
comp=Z,16nm,1.0s,baz=263,slow=4.3,SNR=3.0								
LVC					PKPbc	**PKiKP**	**14 52 36.4**	**+2.3**
comp=Z,7.3nm,0.5s,baz=292,slow=6.4,SNR=4.2								
LVC					PKPab	**PKPab**	**14 52 49.5**	**+1.5**
comp=Z,27nm,0.8s,baz=248,slow=6.5,SNR=5.6								
CPUP	**Villa Florida**	**155.07**	**172**	PKP		**PKPdf**	**14 52 27.7**	**+1.3**
comp=Z,2.2nm,1.0s,baz=136,slow=7.2,SNR=3.3								
CPUP					PKPab	**PKPab**	**14 52 51.4**	**+0.7**
comp=Z,2.0nm,0.6s,baz=218,slow=5.9,SNR=3.7								
ROSC	**El Rosal**	**158.34**	**73**	PKP		**PKPdf**	**14 52 32.7**	**+1.2**
comp=Z,4.4nm,0.3s,baz=229,slow=19,SNR=2.9								
ROSC					PKPab	**PKPab**	**14 53 07.2**	**+1.3**
comp=Z,8.4nm,0.6s,baz=24,slow=13,SNR=5.3								
LPAZ	**La Paz**	**159.50**	**136**	PKP		**PKPdf**	**14 52 34.2**	**+1.2**
comp=Z,2.8nm,0.9s,baz=287,slow=3.6,SNR=7.1								
SIV	**San Ignacio**	**163.84**	**153**	PKP		**PKPdf**	**14 52 37.8**	**+1.1**
comp=Z,2.4nm,0.9s,baz=109,slow=1.8,SNR=2.9								
SIV					PKPab	**PKPab**	**14 53 28.7**	**-0.4**
comp=Z,4.1nm,1.0s,baz=239,slow=1.2,SNR=3.6								
SAML	**Samuel**	**167.93**	**128**	*e*PKPdf		**PKPdf**	**14 52 40.0**	**-0.1**

MEX 10 14:34:33.1±1.3, 30.32N×105.03W, h13km±154km, MD3.9, Texas-Mexico border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CGIG		**2.54**	**272**	*eP*	Pn	14 35 12.4	-1.8
CGIG				*eS*	Sn	14 35 40.3	-4.8
319A	**Douglas**	**3.80**	**287**	*eP*	Pn	14 35 27.6	-3.8
319A				*eS*	Sn	14 36 13.4	-2.6

*IDC **10** 14:35:26.9±1.8, 38.67N×142.79E, h0km, mb4.0/2, mb1 3.9/8, mb1mx3.6/49, mbtmp3.9/8, ML3.4/6, Error ellipse: s-maj=39.4km s-min=22.6km az=78.0*
*NEIC **10** 14:35:32.1±0.6, 38.68N×142.65E, h35km, mb4.1/1, Error ellipse: s-maj=13.3km s-min=7.1km az=97.0*
NEIC Recorded [1 JMA] in Iwate and Miyagi.
*JMA **10** 14:35:33.5±0.1, 38.88N×142.08E, h48km±1km, M3.7*
JMA Felt I J1.

ISC 10 14:35:28.5±2.4, 38.77N±0.04×142.38E±0.07, h5km±15km, n30, σ2.9 16/34, mb4.0/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.63**	**299**	P	**Pn**	**14 35 43.4**	**-0.7**
OFUJ				S	**Sg**	**14 35 50.2**	**+1.3**
JIO	**Ouri**	**0.87**	**249**	P	**Pn**	**14 35 47.2**	**-0.1**
JIO				S	**Sg**	**14 35 55.1**	**-1.3**
JMK	**Ichinoseki**	**0.92**	**281**	P	**Pb**	**14 35 46.9**	**0.0**
JMK				S	**Sg**	**14 35 55.3**	**-2.8**
JOM	**Ohasama**	**1.10**	**310**	P	**Pb**	**14 35 49.3**	**-0.6**
JOM				S	**Sb**	**14 36 00.8**	**-3.7**
JOU	**Okura**	**1.41**	**254**	P	**Pn**	**14 35 54.3**	**-0.4**
JRG	**Rokugo**	**1.49**	**295**	P	**Pn**	**14 35 54.7**	**-1.2**
JMM	**Marumori**	**1.54**	**234**	P	**Pb**	**14 35 56.8**	**-0.7**
JMM				S	**Sn**	**14 36 14.2**	**-2.7**
JYK	**Kaneyama**	**1.58**	**276**	P	**Pn**	**14 35 55.9**	**-1.3**
ERM	**Erimo**	**3.29**	**10**	*e*Pn	**Pn**	**14 36 22.6**	**+1.9**
MJAR	**Matsushiro Arr**	**3.99**	**237**	Pn	**Pn**	**14 36 32.8**	**+2.6**
4.4nm,0.3s,baz=40,slow=11,SNR=40							
MJAR				Sn	**Sn**	**14 37 19.7**	**+2.4**
1.4nm,0.3s,baz=76,slow=12,SNR=6.9							
MAJO	**Matsushiro**	**3.99**	**237**	*e*Pn	**Pn**	**14 36 32.4**	**+2.1**
MAT	**Matsushiro**	**3.99**	**237**	P	**Pn**	**14 36 32.4**	**+2.1**
MAT				S	**Sn**	**14 37 21.3**	**+3.9**
ASAJ	**Asahikawa**	**5.34**	**2**	Pn	**Pn**	**14 36 50.6**	**+1.8**
1.8nm,0.3s,baz=192,slow=12,SNR=14							
ASAJ				Sn	**Sn**	**14 37 50.1**	**-0.5**
1.6nm,0.3s,baz=116,slow=29,SNR=2.6							
ASAJ	**Asahikawa**	**5.34**	**2**	*e*Pn	**Pn**	**14 36 50.5**	**+1.7**
4.7nm,0.8s							
ASAJ				Sn	**Sn**	**14 37 50.1**	**-0.5**
JHJ2	**Mitsune**	**6.02**	**201**	*e*Pn	**Pn**	**14 37 00.2**	**+2.1**
JHJ	**Hachijo jima 2**	**6.02**	**201**	Pn	**Pn**	**14 36 59.2**	**+1.0**
15nm,0.3s,baz=144,slow=24,SNR=5.7							
JHJ				Sn	**Sn**	**14 38 05.2**	**-2.3**
13nm,0.3s,baz=102,slow=23,SNR=3.7							
USRK	**Ussuriysk Ar.**	**9.49**	**308**	Pn	**Pn**	**14 37 48.2**	**+2.5**
0.4nm,0.3s,baz=120,slow=14,SNR=14							
KSRS	**Korea Array**	**11.47**	**268**	Pn	**Pn**	**14 38 16.2**	**+3.5**
0.2nm,0.3s,baz=76,slow=14,SNR=7.0							
KSAR	**Wonju Array Be**	**11.50**	**268**	Pn	**Pn**	**14 38 16.2**	**+3.0**
CBIJ	**Chichi jima**	**11.65**	**181**	Pn	**Pn**	**14 38 13.6**	**-1.7**
KLR	**Kul'dur**	**12.94**	**327**	Pn	**Pn**	**14 38 35.7**	**+2.9**
0.1nm,0.3s,baz=266,slow=20,SNR=2.2							
H11N2	**WAKE ISLAND Hy**	**28.45**	**125**	T	T	15 11 51.3	
baz=318,slow=75,SNR=256							
H11N1	**WAKE ISLAND Hy**	**28.46**	**125**	T	T	15 11 52.0	
baz=318,slow=75,SNR=343							
H11N3	**WAKE ISLAND Hy**	**28.46**	**125**	T	T	15 11 53.1	
baz=318,slow=75,SNR=460							
H11S1	**WAKE ISLAND Hy**	**29.23**	**127**	T	T	15 12 49.6	
baz

IDC 10 14:52:51.3±1.5, 3°70N×125°16E, h0km, mb3.5/5, mb1 3.7/5, mb1mx3.5/41, mbtmp3.6/5, Error ellipse: s-maj=128.6km s-min=19.1km az=69.0, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**21.67**	**179**	P	P	14 57 44.6	+0.9
	1.7nm,0.8s,baz=21,slow=8.6,SNR=6.1						
WRA	**Warramunga Arr**	**25.16**	**159**	P	P	14 58 18.8	+0.2
	0.3nm,0.4s,baz=337,slow=9.9,SNR=11						
ASAR	**Alice Springs**	**28.50**	**163**	P	P	14 58 47.8	-0.9
	0.1nm,0.4s,baz=337,slow=7.0,SNR=2.9						
MKAR	**Makanchi Array**	**56.70**	**326**	P	P	15 02 36.4	-0.3
	0.5nm,0.4s,baz=117,slow=7.7,SNR=8.6						
ZALV	**Zalesovo Beam**	**59.91**	**334**	P	P	15 02 59.3	+0.3
	0.3nm,0.4s,baz=141,slow=16,SNR=2.2						

*IDC **10** 14:53:28.8±0.5, 20°22S×168°23E, h0km, mb4.6/22, mb1 4.7/24, mb1mx4.6/42, mbtmp4.6/24, ML3.8/2, MS4.1/6, Ms1 4.0/6, ms1mx3.6/42, Error ellipse: s-maj=16.9km s-min=13.1km az=154.0*

*NEIC **10** 14:53:30.0±0.2, 20°17S×168°25E, h10km, mb5.1/54, Error ellipse: s-maj=6.7km s-min=4.3km az=156.0*

*ISCJB **10** 14:53:31.8±0.2, 20°29S±0°05×168°21E±0°04, h32km, mb5.0/76, MS4.1/6, Error ellipse: s-maj=7.6km s-min=4.7km az=150.4*

*BJI **10** 14:53:33.3, 20°17S×168°67E, h53km, mb5.0/22, mB5.2/15, Ms5.4/6, Ms7 5.0/7*

ISC 10 14:53:33.3±0.4, 20°29S±0°07×168°22E±0°07, h32km, n175, σ1°95/176, mb5.0/75, MS4.0/6, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.42**	**223**	Pn	**Pn**	**14 54 09.7**	**-1.1**
	30nm,0.3s,baz=52,slow=17,SNR=27						
DZM				Sn	**Sn**	**14 54 37.6**	**-1.8**
	55nm,0.3s,baz=265,slow=22,SNR=5.8						
DZM				LR	LR	14 55 08.7	
	comp=Z,5μm,18.1s,baz=5,0,slow=40						
MSVF	**Nonsavu**	**9.64**	**76**	*e*Pn	**Pn**	**14 55 49.8**	**-0.1**
EIDS	**Eidsvold**	**16.58**	**249**	*e*Pn	**P**	**14 57 25.1**	**-0.6**
	24nm,1.2s						
URZ	**Urewera**	**19.49**	**159**	P	**Pn**	**14 57 59.2**	**+0.2**
	0.2nm,0.3s,baz=349,slow=6.2,SNR=4.2						
BKZ	**Black Stump Fm**	**20.11**	**161**	*e*P	Pn	14 58 06.5	0.0
	31nm,1.3s						
CTA	**Charters Tower**	**20.62**	**267**	P	Pn	14 58 11.6	-0.9
	19nm,0.7s,baz=94,slow=12,SNR=18						
CTAO	**Charters Tower**	**20.62**	**267**	*e*P	**P**	**14 58 11.2**	**+1.1**
	221nm,1.0s						
CAN	**Canberra**	**22.59**	**224**	*e*P	**P**	**14 58 32.4**	**+1.2**
	84nm,1.5s						
PMG	**Port Moresby**	**23.02**	**295**	P	**P**	**14 58 35.6**	**-0.2**
	8.7nm,0.9s,baz=71,slow=4.1,SNR=3.8						
PMG	**Port Moresby**	**23.02**	**295**	*e*P	**P**	**14 58 35.1**	**-0.7**
	20nm,0.9s						
COEN	**Coen**	**24.73**	**281**	*e*P	**P**	**14 58 52.9**	**+0.9**
	15nm,1.0s						
STKA	**Stephens Creek**	**26.48**	**239**	P	**P**	**14 59 09.2**	**+1.6**
	6.7nm,0.6s,baz=69,slow=9.9,SNR=25						
STKA				LR	LR	15 09 58.7	
	comp=Z,431nm,19.0s,baz=5.2,slow=37						
STKA	**Stephens Creek**	**26.48**	**239**	*e*P	**P**	**14 59 09.0**	**+1.3**
	13nm,1.6s						
MANU	**Manus Island**	**27.27**	**309**	*e*P	**P**	**14 59 12.9**	**-2.0**
	70nm,1.3s						
WRA	**Warramunga Arr**	**31.79**	**265**	P	**P**	**14 59 53.7**	**-1.3**
	1.8nm,0.5s,baz=92,slow=8.5,SNR=55						
WRA				LR	LR	15 13 15.3	
	comp=Z,341nm,19.2s,baz=145,slow=37						
AS01	**Alice Springs**	**31.91**	**258**	*e*P	**P**	**14 59 55.5**	**-0.6**
AS01				*e*PcP	**PcP**	**15 02 45.6**	**-0.6**
AS31	**Alice Springs**	**31.95**	**258**	*e*P	**P**	**14 59 55.8**	**-0.7**
	3.7nm,0.8s						
ASAR	**Alice Springs**	**31.95**	**258**	P	**P**	**14 59 56.0**	**-0.5**
	7.9nm,0.6s,baz=87,slow=8.9,SNR=96						
ASAR				LR	LR	15 13 12.9	
	comp=Z,429nm,18.4s,baz=98,slow=37						
PPT	**Papeete**	**39.94**	**93**	P	**P**	**15 01 04.5**	**-0.4**
	50nm,1.0s,baz=233,slow=20,SNR=3.0						
FITZ	**Fitzroy Crossi**	**40.19**	**266**	P	**P**	**15 01 07.0**	**0.0**
	8.4nm,0.7s,baz=80,slow=8.2,SNR=12						
FITZ				LR	LR	15 16 57.5	
	comp=Z,218nm,18.9s,baz=82,slow=35						
FITZ	**Fitzroy Crossi**	**40.19**	**266**	*e*P	**P**	**15 01 07.0**	**0.0**
	14nm,0.9s						
GUMO	**Guam**	**40.76**	**324**	LR	LR	15 18 22.7	
	comp=Z,56nm,18.4s,baz=204,slow=37						
KAPI	**Kappang**	**49.46**	**281**	P	**P**	**15 02 21.7**	**+0.9**
	4.6nm,0.4s,baz=133,slow=3.1,SNR=7.7						
KAPI	**Kappang**	**49.46**	**281**	*e*P	**P**	**15 02 21.2**	**+0.3**
VNDA	**Vanda**	**57.35**	**182**	P	**P**	**15 03 18.4**	**+0.6**
	2.2nm,1.0s,baz=4.4,slow=6.1,SNR=6.6						
SBA	**Scott Base**	**57.61**	**180**	*e*P	**P**	**15 03 20.7**	**+1.0**
	25nm,1.4s						
MJAR	**Matsushiro Arr**	**63.24**	**333**	P	**P**	**15 03 57.9**	**-0.7**
	4.4nm,0.9s,baz=167,slow=6.6,SNR=8.5						
MAT	**Matsushiro**	**63.24**	**333**	P	**P**	**15 03 58.0**	**-0.7**
KSRS	**Korea Array**	**68.84**	**327**	P	**P**	**15 04 34.7**	**+0.1**
	1.7nm,1.0s,baz=139,slow=5.4,SNR=5.3						
KSAR	**Wonju Array Be**	**68.85**	**326**	P	**P**	**15 04 34.7**	**0.0**
KS01	**Wonju Array Si**	**68.87**	**326**	*e*P	**P**	**15 04 33.8**	**-1.0**
QSPA	**South Pole Qui**	**69.77**	**180**	*e*P	**P**	**15 04 40.9**	**+0.8**
NJ2	**Nanjing**	**70.31**	**317**	*e*P	**P**	**15 04 46.5**	**+2.7**
NJ2				pmax	pmax		
	comp=Z,17nm,0.5s						
USRK	**Ussuriysk Ar.**	**72.24**	**333**	P	**P**	**15 04 55.9**	**+0.8**
	11nm,0.9s,baz=160,slow=4.6,SNR=15						
PETK	**Petropavlovsk-**	**73.66**	**353**	P	**P**	**15 05 04.0**	**+0.6**
	5.3nm,0.8s,baz=136,slow=12,SNR=5.2						
CN2	**Changchun**	**74.86**	**329**	*e*P	**P**	**15 05 11.0**	**+0.4**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.6s						
ENH	**Enshi**	**75.61**	**310**	*e*P	**P**	**15 05 14.7**	**-0.6**
	13nm,1.3s						
GYA	**Guiyang**	**75.64**	**306**	P	**P**	**15 05 17.2**	**+1.5**
GYA				pP	sP	15 05 30.0	+0.6
GYA				PP	**PP**	**15 08 08.4**	**+2.6**
GYA				S	**S**	**15 14 54.8**	**-0.3**
GYA				sS	sS	15 15 15.2	+3.5
GYA				SKS	**SKSac**	**15 15 19.0**	**-4.8**
GYA				SS	**SS**	**15 19 49.6**	**+2.3**
GYA				pmax	pmax		
	comp=Z,30nm,1.0s						
GYA				pmax	pmax		
	comp=Z,140nm,6.9s						
GYA				LR	LR		
	comp=N,590nm,18.9s						
GYA				LR	LR		
	comp=E,530nm,19.0s						
GYA				LR	LR		
	comp=Z,550nm,19.2s						
MAW	**Mawson**	**77.10**	**202**	P	**P**	**15 05 24.3**	**+1.2**
	4.8nm,1.0s,baz=164,slow=4.4,SNR=3.3						
KMI	**Kunming**	**78.02**	**303**	P	**P**	**15 05 30.7**	**+1.4**
KMI				pmax	pmax		
	comp=Z,12nm,1.1s						
KMI				pmax	pmax		
	comp=Z,270nm,11.0s						
CM01	**Chiang Mai Arr**	**78.04**	**295**	*e*P	**P**	**15 05 30.1**	**+0.9**
CMAR	**Chiang Mai Arr**	**78.07**	**295**	P	**P**	**15 05 30.9**	**+1.5**
	4.0nm,0.9s,baz=138,slow=4.2,SNR=12						
CHTO	**Chiang Mai**	**78.22**	**295**	*e*P	**P**	**15 05 30.8**	**+0.6**
	7.9nm,0.9s						
CD2	**Chengdu**	**80.12**	**308**	P	**P**	**15 05 40.5**	**+0.1**
CD2				pmax	pmax		
	comp=Z,13nm,0.6s						
HHC	**Hu-ho-hao-te**	**80.40**	**320**	*e*P	**P**	**15 05 43.3**	**+1.5**
HHC				S	**S**	**15 15 40.3**	**-5.5**
HHC				pmax	pmax		
	comp=Z,37nm,1.3s						
HHC				pmax	pmax		
	comp=Z,240nm,7.9s						
LZH	**Lanzhou**	**82.72**	**313**	*e*P	**P**	**15 05 54.7**	**+0.5**
LZH				pP	sP	15 06 06.1	-2.0
LZH				sP	pP	15 06 10.3	+5.9
LZH				pmax	pmax		
	comp=Z,28nm,1.2s						
RSO	**Redoubt South**	**86.45**	**18**	*e*P	**P**	**15 06 12.0**	**-0.5**
ULN	**Ulaanbaatar**	**87.14**	**324**	*e*P	**P**	**15 06 15.7**	**-0.5**
	8.8nm,1.3s						
GTA	**Gaotai**	**87.16**	**314**	*e*P	P	15 06 24.1	+7.7
GTA				pP	sP	15 06 33.4	+3.1
GTA				sP	pP	15 06 37.7	+11
GTA				pmax	pmax		
	comp=Z,2.0nm,0.9s						
SCZ2	**Santa Cruz Isl**	**87.29**	**52**	P	**P**	**15 06 17.5**	**+0.4**
	baz=243						
PKM	**Mcpherson Peak**	**87.56**	**51**	P	**P**	**15 06 17.6**	**-0.9**
	baz=243						
YAK	**Yakutsk**	**87.59**	**343**	*e*P	**P**	**15 06 17.5**	**-0.2**
	comp=Z,6.7nm,0.6s						
KHMM	**Hose Mountain**	**87.63**	**45**	*e*P	**P**	**15 06 18.8**	**+0.1**
	comp=Z,45nm,1.1s						
SNAA	**Sanae**	**88.07**	**183**	*e*P	**P**	**15 06 18.5**	**-1.8**
	comp=Z,463nm,1.0s						
BILL	**Biiibino**	**88.08**	**359**	*e*P	**P**	**15 06 19.5**	**-0.5**
	comp=Z,13nm,1.1s						
L02D	**Cave Junction,**	**88.34**	**44**	P	**P**	**15 06 22.1**	**+0.3**
	baz=241						
N02D	**Trinity Center**	**88.36**	**45**	P	**P**	**15 06 22.7**	**+0.6**
	baz=241,SNR=10						
M02C	**Callahan**	**88.46**	**45**	P	**P**	**15 06 23.1**	**+0.5**
	baz=241,SNR=10						
ORV	**Oroville**	**88.50**	**47**	*e*P	**P**	**15 06 22.3**	**-0.4**
	comp=Z,13nm,1.0s						
MWC	**Mount Wilson**	**88.57**	**53**	*e*P	**P**	**15 06 22.8**	**-0.5**
	comp=Z,36nm,1.4s						
CMB	**Columbia Colle**	**88.57**	**48**	*e*P	**P**	**15 06 22.1**	**-1.0**
	comp=Z,14nm,1.0s						
AFDM	**Forest Hills D**	**88.58**	**47**	*e*P	**P**	**15 06 22.7**	**-0.4**
	comp=Z,23nm,1.1s						
O03D	**Paynes Creek**	**88.64**	**46**	P	**P**	**15 06 23.0**	**-0.4**
	baz=242						
YBH	**Yreka Blue Hor**	**88.72**	**44**	P	**P**	**15 06 24.6**	**+0.9**
	comp=Z,11nm,1.0s,baz=108,slow=0.3,SNR=15						
YBH	**Yreka Blue Hor**	**88.72**	**44**	*e*P	**P**	**15 06 20.8**	**-3.0**
	comp=Z,15nm,1.0s						
BFSC	**Mount Baldy Ra**	**88.87**	**53**	P	**P**	**15 06 24.3**	**-0.4**
	baz=244						
EDW2	**Edwards Air Fo**	**88.90**	**52**	P	**P**	**15 06 24.6**	**-0.2**
	baz=244						
HUMO	**Hull Mountain**	**88.98**	**44**	*e*P	**P**	**15 06 25.3**	**+0.4**
	comp=Z,19nm,1.0s						
CAST	**Castle Rocks**	**89.03**	**17**	*e*P	**P**	**15 06 22.7**	**-1.9**
	comp=Z,7.9nm,1.3s						
MONP2	**Monument Peak**	**89.24**	**54**	P	**P**	**15 06 25.8**	**-0.8**
	baz=245						
I03D	**Drain, OR**	**89.26**	**42**	P	**P**	**15 06 26.0**	**0.0**
	baz=241						
M04C	**Macdoel**	**89.32**	**45**	P	**P**	**15 06 26.4**	**-0.3**
	baz=242,SNR=5.8						
IKP	**In-Ko-Pah, Jac**	**89.38**	**55**	P	**P**	**15 06 27.0**	**0.0**
	baz=245						
LRMC	**Laurel Mtn Rad**	**89.39**	**52**	P	**P**	**15 06 27.0**	**-0.1**
	baz=244						
WAKR	**Walker**	**89.45**	**48**	*e*P	**P**	**15 06 26.7**	**-0.7**
PFO	**Pinyon Flats O**	**89.51**	**54**	P	**P**	**15 06 28.4**	**+0.7**
	comp=Z,5.6nm,1.0s,baz=296,slow=2.2,SNR=3.6						
PFO	**Pinyon Flats O**	**89.51**	**54**	*e*P	**P**	**15 06 26.8**	**-0.9**
	comp=Z,7.2nm,0.9s						
TPFO	**Pinon Flats**	**89.51**	**54**	P	**P**	**15 06 27.9**	**+0.2**
	baz=245						
SWSC	**Sam W. Stewart**	**89.74**	**55**	P	**P**	**15 06 28.6**	**0.0**
	baz=246						
MPMC	**Manual Prospec**	**89.78**	**51**	P	**P**	**15 06 28.9**	**-0.1**
	baz=245						
DAC	**Darwin (Calif)**	**89.80**	**51**	*e*P	**P**	**15 06 28.8**	**-0.3**
	comp=Z,10nm,0.9s						
I04A	**Tendick Farm,**	**89.90**	**43**	P	**P**	**15 06 28.8**	**-0.3**
	baz=241,SNR=6.4						
RND	**Reindeer**	**89.92**	**18**	*e*P	**P**	**15 06 29.5**	**+0.7**
	comp=Z,8.1nm,1.2s						
GSC	**Goldstone, Bar**	**89.96**	**52**	P	**P**	**15 06 29.8**	**0.0**
	baz=245						
G03D	**McMinnville, O**	**90.05**	**41**	P	**P**	**15 06 30.1**	**+0.4**
	baz=241						
HEC	**Hector,Ludlow**	**90.11**	**53**	P	**P**	**15 06 30.6**	**+0.1**
	baz=245						
NV01	**Mina Array Sit**	**90.21**	**49**	*e*P	**P**	**15 06 30.8**	**-0.2**
NVAR	**Mina Array Bea**	**90.21**	**49**	P	**P**	**15 06 31.3**	**+0.3**
	comp=Z,8.6nm,0.9s,baz=229,slow=7.7,SNR=22						
GRAC	**Grapevine Rang**	**90.27**	**50**	P	**P**	**15 06 31.3**	**+0.3**
	baz=245						
BC3	**Big Chuckawall**	**90.29**	**54**	P	**P**	**15 06 31.8**	**+0.4**
	baz=246						
NV11	**Mina Array Sit**	**90.32**	**49**	*e*P	**P**	**15 06 31.0**	**-0.5**
	comp=Z,18nm,1.0s						
K05A	**Summer Lake**	**90.38**	**44**	*e*P	**P**	**15 06 32.0**	**+0.4**
	comp=Z,29nm,1.1s						
MOD	**Modoc Plateau**	**90.39**	**45**	*e*P	**P**	**15 06 31.4**	**-0.2**
	comp=Z,12nm,0.9s						
FURC	**Furnace Creek,**	**90.41**	**51**	P	**P**	**15 06 32.1**	**+0.5**
	baz=245						
J05D	**Fort Rock, OR**	**90.42**	**44**	P	**P**	**15 06 31.5**	**-0.2**
	baz=242,SNR=6.8						
H04A	**Detroit Lake**	**90.47**	**42**	*e*P	**P**	**15 06 31.2**	**-0.6**
	comp=Z,15nm,1.0s						
E03A	**Lebam**	**90.52**	**40**	*e*P	**P**	**15 06 32.4**	**+0.5**
	comp=Z,67nm,1.2s						
GLA	**Glamis**	**90.53**	**55**	P	**P**	**15 06 32.2**	**-0.1**
	baz=246						
GLA	**Glamis**	**90.53**	**55**	*e*P	**P**	**15 06 31.2**	**-1.2**
	comp=Z,19nm,1.1s						
GMRC	**Granite Mounta**	**90.60**	**53**	P	**P**	**15 06 33.1**	**+0.3**
	baz=246						
SHOC	**Shoshone, Teco**	**90.60**	**52**	P	**P**	**15 06 32.9**	**+0.2**
	baz=245						
IRM	**Iron Mountain**	**90.73**	**54**	P	**P**	**15 06 33.7**	**+0.4**
	baz=246						
NLWA	**Neilton Lookou**	**90.75**	**39**	*e*P	**P**	**15 06 32.9**	**-0.1**
	comp=Z,25nm,1.3s						
I05D	**Terrebonne, OR**	**90.84**	**43**	P	**P**	**15 06 33.8**	**+0.2**
	baz=242						
F04A	**Amboy**	**90.92**	**41**	*e*P	**P**	**15 06 33.3**	**-0.5**
	comp=Z,22nm,1.0s						
Y12C	**Blythe**	**91.04**	**54**	P	**P**	**15 06 35.1**	**+0.5**
	baz=246						
Y12C	**Blythe**	**91.04**	**54**	*e*P	**P**	**15 06 34.0**	**-0.7**
	comp=Z,36nm,1.6s						
TPNV	**Topopah Spring**	**91.06**	**51**	P	**P**	**15 06 35.1**	**+0.2**
	baz=245						
TPNV	**Topopah Spring**	**91.06**	**51**	*e*P	**P**	**15 06 34.8**	**-0.1**
	comp=Z,16nm,1.0s						
ILAR	**Eielson Array**	**91.52**	**18**	P	**P**	**15 06 35.1**	**-1.1**
	comp=Z,1.7nm,0.8s,baz=236,slow=5.3,SNR=13						
IL1	**Eielson Array**	**91.52**	**18**	*e*P	**P**	**15 06 32.5**	**-3.7**
PDMCI	**Parker Dam,Lak**	**91.55**	**54**	P	**P**	**15 06 37.2**	**+0.2**
	baz=246						
SHPR	**Sheep Range**	**91.67**	**52**	*e*P	**P**	**15 06 38.0**	**+0.2**
	comp=Z,13nm,1.3s						
LON	**Longmire**	**91.68**	**40**	*e*P	**P**	**15 06 37.0**	**-0.4**
	comp=Z,8.8nm,1.2s						
WVOR	**Wild Horse Val**	**91.73**	**45**	*e*P	**P**	**15 06 36.5**	**-1.4**
	comp=Z,11nm,1.0s						
D05A	**Enumclaw**	**91.78**	**40**	*e*P	**P**	**15 06 36.6**	**-1.1**
	comp=Z,30nm,1.1s						
W13A	**Hualapai Mount**	**92.06**	**53**	*e*P	**P**	**15 06 39.2**	**-0.5**
	comp=Z,8.1nm,1.1s						
R11A	**Troy Canyon, C**	**92.12**	**50**	P	**P**	**15 06 39.6**	**-0.2**
	baz=246						
R11A	**Troy Canyon, C**	**92.12**	**50**	*e*P	**P**	**15 06 39.1**	**-0.7**
	comp=Z,12nm,1.9s						
B05A	**Bryant**	**92.22**	**39**	P	**P**	**15 06 40.5**	**+0.8**
	baz=242						
G08A	**Pilot Rock**	**92.78**	**42**	*e*P	**P**	**15 06 42.4**	**-0.2**
	comp=Z,5.2nm,0.9s						
LCMT	**Little Creek M**	**93.29**	**52**	*e*P	**P**	**15 06 45.2**	**0.0**
	comp=Z,6.9nm,1.0s						
TUC	**Tucson**	**93.38**	**57**	P	**P**	**15 06 46.0**	**+0.4**
	baz=248						
TUC	**Tucson**	**93.38**	**57**	*e*P	**P**	**15 06 45.6**	**0.0**
	comp=Z,10.0nm,1.1s						
DLBC	**Dease Lake**	**93.42**	**28**	P	**P**	**15 06 45.0**	**-0.1**
	comp=Z,5.3nm,1.0s,baz=209,slow=6.9,SNR=6.8						
PSUT	**Pine Spring**	**93.44**	**50**	*e*P	**P**	**15 06 45.1**	**-0.8**
	comp=Z,7.7nm,1.4s						
KNB	**Kanab**	**93.60**	**52**	*e*P	**P**	**15 06 46.4**	**-0.3**
	comp=Z,17nm,1.5s						
X16A	**Lo Mia Camp, P**	**93.66**	**55**	*e*P	**P**	**15 06 47.3**	**+0.3**
	comp=Z,8.2nm,1.1s						
U15A	**North Rim**	**93.77**	**53**	*e*P	**P**	**15 06 47.9**	**+0.3**
	comp=Z,13nm,1.5s						
MFID	**Camas Ranch**	**94.02**	**45**	*e*P	**P**	**15 06 48.0**	**-0.4**
	comp=Z,4.0nm,1.0s						
WUAZ	**Wupatki**	**94.12**	**54**	P	**P**	**15 06 49.3**	**+0.2**
	baz=248						
MTPU	**Mount Pierson**	**94.46**	**51**	*e*P	**P**	**15 06 51.0**	**+0.1**
	comp=Z,3.4nm,0.9s						
HLID	**Hailey**	**95.02**	**45**	P	**P**	**15 06 53.0**	**0.0**
	baz=247						
HLID	**Hailey**	**95.02**	**45**	*e*P	**P**	**15 06 52.5**	**-0.6**
	comp=Z,4.6nm,1.3s						
NEW	**Newport**	**95.20**	**40**	P	**P**	**15 06 53.8**	**+0.3**
	baz=245						
HVU	**Hansel Valley**	**95.45**	**48**	*e*P	**P**	**15 06 54.6**	**-0.4**
	comp=Z,3.4nm,0.9s						
WMQ	**Urumqi**	**97.24**	**314**	*e*P	Pdif	15 07 04.6	+1.5
BOZ	**Bozeman (W)**	**97.65**	**44**	P	Pdif	15 07 04.8	-0.1
	baz=249						
BW06	**Boulder Array**	**98.03**	**47**	*e*P	**P**	**15 07 05.3**	**-1.5**
PDAR	**Pinedale Array**	**98.03**	**47**	P	**P**	**15 07 06.2**	**-0.5**
	comp=Z,0.4nm,0.6s,baz=241,slow=3.1,SNR=4.2						
TXAR	**Lajitas Array**	**98.11**	**62**	P	Pdif	15 07 08.5	+1.2
	comp=Z,0.3nm,0.7s,baz=230,slow=5.9,SNR=3.7						
PHWY	**Pilot Hill**	**100.45**	**50**	*e*Pdif	**Pdif**	**15 07 17.9**	**+0.2**
MKAR	**Makanchi Array**	**101.81**	**316**	PP	PP	15 11 32.6	-2.0
	comp=Z,0.5nm,0.9s,baz=97,slow=10.0,SNR=3.7						
YKA	**Yellowknife Ar**	**102.04**	**28**	P	**Pdif**	**15 07 25.1**	**+1.3**
	comp=Z,0.7nm,0.8s,baz=255,slow=4.3,SNR=8.7						
LBTB	**Lobatse**	**122.13**	**221**	*e*PKPdf	**PKPdf**	**15 12 25.4**	**-0.1**
ARCES	**ARCESS Array B**	**125.83**	**345**	PKP	**PKPdf**	**15 12 32.2**	**+1.1**
	comp=Z,3.1nm,0.8s,baz=28,slow=2.9,SNR=6.5						
FINES	**FINESS Array B**	**131.19**	**337**	PKP	**PKPdf**	**15 12 42.2**	**+0.7**
	comp=Z,3.3nm,1.1s,baz=350,slow=10,SNR=3.0						
CONA	**Conrad Observa**	**144.53**	**327**	*i* PKPdf	**PKPdf**	**15 13 05.8**	**-0.8**
	comp=Z,7.6nm,1.1s						
KHC	**Kasperske Hory**	**144.80**	**331**	*e*PKP	**PKPab**	**15 13 04.0**	**-1.9**
GERES	**GERESS Array B**	**144.95**	**330**	PKP	**PKPab**	**15 13 06.3**	**-0.2**
	comp=Z,1.5nm,0.8s,baz=29,slow=3.0,SNR=11						
GEA0	**GERESS Array S**	**144.95**	**330**	*e*PKPdf	**PKPab**	**15 13 06.0**	**-0.4**
ARSA	**Arzberg**	**145.15**	**327**	*i* PKPdf	**PKPdf**	**15 13 08.0**	**+0.4**
	comp=Z,10.0nm,1.2s						
MOA	**Molln**	**145.38**	**329**	*i* PKPdf	**PKPab**	**15 13 08.7**	**+0.7**
	comp=Z,15nm,1.0s						
SOKA	**Soboth**	**145.78**	**326**	*i* PKPab	**PKPab**	**15 13 09.5**	**-0.1**
	comp=Z,9.9nm,1.1s						
OBKA	**Obir**	**146.14**	**327**	*i* pPKPdf	**PKPab**	**15 13 11.0**	**0.0**
	comp=Z,5.2nm,0.9s						
KBA	**Koelnbreisper**	**146.36**	**328**	*i* PKPab	**PKPab**	**15 13 11.4**	**-0.5**
	comp=Z,3.0nm,0.7s						
MYKA	**Terra Mystica**	**146.52**	**328**	*i* pPKPbc	**PKPab**	**15 13 13.7**	**+1.3**
	comp=Z,4.3nm,1.0s						
CWF	**Charnwood Fore**	**146.61**	**348**	*e*PKPdf	**PKPbc**	**15 13 11.2**	**-0.1**
MEM	**Membach**	**146.64**	**339**	PKP	**PKPab**	**15 13 13.7**	**+1.0**
ABTA	**Abfaltersbach**	**147.00**	**329**	*i* PKPab	**PKPbc**	**15 13 12.9**	**+0.1**
	comp=Z,10.0nm,1.3s						
BCLA	**Clavier**	**147.03**	**340**	PKP	**PKPab**	**15 13 13.3**	**-0.9**
WTTA	**Wattenberg**	**147.05**	**330**	*i* pPKPab	**PKPab**	**15 13 16.9**	**+2.3**
	comp=Z,5.2nm,0.9s						
MOTA	**Moosalm**	**147.23**	**331**	*i* pPKPdf	**PKPbc**	**15 13 13.4**	**-0.2**
	comp=Z,3.8nm,0.7s						
RETA	**Reutte**	**147.28**	**331**	*i* PKPbc	**PKPdf**	**15 13 11.5**	**+0.3**
	comp=Z,6.2nm,1.4s						
WLF	**Walferdange**	**147.39**	**338**	PKP	**PKPab**	**15 13 14.6**	**-1.0**
WLF				APKP	**pPKPdf**	**15 13 23.5**	**+1.7**
WLF	**Walferdange**	**147.39**	**338**	*e*PKPbc	**PKPab**	**15 13 14.6**	**-1.0**
DOU	**Dourbes**	**147.54**	**340**	PKP	**PKPbc**	**15 13 14.2**	**+0.2**
FETA	**Feichten**	**147.65**	**331**	*i* PKPbc	**PKPbc**	**15 13 13.9**	**-0.8**
	comp=Z,9.3nm,1.0s						
DAVA	**Damuels**	**147.83**	**332**	*i* pPKPdf	**PKPbc**	**15 13 14.6**	**-0.5**
	comp=Z,15nm,1.2s						
FUORN	**Ofenpass-Fuorn**	**148.16**	**331**	*e*PKPbc	**PKPbc**	**15 13 16.7**	**+0.5**
TUE	**Stuetta**	**148.69**	**331**	*e*PKPbc	**PKPbc**	**15 13 17.7**	**+0.2**
SENIN	**Lac Senin/Sane**	**149.66**	**333**	*e*PKPbc	**PKPbc**	**15 13 18.8**	**-1.2**
ESDC	**Sonseca Array**	**159.55**	**343**	PKPab	**PKPab**	**15 14 06.9**	**-0.2**
	comp=Z,0.1nm,0.2s,baz=48,slow=2.2,SNR=4.7						
TOA0	**Torodi Ar. Sit**	**165.27**	**243**	*e*PKPdf	**PKPdf**	**15 13 35.1**	**-0.1**
TORD	**Torodi Ar. Bea**	**165.27**	**243**	PKP	**PKPdf**	**15 13 35.1**	**-0.2**
	comp=Z,1.8nm,0.9s,baz=126,slow=1.7,SNR=7.7						
TORD				PKPab	**PKPab**	**15 14 32.9**	**+0.1**
	comp=Z,1.6nm,1.1s,baz=20,slow=4.7,SNR=3.7						

IDC 10 14:54:58.8±1.9, 17°31S×174°80E, h0km, mb4.1/5, mb1 4.3/5, mb1mx3.8/41, mbtmp4.1/5, ML5.2/1, Error ellipse: s-maj=114.3km s-min=25.9km az=151.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**9.19**	**238**	Pn	Pn	14 57 11.2	-1.5
	22nm,0.3s,baz=288,slow=20,SN

λ178.00000°. NP2:φ₀101.00000°,δ88.00000°,λ1.00000°.
Principal axes: T 2.0950, Plg2.0000°, Azm326.0000°; N 0.1390, Plg88.0000°, Azm173.0000°; P -2.2350, Plg1.0000°, Azm56.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.
NEIC ***10*** *15:05:22.2±0.4, 4°.74S×105°.59W, h10km, mb5.0/97, MS5.2/39 Error ellipse: s-maj=11.2km s-min=6.7km az=52.0*
ISC 10 15:05:22.4±0.5, 4°.73S±0°.09×105°.66W±0°.09, h13km, n277, σ1§14/214, mb4.9/107, MS5.2/66, Central East Pacific Rise

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H06S1	**SOCORRO T** SNR=43	**23.90**	**348**	T	T	15 35 10.5	
H06E1	**SOCORRO T-PHAS** SNR=5.0	**23.93**	**348**	T	T	15 35 16.2	
CMIG	**Matias Romero** 5.5nm,1.0s,baz=205,slow=9.3,SNR=7.4	**24.16**	**26**	P	**P**	**15 10 39.5**	**+1.0**
CMIG	comp=Z,4μm,21.9s,baz=194,slow=31			LR	LR	15 17 55.7	
CCIG	**Comitan** 46nm,1.1s	**24.80**	**32**	*e*P	**P**	**15 10 43.8**	**-0.7**
JTS	**JuntasAbangare** 51nm,1.4s	**25.46**	**54**	P	**P**	**15 10 51.7**	**+1.3**
JTS	comp=Z,9μm,19.0s			LR	LR		
ATAH	**Atahualpa** comp=Z,2μm,19.4s,baz=272,slow=31	**27.22**	**96**	LR	LR	15 19 18.3	
OTAV	**Otavalo**	**27.62**	**80**	P	**P**	**15 11 10.8**	**+0.3**
OTAV	**Otavalo**	**27.62**	**80**	*e*P	**P**	**15 11 09.8**	**-0.7**
LPIG	**La Paz** comp=Z,5μm,20.2s,baz=172,slow=30	**29.02**	**351**	LR	LR	15 19 55.2	
NNA	**Nana** comp=Z,3μm,20.6s,baz=280,slow=30	**29.39**	**106**	LR	LR	15 19 55.6	
TEIG	**Tepich** comp=Z,3μm,20.6s,baz=171,slow=33	**30.12**	**34**	LR	LR	15 21 45.5	
HELC	**Santa Helena**	**31.98**	**70**	*e*P	**P**	**15 11 45.7**	**-3.3**
ROSC	**El Rosal** comp=Z,2μm,21.6s,baz=252,slow=31	**32.71**	**74**	LR	LR	15 22 29.6	
MOTC	**Monteria, Cord**	**32.78**	**66**	*e*P	**P**	**15 11 52.4**	**-3.3**
RKT	**Rikitea** comp=Z,756nm,27.8s	**33.69**	**234**	*e*S	**S**	**15 17 24.3**	**-2.2**
RKT	comp=Z,8μm,27.0s,baz=57			*e*LR	LR	15 20 55.9	
RKT	**Rikitea** comp=Z,2.1nm,0.3s	**33.69**	**234**	*e*T	T	15 47 28.9	
TXAR	**Lajitas Array** comp=Z,0.4nm,0.7s,baz=178,slow=6.0,SNR=4.0	**33.92**	**3**	P	**P**	**15 12 05.5**	**0.0**
TXAR	comp=Z,2μm,20.6s,baz=0.0,slow=32			LR	LR	15 23 27.0	
TX31	**Lajitas Ar. Si**	**33.93**	**3**	*e*P	**P**	**15 12 04.8**	**-0.7**
BRRC	**Barranca, Sant**	**33.98**	**70**	*e*P	P	15 12 01.6	-4.5
TAOE	**Nuku Hiva Isla** comp=Z,6μm,25.7s,baz=90	**34.48**	**261**	*e*LR	LR	15 21 11.1	
GRMC	**Gramalote, San**	**35.03**	**69**	*e*P	P	15 12 07.0	-8.5
CBRI	**Barrientos, No**	**35.04**	**69**	*e*P	P	15 12 10.9	-4.5
JCT	**Junction City** baz=190	**35.46**	**9**	P	**P**	**15 12 19.8**	**+1.1**
MNTX	**Cornudas Mount** baz=180	**36.23**	**0**	P	**P**	**15 12 27.7**	**+2.4**
MNTX	**Cornudas Mount** comp=Z,21nm,1.7s	**36.23**	**0**	*e*P	**P**	**15 12 23.9**	**-1.3**
333A	**Richland Sprin** baz=191	**36.42**	**10**	P	**P**	**15 12 26.8**	**0.0**
233A	**Rising Star** baz=191	**37.11**	**10**	P	**P**	**15 12 33.5**	**+0.8**
214A	**Organ Pipe Nat** baz=168	**37.12**	**350**	P	**P**	**15 12 33.7**	**+0.9**
234A	**Clairette** baz=192	**37.23**	**11**	P	**P**	**15 12 34.1**	**+0.4**
236A	**Katherine and** baz=195	**37.55**	**13**	P	**P**	**15 12 37.6**	**+1.2**
ABTX	**Abilene, Hawle** baz=190	**37.59**	**8**	P	**P**	**15 12 38.1**	**+1.3**
ABTX	**Abilene, Hawle** comp=Z,41nm,1.7s	**37.59**	**8**	*e*P	**P**	**15 12 37.5**	**+0.7**
133A	**Hamilton Ranch** baz=191	**37.68**	**9**	P	**P**	**15 12 39.1**	**+1.4**
LPAZ	**La Paz** comp=Z,1.6nm,0.9s,baz=300,slow=24,SNR=2.6	**38.56**	**110**	P	**P**	**15 12 47.3**	**+1.3**
LPAZ	comp=Z,1μm,18.9s,baz=275,slow=33			LR	LR	15 26 20.3	
GTBY	**Guantanamo Bay**	**38.76**	**50**	PFAKE		15 13 00.0	+13
GTBY	comp=Z,2μm,20.0s			LR	LR		
Y14A	**Wickenburg** comp=Z,33nm,0.9s	**39.08**	**350**	*e*P	**P**	**15 12 49.7**	**+0.3**
X16A	**Lo Mia Camp, P** comp=Z,9.7nm,1.3s	**39.32**	**352**	*e*P	**P**	**15 12 53.2**	**+1.6**
VBMS	**Vicksburg** comp=Z,60nm,0.3s	**39.47**	**20**	*e*P	**P**	**15 12 53.1**	**+0.5**
ANMO	**Albuquerque** comp=Z,0.4nm,0.3s,baz=179,slow=9.6,SNR=3.6	**39.47**	**359**	P	**P**	**15 12 54.1**	**+1.2**
ANMO	**Albuquerque**	**39.47**	**359**	P	**P**	**15 12 54.1**	**+1.2**
ANMO	comp=Z,1μm,21.0s			LR	LR		
PFO	**Pinyon Flats O**	**39.48**	**346**	PFAKE		15 13 00.0	+7.1
PFO	comp=Z,5μm,22.0s			LR	LR		
LVC	**Limon Verde** comp=Z,25nm,1.1s,baz=266,slow=7.6,SNR=5.2	**39.71**	**120**	P	**P**	**15 12 57.5**	**+2.3**
LVC	comp=Z,9μm,19.9s,baz=293,slow=30			LR	LR	15 25 01.4	
LVC	**Limon Verde** comp=Z,26nm,1.3s	**39.71**	**120**	*e*P	**P**	**15 12 56.8**	**+1.5**
X36A	**Centrahoma** baz=194	**40.07**	**12**	P	**P**	**15 12 58.5**	**+1.0**
Y40A	**Okolona** baz=199	**40.27**	**16**	P	**P**	**15 13 00.5**	**+1.3**
WUAZ	**Wupatki** baz=171	**40.40**	**353**	P	**P**	**15 13 02.6**	**+2.2**
WUAZ	**Wupatki** comp=Z,7.1nm,0.8s	**40.40**	**353**	*e*P	**P**	**15 13 02.0**	**+1.5**
GMRC	**Granite Mounta** baz=164	**40.42**	**347**	P	**P**	**15 13 01.6**	**+1.0**
X38A	**Whitesboro** baz=197	**40.50**	**14**	P	**P**	**15 13 01.5**	**+0.4**
X39A	**Fountain Ranch** baz=198	**40.52**	**15**	P	**P**	**15 13 02.9**	**+1.5**
W36A	**Wetumka** baz=194	**40.64**	**12**	P	**P**	**15 13 03.2**	**+0.9**
MIAR	**Mount Ida** baz=198	**40.70**	**15**	P	**P**	**15 13 02.6**	**-0.2**
MIAR	**Mount Ida** comp=Z,13nm,0.9s	**40.70**	**15**	*e*P	**P**	**15 13 03.6**	**+0.9**
W37B	**Quinton** baz=196	**40.81**	**13**	P	**P**	**15 13 03.5**	**-0.2**
GSC	**Goldstone, Bar** baz=163	**41.18**	**346**	P	**P**	**15 13 07.9**	**+1.0**
GSC	**Goldstone, Bar** comp=Z,30nm,1.5s	**41.18**	**346**	*e*P	**P**	**15 13 07.5**	**+0.7**
W39A	**Magazine** baz=198	**41.26**	**15**	P	**P**	**15 13 08.2**	**+0.8**
V36A	**Jenks** baz=195	**41.32**	**12**	P	**P**	**15 13 08.7**	**+0.8**
W41B	**Gary Mavity, V** baz=200	**41.65**	**17**	P	**P**	**15 13 10.3**	**-0.2**
U34A	**Anderson Ranch** baz=192	**41.65**	**10**	P	**P**	**15 13 11.0**	**+0.4**
X301	**Greenbrier Sit** comp=Z,25nm,1.4s	**41.67**	**16**	*e*P	**P**	**15 13 10.1**	**-0.6**
V38A	**Canehill** baz=197	**41.74**	**14**	P	**P**	**15 13 11.1**	**-0.2**
WHAR	**Wooly Hollow** comp=Z,82nm,1.9s	**41.75**	**17**	*e*P	**P**	**15 13 11.0**	**-0.4**
SHPR	**Sheep Range** comp=Z,9.2nm,1.0s	**41.98**	**349**	*e*P	**P**	**15 13 15.4**	**+1.9**
MPMC	**Manual Prospec** baz=162	**42.06**	**346**	P	**P**	**15 13 15.4**	**+1.2**
KNB	**Kanab** comp=Z,42nm,1.7s	**42.07**	**351**	*e*P	**P**	**15 13 15.5**	**+1.3**
V40A	**Witts Springs** baz=199	**42.08**	**16**	P	**P**	**15 13 14.4**	**+0.2**
LCMT	**Little Creek M** comp=Z,25nm,1.9s	**42.13**	**351**	*e*P	**P**	**15 13 15.7**	**+1.1**
T33A	**Patterson Ranc** baz=191	**42.17**	**9**	P	**P**	**15 13 16.1**	**+1.3**
SDCO	**Great Sand Dun** comp=Z,8.8nm,1.5s	**42.26**	**0**	*e*P	**P**	**15 13 16.0**	**+0.1**
S22A	**4UR Ranch, Cre** baz=178	**42.28**	**359**	P	**P**	**15 13 18.1**	**+2.1**
S22A	**4UR Ranch, Cre** comp=Z,24nm,1.8s	**42.28**	**359**	*e*P	**P**	**15 13 17.8**	**+1.8**
T34A	**McClaskey Farm** baz=192	**42.28**	**10**	P	**P**	**15 13 16.5**	**+0.7**
DAC	**Darwin (Calif)** comp=Z,35nm,1.9s	**42.30**	**346**	*e*P	**P**	**15 13 17.4**	**+1.2**
T35A	**Sooner Cattle** baz=194	**42.30**	**11**	P	**P**	**15 13 16.5**	**+0.6**
SAML	**Samuel** comp=Z,24nm,1.4s	**42.36**	**98**	*e*P	**P**	**15 13 15.5**	**-1.3**
PKCU	**Pink Cliffs** comp=Z,55nm,1.8s	**42.42**	**352**	*e*P	**P**	**15 13 17.8**	**+0.6**
U39A	**Green Forest** baz=198	**42.46**	**15**	P	**P**	**15 13 17.0**	**-0.2**
T36A	**Boggs Farm, Ca** baz=194	**42.57**	**12**	P	**P**	**15 13 18.0**	**0.0**
U40A	**Yellville** baz=199	**42.60**	**15**	P	**P**	**15 13 18.6**	**+0.3**
TPNV	**Topopah Spring** comp=Z,34nm,1.6s	**42.63**	**347**	*e*P	**P**	**15 13 20.4**	**+1.6**
GRTK	**Grand Turk**	**42.72**	**51**	PFAKE		15 13 30.0	+10
GRTK	comp=Z,3μm,21.0s			LR	LR		
GRAC	**Grapevine Rang** baz=163	**42.93**	**346**	P	**P**	**15 13 23.1**	**+2.1**
MTPU	**Mount Pierson** comp=Z,13nm,1.2s	**42.99**	**352**	*e*P	**P**	**15 13 21.9**	**0.0**
GOGA	**Godfrey**	**43.37**	**27**	PFAKE		15 13 40.0	+15
GOGA	comp=Z,1μm,19.0s			LR	LR		
MSU	**Marysvale**	**43.45**	**353**	*e*P	**P**	**15 13 26.5**	**+1.0**
T41A	**Mountain View** baz=200	**43.54**	**16**	P	**P**	**15 13 26.6**	**+0.6**
PBMO	**Poplar Bluff** comp=Z,52nm,1.5s	**43.68**	**18**	*e*P	**P**	**15 13 27.0**	**0.0**
PSUT	**Pine Spring** comp=Z,7.2nm,1.1s	**43.71**	**351**	*e*P	**P**	**15 13 27.8**	**+0.2**
S39A	**Bolivar** baz=198	**43.74**	**14**	P	**P**	**15 13 27.5**	**0.0**
R11A	**Troy Canyon, C** baz=166	**43.84**	**349**	P	**P**	**15 13 29.7**	**+1.1**
R11A	**Troy Canyon, C** comp=Z,26nm,1.8s	**43.84**	**349**	*e*P	**P**	**15 13 29.5**	**+0.9**
SWET	**Sewanee** comp=Z,14nm,1.1s	**43.85**	**24**	*e*P	**P**	**15 13 25.9**	**-2.7**
SRU	**San Rafael Swe** comp=Z,35nm,1.9s	**43.86**	**355**	*e*P	**P**	**15 13 30.6**	**+1.9**
S40A	**Lebanon** baz=199	**43.86**	**15**	P	**P**	**15 13 29.1**	**+0.6**
WVT	**Waverly** comp=Z,26nm,1.0s	**43.95**	**21**	*e*P	**P**	**15 13 29.3**	**+0.1**
TMUT	**Trail Mountain** comp=Z,40nm,2.0s	**44.11**	**354**	*e*P	**P**	**15 13 32.5**	**+1.7**
P18A	**Preston Nutter** comp=Z,15nm,1.4s	**44.34**	**355**	*e*P	**P**	**15 13 34.0**	**+1.3**
R39A	**Chumby, Stover** baz=198	**44.40**	**14**	P	**P**	**15 13 32.6**	**-0.3**
KSU1	**Kansas State U**	**44.41**	**10**	*e*P	**P**	**15 13 33.5**	**+0.6**
NV01	**Mina Array Sit**	**44.52**	**346**	*e*P	**P**	**15 13 35.3**	**+1.2**
NVAR	**Mina Array Bea** comp=Z,1.3nm,0.6s,baz=174,slow=8.7,SNR=8.6	**44.52**	**346**	P	**P**	**15 13 35.6**	**+1.5**
NVAR	comp=Z,2μm,18.4s,baz=178,slow=31			LR	LR	15 28 19.4	
R40A	**Maddies Statio** baz=199	**44.57**	**15**	P	**P**	**15 13 34.7**	**+0.4**
CPCT	**Cooper Cave** comp=Z,18nm,1.4s	**44.63**	**25**	*e*P	**P**	**15 13 34.2**	**-0.5**
P34A	**Walnut Farm, R** baz=192	**44.81**	**10**	P	**P**	**15 13 37.2**	**+1.1**
PPT	**Papeete** comp=Z,2μm,19.1s,baz=60,slow=30	**44.81**	**250**	LR	LR	15 27 30.9	
PPT2	**Papeete2** comp=Z,634nm,26.8s	**44.82**	**250**	*e*S	**S**	**15 20 12.2**	**-1.9**
PPT2	comp=Z,3μm,27.8s			*e*LQ	LQ	15 24 11.7	
PPT2	comp=Z,7μm,26.0s,baz=73			*e*LR	LR	15 26 07.4	
NLU	**North Lily Min** comp=Z,23nm,1.9s	**44.86**	**353**	*e*P	**P**	**15 13 37.7**	**+1.0**
MPU	**Maple Canyon** comp=Z,45nm,1.9s	**44.87**	**353**	*e*P	**P**	**15 13 37.1**	**+0.3**
WAKR	**Walker**	**44.88**	**345**	*e*P	**P**	**15 13 37.2**	**+0.3**
SJG	**San Juan** comp=Z,2μm,21.8s,baz=243,slow=31	**45.09**	**59**	LR	LR	15 28 41.9	
Q39A	**Willow Grove F** baz=198	**45.11**	**14**	P	**P**	**15 13 39.1**	**+0.6**
JSC	**Jenkinsville** comp=Z,25nm,0.8s	**45.12**	**29**	*e*P	**P**	**15 13 39.9**	**+1.3**
TKL	**Tuckaleechee C** comp=Z,6.9nm,1.0s,baz=176,slow=8.0,SNR=7.1	**45.12**	**25**	P	**P**	**15 13 38.4**	**-0.3**
TKL	**Tuckaleechee C** comp=Z,50nm,1.6s	**45.12**	**25**	*e*P	**P**	**15 13 38.3**	**-0.4**
SIV	**San Ignacio** comp=Z,2μm,21.7s,baz=318,slow=32	**45.16**	**108**	LR	LR	15 29 50.1	
DUG	**Dugway, Tooele** baz=170	**45.19**	**352**	P	**P**	**15 13 40.9**	**+1.7**
DUG	**Dugway, Tooele** comp=Z,12nm,1.1s	**45.19**	**352**	*e*P	**P**	**15 13 39.9**	**+0.6**
Q40A	**Laux Farm, Aux** baz=199	**45.29**	**15**	P	**P**	**15 13 40.2**	**+0.3**
AFDM	**Forest Hills D** comp=Z,35nm,1.6s	**45.71**	**343**	*e*P	**P**	**15 13 44.0**	**+0.7**
KMSC	**Kings Mountain** comp=Z,8.9nm,1.1s	**45.79**	**28**	*e*P	**P**	**15 13 43.5**	**-0.4**
P40A	**Paris** baz=199	**45.80**	**15**	P	**P**	**15 13 43.4**	**-0.6**
PTGA	**Pitinga** comp=Z,25nm,1.2s	**45.80**	**86**	*e*P	**P**	**15 13 43.4**	**-1.0**
PTGA	comp=Z,35μm,20.0s			LR	LR		
BGU	**Big Grassy Mou** comp=Z,34nm,1.9s	**45.94**	**352**	*e*P	**P**	**15 13 45.1**	**-0.1**
TZTN	**Tazewell** comp=Z,30nm,1.3s	**45.97**	**25**	*e*P	**P**	**15 13 44.9**	**-0.5**
ELK	**Elko** comp=Z,33nm,1.9s	**46.10**	**350**	*e*P	**P**	**15 13 47.6**	**+1.0**
ORV	**Oroville** comp=Z,28nm,1.4s	**46.43**	**343**	*e*P	**P**	**15 13 50.3**	**+1.4**
HWUT	**Hardware Ranch** comp=Z,31nm,1.7s	**46.43**	**354**	*e*P	**P**	**15 13 50.7**	**+1.5**
HVU	**Hansel Valley** comp=Z,44nm,1.9s	**46.74**	**353**	*e*P	**P**	**15 13 52.7**	**+1.2**
PTU	**Portage**	**46.84**	**353**	*e*P	**P**	**15 13 53.2**	**+0.9**
NPI	**North Pocatell**	**47.07**	**353**	*e*P	**P**	**15 13 53.1**	**-1.0**
BW06	**Boulder Array** baz=175	**47.41**	**356**	P	**P**	**15 13 57.7**	**+0.8**
BW06	**Boulder Array**	**47.41**	**356**	*e*P	**P**	**15 13 57.1**	**+0.3**
PDAR	**Pinedale Array** comp=Z,1.4nm,1.0s,baz=190,slow=7.4,SNR=7.3	**47.41**	**356**	P	**P**	**15 13 57.5**	**+0.7**
PDAR	comp=Z,2μm,18.3s,baz=196,slow=33			LR	LR	15 31 28.9	
PLCA	**Paso Flores** comp=Z,4.2nm,1.1s,baz=42,slow=20,SNR=2.7	**47.71**	**144**	P	**P**	**15 14 00.1**	**+1.0**
PLCA	comp=Z,4μm,19.6s,baz=344,slow=30			LR	LR	15 29 01.1	
J26A	**Sides Ranch, S** baz=183	**47.88**	**3**	P	**P**	**15 14 01.5**	**+1.2**
N02D	**Trinity Center** baz=157	**48.09**	**343**	P	**P**	**15 14 03.2**	**+1.3**
MOD	**Modoc Plateau** comp=Z,27nm,1.3s	**48.30**	**345**	*e*P	**P**	**15 14 04.2**	**+0.6**
KHMM	**Horse Mountain** comp=Z,138nm,1.9s	**48.31**	**342**	*e*P	**P**	**15 14 05.5**	**+1.8**
LOHW	**Long Hollow** comp=Z,28nm,2.0s	**48.33**	**355**	*e*P	**P**	**15 14 04.5**	**+0.5**
WVOR	**Wild Horse Val** comp=Z,28nm,1.7s	**48.41**	**347**	*e*P	**P**	**15 14 05.3**	**+0.9**
MOOW	**Moose Ponds** comp=Z,25nm,2.0s	**48.48**	**355**	*e*P	**P**	**15 14 05.8**	**+0.7**
M02C	**Callahan** baz=157	**48.52**	**343**	P	**P**	**15 14 05.9**	**+0.6**
M04C	**Macdoel** baz=158	**48.59**	**344**	P	**P**	**15 14 07.2**	**+1.3**
IMW	**Indian Meadow** comp=Z,16nm,1.5s	**48.64**	**355**	*e*P	**P**	**15 14 07.3**	**+1.0**
RSSD	**Black Hills** baz=182	**48.65**	**2**	P	**P**	**15 14 07.4**	**+1.0**
RSSD	**Black Hills** comp=Z,15nm,1.5s	**48.65**	**2**	*e*P	**P**	**15 14 05.8**	**-0.6**
ANWB	**Willy Bob**	**48.68**	**62**	PFAKE		15 14 20.0	+13
ANWB	comp=Z,1μm,21.0s			LR	LR		
HLID	**Hailey** baz=168	**48.72**	**352**	P	**P**	**15 14 08.3**	**+1.4**
HLID	**Hailey** comp=Z,13nm,1.4s	**48.72**	**352**	*e*P	**P**	**15 14 06.6**	**-0.3**
YBH	**Yreka Blue Hor** comp=Z,8.3nm,0.9s	**48.79**	**343**	*e*P	**P**	**15 14 06.9**	**-0.4**
MFID	**Camas Ranch** comp=Z,30nm,1.3s	**48.80**	**350**	*e*P	**P**	**15 14 07.9**	**+0.5**
FLWY	**Flagg Ranch** comp=Z,76nm,2.0s	**48.80**	**355**	*e*P	**P**	**15 14 08.1**	**+0.5**
ECSD	**EROS Data Cent**	**48.93**	**9**	PFAKE		15 14 20.0	+12
ECSD	comp=Z,2μm,19.0s			LR	LR		
BBGH	**Gun Hill**	**49.10**	**68**	PFAKE		15 14 20.0	+10
BBGH	comp=Z,3μm,21.0s			LR	LR		
K05A	**Summer Lake** comp=Z,48nm,1.4s	**49.22**	**345**	*e*P	**P**	**15 14 12.1**	**+1.4**
L02D	**Cave Junction,** baz=156	**49.45**	**342**	P	**P**	**15 14 13.5**	**+1.2**
HUMO	**Hull Mountain** comp=Z,38nm,1.7s	**49.67**	**343**	*e*P	**P**	**15 14 16.5**	**+2.5**
MCMT	**McKenzie Canyo**	**49.76**	**353**	*e*P	**P**	**15 14 15.6**	**+0.7**
I04A	**Tendick Farm,** baz=158	**50.61**	**344**	P	**P**	**15 14 21.5**	**+0.3**
CPUP	**Villa Florida** comp=Z,3.3nm,0.9s,baz=274,slow=7.3,SNR=5.3	**50.89**	**120**	P	**P**	**15 14 23.3**	**-0.2**
CPUP	comp=Z,1μm,21.6s,baz=286,slow=32			LR	LR	15 32 20.4	
CPUP	**Villa Florida**	**50.89**	**120**	*e*P	**P**	**15 14 22.9**	**-0.6**
G08A	**Pilot Rock** comp=Z,33nm,1.6s	**51.20**	**348**	*e*P	**P**	**15 14 26.5**	**+0.9**
H04A	**Detroit Lake** comp=Z,31nm,1.4s	**51.38**	**345**	*e*P	**P**	**15 14 27.4**	**+0.5**
F36A	**Milaca** baz=195	**51.52**	**11**	P	**P**	**15 14 27.9**	**0.0**
F10A	**Beach Ranch, E** comp=Z,40nm,1.7s	**51.52**	**350**	*e*P	**P**	**15 14 28.9**	**+0.9**
G05D	**Wamic, OR** baz=160	**51.69**	**346**	P	**P**	**15 14 29.6**	**+0.4**
SSPA	**Standing Stone** comp=Z,64nm,1.4s	**51.84**	**27**	*e*P	**P**	**15 14 28.8**	**-1.5**
HAWA	**Hanford** comp=Z,14nm,1.1s	**52.37**	**348**	*e*P	**P**	**15 14 35.1**	**+0.9**
EGMT	**Eagleton** comp=Z,26nm,1.6s	**52.66**	**357**	*e*P	**P**	**15 14 36.7**	**+0.3**
BSMT	**Bassoo Peak**	**52.97**	**352**	*e*P	**P**	**15 14 38.9**	**0.0**
LON	**Longmire** comp=Z,7.1nm,1.0s	**53.22**	**346**	*e*P	**P**	**15 14 40.7**	**+0.2**
C09A	**Chrisman Ranch** comp=Z,61nm,1.8s	**53.48**	**349**	*e*P	**P**	**15 14 43.5**	**+1.1**
C37A	**Embarrass** baz=197	**53.57**	**11**	P	**P**	**15 14 43.0**	**0.0**
BBSR	**BB Station**	**53.62**	**44**	PFAKE		15 15 00.0	+16
BBSR	comp=Z,1μm,22.0s			LR	LR		
D05A	**Enumclaw** comp=Z,83nm,1.8s	**53.67**	**346**	*e*P	**P**	**15 14 44.8**	**+1.0**
NEW	**Newport** baz=166	**53.73**	**351**	P	**P**	**15 14 44.8**	**+0.6**
NEW	**Newport** comp=Z,24nm,1.5s	**53.73**	**351**	*e*P	**P**	**15 14 44.5**	**+0.3**
EYMN	**Ely** baz=197	**53.91**	**12**	P	**P**	**15 14 45.6**	**0.0**
B08A	**Colville Reser** comp=Z,6.7nm,1.2s	**54.21**	**349**	*e*P	**P**	**15 14 47.7**	**0.0**
GNW	**Green Mountain**	**54.23**	**346**	*e*P	**P**	**15 14 50.0**	**+2.2**
NLWA	**Neilton Lookou** comp=Z,21nm,1.3s	**54.33**	**345**	*e*P	**P**	**15 14 49.9**	**+1.3**
B05A	**Bryant** baz=160	**54.71**	**347**	P	**P**	**15 14 52.0**	**+0.7**
SADO	**Sadowa** comp=Z,12nm,1.1s,baz=226,slow=12,SNR=3.6	**54.71**	**23**	P	**P**	**15 14 50.8**	**-0.6**
SADO	**Sadowa** comp=Z,23nm,1.3s	**54.71**	**23**	*e*P	**P**	**15 14 50.6**	**-0.8**
POHA	**Pohakuloa**	**54.73**	**298**	PFAKE		15 15 10.0	+18
POHA	comp=Z,2μm,19.0s			LR	LR		
B06A	**Marblemount** comp=Z,20nm,1.2s	**54.81**	**347**	*e*P	**P**	**15 14 52.2**	**+0.2**
RAR	**Rarotonga** comp=Z,879nm,19.9s,baz=93,slow=29	**54.93**	**247**	LR	LR	15 32 10.2	
ULM	**Lac du Bonnet** comp=Z,3.9nm,0.8s,baz=212,slow=5.6,SNR=4.5	**55.41**	**8**	P	**P**	**15 14 56.6**	**+0.3**
ULM	comp=Z,2μm,18.7s,baz=206,slow=35			LR	LR	15 37 16.4	
ULM	**Lac du Bonnet** comp=Z,33nm,1.8s	**55.41**	**8**	*e*P	**P**	**15 14 55.8**	**-0.6**
EFI	**East Falkland**	**61.14**	**148**	PFAKE		15 15 50.0	+14
EFI	comp=Z,2μm,19.0s			LR	LR		
FCC	**Fort Churchill** comp=Z,8.7nm,0.9s	**63.97**	**7**	*e*P	**P**	**15 15 54.7**	**-0.4**
AFI	**Afiamalu** comp=Z,824nm,21.8s,baz=88,slow=29	**65.71**	**257**	LR	LR	15 36 49.1	
DLBC	**Dease Lake** comp=Z,10nm,1.0s,baz=164,slow=4.9,SNR=13	**65.93**	**346**	P	**P**	**15 16 09.5**	**+1.5**
DLBC	**Dease Lake** comp=Z,44nm,1.6s	**65.93**	**346**	*e*P	**P**	**15 16 08.3**	**+0.2**
PMSA	**Palmer Station**	**66.83**	**162**	PFAKE		15 16 30.0	+16
PMSA	comp=Z,3μm,20.0s			LR	LR		
YKA	**Yellowknife Ar** comp=Z,5.4nm,0.9s,baz=163,slow=6.3,SNR=48	**67.39**	**356**	P	**P**	**15 16 16.1**	**-1.1**
YKW3	**Yellowknife Ar** comp=Z,13nm,1.3s	**67.45**	**356**	*e*P	**P**	**15 16 16.9**	**-0.7**
SCHQ	**Schefferville** comp=Z,1μm,20.3s,baz=231,slow=35	**67.52**	**23**	LR	LR	15 44 57.5	
BMRM	**Bremner River** comp=Z,40nm,1.3s	**72.15**	**341**	*e*P	**P**	**15 16 47.1**	**+0.5**
RAO	**Raoul Island** comp=Z,902nm,20.6s,baz=89,slow=29	**72.23**	**241**	LR	LR	15 40 12.6	
KDAK	**Kodiak Island**	**72.82**	**336**	PFAKE		15 17 00.0	+9.4
KDAK	comp=Z,3μm,21.0s			LR	LR		
KLU	**Klutina** comp=Z,5.8nm,0.6s	**72.97**	**341**	*e*P	**P**	**15 16 52.0**	**+0.5**
DAWY	**Dawson** comp=Z,31nm,1.5s	**73.09**	**345**	*e*P	**P**	**15 16 52.5**	**+0.3**
MENT	**Mentasta**	**73.38**	**343**	*e*pP	pP	15 17 00.4	+2.2
PAX	**Paxson** comp=Z,21nm,1.5s	**73.93**	**342**	*e*P	**P**	**15 16 57.3**	**+0.1**
HOPE	**Hope Point**	**74.09**	**145**	PFAKE		15 17 10.0	+12
HOPE	comp=Z,2μm,19.0s			LR	LR		
PMR	**Palmer** comp=Z,24nm,1.2s	**74.10**	**340**	*e*P	**P**	**15 16 58.3**	**+0.2**
EGAK	**Eagle** comp=Z,22nm,1.2s	**74.12**	**345**	*e*P	**P**	**15 16 57.6**	**-0.5**
SPU	**Mount Spurr**	**74.85**	**339**	*e*P	**P**	**15 16 60.0**	**-2.5**
RND	**Reindeer** comp=Z,53nm,1.4s	**75.30**	**341**	*e*P	**P**	**15 17 04.5**	**-0.6**
INK	**Inuvik** comp=Z,2μm,18.4s,baz=151,slow=34	**75.44**	**350**	LR	LR	15 48 03.7	
INK	**Inuvik** comp=Z,16nm,1.1s	**75.44**	**350**	*e*P	**P**	**15 17 05.9**	**+0.3**
MCK	**McKinley** comp=Z,37nm,1.4s	**75.56**	**342**	*e*P	**P**	**15 17 06.2**	**-0.3**
IL1	**Eielson Array**	**75.69**	**343**	*e*P	**P**	**15 17 05.8**	**-1.4**
ILAR	**Eielson Array** comp=Z,4.9nm,1.0s,baz=157,slow=4.6,SNR=32	**75.69**	**343**	P	**P**	**15 17 06.5**	**-0.7**
ILB	**Eielson Array**	**75.69**	**343**	*e*P	**P**	**15 17 05.4**	**-1.8**
TRF	**Thorofare Moun** comp=Z,15nm,1.2s	**75.79**	**341**	*e*P	**P**	**15 17 07.6**	**-0.4**
WRH	**Wood River Hil** comp=Z,33nm,1.5s	**75.83**	**342**	*e*P	**P**	**15 17 08.3**	**+0.3**
BWN	**Browne** comp=Z,91nm,1.3s	**76.03**	**342**	*e*P	**P**	**15 17 08.9**	**-0.3**
PPLA	**Purkeypile** comp=Z,77nm,1.6s	**76.04**	**340**	*e*P	**P**	**15 17 09.6**	**+0.1**
KTH	**Kantishna Hill** comp=Z,19nm,1.0s	**76.07**	**341**	*e*P	**P**	**15 17 08.5**	**-0.9**
MDM	**Murphy Dome** comp=Z,18nm,1.3s	**76.22**	**343**	*e*P	**P**	**15 17 10.4**	**+0.2**
CAST	**Castle Rocks** comp=Z,23nm,1.3s	**76.36**	**340**	*e*P	**P**	**15 17 10.8**	**-0.3**
BPAW	**Bear Paw Mtn.** comp=Z,7.1nm,1.1s	**76.46**	**341**	*e*P	**P**	**15 17 10.6**	**-1.1**
MLY	**Manley** comp=Z,15nm,1.1s	**77.03**	**342**	*e*P	**P**	**15 17 14.1**	**-0.8**
URZ	**Urewera** comp=Z,1μm,18.4s,baz=114,slow=31	**77.06**	**232**	LR	LR	15 45 38.1	
COLD	**Coldfoot** comp=Z,26nm,1.4s	**78.40**	**344**	*e*P	**P**	**15 17 22.5**	**+0.1**
RES	**Resolute Bay** comp=Z,

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H11S2	**WAKE ISLAND Hy**	**89.25**	**289**	T	T	16 57 00.6	
	baz=93,slow=74,SNR=55						
H11S1	**WAKE ISLAND Hy**	**89.25**	**289**	T	T	16 57 00.8	
	baz=93,slow=74,SNR=52						
H11S3	**WAKE ISLAND Hy**	**89.26**	**289**	T	T	16 57 00.8	
	baz=93,slow=74,SNR=58						
ASCN	**Ascension**	**90.64**	**98**	PFAKE		15 18 40.0	+14
ASCN				LR	LR		
	comp=Z,1μm,21.0s						
HNR	**Honiara**	**93.56**	**260**	PFAKE		15 18 50.0	+11
HNR				LR	LR		
	comp=Z,844nm,22.0s						
PET	**Petropavlovsk**	**97.18**	**323**	PFAKE		15 19 10.0	+15
PET				LR	LR		
	comp=Z,1μm,20.0s						
TAU	**Tasmania Unive**	**99.13**	**225**	PFAKE		15 19 20.0	+16
TAU				LR	LR		
	comp=Z,1μm,20.0s						
MTE	**Manteigas**	**99.23**	**50**	PFAKE		15 19 20.0	+16
MTE				LR	LR		
	comp=Z,552nm,20.0s						
CAN	**Canberra**	**99.70**	**233**	PFAKE		15 19 20.0	+13
CAN				LR	LR		
	comp=Z,796nm,19.0s						
KBS	**Kingsbay**	**99.77**	**10**	PFAKE		15 19 20.0	+14
KBS				LR	LR		
	comp=Z,780nm,21.0s						
PAB	**San Pablo**	**101.72**	**51**	PFAKE		15 19 30.0	+15
PAB				LR	LR		
	comp=Z,868nm,19.0s						
CTAO	**Charters Tower**	**105.24**	**248**	PFAKE		15 24 00.0	
CTAO				LR	LR		
	comp=Z,856nm,20.0s						
PMG	**Port Moresby**	**106.09**	**259**	PFAKE		15 24 00.0	
PMG				LR	LR		
	comp=Z,880nm,20.0s						
KONO	**Kongsberg**	**106.65**	**29**	PFAKE		15 24 00.0	
KONO				LR	LR		
	comp=Z,329nm,21.0s						
KEV	**Kevo**	**108.18**	**16**	PFAKE		15 24 00.0	
KEV				LR	LR		
	comp=Z,710nm,22.0s						
ERM	**Erimo**	**108.85**	**313**	PFAKE		15 24 00.0	
ERM				LR	LR		
	comp=Z,1μm,19.0s						
BFO	**Black Forest**	**109.36**	**40**	PFAKE		15 24 00.0	
BFO				LR	LR		
	comp=Z,401nm,21.0s						
MAJO	**Matsushiro**	**113.71**	**308**	PFAKE		15 24 10.0	
MAJO				LR	LR		
	comp=Z,2μm,22.0s						
WRAB	**Tennant Creek**	**116.16**	**245**	PFAKE		15 24 20.0	+14
WRAB				LR	LR		
	comp=Z,937nm,20.0s						
WDD	**Wied Dalam**	**117.05**	**52**	PFAKE		15 24 20.0	+12
WDD				LR	LR		
	comp=Z,498nm,20.0s						
OBN	**Obninsk**	**121.31**	**24**	PFAKE		15 24 30.0	+15
OBN				LR	LR		
	comp=Z,502nm,21.0s						
NWAO	**Narrogin (SRO)**	**124.73**	**224**	PFAKE		15 24 30.0	+7.4
NWAO				LR	LR		
	comp=Z,1μm,19.0s						
SANT	**Santorini**	**125.26**	**48**	PFAKE		15 24 40.0	+16
SANT				LR	LR		
	comp=Z,250nm,20.0s						
ARU	**Arti**	**126.94**	**11**	PFAKE		15 24 40.0	+14
ARU				LR	LR		
	comp=Z,452nm,19.0s						
BR231	**Keskin MP Arra**	**128.79**	**41**	*e*PKPdf	**PKPdf**	**15 24 27.8**	**-2.5**
DAV	**Davao City (W)**	**129.00**	**275**	PFAKE		15 24 40.0	+8.8
DAV				LR	LR		
	comp=Z,402nm,20.0s						
BRTR	**Keskin Array B**	**129.41**	**41**	PKP	**PKPdf**	**15 24 32.6**	**+1.2**
	comp=Z,0.8nm,0.8s,baz=270,slow=1.0,SNR=4.9						
LSZ	**Lusaka**	**130.15**	**114**	PFAKE		15 24 50.0	+17
LSZ				LR	LR		
	comp=Z,938nm,22.0s						
NJ2	**Nanjing**	**130.30**	**309**	*e*PKP	**PKPdf**	**15 24 31.8**	**-1.4**
YHNB	**Yeheng**	**130.69**	**299**	PFAKE		15 24 50.0	+16
YHNB				LR	LR		
	comp=Z,735nm,20.0s						
HHC	**Hu-ho-hao-te**	**130.95**	**323**	*e*PKP	**PKPdf**	**15 24 33.5**	**-0.8**
KURK	**Kurchatov**	**134.03**	**356**	PKP	**PKPdf**	**15 24 41.0**	**+1.3**
KURBB	**Kurchatov Arra**	**134.13**	**356**	PKP	**PKPdf**	**15 24 41.0**	**+1.1**
	comp=Z,0.2nm,0.7s,baz=32,slow=1.9,SNR=2.8						
MKAR	**Makanchi Array**	**137.54**	**352**	PKP	**PKPdf**	**15 24 46.9**	**+0.6**
	comp=Z,0.3nm,0.8s,baz=38,slow=2.6,SNR=2.4						
WMQ	**Urumqi**	**139.33**	**345**	*e*PKP	**PKPdf**	**15 24 50.4**	**+0.6**
CD2	**Chengdu**	**142.00**	**317**	PKP	**PKPdf**	**15 24 52.7**	**-2.3**
GYA	**Guiyang**	**142.31**	**308**	*e*PKP	**PKPdf**	**15 24 54.8**	**-1.0**
GYA				PP	**PP**	**15 28 05.2**	**+3.2**
GYA				AMB	AMB		
	comp=Z,120nm,7.9s						
GEYT	**Alibeck**	**143.79**	**22**	PKP	**PKPdf**	**15 24 57.3**	**-0.7**
	comp=Z,1.2nm,0.7s,baz=261,slow=5.7,SNR=3.2						
KSH	**Kashi**	**145.34**	**358**	*e*PKPbc	**PKPdf**	**15 25 02.9**	**+2.2**
KSH				*e*PP	PP	15 28 29.1	+10
KSH				PKS	**PKSdf**	**15 28 37.2**	**+0.9**
KSH				SKS	**SKSdf**	**15 32 12.2**	**+2.2**
KSH				AMB	AMB		
	comp=Z,95nm,4.6s						
KSH				LR	LR		
	comp=Z,400nm,10.2s						
KSH				LR	LR		
	comp=Z,580nm,13.9s						
KSH				LR	LR		
	comp=Z,860nm,20.9s						
KMI	**Kunming**	**146.03**	**310**	PKPbc	**PKPdf**	**15 25 00.8**	**-1.6**
CMAR	**Chiang Mai Arr**	**152.37**	**302**	PKPbc	**PKPbc**	**15 25 20.2**	**+1.0**
	baz=58,slow=1.0						
CM01	**Chiang Mai Arr**	**152.37**	**301**	*e*PKPdf	**PKPdf**	**15 25 10.4**	**-2.1**
CM01				*e*PKPbc	**PKiKP**	**15 25 19.4**	**-0.2**

*IDC **10** 15:09:57.8±0.7,20°.22S×168°.32E,h0km,mb4.4/15, mb1 4.5/16,mb1mx4.3/37,mbtmp4.3/16,ML3.5/1,MS4.0/8, Ms1 4.0/8,ms1mx3.5/49,Error ellipse: s-maj=24.3km s-min=15.7km az=140.0*
*NEIC **10** 15:09:59.3±0.2,20°.12S×168°.30E,h10km,mb5.0/36,Error ellipse: s-maj=8.4km s-min=5.0km az=152.0*
*ISCJB **10** 15:10:00.6±0.2,20°.16S±0°.05×168°.23E±0°.05,h27km, mb4.8/52,MS4.3/9,Error ellipse: s-maj=8.8km s-min=5.2km az=145.8*
*BJI **10** 15:10:02.3,20°.10S×168°.30E,h35km,mb4.8/19,mB5.1/12, Ms5.3/6,Ms7 5.2/5*
ISC 10 15:10:02.3±0.4,20°.11S±0°.07×168°.18E±0°.07,h27km,n110, σ1§33/112,mb4.9/52,MS4.1/9,Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.54**	**219**	Pn	**Pn**	**15 10 40.3**	**-1.6**
	8.6nm,0.3s,baz=84,slow=20,SNR=8.3						
DZM				Sn	**Sn**	**15 11 11.6**	**-0.3**
	83nm,0.3s,baz=294,slow=20,SNR=9.7						
DZM				LR	LR	15 11 40.2	
	comp=Z,3μm,18.8s,baz=348,slow=40						
MSVF	**Nonsavu**	**9.64**	**77**	*e*Pn	**Pn**	**15 12 20.9**	**+1.5**
EIDS	**Eidsvold**	**16.61**	**248**	*e*P	**P**	**15 13 57.7**	**+2.0**
	36nm,1.4s						
URZ	**Urewera**	**19.67**	**159**	P	**Pn**	**15 14 31.9**	**+1.1**
	0.3nm,0.3s,baz=339,slow=6.9,SNR=5.9						
AFI	**Afiamalu**	**20.12**	**75**	LR	LR	15 20 45.2	
	comp=Z,333nm,19.9s,baz=266,slow=32						
BKZ	**Black Stump Fm**	**20.30**	**161**	*e*P	**P**	**15 14 35.9**	**-0.2**
CTA	**Charters Tower**	**20.59**	**266**	P	**P**	**15 14 38.4**	**-1.1**
	5.1nm,0.8s,baz=33,slow=15,SNR=2.5						
CTAO	**Charters Tower**	**20.59**	**266**	*e*P	Pn	15 14 41.5	-0.3
	446nm,1.3s						
CAN	**Canberra**	**22.70**	**224**	*e*P	**P**	**15 15 02.9**	**+0.9**
	40nm,1.2s						
PMG	**Port Moresby**	**22.91**	**295**	P	**P**	**15 15 06.5**	**+2.1**
	6.2nm,0.8s,baz=100,slow=7.1,SNR=5.2						
PMG	**Port Moresby**	**22.91**	**295**	*e*P	**P**	**15 15 06.5**	**+2.1**
	30nm,1.0s						
COEN	**Coen**	**24.66**	**280**	*e*P	**P**	**15 15 22.4**	**+1.2**
	22nm,1.0s						
STKA	**Stephens Creek**	**26.54**	**238**	P	**P**	**15 15 39.4**	**+1.4**
	7.5nm,1.1s,baz=58,slow=11,SNR=3.0						
STKA				LR	LR	15 25 43.6	
	comp=Z,262nm,18.3s,baz=25,slow=36						
STKA	**Stephens Creek**	**26.54**	**238**	*e*P	**P**	**15 15 39.1**	**+1.1**
	14nm,1.5s						
WB2	**Warramunga Arr**	**31.75**	**264**	*e*P	**P**	**15 16 23.7**	**-0.7**
	15nm,1.2s						
WRA	**Warramunga Arr**	**31.77**	**264**	P	**P**	**15 16 23.8**	**-0.8**
	1.8nm,0.9s,baz=92,slow=8.4,SNR=14						
AS01	**Alice Springs**	**31.91**	**257**	*e*P	**P**	**15 16 25.4**	**-0.5**
AS31	**Alice Springs**	**31.95**	**257**	*e*P	**P**	**15 16 25.6**	**-0.6**
	8.9nm,0.9s						
ASAR	**Alice Springs**	**31.96**	**257**	P	**P**	**15 16 26.1**	**-0.2**
	4.7nm,0.8s,baz=87,slow=8.9,SNR=22						
ASAR				LR	LR	15 29 42.0	
	comp=Z,330nm,18.2s,baz=106,slow=37						
FITZ	**Fitzroy Crossi**	**40.17**	**265**	P	**P**	**15 17 37.6**	**+1.1**
	9.6nm,1.0s,baz=92,slow=10,SNR=4.7						
FITZ				LR	LR	15 34 00.2	
	comp=Z,149nm,18.3s,baz=70,slow=36						
FITZ	**Fitzroy Crossi**	**40.17**	**265**	*e*P	**P**	**15 17 37.2**	**+0.7**
	23nm,1.0s						
NWAO	**Narrogin (SRO)**	**46.93**	**243**	LR	LR	15 38 13.0	
	comp=Z,227nm,18.9s,slow=36						
VNDA	**Vanda**	**57.53**	**182**	P	**P**	**15 19 47.8**	**-1.1**
	1.8nm,0.8s,baz=2.1,slow=6.1,SNR=4.1						
SBA	**Scott Base**	**57.79**	**180**	*e*P	**P**	**15 19 51.2**	**+0.5**
	32nm,1.5s						
KSM	**Kuching**	**60.60**	**284**	*e*P	**P**	**15 20 10.4**	**-0.8**
	18nm,1.0s						
MJAR	**Matsushiro Arr**	**63.06**	**333**	P	**P**	**15 20 27.2**	**-0.1**
	2.3nm,0.8s,baz=177,slow=5.2,SNR=6.0						
QSPA	**South Pole Qui**	**69.95**	**180**	*e*P	**P**	**15 21 10.6**	**-0.5**
USRK	**Ussuriysk Ar.**	**72.06**	**333**	P	**P**	**15 21 25.2**	**+1.3**
	5.9nm,0.9s,baz=127,slow=4.0,SNR=10						
PETK	**Petropavlovsk-**	**73.48**	**353**	P	**P**	**15 21 33.5**	**+1.4**
	3.5nm,0.7s,baz=131,slow=7.0,SNR=4.6						
CN2	**Changchun**	**74.69**	**329**	*e*P	**P**	**15 21 40.4**	**+1.0**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.6s						
GYA	**Guiyang**	**75.50**	**306**	P	**P**	**15 21 46.4**	**+1.7**
GYA				pP	PcP	15 21 57.6	-0.1
GYA				PP	**PP**	**15 24 38.0**	**+3.6**
GYA				S	**S**	**15 31 23.2**	**-0.7**
GYA				SKS	**SKSac**	**15 31 48.0**	**-5.2**
GYA				SS	**SS**	**15 36 18.2**	**+2.8**
GYA				pmax	pmax		
	comp=Z,20nm,1.0s						
GYA				pmax	pmax		
	comp=Z,120nm,6.9s						
GYA				LR	LR		
	comp=N,480nm,18.4s						
GYA				LR	LR		
	comp=E,460nm,19.0s						
GYA				LR	LR		
	comp=Z,440nm,19.2s						
KLR	**Kul'dur**	**76.26**	**336**	P	**P**	**15 21 48.7**	**+0.4**
	2.1nm,0.9s,baz=132,slow=4.8,SNR=6.6						
KMI	**Kunming**	**77.89**	**303**	P	**P**	**15 21 59.9**	**+1.6**
KMI				pmax	pmax		
	comp=Z,10.0nm,1.0s						
KMI				pmax	pmax		
	comp=Z,68nm,4.1s						
CM01	**Chiang Mai Arr**	**77.93**	**295**	*e*P	**P**	**15 21 58.8**	**+0.4**
CD2	**Chengdu**	**79.98**	**308**	P	**P**	**15 22 09.8**	**+0.3**
CD2				pmax	pmax		
	comp=Z,9.0nm,0.5s						
HHC	**Hu-ho-hao-te**	**80.24**	**320**	*e*P	**P**	**15 22 13.9**	**+3.2**
HHC				pmax	pmax		
	comp=Z,20nm,0.7s						
HHC				pmax	pmax		
	comp=Z,66nm,7.4s						
LZH	**Lanzhou**	**82.58**	**313**	*e*P	**P**	**15 22 22.3**	**-1.0**
LZH				PP	**PP**	**15 25 32.3**	**-0.9**
LZH				*e*S	**S**	**15 32 34.1**	**-4.8**
LZH				SS	**SS**	**15 37 57.6**	**-3.8**
LZH				pmax	pmax		
	comp=Z,64nm,1.4s						
LZH				pmax	pmax		
	comp=Z,150nm,4.8s						
LZH				LR	LR		
	comp=N,1μm,17.7s						
LZH				LR	LR		
	comp=E,2μm,15.5s						
LZH				LR	LR		
	comp=Z,2μm,18.8s						
ULN	**Ulaanbaatar**	**86.97**	**324**	*e*P	**P**	**15 22 45.1**	**-0.1**
	8.6nm,1.2s						
GTA	**Gaotai**	**87.00**	**314**	*e*P	**P**	**15 22 48.0**	**+2.5**
GTA				pP	sP	15 22 59.2	+1.8
GTA				sP	pP	15 23 03.6	+9.4
GTA				pmax	pmax		
	comp=Z,3.0nm,1.0s						
YAK	**Yakutsk**	**87.40**	**343**	P	**P**	**15 22 46.2**	**-0.5**
	10nm,0.8s,baz=162,slow=1.9,SNR=3.8						
YAK	**Yakutsk**	**87.40**	**343**	*e*P	**P**	**15 22 46.5**	**-0.1**
	10nm,0.8s						
BILL	**Bilibino**	**87.90**	**359**	*e*P	**P**	**15 22 48.5**	**-0.4**
	8.3nm,1.0s						
N02D	**Trinity Center**	**88.26**	**45**	P	**P**	**15 22 52.0**	**+0.6**
	baz=241						
M02C	**Callahan**	**88.36**	**45**	P	**P**	**15 22 52.4**	**+0.6**
	baz=241						
CMB	**Columbia Colle**	**88.48**	**48**	*e*P	**P**	**15 22 51.4**	**-1.1**
	6.6nm,0.9s						
AFDM	**Forest Hills D**	**88.49**	**47**	*e*P	**P**	**15 22 51.7**	**-0.7**
	13nm,1.0s						
O03D	**Paynes Creek**	**88.54**	**46**	P	**P**	**15 22 51.9**	**-0.8**
	baz=242						
YBH	**Yreka Blue Hor**	**88.62**	**44**	*e*P	**P**	**15 22 52.3**	**-0.7**
	13nm,1.1s						
BFSC	**Mount Baldy Ra**	**88.79**	**53**	P	**P**	**15 22 53.3**	**-0.9**
	baz=245						
ISA	**Isabella, Lake**	**88.80**	**51**	P	**P**	**15 22 54.4**	**+0.3**
	baz=244						
CAST	**Castle Rocks**	**88.86**	**17**	*e*P	**P**	**15 22 52.5**	**-1.1**
	3.7nm,1.0s						
HUMO	**Hull Mountain**	**88.88**	**44**	*e*P	**P**	**15 22 54.1**	**-0.1**
	11nm,0.9s						
MONP2	**Monument Peak**	**89.16**	**55**	P	**P**	**15 22 55.0**	**-1.0**
	baz=245						
WAKR	**Walker**	**89.36**	**48**	*e*P	**P**	**15 22 56.4**	**-0.4**
CWC	**Cottonwood Cre**	**89.42**	**51**	P	**P**	**15 22 56.8**	**-0.3**
	baz=244						
MPMC	**Manual Prospec**	**89.69**	**51**	P	**P**	**15 22 57.6**	**-0.8**
	baz=245						
DAC	**Darwin (Calif)**	**89.71**	**51**	*e*P	**P**	**15 22 57.6**	**-0.9**
	7.8nm,1.0s						
NV01	**Mina Array Sit**	**90.12**	**49**	*e*P	**P**	**15 22 59.5**	**-0.9**
NVAR	**Mina Array Bea**	**90.12**	**49**	P	**P**	**15 23 00.0**	**-0.4**
	4.5nm,0.8s,baz=229,slow=8.2,SNR=18						
NV11	**Mina Array Sit**	**90.23**	**49**	*e*P	**P**	**15 23 00.3**	**-0.5**
	9.5nm,0.8s						
K05A	**Summer Lake**	**90.27**	**44**	*e*P	**P**	**15 23 00.6**	**-0.3**
	12nm,0.9s						
J05D	**Fort Rock, OR**	**90.31**	**44**	P	**P**	**15 23 01.1**	**+0.1**
	baz=242						
FURC	**Furnace Creek,**	**90.32**	**51**	P	**P**	**15 23 00.9**	**-0.2**
	baz=245						
H04A	**Detroit Lake**	**90.36**	**42**	*e*P	**P**	**15 23 00.2**	**-0.9**
	12nm,0.9s						
GMRC	**Granite Mounta**	**90.52**	**53**	P	**P**	**15 23 02.0**	**-0.3**
	baz=246						
IRM	**Iron Mountain**	**90.66**	**54**	P	**P**	**15 23 03.1**	**+0.4**
	baz=246						
I05D	**Terrebonne, OR**	**90.73**	**43**	P	**P**	**15 23 02.5**	**-0.4**
	baz=242						
TPNV	**Topopah Spring**	**90.97**	**51**	P	**P**	**15 23 03.5**	**-0.8**
	baz=245						
TPNV	**Topopah Spring**	**90.97**	**51**	*e*P	**P**	**15 23 03.5**	**-0.8**
	11nm,1.0s						
G05D	**Wamic, OR**	**91.16**	**42**	P	**P**	**15 23 04.4**	**-0.4**
	baz=242						
ILAR	**Eielson Array**	**91.36**	**18**	P	**P**	**15 23 02.9**	**-2.3**
	1.2nm,0.6s,baz=232,slow=5.8,SNR=12						
IL1	**Eielson Array**	**91.36**	**18**	*e*P	**P**	**15 23 03.0**	**-2.2**
SHPR	**Sheep Range**	**91.59**	**52**	*e*P	**P**	**15 23 07.4**	**+0.2**
	11nm,1.3s						
WVOR	**Wild Horse Val**	**91.63**	**45**	*e*P	**P**	**15 23 06.3**	**-0.9**
	11nm,1.1s						
D05A	**Enumclaw**	**91.66**	**40**	*e*P	**P**	**15 23 06.9**	**-0.1**
	35nm,1.2s						
W13A	**Hualapai Mount**	**91.98**	**53**	*e*P	**P**	**15 23 08.4**	**-0.7**
	4.9nm,0.9s						
R11A	**Troy Canyon, C**	**92.03**	**50**	P	**P**	**15 23 08.5**	**-0.7**
	baz=246						
G08A	**Pilot Rock**	**92.67**	**42**	*e*P	**P**	**15 23 10.5**	**-1.4**
	3.7nm,0.8s						
LCMT	**Little Creek M**	**93.20**	**52**	*e*P	**P**	**15 23 13.9**	**-0.7**
	26nm,1.9s						
TUC	**Tucson**	**93.31**	**57**	P	**P**	**15 23 15.8**	**+0.6**
	baz=248						
PSUT	**Pine Spring**	**93.35**	**50**	*e*P	**P**	**15 23 14.3**	**-1.0**
	2.5nm,0.9s						
KNB	**Kanab**	**93.52**	**52**	*e*P	**P**	**15 23 15.5**	**-0.6**
	9.5nm,1.3s						
X16A	**Lo Mia Camp, P**	**93.58**	**55**	*e*P	**P**	**15 23 16.1**	**-0.4**
	4.9nm,0.9s						
U15A	**North Rim**	**93.69**	**53**	*e*P	**P**	**15 23 16.7**	**-0.4**
	6.1nm,1.0s						
MTPU	**Mount Pierson**	**94.37**	**51**	*e*P	**P**	**15 23 19.4**	**-0.9**
	3.6nm,0.9s						
HVU	**Hansel Valley**	**95.35**	**48**	*e*P	**P**	**15 23 22.8**	**-1.6**
	15nm,1.7s						
TIXI	**Tiksi**	**95.39**	**348**	LR	LR	16 01 11.4	
	comp=Z,172nm,21.3s,baz=20,slow=32						
WMQ	**Urumqi**	**97.09**	**314**	*e*P	Pdif	15 23 33.4	+1.2
PDAR	**Pinedale Array**	**97.94**	**47**	P	**P**	**15 23 34.9**	**-1.3**
	0.1nm,0.4s,baz=82,slow=32,SNR=2.9						
PDAR				LR	LR	16 03 03.2	
	comp=Z,58nm,19.0s,baz=54,slow=32						
TXAR	**Lajitas Array**	**98.06**	**62**	P	**P**	**15 23 35.7**	**-1.2**
	0.3nm,0.7s,baz=223,slow=5.1,SNR=3.5						
YKA	**Yellowknife Ar**	**101.90**	**28**	P	**Pdif**	**15 23 51.3**	**-1.7**
	0.3nm,0.6s,baz=257,slow=4.4,SNR=4.0						
ARCES	**ARCESS Array B**	**125.65**	**345**	PKP	**PKPdf**	**15 29 00.5**	**-0.2**
	3.8nm,0.8s,baz=22,slow=1.3,SNR=8.7						
FINES	**FINESS Array B**	**131.00**	**337**	PKP	**PKPdf**	**15 29 10.4**	**-0.6**
	1.2nm,0.7s,baz=172,slow=28,SNR=3.4						
BRTR	**Keskin Array B**	**136.55**	**307**	PKP	**PKPdf**	**15 29 24.3**	**+2.0**
	0.3nm,0.4s,baz=95,slow=7.2,SNR=2.3						
BRG	**Berggiesshubel**	**143.20**	**333**	*e*PKP	**PKPdf**	**15 29 33.5**	**-0.3**
	6.5nm,1.2s						
	comp=N,269nm,24.1s						
	comp=E,257nm,27.0s						
	comp=Z,399nm,19.2s						
NKC	**Novy Kostel**	**144.31**	**333**	*e*PKP	**PKPab**	**15 29 33.6**	**-0.2**
NKC				*ex*	x	15 29 47.0	
KHC	**Kasperske Hory**	**144.62**	**331**	*e*PKP	**PKPdf**	**15 29 36.0**	**-0.4**
KHC				*e*pPKP	**PKiKP**	**15 29 40.3**	**+0.2**
KHC				*ex*	x	15 29 50.8	
GEC2	**GERESS Array S**	**144.77**	**330**	*e*PKPdf	PKPbc	15 29 36.0	+0.2
GERES	**GERESS Array B**	**144.77**	**330**	PKP	**PKPdf**	**15 29 36.5**	**-0.3**
	comp=Z,1.6nm,0.9s,baz=42,slow=4.3,SNR=9.3						
GEA0	**GERESS Array S**	**144.78**	**330**	*e*PKPdf	PKPbc	15 29 35.8	+0.1
RCBR	**Riachuelo**	**145.00**	**135**	PKP	**PKPdf**	**15 29 37.7**	**-0.5**
	comp=Z,12nm,1.1s,baz=218,slow=4.9,SNR=4.7						
MEM	**Membach**	**146.46**	**339**	PKP	**PKPbc**	**15 29 40.6**	**-0.3**
WLF	**Walferdange**	**147.21**	**338**	PKP	**PKPab**	**15 29 44.5**	**-0.2**
WLF	**Walferdange**	**147.21**	**338**	*e*PKPbc	**PKPab**	**15 29 44.0**	**-0.7**
DOU	**Dourbes**	**147.36**	**340**	PKP	**PKPbc**	**15 29 43.5**	**+0.1**
BFO	**Black Forest**	**147.49**	**335**	*e*PKPbc	**PKPbc**	**15 29 43.9**	**0.0**
FUORN	**Ofenpass-Fuorn**	**147.98**	**331**	*e*PKPbc	**PKPbc**	**15 29 45.3**	**-0.2**
DAVOX	**Davos/Dischmat**	**148.04**	**331**	PKPbc	**PKPab**	**15 29 47.1**	**-1.2**
	comp=Z,5.2nm,0.7s,baz=278,slow=2.3,SNR=6.4						
TUE	**Stuetta**	**148.51**	**331**	*e*PKPbc	**PKPbc**	**15 29 46.9**	**0.0**
SSB	**Saint Sauveur**	**151.49**	**335**	*e*PKPbc	**PKPbc**	**15 29 53.5**	**-0.5**

*GRAL **10** 15:14:44.9±0.3,34°.29N×36°.49E,h0km±194km,MD3.0*
*ISCJB **10** 15:14:46.3±0.5,34°.20N±0°.02×36°.38E±0°.03,h5km±5km, Error ellipse: s-maj=4.5km s-min=4.2km az=16.6*
*CSEM **10** 15:14:46.4±0.1,34°.19N×36°.35E,h5km,ML1.8,Error ellipse: s-maj=3.1km s-min=2.6km az=134.0*
*NSSC **10** 15:14:46.4±1.6,34°.20N×36°.40E,h2km±5km,ML1.8*
ISC 10 15:14:45.8±0.9,34°.20N±0°.02×36°.38E±0°.03,h16km±8km, n21,σ0§32/38,Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HAWK	**Haweek**	**0.32**	**4**	*e*P	**Pg**	**15 14 52.8**	**+0.1**
HAWK				*e*S	**Sg**	**15 14 57.2**	**-0.1**
HAWK				AML	AML	15 15 02.3	
	comp=E,125nm,0.3s						
HAWK				AML	AML	15 15 04.3	
	comp=N,84nm,0.4s						
HAWK	**Haweek**	**0.32**	**4**	*e*P	**Pg**	**15 14 52.8**	**+0.1**
HAWK				*e*S	**Sg**	**15 14 57.2**	**-0.1**
	comp=N,84nm,0.4s						
HWQ	**Hawqa**	**0.36**	**283**	*e*P	**Pg**	**15 14 53.0**	**-0.4**
HWQ				*e*S	**Sg**	**15 14 59.0**	**+0.5**
HWQ	**Hawqa**	**0.36**	**283**	*e*P	**Pg**	**15 14 53.0**	**-0.4**
HWQ				*e*S	**Sg**	**15 14 59.0**	**+0.5**
BHL	**Bhannes**	**0.67**	**244**	*e*P	**Pb**	**15 14 59.3**	**+0.1**
BHL	**Bhannes**	**0.67**	**244**	*e*P	**Pb**	**15 14 59.3**	**+0.1**
RABH	**Abou Rabah**	**0.72**	**71**	*e*P	**Pn**	**15 15 01.5**	**-0.1**
RABH				*e*S	**Sb**	**15 15 10.6**	**+0.6**
RABH				AML	AML	15 15 15.0	
	comp=E,36nm,0.7s						
RABH				AML	AML	15 15 19.1	
	comp=N,38nm,0.7s						
RABH	**Abou Rabah**	**0.72**	**71**	*e*P	**Pn**	**15 15 01.5**	**-0.1**
RABH				*e*S	**Sb**	**15 15 10.6**	**+0.6**
	comp=N,38nm,0.7s						
ROOS	**tl_alroos**	**0.76**	**92**	*e*P	**Pn**	**15 15 01.9**	**-0.1**
ROOS				*e*S	**Sg**	**15 15 10.3**	**-0.4**
ROOS				AML	AML	15 15 23.7	
	comp=N,61nm,0.7s						
ROOS				AML	AML	15 15 24.4	
	comp=E,64nm,0.4s						
ROOS	**tl_alroos**	**0.76**	**92**	*e*P	**Pn**	**15 15 01.9**	**-0.1**
ROOS				*e*S	**Sg**	**15 15 10.3**	**-0.4**
	comp=E,64nm,0.4s						
DQRL	**Deir Qamar**	**0.83**	**234**	*e*P	**Pg**	**15 15 02.1**	**+0.1**
DQRL	**Deir Qamar**	**0.83**	**234**	*e*P	**Pg**	**15 15 02.1**	**+0.1**
RCY	**Rachaya**	**0.83**	**213**	*e*P	**Pb**	**15 15 02.2**	**+0.1**
RCY				*e*S	**Sn**	**15 15 15.0**	**-0.2**
ZALF	**Zalf**	**1.50**	**148**	*e*P	**Pb**	**15 15 13.7**	**+0.3**
ZAL

PMG Sn **Sn** **15 18 52.9 -0.4**
CTA Charters Tower 15.57 213 Pn **P** **15 19 07.4 +2.3**
0.2nm,0.3s,baz=38,slow=12,SNR=7.2
CTAO Charters Tower 15.57 213 *e*P **P** **15 19 06.9 +1.8**
59nm,0.8s
WRAB Tennant Creek 23.89 236 *e*P **P** **15 20 34.1 -0.6**
5.3nm,0.7s
WRA Warrramunga Arr 23.90 235 P **P** **15 20 34.1 -0.7**
5.6nm,0.8s,baz=59,slow=8.7,SNR=18
WRA PcP **PcP** **15 24 18.0 +1.0**
0.9nm,0.8s,baz=58,slow=2.6,SNR=7.6
ASAR Alice Springs 26.25 229 P **P** **15 20 56.2 0.0**
2.7nm,0.8s,baz=60,slow=8.7,SNR=15
ASAR PcP **PcP** **15 24 24.7 +2.5**
0.3nm,0.6s,baz=37,slow=2.3,SNR=2.8
STKA Stephens Creek 27.76 205 P **P** **15 21 10.3 +0.8**
2.3nm,0.8s,baz=36,slow=12,SNR=3.9
H11S3 WAKE ISLAND Hy 27.81 24 T T 15 49 49.1
baz=203,slow=75,SNR=12
H11S2 WAKE ISLAND Hy 27.82 24 T T 15 49 37.0
baz=203,slow=75,SNR=13
H11S1 WAKE ISLAND Hy 27.83 24 T T 15 49 50.7
baz=203,slow=75,SNR=8.2
FITZ Fitzroy Crossi 30.76 246 P **P** **15 21 35.2 -1.2**
1.6nm,0.7s,baz=56,slow=9.7,SNR=6.5
ILAR Eielson Array 83.36 21 P **P** **15 27 46.8 -0.3**
0.8nm,0.8s,baz=248,slow=4.8,SNR=7.1
MKAR Makanchi Array 83.52 319 P **P** **15 27 48.5 +0.1**
0.7nm,0.7s,baz=110,slow=5.6,SNR=5.6
ZALV Zalesovo Beam 84.29 326 P **P** **15 27 51.4 -0.6**
0.4nm,0.3s,baz=127,slow=6.2,SNR=2.6
NVAR Mina Array Bea 91.64 52 P **P** **15 28 26.9 -1.1**
0.6nm,0.7s,baz=245,slow=11,SNR=2.3
YKA Yellowknife Ar 96.31 28 P **P** **15 28 50.6 +2.1**
1.1nm,0.7s,baz=266,slow=4.7,SNR=14
PDAR Pinedale Array 98.63 48 P Pdif 15 29 00.2 +0.3
0.2nm,0.5s,baz=285,slow=11,SNR=2.6

MAN 10 15:17:34.13″48N×121″77E,h42km,mb4.0,ML2.8,MS2.5,1C,Mindoro

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BOAC	**Boac**	**0.07**	**103**	*e*P	Pn	15 17 41.5	+0.7
BOAC				*e*S	Sn	15 17 45.6	+0.2
GQP	**Guinayangan**	**0.78**	**57⇑**	*e*P	Pn	15 17 50.4	+1.8
GQP				*e*S	Sn	15 18 07.3	+8.2
OTRP	**Odiongan**	**1.13**	**168**	*e*P	Pn	15 17 55.4	+2.0
OTRP				*e*S	Sn	15 18 10.2	+2.4
SJMP	**San Jose**	**1.19**	**212**	*e*P	Pn	15 17 54.5	+0.3
SJMP				*e*S	Sn	15 18 10.4	+1.2
LUBP	**Lubang**	**1.51**	**280**	*e*P	Pn	15 17 59.3	+0.8
LUBP				*e*S	Sn	15 18 19.4	+2.5

IDC ***10*** *15:18:47.4±2.0,20.″12S×167.″39E,h0km,mb4.0/5, mb1 4.2/6,mb1mx4.0/39,mbtmp4.0/6,ML3.3/1,Error ellipse: s-maj=47.7km s-min=24.1km az=116.0*
NEIC ***10*** *15:18:48.9±1.2,20.″19S×167.″40E,h10km,mb4.1/1,Error ellipse: s-maj=26.7km s-min=15.4km az=112.0*
ISCJB ***10*** *15:18:51.4±1.6,20.″02S±0.″08×167.″2E±0.″2,h33km, mb3.9/6,Error ellipse: s-maj=31.9km s-min=11.6km az=7.0*
ISC 10 15:18:53.0±1.7,20.″1S±0.″1×167.″2E±0.″2,h35km,n10,σ1§78/10,mb3.9/6,Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.10**	**199**	Pn	**Pn**	**15 19 23.6**	**-2.1**
	8.8nm,0.3s,baz=126,slow=19,SNR=11						
DZM				Sn	**Sn**	**15 19 52.9**	**+2.1**
	52nm,0.3s,baz=145,slow=22,SNR=13						
HNR	**Honiara**	**12.69**	**326**	*e*Pn	Pn	15 21 45.1	-6.0
CTAO	**Charters Tower**	**19.66**	**266**	P	**P**	**15 23 16.4**	**-2.7**
STKA	**Stephens Creek**	**25.76**	**238**	P	**P**	**15 24 21.5**	**+0.9**
	2.8nm,0.7s,baz=68,slow=9.6,SNR=9.6						
WRAB	**Tennant Creek**	**30.83**	**265**	*e*P	**P**	**15 25 06.9**	**+1.0**
	1.3nm,0.5s						
WRA	**Warrramunga Arr**	**30.84**	**265**	P	**P**	**15 25 06.8**	**+0.7**
	0.6nm,0.4s,baz=93,slow=8.5,SNR=10						
ASAR	**Alice Springs**	**31.05**	**257**	P	**P**	**15 25 08.8**	**+0.9**
	3.4nm,0.7s,baz=88,slow=8.7,SNR=30						
FITZ	**Fitzroy Crossi**	**39.24**	**266**	P	**P**	**15 26 19.9**	**+1.5**
	baz=126,slow=19						
CMAR	**Chiang Mai Arr**	**77.10**	**295**	P	**P**	**15 30 43.7**	**+0.4**
	0.8nm,0.7s,baz=147,slow=4.6,SNR=4.9						
ILAR	**Eielson Array**	**91.61**	**18**	P	**P**	**15 31 56.1**	**+0.2**
	0.3nm,0.7s,baz=206,slow=5.9,SNR=3.9						

CSEM ***10*** *15:22:04.0±0.3,48.″34N×15.″73E,h1km,ML1.4,Error ellipse: s-maj=8.2km s-min=4.7km az=113.0,Suspected Mining explosion.*
VIE 10 15:22:04.3±0.7,48.″33N×15.″68E,h0km,mb1.1/3,ml1.4/4, Error ellipse: s-maj=4.8km s-min=4.1km az=31.0, Suspected Mining explosion.,Austria

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CONA	**Conrad Observa**	**0.42**	**163**	*i* Pg	Pg	15 22 12.6	+0.4
CONA				*i* Sg	Sg	15 22 19.2	+1.6
	0.9nm,0.1s						
CONA	**Conrad Observa**	**0.42**	**163**	Pg	Pg	15 22 12.6	+0.4
CONA				Sg	Sg	15 22 19.2	+1.6
	0.9nm,0.1s						
MOA	**Molln**	**1.06**	**244**	*i* Pg	Pb	15 22 25.5	0.0
	0.3nm,0.1s						
MOA				*i* Sg	Sb	15 22 39.1	-0.8
MOA	**Molln**	**1.06**	**244**	Pg	Pb	15 22 25.5	0.0
	0.3nm,0.1s						
MOA				Sg	Sb	15 22 39.1	-0.8
ARSA	**Arzberg**	**1.08**	**186**	*i* Pg	Pg	15 22 24.3	-0.6
	0.2nm,0.1s						
ARSA				*i* Sg	Sg	15 22 39.1	+0.1
	1.7nm,0.3s						
ARSA	**Arzberg**	**1.08**	**186**	Pg	Pg	15 22 24.3	-0.7
	0.2nm,0.1s						
ARSA				Sg	Sg	15 22 39.1	+0.2
	1.7nm,0.3s						
VRAC	**Vranov**	**1.16**	**31**	*e*Pg	Pg	15 22 25.6	-0.8
VRAC				*e*Sg	Sg	15 22 40.2	-1.2

NIED ***10*** *15:22:00,36.″70N×140.″90E,h44km,Mw3.7 Best double couple: M0 3.77000×1014 NP1:φs336.00000°,δ37.00000°, λ60.00000°. NP2:φs192.00000°,δ58.00000°,λ111.00000°.*
IDC ***10*** *15:22:33.2±1.0,36.″60N×141.″11E,h0km,mb3.6/6, mb1 3.7/9,mb1mx3.4/77,mbtmp3.5/9,ML3.4/3,MS4.0/1, Ms1 4.0/1,ms1mx2.9/52,Error ellipse: s-maj=23.0km s-min=20.3km az=75.0*
ISCJB ***10*** *15:22:38.2±0.7,36.″71N±0.″04×141.″07E±0.″07,h51km±5km, mb3.5/6,MS3.8/1,Error ellipse: s-maj=9.8km s-min=5.4km az=20.8*
JMA ***10*** *15:22:39.7±0.1,36.″73N×140.″93E,h52km±1km,M3.7*
JMA Felt II J1.
ISC 10 15:22:39.7±1.1,36.″73N±0.″04×141.″01E±0.″08,h44km±9km, n27,σ0§91/30,mb3.5/6,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.38**	**252**	P	**Pn**	**15 22 49.1**	**0.0**
JHO				S	**Sn**	**15 22 55.6**	**-0.1**
ONAJ	**Iwakimizuishiy**	**0.41**	**335**	P	**Pn**	**15 22 49.7**	**+0.2**
ONAJ				S	**Sn**	**15 22 56.6**	**+0.1**
JFK	**Kawauchi**	**0.65**	**350**	P	**Pn**	**15 22 52.4**	**-0.1**
JFK				S	**Sn**	**15 23 01.3**	**-0.5**
JYT	**Yasato**	**0.83**	**233**	P	**Pn**	**15 22 54.3**	**-0.6**
JYT				S	**Sn**	**15 23 04.6**	**-1.4**
JFT	**Otama**	**0.96**	**326**	P	**Pn**	**15 22 56.8**	**+0.1**
JFT				*i* S	**Sn**	**15 23 09.2**	**0.0**
JMM	**Marumori**	**1.15**	**351**	P	**Pn**	**15 22 59.3**	**0.0**
JMM				S	**Sn**	**15 23 13.7**	**-0.2**
JFY	**Yanaizu**	**1.25**	**303**	P	**Pn**	**15 23 00.2**	**-0.5**
JAG	**Ashikaga**	**1.29**	**257**	P	**Pn**	**15 23 00.5**	**-0.7**
JKT	**Katashina**	**1.42**	**272**	P	**Pn**	**15 23 02.6**	**-0.4**
JKT				S	**Sn**	**15 23 19.7**	**-0.9**
MJAR	**Matsushiro Arr**	**2.26**	**266**	Pn	**Pn**	**15 23 14.5**	**-0.1**
	15nm,0.3s,baz=89,slow=15,SNR=77						
MJAR				Sn	**Sn**	**15 23 43.4**	**+2.2**
	11nm,0.3s,baz=81,slow=14,SNR=11						
MAT	**Matsushiro**	**2.27**	**266**	P	**Pn**	**15 23 14.9**	**+0.3**
MAT				S	**Sn**	**15 23 43.2**	**+1.9**
JHJ	**Hachijo jima 2**	**3.74**	**196**	Pn	**Pn**	**15 23 34.8**	**-0.1**
	6.2nm,0.3s,baz=103,slow=22,SNR=6.8						
JHJ				Sn	**Sn**	**15 24 19.8**	**+2.2**
	14nm,0.3s,baz=244,slow=21,SNR=3.4						
ASAJ	**Asahikawa**	**7.48**	**9**	Pn	**Pn**	**15 24 26.0**	**-0.1**
	0.6nm,0.3s,baz=214,slow=12,SNR=8.1						
KSRS	**Korea Array**	**10.48**	**278**	Pn	**Pn**	**15 25 07.4**	**+0.1**
	0.2nm,0.3s,baz=107,slow=14,SNR=3.9						
PETK	**Petropavlovsk-**	**20.11**	**30**	LR	LR	15 35 31.2	
	comp=Z,371nm,18.6s,baz=23,slow=38						
H11N2	**WAKE ISLAND Hy 28.27**	**120**		T	T	15 58 14.6	
	baz=313,slow=75,SNR=15						
H11N1	**WAKE ISLAND Hy 28.28**	**120**		T	T	15 58 31.3	
	baz=313,slow=75,SNR=15						
H11N3	**WAKE ISLAND Hy 28.29**	**120**		T	T	15 58 33.6	
	baz=313,slow=75,SNR=13						
H11S1	**WAKE ISLAND Hy 28.97**	**122**		T	T	15 59 16.4	
	baz=314,slow=76,SNR=16						
H11S3	**WAKE ISLAND Hy 28.97**	**122**		T	T	15 59 01.7	
	baz=314,slow=76,SNR=12						
H11S2	**WAKE ISLAND Hy 28.98**	**122**		T	T	15 59 22.8	
	baz=314,slow=76,SNR=10.0						
ZALV	**Zalesovo Beam**	**41.88**	**313**	P	**P**	**15 30 25.4**	**0.0**
	0.3nm,0.4s,baz=69,slow=7.9,SNR=2.5						
MKAR	**Makanchi Array**	**44.01**	**302**	P	**P**	**15 30 42.1**	**-0.7**
	0.3nm,0.6s,baz=91,slow=8.9,SNR=3.0						
KURBB	**Kurchatov Arra**	**45.94**	**308**	P	**P**	**15 30 58.8**	**+0.9**
	0.4nm,0.4s,baz=84,slow=8.6,SNR=5.8						
ILAR	**Eielson Array**	**49.92**	**32**	P	**P**	**15 31 29.4**	**+0.8**
	0.4nm,0.9s,baz=280,slow=5.4,SNR=3.8						
WRA	**Warrramunga Arr**	**56.72**	**188**	P	**P**	**15 32 17.6**	**-1.3**
	1.0nm,0.5s,baz=4.4,slow=7.3,SNR=27						
ASAR	**Alice Springs**	**60.44**	**187**	P	**P**	**15 32 44.0**	**-0.9**
	0.4nm,0.7s,baz=20,slow=6.5,SNR=5.6						

NIED ***10*** *15:26:00,43.″50N×131.″50E,h680km,Mw5.5 Best double couple: M0 2.22000×1017 NP1:φs261.00000°, δ7.00000°,λ16.00000°. NP2:φs155.00000°,δ88.00000°, λ97.00000°.*
JMA ***10*** *15:26:01.4±0.2,43.″52N×131.″50E,h632km±4km,M5.6*
BJI ***10*** *15:26:03.1,43.″30N×131.″20E,h560km,mb6.1/76, mB5.7/31*
ISCJB ***10*** *15:26:03.9±0.1,43.″28N±0.″01×130.″95E±0.″02, h546km±1km,mb5.4/479,Error ellipse: s-maj=2.0km s-min=1.6km az=142.5*
SKHL ***10*** *15:26:04.3±0.6,43.″31N×131.″17E,h554km±8km,mb6.2/8, mbh6.4/4,mbv6.5/6,msh6.0/8,msha5.9/3*
GCMT ***10*** *15:26:04.6±0.6,43.″61N×130.″98E,h564km±4km, MW5.7/47,Moment Tensor Solution. s47,c63; Duration: 1§7 Moment tensor: Scale 1017Nm; Mrr0.74±.15; Mθθ2.16±.23; Mφφ-2.91±.26; Mrθ1.53±.23; Mrφ2.33±.22; Mθφ-3.24±.23; Best double couple: M0 4.47500×1017 NP1:φs298.00000°,δ86.00000°,λ-37.00000°. NP2: φs31.00000°,δ53.00000°,λ-175.00000°. Principal axes: T 3.1710, Plg22.0000°, Azm351.0000°; N 2.6010, Plg52.0000°, Azm112.0000°; P -5.7790, Plg29.0000°, Azm248.0000°; nsta1 refers to body waves, cutoff=40s.*
MOS ***10*** *15:26:04.0±0.8,43.″34N×131.″11E,h558km,mb5.5/110 Error ellipse: s-maj=6.3km s-min=4.5km az=102.7*
NEIC ***10*** *15:26:04.6±0.1,43.″29N×130.″94E,mb5.4/295,Error ellipse: s-maj=2.5km s-min=2.0km az=141.0*
IDC ***10*** *15:26:05.6±0.2,43.″33N×130.″98E,h555km±2km,mb4.6/54, mb1 4.7/59,mb1mx4.6/73,mbtmp5.6/59,Error ellipse: s-maj=4.7km s-min=3.8km az=60.0*
ISC 10 15:26:05.1±0.2,43.″32N±0.″02×131.″09E±0.″02,h555km±1km, h554km:pP-P,n1740,σ1§35/2315,mb5.4/498,55C-103D, Priamurye-Northeastern China border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VLA	**Vladivostok**	**0.61**	**109**	*d iP*	**P**	**15 27 11.1**	**+0.1**
VLA	**Vladivostok**	**0.61**	**109**	⇓*iP*	**P**	**15 27 11.1**	**+0.1**
VLA				AMB	AMB	15 27 11.8	
	6μm,1.6s						
VLA				*e*S	**S**	**15 28 04.7**	**-0.1**
VLA				A	A	15 28 06.1	
	42μm,5.0s						
MSHR	**Mys Shultsa**	**0.74**	**176**	*c iP*	**P**	**15 27 11.3**	**-0.1**
GRTR	**Gornotajezhnoj**	**0.87**	**63**	⇓*iP*	**P**	**15 27 11.6**	**+0.2**
GRTR				*erx*	rx	15 27 36.0	
GRTR				*i* S	**S**	**15 28 04.8**	**-0.9**
USRK	**Ussuriysk Ar.**	**1.09**	**36**	P	**P**	**15 27 11.5**	**-0.3**
	282nm,0.3s,baz=239,slow=1.9,SNR=6591						
USRK				S	**S**	**15 28 06.0**	**-0.7**
	29nm,0.3s,baz=238,slow=11,SNR=7.0						
MDJ	**Mudanjiang**	**1.69**	**321**	P	**P**	**15 27 13.9**	**+0.1**
MDJ				S	**S**	**15 28 09.2**	**-0.8**
MDJ				PcS	**PcS**	**15 37 03.1**	**0.0**
MDJ				ScS	**ScS**	**15 39 42.3**	**+0.5**
MDJ				pmax	pmax		
	comp=Z,6μm,0.8s						
MDJ	**Mudanjiang**	**1.69**	**321**	*e*P	**P**	**15 27 14.0**	**+0.3**
CN2	**Changchun**	**4.13**	**279**	⇑*iP*	**P**	**15 27 27.9**	**-0.2**
CN2				*e*S	**S**	**15 28 33.2**	**-2.9**
CN2				PcP	**PcP**	**15 33 36.7**	**+4.8**
CN2				ScS	**ScS**	**15 39 41.8**	**-1.3**
CN2				pmax	pmax		
	comp=Z,200nm,3.0s						
TEY	**Ternei**	**4.32**	**65**	⇓*iP*	**P**	**15 27 29.6**	**+0.1**
TEY				AMB	AMB	15 27 31.1	
	18μm,1.8s						
TEY				AMB	AMB	15 27 31.1	
	421nm,0.4s						
TEY				AMB	AMB	15 27 31.1	
	562nm,0.4s						
TEY				AMB	AMB	15 27 31.1	
	3μm,1.6s						
TEY				AMB	AMB	15 27 31.1	
	7μm,1.6s						
TEY				*e*S	**S**	**15 28 39.3**	**+0.7**
TEY				A	A	15 28 40.6	
	5μm,4.0s						
TEY				A	A	15 28 40.6	
	4μm,4.0s						
SNY	**Shenyang**	**5.74**	**258**	⇑P	**P**	**15 27 42.4**	**+0.9**
SNY				S	**S**	**15 29 01.9**	**+1.4**
SNY				sP		15 29 06.4	
SNY				ScS	**ScS**	**15 39 43.6**	**-1.0**
SNY				pmax	pmax		
	comp=Z,2μm,5.3s						
HABR	**Khabarovsk**	**5.85**	**27**	*c iP*	**P**	**15 27 41.0**	**-1.3**
HABR				*e*S	**S**	**15 29 00.9**	**-1.1**
HABR				pmax	pmax		
	comp=N,1μm,1.0s						
HABR				pmax	pmax		
	comp=E,891nm,1.0s						
HABR				pmax	pmax		
	comp=Z,3μm,1.0s						
KHBR	**Khabarovsk**	**5.85**	**27**	⇓*iP*	**P**	**15 27 42.9**	**+0.6**
KHBR				*i* S	**S**	**15 29 01.0**	**-1.1**
KLR	**Kul'dur**	**5.93**	**4**	P	**P**	**15 27 43.8**	**+0.8**
	comp=Z,250nm,0.3s,baz=200,slow=9.6,SNR=3379						
KLR				S	**S**	**15 29 03.4**	**0.0**
	baz=355,slow=21,SNR=40						
JOSM	**Okushiri--Mats**	**6.30**	**98**	P	**P**	**15 27 44.4**	**-2.2**
JOSM				*e*S	**S**	**15 29 06.0**	**-3.7**
KS01	**Wonju Array Si**	**6.33**	**204**	*e*P	**P**	**15 27 46.7**	**-0.2**
KSRS	**Korea Array**	**6.34**	**203**	P	**P**	**15 27 47.8**	**+0.8**
	comp=Z,112nm,0.3s,baz=20,slow=9.2,SNR=5301						
KSRS				S	**S**	**15 29 11.9**	**+1.5**
	baz=21,slow=15,SNR=10						
KSRS				ScP	**ScP**	**15 36 11.9**	**-0.3**
	comp=Z,0.3nm,0.3s,baz=302,slow=1.1,SNR=8.7						
KS15	**Wonju Array Si**	**6.36**	**204**	*e*P	**P**	**15 27 47.8**	**+0.5**
KS15				*e*ScP	**ScP**	**15 36 11.7**	**-0.7**
KSAR	**Wonju Array Be**	**6.36**	**204**	P	**P**	**15 27 47.8**	**+0.5**
KSAR				S	**S**	**15 29 11.9**	**+1.1**
KSAR	**Wonju Array Be**	**6.36**	**204**	P	**P**	**15 27 47.8**	**+0.5**
KSAR				S	**S**	**15 29 11.9**	**+1.1**
KSAR				ScP	**ScP**	**15 36 11.9**	**-0.3**
KSAR	**Wonju Array Be**	**6.36**	**204**	P	**P**	**15 27 47.8**	**+0.5**
INCN	**Inchon**	**6.75**	**212**	P	**P**	**15 27 51.8**	**+0.8**
	SNR=80						
INCN	**Inchon**	**6.75**	**212**	P	**P**	**15 27 51.8**	**+0.8**
	SNR=80						
INCN	**Inchon**	**6.75**	**212**	*e*P	**P**	**15 27 51.4**	**+0.5**
JHG	**Hegura jima**	**7.04**	**139**	P	**P**	**15 27 53.3**	**-0.3**
JHG				S	**S**	**15 29 23.0**	**+0.6**
JOI	**OKI**	**7.21**	**166**	P	**P**	**15 27 55.2**	**-0.1**
JOG2	**Oga 2**	**7.35**	**115**	P	**P**	**15 27 55.0**	**-1.5**
JOG2				*e*S	**S**	**15 29 25.2**	**-2.7**
JKB	**Kayabe**	**7.47**	**98**	P	**P**	**15 27 55.4**	**-2.3**
JKB				S	**S**	**15 29 24.5**	**-5.5**
TJN	**Taejon**	**7.50**	**204**	*c iP*	**P**	**15 27 58.7**	**+0.6**
JSD	**Sado**	**7.58**	**132**	P	**P**	**15 27 57.0**	**-1.9**
JSD				*e*S	**S**	**15 29 29.8**	**-2.3**
JOT	**Ohata**	**7.62**	**101**	P	**P**	**15 27 56.5**	**-2.7**
JOT				S	**S**	**15 29 26.7**	**-6.1**
JHR	**Hokuryu**	**7.74**	**83**	P	**P**	**15 27 59.0**	**-1.2**
JHR				*e*S	**S**	**15 29 30.0**	**-4.8**
JAW	**Awa shima**	**7.86**	**125**	P	**P**	**15 27 59.4**	**-2.1**
JAW				*e*S	**S**	**15 29 33.4**	**-3.6**
JWK2	**Keihoku**	**8.00**	**72**	P	**P**	**15 28 02.3**	**-0.5**
JWK2				S	**S**	**15 29 33.4**	**-6.0**
JKG	**Kaga**	**8.11**	**148**	P	**P**	**15 28 03.1**	**-0.9**
JKG				S	**S**	**15 29 39.7**	**-1.8**
JRG	**Rokugo**	**8.18**	**115**	P	**P**	**15 28 02.1**	**-2.6**
JRG				S	**S**	**15 29 37.1**	**-5.7**
JKSM	**Kasumi**	**8.20**	**159**	P	**P**	**15 28 04.5**	**-0.5**
JKSM				S	**S**	**15 29 45.4**	**+2.1**
JTT	**Ttatey**	**8.24**	**142**	P	**P**	**15 28 04.1**	**-1.3**
JTT				S	**S**	**15 29 42.6**	**-1.4**
JKY	**Yasaka**	**8.28**	**157**	P	**P**	**15 28 05.3**	**-0.5**
GRNR	**Gornyy**	**8.29**	**24**	⇓*iP*	**P**	**15 28 05.5**	**0.0**
GRNR				AMB	AMB	15 28 05.8	
	comp=Z,590nm,0.5s						
GRNR				*i* S	**S**	**15 29 42.7**	**-1.9**
NEVR	**Nevel'sk**	**8.34**	**63**	⇓*iP*	**P**	**15 28 06.0**	**0.0**
ASAJ	**Asahikawa**	**8.37**	**81**	P	**P**	**15 28 05.5**	**-0.9**
	comp=Z,279nm,0.3s,baz=271,slow=9.6,SNR=2360						
ASAJ				S	**S**	**15 29 44.2**	**-2.0**
	baz=92,slow=23,SNR=6.5						
ASAJ	**Asahikawa**	**8.37**	**81**	*e*P	**P**	**15 28 05.1**	**-1.4**
ASAJ				S	**S**	**15 29 44.2**	**-2.0**
JKA	**Kamikawa-asahi**	**8.38**	**81**	P	**P**	**15 28 05.6**	**-0.9**
DL2	**Dalian**	**8.39**	**242**	P	**P**	**15 28 07.2**	**+0.4**
DL2				sP		15 29 39.7	
DL2				S	**S**	**15 29 47.5**	**+0.8**
DL2				ScP	**ScP**	**15 36 13.9**	**-0.3**
DL2				ScS	**ScS**	**15 39 46.5**	**-1.7**
DL2				pmax	pmax		
	comp=Z,1μm,0.8s						
JHS	**Saijyo**	**8.46**	**169**	P	**P**	**15 28 07.7**	**+0.1**
JHS				S	**S**	**15 29 48.2**	**+0.2**
JHK	**Hiroka**	**8.57**	**132**	P	**P**	**15 28 06.5**	**-2.1**
JHK				S	**S**	**15 29 45.5**	**-4.4**
KHLM	**Kholmsk**	**8.59**	**60**	*e*P	**P**	**15 28 08.4**	**-0.2**
JWT	**Wachi**	**8.69**	**156**	P	**P**	**15 28 09.6**	**-0.3**
JWT				S	**S**	**15 29 51.5**	**-0.8**
MJB9	**Matsu-Tunnel**	**8.69**	**139**	*e*P	**P**	**15 28 07.7**	**-2.2**
MAJO	**Matsushiro**	**8.70**	**139**	*c iP*	**P**	**15 28 07.8**	**-2.1**
MAJO	**Matsushiro**	**8.70**	**139**	*e*P	**P**	**15 28 07.7**	**-2.2**
MAT	**Matsushiro**	**8.70**	**139**	P	**P**	**15 28 07.7**	**-2.2**
MAT				S	**S**	**15 29 47.9**	**-4.5**
MJAR	**Matsushiro Arr**	**8.70**	**139**	P	**P**	**15 28 08.2**	**-1.7**
	comp=Z,15nm,0.3s,baz=322,slow=10,SNR=242						
MJAR				ScP	**ScP**	**15 36 14.5**	**-0.1**
	comp=Z,0.2nm,0.3s,baz=293,slow=1.2,SNR=6.3						
JNG	**Nsakai**	**8.76**	**140**	P	**P**	**15 28 08.6**	**-2.0**
JNG				S	**S**	**15 29 49.8**	**-3.8**
JMK	**Ichinoseki**	**8.80**	**116**	P	**P**	**15 28 07.7**	**-3.1**
JMK				S	**S**	**15 29 46.1**	**-8.0**
JTU	**Tsushima**	**8.88**	**189**	P	**P**	**15 28 12.2**	**+0.4**
ERM	**Erimo**	**8.99**	**94**	*c iP*	**P**	**15 28 10.8**	**-1.9**
ERM	**Erimo**	**8.99**	**94**	*e*P	**P**	**15 28 10.3**	**-2.4**
ERM	**Erimo**	**8.99**	**94**	P	**P**	**15 28 10.8**	**-1.9**
YSS	**Yuzh-Sakhalins**	**9.01**	**62**	⇓*iP*	**P**	**15 28 11.7**	**-1.1**
YSS				*i* S	**S**	**15 29 53.5**	**-4.2**
YSS				pmax	pmax		
	comp=Z,3μm,2.0s						
YSS				pmax	pmax		
	comp=Z,1μm,0.6s						
YSS				smax	smax		
	comp=N,5μm,4.0s						
YSS				smax	smax		
	comp=E,4μm,3.0s						
YSS				smax	smax		
	comp=N,540nm,1.2s						
YSS				smax	smax		
	comp=E,340nm,1.7s						
YSS	**Yuzh-Sakhalins**	**9.01**	**62**	⇓*iP*	**P**	**15 28 11.7**	**-1.1**
YSS				AMB	AMB	15 28 12.9	
	comp=E,3μm,2.0s						
YSS				AMB	AMB	15 28 14.0	
	comp=E,1μm,0.6s						
YSS				*i* S	**S**	**15 29 53.5**	**-4.2**
YSS				A	A	15 29 55.5	
	comp=E,5μm,4.0s						
YSS				A	A	15 29 55.5	
	comp=E,4μm,3.0s						
YSS				A	A	15 29 57.0	
	comp=E,340nm,1.7s						
YSS				A	A	15 29 57.0	
	comp=E,540nm,1.2s						
JCH	**Churui**	**9.03**	**90**	P	**P**	**15 28 09.8**	**-3.3**
JCH				S	**S**	**15 29 49.6**	**-8.6**
JFT	**Otama**	**9.12**	**126**	P	**P**	**15 28 11.8**	**-2.4**
JMM	**Marumori**	**9.17**	**123**	P	**P**	**15 28 11.4**	**-3.2**
JMM				S	**S**	**15 29 53.3**	**-7.7**
INU	**Inuyama**	**9.19**	**148**	*e*P	**P**	**15 28 12.2**	**-2.6**
JTKR	**Abashiri--Toko**	**9.32**	**82**	P	**P**	**15 28 14.6**	**-1.4**
JTKR				S	**S**	**15 29 58.9**	**-4.6**
JRY	**Ryogami san**	**9.45**	**138**	P	**P**	**15 28 14.4**	**-3.2**
UGL	**Uglegorsk**	**9.54**	**49**	⇓*iP*	**P**	**15 28 17.8**	**-0.3**
UGL				*i* S	**S**	**15 30 04.2**	**-3.3**
UGL				pmax	pmax		
	comp=N,1μm,1.0s						
UGL				pmax	pmax		
	comp=E,4μm,1.0s						
UGL				pmax	pmax		
	comp=Z,8μm,1.0s						
UGL				pmax	pmax		
	comp=Z,5μm,1.0s						
UGL				smax	smax		
	comp=N,3μm,6.0s						
UGL				smax	smax		
	comp=E,13μm,6.0s						
UGL	**Uglegorsk**	**9.54**	**49**	⇓*iP*	**P**	**15 28 17.8**	**-0.3**
UGL				⇓*iP*	**P**	**15 28 17.8**	**-0.3**
UGL				AMB	AMB	15 28 19.0	
	comp=E,5μm,1.0s						
UGL				AMB	AMB	15 28 19.0	
	comp=E,1μm,1.0s						
UGL				AMB	AMB	15 28 19.0	
	comp=E,4μm,1.0s						
UGL				AMB	AMB	15 28 19.0	
	comp=E,8μm,1.0s						

JTO	**Tosashimizu**	**10.53**	**172**	P	**P**	**15 28 27.5**	**-1.1**
TTO1	**TONANKAI O.B.S**	**10.66**	**153**	P	**P**	**15 28 28.7**	**-0.8**
NEM2	**Nemuro 2**	**10.68**	**85**	P	**P**	**15 28 27.3**	**-2.5**
NEM2				S	**S**	**15 30 21.4**	**-7.5**
YUK	**Yuzh-Kuril'sk**	**10.73**	**81***d*	*i* P	**P**	**15 28 29.4**	**-0.9**
YUK				*i* S	**S**	**15 30 27.1**	**-2.7**
YUK				pmax	pmax		
	comp=Z,2μm,0.7s						
YUK				pmax	pmax		
	comp=E,273nm,0.4s						
YUK				pmax	pmax		
	comp=N,322nm,0.5s						
YUK	**Yuzh-Kuril'sk**	**10.73**	**81** ⇓	*i* P	**P**	**15 28 29.4**	**-0.9**
YUK				AMB	AMB	15 28 34.8	
	comp=N,2μm,0.7s						
YUK				*i* S	**S**	**15 30 27.1**	**-2.7**
ZEA	**Zeya**	**10.73**	**348** ⇑	*i* P	**P**	**15 28 30.1**	**-0.1**
ZEA				⇑ *i* P	**P**	**15 28 30.1**	**-0.1**
ZEA				AMB	AMB	15 28 31.3	
	comp=N,690nm,1.2s						
ZEA				AMB	AMB	15 28 31.3	
	comp=N,1μm,1.2s						
ZEA				AMB	AMB	15 28 32.0	
	comp=N,600nm,2.0s						
ZEA				AMB	AMB	15 28 32.0	
	comp=N,1μm,2.0s						
ZEA				*i* S	**S**	**15 30 28.0**	**-1.7**
ZEA				A	A	15 30 32.0	
	comp=N,4μm,6.0s						
ZEA				A	A	15 30 32.0	
	comp=N,3μm,6.0s						
TYV	**Tymovskoe**	**10.90**	**42**	*e* P	**P**	**15 28 33.2**	**+1.2**
TYV				*e* S	**S**	**15 30 26.0**	**-7.0**
TYV				pmax	pmax		
	comp=E,2μm,2.0s						
TYV				pmax	pmax		
	comp=Z,4μm,2.0s						
TYV				pmax	pmax		
	comp=E,2μm,1.8s						
TYV				pmax	pmax		
	comp=Z,6μm,1.8s						
TYV				smax	smax		
	comp=N,7μm,3.0s						
TYV				smax	smax		
	comp=N,3μm,2.0s						
TYV				MLR	MLR		
	comp=E,2μm,6.0s						
TYV				MLR	MLR		
	comp=E,3μm,10.0s						
TYV	**Tymovskoe**	**10.90**	**42** ⇓	*i* P	**P**	**15 28 33.1**	**+1.1**
TYV				AMB	AMB	15 28 34.0	
	comp=Z,2μm,2.0s						
TYV				AMB	AMB	15 28 34.0	
	comp=Z,4μm,2.0s						
TYV				AMB	AMB	15 28 35.2	
	comp=Z,1μm,1.2s						
TYV				*e* S	**S**	**15 30 31.0**	**-2.0**
TYV				A	A	15 30 34.0	
	comp=Z,7μm,3.0s						
TYV				A	A	15 30 35.2	
	comp=Z,3μm,2.0s						
SHO	**Shikotan**	**11.43**	**82***d*	*i* P	**P**	**15 28 35.1**	**-2.5**
SHO				*i* S	**S**	**15 30 37.7**	**-5.4**
SHO				pmax	pmax		
	comp=Z,689nm,0.4s						
SHO				pmax	pmax		
	comp=E,683nm,0.8s						
SHO				pmax	pmax		
	comp=N,340nm,0.2s						
SHO	**Shikotan**	**11.43**	**82** ⇓	*i* P	**P**	**15 28 35.1**	**-2.5**
SHO				AMB	AMB	15 28 47.5	
	comp=N,689nm,0.4s						
SHO				*i* S	**S**	**15 30 37.7**	**-5.4**
KROS	**Kirovskiy**	**11.45**	**348** ⇑	*i* P	**P**	**15 28 37.1**	**-0.5**
KROS				AMB	AMB	15 28 38.0	
	comp=N,120nm,0.9s						
KROS				AMB	AMB	15 28 38.0	
	comp=N,24nm,0.9s						
KROS				AMB	AMB	15 28 38.0	
	comp=N,260nm,0.9s						
BMKR	**Bomnak**	**11.50**	**353** ⇑	*i* P	**P**	**15 28 37.0**	**-1.1**
BMKR				AMB	AMB	15 28 37.8	
	comp=N,98nm,0.7s						
BSO1	**Boso 1**	**11.57**	**135**	P	**P**	**15 28 36.1**	**-2.5**
BJI	**Beijing**	**11.63**	**259**	P	**P**	**15 28 39.8**	**+0.1**
BJI				S	**S**	**15 30 45.9**	**-1.0**
BJI				PcP	**PcP**	**15 33 38.1**	**+0.3**
BJI				ScP	**ScP**	**15 36 18.4**	**+0.2**
BJI				ScS	**ScS**	**15 39 53.7**	**-0.3**
BJI				pmax	pmax		
	comp=N,2μm,0.8s						
BJT	**Baijiatuau**	**11.64**	**259**	*e* P	**P**	**15 28 39.7**	**-0.1**
BJT	**Baijiatuau**	**11.64**	**259**	*e* P	**P**	**15 28 39.7**	**-0.1**
BJT				*e* ScP	**ScP**	**15 36 18.0**	**-0.2**
BJT	**Baijiatuau**	**11.64**	**259**	*e* P	**P**	**15 28 39.7**	**-0.1**
JSJ	**Shimokoshiki**	**11.67**	**186**	P	**P**	**15 28 39.5**	**-0.8**
NKL	**Nikolayevsk**	**11.72**	**30**	*i* P	**P**	**15 28 40.0**	**-0.3**
NKL				*i* S	**S**	**15 30 45.0**	**-3.2**
NKL				pmax	pmax		
	comp=N,800nm,4.0s						
NKL				pmax	pmax		
	comp=Z,1μm,4.0s						
NKL				pmax	pmax		
	comp=N,150nm,1.0s						
NKL				pmax	pmax		
	comp=E,86nm,1.0s						
NKL				pmax	pmax		
	comp=Z,440nm,1.0s						
NKL				smax	smax		
	comp=N,8μm,8.0s						
NKL				smax	smax		
	comp=E,4μm,8.0s						
NKL	**Nikolayevsk**	**11.72**	**30** ⇓	*i* P	**P**	**15 28 40.0**	**-0.3**
NKL				AMB	AMB	15 28 42.0	
	comp=E,800nm,4.0s						
NKL				AMB	AMB	15 28 42.0	
	comp=E,1μm,4.0s						
NKL				AMB	AMB	15 28 42.5	
	comp=E,150nm,1.0s						
NKL				AMB	AMB	15 28 42.5	
	comp=E,86nm,1.0s						
NKL				AMB	AMB	15 28 42.5	
	comp=E,440nm,1.0s						
NKL				*i* S	**S**	**15 30 45.0**	**-3.2**
NKL				A	A	15 30 48.0	
	comp=E,8μm,8.0s						
NKL				A	A	15 30 48.0	
	comp=E,4μm,8.0s						
KUR	**Kuril'sk**	**12.18**	**75***d*	*i* P	**P**	**15 28 44.7**	**-0.5**
KUR				*i* S	**S**	**15 30 56.3**	**-0.8**
KUR				pmax	pmax		
	comp=Z,918nm,2.1s						
KUR				pmax	pmax		
	comp=N,45nm,0.6s						
KUR				pmax	pmax		
	comp=E,36nm,0.6s						
KUR				pmax	pmax		
	comp=Z,214nm,0.6s						
KUR				pmax	pmax		
	comp=N,1μm,2.9s						
KUR				pmax	pmax		
	comp=E,2μm,2.9s						
KUR	**Kuril'sk**	**12.18**	**75** ⇓	*i* P	**P**	**15 28 44.8**	**-0.5**
KUR				AMB	AMB	15 28 45.7	
	comp=E,918nm,2.1s						
KUR				AMB	AMB	15 28 50.1	
	comp=E,45nm,0.6s						
KUR				AMB	AMB	15 28 50.1	
	comp=E,36nm,0.6s						
KUR				AMB	AMB	15 28 50.1	
	comp=E,214nm,0.6s						
KUR				*i* S	**S**	**15 30 56.4**	**-0.7**
KUR				A	A	15 30 59.2	
	comp=E,1μm,3.0s						
KUR				A	A	15 30 59.2	
	comp=E,2μm,3.0s						
JHJ	**Hachijo jima 2**	**12.26**	**143**	P	**P**	**15 28 44.0**	**-2.2**
	comp=E,66nm,0.3s,baz=341,slow=21,SNR=28						
JHJ				S	**S**	**15 30 57.9**	**-1.0**
	comp=E,98nm,0.3s,baz=249,slow=23,SNR=6.9						
JHJ2	**Mitsune**	**12.28**	**143**	P	**P**	**15 28 45.5**	**-1.0**
JHJ2	**Mitsune**	**12.28**	**143**	*e* P	**P**	**15 28 43.1**	**-3.4**
TIA	**Tai'an**	**12.87**	**241**	⇓ P	**P**	**15 28 52.4**	**-0.2**
TIA				S	**S**	**15 31 10.3**	**-0.2**
TIA				pmax	pmax		
	comp=E,2μm,0.9s						
TIA				pmax	pmax		
	comp=E,5μm,3.5s						
OKH	**Okha**	**12.89**	**33**	*e* P	**P**	**15 28 53.0**	**+0.6**
OKH				*i* S	**S**	**15 31 10.0**	**-0.2**
OKH				smax	smax		
	comp=N,10μm,8.0s						
OKH	**Okha**	**12.89**	**33**	*e* P	**P**	**15 28 52.8**	**+0.4**
OKH				AMB	AMB	15 28 57.0	
	comp=N,500nm,0.5s						
OKH				*i* S	**S**	**15 31 10.0**	**-0.2**
OKH				A	A	15 31 14.2	
	comp=N,10μm,8.0s						
OKH				A	A	15 31 14.2	
	comp=N,10μm,8.0s						
CLNS	**Chul'man**	**14.10**	**346**	*e* P	**P**	**15 29 02.3**	**-2.6**
CLNS				*e* S	**S**	**15 31 25.9**	**-7.0**
CLNS				pmax	pmax		
	comp=Z,17nm,1.0s						
CLNS				pmax	pmax		
	comp=E,117nm,0.8s						
CLNS				pmax	pmax		
	comp=N,58nm,0.9s						
CLNS				smax	smax		
	comp=N,199nm,9.4s						
CLNS				smax	smax		
	comp=E,239nm,9.8s						
CLNS	**Chul'man**	**14.10**	**346**	*e* P	**P**	**15 29 02.3**	**-2.6**
CLNS				AMB	AMB	15 29 07.4	
	comp=E,17nm,1.0s						
SSE	**Sheshan**	**14.52**	**216**	P	**P**	**15 29 07.7**	**-1.8**
SSE				S	**S**	**15 31 39.3**	**-2.1**
SSE				pmax	pmax		
	comp=E,1μm,1.0s						
CIT	**Chita**	**14.64**	**313**	*e* P	**P**	**15 29 09.6**	**-1.0**
CIT				*e* S	**S**	**15 31 40.3**	**-3.1**
CIT				pmax	pmax		
	comp=Z,624nm,1.6s						
CIT	**Chita**	**14.64**	**313**	*e* P	**P**	**15 29 09.6**	**-1.0**
HHC	**Hu-ho-hao-te**	**14.71**	**267** ⇓	*i* P	**P**	**15 29 11.3**	**-0.2**
HHC				sP		15 31 13.8	
HHC				S	**S**	**15 31 40.4**	**-4.6**
HHC				pmax	pmax		
	comp=Z,620nm,0.7s						
HHC				pmax	pmax		
	comp=Z,1μm,3.7s						
NJ2	**Nanjing**	**14.83**	**225**	*e* P	**P**	**15 29 11.7**	**-1.0**
NJ2				S	**S**	**15 31 47.2**	**+0.1**
NJ2				PcP	**PcP**	**15 33 41.2**	**-0.8**
NJ2				ScP	**ScP**	**15 36 23.8**	**+0.2**
NJ2				pmax	pmax		
	comp=Z,400nm,1.0s						
NJ2				pmax	pmax		
	comp=Z,1μm,5.4s						
JAMN	**Amaminishikomi**	**15.12**	**186**	P	**P**	**15 29 13.4**	**-2.4**
JAMN				S	**S**	**15 31 50.3**	**-2.2**
TIY	**Taiyuan**	**15.24**	**255**	*e* P	**P**	**15 29 16.9**	**-0.1**
TIY				sP	sP	15 31 18.8	-11
TIY				S	**S**	**15 31 56.6**	**+2.0**
TIY				pmax	pmax		
	comp=Z,630nm,0.8s						
BTO	**Baotou**	**15.90**	**267**	*e* P	**P**	**15 29 22.8**	**-0.7**
JOW	**Kunigami**	**16.61**	**189**	S	**S**	**15 32 09.8**	**-7.5**
JOW	**Kunigami**	**16.61**	**189**	*e* P	**P**	**15 29 26.2**	**-3.9**
	comp=Z,76nm,1.1s						
JOW				*e* ScP	**ScP**	**15 36 27.5**	**+0.3**
ULN	**Ulaanbaatar**	**17.40**	**293***d*	*i* P	**P**	**15 29 37.6**	**+0.4**
ULN				pmax	pmax		
	comp=Z,406nm,1.2s						
ULN	**Ulaanbaatar**	**17.40**	**293**	P	**P**	**15 29 38.0**	**+0.9**
	SNR=89						
ULN	**Ulaanbaatar**	**17.40**	**293**	P	**P**	**15 29 38.0**	**+0.9**
	SNR=89						
ULN	**Ulaanbaatar**	**17.40**	**293**	*e* P	**P**	**15 29 37.7**	**+0.4**
	comp=Z,207nm,0.7s						
ULN				*e* ScP	**ScP**	**15 36 28.3**	**-0.3**
ULN	**Ulaanbaatar**	**17.40**	**293**	*i* P	**P**	**15 29 37.6**	**+0.4**
SONA1	**Songino Array**	**17.84**	**293**	*e* P	**P**	**15 29 41.6**	**+0.4**
SONA1				*e* ScP	**ScP**	**15 36 29.0**	**-0.6**
SONM	**Songino Array**	**17.84**	**293**	P	**P**	**15 29 42.1**	**+0.9**
	comp=Z,18nm,0.3s,baz=99,slow=10,SNR=35						
SONM				ScP	**ScP**	**15 36 28.3**	**-1.3**
	comp=Z,1.8nm,0.3s,baz=165,slow=6.2,SNR=3.5						
BOD	**Bodaibo**	**18.04**	**329** ⇓	*i* P	**P**	**15 29 42.1**	**-0.6**
BOD				*e*		15 32 39.3	
BOD				pmax	pmax		
	comp=Z,204nm,1.3s						
BOD	**Bodaibo**	**18.04**	**329**	*e* P	**P**	**15 29 42.1**	**-0.6**
WHN	**Wuhan**	**18.44**	**232**	⇓ P	**P**	**15 29 46.0**	**-0.7**
WHN				sP	**sP**	**15 32 03.2**	**-2.3**
WHN				S	**S**	**15 32 45.2**	**-1.8**
WHN				ScP	**ScP**	**15 36 31.4**	**+0.4**
WHN				pmax	pmax		
	comp=Z,8μm,2.3s						
CBIJ	**Chichi jima**	**18.52**	**147**	P	**P**	**15 29 45.2**	**-2.3**
CBIJ				S	**S**	**15 32 45.7**	**-2.7**
CBIJ	**Chichi jima**	**18.52**	**147**	*e* P	**P**	**15 29 44.8**	**-2.8**
	comp=Z,244nm,1.1s						
CBIJ				*e* S	**S**	**15 32 45.4**	**-3.0**
CBIJ				*e* ScP	**ScP**	**15 36 30.1**	**-1.2**
JCJ	**Chichijima**	**18.52**	**147**	P	**P**	**15 29 45.3**	**-2.2**
	comp=Z,61nm,0.3s,baz=316,slow=20,SNR=46						
JCJ				S	**S**	**15 32 47.6**	**-0.8**
	comp=Z,17nm,0.3s,baz=119,slow=23,SNR=10						
SKR	**Severo-Kuril's**	**18.53**	**58**	*e* P	**P**	**15 29 40.9**	**-6.3**
SKR				*e* S	**S**	**15 32 40.0**	**-7.8**
SKR				pmax	pmax		
	comp=E,80nm,0.5s						
SKR				pmax	pmax		
	comp=Z,150nm,0.5s						
SKR				MLR	MLR		
	comp=Z,3μm,14.0s						
SKR	**Severo-Kuril's**	**18.53**	**58**	*e* P	**P**	**15 29 46.6**	**-0.6**
SKR				AMB	AMB	15 30 07.9	
	comp=Z,15μm,8.8s						
YAK	**Yakutsk**	**18.76**	**358**	P	**P**	**15 29 48.6**	**-0.6**
	comp=Z,0.4nm,0.3s,baz=177,slow=2.5,SNR=422						
YAK				S	**S**	**15 32 51.2**	**0.0**
	baz=241,slow=23,SNR=7.2						
YAK				ScP	**ScP**	**15 36 30.7**	**-0.5**
	comp=Z,0.0nm,0.3s,baz=128,slow=1.0,SNR=7.2						
YAK	**Yakutsk**	**18.76**	**358***c*	*i* P	**P**	**15 29 48.5**	**-0.6**
YAK				*e* S	**S**	**15 32 48.3**	**-3.0**
YAK				pmax	pmax		
	comp=Z,635nm,0.9s						
YAK				pmax	pmax		
	comp=N,420nm,1.1s						
YAK				pmax	pmax		
	comp=E,59nm,0.9s						
YAK				smax	smax		
	comp=E,566nm,1.3s						
YAK				smax	smax		
	comp=N,2μm,1.6s						
YAK	**Yakutsk**	**18.76**	**358**	*e* P	**P**	**15 29 48.4**	**-0.8**
	comp=N,1μm,1.1s						
YAK				S	**S**	**15 32 51.2**	**0.0**
YAK				*e* ScP	**ScP**	**15 36 30.4**	**-0.7**
XAN	**Xi'an**	**19.59**	**249**	P	**P**	**15 29 57.4**	**+0.2**
XAN				sP	sP	15 32 17.3	-1.0
XAN				pmax	pmax		
	comp=N,410nm,0.9s						
XAN				pmax	pmax		
	comp=N,950nm,5.9s						
TATO	**Taipei**	**19.92**	**206**	*e* P	**P**	**15 30 01.2**	**+1.0**
	comp=N,160nm,0.8s						
YOJ	**Yonaguni jima**	**19.95**	**202**	*e* P	**P**	**15 30 00.1**	**-0.4**
YOJ				pmax	pmax		
	comp=Z,61nm,0.9s						
YOJ	**Yonaguni jima**	**19.95**	**202**	*e* P	**P**	**15 30 00.1**	**-0.4**
	comp=Z,61nm,0.9s						
IRK	**Irkutsk**	**20.01**	**306**	*e* P	**P**	**15 30 00.4**	**-0.3**
IRK				*e* S	**sP**	**15 32 24.4**	**+1.4**
IRK				*e*		15 33 18.8	
IRK				pmax	pmax		
	comp=Z,128nm,1.0s						
IRK	**Irkutsk**	**20.01**	**306**	*e* P	**P**	**15 30 00.4**	**-0.3**
PEA0	**Petropavlovsk-**	**20.14**	**52**	*e* P	**P**	**15 30 01.4**	**-0.5**
PEA0				*e* ScP	**ScP**	**15 36 34.4**	**-0.2**
PEA0B	**Petropavlovsk-**	**20.14**	**52**	*e* P	**P**	**15 30 01.8**	**-0.1**
	comp=Z,136nm,1.1s						
PEA0B				*e* ScP	**ScP**	**15 36 34.5**	**0.0**
PETK	**Petropavlovsk-**	**20.14**	**52**	P	**P**	**15 30 01.6**	**-0.4**
	comp=Z,29nm,0.6s,baz=195,slow=3.7,SNR=89						
PETK				PcP	**PcP**	**15 33 51.6**	**+1.0**
	comp=Z,7.8nm,0.6s,baz=86,slow=4.0,SNR=6.1						
PETK				ScP	**ScP**	**15 36 34.6**	**0.0**
	comp=Z,10nm,0.5s,baz=102,slow=1.8,SNR=24						
ZAK	**Zakamensk**	**20.21**	**300**	*e* P	**P**	**15 30 03.0**	**+0.3**
ZAK				pmax	pmax		
	comp=Z,189nm,0.9s						
MA2	**Magadan**	**20.25**	**30**	P	**P**	**15 30 03.2**	**+0.5**
	comp=Z,346nm,0.5s,baz=254,slow=8.3,SNR=368						
MA2				S	**S**	**15 33 18.0**	**+2.8**
	comp=Z,9.4nm,0.8s,baz=340,slow=23,SNR=4.1						
MA2				ScP	**ScP**	**15 36 35.0**	**+0.3**
	comp=Z,73nm,0.7s,baz=176,slow=2.3,SNR=26						
MA2	**Magadan**	**20.25**	**30**	P	**P**	**15 30 03.2**	**+0.5**
MA2				S	**S**	**15 33 18.0**	**+2.8**
MA2				pmax	pmax		
	comp=Z,381nm,0.5s						
MA2				smax	smax		
	comp=N,9.0nm,0.8s						
MA2	**Magadan**	**20.25**	**30**	*e* P	**P**	**15 30 03.0**	**+0.3**
	comp=N,2μm,0.6s						
MA2				S	**S**	**15 33 18.0**	**+2.8**
MA2				ScP	**ScP**	**15 36 35.0**	**+0.3**
YHNB	**Yeheng**	**20.25**	**206**	*e* P	**P**	**15 30 03.7**	**+0.4**
	comp=N,243nm,0.8s						
TLY	**Talaya**	**20.25**	**304**	P	**P**	**15 30 03.7**	**+0.8**
	comp=N,67nm,0.7s,baz=115,slow=6.4,SNR=107						
TLY				ScP	**ScP**	**15 36 34.7**	**-0.2**
	comp=N,17nm,0.8s,baz=202,slow=4.5,SNR=7.0						
TLY	**Talaya**	**20.25**	**304***d*	*i* P	**P**	**15 30 03.5**	**+0.6**
TLY				*e* S	**S**	**15 33 16.4**	**+0.9**
TLY				pmax	pmax		
	comp=Z,134nm,0.9s						
TLY				MLR	MLR		
	comp=Z,142nm,13.0s						
TLY	**Talaya**	**20.25**	**304**	*e* P	**P**	**15 30 03.5**	**+0.6**
	comp=Z,121nm,0.9s						
TLY				*e* ScP	**ScP**	**15 36 34.9**	**0.0**
TLY	**Talaya**	**20.25**	**304** ⇓	*i* P	**P**	**15 30 03.5**	**+0.6**
NACB	**Ninganchiao**	**20.64**	**205**	*e* P	**P**	**15 30 05.1**	**-1.6**
	comp=Z,107nm,0.9s						
NACB				*e* ScP	**ScP**	**15 36 36.7**	**+0.4**
PET	**Petropavlovsk**	**20.67**	**52**	*e* P	**P**	**15 30 05.6**	**-1.0**
PET				*e**SP	**sP**	**15 32 25.1**	**-5.1**
PET				*e* S	**S**	**15 33 19.2**	**-2.8**
PET				*e*		15 40 20.6	
PET				pmax	pmax		
	comp=Z,305nm,1.2s						
PET				MLR	MLR		
	comp=Z,800nm,16.0s						
PET	**Petropavlovsk**	**20.67**	**52**	*e* P	**P**	**15 30 06.1**	**-0.5**
	comp=Z,370nm,1.2s						
PET				*e* ScP	**ScP**	**15 36 35.9**	**+0.1**
PET	**Petropavlovsk**	**20.67**	**52**	*e* P	**P**	**15 30 05.6**	**-1.0**
QZH	**Quanzhou**	**21.00**	**213** ⇓	*i* P	**P**	**15 30 04.9**	**-5.1**
QZH				S	**S**	**15 33 19.0**	**-9.0**
QZH				pmax	pmax		
	comp=Z,570nm,1.0s						
QZH				pmax	pmax		
	comp=Z,2μm,4.4s						
SSLB	**Suanglung**	**21.20**	**206**	*e* P	**P**	**15 30 11.2**	**-0.7**
	comp=Z,113nm,0.9s						
SSLB				*e* ScP	**ScP**	**15 36 38.0**	**+0.3**
SSLB				*e* ScS	**ScS**	**15 40 21.8**	**-0.7**
YULB	**Yu-li**	**21.46**	**205**	*e* P	**P**	**15 30 12.3**	**-1.8**
	comp=Z,44nm,0.8s						
ENH	**Enshi**	**21.58**	**240**	*e* P	**P**	**15 30 14.4**	**-0.8**
	comp=Z,610nm,0.9s						
ENH				*e* ScP	**ScP**	**15 36 38.9**	**+0.3**
ENH				*e* ScS	**ScS**	**15 40 24.6**	**+0.9**
TPUB	**Ta-pu**	**21.76**	**207**	*e* P	**P**	**15 30 16.6**	**-0.3**
	comp=Z,382nm,1.0s						
TPUB				*e* ScP	**ScP**	**15 36 39.8**	**+0.7**
MOY	**Mondy**	**21.86**	**303**	*e* P	**P**	**15 30 17.7**	**+0.2**
MOY				pmax	pmax		
	comp=Z,71nm,1.8s						
MOY	**Mondy**	**21.86**	**303**	*e* P	**P**	**15 30 17.7**	**+0.2**
TWG	**Pinlang**	**22.07**	**205**	*e* P	**P**	**15 30 18.8**	**-0.8**
	comp=Z,586nm,1.3s						
LZH	**Lanzhou**	**22.11**	**260**	*e* P	**P**	**15 30 21.0**	**+1.0**
LZH				sP	sP	15 32 42.8	-3.5
LZH				*e* S	**S**	**15 33 46.6**	**+1.0**
LZH				ScP	**ScP**	**15 36 41.0**	**+0.9**
LZH				ScS	**ScS**	**15 40 26.1**	**+0.2**
LZH				pmax	pmax		
	comp=Z,340nm,1.0s						
LZH				pmax	pmax		
	comp=Z,1μm,4.8s						
SEY	**Seymchan**	**23.22**	**25**	P	**P**	**15 30 30.8**	**+1.5**
	comp=Z,62nm,0.4s,baz=211,slow=7.2,SNR=127						
SEY				ScP	**ScP**	**15 36 43.0**	**+0.7**
	comp=Z,12nm,0.6s,baz=211,slow=2.7,SNR=9.1						
SEY	**Seymchan**	**23.22**	**25***c*	*e* P	**P**	**15 30 30.2**	**+0.9**
SEY	**Seymchan**	**23.22**	**25**	*e* P	**P**	**15 30 30.2**	**+0.9**
GTA	**Gaotai**	**23.72**	**271**	⇓ P	**P**	**15 30 35.3**	**+1.0**
GTA				sP	sP	15 33 09.2	+5.4
GTA				S	**S**	**15 34 10.9**	**+0.1**
GTA				ScP	**ScP**	**15 36 44.6**	**+0.3**
GTA				ScS	**ScS**	**15 40 32.9**	**+0.8**
GTA				pmax	pmax		
	comp=Z,660nm,0.9s						
GTA				pmax	pmax		
	comp=Z,2μm,6.2s						
CD2	**Chengdu**	**24.95**	**249**	P	**P**	**15 30 43.1**	**-2.0**
CD2				sP	sP	15 33 15.8	-1.1
CD2				PcP	**PcP**	**15 34 00.4**	**-0.8**
CD2				S	**S**	**15 34 28.1**	**-2.0**
CD2				pmax	pmax		
	comp=Z,860nm,1.0s						
CD2				pmax	pmax		
	comp=Z,1μm,3.8s						
GZH	**Guangzhou**	**24.96**	**222** ⇓	*i* P	**P**	**15 30 39.5**	**-5.7**
GZH				sP	sP	15 33 07.7	-9.2
GZH				S	S	15 34 18.0	-12
GZH				ScP	**ScP**	**15 36 45.5**	**-2.3**
GZH				pmax	pmax		
	comp=Z,2μm,1.2s						
HKC	**Hong Kong Obse**	**25.23**	**219**	P	**P**	**15 30 48.0**	**+0.3**
MCO	**Taipa Grande**	**25.68**	**220**	P	**P**	**15 30 51.0**	**-0.6**
GYA	**Guiyang**	**26.02**	**238** ⇓	*i* P	**P**	**15 30 54.1**	**-0.6**
GYA				sP	sP	15 33 25.0	-3.4
GYA				PcP	**PcP**	**15 34 06.0**	**+2.2**
GYA				S	**S**	**15 34 47.6**	**+0.5**
GYA				ScP	**ScP**	**15 36 54.2**	**+3.1**
GYA				ScS	**ScS**	**15 40 43.8**	**+1.7**
GYA				pmax	pmax		
	comp=Z,610nm,0.9s						
GYA				pmax	pmax		
	comp=Z,780nm,5.4s						
SGCP	**Mt. Cagua**	**26.14**	**200**	*e* P	**P**	**15 30 55.8**	**0.0**
APYP	**Conner**	**26.71**	**201**	*e* P	**P**	**15 30 59.7**	**-1.0**
ABRA	**Dolores**	**27.06**	**202**	*e* P	**P**	**15 31 03.2**	**-0.5**
CAUP	**Cauayan**	**27.45**	**200**	*e* P	**P**	**15 31 08.0**	**+0.9**
TIXI	**Tiksi**	**28.43**	**359**	P	**P**	**15 31 14.4**	**-0.6**
	comp=Z,56nm,0.4s,baz=149,slow=7.7,SNR=259						
TIXI				S	**S**	**15 35 22.8**	**-0.3**
	comp=Z,3.8nm,0.3s,baz=289,slow=23,SNR=7.3						
TIXI				ScP	**ScP**	**15 36 55.8**	**-1.6**
	comp=Z,9.1nm,0.4s,baz=102,slow=7.4,SNR=6.6						
TIXI	**Tiksi**	**28.43**	**359***c*	*i* P	**P**	**15 31 14.0**	**-0.9**
TIXI				pmax	pmax		
	comp=Z,130nm,1.3s						
TIXI	**Tiksi**	**28.43**	**359**	*e* P	**P**	**15 31 14.1**	**-0.9**
	comp=Z,295nm,1.7s						
TIXI				S	**S**	**15 35 22.8**	**-0.3**
TIXI				ScP	**ScP**	**15 36 55.8**	**-1.6**
BOLP	**Bolinao**	**28.49**	**203**	*e* P	**P**	**15 31 16.0**	**-0.3**
BALP	**Baler**	**28.66**	**199**	*e* P	**P**	**15 31 17.5**	**-0.3**
SCZP	**Santa Cruz**	**29.07**	**203**	*e* P	**P**	**15 31 20.4**	**-0.8**
KMI	**Kunming**	**29.44**	**241**	P	**P**	**15 31 24.6**	**-0.1**
KMI				sP	sP	15 33 57.9	-1.9
KMI				S	**S**	**15 35 40.0**	**-0.5**
KMI				pmax	pmax		
	comp=Z,440nm,1.3s

BILL Bilibino 30.93 25 *eP* **P 15 31 37.2 +0.5**
comp=Z,378nm,1.3s
BILL *e*ScP **ScP 15 37 06.2 +0.4**
BILL Bilibino 30.93 25 ⇑ *i*P **P 15 31 37.3 +0.7**
BILL AMB AMB 15 31 37.9
comp=Z,450nm,1.8s
BILL *i* S **S 15 36 02.5 +0.7**
WMQ Urumqi 31.18 286 P **P 15 31 40.2 +1.0**
WMQ sP sP 15 34 12.2 -2.9
WMQ S **S 15 36 06.5 0.0**
WMQ ScS **ScS 15 41 04.4 -1.6**
WMQ pmax pmax
comp=Z,94nm,1.2s
WMQ pmax pmax
comp=Z,450nm,3.6s
OTRP Odiongan 31.83 197 *eP* **P 15 31 45.8 +0.8**
ZAA0 Zalesovo Array 31.83 306 *eP* **P 15 31 44.0 -0.5**
ZAA0 *ep*P **pP 15 33 16.6 +0.2**
ZAA0 *e*ScP **ScP 15 37 07.9 -1.2**
ZALV Zalesovo Beam 31.83 306 P **P 15 31 44.3 -0.2**
comp=Z,17nm,0.3s,baz=86,slow=7.6,SNR=104
ZALV PcP **PcP 15 34 18.2 0.0**
comp=Z,14nm,0.5s,baz=84,slow=1.5,SNR=8.8
ZALV S **S 15 36 16.9 +0.9**
comp=Z,5.2nm,0.8s,baz=97,slow=12,SNR=3.7
ZALV ScP **ScP 15 37 08.2 -0.9**
comp=Z,14nm,0.3s,baz=99,slow=3.4,SNR=20
GUMO Guam 31.91 154 *eP* **P 15 31 46.0 +0.3**
GUMO Guam 31.91 154 *eP* **P 15 31 46.0 +0.3**
SJMP San Jose 31.93 199 *eP* **P 15 31 45.9 +0.1**
BESP Borongan 31.98 190 *eP* **P 15 31 46.7 +0.4**
RCP Roxas 32.46 195 ⇑ *eP* **P 15 31 51.1 +0.7**
BUSP Coron 32.60 200 *eP* **P 15 31 50.9 -0.6**
OCLP Ormoc 32.64 192 *eP* **P 15 31 50.9 -1.0**
NVS Novosibirsk 32.76 308 ⇑ *i*P **P 15 31 52.3 -0.1**
NVS *e*S **S 15 36 29.1 -1.0**
NVS pmax pmax
comp=N,11nm,1.1s
NVS pmax pmax
comp=E,44nm,1.1s
NVS pmax pmax
comp=Z,60nm,1.1s
NVS smax smax
comp=N,51nm,1.6s
NVS smax smax
comp=E,60nm,1.6s
NVS Novosibirsk 32.76 308 *eP* **P 15 31 52.3 -0.1**
GUIM Jordan 33.40 195 *eP* **P 15 31 58.9 +0.6**
CUYO Cuyo Island 33.51 198 *eP* **P 15 31 59.6 +0.3**
ENPP El Nido 33.56 201 *eP* **P 15 31 59.9 +0.3**
MK01 Makanchi Array 34.21 293 *eP* **P 15 32 04.8 +0.1**
MK31 Makanchi Array 34.21 293 *eP* **P 15 32 04.9 +0.2**
MK31 Makanchi Array 34.21 293 *eP* **P 15 32 04.9 +0.2**
MKAR Makanchi Array 34.21 293 P **P 15 32 05.1 +0.4**
comp=E,141nm,0.9s,baz=85,slow=9.3,SNR=626
MKAR PcP **PcP 15 34 25.4 +0.2**
comp=E,5.7nm,0.5s,baz=66,slow=4.3,SNR=5.2
MKAR ScP **ScP 15 37 17.2 -0.4**
comp=E,7.4nm,0.7s,baz=74,slow=6.4,SNR=5.3
MKAR P3KPbc 16 02 54.2
comp=E,0.6nm,0.6s,baz=259,slow=4.8,SNR=8.0
MKAR Makanchi Array 34.21 293 *eP* **P 15 32 05.1 +0.4**
MKAR 15 34 25.4
MKAR Makanchi Array 34.21 293 *eP* **P 15 32 05.1 +0.4**
MKAR PcP **PcP 15 34 25.4 +0.2**
MKAR ScP **ScP 15 37 17.2 -0.4**
MKAR *e* 16 02 54.2
NRIK Noril'sk 34.22 334 P **P 15 32 04.0 -0.4**
comp=E,75nm,0.8s,baz=111,slow=8.9,SNR=100
NRIK S **S 15 36 49.4 -2.4**
comp=E,13nm,0.8s,baz=222,slow=22,SNR=9.9
MAKZ Makanchi 34.41 293 P **P 15 32 06.7 +0.2**
MAKZ pmax pmax
comp=Z,186nm,1.0s
MAKZ Makanchi 34.41 293 *eP* **P 15 32 06.9 +0.4**
comp=Z,151nm,0.8s
PANO Nakornpanom 34.42 229 P **P 15 32 07.4 +0.6**
comp=Z,753nm,1.1s,comp=Z,7μm
CRAI Chiangrai 34.49 238 P **P 15 32 07.5 +0.1**
comp=Z,8μm,1.1s,comp=Z,54μm
NONG Nongkai 34.51 232 P **P 15 32 07.9 +0.4**
comp=Z,860nm,0.9s,comp=Z,8μm
LSA Lhasa 34.53 260 P **P 15 32 09.4 +1.2**
LSA S **S 15 36 53.9 -4.5**
LSA sS **sS 15 39 53.4 +2.0**
LSA pmax pmax
comp=Z,180nm,0.8s
LSA Lhasa 34.53 260 *eP* **P 15 32 09.1 +0.9**
LSA pmax pmax
comp=Z,123nm,0.8s
LSA Lhasa 34.53 260 *eP* **P 15 32 09.1 +0.9**
comp=Z,123nm,0.8s
SKNT Sakolnakorn 34.91 230 P **P 15 32 11.0 +0.1**
comp=Z,726nm,1.1s,comp=Z,8μm
CMAI Chiengmai2 35.54 239 P **P 15 32 16.6 +0.3**
comp=Z,706nm,1.2s,comp=Z,7μm
BUKP Musuan 35.70 190 *eP* **P 15 32 17.8 +0.3**
KURK Kurchatov 35.87 301 P **P 15 32 18.2 -0.2**
KURK pmax pmax
comp=Z,262nm,0.6s
KURK Kurchatov 35.87 301 *eP* **P 15 32 18.3 -0.1**
comp=Z,459nm,1.3s
KURK sP **sP 15 34 57.9 +1.7**
KURK S **S 15 37 17.1 +0.1**
KURK Kurchatov 35.87 301 *eP* **P 15 32 18.2 -0.2**
KURBB Kurchatov Arra 35.94 300 P **P 15 32 19.1 +0.1**
comp=Z,101nm,0.5s,baz=81,slow=8.0,SNR=516
KURBB sP **sP 15 34 57.9 +1.0**
comp=Z,16nm,0.9s,baz=77,slow=8.9,SNR=3.1
KURBB S **S 15 37 17.1 -1.0**
comp=Z,15nm,0.9s,baz=355,slow=18,SNR=10.0
LOEI Loei 36.04 234 P **P 15 32 18.0 -2.3**
comp=Z,412nm,1.2s,comp=Z,5μm
KHON Khomkaen 36.07 231 P **P 15 32 20.7 +0.2**
comp=Z,493nm,0.8s,comp=Z,4μm
IPIL Ipil 36.17 194 *eP* **P 15 32 20.2 -1.1**
LAMP Lampang 36.24 237 P **P 15 32 22.4 +0.5**
comp=Z,455nm,0.9s,comp=Z,3μm
UTTA Uttaradit 36.28 235 P **P 15 32 22.2 0.0**
comp=Z,75nm,0.8s,comp=Z,579nm
BATP Bataraza 36.30 203 *eP* **P 15 32 22.9 +0.5**
CMMT Chiang Mai 36.44 238 P **P 15 32 23.5 -0.1**
comp=Z,862nm,1.5s,comp=Z,7μm
CHTO Chiang Mai 36.44 238 P **P 15 32 23.6 0.0**
comp=Z,4μm,1.5s,comp=Z,33μm
CHTO Chiang Mai 36.44 238 *eP* **P 15 32 24.0 +0.4**
CHTO pmax pmax
comp=Z,828nm,1.0s
CHTO Chiang Mai 36.44 238 P **P 15 32 24.3 +0.7**
SNR=114
CHTO Chiang Mai 36.44 238 P **P 15 32 24.3 +0.7**
SNR=114
CHTO Chiang Mai 36.44 238 *eP* **P 15 32 24.0 +0.4**
comp=Z,828nm,1.0s
CHTO Chiang Mai 36.44 238 *eP* **P 15 32 24.0 +0.4**
CTBH Cotabato--PC H 36.45 191 ⇓ *i*P **P 15 32 24.6 +0.9**
CM31 Chiang Mai Arr 36.71 238 *eP* **P 15 32 26.3 +0.6**
CMAR Chiang Mai Arr 36.71 238 pP pP 15 34 01.9 +1.4
CM01 Chiang Mai Arr 36.73 238 *eP* **P 15 32 26.2 +0.3**
CHAI Chaiyaphum 36.90 231 P **P 15 32 26.9 -0.4**
comp=Z,118nm,1.3s,comp=Z,1μm
PBKT Sadao Pong 36.95 233 P **P 15 32 27.6 -0.1**
comp=Z,239nm,1.1s,comp=Z,4μm
SUKH Sukhothai 37.03 236 P **P 15 32 28.8 +0.4**
comp=Z,131nm,0.8s,comp=Z,974nm
PDGK Podgornoye 37.04 288 P **P 15 32 28.1 -0.1**
PDGK pmax pmax
comp=Z,137nm,0.9s
GAMB Gambell 37.99 37 *eP* **P 15 32 35.9 +0.3**
comp=Z,169nm,1.2s
H11N2 WAKE ISLAND Hy 38.09 117 P **P 15 32 37.2 +0.4**
baz=282,slow=8.0,SNR=14
H11N1 WAKE ISLAND Hy 38.10 117 P **P 15 32 37.2 +0.4**
baz=282,slow=8.0,SNR=22
H11N3 WAKE ISLAND Hy 38.11 117 P **P 15 32 37.1 +0.2**
baz=282,slow=8.0,SNR=18
SRAK Srakaew 38.39 229 P **P 15 32 37.2 -2.3**
comp=Z,855nm,1.1s,comp=Z,9μm
NAYO Nakonayok 38.55 231 P **P 15 32 41.2 +0.4**
comp=Z,145nm,1.1s
H11S1 WAKE ISLAND Hy 38.85 118 P **P 15 32 44.0 +1.0**
SNR=7.8
H11S3 WAKE ISLAND Hy 38.85 118 P **P 15 32 44.2 +1.2**
H11S2 WAKE ISLAND Hy 38.87 118 P **P 15 32 44.3 +1.2**
CHBT CHBT 39.27 228 P **P 15 32 47.4 +0.8**
comp=Z,254nm,1.3s,comp=Z,3μm
GUN Gumba 39.34 262 *eP* **P 15 32 47.9 +0.4**
comp=Z,1μm,0.7s
KKM Kota Kinabalu 39.38 204 *eP* **P 15 32 47.5 0.0**
comp=Z,192nm,0.8s
KKM *ep*P **pP 15 34 26.0 +2.0**
MYLDM Lahad Datu 39.58 200 ⇓ P **P 15 32 51.3 +2.2**
MYLDM Lahad Datu 39.58 200 *eP* **P 15 32 50.4 +1.4**
comp=Z,149nm,0.9s
TNA Tin City 39.74 35 *eP* **P 15 32 50.5 +0.8**
comp=Z,254nm,1.0s
TNA *ep*P **pP 15 34 26.3 0.0**
SRDT SRDT 39.79 233 P **P 15 32 51.2 +0.5**
comp=Z,885nm,1.0s,comp=Z,8μm
KKN Kakani 39.85 262 *eP* **P 15 32 51.7 +0.3**
comp=Z,789nm,0.7s
TKM2 Tokmak 2 39.87 289 P **P 15 32 52.4 +1.1**
TKM2 pmax pmax
comp=Z,289nm,0.8s
TKM2 Tokmak 2 39.87 289 *eP* **P 15 32 52.1 +0.8**
comp=Z,227nm,0.7s
TKM2 *ep*P **pP 15 34 28.1 +0.1**
PKIN Phulchoki 39.89 262 *eP* **P 15 32 52.1 +0.4**
PATY Pattaya 39.94 230 P **P 15 32 52.8 +0.9**
comp=Z,105nm,0.8s,comp=Z,2μm
DMN Daman 40.08 262 *eP* **P 15 32 53.7 +0.4**
comp=Z,709nm,0.8s
GKN Gorkha 40.19 263 *eP* **P 15 32 54.3 +0.2**
CHKZ Chkalovo 40.23 307 P **P 15 32 53.6 -0.1**
CHKZ pmax pmax
comp=Z,115nm,0.6s
OTUK Ortayu 40.40 298 P **P 15 32 55.5 +0.2**
OTUK pmax pmax
comp=Z,169nm,1.0s
BVA0 Borovoye Array 40.49 306 *i* P **P 15 32 56.0 +0.1**
BVA0 pmax pmax
comp=Z,52nm,0.6s
BVAR Borovoye Array 40.49 306 P **P 15 32 55.9 +0.1**
comp=Z,46nm,0.5s,baz=81,slow=8.0,SNR=243
BVAR pP **pP 15 34 34.3 +1.4**
comp=Z,9.8nm,0.6s,baz=64,slow=10,SNR=2.8
BVAR PcP **PcP 15 34 45.0 +0.3**
comp=Z,26nm,0.6s,baz=74,slow=2.8,SNR=7.5
BVAR ScP **ScP 15 37 40.8 -0.6**
comp=Z,6.4nm,0.5s,baz=90,slow=4.4,SNR=4.7
BVAR S **S 15 38 24.4 -0.5**
comp=Z,12nm,0.9s,baz=78,slow=14,SNR=6.0
BRVK Borovoye 40.54 306 *d i*P **P 15 32 56.3 0.0**
BRVK pmax pmax
comp=Z,71nm,1.0s
BRVK Borovoye 40.54 306 *eP* **P 15 32 56.2 0.0**
comp=Z,67nm,1.0s
BRVK *ep*P **pP 15 34 34.0 +0.5**
BRVK Borovoye 40.54 306 *i* P **P 15 32 56.3 0.0**
FRU Bishkek 40.57 289 ⇓ *i*P **P 15 32 56.0 -0.7**
FRU *i* *PP **pP 15 34 35.0 +1.1**
FRU *i* S **S 15 38 27.0 +0.6**
FRU pmax pmax
comp=Z,350nm,1.8s
FRU smax smax
comp=N,145nm,2.1s
FRU Bishkek 40.57 289 *i* P **P 15 32 56.0 -0.7**
PHET Kaeng Krachan 40.64 231 P **P 15 32 58.6 +1.0**
comp=N,116nm,1.1s,comp=N,911nm
AAK Ala-Archa 40.72 289 P **P 15 32 58.7 +0.6**
comp=N,43nm,0.3s,baz=86,slow=6.1,SNR=94
AAK pP **pP 15 34 37.1 +1.7**
comp=N,54nm,1.0s,baz=90,slow=6.2,SNR=6.5
AAK ScP **ScP 15 37 43.2 +0.5**
comp=N,10nm,0.9s,baz=111,slow=5.9,SNR=3.8
AAK Ala-Archa 40.72 289 *d i*P **P 15 32 58.4 +0.3**
AAK pmax pmax
comp=Z,213nm,0.9s
AAK Ala-Archa 40.72 289 *eP* **P 15 32 58.5 +0.3**
comp=Z,132nm,0.8s
AAK pP **pP 15 34 37.1 +1.7**
AAK ScP **ScP 15 37 43.2 +0.5**
AAK Ala-Archa 40.72 289 *i* P **P 15 32 58.4 +0.3**
KSH Kashi 40.88 284 *i* P **P 15 33 03.6 +4.3**
KSH *ep*P pP 15 34 41.2 +4.5
KSH *e*PP **PP 15 34 52.6 +4.0**
KSH *e*sP sP 15 35 40.6 +1.3
KSH *e*ScP **ScP 15 37 49.1 +5.8**
KSH S **S 15 38 38.9 +7.8**
KSH sS sS 15 41 32.8 +3.6
KSH ScS **ScS 15 42 06.8 +5.9**
KSH pmax pmax
comp=Z,110nm,1.2s
KSH pmax pmax
comp=Z,410nm,2.8s
KOLN Koldanda 41.08 264 *eP* **P 15 33 01.9 +0.8**
comp=Z,1μm,0.8s
EKS2 Erkin-Say 41.21 290 *eP* **P 15 33 01.9 0.0**
EKS2 pmax pmax
comp=Z,99nm,0.8s
EKS2 Erkin-Say 41.21 290 *eP* **P 15 33 01.9 0.0**
comp=Z,99nm,0.8s
ZRNK Zerenda 41.32 306 *eP* **P 15 33 02.6 +0.1**
ZRNK pmax pmax
comp=Z,319nm,0.4s
ZRNK Zerenda 41.32 306 *eP* **P 15 33 02.6 +0.1**
comp=Z,319nm,0.4s
UNV Unalaska Valle 41.32 53 *eP* **P 15 33 01.1 -1.3**
comp=Z,57nm,0.6s
PYUN Piuthan 41.33 265 *eP* **P 15 33 04.0 +0.8**
AKUT Akutan 41.69 52 *eP* **P 15 33 04.2 -1.0**
JOSI Joshimath 42.49 270 *eP* **P 15 33 12.7 +0.5**
KKAR Karatay Array 43.28 291 *eP* **P 15 33 17.9 -0.1**
KKAR pmax pmax
comp=Z,114nm,0.7s
KKAR Karatay Array 43.28 291 *eP* **P 15 33 17.9 -0.1**
comp=Z,114nm,0.7s
MRSI Marisa 43.43 193 P **P 15 33 18.2 -1.2**
comp=Z,466nm,0.8s,comp=Z,3μm
LBMI Labuha 43.88 185 P **P 15 33 22.1 -0.8**
comp=Z,108nm,0.9s,comp=Z,1μm
SMLA Simla 43.93 272 *eP* **P 15 33 23.4 +0.2**
SWI Sorong 43.98 180 P **P 15 33 23.3 -0.4**
comp=Z,130nm,0.9s,comp=Z,2μm
SBUM Sibu 44.03 208 *eP* **P 15 33 25.1 +1.0**
comp=Z,546nm,0.8s
BWNR Bhubaneshwar 44.13 253 *eP* **P 15 33 25.0 +0.1**
BWNR IAmb IAmb 15 33 26.1
comp=Z,218nm,1.0s
SURT Suratani 44.34 229 P **P 15 33 27.4 +0.9**
comp=Z,105nm,1.1s
KRAB Krabi 44.73 228 P **P 15 33 25.1 -4.4**
comp=Z,1μm,0.6s,comp=Z,94μm
TRTT Trang 44.78 227 P **P 15 33 30.8 +0.9**
comp=Z,340nm,1.4s,comp=Z,3μm
LUWI Luwuk 44.79 192 P **P 15 33 27.2 -2.7**
comp=Z,200nm,1.1s,comp=Z,2μm
LUWI Luwuk 44.79 192 *eP* **P 15 33 27.3 -2.7**
comp=Z,290nm,1.2s
KKR Kurukshetra 44.80 271 *eP* **P 15 33 28.8 -1.1**
SKLT Songkhla 44.85 226 P **P 15 33 31.4 +1.0**
comp=Z,512nm,1.1s
TT01 Tatalina 45.08 38 *eP* **P 15 33 32.5 +1.0**
TT01 *ep*P **pP 15 35 12.4 +0.8**
TTA Tatalina 45.08 38 *eP* **P 15 33 32.5 +0.9**
TTA pmax pmax
comp=Z,148nm,1.3s
TTA Tatalina 45.08 38 *eP* **P 15 33 32.5 +0.9**
comp=Z,148nm,1.3s
SVE Sverdlovsk 45.15 313 *c i*P **P 15 33 32.2 +0.1**
SVE *e*S **S 15 39 30.6 -0.5**
SVE pmax pmax
comp=Z,336nm,0.8s
SVE Sverdlovsk 45.15 313 *i* P **P 15 33 32.2 +0.1**
SANI Sanana 45.40 187 P **P 15 33 34.1 -0.4**
comp=Z,262nm,0.9s,comp=Z,2μm
BHGR Bahadurgarh 45.41 270 *eP* **P 15 33 34.6 0.0**
PKDT Phuket 45.47 229 P **P 15 33 36.2 +1.1**
comp=Z,323nm,1.4s,comp=Z,4μm
RTK Rohtak 45.60 271 *eP* **P 15 33 35.3 -0.7**
KSM Kuching 45.61 210 *eP* **P 15 33 36.5 +0.3**
comp=Z,218nm,0.9s
KSM *e*ScP **ScP 15 38 02.9 +0.1**
SVW2 Sparrevohn 45.63 41 *eP* **P 15 33 36.8 +1.0**
comp=Z,68nm,1.0s
FAKI Fak Fak 46.04 178 P **P 15 33 40.5 +1.1**
comp=Z,122nm,0.9s,comp=Z,1μm
FAKI Fak Fak 46.04 178 *eP* **P 15 33 39.3 -0.2**
comp=Z,71nm,0.7s
KUDL Kundal 46.04 269 *eP* **P 15 33 38.2 -1.1**
KUDL IAmb IAmb 15 33 39.8
comp=Z,84nm,0.7s
BKB Balikpapan 46.18 200 P **P 15 33 40.9 +0.4**
comp=Z,631nm,1.0s,comp=Z,5μm
ARU Arti 46.36 313 P **P 15 33 41.4 +0.1**
comp=Z,127nm,0.4s,baz=79,slow=5.0,SNR=315
ARU ScP **ScP 15 38 04.4 -0.9**
comp=Z,10.0nm,0.5s,baz=88,slow=7.1,SNR=4.9
ARU S **S 15 39 47.6 -0.4**
comp=Z,9.1nm,0.6s,baz=209,slow=22,SNR=25
ARU Arti 46.36 313 *d i*P **P 15 33 41.3 0.0**
ARU 15 35 04.5
ARU *PP **pP 15 35 22.9 +0.6**
ARU 15 35 39.4
ARU *SP **sP 15 36 24.1 +0.2**
ARU *e*S **S 15 39 47.7 -0.3**
ARU 15 42 31.6
ARU SS **SS 15 43 20.9 -1.6**
ARU pmax pmax
comp=Z,303nm,0.7s
ARU Arti 46.36 313 *eP* **P 15 33 41.4 0.0**
comp=Z,375nm,0.9s
ARU ScP **ScP 15 38 04.4 -0.9**
ARU S **S 15 39 47.6 -0.4**
ARU Arti 46.36 313 *i* P **P 15 33 41.3 0.0**
MTKI Muara Teweh, K 46.40 203 P **P 15 33 42.4 +0.2**
comp=Z,608nm,0.8s,comp=Z,5μm
KULM Kulim 46.43 224 *eP* **P 15 33 43.5 +1.0**
comp=Z,384nm,0.8s
KULM *ep*P **pP 15 35 24.5 +0.9**
JAY Jayapura 46.44 167 P **P 15 33 43.5 +0.9**
comp=Z,2.4nm,0.9s,baz=92,slow=23,SNR=4.2
JAY ScP **ScP 15 38 05.7 -0.6**
comp=Z,1.1nm,0.8s,baz=101,slow=23,SNR=4.4
MSAI Masohi 46.49 183 P **P 15 33 44.2 +1.3**
comp=Z,41nm,1.4s,comp=Z,657nm
STKI Sintang 46.51 208 P **P 15 33 43.9 +0.9**
comp=Z,334nm,1.0s,comp=Z,4μm
KHET Khetri 46.58 270 *eP* **P 15 33 42.2 -1.2**
KHET IAmb IAmb 15 33 43.6
comp=Z,106nm,0.9s
CAST Castle Rocks 46.73 37 *eP* **P 15 33 45.6 +1.5**
comp=Z,168nm,0.6s
CAST *ep*P **pP 15 35 26.1 +0.8**
COLD Coldfoot 46.74 32 *eP* **P 15 33 45.1 +1.1**
comp=Z,224nm,1.1s
PPLA Purkeypile 46.80 38 *eP* **P 15 33 46.5 +1.7**
comp=Z,917nm,1.9s
IPM Ipoh 46.94 223 *eP* **P 15 33 46.4 +0.1**
comp=Z,272nm,0.6s
IPM *e*ScP **ScP 15 38 07.7 -0.7**
MLY Manley 46.96 35 *eP* **P 15 33 47.2 +1.4**
comp=Z,134nm,1.0s
BPAW Bear Paw Mtn. 47.06 36 *eP* **P 15 33 47.8 +1.3**
comp=Z,101nm,0.6s
RSO Redoubt South 47.13 41 *eP* **P 15 33 48.3 +1.0**
RSO *ep*P **pP 15 35 29.7 +0.9**
KTH Kantishna Hill 47.21 37 *eP* **P 15 33 49.2 +1.5**
comp=Z,330nm,1.0s
KTH *ep*P **pP 15 35 30.1 +0.9**
TTSI Tana Toraja 47.26 195 P **P 15 33 48.6 0.0**
comp=Z,51nm,0.9s,comp=Z,716nm
SPU Mount Spurr 47.28 40 *eP* **P 15 33 49.6 +1.3**
SPU *ep*P **pP 15 35 30.6 +0.9**
TRF Thorofare Moun 47.51 37 *eP* **P 15 33 51.0 +0.9**
comp=Z,60nm,0.8s
TRF *ep*P **pP 15 35 32.5 +0.7**
BNDI Bandanaira 47.63 182 P **P 15 33 54.0 +2.6**
KDI Kendari 47.68 191 P **P 15 33 51.3 -0.5**
comp=Z,180nm,1.1s,comp=Z,2μm
BWN Browne 47.69 36 *eP* **P 15 33 53.3 +2.0**
comp=Z,990nm,1.2s
BWN *ep*P **pP 15 35 34.4 +1.4**
OHAK Old Harbor 47.76 45 *eP* **P 15 33 52.2 +0.4**
comp=Z,594nm,1.3s
OHAK *ep*P **pP 15 35 33.2 -0.4**
AB31 Akbulak array 47.86 303 *i* P **P 15 33 52.8 +0.1**
AB31 pmax pmax
comp=Z,154nm,0.4s
ABKAR Akbulak array 47.86 303 *eP* **P 15 33 52.7 0.0**
ABKAR *ep*P **pP 15 35 35.1 +0.5**
HOM Homer 47.88 42 *eP* **P 15 33 53.4 +0.7**
comp=Z,522nm,1.2s
MYKOM Kota Tinggi 47.95 218 *eP* **P 15 33 54.7 +0.9**
comp=Z,309nm,1.0s
KDAK Kodiak Island 47.96 44 *i* P **P 15 33 54.3 +1.0**
KDAK Kodiak Island 47.96 44 *eP* **P 15 33 54.5 +1.3**
comp=Z,466nm,1.1s
KDAK *ep*P **pP 15 35 35.9 +0.7**
MDM Murphy Dome 48.02 34 *eP* **P 15 33 55.1 +1.5**
comp=Z,265nm,0.8s
MDM *ep*P **pP 15 35 37.3 +1.6**
MDM *e*ScP **ScP 15 38 13.3 +1.1**
MCK McKinley 48.03 36 *eP* **P 15 33 54.4 +0.6**
MCK *e*PP **pP 15 35 36.6 +0.8**
MCK pmax pmax
comp=Z,342nm,1.2s
MCK McKinley 48.03 36 *eP* **P 15 33 54.4 +0.6**
comp=Z,342nm,1.2s
MCK *ep*P **pP 15 35 36.6 +0.8**
MCK *e*ScP **ScP 15 38 12.7 +0.4**
MCK McKinley 48.03 36 *eP* **P 15 33 54.4 +0.6**
KBL Kabul 48.07 281 *eP* **P 15 33 53.9 -0.9**
KBL pmax pmax
comp=Z,212nm,0.9s
KBL Kabul 48.07 281 *eP* **P 15 33 53.9 -0.9**
comp=Z,212nm,0.9s
RND Reindeer 48.15 37 *eP* **P 15 33 54.9 +0.2**
RND *e*PP **pP 15 35 37.4 +0.6**
RND pmax pmax
comp=Z,236nm,1.2s
RND Reindeer 48.15 37 *eP* **P 15 33 54.9 +0.2**
comp=Z,236nm,1.2s
RND *ep*P **pP 15 35 37.4 +0.6**
RND *e*ScP **ScP 15 38 13.0 +0.1**
SPSI Sidrap Palu 48.16 195 P **P 15 33 54.3 -1.1**
comp=Z,37nm,1.2s,comp=Z,438nm
COLA College 48.19 34 *c i*P **P 15 33 56.0 +1.1**
COLA pmax pmax
comp=Z,440nm,1.0s
COLA College 48.19 34 *eP* **P 15 33 56.2 +1.3**
comp=Z,503nm,0.5s
COLA *ep*P **pP 15 35 38.6 +1.6**
COLA College 48.19 34 *i* P **P 15 33 56.0 +1.1**
WRH Wood River Hil 48.20 35 *eP* **P 15 33 55.8 +0.8**
comp=Z,338nm,1.3s
WRH *ep*P **pP 15 35 38.1 +1.0**
WRH *e*ScP **ScP 15 38 13.6 +0.6**
CCB Clear Creek Bu 48.27 35 *eP* **P 15 33 56.3 +0.8**
comp=Z,137nm,0.5s
CCB *ep*P **pP 15 35 38.9 +1.2**
CCB *e*ScP **ScP 15 38 13.9 +0.6**
NGP Nagpur 48.37 260 *eP* **P 15 33 55.9 -1.1**
NGP IAmb IAmb 15 33 56.7
comp=Z,113nm,0.7s
RC01 Rabbit Creek A 48.39 40 *eP* **P 15 33 57.1 +0.6**
comp=Z,514nm,1.3s
RC01 *ep*P **pP 15 35 39.0 +0.3**
RC01 *e*ScP **ScP 15 38 14.7 +0.9**
TPRI Tanjung Pinang 48.43 217 P **P 15 33 58.2 +0.8**
comp=Z,624nm,0.9s,comp=Z,6μm
PMR Palmer 48.52 39 *eP* **P 15 33 57.9 +0.5**
PMR *e*PP **pP 15 35 39.9 +0.2**
PMR pmax pmax
comp=Z,385nm,1.3s
PMR Palmer 48.52 39 *eP* **P 15 33 57.9 +0.5**
comp=Z,385nm,1.3s
PMR *ep*P **pP 15 35 39.9 +0.2**
PMR *e*ScP **ScP 15 38 15.1 +0.7**
PMR Palmer 48.52 39 *eP* **P 15 33 57.9 +0.5**
AKTO Aktyubinsk 48.59 305 P **P 15 33 57.9 -0.3**
comp=Z,82nm,0.8s,baz=86,slow=7.7,SNR=146
AKTO S **S 15 40 18.7 -0.3**
comp=Z,14nm,0.9s,baz=218,slow=20,SNR=19
AKTO Aktyubinsk 48.59 305 P **P 15 33 57.6 -0.5**
AKTO pmax pmax
comp=Z,55nm,0.7s
IL1 Eielson Array 48.62 34 *eP* **P 15 33 58.4 +0.3**
IL1 *ep*P **pP 15 35 41.1 +0.6**
ILAR Eielson Array 48.62 34 P **P 15 33 58.5 +0.4**
comp=Z,144nm,0.5s,baz=284,slow=7.4,SNR=1018
ILAR PcP **PcP 15 35 12.4 -0.4**
comp=Z,13nm,0.9s,baz=293,slow=3.0,SNR=4.6
ILAR pP **pP 15 35 41.8 +1.3**
comp=Z,29nm,1.0s,baz=282,slow=8.8,SNR=6.8
ILAR ScP **ScP 15 38 14.3 -0.5**

comp=Z,3,6nm,0.7s,baz=295,slow=3.5,SNR=5.3
ILAR S **S** **15 40 19.6 +0.7**
comp=Z,2.0nm,1.0s,baz=294,slow=15,SNR=4.7
ILB Eielson Array 48.62 34 *e*P **P** **15 33 58.5 +0.4**
ILB *e*pP **pP** **15 35 41.6 +1.2**
HDA Harding Lake 48.69 35 *e*P **P** **15 33 58.8 +0.1**
comp=Z,348nm,1.0s
HDA *e*pP **pP** **15 35 41.6 +0.5**
HDA *e*ScP **ScP** **15 38 14.6 -0.5**
FYU Fort Yukon 48.80 32 *e*P **P** **15 34 01.1 +1.7**
comp=Z,759nm,1.1s
FYU *e*pP **pP** **15 35 43.3 +1.4**
SEW Seward 48.81 41 *e*P **P** **15 33 59.8 +0.2**
comp=Z,310nm,1.0s
SEW *e*pP **pP** **15 35 41.7 -0.4**
SEW *e*ScP **ScP** **15 38 16.6 +0.9**
BBKI Banjar Baru 48.82 202 P P 15 34 05.4 +5.1
SML Sawmill 48.82 38 *e*P **P** **15 34 00.4 +0.7**
SML *e**PP **pP** **15 35 42.6 +0.3**
SML pmax pmax
comp=Z,285nm,1.0s
SML Sawmill 48.82 38 *e*P **P** **15 34 00.4 +0.7**
comp=Z,285nm,1.0s
SML *e*pP **pP** **15 35 42.5 +0.3**
SML Sawmill 48.82 38 *e*P **P** **15 34 00.4 +0.7**
TSI Tuntungan 49.03 225 P **P** **15 34 02.6 +0.8**
comp=Z,197nm,1.3s
KAPI Kappang 49.19 195 P **P** **15 34 02.4 -0.5**
comp=Z,57nm,0.6s,baz=351,slow=3.8,SNR=73
KAPI ScP **ScP** **15 38 17.2 -0.7**
comp=Z,5.6nm,0.8s,baz=338,slow=8.3,SNR=3.7
KAPI S **S** **15 40 26.5 -1.4**
comp=Z,4.8nm,0.4s,baz=345,slow=21,SNR=6.2
KAPI Kappang 49.19 195 *e*P **P** **15 34 02.2 -0.8**
comp=Z,60nm,0.6s
KAPI ScP **ScP** **15 38 17.2 -0.7**
KAPI S **S** **15 40 26.5 -1.4**
SCM Sheep Creek Mo 49.27 38 *e*P **P** **15 34 04.2 +1.1**
SCM *e**PP **pP** **15 35 46.3 +0.5**
SCM pmax pmax
comp=Z,619nm,0.5s
SCM Sheep Creek Mo 49.27 38 *e*P **P** **15 34 04.2 +1.1**
comp=Z,618nm,0.5s
SCM *e*pP **pP** **15 35 46.3 +0.5**
KCSI Kotacane, Aceh 49.42 226 P **P** **15 34 03.9 -0.9**
comp=Z,55nm,0.9s,comp=Z,3μm
PSI Prapat 49.44 224 *e*P **P** **15 34 05.1 +0.1**
PSI pmax pmax
comp=Z,182nm,0.9s
PSI Prapat 49.44 224 *e*P **P** **15 34 05.1 +0.1**
comp=Z,182nm,0.9s
PSI *e*ScP **ScP** **15 38 18.4 -0.8**
MLSI Meulaboh, Aceh 49.53 228 P **P** **15 34 04.8 -0.8**
comp=Z,230nm,1.2s,comp=Z,4μm
PAX Paxson 49.74 36 *e*P **P** **15 34 06.8 +0.3**
PAX pmax pmax
comp=Z,130nm,1.1s
PAX Paxson 49.74 36 *e*P **P** **15 34 06.8 +0.3**
comp=Z,130nm,1.1s
KLU Klutina 50.02 38 *e*P **P** **15 34 09.7 +1.2**
comp=Z,461nm,1.6s
KLU *e*pP **pP** **15 35 52.3 +0.5**
DOT Dot Lake 50.13 35 *e*P **P** **15 34 09.5 +0.2**
comp=Z,555nm,0.7s
DOT *e*pP **pP** **15 35 52.9 +0.3**
BSSI Bau Bau, Buton 50.16 194 P **P** **15 34 09.2 -0.9**
comp=Z,101nm,1.1s,comp=Z,1μm
DIV Divide 50.20 39 *e*P **P** **15 34 10.8 +0.8**
comp=Z,167nm,0.9s
DIV *e*pP **pP** **15 35 54.0 +0.8**
EYAK Cordova Ski Ar 50.41 40 *e*P **P** **15 34 12.7 +1.4**
comp=Z,252nm,0.9s
EYAK *e*pP **pP** **15 35 55.4 +0.7**
MENT Mentasta 50.51 36 *e*P **P** **15 34 13.4 +1.3**
comp=Z,172nm,0.7s
MENT *e*pP **pP** **15 35 57.4 +1.8**
MENT *e*ScP **ScP** **15 38 24.4 +1.4**
MID Middleton Isla 50.52 41 *e*P **P** **15 34 13.4 +1.3**
MID *e**PP **pP** **15 35 56.7 +1.1**
MID pmax pmax
comp=Z,297nm,0.9s
MID Middleton Isla 50.52 41 *e*P **P** **15 34 13.4 +1.3**
comp=Z,297nm,0.9s
MID *e*pP **pP** **15 35 56.7 +1.1**
SBSI Sibolga 50.53 224 P **P** **15 34 11.0 -1.8**
comp=Z,383nm,0.8s,comp=Z,4μm
BKNI Bangkinang 50.54 220 P **P** **15 34 13.9 +1.0**
comp=Z,796nm,1.0s,comp=Z,6μm
BKNI Bangkinang 50.54 220 *e*P **P** **15 34 13.3 +0.4**
comp=Z,571nm,0.9s
BMRM Bremner River 50.79 39 *e*P **P** **15 34 15.2 +1.0**
comp=Z,238nm,1.0s
BMRM *e*pP **pP** **15 35 58.0 +0.2**
BMRM *e*ScP **ScP** **15 38 25.8 +1.5**
JASL Jaisalmer 50.81 272 *e*P **P** **15 34 15.1 +0.3**
JASL IAmb IAmb 15 34 15.4
comp=Z,1μm,0.1s
MNSI Mandailing Nat 50.83 222 P **P** **15 34 13.4 -1.6**
comp=Z,325nm,0.5s,comp=Z,5μm
EGAK Eagle 50.95 33 *e*P **P** **15 34 16.0 +0.8**
comp=Z,263nm,0.6s
RAGM Ragged Mountai 50.97 40 *e*P **P** **15 34 17.1 +1.7**
comp=Z,908nm,1.4s
RAGM *e*pP **pP** **15 36 00.8 +1.6**
RABL Rabaul 50.98 153 *e*P **P** **15 34 16.8 +0.7**
comp=Z,194nm,0.4s
HYB Hyderabad 51.16 257 ⇓*i*P **P** **15 34 17.0 -0.4**
comp=Z,240nm,1.0s
HYB *e*PcP P 15 34 22.5 +5.1
HYB *e*pP **pP** **15 36 01.0 -0.4**
HYB *e*PP **PP** **15 36 22.0 +0.1**
HYB *e*ScP **ScP** **15 38 27.0 +0.5**
HYB *e*S **S** **15 40 54.0 -0.6**
GSI Gunungsitoli 51.41 225 P **P** **15 34 19.1 -0.1**
comp=Z,776nm,0.8s,comp=Z,7μm
GSI Gunungsitoli 51.41 225 *e*P **P** **15 34 19.2 0.0**
comp=Z,404nm,0.7s
SDSI Sungal Dareh 51.46 219 P **P** **15 34 19.8 +0.2**
comp=Z,474nm,1.1s,comp=Z,9μm
PMBI Palembang 51.78 214 P **P** **15 34 23.6 +1.7**
comp=Z,1μm,1.1s,comp=Z,10μm
BALM Baldy 51.80 38 *e*P **P** **15 34 22.6 +1.1**
BALM *e**PP **pP** **15 36 07.0 +1.2**
BALM pmax pmax
comp=Z,485nm,1.5s
BALM Baldy 51.80 38 *e*P **P** **15 34 22.6 +1.1**
comp=Z,485nm,1.5s
BALM *e*pP **pP** **15 36 07.0 +1.2**
PDSI Padang 51.89 220 P **P** **15 34 21.1 -1.6**
comp=Z,145nm,0.9s
DAWY Dawson 51.92 34 *e*P **P** **15 34 23.0 +0.7**
comp=Z,177nm,0.9s
DAWY *e*pP **pP** **15 36 07.4 +0.7**
MMRI Maumere 52.33 191 P **P** **15 34 24.3 -1.5**
comp=Z,320nm,1.2s,comp=Z,3μm
MMRI Maumere 52.33 191 *e*P **P** **15 34 24.4 -1.5**
comp=Z,1μm,1.9s
INK Inuvik 52.47 28 P **P** **15 34 27.1 +1.0**
comp=Z,114nm,0.4s,baz=301,slow=7.5,SNR=908
INK PcP **PcP** **15 35 27.3 0.0**
comp=Z,17nm,0.9s,baz=350,slow=7.2,SNR=3.7
INK pP **pP** **15 36 11.9 +1.2**
comp=Z,30nm,1.0s,baz=304,slow=4.4,SNR=3.7
INK ScP **ScP** **15 38 31.7 +0.4**
comp=Z,30nm,1.2s,baz=274,slow=6.0,SNR=5.7
INK Inuvik 52.47 28 *e*P **P** **15 34 26.8 +0.8**
INK 15 35 27.3
INK *PP **pP** **15 36 11.9 +1.2**
INK pmax pmax
comp=Z,159nm,0.6s
INK Inuvik 52.47 28 *e*P **P** **15 34 26.8 +0.8**
comp=Z,159nm,0.6s
INK PcP **PcP** **15 35 27.3 0.0**
INK pP **pP** **15 36 11.9 +1.2**
INK ScP **ScP** **15 38 31.7 +0.4**
INK Inuvik 52.47 28 *e*P **P** **15 34 27.8 +0.2**
SPA0 Spitsbergen Ar 52.70 346 *e*P **P** **15 34 27.1 -0.5**
SPA0 IAmb IAmb 15 34 29.1
comp=Z,141nm,1.3s
SPA0 Spitsbergen Ar 52.70 346 *e*P **P** **15 34 27.8 +0.2**
KBS Kingsbay 52.99 348 *e*P **P** **15 34 30.6 +1.0**
KBS IAmb IAmb 15 34 31.2
comp=Z,50nm,0.8s
KBS Kingsbay 52.99 348 *e*P **P** **15 34 30.1 +0.5**
KBS pmax pmax
comp=Z,108nm,1.3s
KBS Kingsbay 52.99 348 *e*P **P** **15 34 30.1 +0.5**
comp=Z,108nm,1.3s
KBS Kingsbay 52.99 348 *e*P **P** **15 34 30.1 +0.5**
MASI Maura Aman, Be 53.05 217 P **P** **15 34 31.0 0.0**
comp=Z,680nm,1.0s,comp=Z,6μm
LHSI Lahat 53.11 215 P **P** **15 34 31.7 +0.3**
comp=Z,437nm,1.1s,comp=Z,5μm
ABJI Asem Bagus 53.13 201 P **P** **15 34 31.6 +0.1**
comp=Z,157nm,1.1s
SRBI Singaraja 53.16 200 P **P** **15 34 31.3 -0.4**
comp=Z,368nm,1.2s,comp=Z,4μm
SOEI Soe 53.19 188 P **P** **15 34 31.1 -0.9**
comp=Z,168nm,0.9s
SOEI Soe 53.19 188 *e*P **P** **15 34 30.7 -1.3**
comp=Z,136nm,0.8s
PLAI Plampang 53.30 196 P **P** **15 34 31.0 -1.6**
comp=Z,272nm,1.2s,comp=Z,2μm
TMCR Tamitsa 53.31 327 *e*P **P** **15 34 32.1 0.0**
TMCR pmax pmax
comp=Z,47nm,1.0s
TWSI Taliwang, Sumb 53.40 198 P **P** **15 34 31.9 -1.5**
comp=Z,167nm,1.0s
KLI Kotabumi 53.51 213 P **P** **15 34 34.1 0.0**
comp=Z,997nm,0.9s,comp=Z,8μm
NGJI Ngawi 53.51 204 P **P** **15 34 35.1 +1.0**
comp=Z,233nm,1.1s
HSPB Hornsund (broa 53.52 345 *e*P **P** **15 34 34.2 +0.8**
HSPB IAmb IAmb 15 34 35.0
comp=Z,127nm,1.0s
SMRI Semarang 53.52 206 P **P** **15 34 34.5 +0.2**
comp=Z,280nm,1.1s
SMRI Semarang 53.52 206 *e*P **P** **15 34 34.4 +0.2**
comp=Z,402nm,1.2s
DNP Denpasar 53.73 200 P **P** **15 34 34.9 -0.8**
comp=Z,490nm,1.1s,comp=Z,18μm
GMJI Gumukmas 53.80 202 P **P** **15 34 35.9 -0.3**
comp=Z,313nm,1.1s
JAGI Jajag, Banyuwa 53.80 201 P **P** **15 34 35.7 -0.5**
comp=Z,77nm,1.0s
JAGI Jajag, Banyuwa 53.80 201 *e*P **P** **15 34 34.3 -1.9**
comp=Z,49nm,0.8s
BLSI Bandar Lampung 53.81 213 P **P** **15 34 36.4 +0.1**
comp=Z,527nm,1.0s,comp=Z,14μm
LWLI Liwa 53.97 214 P **P** **15 34 36.9 -0.7**
comp=Z,381nm,0.8s,comp=Z,5μm
GEYT Alibeck 54.02 291 P **P** **15 34 37.8 +0.1**
comp=Z,180nm,0.7s,baz=31,slow=3.5,SNR=425
GEYT pP **pP** **15 36 24.5 +1.2**
comp=Z,23nm,0.9s,baz=53,slow=5.7,SNR=3.8
GEYT S **S** **15 41 33.1 +1.0**
comp=Z,5.2nm,1.1s,baz=101,slow=7.7,SNR=10
KLMR Klimovskoe 54.10 323 *e*P **P** **15 34 36.5 -1.2**
KLMR *e**PP **pP** **15 36 21.8 -1.6**
KLMR *e*S **S** **15 41 29.0 -3.4**
KLMR pmax pmax
comp=Z,39nm,0.9s
WOJI Wonogiri, Jawa 54.12 205 P **P** **15 34 38.5 +0.1**
comp=Z,232nm,1.0s
SBJI Serang 54.16 211 P **P** **15 34 38.8 +0.1**
comp=Z,397nm,1.0s
KASI Kota Agung 54.25 213 P **P** **15 34 37.8 -1.6**
comp=Z,132nm,0.9s
LEM Lembang 54.27 209 P P 15 34 45.0 +5.3
comp=Z,405nm,1.0s,baz=347,slow=4.1,SNR=59
LEM Lembang 54.27 209 P P 15 34 44.7 +5.0
LEM Lembang 54.27 209 P P 15 34 45.0 +5.3
UGM Wanagama 54.31 205 P **P** **15 34 39.1 -0.7**
comp=Z,750nm,1.0s,comp=Z,7μm
UGM Wanagama 54.31 205 *e*P **P** **15 34 38.8 -1.1**
comp=Z,1μm,1.2s
PCJI Pacitan 54.38 205 P **P** **15 34 39.8 -0.4**
comp=Z,236nm,0.6s,comp=Z,4μm
PMG Port Moresby 54.48 160 P **P** **15 34 41.2 +0.2**
comp=Z,10nm,0.8s,baz=340,slow=5.9,SNR=5.2
PMG ScP **ScP** **15 38 39.8 -1.1**
comp=Z,6.0nm,0.7s,baz=345,slow=3.2,SNR=3.6
PMG S **S** **15 41 42.1 +3.7**
comp=Z,4.8nm,0.8s,baz=104,slow=17,SNR=2.6
PMG Port Moresby 54.48 160*ce*P **P** **15 34 41.0 0.0**
PMG pmax pmax
comp=Z,52nm,0.8s
PMG Port Moresby 54.48 160 *e*P **P** **15 34 39.9 -1.1**
comp=Z,12nm,0.8s
PMG ScP **ScP** **15 38 39.8 -1.1**
PMG S **S** **15 41 42.1 +3.7**
KEV Kevo 54.62 336 *e*P **P** **15 34 41.2 0.0**
KEV pmax pmax
comp=Z,98nm,0.9s
KEV Kevo 54.62 336 *e*P **P** **15 34 41.2 0.0**
comp=Z,98nm,0.9s
KEV Kevo 54.62 336 *e*P **P** **15 34 41.2 0.0**
CGJI Cibinong 54.78 211 P **P** **15 34 40.4 -2.7**
comp=Z,343nm,0.9s,comp=Z,2μm
SKJI Sukabumi 54.81 210 P **P** **15 34 44.3 +1.0**
comp=Z,294nm,0.9s,comp=Z,5μm
CISI Cisompet, Garu 54.87 209 P **P** **15 34 41.8 -2.0**
comp=Z,118nm,1.1s
CISI Cisompet, Garu 54.87 209 *e*P **P** **15 34 40.8 -3.0**
comp=Z,163nm,1.2s
CNJI Cibinong 54.89 210 P **P** **15 34 42.0 -1.8**
comp=Z,201nm,0.9s
HAMF Hammerfest 55.13 337 *e*P **P** **15 34 44.6 -0.2**
ARA0 ARCESS Array S 55.18 336 *e*P **P** **15 34 45.0 -0.1**
ARCES ARCESS Array B 55.18 336 P **P** **15 34 45.3 +0.1**
comp=Z,34nm,0.7s,baz=61,slow=7.9,SNR=257
ARCES PP **PP** **15 36 54.7 -1.6**
comp=Z,16nm,0.9s,baz=52,slow=8.1,SNR=5.0
ARCES ScP **ScP** **15 38 43.9 +0.6**
comp=Z,16nm,1.1s,baz=54,slow=6.3,SNR=3.5
ARE0 ARCESS Array S 55.18 336 *e*P **P** **15 34 45.4 +0.2**
ARE0 ARCESS Array S 55.18 336 *e*P **P** **15 34 45.3 +0.1**
comp=Z,65nm,1.0s
SKAG Skagway 55.63 38 *e*P **P** **15 34 50.2 +1.8**
comp=Z,270nm,1.3s
SKAG *e*pP **pP** **15 36 37.6 +2.7**
MTN Manton Dam 55.89 180 *e*P **P** **15 34 50.5 -0.3**
comp=Z,172nm,1.3s
TARA Tarawa 55.96 126 *e*P **P** **15 34 51.9 +0.5**
comp=Z,194nm,1.0s
KTK1 Kautokeino 56.14 336 *e*P **P** **15 34 52.2 +0.3**
KTK1 IAmb IAmb 15 34 52.9
comp=Z,95nm,1.0s
JOHN Johnston Islan 56.51 99 *e*P **P** **15 34 56.1 +1.0**
PALK Pallekele 56.80 246 *i*P **P** **15 34 57.3 +0.1**
SNR=26
PALK Pallekele 56.80 246 *i*P **P** **15 34 57.5 +0.3**
PALK Pallekele 56.80 246 *e*P **P** **15 34 56.9 -0.3**
comp=Z,176nm,0.8s
PALK *e*pP **pP** **15 36 44.6 +0.2**
TRO Tromso 57.05 337 *e*P **P** **15 34 58.1 +0.2**
TRO IAmb IAmb 15 34 58.7
comp=Z,91nm,1.1s
MOS Moscow 57.40 318 *e*P **P** **15 35 00.5 -0.1**
MOS *e**PP **pP** **15 36 46.6 -1.4**
MOS *e* 15 37 13.6
MOS *e* 15 38 49.5
MOS *i*S **S** **15 42 13.6 -1.5**
MOS *e* 15 43 48.7
MOS pmax pmax
comp=Z,300nm,1.1s
MOS pmax pmax
comp=Z,203nm,1.1s
MOS smax smax
comp=N,2μm,2.5s
MOS smax smax
comp=E,700nm,2.2s
MOS Moscow 57.40 318 *e*P **P** **15 35 00.5 -0.1**
VRH Novokhopyorsk 57.56 312 *e*P **P** **15 35 00.8 -1.0**
VRH *e**PP **pP** **15 36 47.3 -2.0**
VRH *e*S **S** **15 42 14.6 -2.7**
VRH pmax pmax
comp=Z,130nm,0.7s
VRH smax smax
comp=N,720nm,1.8s
OBN Obninsk 58.23 318 P **P** **15 35 05.8 -0.5**
comp=N,39nm,0.3s,baz=24,slow=2.0,SNR=26
OBN pP **pP** **15 36 54.4 +0.2**
comp=N,13nm,0.5s,baz=66,slow=2.9,SNR=1.7
OBN Obninsk 58.23 318*d*P **P** **15 35 05.7 -0.5**
OBN *i* 15 35 49.0
OBN *i**PP **pP** **15 36 53.8 -0.4**
OBN *i* 15 37 22.2
OBN *e*S S 15 42 16.4 -9.3
OBN pmax pmax
comp=Z,113nm,0.9s
OBN Obninsk 58.23 318 *e*P **P** **15 35 05.7 -0.5**
comp=Z,370nm,1.7s
OBN *e*pP **pP** **15 36 54.6 +0.5**
LPSR Galich'ya Gora 58.34 314 *e*P **P** **15 35 06.5 -0.5**
LPSR *e**PP **pP** **15 36 53.4 -1.6**
LPSR *e*S **S** **15 42 24.8 -2.3**
LPSR pmax pmax
comp=Z,120nm,0.9s
LPSR smax smax
comp=N,180nm,1.5s
RES Resolute Bay 58.38 13 P **P** **15 35 07.2 +0.3**
comp=N,154nm,0.5s,baz=310,slow=5.8,SNR=1283
RES pP **pP** **15 36 55.1 +0.2**
comp=N,18nm,1.1s,baz=302,slow=7.7,SNR=2.4
RES ScP **ScP** **15 38 57.4 +0.2**
comp=N,10.0nm,0.8s,baz=322,slow=7.5,SNR=6.2
DLBC Dease Lake 58.52 38 P **P** **15 35 10.5 +2.2**
comp=N,35nm,0.4s,baz=294,slow=6.6,SNR=100
DLBC pP **pP** **15 36 58.2 +1.9**
comp=N,12nm,0.9s,baz=328,slow=11,SNR=2.7
DLBC Dease Lake 58.52 38 *e*P **P** **15 35 10.2 +1.9**
comp=N,118nm,0.9s
DLBC *e*pP **pP** **15 36 57.9 +1.6**
WRAK Wrangell Islan 58.53 40 *e*P **P** **15 35 10.2 +1.9**
comp=N,195nm,1.0s
WRAK *e*pP **pP** **15 36 58.8 +2.4**
PUL Pulkovo 58.63 324⇓*e*P **P** **15 35 08.8 0.0**
PUL pmax pmax
comp=Z,130nm,0.4s
PUL Pulkovo 58.63 324 *e*P **P** **15 35 08.8 0.0**
DAG Danmarks Havn 58.66 352⇑*i*P **P** **15 35 08.7 -0.1**
comp=Z,52nm,0.8s
DAG Danmarks Havn 58.66 352⇑*i*P **P** **15 35 08.7 -0.1**
DAG pmax pmax
comp=Z,39nm,0.8s
HNR Honiara 58.71 146 P **P** **15 35 11.0 +1.0**
comp=Z,94nm,0.8s,baz=248,slow=1.1,SNR=12
HNR ScP **ScP** **15 38 59.1 -0.4**
comp=Z,17nm,0.5s,baz=131,slow=8.0,SNR=2.7
HNR Honiara 58.71 146 *e*P **P** **15 35 10.0 0.0**
HNR Honiara 58.71 146 *e*P **P** **15 35 10.6 +0.6**
comp=Z,164nm,0.9s
HNR ScP **ScP** **15 38 59.1 -0.4**
VSR Storozhevoye 58.93 313 *e*P **P** **15 35 10.4 -0.6**
VSR *e**PP **pP** **15 36 57.6 -1.7**
VSR *e*S **S** **15 42 31.5 -3.2**
VSR pmax pmax
comp=Z,80nm,0.6s
VSR smax smax
comp=E,290nm,1.5s
STEI Steigen 59.16 337 *e*P **P** **15 35 12.3 +0.1**
STEI IAmb IAmb 15 35 12.9
comp=Z,88nm,1.1s
FIA1 FINESS Array S 59.42 327 *e*P **P** **15 35 13.7 -0.4**
FIA1 *e*pP **pP** **15 37 02.1 -0.6**
FINES FINESS Array B 59.42 327 P **P** **15 35 13.9 -0.2**
comp=Z,25nm,0.4s,baz=80,slow=6.0,SNR=206
FINES PcP **PcP** **15 35 54.0 -0.7**
comp=Z,14nm,0.5s,baz=67,slow=4.7,SNR=3.8
FINES pP **pP** **15 37 02.6 -0.1**
comp=Z,26nm,0.7s,baz=61,slow=9.0,SNR=6.9
FINES sP **sP** **15 38 02.4 +0.4**
comp=Z,10.0nm,0.9s,baz=90,slow=7.6,SNR=1.8
FINES ScP **ScP** **15 39 01.2 -0.9**
comp=Z,5.5nm,0.6s,baz=83,slow=6.3,SNR=4.0
FINES S **S** **15 42 39.2 -1.3**
comp=Z,6.5nm,0.8s,baz=47,slow=17,SNR=7.1
GOF Gofitskoye 60.01 305⇑*e*P **P** **15 35 17.9 -0.4**
GOF *i*S **S** **15 42 48.1 -0.3**
GOF pmax pmax
comp=Z,332nm,0.9s
H02N1 VAN INLET T-PH 60.14 44 P **P** **15 35 20.6 +1.4**
SNR=39
DGRG David-gareji 60.54 301 P **P** **15 35 21.9 -0.1**
DGRG David-gareji 60.54 301 P **P** **15 35 21.9 -0.1**
GUDG Gudauri 60.54 302 P **P** **15 35 25.1 +2.9**
GUDG Gudauri 60.54 302 P **S** **15 42 56.0 +0.4**
MOR8 Moi Rana 60.55 335 *e*P **P** **15 35 20.1 -1.5**
MOR8 IAmb IAmb 15 35 21.0
comp=Z,111nm,0.9s
ZEI Tsey 60.72 303 *e*P **P** **15 35 22.1 -1.2**
ZEI *e**PP **pP** **15 37 11.8 -0.8**
ZEI *e**SP **sP** **15 38 10.2 -1.5**
ZEI *e*S **S** **15 42 54.9 -2.9**
ZEI pmax pmax
comp=Z,207nm,1.1s
TBLG Delisi 60.78 301 P **P** **15 35 23.4 -0.1**
TBLG Delisi 60.78 301 P **S** **15 42 57.2 -1.1**
TBLG Delisi 60.78 301 P **P** **15 35 23.4 -0.1**
KBZ Khabaz 60.82 304 P **P** **15 35 23.6 -0.1**
comp=Z,28nm,0.4s,baz=27,slow=6.5,SNR=105
KBZ S **S** **15 42 59.5 +1.0**
comp=Z,12nm,1.0s,baz=54,slow=20,SNR=9.1
KIV Kislovodsk 60.82 304 *i*P **P** **15 35 24.0 +0.2**
SNR=74
KIV Kislovodsk 60.82 304 *e*P **P** **15 35 23.9 +0.1**
KIV *e**PP **pP** **15 37 12.8 -0.3**
KIV *e**SP **sP** **15 38 11.7 -0.5**
KIV *e*S **S** **15 42 59.5 +0.8**
KIV pmax pmax
comp=Z,505nm,1.0s
KIV pmax pmax
comp=Z,400nm,2.3s
KIV Kislovodsk 60.82 304 *e*P **P** **15 35 23.9 +0.1**
comp=Z,421nm,0.9s
KIV *e*pP **pP** **15 37 13.5 +0.3**
KIV Kislovodsk 60.82 304 *e*P **P** **15 35 23.9 +0.1**
STOK Stokkvaagen 60.87 336 *e*P **P** **15 35 22.8 -0.8**
VSU Vasula 60.89 324*d*P **P** **15 35 23.7 -0.2**
VSU pmax pmax
comp=Z,197nm,0.9s
ONI Oni 61.11 303 P **P** **15 35 26.0 +0.3**
ONI Oni 61.11 303 P **S** **15 43 04.7 +2.4**
ONI Oni 61.11 303 P **P** **15 35 26.0 +0.3**
FITZ Fitzroy Crossi 61.32 186 P **P** **15 35 27.5 +0.3**
comp=Z,81nm,0.7s,baz=2.8,slow=5.7,SNR=145
FITZ Fitzroy Crossi 61.32 186 *e*P **P** **15 35 27.3 +0.1**
comp=Z,96nm,0.8s
GNI Garni 61.66 300 P **P** **15 35 30.1 +0.6**
comp=Z,66nm,0.8s,baz=320,slow=0.8,SNR=49
GNI pP **pP** **15 37 20.0 +0.7**
comp=Z,102nm,1.3s,baz=178,slow=6.8,SNR=3.6
GNI Garni 61.66 300*d*P **P** **15 35 30.0 +0.5**
GNI pmax pmax
comp=Z,361nm,1.1s
GNI Garni 61.66 300 P **P** **15 35 30.4 +0.9**
SNR=31
GNI Garni 61.66 300 P **P** **15 35 30.4 +0.9**
SNR=31
GNI Garni 61.66 300 *e*P **P** **15 35 29.8 +0.3**
comp=Z,102nm,0.9s
GNI *e*pP **pP** **15 37 19.9 +0.7**
AKH Akhalkalaki 61.74 301⇓*i*P **P** **15 35 30.5 +0.5**
AKH Akhalkalaki 61.74 301 P **P** **15 35 30.4 +0.5**
AKH Akhalkalaki 61.74 301 P **S** **15 43 13.0 +2.7**
AKH Akhalkalaki 61.74 301 P **P** **15 35 30.4 +0.5**
OPA Opana 61.75 86 *e*P **P** **15 35 30.9 +0.8**
OPA pmax pmax
comp=Z,188nm,0.8s
OPA Opana 61.75 86 *e*P **P** **15 35 30.9 +0.8**
comp=Z,188nm,0.8s
BGD Bogdanovka 61.76 301 P **P** **15 35 30.8 +0.7**
BGD Bogdanovka 61.76 301 P **S** **15 43 12.1 +1.5**
CHVG Ch'k'valeri 61.87 303⇓*i*P **P** **15 35 30.5 -0.1**
CHVG Ch'k'valeri 61.87 303 P **P** **15 35 30.6 -0.1**
CHVG Ch'k'valeri 61.87 303 P **S** **15 43 11.6 0.0**
KIP Kipapa 61.91 86 *e*P **P** **15 35 31.8 +0.6**
KIP pmax pmax
comp=Z,116nm,0.9s
KIP Kipapa 61.91 86 *e*P **P** **15 35 31.8 +0.6**
comp=Z,116nm,0.9s
WSAR Wadi Sarin 61.93 276 P **P** **15 35 31.9 +0.6**
comp=Z,57nm,0.9s,baz=85,slow=4.3,SNR=36
BANOM Banah 61.99 280 *i*P **P** **15 35 31.8 +0.1**
SNR=128
BANOM Banah 61.99 280 P **P** **15 35 32.1 +0.5**
SNR=19
BANOM Banah 61.99 280 P **P** **15 35 32.1 +0.5**
SNR=19
BIDO Bidbid 62.12 277 P **P** **15 35 34.0 +1.5**
SNR=25
BIDO Bidbid 62.12 277 P **P** **15 35 34.0 +1.5**
SNR=25
YKW3 Yellowknife Ar 62.18 29 *e*P **P** **15 35 32.6 +0.4**
comp=Z,301nm,1.4s

YKW3 *e*pP **pP** **15 37 23.1 +0.9**
YKA Yellowknife Ar 62.22 29 P **P** **15 35 33.0 +0.5**
comp=Z,66nm,0.4s,baz=311,slow=6.8,SNR=1122
YKA pP **pP** **15 37 23.7 +1.2**
comp=Z,17nm,0.9s,baz=308,slow=7.2,SNR=8.7
YKA PKPPKP P'P'df 16 04 24.3 -8.2
comp=Z,0.4nm,0.6s,baz=149,slow=2.2,SNR=6.4
YKB5 Yellowknife Ar 62.22 29 *e*P **P** **15 35 32.2 -0.2**
YKB5 *e*pP **pP** **15 37 23.4 +0.9**
KULLO Kullorsuaq 62.26 3⇑*i*P **P** **15 35 32.3 -0.2**
comp=Z,56nm,0.8s
KULLO Kullorsuaq 62.26 3⇑*i*P **P** **15 35 32.3 -0.2**
KULLO pmax pmax
comp=Z,56nm,0.8s
SMDO Samad 62.46 277 P **P** **15 35 35.5 +0.6**
SNR=40
SMDO Samad 62.46 277 P **P** **15 35 35.5 +0.6**
SNR=40
UOSS Minazif 62.65 279 *e*P **P** **15 35 35.3 -0.6**
comp=Z,14nm,0.8s
UOSS *e*pP **pP** **15 37 26.7 +0.5**
IZAR Zarasai 62.73 322 *e*P **P** **15 35 36.0 +0.1**
IZAR IAmb IAmb 15 35 36.8
comp=Z,29nm,0.5s
MICGM Minsk 62.74 320⇓*e*P **P** **15 35 36.0 0.0**
MICGM PM 15 35 37.0
comp=Z,0.2nm,0.8s
MICGM *e*pP **pP** **15 37 25.0 -1.2**
MICGM *e*S **S** **15 43 21.0 -0.7**
MNK Minsk 62.74 320⇓*e*P **P** **15 35 36.0 0.0**
MNK *e**PP **pP** **15 37 25.0 -1.2**
MNK *e*S **S** **15 43 21.0 -0.7**
MNK pmax pmax
comp=Z,220nm,0.8s
HATD Hatta, Dubai 62.77 279 *i*P **P** **15 35 37.0 +0.4**
SNR=167
HATD Hatta, Dubai 62.77 279 P **P** **15 35 37.1 +0.4**
SNR=59
HATD Hatta, Dubai 62.77 279 P **P** **15 35 37.1 +0.4**
SNR=59
HATD P **P** **15 35 37.4 +0.7**
SNR=8.5
IDID Didziasalis 62.77 321 *e*P **P** **15 35 36.3 +0.1**
IDID IAmb IAmb 15 35 38.0
comp=Z,23nm,0.7s
ASHO Ashiyiah 62.91 279 *i*P **P** **15 35 37.9 +0.2**
SNR=43
ASHO Ashiyiah 62.91 279 P **P** **15 35 38.1 +0.5**
SNR=51
ASHO Ashiyiah 62.91 279 P **P** **15 35 37.9 +0.2**
SNR=43
ASHO P **P** **15 35 38.1 +0.5**
SNR=51
NACGM Naroch 63.01 321 *e*P **P** **15 35 37.0 -0.7**
NACGM *e*S **S** **15 43 20.0 -4.9**
WRAB Tennant Creek 63.01 177*d i*P **P** **15 35 37.5 -0.6**
WRAB pmax pmax
comp=Z,46nm,0.7s
WRAB Tennant Creek 63.01 177 *e*P **P** **15 35 37.6 -0.6**
comp=Z,19nm,0.6s
NAZ Nazwa, Dubai 63.01 280 *i*P **P** **15 35 38.2 -0.1**
SNR=19
NAZ Nazwa, Dubai 63.01 280 P **P** **15 35 39.0 +0.7**
SNR=18
NAZ Nazwa, Dubai 63.01 280 P **P** **15 35 39.0 +0.7**
SNR=18
WRA Warramunga Arr 63.02 177 P **P** **15 35 37.8 -0.4**
comp=Z,18nm,0.6s,baz=357,slow=6.8,SNR=282
WRA PcP **PcP** **15 36 10.2 +0.3**
comp=Z,5.9nm,0.5s,baz=354,slow=4.9,SNR=10
WRA pP **pP** **15 37 30.1 +1.4**
comp=Z,20nm,1.1s,baz=357,slow=7.1,SNR=6.4
WRA ScP 15 39 17.7
comp=Z,7.4nm,0.9s,baz=352,slow=5.1,SNR=4.6
WRA S **S** **15 43 24.4 -1.4**
comp=Z,1.1nm,0.7s,baz=6.1,slow=13,SNR=4.5
WRA PKP2bc 16 04 37.2
comp=Z,3.7nm,1.0s,baz=183,slow=2.0,SNR=7.3
WB2 Warramunga Arr 63.02 177 *e*P **P** **15 35 37.7 -0.5**
comp=Z,23nm,0.6s
FAQ Al Faqa, Dubai 63.21 280 *i*P **P** **15 35 39.4 -0.1**
SNR=33
FAQ Al Faqa, Dubai 63.21 280 P **P** **15 35 40.0 +0.5**
SNR=17
FAQ Al Faqa, Dubai 63.21 280 P **P** **15 35 40.0 +0.5**
SNR=17
ARQ Araqi 63.40 278 P **P** **15 35 41.5 +0.7**
SNR=43
ARQ Araqi 63.40 278 P **P** **15 35 41.5 +0.7**
SNR=43
ANN Anapa 63.45 307*d i*P **P** **15 35 40.1 -0.6**
ANN *e**PP **pP** **15 37 30.0 -1.3**
ANN *i*S **S** **15 43 28.4 -2.2**
ANN pmax pmax
comp=Z,225nm,1.4s
ANN pmax pmax
comp=E,58nm,1.4s
ANN pmax pmax
comp=N,43nm,1.4s
ANN Anapa 63.45 307 *i*P **P** **15 35 40.1 -0.6**
COCO West Island 63.49 218 *i*P **P** **15 35 43.5 +2.3**
SUMG Summit 64.17 357⇑*i*P **P** **15 35 46.1 +0.8**
comp=N,80nm,0.7s
SUMG Summit 64.17 357⇑*i*P **P** **15 35 46.1 +0.8**
SUMG pmax pmax
comp=Z,80nm,0.7s
SUMG Summit 64.17 357 *e*P **P** **15 35 45.7 +0.4**
comp=Z,240nm,1.3s
SUMG *e*pP **pP** **15 37 37.3 +1.0**
AKASG Malin Array Be 64.39 316 P **P** **15 35 46.0 -0.6**
comp=Z,44nm,0.5s,baz=50,slow=6.7,SNR=153
AKASG pP **pP** **15 37 36.6 -1.1**
comp=Z,15nm,0.7s,baz=47,slow=7.4,SNR=5.5
AKASG sP **sP** **15 38 38.5 +2.3**
comp=Z,0.6nm,0.4s,baz=46,slow=6.8,SNR=1.1
AKASG S **S** **15 43 39.9 -1.9**
comp=Z,3.7nm,0.8s,baz=48,slow=12,SNR=7.1
AKBB Malin Array Si 64.39 316 *e*P **P** **15 35 45.7 -0.9**
AKBB *e**PP **pP** **15 37 36.5 -1.2**
AKBB pmax pmax
comp=Z,66nm,0.8s
AKBB Malin Array Si 64.39 316 *e*P **P** **15 35 45.7 -0.9**
comp=Z,66nm,0.8s
AKBB *e*pP **pP** **15 37 36.5 -1.2**
KIEV Kiev 64.41 316*d i*P **P** **15 35 45.8 -0.8**
KIEV pmax pmax
comp=Z,52nm,0.8s
KIEV Kiev 64.41 316 *e*P **P** **15 35 45.9 -0.8**
comp=Z,65nm,0.7s
KIEV *e*pP **pP** **15 37 36.3 -1.4**
AK11 Malin Array Si 64.44 316 *e*P **P** **15 35 45.7 -1.2**
AK11 *e*pP **pP** **15 37 37.6 -0.4**
HPAH Hawaii Prepara 64.47 86 *e*P **P** **15 35 48.1 +0.4**
comp=Z,171nm,0.9s
CTA Charters Tower 64.62 164 P **P** **15 35 49.2 +0.9**
comp=Z,11nm,0.9s,baz=90,slow=19,SNR=3.8
CTA PKP2bc **P'P'bc** **16 04 29.1 -2.2**
comp=Z,4.6nm,0.9s,baz=279,slow=10.0,SNR=3.2
POHA Pohakuloa 64.76 86 *e*P **P** **15 35 50.2 +0.5**
comp=Z,290nm,0.9s
SCO Scoresbysund 64.83 350⇑*i*P **P** **15 35 49.7 +0.7**
SCO Scoresbysund 64.83 350⇑*i*P **P** **15 35 49.7 +0.7**
MLOA Mauna Loa Obse 64.87 86 *e*P **P** **15 35 51.3 +0.7**
NC405 NORSAR Array S 64.93 332 *e*P **P** **15 35 49.6 -0.2**
NC405 *e*pP **pP** **15 37 40.3 -0.8**
HFS Hagfors 64.93 331 P **P** **15 35 49.3 -0.5**
comp=Z,23nm,0.5s,baz=64,slow=6.9,SNR=162
HFS PcP **PcP** **15 36 16.2 -1.2**
comp=Z,6.7nm,0.4s,baz=72,slow=4.8,SNR=5.3
HFS pP **pP** **15 37 40.9 -0.2**
comp=Z,3.3nm,0.5s,baz=64,slow=6.9,SNR=1.9
NC303 NORSAR Array S 64.96 332 *e*P **P** **15 35 49.6 -0.4**
NC303 *e*pP **pP** **15 37 40.4 -0.9**
NB201 NORSAR Array S 65.11 332 *e*P **P** **15 35 50.6 -0.4**
NB201 *e*pP **pP** **15 37 41.3 -1.1**
NC204 NORSAR Array S 65.13 333 *e*P **P** **15 35 50.7 -0.4**
NC204 *e*pP **pP** **15 37 40.7 -1.9**
NB2 NORSAR Subarra 65.15 332 P **P** **15 35 50.3 -0.9**
comp=Z,18nm,0.4s,baz=41,slow=6.5
NB2 NORSAR Subarra 65.15 332 P **P** **15 35 50.3 -0.9**
baz=41,slow=6.5
NOA NORSAR Array B 65.15 332 P **P** **15 35 50.9 -0.4**
comp=Z,25nm,0.7s,baz=42,slow=6.2,SNR=93
NOA PcP **PcP** **15 36 16.2 -2.1**
comp=Z,4.6nm,0.6s,baz=43,slow=6.1,SNR=4.7
NOA pP **pP** **15 37 41.5 -1.1**
comp=Z,12nm,0.9s,baz=44,slow=6.6,SNR=8.7
NOA PP **PP** **15 38 25.2 +1.8**
comp=Z,5.5nm,0.9s,baz=46,slow=8.8,SNR=3.9
SUW Suwalki 65.20 322 *e*P **P** **15 35 50.9 -0.7**
SUW Suwalki 65.20 322 *e*P **P** **15 35 50.9 -0.7**
MOL Molde 65.22 335 *e*P **P** **15 35 52.0 +0.5**
MOL IAmb IAmb 15 35 52.6
comp=Z,32nm,0.6s
NC602 NORSAR Array S 65.26 332 *e*P **P** **15 35 51.0 -0.8**
NC602 NORSAR Array S 65.26 332 *e*P **P** **15 35 51.1 -0.8**
NC602 *e*pP **pP** **15 37 42.0 -1.3**
NBO02 NORSAR Array S 65.26 332 *e*P **P** **15 35 51.6 -0.3**
NBO02 *e*pP **pP** **15 37 42.1 -1.2**
SIM Simferopol' 65.27 309*de*P **P** **15 35 51.8 -0.4**
SIM *e**PP **pP** **15 37 44.0 +0.3**
SIM *e*S **S** **15 43 51.0 -1.4**
SIM pmax pmax
comp=Z,76nm,0.9s
NBO00 NORSAR Array S 65.30 332 *e*P **P** **15 35 51.8 -0.4**
NBO00 *e*pP **pP** **15 37 42.7 -1.0**
NAO01 NORSAR Array S 65.40 332 *e*P **P** **15 35 52.1 -0.7**
AKN Aaknes 65.68 335 *e*P **P** **15 35 55.1 +0.5**
AKN IAmb IAmb 15 35 55.9
comp=Z,45nm,0.9s
SORM Soroca 66.44 315⇑*i*P **P** **15 35 58.3 -1.1**
AS31 Alice Springs 66.70 177 *e*P **P** **15 36 01.5 +0.2**
comp=Z,5.6nm,0.6s
AS01 Alice Springs 66.70 177 *e*P **P** **15 36 01.6 +0.3**
ASAR Alice Springs 66.70 177 P **P** **15 36 01.6 +0.3**
comp=Z,12nm,0.4s,baz=354,slow=6.5,SNR=428
ASAR PcP **PcP** **15 36 25.3 +0.1**
comp=Z,3.8nm,0.7s,baz=352,slow=5.4,SNR=4.5
ASAR pP **pP** **15 37 55.7 +2.0**
comp=Z,9.3nm,0.8s,baz=5.8,slow=6.2,SNR=5.1
ASAR S **S** **15 44 09.6 -0.2**
comp=Z,4.7nm,1.0s,baz=14,slow=24,SNR=11
ASAR PKP2bc 16 04 26.9
comp=Z,2.4nm,1.0s,baz=175,slow=2.6,SNR=7.0
HYA Hoyanger 66.70 334 *e*P **P** **15 36 01.1 +0.3**
HYA IAmb IAmb 15 36 02.0
comp=Z,59nm,1.1s
KONO Kongsberg 66.72 332 *e*P **P** **15 36 00.7 -0.2**
KONO pmax pmax
comp=Z,15nm,0.9s
KONO Kongsberg 66.72 332 *e*P **P** **15 36 00.7 -0.2**
comp=Z,15nm,0.9s
KONO *e*pP **pP** **15 37 52.1 -1.0**
SUE Sulen 67.23 335 *e*P **P** **15 36 04.0 -0.1**
SHAO Shalim 67.39 274 P **P** **15 36 08.8 +3.0**
SNR=5.6
SHAO Shalim 67.39 274 P **P** **15 36 08.8 +3.0**
SNR=5.6
IAS Iasi 67.45 314⇑*i*P **P** **15 36 04.7 -0.9**
PGC Sidney 67.50 44 *e*P **P** **15 36 06.8 +0.9**
comp=Z,68nm,0.8s
LVV L'vov 67.53 318 *e*P **P** **15 36 05.4 -0.7**
LVV *e*S **S** **15 44 15.4 -3.5**
LVV *e* 15 45 05.6
LVV pmax pmax
comp=Z,100nm,1.4s
ASK Askoy 67.54 334 *e*P **P** **15 36 05.8 -0.1**
ASK IAmb IAmb 15 36 07.3
comp=Z,40nm,0.9s
BEL Belsk 67.73 321 *i*P **P** **15 36 07.7 +0.5**
BEL Belsk 67.73 321⇓*i*P **P** **15 36 07.7 +0.5**
ILULI Ilulissat 67.78 1⇑*i*P **P** **15 36 07.4 +0.2**
comp=Z,113nm,0.6s
ILULI Ilulissat 67.78 1⇑*i*P **P** **15 36 07.4 +0.2**
ILULI pmax pmax
comp=Z,110nm,0.6s
A04D Lummi Island 67.83 43 P **P** **15 36 09.3 +1.4**
baz=311,SNR=6.8
BLS5 Blasjo 67.95 333 *e*P **P** **15 36 09.0 +0.5**
BLS5 IAmb IAmb 15 36 10.0
comp=Z,29nm,1.1s
BSD Bornholm Skovb 68.00 326⇓*i*P **P** **15 36 08.4 -0.5**
comp=Z,46nm,0.5s
BSD Bornholm Skovb 68.00 326⇓*i*P **P** **15 36 08.4 -0.5**
BSD pmax pmax
comp=Z,46nm,0.5s
TLCR 68.06 312⇓*i*P **P** **15 36 09.1 -0.3**
NLWA Neilton Lookou 68.10 45 *e*P **P** **15 36 11.6 +1.9**
comp=Z,195nm,1.2s
NLWA *e*pP **pP** **15 38 03.7 +1.2**
KWP Kalwaria Pacla 68.30 318 *i*P **P** **15 36 11.2 +0.4**
KWP *e* 15 38 03.8
KWP Kalwaria Pacla 68.30 318⇑*i*P **P** **15 36 11.1 +0.3**
KWP Kalwaria Pacla 68.30 318⇓*i*P **P** **15 36 11.3 +0.4**
CMW Cultus Mountai 68.32 43 P **P** **15 36 12.6 +1.5**
TESR Tescani 68.36 314⇓*i*P **P** **15 36 10.8 -0.5**
BUR08 Bucovina Ar. S 68.38 316 *e*P **P** **15 36 11.4 0.0**
BURAR Bucovina Array 68.39 316⇓*i*P **P** **15 36 11.3 -0.2**
B05A Bryant 68.44 43 P **P** **15 36 12.8 +1.2**
baz=312,SNR=25
CFR Carcaliu 68.44 312⇑*i*P **P** **15 36 11.1 -0.6**
SNART Snartemo 68.52 332 *e*P **P** **15 36 11.9 0.0**
PETR Petresti 68.57 313⇓*i*P **P** **15 36 13.6 +1.1**
B06A Marblemount 68.57 43 *e*P **P** **15 36 13.5 +1.1**
comp=Z,136nm,0.8s
COP Copenhagen 68.58 328 *i*P **P** **15 36 12.0 -0.3**
comp=Z,27nm,0.6s
COP Copenhagen 68.58 328 *i*P **P** **15 36 12.0 -0.3**
COP pmax pmax
comp=Z,27nm,0.6s
RPW Rockport 68.60 43 P **P** **15 36 13.8 +1.0**
ODBI Odobesti 68.64 313⇓*i*P **P** **15 36 13.8 +0.9**
VRI Vrincioaia 68.74 313⇓*i*P **P** **15 36 13.8 +0.2**
TIRR Tirgusor 68.75 311⇓*i*P **P** **15 36 12.4 -1.2**
TIRR Tirgusor 68.75 311 *e*P **P** **15 36 12.9 -0.7**
TIRR pmax pmax
comp=Z,36nm,1.2s
TIRR Tirgusor 68.75 311 *e*P **P** **15 36 12.9 -0.7**
comp=Z,36nm,1.2s
BR131 Keskin Array S 68.77 305 *e*P **P** **15 36 13.4 -0.6**
BR131 *e*pP **pP** **15 38 06.5 -0.6**
BRTR Keskin Array B 68.77 305 P **P** **15 36 13.6 -0.4**
comp=Z,23nm,0.7s,baz=58,slow=4.7,SNR=128
BRTR PcP **PcP** **15 36 33.6 -0.5**
comp=Z,6.5nm,0.8s,baz=42,slow=2.0,SNR=4.8
BRTR pP **pP** **15 38 06.9 -0.2**
comp=Z,15nm,0.8s,baz=77,slow=4.9,SNR=16
BRTR PKP2bc 16 04 20.8
comp=Z,1.3nm,1.0s,baz=186,slow=1.2,SNR=6.7
KNTN Kanton 68.77 116 *e*P **P** **15 36 15.8 +1.7**
comp=Z,314nm,1.6s
PLOR Plostina 68.80 313⇓*i*P **P** **15 36 14.1 +0.2**
E03A Lebam 68.81 46 *e*P **P** **15 36 15.7 +1.8**
comp=Z,349nm,1.0s
E03A *e*pP **pP** **15 38 07.8 +0.7**
DRWC Darouich 68.86 301 *e*P **P** **15 36 14.5 0.0**
HARR Harsova 68.86 312⇑*i*P **P** **15 36 11.5 -2.8**
GRER 68.93 313⇓*i*P **P** **15 36 16.1 +1.4**
KOLS Kolonicke sedl 68.98 318 *e*P **P** **15 36 15.0 +0.1**
KOLS pmax pmax
comp=Z,15nm,0.7s
KOLS Kolonicke sedl 68.98 318 *e*P **P** **15 36 15.0 +0.1**
KOLS *e* 15 38 08.2
C05A Tolt Reservoir 69.02 44 *e*P **P** **15 36 13.0 -2.2**
RGN Rugen 69.05 326 *e*P **P** **15 36 15.7 +0.5**
comp=Z,68nm,0.9s
STHS Stebnicka Huta 69.15 319 *e*P **P** **15 36 16.3 +0.3**
STHS pmax pmax
comp=Z,18nm,0.7s
STHS Stebnicka Huta 69.15 319 *e*P **P** **15 36 16.3 +0.3**
STHS *e* 15 38 08.8
UZH Uzhgorod 69.17 318 *e*P **P** **15 36 14.3 -1.8**
UZH *e* 15 38 48.1
UZH *e*S **S** **15 44 33.3 -4.6**
ARCR ARCALIA 69.18 316⇑*i*P **P** **15 36 17.1 +1.0**
ANTO Ankara 69.18 305 *e*P **P** **15 36 16.3 -0.1**
ANTO pmax pmax
comp=Z,173nm,1.3s
ANTO Ankara 69.18 305 *e*P **P** **15 36 16.3 -0.1**
comp=Z,173nm,1.3s
ANTO *e*pP **pP** **15 38 08.8 -0.9**
D05A Enumclaw 69.20 44 *e*P **P** **15 36 18.2 +1.9**
comp=Z,228nm,1.0s
BR231 Keskin MP Arra 69.21 305 *e*P **P** **15 36 16.5 -0.1**
BR231 *e*pP **pP** **15 38 07.1 -2.8**
BMR Baia Mare 69.22 316⇑*i*P **P** **15 36 16.8 +0.4**
F03A Seaside 69.22 46 *e*P **P** **15 36 18.1 +1.7**
comp=Z,458nm,1.3s
MUD Monsted U'grnd 69.25 330⇓*i*P **P** **15 36 16.5 +0.2**
MUD Monsted U'grnd 69.25 330⇓*i*P **P** **15 36 16.5 +0.2**
C06D Leavenworth 69.26 43 P **P** **15 36 17.6 +0.9**
baz=312,SNR=5.1
OJC Ojcow 69.29 320 *i*P **P** **15 36 17.1 +0.4**
OJC *e* 15 39 06.6
OJC Ojcow 69.29 320⇓*i*P **P** **15 36 17.1 +0.4**
OJC *e* 15 39 06.6
OJC Ojcow 69.29 320 *e*P **P** **15 36 16.9 +0.2**
comp=Z,134nm,1.0s
OJC *e*pP **pP** **15 38 10.3 +0.3**
WRW Wenatchee Ridg 69.31 43 P **P** **15 36 18.3 +1.2**
ISR Istrita 69.33 313⇓*i*P **P** **15 36 17.5 +0.3**
PSN Preselentsi 69.38 311 P **P** **15 36 18.0 +0.6**
CRVS Cervenica-Dubn 69.40 318 *e*P **P** **15 36 17.8 +0.4**
CRVS Cervenica-Dubn 69.40 318 *e*P **P** **15 36 17.8 +0.4**
MLR Muntele Rosu 69.40 314 P **P** **15 36 17.5 -0.3**
comp=Z,2.6nm,0.4s,baz=340,slow=3.8,SNR=25
MLR Muntele Rosu 69.40 314⇓*i*P **P** **15 36 17.7 0.0**
MLR Muntele Rosu 69.40 314 *e*P **P** **15 36 17.4 -0.3**
MLR pmax pmax
comp=Z,42nm,1.2s
MLR Muntele Rosu 69.40 314 *e*P **P** **15 36 17.4 -0.3**
comp=Z,42nm,1.2s
F04D Rainier, OR 69.41 46 P **P** **15 36 19.2 +1.7**
baz=312,SNR=7.4
NLW Nelson Butte 69.44 43 P **P** **15 36 19.1 +1.3**
OBSR Observation Ro 69.48 44 *e*P **P** **15 36 20.4 +2.1**
ABTO Aybut 69.51 275 P **P** **15 36 18.4 -0.3**
SNR=21
ABTO Aybut 69.51 275 P **P** **15 36 18.4 -0.3**
SNR=21
LON Longmire 69.58 45 *e*P **P** **15 36 19.6 +0.9**
LON pmax pmax
comp=Z,71nm,1.0s
LON Longmire 69.58 45 *e*P **P** **15 36 19.6 +0.9**
comp=Z,71nm,1.0s
NIE Niedzica 69.60 319 *i*P **P** **15 36 19.5 +0.8**
NIE *e* 15 39 09.6
NIE Niedzica 69.60 319⇓*i*P **P** **15 36 19.5 +0.8**
NIE *e* 15 39 09.6
TDL Tradedollar La 69.64 45 P **P** **15 36 20.7 +1.6**
STD Studebaker Rid 69.72 45 P **P** **15 36 21.3 +1.8**
B08A Colville Reser 69.74 42 *e*P **P** **15 36 20.3 +0.8**
comp=Z,155nm,1.3s
ETW Entiat 69.76 43 P **P** **15 36 20.9 +1.1**
CJR Cluj-Napoca 69.81 316⇓*i*P **P** **15 36 19.7 -0.3**
GLK Glacier Lake 69.81 45 P **P** **15 36 21.6 +1.5**
F04A Amboy 69.82 45 *e*P **P** **15 36 21.1 +1.2**
comp=Z,196nm,1.0s
F04A *e*pP **pP** **15 38 13.8 +0.2**
G03D McMinnville, O 69.85 46 P **P** **15 36 21.8 +1.6**
baz=312,SNR=13
RABH Abou Rabah 69.88 299 *e*P **P** **15 36 20.7 0.0**
WTV Waterville 69.88 43 P **P** **15 36 21.2 +0.8**
VOIR 69.91 314⇓*i*P **P** **15 36 20.7 0.0**
SFJD Kangerlussuaq 70.01 1⇑*i*P **P** **15 36 20.9 +0.2**
comp=Z,83nm,0.9s
SFJD Kangerlussuaq 70.01 1⇑*i*P **P** **15 36 20.9 +0.2**
SFJD pmax pmax
comp=Z,83nm,0.9s
SFJD Kangerlussuaq 70.01 1 *e*P **P** **15 36 20.6 -0.1**
comp=Z,106nm,1.0s
SFJD *e*pP **pP** **15 38 14.7 +0.4**
BORG Borgarnes 70.12 348 P **P** **15 36 23.3 +1.9**
comp=Z,28nm,1.1s,baz=360,slow=3.3,SNR=4.7
BORG PP **PP** **15 39 02.3 -3.4**
comp=Z,31nm,1.1s,baz=131,slow=5.9,SNR=2.6
PRD Provadia 70.12 311 P **P** **15 36 22.4 +0.6**
KECS Kecovo 70.16 319 *e*P **P** **15 36 21.8 -0.1**
KECS *e* 15 36 34.3
KECS Kecovo 70.16 319 *e*P **P** **15 36 21.8 -0.1**
KECS *e* 15 36 34.3
KECS *e* 15 38 15.9
ARR Arges 70.18 314⇓*i*P **P** **15 36 22.4 +0.2**
LANS Liptovska Anna 70.18 320 *e*P **P** **15 36 23.2 +1.1**
LANS Liptovska Anna 70.18 320 *e*P **P** **15 36 23.2 +1.1**
LANS *e* 15 38 16.9
DRGR 70.21 316⇓*i*P **P** **15 36 22.8 +0.4**
COR Corvallis 70.25 47 *e*P **P** **15 36 23.4 +0.9**
COR pmax pmax
comp=Z,332nm,1.1s
COR Corvallis 70.25 47 *e*P **P** **15 36 23.4 +0.9**
comp=Z,332nm,1.1s
OKC Ostrava-Krasne 70.32 321⇓*e*P **P** **15 36 23.3 +0.4**
OKC *e*pP **pP** **15 38 16.0 -0.6**
OKC *e*S **S** **15 44 48.8 -2.1**
OKC Ostrava-Krasne 70.32 321 *e*P **P** **15 36 23.3 +0.4**
OKC *e*S **S** **15 44 48.8 -2.1**
KSP Ksiaz 70.45 322 *i*P **P** **15 36 24.1 +0.5**
KSP *e* 15 39 16.1
KSP Ksiaz 70.45 322⇓*i*P **P** **15 36 24.1 +0.5**
KSP *e* 15 39 16.1
LOT Lotru 70.57 315⇑*i*P **P** **15 36 24.2 -0.4**
C09A Chrisman Ranch 70.64 42 *e*P **P** **15 36 26.1 +1.2**
comp=Z,196nm,0.7s
C09A *e*pP **pP** **15 38 19.2 +0.4**
MORC Moravsky Berou 70.64 321⇓*i*P **P** **15 36 25.2 +0.3**
MORC Moravsky Berou 70.64 321 *e*P **P** **15 36 25.2 +0.3**
MORC pmax pmax
comp=Z,247nm,1.0s
MORC Moravsky Berou 70.64 321 *e*P **P** **15 36 25.1 +0.3**
comp=Z,247nm,1.0s
MORC *e*pP **pP** **15 38 18.2 -0.5**
E07A Sunnyside 70.71 44 *e*P **P** **15 36 26.5 +1.2**
comp=Z,191nm,1.0s
VFP Flag Point 70.72 45 P **P** **15 36 27.0 +1.4**
ZALF Zalf 70.76 297 *e*P **P** **15 36 25.6 -0.2**
H04A Detroit Lake 70.78 46 *e*P **P** **15 36 26.6 +0.9**
comp=Z,181nm,0.9s
H04A *e*pP **pP** **15 38 20.4 +0.7**
KRLC Kraliky 70.78 322⇓*i*P **P** **15 36 26.2 +0.6**
KRLC *e*pP **pP** **15 38 19.4 -0.2**
KRLC *e*PP **sP** **15 39 18.5 +1.1**
KRLC Kraliky 70.78 322⇓*i*P **P** **15 36 26.2 +0.6**
KRLC *e* 15 39 18.5
EIDS Eidsvold 70.78 161 *e*P **P** **15 36 26.9 +1.2**
comp=Z,17nm,0.8s
HWQ Hawqa 70.79 299 *e*P **P** **15 36 25.3 -0.8**
DPC Dobruska-Polom 70.79 322⇓*i*P **P** **15 36 25.5 +0.8**
DPC *e*pP **pP** **15 38 19.4 -0.3**
DPC *e*PP **sP** **15 39 18.5 +1.0**
DPC *e*S **S** **15 44 55.3 -1.1**
DPC Dobruska-Polom 70.79 322⇓*i*P **P** **15 36 25.5 +0.8**
DPC *e* 15 39 18.5
DPC *e*S **S** **15 44 55.3 -1.1**
I03D Drain, OR 70.81 48 P **P** **15 36 27.8 +2.0**
baz=312,SNR=53
UPC Upice 70.82 322⇓*i*P **P** **15 36 26.3 +0.5**
UPC *e*pP **pP** **15 38 21.1 +1.3**
UPC *e*PP **sP** **15 39 18.9 +1.3**
UPC *e*S **S** **15 44 54.6 -2.0**
UPC Upice 70.82 322⇓*i*P **P** **15 36 26.3 +0.5**
UPC *e* 15 39 18.9
UPC *e*S **S** **15 44 54.6 -2.0**
UPC smax smax
comp=N,3.0nm,0.4s
PSZ Piszkesteto 70.83 318⇑*i*P **P** **15 36 26.2 +0.2**
PSZ Piszkesteto 70.83 318⇓*e*PP **P** **15 36 26.5 +0.5**
PSZ Piszkesteto 70.83 318 *e*P **P** **15 36 25.9 -0.2**
PSZ pmax pmax
comp=Z,42nm,1.0s
PSZ Piszkesteto 70.83 318 *e*P **P** **15 36 25.9 -0.2**
comp=Z,42nm,1.0s
PSZ *e*pP **pP** **15 38 19.3 -0.7**
D08A Wollman Farm, 70.83 43 *e*P **P** **15 36 27.0 +1.0**
comp=Z,97nm,0.7s
G05D Wamic, OR 70.85 45 P **P** **15 36 27.8 +1.6**
baz=313,SNR=15
NEW Newport 70.88 41 P **P** **15 36 27.4 +1.2**
baz=314,SNR=50
NEW Newport 70.88 41 *e*P **P** **15 36 27.3 +1.1**
NEW pmax pmax
comp=Z,86nm,0.9s
NEW Newport 70.88 41 *e*P **P** **15 36 27.3 +1.1**
comp=Z,86nm,0.9s
VYHS Vyhne 70.94 319 *e*P **P** **15 36 27.0 +0.4**
VYHS pmax pmax
comp=Z,13nm,1.1s
VYHS Vyhne 70.94 319 *e*P **P** **15 36 27.0 +0.4**
VYHS *e* 15 38 22.4
VYHS *e*PP **PP** **15 39 09.0 -4.1**
RSW Rattlesnake Hi 70.95 44 P **P** **15 36 28.3 +1.5**
HAWA Hanford 70.98 44 *e*P **P** **15 36 27.9 +1.0**
comp=Z,240nm,1.1s

CROR Criterion Ridg 71.20 46 P **P 15 36 29.8 +1.6**
G06A Carlson Farm, 71.21 45 *e*P **P 15 36 29.2 +0.9**
comp=Z,194nm,1.3s
BHL Bhannes 71.21 299 *e*P **P 15 36 27.8 -0.7**
I04A Tendick Farm, 71.25 47 P **P 15 36 29.9 +1.4**
baz=312,SNR=117
VTHM Trough 71.29 45 P **P 15 36 30.4 +1.7**
RCY Rachaya 71.36 299 *e*P **P 15 36 29.0 -0.5**
DQRL Deir Qamar 71.39 299 *e*P **P 15 36 29.2 -0.4**
SRE Strehaia 71.40 314 ⇑*i*P **P 15 36 30.2 +0.9**
VRAC Vranov 71.41 321 P **P 15 36 30.0 +0.7**
comp=Z,20nm,0.6s,baz=56,slow=6.0,SNR=31
VRAC pP **pP 15 38 25.4 +1.8**
comp=Z,8.4nm,0.8s,baz=65,slow=8.2,SNR=4.1
VRAC Vranov 71.41 321 ⇓*i*P **P 15 36 29.7 +0.4**
PVCC Panska Ves 71.44 323 ⇓*i*P **P 15 36 30.2 +0.8**
PVCC *ex* x 15 36 38.1
PVCC *e*pP **pP 15 38 24.2 +0.5**
PVCC Panska Ves 71.44 323 ⇓*i*P **P 15 36 30.2 +0.8**
I05D Terrebonne, OR 71.45 46 P **P 15 36 31.1 +1.3**
baz=313,SNR=57
BRG Berggiesshubel 71.46 324 *i* P **P 15 36 29.7 +0.1**
comp=Z,24nm,0.7s
BRG *e*pP **pP 15 38 22.2 -1.6**
comp=Z,27nm,1.5s
BRG *e*sP **PP 15 39 17.0 -0.4**
comp=Z,85nm,1.9s
BRG SCS SKiKP 15 45 25.7 +16
comp=Z,8.9nm,1.4s
comp=N,237nm,16.0s
comp=E,265nm,10.1s
comp=Z,227nm,13.9s
BRG Berggiesshubel 71.46 324 *i* P **P 15 36 29.7 +0.1**
BRG *e**SP **PP 15 39 17.0 -0.4**
BRG pmax pmax
comp=Z,25nm,1.5s
BRG MLR MLR
comp=N,9µm,16.0s
BRG MLR MLR
comp=E,237nm,10.1s
BRG MLR MLR
comp=Z,265nm,13.9s
ASF Jabal al Asfar 71.52 297 P **P 15 36 30.3 0.0**
comp=Z,31nm,0.8s,baz=0.5,slow=1.9,SNR=40
ASF pP **pP 15 38 25.1 +0.4**
ASF sP **sP 15 39 21.1 -1.2**
comp=Z,13nm,1.0s,baz=352,slow=1.7,SNR=3.5
PHNC Paralimni 71.53 301 P **P 15 36 28.5 -1.8**
CLL Collm 71.55 324 ⇓*i*P **P 15 36 30.1 +0.1**
comp=Z,72nm,0.5s
CLL *i* pP **pP 15 38 23.6 -0.8**
CLL *e*PP **PP 15 39 20.0 +1.9**
CLL *e*sP **PP 15 39 20.0 +1.9**
CLL *e*S **S 15 45 02.0 -2.7**
CLL *e*S **S 15 45 02.0 -2.7**
comp=E,300nm,11.5s
CLL Collm 71.55 324 ⇓*i*P **P 15 36 30.1 +0.1**
CLL *e*S **S 15 45 02.0 -2.7**
CLL pmax pmax
comp=Z,72nm,0.5s
CLL Collm 71.55 324 *e*P **P 15 36 29.8 -0.3**
comp=Z,81nm,1.0s
CLL *e*pP **pP 15 38 24.3 -0.1**
BZS Buzias 71.57 316 ⇓*i*P **P 15 36 29.9 -0.4**
SMOL Smolenice 71.59 320 *e*P **P 15 36 31.4 +1.0**
SMOL Smolenice 71.59 320 *e*P **P 15 36 31.4 +1.0**
E09A Wood Farm, Sta 71.59 43 *e*P **P 15 36 31.7 +1.3**
comp=Z,191nm,1.1s
FCC Fort Churchill 71.62 23 *e*P **P 15 36 30.6 +0.3**
FCC pmax pmax
comp=Z,222nm,1.0s
FCC Fort Churchill 71.62 23 *e*P **P 15 36 30.6 +0.3**
comp=Z,222nm,1.0s
FCC *e*pP **pP 15 38 24.1 -0.5**
L02D Cave Junction, 71.71 49 P **P 15 36 32.7 +1.5**
baz=312,SNR=20
HUMO Hull Mountain 71.76 48 *e*P **P 15 36 32.8 +1.3**
comp=Z,26nm,0.6s
HUMO *e*pP **pP 15 38 26.4 +0.5**
GOPC GO Pecny, Ondr 71.79 322 ⇓*i*P **P 15 36 32.1 +0.6**
GOPC *ex* x 15 38 29.8
GOPC *e*PP **sP 15 39 25.0 +1.4**
GOPC *e*S **S 15 45 07.5 -0.1**
GOPC GO Pecny, Ondr 71.79 322 ⇓*i*P **P 15 36 32.1 +0.6**
GOPC *e* 15 39 25.0
GOPC *e*S **S 15 45 07.5 -0.1**
TCHB Talchebab 71.80 298 *e*P P 15 36 24.0 -7.9
WALA Waterton Lakes 71.82 39 *e*P **P 15 36 33.0 +1.1**
comp=Z,349nm,1.5s
PRU Pruhonice 71.85 323 ⇓*i*P **P 15 36 32.4 +0.6**
PRU *e*pP **pP 15 38 25.8 -0.4**
PRU *e*PP **sP 15 39 24.5 +0.6**
PRU *e*S **S 15 45 07.5 -0.6**
PRU Pruhonice 71.85 323 ⇓*i*P **P 15 36 32.4 +0.6**
PRU *e* 15 39 24.5
PRU *e*S **S 15 45 07.5 -0.6**
ISP Isparta 71.85 305 ⇓*i*P **P 15 36 31.7 -0.5**
ISP Isparta 71.85 305 P **P 15 36 31.3 -0.9**
ISP Isparta 71.85 305 *e*P **P 15 36 31.3 -0.9**
ISP Isparta 71.85 305 *e*P **P 15 36 31.3 -0.9**
DIM Dimitrovgrad 71.92 311 P **P 15 36 32.5 +0.1**
TREC Trest 71.92 322 ⇓*i*P **P 15 36 32.8 +0.5**
TREC *e*PCP **PcP 15 36 43.6 -3.6**
TREC *e*PP **sP 15 39 24.3 -0.2**
TREC Trest 71.92 322 ⇓*i*P **P 15 36 32.8 +0.5**
TREC *e* 15 36 43.6
TREC *e* 15 39 24.3
MAMC Mammari 71.93 301 P **P 15 36 31.1 -1.5**
MMAI Mount Meron Ar 71.94 298 P **P 15 36 32.7 -0.1**
comp=Z,46nm,0.8s,baz=57,slow=9.2,SNR=43
MMAI pP **pP 15 38 28.0 +0.7**
comp=Z,26nm,1.0s,baz=55,slow=7.3,SNR=8.2
CSS Mathiatis 72.00 301 *e*P **P 15 36 32.3 -0.7**
comp=Z,22nm,0.7s
CSS *e*pP **pP 15 38 26.8 -0.7**
MPEP Malo Peshtene 72.01 313 P **P 15 36 32.7 -0.2**
G08A Pilot Rock 72.03 44 *e*P **P 15 36 34.4 +1.2**
comp=Z,42nm,0.9s
MDVR Moldovita 72.09 315 ⇑*i*P **P 15 36 32.8 -0.6**
J05D Fort Rock, OR 72.23 47 P **P 15 36 36.2 +1.8**
baz=313,SNR=48
BSMT Bassoo Peak 72.28 40 *e*P **P 15 36 36.2 +1.6**
BSMT *e*pP **pP 15 38 30.2 +0.9**
ALFC Alefka 72.33 302 P **P 15 36 32.7 -2.2**
BLMT Blacktail Moun 72.36 40 *e*P **P 15 36 36.8 +1.7**
BLMT *e*pP **pP 15 38 30.5 +0.7**
JCC Jacoby Creek, 72.37 50 *e*P **P 15 36 36.8 +1.9**
comp=Z,186nm,1.0s
K04D Chiloquin, OR 72.40 48 P **P 15 36 36.8 +1.5**
baz=313,SNR=24
SZAC Souni 72.41 301 P **P 15 36 34.0 -1.4**
F10A Beach Ranch, E 72.43 43 *e*P **P 15 36 36.5 +1.1**
comp=Z,81nm,0.9s
YBH Yreka Blue Hor 72.48 49 pP pP 15 38 31.9 +1.4
comp=Z,22nm,0.9s,baz=165,slow=0.7,SNR=7.5
YBH Yreka Blue Hor 72.48 49 *e*P **P 15 36 37.2 +1.4**
YBH pmax pmax
comp=Z,81nm,1.3s
YBH Yreka Blue Hor 72.48 49 *e*P **P 15 36 37.2 +1.4**
comp=Z,82nm,1.3s
YBH *e*pP **pP 15 38 31.5 +1.0**
KHMM Horse Mountain 72.50 50 *e*P **P 15 36 37.7 +1.7**
comp=Z,158nm,1.1s
KHMM *e*pP **pP 15 38 32.5 +1.8**
KULA Kula-Manisa 72.50 307 P **P 15 36 35.4 -0.5**
KULA Kula-Manisa 72.50 307 P **P 15 36 35.4 -0.5**
AKMC Akamas 72.58 302 P **P 15 36 34.4 -2.0**
NKC Novy Kostel 72.58 324 ⇓*i*P **P 15 36 36.3 +0.2**
NKC *ex* x 15 38 15.7
NKC *e*PP **sP 15 39 29.1 +0.7**
NKC Novy Kostel 72.58 324 ⇓*i*P **P 15 36 36.3 +0.2**
NKC *e**PP pP 15 38 15.7 -15
NKC *e* 15 39 29.1
JTMT Jette 72.59 40 *e*P **P 15 36 38.0 +1.6**
JTMT *e*pP **pP 15 38 32.0 +0.9**
RZN Rozhen 72.61 311 P **P 15 36 36.8 +0.2**
M02C Callahan 72.64 49 P **P 15 36 38.6 +2.0**
baz=313,SNR=35
DZM Mont Dzumac 72.74 146 P **P 15 36 39.4 +2.1**
comp=Z,58nm,0.8s,baz=156,slow=21,SNR=5.3
CONA Conrad Observa 72.74 320 *i* P **P 15 36 38.1 +1.0**
comp=Z,16nm,0.6s,SNR=18
CONA *i* pP **pP 15 38 33.5 +1.5**
comp=Z,5.5nm,0.7s

K05A Summer Lake 72.79 47 *e*P **P 15 36 39.3 +1.6**
comp=Z,309nm,1.3s
KHC Kasperske Hory 72.90 322 ⇓*i*P **P 15 36 38.6 +0.6**
KHC *e*PCP **PcP 15 36 50.1 -1.3**
KHC *e*pP **pP 15 38 31.6 -1.3**
KHC *e*PP **sP 15 39 31.2 +0.8**
KHC *e*S **S 15 45 23.9 +4.0**
KHC Kasperske Hory 72.90 322 ⇓*i*P **P 15 36 38.6 +0.6**
KHC *e* 15 36 50.1
KHC *e* 15 39 31.2
KHC *e*S **S 15 45 23.9 +4.0**
KHC Kasperske Hory 72.90 322 *e*P **P 15 36 38.3 +0.3**
comp=Z,16nm,1.0s
M04C Macdoel 72.93 48 P **P 15 36 39.9 +1.5**
baz=313,SNR=71
KMRM Mail Ridge 72.95 51 *e*P **P 15 36 40.2 +1.8**
comp=Z,159nm,0.9s
N02D Trinity Center 73.00 49 P **P 15 36 40.7 +2.0**
baz=313,SNR=41
GEC2 GERESS Array S 73.06 322 *e*P **P 15 36 38.5 -0.4**
GEC2 pmax pmax
comp=Z,24nm,1.1s
GEC2 GERESS Array S 73.06 322 *e*P **P 15 36 38.5 -0.4**
comp=Z,24nm,1.1s
GEC2 *e*pP **pP 15 38 34.4 +0.5**
GERES GERESS Array B 73.06 322 P **P 15 36 39.0 +0.1**
comp=Z,6.5nm,0.5s,baz=36,slow=5.7,SNR=59
GERES pP **pP 15 38 32.6 -1.3**
comp=Z,3.7nm,0.8s,baz=46,slow=5.8,SNR=5.4
GERES GERESS Array B 73.06 322 P **P 15 36 39.0 +0.1**
GEA0 GERESS Array S 73.06 322 *e*P **P 15 36 38.8 -0.1**
BMO Blue Mountains 73.18 44 *e*P **P 15 36 40.9 +1.2**
BMO pmax pmax
comp=Z,155nm,1.1s
BMO Blue Mountains 73.18 44 *e*P **P 15 36 40.9 +1.2**
comp=Z,155nm,1.1s
KAVA Kavala 73.19 311 P **P 15 36 39.7 0.0**
KAVA Kavala 73.19 311 *e*P **P 15 36 39.7 0.0**
DGAR Diego Garcia 73.20 242 *d i*P **P 15 36 38.7 -1.4**
DGAR Diego Garcia 73.20 242 *e*P **P 15 36 38.9 -1.2**
comp=Z,621nm,1.1s
MMB Musomiste 73.22 312 P **P 15 36 40.5 +0.6**
NVR Nevrokopi 73.31 311 P **P 15 36 40.3 -0.2**
NVR Nevrokopi 73.31 311 P **P 15 36 40.3 -0.2**
H08N2 Diego Garcia H 73.33 244 P **P 15 36 41.0 +0.6**
H08N1 Diego Garcia H 73.33 244 P **P 15 36 40.7 +0.3**
H08S3 Diego Garcia H 73.34 242 P **P 15 36 39.3 -1.3**
baz=7.5,slow=9.9,SNR=12
H08S2 Diego Garcia H 73.35 242 P **P 15 36 39.3 -1.3**
baz=7.5,slow=9.9,SNR=9.2
H08S1 Diego Carcia H 73.36 242 P **P 15 36 39.5 -1.2**
baz=7.5,slow=9.9,SNR=9.6
KKB Krupnik 73.38 312 P **P 15 36 40.9 +0.1**
ARSA Arzberg 73.39 320 *i* P **P 15 36 41.3 +0.6**
comp=Z,8.0nm,0.5s,SNR=10.0
ARSA *i* pP **pP 15 38 31.8 -4.1**
MSO Missoula 73.41 41 P **P 15 36 42.0 +1.0**
baz=316,SNR=41
MSO Missoula 73.41 41 *e*P **P 15 36 42.1 +1.1**
comp=Z,134nm,1.0s
DIVS Divibare 73.45 315 P **P 15 36 40.8 -0.5**
FETY Fethiye 73.50 305 P **P 15 36 40.8 -0.8**
GRFO Grafenberg 73.51 324 *e*P **P 15 36 42.0 +0.6**
GRFO pmax pmax
comp=Z,86nm,0.9s
GRFO Grafenberg 73.51 324 *e*P **P 15 36 42.0 +0.6**
comp=Z,86nm,0.9s
KSL Kastellorizon 73.52 304 P **P 15 36 40.3 -1.4**
MOA Molln 73.53 321 *i* P **P 15 36 42.0 +0.4**
comp=Z,3.6nm,0.4s,SNR=5.5
WTSB Winterswijk 73.58 328 *e*P sP 15 39 34.2 -0.1
comp=Z,281nm,2.4s
SRS Serrai 73.62 311 P **P 15 36 41.6 -0.6**
SRS Serrai 73.62 311 *e*P **P 15 36 41.6 -0.6**
SRS Serrai 73.62 311 *e*P **P 15 36 41.6 -0.6**
YER Yerkesik 73.64 306 P **P 15 36 42.6 +0.2**
YER Yerkesik 73.64 306 *e*P **P 15 36 42.6 +0.2**
YER Yerkesik 73.64 306 *e*P **P 15 36 42.6 +0.2**
CHMT Chamberlain Mo 73.67 40 *e*P **P 15 36 43.5 +0.8**
MOD Modoc Plateau 73.68 47 *e*P **P 15 36 43.9 +1.2**
comp=Z,133nm,1.0s
OUR Ouranopolis 73.94 311 P **P 15 36 43.6 -0.4**
OUR Ouranopolis 73.94 311 *e*P **P 15 36 43.6 -0.4**
OUR Ouranopolis 73.94 311 *e*P **P 15 36 43.6 -0.4**
KNT Kendrikon 73.97 312 P **P 15 36 43.8 -0.3**
KNT Kendrikon 73.97 312 P **P 15 36 43.8 -0.3**
KNT Kendrikon 73.97 312 P **P 15 36 43.8 -0.3**
O03D Paynes Creek 73.97 50 P **P 15 36 45.1 +0.8**
baz=314,SNR=37
PERS Pernice 74.03 320 *i* P pP 15 38 39.6 -0.2
VAY Valandovo 74.03 312 P **P 15 36 44.3 -0.2**
VAY Valandovo 74.03 312 *i* P **P 15 36 44.5 0.0**
VAY Valandovo 74.03 312 *e*P **P 15 36 44.3 -0.2**
VAY Valandovo 74.03 312 *e*P **P 15 36 44.3 -0.2**
SOKA Sobota 74.04 320 *i* P **P 15 36 44.8 +0.3**
comp=Z,25nm,0.5s,SNR=42
SOKA *i* pP **pP 15 38 39.6 -0.3**
comp=Z,30nm,1.3s,SNR=8.3
LYMT Lyon Mountain 74.08 40 *e*P **P 15 36 46.2 +1.2**
HOPS Hopland Field 74.14 51 *e*P **P 15 36 46.2 +1.1**
comp=Z,134nm,1.2s
SKO Skopje 74.19 313 *i* P **P 15 36 46.0 +0.7**
WVOR Wild Horse Val 74.19 46 *e*P **P 15 36 47.0 +1.4**
WVOR pmax pmax
comp=Z,156nm,1.1s
WVOR Wild Horse Val 74.19 46 *e*P **P 15 36 47.0 +1.4**
comp=Z,156nm,1.1s
PLG Polygyros 74.21 311 P **P 15 36 45.1 -0.5**
PLG Polygyros 74.21 311 P **P 15 36 45.1 -0.5**
PLG Polygyros 74.21 311 P **P 15 36 45.1 -0.5**
BODT Bodrum 74.27 306 P **P 15 36 45.6 -0.3**
BODT Bodrum 74.27 306 *e*P **P 15 36 45.6 -0.3**
EKA Eskdalemuir Ar 74.33 335 P **P 15 36 46.4 +0.5**
ARG Arkhangelos 74.35 305 P **P 15 36 46.2 -0.2**
ARG Arkhangelos 74.35 305 P **P 15 36 46.2 -0.2**
ARG Arkhangelos 74.35 305 P **P 15 36 46.2 -0.2**
ESK Eskdalemuir 74.36 335 *i* P **P 15 36 46.9 +0.8**
ESK Eskdalemuir 74.36 335 *e*P **P 15 36 46.4 +0.3**
comp=Z,28nm,0.6s
GRG Griva 74.38 312 P **P 15 36 46.0 -0.5**
GRG Griva 74.38 312 *e*P **P 15 36 46.0 -0.5**
GRG Griva 74.38 312 *e*P **P 15 36 46.0 -0.5**
OBKA Obir 74.39 320 *i* P **P 15 36 46.5 0.0**
comp=Z,10nm,0.4s,SNR=7.4
OBKA *i* pP **pP 15 38 41.5 -0.5**
comp=Z,20nm,0.8s,SNR=6.0
ELMT Elliston 74.39 40 *e*P **P 15 36 47.4 +0.8**
BLY Banja Luka 74.40 317 ⇓*i*P **P 15 36 46.9 +0.4**
EIL Elat 74.41 296 P **P 15 36 46.7 -0.2**
comp=Z,74nm,1.1s,baz=45,slow=2.7,SNR=46
EIL pP **pP 15 38 43.1 +0.7**
comp=Z,10nm,0.9s,baz=21,slow=8.0,SNR=3.6
EGMT Eagleton 74.45 37 P **P 15 36 48.0 +1.1**
baz=319,SNR=94
EGMT Eagleton 74.45 37 *e*P **P 15 36 48.0 +1.1**
comp=Z,304nm,1.2s
MSVF Nonsavu 74.47 134 *e*P **P 15 36 47.5 +0.3**
MSVF pmax pmax
comp=Z,122nm,1.0s
MSVF Nonsavu 74.47 134 *e*P **P 15 36 47.5 +0.3**
comp=Z,122nm,1.0s
HRY Holter Researc 74.49 39 *e*P **P 15 36 48.5 +1.4**
KBA Koelnbreinsper 74.52 321 *i* P **P 15 36 47.6 +0.2**
comp=Z,20nm,0.4s,SNR=26
KBA *i* pP **pP 15 38 43.0 0.0**
comp=Z,42nm,1.0s,SNR=8.8
ORV Oroville 74.64 50 *e*P **P 15 36 48.4 +0.4**
ORV pmax pmax
comp=Z,109nm,1.0s
ORV Oroville 74.64 50 *e*P **P 15 36 48.4 +0.4**
comp=Z,109nm,1.0s
ORV *e*pP **pP 15 38 44.0 +0.3**
MYKA Terra Mystica 74.72 321 *i* P **P 15 36 48.1 -0.3**
comp=Z,8.6nm,0.4s,SNR=11
MYKA *i* pP **pP 15 38 43.5 -0.5**
comp=Z,31nm,0.8s,SNR=8.9
VISS Visnje 74.77 319 *i* P pP 15 38 43.1 -1.2
BOJS Bojanci 74.79 319 *e*P pP 15 38 43.7 -0.7
MCCM Marconi Confer 74.83 52 *e*P **P 15 36 49.7 +0.7**
comp=Z,152nm,1.1s
LRM Limekiln Ridge 74.85 40 *e*P **P 15 36 50.5 +1.1**
LRM *e*pP **pP 15 38 45.6 +0.5**
HGN Heimansgroeve 74.86 327 *e*P sP 15 39 42.0 0.0
comp=Z,141nm,2.1s

LIT Litokhoron 74.93 311 P **P 15 36 48.5 -1.1**
BEBN Eben Emael 74.93 328 P **P 15 36 49.4 +0.1**
comp=Z,10nm,1.2s
MFID Camas Ranch 74.95 44 *e*P **P 15 36 51.2 +1.5**
comp=Z,300nm,0.9s
MFID *e*pP **pP 15 38 45.3 -0.2**
MEM Membach 74.95 327 P **P 15 36 49.6 +0.1**
comp=Z,20nm,1.0s
MEM AP **pP 15 38 44.5 -0.7**
PDG Podgorica 75.02 315 ⇑*i*P **P 15 36 49.5 -0.5**
JAVS Javornik 75.07 320 *i* P pP 15 38 45.2 -0.9
STU Stuttgart 75.08 324 *e*P **P 15 36 49.1 -1.1**
STU pmax pmax
comp=Z,30nm,0.7s
STU Stuttgart 75.08 324 *e*P **P 15 36 49.1 -1.1**
comp=Z,30nm,0.7s
LCCM Lewis and Clar 75.11 40 *e*P **P 15 36 52.1 +1.4**
DLMT Dillon 75.12 41 *e*P **P 15 36 52.2 +1.5**
comp=Z,403nm,1.0s
DLMT *e*pP **pP 15 38 47.3 +0.8**
OHR Ohrid 75.14 313 *i* P **P 15 36 50.6 -0.1**
ABTA Abfaltersbach 75.15 321 *i* P **P 15 36 50.1 -0.7**
comp=Z,5.6nm,0.4s,SNR=6.2
ABTA *i* pP **pP 15 38 46.1 -0.5**
comp=Z,13nm,1.0s
WTTA Wattenberg 75.16 322 *i* P **P 15 36 51.3 +0.4**
comp=Z,12nm,0.7s,SNR=5.5
WTTA *i* pP **pP 15 38 47.5 +0.7**
comp=Z,40nm,1.4s
UDBI Udbina 75.26 318 P **P 15 36 50.9 -0.5**
MOTA Moosalm 75.34 322 *i* P **P 15 36 52.2 +0.3**
comp=Z,9.2nm,0.5s,SNR=12
MOTA *i* pP **pP 15 38 48.0 +0.2**
comp=Z,27nm,0.9s,SNR=6.4
AFDM Forest Hills D 75.36 50 *e*P **P 15 36 52.8 +0.8**
comp=Z,126nm,1.1s
AFDM *e*pP **pP 15 38 48.0 0.0**
BOZ Bozeman (W) 75.37 40 P **P 15 36 53.8 +1.6**
baz=318,SNR=138
BOZ Bozeman (W) 75.37 40 *e*P **P 15 36 53.3 +1.2**
BOZ pmax pmax
comp=Z,156nm,1.0s
BOZ Bozeman (W) 75.37 40 *e*P **P 15 36 53.3 +1.2**
comp=Z,156nm,1.0s
BOZ *e*pP **pP 15 38 48.5 +0.4**
BCLA Clavier 75.38 328 P **P 15 36 51.9 0.0**
RETA Reutte 75.38 323 *i* P **P 15 36 52.4 +0.4**
comp=Z,17nm,0.5s,SNR=25
RETA *i* pP **pP 15 38 47.5 -0.4**
comp=Z,53nm,1.5s,SNR=9.9
KARP Karpathos 75.38 305 P **P 15 36 51.4 -0.8**
KARP Karpathos 75.38 305 *e*P **P 15 36 51.3 -0.8**
comp=Z,64nm,0.4s
KARP *e*pP **pP 15 38 48.4 +0.2**
MCMT McKenzie Canyo 75.39 41 *e*P **P 15 36 53.4 +1.0**
STKA Stephens Creek 75.45 171 P **P 15 36 53.3 +0.9**
comp=Z,7.8nm,0.3s,baz=9.5,slow=5.9,SNR=48
TIR Tirane 75.47 314 ⇑*i*P **P 15 36 52.8 +0.3**
BGMT Barton Gulch 75.48 41 *e*P **P 15 36 54.4 +1.5**
HLID Hailey 75.55 43 P **P 15 36 55.1 +1.9**
baz=317,SNR=160
HLID Hailey 75.55 43 *e*P **P 15 36 55.1 +1.9**
comp=Z,105nm,0.8s
WLF Walferdange 75.64 327 P **P 15 36 53.9 +0.6**
LKR Lokris 75.66 310 P **P 15 36 52.2 -1.4**
LKR Lokris 75.66 310 P **P 15 36 52.2 -1.4**
NVLJ Novalja 75.67 319 P **P 15 36 52.3 -1.2**
SNF Seneffe 75.70 328 P **P 15 36 53.7 +0.1**
FETA Feichten 75.75 322 *i* P **P 15 36 53.8 -0.4**
comp=Z,11nm,1.0s,SNR=6.3
FETA *i* pP **pP 15 38 49.0 -1.2**
comp=Z,19nm,1.1s
AGG Agios Georgios 75.77 310 *e*P **P 15 36 52.5 -1.8**
AGG Agios Georgios 75.77 310 *e*P **P 15 36 52.5 -1.8**
AGG *e*pP **pP 15 38 49.9 -0.5**
BFO Black Forest 75.78 325 *i* P **P 15 36 54.5 +0.3**
BFO Black Forest 75.78 325 *e*P **P 15 36 53.3 -0.9**
comp=Z,48nm,0.9s
BFO *e*pP **pP 15 38 49.6 -0.7**
NRS Narsarsuaq 75.84 358 ⇑*i*P **P 15 36 53.7 -0.4**
comp=Z,24nm,0.7s
NRS Narsarsuaq 75.84 358 ⇑*i*P **P 15 36 53.7 -0.4**
NRS pmax pmax
comp=Z,24nm,0.7s
THR6 Thira Island, 75.87 307 P **P 15 36 52.9 -1.9**
BBOO Buckleboo 75.90 176 *e*P **P 15 36 55.2 +0.4**
comp=Z,33nm,0.9s
CWF Charnwood Fore 75.91 332 *e*P **P 15 36 54.5 -0.2**
comp=Z,30nm,0.7s
DOU Dourbes 75.91 328 P **P 15 36 54.7 -0.1**
DAVA Damuels 75.92 323 *i* P **P 15 36 55.5 +0.4**
comp=Z,24nm,0.5s,SNR=16
DAVA *i* pP **pP 15 38 50.7 -0.6**
comp=Z,50nm,1.1s,SNR=9.2
QLMT Earthquake Lak 76.07 41 *e*P **P 15 36 57.5 +1.4**
QLMT *e*pP **pP 15 38 53.0 +0.7**
DSF Desfina 76.09 310 P **P 15 36 54.0 -2.1**
DSF Desfina 76.09 310 P **P 15 36 54.0 -2.1**
CRMT Chrome Mountai 76.21 39 *e*P **P 15 36 58.2 +1.2**
ZKR Zakros 76.24 305 P **P 15 36 56.3 -0.6**
ZKR Zakros 76.24 305 *e*P **P 15 36 56.3 -0.6**
YHB Horse Butte 76.24 40 *e*P **P 15 36 58.9 +1.9**
FUORN Ofenpass-Fuorn 76.26 322 *e*P **P 15 36 57.5 +0.4**
comp=Z,65nm,1.0s
FUORN *e*pP **pP 15 38 53.0 -0.4**
ANX Ano Chora 76.30 310 P **P 15 36 56.1 -1.2**
DAVOX Davos/Dischmat 76.31 323 P **P 15 36 57.6 +0.3**
comp=Z,16nm,0.6s,baz=56,slow=2.6,SNR=16
DAVOX pP **pP 15 38 54.1 +0.5**
comp=Z,12nm,0.8s,baz=36,slow=4.5,SNR=5.4
YMC Maple Creek 76.33 40 *e*P **P 15 36 59.2 +1.7**
CMB Columbia Colle 76.33 50 *e*P **P 15 36 58.4 +1.0**
CMB pmax pmax
comp=Z,144nm,1.0s
CMB Columbia Colle 76.33 50 *e*P **P 15 36 58.4 +1.0**
comp=Z,144nm,1.0s
CMB *e*pP **pP 15 38 54.7 +1.0**
ECH Echery 76.36 325 *e*P **P 15 36 57.5 +0.1**
DSL Palaion Diasel 76.37 311 P **P 15 36 56.8 -0.8**
DSL Palaion Diasel 76.37 311 *e*P **P 15 36 56.8 -0.8**
YHH Holmes Hill 76.38 40 *e*P **P 15 36 59.4 +1.6**
YMR Madison River 76.41 40 *e*P **P 15 36 59.5 +1.5**
comp=Z,164nm,1.3s
YMR *e*pP **pP 15 38 55.5 +1.1**
YPM Purple Mountai 76.47 40 *e*P **P 15 36 59.9 +1.5**
DGMT Dagmar 76.49 34 P **P 15 36 58.9 +0.9**
baz=322,SNR=19
NPS Neapolis 76.50 306 P **P 15 36 56.9 -1.4**
NPS Neapolis 76.50 306 P **P 15 36 56.9 -1.4**
NPS Neapolis 76.50 306 P **P 15 36 56.9 -1.4**
GUR Goura 76.52 310 P **P 15 36 57.1 -1.5**
GUR Goura 76.52 310 P **P 15 36 57.1 -1.5**
WAKR Walker 76.53 50 *e*P **P 15 37 00.2 +1.5**
A25A Svangstu Ranch 76.56 33 P **P 15 36 59.5 +1.1**
baz=323,SNR=22
KLV Kalavryta, Ach 76.56 310 P **P 15 36 56.7 -2.0**
KLV Kalavryta, Ach 76.56 310 P **P 15 36 56.7 -2.0**
SAO San Andreas Ge 76.61 52 *e*P **P 15 36 59.3 +0.4**
SAO pmax pmax
comp=Z,73nm,1.1s
SAO San Andreas Ge 76.61 52 *e*P **P 15 36 59.3 +0.4**
comp=Z,73nm,1.1s
SAO *e*pP **pP 15 38 55.8 +0.4**
YFT Old Faithful 76.64 41 *e*P **P 15 37 01.8 +2.5**
comp=Z,88nm,0.9s
LAST Lasithi 76.64 306 ⇑*i*P **P 15 36 58.5 -0.8**
LAST Lasithi 76.64 306 P **P 15 36 59.0 -0.2**
LAST Lasithi 76.64 306 *e*P **P 15 36 58.4 -0.8**
comp=Z,114nm,0.9s
LAST *e*pP **pP 15 38 54.7 -1.0**
MOF Molkenrain 76.66 325 *e*P **P 15 36 59.0 -0.1**
KEK Kerkira 76.67 312 P **P 15 36 58.6 -0.6**
KEK Kerkira 76.67 312 P **P 15 36 58.6 -0.6**
PDO Prodromos 76.70 311 P **P 15 36 58.4 -1.0**
LKWY Lake 76.76 40 *e*P **P 15 37 02.4 +2.5**
LKWY pmax pmax
comp=Z,100nm,1.0s
LKWY Lake 76.76 40 *e*P **P 15 37 02.4 +2.5**
comp=Z,100nm,1.0s
YLT Little Thumb C 76.77 40 *e*P **P 15 37 03.2 +3.3**
TUE Stuetta 76.78 323 *e*P **P 15 36 59.7 -0.2**
comp=Z,24nm,0.8s
TUE *e*pP **pP 15 38 56.4 0.0**
H17A Grant Village 76.80 40 P **P 15 37 03.3 +3.1**

baz=319,SNR=155
H17A Grant Village 76.80 40 *e*P **P 15 37 03.1 +2.9**
comp=Z,203nm,1.0s
H17A *e*pP **pP 15 38 58.3 +1.7**
LKD2 Lefkada island 76.86 311 P **P 15 36 59.2 -1.1**
LKD2 Lefkada island 76.86 311 P **P 15 36 59.2 -1.1**
RLMT Red Lodge 76.86 39 P **P 15 37 01.6 +1.2**
baz=320,SNR=43
RLMT Red Lodge 76.86 39 *e*P **P 15 37 01.7 +1.2**
comp=Z,156nm,1.1s
RLMT *e*pP **pP 15 38 55.6 -1.4**
DRO Drossia 76.87 310 P **P 15 36 59.4 -0.9**
IDI Anoyia 76.91 306 P **P 15 36 58.4 -2.2**
comp=Z,40nm,0.3s,baz=12,slow=6.8,SNR=86
IDI pP **pP 15 38 53.6 -3.6**
comp=Z,27nm,0.9s,baz=44,slow=10,SNR=4.6
IDI Anoyia 76.91 306 ⇓*i*P **P 15 36 58.9 -1.7**
IDI Anoyia 76.91 306 P **P 15 36 58.9 -1.7**
IDI Anoyia 76.91 306 *e*P **P 15 36 59.0 -1.7**
comp=Z,84nm,1.0s
IDI pP **pP 15 38 53.6 -3.6**
NWAO Narrogin (SRO) 76.93 192 P **P 15 37 00.6 +0.2**
comp=Z,56nm,0.8s,baz=243,slow=3.2,SNR=19
NWAO pP **pP 15 38 58.4 +1.1**
comp=Z,20nm,1.0s,baz=237,slow=7.3,SNR=4.2
NWAO Narrogin (SRO) 76.93 192 *e*P **P 15 37 00.7 +0.2**
NWAO pmax pmax
comp=Z,246nm,0.9s
NWAO Narrogin (SRO) 76.93 192 *e*P **P 15 37 00.7 +0.2**
comp=Z,246nm,0.9s
NWAO pP **pP 15 38 58.4 +1.1**
YTP The Promontory 76.94 40 *e*P **P 15 37 03.3 +2.4**
FLWY Flagg Ranch 76.98 41 *e*P **P 15 37 03.2 +2.1**
comp=Z,160nm,1.2s
FLWY *e*pP **pP 15 38 58.0 +0.4**
IMW Indian Meadow 77.00 41 *e*P **P 15 37 03.3 +2.0**
comp=Z,175nm,1.2s
IMW *e*pP **pP 15 38 59.0 +1.1**
A26A Wade Farm, Ken 77.02 33 P **P 15 37 01.4 +0.5**
baz=323,SNR=5.5
LAO LASA Array 77.02 36 P **P 15 37 02.0 +0.9**
baz=321
B25A Knox Farm, Ray 77.07 34 P **P 15 37 02.8 +1.6**
baz=323,SNR=14
SIVA Sivas 77.14 306 ⇑*i*P **P 15 37 01.7 -0.1**
SIVA Sivas 77.14 306 P **P 15 37 01.2 -0.6**
SIVA Sivas 77.14 306 P **P 15 37 01.2 -0.6**
AMT Artemida-Makis 77.16 310 P **P 15 36 57.7 -4.3**
LOMF Lomont 77.18 325 *e*P **P 15 37 02.2 +0.3**
ELK Elko 77.18 46 *e*P **P 15 37 04.0 +1.7**
ELK pmax pmax
comp=Z,85nm,1.1s
ELK Elko 77.18 46 *e*P **P 15 37 04.0 +1.7**
comp=Z,85nm,1.1s
ELK *e*pP **pP 15 38 59.6 +0.7**
MOOW Moose Ponds 77.21 41 *e*P **P 15 37 04.2 +1.8**
comp=Z,204nm,1.3s
MOOW *e*pP **pP 15 38 59.6 +0.6**
NV01 Mina Array Sit 77.21 49 *e*P **P 15 37 03.9 +1.5**
NVAR Mina Array Bea 77.21 49 P **P 15 37 04.2 +1.7**
comp=Z,149nm,0.8s,baz=295,slow=5.0,SNR=429
NVAR pP **pP 15 39 00.1 +1.0**
comp=Z,20nm,0.8s,baz=298,slow=4.6,SNR=13
A27A Ledoux Ranch, 77.29 32 P **P 15 37 03.1 +0.8**
baz=324
NV11 Mina Array Sit 77.29 49 *e*P **P 15 37 04.0 +1.3**
comp=Z,106nm,1.1s
VLS Valsamata 77.33 311 P **P 15 37 02.1 -0.7**
VLS Valsamata 77.33 311 P **P 15 37 02.1 -0.7**
VLS Valsamata 77.33 311 P **P 15 37 02.1 -0.7**
B26A Jensen Ranch, 77.36 33 P **P 15 37 03.7 +0.9**
baz=323
LOHW Long Hollow 77.38 41 *e*P **P 15 37 04.8 +1.5**
comp=Z,53nm,0.9s
SNOW Snow King Moun 77.42 41 *e*P **P 15 37 05.2 +1.7**
comp=Z,111nm,1.3s
REDW Red Top Meadow 77.45 41 *e*P **P 15 37 05.1 +1.4**
comp=Z,116nm,1.1s
REDW *e*pP **pP 15 39 00.9 +0.5**
C25A Freed Ranch, W 77.47 34 P **P 15 37 04.7 +1.2**
baz=323,SNR=5.5
MLAC Mammoth, Mammo 77.48 50 P **P 15 37 05.7 +1.7**
baz=316,SNR=13
ZKS Zakynthos 77.56 310 P **P 15 37 02.4 -1.7**
PYL PYLOS 77.60 309 P **P 15 37 02.5 -1.8**
PYL PYLOS 77.60 309 P **P 15 37 02.5 -1.8**
MATE Matera 77.62 315 ⇑*i*P **P 15 37 03.5 -0.8**
HVU Hansel Valley 77.68 43 *e*P **P 15 37 06.3 +1.4**
HVU pmax pmax
comp=Z,162nm,1.5s
HVU Hansel Valley 77.68 43 *e*P **P 15 37 06.3 +1.4**
comp=Z,162nm,1.5s
GVD Gavdhos 77.69 306 P **P 15 37 03.7 -1.1**
GVD Gavdhos 77.69 306 P **P 15 37 03.7 -1.1**
A28A Rude Farm, Bot 77.70 32 P **P 15 37 05.5 +0.8**
baz=324,SNR=9.4
B27A Peters Farms, 77.72 33 P **P 15 37 05.5 +0.7**
baz=324
SENIN Lac Senin/Sane 77.76 324 *e*P **P 15 37 05.1 -0.2**
comp=Z,18nm,0.8s
SENIN *e*pP **pP 15 39 02.7 +0.6**
AHID Auburn Hatcher 77.77 42 *e*P **P 15 37 06.3 +0.9**
comp=Z,68nm,0.9s
DAMY Dhamar 77.78 278 *e*P **P 15 37 07.0 +1.0**
comp=Z,359nm,1.3s
C26A Wahner Farm, P 77.85 33 P **P 15 37 06.2 +0.7**
baz=324,SNR=5.7
D25A Fairfield 77.89 35 P **P 15 37 06.8 +1.1**
baz=323,SNR=12
BEI Bear River Ran 77.92 43 *e*P **P 15 37 08.0 +1.8**
AQU L'Aquila 78.03 318 *e*P **P 15 37 07.1 +0.6**
AQU pmax pmax
comp=Z,83nm,0.9s
AQU L'Aquila 78.03 318 *e*P **P 15 37 07.1 +0.6**
comp=Z,83nm,0.9s
AQU *e*pP **pP 15 39 04.3 +0.8**
B28A Dugan Ranch, T 78.04 32 P **P 15 37 07.3 +0.9**
baz=324,SNR=9.4
A29A Manning Farm, 78.08 31 P **P 15 37 07.3 +0.6**
baz=325,SNR=32
C27A Sayler Ranch, 78.18 33 P **P 15 37 08.2 +1.0**
baz=324,SNR=5.3
BGU Big Grassy Mou 78.19 44 *e*P **P 15 37 08.8 +1.3**
comp=Z,31nm,0.8s
BGU *e*pP **pP 15 39 05.4 +0.7**
RCTC Rector, Farmer 78.19 51 P **P 15 37 08.4 +0.9**
baz=316,SNR=5.4
SPUT South Promonto 78.19 44 *e*P **P 15 37 09.0 +1.4**
comp=Z,67nm,1.1s
ULM Lac du Bonnet 78.20 29 P **P 15 37 07.2 -0.1**
comp=Z,111nm,0.8s,baz=332,slow=6.1,SNR=120
ULM PP **PP 15 40 12.8 -0.5**
comp=Z,7.2nm,0.9s,baz=337,slow=2.6,SNR=2.4
ULM Lac du Bonnet 78.20 29 *e*P **P 15 37 07.0 -0.3**
ULM 15 40 12.8
ULM pmax pmax
comp=Z,176nm,0.9s
ULM Lac du Bonnet 78.20 29 *e*P **P 15 37 07.0 -0.3**
comp=Z,176nm,0.9s
ULM *e*pP **pP 15 39 03.7 -0.6**
ULM PP **PP 15 40 12.8 -0.5**
TIN Tinemaha, Big 78.23 50 P **P 15 37 09.4 +1.5**
baz=316
BMUT Black Mountain 78.31 42 *e*P **P 15 37 09.9 +1.6**
D26A Manning 78.35 34 P **P 15 37 09.2 +1.0**
baz=323,SNR=23
E25A Miller Ranch, 78.38 35 P **P 15 37 09.3 +0.9**
baz=323,SNR=21
B29A Wagenman Farm, 78.41 32 P **P 15 37 08.8 +0.4**
baz=325,SNR=20
HWUT Hardware Ranch 78.41 43 *e*P **P 15 37 10.2 +1.3**
comp=Z,199nm,1.0s
HWUT *e*pP **pP 15 39 06.3 +0.4**
A30A Hoffart Farm, 78.42 31 P **P 15 37 09.1 +0.6**
baz=326,SNR=31
RSUT Red Spur Mount 78.47 43 *e*P **P 15 37 10.9 +1.6**
SMMC Simmler 78.47 52 P **P 15 37 10.5 +1.5**
baz=315,SNR=11
BW06 Boulder Array 78.52 41 P **P 15 37 10.2 +0.7**
baz=320,SNR=160
BW06 Boulder Array 78.52 41 *e*P **P 15 37 09.9 +0.5**
BW06 *e*pP **pP 15 39 06.0 -0.6**
BW06 *e*pP **pP 15 39 06.2 -0.4**
PD31 Pinedale Array 78.52 41 *e*P **P 15 37 09.9 +0.5**
PD31 *e*pP **pP 15 39 06.5 -0.1**
PDAR Pinedale Array 78.52 41 P **P 15 37 10.2 +0.7**
comp=Z,82nm,0.8s,baz=333,slow=1.7,SNR=420
PDAR pP **pP 15 39 07.2 +0.6**
comp=Z,22nm,0.9s,baz=322,slow=1.6,SNR=15
PDAR PKKPbc **PKKPbc 15 55 58.1 -0.8**
comp=Z,0.3nm,0.5s,baz=110,slow=5.4,SNR=5.1
MCU Monte Cristo P 78.55 43 *e*P **P 15 37 11.7 +2.0**
CUC Castrocucco 78.57 315 *e*P **P 15 37 08.6 -0.8**
comp=Z,13nm,1.0s
VES Vestal, Richgr 78.61 51 P **P 15 37 10.2 +0.4**
baz=316,SNR=15
C28A Hausauer Farms 78.62 33 P **P 15 37 10.6 +1.0**
baz=324,SNR=6.5
D27A Center 78.66 34 P **P 15 37 10.9 +1.1**
baz=324,SNR=9.4
TIP Timpagrande 78.67 314 ⇑*i*P **P 15 37 09.4 -0.7**
TIP Timpagrande 78.67 314 *e*P **P 15 37 09.5 -0.7**
comp=Z,42nm,1.2s
R11A Troy Canyon, C 78.74 47 P **P 15 37 12.0 +1.4**
baz=317,SNR=69
R11A Troy Canyon, C 78.74 47 *e*P **P 15 37 11.7 +1.0**
comp=Z,39nm,0.9s
R11A *e*pP **pP 15 39 08.3 +0.4**
GRAC Grapevine Rang 78.75 49 P **P 15 37 12.5 +1.9**
baz=316,SNR=36
E26A Carlson Angus 78.79 35 P **P 15 37 11.2 +0.7**
baz=323,SNR=14
F25A Bowman 78.81 35 P **P 15 37 11.5 +0.8**
baz=323,SNR=12
B30A Myrvik Farm, E 78.81 31 P **P 15 37 11.0 +0.5**
baz=326,SNR=22
MDND Maddock 78.82 32 P **P 15 37 11.4 +0.7**
baz=325,SNR=10
MDND Maddock 78.82 32 *e*P **P 15 37 11.2 +0.5**
comp=Z,169nm,1.0s
DUG Dugway, Tooele 78.84 45 P **P 15 37 12.7 +1.7**
baz=318,SNR=88
DUG Dugway, Tooele 78.84 45 *e*P **P 15 37 12.8 +1.7**
DUG pmax pmax
comp=Z,84nm,1.0s
DUG Dugway, Tooele 78.84 45 *e*P **P 15 37 12.8 +1.7**
comp=Z,84nm,1.0s
TCUT Toone Canyon 78.86 43 *e*P **P 15 37 12.8 +1.5**
comp=Z,246nm,0.9s
TCUT *e*pP **pP 15 39 08.8 +0.2**
PKM Mcpherson Peak 78.87 52 P **P 15 37 12.7 +1.3**
baz=316,SNR=21
FSU Fish Springs 78.89 45 *e*P **P 15 37 13.1 +1.7**
D28A Regan 78.97 33 P **P 15 37 12.2 +0.7**
baz=324,SNR=18
N16A Rees Ranch, Co 79.02 43 *e*P **P 15 37 13.4 +1.4**
ISA Isabella, Lake 79.09 51 P **P 15 37 12.6 +0.3**
baz=316
ISA Isabella, Lake 79.09 51 *e*P **P 15 37 12.2 -0.2**
ISA pmax pmax
comp=Z,1μm,1.2s
ISA Isabella, Lake 79.09 51 *e*P **P 15 37 12.2 -0.2**
comp=Z,1μm,1.2s
ISA *e*pP **pP 15 39 10.3 +0.5**
B31A Greenbush Farm 79.09 31 P **P 15 37 12.1 +0.1**
baz=326
A32A Rocking H Ranc 79.10 30 P **P 15 37 12.3 +0.2**
baz=327,SNR=50
DAC Darwin (Calif) 79.14 50 *e*P **P 15 37 13.8 +1.0**
DAC pmax pmax
comp=Z,100nm,1.0s
DAC Darwin (Calif) 79.14 50 *e*P **P 15 37 13.8 +1.0**
comp=Z,100nm,1.0s
DAC *e*pP **pP 15 39 11.0 +0.8**
E27A Carson 79.19 34 P **P 15 37 13.9 +1.2**
baz=324,SNR=27
F26A Lodgepole 79.20 35 P **P 15 37 13.7 +0.9**
baz=323,SNR=11
JLU Jordanelle 79.22 43 *e*P **P 15 37 14.5 +1.2**
comp=Z,47nm,0.9s
JLU *e*pP **pP 15 39 11.2 +0.5**
ARVC Arvin 79.27 52 P **P 15 37 13.8 +0.5**
baz=316,SNR=6.9
HTU Hoyt Peak 79.29 43 *e*P **P 15 37 13.3 -0.3**
MPMC Manual Prospec 79.36 50 P **P 15 37 15.3 +1.4**
baz=316,SNR=71
C30A Mose, Pekin 79.37 32 P **P 15 37 13.7 +0.1**
baz=326,SNR=6.3
NLU North Lily Min 79.39 44 *e*P **P 15 37 15.3 +1.2**
comp=Z,79nm,1.0s
NLU *e*pP **pP 15 39 12.0 +0.4**
TPNV Topopah Spring 79.40 49 P **P 15 37 15.7 +1.5**
baz=317,SNR=96
TPNV Topopah Spring 79.40 49 *e*P **P 15 37 15.5 +1.4**
TPNV pmax pmax
comp=Z,95nm,0.5s
TPNV Topopah Spring 79.40 49 *e*P **P 15 37 15.5 +1.4**
comp=Z,95nm,0.5s
TPNV *e*pP **pP 15 39 12.1 +0.4**
G25A Newell 79.41 36 P **P 15 37 14.5 +0.7**
baz=323,SNR=17
FURC Furnace Creek, 79.41 49 P **P 15 37 15.6 +1.7**
baz=317,SNR=69
E28A Huff 79.43 33 P **P 15 37 14.3 +0.5**
baz=324,SNR=5.6
DAU Daniels Canyon 79.47 43 *e*P **P 15 37 16.4 +1.8**
DAU Daniels Canyon 79.47 43 *e*P **P 15 37 16.4 +1.8**
D29A Pettibone, Tap 79.47 33 P **P 15 37 14.6 +0.5**
baz=325
A33A Warroad 79.48 29 P **P 15 37 14.2 +0.1**
baz=328,SNR=7.7
B32A Ashes, Strandq 79.52 30 P **P 15 37 14.4 +0.1**
baz=327,SNR=38
PSUT Pine Spring 79.53 46 *e*P **P 15 37 16.1 +1.3**
comp=Z,106nm,1.1s
MPU Maple Canyon 79.57 44 *e*P **P 15 37 16.1 +1.1**
comp=Z,80nm,1.0s
MPU *e*pP **pP 15 39 12.9 +0.3**
C31A Landman Farms, 79.58 31 P **P 15 37 14.9 +0.2**
baz=326,SNR=34
PLDF La Plantade 79.61 326 *e*P **P 15 37 15.0 +0.1**
LRMC Laurel Mtn Rad 79.67 51 P **P 15 37 16.5 +1.0**
baz=316,SNR=13
G26A Maurine 79.68 35 P **P 15 37 16.2 +0.9**
baz=324,SNR=19
OSI Osito Audit: C 79.70 52 P **P 15 37 16.5 +1.0**
baz=316,SNR=9.1
OSI Osito Audit: C 79.70 52 *e*P **P 15 37 16.6 +1.0**
comp=Z,108nm,0.9s
AGO Saint Agoulin 79.75 326 *e*P **P 15 37 15.9 +0.3**
D30A Buchanan 79.76 32 P **P 15 37 15.9 +0.3**
baz=326,SNR=18
FLU Fool Peak 79.78 45 *e*P **P 15 37 17.9 +1.8**
H25A Fruitdale 79.79 36 P **P 15 37 16.4 +0.5**
baz=323
SSB Saint Sauveur 79.79 325 *e*P **P 15 37 15.8 -0.1**
SSB Saint Sauveur 79.79 325 *e*P **P 15 37 15.8 -0.1**
SSB pmax pmax
comp=Z,30nm,0.6s
SSB Saint Sauveur 79.79 325 *e*P **P 15 37 15.8 -0.1**
comp=Z,30nm,0.6s
SSB *e*pP **pP 15 39 13.8 +0.3**
CEL Celeste 79.81 314 *e*P **P 15 37 16.0 -0.1**
comp=Z,71nm,0.8s
CEL *e*pP **pP 15 39 13.7 -0.1**
E29A Napoleon 79.85 33 P **P 15 37 16.4 +0.3**
baz=325,SNR=6.1
BLG Laguna Peak, P 79.86 52 P **P 15 37 17.2 +0.8**
baz=316,SNR=5.3
LEVU Levan 79.86 44 *e*P **P 15 37 18.3 +1.8**
G27A Dupree 79.89 35 P **P 15 37 16.8 +0.4**
baz=324,SNR=31
EDW2 Edwards Air Fo 79.92 51 P **P 15 37 17.8 +1.1**
baz=316,SNR=49
B33A Robert and Kas 79.97 30 P **P 15 37 16.5 -0.2**
baz=328,SNR=8.1
RSSD Black Hills 79.99 37 P **P 15 37 18.1 +0.9**
baz=323
RSSD Black Hills 79.99 37 *e*P **P 15 37 18.1 +0.9**
RSSD pmax pmax
comp=Z,257nm,1.3s
RSSD Black Hills 79.99 37 *e*P **P 15 37 18.1 +0.9**
comp=Z,257nm,1.3s
C32A Crookston 80.00 30 P **P 15 37 16.7 -0.1**
baz=327
K22A Casper 80.03 39 P **P 15 37 17.8 +0.4**
baz=321,SNR=26
K22A Casper 80.03 39 *e*P **P 15 37 17.6 +0.3**
comp=Z,110nm,1.4s
B34A Aery, Baudette 80.12 29 P **P 15 37 17.5 +0.1**
baz=328,SNR=57
H26A Fairpoint 80.14 36 P **P 15 37 18.6 +0.9**
baz=323,SNR=22
SNO Snow College 80.15 44 *e*P **P 15 37 20.2 +2.1**
SHOC Shoshone, Teco 80.15 50 P **P 15 37 18.9 +1.0**
baz=317,SNR=9.5
DECC Green Verdugo 80.18 52 P **P 15 37 18.9 +0.9**
baz=316,SNR=6.4
SGU Sterling 80.19 45 *e*P **P 15 37 20.4 +2.0**
E30A Jud 80.20 32 P **P 15 37 18.5 +0.6**
baz=326,SNR=25
D31A Mcclaflin, Tow 80.20 31 P **P 15 37 18.0 +0.1**
baz=326,SNR=12
I25A Rochford 80.21 37 P **P 15 37 19.1 +0.9**
baz=323,SNR=101
SNCC San Nicolas Is 80.21 53 P **P 15 37 19.4 +1.2**
baz=316
ARGU Argyle Ridge 80.27 43 *e*P **P 15 37 20.6 +1.7**
GSC Goldstone, Bar 80.29 50 P **P 15 37 20.0 +1.2**
baz=317,SNR=60
GSC Goldstone, Bar 80.29 50 *e*P **P 15 37 19.9 +1.2**
GSC pmax pmax
comp=Z,137nm,1.0s
GSC Goldstone, Bar 80.29 50 *e*P **P 15 37 19.9 +1.2**
comp=Z,137nm,1.0s
GSC *e*pP **pP 15 39 16.9 +0.3**
SHPR Sheep Range 80.32 48 *e*P **P 15 37 20.9 +2.0**
comp=Z,113nm,1.1s
SHPR *e*pP **pP 15 39 18.3 +1.4**
PASC Pasadena Art C 80.32 52 *e*P **P 15 37 19.4 +0.6**
comp=Z,123nm,1.2s
PASC *e*pP **pP 15 39 16.7 0.0**
TMUT Trail Mountain 80.33 44 *e*P **P 15 37 20.3 +1.2**
comp=Z,80nm,0.8s
TMUT *e*pP **pP 15 39 17.2 +0.2**
C33A Trail 80.34 30 P **P 15 37 18.5 0.0**
baz=328,SNR=11
MWC Mount Wilson 80.36 52 *e*P **P 15 37 20.0 +0.8**
comp=Z,240nm,1.4s
MWC *e*pP **pP 15 39 17.5 +0.4**
LBL Lubilhac 80.37 326 *e*P **P 15 37 19.2 +0.3**
F29A Eureka 80.38 33 P **P 15 37 19.6 +0.7**
baz=325,SNR=13
D32A Dogwood Acres, 80.40 31 P **P 15 37 18.6 -0.3**
baz=327,SNR=12
MSU Marysvale 80.42 45 *e*P **P 15 37 21.6 +2.1**
MSU Marysvale 80.42 45 *e*P **P 15 37 21.6 +2.1**
MSU *e*pP **pP 15 39 18.4 +1.0**
H27A Howes 80.43 35 P **P 15 37 20.1 +0.9**
baz=324,SNR=56
P17A Butcher Ranch, 80.43 44 *e*P **P 15 37 20.8 +1.3**
comp=Z,220nm,1.2s
RRX Edison Barstow 80.49 51 P **P 15 37 21.1 +1.5**
baz=317
E31A Nome 80.55 32 P **P 15 37 20.0 +0.3**
baz=326,SNR=19
B35A Bob, Littlefor 80.56 28 P **P 15 37 20.0 +0.3**
baz=329,SNR=65
P18A Preston Nutter 80.56 43 *e*P **P 15 37 21.7 +1.3**
comp=Z,246nm,1.0s
BFSC Mount Baldy Ra 80.58 52 P **P 15 37 21.0 +0.7**
baz=317,SNR=33
FMP Fort Macarthur 80.59 52 P **P 15 37 21.1 +1.0**
baz=316
Q16A Castle Valley 80.64 44 *e*P **P 15 37 22.0 +1.4**
comp=Z,210nm,1.7s
J25A Sunshine Ranch 80.68 37 P **P 15 37 20.9 +0.4**
baz=323,SNR=25
TUQ Turquoise Moun 80.68 50 P **P 15 37 22.5 +1.7**
baz=317,SNR=12
F30A Leola 80.70 33 P **P 15 37 21.1 +0.6**
baz=326,SNR=17
C34A RKJ Ranch, Bem 80.74 30 P **P 15 37 20.5 -0.2**
baz=328,SNR=11
CIS Catalina Islan 80.75 53 P **P 15 37 21.4 +0.4**
baz=316,SNR=7.8
MTPU Mount Pierson 80.77 46 *e*P **P 15 37 23.6 +2.1**
comp=Z,109nm,1.0s
SRU San Rafael Swe 80.82 44 *e*P **P 15 37 22.5 +1.0**
SRU pmax pmax
comp=Z,102nm,1.1s
SRU San Rafael Swe 80.82 44 *e*P **P 15 37 22.5 +1.0**
comp=Z,102nm,1.1s
D33A AnnSam, Waubun 80.83 30 P **P 15 37 21.0 -0.2**
baz=328,SNR=8.3
E32A Braaten, Kindr 80.83 31 P **P 15 37 21.0 -0.2**
baz=327,SNR=6.1
G29A Hoven 80.87 34 P **P 15 37 22.1 +0.7**
baz=325,SNR=7.6
HEC Hector,Ludlow 80.90 50 P **P 15 37 23.2 +1.4**
baz=317,SNR=16
SCI2 San Clemente I 80.97 53 P **P 15 37 23.0 +0.8**
baz=316
BBRC Big Bear Solar 80.98 51 P **P 15 37 23.4 +1.0**
baz=317
LCMT Little Creek M 80.98 47 *e*P **P 15 37 23.6 +1.3**
comp=Z,29nm,1.0s
F31A Hecla 80.98 32 P **P 15 37 22.2 +0.2**
baz=326,SNR=7.9
C35A Jirik Farms, M 81.03 29 P **P 15 37 22.1 -0.1**
baz=329,SNR=39
SCHQ Schefferville 81.03 10 P **P 15 37 22.6 +0.5**
comp=Z,34nm,0.5s,baz=349,slow=4.8,SNR=26
SCHQ Schefferville 81.03 10 *e*P **P 15 37 22.1 0.0**
comp=Z,93nm,1.0s
J26A Sides Ranch, S 81.06 37 P **P 15 37 23.8 +1.3**
baz=323,SNR=81
D34A Park Rapids 81.11 30 P **P 15 37 22.4 -0.2**
baz=328,SNR=8.9
MMU Miners Mountai 81.11 45 *e*P **P 15 37 25.1 +1.9**
BTU Barney Top 81.15 46 *e*P **P 15 37 25.8 +2.4**
PKCU Pink Cliffs 81.15 46 *e*P **P 15 37 22.5 -1.0**
comp=Z,61nm,0.9s
O20A White River Ci 81.17 42 P **P 15 37 24.3 +1.0**
baz=321,SNR=27
O20A White River Ci 81.17 42 *e*P **P 15 37 24.2 +0.9**
comp=Z,110nm,0.9s
KNB Kanab 81.20 47 *e*P **P 15 37 25.1 +1.6**
KNB pmax pmax
comp=Z,141nm,1.4s
KNB Kanab 81.20 47 *e*P **P 15 37 25.1 +1.6**
comp=Z,141nm,1.4s
KNB *e*pP **pP 15 39 23.1 +1.3**
H29A Onida 81.21 34 P **P 15 37 23.8 +0.6**
baz=325,SNR=28
G30A Faulkton 81.23 33 P **P 15 37 23.7 +0.4**
baz=326,SNR=69
MURC Murrieta 81.30 52 P **P 15 37 24.7 +0.8**
baz=317,SNR=14
E33A Westby DABS, E 81.31 31 P **P 15 37 23.7 +0.1**
baz=327,SNR=18
GMRC Granite Mounta 81.31 50 P **P 15 37 25.5 +1.4**
baz=318,SNR=74
I28A Midland 81.32 35 P **P 15 37 24.6 +0.8**
baz=324,SNR=29
C36A Pine Crest Far 81.38 28 P **P 15 37 24.0 0.0**
baz=329,SNR=23
F32A Veblen 81.41 32 P **P 15 37 24.0 -0.2**
baz=327,SNR=5.1
G31A Conde 81.53 33 P **P 15 37 25.1 +0.3**
baz=326,SNR=9.7
D35A Remer 81.53 29 P **P 15 37 24.6 -0.2**
baz=329,SNR=14
J27A Elkhorn Farm, 81.57 36 P **P 15 37 26.5 +1.4**
baz=324,SNR=18
PHWY Pilot Hill 81.58 39 *e*P **P 15 37 26.4 +0.8**
comp=Z,194nm,1.2s
E34A Wadena 81.61 30 P **P 15 37 25.0 -0.2**
baz=328,SNR=8.2
C37A Embarrass 81.63 28 P **P 15 37 25.0 -0.2**
baz=330,SNR=20
I29A Vivian Onida 81.67 35 P **P 15 37 26.2 +0.7**
baz=325,SNR=24
EYMN Ely 81.67 27 P **P 15 37 25.4 -0.1**
baz=330,SNR=29
EYMN Ely 81.67 27 *e*P **P 15 37 25.4 -0.1**
comp=Z,147nm,1.1s
EYMN *e*pP **pP 15 39 23.4 -0.5**
N23A Red Feather La 81.67 40 P **P 15 37 27.5 +1.5**
baz=322,SNR=43
N23A Red Feather La 81.67 40 *e*P **P 15 37 27.2 +1.3**
comp=Z,180nm,1.3s
BELC Belle Mtn. Jos 81.69 51 P **P 15 37 27.1 +1.1**
baz=317,SNR=5.4
PFO Pinyon Flats O 81.72 51 pP pP 15 39 25.4 +0.9
comp=Z,42nm,1.1s,baz=321,slow=6.6,SNR=13
PFO Pinyon Flats O 81.72 51 *e*P **P 15 37 27.1 +1.0**
PFO pmax pmax
comp=Z,151nm,1.0s
PFO Pinyon Flats O 81.72 51 *e*P **P 15 37 27.1 +1.0**

comp=Z,151nm,1.0s
PFO epP pP 15 39 24.5 0.0
TPFO Pinon Flats 81.72 51 P P 15 37 27.3 +1.1
baz=317,SNR=50
F33A 5 Mile Ranch, 81.76 31 P P 15 37 26.1 +0.2
baz=327,SNR=43
D36A Goodland 81.76 29 P P 15 37 25.9 -0.1
baz=329,SNR=22
G32A Webster 81.78 32 P P 15 37 26.4 +0.3
baz=327,SNR=10
E35A Pequot Lakes 81.85 30 P P 15 37 26.3 -0.1
baz=328,SNR=9.9
109C Camp Elliot, M 81.87 52 P P 15 37 27.5 +0.8
baz=317,SNR=5.7
SUSD Miller 81.88 34 P P 15 37 27.4 +0.8
baz=326,SNR=14
U15A North Rim 81.92 47 eP P 15 37 29.2 +1.9
comp=Z,218nm,1.0s
U15A epP pP 15 39 26.4 +0.6
C38A Sawbill Land. 81.95 27 P P 15 37 26.7 -0.2
baz=330,SNR=24
PV09 Paradox Valley 81.99 43 eP P 15 37 29.1 +1.5
D37A Cotton 82.04 28 P P 15 37 27.3 -0.1
baz=330,SNR=33
H31A Wolsey 82.04 33 P P 15 37 27.6 +0.2
baz=326,SNR=6.2
IRM Iron Mountain 82.06 50 P P 15 37 29.3 +1.6
baz=318,SNR=70
W13A Hualapai Mount 82.06 49 eP P 15 37 29.2 +1.3
comp=Z,88nm,1.1s
W13A epP pP 15 39 27.0 +0.5
I30A Oacoma 82.12 34 P P 15 37 28.4 +0.5
baz=326,SNR=6.4
VSL Villasalto 82.17 318 eP P 15 37 28.3 +0.1
comp=Z,52nm,0.9s
PV04 Paradox Valley 82.18 43 eP P 15 37 29.8 +1.3
C39A Grand Marais 82.24 27 P P 15 37 27.8 -0.6
baz=331
G33A Ortonville 82.24 32 P P 15 37 28.4 -0.1
baz=327,SNR=22
BC3 Big Chuckawall 82.25 51 P P 15 37 30.1 +1.2
baz=318,SNR=27
MONP2 Monument Peak 82.26 52 P P 15 37 30.0 +1.0
baz=317,SNR=20
BAR Barrett 82.27 52 eP P 15 37 29.6 +0.7
comp=Z,93nm,1.0s
BAR epP pP 15 39 28.0 +0.5
E36A McGregor 82.30 29 P P 15 37 29.1 +0.4
baz=329,SNR=34
PV05 Paradox Valley 82.33 44 eP P 15 37 30.5 +1.2
F35A Swanville 82.38 30 P P 15 37 29.0 -0.1
baz=328,SNR=15
I31A Royce, Wessing 82.39 34 P P 15 37 29.4 +0.2
baz=326
H32A Carlson Farm, 82.43 33 P P 15 37 29.6 +0.2
baz=327,SNR=13
PDMCI Parker Dam,Lak 82.51 49 P P 15 37 31.2 +1.2
baz=318,SNR=35
G34A Benson 82.51 31 P P 15 37 29.9 +0.2
baz=328,SNR=13
SMCO Snowmass 82.53 42 eP P 15 37 31.8 +1.3
comp=Z,179nm,1.1s
SMCO epP pP 15 39 29.2 0.0
PV01 Paradox Valley 82.55 43 eP P 15 37 31.8 +1.3
PV01 epP pP 15 39 29.4 +0.2
H33A Prehn Over Nor 82.56 32 P P 15 37 30.3 +0.3
baz=327,SNR=32
E37A Wrenshall 82.56 29 P P 15 37 29.9 -0.1
baz=330
J30A Dallas 82.58 35 P P 15 37 31.1 +0.9
baz=326,SNR=62
SWSC Sam W. Stewart 82.58 51 P P 15 37 31.3 +1.0
baz=318,SNR=7.9
IKP In-Ko-Pah, Jac 82.62 52 P P 15 37 31.7 +1.0
baz=318,SNR=17
ISCO Idaho Springs 82.69 40 P P 15 37 32.5 +1.4
baz=322,SNR=76
ISCO Idaho Springs 82.69 40 eP P 15 37 32.6 +1.4
ISCO pmax pmax
comp=Z,77nm,0.9s
ISCO Idaho Springs 82.69 40 eP P 15 37 32.6 +1.5
comp=Z,77nm,0.9s
Y12C Blythe 82.70 50 P P 15 37 32.4 +1.5
baz=318,SNR=26
Y12C Blythe 82.70 50 eP P 15 37 32.3 +1.3
comp=Z,166nm,1.0s
Y12C epP pP 15 39 30.2 +0.4
F36A Milaca 82.76 30 P P 15 37 30.9 -0.1
baz=329,SNR=21
I32A Karley and Nic 82.82 33 P P 15 37 31.6 +0.3
baz=327,SNR=11
J31A Geddes 82.91 34 P P 15 37 32.2 +0.3
baz=326,SNR=7.8
H34A Spellman Lake, 82.94 32 P P 15 37 32.1 +0.2
baz=328,SNR=7.3
G35A Watkins 82.96 31 P P 15 37 32.6 +0.5
baz=328,SNR=7.9
GLA Glamis 83.05 51 P P 15 37 34.2 +1.4
baz=318,SNR=43
GLA Glamis 83.05 51 eP P 15 37 34.1 +1.4
GLA pmax pmax
comp=Z,124nm,0.9s
GLA Glamis 83.05 51 eP P 15 37 34.1 +1.3
comp=Z,124nm,0.9s
GLA epP pP 15 39 32.3 +0.6
K30A Basset 83.06 35 P P 15 37 33.8 +1.1
baz=326,SNR=29
I33A Coleman 83.06 33 P P 15 37 33.0 +0.4
baz=327,SNR=9.7
WUAZ Wupatki 83.10 47 P P 15 37 34.8 +1.7
baz=320,SNR=28
WUAZ Wupatki 83.10 47 eP P 15 37 34.9 +1.7
comp=Z,118nm,1.0s
J32A Parkston 83.21 34 P P 15 37 33.6 +0.3
baz=326
G36A St. Michael 83.22 30 P P 15 37 33.6 +0.3
baz=329,SNR=8.7
H35A Sunnyside Ranc 83.27 31 P P 15 37 34.0 +0.4
baz=328,SNR=49
MVCO Mesa Verde 83.30 44 P P 15 37 35.5 +1.4
baz=321,SNR=35
MVCO Mesa Verde 83.30 44 eP P 15 37 35.6 +1.4
comp=Z,148nm,1.1s
ECSD EROS Data Cent 83.40 33 P P 15 37 34.8 +0.5
baz=327,SNR=88
ECSD EROS Data Cent 83.40 33 eP P 15 37 34.8 +0.5
comp=Z,167nm,1.0s
Y14A Wickenburg 83.41 49 eP P 15 37 35.9 +1.4
comp=Z,400nm,1.0s
Y14A epP pP 15 39 34.1 +0.5
OGNE Ogallala 83.42 38 P P 15 37 35.5 +1.0
baz=324,SNR=10
OGNE Ogallala 83.42 38 eP P 15 37 35.6 +1.1
comp=Z,246nm,0.9s
K31A O'Neill 83.46 35 P P 15 37 35.5 +0.9
baz=326,SNR=24
SPMN Marine on St. 83.57 30 P P 15 37 35.3 +0.3
baz=330,SNR=14
SPMN Marine on St. 83.57 30 eP P 15 37 35.4 +0.3
comp=Z,134nm,1.1s
Q24A Divide 83.57 41 P P 15 37 36.4 +0.8
baz=323,SNR=26
Q24A Divide 83.57 41 eP P 15 37 36.6 +1.0
comp=Z,47nm,0.8s
J33A Davis 83.61 33 P P 15 37 35.7 +0.4
baz=327,SNR=8.7
H36A Jessenland, He 83.71 31 P P 15 37 36.6 +0.8
baz=329,SNR=12
S22A 4UR Ranch, Cre 83.72 43 P P 15 37 38.2 +1.9
baz=322,SNR=47
S22A 4UR Ranch, Cre 83.72 43 eP P 15 37 37.9 +1.6
comp=Z,75nm,1.0s
S22A epP pP 15 39 36.5 +1.0
K32A Verdigre 83.75 34 P P 15 37 36.3 +0.3
baz=326
L31A Butterfield Fa 83.80 35 P P 15 37 37.0 +0.8
baz=326,SNR=10.0
113A Mohawk Valley, 83.86 50 eP P 15 37 37.8 +1.1
comp=Z,67nm,1.0s
113A epP pP 15 39 36.9 +1.0
X16A Lo Mia Camp, P 83.89 48 eP P 15 37 39.0 +1.8
comp=Z,105nm,1.0s
J34A George 84.04 33 P P 15 37 37.7 +0.2
baz=328
COWI Conover 84.07 27 eP P 15 37 37.5 -0.1
comp=Z,100nm,1.6s
H37A Dierke Farm, C 84.08 30 P P 15 37 38.2 +0.7
baz=330,SNR=11

I36A Fitzsimmons Fa 84.16 31 P P 15 37 38.4 +0.4
baz=329,SNR=9.5
K33A Hardington 84.19 34 P P 15 37 38.8 +0.6
baz=327
W18A Petrified Fore 84.27 46 P P 15 37 40.5 +1.6
baz=320,SNR=6.0
W18A Petrified Fore 84.27 46 eP P 15 37 40.5 +1.6
comp=Z,30nm,0.9s
L32A Elgin 84.28 34 P P 15 37 39.4 +0.7
baz=326
SDCO Great Sand Dun 84.36 42 P P 15 37 40.7 +1.2
baz=322,SNR=65
SDCO Great Sand Dun 84.36 42 eP P 15 37 40.7 +1.2
comp=Z,33nm,0.8s
I37A Lemond, Waseca 84.39 31 P P 15 37 40.2 +1.0
baz=329,SNR=23
M31A Lambtecht Ranc 84.42 35 P P 15 37 40.2 +0.8
baz=326,SNR=7.1
L33A Hoskins 84.45 34 P P 15 37 39.8 +0.3
baz=327
K34A Le Mars 84.49 33 P P 15 37 40.0 +0.4
baz=328
X18A Snowflake 84.61 47 eP P 15 37 42.2 +1.6
comp=Z,79nm,0.9s
X18A epP pP 15 39 40.4 +0.3
J36A Seneca 1, Swea 84.62 31 P P 15 37 40.4 +0.2
baz=329,SNR=13
KSCO Kaye Shedlock' 84.72 39 P P 15 37 42.0 +1.0
baz=324
KSCO Kaye Shedlock' 84.72 39 eP P 15 37 42.0 +1.0
comp=Z,562nm,1.6s
BGNE Belgrade 84.72 35 P P 15 37 41.7 +0.9
baz=326,SNR=16
BGNE Belgrade 84.72 35 eP P 15 37 41.8 +0.9
I38A Scanlan Farm, 84.76 30 P P 15 37 41.2 +0.3
baz=330,SNR=15
K35A Storm Lake 84.80 32 P P 15 37 41.3 +0.1
baz=328
N31A Bailey Ranch, 84.86 36 P P 15 37 42.3 +0.8
baz=326,SNR=8.3
J37A Redenius Farm, 84.94 31 P P 15 37 42.1 +0.3
baz=329,SNR=5.5
M33A Taylor Creek F 84.98 34 P P 15 37 42.6 +0.5
baz=327,SNR=11
L34A Svendsen Farm, 84.98 33 P P 15 37 42.2 +0.2
baz=328,SNR=5.4
214A Organ Pipe Nat 85.00 50 P P 15 37 43.8 +1.4
baz=319,SNR=13
214A Organ Pipe Nat 85.00 50 eP P 15 37 43.4 +1.1
comp=Z,322nm,1.2s
214A epP pP 15 39 42.5 +0.5
KEST Kesra 85.12 316 P P 15 37 43.1 +0.2
comp=Z,5.2nm,0.5s,baz=89,slow=1.6,SNR=9.8
KEST pP pP 15 39 43.5 +0.9
comp=Z,24nm,1.0s,baz=70,slow=1.4,SNR=9.1
KEST Kesra 85.12 316 eP P 15 37 42.9 0.0
comp=Z,30nm,1.0s
KEST pP pP 15 39 43.5 +0.9
L35A Bielow Farm, R 85.19 33 P P 15 37 43.1 0.0
baz=328,SNR=8.1
N32A Stulken Farm, 85.19 35 P P 15 37 43.6 +0.5
baz=326
O31A Woolen Ranch, 85.26 36 P P 15 37 43.7 +0.3
baz=326,SNR=5.5
M34A Aspy Farms, Fr 85.29 34 P P 15 37 44.5 +0.9
baz=327,SNR=5.6
J38A Wedel Dairy, R 85.33 30 P P 15 37 43.8 +0.1
baz=330
K37A Belmond 85.37 31 P P 15 37 44.2 +0.3
baz=329,SNR=16
T25A Trinidad 85.37 41 P P 15 37 45.5 +1.2
baz=323,SNR=63
T25A Trinidad 85.37 41 eP P 15 37 45.3 +0.9
comp=Z,144nm,1.0s
CMAH Djebel Manchou 85.38 318 P pP 15 39 43.9 0.0
CAEH 'Ain El Ouahch 85.53 318 P pP 15 39 46.7 +2.0
L36A Harm Buss Farm 85.54 32 P P 15 37 45.4 +0.7
baz=328,SNR=33
N33A J Bar K, Exete 85.57 35 P P 15 37 45.3 +0.3
baz=327
O32A Brockman Farm, 85.62 36 P P 15 37 45.2 0.0
baz=326,SNR=5.5
ABSA Djebel Ababsia 85.63 318 P pP 15 39 45.5 +0.2
M35A Neola 85.68 33 P P 15 37 46.4 +1.0
baz=328,SNR=12
K38A Parkersburg 85.80 31 P P 15 37 46.3 +0.3
baz=330
TUC Tucson 85.85 48 P P 15 37 48.1 +1.5
baz=320
TUC Tucson 85.85 48 eP P 15 37 47.6 +1.1
TUC pmax pmax
comp=Z,31nm,1.1s
TUC Tucson 85.85 48 eP P 15 37 47.6 +1.1
comp=Z,31nm,1.1s
TUC epP pP 15 39 47.0 +0.5
L37A Phoenix Point, 85.88 32 P P 15 37 46.6 +0.3
baz=329,SNR=11
N34A Lincoln 85.88 34 P P 15 37 47.0 +0.7
baz=328,SNR=8.2
P32A Huiting Farm, 86.01 36 P P 15 37 47.3 +0.3
baz=326,SNR=8.9
M36A Felix, Anita 86.04 33 P P 15 37 48.0 +0.9
baz=328,SNR=15
O33A Hebron 86.07 35 P P 15 37 47.5 +0.1
baz=327,SNR=5.9
ANMO Albuquerque 86.09 44 pP pP 15 39 49.7 +1.8
comp=Z,6.0nm,0.9s,baz=322,slow=4.6,SNR=5.1
ANMO Albuquerque 86.09 44 P P 15 37 49.7 +1.9
baz=322
ANMO Albuquerque 86.09 44 eP P 15 37 49.3 +1.5
ANMO pmax pmax
comp=Z,64nm,1.2s
ANMO Albuquerque 86.09 44 eP P 15 37 49.3 +1.5
comp=Z,64nm,1.2s
ANMO epP pP 15 39 48.3 +0.5
L38A Oak Wood Farm, 86.17 31 P P 15 37 48.1 +0.4
baz=330,SNR=12
LAZ Ladron 86.17 45 eP P 15 37 49.8 +1.6
LAZ epP pP 15 39 49.5 +1.2
CBKS Cedar Bluff 86.18 37 P P 15 37 48.7 +0.8
baz=326,SNR=14
CBKS Cedar Bluff 86.18 37 eP P 15 37 48.2 +0.3
CBKS pmax pmax
comp=Z,139nm,0.9s
CBKS Cedar Bluff 86.18 37 eP P 15 37 48.2 +0.3
comp=Z,139nm,0.9s
DFRA Djebel Bou Aff 86.19 319 P pP 15 39 47.5 -0.7
N35A Tabor 86.21 34 P P 15 37 49.2 +1.3
baz=328,SNR=13
SCIA State Center 86.27 32 eP P 15 37 49.4 +1.2
comp=Z,250nm,1.0s
O34A Beatrice 86.35 35 P P 15 37 49.2 +0.5
baz=327,SNR=14
M37A Trindle Farm, 86.38 32 P P 15 37 49.9 +1.1
baz=329,SNR=11
JFWS Jewell Farm 86.49 29 eP P 15 37 49.6 +0.4
JFWS pmax pmax
comp=Z,134nm,1.0s
JFWS Jewell Farm 86.49 29 eP P 15 37 49.6 +0.4
comp=Z,134nm,1.0s
LPM Los Pinos Moun 86.50 45 eP P 15 37 51.4 +1.7
N36A Muff Farm, Cla 86.52 33 P P 15 37 50.8 +1.4
baz=328,SNR=15
Q32A Meitler Ranch, 86.55 37 P P 15 37 50.5 +0.9
baz=326,SNR=31
P33A Williams Farm, 86.55 36 P P 15 37 50.1 +0.5
baz=327,SNR=11
O35A Humboldt 86.60 34 P P 15 37 50.6 +0.8
baz=328
BNM Barren Site 86.63 45 eP P 15 37 52.1 +1.8
M38A Pleasantville 86.70 32 P P 15 37 51.1 +0.9
baz=330,SNR=38
P34A Walnut Farm, R 86.83 35 P P 15 37 51.7 +0.8
baz=327,SNR=40
Q33A Connelly Farm, 86.86 36 P P 15 37 52.0 +0.9
baz=327,SNR=37
N37A Lee Faris, Mou 86.87 33 P P 15 37 52.2 +1.1
baz=329,SNR=13
R32A Long Quarter, 86.96 37 P P 15 37 52.4 +0.9
baz=326
O36A Bolckow 87.10 34 P P 15 37 53.5 +1.4
baz=328,SNR=26
PBRG Braganca 87.16 330 eP P 15 37 52.2 -0.2
P35A Duane Minner, 87.18 35 P P 15 37 53.4 +0.9
baz=328,SNR=23
N38A Joes South For 87.22 32 P P 15 37 53.5 +0.8
baz=330

KSU1 Kansas State U 87.29 35 P P 15 37 53.9 +0.8
baz=328
Q34A Chapman 87.30 35 P P 15 37 54.3 +1.2
baz=327
R33A Olander Ranch, 87.37 37 P P 15 37 54.2 +0.8
baz=327,SNR=9.9
319A Douglas 87.39 48 eP P 15 37 55.2 +1.4
comp=Z,43nm,0.9s
319A epP pP 15 39 55.4 +1.0
O37A Wolven Farm, M 87.40 33 P P 15 37 54.6 +1.0
baz=329,SNR=9.2
N39A Derby Farms, D 87.43 32 P P 15 37 54.4 +0.8
baz=330,SNR=39
P36A Good Intent, A 87.44 34 P P 15 37 54.7 +1.0
baz=328,SNR=25
S32A Newby Ranch, P 87.45 37 P P 15 37 55.0 +1.1
baz=326,SNR=17
LMQ La Malbaie 87.56 14 eP P 15 37 54.4 +0.2
comp=Z,73nm,1.0s
PGAV Gavieira, Arco 87.57 331 eP P 15 37 54.2 -0.2
R34A Isabella, Hill 87.69 36 P P 15 37 56.4 +1.4
baz=327,SNR=23
O38A Galt 87.70 33 P P 15 37 55.8 +0.9
baz=329,SNR=8.1
Q35A Mercer Eighty, 87.74 35 P P 15 37 56.1 +0.9
baz=328,SNR=28
P37A Lathrop 87.81 33 P P 15 37 56.4 +0.9
baz=329,SNR=12
MVO Moncorvo 87.82 330 eP P 15 37 55.4 -0.2
ES19 SONSECA Array 87.89 327 eP P 15 37 55.7 -0.2
ES19 epP pP 15 39 55.7 -0.9
Q36A Arnold C. Orve 87.89 34 P P 15 37 56.6 +0.8
baz=328,SNR=8.1
T32A Huddler Ranch, 87.89 38 P P 15 37 57.2 +1.2
baz=326,SNR=26
POLO Lamas de Olo 87.92 330 eP P 15 37 55.8 -0.3
ESDC Sonseca Array 87.94 327 P P 15 37 56.0 -0.1
comp=Z,3.8nm,0.6s,baz=23,slow=4.3,SNR=18
ESDC pP pP 15 39 56.8 -0.1
comp=Z,2.5nm,0.8s,baz=24,slow=4.8,SNR=3.8
ESDC PP PP 15 41 32.0 +0.3
comp=Z,2.2nm,0.8s,baz=31,slow=7.4,SNR=5.4
ESDC PKKPbc PKKPbc 15 55 38.1 +0.7
comp=Z,0.2nm,0.3s,baz=219,slow=1.5,SNR=4.3
O39A Kirksville 87.95 32 P P 15 37 57.1 +1.0
baz=330,SNR=17
S33A Kaszmaul Farm, 87.96 37 P P 15 37 57.7 +1.5
baz=327,SNR=39
TRQ Mont Tremblant 87.98 17 eP P 15 37 56.4 +0.2
TRQ epP pP 15 39 56.8 -0.2
P38A Dawn 88.11 33 P P 15 37 58.0 +1.1
baz=329,SNR=45
R35A Emporia Munici 88.12 35 P P 15 37 58.5 +1.5
baz=328,SNR=22
SADO Sadowa 88.24 21 eP P 15 37 57.0 -0.3
comp=Z,47nm,1.3s
S34A Willow Spring 88.25 36 P P 15 37 58.9 +1.3
baz=327,SNR=22
HSIG 88.27 51 eP P 15 37 58.2 +0.4
comp=Z,55nm,1.4s
T33A Patterson Ranc 88.27 37 P P 15 37 59.1 +1.4
baz=327,SNR=16
O40A La Belle 88.32 32 P P 15 37 58.8 +1.0
baz=330,SNR=58
Q37A Longview Farm, 88.38 34 P P 15 37 58.9 +0.8
baz=329
R36A Gordon, Harris 88.41 35 P P 15 37 59.4 +1.1
baz=328,SNR=34
AMTX Amarillo 88.50 41 P P 15 38 00.4 +1.5
baz=325
AMTX Amarillo 88.50 41 eP P 15 38 00.2 +1.3
comp=Z,83nm,0.9s
AMTX epP pP 15 39 59.3 -0.5
U32A Winter Ranch, 88.52 38 P P 15 38 00.4 +1.5
baz=326
S35A Otter Creek Ra 88.61 36 P P 15 38 00.6 +1.4
baz=328,SNR=51
Q38A Cooks Store, C 88.64 33 P P 15 38 00.4 +1.0
baz=329,SNR=63
MTE Manteigas 88.68 330 eP P 15 37 59.3 -0.3
R37A Teagarden Farm 88.70 34 P P 15 38 00.3 +0.6
baz=329,SNR=33
MSTX Muleshoe 88.71 42 P P 15 38 00.6 +0.7
baz=324,SNR=8.8
MSTX Muleshoe 88.71 42 eP P 15 38 00.5 +0.6
comp=Z,55nm,1.4s
P40A Paris 88.77 32 P P 15 38 00.9 +1.0
baz=330,SNR=48
T34A McClaskey Farm 88.79 37 P P 15 38 01.6 +1.5
baz=327,SNR=30
Q39A Willow Grove F 88.82 33 P P 15 38 01.3 +1.1
baz=330,SNR=44
U33A Lingo Farm, Me 88.87 38 P P 15 38 01.8 +1.3
baz=327,SNR=15
S36A Lake Cedric, C 88.88 35 P P 15 38 01.4 +0.9
baz=328,SNR=36
HDIL Hopedale 88.90 30 P P 15 38 01.2 +0.7
baz=332,SNR=8.0
HDIL Hopedale 88.90 30 eP P 15 38 01.4 +0.8
comp=Z,156nm,1.0s
V32A Arapaho 89.04 39 P P 15 38 03.1 +1.7
baz=326,SNR=9.3
U34A Anderson Ranch 89.13 37 P P 15 38 03.3 +1.6
baz=327,SNR=19
U34A Anderson Ranch 89.13 37 eP P 15 38 03.1 +1.4
comp=Z,123nm,0.9s
U34A epP pP 15 40 03.3 +0.6
T35A Sooner Cattle 89.17 36 P P 15 38 03.2 +1.4
baz=328,SNR=36
S37A Fort Scott 89.17 35 P P 15 38 02.6 +0.8
baz=329,SNR=18
R38A Fenwick Farm, 89.19 34 P P 15 38 02.2 +0.3
baz=329,SNR=42
MNTX Cornudas Mount 89.21 45 P P 15 38 03.7 +1.6
baz=323,SNR=24
MNTX Cornudas Mount 89.21 45 eP P 15 38 03.8 +1.6
comp=Z,22nm,0.9s
MNTX epP pP 15 40 04.2 +1.0
Q40A Laux Farm, Aux 89.22 32 P P 15 38 03.1 +1.1
baz=330,SNR=28
V33A Lossen Ranch, 89.30 38 P P 15 38 03.7 +1.1
baz=327,SNR=8.1
T36A Boggs Farm, Ca 89.32 36 P P 15 38 03.9 +1.4
baz=328,SNR=36
R39A Chumby, Stover 89.43 33 P P 15 38 04.1 +1.1
baz=330,SNR=109
W32A Sentinel 89.44 39 P P 15 38 04.9 +1.7
baz=326,SNR=22
LONY Lake Ozonia 89.50 18 eP P 15 38 03.4 +0.1
comp=Z,30nm,1.1s
FRNY Flat Rock 89.51 17 eP P 15 38 03.0 -0.3
comp=Z,77nm,1.5s
U35A Pawnee 89.53 37 P P 15 38 05.2 +1.6
baz=327,SNR=20
V34A Guthrie 89.64 38 P P 15 38 05.4 +1.4
baz=327,SNR=12
V34A Guthrie 89.64 38 eP P 15 38 05.4 +1.4
comp=Z,164nm,1.1s
V34A epP pP 15 40 05.8 +0.6
S38A Stockton 89.66 34 P P 15 38 04.5 +0.4
baz=329,SNR=22
T37A Cheneyville 18 89.67 35 P P 15 38 05.3 +1.1
baz=328,SNR=47
R40A Maddies Statio 89.75 33 P P 15 38 05.4 +0.9
baz=330,SNR=63
W33A Caddo, Fort Co 89.78 39 P P 15 38 06.6 +1.9
baz=326,SNR=11
SFIN Lafayette 89.83 28 P P 15 38 05.4 +0.5
baz=333,SNR=11
SFIN Lafayette 89.83 28 eP P 15 38 05.3 +0.5
comp=Z,90nm,0.8s
S39A Bolivar 89.85 34 P P 15 38 05.7 +0.7
baz=330,SNR=76
U36A Oologah 89.95 36 P P 15 38 07.0 +1.5
baz=328,SNR=12
PKME Peaks-Kenny Pk 89.95 14 eP P 15 38 06.1 +0.8
comp=Z,40nm,0.8s
WMOK Wichita Mounta 89.98 39 eP P 15 38 06.7 +1.0
WMOK pmax pmax
comp=Z,111nm,1.1s
WMOK Wichita Mounta 89.98 39 eP P 15 38 06.7 +1.0
comp=Z,111nm,1.1s
WMOK epP pP 15 40 06.5 -0.4
V35A Meyer Ranch, C 90.00 37 P P 15 38 06.8 +1.1
baz=327,SNR=7.4
T38A Diamond 90.01 35 P P 15 38 06.6 +0.8
baz=329,SNR=36
W34A Bridge Creek, 90.02 38 P P 15 38 07.3 +1.4

baz=327,SNR=6.3
W34A Bridge Creek, 90.02 38 eP P 15 38 07.2 +1.4
comp=Z,97nm,1.0s
BUF Buffalo 90.03 22 eP P 15 38 05.0 -0.7
U37A Salina 90.20 36 P P 15 38 07.5 +0.9
baz=328,SNR=5.8
SLM Saint Louis 90.24 31 eP P 15 38 07.2 +0.4
SLM pmax pmax
comp=Z,97nm,1.0s
SLM Saint Louis 90.24 31 eP P 15 38 07.2 +0.4
comp=Z,96nm,1.0s
S40A Lebanon 90.26 33 P P 15 38 07.7 +0.8
baz=330,SNR=72
X33A Lawton 90.27 39 P P 15 38 08.2 +1.2
baz=326
TUL1 Leonard 90.33 36 P P 15 38 08.6 +1.4
baz=328,SNR=7.9
TUL1 Leonard 90.33 36 eP P 15 38 08.5 +1.2
comp=Z,104nm,0.9s
V36A Jenks 90.37 37 P P 15 38 08.8 +1.4
baz=328,SNR=12
MDV Middlebury 90.40 17 eP P 15 38 07.8 +0.4
T39A Clever 90.40 34 P P 15 38 08.5 +1.0
baz=329,SNR=19
LBNH Lisbon 90.43 16 eP P 15 38 08.9 +1.4
LBNH pmax pmax
comp=Z,31nm,0.9s
LBNH Lisbon 90.43 16 eP P 15 38 08.9 +1.4
comp=Z,31nm,0.9s
MMNY Mt. Morris Dam 90.47 21 eP P 15 38 07.7 -0.1
comp=Z,428nm,1.7s
MMNY epP **pP 15 40 08.3 -0.7**
ERPA Erie 90.47 23 eP P 15 38 08.3 +0.6
comp=Z,49nm,0.6s
U38A Gravette 90.48 35 P P 15 38 08.7 +0.7
baz=329,SNR=8.5
W35A Tecumseh 90.49 37 P P 15 38 09.4 +1.4
baz=327,SNR=20
X34A Smith Ranch, M 90.52 38 P P 15 38 09.9 +1.7
baz=327,SNR=20
V37A Hulbert 90.63 36 P P 15 38 09.7 +1.1
baz=328
T40A Mansfield 90.64 33 P P 15 38 09.2 +0.6
baz=330,SNR=21
Y33A Hilltop Ranch, 90.65 39 P P 15 38 09.8 +1.0
baz=326,SNR=12
W36A Wetumka 90.79 37 P P 15 38 10.9 +1.5
baz=328,SNR=17
HHAR Hobbs 90.80 35 eP P 15 38 10.1 +0.7
comp=Z,53nm,0.9s
HHAR epP **pP 15 40 10.8 +0.1**
ALLY Alegheny Colle 90.86 23 eP P 15 38 09.9 +0.3
comp=Z,84nm,0.9s
ALLY epP **pP 15 40 11.1 +0.1**
ACCN Adirondack Com 90.88 18 eP P 15 38 09.8 +0.2
comp=Z,32nm,1.0s
U39A Green Forest 90.91 34 P P 15 38 10.6 +0.7
baz=329,SNR=11
OLIL Olney 90.94 30 eP P 15 38 10.8 +0.8
comp=Z,63nm,1.0s
OLIL epP **pP 15 40 11.7 +0.3**
V38A Canehill 90.96 35 P P 15 38 11.0 +0.8
baz=329,SNR=12
X35A Drake 91.08 38 P P 15 38 11.7 +1.0
baz=327,SNR=17
Y34A Reagan Ranch, 91.09 39 P P 15 38 11.9 +1.1
baz=327,SNR=18
BLO Bloomington 91.11 28 eP P 15 38 11.6 +0.8
BLO pmax pmax
comp=Z,45nm,0.6s
BLO Bloomington 91.11 28 eP P 15 38 11.6 +0.8
comp=Z,45nm,0.6s
BLO epP **pP 15 40 12.5 +0.4**
M54A Oil Creek Sta 91.13 23 P P 15 38 11.3 +0.4
baz=338,SNR=11
W37B Quinton 91.14 37 P P 15 38 12.1 +1.1
baz=328,SNR=5.3
U40A Yellville 91.19 34 P P 15 38 12.3 +1.1
baz=330,SNR=16
Z33A Whitaker Ranch 91.19 40 P P 15 38 12.1 +0.9
baz=326,SNR=6.2
X36A Centrahoma 91.21 37 P P 15 38 12.6 +1.2
baz=328,SNR=19
V39A Pettigrew 91.30 35 P P 15 38 12.6 +0.8
baz=329,SNR=7.2
ABTX Abilene, Hawle 91.32 41 P P 15 38 13.0 +1.1
baz=326,SNR=16
ABTX Abilene, Hawle 91.32 41 eP P 15 38 12.7 +0.8
comp=Z,70nm,1.0s
ACSO Alum Creek Sta 91.32 25 eP P 15 38 12.4 +0.6
comp=Z,60nm,0.8s
ACSO epP **pP 15 40 13.8 +0.7**
SIUC Southern Illin 91.43 31 eP P 15 38 12.9 +0.7
comp=Z,143nm,1.2s
SIUC epP **pP 15 40 13.9 +0.3**
Y35A Marietta 91.46 38 P P 15 38 13.6 +1.1
baz=327,SNR=5.9
Z34A Collier Ranch, 91.51 39 P P 15 38 13.6 +0.9
baz=327,SNR=7.7
N54A Moraine State 91.54 23 P P 15 38 13.2 +0.5
baz=338,SNR=14
W38A Poteau 91.59 36 P P 15 38 14.2 +1.1
baz=329,SNR=5.2
X37A Clayton 91.63 37 P P 15 38 14.3 +1.0
baz=328
V40A Witts Springs 91.67 34 P P 15 38 14.0 +0.5
baz=330
133A Hamilton Ranch 91.67 40 P P 15 38 14.5 +1.0
baz=326,SNR=7.5
W39A Magazine 91.80 35 P P 15 38 14.8 +0.8
baz=329
X38A Whitesboro 91.80 36 P P 15 38 15.6 +1.6
baz=329
Y36A Durant 91.81 38 P P 15 38 15.3 +1.2
baz=328,SNR=10
Z35A Perchaven, San 91.85 39 P P 15 38 15.1 +0.9
baz=327,SNR=7.3
TX31 Lajitas Ar. Si 91.98 46 eP P 15 38 16.3 +1.2
TX31 epP **pP 15 40 16.9 +0.3**
TX31 epP **pP 15 40 17.0 +0.4**
TXAR Lajitas Array 91.98 46 P P 15 38 16.5 +1.4
comp=Z,26nm,0.9s,baz=286,slow=3.8,SNR=134
TXAR pP **pP 15 40 17.3 +0.8**
comp=Z,5.1nm,0.9s,baz=289,slow=3.8,SNR=8.7
TXAR PP **PP 15 42 07.2 +3.6**
comp=Z,3.0nm,1.0s,baz=311,slow=5.8,SNR=4.2
TXAR PKiKP **PKiKP 15 43 02.4 +1.0**
comp=Z,0.6nm,0.7s,baz=40,slow=0.7,SNR=3.6
TXAR PKKPbc **PKKPbc 15 55 29.1 +1.8**
comp=Z,1.3nm,1.0s,baz=141,slow=4.8,SNR=4.8
TXAR SKKPbc SKKPbc 15 58 13.2 +3.5
comp=Z,0.6nm,0.8s,baz=148,slow=7.4,SNR=5.4
WCI Wyandotte Cave 92.03 29 eP P 15 38 15.5 +0.5
WCI pmax pmax
comp=Z,94nm,1.5s
WCI Wyandotte Cave 92.03 29 eP P 15 38 15.5 +0.5
comp=Z,94nm,1.5s
WCI epP **pP 15 40 16.9 +0.4**
134A White-Moore Ra 92.10 40 P P 15 38 16.3 +0.9
baz=327,SNR=9.5
W40A Ferguson Farm, 92.10 35 P P 15 38 16.1 +0.7
baz=330,SNR=6.7
KSPA Keystone Colle 92.11 20 eP P 15 38 15.1 -0.3
comp=Z,36nm,1.2s
HRV Adam Dziewonsk 92.17 17 eP P 15 38 16.8 +1.3
HRV Adam Dziewonsk 92.17 17 eP P 15 38 16.8 +1.3
233A Rising Star 92.17 41 P P 15 38 17.2 +1.3
baz=326,SNR=17
X39A Fountain Ranch 92.24 36 P P 15 38 17.4 +1.3
baz=329
Z36A Blue Ridge 92.27 38 P P 15 38 17.2 +1.0
baz=328,SNR=16
WHAR Wooly Hollow 92.34 34 eP P 15 38 17.2 +0.7
WHAR epP **pP 15 40 18.7 +0.7**
135A Vickery Place, 92.42 39 P P 15 38 18.2 +1.3
baz=327
SSPA Standing Stone 92.43 22 eP P 15 38 17.1 +0.3
comp=Z,59nm,1.1s
MIAR Mount Ida 92.44 36 P P 15 38 18.0 +1.1
baz=329,SNR=5.6
MIAR Mount Ida 92.44 36 eP P 15 38 18.3 +1.3
MIAR pmax pmax
comp=Z,50nm,1.0s
MIAR Mount Ida 92.44 36 eP P 15 38 18.3 +1.3
comp=Z,50nm,1.0s
W41B Gary Mavity, V 92.45 34 P P 15 38 17.8 +0.8
baz=330,SNR=18

Y38A Idabel 92.47 37 P P 15 38 18.2 +1.1
baz=329
234A Clairette 92.54 40 P P 15 38 18.6 +1.1
baz=327,SNR=7.2
O56A Blue Knob Stat 92.59 22 P P 15 38 17.8 +0.2
baz=339,SNR=11
Z37A Pogue Cattle C 92.69 38 P P 15 38 19.4 +1.2
baz=328
333A Richland Sprin 92.70 41 P P 15 38 19.1 +0.8
baz=326,SNR=18
N59A State Game Lan 92.72 20 P P 15 38 18.5 +0.4
baz=341,SNR=6.6
Y39A Lockesburg 92.74 36 P P 15 38 19.5 +1.2
baz=329
MCWV Mont Chateau 92.79 23 eP P 15 38 19.5 +1.0
comp=Z,62nm,1.4s
X40A Basin Creek Fa 92.80 35 P P 15 38 19.6 +0.9
baz=330,SNR=6.5
HPIG 92.82 48 eP P 15 38 20.3 +1.2
HPIG comp=Z,97nm,1.2s epP **pP 15 40 20.8 +0.2**
WHTX Lake Whitney, 92.87 40 P P 15 38 19.9 +1.0
baz=327
WHTX Lake Whitney, 92.87 40 eP P 15 38 20.1 +1.0
comp=Z,38nm,1.0s
136A Ennis 92.89 39 P P 15 38 20.0 +0.9
baz=328
SLBS Sierra La Lagu 92.92 53 eP P 15 38 20.7 +1.3
comp=Z,42nm,1.3s
X41A Kaden, Bauxite 92.93 35 P P 15 38 20.2 +1.0
baz=330
Z38A Mt. Pleasant 92.93 37 P P 15 38 20.4 +1.2
baz=328
JCT Junction City 93.00 42 P P 15 38 20.3 +0.6
baz=326,SNR=9.4
JCT Junction City 93.00 42 epP pP 15 40 21.7 +0.5
JCT ePP **PP 15 42 11.2 -0.2**
Y40A Okolona 93.02 36 P P 15 38 20.8 +1.1
baz=330
334A Lometa 93.05 41 P P 15 38 20.2 +0.3
baz=326,SNR=8.0
433A Art 93.12 41 P P 15 38 20.4 +0.2
baz=326,SNR=5.5
137A Heron Place, G 93.14 38 P P 15 38 21.8 +1.6
baz=328
Z39A Irene McRaven, 93.29 37 P P 15 38 22.7 +1.8
baz=329
236A Katherine and 93.29 39 P P 15 38 21.6 +0.7
baz=328
WVT Waverly 93.35 31 eP P 15 38 21.6 +0.5
WVT pmax pmax
comp=Z,31nm,0.9s
WVT Waverly 93.35 31 eP P 15 38 21.6 +0.5
comp=Z,31nm,0.9s
WVT epP **pP 15 40 22.2 -0.4**
WLAR White Oak Lake 93.37 36 eP P 15 38 22.5 +1.3
comp=Z,75nm,1.0s
138A Matatall Enter 93.39 38 P P 15 38 23.1 +1.8
baz=328
Y41A Eaglette Beard 93.42 35 P P 15 38 22.7 +1.3
baz=330
335A Moody 93.48 40 P P 15 38 22.8 +1.1
baz=327
KMBO Kilima Mbogo 93.57 272 eP P 15 38 23.0 +0.2
KMBO pmax pmax
comp=Z,45nm,1.1s
KMBO Kilima Mbogo 93.57 272 P P 15 38 23.4 +0.7
SNR=7.3
KMBO Kilima Mbogo 93.57 272 eP P 15 38 23.0 +0.2
comp=Z,45nm,1.1s
Z40A Long Farm, Mag 93.62 36 P P 15 38 24.3 +1.9
baz=329
237A Washetta, Mont 93.62 38 P P 15 38 23.8 +1.4
baz=328
336A Riesel 93.66 40 P P 15 38 23.6 +1.0
baz=327
139A Bunkhouse Ranc 93.68 37 P P 15 38 24.2 +1.6
baz=329
533A Kerrville 93.71 42 P P 15 38 23.7 +0.8
baz=326
Y42A Garnett, Star 93.80 35 P P 15 38 24.7 +1.5
baz=330
435B Jarrell 93.82 40 P P 15 38 24.2 +0.9
baz=327
Z41A Richland Creek 93.87 36 P P 15 38 25.2 +1.7
baz=330
238A Jacksonville 93.93 38 P P 15 38 25.8 +2.0
baz=328
534A Blanco 94.02 41 P P 15 38 24.3 0.0
baz=326
140A Cam and Jess, 94.07 36 P P 15 38 26.1 +1.7
baz=329
MDT Midelt 94.08 324 P P 15 38 23.9 -0.7
comp=Z,6.8nm,0.9s,baz=54,slow=4.9,SNR=7.1
Y43A Makayla and Ka 94.09 34 P P 15 38 26.1 +1.6
baz=331
633A Saathoff Ranch 94.15 42 P P 15 38 25.8 +1.0
baz=326,SNR=6.1
337A Centerville 94.16 39 P P 15 38 26.8 +1.9
baz=328
OXF Oxford 94.17 33 eP P 15 38 25.6 +0.7
OXF pmax pmax
comp=Z,59nm,1.0s
OXF Oxford 94.17 33 eP P 15 38 25.6 +0.7
comp=Z,59nm,1.0s
436A Wall Ranch, Ga 94.20 40 P P 15 38 26.6 +1.5
baz=327
239A Gary 94.21 37 P P 15 38 26.6 +1.5
baz=329
Z42A Norrel Spur, H 94.22 35 P P 15 38 26.9 +1.8
baz=330,SNR=6.3
Y44A Strider, Charl 94.33 33 P P 15 38 27.1 +1.5
baz=331
NATX Nacogdoches 94.34 38 P P 15 38 27.2 +1.5
baz=329
NATX Nacogdoches 94.34 38 eP P 15 38 27.0 +1.3
141A Papa Simpson, 94.39 36 P P 15 38 27.6 +1.7
baz=330
338A Crockett 94.39 38 P P 15 38 27.7 +1.7
baz=328
437A Phantom Ranch, 94.46 39 P P 15 38 27.9 +1.7
baz=328
TZTN Tazewell 94.49 27 eP P 15 38 26.6 +0.3
comp=Z,15nm,0.8s
240A Hunter Patters 94.50 37 P P 15 38 28.1 +1.7
baz=329
Z43A Armstrong Fami 94.57 34 P P 15 38 28.1 +1.5
baz=331
Y45A Yeager Farm, C 94.68 33 P P 15 38 28.4 +1.2
baz=332,SNR=7.0
733A Divot King Ran 94.70 43 P P 15 38 28.8 +1.4
baz=326
832A Faith Ranch, C 94.72 44 P P 15 38 29.0 +1.5
baz=326
339A Huntington 94.75 38 P P 15 38 28.3 +0.8
baz=329
438A Sam Houston St 94.83 39 P P 15 38 29.6 +1.7
baz=328
Z44A Pea Ridge, Bel 94.84 34 P P 15 38 29.5 +1.6
baz=331
SWET Sewanee 94.86 30 eP P 15 38 27.9 -0.2
comp=Z,17nm,1.4s
SWET epP **pP 15 40 29.6 -0.1**
241A Mo Tay, Goldon 94.88 36 P P 15 38 29.8 +1.7
baz=330
635A Leesville 94.89 41 P P 15 38 29.4 +1.2
baz=327
Y46A Houston 94.94 32 P P 15 38 28.8 +0.5
baz=332,SNR=7.6
833A Chaparral WMA, 94.98 43 P P 15 38 29.9 +1.2
baz=326
340A Bronson 94.98 37 P P 15 38 29.6 +1.1
baz=329
Z45A Winona 95.06 33 P P 15 38 29.9 +1.0
baz=332
439A Center Grove, 95.11 38 P P 15 38 29.8 +0.6
baz=328
CPCT Cooper Cave 95.15 29 eP P 15 38 29.3 0.0
comp=Z,31nm,1.2s
CPCT epP **pP 15 40 31.0 +0.1**
636A Smothers Creek 95.16 41 P P 15 38 30.6 +1.2
baz=327
TKL Tuckaleechee C 95.22 28 eP P 15 38 29.8 +0.2
TKL pmax pmax
comp=Z,13nm,0.8s
TKL Tuckaleechee C 95.22 28 eP P 15 38 29.8 +0.2
comp=Z,13nm,0.8s
Y47A UCPARC, Winfie 95.31 32 P P 15 38 30.2 +0.2

baz=333,SNR=8.8
HKT Hockley 95.34 40 ePP PP 15 42 32.5 +3.4
341A Kurthwood 95.37 37 P P 15 38 31.7 +1.4
baz=329
144A Alexander Plac 95.41 34 P P 15 38 31.8 +1.3
baz=331
Z46A Louisville 95.51 33 P P 15 38 32.3 +1.3
baz=332
243A Waterproof 95.62 35 P P 15 38 33.4 +2.0
baz=330
933A Laredo 95.62 43 P P 15 38 33.3 +1.7
baz=326
145A Houston Renfro 95.63 34 P P 15 38 33.1 +1.6
baz=331
VBMS Vicksburg 95.73 34 P P 15 38 33.3 +1.3
baz=331
244A Avery, Jackson 95.81 35 P P 15 38 34.2 +1.8
baz=331,SNR=9.3
Z47A Carrollton 95.85 32 P P 15 38 32.9 +0.4
baz=333
Z48A Northport 95.89 32 P P 15 38 32.9 +0.2
baz=333
737A Port Lavaca 96.05 41 P P 15 38 35.7 +2.2
baz=327
245A Little AP, Sta 96.15 34 P P 15 38 35.1 +1.3
baz=331
147A Livingston 96.23 33 P P 15 38 34.9 +0.7
baz=332,SNR=5.1
344A Westbrook Farm 96.31 35 P P 15 38 36.3 +1.7
baz=331
034A Hebbronville 96.37 43 P P 15 38 37.2 +2.2
baz=326
LRAL Lakeview Retre 96.41 31 eP P 15 38 35.5 +0.5
comp=Z,11nm,1.0s
246A Jackson Lee, B 96.47 34 P P 15 38 37.0 +1.7
baz=332
KMSC Kings Mountain 96.50 26 P P 15 38 35.9 +0.5
baz=337
KMSC Kings Mountain 96.50 26 eP P 15 38 35.2 -0.2
comp=Z,9.3nm,0.6s
247A Quitman 96.65 33 P P 15 38 37.5 +1.5
baz=332
542A Morse 96.67 37 P P 15 38 38.2 +2.0
baz=330
347A Saraland 97.25 33 P Pdif 15 38 40.5 +1.8
baz=332
GOGA Godfrey 97.36 29 eP P 15 38 40.0 +0.8
GOGA pmax pmax
comp=Z,15nm,1.1s
GOGA Godfrey 97.36 29 eP P 15 38 40.0 +0.8
comp=Z,15nm,1.1s
348A Jackson 97.49 33 P P 15 38 41.4 +1.5
baz=333
ZAIG Zacatecas 97.82 49 ePdif P 15 38 43.3 +1.4
comp=Z,11nm,1.0s
DBIC Dimbokro 116.24 310 PKP PKPdf 15 43 45.3 -0.8
comp=Z,2.4nm,0.4s,baz=35,slow=2.2,SNR=10
DBIC PP **PP 15 44 53.6 -7.5**
comp=Z,9.4nm,0.9s,baz=351,slow=6.8,SNR=3.6
DBIC SKP 15 46 27.7
comp=Z,2.7nm,0.4s,baz=62,slow=3.1,SNR=10
LBTB Lobatse 117.67 261 ePKIKP PKPdf 15 43 48.0 -0.6
LBTB Lobatse 117.67 261 ePKPdf PKPdf 15 43 48.0 -0.6
TSUM Tsumeb 119.91 271 PKKPab PKKPab 15 54 05.0 -1.5
comp=Z,2.3nm,1.0s,baz=30,slow=3.7,SNR=2.9
BOSA Boshof 120.05 258 PKP PKPdf 15 43 53.2 +0.1
comp=Z,1.9nm,0.6s,baz=66,slow=1.9,SNR=7.9
BOSA PP **PP 15 45 25.3 -2.8**
comp=Z,5.0nm,0.8s,baz=82,slow=2.5,SNR=4.9
BOSA PKKPab **PKKPab 15 54 04.7 -0.5**
comp=Z,3.7nm,0.8s,baz=208,slow=6.9,SNR=5.1
MAW Mawson 121.85 205 PKP PKPdf 15 43 57.0 +1.9
comp=Z,4.7nm,1.0s,baz=58,slow=6.0,SNR=6.1
MAW PP **PP 15 45 36.8 -2.4**
comp=Z,6.4nm,1.1s,baz=72,slow=10,SNR=3.5
MAW SKP 15 46 38.7
comp=Z,10.0nm,0.9s,baz=278,slow=5.4,SNR=7.0
MAW PKKPbc **PKKPab 15 53 55.0 +0.2**
comp=Z,1.6nm,0.4s,baz=32,slow=15,SNR=4.7
VNDA Vanda 122.06 172 PKP PKPdf 15 43 55.6 +0.2
comp=Z,3.8nm,0.7s,baz=303,slow=3.7,SNR=23
VNDA PP **PP 15 45 38.4 -2.1**
comp=Z,2.0nm,1.0s,baz=290,slow=5.9,SNR=2.7
VNDA SKP 15 46 38.1
comp=Z,3.9nm,1.0s,baz=297,slow=4.5,SNR=3.9
VNDA Vanda 122.06 172 ePKPdf PKPdf 15 43 55.2 -0.1
VNDA PP **PP 15 45 38.4 -2.1**
VNDA SKP 15 46 38.1
SBA Scott Base 122.86 172 ePKIKP PKPdf 15 43 57.7 +0.9
SBA Scott Base 122.86 172 ePKPdf PKPdf 15 43 57.7 +0.9
SDV Santo Domingo 124.41 26 PKP PKPdf 15 44 02.1 0.0
comp=Z,29nm,0.4s
SDV PP **PP 15 45 55.8 0.0**
comp=Z,5.9nm,0.4s,baz=324,slow=8.4,SNR=3.8
SDV SKP 15 46 43.8
comp=Z,8.7nm,0.4s,baz=317,slow=1.9,SNR=8.7
SDV Santo Domingo 124.41 26 ePKPdf PKPdf 15 44 01.5 -0.6
SDV PP **PP 15 45 55.8 0.0**
SDV SKP 15 46 43.8
ROSC El Rosal 126.84 32 PKP PKPdf 15 44 07.9 +0.9
comp=Z,6.8nm,0.4s,baz=335,slow=3.9,SNR=8.7
OTAV Otavalo 129.21 40 ePKPdf PKPdf 15 44 12.1 +0.6
SYO Syowa Base 130.13 208 ePP PP 15 46 38.0 +4.7
QSPA South Pole Qui 133.06 180 ePKPdf PKPdf 15 44 15.7 -0.9
ATAH Atahualpa 135.63 44 PKP PKPdf 15 44 23.6 +0.1
comp=Z,20nm,0.9s,baz=86,slow=0.7,SNR=10
ATAH SKPbc **SKPbc 15 47 03.1 +0.1**
comp=Z,31nm,1.1s,baz=342,slow=2.9,SNR=14
PTGA Pitinga 136.46 16 PKP PKPdf 15 44 24.8 +0.2
comp=Z,12nm,0.9s,baz=334,slow=2.4,SNR=13
PTGA SKPbc **SKPbc 15 47 04.7 -0.3**
comp=Z,42nm,0.7s,baz=11,slow=3.7,SNR=39
NNA Nana 140.53 46 PKP PKPdf 15 44 32.6 +0.6
comp=Z,15nm,0.6s,baz=308,slow=5.0,SNR=7.0
NNA SKPbc **SKPbc 15 47 15.8 -0.5**
comp=Z,11nm,0.5s,baz=305,slow=7.0,SNR=4.7
SAML Samuel 143.56 24 ePKPbc PKPab 15 44 35.8 -0.1
SNAA Sanae 143.97 203 PKP PKPbc 15 44 35.6 -0.2
SNAA Sanae 143.97 203 ePKIKP PKPbc 15 44 35.6 -0.2
SNAA Sanae 143.97 203 ePKPbc PKPbc 15 44 35.6 -0.2
VNA2 Neumayer--Watz 145.62 203 PKP PKPbc 15 44 40.5 -0.2
baz=89,slow=2.6
VNA1 Neumayer--Stat 146.01 203 PKP PKPbc 15 44 41.6 -0.1
VNA3 Neumayer Olymp 146.07 202 PKP PKPbc 15 44 41.4 -0.6
LPAZ La Paz 148.47 37 PKP PKPdf 15 44 47.1 +0.9
comp=Z,34nm,0.8s,baz=14,slow=9.1,SNR=44
LPAZ PKPbc **PKPbc 15 44 50.9 +0.4**
comp=Z,34nm,0.8s,baz=9.6,slow=5.7,SNR=52
LPAZ pPKPbc **pPKPbc 15 46 59.0 +0.4**
comp=Z,21nm,1.1s,baz=355,slow=6.8,SNR=5.1
LPAZ PP **PP 15 48 23.2 -1.8**
comp=Z,8.3nm,1.1s,baz=19,slow=10,SNR=2.6
LPAZ La Paz 148.47 37 ePKPdf PKPdf 15 44 45.7 -0.6
LPAZ ePKPbc **PKPbc 15 44 50.4 -0.1**
LPAZ ePKPab **PKPab 15 44 55.7 -0.4**
LPAZ pPKPbc **pPKPbc 15 46 59.0 +0.4**
LPAZ PP **PP 15 48 23.2 -1.8**
PB11 IPOC Station P 150.76 43 ePKPdf PKPdf 15 44 49.4 +0.2
PB11 ePKPbc **PKiKP 15 44 55.9 +0.1**
PB11 ePKPab **PKPab 15 45 05.2 +0.3**
SIV San Ignacio 150.85 25 PKP PKPdf 15 44 50.2 +0.9
comp=Z,6.8nm,1.0s,baz=55,slow=0.4,SNR=8.3
SIV PKPbc **PKPbc 15 44 55.5 0.0**
comp=Z,39nm,0.7s,baz=350,slow=1.0,SNR=48
SIV PKPab **PKPab 15 45 05.0 -0.2**
comp=Z,24nm,0.6s,baz=324,slow=4.2,SNR=17
SIV pPKPbc **pPKPbc 15 47 05.0 +1.0**
comp=Z,11nm,1.0s,baz=12,slow=6.3,SNR=5.0
SIV PP **PP 15 48 36.8 -0.8**
comp=Z,8.2nm,1.0s,baz=346,slow=4.7,SNR=4.3
PB01 IPOC Station P 151.92 44 ePKPdf PKPdf 15 44 51.4 +0.6
PB01 ePKPbc **PKiKP 15 44 58.2 +0.2**
PB01 ePKPab **PKPab 15 45 10.4 +0.6**
PB04 IPOC Station P 152.64 47 ePKPdf PKPdf 15 44 52.5 +0.6
PB04 ePKPbc **PKiKP 15 44 59.7 +0.1**
PB04 ePKPab **PKPab 15 45 13.8 +1.0**
PB10 IPOC Station P 153.37 49 ePKPbc PKPbc 15 45 01.2 +0.4
PB10 ePKPab **PKPab 15 45 16.8 +1.0**
LVC Limon Verde 153.51 45 PKP PKPdf 15 44 55.1 +1.7
comp=Z,38nm,0.9s,baz=294,slow=1.3,SNR=9.7
LVC PKPab **PKPab 15 45 17.9 +1.1**
comp=Z,146nm,0.8s,baz=304,slow=6.1,SNR=15
LVC pPKPbc **pPKPbc 15 47 11.0 +0.5**
comp=Z,35nm,0.9s,baz=59,slow=4.1,SNR=3.9
LVC Limon Verde 153.51 45 ePKPdf PKPdf 15 44 53.8 +0.3
LVC ePKPbc **PKiKP 15 45 02.4 +0.7**

LVC					*e*PKPab	**PKPab**	**15 45 17.7**	**+0.9**
LVC					pPKPbc	**pPKPbc**	**15 47 11.0**	**+0.5**
PMSA	**Palmer Station**	**156.86**	**163**	PP	PP		15 49 09.0	-1.8
	comp=Z,18nm,0.9s,baz=175,slow=10,SNR=2.3							
ROC1	**El Roble**	**159.83**	**67**	*e*PKPab	**PKPab**		**15 45 45.0**	**+1.0**
CPUP	**Villa Florida**	**161.71**	**25**	PKP	**PKPdf**		**15 45 03.1**	**+0.3**
	comp=Z,4.4nm,0.8s,baz=335,slow=1.4,SNR=9.4							
CPUP				PKPab	**PKPab**		**15 45 52.2**	**+0.4**
	comp=Z,21nm,0.9s,baz=348,slow=5.1,SNR=22							
CPUP				PP	**PP**		**15 49 35.8**	**-0.9**
	comp=Z,3.1nm,0.9s,baz=344,slow=5.0,SNR=4.8							
CPUP	**Villa Florida**	**161.71**	**25**	*e*PKPdf	**PKPdf**		**15 45 02.8**	**0.0**
CPUP				*e*PKPab	**PKPab**		**15 45 51.9**	**+0.1**
CPUP				PP	**PP**		**15 49 35.8**	**-0.9**
PLCA	**Paso Flores**	**163.72**	**88**	PKP	**PKPdf**		**15 45 08.0**	**+3.6**
	comp=Z,4.9nm,0.9s,baz=247,slow=6.4,SNR=5.0							
PLCA				PKPab	**PKPab**		**15 46 01.7**	**+1.0**
	comp=Z,20nm,0.9s,baz=287,slow=5.1,SNR=17							
PLCA				pPKPab	**pPKPab**		**15 48 04.9**	**+1.8**
	comp=Z,17nm,1.1s,baz=279,slow=7.1,SNR=9.0							
PLCA				PP	**PP**		**15 49 49.0**	**+0.4**
	comp=Z,7.9nm,1.2s,baz=328,slow=8.9,SNR=3.0							

IDC 10 15:26:33.4±6.3, 21°.56S×167°.86E, h0km, mb3.7/3, mb1 3.9/3, mb1mx3.6/49, mbtmp3.6/3, Error ellipse: s-maj=267.4km s-min=30.8km az=148.0, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**1.41**	**249**	Pn	Pn	15 26 59.0	-1.4
	2.9nm,0.3s,baz=99,slow=14,SNR=6.2						
DZM				Sn	Sn	15 27 26.5	+6.6
	4.4nm,0.3s,baz=113,slow=20,SNR=4.0						
WRA	**Warramunga Arr**	**31.36**	**267**	P	P	15 32 56.0	0.0
	1.1nm,1.0s,baz=90,slow=5.8,SNR=4.2						
ASAR	**Alice Springs**	**31.37**	**260**	P	P	15 32 57.5	+1.3
	0.4nm,0.8s,baz=87,slow=9.2,SNR=3.4						
ILAR	**Eielson Array**	**92.83**	**18**	P	P	15 39 47.0	-0.5
	0.8nm,0.8s,baz=240,slow=3.6,SNR=2.1						

*IDC **10** 15:26:39.9±1.2, 41°.86N×132°.21E, h0km, mb4.8/7, mb1 4.9/7, mb1mx4.2/72, mbtmp4.9/7, Error ellipse: s-maj=28.5km s-min=25.3km az=72.0*
*ISCJB **10** 15:26:42.5±1.1, 41°.8N±0°.2×132°.2E±0°.2, h33km, mb4.9/6, Error ellipse: s-maj=22.9km s-min=19.1km az=160.8*
ISC 10 15:26:45.1±1.2, 41°.9N±0°.2×132°.2E±0°.2, h35km, n13, σ0°70/13, mb4.9/6, Sea of Japan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PETK	**Petropavlovsk-**	**20.49**	**48**	P	**P**	**15 31 19.4**	**-0.4**
	30nm,0.9s,baz=232,slow=3.5,SNR=2.4						
SEY	**Seymchan**	**24.25**	**23**	P	**P**	**15 31 57.7**	**-0.8**
	34nm,0.9s,baz=216,slow=7.9,SNR=3.6						
BILL	**Bilibino**	**31.95**	**23**	*e*pP	**P**	**15 33 08.6**	**+1.4**
ZALV	**Zalesovo Beam**	**33.34**	**308**	P	**P**	**15 33 19.9**	**+0.4**
	9.7nm,0.7s,baz=98,slow=7.8,SNR=4.1						
MK01	**Makanchi Array**	**35.52**	**295**	*e*pP	**P**	**15 33 38.0**	**-0.6**
MK31	**Makanchi Array**	**35.53**	**295**	*e*PP	**P**	**15 33 39.1**	**+0.5**
MK31	**Makanchi Array**	**35.53**	**295**	*e*pP	**P**	**15 33 39.1**	**+0.5**
MKAR	**Makanchi Array**	**35.53**	**295**	P	**P**	**15 33 38.9**	**+0.3**
	20nm,0.9s,baz=92,slow=8.6,SNR=4.3						
MKAR	**Makanchi Array**	**35.53**	**295**	*e*pP	**P**	**15 33 39.1**	**+0.5**
MKAR	**Makanchi Array**	**35.53**	**295**	*e*PP	**P**	**15 33 39.1**	**+0.5**
NRIK	**Norilʼsk**	**35.88**	**335**	P	**P**	**15 33 40.6**	**-0.7**
	16nm,1.0s,baz=104,slow=15,SNR=3.2						
KURBB	**Kurchatov Arra**	**37.38**	**302**	P	**P**	**15 33 54.3**	**0.0**
	39nm,0.9s,baz=86,slow=9.5,SNR=4.6						
WRA	**Warramunga Arr**	**61.51**	**178**	P	**P**	**15 36 58.4**	**-0.1**
	3.1nm,0.7s,baz=353,slow=6.7,SNR=2.5						

*IDC **10** 15:30:45.2±0.8, 20°.18S×168°.14E, h0km, mb4.4/12, mb1 4.6/14, mb1mx4.3/50, mbtmp4.4/14, ML3.8/2, MS3.9/4, Ms1 3.9/4, ms1mx3.5/37, Error ellipse: s-maj=22.6km s-min=17.1km az=127.0*
*NEIC **10** 15:30:46.7±0.5, 20°.22S×168°.17E, h10km, mb4.7/2, Error ellipse: s-maj=12.9km s-min=9.8km az=141.0*
*ISCJB **10** 15:30:47.5±0.5, 20°.22S±0°.08×168°.11E±0°.10, h27km, mb4.5/14, MS4.0/3, Error ellipse: s-maj=14.9km s-min=8.2km az=35.8*
ISC 10 15:30:49.2±0.7, 20°.24S±0°.09×168°.1E±0°.1, h27km, n23, σ0°76/20, mb4.5/13, MS4.0/3, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.40**	**220**	Pn	**Pn**	**15 31 25.7**	**-1.1**
	16nm,0.3s,baz=62,slow=19,SNR=10						
DZM				Sn	**Sn**	**15 31 55.4**	**+0.1**
	67nm,0.3s,baz=310,slow=22,SNR=7.1						
DZM				LR	LR	15 32 15.8	
	comp=Z,1μm,21.3s,baz=14,slow=37						
URZ	**Urewera**	**19.57**	**158**	P	**Pn**	**15 35 16.4**	**-0.1**
	0.3nm,0.3s,baz=320,slow=8.4,SNR=6.1						
URZ	**Urewera**	**19.57**	**158**	*e*P	**P**	**15 35 15.4**	**+0.3**
CTA	**Charters Tower**	**20.52**	**267**	P	**P**	**15 35 26.3**	**+0.7**
	8.0nm,0.7s,baz=88,slow=12,SNR=8.9						
CTAO	**Charters Tower**	**20.52**	**267**	*e*P	Pn	15 35 27.9	0.0
	47nm,0.8s						
STKA	**Stephens Creek**	**26.42**	**239**	P	**P**	**15 36 25.4**	**+1.7**
	8.2nm,0.6s,baz=71,slow=10.0,SNR=28						
WRA	**Warramunga Arr**	**31.69**	**265**	P	**P**	**15 37 09.9**	**-0.9**
	2.5nm,1.0s,baz=97,slow=9.8,SNR=3.6						
ASAR	**Alice Springs**	**31.87**	**258**	P	**P**	**15 37 12.1**	**-0.3**
	11nm,0.7s,baz=85,slow=9.0,SNR=29						
PPT	**Papeete**	**40.04**	**93**	LR	LR	15 50 43.3	
	comp=Z,172nm,20.8s,baz=307,slow=30						
FITZ	**Fitzroy Crossi**	**40.10**	**266**	P	**P**	**15 38 23.0**	**+0.2**
	9.5nm,0.8s,baz=156,slow=7.7,SNR=4.0						
FITZ				LR	LR	15 54 01.4	
	comp=Z,231nm,19.9s,baz=150,slow=35						
CBIJ	**Chichi jima**	**53.35**	**331**	*e*P	**P**	**15 40 06.0**	**-0.3**
JCJ	**Chichijima**	**53.35**	**331**	LR	LR	16 00 04.6	
	comp=Z,173nm,21.9s,baz=102,slow=33						
VNDA	**Vanda**	**57.40**	**182**	P	**P**	**15 40 35.2**	**+0.4**
	1.5nm,0.8s,baz=359,slow=8.1,SNR=10						
MJAR	**Matsushiro Arr**	**63.15**	**333**	P	**P**	**15 41 14.4**	**-0.4**
	2.1nm,0.8s,baz=161,slow=9.3,SNR=4.9						
USRK	**Ussuriysk Ar.**	**72.15**	**334**	P	**P**	**15 42 11.6**	**+0.3**
	5.3nm,0.9s,baz=148,slow=6.6,SNR=7.9						
KLR	**Kulʼdur**	**76.35**	**336**	P	**P**	**15 42 36.8**	**+1.0**
	1.4nm,0.8s,baz=48,slow=3.4,SNR=3.3						
YBH	**Yreka Blue Hor**	**88.75**	**44**	P	**P**	**15 43 41.4**	**+0.8**
	3.6nm,0.8s,baz=160,slow=0.6,SNR=6.4						
HUMO	**Hull Mountain**	**89.01**	**44**	*e*P	**P**	**15 43 42.3**	**+0.6**
	22nm,0.8s						
NVAR	**Mina Array Bea**	**90.25**	**49**	P	**P**	**15 43 46.8**	**-1.1**
	3.3nm,0.8s,baz=229,slow=8.7,SNR=7.9						
ILAR	**Eielson Array**	**91.50**	**18**	P	**P**	**15 43 52.0**	**-0.8**
	0.9nm,0.8s,baz=224,slow=5.6,SNR=3.7						
HLID	**Hailey**	**95.06**	**45**	*e*P	**P**	**15 44 09.7**	**-0.2**
	1.8nm,0.9s						
PDAR	**Pinedale Array**	**98.07**	**47**	P	Pdif	15 44 27.6	+3.8
	0.3nm,0.6s,baz=122,slow=1.9,SNR=2.9						
GERES	**GERESS Array B**	**144.85**	**330**	PKP	**PKPdf**	**15 50 24.0**	**+0.2**
	1.2nm,0.7s,baz=41,slow=4.3,SNR=9.3						

*NNC **10** 15:31:54.3±1.6, 40°.62N×73°.51E, h0km, mb3.6, mpv3.2, Error ellipse: s-maj=33.0km s-min=6.0km az=79.0*
*KRNET **10** 15:31:55.5±0.1, 40°.51N×73°.16E, h16km, mb2.9*
ISC 10 15:31:55.5±1.1, 40°.5N±0°.02×73°.21E±0°.03, h8km±13km, n17, σ0°73/31, 15C-17D, Kyrgyzstan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OHH	**Osh**	**0.32**	**268**	⇓*iP*	**Pg**	**15 32 01.6**	**-0.2**
	baz=275						
OHH				⇓*iS*	**Sg**	**15 32 05.7**	**-0.4**
	baz=275						
SFK	**Sufi-Kurgan**	**0.57**	**156**	⇓*iP*	**Pg**	**15 32 06.3**	**-0.2**
	baz=152						
SFK				⇓*iS*	**Sg**	**15 32 14.4**	**+0.4**
	baz=152						
SFK	**Sufi-Kurgan**	**0.57**	**156**	⇑P	**Pg**	**15 32 06.6**	**0.0**
SFK				⇓S	**Sg**	**15 32 14.5**	**+0.4**
ARSB	**Arslanbob**	**0.80**	**348**	⇓*iP*	**Pg**	**15 32 11.3**	**+0.3**
	baz=350						
ARSB				⇓*iS*	**Sb**	**15 32 23.4**	**+0.4**
	baz=350						
TOKL	**Toktogul**	**1.43**	**350**	⇑*iP*	**Pg**	**15 32 23.4**	**+0.6**
	baz=351						
TOKL				⇑*iS*	**Sg**	**15 32 43.6**	**+2.3**
	baz=351						
ARK	**Arkit**	**1.57**	**324**	⇓*iP*	**Pb**	**15 32 24.8**	**-0.1**
	baz=325						
ARK				⇓*iS*	**Sg**	**15 32 45.9**	**-0.1**
	baz=325						
AML	**Almayashu**	**1.64**	**13**	⇑*iP*	**Pg**	**15 32 26.7**	**-0.2**
	baz=13						
AML				⇑*iS*	**Sg**	**15 32 49.1**	**+1.0**
	baz=13						
BTK	**Batken**	**1.89**	**256**	⇓*eP*	**Pn**	**15 32 28.6**	**+0.5**
	baz=257						
BTK				⇓*iS*	**Sb**	**15 32 53.2**	**-0.8**
	baz=257						
UCH	**Uchtor**	**1.96**	**30**	⇑*iP*	**Pb**	**15 32 31.8**	**+0.2**
	baz=30						
UCH				⇑*iS*	**Sg**	**15 32 58.3**	**0.0**
	baz=30						
MNAS	**Manas**	**2.02**	**345**	⇑*iP*	**Pb**	**15 32 32.3**	**-0.2**
	baz=346						
MNAS				⇑*iS*	**Sg**	**15 32 59.4**	**-1.0**
	baz=346						
MNAS	**Manas**	**2.02**	**345**	⇓Pg	**Pb**	**15 32 31.6**	**-0.9**
	11nm,0.4s						
MNAS				⇑Lg	Lg	15 32 59.2	
EKS2	**Erkin-Say**	**2.17**	**11**	⇑*iP*	**Pb**	**15 32 35.4**	**+0.4**
	baz=12						
EKS2				⇑*iS*	**Sg**	**15 33 04.6**	**-0.5**
	baz=12						
KZA	**Kyzart**	**2.18**	**44**	⇓*iP*	**Pg**	**15 32 36.4**	**-0.8**
	baz=44						
KZA				⇓*iS*	**Sg**	**15 33 06.2**	**+0.7**
	baz=44						
AAK	**Ala-Archa**	**2.31**	**24**	⇓*iP*	**Pb**	**15 32 37.2**	**-0.3**
	baz=25						
AAK				⇓*iS*	**Sg**	**15 33 08.6**	**-1.0**
	baz=25						
KSH	**Kashi**	**2.36**	**115**	Pg	**Pb**	**15 32 38.4**	**+0.1**
KSH				smax	smax		
	comp=N,37nm,0.8s						
KSH				smax	smax		
	comp=E,47nm,0.9s						
KBK	**Karagaybulak**	**2.49**	**31**	⇑*iP*	**Pg**	**15 32 42.0**	**-1.2**
	baz=31						
KBK				⇑*iS*	**Sg**	**15 33 15.4**	**0.0**
	baz=31						
KK31	**Karatay Array**	**3.26**	**323**	⇑Pg	**Pb**	**15 32 53.6**	**0.0**
	comp=E,1.4nm,0.2s,baz=133,slow=16,SNR=16						
KK31				⇓Lg	Lg	15 33 40.0	
	comp=E,7.0nm,0.2s,baz=137,slow=26,SNR=4.1						

*IDC **10** 15:31:55.5±1.8, 22°.81S×169°.48E, h0km, mb4.3/7, mb1 4.5/8, mb1mx4.1/50, mbtmp4.3/8, Error ellipse: s-maj=54.6km s-min=24.5km az=152.0*
*ISCJB **10** 15:31:59.7±1.1, 22°.7S±0°.2×169°.26E±0°.09, h33km, mb4.3/7, Error ellipse: s-maj=30.4km s-min=12.4km az=178.9*
ISC 10 15:32:01.7±1.3, 22°.7S±0°.3×169°.3E±0°.1, h35km, n8, σ1°35/9, mb4.4/7, Southeast of Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.69**	**282**	Pn	**Pn**	**15 32 44.0**	**+1.4**
	baz=104,slow=14,SNR=1.3						
DZM				Sn	**Sn**	**15 33 12.3**	**-1.7**
	27nm,0.3s,baz=106,slow=18,SNR=2.6						
STKA	**Stephens Creek**	**26.21**	**244**	P	**P**	**15 37 32.9**	**-0.4**
	3.6nm,0.6s,baz=349,slow=7.9,SNR=2.9						
ASAR	**Alice Springs**	**32.49**	**261**	P	**P**	**15 38 29.4**	**+0.1**
	5.1nm,0.8s,baz=86,slow=8.5,SNR=3.2						
WRA	**Warramunga Arr**	**32.62**	**268**	P	**P**	**15 38 30.3**	**-0.1**
	1.6nm,0.9s,baz=355,slow=6.6,SNR=2.1						
MJAR	**Matsushiro Arr**	**65.78**	**333**	P	**P**	**15 42 42.4**	**-0.8**
	2.6nm,0.8s,baz=161,slow=7.0,SNR=5.9						
USRK	**Ussuriysk Ar.**	**74.77**	**333**	P	**P**	**15 43 40.0**	**+2.0**
	4.2nm,0.7s,baz=115,slow=5.8,SNR=7.8						
NVAR	**Mina Array Bea**	**91.02**	**48**	P	**P**	**15 45 02.5**	**-0.2**
	2.1nm,0.7s,baz=231,slow=8.4,SNR=5.1						
ILAR	**Eielson Array**	**93.46**	**17**	P	**P**	**15 45 11.8**	**-1.2**
	0.5nm,0.8s,baz=245,slow=6.4,SNR=3.2						

IDC 10 15:32:14.2±2.9, 13°.54S×170°.94W, h0km, mb4.5/3, mb1 4.7/3, mb1mx3.8/57, mbtmp4.5/3, MS4.0/2, Ms1 4.0/2, ms1mx3.4/38, Error ellipse: s-maj=98.5km s-min=21.9km az=139.0, Samoa Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**0.90**	**245**	Pn	Pb	15 32 32.3	-0.4
	0.9nm,0.3s,baz=253,slow=4.8,SNR=3.0						
AFI				Sn	Sn	15 32 50.2	+2.2
	6.9nm,0.3s,baz=136,slow=16,SNR=12						
STKA	**Stephens Creek**	**47.03**	**239**	LR	LR	16 00 11.8	
	comp=Z,539nm,19.6s,baz=85,slow=36						
GUMO	**Guam**	**51.41**	**300**	LR	LR	16 01 41.5	
	comp=Z,52nm,18.5s,baz=72,slow=34						
WRA	**Warramunga Arr**	**52.61**	**255**	P	P	15 41 30.4	0.0
	0.6nm,0.5s,baz=89,slow=5.8,SNR=7.4						
ASAR	**Alice Springs**	**52.97**	**251**	P	P	15 41 34.3	+1.3
	16nm,0.5s,baz=84,slow=8.6,SNR=109						
PETK	**Petropavlovsk-**	**71.63**	**341**	P	P	15 43 37.2	-0.2
	2.3nm,0.7s,baz=114,slow=9.6,SNR=2.9						
GERES	**GERESS Array B**	**144.59**	**355**	PKP	PKPbc	15 51 51.6	0.0
	1.1nm,0.8s,baz=3.5,slow=3.2,SNR=3.0						

IDC 10 15:36:56.3±9.8, 19°.97S×171°.41E, h102km±61km, mb3.7/3, mb1 3.8/4, mb1mx3.4/43, mbtmp3.9/4, ML3.1/1, Error ellipse: s-maj=125.1km s-min=70.9km az=151.0, Vanuatu Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**5.09**	**245**	P	Pn	15 38 10.3	0.0
	0.6nm,0.3s,baz=118,slow=20,SNR=2.7						
DZM				S	Sn	15 39 08.3	+0.4
	10.0nm,0.3s,baz=200,slow=21,SNR=7.0						
STKA	**Stephens Creek**	**29.22**	**240**	P	P	15 42 48.9	+0.4
	2.9nm,0.9s,baz=90,slow=12,SNR=3.2						
WRA	**Warramunga Arr**	**34.80**	**264**	P	P	15 43 37.4	0.0
	2.6nm,0.9s,baz=96,slow=7.6,SNR=4.9						
ASAR	**Alice Springs**	**34.95**	**257**	P	P	15 43 38.4	-0.4
	1.5nm,0.4s,baz=89,slow=8.8,SNR=13						

IDC 10 15:38:25.8±426.0, 47°.39N×47°.49E, h0km, Error ellipse: s-maj=173.2km s-min=144.1km az=12.0, Ukraine-Moldova-Southwestern Russia region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I31KZ	**AKTYUBINSK INF**	**7.58**	**63**	*i*		16 27 35.0	
	baz=250,slow=320,SNR=9.7						
I43RU	**DUBNA INFRASONI**	**1.27**	**330**	*i*		16 47 50.0	
	baz=140,slow=314,SNR=2.1						
I26DE	**FREYUNG INFRAS**	**22.49**	**286**	*i*		17 55 50.0	
	baz=80,slow=322,SNR=0.7						

IDC 10 15:48:07.6±10.0, 20°.45S×167°.71E, h0km, mb3.6/3, mb1 3.8/3, mb1mx3.5/34, mbtmp3.6/3, Error ellipse: s-maj=177.3km s-min=40.9km az=97.0, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.00**	**216**	Pn	Pn	15 48 41.7	-1.1
	6.0nm,0.3s,baz=109,slow=13,SNR=12						
DZM				Sn	Sb	15 49 10.1	-0.5
	12nm,0.3s,baz=137,slow=23,SNR=8.1						
STKA	**Stephens Creek**	**25.99**	**239**	P	P	15 53 43.0	+0.8
	1.2nm,0.8s,baz=56,slow=17,SNR=2.9						
WRA	**Warramunga Arr**	**31.29**	**265**	P	P	15 54 30.5	+0.8
	0.2nm,0.8s,baz=93,slow=8.6,SNR=2.9						
ASAR	**Alice Springs**	**31.45**	**258**	P	P	15 54 30.2	-0.8
	1.1nm,0.6s,baz=83,slow=9.2,SNR=20						

NNC 10 15:49:26.6±2.5, 37°.18N×71°.24E, h0km, mb3.6, mpv3.2, 4C-4D, Error ellipse: s-maj=21.5km s-min=8.2km az=170.0, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**2.50**	**311**	⇓Pn	Pn	15 50 08.2	-0.4
	10nm,0.3s						
DZET				⇓Sn	Sn	15 50 41.4	+1.5
	26nm,0.5s						
SFK	**Sufi-Kurgan**	**3.34**	**31**	⇑Pn	Pn	15 50 20.4	+0.2
	7.2nm,0.4s						
SFK				⇓Sn	Sn	15 51 02.8	+2.1
	3.0nm,0.2s						
MNAS	**Manas**	**5.39**	**10**	⇓Pn	Pn	15 50 47.8	-0.5
	1.1nm,0.7s						
MNAS				⇑Sn	Sn	15 51 51.3	+0.3
	1.7nm,0.4s						
KK31	**Karatay Array**	**5.94**	**355**	⇑Pn	Pn	15 50 54.7	-1.1
	0.2nm,0.2s,baz=179,slow=12,SNR=2.6						
KK31				⇑Sn	Sn	15 52 03.9	-0.6
	1.0nm,0.4s,baz=175,slow=21,SNR=5.0						

*IDC **10** 15:56:28.8±2.8, 35°.85N×141°.13E, h0km, mb3.3/3, mb1 3.5/5, mb1mx3.3/40, mbtmp3.3/5, ML2.9/1, Error ellipse: s-maj=71.0km s-min=25.0km az=60.0*
*ISCJB **10** 15:56:34.7±1.0, 35°.75N±0°.06×140°.8E±0°.1, h52km±7km, mb3.3/3, Error ellipse: s-maj=16.8km s-min=7.4km az=156.5*
*JMA **10** 15:56:35.9±0.1, 35°.74N×140°.64E, h45km±1km, M2.5*
ISC 10 15:56:36.2±1.2, 35°.74N±0°.05×140°.71E±0°.09, h45km±11km, n21, σ0°93/18, mb3.5/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.13**	**107**	P	**Pn**	**15 56 43.5**	**0.0**
JCN	**Nagara**	**0.53**	**232**	P	**Pn**	**15 56 47.4**	**0.0**
JYT	**Yasato**	**0.64**	**319**	P	**Pn**	**15 56 48.2**	**-0.8**
JYT				*e*S	**Sn**	**15 56 57.0**	**-1.1**
BSO4	**Boso 4**	**0.81**	**202**	P	**Pn**	**15 56 50.6**	**-0.5**
BSO3	**Boso 3**	**0.95**	**190**	P	**Pn**	**15 56 52.6**	**-0.3**
JAG	**Ashikaga**	**1.23**	**304**	P	**Pn**	**15 56 56.2**	**-0.7**
JOD2	**Odawara 2**	**1.41**	**251**	P	**Pn**	**15 56 58.6**	**-0.8**
JIM2	**Oshima 3**	**1.46**	**226**	P	**Pn**	**15 56 58.5**	**-1.7**
JRY	**Ryogami san**	**1.49**	**281**	P	**Pn**	**15 57 00.2**	**-0.4**
MJAR	**Matsushiro Arr**	**2.18**	**292**	Pn	**Pn**	**15 57 10.2**	**+0.3**
	2.9nm,0.3s,baz=93,slow=14,SNR=27						
MAT	**Matsushiro**	**2.18**	**292**	P	**Pn**	**15 57 11.2**	**+1.2**
MAT				*e*S	**Sn**	**15 57 37.4**	**+1.6**
JHJ	**Hachijo jima 2**	**2.73**	**197**	Pn	**Pn**	**15 57 17.3**	**-0.1**
JHJ				Sn	**Sn**	**15 57 50.3**	**+1.1**
	22nm,0.3s,baz=68,slow=22,SNR=3.6						
H11N2	**WAKE ISLAND Hy**	**28.01**	**118**	T	T	16 31 29.2	
	baz=312						
H11N1	**WAKE ISLAND Hy**	**28.02**	**118**	T	T	16 31 36.2	
	baz=312						
H11N3	**WAKE ISLAND Hy**	**28.03**	**118**	T	T	16 31 32.5	
	baz=312						
H11S1	**WAKE ISLAND Hy**	**28.67**	**120**	T	T	16 32 23.9	
	baz=312,slow=74,SNR=5.1						
H11S3	**WAKE ISLAND Hy**	**28.67**	**120**	T	T	16 32 22.4	
	baz=312						
H11S2	**WAKE ISLAND Hy**	**28.69**	**120**	T	T	16 32 22.9	
	baz=312,slow=74,SNR=3.6						
MKAR	**Makanchi Array**	**44.34**	**303**	P	**P**	**16 04 42.1**	**+0.3**
	0.3nm,0.7s,baz=89,slow=10,SNR=3.0						
WRA	**Warramunga Arr**	**55.71**	**187**	P	**P**	**16 06 07.7**	**-0.5**
	0.3nm,0.6s,baz=0.4,slow=7.5,SNR=3.1						
ASAR	**Alice Springs**	**59.43**	**187**	P	**P**	**16 06 34.4**	**0.0**
	0.4nm,0.9s,baz=11,slow=9.4,SNR=3.6						

IDC 10 15:57:08.4±5.1, 20°.18S×167°.42E, h0km, mb3.8/4, mb1 4.0/5, mb1mx3.7/35, mbtmp3.8/5, ML3.3/1, MS3.8/1, Ms1 3.8/1, ms1mx3.1/25, Error ellipse: s-maj=102.4km s-min=30.2km az=97.0, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.09**	**206**	Pn	Pn	15 57 44.9	+0.1
	9.8nm,0.3s,baz=120,slow=12,SNR=7.8						
DZM				Sn	Sn	15 58 12.5	+1.0
	28nm,0.3s,baz=66,slow=13,SNR=7.7						
RAO	**Raoul Island**	**16.08**	**127**	LR	LR	16 05 54.5	
	comp=Z,333nm,18.4s,baz=56,slow=33						
CTA	**Charters Tower**	**19.88**	**267**	P	Pn	16 01 47.2	+4.2
	0.2nm,0.3s,baz=63,slow=6.4,SNR=3.6						
STKA	**Stephens Creek**	**25.90**	**238**	P	P	16 02 42.0	-0.2
	2.1nm,0.8s,baz=69,slow=12,SNR=3.9						
WRA	**Warramunga Arr**	**31.05**	**265**	P	P	16 03 27.9	-0.4
	0.4nm,0.5s,baz=95,slow=8.4,SNR=11						
ASAR	**Alice Springs**	**31.25**	**257**	P	P	16 03 30.4	+0.3
	1.6nm,0.7s,baz=87,slow=9.1,SNR=23						
CMAR	**Chiang Mai Arr**	**77.34**	**295**	P	P	16 09 05.6	+0.1
	0.5nm,0.6s,baz=107,slow=0.9,SNR=3.2						

KRSC 10 15:57:09.7±0.4, 59°.83N×163°.74E, h24km±11km, ML3.9, Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OSSR	**Ossora**	**0.68**	**211**	*e*P	Pb	15 57 22.7	-0.1
OSSR				*e*S	Sb	15 57 31.5	-0.3
TILK	**Tilichiki**	**1.35**	**62**	*e*P	Pb	15 57 35.0	+0.7
TILK				*e*S	Sb	15 57 51.3	+0.2
PALN	**Palana**	**2.07**	**251**	*e*P	Pb	15 57 45.4	-1.1
PALN				*e*S	Sb	15 58 10.4	-1.3
KMSK	**Kamenskaya**	**2.90**	**23**	*e*P	Pn	15 57 57.0	+2.7

*FUNV **10** 15:59:23.6, 9°.39N×73°.30W, h22km, MW2.9*
*RSNC **10** 15:59:24.1±0.5, 9°.24N×73°.19W, h0km±5km, ML3.0*
ISC 10 15:59:22.1±1.7, 9°.31N±0°.04×73°.2W±0°.1, h9km±14km, n11, σ1°59/17, Northern Colombia

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

1.5nm,0.5s,baz=92,slow=8.0,SNR=19
MKAR PcP **PcP** **16 09 30.9 +0.6**
0.3nm,0.4s,baz=80,slow=3.3,SNR=5.2
KURBB Kurchatov Arra 59.96 318 P **P** **16 09 01.3 +0.4**
2.9nm,0.7s,baz=97,slow=7.2,SNR=38
ILAR Eielson Array 63.29 27 P **P** **16 09 21.8 -0.8**
0.3nm,0.6s,baz=253,slow=5.5,SNR=4.8
BVAR Borovoye Array 65.12 320 P **P** **16 09 35.1 +0.6**
3.5nm,0.4s,baz=96,slow=7.2,SNR=32
YKA Yellowknife Ar 77.67 28 P **P** **16 10 48.6 +0.6**
0.5nm,0.4s,baz=287,slow=5.4,SNR=7.3
ARCES ARCESS Array B 81.31 342 P **P** **16 11 07.8 +0.5**
5.1nm,0.9s,baz=45,slow=7.0,SNR=4.0
FINES FINESS Array B 85.63 335 P **P** **16 11 27.6 -1.3**
0.7nm,0.3s,baz=86,slow=4.3,SNR=9.4

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*ISCJB **10** 16:00:50.8±0.9, 38°.09N±0°.05×141°.75E±0°.10, h59km±9km, mb3.5/3, Error ellipse: s-maj=13.8km s-min=6.1km az=22.2*
*JMA **10** 16:00:51.4, 38°.11N×141°.72E, h56km±1km, M3.2*
*IDC **10** 16:00:56.1±2.9, 36°.41N×141°.68E, h0km, mb3.3/3, mb1 3.3/4, mb1mx3.1/39, mbtmp3.1/4, ML2.6/1, Error ellipse: s-maj=79.4km s-min=29.6km az=54.0*
ISC 10 16:00:51.4±1.5, 38°.09N±0°.05×141°.8E±0°.1, h46km±16km, n16, σ0s57/24, mb3.4/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.49**	**317**	P		**Pn**	**16 01 02.6**	**+0.2**
JIO				S		**Sn**	**16 01 10.4**	**+0.2**
JMM	**Marumori**	**0.81**	**254**	P		**Pn**	**16 01 06.1**	**-0.4**
JMM				S		**Sn**	**16 01 17.0**	**-0.4**
JOU	**Okura**	**0.92**	**288**	P		**Pn**	**16 01 07.8**	**-0.2**
JOU				S		**Sn**	**16 01 19.8**	**-0.3**
JMK	**Ichinoseki**	**0.96**	**333**	P		**Pn**	**16 01 08.7**	**+0.1**
JMK				S		**Sn**	**16 01 20.9**	**-0.2**
OFUJ	**Ofunato**	**0.99**	**355**	P		**Pn**	**16 01 08.9**	**0.0**
JFK	**Kawauchi**	**1.02**	**225**	P		**Pn**	**16 01 09.3**	**-0.1**
JFK				S		**Sn**	**16 01 22.5**	**0.0**
JFT	**Otama**	**1.28**	**244**	P		**Pn**	**16 01 13.2**	**+0.3**
JFT				*e*S		**Sn**	**16 01 28.4**	**-0.4**
JYS	**Shiratake**	**1.35**	**276**	P		**Pn**	**16 01 13.9**	**0.0**
JYS				S		**Sn**	**16 01 30.8**	**+0.1**
JYK	**Kaneyama**	**1.38**	**307**	P		**Pn**	**16 01 14.3**	**0.0**
JYK				S		**Sn**	**16 01 31.6**	**+0.2**
JOM	**Ohasama**	**1.43**	**345**	P		**Pn**	**16 01 15.2**	**+0.3**
JOM				S		**Sn**	**16 01 32.9**	**+0.4**
MIYJ	**Miyakonagasawa**	**1.48**	**1**	P		**Pn**	**16 01 15.9**	**+0.2**
JRG	**Rokugo**	**1.58**	**326**	P		**Pn**	**16 01 17.5**	**+0.5**
MJAR	**Matsushiro Arr**	**3.24**	**243**	Pn		**Pn**	**16 01 41.8**	**+2.1**
	0.9nm,0.3s,baz=66,slow=12,SNR=8.3							
KURBB	**Kurchatov Arra**	**45.59**	**307**	P		P	16 09 25.2	+19
	0.5nm,0.5s,baz=81,slow=8.0,SNR=4.2							
WRA	**Warramunga Arr**	**58.15**	**188**	P		**P**	**16 10 39.7**	**-0.8**
	0.2nm,0.6s,baz=6.9,slow=7.6,SNR=3.1							
ASAR	**Alice Springs**	**61.88**	**188**	P		**P**	**16 11 05.9**	**-0.1**
	0.3nm,1.0s,baz=2.3,slow=5.7,SNR=3.1							

NNC 10 16:03:51.5±4.6, 36°.97N×71°.03E, h0km, mb3.6, mpv3.3, 5C-2D, Error ellipse: s-maj=37.9km s-min=15.9km az=173.0, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**2.53**	**317**	⇑Pn		Pn	16 04 33.5	-0.5
	6.5nm,0.4s							
DZET				⇓Sn		Sn	16 05 07.4	+1.8
	19nm,0.4s							
SFK	**Sufi-Kurgan**	**3.60**	**32**	⇑Pn		Pn	16 04 49.2	+0.4
	2.1nm,0.3s							
SFK				⇑Sn		Sn	16 05 35.1	+2.8
	4.5nm,0.2s							
MNAS	**Manas**	**5.63**	**11**	⇓Pn		Pn	16 05 15.2	-1.4
	1.6nm,0.5s							
MNAS				⇑Sn		Sn	16 06 21.0	-1.0
	1.6nm,0.4s							
KK31	**Karatay Array**	**6.14**	**356**	Pn		Pn	16 05 22.2	-1.3
	1.1nm,0.3s,baz=183,slow=14,SNR=16							
KK31				⇑Sn		Sn	16 06 33.4	-1.0
	0.3nm,0.3s							

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*NIED **10** 16:12:00, 36°.70N×142°.10E, h20km, Mw4.4 Best double couple: M0:5.17000×10^15 NP1:φ=207.00000°, δ=11.00000°, λ=96.00000°. NP2:φ=21.00000°, δ=79.00000°, λ=89.00000°.*
*ISCJB **10** 16:12:34.8±1.2, 36°.66N±0°.03×142°.10E±0°.05, h30km±8km, mb4.5/69, MS4.0/8, Error ellipse: s-maj=6.6km s-min=5.1km az=33.0*
*JMA **10** 16:12:34.7±0.3, 36°.66N×142°.08E, h31km±5km, M4.3*
*NEIC **10** 16:12:37.9±0.4, 36°.72N×142°.02E, h35km, mb4.7/19, Error ellipse: s-maj=8.8km s-min=5.8km az=131.0*
*IDC **10** 16:12:37.8±0.5, 36°.62N×142°.01E, h36km±4km, mb4.0/25, mb1 4.1/31, mb1mx4.0/52, mbtmp4.2/31, ML4.0/5, MS3.8/7, Ms1 3.8/7, ms1mx3.4/51, Error ellipse: s-maj=13.5km s-min=10.6km az=107.0*
*MOS **10** 16:12:38.4±1.0, 37°.11N×141°.94E, h37km, mb4.8/34, Error ellipse: s-maj=8.1km s-min=5.3km az=116.4*
ISC 10 16:12:36.3±0.4, 36°.69N±0°.04×142°.06E±0°.05, h26km±1km, h26km:pP-P, n184, σ1s20/207, mb4.6/69, MS4.0/8, 22C-10D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**1.09**	**293**	P		**Pn**	**16 12 54.2**	**-1.8**
JFK	**Kawauchi**	**1.16**	**306**	P		**Pn**	**16 12 55.5**	**-1.5**
JHO	**Hitachi**	**1.20**	**267**	P		**Pn**	**16 12 55.6**	**-1.8**
JHO				*e*S		**Sn**	**16 13 11.6**	**-1.2**
JMM	**Marumori**	**1.55**	**320**	P		**Pn**	**16 13 01.2**	**-1.0**
JFT	**Otama**	**1.60**	**302**	P		**Pn**	**16 13 02.7**	**-0.3**
JFT				*e*S		**Sb**	**16 13 24.1**	**-1.0**
JIO	**Ouri**	**1.85**	**343**	P		**Pn**	**16 13 05.9**	**-0.5**
JIO				S		**Sn**	**16 13 28.9**	**0.0**
JOU	**Okura**	**2.01**	**327**	P		**Pn**	**16 13 09.0**	**+0.4**
JOU				*e*S		**Sn**	**16 13 34.1**	**+1.3**
JFY	**Yanaizu**	**2.01**	**292**	P		**Pn**	**16 13 09.0**	**+0.4**
MJAR	**Matsushiro Arr**	**3.10**	**268**	Pn		**Pn**	**16 13 24.1**	**+0.5**
	46nm,0.3s,baz=93,slow=9.7,SNR=675							
MJAR				Sn		**Sn**	**16 13 58.1**	**-1.7**
	18nm,0.3s,baz=80,slow=14,SNR=5.0							
MJAR				LR		LR	16 14 50.0	
	comp=Z,2μm,18.2s,baz=115,slow=44							
MAJO	**Matsushiro**	**3.10**	**268**	*c i*P		**Pn**	**16 13 24.6**	**+1.0**
MAJO	**Matsushiro**	**3.10**	**268**	*e*Pn		**Pn**	**16 13 24.5**	**+0.9**
MJB9	**Matsu-Tunnel**	**3.10**	**268**	*e*Pn		**Pn**	**16 13 24.6**	**+1.0**
JHJ2	**Mitsune**	**4.01**	**208**	*e*Pn		**Pn**	**16 13 35.8**	**-0.4**
JHJ	**Hachijo jima 2**	**4.02**	**208**	Pn		**Pn**	**16 13 35.4**	**-0.9**
	43nm,0.3s,baz=44,slow=4.5,SNR=13							
JHJ				Sn		**Sn**	**16 14 19.4**	**-3.2**
	65nm,0.3s,baz=71,slow=22,SNR=12							
INU	**Inuyama**	**4.30**	**253**	*e*Pn		**Pn**	**16 13 40.8**	**+0.8**
ERM	**Erimo**	**5.39**	**9**	⇓*e*P		**Pn**	**16 13 52.1**	**-2.9**
ERM	**Erimo**	**5.39**	**9**	*e*Pn		**Pn**	**16 13 53.6**	**-1.4**
ASAJ	**Asahikawa**	**7.43**	**3**	Pn		**Pn**	**16 14 23.4**	**+0.4**
	2.5nm,0.3s,baz=226,slow=8.9,SNR=10							
ASAJ				Sn		**Sn**	**16 15 45.4**	**-1.0**
	2.6nm,0.3s,baz=226,slow=32,SNR=3.3							
ASAJ	**Asahikawa**	**7.43**	**3**	*e*Pn		**Pn**	**16 14 22.1**	**-1.0**
ASAJ				Sn		**Sn**	**16 15 45.4**	**-1.0**
YUK	**Yuzh-Kuril'sk**	**7.89**	**20**	*e*P		**Pn**	**16 14 26.9**	**-2.4**
YUK				*e*S		Sn	16 15 50.0	-7.7
YUK				pmax		pmax		
	comp=Z,47nm,0.7s							
YUK				pmax		pmax		
	comp=N,30nm,0.4s							
YUK				pmax		pmax		
	comp=E,19nm,0.4s							
SHO	**Shikotan**	**8.05**	**25**	*e*P		**Pn**	**16 14 29.0**	**-2.5**
SHO				*e*S		Sn	16 15 53.8	-7.8
SHO				pmax		pmax		
	comp=Z,48nm,0.9s							
KUR	**Kuril'sk**	**9.60**	**25**	*e*P		**Pn**	**16 14 51.0**	**-1.7**
KUR				*e*S		Sn	16 16 32.8	-6.9
KUR				pmax		pmax		
	comp=Z,23nm,0.7s							
JNU	**Nakatsue**	**9.84**	**252**	Pn		**Pn**	**16 14 57.0**	**+0.8**
	comp=Z,0.9nm,0.3s,baz=52,slow=15,SNR=2.3							
JNU				LR		LR	16 19 37.6	
	comp=Z,402nm,18.0s,baz=304,slow=43							
JNU	**Nakatsue**	**9.84**	**252**	*e*Pn		**Pn**	**16 14 55.0**	**-1.2**
YSS	**Yuzh-Sakhalins**	**10.27**	**3**	*e*P		**Pn**	**16 15 00.3**	**-1.6**
YSS				pmax		pmax		
	comp=Z,20nm,1.0s							
USRK	**Ussuriysk Ar.**	**10.72**	**317**	Pn		**Pn**	**16 15 11.1**	**+3.0**
	comp=Z,0.6nm,0.3s,baz=125,slow=12,SNR=18							
USRK				LR		LR	16 19 08.0	
	comp=Z,779nm,18.3s,baz=105,slow=36							
KSRS	**Korea Array**	**11.32**	**278**	Pn		Pn	16 15 19.9	+3.6
	comp=Z,0.3nm,0.3s,baz=91,slow=14,SNR=23							
KSRS				LR		LR	16 19 39.4	
	comp=Z,617nm,18.1s,baz=88,slow=37							
KSRS	**Korea Array**	**11.32**	**278**	P		Pn	16 15 20.0	+3.7
KSRS				MLR		MLR		
	comp=Z,617nm,18.1s							
KS01	**Wonju Array Si**	**11.34**	**278**	*e*Pn		**Pn**	**16 15 14.4**	**-2.2**
KSAR	**Wonju Array Be**	**11.35**	**278**	P		Pn	16 15 20.0	+3.2
KSAR	**Wonju Array Be**	**11.35**	**278**	Pn		Pn	16 15 19.9	+3.2
TJN	**Taejon**	**11.82**	**273**	⇓*e*P		**Pn**	**16 15 25.2**	**+1.9**
MDJ	**Mudanjiang**	**12.33**	**314**	P		Pn	16 15 35.8	+5.7
MDJ				pmax		pmax		
	comp=Z,13nm,1.1s							
MDJ				pmax		pmax		
	comp=Z,250nm,9.5s							
HABR	**Khabarovsk**	**12.85**	**339**	*e*P		Pn	16 15 30.6	-6.6
HABR				*e*S		Sn	16 17 45.1	-14
HABR				pmax		pmax		
	comp=Z,59nm,2.0s							
HABR				pmax		pmax		
	comp=E,19nm,2.0s							
HABR				pmax		pmax		
	comp=N,21nm,2.0s							
HABR				MLR		MLR		
	comp=Z,487nm,15.0s							
KLR	**Kul'dur**	**14.61**	**332**	Pn		**Pn**	**16 16 02.3**	**+1.1**
	comp=Z,0.1nm,0.3s,baz=157,slow=17,SNR=3.7							
KLR				pP		P	16 16 11.0	+3.6
	comp=Z,0.3nm,0.3s,baz=135,slow=14,SNR=10							
KLR				LR		LR	16 21 32.7	
	comp=Z,438nm,18.0s,baz=96,slow=36							
JOW	**Kunigami**	**15.28**	**234**	*e*Pn		**P**	**16 16 13.6**	**-1.4**
	comp=Z,105nm,1.6s							
SKR	**Severo-Kuril'**	**17.25**	**31**	*e*P		**P**	**16 16 36.7**	**+0.1**
NJ2	**Nanjing**	**19.69**	**263**	*e*P		**P**	**16 17 03.5**	**0.0**
NJ2				pmax		pmax		
	comp=Z,23nm,0.5s							
TIA	**Tai'an**	**20.05**	**276**	⇑P		**P**	**16 17 06.0**	**-1.5**
TIA				pmax		pmax		
	comp=Z,10.0nm,1.1s							
BJI	**Beijing**	**20.54**	**287**	P		**P**	**16 17 11.1**	**-1.7**
BJI				pmax		pmax		
	comp=Z,8.0nm,0.7s							
BJI				LR		LR		
	comp=N,330nm,14.6s							
BJI				LR		LR		
	comp=E,290nm,16.9s							
BJI				LR		LR		
	comp=Z,330nm,25.1s							
GUMO	**Guam**	**23.14**	**173**	LR		LR	16 25 32.0	
	comp=Z,48nm,21.7s,baz=50,slow=34							
WHN	**Wuhan**	**23.82**	**263**	⇑P		**P**	**16 17 47.2**	**-0.1**
CIT	**Chita**	**25.28**	**316**	*e*P		**P**	**16 18 01.1**	**+0.6**
CIT				*e*			16 18 08.3	
CIT				*e*			16 18 13.4	
CIT				*e*			16 18 40.6	
CIT				pmax		pmax		
	comp=Z,52nm,1.3s							
YAK	**Yakutsk**	**26.52**	**347**	P		**P**	**16 18 11.6**	**+0.2**
	comp=Z,35nm,0.8s,baz=347,slow=1.8,SNR=32							
YAK	**Yakutsk**	**26.52**	**347**	*e*P		**P**	**16 18 11.2**	**-0.3**
YAK				*e*			16 18 47.0	
YAK				*e*			16 21 40.3	
YAK				*i* S		**S**	**16 22 38.9**	**-5.0**
YAK				pmax		pmax		
	comp=Z,43nm,1.0s							
YAK				pmax		pmax		
	comp=N,15nm,1.1s							
YAK				pmax		pmax		
	comp=E,5.0nm,1.1s							
YAK				pmax		pmax		
	comp=Z,77nm,4.2s							
YAK				pmax		pmax		
	comp=E,74nm,4.0s							
YAK				pmax		pmax		
	comp=N,64nm,3.8s							
YAK				smax		smax		
	comp=N,103nm,3.3s							
YAK				smax		smax		
	comp=E,79nm,3.2s							
YAK				MLR		MLR		
	comp=Z,176nm,14.0s							
YAK				MLR		MLR		
	comp=N,173nm,16.0s							
YAK	**Yakutsk**	**26.52**	**347**	*e*P		**P**	**16 18 10.6**	**-0.8**
	comp=N,41nm,0.9s							
SEY	**Seymchan**	**27.03**	**10**	P		**P**	**16 18 18.2**	**+2.1**
	comp=N,3.9nm,0.7s,baz=193,slow=7.5,SNR=8.3							
SEY	**Seymchan**	**27.03**	**10**	⇓*e*P		**P**	**16 18 17.4**	**+1.3**
XAN	**Xi'an**	**27.08**	**274**	P		**P**	**16 18 16.6**	**-0.3**
XAN				pP		pP	16 18 23.8	-0.7
XAN				pmax		pmax		
	comp=Z,7.0nm,0.7s							
H11N2	**WAKE ISLAND Hy**	**27.53**	**121**	T		T	16 47 37.1	
	SNR=35							
ENH	**Enshi**	**27.82**	**266**	*e*P		**P**	**16 18 22.3**	**-1.2**
	comp=Z,27nm,0.7s							
ULN	**Ulaanbaatar**	**27.97**	**305**	*c i*P		**P**	**16 18 25.0**	**+0.1**
ULN				pmax		pmax		
	comp=Z,18nm,1.2s							
ULN	**Ulaanbaatar**	**27.97**	**305**	*e*P		**P**	**16 18 24.4**	**-0.5**
	comp=Z,11nm,0.9s							
BOD	**Bodaibo**	**28.09**	**328**	*e*P		**P**	**16 18 24.7**	**-1.0**
BOD				pmax		pmax		
	comp=Z,7.0nm,1.2s							
H11S1	**WAKE ISLAND Hy**	**28.24**	**123**	T		T	16 48 45.0	
	baz=315,slow=75,SNR=34							
H11S3	**WAKE ISLAND Hy**	**28.24**	**123**	T		T	16 48 44.7	
	baz=315,slow=75,SNR=23							
H11S2	**WAKE ISLAND Hy**	**28.26**	**123**	T		T	16 48 35.6	
	baz=315,slow=75,SNR=22							
SONM	**Songino Array**	**28.40**	**304**	P		**P**	**16 18 30.2**	**+1.4**
	comp=Z,10nm,0.6s,baz=74,slow=11,SNR=3.8							
LZH	**Lanzhou**	**30.63**	**280**	*e*P		**P**	**16 18 49.2**	**+0.6**
LZH				pP		pP	16 18 55.1	-1.2
LZH				sP		sP	16 18 58.9	-0.6
LZH				PcP		**PcP**	**16 21 50.0**	**+3.5**
LZH				*e*S		**S**	**16 23 47.2**	**-2.3**
LZH				sS		sS	16 23 56.0	-6.1
LZH				SS		**ScP**	**16 25 26.2**	**-1.1**
LZH				pmax		pmax		
	comp=Z,18nm,1.0s							
LZH				pmax		pmax		
	comp=Z,180nm,5.1s							
LZH				LR		LR		
	comp=N,1μm,12.0s							
LZH				LR		LR		
	comp=E,1μm,14.3s							
LZH				LR		LR		
	comp=Z,1μm,15.3s							
ZAK	**Zakamensk**	**30.89**	**309**	*e*P		**P**	**16 18 50.4**	**-0.2**
ZAK				pmax		pmax		
	comp=Z,6.0nm,1.2s							
TLY	**Talaya**	**30.94**	**311**	P		**P**	**16 18 51.6**	**+0.6**
	comp=Z,2.2nm,0.6s,baz=166,slow=4.3,SNR=6.5							
TLY	**Talaya**	**30.94**	**311**	*e*P		**P**	**16 18 51.2**	**+0.2**
TLY				pmax		pmax		
	comp=Z,9.0nm,1.4s							
TLY				MLR		MLR		
	comp=Z,295nm,15.0s							
TLY	**Talaya**	**30.94**	**311**	*e*P		**P**	**16 18 51.0**	**0.0**
	comp=Z,5.8nm,1.0s							
GYA	**Guiyang**	**31.67**	**261**	⇑*i*P		**P**	**16 18 56.7**	**-1.1**
GYA				pmax		pmax		
	comp=Z,20nm,0.9s							
CD2	**Chengdu**	**32.19**	**271**	P		**P**	**16 19 01.3**	**-1.0**
CD2				pmax		pmax		
	comp=Z,10.0nm,0.6s							
GTA	**Gaotai**	**33.16**	**288**	*e*P		**P**	**16 19 10.9**	**+0.2**
GTA				pP		pP	16 19 18.2	-0.2
GTA				sP		sP	16 19 21.2	-0.4
GTA				PcP		**PcP**	**16 21 55.0**	**+1.7**
GTA				pmax		pmax		
	comp=Z,7.0nm,0.8s							
BILL	**Bilibino**	**34.21**	**16**	*i* P		**P**	**16 19 17.0**	**-2.4**
BILL				pmax		pmax		
	comp=Z,4.0nm,1.2s							
KMI	**Kunming**	**35.42**	**262**	P		**P**	**16 19 31.4**	**+0.8**
KMI				pmax		pmax		
	comp=Z,10.0nm,0.8s							
KMI				pmax		pmax		
	comp=Z,260nm,9.2s							
TIXI	**Tiksi**	**35.69**	**353**	P		**P**	**16 19 32.1**	**0.0**
	comp=Z,1.7nm,0.7s,baz=148,slow=4.9,SNR=14							
TIXI				pP		**sP**	**16 19 43.7**	**+0.7**
	comp=Z,1.4nm,0.6s,baz=195,slow=4.4,SNR=3.2							
TIXI	**Tiksi**	**35.69**	**353**	⇓*e*P		**P**	**16 19 32.3**	**+0.2**
TIXI				pmax		pmax		
	comp=Z,3.0nm,1.0s							
TIXI	**Tiksi**	**35.69**	**353**	*e*P		**P**	**16 19 31.7**	**-0.4**
	comp=Z,9.2nm,1.5s							
TIXI				pP		**sP**	**16 19 43.7**	**+0.7**
MYLDM	**Lahad Datu**	**38.07**	**220**	*e*P		**P**	**16 19 54.4**	**+1.5**
	comp=Z,18nm,1.1s							
WMQ	**Urumqi**	**41.45**	**297**	P		**P**	**16 20 22.9**	**+2.0**
WMQ				pP		pP	16 20 27.7	-1.0
WMQ				sP		sP	16 20 34.7	+2.8
WMQ				pmax		pmax		
	comp=Z,9.0nm,0.6s							
WMQ				pmax		pmax		
	comp=Z,170nm,10.5s							
WMQ				LR		LR		
	comp=N,140nm,20.4s							
WMQ				LR		LR		
	comp=E,52nm,14.0s							
WMQ				LR		LR		
	comp=Z,120nm,17.2s							
CM01	**Chiang Mai Arr**	**41.92**	**256**	*e*P		**P**	**16 20 24.3**	**-0.6**
ZALV	**Zalesovo Beam**	**42.53**	**313**	P		**P**	**16 20 29.6**	**+0.2**
	comp=Z,12nm,0.9s,baz=92,slow=7.4,SNR=32							
ZALV				pP		**sP**	**16 20 39.3**	**-1.0**
	comp=Z,5.4nm,0.8s,baz=97,slow=7.3,SNR=6.0							
ZALV				PcP		**PcP**	**16 22 21.4**	**-0.2**
	comp=Z,1.9nm,0.8s,baz=104,slow=4.7,SNR=3.6							
LSA	**Lhasa**	**42.75**	**276**	*e*P		**P**	**16 20 30.7**	**-1.5**
LSA				pmax		pmax		
	comp=Z,6.0nm,0.6s							
LSA	**Lhasa**	**42.75**	**276**	*e*P		**P**	**16 20 30.7**	**-1.5**
	comp=Z,5.5nm,0.6s							
NVS	**Novosibirsk**	**43.45**	**314**	*e*P		P	16 20 33.1	-3.8
NVS				pmax		pmax		
	comp=E,13nm,1.0s							
NVS				pmax		pmax		
	comp=Z,12nm,1.0s							
NRIK	**Noril'sk**	**43.79**	**335**	P		**P**	**16 20 39.7**	**+0.2**
	comp=Z,1.1nm,0.4s,baz=104,slow=5.8,SNR=3.5							
NRIK				pP		**sP**	**16 20 49.6**	**-0.8**
	comp=Z,2.7nm,0.7s,baz=134,slow=4.9,SNR=3.3							
MK01	**Makanchi Array**	**44.73**	**302**	*e*P		**P**	**16 20 46.9**	**-0.5**
MK31	**Makanchi Array**	**44.74**	**303**	*i* P		**P**	**16 20 46.8**	**-0.6**
MK31				pmax		pmax		
	comp=Z,8.0nm,0.9s							
MK31	**Makanchi Array**	**44.74**	**303**	*e*P		**P**	**16 20 47.2**	**-0.2**
MKAR	**Makanchi Array**	**44.74**	**303**	P		**P**	**16 20 47.4**	**0.0**
	comp=Z,3.9nm,0.7s,baz=88,slow=9.7,SNR=42							
MKAR				pP		**sP**	**16 20 57.4**	**-1.0**
	comp=Z,3.2nm,0.7s,baz=84,slow=12,SNR=8.5							
MKAR				PcP		**PcP**	**16 22 29.1**	**-0.3**
	comp=Z,1.1nm,0.9s,baz=75,slow=5.6,SNR=2.1							
MKAR	**Makanchi Array**	**44.74**	**303**	*e*P		**P**	**16 20 47.0**	**-0.4**
MKAR				pP		**sP**	**16 20 57.4**	**-1.0**
MKAR				PcP		**PcP**	**16 22 29.1**	**-0.3**
MAKZ	**Makanchi**	**44.95**	**303**	*e*P		**P**	**16 20 49.2**	**+0.1**
MAKZ				pmax		pmax		
	comp=Z,6.0nm,0.9s							
MAKZ	**Makanchi**	**44.95**	**303**	*e*P		**P**	**16 20 49.2**	**+0.1**
	comp=Z,6.3nm,0.9s							
KAPI	**Kappang**	**46.43**	**211**	*e*P		**P**	**16 21 02.5**	**+1.5**
	comp=Z,18nm,0.9s							
KURK	**Kurchatov**	**46.55**	**308**	P		**P**	**16 21 01.1**	**-0.5**
KURK				pmax		pmax		
	comp=Z,31nm,0.9s							
KURK	**Kurchatov**	**46.55**	**308**	*e*P		**P**	**16 21 00.7**	**-0.9**
	comp=Z,14nm,0.9s							
PDGK	**Podgornoye**	**47.39**	**298**	P		**P**	**16 21 07.7**	**-0.6**
PDGK				pmax		pmax		
	comp=Z,6.0nm,0.7s							
GUN	**Gumba**	**47.70**	**276**	*e*P		**P**	**16 21 11.8**	**+0.5**
	comp=Z,35nm,0.8s							
PKIN	**Phulchoki**	**48.23**	**276**	*e*P		**P**	**16 21 13.7**	**-1.6**
	comp=Z,10nm,0.6s							
KKN	**Kakani**	**48.23**	**276**	*e*P		**P**	**16 21 15.0**	**-0.3**
	comp=Z,19nm,0.8s							
DMN	**Daman**	**48.45**	**276**	*e*P		**P**	**16 21 15.9**	**-1.1**
GKN	**Gorkha**	**48.66**	**277**	*e*P		**P**	**16 21 17.6**	**-0.9**
	comp=Z,46nm,0.9s							
ILAR	**Eielson Array**	**49.51**	**32**	P		**P**	**16 21 25.0**	**+0.7**
	comp=Z,0.7nm,0.7s,baz=263,slow=6.6,SNR=6.8							
ILAR				pP		**sP**	**16 21 35.4**	**+0.1**
	comp=Z,1.9nm,0.7s,baz=274,slow=7.2,SNR=13							
KOLN	**Koldanda**	**49.58**	**277**	*e*P		**P**	**16 21 23.8**	**-1.8**
PYUN	**Piuthan**	**49.92**	**278**	*e*P		**P**	**16 21 28.7**	**+0.5**
	comp=Z,88nm,1.0s							
TKM2	**Tokmak 2**	**50.25**	**299**	*i* P		**P**	**16 21 30.6**	**+0.1**
TKM2				pmax		pmax		
	comp=Z,6.0nm,0.6s							
TKM2	**Tokmak 2**	**50.25**	**299**	*e*P		**P**	**16 21 30.9**	**+0.5**
	comp=Z,19nm,1.4s							
CHKZ	**Chkalovo**	**50.92**	**313**	*i* P		**P**	**16 21 34.7**	**-0.4**
CHKZ				pmax		pmax		
	comp=Z,8.0nm,1.3s							
FRU	**Bishkek**	**50.96**	**299**	*e*P		**P**	**16 21 37.0**	**+1.3**
KSH	**Kashi**	**51.02**	**295**	P		P	16 21 41.0	+4.8
KSH				*e*pP		sP	16 21 47.6	+0.3
KSH				*e*sP		pP	16 21 50.1	+5.9
KSH				*e*PcP		**PcP**	**16 22 55.1**	**+3.0**
KSH				S		**S**	**16 28 57.2**	**+5.2**
KSH				pmax		pmax		
	comp=Z,110nm,4.5s							
KSH				LR		LR		
	comp=N,440nm,11.5s							
KSH				LR		LR		
	comp=E,220nm,10.5s							
KSH				LR		LR		
	comp=Z,390nm,18.7s							
OTUK	**Ortayu**	**51.04**	**306**	P		**P**	**16 21 35.9**	**-0.3**
OTUK				p

ARU	**Arti**	**56.96 319**	P	**P**	**16 22 19.3**	**+0.1**
	comp=Z,3.2nm,0.4s,baz=95,slow=5.3,SNR=8.2					
ARU	**Arti**	**56.96 319**	*c iP*	**P**	**16 22 19.2**	**0.0**
ARU			S	**S**	**16 30 09.1**	**-2.4**
ARU			SS	**SS**	**16 33 56.3**	**-3.2**
ARU			pmax	pmax		
	comp=Z,15nm,1.2s					
ARU	**Arti**	**56.96 319**	*eP*	**P**	**16 22 18.7**	**-0.5**
	comp=Z,11nm,1.0s					
KBL	**Kabul**	**58.02 291**	*eP*	**P**	**16 22 26.7**	**-0.6**
KBL			pmax	pmax		
	comp=Z,7.0nm,0.9s					
KBL	**Kabul**	**58.02 291**	*eP*	**P**	**16 22 26.7**	**-0.6**
	comp=Z,6.6nm,0.9s					
AB31	**Abkulak array**	**58.55 310**	*i* P	**P**	**16 22 30.1**	**-0.4**
AB31			pmax	pmax		
	comp=Z,6.0nm,0.8s					
ABKAR	**Abkulak array**	**58.55 310**	*eP*	**P**	**16 22 29.9**	**-0.6**
HYB	**Hyderabad**	**58.71 269**	*i* P	**P**	**16 22 32.0**	**-0.1**
HYB			*es*P	**sP**	**16 22 45.5**	**+2.3**
AKTO	**Aktyubinsk**	**59.29 312**	P	**P**	**16 22 35.6**	**0.0**
	comp=Z,4.9nm,0.9s,baz=74,slow=10.0,SNR=12					
ASAR	**Alice Springs**	**60.52 189**	P	**P**	**16 22 43.6**	**-0.6**
	comp=Z,0.9nm,0.8s,baz=12,slow=7.2,SNR=11					
ASAR			pP	**sP**	**16 22 55.2**	**-0.2**
	comp=Z,3.8nm,0.9s,baz=360,slow=6.2,SNR=16					
YKA	**Yellowknife Ar**	**63.85 30**	P	**P**	**16 23 06.1**	**0.0**
	comp=Z,0.2nm,0.5s,baz=295,slow=6.7,SNR=4.3					
KLMR	**Klimovskoe**	**64.32 328**	*eP*	**P**	**16 23 08.1**	**-1.2**
KLMR			*e**SP	**sP**	**16 23 21.6**	**+1.1**
KLMR			*e*		16 23 43.9	
KLMR			pmax	pmax		
	comp=Z,9.0nm,1.3s					
GEYT	**Alibeck**	**64.45 299**	P	**P**	**16 23 10.8**	**+0.2**
	comp=Z,4.1nm,0.8s,baz=53,slow=5.7,SNR=8.9					
GEYT			pP	**sP**	**16 23 20.4**	**-1.3**
	comp=Z,1.9nm,0.8s,baz=108,slow=24,SNR=2.3					
VRH	**Novokhopyorsk**	**68.18 318**	*eP*	**P**	**16 23 34.0**	**-0.1**
VRH			pmax	pmax		
	comp=Z,10.0nm,0.7s					
OBN	**Obninsk**	**68.68 324**	*eP*	**P**	**16 23 38.0**	**+0.8**
OBN			pmax	pmax		
	comp=Z,7.0nm,1.2s					
LPSR	**Galich'ya Gora**	**68.89 320**	*eP*	**P**	**16 23 38.6**	**0.0**
LPSR			pmax	pmax		
	comp=Z,10.0nm,0.7s					
FINES	**FINESS Array B**	**69.36 333**	P	**P**	**16 23 41.7**	**+0.4**
	comp=Z,2.3nm,0.8s,baz=72,slow=6.2,SNR=4.8					
FINES			pP	**pP**	**16 23 50.1**	**+0.6**
	comp=Z,2.7nm,0.7s,baz=47,slow=8.4,SNR=3.9					
VSR	**Storozhevoye**	**69.53 319**	*eP*	**P**	**16 23 42.0**	**-0.6**
VSR			pmax	pmax		
	comp=Z,20nm,1.4s					
ZEI	**Tsey**	**71.41 310**	*eP*	**P**	**16 23 53.4**	**-1.1**
ZEI			pmax	pmax		
	comp=Z,5.0nm,0.6s					
KBZ	**Khabaz**	**71.52 311**	P	**P**	**16 23 55.8**	**+1.0**
	comp=Z,6.0nm,0.9s,baz=42,slow=2.2,SNR=16					
KIV	**Kislovodsk**	**71.52 311**	*eP*	**P**	**16 23 56.0**	**+1.0**
KIV			pmax	pmax		
	comp=Z,15nm,1.0s					
KIV	**Kislovodsk**	**71.52 311**	*eP*	**P**	**16 23 55.9**	**+1.0**
	comp=Z,12nm,0.8s					
GNI	**Garni**	**72.32 307**⇑	*eP*	**P**	**16 24 01.9**	**+1.9**
GNI			pmax	pmax		
	comp=Z,8.0nm,1.0s					
NB2	**NORSAR Subarra**	**74.70 338**	P	**P**	**16 24 13.7**	**+0.3**
	comp=Z,1.8nm,0.8s,baz=40,slow=6.2					
NOA	**NORSAR Array B**	**74.70 338**	P	**P**	**16 24 13.8**	**+0.4**
	comp=Z,2.7nm,0.8s,baz=39,slow=5.8,SNR=11					
AKASG	**Malin Array Be**	**74.88 323**	P	**P**	**16 24 14.5**	**-0.1**
	comp=Z,3.4nm,0.5s,baz=46,slow=6.1,SNR=10					
AKASG			pP	**sP**	**16 24 24.8**	**-1.1**
	comp=Z,1.6nm,0.5s,baz=46,slow=7.1,SNR=3.1					
KIEV	**Kiev**	**74.89 323**	*ceP*	**P**	**16 24 14.4**	**-0.2**
KIEV			pmax	pmax		
	comp=Z,5.0nm,0.9s					
KIEV	**Kiev**	**74.89 323**	*eP*	**P**	**16 24 14.2**	**-0.4**
	comp=Z,7.6nm,0.9s					
SORM	**Soroca**	**76.98 321**⇑	*iP*	**P**	**16 24 26.1**	**-0.5**
SORM	**Soroca**	**76.98 321** ⇑	P	**P**	**16 24 26.1**	**-0.5**
PDAR	**Pinedale Array**	**77.54 46**	P	**P**	**16 24 31.2**	**+1.1**
	comp=Z,0.4nm,0.7s,baz=276,slow=1.3,SNR=3.9					
PDAR			pP	**sP**	**16 24 41.4**	**-0.1**
	comp=Z,0.8nm,0.7s,baz=264,slow=3.1,SNR=6.3					
BUR08	**Bucovina Ar. S**	**78.89 322**	*eP*	**P**	**16 24 38.0**	**+0.7**
BURAR	**Bucovina Array**	**78.90 322**⇑	*iP*	**P**	**16 24 38.2**	**+0.8**
BURAR	**Bucovina Array**	**78.90 322** ⇑	P	**P**	**16 24 38.2**	**+0.8**
CFR	**Carcaliu**	**79.04 319**⇓	*iP*	P	16 24 41.3	+3.2
CFR	**Carcaliu**	**79.04 319** ⇓	P	P	16 24 41.3	+3.2
VRI	**Vrincioaia**	**79.32 320**⇓	*iP*	**P**	**16 24 39.1**	**-0.6**
VRI	**Vrincioaia**	**79.32 320** ⇓	P	**P**	**16 24 39.1**	**-0.6**
BR131	**Keskin Array S**	**79.46 312**	*eP*	**P**	**16 24 41.2**	**+0.5**
BRTR	**Keskin Array B**	**79.46 312**	P	**P**	**16 24 41.6**	**+0.9**
	comp=Z,2.4nm,1.0s,baz=114,slow=3.1,SNR=12					
BRTR			LR	LR	17 04 27.5	
	comp=Z,134nm,19.5s,baz=115,slow=39					
BR231	**Keskin MP Arra**	**79.90 312**	*eP*	**P**	**16 24 42.1**	**-0.9**
ARR	**Arges**	**80.74 321**⇓	*iP*	**P**	**16 24 48.1**	**+0.7**
MORC	**Moravsky Berou**	**80.93 327**⇑	*iP*	**P**	**16 24 48.9**	**+0.6**
MORC	**Moravsky Berou**	**80.93 327** ⇑	P	**P**	**16 24 48.9**	**+0.6**
DPC	**Dobruska-Polom**	**81.02 328**	*eP*	**P**	**16 24 49.7**	**+0.9**
DPC			*ep*P	**sP**	**16 25 00.5**	**+0.4**
DPC	**Dobruska-Polom**	**81.02 328**	*eP*	**P**	**16 24 49.7**	**+0.9**
DPC			*e*		16 25 00.5	
PSZ	**Piszkesteto**	**81.23 325**⇑	*iP*	**P**	**16 24 50.8**	**+0.8**
PSZ	**Piszkesteto**	**81.23 325** ⇑	P	**P**	**16 24 50.8**	**+0.8**
CLL	**Collm**	**81.65 330**	*i* P	**P**	**16 24 52.2**	**+0.2**
	comp=Z,6.0nm,1.0s					
CLL	**Collm**	**81.65 330**	*i* P	**P**	**16 24 52.2**	**+0.2**
CLL			pmax	pmax		
	comp=Z,6.0nm,1.0s					
VRAC	**Vranov**	**81.69 327**⇑	*iP*	**P**	**16 24 52.4**	**+0.1**
VRAC	**Vranov**	**81.69 327** ⇑	P	**P**	**16 24 52.4**	**+0.1**
PRU	**Pruhonice**	**82.04 329**	*eP*	**P**	**16 24 55.7**	**+1.6**
PRU	**Pruhonice**	**82.04 329**	*eP*	**P**	**16 24 55.7**	**+1.6**
MDVR	**Moldovita**	**82.62 322**⇑	*iP*	P	16 25 03.6	+6.3
KHC	**Kasperske Hory**	**83.10 329**	*eP*	**P**	**16 25 00.5**	**+0.8**
KHC			*ep*P	**pP**	**16 25 08.7**	**+0.6**
KHC	**Kasperske Hory**	**83.10 329**	*eP*	**P**	**16 25 00.5**	**+0.8**
KHC			*e*		16 25 08.7	
GERES	**GERESS Array B**	**83.27 329**	P	**P**	**16 25 00.0**	**-0.7**
	comp=Z,1.1nm,0.9s,baz=46,slow=3.9,SNR=6.4					
GEA0	**GERESS Array S**	**83.28 329**	*eP*	**P**	**16 25 00.3**	**-0.4**
BFO	**Black Forest**	**85.85 331**	*i* P	**P**	**16 25 14.6**	**+1.0**
BFO	**Black Forest**	**85.85 331**	*eP*	**P**	**16 25 13.4**	**-0.2**
	comp=Z,8.0nm,1.2s					
TXAR	**Lajitas Array**	**89.92 53**	P	**P**	**16 25 33.7**	**+0.2**
	comp=Z,0.2nm,0.5s,baz=347,slow=5.1,SNR=2.4					
TXAR			pP	**sP**	**16 25 45.7**	**+0.7**
	comp=Z,0.6nm,0.5s,baz=272,slow=2.9,SNR=6.1					
LPAZ	**La Paz**	**146.42 61**	PKPbc	**PKPab**	**16 32 17.1**	**0.0**
	comp=Z,1.1nm,0.6s,baz=6.7,slow=8.0,SNR=3.6					

IDC 10 16:21:45.7±10.0**, 20°30S×167°53E, h0km, mb3.9**/3**, mb1 4.0**/4**, mb1mx3.7**/30**, mbtmp3.8**/4**, ML3.0**/1**, Error ellipse: s-maj=188.2km s-min=38.7km az=90.0, Loyalty Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.03**	**210**	Pn	Pn	16 22 20.2	-1.1
	5.5nm,0.3s,baz=113,slow=13,SNR=6.1						
DZM				Sn	Sn	16 22 47.7	+0.3
	10.0nm,0.3s,baz=55,slow=22,SNR=3.7						
STKA	**Stephens Creek**	**25.92**	**238**	P	P	16 27 20.8	+1.1
	1.5nm,0.6s,baz=65,slow=9.0,SNR=4.7						
WRA	**Warramunga Arr**	**31.14**	**265**	P	P	16 28 06.0	-0.5
	0.2nm,0.4s,baz=91,slow=8.5,SNR=9.2						
ASAR	**Alice Springs**	**31.32**	**258**	P	P	16 28 08.1	+0.1
	2.8nm,0.6s,baz=87,slow=9.1,SNR=27						

*IDC **10** 16:22:59.0±1.3, 37°02N×142°26E, h0km, mb3.2/3, mb1 3.5/4, mb1mx3.3/40, mbtmp3.2/4, ML3.4/1, Error ellipse: s-maj=33.5km s-min=26.6km az=149.0*
*JMA **10** 16:23:03.0±0.3, 36°21N×141°79E, h67km, M3.1*
ISC 10 16:23:02.3±2.3**, 36°29N**±0°08×**141°9E**±0°1**, h19km, n12,** σ0**966/12, mb3.2/3, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.99**	**234**	P	**Pb**	**16 23 20.5**	**-0.3**
JHO	**Hitachi**	**1.08**	**288**	P	**Pb**	**16 23 21.8**	**-0.5**
JFK	**Kawauchi**	**1.33**	**324**	P	**Pb**	**16 23 26.5**	**-0.1**
JFT	**Otama**	**1.73**	**316**	P	**Pb**	**16 23 32.7**	**-0.7**
JMM	**Marumori**	**1.79**	**332**	P	**Pb**	**16 23 34.1**	**-0.3**
JAG	**Ashikaga**	**1.94**	**275**	P	**Pn**	**16 23 34.2**	**0.0**
JAG				S	**Sn**	**16 23 57.7**	**-0.3**
JKT	**Katashina**	**2.15**	**284**	P	**Pn**	**16 23 38.1**	**+1.0**
JRY	**Ryogami san**	**2.40**	**264**	P	**Pn**	**16 23 40.5**	**0.0**
MJAR	**Matsushiro Arr**	**2.94**	**276**	Pn	**Pn**	**16 23 49.4**	**+1.4**
	4.0nm,0.3s,baz=108,slow=8.4,SNR=35						
MJAR				Sn	**Sb**	**16 24 30.0**	**+0.2**
	2.1nm,0.3s,baz=81,slow=17,SNR=5.1						
MKAR	**Makanchi Array**	**44.81**	**303**	P	**P**	**16 31 14.6**	**-0.3**
	0.2nm,0.6s,baz=82,slow=5.0,SNR=3.2						
WRA	**Warramunga Arr**	**56.37**	**188**	P	P	16 32 47.9	+5.6
	0.3nm,0.7s,baz=16,slow=8.8,SNR=3.5						
YKA	**Yellowknife Ar**	**64.28**	**30**	P	P	16 33 29.9	-6.0
	0.1nm,0.5s,baz=295,slow=6.6,SNR=3.2						

IDC 10 16:25:43.8±2.2**, 20°26S×167°58E, h0km, mb3.8**/4**, mb1 3.9**/5**, mb1mx3.6**/33**, mbtmp3.7**/5**, Error ellipse: s-maj=60.3km s-min=25.8km az=123.0, Loyalty Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.09**	**210**	Pn	Pn	16 26 19.2	-1.0
	baz=102,slow=22,SNR=1.8						
DZM				Sn	Sn	16 26 47.5	+0.6
	2.0nm,0.3s,baz=114,slow=19,SNR=1.8						
STKA	**Stephens Creek**	**25.98**	**238**	P	P	16 31 19.1	+0.8
	5.1nm,1.1s,baz=57,slow=17,SNR=3.2						
WRA	**Warramunga Arr**	**31.19**	**265**	P	P	16 32 04.3	-0.6
	0.8nm,1.1s,baz=92,slow=8.4,SNR=2.9						
ASAR	**Alice Springs**	**31.37**	**258**	P	P	16 32 06.8	+0.2
	0.7nm,0.6s,baz=86,slow=9.1,SNR=6.0						
ILAR	**Eielson Array**	**91.67**	**18**	P	P	16 38 52.5	-0.1
	0.2nm,0.6s,baz=218,slow=5.7,SNR=2.5						

*NIED **10** 16:30:00,21°00N×122°20E, h29km, Mw4.4 Best double couple: M0=4.62000×10^15 NP1:φs=155.00000°, δ71.00000°, λ13.00000°. NP2:φs=60.00000°, δ78.00000°, λ161.00000°.*
*IDC **10** 16:30:50.3±0.9, 20°62N×122°29E, h0km, mb3.6/7, mb1 3.7/8, mb1mx3.6/40, mbtmp3.6/8, ML3.1/1, MS3.3/5, Ms1 3.3/5, ms1mx3.1/48, Error ellipse: s-maj=39.0km s-min=19.2km az=71.0*
*JMA **10** 16:30:52.7±0.6, 20°98N×122°15E, h0km, M4.1*
*ISCJB **10** 16:30:53.8±0.7, 20°67N±0°07×122°4E±0°1, h33km, mb3.5/7, MS3.2/2, Error ellipse: s-maj=20.1km s-min=6.8km az=21.3*
ISC 10 16:30:55.6±1.0**, 20°66N**±0°10×**122°4E**±0°2**, h35km, n23,** σ0**978/16, mb3.3/7, Philippine Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**3.83**	**8**	P	**Pn**	**16 31 52.9**	**+0.9**
IRIF	**Iriomote-Funau**	**3.86**	**18**	P	**Pn**	**16 31 52.4**	**-0.1**
IRIF				*e*S	**Sn**	**16 32 36.1**	**-0.5**
JIJ	**Ishigaki jima**	**4.02**	**23**	P	**Pn**	**16 31 55.7**	**+1.0**
JIJ				*e*S	**Sn**	**16 32 39.4**	**-1.3**
JISG	**Ishigakijimahi**	**4.29**	**24**	P	**Pn**	**16 31 58.0**	**-0.4**
JISG				*e*S	**Sn**	**16 32 46.4**	**-0.8**
JTJ	**Tarama**	**4.50**	**28**	*e*S	**Sn**	**16 32 52.7**	**+0.4**
JNU	**Nakatsue**	**14.53**	**30**	LR	LR	16 40 06.6	
	comp=Z,100nm,19.8s,baz=300,slow=38						
KSRS	**Korea Array**	**17.41**	**15**	P	**P**	**16 34 57.2**	**+0.5**
	0.1nm,0.3s,baz=195,slow=11,SNR=6.9						
KSRS				LR	LR	16 42 45.4	
	comp=Z,152nm,18.0s,baz=318,slow=41						
JCJ	**Chichijima**	**19.18**	**67**	LR	LR	16 42 18.9	
	comp=Z,50nm,19.4s,baz=174,slow=36						
GUMO	**Guam**	**22.58**	**105**	LR	LR	16 43 58.5	
	comp=Z,50nm,19.6s,baz=80,slow=35						
KLR	**Kul'dur**	**29.47**	**13**	LR	LR	16 47 57.8	
	comp=Z,102nm,19.2s,baz=113,slow=35						
H11N1	**WAKE ISLAND Hy**	**41.67**	**83**	T	T	17 23 39.9	
	baz=274,slow=75,SNR=82						
MKAR	**Makanchi Array**	**41.67**	**318**	P	**P**	**16 38 40.1**	**-0.7**
	0.6nm,0.3s,baz=109,slow=10,SNR=10.0						
H11N2	**WAKE ISLAND Hy**	**41.67**	**83**	T	T	17 23 37.1	
	baz=274,slow=75,SNR=66						
H11N3	**WAKE ISLAND Hy**	**41.69**	**83**	T	T	17 23 41.5	
	baz=274,slow=75,SNR=87						
H11S3	**WAKE ISLAND Hy**	**41.69**	**85**	T	T	17 23 37.6	
	baz=281,slow=75,SNR=458						
H11S1	**WAKE ISLAND Hy**	**41.70**	**85**	T	T	17 23 36.6	
	baz=281,slow=75,SNR=322						
H11S2	**WAKE ISLAND Hy**	**41.71**	**85**	T	T	17 23 38.3	
	baz=281,slow=75,SNR=190						
WRA	**Warramunga Arr**	**42.01**	**163**	P	**P**	**16 38 42.8**	**-0.9**
	0.3nm,0.5s,baz=344,slow=9.1,SNR=7.6						
ZALV	**Zalesovo Beam**	**43.81**	**329**	P	**P**	**16 38 57.5**	**-0.5**
	1.5nm,0.5s,baz=117,slow=7.0,SNR=7.7						
ASAR	**Alice Springs**	**45.46**	**165**	P	**P**	**16 39 11.8**	**+0.3**
	0.2nm,0.4s,baz=347,slow=7.5,SNR=9.2						
ILAR	**Eielson Array**	**71.83**	**27**	P	**P**	**16 42 14.3**	**-0.2**
	0.2nm,0.6s,baz=288,slow=3.3,SNR=2.8						
BRTR	**Keskin Array B**	**76.18**	**307**	P	**P**	**16 42 40.6**	**0.0**
	0.2nm,0.6s,baz=122,slow=4.5,SNR=2.5						
YKA	**Yellowknife Ar**	**85.76**	**23**	P	**P**	**16 43 32.1**	**+1.2**
	0.4nm,0.7s,baz=313,slow=4.9,SNR=6.4						

IDC 10 16:37:39.3±11.0**, 19°98S×167°68E, h0km, mb3.8**/3**, mb1 3.9**/4**, mb1mx3.6**/37**, mbtmp3.7**/4**, ML3.2**/1**, MS4.7**/1**, Ms1 4.8**/1**, ms1mx3.2**/37**, Error ellipse: s-maj=198.4km s-min=40.7km az=89.0, Vanuatu Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.38**	**209**	Pn	Pn	16 38 18.6	-1.1
	6.0nm,0.3s,baz=66,slow=20,SNR=3.5						
DZM				LR	LR	16 38 45.7	
	comp=Z,162nm,19.2s,baz=60,slow=28						
DZM				Sn	Sn	16 38 48.5	-1.0
	28nm,0.3s,baz=350,slow=18,SNR=9.8						
STKA	**Stephens Creek**	**26.20**	**238**	P	P	16 43 16.1	+0.2
	2.0nm,0.9s,baz=62,slow=7.7,SNR=3.3						
WRA	**Warramunga Arr**	**31.30**	**264**	P	P	16 44 01.7	+0.2
	0.3nm,0.6s,baz=88,slow=8.4,SNR=6.4						
ASAR	**Alice Springs**	**31.52**	**257**	P	P	16 44 03.6	+0.2
	1.4nm,0.6s,baz=86,slow=8.8,SNR=30						
ILAR	**Eielson Array**	**91.38**	**18**	LR	LR	17 27 34.5	
	comp=Z,364nm,20.5s,baz=140,slow=33						

IDC 10 16:40:44.7±1.1**, 2°48N×126°47E, h0km, mb3.5**/5**, mb1 3.6**/5**, mb1mx3.4**/45**, mbtmp3.5**/5**, Error ellipse: s-maj=58.3km s-min=20.2km az=80.0, Northern Molucca Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**20.47**	**182**	P	P	16 45 23.7	-0.5
	2.3nm,1.1s,baz=210,slow=3.8,SNR=2.1						
WRA	**Warramunga Arr**	**23.59**	**161**	P	P	16 45 56.9	-0.4
	0.6nm,0.5s,baz=338,slow=10,SNR=8.4						
ASAR	**Alice Springs**	**26.98**	**165**	P	P	16 46 29.1	+0.7
	0.3nm,0.8s,baz=342,slow=9.8,SNR=5.1						
PETK	**Petropavlovsk-**	**56.67**	**22**	P	P	16 50 29.3	-0.5
	1.8nm,0.7s,baz=210,slow=6.1,SNR=2.8						
MKAR	**Makanchi Array**	**58.43**	**326**	P	P	16 50 42.7	+0.3
	0.2nm,0.7s,baz=118,slow=8.3,SNR=2.4						

*ISCJB **10** 16:45:43.2±0.4, 4°81S±0°05×105°60W±0°04, h10km, mb4.9/125, MS5.1/29, Error ellipse: s-maj=7.7km s-min=5.2km az=27.7*
*IDC **10** 16:45:43.4±0.8, 4°71S×105°75W, h0km, mb4.3/13, mb1 4.5/13, mb1mx4.4/32, mbtmp4.3/13, MS5.0/26, Ms1 5.0/26, ms1mx5.0/32, Error ellipse: s-maj=29.7km s-min=15.8km az=56.0*
*MOS **10** 16:45:44.0±1.1, 4°63S×105°37W, h10km, mb5.2/29, Error ellipse: s-maj=18.4km s-min=6.8km az=97.4*
*GCMT **10** 16:45:45.1±0.1, 4°61S×105°55W, h16km, MW5.5/129, Moment Tensor Solution. s90,c154; s129,c247; Duration: 1s3 Moment tensor: Scale 10^17Nm; Mrr0.03±.03; Mθθ0.72±.03; Mφφ-0.75±.03; Mrθ0.04±.07; Mθφ1.86±.03; Mφr-0.21±.07; Best double couple: M0=2.01200×10^17 NP1:φs=11.00000°, δ88.00000°, λ-174.00000°. NP2:φs=281.00000°, δ84.00000°, λ-2.00000°. Principal axes: T 1.9900, Plg2.0000°, Azm146.0000°; N 0.0440, Plg84.0000°, Azm31.0000°; P -2.0340, Plg5.0000°, Azm236.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **10** 16:45:45.1±0.3, 4°70S×105°52W, h10km, mb5.0/112 Error ellipse: s-maj=8.2km s-min=5.6km az=52.0*
ISC 10 16:45:45.0±0.4**, 4°77S**±0°08×**105°59W**±0°08**, h10km, n435,** σ1**931/418, mb5.0/125, MS5.0/29, 3C-1D, Central East Pacific Rise**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TLIG	**Tlapa**	**23.24**	**17**	*eP*	**P**	**16 50 54.2**	**+1.3**
	113nm,1.9s						
H06S1	**SOCORRO T**	**23.95**	**347**	T	T	17 15 35.7	
	SNR=16						
H06E1	**SOCORRO T-PHAS**	**23.98**	**347**	T	T	17 15 45.2	
	SNR=4.7						
CMIG	**Matias Romero**	**24.15**	**26**	P	**P**	**16 51 01.7**	**+0.2**
	16nm,1.1s,baz=197,slow=8.4,SNR=13						
CMIG				LR	LR	16 58 18.6	
	comp=Z,3μm,22.0s,baz=160,slow=31						
CCIG	**Comitan**	**24.79**	**32**	*eP*	**P**	**16 51 08.1**	**+0.6**
	102nm,1.2s						
JTS	**JuntasAbangare**	**25.42**	**54**	*deP*	**P**	**16 51 13.3**	**+0.2**
JTS				pmax	pmax		
	comp=Z,54nm,1.0s						
JTS	**JuntasAbangare**	**25.42**	**54**	*eP*	**P**	**16 51 12.9**	**-0.2**
	comp=Z,108nm,1.3s						
TGUH	**Tegucigalpa,Un**	**26.07**	**44**	*eP*	**P**	**16 51 19.2**	**+0.2**
	comp=Z,87nm,1.0s						
ATAH	**Atahualpa**	**27.14**	**96**	P	**P**	**16 51 31.4**	**+2.2**
	comp=Z,5.3nm,0.7s,baz=273,slow=8.8,SNR=6.0						
ATAH				LR	LR	16 59 40.2	
	comp=Z,3μm,19.1s,baz=271,slow=31						
OTAV	**Otavalo**	**27.56**	**80**	*eP*	**P**	**16 51 33.0**	**0.0**
	comp=Z,63nm,1.7s						
LPIG	**La Paz**	**29.06**	**351**	LR	LR	17 00 18.7	
	comp=Z,5μm,20.2s,baz=174,slow=30						
NNA	**Nana**	**29.30**	**106**	LR	LR	17 00 16.5	
	comp=Z,4μm,20.5s,baz=278,slow=30						
TEIG	**Tepich**	**30.10**	**34**	LR	LR	17 02 07.7	
	comp=Z,2μm,20.5s,baz=186,slow=33						
TEIG	**Tepich**	**30.10**	**34**	*eP*	**P**	**16 51 55.8**	**+0.8**
	comp=Z,21nm,1.3s						
DBBC	**Dabeiba**	**31.57**	**68**	*eP*	**P**	**16 52 09.7**	**+1.5**
GUYC	**Guyana, Colomb**	**31.75**	**72**	*eP*	**P**	**16 52 11.1**	**+0.9**
PRAC	**Prado**	**31.80**	**75**	*eP*	**P**	**16 52 10.7**	**+0.5**
035Z	**Hargill**	**31.89**	**13**	P	**P**	**16 52 10.2**	**-0.4**
	baz=194						
HELC	**Santa Helena**	**31.92**	**70**	*eP*	**P**	**16 52 12.3**	**+0.7**
NORC	**Norcasia**	**32.34**	**72**	*eP*	**P**	**16 52 15.4**	**+0.4**
ROSC	**El Rosal**	**32.65**	**73**	P	**P**	**16 52 18.6**	**+0.5**
	comp=Z,5.5nm,0.5s,baz=121,slow=21,SNR=4.6						
ROSC				LR	LR	17 02 50.5	
	comp=Z,2μm,20.4s,baz=262,slow=31						
MOTC	**Monteria, Cord**	**32.73**	**66**	*eP*	**P**	**16 52 19.8**	**+1.6**
933A	**Laredo**	**32.76**	**10**	P	**P**	**16 52 19.4**	**+1.0**
	baz=192						
832A	**Faith Ranch, C**	**33.30**	**9**	P	**P**	**16 52 23.9**	**+0.8**
	baz=190						
833A	**Chaparral WMA,**	**33.43**	**10**	P	**P**	**16 52 25.3**	**+1.1**
	baz=191						
RKT	**Rikitea**	**33.73**	**234**	*eS*	**S**	**16 57 48.9**	**-1.6**
	comp=Z,732nm,29.0s						
RKT				*e*LR	LR	17 01 22.5	
	comp=Z,7μm,27.8s,baz=56						
RKT	**Rikitea**	**33.73**	**234**	*eT*	T	17 27 56.5	
	comp=Z,6.8nm,0.3s						
733A	**Divot King Ran**	**33.84**	**10**	P	**P**	**16 52 28.6**	**+0.9**
	baz=191						
BRRC	**Barranca, Sant**	**33.92**	**70**	*eP*	**P**	**16 52 29.8**	**+1.1**
TX31	**Lajitas Ar. Si**	**33.95**	**3**	*eP*	**P**	**16 52 31.4**	**+2.5**
TXAR	**Lajitas Array**	**33.95**	**3**	P	**P**	**16 52 27.7**	**-1.2**
	comp=Z,1.7nm,1.0s,baz=184,slow=10.0,SNR=6.1						
TXAR				PcP	**PcP**	**16 55 08.4**	**+1.2**
	comp=Z,1.2nm,1.0s,baz=182,slow=6.3,SNR=3.8						
TXAR				LR	LR	17 03 50.3	
	comp=Z,2μm,20.5s,baz=0.0,slow=32						
RUSC	**La Rusia**	**34.14**	**72**	*eP*	**P**	**16 52 32.6**	**+1.5**
BARC	**Barichara**	**34.26**	**71**	*eP*	**P**	**16 52 32.2**	**+0.4**
TAOE	**Nuku Hiva Isla**	**34.55**	**261**	*eLR*	LR	17 01 34.7	
	comp=Z,5μm,25.8s						
633A	**Saathoff Ranch**	**34.58**	**10**	P	**P**	**16 52 34.9**	**+0.7**
	baz=191						
GRMC	**Gramalote, San**	**34.98**	**69**	*eP*	**P**	**16 52 38.9**	**+0.9**
636A	**Smothers Creek**	**35.02**	**13**	P	**P**	**16 52 38.2**	**+0.2**
	baz=195						
533A	**Kerrville**	**35.20**	**10**	P	**P**	**16 52 39.6**	**0.0**
	baz=191						
JCT	**Junction City**	**35.48**	**9**	P	**P**	**16 52 42.3**	**+0.3**
	baz=190						
JCT	**Junction City**	**35.48**	**9**

baz=192
244A Avery, Jackson 39.26 20 P P 16 53 14.3 +0.4
baz=204
Y35A Marietta 39.30 11 P P 16 53 15.1 +0.8
baz=193
BC3 Big Chuckawall 39.34 347 P P 16 53 16.1 +1.4
baz=164
X16A Lo Mia Camp, P 39.36 352 eP P 16 53 15.8 +0.7
comp=Z,14nm,1.3s
Y36A Durant 39.45 12 P P 16 53 16.8 +1.3
baz=194
347A Saraland 39.47 23 P P 16 53 16.7 +0.9
baz=207
ANMO Albuquerque 39.51 359 P P 16 53 16.9 +0.6
baz=178
ANMO Albuquerque 39.51 359⇑ eP P 16 53 16.6 +0.4
ANMO pmax pmax
comp=Z,2.0nm,1.1s
ANMO Albuquerque 39.51 359 eP P 16 53 16.0 -0.2
comp=Z,13nm,1.5s
PFO Pinyon Flats O 39.53 346 P P 16 53 19.1 +2.7
comp=Z,5.6nm,1.0s,baz=194,slow=22,SNR=3.8
PFO Pinyon Flats O 39.53 346 eP P 16 53 17.7 +1.3
PFO pmax pmax
comp=Z,24nm,1.4s
PFO Pinyon Flats O 39.53 346 eP P 16 53 17.7 +1.3
comp=Z,24nm,1.4s
Z40A Long Farm, Mag 39.54 16 P P 16 53 16.9 +0.6
baz=199
IRM Iron Mountain 39.75 348 P P 16 53 19.2 +1.1
baz=165
X35A Drake 39.79 11 P P 16 53 19.2 +0.8
baz=193
X34A Smith Ranch, M 39.83 10 P P 16 53 19.2 +0.5
baz=192
Z42A Norrel Spur, H 39.98 18 P P 16 53 20.7 +0.8
baz=201
Y39A Lockesburg 40.00 15 P P 16 53 20.7 +0.6
baz=198
X36A Centrahoma 40.08 12 P P 16 53 20.9 +0.1
baz=194,SNR=6.9
W32A Sentinel 40.12 8 P P 16 53 22.1 +0.9
baz=190
Y40A Okolona 40.28 16 P P 16 53 23.4 +1.0
baz=199
X37A Clayton 40.31 13 P P 16 53 23.5 +0.8
baz=196
W13A Hualapai Mount 40.41 349 eP P 16 53 24.4 +0.6
comp=Z,10nm,1.3s
BFSC Mount Baldy Ra 40.44 345 P P 16 53 23.8 -0.1
baz=161
WUAZ Wupatki 40.44 353 P P 16 53 24.9 +1.0
baz=171
WUAZ Wupatki 40.44 353 eP P 16 53 23.4 -0.5
comp=Z,41nm,1.6s
GMRC Granite Mounta 40.47 347 P P 16 53 24.8 +0.6
baz=164
X38A Whitesboro 40.51 14 P P 16 53 25.0 +0.7
baz=196,SNR=10
X39A Fountain Ranch 40.54 15 P P 16 53 25.3 +0.7
baz=198
W35A Tecumseh 40.54 11 P P 16 53 25.1 +0.5
baz=193,SNR=7.3
W36A Wetumka 40.66 12 P P 16 53 26.1 +0.6
baz=194,SNR=6.8
MIAR Mount Ida 40.71 15 P P 16 53 26.3 +0.4
baz=198,SNR=7.7
MIAR Mount Ida 40.71 15 eP P 16 53 25.2 -0.8
MIAR pmax pmax
comp=Z,25nm,1.2s
MIAR Mount Ida 40.71 15 eP P 16 53 25.2 -0.8
comp=Z,26nm,1.2s
V32A Arapaho 40.74 8 P P 16 53 27.0 +0.8
baz=190
W37B Quinton 40.83 13 P P 16 53 27.4 +0.4
baz=195,SNR=5.2
V33A Lossen Ranch, 40.95 9 P P 16 53 28.7 +0.8
baz=191
W38A Poteau 40.97 14 P P 16 53 28.7 +0.5
baz=197
V34A Guthrie 41.09 10 P P 16 53 30.4 +1.3
baz=192
V34A Guthrie 41.09 10 eP P 16 53 28.9 -0.2
comp=Z,66nm,1.5s
EDW2 Edwards Air Fo 41.13 344 P P 16 53 30.6 +1.1
baz=161
SDDR Presa de Saban 41.20 54 eP P 16 53 28.9 -1.4
comp=Z,35nm,1.4s
GSC Goldstone, Bar 41.23 346 P P 16 53 31.4 +1.1
baz=163
GSC Goldstone, Bar 41.23 346 eP P 16 53 31.5 +1.1
GSC pmax pmax
comp=Z,31nm,1.5s
GSC Goldstone, Bar 41.23 346 eP P 16 53 31.5 +1.1
comp=Z,31nm,1.5s
Z47A Carrollton 41.25 23 P P 16 53 30.9 +0.5
baz=207
W39A Magazine 41.27 15 P P 16 53 31.4 +0.8
baz=198,SNR=5.3
V36A Jenks 41.34 12 P P 16 53 31.9 +0.7
baz=194
U32A Winter Ranch, 41.39 8 P P 16 53 32.7 +1.0
baz=190
W40A Ferguson Farm, 41.45 16 P P 16 53 32.9 +0.9
baz=199
TUL1 Leonard 41.49 12 P P 16 53 33.6 +1.2
baz=195
TUL1 Leonard 41.49 12 eP P 16 53 32.2 -0.2
comp=Z,27nm,1.1s
Y46A Houston 41.57 21 P P 16 53 33.2 +0.2
baz=205
U33A Lingo Farm, Me 41.58 9 P P 16 53 33.3 +0.2
baz=191
Z48A Northport 41.60 23 P P 16 53 33.3 0.0
baz=208
V37A Hulbert 41.60 13 P P 16 53 33.5 +0.2
baz=196
LRMC Laurel Mtn Rad 41.62 345 P P 16 53 34.3 +0.7
baz=162
W41B Gary Mavity, V 41.66 17 P P 16 53 34.1 +0.3
baz=200
U34A Anderson Ranch 41.67 10 P P 16 53 34.4 +0.5
baz=192
U34A Anderson Ranch 41.67 10 eP P 16 53 33.6 -0.3
comp=Z,38nm,1.3s
X301 Greenbrier Sit 41.68 16 eP P 16 53 33.5 -0.5
comp=Z,78nm,1.9s
X201 Greenbrier Sit 41.74 16 eP P 16 53 33.8 -0.6
comp=Z,44nm,1.5s
V38A Canehill 41.75 14 P P 16 53 34.8 +0.3
baz=197
WHAR Wooly Hollow 41.76 16 eP P 16 53 33.9 -0.7
comp=Z,63nm,1.5s
MVCO Mesa Verde 41.85 357 eP P 16 53 35.0 -0.6
comp=Z,48nm,1.6s
V39A Pettigrew 41.92 15 P P 16 53 35.9 -0.1
baz=198
Y47A UCPARC, Winfie 41.95 22 P P 16 53 36.2 0.0
baz=207
U36A Oologah 41.97 12 P P 16 53 36.2 -0.1
baz=195
SHPR Sheep Range 42.02 348 eP P 16 53 37.3 +0.4
comp=Z,11nm,1.0s
V40A Witts Springs 42.10 16 P P 16 53 37.6 +0.2
baz=199
KNB Kanab 42.11 351 eP P 16 53 37.1 -0.6
KNB pmax pmax
comp=Z,35nm,1.4s
KNB Kanab 42.11 351 eP P 16 53 37.1 -0.6
comp=Z,35nm,1.4s
U37A Salina 42.11 13 P P 16 53 37.8 +0.3
baz=196
MPMC Manual Prospec 42.12 346 P P 16 53 38.2 +0.4
baz=162
LCMT Little Creek M 42.17 351 eP P 16 53 38.1 -0.1
comp=Z,15nm,1.5s
T32A Huddler Ranch, 42.19 8 P P 16 53 38.2 +0.1
baz=190
T33A Patterson Ranc 42.19 9 P P 16 53 38.8 +0.7
baz=191
HHAR Hobbs 42.26 14 eP P 16 53 37.3 -1.5
comp=Z,35nm,1.7s
SAML Samuel 42.28 98 eP P 16 53 38.2 -1.0
comp=Z,40nm,1.4s
SDCO Great Sand Dun 42.29 0 P P 16 53 39.8 +0.5
baz=180
SDCO Great Sand Dun 42.29 0 eP P 16 53 37.9 -1.4
comp=Z,21nm,1.5s

T34A McClaskey Farm 42.30 10 P P 16 53 39.1 0.0
baz=192,SNR=7.8
U38A Gravette 42.31 13 P P 16 53 39.4 +0.3
baz=197
S22A 4UR Ranch, Cre 42.31 359 P P 16 53 40.6 +1.2
baz=178
S22A 4UR Ranch, Cre 42.31 359 eP P 16 53 39.0 -0.4
comp=Z,15nm,1.3s
T35A Sooner Cattle 42.32 11 P P 16 53 39.6 +0.4
baz=193
VES Vestal, Richgr 42.33 344 P P 16 53 40.9 +1.7
baz=160
DAC Darwin (Calif) 42.35 346 eP P 16 53 39.5 -0.2
DAC pmax pmax
comp=Z,28nm,1.8s
DAC Darwin (Calif) 42.35 346 eP P 16 53 39.5 -0.2
comp=Z,28nm,1.8s
FURC Furnace Creek, 42.35 346 P P 16 53 40.9 +1.5
baz=163
U39A Green Forest 42.47 15 P P 16 53 40.7 +0.3
baz=198
T36A Boggs Farm, Ca 42.59 11 P P 16 53 41.6 +0.3
baz=194,SNR=5.6
U40A Yellville 42.61 15 P P 16 53 41.8 +0.2
baz=199
TPNV Topopah Spring 42.68 347 P P 16 53 43.9 +1.6
baz=164
TPNV Topopah Spring 42.68 347 eP P 16 53 43.3 +1.0
TPNV pmax pmax
comp=Z,17nm,1.1s
TPNV Topopah Spring 42.68 347 eP P 16 53 43.3 +1.0
comp=Z,17nm,1.1s
S32A Newby Ranch, P 42.70 8 P P 16 53 43.6 +1.3
baz=190
T37A Cheneyville 18 42.84 13 P P 16 53 43.4 0.0
baz=196,SNR=8.2
T38A Diamond 42.90 13 P P 16 53 44.3 +0.4
baz=196
GRAC Grapevine Rang 42.98 346 P P 16 53 45.8 +1.2
baz=163
S34A Willow Spring 42.98 10 P P 16 53 44.4 -0.1
baz=192
MTPU Mount Pierson 43.03 352 eP P 16 53 45.5 +0.2
comp=Z,31nm,1.6s
S35A Otter Creek Ra 43.10 11 P P 16 53 45.9 +0.4
baz=193
T39A Clever 43.11 14 P P 16 53 46.0 +0.4
baz=198
S36A Lake Cedric, C 43.28 12 P P 16 53 47.6 +0.6
baz=194
R33A Olander Ranch, 43.43 9 P P 16 53 49.0 +0.8
baz=191
T40A Mansfield 43.45 15 P P 16 53 48.4 +0.1
baz=199
S37A Fort Scott 43.48 12 P P 16 53 49.1 +0.6
baz=196
Q24A Divide 43.51 0 P P 16 53 49.6 +0.4
baz=180
R34A Isabella, Hill 43.54 10 P P 16 53 49.6 +0.5
baz=192
S38A Stockton 43.56 13 P P 16 53 49.4 +0.2
baz=197
CBKS Cedar Bluff 43.70 7 eP P 16 53 49.7 -0.6
CBKS pmax pmax
comp=Z,15nm,0.9s
CBKS Cedar Bluff 43.70 7 eP P 16 53 49.7 -0.6
comp=Z,15nm,0.9s
S39A Bolivar 43.75 14 P P 16 53 50.7 -0.1
baz=198,SNR=8.7
PSUT Pine Spring 43.76 351 eP P 16 53 49.2 -1.8
comp=Z,18nm,1.6s
S40A Lebanon 43.87 15 P P 16 53 51.9 +0.1
baz=199,SNR=8.5
R36A Gordon, Harris 43.88 11 P P 16 53 52.0 +0.3
baz=194
R11A Troy Canyon, C 43.89 349 P P 16 53 52.5 +0.4
baz=166,SNR=10
R11A Troy Canyon, C 43.89 349 eP P 16 53 52.8 +0.7
comp=Z,11nm,1.2s
SRU San Rafael Swe 43.90 354 eP P 16 53 52.1 0.0
SRU pmax pmax
comp=Z,31nm,1.6s
SRU San Rafael Swe 43.90 354 eP P 16 53 52.1 0.0
comp=Z,31nm,1.6s
MLAC Mammoth, Mammo 43.95 345 P P 16 53 52.9 +0.3
baz=161
R37A Teagarden Farm 44.01 12 P P 16 53 52.9 +0.1
baz=195
R38A Fenwick Farm, 44.09 13 P P 16 53 53.3 -0.2
baz=197,SNR=5.8
Q33A Connelly Farm, 44.13 9 P P 16 53 54.1 +0.3
baz=191
TMUT Trail Mountain 44.15 354 eP P 16 53 53.7 -0.6
comp=Z,21nm,1.6s
Q34A Chapman 44.20 10 P P 16 53 54.8 +0.4
baz=192
Q35A Mercer Eighty, 44.30 11 P P 16 53 55.8 +0.6
baz=194
P18A Preston Nutter 44.38 355 eP P 16 53 56.6 +0.5
comp=Z,36nm,1.8s
R39A Chumby, Stover 44.41 14 P P 16 53 56.1 +0.1
baz=198,SNR=11
KSU1 Kansas State U 44.43 10 P P 16 53 57.1 +0.9
baz=193
Q36A Arnold C. Orve 44.51 11 P P 16 53 57.3 +0.5
baz=194
NV01 Mina Array Sit 44.57 346 eP P 16 53 58.0 +0.4
NVAR Mina Array Bea 44.57 346 P P 16 53 57.4 -0.1
comp=Z,1.1nm,0.6s,baz=177,slow=11,SNR=4.2
NVAR LR LR 17 08 43.3
comp=Z,2µm,18.3s,baz=182,slow=31
P33A Williams Farm, 44.58 9 P P 16 53 58.4 +0.9
baz=191
R40A Maddies Statio 44.59 15 P P 16 53 57.7 +0.3
baz=199
P32A Huiting Farm, 44.63 8 P P 16 53 58.9 +1.1
baz=190
NHSC New Hope 44.71 31 eP P 16 53 58.3 -0.2
O20A White River Ci 44.75 357 P P 16 53 59.7 +0.7
baz=176
O20A White River Ci 44.75 357 eP P 16 53 59.8 +0.9
comp=Z,47nm,1.6s
CMB Columbia Colle 44.75 343 eP P 16 53 59.4 +0.6
CMB pmax pmax
comp=Z,21nm,1.3s
CMB Columbia Colle 44.75 343 eP P 16 53 59.4 +0.6
comp=Z,21nm,1.3s
P34A Walnut Farm, R 44.83 10 P P 16 54 00.0 +0.7
baz=192
PPT Papeete 44.87 250 LR LR 17 07 36.8
comp=Z,2µm,19.5s,baz=63,slow=29
PPT2 Papeete2 44.87 250 eS S 17 00 35.7 -2.6
comp=Z,657nm,25.2s
PPT2 eLQ LQ 17 04 33.6
comp=Z,2µm,27.8s
PPT2 eLR LR 17 06 30.1
comp=Z,5µm,26.0s,baz=73
Q38A Cooks Store, C 44.89 13 P P 16 54 00.2 +0.4
baz=197
NLU North Lily Min 44.90 353 eP P 16 54 00.6 +0.4
comp=Z,20nm,1.5s
WAKR Walker 44.93 345 eP P 16 54 01.1 +0.7
P35A Duane Minner, 44.95 10 P P 16 54 01.0 +0.7
baz=193
SJG San Juan 45.05 59 LR LR 17 09 03.2
comp=Z,2µm,21.6s,baz=244,slow=31
JSC Jenkinsville 45.12 29 eP P 16 54 01.1 -0.6
JSC pmax pmax
comp=Z,74nm,1.6s
JSC Jenkinsville 45.12 29 eP P 16 54 01.1 -0.6
comp=Z,74nm,1.6s
TKL Tuckaleechee C 45.12 25 LR LR 17 13 06.0
comp=Z,907nm,18.6s,baz=224,slow=36
Q39A Willow Grove F 45.12 14 P P 16 54 02.3 +0.6
baz=198
DUG Dugway, Tooele 45.23 352 P P 16 54 03.8 +1.1
baz=170
DUG Dugway, Tooele 45.23 352 eP P 16 54 02.7 0.0
DUG pmax pmax
comp=Z,27nm,1.5s
DUG Dugway, Tooele 45.23 352 eP P 16 54 02.7 0.0
comp=Z,27nm,1.5s
Q40A Laux Farm, Aux 45.30 15 P P 16 54 03.3 +0.2
baz=199
HUMP Col San Antoni 45.31 59 eP P 16 54 02.0 -1.6
comp=Z,24nm,1.1s
JLU Jordanelle 45.47 354 eP P 16 54 05.1 +0.3
comp=Z,32nm,1.6s

P38A Dawn 45.55 13 P P 16 54 04.9 -0.1
baz=197
PTGA Pitinga 45.73 86 eP P 16 54 06.8 -0.2
comp=Z,43nm,1.2s
AFDM Forest Hills D 45.77 343 eP P 16 54 06.8 -0.1
comp=Z,14nm,1.1s
P40A Paris 45.81 15 P P 16 54 06.8 -0.3
baz=199,SNR=5.4
TCUT Toone Canyon 45.97 354 eP P 16 54 07.6 -1.1
comp=Z,51nm,1.6s
TZTN Tazewell 45.97 25 eP P 16 54 06.4 -2.1
comp=Z,39nm,1.0s
BGU Big Grassy Mou 45.98 352 eP P 16 54 08.2 -0.4
comp=Z,29nm,1.7s
ELK Elko 46.15 350 eP P 16 54 11.3 +1.2
ELK pmax pmax
comp=Z,20nm,1.5s
ELK Elko 46.15 350 eP P 16 54 11.3 +1.2
comp=Z,20nm,1.5s
OLIL Olney 46.21 19 eP P 16 54 08.2 -2.1
comp=Z,25nm,1.0s
O40A La Belle 46.41 15 P P 16 54 11.5 -0.4
baz=199
BGNE Belgrade 46.45 8 eP P 16 54 11.9 -0.3
HWUT Hardware Ranch 46.47 354 eP P 16 54 11.2 -1.4
comp=Z,25nm,1.6s
ORV Oroville 46.48 343 eP P 16 54 12.8 +0.4
ORV pmax pmax
comp=Z,33nm,1.1s
ORV Oroville 46.48 343 eP P 16 54 12.8 +0.4
comp=Z,32nm,1.1s
N37A Lee Faris, Mou 46.49 12 P P 16 54 12.9 +0.4
baz=196
HVU Hansel Valley 46.78 353 eP P 16 54 15.1 +0.1
HVU pmax pmax
comp=Z,32nm,1.8s
HVU Hansel Valley 46.78 353 eP P 16 54 15.1 +0.1
comp=Z,32nm,1.8s
N39A Derby Farms, D 46.98 14 P P 16 54 15.8 -0.5
baz=198,SNR=5.1
K22A Casper 47.20 359 eP P 16 54 17.5 -0.7
comp=Z,15nm,1.1s
M38A Pleasantville 47.34 13 P P 16 54 19.5 +0.4
baz=197
BW06 Boulder Array 47.45 356 P P 16 54 21.1 +0.8
baz=174
BW06 Boulder Array 47.45 356 eP P 16 54 19.6 -0.6
comp=Z,18nm,1.5s
PDAR Pinedale Array 47.45 356 P P 16 54 20.1 -0.2
comp=Z,1.4nm,1.0s,baz=170,slow=4.5,SNR=8.3
PDAR LR LR 17 11 52.5
comp=Z,2µm,18.5s,baz=192,slow=33
PLCA Paso Flores 47.64 144 P P 16 54 21.6 0.0
comp=Z,17nm,1.1s,baz=351,slow=8.6,SNR=8.4
PLCA LR LR 17 09 22.3
comp=Z,4µm,19.6s,baz=347,slow=30
PLCA Paso Flores 47.64 144 eP P 16 54 21.3 -0.4
PLCA pmax pmax
comp=Z,39nm,1.3s
PLCA Paso Flores 47.64 144 eP P 16 54 21.2 -0.4
comp=Z,39nm,1.3s
J26A Sides Ranch, S 47.91 2 P P 16 54 25.2 +1.5
baz=183
J30A Dallas 48.18 6 P P 16 54 27.1 +1.4
baz=188
MOD Modoc Plateau 48.35 345 eP P 16 54 26.8 -0.3
comp=Z,39nm,1.2s
LOHW Long Hollow 48.37 355 eP P 16 54 25.3 -2.0
comp=Z,18nm,1.6s
FXWY Fox Creek 48.43 355 eP P 16 54 27.5 -0.3
comp=Z,17nm,1.4s
WVOR Wild Horse Val 48.45 347 eP P 16 54 27.7 -0.2
WVOR pmax pmax
comp=Z,17nm,1.3s
WVOR Wild Horse Val 48.45 347 eP P 16 54 27.6 -0.2
comp=Z,17nm,1.3s
MOOW Moose Ponds 48.52 355 eP P 16 54 27.8 -0.7
comp=Z,14nm,1.4s
M02C Callahan 48.57 343 P P 16 54 29.6 +0.8
baz=157,SNR=5.3
I25A Rochford 48.59 2 P P 16 54 30.4 +1.4
baz=182
M04C Macdoel 48.64 344 P P 16 54 30.6 +1.3
baz=158
IMW Indian Meadow 48.68 355 eP P 16 54 28.5 -1.3
comp=Z,18nm,1.3s
RSSD Black Hills 48.68 1 eP P 16 54 28.7 -1.0
RSSD pmax pmax
comp=Z,19nm,1.2s
RSSD Black Hills 48.68 1 eP P 16 54 28.7 -1.0
comp=Z,19nm,1.2s
I28A Midland 48.70 4 P P 16 54 30.5 +0.8
baz=186
HLID Hailey 48.76 351 P P 16 54 31.1 +0.8
baz=168
HLID Hailey 48.76 351 eP P 16 54 29.8 -0.5
comp=Z,9.6nm,1.1s
I29A Vivian Onida 48.80 5 P P 16 54 31.6 +1.2
baz=187
FLWY Flagg Ranch 48.84 355 eP P 16 54 29.9 -1.1
comp=Z,44nm,1.5s
YBH Yreka Blue Hor 48.84 343 eP P 16 54 30.9 0.0
YBH pmax pmax
comp=Z,46nm,1.7s
YBH Yreka Blue Hor 48.84 343 eP P 16 54 30.9 0.0
comp=Z,46nm,1.7s
MFID Camas Ranch 48.84 350 eP P 16 54 29.9 -0.9
comp=Z,21nm,1.1s
ECSD EROS Data Cent 48.95 9 eP P 16 54 30.4 -1.2
comp=Z,44nm,1.9s
J37A Redenius Farm, 49.08 12 P P 16 54 32.4 -0.1
baz=196
H17A Grant Village 49.14 355 eP P 16 54 34.8 +1.4
comp=Z,32nm,1.8s
K05A Summer Lake 49.27 345 eP P 16 54 34.6 +0.3
comp=Z,65nm,1.4s
H27A Howes 49.27 3 P P 16 54 34.9 +0.8
baz=184
H29A Onida 49.40 5 P P 16 54 35.7 +0.7
baz=187
L02D Cave Junction, 49.50 342 P P 16 54 36.6 +0.8
baz=156
HUMO Hull Mountain 49.72 343 P P 16 54 36.8 -0.7
comp=Z,98nm,1.4s
RLMT Red Lodge 49.77 357 P P 16 54 38.1 0.0
baz=175
MCMT McKenzie Canyo 49.80 353 eP P 16 54 37.2 -1.1
J05D Fort Rock, OR 49.88 345 P P 16 54 40.1 +1.3
baz=159,SNR=17
G26A Maurine 49.91 3 P P 16 54 39.6 +0.7
baz=184
G29A Hoven 49.99 5 P P 16 54 40.3 +0.8
baz=187
I38A Scanlan Farm, 50.03 12 P P 16 54 40.1 +0.3
baz=197
MCWV Mont Chateau 50.17 26 eP P 16 54 39.7 -1.2
comp=Z,23nm,1.3s
H36A Jessenland, He 50.22 11 P P 16 54 41.7 +0.5
baz=195
BOZ Bozeman (W) 50.48 355 P P 16 54 43.8 +0.5
baz=172
I04A Tendick Farm, 50.66 344 P P 16 54 45.0 +0.4
baz=158,SNR=6.3
CPUP Villa Florida 50.81 120 P P 16 54 47.1 +1.1
comp=Z,5.2nm,1.0s,baz=269,slow=8.3,SNR=6.0
CPUP LR LR 17 12 41.2
comp=Z,2µm,21.6s,baz=286,slow=32
CPUP Villa Florida 50.81 120 eP P 16 54 45.7 -0.4
CPUP Villa Florida 50.81 120 eP P 16 54 45.7 -0.4
I03D Drain, OR 50.84 343 P P 16 54 47.0 +1.1
baz=157
G36A St. Michael 50.89 11 P P 16 54 47.0 +0.7
baz=195
I05D Terrebonne, OR 50.89 345 P P 16 54 47.4 +1.0
baz=160
SPMN Marine on St. 51.06 12 P P 16 54 47.9 +0.3
baz=196
N54A Moraine State 51.19 25 P P 16 54 48.7 +0.1
baz=213,SNR=5.2
O56A Blue Knob Stat 51.23 26 P P 16 54 48.9 0.0
baz=215
G08A Pilot Rock 51.25 348 eP P 16 54 48.6 -0.5
comp=Z,23nm,1.5s
H04A Detroit Lake 51.43 345 eP P 16 54 49.8 -0.6
comp=Z,21nm,1.0s
F36A Milaca 51.54 11 P P 16 54 50.8 -0.3
baz=195,SNR=6.9
G06A Carlson Farm, 51.57 346 eP P 16 54 50.0 -1.4

	comp=Z,49nm,1.8s						
F10A	**Beach Ranch, E**	51.57	350	*e*P		**P**	16 54 51.5 0.0
	comp=Z,23nm,1.5s						
G05D	**Wamic, OR**	51.73	346	P		**P**	16 54 53.7 +1.0
	baz=160						
M54A	**Oil Creek Stat**	51.78	25	P		**P**	16 54 53.0 0.0
	baz=214,SNR=5.9						
MSO	**Missoula**	51.90	353	P		**P**	16 54 55.1 +1.2
	baz=169						
D28A	**Regan**	51.92	4	P		**P**	16 54 54.9 +0.8
	baz=186						
D30A	**Buchanan**	52.00	6	P		**P**	16 54 55.4 +0.8
	baz=188						
E36A	**McGregor**	52.22	11	P		**P**	16 54 56.7 +0.5
	baz=196						
EGMT	**Eagleton**	52.69	356	P		**P**	16 55 00.6 +0.8
	baz=175						
YBMT	**Yellow Bay**	52.93	353	*e*P		**P**	16 55 00.9 -0.7
D08A	**Wollman Farm,**	52.93	349	*e*P		**P**	16 55 01.2 -0.3
	comp=Z,27nm,1.4s						
D37A	**Cotton**	52.99	11	P		**P**	16 55 02.1 +0.2
	baz=196						
BSMT	**Bassoo Peak**	53.02	352	*e*P		**P**	16 55 03.5 +1.1
N59A	**State Game Lan**	53.03	28	P		**P**	16 55 02.0 -0.3
	baz=218						
LON	**Longmire**	53.27	346	*e*P		**P**	16 55 02.9 -1.1
LON				pmax	pmax		
	comp=Z,9.0nm,1.0s						
LON	**Longmire**	53.27	346	*e*P		**P**	16 55 02.9 -1.1
	comp=Z,8.5nm,1.0s						
C36A	**Pine Crest Far**	53.49	11	P		**P**	16 55 05.6 0.0
	baz=196						
A26A	**Wade Farm, Ken**	53.53	3	P		**P**	16 55 06.4 +0.5
	baz=184						
C37A	**Embarrass**	53.59	11	P		**P**	16 55 06.6 +0.3
	baz=197						
A29A	**Manning Farm,**	53.75	5	P		**P**	16 55 07.6 +0.1
	baz=188						
C38A	**Sawbill Land.**	53.76	12	P		**P**	16 55 07.7 +0.2
	baz=198						
NEW	**Newport**	53.77	350	P		**P**	16 55 08.0 +0.4
	baz=166						
NEW	**Newport**	53.77	350	*e*P		**P**	16 55 06.4 -1.2
NEW				pmax	pmax		
	comp=Z,14nm,1.3s						
NEW	**Newport**	53.77	350	*e*P		**P**	16 55 06.4 -1.2
	comp=Z,14nm,1.3s						
B34A	**Aery, Baudette**	53.89	9	P		**P**	16 55 08.7 +0.3
	baz=193						
B35A	**Bob, Littlefor**	53.91	10	P		**P**	16 55 08.3 -0.4
	baz=195,SNR=5.1						
EYMN	**Ely**	53.93	12	P		**P**	16 55 09.1 +0.3
	baz=197						
WALA	**Waterton Lakes**	54.09	353	*e*P		**P**	16 55 09.5 -0.6
	comp=Z,28nm,1.7s						
A33A	**Warroad**	54.22	8	P		**P**	16 55 11.3 +0.4
	baz=192						
B08A	**Colville Reser**	54.26	349	*e*P		**P**	16 55 09.7 -1.5
	comp=Z,16nm,1.5s						
NLWA	**Neilton Lookou**	54.38	345	*e*P		**P**	16 55 11.6 -0.6
	comp=Z,51nm,1.5s						
SADO	**Sadowa**	54.71	23	*e*P		**P**	16 55 11.8 -2.8
	comp=Z,29nm,1.1s						
B05A	**Bryant**	54.76	347	P		**P**	16 55 15.9 +1.1
	baz=160						
RAR	**Rarotonga**	54.99	247	LR		LR	17 12 06.3
	comp=Z,1μm,21.8s,baz=102,slow=29						
A04D	**Lummi Island**	55.33	346	P		**P**	16 55 20.5 +1.6
	baz=159						
ULM	**Lac du Bonnet**	55.44	8	P		**P**	16 55 18.1 -1.6
	comp=Z,4.1nm,0.8s,baz=180,slow=6.9,SNR=4.5						
ULM				LR		LR	17 17 39.8
	comp=Z,2μm,18.6s,baz=201,slow=35						
ULM	**Lac du Bonnet**	55.44	8	*e*P		**P**	16 55 18.0 -1.6
ULM				pmax	pmax		
	comp=Z,31nm,1.4s						
ULM	**Lac du Bonnet**	55.44	8	*e*P		**P**	16 55 18.0 -1.6
	comp=Z,31nm,1.4s						
FCC	**Fort Churchill**	63.99	7	*e*P		**P**	16 56 16.8 -1.6
FCC				pmax	pmax		
	comp=Z,18nm,1.0s						
FCC	**Fort Churchill**	63.99	7	*e*P		**P**	16 56 16.8 -1.6
	comp=Z,18nm,1.0s						
DLBC	**Dease Lake**	65.98	346	*e*P		**P**	16 56 31.3 -0.2
	comp=Z,22nm,1.0s						
YKA	**Yellowknife Ar**	67.42	355	P		**P**	16 56 39.8 -0.7
	comp=Z,4.7nm,0.8s,baz=163,slow=6.3,SNR=51						
YKB5	**Yellowknife Ar**	67.42	355	*e*P		**P**	16 56 39.0 -1.5
YKW3	**Yellowknife Ar**	67.49	355	*e*P		**P**	16 56 39.5 -1.4
	comp=Z,13nm,1.0s						
SCHQ	**Schefferville**	67.52	23	LR		LR	17 25 19.4
	comp=Z,1μm,20.2s,baz=227,slow=35						
RAO	**Raoul Island**	72.28	241	LR		LR	17 20 47.8
	comp=Z,725nm,19.8s,baz=82,slow=29						
KDAK	**Kodiak Island**	72.88	336	LR		LR	17 21 19.2
	comp=Z,3μm,20.6s,baz=145,slow=29						
DAWY	**Dawson**	73.14	345	*e*P		**P**	16 57 15.9 +0.3
MENT	**Mentasta**	73.43	343	*e*P		**P**	16 57 18.9 +1.6
	comp=Z,18nm,1.4s						
SCM	**Sheep Creek Mo**	73.73	341	*e*P		**P**	16 57 20.6 +1.5
SCM	**Sheep Creek Mo**	73.73	341	*e*P		**P**	16 57 20.6 +1.5
PAX	**Paxson**	73.98	342	*e*P		**P**	16 57 18.8 -1.8
PAX				pmax	pmax		
	comp=Z,21nm,1.3s						
PAX	**Paxson**	73.98	342	*e*P		**P**	16 57 18.8 -1.8
	comp=Z,21nm,1.3s						
RC01	**Rabbit Creek A**	74.02	339	*e*P		**P**	16 57 21.2 +0.5
	comp=Z,32nm,1.1s						
SML	**Sawmill**	74.04	340	*e*P		**P**	16 57 22.3 +1.3
SML				pmax	pmax		
	comp=Z,40nm,1.4s						
SML	**Sawmill**	74.04	340	*e*P		**P**	16 57 22.2 +1.3
	comp=Z,40nm,1.4s						
DOT	**Dot Lake**	74.08	343	*e*P		**P**	16 57 22.3 +1.2
	comp=Z,27nm,0.9s						
PMR	**Palmer**	74.16	340	*e*P		**P**	16 57 24.0 +2.5
PMR	**Palmer**	74.16	340	*e*P		**P**	16 57 23.9 +2.5
EGAK	**Eagle**	74.17	345	*e*P		**P**	16 57 21.6 +0.1
RSO	**Redoubt South**	74.69	338	*e*P		**P**	16 57 24.9 -0.1
SPU	**Mount Spurr**	74.91	339	*e*P		**P**	16 57 24.8 -1.2
INK	**Inuvik**	75.48	350	P		**P**	16 57 28.7 -0.3
	comp=Z,3.8nm,0.8s,baz=132,slow=6.6,SNR=16						
INK				LR		LR	17 28 18.4
	comp=Z,2μm,18.5s,baz=146,slow=34						
MCK	**McKinley**	75.61	342	*e*P		**P**	16 57 30.6 +0.7
MCK				pmax	pmax		
	comp=Z,37nm,1.4s						
MCK	**McKinley**	75.61	342	*e*P		**P**	16 57 30.6 +0.7
	comp=Z,37nm,1.4s						
IL1	**Eielson Array**	75.74	343	*e*P		**P**	16 57 29.5 -1.2
ILAR	**Eielson Array**	75.74	343	P		**P**	16 57 30.4 -0.3
	comp=Z,3.7nm,0.8s,baz=155,slow=4.9,SNR=17						
ILB	**Eielson Array**	75.74	343	*e*P		**P**	16 57 29.0 -1.6
TRF	**Thorofare Moun**	75.84	341	*e*P		**P**	16 57 30.7 -0.7
	comp=Z,17nm,1.0s						
WRH	**Wood River Hil**	75.88	342	*e*P		**P**	16 57 33.1 +1.7
	comp=Z,27nm,1.0s						
BWN	**Browne**	76.09	342	*e*P		**P**	16 57 32.4 -0.2
	comp=Z,109nm,1.2s						
COLA	**College**	76.10	343	*e*P		**P**	16 57 36.4 +3.8
COLA				pmax	pmax		
	comp=Z,2.0nm,1.0s						
PPLA	**Purkeypile**	76.10	340	*e*P		**P**	16 57 33.5 +0.6
	comp=Z,36nm,1.2s						
KTH	**Kantishna Hill**	76.12	341	*e*P		**P**	16 57 32.7 -0.2
	comp=Z,42nm,1.0s						
MDM	**Murphy Dome**	76.27	343	*e*P		**P**	16 57 33.8 +0.1
	comp=Z,22nm,1.3s						
CAST	**Castle Rocks**	76.41	340	*e*P		**P**	16 57 34.1 -0.5
	comp=Z,23nm,1.1s						
BPAW	**Bear Paw Mtn.**	76.52	341	*e*P		**P**	16 57 34.0 -1.1
	comp=Z,11nm,1.2s						
MLY	**Manley**	77.08	342	*e*P		**P**	16 57 37.7 -0.6
	comp=Z,18nm,1.1s						
URZ	**Urewera**	77.10	232	LR		LR	17 26 03.3
	comp=Z,780nm,18.4s,baz=141,slow=31						
COLD	**Coldfoot**	78.45	344	*e*P		**P**	16 57 45.0 -0.8
	comp=Z,25nm,1.1s						
RES	**Resolute Bay**	79.59	3	*e*P		**P**	16 57 51.2 -0.7
RES				pmax	pmax		
	comp=Z,12nm,1.3s						
RES	**Resolute Bay**	79.59	3	*e*P		**P**	16 57 51.2 -0.7
	comp=Z,12nm,1.3s						
THZ	**Tophouse**	80.51	229	*e*P		**P**	16 58 00.9 +3.2
RPZ	**Rata Peaks**	81.93	227	LR		LR	17 27 59.1
	comp=Z,1μm,18.6s,baz=34,slow=31						
QSPA	**South Pole Qui**	85.29	180	*e*P		**P**	16 58 24.0 +1.9
VNDA	**Vanda**	85.94	193	LR		LR	17 29 45.7
	comp=Z,414nm,19.0s,baz=87,slow=31						
H11N3	**WAKE ISLAND Hy**	89.25	290	T		T	18 37 20.6
	baz=96,slow=75,SNR=440						
H11N2	**WAKE ISLAND Hy**	89.26	290	T		T	18 37 25.7
	baz=96,slow=75,SNR=366						
H11N1	**WAKE ISLAND Hy**	89.26	290	T		T	18 37 21.9
	baz=96,slow=75,SNR=154						
H11S2	**WAKE ISLAND Hy**	89.33	288	T		T	18 37 29.1
	baz=93,slow=74,SNR=190						
H11S1	**WAKE ISLAND Hy**	89.33	289	T		T	18 37 30.3
	baz=93,slow=74,SNR=145						
H11S3	**WAKE ISLAND Hy**	89.34	289	T		T	18 37 30.4
	baz=93,slow=74,SNR=108						
BILL	**Bilibino**	93.69	338	*i* P		**P**	16 59 04.1 +2.5
BILL				pmax	pmax		
	comp=Z,2.0nm,1.3s						
PETK	**Petropavlovsk-**	97.82	323	LR		LR	17 35 43.5
	comp=Z,814nm,20.6s,baz=93,slow=31						
MA2	**Magadan**	101.00	330	*e*P		**Pdif**	16 59 35.5 +0.7
ASAR	**Alice Springs**	115.53	241	PKP		**PKPdf**	17 04 28.1 -0.2
	comp=Z,0.5nm,0.9s,baz=159,slow=7.9,SNR=2.6						
WRA	**Warramunga Arr**	116.22	245	PKP		**PKPdf**	17 04 29.0 -0.7
	comp=Z,0.3nm,0.7s,baz=357,slow=1.5,SNR=3.1						
ANN	**Anapa**	128.66	33	*e*P		**Pdif**	17 01 37.1 -1.0
ANN				MLR	MLR		
	comp=Z,419nm,18.0s						
BR231	**Keskin MP Arra**	128.76	41	*e*PKPdf		**PKPdf**	17 04 53.7 +0.3
ULN	**Ulaanbaatar**	128.76	332	*i* PKIKP		**PKPdf**	17 04 56.5 +3.3
BRTR	**Keskin Array B**	129.39	41	PKP		**PKPdf**	17 04 54.8 +0.2
	comp=Z,0.4nm,0.7s,baz=225,slow=6.5,SNR=3.0						
ZAA0	**Zalesovo Array**	130.24	352	*e*PKPdf		**PKPdf**	17 04 54.4 -1.2
ZALV	**Zalesovo Beam**	130.24	352	PKP		**PKPdf**	17 04 55.6 +0.1
	comp=Z,0.5nm,0.5s,baz=158,slow=4.8,SNR=2.6						
HHC	**Hu-ho-hao-te**	131.02	323	*e*PKP		**PKPdf**	17 04 55.6 -2.0
HHC				PP		**PP**	17 07 09.8 -4.0
HHC				PKS		**PKSdf**	17 08 34.2 0.0
HHC				SKS		SKSdf	17 11 57.9 -12
HHC				SKKS		**SKKSac**	17 14 01.0 -10
KIV	**Kislovodsk**	132.01	31	*i* PKIKP		**PKPdf**	17 05 02.2 +2.8
KIV				pmax	pmax		
	comp=Z,6.0nm,1.1s						
KIV				MLR	MLR		
	comp=Z,253nm,21.0s						
ZEI	**Tsey**	133.46	31	*e*P		**Pdif**	17 01 51.9 -7.9
ZEI				pmax	pmax		
	comp=Z,9.0nm,1.3s						
ABKAR	**Akbulak array**	134.00	13	*e*PKPdf		**PKPdf**	17 05 03.3 +0.5
MKAR	**Makanchi Array**	137.58	352	PKP		**PKPdf**	17 05 08.1 -1.5
	comp=Z,1.0nm,1.0s,baz=36,slow=3.1,SNR=3.9						
MKAR				PP		**PP**	17 07 54.0 -0.5
	comp=Z,0.8nm,1.1s,baz=38,slow=6.1,SNR=3.9						
MK01	**Makanchi Array**	137.60	352	*e*PKPdf		**PKPdf**	17 05 10.1 +0.5
GTA	**Gaotai**	138.56	330	*e*PKP		**PKPdf**	17 05 14.7 +2.9
GTA				PP		**PP**	17 08 07.9 +6.6
GTA				SKS		**SKSdf**	17 12 23.0 +0.2
GTA				SKKS		**SKKSac**	17 14 57.0 +0.2
LZH	**Lanzhou**	138.72	323	*e*PKP		**PKPdf**	17 05 05.2 -7.0
LZH				sPKP			17 05 12.7
LZH				PP		PP	17 07 52.3 -10
LZH				PKS		PKSdf	17 08 37.7 -11
LZH				SKS		SKSdf	17 12 07.6 -16
LZH				SKKS		SKKSac	17 14 42.7 -15
CD2	**Chengdu**	142.08	317	PKP		**PKPdf**	17 05 16.4 -1.9
GYA	**Guiyang**	142.39	308	*e*PKP		**PKPdf**	17 05 17.8 -1.2
GYA				PP		**PP**	17 08 28.4 +2.8
GYA				AMB	AMB		
	comp=Z,120nm,8.0s						
GEYT	**Alibeck**	143.80	22	PKP		PKPbc	17 05 19.8 +1.1
	comp=Z,1.5nm,0.7s,baz=321,slow=2.1,SNR=4.6						
KSM	**Kuching**	144.02	266	*e*PKPdf		**PKPab**	17 05 19.4 0.0
KSH	**Kashi**	145.38	358	*e*PKPbc		**PKPdf**	17 05 26.1 +2.2
KSH				*e*PP		PP	17 08 52.9 +11
KSH				SKS		**SKSdf**	17 12 31.0 -2.6
KSH	**Kashi**	145.38	358	SKKS			17 15 44.0
KSH				AMB	AMB		
	comp=Z,80nm,3.8s						
KSH				LR	LR		
	comp=N,620nm,15.5s						
KSH				LR	LR		
	comp=E,460nm,17.4s						
KSH				LR	LR		
	comp=Z,970nm,17.9s						
CHTO	**Chiang Mai**	152.28	302	*e*PKIKP		**PKPbc**	17 05 42.1 -0.1
CHTO	**Chiang Mai**	152.28	302	*e*PKPbc		**PKPbc**	17 05 42.1 -0.1
CM01	**Chiang Mai Arr**	152.45	302	*e*PKPdf		**PKPdf**	17 05 34.5 -1.2

IDC 10 16:51:32.9±2.0, 7°.86S×68°.32E, h0km, mb3.7/6, mb1 3.9/6, mb1mx3.5/55, mbtmp3.7/6, Error ellipse: s-maj=88.5km s-min=25.3km az=46.0, Chagos Archipelago region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
H08N3	**Diego Garcia H**	3.05	61	T	T	16 55 55.5	
	baz=251						
H08N2	**Diego Garcia H**	3.07	60	T	T	16 55 52.9	
	baz=251						
H08N1	**Diego Carcia H**	3.07	61	T	T	16 55 56.4	
	baz=251						
MKAR	**Makanchi Array**	55.81	12	P	P	17 01 11.9	0.0
	0.2nm,0.4s,baz=201,slow=6.6,SNR=3.8						
BRTR	**Keskin Array B**	57.19	329	P	P	17 01 22.1	+0.2
	0.3nm,0.5s,baz=116,slow=9.8,SNR=3.1						
ASAR	**Alice Springs**	64.56	112	P	P	17 02 12.4	0.0
	0.9nm,0.9s,baz=275,slow=6.4,SNR=5.1						
WRA	**Warramunga Arr**	64.86	108	P	P	17 02 14.5	+0.1
	1.1nm,0.9s,baz=283,slow=5.4,SNR=4.4						
ARCES	**ARCESS Array B**	82.62	346	P	P	17 03 57.1	-0.5
	2.1nm,0.9s,baz=126,slow=6.2,SNR=3.8						
TIXI	**Tiksi**	88.54	16	P	P	17 04 26.9	-0.1
	0.5nm,0.8s,baz=16,slow=1.5,SNR=3.6						
PDAR	**Pinedale Array**	145.18	357	PKPbc	PKPab	17 11 12.7	0.0
	0.4nm,0.6s,baz=115,slow=2.5,SNR=4.1						
NVAR	**Mina Array Bea**	148.98	10	PKPbc	PKPbc	17 11 22.4	-1.2
	0.3nm,0.4s,baz=284,slow=26,SNR=2.7						

*ISCJB **10** 16:51:59.7±0.8, 38°.81N±0°.05×142°.50E±0°.06, h27km, mb3.6/6, MS3.4/1, Error ellipse: s-maj=8.0km s-min=6.6km az=151.7*

*NIED **10** 16:52:00, 38°.90N×142°.40E, h32km, Mw3.5 Best double couple: M0 2.07000×10^14 NP1:φs 173.00000°, δ 15.00000°, λ 95.00000°. NP2:φs 349.00000°, δ 75.00000°, λ 89.00000°.*

*JMA **10** 16:52:01.0±0.2, 38°.86N×142°.45E, h35km±3km, M3.8*

JMA Felt I J1.

*IDC **10** 16:52:04.8±3.1, 38°.78N×142°.44E, h61km±28km, mb3.3/6, mb1 3.5/8, mb1mx3.3/54, mbtmp3.5/8, ML3.2/2, MS3.5/1, Ms1 3.5/1, ms1mx2.5/31, Error ellipse: s-maj=31.7km s-min=18.3km az=97.0*

ISC 10 16:52:01.7±1.0, 38°.88N±0°.06×142°.35E±0°.07, h27km, n16, σ 1§44/20, mb3.6/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	0.57	291	P	**Pn**	16 52 13.8	-0.2
OFUJ				S	**Sn**	16 52 22.6	+0.1
JMK	**Ichinoseki**	0.88	275	P	**Pb**	16 52 18.5	+0.1
JMK				S	**Sn**	16 52 30.7	+0.4
JIO	**Ouri**	0.89	242	P	**Pn**	16 52 17.6	-0.9
JIO				S	**Sb**	16 52 29.6	-0.4
JOM	**Ohasama**	1.01	306	P	**Pb**	16 52 20.6	-0.1
JOM				S	**Sb**	16 52 34.1	+0.5
JTH	**Tanohata**	1.12	341	P	**Pn**	16 52 21.0	-0.7
JOU	**Okura**	1.42	249	P	**Pn**	16 52 26.2	+0.5
MAT	**Matsushiro**	4.03	236	P	**Pn**	16 53 04.4	+2.8
MAT				S	**Sn**	16 53 49.5	+1.6
MJAR	**Matsushiro Arr**	4.03	236	P	**Pn**	16 53 04.4	+2.8
	4.6nm,0.3s,baz=35,slow=13,SNR=38						
ASAJ	**Asahikawa**	5.24	2	P	**Pn**	16 53 21.3	+3.1
	0.4nm,0.3s,baz=256,slow=15,SNR=3.6						
TGY	**Tagaytay City**	31.09	223	LR	LR	17 11 11.2	
	comp=Z,80nm,19.3s,slow=37						
ZALV	**Zalesovo Beam**	41.24	311	P	**P**	16 59 44.2	0.0
	0.3nm,0.3s,baz=93,slow=7.2,SNR=2.8						
MKAR	**Makanchi Array**	43.79	301	P	**P**	17 00 04.9	-0.1
	0.2nm,0.5s,baz=77,slow=6.6,SNR=4.1						
ILAR	**Eielson Array**	47.55	33	P	**P**	17 00 34.1	-0.3
	0.3nm,0.6s,baz=277,slow=7.1,SNR=3.4						
WRA	**Warramunga Arr**	58.99	189	P	**P**	17 01 56.9	-2.0
	1.0nm,0.5s,baz=6.3,slow=7.1,SNR=13						
ASAR	**Alice Springs**	62.72	189	P	**P**	17 02 23.0	-1.3
	0.6nm,0.8s,baz=14,slow=10,SNR=5.4						
GERES	**GERESS Array B**	81.53	329	P	**P**	17 04 16.6	-0.2
	0.2nm,0.3s,baz=158,slow=43,SNR=4.6						

*ISCJB **10** 16:52:17.7±0.4, 8°.10S±0°.08×68°.16E±0°.05, h15km, mb4.3/28, Error ellipse: s-maj=11.8km s-min=7.6km az=175.6*

*IDC **10** 16:52:17.4±0.6, 8°.10S×68°.13E, h0km, mb4.2/20, mb1 4.3/20, mb1mx4.1/55, mbtmp4.2/20, Error ellipse: s-maj=17.5km s-min=14.7km az=161.0*

*NEIC **10** 16:52:18.8±0.3, 8°.12S×68°.14E, h10km, mb4.6/7, Error ellipse: s-maj=10.2km s-min=7.8km az=156.0*

ISC 10 16:52:19.5±0.5, 8°.2S±0°.1×68°.22E±0°.07, h15km, n51, σ 1§07/50, mb4.3/28, Chagos Archipelago region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
H08N3	**Diego Garcia H**	3.28	57	Pn	**Pn**	16 53 09.2	-1.0
H08N3				T	T	16 56 38.2	
	baz=238,slow=75,SNR=326						
H08N2	**Diego Garcia H**	3.30	57	T	T	16 56 38.4	
	baz=238,slow=75,SNR=332						
H08N1	**Diego Carcia H**	3.30	57	T	T	16 56 13.1	
	baz=238,slow=75,SNR=341						
H08S1	**Diego Carcia H**	4.24	83	Pn	**Pn**	16 53 24.7	+1.3
	baz=266,slow=13,SNR=3.9						
H08S1				Sn	**Sn**	16 54 08.9	-3.7
H08S3	**Diego Garcia H**	4.25	83	Pn	**Pn**	16 53 23.2	-0.4
	baz=266,slow=13,SNR=3.4						
DGAR	**Diego Garcia**	4.26	80	*e*Pn	**Pn**	16 53 23.2	-0.6
H08S2	**Diego Garcia H**	4.26	83	Pn	Pn	16 53 27.7	+4.0
	baz=266,slow=13,SNR=6.9						
OPO	**Ambohidratompo**	22.91	241	P	**P**	16 57 22.1	-1.1
	6.8nm,1.2s,baz=135,slow=3.9,SNR=4.2						
LSZ	**Lusaka**	39.78	256	P	**P**	16 59 52.6	+0.1
	7.7nm,1.1s,baz=88,slow=9.4,SNR=6.5						
CHTO	**Chiang Mai**	40.45	48	*e*P	**P**	16 59 59.4	+1.7
	6.3nm,1.0s						
LSA	**Lhasa**	43.63	29	*e*P	**P**	17 00 26.1	+2.0
	20nm,1.7s						
BOSA	**Boshof**	45.24	238	P	**P**	17 00 36.1	-0.6
	2.6nm,0.8s,baz=106,slow=12,SNR=3.0						
GEYT	**Alibeck**	46.81	349	P	**P**	17 00 49.5	+0.8
	1.6nm,0.8s,baz=164,slow=7.2,SNR=5.3						
AAK	**Ala-Archa**	50.87	6	*e*P	**P**	17 01 20.7	+0.8
	4.5nm,1.0s						
MKAR	**Makanchi Array**	56.12	12	P	**P**	17 01 57.7	-0.6
	1.0nm,0.6s,baz=205,slow=7.8,SNR=8.5						
KBZ	**Khabaz**	56.52	338	P	**P**	17 02 00.4	-0.7
	1.7nm,0.7s,baz=224,slow=5.2,SNR=4.7						
BRTR	**Keskin Array B**	57.39	329	P	**P**	17 02 07.0	-0.6
	3.0nm,1.0s,baz=146,slow=9.0,SNR=15						
ABKAR	**Akbulak array**	57.63	354	*e*P	**P**	17 02 08.3	-0.6
	2.3nm,0.7s						
KURK	**Kurchatov**	59.32	8	*e*P	**P**	17 02 19.9	-0.8
	13nm,0.9s						
MAW	**Mawson**	59.48	182	P	**P**	17 02 21.9	+0.4
	4.7nm,0.9s,baz=54,slow=6.2,SNR=5.0						
ZALV	**Zalesovo Beam**	63.44	11	P	**P**	17 02 47.8	-0.7
	1.6nm,0.9s,baz=224,slow=6.2,SNR=8.0						
ASAR	**Alice Springs**	64.53	112	P	**P**	17 02 58.0	+1.6
	2.2nm,1.0s,baz=275,slow=6.4,SNR=6.9						
ARU	**Arti**	64.85	354	*e*P	**P**	17 02 57.0	-0.7
	10nm,1.1s						
WRA	**Warramunga Arr**	64.86	108	P	**P**	17 02 58.5	-0.1
	4.8nm,1.1s,baz=280,slow=6.5,SNR=8.8						
WRAB	**Tennant Creek**	64.87	108	*e*P	**P**	17 02 59.2	+0.6
	14nm,1.3s						
TLY	**Talaya**	66.92	23	P	**P**	17 03 12.1	+0.9
	0.6nm,0.5s,baz=214,slow=6.0,SNR=4.5						
AKASG	**Malin Array Be**	67.64	334	P	**P**	17 03 13.9	-1.8
	0.4nm,0.3s,baz=138,slow=5.2,SNR=4.4						
TORD	**Torodi Ar. Bea**	69.37	287	P	**P**	17 03 26.8	-0.5
	0.8nm,0.9s,baz=102,slow=12,SNR=4.5						
KOLS	**Kolonicke sedl**	69.64	330	*e*P	**P**	17 03 28.0	-0.3
KOLS				*e*		17 03 33.9	
VYHS	**Vyhne**	71.13	328	*e*P	**P**	17 03 36.7	-0.7
VYHS				*e*		17 03 42.2	
LANS	**Liptovska Anna**	71.20	329	*e*P	**P**	17 03 37.5	-0.4
KSAR	**Wonju Array Be**	71.78	46	P	**P**	17 03 43.2	+1.7
KSRS	**Korea Array**	71.81	46	P	**P**	17 03 43.2	+1.5
	2.1nm,1.0s,baz=244,slow=6.2,SNR=7.2						
DBIC	**Dimbokro**	74.34	279	P	**P**	17 03 57.3	+0.1
	8.2nm,1.0s,baz=348,slow=2.5,SNR=3.8						
BRG	**Berggiesshubel**	75.10	328	*e*P	**P**	17 04 01.0	+0.2
	18nm,1.8s						
KLR	**Kul'dur**	79.46	37	P	**P**	17 04 24.8	-0.6
	1.5nm,0.6s,baz=291,slow=6.6,SNR=3.8						
ESDC	**Sonseca Array**	81.71	312	P	**P**	17 04 37.2	-0.5
	0.8nm,0.5s,baz=84,slow=4.9,SNR=8.4						
ARCES	**ARCESS Array B**	82.88	346	P	**P**	17 04 43.3	+0.1

TORD Torodi Ar. Bea 145.21 289 PKPbc **PKPdf 17 12 39.7 -0.8**
0.2nm,0.4s,baz=24,slow=1.1,SNR=2.6

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*IDC **10** 16:53:50.0±1.3,3.°06S×147.°56E, h0km, mb4.2/5, mb1 4.4/6, mb1mx3.9/46, mbtmp4.2/6, ML1.3/1, Error ellipse: s-maj=71.1km s-min=21.9km az=120.0*
*ISCJB **10** 16:53:52.9±0.9,3.°2S±0.°1×147.°6E±0.°2, h32km, mb4.0/5, MS4.2/1, Error ellipse: s-maj=33.9km s-min=12.9km az=16.9*
*NEIC **10** 16:53:55.1±0.8,3.°14S×147.°65E, h35km, mb4.4/1, Error ellipse: s-maj=31.1km s-min=11.3km az=113.0*
ISC 10 16:53:54.5±1.1,3.°1S±0.°1×147.°6E±0.°3, h32km, n16, σ0s56/10, mb4.1/5, Bismarck Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**6.28**	**184**	Pn	**Pn**	**16 55 24.9**	**-0.1**
0.5nm,0.3s,baz=9.2,slow=10,SNR=2.4							
COEN	**Coen**	**11.64**	**202**	*e*Pn	**Pn**	**16 56 38.6**	**+0.1**
WRAB	**Tennant Creek**	**21.14**	**217**	*e*P	**P**	**16 58 37.5**	**+0.4**
WRA	**Warramunga Arr**	**21.16**	**217**	P	**P**	**16 58 37.5**	**+0.3**
5.8nm,0.7s,baz=42,slow=10,SNR=11							
ASAR	**Alice Springs**	**24.36**	**212**	P	**P**	**16 59 09.2**	**-0.7**
5.6nm,0.8s,baz=40,slow=7.2,SNR=13							
FITZ	**Fitzroy Crossi**	**26.17**	**234**	P	**P**	**16 59 26.8**	**+0.4**
13nm,0.9s,baz=67,slow=8.5,SNR=9.3							
FITZ	**Fitzroy Crossi**	**26.17**	**234**	P	**P**	**16 59 26.7**	**+0.4**
14nm,1.2s							
H11S3	**WAKE ISLAND Hy**	**28.53**	**41**	T	T	17 29 21.5	
baz=222,slow=76,SNR=557							
H11S2	**WAKE ISLAND Hy**	**28.54**	**41**	T	T	17 29 19.4	
baz=222,slow=76,SNR=337							
H11S1	**WAKE ISLAND Hy**	**28.55**	**41**	T	T	17 29 20.2	
baz=222,slow=76,SNR=443							
H11N1	**WAKE ISLAND Hy**	**29.56**	**39**	T	T	17 30 36.4	
baz=221,slow=76,SNR=147							
H11N3	**WAKE ISLAND Hy**	**29.57**	**39**	T	T	17 30 38.9	
baz=221,slow=76,SNR=270							
H11N2	**WAKE ISLAND Hy**	**29.57**	**39**	T	T	17 30 39.2	
baz=221,slow=76,SNR=24							
WMQ	**Urumqi**	**71.01**	**319**	*e*P	**P**	**17 05 09.0**	**-0.4**
WMQ				LR	LR		
comp=N,160nm,16.2s							
WMQ				LR	LR		
comp=E,110nm,24.4s							
WMQ				LR	LR		
comp=Z,120nm,19.6s							
ILAR	**Eielson Array**	**82.60**	**23**	P	**P**	**17 06 15.1**	**+0.8**
comp=Z,0.5nm,0.7s,baz=257,slow=3.6,SNR=3.4							
YKA	**Yellowknife Ar**	**96.35**	**28**	P	**P**	**17 07 19.5**	**-0.4**
comp=Z,0.3nm,0.5s,baz=274,slow=4.3,SNR=4.9							

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*IDC **10** 16:56:14.4±3.6,5.°32N×82.°11W, h0km, mb3.5/3, mb1 3.8/3, mb1mx3.5/33, mbtmp3.5/3, MS4.3/3, Ms1 4.4/3, ms1mx3.7/23, Error ellipse: s-maj=115.8km s-min=83.7km az=58.0*
*ISCJB **10** 16:56:40.8±1.6,8.°95N±0.°07×84.°05W±0.°05, h5km±9km, mb3.4/3, MS4.4/3, Error ellipse: s-maj=13.5km s-min=4.7km az=33.8*
*CASC **10** 16:56:42.6±2.7,9.°07N×83.°94W, h6km±12km, MD4.1*
ISC 10 16:56:42.6±1.3,9.°07N±0.°08×83.°95W±0.°05, h11km±9km, n16, σ2s01/20, mb3.5/3, MS4.3/3, 4C-2D, Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
QCR	**Quepos**	**0.41**	**329**	*e*P	**Pb**	**16 56 51.8**	**0.0**
BUS	**Buena Vista**	**0.52**	**22**	⇓*i*P	**Pb**	**16 56 53.9**	**0.0**
BUS				*e*S	**Sb**	**16 57 02.5**	**+1.0**
ACR	**Cerro Adams**	**0.88**	**118**	*e*P	**Pg**	**16 56 59.2**	**-0.3**
ACR				*e*S	**Sg**	**16 57 11.3**	**+0.3**
CGA2	**Cerro Gallo 2**	**1.06**	**332**	⇓*e*P	**Pg**	**16 57 02.8**	**-0.4**
CGA2				*e*S	**Sb**	**16 57 18.6**	**+1.5**
BRU2	**Volcan**	**1.28**	**102**	⇑*i*P	**Pg**	**16 57 05.0**	**-2.1**
BRU2				*e*S	**Sb**	**16 57 23.6**	**+0.4**
TBS2		**1.31**	**102**	⇑*i*P	**Pn**	**16 57 06.2**	**-0.7**
TBS2				*e*S	**Sg**	**16 57 23.9**	**-0.9**
JCR	**Jicaral**	**1.38**	**304**	*e*P	**Pn**	**16 57 06.3**	**-1.5**
JCR				*e*S	**Sg**	**16 57 31.1**	**+4.0**
JTS	**JuntasAbangare**	**1.56**	**321**	⇑*i*P	**Pn**	**16 57 09.8**	**-0.5**
JTS				*e*S	**Sn**	**16 57 30.9**	**+0.4**
AZU	**Azuero**	**3.85**	**109**	⇑*e*P	**Pn**	**16 57 44.9**	**+3.1**
AZU				*e*S	**Sn**	**16 58 31.4**	**+4.3**
BCIP	**Isla Barro Col**	**4.06**	**88**	*e*P	**Pn**	**16 57 45.6**	**+0.9**
PTGA	**Pitinga**	**25.80**	**111**	LR	LR	17 10 47.5	
comp=Z,764nm,18.6s,baz=275,slow=38							
TXAR	**Lajitas Array**	**27.35**	**320**	P	P	17 02 37.0	+9.1
0.4nm,0.6s,baz=129,slow=9.9,SNR=4.0							
RES	**Resolute Bay**	**65.88**	**357**	P	**P**	**17 07 25.1**	**-2.7**
1.1nm,0.9s,baz=162,slow=12,SNR=3.8							
ILAR	**Eielson Array**	**70.48**	**336**	P	**P**	**17 07 56.2**	**-0.7**
0.3nm,0.8s,baz=110,slow=3.9,SNR=3.0							
NOA	**NORSAR Array B**	**84.63**	**29**	LR	LR	17 44 41.3	
comp=Z,256nm,21.0s,baz=285,slow=33							
AKASG	**Malin Array Be**	**97.25**	**36**	LR	LR	17 52 11.5	
comp=Z,103nm,21.2s,baz=305,slow=34							

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*NIED **10** 17:02:00,35.°70N×140.°80E, h38km, Mw4.4 Best double couple: M0:4.34000×10^15 NP1:φs150.00000°, δ17.00000°, λ-14.00000°. NP2:φs254.00000°, δ86.00000°, λ-107.00000°.*
*IDC **10** 17:02:12.6±0.6,35.°62N×140.°83E, h0km, mb4.1/26, mb1 4.2/30, mb1mx4.1/66, mbtmp4.2/30, ML3.6/3, MS3.8/12, Ms1 3.8/12, ms1mx3.5/43, Error ellipse: s-maj=14.4km s-min=13.3km az=70.0*
*NEIC **10** 17:02:14.5±2.1,35.°59N×140.°83E, h14km±13km, mb4.6/14, Error ellipse: s-maj=5.4km s-min=5.2km az=95.0*
NEIC Recorded [2 JMA] in Chiba and Ibaraki.
*JMA **10** 17:02:15.6±0.1,35.°67N×140.°84E, h28km±1km, M4.1*
JMA Felt II J1.
ISC 10 17:02:16.1±0.8,35.°68N±0.°03×140.°87E±0.°05, h26km±5km, n99, σ1s59/102, mb4.3/40, MS4.1/7, 1C-5D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.03**	**335**	⇓P	**Pb**	**17 02 20.2**	**-0.3**
CHOJ				S	**Sb**	**17 02 23.4**	**-0.1**
I30JP	**ISUMI INFRASON**	**0.59**	**231**	*i*		17 03 50.0	
baz=57,slow=320,SNR=0.9							
JCN	**Nagara**	**0.61**	**245**	⇓P	**Pn**	**17 02 27.8**	**-1.2**
JCN				S	**Sn**	**17 02 37.4**	**-0.6**
KTR	**Katsuura**	**0.70**	**221**	⇑P	**Pb**	**17 02 28.5**	**-1.2**
KTR				S	**Sb**	**17 02 37.5**	**-1.4**
JYT	**Yasato**	**0.78**	**315**	⇓P	**Pb**	**17 02 29.7**	**-1.3**
JYT				S	**Sb**	**17 02 40.0**	**-1.1**
BSO3	**Boso 3**	**0.92**	**199**	⇓P	**Pb**	**17 02 31.9**	**-1.4**
BSO3				S	**Sn**	**17 02 44.7**	**-0.8**
JHO	**Hitachi**	**0.96**	**345**	⇓P	**Pn**	**17 02 32.6**	**-1.4**
JAG	**Ashikaga**	**1.37**	**303**	P	**Pn**	**17 02 38.3**	**-1.3**
JAG				S	**Sn**	**17 02 55.3**	**-1.6**
MJAR	**Matsushiro Arr**	**2.32**	**293**	Pn	**Pn**	**17 02 52.5**	**-0.2**
10nm,0.3s,baz=93,slow=12,SNR=52							
MJAR				Sn	**Sn**	**17 03 20.7**	**+0.3**
20nm,0.3s,baz=229,slow=28,SNR=7.1							
MJAR				LR	LR	17 03 48.6	
comp=Z,760nm,19.0s,baz=125,slow=42							
MAJO	**Matsushiro**	**2.32**	**293**	*e*Pn	**Pn**	**17 02 51.7**	**-1.0**
MAT	**Matsushiro**	**2.32**	**293**	P	**Pn**	**17 02 52.9**	**+0.2**
MAT				*e*S	**Sn**	**17 03 21.3**	**+0.8**
MJB9	**Matsu-Tunnel**	**2.33**	**293**	*e*Pn	**Pn**	**17 02 52.5**	**-0.2**
JHJ2	**Mitsune**	**2.71**	**199**	*e*Pn	**Pn**	**17 02 57.6**	**-0.3**
JHJ	**Hachijo jima 2**	**2.71**	**200**	Pn	**Pn**	**17 02 58.3**	**+0.3**
28nm,0.3s,baz=294,slow=22,SNR=11							
JHJ				Sn	**Sn**	**17 03 27.3**	**-2.6**
56nm,0.3s,baz=262,slow=21,SNR=4.9							
JHJ				LR	LR	17 04 06.4	
comp=Z,685nm,21.3s,baz=101,slow=43							
INU	**Inuyama**	**3.16**	**265**	*e*Pn	**Pn**	**17 03 05.4**	**+1.2**
ERM	**Erimo**	**6.57**	**15**	*e*Pn	**Pn**	**17 03 51.1**	**+0.1**
ASAJ	**Asahikawa**	**8.53**	**8**	Pn	**Pn**	**17 04 18.8**	**+0.9**
1.1nm,0.3s,baz=206,slow=16,SNR=16							
ASAJ				Sn	**Sn**	**17 05 47.7**	**-5.6**
0.6nm,0.3s,baz=190,slow=14,SNR=4.9							
ASAJ	**Asahikawa**	**8.53**	**8**	*e*Pn	**Pn**	**17 04 15.2**	**-2.7**
ASAJ				*e*Sn	**Sn**	**17 05 47.2**	**-6.1**
CBIJ	**Chichi jima**	**8.63**	**172**	*e*Pn	**Pn**	**17 04 15.8**	**-3.6**
CBIJ				Sn	**Sn**	**17 05 54.0**	**-1.9**
JCJ	**Chichijima**	**8.63**	**172**	Pn	**Pn**	**17 04 17.2**	**-2.1**
20nm,0.3s,baz=64,slow=22,SNR=16							
JCJ				Sn	**Sn**	**17 05 54.0**	**-1.9**
7.2nm,0.3s,baz=286,slow=23,SNR=3.4							
JNU	**Nakatsue**	**8.64**	**256**	Pn	**Pn**	**17 04 23.4**	**+3.9**
0.5nm,0.3s,baz=85,slow=8.0,SNR=4.4							
JNU				LR	LR	17 07 55.3	
comp=Z,441nm,18.1s,baz=116,slow=40							
KSRS	**Korea Array**	**10.57**	**283**	Pn	Pn	17 04 51.8	+6.0
0.2nm,0.3s,baz=98,slow=14,SNR=11							
KSRS				LR	LR	17 08 44.4	
comp=Z,471nm,20.7s,baz=136,slow=37							
KSAR	**Wonju Array Be**	**10.60**	**283**	Pn	Pn	17 04 51.8	+5.6
USRK	**Ussuriysk Ar.**	**10.90**	**324**	Pn	**Pn**	**17 04 53.9**	**+3.5**
0.2nm,0.3s,baz=131,slow=12,SNR=8.8							
USRK				LR	LR	17 08 46.8	
comp=Z,356nm,19.0s,baz=159,slow=36							
CN2	**Changchun**	**14.36**	**309**	*e*P	**Pn**	**17 05 37.1**	**-0.5**
CN2				pmax	pmax		
comp=Z,10.0nm,0.5s							
CN2				LR	LR		
comp=N,200nm,14.0s							
CN2				LR	LR		
comp=E,200nm,14.0s							
CN2				LR	LR		
comp=Z,300nm,15.0s							
KLR	**Kul'dur**	**15.11**	**336**	Pn	**P**	**17 05 51.5**	**-1.2**
comp=Z,0.1nm,0.3s,baz=142,slow=7.4,SNR=2.1							
KLR				LR	LR	17 11 31.0	
comp=Z,261nm,18.4s,baz=189,slow=37							
NJ2	**Nanjing**	**18.63**	**265**	*e*P	**P**	**17 06 30.7**	**-1.1**
NJ2				pmax	pmax		
comp=Z,16nm,0.5s							
PETK	**Petropavlovsk-**	**21.08**	**29**	P	**P**	**17 07 00.0**	**+1.7**
comp=Z,7.6nm,0.9s,baz=217,slow=9.3,SNR=4.8							
PEA1	**Petropavlovsk-**	**21.08**	**29**	*e*P	**P**	**17 07 00.0**	**+1.7**
HHC	**Hu-ho-hao-te**	**23.52**	**292**	*e*P	**P**	**17 07 24.0**	**-0.3**
HHC				S	**S**	**17 11 30.3**	**-6.4**
HHC				pmax	pmax		
comp=Z,22nm,0.8s							
HHC				pmax	pmax		
comp=Z,210nm,4.3s							
HHC				LR	LR		
comp=N,650nm,11.1s							
HHC				LR	LR		
comp=E,600nm,12.1s							
HHC				LR	LR		
comp=Z,780nm,11.8s							
XAN	**Xi'an**	**26.21**	**276**	P	**P**	**17 07 47.8**	**-1.1**
XAN				pP	pP	17 07 53.5	-3.0
XAN				pmax	pmax		
comp=Z,5.0nm,1.0s							
ENH	**Enshi**	**26.81**	**267**	*e*P	**P**	**17 07 52.4**	**-1.9**
comp=Z,14nm,0.7s							
YAK	**Yakutsk**	**27.30**	**348**	P	**P**	**17 07 58.6**	**+0.4**
comp=Z,8.0nm,0.4s,baz=348,slow=5.4,SNR=6.6							
ULN	**Ulaanbaatar**	**27.78**	**306**	*e*P	**P**	**17 08 03.4**	**+0.4**
comp=Z,3.2nm,0.8s							
H11N2	**WAKE ISLAND Hy**	**27.87**	**118**	T	T	17 37 05.5	
baz=311,slow=75,SNR=180							
H11N1	**WAKE ISLAND Hy**	**27.87**	**118**	T	T	17 37 04.7	
baz=311,slow=75,SNR=86							
H11N3	**WAKE ISLAND Hy**	**27.89**	**118**	T	T	17 37 06.4	
baz=311,slow=75,SNR=199							
SONA1	**Songino Array**	**28.20**	**306**	*e*P	**P**	**17 08 07.0**	**+0.3**
SONA0	**Songino Array**	**28.20**	**306**	*e*P	**P**	**17 08 06.8**	**0.0**
comp=Z,27nm,1.0s							
SONM	**Songino Array**	**28.20**	**306**	P	**P**	**17 08 06.8**	**0.0**
comp=Z,17nm,0.7s,baz=140,slow=30,SNR=4.0							
H11S3	**WAKE ISLAND Hy**	**28.53**	**120**	T	T	17 37 53.9	
baz=312,slow=76,SNR=272							
H11S1	**WAKE ISLAND Hy**	**28.53**	**120**	T	T	17 37 53.9	
baz=312,slow=76,SNR=424							
H11S2	**WAKE ISLAND Hy**	**28.54**	**120**	T	T	17 37 55.1	
baz=312,slow=76,SNR=180							
TLY	**Talaya**	**30.91**	**313**	P	**P**	**17 08 31.4**	**+0.9**
comp=Z,2.0nm,0.8s,baz=188,slow=3.0,SNR=4.6							
TLY				LR	LR	17 21 23.8	
comp=Z,135nm,19.3s,baz=140,slow=37							
CD2	**Chengdu**	**31.26**	**272**	P	**P**	**17 08 32.9**	**-1.0**
CD2				pmax	pmax		
comp=Z,1.0nm,0.5s							
GTA	**Gaotai**	**32.57**	**289**	*e*P	**P**	**17 08 45.2**	**-0.2**
GTA				pP	pP	17 08 50.6	-2.4
GTA				sP	sP	17 08 53.6	-2.6
GTA				pmax	pmax		
comp=Z,4.0nm,0.9s							
TIXI	**Tiksi**	**36.58**	**354**	P	**P**	**17 09 20.1**	**+0.6**
comp=Z,1.0nm,0.6s,baz=134,slow=4.8,SNR=7.8							
TIXI	**Tiksi**	**36.58**	**354**	*e*P	**P**	**17 09 19.8**	**+0.3**
comp=Z,1.9nm,0.7s							
WMQ	**Urumqi**	**41.08**	**298**	*e*P	**P**	**17 09 58.4**	**+0.8**
LSA	**Lhasa**	**41.91**	**276**	*e*P	**P**	**17 10 06.2**	**+1.1**
comp=Z,5.0nm,0.8s							
ZAA0	**Zalesovo Array**	**42.52**	**313**	*e*P	**P**	**17 10 08.9**	**-0.2**
ZAA1	**Zalesovo Array**	**42.52**	**313**	*e*P	**P**	**17 10 09.6**	**+0.4**
ZALV	**Zalesovo Beam**	**42.52**	**313**	P	**P**	**17 10 09.6**	**+0.4**
comp=Z,5.4nm,0.8s,baz=90,slow=6.7,SNR=20							
MK01	**Makanchi Array**	**44.48**	**303**	*e*P	**P**	**17 10 25.1**	**-0.1**
MK31	**Makanchi Array**	**44.48**	**303**	*e*P	**P**	**17 10 25.1**	**-0.1**
MK32	**Makanchi Array**	**44.48**	**303**	*e*P	**P**	**17 10 25.6**	**+0.5**
MKAR	**Makanchi Array**	**44.48**	**303**	P	**P**	**17 10 25.6**	**+0.5**
comp=Z,2.2nm,0.7s,baz=87,slow=9.0,SNR=18							
MKAR				LR	LR	17 29 34.6	
comp=Z,96nm,19.7s,baz=83,slow=37							
MKAR	**Makanchi Array**	**44.48**	**303**	*e*P	**P**	**17 10 25.2**	**+0.1**
KURK	**Kurchatov**	**46.43**	**309**	*e*P	**P**	**17 10 40.3**	**-0.2**
comp=Z,14nm,0.7s							
KURBB	**Kurchatov Arra**	**46.50**	**309**	P	**P**	**17 10 40.9**	**-0.1**
comp=Z,7.4nm,0.8s,baz=84,slow=8.2,SNR=40							
TKM2	**Tokmak 2**	**49.90**	**299**	*e*P	**P**	**17 11 08.3**	**+0.7**
comp=Z,12nm,1.4s							
MDM	**Murphy Dome**	**50.29**	**32**	*e*P	**P**	**17 11 12.1**	**+2.0**
comp=Z,6.6nm,1.1s							
AAK	**Ala-Archa**	**50.76**	**299**	P	**P**	**17 11 14.3**	**+0.2**
comp=Z,0.8nm,0.4s,baz=84,slow=9.0,SNR=4.5							
IL1	**Eielson Array**	**50.87**	**32**	*e*P	**P**	**17 11 15.1**	**+0.7**
ILAR	**Eielson Array**	**50.87**	**32**	P	**P**	**17 11 15.4**	**+1.0**
comp=Z,1.5nm,0.8s,baz=273,slow=6.3,SNR=15							
ILB	**Eielson Array**	**50.87**	**32**	*e*P	**P**	**17 11 15.1**	**+0.6**
BVAR	**Borovoye Array**	**51.17**	**313**	P	**P**	**17 11 17.9**	**+1.1**
comp=Z,2.8nm,0.8s,baz=95,slow=9.4,SNR=9.0							
ZRNK	**Zerenda**	**52.00**	**313**	*e*P	**P**	**17 11 23.9**	**+0.8**
comp=Z,5.1nm,0.8s							
WR1	**Warramunga Arr**	**55.66**	**187**	*e*P	**P**	**17 11 49.5**	**-0.6**
comp=Z,20nm,1.4s							
WRA	**Warramunga Arr**	**55.66**	**187**	P	**P**	**17 11 49.5**	**-0.6**
comp=Z,2.6nm,0.6s,baz=3.1,slow=7.5,SNR=29							
INK	**Inuvik**	**55.79**	**27**	P	**P**	**17 11 51.9**	**+1.4**
comp=Z,0.5nm,0.5s,baz=275,slow=4.1,SNR=3.9							
INK	**Inuvik**	**55.79**	**27**	*e*P	**P**	**17 11 52.2**	**+1.8**
comp=Z,15nm,1.9s							
ARU	**Arti**	**57.09**	**319**	P	**P**	**17 12 00.2**	**+0.3**
comp=Z,4.6nm,0.5s,baz=62,slow=5.2,SNR=12							
ARU	**Arti**	**57.09**	**319**	*e*P	**P**	**17 11 59.5**	**-0.4**
comp=Z,7.1nm,0.7s							
ABKAR	**Akbulak array**	**58.48**	**311**	*e*P	**P**	**17 12 09.6**	**-0.2**
AKTO	**Aktyubinsk**	**59.26**	**312**	P	**P**	**17 12 15.0**	**-0.2**
comp=Z,1.9nm,0.8s,baz=59,slow=14,SNR=4.2							
AS31	**Alice Springs**	**59.39**	**187**	*e*P	**P**	**17 12 16.0**	**-0.3**
comp=Z,4.0nm,0.7s							
ASAR	**Alice Springs**	**59.39**	**187**	P	**P**	**17 12 16.2**	**-0.1**
comp=Z,1.0nm,0.6s,baz=18,slow=11,SNR=8.6							
RES	**Resolute Bay**	**64.02**	**14**	P	**P**	**17 12 47.7**	**+0.8**
comp=Z,1.4nm,0.9s,baz=329,slow=7.6,SNR=4.7							
RES	**Resolute Bay**	**64.02**	**14**	*e*P	**P**	**17 12 47.6**	**+0.8**
comp=Z,4.9nm,1.3s							
YKA	**Yellowknife Ar**	**65.20**	**30**	P	**P**	**17 12 55.3**	**+0.5**
comp=Z,0.5nm,0.8s,baz=299,slow=6.4,SNR=5.8							
YKB5	**Yellowknife Ar**	**65.20**	**30**	*e*P	**P**	**17 12 55.8**	**+1.0**
STKA	**Stephens Creek**	**67.20**	**179**	LR	LR	17 40 26.0	
comp=Z,456nm,21.0s,baz=74,slow=34							
FIA0	**FINESS Array S**	**69.81**	**332**	*e*P	**P**	**17 13 24.2**	**+0.3**
FINES	**FINESS Array B**	**69.81**	**332**	P	**P**	**17 13 24.2**	**+0.3**
comp=Z,1.7nm,0.7s,baz=38,slow=7.2,SNR=6.5							
RSW	**Rattlesnake Hi**	**70.99**	**46**	*e*P	P	17 13 37.4	+5.9
KBZ	**Khabaz**	**71.45**	**311**	P	**P**	**17 13 35.7**	**+1.5**
comp=Z,1.9nm,0.7s,baz=70,slow=2.9,SNR=6.4							
AKASG	**Malin Array Be**	**75.10**	**322**	P	**P**	**17 13 55.7**	**+0.1**
comp=Z,0.9nm,0.5s,baz=47,slow=6.0,SNR=4.1							
NB2	**NORSAR Subarra**	**75.26**	**337**	P	**P**	**17 13 56.5**	**0.0**
comp=Z,1.4nm,0.5s,baz=41,slow=5.9							
NB200	**NORSAR Array S**	**75.26**	**337**	*e*P	**P**	**17 13 57.0**	**+0.5**
NOA	**NORSAR Array B**	**75.26**	**337**	P	**P**	**17 13 57.0**	**+0.5**
comp=Z,1.2nm,0.5s,baz=40,slow=5.8,SNR=8.0							
NVAR	**Mina Array Bea**	**76.15**	**53**	P	**P**	**17 14 04.2**	**+2.0**
comp=Z,1.4nm,1.0s,baz=286,slow=5.5,SNR=2.5							
NVAR				LR	LR	17 43 09.1	
comp=Z,92nm,18.5s,baz=274,slow=32							
PDAR	**Pinedale Array**	**78.93**	**45**	P	**P**	**17 14 17.4**	**-0.2**
comp=Z,0.2nm,0.6s,baz=130,slow=2.3,SNR=3.2							
PDAR				LR	LR	17 47 57.0	
comp=Z,47nm,20.3s,baz=342,slow=35							
BR101	**Keskin Array S**	**79.42**	**311**	*e*P	**P**	**17 14 21.4**	**+1.1**
BRTR	**Keskin Array B**	**79.42**	**311**	P	**P**	**17 14 21.4**	**+1.1**
comp=Z,1.6nm,1.0s,baz=104,slow=4.2,SNR=6.8							
BR231	**Keskin MP Arra**	**79.87**	**312**	*e*P	**P**	**17 14 21.7**	**-1.0**
LTX	**Lajitas**	**91.30**	**52**	*e*P	**P**	**17 15 21.1**	**+1.3**
TXAR	**Lajitas Array**	**91.30**	**52**	P	**P**	**17 15 21.1**	**+1.3**
comp=Z,0.3nm,0.8s,baz=329,slow=4.7,SNR=3.4							
TXAR				LR	LR	17 51 40.1	
comp=Z,71nm,20.6s,baz=0.0,slow=32							
LPAZ	**La Paz**	**147.74**	**61**	PKPbc	**PKPbc**	**17 22 00.3**	**+0.5**
comp=Z,1.5nm,0.7s,baz=333,slow=3.7,SNR=5.8							

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*IDC **10** 17:04:59.2±2.0,20.°34S×168.°21E, h0km, mb4.2/6, mb1 4.4/7, mb1mx4.0/38, mbtmp4.2/7, ML3.1/1, Error ellipse: s-maj=64.8km s-min=22.5km az=134.0*
*NEIC **10** 17:05:00.2±1.0,20.°29S×168.°18E, h10km, mb4.8/9, Error ellipse: s-maj=25.7km s-min=19.8km az=153.0*
*ISCJB **10** 17:05:02.3±1.1,20.°25S±0.°10×168.°1E±0.°2, h32km, mb4.6/13, Error ellipse: s-maj=23.5km s-min=10.6km az=27.4*
ISC 10 17:05:03.7±1.2,20.°3S±0.°1×168.°2E±0.°2, h32km, n18, σ1s20/19, mb4.7/13, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.36**	**222**	Pn	**Pn**	**17 05 39.5**	**-0.9**
4.8nm,0.3s,baz=80,slow=8.5,SNR=27							
DZM				Sn	**Sn**	**17 06 09.2**	**+0.9**
67nm,0.3s,baz=6.1,slow=24,SNR=22							
CTA	**Charters Tower**	**20.55**	**267**	P	**P**	**17 09 41.2**	**+1.4**
6.7nm,0.9s,baz=79,slow=9.7,SNR=5.4							
PMG	**Port Moresby**	**22.97**	**295**	*e*P	**P**	**17 10 05.3**	**-0.5**
23nm,1.4s							
STKA	**Stephens Creek**	**26.41**	**239**	P	**P**	**17 10 39.2**	**+1.7**
4.2nm,0.6s,baz=75,slow=9.6,SNR=11							
WR1	**Warramunga Arr**	**31.71**	**265**	*e*P	**P**	**17 11 24.2**	**-0.6**
33nm,1.7s							
WRA	**Warramunga Arr**	**31.71**	**265**	P	**P**	**17 11 24.2**	**-0.6**
0.7nm,0.5s,baz=91,slow=8.6,SNR=26							
AS01	**Alice Springs**	**31.84**	**258**	*e*P	**P**	**17 11 25.6**	**-0.3**
AS31	**Alice Springs**	**31.88**	**258**	*e*P	**P**	**17 11 26.4**	**+0.1**
2.7nm,0.6s							
ASAR	**Alice Springs**	**31.88**	**258**	P	**P**	**17 11 26.2**	**-0.1**
5.8nm,0.7s,baz=83,slow=8.8,SNR=93							
KKM	**Kota Kinabalu**	**57.35**	**292**	*e*P	**P**	**17 14 48.8**	**-0.6**
13nm,1.2s							
SBUM	**Sibu**	**59.29**	**286**	*e*P	**P**	**17 14 59.9**	**-2.9**
6.1nm,0.9s							
KSM	**Kuching**	**60.62**	**284**	*e*P	**P**	**17 15 11.4**	**-0.6**
8.3nm,0.8s							
QSPA	**South Pole Qui**	**69.74**	**180**	*e*P	**P**	**17 16 10.0**	**-0.5**
IPM	**Ipoh**	**70.31**	**283**	*e*P	**P**	**17 16 14.2**	**-0.5**
12nm,1.2s							
SONA0	**Songino Array**	**87.47**	**324**	*e*P	**P**	**17 17 49.8**	**+1.7**
24nm,0.7s							
SONM	**Songino Array**	**87.47**	**324**	P	**P**	**17 17 49.8**	**+1.7**
5.3nm,0.5s,baz=142,slow=7.3,SNR=2.8							
ILAR	**Eielson Array**	**91.56**	**18**	P	**P**	**17 18 07.1**	**+0.3**
0.2nm,0.6s,baz=242,slow=3.9,SNR=2.9							
GERES	**GERESS Array B**	**144.93**	**330**	PKP	**PKPab**	**17 24 36.7**	**-0.2**
0.3nm,0.5s,baz=46,slow=3.9,SNR=3.6							

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*IDC **10** 17:06:18.0±0.8,20.°34S×168.°42E, h0km, mb4.3/13, mb1 4.4/15, mb1mx4.3/37, mbtmp4.4/15, ML3.7/2, MS4.2/6, Ms1 4.2/6, ms1mx3.7/25, Error ellipse: s-maj=23.6km s-min=17.8km az=114.0*
*NEIC **10** 17:06:19.2±0.3,20.°43S×168.°49E, h10km, mb5.0/17, Error ellipse: s-maj=11.3km s-min=6.3km az=154.0*
*ISCJB **10** 17:06:20.6±0.3,20.°39S±0.°06×168.°34E±0.°06, h26km, mb4.7/27, MS4.4/5, Error ellipse: s-maj=10.7km s-min=

NVAR	**Mina Array Bea**	**90.17**	**49**	P	**P**	**17 19 20.5**	**+0.1**
	3.2nm,0.8s,baz=227,slow=8.1,SNR=11						
GRAC	**Grapevine Rang**	**90.22**	**50**	P	**P**	**17 19 20.7**	**+0.3**
	baz=244						
K05A	**Summer Lake**	**90.35**	**44**	*e*P	**P**	**17 19 21.2**	**0.0**
	23nm,1.6s						
FURC	**Furnace Creek,**	**90.36**	**51**	P	**P**	**17 19 21.4**	**+0.4**
	baz=245						
MOD	**Modoc Plateau**	**90.36**	**45**	*e*P	**P**	**17 19 20.8**	**-0.3**
	6.1nm,0.8s						
J05D	**Fort Rock, OR**	**90.39**	**43**	P	**P**	**17 19 21.6**	**+0.4**
	baz=242						
H04A	**Detroit Lake**	**90.44**	**42**	*e*P	**P**	**17 19 20.7**	**-0.6**
	7.8nm,0.8s						
GLA	**Glamis**	**90.47**	**55**	P	**P**	**17 19 22.5**	**+0.8**
	baz=246						
IRM	**Iron Mountain**	**90.67**	**54**	P	**P**	**17 19 23.0**	**+0.4**
	baz=246						
TPNV	**Topopah Spring**	**91.01**	**51**	P	**P**	**17 19 24.5**	**+0.2**
	baz=245						
TPNV	**Topopah Spring**	**91.01**	**51**	*e*P	**P**	**17 19 23.6**	**-0.7**
	5.9nm,0.9s						
HDA	**Harding Lake**	**91.28**	**18**	*e*P	P	17 19 21.2	-3.5
	79nm,1.5s						
PDMCI	**Parker Dam,Lak**	**91.49**	**54**	P	**P**	**17 19 26.8**	**+0.4**
	baz=246						
ILAR	**Eielson Array**	**91.57**	**18**	P	**P**	**17 19 24.8**	**-1.2**
	0.7nm,0.7s,baz=230,slow=5.9,SNR=5.8						
ILB	**Eielson Array**	**91.57**	**18**	*e*P	**P**	**17 19 26.8**	**+0.8**
SHPR	**Sheep Range**	**91.62**	**52**	*e*P	**P**	**17 19 28.1**	**+0.9**
	14nm,1.8s						
WVOR	**Wild Horse Val**	**91.70**	**45**	*e*P	**P**	**17 19 26.5**	**-0.8**
	4.8nm,0.9s						
R11A	**Troy Canyon, C**	**92.07**	**50**	P	**P**	**17 19 28.4**	**-0.8**
	baz=246						
LCMT	**Little Creek M**	**93.23**	**52**	*e*P	**P**	**17 19 34.0**	**-0.6**
	6.3nm,1.3s						
TUC	**Tucson**	**93.31**	**57**	P	**P**	**17 19 35.2**	**+0.2**
	baz=248						
INK	**Inuvik**	**97.89**	**19**	P	**P**	**17 19 53.4**	**-1.4**
	0.4nm,0.3s,baz=240,slow=7.4,SNR=3.2						
YKA	**Yellowknife Ar**	**102.06**	**28**	P	**Pdif**	**17 20 13.5**	**-0.1**
	0.1nm,0.5s,baz=250,slow=3.7,SNR=3.4						
KRLC	**Kraliky**	**142.81**	**330**	*e*PKP	**PKPdf**	**17 25 56.4**	**+3.3**
NKC	**Novy Kostel**	**144.65**	**333**	*e*PKP	**PKPdf**	**17 25 55.7**	**-0.6**
KHC	**Kasperske Hory**	**144.96**	**331**	*e*PKP	**PKPdf**	**17 25 56.6**	**-0.3**
KHC				*ex*	x	17 26 21.0	
GERES	**GERESS Array B**	**145.11**	**330**	PKPbc	**PKPab**	**17 25 56.7**	**0.0**
	2.1nm,0.9s,baz=38,slow=2.4,SNR=11						
GEA0	**GERESS Array S**	**145.12**	**330**	*e*PKPbc	**PKPbc**	**17 25 56.5**	**-0.2**
BFO	**Black Forest**	**147.83**	**335**	*e*PKPbc	**PKPbc**	**17 26 03.7**	**-0.9**
TUE	**Stuetta**	**148.85**	**331**	*e*PKPdf	**PKPdf**	**17 26 03.5**	**-0.2**
TUE				*e*PKPbc	**PKPbc**	**17 26 07.8**	**+0.2**

*JMA **10** 17:16:52.1±0.2,24°.75N×122°.49E,h127km±2km,M2.7*
*TAP **10** 17:16:52.2,24°.84N×122°.55E,h127km,ML3.6,C*
*ISCJB **10** 17:16:53.3±0.7,24°.74N±0°.04×122°.55E±0°.02,*
h118km±5km,Error ellipse: s-maj=6.9km s-min=3.3km
az=168.7

ISC 10 17:16:53.9±1.8,24°.75N±0°.07×122°.55E±0°.03,
h116km±11km,n40,σ0s74/77,4D,Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JYNG	**Yonagunijimaku**	**0.47**	**129**	P	**Pn**	**17 17 11.2**	**+0.1**
JYNG				S	**Sn**	**17 17 25.4**	**+1.3**
YOJ	**Yonaguni jima**	**0.51**	**124**	P	**Pn**	**17 17 11.5**	**+0.1**
YOJ				*e*S	**Sn**	**17 17 25.9**	**+1.3**
TWB1	**Santiao Chiao**	**0.57**	**297**	P	**Pn**	**17 17 11.4**	**-0.4**
	baz=289						
TWB1				S	**Sn**	**17 17 25.6**	**+0.4**
	baz=289						
TWC	**Suao**	**0.65**	**258**	P	**Pn**	**17 17 11.9**	**-0.5**
	baz=245						
TWC				*e*S	**Sn**	**17 17 26.1**	**-0.1**
	baz=245						
NWF	**Wu-fen Shan**	**0.77**	**295**	*e*P	**Pn**	**17 17 13.0**	**-0.4**
	baz=279						
NWF				*e*S	**Sn**	**17 17 27.4**	**-0.8**
	baz=279						
ENA	**Nanau**	**0.80**	**247**	⇓*i*P	**Pn**	**17 17 13.7**	**0.0**
	baz=239						
ENA				*e*S	**Sn**	**17 17 28.9**	**+0.4**
	baz=239						
TWE	**Neicheng**	**0.80**	**268**	⇓*i*P	**Pn**	**17 17 13.4**	**-0.2**
	baz=261						
TWE				*e*S	**Sn**	**17 17 28.3**	**-0.2**
	baz=261						
ENTT	**Nioudou**	**0.90**	**263**	P	**Pn**	**17 17 14.6**	**+0.1**
	baz=260						
ENTT				*e*S	**Sn**	**17 17 31.1**	**+1.0**
	baz=260						
NSK	**Sanguang**	**1.08**	**266**	⇓*i*P	**Pn**	**17 17 16.2**	**-0.2**
	baz=266						
NSK				S	**Sn**	**17 17 33.4**	**-0.1**
	baz=266						
TWS1	**Kuangyinshan**	**1.08**	**289**	*e*P	**Pn**	**17 17 16.1**	**-0.2**
	baz=278						
TWD	**Chiawan**	**1.09**	**233**	*e*P	**Pn**	**17 17 15.7**	**-0.7**
	baz=228						
TWD				*e*S	**Sn**	**17 17 33.7**	**+0.2**
	baz=228						
NNS	**Nan Shan**	**1.11**	**254**	⇓*i*P	**Pn**	**17 17 16.8**	**0.0**
	baz=244						
NNS				S	**Sn**	**17 17 34.4**	**+0.3**
	baz=244						
IRIF	**Iriomote-Funau**	**1.16**	**111**	P	**Pn**	**17 17 16.9**	**-0.2**
IRIF				S	**Sn**	**17 17 35.2**	**+0.5**
WHF	**Hehuan Shan**	**1.31**	**243**	*e*S	**Sn**	**17 17 37.7**	**-0.8**
	baz=234						
TWT	**Tachien**	**1.34**	**249**	*e*P	**Pn**	**17 17 19.6**	**+0.3**
	baz=239						
TWT				*e*S	**Sn**	**17 17 39.2**	**+0.5**
	baz=239						
ESL	**Shilin**	**1.38**	**228**	*e*P	**Pn**	**17 17 18.4**	**-1.2**
	baz=231						
ESL				*e*S	**Sn**	**17 17 38.0**	**-1.2**
	baz=231						
NSTT	**Nanjuang**	**1.41**	**266**	*e*P	**Pn**	**17 17 19.1**	**-0.9**
	baz=261						
NSTT				*e*S	**Sn**	**17 17 38.5**	**-1.2**
	baz=261						
JKRS	**Kuro-shima**	**1.43**	**111**	P	**Pn**	**17 17 20.5**	**+0.3**
JKRS				S	**Sn**	**17 17 40.8**	**+0.7**
JIJ	**Ishigaki jima**	**1.50**	**104**	P	**Pn**	**17 17 20.8**	**-0.3**
JIJ				S	**Sn**	**17 17 41.0**	**-0.7**
JISG	**Ishigakijimahi**	**1.61**	**95**	P	**Pn**	**17 17 22.1**	**-0.3**
JISG				S	**Sn**	**17 17 43.5**	**-0.5**
NSY	**Sanyi**	**1.66**	**259**	*e*P	**Pn**	**17 17 23.5**	**+0.6**
	baz=255						
NSY				*e*S	**Sn**	**17 17 45.3**	**+0.2**
	baz=255						
TWQ1	**Liyutan**	**1.66**	**256**	*e*P	**Pn**	**17 17 23.0**	**+0.1**
	baz=253						
TWQ1				*e*S	**Sn**	**17 17 44.6**	**-0.6**
	baz=253						
EHY	**Hungye**	**1.67**	**222**	*e*P	**Pn**	**17 17 22.1**	**-1.0**
	baz=219						
EHY				*e*S	**Sn**	**17 17 43.7**	**-1.5**
	baz=219						
SMLT	**Sun Moon Lake**	**1.73**	**240**	*e*P	**Pn**	**17 17 24.7**	**+0.8**
	baz=234						
SMLT				*e*S	**Sn**	**17 17 48.4**	**+1.7**
	baz=234						
TYC	**Yuchr**	**1.75**	**242**	P	**Pn**	**17 17 24.6**	**+0.5**
	baz=244						
TYC				S	**Sn**	**17 17 48.1**	**+1.0**
	baz=244						
TWF1	**Yuli**	**1.80**	**220**	*e*P	**Pn**	**17 17 23.7**	**-1.0**
	baz=224						
TWF1				*e*S	**Sn**	**17 17 46.6**	**-1.5**
	baz=224						
WNT	**Mingjian**	**1.91**	**243**	*e*P	**Pn**	**17 17 26.2**	**+0.3**
	baz=240						
WNT				*e*S	**Sn**	**17 17 51.4**	**+0.9**
	baz=240						
YUS	**Yu-Shan**	**1.92**	**230**	*e*P	**Pn**	**17 17 27.0**	**+0.3**
	baz=220						
YUS				S	**Sn**	**17 17 51.4**	**-0.2**
	baz=220						
JTJ	**Tarama**	**1.96**	**93**	S	**Sn**	**17 17 51.4**	**-0.3**
ALS	**Alishan**	**2.01**	**233**	P	**Pn**	**17 17 28.0**	**+0.4**
	baz=224						
ALS				*e*S	**Sn**	**17 17 54.3**	**+1.0**
	baz=224						
CHN5	**Tsauling**	**2.06**	**236**	P	**Pn**	**17 17 28.3**	**+0.3**
	baz=243						
CHN5				S	**Sn**	**17 17 54.5**	**+0.6**
	baz=243						
ELDTW	**Lidau**	**2.09**	**222**	*e*P	**Pn**	**17 17 27.4**	**-1.0**
	baz=220						
ELDTW				*e*S	**Sn**	**17 17 53.3**	**-1.5**
	baz=220						
CHN4	**Tsaushan**	**2.26**	**232**	*e*P	**Pn**	**17 17 30.7**	**+0.2**
	baz=239						
CHN4				*e*S	**Sn**	**17 17 59.0**	**+0.5**
	baz=239						
STYT	**Tauyuan**	**2.27**	**226**	*e*P	**Pn**	**17 17 31.3**	**+0.6**
	baz=224						
STYT				*e*S	**Sn**	**17 18 00.3**	**+1.5**
	baz=224						
WTP	**Ta-pu**	**2.31**	**230**	*e*P	**Pn**	**17 17 31.8**	**+0.6**
	baz=228						
WTP				*e*S	**Sn**	**17 18 00.6**	**+0.9**
	baz=228						
TWG	**Pinlang**	**2.35**	**215**	*e*P	**Pn**	**17 17 31.1**	**-0.4**
	baz=218						
TWG				*e*S	**Sn**	**17 17 59.3**	**-1.1**
	baz=218						
CHN1	**Nanshi**	**2.41**	**230**	*e*P	**Pn**	**17 17 32.1**	**-0.3**
	baz=228						
CHN1				*e*S	**Sn**	**17 18 01.9**	**-0.1**
	baz=228						
SGST	**Jiashian**	**2.44**	**228**	*e*P	**Pn**	**17 17 33.5**	**+0.7**
	baz=225						
SGST				*e*S	**Sn**	**17 18 03.1**	**+0.4**
	baz=225						
SSD	**Sandimen**	**2.65**	**222**	*e*P	**Pn**	**17 17 36.6**	**+1.0**
	baz=219						
SSD				*e*S	**Sn**	**17 18 07.8**	**+0.3**
	baz=219						
EAST	**Anshuo**	**2.82**	**214**	*e*P	**Pn**	**17 17 37.8**	**0.0**
	baz=208						
EAST				*e*S	**Sn**	**17 18 11.6**	**0.0**
	baz=208						

IDC 10 17:26:53.0±3.1,20°.27S×167°.97E,h0km,mb3.4/2,
mb1 3.6/3,mb1mx3.4/24,mbtmp3.3/3,ML2.6/1,MS4.3/1,
Ms1 4.3/1,ms1mx3.1/19,Error ellipse: s-maj=74.0km
s-min=32.6km az=124.0,Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.29**	**218**	Pn	Pn	17 27 32.9	+0.7
	1.6nm,0.3s,baz=85,slow=13,SNR=5.7						
DZM				Sn	Sb	17 28 03.5	-0.7
	4.0nm,0.3s,baz=139,slow=22,SNR=7.0						
WRA	**Warramunga Arr**	**31.55**	**265**	P	P	17 33 16.6	-0.8
	0.3nm,0.9s,baz=100,slow=7.1,SNR=2.5						
WRA				LR	LR	17 46 08.9	
	comp=Z,605nm,20.4s,baz=120,slow=37						
ASAR	**Alice Springs**	**31.73**	**258**	P	P	17 33 18.9	0.0
	0.6nm,0.7s,baz=82,slow=8.3,SNR=10						
YKA	**Yellowknife Ar**	**102.13**	**28**	P	Pdif	17 40 49.3	+0.2
	0.1nm,0.4s,baz=270,slow=8.5,SNR=3.3						

IDC 10 17:49:43.8±10.0,7°.18S×129°.53E,h230km±127km,
mb2.8/1,mb1 2.7/4,mb1mx2.6/39,mbtmp3.3/4,Error
ellipse: s-maj=73.1km s-min=54.8km az=25.0,Banda
Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**11.50**	**199**	P	Pn	17 52 22.6	+1.0
	0.1nm,0.3s,baz=37,slow=11,SNR=7.4						
FITZ				S	S	17 54 28.7	-0.3
	0.1nm,0.3s,baz=243,slow=7.2,SNR=3.6						
WRA	**Warramunga Arr**	**13.52**	**160**	P	Pn	17 52 45.2	-1.6
	0.1nm,0.3s,baz=342,slow=13,SNR=6.6						
WRA				S	S	17 55 13.3	-3.2
	0.1nm,0.3s,baz=331,slow=23,SNR=5.2						
ASAR	**Alice Springs**	**16.93**	**166**	P	Pn	17 53 27.1	-0.7
	0.1nm,0.3s,baz=342,slow=9.2,SNR=6.7						
MKAR	**Makanchi Array**	**68.12**	**327**	P	P	18 00 18.9	-0.1
	0.2nm,0.6s,baz=116,slow=9.8,SNR=2.7						

MAN 10 17:50:00,8°.73N×125°.56E,h23km,mb4.4,ML3.3,MS3.1,
3C,Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CGP	**Cagayan de Oro**	**0.90**	**252**	*e*P	Pn	17 50 17.2	-0.1
CGP				*e*S	Sn	17 50 29.6	0.0
BUKP	**Musuan**	**0.98**	**210**	*e*P	Pb	17 50 18.1	-0.3
BUKP				*e*S	Sn	17 50 32.5	+0.8
DMPH	**Davao City--Mi**	**1.64**	**182**	⇑*e*P	Pb	17 50 28.6	-1.0
DMPH				*e*S	Sb	17 50 49.6	-0.2
MATI	**Mati**	**1.90**	**159**	*e*P	Pn	17 50 30.5	-0.6
MATI				*e*S	Sn	17 50 55.4	+1.1
TBP	**Tagbilaran**	**1.93**	**300**	⇑*e*P	Pn	17 50 32.7	+1.3
CTBH	**Cotabato--PC H**	**1.99**	**221**	⇑*i*P	Pn	17 50 32.5	+0.3
PAGZ	**Pagadian**	**2.33**	**248**	*e*P	Pn	17 50 37.9	+0.9
IPIL	**Ipil**	**3.11**	**253**	*e*P	Pn	17 50 42.8	-4.8
IPIL				*e*S	Sb	17 51 30.6	-1.5

OTT 10 17:53:05.7±0.2,68°.04N×67°.62W,h18km,MN3.6/10,
160km west from Qikiqtarjuaq, Nu Baffin Island
Seismic Zone, Nt.,Baffin Island region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CLRN	**Clyde River**	**2.47**	**352**	PN	Pn	17 53 45.4	+0.5
CLRN				PG	Pb	17 53 48.2	-1.3
CLRN				SN	Sn	17 54 14.9	+0.3
CLRN				SG	Sb	17 54 19.1	-0.4
CLRN				Trac		17 54 20.0	
	comp=Z,231nm,0.3s						
FRB	**Frobisher Bay**	**4.33**	**185**	PN	Pn	17 54 09.1	-1.4
FRB				SN	Sn	17 55 00.6	+0.2
FRB				LG	Lg	17 55 18.9	
FRB				Trac		17 55 22.8	
	comp=Z,33nm,0.1s						
ILON	**Igloolik, Nuna**	**5.34**	**291**	PN	Pn	17 54 23.7	-0.7
ILON				SN	Sn	17 55 22.3	-3.1
ILON				LG	Lg	17 55 47.9	
ILON				Trac		17 55 55.1	
	comp=Z,40nm,0.2s						
GIFN	**Gifford Fjord,**	**5.40**	**298**	PN	Pn	17 54 24.4	-0.9
GIFN				SN	Sn	17 55 24.2	-2.6
GIFN				LG	Lg	17 55 50.4	
GIFN				Trac		17 55 55.6	
	comp=Z,39nm,0.3s						
SFJD	**Kangerlussuaq**	**6.60**	**91**	PN	Pn	17 54 42.9	+1.3
SFJD				SN	Sn	17 55 51.7	-4.5
SFJD				Trac		17 56 01.1	
	comp=Z,4.3nm,0.2s						
KULLO	**Kullorsuaq**	**7.36**	**22**	PN	Pn	17 54 50.0	-2.0
KULLO				SN	Sn	17 56 11.4	-3.4
KUGN	**Kugaaruk Camp,**	**8.39**	**281**	PN	Pn	17 55 05.2	-1.0
KUGN				SN	Sn	17 56 30.8	-9.4
KUGN				LG	Lg	17 57 20.9	
KUGN				Trac		17 57 30.0	
	comp=Z,17nm,0.6s						
KUQ	**Kuujjuuaa**	**9.98**	**182**	PN	Pn	17 55 21.8	-6.1
KUQ				SN	Sn	17 57 04.0	-15
KUQ				LG	Lg	17 58 01.6	
KUQ				Trac		17 58 17.6	
	comp=Z,12nm,0.3s						
BULN	**Bullion Camp,**	**9.99**	**272**	PN	Pn	17 55 25.6	-2.6
BULN				SN	Sn	17 57 12.1	-7.6
BULN				LG	Lg	17 58 08.8	
BULN				Trac		17 58 21.8	
	comp=Z,13nm,0.4s						
INUQ	**Inukjuak**	**10.70**	**211**	PN	Pn	17 55 37.2	-0.6
INUQ				SN	Sn	17 57 31.0	-6.0
INUQ				LG	Lg	17 58 34.8	
INUQ				Trac		17 58 39.4	
	comp=Z,3.5nm,0.3s						
RES	**Resolute Bay**	**10.86**	**320**	PN	Pn	17 55 37.0	-3.0
RES				SN	Sn	17 57 32.4	-8.3
RES				LG	Lg	17 58 34.7	
RES				Trac		17 58 51.1	
	comp=Z,5.6nm,0.5s						
MCMN	**McManaman Lake**	**11.18**	**257**	PN	Pn	17 55 43.1	-1.1
MCMN				SN	Sn	17 57 33.5	-15
MCMN				LG	Lg	17 58 43.6	
MCMN				Trac		17 58 55.7	
	comp=Z,14nm,0.4s						
YBKN	**Baker Lake, Hu**	**11.99**	**265**	PN	Pn	17 55 55.2	-0.2
YBKN				SN	Sn	17 57 57.9	-11
YBKN				LG	Lg	17 59 09.2	
YBKN				Trac		17 59 16.9	
	comp=Z,29nm,0.8s						
EUNU	**Eureka**	**13.00**	**346**	PN	Pn	17 56 11.3	+2.1
EUNU				SN	Sn	17 58 28.9	-4.2
ARVN	**Arviat, NU**	**13.23**	**251**	PN	Pn	17 56 09.9	-2.4
ARVN				SN	Sn	17 58 29.6	-9.1
ARVN				LG	Lg	17 59 48.0	
ARVN				Trac		17 59 56.2	
	comp=Z,21nm,0.8s						
SCHQ	**Schefferville**	**13.26**	**178**	PN	Pn	17 56 08.8	-4.0
SCHQ				SN	Sn	17 58 28.8	-11
LG4Q	**La Grande 4**	**14.79**	**195**	PN	Pn	17 56 29.3	-4.3
LG4Q				SN	Sn	17 59 04.9	-12
FCC	**Fort Churchill**	**14.93**	**244**	PN	Pn	17 56 31.5	-3.9
FCC				SN	Sn	17 59 08.1	-12
FCC				LG	Lg	18 00 35.9	
YOSQ	**Ashton Mining**	**15.38**	**191**	PN	Pn	17 56 34.7	-6.9
YOSQ				SN	Sn	17 59 16.9	-14
YOSQ				LG	Lg	18 00 55.1	
VIMO	**Victor Mine**	**17.12**	**215**	PN	Pn	17 57 00.8	-2.9
VIMO				SN	Sn	17 59 58.7	-15
WHFN	**White Fish Lak**	**17.13**	**270**	SN	Sn	17 59 57.5	-16
YKW3	**Yellowknife Ar**	**19.95**	**277**	PN	P	17 57 33.1	-3.2
YKW3				SN	S	18 01 01.6	-18
YKW3				LG	Lg	18 03 11.6	
YKW3				Trac		18 03 23.5	
	comp=Z,4.1nm,0.7s						

*IDC **10** 18:11:15.4±1.0,20°.20S×168°.28E,h0km,mb4.1/8,*
mb1 4.3/9,mb1mx4.0/30,mbtmp4.1/9,ML3.7/1,MS3.7/4,
Ms1 3.7/4,ms1mx3.1/37,Error ellipse: s-maj=34.1km
s-min=20.0km az=117.0
*ISCJB **10** 18:11:17.9±0.5,20°.22S±0°.07×168°.23E±0°.07,h27km,*
mb4.4/13,MS3.7/3,Error ellipse: s-maj=11.3km
s-min=8.0km az=40.0
*NEIC **10** 18:11:17.5±0.4,20°.17S×168°.18E,h10km,mb4.7/6,Error*
ellipse: s-maj=11.4km s-min=10.3km az=151.0

ISC 10 18:11:19.9±0.6,20°.23S±0°.08×168°.21E±0°.09,h27km,n27,
σ0s98/27,mb4.3/13,MS3.6/3,Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.46**	**222**	Pn	**Pn**	**18 11 57.9**	**-0.5**
	16nm,0.3s,baz=70,slow=15,SNR=15						
DZM				Sn	**Sn**	**18 12 26.8**	**-1.0**
	66nm,0.3s,baz=180,slow=23,SNR=11						
DZM				LR	LR	18 12 56.5	
	comp=Z,658nm,18.8s,baz=349,slow=40						
MSVF	**Nonsavu**	**9.63**	**77**	*e*Pn	**Pn**	**18 13 36.4**	**-0.6**
URZ	**Urewera**	**19.55**	**159**	P	**Pn**	**18 15 48.0**	**+1.1**
	0.1nm,0.3s,baz=30,slow=22,SNR=3.6						
AFI	**Afiamalu**	**20.13**	**75**	LR	LR	18 23 09.3	
	comp=Z,110nm,18.1s,baz=170,slow=36						
BKZ	**Black Stump Fm**	**20.17**	**161**	*e*P	**P**	**18 15 53.4**	**+1.0**
	103nm,1.9s						
STKA	**Stephens Creek**	**26.50**	**239**	P	**P**	**18 16 55.9**	**+0.7**
	3.0nm,0.6s,baz=64,slow=9.8,SNR=6.0						
STKA	**Stephens Creek**	**26.50**	**239**	*e*P	**P**	**18 16 55.5**	**+0.3**
	6.3nm,1.8s						
WR1	**Warramunga Arr**	**31.78**	**265**	*e*P	**P**	**18 17 41.4**	**-0.9**
	26nm,1.6s						
WRA	**Warramunga Arr**	**31.78**	**265**	P	**P**	**18 17 41.4**	**-0.9**
	0.9nm,0.6s,baz=90,slow=8.5,SNR=13						
AS01	**Alice Springs**	**31.92**	**258**	*e*P	**P**	**18 17 44.0**	**+0.5**
AS31	**Alice Springs**	**31.96**	**258**	*e*P	**P**	**18 17 43.7**	**-0.2**
	2.5nm,0.8s						
ASAR	**Alice Springs**	**31.96**	**258**	P	**P**	**18 17 44.1**	**+0.2**
	3.7nm,0.6s,baz=86,slow=8.8,SNR=42						
ASAR				LR	LR	18 29 37.1	
	comp=Z,128nm,18.8s,baz=103,slow=34						
FAKI	**Fak Fak**	**39.06**	**291**	*e*P	**P**	**18 18 46.5**	**+1.6**
	18nm,1.0s						
VNDA	**Vanda**	**57.41**	**182**	P	**P**	**18 21 05.5**	**-0.1**
	0.6nm,0.8s,baz=358,slow=6.2,SNR=4.4						
KSM	**Kuching**	**60.66**	**284**	*e*P	**P**	**18 21 27.8**	**-1.4**
	8.2nm,1.0s						
MJAR	**Matsushiro Arr**	**63.19**	**333**	P	**P**	**18 21 44.6**	**-1.1**
	2.3nm,0.9s,baz=161,slow=7.4,SNR=4.2						
QSPA	**South Pole Qui**	**69.83**	**180**	*e*P	**P**	**18 22 27.7**	**-0.2**
USRK	**Ussuriysk Ar.**	**72.18**	**333**	P	**P**	**18 22 42.3**	**+0.1**
	3.4nm,0.9s,baz=193,slow=7.8,SNR=5.2						
SMY	**Shemya**	**72.83**	**4**	*e*P	**P**	**18 22 46.2**	**+0.3**
	338nm,1.3s						
PETK	**Petropavlovsk-**	**73.60**	**353**	P	**P**	**18 22 51.8**	**+1.4**
	2.1nm,0.6s,baz=126,slow=7.5,SNR=4.3						
PEA1	**Petropavlovsk-**	**73.61**	**353**	*e*P	**P**	**18 22 51.8**	**+1.3**
CM01	**Chiang Mai Arr**	**78.00**	**295**	*e*P	**P**	**18 23 18.2**	**+1.8**
YAK	**Yakutsk**	**87.53**	**343**	LR	LR	19 01 30.9	
	comp=Z,96nm,19.0s,baz=270,slow=34						
ILAR	**Eielson Array**	**91.46**	**18**	P	**P**	**18 24 21.4**	**-2.0**
	0.4nm,0.7s,baz=242,slow=5.1,SNR=4.0						
ARCES	**ARCESS Array B**	**125.77**	**345**	PKP	**PKPdf**	**18 30 17.9**	**-0.6**
	9.6nm,1.1s,baz=49,slow=5.5,SNR=6.0						
GERES	**GERESS Array B**	**144.89**	**330**	PKP	**PKPab**	**18 30 53.9**	**+0.2**
	0.9nm,0.7s,baz=29,slow=3.0,SNR=7.6						
TORD	**Torodi Ar. Bea**	**165.29**	**243**	PKP	**PKPdf**	**18 31 22.7**	**-0.1**
	0.5nm,0.8s,baz=82,slow=2.0,SNR=2.8						
TORD				PKPab	**PKPab**	**18 32 20.3**	**-0.1**
	0.3nm,0.6s,baz=99,slow=3.7,SNR=3.7						

IDC 10 18:18:28.0±10.0,20°.17S×167°.70E,h0km,mb4.0/3,
mb1 4.1/4,mb1mx3.7/36,mbtmp3.9/4,ML3.5/1,Error
ellipse: s-maj=184.4km s-min=39.7km az=92.0,Loyalty
Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.23**	**212**	Pn	Pn	18 19 05.5	-0.8
	12nm,0.3s,baz=44,slow=15,SNR=48						
DZM				Sn	Sn	18 19 35.1	+0.4
	23nm,0.3s,baz=268,slow=22,SNR=5.7						
STKA	**Stephens Creek**	**26.13**	**238**	P	P	18 24 04.7	+0.8
	2.1nm,0.5s,baz=68,slow=10,SNR=5.8						
WRA	**Warramunga Arr**	**31.31**	**265**	P	P	18 24 49.7	-0.6
	0.4nm,0.6s,baz=92,slow=8.5,SNR=11						
ASAR	**Alice Springs**	**31.51**	**257**	P	P	18 24 52.2	+0.2
	2.5nm,0.7s,baz=87,slow=8.9,SNR=43						

*IDC **10** 18:21:26.6±10.0,20°.23S×168°.83E,h0km,mb4.0/4,*
mb1 4.2/5,mb1mx3.8/36,mbtmp4.0/5,ML3.4/1,MS2.8/1,
*Ms1 2.8/1

*NEIC **10** 18:21:52.2, 38.29N×118.18W, h16km, ML3.6(REN), After REN.*
NEIC Felt at Uniola Village.
ISC 10 18:21:51.5±0.7, 38.30N±0.02×118.12W±0.02, h12km±6km, n63, σ2°11/85, California-Nevada border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NV11	**Mina Array Sit**	**0.13**	**348**	*e*Pg	**Pg**	**18 21 56.2**	**+1.3**
NV11				*e*Sg	**Sb**	**18 21 59.3**	**+1.9**
NV01	**Mina Array Sit**	**0.19**	**312**	*e*Pg	**Pg**	**18 21 56.0**	**+0.2**
NV01				*e*Sg	**Sg**	**18 21 58.9**	**0.0**
MLAC	**Mammoth, Mammo**	**0.88**	**220**	P	**Pg**	**18 22 08.8**	**+0.3**
	baz=37						
MTUM	**Tungsten Hills**	**1.01**	**200**	*e*Pg	**Pg**	**18 22 11.4**	**+0.4**
WAKR	**Walker**	**1.05**	**281**	*e*Pg	**Pb**	**18 22 11.2**	**-0.6**
TIN	**Tinemaha, Big**	**1.25**	**184**	Pb	**Pg**	**18 22 16.2**	**+0.7**
	baz=1.3						
TIN				S	**Sg**	**18 22 32.8**	**+1.0**
	baz=1.3						
GRAC	**Grapevine Rang**	**1.44**	**155**	Pb	**Pg**	**18 22 19.8**	**+0.7**
	baz=333						
GRAC				Sb	**Sg**	**18 22 40.0**	**+2.3**
	baz=333						
CMB	**Columbia Colle**	**1.81**	**262**	*e*Pn	**Pn**	**18 22 19.9**	**-2.5**
R11A	**Troy Canyon, C**	**2.00**	**88**	P	**Pn**	**18 22 26.4**	**+1.2**
	baz=269						
R11A				Sb	**Sg**	**18 22 57.4**	**+1.8**
	baz=269						
R11A	**Troy Canyon, C**	**2.00**	**88**	*e*Pn	**Pb**	**18 22 29.6**	**+1.7**
TPNV	**Topopah Spring**	**2.01**	**132**	Pb	**Pb**	**18 22 29.9**	**+1.9**
	baz=312						
TPNV	**Topopah Spring**	**2.01**	**132**	*e*Pn	**Pb**	**18 22 27.7**	**-0.3**
DAC	**Darwin (Calif)**	**2.07**	**168**	*e*Pn	**Pn**	**18 22 27.5**	**+1.3**
FURC	**Furnace Creek,**	**2.09**	**151**	Pb	**Pb**	**18 22 30.9**	**+1.6**
	baz=330						
FURC				Sb	**Sg**	**18 22 59.4**	**+0.8**
	baz=330						
WLHM	**Little Horse**	**2.15**	**184**	*e*Pn	**Pg**	**18 22 32.4**	**-0.4**
RCTC	**Rector, Farmer**	**2.19**	**205**	Pb	**Pb**	**18 22 31.9**	**+0.9**
	baz=22						
RCTC				Sb	**Sg**	**18 23 00.2**	**-1.6**
	baz=22						
MPMC	**Manual Prospec**	**2.30**	**167**	P	**Pn**	**18 22 30.7**	**+1.4**
	baz=346						
MPMC				Sb	**Sg**	**18 23 05.3**	**0.0**
	baz=346						
AFDM	**Forest Hills D**	**2.32**	**287**	*e*Pn	**Pn**	**18 22 30.5**	**+1.0**
VES	**Vestal, Richgr**	**2.58**	**198**	Sb	**Sg**	**18 23 13.3**	**-0.9**
	baz=16						
WASM	**Alta Sierra Ca**	**2.58**	**188**	*e*Pn	**Pg**	**18 22 40.0**	**-1.1**
ISA	**Isabella, Lake**	**2.65**	**186**	Pb	**Pb**	**18 22 40.8**	**+1.9**
	baz=4.8						
ISA				Sb	**Sg**	**18 23 15.0**	**-1.7**
	baz=4.8						
ISA	**Isabella, Lake**	**2.65**	**186**	*e*Pn	**Pb**	**18 22 40.6**	**+1.7**
WOFM	**Oak Flat**	**2.80**	**190**	*e*Pn	**Pb**	**18 22 43.5**	**+2.0**
SHOC	**Shoshone, Teco**	**2.82**	**148**	Sb	**Sg**	**18 23 22.2**	**+0.3**
	baz=328						
ORV	**Oroville**	**2.92**	**296**	*e*Pn	**Pb**	**18 22 43.9**	**+0.5**
SHPR	**Sheep Range**	**2.96**	**126**	*e*Pn	**Pn**	**18 22 40.2**	**+1.8**
SAO	**San Andreas Ge**	**3.06**	**241**	*e*Pn	**Pn**	**18 22 41.3**	**+1.6**
SAO				*e*Sn	**Sb**	**18 23 24.9**	**+1.9**
GSC	**Goldstone, Bar**	**3.18**	**160**	*e*Pn	**Pn**	**18 22 43.1**	**+1.7**
ARVC	**Arvin**	**3.22**	**190**	Sb	**Sg**	**18 23 32.9**	**-2.0**
	baz=9.0						
ELK	**Elko**	**3.30**	**42**	*e*Pn	**Pn**	**18 22 45.4**	**+2.1**
PSUT	**Pine Spring**	**3.36**	**85**	*e*Pn	**Pb**	**18 22 50.9**	**-0.2**
GASB	**Alder Springs**	**3.83**	**292**	*e*Sg	**Sb**	**18 23 44.9**	**-0.4**
CCUT	**Cedar City**	**3.84**	**100**	*e*Pg	**Pg**	**18 23 06.4**	**+1.4**
IMU	**Iron Mountain**	**3.91**	**84**	*e*Pg	**Pg**	**18 23 07.2**	**+0.8**
MOD	**Modoc Plateau**	**3.96**	**336**	*e*Pg	**Pg**	**18 23 06.0**	**-1.4**
LDFC	**Landfair**	**4.03**	**142**	*e*Pg	**Pg**	**18 23 07.1**	**-1.5**
LCMT	**Little Creek M**	**4.08**	**107**	*e*Pn	**Pn**	**18 22 55.9**	**+2.0**
LCMT				*e*Pg	**Pg**	**18 23 11.4**	**+1.8**
WVOR	**Wild Horse Val**	**4.14**	**355**	*e*Pn	Pn	18 22 59.9	+5.2
WVOR				*e*Pg	**Pg**	**18 23 09.2**	**-1.6**
KNB	**Kanab**	**4.40**	**105**	*e*Pn	**Pn**	**18 23 00.6**	**+2.4**
KNB				*e*Pg	**Pg**	**18 23 14.1**	**-1.7**
DUG	**Dugway, Tooele**	**4.53**	**64**	*e*Pn	**Pb**	**18 23 09.5**	**-1.6**
DUG				*e*Pg	**Pg**	**18 23 19.4**	**+1.1**
EKU	**East Kanab**	**4.63**	**104**	*e*Pg	**Pg**	**18 23 20.3**	**+0.2**
W13A	**Hualapai Mount**	**4.67**	**132**	*e*Pn	Pn	18 23 07.3	+5.3
W13A				*e*Pg	**Pg**	**18 23 20.2**	**-0.8**
MSU	**Marysvale**	**4.67**	**86**	*e*Pn	Pb	18 23 09.8	-3.7
PKCU	**Pink Cliffs**	**4.68**	**99**	*e*Pn	**Pb**	**18 23 11.2**	**-2.4**
PKCU				*e*Pg	**Pg**	**18 23 20.8**	**-0.3**
MTPU	**Mount Pierson**	**4.69**	**91**	*e*Pn	**Pn**	**18 23 06.0**	**+3.6**
BGU	**Big Grassy Mou**	**4.72**	**55**	*e*Pn	Pn	18 23 09.3	+6.6
WCU	**Willow Creek**	**4.77**	**80**	*e*Sg	**Sg**	**18 24 23.7**	**-0.9**
K05A	**Summer Lake**	**4.90**	**335**	*e*Pn	**Pn**	**18 23 08.8**	**+3.8**
K05A				*e*Pg	**Pg**	**18 23 22.2**	**-3.0**
NLU	**North Lily Min**	**4.98**	**69**	*e*Pn	Pn	18 23 13.6	+7.3
NLU				*e*Pg	**Pg**	**18 23 26.1**	**-0.8**
U15A	**North Rim**	**5.01**	**110**	*e*Pn	Pb	18 23 15.4	-3.8
U15A				*e*Pg	**Pg**	**18 23 26.0**	**-1.4**
U15A				*e*Sg	**Sg**	**18 24 30.6**	**-1.6**
SPUT	**South Promonto**	**5.30**	**54**	*e*Pn	Pn	18 23 18.2	+7.7
SPUT				*e*Pg	**Pg**	**18 23 33.1**	**+0.2**
SPUT				*e*Sg	**Sg**	**18 24 42.4**	**+0.8**
MPU	**Maple Canyon**	**5.33**	**69**	*e*Pg	**Pg**	**18 23 35.0**	**+1.5**
MPU				*e*Sg	**Sg**	**18 24 43.8**	**+1.3**
HVU	**Hansel Valley**	**5.38**	**48**	*e*Pn	**Pn**	**18 23 13.7**	**+2.1**
HVU				*e*Sg	**Sg**	**18 24 41.8**	**-2.2**
MFID	**Camas Ranch**	**5.39**	**18**	*e*Pn	Pn	18 23 16.7	+4.9
MFID				*e*Pg	**Pg**	**18 23 33.5**	**-1.3**
MFID				*e*Sg	**Sg**	**18 24 41.8**	**-2.9**
TMUT	**Trail Mountain**	**5.49**	**77**	*e*Pn	**Pb**	**18 23 24.2**	**-3.3**
TMUT				*e*Pg	**Pg**	**18 23 38.4**	**+1.7**
TMUT				*e*Sg	**Sg**	**18 24 44.6**	**-3.2**
TCUT	**Toone Canyon**	**5.89**	**59**	*e*Sg	**Sg**	**18 25 01.4**	**+0.9**
HLID	**Hailey**	**5.96**	**27**	*e*Pn	Pn	18 23 25.3	+5.7
HLID				*e*Sg	**Sb**	**18 24 55.0**	**+8.3**
SRU	**San Rafael Swe**	**6.00**	**80**	*e*Pn	Pn	18 23 26.0	+5.8
SRU				*e*Sg	**Sg**	**18 24 59.9**	**-4.1**
Y14A	**Wickenburg**	**6.01**	**135**	*e*Pg	**Pg**	**18 23 43.5**	**-3.0**
Y14A				*e*Sg	**Sg**	**18 25 02.8**	**-1.6**
HWUT	**Hardware Ranch**	**6.02**	**55**	*e*Pn	**Pn**	**18 23 23.6**	**+3.1**
HWUT				*e*Sn	**Sb**	**18 24 42.9**	**-5.7**
WUAZ	**Wupatki**	**6.08**	**115**	*e*Pg	**Pg**	**18 23 45.4**	**-2.5**
RLMT	**Red Lodge**	**9.49**	**41**	*e*Pn	**Pn**	**18 24 10.3**	**+2.1**
N23A	**Red Feather La**	**9.75**	**71**	*e*Pn	**Pn**	**18 24 13.8**	**+2.0**

*NIED **10** 18:24:00, 38.30N×141.90E, h47km, Mw4.5 Best double couple: M0=5.79000×10^15 NP1:φ=195.00000°, δ=22.00000°, λ=81.00000°. NP2:φ=24.00000°, δ=68.00000°, λ=94.00000°.*
*MOS **10** 18:24:13.9±1.1, 38.26N×142.06E, h33km, mb4.8/30, Error ellipse: s-maj=7.9km s-min=5.5km az=105.8*
*ISCJB **10** 18:24:16.3±0.5, 38.29N±0.03×141.96E±0.04, h53km±3km, mb4.6/69, MS3.6/4, Error ellipse: s-maj=6.3km s-min=3.5km az=27.3*
*JMA **10** 18:24:17.6±0.1, 38.30N×141.88E, h47km±1km, M4.2*
JMA Felt III J1.
*IDC **10** 18:24:18.4±1.9, 38.30N×141.83E, h51km±16km, mb4.0/20, mb1 4.1/25, mb1mx4.0/48, mbtmp4.2/25, ML3.7/5, MS3.6/9, Ms1 3.6/9, ms1mx3.3/47, Error ellipse: s-maj=17.7km s-min=11.1km az=104.0*
*NEIC **10** 18:24:19.4±0.5, 38.30N×141.87E, h64km±4km, mb4.7/31, Error ellipse: s-maj=5.1km s-min=3.6km az=122.0*
NEIC Recorded [3 JMA] in Iwate and Miyagi.
ISC 10 18:24:17.4±0.9, 38.27N±0.04×141.95E±0.05, h48km±8km, n193, σ1°10/198, mb4.5/69, MS3.5/4, 6C-5D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.51**	**291**	P	**Pn**	**18 24 28.1**	**-0.6**
JIO				S	**Sn**	**18 24 35.1**	**-1.6**
OFUJ	**Ofunato**	**0.84**	**345**	P	**Pn**	**18 24 32.4**	**-0.6**
OFUJ				S	**Sn**	**18 24 42.7**	**-1.6**
JMK	**Ichinoseki**	**0.89**	**320**	P	**Pn**	**18 24 33.3**	**-0.3**
JMK				S	**Sn**	**18 24 44.2**	**-1.3**
JMM	**Marumori**	**1.00**	**247**	P	**Pn**	**18 24 34.3**	**-0.8**
JMM				S	**Sn**	**18 24 46.5**	**-1.6**
JOU	**Okura**	**1.02**	**276**	P	**Pn**	**18 24 35.1**	**-0.3**
JOU				S	**Sn**	**18 24 48.0**	**-0.6**
JFK	**Kawauchi**	**1.24**	**224**	P	**Pn**	**18 24 37.9**	**-0.5**
JFK				S	**Sn**	**18 24 52.9**	**-1.1**
JOM	**Ohasama**	**1.31**	**337**	P	**Pn**	**18 24 39.2**	**-0.1**
JOM				*e*S	**Sn**	**18 24 55.5**	**-0.1**
JYK	**Kaneyama**	**1.41**	**298**	P	**Pn**	**18 24 40.4**	**-0.2**
JFT	**Otama**	**1.48**	**240**	P	**Pn**	**18 24 41.7**	**0.0**
JFT				S	**Sn**	**18 25 00.7**	**+0.8**
JYS	**Shirataka**	**1.49**	**269**	P	**Pn**	**18 24 41.6**	**-0.1**
JYS				*e*S	**Sn**	**18 24 59.5**	**-0.5**
JRG	**Rokugo**	**1.52**	**318**	P	**Pn**	**18 24 42.2**	**-0.1**
MJAR	**Matsushiro Arr**	**3.44**	**241**	P	**Pn**	**18 25 09.3**	**+0.7**
	7.9nm,0.3s,baz=58,slow=10,SNR=38						
MJAR				S	**Sn**	**18 25 51.1**	**+3.0**
	7.6nm,0.3s,baz=76,slow=28,SNR=4.9						
MJAR				LR	LR	18 26 51.7	
	comp=Z,700nm,18.7s,baz=50,slow=46						
MAJO	**Matsushiro**	**3.44**	**241**	*d*P	**Pn**	**18 25 09.8**	**+1.2**
MAJO	**Matsushiro**	**3.44**	**241**	*e*Pn	**Pn**	**18 25 10.0**	**+1.4**
MAT	**Matsushiro**	**3.44**	**241**	P	**Pn**	**18 25 10.0**	**+1.4**
MAT				S	Sn	18 25 55.0	+6.9
MJB9	**Matsu-Tunnel**	**3.44**	**241**	*e*Pn	**Pn**	**18 25 10.1**	**+1.5**
ERM	**Erimo**	**3.85**	**13**	⇓*e*P	**Pn**	**18 25 14.0**	**-0.1**
ERM	**Erimo**	**3.85**	**13**	*e*Pn	**Pn**	**18 25 14.3**	**+0.1**
ERM				*e*Sn	**Sn**	**18 25 59.4**	**+1.3**
INU	**Inuyama**	**4.92**	**235**	*e*Pn	**Pn**	**18 25 31.7**	**+2.9**
JHJ2	**Mitsune**	**5.43**	**199**	*e*Pn	**Pn**	**18 25 36.3**	**+0.5**
JHJ	**Hachijo jima 2**	**5.43**	**200**	P	**Pn**	**18 25 36.8**	**+0.9**
	16nm,0.3s,baz=315,slow=22,SNR=8.2						
JHJ				S	**Sn**	**18 26 34.8**	**-2.3**
	24nm,0.3s,baz=316,slow=22,SNR=3.6						
ASAJ	**Asahikawa**	**5.86**	**5**	P	**Pn**	**18 25 41.6**	**-0.1**
	3.8nm,0.3s,baz=210,slow=12,SNR=31						
ASAJ				S	**Sn**	**18 26 47.2**	**-0.3**
	2.8nm,0.3s,baz=148,slow=30,SNR=4.8						
YUK	**Yuzh-Kuril'sk**	**6.47**	**26**	*e*P	**Pn**	**18 25 49.2**	**-0.8**
YUK				*e*S	**Sn**	**18 26 58.7**	**-3.8**
YUK				pmax	pmax		
	comp=Z,72nm,0.3s						
SHO	**Shikotan**	**6.70**	**32**	*e*P	Pn	18 25 50.6	-2.6
SHO				*i* S	Sn	18 27 01.3	-6.8
SHO				pmax	pmax		
	comp=Z,45nm,0.5s						
KUR	**Kuril'sk**	**8.24**	**31**	*e*P	**Pn**	**18 26 13.5**	**-0.8**
KUR				*e*S	**Sn**	**18 27 42.2**	**-3.7**
KUR				pmax	pmax		
	comp=Z,24nm,0.3s						
MSHR	**Mys Shultsa**	**9.29**	**301**	⇑*e*P	**Pn**	**18 26 31.6**	**+3.0**
USRK	**Ussuriysk Ar.**	**9.56**	**311**	P	**Pn**	**18 26 33.1**	**+0.8**
	comp=Z,1.5nm,0.3s,baz=123,slow=14,SNR=17						
USRK				LR	LR	18 30 02.2	
	comp=Z,340nm,19.4s,baz=127,slow=36						
JNU	**Nakatsue**	**10.36**	**244**	P	**Pn**	**18 26 46.1**	**+2.7**
	comp=Z,0.9nm,0.3s,baz=107,slow=11,SNR=4.1						
JNU				LR	LR	18 31 03.4	
	comp=Z,448nm,19.6s,baz=306,slow=39						
JNU	**Nakatsue**	**10.36**	**244**	*e*Pn	**Pn**	**18 26 46.2**	**+2.8**
KSRS	**Korea Array**	**11.12**	**270**	P	**Pn**	**18 26 56.9**	**+3.1**
	comp=Z,0.3nm,0.3s,baz=75,slow=14,SNR=8.7						
KSRS				LR	LR	18 30 50.0	
	comp=Z,287nm,20.1s,baz=91,slow=35						
KS01	**Wonju Array Si**	**11.14**	**270**	*e*Pn	**Pn**	**18 26 54.5**	**+0.5**
CBIJ	**Chichi jima**	**11.14**	**179**	*e*Pn	Pn	18 26 51.7	-2.4
JCJ	**Chichijima**	**11.14**	**179**	P	Pn	18 26 51.5	-2.7
	comp=Z,8.2nm,0.3s,baz=266,slow=22,SNR=9.8						
KS15	**Wonju Array Si**	**11.15**	**270**	*e*Pn	**Pn**	**18 26 57.0**	**+2.8**
KSAR	**Wonju Array Be**	**11.15**	**270**	P	**Pn**	**18 26 56.9**	**+2.7**
KSAR	**Wonju Array Be**	**11.15**	**270**	P	**Pn**	**18 26 56.9**	**+2.7**
MDJ	**Mudanjiang**	**11.23**	**308**	*e*Pn	Pn	18 26 59.7	+4.5
TJN	**Taejon**	**11.77**	**265**	⇑*e*P	**Pn**	**18 27 04.1**	**+1.5**
KLR	**Kul'dur**	**13.19**	**329**	P	**Pn**	**18 27 21.8**	**-0.1**
	comp=Z,0.2nm,0.3s,baz=128,slow=15,SNR=3.6						
KLR				LR	LR	18 32 30.8	
	comp=Z,198nm,19.3s,baz=138,slow=38						
TIA	**Tai'an**	**19.86**	**272**	*e*P	**P**	**18 28 42.8**	**-1.6**
TIA				pmax	pmax		
	comp=Z,10.0nm,1.2s						
MA2	**Magadan**	**22.06**	**12**	P	**P**	**18 29 08.9**	**+1.0**
	comp=Z,7.6nm,0.7s,baz=220,slow=9.4,SNR=6.5						
MA2				LR	LR	18 38 03.5	
	comp=Z,60nm,19.0s,baz=280,slow=37						
TPUB	**Ta-pu**	**23.55**	**237**	*e*P	**P**	**18 29 23.7**	**+0.2**
	comp=Z,16nm,0.9s						
CIT	**Chita**	**24.11**	**314**	*e*P	**P**	**18 29 28.5**	**+0.1**
CIT				*e*		18 29 36.6	
CIT				pmax	pmax		
	comp=Z,63nm,1.2s						
YAK	**Yakutsk**	**24.96**	**346**	P	**P**	**18 29 35.2**	**-0.9**
	comp=Z,3.9nm,0.3s,baz=157,slow=2.6,SNR=13						
YAK				LR	LR	18 38 57.6	
	comp=Z,63nm,20.8s,baz=174,slow=35						
YAK	**Yakutsk**	**24.96**	**346**	*e*P	**P**	**18 29 35.7**	**-0.3**
YAK				pmax	pmax		
	comp=Z,17nm,1.0s						
YAK	**Yakutsk**	**24.96**	**346**	*e*P	**P**	**18 29 34.9**	**-1.1**
	comp=Z,11nm,0.8s						
SEY	**Seymchan**	**25.50**	**11**	P	**P**	**18 29 42.4**	**+1.5**
	comp=Z,3.6nm,0.9s,baz=167,slow=11,SNR=4.0						
BOD	**Bodaibo**	**26.73**	**326**	*e*P	**P**	**18 29 51.2**	**-0.9**
BOD				pmax	pmax		
	comp=Z,8.0nm,0.8s						
XAN	**Xi'an**	**26.92**	**271**	P	**P**	**18 29 53.0**	**-1.1**
XAN				pP	pP	18 30 00.9	-5.7
XAN				pmax	pmax		
	comp=Z,8.0nm,0.7s						
ULN	**Ulaanbaatar**	**27.04**	**302**	⇑*e*P	**P**	**18 29 56.0**	**+0.9**
ULN				pmax	pmax		
	comp=Z,7.0nm,1.2s						
ULN	**Ulaanbaatar**	**27.04**	**302**	*e*P	**P**	**18 29 56.1**	**+0.9**
	comp=Z,6.2nm,1.1s						
ENH	**Enshi**	**27.88**	**263**	*e*P	**P**	**18 30 01.9**	**-0.8**
	comp=Z,26nm,0.8s						
H11N2	**WAKE ISLAND Hy**	**28.44**	**123**	T	T	19 00 22.4	
	baz=316,slow=75,SNR=2439						
H11N1	**WAKE ISLAND Hy**	**28.45**	**124**	T	T	19 00 23.4	
	baz=316,slow=75,SNR=3880						
H11N3	**WAKE ISLAND Hy**	**28.46**	**123**	T	T	19 00 28.4	
	baz=316,slow=75,SNR=2794						
H11S1	**WAKE ISLAND Hy**	**29.20**	**125**	T	T	19 01 19.9	
	baz=318,slow=76,SNR=1582						
H11S3	**WAKE ISLAND Hy**	**29.20**	**126**	T	T	19 01 20.1	
	baz=318,slow=76,SNR=2532						
H11S2	**WAKE ISLAND Hy**	**29.22**	**125**	T	T	19 01 21.6	
	baz=318,slow=76,SNR=1738						
ZAK	**Zakamensk**	**29.86**	**307**	*e*P	P	18 30 16.8	-3.4
ZAK				pmax	pmax		
	comp=Z,5.0nm,1.0s						
MOY	**Mondy**	**31.48**	**309**	*e*P	**P**	**18 30 34.6**	**+0.1**
GYA	**Guiyang**	**31.86**	**259**	P	**P**	**18 30 36.9**	**-1.2**
GYA				pmax	pmax		
	comp=Z,20nm,0.8s						
GSTR	**Great Sitkin T**	**32.18**	**51**	*e*P	**P**	**18 30 42.9**	**+2.4**
GTA	**Gaotai**	**32.63**	**285**	*e*P	**P**	**18 30 45.0**	**+0.3**
GTA				pP	pP	18 30 53.0	-4.3
GTA				sP	sP	18 30 57.3	-5.8
GTA				pmax	pmax		
	comp=Z,5.0nm,0.8s						
TIXI	**Tiksi**	**34.12**	**353**	*e*P	**P**	**18 30 56.9**	**-0.2**
TIXI				pmax	pmax		
	comp=Z,9.0nm,1.8s						
TIXI	**Tiksi**	**34.12**	**353**	*e*P	**P**	**18 30 56.9**	**-0.2**
	comp=Z,8.7nm,1.8s						
DAV	**Davao City (W)**	**34.42**	**210**	*e*S	**S**	**18 36 21.9**	**-3.1**
ZAA1	**Zalesovo Array**	**41.41**	**311**	*e*P	**P**	**18 31 59.0**	**+0.1**
ZAA1				*e*PcP	**PcP**	**18 33 56.1**	**+0.1**
ZALV	**Zalesovo Beam**	**41.41**	**311**	P	**P**	**18 31 59.0**	**+0.1**
	comp=Z,5.3nm,0.6s,baz=85,slow=7.5,SNR=24						
ZALV				PcP	**PcP**	**18 33 56.1**	**+0.1**
	comp=Z,0.9nm,0.4s,baz=85,slow=1.6,SNR=3.9						
CM01	**Chiang Mai Arr**	**42.24**	**254**	*e*P	**P**	**18 32 04.8**	**-1.2**
NVS	**Novosibirsk**	**42.31**	**313**	*e*P	**P**	**18 32 05.8**	**-0.3**
LSA	**Lhasa**	**42.53**	**274**	*e*P	**P**	**18 32 08.3**	**-0.6**
LSA				pmax	pmax		
	comp=Z,9.0nm,1.3s						
LSA	**Lhasa**	**42.53**	**274**	*e*P	**P**	**18 32 08.2**	**-0.6**
	comp=Z,9.2nm,1.3s						
MK01	**Makanchi Array**	**43.83**	**301**	*e*P	**P**	**18 32 18.2**	**-0.4**
MK31	**Makanchi Array**	**43.84**	**301**	*e*P	**P**	**18 32 18.4**	**-0.3**
MK31	**Makanchi Array**	**43.84**	**301**	*e*P	**P**	**18 32 18.4**	**-0.3**
MK32	**Makanchi Array**	**43.84**	**301**	*e*P	**P**	**18 32 18.6**	**-0.1**
MKAR	**Makanchi Array**	**43.84**	**301**	P	**P**	**18 32 18.6**	**-0.1**
	comp=Z,3.3nm,0.6s,baz=86,slow=9.9,SNR=42						
MKAR	**Makanchi Array**	**43.84**	**301**	*e*P	**P**	**18 32 18.4**	**-0.3**
MKAR	**Makanchi Array**	**43.84**	**301**	*e*P	**P**	**18 32 18.4**	**-0.3**
MAKZ	**Makanchi**	**44.04**	**301**	*e*P	**P**	**18 32 20.1**	**-0.3**
MAKZ				pmax	pmax		
	comp=Z,8.0nm,1.0s						
MAKZ	**Makanchi**	**44.04**	**301**	*e*P	**P**	**18 32 20.1**	**-0.3**
	comp=Z,7.5nm,1.0s						
SPU	**Mount Spurr**	**45.99**	**38**	*e*P	**P**	**18 32 36.4**	**+0.7**
KSM	**Kuching**	**46.71**	**226**	*e*P	**P**	**18 32 41.9**	**+0.2**
	comp=Z,7.6nm,1.2s						
KAPI	**Kappang**	**47.74**	**211**	*e*P	**P**	**18 32 50.5**	**+0.9**
	comp=Z,23nm,1.5s						
IL1	**Eielson Array**	**48.23**	**33**	*e*P	**P**	**18 32 53.9**	**+1.0**
ILAR	**Eielson Array**	**48.23**	**33**	P	**P**	**18 32 53.7**	**+0.8**
	comp=Z,0.6nm,0.6s,baz=261,slow=5.8,SNR=7.5						
ILB	**Eielson Array**	**48.23**	**33**	*e*P	**P**	**18 32 53.4**	**+0.5**
DIV	**Divide**	**49.04**	**38**	*e*P	**P**	**18 33 00.3**	**+1.0**
	comp=Z,32nm,1.9s						
TKM2	**Tokmak 2**	**49.43**	**298**	*e*P	**P**	**18 33 02.4**	**-0.3**
TKM2				pmax	pmax		
	comp=Z,5.0nm,0.8s						
TKM2	**Tokmak 2**	**49.43**	**298**	*e*P	**P**	**18 33 02.4**	**-0.3**
	comp=Z,5.3nm,0.8s						
DOT	**Dot Lake**	**49.54**	**34**	*e*P	**P**	**18 33 04.0**	**+0.9**
	comp=Z,45nm,1.5s						
BRVK	**Borovoye**	**50.12**	**312**	⇓*e*P	**P**	**18 33 07.8**	**+0.3**
BRVK				pmax	pmax		
	comp=Z,9.0nm,2.5s						
AAK	**Ala-Archa**	**50.29**	**298**	⇑*e*P	**P**	**18 33 09.3**	**+0.1**
AAK				pmax	pmax		
	comp=Z,2.0nm,0.7s						
AAK	**Ala-Archa**	**50.29**	**298**	*e*P	**P**	**18 33 08.9**	**-0.3**
	comp=Z,1.9nm,0.6s						
EKS2	**Erkin-Say**	**50.78**	**298**	*e*P	**P**	**18 33 11.9**	**-0.9**
EKS2				pmax	pmax		
	comp=Z,5.0nm,1.3s						
EKS2	**Erkin-Say**	**50.78**	**298**	*e*P	**P**	**18 33 11.9**	**-0.9**
	comp=Z,4.8nm,1.3s						
ZRNK	**Zerenda**	**50.90**	**312**	*e*P	**P**	**18 33 13.4**	**0.0**
ZRNK				pmax	pmax		
	comp=Z,19nm,1.7s						
ZRNK	**Zerenda**	**50.90**	**312**	*e*P	**P**	**18 33 13.4**	**0.0**
	comp=Z,18nm,1.7s						
KKAR	**Karatay Array**	**52.88**	**299**	*e*P	**P**	**18 33 26.9**	**-1.5**
KKAR	**Karatay Array**	**52.88**	**299**	*e*P	**P**	**18 33 26.9**	**-1.5**
INK	**Inuvik**	**53.09**	**28**	P	**P**	**18 33 31.0**	**+1.5**
	comp=Z,1.3nm,0.7s,baz=311,slow=7.0,SNR=5.0						
INK	**Inuvik**	**53.09**	**28**	*e*P	**P**	**18 33 30.3**	**+0.9**
	comp=Z,11nm,1.8s						
OPA	**Opana**	**53.69**	**90**	*e*P	**P**	**18 33 34.8**	**+0.3**
OPA				pmax	pmax		
	comp=Z,199nm,1.3s						
OPA	**Opana**	**53.69**	**90**	*e*P	**P**	**18 33 34.8**	**+0.3**
	comp=Z,199nm,1.3s						
GSI	**Gunungsitoli**	**54.80**	**239**	*e*P	**P**	**18 33 43.1**	**+0.5**
	comp=Z,126nm,2.0s						
ARU	**Arti**	**55.72**	**318**	*d*P	**P**	**18 33 47.3**	**-1.5**
ARU				S	**S**	**18 41 31.3**	**-0.3**
ARU				pmax	pmax		
	comp=Z,18nm,1.7s						
ARU	**Arti**	**55.72**	**318**	*e*P	**P**	**18 33 48.5**	**-0.3**
	comp=Z,25nm,1.5s						
KBL	**Kabul**	**57.38**	**290**	*e*P	**P**	**18 34 00.3**	**-0.8**
KBL				pmax	pmax		
	comp=Z,7.0nm,0.9s						
KBL	**Kabul**	**57.38**	**290**	*e*P	**P**	**18 34 00.3**	**-0.8**
	comp=Z,7.0nm,0.9s						
ABKAR	**Akbulak array**	**57.48**	**310**	*e*P	**P**	**18 34 00.7**	**-0.6**
FUNA	**Funafuti**	**58.07**	**135**	*e*P	**P**	**18 34 06.5**	**+0.7**
	comp=Z,380nm,1.6s						
WB2	**Warramunga Arr**	**58.34**	**188**	*e*P	**P**	**18 34 07.1**	**-0.6**
	comp=Z,16nm,1.4s						
WR1	**Warramunga Arr**	**58.34**	**188**	*e*P	**P**	**18 34 07.8**	**+0.2**
	comp=Z,28nm,1.6s						
WRA

comp=Z,6.1nm,0.8s
AK11 Malin Array Si 73.62 322 *e*P **P 18 35 44.6 -0.9**
PDAR Pinedale Array 76.50 46 P **P 18 36 03.7 +1.2**
comp=Z,0.4nm,0.5s,baz=12,slow=0.7,SNR=9.4
KOLS Kolonicke sedl 78.07 324 *e*P **P 18 36 11.5 +0.6**
KOLS pmax pmax
comp=Z,5.0nm,1.3s
KOLS Kolonicke sedl 78.07 324 *e*P **P 18 36 11.5 +0.6**
STHS Stebnicka Huta 78.19 325 *e*P **P 18 36 13.3 +1.7**
STHS pmax pmax
comp=Z,2.0nm,0.9s
STHS Stebnicka Huta 78.19 325 *e*P **P 18 36 13.3 +1.7**
STHS *e*PP PP 18 38 50.0 -18
BR101 Keskin Array S 78.35 312 *e*P **P 18 36 12.9 +0.1**
BRTR Keskin Array B 78.35 312 P **P 18 36 12.9 +0.1**
comp=Z,0.9nm,0.6s,baz=90,slow=3.7,SNR=8.4
BRTR Keskin Array B 78.35 312 P **P 18 36 13.0 +0.1**
LANS Liptovska Anna 79.18 326 *e*P **P 18 36 18.3 +1.2**
LANS Liptovska Anna 79.18 326 *e*P **P 18 36 18.3 +1.2**
DPC Dobruska-Polom 79.64 328 *e*P **P 18 36 20.6 +1.0**
DPC Dobruska-Polom 79.64 328 *e*P **P 18 36 20.6 +1.0**
VYHS Vyhne 79.95 326 *e*P **P 18 36 22.1 +0.9**
VYHS pmax pmax
comp=Z,11nm,2.2s
VYHS Vyhne 79.95 326 *e*P **P 18 36 22.1 +0.9**
BRG Berggiesshubel 80.21 330 *e*P **P 18 36 22.8 +0.3**
comp=Z,4.2nm,0.9s
BRG Berggiesshubel 80.21 330 *e*P **P 18 36 22.8 +0.3**
BRG pmax pmax
comp=Z,18nm,0.9s
CLL Collm 80.24 330 *i*P **P 18 36 22.7 0.0**
comp=Z,7.0nm,1.0s
CLL Collm 80.24 330 *i*P **P 18 36 22.7 0.0**
CLL pmax pmax
comp=Z,7.0nm,1.0s
RAR Rarotonga 80.54 126 LR LR 19 02 54.2
comp=Z,299nm,21.6s,baz=142,slow=29
PRU Pruhonice 80.65 329 *e*P **P 18 36 25.9 +1.0**
PRU Pruhonice 80.65 329 *e*P **P 18 36 25.9 +1.0**
TREC Trest 80.79 328 *e*P **P 18 36 26.7 +0.9**
TREC Trest 80.79 328 *e*P **P 18 36 26.7 +0.9**
KHC Kasperske Hory 81.71 329 *e*P **P 18 36 31.2 +0.5**
KHC *e*x x 18 36 42.8
KHC Kasperske Hory 81.71 329 *e*P **P 18 36 31.2 +0.5**
KHC *e* 18 36 42.8
GERES GERESS Array B 81.89 328 P **P 18 36 31.6 -0.1**
comp=Z,1.3nm,0.8s,baz=45,slow=4.0,SNR=9.3
BFO Black Forest 84.43 331 *i*P **P 18 36 45.7 +1.0**
LPAZ La Paz 145.69 59 PKPbc **PKPab 18 43 52.8 +0.4**
comp=Z,1.3nm,0.8s,baz=46,slow=5.7,SNR=3.7

NEIC ***10*** *18:41:18.4±0.8, 30°.72N×105°.72W, h10km, ML3.4, Error ellipse: s-maj=11.4km s-min=7.5km az=7.0*
MEX ***10*** *18:41:19.9±0.4, 30°.66N×105°.42W, h16km±22km, MD3.8*
ISC 10 18:41:17.0±0.8, 30°.70N±0°.03×105°.65W±0°.03, h10km, n28, σ2§21/44, Texas-Mexico border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MNTX	**Cornudas Mount**	**1.02**	**13**	*e*Pg	**Pg**	**18 41 36.0**	**-0.7**
MNTX				*e*Sg	**Sb**	**18 41 49.5**	**-0.9**
CGIG		**2.04**	**261**	*e*P	**Pb**	**18 41 53.4**	**-0.8**
CGIG				*e*S	**Sn**	**18 42 18.9**	**+1.9**
CGIG		**2.04**	**261**	*e*Pn	**Pb**	**18 41 53.4**	**-0.8**
CGIG				*e*Sn	**Sn**	**18 42 18.9**	**+1.9**
CLNB	**Carlsbad**	**2.17**	**44**	*e*Pn	**Pg**	**18 41 56.9**	**-1.8**
CLNB				*e*Sn	**Sg**	**18 42 25.4**	**-1.5**
TX31	**Lajitas Ar. Si**	**2.19**	**128**	*e*Pn	**Pb**	**18 41 55.7**	**-1.2**
TX31				*e*Pg	**Pg**	**18 41 59.2**	**+0.1**
TX31				*e*Sn	**Sg**	**18 42 29.2**	**+1.7**
319A	**Douglas**	**3.19**	**283**	*e*P	**Pn**	**18 42 09.4**	**+2.1**
319A				*e*S	**Sn**	**18 42 48.8**	**+3.3**
319A	**Douglas**	**3.19**	**283**	*e*Pn	**Pn**	**18 42 05.7**	**-1.7**
319A				*e*Pg	**Pb**	**18 42 14.7**	**+0.9**
319A				*e*Sg	**Sg**	**18 42 57.2**	**-2.3**
Y22D	**IRIS PASSCAL I**	**3.53**	**343**	*e*Pn	**Pn**	**18 42 11.4**	**-0.7**
BNM	**Barren Site**	**3.54**	**347**	*e*Pn	**Pn**	**18 42 12.1**	**-0.2**
BNM				*e*Sg	**Sg**	**18 43 06.7**	**-4.1**
LPM	**Los Pinos Moun**	**3.70**	**347**	*e*Pn	**Pn**	**18 42 15.2**	**+0.8**
LPM				*e*Sg	**Sb**	**18 43 09.7**	**+2.2**
HPIG		**3.75**	**180**	*e*Pn	**Pb**	**18 42 21.6**	**-1.9**
LAZ	**Ladron**	**3.90**	**342**	*e*Pn	**Pn**	**18 42 18.8**	**+1.6**
MSTX	**Muleshoe**	**4.07**	**36**	*e*Pn	**Pn**	**18 42 20.4**	**+0.9**
MSTX				*e*Pg	**Pb**	**18 42 30.1**	**+1.2**
MSTX				*e*Sg	**Sg**	**18 43 23.7**	**-4.1**
ANMO	**Albuquerque**	**4.29**	**351**	*e*Pn	Pn	18 42 26.4	+3.9
ANMO				*e*Sg	**Sb**	**18 43 27.8**	**+3.2**
TUC	**Tucson**	**4.67**	**291**	*e*Pn	**Pn**	**18 42 27.8**	**+0.1**
TUC				*e*Sg	**Sg**	**18 43 42.2**	**-4.8**
JCT	**Junction City**	**5.05**	**91**	*e*Pn	Pn	18 42 35.4	+2.6
JCT				*e*Sg	**Sg**	**18 43 56.1**	**-3.0**
X18A	**Snowflake**	**5.27**	**318**	*e*Pn	Pn	18 42 39.6	+3.6
X18A				*e*Sg	**Sg**	**18 44 01.9**	**-4.3**
AMTX	**Amarillo**	**5.35**	**38**	*e*Pn	**Pn**	**18 42 39.6**	**+2.6**
AMTX				*e*Sg	**Sg**	**18 44 08.2**	**-0.5**
ABTX	**Abilene, Hawle**	**5.47**	**68**	*e*Pn	**Pn**	**18 42 38.9**	**+0.3**
ABTX				*e*Pg	**Pg**	**18 42 59.4**	**-2.4**
ABTX				*e*Sg	**Sg**	**18 44 09.6**	**-3.1**
W18A	**Petrified Fore**	**5.59**	**323**	*e*Pg	**Pb**	**18 42 55.4**	**+0.6**
W18A				*e*Sg	**Sb**	**18 44 04.7**	**+2.8**
X16A	**Lo Mia Camp, P**	**6.13**	**309**	*e*Pn	**Pn**	**18 42 50.0**	**+2.1**
T25A	**Trinidad**	**6.50**	**9**	*e*Pn	**Pn**	**18 42 54.4**	**+1.4**
T25A				*e*Sg	Sg	18 44 38.4	-7.5
WUAZ	**Wupatki**	**6.79**	**317**	Pn	**Pn**	**18 42 57.4**	**+0.5**
WUAZ				*e*Sg	Sg	18 44 49.1	-6.0
MVCO	**Mesa Verde**	**6.91**	**341**	*e*Pn	**Pn**	**18 43 01.1**	**+2.5**
Y14A	**Wickenburg**	**7.01**	**299**	*e*Pn	**Pn**	**18 42 59.9**	**0.0**
SDCO	**Great Sand Dun**	**7.03**	**1**	*e*Pn	Pn	18 42 55.9	-4.4
SDCO				*e*Pg	Pb	18 43 15.1	-4.3
SDCO				*e*Sg	Sg	18 44 53.1	-10
WMOK	**Wichita Mounta**	**7.05**	**53**	*e*Pn	Pn	18 42 56.4	-3.9
WMOK				*e*Sg	Sb	18 44 50.8	+6.9
WHTX	**Lake Whitney,**	**7.13**	**77**	*e*Pn	**Pn**	**18 43 03.7**	**+2.3**

IDC 10 18:47:13.8±11.0, 20°.14S×167°.64E, h0km, mb3.8/3, mb1 3.9/4, mb1mx3.6/38, mbtmp3.8/4, ML3.1/1, Error ellipse: s-maj=189.9km s-min=39.6km az=90.0, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.22**	**210**	Pn	Pn	18 47 51.2	-0.7
DZM	5.1nm,0.3s,baz=56,slow=15,SNR=8.0			Sn	Sn	18 48 20.5	+0.3
	12nm,0.3s,baz=136,slow=22,SNR=14						
STKA	**Stephens Creek**	**26.09**	**238**	P	P	18 52 50.7	+1.3
	1.6nm,0.8s,baz=90,slow=11,SNR=3.9						
WRA	**Warramunga Arr**	**31.26**	**265**	P	P	18 53 34.9	-0.7
	0.4nm,0.8s,baz=92,slow=8.4,SNR=6.9						
ASAR	**Alice Springs**	**31.46**	**257**	P	P	18 53 37.2	-0.1
	1.5nm,0.7s,baz=89,slow=8.8,SNR=23						

IDC ***10*** *19:08:01.4±1.2, 20°.08S×168°.17E, h0km, mb4.0/4, mb1 4.3/6, mb1mx3.9/31, mbtmp4.1/6, ML3.7/2, MS3.4/2, Ms1 3.4/2, ms1mx2.8/27, Error ellipse: s-maj=37.7km s-min=23.5km az=144.0*
NEIC ***10*** *19:08:02.9±0.5, 20°.13S×168°.11E, h10km, mb4.8/7, Error ellipse: s-maj=13.3km s-min=8.7km az=126.0*
ISCJB ***10*** *19:08:03.4±0.6, 20°.13S±0°.07×168°.09E±0°.09, h27km, mb4.5/12, MS3.8/1, Error ellipse: s-maj=13.4km s-min=8.5km az=35.5*
ISC 10 19:08:05.2±0.7, 20°.1S±0°.1×168°.0E±0°.1, h27km, n21, σ1§49/21, mb4.5/12, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.44**	**217**	Pn	**Pn**	**19 08 42.6**	**-0.7**
	12nm,0.3s,baz=112,slow=12,SNR=14						
DZM				Sn	**Sn**	**19 09 12.1**	**-0.3**
	45nm,0.3s,baz=112,slow=22,SNR=12						
DZM				LR	LR	19 09 42.1	
	comp=Z,260nm,19.8s,baz=344,slow=40						
LHI	**Lord Howe Isla**	**13.92**	**214**	*e*Pn	**Pn**	**19 11 20.0**	**-0.7**
URZ	**Urewera**	**19.73**	**158**	P	**P**	**19 12 33.1**	**+0.3**
	0.3nm,0.3s,baz=278,slow=5.0,SNR=3.8						
RPZ	**Rata Peaks**	**23.68**	**174**	*e*P	**P**	**19 13 14.6**	**+0.1**
	34nm,1.1s						
STKA	**Stephens Creek**	**26.41**	**238**	P	**P**	**19 13 41.6**	**+2.0**
	1.9nm,0.8s,baz=78,slow=9.3,SNR=4.8						

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**26.41**	**238**	*e*P	**P**	**19 13 42.0**	**+2.4**
	6.6nm,1.8s						
RAR	**Rarotonga**	**30.14**	**98**	LR	LR	19 23 15.1	
	comp=Z,234nm,21.6s,baz=105,slow=30						
WR1	**Warramunga Arr**	**31.61**	**264**	*e*P	**P**	**19 14 27.3**	**+1.3**
	31nm,1.9s						
WRA	**Warramunga Arr**	**31.61**	**264**	P	**P**	**19 14 27.3**	**+1.3**
	0.4nm,0.7s,baz=92,slow=8.5,SNR=5.3						
AS01	**Alice Springs**	**31.76**	**257**	*e*P	**P**	**19 14 28.6**	**+1.2**
AS31	**Alice Springs**	**31.80**	**257**	*e*P	**P**	**19 14 29.4**	**+1.7**
	2.5nm,1.3s						
ASAR	**Alice Springs**	**31.80**	**257**	P	**P**	**19 14 29.4**	**+1.7**
	1.8nm,0.6s,baz=84,slow=8.7,SNR=22						
SOEI	**Soe**	**43.38**	**277**	*e*P	**P**	**19 16 02.9**	**-2.9**
	33nm,1.1s						
PTCN	**Pitcairn Islan**	**56.94**	**107**	*e*P	**P**	**19 17 48.4**	**0.0**
	443nm,1.2s						
MAJO	**Matsushiro**	**62.99**	**333**	*e*P	**P**	**19 18 30.4**	**+0.8**
	46nm,1.9s						
MJB9	**Matsu-Tunnel**	**63.00**	**333**	*e*P	**P**	**19 18 30.6**	**+1.0**
	12nm,1.9s						
KS01	**Wonju Array Si**	**68.61**	**327**	*e*P	**P**	**19 19 03.9**	**-1.9**
NV01	**Mina Array Sit**	**90.24**	**49**	*e*P	**P**	**19 21 02.7**	**-1.1**
NVAR	**Mina Array Bea**	**90.24**	**49**	P	**P**	**19 21 02.8**	**-1.0**
	1.4nm,0.8s,baz=228,slow=8.5,SNR=6.5						
ILAR	**Eielson Array**	**91.40**	**18**	P	**P**	**19 21 08.7**	**+0.5**
	0.4nm,0.7s,baz=238,slow=5.2,SNR=4.3						
GERES	**GERESS Array B**	**144.69**	**330**	PKP	**PKPdf**	**19 27 41.1**	**+1.6**
	0.4nm,0.6s,baz=46,slow=3.9,SNR=4.4						

SOME ***10*** *19:19:54.3, 37°.07N×71°.18E, h20km*
ISCJB ***10*** *19:19:55.3±0.4, 35°.51N±0°.03×71°.08E±0°.06, h90km, mb3.7/9, Error ellipse: s-maj=7.2km s-min=3.9km az=156.0*
IDC ***10*** *19:19:57.5±3.4, 35°.60N×70°.85E, h78km±27km, mb3.6/10, mb1 3.7/15, mb1mx3.4/50, mbtmp3.9/15, MS2.8/2, Ms1 2.8/2, ms1mx2.4/40, Error ellipse: s-maj=26.0km s-min=15.4km az=165.0*
NNC ***10*** *19:20:03.0±2.1, 35°.94N×70°.73E, h144km±16km, mb3.3, mpv4.1, Error ellipse: s-maj=17.7km s-min=10.6km az=174.0*
ISC 10 19:19:56.4±0.6, 35°.48N±0°.05×70°.90E±0°.06, h90km, n43, σ2§97/58, mb3.8/9, 10C-9D, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**3.71**	**334**	⇑P	**Pn**	**19 20 52.6**	**+1.1**
	3.8nm,0.3s						
DZET				⇓S	**Sn**	**19 21 32.9**	**-1.3**
	101nm,0.3s						
SFK	**Sufi-Kurgan**	**4.97**	**24**	⇓P	**Pn**	**19 21 11.5**	**+2.7**
	12nm,0.3s						
SFK				⇓S	**Sn**	**19 22 06.2**	**+1.1**
	19nm,0.2s						
IUG	**Iuzhnay**	**6.69**	**354**	*e*P	**Pn**	**19 21 32.8**	**+0.7**
	17nm,0.1s						
IUG				*e*S	**Sn**	**19 22 43.1**	**-3.7**
	117nm,0.5s						
SMLA	**Simla**	**6.81**	**128**	*e*P	**Pn**	**19 21 33.8**	**+0.2**
SMLA				*e*S	**Sn**	**19 22 45.6**	**-4.0**
SMLA				IAML		19 23 38.9	
	comp=N,81nm,0.5s						
SMLA				IAML		19 23 42.2	
	comp=E,91nm,0.4s						
MNAS	**Manas**	**7.11**	**10**	⇓P	**Pn**	**19 21 38.2**	**+0.5**
	comp=E,17nm,0.8s						
MNAS				⇑S	**Sn**	**19 22 53.5**	**-3.6**
	comp=E,21nm,0.4s						
BRLS	**Borolday**	**7.36**	**353**	*e*P	**Pn**	**19 21 43.8**	**+2.7**
	comp=E,5.5nm,0.2s						
BRLS				*e*S	**Sn**	**19 23 01.0**	**-2.0**
	comp=E,919nm,0.3s						
KK31	**Karatay Array**	**7.62**	**358**	⇑P	**Pn**	**19 21 45.0**	**+0.4**
	comp=E,8.6nm,0.5s,baz=177,slow=12,SNR=160						
KK31				⇑S	**Sn**	**19 23 06.3**	**-3.0**
	comp=E,7.4nm,0.4s,baz=195,slow=30,SNR=12						
AAK	**Ala-Archa**	**7.67**	**20**	P	**Pn**	**19 21 46.9**	**+1.4**
	comp=E,5.5nm,0.3s,baz=178,slow=6.7,SNR=58						
AAK				S	**Sn**	**19 23 08.5**	**-2.3**
	comp=E,1.1nm,0.3s,baz=328,slow=20,SNR=6.1						
AAK	**Ala-Archa**	**7.67**	**20**	⇑P	**Pn**	**19 21 46.3**	**+0.9**
	comp=E,8.5nm,0.4s						
AAK				⇑S	**Sn**	**19 23 09.1**	**-1.7**
	comp=E,20nm,1.1s						
RTK	**Rohtak**	**7.94**	**142**	*e*P	**Pn**	**19 21 49.4**	**+0.3**
TKM2	**Tokmak 2**	**8.27**	**25**	⇓P	**Pn**	**19 21 54.5**	**+0.7**
	comp=E,9.5nm,0.6s						
TKM2				⇓S	**Sn**	**19 23 25.2**	**-0.4**
	comp=E,2.5nm,0.6s						
KHET	**Khetri**	**8.48**	**149**	*e*P	**Pn**	**19 21 56.3**	**-0.1**
KHET				*e*S	**Sn**	**19 23 24.4**	**-6.1**
KHET				IAML		19 23 27.4	
	comp=E,30nm,0.3s						
KHET				IAML		19 23 27.6	
	comp=N,27nm,0.2s						
KST	**Kastek**	**8.51**	**26**	*e*P	Pn	19 22 05.7	+8.8
	comp=N,2.0nm,0.3s						
KST				*e*S	**Sn**	**19 23 38.0**	**+6.8**
	comp=N,4.1nm,0.6s						
KUDL	**Kundal**	**8.72**	**145**	*e*P	**Pn**	**19 21 59.6**	**-0.1**
KUDL				*e*S	**Sn**	**19 23 29.9**	**-6.4**
KUDL				IAML		19 23 37.7	
	comp=E,16nm,0.3s						
KUDL				IAML		19 23 38.0	
	comp=N,15nm,0.4s						
JOSI	**Joshimath**	**8.77**	**122**	*e*P	**Pn**	**19 22 01.1**	**+0.5**
JOSI				*e*S	**Sn**	**19 23 32.8**	**-5.0**
JOSI				IAML		19 23 39.6	
	comp=E,152nm,0.9s						
JOSI				IAML		19 23 40.1	
	comp=N,98nm,0.7s						
GEYT	**Alibeck**	**10.55**	**287**	P	**Pn**	**19 22 25.9**	**+1.3**
	comp=N,0.5nm,0.3s,baz=122,slow=15,SNR=11						
GEYT				S	**Sn**	**19 24 15.8**	**-5.1**
	baz=84,slow=15,SNR=2.9						
PYUN	**Piuthan**	**12.64**	**122**	*e*P	**Pn**	**19 22 50.6**	**-2.4**
	comp=N,19nm,0.4s						
OTUK	**Ortayu**	**12.80**	**4**	⇑P	**Pn**	**19 22 52.7**	**-2.1**
	comp=N,1.8nm,0.8s						
OTUK				⇓S	**Sn**	**19 25 07.5**	**-7.9**
	comp=N,6.7nm,1.0s						
KOLN	**Koldanda**	**13.26**	**122**	*e*P	**Pn**	**19 22 58.0**	**-3.3**
	comp=N,17nm,0.6s						
GKN	**Gorkha**	**13.85**	**119**	*e*P	**Pn**	**19 23 06.2**	**-2.7**
MK31	**Makanchi Array**	**14.17**	**34**	⇓P	**Pn**	**19 23 11.8**	**-1.0**
	comp=N,0.6nm,0.3s,baz=210,slow=13,SNR=26						
MKAR	**Makanchi Array**	**14.17**	**34**	P	**Pn**	**19 23 12.2**	**-0.6**
	comp=N,0.1nm,0.3s,baz=201,slow=12,SNR=5.6						
KKN	**Kakani**	**14.44**	**118**	*e*P	**Pn**	**19 23 13.8**	**-2.8**
	comp=N,13nm,0.5s						
PKIN	**Phulchoki**	**14.65**	**119**	*e*P	**Pn**	**19 23 16.8**	**-2.5**
	comp=N,8.9nm,0.3s						
AB31	**Akbulak array**	**15.95**	**333**	P	**Pn**	**19 23 35.6**	**+0.3**
	comp=N,0.9nm,0.3s,baz=156,slow=12,SNR=104						
AB31				⇓S	Sn	19 26 19.5	-12
	comp=N,2.6nm,0.6s						
KURBB	**Kurchatov Arra**	**16.11**	**18**	P	**Pn**	**19 23 33.9**	**-3.5**
	comp=N,0.1nm,0.3s,baz=208,slow=12,SNR=5.4						
BVA0	**Borovoye Array**	**17.54**	**359**	P	**P**	**19 23 53.6**	**-1.2**
	comp=N,3.4nm,1.2s,baz=357,slow=17,SNR=11						
BVAR	**Borovoye Array**	**17.54**	**359**	P	**Pn**	**19 23 55.2**	**+0.3**
	comp=N,0.4nm,0.3s,baz=155,slow=9.6,SNR=9.1						
BRVK	**Borovoye**	**17.58**	**359**	⇑P	**P**	**19 23 54.3**	**-0.8**
	comp=N,2.4nm,0.8s						
AKTO	**Aktyubinsk**	**17.63**	**332**	P	**Pn**	**19 23 57.7**	**+1.7**
	comp=N,0.5nm,0.3s,baz=143,slow=12,SNR=12						
AKTO				S	Sn	19 27 00.5	-12
	comp=N,0.2nm,0.3s,baz=292,slow=12,SNR=1.8						
AKTO				LR	LR	19 30 23.3	
	comp=N,21nm,20.4s,baz=284,slow=36						
AKTO	**Aktyubinsk**	**17.63**	**332**	⇑P	**Pn**	**19 23 57.0**	**+1.0**
	comp=N,3.2nm,0.7s						
AKTO				⇑S	**Sn**	**19 27 04.5**	**-7.6**
	comp=N,5.9nm,1.2s						
ZALV	**Zalesovo Beam**	**20.88**	**24**	P	**P**	**19 24 31.8**	**+0.8**
	comp=N,3.1nm,0.3s,baz=227,slow=11,SNR=15						
TLY	**Talaya**	**28.41**	**45**	LR	LR	19 37 35.9	
	comp=N,33nm,19.9s,baz=240,slow=37						
BRTR	**Keskin Array B**	**29.68**	**289**	P	**P**	**19 25 57.0**	**+3.2**
	comp=N,0.5nm,0.8s,baz=97,slow=10,SNR=4.0						
FINES	**FINESS Array B**	**38.29**	**327**	P	**P**	**19 27 08.7**	**+1.0**
	comp=N,0.4nm,0.4s,baz=110,slow=10,SNR=5.2						
ARCES	**ARCESS Array B**	**42.06**	**338**	P	**P**	**19 27 40.3**	**+1.6**
	comp=N,1.6nm,0.6s,baz=121,slow=4.7,SNR=9.7						
NB2	**NORSAR Subarra**	**45.15**	**324**	P	**P**	**19 28 04.8**	**+1.1**
	comp=Z,1.0nm,0.5s,baz=98,slow=7.9						
NOA	**NORSAR Array B**	**45.15**	**324**	P	**P**	**19 28 04.9**	**+1.2**
	comp=Z,0.3nm,0.7s,baz=104,slow=7.3,SNR=9.2						
KSRS	**Korea Array**	**45.30**	**70**	P	**P**	**19 28 07.7**	**+2.6**
	comp=Z,0.7nm,0.5s,baz=267,slow=7.7,SNR=5.5						
TORD	**Torodi Ar. Bea**	**65.62**	**269**	P	**P**	**19 30 32.9**	**+1.8**
	comp=Z,1.6nm,0.7s,baz=45,slow=5.4,SNR=11						
INK	**Inuvik**	**74.92**	**9**	P	**P**	**19 31 29.2**	**+2.3**
	comp=Z,1.3nm,0.4s,baz=326,slow=4.9,SNR=20						
YKA	**Yellowknife Ar**	**82.27**	**3**	P	**P**	**19 32 08.7**	**+1.3**
	comp=Z,0.9nm,0.4s,baz=351,slow=5.5,SNR=18						
ASAR	**Alice Springs**	**83.74**	**125**	P	**P**	**19 32 18.0**	**+2.4**
	comp=Z,0.2nm,0.4s,baz=317,slow=4.8,SNR=5.1						

NIED ***10*** *19:22:00, 35°.80N×141°.00E, h8km, Mw3.9 Best double couple: M0:9.24000×10^14 NP1:φ=171.00000°, δ=33.00000°, λ=-120.00000°. NP2:φ=25.00000°, δ=62.00000°, λ=-72.00000°.*
IDC ***10*** *19:22:23.2±1.1, 35°.64N×140°.79E, h0km, mb3.8/10, mb1 3.9/11, mb1mx3.7/51, mbtmp3.8/11, ML3.5/1, MS2.7/3, Ms1 2.7/3, ms1mx2.5/40, Error ellipse: s-maj=25.1km s-min=23.1km az=167.0*
ISCJB ***10*** *19:22:24.5±0.7, 35°.79N±0°.04×141°.02E±0°.05, h19km±5km, mb4.3/19, Error ellipse: s-maj=7.6km s-min=6.6km az=146.7*
JMA ***10*** *19:22:25.1±0.2, 35°.79N×140°.98E, h13km±1km, M4.2*
JMA Felt II J1.
NEIC ***10*** *19:22:25.9±3.1, 35°.73N×140°.95E, h17km±20km, mb4.7/9, Error ellipse: s-maj=8.5km s-min=8.1km az=108.0*
NEIC Recorded [2 JMA] in Ibaraki.
ISC 10 19:22:25.2±1.0, 35°.78N±0°.05×140°.97E±0°.05, h13km±6km, n55, σ1§05/51, mb4.1/19, 3C-2D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.12**	**229**	⇑P	**Pg**	**19 22 28.4**	**+0.1**
CHOJ				*e*S	**Sg**	**19 22 30.7**	**+0.1**
JCN	**Nagara**	**0.72**	**240**	⇑P	**Pb**	**19 22 40.2**	**+0.6**
JCN				S	**Sn**	**19 22 51.7**	**-0.3**
JYT	**Yasato**	**0.77**	**306**	⇑P	**Pg**	**19 22 39.5**	**-0.6**
JYT				*e*S	**Sg**	**19 22 49.8**	**-0.4**
JHO	**Hitachi**	**0.89**	**339**	⇓P	**Pg**	**19 22 41.4**	**-1.0**
BSO4	**Boso 4**	**0.94**	**213**	P	**Pn**	**19 22 44.0**	**0.0**
BSO3	**Boso 3**	**1.05**	**201**	⇓P	**Pb**	**19 22 44.8**	**-0.2**
MJAR	**Matsushiro Arr**	**2.36**	**290**	Pn	**Pn**	**19 23 03.0**	**-0.7**
	13nm,0.3s,baz=95,slow=8.4,SNR=80						
MJAR				Sn	**Sb**	**19 23 36.3**	**-0.3**
	15nm,0.3s,baz=88,slow=27,SNR=4.6						
MJAR				LR	LR	19 23 41.1	
	comp=Z,59nm,20.6s,baz=115,slow=35						
MAJO	**Matsushiro**	**2.36**	**290**	*e*Pn	**Pn**	**19 23 03.2**	**-0.4**
MAT	**Matsushiro**	**2.36**	**290**	P	**Pn**	**19 23 03.4**	**-0.3**
MAT				*e*S	**Sn**	**19 23 32.1**	**-0.4**
MJB9	**Matsu-Tunnel**	**2.36**	**290**	*e*Pn	**Pn**	**19 23 03.3**	**-0.5**
JHJ2	**Mitsune**	**2.83**	**200**	*e*Pn	**Pn**	**19 23 11.3**	**+1.2**
INU	**Inuyama**	**3.25**	**264**	*e*Pn	**Pn**	**19 23 17.9**	**+2.0**
ERM	**Erimo**	**6.45**	**15**	*e*Pn	**Pn**	**19 23 59.8**	**-0.1**
ASAJ	**Asahikawa**	**8.42**	**8**	Pn	**Pn**	**19 24 25.9**	**-1.0**
	0.7nm,0.3s,baz=236,slow=12,SNR=6.8						
CBIJ	**Chichi jima**	**8.72**	**173**	*e*Pn	**Pn**	**19 24 29.6**	**-1.5**
JNU	**Nakatsue**	**8.74**	**255**	LR	LR	19 27 52.5	
	comp=Z,74nm,19.1s,baz=116,slow=38						
KSRS	**Korea Array**	**10.62**	**283**	Pn	**Pn**	**19 24 58.8**	**+1.8**
	0.1nm,0.3s,baz=93,slow=16,SNR=2.6						
KSRS				LR	LR	19 28 53.5	
	comp=Z,76nm,18.2s,baz=92,slow=37						
KSAR	**Wonju Array Be**	**10.65**	**283**	Pn	**Pn**	**19 24 58.8**	**+1.4**
PETK	**Petropavlovsk-**	**20.95**	**29**	P	Pn	19 27 09.9	-0.4
	2.5nm,0.8s,baz=203,slow=14,SNR=3.2						
PEA1	**Petropavlovsk-**	**20.95**	**29**	*e*P	Pn	19 27 09.9	-0.4
H11N2	**WAKE ISLAND Hy**	**27.84**	**118**	T	T	19 57 14.6	
	baz=311,slow=75,SNR=108						
H11N1	**WAKE ISLAND Hy**	**27.85**	**118**	T	T	19 57 15.3	
	baz=311,slow=75,SNR=101						
H11N3	**WAKE ISLAND Hy**	**27.86**	**118**	T	T	19 57 16.0	
	baz=311,slow=75,SNR=107						
H11S1	**WAKE ISLAND Hy**	**28.51**	**120**	T	T	19 58 04.3	
	baz=312,slow=75,SNR=97						
H11S3	**WAKE ISLAND Hy**	**28.51**	**120**	T	T	19 58 05.1	
	baz=312,slow=75,SNR=78						
H11S2	**WAKE ISLAND Hy**	**28.52**	**120**	T	T	19 58 05.5	
	baz=312,slow=75,SNR=53						
ZAA1	**Zalesovo Array**	**42.50**	**313**	*e*P	**P**	**19 30 20.4**	**+0.3**
ZALV	**Zalesovo Beam**	**42.50**	**313**	P	**P**	**19 30 20.3**	**+0.3**
	1.0nm,0.7s,baz=110,slow=12,SNR=3.6						
MK01	**Makanchi Array**	**44.49**	**303**	*e*P	**P**	**19 30 36

ellipse: s-maj=5.5km s-min=4.2km az=156.0
NEIC Felt at We. Also felt at Noumea, New Caledonia.
*MOS **10** 19:31:47.8±1.1,20.07S×168.31E,h33km,mb5.3/32,Error*
ellipse: s-maj=9.7km s-min=9.0km az=8.3
ISC 10 19:31:47.3±0.3,20.21S±0.06×168.41E±0.07,h25km,n358,
σ1§10/351**,mb5.1**/100**,MS4.0**/13**,5C-6D,Loyalty Islands**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**2.61**	**224**	Pn	**Pn**	**19 32 26.5**	**-1.5**
	34nm,0.3s,baz=64,slow=18,SNR=47						
DZM				Sn	**Sn**	**19 32 57.1**	**-1.8**
	68nm,0.3s,baz=285,slow=19,SNR=9.5						
DZM				LR	LR	19 33 27.6	
	comp=Z,3μm,20.9s,baz=346,slow=39						
MSVF	**Nonsavu**	**9.45**	**77**	*e*P	Pn	19 34 07.1	+5.1
MSVF	**Nonsavu**	**9.45**	**77**	*e*Pn	Pn	19 34 07.1	+5.1
HNR	**Honiara**	**13.47**	**321**	Pn	**Pn**	**19 34 55.5**	**-1.5**
	4.5nm,0.3s,baz=163,slow=6.8,SNR=4.0						
HNR	**Honiara**	**13.47**	**321**	P	**Pn**	**19 34 57.0**	**0.0**
HNR	**Honiara**	**13.47**	**321**	*e*P	**Pn**	**19 34 55.3**	**-1.7**
HNR	**Honiara**	**13.47**	**321**	*e*Pn	**Pn**	**19 34 55.3**	**-1.7**
OUZ	**Omahuta**	**15.64**	**164**	*e*Pn	**Pn**	**19 35 26.0**	**-0.1**
	74nm,1.4s						
ARMA	**Armidale**	**18.24**	**233**	*e*Pn	**P**	**19 36 04.5**	**+5.5**
	45nm,1.3s						
URZ	**Urewera**	**19.51**	**159**	P	**Pn**	**19 36 13.9**	**-0.2**
	0.6nm,0.3s,baz=15,slow=14,SNR=11						
URZ				LR	LR	19 42 36.1	
	comp=Z,179nm,19.5s,baz=346,slow=33						
BKZ	**Black Stump Fm**	**20.14**	**161**	*e*P	Pn	19 36 22.1	+0.5
	73nm,1.2s						
CTA	**Charters Tower**	**20.80**	**266**	P	**P**	**19 36 27.8**	**+0.9**
	14nm,0.8s,baz=86,slow=11,SNR=14						
CTAO	**Charters Tower**	**20.80**	**266**	*e*P	Pn	19 36 29.2	-0.2
CTAO				pmax	pmax		
	comp=Z,512nm,1.3s						
CTAO	**Charters Tower**	**20.80**	**266**	*e*P	Pn	19 36 29.2	-0.2
	comp=Z,512nm,1.3s						
PMG	**Port Moresby**	**23.15**	**295**	P	**P**	**19 36 52.1**	**+0.1**
	comp=Z,18nm,0.9s,baz=105,slow=18,SNR=4.9						
PMG				LR	LR	19 44 39.8	
	comp=Z,224nm,18.5s,baz=164,slow=34						
PMG	**Port Moresby**	**23.15**	**295**	*e*P	**P**	**19 36 52.7**	**+0.7**
PMG				pmax	pmax		
	comp=Z,56nm,0.8s						
PMG	**Port Moresby**	**23.15**	**295**	*e*P	**P**	**19 36 53.2**	**+1.3**
	comp=Z,37nm,0.9s						
RPZ	**Rata Peaks**	**23.55**	**175**	P	**P**	**19 36 56.7**	**+1.1**
	comp=Z,23nm,0.9s,baz=100,slow=9.8,SNR=4.3						
RPZ				LR	LR	19 45 11.7	
	comp=Z,407nm,18.6s,baz=342,slow=34						
COEN	**Coen**	**24.89**	**280**	*e*P	**P**	**19 37 09.0**	**+0.6**
	comp=Z,129nm,2.0s						
STKA	**Stephens Creek**	**26.67**	**239**	P	**P**	**19 37 25.9**	**+1.4**
	comp=Z,4.7nm,0.7s,baz=84,slow=8.8,SNR=13						
STKA				LR	LR	19 48 23.4	
	comp=Z,308nm,18.2s,baz=42,slow=37						
STKA	**Stephens Creek**	**26.67**	**239**	*e*P	**P**	**19 37 25.6**	**+1.2**
STKA				pmax	pmax		
	comp=Z,14nm,1.4s						
STKA	**Stephens Creek**	**26.67**	**239**	*e*P	**P**	**19 37 25.6**	**+1.2**
	comp=Z,14nm,1.4s						
RAR	**Rarotonga**	**29.76**	**98**	LR	LR	19 47 13.5	
	comp=Z,77nm,22.0s,baz=268,slow=31						
WB2	**Warramunga Arr**	**31.96**	**264**	*e*P	**P**	**19 38 13.3**	**+1.8**
	comp=Z,26nm,1.4s						
WRAB	**Tennant Creek**	**31.96**	**265**	*e*P	**P**	**19 38 11.6**	**+0.1**
WRAB				pmax	pmax		
	comp=Z,86nm,2.9s						
WRAB	**Tennant Creek**	**31.96**	**265**	*e*P	**P**	**19 38 13.0**	**+1.5**
	comp=Z,31nm,1.5s						
WR1	**Warramunga Arr**	**31.97**	**264**	*e*P	**P**	**19 38 11.0**	**-0.6**
	comp=Z,34nm,1.4s						
WR1				*e*PcP	**PcP**	**19 41 01.6**	**+0.1**
WRA	**Warramunga Arr**	**31.97**	**264**	P	**P**	**19 38 11.0**	**-0.6**
	comp=Z,3.2nm,0.8s,baz=90,slow=8.5,SNR=36						
WRA				PcP	**PcP**	**19 41 01.6**	**+0.1**
	comp=Z,2.4nm,0.8s,baz=92,slow=2.4,SNR=5.3						
AS01	**Alice Springs**	**32.10**	**257**	*e*P	**P**	**19 38 13.2**	**+0.4**
AS31	**Alice Springs**	**32.14**	**257**	*e*P	**P**	**19 38 12.5**	**-0.7**
	comp=Z,14nm,0.7s						
ASAR	**Alice Springs**	**32.14**	**257**	P	**P**	**19 38 12.7**	**-0.5**
	comp=Z,11nm,0.7s,baz=85,slow=8.5,SNR=130						
ASAR				PcP	**PcP**	**19 41 01.6**	**-0.4**
	comp=Z,2.0nm,0.9s,baz=93,slow=2.9,SNR=4.3						
ASAR				LR	LR	19 50 31.7	
	comp=Z,336nm,20.3s,baz=96,slow=35						
PPT2	**Papeete2**	**39.76**	**93**	*e*LR	LR	19 50 11.3	
	comp=Z,379nm,30.5s						
FITZ	**Fitzroy Crossi**	**40.38**	**266**	*e*P	**P**	**19 39 23.5**	**+0.1**
	comp=Z,42nm,0.9s						
KAPI	**Kappang**	**49.62**	**281**	*e*P	**P**	**19 40 37.4**	**+0.3**
	comp=Z,42nm,1.4s						
VNDA	**Vanda**	**57.45**	**182**	P	**P**	**19 41 33.9**	**+0.3**
	comp=Z,2.8nm,0.9s,baz=354,slow=7.2,SNR=9.3						
VNDA	**Vanda**	**57.45**	**182**	*e*P	**P**	**19 41 34.0**	**+0.4**
VNDA				pmax	pmax		
	comp=Z,6.0nm,1.1s						
VNDA	**Vanda**	**57.45**	**182**	*e*P	**P**	**19 41 34.0**	**+0.4**
	comp=Z,6.3nm,1.1s						
KSM	**Kuching**	**60.83**	**284**	*e*P	**P**	**19 41 57.7**	**-0.3**
	comp=Z,15nm,1.0s						
MJAR	**Matsushiro Arr**	**63.24**	**333**	P	**P**	**19 42 13.1**	**-0.7**
	comp=Z,8.5nm,0.9s,baz=168,slow=7.8,SNR=17						
MAJO	**Matsushiro**	**63.25**	**333**	*de*P	**P**	**19 42 13.0**	**-0.8**
MAJO	**Matsushiro**	**63.25**	**333**	*e*P	**P**	**19 42 13.5**	**-0.2**
	comp=Z,14nm,1.0s						
MAT	**Matsushiro**	**63.25**	**333**	P	**P**	**19 42 13.6**	**-0.2**
MJB9	**Matsu-Tunnel**	**63.25**	**333**	*e*P	**P**	**19 42 13.6**	**-0.2**
	comp=Z,3.3nm,0.9s						
TJN	**Taejon**	**68.35**	**325**	*e*P	**P**	**19 42 46.1**	**-0.5**
KSRS	**Korea Array**	**68.86**	**326**	P	**P**	**19 42 50.6**	**+0.8**
	comp=Z,3.6nm,0.9s,baz=148,slow=5.9,SNR=11						
KS15	**Wonju Array Si**	**68.88**	**326**	*e*P	**P**	**19 42 50.6**	**+0.7**
KSAR	**Wonju Array Be**	**68.88**	**326**	P	**P**	**19 42 50.6**	**+0.7**
KSAR	**Wonju Array Be**	**68.88**	**326**	P	**P**	**19 42 50.6**	**+0.7**
KS01	**Wonju Array Si**	**68.90**	**326**	*e*P	**P**	**19 42 50.5**	**+0.4**
QSPA	**South Pole Qui**	**69.85**	**180**	*e*P	**P**	**19 42 56.1**	**+0.3**
NJ2	**Nanjing**	**70.36**	**317**	*e*P	**P**	**19 42 56.9**	**-2.3**
NJ2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
YSS	**Yuzh-Sakhalins**	**70.74**	**342**	*e*P	**P**	**19 43 02.8**	**+1.7**
YSS				pmax	pmax		
	comp=Z,20nm,0.7s						
PSI	**Prapat**	**71.81**	**280**	*e*P	**P**	**19 43 07.5**	**-1.1**
PSI				pmax	pmax		
	comp=Z,13nm,1.1s						
PSI	**Prapat**	**71.81**	**280**	*e*P	**P**	**19 43 07.5**	**-1.1**
	comp=Z,13nm,1.1s						
USRK	**Ussurivsk Ar.**	**72.24**	**333**	P	**P**	**19 43 11.4**	**+1.2**
	comp=Z,12nm,0.9s,baz=140,slow=3.8,SNR=19						
SKNT	**Sakolnakorn**	**73.24**	**296**	P	**P**	**19 43 17.7**	**+0.9**
	comp=Z,33nm,1.3s						
PEA0	**Petropavlovsk-**	**73.59**	**353**	*e*P	**P**	**19 43 18.6**	**+0.5**
PETK	**Petropavlovsk-**	**73.59**	**353**	P	**P**	**19 43 18.6**	**+0.5**
	comp=Z,13nm,0.6s,baz=132,slow=6.8,SNR=26						
PEA1	**Petropavlovsk-**	**73.60**	**353**	*e*P	**P**	**19 43 18.6**	**+0.5**
MDJ	**Mudanjiang**	**73.60**	**332**	P	**P**	**19 43 19.7**	**+1.4**
MDJ				pmax	pmax		
	comp=Z,20nm,0.8s						
MDJ				pmax	pmax		
	comp=Z,74nm,4.8s						
MDJ				pmax	pmax		
	comp=Z,74nm,4.8s						
MDJ				pmax	pmax		
	comp=Z,74nm,0.1s						
MDJ	**Mudanjiang**	**73.60**	**332**	*e*P	**P**	**19 43 19.4**	**+1.1**
	comp=Z,25nm,1.0s						
CN2	**Changchun**	**74.88**	**329**	*e*P	**P**	**19 43 26.7**	**+0.9**
CN2				pmax	pmax		
	comp=Z,20nm,0.6s						
ENH	**Enshi**	**75.69**	**310**	*e*P	**P**	**19 43 31.0**	**+0.2**
	comp=Z,16nm,1.0s						
GYA	**Guiyang**	**75.73**	**305**	P	**P**	**19 43 32.8**	**+1.5**
GYA				pP	PcP	19 43 48.0	+4.1
GYA				PP	**PP**	**19 46 25.4**	**+3.9**
GYA				S	**S**	**19 53 10.2**	**-1.7**
GYA	**Guiyang**	**75.73**	**305**	SKS	**SKSac**	**19 53 33.7**	**-6.6**
GYA	**Guiyang**	**75.73**	**305**	SS	SS	19 58 05.0	+0.7
GYA				pmax	pmax		
	comp=Z,30nm,1.0s						
GYA				pmax	pmax		
	comp=Z,140nm,6.2s						
GYA				LR	LR		
	comp=N,580nm,18.4s						
GYA				LR	LR		
	comp=E,530nm,19.0s						
GYA				LR	LR		
	comp=Z,540nm,19.2s						
UTTA	**Uttaradit**	**76.50**	**295**	P	**P**	**19 43 37.9**	**+2.3**
	comp=Z,2.4nm,1.1s						
NANT	**Nan**	**76.85**	**296**	P	**P**	**19 43 38.9**	**+1.3**
	comp=Z,7.1nm,0.8s						
MAW	**Mawson**	**77.25**	**202**	P	**P**	**19 43 39.9**	**+0.9**
	comp=Z,6.1nm,0.9s,baz=88,slow=7.0,SNR=6.8						
MAW	**Mawson**	**77.25**	**202**	*e*P	**P**	**19 43 40.2**	**+1.2**
MAW				pmax	pmax		
	comp=Z,2.0nm,1.0s						
MAW	**Mawson**	**77.25**	**202**	*e*P	**P**	**19 43 40.2**	**+1.2**
	comp=Z,2.1nm,1.0s						
LAMP	**Lampang**	**77.63**	**295**	P	**P**	**19 43 44.1**	**+2.1**
	comp=Z,11nm,0.8s						
CRAI	**Chiangrai**	**77.77**	**297**	P	**P**	**19 43 44.2**	**+1.4**
	comp=Z,487nm,1.0s						
KMI	**Kunming**	**78.12**	**302**	P	**P**	**19 43 46.0**	**+1.1**
KMI				pmax	pmax		
	comp=Z,12nm,1.2s						
KMI				pmax	pmax		
	comp=Z,140nm,8.4s						
CM01	**Chiang Mai Arr**	**78.16**	**295**	*e*P	**P**	**19 43 46.3**	**+1.4**
CM31	**Chiang Mai Arr**	**78.19**	**295**	*e*P	**P**	**19 43 46.7**	**+1.6**
CMAR	**Chiang Mai Arr**	**78.19**	**295**	P	**P**	**19 43 46.9**	**+1.8**
	comp=Z,8.5nm,0.8s,baz=139,slow=4.5,SNR=43						
CMMT	**Chiang Mai**	**78.34**	**295**	P	**P**	**19 43 47.4**	**+1.4**
	comp=Z,20nm,1.0s						
CHTO	**Chiang Mai**	**78.34**	**295**	P	**P**	**19 43 47.5**	**+1.5**
	comp=Z,90nm,1.0s						
CHTO	**Chiang Mai**	**78.34**	**295**	*e*P	**P**	**19 43 46.6**	**+0.6**
CHTO				pmax	pmax		
	comp=Z,15nm,0.8s						
CHTO	**Chiang Mai**	**78.34**	**295**	*e*P	**P**	**19 43 46.6**	**+0.6**
	comp=Z,15nm,0.8s						
CD2	**Chengdu**	**80.20**	**308**	P	**P**	**19 43 56.3**	**+0.3**
CD2				pP	sP	19 44 11.4	+4.4
CD2				sP	pP	19 44 17.5	+13
CD2				PP	**PP**	**19 46 59.2**	**+0.3**
CD2	**Chengdu**	**80.20**	**308**	S	**S**	**19 53 58.1**	**-1.7**
CD2	**Chengdu**	**80.20**	**308**	sS	sS	19 54 24.2	+11
CD2	**Chengdu**	**80.20**	**308**	SS	SS	19 59 11.1	-0.3
CD2				pmax	pmax		
	comp=Z,10.0nm,1.0s						
CD2				pmax	pmax		
	comp=Z,130nm,10.4s						
CD2				LR	LR		
	comp=N,290nm,8.4s						
CD2				LR	LR		
	comp=Z,170nm,11.3s						
HHC	**Hu-ho-hao-te**	**80.45**	**320**	*e*P	**P**	**19 43 57.9**	**+0.8**
HHC				pP	pP	19 44 06.3	+1.1
HHC	**Hu-ho-hao-te**	**80.45**	**320**	S	**S**	**19 54 07.1**	**+5.1**
HHC				pmax	pmax		
	comp=Z,32nm,1.4s						
HHC				pmax	pmax		
	comp=Z,100nm,7.0s						
HHC				LR	LR		
	comp=N,230nm,17.1s						
HHC				LR	LR		
	comp=E,990nm,17.3s						
HHC				LR	LR		
	comp=Z,120nm,17.6s						
LZH	**Lanzhou**	**82.80**	**312**	*e*P	**P**	**19 44 11.1**	**+1.4**
LZH				pP	sP	19 44 24.3	+3.6
LZH				sP	pP	19 44 30.4	+13
LZH				PP	**PP**	**19 47 18.7**	**-1.6**
LZH	**Lanzhou**	**82.80**	**312**	*e*S	**S**	**19 54 24.1**	**-2.5**
LZH	**Lanzhou**	**82.80**	**312**	SKS	**S**	**19 54 24.3**	**-2.3**
LZH	**Lanzhou**	**82.80**	**312**	sS	sS	19 54 46.3	+6.2
LZH	**Lanzhou**	**82.80**	**312**	SS	SS	19 59 51.3	+1.2
LZH				pmax	pmax		
	comp=Z,46nm,1.6s						
LZH				pmax	pmax		
	comp=Z,190nm,5.0s						
OHAK	**Old Harbor**	**83.53**	**20**	*e*P	**P**	**19 44 12.2**	**-0.5**
	comp=Z,47nm,1.0s						
SYO	**Syowa Base**	**83.79**	**196**	*e*P	**P**	**19 44 13.0**	**-1.1**
SEY	**Seymchan**	**83.82**	**353**	*e*P	**P**	**19 44 13.4**	**-0.7**
SEY				*i* *PP	**sP**	**19 44 28.0**	**+2.9**
KDAK	**Kodiak Island**	**84.20**	**20**	*i* P	**P**	**19 44 16.7**	**+0.6**
KDAK	**Kodiak Island**	**84.20**	**20**	*e*P	**P**	**19 44 16.4**	**+0.3**
	comp=Z,27nm,0.9s						
RSO	**Redoubt South**	**86.32**	**18**	*e*P	**P**	**19 44 26.7**	**-0.3**
SHL	**Shillong**	**87.11**	**298**	*e*P	**P**	**19 44 33.5**	**+1.8**
ULN	**Ulaanbaatar**	**87.17**	**324**	*d i* P	**P**	**19 44 31.8**	**+0.4**
ULN				pmax	pmax		
	comp=Z,21nm,1.2s						
ULN	**Ulaanbaatar**	**87.17**	**324**	*e*P	**P**	**19 44 31.9**	**+0.4**
	comp=Z,17nm,1.1s						
GTA	**Gaotai**	**87.22**	**314**	*e*P	**P**	**19 44 32.6**	**+0.8**
GTA				pP	sP	19 44 45.0	+2.1
GTA				sP	pP	19 44 50.1	+10
GTA	**Gaotai**	**87.22**	**314**	SKS	**SKSac**	**19 54 54.0**	**-3.9**
GTA	**Gaotai**	**87.22**	**314**	S	**S**	**19 55 08.3**	**-2.0**
GTA	**Gaotai**	**87.22**	**314**	sS	sS	19 55 30.6	+6.8
GTA	**Gaotai**	**87.22**	**314**	SS	SS	20 00 57.2	+2.1
GTA				pmax	pmax		
	comp=Z,2.0nm,1.1s						
GTA				pmax	pmax		
	comp=Z,120nm,4.8s						
GTA				LR	LR		
	comp=N,97nm,16.6s						
GTA				LR	LR		
	comp=E,94nm,16.2s						
GTA				LR	LR		
	comp=Z,77nm,19.0s						
PKM	**Mcpherson Peak**	**87.37**	**51**	P	**P**	**19 44 32.2**	**-0.5**
	baz=243						
KHMM	**Horse Mountain**	**87.45**	**45**	*e*P	**P**	**19 44 32.6**	**-0.3**
	comp=Z,20nm,0.8s						
TTA	**Tatalina**	**87.47**	**15**	*e*P	**P**	**19 44 32.2**	**-0.2**
TTA				pmax	pmax		
	comp=Z,26nm,1.8s						
TTA	**Tatalina**	**87.47**	**15**	*e*P	**P**	**19 44 32.2**	**-0.2**
	comp=Z,26nm,1.8s						
YAK	**Yakutsk**	**87.56**	**343**	*e*P	**P**	**19 44 32.6**	**-0.1**
YAK				pmax	pmax		
	comp=Z,13nm,0.9s						
YAK	**Yakutsk**	**87.56**	**343**	*e*P	**P**	**19 44 32.5**	**-0.1**
	comp=Z,14nm,0.8s						
CRGC	**Crocker Grade**	**87.59**	**51**	*e*P	**P**	**19 44 31.0**	**-2.7**
BILL	**Bilibino**	**88.00**	**359**	*d i* P	**P**	**19 44 34.7**	**0.0**
BILL				pmax	pmax		
	comp=Z,22nm,1.2s						
BILL	**Bilibino**	**88.00**	**359**	*e*P	**P**	**19 44 34.5**	**-0.2**
	comp=Z,19nm,1.1s						
SNAA	**Sanae**	**88.16**	**183**	*e*P	**P**	**19 44 35.7**	**-0.1**
SNAA	**Sanae**	**88.16**	**183**	*e*P	**P**	**19 44 35.4**	**-0.4**
	comp=Z,20nm,0.5s						
N02D	**Trinity Center**	**88.17**	**45**	P	**P**	**19 44 37.1**	**+0.8**
	baz=241,SNR=10						
ARVC	**Arvin**	**88.20**	**52**	P	**P**	**19 44 36.2**	**-0.2**
	baz=244						
M02C	**Callahan**	**88.28**	**45**	P	**P**	**19 44 37.8**	**+1.0**
	baz=241,SNR=7.8						
CMB	**Columbia Colle**	**88.38**	**48**	*e*P	**P**	**19 44 37.0**	**-0.3**
CMB				pmax	pmax		
	comp=Z,11nm,0.9s						
CMB	**Columbia Colle**	**88.38**	**48**	*e*P	**P**	**19 44 37.0**	**-0.3**
	comp=Z,10nm,0.9s						
AFDM	**Forest Hills D**	**88.39**	**47**	*e*P	**P**	**19 44 37.5**	**+0.2**
	comp=Z,20nm,1.2s						
O03D	**Paynes Creek**	**88.45**	**46**	P	**P**	**19 44 37.6**	**0.0**
	baz=242						
YBH	**Yreka Blue Hor**	**88.53**	**44**	*e*P	**P**	**19 44 38.6**	**+0.6**
YBH				pmax	pmax		
	comp=Z,15nm,1.0s						
YBH	**Yreka Blue Hor**	**88.53**	**44**	*e*P	**P**	**19 44 38.5**	**+0.6**
	comp=Z,15nm,1.0s						
BFSC	**Mount Baldy Ra**	**88.68**	**53**	P	**P**	**19 44 38.4**	**-0.5**
	baz=244						
ISA	**Isabella, Lake**	**88.69**	**51**	P	**P**	**19 44 38.6**	**-0.3**
	baz=244						
ISA	**Isabella, Lake**	**88.69**	**51**	*e*P	**P**	**19 44 39.2**	**+0.3**
ISA				pmax	pmax		
	comp=Z,48nm,1.6s						
ISA	**Isabella, Lake**	**88.69**	**51**	*e*P	**P**	**19 44 39.2**	**+0.3**
	comp=Z,48nm,1.6s						
EDW2	**Edwards Air Fo**	**88.71**	**52**	P	**P**	**19 44 39.3**	**+0.3**
	baz=244,SNR=5.1						
MURC	**Murrieta**	**88.76**	**54**	P	**P**	**19 44 38.8**	**-0.3**
	baz=245						
HUMO	**Hull Mountain**	**88.80**	**43**	*e*P	**P**	**19 44 39.9**	**+0.8**
	comp=Z,18nm,0.9s						
CAST	**Castle Rocks**	**88.89**	**17**	*e*P	**P**	**19 44 38.4**	**-0.7**
	comp=Z,6.9nm,1.0s						
SCM	**Sheep Creek Mo**	**89.03**	**19**	*e*P	**P**	**19 44 40.4**	**+0.6**
SCM				pmax	pmax		
	comp=Z,11nm,0.8s						
SCM	**Sheep Creek Mo**	**89.03**	**19**	*e*P	**P**	**19 44 40.4**	**+0.6**
	comp=Z,11nm,0.8s						
MONP2	**Monument Peak**	**89.05**	**54**	P	**P**	**19 44 41.0**	**+0.2**
	baz=245,SNR=5.5						
I03D	**Drain, OR**	**89.08**	**42**	P	**P**	**19 44 40.4**	**+0.1**
	baz=241						
M04C	**Macdoel**	**89.13**	**45**	P	**P**	**19 44 41.1**	**+0.2**
	baz=242,SNR=6.4						
IKP	**In-Ko-Pah, Jac**	**89.18**	**55**	P	**P**	**19 44 40.5**	**-0.8**
	baz=245						
LRMC	**Laurel Mtn Rad**	**89.20**	**52**	P	**P**	**19 44 41.5**	**+0.2**
	baz=244,SNR=6.8						
WAKR	**Walker**	**89.26**	**48**	*e*P	**P**	**19 44 42.0**	**+0.4**
TPFO	**Pinon Flats**	**89.32**	**54**	P	**P**	**19 44 42.0**	**+0.1**
	baz=245						
MPOR	**Mary's Peak**	**89.35**	**42**	P	**P**	**19 44 42.7**	**+1.0**
MPMC	**Manual Prospec**	**89.59**	**51**	P	**P**	**19 44 43.3**	**+0.1**
	baz=244,SNR=12						
DAC	**Darwin (Calif)**	**89.60**	**51**	*e*P	**P**	**19 44 43.5**	**+0.2**
DAC				pmax	pmax		
	comp=Z,12nm,1.0s						
DAC	**Darwin (Calif)**	**89.60**	**51**	*e*P	**P**	**19 44 43.5**	**+0.2**
	comp=Z,12nm,1.0s						
I04A	**Tendick Farm,**	**89.72**	**43**	P	**P**	**19 44 43.3**	**-0.1**
	baz=241,SNR=8.5						
GSC	**Goldstone, Bar**	**89.77**	**52**	P	**P**	**19 44 43.8**	**-0.1**
	baz=245						
GSC	**Goldstone, Bar**	**89.77**	**52**	*e*P	**P**	**19 44 44.0**	**+0.1**
GSC				pmax	pmax		
	comp=Z,11nm,1.3s						
GSC	**Goldstone, Bar**	**89.77**	**52**	*e*P	**P**	**19 44 44.0**	**+0.1**
	comp=Z,11nm,1.3s						
BOD	**Bodaibo**	**89.86**	**334**	*e*P	**P**	**19 44 42.4**	**-1.2**
BOD				pmax	pmax		
	comp=Z,9.0nm,1.2s						
G03D	**McMinnville, O**	**89.87**	**41**	P	**P**	**19 44 44.4**	**+0.4**
	baz=241						
HEC	**Hector,Ludlow**	**89.92**	**53**	P	**P**	**19 44 44.7**	**+0.1**
	baz=245,SNR=5.6						
NV01	**Mina Array Sit**	**90.03**	**49**	*e*P	**P**	**19 44 45.3**	**+0.1**
NVAR	**Mina Array Bea**	**90.03**	**49**	P	**P**	**19 44 45.8**	**+0.5**
	comp=Z,10nm,1.0s,baz=228,slow=7.5,SNR=35						
NVAR				LR	LR	20 19 57.5	
	comp=Z,50nm,18.4s,baz=87,slow=32						
GRAC	**Grapevine Rang**	**90.08**	**50**	P	**P**	**19 44 45.8**	**+0.5**
	baz=245,SNR=5.1						
BC3	**Big Chuckawall**	**90.10**	**54**	P	**P**	**19 44 45.1**	**-0.4**
	baz=246						
NV11	**Mina Array Sit**	**90.13**	**49**	*e*P	**P**	**19 44 45.4**	**-0.2**
	comp=Z,26nm,1.3s						
K05A	**Summer Lake**	**90.19**	**44**	*e*P	**P**	**19 44 45.9**	**+0.1**
	comp=Z,23nm,1.0s						
MOD	**Modoc Plateau**	**90.20**	**45**	*e*P	**P**	**19 44 46.2**	**+0.4**
	comp=Z,17nm,1.0s						
FURC	**Furnace Creek,**	**90.22**	**51**	P	**P**	**19 44 46.1**	**+0.2**
	baz=245,SNR=6.8						
J05D	**Fort Rock, OR**	**90.23**	**43**	P	**P**	**19 44 46.7**	**+0.7**
	baz=242,SNR=8.8						
H04A	**Detroit Lake**	**90.28**	**42**	*e*P	**P**	**19 44 45.5**	**-0.5**
	comp=Z,16nm,0.8s						
GLA	**Glamis**	**90.33**	**55**	P	**P**	**19 44 47.1**	**+0.5**
	baz=246,SNR=6.4						
GLA	**Glamis**	**90.33**	**55**	*e*P	**P**	**19 44 47.0**	**+0.5**
GLA				pmax	pmax		
	comp=Z,41nm,1.4s						
GLA	**Glamis**	**90.33**	**55**	*e*P	**P**	**19 44 47.0**	**+0.5**
	comp=Z,41nm,1.4s						
E03A	**Lebam**	**90.34**	**40**	*e*P	**P**	**19 44 46.9**	**+0.7**
	comp=Z,28nm,0.7s						
GMRC	**Granite Mounta**	**90.41**	**53**	P	**P**	**19 44 47.3**	**+0.3**
	baz=246,SNR=5.5						
SHOC	**Shoshone, Teco**	**90.41**	**52**	P	**P**	**19 44 46.9**	**+0.1**
	baz=245						
F04D	**Rainier, OR**	**90.45**	**40**	P	**P**	**19 44 47.5**	**+0.8**
	baz=241						
TUQ	**Turquoise Moun**	**90.48**	**52**	P	**P**	**19 44 47.4**	**+0.1**
	baz=245						
IRM	**Iron Mountain**	**90.54**	**54**	P	**P**	**19 44 47.8**	**+0.4**
	baz=246,SNR=6.5						
NLWA	**Neilton Lookou**	**90.58**	**39**	*e*P	**P**	**19 44 47.4**	**+0.1**
	comp=Z,16nm,0.9s						
ZAK	**Zakamensk**	**90.62**	**324**	*e*P	**P**	**19 44 46.8**	**-0.7**
ZAK				pmax	pmax		
	comp=Z,7.0nm,1.5s						
I05D	**Terrebonne, OR**	**90.66**	**42**	P	**P**	**19 44 48.0**	**+0.2**
	baz=242,SNR=5.3						
F04A	**Amboy**	**90.74**	**41**	*e*P	**P**	**19 44 48.0**	**0.0**
	comp=Z,29nm,0.9s						
TDH	**Tom, Dick, Har**	**90.82**	**41**	P	**P**	**19 44 48.9**	**+0.2**
Y12C	**Blythe**	**90.85**	**54**	P	**P**	**19 44 49.2**	**+0.3**
	baz=246						
Y12C	**Blythe**	**90.85**	**54**	*e*P	**P**	**19 44 49.3**	**+0.4**
	comp=Z,18nm,1.0s						
TPNV	**Topopah Spring**	**90.87**	**51**	P	**P**	**19 44 49.2**	**+0.1**
	baz=245,SNR=13						
TPNV	**Topopah Spring**	**90.87**	**51**	*e*P	**P**	**19 44 48.8**	**-0.3**
TPN

TUC				pmax	pmax		
	comp=Z,8.0nm,1.0s						
TUC	**Tucson**	**93.19**	**57**	*eP*	**P**	**19 44 59.2**	**-0.7**
	comp=Z,7.9nm,1.0s						
PSUT	**Pine Spring**	**93.24**	**50**	*eP*	**P**	**19 44 59.9**	**-0.2**
	comp=Z,2.9nm,0.8s						
KNB	**Kanab**	**93.41**	**52**	*eP*	**P**	**19 45 01.5**	**+0.6**
KNB				pmax	pmax		
	comp=Z,8.0nm,1.0s						
KNB	**Kanab**	**93.41**	**52**	*eP*	**P**	**19 45 01.5**	**+0.6**
	comp=Z,7.5nm,1.0s						
X16A	**Lo Mia Camp, P**	**93.46**	**55**	*eP*	**P**	**19 45 01.6**	**+0.4**
	comp=Z,9.3nm,0.9s						
U15A	**North Rim**	**93.58**	**53**	*eP*	**P**	**19 45 01.5**	**-0.3**
	comp=Z,6.9nm,1.0s						
MFID	**Camas Ranch**	**93.83**	**45**	*eP*	**P**	**19 45 02.2**	**-0.4**
	comp=Z,5.4nm,0.9s						
WUAZ	**Wupatki**	**93.92**	**54**	P	**P**	**19 45 03.1**	**-0.2**
	baz=248						
319A	**Douglas**	**94.04**	**58**	*eP*	**P**	**19 45 04.8**	**+0.9**
	comp=Z,15nm,0.9s						
MTPU	**Mount Pierson**	**94.27**	**51**	*eP*	**P**	**19 45 05.8**	**+0.7**
	comp=Z,4.4nm,0.8s						
DUG	**Dugway, Tooele**	**94.63**	**49**	P	**P**	**19 45 06.3**	**-0.1**
	baz=248						
HLID	**Hailey**	**94.83**	**45**	P	**P**	**19 45 07.0**	**-0.2**
	baz=247						
HLID	**Hailey**	**94.83**	**45**	*eP*	**P**	**19 45 07.2**	**-0.1**
	comp=Z,2.2nm,0.8s						
HVU	**Hansel Valley**	**95.26**	**47**	*eP*	**P**	**19 45 09.1**	**-0.2**
HVU				pmax	pmax		
	comp=Z,4.0nm,0.9s						
HVU	**Hansel Valley**	**95.26**	**47**	*eP*	**P**	**19 45 09.1**	**-0.2**
	comp=Z,4.1nm,0.9s						
TIXI	**Tiksi**	**95.52**	**348**‖	*eP*	**P**	**19 45 07.6**	**-1.9**
TIXI				pmax	pmax		
	comp=Z,5.0nm,2.5s						
LPM	**Los Pinos Moun**	**97.14**	**56**	*eP*	**P**	**19 45 16.0**	**-2.1**
WMQ	**Urumqi**	**97.31**	**314**	*eP*	**P**	**19 45 18.2**	**-0.2**
BOZ	**Bozeman (W)**	**97.46**	**44**	P	**P**	**19 45 18.2**	**-0.9**
	baz=249						
ANMO	**Albuquerque**	**97.49**	**56**	P	**P**	**19 45 18.5**	**-1.1**
	baz=251						
INK	**Inuvik**	**97.71**	**19**	*eP*	**P**	**19 45 17.8**	**-1.7**
INK				pmax	pmax		
	comp=Z,14nm,1.8s						
INK	**Inuvik**	**97.71**	**19**	*eP*	**P**	**19 45 17.8**	**-1.7**
	comp=Z,14nm,1.8s						
BW06	**Boulder Array**	**97.84**	**47**	*eP*	**P**	**19 45 19.2**	**-1.9**
PD31	**Pinedale Array**	**97.84**	**47**	*eP*	**P**	**19 45 19.9**	**-1.2**
PDAR	**Pinedale Array**	**97.84**	**47**	P	**P**	**19 45 20.1**	**-1.0**
	comp=Z,0.4nm,0.6s,baz=222,slow=2.0,SNR=5.6						
PDAR				LR	LR	20 25 26.6	
	comp=Z,39nm,18.3s,baz=61,slow=33						
LTX	**Lajitas**	**97.91**	**62**	*eP*	**P**	**19 45 21.3**	**-0.2**
LTX	**Lajitas**	**97.91**	**62**	*eP*	**P**	**19 45 21.2**	**-0.2**
TXAR	**Lajitas Array**	**97.91**	**62**	P	**P**	**19 45 21.2**	**-0.3**
	comp=Z,0.8nm,0.7s,baz=218,slow=5.9,SNR=6.4						
TXAR				LR	LR	20 25 15.5	
	comp=Z,38nm,18.0s,baz=0.0,slow=33						
035A	**Encino**	**101.88**	**66**	Pdiff	**Pdif**	**19 45 38.9**	**-0.2**
	baz=253						
MK32	**Makanchi Array**	**101.88**	**316**	*e*Pdif	**Pdif**	**19 45 40.6**	**+2.0**
MK32				*e*PKKPbc	**PKKPbc**	**20 01 43.0**	**-2.3**
MKAR	**Makanchi Array**	**101.88**	**316**	P	**Pdif**	**19 45 40.6**	**+2.0**
	comp=Z,0.5nm,0.8s,baz=77,slow=5.4,SNR=4.8						
MKAR				PKKPbc	**PKKPbc**	**20 01 43.0**	**-2.3**
	comp=Z,0.5nm,0.7s,baz=275,slow=5.6,SNR=4.7						
YKA	**Yellowknife Ar**	**101.88**	**28**	P	**Pdif**	**19 45 39.2**	**+1.0**
	comp=Z,1.0nm,0.8s,baz=253,slow=4.7,SNR=12						
YKA				PKKP	PKKPdf	20 02 04.8	+12
	comp=Z,0.5nm,1.0s,baz=86,slow=5.2,SNR=3.9						
433A	**Art**	**102.12**	**62**	Pdiff	**Pdif**	**19 45 40.0**	**-0.1**
	baz=254						
337A	**Centerville**	**104.92**	**62**	Pdiff	**PKiKP**	**19 50 06.7**	**-0.9**
	baz=255						
Y40A	**Okolona**	**107.70**	**60**	Pdiff	**Pdif**	**19 46 04.6**	**-0.2**
	baz=257						
546A	**Slidell**	**109.83**	**64**	Pdiff	**Pdif**	**19 46 15.1**	**+0.7**
	baz=258						
BRVK	**Borovoye**	**110.72**	**320**‖	*i*PKIKP	**PKiKP**	**19 50 18.1**	**+0.4**
ARU	**Arti**	**117.56**	**324**	*i* PKIKP	**PKPdf**	**19 50 30.6**	**-0.1**
ARU						19 51 43.7	
ARU						19 57 38.2	
ARA0	**ARCESS Array S**	**125.80**	**345**	*e*PKPdf	**PKPdf**	**19 50 45.9**	**-0.3**
ARCES	**ARCESS Array B**	**125.80**	**345**	PKP	**PKPdf**	**19 50 45.9**	**-0.3**
	comp=Z,5.3nm,0.6s,baz=72,slow=0.8,SNR=24						
KLMR	**Klimovskoe**	**126.02**	**332**	*e*PKIKP	**PKPdf**	**19 50 45.5**	**-1.3**
KLMR				pmax	pmax		
	comp=Z,13nm,1.1s						
VRH	**Novokhopyorsk**	**128.31**	**320**	*e*PKIKP	**PKPdf**	**19 50 49.8**	**-1.7**
VRH				pmax	pmax		
	comp=Z,8.0nm,0.8s						
KIV	**Kislovodsk**	**129.31**	**311**	*i* PKIKP	**PKPdf**	**19 50 54.8**	**+1.0**
KIV				pmax	pmax		
	comp=Z,5.0nm,1.1s						
KIV				MLR	MLR		
	comp=Z,83nm,21.0s						
LPSR	**Galich'ya Gora**	**129.52**	**322**	*e*PKIKP	**PKPdf**	**19 50 54.1**	**+0.4**
LPSR				pmax	pmax		
	comp=Z,10.0nm,1.1s						
VSR	**Storozhevoye**	**129.84**	**321**	*e*PKIKP	**PKPdf**	**19 50 51.8**	**-2.6**
VSR				pmax	pmax		
	comp=Z,10.0nm,1.5s						
OBN	**Obninsk**	**129.86**	**326**	*i* PKIKP	**PKPdf**	**19 50 54.2**	**-0.1**
OBN				pmax	pmax		
	comp=Z,6.0nm,0.9s						
FIA0	**FINESS Array S**	**131.17**	**337**	*e*PKIKP	**PKPdf**	**19 50 56.6**	**0.0**
FIA0	**FINESS Array S**	**131.17**	**337**	*e*PKPdf	**PKPdf**	**19 50 56.6**	**0.0**
FINES	**FINESS Array B**	**131.17**	**337**	PKP	**PKPdf**	**19 50 56.6**	**0.0**
	comp=Z,2.1nm,0.7s,baz=33,slow=3.5,SNR=13						
AKASG	**Malin Array Be**	**135.81**	**323**	PKP	**PKPdf**	**19 51 05.2**	**-0.4**
	comp=Z,0.8nm,0.5s,baz=61,slow=2.3,SNR=5.0						
KIEV	**Kiev**	**135.82**	**323**‖	*i*PKIKP	**PKPdf**	**19 51 05.4**	**-0.3**
NB2	**NORSAR Subarra**	**136.16**	**344**	PKPdf	**PKPdf**	**19 51 05.2**	**-0.9**
	comp=Z,0.7nm,0.6s,baz=31,slow=1.9						
NB200	**NORSAR Array S**	**136.16**	**344**	*e*PKPdf	**PKPdf**	**19 51 05.7**	**-0.4**
NOA	**NORSAR Array B**	**136.16**	**344**	PKP	**PKPdf**	**19 51 05.7**	**-0.4**
	comp=Z,1.8nm,0.8s,baz=31,slow=2.0,SNR=8.2						
BR101	**Keskin Array S**	**136.78**	**307**	*e*PKPdf	**PKPdf**	**19 51 08.6**	**+0.6**
BRTR	**Keskin Array B**	**136.78**	**307**	PKP	**PKPdf**	**19 51 08.6**	**+0.6**
	comp=Z,0.8nm,0.9s,baz=93,slow=2.5,SNR=6.4						
BR231	**Keskin MP Arra**	**137.39**	**307**	*e*PKPdf	**PKPdf**	**19 51 09.5**	**+0.4**
KOLS	**Kolonicke sedl**	**140.57**	**325**	*e*PKIKP	**PKPdf**	**19 51 15.4**	**+0.9**
KOLS	**Kolonicke sedl**	**140.57**	**325**	*e*PKP	**PKPdf**	**19 51 15.4**	**+0.9**
CRVS	**Cervenica-Dubn**	**141.03**	**325**	*e*PKIKP	**PKPdf**	**19 51 16.1**	**+0.8**
CRVS	**Cervenica-Dubn**	**141.03**	**325**	*e*PKP	**PKPdf**	**19 51 16.1**	**+0.8**
PSZ	**Piszkesteto**	**142.45**	**325**	*e*PKPpre	PKPpre	19 51 14.0	
PSZ				*e*PKPdf	**PKiKP**	**19 51 21.3**	**+0.3**
VYHS	**Vyhne**	**142.66**	**326**	*e*PKIKP	**PKPdf**	**19 51 16.3**	**-2.0**
VYHS	**Vyhne**	**142.66**	**326**	*e*PKP	**PKPdf**	**19 51 16.3**	**-2.0**
DPC	**Dobruska-Polom**	**142.69**	**330**	*e*PKP	**PKPdf**	**19 51 20.1**	**+1.8**
DPC	**Dobruska-Polom**	**142.69**	**330**	*e*PKIKP	**PKPdf**	**19 51 20.1**	**+1.8**
PVCC	**Panska Ves**	**143.36**	**332**	*e*PKP	**PKPdf**	**19 51 19.5**	**+0.1**
PVCC				*ep*PKP	**PKiKP**	**19 51 23.7**	**+1.0**
PVCC	**Panska Ves**	**143.36**	**332**	*e*PKIKP	**PKPdf**	**19 51 19.5**	**+0.1**
BRG	**Berggiesshubel**	**143.38**	**333**	*e*PKP	PKPbc	19 51 16.8	+0.2
	comp=Z,3.9nm,1.1s						
BRG	**Berggiesshubel**	**143.38**	**333**	*e*PKIKP	PKPbc	19 51 16.8	+0.2
BRG				pmax	pmax		
	comp=Z,4.0nm,1.1s						
CLL	**Collm**	**143.45**	**334**	*i* PKPdf	PKPbc	19 51 18.1	+1.3
	comp=Z,6.0nm,0.7s						
CLL	**Collm**	**143.45**	**334**	*i* PKIKP	PKPbc	19 51 18.1	+1.3
CLL				pmax	pmax		
	comp=Z,6.0nm,0.7s						
CLL	**Collm**	**143.45**	**334**	*e*PKPpre	PKPpre	19 51 17.1	
GOPC	**GO Pecny, Ondr**	**143.70**	**331**	*e*PKP	**PKPdf**	**19 51 20.2**	**+0.1**
GOPC	**GO Pecny, Ondr**	**143.70**	**331**	*e*PKIKP	**PKPdf**	**19 51 20.2**	**+0.1**
LAST	**Lasithi**	**144.18**	**302**	*e*PKPdf	PKPbc	19 51 20.4	+0.8
VAY	**Valandovo**	**144.21**	**314**	*i* PKP	PKPbc	19 51 19.4	0.0
NKC	**Novy Kostel**	**144.49**	**333**	*i* PKP	**PKPdf**	**19 51 20.9**	**-0.5**
NKC	**Novy Kostel**	**144.49**	**333**	*i* PKIKP	**PKPdf**	**19 51 20.9**	**-0.5**
CONA	**Conrad Observa**	**144.55**	**328**	*i* PKPdf	**PKPdf**	**19 51 21.6**	**-0.1**
	comp=Z,2.4nm,0.7s,SNR=17						
SKO	**Skopje**	**144.68**	**315**	*i* PKP	**PKPdf**	**19 51 21.6**	**-0.4**
KHC	**Kasperske Hory**	**144.81**	**331**	*i* PKP	**PKPdf**	**19 51 21.9**	**-0.2**
KHC				*ep*PKP	**PKiKP**	**19 51 24.9**	**-0.9**
KHC				*ex*	x	19 51 43.1	
KHC	**Kasperske Hory**	**144.81**	**331**	*i* PKIKP	**PKPdf**	**19 51 21.9**	**-0.2**
KHC	**Kasperske Hory**	**144.81**	**331**	*e*PKPdf	**PKPdf**	**19 51 21.6**	**-0.4**
GEC2	**GERESS Array S**	**144.96**	**331**	*e*PKIKP	PKPbc	19 51 21.8	+0.1
GEC2	**GERESS Array S**	**144.96**	**331**	*e*PKPdf	PKPbc	19 51 21.8	+0.2
GERES	**GERESS Array B**	**144.96**	**331**	PKP	**PKPdf**	**19 51 22.2**	**-0.1**
	comp=Z,4.0nm,0.8s,baz=41,slow=4.3,SNR=26						
GEA0	**GERESS Array S**	**144.96**	**331**	*e*PKPdf	PKPbc	19 51 22.0	+0.3
ARSA	**Arzberg**	**145.17**	**327**	*i* PKPdf	**PKPdf**	**19 51 23.2**	**+0.5**
	comp=Z,3.6nm,0.8s,SNR=12						
BIA	**Bitola**	**145.19**	**314**	*i* PKP	PKPbc	19 51 12.8	-10
AGG	**Agios Georgios**	**145.32**	**310**	*e*PKP2	**PKPbc**	**19 51 21.8**	**-1.3**
AGG	**Agios Georgios**	**145.32**	**310**	*e*PKPbc	**PKPbc**	**19 51 21.8**	**-1.3**
MOA	**Molln**	**145.39**	**329**	*i* PKPdf	**PKPab**	**19 51 24.0**	**+0.8**
	comp=Z,16nm,0.8s,SNR=17						
GRFO	**Grafenberg**	**145.42**	**334**	*e*PKIKP	**PKPab**	**19 51 23.4**	**+0.2**
GRFO	**Grafenberg**	**145.42**	**334**	*e*PKPbc	**PKPab**	**19 51 23.4**	**+0.2**
OHR	**Ohrid**	**145.50**	**314**	*i* PKP	**PKPab**	**19 51 24.0**	**+0.2**
SOKA	**Soboth**	**145.80**	**327**	*i* PKPab	**PKPab**	**19 51 24.8**	**0.0**
	comp=Z,4.7nm,0.7s,SNR=14						
OBKA	**Obir**	**146.16**	**327**	*i* pPKPdf	**PKPab**	**19 51 26.9**	**+0.7**
	comp=Z,2.9nm,0.6s						
KBA	**Koelnbreinsper**	**146.38**	**329**	*i* PKPab	**PKPbc**	**19 51 26.0**	**-0.2**
	comp=Z,0.8nm,0.3s						
MYKA	**Terra Mystica**	**146.54**	**328**	*i* PKPab	**PKPbc**	**19 51 26.2**	**-0.4**
	comp=Z,4.3nm,0.7s						
CWF	**Charnwood Fore**	**146.56**	**349**	*e*PKPdf	**PKPbc**	**19 51 26.5**	**+0.2**
MEM	**Membach**	**146.62**	**340**	PKP	**PKPab**	**19 51 27.4**	**-0.3**
STU	**Stuttgart**	**146.97**	**334**	*e*PKP2	**PKPbc**	**19 51 28.3**	**+0.6**
STU	**Stuttgart**	**146.97**	**334**	*e*PKPbc	**PKPbc**	**19 51 28.2**	**+0.6**
BCLA	**Clavier**	**147.01**	**340**	PKP	**PKPbc**	**19 51 27.9**	**+0.2**
ABTA	**Abfaltersbach**	**147.01**	**329**	*i* PKPdf	**PKPdf**	**19 51 25.4**	**-0.5**
	comp=Z,3.8nm,0.5s						
WTTA	**Wattenberg**	**147.06**	**330**	*i* PKPbc	**PKPbc**	**19 51 27.4**	**-0.8**
	comp=Z,6.2nm,0.6s						
MOTA	**Moosalm**	**147.24**	**331**	*i* PKPbc	**PKPdf**	**19 51 26.8**	**+0.4**
	comp=Z,10nm,0.9s,SNR=11						
SNF	**Seneffe**	**147.25**	**341**	PKP	**PKPbc**	**19 51 29.1**	**+0.8**
RETA	**Reutte**	**147.29**	**331**	*i* pPKPdf	**PKPbc**	**19 51 29.2**	**+0.4**
	comp=Z,5.6nm,0.8s,SNR=5.3						
LANF	**Langenberg**	**147.35**	**336**	PKP	**PKPab**	**19 51 29.7**	**-0.9**
WLF	**Walferdange**	**147.38**	**338**	PKP	**PKPbc**	**19 51 29.9**	**+1.1**
WLF	**Walferdange**	**147.38**	**338**	*e*PKP2	**PKPbc**	**19 51 29.6**	**+0.8**
WLF	**Walferdange**	**147.38**	**338**	*e*PKPbc	**PKPbc**	**19 51 29.6**	**+0.8**
DOU	**Dourbes**	**147.52**	**340**	PKP	**PKPbc**	**19 51 29.8**	**+0.7**
FETA	**Feichten**	**147.66**	**331**	*i* PKPbc	**PKPdf**	**19 51 27.7**	**+0.6**
	comp=Z,13nm,1.0s,SNR=8.1						
BFO	**Black Forest**	**147.67**	**335**	*i* PKP2	**PKPbc**	**19 51 30.2**	**+0.5**
BFO	**Black Forest**	**147.67**	**335**	*e*PKPbc	**PKPbc**	**19 51 29.8**	**+0.1**
DAVA	**Damuels**	**147.84**	**332**	*i* PKPbc	**PKPdf**	**19 51 28.2**	**+0.8**
	comp=Z,11nm,1.0s,SNR=7.0						
FUORN	**Ofenpass-Fuorn**	**148.17**	**331**	*e*PKPbc	**PKPbc**	**19 51 32.0**	**+0.6**
ECH	**Echery**	**148.22**	**336**	PKP	**PKPbc**	**19 51 31.0**	**-0.1**
MOF	**Molkenrain**	**148.53**	**336**	PKP	**PKPbc**	**19 51 32.5**	**+0.5**
TUE	**Stuetta**	**148.69**	**332**	*e*PKPbc	**PKPbc**	**19 51 32.8**	**+0.2**
LOMF	**Lomont**	**149.06**	**335**	PKP	**PKPbc**	**19 51 34.0**	**+0.6**
AQU	**L'Aquila**	**149.48**	**322**	*e*PKP2	**PKPbc**	**19 51 34.7**	**+0.1**
AQU	**L'Aquila**	**149.48**	**322**	*e*PKPbc	**PKPbc**	**19 51 34.7**	**+0.1**
SENIN	**Lac Senin/Sane**	**149.66**	**334**	*e*PKPbc	**PKPbc**	**19 51 34.4**	**-0.7**
OG01	**Vacheresse**	**149.94**	**334**	PKP	**PKPbc**	**19 51 36.4**	**+0.8**
PLDF	**La Plantade**	**151.42**	**338**	PKP	**PKPbc**	**19 51 40.9**	**+1.8**
AGO	**Saint Agoulin**	**151.52**	**338**	PKP	**PKPbc**	**19 51 40.7**	**+1.4**
SSB	**Saint Sauveur**	**151.66**	**336**	PKP	**PKPbc**	**19 51 40.2**	**+0.6**
SSB	**Saint Sauveur**	**151.66**	**336**	*e*PKIKP	**PKPbc**	**19 51 39.8**	**+0.1**
SSB	**Saint Sauveur**	**151.66**	**336**	*e*PKPbc	**PKPbc**	**19 51 39.8**	**+0.1**
PYM	**Petit Puy Mans**	**151.83**	**338**	PKP	**PKPbc**	**19 51 41.7**	**+1.6**
LBL	**Lubilhac**	**152.19**	**337**	PKP	**PKPbc**	**19 51 43.0**	**+2.1**
ES19	**SONSECA Array**	**159.48**	**343**	*e*PKPdf	**PKPdf**	**19 51 44.5**	**+0.5**
ES19				*e*PKPab	**PKPab**	**19 52 21.9**	**0.0**
TAM	**Tamanrasset**	**163.86**	**282**	*e*PKIKP	**PKPdf**	**19 51 50.3**	**+1.1**
TAM	**Tamanrasset**	**163.86**	**282**	*e*PKPdf	**PKPdf**	**19 51 50.3**	**+1.1**
TAM				*e*PKPab	**PKPab**	**19 52 42.7**	**+0.8**
DBIC	**Dimbokro**	**165.04**	**207**	PKPab	**PKPab**	**19 52 45.8**	**-0.9**
	comp=Z,4.3nm,0.8s,baz=201,slow=6.1,SNR=3.6						
TOA0	**Torodi Ar. Sit**	**165.47**	**243**	*e*PKPdf	**PKPdf**	**19 51 50.3**	**-0.3**
TOA0				*e*PKPab	**PKPab**	**19 52 48.5**	**-0.4**
TORD	**Torodi Ar. Bea**	**165.47**	**243**	PKP	**PKPdf**	**19 51 49.5**	**-1.1**
	comp=Z,1.6nm,0.9s,baz=64,slow=1.8,SNR=6.9						
TORD				PKPab	**PKPab**	**19 52 46.5**	**-2.3**
	comp=Z,1.7nm,0.9s,baz=111,slow=4.3,SNR=5.4						
TOA1	**Torodi Ar. Sit**	**165.47**	**243**	*e*PKPdf	**PKPdf**	**19 51 49.5**	**-1.2**
TOA1				*e*PKPab	**PKPab**	**19 52 46.5**	**-2.3**

*ISK **10** 19:31:48.6, 36°.10N×27°.87E, h5km, MD2.7*
*CSEM **10** 19:31:48.6, 36°.10N×27°.87E, h5km, MD2.7*
*DDA **10** 19:31:52.7, 37°.00N×28°.29E, h7km, Md2.3*
*ISCJB **10** 19:31:53.3±1.1, 36°.92N±0°.07×27°.98E±0°.09, h12km, Error ellipse: s-maj=12.1km s-min=9.1km az=43.9*
ISC 10 19:31:54.2±1.0, 36°.93N±0°.08×27°.98E±0°.07, h12km, n9, σ1§59/11, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
BDRM	**Kayabasi**	**0.45**	**287**		*i* P	**Pb**	**19 32 03.2**	**-0.8**
TURN	**Turunc**	**0.51**	**97**		*i* P	Pg	19 31 57.4	-6.7
TURN					*i* S	Sg	19 32 01.0	-10
BODT	**Bodrum**	**0.55**	**284**		*e*PG	**Pn**	**19 32 10.4**	**+2.6**
BODT	**Bodrum**	**0.55**	**284**		*e*Pg	**Pn**	**19 32 10.4**	**+2.6**
AYDN	**Tasoluk**	**0.73**	**354**		*i* P	**Pg**	**19 32 07.6**	**-0.8**
AYDN					*i* S	**Sg**	**19 32 17.6**	**-0.4**
FETY	**Fethiye**	**0.94**	**108**		*e*PN	**Pg**	**19 32 11.3**	**-1.0**
FETY					*e*SN	**Sn**	**19 32 27.8**	**+1.2**
FETY	**Fethiye**	**0.94**	**108**		*e*Pn	**Pg**	**19 32 11.3**	**-1.0**
FETY					*e*Sn	**Sn**	**19 32 27.8**	**+1.2**
APE	**Apeiranthos**	**1.96**	**275**		*e*PN	**Pn**	**19 32 26.6**	**-0.7**
APE	**Apeiranthos**	**1.96**	**275**		*e*Pn	**Pn**	**19 32 26.6**	**-0.7**

*ISCJB **10** 19:32:02.4±1.0, 36°.9N±0°.1×28°.34E±0°.10, h14km, Error ellipse: s-maj=17.5km s-min=5.9km az=35.0*
*DDA **10** 19:32:04.0, 36°.96N×28°.23E, h7km, Md2.7*
ISC 10 19:32:01.9±1.2, 36°.92N±0°.08×28°.31E±0°.05, h14km, n6, σ0§64/9, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
TURN	**Turunc**	**0.24**	**101**		*i* P	**Pb**	**19 32 08.1**	**+0.1**
TURN					*i* S	**Sg**	**19 32 11.2**	**+0.7**
DALY	**Dalyan (Mu¨la**	**0.29**	**111**		*e*PG	**Pg**	**19 32 07.3**	**-0.7**
BDRM	**Kayabasi**	**0.71**	**282**		*i* P	**Pb**	**19 32 16.2**	**+0.1**
BDRM					*i* S	**Sn**	**19 32 29.3**	**+1.0**
BDRM	**Kayabasi**	**0.71**	**282**		*i* S	**Pb**	**19 32 15.8**	**-0.3**
AYDN	**Tasoluk**	**0.81**	**335**		*i* P	**Pb**	**19 32 18.2**	**+0.2**
AYDN					*i* S	**Sg**	**19 32 27.8**	**-0.7**
AYDB	**Zeytinkoy-Aydi**	**1.08**	**342**		*e*PN	**Pg**	**19 32 22.6**	**-0.2**

CASC 10 19:36:07.4±1.6, 12°.40N×87°.33W, h38km±303km, MD3.5, ML2.7, Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
CSGN	**Cosiguina Volc**	**0.62**	**338**		*e*P	Pn	19 36 22.5	+2.7
CSGN					*e*S	Sn	19 36 33.7	+5.1
COPN	**Copaltepe**	**0.75**	**107**		*e*P	Pn	19 36 20.9	-0.6
COPN					*e*P	Pn	19 36 20.9	-0.5
COPN					*e*S	Sn	19 36 32.3	+0.7
COPN					AML	AML	19 36 34.2	
	comp=Z,203nm,0.2s							
MOMN	**Momotombo**	**0.77**	**89**		*e*P	Pn	19 36 21.8	+0.1
PACA	**Pacayal**	**1.44**	**318**		*e*P	Pn	19 36 32.5	+1.5
PACA					*e*S	Sn	19 36 49.3	+0.5
TECA	**Tecapa**	**1.58**	**314**		*e*P	Pn	19 36 33.2	+0.1
TECA					*e*S	Sn	19 36 53.8	+1.4
LFRS	**El Faro**	**2.08**	**306**		*e*P	Pn	19 36 40.7	+0.8
LFRS					*e*S	Sn	19 37 05.0	+0.4

*ISK **10** 19:39:42.5, 36°.99N×28°.27E, h3km, MD2.6*
*DDA **10** 19:39:42.2, 36°.98N×28°.22E, h7km, Md2.6*
*CSEM **10** 19:39:43.0±0.2, 36°.99N×28°.20E, h2km, MD2.6, Error ellipse: s-maj=5.0km s-min=3.5km az=35.0*
*ATH **10** 19:39:44.0, 36°.87N×28°.01E, h30km±2km, ML1.7/1, Error ellipse: s-maj=3.1km s-min=2.0km az=197.0*
ISC 10 19:39:41.9±1.1, 36°.97N±0°.03×28°.16E±0°.03, h8km±10km, n27, σ1§17/44, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.19**	**31**		*e*PG	**Pg**	**19 39 46.1**	**+0.3**
YER	**Yerkesik**	**0.19**	**31**		*e*Pg	**Pg**	**19 39 46.1**	**+0.3**
TURN	**Turunc**	**0.37**	**105**		*i* P	**Pg**	**19 39 46.7**	**-2.4**
TURN					*i* S	**Sg**	**19 39 49.8**	**-4.1**
DALY	**Dalyan (Mu¨la**	**0.43**	**111**		*e*PG	**Pg**	**19 39 50.0**	**-0.2**
DALY					*e*SG	**Sg**	**19 39 56.0**	**+0.2**
DALY	**Dalyan (Mu¨la**	**0.43**	**111**		*e*Pg	**Pg**	**19 39 50.0**	**-0.2**
DALY					*e*Sg	**Sg**	**19 39 56.0**	**+0.2**
BDRM	**Kayabasi**	**0.58**	**279**		P	**Pb**	**19 39 54.4**	**+0.1**
BDRM					S	**Sn**	**19 40 04.5**	**-1.6**
BDRM	**Kayabasi**	**0.58**	**279**	*i*	P	**Pb**	**19 39 54.4**	**+0.1**
BDRM				*i*	S	**Sn**	**19 40 04.5**	**-1.6**
BODT	**Bodrum**	**0.69**	**278**	*e*PG		**Pn**	**19 39 58.1**	**+0.2**
BODT				*e*SG		**Sn**	**19 40 09.2**	**+0.5**
BODT	**Bodrum**	**0.69**	**278**	*e*Pg		**Pn**	**19 39 58.1**	**+0.2**
AYDN	**Tasoluk**	**0.72**	**342**	P		**Pb**	**19 39 56.7**	**0.0**
AYDN				S		**Sb**	**19 40 06.8**	**-0.1**
AYDN	**Tasoluk**	**0.72**	**342**	*i* P		**Pb**	**19 39 56.7**	**0.0**
AYDN				*i* S		**Sb**	**19 40 06.8**	**-0.1**
ARG	**Arkhangelos**	**0.76**	**182**	P		**Pg**	**19 39 56.5**	**+0.1**
ARG				S		**Sb**	**19 40 07.2**	**-0.5**
FETY	**Fethiye**	**0.81**	**114**	*e*PG		**Pg**	**19 39 58.1**	**+0.6**
FETY				*e*SG		**Sg**	**19 40 08.5**	**+0.4**
FETY	**Fethiye**	**0.81**	**114**	*e*Pg		**Pg**	**19 39 58.1**	**+0.6**
FETY				*e*Sg		**Sg**	**19 40 08.5**	**+0.4**
AYDB	**Zeytinkoy-Aydi**	**1.00**	**348**	*e*PG		**Pn**	**19 40 02.4**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**1.00**	**348**	*e*Pg		**Pn**	**19 40 02.4**	**+0.1**
DNZL	**Cakiroluk**	**1.01**	**44**	P		**Pg**	**19 40 00.4**	**-0.8**
DNZL	**Cakiroluk**	**1.01**	**44**	*i* P		**Pg**	**19 40 00.4**	**-0.8**
GOLH	**Golhisar**	**1.15**	**76**	P		**Pn**	**19 40 05.6**	**+1.2**
GOLH	**Golhisar**	**1.15**	**76**	*i* P		**Pn**	**19 40 05.6**	**+1.2**
SMG	**Samos**	**1.28**	**305**	P		**Pg**	**19 40 07.3**	**+0.8**
SMG				S		**Sn**	**19 40 23.5**	**0.0**
SMG	**Samos**	**1.28**	**305**	P		**Pg**	**19 40 07.3**	**+0.8**
SMG				S		**Sn**	**19 40 23.5**	**0.0**
SMG				AML		AML	19 40 30.7	
	comp=N,45μm,0.3s							
SMG				AML		AML	19 40 33.8	
	comp=E,62μm,0.3s							
AKAS	**Kas**	**1.38**	**122**	P		**Pb**	**19 40 08.2**	**+0.2**
AKAS				S		**Sg**	**19 40 27.7**	**+1.5**
AKAS	**Kas**	**1.38**	**122**	*i* P

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JYK	**Kaneyama**	**1.28**	**272**	P	**Pn**	**19 58 31.7**	**0.0**
ERM	**Erimo**	**3.25**	**15**	*e*Pn	**Pn**	**19 59 00.6**	**+1.9**
MJAR	**Matsushiro Arr**	**3.81**	**233**	P	**Pn**	**19 59 08.3**	**+2.0**
	7.6nm,0.3s,baz=35,slow=12,SNR=30						
MJAR				LR	LR	20 00 47.1	
	comp=Z,136nm,18.1s,baz=60,slow=41						
MAJO	**Matsushiro**	**3.81**	**233**	*e*Pn	**Pn**	**19 59 08.6**	**+2.3**
MAT	**Matsushiro**	**3.81**	**233**	P	**Pn**	**19 59 08.7**	**+2.3**
MAT				S	**Sn**	**19 59 50.2**	**+0.3**
MJB9	**Matsu-Tunnel**	**3.81**	**233**	*e*Pn	**Pn**	**19 59 08.9**	**+2.5**
ASAJ	**Asahikawa**	**5.25**	**5**	P	**Pn**	**19 59 26.4**	**+0.4**
	3.1nm,0.3s,baz=208,slow=15,SNR=18						
ASAJ				S	**Sn**	**20 00 23.4**	**-1.8**
	2.2nm,0.3s,baz=202,slow=27,SNR=4.2						
ASAJ	**Asahikawa**	**5.25**	**5**	*e*Pn	**Pn**	**19 59 25.6**	**-0.4**
ASAJ				S	**Sn**	**20 00 23.4**	**-1.8**
INU	**Inuyama**	**5.32**	**230**	*e*Pn	**Pn**	**19 59 30.2**	**+3.1**
JHJ2	**Mitsune**	**6.03**	**198**	*e*Pn	**Pn**	**19 59 37.0**	**+0.3**
JHJ	**Hachijo jima 2**	**6.03**	**198**	P	**Pn**	**19 59 38.6**	**+1.9**
	8.4nm,0.3s,baz=30,slow=13,SNR=4.8						
JHJ				S	**Sn**	**20 00 42.6**	**-1.9**
	7.3nm,0.3s,baz=79,slow=23,SNR=2.9						
USRK	**Ussuriysk Ar.**	**9.19**	**308**	P	**Pn**	**20 00 20.5**	**+0.5**
	1.5nm,0.3s,baz=119,slow=13,SNR=27						
KSRS	**Korea Array**	**11.17**	**267**	P	**Pn**	**20 00 49.6**	**+2.4**
	0.4nm,0.3s,baz=78,slow=14,SNR=11						
KSRS				LR	LR	20 04 32.0	
	comp=Z,60nm,20.4s,baz=144,slow=34						
KS01	**Wonju Array Si**	**11.19**	**267**	*e*Pn	**Pn**	**20 00 49.8**	**+2.4**
KS15	**Wonju Array Si**	**11.21**	**267**	*e*Pn	**Pn**	**20 00 51.2**	**+3.6**
KSAR	**Wonju Array Be**	**11.21**	**267**	P	**Pn**	**20 00 49.6**	**+1.9**
KLR	**Kul'dur**	**12.68**	**328**	P	**Pn**	**20 01 06.8**	**-1.0**
	0.1nm,0.3s,baz=145,slow=16,SNR=3.5						
KLR				LR	LR	20 06 07.7	
	comp=Z,89nm,18.0s,baz=134,slow=38						
NACB	**Ninganchiao**	**22.68**	**236**	*e*P	**P**	**20 03 04.1**	**-3.2**
	19nm,0.8s						
YULB	**Yu-li**	**23.42**	**235**	*e*P	**P**	**20 03 11.2**	**-3.5**
	46nm,1.7s						
TPUB	**Ta-pu**	**23.92**	**236**	*e*P	**P**	**20 03 16.9**	**-2.4**
	25nm,1.2s						
TWG	**Pinlang**	**23.98**	**234**	*e*P	**P**	**20 03 16.2**	**-3.6**
	180nm,1.4s						
YAK	**Yakutsk**	**24.38**	**346**	P	**P**	**20 03 23.7**	**+0.5**
	4.3nm,0.3s,baz=19,slow=2.7,SNR=5.3						
YAK	**Yakutsk**	**24.38**	**346**	*e*P	**P**	**20 03 22.2**	**-0.9**
	14nm,0.5s						
SEY	**Seymchan**	**24.89**	**11**	P	**P**	**20 03 28.9**	**+1.1**
	3.3nm,0.8s,baz=232,slow=8.0,SNR=3.8						
ENH	**Enshi**	**28.00**	**262**	*e*P	**P**	**20 03 55.4**	**-0.8**
	11nm,0.6s						
H11N2	**WAKE ISLAND Hy**	**28.76**	**124**	T	T	20 34 30.8	
	baz=317,slow=75,SNR=499						
H11N1	**WAKE ISLAND Hy**	**28.77**	**125**	T	T	20 34 31.8	
	baz=317,slow=75,SNR=615						
H11N3	**WAKE ISLAND Hy**	**28.77**	**124**	T	T	20 34 33.2	
	baz=317,slow=75,SNR=1199						
TLY	**Talaya**	**29.50**	**308**	LR	LR	20 17 10.5	
	comp=Z,45nm,18.4s,baz=125,slow=39						
H11S1	**WAKE ISLAND Hy**	**29.53**	**126**	T	T	20 35 31.6	
	baz=319,slow=76,SNR=279						
H11S3	**WAKE ISLAND Hy**	**29.53**	**126**	T	T	20 35 30.4	
	baz=319,slow=76,SNR=335						
H11S2	**WAKE ISLAND Hy**	**29.55**	**126**	T	T	20 35 36.6	
	baz=319,slow=76,SNR=264						
TIXI	**Tiksi**	**33.51**	**353**	*e*P	**P**	**20 04 44.7**	**+0.4**
	4.8nm,1.5s						
ZAA0	**Zalesovo Array**	**41.03**	**311**	*e*P	**P**	**20 05 47.5**	**-0.7**
ZAA1	**Zalesovo Array**	**41.03**	**311**	*e*P	**P**	**20 05 48.3**	**+0.2**
ZAA1				*e*PcP	**PcP**	**20 07 47.0**	**-0.1**
ZALV	**Zalesovo Beam**	**41.03**	**311**	P	**P**	**20 05 48.3**	**+0.2**
	5.8nm,0.5s,baz=88,slow=8.0,SNR=22						
ZALV				PcP	**PcP**	**20 07 47.0**	**-0.1**
	1.0nm,0.3s,baz=114,slow=3.5,SNR=3.8						
MK01	**Makanchi Array**	**43.55**	**301**	*e*P	**P**	**20 06 08.8**	**0.0**
MK31	**Makanchi Array**	**43.55**	**301**	*e*P	**P**	**20 06 08.3**	**-0.5**
MK32	**Makanchi Array**	**43.55**	**301**	*e*P	**P**	**20 06 09.0**	**+0.3**
MKAR	**Makanchi Array**	**43.55**	**301**	P	**P**	**20 06 09.0**	**+0.3**
	7.1nm,0.7s,baz=85,slow=10.0,SNR=77						
MKAR	**Makanchi Array**	**43.55**	**301**	*e*P	**P**	**20 06 08.8**	**0.0**
MAKZ	**Makanchi**	**43.76**	**301**	*e*P	**P**	**20 06 10.1**	**-0.4**
KURK	**Kurchatov**	**45.17**	**307**	*e*P	**P**	**20 06 21.3**	**-0.3**
	17nm,1.1s						
MLY	**Manley**	**46.04**	**33**	*e*P	**P**	**20 06 29.7**	**+1.4**
	16nm,2.0s						
KSM	**Kuching**	**47.17**	**226**	*e*P	**P**	**20 06 37.6**	**-0.1**
	3.3nm,1.0s						
IL1	**Eielson Array**	**47.69**	**33**	*e*P	**P**	**20 06 41.9**	**+0.7**
ILAR	**Eielson Array**	**47.69**	**33**	P	**P**	**20 06 42.6**	**+1.5**
	0.8nm,0.7s,baz=268,slow=6.2,SNR=7.4						
ILB	**Eielson Array**	**47.69**	**33**	*e*P	**P**	**20 06 42.3**	**+1.1**
KKN	**Kakani**	**47.98**	**274**	*e*P	**P**	**20 06 43.9**	**-0.3**
	12nm,0.7s						
PKIN	**Phulchoki**	**47.99**	**274**	*e*P	**P**	**20 06 45.9**	**+1.6**
GKN	**Gorkha**	**48.38**	**275**	*e*P	**P**	**20 06 46.6**	**-0.6**
TKM2	**Tokmak 2**	**49.17**	**297**	*e*P	**P**	**20 06 53.7**	**+0.5**
	4.8nm,0.8s						
KOLN	**Koldanda**	**49.29**	**275**	*e*P	**P**	**20 06 55.7**	**+1.5**
	4.3nm,0.3s						
PYUN	**Piuthan**	**49.61**	**276**	*e*P	**P**	**20 06 57.3**	**+0.6**
BRVK	**Borovoye**	**49.74**	**311**	*e*P	**P**	**20 06 56.9**	**-0.2**
	3.6nm,0.6s						
AAK	**Ala-Archa**	**50.04**	**297**	*e*P	**P**	**20 06 59.2**	**-0.5**
	2.6nm,0.4s						
ZRNK	**Zerenda**	**50.51**	**311**	*e*P	**P**	**20 07 03.0**	**+0.1**
	4.3nm,0.8s						
EKS2	**Erkin-Say**	**50.52**	**297**	*e*P	**P**	**20 07 03.3**	**0.0**
	2.1nm,0.8s						
INK	**Inuvik**	**52.53**	**28**	P	**P**	**20 07 19.1**	**+1.4**
	1.1nm,0.7s,baz=308,slow=9.0,SNR=6.2						
INK	**Inuvik**	**52.53**	**28**	*e*P	**P**	**20 07 19.5**	**+1.8**
	13nm,1.8s						
KKAR	**Karatay Array**	**52.61**	**299**	*e*P	**P**	**20 07 18.6**	**-0.2**
ARU	**Arti**	**55.29**	**318**	*e*P	**P**	**20 07 38.1**	**+0.1**
	8.9nm,0.9s						
CISI	**Cisompet, Garu**	**56.05**	**222**	*e*P	**P**	**20 07 42.7**	**-1.3**
	41nm,0.8s						
HPO	**Honuapo**	**57.00**	**91**	*e*P	**P**	**20 07 50.7**	**0.0**
ABKAR	**Akbulak array**	**57.11**	**309**	*e*P	**P**	**20 07 50.8**	**-0.3**
KBL	**Kabul**	**57.20**	**290**	*e*P	**P**	**20 07 51.5**	**-0.7**
	4.4nm,1.1s						
WR1	**Warramunga Arr**	**58.96**	**188**	*e*P	**P**	**20 08 04.7**	**+0.4**
	37nm,1.9s						
WRA	**Warramunga Arr**	**58.96**	**188**	P	**P**	**20 08 04.7**	**+0.4**
	1.4nm,0.4s,baz=7.8,slow=7.7,SNR=20						
ARA0	**ARCESS Array S**	**62.43**	**339**	*e*P	**P**	**20 08 27.6**	**+0.2**
ARCES	**ARCESS Array B**	**62.43**	**339**	P	**P**	**20 08 27.6**	**+0.2**
	2.5nm,0.8s,baz=65,slow=8.5,SNR=4.9						
AS01	**Alice Springs**	**62.68**	**188**	*e*P	**P**	**20 08 30.3**	**+0.8**
ASAR	**Alice Springs**	**62.68**	**188**	P	**P**	**20 08 30.3**	**+0.8**
	0.7nm,0.6s,baz=357,slow=4.0,SNR=7.6						
GEYT	**Alibeck**	**63.35**	**298**	P	**P**	**20 08 34.1**	**+0.1**
	2.0nm,0.7s,baz=20,slow=4.7,SNR=5.5						
FIA1	**FINESS Array S**	**67.39**	**332**	*e*P	**P**	**20 08 59.5**	**-0.2**
FIA0	**FINESS Array S**	**67.39**	**332**	*e*P	**P**	**20 08 59.7**	**+0.1**
FINES	**FINESS Array B**	**67.39**	**332**	P	**P**	**20 08 59.7**	**+0.1**
	3.2nm,0.6s,baz=33,slow=10,SNR=18						
KIV	**Kislovodsk**	**70.05**	**311**	*e*P	**P**	**20 09 18.1**	**+1.4**
	8.5nm,0.8s						
KBZ	**Khabaz**	**70.05**	**310**	P	**P**	**20 09 17.1**	**+0.6**
	3.1nm,0.9s,baz=49,slow=4.6,SNR=7.8						
NB2	**NORSAR Subarra**	**72.66**	**337**	P	**P**	**20 09 32.1**	**+0.1**
	comp=Z,0.9nm,0.8s,baz=35,slow=5.9						
NB200	**NORSAR Array S**	**72.66**	**337**	*e*P	**P**	**20 09 32.2**	**+0.2**
NOA	**NORSAR Array B**	**72.66**	**337**	P	**P**	**20 09 32.2**	**+0.2**
	comp=Z,1.2nm,0.7s,baz=39,slow=5.9,SNR=6.3						
AKASG	**Malin Array Be**	**73.12**	**322**	P	**P**	**20 09 34.8**	**-0.1**
	comp=Z,1.8nm,0.5s,baz=45,slow=6.0,SNR=11						
BR101	**Keskin Array S**	**77.97**	**312**	*e*P	**P**	**20 10 03.5**	**+0.5**
BRTR	**Keskin Array B**	**77.97**	**312**	P	**P**	**20 10 03.5**	**+0.4**
	comp=Z,0.5nm,0.4s,baz=123,slow=3.6,SNR=11						
GERES	**GERESS Array B**	**81.38**	**328**	P	**P**	**20 10 20.6**	**-0.7**
	comp=Z,0.6nm,0.5s,baz=28,slow=6.0,SNR=6.7						

*IDC **10** 20:07:50.0±3.8, 19°.92S×168°.42E, h0km, mb4.1/3, mb1 4.2/4, mb1mx3.8/30, mbtmp4.0/4, ML3.2/1, MS3.3/2, Ms1 3.3/2, ms1mx2.9/29, Error ellipse: s-maj=86.0km s-min=50.0km az=123.0*

*ISCJB **10** 20:07:51.9±1.0, 20°.1S±0°.1×168°.4E±0°.1, h25km, mb4.0/4, MS3.3/1, Error ellipse: s-maj=24.4km s-min=12.4km az=143.3*

*NEIC **10** 20:07:51.4±1.1, 20°.06S×168°.48E, h10km, mb4.3/1, Error ellipse: s-maj=35.2km s-min=15.6km az=166.0*

ISC 10 20:07:53.7±1.2, 20°.1S±0°.2×168°.5E±0°.2, h25km, n10, σ0°51/10, mb4.1/4, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	**Mont Dzumac**	**2.71**	**224**	Pn	**Pn**	**20 08 35.6**	**-0.2**
	3.9nm,0.3s,baz=61,slow=16,SNR=5.7						
DZM				Sn	**Sn**	**20 09 07.4**	**-0.5**
	6.6nm,0.3s,baz=296,slow=24,SNR=3.6						
AFI	**Afiamalu**	**19.87**	**75**	LR	LR	20 18 40.9	
	comp=Z,70nm,18.9s,baz=180,slow=33						
STKA	**Stephens Creek**	**26.77**	**239**	P	**P**	**20 13 31.8**	**+0.1**
	1.8nm,0.6s,baz=358,slow=9.0,SNR=2.9						
WRA	**Warramunga Arr**	**32.02**	**264**	P	**P**	**20 14 18.3**	**-0.1**
	0.9nm,0.5s,baz=91,slow=8.4,SNR=15						
AS01	**Alice Springs**	**32.17**	**257**	*e*P	**P**	**20 14 19.8**	**0.0**
AS31	**Alice Springs**	**32.21**	**257**	*e*P	**P**	**20 14 20.6**	**+0.4**
	1.9nm,0.5s						
ASAR	**Alice Springs**	**32.21**	**257**	P	**P**	**20 14 20.6**	**+0.5**
	5.3nm,0.9s,baz=82,slow=9.1,SNR=32						
ASAR				LR	LR	20 27 50.8	
	comp=Z,56nm,18.5s,baz=300,slow=37						
PPT	**Papeete**	**39.73**	**94**	*e*P	**P**	**20 15 24.0**	**-0.4**
QSPA	**South Pole Qui**	**69.95**	**180**	*e*P	**P**	**20 19 03.6**	**+0.8**
GERES	**GERESS Array B**	**144.89**	**331**	PKP	**PKPdf**	**20 27 28.2**	**-0.4**
	0.2nm,0.4s,baz=44,slow=4.4,SNR=2.8						

*ISCJB **10** 20:08:21.8±0.6, 35°.54N±0°.04×140°.11E±0°.06, h77km±5km, mb3.6/4, Error ellipse: s-maj=8.4km s-min=5.2km az=146.4*

*JMA **10** 20:08:22.3±0.2, 35°.63N×140°.10E, h68km±2km, M3.4 Broadband fault plane solution: P waves. NP1: ϕ_s=15.00000°, δ=71.00000°, λ=110.00000°. NP2: ϕ_s=147.00000°, δ=28.00000°, λ=45.00000°. Principal axes: T Plg59.0000°, Azm314.0000°; N Plg19.0000°, Azm189.0000°; P Plg23.0000°, Azm90.0000°;*

JMA Felt I J1.

*IDC **10** 20:08:22.3±3.3, 35°.54N×140°.18E, h68km±26km, mb3.4/4, mb1 3.5/5, mb1mx3.2/42, mbtmp3.7/5 Error ellipse: s-maj=46.6km s-min=7.1km az=67.0*

ISC 10 20:08:22.9±0.9, 35°.55N±0°.04×140°.09E±0°.05, h71km±7km, n17, σ0°71/28, mb3.7/4, 2C-5D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JCN	**Nagara**	**0.16**	**146**	⇑P	**Pn**	**20 08 33.5**	**0.0**
JCN				S	**Sn**	**20 08 42.0**	**+0.8**
BSO3	**Boso 3**	**0.83**	**155**	⇑P	**Pn**	**20 08 38.8**	**-0.2**
BSO3				X		20 08 52.1	
JOD2	**Odawara 2**	**0.87**	**251**	⇓P	**Pn**	**20 08 39.5**	**-0.3**
JOD2				S	**Sn**	**20 08 51.7**	**-0.7**
JIM2	**Oshima 3**	**0.99**	**213**	P	**Pn**	**20 08 40.7**	**-0.7**
JIM2				S	**Sn**	**20 08 54.3**	**-0.9**
JAG	**Ashikaga**	**1.01**	**329**	⇓P	**Pn**	**20 08 40.6**	**-1.0**
JAG				*e*S	**Sn**	**20 08 54.6**	**-0.9**
JRY	**Ryogami san**	**1.07**	**296**	⇓P	**Pn**	**20 08 42.3**	**0.0**
JRY				*e*S	**Sn**	**20 08 58.5**	**+1.6**
BSO1	**Boso 1**	**1.16**	**141**	P	**Pn**	**20 08 42.3**	**-0.6**
BSO1				*e*S	**Sn**	**20 08 58.2**	**+0.3**
JYN	**Shimob**	**1.26**	**268**	⇓P	**Pn**	**20 08 44.7**	**-0.1**
JYN				S	**Sn**	**20 09 01.3**	**0.0**
JIZS	**Izushimoda**	**1.30**	**230**	⇓P	**Pn**	**20 08 45.1**	**-0.1**
JIZS				S	**Sn**	**20 09 01.5**	**-0.5**
JKT	**Katashina**	**1.39**	**331**	P	**Pn**	**20 08 45.6**	**-0.9**
MJAR	**Matsushiro Arr**	**1.81**	**303**	P	**Pn**	**20 08 50.9**	**-1.2**
	24nm,0.3s,baz=131,slow=11,SNR=141						
MJAR				S	**Sn**	**20 09 14.8**	**+0.6**
	11nm,0.3s,baz=114,slow=15,SNR=10						
MJAR				LR	LR	20 09 34.1	
	comp=Z,45nm,18.4s,baz=180,slow=39						
MAT	**Matsushiro**	**1.82**	**303**	P	**Pn**	**20 08 52.3**	**+0.2**
MAT				S	**Sn**	**20 09 15.3**	**+1.0**
JHJ	**Hachijo jima 2**	**2.44**	**186**	P	**Pn**	**20 09 00.9**	**+0.4**
	26nm,0.3s,baz=142,slow=21,SNR=16						
JHJ				S	**Sn**	**20 09 29.0**	**-0.3**
	79nm,0.3s,baz=324,slow=22,SNR=10						
MKAR	**Makanchi Array**	**44.02**	**303**	P	**P**	**20 16 24.0**	**+0.7**
	0.6nm,0.5s,baz=84,slow=9.5,SNR=8.0						
WRA	**Warramunga Arr**	**55.46**	**187**	P	**P**	**20 17 50.1**	**-0.1**
	0.4nm,0.5s,baz=1.5,slow=7.6,SNR=11						
FINES	**FINESS Array B**	**69.62**	**332**	P	**P**	**20 19 24.2**	**+0.1**
	0.8nm,0.6s,baz=82,slow=10.0,SNR=6.1						
NOA	**NORSAR Array B**	**75.13**	**337**	P	**P**	**20 19 56.7**	**-0.3**
	0.5nm,0.8s,baz=83,slow=10,SNR=2.4						

WEL 10 20:13:13.0±0.3, 40°.61S×173°.21E, h187km±2km, ML3.5/4, 6C-2D, Error ellipse: s-maj=3.0km s-min=2.3km az=0.0, Cook Strait

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
QRZ	**Quartz Range**	**0.56**	**247**	⇑PN	Pn	20 13 38.6	-0.2
QRZ				SN	Sn	20 13 57.5	-1.3
DUWZ	**D'Urville Isla**	**0.57**	**110**	⇑PN	Pn	20 13 38.9	0.0
DUWZ				SN	Sn	20 13 58.2	-0.7
NNZ	**Nelson**	**0.62**	**168**	⇑PN	Pn	20 13 39.1	0.0
NNZ				SN	Sn	20 13 58.4	-1.0
TUWZ	**Tuamarina**	**0.99**	**146**	PN	Pn	20 13 41.4	+0.1
TUWZ				SN	Sn	20 14 02.3	-1.0
TUWZ				AML	AML	20 14 03.4	
TCW	**Tory Channel**	**1.01**	**127**	PN	Pn	20 13 41.7	+0.3
TCW				SN	Sn	20 14 02.3	-1.1
TCW				AML	AML	20 14 04.4	
TCW				AML	AML	20 14 04.4	
THZ	**Tophouse**	**1.18**	**191**	⇑PN	Pn	20 13 42.8	0.0
THZ				SN	Sn	20 14 06.0	-0.1
BSWZ	**Blackbirch Sta**	**1.22**	**156**	PN	Pn	20 13 43.3	+0.3
KIW	**Kapiti Island**	**1.31**	**102**	PN	Pn	20 13 43.7	-0.2
CAW	**Cannon Point**	**1.49**	**110**	PN	Pn	20 13 45.4	-0.1
CAW				AML	AML	20 14 10.1	
CAW				AML	AML	20 14 10.1	
OGWZ	**Otaki Gorge**	**1.50**	**99**	PN	Pn	20 13 45.5	0.0
DSZ	**Denniston Nort**	**1.56**	**223**	⇑PN	Pn	20 13 45.5	-0.5
MSWZ	**Moikau Station**	**1.74**	**118**	PN	Pn	20 13 47.3	-0.5
MSWZ				AML	AML	20 14 14.9	
MSWZ				AML	AML	20 14 15.2	
MRZ	**Mangatainoka R**	**1.80**	**92**	PN	Pn	20 13 47.8	-0.6
MRZ				SN	Sn	20 14 13.7	-2.2
PLWZ	**Palliser**	**1.82**	**123**	PN	Pn	20 13 48.0	-0.6
KHZ	**Kahutara**	**1.82**	**172**	PN	Pn	20 13 48.2	-0.5
KHZ				SN	Sn	20 14 14.5	-2.0
PAWZ	**Paruwai Farm**	**1.85**	**116**	SN	Sn	20 14 14.2	-2.7
LTZ	**Lake Taylor**	**2.29**	**198**	PN	Pn	20 13 53.0	-0.6
BFZ	**Birch Farm**	**2.31**	**93**	⇓PN	Pn	20 13 53.3	-0.6
INZ	**Inchbonnie**	**2.50**	**211**	PN	Pn	20 13 54.8	-1.2
OXZ	**Oxford**	**2.85**	**197**	⇑PN	Pn	20 13 58.8	-1.4
WVZ	**Waitaha Valley**	**3.08**	**216**	⇓PN	Pn	20 14 01.4	-1.5
MQZ	**McQueen's Vall**	**3.13**	**187**	PN	Pn	20 14 01.1	-2.3
FOZ	**Fox Glacier**	**3.87**	**220**	PN	Pn	20 14 10.0	-2.5

*NIED **10** 20:24:00, 35°.80N×141°.10E, h8km, Mw4.5 Best double couple: M_0=7.42000×10^{15} NP1:ϕ_s=216.00000°, δ=56.00000°, λ=-11.00000°. NP2:ϕ_s=312.00000°, δ=81.00000°, λ=-146.00000°.*

*IDC **10** 20:24:12.4±0.5, 35°.56N×141°.04E, h0km, mb4.3/26, mb1 4.4/30, mb1mx4.3/57, mbtmp4.3/30, ML4.4/4, MS3.7/19, Ms1 3.7/19, ms1mx3.5/42, Error ellipse: s-maj=16.5km s-min=12.4km az=98.0*

*ISCJB **10** 20:24:13.5±0.7, 35°.66N±0°.02×141°.14E±0°.03, h15km±4km, mb4.5/71, MS3.8/23, Error ellipse: s-maj=4.7km s-min=3.9km az=32.4*

*NEIC **10** 20:24:14.3±0.2, 35°.58N×141°.06E, h10km, mb4.6/34, Error ellipse: s-maj=5.9km s-min=5.1km az=129.0*

NEIC Felt at Narita. Recorded [3 JMA] in Chiba and Ibaraki.

*JMA **10** 20:24:15.3±0.1, 35°.67N×141°.01E, h23km±1km, M4.7 Broadband fault plane solution: P waves. NP1: ϕ_s=309.00000°, δ=89.00000°, λ=-140.00000°. NP2: ϕ_s=218.00000°, δ=50.00000°, λ=-2.00000°. Principal axes: T Plg26.0000°, Azm76.0000°; N Plg50.0000°, Azm310.0000°; P Plg28.0000°, Azm181.0000°;*

JMA Felt III J1.

*MOS **10** 20:24:16.1±1.5, 35°.70N×141°.15E, h33km, mb4.8/35 Error ellipse: s-maj=8.6km s-min=5.0km az=99.9*

ISC 10 20:24:14.5±0.9, 35°.66N±0°.03×141°.14E±0°.04, h11km±5km, n214, σ2°00/222, mb4.5/75, MS3.8/24, 11C-7D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.23**	**281**	⇑P	**Pg**	**20 24 19.8**	**+0.5**
CHOJ				S	**Sg**	**20 24 22.7**	**+0.2**
JCN	**Nagara**	**0.80**	**253**	⇑P	**Pg**	**20 24 29.6**	**-0.3**
JCN				*e*S	**Sg**	**20 24 38.1**	**-2.3**
BSO4	**Boso 4**	**0.93**	**225**	⇓P	**Pb**	**20 24 32.2**	**-0.5**
JYT	**Yasato**	**0.95**	**307**	⇓P	**Pg**	**20 24 31.0**	**-1.9**
JYT				S	**Sg**	**20 24 42.1**	**-3.2**
BSO3	**Boso 3**	**1.00**	**211**	⇓P	**Pg**	**20 24 32.7**	**-0.9**
BSO1	**Boso 1**	**1.01**	**187**	⇓P	**Pg**	**20 24 32.7**	**-1.1**
JHO	**Hitachi**	**1.06**	**334**	⇓P	**Pg**	**20 24 33.0**	**-1.8**
JHO				S	**Sg**	**20 24 46.8**	**-1.8**
MJAR	**Matsushiro Arr**	**2.53**	**291**	Pn	**Pn**	**20 24 53.5**	**-2.2**
	89nm,0.3s,baz=120,slow=4.3,SNR=181						
MAJO	**Matsushiro**	**2.53**	**291**	*e*P	**Pn**	**20 24 54.5**	**-1.1**
MAJO	**Matsushiro**	**2.53**	**291**	*e*Pn	**Pn**	**20 24 54.5**	**-1.1**
MAT	**Matsushiro**	**2.53**	**291**	P	**Pn**	**20 24 54.4**	**-1.2**
MAT				*e*S	**Sn**	**20 25 26.1**	**-0.4**
MJB9	**Matsu-Tunnel**	**2.54**	**291**	*e*Pn	**Pn**	**20 24 54.4**	**-1.3**
JHJ2	**Mitsune**	**2.76**	**204**	*e*Pn	**Pn**	**20 24 58.2**	**-0.5**
JHJ	**Hachijo jima 2**	**2.77**	**204**	Pn	**Pn**	**20 24 57.0**	**-1.9**
	137nm,0.3s,baz=274,slow=8.5,SNR=28						
JHJ				Sn	**Sn**	**20 25 33.2**	**+0.9**
	106nm,0.3s,baz=194,slow=19,SNR=5.0						
INU	**Inuyama**	**3.38**	**266**	*e*Pn	**Pn**	**20 25 06.9**	**-0.3**
ERM	**Erimo**	**6.54**	**13**	⇑*e*P	**Pn**	**20 25 51.8**	**+1.1**
ERM	**Erimo**	**6.54**	**13**	*e*Pn	**Pn**	**20 25 50.6**	**0.0**
ERM				*e*Sn	**Sn**	**20 27 04.1**	**-1.1**
ASAJ	**Asahikawa**	**8.52**	**7**	Pn	**Pn**	**20 26 17.3**	**-0.5**
	13nm,0.3s,baz=248,slow=12,SNR=16						
ASAJ				Sn	**Sn**	**20 27 51.9**	**-2.2**
	2.3nm,0.3s,baz=41,slow=26,SNR=2.1						
ASAJ				LR	LR	20 30 14.4	
	comp=Z,422nm,18.6s,baz=212,slow=42						
ASAJ	**Asahikawa**	**8.52**	**7**	*e*Pn	**Pn**	**20 26 16.8**	**-1.1**
ASAJ				*e*Sn	**Sn**	**20 27 51.8**	**-2.2**
CBIJ	**Chichi jima**	**8.58**	**174**	*e*Pn	**Pn**	**20 26 14.9**	**-3.8**
JCJ	**Chichijima**	**8.58**	**174**	Pn	**Pn**	**20 26 14.4**	**-4.3**
	5.8nm,0.3s,baz=301,slow=22,SNR=6.0						
JNU	**Nakatsue**	**8.85**	**256**	Pn	**Pn**	**20 26 23.6**	**+1.2**
	baz=27,slow=14,SNR=2.7						
JNU				LR	LR	20 30 05.1	
	comp=Z,1μm,18.9s,baz=117,slow=40						
JNU	**Nakatsue**	**8.85**	**256**	*e*Pn	**Pn**	**20 26 23.9**	**+1.5**
YUK	**Yuzh-Kuril'sk**	**9.12**	**22**	*e*P	**Pn**	**20 26 25.9**	**-0.1**
YUK				*e*S	**Sn**	**20 28 01.4**	**-7.2**
YUK				pmax	pmax		
	comp=Z,92nm,0.5s						
SHO	**Shikotan**	**9.30**	**26**	*e*P	**Pn**	**20 26 27.1**	**-1.3**
SHO				pmax	pmax		
	comp=Z,43nm,0.5s						
KSRS	**Korea Array**	**10.78**	**283**	Pn	**Pn**	**20 26 51.0**	**+2.2**
	comp=Z,0.5nm,0.3s,baz=99,slow=14,SNR=24						
KSRS				LR	LR	20 30 55.5	
	comp=Z,233nm,20.0s,baz=88,slow=38						
KS01	**Wonju Array Si**	**10.81**	**284**	*e*Pn	**Pn**	**20 26 46.5**	**-2.7**
KS15	**Wonju Array Si**	**10.81**	**283**	*e*Pn	**Pn**	**20 26 53.5**	**+4.3**
KSAR	**Wonju Array Be**	**10.81**	**283**	P	**Pn**	**20 26 51.0**	**+1.8**
KSAR	**Wonju Array Be**	**10.81**	**283**	Pn	**Pn**	**20 26 51.0**	**+1.8**
KUR	**Kuril'sk**	**10.85**	**26**	P	**Pn**	**20 26 50.4**	**+0.7**
KUR				*e*S	**Sn**	**20 28 44.9**	**-6.1**
KUR				pmax	pmax		

YAK smax smax
comp=N,100nm,3.6s
YAK MLR MLR
comp=Z,233nm,25.0s
YAK Yakutsk 27.37 348 *eP* **P 20 29 59.0 -0.5**
comp=Z,25nm,0.7s
H11N2 WAKE ISLAND Hy 27.67 118 T T 20 59 03.0
baz=311,slow=75,SNR=1178
H11N1 WAKE ISLAND Hy 27.67 118 T T 20 59 03.8
baz=311,slow=75,SNR=77
H11N3 WAKE ISLAND Hy 27.68 118 T T 20 59 04.5
baz=311,slow=75,SNR=1433
ULN Ulaanbaatar 27.97 306⇑ *eP* **P 20 30 05.0 -0.2**
ULN pmax pmax
comp=Z,3.0nm,0.6s
ULN Ulaanbaatar 27.97 306 *eP* **P 20 30 04.5 -0.7**
comp=Z,3.5nm,0.7s
SEY Seymchan 28.18 11 P **P 20 30 07.7 +0.9**
comp=Z,2.2nm,0.7s,baz=218,slow=17,SNR=3.7
SEY Seymchan 28.18 11⇓ *eP* **P 20 30 07.2 +0.4**
H11S3 WAKE ISLAND Hy 28.33 120 T T 20 59 51.7
baz=312,slow=75,SNR=1289
H11S1 WAKE ISLAND Hy 28.33 120 T T 20 59 51.7
baz=312,slow=75,SNR=1720
H11S2 WAKE ISLAND Hy 28.34 120 T T 20 59 52.9
baz=312,slow=75,SNR=1742
BOD Bodaibo 28.59 329 *eP* **P 20 30 09.7 -0.7**
BOD pmax pmax
comp=Z,6.0nm,0.9s
LZH Lanzhou 30.11 282 *eP* **P 20 30 24.4 0.0**
LZH pP sP 20 30 32.7 +3.8
LZH sP pP 20 30 36.9 +9.3
LZH PP **PnPn 20 31 25.6 +4.3**
LZH *eS* **S 20 35 17.3 -5.8**
LZH sS sS 20 35 32.7 +4.3
LZH SS **SnSn 20 36 55.1 -0.4**
LZH pmax pmax
comp=Z,16nm,1.2s
LZH pmax pmax
comp=Z,96nm,5.0s
LZH LR LR
comp=N,1μm,12.0s
LZH LR LR
comp=E,1μm,13.4s
LZH LR LR
comp=Z,1μm,15.4s
TLY Talaya 31.08 313 *eP* **P 20 30 33.9 +1.3**
TLY pmax pmax
comp=Z,1.0nm,0.7s
TLY MLR MLR
comp=Z,112nm,15.0s
TLY Talaya 31.08 313 *eP* **P 20 30 32.9 +0.3**
comp=Z,2.5nm,0.7s
CD2 Chengdu 31.48 272 P **P 20 30 34.8 -1.6**
CD2 pmax pmax
comp=Z,3.0nm,0.7s
GTA Gaotai 32.78 289 *eP* **P 20 30 48.3 +0.5**
GTA pP sP 20 30 57.9 +5.5
GTA sP pP 20 31 02.1 +11
GTA S **S 20 36 05.1 +0.4**
GTA sS sS 20 36 20.0 +10
GTA SS **SnSn 20 38 07.2 +6.8**
GTA pmax pmax
comp=Z,3.0nm,1.2s
GTA pmax pmax
comp=Z,41nm,4.5s
GTA LR LR
comp=N,220nm,14.7s
GTA LR LR
comp=E,170nm,15.2s
GTA LR LR
comp=Z,190nm,16.2s
KMI Kunming 34.55 263 P **P 20 31 03.6 +0.1**
KMI pmax pmax
comp=Z,8.0nm,0.9s
KMI pmax pmax
comp=Z,55nm,4.1s
BILL Bilibino 35.41 16 *i* P **P 20 31 11.2 +1.1**
BILL *i* 20 32 31.4
BILL *i* 20 33 36.8
BILL pmax pmax
comp=Z,3.0nm,0.9s
BILL MLR MLR
comp=Z,104nm,18.0s
BILL Bilibino 35.41 16 *eP* **P 20 31 11.0 +0.9**
comp=Z,11nm,1.0s
TIXI Tiksi 36.63 354 P **P 20 31 20.1 -0.4**
comp=Z,2.3nm,0.5s,baz=137,slow=4.4,SNR=11
TIXI Tiksi 36.63 354⇑ *eP* **P 20 31 21.1 +0.6**
TIXI pmax pmax
comp=Z,4.0nm,1.0s
TIXI Tiksi 36.63 354 *eP* **P 20 31 19.9 -0.6**
comp=Z,3.1nm,0.7s
MANU Manus Island 37.95 170 *eP* **P 20 31 31.3 -1.1**
comp=Z,2μm,1.2s
WMQ Urumqi 41.28 298 *eP* **P 20 32 01.6 +1.7**
WMQ pmax pmax
comp=Z,5.0nm,0.8s
WMQ pmax pmax
comp=Z,46nm,6.6s
WMQ LR LR
comp=N,190nm,18.2s
WMQ LR LR
comp=E,52nm,22.6s
WMQ LR LR
comp=Z,36nm,20.4s
LSA Lhasa 42.13 277 *eP* **P 20 32 09.7 +2.2**
LSA pmax pmax
comp=Z,5.0nm,0.8s
LSA Lhasa 42.13 277 *eP* **P 20 32 09.7 +2.2**
comp=Z,5.0nm,0.8s
ZAA0 Zalesovo Array 42.69 313 *eP* **P 20 32 10.7 -0.5**
ZALV Zalesovo Beam 42.69 313 P **P 20 32 10.1 -1.1**
comp=Z,4.5nm,0.6s,baz=104,slow=6.3,SNR=19
ZAA1 Zalesovo Array 42.69 313 *eP* **P 20 32 10.1 -1.0**
NVS Novosibirsk 43.64 315 *eP* **P 20 32 17.8 -1.0**
NVS pmax pmax
comp=Z,15nm,1.3s
NRIK Noril'sk 44.43 336 P **P 20 32 24.8 -0.2**
comp=Z,1.4nm,0.3s,baz=152,slow=7.5,SNR=3.7
NRIK LR LR 20 54 10.7
comp=Z,80nm,19.3s,baz=114,slow=40
MK01 Makanchi Array 44.67 303 *eP* **P 20 32 26.2 -1.1**
MK31 Makanchi Array 44.67 303 *eP* **P 20 32 25.6 -1.7**
MK31 Makanchi Array 44.67 303 *eP* **P 20 32 25.6 -1.7**
MK32 Makanchi Array 44.67 303 *eP* **P 20 32 26.8 -0.5**
MKAR Makanchi Array 44.67 303 P **P 20 32 26.8 -0.5**
comp=Z,3.7nm,0.6s,baz=88,slow=9.8,SNR=24
MKAR LR LR 20 51 57.5
comp=Z,109nm,18.2s,baz=96,slow=37
MKAR Makanchi Array 44.67 303 *eP* **P 20 32 26.0 -1.3**
MAKZ Makanchi 44.88 303 *eP* **P 20 32 29.4 +0.4**
MAKZ pmax pmax
comp=Z,7.0nm,0.9s
MAKZ Makanchi 44.88 303 *eP* **P 20 32 29.4 +0.4**
comp=Z,6.8nm,0.9s
KURK Kurchatov 46.62 309 *eP* **P 20 32 40.9 -1.7**
KURK pmax pmax
comp=Z,18nm,0.8s
KURK Kurchatov 46.62 309 *eP* **P 20 32 40.9 -1.7**
comp=Z,18nm,0.8s
PKIN Phulchoki 47.61 277 *eP* **P 20 32 53.3 +2.3**
comp=Z,7.3nm,0.6s
KKN Kakani 47.62 277 *eP* **P 20 32 52.7 +1.7**
comp=Z,15nm,0.8s
GKN Gorkha 48.05 278 *eP* **P 20 32 56.7 +2.4**
comp=Z,43nm,1.0s
KOLN Koldanda 48.98 278 *eP* **P 20 33 03.0 +1.5**
comp=Z,9.6nm,0.6s
MLY Manley 49.13 31 *eP* **P 20 33 02.7 +0.7**
comp=Z,5.5nm,1.2s
PYUN Piuthan 49.34 278 *eP* **P 20 33 07.0 +2.8**
comp=Z,62nm,0.9s
TKM2 Tokmak 2 50.10 299 *eP* **P 20 33 09.8 -0.1**
TKM2 pmax pmax
comp=Z,10.0nm,0.6s
TKM2 Tokmak 2 50.10 299 *eP* **P 20 33 09.8 -0.1**
comp=Z,10nm,0.6s
MDM Murphy Dome 50.20 32 *eP* **P 20 33 12.0 +2.0**
comp=Z,5.2nm,0.8s
COLA College 50.36 32⇑ *eP* **P 20 33 09.9 -1.3**
COLA pmax pmax
comp=Z,3.0nm,0.9s
KSH Kashi 50.77 295 *eP* **P 20 33 19.4 +4.5**
KSH *es*P sP 20 33 32.4 +13
KSH PcS **PcS 20 38 31.1 +1.8**
KSH S **S 20 40 33.8 +3.2**
KSH ScS **ScS 20 43 03.9 -2.1**
KSH Kashi 50.77 295 SS **SS 20 44 06.3 +1.5**
KSH pmax pmax
comp=Z,42nm,6.3s
KSH LR LR
comp=N,160nm,6.3s
KSH LR LR
comp=E,100nm,6.6s
IL1 Eielson Array 50.78 32 *eP* **P 20 33 14.2 -0.2**
ILAR Eielson Array 50.78 32 P **P 20 33 15.2 +0.9**
comp=E,1.5nm,0.7s,baz=269,slow=6.2,SNR=17
ILAR LR LR 20 56 17.8
comp=E,47nm,19.8s,baz=306,slow=38
ILB Eielson Array 50.78 32 *eP* **P 20 33 15.3 +0.9**
FRU Bishkek 50.82 299 *eP* P 20 33 21.0 +5.9
AAK Ala-Archa 50.96 299⇑ *eP* **P 20 33 16.5 +0.2**
AAK pmax pmax
comp=Z,18nm,2.7s
AAK Ala-Archa 50.96 299 *eP* **P 20 33 16.4 +0.2**
comp=Z,3.6nm,0.8s
BRVK Borovoye 51.40 313⇑ *eP* **P 20 33 20.6 +1.4**
BRVK pmax pmax
comp=Z,4.0nm,0.8s
BRVK Borovoye 51.40 313 *eP* **P 20 33 19.4 +0.2**
comp=Z,4.4nm,0.9s
EKS2 Erkin-Say 51.46 299 *eP* **P 20 33 21.0 +1.0**
EKS2 pmax pmax
comp=Z,3.0nm,1.0s
EKS2 Erkin-Say 51.46 299 *eP* **P 20 33 21.0 +1.0**
comp=Z,3.2nm,1.0s
ZRNK Zerenda 52.18 313 *eP* **P 20 33 24.4 -0.6**
ZRNK pmax pmax
comp=Z,8.0nm,0.8s
ZRNK Zerenda 52.18 313 *eP* **P 20 33 24.4 -0.6**
comp=Z,7.7nm,0.8s
LEM Lembang 52.72 224 P **P 20 33 31.2 +1.6**
comp=Z,11nm,0.6s,baz=300,slow=20,SNR=3.5
KKAR Karatay Array 53.63 301 *eP* **P 20 33 35.1 -0.9**
KKAR Karatay Array 53.63 301 *eP* **P 20 33 35.1 -0.9**
WRAB Tennant Creek 55.66 188⇑ *eP* **P 20 33 49.5 -1.2**
WRAB pmax pmax
comp=Z,20nm,1.0s
WRAB Tennant Creek 55.66 188 *eP* **P 20 33 49.0 -1.8**
comp=Z,14nm,1.0s
WB2 Warramunga Arr 55.67 188 *eP* **P 20 33 49.0 -1.8**
comp=Z,10.0nm,0.9s
WR1 Warramunga Arr 55.67 188 *eP* **P 20 33 49.6 -1.2**
comp=Z,23nm,1.3s
WRA Warramunga Arr 55.67 188 P **P 20 33 49.6 -1.2**
comp=Z,6.4nm,0.7s,baz=5.7,slow=7.6,SNR=44
INK Inuvik 55.71 27 *eP* **P 20 33 51.3 +0.7**
INK pmax pmax
comp=Z,3.0nm,0.8s
INK Inuvik 55.71 27 *eP* **P 20 33 51.3 +0.7**
comp=Z,2.7nm,0.8s
SVE Sverdlovsk 56.04 319 *eP* **P 20 33 55.2 +2.1**
SVE pmax pmax
comp=Z,11nm,0.9s
ARU Arti 57.25 319 *d iP* **P 20 34 01.7 0.0**
ARU 20 34 52.5
ARU 20 36 06.2
ARU S **S 20 41 58.5 +1.2**
ARU SS **SS 20 45 41.0 -4.9**
ARU pmax pmax
comp=Z,16nm,1.7s
ARU Arti 57.25 319 *eP* **P 20 34 01.2 -0.5**
comp=Z,12nm,0.8s
ABKAR Akbulak array 58.66 311 *eP* **P 20 34 11.4 -0.3**
AS01 Alice Springs 59.39 188 *eP* **P 20 34 16.3 -0.7**
AS31 Alice Springs 59.40 188 *eP* **P 20 34 17.1 0.0**
comp=Z,1.7nm,0.7s
ASAR Alice Springs 59.40 188 P **P 20 34 15.6 -1.5**
comp=Z,1.1nm,0.6s,baz=18,slow=13,SNR=21
RES Resolute Bay 63.99 14 P **P 20 34 47.2 -0.2**
comp=Z,3.6nm,0.9s,baz=306,slow=6.8,SNR=10
RES Resolute Bay 63.99 14 *eP* **P 20 34 47.6 +0.2**
RES pmax pmax
comp=Z,4.0nm,0.8s
RES Resolute Bay 63.99 14 *eP* **P 20 34 47.5 +0.2**
comp=Z,4.4nm,0.8s
GEYT Alibeck 64.31 299 P **P 20 34 49.7 -0.5**
comp=Z,1.4nm,0.7s,baz=102,slow=2.1,SNR=3.0
GEYT LR LR 21 03 54.9
comp=Z,60nm,19.0s,baz=175,slow=37
YKA Yellowknife Ar 65.11 30 P **P 20 34 55.4 +0.5**
comp=Z,1.0nm,0.8s,baz=299,slow=6.6,SNR=9.7
YKB5 Yellowknife Ar 65.11 30 *eP* **P 20 34 54.9 0.0**
ARA0 ARCESS Array S 65.20 340 *eP* **P 20 34 56.6 +1.2**
ARCES ARCESS Array B 65.20 340 P **P 20 34 56.6 +1.2**
comp=Z,4.6nm,0.8s,baz=47,slow=7.1,SNR=4.9
ARCES LR LR 21 08 16.5
comp=Z,41nm,18.1s,baz=21,slow=40
DAG Danmarks Havn 67.12 355 *i* P **P 20 35 10.8 +3.2**
DAG Danmarks Havn 67.12 355 *eP* **P 20 35 10.8 +3.2**
STKA Stephens Creek 67.18 180 P **P 20 35 07.3 -1.2**
comp=Z,4.8nm,1.0s,baz=250,slow=3.0,SNR=3.8
STKA Stephens Creek 67.18 180 *eP* **P 20 35 08.2 -0.3**
comp=Z,8.8nm,2.0s
OBN Obninsk 69.06 323 *eP* **P 20 35 19.9 -0.2**
OBN pmax pmax
comp=Z,5.0nm,0.8s
VSR Storozhevoye 69.82 319 *eP* **P 20 35 25.0 +0.1**
VSR pmax pmax
comp=Z,4.0nm,0.9s
FIA1 FINESS Array S 69.93 332 *eP* **P 20 35 25.9 +0.5**
FIA0 FINESS Array S 69.93 332 *eP* **P 20 35 26.1 +0.7**
FIA0 FINESS Array S 69.93 332 *eP* **P 20 35 26.1 +0.7**
FINES FINESS Array B 69.93 332 P **P 20 35 26.1 +0.7**
comp=Z,3.7nm,0.7s,baz=53,slow=7.4,SNR=11
FINES LR LR 21 09 06.8
comp=Z,91nm,18.3s,baz=3.0,slow=38
ZEI Tsey 71.50 310 *eP* **P 20 35 33.5 -2.1**
ZEI pmax pmax
comp=Z,9.0nm,0.8s
KBZ Khabaz 71.63 311 P **P 20 35 36.1 +0.1**
comp=Z,4.0nm,0.9s,baz=134,slow=0.2,SNR=10
KBZ LR LR 21 08 32.2
comp=Z,71nm,20.4s,baz=98,slow=37
KIV Kislovodsk 71.64 311 *eP* **P 20 35 38.9 +2.6**
KIV pmax pmax
comp=Z,18nm,1.1s
KIV Kislovodsk 71.64 311 *eP* **P 20 35 36.5 +0.2**
comp=Z,11nm,0.7s
SUMG Summit 72.06 360 *i* P **P 20 35 40.9 +2.2**
comp=Z,8.9nm,1.0s
SUMG Summit 72.06 360 *eP* **P 20 35 39.7 +1.0**
SUMG pmax pmax
comp=Z,8.0nm,0.9s
SUMG Summit 72.06 360 *eP* **P 20 35 39.6 +1.0**
comp=Z,8.2nm,0.9s
GNI Garni 72.35 307⇑ *eP* **P 20 35 44.2 +3.5**
GNI pmax pmax
comp=Z,15nm,1.1s
GNI Garni 72.35 307 *eP* **P 20 35 42.5 +1.9**
comp=Z,6.6nm,0.8s
NC405 NORSAR Array S 75.15 337 *eP* **P 20 35 56.9 +0.3**
AKASG Malin Array Be 75.25 322 P **P 20 35 57.1 -0.1**
comp=Z,1.9nm,0.5s,baz=48,slow=6.1,SNR=8.3
AKASG LR LR 21 11 50.8
comp=Z,61nm,18.8s,baz=30,slow=38
KIEV Kiev 75.26 322 *eP* **P 20 35 58.1 +0.8**
KIEV pmax pmax
comp=Z,5.0nm,0.8s
KIEV Kiev 75.26 322 *eP* **P 20 35 58.1 +0.8**
comp=Z,5.1nm,0.8s
LRM Limekiln Ridge 75.29 44 *eP* **P 20 35 58.9 +0.9**
NC204 NORSAR Array S 75.33 338 *eP* **P 20 35 57.2 -0.4**
NB2 NORSAR Subarra 75.37 337 P **P 20 35 57.5 -0.3**
comp=Z,4.6nm,0.8s,baz=40,slow=6.2
NB200 NORSAR Array S 75.37 337 *eP* **P 20 35 57.6 -0.2**
NOA NORSAR Array B 75.37 337 P **P 20 35 57.6 -0.2**
comp=Z,0.4nm,0.4s,baz=52,slow=5.1,SNR=8.3
NOA LR LR 21 12 01.7
comp=Z,53nm,20.3s,baz=15,slow=38
NBO02 NORSAR Array S 75.47 337 *eP* **P 20 35 58.8 +0.4**
NV01 Mina Array Sit 75.99 53 *eP* **P 20 36 03.5 +1.5**
NVAR Mina Array Bea 75.99 53 P **P 20 36 00.8 -1.3**
comp=Z,1.4nm,0.8s,baz=296,slow=6.0,SNR=6.0
H17A Grant Village 77.21 44 *eP* **P 20 36 11.6 +2.8**
comp=Z,4.3nm,1.0s
FRB Frobisher Bay 78.16 13 P **P 20 36 13.1 -0.4**
comp=Z,1.0nm,0.3s,baz=307,slow=5.1,SNR=1.6
BW06 Boulder Array 78.79 45 *eP* **P 20 36 18.1 +0.5**
PD31 Pinedale Array 78.79 45 *eP* **P 20 36 17.9 +0.2**
PDAR Pinedale Array 78.79 45 P **P 20 36 18.2 +0.5**
comp=Z,1.0nm,0.5s,baz=271,slow=2.4,SNR=12
BUR08 Bucovina Ar. S 79.24 322 *eP* **P 20 36 20.1 +0.2**
BR101 Keskin Array S 79.60 312 *eP* **P 20 36 20.9 -1.2**
BR131 Keskin Array S 79.60 312 *eP* **P 20 36 21.1 -0.9**
BRTR Keskin Array B 79.60 312 P **P 20 36 20.9 -1.2**
comp=Z,0.7nm,0.8s,baz=128,slow=3.4,SNR=3.3
BRTR LR LR 21 14 15.3
comp=Z,39nm,19.6s,baz=226,slow=38
STHS Stebnicka Huta 79.95 325 *eP* P 20 36 31.2 +7.6
STHS Stebnicka Huta 79.95 325 *e* P 20 36 31.2 +7.6
BR231 Keskin MP Arra 80.05 312 *eP* **P 20 36 21.9 -2.5**
SRU San Rafael Swe 80.49 48 *eP* **P 20 36 26.0 -0.9**
SRU pmax pmax
comp=Z,6.0nm,0.7s
SRU San Rafael Swe 80.49 48 *eP* **P 20 36 26.0 -0.9**
comp=Z,6.3nm,0.7s
KECS Kecovo 80.97 325 *eP* **P 20 36 31.3 +2.3**
KECS Kecovo 80.97 325 *e* **P 20 36 31.3 +2.3**
LANS Liptovska Anna 80.97 326 *eP* P 20 36 36.1 +7.0
LANS Liptovska Anna 80.97 326 *e* P 20 36 36.1 +7.0
VYHS Vyhne 81.73 325 *eP* **P 20 36 28.8 -4.3**
VYHS *e* 20 36 36.2
VYHS Vyhne 81.73 325 *e* **P 20 36 28.8 -4.3**
VYHS *e* 20 36 36.2
BRG Berggiesshubel 82.12 329 *eP* **P 20 36 39.9 +4.8**
comp=Z,4.0nm,1.0s
BRG Berggiesshubel 82.12 329 *eP* **P 20 36 39.9 +4.8**
BRG pmax pmax
comp=Z,4.0nm,1.0s
CLL Collm 82.18 330 *i* P **P 20 36 38.9 +3.5**
comp=Z,5.0nm,1.0s
CLL L L 21 16 00.0
comp=Z,100nm,21.8s
CLL Collm 82.18 330 *i* P **P 20 36 38.9 +3.5**
CLL pmax pmax
comp=Z,5.0nm,1.0s
CLL Collm 82.18 330 *eP* **P 20 36 36.6 +1.2**
comp=Z,5.8nm,1.0s
CONA Conrad Observa 83.50 326 *i* sP P 20 36 48.5 +6.1
comp=Z,0.9nm,0.6s
KHC Kasperske Hory 83.60 328 *eP* **P 20 36 45.0 +2.1**
KHC Kasperske Hory 83.60 328 *eP* **P 20 36 44.7 +1.8**
KHC pmax pmax
comp=Z,1.0nm,0.8s
KHC Kasperske Hory 83.60 328 *eP* **P 20 36 44.7 +1.8**
comp=Z,1.0nm,0.8s
GERES GERESS Array B 83.76 328 P **P 20 36 43.5 -0.2**
comp=Z,1.2nm,0.9s,baz=44,slow=5.9,SNR=7.6
GEA0 GERESS Array S 83.77 328 *eP* **P 20 36 43.1 -0.7**
MOA Molln 84.27 327 *i* sP **P 20 36 49.8 +3.5**
comp=Z,0.3nm,0.2s
SOKA Soboth 84.81 326 *i* PcP **P 20 36 51.0 +1.9**
comp=Z,2.0nm,0.7s
ABTA Abfaltersbach 85.88 327 *i* sP **P 20 36 57.8 +3.3**
comp=Z,1.3nm,0.6s
SCHQ Schefferville 86.72 16 LR LR 21 17 22.5
comp=Z,58nm,20.8s,baz=95,slow=37
LTX Lajitas 91.14 52 *eP* **P 20 37 20.7 +0.9**
LTX Lajitas 91.14 52 *eP* **P 20 37 20.7 +0.9**
TXAR Lajitas Array 91.14 52 P **P 20 37 20.7 +0.9**
comp=Z,0.6nm,0.6s,baz=327,slow=4.3,SNR=4.7
H06N1 SOCORRO T-PHAS 92.88 64 T T 22 20 53.4
SNR=4.2
SAML Samuel 145.37 46 *e*PKPdf **PKPbc 20 43 52.7 -0.2**
LPAZ La Paz 147.57 61 PKPbc **PKPbc 20 44 01.0 +0.8**
comp=Z,2.0nm,0.6s,baz=23,slow=5.0,SNR=6.3

IDC 10 20:47:35.2±2.1, 34°.64N×142°.72E, h0km, mb3.5/3, mb1 3.7/6, mb1mx3.4/45, mbtmp3.7/6, ML3.7/3, Error ellipse: s-maj=42.1km s-min=25.1km az=63.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
JHJ	**Hachijo jima 2**	**2.87**	**239**		Pn	Pn	20 48 22.9	+0.7
	22nm,0.3s,baz=248,slow=23,SNR=1.9							
JHJ					Sn	Sn	20 48 56.4	-1.1
	30nm,0.3s,baz=46,slow=23,SNR=2.1							
MJAR	**Matsushiro Arr**	**4.13**	**299**		Pn	Pn	20 48 38.8	-0.9
	2.5nm,0.3s,baz=200,slow=9.3,SNR=10							
MAT	**Matsushiro**	**4.14**	**299**		P	Pn	20 48 38.8	-0.9
MAT					*e*S	Sn	20 49 21.2	-7.5
JCJ	**Chichijima**	**7.53**	**184**		Pn	Pn	20 49 26.5	+0.2
	2.3nm,0.3s,baz=299,slow=19,SNR=1.8							
MKAR	**Makanchi Array**	**46.31**	**304**		P	P	20 56 02.6	0.0
	0.4nm,0.7s,baz=92,slow=9.8,SNR=3.2							
WRA	**Warramunga Arr**	**54.86**	**190**		P	P	20 57 07.0	-0.3
	0.8nm,0.7s,baz=7.7,slow=7.6,SNR=3.6							
ASAR	**Alice Springs**	**58.58**	**189**		P	P	20 57 33.8	-0.1
	0.4nm,0.7s,baz=16,slow=12,SNR=2.4							

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*ISCJB **10** 20:47:46.0±0.8, 51°.43N±0°.04×16°.17E±0°.04, h0km, Error ellipse: s-maj=5.6km s-min=3.2km az=23.7*
*CSEM **10** 20:47:47.6±0.6, 51°.44N×16°.16E, h2km, ML2.8/8, Error ellipse: s-maj=9.7km s-min=5.6km az=17.0*
*WAR **10** 20:47:47.6, 51°.48N×16°.17E, h1km, Mw2.3*
ISC 10 20:47:46.5±1.3, 51°.52N±0°.05×16°.19E±0°.03, h0km, n34, σ0 99/60, Poland

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.68**	**174**	*e*Pg		**Pg**	**20 47 59.6**	**+0.1**
KSP				*e*Sg		**Sg**	**20 48 08.1**	**-0.1**
KSP	**Ksiaz**	**0.68**	**174**	*e*Pg		**Pg**	**20 47 59.6**	**+0.1**
KSP				*e*Sg		**Sg**	**20 48 08.1**	**-0.1**
UPC	**Upice**	**1.01**	**186**	*e*PG		**Pg**	**20 48 06.0**	**+0.1**
UPC				*e*SG		**Sg**	**20 48 18.9**	**-0.1**
	comp=Z,33nm,0.3s							
UPC	**Upice**	**1.01**	**186**	Pg		**Pg**	**20 48 06.0**	**+0.1**
UPC				Sg		**Sg**	**20 48 18.9**	**-0.1**
	33nm,0.3s							
DPC	**Dobruska-Polom**	**1.17**	**176**	*e*PG		**Pg**	**20 48 08.4**	**-0.5**
DPC				*e*SG		**Sg**	**20 48 23.4**	**-0.6**
	comp=Z,15nm,0.3s							
DPC	**Dobruska-Polom**	**1.17**	**176**	Pg		**Pg**	**20 48 08.4**	**-0.5**
DPC				Sg		**Sg**	**20 48 23.4**	**-0.6**
	15nm,0.3s							
PVCC	**Panska Ves**	**1.42**	**227**	*e*PG		**Pg**	**20 48 13.7**	**0.0**
PVCC				*e*SG		**Sn**	**20 48 33.2**	**+0.2**
PVCC	**Panska Ves**	**1.42**	**227**	Pg		**Pg**	**20 48 13.7**	**0.0**
PVCC				Sg		**Sn**	**20 48 33.2**	**+0.2**
KRLC	**Kraliky**	**1.49**	**165**	*e*PG		**Pn**	**20 48 14.8**	**+0.2**
KRLC				*e*SG		**Sg**	**20 48 33.1**	**-1.2**
KRLC	**Kraliky**	**1.49**	**165**	Pg		**Pn**	**20 48 14.8**	**+0.2**
KRLC				Sg		**Sg**	**20 48 33.1**	**-1.2**
BRG	**Berggiesshubel**	**1.55**	**246**	PG		**Pg**	**20 48 16.3**	**+0.1**
BRG				SG		**Sg**	**20 48 36.9**	**+0.6**
	15nm,0.4s							
GOPC	**GO Pecny, Ondr**	**1.83**	**210**	*e*PG		**Pb**	**20 48 20.5**	**-0.4**
GOPC				*e*SG		**Sb**	**20 48 44.0**	**-0.4**
GOPC	**GO Pecny, Ondr**	**1.83**	**210**	Pg		**Pb**	**20 48 20.5**	**-0.4**
GOPC				Sg		**Sb**	**20 48 44.0**	**-0.4**
PRU	**Pruhonice**	**1.85**	**215**	*e*SG		**Sb**	**20 48 44.6**	**-0.3**
	comp=Z,11nm,0.2s							
PRU	**Pruhonice**	**1.85**	**215**	Sg		**Sb**	**20 48 44.6**	**-0.3**
	11nm,0.2s							
MORC	**Moravsky Berou**	**1.94**	**153**	*e*Pn		**Pn**	**20 48 20.2**	**-0.6**
MORC				*e*Sg		**Sn**	**20 48 46.2**	**+0.3**
CLL	**Collm**	**2.00**	**265**	*e*Pn		**Pn**	**20 48 21.0**	**-0.6**
CLL				*e*Pg		**Pb**	**20 48 23.0**	**-0.8**
CLL				*i*			20 48 25.8	
CLL				*i* Sg		**Sg**	**20 48 51.4**	**+0.5**
	comp=Z,6.0nm,0.5s							
OKC	**Ostrava-Krasne**	**2.09**	**143**	*e*SG		**Sb**	**20 48 51.3**	**-0.5**
	comp=Z,8.0nm,0.5s							
OKC	**Ostrava-Krasne**	**2.09**	**143**	Sg		**Sb**	**20 48 51.3**	**-0.5**
	comp=Z,8.0nm,0.5s							
VRAC	**Vranov**	**2.22**	**173**	*e*Pn		**Pn**	**20 48 25.0**	**+0.4**
VRAC				*e*Sg		**Sb**	**20 48 56.2**	**+0.6**
TREC	**Trest**	**2.27**	**192**	*e*PG		**Pb**	**20 48 28.9**	**+0.6**
TREC	**Trest**	**2.27**	**192**	Pg		**Pb**	**20 48 28.9**	**+0.6**
NKC	**Novy Kostel**	**2.69**	**243**	*e*PN		**Pn**	**20 48 31.5**	**+0.4**
NKC				*e*PG		**Pg**	**20 48 37.6**	**-0.5**
NKC				*e*SG		**Sg**	**20 49 13.4**	**+0.4**
	comp=Z,14nm,0.3s							
NKC	**Novy Kostel**	**2.69**	**243**	Pn		**Pn**	**20 48 31.5**	**+0.4**
KHC	**Kasperske Hory**	**2.91**	**216**	*e*PN		**Pn**	**20 48 34.9**	**+0.8**
KHC				*e*PG		**Pb**	**20 48 40.0**	**+0.7**
KHC				*e*SN		**Sn**	**20 49 08.9**	**-0.9**
KHC				*e*SG		**Sg**	**20 49 17.9**	**-2.1**
	comp=Z,3.2nm,0.4s							
KHC	**Kasperske Hory**	**2.91**	**216**	Pn		**Pn**	**20 48 34.9**	**+0.8**

LANS	**Liptovska Anna**	**3.17 137**	*e*Sg	**Sg**	**20 49 25.5**	**-2.6**
LANS	**Liptovska Anna**	**3.17 137**	*e*SG	**Sg**	**20 49 25.5**	**-2.6**
CONA	**Conrad Observa**	**3.60 183**	*i* Pn	**Pn**	**20 48 46.1**	**+2.5**
	comp=Z,0.1nm,0.1s					
CONA			*e*Sg	**Sg**	**20 49 41.4**	**-0.6**
	comp=Z,0.8nm,0.2s					
CONA	**Conrad Observa**	**3.60 183**	Pn	**Pn**	**20 48 46.1**	**+2.5**
	comp=Z,0.1nm,0.1s					
CONA			Sg	**Sg**	**20 49 41.4**	**-0.6**
	comp=Z,0.8nm,0.2s					
STHS	**Stebnicka Huta**	**3.85 121**	*e*Sg	**Sg**	**20 49 52.3**	**+2.1**
STHS	**Stebnicka Huta**	**3.85 121**	*e*SG	**Sg**	**20 49 52.3**	**+2.1**
STHS			*e*LG	Lg	20 49 58.2	
MOA	**Molln**	**3.88 200**	*i* Pn	**Pn**	**20 48 47.1**	**-0.2**
	comp=Z,0.4nm,0.2s					
MOA			*i* Sg	**Sg**	**20 49 52.2**	**+1.3**
	comp=Z,0.7nm,0.3s					
MOA	**Molln**	**3.88 200**	Pn	**Pn**	**20 48 47.1**	**-0.2**
	comp=Z,0.4nm,0.2s					
MOA			Sg	**Sg**	**20 49 52.2**	**+1.3**
	comp=Z,0.7nm,0.3s					

*IDC **10** 20:49:53.7±1.7, 20°.39S×168°.49E, h0km, mb4.0/7, mb1 4.2/8, mb1mx4.0/28, mbtmp4.0/8, ML3.6/1, MS3.5/3, Ms1 3.5/3, ms1mx2.9/30, Error ellipse: s-maj=57.8km s-min=19.8km az=140.0*
*NEIC **10** 20:49:55.5±0.6, 20°.28S×168°.35E, h10km, mb5.0/7, Error ellipse: s-maj=22.1km s-min=13.1km az=160.0*
*ISCJB **10** 20:49:56.4±0.8, 20°.2S±0°.1×168°.3E±0°.1, h26km, mb4.7/14, MS3.5/2, Error ellipse: s-maj=20.0km s-min=9.3km az=40.0*

ISC 10 20:49:58.0±0.9, 20°.3S±0°.1×168°.3E±0°.2, h26km, n29, σ0s75/26, mb4.6/14, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.50**	**225**	Pn	**Pn**	**20 50 36.7**	**-0.4**
	11nm,0.3s,baz=83,slow=20,SNR=3.0						
DZM				Sn	**Sn**	**20 51 07.5**	**+0.6**
	42nm,0.3s,baz=129,slow=23,SNR=8.0						
HNR	**Honiara**	**13.50**	**322**	LR	LR	20 58 17.9	
	comp=Z,130nm,18.6s,baz=120,slow=37						
CTA	**Charters Tower**	**20.73**	**267**	P	Pn	20 54 39.2	-0.1
	1.7nm,0.3s,baz=95,slow=17,SNR=3.4						
PMG	**Port Moresby**	**23.13**	**295**	LR	LR	21 02 41.4	
	comp=Z,120nm,18.2s,baz=101,slow=33						
STKA	**Stephens Creek**	**26.57**	**239**	P	**P**	**20 55 34.9**	**+0.7**
	4.4nm,0.8s,baz=58,slow=9.2,SNR=5.4						
STKA	**Stephens Creek**	**26.57**	**239**	*e*P	**P**	**20 55 35.2**	**+1.1**
	4.9nm,1.4s						
WR1	**Warramunga Arr**	**31.90**	**265**	*e*P	**P**	**20 56 21.0**	**-0.6**
	18nm,1.4s						
WRA	**Warramunga Arr**	**31.90**	**265**	P	**P**	**20 56 21.0**	**-0.6**
	0.6nm,0.7s,baz=89,slow=8.5,SNR=8.3						
ASAR	**Alice Springs**	**32.06**	**258**	P	**P**	**20 56 22.9**	**-0.1**
	3.4nm,0.9s,baz=83,slow=8.7,SNR=11						
MMRI	**Maumere**	**45.97**	**278**	*e*P	**P**	**20 58 19.3**	**-0.1**
	24nm,0.9s						
LUWI	**Luwuk**	**48.45**	**287**	*e*P	**P**	**20 58 38.2**	**-0.5**
	26nm,0.7s						
KAPI	**Kappang**	**49.57**	**281**	*e*P	**P**	**20 58 47.9**	**+0.6**
	13nm,1.4s						
KSM	**Kuching**	**60.79**	**284**	*e*P	**P**	**21 00 08.1**	**-0.2**
	4.1nm,1.0s						
XMIS	**Christmas Isla**	**60.93**	**269**	*e*P	**P**	**21 00 07.3**	**-2.0**
	57nm,0.8s						
TWG	**Pinlang**	**62.95**	**310**	*e*P	**P**	**21 00 23.8**	**+1.1**
	456nm,2.0s						
QSPA	**South Pole Qui**	**69.76**	**180**	*e*P	**P**	**21 01 06.0**	**+0.2**
	32nm,2.0s						
USRK	**Ussuriysk Ar.**	**72.29**	**333**	P	**P**	**21 01 21.8**	**+0.7**
	1.5nm,0.9s,baz=94,slow=5.8,SNR=3.6						
KLR	**Kul'dur**	**76.49**	**336**	LR	LR	21 33 28.5	
	comp=Z,26nm,19.4s,baz=6.0,slow=34						
NV01	**Mina Array Sit**	**90.13**	**49**	*e*P	**P**	**21 02 56.0**	**-0.3**
NVAR	**Mina Array Bea**	**90.13**	**49**	P	**P**	**21 02 55.7**	**-0.6**
	1.6nm,0.8s,baz=224,slow=8.3,SNR=3.6						
ILAR	**Eielson Array**	**91.49**	**18**	P	**P**	**21 03 01.4**	**-0.2**
	0.3nm,0.5s,baz=245,slow=4.4,SNR=3.2						
CONA	**Conrad Observa**	**144.59**	**328**	*i* PKPdf	**PKPdf**	**21 09 32.0**	**-0.4**
	3.6nm,1.3s						
GERES	**GERESS Array B**	**145.00**	**330**	PKPbc	**PKPdf**	**21 09 33.3**	**+0.2**
	0.2nm,0.4s,baz=22,slow=1.4,SNR=3.9						
ARSA	**Arzberg**	**145.21**	**327**	*i* pPKPbc	**PKPdf**	**21 09 34.1**	**+0.7**
	4.4nm,1.8s						
MOA	**Molln**	**145.44**	**329**	*i* pPKPbc	**PKPab**	**21 09 34.8**	**+0.8**
	4.7nm,1.0s						
SOKA	**Soboth**	**145.84**	**327**	*i* PKPab	**PKPbc**	**21 09 35.2**	**+0.1**
	4.3nm,1.2s						
MOTA	**Moosalm**	**147.29**	**331**	*i* PKPab	**PKPbc**	**21 09 40.1**	**+0.7**
	0.9nm,0.6s						
RETA	**Reutte**	**147.34**	**331**	*i* pPKPdf	**PKPbc**	**21 09 39.4**	**0.0**
	3.0nm,1.3s						
DAVA	**Damuels**	**147.88**	**332**	*i* PKPdf	**PKPdf**	**21 09 36.9**	**-1.1**
	2.1nm,0.8s						

*NIED **10** 20:51:00, 37°.80N×143°.50E, h5km, Mw3.6 Best double couple: M0=2.94000×10^14 NP1:φs=335.00000°, δ=21.00000°, λ=-130.00000°. NP2:φs=196.00000°, δ=74.00000°, λ=-77.00000°.*
*IDC **10** 20:51:09.4±2.2, 37°.34N×143°.62E, h0km, mb3.7/3, mb1 3.9/5, mb1mx3.6/42, mbtmp3.9/5, ML3.6/2, MS2.5/2, Ms1 2.5/2, ms1mx2.3/44, Error ellipse: s-maj=40.8km s-min=28.1km az=85.0*
*JMA **10** 20:51:10.2±0.3, 37°.83N×143°.48E, h27km, M3.5*

ISC 10 20:51:10.9±3.5, 37°.71N±0°.06×143°.34E±0°.08, h9km±24km, n17, σ2s34/19, mb3.6/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.73**	**296**	P	Pn	20 51 40.4	-0.9
JIO				*e*S	**Sn**	**20 52 02.3**	**-1.2**
OFUJ	**Ofunato**	**1.89**	**317**	P	Pn	20 51 41.7	-1.7
JMM	**Marumori**	**2.02**	**275**	P	Pn	20 51 45.0	-0.2
JMK	**Ichinoseki**	**2.07**	**307**	P	Pn	20 51 44.8	-1.1
JOU	**Okura**	**2.21**	**288**	P	**Pn**	**20 51 48.2**	**+0.4**
JOM	**Ohasama**	**2.38**	**318**	P	Pn	20 51 48.7	-1.4
JOM				*e*S	**Sn**	**20 52 17.5**	**-1.9**
JFT	**Otama**	**2.39**	**266**	P	**Pn**	**20 51 50.9**	**+0.6**
JFT				S	**Sn**	**20 52 20.7**	**+0.9**
JTH	**Tanohata**	**2.50**	**333**	P	**Pn**	**20 51 51.3**	**-0.5**
JYK	**Kaneyama**	**2.63**	**298**	P	**Pn**	**20 51 53.7**	**+0.1**
JYK				*e*S	**Sn**	**20 52 25.7**	**0.0**
JRG	**Rokugo**	**2.70**	**309**	P	**Pn**	**20 51 54.6**	**0.0**
JRG				S	**Sn**	**20 52 28.3**	**+0.8**
MJAR	**Matsushiro Arr**	**4.26**	**256**	Pn	**Pn**	**20 52 17.8**	**+1.8**
	2.5nm,0.3s,baz=85,slow=15,SNR=12						
MJAR				Sn	**Sn**	**20 53 08.7**	**+2.8**
	0.8nm,0.3s,baz=75,slow=30,SNR=2.0						
MJAR				LR	LR	20 54 01.9	
	comp=Z,48nm,19.1s,baz=60,slow=39						
MAT	**Matsushiro**	**4.26**	**256**	P	**Pn**	**20 52 18.1**	**+2.0**
MAT				S	**Sn**	**20 53 08.0**	**+2.0**
JHJ	**Hachijo jima 2**	**5.42**	**213**	Pn	**Pn**	**20 52 30.9**	**-1.1**
	8.8nm,0.3s,baz=128,slow=5.3,SNR=2.0						
JHJ				Sn	**Sn**	**20 53 29.2**	**-5.4**
	13nm,0.3s,baz=273,slow=23,SNR=1.6						
ASAJ	**Asahikawa**	**6.42**	**355**	LR	LR	20 55 59.6	
	comp=Z,36nm,19.2s,baz=313,slow=43						
ZALV	**Zalesovo Beam**	**42.59**	**312**	P	**P**	**20 59 09.9**	**+2.8**
	0.4nm,0.3s,baz=80,slow=7.9,SNR=2.9						
MKAR	**Makanchi Array**	**45.06**	**302**	P	**P**	**20 59 30.2**	**+3.1**
	0.5nm,0.7s,baz=81,slow=10,SNR=3.9						
WRA	**Warramunga Arr**	**57.97**	**190**	P	**P**	**21 01 01.1**	**-2.8**
	0.9nm,0.5s,baz=10,slow=7.2,SNR=4.4						

*IDC **10** 20:53:55.7±1.3, 20°.31S×168°.19E, h0km, mb4.2/5, mb1 4.5/7, mb1mx4.1/28, mbtmp4.3/7, ML3.7/2, MS3.5/6, Ms1 3.5/6, ms1mx3.2/28, Error ellipse: s-maj=31.5km s-min=25.8km az=166.0*
*NEIC **10** 20:53:57.5±0.4, 20°.30S×168°.13E, h10km, mb4.8/11, Error ellipse: s-maj=12.4km s-min=9.1km az=179.0*
*ISCJB **10** 20:53:58.7±0.5, 20°.37S±0°.07×168°.15E±0°.07, h32km, mb4.7/15, MS3.5/6, Error ellipse: s-maj=11.4km s-min=8.3km az=138.3*

ISC 10 20:54:00.7±0.6, 20°.40S±0°.09×168°.15E±0°.09, h32km, n32, σ1s06/30, mb4.8/15, MS3.6/6, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.30**	**223**	Pn	**Pn**	**20 54 35.1**	**-1.4**
	14nm,0.3s,baz=113,slow=9.6,SNR=25						
DZM				Sn	**Sn**	**20 55 03.9**	**+0.1**
	70nm,0.3s,baz=130,slow=23,SNR=14						
MSVF	**Nonsavu**	**9.73**	**76**	*e*Pn	**Pn**	**20 56 17.1**	**-1.5**
URZ	**Urewera**	**19.42**	**158**	P	**Pn**	**20 58 25.9**	**+0.3**
	0.3nm,0.3s,baz=339,slow=7.0,SNR=5.8						
BKZ	**Black Stump Fm**	**20.04**	**161**	*e*P	**P**	**20 58 32.3**	**+1.2**
	45nm,1.5s						
AFI	**Afiamalu**	**20.23**	**75**	LR	LR	21 04 03.6	
	comp=Z,46nm,21.2s,baz=248,slow=30						
STKA	**Stephens Creek**	**26.36**	**239**	P	**P**	**20 59 35.5**	**+1.4**
	5.9nm,0.7s,baz=78,slow=9.8,SNR=13						
STKA				LR	LR	21 08 45.2	
	comp=Z,133nm,20.4s,baz=29,slow=34						
STKA	**Stephens Creek**	**26.36**	**239**	*e*P	**P**	**20 59 35.3**	**+1.2**
	3.2nm,1.0s						
WR1	**Warramunga Arr**	**31.71**	**265**	*e*P	**P**	**21 00 21.4**	**-0.4**
	31nm,1.8s						
WRA	**Warramunga Arr**	**31.71**	**265**	P	**P**	**21 00 21.4**	**-0.4**
	0.6nm,0.4s,baz=92,slow=8.5,SNR=19						
AS01	**Alice Springs**	**31.82**	**258**	*e*P	**P**	**21 00 22.7**	**-0.1**
AS31	**Alice Springs**	**31.86**	**258**	*e*P	**P**	**21 00 23.4**	**+0.3**
	7.4nm,0.8s						
ASAR	**Alice Springs**	**31.87**	**258**	P	**P**	**21 00 23.4**	**+0.3**
	9.3nm,0.7s,baz=86,slow=9.1,SNR=67						
ASAR				LR	LR	21 12 40.4	
	comp=Z,155nm,18.0s,baz=96,slow=35						
LUWI	**Luwuk**	**48.31**	**288**	*e*P	**P**	**21 02 38.1**	**-1.3**
	27nm,1.0s						
KAPI	**Kappang**	**49.42**	**281**	*e*P	**P**	**21 02 47.6**	**-0.4**
	15nm,1.3s						
JAGI	**Jajag, Banyuwa**	**53.40**	**275**	*e*P	**P**	**21 03 18.0**	**+0.1**
	20nm,0.7s						
VNDA	**Vanda**	**57.25**	**182**	P	**P**	**21 03 44.0**	**-0.6**
	1.1nm,0.9s,baz=334,slow=8.9,SNR=3.0						
KKM	**Kota Kinabalu**	**57.39**	**292**	*e*P	**P**	**21 03 44.5**	**-2.1**
	9.3nm,1.0s						
KSM	**Kuching**	**60.64**	**284**	*e*P	**P**	**21 04 09.6**	**+0.5**
	9.9nm,1.0s						
INU	**Inuyama**	**62.82**	**332**	*e*P	**P**	**21 04 23.3**	**0.0**
	70nm,1.9s						
CM01	**Chiang Mai Arr**	**78.02**	**295**	*e*P	**P**	**21 05 58.3**	**+1.8**
CHTO	**Chiang Mai**	**78.21**	**295**	*e*P	**P**	**21 05 57.9**	**+0.3**
	4.6nm,0.9s						
FALS	**False Pass**	**78.80**	**16**	*e*P	**P**	**21 06 01.7**	**+1.8**
	315nm,0.9s						
NV01	**Mina Array Sit**	**90.33**	**49**	*e*P	**P**	**21 06 58.1**	**-0.9**
NVAR	**Mina Array Bea**	**90.33**	**49**	P	**P**	**21 06 58.5**	**-0.5**
	0.4nm,0.4s,baz=238,slow=9.5,SNR=4.8						
NVAR				LR	LR	21 41 28.4	
	comp=Z,40nm,19.8s,baz=87,slow=32						
ILAR	**Eielson Array**	**91.64**	**18**	LR	LR	21 44 21.4	
	comp=Z,19nm,18.5s,baz=313,slow=33						
GCAZ	**Grand Canyon**	**93.86**	**53**	*e*P	**P**	**21 07 17.2**	**+1.7**
PDAR	**Pinedale Array**	**98.15**	**47**	LR	LR	21 43 53.7	
	comp=Z,20nm,21.4s,baz=78,slow=31						
BR101	**Keskin Array S**	**136.70**	**307**	*e*PKPdf	**PKPdf**	**21 13 20.9**	**+0.7**
BRTR	**Keskin Array B**	**136.70**	**307**	PKP	**PKPdf**	**21 13 20.9**	**+0.7**
	0.7nm,0.9s,baz=26,slow=3.1,SNR=4.1						
BR231	**Keskin MP Arra**	**137.32**	**307**	*e*PKPdf	**PKPdf**	**21 13 19.8**	**-1.5**
GERES	**GERESS Array B**	**145.00**	**330**	PKP	**PKPab**	**21 13 34.0**	**-0.2**
	0.7nm,0.8s,baz=52,slow=2.4,SNR=5.5						
GEA0	**GERESS Array S**	**145.01**	**330**	*e*PKPdf	**PKPab**	**21 13 34.2**	**0.0**

JMA 10 20:54:40.7, 36°.96N×140°.69E, h9km±1km, M2.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.17**	**31**	P	Pg	20 54 44.3	0.0
ONAJ				S	Sg	20 54 46.9	+0.2
JHO	**Hitachi**	**0.36**	**196**	P	Pg	20 54 47.6	-0.2
JFK	**Kawauchi**	**0.43**	**20**	P	Pg	20 54 49.0	-0.2
JFK				S	Sg	20 54 55.1	+0.2
JFY	**Yanaizu**	**0.90**	**300**	P	Pg	20 54 58.1	0.0
JMM	**Marumori**	**0.91**	**5**	P	Pg	20 54 57.4	-0.8
MAT	**Matsushiro**	**2.04**	**259**	P	Pb	20 55 16.8	-1.1
MAT				S	Sb	20 55 44.3	+1.0

*NEIC **10** 20:59:57.8±3.0, 20°.61S×168°.75E, h2km±17km, mb4.6/7, Error ellipse: s-maj=39.4km s-min=20.6km az=106.0*
*ISCJB **10** 21:00:01.1±1.3, 20°.5S±0°.1×168°.6E±0°.2, h32km, mb4.4/9, Error ellipse: s-maj=22.7km s-min=14.3km az=33.0*
*IDC **10** 21:00:01.9±4.0, 20°.20S×168°.07E, h0km, mb4.1/3, mb1 4.2/4, mb1mx3.9/26, mbtmp4.0/4, ML3.1/1, Error ellipse: s-maj=84.5km s-min=49.1km az=115.0*

ISC 10 21:00:03.7±1.5, 20°.6S±0°.2×168°.5E±0°.2, h32km, n13, σ1s54/14, mb4.5/9, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.43**	**233**	Pn	**Pn**	**21 00 41.6**	**+0.3**
	4.4nm,0.3s,baz=103,slow=20,SNR=9.4						
DZM				Sn	**Sn**	**21 01 09.8**	**-0.3**
	32nm,0.3s,baz=322,slow=23,SNR=8.9						
PMG	**Port Moresby**	**23.42**	**295**	*e*P	**P**	**21 05 07.4**	**-2.8**
	10nm,1.0s						
LBZ	**Lake Benmore**	**23.76**	**177**	*e*P	**P**	**21 05 11.2**	**-2.1**
	76nm,1.4s						
STKA	**Stephens Creek**	**26.57**	**239**	P	**P**	**21 05 40.6**	**+1.7**
	1.9nm,0.5s,baz=82,slow=8.4,SNR=7.8						
STKA	**Stephens Creek**	**26.57**	**239**	*e*P	**P**	**21 05 40.3**	**+1.4**
	10.0nm,1.9s						
WR1	**Warramunga Arr**	**32.05**	**265**	*e*P	**P**	**21 06 26.7**	**-1.1**
	30nm,1.8s						
WRA	**Warramunga Arr**	**32.05**	**265**	P	**P**	**21 06 26.7**	**-1.1**
	0.4nm,0.5s,baz=92,slow=8.5,SNR=11						
AS01	**Alice Springs**	**32.13**	**258**	*e*P	**P**	**21 06 28.9**	**+0.4**
AS31	**Alice Springs**	**32.17**	**258**	*e*P	**P**	**21 06 29.4**	**+0.5**
	3.4nm,0.8s						
ASAR	**Alice Springs**	**32.17**	**258**	P	**P**	**21 06 29.4**	**+0.5**
	4.8nm,0.7s,baz=87,slow=9.0,SNR=40						
KAPI	**Kappang**	**49.80**	**281**	*e*P	**P**	**21 08 55.5**	**+1.5**
	7.8nm,1.3s						
GSI	**Gunungsitoli**	**72.68**	**278**	*e*P	**P**	**21 11 28.4**	**-0.6**
	40nm,1.6s						
GERES	**GERESS Array B**	**145.35**	**330**	PKP	**PKPdf**	**21 19 40.3**	**+1.9**
	0.1nm,0.3s,baz=58,slow=5.9,SNR=2.0						

IDC 10 21:06:27.1±25.0, 20°.20S×168°.13E, h0km, mb4.0/3, mb1 4.1/4, mb1mx3.8/35, mbtmp4.0/4, ML2.9/1, Error ellipse: s-maj=426.7km s-min=60.2km az=88.0, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.44**	**220**	Pn	Pn	21 07 07.1	-1.2
	2.8nm,0.3s,baz=101,slow=18,SNR=2.2						
DZM				Sn	Sn	21 07 35.1	-3.9
	29nm,0.3s,baz=327,slow=21,SNR=4.5						
STKA	**Stephens Creek**	**26.45**	**239**	P	P	21 12 06.3	+0.4
	2.0nm,0.6s,baz=93,slow=12,SNR=2.2						
WRA	**Warramunga Arr**	**31.71**	**265**	P	P	21 12 52.3	-0.6
	0.4nm,0.4s,baz=91,slow=8.5,SNR=2.6						
ASAR	**Alice Springs**	**31.89**	**257**	P	P	21 12 55.1	+0.6
	3.9nm,0.7s,baz=87,slow=9.0,SNR=23						

JMA 10 21:09:21.2±0.1, 36°.96N×141°.22E, h44km±1km, M3.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.37**	**293**	P	Pn	21 09 30.5	-0.1
ONAJ				S	Sn	21 09 36.9	-0.3
JFK	**Kawauchi**	**0.49**	**326**	P	Pn	21 09 31.8	-0.3
JFK				S	Sn	21 09 39.0	-0.7
JHO	**Hitachi**	**0.63**	**236**	P	Pn	21 09 33.6	-0.2
JHO				S	Sn	21 09 42.2	-0.6
JFT	**Otama**	**0.90**	**309**	P	Pn	21 09 38.1	+0.7
JFT				S	Sn	21 09 49.9	+0.6
JMM	**Marumori**	**0.97**	**340**	P	Pn	21 09 38.1	-0.2
JMM				S	Sn	21 09 49.9	-1.0
JOU	**Okura**	**1.47**	**343**	P	Pn	21 09 46.0	+0.7
JOU				S	Sn	21 10 04.4	+1.1
MAT	**Matsushiro**	**2.46**	**261**	P	Pn	21 10 00.4	+1.6
MAT				S	Sn	21 10 32.2	+4.6

*SKHL **10** 21:15:05.8±0.2, 43°.40N×148°.10E, h38km±5km, mb4.4/3*
*ISCJB **10** 21:15:06.2±0.9, 43°.27N±0°.09×147°.86E±0°.07, h42km, mb3.9/8, Error ellipse: s-maj=13.0km s-min=7.1km az=169.4*
*IDC **10** 21:15:06.9±5.5, 44°.05N×147°.57E, h0km, mb3.9/8, mb1 4.0/9, mb1mx3.7/44, mbtmp3.9/9, ML2.6/2, Error ellipse: s-maj=133.5km s-min=25.1km az=161.0*
*JMA **10** 21:15:06.2±0.4, 43°.24N×147°.75E, h25km, M3.4*
*MOS **10** 21:15:10.0±1.7, 44°.14N×147°.75E, h32km, mb4.1/5, Error ellipse: s-maj=18.5km s-min=15.6km az=150.6*

ISC 10 21:15:08.1±1.0, 43°.33N±0°.10×147°.85E±0°.08, h42km, n32, σ1s27/31, mb3.9/8, 5C, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHO	**Shikotan**	**0.92**	**307**	*c i* PN	**Pn**	**21 15 23.2**	**-1.3**
SHO				*i* S	**Sn**	**21 15 36.1**	**-0.4**
SHO				pmax	pmax		
	comp=Z,629nm,0.7s						
SHO				pmax	pmax		
	comp=E,247nm,0.6s						
SHO				pmax	pmax		
	comp=N,249nm,0.7s						
SHO				smax	smax		
	comp=N,2μm,0.4s						
SHO				smax	smax		
	comp=E,545nm,0.4s						
SHO	**Shikotan**	**0.92**	**307⇑**	*i* P	**Pn**	**21 15 23.2**	**-1.3**
SHO				AMB	AMB	21 15 23.8	
	comp=E,250nm,0.7s						
SHO				AMB	AMB	21 15 23.8	
	comp=E,630nm,0.7s						
SHO				*i* S	**Sn**	**21 15 36.1**	**-0.4**
SHO				A	A	21 15 36.4	
	comp=E,2μm,0.4s						
SHO				A	A	21 15 36.4	
	comp=E,550nm,0.4s						
NEM2	**Nemuro 2**	**1.53**	**272**	P	**Pn**	**21 15 31.6**	**-1.4**
NEM2				*e*S	**Sn**	**21 15 50.6**	**-1.1**
YUK	**Yuzh-Kuril'sk**	**1.60**	**297**	*c i* PN	**Pn**	**21 15 33.4**	**-0.6**
YUK				*i* S	**Sn**	**21 15 54.2**	**+0.8**
YUK				pmax	pmax		
	comp=Z,167nm,0.2s						
YUK				pmax	pmax		
	comp=N,33nm,0.1s						
YUK				pmax	pmax		
	comp=E,33nm,0.2s						
YUK				smax	smax		
	comp=N,596nm,0.3s						
YUK				smax	smax		
	comp=E,194nm,0.3s						
YUK	**Yuzh-Kuril'sk**	**1.60**	**297⇑**	*i* P	**Pn**	**21 15 33.4**	**-0.6**
YUK				AMB	AMB	21 15 40.1	
	comp=E,30nm,0.2s						
YUK				AMB	AMB	21 15 40.1	
	comp=E,120nm,0.2s						
YUK				*i* S	**Sn**	**21 15 54.2**	**+0.8**
YUK				A	A	21 15 59.6	
	comp=E,600nm,0.3s						
YUK				A	A	21 15 59.6	
	comp=E,200nm,0.3s						
KUR	**Kuril'sk**	**1.91**	**0**	*e*P	Pn	21 15 34.2	-3.9
KUR				AMB	AMB	21 15 35.4	
	comp=E,40nm,0.3s						
JNK	**Nakash**	**2.29**	**278**	P	**Pn**	**21 15 42.3**	**-1.1**
JAK	**Akkeshi**	**2.33**	**263**	P	**Pn**	**21 15 42.9**	**-1.0**
JTKR	**Abashiri--Toko**	**2.93**	**284**	P	**Pn**	**21 15 52.1**	**-0.1**
JAR	**Ashorobuto**	**2.98**	**271**	P	**Pn**	**21 15 52.3**	**-0.5**
JCH	**Churui**	**3.37**	**259**	P	**Pn**	**21 15 58.0**	**-0.2**
JCH				*e*S	**Sn**	**21 16 34.9**	**-1.9**
JKA	**Kamikawa-asahi**	**3.88**	**284**	*e*P	**Pn**	**21 16 05.7**	**+0.4**
ASAJ	**Asahikawa**	**3.89**	**284**	Pn	**Pn**	**21 16 05.7**	**+0.4**
	comp=E,0.4nm,0.3s,baz=72,slow=20,SNR=3.0						
YSS	**Yuzh-Sakhalins**	**5.11**	**317**	*e*P	**Pn**	**21 16 22.0**	**-0.1**
VLA	**Vladivostok**	**11.65**	**274**	⇑PN	Pn	21 17 59.1	+7.4
VLA				pmax	pmax		
	comp=Z,24nm,1.4s						
PETK	**Petropavlovsk-**	**11.78**	**30**	Pn	**Pn**	**21 17 49.9**	**-3.5**
	comp=Z,0.2nm,0.3s,baz=210,slow=10,SNR=4.7						
PET	**Petropavlovsk**	**12.08**	**33**	*e*P	Pn	21 17 51.5	-5.9
H11N2	**WAKE ISLAND Hy**	**28.45**	**140**	T	T	21 51 52.3	
	baz=330,slow=75,SNR=8.3						
H11N1	**WAKE ISLAND Hy**	**28.46**	**140**	T	T	21 51 55.8	
	baz=330,slow=75,SNR=6.2						
H11N3	**WAKE ISLAND Hy**	**28.47**	**140**	T	T	21 51 55.0	
	baz=330,slow=75,SNR=7.9						
H11S3	**WAKE ISLAND Hy**	**29.43**	**141**	T	T	21 53 09.4	
	SNR=8.6						
MKAR	**Makanchi Array**	**45.23**	**298**	P	**P**	**21 23 21.6**	**+0.5**
	comp=Z,0.5nm,0.5s,baz=81,slow=9.3,SNR=12						
INK	**Inuvik**	**46.52**	**30**	P	**P**	**21 23 32.8**	**+2.0**
	comp=Z,0.5nm,0.4s,baz=242,slow=2.3,SNR=4.2						
YKA	**Yellowknife Ar**	**55.87**	**34**	P	**P**	**21 24 41.6**	**+0.6**
	comp=Z,0.3nm,0.6s,baz=297,slow=6.9,SNR=4.8						
ARCES	**ARCESS Array B**	**59.82**	**340**	P	**P**	**21 25 08.7**	**+0.1**
	comp=Z,6.9nm,1.0s,baz=64,slow=9.1,SNR=2.7						
FINES	**FINESS Array B**	**65.48**	**333**	P	**P**	**21 25 46.1**	**-0.3**
	comp=Z,1.4nm,0.8s,baz=90,slow=7.6,SNR=4.6						
NB2	**NORSAR Subarra**	**70.18**	**339**	P	**P**	**21 26 15.9**	**-0.2**
	comp=Z,0.7nm,0.6s,baz=32,slow=6.5						
NOA	**NORSAR Array B**	**70.18**	**339**	P	**P**	**21 26 16.1**	**0.0**
	comp=Z,1.1nm,0.7s,baz=31,slow=6.4,SNR=5.6						
KBZ	**Khabaz**	**70.46**	**312**	P	**P**	**21 26 19.9**	**+2.0**
	comp=Z,1.1nm,0.7s,baz=56,slow=6.1,SNR=3.9

4.1nm,0.3s,baz=105,slow=9.2,SNR=29
MJAR LR LR 21 33 39.1
comp=Z,89nm,18.1s,baz=195,slow=43
MAT Matsushiro 3.06 275 P **Pn 21 32 16.4 +1.3**
MAT *e*S **Sn 21 32 53.0 +1.8**
JHJ Hachijo jima 2 3.67 210 Pn **Pn 21 32 24.5 +1.0**
8.6nm,0.3s,baz=138,slow=23,SNR=4.3
JHJ Sn **Sn 21 33 02.9 -3.3**
24nm,0.3s,baz=60,slow=24,SNR=6.9
USRK Ussuriysk Ar. 10.97 319 Pn Pn 21 34 13.4 +10
0.1nm,0.3s,baz=154,slow=14,SNR=6.9
H11N2 WAKE ISLAND Hy 27.39 120 T T 22 05 50.6
baz=312,slow=75,SNR=5.3
H11N1 WAKE ISLAND Hy 27.39 120 T T 22 05 54.8
baz=312,slow=75,SNR=4.2
H11N3 WAKE ISLAND Hy 27.40 120 T T 22 05 52.2
baz=312,slow=75,SNR=6.1
MKAR Makanchi Array 44.89 303 P **P 21 39 42.2 +1.2**
0.6nm,0.7s,baz=90,slow=8.5,SNR=5.7
WRA Warramunga Arr 56.41 189 P **P 21 41 08.3 +0.2**
0.5nm,0.9s,baz=5.3,slow=7.7,SNR=3.4

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*SJA **10** 21:33:38.8±0.5, 32°.53S×71°.61W, h10km±11km, ML2.6, MW3.4*
*GUC **10** 21:33:39.5±0.4, 32°.67S×71°.59W, h8km±3km, ML2.8*
ISC 10 21:33:37.6±3.3, 32°.52S±0°.07×71°.6W±0°.2, h7km±16km, n10, σ0s33/16, 2D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ROC1	**El Roble**	**0.68**	**131**	*i* P	**Pb**	**21 33 52.0**	**+0.1**
ROC1				*i* S	**Sb**	**21 34 02.2**	**+0.5**
ROCH	**El Roble**	**0.68**	**131**	⇓*e*P	**Pb**	**21 33 52.0**	**+0.1**
ROCH				*e*S	**Sb**	**21 34 01.5**	**-0.2**
ROCH				IAML		21 34 03.3	
	comp=N,915nm,0.5s						
PEL	**Peldehue**	**1.00**	**128**	⇓*e*P	**Pg**	**21 33 57.1**	**+0.3**
PEL				*e*S	**Sb**	**21 34 10.9**	**+0.2**
PEL				IAML		21 34 14.0	
	comp=N,1μm,0.1s						
RCDM	**Rinconada Maip**	**1.18**	**145**	*e*S	**Sg**	**21 34 15.5**	**-0.1**
CLCH	**Cerro Calan**	**1.26**	**134**	*e*P	**Pg**	**21 34 01.9**	**+0.1**
CLCH				*e*S	**Sb**	**21 34 18.3**	**+0.1**
CLCH				IAML		21 34 24.8	
	comp=E,377nm,0.5s						
ANTU	**Antumapu**	**1.33**	**142**	*e*P	**Pn**	**21 34 02.5**	**-0.2**
ANTU				*e*S	**Sb**	**21 34 20.2**	**0.0**
AUSP	**Uspallata**	**1.92**	**82**	*i* P	**Pg**	**21 34 14.2**	**-0.1**
RTLS	**Leoncito**	**2.10**	**71**	*i* P	**Pb**	**21 34 16.6**	**+0.4**
ARCO	**CERRO ARCO**	**2.29**	**99**	*i* P	**Pb**	**21 34 18.9**	**-0.5**
ARCO				*i* S	**Sb**	**21 34 48.4**	**+0.5**
ARCO				IAML		21 35 01.5	
	comp=Z,35nm,0.6s						
ASAL	**Salagasta**	**2.36**	**92**	*i* P	**Pb**	**21 34 19.9**	**-0.5**

IDC 10 21:43:08.8±3.7, 5°.76S×147°.87E, h228km±39km, mb3.4/3, mb1 3.6/5, mb1mx3.2/36, mbtmp4.0/5, Error ellipse: s-maj=78.5km s-min=27.0km az=133.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**3.69**	**191**	P	Pn	21 44 09.6	+1.6
	8.0nm,0.3s,baz=12,slow=10,SNR=18						
PMG				S		21 44 54.8	+0.1
	8.6nm,0.3s,baz=240,slow=23,SNR=13						
WRA	**Warramunga Arr**	**19.28**	**222**	P	P	21 47 15.8	-0.9
	0.7nm,0.3s,baz=38,slow=11,SNR=30						
ASAR	**Alice Springs**	**22.31**	**216**	P	P	21 47 48.3	+0.6
	2.3nm,0.7s,baz=50,slow=8.3,SNR=25						
FITZ	**Fitzroy Crossi**	**24.93**	**239**	P	P	21 48 11.8	+0.4
	1.9nm,0.3s,baz=55,slow=12,SNR=15						
ILAR	**Eielson Array**	**84.92**	**23**	P	P	21 55 17.3	-0.6
	0.4nm,0.5s,baz=257,slow=4.8,SNR=4.3						

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*ISCJB **10** 21:52:54.0±0.4, 46°.97S±0°.07×33°.4E±0°.2, h10km, mb4.3/19, MS4.0/15, Error ellipse: s-maj=18.4km s-min=8.0km az=160.4*
*IDC **10** 21:52:54.1±0.6, 46°.92S×33°.57E, h0km, mb4.3/15, mb1 4.5/16, mb1mx4.3/36, mbtmp4.3/16, ML3.7/2, MS3.9/17, Ms1 3.9/17, ms1mx3.8/33, Error ellipse: s-maj=30.7km s-min=13.5km az=62.0*
*NEIC **10** 21:52:55.6±0.3, 46°.95S×33°.52E, h10km, mb4.8/8, Error ellipse: s-maj=16.5km s-min=7.4km az=68.0*
ISC 10 21:52:55.6±0.5, 46°.99S±0°.09×33°.4E±0°.2, h10km, n48, σ1s54/45, mb4.4/19, MS4.0/15, 1C-1D, Prince Edward Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SUR	**Sutherland**	**17.49**	**322**	P	**Pn**	**21 56 57.9**	**-1.9**
	0.1nm,0.3s,baz=144,slow=14,SNR=18						
SUR				S	Sn	21 59 57.8	-17
	0.0nm,0.3s,baz=188,slow=10,SNR=3.6						
SUR				LR	LR	22 02 36.2	
	comp=Z,60nm,18.7s,baz=152,slow=33						
SUR	**Sutherland**	**17.49**	**322**	*e*Pn	**Pn**	**21 56 57.9**	**-1.9**
	144nm,1.8s						
SUR				*e*Sn	Sn	21 59 57.8	-17
BOSA	**Boshof**	**19.43**	**338**	P	**P**	**21 57 20.0**	**-2.2**
	0.6nm,0.3s,baz=164,slow=11,SNR=17						
BOSA				LR	LR	22 03 25.8	
	comp=Z,597nm,21.2s,baz=146,slow=33						
BOSA	**Boshof**	**19.43**	**338**	*e*P	**P**	**21 57 22.0**	**-0.2**
SYO	**Syowa Base**	**22.30**	**174**	⇓*i*P	**P**	**21 57 52.9**	**+0.2**
SYO	**Syowa Base**	**22.30**	**174**	⇓*e*pP	pP	21 57 58.0	+2.4
LBTB	**Lobatse**	**22.80**	**341**	P	**P**	**21 57 57.6**	**-1.0**
	29nm,1.0s,baz=180,slow=10,SNR=24						
LBTB				LR	LR	22 05 38.2	
	comp=Z,698nm,18.9s,baz=171,slow=34						
MAW	**Mawson**	**25.61**	**154**	P	**P**	**21 58 24.4**	**-0.4**
	16nm,0.8s,baz=301,slow=13,SNR=16						
MAW				LR	LR	22 07 18.7	
	comp=Z,120nm,18.2s,baz=28,slow=34						
MAW	**Mawson**	**25.61**	**154**	*e*P	**P**	**21 58 24.4**	**-0.4**
	5.5nm,1.0s						
MATP	**Matopo**	**26.80**	**350**	P	**P**	**21 58 35.2**	**-0.8**
	3.7nm,0.9s,baz=190,slow=8.2,SNR=7.7						
MATP				LR	LR	22 07 45.5	
	comp=Z,294nm,20.0s,baz=213,slow=33						
SNAA	**Sanae**	**29.98**	**202**	*e*P	**P**	**21 59 03.4**	**-0.5**
	7.2nm,1.0s						
OPO	**Ambohidratompo**	**30.52**	**26**	LR	LR	22 07 50.1	
	comp=Z,163nm,18.6s,baz=184,slow=30						
TSUM	**Tsumeb**	**30.60**	**330**	P	**P**	**21 59 09.8**	**-0.1**
	8.1nm,1.1s,baz=127,slow=6.7,SNR=4.7						
TSUM				LR	LR	22 10 26.8	
	comp=Z,616nm,19.7s,baz=151,slow=34						
LSZ	**Lusaka**	**31.92**	**350**	P	**P**	**21 59 21.1**	**-0.4**
	3.3nm,0.7s,baz=187,slow=10,SNR=8.4						
LSZ	**Lusaka**	**31.92**	**350**	*e*P	**P**	**21 59 20.2**	**-1.3**
LSZ				*e*pP	**P**	**21 59 21.1**	**-0.4**
QSPA	**South Pole Qui**	**43.23**	**180**	*e*P	**P**	**22 00 56.9**	**+0.2**
QSPA				*e*pP	**pP**	**22 00 57.4**	**-2.5**
VNDA	**Vanda**	**51.76**	**167**	P	**P**	**22 02 03.4**	**+0.8**
	6.3nm,0.7s,baz=251,slow=7.0,SNR=41						
VNDA				LR	LR	22 22 15.9	
	comp=Z,320nm,21.9s,baz=244,slow=34						
VNDA	**Vanda**	**51.76**	**167**	*e*P	**P**	**22 02 03.4**	**+0.8**
VNDA				*e*pP	**pP**	**22 02 03.6**	**-2.2**
SBA	**Scott Base**	**52.20**	**169**	*e*P	**P**	**22 02 06.8**	**+0.8**
	25nm,1.3s						
DBIC	**Dimbokro**	**63.27**	**316**	P	**P**	**22 03 25.2**	**+0.7**
	8.9nm,1.0s,baz=132,slow=10,SNR=3.1						
DBIC				LR	LR	22 29 27.6	
	comp=Z,94nm,18.1s,baz=103,slow=35						
DBIC	**Dimbokro**	**63.27**	**316**	*e*P	**P**	**22 03 25.2**	**+0.7**
	99nm,1.9s						
CPUP	**Villa Florida**	**71.72**	**251**	P	**P**	**22 04 18.6**	**+0.7**
	2.2nm,0.8s,baz=99,slow=5.8,SNR=4.8						
CPUP				LR	LR	22 29 38.8	
	comp=Z,42nm,19.7s,baz=125,slow=31						
WSAR	**Wadi Sarin**	**73.52**	**24**	LR	LR	22 30 36.2	
	comp=Z,39nm,20.8s,slow=31						
FITZ	**Fitzroy Crossi**	**78.47**	**104**	P	**P**	**22 04 56.9**	**-0.1**
	2.8nm,0.8s,baz=246,slow=10.0,SNR=3.4						
FITZ	**Fitzroy Crossi**	**78.47**	**104**	*e*P	**P**	**22 04 56.9**	**-0.1**
	33nm,1.6s						
ASAR	**Alice Springs**	**79.82**	**114**	P	**P**	**22 05 03.8**	**-0.6**
	1.4nm,0.9s,baz=214,slow=5.6,SNR=6.4						
AS31	**Alice Springs**	**79.83**	**114**	*e*P	**P**	**22 05 03.8**	**-0.6**
	2.0nm,1.3s						
WRA	**Warramunga Arr**	**82.81**	**111**	P	**P**	**22 05 19.1**	**-1.2**
	0.5nm,0.6s,baz=221,slow=3.5,SNR=5.7						
WR1	**Warramunga Arr**	**82.81**	**111**	*e*P	**P**	**22 05 19.1**	**-1.2**
	19nm,1.5s						
KEST	**Kesra**	**85.14**	**341**	LR	LR	22 45 32.7	
	comp=Z,238nm,18.4s,baz=234,slow=37						
LPAZ	**La Paz**	**85.89**	**251**	LR	LR	22 40 39.7	
	comp=Z,56nm,18.3s,baz=125,slow=33						
BRTR	**Keskin Array B**	**86.34**	**0**	P	**P**	**22 05 37.7**	**+0.1**
	0.6nm,0.8s,baz=211,slow=1.4,SNR=4.1						
BR101	**Keskin Array S**	**86.34**	**0**	*e*P	**P**	**22 05 37.7**	**+0.1**
BR231	**Keskin MP Arra**	**86.45**	**360**	*e*P	**P**	**22 05 38.8**	**+0.7**
GEYT	**Alibeck**	**87.39**	**19**	P	**P**	**22 05 42.8**	**+0.2**
	0.8nm,0.7s,baz=251,slow=4.5,SNR=5.2						
KBZ	**Khabaz**	**90.73**	**7**	P	**P**	**22 05 58.9**	**+0.8**
	1.2nm,0.8s,baz=170,slow=4.4,SNR=3.3						
KBZ				LR	LR	22 46 47.4	
	comp=Z,46nm,19.9s,baz=176,slow=36						
ESDC	**Sonseca Array**	**92.50**	**332**	P	**P**	**22 06 08.6**	**+2.0**
	0.3nm,0.5s,baz=165,slow=6.2,SNR=4.8						
ESDC				LR	LR	22 50 10.3	
	comp=Z,90nm,18.1s,baz=95,slow=37						
ES19	**SONSECA Array**	**92.51**	**332**	*e*P	**P**	**22 06 09.1**	**+2.5**
AKASG	**Malin Array Be**	**97.38**	**357**	LR	LR	22 54 39.0	
	comp=Z,45nm,19.4s,baz=65,slow=38						
AKTO	**Aktyubinsk**	**99.35**	**16**	LR	LR	22 50 49.3	
	comp=Z,27nm,19.1s,slow=35						
LTX	**Lajitas**	**142.47**	**257**	*e*PKPpre	PKPpre	22 12 24.8	
TXAR	**Lajitas Array**	**142.47**	**257**	PKhKP	PKPpre	22 12 24.8	
	0.8nm,0.8s,baz=160,slow=4.0,SNR=5.6						
RES	**Resolute Bay**	**144.64**	**339**	PKP	**PKPdf**	**22 12 30.8**	**-0.1**
	3.1nm,0.9s,baz=67,slow=7.6,SNR=7.8						
ECSD	**EROS Data Cent**	**145.22**	**283**	*e*PKPbc	**PKPdf**	**22 12 33.2**	**+0.4**
YKW3	**Yellowknife Ar**	**156.21**	**323**	*e*PKPdif	**PKPdf**	**22 12 55.4**	**+6.3**
YKA	**Yellowknife Ar**	**156.24**	**322**	PKP	**PKPdf**	**22 12 48.5**	**-0.6**
	0.1nm,0.3s,baz=208,slow=18,SNR=4.3						
YKA				PKPab	**PKPab**	**22 13 16.3**	**-1.0**
	1.0nm,0.9s,baz=59,slow=3.7,SNR=7.3						
YKB5	**Yellowknife Ar**	**156.24**	**322**	*e*PKPdf	**PKPdf**	**22 12 48.5**	**-0.6**
YKB5				*e*PKPdif	**pPKPdf**	**22 12 56.1**	**+3.5**
YKB5				*e*PKPab	**PKPab**	**22 13 16.3**	**-1.0**
INK	**Inuvik**	**157.61**	**347**	PKPab	**PKPab**	**22 13 23.5**	**+0.5**
	1.9nm,0.8s,baz=23,slow=6.5,SNR=5.6						

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*SOME **10** 21:53:45.1, 42°.02N×82°.48E, h15km*
ISC 10 21:53:48.8±3.9, 42°.0N±0°.1×82°.2E±0°.1, h13km, n10, σ1s79/18, 1C-3D, Southern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KTMS	**Ketmen**	**1.99**	**318**	*e*P	**Pb**	**21 54 24.4**	**-0.6**
	5.5nm,0.3s						
KTMS				*e*S	**Sg**	**21 54 52.7**	**-0.3**
	26nm,0.3s						
SHLS	**Shalkode**	**2.07**	**305**	*e*P	**Pb**	**21 54 25.2**	**-1.2**
	5.2nm,0.1s						
SHLS				*e*S	**Sb**	**21 54 54.5**	**+2.3**
	16nm,0.3s						
PDGK	**Podgornoye**	**2.41**	**305**	⇓Pg	**Pb**	**21 54 30.5**	**-1.5**
	1.8nm,0.6s						
PDGK				⇓Lg	Lg	21 55 02.5	
	22nm,0.8s						
UZB	**Uzynbulak**	**2.62**	**297**	*e*P	**Pb**	**21 54 34.5**	**-1.2**
	2.1nm,0.2s						
UZB				*e*S	**Sb**	**21 55 10.1**	**+2.3**
	5.9nm,0.3s						
DJR	**Jarkent**	**2.93**	**324**	*e*P	**Pb**	**21 54 39.8**	**-1.2**
	0.9nm,0.3s						
DJR				*e*S	**Sg**	**21 55 19.9**	**-3.1**
	5.7nm,0.3s						
KPKS	**Kokpek**	**2.98**	**301**	*e*P	**Pb**	**21 54 39.9**	**-1.9**
	5.8nm,0.3s						
KPKS				*e*S	**Sb**	**21 55 19.6**	**+1.4**
	18nm,0.3s						
SATY	**Saty**	**3.00**	**292**	*e*P	**Pb**	**21 54 42.5**	**+0.3**
	1.4nm,0.1s						
SATY				*e*S	**Sg**	**21 55 23.9**	**-1.3**
	12nm,0.3s						
ZHN	**Zhinishke**	**3.02**	**294**	*e*P	**Pb**	**21 54 42.9**	**+0.4**
	1.5nm,0.1s						
ZHN				*e*S	**Sg**	**21 55 24.2**	**-1.6**
	6.3nm,0.2s						
KAPS	**Kapalarasan**	**3.89**	**329**	*e*P	**Pb**	**21 54 56.0**	**-1.2**
	1.4nm,0.2s						
KAPS				*e*S	**Sb**	**21 55 47.0**	**+2.8**
	2.4nm,0.3s						
MK31	**Makanchi Array**	**4.80**	**1**	Pn	Pn	21 55 02.1	+1.3
	0.1nm,0.3s,baz=191,slow=13,SNR=7.1						
MK31				⇓Sn	**Sn**	**21 55 57.9**	**+1.5**
	1.8nm,0.9s						
MK31				⇑Lg	Lg	21 56 17.4	
	1.2nm,0.7s,baz=185,slow=26,SNR=2.6						

IDC 10 22:07:46.7±1.4, 13°.07N×143°.50E, h217km±18km, mb3.4/6, mb1 3.6/6, mb1mx3.2/41, mbtmp3.9/6, Error ellipse: s-maj=49.9km s-min=16.8km az=100.0, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**1.43**	**68**	P	Pn	22 08 22.2	+0.9
	15nm,0.3s,baz=209,slow=6.4,SNR=6.4						
GUMO				S	S	22 08 48.3	+0.2
	30nm,0.3s,baz=136,slow=21,SNR=11						
WRA	**Warramunga Arr**	**34.02**	**196**	P	P	22 14 09.9	-0.6
	0.9nm,0.7s,baz=17,slow=9.2,SNR=7.5						
ASAR	**Alice Springs**	**37.70**	**194**	P	P	22 14 42.0	+0.4
	0.3nm,0.6s,baz=18,slow=13,SNR=5.4						
MKAR	**Makanchi Array**	**60.95**	**316**	P	P	22 17 37.4	+0.3
	0.8nm,1.0s,baz=99,slow=9.2,SNR=4.5						
ILAR	**Eielson Array**	**69.61**	**25**	P	P	22 18 32.6	+0.4
	0.5nm,0.5s,baz=244,slow=5.3,SNR=5.5						
ARCES	**ARCESS Array B**	**87.17**	**342**	P	P	22 20 07.8	-0.2
	5.0nm,0.9s,baz=67,slow=9.2,SNR=3.6						
FINES	**FINESS Array B**	**91.07**	**335**	P	P	22 20 25.4	-1.0
	2.5nm,1.0s,baz=63,slow=4.0,SNR=11						

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*SOME **10** 22:21:58.2, 41°.57N×81°.25E, h10km*
*NNC **10** 22:22:01.0±1.2, 41°.77N×81°.24E, h0km, mb3.8, mpv3.4, Error ellipse: s-maj=9.5km s-min=4.8km az=143.0*
ISC 10 22:22:00.8±1.9, 41°.68N±0°.08×81°.17E±0°.06, h10km, n29, σ1s90/48, 12C-8D, Southern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHLS	**Shalkode**	**1.75**	**328**	*e*P	**Pb**	**22 22 33.5**	**+0.3**
	115nm,0.1s						
SHLS				*e*S	**Sg**	**22 22 57.9**	**+0.7**
	188nm,0.2s						
KTMS	**Ketmen**	**1.86**	**341**	*e*P	**Pb**	**22 22 34.4**	**-0.6**
	66nm,0.2s						
KTMS				*e*S	**Sb**	**22 23 00.7**	**+2.3**
	150nm,0.3s						
PDGK	**Podgornoye**	**2.06**	**323**	⇑Pg	**Pb**	**22 22 37.1**	**-1.2**
	80nm,0.4s						
PDGK				⇑Lg	Lg	22 23 06.7	
	80nm,0.7s						
UZB	**Uzynbulak**	**2.16**	**313**	*e*P	**Pb**	**22 22 40.4**	**+0.3**
	103nm,0.3s						
UZB				*e*S	**Sg**	**22 23 11.0**	**+0.7**
	95nm,0.3s						
SATY	**Saty**	**2.46**	**305**	*e*P	**Pb**	**22 22 46.1**	**+0.8**
	112nm,0.5s						
SATY				*e*S	**Sg**	**22 23 20.8**	**+0.8**
	115nm,0.2s						
ZHN	**Zhinishke**	**2.51**	**307**	*e*P	**Pb**	**22 22 46.1**	**+0.1**
	49nm,0.1s						
ZHN				*e*S	**Sg**	**22 23 20.9**	**-0.5**
	96nm,0.2s						
KPKS	**Kokpek**	**2.56**	**315**	*e*P	**Pb**	**22 22 47.1**	**+0.3**
	107nm,0.2s						
KPKS				*e*S	**Sg**	**22 23 22.1**	**-0.8**
	234nm,0.3s						
DJR	**Jarkent**	**2.83**	**340**	*e*P	**Pb**	**22 22 51.9**	**+0.3**
	21nm,0.4s						
DJR				*e*S	**Sg**	**22 23 30.7**	**-1.1**
	88nm,0.3s						
KURS	**Kuram**	**2.85**	**310**	*e*P	**Pb**	**22 22 52.5**	**+0.6**
	16nm,0.4s						
KURS				*e*S	**Sg**	**22 23 31.1**	**-1.5**
	50nm,0.4s						
MNBS	**Baschi**	**3.14**	**321**	*e*P	**Pb**	**22 22 55.1**	**-1.7**
	8.6nm,0.2s						
MNBS				*e*S	**Sb**	**22 23 35.5**	**+0.3**
	166nm,0.3s						
KOTS	**Kotyrbulak**	**3.38**	**299**	*e*P	**Pg**	**22 23 03.3**	**-2.2**
	20nm,0.3s						
KOTS				*e*S	**Sg**	**22 23 49.6**	**+0.3**
	28nm,0.3s						
TNSS	**Tian-Shan**	**3.41**	**295**	*e*P	**Pb**	**22 23 02.0**	**+0.4**
	13nm,0.5s						
TNSS				*e*S	**Sg**	**22 23 48.0**	**-2.5**
	48nm,0.4s						
KNDC	**Almaty**	**3.47**	**298**	⇓Pg	**Pg**	**22 23 04.5**	**-2.7**
	7.8nm,0.4s						
KNDC				⇑Lg	Lg	22 23 51.8	
	52nm,0.8s						
ARXS	**Arharly**	**3.52**	**317**	*e*P	**Pb**	**22 23 03.1**	**-0.1**
	14nm,0.4s						
ARXS				*e*S	**Sb**	**22 23 50.3**	**+4.2**
	31nm,0.4s						
CHKK	**Chushkaly**	**3.77**	**307**	*e*P	**Pb**	**22 23 08.6**	**+1.2**
	15nm,0.3s						
CHKK				*e*S	**Sg**	**22 23 59.4**	**-2.4**
	50nm,0.3s						
MTBS	**Maitube**	**3.79**	**294**	*e*P	**Pb**	**22 23 09.8**	**+1.9**
	12nm,0.2s						
MTBS				*e*S	**Sg**	**22 24 01.2**	**-1.4**
	21nm,0.2s						
KAPS	**Kapalarasan**	**3.83**	**340**	*e*P	**Pb**	**22 23 07.6**	**-1.0**
	12nm,0.2s						
KAPS				*e*S	**Sb**	**22 23 56.5**	**+1.4**
	16nm,0.4s						
TDK	**Taldyqorghan**	**3.88**	**330**	*e*P	**Pg**	**22 23 12.5**	**-2.7**
	22nm,0.3s						
TDK				*e*S	**Sg**	**22 24 06.2**	**+0.7**
	44nm,0.5s						
KST	**Kastek**	**4.09**	**291**	*e*P	**Pb**	**22 23 13.3**	**+0.3**
	4.0nm,0.4s						
KST				*e*S	**Sb**	**22 24 07.3**	**+4.8**
	30nm,0.7s						
DGS	**Degeres**	**4.29**	**293**	*e*P	**Pb**	**22 23 18.7**	**+2.4**
	13nm,0.3s						
DGS				*e*S	**Sg**	**22 24 17.0**	**-1.4**
	38nm,0.3s						
TKM2	**Tokmak 2**	**4.31**	**288**	⇑Pn	**Pn**	**22 23 08.4**	**+1.8**
	2.9nm,0.3s						
TKM2				⇓Pg	**Pg**	**22 23 19.6**	**-3.9**
	4.1nm,0.5s						
TKM2				⇑Lg	Lg	22 24 17.4	
	10nm,0.5s						
AAK	**Ala-Archa**	**5.05**	**283**	⇑Pg	**Pg**	**22 23 35.5**	**-2.0**
AAK				⇓Lg	Lg	22 24 42.3	
	10nm,0.7s						
MAKZ	**Makanchi**	**5.16**	**6**	⇑Pn	**Pn**	**22 23 18.9**	**+0.9**
	8.5nm,0.9s						
MAKZ				⇓Sn	**Sn**	**22 24 18.4**	**+0.8**
	2.4nm,0.5s						
MK31	**Makanchi Array**	**5.17**	**9**	Pn	**Pn**	**22 23 18.8**	**+0.5**
	1.6nm,0.5s,baz=198,slow=13,SNR=43						
MK31				⇑Sn	**Sn**	**22 24 18.4**	**+0.4**
	0.9nm,0.3s,baz=192,slow=24,SNR=4.2						
MK31				⇓Lg	Lg	22 24 42.8	
	3.2nm,0.6s,baz=185,slow=26,SNR=3.6						
SFK	**Sufi-Kurgan**	**6.05**	**257**	⇓Pg	**Pg**	**22 23 52.5**	**-4.1**
	1.2nm,0.6s						
SFK				⇑Lg	Lg	22 25 16.4	
	4.6nm,0.8s						
ZSN	**Zaisan**	**6.21**	**21**	*e*P	**Pg**	**22 23 56.4**	**-3.3**
	2.5nm,0.5s						
ZSN				*e*S	**Sg**	**22 25 21.7**	**+1.7**
	8.9nm,0.4s						
MNAS	**Manas**	**6.50**	**280**	⇓Pg	Pg	22 23 59.5	-5.7
	0.8nm,0.7s						
MNAS				⇑Lg	Lg	22 25 28.6	
	5.9nm,1.2s						
KK31	**Karatay Array**	**8.02**	**284**	⇑Pg	Pg	22 24 28.1	-6.1
	0.6nm,0.6s,baz=90,slow=16,SNR=4.8						
KK31				⇑Lg	Lg	22 26 17.6	
	2.5nm,0.7s,baz=99,slow=28,SNR=9.1						
KURK	**Kurchatov**	**9.20**	**350**	⇓Lg	Lg	22 26 51.5	
	4.8nm,0.7s						

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*ISCJB **10** 22:26:52.6±0.5, 7°.56S±0°.08×68°.01E±0°.08, h12km, mb4.3/21, MS3.8/10, Error ellipse: s-maj=12.8km s-min=10.9km az=41.8*
*IDC **10** 22:26:52.8±0.7, 7°.60S×67°.96E, h0km, mb4.0/14, mb1 4.1/14, mb1mx4.0/47, mbtmp4.0/14, MS3.7/11, Ms1 3.7/11, ms1mx3.4/44, Error ellipse: s-maj=21.6km s-min=18.0km az=133.0*
*NEIC **10** 22:26:54.3±0.4, 7°.61S×67°.95E, h10km, mb4.7/8, Error ellipse: s-maj=12.3km s-min=10.3km az=136.0*
ISC 10 22:26:54.8±0.7, 7°.6S±0°.1×68°.0E±0°.1, h12km, n60, σ1s34/38, mb4.4/27, MS3.8/10, 6C-3D, Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08N3	**Diego Garcia H**	**3.25**	**67**	T	T	22 31 19.5	
	baz=243,slow=76,SNR=420						
H08N2	**Diego Garcia H**	**3.27**	**67**	T	T	22 31 19.9	
	baz=243,slow=76,SNR=507						
H08N1	**Diego Garcia H**	**3.28**	**67**	T	T	22 31 21.0	
	baz=243,slow=76,SNR=367						
PALK	**Pallekele**	**19.50**	**41**	LR	LR	22 37 13.8	
	comp=Z,169nm,20.2s,baz=297,slow=32						
OPO	**Ambohidratompo**	**22.95**	**240**	P	**P**	**22 32 00.4**	**+1.0**
	4.9nm,0.9s,baz=81,slow=13,SNR=4.1						
OPO				LR	LR	22 38 44.5	
	comp=Z,253nm,19.2s,baz=7.5,slow=31						
LSZ	**Lusaka**	**39.67**	**255**	P	**P**	**22 34 25.3**	**-2.0**
	5.5nm,1.0s,baz=71,slow=8.6,SNR=5.4						
LSZ	**Lusaka**	**39.67**	**255**	*e*P	**P**	**22 34 25.3**	**-2.0**
	11nm,1.0s						
MATP	**Matopo**	**40.24**	**247**	P	**P**	**22 34 31.1**	**-0.8**
	2.9nm,0.8s,baz=72,slow=10,SNR=2.6						
LBTB	**Lobatse**	**43.96**	**242**	*e*P	**P**	**22 35 00.6**	**-1.7**
	42nm,1.8s						
BOSA	**Boshof**	**45.32**	**237**	P	**P**	**22 35 13.3**	**+0.2**
	6.9nm,0.9s,baz=81,slow=8.6,SNR=7.0						
BOSA				LR	LR	22 53 18.4	
	comp=Z,97nm,18.7s,baz=74,slow=35						
BOSA	**Boshof**	**45.32**	**237**	*e*P	**P**	**22 35 13.3**	**+0.2**
	46nm,1.8s

MDVR	Moldovita	66.70	326	↓iP		P	22 37 50.1 +4.3
BURAR	Bucovina Array	66.71	330	↑iP		P	22 37 53.4 +7.6
AKASG	Malin Array Be	67.05	334	P		P	22 37 47.3 -0.4
	1.1nm,0.5s,baz=122,slow=7.0,SNR=3.3						
AKBB	Malin Array Si	67.05	334	eP		P	22 37 47.3 -0.4
	7.1nm,0.5s						
BZS	Buzias	67.28	327	↑iP		P	22 37 54.8 +5.5
KWP	Kalwaria Pacla	69.30	330	↓iP		P	22 38 07.3 +5.4
CONA	Conrad Observa	71.83	326	i sP		P	22 38 22.4 +4.9
	6.6nm,1.3s						
STKA	Stephens Creek	72.12	121	LR		LR	23 07 12.6
	comp=Z,107nm,18.9s,baz=316,slow=34						
MOA	Molln	72.67	325	i sP		P	22 38 28.1 +5.6
	4.1nm,0.9s						
ABTA	Abfaltersbach	73.09	324	i sP		P	22 38 30.3 +5.2
	7.9nm,1.2s						
WTTA	Wattenberg	73.88	324	i sP		P	22 38 36.1 +6.2
	7.4nm,1.0s						
DBIC	Dimbokro	74.01	279	LR		LR	23 09 12.0
	comp=Z,74nm,20.2s,baz=100,slow=34						
MOTA	Moosalm	74.23	324	i sP		P	22 38 37.0 +5.2
	9.1nm,1.0s						
FETA	Feichten	74.29	323	i sP		P	22 38 37.9 +5.7
	5.6nm,1.0s						
FIA0	FINESS Array S	76.17	341	eP		P	22 38 43.7 +1.2
FINES	FINESS Array B	76.17	341	P		P	22 38 43.7 +1.2
	3.3nm,1.0s,baz=149,slow=6.5,SNR=2.9						
ES19	SONSECA Array	81.14	312	eP		P	22 39 12.3 +1.9
ESDC	Sonseca Array	81.17	312	P		P	22 39 11.3 +0.6
	0.9nm,0.8s,baz=69,slow=5.7,SNR=4.4						
NOA	NORSAR Array B	81.41	336	LR		LR	23 15 55.5
	comp=Z,19nm,20.8s,baz=220,slow=36						
YKA	Yellowknife Ar	125.20	1	PKP		PKPdf	22 45 56.0 +1.0
	0.1nm,0.4s,baz=352,slow=2.6,SNR=2.7						
YKB5	Yellowknife Ar	125.20	1	ePKPdf		PKPdf	22 45 56.0 +1.0
PDAR	Pinedale Array	144.93	357	PKP		PKPab	22 46 31.3 -0.4
	0.3nm,0.6s,baz=249,slow=0.8,SNR=3.0						
NVAR	Mina Array Bea	148.81	10	PKPbc		PKPbc	22 46 44.3 +1.3
	0.4nm,0.3s,baz=268,slow=4.5,SNR=4.0						
TXAR	Lajitas Array	157.01	341	PKPab		PKPab	22 47 19.1 -2.2
	0.3nm,0.6s,baz=131,slow=5.2,SNR=2.4						

CASC 10 22:33:03.1±1.9, 12°.72N×88°.33W, h45km±103km, MD3.5, ML3.1, 1D, Off coast of central America

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LCY	Lacayo	0.70	3	eP	Pn	22 33 17.6	+0.7
LCY				eS	Sn	22 33 27.4	+0.6
VSM	San Miguel	0.71	4	eP	Pn	22 33 18.1	+1.0
VSM				eS	Sn	22 33 27.8	+0.7
CNCH	Conchagua	0.73	41	eP	Pn	22 33 17.9	+0.7
CNCH				eS	Sn	22 33 28.6	+1.1
PACA	Pacayal	0.75	0	↓eP	Pn	22 33 18.3	+0.9
PACA				eS	Sn	22 33 28.2	+0.4
TECA	Tecapa	0.79	348	eP	Pn	22 33 18.7	+0.6
TECA				eS	Sn	22 33 28.8	-0.2
CSGN	Cosiguina Volc	0.79	71	eP	Pn	22 33 18.0	0.0
CSGN				eS	Sn	22 33 28.6	-0.2
CAHU	Cacacuatique	1.05	6	eP	Pn	22 33 22.5	+0.8
LFRS	El Faro	1.15	322	eP	Pn	22 33 23.4	+0.5
LFRS				eS	Sn	22 33 37.6	+0.1
LBRS	Las Brisas	1.23	326	eP	Pn	22 33 23.5	-0.4
SNET	Serv Nac Est T	1.30	318	AML	AML	22 33 45.2	
	comp=Z,445nm,0.2s						
COLS	Colinas	1.33	315	eP	Pn	22 33 25.7	+0.3
COLS				eS	Sn	22 33 41.8	-0.3
BOQS	Boqueron	1.37	318	eP	Pn	22 33 26.6	+0.5
BOQS				eS	Sn	22 33 43.9	+0.7
CNGN	Cerro Negro	1.60	98	eP	Pn	22 33 28.8	-0.3
CNGN				eS	Sn	22 33 48.2	-0.4
CNGN				AML	AML	22 33 50.1	
	comp=E,146nm,0.4s						
SBLS	San Blas	1.68	312	eP	Pn	22 33 31.4	+1.1
SBLS				eS	Sn	22 33 51.5	+0.7
COPN	Copaltepe	1.78	107	eP	Pn	22 33 28.6	-2.8
COPN				eS	Sn	22 33 49.8	-3.0
BOAB	BOACO BROADBAN	2.61	96	eP	Pn	22 33 41.6	-1.2

*IDC **10** 22:40:06.8±2.8, 40°.18N×91°.87E, h0km, mb3.9/3, mb1 3.8/7, mb1mx3.5/45, mbtmp3.7/7, ML3.5/4, Error ellipse: s-maj=75.2km s-min=35.3km az=41.0*
*ISCJB **10** 22:40:09.2±0.7, 40°.71N±0°.09×91°.76E±0°.07, h10km, mb3.8/3, Error ellipse: s-maj=13.8km s-min=5.2km az=25.6*
*NNC **10** 22:40:16.8±3.3, 40°.79N×91°.67E, h74km±31km, mb3.5, Error ellipse: s-maj=28.8km s-min=23.9km az=173.0*

ISC 10 22:40:12.4±0.9, 40°.7N±0°.1×91°.63E±0°.06, h10km, n21, σ1§98/31, mb3.8/3, 11C-4D, Southern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WMQ	Urumqi	4.29	318	Pn	Pn	22 41 19.0	+1.2
WMQ				Sn	Sn	22 42 09.8	+1.8
WMQ				smax	smax		
	comp=N,280nm,0.4s						
WMQ				smax	smax		
	comp=E,290nm,0.4s						
GTA	Gaotai	6.40	99	Pn	Pn	22 41 44.7	-2.2
GTA				Pg	Pb	22 42 04.6	+0.6
GTA				Sn	Sn	22 42 55.9	-4.2
GTA				Sg	Sb	22 43 26.9	+6.2
GTA				smax	smax		
	comp=N,93nm,0.9s						
GTA				smax	smax		
	comp=E,64nm,0.6s						
MK31	Makanchi Array	9.11	315	Pn	Pn	22 42 25.0	+1.0
	comp=E,1.5nm,0.5s,baz=141,slow=14,SNR=36						
MK31				↑Sn	Sn	22 44 07.5	+0.9
	comp=E,6.7nm,0.7s,baz=126,slow=25,SNR=6.9						
MKAR	Makanchi Array	9.11	315	Pn	Pn	22 42 24.7	+0.7
	comp=E,0.9nm,0.3s,baz=124,slow=13,SNR=20						
MKAR				Sn	Sn	22 44 08.9	+2.3
	comp=E,1.5nm,0.3s,baz=129,slow=27,SNR=7.0						
MKAR				Lg	Lg	22 45 09.1	
	comp=E,0.8nm,0.3s,baz=133,slow=29,SNR=4.5						
MAKZ	Makanchi	9.29	314	↑Pn	Pn	22 42 27.0	+0.6
	comp=E,0.9nm,0.3s						
MAKZ				↑Sn	Sn	22 44 11.0	0.0
	comp=E,9.0nm,1.0s						
PDGK	Podgornoye	9.43	290	↓Pn	Pn	22 42 29.3	+1.2
	comp=E,1.5nm,0.6s						
PDGK				↓Sn	Sn	22 44 14.8	+0.7
	comp=E,6.3nm,0.5s						
TKM2	Tokmak 2	12.18	286	↓Pn	Pn	22 43 06.0	-0.1
	comp=E,6.6nm,0.8s						
TKM2				↑Sn	Sn	22 45 22.0	0.0
	comp=E,2.3nm,0.5s						
AAK	Ala-Archa	12.97	284	Pn	Pn	22 43 16.7	-0.2
	comp=E,0.3nm,0.3s,baz=99,slow=14,SNR=2.6						
AAK				Lg	Lg	22 47 04.4	
	comp=E,0.2nm,0.3s,baz=101,slow=22,SNR=1.6						
KURBB	Kurchatov Arra	13.51	322	Pn	Pn	22 43 23.7	-0.2
	comp=E,0.0nm,0.3s,baz=130,slow=11,SNR=3.6						
KURBB				Sn	Sn	22 45 55.0	+1.0
	comp=E,0.1nm,0.3s,baz=117,slow=28,SNR=3.8						
KURBB				Lg	Lg	22 47 26.9	
	baz=132,slow=54,SNR=3.1						
KURK	Kurchatov	13.53	322	↑Pn	Pn	22 43 25.5	+1.3
	comp=E,1.2nm,0.5s						
KURK				↓Sn	Sn	22 45 50.2	-4.2
	comp=E,3.3nm,0.5s						
ZALV	Zalesovo Beam	14.05	343	Pn	Pn	22 43 27.1	-4.3
	baz=160,slow=18,SNR=2.6						
MNAS	Manas	14.43	283	↑Pn	Pn	22 43 38.2	+1.4
	comp=E,3.1nm,0.6s						
KK31	Karatay Array	15.91	286	↑Pn	Pn	22 43 57.6	+1.3
	comp=E,0.8nm,0.7s,baz=92,slow=11,SNR=6.4						
BVA0	Borovoye Array	18.98	318	↑Pn	P	22 44 32.6	-1.2
	comp=E,4.1nm,1.3s,baz=124,slow=11,SNR=12						
BVAR	Borovoye Array	18.98	318	P	P	22 44 34.4	+0.5
	comp=E,0.4nm,0.3s,baz=119,slow=10,SNR=14						
BRVK	Borovoye	19.05	318	↑Pn	P	22 44 35.0	+0.4
	comp=E,3.8nm,0.8s						
CHKZ	Chkalovo	19.23	320	↑Pn	P	22 44 33.9	-2.6
	comp=E,1.8nm,0.7s						
ZRNK	Zerenda	19.66	316	↑Pn	P	22 44 41.0	-0.3
	comp=E,1.8nm,0.8s						
FINES	FINESS Array B	43.90	321	P	P	22 48 18.4	-0.3
	comp=E,1.5nm,1.0s,baz=67,slow=11,SNR=3.0						
ARCES	ARCESS Array B	44.27	333	P	P	22 48 21.8	+0.1
	comp=E,5.6nm,1.0s,baz=92,slow=9.0,SNR=3.8						
NOA	NORSAR Array B	51.04	322	P	P	22 49 13.9	-0.5
	comp=E,0.3nm,0.4s,baz=82,slow=8.9,SNR=3.0						

*IDC **10** 22:47:34.4±1.1, 20°.41S×168°.34E, h0km, mb4.2/10, mb1 4.4/11, mb1mx4.1/33, mbtmp4.2/11, ML3.8/1, MS3.5/5, Ms1 3.5/5, ms1mx3.1/39, Error ellipse: s-maj=31.9km s-min=19.9km az=140.0*
*ISCJB **10** 22:47:36.6±0.9, 20°.5S±0°.1×168°.3E±0°.1, h26km, mb4.2/9, MS3.6/3, Error ellipse: s-maj=24.0km s-min=10.3km az=41.6*

ISC 10 22:47:38.5±0.9, 20°.5S±0°.1×168°.3E±0°.2, h26km, n18, σ0§96/17, mb4.2/9, MS3.7/3, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	2.32	228	Pn	Pn	22 48 14.5	-0.5
	21nm,0.3s,baz=105,slow=7.3,SNR=16						
DZM				Sn	Sn	22 48 41.5	-1.3
	59nm,0.3s,baz=342,slow=18,SNR=10						
DZM				LR	LR	22 49 03.6	
	comp=Z,699nm,20.7s,baz=354,slow=37						
HNR	Honiara	13.64	323	LR	LR	22 55 31.3	
	comp=Z,77nm,18.8s,baz=246,slow=35						
AFI	Afiamalu	20.13	74	LR	LR	22 59 10.9	
	comp=Z,106nm,18.6s,baz=222,slow=35						
CTA	Charters Tower	20.68	267	P	P	22 52 18.1	+1.4
	4.1nm,0.9s,baz=82,slow=14,SNR=3.1						
STKA	Stephens Creek	26.42	239	P	P	22 53 14.5	+1.4
	4.8nm,0.6s,baz=67,slow=11,SNR=11						
WRA	Warramunga Arr	31.83	265	P	P	22 54 00.1	-1.3
	0.7nm,0.5s,baz=94,slow=8.4,SNR=10						
ASAR	Alice Springs	31.97	258	P	P	22 54 02.7	0.0
	9.9nm,0.7s,baz=84,slow=9.1,SNR=70						
FITZ	Fitzroy Crossi	40.25	266	P	P	22 55 13.8	+0.4
	4.6nm,0.7s,baz=145,slow=9.9,SNR=6.2						
FITZ				LR	LR	23 11 04.8	
	comp=Z,105nm,18.4s,baz=304,slow=35						
KAPI	Kappang	49.57	281	P	P	22 56 28.1	+0.4
	1.9nm,0.4s,baz=179,slow=4.7,SNR=3.7						
VNDA	Vanda	57.14	182	P	P	22 57 22.9	+0.5
	0.8nm,1.0s,baz=353,slow=8.4,SNR=3.8						
MJAR	Matsushiro Arr	63.47	333	P	P	22 58 05.3	-0.9
	2.2nm,1.1s,baz=169,slow=6.6,SNR=4.2						
NVAR	Mina Array Bea	90.31	49	P	P	23 00 37.5	-0.1
	1.0nm,0.6s,baz=223,slow=6.2,SNR=6.4						
ILAR	Eielson Array	91.70	18	P	P	23 00 41.8	-1.3
	0.7nm,1.1s,baz=180,slow=11,SNR=3.2						
ILAR				LR	LR	23 35 30.6	
	comp=Z,47nm,19.4s,baz=326,slow=31						
CONA	Conrad Observa	144.75	327	i PKPbc	PKPdf	23 07 13.1	+0.1
	7.0nm,1.4s						
GERES	GERESS Array B	145.17	330	PKPbc	PKPbc	23 07 13.9	+0.6
	0.3nm,0.3s,baz=27,slow=0.6,SNR=5.5						
MOA	Molln	145.59	329	i PKPbc	PKPab	23 07 15.5	+0.6
	5.7nm,1.1s						
KBA	Koelnbreinsper	146.58	328	i PKPdf	PKPbc	23 07 17.6	-0.2
	2.9nm,0.9s						
FETA	Feichten	147.87	331	i PKPdf	PKPbc	23 07 22.6	+1.2

*IDC **10** 22:56:27.5±0.6, 8°.86N×126°.04E, h0km, mb4.1/13, mb1 4.2/13, mb1mx4.0/38, mbtmp4.1/13, MS3.2/1, Ms1 3.2/1, ms1mx2.6/47, Error ellipse: s-maj=34.3km s-min=13.4km az=87.0*
*MAN **10** 22:56:30.8±54N×125°.84E, h146km, mb4.7, ML3.6, MS3.6*
*ISCJB **10** 22:56:32.0±0.9, 8°.82N±0°.04×126°.10E±0°.06, h46km±9km, mb4.2/20, MS3.1/1, Error ellipse: s-maj=10.9km s-min=5.8km az=158.5*
*NEIC **10** 22:56:33.7±1.6, 8°.82N×126°.12E, h46km±15km, mb4.4/10, Error ellipse: s-maj=16.2km s-min=7.7km az=71.0*
*DJA **10** 22:56:46.0±1.4, 8°.N±10°.×12°.6E±°, h35km±17km, M4.3/5, mB5.6/2, mb4.6/5, MLv4.1/1, Mw(mB)5.1/2*

ISC 10 22:56:34.7±1.3, 8.76N±0°.05×126°.03E±0°.07, h54km±12km, n59, σ1§77/60, mb4.2/20, 4C-3D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BUKP	Musuan	1.30	228	eP	Pn	22 56 54.3	-2.3
BUKP				eS	Sn	22 57 14.1	+1.2
CGP	Cagayan de Oro	1.36	257	↑eP	Pn	22 56 55.0	-2.2
CGP				eS	Sn	22 57 13.2	-1.0
DAV	Davao City (W)	1.74	195	Pn	Pn	22 57 01.3	-1.2
	268nm,0.3s,baz=39,slow=3.8,SNR=59						
DAV				Sn	Sn	22 57 33.7	+10
	99nm,0.3s,baz=209,slow=20,SNR=4.7						
DMPH	Davao City--Mi	1.75	197	↑eP	Pn	22 57 02.6	0.0
DMPH				eS	Sn	22 57 30.4	+6.7
MATI	Mati	1.82	173	eP	Pn	22 57 01.4	-2.1
MATI				eS	Sn	22 57 26.6	+1.1
KCP	Kidapawan	1.97	208	↓iP	Pn	22 57 03.8	-2.0
KCP				i S	Sn	22 57 29.7	+0.3
TBP	Tagbilaran	2.33	294	↑eP	Pn	22 57 08.8	-1.8
CTBH	Cotabato--PC H	2.34	229	↓iP	Pn	22 57 09.2	-1.5
LLP	Lapu-Lapu	2.56	307	eP	Pn	22 57 12.8	-0.8
LLP				eS	Sn	22 57 46.8	+3.1
PLP	Palo	2.60	337	↓eP	Pn	22 57 14.9	+0.6
PAGZ	Pagadian	2.77	251	eP	Pn	22 57 15.6	-1.1
PAGZ				eS	Sn	22 57 52.7	+3.8
SNPH	Sibulan	2.82	282	↑iP	Pn	22 57 15.6	-1.8
BESP	Borongan	2.88	348	eP	Pn	22 57 20.1	+2.0
BESP				eS	Sn	22 57 56.8	+5.2
GUIM	Jordan	3.87	299	eP	Pn	22 57 30.7	-1.0
MRSI	Marisa	9.18	207	P	Pn	22 58 45.2	+0.7
	25nm,0.7s,10μm						
LBMI	Labuha	9.45	171	P	Pn	22 58 57.9	+10
LUWI	Luwuk	10.27	199	P	Pn	22 59 02.5	+3.1
	57nm,1.0s						
LUWI	Luwuk	10.27	199	ePn	Pn	22 59 00.3	+1.0
SANI	Sanana	10.74	180	P	Pn	22 59 05.1	-0.7
	28nm,0.8s						
SANI				S	Sn	23 00 59.6	-5.0
	28nm,0.8s						
SWI	Sorong	10.89	151	P	Pn	22 59 08.4	+0.5
	32nm,0.9s,824nm						
TTSI	Tana Toraja	13.26	208	P	P	22 59 47.3	-1.2
KAPI	Kappang	15.05	205	ePn	P	23 00 12.1	+3.7
	13nm,1.3s						
SBUM	Sibu	15.10	246	ePn	P	23 00 11.4	+2.4
	6.9nm,1.0s						
FITZ	Fitzroy Crossi	26.69	181	P	P	23 02 10.0	+1.1
	2.1nm,0.6s,baz=35,slow=6.3,SNR=9.0						
FITZ	Fitzroy Crossi	26.69	181	eP	P	23 02 10.0	+1.1
	9.8nm,1.0s						
CM01	Chiang Mai Arr	27.97	293	eP	P	23 02 22.3	+1.8
KSRS	Korea Array	28.62	3	LR	LR	23 16 37.0	
	comp=Z,44nm,18.1s,baz=214,slow=42						
WR1	Warramunga Arr	29.67	164	eP	P	23 02 36.0	+0.5
	30nm,1.6s						
WRA	Warramunga Arr	29.67	164	P	P	23 02 36.0	+0.5
	0.4nm,0.5s,baz=344,slow=9.4,SNR=4.3						
AS31	Alice Springs	33.13	167	eP	P	23 03 05.5	-0.5
	1.6nm,1.1s						
ASAR	Alice Springs	33.13	167	P	P	23 03 05.5	-0.5
	0.5nm,0.5s,baz=344,slow=6.8,SNR=6.8						
USRK	Ussuriysk Ar.	35.68	7	P	P	23 03 27.9	+0.1
	8.5nm,0.7s,baz=196,slow=8.6,SNR=18						
H11S3	WAKE ISLAND Hy	40.59	72	T	T	23 47 07.1	
	baz=262,slow=75,SNR=23						
H11S1	WAKE ISLAND Hy	40.61	72	T	T	23 47 08.3	
	baz=262,slow=75,SNR=20						
H11S2	WAKE ISLAND Hy	40.61	72	T	T	23 47 06.7	
	baz=262,slow=75,SNR=22						
KLR	Kul'dur	40.62	6	P	P	23 04 08.7	-0.6
	1.5nm,0.5s,baz=169,slow=5.7,SNR=8.9						
PETK	Petropavlovsk-	51.10	24	P	P	23 05 32.5	+0.7
	1.8nm,0.5s,baz=202,slow=4.7,SNR=5.1						
PEA1	Petropavlovsk-	51.11	24	eP	P	23 05 32.5	+0.7
MK01	Makanchi Array	53.07	324	eP	P	23 05 46.5	0.0
MK31	Makanchi Array	53.09	324	eP	P	23 05 46.8	+0.1
MK32	Makanchi Array	53.09	324	eP	P	23 05 46.5	-0.2
MKAR	Makanchi Array	53.09	324	P	P	23 05 46.5	-0.2
	1.5nm,0.6s,baz=127,slow=7.9,SNR=20						
MKAR	Makanchi Array	53.09	324	eP	P	23 05 46.8	+0.1
MAKZ	Makanchi	53.28	323	eP	P	23 05 48.7	+0.7
	11nm,1.4s						
KURK	Kurchatov	57.18	326	eP	P	23 06 15.8	-0.3
	5.7nm,1.1s						
TIXI	Tiksi	62.86	1	eP	P	23 06 53.4	-1.2
	5.1nm,0.9s						
ZRNK	Zerenda	63.51	325	eP	P	23 06 58.7	-0.6
	2.3nm,0.9s						
GEYT	Alibeck	67.26	307	P	P	23 07 24.4	+0.5
	0.7nm,0.4s,baz=185,slow=6.8,SNR=6.6						
ILAR	Eielson Array	80.89	26	P	P	23 08 42.0	-0.9
	0.5nm,0.7s,baz=238,slow=5.5,SNR=4.1						
ILB	Eielson Array	80.89	26	eP	P	23 08 42.0	-0.9
DAWY	Dawson	84.19	26	eP	P	23 09 01.1	+1.0
	19nm,1.9s						
ARA0	ARCESS Array S	85.52	340	eP	P	23 09 06.0	-0.6
ARCES	ARCESS Array B	85.52	340	P	P	23 09 06.0	-0.6
	4.8nm,0.9s,baz=69,slow=6.6,SNR=3.9						
FIA0	FINESS Array S	87.10	332	eP	P	23 09 13.5	-0.9
FINES	FINESS Array B	87.10	332	P	P	23 09 13.5	-0.9
	0.8nm,0.3s,baz=71,slow=4.3,SNR=30						
VNDA	Vanda	88.47	173	P	P	23 09 21.6	+0.9
	0.5nm,0.6s,baz=328,slow=5.7,SNR=7.0						
YKA	Yellowknife Ar	95.22	24	P	P	23 09 50.6	-1.6
	0.2nm,0.7s,baz=301,slow=4.5,SNR=8.5						
YKB5	Yellowknife Ar	95.22	24	eP	P	23 09 50.6	-1.6
PLCA	Paso Flores	144.91	158	PKPbc	PKPbc	23 16 06.1	+0.7
	2.1nm,0.7s,baz=195,slow=4.8,SNR=5.9						

*IDC **10** 22:56:35.1±6.8, 28°.08S×178°.20W, h0km, mb3.6/2, mb1 3.9/2, mb1mx3.6/30, mbtmp3.6/2, Error ellipse: s-maj=324.3km s-min=101.5km az=163.0*

ISC 10 22:56:42.1±2.8, 27°.2S±0°.2×178°.6W±0°.4, h35km, n10, σ1§16/9, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WMGZ	Waiomatatini S	10.93	193	PN	Pn	22 59 17.5	+1.7
HAZ	Te Kaha	11.00	195	ePN	Pn	22 59 16.6	-0.3
HAZ				SN	Sn	23 00 55.8	-23
TWGZ	Tauwhareparae	11.36	194	ePN	Pn	22 59 22.7	+0.8
TWGZ				SN	Sn	23 01 01.0	-27
URZ	Urewera	11.65	197	ePN	Pn	22 59 25.6	-0.2
URZ				SN	Sn	23 01 09.2	-25
RIGZ	Rimuhau	11.92	194	ePN	Pn	22 59 28.7	-0.7
NMHZ	Naumai	12.51	197	ePN	Pn	22 59 36.5	-1.2
MRZ	Mangatainoka R	14.31	198	PN	Pn	22 59 54.4	-7.6
ASAR	Alice Springs	42.86	264	P	P	23 04 36.5	-0.7
	0.3nm,0.5s,baz=103,slow=6.1,SNR=4.3						
WRA	Warramunga Arr	43.55	269	P	P	23 04 44.1	+1.3
	0.6nm,0.5s,baz=107,slow=8.7,SNR=5.1						
FINES	FINESS Array B	141.93	341	PKP	PKPdf	23 16 08.9	-0.6
	0.5nm,0.5s,baz=64,slow=4.2,SNR=10						

*IDC **10** 23:13:20.8±1.4, 35°.65N×140°.92E, h0km, mb3.5/3, mb1 3.7/4, mb1mx3.4/53, mbtmp3.4/4, ML3.2/1, Error ellipse: s-maj=33.8km s-min=26.3km az=41.0*
*ISCJB **10** 23:13:21.8±1.1, 35°.78N±0°.05×141°.02E±0°.09, h18km±6km, mb3.5/3, Error ellipse: s-maj=12.3km s-min=8.0km az=162.5*
*JMA **10** 23:13:22.8±0.1, 35°.79N×140°.96E, h13km±1km, M3.4*
JMA Felt I J1.

ISC 10 23:13:22.9±1.1, 35°.78N±0°.05×140°.89E±0°.09, h15km±6km, n10, σ0§79/15, mb3.5/3, 1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	0.08	201	↓P	Pg	23 13 25.9	+0.1
CHOJ				S	Sg	23 13 28.3	+0.5
JCN	Nagara	0.67	238	P	Pn	23 13 37.6	-0.2
JYT	Yasato	0.72	309	P	Pg	23 13 36.9	-0.1
JYT				S	Sb	23 13 47.0	+0.1
JHO	Hitachi	0.87	343	P	Pb	23 13 38.6	-1.1
JHO				eS	Sb	23 13 50.6	-0.7
BSO3	Boso 3	1.02	198	P	Pg	23 13 42.2	-0.4
MJAR	Matsushiro Arr	2.30	290	Pn	Pn	23 13 59.8	-0.5
	5.3nm,0.3s,baz=108,slow=9.1,SNR=29						
MJAR				Sn	Sb	23 14 31.5	-0.9
	2.1nm,0.3s,baz=76,slow=7.6,SNR=4.7						
MAT	Matsushiro	2.30	290	P	Pn	23 14 00.9	+0.5
MAT				eS	Sn	23 14 29.6	+1.1
MKAR	Makanchi Array	44.44	303	P	P	23 21 34.1	+0.9
	0.3nm,0.5s,baz=78,slow=9.1,SNR=3.2						
ILAR	Eielson Array	50.78	32	P	P	23 22 23.0	+0.9
	0.5nm,0.8s,baz=267,slow=5.8,SNR=4.1						
WRA	Warramunga Arr	55.76	187	P	P	23 22 58.5	-0.7
	0.5nm,0.9s,baz=6.0,slow=7.2,SNR=3.0						

IDC 10 23:18:14.9±11.0, 20°.07S×167°.46E, h0km, mb3.8/3, mb1 3.9/4, mb1mx3.6/40, mbtmp3.7/4, Error ellipse: s-maj=198.1km s-min=38.5km az=86.0, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	2.20	205	Pn	Pn	23 18 52.1	-0.8
	baz=89,slow=5.9,SNR=3.9						
DZM				Sn	Sn	23 19 20.4	-0.5
	14nm,0.3s,baz=319,slow=21,SNR=6.7						
STKA	Stephens Creek	25.98	238	P	P	23 23 50.2	+0.7
	1.2nm,0.5s,baz=45,slow=4.3,SNR=3.1						
WRA	Warramunga Arr	31.09	264	P	P	23 24 34.6	-0.7
	0.5nm,0.7s,baz=86,slow=8.6,SNR=4.6						
ASAR	Alice Springs	31.30	257	P	P	23 24 37.6	+0.5
	1.3nm,0.6s,baz=85,slow=8.8,SNR=10						

JMA 10 23:22:02.9±0.2, 37°.84N×143°.99E, h8km, M3.7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	2.17	287	P	Pn	23 22 40.1	+0.8
JIO				S	Sn	23 23 07.9	+1.5
OFUJ	Ofunato	2.20	305	P	Pn	23 22 40.1	+0.3
OFUJ				S	Sn	23 23 08.2

SCHQ				LR	LR	23 29 22.3	
	comp=Z,96nm,18.5s,baz=89,slow=40						
SCHQ	**Schefferville**	**7.35**	**227**	PN	Pn	23 26 09.9	+3.5
SCHQ				mb		23 26 18.4	
	comp=Z,18nm,0.3s						
SCHQ				SN	**Sn**	**23 27 29.1**	**-0.7**
SCHQ				Trac		23 27 32.9	
	comp=Z,30nm,0.3s						
SFJD	**Kangerlussuaq**	**7.50**	**21**	Pn	**Pn**	**23 26 07.3**	**-0.9**
	5.2nm,0.3s,baz=208,slow=11,SNR=50						
SFJD				Sn	Sn	23 27 23.9	-9.2
	1.3nm,0.3s,baz=249,slow=22,SNR=4.0						
SFJD	**Kangerlussuaq**	**7.50**	**21**	*i* P	**Pn**	**23 26 07.9**	**-0.3**
SFJD	**Kangerlussuaq**	**7.50**	**21**	PN	**Pn**	**23 26 08.2**	**0.0**
SFJD				mb		23 26 09.7	
	comp=Z,9.9nm,0.2s						
SFJD				SN	Sn	23 27 26.6	-6.5
SFJD				Trac		23 27 38.8	
	comp=Z,20nm,0.4s						
ILULI	**Ilulissat**	**9.47**	**14**	SN	Sn	23 28 05.9	-16
NATG	**Natashquan Que**	**10.36**	**199**	PN	**Pn**	**23 26 48.2**	**+0.7**
NATG				SN	Sn	23 28 36.3	-7.2
NATG				Trac		23 28 45.1	
	comp=Z,4.7nm,0.2s						
INUQ	**Inukjuak**	**10.69**	**270**	PN	**Pn**	**23 26 54.6**	**+2.7**
INUQ				mb		23 27 03.0	
	comp=Z,4.9nm,0.2s						
INUQ				SN	**Sn**	**23 28 46.7**	**-4.7**
INUQ				Trac		23 28 57.8	
	comp=Z,4.9nm,0.3s						
YOSQ	**Ashton Mining**	**10.93**	**234**	PN	**Pn**	**23 26 56.6**	**+1.3**
YOSQ				mb		23 27 04.7	
	comp=Z,38nm,0.5s						
YOSQ				SN	Sn	23 28 49.5	-8.0
YOSQ				Trac		23 28 56.6	
	comp=Z,9.0nm,0.2s						
DRLN	**Deer Lake**	**10.94**	**180**	PN	**Pn**	**23 26 54.7**	**-0.8**
DRLN				SN	Sn	23 28 45.4	-12
DRLN				Trac		23 28 48.9	
	comp=Z,35nm,0.6s						
LG4Q	**La Grande 4**	**11.19**	**241**	PN	**Pn**	**23 26 59.6**	**+0.8**
LG4Q				mb		23 27 09.5	
	comp=Z,10.0nm,0.2s						
LG4Q				SN	Sn	23 28 54.0	-10
LG4Q				Trac		23 29 01.0	
	comp=Z,9.1nm,0.2s						
SMQ	**Clarke City**	**11.27**	**212**	PN	**Pn**	**23 27 00.4**	**+0.4**
SMQ				SN	Sn	23 28 56.8	-9.0
SMQ				Trac		23 29 10.8	
	comp=Z,2.8nm,0.2s						
GSQ	**Grosses Roches**	**12.58**	**210**	PN	**Pn**	**23 27 18.1**	**+0.2**
GSQ				SN	Sn	23 29 15.4	-22
SJNN	**Saint John's**	**12.91**	**165**	PN	**Pn**	**23 27 20.6**	**-1.7**
SJNN				mb		23 27 21.7	
	comp=Z,1.3nm,0.1s						
SJNN				SN	Sn	23 29 34.3	-12
NMSQ	**Nemaska Statio**	**13.37**	**239**	PN	**Pn**	**23 27 28.4**	**-0.3**
NMSQ				mb		23 27 36.0	
	comp=Z,5.9nm,0.5s						
NMSQ				SN	Sn	23 29 45.5	-12
ILON	**Igloolik, Nuna**	**13.77**	**322**	PN	**Pn**	**23 27 33.8**	**-0.2**
ILON				mb		23 27 42.2	
	comp=Z,3.9nm,0.2s						
ILON				SN	Sn	23 29 59.2	-7.5
GIFN	**Gifford Fjord,**	**14.04**	**324**	PN	**Pn**	**23 27 38.0**	**+0.4**
GIFN				mb		23 27 44.5	
	comp=Z,15nm,0.8s						
GIFN				SN	Sn	23 30 04.4	-8.9
SUMG	**Summit**	**14.48**	**23**	*i* P	**Pn**	**23 27 42.5**	**-1.6**
KUGN	**Kugaaruk Camp,**	**16.09**	**313**	PN	**Pn**	**23 28 05.7**	**+0.7**
VIMO	**Victor Mine**	**16.18**	**255**	PN	**Pn**	**23 28 04.3**	**-1.9**
YBKN	**Baker Lake, Hu**	**18.21**	**300**	PN	P	23 28 39.4	+7.6
ULM	**Lac du Bonnet**	**23.72**	**263**	LR	LR	23 39 19.5	
	comp=Z,44nm,18.5s,baz=44,slow=38						
YKA	**Yellowknife Ar**	**26.75**	**300**	P	**P**	**23 30 02.5**	**+4.2**
	0.1nm,0.5s,baz=64,slow=9.0,SNR=3.1						
NOA	**NORSAR Array B**	**32.33**	**58**	LR	LR	23 42 08.3	
	comp=Z,23nm,19.8s,baz=65,slow=33						
ARCES	**ARCESS Array B**	**33.67**	**39**	P	**P**	**23 31 00.4**	**+0.9**
	3.7nm,0.8s,baz=298,slow=8.1,SNR=2.5						
PDAR	**Pinedale Array**	**35.70**	**265**	P	P	23 31 22.1	+4.5
	0.4nm,0.5s,baz=55,slow=10,SNR=4.4						
FINES	**FINESS Array B**	**38.14**	**51**	P	**P**	**23 31 39.3**	**+1.6**
	1.7nm,1.1s,baz=309,slow=8.8,SNR=3.3						
ILAR	**Eielson Array**	**38.31**	**316**	P	P	23 31 44.5	+5.3
	0.3nm,0.5s,baz=50,slow=8.2,SNR=3.8						

NIED ***10*** *23:25:00,38.'50N×144.'60E,h5km,Mw4.2 Best double couple: M0=1.97000×10^15 NP1:φ=22.00000°,δ=43.00000°, λ=-78.00000°. NP2:φ=186.00000°,δ=49.00000°, λ=-101.00000°.*

IDC ***10*** *23:25:30.5±0.5,38.'41N×144.'85E,h0km,mb4.3/25, mb1 4.5/31,mb1mx4.4/49,mbtmp4.3/31,ML4.2/6,MS3.3/12, Ms1 3.3/12,ms1mx3.1/48,Error ellipse: s-maj=15.3km s-min=12.4km az=121.0*

ISCJB ***10*** *23:25:32.6±1.0,38.'47N±0.'03×144.'64E±0.'03,h15km±6km, mb4.5/75,MS3.5/6,Error ellipse: s-maj=4.9km s-min=3.1km az=159.8*

JMA ***10*** *23:25:34.4±0.2,38.'46N×144.'61E,h52km,M5.0*

JMA Felt I J1.

NEIC ***10*** *23:25:35.2±0.7,38.'43N×144.'71E,h27km±5km,mb4.6/37, Error ellipse: s-maj=5.7km s-min=4.1km az=154.0*

NEIC Recorded [1 JMA] in Miyagi.

MOS ***10*** *23:25:35.7±1.0,38.'75N×144.'65E,h33km,mb4.8/36,Error ellipse: s-maj=8.9km s-min=5.5km az=106.9*

ISC 10 23:25:35.0±0.8,38.'48N±0.'04×144.'75E±0.'05,h30km±6km, n226,σ1§83/250,mb4.5/82,MS3.5/6,9C-9D,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.48**	**285**	P	**Pn**	**23 26 12.1**	**-1.2**
OFUJ				S	**Sn**	**23 26 40.4**	**-2.2**
MIYJ	**Miyakonagasawa**	**2.53**	**297**	P	**Pn**	**23 26 12.6**	**-1.4**
MIYJ				S	**Sn**	**23 26 40.6**	**-3.2**
JIO	**Ouri**	**2.67**	**271**	||P	**Pn**	**23 26 14.9**	**-1.0**
JIO				S	**Sn**	**23 26 44.6**	**-2.6**
JMK	**Ichinoseki**	**2.80**	**281**	⇑P	**Pn**	**23 26 17.0**	**-0.7**
JMK				S	**Sn**	**23 26 48.0**	**-2.5**
JOM	**Ohasama**	**2.87**	**291**	P	**Pn**	**23 26 18.0**	**-0.7**
JOM				S	**Sn**	**23 26 50.1**	**-2.1**
JANG	**Nango**	**3.14**	**308**	P	**Pn**	**23 26 20.6**	**-1.8**
JANG				*e*S	**Sn**	**23 26 58.9**	**+0.1**
JFK	**Kawauchi**	**3.26**	**251**	P	**Pn**	**23 26 22.6**	**-1.5**
JFK				S	**Sn**	**23 26 58.7**	**-3.2**
JYK	**Kaneyama**	**3.46**	**279**	P	**Pn**	**23 26 26.5**	**-0.3**
JYK				*e*S	**Sn**	**23 27 04.7**	**-2.1**
JFT	**Otama**	**3.61**	**256**	P	**Pn**	**23 26 28.9**	**-0.1**
JFT				S	**Sn**	**23 27 09.1**	**-1.5**
ERM	**Erimo**	**3.74**	**341**	⇑*e*P	**Pn**	**23 26 29.5**	**-1.1**
ERM	**Erimo**	**3.74**	**341**	*e*Pn	**Pn**	**23 26 30.1**	**-0.5**
ERM				*e*Sn	**Sn**	**23 27 08.9**	**-4.7**
JHO	**Hitachi**	**3.81**	**242**	P	**Pn**	**23 26 29.7**	**-1.9**
JHO				S	**Sn**	**23 27 11.3**	**-4.1**
JOT	**Ohata**	**4.06**	**317**	P	**Pn**	**23 26 35.2**	**+0.1**
JOT				S	**Sn**	**23 27 17.8**	**-3.8**
JCH	**Churui**	**4.26**	**346**	P	**Pn**	**23 26 36.1**	**-1.7**
JCH				S	**Sn**	**23 27 22.5**	**-4.1**
JYT	**Yasato**	**4.27**	**240**	P	**Pn**	**23 26 36.5**	**-1.4**
JYT				S	**Sn**	**23 27 22.3**	**-4.4**
JKB	**Kayabe**	**4.44**	**321**	P	**Pn**	**23 26 40.1**	**-0.1**
JKB				S	**Sn**	**23 27 27.2**	**-3.6**
JAG	**Ashikaga**	**4.69**	**246**	P	**Pn**	**23 26 42.5**	**-1.2**
JAG				S	**Sn**	**23 27 34.2**	**-2.8**
NEM2	**Nemuro 2**	**4.94**	**8**	P	**Pn**	**23 26 43.5**	**-3.6**
NEM2				S	**Sn**	**23 27 35.6**	**-7.6**
JHU	**Hanno**	**5.09**	**241**	P	**Pn**	**23 26 47.2**	**-2.1**
JHU				S	**Sn**	**23 27 42.6**	**-4.5**
JRY	**Ryogami san**	**5.27**	**244**	P	**Pn**	**23 26 50.8**	**-1.0**
JRY				*e*S	**Sn**	**23 27 47.7**	**-3.8**
JOSM	**Okushiri--Mats**	**5.40**	**313**	P	**Pn**	**23 26 51.9**	**-1.6**
JTKR	**Abashiri--Toko**	**5.52**	**354**	P	**Pn**	**23 26 52.9**	**-2.2**
JTKR				S	**Sn**	**23 27 52.5**	**-5.1**
MJAR	**Matsushiro Arr**	**5.55**	**252**	Pn	**Pn**	**23 26 56.1**	**+0.6**
	20nm,0.3s,baz=58,slow=9.4,SNR=127						
MJAR				LR	LR	23 29 17.3	
	comp=Z,222nm,20.1s,baz=105,slow=41						
MAJO	**Matsushiro**	**5.55**	**252**	*d i* P	**Pn**	**23 26 56.1**	**+0.6**
MAJO	**Matsushiro**	**5.55**	**252**	*e*Pn	**Pn**	**23 26 56.3**	**+0.8**
MAT	**Matsushiro**	**5.55**	**252**	P	**Pn**	**23 26 56.2**	**+0.7**
MAT				S	**Sn**	**23 27 59.3**	**+1.0**
MJB9	**Matsu-Tunnel**	**5.55**	**252**	*e*Pn	**Pn**	**23 26 56.4**	**+0.8**
JOD2	**Odawara 2**	**5.56**	**236**	P	**Pn**	**23 26 54.6**	**-1.1**
JOD2				S	**Sn**	**23 27 54.9**	**-3.6**
YUK	**Yuzh-Kuril'sk**	**5.61**	**8**	⇑*i*P	**Pn**	**23 26 52.9**	**-3.5**
YUK				*i* S	**Sn**	**23 27 53.3**	**-6.5**
YUK				pmax	pmax		
	comp=N,142nm,0.4s						
YUK				pmax	pmax		
	comp=Z,188nm,0.4s						
YUK				pmax	pmax		
	comp=E,143nm,0.5s						
JHR	**Hokuryu**	**5.73**	**338**	P	**Pn**	**23 26 58.4**	**+0.4**
JHR				*e*S	**Sn**	**23 28 02.0**	**-0.8**
ASAJ	**Asahikawa**	**5.86**	**345**	Pn	**Pn**	**23 26 59.3**	**-0.5**
	comp=E,11nm,0.3s,baz=198,slow=15,SNR=12						
ASAJ				Sn	**Sn**	**23 28 03.1**	**-2.8**
	comp=E,4.3nm,0.3s,baz=39,slow=15,SNR=9.3						
ASAJ				LR	LR	23 29 33.2	
	comp=E,72nm,19.1s,baz=354,slow=41						
JNY	**Yasuok**	**6.33**	**243**	P	**Pn**	**23 27 07.0**	**+0.6**
JNY				*e*S	**Sn**	**23 28 18.8**	**+1.0**
JHJ2	**Mitsune**	**6.69**	**218**	*e*Pn	**Pn**	**23 27 08.1**	**-3.1**
JHJ2				*e*Sn	Sn	23 28 17.6	-8.7
JHJ	**Hachijo jima 2**	**6.70**	**219**	Pn	**Pn**	**23 27 09.3**	**-2.0**
	comp=E,71nm,0.3s,baz=331,slow=20,SNR=8.1						
JHJ				Sn	**Sn**	**23 28 20.1**	**-6.5**
	comp=E,105nm,0.3s,baz=256,slow=24,SNR=7.3						
HMMJ	**Hamamatsu 2**	**6.70**	**240**	P	**Pn**	**23 27 11.6**	**+0.2**
JAO	**Obara**	**6.80**	**244**	P	**Pn**	**23 27 13.4**	**+0.6**
INU	**Inuyama**	**6.94**	**246**	*e*Pn	**Pn**	**23 27 15.3**	**+0.7**
KUR	**Kuril'sk**	**7.14**	**18**	*e*P	**Pn**	**23 27 14.6**	**-2.7**
KUR				*e*S	Sn	23 28 27.0	-10
KUR				pmax	pmax		
	comp=Z,40nm,0.4s						
KUR				smax	smax		
	comp=N,67nm,0.5s						
KUR				smax	smax		
	comp=E,37nm,0.5s						
JKN2	**Miekihoku**	**8.04**	**241**	P	**Pn**	**23 27 29.4**	**-0.3**
YSS	**Yuzh-Sakhalins**	**8.60**	**351**	*e*P	**Pn**	**23 27 34.8**	**-2.5**
YSS				*e*S	**Sn**	**23 29 05.4**	**-7.8**
YSS				pmax	pmax		
	comp=Z,20nm,0.3s						
VLA	**Vladivostok**	**10.79**	**299**	*de*P	**Pn**	**23 28 08.3**	**+0.9**
USRK	**Ussuriysk Ar.**	**11.16**	**305**	Pn	**Pn**	**23 28 13.6**	**+1.2**
	comp=Z,2.8nm,0.3s,baz=104,slow=14,SNR=35						
USRK				LR	LR	23 32 23.1	
	comp=Z,151nm,18.2s,baz=112,slow=37						
CBIJ	**Chichi jima**	**11.55**	**191**	*e*Pn	Pn	23 28 13.0	-4.9
CBIJ				*e*Sn	Sn	23 30 06.6	-19
JNU	**Nakatsue**	**12.46**	**249**	Pn	**Pn**	**23 28 29.9**	**-0.4**
	comp=Z,0.5nm,0.3s,baz=209,slow=8.6,SNR=3.7						
JNU				LR	LR	23 33 18.7	
	comp=Z,140nm,19.3s,baz=117,slow=37						
KSRS	**Korea Array**	**13.32**	**271**	Pn	**Pn**	**23 28 43.4**	**+1.4**
	comp=Z,0.3nm,0.3s,baz=84,slow=14,SNR=7.9						
KSRS				LR	LR	23 33 17.1	
	comp=Z,113nm,20.8s,baz=74,slow=35						
KS15	**Wonju Array Si**	**13.35**	**271**	*e*Pn	**Pn**	**23 28 43.4**	**+1.0**
KSAR	**Wonju Array Be**	**13.35**	**271**	P	**Pn**	**23 28 43.4**	**+1.0**
KSAR	**Wonju Array Be**	**13.35**	**271**	Pn	**Pn**	**23 28 43.4**	**+1.0**
KLR	**Kul'dur**	**14.24**	**323**	Pn	**Pn**	**23 28 51.8**	**-2.6**
	comp=Z,0.1nm,0.3s,baz=125,slow=13,SNR=5.7						
CN2	**Changchun**	**15.47**	**296**	*e*P	**Pn**	**23 29 04.8**	**-6.2**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.6s						
CN2				pmax	pmax		
	comp=Z,200nm,3.0s						
CN2				LR	LR		
	comp=N,200nm,12.0s						
CN2				LR	LR		
	comp=E,200nm,12.0s						
CN2				LR	LR		
	comp=Z,200nm,14.0s						
PETK	**Petropavlovsk-**	**17.15**	**27**	LR	LR	23 36 12.4	
	comp=Z,34nm,18.9s,baz=239,slow=37						
MA2	**Magadan**	**21.46**	**8**	P	**P**	**23 30 21.3**	**+0.6**
	comp=Z,9.8nm,0.8s,baz=219,slow=11,SNR=5.2						
TIA	**Tai'an**	**22.05**	**273**	*e*P	**P**	**23 30 26.3**	**-0.9**
TIA				pmax	pmax		
	comp=Z,20nm,1.1s						
SEY	**Seymchan**	**24.92**	**8**	P	**P**	**23 30 55.5**	**+0.4**
	comp=Z,12nm,0.8s,baz=181,slow=5.9,SNR=14						
SEY	**Seymchan**	**24.92**	**8**	⇑*e*P	**P**	**23 30 56.6**	**+1.5**
YAK	**Yakutsk**	**25.34**	**343**	P	**P**	**23 30 59.3**	**+0.4**
	comp=Z,45nm,0.6s,baz=156,slow=0.7,SNR=11						
YAK	**Yakutsk**	**25.34**	**343**	*e*P	**P**	**23 30 59.8**	**+0.9**
YAK				pmax	pmax		
	comp=Z,61nm,1.0s						
YAK				pmax	pmax		
	comp=E,10.0nm,1.1s						
YAK				pmax	pmax		
	comp=N,28nm,1.1s						
YAK	**Yakutsk**	**25.34**	**343**	*e*P	**P**	**23 30 59.3**	**+0.4**
	comp=N,55nm,0.8s						
H11N2	**WAKE ISLAND Hy**	**26.78**	**128**	T	T	23 59 09.7	
	baz=320,slow=76,SNR=6.9						
H11N1	**WAKE ISLAND Hy**	**26.79**	**128**	T	T	23 59 10.7	
	baz=320,slow=76,SNR=7.8						
H11N3	**WAKE ISLAND Hy**	**26.80**	**128**	T	T	23 59 07.0	
	baz=320,slow=76,SNR=6.7						
H11S1	**WAKE ISLAND Hy**	**27.59**	**130**	T	T	00 00 03.5	
H11S3	**WAKE ISLAND Hy**	**27.59**	**130**	T	T	00 00 09.9	
	baz=319,slow=74,SNR=3.2						
H11S2	**WAKE ISLAND Hy**	**27.61**	**130**	T	T	00 00 15.1	
	baz=249,slow=74,SNR=4.2						
BOD	**Bodaibo**	**27.82**	**324**	*e*P	**P**	**23 31 21.3**	**0.0**
BOD				pmax	pmax		
	comp=Z,8.0nm,0.9s						
ULN	**Ulaanbaatar**	**28.80**	**301**	||*e*P	**P**	**23 31 31.1**	**+0.7**
ULN				pmax	pmax		
	comp=Z,3.0nm,0.7s						
BILL	**Bilibino**	**31.92**	**15**	*c i* P	**P**	**23 31 57.7**	**+0.2**
BILL				*i*		23 33 04.1	
BILL				*i*		23 34 47.0	
BILL				pmax	pmax		
	comp=Z,9.0nm,1.2s						
BILL	**Bilibino**	**31.92**	**15**	*e*P	**P**	**23 31 57.6**	**+0.2**
	comp=Z,9.7nm,0.9s						
TIXI	**Tiksi**	**34.22**	**351**	||*e*P	**P**	**23 32 17.1**	**-0.4**
TIXI				pmax	pmax		
	comp=Z,8.0nm,1.0s						
TIXI	**Tiksi**	**34.22**	**351**	*e*P	**P**	**23 32 17.2**	**-0.3**
	comp=Z,6.6nm,0.6s						
GTA	**Gaotai**	**34.69**	**286**	*e*P	**P**	**23 32 23.3**	**+1.2**
GTA				pP	pP	23 32 32.5	+1.6
GTA				sP	sP	23 32 36.4	+1.9
GTA				pmax	pmax		
	comp=Z,5.0nm,1.0s						
MYLDM	**Lahad Datu**	**40.83**	**222**	*e*P	**P**	**23 33 11.6**	**-2.4**
	comp=Z,25nm,1.4s						
ZAA1	**Zalesovo Array**	**42.92**	**311**	*e*P	**P**	**23 33 31.8**	**+1.1**
ZAA1				*e*PcP	**PcP**	**23 35 21.6**	**+0.6**
ZAA0	**Zalesovo Array**	**42.92**	**311**	*e*P	**P**	**23 33 30.9**	**+0.2**
ZALV	**Zalesovo Beam**	**42.92**	**311**	P	**P**	**23 33 31.8**	**+1.1**
	comp=Z,1.6nm,0.4s,baz=97,slow=8.4,SNR=11						
ZALV				PcP	**PcP**	**23 35 21.6**	**+0.6**
	comp=Z,4.4nm,0.4s,baz=93,slow=3.4,SNR=19						
NRIK	**Noril'sk**	**43.09**	**334**	P	**P**	**23 33 32.8**	**+0.9**
	comp=Z,1.8nm,0.3s,baz=119,slow=13,SNR=11						
RSO	**Redoubt South**	**44.12**	**39**	*e*P	**P**	**23 33 41.7**	**+1.1**
KDAK	**Kodiak Island**	**44.25**	**43**	*i* P	**P**	**23 33 41.3**	**0.0**
MK01	**Makanchi Array**	**45.60**	**301**	*e*P	**P**	**23 33 53.0**	**+0.7**
MK31	**Makanchi Array**	**45.60**	**302**	*e*P	**P**	**23 33 53.6**	**+1.2**
MK31	**Makanchi Array**	**45.60**	**302**	*e*P	**P**	**23 33 53.6**	**+1.2**
MK32	**Makanchi Array**	**45.60**	**302**	*e*P	**P**	**23 33 53.2**	**+0.9**
MK32				*e*PcP	**PcP**	**23 35 31.1**	**+0.7**
MKAR	**Makanchi Array**	**45.60**	**302**	P	**P**	**23 33 53.2**	**+0.9**
	comp=Z,4.4nm,0.7s,baz=85,slow=9.3,SNR=36						
MKAR				PcP	**PcP**	**23 35 31.1**	**+0.7**
	comp=Z,1.2nm,0.8s,baz=84,slow=5.9,SNR=3.4						
MKAR				LR	LR	23 53 23.6	
	comp=Z,65nm,19.6s,baz=135,slow=37						
MKAR	**Makanchi Array**	**45.60**	**302**	*e*P	**P**	**23 33 53.6**	**+1.2**
MKAR						23 35 31.1	
MKAR	**Makanchi Array**	**45.60**	**302**	*e*P	**P**	**23 33 53.6**	**+1.2**
MKAR				PcP	**PcP**	**23 35 31.1**	**+0.7**
MAKZ	**Makanchi**	**45.81**	**302**	*e*P	**P**	**23 33 55.3**	**+1.3**
MAKZ				pmax	pmax		
	comp=Z,7.0nm,1.0s						
MAKZ	**Makanchi**	**45.81**	**302**	*e*P	**P**	**23 33 55.3**	**+1.3**
	comp=Z,7.1nm,1.0s						
MDM	**Murphy Dome**	**46.28**	**33**	*e*P	**P**	**23 33 58.9**	**+1.5**
	comp=Z,5.8nm,1.0s						
IL1	**Eielson Array**	**46.85**	**33**	*e*P	**P**	**23 34 01.1**	**-0.7**
ILAR	**Eielson Array**	**46.85**	**33**	P	**P**	**23 34 01.8**	**-0.1**
	comp=Z,2.0nm,0.8s,baz=258,slow=6.7,SNR=20						
ILB	**Eielson Array**	**46.85**	**33**	*e*P	**P**	**23 34 01.8**	**-0.1**
KURK	**Kurchatov**	**47.14**	**308**	*e*P	**P**	**23 34 03.8**	**-0.5**
KURK				pmax	pmax		
	comp=Z,10.0nm,0.7s						
KURK	**Kurchatov**	**47.14**	**308**	*e*P	**P**	**23 34 03.8**	**-0.5**
	comp=Z,9.9nm,0.7s						
KKN	**Kakani**	**50.16**	**276**	*e*P	**P**	**23 34 29.7**	**+1.6**
PKIN	**Phulchoki**	**50.17**	**276**	*e*P	**P**	**23 34 29.8**	**+1.5**
	comp=Z,8.4nm,0.6s						
GKN	**Gorkha**	**50.56**	**277**	*e*P	**P**	**23 34 32.5**	**+1.4**
	comp=Z,77nm,0.9s						
TKM2	**Tokmak 2**	**51.27**	**298**	*e*P	**P**	**23 34 37.8**	**+1.5**
TKM2				pmax	pmax		
	comp=Z,9.0nm,0.6s						
TKM2	**Tokmak 2**	**51.27**	**298**	*e*P	**P**	**23 34 37.8**	**+1.5**
	comp=Z,8.9nm,0.6s						
KOLN	**Koldanda**	**51.48**	**277**	*e*P	**P**	**23 34 39.6**	**+1.6**
	comp=Z,15nm,0.5s						
BRVK	**Borovoye**	**51.62**	**312**	*ce*P	**P**	**23 34 39.8**	**+1.4**
BRVK				pmax	pmax		
	comp=Z,11nm,2.5s						
KIP	**Kipapa**	**51.63**	**92**	||*e*P	**P**	**23 34 37.8**	**-1.1**
PYUN	**Piuthan**	**51.80**	**278**	*e*P	**P**	**23 34 42.1**	**+1.7**
	comp=Z,95nm,1.0s						
INK	**Inuvik**	**51.89**	**28**	P	**P**	**23 34 40.9**	**+0.7**
	comp=Z,1.4nm,0.5s,baz=294,slow=8.9,SNR=6.2						
INK	**Inuvik**	**51.89**	**28**	*e*P	**P**	**23 34 40.9**	**+0.7**
INK				pmax	pmax		
	comp=Z,11nm,1.7s						
INK	**Inuvik**	**51.89**	**28**	*e*P	**P**	**23 34 40.9**	**+0.7**
	comp=Z,11nm,1.7s						
AAK	**Ala-Archa**	**52.13**	**298**	LR	LR	23 57 24.9	
	comp=Z,29nm,19.6s,baz=158,slow=37						
AAK	**Ala-Archa**	**52.13**	**298**	||*e*P	**P**	**23 34 43.8**	**+1.1**
AAK				pmax	pmax		
	comp=Z,2.0nm,0.9s						
ZRNK	**Zerenda**	**52.39**	**312**	*e*P	**P**	**23 34 45.4**	**+1.2**
ZRNK				pmax	pmax		
	comp=Z,6.0nm,0.9s						
ZRNK	**Zerenda**	**52.39**	**312**	*e*P	**P**	**23 34 45.4**	**+1.2**
	comp=Z,6.1nm,0.9s						
EKS2	**Erkin-Say**	**52.62**	**299**	*e*P	**P**	**23 34 47.5**	**+1.3**
EKS2				pmax	pmax		
	comp=Z,3.0nm,0.6s						
EKS2	**Erkin-Say**	**52.62**	**299**	*e*P	**P**	**23 34 47.5**	**+1.3**
	comp=Z,3.1nm,0.6s						
KKAR	**Karatay Array**	**54.69**	**300**	*e*P	**P**	**23 35 01.9**	**+0.7**
KKAR	**Karatay Array**	**54.69**	**300**	*e*P	**P**	**23 35 01.9**	**+0.7**
SVE	**Sverdlovsk**	**55.81**	**319**	*e*P	**P**	**23 35 10.1**	**+1.0**
SVE				pmax	pmax		
	comp=Z,9.0nm,0.8s						
ARU	**Arti**	**57.03**	**319**	*d i* P	**P**	**23 35 18.2**	**+0.5**
ARU						23 37 21.0	
ARU				S	**S**	**23 43 12.4**	**+2.3**
ARU				SS	**SS**	**23 46 54.1**	**-4.2**
ARU				pmax	pmax		
	comp=Z,22nm,1.7s						
ARU	**Arti**	**57.03**	**319**	*e*P	**P**	**23 35 18.5**	**+0.7**
	comp=Z,9.6nm,0.7s						
WRAB	**Tennant Creek**	**58.92**	**191**	*e*P	P	23 35 40.4	+9.1
WRAB	**Tennant Creek**	**58.92**	**191**	*ep*P	pP	23 35 40.4	-0.1
WR1	**Warramunga Arr**	**58.93**	**191**	*e*P	**P**	**23 35 30.9**	**-0.5**
	comp=Z,5.7nm,0.8s						
WRA	**Warramunga Arr**	**58.93**	**191**	P	**P**	**23 35 30.9**	**-0.5**
	comp=Z,5.3nm,0.6s,baz=12,slow=7.2,SNR=24						
ABKAR	**Akbulak array**	**59.02**	**310**	*e*P	**P**	**23 35 32.6**	**+0.8**
AKTO	**Aktyubinsk**	**59.67**	**312**	LR	LR	00 01 41.7	
	comp=Z,25nm,20.1s,slow=36						
RES	**Resolute Bay**	**60.53**	**15**	P	**P**	**23 35 41.7**	**-0.1**
	comp=Z,3.0nm,0.9s,baz=354,slow=6.8,SNR=5.4						
RES	**Resolute Bay**	**60.53**	**15**	*e*P	**P**	**23 35 41.7**	**-0.1**
RES				pmax	pmax		
	comp=Z,7.0nm,1.3s						
RES	**Resolute Bay**	**60.53**	**15**	*e*P	**P**	**23 35 41.7**	**-0.1**
	comp=Z,6.5nm,1.3s						
YKA	**Yellowknife Ar**	**61.22**	**31**	P	**P**	**23 35 46.8**	**+0.2**
	comp=Z,0.8nm,0.7s,baz=300,slow=6.3,SNR=12						
YKB5	**Yellowknife Ar**	**61.22**	**31**	*e*P	**P**	**23 35 46.8**	**+0.2**
AS01	**Alice Springs**	**62.64**	**191**	*e*P	**P**	**23 35 56.0**	**-0.6**
AS31	**Alice Springs**	**62.65**	**191**	*e*P	**P**	**23 35 56.8**	**+0.1**
	comp=Z,1.3nm,0.8s						
ASAR	**Alice Springs**	**62.65**	**191**	P	**P**	**23 35 56.8**	**+0.1**
	comp=Z,2.0nm,0.8s,baz=11,slow=6.8,SNR=17				

AKASG LR LR 00 11 30.5
comp=Z,27nm,20.4s,baz=40,slow=37
AKBB Malin Array Si 74.74 324 *e*P **P 23 37 11.7 -0.1**
AKBB pmax pmax
comp=Z,6.0nm,0.6s
AKBB Malin Array Si 74.74 324 *e*P **P 23 37 11.7 -0.1**
comp=Z,6.2nm,0.6s
KIEV Kiev 74.75 324⇓*e*P **P 23 37 12.6 +0.7**
KIEV pmax pmax
comp=Z,3.0nm,1.0s
BW06 Boulder Array 74.76 47 *e*P **P 23 37 12.9 +0.6**
PD31 Pinedale Array 74.76 47 *e*P **P 23 37 12.9 +0.5**
PDAR Pinedale Array 74.76 47 P **P 23 37 12.9 +0.5**
comp=Z,1.3nm,0.7s,baz=275,slow=1.8,SNR=14
N16A Rees Ranch, Co 74.81 50 *e*P **P 23 37 13.1 +0.4**
CCUT Cedar City 75.67 53 *e*pP pP 23 37 32.8 +5.7
LDFC Landfair 76.05 56 *e*P **P 23 37 21.2 +1.4**
comp=Z,26nm,0.4s
LCMT Little Creek M 76.07 54 *e*P **P 23 37 21.5 +1.6**
comp=Z,3.7nm,0.9s
MTPU Mount Pierson 76.11 52 *e*P **P 23 37 22.3 +1.9**
comp=Z,3.5nm,0.9s
P17A Butcher Ranch, 76.11 51 *e*P **P 23 37 22.0 +1.9**
KNB Kanab 76.33 54 *e*P **P 23 37 23.6 +2.1**
KNB pmax pmax
comp=Z,22nm,1.9s
KNB Kanab 76.33 54 *e*P **P 23 37 23.6 +2.1**
comp=Z,22nm,1.9s
SRU San Rafael Swe 76.46 51 *e*P **P 23 37 23.3 +1.2**
SRU pmax pmax
comp=Z,7.0nm,0.7s
SRU San Rafael Swe 76.46 51 *e*P **P 23 37 23.3 +1.2**
comp=Z,7.1nm,0.7s
PV10 Paradox Valley 77.83 51 *e*P **P 23 37 31.8 +1.9**
N23A Red Feather La 78.03 47 *e*P **P 23 37 31.8 +0.8**
N23A *e*pP **PcP 23 37 42.4 +1.7**
Y14A Wickenburg 78.12 56 *e*PcP **PcP 23 37 42.0 +1.1**
BUR08 Bucovina Ar. S 78.77 323 *e*P **P 23 37 35.5 +0.8**
X16A Lo Mia Camp, P 78.83 55 *e*P **P 23 37 37.0 +1.6**
comp=Z,3.0nm,1.0s
STHS Stebnicka Huta 79.26 326 *e*PP PP 23 40 33.7 -2.8
S22A 4UR Ranch, Cre 79.56 50 *e*P **P 23 37 41.3 +1.7**
comp=Z,3.0nm,1.0s
BR101 Keskin Array S 79.84 313 *e*P **P 23 37 41.1 +0.3**
BRTR Keskin Array B 79.84 313 P **P 23 37 41.1 +0.3**
comp=Z,0.6nm,0.7s,baz=46,slow=7.1,SNR=5.4
BRTR LR LR 00 19 07.1
comp=Z,31nm,18.1s,baz=182,slow=40
BR231 Keskin MP Arra 80.25 314 *e*P **P 23 37 42.1 -0.8**
VYHS Vyhne 81.00 327 *e*P **P 23 37 48.0 +1.3**
VYHS Vyhne 81.00 327 *e*P **P 23 37 48.0 +1.3**
BRG Berggiesshubel 81.11 331 *e*P **P 23 37 47.2 0.0**
comp=Z,3.1nm,1.0s
BRG Berggiesshubel 81.11 331 *e*P **P 23 37 47.2 0.0**
BRG pmax pmax
comp=Z,15nm,1.0s
CLL Collm 81.12 332 *i* P **P 23 37 47.7 +0.5**
comp=Z,6.0nm,0.9s
CLL *i* 23 37 57.0
CLL Collm 81.12 332 *e*P **P 23 37 47.9 +0.7**
CLL pmax pmax
comp=Z,5.0nm,0.8s
CLL Collm 81.12 332 *e*P **P 23 37 47.9 +0.7**
comp=Z,5.4nm,0.8s
T25A Trinidad 81.41 49 *e*P **P 23 37 51.1 +1.8**
comp=Z,14nm,0.9s
ANMO Albuquerque 81.63 52⇓*e*P **P 23 37 51.3 +0.8**
ANMO pmax pmax
comp=Z,3.0nm,1.3s
ANMO Albuquerque 81.63 52 *e*P **P 23 37 52.4 +1.9**
comp=Z,3.7nm,1.3s
EKA Eskdalemuir Ar 82.61 342 P **P 23 37 55.6 +0.6**
comp=Z,0.5nm,0.5s,baz=24,slow=4.8,SNR=5.4
KHC Kasperske Hory 82.65 330 *e*P **P 23 37 56.5 +1.1**
KHC pmax pmax
comp=Z,1.0nm,0.8s
KHC Kasperske Hory 82.65 330 *e*P **P 23 37 56.5 +1.1**
comp=Z,1.4nm,0.8s
CONA Conrad Observa 82.69 328 *i* pP **P 23 37 56.5 +0.8**
comp=Z,4.0nm,1.1s
GERES GERESS Array B 82.83 330 P **P 23 37 57.1 +0.7**
comp=Z,1.0nm,0.7s,baz=36,slow=5.3,SNR=11
GEA0 GERESS Array S 82.84 330 *e*P **P 23 37 56.7 +0.3**
PERS Pernice 84.02 328 *i* P **P 23 38 03.0 +0.5**
SOKA Soboth 84.03 328 *i* pP **P 23 38 03.1 +0.5**
comp=Z,3.5nm,0.6s
VISS Visnje 84.80 327 *i* P **P 23 38 06.6 +0.1**
BOJS Bojanci 84.87 327 *e*P **P 23 38 06.6 -0.2**
WTTA Wattenberg 84.93 330 *i* PcP **P 23 38 08.2 +0.9**
comp=Z,3.3nm,0.6s
JAVS Javornik 85.06 328 *i* P **P 23 38 06.2 -1.6**
MOTA Moosalm 85.07 330 *i* pP **P 23 38 10.9 +2.9**
comp=Z,4.1nm,0.9s
RETA Reutte 85.08 331 *i* PcP **P 23 38 08.8 +0.9**
comp=Z,6.0nm,0.7s
BFO Black Forest 85.29 333 *i* P **P 23 38 10.2 +1.3**
BFO Black Forest 85.29 333 *e*P **P 23 38 09.9 +1.0**
comp=Z,7.2nm,1.2s
FETA Feichten 85.48 330 *i* PcP **P 23 38 10.8 +0.8**
comp=Z,4.2nm,0.7s
DAVA Damuels 85.59 331 *i* PcP **P 23 38 10.9 +0.4**
comp=Z,9.5nm,1.0s
FUORN Ofenpass-Fuorn 85.99 330 *e*P **P 23 38 13.9 +1.3**
comp=Z,8.7nm,0.7s
TX31 Lajitas Ar. Si 87.14 54 *e*P **P 23 38 19.0 +0.5**
TX31 *e*pP **pP 23 38 28.9 +0.9**
LTX Lajitas 87.14 54 *e*P **P 23 38 19.0 +0.6**
LTX Lajitas 87.14 54 *e*P **P 23 38 19.0 +0.6**
TXAR Lajitas Array 87.14 54 P **P 23 38 19.0 +0.6**
comp=Z,0.9nm,0.8s,baz=288,slow=3.3,SNR=8.0
TXAR Lajitas Array 87.14 54 P **P 23 38 19.0 +0.6**

*IDC **10** 23:54:11.0±9.9, 36°.60N×71°.88E, h152km±61km, mb1 3.1/5, mb1mx2.8/56, mbtmp3.7/5, Error ellipse: s-maj=139.2km s-min=24.4km az=158.0*
*SOME **10** 23:54:15.3, 38°.13N×71°.78E, h20km*
*NNC **10** 23:54:19.8±3.0, 37°.66N×71°.32E, h0km, mb4.0, mpv3.6, Error ellipse: s-maj=23.2km s-min=18.5km az=160.0*
ISC 10 23:54:16.3±1.9, 37°.2N±0°.1×71°.66E±0°.09, h150km, n12, σ1§54/20, 6C-1D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFK	**Sufi-Kurgan**	**3.18**	**27**	⇑Pn	**Pn**	**23 55 07.8**	**+1.6**
	23nm,0.3s						
SFK				⇑Sn	**Sn**	**23 55 45.1**	**+0.3**
	40nm,0.2s						
IUG	**Iuzhnay**	**5.12**	**346**	*e*P	**Pn**	**23 55 33.7**	**+2.3**
	19nm,0.3s						
IUG				*e*S	**Sn**	**23 56 29.5**	**-0.4**
	27nm,0.5s						
MNAS	**Manas**	**5.34**	**7**	⇑Pn	**Pn**	**23 55 35.6**	**+1.2**
	0.9nm,0.2s						
MNAS				⇑Sn	**Sn**	**23 56 33.9**	**-1.4**
	30nm,0.5s						
DZA	**Taraz**	**5.71**	**358**	*e*P	**Pn**	**23 55 42.3**	**+3.1**
	23nm,0.2s						
DZA				*e*S	**Sn**	**23 56 44.0**	**+0.1**
	45nm,0.4s						
AAK	**Ala-Archa**	**5.87**	**21**	P	**Pn**	**23 55 42.7**	**+1.3**
	2.1nm,0.3s,baz=194,slow=8.0,SNR=23						
AAK				S	**Sn**	**23 56 47.2**	**-0.7**
	2.1nm,0.3s,baz=306,slow=20,SNR=18						
AAK	**Ala-Archa**	**5.87**	**21**	⇑Pn	**Pn**	**23 55 42.1**	**+0.7**
	4.3nm,0.6s						
AAK				⇑Sn	**Sn**	**23 56 47.2**	**-0.7**
	25nm,0.9s						
KK31	**Karatay Array**	**5.98**	**352**	⇓Pn	**Pn**	**23 55 44.1**	**+1.4**
	2.4nm,0.3s,baz=162,slow=9.9,SNR=191						
KK31				Sn	**Sn**	**23 56 48.0**	**-2.4**
	6.3nm,0.3s,baz=165,slow=19,SNR=30						
GEYT	**Alibeck**	**10.78**	**278**	P	**Pn**	**23 56 46.4**	**-0.1**
	0.4nm,0.3s,baz=98,slow=11,SNR=6.8						
GEYT				S	**Sn**	**23 58 44.2**	**-1.5**
	0.5nm,0.3s,baz=147,slow=19,SNR=3.8						
MKAR	**Makanchi Array**	**12.43**	**36**	P	**Pn**	**23 57 06.0**	**-2.1**
	0.1nm,0.3s,baz=212,slow=8.9,SNR=3.3						
KURBB	**Kurchatov Arra**	**14.31**	**18**	P	**P**	**23 57 34.2**	**-0.5**
	0.1nm,0.3s,baz=204,slow=10,SNR=5.9						
AB31	**Akbulak array**	**14.76**	**329**	Pn	**P**	**23 57 40.2**	**+0.5**
	0.5nm,0.4s,baz=138,slow=13,SNR=19						
ZALV	**Zalesovo Beam**	**19.08**	**24**	P	**P**	**23 58 26.3**	**-0.8**
	0.4nm,0.3s,baz=224,slow=10,SNR=12						

*NEIC **10** 23:56:05.8±0.4, 20°.22S×168°.11E, h10km, mb4.7/8, Error ellipse: s-maj=13.6km s-min=8.8km az=149.0*
*ISCJB **10** 23:56:06.1±2.8, 20°.24S±0°.08×168°.04E±0°.07, h22km±20km, mb4.5/18, MS3.5/9, Error ellipse: s-maj=15.3km s-min=8.4km az=143.0*
*IDC **10** 23:56:09.0±0.8, 20°.23S×168°.12E, h31km±4km, mb4.2/14, mb1 4.4/15, mb1mx4.2/40, mbtmp4.4/15, ML3.4/1, MS3.4/11, Ms1 3.5/11, ms1mx3.2/35, Error ellipse: s-maj=20.5km s-min=14.0km az=137.0*
ISC 10 23:56:08.0±0.6, 20°.2S±0°.1×168°.05E±0°.08, h23km±3km, h23km:pP-P, n57, σ1§14/50, mb4.5/18, MS3.6/9, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.38**	**219**	Pn	**Pn**	**23 56 44.8**	**-0.8**
	9.8nm,0.3s,baz=58,slow=18,SNR=26						
DZM				Sn	**Sn**	**23 57 12.5**	**-1.7**
	64nm,0.3s,baz=98,slow=22,SNR=11						
DZM				LR	LR	23 57 34.6	
	comp=Z,822nm,21.4s,baz=59,slow=36						
MSVF	**Nonsavu**	**9.78**	**77**	*e*Pn	**Pn**	**23 58 28.9**	**+1.6**
HNR	**Honiara**	**13.27**	**323**	LR	LR	00 03 53.5	
	comp=Z,75nm,18.3s,baz=137,slow=35						
AFI	**Afiamalu**	**20.27**	**75**	LR	LR	00 06 12.9	
	comp=Z,36nm,21.3s,baz=266,slow=30						
CTA	**Charters Tower**	**20.46**	**267**	P	Pn	00 00 45.6	-0.8
	16nm,0.7s,baz=95,slow=12,SNR=12						
CTAO	**Charters Tower**	**20.46**	**267**	*e*P	**P**	**00 00 44.4**	**+0.2**
	116nm,0.8s						
PMG	**Port Moresby**	**22.85**	**295**	P	**P**	**00 01 11.1**	**+1.4**
	5.6nm,0.4s,baz=164,slow=3.0,SNR=3.3						
PMG				LR	LR	00 08 00.3	
	comp=Z,129nm,18.4s,baz=49,slow=31						
STKA	**Stephens Creek**	**26.38**	**239**	P	**P**	**00 01 44.3**	**+1.6**
	8.2nm,0.6s,baz=67,slow=7.4,SNR=18						
STKA				LR	LR	00 11 37.6	
	comp=Z,156nm,18.5s,baz=27,slow=35						
STKA	**Stephens Creek**	**26.38**	**239**	*e*P	**P**	**00 01 44.3**	**+1.6**
	8.9nm,1.5s						
RAR	**Rarotonga**	**30.09**	**98**	LR	LR	00 11 49.5	
	comp=Z,43nm,21.8s,baz=304,slow=31						
WRAB	**Tennant Creek**	**31.62**	**265**	*e*P	**P**	**00 02 29.0**	**-0.5**
	2.3nm,0.6s						
WRAB				*e*S	**S**	**00 07 36.9**	**-0.6**
WR1	**Warramunga Arr**	**31.63**	**265**	*e*P	**P**	**00 02 28.6**	**-0.9**
WR1				*e*pP	**pP**	**00 02 37.2**	**+0.7**
WRA	**Warramunga Arr**	**31.63**	**265**	P	**P**	**00 02 28.6**	**-1.0**
	3.7nm,0.8s,baz=95,slow=8.9,SNR=8.7						
WRA				pP	**pP**	**00 02 37.2**	**+0.7**
	2.4nm,0.6s,baz=93,slow=8.9,SNR=8.5						
AS01	**Alice Springs**	**31.77**	**257**	*e*P	**P**	**00 02 29.7**	**-1.1**
AS31	**Alice Springs**	**31.81**	**257**	*e*P	**P**	**00 02 31.1**	**0.0**
	5.9nm,0.6s						
AS31				*e*pP	**sP**	**00 02 40.9**	**-0.1**
ASAR	**Alice Springs**	**31.82**	**257**	P	**P**	**00 02 31.1**	**0.0**
	14nm,0.7s,baz=86,slow=8.9,SNR=122						
ASAR				pP	**sP**	**00 02 40.9**	**-0.1**
	16nm,0.8s,baz=82,slow=9.1,SNR=21						
ASAR				LR	LR	00 15 37.8	
	comp=Z,130nm,18.7s,baz=127,slow=37						
FITZ	**Fitzroy Crossi**	**40.04**	**266**	P	**P**	**00 03 42.0**	**+0.4**
	12nm,0.8s,baz=110,slow=8.5,SNR=11						
FITZ				pP	**sP**	**00 03 52.2**	**+0.7**
	15nm,0.8s,baz=150,slow=4.5,SNR=7.6						
FITZ				LR	LR	00 20 19.7	
	comp=Z,126nm,18.2s,baz=68,slow=36						
PPT2	**Papeete2**	**40.10**	**94**	*e*LR	LR	00 14 49.2	
	145nm,30.0s						
TAOE	**Nuku Hiva Isla**	**51.21**	**85**	*e*LR	LR	00 19 58.1	
	199nm,27.5s						
VNDA	**Vanda**	**57.42**	**182**	P	**P**	**00 05 54.1**	**-0.3**
	1.2nm,0.7s,baz=3.2,slow=5.8,SNR=7.1						
SBA	**Scott Base**	**57.68**	**180**	*e*P	**P**	**00 05 57.5**	**+1.3**
	22nm,1.5s						
MJAR	**Matsushiro Arr**	**63.10**	**333**	P	**P**	**00 06 33.0**	**-0.7**
	1.2nm,0.3s,baz=121,slow=45,SNR=3.5						
MJAR				pP	**sP**	**00 06 43.3**	**-0.6**
	1.9nm,0.5s,baz=172,slow=8.3,SNR=2.3						
KSRS	**Korea Array**	**68.69**	**327**	P	**P**	**00 07 11.0**	**+1.4**
	1.2nm,0.9s,baz=142,slow=6.2,SNR=3.2						
KS15	**Wonju Array Si**	**68.70**	**327**	*e*P	**P**	**00 07 11.0**	**+1.3**
KSAR	**Wonju Array Be**	**68.70**	**327**	P	**P**	**00 07 11.0**	**+1.3**
USRK	**Ussuriysk Ar.**	**72.10**	**334**	P	**P**	**00 07 30.4**	**+0.1**
	5.3nm,0.9s,baz=146,slow=4.6,SNR=7.9						
USRK				pP	**sP**	**00 07 41.0**	**+0.4**
	5.2nm,0.8s,baz=185,slow=2.3,SNR=8.1						
GSTR	**Great Sitkin T**	**73.33**	**10**	*e*P	P	00 07 43.5	+6.0
MAW	**Mawson**	**77.11**	**202**	P	**P**	**00 07 59.7**	**+0.5**
	2.2nm,0.7s,baz=140,slow=9.0,SNR=2.5						
CM01	**Chiang Mai Arr**	**77.86**	**295**	*e*P	**P**	**00 08 05.7**	**+1.5**
PLEC	**Pleito Hills**	**88.22**	**52**	*e*P	P	00 09 03.6	+6.0
YBH	**Yreka Blue Hor**	**88.78**	**44**	P	**P**	**00 08 59.5**	**-0.6**
	2.1nm,0.8s,baz=318,slow=3.9,SNR=4.4						
YBH	**Yreka Blue Hor**	**88.78**	**44**	*e*P	**P**	**00 08 59.5**	**-0.6**
	4.9nm,0.9s						
WASM	**Alta Sierra Ca**	**88.93**	**51**	*e*P	**P**	**00 09 00.1**	**-0.9**
WASM				*e*pP	**pP**	**00 09 07.2**	**-1.6**
NV01	**Mina Array Sit**	**90.28**	**49**	*e*P	**P**	**00 09 06.7**	**-0.7**
NV01				*e*pP	**sP**	**00 09 16.9**	**-0.8**
NVAR	**Mina Array Bea**	**90.28**	**49**	P	**P**	**00 09 06.7**	**-0.7**
	1.5nm,0.8s,baz=230,slow=8.3,SNR=6.7						
NVAR				pP	**sP**	**00 09 16.9**	**-0.8**
	4.4nm,0.9s,baz=226,slow=8.0,SNR=13						
NVAR				LR	LR	00 41 26.5	
	comp=Z,43nm,20.8s,baz=72,slow=30						
TPNV	**Topopah Spring**	**91.13**	**51**	*e*P	**P**	**00 09 12.8**	**+1.6**
	6.3nm,1.0s						
HDA	**Harding Lake**	**91.20**	**18**	*e*P	P	00 09 17.8	+7.1
	121nm,1.2s						
ILAR	**Eielson Array**	**91.50**	**18**	P	**P**	**00 09 11.0**	**-1.1**
	0.5nm,0.7s,baz=249,slow=5.9,SNR=4.7						
ILAR				LR	LR	00 44 34.2	
	comp=Z,15nm,19.2s,baz=29,slow=32						
ILB	**Eielson Array**	**91.50**	**18**	*e*P	**P**	**00 09 10.9**	**-1.1**
INK	**Inuvik**	**97.82**	**19**	*e*P	**P**	**00 09 36.9**	**-4.0**
TXAR	**Lajitas Array**	**98.21**	**62**	LR	LR	00 45 14.4	
	comp=Z,20nm,20.2s,baz=0.0,slow=30						
YKA	**Yellowknife Ar**	**102.05**	**28**	P	**Pdif**	**00 09 59.4**	**-0.5**
	0.1nm,0.5s,baz=257,slow=5.0,SNR=4.5						
YKB5	**Yellowknife Ar**	**102.05**	**28**	*e*Pdif	**Pdif**	**00 09 59.4**	**-0.5**
CONA	**Conrad Observa**	**144.38**	**327**	*i* sPKiKP	sPKPdf	00 15 52.2	-0.6
	0.3nm,0.2s						
GERES	**GERESS Array B**	**144.80**	**330**	PKP	**PKPab**	**00 15 41.7**	**-0.3**
	0.8nm,0.7s,baz=46,slow=3.9,SNR=9.8						
GERES				pPKP	**pPKPdf**	**00 15 52.3**	**+1.4**
	1.7nm,0.8s,baz=11,slow=1.4,SNR=7.2						
ARSA	**Arzberg**	**145.00**	**327**	*i* sPKiKP	sPKPdf	00 15 54.5	+0.6
	0.6nm,0.4s						
MOA	**Molln**	**145.23**	**329**	*i* sPKiKP	sPKPdf	00 15 53.5	-0.7
	2.7nm,0.6s						
SOKA	**Soboth**	**145.63**	**326**	*i* sPKiKP	sPKPdf	00 15 54.9	-0.2
	2.4nm,0.8s						
OBKA	**Obir**	**145.99**	**327**	*i* sPKiKP	sPKPdf	00 15 56.6	+1.0
	0.9nm,0.4s						
ABTA	**Abfaltersbach**	**146.85**	**329**	*i* pPKiKP	sPKPdf	00 15 55.0	-2.2
	1.2nm,0.6s						
MOTA	**Moosalm**	**147.09**	**331**	*i* sPKiKP	sPKPdf	00 15 57.7	+0.1
	0.2nm,0.2s						
RETA	**Reutte**	**147.14**	**331**	*i* sPKiKP	sPKPdf	00 15 56.5	-1.1
	1.1nm,0.5s						
WLF	**Walferdange**	**147.26**	**338**	*e*PKPdf	**PKPbc**	**00 15 50.4**	**+1.0**
FETA	**Feichten**	**147.50**	**331**	*i* sPKPab	sPKPdf	00 15 56.3	-2.1
	1.0nm,0.5s						
BFO	**Black Forest**	**147.53**	**334**	*e*PKPbc	**PKPab**	**00 15 51.8**	**-0.6**
DAVA	**Damuels**	**147.69**	**332**	*i* sPKiKP	sPKPdf	00 15 57.2	-1.4
	0.7nm,0.4s						
FUORN	**Ofenpass-Fuorn**	**148.01**	**331**	*e*PKPbc	**PKPbc**	**00 15 52.5**	**+0.6**

GUC 11 00:01:44.9±0.6, 36°.37S×72°.44W, h54km±4km, ML3.8, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
COCH	**Cobquecura**	**0.36**	**310**	*e*P	Pn	00 01 54.5	-0.5
COCH				*e*S	Sn	00 02 01.9	-0.2
COCH				IAML		00 02 03.8	
	comp=N,8μm,0.2s						
CCHI	**Chillan**	**0.38**	**129**	*e*P	Pn	00 01 54.6	-0.4
CCHI				*e*S	Sn	00 02 02.2	-0.2
CCHI				IAML		00 02 03.2	
	comp=N,24μm,0.2s						
CCSP	**San Pedro de C**	**0.72**	**228**	*e*P	Pn	00 01 58.4	-0.6
CCSP				*e*S	Sn	00 02 09.5	+0.2
CCSP				IAML		00 02 12.4	
	comp=N,6μm,0.8s						
TALC	**Talca**	**1.17**	**34**	*e*P	Pn	00 02 04.5	-0.5
TALC				*e*S	Sn	00 02 20.1	+0.2

IDC 11 00:05:22.6±4.0, 19°.91S×167°.93E, h0km, mb4.0/3, mb1 4.1/4, mb1mx3.8/26, mbtmp3.9/4, ML3.2/1, MS3.7/1, Ms1 3.7/1, ms1mx2.8/33, Error ellipse: s-maj=79.5km s-min=49.2km az=108.0, Vanuatu Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.56**	**213**	Pn	Pn	00 06 03.5	-1.9
	5.1nm,0.3s,baz=43,slow=19,SNR=2.5						
STKA	**Stephens Creek**	**26.45**	**238**	P	P	00 11 02.6	+1.2
	2.9nm,0.7s,baz=79,slow=12,SNR=3.2						
WRA	**Warramunga Arr**	**31.55**	**264**	P	P	00 11 46.6	-0.4
	0.3nm,0.5s,baz=90,slow=8.4,SNR=3.5						
JAY	**Jayapura**	**31.72**	**300**	LR	LR	00 22 01.8	
	comp=Z,138nm,21.3s,slow=32						
ASAR	**Alice Springs**	**31.77**	**257**	P	P	00 11 49.0	+0.2
	2.2nm,0.7s,baz=88,slow=9.0,SNR=14						
GERES	**GERESS Array B**	**144.48**	**330**	PKP	PKPdf	00 25 00.5	-0.5
	0.3nm,0.6s,baz=45,slow=5.7,SNR=3.4						

IDC 11 00:05:40.0±3.4, 20°.13S×168°.13E, h0km, mb3.8/2, mb1 4.1/3, mb1mx3.8/26, mbtmp3.9/3, ML3.7/1, Error ellipse: s-maj=73.7km s-min=38.0km az=119.0, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.49**	**219**	Pn	Pn	00 06 22.2	+0.2
	15nm,0.3s,baz=43,slow=15,SNR=6.8						
DZM				Sn	Sn	00 06 52.1	-1.1
	24nm,0.3s,baz=116,slow=20,SNR=8.1						
WRA	**Warramunga Arr**	**31.72**	**264**	P	P	00 12 06.6	+0.8
	0.4nm,0.5s,baz=89,slow=8.3,SNR=3.5						
ASAR	**Alice Springs**	**31.91**	**257**	P	P	00 12 06.8	-0.7
	2.3nm,0.7s,baz=84,slow=9.1,SNR=7.9						
GERES	**GERESS Array B**	**144.76**	**330**	PKP	PKPbc	00 25 18.1	+0.3
	0.7nm,0.8s,baz=72,slow=3.2,SNR=5.0						

MEX 11 00:06:23.8±0.9, 14°.66N×93°.17W, h16km±252km, MD3.6, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		**1.04**	**358**	*e*P	Pb	00 06 39.9	-3.6
PCIG				*e*S	Sb	00 06 52.3	-4.6
TGIG		**2.11**	**1**	*e*P	Pn	00 06 56.2	-2.3
TGIG				*e*S	Sn	00 07 19.6	-4.9

IDC 11 00:18:17.5±1.4, 3°.79S×127°.83E, h0km, mb3.9/3, mb1 4.2/5, mb1mx3.8/33, mbtmp4.0/5, ML3.7/2, MS3.4/1, Ms1 3.4/1, ms1mx2.6/50, Error ellipse: s-maj=45.1km s-min=24.2km az=74.0, Seram

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAPI	**Kappang**	**8.15**	**261**	Pn	Pn	00 20 16.8	-0.3
	1.1nm,0.3s,baz=106,slow=7.4,SNR=4.7						
WRA	**Warramunga Arr**	**17.27**	**159**	P	Pn	00 22 18.2	-2.0
	0.3nm,0.3s,baz=339,slow=12,SNR=6.5						
ASAR	**Alice Springs**	**20.61**	**164**	P	P	00 22 59.5	+1.0
	13nm,0.8s,baz=341,slow=10,SNR=77						
KSRS	**Korea Array**	**41.03**	**0**	P	P	00 26 02.6	+0.1
	1.0nm,0.7s,baz=178,slow=8.5,SNR=5.2						
ASAJ	**Asahikawa**	**49.50**	**14**	LR	LR	00 48 02.8	
	comp=Z,46nm,21.9s,baz=220,slow=36						
MKAR	**Makanchi Array**	**64.37**	**327**	P	P	00 28 55.1	-0.2
	0.4nm,0.6s,baz=133,slow=6.3,SNR=3.3						

IDC 11 00:27:33.9±2.5, 30°.03S×177°.25W, h0km, mb3.9/2, mb1 4.2/2, mb1mx3.7/26, mbtmp3.9/2, Error ellipse: s-maj=53.9km s-min=28.5km az=70.0, Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**0.97**	**323**	Pn	Pn	00 27 55.7	+0.9
	154nm,0.3s,baz=26,slow=18,SNR=6.3						
RAO				Sn	Sn	00 28 08.8	-0.4
	381nm,0.3s,baz=14,slow=23,SNR=9.1						
ASAR	**Alice Springs**	**43.78**	**266**	P	P	00 35 41.6	+0.1
	0.3nm,0.3s,baz=107,slow=7.6,SNR=5.4						
WRA	**Warramunga Arr**	**44.73**	**271**	P	P	00 35 48.9	-0.4
	1.2nm,0.3s,baz=111,slow=7.9,SNR=2.9						
FINES	**FINESS Array B**	**145.02**	**341**	PKPbc	PKPbc	00 47 10.6	-1.2
	3.4nm,0.9s,baz=64,slow=2.7,SNR=12						

*NIED **11** 00:35:00, 39°.10N×142°.40E, h35km, Mw3.7 Best double couple: M0=4.40000×10^14 NP1:φ=282.00000°, δ=12.00000°, λ=-169.00000°. NP2:φ=181.00000°, δ=88.00000°, λ=-78.00000°.*
*JMA **11** 00:35:22.1±0.1, 39°.12N×142°.41E, h33km±2km, M3.9*
JMA Felt I J1.
*IDC **11** 00:35:27.4±3.8, 39°.03N×142°.27E, h73km±34km, mb3.4/6, mb1 3.6/8, mb1mx3.3/44, mbtmp3.7/8, ML2.7/2, MS2.9/2, Ms1 2.9/2, ms1mx2.4/40, Error ellipse: s-maj=34.2km s-min=20.2km az=86.0*
ISC 11 00:35:21.7±1.5, 39°.09N±0°.04×142°.38E±0°.07, h18km±4km, n16, σ1§50/24, mb3.8/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.56**	**269**	P	**Pn**	**00 35 33.6**	**-1.1**
OFUJ				S	**Sb**	**00 35 41.5**	**+1.1**
MIYJ	**Miyakonagasawa**	**0.65**	**318**	P	**Pg**	**00 35 34.5**	**-0.1**
MIYJ				S	**Sg**	**00 35 42.8**	**-0.5**
JMK	**Ichinoseki**	**0.92**	**262**	P	**Pg**	**00 35 39.0**	**-0.6**
JMK				S	**Sg**	**00 35 51.2**	**-0.5**
JOM	**Ohasama**	**0.93**	**294**	P	**Pg**	**00 35 39.2**	**-0.6**
JOM				S	**Sg**	**00 35 51.6**	**-0.4**
JTH	**Tanohata**	**0.94**	**335**	P	**Pb**	**00 35 38.6**	**-0.8**
JTH				*e*S	**Sg**	**00 35 51.2**	**-1.1**
JIO	**Ouri**	**1.03**	**232**	P	**Pb**	**00 35 40.0**	**-1.0**
JIO				S	**Sb**	**00 35 52.7**	**-1.4**
JKZ	**Kuzumaki**	**1.21**	**318**	P	**Pb**	**00 35 43.4**	**-0.6**
JKZ				S	**Sb**	**00 35 58.7**	**-0.6**
MAT	**Matsushiro**	**

0.7nm,0.7s,baz=86,slow=9.1,SNR=5.2
GERES **GERESS Array B 145.65 330** PKPbc PKPdf 01 04 48.1 -0.6
0.1nm,0.4s,baz=56,slow=6.0,SNR=3.6

IDC ***11*** *00:48:05.8±1.1, 18°.87S×176°.75W, h317km±9km, mb4.4/24, mb1 4.5/26, mb1mx4.4/34, mbtmp5.0/26, Error ellipse: s-maj=10.6km s-min=9.0km az=158.0*
NEIC ***11*** *00:48:06.2±0.5, 18°.92S×176°.77W, h320km±4km, mb5.0/179, Error ellipse: s-maj=4.9km s-min=2.9km az=149.0*
NEIC Felt at Tubou and Vunisea.
GCMT ***11*** *00:48:06.2±0.6, 18°.91S×176°.05W, h361km±3km, MW5.2/56, Moment Tensor Solution. s56,c62; Duration: 1±0 Moment tensor: Scale 10^{16}Nm; M_{rr}=0.42±.53; $M_{\theta\theta}$3.05±.87; $M_{\phi\phi}$-2.64±.68; $M_{r\theta}$0.89±.69; $M_{\theta\phi}$-3.28±.51; $M_{\phi r}$-7.91±.49; Best double couple: $M_0$8.95500×10^{16} NP1:ϕ_s346.00000°, δ89.00000°, λ-62.00000°. NP2: ϕ_s77.00000°, δ28.00000°, λ-179.00000°. Principal axes: T 8.1050, Plg38.0000°, Azm50.0000°; N 1.6940, Plg28.0000°, Azm165.0000°; P -9.8050, Plg39.0000°, Azm281.0000°; nsta1 refers to body waves, cutoff=40s.*
ISCJB ***11*** *00:48:07.9±0.1, 18°.98S±0°.03×176°.78W±0°.02, h350km, mb4.9/234 Error ellipse: s-maj=5.1km s-min=2.5km az=153.5*
MOS ***11*** *00:48:07.1±1.8, 18°.79S×176°.75W, h327km, mb5.0/37, Error ellipse: s-maj=8.0km s-min=6.7km az=135.2*

ISC 11 00:48:08.7±0.3,**18°.85S**±0°.06×**176°.69W**±0°.04,**h350**km, **n839**,σ1^{s}**52**/839,**mb5.0**/235,**32C-32D,Fiji Islands region**

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time h m s	Res ISC
MSVF	**Nonsavu**	**5.12**	**282**	*e*P		**Pn**	**00 49 30.5**	**+0.7**
MSVF				*e*S		**S**	**00 50 38.2**	**+2.9**
MSVF	**Nonsavu**	**5.12**	**282**	*e*Pn		**Pn**	**00 49 30.5**	**+0.7**
MSVF				*e*S		**S**	**00 50 38.2**	**+2.9**
NIUE	**Niue**	**6.40**	**93**	P		Pn	00 49 34.1	-10
baz=6.0,SNR=11								
AFI	**Afiamalu**	**6.81**	**44**	P		Pn	00 49 41.5	-7.5
17nm,0.3s,baz=189,slow=4.2,SNR=14								
AFI				S		S	00 50 54.3	-16
19nm,0.3s,baz=29,slow=21,SNR=5.9								
AFI	**Afiamalu**	**6.81**	**44**	*e*P		Pn	00 49 41.6	-7.4
AFI				*e*S		S	00 51 01.1	-9.4
AFI	**Afiamalu**	**6.81**	**44**	*e*Pn		Pn	00 49 41.5	-7.4
AFI				*e*S		S	00 51 01.1	-9.4
RAR	**Rarotonga**	**16.07**	**101**	P		**Pn**	**00 51 35.7**	**-2.2**
1.4nm,0.3s,baz=265,slow=7.5,SNR=4.6								
RAR	**Rarotonga**	**16.07**	**101**	*e*P		**Pn**	**00 51 35.7**	**-2.2**
RAR				pmax		pmax		
comp=Z,627nm,2.0s								
RAR	**Rarotonga**	**16.07**	**101**	*e*P		**Pn**	**00 51 35.7**	**-2.2**
comp=Z,627nm,2.0s								
DZM	**Mont Dzumac**	**16.13**	**256**	P		**Pn**	**00 51 34.6**	**-4.2**
comp=Z,1.8nm,0.3s,baz=85,slow=15,SNR=37								
OUZ	**Omahuta**	**18.44**	**206**	*e*P		**P**	**00 51 59.9**	**-0.3**
comp=Z,234nm,1.9s								
URZ	**Urewera**	**20.08**	**194**	P		**P**	**00 52 14.1**	**-3.2**
comp=Z,34nm,0.8s,baz=284,slow=3.2,SNR=11								
URZ				S		**S**	**00 55 36.4**	**-4.4**
comp=Z,25nm,0.8s,baz=73,slow=22,SNR=7.9								
URZ	**Urewera**	**20.08**	**194**	*e*P		**P**	**00 52 14.8**	**-2.5**
comp=Z,173nm,1.8s								
HIZ	**Hauiti**	**20.93**	**199**	*e*P		**P**	**00 52 24.2**	**-0.8**
comp=Z,128nm,1.2s								
BKZ	**Black Stump Fm**	**21.09**	**195**	*e*P		**P**	**00 52 23.7**	**-2.8**
comp=Z,34nm,1.3s								
BKZ				*e*S		**S**	**00 56 03.8**	**+6.5**
TARA	**Tarawa**	**22.53**	**332**	*e*P		**P**	**00 52 39.5**	**-0.3**
comp=Z,123nm,0.9s								
BFZ	**Birch Farm**	**22.59**	**194**	*e*P		**P**	**00 52 37.6**	**-2.5**
comp=Z,164nm,1.7s								
SNZO	**South Karori**	**23.56**	**196**	*e*P		**P**	**00 52 46.7**	**-2.2**
comp=Z,54nm,1.2s								
HNR	**Honiara**	**24.49**	**289**	P		**P**	**00 52 55.4**	**-2.2**
comp=Z,157nm,0.7s,baz=197,slow=3.4,SNR=16								
HNR	**Honiara**	**24.49**	**289**	P		**P**	**00 52 55.0**	**-2.6**
HNR	**Honiara**	**24.49**	**289**	*e*P		**P**	**00 52 57.4**	**-0.2**
HNR	**Honiara**	**24.49**	**289**	*e*P		**P**	**00 52 57.4**	**-0.2**
THZ	**Tophouse**	**24.50**	**199**	*e*P		**P**	**00 52 55.8**	**-1.6**
comp=Z,184nm,2.0s								
LTZ	**Lake Taylor**	**25.62**	**199**	*e*P		**P**	**00 53 05.8**	**-1.6**
comp=Z,31nm,0.6s								
PAE	**Paea**	**25.76**	**92**	*e*P		**P**	**00 53 08.1**	**-0.8**
comp=Z,25nm,1.1s								
PPT2	**Papeete2**	**25.77**	**92**	*e*P		**P**	**00 53 08.3**	**-0.8**
comp=Z,67nm,0.9s								
PPT	**Papeete**	**25.78**	**91**	P		**P**	**00 53 08.2**	**-0.9**
comp=Z,89nm,0.9s,baz=1.6,slow=3.4,SNR=7.6								
TIAR	**Tiarei**	**26.00**	**92**	*e*P		**P**	**00 53 10.2**	**-0.8**
comp=Z,22nm,1.0s								
OXZ	**Oxford**	**26.19**	**199**	*e*P		**P**	**00 53 10.3**	**-2.1**
comp=Z,57nm,1.1s								
MQZ	**McQueen's Vall**	**26.35**	**198**	*e*P		**P**	**00 53 11.3**	**-2.5**
comp=Z,82nm,1.3s								
RPZ	**Rata Peaks**	**26.85**	**200**	P		**P**	**00 53 21.2**	**+2.9**
comp=Z,19nm,0.7s,baz=168,slow=0.8,SNR=7.8								
RPZ	**Rata Peaks**	**26.85**	**200**	*e*P		**P**	**00 53 18.3**	**0.0**
comp=Z,105nm,1.6s								
XMAS	**Kiritimati**	**28.09**	**44**	*e*P		**P**	**00 53 29.0**	**-0.7**
comp=Z,78nm,0.9s								
ODZ	**Otahua Downs**	**28.17**	**199**	*e*P		P	00 53 32.8	+2.9
comp=Z,71nm,1.3s								
MLZ	**Mavora Lakes**	**29.30**	**202**	*e*P		**P**	**00 53 38.6**	**-1.3**
comp=Z,107nm,1.5s								
EIDS	**Eidsvold**	**30.51**	**252**	P		**P**	**00 53 50.7**	**-0.1**
baz=31,SNR=27								
EIDS	**Eidsvold**	**30.51**	**252**	*e*P		**P**	**00 53 50.7**	**-0.1**
comp=Z,108nm,1.0s								
ARMA	**Armidale**	**30.91**	**242**	P		**P**	**00 53 55.2**	**+0.8**
baz=31,SNR=37								
ARMA	**Armidale**	**30.91**	**242**	*e*P		**P**	**00 53 55.1**	**+0.8**
comp=Z,50nm,0.6s								
MGCD	**Mangrove Creek**	**32.13**	**237**	P		**P**	**00 54 05.5**	**+0.7**
baz=32,SNR=4.8								
RMQ	**Roma**	**32.70**	**250**	P		**P**	**00 54 10.7**	**+0.9**
baz=33,SNR=12								
CNB	**Canberra Magne**	**34.18**	**234**	P		**P**	**00 54 22.7**	**+0.3**
baz=34,SNR=13								
CTA	**Charters Tower**	**34.92**	**262**	P		**P**	**00 54 28.8**	**0.0**
CTA				pmax		pmax		
comp=Z,304nm,0.8s								
CTAO	**Charters Tower**	**34.92**	**262**	*e*P		**P**	**00 54 28.8**	**0.0**
CTAO				pmax		pmax		
comp=Z,185nm,0.8s								
CTAO	**Charters Tower**	**34.92**	**262**	*e*P		**P**	**00 54 28.8**	**0.0**
comp=Z,185nm,0.8s								
CMSA	**Cobar Meteorol**	**36.13**	**242**	P		**P**	**00 54 38.8**	**-0.1**
baz=36,SNR=35								
PMG	**Port Moresby**	**36.23**	**280**	*d iP*		**P**	**00 54 40.1**	**+0.2**
PMG	**Port Moresby**	**36.23**	**280**	*e*P		**P**	**00 54 40.5**	**+0.6**
comp=Z,300nm,1.1s								
QLP	**Quilpie**	**36.75**	**251**	P		**P**	**00 54 44.1**	**0.0**
baz=37,SNR=41								
MTSU	**Mount Surprise**	**36.94**	**265**	P		**P**	**00 54 45.6**	**-0.2**
baz=37,SNR=51								
TOO	**Toolangi**	**37.87**	**233**	P		**P**	**00 54 52.8**	**-0.5**
baz=38,SNR=7.6								
COEN	**Coen**	**38.75**	**271**	P		**P**	**00 55 01.0**	**+0.2**
baz=39,SNR=28								
COEN	**Coen**	**38.75**	**271**	*e*P		**P**	**00 55 00.6**	**-0.3**
comp=Z,127nm,1.4s								
MANU	**Manus Island**	**38.96**	**291**	*e*P		**P**	**00 55 04.5**	**+1.9**
comp=Z,279nm,0.9s								
MANU				*e*ScP		**ScP**	**01 00 16.8**	**-2.7**
RKT	**Rikitea**	**39.08**	**104**	*e*P		**P**	**00 55 02.0**	**-1.4**
comp=Z,213nm,1.3s								
STKA	**Stephens Creek**	**39.63**	**243**	P		**P**	**00 55 08.0**	**+0.2**
comp=Z,59nm,1.1s,baz=93,slow=10,SNR=31								
STKA	**Stephens Creek**	**39.63**	**243**	P		**P**	**00 55 08.1**	**+0.2**
baz=40,SNR=27								
STKA	**Stephens Creek**	**39.63**	**243**	*e*P		**P**	**00 55 08.0**	**+0.2**
STKA				pmax		pmax		
comp=Z,13nm,1.1s								
STKA	**Stephens Creek**	**39.63**	**243**	*e*P		**P**	**00 55 08.0**	**+0.2**
comp=Z,13nm,1.1s								
QIS	**Mount Isa**	**41.09**	**260**	P		**P**	**00 55 19.3**	**-0.6**
baz=42,SNR=8.7								
HTT	**Hallett**	**42.10**	**241**	P		**P**	**00 55 27.4**	**-0.4**
baz=42,SNR=19								
KKH	**Kailua Kona**	**43.31**	**29**	*e*P		**P**	**00 55 36.8**	**-0.6**
KKH	**Kailua Kona**	**43.31**	**29**	*e*P		**P**	**00 55 36.8**	**-0.6**
KEKH	**Kekaha**	**43.85**	**23**	*e*P		**P**	**00 55 41.2**	**-0.5**
comp=Z,356nm,1.5s								
BBOO	**Buckleboo**	**44.40**	**242**	P		**P**	**00 55 45.4**	**-0.6**
baz=45,SNR=32								
BBOO	**Buckleboo**	**44.40**	**242**	*e*P		**P**	**00 55 45.6**	**-0.4**
comp=Z,68nm,1.1s								
JAY	**Jayapura**	**44.74**	**286**	P		**P**	**00 55 49.6**	**+0.7**
comp=Z,5.9nm,0.6s,baz=91,slow=23,SNR=22								
WB2	**Warramunga Arr**	**46.07**	**260**	*e*P		**P**	**00 55 58.3**	**-0.9**
comp=Z,92nm,0.6s								
WRAB	**Tennant Creek**	**46.07**	**260**	*d iP*		**P**	**00 55 58.1**	**-1.1**
WRAB				pmax		pmax		
comp=Z,278nm,1.1s								
WRAB	**Tennant Creek**	**46.07**	**260**	*e*P		**P**	**00 55 58.9**	**-0.3**
comp=Z,79nm,0.6s								
AS01	**Alice Springs**	**46.08**	**255**	*e*P		**P**	**00 55 57.7**	**-1.5**
WR1	**Warramunga Arr**	**46.08**	**260**	*e*P		**P**	**00 55 58.5**	**-0.8**
comp=Z,110nm,0.6s								
WR1				*e*ScP		**ScP**	**01 00 51.0**	**+2.8**
WR1				*e*S		**S**	**01 02 14.8**	**-3.2**
WRA	**Warramunga Arr**	**46.08**	**260**	P		**P**	**00 55 58.5**	**-0.8**
comp=Z,67nm,0.7s,baz=95,slow=7.5,SNR=224								
WRA				ScP		**ScP**	**01 00 51.0**	**+2.8**
comp=Z,3.5nm,1.2s,baz=82,slow=3.7,SNR=4.9								
WRA				S		**S**	**01 02 14.8**	**-3.2**
comp=Z,2.1nm,0.8s,baz=97,slow=14,SNR=4.1								
AS31	**Alice Springs**	**46.12**	**255**	*e*P		**P**	**00 55 59.5**	**0.0**
comp=Z,89nm,0.6s								
AS31				*e*ScP		**ScP**	**01 00 51.4**	**+2.9**
AS31				*e*S		**S**	**01 02 18.3**	**-0.3**
ASAR	**Alice Springs**	**46.12**	**255**	P		**P**	**00 55 59.5**	**-0.1**
comp=Z,311nm,0.6s,baz=92,slow=8.3,SNR=2707								
ASAR				ScP		**ScP**	**01 00 51.4**	**+2.9**
comp=Z,1.7nm,0.6s,baz=108,slow=4.1,SNR=4.1								
ASAR				S		**S**	**01 02 18.3**	**-0.3**
comp=Z,16nm,0.8s,baz=93,slow=15,SNR=46								
KDU	**Kakadu**	**49.18**	**269**	P		**P**	**00 56 22.6**	**-0.3**
baz=50,SNR=8.3								
GUMO	**Guam**	**49.74**	**308**	P		**P**	**00 56 26.9**	**-0.1**
comp=Z,61nm,0.6s,baz=191,slow=5.5,SNR=4.3								
GUMO	**Guam**	**49.74**	**308**	*e*P		**P**	**00 56 26.9**	**-0.1**
GUMO				pmax		pmax		
comp=Z,161nm,1.0s								
GUMO	**Guam**	**49.74**	**308**	*e*P		**P**	**00 56 26.9**	**-0.1**
comp=Z,161nm,1.0s								
MTN	**Manton Dam**	**50.41**	**269**	P		**P**	**00 56 31.4**	**-0.6**
baz=51,SNR=19								
MTN	**Manton Dam**	**50.41**	**269**	*e*P		**P**	**00 56 31.4**	**-0.6**
comp=Z,102nm,0.8s								
WRKA	**Warakurna**	**51.12**	**253**	P		**P**	**00 56 37.1**	**-0.2**
baz=52,SNR=111								
FAKI	**Fak Fak**	**52.37**	**281**	*e*P		**P**	**00 56 46.6**	**+0.1**
comp=Z,30nm,0.9s								
SIJI	**Sorong**	**54.04**	**283**	P		**P**	**00 56 58.6**	**0.0**
comp=Z,33nm,0.3s,baz=171,slow=19,SNR=2.6								
SWI	**Sorong**	**54.05**	**283**	P		**P**	**00 56 58.9**	**+0.3**
comp=Z,152nm,0.8s								
FITZ	**Fitzroy Crossi**	**54.49**	**261**	P		**P**	**00 57 02.0**	**+0.3**
baz=55,SNR=18								
FITZ	**Fitzroy Crossi**	**54.49**	**261**	*e*P		**P**	**00 57 02.0**	**+0.3**
comp=Z,28nm,0.8s								
KMBL	**Kambalda**	**56.38**	**244**	P		**P**	**00 57 14.1**	**-0.8**
baz=57,SNR=5.9								
LBMI	**Labuha**	**57.61**	**282**	P		P	00 57 26.1	+2.4
comp=Z,56nm,0.8s,comp=Z,985nm								
SOEI	**Soe**	**57.71**	**270**	P		**P**	**00 57 26.1**	**+1.6**
SOEI	**Soe**	**57.71**	**270**	*e*P		**P**	**00 57 26.0**	**+1.6**
comp=Z,229nm,0.7s								
SANI	**Sanana**	**58.51**	**279**	P		**P**	**00 57 31.4**	**+1.6**
comp=Z,81nm,1.0s,comp=Z,760nm								
SBA	**Scott Base**	**59.59**	**184**	*e*P		P	00 57 38.7	+2.6
SBA				pmax		pmax		
comp=Z,57nm,1.9s								
SBA	**Scott Base**	**59.59**	**184**	*e*P		P	00 57 38.7	+2.6
comp=Z,57nm,1.9s								
VNDA	**Vanda**	**59.65**	**185**	P		**P**	**00 57 38.0**	**+1.4**
comp=Z,1.5nm,0.5s,baz=12,slow=7.8,SNR=17								
VNDA				ScP		**ScP**	**01 01 50.0**	**+3.9**
comp=Z,1.4nm,0.8s,baz=339,slow=3.4,SNR=6.0								
VNDA	**Vanda**	**59.65**	**185**	*e*P		**P**	**00 57 38.0**	**+1.4**
VNDA				pmax		pmax		
comp=Z,7.0nm,1.3s								
VNDA	**Vanda**	**59.65**	**185**	*e*P		**P**	**00 57 38.0**	**+1.4**
comp=Z,7.2nm,1.3s								
VNDA				*e*ScP		**ScP**	**01 01 50.0**	**+3.9**
KLBR	**Kellerberrin**	**59.88**	**244**	P		**P**	**00 57 38.2**	**-0.7**
baz=60,SNR=23								
MMRI	**Maumere**	**59.95**	**271**	P		**P**	**00 57 39.3**	**-0.3**
comp=Z,162nm,0.7s,comp=Z,7μm								
MMRI	**Maumere**	**59.95**	**271**	*e*P		**P**	**00 57 39.4**	**-0.3**
comp=Z,100nm,0.6s								
NWAO	**Narrogin (SRO)**	**60.22**	**242**	P		**P**	**00 57 41.0**	**-0.2**
baz=60,SNR=4.8								
NWAO	**Narrogin (SRO)**	**60.22**	**242**	*e*P		**P**	**00 57 40.9**	**-0.2**
NWAO				pmax		pmax		
comp=Z,25nm,1.0s								
NWAO	**Narrogin (SRO)**	**60.22**	**242**	*e*P		**P**	**00 57 40.9**	**-0.3**
comp=Z,24nm,1.0s								
BLDU	**Ballidu**	**60.86**	**245**	P		**P**	**00 57 44.8**	**-0.7**
baz=61,SNR=13								
MORW	**Morawa**	**61.61**	**247**	P		**P**	**00 57 49.7**	**-0.7**
baz=62,SNR=4.1								
LUWI	**Luwuk**	**61.87**	**279**	*e*P		**P**	**00 57 51.1**	**-1.3**
comp=Z,147nm,1.0s								
KAPI	**Kappang**	**63.39**	**274**	*e*P		**P**	**00 58 02.4**	**+0.1**
comp=Z,24nm,0.9s								
SPSI	**Sidrap Palu**	**63.71**	**275**	P		**P**	**00 58 03.4**	**-1.0**
comp=Z,39nm,0.8s								
TTSI	**Tana Toraja**	**63.96**	**276**	P		**P**	**00 58 07.6**	**+1.5**
comp=Z,22nm,0.8s								
PLAI	**Plampang**	**64.12**	**269**	P		**P**	**00 58 06.8**	**-0.3**
comp=Z,146nm,0.9s								
GIRL	**Giralia**	**64.19**	**253**	P		**P**	**00 58 08.3**	**+0.9**
baz=64,SNR=6.4								
TWSI	**Taliwang, Sumb**	**64.99**	**269**	P		**P**	**00 58 12.4**	**-0.3**
comp=Z,106nm,0.9s								
SRBI	**Singaraja**	**66.76**	**269**	P		**P**	**00 58 23.2**	**-0.6**
comp=Z,74nm,1.0s								
JAGI	**Jajag, Banyuwa**	**67.65**	**268**	P		**P**	**00 58 27.8**	**-1.6**
comp=Z,98nm,1.0s								
JAGI	**Jajag, Banyuwa**	**67.65**	**268**	*e*P		**P**	**00 58 28.5**	**-0.9**
comp=Z,72nm,0.7s								
ABJI	**Asem Bagus**	**67.77**	**269**	P		**P**	**00 58 30.8**	**+0.7**
comp=Z,89nm,1.0s								
MYLDM	**Lahad Datu**	**68.13**	**284**	*e*P		P	00 58 34.3	+2.0
comp=Z,30nm,1.2s								
BBKI	**Banjar Baru**	**68.52**	**274**	P		**P**	**00 58 36.0**	**+1.2**
comp=Z,111nm,1.2s,comp=Z,6μm								
MJAR	**Matsushiro Arr**	**69.64**	**323**	P		**P**	**00 58 40.8**	**-0.3**
comp=Z,10nm,0.6s,baz=158,slow=6.3,SNR=18								
MAJO	**Matsushiro**	**69.64**	**323**	*de*P		**P**	**00 58 40.8**	**-0.4**
MAJO				pmax		pmax		
comp=Z,76nm,0.9s								
MAJO	**Matsushiro**	**69.64**	**323**	*e*P		**P**	**00 58 41.4**	**+0.3**
comp=Z,21nm,1.0s								
MAT	**Matsushiro**	**69.64**	**323**	P		**P**	**00 58 40.8**	**-0.4**
MJB9	**Matsu-Tunnel**	**69.65**	**323**	*e*P		**P**	**00 58 41.5**	**+0.3**
comp=Z,5.5nm,1.1s								
PWJI	**Pagerwojo**	**70.00**	**268**	P		**P**	**00 58 44.0**	**+0.2**
comp=Z,66nm,0.8s								
PCJI	**Pacitan**	**70.55**	**268**	P		**P**	**00 58 47.5**	**+0.4**
comp=Z,212nm,0.7s								
KKM	**Kota Kinabalu**	**70.56**	**284**	*e*P		**P**	**00 58 47.0**	**-0.2**
comp=Z,28nm,0.7s								
WOJI	**Wonogiri, Jawa**	**70.89**	**268**	P		**P**	**00 58 49.3**	**+0.2**
comp=Z,11nm,1.0s,comp=Z,7μm								
QSPA	**South Pole Qui**	**71.21**	**180**	*e*P		**P**	**00 58 51.0**	**+0.8**
comp=Z,14nm,1.1s								
ASAJ	**Asahikawa**	**72.89**	**331**	P		**P**	**00 59 01.1**	**+0.9**
comp=Z,12nm,0.7s,baz=213,slow=7.0,SNR=8.3								
ASAJ	**Asahikawa**	**72.89**	**331**	*e*P		**P**	**00 59 01.1**	**+0.9**
comp=Z,138nm,2.0s								
SBUM	**Sibu**	**72.97**	**279**	*e*P		**P**	**00 59 02.1**	**+0.8**
comp=Z,21nm,1.0s								
TPUB	**Ta-pu**	**74.14**	**302**	*e*P		**P**	**00 59 07.2**	**-0.7**
comp=Z,41nm,0.7s								
LEM	**Lembang**	**74.32**	**268**	P		P	00 59 15.5	+6.1
KSM	**Kuching**	**74.43**	**277**	*e*P		**P**	**00 59 10.6**	**+0.8**
comp=Z,47nm,0.9s								
PEA0	**Petropavlovsk-**	**75.02**	**344**	*e*P		**P**	**00 59 12.8**	**+0.5**
PEA0B	**Petropavlovsk-**	**75.02**	**344**	*e*P		**P**	**00 59 13.2**	**+0.9**
comp=Z,111nm,1.5s								
PETK	**Petropavlovsk-**	**75.02**	**344**	P		**P**	**00 59 12.8**	**+0.6**
comp=Z,14nm,0.6s,baz=120,slow=7.5,SNR=16								
PEA1	**Petropavlovsk-**	**75.02**	**344**	*e*P		**P**	**00 59 12.8**	**+0.5**
SNCC	**San Nicolas Is**	**75.22**	**47**	P		**P**	**00 59 14.7**	**+0.8**
baz=235								
SCZ2	**Santa Cruz Isl**	**75.57**	**46**	P		**P**	**00 59 17.3**	**+1.4**
baz=235								
SCI2	**San Clemente I**	**75.75**	**47**	P		**P**	**00 59 18.5**	**+1.7**
baz=236								
SBC	**Santa Barbara**	**75.77**	**46**	P		**P**	**00 59 16.6**	**-0.4**
baz=235								
PKM	**Mcpherson Peak**	**75.96**	**45**	P		**P**	**00 59 19.6**	**+1.4**
baz=235								
CIS	**Catalina Islan**	**76.08**	**47**	P		**P**	**00 59 19.7**	**+1.0**
baz=236								
SMMC	**Simmler**	**76.09**	**45**	P		**P**	**00 59 20.4**	**+1.7**
baz=235								
CGJI	**Cibinong**	**76.21**	**268**	P		**P**	**00 59 18.7**	**-1.1**
comp=Z,51nm,0.7s								
TJN	**Taejon**	**76.22**	**316**	‖*e*P		**P**	**00 59 20.7**	**+1.4**
KSRS	**Korea Array**	**76.50**	**318**	P		**P**	**00 59 21.9**	**+1.0**
comp=Z,3.2nm,0.7s,baz=136,slow=6.5,SNR=10								
KS15	**Wonju Array Si**	**76.51**	**318**	*e*P		**P**	**00 59 21.9**	**+0.9**
KSAR	**Wonju Array Be**	**76.51**	**318**	P		**P**	**00 59 21.9**	**+0.9**
KSAR	**Wonju Array Be**	**76.51**	**318**	P		**P**	**00 59 21.9**	**+0.9**
KS01	**Wonju Array Si**	**76.53**	**318**	*e*P		**P**	**00 59 21.5**	**+0.5**
OSI	**Osito Audit: C**	**76.54**	**46**	P		**P**	**00 59 22.8**	**+1.5**
baz=236								
PASC	**Pasadena Art C**	**76.66**	**47**	*e*P		**P**	**00 59 23.2**	**+1.3**
comp=Z,20nm,0.8s								
KMRM	**Mail Ridge**	**76.70**	**39**	*e*P		**P**	**00 59 24.4**	**+2.3**
comp=Z,90nm,0.8s								
ARVC	**Arvin**	**76.76**	**45**	P		**P**	**00 59 23.5**	**+1.1**
baz=235								
MWC	**Mount Wilson**	**76.78**	**47**	*e*P		**P**	**00 59 23.8**	**+1.0**
MWC				pmax		pmax		
comp=Z,27nm,0.7s								
MWC	**Mount Wilson**	**76.78**	**47**	*e*P		**P**	**00 59 23.8**	**+1.0**
comp=Z,27nm,0.7s								
VES	**Vestal, Richgr**	**77.00**	**45**	P		**P**	**00 59 24.7**	**+1.0**
baz=235								
MURC	**Murrieta**	**77.04**	**48**	P		**P**	**00 59 25.0**	**+1.0**
baz=237								
BFSC	**Mount Baldy Ra**	**77.06**	**47**	P		**P**	**00 59 25.1**	**+0.8**
baz=236								
KHMM	**Horse Mountain**	**77.10**	**38**	*e*P		**P**	**00 59 26.5**	**+2.1**
comp=Z,39nm,1.1s								
EDW2	**Edwards Air Fo**	**77.19**	**46**	P		**P**	**00 59 26.0**	**+1.1**
baz=236								
MONP2	**Monument Peak**	**77.20**	**49**	P		**P**	**00 59 26.4**	**+1.2**
baz=237								
IKP	**In-Ko-Pah, Jac**	**77.29**	**49**	P		**P**	**00 59 26.6**	**+1.1**
baz=238								
ISA	**Isabella, Lake**	**77.30**	**45**	P		**P**	**00 59 26.9**	**+1.4**
baz=236								
ISA	**Isabella, Lake**	**77.30**	**45**	*e*P		**P**	**00 59 27.3**	**+1.8**
ISA				pmax		pmax		
comp=Z,28nm,1.0s								
ISA	**Isabella, Lake**	**77.30**	**45**	*e*P		**P**	**00 59 27.3**	**+1.8**
comp=Z,28nm,1.0s								
CMB	**Columbia Colle**	**77.42**	**42**	*e*P		**P**	**00 59 27.1**	**+1.0**
CMB				pmax		pmax		
comp=Z,22nm,1.0s								
CMB	**Columbia Colle**	**77.42**	**42**	*e*P		**P**	**00 59 27.1**	**+1.0**
comp=Z,22nm,1.0s								
PFO	**Pinyon Flats O**	**77.56**	**48**	*e*P		**P**	**00 59 28.6**	**+1.6**
PFO				pmax		pmax		
comp=Z,23nm,1.1s								
PFO	**Pinyon Flats O**	**77.56**	**48**	*e*P		**P**	**00 59 28.6**	**+1.6**
comp=Z,23nm,1.1s								
TPFO	**Pinon Flats**	**77.56**	**48**	P		**P**	**00 59 28.2**	**+1.2**
baz=237								
AFDM	**Forest Hills D**	**77.59**	**41**	*e*P		**P**	**00 59 28.3**	**+1.3**
comp=Z,21nm,1.0s								
SLBS	**Sierra La Lagu**	**77.61**	**60**	*e*P		**P**	**00 59 29.0**	**+1.6**
comp=Z,69nm,1.4s								
ORV	**Oroville**	**77.63**	**41**	*e*P		**P**	**00 59 28.6**	**+1.5**
ORV				pmax		pmax		
comp=Z,19nm,1.0s								
ORV	**Oroville**	**77.63**	**41**	*e*P		**P**	**00 59 28.6**	**+1.5**
comp=Z,19nm,1.0s								
SWSC	**Sam W. Stewart**	**77.67**	**49**	P		**P**	**00 59 28.8**	**+1.4**

K04D	Chiloquin, OR	79.35	38	P	P	00 59 37.9 +1.4
	baz=232					
TPNV	Topopah Spring	79.51	45	P	P	00 59 38.7 +1.1
	baz=237					
PDMCI	Parker Dam,Lak	79.56	48	P	P	00 59 38.9 +1.2
	baz=239					
HABR	Khabarovsk	79.64	330	eP	P	00 59 36.8 -0.9
HABR				e		00 59 43.5
HABR				e		01 02 42.6
HABR				eS	S	01 09 07.4 -2.6
HABR				e		01 09 26.2
HABR				eSS	SS	01 14 25.9 -1.9
HABR				eSSS	SSS	01 17 52.9
HABR				pmax	pmax	
	comp=Z,53nm,0.9s					
HABR				MLR	MLR	
	comp=Z,401nm,15.0s					
I04A	Tendick Farm,	79.69	37	P	P	00 59 39.1 +0.8
	baz=231,SNR=6.5					
MOD	Modoc Plateau	79.77	39	eP	P	00 59 40.1 +1.3
	comp=Z,27nm,0.6s					
MDJ	Mudanjiang	79.90	324	eP	P	00 59 41.0 +1.8
	comp=Z,20nm,0.9s					
K05A	Summer Lake	79.91	38	eP	P	00 59 41.1 +1.5
	comp=Z,59nm,1.0s					
SHPR	Sheep Range	80.01	46	eP	P	00 59 42.1 +1.9
	comp=Z,71nm,1.9s					
J05D	Fort Rock, OR	80.05	38	P	P	00 59 41.8 +1.5
	baz=232,SNR=29					
G03D	McMinnville, O	80.11	35	P	P	00 59 41.6 +1.3
	baz=230,SNR=6.4					
W13A	Hualapai Mount	80.15	48	eP	P	00 59 42.6 +1.6
	comp=Z,17nm,1.0s					
Y14A	Wickenburg	80.18	49	eP	P	00 59 42.6 +1.5
	comp=Z,84nm,0.9s					
H04A	Detroit Lake	80.38	36	eP	P	00 59 42.7 +0.9
	comp=Z,66nm,1.5s					
F03A	Seaside	80.41	34	eP	P	00 59 43.7 +1.8
	comp=Z,27nm,0.9s					
MYKOM	Kota Tinggi	80.61	275	eP	P	00 59 43.8 0.0
	comp=Z,17nm,1.0s					
I05D	Terrebonne, OR	80.64	37	P	P	00 59 44.3 +1.1
	baz=232,SNR=7.7					
R11A	Troy Canyon, C	80.71	44	P	P	00 59 45.1 +1.2
	baz=237					
R11A	Troy Canyon, C	80.71	44	eP	P	00 59 44.7 +0.8
	comp=Z,9.5nm,1.0s					
F04D	Rainier, OR	80.80	35	P	P	00 59 46.2 +2.2
	baz=231					
E03A	Lebam	80.80	34	eP	P	00 59 45.5 +1.5
	comp=Z,38nm,0.9s					
TDH	Tom, Dick, Har	80.97	36	P	P	00 59 46.0 +0.9
TUC	Tucson	80.99	52	P	P	00 59 47.6 +2.2
	baz=241					
TUC	Tucson	80.99	52	eP	P	00 59 47.3 +1.9
TUC				pmax	pmax	
	comp=Z,33nm,1.1s					
TUC	Tucson	80.99	52	eP	P	00 59 47.3 +1.9
	comp=Z,33nm,1.1s					
F04A	Amboy	81.03	35	eP	P	00 59 46.5 +1.4
	comp=Z,55nm,1.4s					
WVOR	Wild Horse Val	81.08	39	eP	P	00 59 47.0 +1.3
WVOR				pmax	pmax	
	comp=Z,36nm,1.1s					
WVOR	Wild Horse Val	81.08	39	eP	P	00 59 47.0 +1.3
	comp=Z,36nm,1.1s					
NLWA	Neilton Lookou	81.19	33	eP	P	00 59 47.9 +1.9
	comp=Z,26nm,1.0s					
G05D	Wamic, OR	81.21	36	P	P	00 59 47.4 +1.2
	baz=232					
OSR	Olympics--Salm	81.21	33	P	P	00 59 48.2 +2.0
TDL	Tradedollar La	81.40	35	P	P	00 59 48.6 +1.4
X16A	Lo Mia Camp, P	81.54	49	eP	P	00 59 50.3 +1.9
	comp=Z,37nm,1.0s					
LCMT	Little Creek M	81.58	46	eP	P	00 59 50.0 +1.5
G06A	Carlson Farm,	81.58	36	eP	P	00 59 49.5 +1.4
	comp=Z,14nm,1.0s					
319A	Douglas	81.67	53	eP	P	00 59 51.2 +2.2
	comp=Z,57nm,1.2s					
KLR	Kul'dur	81.76	329	P	P	00 59 49.0 +0.1
	comp=Z,3.2nm,0.8s,baz=87,slow=3.0,SNR=9.5					
CN2	Changchun	81.77	322	eP	P	00 59 53.2 +4.1
LON	Longmire	81.87	35	eP	P	00 59 50.4 +0.8
LON				pmax	pmax	
	comp=Z,6.0nm,0.8s					
LON	Longmire	81.87	35	eP	P	00 59 50.4 +0.8
	comp=Z,6.3nm,0.8s					
KNB	Kanab	81.87	47	eP	P	00 59 51.8 +1.8
KNB				pmax	pmax	
	comp=Z,14nm,0.8s					
KNB	Kanab	81.87	47	eP	P	00 59 51.8 +1.8
	comp=Z,14nm,0.8s					
U15A	North Rim	81.94	47	eP	P	00 59 52.3 +1.8
	comp=Z,35nm,0.8s					
PSUT	Pine Spring	81.96	45	eP	P	00 59 51.7 +1.2
	comp=Z,29nm,1.4s					
D05A	Enumclaw	82.05	34	eP	P	00 59 52.5 +2.1
	comp=Z,81nm,1.4s					
WUAZ	Wupatki	82.13	48	P	P	00 59 52.9 +1.5
	baz=240					
WUAZ	Wupatki	82.13	48	eP	P	00 59 53.1 +1.7
	comp=Z,41nm,1.2s					
PGC	Sidney	82.21	32	eP	P	00 59 52.5 +1.3
	comp=Z,24nm,0.8s					
ELK	Elko	82.24	42	eP	P	00 59 52.9 +1.0
ELK				pmax	pmax	
	comp=Z,23nm,1.0s					
ELK	Elko	82.24	42	eP	P	00 59 52.9 +1.0
	comp=Z,24nm,1.0s					
PKCU	Pink Cliffs	82.44	46	eP	P	00 59 55.9 +2.8
	comp=Z,28nm,0.9s					
MA2	Magadan	82.54	344‖	eP	P	00 59 52.3 -0.4
G08A	Pilot Rock	82.56	37	eP	P	00 59 54.5 +1.2
	comp=Z,50nm,1.1s					
A04D	Lummi Island	82.64	33	P	P	00 59 54.9 +1.5
	baz=230					
B05A	Bryant	82.67	33	P	P	00 59 54.8 +1.2
	baz=231,SNR=10					
X18A	Snowflake	82.67	50	eP	P	00 59 56.1 +2.0
	comp=Z,26nm,0.9s					
E07A	Sunnyside	82.82	36	eP	P	00 59 56.1 +1.7
	comp=Z,35nm,0.9s					
MTPU	Mount Pierson	82.83	46	eP	P	00 59 57.3 +2.1
	comp=Z,31nm,0.9s					
HAWA	Hanford	82.89	36	eP	P	00 59 56.2 +1.4
	comp=Z,31nm,0.9s					
MSU	Marysvale	83.08	46	eP	P	00 59 58.1 +1.9
MSU	Marysvale	83.08	46	eP	P	00 59 58.1 +1.9
W18A	Petrified Fore	83.11	49	P	P	00 59 57.8 +1.4
	baz=241					
W18A	Petrified Fore	83.11	49	eP	P	00 59 58.4 +2.0
	comp=Z,33nm,1.2s					
ETW	Entiat	83.19	35	eP	P	00 59 57.5 +1.0
MFID	Camas Ranch	83.33	40	eP	P	00 59 58.4 +1.2
	comp=Z,23nm,0.9s					
ZAIG	Zacatecas	83.36	63	eP	P	00 59 59.6 +1.6
	comp=Z,17nm,1.3s					
DUG	Dugway, Tooele	83.52	44	P	P	00 59 59.2 +0.9
	baz=239					
DUG	Dugway, Tooele	83.52	44	eP	P	00 59 59.2 +0.9
DUG				pmax	pmax	
	comp=Z,29nm,1.5s					
DUG	Dugway, Tooele	83.52	44	eP	P	00 59 59.2 +0.9
	comp=Z,29nm,1.5s					
MMU	Miners Mountai	83.52	46	eP	P	00 59 59.9 +1.4
MAW	Mawson	83.52	199	P	P	00 59 57.2 -0.4
	comp=Z,3.1nm,0.7s,baz=139,slow=6.4,SNR=8.5					
D08A	Wollman Farm,	83.63	36	eP	P	00 59 59.9 +1.4
	comp=Z,18nm,0.8s					
E09A	Wood Farm, Sta	83.74	36	eP	P	01 00 00.3 +1.2
	comp=Z,32nm,1.3s					
BGU	Big Grassy Mou	83.75	43	eP	P	01 00 00.7 +1.2
	comp=Z,30nm,1.8s					
NLU	North Lily Min	83.88	44	eP	P	01 00 01.7 +1.5
	comp=Z,5.2nm,0.9s					
F10A	Beach Ranch, E	83.95	37	eP	P	01 00 00.9 +0.7
	comp=Z,46nm,0.9s					
Q16A	Castle Valley	83.96	46	eP	P	01 00 02.5 +1.9
	comp=Z,16nm,0.9s					
TMUT	Trail Mountain	84.12	45	eP	P	01 00 03.4 +1.9
	comp=Z,40nm,0.9s					
B08A	Colville Reser	84.18	34	eP	P	01 00 01.8 +0.5
	comp=Z,14nm,0.8s					
MPU	Maple Canyon	84.20	44	eP	P	01 00 03.4 +1.6
	comp=Z,12nm,0.9s					
CAST	Castle Rocks	84.23	11	eP	P	01 00 00.5 -0.6
	comp=Z,6.5nm,1.0s					
HLID	Hailey	84.28	40	P	P	01 00 03.6 +1.6
	baz=237					
HLID	Hailey	84.28	40	eP	P	01 00 03.4 +1.4
	comp=Z,21nm,0.9s					
SPUT	South Promonto	84.33	43	eP	P	01 00 03.5 +1.2
	comp=Z,21nm,1.0s					
HVU	Hansel Valley	84.36	42	eP	P	01 00 04.0 +1.5
HVU				pmax	pmax	
	comp=Z,21nm,0.9s					
HVU	Hansel Valley	84.36	42	eP	P	01 00 04.0 +1.5
	comp=Z,21nm,0.9s					
SRU	San Rafael Swe	84.49	46	eP	P	01 00 04.4 +1.1
SRU				pmax	pmax	
	comp=Z,21nm,0.8s					
SRU	San Rafael Swe	84.49	46	eP	P	01 00 04.4 +1.1
	comp=Z,21nm,0.8s					
P17A	Butcher Ranch,	84.53	45	eP	P	01 00 05.2 +1.8
	comp=Z,22nm,1.2s					
TRF	Thorofare Moun	84.59	12	eP	P	01 00 02.7 -0.4
	comp=Z,10nm,0.8s					
JLU	Jordanelle	84.62	44	eP	P	01 00 05.0 +1.0
	comp=Z,14nm,1.0s					
LAZ	Ladron	84.67	51	eP	P	01 00 06.0 +1.7
MNTX	Cornudas Mount	84.79	54	P	P	01 00 06.6 +1.9
	baz=244					
MNTX	Cornudas Mount	84.79	54	eP	P	01 00 06.5 +1.9
	comp=Z,45nm,1.0s					
RND	Reindeer	84.83	12	eP	P	01 00 04.7 +0.5
RND				pmax	pmax	
	comp=Z,16nm,0.9s					
RND	Reindeer	84.83	12	eP	P	01 00 04.7 +0.5
	comp=Z,16nm,0.9s					
TLIG	Tlapa	84.86	70	eP	P	01 00 06.9 +1.5
	comp=Z,17nm,1.0s					
TCUT	Toone Canyon	84.90	44	eP	P	01 00 06.9 +1.6
	comp=Z,48nm,1.1s					
P18A	Preston Nutter	84.94	45	eP	P	01 00 07.0 +1.5
	comp=Z,7.2nm,0.8s					
PV05	Paradox Valley	84.97	47	eP	P	01 00 07.6 +1.9
MVCO	Mesa Verde	84.98	48	P	P	01 00 06.6 +0.9
	baz=242					
MVCO	Mesa Verde	84.98	48	eP	P	01 00 06.9 +1.2
	comp=Z,30nm,1.9s					
LPM	Los Pinos Moun	85.00	51	eP	P	01 00 07.3 +1.4
HWUT	Hardware Ranch	85.05	43	eP	P	01 00 06.5 +0.6
	comp=Z,5.1nm,0.8s					
SEY	Seymchan	85.07	346‖	eP	P	01 00 05.6 +0.4
MCK	McKinley	85.11	12	eP	P	01 00 06.0 +0.5
MCK				pmax	pmax	
	comp=Z,11nm,0.8s					
MCK	McKinley	85.11	12	eP	P	01 00 06.0 +0.5
	comp=Z,11nm,0.8s					
TX31	Lajitas Ar. Si	85.13	57	eP	P	01 00 07.7 +1.2
LTX	Lajitas	85.13	57	eP	P	01 00 08.4 +1.9
LTX	Lajitas	85.13	57	eP	P	01 00 08.4 +1.9
TXAR	Lajitas Array	85.13	57	P	P	01 00 08.4 +1.9
	comp=Z,30nm,0.9s,baz=216,slow=6.2,SNR=270					
PV09	Paradox Valley	85.15	47	eP	P	01 00 07.8 +1.2
PV10	Paradox Valley	85.15	47	eP	P	01 00 07.6 +1.0
PANO	Nakornpanom	85.22	290	P	P	01 00 08.2 +1.1
	comp=Z,56nm,2.1s					
NEW	Newport	85.32	35	P	P	01 00 07.4 +0.5
	baz=235					
NEW	Newport	85.32	35	eP	P	01 00 07.6 +0.7
NEW				pmax	pmax	
	comp=Z,27nm,1.8s					
NEW	Newport	85.32	35	eP	P	01 00 07.5 +0.7
	comp=Z,27nm,1.8s					
PV01	Paradox Valley	85.36	47	eP	P	01 00 08.4 +0.8
ANMO	Albuquerque	85.41	51	P	P	01 00 09.0 +1.1
	baz=243					
ANMO	Albuquerque	85.41	51	ceP	P	01 00 09.1 +1.2
ANMO				pmax	pmax	
	comp=Z,14nm,1.0s					
ANMO	Albuquerque	85.41	51	eP	P	01 00 09.1 +1.2
	comp=Z,12nm,0.9s					
PSI	Prapat	85.59	274	eP	P	01 00 08.4 -0.7
PSI				pmax	pmax	
	comp=Z,16nm,1.0s					
PSI	Prapat	85.59	274	eP	P	01 00 08.4 -0.7
	comp=Z,16nm,1.0s					
BJI	Beijing	85.61	315	P	P	01 00 08.7 +0.3
BJI				pmax	pmax	
	comp=Z,12nm,1.1s					
SKNT	Sakolnakorn	85.72	289	P	P	01 00 10.4 +0.9
	comp=Z,34nm,1.1s					
MCMT	McKenzie Canyo	85.90	40	eP	P	01 00 11.4 +1.3
AHID	Auburn Hatcher	85.93	42	eP	P	01 00 11.6 +1.3
	comp=Z,9.2nm,1.0s					
WRH	Wood River Hil	85.94	12	eP	P	01 00 10.0 +0.5
	comp=Z,13nm,1.0s					
DOT	Dot Lake	86.07	14	eP	P	01 00 10.7 +0.5
	comp=Z,41nm,1.0s					
CCB	Clear Creek Bu	86.15	12	eP	P	01 00 10.3 -0.2
	comp=Z,7.2nm,0.7s					
ENH	Enshi	86.15	304	eP	P	01 00 12.4 +1.0
	comp=Z,32nm,1.0s					
MSO	Missoula	86.32	38	P	P	01 00 12.3 +0.4
	baz=238					
MSO	Missoula	86.32	38	eP	P	01 00 12.6 +0.7
	comp=Z,15nm,1.4s					
DLMT	Dillon	86.33	39	eP	P	01 00 13.4 +1.3
	comp=Z,36nm,1.4s					
COLA	College	86.35	12	c iP	P	01 00 11.3 -0.1
COLA				pmax	pmax	
	comp=Z,10.0nm,0.9s					
MDM	Murphy Dome	86.35	12	eP	P	01 00 11.7 +0.2
	comp=Z,7.8nm,0.9s					
BSMT	Bassoo Peak	86.39	37	eP	P	01 00 12.9 +0.6
REDW	Red Top Meadow	86.39	42	eP	P	01 00 13.8 +1.4
	comp=Z,14nm,1.2s					
S22A	4UR Ranch, Cre	86.40	48	P	P	01 00 13.9 +1.1
	baz=243					
S22A	4UR Ranch, Cre	86.40	48	eP	P	01 00 14.1 +1.3
	comp=Z,18nm,1.0s					
FXWY	Fox Creek	86.42	42	eP	P	01 00 14.0 +1.4
	comp=Z,8.8nm,1.3s					
ILAR	Eielson Array	86.45	12	P	P	01 00 11.7 -0.2
	comp=Z,2.2nm,0.8s,baz=226,slow=6.1,SNR=14					
ILB	Eielson Array	86.45	12	eP	P	01 00 11.7 -0.2
IL1	Eielson Array	86.45	12	eP	P	01 00 11.6 -0.4
SNOW	Snow King Moun	86.50	42	eP	P	01 00 14.6 +1.6
	comp=Z,13nm,1.0s					
TRTT	Trang	86.52	279	P	P	01 00 15.4 +1.9
	comp=Z,36nm,1.0s					
O20A	White River Ci	86.53	46	P	P	01 00 13.9 +0.7
	baz=242					
O20A	White River Ci	86.53	46	eP	P	01 00 14.0 +0.8
	comp=Z,12nm,0.7s					
IMW	Indian Meadow	86.60	41	eP	P	01 00 14.8 +1.3
	comp=Z,29nm,1.6s					
JTMT	Jette	86.61	37	eP	P	01 00 13.7 +0.4
MOOW	Moose Ponds	86.65	42	eP	P	01 00 14.5 +0.8
	comp=Z,16nm,1.8s					
LRM	Limekiln Ridge	86.66	39	eP	P	01 00 14.6 +0.8
LOHW	Long Hollow	86.67	42	eP	P	01 00 15.1 +1.3
	comp=Z,16nm,1.6s					
CHMT	Chamberlain Mo	86.76	38	eP	P	01 00 14.6 +0.5
QLMT	Earthquake Lak	86.77	40	eP	P	01 00 16.0 +1.8
YBMT	Yellow Bay	86.83	37	eP	P	01 00 14.7 +0.3
FLWY	Flagg Ranch	86.84	41	eP	P	01 00 16.5 +1.9
	comp=Z,21nm,1.2s					
NONG	Nongkai	86.86	290	P	P	01 00 16.1 +1.2
	comp=Z,27nm,1.1s					
BW06	Boulder Array	86.92	43	P	P	01 00 15.6 +0.6
	baz=241					
BW06	Boulder Array	86.92	43	eP	P	01 00 15.4 +0.4
PD31	Pinedale Array	86.92	43	eP	P	01 00 15.3 +0.3
PDAR	Pinedale Array	86.92	43	P	P	01 00 15.3 +0.3
	comp=Z,3.8nm,0.6s,baz=212,slow=3.3,SNR=32					
GYA	Guiyang	86.92	299	P	P	01 00 16.4 +1.1
GYA				pP	pP	01 01 40.6 +3.8
GYA				sP	sP	01 02 18.2 +4.9
GYA				PP	PP	01 03 47.5 +3.3
GYA				SKS	SKSac	01 10 06.0 -2.7
GYA	Guiyang	86.92	299	S	S	01 10 22.9 -0.8
GYA	Guiyang	86.92	299	sS	sS	01 12 50.4 +2.1
GYA				pmax	pmax	
	comp=Z,10.0nm,1.0s					
YFT	Old Faithful	86.94	41	eP	P	01 00 17.9 +2.8
	comp=Z,17nm,1.3s					
SMCO	Snowmass	86.95	47	eP	P	01 00 16.5 +1.0
	comp=Z,9.5nm,0.6s					
YMR	Madison River	86.97	41	eP	P	01 00 17.4 +2.2
	comp=Z,53nm,1.6s					
BOZ	Bozeman (W)	87.06	40	P	P	01 00 16.7 +1.1
	baz=239					
H17A	Grant Village	87.08	41	P	P	01 00 17.7 +1.9
	baz=240					
H17A	Grant Village	87.08	41	eP	P	01 00 18.4 +2.7
	comp=Z,6.6nm,0.8s					
KRAB	Krabi	87.11	280	P	P	01 00 18.2 +1.9
	comp=Z,36nm,0.7s					
LKWY	Lake	87.27	41	eP	P	01 00 19.7 +3.0
LKWY				pmax	pmax	
	comp=Z,14nm,1.0s					
LKWY	Lake	87.27	41	eP	P	01 00 19.7 +3.0
	comp=Z,14nm,1.0s					
SDCO	Great Sand Dun	87.34	49	P	P	01 00 18.2 +0.9
	baz=244					
SDCO	Great Sand Dun	87.34	49	eP	P	01 00 17.8 +0.6
	comp=Z,6.5nm,0.8s					
WALA	Waterton Lakes	87.53	36	eP	P	01 00 18.5 +0.9
	comp=Z,12nm,0.8s					
BILL	Bilibino	87.54	354	i P	P	01 00 17.6 +0.6
BILL				pmax	pmax	
	comp=Z,2.0nm,1.0s					
DAWY	Dawson	87.55	15	eP	P	01 00 18.4 +1.2
	comp=Z,11nm,1.4s					
832A	Faith Ranch, C	87.67	59	P	P	01 00 19.5 +0.9
	baz=247					
MSTX	Muleshoe	87.74	53	P	P	01 00 19.9 +0.9
	baz=246					
MSTX	Muleshoe	87.74	53	eP	P	01 00 20.2 +1.3
	comp=Z,23nm,1.1s					
T25A	Trinidad	87.86	50	P	P	01 00 20.2 +0.6
	baz=244					
T25A	Trinidad	87.86	50	eP	P	01 00 20.4 +0.8
	comp=Z,6.0nm,0.8s					
933A	Laredo	87.99	60	P	P	01 00 21.2 +1.1
	baz=248					
COLD	Coldfoot	88.05	10	eP	P	01 00 20.8 +1.4
	comp=Z,3.9nm,0.7s					
Q24A	Divide	88.13	48	P	P	01 00 21.9 +0.9
	baz=244					
Q24A	Divide	88.13	48	eP	P	01 00 22.4 +1.4
	comp=Z,13nm,1.2s					
XAN	Xi'an	88.13	307	P	P	01 00 20.0 -0.7
XAN				pP	PcP	01 00 29.3 +7.2
XAN				pmax	pmax	
	comp=Z,24nm,1.1s					
833A	Chaparral WMA,	88.16	59	P	P	01 00 22.1 +1.2
	baz=248					
ISCO	Idaho Springs	88.17	47	P	P	01 00 21.9 +0.8
	baz=244					
ISCO	Idaho Springs	88.17	47	eP	P	01 00 22.4 +1.3
ISCO				pmax	pmax	
	comp=Z,3.0nm,0.9s					
ISCO	Idaho Springs	88.17	47	eP	P	01 00 22.4 +1.3
	comp=Z,3.2nm,0.9s					
RLMT	Red Lodge	88.25	41	P	P	01 00 22.4 +1.2
	baz=241					
RLMT	Red Lodge	88.25	41	eP	P	01 00 22.6 +1.4
	comp=Z,13nm,1.0s					
PHET	Kaeng Krachan	88.27	284	P	P	01 00 24.2 +2.5
	comp=Z,11nm,1.0s					
GCMT	Greycliff	88.33	40	eP	P	01 00 23.0 +1.6
733A	Divot King Ran	88.39	59	P	P	01 00 23.2 +1.2
	baz=248					
N23A	Red Feather La	88.44	46	P	P	01 00 23.3 +1.0
	baz=243					
N23A	Red Feather La	88.44	46	eP	P	01 00 23.6 +1.4
	comp=Z,12nm,1.1s					
SYO	Syowa Base	88.59	192‖	eP	P	01 00 20.0 -2.2
SYO	Syowa Base	88.59	192‖	epP	pP	01 01 37.0 -7.0
JCT	Junction City	88.66	57	P	P	01 00 23.9 +0.6
	baz=247					
JCT	Junction City	88.66	57	eP	P	01 00 23.8 +0.6
JCT				pmax	pmax	
	comp=Z,30nm,1.6s					
JCT	Junction City	88.66	57	eP	P	01 00 23.8 +0.6
	comp=Z,30nm,1.6s					
633A	Saathoff Ranch	88.77	58	P	P	01 00 25.2 +1.5
	baz=248					
K22A	Casper	88.84	44	P	P	01 00 25.1 +1.1
	baz=243					
AMTX	Amarillo	88.94	53	P	P	01 00 25.3 +0.8
	baz=246					
HHC	Hu-ho-hao-te	89.10	314	eP	P	01 00 26.6 +1.4
HHC				pP	pP	01 01 49.1 +2.0
HHC				sP	sP	01 02 29.1 +5.6
HHC				PP	PP	01 04 09.6 +8.3
HHC	Hu-ho-hao-te	89.10	314	S	S	01 10 45.2 +1.7
HHC	Hu-ho-hao-te	89.10	314	sS	sS	01 13 17.2 +8.3
HHC				pmax	pmax	
	comp=Z,25nm,1.3s					
HHC				pmax	pmax	
	comp=Z,150nm,7.5s					
533A	Kerrville	89.12	58	P	P	01 00 26.5 +1.1
	baz=248					
NANT	Nan	89.29	290	P	P	01 00 27.9 +1.5
	comp=Z,3.9nm,0.2s					
433A	Art	89.33	57	P	P	01 00 27.2 +0.9
	baz=248					
EGMT	Eagleton	89.37	38	P	P	01 00 27.0 +0.8
	baz=241					
PLCA	Paso Flores	89.50	133	P	P	01 00 28.1 +0.9
	comp=Z,6.4nm,1.0s,baz=240,slow=7.9,SNR=7.6					
PLCA	Paso Flores	89.50	133	eP	P	01 00 28.1 +0.9
PLCA				pmax	pmax	
	comp=Z,13nm,1.1s					
PLCA	Paso Flores	89.50	133	eP	P	01 00 28.1 +0.9
	comp=Z,13nm,1.1s					
534A	Blanco	89.55	58	P	P	01 00 28.4 +1.0
	baz=248					
ABTX	Abilene, Hawle	89.61	55	P	P	01 00 28.5 +0.9
	baz=247					
ABTX	Abilene, Hawle	89.61	55	eP	P	01 00 28.3 +0.7
	comp=Z,58nm,1.0s					
333A	Richland Sprin	89.63	57	P	P	01 00 28.4 +0.6
	baz=248					
735A	Kenedy	89.65	59	P	P	01 00 30.1 +2.2
	baz=248					
KMI	Kunming	89.72	297	P	P	01 00 29.9 +1.4
KMI				pmax	pmax	
	comp=Z,14nm,0.9s					
KMI				pmax	pmax	
	comp=Z,120nm,5.5s					
SUKH	Sukhothai	89.80	288	P	P	01 00 32.1 +3.4
	comp=Z,3.0nm,0.8s					
233A	Rising Star	89.96	56	P	P	01 00 30.4 +1.1
	baz=248					
434A	Burnet	90.01	57	P	P	01 00 30.2 +0.7
	baz=248					
CRAI	Chiangrai	90.06	291	P	P	01 00 32.0 +2.0
	comp=Z,33nm,1.2s					
LAMP	Lampang	90.15	289	P	P	01 00 32.3 +1.9
	comp=Z,9.7nm,0.7s					
133A	Hamilton Ranch	90.17	56	P	P	01 00 31.2 +1.0
	baz=248					
CCIG	Comitan	90.18	73	eP	P	01 00 32.3 +1.5
	comp=Z,16nm,0.9s					
334A	Lometa	90.22	57	P	P	01 00 31.5 +1.0
	baz=248					
736A	Circle Diamond	90.30	60	P	P	01 00 33.2 +2.3
	baz=249					
636A	Smothers Creek	90.49	59	P	P	01 00 33.3 +1.6
	baz=249					
Z33A	Whitaker Ranch	90.54	55	P	P	01 00 33.0 +1.1
	baz=248					
435B	Jarrell	90.54	58	P	P	01 00 33.1 +1.1
	baz=248					
234A	Clairette	90.56	56	P	P	01 00 33.0 +1.0
	baz=248					
536A	Bastrop	90.70	59	P	P	01 00 34.1 +1.4
	baz=249					
134A	White-Moore Ra	90.81	56	P	P	01 00 34.1 +0.9
	baz=248					
335A	Moody	90.85	57	P	P	01 00 34.1 +0.8
	baz=248					
CMMT	Chiang Mai	90.85	289	P	P	01 00 34.9 +1.2
	comp=Z,17nm,0.9s					
CHTO	Chiang Mai	90.86	289	eP	P	01 00 34.8 +1.1
CHTO				pmax	pmax	
	comp=Z,12nm,0.9s					
CHTO	Chiang Mai	90.86	289	eP	P	01 00 34.8 +1.1
	comp=Z,12nm,0.9s					
LAO	LASA Array	90.86	40	P	P	01 00 34.8

Y33A	Hilltop Ranch,	90.92	54	P	P	01 00 34.9	+1.2
	baz=248						
CD2	Chengdu	90.95	302	P	P	01 00 33.7	-0.2
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
WHTX	Lake Whitney,	91.09	57	P	P	01 00 35.2	+0.8
	baz=248						
WHTX	Lake Whitney,	91.09	57	eP	P	01 00 32.4	-2.0
	comp=Z,20nm,0.9s						
RSSD	Black Hills	91.11	43	P	P	01 00 35.2	+0.6
	baz=245						
RSSD	Black Hills	91.11	43	eP	P	01 00 34.8	+0.2
RSSD				pmax	pmax		
	comp=Z,33nm,1.1s						
RSSD	Black Hills	91.11	43	eP	P	01 00 34.8	+0.2
	comp=Z,33nm,1.1s						
436A	Wall Ranch, Ga	91.17	58	P	P	01 00 36.0	+1.1
	baz=249						
X33A	Lawton	91.22	54	P	P	01 00 35.8	+0.8
	baz=248						
Z34A	Collier Ranch,	91.23	55	P	P	01 00 36.3	+1.2
	baz=248						
V32A	Arapaho	91.25	53	P	P	01 00 36.5	+1.3
	baz=248						
I25A	Rochford	91.27	44	P	P	01 00 36.0	+0.8
	baz=245						
135A	Vickery Place,	91.33	56	P	P	01 00 36.7	+1.2
	baz=248						
336A	Riesel	91.35	57	P	P	01 00 36.6	+0.9
	baz=249						
J26A	Sides Ranch, S	91.41	44	P	P	01 00 36.8	+1.0
	baz=245						
W33A	Caddo, Fort Co	91.47	53	P	P	01 00 37.5	+1.3
	baz=248						
U32A	Winter Ranch,	91.53	52	P	P	01 00 37.4	+1.0
	baz=248						
Y34A	Reagan Ranch,	91.57	55	P	P	01 00 37.2	+0.6
	baz=248						
H25A	Fruitdale	91.61	43	P	P	01 00 37.2	+0.6
	baz=245						
HKT	Hockley	91.66	59⇑	eP	P	01 00 38.3	+1.3
HKT				pmax	pmax		
	comp=Z,2.0nm,1.0s						
437A	Phantom Ranch,	91.72	58	P	P	01 00 38.5	+1.1
	baz=249						
Z35A	Perchaven, San	91.73	55	P	P	01 00 38.5	+1.0
	baz=249						
X34A	Smith Ranch, M	91.75	54	P	P	01 00 39.0	+1.6
	baz=248						
236A	Katherine and	91.82	57	P	P	01 00 38.8	+1.0
	baz=249						
V33A	Lossen Ranch,	91.86	53	P	P	01 00 39.2	+1.2
	baz=248						
T32A	Huddler Ranch,	91.89	51	P	P	01 00 39.2	+1.1
	baz=248						
CBKS	Cedar Bluff	91.92	50	P	P	01 00 39.5	+1.3
	baz=247						
136A	Ennis	91.99	56	P	P	01 00 39.5	+0.9
	baz=249						
W34A	Bridge Creek,	92.03	53	P	P	01 00 39.8	+1.1
	baz=248						
J27A	Elkhorn Farm,	92.09	45	P	P	01 00 40.5	+1.6
	baz=246						
337A	Centerville	92.09	58	P	P	01 00 40.7	+1.6
	baz=249						
Y35A	Marietta	92.11	55	P	P	01 00 39.9	+0.8
	baz=249						
H26A	Fairpoint	92.14	43	P	P	01 00 40.3	+1.2
	baz=246						
U33A	Lingo Farm, Me	92.21	52	P	P	01 00 40.5	+1.0
	baz=248						
438A	Sam Houston St	92.23	58	P	P	01 00 41.8	+2.1
	baz=249						
F25A	Bowman	92.25	42	P	P	01 00 41.3	+1.7
	baz=245						
X35A	Drake	92.34	55	P	P	01 00 40.9	+0.7
	baz=249						
Z36A	Blue Ridge	92.35	56	P	P	01 00 41.3	+1.0
	baz=249						
T33A	Patterson Ranc	92.36	52	P	P	01 00 41.1	+0.9
	baz=248						
INK	Inuvik	92.37	15	P	P	01 00 39.2	-0.2
	comp=Z,4.8nm,0.9s,baz=238,slow=5.3,SNR=18						
INK	Inuvik	92.37	15	eP	P	01 00 39.2	-0.2
INK				pmax	pmax		
	comp=Z,9.0nm,1.0s						
INK	Inuvik	92.37	15	eP	P	01 00 39.2	-0.2
	comp=Z,8.8nm,1.0s						
237A	Washetta, Mont	92.40	57	P	P	01 00 42.2	+1.7
	baz=249						
R32A	Long Quarter,	92.51	50	P	P	01 00 41.9	+1.0
	baz=248						
E25A	Miller Ranch,	92.53	41	P	P	01 00 42.4	+1.6
	baz=245						
G26A	Maurine	92.54	43	P	P	01 00 42.0	+1.1
	baz=246						
338A	Crockett	92.57	58	P	P	01 00 42.5	+1.2
	baz=250						
H27A	Howes	92.60	44	P	P	01 00 42.4	+1.2
	baz=246						
137A	Heron Place, G	92.65	57	P	P	01 00 42.8	+1.1
	baz=249						
U34A	Anderson Ranch	92.65	52	P	P	01 00 42.2	+0.6
	baz=249						
W35A	Tecumseh	92.69	54	P	P	01 00 42.8	+1.1
	baz=249						
Y36A	Durant	92.69	55	P	P	01 00 43.0	+1.2
	baz=249						
F26A	Lodgepole	92.72	42	P	P	01 00 42.2	+0.4
	baz=246						
O31A	Woolen Ranch,	92.72	48	P	P	01 00 42.6	+0.8
	baz=248						
S33A	Kaszmaul Farm,	92.72	51	P	P	01 00 42.9	+1.0
	baz=248						
LZH	Lanzhou	92.76	307	eP	P	01 00 45.0	+2.7
LZH				pP	pP	01 02 06.2	+1.7
LZH				sP	sP	01 02 40.2	-0.5
LZH				PP	PP	01 04 42.3	+12
LZH	Lanzhou	92.76	307	eS	S	01 11 14.1	-2.6
LZH	Lanzhou	92.76	307	sS	sS	01 13 42.0	-1.3
LZH	Lanzhou	92.76	307	SS	SS	01 17 47.5	+7.8
LZH				pmax	pmax		
	comp=Z,25nm,1.0s						
LZH				pmax	pmax		
	comp=Z,200nm,4.5s						
Q32A	Meitler Ranch,	92.83	50	P	P	01 00 43.4	+1.0
	baz=248						
D25A	Fairfield	92.85	41	P	P	01 00 43.5	+1.2
	baz=245						
DGMT	Dagmar	92.87	39	P	P	01 00 43.7	+1.4
	baz=245						
X36A	Centrahoma	92.88	55	P	P	01 00 43.4	+0.8
	baz=249						
I28A	Midland	92.95	44	P	P	01 00 43.4	+0.7
	baz=247						
Z37A	Pogue Cattle C	92.96	56	P	P	01 00 44.4	+1.4
	baz=250						
R33A	Olander Ranch,	93.00	51	P	P	01 00 44.0	+0.9
	baz=248						
G27A	Dupree	93.00	43	P	P	01 00 43.7	+0.7
	baz=246						
T34A	McClaskey Farm	93.12	52	P	P	01 00 44.4	+0.7
	baz=249						
D26A	Manning	93.35	41	P	P	01 00 45.5	+1.0
	baz=246						
Q33A	Connelly Farm,	93.36	50	P	P	01 00 45.9	+1.1
	baz=248						
239A	Gary	93.47	57	P	P	01 00 46.0	+0.6
	baz=250						
K30A	Basset	93.48	46	P	P	01 00 46.4	+1.1
	baz=248						
O32A	Brockman Farm,	93.51	49	P	P	01 00 46.3	+0.9
	baz=248						
I29A	Vivian Onida	93.53	45	P	P	01 00 46.1	+0.6
	baz=247						
R34A	Isabella, Hill	93.54	51	P	P	01 00 46.3	+0.7
	baz=249						
T35A	Sooner Cattle	93.59	52	P	P	01 00 46.8	+0.9
	baz=249						
V36A	Jenks	93.62	54	P	P	01 00 47.1	+1.1
	baz=249						
P33A	Williams Farm,	93.62	50	P	P	01 00 47.0	+1.0
	baz=249						
X37A	Clayton	93.64	55	P	P	01 00 46.7	+0.5
	baz=250						
E27A	Carson	93.66	42	P	P	01 00 47.1	+1.1
	baz=246						
A25A	Svangstu Ranch	93.72	39	P	P	01 00 47.7	+1.5
	baz=246						
TUL1	Leonard	93.78	53	P	P	01 00 47.7	+0.9
	baz=250						
W37B	Quinton	93.79	54	P	P	01 00 47.7	+0.9
	baz=250						
J30A	Dallas	93.81	45	P	P	01 00 47.6	+0.8
	baz=248						
H29A	Onida	93.83	44	P	P	01 00 47.7	+0.9
	baz=247						
541A	Lake Charles	93.85	60	P	P	01 00 48.4	+1.3
	baz=250						
C26A	Wahner Farm, P	93.89	41	P	P	01 00 48.6	+1.6
	baz=246						
O33A	Hebron	93.93	49	P	P	01 00 48.8	+1.4
	baz=249						
D27A	Center	93.95	41	P	P	01 00 48.9	+1.6
	baz=247						
Q34A	Chapman	93.98	50	P	P	01 00 48.7	+1.1
	baz=249						
U36A	Oologah	93.99	53	P	P	01 00 48.4	+0.7
	baz=250						
S35A	Otter Creek Ra	94.00	52	P	P	01 00 48.7	+1.0
	baz=249						
K31A	O'Neill	94.05	46	P	P	01 00 49.2	+1.3
	baz=248						
X38A	Whitesboro	94.09	55	P	P	01 00 49.2	+1.0
	baz=250						
T36A	Boggs Farm, Ca	94.11	52	P	P	01 00 49.1	+0.8
	baz=250						
V37A	Hulbert	94.27	54	P	P	01 00 49.6	+0.7
	baz=250						
N33A	J Bar K, Exete	94.27	48	P	P	01 00 50.0	+1.1
	baz=249						
KSU1	Kansas State U	94.29	50	P	P	01 00 50.2	+1.2
	baz=249						
P34A	Walnut Farm, R	94.29	50	P	P	01 00 50.2	+1.2
	baz=249						
U37A	Salina	94.46	53	P	P	01 00 50.0	+0.2
	baz=250						
W38A	Poteau	94.47	55	P	P	01 00 49.9	0.0
	baz=250						
YKA	Yellowknife Ar	94.51	24	P	P	01 00 49.6	+0.2
	comp=Z,2.4nm,0.8s,baz=241,slow=4.3,SNR=43						
YKA				PP	PP	01 04 41.3	-1.4
	comp=Z,0.4nm,0.9s,baz=240,slow=7.8,SNR=4.7						
YKB5	Yellowknife Ar	94.51	24	eP	P	01 00 49.6	+0.2
YKB5				ePP	PP	01 04 41.4	-1.4
YKW3	Yellowknife Ar	94.54	24	eP	P	01 00 50.2	+0.7
	comp=Z,4.6nm,1.1s						
O34A	Beatrice	94.61	49	P	P	01 00 51.1	+0.6
	baz=249						
V38A	Canehill	94.82	54	P	P	01 00 52.0	+0.5
	baz=250						
T37A	Cheneyville 18	94.86	53	P	P	01 00 52.4	+0.8
	baz=250						
ULN	Ulaanbaatar	94.94	319⇑	eP	P	01 00 52.2	+0.3
ULN				pmax	pmax		
	comp=Z,3.0nm,1.0s						
ULN	Ulaanbaatar	94.94	319	eP	P	01 00 52.5	+0.5
	comp=Z,4.7nm,1.1s						
N34A	Lincoln	94.98	49	P	P	01 00 53.0	+0.9
	baz=250						
U38A	Gravette	95.03	53	P	P	01 00 53.1	+0.6
	baz=250						
W39A	Magazine	95.08	55	P	P	01 00 53.4	+0.7
	baz=251						
S37A	Fort Scott	95.14	52	P	P	01 00 53.3	+0.4
	baz=250						
M34A	Aspy Farms, Fr	95.15	48	P	P	01 00 54.3	+1.4
	baz=250						
T38A	Diamond	95.30	53	P	P	01 00 54.2	+0.5
	baz=250						
V39A	Pettigrew	95.39	54	P	P	01 00 54.7	+0.5
	baz=251						
A28A	Rude Farm, Bot	95.43	40	P	P	01 00 55.1	+1.0
	baz=248						
N35A	Tabor	95.60	49	P	P	01 00 56.1	+1.2
	baz=250						
W40A	Ferguson Farm,	95.63	55	P	P	01 00 56.4	+1.2
	baz=251						
U39A	Green Forest	95.70	54	P	P	01 00 55.5	-0.1
	baz=251						
D30A	Buchanan	95.70	42	P	P	01 00 55.4	+0.1
	baz=248						
B29A	Wagenman Farm,	95.83	41	P	P	01 00 56.2	+0.4
	baz=248						
ECSD	EROS Data Cent	95.91	46	P	P	01 00 56.8	+0.5
	baz=250						
ECSD	EROS Data Cent	95.91	46	eP	P	01 00 56.6	+0.4
	comp=Z,20nm,1.3s						
R38A	Fenwick Farm,	95.97	52	P	P	01 00 57.3	+0.6
	baz=251						
T39A	Clever	95.98	53	P	P	01 00 57.7	+0.9
	baz=251						
V40A	Witts Springs	96.02	54	P	P	01 00 57.9	+0.9
	baz=251						
A29A	Manning Farm,	96.07	40	P	P	01 00 57.7	+0.8
	baz=248						
C30A	Mose, Pekin	96.09	42	P	P	01 00 57.6	+0.6
	baz=249						
P37A	Lathrop	96.10	50	P	P	01 00 58.4	+1.2
	baz=251						
U40A	Yellville	96.17	54	P	P	01 00 58.2	+0.5
	baz=251						
J34A	George	96.20	46	P	P	01 00 58.0	+0.4
	baz=250						
S39A	Bolivar	96.24	52	P	P	01 00 58.3	+0.3
	baz=251						
W41B	Gary Mavity, V	96.26	55	P	P	01 00 58.8	+0.8
	baz=251						
Q38A	Cooks Store, C	96.43	51	P	P	01 00 59.4	+0.6
	baz=251						
G33A	Ortonville	96.53	45	P	P	01 00 59.2	+0.2
	baz=250						
A30A	Hoffart Farm,	96.65	41	P	P	01 01 00.2	+0.7
	baz=249						
R39A	Chumby, Stover	96.66	52	P	P	01 01 00.5	+0.7
	baz=251						
T40A	Mansfield	96.68	53	P	P	01 01 00.6	+0.7
	baz=252						
P38A	Dawn	96.71	51	P	P	01 01 01.1	+1.1
	baz=251						
S40A	Lebanon	96.83	53	P	P	01 01 01.1	+0.5
	baz=252						
F33A	5 Mile Ranch,	96.85	44	P	P	01 01 01.1	+0.7
	baz=250						
M37A	Trindle Farm,	96.91	49	P	P	01 01 01.6	+0.8
	baz=251						
446A	Poplarville	97.21	60	P	Pdif	01 01 02.8	+0.3
	baz=252						
R40A	Maddies Statio	97.22	52	P	Pdif	01 01 03.0	+0.7
	baz=252						
TIXI	Tiksi	97.48	345	P	Pdif	01 01 02.0	-0.7
	comp=Z,1.7nm,0.6s,baz=135,slow=2.8,SNR=4.8						
TIXI	Tiksi	97.48	345⇑	eP	Pdif	01 01 02.6	-0.1
TIXI				pmax	pmax		
	comp=Z,3.0nm,1.2s						
M38A	Pleasantville	97.52	49	P	Pdif	01 01 04.3	+0.7
	baz=252						
B32A	Ashes, Strandq	97.56	41	P	Pdif	01 01 03.4	-0.2
	baz=250						
A32A	Rocking H Ranc	97.76	41	P	Pdif	01 01 04.5	+0.1
	baz=250						
L38A	Oak Wood Farm,	97.92	48	P	Pdif	01 01 06.2	+0.9
	baz=252						
O40A	La Belle	98.08	50	P	P	01 01 06.5	+0.4
	baz=252						
A33A	Warroad	98.45	41	P	P	01 01 06.6	-1.0
	baz=251						
C35A	Jirik Farms, M	98.96	43	P	Pdif	01 01 09.1	-0.8
	baz=252						
E36A	McGregor	99.06	44	P	Pdif	01 01 10.3	0.0
	baz=252						
B35A	Bob, Littlefor	99.32	42	P	Pdif	01 01 11.2	-0.2
	baz=252						
ZAA1	Zalesovo Array	109.99	322	ePKiKP	PKiKP	01 05 57.8	-0.8
ZALV	Zalesovo Beam	109.99	322	PKiKP	PKiKP	01 05 57.8	-0.8
	comp=Z,1.5nm,0.5s,baz=259,slow=0.3,SNR=8.6						
MK32	Makanchi Array	110.97	314	ePKiKP	PKiKP	01 06 00.0	-0.7
MKAR	Makanchi Array	110.97	314	PKiKP	PKiKP	01 06 00.0	-0.7
	comp=Z,1.0nm,0.6s,baz=176,slow=0.6,SNR=7.9						
KSH	Kashi	114.95	305	ePKP	PKPdf	01 06 14.4	+5.7
KSH				ePP	PP	01 07 34.3	+20
KSH				esPKP		01 08 16.2	
KSH				SKS	SKSdf	01 12 52.0	+4.9
KSH				AMB	AMB		
	comp=Z,120nm,7.2s						
AAK	Ala-Archa	116.25	309⇑	iPKIKP	PKPdf	01 06 10.6	-0.5
BRVK	Borovoye	118.67	321	diPKIKP	PKPdf	01 06 14.6	-0.6
BRVK				pmax	pmax		
	comp=Z,2.0nm,0.7s						
BRVK	Borovoye	118.67	321	ePKPdf	PKPdf	01 06 15.0	-0.2
KKAR	Karatay Array	119.18	309	ePKIKP	PKPdf	01 06 16.3	-0.3
KKAR	Karatay Array	119.18	309	ePKPdf	PKPdf	01 06 16.3	-0.3
ZRNK	Zerenda	119.45	321	ePKIKP	PKPdf	01 06 16.2	-0.5
ZRNK	Zerenda	119.45	321	ePKPdf	PKPdf	01 06 16.2	-0.5
ARU	Arti	124.54	326	iPKIKP	PKPdf	01 06 26.6	+0.2
ARU						01 08 18.0	
ARU						01 13 02.7	
ARU	Arti	124.54	326	ePKPdf	PKPdf	01 06 26.2	-0.1
ARA0	ARCESS Array S	127.52	350	ePKPdf	PKPdf	01 06 32.1	+0.3
ARCES	ARCESS Array B	127.52	350	PKP	PKPdf	01 06 32.1	+0.3
	comp=Z,3.8nm,0.8s,baz=336,slow=1.6,SNR=8.1						
BOSA	Boshof	128.26	205	PKP	PKPdf	01 06 35.0	+0.3
	comp=Z,2.0nm,0.8s,baz=144,slow=4.1,SNR=4.5						
GEYT	Alibeck	128.92	304	PKP	PKPdf	01 06 35.8	+0.4
	comp=Z,1.9nm,0.6s,baz=263,slow=3.7,SNR=7.0						
GEYT				SKPbc	SKPbc	01 09 25.8	
	comp=Z,2.8nm,0.9s,baz=318,slow=2.0,SNR=6.3						
UOSS	Minazif	130.80	287	eSKPbc	SKPab	01 09 32.2	+1.6
KLMR	Klimovskoe	130.86	338	ePKIKP	PKPdf	01 06 35.2	-3.1
KLMR				pmax	pmax		
	comp=Z,8.0nm,1.4s						
FIA1	FINESS Array S	134.53	345	eSKPbc	SKiKP	01 09 46.0	-2.8
FIA0	FINESS Array S	134.53	345	ePKIKP	PKPdf	01 06 45.2	0.0
FIA0	FINESS Array S	134.53	345	ePKPdf	PKPdf	01 06 45.2	0.0
FIA0				eSKPbc	SKiKP	01 09 45.3	-3.5
FINES	FINESS Array B	134.53	345	PKP	PKPdf	01 06 45.2	0.0
	comp=Z,1.0nm,0.7s,baz=166,slow=33,SNR=5.1						
FINES				SKPbc	SKiKP	01 09 45.3	-3.5
	comp=Z,5.3nm,0.8s,baz=45,slow=1.8,SNR=7.9						
OBN	Obninsk	135.88	333	iPKIKP	PKPdf	01 06 49.6	+1.7
OBN				pmax	pmax		
	comp=Z,28nm,2.5s						
NB2	NORSAR Subarra	137.49	354	PKPdf	PKPpre	01 06 43.1	
	comp=Z,0.5nm,0.8s,baz=27,slow=1.8						
NB200	NORSAR Array S	137.49	354	ePKPpre	PKPpre	01 06 41.6	
NB200				ePKPdf	PKiKP	01 06 49.9	-2.9
NB200				eSKPbc	SKPab	01 09 55.2	-3.3
NOA	NORSAR Array B	137.49	354	PKhKP	PKPpre	01 06 41.6	
	comp=Z,0.6nm,0.8s,baz=13,slow=2.3,SNR=3.6						
NOA				PKP	PKiKP	01 06 49.9	-2.9
	comp=Z,0.6nm,0.8s,baz=18,slow=5.2,SNR=3.9						
NOA				SKPbc	SKPab	01 09 55.2	-3.3
	comp=Z,2.6nm,0.9s,baz=15,slow=4.5,SNR=7.6						
NBO02	NORSAR Array S	137.51	355	eSKPbc	SKPab	01 09 55.5	-3.1
ZEI	Tsey	138.31	314	ePKIKP	PKPdf	01 06 55.0	+1.9
ZEI				pmax	pmax		
	comp=Z,5.0nm,0.9s						
KBZ	Khabaz	138.62	316	SKPbc	SKPbc	01 09 58.5	+4.2
	comp=Z,1.3nm,0.9s,baz=86,slow=2.2,SNR=3.7						
GNI	Garni	138.64	310⇑	iPKIKP	PKPdf	01 06 57.5	+3.8
GNI				pmax	pmax		
	comp=Z,5.0nm,0.7s						
KIV	Kislovodsk	138.67	316	eSKPbc	SKPbc	01 09 59.8	+5.1
AKASG	Malin Array Be	142.15	333	PKhKP	PKPpre	01 06 52.4	
	comp=Z,0.6nm,0.3s,baz=43,slow=4.0,SNR=7.9						
AKASG				PKP	PKiKP	01 06 59.5	-3.1
	comp=Z,0.9nm,0.3s,baz=43,slow=3.2,SNR=6.2						
AKASG				SKPbc	SKiKP	01 10 06.4	+1.6
	comp=Z,0.6nm,0.4s,baz=41,slow=4.3,SNR=4.9						
AKBB	Malin Array Si	142.15	333	ePKHKP	PKPpre	01 06 52.4	
AKBB				e		01 06 59.5	
AKBB				e		01 10 06.4	
AKBB	Malin Array Si	142.15	333	ePKPpre	PKPpre	01 06 52.4	
AKBB				ePKPdf	PKiKP	01 06 59.5	-3.1
AKBB				eSKPbc	SKiKP	01 10 06.4	+1.6
KIEV	Kiev	142.16	333⇑	ePKIKP	PKPdf	01 06 59.3	-0.2
AK11	Malin Array Si	142.19	333	ePKPpre	PKPpre	01 06 57.4	
SIM	Simferopol'	143.49	322	ePKIKP	PKPdf	01 07 00.8	-1.2
SIM				pmax	pmax		
	comp=Z,19nm,1.0s						
CUZAR	Zara_SIVAS	143.71	313	iP	PKPdf	01 07 01.4	-1.4
ERBA	Erbaa	144.05	314	iP	PKPdf	01 07 01.4	-1.8
CUKAN	kangal_SIVAS	144.16	312	iP	PKPdf	01 07 03.5	-0.1
AKCD	Akcadag	144.25	310	iP	PKPdf	01 07 03.5	-0.2
BEL	Belsk	144.33	341	ePKP	PKPdf	01 07 03.9	+0.6
BEL	Belsk	144.33	341	ePKIKP	PKPdf	01 07 03.9	+0.6
SORM	Soroca	144.41	331⇓	iP	PKPdf	01 07 02.9	-0.6
SORM	Soroca	144.41	331⇓	iPKIKP	PKPdf	01 07 02.9	-0.6
CUGUR	Gurin_S¨VAS	144.54	311	iP	PKPdf	01 07 04.8	+0.6
HAVZ	Havza	144.56	316	iP	PKPdf	01 07 04.0	-0.1
CUALT	Altinyayla-SIV	144.68	312	iP	PKPdf	01 07 04.7	+0.2
GZT	Gaziantep	144.87	309	iP	PKPab	01 07 05.4	+0.2
BOYT	Boyabat	144.92	317	iP	PKPab	01 07 05.8	+0.6
LVV	L'vov	144.93	336	ePKIKP	PKPab	01 07 04.6	-0.2
CUSAR	Sarkisla-SIVAS	144.97	313	iP	PKPab	01 07 05.6	+0.1
KIS	Kishinev	145.01	329	eP	PKPab	01 07 05.0	-0.2
HCB	Kahramanmara¨	145.36	309	iP	PKPab	01 07 05.4	-1.5
COAL	Corum-Alaca	145.44	315	iP	PKPab	01 07 06.7	-0.6
KUZU	Kuzuini	145.45	308	iP	PKPab	01 07 06.8	-0.5
KWP	Kalwaria Pacla	145.57	338	ePKP	PKPab	01 07 07.3	0.0
KWP	Kalwaria Pacla	145.57	338⇑	iP	PKPab	01 07 06.9	-0.4
KWP	Kalwaria Pacla	145.57	338⇑	iPKIKP	PKPab	01 07 06.9	-0.4
LEOM	Leova	145.66	329⇓	iP	PKPab	01 07 07.6	-0.1
LEOM	Leova	145.66	329⇓	iPKIKP	PKPab	01 07 07.6	-0.1
ANDN	Andirin	145.67	310	iP	PKPab	01 07 07.4	-0.9
ILGA	Ilgaz	145.88	317	iP	PKPab	01 07 08.1	-1.0
OJC	Ojcow	146.05	341	ePKP	PKPdf	01 07 08.6	+2.3
OJC	Ojcow	146.05	341	ePKIKP	PKPab	01 07 07.7	-1.4
OJC	Ojcow	146.05	341	ePKPdf	PKPab	01 07 07.7	-1.4
BUR08	Bucovina Ar. S	146.19	333	ePKPdf	PKPab	01 07 09.1	-0.8
BURAR	Bucovina Array	146.20	333⇓	iP	PKPab	01 07 09.6	-0.3
BURAR	Bucovina Array	146.20	333⇓	iPKP2	PKPab	01 07 09.6	-0.3
AVNS	Nevsehir-Avano	146.22	313	iP	PKPab	01 07 09.2	-1.2
TLCR		146.26	327⇓	iP	PKPab	01 07 09.1	-1.0
TLCR		146.26	327⇓	iPKIKP	PKPab	01 07 09.1	-1.0
STHS	Stebnicka Huta	146.27	339	ePKP2	PKPab	01 07 09.8	-0.2
STHS	Stebnicka Huta	146.27	339	ePKP	PKPab	01 07 09.8	-0.2
STHS				e		01 07 12.3	
STHS				e		01 12 13.5	
STHS				e		01 27 08.6	
KOLS	Kolonicke sedl	146.31	337	ePKP2	PKPab	01 07 09.7	-0.5
KOLS	Kolonicke sedl	146.31	337	ePKP	PKPab	01 07 09.7	-0.5
KOLS				e		01 27 13.4	
TESR	Tescani	146.39	330⇑	iP	PKPab	01 07 09.2	-1.4
KSP	Ksiaz	146.46	345	ePKP	PKPab	01 07 10.2	-0.5
KSP	Ksiaz	146.46	345	ePKP2	PKPab	01 07 10.2	-0.5
UZH	Uzhgorod	146.56	337	ePKIKP	PKPbc	01 07 07.8	-1.5
UZH				e		01 07 10.4	
UZH				e		01 08 33.2	
NIE	Niedzica	146.59	340	ePKP	PKPab	01 07 10.7	-0.6
NIE	Niedzica	146.59	340	ePKP2	PKPab	01 07 10.7	-0.6
BR101	Keskin Array S	146.60	315	ePKPdf	PKPab	01 07 09.7	-2.2
BR101				eSKPbc	SKiKP	01 10 18.0

DPC	**Dobruska-Polom**	**146.90 345**	*e*PKP	**PKPab**	**01 07 11.5**	**-1.0**
DPC			*ex*	x	01 07 14.1	
DPC			*ex*	x	01 08 35.9	
DPC	**Dobruska-Polom**	**146.90 345**	*e*PKP2	**PKPab**	**01 07 11.5**	**-1.0**
BRG	**Berggiesshubel**	**146.95 348**	*e*PKP	**PKPab**	**01 07 11.3**	**-1.4**
	comp=Z,11nm,1.0s					
BRG			*e*		01 08 36.7	
	comp=Z,6.0nm,1.1s					
BRG	**Berggiesshubel**	**146.95 348**	*e*PKP2	**PKPab**	**01 07 11.3**	**-1.4**
BRG			pmax	pmax		
	comp=Z,3.0nm,1.0s					
TIRR	**Tirgusor**	**146.96 326** ⇓	*i* P	**PKPab**	**01 07 13.2**	**+0.3**
TIRR	**Tirgusor**	**146.96 326** ⇓	PKP2	**PKPab**	**01 07 13.2**	**+0.3**
ARCR	**ARCALIA**	**146.98 333** ⇑	*i* P	**PKPab**	**01 07 10.9**	**-2.0**
KRLC	**Kraliky**	**147.04 344**	*e*PKP	**PKPab**	**01 07 11.6**	**-1.5**
KRLC			*ex*	x	01 07 13.8	
KRLC	**Kraliky**	**147.04 344**	*e*PKP2	**PKPab**	**01 07 11.6**	**-1.5**
AKSY	**AKSARAY - Alti**	**147.04 313**	*i* P	**PKPab**	**01 07 10.3**	**-3.2**
HARR	**Harsova**	**147.06 327** ⇑	*i* P	**PKPbc**	**01 07 09.3**	**-1.5**
HARR	**Harsova**	**147.06 327** ⇑	PKIKP	**PKPbc**	**01 07 09.3**	**-1.5**
BCAM	**Yenicaga**	**147.07 318**	*i* P	**PKPab**	**01 07 10.7**	**-2.9**
LANS	**Liptovska Anna**	**147.09 340**	*e*PKP2	**PKPab**	**01 07 12.7**	**-0.6**
LANS	**Liptovska Anna**	**147.09 340**	*e*PKP	**PKPab**	**01 07 12.7**	**-0.6**
LANS			*e*		01 27 12.3	
ANTO	**Ankara**	**147.09 316**	*e*PKIKP	**PKPab**	**01 07 10.4**	**-3.3**
ANTO	**Ankara**	**147.09 316**	*e*PKPdf	**PKPab**	**01 07 10.4**	**-3.3**
MORC	**Moravsky Berou**	**147.11 343** ⇑	*i* P	**PKPab**	**01 07 12.0**	**-1.4**
MORC	**Moravsky Berou**	**147.11 343** ⇑	PKP2	**PKPab**	**01 07 12.0**	**-1.4**
MORC	**Moravsky Berou**	**147.11 343** ⇑	*e*PKPbc	**PKPab**	**01 07 11.7**	**-1.7**
BR231	**Keskin MP Arra**	**147.12 316**	*e*PKPdf	**PKPbc**	**01 07 08.6**	**-2.7**
BR231			*e*PKPbc	**PKPab**	**01 07 12.1**	**-1.8**
BR231			*e*SKPbc	**SKiKP**	**01 10 18.6**	**+3.0**
PVCC	**Panska Ves**	**147.15 347**	*e*PKP	**PKPab**	**01 07 12.2**	**-1.2**
PVCC			*ex*	x	01 07 14.9	
PVCC			*ex*	x	01 08 37.8	
PVCC	**Panska Ves**	**147.15 347**	*e*PKP2	**PKPab**	**01 07 12.2**	**-1.2**
MANR	**Mangalia**	**147.30 325** ⇓	*i* P	**PKPab**	**01 07 12.3**	**-2.0**
KECS	**Kecovo**	**147.33 339**	*e*PKP2	**PKPab**	**01 07 12.6**	**-1.6**
KECS	**Kecovo**	**147.33 339**	*e*PKP	**PKPab**	**01 07 12.6**	**-1.6**
KECS			*e*		01 07 15.5	
KECS			*e*		01 26 58.1	
KECS			*e*		01 27 11.8	
KKUL	**Konya-Kulu**	**147.37 315**	*i* P	**PKPab**	**01 07 12.2**	**-2.7**
ISR	**Istrita**	**147.46 329** ⇓	*i* P	**PKPab**	**01 07 12.9**	**-2.0**
ISR	**Istrita**	**147.46 329** ⇓	PKP2	**PKPab**	**01 07 12.9**	**-2.0**
MLR	**Muntele Rosu**	**147.47 330** ⇓	*i* P	**PKPab**	**01 07 12.4**	**-2.7**
MLR	**Muntele Rosu**	**147.47 330** ⇓	PKIKP	**PKPab**	**01 07 12.4**	**-2.7**
MLR	**Muntele Rosu**	**147.47 330**	*e*PKPdf	**PKPab**	**01 07 12.1**	**-3.0**
PRU	**Pruhonice**	**147.66 346**	*e*PKP	**PKPab**	**01 07 13.2**	**-2.3**
PRU			*ex*	x	01 07 16.4	
PRU	**Pruhonice**	**147.66 346**	*e*PKP2	**PKPab**	**01 07 13.2**	**-2.3**
GOPC	**GO Pecny, Ondr**	**147.68 346**	*e*PKP	**PKPab**	**01 07 13.4**	**-2.2**
GOPC	**GO Pecny, Ondr**	**147.68 346**	*e*PKP2	**PKPab**	**01 07 13.4**	**-2.2**
VRAC	**Vranov**	**147.79 344** ⇓	*i* P	**PKPab**	**01 07 13.6**	**-2.5**
VRAC	**Vranov**	**147.79 344** ⇓	PKP2	**PKPab**	**01 07 13.6**	**-2.5**
NKC	**Novy Kostel**	**147.85 349**	*e*PKP	**PKPab**	**01 07 14.1**	**-2.2**
NKC			*ex*	x	01 07 17.4	
NKC	**Novy Kostel**	**147.85 349**	*e*PKP2	**PKPab**	**01 07 14.1**	**-2.2**
VYHS	**Vyhne**	**147.87 340**	*e*PKP2	**PKPab**	**01 07 13.7**	**-2.7**
VYHS	**Vyhne**	**147.87 340**	*e*PKP	**PKPab**	**01 07 13.7**	**-2.7**
VYHS			*e*		01 07 17.3	
VYHS			*e*		01 26 59.8	
VYHS			*e*		01 27 13.6	
SULR		**147.91 328** ⇓	*i* P	**PKPab**	**01 07 13.7**	**-3.0**
VOIR		**147.94 331** ⇑	*i* P	**PKPab**	**01 07 13.8**	**-3.1**
VOIR		**147.94 331** ⇑	PKP2	**PKPab**	**01 07 13.8**	**-3.1**
PSZ	**Piszkesteto**	**148.02 339** ⇑	*i* P	**PKPab**	**01 07 13.5**	**-3.6**
PSZ	**Piszkesteto**	**148.02 339** ⇑	PKIKP	**PKPab**	**01 07 13.5**	**-3.6**
PSZ	**Piszkesteto**	**148.02 339**	*e*PKPbc	**PKPab**	**01 07 14.0**	**-3.2**
TREC	**Trest**	**148.09 345**	*e*PKP	**PKPab**	**01 07 14.3**	**-3.0**
TREC			*ex*	x	01 07 17.6	
TREC	**Trest**	**148.09 345**	*e*PKP2	**PKPab**	**01 07 14.3**	**-3.0**
ARR	**Arges**	**148.18 331** ⇑	*i* P	**PKPab**	**01 07 15.5**	**-2.4**
KDHN	**Kadinhani**	**148.23 314**	*i* P	**PKPbc**	**01 07 13.4**	**-0.8**
ESKT	**Eskisehir**	**148.55 317**	*i* P	**PKPab**	**01 07 14.9**	**-4.8**
ERMK	**Ermenek**	**148.56 310**	*i* P	**PKPab**	**01 07 15.6**	**-4.3**
GRFO	**Grafenberg**	**148.59 350**	*e*PKP2	**PKPab**	**01 07 16.0**	**-3.3**
GRFO	**Grafenberg**	**148.59 350**	*e*PKPbc	**PKPab**	**01 07 16.0**	**-3.3**
HUMR	**Humele**	**148.65 330** ⇑	*i* P	**PKPbc**	**01 07 14.4**	**-0.5**
KHC	**Kasperske Hory**	**148.68 347**	*e*PKP	**PKPab**	**01 07 15.9**	**-3.8**
KHC			*ex*	x	01 07 21.3	
KHC	**Kasperske Hory**	**148.68 347**	*e*PKHKP	**PKPbc**	**01 07 15.5**	**+0.6**
KHC	**Kasperske Hory**	**148.68 347**	*e*PKPbc	**PKPbc**	**01 07 15.5**	**+0.6**
SIRR	**Siria**	**148.75 335** ⇓	*i* P	**PKPab**	**01 07 16.4**	**-3.7**
GEC2	**GERESS Array S**	**148.92 347**	*e*PKP2	**PKPab**	**01 07 16.6**	**-4.2**
GEC2	**GERESS Array S**	**148.92 347**	*e*PKPbc	**PKPab**	**01 07 16.6**	**-4.2**
GERES	**GERESS Array B**	**148.92 347**	PKPbc	**PKPbc**	**01 07 15.9**	**+0.3**
	comp=Z,2.7nm,0.6s,baz=32,slow=3.1,SNR=29					
GEA0	**GERESS Array S**	**148.93 347**	*e*PKPbc	**PKPab**	**01 07 16.1**	**-4.7**
CSS	**Mathiatis**	**148.95 307**	*e*PKPbc	**PKPbc**	**01 07 16.0**	**0.0**
CONA	**Conrad Observa**	**149.25 343**	*i* PKiKP	**PKiKP**	**01 07 17.5**	**+0.1**
	comp=Z,4.7nm,0.6s,SNR=8.6					
SOP	**Sopron**	**149.28 342**	*e*PKPdf	**PKPab**	**01 07 17.6**	**-4.6**
BZS	**Buzias**	**149.30 334** ⇓	*i* P	**PKPbc**	**01 07 16.5**	**0.0**
BZS	**Buzias**	**149.30 334** ⇓	PKHKP	**PKPbc**	**01 07 16.5**	**0.0**
BANR	**Banloc**	**149.69 335** ⇑	*i* P	**PKPbc**	**01 07 17.4**	**0.0**
MOA	**Molln**	**149.73 345**	*i* PKiKP	**PKiKP**	**01 07 18.8**	**+0.5**
	comp=Z,1.8nm,0.4s					
MDVR	**Moldovita**	**149.93 333** ⇑	*i* P	**PKPbc**	**01 07 18.9**	**+0.8**
ARSA	**Arzberg**	**149.96 343**	*i* PKiKP	**PKiKP**	**01 07 19.2**	**+0.3**
	comp=Z,3.4nm,0.8s					
KORT	**Korkueli**	**150.20 313**	*i* P	**PKPbc**	**01 07 18.6**	**-0.5**
BFO	**Black Forest**	**150.32 353**	*e*PKIKP	**PKPbc**	**01 07 20.0**	**+1.1**
BFO	**Black Forest**	**150.32 353**	*e*PKPbc	**PKPbc**	**01 07 20.0**	**+1.1**
SOKA	**Soboth**	**150.62 343**	*i* PKPbc	**PKPbc**	**01 07 19.7**	**0.0**
	comp=Z,6.6nm,0.9s,SNR=7.2					
PERS	**Pernice**	**150.64 343**	*i* PKPbc	**PKPbc**	**01 07 19.8**	**0.0**
KBA	**Koelnbreinsper**	**150.67 346**	*i* PKPbc	**PKPbc**	**01 07 20.6**	**+0.6**
	comp=Z,1.8nm,0.3s					
DNZL	**Cakiroluk**	**150.73 315**	*i* P	**PKPbc**	**01 07 19.9**	**-0.5**
RETA	**Reutte**	**150.80 350**	*i* PKPbc	**PKPbc**	**01 07 20.7**	**+0.6**
	comp=Z,2.8nm,0.8s					
WTTA	**Wattenberg**	**150.85 348**	*i* PKiKP	**PKiKP**	**01 07 21.3**	**+0.4**
	comp=Z,4.4nm,0.4s					
MOTA	**Moosalm**	**150.88 349**	*i* PKPbc	**PKPbc**	**01 07 21.1**	**+0.7**
	comp=Z,3.6nm,0.8s,SNR=5.4					
OBKA	**Obir**	**150.91 344**	*i* PKPbc	**PKPbc**	**01 07 20.2**	**-0.2**
	comp=Z,2.8nm,0.7s					
MYKA	**Terra Mystica**	**151.02 345**	*i* PKPbc	**PKPbc**	**01 07 20.3**	**-0.3**
	comp=Z,6.7nm,0.8s					
AKAS	**Kas**	**151.10 312**	*i* P	**PKPbc**	**01 07 20.5**	**-0.7**
DAVA	**Damuels**	**151.13 351**	*i* PKiKP	**PKiKP**	**01 07 22.4**	**+0.9**
	comp=Z,7.5nm,1.1s					
ABTA	**Abfaltersbach**	**151.17 347**	*i* PKPbc	**PKPbc**	**01 07 21.1**	**+0.1**
	comp=Z,9.0nm,0.7s,SNR=8.8					
FETA	**Feichten**	**151.25 349**	*i* PKiKP	**PKiKP**	**01 07 22.2**	**+0.5**
	comp=Z,3.4nm,0.7s					
LJU	**Ljubljana**	**151.34 344**	*i* PKPbc	**PKPbc**	**01 07 21.8**	**+0.5**
CRNS	**Crni Vrh**	**151.38 344**	*i* PKPbc	**PKPbc**	**01 07 21.4**	**0.0**
CRNS			*i*		01 07 24.8	
BOJS	**Bojanci**	**151.63 342**	*i* PKPbc	**PKPbc**	**01 07 22.7**	**+0.8**
CEY	**Cerknica**	**151.65 343**	*i* PKPbc	**PKPbc**	**01 07 22.3**	**+0.2**
BLY	**Banja Luka**	**151.70 339** ⇑	*i* P	**PKPbc**	**01 07 22.7**	**+0.6**
FUORN	**Ofenpass-Fuorn**	**151.72 350**	*e*PKPbc	**PKPbc**	**01 07 23.4**	**+0.9**
VAY	**Valandovo**	**152.21 328**	*i* PKP	**PKPbc**	**01 07 18.3**	**-5.1**
UDBI	**Udbina**	**152.36 341**	P	**PKPbc**	**01 07 23.8**	**+0.1**
OHR	**Ohrid**	**153.24 330**	*i* PKP	**PKPbc**	**01 07 26.4**	**+0.6**
PBRG	**Braganca**	**155.57 18**	*e*PKPab	**PKPab**	**01 07 49.0**	**0.0**
PVIS	**Viseu**	**156.18 21**	*e*PKPab	**PKPab**	**01 07 52.3**	**+0.7**
PCAS	**Casmilo, Conde**	**156.55 23**	*e*PKPab	**PKPab**	**01 07 53.9**	**+0.7**
TIP	**Timpagrande**	**156.63 333** ⇑	*i* P	**PKPdf**	**01 07 15.6**	**-7.0**
PTOM	**Tomar**	**156.96 24**	*e*PKPab	**PKPab**	**01 07 55.9**	**+0.9**
PMRV	**Marv??o**	**157.50 22**	*e*PKPab	**PKPab**	**01 07 57.9**	**+0.6**
PMTG	**Montargil**	**157.51 24**	*e*PKPab	**PKPab**	**01 07 57.5**	**+0.2**
ESDC	**Sonseca Array**	**158.32 15**	PKPab	**PKPab**	**01 08 00.9**	**0.0**
	comp=Z,0.1nm,0.3s,baz=3.4,slow=5.0,SNR=4.1					
DBIC	**Dimbokro**	**165.51 146**	PKPab	**PKPab**	**01 08 32.9**	**-0.1**
	comp=Z,4.3nm,0.8s,baz=162,slow=6.3,SNR=4.7					
TAM	**Tamanrasset**	**175.57 333**	*e*PKP2	**PKPab**	**01 09 18.6**	**+1.1**
TAM	**Tamanrasset**	**175.57 333**	*e*PKPab	**PKPab**	**01 09 18.6**	**+1.1**

IDC 11 00:48:44.2±61.0, 19°.55S×178°.84E, h0km, mb5.0/3, mb1 5.2/3, mb1mx4.1/35, mbtmp5.0/3, Error ellipse: s-maj=1089.0km s-min=150.6km az=80.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**35.56**	**242**	P	P	00 55 43.2	-0.1
	9.2nm,0.7s,baz=80,slow=13,SNR=3.6						
WRA	**Warramunga Arr**	**41.79**	**262**	P	P	00 56 35.7	-0.2
	18nm,0.5s,baz=97,slow=7.8,SNR=10						
ASAR	**Alice Springs**	**41.85**	**256**	P	P	00 56 36.4	0.0
	14nm,0.6s,baz=89,slow=7.8,SNR=5.1						

*NIED **11** 00:50:00, 38°.20N×141°.70E, h47km, Mw3.8 Best double couple: M0:5.84000×10^14 NP1:φ=226.00000°, δ17.00000°, λ114.00000°. NP2:φ=21.00000°, δ75.00000°, λ83.00000°.*
*ISCJB **11** 00:50:48.7±0.8, 38°.17N±0°.04×141°.72E±0°.09, h56km±6km, mb3.8/10, Error ellipse: s-maj=13.0km s-min=5.4km az=24.1*
*JMA **11** 00:50:49.6±0.1, 38°.17N×141°.68E, h51km±1km, M3.9*
JMA Felt II J1.
*IDC **11** 00:50:51.8±1.2, 38°.12N×141°.64E, h71km±8km, mb3.5/10, mb1 3.7/12, mb1mx3.5/33, mbtmp3.8/12, MS2.7/1, Ms1 2.7/1, ms1mx2.2/44, Error ellipse: s-maj=22.6km s-min=20.2km az=125.0*
ISC 11 00:50:49.1±0.8, 38°.17N±0°.05×141°.76E±0°.08, h45km±5km, n31, σ0°.98/35, mb3.7/10, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.43**	**312**	P	**Pn**	**00 50 59.8**	**+0.6**
JIO				S	**Sn**	**00 51 06.5**	**+0.2**
JMM	**Marumori**	**0.82**	**249**	P	**Pn**	**00 51 03.9**	**-0.3**
JMM				S	**Sn**	**00 51 14.2**	**-1.1**
JOU	**Okura**	**0.89**	**283**	P	**Pn**	**00 51 05.2**	**+0.1**
JOU				S	**Sn**	**00 51 16.6**	**-0.3**
JMK	**Ichinoseki**	**0.89**	**332**	P	**Pn**	**00 51 05.7**	**+0.5**
JMK				S	**Sn**	**00 51 16.9**	**-0.1**
OFUJ	**Ofunato**	**0.91**	**356**	P	**Pn**	**00 51 05.9**	**+0.4**
OFUJ				S	**Sn**	**00 51 17.4**	**-0.1**
JFK	**Kawauchi**	**1.06**	**222**	P	**Pn**	**00 51 07.7**	**+0.1**
JFK				S	**Sn**	**00 51 20.6**	**-0.6**
JFT	**Otama**	**1.30**	**241**	P	**Pn**	**00 51 11.2**	**+0.4**
JFT				S	**Sn**	**00 51 27.0**	**0.0**
JYK	**Kaneyama**	**1.33**	**305**	P	**Pn**	**00 51 11.4**	**+0.2**
JYS	**Shiratake**	**1.34**	**273**	P	**Pn**	**00 51 11.5**	**+0.2**
JYS				S	**Sn**	**00 51 27.8**	**-0.1**
JOM	**Ohasama**	**1.35**	**344**	P	**Pn**	**00 51 12.2**	**+0.7**
JOM				*e*S	**Sn**	**00 51 28.5**	**+0.2**
MJAR	**Matsushiro Arr**	**3.26**	**241**	P	**Pn**	**00 51 37.6**	**-0.1**
	2.7nm,0.3s,baz=57,slow=11,SNR=15						
MAT	**Matsushiro**	**3.26**	**241**	P	Pn	00 51 41.0	+3.3
MAT				S	**Sn**	**00 52 20.2**	**+4.9**
USRK	**Ussuriysk Ar.**	**9.51**	**312**	P	Pn	00 53 07.0	+3.6
	0.7nm,0.3s,baz=127,slow=13,SNR=11						
KLR	**Kul'dur**	**13.20**	**330**	LR	LR	00 58 15.5	
	comp=Z,35nm,20.5s,baz=191,slow=34						
H11N2	**WAKE ISLAND Hy**	**28.51**	**123**	T	T	01 26 56.5	
	baz=316,slow=75,SNR=129						
H11N1	**WAKE ISLAND Hy**	**28.52**	**123**	T	T	01 26 58.8	
	baz=316,slow=75,SNR=62						
H11N3	**WAKE ISLAND Hy**	**28.53**	**123**	T	T	01 27 13.1	
	baz=316,slow=75,SNR=73						
H11S1	**WAKE ISLAND Hy**	**29.26**	**125**	T	T	01 27 53.9	
	baz=318,slow=76,SNR=32						
H11S3	**WAKE ISLAND Hy**	**29.26**	**125**	T	T	01 27 51.3	
	baz=318,slow=76,SNR=42						
H11S2	**WAKE ISLAND Hy**	**29.28**	**125**	T	T	01 27 52.0	
	baz=318,slow=76,SNR=20						
ZALV	**Zalesovo Beam**	**41.36**	**311**	P	**P**	**00 58 30.1**	**-0.4**
	1.8nm,0.4s,baz=88,slow=7.1,SNR=9.2						
ZALV				pP	**sP**	**00 58 47.7**	**-0.2**
	2.3nm,0.7s,baz=86,slow=7.2,SNR=6.1						
MKAR	**Makanchi Array**	**43.76**	**301**	P	**P**	**00 58 49.6**	**-0.4**
	0.9nm,0.6s,baz=84,slow=10,SNR=8.3						
MKAR				pP	**sP**	**00 59 07.7**	**+0.1**
	1.6nm,0.6s,baz=88,slow=11,SNR=9.7						
ILAR	**Eielson Array**	**48.39**	**33**	P	**P**	**00 59 26.2**	**+0.1**
	0.4nm,0.6s,baz=266,slow=5.7,SNR=4.4						
INK	**Inuvik**	**53.26**	**28**	P	**P**	**01 00 03.2**	**+0.6**
	0.4nm,0.5s,baz=298,slow=7.0,SNR=4.1						
WRA	**Warramunga Arr**	**58.22**	**188**	P	**P**	**01 00 38.5**	**-0.3**
	0.6nm,0.4s,baz=4.7,slow=7.0,SNR=3.4						
ARCES	**ARCESS Array B**	**63.03**	**339**	P	**P**	**01 01 10.3**	**-0.7**
	3.4nm,0.8s,baz=54,slow=6.3,SNR=4.0						
FINES	**FINESS Array B**	**67.94**	**332**	P	**P**	**01 01 42.5**	**-0.3**
	1.2nm,0.6s,baz=46,slow=8.2,SNR=4.8						
FINES				pP	**sP**	**01 02 00.6**	**-0.2**
	1.0nm,0.8s,baz=57,slow=7.0,SNR=1.7						
NB2	**NORSAR Subarra**	**73.25**	**337**	P	**P**	**01 02 14.5**	**-0.7**
	comp=Z,0.5nm,0.5s,baz=40,slow=6.2						
NOA	**NORSAR Array B**	**73.25**	**337**	P	**P**	**01 02 14.9**	**-0.3**
	comp=Z,0.7nm,0.5s,baz=51,slow=7.2,SNR=6.5						
PDAR	**Pinedale Array**	**76.68**	**46**	P	**P**	**01 02 36.1**	**+0.5**
	comp=Z,0.3nm,0.5s,baz=262,slow=4.5,SNR=2.9						
TXAR	**Lajitas Array**	**89.21**	**53**	P	**P**	**01 03 40.7**	**+0.3**
	comp=Z,0.2nm,0.6s,baz=173,slow=0.7,SNR=3.2						

*IDC **11** 01:07:27.8±0.7, 15°.13S×173°.69W, h51km±5km, mb4.0/12, mb1 4.3/12, mb1mx4.0/39, mbtmp4.3/12, MS4.2/25, Ms1 4.2/25, ms1mx4.1/36, Error ellipse: s-maj=24.9km s-min=14.9km az=133.0*
*ISCJB **11** 01:07:29.4±0.4, 14°.29S±0°.08×173°.36W±0°.05, h33km, mb4.7/71, MS4.3/22, Error ellipse: s-maj=11.4km s-min=6.6km az=167.5*
*MOS **11** 01:07:31.1±1.0, 13°.83S×173°.33W, h33km, mb5.0/18, Error ellipse: s-maj=16.0km s-min=10.4km az=45.3*
*NEIC **11** 01:07:33.1±0.7, 13°.88S×173°.33W, h39km±5km, mb4.7/52, Error ellipse: s-maj=12.3km s-min=6.6km az=149.0*
NEIC Felt at Apia, Samoa and at Fagatogo, American Samoa.
ISC 11 01:07:27.7±0.4, 15°.1S±0°.1×173°.7W±0°.1, h33km±1km, h33km:pP-P, n237, σ2°.16/174, mb4.8/69, MS4.3/22, 16C-13D, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**2.16**	**58**	P	Pn	01 07 55.9	-5.5
	591nm,0.3s,baz=72,slow=1.2,SNR=432						
AFI				S	Sn	01 08 15.6	-11
	2μm,0.3s,baz=55,slow=23,SNR=38						
AFI				LR	LR	01 08 39.6	
	comp=Z,6μm,20.4s,baz=174,slow=32						
AFI	**Afiamalu**	**2.16**	**58**	*e*P	Pn	01 07 55.9	-5.5
AFI				*e*		01 08 11.5	
AFI	**Afiamalu**	**2.16**	**58**	*e*Pn	Pn	01 07 55.9	-5.5
AFI				*e*Sn	Sn	01 08 11.4	-16
MSVF	**Nonsavu**	**8.38**	**250**	*e*P	Pn	01 09 35.7	+8.7
MSVF	**Nonsavu**	**8.38**	**250**	*e*Pn	Pn	01 09 35.7	+8.7
KNTN	**Kanton**	**12.36**	**9**	*e*Pn	**Pn**	**01 10 18.4**	**-3.1**
KNTN				*e*Sn	Sn	01 12 25.5	-13
RAR	**Rarotonga**	**14.54**	**117**	LR	LR	01 16 02.9	
	comp=Z,184nm,18.2s,baz=285,slow=35						
RAO	**Raoul Island**	**14.65**	**195**	LR	LR	01 15 54.2	
	comp=Z,1μm,20.2s,baz=348,slow=35						
DZM	**Mont Dzumac**	**20.09**	**247**	LR	LR	01 18 42.7	
	comp=Z,1μm,20.8s,baz=67,slow=34						
PPT	**Papeete**	**23.25**	**99**	LR	LR	01 19 01.9	
	comp=Z,80nm,20.4s,baz=240,slow=30						
PAE	**Paea**	**23.25**	**100**	*e*T	T	01 36 06.1	
	6.5nm,0.2s						
PPT2	**Papeete2**	**23.25**	**100**	*e*LQ	LQ	01 16 28.9	
	740nm,27.7s						
PPT2				*e*LR	LR	01 17 55.4	
	456nm,26.5s						
PPT2	**Papeete2**	**23.25**	**100**	*e*T	T	01 36 06.8	
	9.9nm,0.3s						
TIAR	**Tiarei**	**23.47**	**99**	*e*T	T	01 36 21.7	
	3.5nm,0.2s						
URZ	**Urewera**	**24.50**	**198**	LR	LR	01 21 01.8	
	comp=Z,1μm,18.8s,baz=35,slow=33						
PMOR	**Pomariorio Ree**	**24.89**	**93**	*e*T	T	01 38 03.9	
	5.7nm,0.3s						
HNR	**Honiara**	**26.38**	**279**	LR	LR	01 20 48.8	
	comp=Z,188nm,21.9s,baz=126,slow=30						
TAOE	**Nuku Hiva Isla**	**33.34**	**83**	*e*LR	LR	01 22 32.2	
	781nm,25.4s						
TAOE	**Nuku Hiva Isla**	**33.34**	**83**	*e*T	T	01 48 29.3	
	229nm,0.3s						
EIDS	**Eidsvold**	**34.54**	**247**	*e*P	pP	01 14 24.9	+2.1
	12nm,0.6s						
RKT	**Rikitea**	**37.34**	**108**	*e*LR	LR	01 24 30.7	
	214nm,25.0s						
RKT	**Rikitea**	**37.34**	**108**	*e*T	T	01 53 34.2	
	9.8nm,0.3s						
CTAO	**Charters Tower**	**38.47**	**257**	*e*P	**pP**	**01 14 57.1**	**+0.5**
CTAO				pmax	pmax		
	comp=Z,58nm,0.7s						
CTAO	**Charters Tower**	**38.47**	**257**	*e*P	pP	01 14 57.1	+0.5
	comp=Z,58nm,0.7s						
KIP	**Kipapa**	**39.38**	**23** ⇑	*e*P	P	01 14 49.1	-5.2
KIP				pmax	pmax		
	comp=Z,185nm,1.4s						
MANU	**Manus Island**	**40.56**	**285**	*e*P	**P**	**01 15 05.6**	**+1.3**
	comp=Z,859nm,0.4s						
COEN	**Coen**	**41.75**	**266**	*e*P	pP	01 15 23.1	-0.8
	comp=Z,9.8nm,0.9s						
STKA	**Stephens Creek**	**43.98**	**240**	P	**P**	**01 15 29.0**	**-3.1**
	comp=Z,3.8nm,1.0s,baz=113,slow=13,SNR=3.2						
STKA				LR	LR	01 31 41.5	
	comp=Z,294nm,20.8s,baz=55,slow=33						
STKA	**Stephens Creek**	**43.98**	**240**	*e*P	**sP**	**01 15 45.0**	**-0.8**
STKA				pmax	pmax		
	comp=Z,3.0nm,1.1s						
STKA	**Stephens Creek**	**43.98**	**240**	*e*P	sP	01 15 45.0	-0.8
	comp=Z,3.4nm,1.1s						
WRAB	**Tennant Creek**	**49.66**	**257**	*e*P	**pP**	**01 16 25.4**	**-1.2**
WRAB				pmax	pmax		
	comp=Z,14nm,1.0s						
WRAB	**Tennant Creek**	**49.66**	**257**	*e*P	pP	01 16 25.4	-1.2
	comp=Z,14nm,1.0s						
WRA	**Warramunga Arr**	**49.67**	**257**	P	**P**	**01 16 13.9**	**-2.8**
	comp=Z,2.4nm,0.7s,baz=90,slow=7.4,SNR=11						
WRA				pP	**sP**	**01 16 28.6**	**-2.0**
	comp=Z,4.1nm,0.7s,baz=90,slow=7.1,SNR=8.4						
WRA				LR	LR	01 37 24.3	
	comp=Z,183nm,19.4s,baz=120,slow=36						
GUMO	**Guam**	**49.94**	**303**	LR	LR	01 33 57.3	
	comp=Z,468nm,20.5s,baz=14,slow=32						
ASAR	**Alice Springs**	**49.97**	**252**	P	**P**	**01 16 15.5**	**-3.5**
	comp=Z,16nm,0.7s,baz=85,slow=8.6,SNR=90						
ASAR				pP	**sP**	**01 16 31.1**	**-1.7**
	comp=Z,16nm,0.7s,baz=87,slow=7.9,SNR=11						
ASAR				LR	LR	01 35 45.8	
	comp=Z,599nm,21.8s,baz=96,slow=34						
SBA	**Scott Base**	**63.56**	**185**	*e*P	**sP**	**01 18 08.7**	**+0.1**
SBA				pmax	pmax		
	comp=Z,47nm,2.0s						
SBA	**Scott Base**	**63.56**	**185**	*e*P	sP	01 18 08.7	+0.1
	comp=Z,47nm,2.0s						
VNDA	**Vanda**	**63.68**	**186**	P	**P**	**01 17 52.9**	**-2.4**
	comp=Z,4.6nm,0.9s,baz=7.1,slow=6.4,SNR=19						
VNDA				pP	**sP**	**01 18 08.2**	**-1.2**
	comp=Z,3.5nm,0.9s,baz=16,slow=5.2,SNR=6.7						
VNDA				LR	LR	01 40 28.6	
	comp=Z,94nm,21.6s,baz=304,slow=31						
VNDA	**Vanda**	**63.68**	**186**	*e*P	**pP**	**01 18 08.6**	**+3.1**
VNDA				pmax	pmax		
	comp=Z,31nm,1.8s						
VNDA	**Vanda**	**63.68**	**186**	*e*P	pP	01 18 08.6	+3.1
	comp=Z,31nm,1.8s						
MJAR	**Matsushiro Arr**	**68.52**	**320**	LR	LR	01 43 07.9	
	comp=Z,153nm,21.7s,baz=150,slow=31						
**C

comp=Z,154nm,19.9s,baz=0.0,slow=31
CN2 Changchun 80.67 320 *e*P **P 01 19 41.8 +4.5**
PV01 Paradox Valley 80.68 46 *e*P **P 01 19 37.0 -0.8**
ANMO Albuquerque 80.78 50⇑*e*P **P 01 19 37.2 -1.2**
ANMO pmax pmax
comp=Z,3.0nm,1.1s
ANMO Albuquerque 80.78 50 *e*P **P 01 19 37.4 -1.1**
comp=Z,4.3nm,1.0s
MCK McKinley 80.84 11 *e*P **P 01 19 35.9 -2.0**
MCK pmax pmax
comp=Z,17nm,1.0s
MCK McKinley 80.84 11 *e*P **P 01 19 35.9 -2.0**
comp=Z,17nm,1.0s
MCMT McKenzie Canyo 81.16 39 *e*P **P 01 19 39.7 -0.5**
MCMT *e*pP **pP 01 19 51.2 +0.5**
DLBC Dease Lake 81.48 22 LR LR 01 52 00.8
comp=Z,205nm,18.1s,baz=259,slow=33
DLMT Dillon 81.59 39 *e*P **P 01 19 41.4 -1.0**
comp=Z,9.5nm,1.1s
BSMT Bassoo Peak 81.64 36 *e*P **P 01 19 41.4 -1.3**
REDW Red Top Meadow 81.65 41 *e*P **P 01 19 41.5 -1.3**
comp=Z,19nm,1.4s
WRH Wood River Hil 81.67 11 *e*P **P 01 19 40.6 -1.5**
WRH *e*pP **pP 01 19 50.5 -2.2**
FXWY Fox Creek 81.68 41 *e*P **P 01 19 42.2 -0.8**
comp=Z,7.8nm,1.2s
S22A 4UR Ranch, Cre 81.73 47 *e*P **P 01 19 42.5 -1.0**
comp=Z,41nm,1.9s
IMW Indian Meadow 81.86 40 *e*P **P 01 19 42.8 -1.3**
comp=Z,9.3nm,1.0s
CCB Clear Creek Bu 81.89 11 *e*P **P 01 19 41.3 -2.0**
comp=Z,9.8nm,0.9s
MOOW Moose Ponds 81.91 41 *e*P **P 01 19 42.4 -1.8**
comp=Z,7.3nm,1.3s
LOHW Long Hollow 81.93 41 *e*P **P 01 19 43.5 -0.8**
comp=Z,7.3nm,1.1s
COLA College 82.08 11*d i*P **P 01 19 42.5 -1.8**
COLA pmax pmax
comp=Z,10.0nm,0.9s
COLA College 82.08 11 *e*P **P 01 19 41.9 -2.4**
comp=Z,12nm,0.9s
FLWY Flagg Ranch 82.10 40 *e*P **P 01 19 45.9 +0.6**
comp=Z,12nm,1.0s
SEY Seymchan 82.13 345⇑*e*P **P 01 19 44.3 -0.3**
IL1 Eielson Array 82.17 11 *e*P **P 01 19 42.2 -2.6**
ILAR Eielson Array 82.17 11 P **P 01 19 42.7 -2.1**
comp=Z,1.1nm,0.7s,baz=236,slow=6.0,SNR=12
ILB Eielson Array 82.17 11 *e*P **P 01 19 43.2 -1.6**
BW06 Boulder Array 82.19 42 *e*P **P 01 19 43.8 -1.9**
BW06 *e*pP **pP 01 19 54.5 -1.7**
PD31 Pinedale Array 82.19 42 *e*P **P 01 19 43.8 -2.0**
PD31 *e*pP **pP 01 19 54.8 -1.4**
PDAR Pinedale Array 82.19 42 P **P 01 19 43.6 -2.1**
comp=Z,0.8nm,0.7s,baz=216,slow=3.6,SNR=6.6
PDAR LR LR 01 51 26.2
comp=Z,249nm,18.8s,baz=294,slow=32
SMCO Snowmass 82.26 46 *e*P **P 01 19 45.0 -1.4**
H17A Grant Village 82.33 40 *e*P **P 01 19 46.2 -0.3**
comp=Z,4.3nm,0.9s
SDCO Great Sand Dun 82.68 48 *e*P **P 01 19 47.8 -0.6**
comp=Z,6.9nm,1.4s
DAWY Dawson 83.16 14 *e*P **P 01 19 49.3 -0.7**
comp=Z,4.0nm,0.6s
RLMT Red Lodge 83.50 40 *e*P **P 01 19 50.8 -1.7**
comp=Z,12nm,1.2s
COLD Coldfoot 83.85 9 *e*P **P 01 19 53.5 +0.1**
comp=Z,9.2nm,1.2s
K22A Casper 84.12 43 *e*P **P 01 19 54.9 -0.7**
BILL Bilibino 84.15 353 *i*P **P 01 19 53.6 -1.3**
BILL *i* 01 20 06.2
BILL pmax pmax
comp=Z,3.0nm,0.9s
EGMT Eagleton 84.62 37 *e*P **P 01 19 56.9 -1.0**
comp=Z,14nm,1.2s
BJI Beijing 85.06 314 P **P 01 20 04.5 +4.4**
BJI pmax pmax
comp=Z,5.0nm,1.0s
ABTX Abilene, Hawle 85.08 55 *e*P **P 01 20 00.2 -0.3**
comp=Z,32nm,1.1s
RSSD Black Hills 86.39 43 *e*P **P 01 20 05.9 -1.1**
RSSD pmax pmax
comp=Z,8.0nm,1.0s
RSSD Black Hills 86.39 43 *e*P **P 01 20 05.9 -1.1**
comp=Z,7.5nm,1.0s
COCO West Island 86.42 258 *i*P P 01 20 16.2 +8.7
GYA Guiyang 87.66 298 *e*P **P 01 20 18.0 +4.5**
GYA pmax pmax
comp=Z,10.0nm,1.0s
INK Inuvik 88.01 14 P **P 01 20 11.6 -2.4**
comp=Z,2.3nm,1.0s,baz=224,slow=5.7,SNR=6.3
INK Inuvik 88.01 14 *e*P **P 01 20 12.7 -1.2**
INK pmax pmax
comp=Z,6.0nm,1.1s
INK Inuvik 88.01 14 *e*P **P 01 20 12.7 -1.2**
comp=Z,6.1nm,1.1s
MAW Mawson 88.03 199 P **P 01 20 12.0 -2.3**
comp=Z,4.5nm,0.8s,baz=216,slow=15,SNR=6.1
MAW LR LR 01 57 04.0
comp=Z,321nm,20.2s,baz=68,slow=34
MAW Mawson 88.03 199 P **P 01 20 12.0 -2.3**
HHC Hu-ho-hao-te 88.61 313 *e*P **P 01 20 22.0 +4.4**
HHC pmax pmax
comp=Z,20nm,1.2s
HHC pmax pmax
comp=Z,82nm,7.5s
YAK Yakutsk 88.71 337⇑*e*P **P 01 20 18.4 +1.0**
YAK pmax pmax
comp=Z,9.0nm,0.7s
YKA Yellowknife Ar 89.89 23 P **P 01 20 21.3 -1.6**
comp=Z,1.0nm,0.8s,baz=238,slow=4.2,SNR=20
YKB5 Yellowknife Ar 89.89 23 *e*P **P 01 20 20.1 -2.8**
YKB5 *e*pP **pP 01 20 31.7 -1.8**
PLCA Paso Flores 89.92 132 LR LR 01 52 56.2
comp=Z,101nm,20.0s,baz=228,slow=30
KMI Kunming 90.65 296 P P 01 20 32.9 +5.2
KMI pmax pmax
comp=Z,5.0nm,0.6s
KMI pmax pmax
comp=Z,73nm,4.7s
JTS JuntasAbangare 91.40 80⇑*e*P **P 01 20 33.4 +2.3**
JTS pmax pmax
comp=Z,10.0nm,1.1s
CD2 Chengdu 91.42 302 P **P 01 20 33.7 +2.8**
CD2 pmax pmax
comp=Z,1.0nm,0.6s
LZH Lanzhou 92.82 306 *e*P **P 01 20 40.0 +2.6**
LZH pP sP 01 20 54.3 +2.5
LZH sP pP 01 21 00.2 +12
LZH pmax pmax
comp=Z,54nm,1.6s
SNAA Sanae 93.25 177⇑*e*P pP 01 20 48.8 -0.4
ULM Lac du Bonnet 93.83 39 LR LR 01 58 52.0
comp=Z,298nm,18.7s,baz=272,slow=33
TIXI Tiksi 94.61 344 LR LR 01 58 49.7
comp=Z,162nm,21.3s,baz=126,slow=33
ARU Arti 122.92 328 *e*PKIKP **PKPdf 01 26 23.6 +3.4**
ARU Arti 122.92 328 *e*PKPdf **PKPdf 01 26 23.6 +3.4**
KWP Kalwaria Pacla 143.03 342⇓*i*P **PKPdf 01 27 02.8 +4.7**
KWP Kalwaria Pacla 143.03 342⇓PKIKP **PKPdf 01 27 02.8 +4.7**
CLL Collm 143.45 353 *i*PKPdf **PKPdf 01 27 04.8 +6.0**
CLL *i* 01 27 08.9
CLL *i* 01 27 15.7
CLL *e*SS SS 01 48 18.0 -30
CLL Collm 143.45 353 *i*PKIKP **PKPdf 01 27 04.8 +6.0**
DPC Dobruska-Polom 143.89 349 *e*PKP PKPab 01 26 56.8 0.0
DPC *ex* x 01 27 10.3
DPC *e*pPKP pPKPdf 01 27 14.8 +4.3
BURAR Bucovina Array 143.97 338⇑*i*P PKPdf 01 27 11.3 +11
BURAR Bucovina Array 143.97 338⇑PKIKP PKPdf 01 27 11.3 +11
UZH Uzhgorod 144.04 342 *e*PKHKP PKPpre 01 26 54.6
KRLC Kraliky 144.06 349 *e*PKP **PKPab 01 26 56.0 -1.4**
KRLC *ex* x 01 27 10.0
KRLC *e*pPKP **pPKPdf 01 27 15.5 +4.7**
KRLC Kraliky 144.06 349 *e*PKHKP PKPpre 01 26 56.0
TSUM Tsumeb 144.19 198 *e*PKPbc **PKPdf 01 27 08.3 +7.0**
MORC Moravsky Berou 144.20 348⇓*i*P **PKPdf 01 27 07.9 +7.8**
MORC Moravsky Berou 144.20 348⇓PKIKP **PKPdf 01 27 08.0 +7.8**
TRPA Tarpa 144.41 341⇑*e*PKPdf PKPdf 01 27 11.0 +10
PRU Pruhonice 144.53 351 *ex* x 01 27 12.2
ARCR ARCALIA 144.72 339⇓*i*P **PKPab 01 26 59.3 -0.6**
VRAC Vranov 144.83 348⇓*i*P PKPbc 01 27 00.9 +0.6
VRAC Vranov 144.83 348⇓PKIKP PKPbc 01 27 00.9 +0.6
VRI Vrincioaia 144.84 335⇓*i*P PKPdf 01 27 10.9 +10
VRI Vrincioaia 144.84 335⇓PKIKP PKPdf 01 27 10.9 +10
DOU Dourbes 145.03 2 APKP pPKPdf 01 27 18.1 +5.6
GRFO Grafenberg 145.24 354 *e*PKIKP **PKPdf 01 27 03.7 +1.8**
GRFO Grafenberg 145.24 354 *e*PKPdf **PKPdf 01 27 03.7 +1.8**
PSZ Piszkesteto 145.37 344⇑*i*P PKPab 01 27 12.8 +10
PSZ Piszkesteto 145.37 344⇑*e*PKPdf PKPab 01 27 14.5 +12
PSZ Piszkesteto 145.37 344 *e*PKIKP **PKPab 01 27 05.7 +3.4**
PSZ Piszkesteto 145.37 344 *e*PKPdf **PKPab 01 27 05.7 +3.4**
SMOL Smolenice 145.42 347 *e*PKIKP PKPab 01 27 15.1 +13
SMOL Smolenice 145.42 347 *e* PKPab 01 27 15.1 +13
MLR Muntele Rosu 145.46 335⇑*i*P **PKPbc 01 27 01.6 -1.0**
MLR Muntele Rosu 145.46 335 *e*PKHKP **PKPbc 01 27 01.6 -1.0**
MLR Muntele Rosu 145.46 335 *e*PKPdf **PKPbc 01 27 01.6 -1.0**
WLF Walferdange 145.50 0 APKP pPKPdf 01 27 15.5 +2.2
WLF Walferdange 145.50 0 *e*PKIKP **PKPab 01 27 03.9 +1.2**
WLF Walferdange 145.50 0 *e*PKPdf **PKPab 01 27 03.9 +1.2**
KHC Kasperske Hory 145.51 352 *e*PKP **PKPab 01 27 03.5 +0.7**
KHC *ex* x 01 27 15.0
KHC Kasperske Hory 145.51 352 *e*PKIKP **PKPab 01 27 03.2 +0.4**
KHC Kasperske Hory 145.51 352 *e*PKPdf **PKPab 01 27 03.2 +0.4**
DRGR 145.54 340⇓*i*P **PKPdf 01 27 00.6 -2.0**
BRTR Keskin Array B 145.74 321 PKPbc **PKPdf 01 27 02.1 -1.2**
comp=Z,3.6nm,0.8s,baz=111,slow=2.5,SNR=27
GERES GERESS Array B 145.78 351 PKPbc **PKPdf 01 27 01.4 -1.6**
comp=Z,1.0nm,0.6s,baz=48,slow=2.0,SNR=12
GERES pPKPbc pPKPbc 01 27 14.8 +0.5
comp=Z,5.7nm,1.1s,baz=2.9,slow=2.7,SNR=12
GEAO GERESS Array S 145.78 351 *e*PKPdf **PKPdf 01 27 01.4 -1.6**
SULR 145.99 334⇓*i*P **PKPdf 01 27 03.1 -0.2**
ARR Arges 146.08 337⇓*i*P **PKPbc 01 27 04.2 -0.3**
LANF Langenberg 146.16 358 PKP PKPab 01 27 16.9 +12
CONA Conrad Observa 146.30 348 *i*pPKPdf pPKPdf 01 27 18.0 +3.2
comp=Z,44nm,1.6s,SNR=9.1
SOP Sopron 146.39 347⇑*e*PKPbc PKPab 01 27 17.9 +12
MOA Molln 146.66 350 *i*pPKPdf pPKPdf 01 27 18.9 +3.6
comp=Z,25nm,1.6s
BFO Black Forest 146.79 358 *i* PKP2 **PKPab 01 27 07.2 -0.5**
BFO Black Forest 146.79 358 *e*PKPbc **PKPbc 01 27 06.2 -0.2**
BZS Buzias 146.94 340⇑*i*P **PKPdf 01 27 05.6 +0.7**
BZS Buzias 146.94 340⇑PKIKP **PKPdf 01 27 05.6 +0.7**
ECH Echery 146.94 359 PKP PKPab 01 27 18.9 +11
ARSA Arzberg 147.01 348 *i*pPKPbc pPKPbc 01 27 19.7 +1.8
comp=Z,13nm,1.5s
MOF Molkenrain 147.30 359 PKP PKPab 01 27 19.5 +10
RETA Reutte 147.47 354 *i*pPKPab pPKPab 01 27 21.2 +0.1
comp=Z,22nm,1.4s,SNR=5.8
KBA Koelnbreinsper 147.55 351 *i*pPKPbc pPKPbc 01 27 20.9 +1.2
comp=Z,16nm,1.1s
MOTA Moosalm 147.57 354 *i*pPKPab pPKPab 01 27 23.0 +1.4
comp=Z,17nm,1.2s
WTTA Wattenberg 147.60 353 *i*pPKPab pPKPab 01 27 21.9 +0.2
comp=Z,19nm,1.5s
SOKA Soboth 147.66 349 *i*pPKPbc pPKPbc 01 27 21.0 +1.2
comp=Z,17nm,1.4s
PERS Pernice 147.68 349 *e*PKPdf **PKPdf 01 27 07.4 +1.2**
DAVA Damuels 147.74 355 *i*pPKPbc pPKPbc 01 27 21.9 +1.8
comp=Z,43nm,1.7s,SNR=7.2
LOMF Lomont 147.81 359 PKP PKPab 01 27 21.5 +10
OBKA Obir 147.91 349 *i*pPKPdf pPKPdf 01 27 21.3 +3.8
comp=Z,11nm,1.2s
FETA Feichten 147.93 354 *i*pPKPbc pPKPbc 01 27 22.5 +1.9
comp=Z,18nm,1.4s,SNR=5.1
MYKA Terra Mystica 147.94 350 *i*pPKPbc pPKPbc 01 27 21.6 +1.0
comp=Z,18nm,1.3s
ABTA Abfaltersbach 148.00 352 *i*pPKPbc pPKPbc 01 27 21.8 +1.1
comp=Z,21nm,1.2s,SNR=5.5
LJU Ljubljana 148.36 349 *e*PKPdf **PKPdf 01 27 09.0 +1.7**
LJU *e* 01 27 22.5
FUORN Ofenpass-Fuorn 148.37 355 *e*PKPdf **PKPbc 01 27 10.3 -0.8**
CRES Cresnjev 148.39 348 *e*PKPdf **PKPdf 01 27 09.0 +1.6**
CRES *e* 01 27 22.6
TUE Stuetta 148.59 356 *e*PKPbc **PKPbc 01 27 12.3 +0.7**
AGO Saint Agoulin 148.99 4 PKP PKPab 01 27 25.8 +9.3
BLY Banja Luka 149.01 345⇑*i*P **PKPdf 01 27 10.4 +2.0**
PLDF La Plantade 149.11 4 PKP PKPab 01 27 26.0 +9.0
PYM Petit Puy Mans 149.28 5 PKP PKPab 01 27 26.5 +8.8
LBL Lubilhac 149.82 4 PKP PKPab 01 27 28.4 +8.5
SSB Saint Sauveur 149.84 3 *e*PKP2 **PKPbc 01 27 16.5 +1.9**
SSB Saint Sauveur 149.84 3 *e*PKPbc **PKPbc 01 27 16.5 +1.9**
BNI Bardonecchia 150.11 360 *e*PKIKP **PKPbc 01 27 13.6 -1.7**
BNI Bardonecchia 150.11 360 *e*PKPdf **PKPbc 01 27 13.6 -1.7**

IDC ***11*** *01:12:30.0±2.6, 36°.47N×71°.12E, h167km±23km, mb3.6/8, mb1 3.7/16, mb1mx3.4/54, mbtmp4.1/16, Error ellipse: s-maj=20.6km s-min=17.0km az=46.0*
ISCJB ***11*** *01:12:30.9±0.3, 36°.57N±0°.03×70°.93E±0°.05, h188km, mb3.8/8, Error ellipse: s-maj=5.4km s-min=3.4km az=162.9*
NNC ***11*** *01:12:36.4±1.0, 36°.94N×70°.79E, h181km±7km, mb3.3, mpv4.2, Error ellipse: s-maj=9.7km s-min=5.1km az=162.0*
ISC 11 01:12:31.3±0.5, 36°.57N±0°.05×70°.93E±0°.05, h188km, n46, σ2°23/63, **mb3.8/8, 12C-10D, Hindu Kush region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**2.79**	**324**	⇓P	**Pn**	**01 13 18.2**	**+0.3**
	99nm,0.5s						
DZET				⇑S	**Sn**	**01 13 51.6**	**-2.7**
	587nm,0.5s						
CEP	**Cherat**	**2.85**	**163**	⇓P	**Pn**	**01 13 19.7**	**+0.9**
CEP				S	**Sn**	**01 13 55.0**	**-0.7**
CHCP	**Chirah Chowk**	**3.48**	**146**	P	**Pn**	**01 13 27.5**	**+1.3**
THW	**Thamme Wali**	**3.82**	**170**	P	**Pn**	**01 13 31.0**	**+0.5**
SFK	**Sufi-Kurgan**	**3.99**	**30**	⇑P	**Pn**	**01 13 34.3**	**+1.6**
	20nm,0.5s						
SFK				⇑S	**Sn**	**01 14 20.6**	**-0.3**
	166nm,0.5s						
SARP	**Sargodha**	**4.85**	**162**	P	**Pn**	**01 13 43.4**	**-0.2**
MNAS	**Manas**	**6.03**	**11**	⇓P	**Pn**	**01 13 59.9**	**+1.0**
	15nm,0.6s						
MNAS				⇑S	**Sn**	**01 15 06.0**	**-2.1**
	118nm,0.6s						
PONG	**Pong**	**6.20**	**136**	*e*S	**Sn**	**01 15 06.0**	**-5.8**
KK31	**Karatay Array**	**6.54**	**357**	⇑P	**Pn**	**01 14 06.0**	**+0.7**
	11nm,0.3s,baz=184,slow=12,SNR=637						
KK31				⇑S	**Sn**	**01 15 15.7**	**-4.0**
	126nm,0.7s,baz=188,slow=21,SNR=26						
AAK	**Ala-Archa**	**6.65**	**23**	P	**Pn**	**01 14 07.4**	**+0.4**
	4.6nm,0.3s,baz=168,slow=4.3,SNR=31						
AAK				S	**Sn**	**01 15 20.0**	**-2.6**
	2.6nm,0.3s,baz=350,slow=16,SNR=3.8						
AAK	**Ala-Archa**	**6.65**	**23**	⇑P	**Pn**	**01 14 07.9**	**+1.0**
	5.0nm,0.4s						
AAK				⇑S	**Sn**	**01 15 21.2**	**-1.5**
	33nm,0.8s						
TKM2	**Tokmak 2**	**7.29**	**28**	⇓P	**Pn**	**01 14 16.4**	**+1.0**
	12nm,0.8s						
TKM2				⇓S	**Sn**	**01 15 36.2**	**-1.6**
	15nm,0.7s						
SMLA	**Simla**	**7.50**	**135**	*e*P	**Pn**	**01 14 17.5**	**-0.6**
SMLA				*e*S	**Sn**	**01 15 38.4**	**-4.2**
SMLA				IAML		01 15 40.3	
	comp=N,216nm,0.1s						
SMLA				IAML		01 15 41.0	
	comp=E,217nm,0.0s						
JOSI	**Joshimath**	**9.36**	**127**	*e*P	**Pn**	**01 14 42.3**	**-0.4**
JOSI				*e*S	**Sn**	**01 16 20.0**	**-7.4**
JOSI				IAML		01 16 24.8	
	comp=N,349nm,0.9s						
JOSI				IAML		01 16 24.9	
	comp=E,501nm,1.0s						
KHET	**Khetri**	**9.42**	**153**	*e*P	**Pn**	**01 14 40.5**	**-2.7**
KHET				*e*S	Sn	01 16 18.5	-10
KHET				IAML		01 16 22.3	
	comp=N,33nm,0.4s						
KHET				IAML		01 16 22.4	
	comp=E,48nm,0.3s						
KUDL	**Kundal**	**9.62**	**149**	*e*P	**Pn**	**01 14 43.8**	**-2.0**
KUDL				*e*S	Sn	01 16 21.8	-11
KUDL				IAML		01 16 24.3	
	comp=E,50nm,0.7s						
KUDL				IAML		01 16 27.6	
	comp=N,40nm,0.5s						
GEYT	**Alibeck**	**10.31**	**281**	P	**Pn**	**01 14 54.4**	**-0.4**
	comp=N,0.5nm,0.3s,baz=109,slow=8.2,SNR=4.9						
GEYT				S	**Sn**	**01 16 47.5**	**-2.0**
	comp=N,1.6nm,0.3s,baz=344,slow=41,SNR=5.8						
PYUN	**Piuthan**	**13.23**	**126**	*e*P	**Pn**	**01 15 32.3**	**0.0**
	comp=N,23nm,0.4s						
PYUN				*e*S	Sn	01 17 48.4	-11
MK31	**Makanchi Array**	**13.27**	**36**	⇓P	**Pn**	**01 15 33.6**	**+1.2**
	comp=N,0.9nm,0.5s,baz=243,slow=20,SNR=2.5						
MKAR	**Makanchi Array**	**13.27**	**36**	P	**Pn**	**01 15 30.7**	**-1.7**
	comp=N,0.2nm,0.3s,baz=207,slow=11,SNR=7.5						
KOLN	**Koldanda**	**13.85**	**126**	*e*P	**Pn**	**01 15 39.8**	**-0.2**
	comp=N,17nm,0.4s						
GKN	**Gorkha**	**14.38**	**123**	*e*P	**Pn**	**01 15 48.0**	**+1.4**
	comp=N,43nm,0.4s						
GKN				*e*S	Sn	01 18 15.7	-12
DMN	**Daman**	**14.96**	**123**	*e*P	**P**	**01 15 56.3**	**+1.5**
	comp=N,15nm,0.3s						
KKN	**Kakani**	**14.96**	**122**	*e*P	**P**	**01 15 56.6**	**+1.9**
AB31	**Akbulak array**	**15.00**	**331**	⇑P	**Pn**	**01 15 53.7**	**-0.1**
	comp=N,3.7nm,0.5s,baz=145,slow=12,SNR=67						
AB31				⇑S	**Sn**	**01 18 33.7**	**-7.6**
	comp=N,2.5nm,0.5s,baz=151,slow=24,SNR=10						
KURBB	**Kurchatov Arra**	**15.07**	**19**	P	**Pn**	**01 15 54.1**	**-0.6**
	comp=N,0.3nm,0.3s,baz=210,slow=10,SNR=30						
KURBB	**Kurchatov Arra**	**15.07**	**19**	⇓P	**P**	**01 15 57.4**	**+1.8**
	comp=N,4.1nm,0.6s						
PKIN	**Phulchoki**	**15.17**	**122**	*e*P	**P**	**01 15 59.2**	**+2.0**
	comp=N,26nm,0.4s						
PKIN				*e*S	S	01 18 35.7	-10
GUN	**Gumba**	**15.30**	**120**	*e*P	**P**	**01 15 59.2**	**+0.6**
ZRNK	**Zerenda**	**16.44**	**356**	⇓P	**Pn**	**01 16 12.3**	**+1.1**
BVA0	**Borovoye Array**	**16.46**	**359**	⇑P	**Pn**	**01 16 13.5**	**+2.0**
	comp=N,2.9nm,0.6s,baz=184,slow=8.0,SNR=25						
BVAR	**Borovoye Array**	**16.46**	**359**	P	**P**	**01 16 10.5**	**-0.3**
	comp=N,1.4nm,0.3s,baz=156,slow=9.2,SNR=23						
AKTO	**Aktyubinsk**	**16.69**	**330**	P	**Pn**	**01 16 15.8**	**+1.4**
	comp=N,3.5nm,0.3s,baz=140,slow=11,SNR=58						
AKTO				S	**S**	**01 19 14.9**	**-3.0**
	comp=N,0.1nm,0.3s,baz=229,slow=20,SNR=3.3						
AKTO	**Aktyubinsk**	**16.69**	**330**	⇑P	**Pn**	**01 16 15.6**	**+1.3**
	comp=N,11nm,0.6s						
AKTO				⇓S	**S**	**01 19 18.1**	**+0.2**
	comp=N,5.0nm,0.7s						
WSAR	**Wadi Sarin**	**17.01**	**222**	P	**Pn**	**01 16 19.5**	**+1.1**
	comp=N,0.2nm,0.3s,baz=346,slow=7.1,SNR=3.5						
CHKZ	**Chkalovo**	**17.11**	**359**	⇓P	**Pn**	**01 16 19.8**	**+0.7**
	comp=N,5.1nm,0.5s						
ZALV	**Zalesovo Beam**	**19.88**	**25**	P	**P**	**01 16 48.8**	**+0.9**
	comp=N,2.3nm,0.3s,baz=222,slow=11,SNR=30						
ZALV				S	**S**	**01 20 19.5**	**-1.6**
	comp=N,0.2nm,0.3s,baz=151,slow=42,SNR=4.0						
ARU	**Arti**	**21.55**	**341**	P	**P**	**01 17 06.8**	**+1.1**
	comp=N,2.3nm,0.3s,baz=130,slow=6.0,SNR=5.6						
FINES	**FINESS Array B**	**37.40**	**326**	P	**P**	**01 19 27.8**	**+2.1**
	comp=N,0.5nm,0.4s,baz=122,slow=7.2,SNR=7.4						
ARCES	**ARCESS Array B**	**41.06**	**338**	P	**P**	**01 19 58.5**	**+2.6**
	comp=N,8.4nm,1.0s,baz=98,slow=8.7,SNR=10						
NB2	**NORSAR Subarra**	**44.29**	**323**	P	**P**	**01 20 23.4**	**+1.3**
	comp=Z,1.1nm,0.5s,baz=97,slow=7.9						
NOA	**NORSAR Array B**	**44.29**	**323**	P	**P**	**01 20 23.7**	**+1.6**
	comp=Z,1.4nm,0.5s,baz=97,slow=7.8,SNR=11						
NOA				pP	**pP**	**01 21 03.9**	**+1.1**
	comp=Z,0.6nm,0.6s,baz=96,slow=8.0,SNR=3.5						
INK	**Inuvik**	**73.85**	**9**	P	**P**	**01 23 46.2**	**+1.5**
	comp=Z,0.9nm,0.6s,baz=326,slow=9.5,SNR=4.2						
YKA	**Yellowknife Ar**	**81.18**	**3**	P	**P**	**01 24 27.1**	**+1.6**
	comp=Z,0.4nm,0.4s,baz=351,slow=5.3,SNR=16						
YKA				pP	**pP**	**01 25 12.8**	**+1.5**
	comp=Z,0.5nm,0.8s,baz=352,slow=5.8,SNR=8.3						
WRA	**Warramunga Arr**	**82.07**	**122**	P	**P**	**01 24 30.6**	**-0.2**
	comp=Z,1.6nm,0.6s,baz=324,slow=4.7,SNR=7.1						
ASAR	**Alice Springs**	**84.34**	**125**	P	**P**	**01 24 42.5**	**+0.1**
	comp=Z,1.6nm,0.6s,baz=309,slow=4.9,SNR=24						

NIED ***11*** *01:12:00, 38°.00N×144°.40E, h5km, Mw3.7 Best double couple: M0 3.80000×10^14 NP1:φs30.00000°, δ25.00000°, λ-105.00000°. NP2:φs226.00000°, δ66.00000°, λ-83.00000°.*
JMA 11 01:12:51.7±0.3, 38°.03N×144°.45E, h40km, M3.7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.42**	**297**	P	Pn	01 13 30.1	+1.4
JIO	**Ouri**	**2.48**	**281**	P	Pn	01 13 31.1	+1.6
JIO				*e*S	Sn	01 13 59.7	+1.2
JMK	**Ichinoseki**	**2.70**	**291**	P	Pn	01 13 34.7	+2.2
JOM	**Ohasama**	**2.86**	**301**	P	Pn	01 13 36.8	+2.0
JOM				S	Sn	01 14 10.4	+2.5
JANG	**Nango**	**3.27**	**317**	P	Pn	01 13 42.0	+1.6
JANG				*e*S	Sn	01 14 21.0	+3.0
JFT	**Otama**	**3.30**	**262**	P	Pn	01 13 42.5	+1.7
JFT				S	Sn	01 14 20.8	+2.0
JYK	**Kaneyama**	**3.33**	**287**	P	Pn	01 13 44.3	+3.0
JYK				*e*S	Sn	01 14 22.8	+3.2
JCH	**Churui**	**4.65**	**350**	P	Pn	01 13 59.9	+0.5
JCH				*e*S	Sn	01 14 50.0	-2.2
JRY	**Ryogami san**	**4.87**	**247**	P	Pn	01 14 03.3	+0.8
JRY				S	Sn	01 14 56.8	-0.9

NIED ***11*** *01:20:00, 37°.90N×143°.50E, h8km, Mw5.2 Best double couple: M0 6.42000×10^16 NP1:φs44.00000°, δ31.00000°, λ-78.00000°. NP2:φs210.00000°, δ59.00000°, λ-97.00000°.*
ISCJB ***11*** *01:20:02.9±0.7, 37°.84N±0°.02×143°.60E±0°.01, h8km±4km, mb5.4/299, MS4.7/175, Error ellipse: s-maj=3.3km s-min=1.9km az=168.5*
JMA ***11*** *01:20:05.3±0.2, 37°.86N×143°.59E, h43km, M5.2*
JMA Felt I J1.
NEIC ***11*** *01:20:05.6±1.4, 37°.81N×143°.56E, h15km±8km, mb5.6/153, MS4.7/114, Error ellipse: s-maj=3.7km s-min=2.2km az=140.0*
NEIC Recorded [1 JMA] in Fukushima, Gumma, Ibaraki, Iwate and Miyagi.
GCMT ***11*** *01:20:05.6±0.2, 37°.88N×143°.68E, h13km, MW5.2/94, Moment Tensor Solution. s61,c102; s94,c201; Duration: 1s0 Moment tensor: Scale 10^17Nm; Mrr=0.64±.02; Mθθ0.10±.01; Mφφ0.54±.01; Mrθ0.09±.03; Mθφ0.50±.01; Mφr0.44±.04; Best double couple: M0 0.88600×10^17 NP1:φs199.00000°, δ61.00000°, λ-107.00000°. NP2:φs51.00000°, δ33.00000°, λ-62.00000°. Principal axes: T 0.9760, Plg15.0000°, Azm301.0000°; N -0.1810, Plg15.0000°, Azm207.0000°; P -0.7960, Plg69.0000°, Azm73.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*
MOS ***11*** *01:20:07.2±0.9, 37°.97N×143°.51E, h33km, mb5.7/118, MS4.8/55 Error ellipse: s-maj=5.9km s-min=4.0km az=105.8*
BJI ***11*** *01:20:07.2, 38°.02N×143°.13E, h18km, mb5.1/81, mB5.2/60, Ms5.1/91, Ms7 4.9/85*
IDC ***11*** *01:20:08.8±0.4, 37°.79N×143°.59E, h41km±3km, mb4.8/34, mb1 5.0/41, mb1mx4.9/49, mbtmp5.1/41, ML4.7/6, MS4.6/21, Ms1 4.6/21, ms1mx4.3/37, Error ellipse: s-maj=11.1km s-min=8.2km az=99.0*
ISC 11 01:20:07.3±0.3, 37°.86N±0°.03×143°.56E±0°.03, h28km±1km, h27km: pP-P, n1386, σ1°38/1453, **mb5.5**/319, **MS4.8**/175, **65C-44D, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.84**	**289**	⇑P	**Pn**	**01 20 35.7**	**-1.4**
JIO				*e*S	**Sn**	**01 20 57.9**	**-1.6**
OFUJ	**Ofunato**	**1.92**	**310**	⇑P	**Pn**	**01 20 36.7**	**-1.5**
OFUJ				S	**Sn**	**01 21 00.3**	**-1.1**
JMK	**Ichinoseki**	**2.14**	**301**	⇑P	**Pn**	**01 20 40.1**	**-1.1**
JMK				*e*S	**Sn**	**01 21 05.

JRY			*e*S	**Sn**	**01 21 53.5**	**-3.3**
JSD	**Sado**	**4.20 274**	P	**Pn**	**01 21 09.5**	**+0.1**
JOD2	**Odawara 2**	**4.44 236**	P	**Pn**	**01 21 11.7**	**-1.1**
JKB	**Kayabe**	**4.47 335**	P	**Pn**	**01 21 12.7**	**-0.5**
MJAR	**Matsushiro Arr**	**4.47 254**	P	**Pn**	**01 21 13.6**	**+0.3**
comp=Z,88nm,0.3s,baz=87,slow=15,SNR=189						
MAJO	**Matsushiro**	**4.47 255**	*c i*P	**Pn**	**01 21 13.5**	**+0.2**
MAJO	**Matsushiro**	**4.47 255**	*e*Pn	**Pn**	**01 21 14.3**	**+0.9**
MAT	**Matsushiro**	**4.47 255**	P	**Pn**	**01 21 13.5**	**+0.2**
MAT			S	**Sn**	**01 22 03.0**	**-1.5**
MJB9	**Matsu-Tunnel**	**4.47 255**	*e*Pn	**Pn**	**01 21 14.3**	**+1.0**
JCH	**Churui**	**4.75 358**	P	**Pn**	**01 21 15.1**	**-1.9**
JHJ2	**Mitsune**	**5.64 214**	*e*Pn	**Pn**	**01 21 25.6**	**-3.7**
JHJ2			*e*Sn	**Sn**	**01 22 24.9**	**-8.3**
JHJ	**Hachijo jima 2**	**5.65 214**	P	**Pn**	**01 21 27.4**	**-2.0**
comp=Z,144nm,0.3s,baz=342,slow=22,SNR=27						
JHJ			S	**Sn**	**01 22 26.0**	**-7.4**
comp=Z,239nm,0.3s,baz=227,slow=22,SNR=5.4						
JHJ			LR	LR	01 23 41.8	
comp=Z,3μm,18.0s,baz=324,slow=38						
INU	**Inuyama**	**5.83 247**	*e*Pn	**Pn**	**01 21 31.8**	**-0.2**
ASAJ	**Asahikawa**	**6.29 354**	P	**Pn**	**01 21 38.3**	**+0.1**
comp=Z,64nm,0.3s,baz=203,slow=11,SNR=76						
ASAJ			S	**Sn**	**01 22 41.5**	**-7.7**
comp=Z,19nm,0.3s,baz=161,slow=12,SNR=4.1						
ASAJ	**Asahikawa**	**6.29 354**	*e*Pn	**Pn**	**01 21 37.0**	**-1.2**
ASAJ			*e*Sn	**Sn**	**01 22 44.9**	**-4.3**
YUK	**Yuzh-Kuril'sk**	**6.41 15**	*e*P	**Pn**	**01 21 36.6**	**-3.2**
YUK			*e*S	Sn	01 22 42.8	-9.2
YUK			pmax	pmax		
comp=E,547nm,0.2s						
YUK			pmax	pmax		
comp=Z,2μm,0.2s						
YUK			pmax	pmax		
comp=N,5μm,16.1s						
YUK			MLR	MLR		
comp=Z,3μm,21.0s						
YUK			MLR	MLR		
comp=E,5μm,20.0s						
SHO	**Shikotan**	**6.49 21**	*e*P	**Pn**	**01 21 37.5**	**-3.5**
SHO			pmax	pmax		
comp=N,221nm,0.3s						
SHO			pmax	pmax		
comp=Z,483nm,0.3s						
SHO			pmax	pmax		
comp=E,311nm,0.4s						
KUR	**Kuril'sk**	**8.04 22**	*d i*P	**Pn**	**01 21 59.8**	**-2.4**
KUR			*i* S	**Sn**	**01 23 24.8**	**-7.3**
KUR			pmax	pmax		
comp=Z,210nm,0.6s						
KUR			pmax	pmax		
comp=Z,703nm,3.2s						
KUR			smax	smax		
comp=N,278nm,0.7s						
KUR			smax	smax		
comp=E,569nm,0.7s						
KUR			MLR	MLR		
comp=N,2μm,10.0s						
KUR			MLR	MLR		
comp=E,2μm,10.0s						
KUR			MLR	MLR		
comp=Z,3μm,10.0s						
YSS	**Yuzh-Sakhalins**	**9.11 357⇓**	*e*P	**Pn**	**01 22 14.3**	**-2.5**
YSS			*e*S	**Sn**	**01 23 53.8**	**-4.5**
YSS			pmax	pmax		
comp=Z,40nm,0.5s						
YSS			MLR	MLR		
comp=N,4μm,13.0s						
YSS			MLR	MLR		
comp=Z,4μm,13.0s						
YSS			MLR	MLR		
comp=E,2μm,15.0s						
VLA	**Vladivostok**	**10.32 304**	*de*P	**Pn**	**01 22 35.6**	**+2.1**
MSHR	**Mys Shultsa**	**10.59 300**	*d i*P	**Pn**	**01 22 37.6**	**+0.5**
USRK	**Ussurisyk Ar.**	**10.79 310**	P	**Pn**	**01 22 39.9**	**0.0**
comp=E,2.1nm,0.3s,baz=113,slow=15,SNR=68						
CBIJ	**Chichi jima**	**10.80 187**	*e*Pn	Pn	01 22 34.2	-5.9
CBIJ			*e*Sn	Sn	01 24 22.4	-18
JCJ	**Chichijima**	**10.80 187**	P	Pn	01 22 33.8	-6.3
baz=170,slow=19						
JCJ			S	Sn	01 24 25.2	-15
comp=E,43nm,0.3s,baz=231,slow=23,SNR=7.5						
UGL	**Uglegorsk**	**11.26 355**	*e*P	**Pn**	**01 22 45.0**	**-1.3**
UGL			pmax	pmax		
comp=Z,112nm,1.0s						
UGL			MLR	MLR		
comp=N,7μm,17.0s						
UGL			MLR	MLR		
comp=Z,6μm,17.0s						
UGL			MLR	MLR		
comp=E,6μm,20.0s						
JNU	**Nakatsue**	**11.37 249**	P	**Pn**	**01 22 47.4**	**-0.6**
comp=E,2.1nm,0.3s,baz=71,slow=8.5,SNR=15						
JNU			LR	LR	01 27 37.2	
comp=E,5μm,18.2s,baz=47,slow=40						
JNU	**Nakatsue**	**11.37 249**	*e*Pn	**Pn**	**01 22 47.0**	**-0.9**
HABR	**Khabarovsk**	**12.28 332**	*ce*P	**Pn**	**01 22 59.1**	**-1.2**
HABR			*e*S	**Sn**	**01 25 16.3**	**+0.2**
HABR			pmax	pmax		
comp=Z,110nm,1.4s						
HABR			pmax	pmax		
comp=N,78nm,1.4s						
HABR			pmax	pmax		
comp=E,86nm,1.4s						
HABR			MLR	MLR		
comp=Z,2μm,15.0s						
KSRS	**Korea Array**	**12.40 273**	P	**Pn**	**01 23 03.2**	**+1.2**
comp=Z,1.8nm,0.3s,baz=91,slow=13,SNR=52						
KS01	**Wonju Array Si**	**12.43 273**	*e*Pn	**Pn**	**01 23 00.8**	**-1.5**
KS15	**Wonju Array Si**	**12.44 273**	*e*Pn	**Pn**	**01 23 02.6**	**+0.2**
KSAR	**Wonju Array Be**	**12.44 273**	P	**Pn**	**01 23 03.3**	**+0.8**
KSAR	**Wonju Array Be**	**12.44 273**	P	**Pn**	**01 23 03.2**	**+0.8**
MDJ	**Mudanjiang**	**12.48 307**	P	**Pn**	**01 23 04.2**	**+1.1**
MDJ			S	**Sn**	**01 25 22.2**	**+1.0**
MDJ			PcP	**PcP**	**01 28 43.2**	**+1.5**
MDJ			ScP	**ScP**	**01 32 14.8**	**+2.1**
MDJ			PcS	**PcS**	**01 32 17.2**	**+1.4**
MDJ			ScS	**ScS**	**01 35 51.0**	**+2.3**
MDJ			pmax	pmax		
comp=Z,80nm,1.1s						
MDJ			pmax	pmax		
comp=Z,1μm,8.2s						
MDJ			LR	LR		
comp=Z,1μm,10.3s						
MDJ			LR	LR		
comp=Z,3μm,16.2s						
MDJ			LR	LR		
comp=Z,3μm,19.2s						
MDJ	**Mudanjiang**	**12.48 307**	*e*Pn	**Pn**	**01 23 03.8**	**+0.7**
comp=Z,123nm,0.9s						
TYV	**Tymovskoe**	**13.01 357**	*e*P	**Pn**	**01 23 09.5**	**-0.8**
TYV			*e*S	**Sn**	**01 25 28.0**	**-6.0**
TYV			pmax	pmax		
comp=Z,62nm,1.0s						
TYV			pmax	pmax		
comp=Z,1μm,4.0s						
TYV			smax	smax		
comp=E,1μm,10.0s						
TYV			MLR	MLR		
comp=N,4μm,14.0s						
TYV			MLR	MLR		
comp=Z,5μm,16.0s						
TJN	**Taejon**	**13.02 268⇑**	*e*P	**Pn**	**01 23 10.4**	**0.0**
INCN	**Inchon**	**13.42 274**	*e*Pn	**Pn**	**01 23 15.4**	**-0.5**
KLR	**Kul'dur**	**14.21 327**	P	**Pn**	**01 23 24.7**	**-1.9**
comp=Z,2.5nm,0.3s,baz=133,slow=12,SNR=175						
CN2	**Changchun**	**14.93 299**	⇑P	**Pn**	**01 23 34.1**	**-2.3**
CN2			*e*pP	P	01 23 39.4	-2.3
CN2			*e*S	**Sn**	**01 26 19.3**	**-1.5**
CN2			pmax	pmax		
comp=Z,40nm,1.2s						
CN2			pmax	pmax		
comp=Z,200nm,8.0s						
CN2			LR	LR		
comp=Z,2μm,16.0s						
CN2			LR	LR		
comp=Z,2μm,16.0s						
CN2			LR	LR		
comp=Z,2μm,17.0s						
NKL	**Nikolayevsk**	**15.42 353**	*i* P	**Pn**	**01 23 41.0**	**-1.8**
NKL			*e*		01 26 23.0	
NKL			pmax	pmax		
comp=Z,450nm,2.5s						
NKL			pmax	pmax		
comp=N,55nm,1.1s						
NKL			pmax	pmax		
comp=E,22nm,1.1s						
NKL			pmax	pmax		
comp=Z,120nm,1.1s						
SKR	**Severo-Kuril's**	**15.63 31**	*e*P	Pn	01 23 36.4	-9.1
SKR			pmax	pmax		
comp=N,400nm,1.0s						
SKR			pmax	pmax		
comp=E,490nm,1.0s						
SKR			pmax	pmax		
comp=Z,670nm,1.0s						
SKR			MLR	MLR		
comp=N,3μm,14.0s						
SKR			MLR	MLR		
comp=E,3μm,14.0s						
SKR			MLR	MLR		
comp=Z,3μm,14.0s						
DL2	**Dalian**	**17.23 280⇑**	*i*P	**Pn**	**01 24 04.2**	**-1.7**
DL2			S	**Sn**	**01 27 10.4**	**-6.3**
DL2			pmax	pmax		
comp=Z,320nm,1.3s						
DL2			pmax	pmax		
comp=Z,1μm,6.5s						
DL2			LR	LR		
comp=Z,1μm,12.9s						
DL2			LR	LR		
comp=Z,2μm,15.7s						
DL2			LR	LR		
comp=Z,3μm,18.4s						
PEA0	**Petropavlovsk-**	**18.13 28**	*e*Pn	**P**	**01 24 17.2**	**+0.1**
PEA0B	**Petropavlovsk-**	**18.13 28**	*e*Pn	**Pn**	**01 24 16.4**	**-0.6**
comp=Z,206nm,1.2s						
PETK	**Petropavlovsk-**	**18.13 28**	P	**Pn**	**01 24 16.0**	**-0.9**
comp=Z,1.2nm,0.3s,baz=208,slow=9.2,SNR=43						
PETK			LR	LR	01 32 58.1	
comp=Z,871nm,18.9s,baz=218,slow=42						
PET	**Petropavlovsk**	**18.43 30**	*e*P	**Pn**	**01 24 21.1**	**+0.5**
PET			pmax	pmax		
comp=Z,82nm,1.2s						
PET			pmax	pmax		
comp=Z,200nm,10.9s						
PET			MLR	MLR		
comp=Z,2μm,14.0s						
PET			MLR	MLR		
comp=Z,2μm,18.0s						
PET	**Petropavlovsk**	**18.43 30**	*e*P	**P**	**01 24 20.1**	**-0.3**
comp=Z,88nm,1.0s						
SSE	**Sheshan**	**19.62 257**	P	**P**	**01 24 33.4**	**-0.2**
SSE			S	**S**	**01 28 12.1**	**-1.4**
SSE			pmax	pmax		
comp=Z,88nm,1.0s						
SSE			pmax	pmax		
comp=Z,400nm,7.7s						
SSE			LR	LR		
comp=Z,4μm,19.6s						
SSE			LR	LR		
comp=Z,1μm,19.6s						
SSE			LR	LR		
comp=Z,2μm,14.8s						
HIA	**Hailar**	**20.59 311**	*e*P	**P**	**01 24 41.4**	**-2.7**
HIA			pmax	pmax		
comp=Z,113nm,0.8s						
HIA			MLR	MLR		
comp=Z,2μm,20.0s						
HIA	**Hailar**	**20.59 311**	*e*P	**P**	**01 24 41.4**	**-2.7**
comp=Z,113nm,0.8s						
HIA			LR	LR		
comp=Z,2μm,20.0s						
NJ2	**Nanjing**	**21.04 261**	*e*P	**P**	**01 24 51.4**	**+2.4**
NJ2			S	**S**	**01 28 43.2**	**+1.4**
NJ2			pmax	pmax		
comp=Z,24nm,0.7s						
NJ2			pmax	pmax		
comp=Z,550nm,5.4s						
NJ2			LR	LR		
comp=Z,1μm,8.1s						
NJ2			LR	LR		
comp=Z,4μm,9.2s						
NJ2			LR	LR		
comp=Z,4μm,11.9s						
TIA	**Tai'an**	**21.15 274**	⇓P	**P**	**01 24 49.1**	**-1.1**
TIA			S	**S**	**01 28 38.8**	**-5.2**
TIA			pmax	pmax		
comp=Z,80nm,1.2s						
TIA			pmax	pmax		
comp=Z,430nm,4.0s						
TIA			LR	LR		
comp=Z,1μm,16.0s						
TIA			LR	LR		
comp=Z,3μm,16.0s						
TIA			LR	LR		
comp=Z,3μm,18.0s						
BJI	**Beijing**	**21.38 284**	P	**P**	**01 24 50.4**	**-2.2**
BJI			sP	**sP**	**01 25 02.0**	**-1.6**
BJI			S	**S**	**01 28 44.3**	**-4.2**
BJI			sS	Sn	01 28 55.4	-1.4
BJI			pmax	pmax		
comp=Z,62nm,1.4s						
BJI			LR	LR		
comp=Z,2μm,18.8s						
BJI			LR	LR		
comp=Z,810nm,21.9s						
BJI			LR	LR		
comp=Z,1μm,26.2s						
BJT	**Baijiatuau**	**21.39 284**	*e*P	**P**	**01 24 51.6**	**-1.1**
BJT			pmax	pmax		
comp=Z,502nm,1.4s						
BJT			MLR	MLR		
comp=Z,2μm,19.0s						
BJT	**Baijiatuau**	**21.39 284**	*e*P	**P**	**01 24 51.6**	**-1.1**
comp=Z,502nm,1.4s						
BJT			LR	LR		
comp=Z,2μm,19.0s						
YOJ	**Yonaguni jima**	**22.02 239**	*e*P	**P**	**01 24 59.8**	**+0.2**
YOJ			pmax	pmax		
comp=Z,62nm,1.1s						
YOJ	**Yonaguni jima**	**22.02 239**	*e*P	**P**	**01 24 59.8**	**+0.2**
comp=Z,62nm,1.1s						
MA2	**Magadan**	**22.22 10**	P	**P**	**01 25 00.6**	**-0.8**
comp=Z,41nm,0.7s,baz=215,slow=9.7,SNR=22						
MA2	**Magadan**	**22.22 10**	*e*P	**P**	**01 25 01.0**	**-0.4**
MA2			pmax	pmax		
comp=Z,676nm,1.1s						
MA2			MLR	MLR		
comp=Z,1μm,19.0s						
MA2	**Magadan**	**22.22 10**	*e*P	**P**	**01 25 01.0**	**-0.4**
comp=Z,676nm,1.1s						
MA2			LR	LR		
comp=Z,1μm,19.0s						
CLNS	**Chul'man**	**22.67 333**	*e*P	**P**	**01 25 06.5**	**+0.1**
CLNS			*e**PP	**sP**	**01 25 19.7**	**+2.3**
CLNS			*e*S	**S**	**01 29 02.7**	**-10**
CLNS			*e*		01 29 03.3	
CLNS			*e*SS	**SnSn**	**01 29 44.3**	**+0.9**
CLNS			pmax	pmax		
comp=Z,40nm,0.9s						
CLNS			pmax	pmax		
comp=N,91nm,1.1s						
CLNS			pmax	pmax		
comp=E,109nm,1.0s						
CLNS			smax	smax		
comp=E,494nm,12.9s						
CLNS			smax	smax		
comp=N,480nm,9.7s						
CLNS			MLR	MLR		
comp=Z,1μm,16.0s						
CLNS			MLR	MLR		
comp=N,1μm,14.0s						
CLNS			MLR	MLR		
comp=E,2μm,16.0s						
YHNB	**Yeheng**	**23.01 242**	*e*P	**P**	**01 25 10.1**	**-0.1**
comp=E,26nm,0.7s						
YHNB			LR	LR		
comp=Z,782nm,22.0s						
NACB	**Ninganchiao**	**23.18 240**	*e*P	**P**	**01 25 10.3**	**-1.5**
comp=Z,40nm,0.9s						
SSLB	**Suanglung**	**23.87 240**	*e*P	**P**	**01 25 17.0**	**-1.6**
comp=Z,32nm,0.8s						
YULB	**Yu-li**	**23.90 239**	*e*P	**P**	**01 25 18.0**	**-0.8**
comp=Z,80nm,1.2s						
TPUB	**Ta-pu**	**24.42 240**	*e*P	**P**	**01 25 23.0**	**-0.6**
comp=Z,112nm,0.9s						
TWG	**Pinlang**	**24.44 239**	*e*P	**P**	**01 25 23.5**	**-0.2**
comp=Z,499nm,1.2s						
TIY	**Taiyuan**	**24.55 279**	*e*P	**P**	**01 25 26.4**	**+1.6**
TIY			PP	**PnPn**	**01 25 59.0**	**+2.7**
TIY			S	**S**	**01 29 47.4**	**+3.5**
TIY			SS	**SnSn**	**01 30 34.8**	**+5.2**
TIY			pmax	pmax		
comp=Z,510nm,6.9s						
TIY			LR	LR		
comp=Z,620nm,10.3s						
TIY			LR	LR		
comp=Z,2μm,12.7s						
TIY			LR	LR		
comp=Z,2μm,17.4s						
QZH	**Quanzhou**	**24.81 246⇓**	*i*P	**P**	**01 25 26.6**	**-0.5**
QZH			S	**S**	**01 29 45.0**	**-3.1**
QZH			pmax	pmax		
comp=Z,750nm,5.1s						
QZH			LR	LR		
comp=Z,4μm,15.3s						
QZH			LR	LR		
comp=Z,3μm,13.8s						
QZH			LR	LR		
comp=Z,3μm,15.6s						
HHC	**Hu-ho-hao-te**	**24.85 287**	*e*P	**P**	**01 25 25.3**	**-2.2**
HHC			pP	pP	01 25 30.5	-5.0
HHC			sP	sP	01 25 34.9	-4.0
HHC			S	**S**	**01 29 39.0**	**-10**
HHC			sS	sS	01 29 54.2	-7.8
HHC			pmax	pmax		
comp=Z,32nm,0.8s						
HHC			pmax	pmax		
comp=Z,430nm,4.3s						
HHC			LR	LR		
comp=Z,2μm,13.2s						
HHC			LR	LR		
comp=Z,2μm,14.1s						
HHC			LR	LR		
comp=Z,3μm,14.5s						
WHN	**Wuhan**	**25.17 262**	⇑P	**P**	**01 25 30.4**	**+0.1**
WHN			pP	**pP**	**01 25 34.9**	**-3.4**
WHN			sP	**sP**	**01 25 42.1**	**+0.4**
WHN			S	**S**	**01 29 53.4**	**-0.4**
WHN			pmax	pmax		
comp=Z,620nm,2.3s						
WHN			LR	LR		
comp=Z,5μm,12.4s						
WHN			LR	LR		
comp=Z,7μm,20.6s						
WHN			LR	LR		
comp=Z,7μm,14.8s						
CIT	**Chita**	**25.30 314**	*e*P	**P**	**01 25 36.4**	**+5.0**
CIT			*e*		01 25 52.5	
CIT			pmax	pmax		
comp=Z,693nm,1.7s						
SEY	**Seymchan**	**25.67 9**	P	**P**	**01 25 35.9**	**+1.3**
comp=Z,81nm,0.8s,baz=190,slow=6.7,SNR=84						
YAK	**Yakutsk**	**25.68 345**	P	**P**	**01 25 35.1**	**+0.5**
comp=Z,136nm,0.7s,baz=19,slow=0.5,SNR=22						
YAK	**Yakutsk**	**25.68 345**	*e*P	**P**	**01 25 34.6**	**0.0**
YAK			*e**PP	**sP**	**01 25 45.5**	**-0.5**
YAK			*e*PPP	PPP	01 26 17.5	
YAK			*e*S	**S**	**01 30 02.0**	**+0.8**
YAK			*e**SS	**sS**	**01 30 14.6**	**+0.1**
YAK			*e*SS	**SnSn**	**01 30 58.8**	**+2.2**
YAK			*e*SSS	SSS	01 31 12.6	
YAK			*e*		01 36 26.6	
YAK			pmax	pmax		
comp=E,30nm,0.8s						
YAK			pmax	pmax		
comp=N,92nm,1.2s						
YAK			pmax	pmax		
comp=Z,145nm,0.8s						
YAK			smax	smax		
comp=N,518nm,1.9s						
YAK			smax	smax		
comp=E,379nm,1.3s						
YAK			MLR	MLR		
comp=N,2μm,17.0s						
YAK			MLR	MLR		
comp=Z,2μm,17.0s						
YAK			MLR	MLR		
comp=E,900nm,12.0s						
YAK	**Yakutsk**	**25.68 345**	*e*P	**P**	**01 25 34.4**	**-0.2**
comp=E,292nm,0.8s						
YAK			LR	LR		
comp=Z,2μm,19.0s						
BTO	**Baotou**	**26.04 287**	*e*P	**P**	**01 25 38.2**	**-0.1**
H11N2	**WAKE ISLAND Hy**	**27.16 125**	T	T	01 54 13.7	
baz=317,slow=75,SNR=171						
H11N1	**WAKE ISLAND Hy**	**27.17 125**	T	T	01 54 12.7	
baz=317,slow=75,SNR=131						
H11N3	**WAKE ISLAND Hy**	**27.18 125**	T	T	01 54 13.8	
baz=317,slow=75,SNR=163						
BOD	**Bodaibo**	**27.78 325**	*e*P	**P**	**01 25 53.7**	**+0.1**
BOD			pmax	pmax		
comp=Z,145nm,1.4s						
XAN	**Xi'an**	**28.20 273**	P	**P**	**01 25 57.3**	**-0.4**
XAN			sP	sP	01 26 08.7	-0.5
XAN			PP	**PnPn**	**01 26 46.4**	**+0.2**
XAN			PcP	**PcP**	**01 29 13.3**	**+2.4**
XAN			S	**S**	**01 30 37.2**	**-4.6**
XAN			SS	**SnSn**	**01 31 57.7**	**-1.3**
XAN			pmax	pmax		
comp=Z,470nm,10.0s						
XAN			LR	LR		
comp=Z,2μm,15.6s						
XAN			LR	LR		
comp=Z,1μm,17.3s						
ULN	**Ulaanbaatar**	**28.33 302**	*c i*P	**P**	**01 25 59.5**	**+0.6**
ULN			pmax	pmax		
comp=Z,95nm,1.2s						
ULN	**Ulaanbaatar**	**28.33 302**	P	**P**	**01 26 00.9**	**+2.1**
SNR=72						
ULN	**Ulaanbaatar**	**28.33 302**	P	**P**	**01 26 00.9**	**+2.1**
SNR=72						
ULN	**Ulaanbaatar**	**28.33 302**	*e*P	**P**	**01 26 00.2**	**+1.4**
comp=Z,151nm,1.2s						
ULN			LR	LR		
comp=Z,2μm,19.0s						
SONA1	**Songino Array**	**28.76 302**	*e*P	**P**	**01 26 04.7**	**+2.0**
SONM	**Songino Array**	**28.77 302**	P	**P**	**01 26 03.3**	**+0.6**
comp=Z,16nm,0.7s,baz=103,slow=9.6,SNR=8.5						
SONM	**Songino Array**	**28.77 302**	P	**P**	**01 26 03.3**	**+0.6**
SONM			pmax	pmax		
comp=Z,23nm,0.7s						
ENH	**Enshi**	**29.11 265**	*e*P	**P**	**01 26 06.5**	**+0.7**
comp=Z,119nm,0.8s						
ENH			LR	LR		
comp=Z,1μm,20.0s						
HKC	**Hong Kong Obse**	**29.63 247**	P	P	01 26 20.0	+10
GZH	**Guangzhou**	**29.76 249**	*e*P	**P**	**01 26 12.6**	**+1.1**
GZH			S	**S**	**01 31 04.2**	**-2.0**
IRK	**Irkutsk**	**30.84 311**	*e*P	**P**	**01 26 23.4**	**+2.6**
IRK			pmax	pmax		
comp=Z,179nm,1.6s						
TLY	**Talaya**	**31.11 309**	*c i*P	**P**	**01 26 25.9**	**+2.7**
TLY			*e*		01 27 29.2	
TLY			*e*PPP	PPP	01 27 46.3	
TLY			*e*S	**S**	**01 31 27.5**	**+0.6**
TLY			pmax	pmax		
comp=Z,84nm,1.1s						
TLY			MLR	MLR		
comp=Z,1μm,15.0s						
TLY	**Talaya**	**31.11 309**	*e*P	**P**	**01 26 26.6**	**+3.4**
comp=Z,145nm,1.3s						
TLY			LR	LR		
comp=Z,1μm,20.0s						
ZAK	**Zakamensk**	**31.12 307**	*e*P	**P**	**01 26 25.2**	**+1.7**
ZAK			pmax	pmax		
comp=Z,61nm,1.5s						
LZH	**Lanzhou**	**31.62 279**	*e*P	**P**	**01 26 28.9**	**+0.8**
LZH			pP	pP	01 26 34.3	-1.9
LZH			sP	sP	01 26 37.2	-2.3
LZH			PP	**PnPn**	**01 27 32.6**	**+0.6**
LZH			*e*S	**S**	**01 31 34.8**	**-0.7**
LZH			sS	sS	01 31 46.3	-2.6
LZH			pmax	pmax		
comp=Z,71nm,1.0s						
LZH			pmax	pmax		
comp=Z,340nm,5.2s						
LZH			LR	LR		
comp=Z,2μm,11.2s						
LZH			LR	LR		
comp=Z,1μm,12.6s						
LZH			LR	LR		
comp=Z,2μm,16.7s						
MOY	**Mondy**	**32.73 309**	*e*P	**P**	**01 26 40.0**	**+2.4**
MOY			pmax	pmax		
comp=Z,79nm,2.0s						
BILL	**Biiibino**	**32.76 16**	*d i*P	**P**	**01 26 36.7**	**-0.8**
BILL			*i*		01 26 49.7	

BILL *i* 01 29 21.9
BILL pmax pmax
comp=Z,65nm,1.2s
BILL Bilibino 32.76 16 *e*P **P 01 26 37.5 0.0**
comp=Z,82nm,1.2s
BILL LR LR
comp=Z,808nm,21.0s
GYA Guiyang 33.04 261⇑*i*P **P 01 26 40.4 -0.2**
GYA pP pP 01 26 50.0 +1.3
GYA PP **PnPn 01 27 52.4 +2.0**
GYA PcP **PcP 01 29 25.7 +1.8**
GYA S **S 01 31 53.5 -4.3**
GYA sS sS 01 32 11.0 -0.2
GYA ScP **ScP 01 33 06.8 +0.7**
GYA SS **SnSn 01 33 58.2 +1.2**
GYA ScS **ScS 01 37 05.6 -1.1**
GYA pmax pmax
comp=Z,90nm,1.0s
GYA pmax pmax
comp=Z,130nm,6.2s
GYA LR LR
comp=Z,1μm,16.2s
GYA LR LR
comp=Z,1μm,16.8s
GYA LR LR
comp=Z,900nm,19.9s
CD2 Chengdu 33.38 270 P **P 01 26 42.6 -0.8**
CD2 sP sP 01 26 53.4 -1.5
CD2 PP **PP 01 27 58.2 -0.9**
CD2 S **S 01 32 02.5 -0.3**
CD2 sS sS 01 32 15.3 -0.9
CD2 pmax pmax
comp=Z,60nm,0.9s
CD2 LR LR
comp=Z,4μm,18.0s
CD2 LR LR
comp=Z,2μm,18.0s
GTA Gaotai 33.96 286 *e*P **P 01 26 49.6 +1.1**
GTA pP pP 01 26 56.8 +0.2
GTA sP sP 01 27 00.3 +0.3
GTA S **S 01 32 12.8 +1.0**
GTA sS sS 01 32 24.4 -0.8
GTA pmax pmax
comp=Z,26nm,1.1s
GTA pmax pmax
comp=Z,270nm,5.0s
GTA LR LR
comp=Z,1μm,17.1s
GTA LR LR
comp=Z,2μm,18.8s
GTA LR LR
comp=Z,3μm,19.2s
TIXI Tiksi 34.69 352 P **P 01 26 54.1 -0.1**
comp=Z,12nm,1.0s,baz=146,slow=6.5,SNR=20
TIXI Tiksi 34.69 352*d i*P **P 01 26 53.2 -1.0**
TIXI pmax pmax
comp=Z,14nm,1.0s
TIXI Tiksi 34.69 352 *e*P **P 01 26 53.8 -0.5**
comp=Z,22nm,0.9s
TIXI LR LR
comp=Z,951nm,19.0s
DAV Davao City (W) 34.73 213 PFAKE 01 27 10.0 +15
DAV LR LR
comp=Z,846nm,19.0s
QIZ Qiongzhong 34.83 247 P **P 01 26 57.2 +1.2**
QIZ S **S 01 32 29.2 +4.0**
QIZ LR LR
comp=Z,650nm,22.1s
QIZ LR LR
comp=Z,660nm,21.1s
KMI Kunming 36.77 262 P **P 01 27 14.9 +2.0**
KMI pP pP 01 27 22.2 +1.1
KMI sP sP 01 27 25.1 +0.7
KMI PP **PnPn 01 28 40.0 +3.1**
KMI S **S 01 32 56.3 +0.8**
KMI sS sS 01 33 08.6 -0.3
KMI SS **SnSn 01 35 23.7 -3.9**
KMI pmax pmax
comp=Z,28nm,1.1s
KMI pmax pmax
comp=Z,290nm,6.4s
KMI LR LR
comp=Z,1μm,15.3s
KMI LR LR
comp=Z,1μm,15.6s
KMI LR LR
comp=Z,2μm,16.0s
TNA Tin City 39.29 29 *e*P **P 01 27 34.9 +1.5**
comp=Z,58nm,1.0s
MYLDM Lahad Datu 39.75 221⇑P **P 01 27 40.4 +2.7**
MYLDM Lahad Datu 39.75 221 *e*P **P 01 27 39.6 +1.9**
PANO Nakornpanom 39.86 250 P P 01 27 47.1 +8.4
SDKM Sandakan 40.05 223⇑P **P 01 27 42.2 +1.9**
SWI Sorong 40.18 199 P **P 01 27 39.7 -1.5**
comp=Z,32nm,1.3s,comp=Z,819nm
JAY Jayapura 40.26 184 P **P 01 27 40.6 -1.4**
comp=Z,2.8nm,0.8s,baz=89,slow=24,SNR=6.2
JAY Jayapura 40.26 184 P **P 01 27 41.3 -0.7**
comp=Z,55nm,1.3s,comp=Z,682nm
KKM Kota Kinabalu 40.26 225⇑P **P 01 27 43.7 +1.6**
NONG Nongkai 40.39 252 P **P 01 27 45.0 +1.9**
comp=Z,24nm,1.2s
SKNT Sakolnakorn 40.44 250 P **P 01 27 46.3 +2.8**
comp=Z,22nm,1.7s
TSM Tawau 40.82 221⇓P **P 01 27 47.6 +1.0**
CRAI Chiangrai 41.24 257 P **P 01 27 51.5 +1.4**
comp=Z,270nm,1.1s
WMQ Urumqi 42.00 296 P **P 01 27 57.4 +1.3**
WMQ pP pP 01 28 04.7 +0.3
WMQ sP sP 01 28 09.1 +1.4
WMQ S **S 01 34 16.0 +2.8**
WMQ sS sS 01 34 28.2 +1.4
WMQ SS **SS 01 37 15.6 -4.9**
WMQ pmax pmax
comp=Z,17nm,0.8s
WMQ pmax pmax
comp=Z,210nm,4.8s
WMQ LR LR
comp=Z,750nm,18.2s
WMQ LR LR
comp=Z,270nm,24.4s
WMQ LR LR
comp=Z,310nm,21.4s
LOEI Loei 42.15 253 P **P 01 27 55.7 -1.8**
comp=Z,20nm,1.1s
CMAI Chiengmai2 42.43 258 P **P 01 28 01.7 +1.7**
comp=Z,40nm,1.3s
UTTA Uttaradit 42.55 254 P **P 01 28 02.0 +1.3**
comp=Z,11nm,1.0s,comp=Z,122nm
CHAI Chaiyaphum 42.60 251 P **P 01 28 02.4 +1.2**
comp=Z,14nm,1.0s,comp=Z,142nm
ZAA0 Zalesovo Array 42.63 312 *e*P **P 01 28 01.6 +0.6**
ZALV Zalesovo Beam 42.63 312 P **P 01 28 01.3 +0.3**
comp=Z,36nm,0.9s,baz=88,slow=6.9,SNR=37
ZALV PcP **PcP 01 29 51.6 -1.1**
comp=Z,15nm,0.6s,baz=101,slow=3.6,SNR=5.4
ZALV LR LR 01 46 54.1
comp=Z,676nm,18.8s,baz=72,slow=38
LAMP Lampang 42.79 256 P **P 01 28 04.5 +1.8**
comp=Z,24nm,0.9s,comp=Z,234nm
PBKT Sadao Pong 42.95 252 P **P 01 28 05.2 +1.2**
comp=Z,29nm,1.3s
CMMT Chiang Mai 43.15 257 P **P 01 28 06.8 +1.1**
comp=Z,44nm,1.1s,comp=Z,878nm
CHTO Chiang Mai 43.15 257 P **P 01 28 06.9 +1.2**
comp=Z,93nm,1.1s,comp=Z,3μm
CHTO Chiang Mai 43.15 257 *e*P **P 01 28 06.4 +0.8**
CHTO pmax pmax
comp=Z,37nm,1.0s
CHTO Chiang Mai 43.15 257 P **P 01 28 07.0 +1.4**
SNR=11
CHTO Chiang Mai 43.15 257 P **P 01 28 07.0 +1.4**
SNR=11
CHTO Chiang Mai 43.15 257 *e*P **P 01 28 06.4 +0.8**
comp=Z,37nm,1.0s
CHTO LR LR
comp=Z,653nm,21.0s
NRIK Noril'sk 43.24 335 P **P 01 28 06.3 +0.6**
comp=Z,14nm,1.0s,baz=111,slow=9.9,SNR=15
NRIK LR LR 01 47 38.9
comp=Z,3μm,18.5s,baz=104,slow=38
CM01 Chiang Mai Arr 43.37 256 *e*P **P 01 28 03.9 -3.5**
SUKH Sukhothai 43.41 254 P **P 01 28 09.1 +1.4**
comp=Z,18nm,0.9s,comp=Z,132nm
NVS Novosibirsk 43.51 313 *e*P **P 01 28 08.5 +0.4**
NVS *e* 01 29 53.5
NVS pmax pmax
comp=N,27nm,1.9s
NVS pmax pmax
comp=E,83nm,1.9s
NVS pmax pmax
comp=Z,109nm,1.9s
TT01 Tatalina 43.76 35 *e*P **P 01 28 10.2 +0.2**
SRAK Srakaew 43.76 248 P **P 01 28 09.3 -1.3**
comp=Z,77nm,1.0s,comp=Z,703nm
TTA Tatalina 43.76 35 *e*P **P 01 28 10.6 +0.4**
TTA pmax pmax
comp=Z,58nm,1.2s
TTA Tatalina 43.76 35 *e*P **P 01 28 10.6 +0.4**
comp=Z,58nm,1.3s
SVW2 Sparrevohn 43.82 38 *e*P **P 01 28 12.5 +1.9**
comp=Z,47nm,1.0s
LSA Lhasa 43.84 275 P **P 01 28 14.0 +2.4**
LSA pmax pmax
comp=Z,10.0nm,1.2s
LSA pmax pmax
comp=Z,230nm,9.9s
LSA LR LR
comp=Z,350nm,16.5s
LSA LR LR
comp=Z,480nm,11.6s
LSA LR LR
comp=Z,1μm,18.1s
LSA Lhasa 43.84 275 *e*P **P 01 28 12.8 +1.2**
LSA pmax pmax
comp=Z,68nm,1.1s
LSA MLR MLR
comp=Z,1μm,20.0s
LSA Lhasa 43.84 275 *e*P **P 01 28 12.8 +1.2**
comp=Z,68nm,1.1s
LSA LR LR
comp=Z,1μm,20.0s
PCI Palu 44.37 215 P **P 01 28 14.8 -0.6**
comp=Z,86nm,1.2s,comp=Z,780nm
PCI Palu 44.37 215 P **P 01 28 16.6 +1.2**
PCI pmax pmax
comp=Z,59nm,1.1s
OHAK Old Harbor 44.98 43 *e*P **P 01 28 19.2 -0.6**
comp=Z,89nm,0.9s
SHL Shillong 45.12 270 *e*P **P 01 28 21.5 -0.1**
MK01 Makanchi Array 45.13 302 *e*P **P 01 28 21.6 +0.4**
MK31 Makanchi Array 45.13 302 *i*P **P 01 28 21.9 +0.6**
MK31 pmax pmax
comp=Z,82nm,1.0s
MK31 Makanchi Array 45.13 302 *e*P **P 01 28 22.1 +0.8**
MKAR Makanchi Array 45.13 302 P **P 01 28 21.2 -0.1**
comp=Z,17nm,0.9s,baz=86,slow=10,SNR=42
MKAR LR LR 01 47 59.8
comp=Z,686nm,19.5s,baz=70,slow=37
MKAR Makanchi Array 45.13 302 *e*P **P 01 28 22.1 +0.8**
MKAR Makanchi Array 45.13 302 *e*P **P 01 28 22.1 +0.8**
RSO Redoubt South 45.19 39 *e*P **P 01 28 22.5 +0.7**
KDAK Kodiak Island 45.34 43 *i*P **P 01 28 22.3 -0.3**
KDAK Kodiak Island 45.34 43 *e*P **P 01 28 22.6 0.0**
comp=Z,239nm,1.1s
KDAK LR LR
comp=Z,1μm,20.0s
MAKZ Makanchi 45.34 302 *e*P **P 01 28 23.7 +0.8**
MAKZ pmax pmax
comp=Z,79nm,1.0s
MAKZ Makanchi 45.34 302 *e*P **P 01 28 23.7 +0.8**
comp=Z,79nm,1.0s
SBUM Sibu 45.47 227 *e*P **P 01 28 24.9 +0.7**
comp=Z,28nm,1.2s
PPLA Purkeypile 45.51 35 *e*P **P 01 28 25.8 +1.6**
comp=Z,199nm,1.3s
SPU Mount Spurr 45.54 38 *e*P **P 01 28 25.3 +1.0**
CAST Castle Rocks 45.58 35 *e*P **P 01 28 25.8 +1.3**
comp=Z,141nm,1.4s
BPAW Bear Paw Mtn. 46.09 34 *e*P **P 01 28 29.4 +0.8**
comp=Z,146nm,1.7s
KTH Kantishna Hill 46.10 34 *e*P **P 01 28 29.9 +1.1**
comp=Z,157nm,1.2s
BRLK Bradley Lake 46.14 40 *e*P **P 01 28 30.1 +1.1**
comp=Z,58nm,1.1s
MLY Manley 46.24 32 *e*P **P 01 28 30.6 +0.8**
comp=Z,88nm,1.0s
PHET Kaeng Krachan 46.26 249 P **P 01 28 32.2 +1.8**
comp=Z,30nm,1.0s,comp=Z,288nm
TRF Thorofare Moun 46.38 35 *e*P **P 01 28 31.2 +0.1**
comp=Z,42nm,1.0s
COLD Coldfoot 46.60 29 *e*P **P 01 28 33.4 +0.9**
comp=Z,85nm,1.8s
RC01 Rabbit Creek A 46.66 38 *e*P **P 01 28 33.6 +0.6**
comp=Z,134nm,1.0s
BWN Browne 46.76 34 *e*P **P 01 28 35.8 +2.0**
comp=Z,452nm,1.2s
KURK Kurchatov 46.77 308 *e*P **P 01 28 34.1 0.0**
KURK pmax pmax
comp=Z,190nm,0.9s
KURK Kurchatov 46.77 308 *e*P **P 01 28 34.1 0.0**
comp=Z,189nm,0.9s
KURK LR LR
comp=Z,1μm,20.0s
SEW Seward 46.84 39 *e*P **P 01 28 34.7 +0.2**
comp=Z,112nm,1.1s
PMR Palmer 46.94 37 *e*P **P 01 28 34.9 -0.3**
PMR pmax pmax
comp=Z,99nm,1.0s
PMR Palmer 46.94 37 *e*P **P 01 28 34.9 -0.3**
comp=Z,99nm,1.0s
MCK McKinley 46.99 34 *e*P **P 01 28 35.8 +0.1**
MCK pmax pmax
comp=Z,88nm,1.1s
MCK McKinley 46.99 34 *e*P **P 01 28 35.8 +0.1**
comp=Z,88nm,1.1s
RND Reindeer 47.03 35 *e*P **P 01 28 36.3 +0.3**
RND pmax pmax
comp=Z,190nm,1.2s
RND Reindeer 47.03 35 *e*P **P 01 28 36.3 +0.3**
comp=Z,188nm,1.3s
SPSI Sidrap Palu 47.12 213 P **P 01 28 38.3 +1.2**
comp=Z,15nm,1.9s
PMG Port Moresby 47.14 175 P **P 01 28 36.1 -1.2**
comp=Z,15nm,0.8s,baz=18,slow=14,SNR=5.5
PMG Port Moresby 47.14 175*d i*P **P 01 28 36.0 -1.2**
PMG pmax pmax
comp=Z,108nm,1.2s
PMG Port Moresby 47.14 175 *e*P **P 01 28 36.8 -0.5**
comp=Z,42nm,0.9s
PMG LR LR
comp=Z,355nm,21.0s
MDM Murphy Dome 47.30 33 *e*P **P 01 28 38.7 +0.6**
comp=Z,165nm,1.0s
SML Sawmill 47.31 37 *e*P **P 01 28 38.8 +0.6**
SML pmax pmax
comp=Z,150nm,1.0s
SML Sawmill 47.31 37 *e*P **P 01 28 38.8 +0.6**
comp=Z,150nm,1.0s
WRH Wood River Hil 47.36 33 *e*P **P 01 28 39.2 +0.7**
comp=Z,33nm,0.8s
KSM Kuching 47.37 228 *e*P **P 01 28 39.5 +0.4**
comp=Z,57nm,1.4s
KSM LR LR
comp=Z,346nm,19.0s
COLA College 47.46 33*d i*P **P 01 28 39.2 0.0**
COLA pmax pmax
comp=Z,36nm,1.0s
COLA College 47.46 33 *e*P **P 01 28 40.5 +1.3**
comp=Z,73nm,1.1s
COLA LR LR
comp=Z,570nm,19.0s
CCB Clear Creek Bu 47.48 33 *e*P **P 01 28 39.8 +0.4**
comp=Z,31nm,1.0s
SCM Sheep Creek Mo 47.78 37 *e*P **P 01 28 42.8 +0.9**
SCM pmax pmax
comp=Z,150nm,1.0s
SCM Sheep Creek Mo 47.78 37 *e*P **P 01 28 42.8 +0.9**
comp=Z,147nm,1.0s
STKI Sintang 47.83 226 P **P 01 28 44.2 +1.5**
comp=Z,58nm,1.0s,comp=Z,28μm
ILAR Eielson Array 47.88 33 P **P 01 28 42.5 -0.1**
comp=Z,46nm,0.8s,baz=265,slow=6.4,SNR=314
ILB Eielson Array 47.88 33 *e*P **P 01 28 42.5 -0.1**
IL1 Eielson Array 47.88 33 *e*P **P 01 28 41.3 -1.2**
PDGK Podgornoye 47.90 298 P **P 01 28 43.6 +0.6**
PDGK pmax pmax
comp=Z,94nm,1.1s
KAPI Kappang 48.06 213 P **P 01 28 44.0 -0.5**
comp=Z,18nm,1.1s,baz=48,slow=6.3,SNR=8.1
KAPI Kappang 48.06 213 *e*P **P 01 28 44.9 +0.4**
comp=Z,71nm,1.2s
KAPI LR LR
comp=Z,246nm,22.0s
KLU Klutina 48.48 37 *e*P **P 01 28 48.3 +1.0**
comp=Z,130nm,1.0s
FYU Fort Yukon 48.53 30 *e*P **P 01 28 49.6 +2.1**
comp=Z,252nm,1.4s
PAX Paxson 48.58 35 *e*P **P 01 28 48.2 +0.1**
PAX pmax pmax
comp=Z,48nm,1.2s
PAX Paxson 48.58 35 *e*P **P 01 28 48.2 +0.1**
comp=Z,48nm,1.2s
DIV Divide 48.58 38 *e*P **P 01 28 49.1 +1.1**
comp=Z,224nm,1.1s
EYAK Cordova Ski Ar 48.65 38 *e*P **P 01 28 49.9 +1.4**
comp=Z,130nm,1.0s
GUN Gumba 48.77 276 *e*P **P 01 28 51.5 +1.2**
comp=Z,609nm,1.1s
BBKI Banjar Baru 48.99 219 P **P 01 28 52.1 +0.5**
comp=Z,65nm,1.0s
BMRM Bremner River 49.16 38 *e*P **P 01 28 53.9 +1.4**
comp=Z,135nm,1.1s
DOT Dot Lake 49.16 34 *e*P **P 01 28 52.4 0.0**
comp=Z,306nm,1.6s
RAGM Ragged Mountai 49.19 39 *e*P **P 01 28 54.3 +1.6**
comp=Z,186nm,1.2s
KKN Kakani 49.30 276 *e*P **P 01 28 55.5 +1.3**
comp=Z,253nm,1.0s
PKIN Phulchoki 49.30 276 *e*P **P 01 28 56.1 +1.8**
MENT Mentasta 49.38 35 *e*P **P 01 28 55.6 +1.5**
comp=Z,78nm,1.0s
DMN Daman 49.52 276 *e*P **P 01 28 57.1 +1.2**
KRAB Krabi 49.69 245 P **P 01 28 59.2 +2.2**
comp=Z,65nm,0.7s
AAA Alma-Ata 49.69 298 *i*P **P 01 28 58.1 +1.3**
AAA *i*S S 01 36 19.2 +15
AAA pmax pmax
comp=Z,300nm,2.4s
AAA smax smax
comp=E,500nm,5.3s
AAA MLR MLR
comp=Z,1μm,18.0s
GKN Gorkha 49.71 277 *e*P **P 01 28 58.3 +1.0**
comp=Z,523nm,1.1s
BALM Baldy 50.25 38 *e*P **P 01 29 01.9 +1.1**
BALM pmax pmax
comp=Z,94nm,1.0s
BALM Baldy 50.25 38 *e*P **P 01 29 01.9 +1.1**
comp=Z,94nm,1.1s
EGAK Eagle 50.33 33 *e*P **P 01 29 00.3 -0.9**
comp=Z,51nm,1.2s
EGAK LR LR
comp=Z,587nm,20.0s
KOLN Koldanda 50.63 277 *e*P **P 01 29 05.3 +1.0**
comp=Z,41nm,0.4s
SOEI Soe 50.69 205 *e*P **P 01 29 00.5 -4.2**
comp=Z,79nm,1.1s
KULM Kulim 50.71 241 *e*P **P 01 29 05.2 +0.5**
comp=Z,15nm,0.8s
KULM LR LR
comp=Z,769nm,20.0s
TKM2 Tokmak 2 50.74 298 *e*P **P 01 29 06.0 +1.0**
TKM2 pmax pmax
comp=Z,160nm,1.0s
TKM2 Tokmak 2 50.74 298 *e*P **P 01 29 06.0 +1.0**
comp=Z,163nm,1.0s
TKM2 LR LR
comp=Z,647nm,19.0s
PYUN Piuthan 50.96 278 *e*P **P 01 29 08.0 +1.2**
comp=Z,753nm,1.1s
CHKZ Chkalovo 51.00 313 P **P 01 29 05.9 -0.5**
CHKZ pmax pmax
comp=Z,64nm,1.2s
MYKOM Kota Tinggi 51.13 235 *e*P **P 01 29 09.2 +1.3**
BVA0 Borovoye Array 51.28 312 P **P 01 29 08.9 +0.3**
BVA0 pmax pmax
comp=Z,47nm,0.9s
OTUK Ortayu 51.33 306 P **P 01 29 09.4 +0.3**
OTUK pmax pmax
comp=Z,57nm,1.0s
BRVK Borovoye 51.34 312 *e*P **P 01 29 09.4 +0.4**
BRVK pmax pmax
comp=Z,59nm,1.0s
BRVK Borovoye 51.34 312 *e*P **P 01 29 09.4 +0.4**
comp=Z,59nm,1.0s
BRVK LR LR
comp=Z,902nm,20.0s
FRU Bishkek 51.45 299⇑*i*P **P 01 29 11.0 +0.9**
FRU *i* 01 31 09.0
FRU *e*S **S 01 36 29.0 +0.7**
FRU pmax pmax
comp=Z,180nm,2.0s
FRU smax smax
comp=N,100nm,2.8s
COEN Coen 51.55 180 *e*P **P 01 29 10.9 0.0**
comp=N,68nm,1.0s
AAK Ala-Archa 51.60 298 *i*P **P 01 29 12.0 +0.6**
AAK pmax pmax
comp=Z,71nm,1.1s
AAK Ala-Archa 51.60 298 *e*P **P 01 29 12.0 +0.6**
comp=Z,53nm,1.2s
AAK LR LR
comp=Z,686nm,19.0s
KSH Kashi 51.63 294 P P 01 29 16.7 +5.1
KSH *e*pP sP 01 29 24.2 +0.9
KSH *e*sP pP 01 29 27.8 +7.8
KSH *e*PcP **PcP 01 30 29.2 +4.1**
KSH *e*PP PP 01 31 17.3 +8.3
KSH PcS **PcS 01 34 25.9 +2.8**
KSH S **S 01 36 37.4 +6.4**
KSH ScS **ScS 01 39 00.4 +0.4**
KSH pmax pmax
comp=Z,13nm,1.0s
KSH pmax pmax
comp=Z,260nm,2.9s
KSH LR LR
comp=Z,730nm,15.3s
KSH LR LR
comp=Z,1μm,13.7s
KSH LR LR
comp=Z,1μm,13.9s
MTN Manton Dam 51.77 196 *e*P **P 01 29 12.3 -0.2**
EKS2 Erkin-Say 52.09 299 *e*P **P 01 29 15.9 +0.9**
EKS2 pmax pmax
comp=Z,44nm,1.0s
EKS2 Erkin-Say 52.09 299 *e*P **P 01 29 15.9 +0.9**
comp=Z,44nm,0.9s
EKS2 LR LR
comp=Z,577nm,20.0s
ZRNK Zerenda 52.11 312 P **P 01 29 15.0 +0.2**
ZRNK pmax pmax
comp=Z,63nm,1.0s
ZRNK Zerenda 52.11 312 *e*P **P 01 29 15.3 +0.5**
comp=Z,47nm,0.9s
INK Inuvik 52.87 28 *e*P **P 01 29 20.3 +0.2**
INK pmax pmax
comp=Z,75nm,1.4s
INK Inuvik 52.87 28 *e*P **P 01 29 20.3 +0.2**
comp=Z,75nm,1.4s
MNAS Manas 53.03 299 P **P 01 29 22.8 +0.8**
MNAS pmax pmax
comp=Z,170nm,1.0s
SFK Sufi-Kurgan 53.22 296 P **P 01 29 24.1 +0.6**
SFK pmax pmax
comp=Z,97nm,1.2s
PSI Prapat 53.69 241 *e*P **P 01 29 27.7 +0.7**
PSI pmax pmax
comp=Z,13nm,0.9s
PSI Prapat 53.69 241 *e*P **P 01 29 27.7 +0.7**
comp=Z,13nm,0.9s
SKAG Skagway 53.99 39 *e*P **P 01 29 30.4 +1.9**
comp=Z,52nm,1.2s
KK31 Karatay Array 54.19 300 *i*P **P 01 29 30.8 +0.5**
KK31 pmax pmax
comp=Z,41nm,0.9s
KKAR Karatay Array 54.19 300 *e*P **P 01 29 30.7 +0.4**
KKAR pmax pmax
comp=Z,96nm,1.1s
KKAR Karatay Array 54.19 300 *e*P **P 01 29 30.7 +0.4**
comp=Z,96nm,1.1s
SMRI Semarang 54.31 222 *e*P **P 01 29 31.3 0.0**
MNSI Mandailing Nat 54.70 238 P **P 01 29 38.2 +4.0**
comp=Z,25nm,0.7s
SDSI Sungai Dareh 54.76 235 P **P 01 29 35.9 +1.2**
comp=Z,134nm,0.7s,comp=Z,11μm
CHLP Challavanipeta 54.97 267 *e*P **P 01 29 34.8 -1.5**
CHLP IAmb IAmb 01 29 45.0
comp=Z,17nm,1.1s

CHLP IVMs_BB IVMs_BB 01 57 50.0
comp=Z,261nm,4.2s
NDI New Delhi 55.19 281 *e*P **P 01 29 35.5 -2.2**
SVE Sverdlovsk 55.66 319*d i*P **P 01 29 41.6 +1.0**
SVE *e*S **S 01 37 25.8 +1.0**
SVE pmax pmax
comp=Z,97nm,1.1s
SVE MLR MLR
comp=Z,1µm,14.0s
LEM Lembang 55.66 225 P P 01 29 46.5 +5.2
comp=Z,29nm,0.6s,baz=90,slow=4.7,SNR=12
LEM Lembang 55.66 225 P P 01 29 47.4 +6.1
LHSI Lahat 55.66 231 P **P 01 29 42.4 +1.3**
comp=Z,92nm,1.1s,comp=Z,5µm
KLI Kotabumi 55.67 229 P **P 01 29 43.3 +2.1**
comp=Z,72nm,0.9s,comp=Z,7µm
GSI Gunungsitoli 55.69 241 P **P 01 29 42.7 +1.3**
comp=Z,113nm,1.9s
GSI Gunungsitoli 55.69 241 *e*P **P 01 29 41.9 +0.5**
comp=Z,99nm,1.2s
MASI Maura Aman, Be 55.93 233 P **P 01 29 44.8 +1.7**
comp=Z,159nm,1.3s,comp=Z,4µm
WRAK Wrangell Islan 56.40 42 PFAKE 01 30 00.0 +14
WRAK LR LR
comp=Z,542nm,21.0s
ARU Arti 56.87 319*d i*P **P 01 29 49.9 +0.6**
ARU 01 30 42.7
ARU 01 31 58.4
ARU S **S 01 37 43.0 +2.1**
ARU SS **SS 01 41 27.1 -1.6**
ARU pmax pmax
comp=Z,81nm,1.2s
ARU MLR MLR
comp=Z,1µm,18.0s
ARU Arti 56.87 319 *e*P **P 01 29 49.8 +0.5**
comp=Z,98nm,1.2s
ARU LR LR
comp=Z,601nm,21.0s
DLBC Dease Lake 56.91 39 *e*P **P 01 29 51.4 +1.7**
comp=Z,31nm,0.9s
PVM Polavaram 57.59 267 *e*P **P 01 29 55.4 +0.5**
PVM IAmb IAmb 01 29 59.1
comp=Z,14nm,0.9s
PVM IVMs_BB IVMs_BB 01 55 22.8
comp=Z,166nm,4.2s
CTAO Charters Tower 57.70 177 *e*P **P 01 29 55.7 +0.3**
CTAO pmax pmax
comp=Z,156nm,1.3s
CTAO MLR MLR
comp=Z,366nm,19.0s
CTAO Charters Tower 57.70 177 *e*P **P 01 29 55.7 +0.3**
comp=Z,156nm,1.3s
CTAO LR LR
comp=Z,366nm,19.0s
WRAB Tennant Creek 58.14 190*d i*P **P 01 29 56.6 -1.9**
WRAB pmax pmax
comp=Z,135nm,1.1s
WRAB Tennant Creek 58.14 190 *e*P **P 01 29 57.0 -1.6**
comp=Z,135nm,1.3s
WB2 Warramunga Arr 58.15 190 *e*P **P 01 29 57.6 -1.0**
WRA Warramunga Arr 58.15 190 P **P 01 29 57.0 -1.6**
comp=Z,21nm,0.6s,baz=11,slow=7.3,SNR=72
WRA pP **sP 01 30 10.3 -0.1**
comp=Z,48nm,0.9s,baz=7.5,slow=7.1,SNR=11
FITZ Fitzroy Crossi 58.16 200 P **P 01 29 57.8 -1.0**
comp=Z,19nm,1.1s,baz=28,slow=7.6,SNR=5.7
FITZ Fitzroy Crossi 58.16 200 *e*P **P 01 29 58.9 +0.2**
comp=Z,91nm,1.5s
RPR Rampur 58.55 270 *e*P **P 01 30 01.7 +0.1**
RPR IAmb IAmb 01 30 05.8
comp=Z,37nm,1.0s
RPR IVMs_BB IVMs_BB 02 01 10.2
comp=Z,274nm,4.2s
ABKAR Akbulak array 58.71 310 *e*P **P 01 30 02.4 +0.1**
KBL Kabul 58.71 291 *e*P **P 01 30 03.4 +0.6**
KBL pmax pmax
comp=Z,86nm,1.1s
KBL Kabul 58.71 291 *e*P **P 01 30 03.4 +0.6**
comp=Z,86nm,1.1s
SRSP Sriramsagar 59.26 271 *e*P **P 01 30 06.3 -0.3**
SRSP IAmb IAmb 01 30 10.6
comp=Z,74nm,1.0s
SRSP IVMs_BB IVMs_BB 01 55 19.3
comp=Z,256nm,4.9s
AKTO Aktyubinsk 59.39 312 LR LR 01 57 20.0
comp=Z,486nm,19.0s,baz=68,slow=38
HOPEN Hopen 59.65 346 *e*P **P 01 30 09.7 +1.3**
HOPEN IAmb IAmb 01 30 10.1
comp=Z,86nm,1.0s
NJS Nagarjunasagar 59.82 268 *e*P **P 01 30 10.4 0.0**
NJS IAmb IAmb 01 30 14.5
comp=Z,12nm,0.9s
NJS IVMs_BB IVMs_BB 02 00 48.1
comp=Z,249nm,3.9s
HYBB Hyderabad (bro 59.93 269 *e*P **P 01 30 11.0 -0.2**
HYBB IAmb IAmb 01 30 15.6
comp=Z,28nm,0.9s
HYBB IVMs_BB IVMs_BB 02 01 41.3
comp=Z,212nm,4.4s
HYB Hyderabad 59.93 269 *i*P **P 01 30 12.0 +0.8**
comp=Z,50nm,1.0s
SPA0 Spitsbergen Ar 60.04 349 *e*P **P 01 30 11.3 +0.1**
SPA0 IAmb IAmb 01 30 15.1
comp=Z,60nm,1.2s
SPA0 Spitsbergen Ar 60.04 349 *e*P **P 01 30 12.1 +1.0**
KBS Kingsbay 60.13 350 *e*P **P 01 30 12.2 +0.6**
KBS IAmb IAmb 01 30 13.4
comp=Z,51nm,0.9s
KBS Kingsbay 60.13 350 *e*P **P 01 30 12.9 +1.2**
KBS pmax pmax
comp=Z,49nm,1.0s
KBS Kingsbay 60.13 350 *e*P **P 01 30 12.9 +1.2**
comp=Z,49nm,0.9s
KBS LR LR
comp=Z,473nm,19.0s
SRLM Srisailam 60.40 268 *e*P **P 01 30 14.5 0.0**
SRLM IAmb IAmb 01 30 18.3
comp=Z,18nm,1.1s
SRLM IVMs_BB IVMs_BB 02 00 11.5
comp=Z,281nm,4.1s
RCLA Racherla 60.72 267 *e*P **P 01 30 16.9 +0.3**
RCLA IAmb IAmb 01 30 22.4
comp=Z,19nm,1.0s
RCLA IVMs_BB IVMs_BB 01 58 49.4
comp=Z,206nm,3.7s
HSPB Hornsund (broa 60.99 348 *e*P **P 01 30 17.3 -0.3**
HSPB IAmb IAmb 01 30 19.1
comp=Z,105nm,1.1s
SKHT Srikalahasti 61.11 265 *e*P **P 01 30 19.9 +0.7**
SKHT IAmb IAmb 01 30 21.1
comp=Z,16nm,0.8s
KLRI Killari 61.12 271 *e*P **P 01 30 18.9 -0.4**
KLRI IAmb IAmb 01 30 23.4
comp=Z,46nm,0.8s
KLRI IVMs_BB IVMs_BB 01 58 15.2
comp=Z,384nm,4.7s
AS01 Alice Springs 61.86 190 *e*P **P 01 30 22.2 -1.9**
AS31 Alice Springs 61.87 190 *e*P **P 01 30 23.6 -0.6**
ASAR Alice Springs 61.87 190 P **P 01 30 23.4 -0.8**
comp=Z,11nm,0.9s,baz=11,slow=5.2,SNR=44
ASAR pP **sP 01 30 35.7 -0.3**
comp=Z,18nm,0.8s,baz=10,slow=5.8,SNR=15
LVZ Lovozero 62.05 336⇓ *e*P **P 01 30 25.4 +0.5**
LVZ pmax pmax
comp=Z,45nm,1.1s
LVZ Lovozero 62.05 336 PFAKE 01 30 40.0 +15
LVZ LR LR
comp=Z,847nm,22.0s
YKA Yellowknife Ar 62.23 31 P **P 01 30 25.6 -0.5**
comp=Z,12nm,0.8s,baz=302,slow=6.8,SNR=140
YKA pP **sP 01 30 38.0 +0.1**
comp=Z,10nm,0.7s,baz=296,slow=6.5,SNR=15
APA Apatity 62.63 336⇓ *i*P **P 01 30 30.0 +1.3**
APA pmax pmax
comp=Z,65nm,1.0s
APA MLR MLR
comp=Z,1µm,20.0s
TMCR Tamitsa 62.83 332 *e*P **P 01 30 29.6 -0.5**
TMCR pmax pmax
comp=Z,77nm,0.9s
KEV Kevo 63.27 340 *e*P **P 01 30 33.8 +0.9**
KEV Kevo 63.27 340 *e*P **P 01 30 33.8 +0.9**
comp=Z,51nm,1.0s
KEV LR LR
comp=Z,852nm,19.0s
EIDS Eidsvold 63.29 172 *e*P **P 01 30 33.6 0.0**
comp=Z,45nm,1.3s
HAMF Hammerfest 63.59 341 *e*P **P 01 30 35.7 +0.6**
ARA0 ARCESS Array S 63.82 340 *e*P **P 01 30 37.4 +0.8**
ARCES ARCESS Array B 63.82 340 P **P 01 30 37.4 +0.8**
comp=Z,18nm,0.8s,baz=57,slow=8.8,SNR=17
ARCES LR LR 02 02 54.3
comp=Z,492nm,18.1s,baz=46,slow=40
ARE0 ARCESS Array S 63.82 340 *e*P **P 01 30 37.9 +1.3**
KLMR Klimovskoe 63.96 328 *e*P **P 01 30 36.0 -1.6**
KLMR *e**SP **sP 01 30 49.9 +0.4**
KLMR *e* 01 31 11.8
KLMR *e* 01 32 58.1
KLMR pmax pmax
comp=Z,54nm,1.4s
MSVF Nonsavu 64.10 143 *e*P **P 01 30 40.3 +1.2**
MSVF *e* 01 30 53.0
MSVF Nonsavu 64.10 143 *e*P **P 01 30 40.3 +1.2**
comp=Z,33nm,1.0s
PALK Pallekele 64.21 259 P **P 01 30 40.2 +0.2**
comp=Z,16nm,0.9s,baz=18,slow=20
PALK Pallekele 64.21 259 *i*P **P 01 30 41.4 +1.4**
PGC Sidney 64.52 47 *e*P **P 01 30 42.5 +1.0**
KTK1 Kautokeino 64.78 340 *e*P **P 01 30 43.6 +0.7**
KTK1 IAmb IAmb 01 30 44.1
comp=Z,50nm,0.9s
NLWA Neilton Lookou 64.89 49 *e*P **P 01 30 45.6 +1.6**
comp=Z,111nm,1.3s
NLWA LR LR
comp=Z,238nm,20.0s
A04D Lummi Island 64.92 47 P **P 01 30 44.4 +0.3**
baz=299
GEYT Alibeck 64.92 300 P **P 01 30 44.5 +0.1**
comp=Z,47nm,1.0s,baz=29,slow=3.4,SNR=49
GEYT pP **sP 01 30 56.9 +0.6**
comp=Z,37nm,0.9s,baz=352,slow=3.0,SNR=11
GEYT LR LR 02 00 59.5
comp=Z,841nm,19.1s,baz=45,slow=38
DAG Danmarks Havn 65.09 356⇓ *i*P **P 01 30 44.4 -0.4**
comp=Z,37nm,0.9s
DAG Danmarks Havn 65.09 356⇓ *i*P **P 01 30 44.4 -0.4**
DAG pmax pmax
comp=Z,31nm,0.9s
TRO Tromso 65.48 342 *e*P **P 01 30 47.8 +0.4**
TRO IAmb IAmb 01 30 48.3
comp=Z,47nm,1.0s
E03A Lebam 65.49 49 *e*P **P 01 30 47.3 -0.5**
B05A Bryant 65.50 47 P **P 01 30 48.5 +0.7**
baz=300,SNR=9.5
B05A Bryant 65.50 47 P **P 01 30 48.6 +0.7**
F03A Seaside 65.80 50 *e*P **P 01 30 51.9 +2.1**
F04D Rainier, OR 66.05 49 P **P 01 30 52.1 +0.6**
baz=300
G03D McMinnville, O 66.34 50 P **P 01 30 54.2 +0.8**
baz=300,SNR=6.0
C06D Leavenworth 66.37 47 P **P 01 30 54.2 +0.7**
baz=301
LON Longmire 66.43 48 *e*P **P 01 30 54.8 +0.8**
LON Longmire 66.43 48 *e*P **P 01 30 54.8 +0.8**
F04A Amboy 66.48 49 *e*P **P 01 30 55.5 +1.2**
NLW Nelson Butte 66.61 47 P **P 01 30 55.9 +0.7**
COR Corvallis 66.63 51 *e*P **P 01 30 57.2 +2.0**
COR Corvallis 66.63 51 *e*P **P 01 30 57.2 +2.0**
comp=Z,106nm,1.3s
GLK Glacier Lake 66.64 48 P **P 01 30 56.4 +0.9**
KULLO Kullorsuaq 66.99 6 *i*P **P 01 30 56.4 -0.6**
comp=Z,1µm,18.0s
KULLO Kullorsuaq 66.99 6 *i*P **P 01 30 56.4 -0.6**
KULLO MLR MLR
comp=Z,1µm,18.0s
NAC Naches 67.02 48 P **P 01 30 58.9 +1.2**
B08A Colville Reser 67.04 46 *e*P **P 01 30 58.5 +0.7**
I03D Drain, OR 67.06 52 P **P 01 30 59.0 +1.1**
baz=301,SNR=13
EBG Ellensburg 67.08 48 P **P 01 30 59.1 +0.9**
H04A Detroit Lake 67.27 50 *e*P **P 01 31 00.2 +0.9**
G05D Wamic, OR 67.50 50 P **P 01 31 01.8 +1.0**
baz=302,SNR=5.5
I04A Tendick Farm, 67.59 51 P **P 01 31 01.8 +0.4**
baz=301,SNR=19
MOS Moscow 67.59 324 *e*P **P 01 31 00.7 -0.4**
MOS *e* 01 31 27.4
MOS *e* 01 33 33.5
MOS *e*S **S 01 39 56.8 +0.8**
MOS pmax pmax
comp=Z,200nm,1.5s
MOS pmax pmax
comp=Z,96nm,1.4s
MOS MLR MLR
comp=Z,1µm,16.0s
L02D Cave Junction, 67.69 53 P **P 01 31 03.2 +1.2**
baz=301,SNR=6.3
HUMO Hull Mountain 67.87 53 *e*P **P 01 31 04.5 +1.4**
comp=Z,122nm,1.4s
G06A Carlson Farm, 67.92 49 *e*P **P 01 31 04.5 +1.1**
C09A Chrisman Ranch 67.94 46 *e*P **P 01 31 04.2 +0.7**
HAWA Hanford 67.96 48 *e*P **P 01 31 04.6 +1.0**
comp=Z,45nm,1.5s
HAWA LR LR
comp=Z,234nm,21.0s
D08A Wollman Farm, 67.96 47 *e*P **P 01 31 04.3 +0.7**
I05D Terrebonne, OR 67.96 50 P **P 01 31 04.6 +0.9**
baz=302,SNR=7.5
VRH Novokhopyorsk 68.11 318 *e*P **P 01 31 04.9 +0.5**
VRH *e**PP **sP 01 31 15.1 -1.2**
VRH *e* 01 31 28.1
VRH *e* 01 33 36.9
VRH pmax pmax
comp=Z,40nm,1.3s
VRH MLR MLR
comp=Z,730nm,13.0s
KHMM Horse Mountain 68.28 55 *e*P **P 01 31 08.2 +2.3**
NEW Newport 68.34 45 P **P 01 31 05.9 -0.1**
baz=303,SNR=20
NEW Newport 68.34 45 *e*P **P 01 31 06.0 -0.1**
NEW Newport 68.34 45 *e*P **P 01 31 06.0 0.0**
NEW LR LR
comp=Z,274nm,19.0s
PUL Pulkovo 68.34 330⇑ *e*P **P 01 31 06.7 +1.0**
PUL pmax pmax
comp=Z,132nm,1.0s
ARMA Armidale 68.34 173 *e*P **P 01 31 06.5 +0.4**
comp=Z,75nm,1.3s
OBN Obninsk 68.45 324*d i*P **P 01 31 06.2 -0.3**
OBN *i* 01 31 18.8
OBN *i*S S 01 39 55.9 -10
OBN pmax pmax
comp=Z,38nm,1.1s
OBN MLR MLR
comp=Z,945nm,16.0s
OBN Obninsk 68.45 324 *e*P **P 01 31 07.2 +0.7**
comp=Z,82nm,1.3s
OBN LR LR
comp=Z,277nm,19.0s
YBH Yreka Blue Hor 68.48 53 LR LR 01 54 35.3
comp=Z,78nm,19.8s,baz=294,slow=30
YBH Yreka Blue Hor 68.48 53 *e*P **P 01 31 08.6 +1.5**
YBH Yreka Blue Hor 68.48 53 *e*P **P 01 31 08.6 +1.5**
comp=Z,41nm,1.3s
M02C Callahan 68.57 54 P **P 01 31 08.5 +0.8**
baz=302,SNR=12
J05D Fort Rock, OR 68.58 51 P **P 01 31 08.3 +0.5**
baz=302,SNR=19
K04D Chiloquin, OR 68.61 52 P **P 01 31 08.2 +0.3**
baz=302
E09A Wood Farm, Sta 68.70 47 *e*P **P 01 31 09.1 +0.8**
LPSR Galich'ya Gora 68.75 321 *e*P **P 01 31 09.5 +1.1**
LPSR *e**PP **sP 01 31 21.3 +0.9**
LPSR *e* 01 31 31.3
LPSR *e* 01 33 41.1
LPSR pmax pmax
comp=Z,40nm,0.9s
LPSR MLR MLR
comp=Z,560nm,13.0s
FIA1 FINESS Array S 68.87 333 *e*P **P 01 31 09.2 +0.2**
FINES FINESS Array B 68.87 333 P **P 01 31 09.1 +0.1**
comp=Z,30nm,0.8s,baz=46,slow=8.2,SNR=79
FINES LR LR 02 04 54.9
comp=Z,999nm,18.9s,baz=43,slow=39
N02D Trinity Center 68.89 54 P **P 01 31 10.2 +0.6**
baz=302,SNR=7.5
G08A Pilot Rock 68.89 49 *e*P **P 01 31 10.4 +0.8**
M04C Macdoel 69.01 53 P **P 01 31 10.7 +0.3**
baz=302,SNR=14
K05A Summer Lake 69.09 52 *e*P **P 01 31 11.6 +0.6**
MOR8 Moi Rana 69.17 340 *e*P **P 01 31 09.7 -1.1**
MOR8 IAmb IAmb 01 31 10.6
comp=Z,47nm,0.9s
STKA Stephens Creek 69.41 182 P **P 01 31 12.2 -0.4**
comp=Z,4.6nm,0.6s,baz=340,slow=8.3,SNR=8.8
STKA LR LR 02 02 01.9
comp=Z,140nm,21.0s,baz=11,slow=36
STKA Stephens Creek 69.41 182 *e*P **P 01 31 12.2 -0.4**
STKA *e* 01 31 25.1
STKA Stephens Creek 69.41 182 *e*P **P 01 31 12.2 -0.4**
STKA *e*PcP **sP 01 31 25.1 +0.6**
VSR Storozhevoye 69.43 319 *e*P **P 01 31 13.4 +0.8**
VSR *e**PP **sP 01 31 23.6 -1.0**
VSR *e* 01 31 35.4
VSR *e* 01 33 48.0
VSR pmax pmax
comp=Z,40nm,1.3s
VSR MLR MLR
comp=Z,760nm,15.0s
F10A Beach Ranch, E 69.53 47 *e*P **P 01 31 14.2 +0.7**
WALA Waterton Lakes 69.67 43 *e*P **P 01 31 15.1 +0.7**
O03D Paynes Creek 69.83 54 P **P 01 31 15.4 0.0**
baz=303,SNR=18
SUMG Summit 69.85 1⇓ *i*P **P 01 31 16.1 +0.7**
comp=Z,60nm,0.9s
SUMG Summit 69.85 1⇓ *i*P **P 01 31 16.1 +0.7**
SUMG pmax pmax
comp=Z,60nm,0.9s
SUMG Summit 69.85 1 *e*P **P 01 31 15.6 +0.2**
comp=Z,80nm,1.1s
BSMT Bassoo Peak 69.87 45 *e*P **P 01 31 16.6 +0.9**
MOD Modoc Plateau 69.91 52 *e*P **P 01 31 16.7 +0.7**
comp=Z,30nm,1.3s
BLMT Blacktail Moun 70.02 44 *e*P **P 01 31 17.6 +1.0**
BMO Blue Mountains 70.11 48 *e*P **P 01 31 17.6 +0.5**
comp=Z,22nm,1.1s
BMO LR LR
comp=Z,223nm,19.0s
JTMT Jette 70.21 45 *e*P **P 01 31 18.6 +0.8**
YBMT Yellow Bay 70.30 44 *e*P **P 01 31 19.1 +0.8**
ORV Oroville 70.43 55 *e*P **P 01 31 19.5 +0.4**
ORV *e* 01 31 32.4
ORV Oroville 70.43 55 *e*P **P 01 31 19.5 +0.4**
ORV *e*PcP **sP 01 31 32.4 +1.4**
SWMT Swartz Lake 70.50 45 *e*P **P 01 31 19.9 +0.4**
VSU Vasula 70.60 330*d i*P **P 01 31 20.1 +0.4**
VSU pmax pmax
comp=Z,221nm,1.2s
WVOR Wild Horse Val 70.65 51 *e*P **P 01 31 21.5 +1.0**
WVOR pmax pmax
comp=Z,48nm,1.4s
WVOR MLR MLR
comp=Z,279nm,19.0s
WVOR Wild Horse Val 70.65 51 *e*P **P 01 31 21.4 +1.0**
comp=Z,48nm,1.4s
WVOR LR LR
comp=Z,279nm,19.0s
BBOO Buckleboo 70.66 187 *e*P **P 01 31 19.7 -0.5**
comp=Z,46nm,1.0s
GOF Gofitskoye 70.81 312⇑ *i*P **P 01 31 22.8 +1.5**
GOF pmax pmax
comp=Z,85nm,0.9s
MSO Missoula 70.93 45 P **P 01 31 21.6 -0.5**
baz=305,SNR=5.4
MSO Missoula 70.93 45 *e*P **P 01 31 22.4 +0.3**
AFDM Forest Hills D 71.10 55 *e*P **P 01 31 23.8 +0.6**
CHMT Chamberlain Mo 71.26 45 *e*P **P 01 31 24.2 0.0**
GUDG Gudauri 71.42 310 P **P 01 31 27.8 +2.5**
SCO Scoresbysund 71.45 355 *i*P **P 01 31 25.5 +0.8**
comp=Z,30nm,1.1s
SCO Scoresbysund 71.45 355 *i*P **P 01 31 25.5 +0.8**
SCO pmax pmax
comp=Z,30nm,1.1s
DUS Dusheti 71.49 309 P **P 01 31 29.9 +4.3**
DUS Dusheti 71.49 309 P **P 01 31 29.9 +4.3**
ZEI Tsey 71.58 310 *e*P **P 01 31 24.6 -1.7**
ZEI pmax pmax
comp=Z,86nm,1.2s
KIV Kislovodsk 71.65 312 *e*P **P 01 31 27.0 +0.5**
KIV *e* 01 34 06.7
KIV *e*S **S 01 40 45.0 +0.7**
KIV *e*SS **SS 01 45 22.3 +3.1**
KIV pmax pmax
comp=Z,31nm,2.5s
KIV pmax pmax
comp=Z,135nm,1.1s
KIV Kislovodsk 71.65 312 *e*P **P 01 31 27.6 +1.1**
comp=Z,221nm,1.3s
KIV LR LR
comp=Z,479nm,20.0s
KBZ Khabaz 71.65 311 P **P 01 31 27.9 +1.6**
comp=Z,40nm,0.9s,baz=57,slow=4.3,SNR=83
KBZ LR LR 02 07 11.7
comp=Z,341nm,18.2s,baz=43,slow=39
TBLG Delisi 71.67 309 P **P 01 31 28.4 +1.8**
TBLG Delisi 71.67 309 P **P 01 31 28.4 +1.8**
MFID Camas Ranch 71.80 49 *e*P **P 01 31 28.3 +0.9**
ONI Oni 71.97 310 P **P 01 31 30.6 +2.2**
ONI Oni 71.97 310 P **P 01 31 30.6 +2.2**
CMB Columbia Colle 71.99 56 *e*P **P 01 31 29.4 +0.8**
CMB Columbia Colle 71.99 56 *e*P **P 01 31 29.4 +0.8**
comp=Z,233nm,1.4s
WAKR Walker 72.35 55 *e*P **P 01 31 31.6 +0.7**
LRM Limekiln Ridge 72.35 45 *e*P **P 01 31 31.0 +0.1**
FCC Fort Churchill 72.49 27 *e*P **P 01 31 31.1 0.0**
FCC Fort Churchill 72.49 27 *e*P **P 01 31 31.1 0.0**
EGMT Eagleton 72.51 42 P **P 01 31 31.3 -0.3**
baz=307,SNR=14
EGMT Eagleton 72.51 42 *e*P **P 01 31 31.8 +0.2**
comp=Z,47nm,1.3s
EGMT LR LR
comp=Z,298nm,21.0s
DLMT Dillon 72.54 46 *e*P **P 01 31 32.3 +0.4**
HLID Hailey 72.55 48 P **P 01 31 32.3 +0.3**
baz=306,SNR=28
HLID Hailey 72.55 48 *e*P **P 01 31 32.5 +0.5**
HLID LR LR
comp=Z,187nm,20.0s
GNI Garni 72.57 307*d i*P **P 01 31 33.2 +1.1**
GNI pmax pmax
comp=Z,170nm,1.2s
GNI Garni 72.57 307 P **P 01 31 34.5 +2.3**
SNR=22
GNI Garni 72.57 307 P **P 01 31 34.5 +2.3**
SNR=22
GNI Garni 72.57 307 *e*P **P 01 31 33.3 +1.1**
comp=Z,509nm,1.2s
GNI LR LR
comp=Z,365nm,20.0s
IZAR Zarasai 72.62 328 *e*P **P 01 31 31.4 -0.5**
IZAR IAmb IAmb 01 31 33.6
comp=Z,10nm,0.9s
AKH Akhalkalaki 72.62 309 P **P 01 31 34.8 +2.3**
AKH Akhalkalaki 72.62 309 P **P 01 31 34.8 +2.3**
BGD Bogdanovka 72.64 309 P **P 01 31 34.7 +2.0**
ILULI Ilulissat 72.69 5 *i*P **P 01 31 32.1 0.0**
comp=Z,46nm,1.1s
comp=Z,670nm,21.0s
ILULI Ilulissat 72.69 5 *i*P **P 01 31 32.1 0.0**
ILULI pmax pmax
comp=Z,46nm,1.1s
ILULI MLR MLR
comp=Z,670nm,21.0s
IDID Didziasalis 72.70 328 *e*P **P 01 31 32.2 -0.2**
IDID IAmb IAmb 01 31 34.3
comp=Z,16nm,0.9s
MCMT McKenzie Canyo 72.72 46 *e*P **P 01 31 33.2 +0.2**
CHVG Ch'k'valeri 72.72 311⇓ *i*P **P 01 31 33.6 +0.8**
CHVG Ch'k'valeri 72.72 311 P **P 01 31 34.5 +1.7**
MICGM Minsk 72.76 327 *e* **P 01 31 33.0 +0.2**
MNK Minsk 72.76 327 *e*P **P 01 31 33.0 +0.2**
BOZ Bozeman (W) 72.92 45 P **P 01 31 34.4 +0.2**
baz=307,SNR=39
BOZ Bozeman (W) 72.92 45 *e*P **P 01 31 34.1 0.0**
BOZ pmax pmax
comp=Z,33nm,1.1s
BOZ MLR MLR
comp=Z,221nm,19.0s
BOZ Bozeman (W) 72.92 45 *e*P **P 01 31 34.1 0.0**
comp=Z,33nm,1.1s
BOZ LR LR
comp=Z,221nm,19.0s
NACGM Naroch 72.96 327 *e* **P 01 31 34.0 0.0**
NACGM *e*LQ LQ 01 59 28.0
NACGM *e*LR LR 02 04 24.0
EAK Akyaka 72.97 308 *i*P **P 01 31 34.6 +0.1**

EPOS	Posof	73.04	310	*i* P		P	01 31 36.8 +1.9
NVAR	Mina Array Bea	73.12	54	P		P	01 31 36.1 +0.6
	comp=Z,10nm,0.9s,baz=285,slow=6.1,SNR=44						
NVAR				LR		LR	01 56 18.5
	comp=Z,168nm,21.7s,baz=275,slow=30						
UOSS	Minazif	73.17	289	*e*P		P	01 31 36.3 +0.6
MLAC	Mammoth, Mammo	73.23	55	P		P	01 31 36.6 +0.4
	baz=305						
QLMT	Earthquake Lak	73.52	46	*e*P		P	01 31 38.7 +0.9
SOC	Sochi	73.61	313	*d* *i*P		P	01 31 38.0 0.0
SOC				*e**SP		sP	01 31 51.1 +1.1
SOC				*e*			01 34 19.6
SOC				*e*PPP		PPP	01 36 08.8
SOC				*e*S		SKiKP	01 41 04.6 -1.4
SOC				*e*			01 41 39.7
SOC				*e*SSS		SSS	01 49 06.6
SOC				pmax		pmax	
	comp=Z,29nm,0.9s						
SOC				MLR		MLR	
	comp=Z,454nm,15.0s						
ELK	Elko	73.70	51	*e*P		P	01 31 40.0 +1.0
ELK	Elko	73.70	51	*e*P		P	01 31 40.0 +1.0
	comp=Z,24nm,1.4s						
ARTV	Artvin	73.71	310	*i* P		P	01 31 40.1 +1.2
RCTC	Rector, Farmer	73.72	57	P		P	01 31 38.8 0.0
	baz=305						
DBOC	Borcka	73.78	310	*i* P		P	01 31 40.3 +1.2
DAGI	Agillar	73.78	310	*i* P		P	01 31 39.9 +0.6
SMMC	Simmler	73.79	58	P		P	01 31 40.1 +0.8
	baz=305						
ARQ	Araqi	73.84	287	P		P	01 31 42.6 +2.9
	SNR=8.7						
ARQ	Araqi	73.84	287	P		P	01 31 42.6 +2.9
	SNR=8.7						
YMR	Madison River	73.89	46	*e*P		P	01 31 41.1 +1.2
GCMT	Greycliff	73.92	44	*e*P		P	01 31 40.5 +0.5
DBAD	Bademkaya	73.95	310	*i* P		P	01 31 41.5 +1.3
TIN	Tinemaha, Big	73.96	55	P		P	01 31 40.9 +0.5
	baz=306						
VMUR	Van-Muradiye	73.98	307	*i* P		P	01 31 40.2 -0.3
DDEM	Demirkent	73.99	309	*i* P		P	01 31 37.9 -2.6
NB2	NORSAR Subarra	74.07	338	P		P	01 31 40.3 -0.2
	comp=Z,50nm,1.1s,baz=40,slow=6.2						
NB2	NORSAR Subarra	74.07	338	P		P	01 31 40.3 -0.2
	baz=40,slow=6.2						
NB2	NORSAR Subarra	74.07	338	P		P	01 31 40.2 -0.2
NB2				pmax		pmax	
	comp=Z,42nm,1.1s						
NOA	NORSAR Array B	74.07	338	P		P	01 31 40.6 +0.1
	comp=Z,17nm,0.9s,baz=38,slow=5.8,SNR=48						
NOA				pP		sP	01 31 53.5 +1.0
	comp=Z,30nm,1.0s,baz=39,slow=5.8,SNR=12						
NOA				LR		LR	02 09 46.2
	comp=Z,788nm,19.3s,baz=30,slow=40						
YFT	Old Faithful	74.09	46	*e*P		P	01 31 43.7 +2.5
VES	Vestal, Richgr	74.10	57	P		P	01 31 40.5 -0.5
	baz=305,SNR=7.8						
EATA	Eleskirt	74.14	308	*i* P		P	01 31 42.2 +0.6
PKM	Mcpherson Peak	74.16	58	P		P	01 31 41.7 +0.1
	baz=305						
ANN	Anapa	74.18	315	*e*P		P	01 31 41.7 +0.4
ANN				*e*S		S	01 41 14.0 +1.2
ANN				pmax		pmax	
	comp=Z,72nm,1.3s						
LKWY	Lake	74.27	46	*e*P		P	01 31 44.2 +2.0
LKWY				pmax		pmax	
	comp=Z,34nm,1.1s						
LKWY				MLR		MLR	
	comp=Z,334nm,21.0s						
LKWY	Lake	74.27	46	*e*P		P	01 31 44.2 +2.0
	comp=Z,34nm,1.1s						
LKWY				LR		LR	
	comp=Z,334nm,21.0s						
H17A	Grant Village	74.27	46	P		P	01 31 43.9 +1.7
	baz=308,SNR=47						
H17A	Grant Village	74.27	46	*e*P		P	01 31 44.0 +1.7
	comp=Z,61nm,1.0s						
TVAN	Van	74.35	307	*i* P		P	01 31 43.8 +1.1
IMW	Indian Meadow	74.37	46	*e*P		P	01 31 43.5 +0.6
	comp=Z,44nm,1.0s						
FLWY	Flagg Ranch	74.39	46	*e*P		P	01 31 44.4 +1.5
	comp=Z,71nm,1.3s						
HOMI	Horasan	74.40	309	*i* P		P	01 31 44.1 +1.1
CWC	Cottonwood Cre	74.41	56	P		P	01 31 43.6 +0.5
	baz=306						
FXWY	Fox Creek	74.48	47	*e*P		P	01 31 44.4 +1.0
GRAC	Grapevine Rang	74.56	55	P		P	01 31 44.2 +0.5
	baz=306						
RLMT	Red Lodge	74.56	45	P		P	01 31 44.4 +0.5
	baz=308,SNR=12						
RLMT	Red Lodge	74.56	45	*e*P		P	01 31 44.8 +0.9
	comp=Z,51nm,1.3s						
RLMT				LR		LR	
	comp=Z,213nm,20.0s						
MOOW	Moose Ponds	74.57	46	*e*P		P	01 31 44.7 +0.7
HVU	Hansel Valley	74.58	49	*e*P		P	01 31 45.1 +1.1
HVU	Hansel Valley	74.58	49	*e*P		P	01 31 45.1 +1.1
ISA	Isabella, Lake	74.61	57	P		P	01 31 43.4 -0.7
	baz=306						
ISA	Isabella, Lake	74.61	57	*e*P		P	01 31 46.1 +2.0
ISA	Isabella, Lake	74.61	57	*e*P		P	01 31 46.1 +2.0
AKASG	Malin Array Be	74.68	323	P		P	01 31 43.8 -0.3
	comp=Z,14nm,0.7s,baz=44,slow=6.1,SNR=66						
AKASG				pP		sP	01 31 56.0 0.0
	comp=Z,7.1nm,0.5s,baz=45,slow=6.0,SNR=8.9						
AKASG				LR		LR	02 07 57.7
	comp=Z,599nm,18.2s,baz=45,slow=38						
ARVC	Arvin	74.68	57	P		P	01 31 44.0 -0.4
	baz=306						
KIEV	Kiev	74.69	323	*d* *i*P		P	01 31 43.9 -0.3
KIEV				pmax		pmax	
	comp=Z,31nm,1.0s						
KIEV	Kiev	74.69	323	*e*P		P	01 31 44.6 +0.5
	comp=Z,61nm,1.2s						
KIEV				LR		LR	
	comp=Z,566nm,20.0s						
LOHW	Long Hollow	74.74	46	*e*P		P	01 31 46.1 +1.2
SNOW	Snow King Moun	74.74	47	*e*P		P	01 31 46.4 +1.4
	comp=Z,36nm,1.1s						
REDW	Red Top Meadow	74.75	47	*e*P		P	01 31 45.8 +0.8
	comp=Z,64nm,1.2s						
EKAR	Karacoban	74.77	308	*i* P		P	01 31 46.7 +1.5
DAC	Darwin (Calif)	74.83	56	*e*P		P	01 31 45.9 +0.4
DAC	Darwin (Calif)	74.83	56	*e*P		P	01 31 45.9 +0.4
	comp=Z,17nm,1.1s						
R11A	Troy Canyon, C	74.90	53	P		P	01 31 45.8 -0.1
	baz=306,SNR=38						
R11A	Troy Canyon, C	74.90	53	*e*P		P	01 31 46.0 +0.1
SFJD	Kangerlussuaq	74.91	6	*i* P		P	01 31 45.2 +0.1
	comp=Z,32nm,1.0s						
SFJD	Kangerlussuaq	74.91	6	*i* P		P	01 31 45.2 +0.1
SFJD				pmax		pmax	
	comp=Z,32nm,1.0s						
SFJD	Kangerlussuaq	74.91	6	*e*P		P	01 31 45.6 +0.5
SFJD				LR		LR	
	comp=Z,521nm,21.0s						
BGU	Big Grassy Mou	74.94	50	*e*P		P	01 31 46.9 +0.9
AHID	Auburn Hatcher	74.97	47	*e*P		P	01 31 47.0 +0.8
AHID				LR		LR	
	comp=Z,239nm,20.0s						
MPMC	Manual Prospec	75.02	56	P		P	01 31 46.2 -0.4
	baz=306,SNR=14						
OSI	Osito Audit: C	75.05	58	P		P	01 31 47.0 +0.4
	baz=306						
SPUT	South Promonto	75.06	49	*e*P		P	01 31 47.8 +1.0
SUW	Suwalki	75.10	328	*e*P		P	01 31 46.7 +0.2
SUW	Suwalki	75.10	328	*e*P		P	01 31 46.7 +0.2
BLG	Laguna Peak, P	75.11	58	P		P	01 31 46.8 -0.2
	baz=306						
DGMT	Dagmar	75.12	40	P		P	01 31 46.4 -0.4
	baz=311,SNR=6.7						
DGMT	Dagmar	75.12	40	*e*P		P	01 31 46.2 -0.6
	comp=Z,77nm,1.3s						
DGMT				LR		LR	
	comp=Z,445nm,20.0s						
FURC	Furnace Creek,	75.19	55	P		P	01 31 47.3 0.0
	baz=306,SNR=12						
LAO	LASA Array	75.22	42	P		P	01 31 47.4 0.0
	baz=310						
LAO	LASA Array	75.22	42	*e*P		P	01 31 48.2 +0.8
LAO				LR		LR	
	comp=Z,318nm,22.0s						
LRMC	Laurel Mtn Rad	75.24	57	P		P	01 31 47.6 -0.2
	baz=306,SNR=8.0						
KOPT	Kop Dagi	75.28	309	*i* P		P	01 31 49.1 +0.9
SNCC	San Nicolas Is	75.30	59	P		P	01 31 48.4 +0.3
	baz=306						
TPNV	Topopah Spring	75.31	55	P		P	01 31 48.3 +0.1
	baz=306,SNR=15						
TPNV	Topopah Spring	75.31	55	*e*P		P	01 31 47.9 -0.4
TPNV	Topopah Spring	75.31	55	*e*P		P	01 31 47.9 -0.4
A25A	Svangstu Ranch	75.35	39	P		P	01 31 47.9 -0.2
	baz=311						
EDW2	Edwards Air Fo	75.38	57	P		P	01 31 48.7 +0.1
	baz=306,SNR=8.4						
BMUT	Black Mountain	75.39	48	*e*P		P	01 31 49.0 +0.2
HWUT	Hardware Ranch	75.41	49	*e*P		P	01 31 49.1 +0.3
	comp=Z,65nm,1.2s						
HWUT				LR		LR	
	comp=Z,189nm,19.0s						
DUG	Dugway, Tooele	75.52	50	P		P	01 31 50.0 +0.6
	baz=308,SNR=38						
DUG	Dugway, Tooele	75.52	50	*e*P		P	01 31 49.7 +0.3
DUG	Dugway, Tooele	75.52	50	*e*P		P	01 31 49.7 +0.3
DUG				LR		LR	
	comp=Z,255nm,19.0s						
BNGL	BINGOL	75.52	308	*i* P		P	01 31 51.5 +2.1
DECC	Green Verdugo	75.52	58	P		P	01 31 49.3 -0.1
	baz=306						
SIRN	S¨–rnak	75.60	306	*i* P		P	01 31 49.9 +0.1
KONO	Kongsberg	75.67	338	*e*P		P	01 31 50.4 +0.8
KONO	Kongsberg	75.67	338	*e*P		P	01 31 50.4 +0.8
	comp=Z,19nm,1.1s						
KONO				LR		LR	
	comp=Z,887nm,20.0s						
MWC	Mount Wilson	75.72	58	*e*P		P	01 31 51.2 +0.5
MWC	Mount Wilson	75.72	58	*e*P		P	01 31 51.2 +0.5
B25A	Knox Farm, Ray	75.77	39	P		P	01 31 50.4 -0.1
	baz=312						
TCUT	Toone Canyon	75.80	49	*e*P		P	01 31 52.1 +1.0
BW06	Boulder Array	75.86	47	P		P	01 31 51.1 -0.3
	baz=309,SNR=30						
BW06	Boulder Array	75.86	47	*e*P		P	01 31 51.0 -0.4
BW06				LR		LR	
	comp=Z,218nm,20.0s						
PD31	Pinedale Array	75.86	47	*e*P		P	01 31 51.5 0.0
PDAR	Pinedale Array	75.86	47	P		P	01 31 51.4 -0.1
	comp=Z,12nm,0.9s,baz=270,slow=3.0,SNR=69						
PDAR				pP		PcP	01 32 04.0 +0.1
	comp=Z,11nm,0.6s,baz=269,slow=2.3,SNR=12						
PSUT	Pine Spring	75.88	52	*e*P		P	01 31 52.3 +0.8
A26A	Wade Farm, Ken	75.91	38	P		P	01 31 51.2 -0.1
	baz=312						
SHOC	Shoshone, Teco	75.91	55	P		P	01 31 51.8 +0.3
	baz=307						
GSC	Goldstone, Bar	75.92	56	P		P	01 31 51.8 +0.1
	baz=306,SNR=6.6						
GSC	Goldstone, Bar	75.92	56	*e*P		P	01 31 52.1 +0.4
GSC	Goldstone, Bar	75.92	56	*e*P		P	01 31 52.1 +0.4
SIM	Simferopol'	75.92	316	*e*P		P	01 31 52.1 +0.7
SIM				*e*			01 32 04.0
SIM				*e*			01 34 41.0
SIM				*e*PPP		PPP	01 36 26.0
SIM				*e*S		S	01 41 33.0 +0.8
SIM				*e*SS		SS	01 46 31.0 +7.0
SIM				pmax		pmax	
	comp=Z,30nm,0.9s						
KELT	Kelkit	75.96	310	*i* P		P	01 31 50.5 -1.4
EUZM	Uzumlu	75.96	309	*i* P		P	01 31 53.5 +1.7
CIS	Catalina Islan	75.97	59	P		P	01 31 51.8 -0.1
	baz=306						
BFSC	Mount Baldy Ra	75.98	58	P		P	01 31 51.8 -0.3
	baz=306						
RRX	Edison Barstow	76.05	57	P		P	01 31 52.5 +0.2
	baz=306						
BTMN	Batman	76.08	307	*i* P		P	01 31 53.3 +0.8
JLU	Jordanelle	76.09	49	*e*P		P	01 31 53.6 +0.8
C25A	Freed Ranch, W	76.09	40	P		P	01 31 52.4 0.0
	baz=312						
NLU	North Lily Min	76.11	50	*e*P		P	01 31 53.8 +0.9
SCI2	San Clemente I	76.12	59	P		P	01 31 53.4 +0.6
	baz=306						
B26A	Jensen Ranch,	76.16	39	P		P	01 31 52.9 +0.1
	baz=312						
A27A	Ledoux Ranch,	76.26	38	P		P	01 31 53.3 0.0
	baz=313						
SHPR	Sheep Range	76.27	54	*e*P		P	01 31 54.7 +0.9
ORDU	Ordu-Boztepe	76.28	311	*i* P		P	01 31 53.5 -0.1
TNCL	Tunceli-Merkez	76.42	309	*i* P		P	01 31 54.5 0.0
TUQ	Turquoise Moun	76.42	56	P		P	01 31 54.5 -0.1
	baz=307						
D25A	Fairfield	76.43	40	P		P	01 31 54.2 -0.2
	baz=312						
BBRC	Big Bear Solar	76.46	57	P		P	01 31 54.4 -0.6
	baz=307						
HEC	Hector,Ludlow	76.51	56	P		P	01 31 55.0 0.0
	baz=307,SNR=6.4						
SUSE	Susehri	76.56	311	*i* P		P	01 32 00.4 +5.1
C26A	Wahner Farm, P	76.60	39	P		P	01 31 55.2 0.0
	baz=312						
B27A	Peters Farms,	76.62	38	P		P	01 31 55.1 -0.3
	baz=313						
MURC	Murrieta	76.67	58	P		P	01 31 56.0 +0.1
	baz=307						
MARD	Mardin	76.75	307	*i* P		P	01 31 56.3 -0.1
A28A	Rude Farm, Bot	76.76	37	P		P	01 31 55.9 -0.2
	baz=313,SNR=19						
E25A	Miller Ranch,	76.82	41	P		P	01 31 56.4 -0.2
	baz=312,SNR=14						
SORM	Soroca	76.82	322	⇓ *i* P		P	01 31 55.9 -0.5
MSU	Marysvale	76.93	51	*e*P		P	01 31 58.4 +0.9
MSU	Marysvale	76.93	51	*e*P		P	01 31 58.4 +0.9
D26A	Manning	76.96	40	P		P	01 31 57.1 -0.3
	baz=312,SNR=7.2						
KEMA	Kemaliye	76.96	310	*i* P		P	01 31 57.5 -0.1
C27A	Sayler Ranch,	76.97	39	P		P	01 31 57.4 +0.1
	baz=313						
GMRC	Granite Mounta	76.98	56	P		P	01 31 57.9 +0.2
	baz=307,SNR=6.8						
CUZAR	Zara_SIVAS	77.02	311	*i* P		P	01 31 59.6 +1.8
B28A	Dugan Ranch, T	77.03	38	P		P	01 31 57.4 -0.2
	baz=313,SNR=6.3						
SAMS	Samsun-Alacam	77.03	313	*i* P		P	01 31 56.8 -0.9
BORG	Borgarnes	77.04	353	*e*P		P	01 31 58.9 +1.6
BORG				pmax		pmax	
	comp=Z,55nm,0.9s						
BORG	Borgarnes	77.04	353	*e*P		P	01 31 58.9 +1.6
	comp=Z,55nm,0.9s						
TMUT	Trail Mountain	77.04	50	*e*P		P	01 31 59.0 +0.8
ERBA	Erbaa	77.13	312	*i* P		P	01 31 58.3 -0.1
109C	Camp Elliot, M	77.15	58	P		P	01 31 58.6 +0.1
	baz=307						
PFO	Pinyon Flats O	77.16	57	P		P	01 31 58.5 -0.3
	baz=307						
PFO	Pinyon Flats O	77.16	57	*e*P		P	01 31 59.0 +0.2
PFO	Pinyon Flats O	77.16	57	*e*P		P	01 31 59.0 +0.2
PFO				LR		LR	
	comp=Z,478nm,21.0s						
TPFO	Pinon Flats	77.16	57	P		P	01 31 58.6 -0.1
	baz=307						
LDFC	Landfair	77.16	56	*e*P		P	01 31 59.3 +0.6
F25A	Bowman	77.17	41	P		P	01 31 58.5 0.0
	baz=312,SNR=8.4						
LCMT	Little Creek M	77.19	53	*e*P		P	01 32 00.1 +1.2
P17A	Butcher Ranch,	77.22	50	*e*P		P	01 32 00.1 +1.0
MTPU	Mount Pierson	77.22	52	*e*P		P	01 32 00.7 +1.4
BELC	Belle Mtn. Jos	77.23	57	P		P	01 31 58.5 -0.7
	baz=307						
A29A	Manning Farm,	77.25	37	P		P	01 31 58.8 -0.1
	baz=314,SNR=45						
Q16A	Castle Valley	77.30	50	*e*P		P	01 32 00.6 +1.1
E26A	Carlson Angus	77.32	40	P		P	01 31 59.0 -0.3
	baz=312						
KIS	Kishinev	77.36	320	*e*P		P	01 32 05.0 +5.5
KIS				*e*S		S	01 41 45.0 -2.9
KIS	Kishinev	77.36	320	*e*P		P	01 32 05.0 +5.5
KIS				*e*			01 36 50.0
KIS				*e*S		S	01 41 45.0 -2.9
KIS				*e*PS		PnS	01 42 18.0 -11
KIS				MLR		MLR	
	comp=Z,900nm,16.0s						
KIS				MLR		MLR	
	comp=N,600nm,17.0s						
KIS				MLR		MLR	
	comp=E,500nm,15.0s						
KIS				MLR		MLR	
	comp=Z,900nm,16.0s						
D27A	Center	77.37	39	P		P	01 31 59.0 -0.6
	baz=313						
P18A	Preston Nutter	77.42	49	*e*P		P	01 32 00.5 +0.2
HAVZ	Havza	77.49	313	*i* P		P	01 31 56.9 -3.4
B29A	Wagenman Farm,	77.51	37	P		P	01 31 60.0 -0.3
	baz=314,SNR=28						
PKCU	Pink Cliffs	77.51	52	*e*P		P	01 32 02.5 +1.5
BSD	Bornholm Skovb	77.51	333	*i* P		P	01 32 00.5 +0.4
	comp=Z,54nm,1.1s						
BSD				*i*			01 32 13.4
BSD	Bornholm Skovb	77.51	333	*i* P		P	01 32 00.5 +0.4
BSD				*i*			01 32 13.4
BSD				pmax		pmax	
	comp=Z,54nm,1.1s						
BSD				MLR		MLR	
	comp=Z,790nm,19.0s						
C28A	Hausauer Farms	77.52	38	P		P	01 32 00.5 +0.1
	baz=313						
CUKAN	kangal_SIVAS	77.56	310	*i* P		P	01 32 01.5 +0.5
SRU	San Rafael Swe	77.58	50	*e*P		P	01 32 01.6 +0.5
SRU	San Rafael Swe	77.58	50	*e*P		P	01 32 01.6 +0.5
F26A	Lodgepole	77.63	41	P		P	01 32 00.8 -0.4
	baz=312						
K22A	Casper	77.66	45	P		P	01 32 01.0 -0.4
	baz=310,SNR=15						
K22A	Casper	77.66	45	*e*P		P	01 32 01.5 0.0
MMU	Miners Mountai	77.67	51	*e*P		P	01 32 02.3 +0.6
BEL	Belsk	77.67	328	*e*P		P	01 32 02.4 +1.3
BEL	Belsk	77.67	328	*e*P		P	01 32 02.4 +1.3
A30A	Hoffart Farm,	77.68	37	P		P	01 32 00.6 -0.6
	baz=314,SNR=30						
G25A	Newell	77.68	42	P		P	01 32 01.4 0.0
	baz=312						
IRM	Iron Mountain	77.70	56	P		P	01 32 01.4 -0.2
	baz=308,SNR=7.4						
LVV	L`vov	77.70	325	*e*P		P	01 32 01.8 +0.5
LVV				*e*			01 34 58.4
LVV				*e*S		S	01 41 51.6 +0.1
LVV				*e*SS		SS	01 46 54.2 +3.6
LVV				MLR		MLR	
	comp=Z,800nm,15.0s						
BOYT	Boyabat	77.74	313	*i* P		P	01 32 03.0 +1.3
D28A	Regan	77.79	39	P		P	01 32 01.4 -0.6
	baz=313						
BC3	Big Chuckawall	77.80	57	P		P	01 32 01.6 -0.7
	baz=307						
E27A	Carson	77.81	40	P		P	01 32 01.6 -0.5
	baz=313,SNR=5.4						
MDND	Maddock	77.81	38	P		P	01 32 01.6 -0.5
	baz=314,SNR=6.1						
MDND	Maddock	77.81	38	*e*P		P	01 32 02.2 +0.2
	comp=Z,183nm,1.3s						
IAS	Iasi	77.86	321 ⇑ *i* P			P	01 32 04.9 +2.7
ULM	Lac du Bonnet	77.86	34	P		P	01 32 01.6 -0.6
	comp=Z,22nm,0.9s,baz=316,slow=6.2,SNR=18						
COP	Copenhagen	77.94	334	*i* P		P	01 32 03.0 +0.5
	comp=Z,30nm,1.0s						
	comp=Z,450nm,15.0s						
COP	Copenhagen	77.94	334	*i* P		P	01 32 03.0 +0.5
COP				pmax		pmax	
	comp=Z,30nm,1.0s						
COP				MLR		MLR	
	comp=Z,450nm,15.0s						
H25A	Fruitdale	77.97	42	P		P	01 32 02.0 -1.0
	baz=312						
IKP	In-Ko-Pah, Jac	77.97	58	P		P	01 32 02.2 -1.1
	baz=307						
SWSC	Sam W. Stewart	78.00	58	P		P	01 32 03.3 +0.1
	baz=307						
B30A	Myrvik Farm, E	78.01	37	P		P	01 32 02.6 -0.5
	baz=314,SNR=36						
CUALT	Altinyayla-SIV	78.01	311	*i* P		P	01 32 04.4 +1.0
G26A	Maurine	78.04	41	P		P	01 32 02.6 -0.8
	baz=312,SNR=6.7						
RSSD	Black Hills	78.06	43	P		P	01 32 03.2 -0.6
	baz=312						
RSSD	Black Hills	78.06	43	*e*P		P	01 32 03.7 -0.1
RSSD	Black Hills	78.06	43	*e*P		P	01 32 03.7 -0.1
E28A	Huff	78.15	39	P		P	01 32 03.4 -0.6
	baz=313						
A31A	Linda, St. Vin	78.20	36	P		P	01 32 03.6 -0.5
	baz=315						
CUSAR	Sarkisla-SIVAS	78.23	311	*i* P		P	01 32 05.9 +1.3
PDMCI	Parker Dam,Lak	78.27	56	P		P	01 32 04.6 -0.1
	baz=308,SNR=5.0						
O20A	White River Ci	78.29	48	P		P	01 32 04.7 -0.3
	baz=310,SNR=15						
O20A	White River Ci	78.29	48	*e*P		P	01 32 04.9 -0.2
	comp=Z,46nm,1.2s						
I25A	Rochford	78.30	43	P		P	01 32 04.4 -0.6
	baz=312,SNR=16						
G27A	Dupree	78.33	41	P		P	01 32 04.7 -0.3
	baz=313						
B31A	Greenbush Farm	78.35	37	P		P	01 32 04.2 -0.8
	baz=315						
Y12C	Blythe	78.35	56	P		P	01 32 05.1 -0.1
	baz=308,SNR=5.7						
Y12C	Blythe	78.35	56	*e*P		P	01 32 06.0 +0.7
D29A	Pettibone, Tap	78.36	39	P		P	01 32 04.4 -0.7
	baz=314						
SURC	SANLIURFA_SURC	78.38	308	*i* P		P	01 32 05.6 +0.2
PRAR	RASCA	78.39	322 ⇑ *i* P			P	01 32 06.3 +1.0
MUD	Monsted U'grnd	78.41	336	*i* P		P	01 32 05.5 +0.4
	comp=Z,27nm,1.2s						
MUD	Monsted U'grnd	78.41	336	*i* P		P	01 32 05.5 +0.4
MUD				pmax		pmax	
	comp=Z,27nm,1.2s						
H26A	Fairpoint	78.41	42	P		P	01 32 05.0 -0.4
	baz=312,SNR=8.0						
COAL	Corum-Alaca	78.44	312	*i* P		P	01 32 05.7 0.0
KWP	Kalwaria Pacla	78.44	325	*e*P		P	01 32 06.9 +1.5
KWP	Kalwaria Pacla	78.44	325 ⇑ *i* P			P	01 32 06.6 +1.1
KWP	Kalwaria Pacla	78.44	325	*e*P		P	01 32 06.9 +1.5
C30A	Mose, Pekin	78.46	38	P		P	01 32 04.6 -1.0
	baz=314,SNR=15						
A32A	Rocking H Ranc	78.54	36	P		P	01 32 05.0 -0.9
	baz=316,SNR=10						
GLA	Glamis	78.58	57	P		P	01 32 06.6 0.0
	baz=308,SNR=5.9						
GLA	Glamis	78.58	57	*e*P		P	01 32 07.2 +0.6
GLA	Glamis	78.58	57	*e*P		P	01 32 07.2 +0.6
ILGA	Ilgaz	78.66	313	*i* P		P	01 32 07.5 +0.4
E29A	Napoleon	78.68	39	P		P	01 32 05.8 -1.1
	baz=314						
BURAR	Bucovina Array	78.71	323 ⇑ *i* P			P	01 32 07.7 +0.6
GZT	Gaziantep	78.73	309	*i* P		P	01 32 08.6 +1.1
D30A	Buchanan	78.74	38	P		P	01 32 06.3 -0.8
	baz=314,SNR=12						
C31A	Landman Farms,	78.75	37	P		P	01 32 06.6 -0.6
	baz=315,SNR=5.7						
H27A	Howes	78.76	42	P		P	01 32 06.9 -0.5
	baz=313,SNR=13						
TESR	Tescani	78.78	321 ⇓ *i* P			P	01 32 06.9 -0.5
PV09	Paradox

STHS	Stebnicka Huta	79.25	326	eP	P	01 32 11.4	+1.5
STHS				e		01 32 23.6	
D31A	Mcclaflin, Tow	79.28	38	P	P	01 32 09.3	-0.8
baz=315,SNR=5.1							
OJC	Ojcow	79.29	327	eP	P	01 32 11.4	+1.3
OJC	Ojcow	79.29	327	eP	P	01 32 11.0	+0.9
OJC	Ojcow	79.29	327	eP	P	01 32 11.0	+0.9
TIRR	Tirgusor	79.30	319⇑	iP	P	01 32 11.0	+0.8
TIRR	Tirgusor	79.30	319	P	P	01 32 10.9	+0.8
WUAZ	Wupatki	79.30	53	P	P	01 32 11.0	+0.3
baz=309,SNR=18							
WUAZ	Wupatki	79.30	53	eP	P	01 32 11.5	+0.9
comp=Z,38nm,1.1s							
WUAZ				LR	LR		
comp=Z,260nm,21.0s							
C32A	Crookston	79.30	36	P	P	01 32 09.4	-0.8
baz=316							
ANDN	Andirin	79.34	309	iP	P	01 32 11.7	+1.0
UZH	Uzhgorod	79.35	325⇓	iP	P	01 32 11.0	+0.6
UZH				e		01 32 17.0	
PV01	Paradox Valley	79.38	50	eP	P	01 32 11.4	+0.3
KUZU	Kuzuini	79.40	308	iP	P	01 32 12.2	+1.2
B33A	Robert and Kas	79.42	36	P	P	01 32 09.8	-1.0
baz=316							
AVNS	Nevsehir-Avano	79.45	311	iP	P	01 32 11.6	+0.3
BMR	Baia Mare	79.48	323⇑	iP	P	01 32 13.0	+1.8
G29A	Hoven	79.49	40	P	P	01 32 10.9	-0.4
baz=314							
ARCR	ARCALIA	79.50	323⇑	iP	P	01 32 13.6	+2.3
F30A	Leola	79.50	39	P	P	01 32 10.2	-1.2
baz=314							
CRVS	Cervenica-Dubn	79.53	325	eP	P	01 32 12.2	+0.8
CRVS				e		01 32 24.7	
CRVS	Cervenica-Dubn	79.53	325	eP	P	01 32 12.2	+0.8
CRVS				e		01 32 24.7	
E31A	Nome	79.55	38	P	P	01 32 11.0	-0.6
baz=315,SNR=5.4							
D32A	Dogwood Acres,	79.56	37	P	P	01 32 10.6	-1.0
baz=316							
BR131	Keskin Array S	79.57	313	eP	P	01 32 12.9	+1.0
BRTR	Keskin Array B	79.57	313	P	P	01 32 12.9	+1.0
comp=Z,15nm,1.1s,baz=103,slow=3.9,SNR=39							
BRTR				LR	LR	02 12 22.3	
comp=Z,169nm,19.6s,baz=42,slow=39							
BRTR	Keskin Array B	79.57	313	P	P	01 32 13.0	+1.0
BRTR				pmax	pmax		
comp=Z,15nm,1.1s							
TRPA	Tarpa	79.60	324⇑	eP	P	01 32 13.4	+1.6
SMCO	Snowmass	79.66	48	eP	P	01 32 13.3	+0.5
NIE	Niedzica	79.67	326	eP	P	01 32 13.9	+1.7
NIE	Niedzica	79.67	326	eP	P	01 32 13.9	+1.7
I28A	Midland	79.67	42	P	P	01 32 12.1	-0.3
baz=313,SNR=16							
B34A	Aery, Baudette	79.69	35	P	P	01 32 11.2	-1.1
baz=317,SNR=5.9							
C33A	Trail	79.70	36	P	P	01 32 11.6	-0.8
baz=316							
PGOR	Pogoanele	79.72	320⇓	iP	P	01 32 14.4	+1.9
H29A	Onida	79.74	41	P	P	01 32 12.1	-0.6
baz=314,SNR=8.8							
J27A	Elkhorn Farm,	79.74	43	P	P	01 32 12.4	-0.4
baz=313							
BCAM	Yenicaga	79.76	314	iP	P	01 32 13.0	0.0
ISR	Istrita	79.80	320⇑	iP	P	01 32 13.0	0.0
MLR	Muntele Rosu	79.84	321⇑	iP	P	01 32 14.3	+0.9
MLR	Muntele Rosu	79.84	321	eP	P	01 32 14.3	+0.9
F31A	Hecla	79.87	39	P	P	01 32 12.8	-0.5
baz=315							
E32A	Braaten, Kindr	79.92	38	P	P	01 32 12.8	-0.8
baz=316							
G30A	Faulkton	79.93	40	P	P	01 32 12.8	-0.9
baz=314							
ANTO	Ankara	79.97	313	eP	P	01 32 15.4	+1.3
ANTO	Ankara	79.97	313	eP	P	01 32 15.4	+1.3
ANTO				LR	LR		
comp=Z,10.0nm,19.0s							
BBAL	Bala	79.99	313	iP	P	01 32 13.4	-0.9
BR231	Keskin MP Arra	79.99	313	eP	P	01 32 15.8	+1.6
MVCO	Mesa Verde	80.01	50	P	P	01 32 14.4	-0.2
baz=310,SNR=14							
MVCO	Mesa Verde	80.01	50	eP	P	01 32 14.4	-0.2
comp=Z,41nm,1.1s							
MVCO				LR	LR		
comp=Z,239nm,21.0s							
ISCO	Idaho Springs	80.04	47	P	P	01 32 14.8	0.0
baz=311,SNR=17							
ISCO	Idaho Springs	80.04	47	eP	P	01 32 15.6	+0.8
ISCO	Idaho Springs	80.04	47	eP	P	01 32 15.6	+0.8
ISCO				LR	LR		
comp=Z,218nm,21.0s							
I29A	Vivian Onida	80.11	41	P	P	01 32 13.9	-0.8
baz=314,SNR=7.5							
D33A	AnnSam, Waubun	80.12	37	P	P	01 32 13.4	-1.2
baz=316,SNR=6.0							
CJR	Cluj-Napoca	80.12	323⇑	iP	P	01 32 16.0	+1.2
C34A	RKJ Ranch, Bem	80.18	36	P	P	01 32 13.5	-1.5
baz=317							
AKSY	AKSARAY - Alti	80.20	312	iP	P	01 32 16.2	+0.8
B35A	Bob, Littlefor	80.20	35	P	P	01 32 14.2	-0.8
baz=318,SNR=10							
LANS	Liptovska Anna	80.23	327	eP	P	01 32 17.4	+2.1
LANS	Liptovska Anna	80.23	327	eP	P	01 32 17.4	+2.1
SULR		80.26	320⇓	iP	P	01 32 16.2	+0.8
KECS	Kecovo	80.28	326	eP	P	01 32 16.7	+1.2
KECS				pmax	pmax		
comp=Z,5.0nm,0.9s							
KECS	Kecovo	80.28	326	eP	P	01 32 16.7	+1.2
KECS				ePP	PP	01 35 25.5	+7.9
KSP	Ksiaz	80.28	329	eP	P	01 32 16.7	+1.2
KSP	Ksiaz	80.28	329	eP	P	01 32 16.7	+1.2
OKC	Ostrava-Krasne	80.28	328⇑	eP	P	01 32 16.8	+1.3
OKC				epP	PcP	01 32 22.0	-0.6
OKC				ex	x	01 32 29.1	
OKC				AMS	AMS	02 12 10.0	
comp=Z,700nm,15.2s							
OKC	Ostrava-Krasne	80.28	328	eP	P	01 32 16.8	+1.3
OKC				e		01 32 22.0	
OKC				e		01 32 29.1	
OKC				MLR	MLR		
comp=Z,700nm,15.2s							
VOIR		80.33	321⇑	iP	P	01 32 16.8	+0.9
G31A	Conde	80.34	39	P	P	01 32 15.3	-0.5
baz=315							
KKUL	Konya-Kulu	80.35	312	iP	P	01 32 16.7	+0.5
F32A	Veblen	80.41	38	P	P	01 32 15.5	-0.8
baz=316							
D34A	Park Rapids	80.46	36	P	P	01 32 15.5	-1.0
baz=317,SNR=14							
YAYL	Yayladag	80.47	308	iP	P	01 32 15.5	-1.4
DRGR		80.49	323⇑	iP	P	01 32 17.3	+0.5
E33A	Westby DABS, E	80.50	37	P	P	01 32 15.9	-0.9
baz=316,SNR=6.0							
SUSD	Miller	80.51	40	P	P	01 32 16.3	-0.6
baz=315							
C35A	Jirik Farms, M	80.58	35	P	P	01 32 15.9	-1.2
baz=317,SNR=11							
MORC	Moravsky Berou	80.58	328⇑	iP	P	01 32 18.5	+1.3
MORC	Moravsky Berou	80.58	328	eP	P	01 32 18.5	+1.3
MORC	Moravsky Berou	80.58	328	eP	P	01 32 18.5	+1.3
ARR	Arges	80.58	321⇑	iP	P	01 32 19.3	+2.0
W18A	Petrified Fore	80.59	53	P	P	01 32 18.3	+0.6
baz=310							
214A	Organ Pipe Nat	80.59	57	P	P	01 32 17.8	+0.3
baz=309,SNR=5.6							
I30A	Oacoma	80.64	41	P	P	01 32 17.0	-0.5
baz=314,SNR=8.7							
DPC	Dobruska-Polom	80.65	329⇑	iP	P	01 32 19.1	+1.6
DPC				ex	x	01 32 31.4	
DPC				ex	x	01 32 35.4	
DPC				ePP	PP	01 35 15.9	-4.8
DPC				AMS	AMS	02 18 20.0	
comp=Z,700nm,15.9s							
DPC	Dobruska-Polom	80.65	329⇑	iP	P	01 32 19.1	+1.6
DPC				e		01 32 31.4	
DPC				e		01 35 15.9	
DPC				MLR	MLR		
comp=Z,700nm,15.9s							
UPC	Upice	80.66	329⇑	eP	P	01 32 18.9	+1.4
UPC				ex	x	01 32 31.2	
UPC				eS	S	01 42 25.1	+2.2
UPC				AMS	AMS	02 12 40.0	
comp=Z,800nm,17.6s							
UPC	Upice	80.66	329	eP	P	01 32 18.9	+1.4
UPC				e		01 32 31.2	
UPC				eS	S	01 42 25.1	+2.2
UPC				MLR	MLR		
comp=Z,800nm,17.6s							
G32A	Webster	80.67	39	P	P	01 32 17.1	-0.6
baz=316							
KRLC	Kraliky	80.67	328⇑	eP	P	01 32 19.0	+1.4
KRLC				epP	PcP	01 32 23.6	-0.8
KRLC				ex	x	01 32 30.6	
KRLC				ePP	PP	01 35 16.3	-4.6
KRLC	Kraliky	80.67	328	eP	P	01 32 19.0	+1.4
KRLC				e		01 32 30.6	
KRLC				e		01 35 16.3	
S22A	4UR Ranch, Cre	80.67	49	P	P	01 32 19.0	+0.8
baz=311,SNR=33							
DED	Mersin	80.68	310	iP	P	01 32 15.1	-2.8
H31A	Wolsey	80.73	40	P	P	01 32 17.6	-0.4
baz=315							
KERG	Konya-Eregli	80.79	310	iP	P	01 32 16.8	-1.9
MVH1	Achvaich	80.81	343	eP	P	01 32 18.8	+0.7
F33A	5 Mile Ranch,	80.84	38	P	P	01 32 18.1	-0.5
baz=316,SNR=17							
Q24A	Divide	80.86	47	P	P	01 32 19.1	-0.1
baz=312,SNR=11							
E34A	Wadena	80.89	37	P	P	01 32 18.0	-0.8
baz=317							
PSZ	Piszkesteto	80.96	325⇓	iP	P	01 32 20.7	+1.4
PSZ	Piszkesteto	80.96	325⇓	eP	P	01 32 20.1	+0.8
PSZ	Piszkesteto	80.96	325	eP	P	01 32 19.6	+0.4
PSZ				pmax	pmax		
comp=Z,84nm,1.4s							
PSZ				MLR	MLR		
comp=Z,499nm,21.0s							
PSZ	Piszkesteto	80.96	325	eP	P	01 32 19.6	+0.4
comp=Z,84nm,1.4s							
PSZ				LR	LR		
comp=Z,499nm,21.0s							
D35A	Remer	81.00	36	P	P	01 32 18.4	-0.9
baz=318							
VYHS	Vyhne	81.00	326	eP	P	01 32 20.4	+1.0
VYHS				e		01 32 32.2	
VYHS				pmax	pmax		
comp=Z,23nm,1.4s							
VYHS	Vyhne	81.00	326	eP	P	01 32 20.4	+1.0
VYHS				e		01 32 32.2	
VYHS				ePP	PP	01 35 36.6	+13
I31A	Royce, Wessing	81.02	40	P	P	01 32 19.0	-0.6
baz=315							
J30A	Dallas	81.02	41	P	P	01 32 19.4	-0.2
baz=314							
C36A	Pine Crest Far	81.05	35	P	P	01 32 18.8	-0.9
baz=318,SNR=8.6							
MME1	Meikle Cairn	81.07	342	eP	P	01 32 20.0	+0.4
BRG	Berggiesshubel	81.19	330	eP	P	01 32 21.3	+1.0
comp=Z,36nm,1.3s							
BRG				e		01 32 33.7	
comp=Z,29nm,1.0s							
BRG				ePP	PP	01 35 10.4	-15
comp=Z,5.4nm,1.0s							
BRG				S	S	01 42 28.0	-0.5
comp=N,514nm,15.7s							
comp=E,302nm,16.6s							
comp=Z,730nm,14.6s							
BRG	Berggiesshubel	81.19	330	eP	P	01 32 21.3	+1.0
BRG				e		01 32 33.7	
BRG				S	S	01 42 28.0	-0.5
BRG				pmax	pmax		
comp=Z,6.0nm,1.3s							
BRG				MLR	MLR		
comp=N,5μm,15.7s							
BRG				MLR	MLR		
comp=E,514nm,16.6s							
BRG				MLR	MLR		
comp=Z,302nm,14.6s							
CLL	Collm	81.21	331⇓	iP	P	01 32 20.6	+0.2
comp=Z,45nm,1.0s							
CLL				iPP	sP	01 32 33.3	+0.9
comp=Z,53nm,1.0s							
CLL				eS	S	01 42 26.0	-2.6
comp=N,100nm,13.1s							
CLL				eS	S	01 42 26.0	-2.6
comp=E,200nm,19.2s							
CLL				eSS	SS	01 47 48.0	+5.1
CLL				LmH		02 06 00.0	
comp=N,800nm,19.5s							
CLL				LmH		02 06 00.0	
comp=E,900nm,19.7s							
CLL				LmV		02 13 00.0	
comp=Z,700nm,18.8s							
CLL	Collm	81.21	331⇓	iP	P	01 32 20.6	+0.2
CLL				i *PP	sP	01 32 33.3	+0.9
CLL				eS	S	01 42 26.0	-2.6
CLL				pmax	pmax		
comp=Z,45nm,1.0s							
CLL				MLR	MLR		
comp=Z,700nm,18.8s							
CLL	Collm	81.21	331	eP	P	01 32 21.1	+0.6
E35A	Pequot Lakes	81.22	36	P	P	01 32 19.8	-0.8
baz=317							
PVCC	Panska Ves	81.22	330⇑	eP	P	01 32 22.0	+1.5
PVCC				epP	PcP	01 32 26.8	+0.1
PVCC				ex	x	01 32 34.3	
PVCC				AMS	AMS	02 15 00.0	
comp=Z,700nm,14.4s							
PVCC	Panska Ves	81.22	330	eP	P	01 32 22.0	+1.5
PVCC				e		01 32 34.3	
PVCC				MLR	MLR		
comp=Z,700nm,14.4s							
G33A	Ortonville	81.23	38	P	P	01 32 19.9	-0.7
baz=316,SNR=15							
H32A	Carlson Farm,	81.23	39	P	P	01 32 20.0	-0.7
baz=316							
KDHN	Kadinhani	81.25	312	iP	P	01 32 20.4	-0.6
MDO	Dochfour	81.29	343	eP	P	01 32 21.4	+0.7
OGNE	Ogallala	81.30	44	P	P	01 32 20.9	-0.3
baz=313,SNR=7.5							
OGNE	Ogallala	81.30	44	eP	P	01 32 21.5	+0.3
comp=Z,78nm,1.1s							
OGNE				LR	LR		
comp=Z,292nm,21.0s							
ESKT	Eskisehir	81.31	314	iP	P	01 32 20.2	-1.1
VRAC	Vranov	81.34	328⇓	iP	P	01 32 22.6	+1.4
VRAC	Vranov	81.34	328	P	P	01 32 22.6	+1.4
C37A	Embarrass	81.36	34	P	P	01 32 19.8	-1.5
baz=319,SNR=7.6							
SIRR	Siria	81.37	323⇑	iP	P	01 32 22.0	+0.6
F34A	Alexandria	81.37	37	P	P	01 32 20.4	-1.0
baz=317,SNR=6.0							
K30A	Basset	81.41	42	P	P	01 32 21.0	-0.7
baz=314,SNR=7.3							
SZH	Strazhica	81.41	319	P	P	01 32 23.0	+1.4
J31A	Geddes	81.43	41	P	P	01 32 21.3	-0.4
baz=315							
KAC	Achnashellach	81.45	344	eP	P	01 32 22.6	+1.0
H33A	Prehn Over Nor	81.45	39	P	P	01 32 21.4	-0.5
baz=316,SNR=9.0							
SDCO	Great Sand Dun	81.47	48	P	P	01 32 22.8	+0.4
baz=312,SNR=28							
SDCO	Great Sand Dun	81.47	48	eP	P	01 32 23.2	+0.8
SDCO				LR	LR		
comp=Z,228nm,20.0s							
EYMN	Ely	81.51	34	P	P	01 32 21.0	-1.1
baz=319,SNR=5.3							
EYMN	Ely	81.51	34	eP	P	01 32 21.9	-0.2
comp=Z,36nm,1.0s							
EYMN				LR	LR		
comp=Z,263nm,20.0s							
I32A	Karley and Nic	81.56	40	P	P	01 32 21.6	-0.8
baz=316							
G34A	Benson	81.59	38	P	P	01 32 21.7	-0.9
baz=317,SNR=6.9							
SMOL	Smolenice	81.59	327	eP	P	01 32 23.9	+1.4
SMOL				e		01 32 36.5	
SMOL	Smolenice	81.59	327	eP	P	01 32 23.9	+1.4
SMOL				e		01 32 36.5	
GOPC	GO Pecny, Ondr	81.61	329⇑	eP	P	01 32 23.9	+1.3
GOPC				ex	x	01 32 36.1	
GOPC				ex	x	01 32 40.7	
GOPC				eS	S	01 42 33.3	+0.4
GOPC				AMS	AMS	02 14 20.0	
comp=Z,700nm,17.6s							
GOPC	GO Pecny, Ondr	81.61	329	eP	P	01 32 23.9	+1.3
GOPC				e		01 32 36.1	
GOPC				eS	S	01 42 33.3	+0.4
GOPC				MLR	MLR		
comp=Z,700nm,17.6s							
F35A	Swanville	81.65	37	P	P	01 32 22.2	-0.7
baz=317							
PRU	Pruhonice	81.65	330⇑	eP	P	01 32 24.0	+1.2
PRU				ex	x	01 32 36.4	
PRU				eS	S	01 42 34.9	+1.6
PRU				AMS	AMS	02 11 20.0	
comp=Z,900nm,16.9s							
PRU	Pruhonice	81.65	330	eP	P	01 32 24.0	+1.2
PRU				e		01 32 36.4	
PRU				eS	S	01 42 34.9	+1.6
PRU				MLR	MLR		
comp=Z,900nm,16.9s							
KPL	Plockton	81.67	344	eP	P	01 32 23.8	+1.1
KPL				AMB	AMB	01 32 24.8	
comp=Z,97nm,1.1s							
BUD	Budapest	81.68	326	P	P	01 32 25.1	+2.2
TUC	Tucson	81.70	55	P	P	01 32 23.9	+0.4
baz=310							
TUC	Tucson	81.70	55	eP	P	01 32 23.9	+0.4
TUC	Tucson	81.70	55	eP	P	01 32 23.9	+0.4
TUC				LR	LR		
comp=Z,268nm,20.0s							
KSB	Sheil Bridge	81.74	344	eP	P	01 32 23.9	+0.9
C38A	Sawbill Land,	81.78	34	P	P	01 32 22.4	-1.1
baz=319,SNR=5.4							
E36A	McGregor	81.78	36	P	P	01 32 22.4	-1.1
baz=318,SNR=8.4							
TREC	Trest	81.81	329⇑	eP	P	01 32 24.9	+1.2
TREC				ex	x	01 32 37.1	
TREC				eS	S	01 42 36.8	+1.8
TREC				AMS	AMS	02 13 40.0	
comp=Z,1μm,15.8s							
TREC	Trest	81.81	329	eP	P	01 32 24.9	+1.2
TREC				e		01 32 37.1	
TREC				eS	S	01 42 36.8	+1.8
TREC				MLR	MLR		
comp=Z,1μm,15.8s							
J32A	Parkston	81.83	40	P	P	01 32 23.1	-0.8
baz=316							
ULDT	Uludag	81.86	315	iP	P	01 32 25.7	+1.4
BZS	Buzias	81.87	323⇑	iP	P	01 32 24.6	+0.6
I33A	Coleman	81.88	39	P	P	01 32 23.7	-0.5
baz=316							
K31A	O'Neill	81.89	41	P	P	01 32 24.0	-0.3
baz=315,SNR=9.0							
H34A	Spellman Lake,	81.94	38	P	P	01 32 24.1	-0.3
baz=317							
ERMK	Ermenek	82.03	311	iP	P	01 32 24.1	-1.2
CSKK	Cs˘‡kako	82.11	326⇓	eP	P	01 32 26.6	+1.4
E37A	Wrenshall	82.14	35	P	P	01 32 24.5	-0.9
baz=319							
G35A	Watkins	82.16	37	P	P	01 32 25.3	-0.3
baz=317							
L31A	Butterfield Fa	82.17	42	P	P	01 32 24.8	-0.9
baz=315,SNR=9.2							
ECSD	EROS Data Cent	82.20	39	P	P	01 32 24.9	-0.9
baz=316,SNR=20							
ECSD	EROS Data Cent	82.20	39	eP	P	01 32 25.7	-0.1
ECSD				LR	LR		
comp=Z,326nm,20.0s							
C39A	Grand Marais	82.20	33	P	P	01 32 24.8	-0.9
baz=320							
ESY	Stoneypath	82.24	342	eP	P	01 32 26.4	+0.6
MOX	Moxa	82.27	331	P	P	01 32 26.9	+0.9
K32A	Verdigre	82.28	41	P	P	01 32 25.4	-0.8
baz=316							
NKC	Novy Kostel	82.28	331⇑	eP	P	01 32 27.2	+1.1
NKC				ex	x	01 32 40.0	
NKC				ex	x	01 32 43.9	
NKC				eS	S	01 42 42.1	+2.3
NKC				AMS	AMS	02 16 00.0	
comp=Z,800nm,13.7s							
NKC	Novy Kostel	82.28	331	eP	P	01 32 27.2	+1.1
NKC				e		01 32 40.0	
NKC				eS	S	01 42 42.1	+2.3
NKC				MLR	MLR		
comp=Z,800nm,13.7s							
KSCO	Kaye Shedlock'	82.29	46	P	P	01 32 26.4	-0.1
baz=313							
KSCO	Kaye Shedlock'	82.29	46	eP	P	01 32 26.3	-0.1
comp=Z,16nm,0.8s							
J33A	Davis	82.32	40	P	P	01 32 25.6	-0.8
baz=316							
H35A	Sunnyside Ranc	82.38	38	P	P	01 32 26.5	-0.2
baz=317,SNR=14							
BAGO	Egridir - ISPA	82.38	313	iP	P	01 32 24.3	-2.6
GDZ	Gediz	82.39	314	iP	P	01 32 25.9	-1.1
EAB	Aberfoyle	82.42	343	eP	P	01 32 26.6	-0.1
PHNC	Paralimni	82.43	309	P	P	01 32 26.2	-0.9
MDVR	Moldovita	82.44	322⇓	iP	P	01 32 27.6	+0.5
ASF	Jabal al Asfar	82.45	305	PP	PP	01 35 40.6	+4.5
comp=Z,7.6nm,1.2s,baz=321,slow=5.7,SNR=4.9							
MPEP	Malo Peshtene	82.47	320	P	P	01 32 28.3	+1.1
G36A	St. Michael	82.50	37	P	P	01 32 26.5	-0.8
baz=318							
T25A	Trinidad	82.52	48	P	P	01 32 27.7	-0.1
baz=312,SNR=20							
DURS	Dursunbey	82.60	315	iP	P	01 32 26.1	-2.0
SOP	Sopron	82.61	327⇓	eP	P	01 32 28.9	+1.1
SOP	Sopron	82.61	327	P	P	01 32 29.5	+1.7
GAZI	Gazipasa	82.66	311	iP	P	01 32 27.9	-0.4
LAZ	Ladron	82.68	52	eP	P	01 32 29.3	+0.6
M31A	Lambtecht Ranc	82.68	42	P	P	01 32 27.7	-0.7
baz=315							
CONA	Conrad Observa	82.72	328	iP	P	01 32 29.4	+0.9
comp=Z,63nm,1.7s,SNR=34							
KHC	Kasperske Hory	82.72	330⇑	eP	P	01 32 29.5	+1.1
KHC				epP	PcP	01 32 34.7	+1.4
KHC				ex	x	01 32 41.9	
KHC				eS	S	01 42 43.0	-1.3
KHC				AMS	AMS	02 11 50.0	
comp=Z,900nm,19.9s							
KHC	Kasperske Hory	82.72	330	eP	P	01 32 29.1	+0.7
KHC				pmax	pmax		
comp=Z,18nm,1.2s							
KHC	Kasperske Hory	82.72	330	eP	P	01 32 29.1	+0.7
comp=Z,18nm,1.2s							
L32A	Elgin	82.72	41	P	P	01 32 28.0	-0.6
baz=316							
KESN	Edirne-Kesan	82.73	317	iP	P	01 32 29.9	+0.8
ANMO	Albuquerque	82.74	51	P	P	01 32 29.6	+0.6
baz=312							
ANMO	Albuquerque	82.74	51	diP	P	01 32 29.1	+0.1
ANMO				pmax	pmax		
comp=Z,30nm,1.2s							
ANMO	Albuquerque	82.74	51	eP	P	01 32 29.2	+0.1
ANMO				LR	LR		
comp=Z,210nm,20.0s							
PGBU	Glenifferbraes	82.80	342	eP	P	01 32 29.6	+1.0
PGBU				AMB	AMB	01 32 30.8	
comp=Z,46nm,1.3s							
K33A	Hardington	82.82	40	P	P	01 32 28.6	-0.5
baz=316							
KDZ	Kurdzhali	82.83	318	P	P	01 32 31.3	+2.2
PGB	Panagyurishte	82.83	320	P	P	01 32 30.5	+1.3
J34A	George	82.86	39	P	P	01 32 28.6	-0.6
baz=317							
KHAL	Karahalli	82.87	314	iP	P	01 32 30.0	+0.5
CSS	Mathiatis	82.89	309	P	P	01 32 28.6	-0.9
CSS	Mathiatis	82.89	309	PFAKE		01 32 40.0	+10
CSS				LR	LR		
comp=Z,62nm,21.0s							
GERES	GERESS Array B	82.89	329	P	P	01 32 29.2	-0.2
comp=Z,6.3nm,0.9s,baz=36,slow=5.0,SNR=45							
GERES				PP	PP	01 35 37.6	-1.6
comp=Z,2.3nm,0.9s,baz=50,slow=8.9,SNR=4.1							
GERES				PKKPbc	PKKPbc	01 50 49.4	-2.1
comp=Z,0.2nm,0.4s,baz=194,slow=2.8,SNR=4.2							
H36A	Jessenland, He	82.90	37	P	P	01 32 29.3	-0.1
baz=318,SNR=13							
EKA	Eskdalemuir Ar	82.91	342	PP	PP	01 35 48.6	+10
comp=Z,15nm,1.2s,baz=38,slow=9.6,SNR=6.6							
WTSB	Winterswijk	82.91	335	eP	P	01 32 29.7	+0.4
comp=Z,27nm,1.0s							
I35A	Creekview Farm	82.92	38	P	P	01 32 28.6	-1.0
baz=317	

baz=316
Y22D IRIS PASSCAL I 83.03 52 P **P 01 32 31.0 +0.5**
baz=311
LPM Los Pinos Moun 83.05 52 eP **P 01 32 31.5 +0.9**
N31A Bailey Ranch, 83.06 43 P **P 01 32 29.4 -1.0**
baz=315
BGNE Belgrade 83.07 42 P **P 01 32 29.8 -0.6**
baz=316,SNR=5.1
BGNE Belgrade 83.07 42 eP **P 01 32 29.8 -0.6**
comp=Z,183nm,1.3s
BNM Barren Site 83.16 52 eP **P 01 32 31.3 +0.1**
RZN Rozhen 83.17 319 P **P 01 32 32.0 +0.9**
J35A Milford 83.17 39 P **P 01 32 29.9 -1.0**
baz=317
GRFO Grafenberg 83.19 331 eP **P 01 32 31.4 +0.6**
GRFO pmax pmax
comp=Z,48nm,1.0s
GRFO Grafenberg 83.19 331 eP **P 01 32 31.4 +0.6**
comp=Z,48nm,1.0s
ALFC Alefka 83.20 310 P **P 01 32 30.4 -0.8**
K34A Le Mars 83.22 40 P **P 01 32 30.4 -0.7**
baz=317
KULA Kula-Manisa 83.25 314 P **P 01 32 31.2 -0.2**
I36A Fitzsimmons Fa 83.28 38 P **P 01 32 30.7 -0.7**
baz=318
SZAC Souni 83.30 309 P **P 01 32 31.5 -0.2**
KORT Korkueli 83.31 312 *i* P **P 01 32 31.2 -0.6**
O31A Woolen Ranch, 83.33 43 P **P 01 32 30.6 -1.2**
baz=315
H37A Dierke Farm, C 83.38 37 P **P 01 32 31.5 -0.4**
baz=318,SNR=5.5
ARSA Arzberg 83.39 327 *i* P **P 01 32 32.7 +0.8**
comp=Z,29nm,1.6s,SNR=13
MOA Molln 83.45 328 *i* P **P 01 32 33.3 +1.1**
comp=Z,35nm,1.3s,SNR=18
AKMC Akamas 83.45 310 P **P 01 32 31.8 -0.7**
N32A Stulken Farm, 83.45 42 P **P 01 32 31.1 -1.4**
baz=315
M33A Taylor Creek F 83.46 41 P **P 01 32 31.3 -1.1**
baz=316
PPT Papeete 83.49 118 LR LR 02 09 52.7
comp=Z,145nm,18.8s,baz=310,slow=36
PPT2 Papeete2 83.51 118 *e*S **S 01 42 50.3 -2.7**
comp=Z,608nm,30.5s
PPT2 Papeete2 83.51 118 *e*LR LR 01 58 27.6
comp=Z,653nm,25.0s,baz=315
KESW Keswick, Cumbr 83.56 341 eP **P 01 32 34.0 +1.4**
KESW AMB AMB 01 32 34.1
comp=Z,80nm,1.6s
I37A Lemond, Waseca 83.58 37 P **P 01 32 32.7 -0.3**
baz=318,SNR=9.6
DNZL Cakiroluk 83.59 313 *i* P **P 01 32 32.8 -0.6**
L34A Svendsen Farm, 83.60 41 P **P 01 32 31.9 -1.1**
baz=316,SNR=5.3
GOLH Golhisar 83.61 313 *i* P **P 01 32 32.3 -1.0**
K35A Storm Lake 83.63 39 P **P 01 32 32.3 -1.0**
baz=317
GAL1 Galloway 83.71 342 eP **P 01 32 33.3 0.0**
GAL1 AMB AMB 01 32 34.5
comp=Z,30nm,1.2s
MMB Musomiste 83.75 319 P **P 01 32 34.4 +0.5**
DIVS Divibare 83.77 323 P **P 01 32 33.1 -0.9**
O32A Brockman Farm, 83.82 43 P **P 01 32 32.8 -1.5**
baz=316
M34A Aspy Farms, Fr 83.83 41 P **P 01 32 33.4 -0.8**
baz=316
NVR Nevrokopi 83.86 319 P **P 01 32 34.9 +0.4**
NVR Nevrokopi 83.86 319 P **P 01 32 34.9 +0.4**
L35A Bielow Farm, R 83.92 40 P **P 01 32 33.6 -1.1**
baz=317
N33A J Bar K, Exete 83.92 42 P **P 01 32 33.6 -1.2**
baz=316
COWI Conover 83.96 34 eP **P 01 32 34.2 -0.7**
COWI LR LR
comp=Z,9.1nm,0.9s
comp=Z,494nm,21.0s
J37A Redenius Farm, 84.03 38 P **P 01 32 34.9 -0.3**
baz=318
PERS Pernice 84.04 327 *i* P **P 01 32 35.7 +0.4**
PERS Pernice 84.04 327 P **P 01 32 35.7 +0.4**
SOKA Soboth 84.04 327 *i* P **P 01 32 35.8 +0.4**
comp=Z,60nm,1.1s,SNR=36
CBKS Cedar Bluff 84.05 45 P **P 01 32 34.6 -0.9**
baz=315
CBKS Cedar Bluff 84.05 45 eP **P 01 32 34.5 -0.9**
CBKS pmax pmax
comp=Z,47nm,1.3s
CBKS Cedar Bluff 84.05 45 eP **P 01 32 34.5 -0.9**
comp=Z,47nm,1.3s
SCHQ Schefferville 84.06 17 P **P 01 32 35.0 -0.2**
comp=Z,7.7nm,0.9s,baz=82,slow=1.1,SNR=5.8
SCHQ LR LR 02 14 19.2
comp=Z,245nm,19.4s,baz=7.0,slow=39
I38A Scanlan Farm, 84.07 37 P **P 01 32 34.4 -1.0**
baz=319,SNR=6.6
K36A Gilmore City 84.08 39 P **P 01 32 35.0 -0.6**
baz=318
P32A Huiting Farm, 84.10 43 P **P 01 32 34.4 -1.3**
baz=315,SNR=6.0
SRS Serrai 84.17 319 P **P 01 32 35.5 -0.5**
SRS Serrai 84.17 319 P **P 01 32 35.5 -0.5**
SRS Serrai 84.17 319 P **P 01 32 35.5 -0.5**
LHO Holmfirth 84.17 340 eP **P 01 32 36.5 +0.8**
HGN Heimansgroeve 84.22 335 eP **P 01 32 36.2 +0.2**
comp=Z,39nm,1.2s
AKAS Kas 84.27 312 *i* P **P 01 32 35.6 -1.1**
BEBN Eben Emael 84.28 335 P **P 01 32 36.8 +0.5**
AYDN Tasoluk 84.28 314 *i* P **P 01 32 38.0 +1.3**
FETY Fethiye 84.30 313 P **P 01 32 36.5 -0.3**
M35A Neola 84.31 40 P **P 01 32 36.0 -0.8**
baz=317,SNR=6.0
MEM Membach 84.32 334 P **P 01 32 37.1 +0.5**
comp=Z,14nm,1.1s
O33A Hebron 84.33 42 P **P 01 32 35.5 -1.3**
baz=316
N34A Lincoln 84.35 41 P **P 01 32 36.1 -0.8**
baz=316
L36A Harm Buss Farm 84.37 39 P **P 01 32 36.4 -0.6**
baz=318
OBKA Obir 84.38 327 *i* P **P 01 32 37.6 +0.5**
comp=Z,13nm,0.9s
K37A Belmond 84.39 38 P **P 01 32 36.2 -0.9**
baz=318,SNR=5.5
TURN Turunc 84.41 313 *i* P **P 01 32 37.6 +0.3**
YER Yerkesik 84.42 313 P **P 01 32 37.5 +0.1**
GCIS Gornji Cirnik 84.42 326 eP **P 01 32 36.8 -0.4**
GCIS Gornji Cirnik 84.42 326 eP **P 01 32 36.8 -0.4**
KBA Koelnbreinsper 84.44 328 *i* P **P 01 32 38.0 +0.5**
comp=Z,35nm,1.2s,SNR=22
KBA Koelnbreinsper 84.44 328 P **P 01 32 38.0 +0.5**
KNT Kendrikon 84.49 319 P **P 01 32 37.5 -0.2**
KNT Kendrikon 84.49 319 P **P 01 32 37.5 -0.2**
KNT Kendrikon 84.49 319 P **P 01 32 37.5 -0.2**
J38A Wedel Dairy, R 84.54 37 P **P 01 32 37.4 -0.5**
baz=319
VAY Valandovo 84.55 320 *i* P **P 01 32 39.0 +1.1**
Q32A Meitler Ranch, 84.57 44 P **P 01 32 37.0 -1.1**
baz=315
BLY Banja Luka 84.59 325⇓ *i* P **P 01 32 39.2 +1.2**
GCAM G?zelcaml? 84.62 314 *i* P **P 01 32 37.8 -0.5**
SKO Skopje 84.64 321 *i* P **P 01 32 40.0 +1.6**
MYKA Terra Mystica 84.67 328 *i* P **P 01 32 38.2 -0.4**
comp=Z,24nm,1.0s,SNR=16
STU Stuttgart 84.71 332 eP **P 01 32 39.5 +0.9**
STU pmax pmax
comp=Z,82nm,1.4s
STU Stuttgart 84.71 332 eP **P 01 32 39.5 +0.9**
comp=Z,82nm,1.4s
BCLA Clavier 84.72 335 P **P 01 32 39.1 +0.5**
comp=Z,23nm,1.6s
O34A Beatrice 84.72 42 P **P 01 32 37.2 -1.6**
baz=316,SNR=7.1
P33A Williams Farm, 84.72 43 P **P 01 32 37.4 -1.5**
baz=316
TAOE Nuku Hiva Isla 84.73 105 *e*LR LR 01 59 10.4
comp=Z,725nm,30.8s
CWF Charnwood Fore 84.74 339 eP **P 01 32 39.1 +0.4**
LJU Ljubljana 84.76 327 *i* P **P 01 32 39.0 +0.1**
LJU Ljubljana 84.76 327 *i* P **P 01 32 39.0 +0.1**
M36A Felix, Anita 84.78 40 P **P 01 32 38.6 -0.5**
baz=318
N35A Tabor 84.78 41 P **P 01 32 38.6 -0.5**
baz=317
PLG Polygyros 84.78 318 P **P 01 32 37.7 -1.5**
PLG Polygyros 84.78 318 P **P 01 32 37.7 -1.5**
PLG Polygyros 84.78 318 P **P 01 32 37.7 -1.5**

L37A Phoenix Point, 84.81 39 P **P 01 32 38.4 -0.8**
baz=318
R32A Long Quarter, 84.89 44 P **P 01 32 38.6 -1.1**
baz=315
K38A Parkersburg 84.90 38 P **P 01 32 39.2 -0.5**
baz=319
CADS Cadrg 84.95 328 *i* P **P 01 32 38.6 -1.3**
CADS Cadrg 84.95 328 *i* P **P 01 32 38.6 -1.3**
Q33A Connelly Farm, 84.96 43 P **P 01 32 38.7 -1.4**
baz=316,SNR=5.7
WPM1 Penmaenmawr 84.97 341 eP **P 01 32 40.7 +0.9**
SNF Seneffe 84.99 335 P P 01 32 34.6 -5.3
WTTA Wattenberg 84.99 329 *i* P **P 01 32 40.2 0.0**
comp=Z,24nm,1.6s,SNR=6.1
ABTA Abfaltersbach 85.05 329 *i* P **P 01 32 39.6 -0.9**
comp=Z,23nm,1.1s,SNR=13
LANF Langenberg 85.05 333⇑ eP **P 01 32 41.3 +1.0**
WLF Walferdange 85.07 334 P **P 01 32 40.6 +0.3**
comp=Z,32nm,1.7s
WLF Walferdange 85.07 334 eP **P 01 32 40.9 +0.5**
WLF pmax pmax
comp=Z,45nm,1.3s
WLF MLR MLR
comp=Z,910nm,22.0s
WLF Walferdange 85.07 334 eP **P 01 32 40.9 +0.5**
comp=Z,45nm,1.3s
WLF LR LR
comp=Z,910nm,22.0s
O35A Humboldt 85.07 41 P **P 01 32 39.5 -1.1**
baz=317
P34A Walnut Farm, R 85.11 42 P **P 01 32 39.3 -1.5**
baz=316,SNR=12
FOEL Foel Wylfa 85.12 341 eP **P 01 32 41.0 +0.5**
FOEL AMB AMB 01 32 42.6
comp=Z,102nm,1.4s
MOTA Moosalm 85.14 330 *i* PcP **P 01 32 41.7 +0.7**
comp=Z,37nm,1.0s,SNR=27
ARG Arkhangelos 85.14 313 P **P 01 32 41.6 +0.6**
GIVF Givet 85.15 335 eP **P 01 32 40.3 -0.5**
GIVF pmax pmax
comp=Z,40nm,1.4s
RETA Reutte 85.16 330 *i* P **P 01 32 41.3 +0.3**
comp=Z,67nm,1.1s,SNR=37
N36A Muff Farm, Cla 85.17 41 P **P 01 32 41.0 -0.1**
baz=317
L38A Oak Wood Farm, 85.19 39 P **P 01 32 40.7 -0.5**
baz=319
M37A Trindle Farm, 85.19 40 P **P 01 32 41.2 0.0**
baz=318
DOU Dourbes 85.24 335 P **P 01 32 41.7 +0.5**
comp=Z,12nm,1.7s
SCIA State Center 85.24 39 PFAKE 01 32 50.0 +8.6
SCIA LR LR
comp=Z,367nm,21.0s
S32A Newby Ranch, P 85.28 45 P **P 01 32 40.7 -1.0**
baz=315,SNR=5.9
TRI Trieste 85.35 327 eP **P 01 32 41.2 -0.6**
TRI pmax pmax
comp=Z,31nm,1.0s
TRI Trieste 85.35 327 eP **P 01 32 41.2 -0.6**
comp=Z,31nm,1.0s
HLM1 Long Mynd 85.37 340 eP **P 01 32 42.6 +0.8**
HLM1 AMB AMB 01 32 43.7
comp=Z,32nm,1.5s
R33A Olander Ranch, 85.37 44 P **P 01 32 40.9 -1.3**
baz=316,SNR=8.0
BAIF Baives 85.40 335 eP **P 01 32 41.5 -0.5**
BAIF pmax pmax
comp=Z,22nm,1.1s
BFO Black Forest 85.40 332 *i* P **P 01 32 42.7 +0.6**
BFO Black Forest 85.40 332 eP **P 01 32 42.5 +0.4**
comp=Z,86nm,1.3s
BFO LR LR
comp=Z,711nm,22.0s
BIA Bitola 85.40 320 *i* P **P 01 32 42.6 +0.3**
LIT Litokhoron 85.48 319 P **P 01 32 42.2 -0.4**
LIT Litokhoron 85.48 319 P **P 01 32 42.2 -0.4**
LIT Litokhoron 85.48 319 P **P 01 32 42.2 -0.4**
Q34A Chapman 85.50 43 P **P 01 32 41.5 -1.3**
baz=316,SNR=7.4
FETA Feichten 85.55 330 *i* PcP **P 01 32 43.4 +0.4**
comp=Z,33nm,1.0s,SNR=21
KSU1 Kansas State U 85.55 43 P **P 01 32 41.5 -1.5**
baz=317,SNR=5.4
KSU1 Kansas State U 85.55 43 eP **P 01 32 42.1 -0.8**
KSU1 LR LR
comp=Z,219nm,19.0s
P35A Duane Minner, 85.55 42 P **P 01 32 42.0 -1.0**
baz=317
MNTX Cornudas Mount 85.57 53 P **P 01 32 43.1 -0.1**
baz=312,SNR=15
N37A Lee Faris, Mou 85.59 40 P **P 01 32 42.8 -0.3**
baz=318
OHR Ohrid 85.60 320 *i* P **P 01 32 43.8 +0.5**
M38A Pleasantville 85.61 39 P **P 01 32 42.4 -0.9**
baz=318,SNR=11
MSTX Muleshoe 85.65 50 P **P 01 32 43.1 -0.6**
baz=314,SNR=10
MSTX Muleshoe 85.65 50 eP **P 01 32 43.3 -0.4**
comp=Z,35nm,1.4s
T32A Huddler Ranch, 85.66 45 P **P 01 32 42.8 -0.8**
baz=315,SNR=12
O36A Bolckow 85.67 41 P **P 01 32 43.1 -0.5**
baz=318
DAVA Damuels 85.67 330 *i* P **P 01 32 43.5 -0.1**
comp=Z,60nm,1.0s,SNR=29
AMTX Amarillo 85.67 48 P **P 01 32 44.2 +0.4**
baz=314
AMTX Amarillo 85.67 48 eP **P 01 32 44.0 +0.2**
comp=Z,68nm,1.0s
CDF Champ du Feu 85.72 333 eP **P 01 32 43.4 -0.4**
CDF pmax pmax
comp=Z,74nm,1.3s
R34A Isabella, Hill 85.78 44 P **P 01 32 43.1 -1.1**
baz=316
STRD Stroud 85.84 339 eP **P 01 32 44.6 +0.5**
STRD AMB AMB 01 32 46.0
comp=Z,120nm,1.6s
MCH1 Michaelchurch 85.87 340 eP **P 01 32 45.1 +0.9**
MCH1 AMB AMB 01 32 45.2
comp=Z,70nm,1.7s
S33A Kaszmaul Farm, 85.88 44 P **P 01 32 43.9 -0.8**
baz=316,SNR=15
TIR Tirane 85.89 321 eP **P 01 32 44.9 +0.3**
TIR pmax pmax
comp=Z,44nm,1.0s
TIR MLR MLR
comp=Z,685nm,19.0s
TIR Tirane 85.89 321 eP **P 01 32 44.9 +0.3**
comp=Z,44nm,1.0s
TIR LR LR
comp=Z,685nm,19.0s
JFWS Jewell Farm 85.91 36 eP **P 01 32 44.3 -0.4**
JFWS Jewell Farm 85.91 36 eP **P 01 32 43.9 -0.8**
comp=Z,12nm,0.8s
JFWS LR LR
comp=Z,412nm,22.0s
P36A Good Intent, A 85.92 41 P **P 01 32 43.9 -0.9**
baz=317,SNR=6.5
ECH Echery 85.93 332⇑ eP **P 01 32 45.4 +0.7**
MONM Monmouth 85.96 340 eP **P 01 32 45.2 +0.5**
MONM AMB AMB 01 32 45.8
comp=Z,48nm,1.4s
Q35A Mercer Eighty, 86.03 42 P **P 01 32 44.5 -0.9**
baz=317,SNR=14
LPW Lampeter 86.05 341 eP **P 01 32 46.1 +0.9**
LPW AMB AMB 01 32 47.0
comp=Z,48nm,1.2s
N38A Joes South For 86.06 40 P **P 01 32 45.1 -0.3**
baz=318
O37A Wolven Farm, M 86.06 40 P **P 01 32 45.0 -0.5**
baz=318
DAVOX Davos/Dischmat 86.08 330 P **P 01 32 45.9 +0.2**
comp=Z,17nm,0.9s,baz=318,slow=10,SNR=5.6
T33A Patterson Ranc 86.11 45 P **P 01 32 44.9 -0.9**
baz=316,SNR=6.1
U32A Winter Ranch, 86.18 46 P **P 01 32 46.1 -0.1**
baz=315
MOF Molkenrain 86.24 332⇑ eP **P 01 32 46.9 +0.5**
Q36A Arnold C. Orve 86.26 42 P **P 01 32 45.6 -1.0**
baz=317
S34A Willow Spring 86.29 44 P **P 01 32 46.3 -0.3**
baz=316
R35A Emporia Munici 86.33 43 P **P 01 32 46.5 -0.4**
baz=317,SNR=8.2
N39A Derby Farms, D 86.36 39 P **P 01 32 46.1 -0.9**
baz=319,SNR=6.9

HINF Hinteralfeld 86.37 332 eP **P 01 32 46.2 -0.8**
HINF pmax pmax
comp=Z,19nm,1.2s
P37A Lathrop 86.39 41 P **P 01 32 46.1 -1.0**
baz=318,SNR=5.7
O38A Galt 86.44 40 P **P 01 32 46.9 -0.5**
baz=318
TUE Stuetta 86.55 330 eP **P 01 32 48.4 +0.3**
comp=Z,28nm,0.9s
TUE LR LR
comp=Z,707nm,22.0s
SANT Santorini 86.56 315 PFAKE 01 33 00.0 +12
SANT LR LR
comp=Z,300nm,19.0s
V32A Arapaho 86.62 46 P **P 01 32 48.6 +0.2**
baz=315,SNR=11
U33A Lingo Farm, Me 86.64 45 P **P 01 32 47.8 -0.6**
baz=316,SNR=9.0
R36A Gordon, Harris 86.71 43 P **P 01 32 48.0 -0.8**
baz=317,SNR=12
S35A Otter Creek Ra 86.74 43 P **P 01 32 48.2 -0.6**
baz=317,SNR=19
T34A McClaskey Farm 86.74 44 P **P 01 32 48.2 -0.6**
baz=316,SNR=11
LOMF Lomont 86.78 332⇑ eP **P 01 32 49.7 +0.7**
P38A Dawn 86.78 41 P **P 01 32 48.3 -0.8**
baz=318,SNR=10
O39A Kirksville 86.81 40 P **P 01 32 48.8 -0.3**
baz=319
Q37A Longview Farm, 86.86 42 P **P 01 32 48.2 -1.2**
baz=318
W32A Sentinel 86.93 47 P **P 01 32 49.6 -0.3**
baz=315,SNR=10.0
U34A Anderson Ranch 86.97 45 P **P 01 32 49.2 -0.8**
baz=316,SNR=12
U34A Anderson Ranch 86.97 45 eP **P 01 32 50.1 +0.1**
comp=Z,101nm,1.3s
V33A Lossen Ranch, 86.98 46 P **P 01 32 50.0 -0.1**
baz=316
R37A Teagarden Farm 87.08 42 P **P 01 32 49.2 -1.3**
baz=318,SNR=9.1
S36A Lake Cedric, C 87.10 43 P **P 01 32 50.1 -0.6**
baz=317
T35A Sooner Cattle 87.19 44 P **P 01 32 50.1 -1.0**
baz=317,SNR=7.4
Q38A Cooks Store, C 87.23 41 P **P 01 32 49.9 -1.4**
baz=318,SNR=8.2
O40A La Belle 87.25 39 P **P 01 32 50.4 -0.9**
baz=319,SNR=8.9
W33A Caddo, Fort Co 87.36 46 P **P 01 32 51.8 -0.1**
baz=316,SNR=7.5
V34A Guthrie 87.41 45 P **P 01 32 51.7 -0.5**
baz=316,SNR=7.6
V34A Guthrie 87.41 45 eP **P 01 32 52.4 +0.2**
comp=Z,26nm,0.9s
LAST Lasithi 87.42 314⇑ *i* P **P 01 32 52.9 +0.6**
LAST Lasithi 87.42 314⇑ *i* P **P 01 32 52.9 +0.6**
T36A Boggs Farm, Ca 87.43 44 P **P 01 32 52.0 -0.2**
baz=317
U35A Pawnee 87.46 45 P **P 01 32 51.6 -0.8**
baz=317,SNR=11
WMOK Wichita Mounta 87.47 47 eP **P 01 32 52.4 -0.1**
WMOK pmax pmax
comp=Z,36nm,1.2s
WMOK MLR MLR
comp=Z,213nm,21.0s
WMOK Wichita Mounta 87.47 47 eP **P 01 32 52.4 -0.1**
comp=Z,36nm,1.2s
WMOK LR LR
comp=Z,213nm,21.0s
S37A Fort Scott 87.48 43 P **P 01 32 51.6 -0.9**
baz=318,SNR=8.0
Q39A Willow Grove F 87.50 41 P **P 01 32 51.9 -0.6**
baz=319,SNR=12
P40A Paris 87.61 40 P **P 01 32 52.3 -0.8**
baz=319,SNR=14
R38A Fenwick Farm, 87.66 42 P **P 01 32 53.7 +0.4**
baz=318,SNR=5.7
IDI Anoyia 87.66 314 P **P 01 32 52.7 -0.7**
comp=Z,11nm,0.8s,baz=279,slow=10,SNR=7.7
CABF La Chapelle 87.67 332 eP **P 01 32 52.9 -0.4**
CABF pmax pmax
comp=Z,39nm,1.5s
W34A Bridge Creek, 87.69 46 P **P 01 32 53.5 0.0**
baz=316,SNR=7.4
W34A Bridge Creek, 87.69 46 eP **P 01 32 53.9 +0.3**
comp=Z,72nm,1.2s
X33A Lawton 87.77 47 P **P 01 32 53.4 -0.6**
baz=316
V35A Meyer Ranch, C 87.84 45 P **P 01 32 53.7 -0.6**
baz=317
SIVA Sivas 87.90 314⇑ *i* P **P 01 32 55.2 +0.7**
T37A Cheneyville 18 87.90 43 P **P 01 32 53.7 -0.8**
baz=318,SNR=7.8
U36A Oologah 88.00 44 P **P 01 32 54.6 -0.3**
baz=317
Q40A Laux Farm, Aux 88.00 40 P **P 01 32 53.9 -1.0**
baz=319,SNR=10
R39A Chumby, Stover 88.02 41 P **P 01 32 53.8 -1.3**
baz=319,SNR=10
VLC Villacollemand 88.02 328 PFAKE 01 33 10.0 +15
VLC LR LR
comp=Z,429nm,20.0s
FLN La Foliniere 88.03 337 eP **P 01 32 54.3 -0.6**
FLN pmax pmax
comp=Z,22nm,1.0s
S38A Stockton 88.07 42 P **P 01 32 54.5 -0.8**
baz=318
Y33A Hilltop Ranch, 88.08 47 P **P 01 32 54.7 -0.8**
baz=316,SNR=7.7
X34A Smith Ranch, M 88.11 46 P **P 01 32 54.9 -0.6**
baz=316,SNR=8.4
AQU L'Aquila 88.17 325 eP **P 01 32 55.8 0.0**
AQU pmax pmax
comp=Z,18nm,0.9s
AQU MLR MLR
comp=Z,481nm,19.0s
AQU L'Aquila 88.17 325 eP **P 01 32 55.8 0.0**
comp=Z,18nm,0.9s
AQU LR LR
comp=Z,481nm,19.0s
HDIL Hopedale 88.18 37 P **P 01 32 55.3 -0.5**
baz=321
HDIL Hopedale 88.18 37 eP **P 01 32 55.6 -0.2**
comp=Z,41nm,1.0s
HDIL LR LR
comp=Z,282nm,21.0s
DAMY Dhamar 88.24 287 eP **P 01 32 57.9 +1.1**
comp=Z,32nm,1.4s
TXAR Lajitas Array 88.26 54 P **P 01 32 56.3 -0.2**
comp=Z,8.0nm,1.0s,baz=295,slow=3.1,SNR=37
TXAR pP **sP 01 33 09.0 +0.4**
comp=Z,4.3nm,0.8s,baz=284,slow=3.6,SNR=9.2
TXAR Lajitas Array 88.26 54 P **P 01 32 56.3 -0.2**
TXAR *PP **sP 01 33 09.0 +0.4**
TXAR pmax pmax
comp=Z,13nm,1.1s
W35A Tecumseh 88.26 45 P **P 01 32 55.9 -0.4**
baz=317,SNR=5.8
T38A Diamond 88.31 43 P **P 01 32 55.4 -1.0**
baz=318,SNR=18
TUL1 Leonard 88.32 44 P **P 01 32 55.9 -0.6**
baz=317,SNR=7.9
TUL1 Leonard 88.32 44 eP **P 01 32 56.1 -0.4**
comp=Z,31nm,1.2s
V36A Jenks 88.32 44 P **P 01 32 56.1 -0.4**
baz=317,SNR=8.0
U37A Salina 88.32 44 P **P 01 32 55.8 -0.8**
baz=318,SNR=7.6
S39A Bolivar 88.33 42 P **P 01 32 55.1 -1.4**
baz=318,SNR=13
LPL La Plagne 88.35 331 eP **P 01 32 56.7 -0.1**
LPL pmax pmax
comp=Z,30nm,1.1s
LPG La Plagne 88.36 331 eP **P 01 32 56.8 -0.1**
LPG pmax pmax
comp=Z,39nm,1.3s
R40A Maddies Statio 88.43 41 P **P 01 32 55.8 -1.1**
baz=319,SNR=12
ABTX Abilene, Hawle 88.46 49 P **P 01 32 56.9 -0.3**
baz=315
ABTX Abilene, Hawle 88.46 49 eP **P 01 32 57.0 -0.3**
comp=Z,14nm,1.0s
AVF Avril sur Loir 88.50 334 eP **P 01 32 56.9 -0.2**
AVF pmax pmax
comp=Z,80nm,1.5s
Z33A Whitaker Ranch 88.51 48 P **P 01 32 57.0 -0.5**
baz=316,SNR=5.4

Y34A	Reagan Ranch,	88.62	47	P	P	01 32 57.2	-0.8	
	baz=316,SNR=5.3							
W36A	Wetumka	88.64	45	P	P	01 32 57.4	-0.6	
	baz=317,SNR=6.6							
V37A	Hulbert	88.69	44	P	P	01 32 57.9	-0.4	
	baz=318,SNR=21							
U38A	Gravette	88.70	43	P	P	01 32 57.4	-0.9	
	baz=318,SNR=14							
X35A	Drake	88.75	46	P	P	01 32 57.7	-0.9	
	baz=316,SNR=9.1							
BNI	Bardonecchia	88.76	331	PFAKE		01 33 10.0	+11	
BNI				LR	LR			
	comp=Z,830nm,21.0s							
T39A	Clever	88.80	42	P	P	01 32 57.7	-1.0	
	baz=318,SNR=9.4							
S40A	Lebanon	88.83	41	P	P	01 32 57.9	-1.0	
	baz=319							
133A	Hamilton Ranch	88.90	48	P	P	01 32 58.9	-0.5	
	baz=316							
CUC	Castrocucco	88.91	323	PFAKE		01 33 10.0	+11	
CUC				LR	LR			
	comp=Z,295nm,20.0s							
Z34A	Collier Ranch,	88.95	47	P	P	01 32 59.2	-0.3	
	baz=316							
X36A	Centrahoma	88.98	46	P	P	01 32 59.1	-0.5	
	baz=317,SNR=18							
Y35A	Marietta	89.07	46	P	P	01 32 59.4	-0.7	
	baz=316							
W37B	Quinton	89.08	45	P	P	01 32 59.6	-0.5	
	baz=317,SNR=8.8							
V38A	Canehill	89.11	44	P	P	01 32 59.3	-0.9	
	baz=318,SNR=19							
PLDF	La Plantade	89.11	333⇑	eP	P	01 33 01.4	+1.3	
T40A	Mansfield	89.16	42	P	P	01 32 59.2	-1.3	
	baz=319,SNR=16							
AGO	Saint Aguolin	89.21	334⇑	eP	P	01 33 01.7	+1.1	
U39A	Green Forest	89.23	43	P	P	01 32 59.9	-0.9	
	baz=318,SNR=28							
233A	Rising Star	89.33	49	P	P	01 33 00.8	-0.5	
	baz=316,SNR=7.5							
Z35A	Perchaven, San	89.36	47	P	P	01 33 00.7	-0.8	
	baz=316,SNR=5.8							
SFIN	Lafayette	89.36	36	P	P	01 33 00.9	-0.4	
	baz=322,SNR=6.9							
SFIN	Lafayette	89.36	36	eP	P	01 33 01.0	-0.3	
	comp=Z,66nm,1.4s							
AAM	Ann Arbor	89.37	33	PFAKE		01 33 10.0	+8.7	
AAM				LR	LR			
	comp=Z,283nm,20.0s							
SSB	Saint Sauveur	89.37	332	PFAKE		01 33 10.0	+8.7	
SSB				LR	LR			
	comp=Z,586nm,20.0s							
134A	White-Moore Ra	89.42	48	P	P	01 33 01.1	-0.6	
	baz=316,SNR=6.2							
Y36A	Durant	89.50	46	P	P	01 33 01.2	-0.9	
	baz=317,SNR=8.4							
X37A	Clayton	89.52	45	P	P	01 33 01.7	-0.5	
	baz=317							
PYM	Petit Puy Mans	89.52	334⇑	eP	P	01 33 03.1	+1.0	
V39A	Pettigrew	89.54	43	P	P	01 33 01.1	-1.2	
	baz=318,SNR=17							
U40A	Yellville	89.58	42	P	P	01 33 01.8	-0.7	
	baz=319,SNR=35							
W38A	Poteau	89.64	44	P	P	01 33 02.2	-0.5	
	baz=318,SNR=6.3							
X38A	Whitesboro	89.76	45	P	P	01 33 03.1	-0.2	
	baz=318,SNR=13							
333A	Richland Sprin	89.78	49	P	P	01 33 02.9	-0.5	
	baz=316,SNR=14							
234A	Clairette	89.80	48	P	P	01 33 03.1	-0.4	
	baz=316,SNR=6.3							
Y37A	Hugo	89.82	46	P	P	01 33 02.6	-0.9	
	baz=317							
135A	Vickery Place,	89.83	48	P	P	01 33 03.2	-0.5	
	baz=316							
JCT	Junction City	89.88	51	P	P	01 33 02.7	-1.2	
	baz=315							
JCT	Junction City	89.88	51	eP	P	01 33 03.1	-0.9	
JCT				pmax	pmax			
	comp=Z,13nm,1.0s							
JCT				MLR	MLR			
	comp=Z,223nm,22.0s							
JCT	Junction City	89.88	51	eP	P	01 33 03.1	-0.9	
	comp=Z,13nm,1.0s							
JCT				LR	LR			
	comp=Z,223nm,22.0s							
Z36A	Blue Ridge	89.88	47	P	P	01 33 03.1	-0.8	
	baz=317,SNR=9.6							
LBL	Lubilhac	89.88	333⇑	eP	P	01 33 05.0	+1.2	
W39A	Magazine	89.95	44	P	P	01 33 03.4	-0.8	
	baz=318,SNR=5.3							
V40A	Witts Springs	90.01	43	P	P	01 33 03.2	-1.3	
	baz=319,SNR=6.0							
433A	Art	90.11	50	P	P	01 33 03.5	-1.5	
	baz=315,SNR=6.5							
WHTX	Lake Whitney,	90.21	48	P	P	01 33 05.2	-0.3	
	baz=316,SNR=7.3							
WHTX	Lake Whitney,	90.21	48	eP	P	01 33 04.8	-0.6	
	comp=Z,23nm,0.9s							
334A	Lometa	90.22	49	P	P	01 33 04.7	-0.8	
	baz=316,SNR=11							
CEL	Celeste	90.22	321	PFAKE		01 33 20.0	+15	
CEL				LR	LR			
	comp=Z,517nm,20.0s							
X39A	Fountain Ranch	90.27	44	P	P	01 33 05.2	-0.6	
	baz=318,SNR=15							
W40A	Ferguson Farm,	90.34	43	P	P	01 33 04.9	-1.0	
	baz=319,SNR=11							
Y38A	Idabel	90.36	45	P	P	01 33 05.4	-0.7	
	baz=318							
Z37A	Pogue Cattle C	90.39	46	P	P	01 33 05.8	-0.5	
	baz=317							
136A	Ennis	90.40	47	P	P	01 33 05.9	-0.4	
	baz=317							
MIAR	Mount Ida	90.54	44	P	P	01 33 06.3	-0.7	
	baz=318,SNR=29							
MIAR	Mount Ida	90.54	44	eP	P	01 33 06.4	-0.5	
MIAR				pmax	pmax			
	comp=Z,56nm,1.1s							
MIAR				MLR	MLR			
	comp=Z,273nm,20.0s							
MIAR	Mount Ida	90.54	44	eP	P	01 33 06.4	-0.5	
	comp=Z,56nm,1.1s							
MIAR				LR	LR			
	comp=Z,273nm,20.0s							
434A	Burnet	90.57	49	P	P	01 33 06.4	-0.8	
	baz=316,SNR=5.3							
533A	Kerrville	90.63	50	P	P	01 33 06.9	-0.6	
	baz=316							
Y39A	Lockesburg	90.71	45	P	P	01 33 07.2	-0.5	
	baz=318,SNR=14							
Z38A	Mt. Pleasant	90.72	46	P	P	01 33 07.4	-0.4	
	baz=318							
335A	Moody	90.73	48	P	P	01 33 07.6	-0.3	
	baz=316							
236A	Katherine and	90.74	47	P	P	01 33 07.7	-0.2	
	baz=317							
137A	Heron Place, G	90.76	47	P	P	01 33 07.9	-0.1	
	baz=317							
W41B	Gary Mavity, V	90.79	43	P	P	01 33 07.3	-0.8	
	baz=319,SNR=12							
LONY	Lake Ozonia	90.96	26	PFAKE		01 33 20.0	+11	
LONY				LR	LR			
	comp=Z,346nm,19.0s							
633A	Saathoff Ranch	90.98	51	P	P	01 33 08.2	-0.9	
	baz=315,SNR=5.3							
X40A	Basin Creek Fa	90.99	43	P	P	01 33 08.4	-0.7	
	baz=319,SNR=8.2							
435B	Jarrell	91.00	49	P	P	01 33 08.7	-0.5	
	baz=316							
336A	Riesel	91.00	48	P	P	01 33 08.9	-0.2	
	baz=317							
534A	Blanco	91.00	50	P	P	01 33 08.2	-1.0	
	baz=316,SNR=9.9							
LFF	La Frestale	91.01	335	eP	P	01 33 09.1	+0.2	
LFF				pmax	pmax			
	comp=Z,27nm,1.0s							
138A	Matatall Enter	91.09	46	P	P	01 33 09.6	0.0	
	baz=318							
Y40A	Okolona	91.10	44	P	P	01 33 09.1	-0.5	
	baz=319							
237A	Washetta, Mont	91.16	47	P	P	01 33 09.5	-0.3	
	baz=317							
X41A	Kaden, Bauxite	91.16	43	P	P	01 33 09.3	-0.5	
	baz=319							
Z39A	Irene McRaven,	91.18	45	P	P	01 33 09.8	-0.1	
	baz=318							
832A	Faith Ranch, C	91.31	52	P	P	01 33 10.7	+0.1	
	baz=315							
ACSO	Alum Creek Sta	91.35	34	eP	P	01 33 10.1	-0.4	
	comp=Z,16nm,1.0s							
ACSO				LR	LR			
	comp=Z,304nm,20.0s							
733A	Divot King Ran	91.43	51	P	P	01 33 11.0	-0.2	
	baz=315							
139A	Bunkhouse Ranc	91.47	46	P	P	01 33 11.3	0.0	
	baz=318							
436A	Wall Ranch, Ga	91.48	48	P	P	01 33 11.3	-0.1	
	baz=317							
634A	China Grove, S	91.54	50	P	P	01 33 11.3	-0.3	
	baz=316							
238A	Jacksonville	91.56	47	P	P	01 33 11.6	-0.1	
	baz=318							
Y41A	Eaglette Beard	91.57	44	P	P	01 33 11.7	0.0	
	baz=319,SNR=6.8							
Z40A	Long Farm, Mag	91.60	45	P	P	01 33 11.6	-0.2	
	baz=318							
337A	Centerville	91.62	48	P	P	01 33 12.0	0.0	
	baz=317							
833A	Chaparral WMA,	91.65	52	P	P	01 33 12.0	-0.2	
	baz=315							
734A	La Parita Cree	91.80	51	P	P	01 33 12.7	-0.2	
	baz=316							
536A	Bastrop	91.82	49	P	P	01 33 13.0	+0.1	
	baz=316							
239A	Gary	91.92	46	P	P	01 33 13.1	-0.2	
	baz=318							
338A	Crockett	91.92	47	P	P	01 33 13.4	0.0	
	baz=317							
Z41A	Richland Creek	91.93	44	P	P	01 33 12.9	-0.5	
	baz=319							
140A	Cam and Jess,	91.96	45	P	P	01 33 13.0	-0.6	
	baz=318							
NATX	Nacogdoches	92.00	46	PFAKE		01 33 30.0	+16	
NATX				LR	LR			
	comp=Z,268nm,19.0s							
N54A	Moraine State	92.02	31	P	P	01 33 13.5	-0.2	
	baz=327							
Y42A	Garnett, Star	92.05	43	P	P	01 33 13.8	-0.1	
	baz=319							
CLTB	Caltabellotta	92.06	323	PFAKE		01 33 30.0	+16	
CLTB				LR	LR			
	comp=Z,232nm,20.0s							
933A	Laredo	92.22	52	P	P	01 33 15.8	+0.9	
	baz=315							
735A	Kenedy	92.25	50	P	P	01 33 15.9	+0.9	
	baz=316							
636A	Smothers Creek	92.25	49	P	P	01 33 15.9	+0.9	
	baz=316							
537A	Green Hill Far	92.26	49	P	P	01 33 15.4	+0.4	
	baz=317							
VSL	Villasalto	92.27	326	PFAKE		01 33 30.0	+15	
VSL				LR	LR			
	comp=Z,453nm,19.0s							
240A	Hunter Patters	92.31	46	P	P	01 33 14.9	-0.2	
	baz=318							
141A	Papa Simpson,	92.36	45	P	P	01 33 15.3	-0.1	
	baz=319							
339A	Huntington	92.38	47	P	P	01 33 15.1	-0.3	
	baz=318							
Z42A	Norrel Spur, H	92.39	44	P	P	01 33 15.5	0.0	
	baz=319							
Y43A	Makayla and Ka	92.46	43	P	P	01 33 15.7	-0.1	
	baz=320							
637A	Eagle Lake	92.72	49	P	P	01 33 17.3	+0.2	
	baz=317							
WDD	Wied Dalam	92.77	321	PFAKE		01 33 30.0	+13	
WDD				LR	LR			
	comp=Z,457nm,20.0s							
OXF	Oxford	92.80	41	eP	P	01 33 16.7	-0.7	
OXF				pmax	pmax			
	comp=Z,53nm,1.0s							
OXF	Oxford	92.80	41	eP	P	01 33 16.7	-0.7	
	comp=Z,53nm,1.0s							
Y44A	Strider, Charl	92.80	42	P	P	01 33 17.0	-0.4	
	baz=320,SNR=5.9							
034A	Hebbronville	92.98	52	P	P	01 33 18.9	+0.6	
	baz=316							
143A	Socs Landing,	93.12	44	P	P	01 33 18.6	-0.2	
	baz=320							
341A	Kurthwood	93.17	46	P	P	01 33 18.6	-0.5	
	baz=319							
O56A	Blue Knob Stat	93.19	31	P	P	01 33 18.4	-0.8	
	baz=328							
Z45A	Winona	93.53	42	P	P	01 33 20.5	-0.3	
	baz=321							
Y46A	Houston	93.58	41	P	P	01 33 20.5	-0.5	
	baz=321,SNR=5.6							
035Z	Hargill	93.80	52	P	P	01 33 22.3	+0.2	
	baz=316							
145A	Houston Renfro	94.00	43	P	P	01 33 22.9	0.0	
	baz=320							
244A	Avery, Jackson	94.02	44	P	P	01 33 22.9	-0.1	
	baz=320							
Z46A	Louisville	94.07	42	P	P	01 33 23.0	-0.3	
	baz=321							
Y47A	UCPARC, Winfie	94.08	41	P	P	01 33 22.0	-1.3	
	baz=322							
147A	Livingston	94.83	42	P	P	01 33 26.0	-0.7	
	baz=322							
BLA	Blacksburg	94.97	34	PFAKE		01 33 40.0	+13	
BLA				LR	LR			
	comp=Z,284nm,19.0s							
KEST	Kesra	95.38	324	P	P	01 33 28.6	-0.8	
	comp=Z,6.9nm,1.0s,baz=40,slow=7.5,SNR=5.0							
KEST				LR	LR	02 22 08.7		
	comp=Z,422nm,18.1s,baz=312,slow=39							
CBN	Corbin Frederi	95.43	31	PFAKE		01 33 40.0	+11	
CBN				LR	LR			
	comp=Z,296nm,20.0s							
CMAH	Djebel Manchou	95.51	326	P	P	01 33 29.2	-0.7	
ABSA	Djebel Ababsia	95.78	326	P	P	01 33 30.7	-0.5	
CKFL	Kef-Lekhel	96.01	326	P	P	01 33 31.9	-0.3	
BRAL	Brewton	96.65	42	PFAKE		01 33 50.0	+15	
BRAL				LR	LR			
	comp=Z,231nm,19.0s							
GOGA	Godfrey	96.68	38	PFAKE		01 33 50.0	+15	
GOGA				LR	LR			
	comp=Z,241nm,19.0s							
ESDC	Sonseca Array	97.28	335	P	P	01 33 37.2	-0.7	
	comp=Z,2.3nm,0.9s,baz=19,slow=4.3,SNR=9.1							
ESDC				PP	PP	01 37 27.0	-6.4	
	comp=Z,1.5nm,0.9s,baz=20,slow=7.0,SNR=4.4							
ESDC				LR	LR	02 21 25.7		
	comp=Z,444nm,21.2s,baz=35,slow=38							
RKT	Rikitea	97.50	113	eLR	LR	02 04 47.5		
	comp=Z,469nm,29.0s							
PAB	San Pablo	97.52	336	PFAKE		01 33 50.0	+11	
PAB				LR	LR			
	comp=Z,641nm,19.0s							
MTE	Manteigas	97.74	338	PFAKE		01 33 50.0	+10	
MTE				LR	LR			
	comp=Z,780nm,20.0s							
NHSC	New Hope	98.49	36	PFAKE		01 33 50.0	+6.7	
NHSC				LR	LR			
	comp=Z,293nm,20.0s							
KMBO	Kilima Mbogo	103.54	279	PFAKE		01 34 20.0	+14	
KMBO				LR	LR			
	comp=Z,251nm,21.0s							
TEIG	Tepich	104.43	50	PFAKE		01 34 20.0	+10	
TEIG				LR	LR			
	comp=Z,117nm,19.0s							
TAM	Tamanrasset	107.92	320	PFAKE		01 38 40.0		
TAM				LR	LR			
	comp=Z,471nm,21.0s							
MTDJ	Mount Denham	112.14	42	PFAKE		01 38 50.0		
MTDJ				LR	LR			
	comp=Z,219nm,19.0s							
GRTK	Grand Turk	112.53	35	PFAKE		01 38 50.0		
GRTK				LR	LR			
	comp=Z,302nm,21.0s							
JTS	JuntasAbangare	114.05	54	PFAKE		01 39 00.0	+16	
JTS				LR	LR			
	comp=Z,308nm,22.0s							
SDDR	Presa de Saban	114.65	37	PFAKE		01 39 00.0	+14	
SDDR				LR	LR			
	comp=Z,249nm,20.0s							
SJG	San Juan	117.70	32	PFAKE		01 39 00.0	+8.7	
SJG				LR	LR			
	comp=Z,248nm,21.0s							
LSZ	Lusaka	119.17	273	PFAKE		01 39 10.0	+16	
LSZ				LR	LR			
	comp=Z,251nm,20.0s							
FDF	Fort de France	122.76	29	PFAKE		01 39 10.0	+8.8	
FDF				LR	LR			
	comp=Z,233nm,20.0s							
SDV	Santo Domingo	123.58	42	PFAKE		01 39 10.0	+7.0	
SDV				LR	LR			
	comp=Z,192nm,20.0s							
ROSC	El Rosal	124.84	48	PKP	PKPdf	01 39 05.6	-0.1	
	comp=Z,2.3nm,0.4s,baz=129,slow=17,SNR=4.5							
GRGR	Grenville	124.93	31	PFAKE		01 39 20.0	+15	
GRGR				LR	LR			
	comp=Z,271nm,20.0s							
OTAV	Otavalo	125.84	56	PFAKE		01 39 20.0	+12	
OTAV				LR	LR			
	comp=Z,185nm,19.0s							
DBIC	Dimbokro	126.81	319	PP	PP	01 41 05.5	+0.1	
	comp=Z,14nm,1.0s,baz=16,slow=8.8,SNR=3.8							
SNAA	Sanae	142.03	197	PKP	PKPpre	01 39 30.1		
SNAA	Sanae	142.03	197	ePKIKP	PKPpre	01 39 31.9		
SNAA	Sanae	142.03	197	ePKPdf	PKPpre	01 39 31.9		
SAML	Samuel	142.44	47	ePKPdf	PKPpre	01 39 35.7		
SAML				LR	LR			
	comp=Z,270nm,19.0s							
VNA2	Neumayer--Watz	143.58	196	PKP	PKPab	01 39 32.0	-2.9	
	baz=112,slow=1.8							
VNA1	Neumayer--Stat	143.98	196	PKP	PKPbc	01 39 36.9	0.0	
LPAZ	La Paz	144.80	61	PKP	PKPab	01 39 41.4	-0.4	
	comp=Z,7.2nm,0.8s,baz=345,slow=4.6,SNR=23							
LVC	Limon Verde	148.28	71	PKPbc	PKPdf	01 39 49.5	+1.2	
	comp=Z,73nm,1.0s,baz=270,slow=4.2,SNR=12							
LVC	Limon Verde	148.28	71	ePKPbc	PKPdf	01 39 49.2	+0.9	
SIV	San Ignacio	149.24	52	PKP	PKPdf	01 39 49.5	-0.1	
	comp=Z,30nm,1.0s,baz=49,slow=0.2,SNR=9.3							
SIV				PKPbc	PKPbc	01 39 53.5	-0.3	
	comp=Z,30nm,1.0s,baz=325,slow=3.1,SNR=33							
LCO	Las Campanas	150.21	83	ePKPbc	PKPbc	01 39 56.1	0.0	
ROCH	El Roble	151.51	91	i P	PKPbc	01 39 58.8	-0.3	
PEL	Peldehue	151.82	91	i P	PKPbc	01 39 58.6	-0.9	
CLCH	Cerro Calan	152.02	91	‖ iP	PKPbc	01 39 59.5	-0.5	
PLCA	Paso Flores	153.54	107	PKPbc	PKPbc	01 40 03.4	+0.2	
	comp=Z,10nm,1.1s,baz=290,slow=3.8,SNR=8.0							
CPUP	Villa Florida	158.94	63	PKP	PKPdf	01 40 00.8	-2.0	
	comp=Z,2.7nm,1.0s,baz=240,slow=7.8,SNR=3.5							
CPUP	Villa Florida	158.94	63	PKIKP	PKPdf	01 40 00.9	-2.0	
CPUP				pmax	pmax			
	comp=Z,2.0nm,1.0s							
TRQA	Tornquist	159.87	98	PFAKE		01 40 10.0	+6.4	
TRQA				LR	LR			
	comp=Z,330nm,19.0s							

DJA ***11*** *01:28:02.6±0.6, 7°N±5°×12°6E±°, h49km±5km, M5.2/31, mb5.0/31, mB5.7/12, MLv5.5/5, Mw(mB)5.2/12*
MOS ***11*** *01:28:02.9±1.2, 6°08N×125°84E, h77km, mb5.1/26, Error ellipse: s-maj=11.1km s-min=6.0km az=110.5*
ISCJB ***11*** *01:28:05.8±0.3, 6°06N±0°02×126°03E±0°03, h98km±3km, mb4.8/126, Error ellipse: s-maj=5.4km s-min=3.5km az=168.1*
MAN ***11*** *01:28:05, 6°06N×125°99E, h98km, mb5.4, ML4.3, MS4.6*
MAN INTENSITY II - DAVAO CITY.
IDC ***11*** *01:28:06.0±0.7, 6°02N×125°81E, h97km±5km, mb4.3/29, mb1 4.4/31, mb1mx4.3/48, mbtmp4.7/31, Error ellipse: s-maj=16.3km s-min=8.1km az=77.0*
BJI ***11*** *01:28:06.0, 6°00N×126°00E, h105km, mb4.8/40, mB5.0/25*
NEIC ***11*** *01:28:08.4±0.7, 6°04N×125°95E, h111km±6km, mb4.9/68, Error ellipse: s-maj=6.5km s-min=4.5km az=76.0*
NEIC Felt [II PIVS] at Davao and Digos.

ISC 11 01:28:06.8±0.6, **6°10N**±0°04×**126°02E**±0°05, **h97**km±5km, **n254**, σ1°**73**/271, **mb4.8**/125, **9C-5D, Mindanao**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MATI	Mati	0.87	16	eP	Pn	01 28 25.3	-0.4
DAV	Davao City (W)	1.06	335	P	Pn	01 28 27.9	+0.2
	375nm,0.3s,baz=112,slow=1.9,SNR=51						
DAV				S	Sn	01 28 42.9	-0.5
	917nm,0.3s,baz=99,slow=19,SNR=33						
DAV	Davao City (W)	1.06	335	ePn	Pn	01 28 28.2	+0.5
DAV				eSn	Sn	01 28 43.2	-0.2
GSPH	General Santos	1.07	269	i P	Pn	01 28 24.9	-3.0
GSPH				i S	Sn	01 28 39.6	-4.2
DMPH	Davao City--Mi	1.10	332⇑	eP	Pn	01 28 28.3	+0.2
DMPH				eS	Sn	01 28 44.8	+0.5
KCP	Kidapawan	1.29	314⇑	eP	Pn	01 28 30.1	-0.4
KCP				i S	Sn	01 28 47.7	-0.6
BUKP	Musuan	2.01	332	eP	Pn	01 28 39.7	+0.2
SGSI	Sangihe	2.45	192	P	Pn	01 28 45.1	-0.1
CGP	Cagayan de Oro	2.69	331	eP	Pn	01 28 47.9	-0.4
CGP				eS	Sn	01 29 24.3	+4.1
PAGZ	Pagadian	3.14	304	eP	Pn	01 28 54.1	-0.3
DCPH	Dipolog City	3.62	313	eP	Pn	01 29 01.7	+0.9
IPIL	Ipil	3.81	296	eP	Pn	01 29 03.8	+0.4
LBMI	Labuha	6.85	168	P	Pn	01 29 45.3	+0.5
	250nm,0.8s,4μm1.2nm						
MRSI	Marisa	6.91	216	P	Pn	01 29 45.3	-0.3
	176nm,0.6s,19μm2.5nm						
MRSI	Marisa	6.91	216	P	Pn	01 29 45.3	-0.3
MYLDM	Lahad Datu	7.54	263	ePn	Pn	01 29 57.8	+3.7
MYLDM				eSn	Sn	01 31 23.9	+5.8
LUWI	Luwuk	7.80	205	P	Pn	01 30 00.3	+2.6
	229nm,0.6s,5μm						
LUWI	Luwuk	7.80	205	P	Pn	01 30 00.3	+2.6
LUWI	Luwuk	7.80	205	ePn	Pn	01 29 58.7	+1.0
LUWI				eSn	Sn	01 31 26.2	+1.8
SANI	Sanana	8.10	180	P	Pn	01 30 00.5	-1.2
	144nm,0.8s,4μm						
SANI	Sanana	8.10	180	P	Pn	01 30 00.9	-0.8
SWI	Sorong	8.67	143	P	Pn	01 30 08.8	-0.7
	75nm,0.8s						
SWI	Sorong	8.67	143	P	Pn	01 30 09.4	-0.1
SWI				pmax	pmax		
	comp=Z,67nm,0.6s						
SIJI	Sorong	8.68	143	P	Pn	01 30 09.6	0.0
	comp=Z,1.8nm,0.3s,baz=5.0,slow=19,SNR=1.8						
KKM	Kota Kinabalu	9.75	270	ePn	Pn	01 30 24.5	+0.2
MSAI	Masohi	9.82	163	P	Pn	01 30 26.0	+0.8
	comp=Z,25nm,0.5s,comp=Z,3μm						
MSAI	Masohi	9.82	163	P	Pn	01 30 29.4	+4.2
KDI	Kendari	10.55	199	P	Pn	01 30 36.0	+0.9
	comp=Z,41nm,0.8s,comp=Z,552nm						
FAKI	Fak Fak	10.91	145	P	Pn	01 30 38.5	-1.4
	comp=Z,48nm,0.9s						
FAKI	Fak Fak	10.91	145	ePn	Pn	01 30 39.9	0.0
TTSI	Tana Toraja	10.99	214	P	Pn	01 30 43.7	+2.6
	comp=Z,49nm,1.0s						
SPSI	Sidrap Palu	11.79	212	P	Pn	01 30 55.3	+3.5
	comp=Z,32nm,0.7s						
KAPI	Kappang	12.69	210	P	Pn	01 31 02.2	-1.6
	comp=Z,0.7nm,0.3s,baz=58,slow=19,SNR=2.4						
KAPI	Kappang	12.69	210	ePn	Pn	01 31 04.2	+0.3
SBUM	Sibu	14.23	256	ePn	P	01 31 25.8	-2.6
BBKI	Banjar Baru	14.66	230	P	P	01 31 34.0	+0.9
	comp=Z,105nm,1.3s,comp=Z,7μm						
STKI	Sintang	15.71	248	P	P	01 31 50.9	+6.2
SOEI	Soe	15.85	186	ePn	Pn	01 31 44.3	-0.2
KSM	Kuching	16.34	254	ePn	P	01 31 53.0	+1.3
	comp=Z,30nm,1.2s						
TPUB	Ta-pu	17.87	344	eP	Pn	01 32 09.5	+0.3
	comp=Z,30nm,0.6s						
MTN	Manton Dam	19.49	165	eP	P	01 32 26.6	+0.2
	comp=Z,37nm,0.4s						
QIZ	Qiongzhong	20.33	311	P	Pn	01 32 37.3	-1

NONG	Nongkai	25.29	300	P	P	01 33 27.8 +3.4
CHAI	Chaiyaphum	25.50	294	P	P	01 33 28.8 +2.5
	comp=Z,6.2nm,1.1s					
CBIJ	Chichi jima	25.93	35	eP	P	01 33 29.6 -0.5
	comp=Z,56nm,0.7s					
JCJ	Chichijima	25.93	35	P	P	01 33 29.2 -0.9
	comp=Z,53nm,0.5s,baz=227,slow=7.5,SNR=8.7					
PMG	Port Moresby	26.10	126	P	P	01 33 30.7 -1.0
	comp=Z,34nm,0.7s,baz=333,slow=5.3,SNR=13					
PMG	Port Moresby	26.10	126⇓	eP	P	01 33 30.9 -0.8
PMG				pmax	pmax	
	comp=Z,122nm,1.1s					
PMG	Port Moresby	26.10	126	eP	P	01 33 31.6 -0.1
	comp=Z,39nm,0.9s					
COEN	Coen	26.21	140	eP	P	01 33 33.4 +0.7
	comp=Z,32nm,0.8s					
PPI	Padang Panjang	26.40	257	P	P	01 33 34.8 +0.3
	comp=Z,47nm,0.9s,comp=Z,938nm					
NJ2	Nanjing	26.67	346	eP	P	01 33 33.4 -3.3
NJ2				pmax	pmax	
	comp=Z,29nm,0.6s					
LOEI	Loei	26.71	297	P	P	01 33 35.0 -2.3
	comp=Z,12nm,1.1s					
PHET	Kaeng Krachan	26.88	287	P	P	01 33 41.0 +2.2
	comp=Z,12nm,1.1s					
WRAB	Tennant Creek	27.14	163⇑	eP	P	01 33 39.8 -1.2
WRAB				pmax	pmax	
	comp=Z,46nm,1.2s					
WRAB	Tennant Creek	27.14	163	eP	P	01 33 39.7 -1.2
	comp=Z,14nm,0.6s					
WRA	Warramunga Arr	27.14	163	P	P	01 33 40.1 -1.0
	comp=Z,4.3nm,0.4s,baz=336,slow=11,SNR=11					
WB2	Warramunga Arr	27.15	163	eP	P	01 33 41.1 0.0
	comp=Z,14nm,0.6s					
PSI	Prapat	27.21	264	eP	P	01 33 42.5 +0.6
PSI				pmax	pmax	
	comp=Z,9.0nm,0.9s					
PSI	Prapat	27.21	264	eP	P	01 33 42.5 +0.6
	comp=Z,8.6nm,0.9s					
JNU	Nakatsue	27.26	9	P	P	01 33 41.5 -0.6
	comp=Z,16nm,0.8s,baz=144,slow=11,SNR=7.7					
GYA	Guiyang	27.40	320	P	P	01 33 45.6 +2.1
GYA				pP	pP	01 34 08.9 +3.7
GYA				sP	sP	01 34 22.0 +5.5
GYA				PP	PnPn	01 34 37.6 +4.1
GYA				PcP	PcP	01 37 02.0 +1.8
GYA				S	S	01 38 16.7 -0.1
GYA				sS	sS	01 38 56.4 +1.7
GYA				ScP	ScP	01 40 31.0 -1.1
GYA				ScS	ScS	01 44 22.5 -1.6
GYA				pmax	pmax	
	comp=Z,20nm,0.8s					
GYA				pmax	pmax	
	comp=Z,120nm,5.0s					
NANT	Nan	27.71	299	P	P	01 33 54.4 +8.2
KCSI	Kotacane, Aceh	28.26	266	P	P	01 33 51.6 +0.4
	comp=Z,24nm,1.1s					
CRAI	Chiangrai	28.59	302	P	P	01 33 55.7 +1.7
	comp=Z,56nm,1.0s					
ENH	Enshi	28.64	329	eP	P	01 33 55.4 +1.0
GSI	Gunungsitoli	28.77	262	P	P	01 33 55.6 -0.1
	comp=Z,62nm,0.9s					
GSI	Gunungsitoli	28.77	262	eP	P	01 33 53.9 -1.9
	comp=Z,40nm,0.8s					
CM01	Chiang Mai Arr	29.09	297	eP	P	01 34 03.9 +5.4
CMAR	Chiang Mai Arr	29.11	297	P	P	01 33 57.9 -0.8
	comp=Z,2.9nm,0.8s,baz=106,slow=6.7,SNR=11					
KMI	Kunming	29.24	313	P	P	01 34 02.7 +2.7
KMI				pmax	pmax	
	comp=Z,13nm,0.6s					
KMI				pmax	pmax	
	comp=Z,180nm,4.7s					
CHTO	Chiang Mai	29.25	298	eP	P	01 34 00.4 +0.6
CHTO				pmax	pmax	
	comp=Z,5.0nm,0.7s					
CHTO	Chiang Mai	29.25	298	eP	P	01 34 00.4 +0.6
	comp=Z,4.9nm,0.7s					
AS31	Alice Springs	30.57	166	eP	P	01 34 11.1 -0.4
	comp=Z,3.1nm,0.5s					
ASAR	Alice Springs	30.57	166	P	P	01 34 10.8 -0.6
	comp=Z,4.5nm,0.6s,baz=345,slow=7.3,SNR=33					
ASAR				PcP	PcP	01 37 07.6 -0.5
	comp=Z,3.6nm,0.4s,baz=346,slow=2.5,SNR=10.0					
ASAR				ScP	ScP	01 40 40.9 -1.2
	comp=Z,0.7nm,0.6s,baz=0.3,slow=2.7,SNR=4.5					
AS01	Alice Springs	30.58	166	eP	P	01 34 09.5 -2.0
AS01				ePcP	PcP	01 37 07.3 -0.9
INU	Inuyama	30.82	18	eP	P	01 34 15.3 +1.8
	comp=Z,18nm,0.8s					
KSAR	Wonju Array Be	31.24	3	P	P	01 34 18.3 +1.1
KSAR	Wonju Array Be	31.24	3	P	P	01 34 18.2 +1.1
KSRS	Korea Array	31.26	3	P	P	01 34 18.2 +0.9
	comp=Z,4.7nm,0.8s,baz=190,slow=10.0,SNR=12					
XAN	Xi'an	32.00	333	P	P	01 34 24.7 +0.7
XAN				pmax	pmax	
	comp=Z,12nm,0.9s					
MAJO	Matsushiro	32.29	19⇑	eP	P	01 34 26.2 -0.2
MAJO				pmax	pmax	
	comp=Z,23nm,0.8s					
MJAR	Matsushiro Arr	32.29	19	P	P	01 34 25.8 -0.6
	comp=Z,3.4nm,0.7s,baz=192,slow=9.7,SNR=6.3					
CD2	Chengdu	32.34	322	P	P	01 34 28.0 +1.0
CD2				pP	pP	01 34 51.4 +2.4
CD2				sP	sP	01 35 03.8 +3.6
CD2				PP	PP	01 35 43.2 +1.3
CD2				S	S	01 39 35.5 +1.5
CD2				sS	sS	01 40 16.9 +4.8
CD2				pmax	pmax	
	comp=Z,20nm,0.8s					
CD2				pmax	pmax	
	comp=Z,260nm,3.5s					
CD2				LR	LR	
	comp=Z,2μm,15.6s					
CD2				LR	LR	
	comp=Z,2μm,18.0s					
CTAO	Charters Tower	32.76	143	eP	P	01 34 32.4 +1.7
CTAO				pmax	pmax	
	comp=Z,107nm,1.0s					
CTAO	Charters Tower	32.76	143	eP	P	01 34 32.4 +1.7
	comp=Z,107nm,1.0s					
DL2	Dalian	32.90	354	P	P	01 34 34.1 +2.4
DL2				pmax	pmax	
	comp=Z,35nm,0.8s					
BJI	Beijing	34.93	347	P	P	01 34 52.1 +2.8
BJI				pmax	pmax	
	comp=Z,12nm,0.8s					
BJI				pmax	pmax	
	comp=Z,810nm,7.9s					
LZH	Lanzhou	36.12	329	eP	P	01 35 00.9 +1.2
LZH				pP	pP	01 35 25.4 +3.4
LZH				sP	sP	01 35 39.8 +6.6
LZH				pmax	pmax	
	comp=Z,61nm,1.4s					
HHC	Hu-ho-hao-te	36.94	342	eP	P	01 35 09.2 +2.6
HHC				pmax	pmax	
	comp=Z,13nm,0.9s					
HHC				pmax	pmax	
	comp=Z,770nm,5.4s					
CN2	Changchun	37.55	359	eP	P	01 35 14.3 +2.7
USRK	Ussuriysk Ar.	38.31	7	P	P	01 35 19.6 +1.7
	comp=Z,11nm,0.7s,baz=192,slow=7.3,SNR=43					
MDJ	Mudanjiang	38.49	4	P	P	01 35 21.7 +2.3
MDJ				pmax	pmax	
	comp=Z,16nm,1.3s					
MDJ				pmax	pmax	
	comp=Z,920nm,12.2s					
ERM	Erimo	38.87	20⇓	eP	P	01 35 22.3 -0.4
ERM				pmax	pmax	
	comp=Z,57nm,1.3s					
EIDS	Eidsvold	39.65	143	eP	P	01 35 28.7 -0.6
	comp=Z,17nm,0.8s					
NWAO	Narrogin (SRO)	39.70	192	eP	P	01 35 28.9 -0.8
NWAO				pmax	pmax	
	comp=Z,152nm,1.1s					
NWAO	Narrogin (SRO)	39.70	192	eP	P	01 35 28.9 -0.8
	comp=Z,152nm,1.1s					
BBOO	Buckleboo	39.85	167	eP	P	01 35 31.3 +0.3
	comp=Z,36nm,0.6s					
ASAJ	Asahikawa	40.56	18	eP	P	01 35 38.4 +1.8
	comp=Z,3.6nm,0.4s					
STKA	Stephens Creek	40.58	159	P	P	01 35 36.1 -0.8
	comp=Z,18nm,0.7s,baz=331,slow=8.6,SNR=18					
STKA	Stephens Creek	40.58	159	eP	P	01 35 37.0 0.0
STKA				pmax	pmax	
	comp=Z,5.0nm,0.9s					
STKA	Stephens Creek	40.58	159	eP	P	01 35 37.0 0.0
	comp=Z,5.2nm,0.9s					
GTA	Gaotai	40.72	328	eP	P	01 35 39.3 +1.1
GTA				pP	pP	01 36 05.0 +4.2
GTA				sP	sP	01 36 17.6 +5.7
GTA				pmax	pmax	
	comp=Z,8.0nm,0.9s					
H11S3	WAKE ISLAND Hy	41.49	69	T	T	02 19 59.9
	baz=258,slow=75,SNR=7.9					
H11S1	WAKE ISLAND Hy	41.50	69	T	T	02 19 54.2
	baz=258,slow=75,SNR=7.6					
H11S2	WAKE ISLAND Hy	41.50	69	T	T	02 19 57.6
	baz=258,slow=75,SNR=11					
H11N1	WAKE ISLAND Hy	41.94	67	T	T	02 20 57.3
	baz=255,slow=74,SNR=5.2					
H11N2	WAKE ISLAND Hy	41.95	67	T	T	02 20 37.3
	baz=255,slow=74,SNR=2.8					
H11N3	WAKE ISLAND Hy	41.96	67	T	T	02 20 49.7
	baz=255,slow=74,SNR=7.2					
KLR	Kul'dur	43.25	5	iP	P	01 35 59.8 +1.3
ULN	Ulaanbaatar	44.66	342⇓	eP	P	01 36 10.4 +0.4
ULN				pmax	pmax	
	comp=Z,6.0nm,1.0s					
ULN	Ulaanbaatar	44.66	342	eP	P	01 36 10.9 +0.9
	comp=Z,4.5nm,0.7s					
CAN	Canberra	46.53	154	eP	P	01 36 25.7 +0.9
CAN				pmax	pmax	
	comp=Z,13nm,0.7s					
CAN	Canberra	46.53	154	eP	P	01 36 25.7 +0.9
	comp=Z,13nm,0.7s					
WMQ	Urumqi	50.40	324	eP	P	01 36 58.4 +4.1
WMQ				pmax	pmax	
	comp=Z,3.0nm,0.6s					
WMQ				pmax	pmax	
	comp=Z,70nm,5.0s					
WMQ				LR	LR	
	comp=Z,160nm,11.4s					
WMQ				LR	LR	
	comp=Z,170nm,11.4s					
WMQ				LR	LR	
	comp=Z,210nm,11.4s					
BOD	Bodaibo	52.43	352	eP	P	01 37 09.3 +0.1
BOD				pmax	pmax	
	comp=Z,6.0nm,1.6s					
PEA0	Petropavlovsk-	53.53	23	eP	P	01 37 19.0 +1.7
PETK	Petropavlovsk-	53.53	23	P	P	01 37 19.2 +1.9
	comp=Z,10.0nm,0.6s,baz=192,slow=2.2,SNR=15					
MK01	Makanchi Array	55.20	325	eP	P	01 37 29.8 +0.1
MK31	Makanchi Array	55.22	325	eP	P	01 37 30.0 +0.2
MK31	Makanchi Array	55.22	325	eP	P	01 37 30.0 +0.2
MKAR	Makanchi Array	55.22	325	P	P	01 37 28.6 -1.2
	comp=Z,2.1nm,0.3s,baz=116,slow=7.2,SNR=26					
MKAR	Makanchi Array	55.22	325	eP	P	01 37 30.0 +0.2
MKAR	Makanchi Array	55.22	325	eP	P	01 37 30.0 +0.2
YAK	Yakutsk	55.88	2	P	P	01 37 34.0 -0.1
	comp=Z,55nm,0.8s,baz=338,slow=0.4,SNR=8.2					
YAK	Yakutsk	55.88	2	eP	P	01 37 33.3 -0.8
YAK				pmax	pmax	
	comp=Z,38nm,0.8s					
YAK	Yakutsk	55.88	2	eP	P	01 37 35.3 +1.2
	comp=Z,44nm,0.7s					
KSH	Kashi	55.89	314	eP	P	01 37 36.1 +1.3
KSH				epP	pP	01 38 02.8 +4.2
KSH				esP	sP	01 38 16.0 +6.6
KSH				ePP	PP	01 39 43.5 +3.1
KSH				eScP	ScP	01 42 20.7 -2.2
KSH				S	S	01 45 12.9 -2.3
KSH				ScS	ScS	01 47 11.5 -3.5
KSH				SS	SS	01 48 57.6 -4.8
KSH				pmax	pmax	
	comp=Z,99nm,4.7s					
KSH				LR	LR	
	comp=Z,470nm,12.8s					
KSH				LR	LR	
	comp=Z,340nm,9.7s					
KSH				LR	LR	
	comp=Z,440nm,10.7s					
MSVF	Nonsavu	56.55	116	eP	P	01 37 42.0 +2.2
MSVF				pmax	pmax	
	comp=Z,31nm,0.9s					
MSVF	Nonsavu	56.55	116	eP	P	01 37 42.0 +2.2
	comp=Z,31nm,0.9s					
MA2	Magadan	56.60	15	eP	P	01 37 40.9 +1.6
MA2				pmax	pmax	
	comp=Z,50nm,0.7s					
MA2	Magadan	56.60	15	eP	P	01 37 40.9 +1.6
	comp=Z,50nm,0.7s					
TKM2	Tokmak 2	57.52	318	eP	P	01 37 46.1 -0.3
TKM2				pmax	pmax	
	comp=Z,4.0nm,1.0s					
TKM2	Tokmak 2	57.52	318	eP	P	01 37 46.0 -0.3
	comp=Z,4.1nm,1.0s					
AAK	Ala-Archa	58.14	317⇑	eP	P	01 37 52.5 +1.8
AAK				pmax	pmax	
	comp=Z,5.0nm,1.2s					
ZALV	Zalesovo Beam	58.17	333	P	P	01 37 49.2 -1.2
	comp=Z,1.3nm,0.3s,baz=120,slow=5.9,SNR=5.8					
EKS2	Erkin-Say	58.64	317	eP	P	01 37 53.5 -0.6
EKS2				pmax	pmax	
	comp=Z,3.0nm,0.7s					
EKS2	Erkin-Say	58.64	317	eP	P	01 37 53.5 -0.6
	comp=Z,3.2nm,0.7s					
KURK	Kurchatov	59.38	327	eP	P	01 37 58.1 -0.8
KURK				pmax	pmax	
	comp=Z,5.0nm,0.6s					
KURK	Kurchatov	59.38	327	eP	P	01 37 58.1 -0.8
	comp=Z,4.7nm,0.6s					
SEY	Seymchan	59.90	14	P	P	01 38 03.7 +1.5
	comp=Z,4.9nm,0.8s,baz=185,slow=9.6,SNR=5.4					
KKAR	Karatay Array	61.03	316	eP	P	01 38 09.4 -1.0
KKAR				pmax	pmax	
	comp=Z,2.0nm,0.6s					
KKAR	Karatay Array	61.03	316	eP	P	01 38 09.3 -1.0
	comp=Z,1.7nm,0.6s					
BKZ	Black Stump Fm	64.81	138	eP	P	01 38 36.3 +0.8
	comp=Z,114nm,2.0s					
BRVK	Borovoye	65.03	327⇓	eP	P	01 38 36.7 +0.1
BRVK				pmax	pmax	
	comp=Z,3.0nm,0.7s					
TIXI	Tiksi	65.50	1⇓	eP	P	01 38 38.7 -0.6
TIXI				pmax	pmax	
	comp=Z,9.0nm,0.9s					
TIXI	Tiksi	65.50	1	eP	P	01 38 38.8 -0.4
	comp=Z,14nm,0.7s					
ZRNK	Zerenda	65.69	326	eP	P	01 38 39.8 -1.1
ZRNK				pmax	pmax	
	comp=Z,5.0nm,0.7s					
ZRNK	Zerenda	65.69	326	eP	P	01 38 39.8 -1.1
	comp=Z,4.9nm,0.7s					
GSTR	Great Sitkin T	65.86	35	eP	P	01 38 40.3 -1.7
BILL	Bilibino	67.46	15	eP	P	01 38 52.3 +0.4
BILL				i		01 39 17.6
BILL				pmax	pmax	
	comp=Z,5.0nm,0.9s					
BILL	Bilibino	67.46	15	eP	P	01 38 52.2 +0.3
	comp=Z,6.5nm,0.7s					
GEYT	Alibeck	68.88	308	P	P	01 38 59.2 -2.2
	comp=Z,2.7nm,0.9s,baz=144,slow=5.5,SNR=5.5					
ABKAR	Akbulak array	69.88	320	eP	P	01 39 06.2 -1.0
AKTO	Aktyubinsk	71.38	321	P	P	01 39 14.4 -1.9
	comp=Z,1.4nm,0.4s,baz=95,slow=11,SNR=5.2					
UNV	Unalaska Valle	71.89	35	eP	P	01 39 19.9 +0.5
	comp=Z,16nm,0.7s					
ARU	Arti	72.57	327	P	P	01 39 21.1 -2.2
	comp=Z,1.9nm,0.4s,baz=166,slow=1.4,SNR=3.6					
TT01	Tatalina	79.11	27	eP	P	01 40 01.9 +1.4
TTA	Tatalina	79.12	27	eP	P	01 40 02.3 +1.7
TTA				pmax	pmax	
	comp=Z,6.0nm,0.6s					
TTA	Tatalina	79.12	27	eP	P	01 40 02.3 +1.7
	comp=Z,6.0nm,0.6s					
GNI	Garni	79.44	310⇑	eP	P	01 40 03.2 +0.3
GNI				pmax	pmax	
	comp=Z,31nm,1.6s					
ZEI	Tsey	80.11	312	eP	P	01 40 06.1 -0.4
ZEI				pmax	pmax	
	comp=Z,10.0nm,0.8s					
RSO	Redoubt South	80.39	30	eP	P	01 40 09.6 +1.9
SPU	Mount Spurr	80.79	29	eP	P	01 40 10.5 +0.9
KBZ	Khabaz	80.85	313	P	P	01 40 09.4 -0.8
	comp=Z,2.6nm,1.0s,baz=35,slow=2.7,SNR=3.7					
PPLA	Purkeypile	80.86	27	eP	P	01 40 11.6 +1.5
	comp=Z,17nm,0.6s					
CAST	Castle Rocks	80.95	27	eP	P	01 40 11.6 +1.3
	comp=Z,30nm,0.8s					
KIV	Kislovodsk	81.00	313	eP	P	01 40 11.2 0.0
KIV	Kislovodsk	81.00	313	eP	P	01 40 11.2 0.0
BRLK	Bradley Lake	81.28	31	eP	P	01 40 13.1 +0.9
	comp=Z,88nm,1.6s					
KTH	Kantishna Hill	81.48	27	eP	P	01 40 14.9 +1.7
	comp=Z,13nm,0.9s					
BPAW	Bear Paw Mtn.	81.48	26	eP	P	01 40 14.4 +1.2
	comp=Z,27nm,1.0s					
MLY	Manley	81.65	25	eP	P	01 40 15.5 +1.5
	comp=Z,31nm,0.8s					
VRH	Novokhopyorsk	81.71	321	eP	P	01 40 12.4 -2.2
VRH				pmax	pmax	
	comp=Z,4.0nm,0.6s					
TRF	Thorofare Moun	81.75	27	eP	P	01 40 15.0 +0.2
	comp=Z,41nm,1.2s					
RC01	Rabbit Creek A	81.91	29	eP	P	01 40 16.5 +1.1
	comp=Z,30nm,0.9s					
COLD	Coldfoot	82.00	23	eP	P	01 40 18.0 +2.3
	comp=Z,19nm,0.7s					
SEW	Seward	82.02	30	eP	P	01 40 17.0 +1.1
	comp=Z,25nm,0.7s					
PMR	Palmer	82.22	29	eP	P	01 40 17.6 +0.6
PMR				pmax	pmax	
	comp=Z,46nm,1.5s					
PMR	Palmer	82.22	29	eP	P	01 40 17.6 +0.6
	comp=Z,46nm,1.5s					
MCK	McKinley	82.37	27	eP	P	01 40 18.5 +0.7
MCK				pmax	pmax	
	comp=Z,32nm,0.8s					
MCK	McKinley	82.37	27	eP	P	01 40 18.5 +0.7
	comp=Z,32nm,0.8s					
RND	Reindeer	82.40	27	eP	P	01 40 18.6 +0.6
RND				pmax	pmax	
	comp=Z,158nm,2.0s					
RND	Reindeer	82.40	27	eP	P	01 40 18.6 +0.6
	comp=Z,158nm,2.0s					
SML	Sawmill	82.60	29	eP	P	01 40 19.5 +0.4
SML				pmax	pmax	
	comp=Z,42nm,1.1s					
SML	Sawmill	82.60	29	eP	P	01 40 19.5 +0.4
	comp=Z,42nm,1.1s					
MDM	Murphy Dome	82.71	25	eP	P	01 40 20.4 +0.9
	comp=Z,23nm,1.0s					
WRH	Wood River Hil	82.76	26	eP	P	01 40 20.6 +0.8
	comp=Z,26nm,0.9s					
COLA	College	82.87	25	ceP	P	01 40 21.2 +0.9
COLA				pmax	pmax	
	comp=Z,14nm,0.8s					
COLA	College	82.87	25	eP	P	01 40 20.0 -0.3
	comp=Z,14nm,0.8s					
CCB	Clear Creek Bu	82.89	26	eP	P	01 40 21.0 +0.6
	comp=Z,37nm,1.4s					
KLMR	Klimovskoe	83.01	331	P	P	01 40 16.1 -5.0
KLMR				pmax	pmax	
	comp=Z,10.0nm,1.3s					
SCM	Sheep Creek Mo	83.08	29	eP	P	01 40 22.9 +1.3
SCM				pmax	pmax	
	comp=Z,51nm,1.3s					
SCM	Sheep Creek Mo	83.08	29	eP	P	01 40 22.9 +1.3
	comp=Z,51nm,1.3s					
IL1	Eielson Array	83.28	26	eP	P	01 40 21.8 -0.6
ILAR	Eielson Array	83.28	26	P	P	01 40 22.2 -0.2
	comp=Z,12nm,0.7s,baz=239,slow=5.0,SNR=89					
ILB	Eielson Array	83.28	26	eP	P	01 40 22.3 -0.2
VSR	Storozhevoye	83.32	321	eP	P	01 40 19.4 -3.5
VSR				pmax	pmax	
	comp=Z,5.0nm,1.0s					
KLU	Klutina	83.75	29	eP	P	01 40 26.4 +1.4
	comp=Z,12nm,0.6s					
DIV	Divide	83.83	29	eP	P	01 40 26.9 +1.4
	comp=Z,116nm,1.6s					
PAX	Paxson	83.93	27	eP	P	01 40 27.5 +1.5
PAX				pmax	pmax	
	comp=Z,26nm,1.3s					
PAX	Paxson	83.93	27	eP	P	01 40 27.5 +1.5
	comp=Z,26nm,1.3s					
FYU	Fort Yukon	83.95	24	eP	P	01 40 29.3 +3.5
RAGM	Ragged Mountai	84.40	30	eP	P	01 40 30.2 +1.9
	comp=Z,50nm,1.2s					
BMRM	Bremner River	84.41	29	eP	P	01 40 29.9 +1.6
	comp=Z,22nm,0.8s					
OBN	Obninsk	84.73	325	iP	P	01 40 28.4 -1.6
OBN				pmax	pmax	
	comp=Z,4.0nm,0.6s					
OBN	Obninsk	84.73	325	eP	P	01 40 29.1 -0.9
	comp=Z,22nm,0.5s					
MENT	Mentasta	84.73	27	eP	P	01 40 32.1 +2.1
	comp=Z,7.8nm,0.8s					
ANN	Anapa	84.75	314	eP	P	01 40 34.8 +4.5
ANN				e*PP	pP	01 40 51.9 -3.9
ANN				eS	S	01 50 48.8 -1.5
ANN				pmax	pmax	
	comp=Z,53nm,1.0s					
BALM	Baldy	85.50	29	eP	P	01 40 35.7 +1.8
BALM				pmax	pmax	
	comp=Z,14nm,1.0s					
BALM	Baldy	85.50	29	eP	P	01 40 35.7 +1.8
	comp=Z,14nm,1.0s					
MAW	Mawson	85.72	200	P	P	01 40 33.2 -1.4
	comp=Z,3.4nm,0.6s,baz=60,slow=4.5,SNR=8.4					
EGAK	Eagle	85.73	25	eP	P	01 40 36.0 +1.2
	comp=Z,6.1nm,0.6s					
VNDA	Vanda	85.85	173	P	P	01 40 33.9 -1.3
	comp=Z,1.7nm,0.6s,baz=320,slow=6.7,SNR=9.8					
ASF	Jabal al Asfar	86.05	302	P	P	01 40 36.5 -0.8
	comp=Z,0.9nm,0.4s,baz=142,slow=6.5,SNR=3.1					
DAWY	Dawson	86.57	26	eP	P	01 40 40.1 +1.1
ARCES	ARCESS Array B	88.00	340	P	P	01 40 44.1 -1.6
	comp=Z,3.1nm,0.5s,baz=80,slow=5.9,SNR=29					
ARCES				PKKPbc	PKKPdf	01 58 30.3 +3.1
	comp=Z,1.8nm,0.9s,baz=249,slow=4.3,SNR=4.9					
INK	Inuvik	88.23	21	eP	P	01 40 47.1 +0.3
INK				pmax	pmax	
	comp=Z,4.0nm,0.9s					
INK	Inuvik	88.23	21	eP	P	01 40 47.1 +0.3
	comp=Z,4.2nm,0.9s					
CSS	Mathiatis	88.75	305	eP	P	01 40 51.8 +1.7
	comp=Z,3.0nm,0.9s					
FINES	FINESS Array B	89.42	332	P	P	01 40 50.4 -2.1
	comp=Z,2.3nm,0.7s,baz=59,slow=3.2,SNR=11					
DAG	Danmarks Havn	94.83	352⇓	iP	P	01 41 15.8 -1.5
	comp=Z,6.8nm,0.7s					
DAG	Danmarks Havn	94.83	352⇑	iP	P	01 41 15.8 -1.5
DAG				pmax	pmax	
	comp=Z,5.0nm,0.7s					
HFS	Hagfors	95.61	332	P	P	01 41 18.5 -2.7
	comp=Z,0.6nm,0.4s,baz=106,slow=3.2,SNR=10					
RES	Resolute Bay	95.62	10	eP	P	01 41 21.1 +0.2
RES				pmax	pmax	
	comp=Z,2.0nm,0.8s					
RES	Resolute Bay	95.62	10	eP	P	01 41 21.1 +0.2
	comp=Z,1.7nm,0.8s					
PSZ	Piszkesteto	96.18	319	eP	P	01 41 24.1 0.0
PSZ				pmax	pmax	
	comp=Z,4.0nm,0.9s					
PSZ	Piszkesteto	96.18	319	eP	P	01 41 24.1 0.0
	comp=Z,3.8nm,0.9s					
NB2	NORSAR Subarra	96.36	334	P	P	01 41 22.9 -1.7
	comp=Z,0.5nm,0.4s,baz=68,slow=4.6					
NOA	NORSAR Array B	96.36	334	P	P	01 41 22.5 -2.1
	comp=Z,0.7nm,0.7s,baz=65,slow=4.6,SNR=5.3					
YKA	Yellowknife Ar	97.64	24	P	Pdif	01 41 30.7 +0.4
	comp=Z,2.1nm,0.7s,baz=300,slow=4.6,SNR=35					
YKA				PKKPbc	PKKPbc	01 58 03.8 -4.8
	comp=Z,0.4nm,0.4s,baz=123,slow=3.4,SNR=15					
TXAR	Lajitas Array	120.68	51	PKP	PKPdf	01 46 47.6 -0.6
	comp=Z,0.5nm,0.6s,baz=224,slow=1.4,SNR=8.2					
JCT	Junction City	123.02	48	ePKIKP	PKPdf	01 46 52.9 +0.2
JCT	Junction City	123.02	48	ePKPdf	PKPdf	01 46 52.9 +0.2
WCI	Wyandotte Cave	126.64	32	ePKIKP	PKPdf	01 46 59.8 +0.5
WCI	Wyandotte Cave	126.64	32	ePKPdf	PKPdf	01 46 59.8 +0.5
PLCA	Paso Flores	142.46	159	PKhKP	PKPpre	01 47 24.1
	comp=Z,2.6nm,0.9s,baz=246,slow

Error ellipse: s-maj=1.2km s-min=2.1km az=0.0
CSEM ***11*** *01:30:56.7±0.1,39°.17N×16°.11E,h60km,ML4.0/20,Error ellipse: s-maj=4.6km s-min=2.6km az=114.0*
ROM ***11*** *01:30:57.3±0.1,39°.13N×16°.00E,h55km±2km,Ml3.1/31, Error ellipse: s-maj=1.7km s-min=1.0km az=101.0*
ISC 11 01:30:55.5±1.2,**39°.14N**±0°.02×**16°.09E**±0°.03,**h78**km±5km, **n110**,σ1⁰**08**/182,**10C-10D,Southern Italy**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CAR1	**CAROLEI**	**0.15**	**40**	Pg	**Pn**	**01 31 06.6**	**-0.3**
CAR1				Sg	**Sn**	**01 31 13.2**	**-2.2**
CAR1	**CAROLEI**	**0.15**	**40**	Pg	**Pn**	**01 31 06.6**	**-0.3**
CAR1				Sg	**Sn**	**01 31 13.2**	**-2.2**
GRI	**Girifalco**	**0.41**	**140**	Pg	**Pn**	**01 31 08.6**	**+0.3**
GRI				Sg	**Sn**	**01 31 16.6**	**-1.2**
	1μm,0.4s						
GRI	**Girifalco**	**0.41**	**140**	Pg	**Pn**	**01 31 08.6**	**+0.3**
GRI				Sg	**Sn**	**01 31 16.6**	**-1.2**
	1μm,0.4s						
SERS	**Sersale**	**0.48**	**102**	⇓*i*Pg	**Pn**	**01 31 09.9**	**+0.9**
SERS				Sg	**Sn**	**01 31 19.5**	**+0.5**
	700nm,0.3s						
SERS	**Sersale**	**0.48**	**102**	⇓*i*Pg	**Pn**	**01 31 09.9**	**+0.9**
SERS				Sg	**Sn**	**01 31 19.5**	**+0.5**
	700nm,0.3s						
TIP	**Timpagrande**	**0.53**	**85**	Pg	**Pn**	**01 31 10.2**	**+0.9**
TIP				Sg	**Sn**	**01 31 20.2**	**+0.6**
	477nm,0.5s						
TIP	**Timpagrande**	**0.53**	**85**	Pg	**Pn**	**01 31 10.2**	**+0.9**
TIP				Sg	**Sn**	**01 31 20.2**	**+0.6**
	477nm,0.5s						
JOPP	**Joppolo**	**0.55**	**196**	Pg	**Pn**	**01 31 09.7**	**+0.1**
JOPP				Sg	**Sn**	**01 31 18.5**	**-1.4**
	5μm,0.4s						
JOPP	**Joppolo**	**0.55**	**196**	Pg	**Pn**	**01 31 09.7**	**+0.1**
JOPP				Sg	**Sn**	**01 31 18.5**	**-1.4**
	5μm,0.4s						
PIPA	**Pietrapaola**	**0.67**	**58**	Pg	**Pn**	**01 31 12.0**	**+1.3**
PIPA				Sg	**Sn**	**01 31 23.3**	**+1.4**
	385nm,0.4s						
PIPA	**Pietrapaola**	**0.67**	**58**	Pg	**Pn**	**01 31 12.0**	**+1.3**
PIPA				Sg	**Sn**	**01 31 23.3**	**+1.4**
	385nm,0.4s						
LADO	**San Nicola del**	**0.71**	**78**	Pg	**Pn**	**01 31 12.0**	**+0.9**
	447nm,0.3s						
LADO	**San Nicola del**	**0.71**	**78**	Pg	**Pn**	**01 31 12.0**	**+0.9**
	447nm,0.3s						
PLAC	**Placanica**	**0.74**	**158**	Pg	**Pn**	**01 31 12.5**	**+1.0**
PLAC				Sg	**Sn**	**01 31 23.9**	**+0.6**
	1μm,0.8s						
PLAC	**Placanica**	**0.74**	**158**	Pg	**Pn**	**01 31 12.5**	**+1.0**
PLAC				Sg	**Sn**	**01 31 23.9**	**+0.6**
	1μm,0.8s						
STR3	**STROMBOLI 3**	**0.75**	**243**	Pg	**Pn**	**01 31 11.8**	**+0.3**
STR3				Sg	**Sn**	**01 31 22.5**	**-0.9**
STR3	**STROMBOLI 3**	**0.75**	**243**	Pg	**Pn**	**01 31 11.8**	**+0.3**
STR3				Sg	**Sn**	**01 31 22.5**	**-0.9**
SALB	**San Lorenzo Be**	**0.77**	**15**	Pg	**Pn**	**01 31 13.6**	**+1.7**
SALB				Sg	**Sn**	**01 31 24.6**	**+0.6**
	429nm,0.3s						
SALB	**San Lorenzo Be**	**0.77**	**15**	Pg	**Pn**	**01 31 13.6**	**+1.7**
SALB				Sg	**Sn**	**01 31 24.6**	**+0.6**
	429nm,0.3s						
CUC	**Castrocucco**	**0.88**	**346**	Pg	**Pn**	**01 31 13.2**	**+0.1**
CUC				Sg	**Sn**	**01 31 25.3**	**-0.8**
	223nm,0.5s						
CUC	**Castrocucco**	**0.88**	**346**	Pg	**Pn**	**01 31 13.2**	**+0.1**
CUC				Sg	**Sn**	**01 31 25.3**	**-0.8**
	223nm,0.5s						
CEL	**Celeste**	**0.89**	**190**	Pg	**Pn**	**01 31 13.6**	**+0.4**
CEL				Sg	**Sn**	**01 31 25.2**	**-1.1**
	275nm,0.4s						
CEL	**Celeste**	**0.89**	**190**	Pg	**Pn**	**01 31 13.6**	**+0.4**
CEL				Sg	**Sn**	**01 31 25.2**	**-1.1**
	275nm,0.4s						
MSCL	**Scilla**	**0.93**	**194**	Pg	**Pn**	**01 31 14.1**	**+0.4**
MSCL				Sg	**Sn**	**01 31 26.4**	**-0.8**
	1μm,0.6s						
MSCL	**Scilla**	**0.93**	**194**	Pg	**Pn**	**01 31 14.1**	**+0.4**
MSCL				Sg	**Sn**	**01 31 26.4**	**-0.8**
	1μm,0.6s						
ORI	**Oriolo Calabro**	**0.97**	**17**	Pg	**Pn**	**01 31 16.1**	**+2.1**
	655nm,0.4s						
ORI	**Oriolo Calabro**	**0.97**	**17**	Pg	**Pn**	**01 31 16.1**	**+2.1**
	655nm,0.4s						
MSRU	**Castanea**	**0.98**	**208**	Pg	**Pn**	**01 31 14.6**	**+0.4**
MSRU				Sg	**Sn**	**01 31 27.0**	**-1.2**
	665nm,0.4s						
MSRU	**Castanea**	**0.98**	**208**	Pg	**Pn**	**01 31 14.6**	**+0.4**
MSRU				Sg	**Sn**	**01 31 27.0**	**-1.2**
	665nm,0.4s						
SIRI	**Monte Sirino -**	**1.06**	**351**	Pg	**Pn**	**01 31 15.8**	**+0.6**
SIRI				Sg	**Sn**	**01 31 29.6**	**-0.3**
	366nm,0.2s						
SIRI	**Monte Sirino -**	**1.06**	**351**	Pg	**Pn**	**01 31 15.8**	**+0.6**
SIRI				Sg	**Sn**	**01 31 29.6**	**-0.3**
	366nm,0.2s						
SCHR	**S. Chirico Rap**	**1.06**	**360**	Pg	**Pn**	**01 31 16.3**	**+1.0**
	166nm,0.4s						
SOI	**Samo**	**1.06**	**181**	Pg	**Pn**	**01 31 16.4**	**+1.2**
SOI				Sg	**Sn**	**01 31 30.3**	**+0.4**
	203nm,0.5s						
SOI	**Samo**	**1.06**	**181**	Pg	**Pn**	**01 31 16.4**	**+1.2**
SOI				Sg	**Sn**	**01 31 30.3**	**+0.4**
	203nm,0.5s						
MGR	**Morigerati**	**1.08**	**338**	Pg	**Pn**	**01 31 16.1**	**+0.7**
MGR				Sg	**Sn**	**01 31 29.9**	**-0.4**
	205nm,0.3s						
MGR	**Morigerati**	**1.08**	**338**	Pg	**Pn**	**01 31 16.1**	**+0.7**
MGR				Sg	**Sn**	**01 31 29.9**	**-0.4**
	205nm,0.3s						
BULG	**Bulgheria - Ca**	**1.09**	**330**	Pg	**Pn**	**01 31 16.5**	**+0.9**
BULG				Sg	**Sn**	**01 31 30.5**	**-0.1**
	377nm,0.3s						
BULG	**Bulgheria - Ca**	**1.09**	**330**	Pg	**Pn**	**01 31 16.5**	**+0.9**
BULG				Sg	**Sn**	**01 31 30.5**	**-0.1**
	377nm,0.3s						
LLI	**Lipari**	**1.13**	**232**	Pg	**Pn**	**01 31 17.2**	**+1.2**
LLI				Sg	**Sn**	**01 31 31.0**	**-0.3**
	1μm,0.4s						
LLI	**Lipari**	**1.13**	**232**	Pg	**Pn**	**01 31 17.2**	**+1.2**
LLI				Sg	**Sn**	**01 31 31.0**	**-0.3**
	1μm,0.4s						
MPNC	**Port Mandanici**	**1.15**	**210**	Pg	**Pn**	**01 31 16.6**	**+0.4**
MPNC				Sg	**Sn**	**01 31 31.0**	**-0.7**
	496nm,0.2s						
MPNC	**Port Mandanici**	**1.15**	**210**	Pg	**Pn**	**01 31 16.6**	**+0.4**
MPNC				Sg	**Sn**	**01 31 31.0**	**-0.7**
	496nm,0.2s						
VPL	**Vulcano Piano**	**1.15**	**229**	Pg	**Pn**	**01 31 17.1**	**+0.9**
VPL				Sg	**Sn**	**01 31 31.6**	**-0.2**
	2μm,0.6s						
VPL	**Vulcano Piano**	**1.15**	**229**	Pg	**Pn**	**01 31 17.1**	**+0.9**
VPL				Sg	**Sn**	**01 31 31.6**	**-0.2**
	2μm,0.6s						
MTSN	**Montesano sull**	**1.16**	**347**	Pg	**Pn**	**01 31 16.9**	**+0.4**
MTSN				Sg	**Sn**	**01 31 32.9**	**+0.8**
	88nm,0.4s						
MTSN	**Montesano sull**	**1.16**	**347**	Pg	**Pn**	**01 31 16.9**	**+0.4**
MTSN				Sg	**Sn**	**01 31 32.9**	**+0.8**
	88nm,0.4s						
MPAZ	**Palizzi**	**1.18**	**183**	Pn	**Pn**	**01 31 18.2**	**+1.5**
	279nm,0.6s						
MPAZ	**Palizzi**	**1.18**	**183**	Pn	**Pn**	**01 31 18.2**	**+1.5**
	279nm,0.6s						
MCEL	**Monticello**	**1.21**	**350**	Pn	**Pn**	**01 31 17.6**	**+0.5**
	233nm,0.8s						
MCEL	**Monticello**	**1.21**	**350**	Pn	**Pn**	**01 31 17.6**	**+0.5**
	233nm,0.8s						
CRAC	**Craco**	**1.26**	**12**	Pn	**Pn**	**01 31 20.1**	**+2.5**
	145nm,0.3s						
IFIL	**Filicudi I Eol**	**1.32**	**245**	Pn	**Pn**	**01 31 19.1**	**+0.7**
IFIL				Sn	**Sn**	**01 31 35.2**	**-0.4**
	291nm,0.2s						
IFIL	**Filicudi I Eol**	**1.32**	**245**	Pn	**Pn**	**01 31 19.1**	**+0.7**
IFIL				Sn	**Sn**	**01 31 35.2**	**-0.4**
	291nm,0.2s						
CMPR	**Campora**	**1.32**	**333**	Pn	**Pn**	**01 31 19.5**	**+1.0**
	128nm,0.4s						
CMPR	**Campora**	**1.32**	**333**	Pn	**Pn**	**01 31 19.5**	**+1.0**
	128nm,0.4s						
NOV	**Novara**	**1.33**	**214**	Pn	**Pn**	**01 31 19.3**	**+0.6**
	295nm,0.5s						
NOV	**Novara**	**1.33**	**214**	Pn	**Pn**	**01 31 19.3**	**+0.6**
	295nm,0.5s						
MMME	**Mongiuffi-Meli**	**1.37**	**209**	Pn	**Pn**	**01 31 20.0**	**+0.9**
MMME				Sn	**Sn**	**01 31 36.6**	**-0.2**
	176nm,0.3s						
MMME	**Mongiuffi-Meli**	**1.37**	**209**	Pn	**Pn**	**01 31 20.0**	**+0.9**
MMME				Sn	**Sn**	**01 31 36.6**	**-0.2**
	176nm,0.3s						
CDRU	**Civita di Ruta**	**1.48**	**336**	Pn	**Pn**	**01 31 21.8**	**+1.3**
	87nm,0.4s						
CDRU	**Civita di Ruta**	**1.48**	**336**	Pn	**Pn**	**01 31 21.8**	**+1.3**
	87nm,0.4s						
IACL	**Alicudi**	**1.48**	**246**	Pn	**Pn**	**01 31 21.4**	**+1.0**
	113nm,0.2s						
IACL	**Alicudi**	**1.48**	**246**	Pn	**Pn**	**01 31 21.4**	**+1.0**
	113nm,0.2s						
TAR1	**Taranto**	**1.67**	**33**	*i* Pn	**Pn**	**01 31 22.8**	**-0.1**
SG1	**Sgolgore (BA)**	**1.76**	**15**	*e*Pn	**Pn**	**01 31 25.6**	**+1.4**
CDT	**Castel del Mon**	**1.95**	**4**	*e*Pn	**Pn**	**01 31 28.7**	**+2.0**
BAI	**Bari**	**2.06**	**17**	*e*Pn	**Pn**	**01 31 28.3**	**+0.2**
VLS	**Valsamata**	**3.65**	**104**	P	**Pn**	**01 31 50.0**	**+0.3**
VLS	**Valsamata**	**3.65**	**104**	P	**Pn**	**01 31 50.0**	**+0.3**
ULC	**Ulcinj**	**3.71**	**39**	*e*Pn	**Pn**	**01 31 49.7**	**-0.7**
ULC				*e*Sn	**Sn**	**01 32 31.1**	**-1.9**
ULC	**Ulcinj**	**3.71**	**39**	*e*Pn	**Pn**	**01 31 49.7**	**-0.7**
ULC				*e*Sn	**Sn**	**01 32 31.1**	**-1.9**
HCY	**Herceg Novi**	**3.78**	**28**	⇓*i*Pn	**Pn**	**01 31 50.4**	**-0.9**
HCY				*e*Sn	**Sn**	**01 32 33.5**	**-1.1**
HCY	**Herceg Novi**	**3.78**	**28**	⇓*i*Pn	**Pn**	**01 31 50.4**	**-0.9**
HCY				*e*Sn	**Sn**	**01 32 33.5**	**-1.1**
BUM	**Brajici-Budva**	**3.81**	**33**	*e*Pn	**Pn**	**01 31 51.2**	**-0.7**
BUM				*e*Sn	**Sn**	**01 32 34.1**	**-1.5**
BUM	**Brajici-Budva**	**3.81**	**33**	*e*Pn	**Pn**	**01 31 51.2**	**-0.7**
BUM				*e*Sn	**Sn**	**01 32 34.1**	**-1.5**
DRME	**Dracevica, Mon**	**3.85**	**37**	⇑*i*Pn	**Pn**	**01 31 51.9**	**-0.4**
DRME				*e*Sn	**Sn**	**01 32 35.2**	**-1.2**
DRME	**Dracevica, Mon**	**3.85**	**37**	⇑*i*Pn	**Pn**	**01 31 51.9**	**-0.4**
DRME				*e*Sn	**Sn**	**01 32 35.2**	**-1.2**
ZKS	**Zakynthos**	**3.96**	**110**	P	**Pn**	**01 31 54.0**	**+0.1**
ZKS	**Zakynthos**	**3.96**	**110**	P	**Pn**	**01 31 54.0**	**+0.1**
CEME	**Cevo**	**4.03**	**31**	⇓*i*Pn	**Pn**	**01 31 53.8**	**-1.0**
CEME				*e*Sn	**Sn**	**01 32 39.8**	**-1.0**
CEME	**Cevo**	**4.03**	**31**	⇓*i*Pn	**Pn**	**01 31 53.8**	**-1.0**
CEME				*e*Sn	**Sn**	**01 32 39.8**	**-1.0**
NEST	**Nestorio**	**4.03**	**70**	P	**Pn**	**01 31 57.2**	**+2.3**
NEST	**Nestorio**	**4.03**	**70**	P	**Pn**	**01 31 57.2**	**+2.3**
PDG	**Podgorica**	**4.08**	**35**	⇑*i*Pn	**Pn**	**01 31 54.9**	**-0.5**
PDG				*e*Sn	**Sn**	**01 32 40.7**	**-1.1**
TTG	**Podgorica**	**4.08**	**35**	⇑*i*Pn	**Pn**	**01 31 54.9**	**-0.5**
TTG				*e*Sn	**Sn**	**01 32 40.7**	**-1.1**
BRY	**Bratogost**	**4.19**	**25**	⇑*i*Pn	**Pn**	**01 31 56.8**	**-0.3**
BRY				*e*Sn	**Sn**	**01 32 43.9**	**-1.0**
BRY	**Bratogost**	**4.19**	**25**	⇑*i*Pn	**Pn**	**01 31 56.8**	**-0.3**
BRY				*e*Sn	**Sn**	**01 32 43.9**	**-1.0**
NKME	**Niksic**	**4.23**	**30**	⇑*i*Pn	**Pn**	**01 31 56.8**	**-0.7**
NKME				*e*Sn	**Sn**	**01 32 44.4**	**-1.2**
NKME	**Niksic**	**4.23**	**30**	⇑*i*Pn	**Pn**	**01 31 56.8**	**-0.7**
NKME				*e*Sn	**Sn**	**01 32 44.4**	**-1.2**
FNA	**Florina**	**4.39**	**66**	P	**Pn**	**01 32 01.2**	**+1.5**
FNA	**Florina**	**4.39**	**66**	P	**Pn**	**01 32 01.2**	**+1.5**
PVY	**Plav**	**4.53**	**39**	*e*Pn	**Pn**	**01 32 01.7**	**0.0**
PVY				*e*Sn	**Sn**	**01 32 51.0**	**-2.2**
PVY	**Plav**	**4.53**	**39**	*e*Pn	**Pn**	**01 32 01.7**	**0.0**
PVY				*e*Sn	**Sn**	**01 32 51.0**	**-2.2**
UPM	**Unac-Piva**	**4.58**	**27**	⇑*i*Pn	**Pn**	**01 32 02.2**	**-0.3**
UPM				*e*Sn	**Sn**	**01 32 53.3**	**-1.3**
UPM	**Unac-Piva**	**4.58**	**27**	⇑*i*Pn	**Pn**	**01 32 02.2**	**-0.3**
UPM				*e*Sn	**Sn**	**01 32 53.3**	**-1.3**
BEY	**Berane**	**4.71**	**36**	⇓*i*Pn	**Pn**	**01 32 03.8**	**-0.4**
BEY				*e*Sn	**Sn**	**01 32 56.4**	**-1.2**
IVA	**Berane**	**4.71**	**36**	⇓*i*Pn	**Pn**	**01 32 03.8**	**-0.4**
IVA				*e*Sn	**Sn**	**01 32 56.4**	**-1.2**
PLE	**Pljevlja**	**4.87**	**30**	⇓*i*Pn	**Pn**	**01 32 06.8**	**+0.4**
PLE				*e*Sn	**Sn**	**01 32 59.8**	**-1.7**
PLE	**Pljevlja**	**4.87**	**30**	⇓*i*Pn	**Pn**	**01 32 06.8**	**+0.4**
PLE				*e*Sn	**Sn**	**01 32 59.8**	**-1.7**
SJES	**Sjenica**	**5.06**	**34**	*e*Pn	**Pn**	**01 32 11.6**	**+2.7**
GRG	**Griva**	**5.18**	**67**	P	**Pn**	**01 32 12.0**	**+1.6**
GRG	**Griva**	**5.18**	**67**	P	**Pn**	**01 32 12.0**	**+1.6**
IVAS	**Ivanjica**	**5.39**	**33**	*e*Pn	**Pn**	**01 32 15.2**	**+1.9**
UDBI	**Udbina**	**5.39**	**358**	Sn	**Sn**	**01 33 13.3**	**-0.8**
UDBI	**Udbina**	**5.39**	**358**	Sn	**Sn**	**01 33 13.3**	**-0.8**
NVLJ	**Novalja**	**5.50**	**351**	*e*Pn	**Pn**	**01 32 16.7**	**+1.9**
NVLJ				Sn	**Sn**	**01 33 16.7**	**+0.1**
NVLJ	**Novalja**	**5.50**	**351**	*e*Pn	**Pn**	**01 32 16.6**	**+1.9**
NVLJ				Sn	**Sn**	**01 33 16.6**	**+0.1**
DIVS	**Divibare**	**5.76**	**29**	*e*Pn	**Pn**	**01 32 18.3**	**-0.1**
FGSL	**Fruska Gora**	**6.62**	**23**	*e*Pn	**Pn**	**01 32 27.5**	**-2.6**

IDC 11 01:35:21.4±4.4,**19°.51S**×**168°.20E**,**h36**km±9km,**mb3.7**/3, **mb1 3.9**/3,**mb1mx3.5**/29,**mbtmp3.9**/3,**MS3.9**/2,**Ms1 3.9**/2, **ms1mx3.3**/23,**Error ellipse: s-maj=92.8km s-min=69.4km az=136.0,Vanuatu Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**26.87**	**237**	P	P	01 40 58.0	-0.8
	0.9nm,0.4s,baz=72,slow=9.6,SNR=3.3						
STKA				pP	pP	01 41 09.1	0.0
	3.5nm,0.8s,baz=73,slow=9.2,SNR=3.0						
WRA	**Warramunga Arr**	**31.84**	**263**	P	P	01 41 43.4	+0.3
	0.4nm,0.6s,baz=90,slow=8.7,SNR=2.3						
WRA				pP	pP	01 41 53.7	+0.2
	0.5nm,0.4s,baz=90,slow=8.5,SNR=2.8						
ASAR	**Alice Springs**	**32.10**	**256**	P	P	01 41 45.5	+0.1
	1.4nm,0.7s,baz=87,slow=8.9,SNR=15						
ASAR				pP	pP	01 41 55.7	-0.1
	5.9nm,0.9s,baz=83,slow=8.9,SNR=16						
ASAR				LR	LR	01 55 35.4	
	comp=Z,250nm,18.1s,baz=25,slow=38						
PDAR	**Pinedale Array**	**97.52**	**47**	LR	LR	02 34 35.9	
	comp=Z,38nm,18.0s,baz=3.5,slow=36						
GERES	**GERESS Array B**	**144.26**	**331**	PKP	PKPdf	01 54 53.3	-0.2
	0.4nm,0.7s,baz=46,slow=4.2,SNR=4.8						

CSEM ***11*** *01:45:35.6,37°.79N×14°.96E,h27km,ML3.5/30*
ROM 11 01:45:35.6±0.1,**37°.79N**×**14°.96E**,**h27**km±1km,**Ml3.5**/30, **20C-4D,Error ellipse: s-maj=1.4km s-min=1.0km az=104.0,Sicily**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ESLN	**Serra La Nave**	**0.10**	**174**	⇓*i*Pg	Pb	01 45 40.5	-0.2
ESLN				Sg	Sb	01 45 44.1	-0.1
	8μm,0.7s						
ESLN	**Serra La Nave**	**0.10**	**174**	⇓*i*Pg	Pb	01 45 40.5	-0.2
ESLN				Sg	Sb	01 45 44.1	-0.1
	8μm,0.7s						
MNO	**Monte Soro**	**0.26**	**304**	⇓*i*Pg	Pb	01 45 42.1	-0.2
MNO				Sg	Sb	01 45 47.0	+0.1
	4μm,0.5s						
MNO	**Monte Soro**	**0.26**	**304**	⇓*i*Pg	Pb	01 45 42.1	-0.2
MNO				Sg	Sb	01 45 47.0	+0.1
	4μm,0.5s						
MUCR	**Ucria**	**0.26**	**345**	⇑*i*Pg	Pb	01 45 41.9	-0.4
MUCR				Sg	Sb	01 45 47.3	+0.4
MUCR	**Ucria**	**0.26**	**345**	⇑*i*Pg	Pb	01 45 41.9	-0.4
MUCR				Sg	Sb	01 45 47.3	+0.4
MMME	**Mongiuffi-Meli**	**0.27**	**58**	Pg	Pb	01 45 42.7	+0.2
MMME				Sg	Sb	01 45 48.0	+0.9
	13μm,0.9s						
MMME	**Mongiuffi-Meli**	**0.27**	**58**	Pg	Pb	01 45 42.7	+0.2
MMME				Sg	Sb	01 45 48.0	+0.9
	13μm,0.9s						
NOV	**Novara**	**0.27**	**30**	⇑*i*Pg	Pb	01 45 42.4	-0.1
NOV				Sg	Sb	01 45 47.3	+0.1
	3μm,0.4s						
NOV	**Novara**	**0.27**	**30**	⇑*i*Pg	Pb	01 45 42.4	-0.1
NOV				Sg	Sb	01 45 47.3	+0.1
	3μm,0.4s						
ECNV	**Catenanuova**	**0.28**	**225**	Pg	Pb	01 45 43.0	+0.5
ECNV				Sg	Sb	01 45 47.0	-0.2
	4μm,0.6s						
ECNV	**Catenanuova**	**0.28**	**225**	Pg	Pb	01 45 43.0	+0.5
ECNV				Sg	Sb	01 45 47.0	-0.2
	4μm,0.6s						
GALF	**Gagliano Caste**	**0.32**	**256**	Pg	Pb	01 45 43.5	+0.3
GALF				Sg	Sn	01 45 50.0	-0.5
	5μm,0.4s						
GALF	**Gagliano Caste**	**0.32**	**256**	Pg	Pb	01 45 43.5	+0.3
GALF				Sg	Sn	01 45 50.0	-0.5
	5μm,0.4s						
MCSR	**Castroreale**	**0.35**	**40**	⇑*i*Pg	Pb	01 45 43.6	-0.1
MCSR	**Castroreale**	**0.35**	**40**	⇑*i*Pg	Pb	01 45 43.6	-0.1
CAGR	**Agira**	**0.40**	**245**	⇑*i*Pg	Pb	01 45 45.3	-0.4
	8μm,0.7s						
CAGR	**Agira**	**0.40**	**245**	⇑*i*Pg	Pn	01 45 45.3	-0.4
	8μm,0.7s						
HLNI	**Lentini**	**0.45**	**189**	⇑*i*Pg	Pb	01 45 44.9	-0.1
HLNI				Sg	Sb	01 45 52.0	+0.6
	2μm,0.5s						
HLNI	**Lentini**	**0.45**	**189**	⇑*i*Pg	Pb	01 45 44.9	-0.1
HLNI				Sg	Sb	01 45 52.0	+0.6
	2μm,0.5s						
MPNC	**Port Mandanici**	**0.47**	**41**	⇑*i*Pg	Pb	01 45 45.6	+0.2
MPNC				Sg	Sn	01 45 53.3	-0.8
	7μm,0.7s						
MPNC	**Port Mandanici**	**0.47**	**41**	⇑*i*Pg	Pb	01 45 45.6	+0.2
MPNC				Sg	Sn	01 45 53.3	-0.8
	7μm,0.7s						
HCRL	**Carlentini**	**0.51**	**174**	⇑*i*Pg	Pb	01 45 46.1	+0.1
HCRL				Sg	Sn	01 45 54.1	-0.9
	11μm,0.7s						
HCRL	**Carlentini**	**0.51**	**174**	⇑*i*Pg	Pb	01 45 46.1	+0.1
HCRL				Sg	Sn	01 45 54.1	-0.9
	11μm,0.7s						
HAGA	**Augusta**	**0.53**	**163**	Pg	Pb	01 45 46.4	+0.1
HAGA				Sg	Sn	01 45 54.6	-0.8
	2μm,0.4s						
HAGA	**Augusta**	**0.53**	**163**	Pg	Pb	01 45 46.4	+0.1
HAGA				Sg	Sn	01 45 54.6	-0.8
	2μm,0.4s						
AGST	**Augusta-Monte**	**0.57**	**158**	Pg	Pb	01 45 47.1	0.0
	277nm,0.3s						
AGST	**Augusta-Monte**	**0.57**	**158**	Pg	Pb	01 45 47.1	0.0
	277nm,0.3s						
VPL	**Vulcano Piano**	**0.59**	**2**	⇑*i*Pg	Pb	01 45 47.5	+0.1
VPL				Sg	Sn	01 45 56.9	-0.1
	13μm,0.8s						
VPL	**Vulcano Piano**	**0.59**	**2**	⇑*i*Pg	Pb	01 45 47.5	+0.1
VPL				Sg	Sn	01 45 56.9	-0.1
	13μm,0.8s						
MSRU	**Castanea**	**0.64**	**42**	Pg	Pb	01 45 48.3	+0.1
MSRU				Sg	Sn	01 45 58.1	-0.1
	1μm,0.4s						
MSRU	**Castanea**	**0.64**	**42**	Pg	Pb	01 45 48.3	+0.1
MSRU				Sg	Sn	01 45 58.1	-0.1
	1μm,0.4s						
SSY	**Sortino**	**0.64**	**172**	⇑*i*Pg	Pb	01 45 48.2	-0.1
SSY				Sg	Sn	01 45 58.1	-0.2
	5μm,0.4s						
SSY	**Sortino**	**0.64**	**172**	⇑*i*Pg	Pb	01 45 48.2	-0.1
SSY				Sg	Sn	01 45 58.1	-0.2
	5μm,0.4s						
HVZN	**Vizzini**	**0.64**	**198**	⇑*i*Pg	Pb	01 45 48.0	-0.3
HVZN				Sg	Sn	01 45 58.3	-0.1
	4μm,0.7s						
HVZN	**Vizzini**	**0.64**	**198**	⇑*i*Pg	Pb	01 45 48.0	-0.3
HVZN				Sg	Sn	01 45 58.3	-0.1
	4μm,0.7s						
LLI	**Lipari**	**0.65**	**359**	Pg	Pn	01 45 49.0	-0.1
	5μm,0.5s						
LLI	**Lipari**	**0.65**	**359**	Pg	Pn	01 45 49.0	-0.1
	5μm,0.5s						
PLLN	**Pollina**	**0.68**	**287**	Pg	Pb	01 45 49.0	+0.1
	3μm,0.6s						
PLLN	**Pollina**	**0.68**	**287**	Pg	Pb	01 45 49.0	+0.1
	3μm,0.6s						
RAFF	**Raffo Rosso**	**0.74**	**220**	Pg	Pb	01 45 49.9	0.0
	1μm,0.7s						
RAFF	**Raffo Rosso**	**0.74**	**220**	Pg	Pb	01 45 49.9	0.0
	1μm,0.7s						
GIB	**Gibilmanna**	**0.77**	**285**	Pg	Pb	01 45 50.4	0.0
	5μm,0.9s						
GIB	**Gibilmanna**	**0.77**	**285**	Pg	Pb	01 45 50.4	0.0
	5μm,0.9s						
MSCL	**Scilla**	**0.79**	**56**	Pg	Pb	01 45 50.8	0.0
	1μm,0.7s						
MSCL	**Scilla**	**0.79**	**56**	Pg	Pb	01 45 50.8	0.0
	1μm,0.7s						
IFIL	**Filicudi I Eol**	**0.83**	**338**	Pg	Pb	01 45 51.3	-0.2
IFIL				Sg	Sn	01 46 03.7	+0.7
	3μm,0.5s						
IFIL	**Filicudi I Eol**	**0.83**	**338**	Pg	Pb	01 45 51.3	-0.2

SHO smax smax
comp=N,1μm,0.5s
SHO smax smax
comp=E,2μm,0.4s
SHO Shikotan 0.76 296⇓ *i*P Pn 01 59 56.6 +0.1
SHO AMB AMB 01 59 56.9
comp=E,450nm,0.4s
SHO AMB AMB 01 59 56.9
comp=E,850nm,0.4s
SHO AMB AMB 01 59 56.9
comp=E,2μm,0.4s
SHO *i* S **Sn 02 00 06.7 -0.2**
SHO A A 02 00 06.9
comp=E,1μm,0.3s
SHO A A 02 00 06.9
comp=E,2μm,0.3s
YUK Yuzh-Kuril'sk 1.48 290*d* *i*PN Pn 02 00 06.1 -0.2
YUK *i* S **Sn 02 00 23.2 -1.1**
YUK pmax pmax
comp=Z,364nm,0.2s
YUK pmax pmax
comp=N,132nm,0.1s
YUK pmax pmax
comp=E,118nm,0.1s
YUK smax smax
comp=N,1μm,0.3s
YUK smax smax
comp=E,501nm,0.3s
YUK Yuzh-Kuril'sk 1.48 290⇓ *i*P Pn 02 00 06.1 -0.2
YUK AMB AMB 02 00 07.2
comp=E,360nm,0.2s
YUK AMB AMB 02 00 07.2
comp=E,130nm,0.1s
YUK AMB AMB 02 00 07.2
comp=E,120nm,0.1s
YUK *i* S **Sn 02 00 23.2 -1.1**
YUK A A 02 00 27.8
comp=E,1μm,0.3s
YUK A A 02 00 27.8
comp=E,500nm,0.3s
NEM2 Nemuro 2 1.49 264 P **Pn 02 00 06.4 -0.1**
NEM2 *e*S **Sn 02 00 23.8 -0.9**
KUR Kuril'sk 1.70 2 *e*PN **Pn 02 00 09.6 +0.2**
KUR *i* S **Sn 02 00 29.0 -0.9**
KUR pmax pmax
comp=N,14nm,0.1s
KUR pmax pmax
comp=Z,27nm,0.1s
KUR pmax pmax
comp=E,27nm,0.2s
KUR smax smax
comp=N,260nm,0.3s
KUR smax smax
comp=E,154nm,0.3s
KUR Kuril'sk 1.70 2 *e*P **Pn 02 00 09.6 +0.2**
KUR AMB AMB 02 00 11.2
comp=E,10.0nm,0.2s
KUR AMB AMB 02 00 11.2
comp=E,30nm,0.2s
KUR *i* S **Sn 02 00 29.0 -0.9**
KUR A A 02 00 29.9
comp=E,260nm,0.2s
KUR A A 02 00 29.9
comp=E,150nm,0.2s
JRA Rausu 1.97 283 P **Pn 02 00 13.7 +0.7**
JNK Nakash 2.22 272 P **Pn 02 00 16.9 +0.3**
JNK *e*S **Sn 02 00 42.5 -0.3**
JAK Akkeshi 2.31 258 P **Pn 02 00 18.3 +0.5**
JTKR Abashiri--Toko 2.84 280 P **Pn 02 00 26.3 +1.3**
JAR Ashorobuto 2.93 267 P **Pn 02 00 27.2 +1.0**
JAR *e*S **Sn 02 01 00.2 0.0**
JMP Maruseppu 3.23 280 P **Pn 02 00 32.0 +1.5**
JKA Kamikawa-asahi 3.79 281 *e*P Pn 02 00 44.3 +6.2
ASAJ Asahikawa 3.79 281 P Pn 02 00 44.2 +6.1
comp=E,2.8nm,0.3s,baz=100,slow=21,SNR=7.7
YSS Yuzh-Sakhalins 4.93 316 *e*PN **Pn 02 00 55.8 +2.2**
YSS Yuzh-Sakhalins 4.93 316 *e*P **Pn 02 00 55.8 +2.2**
YSS AMB AMB 02 00 57.2
comp=E,30nm,0.3s
MKAR Makanchi Array 45.09 298 P **P 02 07 54.2 +0.2**
comp=E,0.3nm,0.5s,baz=76,slow=8.2,SNR=2.9
INK Inuvik 46.36 30 P **P 02 08 04.8 +1.1**
comp=E,1.5nm,0.7s,baz=299,slow=5.3,SNR=11
RES Resolute Bay 55.04 17 P **P 02 09 08.9 -0.1**
comp=E,1.2nm,0.4s,baz=336,slow=10.0,SNR=8.0
YKA Yellowknife Ar 55.73 34 P **P 02 09 14.4 +0.4**
comp=E,0.3nm,0.6s,baz=303,slow=7.3,SNR=5.7
FINES FINESS Array B 65.27 333 P **P 02 10 17.7 -1.5**
comp=E,1.0nm,0.7s,baz=94,slow=5.7,SNR=3.1
NB2 NORSAR Subarra 69.97 339 P **P 02 10 47.8 -1.0**
comp=Z,0.6nm,0.5s,baz=31,slow=6.5
NOA NORSAR Array B 69.97 339 P **P 02 10 48.0 -0.8**
comp=Z,0.7nm,0.5s,baz=33,slow=6.5,SNR=7.6
AKASG Malin Array Be 72.02 324 P **P 02 11 00.9 -0.5**
comp=Z,0.6nm,0.5s,baz=41,slow=6.2,SNR=4.2

*LJU **11** 02:08:29.5, 46°.39N×15°.07E, h0km, ML1.0 Rockburst*
CSEM 11 02:08:29.5±99.0, 46°.39N×15°.07E, h0km, Mining explosion., Northwestern Balkan Peninsula

IDC 11 02:12:15.4±6.4, 17°.00S×176°.47W, h0km, mb4.3/2, mb1 4.6/2, mb1mx3.7/29, mbtmp4.3/2, Error ellipse: s-maj=306.8km s-min=45.9km az=144.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**46.62**	**258**	P	P	P	02 20 45.6	-0.2
	1.0nm,0.4s,baz=96,slow=7.1,SNR=13							
ASAR	**Alice Springs**	**46.82**	**253**	P	P	P	02 20 47.5	+0.1
	4.1nm,0.5s,baz=87,slow=8.8,SNR=51							
BRTR	**Keskin Array B**	**145.43**	**317**	PKPbc	PKPbc	PKPbc	02 31 54.0	-1.8
	0.3nm,0.5s,baz=48,slow=2.1,SNR=3.6							
GERES	**GERESS Array B**	**147.18**	**348**	PKPbc	PKPbc	PKPbc	02 32 00.6	-0.1
	0.1nm,0.4s,baz=35,slow=3.6,SNR=4.0							

*NEIC **11** 02:16:35.7±0.4, 20°.45S×168°.45E, h10km, mb4.5/10, Error ellipse: s-maj=15.2km s-min=8.0km az=153.0*
*ISCJB **11** 02:16:36.8±0.6, 20°.4S±0°.1×168°.4E±0°.1, h26km, mb4.3/15, MS3.4/5, Error ellipse: s-maj=19.1km s-min=8.3km az=139.1*
*IDC **11** 02:16:40.4±1.6, 20°.41S×168°.26E, h38km±7km, mb4.0/6, mb1 4.3/7, mb1mx3.9/26, mbtmp4.2/7, ML3.5/1, MS3.5/6, Ms1 3.4/6, ms1mx3.2/31, Error ellipse: s-maj=50.7km s-min=17.3km az=138.0*
ISC 11 02:16:38.3±0.8, 20°.5S±0°.1×168°.4E±0°.1, h26km, n31, σ0961/32, mb4.4/15, MS3.3/5, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.43**	**228**	Pn		**Pn**	**02 17 16.2**	**-0.3**
	12nm,0.3s,baz=153,slow=23,SNR=28							
DZM				Sn		**Sn**	**02 17 45.3**	**-0.1**
	46nm,0.3s,baz=157,slow=23,SNR=7.7							
DZM				LR		LR	02 18 15.4	
	comp=Z,786nm,18.1s,baz=39,slow=40							
AFI	**Afiamalu**	**20.02**	**74**	LR		LR	02 27 22.4	
	comp=Z,89nm,20.1s,baz=265,slow=32							
CTAO	**Charters Tower**	**20.78**	**267**	*e*P		**P**	**02 21 18.1**	**+0.6**
	60nm,0.8s							
PMG	**Port Moresby**	**23.24**	**295**	LR		LR	02 29 13.4	
	comp=Z,58nm,19.1s,baz=274,slow=33							
PMG	**Port Moresby**	**23.24**	**295**	*e*P		**P**	**02 21 44.4**	**+0.6**
	6.2nm,0.6s							
COEN	**Coen**	**24.93**	**281**	*e*P		**P**	**02 22 00.7**	**+1.1**
	8.8nm,1.0s							
STKA	**Stephens Creek**	**26.54**	**239**	P		**P**	**02 22 14.8**	**+0.8**
	1.6nm,0.5s,baz=94,slow=14,SNR=3.0							
STKA				LR		LR	02 32 09.8	
	comp=Z,88nm,18.6s,baz=23,slow=35							
WRAB	**Tennant Creek**	**31.93**	**265**	*e*P		**P**	**02 23 02.3**	**+0.2**
	12nm,1.2s							
WRA	**Warramunga Arr**	**31.94**	**265**	P		**P**	**02 23 00.7**	**-1.4**
	1.0nm,0.8s,baz=86,slow=8.2,SNR=5.5							
WRA				pP		**sP**	**02 23 12.1**	**-0.9**
	0.8nm,0.4s,baz=91,slow=8.5,SNR=4.8							
ASAR	**Alice Springs**	**32.08**	**258**	P		**P**	**02 23 03.0**	**-0.4**
	4.2nm,0.6s,baz=87,slow=8.8,SNR=32							
ASAR				pP		**sP**	**02 23 13.8**	**-0.5**
	3.9nm,0.7s,baz=84,slow=9.1,SNR=10							
ASAR				LR		LR	02 34 46.0	
	comp=Z,102nm,20.8s,baz=160,slow=34							
QSPA	**South Pole Qui**	**69.61**	**180**	*e*P		**P**	**02 27 45.3**	**+0.3**
	7.8nm,0.7s							
USRK	**Ussuriysk Ar.**	**72.45**	**333**	P		**P**	**02 28 02.2**	**-0.1**
	2.1nm,0.7s,baz=144,slow=3.5,SNR=5.5							
USRK				pP		**sP**	**02 28 14.0**	**+0.3**
	2.1nm,0.7s,baz=109,slow=6.0,SNR=4.5							
CHTO	**Chiang Mai**	**78.44**	**295**	*e*P		**P**	**02 28 37.8**	**+0.4**
	2.3nm,0.6s							
BILL	**Bilibino**	**88.25**	**359**	*e*P		**P**	**02 29 25.9**	**-0.8**
	2.7nm,0.6s							
NVAR	**Mina Array Bea**	**90.19**	**49**	P		**P**	**02 29 36.8**	**0.0**
	2.6nm,0.8s,baz=228,slow=8.4,SNR=12							
MOD	**Modoc Plateau**	**90.38**	**45**	*e*P		**P**	**02 29 37.2**	**-0.3**
	1.1nm,0.5s							
TLY	**Talaya**	**91.31**	**326**	LR		LR	03 09 24.3	
	comp=Z,46nm,21.1s,baz=130,slow=35							
ILAR	**Eielson Array**	**91.62**	**18**	P		**P**	**02 29 42.6**	**+0.1**
	0.5nm,0.6s,baz=224,slow=7.1,SNR=5.0							
WVOR	**Wild Horse Val**	**91.73**	**45**	*e*P		**P**	**02 29 43.4**	**-0.3**
	1.2nm,0.5s							
TUC	**Tucson**	**93.33**	**57**	*e*P		**P**	**02 29 51.9**	**+0.5**
	1.5nm,0.7s							
YKA	**Yellowknife Ar**	**102.11**	**28**	P		**Pdif**	**02 30 30.5**	**+0.5**
	0.3nm,0.9s,baz=254,slow=3.8,SNR=3.8							
YKA				pP			02 30 42.8	
	0.1nm,0.5s,baz=252,slow=4.5,SNR=2.3							
PSZ	**Piszkesteto**	**142.64**	**325**	*e*PKPdf		**PKPdf**	**02 36 08.7**	**-0.4**
CONA	**Conrad Observa**	**144.75**	**327**	*i* PKPdf		**PKPdf**	**02 36 13.0**	**+0.1**
	7.0nm,1.5s							
GERES	**GERESS Array B**	**145.17**	**330**	PKPbc		**PKPbc**	**02 36 12.9**	**-0.2**
	0.7nm,0.7s,baz=50,slow=2.1,SNR=7.5							
MOA	**Molln**	**145.60**	**329**	*i* PKPab		**PKPab**	**02 36 14.9**	**+0.2**
	7.3nm,1.3s							
SOKA	**Soboth**	**146.00**	**326**	*i* PKPbc		**PKPdf**	**02 36 15.0**	**0.0**
	4.0nm,1.0s							
ABTA	**Abfaltersbach**	**147.22**	**329**	*i* PKPbc		**PKPbc**	**02 36 18.7**	**-0.7**
	1.1nm,0.5s							
MOTA	**Moosalm**	**147.45**	**331**	*i* PKPab		**PKPbc**	**02 36 20.8**	**+0.7**
	2.5nm,0.7s							
RETA	**Reutte**	**147.50**	**331**	*i* PKPbc		**PKPbc**	**02 36 19.0**	**-1.1**
	3.8nm,1.4s							
WLF	**Walferdange**	**147.60**	**338**	*e*PKPbc		**PKPbc**	**02 36 20.9**	**+0.7**
FETA	**Feichten**	**147.87**	**331**	*i* pPKPdf		**PKPbc**	**02 36 21.0**	**-0.2**
	5.8nm,1.0s							

IDC 11 02:20:48.1±1.8, 20°.40S×168°.17E, h0km, mb3.9/3, mb1 4.2/4, mb1mx3.8/27, mbtmp3.9/4, ML3.3/1, Error ellipse: s-maj=69.2km s-min=25.3km az=143.0, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.31**	**224**	Pn		Pn	02 21 26.7	-0.8
	7.0nm,0.3s,baz=111,slow=12,SNR=17							
DZM				Sn		Sn	02 21 56.2	-0.5
	56nm,0.3s,baz=153,slow=21,SNR=14							
WRA	**Warramunga Arr**	**31.73**	**265**	P		P	02 27 13.9	-0.1
	0.4nm,0.5s,baz=88,slow=8.4,SNR=12							
ASAR	**Alice Springs**	**31.88**	**258**	P		P	02 27 15.9	+0.6
	1.7nm,0.6s,baz=86,slow=8.7,SNR=16							
NVAR	**Mina Array Bea**	**90.32**	**49**	P		P	02 33 51.3	-0.2
	0.6nm,0.7s,baz=224,slow=7.1,SNR=4.6							

*ISCJB **11** 02:30:03.0±0.2, 20°.18S±0°.03×68°.71W±0°.03, h124km±2km, mb4.5/71, Error ellipse: s-maj=5.6km s-min=3.9km az=155.9*
*SCB **11** 02:30:03.5±0.4, 20°.06S×68°.51W, h116km, Ml4.5/1, Error ellipse: s-maj=13.8km s-min=3.3km az=56.0*
*NEIC **11** 02:30:04.9±0.2, 20°.16S×68°.47W, mb4.5/56, Error ellipse: s-maj=7.6km s-min=5.4km az=66.0*
NEIC Felt [III] at Pica and [II] at Alto Hospicio, Camina, Huara, Iquique, Pisagua, Pozo Almonte and Quillagua, Chile.
*IDC **11** 02:30:05.0±0.5, 20°.13S×68°.51W, h125km±3km, mb4.2/20, mb1 4.3/25, mb1mx4.2/44, mbtmp4.6/25, MS3.2/2, Ms1 3.2/2, ms1mx2.9/31, Error ellipse: s-maj=14.5km s-min=10.9km az=67.0*
*GUC **11** 02:30:05.4±0.7, 20°.22S×68°.89W, h109km±5km, ML4.8*
ISC 11 02:30:04.5±0.3, 20°.17S±0°.03×68°.72W±0°.04, h124km±2km, h123km:pP-P, n352, σ1958/419, mb4.4/71, 8C-1D, Chile-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
PB08	**IPOC Station P**	**0.41**	**274⇑**	*i*P		**Pn**	**02 30 21.8**	**-1.1**
PB08				*i* S		**Sn**	**02 30 34.2**	**-2.4**
PB08				IAML			02 30 35.7	
	comp=E,33μm,1.1s							
PB01	**IPOC Station P**	**1.13**	**219**	*i* P		**Pn**	**02 30 26.8**	**-1.4**
PB01				*i* S		**Sn**	**02 30 43.8**	**-2.5**
PB01				IAML			02 30 44.7	
	comp=E,24μm,0.2s							
PB01	**IPOC Station P**	**1.13**	**219**	*e*Pn		**Pn**	**02 30 26.8**	**-1.4**
MNMC	**Minye Minye**	**1.32**	**321**	*i* P		**Pn**	**02 30 30.4**	**-0.1**
MNMC				*i* S		**Sn**	**02 30 49.0**	**-1.2**
MNMC				IAML			02 30 51.0	
	comp=E,47μm,0.3s							
PSGC	**Pisagua**	**1.44**	**293**	*i* P		**Pn**	**02 30 30.4**	**-1.2**
PSGC				*i* S		**Sn**	**02 30 49.9**	**-2.3**
PSGC				IAML			02 30 50.7	
	comp=N,17μm,0.6s							
PATCX	**Punta Patache**	**1.49**	**244⇑**	*i*P		**Pn**	**02 30 30.6**	**-1.6**
PATCX				*i* S		**Sn**	**02 30 49.5**	**-3.7**
PATCX				IAML			02 30 51.5	
	comp=E,15μm,0.6s							
PB09	**IPOC Station P**	**1.69**	**197**	*i* P		**Pn**	**02 30 33.5**	**-1.2**
PB09				*e*S		**Sn**	**02 30 55.0**	**-2.6**
PB09				IAML			02 31 00.5	
	comp=E,16μm,1.1s							
LVC	**Limon Verde**	**2.44**	**184**	*i* P		**Pn**	**02 30 43.9**	**-0.2**
LVC				*i* S		**Sn**	**02 31 19.2**	**+4.9**
LVC	**Limon Verde**	**2.44**	**184**	P		**Pn**	**02 30 43.7**	**-0.3**
	comp=E,5μm,0.3s,baz=34,slow=13,SNR=891							
LVC				S		**Sn**	**02 31 13.8**	**-0.5**
	comp=E,7μm,0.3s,baz=290,slow=15,SNR=6.1							
LVC	**Limon Verde**	**2.44**	**184**	*e*Pn		**Pn**	**02 30 43.8**	**-0.2**
LVC				*e*Sn		**Sn**	**02 31 13.1**	**-1.2**
PB04	**IPOC Station P**	**2.54**	**212**	*e*Pn		**Pn**	**02 30 43.4**	**-1.7**
MOCB	**Mochara**	**3.08**	**111**	*e*Pn		**Pn**	**02 30 54.2**	**+1.8**
MOCB				*e*Sn		**Sn**	**02 31 29.7**	**+0.5**
	comp=E,1μm,1.2s							
BBOJ	**La Paz, Jacaqu**	**3.21**	**9⇑**	*i*Pn		**Pn**	**02 30 55.7**	**+1.4**
BBOE	**La Paz, Chanca**	**3.41**	**12⇑**	*i*Pn		**Pn**	**02 30 58.5**	**+1.6**
BBOD	**La Paz, Gloria**	**3.51**	**2⇓**	*i*Pn		**Pn**	**02 31 00.4**	**+2.2**
BBOD				⇑*i*Sn		**Sn**	**02 31 41.0**	**+1.3**
YJA	**Yavi**	**3.60**	**124**	*i* P		**Pn**	**02 31 00.8**	**+1.6**
PB10	**IPOC Station P**	**3.74**	**207**	*e*Pn		**Pn**	**02 30 58.1**	**-2.6**
LPAZ	**La Paz**	**3.90**	**8**	*i* P		**Pn**	**02 31 05.0**	**+1.6**
LPAZ	**La Paz**	**3.90**	**8**	P		**Pn**	**02 31 04.4**	**+1.0**
	comp=E,58nm,0.3s,baz=176,slow=6.9,SNR=1042							
LPAZ				LR		LR	02 33 11.8	
	comp=E,286nm,19.5s,baz=264,slow=49							
LPAZ	**La Paz**	**3.90**	**8⇑**	*i*Pn		**Pn**	**02 31 05.1**	**+1.7**
LPAZ				*e*Sn		**Sn**	**02 31 50.2**	**+1.3**
LPAZ	**La Paz**	**3.90**	**8**	*e*Pn		**Pn**	**02 31 05.3**	**+1.9**
BBOB	**La Paz, Bander**	**4.04**	**8⇑**	*i*Pn		**Pn**	**02 31 06.7**	**+1.5**
HJA	**Humahuaca**	**4.32**	**135**	*i* P		**Pn**	**02 31 09.6**	**+0.9**
HJA				*i* S		**Sn**	**02 32 00.8**	**+2.4**
ARE	**Arequipa**	**4.53**	**324**	*e*P		**Pn**	**02 31 11.0**	**-0.5**
ARE				*e*S		**Sn**	**02 31 59.0**	**-4.5**
AZAP	**Zapla**	**5.27**	**141**	*i* P		**Pn**	**02 31 20.0**	**-1.3**
SLA	**San Lorenzo**	**5.42**	**147**	*i* P		**Pn**	**02 31 20.9**	**-2.4**
FSA	**Cafayete**	**6.43**	**157**	*i* P		**Pn**	**02 31 32.9**	**-4.0**
FSA				IAML			02 32 42.8	
	comp=Z,4.0nm,0.4s							
FSA				*i* S		**Sn**	**02 32 43.1**	**-6.0**
SIV	**San Ignacio**	**8.37**	**61**	P		**Pn**	**02 32 00.8**	**-2.3**
	comp=Z,15nm,0.3s,baz=262,slow=11,SNR=267							
SIV	**San Ignacio**	**8.37**	**61**	*e*P		**Pn**	**02 32 00.7**	**-2.4**
LCO	**Las Campanas**	**8.99**	**191**	*e*Pn		Pn	02 32 07.8	-3.7
CPUP	**Villa Florida**	**12.13**	**123**	P		**Pn**	**02 32 51.2**	**-2.1**
	comp=Z,1.6nm,0.3s,baz=303,slow=12,SNR=132							
CPUP				LR		LR	02 38 54.2	
	comp=Z,107nm,18.6s,baz=294,slow=44							
CPUP	**Villa Florida**	**12.13**	**123**	*e*Pn		**Pn**	**02 32 51.1**	**-2.2**
SAML	**Samuel**	**12.37**	**26**	*e*Pn		**Pn**	**02 32 54.1**	**-2.4**
SAML				*e*Sn		**Sn**	**02 35 05.7**	**-7.1**
ROC1	**El Roble**	**12.92**	**189**	*e*Pn		Pn	02 32 57.6	-6.2
ATAH	**Atahualpa**	**16.00**	**323**	P		**Pn**	**02 33 45.0**	**+1.9**
	comp=Z,0.3nm,0.3s,baz=184,slow=16,SNR=4.6							
TRQA	**Tornquist**	**18.76**	**163**	*e*P		**P**	**02 34 13.9**	**0.0**
	comp=Z,48nm,1.6s							
SPB	**Sao Paulo**	**20.04**	**104**	*e*P		**P**	**02 34 27.0**	**-0.9**
	comp=Z,33nm,0.6s							
PLCA	**Paso Flores**	**20.56**	**184**	P		**P**	**02 34 33.2**	**-0.2**
	comp=Z,21nm,0.7s,baz=28,slow=11,SNR=27							
PLCA	**Paso Flores**	**20.56**	**184**	*e*P		**P**	**02 34 34.0**	**+0.6**
	comp=Z,21nm,0.7s							
PTGA	**Pitinga**	**21.13**	**25**	P		**P**	**02 34 37.8**	**-1.9**
	comp=Z,4.2nm,0.3s,baz=196,slow=19,SNR=8.5							
PTGA				S		**S**	**02 38 20.3**	**-7.6**
	comp=Z,5.7nm,0.7s,baz=312,slow=20,SNR=4.2							
OTAV	**Otavalo**	**22.41**	**334**	*e*P		**P**	**02 34 55.7**	**+2.1**
	comp=Z,50nm,1.4s							
OTAV	**Otavalo**	**22.41**	**334**	*e*P		**P**	**02 34 54.0**	**+0.4**
CRUC	**La Cruz**	**23.06**	**339**	*e*P		**P**	**02 35 00.8**	**+1.0**
SJAC	**San Juan de Ar**	**23.86**	**347**	*e*P		**P**	**02 35 08.7**	**+2.0**
POPC	**Popayan, Colom**	**23.88**	**340**	*e*P		**P**	**02 35 07.6**	**+0.5**
PRAC	**Prado**	**24.49**	**345**	*e*P		**P**	**02 35 11.5**	**-0.9**
VILC	**Villavicencio,**	**24.62**	**348**	*e*P		**P**	**02 35 13.2**	**-0.5**
GRGC	**Isla de Gorgon**	**24.82**	**337**	*e*P		**P**	**02 35 18.3**	**+2.9**
ROSC	**El Rosal**	**25.45**	**347**	P		**P**	**02 35 21.1**	**-0.4**
	comp=Z,4.5nm,0.3s,baz=90,slow=20,SNR=3.4							
RUSC	**La Rusia**	**26.25**	**350**	*e*P		**P**	**02 35 27.9**	**-0.9**
NORC	**Norcasia**	**26.28**	**346**	*e*P		**P**	**02 35 27.4**	**-1.2**
HELC	**Santa Helena**	**27.04**	**345**	*e*P		**P**	**02 35 33.0**	**-2.7**
CBRI	**Barrientos, No**	**28.00**	**351**	*e*P		**P**	**02 35 42.6**	**-1.5**
GRMC	**Gramalote, San**	**28.00**	**351**	*e*P		**P**	**02 35 41.5**	**-2.6**
DBBC	**Dabeiba**	**28.00**	**344**	*e*P		**P**	**02 35 45.5**	**+1.4**
SDV	**Santo Domingo**	**28.93**	**356**	P		**P**	**02 35 51.4**	**-1.0**
	comp=Z,7.9nm,0.5s,baz=358,slow=6.9,SNR=3.2							
MOTC	**Monteria, Cord**	**29.57**	**346**	*e*P		**P**	**02 35 55.1**	**-2.7**
JTS	**JuntasAbangare**	**34.23**	**331**	*e*P		**P**	**02 36 40.7**	**+2.0**
	comp=Z,6.5nm,0.8s							
RCBR	**Riachuelo**	**34.91**	**70**	P		**P**	**02 36 42.8**	**-1.8**
	comp=Z,11nm,0.7s,baz=190,slow=5.7,SNR=6.5							
CELP	**Cerrillos**	**38.06**	**3**	*e*P		**P**	**02 37 09.8**	**-1.4**
SJG	**San Juan**	**38.12**	**4**	P		**P**	**02 37 10.1**	**-1.6**
	comp=Z,22nm,0.7s,baz=148,slow=3.2,SNR=18							
MPR	**Mayaguez**	**38.17**	**2**	*e*P		**P**	**02 37 09.3**	**-2.8**
	comp=Z,17nm,0.8s							
CBYP	**Canovanas**	**38.30**	**4**	*e*P		**P**	**02 37 11.1**	**-2.2**
	comp=Z,18nm,0.8s							
ZAIG	**Zacatecas**	**53.97**	**321**	*e*P		**P**	**02 39 18.4**	**+2.3**
ZAIG				*e*pP		**pP**	**02 39 46.8**	**+1.5**
JSC	**Jenkinsville**	**55.45**	**347**	*e*P		**P**	**02 39 27.2**	**+0.9**
	comp=Z,10nm,1.0s							
933A	**Laredo**	**55.96**	**327**	P		**P**	**02 39 30.6**	**+0.6**
	baz=145							
736A	**Circle Diamond**	**55.98**	**330**	P		**P**	**02 39 31.7**	**+1.6**
	baz=147							
Z48A	**Northport**	**56.20**	**341**	P		**P**	**02 39 31.1**	**-0.5**
	baz=158							
833A	**Chaparral WMA,**	**56.59**	**327**	P		**P**	**02 39 34.9**	**+0.4**
	baz=145							
734A	**La Parita Cree**	**56.61**	**328**	P		**P**	**02 39 35.0**	**+0.4**
	baz=146							
340A	**Bronson**	**56.69**	**334**	P		**P**	**02 39 36.0**	**+0.8**
	baz=151							
Y47A	**UCPARC, Winfie**	**56.78**	**341**	P		**P**	**02 39 35.2**	**-0.5**
	baz=158							
733A	**Divot King Ran**	**56.87**	**328**	P		**P**	**02 39 37.0**	**+0.5**
	baz=145							
338A	**Crockett**	**57.24**	**333**	P		**P**	**02 39 40.5**	**+1.5**
	baz=150							
NATX	**Nacogdoches**	**57.31**	**334**	P		**P**	**02 39 40.4**	**+0.9**
	baz=151							
TKL	**Tuckaleechee C**	**57.33**	**345**	*e*P		**P**	**02 39 39.6**	**0.0**
	comp=Z,6.3nm,0.9s							
141A	**Papa Simpson,**	**57.35**	**336**	P		**P**	**02 39 40.7**	**+0.9**
	baz=153							
633A	**Saathoff Ranch**	**57.42**	**328**	P		**P**	**02 39 41.2**	**+0.9**
	baz=146							
SWET	**Sewanee**	**57.45**	**343**	*e*P		**P**	**02 39 40.5**	**-0.1**
SWET				*e*pP		**pP**	**02 40 10.4**	**+0.3**
534A	**Blanco**	**57.55**	**329**	P		**P**	**02 39 41.8**	**+0.5**
	baz=146							
238A	**Jacksonville**	**57.72**	**333**	P		**P**	**02 39 43.6**	**+1.3**
	baz=150							
OXF	**Oxford**	**57.83**	**340**	*e*P		**P**	**02 39 43.0**	**-0.1**
	comp=Z,16nm,1.0s							
237A	**Washetta, Mont**	**58.01**	**333**	P		**P**	**02 39 45.8**	**+1.4**
	baz=150							
335A	**Moody**	**58.11**	**331**	P		**P**	**02 39 46.0**	**+0.8**
	baz=148							
Z40A	**Long Farm, Mag**	**58.12**	**336**	P		**P**	**02 39 46.7**	**+1.6**
	baz=152							
138A	**Matatall Enter**	**58.27**	**334**	P		**P**	**02 39 47.8**	**+1.5**
	baz=150							
236A	**Katherine and**	**58.32**	**332**	P		**P**	**02 39 47.4**	**+0.9**
	baz=149							
WLAR	**White Oak Lake**	**58.39**	**336**	*e*P		**P**	**02 39 48.8**	**+1.8**
WLAR				*e*pP		**pP**	**02 40 19.2**	**+2.6**
433A	**Art**	**58.44**	**329**	P		**P**	**02 39 47.9**	**+0.4**
	baz=146							
137A	**Heron Place, G**	**58.50**	**333**	P		**P**	**02 39 48.9**	**+1.1**
	baz=150							
334A	**Lometa**	**58.52**	**330**	P		**P**	**02 39 48.2**	**+0.2**
	baz=147							
JCT	**Junction City**	**58.56**	**329**	P		**P**	**02 39 48.5**	**0.0**
	baz=145							
JCT	**Junction City**	**58.56**	**329**	*e*P		**P**	**02 39 48.4**	**0.0**
	comp=Z,9.1nm,1.2s							
WHTX	**Lake Whitney,**	**58.72**	**331**	P		**P**	**02 39 49.7**	**+0.3**
	baz=148							
WHTX	**Lake Whitney,**	**58.72**	**331**	*e*P		**P**	**02 39 50.3**	**+0.9**
	comp=Z,13nm,0.7s							
WVT	**Waverly**	**58.84**	**342**	*e*P		**P**	**02 39 49.6**	**-0.5**
	comp=Z,7.9nm,0.8s							
WVT				*e*pP		**pP**	**02 40 19.4**	**-0.3**
333A	**Richland Sprin**	**58.87**	**330**	P		**P**	**02 39 50.7**	**+0.3**
	baz=146							
Y39A	**Locksburg**	**58.99**	**335**	P		**P**	**02 39 51.9**	**+0.7**
	baz=152							
234A	**Clairette**	**59.04**	**331**	P		**P**	**02 39 52.0**	**+0.4**
	baz=147							
135A	**Vickery Place,**	**59.18**	**332**	P		**P**	**02 39 53.4**	**+0.8**
	baz=148							
MIAR	**Mount Ida**	**59.33**	**336**	P		**P**	**02 39 53.

X35A	Drake	60.56 333	P	P	02 40 02.1	+0.1
	baz=149					
W37B	Quinton	60.57 335	P	P	02 40 02.8	+0.8
	baz=151,SNR=7.6					
U40A	Yellville	60.67 338	P	P	02 40 02.1	-0.5
	baz=154					
V38A	Canehill	60.81 336	P	P	02 40 03.5	-0.1
	baz=152,SNR=7.1					
O56A	Blue Knob Stat	60.82 351	P	P	02 40 04.2	+0.6
	baz=169					
W36A	Wetumka	60.89 334	P	P	02 40 03.7	-0.5
	baz=150					
U39A	Green Forest	60.92 337	P	P	02 40 04.1	-0.3
	baz=153					
HHAR	Hobbs	61.00 337	eP	P	02 40 05.3	+0.4
	comp=Z,4.5nm,0.9s					
X34A	Smith Ranch, M	61.10 333	P	P	02 40 06.1	+0.5
	baz=148					
V37A	Hulbert	61.11 336	P	P	02 40 05.7	+0.1
	baz=151,SNR=9.5					
W35A	Tecumseh	61.17 334	P	P	02 40 05.7	-0.4
	baz=150					
T40A	Mansfield	61.27 338	P	P	02 40 06.4	-0.3
	baz=154					
V36A	Jenks	61.34 335	P	P	02 40 07.3	+0.2
	baz=150,SNR=7.8					
TUL1	Leonard	61.38 335	P	P	02 40 07.4	-0.1
	baz=151					
TUL1	Leonard	61.38 335	eP	P	02 40 08.0	+0.5
	comp=Z,11nm,0.9s					
T39A	Clever	61.46 338	P	P	02 40 07.8	-0.2
	baz=153					
U37A	Salina	61.55 336	P	P	02 40 08.7	+0.1
	baz=152,SNR=8.4					
S40A	Lebanon	61.67 339	P	P	02 40 09.1	-0.3
	baz=154					
V35A	Meyer Ranch, C	61.68 334	P	P	02 40 09.1	-0.3
	baz=150					
U36A	Oologah	61.78 335	P	P	02 40 10.3	+0.2
	baz=151					
T38A	Diamond	61.80 337	P	P	02 40 10.1	-0.2
	baz=152,SNR=6.1					
W33A	Caddo, Fort Co	61.84 333	P	P	02 40 11.2	+0.6
	baz=148,SNR=8.6					
V34A	Guthrie	62.02 334	P	P	02 40 11.5	-0.2
	baz=149					
S39A	Bolivar	62.04 338	P	P	02 40 11.8	0.0
	baz=154,SNR=5.3					
T37A	Cheneyville 18	62.11 336	P	P	02 40 12.5	+0.2
	baz=152,SNR=18					
W32A	Sentinel	62.16 332	P	P	02 40 12.9	+0.2
	baz=147,SNR=6.1					
U35A	Pawnee	62.16 335	P	P	02 40 12.8	+0.2
	baz=150,SNR=10.0					
S38A	Stockton	62.19 338	P	P	02 40 13.2	+0.3
	baz=153					
M54A	Oil Creek Stat	62.20 351	P	P	02 40 13.2	+0.4
	baz=168					
R40A	Maddies Statio	62.22 339	P	P	02 40 13.5	+0.5
	baz=155					
V33A	Lossen Ranch,	62.33 333	P	P	02 40 13.5	-0.4
	baz=148					
MNTX	Cornudas Mount	62.41 325	P	P	02 40 14.0	-0.5
	baz=141					
T36A	Boggs Farm, Ca	62.42 336	P	P	02 40 14.3	-0.1
	baz=151,SNR=7.3					
R39A	Chumby, Stover	62.50 339	P	P	02 40 14.7	-0.1
	baz=154					
U34A	Anderson Ranch	62.54 334	P	P	02 40 15.1	-0.1
	baz=149					
T35A	Sooner Cattle	62.54 335	P	P	02 40 15.4	+0.2
	baz=150					
V32A	Arapaho	62.57 332	P	P	02 40 15.3	-0.2
	baz=148					
SFIN	Lafayette	62.62 344	P	P	02 40 14.7	-0.9
	baz=160					
S37A	Fort Scott	62.64 337	P	P	02 40 15.8	0.0
	baz=152,SNR=7.6					
R38A	Fenwick Farm,	62.69 338	P	P	02 40 16.0	-0.1
	baz=153,SNR=7.2					
MSTX	Muleshoe	62.86 328	P	P	02 40 17.3	-0.2
	baz=144,SNR=6.1					
MSTX	Muleshoe	62.86 328	eP	P	02 40 17.6	+0.1
	comp=Z,10nm,0.8s					
MSTX			epP	pP	02 40 48.0	+0.6
S36A	Lake Cedric, C	62.89 336	P	P	02 40 17.6	+0.1
	baz=151					
T34A	McClaskey Farm	62.91 335	P	P	02 40 17.9	+0.3
	baz=150					
U32A	Winter Ranch,	63.11 333	P	P	02 40 18.9	-0.2
	baz=148					
R37A	Teagarden Farm	63.13 337	P	P	02 40 18.8	-0.3
	baz=152					
Q39A	Willow Grove F	63.13 339	P	P	02 40 18.4	-0.6
	baz=154					
S35A	Otter Creek Ra	63.13 336	P	P	02 40 19.0	-0.1
	baz=151,SNR=7.5					
P40A	Paris	63.27 340	P	P	02 40 19.1	-0.9
	baz=155					
Q38A	Cooks Store, C	63.28 338	P	P	02 40 19.9	-0.1
	baz=154,SNR=6.0					
R36A	Gordon, Harris	63.39 337	P	P	02 40 20.5	-0.3
	baz=152					
T33A	Patterson Ranc	63.39 334	P	P	02 40 21.1	+0.3
	baz=149					
S34A	Willow Spring	63.46 335	P	P	02 40 21.2	-0.1
	baz=150					
Q37A	Longview Farm,	63.49 338	P	P	02 40 21.3	-0.2
	baz=153					
R35A	Emporia Munici	63.65 336	P	P	02 40 22.3	-0.2
	baz=151					
S33A	Kaszmaul Farm,	63.73 334	P	P	02 40 23.2	+0.1
	baz=149					
O40A	La Belle	63.75 340	P	P	02 40 22.1	-1.0
	baz=156					
T32A	Huddler Ranch,	63.76 333	P	P	02 40 23.6	+0.3
	baz=148					
R34A	Isabella, Hill	64.03 335	P	P	02 40 24.8	-0.2
	baz=150					
Q35A	Mercer Eighty,	64.06 337	P	P	02 40 24.6	-0.6
	baz=151					
P37A	Lathrop	64.09 338	P	P	02 40 24.8	-0.5
	baz=153					
S32A	Newby Ranch, P	64.20 334	P	P	02 40 25.3	-0.9
	baz=148					
O38A	Galt	64.27 339	P	P	02 40 26.0	-0.5
	baz=154					
P36A	Good Intent, A	64.42 338	P	P	02 40 27.5	0.0
	baz=152					
Q34A	Chapman	64.45 336	P	P	02 40 27.8	0.0
	baz=150					
KSU1	Kansas State U	64.48 336	P	P	02 40 28.0	+0.1
	baz=151					
O37A	Wolven Farm, M	64.54 339	P	P	02 40 28.2	0.0
	baz=153					
N39A	Derby Farms, D	64.63 340	P	P	02 40 28.6	-0.2
	baz=155					
P35A	Duane Minner,	64.64 337	P	P	02 40 28.4	-0.6
	baz=151					
R32A	Long Quarter,	64.72 334	P	P	02 40 29.7	+0.1
	baz=149					
O36A	Bolckow	64.79 338	P	P	02 40 29.4	-0.5
	baz=152					
Q33A	Connelly Farm,	64.87 335	P	P	02 40 30.2	-0.2
	baz=150					
P34A	Walnut Farm, R	64.95 336	P	P	02 40 31.0	0.0
	baz=151,SNR=5.1					
N37A	Lee Faris, Mou	65.09 339	P	P	02 40 31.8	0.0
	baz=153					
O34A	Beatrice	65.46 337	P	P	02 40 34.5	+0.3
	baz=151					
CBKS	Cedar Bluff	65.48 334	P	P	02 40 34.9	+0.4
	baz=148					
ANMO	Albuquerque	65.49 326	P	P	02 40 35.9	+1.1
	comp=Z,2.1nm,0.8s,baz=148,slow=8.5					
ANMO			pP	pP	02 41 05.6	+0.6
	comp=Z,1.9nm,0.7s,baz=127,slow=9.7,SNR=4.4					
ANMO	Albuquerque	65.49 326	P	P	02 40 36.0	+1.2
	baz=141					
ANMO	Albuquerque	65.49 326	eP	P	02 40 36.2	+1.4
	comp=Z,3.0nm,0.8s					
ANMO			epP	pP	02 41 05.5	+0.6
N35A	Tabor	65.67 338	P	P	02 40 35.7	+0.1
	baz=152					
O33A	Hebron	65.70 336	P	P	02 40 36.0	+0.1
	baz=150					
M36A	Felix, Anita	65.91 339	P	P	02 40 37.0	-0.1
	baz=153					
N34A	Lincoln	65.96 337	P	P	02 40 37.4	-0.1
	baz=151					
T25A	Trinidad	66.19 329	P	P	02 40 40.3	+1.0
	baz=143					
L36A	Harm Buss Farm	66.44 339	P	P	02 40 40.4	0.0
	baz=153					
L35A	Bielow Farm, R	66.75 339	P	P	02 40 42.7	+0.3
	baz=152					
K36A	Gilmore City	66.85 340	P	P	02 40 43.3	+0.2
	baz=154					
214A	Organ Pipe Nat	66.86 320	eP	P	02 40 45.2	+1.8
	comp=Z,9.9nm,0.9s					
214A			epP	pP	02 41 15.2	+1.5
BGNE	Belgrade	67.07 336	P	P	02 40 44.9	+0.4
	baz=150					
BGNE	Belgrade	67.07 336	eP	P	02 40 44.1	-0.4
	comp=Z,42nm,0.6s					
J37A	Redenius Farm,	67.17 341	P	P	02 40 44.9	-0.2
	baz=154					
SDCO	Great Sand Dun	67.20 329	P	P	02 40 47.2	+1.5
	baz=142					
SDCO	Great Sand Dun	67.20 329	eP	P	02 40 47.1	+1.4
	comp=Z,4.8nm,0.8s					
M31A	Lambtecht Ranc	67.33 336	P	P	02 40 46.3	+0.1
	baz=149					
I38A	Scanlan Farm,	67.46 342	P	P	02 40 46.6	-0.3
	baz=156					
X16A	Lo Mia Camp, P	67.81 323	eP	P	02 40 51.9	+2.4
X16A			epP	pP	02 41 21.8	+1.9
LIC	Lamto	67.85 74	eP	P	02 40 48.8	-1.2
	comp=Z,90nm,2.0s					
Q24A	Divide	68.00 330	P	P	02 40 51.8	+1.0
	baz=143					
TIC	Toumodi	68.03 74	eP	P	02 40 49.9	-1.2
KIC	Kosan Boka	68.17 74	eP	P	02 40 51.2	-0.8
	comp=Z,81nm,0.9s					
DBIC	Dimbokro	68.19 74	P	P	02 40 51.4	-0.7
	comp=Z,31nm,0.8s,baz=221,slow=6.6,SNR=45					
DBIC	Dimbokro	68.19 74	eP	P	02 40 51.8	-0.3
	comp=Z,36nm,0.9s					
OGNE	Ogallala	68.23 333	P	P	02 40 52.7	+0.8
	baz=146					
MVCO	Mesa Verde	68.28 327	P	P	02 40 53.2	+0.7
	baz=140					
MVCO	Mesa Verde	68.28 327	eP	P	02 40 53.8	+1.3
	comp=Z,23nm,1.8s					
H36A	Jessenland, He	68.43 341	P	P	02 40 53.5	+0.6
	baz=154					
ECSD	EROS Data Cent	68.55 339	P	P	02 40 53.5	-0.2
	baz=152					
WUAZ	Wupatki	68.57 324	P	P	02 40 55.9	+1.7
	baz=137					
ISCO	Idaho Springs	68.88 330	P	P	02 40 57.6	+1.4
	baz=143					
ISCO	Idaho Springs	68.88 330	eP	P	02 40 57.9	+1.6
	comp=Z,3.8nm,0.8s					
SMCO	Snowmass	69.04 329	eP	P	02 40 59.3	+1.9
	comp=Z,5.5nm,1.0s					
SMCO			epP	pP	02 41 28.9	+1.1
F36A	Milaca	69.47 342	P	P	02 40 59.2	-0.2
	baz=155					
BC3	Big Chuckawall	69.64 320	P	P	02 41 01.9	+1.2
	baz=133					
I30A	Oacoma	69.71 337	P	P	02 41 01.7	+0.9
	baz=149					
U15A	North Rim	69.74 324	eP	P	02 41 04.3	+2.7
U15A			epP	pP	02 41 34.3	+2.2
IRM	Iron Mountain	69.79 320	P	P	02 41 03.3	+1.7
	baz=133,SNR=5.8					
N23A	Red Feather La	69.91 331	P	P	02 41 03.4	+0.9
	baz=143					
N23A	Red Feather La	69.91 331	eP	P	02 41 04.0	+1.6
	comp=Z,4.6nm,0.7s					
E36A	McGregor	69.99 342	P	P	02 41 02.6	+0.1
	baz=155					
O20A	White River Ci	70.40 329	P	P	02 41 06.1	+0.7
	baz=140					
KNB	Kanab	70.46 324	eP	P	02 41 08.3	+2.5
KNB			epP	pP	02 41 39.1	+2.7
GMRC	Granite Mounta	70.53 320	P	P	02 41 08.4	+2.1
	baz=133,SNR=5.5					
D36A	Goodland	70.56 343	P	P	02 41 06.8	+0.8
	baz=156					
J26A	Sides Ranch, S	70.62 334	P	P	02 41 07.6	+1.1
	baz=146					
LCMT	Little Creek M	70.69 324	eP	P	02 41 09.6	+2.5
LCMT			epP	pP	02 41 40.0	+2.2
SRU	San Rafael Swe	70.76 327	eP	P	02 41 09.4	+1.8
	comp=Z,7.7nm,0.7s					
C36A	Pine Crest Far	71.00 343	P	P	02 41 09.2	+0.6
	baz=156					
MSU	Marysvale	71.19 325	eP	P	02 41 12.7	+2.4
MSU			epP	pP	02 41 43.2	+2.3
SHPR	Sheep Range	71.42 322	eP	P	02 41 14.1	+2.4
SHPR			epP	pP	02 41 44.6	+2.3
I25A	Rochford	71.47 334	P	P	02 41 13.1	+1.3
	baz=145,SNR=5.4					
RSSD	Black Hills	71.68 334	P	P	02 41 13.9	+0.8
	baz=145					
RSSD	Black Hills	71.68 334	eP	P	02 41 14.6	+1.5
	comp=Z,4.7nm,0.8s					
RSSD			epP	pP	02 41 45.3	+1.6
B35A	Bob, Littlefor	71.80 343	P	P	02 41 13.3	-0.1
	baz=155					
G27A	Dupree	71.89 336	P	P	02 41 14.7	+0.7
	baz=147					
G26A	Maurine	72.08 336	P	P	02 41 15.3	+0.1
	baz=146					
PSUT	Pine Spring	72.12 324	eP	P	02 41 18.3	+2.5
PSUT			epP	pP	02 41 48.8	+2.3
B34A	Aery, Baudette	72.17 342	P	P	02 41 16.3	+0.7
	baz=154					
D30A	Buchanan	72.23 339	P	P	02 41 16.8	+0.7
	baz=150					
JLU	Jordanelle	72.35 327	eP	P	02 41 19.3	+2.1
	comp=Z,6.0nm,1.0s					
TPNV	Topopah Spring	72.36 322	P	P	02 41 19.4	+2.1
	baz=133,SNR=5.4					
TPNV	Topopah Spring	72.36 322	eP	P	02 41 19.9	+2.7
TPNV			epP	pP	02 41 50.5	+2.5
C31A	Landman Farms,	72.49 340	P	P	02 41 17.7	+0.1
	baz=151					
MPMC	Manual Prospec	72.49 320	P	P	02 41 19.4	+1.3
	baz=132					
C30A	Mose, Pekin	72.66 339	P	P	02 41 19.3	+0.7
	baz=151					
DUG	Dugway, Tooele	72.75 326	P	P	02 41 20.6	+1.2
	baz=137					
DUG	Dugway, Tooele	72.75 326	eP	P	02 41 21.0	+1.5
	comp=Z,6.4nm,1.2s					
DUG			epP	pP	02 41 51.5	+1.2
A33A	Warroad	72.79 342	P	P	02 41 19.9	+0.7
	baz=154					
R11A	Troy Canyon, C	72.95 323	P	P	02 41 22.6	+1.9
	baz=134,SNR=5.8					
R11A	Troy Canyon, C	72.95 323	eP	P	02 41 23.0	+2.3
	comp=Z,1.2nm,0.7s					
R11A			epP	pP	02 41 53.9	+2.4
BW06	Boulder Array	73.05 330	P	P	02 41 22.0	+0.8
	baz=140					
BW06	Boulder Array	73.05 330	eP	P	02 41 22.8	+1.5
	comp=Z,2.6nm,1.0s					
PD31	Pinedale Array	73.05 330	eP	P	02 41 24.7	+3.4
PDAR	Pinedale Array	73.05 330	P	P	02 41 22.1	+0.9
	comp=Z,0.9nm,0.8s,baz=107,slow=8.7,SNR=6.2					
PDAR			pP	pP	02 41 54.0	+1.9
	comp=Z,1.0nm,0.7s,baz=131,slow=5.6,SNR=4.7					
HWUT	Hardware Ranch	73.15 328	eP	P	02 41 23.3	+1.5
	comp=Z,4.7nm,0.8s					
MDND	Maddock	73.16 339	P	P	02 41 22.6	+1.1
	baz=150					
MDND	Maddock	73.16 339	eP	P	02 41 22.8	+1.3
	comp=Z,22nm,0.7s					
MDND			epP	pP	02 41 53.6	+1.4
B30A	Myrvik Farm, E	73.26 340	P	P	02 41 22.7	+0.6
	baz=151					
SPUT	South Promonto	73.38 327	eP	P	02 41 24.9	+1.8
	comp=Z,7.5nm,1.0s					
E25A	Miller Ranch,	73.39 336	P	P	02 41 24.2	+1.2
	baz=146					
BGU	Big Grassy Mou	73.40 326	eP	P	02 41 25.0	+1.7
BGU			epP	pP	02 41 55.7	+1.6
B29A	Wagenman Farm,	73.61 339	P	P	02 41 24.6	+0.5
	baz=150,SNR=5.8					
A30A	Hoffart Farm,	73.68 340	P	P	02 41 24.9	+0.4
	baz=151					
AHID	Auburn Hatcher	73.79 329	eP	P	02 41 27.1	+1.6
	comp=Z,6.8nm,0.8s					
HVU	Hansel Valley	73.89 327	eP	P	02 41 27.6	+1.5
	comp=Z,6.2nm,1.1s					
D25A	Fairfield	73.90 336	P	P	02 41 27.0	+1.1
	baz=146					
A29A	Manning Farm,	73.97 340	P	P	02 41 26.5	+0.3
	baz=150					
ULM	Lac du Bonnet	74.11 342	P	P	02 41 26.7	-0.3
	comp=Z,3.2nm,0.6s,baz=146,slow=5.1,SNR=4.0					
LOHW	Long Hollow	74.19 330	eP	P	02 41 29.7	+1.8
	comp=Z,3.0nm,0.8s					
MOOW	Moose Ponds	74.36 330	eP	P	02 41 30.5	+1.6
	comp=Z,1.6nm,0.8s					
NV01	Mina Array Sit	74.56 322	eP	P	02 41 31.9	+1.7
NV01			epP	pP	02 42 02.3	+1.3
NVAR	Mina Array Bea	74.56 322	P	P	02 41 32.2	+2.0
	comp=Z,1.5nm,0.9s,baz=148,slow=5.5,SNR=7.9					
NVAR			pP	pP	02 42 02.2	+1.2
	comp=Z,3.0nm,0.9s,baz=149,slow=4.7,SNR=8.8					
IMW	Indian Meadow	74.57 330	eP	P	02 41 31.6	+1.4
	comp=Z,4.7nm,0.8s					
FLWY	Flagg Ranch	74.59 330	eP	P	02 41 32.5	+2.3
	comp=Z,12nm,0.8s					
FLWY			epP	pP	02 42 02.9	+1.8
FLWY			esP	sP	02 42 15.5	+1.2
SCHQ	Schefferville	74.71 1	P	P	02 41 31.3	+1.0
	comp=Z,3.6nm,0.9s,baz=61,slow=4.3,SNR=3.5					
RLMT	Red Lodge	74.73 332	P	P	02 41 32.7	+1.7
	baz=141					
RLMT	Red Lodge	74.73 332	eP	P	02 41 32.8	+1.8
	comp=Z,4.9nm,0.8s					
RLMT			epP	pP	02 42 03.6	+1.7
H17A	Grant Village	74.77 330	P	P	02 41 33.4	+2.1
	baz=139					
H17A	Grant Village	74.77 330	eP	P	02 41 34.0	+2.7
	comp=Z,2.6nm,0.6s					
LKWY	Lake	74.82 330	eP	P	02 41 34.7	+3.1
	comp=Z,6.5nm,0.9s					
YMR	Madison River	75.16 330	eP	P	02 41 36.2	+2.7
	comp=Z,11nm,1.1s					
DGMT	Dagmar	75.33 336	P	P	02 41 35.9	+1.9
	baz=146					
GCMT	Greycliff	75.43 332	eP	P	02 41 36.6	+1.7
HLID	Hailey	76.02 328	P	P	02 41 39.9	+1.6
	baz=136,SNR=7.6					
HLID	Hailey	76.02 328	eP	P	02 41 40.8	+2.5
	comp=Z,5.7nm,0.9s					
HLID			epP	pP	02 42 11.6	+2.3
HLID			esP	sP	02 42 24.7	+2.2
MCMT	McKenzie Canyo	76.17 329	eP	P	02 41 41.6	+2.4
MCMT			epP	pP	02 42 12.6	+2.3
BOZ	Bozeman (W)	76.21 331	P	P	02 41 40.5	+1.2
	baz=139					
DLMT	Dillon	76.45 330	eP	P	02 41 42.1	+1.5
MFID	Camas Ranch	76.63 327	eP	P	02 41 44.0	+2.3
MFID			epP	pP	02 42 14.9	+2.2
MFID			esP	sP	02 42 28.0	+2.1
TORD	Torodi Ar. Bea	76.74 71	P	P	02 41 42.1	-0.7
	comp=Z,18nm,0.5s,baz=252,slow=5.3,SNR=586					
TORD			S	S	02 51 15.2	-5.1
	comp=Z,1.2nm,1.0s,baz=245,slow=12,SNR=4.9					
EGMT	Eagleton	77.19 333	P	P	02 41 45.8	+1.1
	baz=141					
EGMT	Eagleton	77.19 333	eP	P	02 41 45.4	+0.7
	comp=Z,4.9nm,0.8s					
SYO	Syowa Base	77.68 160	eP	P	02 41 46.9	-0.2
MSO	Missoula	78.16 330	P	P	02 41 51.6	+1.4
	baz=137					
MSO	Missoula	78.16 330	eP	P	02 41 52.7	+2.5
	comp=Z,6.3nm,1.3s					
VNDA	Vanda	78.19 190	P	P	02 41 50.5	+0.7
	comp=Z,0.4nm,0.4s,baz=133,slow=6.3,SNR=5.1					
BMO	Blue Mountains	78.40 327	eP	P	02 41 52.2	+0.7
	comp=Z,9.5nm,1.2s					
BMO			epP	pP	02 42 23.7	+1.1
BMO			esP	sP	02 42 37.6	+1.7
YBMT	Yellow Bay	78.95 331	eP	P	02 41 56.5	+2.0
F10A	Beach Ranch, E	79.14 328	eP	P	02 41 57.5	+2.0
	comp=Z,7.1nm,1.3s					
YBH	Yreka Blue Hor	79.28 322	P	P	02 41 56.7	+0.3
	comp=Z,1.4nm,0.9s,baz=162,slow=3.4,SNR=3.9					
WALA	Waterton Lakes	79.79 332	eP	P	02 42 00.5	+1.5
	comp=Z,5.5nm,0.9s					
WALA			epP	pP	02 42 31.6	+1.4
WALA			esP	sP	02 42 44.4	+1.0
L02D	Cave Junction,	80.06 322	P	P	02 42 02.4	+1.9
	baz=129					
I05D	Terrebonne, OR	80.18 325	P	P	02 42 03.2	+2.0
	baz=131					
TSUM	Tsumeb	80.25 107	eP	P	02 42 03.2	+0.9
	comp=Z,7.3nm,0.8s					
I04A	Tendick Farm,	80.42 324	P	P	02 42 03.8	+1.4
	baz=130					
G05D	Wamic, OR	80.76 325	P	P	02 42 05.9	+1.7
	baz=131					
C09A	Chrisman Ranch	80.92 329	eP	P	02 42 06.8	+1.8
B05A	Bryant	83.14 327	P	P	02 42 17.7	+1.3
	baz=130					
BOSA	Boshof	83.91 118	P	P	02 42 20.8	-0.4
	comp=Z,8.5nm,0.6s,baz=265,slow=3.7,SNR=28					
BOSA	Boshof	83.91 118	eP	P	02 42 21.7	+0.5
TAM	Tamanrasset	84.06 63	eP	P	02 42 22.1	+0.1
	comp=Z,1.9nm,0.6s					
ESDC	Sonseca Array	84.76 45	P	P	02 42 25.0	0.0
	comp=Z,1.0nm,0.7s,baz=246,slow=4.5,SNR=5.7					
ES19	SONSECA Array	84.82 45	eP	P	02 42 25.7	+0.4
LBTB	Lobatse	85.41 115	eP	P	02 42 29.6	+0.8
YKA	Yellowknife Ar	90.00 341	P	P	02 42 50.1	+0.6
	comp=Z,3.4nm,0.8s,baz=132,slow=4.5,SNR=62					
YKA			pP	pP	02 43 22.0	+0.6
	comp=Z,12nm,0.8s,baz=134,slow=4.6,SNR=30					
YKA			sP	sP	02 43 35.5	+1.1
	comp=Z,4.7nm,0.8s,baz=134,slow=4.7,SNR=5.6					
LSZ	Lusaka	91.11 107	eP	P	02 42 56.3	+0.2
	comp=Z,2.8nm,0.9s					
DLBC	Dease Lake	93.11 332	P	P	02 43 05.0	+0.8
	comp=Z,1.9nm,0.9s,baz=169,slow=5.2,SNR=3.0					
DLBC			pP	pP	02 43 36.1	0.0
	comp=Z,2.3nm,0.8s,baz=179,slow=5.8,SNR=3.6					
BFZ	Birch Farm	94.58 224	eP	P	02 43 11.7	+0.3
CTAO	Charters Tower	127.34 223	ePKPdf	PKPdf	02 48 54.8	-0.6
ASAR	Alice Springs	131.17 208	PKP	PKPdf	02 49 01.9	-0.8
	comp=Z,0.3nm,0.5s,baz=136,slow=1.9,SNR=4.7					
ASAR			pPKP	pPKPdf	02 49 36.4	+0.4
	comp=Z,0.5nm,0.7s,baz=131,slow=1.8,SNR=2.6					
ASAR			SKPbc	SKPbc	02 52 16.6	+0.4
	comp=Z,1.1nm,0.9s,baz=159,slow=5.2,SNR=4.8					
KURK	Kurchatov	140.12 32	ePKPdf	PKPdf	02 49 18.1	-0.2
ZALV	Zalesovo Beam	140.68 25	PKP	PKPdf	02 49 17.0	-2.2
	comp=Z,1.1nm,0.6s,baz=338,slow=2.2,SNR=4.5					
ZALV			pPKP	pPKPdf	02 49 54.4	+1.9
	comp=Z,1.7nm,0.6s,baz=318,slow=4.2,SNR=2.4					
ZALV			PP	PP	02 52 20.3	+0.5
	comp=Z,1.5nm,0.3s,baz=197,slow=1.5,SNR=4.9					
ZALV			SKPbc	SKPbc	02 52 45.7	+1.2
	comp=Z,1.2nm,0.4s,baz=5.7,slow=3.0,SNR=6.3					
TKM2	Tokmak 2	142.47 45	ePKPdf	PKPdf	02 49 22.1	-1.0
KSH	Kashi	144.12 50	ePKP	PKPdf	02 49 26.6	+0.6
KSH			epPKP	pPKPdf	02 49 52.7	-6.7
KSH			esPKP		02 50 03.9	
KSH			ePP	PP	02 52 40.0	-1.6
KSH			PKS	PKSdf	02 53 00.4	-1.3
KSH			AMB	AMB		
	comp=Z,49nm,5.2s					
MKAR	Makanchi Array	144.45 35	PKP	PKPbc	02 49 25.7	+0.6
	comp=Z,0.9nm,0.6s,baz=310,slow=5.2,SNR=6.9					
MKAR			pPKP	pPKPdf	02 50 00.6	+1.0
	comp=Z,2.1nm,0.7s,baz=336,slow=2.7,SNR=5.9					
USRK	Ussuriysk Ar.	150.48 329	PKPbc	PKPbc	02 49 42.7	+1.0
	comp=Z,1.4nm,0.7s,baz=214,slow=0.5,SNR=4.2					
USRK			pPKPbc	pPKPbc	02 50 15.9	+1.1
	comp=Z,10nm,0.8s,baz=19,slow=0.8,SNR=21					
MJAR	Matsushiro Arr	151.37 310	pPKPbc	pPKPbc	02 50 17.3	+0.1
	comp=Z,4.7nm,0.8s,baz=87,slow=1.4,SNR=5.1					
LZH	Lanzhou	162.85 21	ePKP	PKPdf	02 49 56.1	+3.5
LZH			pPKP	pPKPdf	02 50 21.9	-4.2
LZH			sPKP		02 50 30.0	
LZH			PKP	PKPab	02 50 47.7	+5.6
CD2	Cheng

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KIW	**Kapiti Island**	**0.25**	**94**	⇑PN	Pn	02 42 44.6	-0.3
KIW				SN	Sn	02 42 52.7	-0.5
KIW				AML	AML	02 42 53.5	
TCW	**Tory Channel**	**0.43**	**212**	⇓PN	Pn	02 42 45.9	-0.3
TCW				SN	Sn	02 42 54.5	-0.9
TCW				AML	AML	02 42 55.6	
OGWZ	**Otaki Gorge**	**0.45**	**87**	⇓PN	Pn	02 42 46.1	-0.2
OGWZ				SN	Sn	02 42 55.2	-0.5
CAW	**Cannon Point**	**0.45**	**126**	PN	Pn	02 42 46.1	-0.3
CAW				SN	Sn	02 42 55.3	-0.4
CAW				AML	AML	02 42 57.0	
WEL	**Wellington**	**0.46**	**162**	AML	AML	02 42 56.8	
DUWZ	**D'Urville Isla**	**0.50**	**275**	PN	Pn	02 42 46.2	-0.7
DUWZ				SN	Sn	02 42 55.8	-0.7
BHW	**Baring Head**	**0.60**	**159**	PN	Pn	02 42 47.2	-0.5
BHW				AML	AML	02 42 58.1	
HOWZ	**Holdsworth Sta**	**0.71**	**95**	⇓PN	Pn	02 42 48.3	-0.6
HOWZ				SN	Sn	02 42 59.2	-1.1
TUWZ	**Tuamarina**	**0.76**	**219**	PN	Pn	02 42 49.0	-0.5
TUWZ				SN	Sn	02 43 00.1	-1.1
TUWZ				AML	AML	02 43 02.2	
MSWZ	**Moikau Station**	**0.76**	**139**	PN	Pn	02 42 49.0	-0.5
MSWZ				SN	Sn	02 43 00.2	-1.1
MSWZ				AML	AML	02 43 00.6	
MTW	**Mount Morrison**	**0.76**	**115**	PN	Pn	02 42 48.9	-0.6
MTW				SN	Sn	02 43 00.1	-1.2
MTW				AML	AML	02 43 01.7	
MRZ	**Mangatainoka R**	**0.78**	**77**	⇓PN	Pn	02 42 48.9	-0.8
MRZ				SN	Sn	02 43 00.8	-0.8
PAWZ	**Paruwai Farm**	**0.83**	**130**	PN	Pn	02 42 49.8	-0.5
PAWZ				SN	Sn	02 43 01.9	-0.9
PAWZ				AML	AML	02 43 02.4	
OHWZ	**Ohakea**	**0.85**	**41**	PN	Pn	02 42 50.5	+0.1
PLWZ	**Palliser**	**0.89**	**145**	⇓PN	Pn	02 42 50.3	-0.6
NNZ	**Nelson**	**0.98**	**247**	PN	Pn	02 42 51.4	-0.6
TIWZ	**Tintock**	**0.99**	**87**	⇓PN	Pn	02 42 51.4	-0.8
TIWZ				AML	AML	02 43 06.0	
TIWZ				AML	AML	02 43 06.2	
TRWZ	**Traveller**	**1.00**	**124**	⇑PN	Pn	02 42 51.8	-0.5
TRWZ				AML	AML	02 43 06.2	
POWZ	**Post Office Ro**	**1.01**	**64**	PN	Pn	02 42 51.4	-1.0
BSWZ	**Blackbirch Sta**	**1.02**	**211**	PN	Pn	02 42 52.0	-0.5
TMWZ	**Te Maipa**	**1.02**	**105**	⇓PN	Pn	02 42 51.9	-0.7
PRWZ	**Pori Road**	**1.09**	**75**	PN	Pn	02 42 52.7	-0.8
WAZ	**Wanganui**	**1.13**	**16**	PN	Pn	02 42 54.4	+0.5
CPWZ	**Castlepoint**	**1.23**	**94**	PN	Pn	02 42 54.8	-0.4
BFZ	**Birch Farm**	**1.27**	**83**	PN	Pn	02 42 54.5	-1.3
BFZ				AML	AML	02 43 12.7	
BFZ				AML	AML	02 43 12.7	
TSZ	**Takapari Road**	**1.31**	**54**	PN	Pn	02 42 55.1	-1.1
TSZ				AML	AML	02 43 13.5	
TSZ				AML	AML	02 43 16.0	
DVHZ	**Dannevirke**	**1.32**	**66**	PN	Pn	02 42 55.0	-1.4
LREZ	**Lake Rotokare**	**1.39**	**354**	PN	Pn	02 42 57.6	+0.4
ANWZ	**Angora Road**	**1.49**	**76**	PN	Pn	02 42 57.2	-1.4
PNHZ	**Pukenui**	**1.55**	**54**	⇓PN	Pn	02 42 57.9	-1.5
QRZ	**Quartz Range**	**1.56**	**270**	⇓PN	Pn	02 42 58.4	-1.1
THZ	**Tophouse**	**1.56**	**233**	⇑PN	Pn	02 42 58.8	-0.8
PRHZ	**Porangahau**	**1.67**	**70**	PN	Pn	02 42 59.4	-1.5
MOVZ	**Moawhango**	**1.69**	**32**	PN	Pn	02 43 00.8	-0.5
WNVZ	**Wahianoa**	**1.70**	**28**	PN	Pn	02 43 01.6	+0.1
VRZ	**Vera Road**	**1.72**	**5**	⇑PN	Pn	02 43 01.8	+0.2
KHZ	**Kahutara**	**1.75**	**206**	PN	Pn	02 43 01.3	-0.8
BHHZ	**Black Hill Sta**	**1.77**	**40**	PN	Pn	02 43 01.6	-0.7
KRHZ	**Kereru**	**1.82**	**49**	PN	Pn	02 43 01.3	-1.6
PXZ	**Pawanui**	**1.92**	**66**	PN	Pn	02 43 02.1	-2.1
KWHZ	**Kaweka Forest**	**2.00**	**45**	PN	Pn	02 43 03.9	-1.5
DSZ	**Denniston Nort**	**2.28**	**246**	PN	Pn	02 43 07.8	-1.3
HIZ	**Hauiti**	**2.34**	**5**	PN	Pn	02 43 10.2	+0.3
NMHZ	**Naumai**	**2.44**	**45**	PN	Pn	02 43 09.7	-1.7
LTZ	**Lake Taylor**	**2.59**	**221**	PN	Pn	02 43 11.7	-1.7
INZ	**Inchbonnie**	**3.01**	**230**	PN	Pn	02 43 17.1	-1.8
OXZ	**Oxford**	**3.12**	**217**	PN	Pn	02 43 17.6	-2.8
MQZ	**McQueen's Vall**	**3.20**	**206**	PN	Pn	02 43 18.8	-2.7
RIGZ	**Rimuhau**	**3.25**	**50**	PN	Pn	02 43 19.2	-3.1
MWZ	**Matawai**	**3.39**	**43**	PN	Pn	02 43 22.1	-2.1
WVZ	**Waitaha Valley**	**3.63**	**231**	PN	Pn	02 43 25.4	-2.0
TWGZ	**Tauwhareparae**	**3.74**	**46**	PN	Pn	02 43 27.1	-1.9
PKGZ	**Pakihiroa**	**4.01**	**44**	PN	Pn	02 43 30.3	-2.3

*ISCJB **11** 02:45:23.7±1.3, 43°.70N±0°.09×147°.0E±0°.1, h54km±9km, Error ellipse: s-maj=18.6km s-min=6.9km az=139.2*
*JMA **11** 02:45:24.4±0.3, 43°.64N×147°.00E, h37km, M3.4*
*SKHL **11** 02:45:25.1±0.4, 43°.70N×147°.00E, h47km±1km, mb4.3/2*
ISC 11 02:45:24.3±3.8, 43°.67N±0°.09×147°.08E±0°.08, h36km±3km, n10, σ0°69/18, 1D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHO	**Shikotan**	**0.27**	**318**	*i* P	**Pn**	**02 45 33.0**	**+0.6**
SHO				AMB	AMB	02 45 33.2	
	60nm,0.1s						
SHO				*i* S	**Sn**	**02 45 39.2**	**-0.4**
SHO				A	A	02 45 39.8	
	2μm,0.4s						
SHO				A	A	02 45 39.8	
	2μm,0.4s						
YUK	**Yuzh-Kuril'sk**	**0.95**	**293**	⇓*i* P	**Pn**	**02 45 40.6**	**-0.5**
YUK				AMB	AMB	02 45 42.0	
	50nm,0.2s						
YUK				AMB	AMB	02 45 42.0	
	110nm,0.2s						
YUK				*i* S	**Sn**	**02 45 52.4**	**-1.0**
YUK				A	A	02 45 52.8	
	710nm,0.4s						
YUK				A	A	02 45 52.8	
	520nm,0.4s						
NEM2	**Nemuro 2**	**1.02**	**253**	P	**Pn**	**02 45 41.7**	**-0.3**
NEM2				*e*S	**Sn**	**02 45 54.4**	**-0.6**
JRA	**Rausu**	**1.44**	**281**	P	**Pn**	**02 45 48.0**	**+0.2**
JRA				*e*S	**Sn**	**02 46 05.5**	**0.0**
KUR	**Kuril'sk**	**1.66**	**20**	*e*P	**Pn**	**02 45 50.9**	**+0.1**
KUR				*i* S	**Sn**	**02 46 09.9**	**-0.9**
KUR				A	A	02 46 13.2	
	110nm,0.2s						
KUR				A	A	02 46 13.2	
	80nm,0.2s						
JAK	**Akkeshi**	**1.87**	**250**	P	**Pn**	**02 45 53.7**	**+0.1**
JAK				*e*S	**Sn**	**02 46 15.3**	**-0.6**
JTKR	**Abashiri--Toko**	**2.32**	**278**	P	**Pn**	**02 46 00.4**	**+0.6**
JAR	**Ashorobuto**	**2.44**	**262**	P	**Pn**	**02 46 02.6**	**+1.1**
JAR				*e*S	**Sn**	**02 46 30.3**	**+0.2**
JCH	**Churui**	**2.92**	**250**	P	**Pn**	**02 46 08.3**	**+0.2**
JCH				*e*S	**Sn**	**02 46 41.5**	**-0.4**
YSS	**Yuzh-Sakhalins**	**4.48**	**319**	*e*P	**Pn**	**02 46 30.7**	**+1.2**

IDC 11 02:54:09.1±1.4, 23°.35N×142.75E, h0km, mb3.8/5, mb1 3.9/5, mb1mx3.6/39, mbtmp3.8/5, Error ellipse: s-maj=49.3km s-min=29.5km az=84.0, Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**43.81**	**191**	P	P	03 02 16.8	-0.2
	0.5nm,0.3s,baz=12,slow=8.2,SNR=6.2						
ZALV	**Zalesovo Beam**	**52.67**	**321**	P	P	03 03 25.2	+0.1
	1.0nm,0.3s,baz=101,slow=7.8,SNR=3.1						
MKAR	**Makanchi Array**	**53.29**	**312**	P	P	03 03 30.3	+0.4
	0.3nm,0.4s,baz=95,slow=7.2,SNR=3.8						
YKA	**Yellowknife Ar**	**75.19**	**28**	P	P	03 05 53.7	+0.5
	0.2nm,0.5s,baz=292,slow=6.0,SNR=6.0						
FINES	**FINESS Array B**	**81.52**	**334**	P	P	03 06 26.9	-1.3
	1.4nm,0.9s,baz=57,slow=7.0,SNR=4.5						

*ISCJB **11** 02:57:47.3±1.1, 20°.0S±0°.1×168°.0E±0°.2, h27km, mb4.0/6, Error ellipse: s-maj=35.5km s-min=10.8km az=31.7*
*IDC **11** 02:57:49.6±1.3, 20°.10S×168°.04E, h33km±7km, mb3.9/6, mb1 4.2/7, mb1mx3.8/35, mbtmp4.1/7, ML3.2/1, MS3.0/2, Ms1 3.0/2, ms1mx2.7/36, Error ellipse: s-maj=46.9km s-min=18.7km az=143.0*
ISC 11 02:57:48.4±1.1, 20°.1S±0°.2×168°.0E±0°.2, h27km, n9, σ0°92/12, mb4.0/6, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.47**	**216**	Pn	**Pn**	**02 58 26.5**	**-0.4**
	5.8nm,0.3s,baz=52,slow=19,SNR=8.3						
DZM				Sn	**Sn**	**02 58 56.2**	**0.0**
	8.3nm,0.3s,baz=143,slow=22,SNR=6.8						
DZM				LR	LR	02 59 33.7	
	comp=Z,351nm,19.8s,baz=60,slow=42						
HNR	**Honiara**	**13.15**	**322**	LR	LR	03 04 53.7	
	comp=Z,53nm,20.7s,baz=273,slow=32						
STKA	**Stephens Creek**	**26.43**	**238**	P	**P**	**03 03 23.9**	**+0.9**
	1.9nm,0.7s,baz=78,slow=9.1,SNR=3.7						
WRA	**Warramunga Arr**	**31.62**	**264**	P	**P**	**03 04 09.2**	**-0.2**
	0.5nm,0.6s,baz=89,slow=8.2,SNR=5.5						
WRA				pP	**sP**	**03 04 18.9**	**-1.7**
	0.7nm,0.9s,baz=81,slow=6.3,SNR=2.0						
ASAR	**Alice Springs**	**31.82**	**257**	P	**P**	**03 04 12.3**	**+1.2**
	2.8nm,0.7s,baz=87,slow=8.9,SNR=22						
ASAR				pP	**sP**	**03 04 21.7**	**-0.7**
	2.9nm,0.8s,baz=86,slow=8.5,SNR=11						
CMAR	**Chiang Mai Arr**	**77.81**	**295**	P	**P**	**03 09 44.0**	**+0.2**
	2.4nm,0.3s,baz=134,slow=3.9,SNR=3.1						
NVAR	**Mina Array Bea**	**90.22**	**49**	P	**P**	**03 10 47.2**	**+0.3**
	1.0nm,0.5s,baz=232,slow=8.2,SNR=6.2						
NVAR				pP	**sP**	**03 10 57.8**	**-1.0**
	1.0nm,0.7s,baz=238,slow=6.8,SNR=2.6						
ILAR	**Eielson Array**	**91.38**	**18**	P	**P**	**03 10 51.2**	**-0.1**
	0.3nm,0.7s,baz=234,slow=6.2,SNR=4.2						
GERES	**GERESS Array B**	**144.67**	**330**	PKP	**PKPdf**	**03 17 23.4**	**+0.8**
	0.2nm,0.4s,baz=9.9,slow=3.1,SNR=4.4						

*ISCJB **11** 03:01:32.2±0.6, 10°.58S±0°.05×124°.33E±0°.07, h33km, mb3.6/1, MS4.0/1, Error ellipse: s-maj=10.3km s-min=5.2km az=151.2*
*DJA **11** 03:01:35.0±0.7, 10°.5±4°.×12°.4E±°., h24km±7km, M4.5/6, mB5.2/1, mb4.5/4, MLv4.5/6, Mw(mB)4.5/1*
*IDC **11** 03:01:35.4±3.1, 10°.47S×124°.31E, h59km±36km, mb3.4/1, mb1 3.9/5, mb1mx3.5/34, mbtmp3.9/5, ML3.8/4, MS4.0/1, Ms1 4.0/1, ms1mx2.9/25, Error ellipse: s-maj=72.5km s-min=20.7km az=64.0*
ISC 11 03:01:33.9±0.9, 10°.55S±0°.06×124°.30E±0°.07, h35km, n14, σ1°96/16, Timor region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SOEI	**Soe**	**0.79**	**357**	P	**Pn**	**03 01 48.1**	**-0.6**
SOEI				S	**Sn**	**03 01 59.1**	**-0.2**
MMRI	**Maumere**	**2.78**	**313**	P	**Pn**	**03 02 16.5**	**+0.5**
MMRI				S	**Sn**	**03 02 51.1**	**+2.7**
WSI	**Waingapu**	**4.04**	**282**	P	Pn	03 02 27.8	-5.5
BSSI	**Bau Bau, Buton**	**5.78**	**319**	P	**Pn**	**03 02 58.6**	**+1.4**
PLAI	**Plampang**	**6.66**	**284**	P	**Pn**	**03 03 09.7**	**+0.4**
	45nm,0.7s,0.2nm						
PLAI				S	**Sn**	**03 04 20.6**	**-3.4**
	45nm,0.7s,0.2nm						
KAPI	**Kappang**	**7.11**	**320**	P	**Pn**	**03 03 15.6**	**+0.1**
	1.2nm,0.3s,baz=155,slow=11,SNR=6.2						
SAUI	**Saumlaki**	**7.36**	**70**	P	**Pn**	**03 03 19.4**	**+0.4**
TWSI	**Taliwang, Sumb**	**7.53**	**283**	P	**Pn**	**03 03 22.0**	**+0.6**
	15nm,0.6s,0.1nm						
FITZ	**Fitzroy Crossi**	**7.62**	**170**	P	Pn	03 03 26.5	+3.9
	1.6nm,0.3s,baz=360,slow=9.5,SNR=37						
FITZ				S	**Sn**	**03 04 49.7**	**+1.9**
	8.1nm,0.3s,baz=184,slow=7.2,SNR=23						
LUWI	**Luwuk**	**9.56**	**351**	P	**Pn**	**03 03 50.7**	**+1.5**
WRA	**Warramunga Arr**	**13.45**	**135**	P	**Pn**	**03 04 43.4**	**+1.0**
	0.5nm,0.3s,baz=317,slow=14,SNR=12						
WRA				S	Sn	03 07 04.7	-6.1
	0.9nm,0.3s,baz=308,slow=24,SNR=6.9						
ASAR	**Alice Springs**	**15.94**	**146**	P	**Pn**	**03 05 17.9**	**+2.1**
	0.6nm,0.3s,baz=318,slow=12,SNR=42						
ASAR				S	**Sn**	**03 08 07.7**	**-3.7**
	0.5nm,0.3s,baz=317,slow=21,SNR=8.4						
JCJ	**Chichijima**	**41.24**	**25**	LR	LR	03 24 22.2	
	comp=Z,196nm,18.8s,baz=159,slow=33						
MKAR	**Makanchi Array**	**68.29**	**330**	P	**P**	**03 12 29.8**	**-1.7**
	0.4nm,0.6s,baz=132,slow=8.0,SNR=3.6						

*IDC **11** 03:09:03.8±5.1, 14°.58S×167°.53E, h89km±45km, mb3.7/7, mb1 3.9/8, mb1mx3.6/46, mbtmp4.0/8, Error ellipse: s-maj=33.7km s-min=22.7km az=165.0*
*ISCJB **11** 03:09:11.5±1.0, 14°.7S±0°.2×167°.4E±0°.2, h170km, mb3.8/6, Error ellipse: s-maj=36.7km s-min=18.6km az=149.2*
ISC 11 03:09:12.9±1.0, 14°.6S±0°.2×167°.4E±0°.2, h170km, n10, σ0°59/9, mb3.9/6, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**7.49**	**186**	P	Pn	03 10 50.0	-10
	baz=108,slow=20,SNR=3.3						
CTA	**Charters Tower**	**20.86**	**252**	P	**P**	**03 13 41.7**	**0.0**
	2.6nm,0.5s,baz=75,slow=12,SNR=6.7						
STKA	**Stephens Creek**	**29.14**	**229**	P	**P**	**03 14 58.9**	**+0.8**
	3.0nm,0.4s,baz=58,slow=9.3,SNR=11						
WRA	**Warramunga Arr**	**31.93**	**256**	P	**P**	**03 15 22.1**	**-0.6**
	1.2nm,0.4s,baz=85,slow=9.1,SNR=14						
ASAR	**Alice Springs**	**32.79**	**249**	P	**P**	**03 15 29.6**	**-0.7**
	2.9nm,0.3s,baz=81,slow=9.1,SNR=56						
FITZ	**Fitzroy Crossi**	**40.12**	**259**	P	**P**	**03 16 32.7**	**+0.4**
	baz=270,slow=20						
VNDA	**Vanda**	**63.00**	**181**	P	**P**	**03 19 20.7**	**-0.4**
	0.7nm,0.5s,baz=346,slow=8.3,SNR=7.5						
ILAR	**Eielson Array**	**86.38**	**18**	P	**P**	**03 21 35.4**	**-0.1**
	0.4nm,0.8s,baz=218,slow=5.7,SNR=4.1						
NVAR	**Mina Array Bea**	**87.13**	**49**	P	**P**	**03 21 40.4**	**+0.4**
	0.2nm,0.4s,baz=219,slow=7.0,SNR=2.3						
ARCES	**ARCESS Array B**	**120.14**	**345**	PKP	**PKPdf**	**03 27 42.6**	**-0.3**
	3.4nm,1.0s,baz=66,slow=2.3,SNR=13						

*IDC **11** 03:12:57.0±0.8, 20°.12S×168°.75E, h0km, mb4.5/15, mb1 4.7/16, mb1mx4.5/42, mbtmp4.5/16, ML4.1/1, MS4.7/20, Ms1 4.7/20, ms1mx4.4/33, Error ellipse: s-maj=26.1km s-min=16.3km az=142.0*
*NEIC **11** 03:12:59.5±0.3, 19°.94S×168°.56E, h10km, mb4.9/29, Error ellipse: s-maj=10.0km s-min=7.0km az=147.0*
*GCMT **11** 03:12:59.5±0.1, 20°.08S×168°.49E, h20km, MW5.3/113, Moment Tensor Solution. s94,c141; s113,c183; Duration: 1s1 Moment tensor: Scale 10^{17}Nm; M_{rr}0.84±.02; $M_{\theta\theta}$-0.14±.01; $M_{\phi\phi}$-0.69±.01; $M_{r\theta}$0.43±.03; $M_{\theta\phi}$0.42±.01; $M_{\phi r}$-0.65±.03; Best double couple: $M_0$1.17900×10^{17} NP1:ϕ_s148.00000°, δ66.00000°, λ87.00000°. NP2:ϕ_s336.00000°, δ24.00000°, λ97.00000°. Principal axes: T 1.1380, Plg69.0000°, Azm52.0000°; N 0.0830, Plg3.0000°, Azm150.0000°; P -1.2210, Plg21.0000°, Azm241.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*ISCJB **11** 03:13:00.4±0.3, 20°.14S±0°.05×168°.56E±0°.04, h25km, mb4.8/51, MS4.7/27 Error ellipse: s-maj=7.6km s-min=5.3km az=152.2*
*MOS **11** 03:13:01.7±1.2, 20°.06S×168°.53E, h33km, mb5.1/19, Error ellipse: s-maj=12.3km s-min=9.8km az=159.6*
ISC 11 03:13:01.8±0.4, 20°.15S±0°.06×168°.68E±0°.06, h25km, n158, σ1°43/144, mb4.9/52, MS4.8/27, 1C-6D, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.83**	**227**	Pn	**Pn**	**03 13 43.3**	**-2.3**
	26nm,0.3s,baz=63,slow=17,SNR=89						
DZM				Sn	**Sn**	**03 14 16.5**	**-2.4**
	112nm,0.3s,baz=90,slow=22,SNR=12						
MSVF	**Nonsavu**	**9.19**	**76**	*e*P	Pn	03 15 18.0	+5.1
MSVF	**Nonsavu**	**9.19**	**76**	*e*Pn	Pn	03 15 18.0	+5.1
EIDS	**Eidsvold**	**17.04**	**249**	*e*Pn	**Pn**	**03 16 57.0**	**-1.5**
	17nm,1.2s						
ARMA	**Armidale**	**18.48**	**233**	*e*P	**Pn**	**03 17 18.6**	**+2.2**
	48nm,1.3s						
URZ	**Urewera**	**19.47**	**160**	P	**Pn**	**03 17 28.6**	**+0.5**
	0.2nm,0.3s,baz=61,slow=10,SNR=2.1						
URZ				LR	LR	03 24 18.4	
	comp=Z,3μm,19.0s,baz=348,slow=35						
URZ	**Urewera**	**19.47**	**160**	*e*P	**Pn**	**03 17 31.3**	**+3.3**
	10nm,0.7s						
AFI	**Afiamalu**	**19.68**	**75**	LR	LR	03 23 31.7	
	comp=Z,4μm,19.0s,baz=261,slow=32						
BKZ	**Black Stump Fm**	**20.11**	**162**	*e*P	Pn	03 17 38.6	+2.8
	106nm,1.5s						
CTA	**Charters Tower**	**21.06**	**266**	P	**P**	**03 17 44.3**	**0.0**
	20nm,0.9s,baz=98,slow=12,SNR=13						
CTA				LR	LR	03 25 20.8	
	comp=Z,2μm,18.8s,baz=82,slow=35						
CTAO	**Charters Tower**	**21.06**	**266**	*e*P	**P**	**03 17 44.5**	**+0.3**
CTAO				pmax	pmax		
	comp=Z,311nm,1.2s						
CTAO	**Charters Tower**	**21.06**	**266**	*e*P	**P**	**03 17 44.5**	**+0.3**
	comp=Z,311nm,1.2s						
CAN	**Canberra**	**23.00**	**225**	*e*P	**P**	**03 18 04.3**	**-0.5**
CAN				pmax	pmax		
	comp=Z,52nm,1.3s						
CAN	**Canberra**	**23.00**	**225**	*e*P	**P**	**03 18 04.3**	**-0.5**
	comp=Z,52nm,1.3s						
PMG	**Port Moresby**	**23.36**	**294**	P	**P**	**03 18 08.2**	**-0.4**
	comp=Z,39nm,1.1s,baz=124,slow=6.0,SNR=9.8						
PMG	**Port Moresby**	**23.36**	**294**	*e*P	**P**	**03 18 09.0**	**+0.4**
PMG				pmax	pmax		
	comp=Z,165nm,1.1s						
PMG	**Port Moresby**	**23.36**	**294**	*e*P	**P**	**03 18 06.5**	**-2.1**
	comp=Z,43nm,1.0s						
RPZ	**Rata Peaks**	**23.58**	**176**	LR	LR	03 27 02.0	
	comp=Z,2μm,18.0s,baz=348,slow=36						
COEN	**Coen**	**25.13**	**280**	*e*P	**P**	**03 18 23.8**	**-1.3**
	comp=Z,39nm,1.1s						
STKA	**Stephens Creek**	**26.92**	**239**	P	**P**	**03 18 40.9**	**-0.3**
	comp=Z,6.3nm,0.8s,baz=75,slow=8.7,SNR=6.1						
STKA				LR	LR	03 29 22.7	
	comp=Z,1μm,18.4s,baz=83,slow=36						
RAR	**Rarotonga**	**29.51**	**98**	LR	LR	03 28 24.5	
	comp=Z,648nm,21.9s,baz=258,slow=32						
MMPI	**Merauke**	**29.72**	**289**	P	**P**	**03 19 06.3**	**0.0**
WB2	**Warramunga Arr**	**32.22**	**264**	*e*P	**P**	**03 19 27.1**	**-1.2**
	comp=Z,26nm,1.2s						
WRAB	**Tennant Creek**	**32.22**	**264**	⇓*e*P	**P**	**03 19 26.8**	**-1.5**
WRAB				pmax	pmax		
	comp=Z,24nm,1.2s						
WRAB	**Tennant Creek**	**32.22**	**264**	*e*P	**P**	**03 19 26.1**	**-2.2**
	comp=Z,24nm,1.1s						
WRA	**Warramunga Arr**	**32.23**	**264**	P	**P**	**03 19 27.1**	**-1.3**
	comp=Z,4.3nm,0.5s,baz=90,slow=8.5,SNR=12						
WRA				LR	LR	03 31 49.1	
	comp=Z,1μm,21.6s,baz=95,slow=35						
AS01	**Alice Springs**	**32.36**	**257**	*e*P	**P**	**03 19 27.8**	**-1.7**
AS31	**Alice Springs**	**32.41**	**257**	*e*P	**P**	**03 19 28.8**	**-1.1**
	comp=Z,8.0nm,0.6s						
ASAR	**Alice Springs**	**32.41**	**257**	P	**P**	**03 19 28.4**	**-1.5**
	comp=Z,14nm,0.8s,baz=82,slow=9.0,SNR=94						
ASAR				LR	LR	03 33 23.0	
	comp=Z,3μm,18.2s,baz=94,slow=38						
JAY	**Jayapura**	**32.45**	**299**	P	**P**	**03 19 34.2**	**+3.8**
GENI	**Genyem**	**32.85**	**298**	P	**P**	**03 19 35.5**	**+1.7**
PPT2	**Papeete2**	**39.51**	**93**	*e*S	**S**	**03 26 32.2**	**+0.1**
	comp=Z,478nm,25.0s						
PPT2				*e*LQ	LQ	03 29 43.0	
	comp=Z,3μm,29.5s						
PPT2				*e*LR	LR	03 31 24.3	
	comp=Z,2μm,25.2s,baz=252						
PPT	**Papeete**	**39.51**	**93**	LR	LR	03 32 51.7	
	comp=Z,724nm,20.7s,baz=260,slow=30						
FITZ	**Fitzroy Crossi**	**40.64**	**265**	P	**P**	**03 20 39.7**	**-0.5**
	comp=Z,24nm,0.9s,baz=128,slow=7.8,SNR=14						
FITZ	**Fitzroy Crossi**	**40.64**	**265**	*e*P	**P**	**03 20 39.1**	**-1.1**
	comp=Z,28nm,0.9s						
GUMO	**Guam**	**40.90**	**323**	LR	LR	03 36 51.8	
	comp=Z,494nm,18.6s,baz=142,slow=35						
SWI	**Sorong**	**41.30**	**293**	P	**P**	**03 20 47.1**	**+1.4**
	comp=Z,15nm,0.9s,comp=Z,1μm						
SANI	**Sanana**	**45.39**	**288**	P	**P**	**03 21 19.8**	**+1.1**
	comp=Z,30nm,1.0s,comp=Z,633nm						
NWAO	**Narrogin (SRO)**	**47.33**	**243**	*e*P	**P**	**03 21 32.9**	**-0.9**
NWAO				pmax	pmax		
	comp=Z,51nm,0.8s						
NWAO	**Narrogin (SRO)**	**47.33**	**243**	*e*P	**P**	**03 21 32.9**	**-0.9**
	comp=Z,51nm,0.8s						
KAPI	**Kappang**	**49.86**	**281**	*e*P	**P**	**03 21 55.0**	**+1.6**
	comp=Z,25nm,1.4s						
TAOE	**Nuku Hiva Isla**	**50.62**	**85**	*e*S	**S**	**03 29 14.0**	**+1.1**
	comp=Z,575nm,26.4s						
TAOE				*e*LR	LR	03 36 37.3	
	comp=Z,966nm,26.6s						
RKT	**Rikitea**	**52.19**	**104**	*e*S	**S**	**03 29 35.1**	**+0.8**
	comp=Z,364nm,26.0s						
RKT				*e*LR	LR	03 37 19.5	
	comp=Z,521nm,27.5s						
VNDA	**Vanda**	**57.51**	**182**	P	**P**	**03 22 48.5**	**0.0**
	comp=Z,2.1nm,0.9s,baz=357,slow=6.4,SNR=3.9						
VNDA				LR	LR	03 45 42.2	
	comp=Z,383nm,18.1s,baz=337,slow=34						
SBA	**Scott Base**	**57.75**	**180**	*e*P	**P**	**03 22 51.2**	**+1.0**
SBA				pmax	pmax		
	comp=Z,16nm,1.1s						
SBA	**Scott Base**	**57.75**	**180**	*e*P	**P**	**03 22 51.2**	**+1.0**
	comp=Z,16nm,1.1s						
KKM	**Kota Kinabalu**	**57.76**	**291**	*e*P	**P**	**03 22 51.6**	**+0.2**
MJAR	**Matsushiro Art**	**63.31**	**333**	P	**P**	**03 23 27.6**	**-1.1**
	comp=Z,3.7nm,1.0s,baz=164,slow=9.5,SNR=2.9						
MJAR				LR	LR	03 51 08.4	
	comp=Z,136nm,19

ULN	**Ulaanbaatar**	**87.28**	**324**	*d iP*	**P**	**03 25 47.0**	**+0.6**
ULN				pmax	pmax		
comp=Z,15nm,1.2s							
ULN	**Ulaanbaatar**	**87.28**	**324**	*e*P	**P**	**03 25 45.7**	**-0.7**
comp=Z,11nm,1.0s							
GTA	**Gaotai**	**87.37**	**314**	*e*P	**P**	**03 25 48.3**	**+1.3**
GTA				pP	pP	03 25 52.8	-2.4
GTA				sP	sP	03 25 56.2	-1.9
GTA				pmax	pmax		
comp=Z,8.0nm,1.1s							
BILL	**Bilibino**	**87.95**	**359**	*e*P	**P**	**03 25 49.0**	**0.0**
BILL				pmax	pmax		
comp=Z,5.0nm,0.9s							
BILL	**Bilibino**	**87.95**	**359**	*e*P	**P**	**03 25 49.0**	**0.0**
comp=Z,4.5nm,0.9s							
CMB	**Columbia Colle**	**88.15**	**48**	*e*P	**P**	**03 25 49.9**	**-0.8**
CMB				pmax	pmax		
comp=Z,5.0nm,1.0s							
CMB	**Columbia Colle**	**88.15**	**48**	*e*P	**P**	**03 25 49.9**	**-0.8**
comp=Z,5.3nm,1.0s							
SNAA	**Sanae**	**88.23**	**183⇓**	*e*P	**P**	**03 25 51.2**	**+0.6**
SNAA	**Sanae**	**88.23**	**183**	*e*P	**P**	**03 25 51.1**	**+0.5**
comp=Z,1μm,0.4s							
YBH	**Yreka Blue Hor**	**88.32**	**44**	LR	LR	03 57 08.8	
comp=Z,613nm,20.6s,baz=242,slow=30							
HUMO	**Hull Mountain**	**88.58**	**43**	*e*P	**P**	**03 25 50.1**	**-2.4**
comp=Z,8.8nm,1.1s							
NVAR	**Mina Array Bea**	**89.80**	**49**	P	**P**	**03 25 57.3**	**-1.4**
comp=Z,2.5nm,1.0s,baz=230,slow=8.3,SNR=9.5							
NVAR				LR	LR	03 58 51.3	
comp=Z,634nm,20.0s,baz=253,slow=31							
NV11	**Mina Array Sit**	**89.90**	**49**	*e*P	**P**	**03 25 59.3**	**+0.2**
comp=Z,10nm,1.4s							
BOD	**Bodaibo**	**89.92**	**334**	*e*P	**P**	**03 25 57.5**	**-0.9**
BOD				pmax	pmax		
comp=Z,6.0nm,1.3s							
MOD	**Modoc Plateau**	**89.98**	**45**	*e*P	**P**	**03 25 59.6**	**+0.2**
comp=Z,4.3nm,0.9s							
TPNV	**Topopah Spring**	**90.63**	**51**	*e*P	**P**	**03 26 02.4**	**-0.1**
TPNV				pmax	pmax		
comp=Z,7.0nm,1.0s							
TPNV	**Topopah Spring**	**90.63**	**51**	*e*P	**P**	**03 26 02.4**	**-0.1**
comp=Z,6.9nm,1.0s							
ZAK	**Zakamensk**	**90.73**	**324**	*e*P	**P**	**03 26 01.4**	**-1.1**
ZAK				pmax	pmax		
comp=Z,5.0nm,1.4s							
TLY	**Talaya**	**91.21**	**326**	*e*P	**P**	**03 26 05.1**	**+0.5**
TLY				pmax	pmax		
comp=Z,6.0nm,1.3s							
ILAR	**Eielson Array**	**91.25**	**17**	P	**P**	**03 26 01.6**	**-2.9**
comp=Z,0.7nm,0.8s,baz=235,slow=5.0,SNR=7.0							
ILAR				LR	LR	04 06 24.4	
comp=Z,446nm,18.1s,baz=228,slow=35							
WVOR	**Wild Horse Val**	**91.33**	**45**	*e*P	**P**	**03 26 05.3**	**-0.2**
WVOR				pmax	pmax		
comp=Z,7.0nm,1.1s							
WVOR	**Wild Horse Val**	**91.33**	**45**	*e*P	**P**	**03 26 05.3**	**-0.2**
comp=Z,7.0nm,1.1s							
W13A	**Hualapai Mount**	**91.63**	**53**	*e*P	**P**	**03 26 07.5**	**+0.2**
comp=Z,17nm,1.7s							
TUC	**Tucson**	**92.94**	**57**	*e*P	**P**	**03 26 13.8**	**+0.6**
TUC				pmax	pmax		
comp=Z,3.0nm,0.8s							
TUC	**Tucson**	**92.94**	**57**	*e*P	**P**	**03 26 13.8**	**+0.6**
comp=Z,2.6nm,0.8s							
X16A	**Lo Mia Camp, P**	**93.22**	**55**	*e*P	**P**	**03 26 15.2**	**+0.6**
comp=Z,11nm,1.5s							
319A	**Douglas**	**93.79**	**58**	*e*P	**P**	**03 26 17.9**	**+0.7**
comp=Z,7.2nm,0.9s							
TIXI	**Tiksi**	**95.52**	**348⇓**	*e*P	**P**	**03 26 22.3**	**-1.7**
TIXI				pmax	pmax		
comp=Z,2.0nm,1.1s							
WMQ	**Urumqi**	**97.45**	**314**	*e*P	Pdif	03 26 34.7	+1.1
WMQ				pmax	pmax		
comp=Z,5.0nm,0.6s							
WMQ				pmax	pmax		
comp=Z,56nm,4.0s							
WMQ				LR	LR		
comp=E,100nm,21.4s							
WMQ				LR	LR		
comp=Z,52nm,26.0s							
PDAR	**Pinedale Array**	**97.62**	**47**	LR	LR	04 09 04.7	
comp=Z,231nm,18.0s,baz=266,slow=34							
EFI	**East Falkland**	**97.64**	**153⇑**	*e*P	**P**	**03 26 34.3**	**+0.1**
TXAR	**Lajitas Array**	**97.66**	**62**	P	**P**	**03 26 34.3**	**-0.5**
comp=Z,0.4nm,0.8s,baz=325,slow=2.0,SNR=3.8							
TXAR				LR	LR	04 05 09.4	
comp=Z,369nm,18.1s,baz=0.0,slow=32							
YKA	**Yellowknife Ar**	**101.72**	**27**	P	**Pdif**	**03 26 51.0**	**-1.0**
comp=Z,0.1nm,0.5s,baz=255,slow=4.7,SNR=5.3							
YKA	**Yellowknife Ar**	**101.72**	**27**	P	**Pdif**	**03 26 51.0**	**-1.0**
YKA	**Yellowknife Ar**	**101.72**	**27**	P	**Pdif**	**03 26 51.0**	**-1.0**
ARCES	**ARCESS Array B**	**125.81**	**345**	PKP	**PKPdf**	**03 31 59.5**	**-1.2**
comp=Z,2.9nm,0.8s,baz=30,slow=2.2,SNR=5.2							
KLMR	**Klimovskoe**	**126.09**	**332**	*e*PKIKP	**PKPdf**	**03 32 01.3**	**-0.1**
KLMR				pmax	pmax		
comp=Z,8.0nm,1.1s							
ZEI	**Tsey**	**128.78**	**309**	*i* PKIKP	**PKPdf**	**03 32 07.6**	**+0.2**
ZEI				pmax	pmax		
comp=Z,7.0nm,1.1s							
FINES	**FINESS Array B**	**131.22**	**337**	SKPbc	**SKPab**	**03 35 35.7**	**+0.9**
comp=Z,3.0nm,0.9s,baz=65,slow=7.8,SNR=8.9							
BRTR	**Keskin Array B**	**136.95**	**307**	PKP	**PKPdf**	**03 32 21.9**	**-0.9**
comp=Z,0.8nm,0.9s,baz=177,slow=2.5,SNR=5.2							
OKC	**Ostrava-Krasne**	**142.24**	**329**	AMS	AMS	04 37 30.0	
comp=Z,400nm,21.2s							
UPC	**Upice**	**142.80**	**331**	AMS	AMS	04 36 30.0	
comp=Z,400nm,18.6s							
PVCC	**Panska Ves**	**143.43**	**332**	AMS	AMS	04 41 50.0	
comp=Z,300nm,20.1s							
BRG	**Berggiesshubel**	**143.45**	**333**	*e*PKP	PKPbc	03 32 31.6	+0.3
comp=Z,7.4nm,1.3s							
BRG	**Berggiesshubel**	**143.45**	**333**	*e*PKIKP	PKPbc	03 32 31.6	+0.3
CLL	**Collm**	**143.51**	**334**	*i* PKPdf	**PKPdf**	**03 32 34.7**	**+0.6**
CLL				*e*SS	SS	03 54 42.0	+17
CLL	**Collm**	**143.51**	**334**	*i* PKIKP	**PKPdf**	**03 32 34.7**	**+0.6**
TREC	**Trest**	**143.89**	**330**	AMS	AMS	04 38 10.0	
comp=Z,300nm,19.8s							
VAY	**Valandovo**	**144.36**	**314**	*i* PKP	PKPbc	03 32 34.2	-0.2
NKC	**Novy Kostel**	**144.56**	**333**	*e*PKP	**PKPdf**	**03 32 35.3**	**-0.8**
NKC				*e*pPKP	**pPKPdf**	**03 32 43.8**	**-0.7**
NKC				*ex*	x	03 32 50.2	
NKC				AMS	AMS	04 41 10.0	
comp=Z,200nm,17.3s							
NKC	**Novy Kostel**	**144.56**	**333**	*e*PKIKP	**PKPdf**	**03 32 35.3**	**-0.8**
NKC				*e*		03 32 43.8	
NKC				*e*		03 32 50.2	
NKC				MLR	MLR		
comp=Z,200nm,17.3s							
CONA	**Conrad Observa**	**144.64**	**328**	*i* PKPdf	**PKPdf**	**03 32 36.6**	**+0.2**
comp=Z,3.2nm,1.0s,SNR=7.3							
SKO	**Skopje**	**144.82**	**316**	*i* PKP	**PKPdf**	**03 32 36.3**	**-0.4**
KHC	**Kasperske Hory**	**144.88**	**331**	*e*PKP	**PKPdf**	**03 32 36.1**	**-0.6**
KHC				*ex*	x	03 32 44.4	
KHC				*ex*	x	03 32 50.4	
KHC				AMS	AMS	04 43 40.0	
comp=Z,300nm,19.1s							
KHC	**Kasperske Hory**	**144.88**	**331**	*e*PKIKP	**PKPdf**	**03 32 36.1**	**-0.6**
KHC				*e*		03 32 44.4	
KHC				*e*		03 32 50.4	
KHC				MLR	MLR		
comp=Z,300nm,19.1s							
KHC	**Kasperske Hory**	**144.88**	**331**	*e*PKPdf	**PKPab**	**03 32 35.4**	**-0.4**
GERES	**GERESS Array B**	**145.03**	**331**	PKPbc	**PKPab**	**03 32 36.0**	**-0.4**
comp=Z,3.5nm,1.0s,baz=31,slow=3.9,SNR=18							
ARSA	**Arzberg**	**145.26**	**327**	*i* PKPdf	**PKPab**	**03 32 37.1**	**-0.2**
comp=Z,1.2nm,0.4s							
BIA	**Bitola**	**145.34**	**314**	*i* PKP	**PKPdf**	**03 32 45.2**	**+7.4**
MOA	**Molln**	**145.48**	**329**	*i* PKPdf	**PKPbc**	**03 32 37.2**	**-0.5**
comp=Z,9.4nm,0.9s,SNR=13							
OHR	**Ohrid**	**145.65**	**315**	*i* PKP	**PKPab**	**03 32 38.9**	**0.0**
OBKA	**Obir**	**146.26**	**327**	*i* pPKPdf	**PKPab**	**03 32 41.0**	**0.0**
comp=Z,1.0nm,0.5s							
KBA	**Koelnbreinsper**	**146.46**	**329**	*i* pPKPdf	**PKPbc**	**03 32 41.1**	**+0.1**
comp=Z,1.0nm,0.5s							
BEBN	**Eben Emael**	**146.60**	**340**	PKPab	**PKPab**	**03 32 41.4**	**-0.6**
MYKA	**Terra Mystica**	**146.63**	**328**	*i* sPKPdf	**PKPab**	**03 32 43.3**	**+0.8**
comp=Z,1.6nm,0.4s							
MEM	**Membach**	**146.66**	**340**	PKPbc	**PKPbc**	**03 32 41.0**	**-0.2**
BCLA	**Clavier**	**147.05**	**340**	PKPbc	**PKPbc**	**03 32 42.8**	**+0.4**
ABTA	**Abfaltersbach**	**147.10**	**329**	*i* sPKPdf	**PKPab**	**03 32 43.9**	**-0.4**
comp=Z,4.6nm,0.6s							
MOTA	**Moosalm**	**147.32**	**331**	*i* sPKPdf	**PKPab**	**03 32 44.4**	**-0.9**
comp=Z,4.1nm,0.8s,SNR=5.3							
RETA	**Reutte**	**147.37**	**332**	*i* sPKPdf	**PKPab**	**03 32 44.5**	**-0.8**
comp=Z,0.8nm,0.3s							

LANF	**Langenberg**	**147.40**	**336**	PKP	**PKPbc**	**03 32 43.9**	**+0.5**
WLF	**Walferdange**	**147.42**	**339**	PKPbc	**PKPbc**	**03 32 43.5**	**+0.1**
WLF	**Walferdange**	**147.42**	**339**	*e*PKP2	**PKPbc**	**03 32 43.5**	**+0.1**
WLF	**Walferdange**	**147.42**	**339**	*e*PKPbc	**PKPbc**	**03 32 43.5**	**+0.1**
DOU	**Dourbes**	**147.55**	**341**	PKPbc	**PKPbc**	**03 32 43.3**	**-0.4**
BFO	**Black Forest**	**147.73**	**335**	*i* PKP2	**PKPab**	**03 32 45.3**	**-1.3**
BFO	**Black Forest**	**147.73**	**335**	*e*PKPdf	**PKPdf**	**03 32 40.8**	**-0.7**
BFO				*e*PKPbc	**PKPbc**	**03 32 44.6**	**+0.3**
FETA	**Feichten**	**147.73**	**331**	*i* PKPab	**PKPbc**	**03 32 45.1**	**+0.5**
comp=Z,7.9nm,1.0s,SNR=9.4							
DAVA	**Damuels**	**147.91**	**332**	*i* PKPdf	**PKPdf**	**03 32 40.3**	**-1.7**
comp=Z,7.6nm,0.9s							
ECH	**Echery**	**148.27**	**336**	PKP	**PKPbc**	**03 32 44.9**	**-0.9**
MOF	**Molkenrain**	**148.58**	**336**	PKP	**PKPbc**	**03 32 46.0**	**-0.7**
TUE	**Stuetta**	**148.77**	**332**	*e*PKPdf	**PKPdf**	**03 32 42.7**	**-0.8**
TUE				*e*PKPbc	**PKPbc**	**03 32 47.4**	**0.0**
LOMF	**Lomont**	**149.11**	**336**	PKP	**PKPbc**	**03 32 47.8**	**-0.2**
BNI	**Bardonecchia**	**151.04**	**333**	*e*PKPpre	PKPpre	03 32 37.6	
BNI				*e*PKPbc	**PKPbc**	**03 32 51.7**	**-1.2**
SSB	**Saint Sauveur**	**151.72**	**336**	*e*PKIKP	**PKPdf**	**03 32 46.5**	**-1.4**
SSB	**Saint Sauveur**	**151.72**	**336**	*e*PKPdf	**PKPdf**	**03 32 46.5**	**-1.4**
ESDC	**Sonseca Array**	**159.54**	**344**	PKPab	**PKPab**	**03 33 35.1**	**-1.5**
comp=Z,1.0nm,0.8s,baz=22,slow=4.3,SNR=5.0							

*IDC **11** 03:14:18.8±7.2, 3°.79N×93°.79E, h0km, mb3.9/4, mb1 4.0/4, mb1mx3.5/57, mbtmp3.9/4, MS4.0/1, Ms1 4.0/1, ms1mx2.9/37, Error ellipse: s-maj=327.9km s-min=27.2km az=56.0*

*DJA **11** 03:14:32.8±0.9, 3°.N±6°.×9°.4E±°, h54km±32km, M4.2/5, mB6.1/1, mb4.6/2, MLv4.1/5, Mw(mB)5.7/1*

ISC 11 03:14:21.7±1.4, 3°.7N±0°.1×93°.69E±0°.09, h19km, n15, σ1°52/14, mb4.0/4, Off west coast of northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MLSI	**Meulaboh, Aceh**	**2.77**	**78**	P	**Pb**	**03 15 10.5**	**-0.2**
MLSI				S	**Sb**	**03 15 45.3**	**+1.0**
LHMI	**Lhok Sumawe**	**3.60**	**64**	P	**Pb**	**03 15 25.2**	**+0.4**
KCSI	**Kotacane, Aceh**	**4.08**	**92**	P	**Pb**	**03 15 30.8**	**-2.2**
KCSI				S	**Sb**	**03 16 20.5**	**-1.5**
GSI	**Gunungsitoli**	**4.54**	**121**	P	**Pn**	**03 15 31.5**	**+2.0**
GSI				S	**Sn**	**03 16 20.8**	**-1.0**
TSI	**Tuntungan**	**4.87**	**92**	P	Pn	03 15 39.5	+5.5
MNSI	**Mandailing Nat**	**6.54**	**116**	P	**Pn**	**03 15 59.6**	**+2.5**
34nm,0.3s,14μm							
MNSI				S	**Sn**	**03 17 11.0**	**-0.2**
34nm,0.3s,14μm							
PPSI	**Pulau Pagai**	**8.99**	**135**	P	**Pn**	**03 16 32.6**	**+2.0**
H08S2	**Diego Garcia H**	**23.95**	**242**	T	T	03 44 51.1	
baz=62,slow=75,SNR=6.5							
H08S3	**Diego Garcia H**	**23.95**	**242**	T	T	03 44 59.4	
baz=62,slow=75,SNR=5.5							
H08S1	**Diego Carcia H**	**23.97**	**242**	T	T	03 44 53.4	
baz=62,slow=75,SNR=6.2							
MKAR	**Makanchi Array**	**44.08**	**349**	P	**P**	**03 22 27.8**	**-0.8**
1.1nm,0.5s,baz=172,slow=8.3,SNR=7.6							
WRA	**Warramunga Arr**	**46.31**	**122**	P	**P**	**03 22 46.5**	**-0.3**
0.6nm,0.7s,baz=299,slow=8.8,SNR=2.5							
KURBB	**Kurchatov Arra**	**48.50**	**347**	P	**P**	**03 23 02.4**	**-0.9**
1.1nm,0.7s,baz=169,slow=7.2,SNR=11							
ZALV	**Zalesovo Beam**	**50.64**	**353**	P	**P**	**03 23 18.9**	**-0.7**
1.6nm,0.4s,baz=171,slow=10,SNR=4.3							
JCJ	**Chichijima**	**51.80**	**58**	LR	LR	03 44 25.5	
comp=Z,155nm,18.7s,baz=134,slow=35							

*ISCJB **11** 03:18:31.9±0.9, 14°.07N±0°.09×91°.74W±0°.06, h70km±8km, mb3.7/5, Error ellipse: s-maj=17.6km s-min=3.8km az=32.0*

*NEIC **11** 03:18:32.5±2.5, 14°.01N×91°.91W, h23km±22km, MD3.9(MEX), Error ellipse: s-maj=28.6km s-min=13.0km az=224.0*

NEIC Felt at Antigua Guatemala, Petapa and Villa Nueva.

*MEX **11** 03:18:35.0±1.0, 13°.98N×92°.00W, h24km±27km, MD3.9*

*IDC **11** 03:18:36.9±8.0, 14°.43N×91°.63W, h82km±40km, mb3.4/5, mb1 3.7/8, mb1mx3.4/48, mbtmp3.7/8, MS2.3/1, Ms1 2.3/1, ms1mx2.2/29, Error ellipse: s-maj=93.1km s-min=26.2km az=6.0*

ISC 11 03:18:32.3±1.1, 13°.97N±0°.09×91°.80W±0°.06, h59km±9km, n28, σ1°38/44, mb3.9/5, Near coast of Guatemala

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THIG		**1.04**	**334**	*i* P	**Pn**	**03 18 50.7**	**-0.1**
THIG				*i* S	**Sn**	**03 19 02.6**	**-2.0**
THIG		**1.04**	**334**	*i* P	**Pn**	**03 18 50.7**	**-0.1**
THIG				*i* S	**Sn**	**03 19 02.6**	**-2.0**
RTR	**El Retiro**	**2.09**	**92**	*e*P	**Pn**	**03 19 05.5**	**+0.3**
SBLS	**San Blas**	**2.12**	**93**	*e*P	**Pn**	**03 19 05.2**	**-0.4**
SBLS				*e*S	**Sn**	**03 19 29.8**	**-1.2**
SNJE	**San Jose**	**2.13**	**92**	*e*P	**Pn**	**03 19 05.6**	**-0.2**
SNJE				*e*S	**Sn**	**03 19 29.6**	**-1.7**
PCIG		**2.21**	**322**	*e*P	**Pn**	**03 19 06.2**	**-0.4**
PCIG				*e*S	**Sn**	**03 19 30.3**	**-2.5**
PCIG		**2.21**	**322**	*e*P	**Pn**	**03 19 06.2**	**-0.4**
PCIG				*e*S	**Sn**	**03 19 30.3**	**-2.5**
MRL	**Marmol**	**2.32**	**62**	*e*P	**Pn**	**03 19 08.1**	**-0.1**
CCIG	**Comitan**	**2.33**	**352**	*e*P	**Pn**	**03 19 09.8**	**+1.4**
CCIG				*e*S	**Sn**	**03 19 35.8**	**-0.1**
CCIG	**Comitan**	**2.33**	**352**	*e*P	**Pn**	**03 19 09.8**	**+1.4**
CCIG				*e*S	**Sn**	**03 19 35.8**	**-0.1**
COLS	**Colinas**	**2.45**	**97**	*e*P	**Pn**	**03 19 09.9**	**-0.1**
COLS				*e*S	**Sn**	**03 19 37.0**	**-1.9**
BOQS	**Boqueron**	**2.46**	**95**	*e*P	**Pn**	**03 19 10.1**	**-0.1**
BOQS				*e*S	**Sn**	**03 19 38.4**	**-0.9**
SNET	**Serv Nac Est T**	**2.51**	**96**	*e*S	**Sn**	**03 19 38.9**	**-1.4**
LFRS	**El Faro**	**2.68**	**97**	*e*P	**Pn**	**03 19 13.2**	**0.0**
LFRS				*e*S	**Sn**	**03 19 43.6**	**-1.0**
LBRS	**Las Brisas**	**2.69**	**95**	*e*P	**Pn**	**03 19 13.0**	**-0.2**
TGIG		**3.07**	**336**	*e*P	**Pn**	**03 19 18.4**	**-0.1**
TGIG				*e*S	**Sn**	**03 19 53.0**	**-1.1**
TGIG		**3.07**	**336**	*e*P	**Pn**	**03 19 18.4**	**-0.1**
TGIG				*e*S	**Sn**	**03 19 53.0**	**-1.1**
CMIG	**Matias Romero**	**4.30**	**317**	P	**Pn**	**03 19 36.3**	**+1.1**
4.7nm,0.3s,baz=121,slow=10,SNR=28							
CMIG				S	**Sn**	**03 20 24.2**	**+0.1**
14nm,0.3s,baz=202,slow=11,SNR=8.7							
TEIG	**Tepich**	**7.08**	**28**	P	**Pn**	**03 20 12.0**	**-1.3**
6.8nm,0.3s,baz=88,slow=24,SNR=56							
TEIG				LR	LR	03 23 21.2	
comp=Z,28nm,20.8s,baz=6.5,slow=43							
TEIG	**Tepich**	**7.08**	**28**	*e*Pn	**Pn**	**03 20 13.3**	**+0.1**
JTS	**JuntasAbangare**	**7.63**	**118**	*e*Pn	**Pn**	**03 20 23.9**	**+3.0**
DWPF	**Disney Wildern**	**17.06**	**33**	*e*Pn	**P**	**03 22 31.1**	**+3.2**
TXAR	**Lajitas Array**	**18.83**	**326**	P	**Pn**	**03 22 48.7**	**+0.2**
0.0nm,0.3s,baz=159,slow=15,SNR=7.7							
NVAR	**Mina Array Bea**	**33.82**	**321**	P	**P**	**03 25 10.9**	**+1.7**
1.1nm,0.7s,baz=132,slow=8.2,SNR=8.0							
NVAR				pP	**pP**	**03 25 26.1**	**+2.1**
0.9nm,0.6s,baz=135,slow=8.5,SNR=7.5							
YBH	**Yreka Blue Hor**	**38.51**	**322**	P	**P**	**03 25 49.8**	**+0.8**
0.6nm,0.3s,baz=108,slow=13,SNR=3.4							
YKA	**Yellowknife Ar**	**51.10**	**347**	P	**P**	**03 27 27.3**	**-1.3**
0.3nm,0.7s,baz=150,slow=7.5,SNR=7.3							
YKA				pP	**pP**	**03 27 43.3**	**-0.9**
0.2nm,0.6s,baz=151,slow=7.6,SNR=4.3							
INK	**Inuvik**	**60.52**	**343**	P	**P**	**03 28 34.7**	**-1.3**
1.4nm,1.2s,baz=148,slow=3.3,SNR=3.2							
ILAR	**Eielson Array**	**62.95**	**337**	P	**P**	**03 28 51.0**	**-1.4**
0.7nm,1.0s,baz=127,slow=4.8,SNR=4.6							

IDC 11 03:22:10.6±17.0, 20°.02S×178°.34W, h595km±164km, mb3.5/4, mb1 3.6/4, mb1mx3.0/35, mbtmp4.6/4, Error ellipse: s-maj=143.4km s-min=75.0km az=109.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**33.22**	**264**	P	P	03 28 00.0	-0.1
5.8nm,0.4s,baz=89,slow=9.5,SNR=9.1							
STKA	**Stephens Creek**	**37.71**	**244**	P	P	03 28 36.7	-0.4
1.8nm,0.6s,baz=84,slow=11,SNR=3.7							
ASAR	**Alice Springs**	**44.32**	**256**	P	P	03 29 29.4	+0.1
9.7nm,0.8s,baz=87,slow=8.6,SNR=66							
ASAR				PcP	PcP	03 30 59.7	-0.6
4.2nm,0.5s,baz=107,slow=3.8,SNR=5.7							
WRA	**Warramunga Arr**	**44.35**	**262**	P	P	03 29 29.5	-0.2
4.2nm,0.5s,baz=97,slow=8.5,SNR=21							
AKASG	**Malin Array Be**	**142.44**	**331**	PKhKP	PKPpre	03 40 31.0	
1.0nm,0.4s,baz=41,slow=4.5,SNR=11							

BRTR	**Keskin Array B**	**146.28**	**313**	PKPbc	PKPbc	03 40 45.5	-0.4
1.4nm,0.7s,baz=104,slow=6.1,SNR=9.6							
DPC	**Dobruska-Polom**	**147.57**	**342**	*e*PKP	PKPbc	03 40 48.8	0.0
TREC	**Trest**	**148.76**	**342**	*e*PKP	PKPbc	03 40 51.3	-0.4
KHC	**Kasperske Hory**	**149.42**	**345**	*e*PKP	PKPbc	03 40 53.1	-0.3
KHC				*ex*	x	03 41 01.1	
GERES	**GERESS Array B**	**149.65**	**344**	PKPbc	PKPbc	03 40 53.4	-0.6
0.7nm,0.7s,baz=29,slow=3.0,SNR=9.6							

IDC 11 03:29:53.1±3.3, 20°.19S×168°.81E, h0km, mb4.3/4, mb1 4.5/5, mb1mx3.9/37, mbtmp4.3/5, ML4.0/1, Error ellipse: s-maj=86.1km s-min=39.4km az=133.0, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.89**	**229**	Pn	Pn	03 30 40.4	-0.2
20nm,0.3s,baz=108,slow=12,SNR=75							
DZM				Sn	Sn	03 31 13.7	-2.5
9.7nm,0.3s,baz=350,slow=23,SNR=4.0							
CTA	**Charters Tower**	**21.18**	**266**	P	P	03 34 42.2	+2.0
4.2nm,0.5s,baz=80,slow=12,SNR=6.5							
STKA	**Stephens Creek**	**27.00**	**239**	P	P	03 35 36.6	-0.3
2.4nm,0.9s,baz=69,slow=8.6,SNR=3.6							
WRA	**Warramunga Arr**	**32.34**	**264**	P	P	03 36 23.6	-0.9
2.2nm,0.4s,baz=91,slow=8.4,SNR=25							
ASAR	**Alice Springs**	**32.51**	**257**	P	P	03 36 25.7	-0.3
9.8nm,0.6s,baz=88,slow=9.2,SNR=96							
GERES	**GERESS Array B**	**145.13**	**331**	PKPbc	PKPbc	03 49 31.7	-0.5
0.2nm,0.5s,baz=25,slow=2.6,SNR=2.7							

*CSEM **11** 03:30:20.6±0.5, 50°.28N×18°.76E, h1km, Error ellipse: s-maj=13.4km s-min=5.9km az=5.0*

PRU 11 03:30:21.3, 50°.26N×18°.78E, h0km, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OJC	**Ojcow**	**0.66**	**93**	*e*Pg	Pg	03 30 33.9	+0.1
OJC				*e*Sg	Sg	03 30 42.7	+0.4
OJC	**Ojcow**	**0.66**	**93**	*e*Pg	Pg	03 30 33.9	+0.1
OJC				*e*Sg	Sg	03 30 42.7	+0.4
MORC	**Moravsky Berou**	**0.93**	**239**	*e*Pg	Pg	03 30 39.7	+0.5
MORC				*e*Sg	Sg	03 30 51.6	+0.4
LANS	**Liptovska Anna**	**1.20**	**158**	*e*Pg	Pg	03 30 43.7	-0.5
LANS				*e*Sg	Sg	03 30 58.8	-0.9
LANS	**Liptovska Anna**	**1.20**	**158**	*e*PG	Pg	03 30 43.7	-0.5
LANS				*e*SG	Sg	03 30 58.8	-0.9
KRLC	**Kraliky**	**1.30**	**263**	*e*SG	Sg	03 31 01.9	-1.1
KRLC	**Kraliky**	**1.30**	**263**	Sg	Sg	03 31 01.9	-1.1
DPC	**Dobruska-Polom**	**1.58**	**274**	*e*PG	Pn	03 30 49.5	-1.1
DPC				*e*SG	Sg	03 31 12.1	+0.1
DPC	**Dobruska-Polom**	**1.58**	**274**	Pg	Pn	03 30 49.5	-1.1
DPC				Sg	Sg	03 31 12.1	+0.1

IDC 11 03:38:00.4±4.2, 19°.65S×168°.39E, h0km, mb4.0/2, mb1 4.1/3, mb1mx3.7/35, mbtmp3.9/3, ML3.2/1, Error ellipse: s-maj=87.4km s-min=53.2km az=116.0, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**3.02**	**217**	Pn	Pn	03 38 47.3	-2.2
3.1nm,0.3s,baz=63,slow=16,SNR=12							
DZM				Sn	Sn	03 39 20.0	-6.4
14nm,0.3s,baz=75,slow=20,SNR=5.8							
WRA	**Warramunga Arr**	**32.01**	**264**	P	P	03 44 29.6	+0.8
0.4nm,0.4s,baz=89,slow=8.4,SNR=6.8							
ASAR	**Alice Springs**	**32.25**	**257**	P	P	03 44 30.9	-0.1
3.0nm,0.7s,baz=84,slow=9.0,SNR=25							
GERES	**GERESS Array B**	**144.47**	**331**	PKP	PKPdf	03 57 38.3	-0.5
0.4nm,0.5s,baz=33,slow=3

ARG	Arkhangelos	0.81	143	P	Pg	04 07 42.6	0.0
ARG				S	Sn	04 07 55.1	-0.3
AYDN	Tasoluk	0.84	19	P	Pb	04 07 42.8	-0.5
AYDN				S	Sg	04 07 55.0	+0.5
AYDN	Tasoluk	0.84	19	*i* P	Pb	04 07 42.8	-0.5
AYDN				*i* S	Sg	04 07 55.0	+0.5
TURN	Turunc	0.86	89	*i* P	Pb	04 07 37.4	-6.2
TURN				*i* S	Sb	04 07 46.0	-8.9
GCAM	G?zelcaml?	0.87	345	P	Pn	04 07 44.4	-0.1
GCAM				S	Sn	04 07 57.5	+0.6
GCAM	G?zelcaml?	0.87	345	*i* P	Pn	04 07 44.4	-0.1
GCAM				*i* S	Sn	04 07 57.5	+0.6
DALY	Dalyan (Mu¨la	0.91	93	*e*PG	Pb	04 07 44.0	-0.2
DALY	Dalyan (Mu¨la	0.91	93	*e*Pg	Pb	04 07 44.1	-0.2
SMG	Samos	1.01	327	P	Pb	04 07 45.9	-0.1
SMG				S	Sn	04 08 00.7	+0.3
SMG	Samos	1.01	327	P	Pb	04 07 45.9	-0.1
SMG				S	Sn	04 08 00.7	+0.3
AYDB	Zeytinkoy-Aydi	1.12	15	*e*PN	Pb	04 07 47.8	-0.2
AYDB	Zeytinkoy-Aydi	1.12	15	*e*Pn	Pb	04 07 47.8	-0.2
FETY	Fethiye	1.27	100	*e*PN	Pg	04 07 51.5	+0.1
FETY	Fethiye	1.27	100	P	Pn	04 07 49.8	-0.3
FETY				S	Sg	04 08 08.2	+0.2
FETY	Fethiye	1.27	100	P	Pn	04 07 49.8	-0.3
FETY	Fethiye	1.27	100	*e*Pn	Pg	04 07 51.5	+0.1
FETY				S	Sg	04 08 08.2	+0.2
DGB	¨zmir	1.29	337	*i* P	Pn	04 07 50.0	-0.4
DGB				*i* S	Sn	04 08 07.7	+0.3
KARP	Karpathos	1.35	193	*e*PN	Pb	04 07 51.5	-0.3
KARP	Karpathos	1.35	193	*e*Pn	Pb	04 07 51.5	-0.3

JMA 11 04:10:13.1±0.3, 36°.83N×143°.72E, h51km, M3.8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	2.34	284	P	Pn	04 10 50.4	+1.3
JFK				S	Sn	04 11 17.7	+1.1
ONAJ	Iwakimizuishiy	2.36	277	P	Pn	04 10 50.7	+1.3
ONAJ				S	Sn	04 11 18.1	+1.0
JHO	Hitachi	2.54	266	P	Pn	04 10 52.8	+1.0
JFT	Otama	2.79	285	P	Pn	04 10 57.4	+2.1
JFT				S	Sn	04 11 29.9	+2.2
JMK	Ichinoseki	2.90	318	P	Pn	04 10 57.8	+1.1
JOM	Ohasama	3.26	325	S	Sn	04 11 39.0	-0.2
JYK	Kaneyama	3.38	309	P	Pn	04 11 05.2	+1.9
JYK				*e*S	Sn	04 11 45.1	+2.9
JAG	Ashikaga	3.46	265	P	Pn	04 11 06.4	+2.0
JAG				S	Sn	04 11 44.6	+0.5
JANG	Nango	3.94	335	P	Pn	04 11 11.4	+0.4
JRY	Ryogami san	3.97	260	P	Pn	04 11 13.2	+1.7
JRY				S	Sn	04 11 56.9	+0.1
JOD2	Odawara 2	4.07	249	S	Sn	04 11 59.1	0.0
JYN	Shimob	4.39	254	P	Pn	04 11 20.0	+2.7
JYN				*e*S	Sn	04 12 09.1	+1.8

IDC 11 04:25:10.7±3.9, 19°.88S×168°.59E, h0km, mb4.2/2, mb1 4.4/3, mb1mx3.8/27, mbtmp4.1/3, ML3.7/1, MS3.6/4, Ms1 3.6/4, ms1mx3.2/29, Error ellipse: s-maj=93.6km s-min=51.0km az=129.0, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	2.96	222	Pn	Pn	04 25 57.5	-1.6
	11nm,0.3s,baz=188,slow=18,SNR=17						
DZM				Sn	Sn	04 26 30.9	-4.6
	61nm,0.3s,baz=71,slow=18,SNR=12						
HNR	Honiara	13.33	320	LR	LR	04 32 24.2	
	comp=Z,111nm,19.6s,baz=142,slow=32						
AFI	Afiamalu	19.69	75	LR	LR	04 35 43.6	
	comp=Z,133nm,19.4s,baz=270,slow=32						
STKA	Stephens Creek	26.99	238	LR	LR	04 41 19.7	
	comp=Z,128nm,18.5s,baz=136,slow=36						
WRA	Warramunga Arr	32.17	264	P	P	04 31 40.5	0.0
	1.6nm,1.0s,baz=89,slow=8.6,SNR=7.8						
ASAR	Alice Springs	32.38	257	P	P	04 31 42.9	+0.5
	4.7nm,0.7s,baz=84,slow=9.0,SNR=42						
ASAR				LR	LR	04 45 28.2	
	comp=Z,230nm,18.1s,baz=117,slow=38						
GERES	GERESS Array B	144.76	331	PKP	PKPbc	04 44 48.9	+0.3
	0.1nm,0.3s,baz=59,slow=3.8,SNR=3.4						

*IDC **11** 04:29:34.3±2.7, 20°.69S×176°.37W, h199km±29km, mb3.8/8, mb1 3.9/11, mb1mx3.6/27, mbtmp4.4/11, Error ellipse: s-maj=21.5km s-min=17.6km az=138.0*
*NEIC **11** 04:29:34.9±1.2, 20°.73S×176°.29W, h208km±13km, mb4.3/3, Error ellipse: s-maj=14.3km s-min=11.6km az=144.0*
*ISCJB **11** 04:29:35.5±0.8, 20°.67S±0°.10×176°.3W±0°.1, h234km, mb4.0/10, Error ellipse: s-maj=15.3km s-min=13.0km az=36.9*

ISC 11 04:29:37.0±0.8, 20°.6S±0°.1×176°.3W±0°.1, h234km, n16, σ1§27/16, mb3.9/10, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSVF	Nonsavu	6.04	297	*e*Pn	Pn	04 31 04.5	-0.9
	14nm,0.7s						
AFI	Afiamalu	7.94	34	P	Pn	04 31 28.2	-1.5
	2.3nm,0.3s,baz=210,slow=20,SNR=4.9						
DZM	Mont Dzumac	16.13	262	P	P	04 33 11.1	+0.7
	2.1nm,0.3s,baz=80,slow=17,SNR=7.9						
URZ	Urewera	18.50	196	P	P	04 33 33.0	-2.9
	3.4nm,0.3s,baz=15,slow=1.3,SNR=11						
KHZ	Kahutara	23.37	199	*e*P	P	04 34 23.1	-1.6
	45nm,0.8s						
RPZ	Rata Peaks	25.35	202	P	P	04 34 42.7	+0.1
	12nm,0.6s,baz=360,slow=2.9,SNR=5.1						
CTA	Charters Tower	35.05	264	P	P	04 36 08.7	+0.7
	4.6nm,0.4s,baz=93,slow=11,SNR=7.3						
PMG	Port Moresby	36.90	282	P	P	04 36 24.3	+0.6
	12nm,0.8s,baz=119,slow=5.9,SNR=4.4						
PMG	Port Moresby	36.90	282	*e*P	P	04 36 24.5	+0.8
	13nm,0.8s						
STKA	Stephens Creek	39.17	245	P	P	04 36 41.9	-0.6
	2.4nm,0.6s,baz=104,slow=12,SNR=5.6						
ASAR	Alice Springs	46.03	257	P	P	04 37 37.5	-0.1
	3.9nm,0.8s,baz=87,slow=8.5,SNR=24						
WRAB	Tennant Creek	46.14	262	*e*P	P	04 37 38.0	-0.5
	2.7nm,0.6s						
WRA	Warramunga Arr	46.15	262	P	P	04 37 38.2	-0.4
	2.8nm,0.6s,baz=97,slow=5.1,SNR=22						
VNDA	Vanda	57.96	185	P	P	04 39 05.5	+1.0
	0.5nm,0.9s,baz=344,slow=5.8,SNR=4.1						
TXAR	Lajitas Array	85.79	57	P	P	04 41 52.2	+1.8
	0.4nm,0.9s,baz=233,slow=12,SNR=4.1						
BRTR	Keskin Array B	148.06	313	PKPbc	PKPbc	04 48 56.0	+0.6
	0.8nm,0.6s,baz=134,slow=3.6,SNR=6.3						

*ISCJB **11** 04:35:43.2±0.7, 50°.36N±0°.04×18°.87E±0°.03, h0km, Error ellipse: s-maj=6.7km s-min=2.5km az=16.1*
*CSEM **11** 04:35:43.6±0.5, 50°.41N×18°.91E, h2km, ML2.7/4, Error ellipse: s-maj=11.0km s-min=3.9km az=12.0*
*PRU **11** 04:35:44.5, 50°.37N×18°.91E, h0km*
*WAR **11** 04:35:45.1, 50°.35N×18°.98E, h1km, Mw2.6*

ISC 11 04:35:44.9±0.8, 50°.23N±0°.04×18°.87E±0°.02, h0km, n36, σ0§80/58, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHZP	Chorzow	0.10	50	*e*Pg	Pg	04 35 46.6	-0.2
CHZP	Chorzow	0.10	50	*e*Pg	Pg	04 35 46.6	-0.2
CHZP	Chorzow	0.10	50	*e*Pg	Pg	04 35 46.6	-0.2
OJC	Ojcow	0.60	90	*e*Pg	Pg	04 35 55.3	-1.0
OJC				*e*Sg	Sg	04 36 03.6	-0.4
OJC	Ojcow	0.60	90	*e*Pg	Pg	04 35 55.3	-1.0
OJC				*e*Sg	Sg	04 36 03.6	-0.4
OJC	Ojcow	0.60	90	*e*Pg	Pg	04 35 55.3	-1.0
OJC				*e*Sg	Sg	04 36 03.6	-0.4
OKC	Ostrava-Krasne	0.61	230	*e*SG	Sn	04 36 10.0	-1.3
	comp=Z,13nm,0.2s						
OKC	Ostrava-Krasne	0.61	230	Sg	Sn	04 36 10.0	-1.3
	13nm,0.2s						
MORC	Moravsky Berou	0.97	243	*e*Pg	Pb	04 36 05.0	+0.4
MORC				*e*Sg	Sn	04 36 19.7	-0.6
LANS	Liptovska Anna	1.15	160	*e*Pg	Pn	04 36 08.7	+0.5
LANS				*e*Sg	Sn	04 36 25.6	+1.0
LANS	Liptovska Anna	1.15	160	*e*PG	Pn	04 36 08.7	+0.5
LANS				*e*SG	Sn	04 36 25.6	+1.0
NIE	Niedzica	1.23	131	*e*Pg	Pn	04 36 09.4	+0.1
NIE				*e*Sg	Sn	04 36 27.3	+0.6
NIE	Niedzica	1.23	131	*e*Pg	Pn	04 36 09.4	+0.1
NIE				*e*Sg	Sn	04 36 27.3	+0.6
NIE	Niedzica	1.23	131	*e*Pg	Pn	04 36 09.4	0.0
NIE				*e*Sg	Sn	04 36 27.3	+0.6
KRLC	Kraliky	1.35	264	*e*PG	Pg	04 36 10.3	-0.5
KRLC				*e*SG	Sn	04 36 30.0	+0.3
KRLC	Kraliky	1.35	264	Pg	Pg	04 36 10.3	-0.5
KRLC				Sg	Sn	04 36 30.0	+0.3
DPC	Dobruska-Polom	1.64	275	*e*PG	Pn	04 36 14.9	-0.1
DPC				*e*SG	Sg	04 36 38.0	+0.5
	comp=Z,8.1nm,0.4s						
DPC	Dobruska-Polom	1.64	275	Pg	Pn	04 36 14.9	-0.1
DPC				Sg	Sg	04 36 38.0	+0.5
	8.1nm,0.4s						
VYHS	Vyhne	1.73	181	*e*Pn	Pb	04 36 17.7	+0.1
VYHS				*e*Sn	Sb	04 36 40.1	+0.2
VYHS	Vyhne	1.73	181	*e*PN	Pb	04 36 17.7	+0.1
VYHS				*e*SN	Sb	04 36 40.1	+0.2
VYHS				*e*LG	Lg	04 36 44.1	
STHS	Stebnicka Huta	1.74	117	*e*Pn	Pb	04 36 17.9	+0.2
STHS	Stebnicka Huta	1.74	117	*e*PN	Pb	04 36 17.9	+0.2
STHS				*e*LG	Lg	04 36 54.9	
VRAC	Vranov	1.74	239	*e*Pn	Pg	04 36 18.1	-0.1
VRAC				*e*Sg	Sg	04 36 42.7	+2.0
UPC	Upice	1.85	280	*e*SG	Sg	04 36 45.1	+0.8
UPC	Upice	1.85	280	Sg	Sg	04 36 45.1	+0.8
KECS	Kecovo	2.04	148	*e*Pn	Pn	04 36 20.7	+0.2
KECS				*e*Sn	Sn	04 36 45.4	-1.2
KECS	Kecovo	2.04	148	*e*PN	Pn	04 36 20.7	+0.2
KECS				*e*SN	Sn	04 36 45.4	-1.2
KECS				*e*LG	Lg	04 36 51.5	
CRVS	Cervenica-Dubn	2.15	127	*e*Pg	Pb	04 36 25.2	+0.6
CRVS				*e*Sg	Sg	04 36 54.1	+0.3
CRVS	Cervenica-Dubn	2.15	127	*e*PG	Pb	04 36 25.2	+0.6
CRVS				*e*SG	Sg	04 36 54.1	+0.3
GOPC	GO Pecny, Ondr	2.65	265	*e*PG	Pb	04 36 33.4	+0.2
GOPC				*e*SG	Sg	04 37 09.2	-0.8
	comp=Z,5.7nm,0.4s						
GOPC	GO Pecny, Ondr	2.65	265	Pg	Pb	04 36 33.4	+0.2
GOPC				Sg	Sg	04 37 09.2	-0.8
	5.7nm,0.4s						
PRU	Pruhonice	2.80	267	*e*SG	Sg	04 37 13.6	-1.1
	comp=Z,2.8nm,0.2s						
PRU	Pruhonice	2.80	267	Sg	Sg	04 37 13.6	-1.1
	2.8nm,0.2s						
BRG	Berggiesshubel	3.21	284	SG	Sg	04 37 27.2	-0.7
	3.6nm,0.5s						
KHC	Kasperske Hory	3.61	254	*e*SG	Sg	04 37 39.0	-1.7
	comp=Z,5.2nm,0.5s						
CLL	Collm	3.88	288	*e*Sg	Sg	04 37 52.0	+2.6

*IDC **11** 04:36:10.0±2.2, 44°.35N×80°.93E, h0km, mb3.4/1, mb1 3.4/3, mb1mx3.2/31, mbtmp3.4/3, ML3.1/2, MS2.2/1, Ms1 2.2/1, ms1mx2.1/20, Error ellipse: s-maj=45.4km s-min=15.9km az=123.0*
*NNC **11** 04:36:13.7±0.8, 44°.47N×80°.92E, h1km±4km, mb3.7, mpv3.4, Error ellipse: s-maj=10.2km s-min=1.9km az=121.0*
*BJI **11** 04:36:14.3, 44°.46N×81°.18E, h7km, ML3.3/7*
*SOME **11** 04:36:14.4, 44°.43N×81°.00E, h5km*

ISC 11 04:36:13.3±1.3, 44°.43N±0°.04×81°.06E±0°.04, h1km±11km, n35, σ1§24/56, 15C-11D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DJR	Jarkent	0.92	264	*e*P	Pg	04 36 31.2	+0.3
	191nm,0.2s						
DJR				*e*S	Sg	04 36 43.0	+0.2
	442nm,0.3s						
KTMS	Ketmen	1.11	208	*e*P	Pg	04 36 34.5	0.0
	298nm,0.2s						
KTMS				*e*S	Sg	04 36 48.7	-0.2
	499nm,0.2s						
KAPS	Kapalarasan	1.48	306	⇓*i*P	Pn	04 36 41.3	+0.1
	87nm,0.4s						
KAPS				⇓*i*S	Sg	04 37 00.4	-0.6
	818nm,0.5s						
SHLS	Shalkode	1.53	214	*e*P	Pn	04 36 42.1	+0.1
	342nm,0.3s						
SHLS				*e*S	Sg	04 37 01.6	-1.0
	601nm,0.2s						
PDGK	Podgornoye	1.59	227	⇑P	Pn	04 36 41.9	-0.6
	136nm,0.4s						
PDGK				⇓S	Sn	04 37 02.9	-0.8
	328nm,0.4s						
MNBS	Baschi	1.94	261	*e*P	Pn	04 36 47.9	+0.3
	56nm,0.4s						
MNBS				*e*S	Sn	04 37 11.1	-1.6
	2μm,0.6s						
TDK	Taldyqorghan	1.98	288	*e*P	Pn	04 36 49.0	+1.0
	46nm,0.1s						
TDK				*e*S	Sn	04 37 13.3	-0.2
	392nm,0.5s						
ZHN	Zhinishke	2.28	237	*e*P	Pb	04 36 55.0	-0.4
	46nm,0.2s						
ZHN				*e*S	Sb	04 37 23.5	-0.7
	458nm,0.2s						
KURS	Kuram	2.29	247	*e*P	Pb	04 36 54.1	-1.4
	11nm,0.2s						
KURS				*e*S	Sb	04 37 23.1	-1.2
	78nm,0.5s						
ARXS	Arharly	2.33	266	*e*P	Pb	04 36 55.2	-1.0
	33nm,0.3s						
ARXS				*e*S	Sn	04 37 23.9	+1.6
	215nm,0.4s						
SATY	Saty	2.36	235	*e*P	Pb	04 36 56.5	-0.3
	95nm,0.2s						
SATY				*e*S	Sb	04 37 25.9	-0.6
	1μm,0.2s						
MAKZ	Makanchi	2.46	15	⇓Pn	Pn	04 36 55.0	+0.3
	2.3nm,0.4s						
MAKZ				⇑Sn	Sn	04 37 27.2	+1.8
	13nm,0.3s						
MK31	Makanchi Array	2.52	20	⇓Pn	Pn	04 36 55.7	+0.4
	0.8nm,0.3s,baz=200,slow=13,SNR=371						
MK31				⇑Pg	Pb	04 36 58.7	-0.6
	20nm,0.5s,baz=200,slow=17,SNR=20						
MK31				⇑Sn	Sn	04 37 27.5	+0.8
	14nm,0.5s,baz=194,slow=28,SNR=6.3						
MK31				⇓Lg	Lg	04 37 34.1	
	15nm,0.2s,baz=196,slow=32,SNR=7.6						
MKAR	Makanchi Array	2.52	20	Pn	Pn	04 36 55.8	+0.4
	4.7nm,0.3s,baz=203,slow=14,SNR=62						
MKAR				Sn	Sn	04 37 27.2	+0.5
	18nm,0.3s,baz=198,slow=22,SNR=11						
MKAR				Lg	Lg	04 37 35.1	
	42nm,0.3s,baz=204,slow=32,SNR=15						
MKAR				LR	LR	04 38 10.1	
	comp=Z,48nm,20.6s,baz=146,slow=46						
CHKK	Chushkaly	2.98	261	*e*P	Pb	04 37 07.5	+0.3
	19nm,0.5s						
CHKK				*e*S	Sb	04 37 44.8	+0.7
	183nm,0.5s						
KOTS	Kotyrbulak	3.10	249	*e*P	Pb	04 37 09.4	+0.1
KOTS				*e*S	Sb	04 37 48.6	+0.9
MDOK	Medeo	3.17	248	*e*P	Pb	04 37 10.0	-0.6
	39nm,0.5s						
MDOK				*e*S	Sb	04 37 49.6	-0.1
	122nm,0.6s						
TNSS	Tian-Shan	3.29	246	*e*P	Pb	04 37 13.2	+0.5
	31nm,0.5s						
TNSS				*e*S	Sb	04 37 55.0	+1.6
	54nm,0.3s						
KUU	Kurty	3.44	263	*e*P	Pb	04 37 12.9	-2.2
	19nm,0.6s						
KUU				*e*S	Sb	04 37 55.2	-2.2
	93nm,0.4s						
IZV	Izvestkoviy	3.51	248	*e*P	Pb	04 37 17.4	+1.0
	30nm,0.6s						
IZV				*e*S	Sb	04 38 01.8	+2.1
	54nm,0.5s						
MTBS	Maitube	3.60	250	*e*P	Pb	04 37 17.8	+0.1
	18nm,0.3s						
MTBS				*e*S	Sb	04 38 02.5	+0.5
	105nm,0.4s						
ZSN	Zaisan	3.81	36	*e*P	Pg	04 37 25.9	-0.5
	10nm,0.2s						
ZSN				*e*S	Sg	04 38 17.2	+1.4
	84nm,0.8s						
KST	Kastek	3.95	251	*e*P	Pb	04 37 25.4	+1.6
	8.1nm,0.4s						
KST				*e*S	Sb	04 38 15.5	+3.4
	52nm,0.4s						
DGS	Degeres	4.01	255	*e*P	Pb	04 37 25.4	+0.6
	16nm,0.8s						
DGS				*e*S	Sb	04 38 16.1	+2.3
	52nm,0.6s						
TKM2	Tokmak 2	4.24	251	⇑Pn	Pn	04 37 19.3	0.0
	0.4nm,0.2s						
TKM2				⇓Pg	Pb	04 37 30.1	+1.3
	11nm,0.7s						
TKM2				⇑Lg	Lg	04 38 27.2	
	28nm,0.4s						
AAK	Ala-Archa	5.10	252	⇓Pg	Pb	04 37 45.4	+2.0
	5.5nm,0.5s						
AAK				⇓Lg	Lg	04 38 54.3	
	21nm,0.6s						
KURK	Kurchatov	6.50	346	⇑Pn	Pn	04 37 49.5	-0.5
	2.0nm,0.4s						
KURK				⇑Pg	Pb	04 38 10.8	+3.6
	3.4nm,0.4s						
KURK				⇑Sn	Sn	04 39 01.7	-3.2
	12nm,0.5s						
KURK				⇑Lg	Lg	04 39 38.5	
	60nm,0.9s						
MNAS	Manas	6.53	256	⇑Pg	Pb	04 38 11.7	+4.0
	1.2nm,0.5s						
MNAS				⇑Lg	Lg	04 39 40.0	
	6.7nm,0.6s						
SFK	Sufi-Kurgan	7.14	234	⇑Lg	Lg	04 39 57.6	
	2.9nm,0.3s						
OTUK	Ortayu	7.14	305	⇑Lg	Lg	04 39 57.7	
	16nm,0.8s						
KK31	Karatay Array	7.75	264	⇓Lg	Lg	04 40 17.6	
	2.8nm,0.5s						
ZALV	Zalesovo Beam	9.84	13	Pn	Pn	04 38 34.1	-1.7
	0.5nm,0.3s,baz=194,slow=15,SNR=3.0						
ZALV				Lg	Lg	04 41 26.7	
	0.3nm,0.3s,baz=196,slow=30,SNR=4.2						
BVA0	Borovoye Array	11.11	324	⇓Lg	Lg	04 42 04.4	
	5.6nm,0.9s,baz=134,slow=29,SNR=4.3						
AB31	Akbulak array	15.22	296	⇑P	Pn	04 39 49.4	+0.1
	0.6nm,0.7s,baz=100,slow=14,SNR=5.2						
TORD	Torodi Ar. Bea	73.36	272	P	P	04 47 43.4	-3.7
	0.1nm,0.4s,baz=37,slow=4.9,SNR=4.9						

*IDC **11** 04:37:30.9±1.2, 38°.36S×177°.56E, h76km±6km, mb4.4/5, mb1 4.6/6, mb1mx4.2/26, mbtmp4.7/6, MS3.4/5, Ms1 3.4/5, ms1mx3.2/29, Error ellipse: s-maj=24.8km s-min=19.6km az=118.0*
*ISCJB **11** 04:37:31.7±0.3, 38°.22S±0°.02×177°.53E±0°.03, h91km±2km, mb4.8/17, Error ellipse: s-maj=4.5km s-min=3.4km az=32.8*
*WEL **11** 04:37:32.8±0.1, 38°.05S×177°.55E, h79km±1km, ML5.0/22, Error ellipse: s-maj=0.9km s-min=0.8km az=90.0, intensity MM 5.*
WEL Felt between Bay of Plenty, Wellington and Gisborne, maximum reported.
*NEIC **11** 04:37:32.6, 38°.05S×177°.55E, h81km, mb4.8/5, ML5.0(WEL), After WEL.*
NEIC Felt in parts of the North Island.

ISC 11 04:37:32.6±0.6, 38°.26S±0°.04×177°.49E±0°.04, h88km±4km, n207, σ1§97/224, mb4.9/17, 14C-48D, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MWZ	Matawai	0.08	159	⇑PN	Pn	04 37 44.9	-0.3
MWZ				SN	Sn	04 37 53.7	-0.7
MWZ				AML	AML	04 37 55.3	
MWZ				AML	AML	04 37 55.4	
MWZ				AML	AML	04 37 55.7	
RAGZ	Rawiri	0.24	194	⇑PN	Pn	04 37 46.3	+0.6
RAGZ				SN	Sn	04 37 56.8	+1.4
URZ	Urewera	0.30	270	P	Pn	04 37 44.9	-0.9
	1μm,0.3s,baz=269,slow=3.6,SNR=6348						
URZ				S	Sn	04 37 54.1	-1.5
	3μm,0.3s,baz=53,slow=20,SNR=305						
URZ				LR	LR	04 38 02.3	
	comp=Z,1μm,18.1s,baz=316,slow=85						
URZ	Urewera	0.30	270	⇑PN	Pn	04 37 45.1	-0.6
URZ				SN	Sn	04 37 54.5	-1.1
URZ				AML	AML	04 37 54.5	
URZ	Urewera	0.30	270	*e*Pn	Pn	04 37 45.2	-0.6
URZ				*e*S	Sn	04 37 54.2	-1.3
TKGZ	Te Karaka	0.33	123	⇑PN	Pn	04 37 45.9	-0.1
TKGZ				SN	Sn	04 37 56.0	+0.1
TWGZ	Tauwhareparae	0.39	78	⇑PN	Pn	04 37 45.5	-0.9
TWGZ				SN	Sn	04 37 54.9	-1.8
RIGZ	Rimuhau	0.49	155	⇑PN	Pn	04 37 48.1	+1.0
RIGZ				SN	Sn	04 37 59.9	+1.9
SNGZ	Shannon Statio	0.54	193	⇓PN	Pn	04 37 48.8	+1.3
RTZ	Ruatahuna	0.54	228	⇓PN	Pn	04 37 48.0	+0.5
HAZ	Te Kaha	0.55	25	⇑PN	Pn	04 37 45.2	-2.4
HAZ				SN	Sn	04 37 53.9	-4.8
PKGZ	Pakihiroa	0.59	52	⇑PN	Pn	04 37 46.0	-1.9
PKGZ				SN	Sn	04 37 55.9	-3.5
CNGZ	Carnagh Statio	0.61	112	⇑PN	Pn	04 37 48.5	+0.4
MUGZ	Murupara	0.61	249	⇓PN	Pn	04 37 48.5	+0.4
EDRZ	Edgecumbe	0.61	284	⇓PN	Pn	04 37 47.7	-0.5
PUZ	Puketiti	0.63	73	PN	Pn	04 37 46.2	-2.1
PUZ				SN	Sn	04 37 57.6	-2.5
PUZ				AML	AML	04 37 58.5	
MARZ	Manawahe	0.70	293	⇓PN	Pn	04 37 47.9	-1.0
RAHZ	Arahi	0.73	206	⇓PN	Pn	04 37 51.1	+1.8
PRGZ	Paritu Road	0.73	155	PN	Pn	04 37 50.3	+1.0
WIZ	White Island	0.77	342	PN	Pn	04 37 46.7	-2.9
RRRZ	Republican Roa	0.77	264	⇓PN	Pn	04 37 50.1	+0.4
KNZ	Kokohu	0.78	169	PN	Pn	04 37 50.8	+1.2
KNZ				AML	AML	04 38 06.1	
KNZ				AML	AML	04 38 07.7	
TARZ	Mount Tarawera	0.78	271	⇓PN	Pn	04 37 50.1	+0.3
MKRZ	Makatiti	0.82	278	PN	Pn	04 37 50.4	+0.2
WHHZ	Waihua	0.84	194	⇓PN	Pn	04 37 52.3	+1.9
OPRZ	Ohinepanea	0.85	299	PN	Pn	04 37 49.1	-1.3
WMGZ	Waiomatatini S	0.85	59	⇑PN	Pn	04 37 48.7	-1.7
WMGZ				SN	Sn	04 38 01.0	-2.8
OMRZ	Omania	0.90	279	⇓PN	Pn	04 37 50.9	-0.1
PRRZ	Plateau Road	0.90	254	⇓PN	Pn	04 37 51.7	+0.7
HLRZ	Highlands Stat	0.90	270	⇓PN	Pn	04 37 51.4	+0.4
LIRZ	Lichensteins R	0.91	286	⇓PN	Pn	04 37 50.8	-0.3
MXZ	Matakaoa Point	0.95	43	⇑PN

MOVZ	Moawhango	1.78 229	⇓PN		Pn	04 38 03.2	+1.4
TWVZ	Taurewa	1.80 243	PN		Pn	04 38 03.7	+1.5
WHVZ	Whangaehu Hut	1.81 235	⇓PN		Pn	04 38 04.0	+1.6
FWVZ	Far West T-bar	1.81 236	PN		Pn	04 38 03.8	+1.4
WNVZ	Wahianoa	1.82 234	⇓PN		Pn	04 38 04.1	+1.6
PXZ	Pawanui	1.84 195	PN		Pn	04 38 03.0	+0.5
PXZ			AML	AML		04 38 29.8	
PXZ			AML	AML		04 38 29.8	
PXZ			AML	AML		04 38 30.0	
PXZ			AML	AML		04 38 30.0	
PNHZ	Pukenui	1.94 211	⇓PN		Pn	04 38 04.8	+0.9
MTVZ	Mangateitei	1.94 234	⇓PN		Pn	04 38 05.6	+1.7
WPHZ	Waipukurau	1.98 204	⇓PN		Pn	04 38 05.3	+0.8
KUZ	Kuaotunu	2.06 316	⇓PN		Pn	04 38 03.7	-1.8
HIZ	Hauiti	2.09 262	⇓PN		Pn	04 38 07.6	+1.8
HIZ	Hauiti	2.09 262	ePn		Pn	04 38 07.6	+1.8
HIZ			eSn		Sn	04 38 30.2	-1.0
PRHZ	Porangahau	2.11 198	⇓PN		Pn	04 38 06.9	+0.7
TSZ	Takapari Road	2.16 213	PN		Pn	04 38 07.1	+0.4
TSZ			AML	AML		04 38 39.8	
TSZ			AML	AML		04 38 42.5	
MKAZ	Moumakai	2.18 301	PN		Pn	04 38 06.2	-0.8
DVHZ	Dannevirke	2.28 206	⇓PN		Pn	04 38 08.6	+0.1
VRZ	Vera Road	2.31 247	PN		Pn	04 38 10.6	+1.8
ANWZ	Angora Road	2.34 199	⇓PN		Pn	04 38 09.6	+0.4
KBAZ	Karaka Road Bo	2.37 299	PN		Pn	04 38 09.9	+0.3
ETAZ	East Tamaki Re	2.42 302	⇓PN		Pn	04 38 09.9	-0.3
WAZ	Wanganui	2.46 232	PN		Pn	04 38 13.0	+2.2
POWZ	Post Office Ro	2.52 212	PN		Pn	04 38 11.8	+0.3
OHWZ	Ohakea	2.58 220	PN		Pn	04 38 14.0	+1.7
GRZ	Great Barrier	2.58 320	PN		Pn	04 38 10.8	-1.5
PRWZ	Pori Road	2.58 207	PN		Pn	04 38 12.7	+0.3
HBAZ	Herne Bay Bore	2.60 302	PN		Pn	04 38 12.6	-0.1
BFZ	Birch Farm	2.61 201	PN		Pn	04 38 12.7	-0.1
BFZ			AML	AML		04 38 46.3	
BFZ			AML	AML		04 38 46.3	
BFZ			AML	AML		04 38 47.1	
BFZ			AML	AML		04 38 47.1	
BFZ	Birch Farm	2.61 201	ePn		Pn	04 38 12.7	-0.1
MHEZ	Mangahewa	2.61 251	PN		Pn	04 38 15.6	+2.9
WTAZ	Waiatarua	2.67 299	PN		Pn	04 38 13.9	+0.3
LREZ	Lake Rotokare	2.69 243	PN		Pn	04 38 16.2	+2.3
RVAZ	Riverhead Bore	2.75 302	PN		Pn	04 38 14.5	-0.1
TIWZ	Tintock	2.81 206	PN		Pn	04 38 15.3	-0.1
TIWZ			AML	AML		04 38 52.1	
TIWZ			AML	AML		04 38 54.9	
MRZ	Mangatainoka R	2.82 211	⇑PN		Pn	04 38 15.3	-0.3
NEZ	North Egmont	2.84 248	PN		Pn	04 38 17.7	+1.8
KIW	Kapiti Island	3.28 217	AML	AML		04 39 02.1	
KIW			AML	AML		04 39 02.6	
MTW	Mount Morrison	3.28 207	AML	AML		04 39 01.2	
MTW			AML	AML		04 39 02.0	
CAW	Cannon Point	3.41 213	PN		Pn	04 38 22.4	-1.1
CAW			AML	AML		04 39 04.4	
CAW			AML	AML		04 39 09.3	
TRWZ	Traveller	3.43 203	AML	AML		04 39 05.4	
TRWZ			AML	AML		04 39 06.8	
PAWZ	Paruwai Farm	3.50 206	AML	AML		04 39 06.7	
PAWZ			AML	AML		04 39 07.0	
MSWZ	Moikau Station	3.59 208	AML	AML		04 39 08.1	
MSWZ			AML	AML		04 39 16.0	
WEL	Wellington	3.68 214	AML	AML		04 39 10.9	
PLWZ	Palliser	3.73 207	PN		Pn	04 38 26.0	-1.9
SNZO	South Karori	3.73 214	ePn		Pn	04 38 25.8	-2.0
SNZO			eS		Sn	04 39 08.7	-1.9
BHW	Baring Head	3.74 212	AML	AML		04 39 11.9	
BHW			AML	AML		04 39 13.0	
TCW	Tory Channel	3.85 219	PN		Pn	04 38 28.3	-1.2
TCW			SN		Sn	04 39 14.1	+0.4
TCW			AML	AML		04 39 15.7	
TCW			AML	AML		04 39 18.1	
TUWZ	Tuamarina	4.18 220	AML	AML		04 39 24.1	
TUWZ			AML	AML		04 39 25.7	
CMWZ	Cape Campbell	4.30 215	PN		Pn	04 38 34.5	-1.1
CMWZ			SN		Sn	04 39 23.4	-1.1
CMWZ			AML	AML		04 39 41.8	
NNZ	Nelson	4.33 226	PN		Pn	04 38 34.7	-1.3
NNZ			SN		Sn	04 39 25.4	0.0
OUZ	Omahuta	4.36 313	ePn		Pn	04 38 36.0	-0.4
BSWZ	Blackbirch Sta	4.43 218	PN		Pn	04 38 35.7	-1.7
BSWZ			SN		Sn	04 39 27.5	-0.2
BSWZ			AML	AML		04 39 34.4	
QRZ	Quartz Range	4.61 235	PN		Pn	04 38 38.4	-1.4
QRZ			SN		Sn	04 39 32.5	+0.3
THZ	Tophouse	4.96 224	⇓PN		Pn	04 38 42.9	-1.7
THZ			SN		Sn	04 39 40.6	-0.2
THZ	Tophouse	4.96 224	ePn		Pn	04 38 43.5	-1.2
KHZ	Kahutara	5.13 215	⇑PN		Pn	04 38 44.5	-2.4
KHZ			SN		Sn	04 39 42.7	-2.2
KHZ	Kahutara	5.13 215	ePn		Pn	04 38 44.5	-2.4
KHZ			eS		Sn	04 39 34.5	-10
DSZ	Denniston Nort	5.58 230	SN		Sn	04 39 54.7	-1.2
LTZ	Lake Taylor	6.02 220	PN		Pn	04 38 56.2	-2.9
LTZ	Lake Taylor	6.02 220	ePn		Pn	04 38 57.7	-1.3
INZ	Inchbonnie	6.41 224	PN		Pn	04 39 01.8	-2.5
CRLZ	Canterbury Las	6.46 213	PN		Pn	04 39 02.4	-2.6
CRLZ	Canterbury Las	6.46 213	ePn		Pn	04 39 01.0	-4.0
CRLZ			eSn		Sn	04 40 13.8	-3.5
OXZ	Oxford	6.54 218	PN		Pn	04 39 01.9	-4.2
OXZ	Oxford	6.54 218	ePn		Pn	04 39 03.4	-2.7
MQZ	McQueen's Vall	6.56 212	PN		Pn	04 39 02.3	-4.0
MQZ	McQueen's Vall	6.56 212	ePn		Pn	04 39 04.3	-2.0
MQZ			eSn		Sn	04 40 11.3	-8.2
WVZ	Waitaha Valley	7.04 225	PN		Pn	04 39 09.6	-3.2
CTZ	Chatham Island	7.05 143	ePN		Pn	04 39 14.2	+1.1
RPZ	Rata Peaks	7.31 220	P		Pn	04 39 13.6	-2.9
	6.7nm,0.3s,baz=24,slow=0.7,SNR=19						
RPZ			S		Sn	04 40 32.7	-5.2
	13nm,0.3s,baz=158,slow=21,SNR=18						
RPZ			LR	LR		04 42 53.3	
	comp=Z,576nm,19.3s,baz=56,slow=44						
RPZ	Rata Peaks	7.31 220	ePn		Pn	04 39 14.5	-2.1
RPZ			eS		Sn	04 40 34.0	-3.9
FOZ	Fox Glacier	7.84 225	PN		Pn	04 39 21.2	-2.7
FOZ	Fox Glacier	7.84 225	ePn		Pn	04 39 21.4	-2.4
FOZ			eSn		Sn	04 40 48.1	-2.8
LBZ	Lake Benmore	8.23 220	PN		Pn	04 39 26.3	-2.8
LBZ	Lake Benmore	8.23 220	ePn		Pn	04 39 27.9	-1.2
ODZ	Otahua Downs	8.50 215	PN		Pn	04 39 28.3	-4.4
ODZ	Otahua Downs	8.50 215	ePn		Pn	04 39 29.9	-2.9
ODZ			eS		Sn	04 41 01.0	-5.9
WKZ	Wanaka	9.13 221	PN		Pn	04 39 38.7	-2.7
WKZ	Wanaka	9.13 221	ePn		Pn	04 39 37.3	-4.1
HHSZ	Highcliff Hill	9.18 212	PN		Pn	04 39 39.5	-2.5
EAZ	Earnscleugh	9.27 219	PN		Pn	04 39 40.2	-3.0
TUZ	Tuapeka	9.65 215	PN		Pn	04 39 44.9	-3.5
MLZ	Mavora Lakes	9.96 222	PN		Pn	04 39 50.4	-2.4
MLZ	Mavora Lakes	9.96 222	ePn		Pn	04 39 48.7	-4.1
SYZ	Scrubby Hill	10.32 214	PN		Pn	04 39 55.5	-2.0
DCZ	Deep Cove	10.54 224	PN		Pn	04 39 58.7	-1.9
DCZ	Deep Cove	10.54 224	ePn		Pn	04 39 58.0	-2.6
DCZ			eSn		Sn	04 41 47.4	-9.3
APZ	The Paps	11.06 216	PN		Pn	04 40 04.3	-3.3
PYZ	Puysegur Point	11.25 222	ePn		Pn	04 40 06.2	-4.0
RAR	Rarotonga	25.93 56	LR		LR	04 52 32.5	
	comp=Z,61nm,20.1s,baz=18,slow=35						
AFI	Afiamalu	26.05 24	LR		LR	04 52 10.9	
	comp=Z,37nm,21.4s,baz=205,slow=34						
STKA	Stephens Creek	29.93 271	P		P	04 43 34.0	+1.9
	11nm,0.8s,baz=112,slow=10,SNR=12						
PAE	Paea	35.32 64	eT		T	05 20 36.9	
	1.7nm,0.3s						
PPT2	Papeete2	35.37 64	eLR		LR	04 53 54.7	
	220nm,30.0s						
PPT2	Papeete2	35.37 64	eT		T	05 20 41.9	
	1.9nm,0.3s						
PPT	Papeete	35.38 64	LR		LR	04 55 01.1	
	comp=Z,51nm,20.6s,baz=266,slow=30						
COEN	Coen	38.83 299	eP		P	04 44 50.8	+1.8
	18nm,1.0s						
AS01	Alice Springs	39.70 279	eP		P	04 44 56.8	+0.5
AS31	Alice Springs	39.74 279	eP		P	04 44 57.5	+0.9
	6.6nm,0.7s						
ASAR	Alice Springs	39.74 279	P		P	04 44 57.5	+0.9
	15nm,0.7s,baz=120,slow=8.1,SNR=119						
ASAR			PcP		PcP	04 47 00.1	-1.3
	1.5nm,0.6s,baz=127,slow=3.7,SNR=4.5						
ASAR			LR		LR	05 02 32.1	
	comp=Z,139nm,18.1s,baz=173,slow=38						
WB2	Warramunga Arr	41.45 284	eP		P	04 45 11.5	+0.8
	16nm,0.8s						
WRAB	Tennant Creek	41.46 284	eP		P	04 45 10.9	+0.2
	4.1nm,0.5s						
WRA	Warramunga Arr	41.46 284	P		P	04 45 11.4	+0.6
	13nm,0.8s,baz=126,slow=7.4,SNR=38						
FITZ	Fitzroy Crossi	49.24 279	eP		P	04 46 13.2	+1.0
	29nm,1.3s						
QSPA	South Pole Qui	51.87 180	eP		P	04 46 36.4	+4.8
	31nm,0.8s						
SYO	Syowa Base	68.61 195	⇑eP		P	04 48 26.6	+1.1
MJAR	Matsushiro Arr	82.81 329	P		P	04 49 45.5	-1.3
	1.0nm,0.8s,baz=164,slow=6.0,SNR=4.6						
KSRS	Korea Array	88.11 323	P		P	04 50 14.2	+1.1
	2.7nm,0.8s,baz=151,slow=5.2,SNR=7.3						
KSAR	Wonju Array Be	88.12 323	P		P	04 50 14.2	+1.1
NJ2	Nanjing	88.72 314	eP		P	04 50 16.8	+0.8
NJ2			pmax	pmax			
	comp=Z,18nm,0.7s						
GYA	Guiyang	92.38 302	eP		P	04 50 35.2	+1.8
GYA			pmax	pmax			
	comp=Z,10.0nm,1.0s						
KMI	Kunming	94.17 299	P		P	04 50 43.7	+1.9
KMI			pmax	pmax			
	comp=Z,6.0nm,0.6s						
KMI			pmax	pmax			
	comp=Z,170nm,7.6s						
CN2	Changchun	94.28 325	eP		P	04 50 45.4	+3.8
BJI	Beijing	96.03 317	P		P	04 50 49.4	-0.2
BJI			pmax	pmax			
	comp=Z,7.0nm,0.6s						
CD2	Chengdu	97.22 304	P		Pdif	04 50 55.4	0.0
CD2			pmax	pmax			
	comp=Z,1.0nm,0.5s						
HHC	Hu-ho-hao-te	99.10 315	eP		Pdif	04 51 05.7	+2.1
HHC	Hu-ho-hao-te	99.10 315	S		S	05 02 33.0	+5.9
HHC			pmax	pmax			
	comp=Z,30nm,1.4s						
HHC			pmax	pmax			
	comp=Z,120nm,7.6s						
HHC			LR	LR			
	comp=N,180nm,17.4s						
HHC			LR	LR			
	comp=E,260nm,16.8s						
HHC			LR	LR			
	comp=Z,100nm,17.6s						
ILAR	Eielson Array	106.43 15	PKiKP		PKiKP	04 55 47.8	+1.8
	comp=Z,0.4nm,0.6s,baz=222,slow=3.5,SNR=4.2						
YKA	Yellowknife Ar	114.12 28	PKP		PKPdf	04 55 60.0	-0.5
	comp=Z,0.4nm,0.6s,baz=257,slow=1.7,SNR=16						
YKA			PKKPbc		PKKPbc	05 06 40.8	-1.9
	comp=Z,0.4nm,0.7s,baz=47,slow=3.7,SNR=9.4						
MK01	Makanchi Array	119.79 308	ePKPdf		PKPdf	04 56 10.7	-1.3
MKAR	Makanchi Array	119.81 308	PKP		PKPdf	04 56 10.4	-1.6
	comp=Z,1.3nm,0.9s,baz=146,slow=0.9,SNR=5.4						
KURK	Kurchatov	123.58 311	ePKPdf		PKPdf	04 56 17.9	-1.1
KKAR	Karatay Array	126.03 300	ePKPdf		PKPdf	04 56 23.2	-0.8
BVAR	Borovoye Array	129.14 312	PKP		PKPdf	04 56 29.2	-0.5
	comp=Z,0.8nm,0.6s,baz=169,slow=0.8,SNR=3.9						
ARCES	ARCESS Array B	145.25 343	PKPbc		PKPbc	04 56 57.9	-0.8
	comp=Z,5.2nm,0.9s,baz=70,slow=2.4,SNR=7.6						
KBZ	Khabaz	145.63 294	PKPbc		PKPbc	04 57 00.2	-0.4
	comp=Z,5.1nm,1.1s,baz=183,slow=4.0,SNR=7.0						
KBSD	Kabsdagh	146.10 281	eP		PKPab	04 57 02.7	-0.4
SFNV	Sufian	146.28 280	eP		PKPdf	04 57 01.0	-0.6
ZALF	Zalf	147.35 273	eP		PKPbc	04 57 05.0	-1.0
SALA	Sala	147.74 272	eP		PKPbc	04 57 06.3	-1.0
ROOS	tl_alroos	147.80 275	eP		PKPbc	04 57 06.6	-0.6
TCHB	Talchebab	148.33 272	eP		PKPbc	04 57 06.6	-2.0
DBIC	Dimbokro	148.48 176	PKPbc		PKPbc	04 57 08.1	-1.4
	comp=Z,12nm,1.0s,baz=153,slow=6.4,SNR=4.0						
BRBR	Barbar	148.60 273	eP		PKPbc	04 57 09.5	-0.1
DRWC	Darouich	149.01 279	eP		PKPbc	04 57 08.9	-1.4
ARNB	Al Arnab	149.34 278	eP		PKPbc	04 57 12.3	+1.2
FINES	FINESS Array B	150.80 332	PKPbc		PKPbc	04 57 12.6	-1.1
	comp=Z,2.1nm,0.6s,baz=59,slow=4.9,SNR=8.6						
CSS	Mathiatis	151.16 275	ePKPbc		PKPbc	04 57 15.2	-0.2
BR131	Keskin Array S	151.98 284	ePKPbc		PKPbc	04 57 16.7	-0.6
BRTR	Keskin Array B	151.98 284	PKPbc		PKPbc	04 57 16.8	-0.6
	comp=Z,6.5nm,0.8s,baz=142,slow=5.2,SNR=38						
AKASG	Malin Array Be	154.38 309	PKPbc		PKPbc	04 57 20.4	-1.6
	comp=Z,1.5nm,0.6s,baz=68,slow=2.4,SNR=6.0						
AKASG			PKPab		PKPab	04 57 35.2	-1.4
	comp=Z,2.0nm,0.6s,baz=59,slow=4.8,SNR=7.2						
TORD	Torodi Ar. Bea	154.71 190	PKP		PKPdf	04 57 15.4	+0.2
	comp=Z,2.0nm,0.8s,baz=239,slow=1.0,SNR=12						
TORD			PKPbc		PKiKP	04 57 25.2	+1.4
	comp=Z,1.6nm,1.0s,baz=165,slow=2.7,SNR=10						
TORD			PKPab		PKPab	04 57 39.1	+0.3

*IDC **11** 04:46:00.7±1.4,3°.15N×83°.29W,h0km,mb3.8/4,mb1 4.0/5, mb1mx3.7/28,mbtmp3.8/5,ML1.5/1,MS3.3/2,Ms1 3.3/2, ms1mx2.8/30,Error ellipse: s-maj=59.9km s-min=25.1km az=49.0*

*ISCJB **11** 04:46:04.1±1.0,3°.3N±0°.1×83°.11W±0°.10,h33km,mb3.7/4, Error ellipse: s-maj=21.1km s-min=12.6km az=21.5*

ISC 11 04:46:05.6±1.2,3°.1N±0°.1×83°.2W±0°.1,h35km,n11,σ1°36/9, mb3.8/4,Off coast of central America

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OTAV	Otavalo	5.52	121	eP	Pn	04 47 24.6	-1.2
MALC	Bahia Malaga	5.91	81	eP	Pn	04 47 30.9	+0.3
HELC	Santa Helena	8.22	68	eP	Pn	04 48 00.6	-2.2
NORC	Norcasia	8.64	73	eP	Pn	04 48 08.4	+0.1
ROSC	El Rosal	9.01	79	Pn	Pn	04 48 15.2	+1.6
	0.1nm,0.3s,baz=312,slow=5.4,SNR=3.8						
ATAH	Atahualpa	11.24	155	LR	LR	04 53 01.0	
	comp=Z,221nm,18.2s,baz=329,slow=37						
NNA	Nana	16.26	157	LR	LR	04 56 02.9	
	comp=Z,66nm,18.5s,baz=24,slow=37						
LPAZ	La Paz	24.34	143	P	P	04 51 22.1	+1.0
	3.8nm,1.1s,baz=328,slow=9.8,SNR=8.0						
NVAR	Mina Array Bea	47.56	322	P	P	04 54 39.1	+0.9
	0.9nm,0.9s,baz=148,slow=5.0,SNR=4.8						
YKA	Yellowknife Ar	63.69	344	P	P	04 56 32.5	-0.7
	0.8nm,0.9s,baz=140,slow=6.6,SNR=12						
ILAR	Eielson Array	76.22	337	P	P	04 57 49.9	-0.3
	0.8nm,1.1s,baz=124,slow=4.8,SNR=5.1						

IDC 11 04:46:48.0±1.4,20°.22S×168°.21E,h39km±9km,mb3.6/4, mb1 3.8/5,mb1mx3.6/24,mbtmp3.8/5,ML3.6/1,MS3.1/1, Ms1 3.1/1,ms1mx2.7/24,Error ellipse: s-maj=54.8km s-min=21.4km az=146.0,Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	2.47	221	Pn	Pn	04 47 23.5	-2.3
	12nm,0.3s,baz=108,slow=12,SNR=80						
DZM				Sn	Sn	04 47 53.2	-1.5
	53nm,0.3s,baz=32,slow=20,SNR=5.8						
DZM				LR	LR	04 48 31.9	
	comp=Z,403nm,19.1s,baz=274,slow=42						
STKA	Stephens Creek	26.50	239	P	P	04 52 21.7	-0.1
	1.9nm,0.7s,baz=54,slow=10,SNR=2.0						
WRA	Warramunga Arr	31.78	265	P	P	04 53 08.7	-0.2
	0.4nm,0.9s,baz=90,slow=8.5,SNR=3.5						
WRA				pP	pP	04 53 19.5	-0.3
	0.5nm,0.6s,baz=92,slow=8.5,SNR=2.4						
ASAR	Alice Springs	31.95	257	P	P	04 53 11.2	+0.8
	0.9nm,0.6s,baz=85,slow=8.5,SNR=8.7						
ASAR				pP	pP	04 53 22.1	+0.7
	4.7nm,0.7s,baz=85,slow=8.9,SNR=21						
NVAR	Mina Array Bea	90.18	49	P	P	04 59 44.4	-0.2
	0.2nm,0.6s,baz=234,slow=6.1,SNR=3.5						
NVAR				pP	pP	04 59 56.7	-0.1
	0.5nm,0.7s,baz=222,slow=9.7,SNR=3.6						

*ISCJB **11** 04:48:49.8±0.4,39°.44N±0°.02×26°.99E±0°.03,h8km±4km, Error ellipse: s-maj=4.2km s-min=3.2km az=42.7*

*ISK **11** 04:48:49.4,39°.41N×27°.01E,h13km,MD2.8*

*DDA **11** 04:48:49.7,39°.46N×26°.99E,h7km,Md2.7*

*CSEM **11** 04:48:50.1±0.1,39°.43N×26°.99E,h10km,MD2.7,Error ellipse: s-maj=2.9km s-min=2.8km az=101.0*

ISC 11 04:48:49.9±0.9,39°.42N±0°.02×26°.99E±0°.02,h13km±8km, n45,σ0°56/70,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AYVA	Ayvalik	0.25	245	P	Pg	04 48 55.3	0.0
AYVA				S	Sb	04 48 59.8	-0.8
AYVA	Ayvalik	0.25	245	*i* P	Pg	04 48 55.3	0.0
AYVA				*i* S	Sb	04 48 59.8	-0.8
DKL	Dikili	0.35	190	*e*PG	Pg	04 48 56.7	-0.3
DKL				*e*SG	Sg	04 49 02.0	+0.3
DKL	Dikili	0.35	190	*e*Pg	Pg	04 48 56.7	-0.3
DKL				*e*Sg	Sg	04 49 02.0	+0.3
BALY	Balya	0.59	56	P	Pg	04 49 01.2	-0.2
BALY	Balya	0.59	56	*i* P	Pg	04 49 01.2	-0.2
EZN	Ezine	0.65	309	*e*PG	Pb	04 49 03.3	+0.1
EZN	Ezine	0.65	309	*e*Pg	Pb	04 49 03.3	+0.1
BALB	Balikesir	0.73	72	*e*PG	Pg	04 49 03.9	-0.1
BALB				*e*SG	Sg	04 49 13.8	+0.2
BALB	Balikesir	0.73	72	*e*Pg	Pg	04 49 03.9	-0.1
BALB				*e*Sg	Sg	04 49 13.8	+0.2
GONE	Gonen-Balikesi	0.83	40	*e*PG	Pg	04 49 05.7	-0.3
GONE				*e*SG	Sb	04 49 17.5	+0.2
AKHS	Akhisar	0.84	129	P	Pb	04 49 06.3	0.0
AKHS				S	Sn	04 49 19.5	-0.1
AKHS	Akhisar	0.84	129	*i* P	Pb	04 49 06.3	0.0
AKHS				*i* S	Sn	04 49 19.5	-0.1
SIGR	SIGRI	0.90	257	*e*PG	Pn	04 49 08.2	0.0
SIGR				*e*SG	Sn	04 49 21.0	-0.1
SIGR	SIGRI	0.90	257	*e*Pg	Pn	04 49 08.2	0.0
SIGR				*e*Sg	Sn	04 49 21.0	-0.1
LPK	Lapseki	0.97	350	*e*PG	Pn	04 49 09.1	-0.1
LPK	Lapseki	0.97	350	*e*Pg	Pn	04 49 09.1	-0.1
IZM	Izmir	1.04	168	*e*PG	Pb	04 49 09.4	-0.3
IZM	Izmir	1.04	168	*e*Pg	Pb	04 49 09.4	-0.3
GELI	Tayfur-Gelibol	1.06	338	*e*PG	Pb	04 49 09.7	-0.3
GELI				*e*SG	Sn	04 49 25.5	+0.5
GELI	Tayfur-Gelibol	1.06	338	*e*Pg	Pb	04 49 09.7	-0.3
GELI				*e*Sg	Sn	04 49 25.5	+0.5
URLA	Izmir	1.10	196	P	Pg	04 49 11.6	+0.6
URLA				S	Sn	04 49 27.8	+1.8
URLA	Izmir	1.10	196	*i* P	Pg	04 49 11.6	+0.6
URLA				*i* S	Sn	04 49 27.8	+1.8
DURS	Dursunbey	1.17	80	P	Pg	04 49 13.1	+0.7
DURS				S	Sb	04 49 27.1	+0.1
DURS	Dursunbey	1.17	80	*i* P	Pg	04 49 13.1	+0.7
DURS				*i* S	Sb	04 49 27.1	+0.1
CHOS	Chios island	1.26	216	*e*PN	Pn	04 49 12.9	-0.3
CHOS				*e*SN	Sg	04 49 30.9	+0.4
CHOS	Chios island	1.26	216	*e*Pn	Pn	04 49 12.9	-0.3
CHOS				*e*Sn	Sg	04 49 30.9	+0.4
RKY	Sarkoy-Tekirda	1.28	7	*e*PN	Pn	04 49 13.4	-0.1
RKY	Sarkoy-Tekirda	1.28	7	*e*Pn	Pn	04 49 13.5	-0.1
KCTX	Karacabey (Bur	1.35	51	*e*PN	Pn	04 49 14.0	-0.5
KCTX				*e*SN	Sb	04 49 32.4	0.0
DGB	˜zmir	1.36	183	*i* P	Pn	04 49 14.6	0.0
DGB				*i* S	Sn	04 49 29.7	-2.7
DEMI	Demirci	1.40	105	P	Pb	04 49 16.0	+0.1
DEMI				S	Sg	04 49 34.5	-0.4
DEMI	Demirci	1.40	105	*i* P	Pb	04 49 16.0	+0.1
DEMI				*i* S	Sg	04 49 34.5	-0.4
ENEZ	Enez	1.47	334	*e*PN	Pn	04 49 15.5	-0.5
ENEZ	Enez	1.47	334	*e*Pn	Pn	04 49 15.5	-0.5
MANT	Manisa	1.54	126	P	Pg	04 49 19.2	-0.2
MANT				S	Sb	04 49 37.5	-0.2
MANT	Manisa	1.54	126	*i* P	Pg	04 49 19.2	-0.2
MANT				*i* S	Sb	04 49 37.5	-0.2
KULA	Kula-Manisa	1.59	124	*e*PN	Pn	04 49 17.7	-0.1
AYDB	Zeytinkoy-Aydi	1.63	154	*e*PN	Pn	04 49 18.7	+0.3
AYDB	Zeytinkoy-Aydi	1.63	154	*e*Pn	Pn	04 49 18.7	+0.3
ALN	Alexandroupoli	1.65	334	*e*PN	Pn	04 49 18.9	+0.4
ALN	Alexandroupoli	1.65	334	*e*Pn	Pn	04 49 18.9	+0.4
ARMT	Armutlu	1.84	51	*e*PN	Pn	04 49 21.3	+0.1
ARMT	Armutlu	1.84	51	*e*Pn	Pn	04 49 21.3	+0.1
TVSB	Tavsanli	1.92	88	*e*PN	Pn	04 49 22.6	+0.2

MEX 11 04:52:36.8±0.9,14°.90N×93°.26W,h48km±28km,MD3.6, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		0.81	3	*e*P	Pn	04 52 50.3	-1.6
PCIG				*e*S	Sn	04 53 01.0	-1.9
CCIG	Comitan	1.75	38	*e*P	Pn	04 53 04.3	-0.7
CCIG				*e*S	Sn	04 53 23.8	-2.5
TGIG		1.88	4	*e*P	Pn	04 53 04.0	-2.5
TGIG				*e*S	Sn	04 53 27.3	-1.8

*ISCJB **11** 04:55:58.5±2.0,32°.42S±0°.10×70°.7W±0°.1,h107km±17km, Error ellipse: s-maj=19.1km s-min=10.8km az=138.1*

*SJA **11** 04:55:58.7±0.4,32°.29S×70°.70W,h88km±8km,MD3.3*

*GUC **11** 04:55:58.9±0.3,32°.42S×70°.66W,h99km±8km,ML1.9*

**ISC

comp=Z,24nm,18.0s,baz=235,slow=36
KLR Kul'dur 79.34 37 P **P 05 11 33.8 0.0**
0.3nm,0.3s,baz=273,slow=9.0,SNR=4.6
HFS Hagfors 80.27 336 P **P 05 11 38.6 +0.1**
2.4nm,0.9s,baz=129,slow=4.0,SNR=4.6
ESDC Sonseca Array 81.54 312 P **P 05 11 45.8 -0.1**
1.1nm,0.7s,baz=89,slow=4.0,SNR=6.2
ARCES ARCESS Array B 82.68 346 P **P 05 11 51.8 +0.6**
5.6nm,0.9s,baz=114,slow=6.0,SNR=5.6
TIXI Tiksi 88.68 16 P **P 05 12 20.8 0.0**
0.9nm,0.2s,baz=305,slow=1.1,SNR=5.6
YKA Yellowknife Ar 125.53 2 PKP **PKPdf 05 18 28.1 -0.8**
0.5nm,0.9s,baz=324,slow=2.7,SNR=4.1
WVOR Wild Horse Val 145.14 9 *e*PKPdf **PKPab 05 19 05.8 +0.2**
PDAR Pinedale Array 145.28 357 PKPbc **PKPbc 05 19 05.0 -1.0**
1.0nm,0.6s,baz=45,slow=4.4,SNR=4.7
MOD Modoc Plateau 145.37 11 *e*PKPdf **PKPdf 05 19 06.8 +0.3**
OTAV Otavalo 145.86 259 *e*PKPdf **PKPbc 05 19 09.2 +0.1**
DUG Dugway, Tooele 147.89 1 *e*PKPbc **PKPdf 05 19 11.9 +1.1**
SMCO Snowmass 148.61 353 *e*PKPbc **PKPbc 05 19 17.2 +1.2**
NVAR Mina Array Bea 149.11 10 PKPbc **PKPbc 05 19 17.9 +0.8**
1.1nm,0.9s,baz=302,slow=5.2,SNR=3.3

ASRS ***11*** *05:04:37.2±1.0,52°.27N×91°.50E,h15km,Ms2.8/1*
MOS ***11*** *05:04:40.4±1.2,52°.11N×91°.26E,h10km,mb4.4/1,Error ellipse: s-maj=20.0km s-min=15.4km az=140.6*
NNC ***11*** *05:04:47.7±2.6,51°.48N×90°.81E,h0km,mb3.9,mpv3.6, Error ellipse: s-maj=23.2km s-min=18.2km az=29.0*
ISC 11 05:04:37.5±0.9,52°.30N±0°.04×91°.52E±0°.05,h10km,n22, σ2§42/22,3C-3D,Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CERR	**Cheremushki**	**0.56**	**353**	*i* Pg	**Pg**	**05 04 47.5**	**-0.8**
CERR				*i* Sg	**Sg**	05 04 56.5	**+0.9**
CERR	**Cheremushki**	**0.56**	**353**	*i* PG	**Pg**	**05 04 47.5**	**-0.8**
AKAR	**Aktash**	**3.15**	**232**	*e*Pn	**Pn**	**05 05 27.5**	**+0.3**
AKAR				*e*Pg	**Pb**	**05 05 34.3**	**+0.7**
AKAR				*e*Sg	**Sg**	**05 06 14.9**	**-3.7**
AKAR	**Aktash**	**3.15**	**232**	*e*PN	**Pn**	**05 05 27.5**	**+0.3**
AKAR				*e*		05 05 34.3	
AKAR				*e*		05 06 14.9	
ELT	**Eltsovka**	**3.35**	**289**	*e*Pg	**Pb**	**05 05 35.6**	**-1.2**
ELT				*e*Sg	**Sb**	**05 06 20.7**	**+3.1**
ELT	**Eltsovka**	**3.35**	**289**	*e*PN	**Pb**	**05 05 35.6**	**-1.2**
ELT				*e*		05 06 20.7	
KRAR	**Krasnoyarsk**	**3.80**	**12**	*e*PN	**Pb**	**05 05 42.4**	**-2.2**
ZALV	**Zalesovo Beam**	**4.36**	**295**	*e*PG	Pg	05 06 10.4	+9.5
ZALV				pmax	pmax		
comp=Z,2.0nm,0.3s							
NVS	**Novosibirsk**	**5.55**	**301**	*e*Pg	**Pg**	**05 06 20.1**	**-3.6**
NVS				*e*Sg	**Sg**	**05 07 30.6**	**-5.0**
NVS	**Novosibirsk**	**5.55**	**301**	*e*PN	**Pb**	**05 06 14.5**	**+0.1**
NVS				*e*		05 06 20.1	
NVS				*e*		05 07 10.3	
NVS				*e*		05 07 30.6	
TLY	**Talaya**	**7.51**	**90**	*e*P	Pn	05 06 35.2	+8.2
ZAK	**Zakamensk**	**7.61**	**100**	*e*P	**Pb**	**05 06 46.2**	**-3.4**
ZAK				pmax	pmax		
comp=Z,7.0nm,0.9s							
MK31	**Makanchi Array**	**8.15**	**231**	Pn	**Pn**	**05 06 34.6**	**-1.1**
comp=Z,3.4nm,1.1s,baz=58,slow=13,SNR=4.1							
MK31				⇓Pg	**Pb**	**05 07 01.0**	**+2.4**
comp=Z,0.9nm,0.5s,baz=42,slow=13,SNR=6.0							
MK31				⇑Lg	Lg	05 08 40.2	
comp=Z,6.6nm,0.7s,baz=49,slow=29,SNR=4.9							
MKAR	**Makanchi Array**	**8.15**	**231**	*e*P	Pn	05 06 40.6	+4.9
KURK	**Kurchatov**	**8.21**	**264**	⇑Pn	Pn	05 06 42.0	+5.5
comp=Z,3.7nm,0.5s							
KURK				⇓Sn	**Sn**	**05 08 09.9**	**+0.7**
comp=Z,17nm,0.7s							
KURK				⇓Lg	Lg	05 08 52.5	
comp=Z,54nm,0.8s							
KURK	**Kurchatov**	**8.21**	**264**	*e*P	**Pn**	**05 06 39.0**	**+2.5**
MAKZ	**Makanchi**	**8.29**	**232**	⇑Lg	Lg	05 08 45.4	
comp=Z,21nm,1.2s							
BRVK	**Borovoye**	**12.90**	**282**	*e*P	Pn	05 07 45.4	+4.7
AAK	**Ala-Archa**	**15.00**	**237**	*i* P	**Pn**	**05 08 10.6**	**+1.0**
AAK				pmax	pmax		
comp=Z,2.0nm,1.1s							
ARU	**Arti**	**19.52**	**295**	*i* P	**Pn**	**05 09 08.9**	**+2.9**
ARU				pmax	pmax		
comp=Z,2.0nm,0.9s							
KLR	**Kul'dur**	**25.40**	**81**	*i* P	P	05 10 12.0	+7.2
CLL	**Collm**	**46.28**	**302**	*i* P	**P**	**05 13 04.9**	**+2.1**

IDC ***11*** *05:12:13.4±3.0,5°.63S×154°.45E,h177km±27km,mb3.5/10, mb1 3.7/12,mb1mx3.5/44,mbtmp4.0/12,Error ellipse: s-maj=19.7km s-min=10.8km az=70.0*
ISCJB ***11*** *05:12:14.2±0.6,5°.68S±0°.09×154°.44E±0°.09,h200km, mb3.8/10,Error ellipse: s-maj=14.6km s-min=9.7km az=42.4*
ISC 11 05:12:15.8±0.7,5°.66S±0°.09×154°.36E±0°.10,h200km,n17, σ1§03/16,mb3.8/10,Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**8.05**	**242**	P	**Pn**	**05 14 09.7**	**-0.1**
2.0nm,0.3s,baz=359,slow=5.5,SNR=12							
PMG				S	**Sn**	**05 15 40.0**	**-0.6**
0.8nm,0.3s,baz=139,slow=20,SNR=4.4							
CTA	**Charters Tower**	**16.37**	**208**	P	**Pn**	**05 15 54.8**	**0.0**
0.3nm,0.3s,baz=29,slow=12,SNR=6.9							
DZM	**Mont Dzumac**	**20.07**	**146**	P	**P**	**05 16 32.9**	**-1.3**
9.1nm,0.5s,baz=315,slow=10.0,SNR=9.7							
DZM				S	**S**	**05 20 10.1**	**+1.3**
3.1nm,0.4s,baz=311,slow=20,SNR=3.4							
GUMO	**Guam**	**21.32**	**334**	P	**P**	**05 16 45.9**	**-1.4**
60nm,0.3s,baz=175,slow=19,SNR=4.3							
WRA	**Warramunga Arr**	**24.10**	**232**	P	**P**	**05 17 13.1**	**-0.3**
2.0nm,0.8s,baz=58,slow=10,SNR=19							
ASAR	**Alice Springs**	**26.62**	**226**	P	**P**	**05 17 35.5**	**-0.5**
0.5nm,0.3s,baz=57,slow=9.1,SNR=13							
H11S3	**WAKE ISLAND Hy**	**26.90**	**27**	T	T	05 45 45.1	
baz=207,slow=72,SNR=11							
H11S2	**WAKE ISLAND Hy**	**26.91**	**27**	T	T	05 45 47.2	
baz=207,slow=72,SNR=5.8							
H11S1	**WAKE ISLAND Hy**	**26.92**	**27**	T	T	05 45 46.4	
baz=207,slow=72,SNR=3.7							
KLR	**Kul'dur**	**58.11**	**343**	P	**P**	**05 21 49.1**	**+0.9**
1.6nm,0.8s,baz=180,slow=3.5,SNR=5.6							
CMAR	**Chiang Mai Arr**	**59.65**	**295**	P	**P**	**05 22 01.8**	**+2.3**
1.5nm,0.3s,baz=120,slow=5.3,SNR=9.0							
VNDA	**Vanda**	**71.93**	**178**	P	**P**	**05 23 16.7**	**-0.1**
1.3nm,0.7s,baz=344,slow=6.3,SNR=9.3							
MKAR	**Makanchi Array**	**81.99**	**319**	P	**P**	**05 24 12.6**	**-0.9**
0.3nm,0.6s,baz=105,slow=4.9,SNR=3.4							
ILAR	**Eielson Array**	**82.37**	**22**	P	**P**	**05 24 14.5**	**-0.5**
0.5nm,0.7s,baz=251,slow=5.6,SNR=4.8							
MAW	**Mawson**	**85.38**	**203**	P	**P**	**05 24 31.0**	**+0.7**
3.3nm,0.7s,baz=78,slow=5.1,SNR=8.5							
YKA	**Yellowknife Ar**	**95.45**	**28**	P	**P**	**05 25 17.3**	**-0.2**
0.1nm,0.7s,baz=286,slow=4.4,SNR=2.9							
TORD	**Torodi Ar. Bea**	**152.05**	**287**	PKPbc	**PKPbc**	**05 31 48.6**	**+0.1**
0.4nm,0.8s,baz=54,slow=1.6,SNR=2.9							

IDC 11 05:29:11.3±3.2,16°.59S×175°.56W,h249km±21km, mb3.5/4,mb1 3.8/5,mb1mx3.3/39,mbtmp4.1/5,Error ellipse: s-maj=203.9km s-min=18.4km az=149.0,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**4.52**	**54**	P	Pn	05 30 22.5	+1.1
11nm,0.3s,baz=3.0,slow=2.8,SNR=11							
AFI				S	S	05 31 16.9	-0.2
20nm,0.3s,baz=191,slow=16,SNR=11							
WRA	**Warramunga Arr**	**47.56**	**258**	P	P	05 37 22.4	0.0
2.1nm,0.5s,baz=95,slow=7.1,SNR=53							
ASAR	**Alice Springs**	**47.77**	**253**	P	P	05 37 23.8	-0.3
7.5nm,0.6s,baz=87,slow=9.3,SNR=74							
NVAR	**Mina Array Bea**	**76.60**	**43**	P	P	05 40 35.0	+0.1
0.4nm,0.6s,baz=224,slow=11,SNR=3.6							
YKA	**Yellowknife Ar**	**92.02**	**24**	P	P	05 41 51.4	-0.1
0.2nm,0.9s,baz=262,slow=4.3,SNR=3.0							

IDC 11 05:30:07.7±4.0,41°.64N×127°.36E,h0km,mb1 2.6/2, mb1mx2.6/42,mbtmp2.6/2,ML1.9/2,Error ellipse: s-maj=48.8km s-min=18.0km az=113.0,North Korea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSRS	**Korea Array**	**4.20**	**174**	Pn	Pn	05 31 15.3	+2.3
0.2nm,0.3s,baz=352,slow=13,SNR=3.4							
KSRS				Pg	Pb	05 31 23.4	+0.8
0.6nm,0.3s,baz=355,slow=17,SNR=5.1							
KSRS				Lg	Lg	05 32 20.7	
2.3nm,0.3s,baz=351,slow=29,SNR=16							
I45RU	**USSURIYSK INFR**	**4.25**	**51**	*i*		05 55 12.4	
baz=233,slow=327,SNR=0.8							
USRK	**Ussuriysk Ar.**	**4.26**	**52**	Pn	Pn	05 31 13.3	-0.5
0.2nm,0.3s,baz=237,slow=13,SNR=3.1							
USRK				Pg	Pb	05 31 22.9	-0.5
0.5nm,0.3s,baz=236,slow=16,SNR=5.4							
USRK				Lg	Lg	05 32 22.6	
0.8nm,0.3s,baz=235,slow=27,SNR=4.8							

ISCJB ***11*** *05:30:38.0±0.3,43°.63N±0°.04×140°.04E±0°.06, h220km±4km,mb3.5/8,Error ellipse: s-maj=7.3km s-min=6.5km az=44.3*
JMA ***11*** *05:30:39.0±0.2,43°.69N×139°.98E,h210km±2km,M3.4*
IDC ***11*** *05:30:39.1±0.8,43°.69N×139°.98E,h210km±8km,mb3.3/8, mb1 3.4/15,mb1mx3.2/49,mbtmp4.0/15,Error ellipse: s-maj=16.2km s-min=11.4km az=168.0*
ISC 11 05:30:39.2±0.7,43°.62N±0°.06×140°.03E±0°.06,h215km±7km, n31,σ0§85/43,mb3.4/8,Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JSK	**Shakotan**	**0.42**	**129**	P	**Pn**	**05 31 07.1**	**-0.7**
JSH	**Shimam**	**0.98**	**179**	P	**Pn**	**05 31 10.2**	**-0.2**
JSH				*e*S	**S**	**05 31 33.8**	**-0.8**
JHR	**Hokuryu**	**1.24**	**84**	P	**Pn**	**05 31 12.0**	**-0.1**
JEW	**Eniwo**	**1.30**	**126**	P	**Pn**	**05 31 12.8**	**+0.1**
JEW				*e*S	**S**	**05 31 39.7**	**+1.2**
JSS	**Shosan**	**1.53**	**59**	P	**Pn**	**05 31 14.3**	**-0.1**
JOSM	**Okushiri--Mats**	**1.59**	**195**	P	**Pn**	**05 31 15.3**	**+0.2**
JOSM				*e*S	**S**	**05 31 43.2**	**+0.4**
JKB	**Kayabe**	**1.89**	**157**	P	**Pn**	**05 31 17.5**	**-0.3**
ASAJ	**Asahikawa**	**1.92**	**74**	P	**Pn**	**05 31 17.9**	**-0.1**
5.4nm,0.3s,baz=262,slow=8.8,SNR=13							
ASAJ				S	**S**	**05 31 47.9**	**-0.2**
0.5nm,0.3s,baz=358,slow=31,SNR=8.1							
JFR	**Furan**	**1.93**	**103**	P	**Pn**	**05 31 18.2**	**+0.1**
JFR				*e*S	**S**	**05 31 48.6**	**+0.4**
JKK2	**Kamakawa 2**	**1.99**	**82**	P	**Pn**	**05 31 18.6**	**-0.1**
JKK2				*e*S	**S**	**05 31 49.0**	**-0.3**
JSE	**Soyaes**	**2.27**	**53**	P	**Pn**	**05 31 21.0**	**-0.5**
JSE				*e*S	**S**	**05 31 54.2**	**-0.2**
JOT	**Ohata**	**2.36**	**161**	P	**Pn**	**05 31 22.0**	**-0.6**
JNBK	**Urakawa-nobuka**	**2.41**	**123**	P	**Pn**	**05 31 22.7**	**-0.4**
JNBK				*e*S	**S**	**05 31 57.8**	**+0.8**
JCH	**Churui**	**2.64**	**111**	P	**Pn**	**05 31 23.9**	**-1.7**
JCH				*e*S	**S**	**05 31 58.9**	**-2.6**
JAR	**Ashorobuto**	**2.75**	**96**	P	**Pn**	**05 31 26.7**	**0.0**
JAR				*e*S	**S**	**05 32 04.1**	**+0.5**
JANG	**Nango**	**3.43**	**161**	P	**Pn**	**05 31 33.2**	**-1.5**
JANG				*e*S	**S**	**05 32 16.3**	**-1.7**
USRK	**Ussuriysk Ar.**	**5.83**	**278**	P	**Pn**	**05 32 04.2**	**-0.3**
0.4nm,0.3s,baz=78,slow=14,SNR=4.5							
MJAR	**Matsushiro Arr**	**7.21**	**192**	P	**Pn**	**05 32 22.9**	**+0.6**
0.6nm,0.3s,baz=360,slow=13,SNR=7.5							
KLR	**Kul'dur**	**8.01**	**317**	P	**Pn**	**05 32 31.8**	**-0.6**
0.2nm,0.3s,baz=124,slow=13,SNR=17							
KLR				S	**S**	**05 34 01.1**	**-1.7**
baz=336,slow=20,SNR=2.6							
KSRS	**Korea Array**	**11.07**	**240**	P	**Pn**	**05 33 13.3**	**+1.4**
baz=49,slow=13,SNR=2.5							
PETK	**Petropavlovsk-**	**15.06**	**45**	P	**P**	**05 34 01.9**	**+0.3**
0.2nm,0.3s,baz=209,slow=7.1,SNR=4.3							
JCJ	**Chichijima**	**16.58**	**173**	P	**P**	**05 34 19.9**	**+1.3**
2.5nm,0.3s,baz=294,slow=19,SNR=2.4							
YAK	**Yakutsk**	**19.42**	**345**	P	**P**	**05 34 49.2**	**+0.2**
0.0nm,0.3s,baz=308,slow=2.0,SNR=4.4							
ZALV	**Zalesovo Beam**	**36.92**	**306**	P	**P**	**05 37 26.6**	**-0.6**
2.7nm,0.6s,baz=85,slow=8.6,SNR=10							
MKAR	**Makanchi Array**	**40.02**	**295**	P	**P**	**05 37 52.9**	**-0.1**
0.6nm,0.6s,baz=89,slow=9.8,SNR=5.7							
INK	**Inuvik**	**49.09**	**29**	P	**P**	**05 39 04.5**	**+0.3**
0.5nm,0.3s,baz=298,slow=7.3,SNR=11							
ARCES	**ARCESS Array B**	**57.48**	**338**	P	**P**	**05 40 05.3**	**0.0**
9.4nm,1.1s,baz=61,slow=9.4,SNR=3.1							
YKA	**Yellowknife Ar**	**58.70**	**32**	P	**P**	**05 40 13.8**	**+0.1**
0.1nm,0.4s,baz=308,slow=6.7,SNR=3.3							
FINES	**FINESS Array B**	**62.53**	**330**	P	**P**	**05 40 39.2**	**-0.4**
1.4nm,0.4s,baz=60,slow=7.7,SNR=12							
NOA	**NORSAR Array B**	**67.73**	**336**	P	**P**	**05 41 12.6**	**-0.4**
0.5nm,0.6s,baz=38,slow=6.3,SNR=3.0							
AKASG	**Malin Array Be**	**68.50**	**320**	P	**P**	**05 41 17.6**	**-0.3**
0.3nm,0.3s,baz=45,slow=6.6,SNR=2.9							

ISCJB ***11*** *05:47:11.2±0.3,7°.01S±0°.05×155°.83E±0°.04,h62km, mb4.7/45,Error ellipse: s-maj=6.7km s-min=6.1km az=154.6*
IDC ***11*** *05:47:14.7±1.7,7°.00S×155°.87E,h86km±16km,mb4.2/18, mb1 4.3/22,mb1mx4.2/39,mbtmp4.6/22,MS3.5/6, Ms1 3.5/6,ms1mx3.1/38,Error ellipse: s-maj=12.4km s-min=11.4km az=34.0*
NEIC ***11*** *05:47:16.3±0.9,7°.08S×155°.80E,h99km±7km,mb4.8/21, Error ellipse: s-maj=7.9km s-min=7.3km az=102.0*
DJA ***11*** *05:47:56.2±0.8,9°S±4°×15°3E±°,h214km±7km,M4.8/20, mB4.8/1,mb4.5/20,MLv4.9/1,Mw(mB)4.0/1*
ISC 11 05:47:12.6±0.4,7°.05S±0°.06×155°.83E±0°.05,h62km,n127, σ2§16/119,mb4.8/45,1C,Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RABL	**Rabaul**	**4.62**	**308**	*e*Pn	Pn	05 48 24.9	+4.9
RABL				*e*Sn	**Sn**	**05 49 21.3**	**+8.8**
HNR	**Honiara**	**4.71**	**120**	*e*P	**Pn**	**05 48 23.4**	**+2.2**
20nm,0.3s,baz=323,slow=10,SNR=3.2							
HNR				S	**Sn**	**05 49 17.1**	**+2.6**
30nm,0.3s,baz=180,slow=20,SNR=2.7							
HNR				LR	LR	05 50 27.5	
comp=Z,626nm,18.4s,baz=278,slow=41							
HNR	**Honiara**	**4.71**	**120**	*e*P	**Pn**	**05 48 21.0**	**-0.2**
HNR				*e*S	Sn	05 49 25.0	+10
PMG	**Port Moresby**	**8.90**	**254**	P	**Pn**	**05 49 22.5**	**+3.9**
22nm,0.3s,baz=57,slow=9.3,SNR=43							
PMG				S	**Sn**	**05 50 59.5**	**+2.1**
0.8nm,0.3s,baz=15,slow=20,SNR=3.1							
PMG				LR	LR	05 52 34.8	
comp=Z,495nm,21.1s,baz=59,slow=36							
PMG	**Port Moresby**	**8.90**	**254**	*e*Pn	**Pn**	**05 49 19.6**	**+1.0**
PMG				S	**Sn**	**05 50 59.5**	**+2.1**
MANU	**Manus Island**	**9.79**	**300**	*e*Pn	**Pn**	**05 49 35.6**	**+4.8**
MANU				*e*Sn	**Sn**	**05 51 15.5**	**-3.8**
COEN	**Coen**	**14.21**	**240**	*e*Pn	**Pn**	**05 50 32.4**	**+1.6**
JAY	**Jayapura**	**15.73**	**286**	P	**P**	**05 50 53.1**	**-0.3**
0.1nm,0.3s,baz=90,slow=20,SNR=3.3							
JAY	**Jayapura**	**15.73**	**286**	P	P	05 51 01.1	+7.7
CTA	**Charters Tower**	**15.95**	**215**	P	**P**	**05 50 56.1**	**+0.3**
0.6nm,0.3s,baz=32,slow=15,SNR=16							
CTAO	**Charters Tower**	**15.95**	**215**	*e*Pn	**P**	**05 50 55.7**	**-0.1**
88nm,0.8s							
GENI	**Genyem**	**16.22**	**285**	P	P	05 51 08.0	+9.2
KWAJ	**Kwajalein Atol**	**19.64**	**37**	*e*P	**P**	**05 51 37.5**	**+1.1**
GUMO	**Guam**	**23.21**	**332**	P	**P**	**05 52 15.7**	**+1.2**
28nm,0.4s,baz=163,slow=20,SNR=2.7							
FAKI	**Fak Fak**	**23.85**	**279**	P	P	05 52 29.2	+8.8
FAKI	**Fak Fak**	**23.85**	**279**	*e*P	**P**	**05 52 18.1**	**-2.4**
FAKI				*e*pP	**pP**	**05 52 31.9**	**-3.3**
MSVF	**Nonsavu**	**24.13**	**118**	*e*P	**P**	**05 52 24.9**	**+1.9**
39nm,1.2s							
SAUI	**Saumlaki**	**24.34**	**266**	P	**P**	**05 52 29.2**	**+4.3**
WRAB	**Tennant Creek**	**24.46**	**236**	*e*P	**P**	**05 52 26.1**	**+0.1**
13nm,0.8s							
WB2	**Warramunga Arr**	**24.47**	**236**	*e*P	**P**	**05 52 25.5**	**-0.5**
13nm,0.9s							
WRA	**Warramunga Arr**	**24.48**	**236**	P	**P**	**05 52 26.2**	**+0.1**
5.1nm,0.5s,baz=62,slow=9.6,SNR=29							
WRA				PcP	**PcP**	**05 56 03.7**	**+0.1**
3.7nm,1.0s,baz=60,slow=1.8,SNR=6.0							
MTN	**Manton Dam**	**24.99**	**255**	*e*P	**P**	**05 52 31.0**	**+0.2**
44nm,0.9s							
SWI	**Sorong**	**25.26**	**283**	P	P	05 52 44.1	+11
76nm,0.8s							
BNDI	**Bandanaira**	**25.92**	**274**	P	**P**	**05 52 42.9**	**+3.7**
AS01	**Alice Springs**	**26.73**	**229**	*e*P	**P**	**05 52 45.5**	**-1.0**
AS31	**Alice Springs**	**26.77**	**229**	*e*P	**P**	**05 52 46.5**	**-0.4**
2.2nm,0.7s							
ASAR	**Alice Springs**	**26.77**	**229**	P	**P**	**05 52 46.4**	**-0.5**
2.7nm,0.4s,baz=61,slow=9.6,SNR=21							
ASAR				PcP	**PcP**	**05 56 08.8**	**-0.1**
1.5nm,0.5s,baz=68,slow=2.5,SNR=6.9							
H11S3	**WAKE ISLAND Hy**	**27.55**	**23**	T	T	06 21 14.9	
baz=202,slow=76,SNR=70							
H11S2	**WAKE ISLAND Hy**	**27.55**	**23**	T	T	06 21 14.1	
baz=202,slow=76,SNR=536							
H11S1	**WAKE ISLAND Hy**	**27.56**	**23**	T	T	06 21 16.0	
baz=202,slow=76,SNR=105							
STKA	**Stephens Creek**	**28.05**	**206**	P	**P**	**05 52 58.0**	**-0.2**
6.0nm,0.8s,baz=8.8,slow=8.7,SNR=3.4							
STKA				LR	LR	06 03 30.1	
comp=Z,250nm,20.0s,baz=27,slow=35							
H11N1	**WAKE ISLAND Hy**	**28.73**	**22**	T	T	06 22 56.4	
baz=203,slow=76,SNR=9.6							
H11N3	**WAKE ISLAND Hy**	**28.75**	**22**	T	T	06 22 47.0	
baz=203,slow=76,SNR=12							
H11N2	**WAKE ISLAND Hy**	**28.75**	**22**	T	T	06 22 54.4	
baz=203,slow=76,SNR=7.1							
NLAI	**Namlea**	**28.86**	**276**	P	P	05 53 13.9	+8.3
LBMI	**Labuha**	**28.96**	**281**	P	P	05 53 16.0	+9.5
SANI	**Sanana**	**30.15**	**278**	P	P	05 53 23.6	+6.5
SOEI	**Soe**	**31.34**	**263**	P	**P**	**05 53 30.9**	**+3.2**
FITZ	**Fitzroy Crossi**	**31.40**	**247**	P	**P**	**05 53 27.5**	**-0.5**
21nm,0.6s,baz=96,slow=7.7,SNR=17							
FITZ	**Fitzroy Crossi**	**31.40**	**247**	*e*P	**P**	**05 53 27.7**	**-0.3**
21nm,0.7s							
DAV	**Davao City (W)**	**33.28**	**294**	LR	LR	06 05 57.1	
comp=Z,36nm,18.4s,baz=137,slow=34							
LUWI	**Luwuk**	**33.50**	**279**	P	P	05 53 54.9	+8.4
BSSI	**Bau Bau, Buton**	**35.12**	**269**	P	**P**	**05 54 04.8**	**+4.3**
WSI	**Waingapu**	**35.24**	**263**	P	**P**	**05 54 04.0**	**+2.4**
KAPI	**Kappang**	**35.93**	**271**	P	**P**	**05 54 07.1**	**-0.4**
11nm,0.8s,baz=196,slow=11,SNR=9.4							
KAPI	**Kappang**	**35.93**	**271**	*e*P	**P**	**05 54 07.1**	**-0.4**
62nm,1.7s							
PLAI	**Plampang**	**37.72**	**265**	P	**P**	**05 54 26.8**	**+4.1**
TWSI	**Taliwang, Sumb**	**38.61**	**265**	P	**P**	**05 54 34.2**	**+4.0**
RPZ	**Rata Peaks**	**38.89**	**162**	P	**P**	**05 54 31.9**	**-0.2**
22nm,0.9s,baz=19,slow=5.8,SNR=4.3							
MYLDM	**Lahad Datu**	**39.19**	**287**	*e*P	**P**	**05 54 34.8**	**-0.2**
24nm,0.9s							
BKB	**Balikpapan**	**39.24**	**277**	P	P	05 54 42.4	+7.0
JAGI	**Jajag, Banyuwa**	**41.31**	**265**	P	**P**	**05 54 56.7**	**+4.1**
KKM	**Kota Kinabalu**	**41.62**	**287**	*e*P	**P**	**05 54 53.5**	**-1.7**
28nm,0.8s							
PWJI	**Pagerwojo**	**43.65**	**266**	P	P	05 55 19.0	+7.5
NGJI	**Ngawi**	**44.01**	**267**	P	P	05 55 20.1	+5.6
PCJI	**Pacitan**	**44.26**	**266**	P	P	05 55 22.7	+6.2
MJAR	**Matsushiro Arr**	**46.41**	**340**	P	**P**	**05 55 31.6**	**-1.5**
1.0nm,0.5s,baz=165,slow=3.6,SNR=3.5							
CGJI	**Cibinong**	**49.77**	**267**	P	**P**	**05 55 56.6**	**-2.8**
KSRS	**Korea Array**	**51.38**	**332**	P	**P**	**05 56 11.4**	**+0.3**
0.9nm,0.7s,baz=149,slow=7.4,SNR=3.9							
KSRS				LR	LR	06 16 57.7	
comp=Z,20nm,18.2s,baz=195,slow=35							
KSAR	**Wonju Array Be**	**51.39**	**331**	P	**P**	**05 56 11.4**	**+0.2**
NJ2	**Nanjing**	**52.49**	**320**	*e*P	**P**	**05 56 21.9**	**+2.4**
USRK	**Ussuriysk Ar.**	**55.37**	**339**	P	**P**	**05 56 40.0**	**-0.3**
4.0nm,0.9s,baz=157,slow=6.3,SNR=6.8							
PANO	**Nakornpanom**	**56.04**	**296**	P	**P**	**05 56 46.3**	**+0.7**
28nm,1.4s							
SKNT	**Sakolnakorn**	**56.54**	**296**	P	**P**	**05 56 49.2**	**0.0**
24nm,0.9s							
CN2	**Changchun**	**57.60**	**334**	*e*P	**P**	**05 57 00.5**	**+4.4**
NONG	**Nongkai**	**57.67**	**296**	P	**P**	**05 56 57.0**	**-0.1**
25nm,1.0s							
NONG				P	**pP**	**05 57 09.4**	**-4.1**
25nm,1.0s							
CHAI	**Chaiyaphum**	**57.98**	**294**	P	**P**	**05 56 58.9**	**-0.4**
5.4nm,0.7s							
GYA	**Guiyang**	**58.15**	**307**	*e*P	**P**	**05 57 03.2**	**+2.7**
PBKT	**Sadao Pong**	**59.12**	**294**	P	**P**	**05 57 08.5**	**+1.3**
14nm,0.8s							
LOEI	**Loei**	**59.16**	**295**	P	**P**	**05 57 05.0**	**-2.6**
24nm,0.9s							
BJI	**Beijing**	**59.43**	**325**	P	**P**	**05 57 09.6**	**+0.6**
UTTA	**Uttaradit**	**59.88**	**295**	P	**P**	**05 57 12.6**	**+0.1**
8.3nm,0.9s	

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
CRVS	Cervenica-Dubn	123.34	326	*e*PKP	PKPdf	06 06 02.4	-0.4
GERES	GERESS Array B	127.53	329	PKP	PKPdf	06 06 10.6	-0.3
2.0nm,0.6s,baz=50,slow=2.1,SNR=12							
LPAZ	La Paz	130.70	118	PKP	PKPdf	06 06 19.3	+0.8
0.6nm,0.9s,baz=358,slow=1.0,SNR=4.2							
TORD	Torodi Ar. Bea	153.84	285	PKP	PKPdf	06 06 56.9	-1.1
1.2nm,1.0s,baz=41,slow=0.8,SNR=4.7							
TORD				PKPbc	PKPbc	06 07 05.0	-1.0
3.1nm,0.8s,baz=69,slow=1.6,SNR=13							
TORD				PKPab	PKPab	06 07 18.5	-0.7
1.8nm,0.7s,baz=72,slow=2.6,SNR=5.3							
KIC	Kosan Boka	160.70	269	*e*PKP2	PKPab	06 07 48.3	-0.5
27nm,0.8s							
LIC	Lamto	160.97	269	*e*PKP2	PKPab	06 07 49.3	-0.7
38nm,1.3s							
TIC	Toumodi	160.99	270	*e*PKP2	PKPab	06 07 49.6	-0.5

IDC ***11*** *05:53:16.1±1.0, 20°.31S×168°.15E, h0km, mb4.1/8, mb1 4.3/9, mb1mx4.1/29, mbtmp4.1/9, ML3.5/1, MS3.6/2, Ms1 3.6/2, ms1mx3.0/29, Error ellipse: s-maj=33.0km s-min=19.0km az=144.0*

ISCJB ***11*** *05:53:19.4±1.0, 20°.3S±0°.1×168°.1E±0°.2, h32km, mb4.1/7, MS3.5/2, Error ellipse: s-maj=25.9km s-min=11.1km az=39.5*

ISC 11 05:53:21.0±0.9, 20°.3S±0°.2×168°.2E±0°.2, h32km, n13, σ1§07/13, mb4.0/7, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	Mont Dzumac	2.35	223	Pn	Pn	05 53 56.7	-0.7
11nm,0.3s,baz=122,slow=20,SNR=16							
DZM				Sn	Sn	05 54 26.0	+0.8
42nm,0.3s,baz=154,slow=17,SNR=7.6							
AFI	Afiamalu	20.21	75	LR	LR	06 04 05.4	
comp=Z,93nm,20.3s,baz=160,slow=32							
CTA	Charters Tower	20.55	267	P	P	05 57 58.4	+1.2
4.3nm,0.5s,baz=97,slow=14,SNR=6.7							
STKA	Stephens Creek	26.40	239	P	P	05 58 56.1	+1.4
4.2nm,0.5s,baz=79,slow=11,SNR=14							
WRA	Warramunga Arr	31.72	265	P	P	05 59 40.3	-1.9
1.1nm,0.5s,baz=92,slow=8.3,SNR=13							
ASAR	Alice Springs	31.88	258	P	P	05 59 42.2	-1.4
5.5nm,0.6s,baz=88,slow=8.9,SNR=54							
ASAR				LR	LR	06 12 39.6	
comp=Z,213nm,18.7s,baz=118,slow=36							
FITZ	Fitzroy Crossi	40.13	266	P	P	06 00 54.6	+0.4
3.0nm,0.4s,baz=141,slow=6.5,SNR=3.5							
VNDA	Vanda	57.30	182	P	P	06 03 05.2	0.0
0.6nm,0.7s,baz=352,slow=7.9,SNR=3.7							
NVAR	Mina Array Bea	90.29	49	P	P	06 06 19.3	+0.2
0.6nm,0.7s,baz=223,slow=8.8,SNR=4.8							
ILAR	Eielson Array	91.58	18	P	P	06 06 24.8	+0.6
0.2nm,0.6s,baz=226,slow=7.5,SNR=3.3							
YKA	Yellowknife Ar	102.11	28	P	Pdif	06 07 11.6	-0.3
0.1nm,0.6s,baz=254,slow=4.6,SNR=3.4							
GERES	GERESS Array B	144.96	330	PKP	PKPab	06 12 54.3	0.0
0.6nm,0.6s,baz=35,slow=4.9,SNR=3.5							
TORD	Torodi Ar. Bea	165.19	243	PKP	PKPdf	06 13 22.2	-0.8
0.2nm,0.7s,baz=253,slow=1.5,SNR=2.4							

CSEM ***11*** *06:00:04.1±0.9, 50°.13N×18°.48E, h1km, Error ellipse: s-maj=14.3km s-min=7.2km az=46.0*

PRU 11 06:00:05.3, 50°.09N×18°.44E, h0km, Poland

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OKC	Ostrava-Krasne	0.32	217	*e*PG	Pg	06 00 11.3	0.0
OKC				*e*SG	Sg	06 00 15.9	+0.5
OKC	Ostrava-Krasne	0.32	217	Pg	Pg	06 00 11.3	0.0
OKC				Sg	Sg	06 00 15.9	+0.5
MORC	Moravsky Berou	0.66	242	*e*Pg	Pg	06 00 17.2	-0.7
MORC				*e*Sg	Sg	06 00 26.2	-0.2
KRLC	Kraliky	1.07	270	*e*SG	Sg	06 00 39.7	+0.1
KRLC	Kraliky	1.07	270	Sg	Sg	06 00 39.7	+0.1
DPC	Dobruska-Polom	1.39	282	*e*SG	Sg	06 00 49.5	-0.3
comp=Z,2.0nm,0.4s							
DPC	Dobruska-Polom	1.39	282	Sg	Sg	06 00 49.5	-0.3
2.0nm,0.4s							

IDC 11 06:05:25.4±10.0, 20°.35S×167°.55E, h0km, mb4.0/3, mb1 4.1/3, mb1mx3.7/41, mbtmp4.0/3, Error ellipse: s-maj=184.6km s-min=38.8km az=91.0, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	Mont Dzumac	2.00	211	Pn	Pn	06 05 59.9	-0.7
4.4nm,0.3s,baz=74,slow=9.3,SNR=37							
DZM				Sn	Sn	06 06 26.9	+0.5
5.6nm,0.3s,baz=138,slow=23,SNR=4.8							
DZM				LR	LR	06 06 38.5	
comp=Z,159nm,18.6s,baz=236,slow=37							
STKA	Stephens Creek	25.91	238	P	P	06 11 00.0	+0.7
2.3nm,0.7s,baz=57,slow=16,SNR=3.7							
WRA	Warramunga Arr	31.16	265	P	P	06 11 45.4	-0.8
1.0nm,1.0s,baz=93,slow=8.4,SNR=7.0							
ASAR	Alice Springs	31.33	258	P	P	06 11 48.3	+0.5
2.5nm,0.7s,baz=87,slow=9.3,SNR=23							

SKHL ***11*** *06:10:23.0±0.0, 49°.30N×151°.40E, h350km±16km, mb4.7/2*

ISCJB ***11*** *06:10:24.2±0.6, 49°.5N±0°.1×150°.89E±0°.08, h350km, mb3.3/12, Error ellipse: s-maj=15.8km s-min=5.7km az=162.1*

MOS ***11*** *06:10:24.3±0.9, 49°.54N×150°.81E, h357km, mb4.0/5, Error ellipse: s-maj=18.8km s-min=9.4km az=61.6*

IDC ***11*** *06:10:25.7±2.1, 49°.58N×150°.76E, h354km±23km, mb3.1/13, mb1 3.2/16, mb1mx3.0/69, mbtmp3.8/16, Error ellipse: s-maj=26.4km s-min=12.1km az=160.0*

KRSC ***11*** *06:10:33.9±1.9, 49°.74N×151°.97E, h294km±25km, ML4.3*

ISC 11 06:10:25.1±0.9, 49°.5N±0°.1×150°.98E±0°.08, h350km, n49, σ0§94/46, mb3.3/12, Northwest of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SKR	Severo-Kuril's	3.53	68	*e*P	Pn	06 11 28.8	-0.4
SKR				S	S	06 12 09.2	-12
SKR	Severo-Kuril's	3.53	68	*e*P	Pn	06 11 22.5	-6.7
SKR				AMB	AMB	06 11 23.0	
80nm,0.5s							
APC	Apacha	5.21	46	P	Pn	06 11 46.6	-0.2
APC	Apacha	5.21	46	PN	Pn	06 11 46.6	-0.2
ASAK	Asacha	5.27	54	P	Pn	06 11 48.5	+0.9
TYV	Tymovskoe	5.53	288	*e*P	Pn	06 11 52.0	+1.6
PETK	Petropavlovsk-	5.58	47	P	Pn	06 11 51.5	+0.5
0.4nm,0.3s,baz=206,slow=9.6,SNR=5.4							
RUS	Russkaya	5.62	55	P	Pn	06 11 51.4	0.0
RUS				S	S	06 12 52.6	-8.7
RUS	Russkaya	5.62	55	PN	Pn	06 11 51.4	0.0
RUS	Russkaya	5.62	55	*e*P	Pn	06 11 51.4	0.0
KRMR	Karymshinskiy	5.63	50	P	Pn	06 11 51.8	+0.3
KRMR	Karymshinskiy	5.63	50	PN	Pn	06 11 51.8	+0.3
UGL	Uglegorsk	5.84	270	*e*P	Pn	06 11 55.6	+1.6
UGL				AMB	AMB	06 11 59.0	
60nm,0.4s							
DALK	Dalny	6.05	51	P	Pn	06 11 56.6	+0.3
GNL	Ganaly	6.07	43	*e*P	Pn	06 11 56.9	+0.3
GNL	Ganaly	6.07	43	PN	Pn	06 11 56.9	+0.3
AVH	Avacha	6.18	49	*e*P	Pn	06 11 59.8	+2.0
AVH	Avacha	6.18	49	PN	Pn	06 11 59.8	+2.0
UGLR	Uglovaya	6.19	50	P	Pn	06 11 59.3	+1.3
KRER	Koryakskii	6.21	49	*e*P	Pn	06 11 59.8	+1.5
SDLR	Sedlovina	6.26	49	*e*P	Pn	06 11 59.9	+1.1
SDLR	Sedlovina	6.26	49	PN	Pn	06 11 59.9	+1.1
NLC	Nalytchevo	6.43	51	*e*S	S	06 13 06.4	-12
SPN	Mys Shipunski	6.75	54	P	Pn	06 12 03.8	-0.5
SPN				S	S	06 13 14.1	-11
SPN	Mys Shipunski	6.75	54	PN	Pn	06 12 03.8	-0.5
SPN	Mys Shipunski	6.75	54	*e*P	Pn	06 12 03.8	-0.5
BKI	Bering	10.82	52	S	S	06 14 44.3	-9.5
EKMR	Ekimchan	11.85	295	*e*P	P	06 13 06.2	+1.3
EKMR				AMB	AMB	06 13 07.6	
4.0nm,0.6s							
KLR	Kul'dur	12.54	276	P	P	06 13 12.7	+0.1
0.2nm,0.3s,baz=77,slow=12,SNR=9.4							
SEY	Seymchan	13.53	3	P	Pn	06 13 25.1	+0.6
0.3nm,0.3s,baz=152,slow=10.0,SNR=3.8							
BMKR	Bomnak	14.56	300	*e*P	Pn	06 13 37.0	+0.4
BMKR				AMB	AMB	06 13 38.3	
4.0nm,0.5s							
MJAR	Matsushiro Arr	15.90	221	P	P	06 13 49.7	+0.2
0.8nm,0.3s,baz=21,slow=11,SNR=7.9							
KSRS	Korea Array	20.50	243	P	P	06 14 37.0	-0.5
1.0nm,0.6s,baz=41,slow=10,SNR=3.4							
KSRS	Korea Array	20.50	243	P	P	06 14 37.0	-0.5
KSRS				pmax	pmax		
comp=Z,1.0nm,0.6s							
KSRS	Korea Array	20.50	243	*e*P	P	06 14 37.0	-0.5
TIXI	Tiksi	24.46	343	P	P	06 15 11.4	-1.6
comp=Z,0.8nm,0.4s,baz=142,slow=7.6,SNR=2.7							
ILAR	Eielson Array	35.38	41	P	P	06 16 48.5	+0.2
comp=Z,0.6nm,0.6s,baz=260,slow=8.8,SNR=9.0							
INK	Inuvik	40.17	34	P	P	06 17 28.2	+0.4
comp=Z,2.2nm,0.3s,baz=295,slow=6.5,SNR=37							
MKAR	Makanchi Array	44.48	294	P	P	06 18 01.2	-1.4
comp=Z,0.3nm,0.7s,baz=68,slow=8.7,SNR=2.4							
KURK	Kurchatov	44.71	301	P	P	06 18 03.8	-0.5
KURK	Kurchatov	44.71	301	*e*P	P	06 18 03.8	-0.5
KURBB	Kurchatov Arra	44.80	300	P	P	06 18 03.8	-1.2
comp=Z,0.4nm,0.5s,baz=68,slow=8.3,SNR=4.6							
BVAR	Borovoye Array	48.06	307	P	P	06 18 29.8	-0.2
comp=Z,0.4nm,0.5s,baz=63,slow=10,SNR=3.6							
YKA	Yellowknife Ar	49.63	37	P	P	06 18 41.7	+0.1
comp=Z,0.6nm,0.4s,baz=302,slow=6.9,SNR=18							
ARU	Arti	52.06	315	P	P	06 18 58.1	-1.6
comp=Z,2.8nm,0.3s,baz=340,slow=5.9,SNR=4.1							
FINES	FINESS Array B	60.98	333	P	P	06 20 00.5	-1.2
comp=Z,0.7nm,0.5s,baz=33,slow=7.3,SNR=6.5							
PDAR	Pinedale Array	64.30	54	P	P	06 20 24.9	+0.8
comp=Z,0.4nm,0.5s,baz=46,slow=1.7,SNR=4.5							
SCHQ	Schefferville	71.35	22	P	P	06 21 06.2	-1.0
comp=Z,1.4nm,0.7s,baz=322,slow=5.9,SNR=6.1							
TXAR	Lajitas Array	77.38	60	P	P	06 21 42.9	+0.7
comp=Z,0.4nm,0.7s,baz=278,slow=4.6,SNR=5.3							

WEL ***11*** *06:11:22.9±0.5, 36°.27S×179°.08W, h33km, ML5.8/42, Error ellipse: s-maj=4.8km s-min=3.0km az=90.0, 4.*

WEL Felt between Auckland, Southland and Gisborne, maximum reported intensity MM.

NEIC ***11*** *06:11:23.0±0.2, 36°.33S×179°.49W, h10km, mb5.3/36, Error ellipse: s-maj=7.6km s-min=3.7km az=136.0*

NEIC Felt on the east coast of the North Island.

GCMT ***11*** *06:11:23.0±0.1, 36°.25S×179°.22W, h14km, MW5.3/106, Moment Tensor Solution. s88,c153; s106,c191; Duration: 1s1 Moment tensor: Scale 10^17^Nm; Mrr-1.07±.02; Mθθ-0.23±.02; Mφφ1.30±.02; Mrθ-0.05±.04; Mrφ0.22±.01; Mθφ-0.00±.03; Best double couple: M0 1.20200×10^17^ NP1:φs12.00000°, δ45.00000°, λ-85.00000°. NP2:φs184.00000°, δ45.00000°, λ-95.00000°. Principal axes: T 1.3300, Plg0.0000°, Azm98.0000°; N -0.2600, Plg4.0000°, Azm188.0000°; P -1.0730, Plg86.0000°, Azm4.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISCJB ***11*** *06:11:25.9±0.2, 36°.49S±0°.03×179°.58W±0°.03, h38km, mb5.3/71, MS4.5/23 Error ellipse: s-maj=4.9km s-min=2.3km az=138.0*

MOS ***11*** *06:11:25.8±1.1, 36°.29S×179°.62W, h33km, mb5.2/24, MS4.8/5, Error ellipse: s-maj=10.8km s-min=9.7km az=81.5*

BJI ***11*** *06:11:26.5, 36°.51S×179°.74W, h42km, mb5.4/18, mB5.5/15, Ms5.3/12, Ms7 4.9/11*

IDC ***11*** *06:11:28.9±1.6, 36°.28S×179°.52W, h53km±14km, mb4.7/23, mb1 4.7/24, mb1mx4.6/32, mbtmp4.9/24, ML5.2/2, MS4.5/21, Ms1 4.5/21, ms1mx4.4/30, Error ellipse: s-maj=11.8km s-min=8.7km az=163.0*

ISC 11 06:11:26.2±0.4, 36°.48S±0°.04×179°.60W±0°.04, h34km±1km, h35km: pP-P, n446, σ1§86/489, mb5.4/71, MS4.5/24, 17C-7D, East of North Island

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MXZ	Matakaoa Point	1.99	237	⇑PN	Pn	06 11 59.6	+2.3
MXZ				SN	Sb	06 12 27.5	+1.3
MXZ				AML	AML	06 12 28.8	
MXZ				AML	AML	06 12 28.8	
MXZ				AML	AML	06 12 30.4	
MXZ	Matakaoa Point	1.99	237	*e*Pn	Pn	06 11 59.6	+2.3
MXZ				Sn	Sb	06 12 27.5	+1.3
WMGZ	Waiomatatini S	2.07	229	⇑PN	Pb	06 12 01.5	-1.6
WMGZ				SN	Sb	06 12 31.0	+2.5
WMGZ	Waiomatatini S	2.07	229	Sn	Sb	06 12 31.0	+2.5
PKGZ	Pakihiroa	2.33	232	⇑PN	Pn	06 12 04.7	+2.7
PKGZ				SN	Sb	06 12 36.6	+0.8
PUZ	Puketiti	2.33	226	PN	Pn	06 12 04.6	+2.5
PUZ				SN	Sb	06 12 36.1	+0.2
PUZ				AML	AML	06 12 37.4	
HAZ	Te Kaha	2.45	238	⇑PN	Pn	06 12 06.3	+2.7
TWGZ	Tauwhareparae	2.56	228	⇑PN	Pn	06 12 08.0	+2.7
TWGZ				SN	Sb	06 12 42.8	+0.2
CNGZ	Carnagh Statio	2.65	220	⇑PN	Pn	06 12 09.1	+2.7
WIZ	White Island	2.77	247	PN	Pn	06 12 10.2	+2.1
TKGZ	Te Karaka	2.82	225	PN	Pn	06 12 11.0	+2.3
MWZ	Matawai	2.94	230	⇓PN	Pn	06 12 12.5	+2.0
MWZ				AML	AML	06 12 52.4	
MWZ				AML	AML	06 12 52.4	
MWZ				AML	AML	06 12 53.3	
MWZ				AML	AML	06 12 53.3	
RIGZ	Rimuhau	3.05	223	⇑PN	Pn	06 12 14.1	+2.1
RAGZ	Rawiri	3.11	229	PN	Pn	06 12 14.9	+2.1
PRGZ	Paritu Road	3.15	219	PN	Pn	06 12 15.5	+2.2
URZ	Urewera	3.16	235	P	Pn	06 12 16.6	+3.1
611nm,0.3s,baz=49,slow=4.2,SNR=1278							
URZ				S	Sb	06 12 56.9	-2.8
839nm,0.3s,baz=237,slow=22,SNR=17							
URZ	Urewera	3.16	235	PN	Pn	06 12 15.9	+2.4
URZ				AML	AML	06 12 60.0	
URZ				AML	AML	06 13 01.5	
URZ	Urewera	3.16	235	*e*Pn	Pn	06 12 15.9	+2.4
URZ				S	Sb	06 12 56.9	-2.8
MHGZ	Mahia Peninsul	3.32	216	PN	Pn	06 12 17.3	+1.7
MARZ	Manawahe	3.33	242	⇑PN	Pn	06 12 18.4	+2.7
KNZ	Kokohu	3.33	220	PN	Pn	06 12 17.1	+1.4
KNZ				AML	AML	06 13 02.1	
KNZ				AML	AML	06 13 06.8	
SNGZ	Shannon Statio	3.34	226	PN	Pn	06 12 18.0	+2.0
OPRZ	Ohinepanea	3.36	245	PN	Pn	06 12 18.4	+2.3
MYRZ	Mayor Island	3.43	255	PN	Pn	06 12 19.5	+2.4
RTZ	Ruatahuna	3.45	231	PN	Pn	06 12 20.1	+2.6
MUGZ	Murupara	3.51	234	PN	Pn	06 12 20.1	+1.9
TGRZ	Tauranga	3.53	248	PN	Pn	06 12 21.0	+2.4
TGRZ				AML	AML	06 13 07.7	
TGRZ				AML	AML	06 13 20.6	
TARZ	Mount Tarawera	3.56	239	PN	Pn	06 12 22.4	+3.4
RAHZ	Arahi	3.58	226	PN	Pn	06 12 21.1	+1.9
OMRZ	Omania	3.60	242	PN	Pn	06 12 22.3	+2.8
WHHZ	Waihua	3.60	223	PN	Pn	06 12 21.7	+2.2
RRRZ	Republican Roa	3.60	238	PN	Pn	06 12 21.9	+2.3
KARZ	Kaharoa	3.65	244	⇓PN	Pn	06 12 22.9	+2.7
HLRZ	Highlands Stat	3.67	240	PN	Pn	06 12 23.4	+2.8
PRRZ	Plateau Road	3.77	237	PN	Pn	06 12 24.1	+2.3
KUZ	Kuaotunu	3.77	265	⇓PN	Pn	06 12 23.7	+1.9
KUZ				AML	AML	06 12 24.9	
KUZ				AML	AML	06 13 11.1	
HSRZ	Hossack Road	3.78	240	PN	Pn	06 12 24.8	+2.9
HRRZ	Handcock Road	3.79	239	PN	Pn	06 12 24.6	+2.4
ALRZ	Allen Road	3.83	236	PN	Pn	06 12 24.9	+2.2
NMHZ	Naumai	3.86	226	PN	Pn	06 12 25.1	+2.0
ARHZ	Aropaoanui	3.87	223	⇓PN	Pn	06 12 25.1	+2.0
GRRZ	Galatos Road	3.89	240	PN	Pn	06 12 25.8	+2.3
WPRZ	Whakapatarin	3.93	238	PN	Pn	06 12 27.1	+3.0
MRHZ	Matea Rd	3.94	232	PN	Pn	06 12 26.6	+2.5
GRZ	Great Barrier	3.99	272	PN	Pn	06 12 27.1	+2.2
BKZ	Black Stump Fm	4.09	228	PN	Pn	06 12 27.8	+1.5
BKZ				AML	AML	06 13 20.1	
BKZ				AML	AML	06 13 20.5	
BKZ	Black Stump Fm	4.09	228	*e*Pn	Pn	06 12 28.2	+2.0
TOZ	Tahuroa Road	4.11	251	PN	Pn	06 12 28.6	+2.1
TOZ				AML	AML	06 13 20.9	
TOZ				AML	AML	06 13 21.8	
CKHZ	Cape Kidnapper	4.11	219	⇓PN	Pn	06 12 27.6	+1.1
MCHZ	McNeill Hill	4.16	224	⇓PN	Pn	06 12 28.9	+1.7
HATZ	Hinemaiaia	4.18	234	PN	Pn	06 12 29.0	+1.6
HATZ				AML	AML	06 13 21.3	
HATZ				AML	AML	06 13 29.7	
WIAZ	Waiheke Island	4.25	264	PN	Pn	06 12 31.2	+2.9
MKAZ	Moumakai	4.25	260	PN	Pn	06 12 30.6	+2.2
MKAZ				AML	AML	06 12 33.5	
MKAZ				AML	AML	06 13 22.1	
TLZ	Tolley Road	4.29	243	PN	Pn	06 12 31.5	+2.6
KWHZ	Kaweka Forest	4.30	226	PN	Pn	06 12 30.3	+1.1
KAHZ	Kahuranaki	4.32	219	PN	Pn	06 12 30.2	+0.8
WATZ	Wairara	4.32	238	PN	Pn	06 12 31.5	+2.1
WATZ				AML	AML	06 13 42.7	
WATZ				AML	AML	06 13 58.2	
RATZ	Rangitukua	4.37	236	AML	AML	06 13 39.5	
ETAZ	East Tamaki Re	4.42	262	⇑PN	Pn	06 12 33.7	+3.0
KBAZ	Karaka Road Bo	4.46	261	PN	Pn	06 12 34.8	+3.5
KRHZ	Kereru	4.48	224	PN	Pn	06 12 32.2	+0.7
PXZ	Pawanui	4.50	217	PN	Pn	06 12 31.8	-0.1
PXZ				AML	AML	06 13 28.1	
PXZ				AML	AML	06 13 28.1	
PXZ				AML	AML	06 13 28.6	
PXZ				AML	AML	06 13 28.6	
BHHZ	Black Hill Sta	4.55	227	PN	Pn	06 12 33.8	+1.1
KRVZ	Karewarewa	4.58	234	PN	Pn	06 12 35.4	+2.3
KRVZ				AML	AML	06 13 35.1	
KRVZ				AML	AML	06 13 35.6	
OTVZ	Oturere	4.60	233	AML	AML	06 13 39.5	
OTVZ				AML	AML	06 13 49.9	
WTVZ	West Tongariro	4.63	234	AML	AML	06 13 35.5	
WTVZ				AML	AML	06 13 46.7	
AWAZ	Awhitu Peninsu	4.66	261	PN	Pn	06 12 37.3	+3.3
RVAZ	Riverhead Bore	4.69	265	PN	Pn	06 12 37.9	+3.4
MOVZ	Moawhango	4.69	230	PN	Pn	06 12 35.4	+0.9
MOVZ				AML	AML	06 13 37.9	
MOVZ				AML	AML	06 13 37.9	
WTAZ	Waiatarua	4.70	263	PN	Pn	06 12 38.1	+3.5
WHVZ	Whangaehu Hut	4.72	232	PN	Pn	06 12 36.5	+1.4
FWVZ	Far West T-bar	4.73	233	AML	AML	06 13 36.5	
FWVZ				AML	AML	06 13 38.7	
WNVZ	Wahianoa	4.74	232	⇑PN	Pn	06 12 36.7	+1.4
WPHZ	Waipukurau	4.74	220	PN	Pn	06 12 35.4	+0.3
PNHZ	Pukenui	4.76	223	PN	Pn	06 12 35.9	+0.4
PRHZ	Porangahau	4.80	217	PN	Pn	06 12 35.7	-0.2
HIZ	Hauiti	4.85	244	PN	Pn	06 12 39.8	+3.2
HIZ	Hauiti	4.85	244	*e*Pn	Pn	06 12 40.3	+3.6
MTVZ	Mangateitei	4.85	232	PN	Pn	06 12 38.8	+2.0
MTVZ				AML	AML	06 13 42.6	
MTVZ				AML	AML	06 13 47.0	
WCZ	Waipu Caves	4.92	275	⇑PN	Pn	06 12 40.2	+2.5
TSZ	Takapari Road	4.99	223	PN	Pn	06 12 38.6	-0.1
TSZ				AML	AML	06 13 39.1	
TSZ				AML	AML	06 13 39.4	
ANWZ	Angora Road	5.02	217	PN	Pn	06 12 38.6	-0.4
DVHZ	Dannevirke	5.06	220	PN	Pn	06 12 39.4	-0.1
VRZ	Vera Road	5.19	238	PN	Pn	06 12 43.4	+2.1
VRZ				AML	AML	06 13 49.3	
VRZ				AML	AML	06 13 52.5	
BFZ	Birch Farm	5.31	217	PN	Pn	06 12 41.6	-1.3
BFZ				AML	AML	06 13 46.9	
BFZ				AML	AML	06 13 46.9	
BFZ				AML	AML	06 13 47.2	
BFZ				AML	AML	06 13 47.2	
BFZ	Birch Farm	5.31	217	*e*Pn	Pn	06 12 42.2	-0.7
POWZ	Post Office Ro	5.33	222	PN	Pn	06 12 43.6	+0.3
PRWZ	Pori Road	5.35	219	PN	Pn	06 12 43.2	-0.3
WAZ	Wanganui	5.37	231	AML	AML	06 13 57.0	
WAZ				AML	AML	06 14 05.4	
CPWZ	Castlepoint	5.50	215	PN	Pn	06 12 44.7	-0.9
TIWZ	Tintock	5.55	218	PN	Pn	06 12 45.6	-0.8
TIWZ				AML	AML	06 13 54.3	
TIWZ				AML	AML	06 13 55.1	
MRZ	Mangatainoka R	5.63	221	⇑PN	Pn	06 12 46.5	-0.8
OUZ	Omahuta	5.67	281	PN	Pn	06 12 50.0	+2.2
OUZ	Omahuta	5.67	281	*e*Pn	Pn	06 12 50.2	+2.3
TMWZ	Te Maipa	5.81	216	PN	Pn	06 12 48.0	-1.8
HOWZ	Holdsworth Sta	5.83	219	PN	Pn	06 12 49.0	-1.1
OGWZ	Otaki Gorge	5.96	222	PN	Pn	06 12 50.7	-1.1
MTW	Mount Morrison	6.03	218	AML	AML	06 14 02.6	
MTW				AML	AML	06 14 03.1	
KIW	Kapiti Island	6.13	223	AML	AML	06 14 05.2	
KIW				AML	AML	06 14 06.1	
TRWZ	Traveller	6.13	215	PN	Pn	06 12 51.8	-2.5
TRWZ				AML	AML	06 14 04.7	
TRWZ				AML	AML	06 14 07.0	
CAW	Cannon Point	6.22	220	PN	Pn	06 12 53.8	-1.6
CAW				AML	AML	06 14 08.0	
CAW				AML	AML	06 14 09.5	
PAWZ	Paruwai Farm	6.24	217	PN	Pn	06 12 53.8	-1.9
PAWZ				AML	AML	06 14 08.8	
PAWZ				AML	AML	06 14 14.3	
MSWZ	Moikau Station	6.35	218	PN	Pn	06 12 54.9	-2.4
MSWZ				AML	AML	06 14 10.2	
MSWZ				AML	AML	06 14 12.2	
PLWZ	Palliser	6.47	217	PN	Pn	06 12 56.4	-2.5
WEL	Wellington	6.50	221	AML	AML	06 14 15.0	
WEL				AML	AML	06 14 15.4	
BHW	Baring Head	6.54	220	PN	Pn	06 12 57.7	-2.1
BHW				AML	AML	06 14 14.4	
BHW				AML	AML	06 14 14.5	
SNZO	South Karori	6.55	221	*e*P

WKZ	Wanaka	12.00 222	ePn	Pn	Pn	06 14 17.6 +2.9
EAZ	Earnscleugh	12.11 220	PN	Pn	Pn	06 14 15.2 -0.9
TUZ	Tuapeka	12.45 217	PN	Pn	Pn	06 14 19.1 -1.7
MSZ	Milford Sound	12.51 225	PN	Pn	Pn	06 14 21.1 -0.5
MLZ	Mavora Lakes	12.83 222	PN	Pn	Pn	06 14 24.0 -2.0
MLZ	Mavora Lakes	12.83 222	ePn	Pn	Pn	06 14 27.6 +1.6
SYZ	Scrubby Hill	13.10 216	PN	Pn	Pn	06 14 28.3 -1.4
SYZ			AML	AML		06 16 55.5
SYZ			AML	AML		06 16 55.5
WHZ	Wether Hill Ro	13.26 221	PN	Pn	Pn	06 14 31.2 -0.7
WHZ	Wether Hill Ro	13.26 221	ePn	Pn	Pn	06 14 34.2 +2.3
DCZ	Deep Cove	13.43 224	PN	Pn	Pn	06 14 32.6 -1.5
DCZ	Deep Cove	13.43 224	ePn	Pn	Pn	06 14 37.2 +3.1
APZ	The Paps	13.87 218	PN	Pn	Pn	06 14 37.0 -3.2
PYZ	Puysegur Point	14.12 223	PN	Pn	Pn	06 14 39.6 -4.0
MSVF	Nonsavu	18.79 353	eP	P	P	06 15 42.6 -0.1
MSVF			pmax	pmax		
	comp=Z,22nm,0.7s					
MSVF	Nonsavu	18.79 353	eP	P	P	06 15 42.6 -0.1
	comp=Z,22nm,0.7s					
DZM	Mont Dzumac	18.79 316	P	P	P	06 15 43.2 +0.5
	comp=Z,2.4nm,0.3s,baz=179,slow=22,SNR=16					
DZM			LR	LR		06 21 58.5
	comp=Z,6µm,18.2s,baz=146,slow=34					
RAR	Rarotonga	23.02 54	P	P	P	06 16 27.5 -0.7
	comp=Z,46nm,1.0s,baz=212,slow=13,SNR=3.1					
RAR			S	S	S	06 20 34.2 -2.3
	comp=Z,22nm,0.8s,baz=202,slow=19,SNR=2.7					
RAR			LR	LR		06 26 12.2
	comp=Z,747nm,18.7s,baz=216,slow=39					
AFI	Afiamalu	23.55 19	P	P	P	06 16 32.8 -0.7
	comp=Z,34nm,0.8s,baz=62,slow=22,SNR=3.6					
AFI			S	S	S	06 20 40.8 -4.5
	comp=Z,18nm,0.8s,baz=225,slow=20,SNR=3.6					
AFI	Afiamalu	23.55 19	P	P	P	06 16 32.8 -0.7
AFI			S	S	S	06 20 40.8 -4.5
AFI			pmax	pmax		
	comp=Z,35nm,0.9s					
AFI			smax	smax		
	comp=N,18nm,0.8s					
ARMA	Armidale	24.70 276	eP	P	P	06 16 47.7 +3.5
	comp=N,178nm,1.8s					
CAN	Canberra	25.41 263	eP	P	P	06 16 50.7 +0.2
CAN			e*PP	pP	pP	06 16 58.1 -2.2
CAN	Canberra	25.41 263	eP	P	P	06 16 50.6 +0.2
CAN			epP	pP	pP	06 16 58.0 -2.2
TAU	Tasmania Unive	26.14 246	eP	P	P	06 17 00.0 +3.1
TAU			pmax	pmax		
	comp=Z,94nm,0.9s					
TAU	Tasmania Unive	26.14 246	eP	P	P	06 16 60.0 +3.1
	comp=Z,94nm,0.9s					
EIDS	Eidsvold	27.38 286	eP	P	P	06 17 09.9 +1.6
	comp=Z,87nm,1.5s					
TOO	Toolangi	27.80 257	P	P	P	06 17 16.6 +4.6
TOO			pmax	pmax		
	comp=Z,44nm,1.6s					
STKA	Stephens Creek	32.28 267	P	P	P	06 17 54.1 +2.5
	comp=Z,19nm,0.5s,baz=99,slow=11,SNR=24					
STKA			S	S	S	06 22 56.3 -6.6
	comp=Z,2.4nm,0.9s,baz=137,slow=19,SNR=2.0					
STKA			LR	LR		06 30 22.3
	comp=Z,1µm,20.9s,baz=104,slow=35					
STKA	Stephens Creek	32.28 267	eP	P	P	06 17 54.2 +2.5
	comp=Z,8.3nm,0.8s					
STKA			S	S	S	06 22 56.3 -6.6
PAE	Paea	32.45 63	eP	P	P	06 18 04.4 +11
	comp=Z,27nm,1.2s					
PAE	Paea	32.45 63	eT	T	T	06 50 18.5
	comp=Z,2.1nm,0.2s					
PPT2	Papeete2	32.50 63	eP	P	P	06 18 05.3 +12
	comp=Z,134nm,1.2s					
PPT2			eLQ	LQ		06 24 20.8
	comp=Z,2µm,25.0s					
PPT2			eLR	LR		06 26 00.2
	comp=Z,2µm,27.2s,baz=224					
PPT2	Papeete2	32.50 63	eT	T	T	06 50 22.7
	comp=Z,3.3nm,0.3s					
PPT	Papeete	32.52 63	P	P	P	06 17 51.7 -2.1
	comp=Z,51nm,1.0s,baz=266,slow=13,SNR=3.0					
PPT			LR	LR		06 30 22.2
	comp=Z,702nm,18.5s,baz=233,slow=35					
TIAR	Tiarei	32.69 63	eP	P	P	06 18 06.8 +11
	comp=Z,42nm,0.8s					
HNR	Honiara	32.71 320	P	P	P	06 17 55.4 -0.1
	comp=Z,42nm,0.4s,baz=170,slow=17,SNR=2.4					
CTA	Charters Tower	34.00 289	P	P	P	06 18 08.2 +1.4
	comp=Z,56nm,0.9s,baz=120,slow=9.7,SNR=59					
CTA			S	S	S	06 23 26.4 -3.4
	comp=Z,1.3nm,0.3s,baz=200,slow=12,SNR=2.1					
CTAO	Charters Tower	34.00 289	eP	P	P	06 18 07.6 +0.8
CTAO	Charters Tower	34.00 289	eP	P	P	06 18 07.6 +0.8
	comp=Z,565nm,1.1s					
BBOO	Bookleboo	36.42 262	eP	P	P	06 18 29.7 +2.2
	comp=Z,112nm,1.6s					
COEN	Coen	40.10 294	eP	P	P	06 18 59.6 +1.0
	comp=Z,38nm,0.9s					
PMG	Port Moresby	40.42 303	P	P	P	06 19 01.9 +0.6
	comp=Z,8.6nm,0.5s,baz=158,slow=6.5,SNR=4.0					
PMG			S	S	S	06 25 06.2 -1.4
	comp=Z,4.0nm,0.3s,baz=80,slow=18,SNR=3.2					
PMG			LR	LR		06 33 57.5
	comp=Z,1µm,18.2s,baz=156,slow=33					
PMG	Port Moresby	40.42 303	eP	P	P	06 19 02.4 +1.1
	comp=Z,22nm,0.8s					
PMG			S	S	S	06 25 06.2 -1.4
RKT	Rikitea	40.61 84	eS	S	S	06 25 06.3 -3.8
	comp=Z,670nm,28.0s					
RKT			eLR	LR		06 29 36.8
	comp=Z,2µm,33.5s,baz=234					
AS01	Alice Springs	41.80 275	eP	P	P	06 19 13.1 +0.5
AS31	Alice Springs	41.84 274	eP	P	P	06 19 13.9 +0.9
	comp=Z,24nm,0.6s					
ASAR	Alice Springs	41.84 274	P	P	P	06 19 13.6 +0.7
	comp=Z,62nm,0.8s,baz=116,slow=6.7,SNR=126					
ASAR			S	S	S	06 25 28.3 -0.3
	comp=Z,19nm,1.2s,baz=120,slow=14,SNR=8.6					
ASAR			LR	LR		06 37 09.7
	comp=Z,1µm,18.6s,baz=124,slow=37					
ASAR	Alice Springs	41.84 274	P	P	P	06 19 13.6 +0.7
ASAR			S	S	S	06 25 28.3 -0.3
ASAR			pmax	pmax		
	comp=Z,50nm,0.6s					
ASAR			smax	smax		
	comp=N,19nm,1.2s					
ASAR			MLR	MLR		
	comp=Z,1µm,18.6s					
SBA	Scott Base	41.89 184	eP	P	P	06 19 17.9 +5.3
SBA			pmax	pmax		
	comp=Z,31nm,1.1s					
SBA	Scott Base	41.89 184	eP	P	P	06 19 17.9 +5.3
	comp=Z,32nm,1.1s					
VNDA	Vanda	41.92 186	P	P	P	06 19 16.2 +3.3
	comp=Z,2.8nm,0.7s,baz=19,slow=6.2,SNR=21					
VNDA			LR	LR		06 33 14.1
	comp=Z,896nm,20.1s,baz=32,slow=31					
VNDA	Vanda	41.92 186	eP	P	P	06 19 16.6 +3.8
	comp=Z,56nm,2.0s					
WB2	Warramunga Arr	43.37 279	eP	P	P	06 19 25.8 +0.4
	comp=Z,68nm,0.6s					
WRAB	Tennant Creek	43.37 280	c iP	P	P	06 19 25.8 +0.4
WRAB			pmax	pmax		
	comp=Z,109nm,0.7s					
WRAB	Tennant Creek	43.37 280	eP	P	P	06 19 26.1 +0.8
	comp=Z,59nm,0.6s					
WRA	Warramunga Arr	43.38 279	P	P	P	06 19 25.6 +0.1
	comp=Z,35nm,0.3s,baz=119,slow=7.8,SNR=250					
WRA			PcP	PcP	PcP	06 21 13.8 +0.2
	comp=Z,4.7nm,0.9s,baz=128,slow=3.9,SNR=5.6					
WRA			S	S	S	06 25 49.2 -2.0
	comp=Z,13nm,1.1s,baz=124,slow=14,SNR=14					
WRA			LR	LR		06 38 18.2
	comp=Z,3µm,18.1s,baz=125,slow=37					
TAOE	Nuku Hiva Isla	45.13 62	eS	S	S	06 26 17.5 +0.6
	comp=Z,630nm,25.1s					
TAOE			eLQ	LQ		06 29 58.0
	comp=Z,4µm,27.3s					
TAOE			eLR	LR		06 31 36.3
	comp=Z,1µm,30.8s					
JAY	Jayapura	49.81 303	LR	LR		06 41 01.4
	comp=Z,21nm,18.1s,baz=6.0,slow=36					
NWAO	Narrogin (SRO)	51.23 254	LR	LR		06 40 19.4
	comp=Z,438nm,19.4s,baz=353,slow=34					
NWAO	Narrogin (SRO)	51.23 254	eP	P	P	06 20 26.2 -0.2
NWAO			pmax	pmax		
	comp=Z,149nm,0.9s					
NWAO	Narrogin (SRO)	51.23 254	eP	P	P	06 20 26.1 -0.2
	comp=Z,149nm,0.9s					
FITZ	Fitzroy Crossi	51.31 276	eP	P	P	06 20 28.6 +1.4
	comp=Z,84nm,1.0s					
MBWA	Marble Bar	54.48 269	eP	P	P	06 20 50.5 0.0
	comp=Z,263nm,1.0s					
FAKI	Fak Fak	55.46 295	eP	P	P	06 20 56.9 -0.8
	comp=Z,25nm,0.9s					
MIR	Mirnyy	56.13 209	i P	P	P	06 21 04.0 +2.3
MIR			pmax	pmax		
	comp=Z,4.0nm,1.0s					
SWI	Sorong	57.58 296	P	P	P	06 21 14.5 +1.8
	comp=Z,73nm,1.4s,comp=Z,5µm					
MSAI	Masohi	57.62 292	P	P	P	06 21 15.0 +2.0
MMRI	Maumere	59.42 283	eP	P	P	06 21 25.9 +0.3
	comp=Z,236nm,1.7s					
LBMI	Labuha	60.48 294	P	P	P	06 21 32.6 -0.3
SANI	Sanana	60.67 291	P	P	P	06 21 35.6 +1.4
	comp=Z,99nm,1.2s,comp=Z,1µm					
KAPI	Kappang	63.58 284	eP	P	P	06 21 54.3 +0.6
	comp=Z,21nm,1.1s					
MAW	Mawson	66.17 202	P	P	P	06 22 12.0 +2.3
	comp=Z,17nm,1.0s,baz=112,slow=8.2,SNR=14					
MAW			LR	LR		06 49 58.6
	comp=Z,643nm,19.0s,baz=96,slow=35					
MAW	Mawson	66.17 202	P	P	P	06 22 12.0 +2.3
MAW			pmax	pmax		
	comp=Z,17nm,1.0s					
MAW	Mawson	66.17 202	eP	P	P	06 22 12.4 +2.7
	comp=Z,8.4nm,1.3s					
BBKI	Banjar Baru	68.38 282	P	P	P	06 22 25.1 +0.5
	comp=Z,111nm,1.0s,comp=Z,6µm					
PCJI	Pacitan	68.48 276	P	P	P	06 22 26.9 +1.7
SYO	Syowa Base	70.90 194⇑	iP	P	P	06 22 39.6 +0.4
SYO	Syowa Base	70.90 194⇑	epP	P	P	06 22 42.1 +2.9
SYO	Syowa Base	70.90 194⇓	iSP	P	P	06 22 45.0 +5.8
CISI	Cisompet, Garu	71.55 274	eP	P	P	06 22 43.9 -0.2
	comp=Z,63nm,0.6s					
SNAA	Sanae	72.12 179	P	P	P	06 22 48.0 +1.3
SNAA	Sanae	72.12 179	eP	P	P	06 22 47.5 +0.8
SNAA	Sanae	72.12 179	eP	P	P	06 22 47.8 +1.1
	comp=Z,4µm,1.5s					
LEM	Lembang	72.13 275	P	P	P	06 22 48.8 +1.1
VNA3	Neumayer Olymp	72.33 177	P	P	P	06 22 49.0 +1.1
NVL	N'lazarevskaya	72.74 184	eP	P	P	06 22 52.9 +2.7
VNA2	Neumayer--Watz	72.75 177	P	P	P	06 22 51.9 +1.6
	baz=181,slow=5.0					
CBIJ	Chichi jima	72.76 325	P	P	P	06 22 51.6 +0.7
JCJ	Chichijima	72.76 325	P	P	P	06 22 51.6 +0.7
	comp=Z,35nm,0.5s,baz=273,slow=22,SNR=5.2					
JCJ			LR	LR		06 50 39.2
	comp=Z,93nm,20.2s,baz=126,slow=32					
VNA1	Neumayer--Stat	72.99 177	P	P	P	06 22 53.3 +1.6
STKI	Sintang	73.19 283	P	P	P	06 22 54.9 +1.1
KKM	Kota Kinabalu	73.31 291	eP	P	P	06 22 54.3 -0.3
KKM			epP	pP	pP	06 23 06.2 +0.9
CGJI	Cibinong	73.80 274	P	P	P	06 22 55.8 -1.6
SBUM	Sibu	74.09 285	eP	P	P	06 22 59.3 +0.2
	comp=Z,17nm,1.0s					
KSM	Kuching	74.97 283	eP	P	P	06 23 03.8 -0.5
KSM			epP	pP	pP	06 23 16.4 +1.4
TGY	Tagaytay City	75.29 300	LR	LR		06 54 43.3
	comp=Z,73nm,19.4s,baz=116,slow=34					
KASI	Kota Agung	75.40 274	P	P	P	06 23 06.8 +0.1
MASI	Maura Aman, Be	78.62 275	P	P	P	06 23 23.2 -1.7
PLCA	Paso Flores	79.34 133	P	P	P	06 23 29.7 +1.2
	comp=Z,8.7nm,0.7s,baz=257,slow=5.5,SNR=34					
PLCA			LR	LR		06 52 06.0
	comp=Z,316nm,18.0s,baz=252,slow=31					
PLCA	Paso Flores	79.34 133	eP	P	P	06 23 29.4 +0.8
	comp=Z,24nm,1.0s					
TPUB	Ta-pu	81.94 307	eP	P	P	06 23 40.5 -1.9
TPUB			epP	pP	pP	06 23 52.9 -0.4
SSLB	Suanglung	82.08 307	eP	P	P	06 23 41.2 -1.9
SSLB			epP	pP	pP	06 23 52.5 -1.5
MJAR	Matsushiro Arr	82.53 327	P	P	P	06 23 45.6 +0.4
	comp=Z,1.5nm,0.8s,baz=152,slow=5.4,SNR=3.1					
PSI	Prapat	84.80 277	eP	P	P	06 23 55.7 -1.9
PSI			pmax	pmax		
	comp=Z,21nm,1.1s					
PSI	Prapat	84.80 277	eP	P	P	06 23 55.7 -1.9
	comp=Z,21nm,1.1s					
GSI	Gunungsitoli	84.99 275	P	P	P	06 24 01.5 +3.1
GSI	Gunungsitoli	84.99 275	eP	P	P	06 23 59.5 +1.1
	comp=Z,58nm,0.9s					
GSI			epP	pP	pP	06 24 06.4 -2.9
TRQA	Tornquist	86.08 135	eP	P	P	06 24 04.4 +0.9
TRQA			epP	sP	sP	06 24 16.5 -1.9
KSRS	Korea Array	88.16 321	P	P	P	06 24 13.8 +0.7
	comp=Z,7.4nm,0.6s,baz=141,slow=6.2,SNR=10					
KSRS			LR	LR		06 58 59.3
	comp=Z,82nm,20.8s,baz=148,slow=32					
KSAR	Wonju Array Be	88.17 321	P	P	P	06 24 13.8 +0.6
KSAR	Wonju Array Be	88.17 321	P	P	P	06 24 13.8 +0.6
KS01	Wonju Array Si	88.19 321	eP	P	P	06 24 13.3 0.0
NJ2	Nanjing	89.23 312	eP	P	P	06 24 18.7 +0.3
NJ2			pmax	pmax		
	comp=Z,16nm,0.5s					
NIKH	Nikolski High	89.58 6	eP	P	P	06 24 19.4 0.0
NONG	Nongkai	90.76 292	P	P	P	06 24 26.4 +0.5
	comp=Z,37nm,0.9s,comp=Z,12µm					
MONP2	Monument Peak	90.80 49	P	P	P	06 24 28.0 +1.9
	baz=226					
IKP	In-Ko-Pah, Jac	90.83 49	P	P	P	06 24 27.2 +1.2
	baz=226					
MURC	Murrieta	90.83 48	P	P	P	06 24 27.4 +1.5
	baz=226					
ARVC	Arvin	90.95 46	P	P	P	06 24 27.5 +1.2
	baz=225					
BFSC	Mount Baldy Ra	91.00 47	P	P	P	06 24 27.6 +0.8
	baz=225					
PET	Petropavlovsk	91.12 347	eP	P	P	06 24 26.3 -0.4
PET			eS	S	S	06 35 20.5 -1.2
PET			pmax	pmax		
	comp=Z,70nm,2.0s					
EDW2	Edwards Air Fo	91.26 46	P	P	P	06 24 28.4 +0.6
	baz=225					
PFO	Pinyon Flats O	91.28 48	P	P	P	06 24 28.4 +0.3
	baz=270,slow=3.3					
PFO	Pinyon Flats O	91.28 48	P	P	P	06 24 29.2 +1.1
	baz=226					
PFO	Pinyon Flats O	91.28 48	eP	P	P	06 24 29.5 +1.4
PFO			pmax	pmax		
	comp=Z,19nm,1.1s					
PFO	Pinyon Flats O	91.28 48	eP	P	P	06 24 29.5 +1.4
	comp=Z,18nm,1.1s					
PEA0	Petropavlovsk-	91.38 347	eP	P	P	06 24 27.9 0.0
PEA0B	Petropavlovsk-	91.38 347	eP	P	P	06 24 28.1 +0.2
PETK	Petropavlovsk-	91.38 347	P	P	P	06 24 27.9 +0.1
	comp=Z,29nm,0.6s,baz=119,slow=6.8,SNR=18					
PETK			LR	LR		06 59 01.3
	comp=Z,181nm,21.0s,baz=159,slow=31					
PETK	Petropavlovsk-	91.38 347	P	P	P	06 24 28.0 +0.1
PETK			pmax	pmax		
	comp=Z,27nm,0.6s					
PBKT	Sadao Pong	91.49 289	P	P	P	06 24 32.0 +2.7
USRK	Ussuriysk Ar.	91.52 327	P	P	P	06 24 28.8 0.0
	comp=Z,3.8nm,0.8s,baz=168,slow=3.5,SNR=7.4					
USRK			LR	LR		07 03 31.8
	comp=Z,93nm,18.3s,baz=146,slow=34					
HSIG		91.65 55	eP	P	P	06 24 30.5 +0.7
HSIG			epP	sP	sP	06 24 43.3 -1.3
BELC	Belle Mtn. Jos	91.83 48	P	P	P	06 24 31.8 +1.1
	baz=226					
LRMC	Laurel Mtn Rad	91.86 46	P	P	P	06 24 31.5 +0.7
	baz=225					
GLA	Glamis	91.88 49	P	P	P	06 24 32.4 +1.6
	baz=227					
GLA	Glamis	91.88 49	eP	P	P	06 24 32.4 +1.6
GLA			pmax	pmax		
	comp=Z,24nm,0.9s					
GLA	Glamis	91.88 49	eP	P	P	06 24 32.4 +1.6
	comp=Z,24nm,0.9s					
BC3	Big Chuckawall	91.92 49	P	P	P	06 24 32.5 +1.5
	baz=226					
CMB	Columbia Colle	92.15 43	eP	P	P	06 24 32.1 +0.2
CMB			e*PP	sP	sP	06 24 45.2 -1.7
CMB			pmax	pmax		
	comp=Z,9.0nm,1.0s					
CMB	Columbia Colle	92.15 43	eP	P	P	06 24 32.1 +0.2
	comp=Z,8.9nm,1.0s					
CMB			epP	sP	sP	06 24 45.2 -1.7
HEC	Hector,Ludlow	92.20 47	P	P	P	06 24 33.2 +1.0
	baz=226					
GSC	Goldstone, Bar	92.25 47	P	P	P	06 24 33.5 +0.9
	baz=226					
GSC	Goldstone, Bar	92.25 47	eP	P	P	06 24 33.4 +0.9
GSC			pmax	pmax		
	comp=Z,25nm,1.4s					
GSC	Goldstone, Bar	92.25 47	eP	P	P	06 24 33.4 +0.9
	comp=Z,25nm,1.4s					
MPMC	Manual Prospec	92.38 46	P	P	P	06 24 34.0 +0.8
	baz=225					
214A	Organ Pipe Nat	92.40 51	P	P	P	06 24 34.5 +1.3
	baz=228					
214A	Organ Pipe Nat	92.40 51	eP	P	P	06 24 34.0 +0.8
	comp=Z,29nm,1.1s					
IRM	Iron Mountain	92.45 48	P	P	P	06 24 34.7 +1.3
	baz=227					
AFDM	Forest Hills D	92.49 42	eP	P	P	06 24 33.6 +0.2
Y12C	Blythe	92.55 49	eP	P	P	06 24 35.4 +1.6
GMRC	Granite Mounta	92.57 48	P	P	P	06 24 35.0 +1.0
	baz=226					
PB01	IPOC Station P	92.73 119	eP	P	P	06 24 36.2 +0.9
PB01			epP	pP	pP	06 24 47.4 +1.2
MDJ	Mudanjiang	92.90 326	P	P	P	06 24 37.9 +2.7
MDJ			pmax	pmax		
	comp=Z,8.0nm,1.2s					
MDJ			pmax	pmax		
	comp=Z,180nm,6.0s					
WAKR	Walker	93.01 43	eP	P	P	06 24 36.6 +0.5
O03D	Paynes Creek	93.03 40	P	P	P	06 24 36.7 +0.7
	baz=223					
N02D	Trinity Center	93.06 39	P	P	P	06 24 37.7 +1.6
	baz=222					
LDFC	Landfair	93.10 48	eP	P	P	06 24 38.1 +1.7
	comp=Z,26nm,1.0s					
M02C	Callahan	93.29 39	P	P	P	06 24 38.1 +0.9
	baz=222					
GYA	Guiyang	93.44 300	P	P	P	06 24 40.2 +1.9
GYA			pP	sP		06 24 53.2 0.0
GYA			sP	pP		06 24 58.0 +8.8
GYA			PP	PP		06 28 27.9 +4.7
GYA			SKS	SKSac		06 35 10.0 -0.2
GYA			S	S		06 35 43.2 -0.8
GYA			sS	sS		06 36 04.4 +2.1
GYA			pmax	pmax		
	comp=Z,20nm,1.0s					
GYA			pmax	pmax		
	comp=Z,130nm,5.8s					
NV01	Mina Array Sit	93.58 44	eP	P	P	06 24 38.3 -0.4
NVAR	Mina Array Bea	93.58 44	P	P	P	06 24 38.6 -0.1
	comp=Z,2.3nm,0.9s,baz=220,slow=7.3,SNR=12					
NVAR			LR	LR		07 00 11.6
	comp=Z,180nm,18.8s,baz=239,slow=31					
YBH	Yreka Blue Hor	93.62 39	P	P	P	06 24 38.8 +0.1
	comp=Z,4.2nm,1.1s,baz=244,slow=4.5,SNR=4.5					
YBH	Yreka Blue Hor	93.62 39	eP	P	P	06 24 39.9 +1.3
	comp=Z,8.2nm,1.1s					
NV11	Mina Array Sit	93.66 44	eP	P	P	06 24 39.1 +0.1
TPNV	Topopah Spring	93.71 46	P	P	P	06 24 40.1 +0.7
	baz=226					
TPNV	Topopah Spring	93.71 46	eP	P	P	06 24 40.0 +0.7
TPNV			pmax	pmax		
	comp=Z,7.0nm,0.9s					
TPNV	Topopah Spring	93.71 46	eP	P	P	06 24 40.0 +0.7
	comp=Z,7.1nm,0.9s					
W13A	Hualapai Mount	93.85 49	eP	P	P	06 24 41.0 +1.0
TUC	Tucson	93.92 52	P	P	P	06 24 42.1 +1.9
	baz=229					
TUC	Tucson	93.92 52	eP	P	P	06 24 41.9 +1.6
TUC			pmax	pmax		
	comp=Z,40nm,1.8s					
TUC	Tucson	93.92 52	eP	P	P	06 24 41.9 +1.6
	comp=Z,40nm,1.8s					
SHPR	Sheep Range	94.04 47	eP	P	P	06 24 42.5 +1.6
	comp=Z,8.8nm,1.5s					
M04C	Macdoel	94.10 39	P	P	P	06 24 41.1 +0.1
	baz=223					
HUMO	Hull Mountain	94.14 38	eP	P	P	06 24 42.5 +1.5
	comp=Z,29nm,1.6s					
CMAR	Chiang Mai Arr	94.17 290	P	P	P	06 24 42.9 +1.3
	baz=144,slow=3.5					
CN2	Changchun	94.20 324	eP	P	P	06 24 44.2 +3.1
X16A	Lo Mia Camp, P	94.89 50	eP	P	P	06 24 46.0 +1.1
MOD	Modoc Plateau	94.97 40	eP	P	P	06 24 45.0 +0.1
R11A	Troy Canyon, C	95.06 45	P	P	P	06 24 45.3 -0.1
	baz=227					
K05A	Summer Lake	95.26 39	eP	P	P	06 24 47.6 +1.2
KMI	Kunming	95.38 297	P	P	P	06 24 49.6 +2.3
KMI			pmax	pmax		
	comp=Z,12nm,0.6s					
KMI			pmax	pmax		
	comp=Z,100nm,4.7s					
J05D	Fort Rock, OR	95.50 39	P	P	P	06 24 47.6 +0.3
	baz=224					
LCMT	Little Creek M	95.52 47	eP	P	P	06 24 48.4 +0.9
KLR	Kul'dur	95.62 330	P	P	P	06 24 49.0 +1.4
	comp=Z,0.3nm,0.3s,baz=148,slow=9.5,SNR=2.1					
KLR			LR	LR		07 03 00.8
	comp=Z,98nm,20.4s,slow=32					
KLR	Kul'dur	95.62 330	P	P	P	06 24 49.0 +1.4
KNB	Kanab	95.77 48	eP	P	P	06 24 49.8 +1.0
KNB	Kanab	95.77 48	eP	P	P	06 24 49.8 +1.0
H04A	Detroit Lake	96.04 37	eP	P	P	06 24 50.3 +0.7
I05D	Terrebonne, OR	96.21 38	P	P	P	06 24 50.5 +0.1
	baz=224					
WVOR	Wild Horse Val	96.22 41	eP	P	P	06 24 50.6 0.0
WVOR	Wild Horse Val	96.22 41	eP	P	P	06 24 50.6 0.0
BJI	Beijing	96.33 316	P	P	P	06 24 51.1 +0.1
BJI			PP	PP	PP	06 28 43.0 -2.3
BJI			SKS	SKSac		06 35 20.1 -4.6
BJI			S	S		06 36 10.8 +2.6
BJI			pmax	pmax		
	comp=Z,8.0nm,1.8s					
BJI			pmax	pmax		
	comp=Z,200nm,4.2s					
BJI			LR	LR		
	comp=Z,100nm,22.6s					
BJI			LR	LR		
	comp=Z,170nm,16.6s					
TX31	Lajitas Ar. Si	96.75 59	eP	P	P	06 24 53.0 -0.4
TXAR	Lajitas Array	96.75 59	P	P	P	06 24 53.0 -0.3
	comp=Z,1.3nm,1.1s,baz=196,slow=8.7,SNR=8.0					
TXAR			LR	LR		07 00 59.3
	comp=Z,106nm,19.4s,baz=0.0,slow=31					
LPAZ	La Paz	96.79 116	P	P	P	06 24 54.6 +0.1
	comp=Z,2.0nm,0.7s,baz=202,slow=3.3,SNR=10.0					
LPAZ			LR	LR		07 01 11.5
	comp=Z,159nm,18.5s,baz=204,slow=31					
LPAZ	La Paz	96.79 116	eP	P	P	06 24 55.1 +0.6
MTPU	Mount Pierson	96.83 47	eP	P	P	06 24 55.2 +1.4
CPUP	Villa Florida	97.18 130	P	P	P	06 24 55.4 0.0
	comp=Z,1.4nm,0.9s,baz=188,slow=5.8,SNR=4.0					
CPUP			LR	LR		07 01 37.6
	comp=Z,232nm,19.9s,baz=216,slow=31					
G08A	Pilot Rock	98.07 38	eP	Pdif		06 24 59.0 +0.1
CD2	Chengdu	98.19 302	P	Pdif		06 25 00.1 +0.3
CD2			sP	sP		06 25 16.4 +1.7
CD2			PP	PP		06 29 00.4 +0.5
CD2			SKS	SKSac		06 35 34.2 -0.7
CD2			S	S		06 36 24.8 0.0
CD2			sS	sS		06 36 44.0 +0.9
CD2			pmax	pmax		
	comp=Z,20nm,0.5s				

LZH LR LR
comp=Z,250nm,12.1s
LZH LR LR
comp=Z,280nm,15.6s
LZH LR LR
comp=Z,190nm,15.0s
PDAR Pinedale Array 101.42 45 P **Pdif 06 25 12.5 -1.5**
comp=Z,0.2nm,0.6s,baz=246,slow=4.4,SNR=2.3
PDAR PKKP **PKKPdf 06 41 27.8 -2.0**
comp=Z,0.2nm,0.3s,baz=79,slow=7.7,SNR=4.1
ILAR Eielson Array 104.14 14 PKiKP **PKiKP 06 29 41.6 -0.4**
comp=Z,0.3nm,0.5s,baz=233,slow=4.3,SNR=7.2
ILAR PKKP **PKKPdf 06 41 26.8 +1.6**
comp=Z,0.3nm,0.4s,baz=5.4,slow=2.7,SNR=7.7
INK Inuvik 109.98 17 PKiKP **PKiKP 06 29 52.0 -0.8**
comp=Z,0.5nm,0.6s,baz=143,slow=2.0,SNR=5.0
BOSA Boshof 111.16 203 PKiKP **PKiKP 06 29 56.8 +0.2**
comp=Z,3.4nm,1.1s,baz=158,slow=5.4,SNR=2.8
YKA Yellowknife Ar 111.48 27 Pdiff **Pdif 06 25 59.5 +1.6**
comp=Z,0.1nm,0.8s,baz=211,slow=4.3,SNR=2.7
YKA PKiKP **PKiKP 06 29 54.6 -1.2**
comp=Z,0.5nm,0.4s,baz=240,slow=1.5,SNR=28
YKA PKKPbc **PKKPbc 06 40 49.5 -2.3**
comp=Z,0.8nm,0.6s,baz=41,slow=3.5,SNR=20
TIXI Tiksi 113.75 344 PKiKP **PKiKP 06 29 58.9 -0.9**
comp=Z,1.2nm,0.3s,baz=320,slow=3.0,SNR=4.0
MKAR Makanchi Array 120.55 308 PKP **PKPdf 06 30 12.7 -1.0**
comp=Z,2.3nm,1.0s,baz=137,slow=0.7,SNR=7.2
MKAR PKKPbc **PKKPbc 06 40 19.8 +0.2**
comp=Z,0.6nm,0.6s,baz=289,slow=3.7,SNR=5.8
ZALV Zalesovo Beam 121.59 316 PKP **PKPdf 06 30 14.7 -0.7**
comp=Z,0.6nm,0.3s,baz=127,slow=2.2,SNR=2.9
KSH Kashi 122.04 298 *e*PKP **PKPdf 06 30 17.8 +0.8**
KSH *es*PKP 06 30 32.1
KSH *e*PP **PP 06 31 53.2 +0.9**
KSH SKS **SKSdf 06 37 25.0 -1.3**
KSH AMB AMB
comp=Z,120nm,5.8s
KSH LR LR
comp=Z,270nm,7.5s
KSH LR LR
comp=Z,160nm,8.3s
KSH LR LR
comp=Z,170nm,8.8s
LSZ Lusaka 122.22 212 *e*PKIKP **PKPdf 06 30 18.9 +0.8**
LSZ Lusaka 122.22 212 *e*PKPdf **PKPdf 06 30 18.9 +0.8**
TKM2 Tokmak 2 123.57 302 *e*PKIKP **PKPdf 06 30 19.2 -0.7**
TKM2 Tokmak 2 123.57 302 *e*PKPdf **PKPdf 06 30 19.2 -0.7**
KURK Kurchatov 124.16 311 PKiKP **PKPdf 06 30 19.5 -1.0**
KURK pmax pmax
comp=Z,3.0nm,0.7s
KURK Kurchatov 124.16 311 PKP **PKPdf 06 30 19.5 -1.0**
KURBB Kurchatov Arra 124.19 311 PKP **PKPdf 06 30 19.5 -1.0**
comp=Z,2.6nm,0.7s,baz=112,slow=1.8,SNR=19
AAK Ala-Archa 124.23 301 PKP **PKPdf 06 30 20.9 -0.2**
comp=Z,0.9nm,0.5s,baz=162,slow=5.6,SNR=4.4
NRIK Noril'sk 124.59 334 PKP **PKPdf 06 30 19.6 -1.2**
comp=Z,1.6nm,0.4s,baz=35,slow=0.6,SNR=5.5
EKS2 Erkin-Say 124.73 301 *e*PKIKP **PKPdf 06 30 21.3 -0.8**
EKS2 Erkin-Say 124.73 301 *e*PKPdf **PKPdf 06 30 21.3 -0.8**
KKAR Karatay Array 127.15 300 *e*PKIKP **PKPdf 06 30 26.5 0.0**
KKAR Karatay Array 127.15 300 *e*PKPdf **PKPdf 06 30 26.5 0.0**
BVAR Borovoye Array 129.67 312 PKhKP PKPpre 06 30 21.4
comp=Z,0.5nm,0.4s,baz=187,slow=2.3,SNR=3.1
BVAR PKP **PKPdf 06 30 30.5 -0.4**
comp=Z,1.0nm,0.5s,baz=98,slow=3.0,SNR=9.2
BRVK Borovoye 129.74 313 *i* PKIKP **PKPdf 06 30 30.7 -0.4**
BRVK Borovoye 129.74 313 *e*PKPdf **PKPdf 06 30 30.2 -0.8**
SCHQ Schefferville 131.55 45 PKP **PKPdf 06 30 34.9 +0.5**
comp=Z,3.8nm,0.9s,baz=216,slow=5.6,SNR=3.9
GEYT Alibeck 134.65 290 PKP **PKPdf 06 30 41.8 +0.9**
comp=Z,1.2nm,0.3s,baz=281,slow=0.7,SNR=2.5
GEYT SKPbc **SKPab 06 34 12.7 +0.9**
comp=Z,6.9nm,0.8s,baz=212,slow=1.4,SNR=10
ARU Arti 136.75 316 PKP **PKPdf 06 30 43.2 -1.0**
comp=Z,2.2nm,0.3s,baz=76,slow=4.2,SNR=4.3
ARU Arti 136.75 316 *i* PKIKP PKPdf 06 30 57.2 +13
ARCES ARCESS Array B 144.18 345 PKP **PKPab 06 30 55.2 +0.2**
comp=Z,6.0nm,0.4s,baz=28,slow=2.2,SNR=81
ARE0 ARCESS Array S 144.18 345 *e*PKPdf **PKPab 06 30 54.7 -0.3**
DGRG David-gareji 144.99 292 P **PKPdf 06 30 59.5 0.0**
DGRG David-gareji 144.99 292 PKIKP **PKPdf 06 30 59.5 0.0**
KTK1 Kautokeino 145.07 346 *e*PKPdf **PKPbc 06 30 57.6 -0.7**
KTK1 IAmb IAmb 06 30 57.8
comp=Z,53nm,1.1s
GNI Garni 145.29 290 *i* PKP2 **PKPbc 06 30 59.0 -1.1**
GNI Garni 145.29 290 *e*PKPdf **PKPbc 06 31 00.2 +0.2**
TRO Tromso 145.29 349 *e*PKPdf **PKPbc 06 30 58.4 -0.5**
KLMR Klimovskoe 145.32 327 *e*PKP2 **PKPbc 06 30 56.7 -2.5**
KLMR pmax pmax
comp=Z,23nm,0.6s
TBLG Delisi 145.49 293 P **PKPdf 06 31 00.1 -0.3**
TBLG Delisi 145.49 293 PKIKP **PKPdf 06 31 00.1 -0.3**
GUDG Gudauri 145.75 294 P **PKPab 06 31 03.0 +1.0**
ZEI Tsey 146.20 294 *i* PKP2 **PKPbc 06 31 03.1 +0.2**
ZEI pmax pmax
comp=Z,43nm,0.8s
ONI Oni 146.52 294 P **PKPbc 06 31 03.7 +0.1**
ONI Oni 146.52 294 PKP2 **PKPbc 06 31 03.7 +0.1**
GOF Gofitskoye 146.91 298⇑ *e*PKP2 **PKPbc 06 31 03.9 -0.7**
GOF pmax pmax
comp=Z,43nm,1.0s
KBZ Khabaz 146.99 296 PKPbc **PKPbc 06 31 04.2 -0.5**
comp=Z,14nm,0.9s,baz=115,slow=1.7,SNR=33
KIV Kislovodsk 147.15 296 *i* PKIKP **PKPdf 06 31 04.1 +0.9**
KIV pmax pmax
comp=Z,15nm,1.0s
VRH Novokhopyorsk 147.24 310 *e*PKP2 **PKPbc 06 31 04.8 -0.5**
VRH pmax pmax
comp=Z,50nm,0.8s
STEI Steigen 147.41 350 *e*PKPdf **PKPbc 06 31 04.8 -0.4**
MOS Moscow 148.34 319 *i* PKIKP **PKPdf 06 31 06.1 +1.5**
MOS pmax pmax
comp=Z,105nm,1.5s
LPSR Galich'ya Gora 148.61 313 *e*PKP2 **PKPbc 06 31 09.2 +0.3**
LPSR pmax pmax
comp=Z,40nm,0.8s
VSR Storozhevoye 148.81 310 *e*PKIKP **PKPbc 06 31 08.5 -0.9**
VSR pmax pmax
comp=Z,40nm,1.6s
OBN Obninsk 149.13 319 PKPbc **PKPbc 06 31 09.9 -0.2**
comp=Z,26nm,0.3s,baz=58,slow=2.2,SNR=3.9
OBN Obninsk 149.13 319 *i* PKIKP **PKPdf 06 31 05.5 -0.4**
OBN pmax pmax
comp=Z,27nm,1.2s
MOR8 Moi Rana 149.16 349 *e*PKPdf **PKPbc 06 31 08.4 -1.5**
MOR8 IAmb IAmb 06 31 10.2
comp=Z,26nm,1.0s
STOK Stokkvaagen 149.22 350 *e*PKPdf **PKPdf 06 31 07.5 +1.8**
LIC Lamto 149.48 169 *e*PKP1 **PKPbc 06 31 12.4 +0.1**
comp=Z,68nm,1.5s
KIC Kosan Boka 149.65 170 *e*PKP1 **PKPbc 06 31 13.0 +0.3**
comp=Z,146nm,1.4s
ASF Jabal al Asfar 149.67 273 PKPbc **PKPbc 06 31 13.0 +0.7**
comp=Z,3.5nm,0.8s,baz=188,slow=1.9,SNR=10
ASF PKPab **PKPab 06 31 18.7 +1.0**
comp=Z,11nm,0.8s,baz=301,slow=0.3,SNR=11
TIC Toumodi 149.89 169 *e*PKP1 **PKPbc 06 31 13.5 +0.2**
DBIC Dimbokro 149.94 170 PKPbc **PKPbc 06 31 13.7 +0.3**
comp=Z,9.9nm,0.6s,baz=149,slow=2.7,SNR=21
DBIC PKPab **PKPab 06 31 19.6 +0.6**
comp=Z,17nm,0.9s,baz=195,slow=2.8,SNR=6.8
FINES FINESS Array B 150.25 335 PKPbc **PKPbc 06 31 12.0 -0.7**
comp=Z,18nm,0.8s,baz=157,slow=5.4,SNR=4.2
FINES PKPab **PKPab 06 31 18.0 -0.9**
comp=Z,17nm,0.5s,baz=66,slow=4.7,SNR=53
EIL Elat 150.37 267 PKPbc **PKPbc 06 31 14.4 +0.4**
comp=Z,10.0nm,0.9s,baz=128,slow=2.9,SNR=12
EIL PKPab **PKPab 06 31 21.8 +1.3**
comp=Z,11nm,0.7s,baz=51,slow=2.8,SNR=9.3
ANN Anapa 150.90 298 *i* PKIKP **PKPbc 06 31 13.0 -1.7**
ANN pmax pmax
comp=Z,26nm,0.9s
NSS Namsos 151.07 350 *e*PKPdf **PKPbc 06 31 13.9 -0.6**
MMAI Mount Meron Ar 151.13 274 PKPbc **PKPbc 06 31 16.6 +0.8**
comp=Z,2.8nm,0.4s,baz=72,slow=5.4,SNR=8.9
MMAI PKPab **PKPab 06 31 23.9 +0.3**
comp=Z,4.3nm,0.5s,baz=77,slow=4.5,SNR=10
MOL Molde 153.51 353 *e*P **PKPbc 06 31 20.0 -0.1**
BRTR Keskin Array B 153.73 287 PKPbc **PKPbc 06 31 21.6 +0.1**
comp=Z,5.6nm,0.9s,baz=145,slow=4.7,SNR=11
BRTR PKPab **PKPab 06 31 35.1 +0.7**
comp=Z,8.5nm,0.7s,baz=143,slow=3.3,SNR=14
MICGM Minsk 153.88 322 *e* **PKPbc 06 31 20.0 -1.1**
MNK Minsk 153.88 322 *e*PKIKP **PKPbc 06 31 20.0 -1.1**
AKN Aaknes 153.95 353 *e*P **PKPbc 06 31 21.2 +0.1**

NACGM Naroch 154.19 324 *e* **PKPbc 06 31 20.0 -1.8**
NB2 NORSAR Subarra154.48 348 PKP **PKPbc 06 31 21.9 -0.4**
comp=Z,16nm,1.0s,baz=17,slow=2.6
NB2 NORSAR Subarra154.48 348 PKP **PKPbc 06 31 21.9 -0.4**
baz=17,slow=2.6
NOA NORSAR Array B 154.48 348 PKPbc **PKPbc 06 31 21.8 -0.4**
comp=Z,1.0nm,0.4s,baz=25,slow=4.0,SNR=18
NOA PKPab **PKPab 06 31 36.4 -0.4**
comp=Z,5.7nm,0.7s,baz=24,slow=3.6,SNR=16
FOO Floro 154.69 355 *e*PKPdf **PKPdf 06 31 16.6 +2.6**
FOO *e* 06 31 31.5
NC602 NORSAR Array S 154.71 347 *e*PKPdf **PKPbc 06 31 22.2 -0.5**
AKASG Malin Array Be 154.94 314 PKPbc **PKPbc 06 31 23.2 -0.2**
comp=Z,1.1nm,0.5s,baz=51,slow=2.8,SNR=6.4
AKASG PKPab **PKPab 06 31 37.3 -1.8**
comp=Z,3.0nm,0.5s,baz=50,slow=3.9,SNR=11
TORD Torodi Ar. Bea 156.74 183 PKP **PKPdf 06 31 18.2 0.0**
comp=Z,1.1nm,0.9s,baz=250,slow=2.0,SNR=6.7
TORD PKPbc PKPbc 06 31 28.8
comp=Z,3.0nm,0.8s,baz=155,slow=1.9,SNR=8.4
TORD PKPab **PKPab 06 31 48.2 +0.7**
comp=Z,13nm,0.6s,baz=171,slow=3.8,SNR=29
KOLS Kolonicke sedl 159.76 315 *e*PKIKP **PKPdf 06 31 21.1 +0.2**
KOLS *e* 06 32 00.8
KOLS Kolonicke sedl 159.76 315 *e*PKP **PKPdf 06 31 21.1 +0.2**
KOLS *e* 06 32 00.8
UZH Uzhgorod 159.90 314⇑ *i* PKP2 **PKPab 06 31 58.8 -1.7**
STHS Stebnicka Huta 160.09 317 *e*PKIKP **PKPdf 06 31 22.2 +0.9**
STHS *e* 06 32 02.1
STHS Stebnicka Huta 160.09 317 *e*PKP **PKPdf 06 31 22.2 +0.9**
STHS *e* 06 32 02.1
CRVS Cervenica-Dubn 160.24 315 *e*PKP2 **PKPab 06 32 02.3 +0.3**
CRVS Cervenica-Dubn 160.24 315 *e*PKP **PKPab 06 32 02.3 +0.3**
KECS Kecovo 161.01 315 *e*PKP2 **PKPab 06 32 04.9 -0.5**
KECS Kecovo 161.01 315 *e*PKP **PKPab 06 32 04.9 -0.5**
LANS Liptovska Anna 161.20 318 *e*PKP2 **PKPab 06 32 06.7 +0.5**
LANS Liptovska Anna 161.20 318 *e*PKP **PKPab 06 32 06.7 +0.5**
VYHS Vyhne 161.92 317 *e*PKIKP **PKPdf 06 31 22.8 -0.5**
VYHS *e* 06 32 09.2
VYHS Vyhne 161.92 317 *e*PKP **PKPdf 06 31 22.8 -0.5**
VYHS *e* 06 32 09.2
DPC Dobruska-Polom 162.00 325 *e*PKPAB **PKPab 06 32 09.2 -0.5**
DPC *ep*PKP pPKP 06 32 15.3
DPC Dobruska-Polom 162.00 325 *e*PKP2 **PKPab 06 32 09.2 -0.5**
UPC Upice 162.03 326 AMS AMS 08 11 00.0
comp=Z,200nm,17.1s
CLL Collm 162.66 333 *e*PKPdf **PKPdf 06 31 25.0 +1.1**
CLL *i* (PKPdif) 06 31 42.7
CLL *i* PKPab **PKPab 06 32 11.1 -1.3**
CLL *es* SS 06 52 12.0 -4.7
CLL Collm 162.66 333 *e*PKIKP **PKPdf 06 31 25.0 +1.1**
CLL *i* 06 32 11.1
PRU Pruhonice 163.06 327 AMS AMS 07 59 40.0
comp=Z,300nm,19.4s
TREC Trest 163.12 324 AMS AMS 08 00 00.0
comp=Z,200nm,16.1s
KHC Kasperske Hory 164.12 327 *e*PKPAB **PKPab 06 32 18.1 -0.9**
KHC *ep*PKP pPKP 06 32 24.3
KHC AMS AMS 08 10 40.0
comp=Z,300nm,15.6s
KHC Kasperske Hory 164.12 327 *e*PKP2 **PKPab 06 32 18.1 -0.9**
KHC MLR MLR
comp=Z,300nm,15.6s
GERES GERESS Array B 164.27 326 PKPab **PKPab 06 32 18.9 -0.9**
comp=Z,1.7nm,0.8s,baz=35,slow=4.9,SNR=8.0
ESDC Sonseca Array 175.31 46 PKP **PKPdf 06 31 32.8 +0.4**
comp=Z,0.2nm,0.3s,baz=261,slow=3.2,SNR=3.4

JMA 11 06:12:24.5±0.3, 38°.02N×144°.12E, h10km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.19**	**300**	P	Pn	06 13 01.9	+0.9
OFUJ				S	Sn	06 13 29.7	+1.5
JIO	**Ouri**	**2.23**	**282**	P	Pn	06 13 02.4	+1.0
JIO				S	Sn	06 13 29.9	+1.0
JTH	**Tanohata**	**2.60**	**318**	*e*S	Sn	06 13 39.3	+1.1
JMM	**Marumori**	**2.63**	**268**	P	Pn	06 13 07.9	+0.8
JMM				*e*S	Sn	06 13 40.1	+1.0
JOM	**Ohasama**	**2.64**	**304**	P	Pn	06 13 08.8	+1.6
JOM				S	Sn	06 13 41.5	+2.2
JOU	**Okura**	**2.75**	**278**	S	Sn	06 13 44.3	+2.5
JRG	**Rokugo**	**3.05**	**298**	P	Pn	06 13 15.2	+2.4
JRG				*e*S	Sn	06 13 50.4	+1.0
JTM	**Tenmabayashi**	**3.64**	**320**	*e*S	Sn	06 14 03.0	-0.8
MAT	**Matsushiro**	**4.94**	**254**	P	Pg	06 14 01.2	+2.1
MAT				*e*S	Sb	06 14 52.2	+1.6

NIED ***11*** *06:14:00, 38°.20N×144°.10E, h5km, Mw3.6 Best double couple: M0=2.50000×10^14 NP1:φs=335.00000°, δ=27.00000°, λ=-96.00000°. NP2:φs=163.00000°, δ=63.00000°, λ=-87.00000°.*

JMA 11 06:14:38.1±0.2, 38°.22N×144°.11E, h36km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.10**	**295**	P	Pn	06 15 12.0	+1.4
OFUJ				S	Sn	06 15 37.7	+2.3
JIO	**Ouri**	**2.18**	**277**	P	Pn	06 15 13.4	+1.6
JIO				S	Sn	06 15 39.4	+1.8
JMK	**Ichinoseki**	**2.38**	**289**	P	Pn	06 15 16.0	+1.5
JMK				*e*S	Sn	06 15 44.6	+2.2
JMM	**Marumori**	**2.64**	**263**	P	Pn	06 15 19.6	+1.5
JMM				*e*S	Sn	06 15 50.4	+1.5
JOU	**Okura**	**2.71**	**274**	P	Pn	06 15 21.2	+2.0
JOU				S	Sn	06 15 53.6	+2.8
JRG	**Rokugo**	**2.96**	**294**	*e*S	Sn	06 15 59.6	+2.9
JYK	**Kaneyama**	**3.02**	**284**	P	Pn	06 15 26.0	+2.6
JFT	**Otama**	**3.07**	**258**	P	Pn	06 15 26.1	+2.1
JFT				S	Sn	06 16 02.1	+2.6
JRY	**Ryogami san**	**4.71**	**244**	P	Pn	06 15 48.3	+1.7

WEL 11 06:44:53.9±0.4, 35°.68S×178°.78E, h216km±6km, ML3.8/4, 1D, Error ellipse: s-maj=8.6km s-min=8.1km az=90.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WMGZ	**Waiomatatini S**	**2.15**	**188**	PN	Pn	06 45 35.3	+0.2
WMGZ				SN	S	06 46 06.4	-0.8
HAZ	**Te Kaha**	**2.22**	**201**	PN	Pn	06 45 35.9	+0.1
HAZ				SN	S	06 46 08.3	0.0
PKGZ	**Pakihiroa**	**2.27**	**194**	PN	Pn	06 45 36.3	-0.1
PKGZ				SN	S	06 46 07.8	-1.7
PUZ	**Puketiti**	**2.42**	**190**	PN	Pn	06 45 37.9	0.0
PUZ				SN	S	06 46 09.2	-3.0
TWGZ	**Tauwhareparae**	**2.57**	**194**	PN	Pn	06 45 40.0	+0.4
TWGZ				SN	S	06 46 15.5	+0.4
MWZ	**Matawai**	**2.83**	**200**	PN	Pn	06 45 43.2	+0.8
MWZ				SN	S	06 46 19.4	-0.9
MWZ				AML	AML	06 46 32.1	
CNGZ	**Carnagh Statio**	**2.83**	**189**	PN	Pn	06 45 43.4	+1.0
TKGZ	**Te Karaka**	**2.85**	**195**	⇓PN	Pn	06 45 42.9	+0.3
URZ	**Urewera**	**2.90**	**207**	PN	Pn	06 45 43.8	+0.7
URZ				SN	S	06 46 21.3	-0.2
URZ				AML	AML	06 46 28.1	
RIGZ	**Rimuhau**	**3.12**	**195**	PN	Pn	06 45 46.4	+0.6
RIGZ				SN	S	06 46 25.9	-0.4
SNGZ	**Shannon Statio**	**3.30**	**200**	PN	Pn	06 45 48.9	+1.0
KNZ	**Kokohu**	**3.44**	**194**	PN	Pn	06 45 49.2	-0.3
WHHZ	**Waihua**	**3.60**	**199**	PN	Pn	06 45 51.9	+0.5
ARHZ	**Aropaoanui**	**3.84**	**201**	PN	Pn	06 45 54.6	+0.3
BHHZ	**Black Hill Sta**	**4.37**	**209**	PN	Pn	06 46 01.1	+0.4
KAHZ	**Kahuranaki**	**4.37**	**200**	PN	Pn	06 46 01.0	+0.2
KRHZ	**Kereru**	**4.39**	**205**	PN	Pn	06 46 00.6	-0.5
BFZ	**Birch Farm**	**5.37**	**201**	PN	Pn	06 46 12.9	-0.4
TIWZ	**Tintock**	**5.57**	**203**	PN	Pn	06 46 15.7	-0.1
MRZ	**Mangatainoka R**	**5.57**	**206**	PN	Pn	06 46 14.7	-1.1
DUWZ	**D'Urville Isla**	**6.38**	**215**	PN	Pn	06 46 25.8	-0.3
THZ	**Tophouse**	**7.61**	**215**	PN	Pn	06 46 41.4	-0.6
KHZ	**Kahutara**	**7.86**	**210**	PN	Pn	06 46 44.2	-1.0

IDC ***11*** *06:46:07.8±0.6, 20°.51S×168°.41E, h0km, mb4.5/18, mb1 4.6/19, mb1mx4.5/35, mbtmp4.5/19, ML3.9/1, MS3.9/10, Ms1 3.9/10, ms1mx3.5/37, Error ellipse: s-maj=19.1km s-min=14.8km az=143.0*
NEIC ***11*** *06:46:09.8±0.3, 20°.45S×168°.33E, h10km, mb4.9/27, Error ellipse: s-maj=11.1km s-min=6.7km az=157.0*
ISCJB ***11*** *06:46:11.8±1.5, 20°.53S±0°.08×168°.23E±0°.06, h33km±14km, mb4.8/56, MS3.9/8, Error ellipse: s-maj=13.4km s-min=8.0km az=162.4*
MOS ***11*** *06:46:12.1±1.2, 20°.35S×168°.20E, h33km, mb5.1/16, Error ellipse: s-maj=12.5km s-min=9.9km az=168.9*
ISC 11 06:46:13.4±0.6, 20°.49S±0°.08×168°.26E±0°.07, h35km±3km, h35km:pP-P, n120, σ1=43/123, mb4.8/55, MS4.0/9, 1D, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.31**	**227**	Pn	**Pn**	**06 46 47.6**	**-1.6**
29nm,0.3s,baz=60,slow=16,SNR=18							
DZM				Sn	**Sn**	**06 47 14.4**	**-2.0**
91nm,0.3s,baz=80,slow=23,SNR=13							
DZM				LR	LR	06 47 36.5	
comp=Z,2μm,19.1s,baz=82,slow=37							
MSVF	**Nonsavu**	**9.65**	**75**	*e*P	**Pn**	**06 48 32.7**	**+2.7**
MSVF	**Nonsavu**	**9.65**	**75**	*e*Pn	**Pn**	**06 48 32.7**	**+2.7**
HNR	**Honiara**	**13.61**	**323**	LR	LR	06 54 05.5	
comp=Z,288nm,19.4s,baz=182,slow=35							
FUNA	**Funafuti**	**15.91**	**43**	*e*PcP	**PcP**	**06 54 54.3**	**+2.3**
EIDS	**Eidsvold**	**16.55**	**250**	*e*Pn	**P**	**06 50 06.2**	**+1.0**
32nm,1.4s							
AFI	**Afiamalu**	**20.15**	**74**	LR	LR	06 58 17.1	
comp=Z,183nm,18.1s,baz=250,slow=36							
CTA	**Charters Tower**	**20.65**	**267**	P	**P**	**06 50 51.9**	**+1.7**
38nm,1.1s,baz=87,slow=12,SNR=13							
CTAO	**Charters Tower**	**20.65**	**267**	*e*P	Pn	06 50 52.0	-0.7
CTAO				pmax	pmax		
comp=Z,304nm,1.1s							
CTAO	**Charters Tower**	**20.65**	**267**	*e*P	**P**	**06 50 52.0**	**+1.7**
comp=Z,304nm,1.1s							
CAN	**Canberra**	**22.48**	**225**	*e*P	**P**	**06 51 12.9**	**+3.0**
CAN				pmax	pmax		
comp=Z,39nm,1.2s							
CAN	**Canberra**	**22.48**	**225**	*e*P	**P**	**06 51 12.9**	**+3.0**
comp=Z,38nm,1.2s							
PMG	**Port Moresby**	**23.14**	**295**	P	**P**	**06 51 17.0**	**+0.2**
comp=Z,17nm,0.7s,baz=103,slow=9.3,SNR=7.0							
PMG	**Port Moresby**	**23.14**	**295**	*i* P	**P**	**06 51 15.9**	**-0.9**
PMG				pmax	pmax		
comp=Z,176nm,1.7s							
PMG	**Port Moresby**	**23.14**	**295**	*e*P	**P**	**06 51 17.1**	**+0.2**
comp=Z,20nm,0.8s							
RPZ	**Rata Peaks**	**23.28**	**175**	LR	LR	07 00 12.5	
comp=Z,403nm,18.4s,baz=302,slow=36							
COEN	**Coen**	**24.81**	**281**	*e*P	**P**	**06 51 33.6**	**+1.2**
comp=Z,18nm,0.8s							
STKA	**Stephens Creek**	**26.41**	**239**	P	**P**	**06 51 48.3**	**+1.4**
comp=Z,16nm,0.6s,baz=75,slow=9.9,SNR=32							
STKA				LR	LR	07 02 00.7	
comp=Z,367nm,18.2s,baz=49,slow=36							
STKA	**Stephens Creek**	**26.41**	**239**	*e*P	**P**	**06 51 48.4**	**+1.5**
STKA				*e*PP	**pP**	**06 51 58.4**	**+1.6**
STKA				pmax	pmax		
comp=Z,30nm,1.8s							
STKA	**Stephens Creek**	**26.41**	**239**	*e*P	**P**	**06 51 48.4**	**+1.5**
comp=Z,30nm,1.8s							
STKA				*ep*P	**pP**	**06 51 58.4**	**+1.6**
WRAB	**Tennant Creek**	**31.80**	**265**	*e*P	**P**	**06 52 33.5**	**-1.4**
WRAB				pmax	pmax		
comp=Z,14nm,1.0s							
WRA	**Warramunga Arr**	**31.81**	**265**	P	**P**	**06 52 33.7**	**-1.3**
comp=Z,4.9nm,0.7s,baz=92,slow=8.5,SNR=62							
WRA				LR	LR	07 05 31.2	
comp=Z,309nm,18.6s,baz=185,slow=36							
AS01	**Alice Springs**	**31.91**	**258**	*e*P	**P**	**06 52 34.4**	**-1.5**
AS31	**Alice Springs**	**31.95**	**258**	*e*P	**P**	**06 52 36.0**	**-0.3**
comp=Z,17nm,0.7s							
ASAR	**Alice Springs**	**31.95**	**258**	P	**P**	**06 52 35.7**	**-0.6**
comp=Z,42nm,0.7s,baz=83,slow=9.0,SNR=235							
ASAR				LR	LR	07 05 34.1	
comp=Z,416nm,18.4s,baz=98,slow=36							
JAY	**Jayapura**	**32.27**	**300**	P	P	06 52 31.9	-7.2
PPT2	**Papeete2**	**39.88**	**93**	*e*LR	LR	07 04 59.0	
comp=Z,267nm,26.8s							
PPT	**Papeete**	**39.89**	**93**	P	**P**	**06 53 41.3**	**-3.0**
comp=Z,34nm,0.8s,baz=253,slow=17,SNR=3.3							
PPT				LR	LR	07 06 04.7	
comp=Z,117nm,20.6s,baz=308,slow=30							
LBMI	**Labuha**	**44.45**	**291**	P	**P**	**06 54 19.2**	**-2.2**
SANI	**Sanana**	**45.12**	**288**	P	**P**	**06 54 28.5**	**+1.7**
comp=Z,78nm,1.0s,comp=Z,927nm							
LUWI	**Luwuk**	**48.44**	**288**	P	**P**	**06 54 54.0**	**+1.2**
comp=Z,54nm,1.0s,comp=Z,3μm							
LUWI	**Luwuk**	**48.44**	**288**	*e*P	**P**	**06 54 53.5**	**+0.8**
comp=Z,76nm,1.2s							
KAPI	**Kappang**	**49.54**	**281**	*e*P	**P**	**06 55 02.0**	**+0.8**
comp=Z,43nm,1.3s							
TTSI	**Tana Toraja**	**50.25**	**284**	P	**P**	**06 55 09.0**	**+2.4**
TAOE	**Nuku Hiva Isla**	**51.04**	**85**	*e*LR	LR	07 10 07.4	
comp=Z,177nm,29.6s							
VNDA	**Vanda**	**57.16**	**182**	P	**P**	**06 55 56.2**	**0.0**
comp=Z,1.1nm,0.9s,baz=5.5,slow=7.2,SNR=4.2							
SBA	**Scott Base**	**57.41**	**180**	*e*P	**P**	**06 55 59.5**	**+1.4**
SBA				pmax	pmax		
comp=Z,35nm,1.5s							
SBA	**Scott Base**	**57.41**	**180**	*e*P	**P**	**06 55 59.5**	**+1.4**
comp=Z,35nm,1.5s							
KKM	**Kota Kinabalu**	**57.52**	**292**	*e*P	**P**	**06 55 59.8**	**-0.1**
comp=Z,13nm,0.9s							
SBUM	**Sibu**	**59.44**	**286**	*e*P	**P**	**06 56 13.7**	**+0.5**
comp=Z,6.3nm,0.9s							
KSM	**Kuching**	**60.76**	**284**	*e*P	**P**	**06 56 22.2**	**-0.1**
comp=Z,22nm,0.7s							
KSM				*ep*P	**pP**	**06 56 32.5**	**-0.4**
MJAR	**Matsushiro Arr**	**63.43**	**333**	P	**P**	**06 56 38.6**	**-1.1**
comp=Z,4.5nm,0.9s,baz=164,slow=7.9,SNR=7.2							
MAJO	**Matsushiro**	**63.44**	**333**	*e*P	**P**	**06 56 38.3**	**-1.4**
MAJO				pmax	pmax		
comp=Z,53nm,1.1s							
ASAJ	**Asahikawa**	**68.45**	**340**	P	**P**	**06 57 12.9**	**+1.1**
comp=Z,3.3nm,0.3s,baz=167,slow=19,SNR=3.2							
KSRS	**Korea Array**	**69.02**	**327**	P	**P**	**06 57 16.2**	**+0.7**
comp=Z,1.7nm,0.8s,baz=142,slow=6.2,SNR=5.4							
KSAR	**Wonju Array Be**	**69.03**	**326**	P	**P**	**06 57 16.2**	**+0.6**
KSAR	**Wonju Array Be**	**69.03**	**326**	P	**P**	**06 57 16.2**	**+0.6**
QIZ	**Qiongzhong**	**69.41**	**301**	P	**P**	**06 57 18.8**	**+0.5**
QIZ				S	**S**	**07 06 23.7**	**+0.4**
QIZ				LR	LR		
comp=N,110nm,7.8s							
QIZ				LR	LR		
comp=E,50nm,16.9s							
PSI	**Prapat**	**71.73**	**280**	*e*P	**P**	**06 57 31.8**	**-0.

CRAI	**Chiangrai**	**77.77**	**297**	P	**P**	**06 58 08.8**	**+1.3**
	comp=Z,58nm,1.1s,comp=Z,13μm						
CM01	**Chiang Mai Arr**	**78.15**	**295**	*e*P	**P**	**06 58 10.7**	**+1.1**
KMI	**Kunming**	**78.16**	**303**	P	**P**	**06 58 11.8**	**+2.0**
KMI				pmax	pmax		
	comp=Z,20nm,1.2s						
KMI				pmax	pmax		
	comp=Z,160nm,7.1s						
CMAR	**Chiang Mai Arr**	**78.18**	**295**	P	**P**	**06 58 11.2**	**+1.4**
	baz=133,slow=4.2						
CMMT	**Chiang Mai**	**78.34**	**295**	P	**P**	**06 58 11.9**	**+1.3**
	comp=Z,18nm,1.6s						
CHTO	**Chiang Mai**	**78.34**	**295**	P	**P**	**06 58 12.0**	**+1.4**
	comp=Z,78nm,1.0s						
CHTO	**Chiang Mai**	**78.34**	**295**	*e*P	**P**	**06 58 12.2**	**+1.6**
CHTO				pmax	pmax		
	comp=Z,14nm,0.8s						
CHTO	**Chiang Mai**	**78.34**	**295**	*e*P	**P**	**06 58 12.2**	**+1.6**
	comp=Z,14nm,0.8s						
CD2	**Chengdu**	**80.27**	**308**	P	**P**	**06 58 21.7**	**+0.7**
CD2				pmax	pmax		
	comp=Z,13nm,0.8s						
LZH	**Lanzhou**	**82.89**	**313**	*e*P	**P**	**06 58 36.2**	**+1.4**
LZH				pP	sP	06 58 49.3	-0.5
LZH				sP	pP	06 58 55.2	+9.4
LZH				pmax	pmax		
	comp=Z,14nm,1.0s						
SYO	**Syowa Base**	**83.48**	**196⇓**	*e*P	**P**	**06 58 35.6**	**-1.6**
ULN	**Ulaanbaatar**	**87.32**	**324**	*i* P	**P**	**06 58 56.5**	**-0.3**
ULN				pmax	pmax		
	comp=Z,14nm,1.7s						
ULN	**Ulaanbaatar**	**87.32**	**324**	*e*P	**P**	**06 58 56.6**	**-0.1**
	comp=Z,17nm,1.5s						
BILL	**Bilibino**	**88.28**	**359**	*i* P	**P**	**06 59 00.0**	**-0.7**
BILL				*i*		06 59 10.2	
BILL				pmax	pmax		
	comp=Z,6.0nm,1.1s						
BILL	**Bilibino**	**88.28**	**359**	*e*P	**P**	**06 58 59.9**	**-0.7**
	comp=Z,7.1nm,1.0s						
BILL				*e*pP	**pP**	**06 59 11.8**	**0.0**
CMB	**Columbia Colle**	**88.67**	**48**	*e*P	**P**	**06 59 03.1**	**-0.2**
CMB				pmax	pmax		
	comp=Z,7.0nm,1.3s						
CMB	**Columbia Colle**	**88.67**	**48**	*e*P	**P**	**06 59 03.1**	**-0.2**
	comp=Z,7.2nm,1.3s						
AFDM	**Forest Hills D**	**88.68**	**47**	*e*P	**P**	**06 59 03.6**	**+0.3**
	comp=Z,10nm,1.4s						
AFDM				*e*pP	**sP**	**06 59 16.3**	**-2.1**
HUMO	**Hull Mountain**	**89.09**	**43**	*e*P	**P**	**06 59 05.6**	**+0.5**
	comp=Z,5.6nm,1.0s						
HUMO				*e*pP	**pP**	**06 59 16.3**	**+0.1**
BOD	**Bodaibo**	**90.05**	**334**	*e*P	**P**	**06 59 08.3**	**-0.9**
BOD				pmax	pmax		
	comp=Z,4.0nm,1.7s						
PALK	**Pallekele**	**90.24**	**278**	*i* P	**P**	**06 59 10.1**	**-1.1**
NV01	**Mina Array Sit**	**90.31**	**49**	*e*P	**P**	**06 59 10.5**	**-0.7**
NVAR	**Mina Array Bea**	**90.31**	**49**	P	**P**	**06 59 10.8**	**-0.4**
	comp=Z,2.0nm,0.7s,baz=227,slow=8.1,SNR=19						
NVAR				LR	LR	07 35 25.7	
	comp=Z,65nm,18.3s,baz=234,slow=33						
TPNV	**Topopah Spring**	**91.15**	**51**	*e*P	**P**	**06 59 15.0**	**-0.1**
TPNV				pmax	pmax		
	comp=Z,10.0nm,1.3s						
TPNV	**Topopah Spring**	**91.15**	**51**	*e*P	**P**	**06 59 15.0**	**-0.1**
	comp=Z,9.7nm,1.3s						
ILAR	**Eielson Array**	**91.69**	**18**	P	**P**	**06 59 15.1**	**-1.6**
	comp=Z,1.0nm,0.8s,baz=232,slow=5.8,SNR=7.6						
WVOR	**Wild Horse Val**	**91.84**	**45**	*e*P	**P**	**06 59 18.1**	**0.0**
WVOR				pmax	pmax		
	comp=Z,6.0nm,1.2s						
WVOR	**Wild Horse Val**	**91.84**	**45**	*e*P	**P**	**06 59 18.1**	**0.0**
	comp=Z,6.1nm,1.2s						
G08A	**Pilot Rock**	**92.90**	**42**	*e*P	**P**	**06 59 23.2**	**+0.3**
	comp=Z,8.6nm,1.5s						
LCMT	**Little Creek M**	**93.38**	**52**	*e*P	**P**	**06 59 25.8**	**+0.5**
	comp=Z,2.3nm,0.9s						
TUC	**Tucson**	**93.45**	**57**	*e*P	**P**	**06 59 27.0**	**+1.3**
TUC				pmax	pmax		
	comp=Z,4.0nm,1.3s						
TUC	**Tucson**	**93.45**	**57**	*e*P	**P**	**06 59 27.0**	**+1.3**
	comp=Z,4.4nm,1.3s						
X16A	**Lo Mia Camp, P**	**93.74**	**55**	*e*P	**P**	**06 59 28.4**	**+1.3**
	comp=Z,1.9nm,0.7s						
319A	**Douglas**	**94.30**	**58**	*e*P	**P**	**06 59 31.0**	**+1.3**
	comp=Z,8.2nm,1.0s						
WMQ	**Urumqi**	**97.40**	**314**	*e*P	Pdif	06 59 43.7	+0.2
WMQ				pmax	pmax		
	comp=Z,3.0nm,1.0s						
WMQ				pmax	pmax		
	comp=Z,71nm,5.6s						
INK	**Inuvik**	**98.02**	**19**	P	**P**	**06 59 44.5**	**-1.0**
	comp=Z,0.2nm,0.4s,baz=221,slow=5.3,SNR=2.4						
PDAR	**Pinedale Array**	**98.13**	**47**	P	Pdif	06 59 47.6	+0.6
	comp=Z,0.1nm,0.4s,baz=270,slow=2.3,SNR=2.5						
TXAR	**Lajitas Array**	**98.17**	**62**	LR	LR	07 35 07.4	
	comp=Z,47nm,21.4s,baz=0.0,slow=30						
MKAR	**Makanchi Array**	**101.98**	**316**	P	**Pdif**	**07 00 05.9**	**+2.1**
	comp=Z,0.6nm,0.9s,baz=108,slow=9.3,SNR=2.8						
YKA	**Yellowknife Ar**	**102.20**	**28**	P	**Pdif**	**07 00 04.4**	**+0.1**
	comp=Z,0.3nm,0.6s,baz=255,slow=4.6,SNR=11						
ARCES	**ARCESS Array B**	**126.03**	**345**	PKP	**PKPdf**	**07 05 10.8**	**-0.4**
	comp=Z,9.1nm,1.1s,baz=12,slow=4.9,SNR=3.9						
KLMR	**Klimovskoe**	**126.20**	**332**	PKIKP	**PKPdf**	**07 05 07.1**	**-4.6**
KLMR				pmax	pmax		
	comp=Z,5.0nm,0.9s						
GNI	**Garni**	**128.34**	**305**	*i* PKIKP	**PKPdf**	**07 05 16.1**	**-0.6**
AKASG	**Malin Array Be**	**135.95**	**323**	PKP	**PKPdf**	**07 05 30.1**	**-0.4**
	comp=Z,1.3nm,0.6s,baz=48,slow=1.4,SNR=4.2						
BRTR	**Keskin Array B**	**136.83**	**307**	PKP	**PKPdf**	**07 05 32.1**	**-0.7**
	comp=Z,0.5nm,0.6s,baz=128,slow=2.4,SNR=3.1						
KHC	**Kasperske Hory**	**144.99**	**331**	*e*PKP	**PKPdf**	**07 05 46.6**	**-0.4**
KHC	**Kasperske Hory**	**144.99**	**331**	*e*PKIKP	**PKPdf**	**07 05 46.6**	**-0.4**
KHC	**Kasperske Hory**	**144.99**	**331**	*e*PKPdf	**PKPdf**	**07 05 46.7**	**-0.3**
GERES	**GERESS Array B**	**145.13**	**330**	PKPbc	**PKPdf**	**07 05 47.1**	**-0.2**
	comp=Z,0.8nm,0.6s,baz=57,slow=4.9,SNR=6.3						
GEA0	**GERESS Array S**	**145.14**	**330**	*e*PKPbc	**PKPbc**	**07 05 46.5**	**-0.3**
BCLA	**Clavier**	**147.23**	**340**	PKPbc	**PKPbc**	**07 05 53.2**	**+0.2**
DOU	**Dourbes**	**147.74**	**340**	PKPbc	**PKPbc**	**07 05 54.7**	**+0.4**
BFO	**Black Forest**	**147.86**	**335**	*i* PKP2	**PKPbc**	**07 05 55.4**	**+0.6**
BFO	**Black Forest**	**147.86**	**335**	*e*PKPbc	**PKPbc**	**07 05 54.8**	**0.0**
FUORN	**Ofenpass-Fuorn**	**148.35**	**331**	*e*PKPbc	**PKPbc**	**07 05 57.1**	**+0.7**
TUE	**Stuetta**	**148.88**	**331**	*e*PKPbc	**PKPbc**	**07 05 58.1**	**+0.3**
SENIN	**Lac Senin/Sane**	**149.85**	**333**	*e*PKPbc	**PKPbc**	**07 06 01.0**	**+0.8**
TORD	**Torodi Ar. Bea**	**165.22**	**243**	PKP	**PKPdf**	**07 06 15.0**	**0.0**
	comp=Z,1.0nm,0.9s,baz=338,slow=2.1,SNR=6.0						
TORD				PKPab	**PKPab**	**07 07 11.8**	**-0.6**
	comp=Z,1.8nm,1.1s,baz=119,slow=4.3,SNR=6.5						

*JMA **11** 06:47:08.5±0.3, 37.°35N×142.°42E, h0km, M4.1*
*ISCJB **11** 06:47:10.1±0.9, 37.°27N±0.°06×142.°52E±0.°09, h21km, mb3.8/5, Error ellipse: s-maj=10.3km s-min=9.3km az=170.8*
*IDC **11** 06:47:17.2±3.1, 37.°20N×142.°31E, h62km±28km, mb3.6/5, mb1 3.6/9, mb1mx3.4/44, mbtmp3.7/9, ML3.3/3, Error ellipse: s-maj=33.4km s-min=16.6km az=104.0*
ISC 11 06:47:12.0±1.3, 37.°38N±0.°08×142.°6E±0.°1, h21km, n23, σ2°14/16, mb3.9/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.39**	**270**	P	Pn	06 47 32.3	-3.9
JIO	**Ouri**	**1.46**	**317**	P	**Pn**	**06 47 34.6**	**-2.6**
JIO				*e*S	**Sn**	**06 47 54.2**	**-1.5**
ONAJ	**Iwakimizuishiy**	**1.48**	**260**	P	Pn	06 47 33.7	-3.7
JMM	**Marumori**	**1.52**	**289**	P	Pn	06 47 34.3	-3.7
JHO	**Hitachi**	**1.81**	**245**	P	**Pn**	**06 47 39.2**	**-2.8**
JFT	**Otama**	**1.82**	**275**	P	**Pn**	**06 47 39.6**	**-2.5**
JFT				S	**Sn**	**06 48 03.4**	**-1.1**
JOU	**Okura**	**1.83**	**303**	P	**Pn**	**06 47 40.0**	**-2.2**
MJAR	**Matsushiro Arr**	**3.62**	**258**	P	**Pn**	**06 48 06.2**	**-0.8**
	1.5nm,0.3s,baz=83,slow=15,SNR=8.9						
MAT	**Matsushiro**	**3.63**	**258**	P	**Pn**	**06 48 05.5**	**-1.5**
MAT				*e*S	**Sn**	**06 48 51.4**	**+2.2**
ASAJ	**Asahikawa**	**6.73**	**360**	P	Pn	06 48 54.5	+5.0
	1.0nm,0.3s,baz=283,slow=17,SNR=2.1						
ASAJ				S	Sn	06 50 15.2	+10
	0.6nm,0.3s,baz=351,slow=19,SNR=2.0						
USRK	**Ussuriysk Ar.**	**10.54**	**314**	P	**Pn**	**06 49 44.8**	**+3.0**
	0.1nm,0.3s,baz=125,slow=12,SNR=2.5						
KSRS	**Korea Array**	**11.68**	**275**	P	**Pn**	**06 49 59.5**	**+2.0**
	0.2nm,0.3s,baz=88,slow=15,SNR=2.8						
SEY	**Seymchan**	**26.27**	**10**	P	**P**	**06 52 48.1**	**+2.6**
	3.7nm,0.9s,baz=180,slow=6.1,SNR=3.1						
H11N2	**WAKE ISLAND Hy**	**27.52**	**123**	T	T	07 21 44.8	
	baz=315,slow=75,SNR=170						
H11N1	**WAKE ISLAND Hy**	**27.53**	**123**	T	T	07 21 45.7	
	baz=315,slow=75,SNR=158						
H11N3	**WAKE ISLAND Hy**	**27.54**	**123**	T	T	07 21 47.3	
	baz=315,slow=75,SNR=170						
H11S1	**WAKE ISLAND Hy**	**28.26**	**125**	T	T	07 22 41.4	
	baz=317,slow=76,SNR=186						
H11S3	**WAKE ISLAND Hy**	**28.26**	**125**	T	T	07 22 41.5	
	baz=317,slow=76,SNR=199						
H11S2	**WAKE ISLAND Hy**	**28.28**	**125**	T	T	07 22 42.7	
	baz=317,slow=76,SNR=200						
ZALV	**Zalesovo Beam**	**42.39**	**312**	P	**P**	**06 55 04.5**	**-0.2**
	0.9nm,0.4s,baz=88,slow=10,SNR=3.2						
MKAR	**Makanchi Array**	**44.74**	**302**	P	**P**	**06 55 23.2**	**-0.6**
	0.9nm,0.9s,baz=92,slow=11,SNR=3.6						
WRA	**Warramunga Arr**	**57.55**	**189**	P	**P**	**06 56 58.7**	**-1.4**
	0.7nm,0.5s,baz=7.1,slow=7.3,SNR=8.6						
ASAR	**Alice Springs**	**61.27**	**189**	P	**P**	**06 57 25.2**	**-0.6**
	0.4nm,0.7s,baz=11,slow=7.0,SNR=5.1						

*ISCJB **11** 06:54:43.6±0.6, 23.°55N±0.°04×122.°29E±0.°03, h15km±5km, Error ellipse: s-maj=6.7km s-min=3.2km az=154.9*
*JMA **11** 06:54:44.7, 23.°68N×122.°16E, h63km, M2.6*
*TAP **11** 06:54:45.4, 23.°61N×122.°13E, h6km, ML3.4, C*
ISC 11 06:54:42.9±1.3, 23.°56N±0.°04×122.°25E±0.°03, h10km±10km, n39, σ0°33/57, 6C-1D, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HWA	**Hwalien**	**0.72**	**305**	*e*P	**Pb**	**06 54 58.0**	**+0.4**
	baz=293						
ESL	**Shilin**	**0.79**	**289**	*e*P	**Pg**	**06 54 58.4**	**+0.2**
	baz=288						
ESL				S	**Sg**	**06 55 08.6**	**+0.1**
	baz=288						
TWD	**Chiawan**	**0.79**	**311⇑**	*i* P	**Pb**	**06 54 59.1**	**+0.4**
	baz=315						
TWD				*i* S	**Sb**	**06 55 09.1**	**-0.4**
	baz=315						
EHY	**Hungye**	**0.85**	**267**	P	**Pn**	**06 55 00.7**	**-0.3**
	baz=262						
EHY				*e*S	**Sb**	**06 55 11.6**	**+0.2**
	baz=262						
TWF1	**Yuli**	**0.90**	**257**	P	**Pn**	**06 55 01.4**	**-0.2**
	baz=234						
TWF1				*e*S	**Sb**	**06 55 12.8**	**+0.1**
	baz=234						
CHKT	**Chengkung**	**0.94**	**241**	*e*P	**Pb**	**06 55 01.3**	**+0.1**
	baz=234						
CHKT				*e*S	**Sg**	**06 55 12.9**	**-0.1**
	baz=234						
ENA	**Nanau**	**0.98**	**332**	*e*P	**Pb**	**06 55 02.1**	**+0.1**
	baz=317						
WDT	**Danda**	**1.04**	**281⇑**	*i* P	**Pb**	**06 55 03.5**	**+0.2**
	baz=279						
WDT				*e*S	**Sg**	**06 55 16.4**	**-0.2**
	baz=279						
WHF	**Hehuan Shan**	**1.07**	**303**	⇑P	**Pg**	**06 55 03.7**	**+0.1**
	baz=304						
TWC	**Suao**	**1.11**	**341**	*e*P	**Pb**	**06 55 04.4**	**+0.2**
	baz=346						
YOJ	**Yonaguni jima**	**1.13**	**38**	P	**Pb**	**06 55 04.6**	**0.0**
NNS	**Nan Shan**	**1.19**	**318**	*e*P	**Pb**	**06 55 05.6**	**0.0**
	baz=320						
ELDTW	**Lidau**	**1.19**	**252**	⇑P	**Pb**	**06 55 05.5**	**-0.2**
	baz=247						
YUS	**Yu-Shan**	**1.20**	**267**	P	**Pn**	**06 55 06.5**	**+0.3**
	baz=264						
YUS				*e*S	**Sg**	**06 55 21.1**	**-0.4**
	baz=264						
TWT	**Tachien**	**1.20**	**305**	P	**Pn**	**06 55 06.1**	**+0.1**
	baz=306						
ENTT	**Nioudou**	**1.24**	**330**	*e*P	**Pn**	**06 55 06.3**	**0.0**
	baz=334						
SMLT	**Sun Moon Lake**	**1.28**	**285**	P	**Pn**	**06 55 07.0**	**+0.1**
	baz=284						
TWG	**Pinlang**	**1.31**	**236**	*e*P	**Pn**	**06 55 07.1**	**-0.2**
	baz=217						
TYC	**Yuchr**	**1.32**	**285**	P	**Pb**	**06 55 07.8**	**0.0**
	baz=295						
TYC				*e*S	**Sn**	**06 55 25.2**	**+0.1**
	baz=295						
ALS	**Alishan**	**1.33**	**268**	⇑P	**Pg**	**06 55 08.7**	**+0.3**
	baz=265						
ALS				*e*S	**Sb**	**06 55 25.3**	**0.0**
	baz=265						
NSK	**Sanguang**	**1.38**	**324⇓**	*e*P	**Pn**	**06 55 08.6**	**+0.3**
	baz=327						
STYT	**Tauyuan**	**1.43**	**254**	*e*P	**Pg**	**06 55 10.7**	**+0.4**
	baz=236						
STYT				*e*S	**Sn**	**06 55 27.1**	**-0.7**
	baz=236						
CHN5	**Tsauling**	**1.44**	**272**	⇑P	**Pg**	**06 55 10.8**	**+0.2**
	baz=270						
CHN5				S	**Sg**	**06 55 29.8**	**+0.4**
	baz=270						
CHN4	**Tsaushan**	**1.54**	**263**	P	**Pg**	**06 55 12.2**	**-0.1**
	baz=260						
CHN4				*e*S	**Sg**	**06 55 32.2**	**-0.2**
	baz=260						
WTP	**Ta-pu**	**1.54**	**259**	*e*P	**Pg**	**06 55 12.1**	**-0.2**
	baz=255						
WTP				*e*S	**Sb**	**06 55 31.2**	**+0.1**
	baz=255						
TCU	**Taichung**	**1.56**	**292**	*e*P	**Pg**	**06 55 12.7**	**-0.1**
	baz=292						
IRIF	**Iriomote-Funau**	**1.56**	**60**	S	**Sn**	**06 55 30.3**	**-0.6**
NSTT	**Nanjuang**	**1.56**	**313**	*e*P	**Pb**	**06 55 12.1**	**+0.2**
	baz=315						
TWQ1	**Liyutan**	**1.56**	**300**	*e*P	**Pg**	**06 55 12.7**	**-0.2**
	baz=301						
SGST	**Jiashian**	**1.61**	**253**	*e*P	**Pb**	**06 55 13.0**	**+0.4**
	baz=236						
SGST				*e*S	**Sg**	**06 55 34.0**	**-0.5**
	baz=236						
NSY	**Sanyi**	**1.61**	**302**	*e*P	**Pg**	**06 55 13.4**	**-0.3**
	baz=303						
NSY				*e*S	**Sb**	**06 55 33.0**	**-0.1**
	baz=303						
CHN1	**Nanshi**	**1.63**	**257**	*e*P	**Pg**	**06 55 13.8**	**-0.3**
	baz=254						
CHN1				*e*S	**Sg**	**06 55 34.8**	**-0.4**
	baz=254						
SSD	**Sandimen**	**1.70**	**242**	*e*P	**Pb**	**06 55 14.3**	**+0.1**
	baz=225						
NCU	**National Centr**	**1.71**	**326**	*e*P	**Pg**	**06 55 15.6**	**-0.1**
	baz=329						
JKRS	**Kuro-shima**	**1.74**	**67**	S	**Sn**	**06 55 34.8**	**-0.7**
EAST	**Anshuo**	**1.75**	**228**	*e*P	**Pn**	**06 55 13.4**	**+0.1**
	baz=223						
JIJ	**Ishigaki jima**	**1.91**	**65**	P	**Pn**	**06 55 16.0**	**+0.5**
SCZT	**Fangliau**	**1.91**	**232**	*e*P	**Pb**	**06 55 18.0**	**+0.1**
	baz=219						
SCZT				*e*S	**Sn**	**06 55 40.7**	**+1.0**
	baz=219						
JISG	**Ishigakijimahi**	**2.14**	**61**	P	**Pn**	**06 55 18.9**	**+0.2**
JISG				S	**Sn**	**06 55 45.6**	**+0.3**

*NIED **11** 06:57:00, 36.°30N×142.°50E, h38km, Mw3.9 Best double couple: M0=9.26000×10^14 NP1:φ=222.00000°, δ=43.00000°, λ=100.00000°. NP2:φ=29.00000°, δ=48.00000°, λ=81.00000°.*
*ISCJB **11** 06:57:30.5±0.5, 36.°25N±0.°05×142.°66E±0.°06, h15km, mb4.1/15, MS3.8/1, Error ellipse: s-maj=8.4km s-min=5.6km az=147.6*
*IDC **11** 06:57:30.4±1.0, 36.°32N×142.°64E, h0km, mb3.9/11, mb1 4.1/16, mb1mx3.9/50, mbtmp4.0/16, ML4.0/4, MS3.8/1, Ms1 3.8/1, ms1mx2.7/51, Error ellipse: s-maj=28.2km s-min=16.5km az=167.0*
*JMA **11** 06:57:33.9±0.3, 36.°33N×142.°53E, h68km, M4.0*
*NEIC **11** 06:57:34.7±0.6, 36.°20N×142.°62E, h35km, mb4.1/1, Error ellipse: s-maj=12.0km s-min=11.0km az=171.0*
ISC 11 06:57:31.8±0.6, 36.°29N±0.°06×142.°64E±0.°06, h15km, n38, σ1°99/47, mb4.0/15, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.56**	**248**	P	**Pb**	**06 57 59.2**	**-1.1**
CHOJ				S	**Sn**	**06 58 18.1**	**-0.8**
ONAJ	**Iwakimizuishiy**	**1.69**	**299**	P	**Pn**	**06 58 00.3**	**-0.5**
JHO	**Hitachi**	**1.70**	**281**	P	**Pn**	**06 58 00.5**	**-0.4**
BSO1	**Boso 1**	**2.12**	**220**	P	**Pn**	**06 58 06.9**	**+0.7**
BSO3	**Boso 3**	**2.28**	**230**	P	**Pn**	**06 58 09.9**	**+1.2**
JAG	**Ashikaga**	**2.57**	**274**	P	**Pn**	**06 58 12.8**	**-0.2**
JRY	**Ryogami san**	**3.04**	**266**	P	**Pn**	**06 58 19.3**	**0.0**
JOD2	**Odawara 2**	**3.06**	**251**	P	**Pn**	**06 58 20.2**	**+0.5**
JOD2				S	**Sn**	**06 58 54.6**	**-1.5**
MJAR	**Matsushiro Arr**	**3.58**	**275**	Pn	**Pn**	**06 58 27.6**	**+0.8**
	8.5nm,0.3s,baz=106,slow=8.8,SNR=43						
MJAR				Sn	**Sn**	**06 59 07.1**	**-1.8**
	4.5nm,0.3s,baz=36,slow=33,SNR=4.4						
MAJO	**Matsushiro**	**3.58**	**275**	*e*Pn	**Pn**	**06 58 28.1**	**+1.3**
MAT	**Matsushiro**	**3.58**	**275**	P	**Pn**	**06 58 27.8**	**+1.0**
MAT				S	**Sn**	**06 59 05.4**	**-3.5**
JHJ	**Hachijo jima 2**	**3.94**	**217**	Pn	**Pn**	**06 58 32.4**	**+0.6**
	21nm,0.3s,baz=45,slow=18,SNR=3.3						
JHJ				Sn	**Sn**	**06 59 13.7**	**-4.0**
	155nm,0.3s,baz=287,slow=22,SNR=9.2						
ASAJ	**Asahikawa**	**7.82**	**360**	Pn	**Pn**	**06 59 24.9**	**-0.1**
	4.0nm,0.3s,baz=224,slow=18,SNR=9.2						
ASAJ				Sn	**Sn**	**07 00 48.9**	**-4.3**
	1.0nm,0.3s,baz=74,slow=22,SNR=3.6						
ASAJ	**Asahikawa**	**7.82**	**360**	*e*Pn	**Pn**	**06 59 24.5**	**-0.5**
	7.5nm,0.6s						
ASAJ				Pn	**Pn**	**06 59 24.9**	**-0.1**
ASAJ				Sn	**Sn**	**07 00 48.9**	**-4.3**
CBIJ	**Chichi jima**	**9.18**	**183**	Pn	**Pn**	**06 59 40.8**	**-2.9**
CBIJ				Sn	Sn	07 01 16.6	-10
JCJ	**Chichijima**	**9.18**	**183**	Pn	**Pn**	**06 59 40.8**	**-2.9**
	9.7nm,0.3s,baz=10,slow=19,SNR=16						
JCJ				Sn	Sn	07 01 16.6	-10
	baz=319,slow=20						
USRK	**Ussuriysk Ar.**	**11.33**	**317**	Pn	**Pn**	**07 00 16.3**	**+3.2**
	0.3nm,0.3s,baz=134,slow=14,SNR=4.2						
USRK				Sn	**Sn**	**07 02 13.8**	**-5.7**
	baz=109,slow=16,SNR=2.4						
KSRS	**Korea Array**	**11.85**	**280**	Pn	**Pn**	**07 00 22.6**	**+2.5**
	baz=95,slow=14,SNR=5.7						
KSAR	**Wonju Array Be**	**11.88**	**280**	Pn	**Pn**	**07 00 22.6**	**+2.1**
KLR	**Kul'dur**	**15.18**	**332**	Pn	**Pn**	**07 01 05.2**	**-0.4**
	0.3nm,0.3s,baz=163,slow=9.6,SNR=5.5						
SONM	**Songino Array**	**29.02**	**305**	P	**P**	**07 03 33.2**	**+2.0**
	4.2nm,0.5s,baz=70,slow=12,SNR=2.9						
CMAR	**Chiang Mai Arr**	**42.28**	**257**	P	**P**	**07 05 24.4**	**-0.4**
	0.5nm,0.3s,baz=39,slow=5.8,SNR=3.3						
ZALV	**Zalesovo Beam**	**43.14**	**313**	P	**P**	**07 05 32.5**	**+1.0**
	1.4nm,0.5s,baz=90,slow=5.9,SNR=5.2						
MKAR	**Makanchi Array**	**45.35**	**303**	P	**P**	**07 05 50.0**	**+0.7**
	3.6nm,0.7s,baz=90,slow=10,SNR=24						
MKAR				LR	LR	07 25 42.4	
	comp=Z,111nm,21.4s,baz=146,slow=37						
KURK	**Kurchatov**	**47.16**	**309**	P	**P**	**07 06 03.2**	**-0.2**
	8.1nm,0.9s						
MCK	**McKinley**	**48.71**	**33**	*e*P	**P**	**07 06 17.2**	**+1.9**
COEN	**Coen**	**49.98**	**179**	*e*P	**P**	**07 06 24.6**	**-0.9**
	25nm,0.8s						
TKM2	**Tokmak 2**	**50.85**	**299**	*e*P	**P**	**07 06 33.6**	**+1.5**
	3.8nm,0.6s						
KKAR	**Karatay Array**	**54.35**	**301**	*e*P	**P**	**07 06 56.9**	**-0.9**
INK	**Inuvik**	**54.60**	**27**	P	**P**	**07 06 58.5**	**-0.7**
	0.6nm,0.7s,baz=310,slow=5.7,SNR=4.9						
ABKAR	**Akbulak array**	**59.17**	**311**	*e*P	**P**	**07 07 31.9**	**0.0**
	0.8nm,0.5s						
YKA	**Yellowknife Ar**	**63.95**	**30**	P	**P**	**07 08 04.7**	**+0.7**
	0.3nm,0.8s,baz=303,slow=6.4,SNR=5.8						
FINES	**FINESS Array B**	**69.93**	**333**	P	**P**	**07 08 41.4**	**-0.5**
	1.2nm,0.9s,baz=46,slow=4.4,SNR=3.0						
KBZ	**Khabaz**	**72.13**	**311**	P	**P**	**07 08 56.8**	**+1.2**
	1.9nm,0.9s,baz=67,slow=7.7,SNR=3.7						
NVAR	**Mina Array Bea**	**74.64**	**54**	P	**P**	**07 09 12.5**	**+1.6**
	1.0nm,0.6s,baz=291,slow=6.0,SNR=11						
PDAR	**Pinedale Array**	**77.48**	**46**	P	**P**	**07 09 28.9**	**+1.9**
	0.4nm,0.6s,baz=280,slow=0.9,SNR=3.7						
TXAR	**Lajitas Array**	**89.79**	**53**	P	**P**	**07 10 31.4**	**+1.3**
	0.4nm,0.7s,baz=320,slow=2.4,SNR=3.1						
LPAZ	**La Paz**	**146.19**	**62**	PKPbc	**PKPdf**	**07 17 12.8**	**+1.1**
	0.8nm,0.5s,baz=17,slow=3.0,SNR=9.8						

WEL 11 06:58:36.9±0.4, 38.°33S×175.°82E, h188km±5km, ML3.5/7, 3C-2D, Error ellipse: s-maj=6.9km s-min=6.6km az=0.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BHHZ	**Black Hill Sta**	**1.17**	**171**	⇓PN	Pn	06 59 06.7	0.0
BHHZ				SN	Sn	06 59 28.9	-1.1
KWHZ	**Kaweka Forest**	**1.19**	**157**	PN	Pn	06 59 07.1	+0.3
KWHZ				SN	Sn	06 59 30.2	0.0
MCHZ	**McNeill Hill**	**1.30**	**149**	PN	Pn	06 59 08.0	+0.3
MCHZ				SN	Sn	06 59 31.7	0.0
ARHZ	**Aropaoanui**	**1.31**	**136**	PN

FAKI	Fak Fak	3.45	19	P	Pn	07 01 29.9	+2.8
FAKI				S	Sn	07 02 07.4	+0.3
MSAI	Masohi	3.61	322	P	Pn	07 01 30.3	+1.1
MSAI				S	Sn	07 02 08.0	-2.9
NLAI	Namlea	5.00	306	P	Pn	07 01 49.0	+1.0
SWI	Sorong	5.31	1	P	Pn	07 01 51.1	-1.2
SWI				S	Sn	07 02 45.5	-6.7
SANI	Sanana	6.60	309	P	Pn	07 02 12.2	+2.4
LBMI	Labuha	6.63	327	P	Pn	07 02 09.7	-0.4
LBMI				S	Sn	07 03 18.8	-5.5
KDI	Kendari	8.79	284	P	Pn	07 02 42.6	+3.0
MMRI	Maumere	9.16	254	P	Pn	07 02 52.1	+7.5
LUWI	Luwuk	9.81	301	P	Pn	07 02 53.4	-0.1
WRA	Warramunga Arr	14.00	168	Pn	Pn	07 03 50.5	+1.2
	0.6nm,0.3s,baz=352,slow=13,SNR=19						
WRA				Sn	Sn	07 06 21.6	-1.9
	2.0nm,0.3s,baz=340,slow=22,SNR=8.1						
ASAR	Alice Springs	17.56	172	P	Pn	07 04 39.1	+5.4
	0.4nm,0.3s,baz=351,slow=10,SNR=15						
ASAR				S	Sn	07 07 46.3	-3.1
	0.5nm,0.3s,baz=359,slow=28,SNR=4.9						
MKAR	Makanchi Array	68.20	326	P	P	07 11 26.6	+1.5
	2.4nm,0.5s,baz=122,slow=7.2,SNR=30						
KURBB	Kurchatov Arra	72.45	328	P	P	07 11 52.1	+1.3
	0.4nm,0.4s,baz=118,slow=4.6,SNR=7.2						

NIED **11** *07:08:00,39.°40N×143.°10E,h5km,Mw3.6 Best double couple: M₀2.80000×10¹⁴ NP1:φs22.00000°,δ38.00000°, λ-76.00000°. NP2:φs184.00000°,δ53.00000°, λ-101.00000°.*

JMA 11 07:08:07.9±0.4,39.°39N×143.°11E,h6km±4km,M3.6,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	Miyakonagasawa	1.02	281	P	Pg	07 08 27.0	-0.4
MIYJ				S	Sg	07 08 40.9	+0.3
JTH	Tanohata	1.11	300	P	Pb	07 08 29.7	+0.2
JTH				S	Sg	07 08 43.8	+0.3
JOM	Ohasama	1.41	274	P	Pn	07 08 33.7	-0.4
JOM				S	Sb	07 08 51.8	-1.0
JKZ	Kuzumaki	1.50	294	P	Pn	07 08 35.6	+0.2
JKZ				S	Sn	07 08 55.0	-0.2
JRG	Rokugo	1.92	271	P	Pn	07 08 42.1	+1.0
JAH	Hinai	2.07	293	P	Pb	07 08 45.3	-0.5
JAH				eS	Sg	07 09 13.1	-1.2
JTM	Tenmabayashi	2.10	312	P	Pn	07 08 44.4	+0.8

NIED **11** *07:11:00,38.°50N×142.°00E,h65km,Mw4.1 Best double couple: M₀1.36000×10¹⁵ NP1:φs150.00000°,δ20.00000°, λ-104.00000°. NP2:φs345.00000°,δ71.00000°, λ-85.00000°.*

JMA 11 07:11:04.2±0.1,38.°52N×142.°04E,h40km±1km,M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.55	263	P	Pn	07 11 15.4	-0.1
JIO				S	Sn	07 11 23.1	-0.5
OFUJ	Ofunato	0.63	333	P	Pn	07 11 16.6	-0.1
OFUJ				S	Sn	07 11 25.1	-0.5
JMK	Ichinoseki	0.77	304	P	Pn	07 11 18.8	+0.2
JMK				S	Sn	07 11 29.1	0.0
JOU	Okura	1.09	262	P	Pn	07 11 23.5	+0.5
JOU				S	Sn	07 11 37.9	+1.0
JOM	Ohasama	1.12	329	P	Pn	07 11 23.8	+0.5
JOM				S	Sn	07 11 38.0	+0.5
JMM	Marumori	1.18	237	P	Pn	07 11 23.9	-0.3
JYK	Kaneyama	1.37	287	P	Pn	07 11 27.6	+0.7
JRG	Rokugo	1.40	309	P	Pn	07 11 28.0	+0.7
JFK	Kawauchi	1.48	219	P	Pn	07 11 27.7	-0.6
JFK				eS	Sn	07 11 45.7	-0.7
JYS	Shirataka	1.58	260	P	Pn	07 11 30.7	+1.0
JYS				eS	Sn	07 11 50.1	+1.1
MAT	Matsushiro	3.63	238	P	Pn	07 12 00.0	+2.1

ISCJB **11** *07:19:13.1±0.9,20.°7S±0.°2×178.°9W±0.°2,h645km,mb3.6/8, Error ellipse: s-maj=29.7km s-min=16.3km az=145.9*
IDC **11** *07:19:14.1±3.5,20.°63S×178.°92W,h640km±44km,mb3.2/8, mb1 3.4/8,mb1mx3.2/33,mbtmp4.1/8,Error ellipse: s-maj=26.8km s-min=15.3km az=152.0*

ISC 11 07:19:14.4±0.9,20.°7S±0.°2×178.°9W±0.°2,h645km,n9, σ1°02/11,mb3.8/8,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	Alice Springs	43.68	257	P	P	07 26 24.9	-0.2
	3.4nm,0.5s,baz=96,slow=7.6,SNR=49						
ASAR				PcP	PcP	07 27 58.1	+0.9
	0.3nm,0.5s,baz=92,slow=4.6,SNR=3.8						
ASAR				S	S	07 32 10.9	+0.4
	1.0nm,0.7s,baz=97,slow=16,SNR=6.8						
WRA	Warramunga Arr	43.76	262	P	P	07 26 25.2	-0.5
	3.1nm,0.5s,baz=97,slow=7.8,SNR=85						
VNDA	Vanda	57.69	185	P	P	07 28 05.3	+0.2
	0.4nm,0.4s,baz=337,slow=7.2,SNR=6.2						
PETK	Petropavlovsk-	76.21	346	P	P	07 29 58.6	+0.4
	3.9nm,0.8s,baz=119,slow=5.8,SNR=3.6						
NVAR	Mina Array Bea	81.71	44	P	P	07 30 28.2	+0.4
	0.5nm,0.6s,baz=225,slow=8.3,SNR=5.8						
SEY	Seymchan	86.34	347	P	P	07 30 50.1	+0.6
	1.2nm,0.5s,baz=133,slow=8.3,SNR=3.9						
ILAR	Eielson Array	88.65	13	P	P	07 30 59.9	-0.4
	0.5nm,0.5s,baz=226,slow=5.9,SNR=5.2						
PDAR	Pinedale Array	89.64	44	P	P	07 31 06.0	+0.2
	0.5nm,0.6s,baz=213,slow=3.5,SNR=5.9						
AKASG	Malin Array Be	142.74	330	PKP	PKPdf	07 37 33.3	-2.5
	2.7nm,0.4s,baz=40,slow=4.5,SNR=8.9						

ISCJB **11** *07:23:33.2±1.1,43.°27N±0.°08×146.°61E±0.°08, h69km±10km,Error ellipse: s-maj=14.5km s-min=6.6km az=146.5*
JMA **11** *07:23:34.0±0.2,43.°24N×146.°55E,h71km±2km,M3.1*
SKHL **11** *07:23:34.4±0.6,43.°26N×146.°63E,h65km±1km,mb4.4/2*

ISC 11 07:23:33.5±2.1,43.°2N±0.°1×146.°65E±0.°08,h63km±16km, n13,σ0°62/21,1C,Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHO	Shikotan	0.66	12	eP	Pn	07 23 47.8	+0.3
SHO				AMB	AMB	07 23 48.0	
	180nm,0.3s						
SHO				i S	Sn	07 23 57.8	+0.1
SHO				A	A	07 23 58.2	
	930nm,0.3s						
SHO				A	A	07 23 58.2	
	1μm,0.3s						
NEM2	Nemuro 2	0.68	282	P	Pn	07 23 48.0	+0.4
NEM2				eS	Sn	07 23 58.1	+0.1
YUK	Yuzh-Kuril'sk	0.99	325	⇑iP	Pn	07 23 51.1	-0.4
YUK				AMB	AMB	07 23 53.3	
	60nm,0.2s						
YUK				AMB	AMB	07 23 53.3	
	170nm,0.2s						
YUK				AMB	AMB	07 23 53.3	
	180nm,0.2s						
YUK				i S	Sn	07 24 04.1	-0.8
YUK				A	A	07 24 08.8	
	180nm,0.2s						
YUK				A	A	07 24 08.8	
	500nm,0.2s						
JRA	Rausu	1.32	303	P	Pn	07 23 56.0	+0.2
JRA				eS	Sn	07 24 12.4	-0.1
JAK	Akkeshi	1.45	262	P	Pn	07 23 57.6	+0.1
JAK				eS	Sn	07 24 15.1	-0.4
JNK	Nakash	1.45	285	P	Pn	07 23 57.4	-0.2
JOB	Onbets	2.09	262	P	Pn	07 24 06.5	+0.4
JAR	Ashorobuto	2.10	273	P	Pn	07 24 06.9	+0.5
JAR				eS	Sn	07 24 30.9	-0.6
JTKR	Abashiri--Toko	2.13	292	P	Pn	07 24 07.0	+0.3
JTKR				eS	Sn	07 24 31.3	-0.7
KUR	Kuril'sk	2.19	23	eP	Pn	07 24 07.8	+0.2
KUR				eS	Sn	07 24 32.4	-1.2
KUR				A	A	07 24 32.6	
	100nm,0.2s						
KUR				A	A	07 24 32.6	
	60nm,0.2s						
JCH	Churui	2.49	257	P	Pn	07 24 11.6	0.0
JMP	Maruseppu	2.51	289	P	Pn	07 24 12.0	0.0
YSS	Yuzh-Sakhalins	4.64	325	eP	Pn	07 24 42.5	+1.6

NIED **11** *07:26:00,36.°30N×142.°50E,h29km,Mw3.6 Best double couple: M₀2.39000×10¹⁴ NP1:φs63.00000°,δ11.00000°, λ-58.00000°. NP2:φs211.00000°,δ81.00000°, λ-96.00000°.*
IDC **11** *07:26:55.1±0.9,36.°14N×142.°65E,h0km,mb3.8/6, mb1 3.9/9,mb1mx3.6/58,mbtmp3.9/9,ML3.8/3,MS3.1/2, Ms1 3.1/2,ms1mx2.6/66,Error ellipse: s-maj=25.4km s-min=20.1km az=74.0*
ISCJB **11** *07:26:56.1±0.8,36.°24N±0.°06×142.°61E±0.°08,h18km, mb3.8/6,MS3.8/1,Error ellipse: s-maj=9.6km s-min=8.0km az=155.1*
JMA **11** *07:26:59.2±0.3,36.°32N×142.°48E,h68km,M3.5*

ISC 11 07:26:56.9±0.9,36.°29N±0.°06×142.°63E±0.°08,h18km,n20, σ1°67/24,mb3.8/6,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	1.55	248	P	Pn	07 27 23.9	+0.3
ONAJ	Iwakimizuishiy	1.68	299	P	Pn	07 27 25.1	-0.3
ONAJ				eS	Sn	07 27 45.2	-1.3
JHO	Hitachi	1.69	281	P	Pn	07 27 25.1	-0.4
JHO				eS	Sn	07 27 45.7	-1.0
BSO1	Boso 1	2.12	220	P	Pn	07 27 32.0	+1.1
BSO4	Boso 4	2.27	236	P	Pn	07 27 34.5	+1.1
JRY	Ryogami san	3.03	266	P	Pn	07 27 44.1	+0.2
JOD2	Odawara 2	3.06	251	P	Pn	07 27 45.1	+0.8
MJAR	Matsushiro Arr	3.57	275	Pn	Pn	07 27 52.5	+1.1
	4.0nm,0.3s,baz=107,slow=8.4,SNR=16						
MJAR				LR	LR	07 29 28.2	
	comp=Z,79nm,19.2s,baz=160,slow=43						
MAT	Matsushiro	3.58	275	P	Pn	07 27 52.8	+1.4
MAT				eS	Sn	07 28 29.5	-3.7
JHJ	Hachijo jima 2	3.94	217	Pn	Pn	07 27 56.0	-0.4
	22nm,0.3s,baz=134,slow=22,SNR=7.0						
JHJ				Sn	Sn	07 28 40.2	-1.9
	55nm,0.3s,baz=295,slow=22,SNR=12						
ASAJ	Asahikawa	7.82	360	Pn	Pn	07 28 48.9	-0.7
	1.7nm,0.3s,baz=238,slow=17,SNR=4.9						
ASAJ				Sn	Sn	07 30 14.2	-3.5
	0.9nm,0.3s,baz=327,slow=23,SNR=2.4						
JCJ	Chichijima	9.18	182	Pn	Pn	07 29 05.7	-2.7
	2.4nm,0.3s,baz=2.9,slow=18,SNR=11						
JCJ				Sn	Sn	07 30 42.0	-9.2
	2.1nm,0.3s,baz=287,slow=23,SNR=3.3						
ZALV	Zalesovo Beam	43.13	313	P	P	07 34 58.1	+2.2
	0.8nm,0.5s,baz=101,slow=7.5,SNR=2.4						
MKAR	Makanchi Array	45.34	303	P	P	07 35 15.5	+1.7
	1.9nm,0.7s,baz=83,slow=10.0,SNR=6.2						
KURBB	Kurchatov Arra	47.23	309	P	P	07 35 29.4	+0.9
	1.1nm,0.8s,baz=83,slow=7.2,SNR=3.0						
WRA	Warramunga Arr	56.48	189	P	P	07 36 37.8	0.0
	0.5nm,0.5s,baz=9.3,slow=7.4,SNR=7.2						
ASAR	Alice Springs	60.20	189	P	P	07 37 03.6	-0.1
	0.2nm,0.4s,baz=0.2,slow=6.1,SNR=5.0						
WSAR	Wadi Sarin	72.01	286	LR	LR	08 14 14.1	
	comp=Z,47nm,18.6s,baz=39,slow=39						
NVAR	Mina Array Bea	74.65	54	P	P	07 38 37.3	+1.8
	0.7nm,0.7s,baz=302,slow=6.5,SNR=7.9						
LPAZ	La Paz	146.20	62	PKPbc	PKPab	07 46 38.1	+0.1
	0.5nm,0.4s,baz=347,slow=4.2,SNR=6.0						

ISCJB **11** *07:27:57.1±1.6,8.°0S±0.°2×68.°0E±0.°3,h15km,mb4.1/13, Error ellipse: s-maj=45.9km s-min=18.9km az=137.0*
IDC **11** *07:27:57.1±1.4,8.°01S×68.°07E,h0km,mb4.1/12, mb1 4.2/12,mb1mx3.9/60,mbtmp4.1/12,MS3.6/1, Ms1 3.6/1,ms1mx2.7/54,Error ellipse: s-maj=45.0km s-min=21.6km az=48.0*
NEIC **11** *07:27:58.6±0.8,8.°00S×68.°06E,h10km,mb4.0/1,Error ellipse: s-maj=26.4km s-min=13.1km az=48.0*

ISC 11 07:27:59.4±1.6,8.°0S±0.°3×68.°1E±0.°3,h15km,n21, σ0°58/17,mb4.1/13,Chagos Archipelago region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08N3	Diego Garcia H	3.34	61	T	T	07 32 21.2	
	baz=238,slow=75,SNR=490						
H08N2	Diego Garcia H	3.36	61	T	T	07 32 20.1	
	baz=238,slow=75,SNR=681						
H08N1	Diego Garcia H	3.37	61	T	T	07 32 17.9	
	baz=238,slow=75,SNR=594						
PALK	Pallekele	19.73	40	LR	LR	07 38 16.8	
	comp=Z,168nm,20.0s,baz=117,slow=31						
CMAR	Chiang Mai Arr	40.25	49	P	P	07 35 35.9	-0.1
	0.8nm,0.4s,baz=243,slow=9.9,SNR=3.3						
MKAR	Makanchi Array	56.00	12	P	P	07 37 37.6	+0.2
	0.7nm,0.6s,baz=202,slow=8.4,SNR=5.0						
BRTR	Keskin Array B	57.17	329	P	P	07 37 45.1	-0.8
	1.4nm,0.8s,baz=134,slow=5.4,SNR=9.5						
ABKAR	Akbulak array	57.45	354	eP	P	07 37 47.6	+0.1
	1.1nm,0.6s						
AKTO	Aktyubinsk	58.84	353	P	P	07 37 57.7	+0.4
	2.3nm,0.7s,baz=192,slow=7.1,SNR=5.6						
KURBB	Kurchatov Arra	59.08	8	P	P	07 37 59.2	+0.3
	2.0nm,1.0s,baz=205,slow=7.3,SNR=8.7						
KURK	Kurchatov	59.19	8	P	P	07 37 59.2	-0.4
BVAR	Borovoye Array	60.82	2	P	P	07 38 11.8	+0.9
	1.2nm,0.8s,baz=174,slow=6.0,SNR=6.9						
ZALV	Zalesovo Beam	63.32	11	P	P	07 38 27.4	-0.2
	0.6nm,0.4s,baz=212,slow=5.1,SNR=3.1						
ARU	Arti	64.67	354	P	P	07 38 35.9	-0.6
	4.3nm,0.2s,baz=164,slow=2.3,SNR=4.2						
ASAR	Alice Springs	64.74	112	P	P	07 38 37.5	-0.2
	0.9nm,0.8s,baz=273,slow=6.1,SNR=7.6						
WRA	Warramunga Arr	65.06	108	P	P	07 38 39.9	0.0
	1.5nm,0.9s,baz=278,slow=5.7,SNR=5.1						
MJAR	Matsushiro Arr	79.11	50	P	P	07 40 03.5	-0.2
	1.0nm,0.7s,baz=238,slow=7.2,SNR=4.4						
ARCES	ARCESS Array B	82.69	346	P	P	07 40 22.8	+0.8
	3.0nm,0.8s,baz=116,slow=4.1,SNR=5.1						
YKA	Yellowknife Ar	125.57	2	PKP	PKPdf	07 46 59.4	-0.4
	0.3nm,0.8s,baz=341,slow=2.7,SNR=7.3						
PDAR	Pinedale Array	145.31	357	PKPbc	PKPbc	07 47 37.1	+0.1
	0.7nm,0.6s,baz=47,slow=1.4,SNR=8.6						
NVAR	Mina Array Bea	149.16	10	PKPbc	PKPbc	07 47 49.2	+1.2
	1.1nm,0.8s,baz=251,slow=2.6,SNR=7.3						

NNC 11 07:28:47.4±0.4,50.°03N×78.°67E,h0km,mb3.5,mpv3.2, 14C-8D,Error ellipse: s-maj=4.8km s-min=2.1km az=84.0,Suspected Mining explosion.,Eastern Kazakhstan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KURK	Kurchatov	0.69	357	⇑P	Pg	07 29 00.3	-0.3
	45nm,0.3s						
KURK				⇑S	Sg	07 29 10.8	+1.3
	117nm,0.5s						
MK31	Makanchi Array	4.04	142	⇓Pn	Pn	07 29 51.1	+0.6
	0.3nm,0.2s,baz=154,slow=43,SNR=33						
MK31				⇑Pg	Pb	07 30 01.3	+2.0
	1.9nm,0.4s,baz=324,slow=14,SNR=20						
MK31				⇓Sn	Sn	07 30 40.1	+1.6
	1.9nm,0.3s,baz=350,slow=25,SNR=5.3						
MK31				⇑Lg	Lg	07 30 55.8	
	17nm,0.5s,baz=341,slow=27,SNR=16						
OTUK	Ortayu	4.52	249	⇑Pn	Pn	07 29 57.5	+0.4
	2.4nm,0.2s						
OTUK				⇑Pg	Pb	07 30 10.2	+2.6
	1.2nm,0.3s						
OTUK				⇑Lg	Lg	07 31 11.8	
	10nm,0.5s						
BVA0	Borovoye Array	5.97	303	⇑Pn	Pn	07 30 17.7	+0.7
	0.7nm,0.3s,baz=106,slow=14,SNR=8.2						
BVA0				⇑Sn	Sn	07 31 27.1	+1.0
	2.9nm,0.6s,baz=112,slow=24,SNR=7.8						
BVA0				⇓Lg	Lg	07 31 58.4	
	0.5nm,0.9s,baz=121,slow=27,SNR=4.3						
CHKZ	Chkalovo	6.18	309	⇑Pn	Pn	07 30 20.2	+0.4
	0.9nm,0.5s						
CHKZ				⇑Sn	Sn	07 31 33.2	+2.1
	1.9nm,0.5s						
CHKZ				⇓Lg	Lg	07 32 05.6	
	5.1nm,0.8s						
ZRNK	Zerenda	6.71	300	⇓Pn	Pn	07 30 27.4	+0.4
	1.6nm,0.8s						
ZRNK				⇓Sn	Sn	07 31 44.3	+0.2
	1.7nm,0.5s						
ZRNK				⇓Lg	Lg	07 32 19.8	
	4.4nm,0.8s						
PDGK	Podgornoye	6.73	175	⇑Lg	Lg	07 32 21.0	
	11nm,0.6s						
TKM2	Tokmak 2	7.42	198	⇑Lg	Lg	07 32 43.1	
	4.2nm,0.5s						
AAK	Ala-Archa	7.94	203	⇓Lg	Lg	07 33 00.7	
	8.6nm,1.1s						
KK31	Karatay Array	8.91	222	⇑Lg	Lg	07 33 30.6	
	3.2nm,0.6s,baz=31,slow=25,SNR=6.1						

IDC **11** *07:32:60.0±2.4,37.°53N×143.°84E,h0km,mb3.5/4, mb1 3.6/5,mb1mx3.3/55,mbtmp3.4/5,ML3.2/1,MS2.8/1, Ms1 2.8/1,ms1mx2.2/53,Error ellipse: s-maj=70.1km s-min=26.1km az=63.0*
ISCJB **11** *07:33:03.1±0.9,37.°77N±0.°05×143.°57E±0.°07,h33km, mb3.5/4,Error ellipse: s-maj=8.4km s-min=7.2km az=24.6*
JMA **11** *07:33:03.5±0.2,37.°93N×143.°44E,h17km,M3.4*

ISC 11 07:33:04.7±1.3,37.°84N±0.°06×143.°61E±0.°09,h35km,n19, σ1°39/26,mb3.5/4,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	1.88	290	P	Pn	07 33 33.5	-0.8
JIO				S	Sn	07 33 55.7	-1.2
OFUJ	Ofunato	1.96	310	P	Pn	07 33 34.5	-0.9
OFUJ				eS	Sn	07 33 57.6	-1.2
JMK	Ichinoseki	2.18	301	P	Pn	07 33 37.9	-0.5
JMM	Marumori	2.23	272	P	Pn	07 33 38.2	-0.9
JMM				eS	Sn	07 34 04.3	-1.1
JOU	Okura	2.38	284	P	Pn	07 33 41.2	0.0
JOM	Ohasama	2.44	313	P	Pn	07 33 41.5	-0.5
JOM				eS	Sn	07 34 10.0	-0.6
JFT	Otama	2.62	264	P	Pn	07 33 44.7	+0.3
JFT				eS	Sn	07 34 14.1	-0.9
JYK	Kaneyama	2.77	294	P	Pn	07 33 46.5	0.0
JRG	Rokugo	2.80	305	P	Pn	07 33 47.6	+0.7
JANG	Nango	3.01	328	P	Pn	07 33 50.5	+0.7
JRY	Ryogami san	4.19	246	P	Pn	07 34 05.6	-0.4
JRY				eS	Sn	07 34 51.4	-2.4
JNBK	Urakawa-nobuka	4.48	352	P	Pn	07 34 09.9	-0.2
JNBK				eS	Sn	07 34 57.9	-3.1
MJAR	Matsushiro Arr	4.50	255	Pn	Pn	07 34 10.7	+0.3
	1.1nm,0.3s,baz=90,slow=15,SNR=6.4						
MAT	Matsushiro	4.50	255	P	Pn	07 34 11.1	+0.7
MAT				eS	Sn	07 35 01.0	-0.5
JCJ	Chichijima	10.78	187	LR	LR	07 39 06.0	
	comp=Z,56nm,21.3s,baz=73,slow=35						
MKAR	Makanchi Array	45.18	302	P	P	07 41 20.8	+2.9
	0.2nm,0.6s,baz=92,slow=7.2,SNR=2.3						
KURBB	Kurchatov Arra	46.89	308	P	P	07 41 34.2	+2.9
	0.8nm,0.5s,baz=81,slow=8.3,SNR=9.9						
WRA	Warramunga Arr	58.13	190	P	P	07 42 53.3	-1.5
	0.5nm,0.6s,baz=8.7,slow=7.6,SNR=4.8						
ASAR	Alice Springs	61.86	190	P	P	07 43 19.3	-1.1
	0.2nm,0.7s,baz=7.5,slow=7.9,SNR=2.7						

ISK **11** *07:42:01.4,39.°55N×31.°82E,h8km,MD2.8*
ISCJB **11** *07:42:02.2±0.6,39.°54N±0.°03×31.°83E±0.°04,h0km,Error ellipse: s-maj=4.5km s-min=4.1km az=173.2*
CSEM **11** *07:42:02.6±0.3,39.°54N×31.°77E,h1km,MD2.6,Error ellipse: s-maj=6.4km s-min=6.0km az=101.0,Suspected Mining explosion.*
DDA **11** *07:42:03.2,39.°52N×31.°76E,h7km,Md2.6,Suspected Mining explosion.*

ISC 11 07:42:02.9±0.8,39.°55N±0.°02×31.°76E±0.°02,h0km,n26, σ1°19/43,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AUSIV	SIVRIHISAR	0.20	236	P	Pg	07 42 06.9	+0.1
AUSIV				S	Sg	07 42 10.6	+1.2
AUSIV	SIVRIHISAR	0.20	236	i P	Pg	07 42 06.9	+0.1
AUSIV				i S	Sg	07 42 10.6	+1.2
SVRH	Sivrihisar-ESK	0.21	240	ePG	Pg	07 42 07.0	+0.1
SVRH				eSG	Sg	07 42 10.9	+1.3
SVRH	Sivrihisar-ESK	0.21	240	ePg	Pg	07 42 07.0	+0.1
SVRH				eSg	Sg	07 42 10.9	+1.3
AUMIH	MIHALICIK	0.38	326	P	Pg	07 42 10.5	+0.3
AUMIH				S	Sb	07 42 18.4	-0.7
AUMIH	MIHALICIK	0.38	326	i P	Pg	07 42 10.5	+0.3
AUMIH				i S	Sb	07 42 18.4	-0.7
KIZT	Kizilcal	0.68	172	ePG	Pg	07 42 14.7	-1.2
KIZT				eSG	Sg	07 42 24.5	-0.2
KIZT	Kizilcal	0.68	172	ePg	Pg	07 42 14.7	-1.2
KIZT				eSg	Sg	07 42 24.5	-0.2
ESKT	Eskisehir	0.70	268	i P	Pg	07 42 15.7	-0.6
ESKT				i S	Sb	07 42 27.5	-0.8
SEYT	Eskypehyr	0.70	268	P	Pg	07 42 15.7	-0.6
SEYT				S	Sb	07 42 27.5	-0.8
LOD	Lodumlu	0.85	66	ePG	Pg	07 42 17.3	-1.9
LOD	Lodumlu	0.85	66	ePg	Pg	07 42 17.3	-1.9
MDUB	Mudurnu	1.01	335	ePG	Pb	07 42 22.6	-0.8
MDUB				eSG	Sb	07 42 36.4	-0.9
MDUB	Mudurnu	1.01	335	ePg	Pb	07 42 22.6	-0.8
MDUB				eSg	Sb	07 42 36.4	-0.9
BORA	Eskisehir	1.06	288	P	Pg	07 42 23.0	-0.2
BORA	Eskisehir	1.06	288	i P	Pg	07 42 23.0	-0.2
BORA				i S	Sn	07 42 40.7	+0.1
KDHN	Kadinhani	1.07	165	P	Pb	07 42 24.2	-0.1
KDHN	Kadinhani	1.07	165	i P	Pb	07 42 24.2	-0.1
KDHN				i S	Sn	07 42 41.6	+0.8
BCAM	Yenicaga	1.28	11	P	Pn	07 42 28.3	0.0
BCAM	Yenicaga	1.28	11	i P	Pn	07 42 28.3	0.0
BCAM				i S	Sn	07 42 49.4	+3.2
GULT	Gulveren	1.30	313	ePN	Pg	07 42 26.0	-1.8
GULT	Gulveren	1.30	313	ePn	Pg	07 42 26.0	-1.8
ELDT	Eldivan	1.59	53	P	Pg	07 42 32.7	-0.7
ELDT				S	Sb	07 42 56.7	+2.7
ELDT	Eldivan	1.59	53	i P	Pg	07 42 32.7	-0.7
ELDT				i S	Sb	07 42 56.7	+2.7
TVSB	Tavsanli	1.78	267	ePN	Pn	07 42 34.3	-0.7
TVSB	Tavsanli	1.78	267	ePn	Pn	07 42 34.3	-0.7

JMA 11 07:48:37.6±0.1,36.°75N×141.°20E,h30km±1km,M2.8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.48	318	P	Pb	07 48 47.6	-0.1
ONAJ				S	Sb

s-min=7.8km az=73.0
DJA 11 07:54:32.1±0.2,2°N±2°×12°7E±°,h100km±2km,M5.3/78,
mB5.7/34,mb5.3/78,MLv5.4/14,Mw(mB)5.2/34
ISC 11 07:54:31.0±0.3,1°51N±0°03×127°22E±0°05,h103km,n254,
σ1°82/286,mb4.9/104,11C-6D,Halmahera

Code	Station Name	Δ° AZ°	Phase Op	ID ISC	Time h m s	Res ISC
LBMI	**Labuha**	**2.15 173**	P	**Pn**	**07 55 07.9**	**+2.2**
SGSI	**Sangihe**	**2.75 322**	P	**Pn**	**07 55 12.0**	**-1.5**
SGSI			S	**Sn**	**07 55 44.3**	**-1.8**
SANI	**Sanana**	**3.75 199**	P	**Pn**	**07 55 28.9**	**+2.1**
SANI			S	**Sn**	**07 56 06.9**	**-3.2**
SWI	**Sorong**	**4.67 120**	P	**Pn**	**07 55 41.4**	**+2.1**
NLAI	**Namlea**	**4.72 182**	P	**Pn**	**07 55 40.5**	**+0.5**
NLAI			S	**Sn**	**07 56 33.0**	**-0.6**
GSPH	**General Santos**	**5.08 334**	*e*P	**Pn**	**07 55 42.8**	**-2.2**
GSPH			*e*S	**Sn**	**07 56 37.2**	**-5.4**
MSAI	**Masohi**	**5.12 161**	P	Pn	07 55 49.8	+4.4
	107nm,1.2s,1μm0.3nm					
LUWI	**Luwuk**	**5.12 240**	P	**Pn**	**07 55 45.0**	**-0.4**
	1μm,0.7s,12μm8.1nm					
LUWI			S	**Sn**	**07 56 45.2**	**+1.8**
	1μm,0.7s,12μm8.1nm					
LUWI	**Luwuk**	**5.12 240**	*e*Pn	**Pn**	**07 55 45.3**	**-0.1**
MRSI	**Marisa**	**5.38 259**	P	**Pn**	**07 55 49.4**	**+0.5**
	923nm,0.8s,15μm4.0nm					
MATI	**Mati**	**5.48 350**	*e*P	**Pn**	**07 55 49.8**	**-0.6**
DAV	**Davao City (W)**	**5.76 344**	P	**Pn**	**07 55 53.4**	**-0.7**
	89nm,0.3s,baz=114,slow=1.5,SNR=5.5					
DAV			S	**Sn**	**07 57 02.0**	**+3.1**
	296nm,0.3s,baz=170,slow=20,SNR=3.9					
DMPH	**Davao City--Mi**	**5.79 343**⇑	*e*P	**Pn**	**07 55 53.5**	**-1.1**
DMPH			*e*S	**Sn**	**07 57 02.8**	**+3.1**
KCP	**Kidapawan**	**5.86 339**⇓	*e*P	**Pn**	**07 55 54.8**	**-0.7**
BNDI	**Bandanaira**	**6.56 156**	P	**Pn**	**07 56 07.1**	**+2.1**
FAKI	**Fak Fak**	**6.68 131**	P	**Pn**	**07 56 09.7**	**+3.1**
	234nm,1.6s,2μm0.8nm					
FAKI	**Fak Fak**	**6.68 131**	*e*Pn	**Pn**	**07 56 09.6**	**+3.0**
BUKP	**Musuan**	**6.68 341**	*e*P	**Pn**	**07 56 05.1**	**-1.5**
KDI	**Kendari**	**7.12 220**	P	**Pn**	**07 56 11.9**	**-0.7**
	264nm,0.8s,4μm1.4nm					
KDI			S	**Sn**	**07 57 23.0**	**-9.0**
	264nm,0.8s,4μm1.4nm					
CGP	**Cagayan de Oro**	**7.34 340**	*e*P	**Pn**	**07 56 13.6**	**-2.0**
PAGZ	**Pagadian**	**7.37 329**	*e*P	**Pn**	**07 56 14.2**	**-1.7**
PCI	**Palu**	**7.77 252**	P	**Pn**	**07 56 21.2**	**-0.2**
	466nm,1.0s,4μm1.4nm					
PCI	**Palu**	**7.77 252**	P	**Pn**	**07 56 23.3**	**+1.9**
PCI			pmax	pmax		
	comp=Z,466nm,1.0s					
IPIL	**Ipil**	**7.77 324**	*e*P	**Pn**	**07 56 20.1**	**-1.3**
TTSI	**Tana Toraja**	**8.68 239**	P	**Pn**	**07 56 33.8**	**+0.1**
	comp=Z,1μm,0.8s,comp=Z,8μm					
SPSI	**Sidrap Palu**	**9.22 234**	P	**Pn**	**07 56 41.6**	**+0.4**
	comp=Z,1μm,0.7s,comp=Z,11μm					
MYLDM	**Lahad Datu**	**9.44 293**	⇑P	**Pn**	**07 56 46.5**	**+2.4**
MYLDM	**Lahad Datu**	**9.44 293**	*e*Pn	**Pn**	**07 56 45.2**	**+1.1**
TSM	**Tawau**	**9.74 287**	⇑P	**Pn**	**07 56 48.1**	**-0.1**
KAPI	**Kappang**	**9.89 229**	P	**Pn**	**07 56 50.5**	**+0.3**
	comp=Z,22nm,0.3s,baz=30,slow=3.4,SNR=65					
KAPI			S	**Sn**	**07 58 37.3**	**-2.1**
	comp=Z,11nm,0.3s,baz=58,slow=23,SNR=11					
KAPI	**Kappang**	**9.89 229**	*e*Pn	**Pn**	**07 56 50.1**	**-0.1**
KAPI			S	**Sn**	**07 58 37.3**	**-2.1**
BSSI	**Bau Bau, Buton**	**10.15 221**	P	**Pn**	**07 56 55.6**	**+1.8**
BKB	**Balikpapan**	**10.66 255**	P	**Pn**	**07 57 02.8**	**+1.7**
	comp=Z,186nm,0.5s,comp=Z,4μm					
SDKM	**Sandakan**	**10.82 293**	⇓P	**Pn**	**07 57 03.0**	**+0.1**
SOEI	**Soe**	**11.57 195**	P	P	07 57 27.2	+4.8
SOEI	**Soe**	**11.57 195**	Pn	**Pn**	**07 57 14.4**	**+1.2**
	comp=Z,76nm,0.7s					
KDM	**Kudat**	**11.67 298**	⇓P	**Pn**	**07 57 15.8**	**+1.5**
KKM	**Kota Kinabalu**	**11.87 293**	⇑P	**Pn**	**07 57 18.0**	**+0.9**
KKM	**Kota Kinabalu**	**11.87 293**	*e*Pn	**Pn**	**07 57 17.5**	**+0.4**
BBKI	**Banjar Baru**	**13.33 248**	P	**Pn**	**07 57 37.0**	**+0.8**
	comp=Z,190nm,1.1s,comp=Z,5μm					
GENI	**Genyem**	**13.57 107**	P	**Pn**	**07 57 40.4**	**+1.1**
PLAI	**Plampang**	**13.93 222**	P	**P**	**07 57 46.9**	**-1.9**
JAY	**Jayapura**	**14.06 107**	P	**Pn**	**07 57 47.8**	**+2.1**
	comp=Z,61nm,0.9s,comp=Z,579nm					
BTM	**Bintulu**	**14.23 277**	⇑P	**Pn**	**07 57 48.6**	**+0.8**
TWSI	**Taliwang, Sumb**	**14.49 225**	P	**P**	**07 57 57.4**	**+2.5**
MTN	**Manton Dam**	**14.78 165**	*e*Pn	**Pn**	**07 57 53.5**	**-1.4**
SBUM	**Sibu**	**15.02 274**	*e*Pn	**Pn**	**07 57 57.5**	**-0.5**
	comp=Z,148nm,1.0s					
SRBI	**Singaraja**	**15.31 231**	P	**P**	**07 58 03.7**	**-0.3**
	comp=Z,134nm,1.0s					
DNP	**Denpasar**	**15.68 230**	P	**P**	**07 58 11.6**	**+3.4**
STKI	**Sintang**	**15.81 265**	P	**P**	**07 58 08.7**	**-0.9**
	comp=Z,66nm,1.4s,comp=Z,17μm					
ABJI	**Asem Bagus**	**15.92 234**	P	**P**	**07 58 13.0**	**+2.2**
	comp=Z,155nm,1.2s,comp=Z,4μm					
JAGI	**Jajag, Banyuwa**	**16.38 233**	P	**P**	**07 58 18.8**	**+2.9**
	comp=Z,129nm,1.1s					
JAGI	**Jajag, Banyuwa**	**16.38 233**	*e*Pn	**P**	**07 58 17.3**	**+1.4**
	comp=Z,138nm,1.1s					
GMJI	**Gumukmas**	**16.83 235**	P	**P**	**07 58 26.3**	**+5.4**
KSM	**Kuching**	**16.91 270**	*e*Pn	**P**	**07 58 21.6**	**-0.3**
	comp=Z,52nm,0.7s					
NGJI	**Ngawi**	**18.03 241**	P	**Pn**	**07 58 37.3**	**+2.3**
	comp=Z,336nm,1.1s					
PWJI	**Pagerwojo**	**18.06 238**	P	**Pn**	**07 58 36.5**	**+1.1**
	comp=Z,286nm,0.8s					
PCJI	**Pacitan**	**18.68 239**	P	**Pn**	**07 58 45.3**	**+2.5**
	comp=Z,541nm,1.0s,comp=Z,5μm					
SMRI	**Semarang**	**18.78 243**	P	**Pn**	**07 58 45.5**	**+1.5**
	comp=Z,183nm,1.0s					
SMRI	**Semarang**	**18.78 243**	*e*P	**Pn**	**07 58 45.2**	**+1.2**
	comp=Z,83nm,0.8s					
UGM	**Wanagama**	**19.11 240**	P	**Pn**	**07 58 48.8**	**+0.9**
	comp=Z,234nm,1.2s					
UGM	**Wanagama**	**19.11 240**	*e*P	**Pn**	**07 58 48.5**	**+0.6**
	comp=Z,171nm,0.8s					
FITZ	**Fitzroy Crossi**	**19.55 185**	P	**P**	**07 58 50.8**	**+0.1**
	comp=Z,11nm,0.3s,baz=18,slow=9.4,SNR=104					
FITZ			LR	LR	08 06 59.1	
	comp=Z,76nm,20.1s,baz=1.0,slow=38					
FITZ	**Fitzroy Crossi**	**19.55 185**	*e*P	**P**	**07 58 50.6**	**-0.1**
	comp=Z,55nm,0.5s					
CMJI	**Cimerak**	**20.88 243**	P	Pn	07 59 07.4	-1.1
	comp=Z,172nm,0.7s,comp=Z,2μm					
GUMO	**Guam**	**21.18 55**	LR	LR	08 06 23.2	
	comp=Z,59nm,19.5s,baz=233,slow=34					
LEM	**Lembang**	**21.25 247**	P	P	07 59 18.4	+9.2
CISI	**Cisompet, Garu**	**21.35 245**	P	**P**	**07 59 11.9**	**+1.7**
	comp=Z,129nm,0.8s,comp=Z,6μm					
CISI	**Cisompet, Garu**	**21.35 245**	*e*P	**P**	**07 59 10.4**	**+0.2**
	comp=Z,95nm,0.9s					
CBJI	**Citeko**	**21.81 249**	P	**P**	**07 59 18.1**	**+3.1**
	comp=Z,659nm,0.3s,comp=Z,54μm					
CNJI	**Cibinong**	**21.88 246**	P	**P**	**07 59 16.7**	**+0.9**
	comp=Z,333nm,0.9s,comp=Z,3μm					
TWG	**Pinlang**	**22.01 345**	*e*P	**P**	**07 59 15.9**	**-1.1**
COEN	**Coen**	**22.05 135**	*e*P	**P**	**07 59 18.0**	**+0.5**
	comp=Z,23nm,0.8s					
WRAB	**Tennant Creek**	**22.43 162**	*c i*P	**P**	**07 59 20.5**	**-1.0**
WRAB			pmax	pmax		
	comp=Z,364nm,0.9s					
WRAB	**Tennant Creek**	**22.43 162**	*e*P	**P**	**07 59 20.5**	**-1.0**
	comp=Z,219nm,0.6s					
WRA	**Warramunga Arr**	**22.43 162**	P	**P**	**07 59 20.5**	**-1.0**
	comp=Z,174nm,0.4s,baz=342,slow=11,SNR=1443					
WRA			S	**S**	**08 03 18.8**	**-2.1**
	comp=Z,3.4nm,0.7s,baz=339,slow=21,SNR=5.4					
WRA			ScP	**ScP**	**08 06 38.5**	**-2.5**
	comp=Z,4.6nm,0.7s,baz=341,slow=3.2,SNR=12					
WB2	**Warramunga Arr**	**22.44 162**	*e*P	**P**	**07 59 20.2**	**-1.3**
	comp=Z,205nm,0.6s					
YULB	**Yu-li**	**22.50 346**	*e*P	**P**	**07 59 20.5**	**-1.7**
TPUB	**Ta-pu**	**22.59 344**	*e*P	**P**	**07 59 23.3**	**+0.3**
	comp=Z,25nm,0.7s					
PMG	**Port Moresby**	**22.63 119**	P	**P**	**07 59 22.0**	**-1.6**
	comp=Z,22nm,0.8s,baz=303,slow=5.1,SNR=10					
PMG	**Port Moresby**	**22.63 119**	*e*P	**P**	**07 59 23.5**	**0.0**
PMG			pmax	pmax		
	comp=Z,115nm,1.1s					
PMG	**Port Moresby**	**22.63 119**	*e*P	**P**	**07 59 23.7**	**+0.2**
	comp=Z,21nm,0.8s					
CGJI	**Cibinong**	**22.96 249**	P	**P**	**07 59 26.8**	**0.0**
	comp=Z,353nm,0.7s,comp=Z,3μm					
SSLB	**Suanglung**	**22.96 345**	*e*P	**P**	**07 59 26.4**	**-0.4**
	comp=Z,20nm,0.9s					
BLSI	**Bandar Lampung**	**22.99 253**	P	**P**	**07 59 31.9**	**+4.7**
	comp=Z,159nm,0.6s					
MYKOM	**Kota Tinggi**	**23.37 271**	⇑P	**P**	**07 59 30.8**	**+0.1**
MYKOM	**Kota Tinggi**	**23.37 271**	*e*P	**P**	**07 59 28.1**	**-2.6**
	comp=Z,26nm,0.6s					
MBWA	**Marble Bar**	**23.69 198**	*e*P	**P**	**07 59 33.2**	**-0.4**
	comp=Z,54nm,0.4s					
KASI	**Kota Agung**	**23.75 253**	P	**P**	**07 59 35.5**	**+1.4**
	comp=Z,70nm,0.6s					
LWLI	**Liwa**	**24.03 254**	P	**P**	**07 59 41.3**	**+4.5**
	comp=Z,117nm,1.0s,comp=Z,10μm					
LHSI	**Lahat**	**24.27 257**	P	**P**	**07 59 42.5**	**+3.6**
	comp=Z,84nm,0.8s					
KTGM	**Kuala Trenggan**	**24.34 280**	⇓P	**P**	**07 59 40.2**	**+0.7**
XMIS	**Christmas Isla**	**24.55 240**	*e*P	**P**	**07 59 41.5**	**+0.1**
	comp=Z,427nm,1.4s					
MASI	**Maura Aman, Be**	**25.40 260**	P	**P**	**07 59 53.7**	**+4.5**
	comp=Z,468nm,0.9s,comp=Z,7μm					
FRIM	**Kepong**	**25.63 274**	⇑P	**P**	**07 59 51.5**	**+0.3**
AS31	**Alice Springs**	**25.86 166**	*e*P	**P**	**07 59 52.3**	**-0.9**
	comp=Z,33nm,0.3s					
ASAR	**Alice Springs**	**25.86 166**	P	**P**	**07 59 52.6**	**-0.6**
	comp=Z,40nm,0.5s,baz=350,slow=7.4,SNR=639					
ASAR			ScP	**ScP**	**08 06 48.0**	**-2.4**
	comp=Z,3.7nm,0.6s,baz=341,slow=2.9,SNR=12					
AS01	**Alice Springs**	**25.87 166**	*e*P	**P**	**07 59 51.9**	**-1.4**
PPI	**Padang Panjang**	**26.90 266**	P	**P**	**08 00 09.1**	**+6.5**
CHBT	**CHBT**	**27.07 296**	P	**P**	**08 00 04.1**	**0.0**
	comp=Z,96nm,0.9s					
PANO	**Nakornpanom**	**27.13 306**	P	**P**	**08 00 04.4**	**-0.2**
	comp=Z,38nm,1.2s					
SKNT	**Sakolnakorn**	**27.55 305**	P	**P**	**08 00 08.1**	**-0.3**
	comp=Z,31nm,1.2s					
MNSI	**Mandailing Nat**	**27.65 269**	P	**P**	**08 00 13.1**	**+3.8**
	comp=Z,43nm,0.7s,comp=Z,4μm					
PSI	**Prapat**	**28.31 273**	*e*P	**P**	**08 00 13.8**	**-1.6**
PSI			pmax	pmax		
	comp=Z,27nm,0.9s					
PSI	**Prapat**	**28.31 273**	*e*P	**P**	**08 00 13.8**	**-1.6**
	comp=Z,27nm,0.9s					
CTA	**Charters Tower**	**28.44 140**	P	**P**	**08 00 16.1**	**-0.2**
	comp=Z,13nm,0.9s,baz=325,slow=9.6,SNR=11					
CTAO	**Charters Tower**	**28.44 140**	*e*P	**P**	**08 00 17.2**	**+0.8**
CTAO			pmax	pmax		
	comp=Z,122nm,0.8s					
CTAO	**Charters Tower**	**28.44 140**	*e*P	**P**	**08 00 17.2**	**+0.8**
	comp=Z,122nm,0.8s					
CHAI	**Chaiyaphum**	**28.69 301**	P	**P**	**08 00 17.6**	**-1.0**
	comp=Z,11nm,0.8s,comp=Z,943nm					
NONG	**Nongkai**	**28.80 306**	P	**P**	**08 00 18.8**	**-0.7**
	comp=Z,29nm,0.8s					
KCSI	**Kotacane, Aceh**	**29.49 274**	P	**P**	**08 00 25.1**	**-0.6**
	comp=Z,30nm,1.6s					
PHET	**Kaeng Krachan**	**29.58 294**	P	**P**	**08 00 27.8**	**+1.3**
	comp=Z,9.5nm,0.9s					
PBKT	**Sadao Pong**	**29.87 302**	P	**P**	**08 00 29.5**	**+0.6**
	comp=Z,13nm,0.7s					
LOEI	**Loei**	**30.06 303**	P	**P**	**08 00 27.1**	**-3.6**
	comp=Z,20nm,0.8s,comp=Z,465nm					
UTTA	**Uttaradit**	**30.77 303**	P	**P**	**08 00 36.9**	**0.0**
	comp=Z,3.8nm,0.9s					
NANT	**Nan**	**31.16 305**	P	**P**	**08 00 40.9**	**+0.5**
	comp=Z,6.4nm,0.7s,comp=Z,2μm					
NJ2	**Nanjing**	**31.39 346**	*e*P	**P**	**08 00 41.4**	**-0.8**
NJ2			pmax	pmax		
	comp=Z,22nm,0.5s					
SUKH	**Sukhothai**	**31.42 302**	P	**P**	**08 00 42.7**	**0.0**
	comp=Z,6.1nm,0.7s,comp=Z,71nm					
GYA	**Guiyang**	**31.72 323**⇑	*i*P	**P**	**08 00 48.8**	**+3.5**
GYA			pP	pP	08 01 11.2	+2.8
GYA			sP	sP	08 01 23.6	+3.3
GYA			PP	**PP**	**08 01 57.8**	**-1.1**
GYA			PcP	**PcP**	**08 03 37.4**	**+2.6**
GYA			S	**S**	**08 05 50.6**	**+2.9**
GYA			sS	sS	08 06 30.0	+2.2
GYA			ScP	**ScP**	**08 07 10.8**	**+1.9**
GYA			SS	**SnSn**	**08 07 47.5**	**+1.7**
GYA			ScS	**ScS**	**08 11 06.2**	**-1.2**
GYA			pmax	pmax		
	comp=Z,70nm,1.0s					
GYA			pmax	pmax		
	comp=Z,370nm,6.9s					
GYA			LR	LR		
	comp=Z,680nm,17.2s					
GYA			LR	LR		
	comp=Z,510nm,17.8s					
GYA			LR	LR		
	comp=Z,600nm,17.9s					
CRAI	**Chiangrai**	**32.16 307**	P	**P**	**08 00 49.3**	**+0.1**
	comp=Z,47nm,1.9s					
CM01	**Chiang Mai Arr**	**32.42 303**	*e*P	**P**	**08 00 51.0**	**-0.4**
CM31	**Chiang Mai Arr**	**32.45 303**	*e*PcP	**PcP**	**08 03 38.3**	**+1.5**
CMMT	**Chiang Mai**	**32.61 304**	P	**P**	**08 00 53.1**	**-0.1**
	comp=Z,16nm,1.1s					
CHTO	**Chiang Mai**	**32.62 304**	P	**P**	**08 00 53.1**	**-0.1**
	comp=Z,68nm,1.1s					
CHTO	**Chiang Mai**	**32.62 304**	*e*P	**P**	**08 00 53.1**	**-0.1**
CHTO			pmax	pmax		
	comp=Z,48nm,1.6s					
CHTO	**Chiang Mai**	**32.62 304**	*e*P	**P**	**08 00 53.1**	**-0.1**
	comp=Z,48nm,1.6s					
KMI	**Kunming**	**33.31 317**	P	**P**	**08 01 01.8**	**+2.5**
KMI			pmax	pmax		
	comp=Z,19nm,0.5s					
KMI			pmax	pmax		
	comp=Z,120nm,4.2s					
BBOO	**Buckleboo**	**35.14 167**	*e*P	**P**	**08 01 14.1**	**-0.8**
	comp=Z,63nm,0.6s					
EIDS	**Eidsvold**	**35.32 141**	*e*P	**P**	**08 01 16.1**	**-0.4**
	comp=Z,55nm,1.0s					
NWAO	**Narrogin (SRO)**	**35.53 195**	P	**P**	**08 01 17.8**	**-0.4**
	comp=Z,23nm,0.4s,baz=262,slow=8.0,SNR=38					
NWAO	**Narrogin (SRO)**	**35.53 195**	*e*P	**P**	**08 01 18.3**	**+0.1**
NWAO			pmax	pmax		
	comp=Z,107nm,0.6s					
NWAO	**Narrogin (SRO)**	**35.53 195**	*e*P	**P**	**08 01 18.2**	**+0.1**
	comp=Z,107nm,0.6s					
KSAR	**Wonju Array Be**	**35.76 1**	P	**P**	**08 01 20.3**	**+0.2**
KSAR	**Wonju Array Be**	**35.76 1**	P	**P**	**08 01 20.2**	**+0.2**
KSRS	**Korea Array**	**35.77 1**	P	**P**	**08 01 20.2**	**+0.1**
	comp=Z,1.2nm,0.6s,baz=178,slow=9.9,SNR=5.6					
STKA	**Stephens Creek**	**35.90 159**	P	**P**	**08 01 20.3**	**-0.9**
	comp=Z,86nm,0.7s,baz=336,slow=8.5,SNR=106					
STKA	**Stephens Creek**	**35.90 159**	*e*P	**P**	**08 01 20.4**	**-0.9**
STKA			pmax	pmax		
	comp=Z,18nm,0.8s					
STKA	**Stephens Creek**	**35.90 159**	*e*P	**P**	**08 01 20.4**	**-0.9**
	comp=Z,18nm,0.8s					
MJAR	**Matsushiro Arr**	**36.31 15**	P	**P**	**08 01 22.9**	**-1.9**
	comp=Z,1.7nm,0.5s,baz=190,slow=8.8,SNR=6.2					
XAN	**Xi'an**	**36.61 334**	P	**P**	**08 01 26.7**	**-0.7**
XAN			pmax	pmax		
	comp=Z,20nm,1.3s					
XAN			pmax	pmax		
	comp=Z,72nm,7.2s					
CD2	**Chengdu**	**36.72 325**	P	**P**	**08 01 27.2**	**-1.2**
CD2			pP	pP	08 01 50.0	-1.9
CD2			sP	sP	08 02 01.6	-2.1
CD2			PP	**PP**	**08 02 53.1**	**-1.0**
CD2			S	**S**	**08 07 04.9**	**+0.2**
CD2			sS	sS	08 07 44.8	-0.4
CD2			pmax	pmax		
	comp=Z,20nm,0.8s					
CD2			pmax	pmax		
	comp=Z,110nm,5.1s					
CD2			LR	LR		
	comp=Z,340nm,6.6s					
CD2			LR	LR		
	comp=Z,250nm,15.6s					
ARMA	**Armidale**	**39.36 146**	*e*P	**P**	**08 01 51.4**	**+0.8**
	comp=Z,79nm,0.8s					
BJI	**Beijing**	**39.65 347**	P	**P**	**08 01 51.9**	**-0.8**
BJI			pmax	pmax		
	comp=Z,9.0nm,1.1s					
BJI			pmax	pmax		
	comp=Z,69nm,4.0s					
LZH	**Lanzhou**	**40.66 330**	*e*P	**P**	**08 02 02.7**	**+1.3**
LZH			pP	pP	08 02 24.7	-0.5
LZH			sP	sP	08 02 34.2	-2.7
LZH			*e*S	**S**	**08 08 05.0**	**+1.0**
LZH			sS	sS	08 08 45.6	+0.6
LZH			SS	**SS**	**08 11 00.4**	**-8.0**
LZH			pmax	pmax		
	comp=Z,45nm,1.2s					
LZH			pmax	pmax		
	comp=Z,130nm,4.5s					
HHC	**Hu-ho-hao-te**	**41.65 342**	*e*P	**P**	**08 02 11.0**	**+1.7**
HHC			PP	**PnPn**	**08 03 54.0**	**+0.6**
HHC			S	**S**	**08 08 26.8**	**+8.5**
HHC			pmax	pmax		
	comp=Z,49nm,1.0s					
HHC			pmax	pmax		
	comp=Z,410nm,6.1s					
HHC			LR	LR		
	comp=Z,1μm,14.8s					
HHC			LR	LR		
	comp=Z,1μm,15.1s					
HHC			LR	LR		
	comp=Z,1μm,15.3s					
CAN	**Canberra**	**41.92 153**	*e*P	**P**	**08 02 12.4**	**+0.8**
CAN			pmax	pmax		
	comp=Z,75nm,0.8s					
CAN	**Canberra**	**41.92 153**	*e*P	**P**	**08 02 12.3**	**+0.8**
	comp=Z,75nm,0.8s					
CN2	**Changchun**	**42.14 358**	*e*P	**P**	**08 02 16.5**	**+3.4**
USRK	**Ussuriysk Ar.**	**42.72 5**	P	**P**	**08 02 18.6**	**+0.8**
	comp=Z,3.3nm,0.9s,baz=180,slow=7.4,SNR=5.6					
LSA	**Lhasa**	**44.28 313**	*e*P	**P**	**08 02 32.1**	**+0.9**
LSA			pmax	pmax		
	comp=Z,16nm,0.6s					
LSA	**Lhasa**	**44.28 313**	*e*P	**P**	**08 02 32.1**	**+0.9**
	comp=Z,16nm,0.6s					
GTA	**Gaotai**	**45.25 330**	*e*P	**P**	**08 02 38.4**	**+0.1**
GTA			pP	pP	08 03 02.6	+0.1
GTA			sP	sP	08 03 13.2	-0.9
GTA			S	**S**	**08 09 11.4**	**+0.4**
GTA			sS	sS	08 09 49.8	-2.8
GTA			SS	**ScS**	**08 12 25.9**	**+0.9**
GTA			pmax	pmax		
	comp=Z,12nm,0.9s					
GTA			pmax	pmax		
	comp=Z,120nm,6.2s					
GTA			LR	LR		
	comp=Z,93nm,10.7s					
GTA			LR	LR		
	comp=Z,130nm,12.8s					
GTA			LR	LR		
	comp=Z,110nm,12.4s					
KLR	**Kul'dur**	**47.70 4**	P	**P**	**08 02 57.5**	**+0.3**
	comp=Z,0.7nm,0.5s,baz=255,slow=4.0,SNR=4.2					
KKN	**Kakani**	**47.86 307**	*e*P	**P**	**08 02 58.7**	**-0.4**
	comp=Z,14nm,0.3s					
GKN	**Gorkha**	**48.47 307**	*e*P	**P**	**08 03 03.2**	**-0.5**
	comp=Z,40nm,0.9s					
KOLN	**Koldanda**	**49.20 306**	*e*P	**P**	**08 03 09.4**	**+0.1**
	comp=Z,81nm,0.6s					
ULN	**Ulaanbaatar**	**49.37 342**	*d i*P	**P**	**08 03 10.2**	**0.0**
ULN			pmax	pmax		
	comp=Z,5.0nm,1.0s					
ULN	**Ulaanbaatar**	**49.37 342**	*e*P	**P**	**08 03 09.7**	**-0.5**
	comp=Z,10nm,1.1s					
PYUN	**Piuthan**	**49.83 306**	*e*P	**P**	**08 03 14.3**	**+0.2**
	comp=Z,93nm,0.7s					
HYB	**Hyderabad**	**50.35 291**⇑	*i*P	**P**	**08 03 17.5**	**-0.5**
	comp=Z,38nm,0.8s					
NKL	**Nikolayevsk**	**52.66 10**	*e*P	P	08 03 29.0	-5.5
MSVF	**Nonsavu**	**53.57 113**	*e*P	**P**	**08 03 42.5**	**+0.6**
MSVF			pmax	pmax		
	comp=Z,49nm,1.2s					
MSVF	**Nonsavu**	**53.57 113**	*e*P	**P**	**08 03 42.5**	**+0.6**
	comp=Z,49nm,1.2s					
MOY	**Mondy**	**54.62 340**	*e*P	**P**	**08 03 51.9**	**+2.9**
WMQ	**Urumqi**	**54.82 326**	P	**P**	**08 03 50.9**	**+0.4**
WMQ			pP	pP	08 04 15.2	-0.3
WMQ			sP	sP	08 04 26.5	-0.4
WMQ			pmax	pmax		
	comp=Z,9.0nm,0.8s					
WMQ			pmax	pmax		
	comp=Z,57nm,4.0s					
SMLA	**Simla**	**55.68 307**	*e*P	**P**	**08 03 57.0**	**+0.2**
BOD	**Bodaibo**	**57.12 352**	*e*P	**P**	**08 04 05.8**	**-0.7**
BOD			pmax	pmax		
	comp=Z,3.0nm,1.9s					
PETK	**Petropavlovsk-**	**57.30 21**	P	**P**	**08 04 07.2**	**-0.7**
	comp=Z,3.2nm,0.6s,baz=197,slow=4.8,SNR=7.7					
LBZ	**Lake Benmore**	**59.58 145**	*e*P	**P**	**08 04 24.0**	**0.0**
	comp=Z,85nm,0.6s					
MK01	**Makanchi Array**	**59.63 326**	*e*P	**P**	**08 04 23.9**	**-0.4**
MK31	**Makanchi Array**	**59.65 326**	*e*P	**P**	**08 04 24.2**	**-0.2**
MK31			pmax	pmax		
	comp=Z,11nm,0.6s					
MK31	**Makanchi Array**	**59.65 326**	*e*P	**P**	**08 04 24.3**	**-0.2**
MKAR	**Makanchi Array**	**59.65 326**	P	**P**	**08 04 24.2**	**-0.3**
	comp=Z,12nm,0.5s,baz=116,slow=7.5,SNR=83					
MKAR			ScP	**ScP**	**08 08 59.3**	**-2.9**
	comp=Z,1.3nm,0.7s,baz=123,slow=4.0,SNR=5.9					
MKAR	**Makanchi Array**	**59.65 326**	*e*P	**P**	**08 04 24.3**	**-0.1**
MKAR	**Makanchi Array**	**59.65 326**	*e*P	**P**	**08 04 24.3**	**-0.1**
THZ	**Tophouse**	**59.66 142**	*e*P	**P**	**08 04 24.3**	**-0.3**
	comp=Z,58nm,0.7s					
RPZ	**Rata Peaks**	**59.68 144**	P	**P**	**08 04 24.3**	**-0.4**
	comp=Z,60nm,0.8s,baz=11,slow=1.3,SNR=14					
RPZ	**Rata Peaks**	**59.68 144**	*e*P	**P**	**08 04 24.7**	**+0.1**
	comp=Z,65nm,0.9s					
MAKZ	**Makanchi**	**59.84 326**	P	**P**	**08 04 25.1**	**-0.6**
MAKZ			pmax	pmax		
	comp=Z,11nm,0.6s					
MAKZ	**Makanchi**	**59.84 326**	*e*P	**P**	**08 04 25.8**	**+0.1**
	comp=Z,14nm,0.6s					
KSH	**Kashi**	**59.96 316**	P	**P**	**08 04 28.3**	**+1.5**

comp=Z,4.0nm,0.7s,baz=142,slow=7.3,SNR=4.7
BRVK Borovoye 69.51 327 P P 08 05 26.9 -1.5
BRVK pmax pmax
comp=Z,22nm,1.0s
BRVK Borovoye 69.51 327 *eP* **P 08 05 27.9 -0.5**
comp=Z,16nm,1.1s
CHKZ Chkalovo 69.61 328 P P 08 05 27.7 -1.3
CHKZ pmax pmax
comp=Z,8.0nm,1.1s
WSAR Wadi Sarin 69.76 294 P P 08 05 30.4 -0.2
comp=Z,4.3nm,0.6s,baz=93,slow=4.9,SNR=5.1
TIXI Tiksi 70.04 1 *eP* **P 08 05 31.9 +0.6**
ZRNK Zerenda 70.16 327 P P 08 05 31.2 -1.2
ZRNK pmax pmax
comp=Z,11nm,0.9s
ZRNK Zerenda 70.16 327 *eP* **P 08 05 31.5 -0.9**
comp=Z,12nm,0.8s
GEYT Alibeck 72.67 309 P P 08 05 48.0 +0.2
comp=Z,3.0nm,0.6s,baz=160,slow=4.7,SNR=6.2
NRIK Noril'sk 72.69 346 P P 08 05 46.6 -0.7
comp=Z,1.8nm,0.5s,baz=113,slow=5.6,SNR=4.2
AB31 Akbulak array 74.17 321 P P 08 05 55.1 -1.3
AB31 pmax pmax
comp=Z,4.0nm,0.7s
ABKAR Akbulak array 74.17 321 *eP* **P 08 05 55.6 -0.8**
UNV Unalaska Valle 74.96 34 P P 08 06 00.0 -0.8
AKTO Aktyubinsk 75.70 322 P P 08 06 04.7 -0.5
comp=Z,7.0nm,0.7s,baz=107,slow=12,SNR=10
AKTO Aktyubinsk 75.70 322 P P 08 06 04.0 -1.2
AKTO pmax pmax
comp=Z,8.0nm,0.8s
ARU Arti 77.06 328 P P 08 06 11.4 -1.4
comp=Z,3.8nm,0.2s,baz=104,slow=11,SNR=3.9
ARU LR LR 08 41 48.7
comp=Z,86nm,20.7s,baz=92,slow=37
ARU Arti 77.06 328*d iP* **P 08 06 13.0 +0.3**
ARU 08 09 03.0
ARU S **S** 08 15 54.0 +0.9
ARU SS **SS** 08 20 49.4 -3.0
ARU pmax pmax
comp=Z,9.0nm,1.0s
ARU Arti 77.06 328 *eP* **P 08 06 16.0 +3.3**
comp=Z,6.5nm,0.7s
VNDA Vanda 81.18 173 P P 08 06 33.9 -0.9
comp=Z,8.5nm,0.8s,baz=317,slow=6.7,SNR=73
VNDA Vanda 81.18 173 *eP* **P 08 06 34.5 -0.3**
VNDA pmax pmax
comp=Z,6.0nm,0.8s
VNDA Vanda 81.18 173 *eP* **P 08 06 34.5 -0.3**
comp=Z,6.1nm,0.8s
MAW Mawson 81.86 200 P P 08 06 37.4 -1.0
comp=Z,8.0nm,0.6s,baz=72,slow=7.2,SNR=14
MAW Mawson 81.86 200 *eP* **P 08 06 38.7 +0.2**
MAW pmax pmax
comp=Z,2.0nm,0.8s
MAW Mawson 81.86 200 *eP* **P 08 06 38.7 +0.2**
comp=Z,2.2nm,0.8s
SBA Scott Base 82.08 172 *eP* **P 08 06 40.0 +0.5**
SBA pmax pmax
comp=Z,15nm,1.4s
SBA Scott Base 82.08 172 *eP* **P 08 06 40.0 +0.5**
comp=Z,15nm,1.4s
TT01 Tatalina 82.64 27 *eP* **P 08 06 42.5 -0.1**
TTA Tatalina 82.64 27 *eP* **P 08 06 43.2 +0.4**
TTA pmax pmax
comp=Z,13nm,1.2s
TTA Tatalina 82.64 27 *eP* **P 08 06 43.2 +0.4**
comp=Z,13nm,1.2s
KDAK Kodiak Island 83.49 32 *i P* **P 08 06 47.3 +0.1**
ZEI Tsey 84.07 313 *eP* **P 08 06 50.6 -0.2**
ZEI pmax pmax
comp=Z,13nm,0.6s
SPU Mount Spurr 84.20 29 *eP* **P 08 06 51.5 +0.7**
COLD Coldfoot 85.73 23 *eP* **P 08 06 58.4 +0.1**
VRH Novokhopyorsk 86.00 321 *eP* **P 08 07 03.6 +3.7**
VRH pmax pmax
comp=Z,10.0nm,0.6s
ILAR Eielson Array 86.88 25 P P 08 07 01.6 -2.4
comp=Z,0.4nm,0.6s,baz=248,slow=4.5,SNR=6.1
VSR Storozhevoye 87.61 321 *eP* **P 08 07 11.8 +4.1**
VSR pmax pmax
comp=Z,10.0nm,0.6s
SYO Syowa Base 90.55 201↑ *eP* **P 08 07 19.8 -1.3**
BRTR Keskin Array B 91.81 310 P P 08 07 29.3 +1.4
comp=Z,1.0nm,0.8s,baz=131,slow=3.4,SNR=4.7
BR231 Keskin MP Arra 92.46 310 *eP* **P 08 07 32.0 +1.2**
ARCES ARCESS Array B 92.69 340 P P 08 07 29.4 -1.6
comp=Z,2.4nm,0.8s,baz=76,slow=5.1,SNR=4.3
FINES FINESS Array B 94.01 332 P P 08 07 37.2 -0.1
comp=Z,1.6nm,0.8s,baz=22,slow=37,SNR=2.6
YKA Yellowknife Ar 101.30 25 P Pdif 08 08 09.1 -1.0
comp=Z,0.2nm,0.5s,baz=298,slow=4.4,SNR=6.4
YKA PKKPbc **PKKPbc 08 24 17.0 -4.8**
comp=Z,0.3nm,0.5s,baz=119,slow=3.4,SNR=9.4
PDAR Pinedale Array 112.68 42 PKKPbc PKKPbc 08 23 44.1 -2.1
comp=Z,0.6nm,0.6s,baz=102,slow=6.3,SNR=6.5
SCHQ Schefferville 122.66 10 PKP PKPdf 08 13 13.4 -1.3
comp=Z,1.4nm,0.5s,baz=16,slow=7.5,SNR=7.4
TORD Torodi Ar. Bea 124.05 287 PKP PKPdf 08 13 17.3 -1.1
comp=Z,1.4nm,0.6s,baz=89,slow=1.9,SNR=20
TORD PP **PP 08 15 05.7 +1.9**
comp=Z,1.5nm,0.9s,baz=74,slow=6.8,SNR=5.6
TORD PKKPbc **PKKPab 08 23 04.0 0.0**
comp=Z,1.1nm,0.6s,baz=248,slow=3.0,SNR=11
JCT Junction City 125.10 51 *ePKIKP* **PKPdf 08 13 18.9 -1.2**
JCT Junction City 125.10 51 *ePKPdf* **PKPdf 08 13 18.9 -1.2**
LCO Las Campanas 147.75 150 *ePKPbc* **PKPbc 08 14 04.1 -0.8**
CPUP Villa Florida 154.94 170 PKPbc **PKPbc 08 14 21.2 -0.2**
comp=Z,4.4nm,1.0s,baz=41,slow=3.0,SNR=5.7
CPUP PKPab **PKPab 08 14 36.9 0.0**
comp=Z,6.1nm,1.0s,baz=201,slow=3.6,SNR=7.3
SAML Samuel 167.28 126 *ePKPdf* **PKPdf 08 14 25.8 -0.1**

ISCJB ***11*** *07:57:45.6±0.4, 37°.22N±0°.03×28°.17E±0°.03, h0km, Error ellipse: s-maj=4.5km s-min=3.0km az=28.4*
CSEM ***11*** *07:57:45.8±0.2, 37°.23N×28°.16E, h1km, MD2.6, Error ellipse: s-maj=4.2km s-min=3.2km az=20.0, Suspected Mining explosion.*
ISK ***11*** *07:57:45.2, 37°.24N×28°.18E, h7km, MD2.6*
DDA ***11*** *07:58:40.3, 37°.25N×28°.13E, h17km, Md2.8, Suspected Mining explosion.*
ISC 11 07:57:45.1±0.8, 37°.25N±0°.03×28°.12E±0°.03, h0km, n26, σ0ˢ99/41, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.18**	**130**	PG	**Pg**	**07 57 47.9**	**-0.5**
YER				*e*SG	**Sg**	**07 57 50.5**	**-0.2**
YER	**Yerkesik**	**0.18**	**130**	*i* Pg	**Pg**	**07 57 47.9**	**-0.5**
YER				*e*Sg	**Sg**	**07 57 50.5**	**-0.2**
AYDN	**Tasoluk**	**0.45**	**336**	P	**Pb**	**07 57 55.0**	**-1.0**
AYDN				S	**Sb**	**07 58 02.4**	**-0.9**
AYDN	**Tasoluk**	**0.45**	**336**	*i* P	**Pb**	**07 57 55.0**	**-1.0**
AYDN				*i* S	**Sb**	**07 58 02.4**	**-0.9**
TURN	**Turunc**	**0.54**	**134**	*i* P	**Pg**	**07 57 54.0**	**-1.5**
TURN				*i* S	**Sg**	**07 58 01.3**	**-1.2**
BDRM	**Kayabasi**	**0.57**	**251**	P	**Pb**	**07 57 56.6**	**-1.3**
BDRM				S	**Sb**	**07 58 06.3**	**-0.2**
BDRM	**Kayabasi**	**0.57**	**251**	*i* P	**Pb**	**07 57 56.6**	**-1.3**
BDRM				*i* S	**Sb**	**07 58 06.3**	**-0.2**
DALY	**Dalyan (Mu¨la**	**0.61**	**135**	*e*PG	**Pg**	**07 57 56.8**	**0.0**
DALY				*e*SG	**Sg**	**07 58 05.7**	**+1.0**
DALY	**Dalyan (Mu¨la**	**0.61**	**135**	*e*Pg	**Pg**	**07 57 56.8**	**0.0**
DALY				*e*Sg	**Sg**	**07 58 05.7**	**+1.0**
BODT	**Bodrum**	**0.67**	**254**	*e*PG	**Pb**	**07 57 59.2**	**-0.4**
BODT				*e*SG	**Sb**	**07 58 10.1**	**+0.6**
BODT	**Bodrum**	**0.67**	**254**	*e*Pg	**Pb**	**07 57 59.2**	**-0.4**
BODT				*e*Sg	**Sb**	**07 58 10.1**	**+0.6**
AYDB	**Zeytinkoy-Aydi**	**0.72**	**346**	*e*PG	**Pb**	**07 58 00.0**	**-0.6**
AYDB	**Zeytinkoy-Aydi**	**0.72**	**346**	*e*Pg	**Pb**	**07 58 00.0**	**-0.6**
DNZL	**Cakiroluk**	**0.86**	**59**	P	**Pg**	**07 58 01.8**	**+0.2**
DNZL				S	**Sb**	**07 58 15.1**	**-0.1**
DNZL	**Cakiroluk**	**0.86**	**59**	*i* P	**Pg**	**07 58 01.8**	**+0.2**
DNZL				*i* S	**Sb**	**07 58 15.1**	**-0.1**
FETY	**Fethiye**	**0.99**	**128**	*e*PG	**Pg**	**07 58 04.0**	**+0.1**
FETY	**Fethiye**	**0.99**	**128**	*e*Pg	**Pg**	**07 58 04.1**	**+0.1**
NIS1	**Nisyros Isl.**	**0.99**	**230**	*e*PG	**Pn**	**07 58 05.6**	**-0.6**
NIS1	**Nisyros Isl.**	**0.99**	**230**	*e*Pg	**Pn**	**07 58 05.6**	**-0.6**
DGB	**¯zmir**	**1.27**	**310**	*i* P	**Pn**	**07 58 09.7**	**-0.3**
DGB				*i* S	**Sn**	**07 58 30.4**	**+2.7**
ELL	**Elmali**	**1.52**	**109**	*e*PN	**Pn**	**07 58 13.1**	**-0.6**
ELL	**Elmali**	**1.52**	**109**	*e*Pn	**Pn**	**07 58 13.1**	**-0.6**
AKAS	**Kas**	**1.57**	**130**	P	**Pg**	**07 58 15.1**	**0.0**
AKAS	**Kas**	**1.57**	**130**	*i* P	**Pg**	**07 58 15.2**	**0.0**
AKAS				*i* S	**Sg**	**07 58 39.1**	**+3.7**
KARP	**Karpathos**	**1.86**	**205**	*e*PN	**Pn**	**07 58 18.3**	**0.0**
KARP	**Karpathos**	**1.86**	**205**	*e*Pn	**Pn**	**07 58 18.3**	**0.0**

IDC 11 08:00:55.8±10.0, 20°.25S×167°.78E, h0km, mb4.1/3, mb1 4.2/4, mb1mx3.8/29, mbtmp4.0/4, ML2.9/1, Error ellipse: s-maj=186.5km s-min=41.9km az=95.0, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.20**	**214**	Pn	Pn	08 01 33.1	-0.7
3.9nm,0.3s,baz=124,slow=15,SNR=6.1							
DZM				Sn	Sn	08 02 02.7	+0.9
8.5nm,0.3s,baz=291,slow=23,SNR=4.8							
STKA	**Stephens Creek**	**26.14**	**238**	P	P	08 06 32.7	+0.8
3.2nm,0.6s,baz=62,slow=6.3,SNR=3.0							
WRA	**Warramunga Arr**	**31.37**	**265**	P	P	08 07 18.2	-0.5
1.6nm,1.2s,baz=93,slow=8.3,SNR=3.3							
ASAR	**Alice Springs**	**31.56**	**258**	P	P	08 07 20.3	+0.1
3.0nm,0.7s,baz=87,slow=9.3,SNR=13							

IDC ***11*** *08:02:08.4±1.5, 36°.79N×143°.48E, h0km, mb3.6/2, mb1 3.9/3, mb1mx3.4/59, mbtmp3.5/3, ML3.4/1, Error ellipse: s-maj=39.0km s-min=27.5km az=137.0*
JMA ***11*** *08:02:11.2±0.4, 37°.93N×143°.06E, h37km, M3.2*
ISC 11 08:02:14.9±3.7, 38°.02N±0°.09×143°.0E±0°.2, h35km, n13, σ1ˢ93/15, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.36**	**289**	P	**Pn**	**08 02 36.0**	**-1.3**
JIO				S	**Sn**	**08 02 52.4**	**-1.7**
OFUJ	**Ofunato**	**1.48**	**316**	P	**Pn**	**08 02 37.3**	**-1.7**
JMK	**Ichinoseki**	**1.67**	**304**	P	**Pn**	**08 02 40.5**	**-1.1**
JMK				*e*S	**Sn**	**08 03 02.1**	**+0.4**
JMM	**Marumori**	**1.74**	**266**	P	**Pn**	**08 02 40.3**	**-2.2**
MIYJ	**Miyakonagasawa**	**1.80**	**330**	*e*S	**Sn**	**08 03 06.7**	**+1.6**
JOU	**Okura**	**1.86**	**281**	P	**Pn**	**08 02 43.4**	**-0.8**
JYK	**Kaneyama**	**2.25**	**294**	P	**Pn**	**08 02 49.3**	**-0.2**
JRG	**Rokugo**	**2.29**	**308**	P	**Pn**	**08 02 50.3**	**+0.1**
JKZ	**Kuzumaki**	**2.35**	**327**	P	**Pn**	**08 02 51.1**	**+0.1**
MJAR	**Matsushiro Arr**	**4.08**	**250**	Pn	**Pn**	**08 03 13.6**	**-1.2**
2.2nm,0.3s,baz=89,slow=15,SNR=13							
MJAR				Sn	**Sn**	**08 04 06.1**	**+4.7**
0.7nm,0.3s,baz=83,slow=26,SNR=3.3							
MAT	**Matsushiro**	**4.08**	**250**	P	**Pn**	**08 03 13.6**	**-1.2**
MAT				*e*S	**Sn**	**08 04 03.0**	**+1.6**
ILAR	**Eielson Array**	**47.99**	**33**	P	P	08 10 54.9	+5.0
0.3nm,0.5s,baz=256,slow=5.5,SNR=4.5							
WRA	**Warramunga Arr**	**58.22**	**190**	P	P	08 11 56.4	-9.2
0.9nm,0.6s,baz=7.8,slow=7.1,SNR=7.2							

ISCJB ***11*** *08:06:26.5±0.6, 37°.40N±0°.03×118°.73W±0°.03, h10km±5km, Error ellipse: s-maj=4.8km s-min=3.9km az=43.8*
NEIC ***11*** *08:06:26.2, 37°.39N×118°.69W, h14km, ML3.3(NCEDC), After NCEDC.*
ISC 11 08:06:26.4±1.0, 37°.38N±0°.03×118°.69W±0°.03, h12km±9km, n20, σ0ˢ93/36, California-Nevada border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MLAC	**Mammoth, Mammo**	**0.27**	**336**	P	**Pg**	**08 06 32.2**	**0.0**
baz=154,SNR=1000							
MLAC				S	**Sg**	**08 06 36.5**	**+0.4**
baz=154							
TIN	**Tinemaha, Big**	**0.49**	**131**	P	**Pg**	**08 06 36.2**	**+0.1**
baz=313,SNR=15							
TIN				S	**Sg**	**08 06 43.2**	**+0.6**
baz=313							
GRAC	**Grapevine Rang**	**1.13**	**109**	P	**Pg**	**08 06 47.8**	**-0.3**
baz=291,SNR=72							
GRAC				S	**Sn**	**08 07 03.2**	**-0.4**
baz=291							
RCTC	**Rector, Farmer**	**1.16**	**203**	P	**Pn**	**08 06 47.8**	**-0.7**
baz=22,SNR=55							
RCTC				S	**Sb**	**08 07 03.5**	**+0.1**
baz=22							
DAC	**Darwin (Calif)**	**1.41**	**141**	*e*Pn	**Pb**	**08 06 52.3**	**-0.5**
DAC				*e*Sn	**Sb**	**08 07 10.6**	**-0.3**
CMB	**Columbia Colle**	**1.49**	**296**	*e*Pn	**Pn**	**08 06 53.0**	**-0.2**
CMB				*e*Sn	**Sn**	**08 07 11.7**	**-0.9**
VES	**Vestal, Richgr**	**1.57**	**192**	Pb	**Pb**	**08 06 55.2**	**-0.2**
baz=12,SNR=84							
VES				Sb	**Sg**	**08 07 16.1**	**-0.7**
baz=12							
MPMC	**Manual Prospec**	**1.64**	**143**	P	**Pn**	**08 06 55.3**	**0.0**
baz=325,SNR=42							
MPMC				Sb	**Sb**	**08 07 17.8**	**+0.5**
baz=325							
ISA	**Isabella, Lake**	**1.72**	**174**	Pb	**Pb**	**08 06 58.0**	**-0.1**
baz=354,SNR=60							
ISA				Sb	**Sb**	**08 07 20.2**	**+0.5**
baz=354							
FURC	**Furnace Creek,**	**1.73**	**121**	Pb	**Pb**	**08 06 58.3**	**+0.2**
baz=303,SNR=70							
FURC				Sb	**Sg**	**08 07 21.1**	**-0.9**
baz=303							
TPNV	**Topopah Spring**	**2.00**	**102**	P	**Pn**	**08 07 00.4**	**+0.1**
baz=284,SNR=61							
LRMC	**Laurel Mtn Rad**	**2.06**	**156**	Pb	**Pb**	**08 07 04.0**	**0.0**
baz=337,SNR=25							
LRMC				Sb	**Sg**	**08 07 31.2**	**-1.6**
baz=337							
ARVC	**Arvin**	**2.25**	**183**	Pb	**Pb**	**08 07 06.4**	**-0.6**
baz=2.9,SNR=16							
ARVC				Sb	**Sb**	**08 07 36.1**	**+1.3**
baz=2.9							
SAO	**San Andreas Ge**	**2.29**	**255**	*e*Pn	**Pn**	**08 07 05.1**	**+1.1**
SAO				*e*Sn	**Sn**	**08 07 31.5**	**-0.7**
SHOC	**Shoshone, Teco**	**2.44**	**126**	Pb	**Pb**	**08 07 10.6**	**+0.3**
baz=308,SNR=29							
EDW2	**Edwards Air Fo**	**2.56**	**167**	Pb	**Pb**	**08 07 12.4**	**+0.2**
baz=348,SNR=9.6							
EDW2				Sb	**Sb**	**08 07 45.7**	**+2.0**
baz=348							
R11A	**Troy Canyon, C**	**2.64**	**68**	Pb	**Pb**	**08 07 13.9**	**+0.1**
baz=250,SNR=23							
R11A				Sb	**Sg**	**08 07 48.9**	**-2.4**
baz=250							
R11A	**Troy Canyon, C**	**2.64**	**68**	*e*Pn	**Pn**	**08 07 10.0**	**+0.9**
R11A				*e*Sn	**Sb**	**08 07 48.0**	**+1.6**
PASC	**Pasadena Art C**	**3.23**	**172**	Pn	**Pn**	**08 07 18.9**	**+1.9**
ELK	**Elko**	**4.30**	**38**	*e*Pn	**Pn**	**08 07 31.8**	**-0.1**

DDA ***11*** *08:17:06.6, 40°.26N×40°.24E, h7km, Ml3.0*
ISCJB ***11*** *08:17:07.3±0.7, 40°.26N±0°.04×40°.21E±0°.04, h3km±6km, Error ellipse: s-maj=6.1km s-min=4.6km az=166.6*
CSEM ***11*** *08:17:07.9±0.2, 40°.29N×40°.19E, h10km, MD3.4, Error ellipse: s-maj=5.7km s-min=4.4km az=15.0*
ISK ***11*** *08:17:07.1, 40°.29N×40°.17E, h16km, MD3.4*
ISC 11 08:17:07.2±1.0, 40°.28N±0°.04×40°.21E±0°.02, h13km±6km, n22, σ0ˢ33/39, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BAYT	**Ayd¨–ntepe-Bay**	**0.12**	**335**	PG	**Pg**	**08 17 10.3**	**-0.4**
BAYT				*e*SG	**Sg**	**08 17 13.7**	**+0.5**
BAYT	**Ayd¨–ntepe-Bay**	**0.12**	**335**	*i* Pg	**Pg**	**08 17 10.3**	**-0.4**
BAYT				*e*Sg	**Sg**	**08 17 13.7**	**+0.5**
GUMT	**Gumushane**	**0.59**	**288**	PG	**Pb**	**08 17 19.3**	**-0.1**
GUMT				*e*SG	**Sg**	**08 17 26.5**	**0.0**
GUMT	**Gumushane**	**0.59**	**288**	*i* Pg	**Pb**	**08 17 19.3**	**-0.1**
GUMT				*e*Sg	**Sg**	**08 17 26.5**	**0.0**
MACK	**Trabzon**	**0.74**	**333**	P	**Pg**	**08 17 21.4**	**-0.3**
MACK				S	**Sb**	**08 17 32.8**	**+0.7**
MACK	**Trabzon**	**0.74**	**333**	*i* P	**Pg**	**08 17 21.4**	**-0.3**
MACK				*i* S	**Sb**	**08 17 32.8**	**+0.7**
KELT	**Kelkit**	**0.74**	**260**	P	**Pb**	**08 17 22.1**	**0.0**
KELT				S	**Sb**	**08 17 32.3**	**0.0**
KELT	**Kelkit**	**0.74**	**260**	*i* P	**Pb**	**08 17 22.1**	**0.0**
KELT				*i* S	**Sb**	**08 17 32.3**	**0.0**
KTUT	**Trabzon**	**0.78**	**335**	*e*PG	**Pg**	**08 17 22.4**	**0.0**
KTUT				*e*SG	**Sb**	**08 17 33.2**	**0.0**
KTUT	**Trabzon**	**0.78**	**335**	*e*Pg	**Pg**	**08 17 22.4**	**0.0**
KTUT				*e*Sg	**Sb**	**08 17 33.2**	**0.0**
YEDI	**Yedisu-Bingol**	**0.88**	**163**	*e*PG	**Pb**	**08 17 24.4**	**-0.1**
YEDI	**Yedisu-Bingol**	**0.88**	**163**	*e*Pg	**Pb**	**08 17 24.4**	**-0.1**
EZM	**Erzurum**	**0.96**	**113**	*e*PG	**Pn**	**08 17 26.8**	**+0.1**
ESPY	**Espiye-Giresun**	**1.30**	**300**	*e*PN	**Pn**	**08 17 30.6**	**-0.4**
ESPY	**Espiye-Giresun**	**1.30**	**300**	*e*Pn	**Pn**	**08 17 30.6**	**-0.4**
DBAD	**Bademkaya**	**1.35**	**56**	P	**Pb**	**08 17 32.2**	**-0.2**
DBAD				S	**Sg**	**08 17 51.0**	**+0.3**
DBAD	**Bademkaya**	**1.35**	**56**	*i* P	**Pb**	**08 17 32.2**	**-0.2**
DBAD				*i* S	**Sg**	**08 17 51.0**	**+0.3**
DAGI	**Agillar**	**1.52**	**58**	*i* P	**Pb**	**08 17 35.4**	**+0.1**
DAGI				*i* S	**Sg**	**08 17 56.0**	**-0.2**
SUSE	**Susehri**	**1.54**	**268**	P	**Pb**	**08 17 36.0**	**+0.3**
SUSE				S	**Sg**	**08 17 57.2**	**+0.4**
SUSE	**Susehri**	**1.54**	**268**	*i* P	**Pb**	**08 17 36.0**	**+0.3**
SUSE				*i* S	**Sg**	**08 17 57.1**	**+0.4**
ARTV	**Artvin**	**1.59**	**55**	P	**Pb**	**08 17 36.3**	**-0.3**
ARTV				S	**Sg**	**08 17 58.9**	**+0.5**
ARTV	**Artvin**	**1.59**	**55**	*i* P	**Pb**	**08 17 36.3**	**-0.3**
ARTV				*i* S	**Sg**	**08 17 58.9**	**+0.5**

IDC ***11*** *08:19:31.7±0.3, 20°.35S×168°.47E, h0km, mb5.6/29, mb1 5.5/33, mb1mx5.5/38, mbtmp5.5/33, ML4.7/4, MS4.9/22, Ms1 4.9/22, ms1mx4.8/34, Error ellipse: s-maj=13.0km s-min=11.5km az=78.0*
NEIC ***11*** *08:19:33.5±0.1, 20°.30S×168°.35E, h10km, mb5.8/219, MS5.2/67, MW5.6, Error ellipse: s-maj=4.0km s-min=3.1km az=152.0*
GCMT ***11*** *08:19:33.5±0.1, 20°.40S×168°.23E, h12km, MW5.6/134, Moment Tensor Solution. s116,c200; s134,c343; Duration: 1ˢ5 Moment tensor: Scale 10^17 Nm; Mrr=2.64±.02; Mθθ=0.31±.02; Mφφ=2.33±.02; Mrθ=0.52±.07; Mθφ=-1.02±.02; Mφr=0.06±.06; Best double couple: M0=2.74900×10^17 NP1:φs=148.00000°, δ49.00000°, λ=-103.00000°. NP2:φs=347.00000°, δ43.00000°, λ=-76.00000°. Principal axes: T 2.7670, Plg3.0000°, Azm247.0000°; N -0.0390, Plg10.0000°, Azm156.0000°; P -2.7310, Plg80.0000°, Azm352.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*
ISCJB ***11*** *08:19:35.6±0.9, 20°.34S±0°.03×168°.31E±0°.02, h33km±7km, mb5.8/329, MS5.1/121 Error ellipse: s-maj=4.5km s-min=3.1km az=1.3*
MOS ***11*** *08:19:36.1±1.3, 20°.27S×168°.30E, h33km, mb6.0/82, MS5.2/21, Error ellipse: s-maj=6.6km s-min=6.2km az=97.3*
NEIC ***11*** *08:19:38.0±0.0, 20°.49S×168°.02E, h15km, Moment Tensor Solution. s15 Moment tensor: Scale 10^17 Nm; Mrr=2.30; Mθθ=0.30; Mφφ=2.70; Mrθ=0.60; Mφθ=0.80; Mφr=1.70; Best double couple: M0=3.00000×10^17 NP1:φs=341.00000°, δ62.00000°, λ=-94.00000°. NP2:φs=171.00000°, δ28.00000°, λ=-81.00000°. Principal axes: T 3.4000, Plg17.0000°, Azm75.0000°; N -0.5000, Plg3.0000°, Azm343.0000°; P -2.9000, Plg72.0000°, Azm241.0000°;*
BJI ***11*** *08:19:39.5, 19°.77S×168°.17E, h44km, mb5.5/74, mB5.8/61, Ms5.3/61, Ms7 4.9/58*
ISC 11 08:19:36.8±0.2, 20°.37S±0°.04×168°.35E±0°.04, h32km±1km, h31km: pP-P, n1286, σ1ˢ49/1295, mb5.9/335, MS5.2/123, 38C-54D, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.45**	**226**	Pn	**Pn**	**08 20 12.4**	**-2.3**
129nm,0.3s,baz=69,slow=19,SNR=340							
DZM				Sn	**Sn**	**08 20 41.1**	**-2.6**
406nm,0.3s,baz=262,slow=24,SNR=14							
DZM				LR	LR	08 21 02.4	
comp=Z,52μm,20.7s,baz=358,slow=36							
NFK	**Norfolk Island**	**8.64**	**182**	P	**Pn**	**08 21 39.1**	**-0.5**
baz=8.7,SNR=3.2							
MSVF	**Nonsavu**	**9.54**	**76**	*e*P	**Pn**	**08 21 55.7**	**+3.6**
MSVF	**Nonsavu**	**9.54**	**76**	*e*Pn	**Pn**	**08 21 55.7**	**+3.6**
HNR	**Honiara**	**13.56**	**322**	Pn	**Pn**	**08 22 44.9**	**-2.2**
2.0nm,0.3s,baz=203,slow=6.4,SNR=3.0							
HNR				LR	LR	08 27 29.4	
comp=Z,6μm,18.5s,baz=146,slow=35							
HNR	**Honiara**	**13.56**	**322**	*e*P	**Pn**	**08 22 47.0**	**-0.1**
HNR	**Honiara**	**13.56**	**322**	*e*Pn	**Pn**	**08 22 48.7**	**+1.6**
OUZ	**Omahuta**	**15.50**	**164**	*e*Pn	**P**	**08 23 16.0**	**-1.1**
243nm,0.9s							
FUNA	**Funafuti**	**15.77**	**43**	*e*Pn	**P**	**08 23 20.3**	**+0.1**
1μm,1.8s							
EIDS	**Eidsvold**	**16.67**	**249**	P	**P**	**08 23 30.3**	**+0.1**
baz=17,SNR=17							
EIDS	**Eidsvold**	**16.67**	**249**	*e*Pn	**P**	**08 23 30.6**	**+0.4**
199nm,1.4s							
ARMA	**Armidale**	**18.10**	**233**	P	**P**	**08 23 47.4**	**+1.3**
baz=18,SNR=47							
ARMA	**Armidale**	**18.10**	**233**	*e*P	**P**	**08 23 47.5**	**+1.5**
185nm,1.1s							
HIZ	**Hauiti**	**18.94**	**164**	*e*P	**Pn**	**08 23 58.5**	**+2.6**
773nm,1.6s							
RMQ	**Roma**	**18.97**	**248**	P	**Pn**	**08 23 57.8**	**+1.4**
baz=19,SNR=106							
HAZ	**Te Kaha**	**19.16**	**157**	P*	**Pn**	**08 23 59.3**	**+0.7**
URZ	**Urewera**	**19.38**	**159**	P	**P**	**08 24 00.5**	**+0.6**
1.3nm,0.3s,baz=352,slow=5.8,SNR=17							
URZ				LR	LR	08 30 55.4	
comp=Z,5μm,18.2s,baz=336,slow=35							
URZ	**Urewera**	**19.38**	**159**	*e*P	**P**	**08 23 55.0**	**-4.9**
MGCD	**Mangrove Creek**	**19.97**	**227**	P	**Pn**	**08 24 09.0**	**+0.6**
baz=20							
RIGZ	**Rimuhau**	**20.00**	**158**	*e*P*	Pn	08 24 08.0	-0.6
BKZ	**Black Stump Fm**	**20.00**	**161**	*e*P	**P**	**08 24 02.1**	**-4.7**
275nm,1.1s							
AFI	**Afiamalu**	**20.04**	**74**	P	**P**	**08 24 03.8**	**-3.6**
6.7nm,0.3s,baz=54,slow=15,SNR=14							
AFI	**Afiamalu**	**20.04**	**74**	*e*P	**P**	**08 24 07.6**	**+0.2**
AFI				pmax	pmax		
comp=Z,290nm,1.1s							
AFI	**Afiamalu**	**20.04**	**74**	*e*P	**P**	**08 24 07.6**	**+0.2**
comp=Z,291nm,1.1s							
AFI				LR	LR		
comp=Z,8μm,18.0s							
KNZ	**Kokohu**	**20.25**	**159**	P*	Pn	08 24 10.7	-0.8
CTA	**Charters Tower**	**20.73**	**267**	P	Pn	08 24 16.5	-0.9
comp=Z,48nm,0.7s,baz=87,slow=12,SNR=43							
CTA				S	Sn	08 28 10.1	-0.6
comp=Z,1.5nm,0.3s,baz=299,slow=10,SNR=2.4							
CTA				LR	LR	08 31 28.6

comp=Z,10μm,18.0s
LTZ Lake Taylor 22.59 172 P* **P 08 24 35.9 +1.4**
CAN Canberra 22.62 225 P **P 08 24 37.4 +2.3**
baz=23
CAN Canberra 22.62 225 *e*P **P 08 24 37.0 +1.9**
CAN pmax pmax
comp=Z,240nm,1.0s
CAN Canberra 22.62 225 *e*P **P 08 24 37.0 +1.9**
comp=Z,244nm,1.0s
CAN LR LR
comp=Z,5μm,18.0s
MTSU Mount Surprise 22.79 272 P **P 08 24 37.6 +0.6**
baz=23,SNR=108
QLP Quilpie 22.95 250 P **P 08 24 39.0 +0.5**
baz=23,SNR=160
OXZ Oxford 23.10 173 *e*P **P 08 24 41.1 +1.3**
comp=Z,752nm,1.5s
OXZ LR LR
comp=Z,8μm,18.0s
FOZ Fox Glacier 23.13 177 *e*P **P 08 24 41.6 +1.5**
comp=Z,338nm,1.2s
FOZ LR LR
comp=Z,6μm,18.0s
CMSA Cobar Meteorol 23.16 237 P **P 08 24 41.6 +1.0**
baz=23,SNR=112
PMG Port Moresby 23.17 295 P **P 08 24 41.7 +0.9**
comp=Z,106nm,0.9s,baz=101,slow=6.3,SNR=33
PMG LR LR 08 31 36.9
comp=Z,2μm,19.1s,baz=134,slow=31
PMG Port Moresby 23.17 295*d i*P **P 08 24 41.6 +0.8**
PMG pmax pmax
comp=Z,2μm,1.5s
PMG Port Moresby 23.17 295 *e*P **P 08 24 42.0 +1.2**
comp=Z,542nm,1.5s
RPZ Rata Peaks 23.39 175 P **P 08 24 42.8 +0.1**
comp=Z,72nm,0.9s,baz=0.0,slow=5.1,SNR=11
RPZ Rata Peaks 23.39 175 *e*P **P 08 24 43.9 +1.1**
comp=Z,547nm,1.6s
RPZ LR LR
comp=Z,13μm,18.0s
CRLZ Canterbury Las 23.41 172 PFAKE 08 24 50.0 +7.1
CRLZ LR LR
comp=Z,7μm,18.0s
MQZ McQueen's Vall 23.55 172 *e*P **P 08 24 45.1 +0.8**
comp=Z,199nm,1.1s
MQZ *ep*P **sP 08 24 55.9 -1.2**
MQZ LR LR
comp=Z,8μm,18.0s
LBZ Lake Benmore 24.00 177 *e*P **P 08 24 49.0 +0.5**
comp=Z,153nm,1.2s
LBZ LR LR
comp=Z,6μm,18.0s
WKZ Wanaka 24.40 179 *e*P **P 08 24 55.6 +3.3**
WKZ *ep*P **sP 08 25 04.2 -1.2**
WKZ LR LR
comp=Z,7μm,18.0s
ODZ Otahua Downs 24.68 176 *e*P **P 08 24 55.1 +0.3**
comp=Z,277nm,1.9s
ODZ LR LR
comp=Z,6μm,18.0s
COEN Coen 24.87 281 P **P 08 24 57.4 +0.6**
baz=25,SNR=26
COEN Coen 24.87 281 *e*P **P 08 24 57.6 +0.8**
comp=Z,597nm,1.8s
COEN LR LR
comp=Z,4μm,18.0s
MLZ Mavora Lakes 24.93 180 *e*P **P 08 24 58.1 +1.0**
MLZ *ep*P **sP 08 25 08.9 -1.2**
MLZ LR LR
comp=Z,8μm,18.0s
DCZ Deep Cove 25.05 182 *e*P **P 08 24 59.3 +1.3**
comp=Z,318nm,1.3s
WHZ Wether Hill Ro 25.46 181 *e*P **P 08 25 02.5 +0.7**
comp=Z,138nm,1.2s
WHZ LR LR
comp=Z,6μm,18.0s
TOO Toolangi 26.23 224 P **P 08 25 10.7 +1.8**
baz=26,SNR=9.5
TOO Toolangi 26.23 224 P **P 08 25 09.5 +0.6**
TOO pmax pmax
comp=Z,147nm,1.6s
STKA Stephens Creek 26.54 239 P **P 08 25 12.4 +0.7**
comp=Z,100nm,0.8s,baz=71,slow=9.1,SNR=109
STKA LR LR 08 35 07.7
comp=Z,8μm,19.4s,baz=54,slow=35
STKA Stephens Creek 26.54 239 P **P 08 25 12.2 +0.4**
baz=27,SNR=76
STKA Stephens Creek 26.54 239 *e*P **P 08 25 12.5 +0.7**
STKA pmax pmax
comp=Z,180nm,1.6s
STKA Stephens Creek 26.54 239 *e*P **P 08 25 12.5 +0.7**
comp=Z,184nm,1.6s
QIS Mount Isa 26.92 265 P **P 08 25 15.6 +0.2**
baz=27,SNR=18
ARPS Mount Arapiles 28.31 229 P **P 08 25 28.2 +0.6**
baz=28,SNR=14
MOO Moorlands 28.32 214 P **P 08 25 28.7 +1.1**
baz=28,SNR=4.5
TAU Tasmania Unive 28.58 213 *e*P **P 08 25 31.2 +1.3**
TAU pmax pmax
comp=Z,130nm,1.2s
TAU Tasmania Unive 28.58 213 *e*P **P 08 25 31.2 +1.3**
comp=Z,128nm,1.3s
TAU LR LR
comp=Z,5μm,18.0s
PATS Pohnpei 28.78 339 P **P 08 25 33.4 +1.5**
baz=29,SNR=3.7
KWAJ Kwajalein Atol 29.00 358 PFAKE 08 25 50.0 +16
KWAJ LR LR
comp=Z,2μm,18.0s
HTT Hallett 29.18 237 P **P 08 25 35.2 -0.2**
baz=29,SNR=24
BBOO Buckleboo 31.29 240 P **P 08 25 54.2 +0.2**
baz=31,SNR=7.2
BBOO Buckleboo 31.29 240 *e*P **P 08 25 54.4 +0.3**
comp=Z,218nm,1.0s
BBOO LR LR
comp=Z,6μm,19.0s
WR0 Warramunga Arr 31.71 265 PFAKE 08 26 10.0 +12
WR0 LR LR
comp=Z,4μm,18.0s
WR9 Warramunga Arr 31.73 265 PFAKE 08 26 10.0 +12
WR9 LR LR
comp=Z,5μm,18.0s
WR8 Warramunga Arr 31.75 265 PFAKE 08 26 10.0 +12
WR8 LR LR
comp=Z,4μm,22.0s
WR7 Warramunga Arr 31.77 265 PFAKE 08 26 10.0 +12
WR7 LR LR
comp=Z,5μm,18.0s
WR6 Warramunga Arr 31.79 265 PFAKE 08 26 10.0 +11
WR6 LR LR
comp=Z,4μm,21.0s
WR5 Warramunga Arr 31.81 265 PFAKE 08 26 10.0 +11
WR5 LR LR
comp=Z,4μm,18.0s
WR4 Warramunga Arr 31.83 265 PFAKE 08 26 10.0 +11
WR4 LR LR
comp=Z,4μm,18.0s
WR3 Warramunga Arr 31.85 265 PFAKE 08 26 10.0 +11
WR3 LR LR
comp=Z,5μm,22.0s
WC3 Warramunga Arr 31.87 265 P **P 08 25 57.4 -1.9**
baz=32
WC3 Warramunga Arr 31.87 265 PFAKE 08 26 10.0 +11
WC3 LR LR
comp=Z,7μm,18.0s
WB0 Warramunga Arr 31.87 265 PFAKE 08 26 10.0 +11
WB0 LR LR
comp=Z,4μm,18.0s
WB8 Warramunga Arr 31.87 265 PFAKE 08 26 10.0 +11
WB8 LR LR
comp=Z,4μm,18.0s
WB9 Warramunga Arr 31.87 265 PFAKE 08 26 10.0 +11
WB9 LR LR
comp=Z,8μm,18.0s
WC2 Warramunga Arr 31.88 265 PFAKE 08 26 10.0 +11
WC2 LR LR
comp=Z,7μm,18.0s
WR2 Warramunga Arr 31.88 265 PFAKE 08 26 10.0 +11
WR2 LR LR
comp=Z,5μm,22.0s
WB5 Warramunga Arr 31.88 265 PFAKE 08 26 10.0 +11
WB5 LR LR
comp=Z,5μm,18.0s
WB6 Warramunga Arr 31.88 265 PFAKE 08 26 10.0 +11
WB6 LR LR
comp=Z,4μm,18.0s
WB4 Warramunga Arr 31.88 265 PFAKE 08 26 10.0 +11
WB4 LR LR
comp=Z,5μm,18.0s
WB3 Warramunga Arr 31.89 265 PFAKE 08 26 10.0 +11
WB3 LR LR
comp=Z,5μm,22.0s
WB2 Warramunga Arr 31.89 265 *e*P **P 08 25 57.9 -1.6**
comp=Z,163nm,1.3s
WB2 LR LR
comp=Z,5μm,21.0s
WRAB Tennant Creek 31.89 265*ce*P **P 08 25 58.2 -1.3**
WRAB pmax pmax
comp=Z,175nm,1.3s
WRAB Tennant Creek 31.89 265 *e*P **P 08 25 57.8 -1.7**
comp=Z,185nm,1.4s
WRAB LR LR
comp=Z,6μm,22.0s
WC4 Warramunga Arr 31.89 265 PFAKE 08 26 10.0 +10
WC4 LR LR
comp=Z,5μm,22.0s
WR1 Warramunga Arr 31.90 265 PFAKE 08 26 10.0 +10
WR1 LR LR
comp=Z,6μm,22.0s
WRA Warramunga Arr 31.90 265 P **P 08 25 57.5 -2.0**
comp=Z,38nm,1.0s,baz=94,slow=8.4,SNR=120
WRA PcP **PcP 08 28 49.9 +0.1**
comp=Z,23nm,1.0s,baz=86,slow=2.8,SNR=7.3
WRA S **S 08 31 08.5 -0.1**
comp=Z,8.4nm,1.2s,baz=93,slow=15,SNR=3.6
WRA LR LR 08 38 48.8
comp=Z,4μm,18.1s,baz=95,slow=36
WRA P3KPbc 08 57 32.1
comp=Z,2.8nm,0.9s,baz=302,slow=2.8,SNR=9.8
AS01 Alice Springs 32.01 258 *e*P **P 08 25 58.7 -1.9**
AS31 Alice Springs 32.05 258 *e*P **P 08 26 00.0 -0.9**
comp=Z,96nm,0.8s
AS31 LR LR
comp=Z,200nm,18.0s
ASAR Alice Springs 32.05 258 P **P 08 25 59.6 -1.3**
comp=Z,251nm,0.9s,baz=82,slow=8.9,SNR=322
ASAR PcP **PcP 08 28 50.4 +0.2**
comp=Z,22nm,0.9s,baz=99,slow=3.2,SNR=6.5
ASAR S **S 08 31 09.3 -1.8**
comp=Z,3.4nm,1.0s,baz=82,slow=14,SNR=2.6
ASAR LR LR 08 38 29.4
comp=Z,8μm,19.5s,baz=96,slow=35
ASAR P3KPbc 08 57 31.5
comp=Z,4.2nm,0.9s,baz=275,slow=4.1,SNR=19
JAY Jayapura 32.28 300 P **P 08 26 02.6 -0.4**
comp=Z,19nm,1.0s,baz=90,slow=23,SNR=27
JAY Jayapura 32.28 300 P **P 08 26 03.0 0.0**
comp=Z,186nm,1.0s,comp=Z,2μm
GENI Genyem 32.68 299 P **P 08 26 06.9 +0.5**
comp=Z,598nm,1.3s,comp=Z,9μm
KDU Kakadu 35.17 277 P **P 08 26 28.5 +0.4**
baz=35
MTN Manton Dam 36.38 276 *e*P **P 08 26 38.7 +0.3**
comp=Z,257nm,0.2s
MTN LR LR
comp=Z,5μm,18.0s
WRKA Warakurna 37.15 255 P **P 08 26 44.3 -0.7**
baz=37,SNR=31
SAUI Saumlaki 37.87 284 P **P 08 26 50.3 -0.8**
FAKI Fak Fak 39.23 291 P **P 08 27 02.1 -0.4**
comp=Z,177nm,1.1s,comp=Z,2μm
FAKI Fak Fak 39.23 291 *e*P **P 08 27 01.1 -1.5**
comp=Z,235nm,1.4s
FAKI LR LR
comp=Z,2μm,20.0s
PAE Paea 39.79 93 *e*P **P 08 27 06.3 -0.9**
comp=Z,18nm,1.0s
PAE *ep*P **pP 08 27 18.3 +1.7**
comp=Z,50nm,1.1s
PPT2 Papeete2 39.81 93 *e*P **P 08 27 06.9 -0.5**
comp=Z,123nm,1.2s
PPT2 *ep*P **sP 08 27 18.9 -1.8**
comp=Z,376nm,1.2s
PPT2 *e*S **S 08 33 07.7 -2.3**
comp=Z,1μm,26.0s
PPT2 *e*LQ LQ 08 36 25.3
comp=Z,8μm,27.5s
PPT2 *e*LR LR 08 38 06.1
comp=Z,9μm,29.5s,baz=251
PPT Papeete 39.81 93 P **P 08 27 06.3 -1.0**
comp=Z,96nm,0.7s,baz=61,slow=2.9,SNR=13
PPT Papeete 39.81 93 P **P 08 27 06.3 -1.0**
PPT *ep*P **sP 08 27 18.7 -1.9**
TIAR Tiarei 40.03 93 *e*P **P 08 27 08.8 -0.4**
comp=Z,51nm,0.8s
TIAR *ep*P **sP 08 27 20.5 -2.0**
comp=Z,139nm,1.0s
TVO Taravao 40.08 94 *e*P **P 08 27 09.0 -0.6**
comp=Z,20nm,0.7s
FITZ Fitzroy Crossi 40.31 266 LR LR 08 42 44.1
comp=Z,4μm,21.6s,slow=34
FITZ Fitzroy Crossi 40.31 266 P **P 08 27 11.5 0.0**
baz=40,SNR=18
FITZ Fitzroy Crossi 40.31 266 *e*P **P 08 27 11.3 -0.2**
comp=Z,195nm,0.9s
SWI Sorong 41.10 293 P **P 08 27 17.3 -0.8**
comp=Z,202nm,1.1s,comp=Z,3μm
SWI Sorong 41.10 293 P **P 08 27 17.3 -0.8**
SWI pmax pmax
comp=Z,200nm,1.1s
MEH Mehetia 41.17 94 *e*P **P 08 27 17.9 -0.7**
comp=Z,34nm,0.8s
MEH *ep*P **sP 08 27 29.8 -2.1**
comp=Z,44nm,0.9s
PMOR Pomariorio Ree 41.94 90 *e*P **P 08 27 24.5 -0.4**
comp=Z,93nm,0.9s
PMOR *ep*P **sP 08 27 36.4 -1.8**
comp=Z,785nm,1.2s
MSAI Masohi 41.96 289 P **P 08 27 23.4 -1.7**
VAH Vaihoa 42.13 90 *e*P **P 08 27 25.7 -0.8**
VAH *ep*P **sP 08 27 37.7 -2.1**
comp=Z,481nm,1.2s
KMBL Kambalda 42.94 246 P **P 08 27 32.5 -0.4**
baz=43,SNR=23
PALU Palau 43.22 306 P **P 08 27 35.6 +0.3**
baz=43,SNR=21
NLAI Namlea 43.64 287 P **P 08 27 39.7 +1.0**
comp=Z,341nm,1.5s,comp=Z,6μm
SOEI Soe 43.73 277 P **P 08 27 41.3 +1.7**
comp=Z,295nm,1.3s,comp=Z,4μm
SOEI Soe 43.73 277 *e*P **P 08 27 39.3 -0.3**
comp=Z,469nm,1.3s
LBMI Labuha 44.48 291 P **P 08 27 46.9 +1.4**
comp=Z,304nm,1.2s,comp=Z,5μm
SANI Sanana 45.16 288 P **P 08 27 52.3 +1.4**
comp=Z,838nm,1.0s,comp=Z,7μm
MBWA Marble Bar 45.32 260 *e*P **P 08 27 52.0 -0.2**
comp=Z,2μm,1.5s
MMRI Maumere 45.99 278 P **P 08 27 57.4 -0.1**
comp=Z,328nm,1.0s,comp=Z,11μm
MMRI Maumere 45.99 278 *e*P **P 08 27 57.0 -0.4**
comp=Z,213nm,0.8s
KLBR Kellerberrin 46.48 245 P **P 08 28 00.3 -0.9**
baz=46,SNR=69
NWAO Narrogin (SRO) 46.96 244 P **P 08 28 04.3 -0.6**
baz=47,SNR=52
NWAO Narrogin (SRO) 46.96 244 *e*P **P 08 28 04.1 -0.8**
NWAO pmax pmax
comp=Z,960nm,1.0s
NWAO Narrogin (SRO) 46.96 244 *e*P **P 08 28 04.1 -0.8**
comp=Z,957nm,1.0s
NWAO LR LR
comp=Z,31μm,20.0s
BASI Baing, Sumba 47.02 275 P **P 08 28 07.2 +1.6**
RKGY Rocky Gully 47.25 241 P **P 08 28 07.4 +0.3**
baz=47,SNR=7.5
BLDU Ballidu 47.37 247 P **P 08 28 07.1 -1.0**
baz=47,SNR=21
KDI Kendari 47.38 284 P **P 08 28 09.2 +0.8**
comp=Z,166nm,1.1s,comp=Z,2μm
MORW Morawa 47.98 249 P **P 08 28 13.1 +0.2**
baz=48,SNR=22
LUWI Luwuk 48.48 288 P **P 08 28 17.3 +0.4**
comp=Z,567nm,1.2s,comp=Z,6μm
LUWI Luwuk 48.48 288 *e*P **P 08 28 16.5 -0.4**
comp=Z,502nm,1.0s
BSSI Bau Bau, Buton 48.49 280 P **P 08 28 20.1 +3.1**
KAPI Kappang 49.59 281 LR LR 08 51 49.4
comp=Z,550nm,19.1s,baz=145,slow=39
KAPI Kappang 49.59 281 *e*P **P 08 28 25.9 +0.5**
comp=Z,451nm,1.3s
MRSI Marisa 49.91 289 P **P 08 28 27.2 -0.6**
comp=Z,109nm,0.9s,comp=Z,2μm
SPSI Sidrap Palu 49.98 282 P **P 08 28 27.5 -0.9**
comp=Z,127nm,1.2s,comp=Z,2μm
PLAI Plampang 50.08 276 P **P 08 28 29.6 +0.4**
comp=Z,392nm,1.2s,comp=Z,4μm
DAV Davao City (W) 50.11 299 P **P 08 28 29.3 0.0**
comp=Z,121nm,0.3s,baz=104,slow=3.8,SNR=5.3
DAV Davao City (W) 50.11 299||*e*P **P 08 28 25.7 -3.7**
GIRL Giralia 50.17 257 P **P 08 28 31.3 +1.6**
baz=50,SNR=6.6
TTSI Tana Toraja 50.30 283 P **P 08 28 31.2 +0.4**
comp=Z,152nm,1.3s,comp=Z,3μm
TAOE Nuku Hiva Isla 50.95 85 *e*S **S 08 35 49.8 -1.1**
comp=Z,2μm,26.5s
TAOE *e*SS **SS 08 39 28.0 +1.9**
comp=Z,611nm,26.4s
TAOE *e*LR LR 08 43 22.6
comp=Z,5μm,29.3s,baz=252
TWSI Taliwang, Sumb 50.95 275 P **P 08 28 36.2 +0.5**
comp=Z,290nm,1.2s,comp=Z,4μm
PCI Palu 51.18 286 P **P 08 28 39.6 +2.2**
comp=Z,798nm,1.2s,comp=Z,10μm
PCI Palu 51.18 286 P **P 08 28 38.8 +1.4**
PCI pmax pmax
comp=Z,799nm,1.3s
RKT Rikitea 52.44 104 *e*S **S 08 36 09.3 -1.8**
comp=Z,2μm,29.8s
RKT *e*LQ LQ 08 41 36.1
comp=Z,1μm,29.2s
RKT *e*LR LR 08 43 46.1
comp=Z,3μm,33.5s,baz=257
DNP Denpasar 52.53 275 P **P 08 28 49.4 +1.9**
comp=Z,636nm,1.2s
SRBI Singaraja 52.72 275 P **P 08 28 49.4 +0.5**
comp=Z,304nm,1.2s
HON Honolulu 52.91 40 PFAKE 08 29 00.0 +10
HON LR LR
comp=Z,5μm,18.0s
KIP Kipapa 52.98 40 *i* P **P 08 28 52.1 +1.5**
KIP pmax pmax
comp=Z,721nm,1.6s
KIP Kipapa 52.98 40 PFAKE 08 29 00.0 +9.4
KIP LR LR
comp=Z,4μm,19.0s
UWE Uwekahuna 53.22 44 PFAKE 08 29 00.0 +7.4
UWE LR LR
comp=Z,2μm,21.0s
POHA Pohakuloa 53.31 44 PFAKE 08 29 10.0 +17
POHA LR LR
comp=Z,2μm,19.0s
HPAH Hawaii Prepara 53.40 43 PFAKE 08 29 10.0 +16
HPAH LR LR
comp=Z,2μm,19.0s
CBIJ Chichi jima 53.56 331 *e*P **P 08 28 54.5 -0.3**
comp=Z,556nm,0.3s
JCJ Chichijima 53.56 331 P **P 08 28 54.1 -0.7**
comp=Z,229nm,1.0s,baz=176,slow=6.0,SNR=17
JCJ LR LR 08 51 51.8
comp=Z,402nm,18.7s,slow=36
HLK Haleakala 53.58 42 PFAKE 08 29 10.0 +15
HLK LR LR
comp=Z,3μm,18.0s
JAGI Jajag, Banyuwa 53.59 274 P **P 08 28 54.7 -0.6**
comp=Z,374nm,1.1s,comp=Z,6μm
JAGI Jajag, Banyuwa 53.59 274 *e*P **P 08 28 54.0 -1.3**
comp=Z,432nm,1.1s
BKB Balikpapan 53.70 284 P **P 08 29 00.1 +4.0**
ABJI Asem Bagus 53.73 275 P **P 08 28 57.0 +0.7**
comp=Z,295nm,1.2s
GMJI Gumukmas 54.31 274 P **P 08 29 01.4 +0.8**
comp=Z,165nm,1.1s
BBKI Banjar Baru 54.71 281 P **P 08 29 04.1 +0.6**
comp=Z,355nm,1.2s,comp=Z,6μm
MYLDM Lahad Datu 55.15 292 *e*P **P 08 29 08.6 +2.0**
comp=Z,257nm,1.3s
PWJI Pagerwojo 55.93 274 P **P 08 29 12.3 0.0**
comp=Z,188nm,1.0s
PCJI Pacitan 56.46 274 P **P 08 29 16.9 +0.8**
comp=Z,535nm,1.2s,comp=Z,5μm
NGJI Ngawi 56.47 275 P **P 08 29 19.1 +3.0**
SDKM Sandakan 56.50 292 ⇑P **P 08 29 18.0 +1.6**
WOJI Wonogiri, Jawa 56.81 274 P **P 08 29 22.0 +3.4**
UGM Wanagama 57.16 274 P **P 08 29 22.0 +0.9**
comp=Z,495nm,1.0s
UGM Wanagama 57.16 274 *e*P **P 08 29 21.5 +0.4**
comp=Z,368nm,0.8s
VNDA Vanda 57.28 182 P **P 08 29 20.7 -0.2**
comp=Z,25nm,1.0s,baz=0.4,slow=7.1,SNR=64
VNDA LR LR 08 51 27.4
comp=Z,786nm,18.4s,baz=11,slow=33
VNDA Vanda 57.28 182 *e*P **P 08 29 20.6 -0.4**
comp=Z,115nm,1.6s
KDM Kudat 57.43 293 ⇑P **P 08 29 24.9 +2.0**
SMRI Semarang 57.53 275 P **P 08 29 25.0 +1.4**
comp=Z,232nm,1.0s
SMRI Semarang 57.53 275 *e*P **P 08 29 23.9 +0.3**
comp=Z,232nm,1.1s
SBA Scott Base 57.53 180 *e*P **P 08 29 23.5 +0.8**
SBA pmax pmax
comp=Z,180nm,1.1s
SBA Scott Base 57.53 180 *e*P **P 08 29 23.5 +0.8**
comp=Z,181nm,1.1s
KKM Kota Kinabalu 57.55 292 *e*P **P 08 29 23.9 0.0**
comp=Z,377nm,1.2s
PBKI Pangkalan Bun 57.92 280 P **P 08 29 28.6 +2.2**
CMJI Cimerak 59.15 273 P **P 08 29 34.8 -0.1**
comp=Z,308nm,1.0s,comp=Z,3μm
STKI Sintang 59.18 283 P **P 08 29 36.1 +0.9**
comp=Z,372nm,1.2s,comp=Z,30μm
SBUM Sibu 59.49 286 *e*P **P 08 29 37.1 -0.2**
comp=Z,132nm,1.2s
JCJI Jatiwangi 59.74 274 P **P 08 29 39.3 +0.3**
comp=Z,660nm,1.1s,comp=Z,8μm
CISI Cisompet, Garu 59.82 273 P **P 08 29 39.2 -0.4**
comp=Z,454nm,1.1s,comp=Z,5μm
CISI Cisompet, Garu 59.82 273 *e*P **P 08 29 38.5 -1.1**
comp=Z,448nm,1.0s
CNJI Cibinong 60.54 273 P **P 08 29 44.1 -0.4**
comp=Z,560nm,0.9s,comp=Z,4μm
KSM Kuching 60.82 284 *e*P **P 08 29 45.6 -0.7**
comp=Z,258nm,1.0s
KSM LR LR
comp=Z,1μm,20.0s
XMIS Christmas Isla 60.93 269 *e*P **P 08 29 48.2 +0.9**
comp=Z,281nm,1.0s
XMIS *ep*P **sP 08 29 59.5 -1.3**
SBJI Serang 61.87 274 P **P 08 29 53.9 +0.4**
comp=Z,658nm,1.3s,comp=Z,11μm
CGJI Cibinong 62.11 273 P **P 08 29 54.2 -1.0**
comp=Z,538nm,1.1s,comp=Z,7μm
YOJ Yonaguni jima 62.71 313 *e*P **P 08 29 58.2 -0.7**
YOJ Yonaguni jima 62.71 313 *e*P **P 08 29 58.2 -0.7**
INU Inuyama 62.88 331 *e*P **P 08 29 59.8 0.0**
comp=Z,228nm,1.3s
BLSI Bandar Lampung 62.95 274 P **P 08 30 00.6 -0.2**
comp=Z,369nm,1.1s
TWG Pinlang 63.01 310 *e*P **P 08 30 00.2 -0.8**
comp=Z,18μm,0.5s
YULB Yu-li 63.21 311 *e*P **P 08 30 01.4 -0.9**
comp=Z,411nm,0.6s
MJAR Matsushiro Arr 63.37 333 P **P 08 30 02.6 -0.5**
comp=Z,63nm,1.0s,baz=166,slow=6.9,SNR=86
MJAR LR LR 09 00 32.6
comp=Z,385nm,18.0s,baz=145,slow=39
MAJO Matsushiro 63.37 333*d i*P **P 08 30 02.5 -0.5**
MAJO pmax pmax
comp=Z,647nm,1.0s
MAJO Matsushiro 63.37 333 *e*P **P 08 30 02.9 -0.2**
comp=Z,91nm,0.9s
MAJO LR LR
comp=Z,800nm,19.0s
MAT Matsushiro 63.37 333 P **P 08 30 02.2 -0.8**
MAT S **S 08 38 36.2 +2.7**
MJB9 Matsu-Tunnel 63.37 333 *e*P **P 08 30 02.9 -0.2**
comp=Z,24nm,1.0s
MJB9 LR LR
comp=Z,200nm,19.0s
KLI Kotabumi 63.49 275 P **P 08 30 04.4 +0.1**
comp=Z,146nm,1.3s
NACB Ninganchiao 63.50 312 *e*P **P 08 30 03.5 -0.6**
comp=Z,163nm,0.9s
KASI Kota Agung 63.60 274 P **P 08 30 03.9 -1.2**
comp=Z,452nm,1.0s,comp=Z,4μm
TPUB Ta-pu 63.63 311 *e*P **P 08 30 04.0 -1.1**
comp=Z,320nm,0.7s
TPUB LR LR
comp=Z,600nm,22.0s
SSLB Suanglung 63.70 311 *e*P **P 08 30 04.2 -1.3**

comp=Z,299nm,0.6s
SSLB LR LR
YHNB Yeheng 63.97 312 eP P 08 30 06.2 -1.1
comp=Z,262nm,1.1s
TATO Taipei 64.09 313 eP P 08 30 08.7 +0.7
comp=Z,545nm,1.3s
JNU Nakatsue 64.11 325 eP P 08 30 07.8 -0.2
comp=Z,176nm,1.1s
LWLI Liwa 64.18 274 P P 08 30 08.8 -0.2
comp=Z,262nm,1.1s
PMBI Palembang 64.25 277 P P 08 30 11.1 +1.8
comp=Z,878nm,0.9s,comp=Z,63μm
LHSI Lahat 65.09 275 P P 08 30 14.6 -0.2
comp=Z,129nm,1.4s
MNAI Manna 65.44 275 P P 08 30 18.5 +1.4
comp=Z,570nm,1.6s,comp=Z,8μm
MNAI Manna 65.44 275 eP P 08 30 17.1 0.0
comp=Z,2μm,1.8s
MIR Mirnyy 65.66 205 i P P 08 30 18.0 +0.4
MIR pmax pmax
comp=Z,18nm,1.0s
QZH Quanzhou 66.10 311⇑ iP P 08 30 15.3 -5.8
QZH S **S 08 39 16.4 +8.9**
QZH pmax pmax
comp=Z,150nm,1.2s
QZH pmax pmax
comp=Z,2μm,4.6s
ERM Erimo 66.30 340 i P P 08 30 22.1 +0.1
ERM pmax pmax
comp=Z,53nm,2.2s
ERM Erimo 66.30 340 PFAKE 08 30 30.0 +8.0
ERM LR LR
comp=Z,1μm,18.0s
MASI Maura Aman, Be 66.53 276 P P 08 30 23.9 -0.3
comp=Z,541nm,1.0s,comp=Z,7μm
MYKOM Kota Tinggi 66.86 281 eP P 08 30 26.5 +0.3
comp=Z,177nm,1.4s
YUK Yuzh-Kuril'sk 67.32 343 d iP P 08 30 27.2 -1.2
YUK i *PP **sP 08 30 41.0 -1.1**
YUK i 08 33 01.2
YUK i S **S 08 39 18.0 -3.5**
YUK eSSS SSS 08 46 33.4
YUK MLR MLR
comp=Z,2μm,20.0s
YUK MLR MLR
comp=N,746nm,14.0s
YUK MLR MLR
comp=E,685nm,14.0s
KUR Kuril'sk 67.90 345⇑ iP P 08 30 28.7 -3.4
KUR eS **S 08 39 33.8 +5.4**
KUR pmax pmax
comp=Z,163nm,1.4s
KUR MLR MLR
comp=N,3μm,18.0s
KUR MLR MLR
comp=Z,2μm,18.0s
SDSI Sungai Dareh 68.08 277 P P 08 30 33.3 -0.6
comp=Z,321nm,0.9s,comp=Z,85μm
SSE Sheshan 68.32 317 P P 08 30 35.9 +0.9
SSE sP **PcP 08 30 55.6 -4.9**
SSE S **S 08 39 35.2 +1.2**
SSE pmax pmax
comp=Z,50nm,1.0s
SSE pmax pmax
comp=Z,360nm,5.4s
SSE LR LR
comp=Z,370nm,15.0s
SSE LR LR
comp=Z,450nm,15.0s
SSE LR LR
comp=Z,650nm,18.7s
ASAJ Asahikawa 68.37 340 P P 08 30 36.0 +1.0
comp=Z,97nm,1.0s,baz=226,slow=12,SNR=35
ASAJ Asahikawa 68.37 340 eP P 08 30 36.3 +1.3
comp=Z,156nm,1.1s
ASAJ LR LR
comp=Z,1μm,20.0s
TJN Taejon 68.45 325 d iP P 08 30 36.4 +0.7
PPSI Pulau Pagai 68.75 275 P P 08 30 39.0 +0.9
GZH Guangzhou 68.86 306 P P 08 30 39.8 +1.2
BKNI Bangkinang 68.90 279 P P 08 30 40.3 +1.2
comp=Z,676nm,1.1s,comp=Z,8μm
BKNI Bangkinang 68.90 279 eP P 08 30 39.2 +0.1
comp=Z,712nm,1.1s
KSRS Korea Array 68.97 326 P P 08 30 39.1 +0.2
comp=Z,23nm,1.0s,baz=145,slow=6.4,SNR=47
KSRS PKP2bc 08 58 48.0
comp=Z,4.7nm,1.1s,baz=338,slow=2.9,SNR=6.4
KSRS LR LR 09 01 09.5
comp=Z,234nm,18.0s,baz=140,slow=36
KS15 Wonju Array Si 68.98 326 eP P 08 30 40.2 +1.2
KSAR Wonju Array Be 68.98 326 P P 08 30 39.1 +0.1
KSAR Wonju Array Be 68.98 326 P P 08 30 39.1 +0.1
KS01 Wonju Array Si 69.00 326 eP P 08 30 38.9 -0.3
PPI Padang Panjang 69.21 278 P P 08 30 40.1 -0.9
comp=Z,64nm,1.1s,comp=Z,1μm
QIZ Qiongzhong 69.42 300 P P 08 30 43.6 +1.5
QIZ S **S 08 39 49.0 +1.5**
QIZ pmax pmax
comp=Z,52nm,1.0s
QIZ LR LR
comp=Z,160nm,19.1s
QIZ LR LR
comp=Z,94nm,20.1s
INCN Inchon 69.67 326 P P 08 30 44.9 +1.5
SNR=5.7
INCN Inchon 69.67 326 P P 08 30 44.9 +1.5
SNR=5.7
INCN Inchon 69.67 326 eP P 08 30 44.4 +1.1
comp=Z,280nm,1.3s
INCN epP **sP 08 30 56.1 -1.0**
QSPA South Pole Qui 69.69 180 eP P 08 30 42.5 -0.8
comp=Z,177nm,1.4s
QSPA LR LR
comp=Z,2μm,18.0s
MNSI Mandailing Nat 70.43 278 P P 08 30 47.4 -1.1
comp=Z,146nm,1.0s,comp=Z,5μm
NJ2 Nanjing 70.44 317 eP P 08 30 48.3 +0.2
NJ2 S **S 08 40 00.0 +1.0**
NJ2 SS **SS 08 44 28.3 -2.6**
NJ2 pmax pmax
comp=Z,15nm,0.6s
NJ2 pmax pmax
comp=Z,890nm,4.3s
NJ2 LR LR
comp=Z,460nm,10.3s
NJ2 LR LR
comp=Z,720nm,13.0s
NJ2 LR LR
comp=Z,770nm,14.1s
YSS Yuzh-Sakhalins 70.88 342⇑ eP P 08 30 51.9 +1.5
YSS e 08 31 04.3
YSS eS **S 08 40 12.0 +8.5**
YSS eSS **SS 08 44 33.0 -4.1**
YSS pmax pmax
comp=Z,110nm,1.1s
YSS MLR MLR
comp=E,800nm,17.0s
YSS MLR MLR
comp=Z,2μm,17.0s
YSS MLR MLR
comp=N,1μm,16.0s
KULM Kulim 71.17 283 eP P 08 30 52.7 -0.3
comp=N,273nm,1.4s
KULM LR LR
comp=Z,1μm,22.0s
MSHR Mys Shultsa 71.41 332 d iP P 08 30 55.3 +1.5
VLA Vladivostok 71.53 333 d iP P 08 30 55.1 +0.6
VLA pmax pmax
comp=Z,201nm,1.2s
SKR Severo-Kuril's 71.56 352 eP P 08 30 49.0 -5.5
SKR e 08 31 04.8
SKR e 08 40 14.0
SKR pmax pmax
comp=Z,220nm,1.0s
PSI Prapat 71.79 280 eP P 08 30 54.9 -2.0
PSI pmax pmax
comp=Z,250nm,1.2s
PSI Prapat 71.79 280 eP P 08 30 54.9 -2.0
comp=Z,248nm,1.2s
PSI LR LR
comp=Z,2μm,22.0s
SKLT Songkhla 71.94 285 P P 08 30 58.1 +0.5
comp=Z,174nm,1.2s
USRK Ussuriysk Ar. 72.36 333 P P 08 31 00.1 +0.6
comp=Z,136nm,1.0s,baz=141,slow=4.6,SNR=141
USRK LR LR 09 01 18.1
comp=Z,567nm,19.6s,baz=140,slow=35
TSI Tuntungan 72.39 281 P P 08 31 01.0 +0.7
comp=Z,259nm,1.2s
GSI Gunungsitoli 72.48 278 P P 08 31 01.6 +0.7
comp=Z,336nm,1.2s
GSI Gunungsitoli 72.48 278 eP P 08 31 01.1 +0.2
comp=Z,354nm,1.1s
GSI epP **pP 08 31 10.1 -0.8**
GSI LR LR
comp=Z,2μm,18.0s
WHN Wuhan 72.49 313⇓ iP P 08 31 01.1 +0.6
WHN pP **pP 08 31 11.5 +0.9**
WHN sP **PcP 08 31 22.9 +4.7**
WHN S **S 08 40 23.1 +0.3**
WHN pmax pmax
comp=Z,220nm,1.0s
WHN LR LR
comp=Z,2μm,14.1s
PANO Nakornpanom 72.81 296 P P 08 31 03.3 +0.6
comp=Z,92nm,1.1s
TRTT Trang 73.06 285 P P 08 31 05.2 +0.9
comp=Z,135nm,1.2s
KCSI Kotacane, Aceh 73.12 280 P P 08 31 04.2 -0.5
comp=Z,99nm,0.9s
SKNT Sakolnakorn 73.26 296 P P 08 31 05.6 +0.2
comp=Z,302nm,1.1s
DL2 Dalian 73.42 324⇓ iP P 08 31 05.7 -0.1
DL2 pP **sP 08 31 18.3 -1.3**
DL2 S **SKiKP 08 40 35.9 +1.3**
DL2 pmax pmax
comp=Z,190nm,1.1s
DL2 pmax pmax
comp=Z,660nm,5.1s
DL2 LR LR
comp=Z,520nm,15.6s
DL2 LR LR
comp=Z,610nm,15.1s
DL2 LR LR
comp=Z,860nm,16.3s
PET Petropavlovsk 73.57 354 eP P 08 31 07.5 +1.2
PET e*PP **sP 08 31 19.5 -0.6**
PET e*SP **PcP 08 31 23.3 +1.1**
PET eS **S 08 40 29.8 -4.2**
PET pmax pmax
comp=Z,98nm,1.5s
PET MLR MLR
comp=Z,1μm,17.0s
PET Petropavlovsk 73.57 354 eP P 08 31 07.6 +1.2
comp=Z,253nm,1.6s
MDJ Mudanjiang 73.72 332 P P 08 31 08.0 +0.5
MDJ pP sP 08 31 20.1 -1.2
MDJ sP PcP 08 31 25.0 +1.9
MDJ PP **PP 08 33 50.2 -2.3**
MDJ sS sS 08 40 56.5 +3.7
MDJ pmax pmax
comp=Z,170nm,1.3s
MDJ pmax pmax
comp=Z,630nm,5.4s
MDJ LR LR
comp=Z,380nm,16.9s
MDJ LR LR
comp=Z,210nm,16.9s
MDJ LR LR
comp=Z,530nm,19.4s
MDJ Mudanjiang 73.72 332 eP P 08 31 08.4 +0.9
comp=Z,251nm,1.1s
PEA0 Petropavlovsk- 73.75 353 eP P 08 31 08.2 +0.7
PEA0B Petropavlovsk- 73.75 353 eP P 08 31 08.7 +1.2
comp=Z,356nm,1.4s
PETK Petropavlovsk- 73.75 353 P P 08 31 08.5 +1.0
comp=Z,92nm,1.1s,baz=120,slow=5.8,SNR=40
PETK LR LR 09 01 08.9
comp=Z,818nm,19.2s,baz=156,slow=34
KHON Khomkaen 73.95 295 P P 08 31 10.8 +1.4
comp=Z,60nm,1.1s,comp=Z,1μm
PATY Pattaya 74.13 291 P P 08 31 12.6 +2.1
comp=Z,34nm,0.9s
TIA Tai'an 74.24 319 ⇓ P P 08 31 11.0 +0.3
TIA PP **PP 08 33 57.0 -0.1**
TIA pmax pmax
comp=Z,70nm,1.1s
TIA pmax pmax
comp=Z,970nm,9.0s
TIA LR LR
comp=Z,340nm,19.0s
TIA LR LR
comp=Z,400nm,21.0s
TIA LR LR
comp=Z,580nm,19.0s
SURT Suratani 74.32 286 P P 08 31 13.3 +1.6
comp=Z,46nm,1.5s
TYV Tymovskoe 74.45 343 eP P 08 31 13.2 +1.6
TYV eS **S 08 40 51.0 +7.0**
TYV pmax pmax
comp=Z,62nm,1.0s
TYV pmax pmax
comp=Z,1μm,5.0s
TYV smax smax
comp=E,1μm,8.0s
CHAI Chaiyaphum 74.47 294 P P 08 31 13.1 +0.6
comp=E,31nm,1.0s
NONG Nongkai 74.47 296 P P 08 31 13.1 +0.6
comp=E,140nm,1.1s
MLSI Meulaboh, Aceh 74.67 281 P P 08 31 14.0 +0.3
comp=E,273nm,1.2s,comp=E,4μm
HABR Khabarovsk 74.72 338 eP P 08 31 11.8 -1.4
HABR e 08 31 25.5
HABR e 08 33 58.8
HABR ePPP PPP 08 35 44.3
HABR eS **S 08 40 44.2 -3.0**
HABR e*SS **sS 08 41 08.6 +4.8**
HABR e 08 41 18.5
HABR eSS **SS 08 45 33.0 -2.7**
HABR eSSS SSS 08 48 55.2
HABR pmax pmax
comp=N,31nm,1.1s
HABR pmax pmax
comp=E,17nm,1.1s
HABR pmax pmax
comp=Z,137nm,1.1s
HABR pmax pmax
comp=Z,807nm,2.5s
HABR MLR MLR
comp=Z,233nm,19.0s
CN2 Changchun 74.99 329 eP P 08 31 15.8 +0.9
CN2 epP sP 08 31 28.4 -0.3
CN2 eS **S 08 40 50.5 0.0**
CN2 pmax pmax
comp=Z,20nm,1.0s
CN2 pmax pmax
comp=Z,200nm,3.0s
CN2 LR LR
comp=Z,500nm,15.0s
CN2 LR LR
comp=Z,400nm,15.0s
CN2 LR LR
comp=Z,500nm,15.0s
PHET Kaeng Krachan 75.21 290 P P 08 31 18.8 +2.0
comp=Z,27nm,1.3s,comp=Z,377nm
PBKT Sadao Pong 75.64 294 P P 08 31 20.3 +1.1
comp=Z,123nm,1.1s,comp=Z,2μm
NIKH Nikolski High 75.67 14 eP P 08 31 17.6 -1.0
comp=Z,466nm,0.9s
NIKH LR LR
comp=Z,600nm,18.0s
ENH Enshi 75.75 310 eP P 08 31 19.5 -0.1
comp=Z,181nm,1.1s
GYA Guiyang 75.78 306⇑ iP P 08 31 22.0 +2.0
GYA pP sP 08 31 36.2 +2.4
GYA PP **PP 08 34 15.8 +5.3**
GYA S **S 08 41 00.3 +0.1**
GYA SKS **SKSac 08 41 24.0 -4.4**
GYA pmax pmax
comp=Z,40nm,1.0s
GYA pmax pmax
comp=Z,180nm,6.9s
GYA LR LR
comp=Z,980nm,19.2s
GYA LR LR
comp=Z,810nm,20.0s
GYA LR LR
comp=Z,860nm,19.9s
SRDT SRDT 76.27 291 P P 08 31 25.0 +2.1
comp=Z,523nm,1.2s
UTTA Uttaradit 76.52 295 P P 08 31 25.3 +1.1
comp=Z,33nm,1.1s,comp=Z,290nm
KLR Kul'dur 76.56 336 P P 08 31 24.4 +0.7
comp=Z,44nm,1.1s,baz=128,slow=3.3,SNR=66
UNV Unalaska Valle 77.03 15 eP P 08 31 24.8 -1.4
comp=Z,181nm,1.0s
UNV LR LR
comp=Z,900nm,21.0s
NKL Nikolayevsk 77.04 343 i P P 08 31 28.0 +1.7
NKL i 08 31 39.9
NKL e 08 41 20.0
NKL pmax pmax
comp=E,50nm,1.4s
NKL pmax pmax
comp=N,30nm,1.0s
NKL pmax pmax
comp=Z,170nm,1.0s
NKL pmax pmax
comp=N,450nm,5.0s
NKL pmax pmax
comp=Z,1μm,5.0s
NKL MLR MLR
comp=N,700nm,18.0s
NKL MLR MLR
comp=E,400nm,18.0s
NKL MLR MLR
comp=Z,2μm,18.0s
MAW Mawson 77.08 202 P P 08 31 27.1 +0.6
comp=Z,82nm,0.9s,baz=109,slow=7.0,SNR=73
MAW LR LR 09 04 10.4
comp=Z,805nm,18.1s,baz=88,slow=35
MAW Mawson 77.08 202 eP P 08 31 27.1 +0.6
MAW pmax pmax
comp=Z,29nm,1.0s
MAW Mawson 77.08 202 eP P 08 31 27.1 +0.6
comp=Z,29nm,1.0s
SUKH Sukhothai 77.19 294 P P 08 31 29.3 +1.3
comp=Z,34nm,1.0s,comp=Z,284nm
BJT Baijiatuau 77.28 322 eP P 08 31 28.8 +0.8
BJT e*PP **PcP 08 31 39.7 +1.2**
BJT pmax pmax
comp=Z,55nm,1.1s
BJT Baijiatuau 77.28 322 eP P 08 31 28.8 +0.8
comp=Z,55nm,1.1s
BJT epP **PcP 08 31 39.7 +1.2**
BJI Beijing 77.29 322 P P 08 31 29.0 +0.9
BJI pP **PcP 08 31 39.1 +0.5**
BJI PcP **sP 08 31 40.7 -1.2**
BJI sP pP 08 31 46.2 +8.0
BJI PP **PP 08 34 24.9 +2.1**
BJI S **S 08 41 18.6 +2.7**
BJI pmax pmax
comp=Z,49nm,2.3s
BJI pmax pmax
comp=Z,1μm,5.0s
BJI LR LR
comp=Z,630nm,16.6s
BJI LR LR
comp=Z,280nm,21.7s
BJI LR LR
comp=Z,620nm,41.6s
AKUT Akutan 77.47 15 eP P 08 31 28.5 -0.2
comp=Z,106nm,1.0s
LAMP Lampang 77.65 295 P P 08 31 32.0 +1.4
comp=Z,119nm,0.9s,comp=Z,772nm
CRAI Chiangrai 77.79 297 P P 08 31 32.1 +0.7
comp=Z,920nm,1.1s,comp=Z,12μm
TIY Taiyuan 78.10 318 eP P 08 31 34.2 +1.4
TIY S **S 08 41 24.2 -0.7**
TIY SKS **SKSac 08 41 37.7 -7.1**
TIY pmax pmax
comp=Z,750nm,5.9s
TIY LR LR
comp=Z,240nm,13.2s
TIY LR LR
comp=Z,490nm,15.8s
TIY LR LR
comp=Z,550nm,16.4s
KMI Kunming 78.16 302 P P 08 31 35.1 +1.5
KMI pP sP 08 31 47.8 +0.4
KMI sP pP 08 31 54.7 +11
KMI PP **PP 08 34 34.8 +4.1**
KMI S **S 08 41 24.6 -1.8**
KMI sS SKKSac 08 41 48.6 +1.5
KMI SS **SS 08 46 26.4 -2.8**
KMI pmax pmax
comp=Z,200nm,1.2s
KMI pmax pmax
comp=Z,1μm,4.3s
KMI LR LR
comp=Z,340nm,17.9s
KMI LR LR
comp=Z,400nm,18.9s
KMI LR LR
comp=Z,460nm,16.8s
CM01 Chiang Mai Arr 78.18 295 eP P 08 31 34.3 +0.8
CM31 Chiang Mai Arr 78.21 295 eP P 08 31 35.7 +2.0
CMAR Chiang Mai Arr 78.21 295 P P 08 31 34.9 +1.2
comp=Z,139nm,0.9s,baz=132,slow=4.1,SNR=220
CMAR Chiang Mai Arr 78.21 295 P P 08 31 34.9 +1.2
CMAR pmax pmax
comp=Z,131nm,0.9s
XAN Xi'an 78.26 313 P P 08 31 34.0 +0.3
XAN PcP **pP 08 31 44.7 +0.9**
XAN pP sP 08 31 45.8 -1.7
XAN PP **PP 08 34 31.2 +0.1**
XAN S **S 08 41 20.5 -6.3**
XAN SKS **SKSac 08 41 37.2 -8.9**
XAN SS **SS 08 46 25.6 -4.4**
XAN pmax pmax
comp=Z,48nm,1.2s
XAN pmax pmax
comp=Z,580nm,6.5s
XAN LR LR
comp=Z,160nm,15.2s
XAN LR LR
comp=Z,620nm,17.4s
XAN LR LR
comp=Z,810nm,17.4s
CHTO Chiang Mai 78.36 295 P P 08 31 35.4 +0.9
comp=Z,1μm,1.1s,comp=Z,11μm
CHTO Chiang Mai 78.36 295 eP P 08 31 35.5 +0.9
CHTO pmax pmax
comp=Z,210nm,0.9s
CHTO Chiang Mai 78.36 295 P P 08 31 35.8 +1.2
SNR=50
CHTO Chiang Mai 78.36 295 P P 08 31 35.8 +1.2
SNR=50
CHTO Chiang Mai 78.36 295 eP P 08 31 35.5 +0.9
comp=Z,209nm,0.9s
CMAI Chiengmai2 78.77 296 P P 08 31 38.0 +1.0
comp=Z,190nm,1.1s,comp=Z,2μm
MHMT Maesarieng 78.95 294 P P 08 31 39.2 +1.4
comp=Z,105nm,1.1s
CD2 Chengdu 80.26 308 P P 08 31 45.2 +0.5
CD2 sP sP 08 32 04.1 +5.5
CD2 PP **PP 08 34 47.9 0.0**
CD2 S **S 08 41 47.9 -0.3**
CD2 SKS **SKSac 08 41 57.7 -2.7**
CD2 pmax pmax
comp=Z,110nm,1.2s
CD2 LR LR
comp=Z,670nm,15.6s
CD2 LR LR
comp=Z,470nm,18.0s
HHC Hu-ho-hao-te 80.54 320 eP P 08 31 47.0 +1.0
HHC sP sP 08 31 59.3 -0.6
HHC PP **PP 08 34 47.2 -2.8**
HHC pmax pmax
comp=Z,66nm,1.3s
HHC pmax pmax
comp=Z,700nm,7.6s
HHC LR LR
comp=Z,1μm,17.9s
HHC LR LR
comp=Z,1μm,17.5s
HHC LR LR
comp=Z,1μm,17.2s
MA2 Magadan 80.95 351 P P 08 31 45.7 -1.9
comp=Z,50nm,1.0s,baz=170,slow=6.3,SNR=16
MA2 Magadan 80.95 351 P P 08 31 45.7 -1.9
MA2 pmax pmax
comp=Z,47nm,1.0s
MA2 Magadan 80.95 351 P P 08 31 45.7 -1.9
MA2 eP **PcP 08 31 46.7 -7.4**
DGPR DIGLIPUR 81.28 288 eP P 08 31 49.1 -1.3

BTO	Baotou	81.33	319	eP	P	08 31 49.1	-1.2
CHGN	Chignik	81.37	18	ePP	PP	08 34 54.0	-2.3
HIA	Hailar	81.67	330	eP	P	08 31 52.0	+0.2
HIA				pmax	pmax		
	comp=Z,160nm,1.5s						
HIA	Hailar	81.67	330	eP	P	08 31 52.0	+0.2
	comp=Z,160nm,1.5s						
LZH	Lanzhou	82.87	313	eP	P	08 32 00.3	+1.8
LZH				pP	sP	08 32 14.4	+2.0
LZH				sP	pP	08 32 19.0	+10
LZH				PP	PP	08 35 11.1	+1.7
LZH				eS	S	08 42 16.8	+1.7
LZH				SS	SS	08 47 34.5	-4.6
LZH				pmax	pmax		
	comp=Z,200nm,1.4s						
LZH				pmax	pmax		
	comp=Z,900nm,5.0s						
LZH				LR	LR		
	comp=Z,1μm,16.4s						
LZH				LR	LR		
	comp=Z,2μm,15.0s						
LZH				LR	LR		
	comp=Z,3μm,18.1s						
SYO	Syowa Base	83.62	196⇑	iP	P	08 32 00.0	-1.7
SYO	Syowa Base	83.62	196⇑	eP	pP	08 32 12.4	+0.6
OHAK	Old Harbor	83.70	20	eP	P	08 32 02.3	+0.3
	comp=Z,258nm,1.0s						
SEY	Seymchan	83.98	353	P	P	08 32 02.8	-0.5
	comp=Z,58nm,1.1s,baz=161,slow=5.4,SNR=42						
KDAK	Kodiak Island	84.38	20	iP	P	08 32 05.8	+0.3
KDAK	Kodiak Island	84.38	20	eP	P	08 32 06.2	+0.8
	comp=Z,159nm,1.0s						
CLNS	Chul'man	85.11	338	eP	P	08 32 10.6	+1.3
CLNS				pmax	pmax		
	comp=Z,129nm,1.1s						
CLNS				pmax	pmax		
	comp=N,53nm,1.0s						
CLNS				pmax	pmax		
	comp=E,16nm,1.0s						
GAMB	Gambell	85.31	9	eP	P	08 32 11.4	+1.4
	comp=E,105nm,1.2s						
PMSA	Palmer Station	86.14	160	eP	P	08 32 14.9	+0.5
	comp=E,162nm,1.1s						
CIT	Chita	86.44	330	eP	P	08 32 15.9	-0.1
CIT				e		08 32 29.8	
BRLK	Bradley Lake	86.49	19	eP	P	08 32 20.6	+4.6
	comp=E,86nm,1.2s						
SNCC	San Nicolas Is	86.99	53	P	P	08 32 19.0	-0.1
	baz=243						
HOPS	Hopland Field	87.12	47	eP	P	08 32 20.3	+0.7
	comp=E,215nm,1.1s						
SHL	Shillong	87.15	298	eP	P	08 32 19.8	-0.4
SAO	San Andreas Ge	87.19	49	eP	P	08 32 20.7	+0.7
SAO				pmax	pmax		
	comp=Z,96nm,1.1s						
SAO	San Andreas Ge	87.19	49	eP	P	08 32 20.7	+0.7
	comp=Z,96nm,1.1s						
SEW	Seward	87.21	20	epP	pP	08 32 33.5	+3.8
SCZ2	Santa Cruz Isl	87.25	52	P	P	08 32 20.2	-0.1
	baz=243						
ULN	Ulaanbaatar	87.27	324	ceP	P	08 32 20.4	+0.1
ULN				pmax	pmax		
	comp=Z,171nm,1.3s						
ULN	Ulaanbaatar	87.27	324	P	P	08 32 21.4	+1.1
	SNR=65						
ULN	Ulaanbaatar	87.27	324	P	P	08 32 21.4	+1.1
	SNR=65						
ULN	Ulaanbaatar	87.27	324	eP	P	08 32 20.6	+0.2
	comp=Z,134nm,1.1s						
KMRM	Mail Ridge	87.30	45	eP	P	08 32 21.6	+1.1
	comp=Z,253nm,1.0s						
GTA	Gaotai	87.30	314	eP	P	08 32 21.4	+0.8
GTA				pP	sP	08 32 33.5	-1.0
GTA				sP	pP	08 32 38.6	+7.8
GTA				S	S	08 42 56.7	-2.1
GTA				sS	sS	08 43 20.0	+4.3
GTA				pmax	pmax		
	comp=Z,40nm,1.2s						
GTA				pmax	pmax		
	comp=Z,530nm,6.9s						
GTA				LR	LR		
	comp=Z,230nm,17.3s						
GTA				LR	LR		
	comp=Z,210nm,16.9s						
GTA				LR	LR		
	comp=Z,280nm,19.2s						
JCC	Jacoby Creek,	87.38	45	eP	P	08 32 21.8	+1.1
	comp=Z,141nm,1.1s						
SBC	Santa Barbara	87.39	52	P	P	08 32 23.1	+2.2
	baz=243						
PKM	Mcpherson Peak	87.51	51	P	P	08 32 21.9	+0.1
	baz=243						
TNA	Tin City	87.55	10	eP	P	08 32 21.8	+0.8
	comp=Z,88nm,1.6s						
SMMC	Simmler	87.57	51	P	P	08 32 22.2	+0.3
	baz=243						
KHMM	Horse Mountain	87.60	45	eP	P	08 32 22.8	+0.7
	comp=Z,282nm,1.1s						
SCI2	San Clemente I	87.61	54	P	P	08 32 21.7	-0.4
	baz=244						
TT01	Tatalina	87.62	15	eP	P	08 32 20.6	-0.8
SONM	Songino Array	87.62	323	P	P	08 32 21.5	-0.4
	comp=Z,48nm,1.0s,baz=137,slow=4.5,SNR=27						
SONM				LR	LR	09 09 29.4	
	comp=Z,292nm,21.6s,baz=107,slow=34						
SONA1	Songino Array	87.62	323	eP	P	08 32 22.1	+0.1
NVL	N'lazarevskaya	87.63	188	eP	P	08 32 21.7	+0.1
TTA	Tatalina	87.64	15	eP	P	08 32 20.1	-1.6
TTA				pmax	pmax		
	comp=Z,16nm,1.0s						
TTA	Tatalina	87.64	15	eP	P	08 32 20.1	-1.6
	comp=Z,16nm,1.0s						
YAK	Yakutsk	87.70	343	P	P	08 32 21.6	-0.1
	comp=Z,76nm,0.8s,baz=52,slow=0.5,SNR=20						
YAK	Yakutsk	87.70	343	eP	P	08 32 21.8	0.0
YAK				e*PP	sP	08 32 34.1	-1.6
YAK				e		08 35 48.3	
YAK				eS	SKSac	08 42 47.3	+0.3
YAK				e*SS	S	08 43 03.0	+1.7
YAK				eSS	SS	08 48 52.2	+3.5
YAK				eSSS	SSS	08 52 23.7	
YAK				pmax	pmax		
	comp=Z,166nm,1.3s						
YAK				pmax	pmax		
	comp=E,27nm,1.5s						
YAK				pmax	pmax		
	comp=N,51nm,1.5s						
YAK				pmax	pmax		
	comp=Z,134nm,3.2s						
YAK				smax	smax		
	comp=E,138nm,5.2s						
YAK				smax	smax		
	comp=N,86nm,2.3s						
YAK				MLR	MLR		
	comp=Z,2μm,19.0s						
YAK				MLR	MLR		
	comp=E,554nm,18.0s						
YAK				MLR	MLR		
	comp=N,1μm,17.0s						
YAK	Yakutsk	87.70	343	eP	P	08 32 22.3	+0.5
	comp=N,156nm,1.0s						
YAK				epP	sP	08 32 34.8	-0.9
BLG	Laguna Peak, P	87.72	52	P	P	08 32 22.1	-0.5
	baz=244						
RC01	Rabbit Creek A	87.89	19	P	P	08 32 22.3	-0.5
	comp=N,53nm,1.1s						
CIS	Catalina Islan	87.89	53	P	P	08 32 22.8	-0.7
	baz=244						
SNAA	Sanae	88.00	183	P	P	08 32 22.5	-0.9
SNAA	Sanae	88.00	183	diP	P	08 32 22.8	-0.7
SNAA	Sanae	88.00	183	eP	P	08 32 22.1	-1.3
	comp=N,8μm,1.1s						
FMP	Fort Macarthur	88.12	53	P	P	08 32 24.4	-0.1
	baz=244						
BILL	Bilibino	88.16	359	diP	P	08 32 23.6	-0.3
BILL				i		08 32 33.1	
BILL				pmax	pmax		
	comp=Z,234nm,1.2s						
BILL				MLR	MLR		
	comp=Z,531nm,19.0s						
BILL	Bilibino	88.16	359	eP	P	08 32 23.5	-0.4
	comp=Z,206nm,1.1s						
OSI	Osito Audit: C	88.19	52	P	P	08 32 24.6	-0.3
	baz=244						
OSI	Osito Audit: C	88.19	52	eP	P	08 32 26.3	+1.3
	comp=Z,110nm,1.4s						
L02D	Cave Junction,	88.32	44	P	P	08 32 25.6	+0.3
	baz=240						
DECC	Green Verdugo	88.33	53	P	P	08 32 25.5	-0.1
	baz=244						
N02D	Trinity Center	88.33	45	P	P	08 32 26.4	+1.0
	baz=241,SNR=47						
ARVC	Arvin	88.34	52	P	P	08 32 25.8	+0.3
	baz=244,SNR=10						
PASC	Pasadena Art C	88.40	53	eP	P	08 32 25.5	-0.4
PASC				epP	sP	08 32 38.3	-1.5
M02C	Callahan	88.43	45	P	P	08 32 26.9	+1.0
	baz=241,SNR=56						
ORV	Oroville	88.46	47	eP	P	08 32 25.8	-0.2
ORV				e*PP	sP	08 32 39.2	-0.8
ORV	Oroville	88.46	47	eP	P	08 32 25.8	-0.2
ORV				epP	sP	08 32 39.2	-0.8
PMR	Palmer	88.47	19	eP	P	08 32 23.8	-1.6
PMR				pmax	pmax		
	comp=Z,61nm,1.3s						
PMR	Palmer	88.47	19	eP	P	08 32 23.8	-1.6
	comp=Z,61nm,1.4s						
VES	Vestal, Richgr	88.47	51	P	P	08 32 25.9	-0.3
	baz=244,SNR=8.1						
MWC	Mount Wilson	88.52	53	eP	P	08 32 26.3	-0.4
MWC				pmax	pmax		
	comp=Z,150nm,1.3s						
MWC	Mount Wilson	88.52	53	eP	P	08 32 26.3	-0.4
	comp=Z,146nm,1.4s						
CMB	Columbia Colle	88.53	48	eP	P	08 32 23.8	-2.6
CMB				pmax	pmax		
	comp=Z,100nm,1.0s						
CMB	Columbia Colle	88.53	48	eP	P	08 32 23.8	-2.6
	comp=Z,104nm,1.0s						
AFDM	Forest Hills D	88.54	47	eP	P	08 32 26.4	0.0
	comp=Z,171nm,1.2s						
RCTC	Rector, Farmer	88.56	50	P	P	08 32 26.3	-0.2
	baz=243,SNR=7.2						
O03D	Paynes Creek	88.61	46	P	P	08 32 26.7	0.0
	baz=242,SNR=54						
VNA3	Neumayer Olymp	88.62	181	P	P	08 32 25.3	-1.0
109C	Camp Elliot, M	88.66	54	P	P	08 32 27.2	+0.1
	baz=245,SNR=6.4						
YBH	Yreka Blue Hor	88.69	44	eP	P	08 32 27.7	+0.6
YBH				pmax	pmax		
	comp=Z,130nm,1.1s						
YBH	Yreka Blue Hor	88.69	44	eP	P	08 32 27.7	+0.6
	comp=Z,131nm,1.1s						
BFSC	Mount Baldy Ra	88.82	53	P	P	08 32 27.7	-0.3
	baz=244,SNR=16						
ISA	Isabella, Lake	88.84	51	P	P	08 32 28.3	+0.3
	baz=244,SNR=22						
ISA	Isabella, Lake	88.84	51	eP	P	08 32 28.2	+0.3
ISA				pmax	pmax		
	comp=Z,140nm,1.1s						
ISA	Isabella, Lake	88.84	51	eP	P	08 32 28.2	+0.3
	comp=Z,141nm,1.1s						
EDW2	Edwards Air Fo	88.85	52	P	P	08 32 28.1	+0.1
	baz=244,SNR=21						
SML	Sawmill	88.88	19	eP	P	08 32 31.7	+4.2
SML				pmax	pmax		
	comp=Z,50nm,1.1s						
SML	Sawmill	88.88	19	eP	P	08 32 31.7	+4.2
	comp=Z,50nm,1.2s						
MURC	Murrieta	88.90	54	P	P	08 32 28.1	-0.1
	baz=245,SNR=12						
VNA2	Neumayer--Watz	88.90	181	P	P	08 32 26.9	-0.7
	baz=155,slow=4.9						
BAR	Barrett	88.91	55	eP	P	08 32 28.2	-0.1
	comp=Z,42nm,1.0s						
HUMO	Hull Mountain	88.95	43	eP	P	08 32 28.9	+0.6
	comp=Z,133nm,0.9s						
CAST	Castle Rocks	89.06	17	eP	P	08 32 26.2	-2.1
	comp=Z,36nm,1.0s						
DIV	Divide	89.17	20	eP	P	08 32 28.6	-0.3
	comp=Z,21nm,1.0s						
MONP2	Monument Peak	89.19	54	P	P	08 32 30.0	+0.1
	baz=245,SNR=22						
VNA1	Neumayer--Stat	89.19	181	P	P	08 32 28.3	-0.6
SCM	Sheep Creek Mo	89.20	19	eP	P	08 32 32.0	+2.9
SCM				pmax	pmax		
	comp=Z,22nm,0.8s						
SCM	Sheep Creek Mo	89.20	19	eP	P	08 32 32.0	+2.9
	comp=Z,22nm,0.8s						
I03D	Drain, OR	89.23	42	P	P	08 32 30.0	+0.5
	baz=241,SNR=29						
M04C	Macdoel	89.29	45	P	P	08 32 30.3	+0.3
	baz=242,SNR=42						
IKP	In-Ko-Pah, Jac	89.32	55	P	P	08 32 30.7	+0.3
	baz=245,SNR=11						
LRMC	Laurel Mtn Rad	89.34	52	P	P	08 32 30.5	+0.1
	baz=244,SNR=46						
BBRC	Big Bear Solar	89.39	53	P	P	08 32 30.6	-0.2
	baz=245,SNR=5.8						
WAKR	Walker	89.41	48	eP	P	08 32 31.1	+0.3
LSA	Lhasa	89.41	302	P	P	08 32 31.9	+0.7
LSA				pmax	pmax		
	comp=Z,44nm,1.2s						
LSA	Lhasa	89.41	302	eP	P	08 32 32.0	+0.7
LSA				e*PP	sP	08 32 47.4	+2.2
LSA				pmax	pmax		
	comp=Z,47nm,1.1s						
LSA	Lhasa	89.41	302	eP	P	08 32 32.0	+0.7
	comp=Z,47nm,1.1s						
LSA				epP	sP	08 32 47.4	+2.2
BMRM	Bremner River	89.44	21	eP	P	08 32 34.5	+4.4
	comp=Z,38nm,1.2s						
MLAC	Mammoth, Mammo	89.44	49	P	P	08 32 31.3	+0.3
	baz=244,SNR=21						
PFO	Pinyon Flats O	89.46	54	eP	P	08 32 31.3	+0.3
PFO				pmax	pmax		
	comp=Z,94nm,1.2s						
PFO	Pinyon Flats O	89.46	54	eP	P	08 32 31.3	+0.3
	comp=Z,94nm,1.3s						
TPFO	Pinon Flats	89.46	54	P	P	08 32 30.9	-0.1
	baz=245,SNR=20						
KTH	Kantishna Hill	89.49	17	eP	P	08 32 28.6	-1.7
	comp=Z,34nm,1.2s						
MPOR	Mary's Peak	89.50	42	P	P	08 32 31.4	+0.4
TRF	Thorofare Moun	89.58	17	eP	P	08 32 29.5	-1.4
	comp=Z,22nm,1.0s						
RRX	Edison Barstow	89.59	52	P	P	08 32 31.1	-0.3
	baz=245						
HOG	Hogback Mounta	89.59	44	P	P	08 32 31.5	0.0
TIN	Tinemaha, Big	89.62	50	P	P	08 32 32.1	+0.4
	baz=244,SNR=9.5						
SWSC	Sam W. Stewart	89.68	55	P	P	08 32 32.2	+0.3
	baz=245,SNR=19						
COR	Corvallis	89.70	42	eP	P	08 32 32.6	+1.0
COR				pmax	pmax		
	comp=Z,110nm,1.0s						
COR	Corvallis	89.70	42	eP	P	08 32 32.6	+1.0
	comp=Z,107nm,1.0s						
MPMC	Manual Prospec	89.73	51	P	P	08 32 32.6	+0.2
	baz=244,SNR=67						
K04D	Chiloquin, OR	89.74	44	P	P	08 32 32.5	+0.4
	baz=242,SNR=15						
DAC	Darwin (Calif)	89.75	51	eP	P	08 32 32.0	-0.4
DAC				pmax	pmax		
	comp=Z,88nm,1.0s						
DAC	Darwin (Calif)	89.75	51	eP	P	08 32 32.0	-0.4
	comp=Z,88nm,1.0s						
I04A	Tendick Farm,	89.88	43	P	P	08 32 32.5	-0.1
	baz=241,SNR=36						
BPAW	Bear Paw Mtn.	89.91	17	eP	P	08 32 31.1	-1.1
BPAW				ePcP	PcP	08 32 37.4	+3.9
BPAW				epP	pP	08 32 42.8	+0.3
GSC	Goldstone, Bar	89.91	52	P	P	08 32 33.1	+0.1
	baz=245,SNR=13						
GSC	Goldstone, Bar	89.91	52	eP	P	08 32 33.3	+0.3
GSC				pmax	pmax		
	comp=Z,82nm,1.2s						
GSC	Goldstone, Bar	89.91	52	eP	P	08 32 33.3	+0.3
	comp=Z,82nm,1.3s						
RND	Reindeer	89.95	18	eP	P	08 32 31.5	-1.0
RND				pmax	pmax		
	comp=Z,27nm,1.0s						
RND	Reindeer	89.95	18	eP	P	08 32 31.5	-1.0
	comp=Z,27nm,1.0s						
BELC	Belle Mtn. Jos	89.97	54	P	P	08 32 33.5	+0.1
	baz=245,SNR=48						
BOD	Bodaibo	89.98	334	eP	P	08 32 32.0	-0.7
BOD				pmax	pmax		
	comp=Z,73nm,1.6s						
G03D	McMinnville, O	90.03	41	P	P	08 32 33.8	+0.6
	baz=241,SNR=18						
HEC	Hector,Ludlow	90.06	53	P	P	08 32 33.5	-0.2
	baz=245,SNR=17						
NV01	Mina Array Sit	90.17	49	eP	P	08 32 30.8	-3.5
NVAR	Mina Array Bea	90.17	49	P	P	08 32 34.3	0.0
	comp=Z,52nm,0.9s,baz=231,slow=5.7,SNR=191						
NVAR				PKPPKP	P'P'df	08 58 15.2	+3.4
	comp=Z,0.9nm,0.8s,baz=78,slow=3.8,SNR=6.1						
NVAR				LR	LR	09 09 09.7	
	comp=Z,1μm,18.3s,baz=264,slow=33						
MCK	McKinley	90.18	18	eP	P	08 32 32.3	-1.2
MCK				pmax	pmax		
	comp=Z,18nm,1.0s						
MCK	McKinley	90.18	18	eP	P	08 32 32.3	-1.2
	comp=Z,18nm,1.0s						
F03A	Seaside	90.20	40	eP	P	08 32 34.4	+0.4
	comp=Z,238nm,1.0s						
GRAC	Grapevine Rang	90.22	50	P	P	08 32 34.8	+0.4
	baz=244,SNR=28						
BC3	Big Chuckawall	90.24	54	P	P	08 32 34.8	+0.2
	baz=246,SNR=27						
BALM	Baldy	90.26	22	eP	P	08 32 34.5	+0.4
BALM				pmax	pmax		
	comp=Z,21nm,1.1s						
BALM	Baldy	90.26	22	eP	P	08 32 34.5	+0.4
	comp=Z,21nm,1.1s						
SRIG	Santa Rosalia	90.26	61	eP	P	08 32 34.4	-0.3
	comp=Z,128nm,1.1s						
BWNR	Bhubaneshwar	90.29	291	eP	P	08 32 34.9	0.0
PALK	Pallekele	90.30	278	P	P	08 32 36.3	+1.0
PALK	Pallekele	90.30	278	eP	P	08 32 36.8	+1.5
PALK				pmax	pmax		
	comp=Z,190nm,1.7s						
PALK	Pallekele	90.30	278	eP	P	08 32 36.8	+1.5
	comp=Z,186nm,1.7s						
K05A	Summer Lake	90.35	44	eP	P	08 32 34.9	-0.1
	comp=Z,204nm,1.0s						
MOD	Modoc Plateau	90.36	45	eP	P	08 32 35.1	+0.1
	comp=Z,123nm,1.0s						
FURC	Furnace Creek,	90.36	51	P	P	08 32 35.1	+0.1
	baz=245,SNR=75						
BWN	Browne	90.38	17	eP	P	08 32 34.0	-0.3
	comp=Z,44nm,1.0s						
J05D	Fort Rock, OR	90.39	43	P	P	08 32 35.6	+0.5
	baz=242,SNR=147						
H04A	Detroit Lake	90.44	42	eP	P	08 32 34.7	-0.5
	comp=Z,146nm,1.0s						
GLA	Glamis	90.47	55	P	P	08 32 36.3	+0.6
	baz=246,SNR=37						
GLA	Glamis	90.47	55	eP	P	08 32 35.8	+0.1
GLA				pmax	pmax		
	comp=Z,190nm,1.1s						
GLA	Glamis	90.47	55	eP	P	08 32 35.8	+0.1
	comp=Z,188nm,1.1s						
E03A	Lebam	90.50	40	eP	P	08 32 35.4	+0.1
	comp=Z,371nm,1.1s						
ON2	Olympics--Nort	90.54	39	P	P	08 32 36.1	+0.5
GMRC	Granite Mounta	90.55	53	P	P	08 32 36.0	-0.1
	baz=246,SNR=32						
SHOC	Shoshone, Teco	90.56	52	P	P	08 32 35.8	-0.1
	baz=245,SNR=32						
F04D	Rainier, OR	90.61	40	P	P	08 32 36.5	+0.7
	baz=241,SNR=5.8						
TUQ	Turquoise Moun	90.62	52	P	P	08 32 36.4	0.0
	baz=245,SNR=46						
IRM	Iron Mountain	90.68	54	P	P	08 32 36.8	+0.3
	baz=246,SNR=46						
MLY	Manley	90.71	16	eP	P	08 32 31.1	-4.9
	comp=Z,22nm,1.2s						
ZAK	Zakamensk	90.72	325	eP	P	08 32 35.7	-0.8
ZAK				pmax	pmax		
	comp=Z,57nm,1.3s						
NLWA	Neilton Lookou	90.74	39	eP	P	08 32 37.1	+0.6
	comp=Z,119nm,1.1s						
OSR	Olympics--Salm	90.74	39	P	P	08 32 37.1	+0.6
SLBS	Sierra La Lagu	90.81	65	eP	P	08 32 38.7	+1.2
	comp=Z,87nm,1.0s						
I05D	Terrebonne, OR	90.81	43	P	P	08 32 37.1	+0.2
	baz=242,SNR=41						
F04A	Amboy	90.90	41	eP	P	08 32 37.3	+0.1
	comp=Z,187nm,1.0s						
Y12C	Blythe	90.99	54	P	P	08 32 38.2	+0.3
	baz=246,SNR=28						
Y12C	Blythe	90.99	54	eP	P	08 32 38.2	+0.3
	comp=Z,153nm,1.1s						
WRH	Wood River Hil	90.99	17	eP	P	08 32 36.1	-1.1
	comp=Z,26nm,1.0s						
TPNV	Topopah Spring	91.01	51	P	P	08 32 38.3	0.0
	baz=245,SNR=81						
TPNV	Topopah Spring	91.01	51	eP	P	08 32 38.0	-0.2
TPNV				pmax	pmax		
	comp=Z,140nm,1.0s						
TPNV	Topopah Spring	91.01	51	eP	P	08 32 38.0	-0.2
	comp=Z,136nm,1.0s						
LDFC	Landfair	91.08	53	eP	P	08 32 39.4	+0.9
	comp=Z,262nm,1.1s						
MENT	Mentasta	91.16	20	eP	P	08 32 39.8	+1.7
	comp=Z,17nm,1.2s						
VALT	Mount Saint He	91.17	41	P	P	08 32 39.3	+0.6
113A	Mohawk Valley,	91.17	55	eP	P	08 32 39.0	+0.1
	comp=Z,83nm,1.1s						
CHLP	Challavanipeta	91.18	289	eP	P	08 32 38.7	-0.5
CHLP				IAmb	IAmb	08 32 41.3	
	comp=Z,112nm,1.0s						
CHLP				IVMs_BB	IVMs_BB	09 11 48.1	
	comp=Z,278nm,3.8s						
VFP	Flag Point	91.19	42	P	P	08 32 38.8	-0.1
CCB	Clear Creek Bu	91.20	17	eP	P	08 32 36.5	-1.7
	comp=Z,13nm,0.8s						
TLY	Talaya	91.22	326	eP	P	08 32 38.7	+0.1
TLY				pmax	pmax		
	comp=Z,76nm,1.6s						
TLY	Talaya	91.22	326	eP	P	08 32 38.5	-0.1
	comp=Z,36nm,0.9s						
TDL	Tradedollar La	91.22	40	P	P	08 32 39.3	+0.4
WRAK	Wrangell Islan	91.23	29	eP	P	08 32 38.4	-0.1
	comp=Z,98nm,1.0s						
G05D	Wamic, OR	91.25	42	P	P	08 32 39.1	+0.1
	baz=242,SNR=12						
MDM	Murphy Dome	91.32	17	eP	P	08 32 37.0	-1.8
	comp=Z,24nm,1.0s						
COLA	College	91.36	17	diP	P	08 32 37.4	-1.5
COLA				pmax	pmax		
	comp=Z,16nm,1.1s						
COLA	College	91.36	17	eP	P	08 32 37.2	-1.7
	comp=Z,29nm,0.9s						
BOK	Bokaro	91.50	295	eP	P	08 32 40.3	-0.3
PDMCI	Parker Dam,Lak	91.50	54	P	P	08 32 40.7	+0.4
	baz=246,SNR=33						
VIS	Vishakhapatnam	91.55	288	eP	P	08 32 41.6	+0.7
VIS				IAmb	IAmb	08 32 42.8	
	comp=Z,39nm,0.7s						
ILAR	Eielson Array	91.56	18	P	P	08 32 37.6	-2.2
	comp=Z,7.9nm,0.9s,baz=232,slow=5.7,SNR=31						
ILAR				LR	LR	09 13 46.3	
	comp=Z,869nm,18.0s,baz=238,slow=36						
ILB	Eielson Array	91.56	18	eP	P	08 32 37.6	-2.2
DOT	Dot Lake	91.56	19	eP	P	08 32 37.3	-2.7
	comp=Z,89nm,1.1s						
214A	Organ Pipe Nat	91.60	57	P	P	08 32 40.8	-0.1
	baz=247						
214A	Organ Pipe Nat	91.60	57	eP	P	08 32 40.9	0.0
	comp=Z,456nm,1.2s						
214A				epP	sP	08 32 53.8	-1.0
PGC	Sidney	91.60	38	eP	P	08 32 40.5	+0.1
	comp=Z,100nm,0.9s						
SHPR	Sheep Range	91.63	52	eP	P	08 32 41.8	+0.7
	comp=Z,82nm,1.1s						
LON	Longmire	91.66	40	eP	P	08 32 40.4	-0.4
LON				pmax	pmax		
	comp=Z,42nm,1.2s						
LON	Longmire	91.66	40	eP	P	08 32 40.4	-0.4
	comp=Z,42nm,1.2s						
G06A	Carlson Farm,	91.67	42	eP	P	08 32 40.7	-0.2
	comp=Z,46nm,1.1s						
VTHM	Trough	91.70	42	P	P	08 32 41.3	+0.2
WVOR	Wild Horse Val	91.70	45	eP	P	08 32 41.1	-0.2
WVOR				pmax	pmax		
	comp=Z,140nm,1.0s						
WVOR	Wild Horse Val	91.70	45	eP	P	08 32 41.1	-0.2
	comp=Z,137nm,1.0s						
D05A	Enumclaw	91.76	40	eP	P	08 32 42.0	+0.9
	comp=Z,266

baz=241,SNR=17
R11A Troy Canyon, C 92.07 50 P **P 08 32 42.9 -0.2**
baz=246,SNR=38
R11A Troy Canyon, C 92.07 50 *e*P **P 08 32 41.7 -1.4**
comp=Z,33nm,1.0s
B05A Bryant 92.20 39 P **P 08 32 43.3 0.0**
baz=242,SNR=24
Y14A Wickenburg 92.22 55 *e*P **P 08 32 43.6 -0.1**
comp=Z,185nm,1.0s
COLD Coldfoot 92.58 15 *e*P **P 08 32 44.4 -0.2**
comp=Z,31nm,1.1s
MOY Mondy 92.62 325 *e*P **P 08 32 45.5 +0.2**
MOY pmax pmax
comp=Z,142nm,3.0s
B06A Marblemount 92.68 39 *e*P **P 08 32 45.4 -0.1**
comp=Z,36nm,0.9s
MDRS Chennai 92.72 283 *e*P **P 08 32 47.3 +0.9**
MDRS IAmb IAmb 08 32 48.6
comp=Z,50nm,1.2s
G08A Pilot Rock 92.75 42 *e*P **P 08 32 45.8 -0.3**
comp=Z,58nm,1.0s
C06D Leavenworth 92.76 39 P **P 08 32 46.3 +0.5**
baz=242
HAWA Hanford 92.89 41 *e*P **P 08 32 46.5 0.0**
comp=Z,100nm,1.4s
PVM Polavaram 92.91 287 *e*P **P 08 32 46.6 -0.6**
PVM IAmb IAmb 08 32 48.7
comp=Z,300nm,2.2s
PVM IVMs_BB IVMs_BB 09 07 38.1
comp=Z,289nm,46.4s
LCMT Little Creek M 93.24 52 *e*P **P 08 32 48.6 +0.1**
comp=Z,61nm,1.0s
EGAK Eagle 93.26 19 *e*P **P 08 32 47.6 -0.1**
comp=Z,42nm,1.1s
PKIN Phulchoki 93.28 298 *e*P **P 08 32 49.4 +0.3**
comp=Z,121nm,1.3s
ELK Elko 93.30 48 *e*P **P 08 32 48.5 -0.3**
ELK pmax pmax
comp=Z,32nm,1.1s
ELK Elko 93.30 48 *e*P **P 08 32 48.5 -0.3**
comp=Z,32nm,1.1s
TUC Tucson 93.32 57 P **P 08 32 48.9 0.0**
baz=248
TUC Tucson 93.32 57 *e*P **P 08 32 48.6 -0.3**
TUC pmax pmax
comp=Z,79nm,1.1s
TUC Tucson 93.32 57 *e*P **P 08 32 48.6 -0.3**
comp=Z,79nm,1.1s
DAWY Dawson 93.34 20 *e*P **P 08 32 47.6 -0.6**
comp=Z,25nm,1.3s
PSUT Pine Spring 93.39 50 *e*P **P 08 32 49.3 +0.1**
comp=Z,19nm,0.9s
DLBC Dease Lake 93.43 28 P **P 08 32 48.5 -0.3**
comp=Z,21nm,1.0s
DLBC Dease Lake 93.43 28 *e*P **P 08 32 48.8 0.0**
comp=Z,58nm,1.1s
SKHT Srikalahasti 93.44 283 *e*P **P 08 32 50.2 +0.5**
SKHT IAmb IAmb 08 32 51.8
comp=Z,65nm,1.2s
SKHT IVMs_BB IVMs_BB 09 06 25.4
comp=Z,269nm,20.3s
KKN Kakani 93.45 298 *e*P **P 08 32 49.9 +0.1**
comp=Z,130nm,1.0s
DMN Daman 93.53 298 *e*P **P 08 32 50.5 +0.3**
comp=Z,373nm,1.1s
KNB Kanab 93.55 52 *e*P **P 08 32 50.6 +0.6**
KNB pmax pmax
comp=Z,63nm,1.1s
KNB Kanab 93.55 52 *e*P **P 08 32 50.6 +0.6**
comp=Z,63nm,1.2s
D08A Wollman Farm, 93.56 41 *e*P **P 08 32 49.8 +0.2**
D08A *e*pP **sP 08 33 02.6 -0.9**
X16A Lo Mia Camp, P 93.60 55 *e*P **P 08 32 50.5 +0.2**
comp=Z,80nm,1.1s
BMO Blue Mountains 93.62 43 *e*P **P 08 32 49.6 -0.4**
comp=Z,23nm,1.0s
BMO *e*pP **pP 08 33 01.8 +1.6**
U15A North Rim 93.72 53 *e*P **P 08 32 51.3 +0.4**
comp=Z,79nm,1.3s
E09A Wood Farm, Sta 93.80 42 *e*P **P 08 32 51.6 +1.0**
comp=Z,33nm,1.2s
B08A Colville Reser 93.89 40 *e*P **P 08 32 50.1 -1.0**
comp=Z,34nm,1.1s
ADKI Addanki 93.92 285 *e*P **P 08 32 52.3 +0.4**
ADKI IAmb IAmb 08 32 53.9
comp=Z,77nm,1.1s
ADKI IVMs_BB IVMs_BB 09 12 52.5
comp=Z,273nm,11.4s
MFID Camas Ranch 93.99 45 *e*P **P 08 32 51.4 -0.4**
comp=Z,37nm,0.9s
GKN Gorkha 94.06 298 *e*P **P 08 32 52.0 -0.5**
comp=Z,165nm,1.0s
WUAZ Wupatki 94.06 54 P **P 08 32 53.0 +0.6**
baz=248
WUAZ Wupatki 94.06 54 *e*P **P 08 32 52.5 +0.2**
comp=Z,69nm,1.1s
PKCU Pink Cliffs 94.09 52 *e*P **P 08 32 54.3 +1.7**
comp=Z,53nm,1.2s
F10A Beach Ranch, E 94.15 42 *e*P **P 08 32 52.0 -0.4**
comp=Z,29nm,1.1s
319A Douglas 94.17 58 *e*P **P 08 32 53.6 +0.7**
comp=Z,96nm,1.0s
C09A Chrisman Ranch 94.28 40 *e*P **P 08 32 53.1 +0.2**
comp=Z,28nm,1.4s
MTPU Mount Pierson 94.41 51 *e*P **P 08 32 54.6 +0.5**
comp=Z,46nm,1.1s
MSU Marysvale 94.60 51 *e*P **P 08 32 55.5 +0.7**
MSU Marysvale 94.60 51 *e*P **P 08 32 55.5 +0.7**
RCLA Racherla 94.71 285 *e*P **P 08 32 54.9 -0.7**
RCLA IAmb IAmb 08 32 57.0
comp=Z,77nm,1.4s
RCLA IVMs_BB IVMs_BB 09 07 22.3
comp=Z,409nm,26.3s
NJS Nagarjunasagar 94.76 286 *e*P **P 08 32 55.3 -0.4**
NJS IAmb IAmb 08 32 57.4
comp=Z,134nm,1.1s
NJS IVMs_BB IVMs_BB 09 11 44.8
comp=Z,260nm,3.9s
DUG Dugway, Tooele 94.78 49 P **P 08 32 55.2 -0.3**
baz=247
DUG Dugway, Tooele 94.78 49 *e*P **P 08 32 54.9 -0.6**
DUG pmax pmax
comp=Z,29nm,1.3s
DUG Dugway, Tooele 94.78 49 *e*P **P 08 32 54.9 -0.6**
comp=Z,29nm,1.4s
X18A Snowflake 94.79 55 *e*P **P 08 32 56.0 +0.2**
comp=Z,38nm,1.3s
KOLN Koldanda 94.83 298 *e*P **P 08 32 55.4 -0.7**
comp=Z,40nm,0.8s
BGU Big Grassy Mou 94.91 48 *e*P **P 08 32 55.4 -0.7**
comp=Z,14nm,1.1s
SRLM Srisailam 94.98 285 *e*P **P 08 32 55.9 -0.9**
SRLM IAmb IAmb 08 32 58.5
comp=Z,185nm,1.1s
SRLM IVMs_BB IVMs_BB 09 08 51.3
comp=Z,278nm,4.1s
HLID Hailey 94.99 45 P **P 08 32 56.0 -0.4**
baz=247
HLID Hailey 94.99 45 *e*P **P 08 32 56.2 -0.2**
comp=Z,24nm,1.0s
W18A Petrified Fore 95.16 55 P **P 08 32 56.6 -0.9**
baz=249
W18A Petrified Fore 95.16 55 *e*P **P 08 32 56.3 -1.1**
comp=Z,21nm,1.0s
NEW Newport 95.18 40 P **P 08 32 57.3 +0.3**
baz=245
NEW Newport 95.18 40 *e*P **P 08 32 56.8 -0.2**
NEW *e**PP **pP 08 33 07.3 0.0**
NEW Newport 95.18 40 *e*P **P 08 32 56.8 -0.2**
NEW *e*pP **pP 08 33 07.2 0.0**
NLU North Lily Min 95.21 49 *e*P **P 08 32 57.6 0.0**
comp=Z,24nm,1.1s
HVU Hansel Valley 95.41 47 *e*P **P 08 32 58.3 -0.1**
HVU pmax pmax
comp=Z,38nm,1.0s
HVU Hansel Valley 95.41 47 *e*P **P 08 32 58.3 -0.1**
comp=Z,38nm,1.0s
PYUN Piuthan 95.45 298 *e*P **P 08 32 58.2 -0.8**
comp=Z,161nm,1.0s
SPUT South Promonto 95.46 48 *e*P **P 08 32 59.3 +0.7**
SPUT *e*pP **sP 08 33 11.7 -0.9**
Q16A Castle Valley 95.48 51 *e*P **P 08 32 59.4 +0.6**
comp=Z,40nm,1.1s
TMUT Trail Mountain 95.59 50 *e*P **P 08 33 00.2 +0.8**
comp=Z,36nm,1.0s
TIXI Tiksi 95.67 348 *d i*P **P 08 32 57.7 -0.9**
TIXI pmax pmax
comp=Z,15nm,1.1s
TIXI Tiksi 95.67 348 *e*P **P 08 32 57.0 -1.7**
comp=Z,22nm,1.2s
TIXI *e*pP **sP 08 33 10.7 -1.9**
HYB Hyderabad 95.72 286 *i*P **P 08 33 00.0 -0.2**
comp=Z,71nm,1.2s
HYB Hyderabad 95.72 286 *e*P **P 08 32 59.6 -0.6**
HYB IAmb IAmb 08 33 01.1
HYBB Hyderabad (bro 95.73 286 *e*P **P 08 33 00.1 -0.1**
HYBB IAmb IAmb 08 33 01.4
comp=Z,52nm,1.1s
HYBB IVMs_BB IVMs_BB 09 07 42.4
comp=Z,245nm,5.2s
JLU Jordanelle 95.90 49 *e*P **P 08 33 00.6 -0.2**
comp=Z,20nm,1.0s
P17A Butcher Ranch, 95.99 50 *e*P **P 08 33 03.6 +2.5**
comp=Z,18nm,1.2s
SRU San Rafael Swe 96.02 51 *e*P **P 08 33 01.2 0.0**
SRU pmax pmax
comp=Z,19nm,1.0s
SRU San Rafael Swe 96.02 51 *e*P **P 08 33 01.2 0.0**
comp=Z,19nm,1.0s
TCUT Toone Canyon 96.12 48 *e*P **P 08 33 01.6 -0.1**
comp=Z,34nm,1.0s
HWUT Hardware Ranch 96.19 48 *e*P **P 08 33 00.9 -1.0**
comp=Z,11nm,0.8s
P18A Preston Nutter 96.40 50 *e*P **P 08 33 03.8 +0.7**
comp=Z,16nm,1.1s
SRSP Sriramsagar 96.41 288 *e*P **P 08 33 02.2 -1.1**
SRSP IAmb IAmb 08 33 04.2
comp=Z,86nm,1.4s
SRSP IVMs_BB IVMs_BB 09 09 27.7
comp=Z,221nm,9.7s
BSMT Bassoo Peak 96.44 41 *e*P **P 08 33 02.5 -0.5**
NGP Nagpur 96.51 290 *e*P **P 08 33 03.1 -0.6**
NGP IAmb IAmb 08 33 04.5
comp=Z,44nm,1.2s
MCMT McKenzie Canyo 96.52 45 *e*P **P 08 33 03.4 -0.1**
MCMT *e*pP **sP 08 33 16.1 -1.3**
MSO Missoula 96.57 42 P **P 08 33 03.1 -0.4**
baz=247
MSO Missoula 96.57 42 *e*P **P 08 33 03.2 -0.2**
comp=Z,5.3nm,1.0s
PV05 Paradox Valley 96.69 52 *e*P **P 08 33 05.6 +1.2**
JTMT Jette 96.71 42 *e*P **P 08 33 03.9 -0.3**
PV09 Paradox Valley 96.81 52 *e*P **P 08 33 05.5 +0.5**
MVCO Mesa Verde 96.84 53 P **P 08 33 04.5 -0.6**
baz=250
MVCO Mesa Verde 96.84 53 *e*P **P 08 33 08.7 +3.6**
MVCO *e*pP **pP 08 33 14.6 -0.8**
PV10 Paradox Valley 96.84 52 *e*P **P 08 33 06.1 +1.0**
ZAIG Zacatecas 96.85 68 *e*P **P 08 33 06.3 +0.7**
ZAIG *e*pP **sP 08 33 19.0 -0.5**
DLMT Dillon 96.88 44 *e*P **P 08 33 04.4 -0.6**
comp=Z,17nm,1.1s
LAZ Ladron 96.92 56 *e*P **P 08 33 09.1 +3.6**
YBMT Yellow Bay 96.93 41 *e*P **P 08 33 04.7 -0.4**
AHID Auburn Hatcher 96.93 47 *e*P **P 08 33 05.3 0.0**
comp=Z,13nm,1.1s
PV04 Paradox Valley 96.95 52 *e*P **P 08 33 05.6 +0.1**
PV04 *e*pP **sP 08 33 17.7 -1.7**
CHMT Chamberlain Mo 97.04 43 *e*P **P 08 33 05.1 -0.6**
PV01 Paradox Valley 97.10 52 *e*P Pdif 08 33 07.0 +0.6
LRM Limekiln Ridge 97.15 44 *e*P **P 08 33 06.1 -0.2**
BNM Barren Site 97.23 56 *e*P Pdif 08 33 09.0 +1.9
BNM *e*pP sP 08 33 19.4 -1.5
REDW Red Top Meadow 97.32 47 *e*P **P 08 33 07.2 +0.1**
comp=Z,33nm,1.2s
WMQ Urumqi 97.38 314 P Pdif 08 33 08.3 +1.1
WMQ pP sP 08 33 19.6 -1.5
WMQ sP pP 08 33 26.6 +9.2
WMQ pmax pmax
comp=Z,11nm,1.4s
WMQ pmax pmax
comp=Z,140nm,4.4s
WMQ LR LR
comp=Z,220nm,15.8s
WMQ LR LR
comp=Z,120nm,22.8s
WMQ LR LR
comp=Z,66nm,22.8s
MNTX Cornudas Mount 97.41 59 P **P 08 33 07.2 -0.3**
baz=251
MNTX Cornudas Mount 97.41 59 *e*P **P 08 33 07.3 -0.3**
comp=Z,14nm,1.1s
SNOW Snow King Moun 97.42 46 *e*P **P 08 33 07.0 -0.6**
comp=Z,22nm,1.3s
WALA Waterton Lakes 97.44 40 *e*P Pdif 08 33 07.8 +0.4
comp=Z,18nm,1.1s
IMW Indian Meadow 97.45 46 *e*P **P 08 33 07.6 -0.1**
comp=Z,14nm,1.0s
MOOW Moose Ponds 97.53 46 *e*P **P 08 33 07.5 -0.5**
comp=Z,10nm,1.1s
LOHW Long Hollow 97.57 46 *e*P **P 08 33 07.4 -0.8**
comp=Z,7.6nm,1.0s
BOZ Bozeman (W) 97.62 44 P **P 08 33 07.4 -0.9**
baz=249
BOZ Bozeman (W) 97.62 44 *e*P **P 08 33 08.0 -0.3**
BOZ *e**PP **pP 08 33 19.7 +1.1**
BOZ pmax pmax
comp=Z,17nm,1.2s
BOZ Bozeman (W) 97.62 44 *e*P **P 08 33 08.0 -0.3**
comp=Z,17nm,1.2s
BOZ *e*pP **pP 08 33 19.7 +1.1**
ANMO Albuquerque 97.63 56 P **P 08 33 07.8 -0.9**
baz=251
ANMO Albuquerque 97.63 56 *c e*P **P 08 33 08.3 -0.4**
ANMO pmax pmax
comp=Z,5.0nm,1.1s
ANMO Albuquerque 97.63 56 *e*P **P 08 33 08.2 -0.5**
comp=Z,10nm,1.1s
FLWY Flagg Ranch 97.68 46 *e*P Pdif 08 33 09.2 +0.4
comp=Z,8.8nm,0.9s
KLRI Killari 97.70 286 *e*P **P 08 33 08.0 -1.2**
KLRI IAmb IAmb 08 33 09.4
comp=Z,43nm,1.1s
KLRI IVMs_BB IVMs_BB 09 15 11.2
comp=Z,312nm,4.2s
YMR Madison River 97.71 45 *e*P Pdif 08 33 09.6 +0.7
comp=Z,13nm,1.0s
H17A Grant Village 97.87 46 P **P 08 33 08.7 -0.9**
baz=249
H17A Grant Village 97.87 46 *e*P Pdif 08 33 10.9 +1.2
comp=Z,10nm,0.9s
INK Inuvik 97.88 19 P **P 08 33 07.6 -1.0**
comp=Z,11nm,1.0s,baz=240,slow=6.3,SNR=26
INK Inuvik 97.88 19 *e*P **P 08 33 07.7 -1.0**
INK pmax pmax
comp=Z,30nm,1.2s
INK Inuvik 97.88 19 *e*P **P 08 33 07.7 -1.0**
comp=Z,30nm,1.3s
BW06 Boulder Array 97.99 47 P **P 08 33 08.7 -1.4**
baz=250
BW06 Boulder Array 97.99 47 *e*P **P 08 33 08.2 -1.9**
BW06 *e*P **P 08 33 08.9 -1.3**
PD31 Pinedale Array 97.99 47 *e*P **P 08 33 09.6 -0.6**
PDAR Pinedale Array 97.99 47 P **P 08 33 09.1 -1.1**
comp=Z,2.9nm,0.9s,baz=215,slow=1.8,SNR=16
PDAR PKKPbc **PKKPbc 08 49 42.5 -2.3**
comp=Z,0.8nm,0.9s,baz=67,slow=3.9,SNR=4.5
O20A White River Ci 98.03 50 P **P 08 33 09.4 -1.0**
baz=250
O20A White River Ci 98.03 50 *e*P Pdif 08 33 10.5 +0.1
comp=Z,13nm,0.9s
TX31 Lajitas Ar. Si 98.04 62 *e*P **P 08 33 09.4 -1.1**
TX31 *e*P **P 08 33 10.5 0.0**
TXAR Lajitas Array 98.04 62 P **P 08 33 10.5 0.0**
comp=Z,2.9nm,0.9s,baz=235,slow=4.4,SNR=16
TXAR PKKPbc **PKKPbc 08 49 44.8 +0.8**
comp=Z,2.0nm,0.9s,baz=70,slow=3.0,SNR=11
TXAR LR LR 09 11 53.3
comp=Z,935nm,18.5s,baz=0.0,slow=32
LKWY Lake 98.05 46 *e*P Pdif 08 33 11.9 +1.5
LKWY pmax pmax
comp=Z,7.0nm,1.0s
LKWY Lake 98.05 46 *e*P Pdif 08 33 11.9 +1.5
comp=Z,7.2nm,1.0s
PLCA Paso Flores 98.24 139 P Pdif 08 33 11.8 +0.4
comp=Z,3.7nm,1.0s,baz=210,slow=12,SNR=4.3
PLCA LR LR 09 13 48.0
comp=Z,206nm,18.3s,baz=252,slow=33
S22A 4UR Ranch, Cre 98.27 53 Pdiff **P 08 33 11.0 -0.6**
baz=251
S22A 4UR Ranch, Cre 98.27 53 *e*P Pdif 08 33 12.1 +0.4
comp=Z,13nm,1.3s
BHPL Bhopal 98.61 292 *e*P **P 08 33 10.3 -2.8**
BHPL IAmb IAmb 08 33 14.6
comp=Z,12nm,0.6s
SMCO Snowmass 98.63 52 *e*P **P 08 33 13.3 0.0**
comp=Z,12nm,1.1s
RLMT Red Lodge 99.00 45 Pdiff **Pdif 08 33 14.1 -0.5**
baz=250
RLMT Red Lodge 99.00 45 *e*P **Pdif 08 33 14.4 -0.2**
comp=Z,9.9nm,1.1s
SDCO Great Sand Dun 99.27 53 Pdiff **Pdif 08 33 15.4 -0.6**
baz=252
SDCO Great Sand Dun 99.27 53 *e*P **Pdif 08 33 16.1 0.0**
comp=Z,5.6nm,1.3s
GOA Goa 99.39 283 *e*P **Pdif 08 33 15.4 -1.3**
GOA IAmb IAmb 08 33 18.8
comp=Z,15nm,0.8s
EGMT Eagleton 99.65 42 Pdiff **Pdif 08 33 17.3 0.0**
baz=250
EGMT Eagleton 99.65 42 *e*Pdif **Pdif 08 33 17.1 -0.2**
comp=Z,7.7nm,1.0s
ISCO Idaho Springs 99.83 51 *e*P **Pdif 08 33 26.3 +7.8**
ISCO Idaho Springs 99.83 51 *e*P **Pdif 08 33 26.3 +7.8**
N23A Red Feather La 99.93 50 Pdiff **Pdif 08 33 18.4 -0.5**
baz=252
N23A Red Feather La 99.93 50 *e*Pdif **Pdif 08 33 19.3 +0.4**
N23A *e* 08 33 31.8
K22A Casper 100.07 48 Pdiff **Pdif 08 33 18.9 -0.4**
baz=252
MSTX Muleshoe 100.21 58 Pdiff **Pdif 08 33 19.2 -0.9**
baz=252
MSTX Muleshoe 100.21 58 *e*Pdif **Pdif 08 33 19.8 -0.3**
DDI Dehra Dun 100.25 299 *e*P **Pdif 08 33 17.4 -2.9**
DDI IAmb IAmb 08 33 21.0
comp=Z,41nm,0.7s
POO Poona 100.32 286 *e*P **Pdif 08 33 20.8 -0.1**
POO IAmb IAmb 08 33 21.9
comp=Z,20nm,0.9s
POO Poona 100.32 286 ⇑ *i*P **Pdif 08 33 18.0 -2.8**
comp=Z,30nm,1.0s
POO *e*x x 08 35 47.0
PHWY Pilot Hill 100.41 50 *e*PP PP 08 37 35.6 +7.6
933A Laredo 101.19 65 Pdiff **Pdif 08 33 23.9 -0.5**
baz=253
SMLA Simla 101.22 299 *e*P **Pdif 08 33 23.5 -1.0**
SMLA IAmb IAmb 08 33 24.8
comp=Z,35nm,0.4s
AMTX Amarillo 101.34 57 Pdiff **Pdif 08 33 24.8 -0.3**
baz=253
LAO LASA Array 101.51 44 Pdiff **Pdif 08 33 25.6 0.0**
baz=253
MK01 Makanchi Array 101.94 316 *e*Pdif **Pdif 08 33 27.1 -0.3**
MK01 *e*PP **PP 08 37 36.3 -2.9**
MKAR Makanchi Array 101.95 316 P **Pdif 08 33 27.2 -0.2**
comp=Z,2.1nm,0.8s,baz=98,slow=6.7,SNR=12
MKAR PP **PP 08 37 37.8 -1.5**
comp=Z,2.8nm,0.9s,baz=106,slow=7.7,SNR=5.4
MKAR PKKPbc **PKKPbc 08 49 31.3 -2.1**
comp=Z,3.3nm,1.0s,baz=280,slow=2.1,SNR=7.2
YKA Yellowknife Ar 102.05 28 P **Pdif 08 33 27.0 -0.4**
comp=Z,1.5nm,0.7s,baz=252,slow=4.5,SNR=25
YKA PKiKP **PKiKP 08 37 48.4 -1.3**
comp=Z,0.5nm,0.8s,baz=284,slow=2.1,SNR=5.1
YKA PKKPbc **PKKPbc 08 49 30.5 -3.1**
comp=Z,0.6nm,0.9s,baz=63,slow=2.7,SNR=7.1
YKA Yellowknife Ar 102.05 28 P **Pdif 08 33 27.0 -0.4**
YKA pmax pmax
comp=Z,2.0nm,0.7s
YKB5 Yellowknife Ar 102.05 28 *e*Pdif **Pdif 08 33 27.0 -0.4**
YKW3 Yellowknife Ar 102.07 27 *e*Pdif **Pdif 08 33 29.0 +1.5**
533A Kerrville 102.10 62 Pdiff **Pdif 08 33 28.6 +0.1**
baz=253
RSSD Black Hills 102.24 47 Pdiff **Pdif 08 33 29.0 0.0**
baz=254
RSSD Black Hills 102.24 47 *e*P **Pdif 08 33 28.8 -0.2**
RSSD Black Hills 102.24 47 *e*Pdif **Pdif 08 33 28.8 -0.2**
433A Art 102.25 62 Pdiff **Pdif 08 33 29.4 +0.3**
baz=254
DHRM DHARAMSHALA 102.25 300 *e*P **Pdif 08 33 28.1 -1.3**
DHRM IAmb IAmb 08 33 30.0
comp=Z,57nm,0.2s
333A Richland Sprin 102.50 61 Pdiff **Pdif 08 33 30.0 -0.2**
baz=254
ZAA0 Zalesovo Array 102.51 323 *e*Pdif **Pdif 08 33 28.9 -0.7**
ZAA0 *e*Pdif Pdif 08 33 29.9 +0.2
ZAA0 *e*PP **PP 08 37 43.0 -0.2**
ZALV Zalesovo Beam 102.51 323 P **Pdif 08 33 29.8 +0.1**
comp=Z,3.1nm,0.8s,baz=121,slow=4.4,SNR=9.2
ZALV PP **PP 08 37 42.8 -0.3**
comp=Z,0.7nm,0.3s,baz=62,slow=7.2,SNR=3.8
835A Beeville 102.61 64 Pdiff **Pdif 08 33 30.2 -0.5**
baz=254
J26A Sides Ranch, S 102.68 48 Pdiff **Pdif 08 33 30.3 -0.5**
baz=254
Z33A Whitaker Ranch 103.21 59 Pdiff **Pdif 08 33 33.2 -0.1**
baz=254
H26A Fairpoint 103.24 47 Pdiff **Pdif 08 33 33.5 +0.2**
baz=254
W32A Sentinel 103.33 57 Pdiff **Pdif 08 33 33.7 -0.1**
baz=254
J27A Elkhorn Farm, 103.42 49 Pdiff **Pdif 08 33 34.2 +0.1**
baz=255
Y33A Hilltop Ranch, 103.52 59 Pdiff **Pdif 08 33 34.5 -0.2**
baz=254
G26A Maurine 103.54 47 Pdiff **Pdif 08 33 34.4 -0.2**
baz=255
134A White-Moore Ra 103.58 60 Pdiff **Pdif 08 33 34.5 -0.5**
baz=254
NVS Novosibirsk 103.65 324 *e*P **Pdif 08 33 29.5 -5.2**
H27A Howes 103.73 47 Pdiff **Pdif 08 33 35.6 +0.2**
baz=255
X33A Lawton 103.76 58 Pdiff **Pdif 08 33 35.9 +0.2**
baz=255
R32A Long Quarter, 104.59 54 Pdiff **Pdif 08 33 39.5 +0.1**
baz=256
237A Washetta, Mont 105.29 61 Pdiff **Pdif 08 33 42.7 +0.2**
baz=255
KURK Kurchatov 105.33 319 *e*P **Pdif 08 33 43.5 +1.2**
KURK *e* 08 38 08.3
KURK Kurchatov 105.33 319 *e*Pdif **Pdif 08 33 43.5 +1.2**
KURK *e*PKiKP **PKiKP 08 37 56.6 +0.5**
KURK *e*PP **PP 08 38 08.2 +4.0**
KURBB Kurchatov Arra 105.36 319 PKKPbc PKKPbc 08 49 22.2 -1.0
comp=Z,1.4nm,1.0s,baz=292,slow=3.6,SNR=6.1
TKM2 Tokmak 2 105.54 310 *e*PKiKP **PKiKP 08 38 00.9 +3.8**
NRIK Noril'sk 105.68 339 Pdiff **Pdif 08 33 42.7 -0.8**
comp=Z,3.3nm,0.5s,baz=115,slow=4.1,SNR=8.2
S35A Otter Creek Ra 106.25 55 Pdiff **Pdif 08 33 47.3 +0.5**
baz=257
TUL1 Leonard 106.25 57 Pdiff **Pdif 08 33 47.4 +0.6**
baz=256
B30A Myrvik Farm, E 107.12 44 Pdiff **Pdif 08 33 51.4 +1.0**
baz=259
Q36A Arnold C. Orve 107.19 54 Pdiff **Pdif 08 33 51.9 +1.0**
baz=258
B32A Ashes, Strandq 108.28 44 Pdiff **Pdif 08 33 57.1 +1.5**
baz=260
KKAR Karatay Array 109.23 310 *e*PKiKP **PKiKP 08 38 03.5 -0.2**
BVAR Borovoye Array 110.75 320 PKiKP **PKiKP 08 38 06.1 -0.1**
BVAR PKKPbc **PKKPbc 08 49 04.6 -1.7**
comp=Z,1.3nm,0.6s,baz=310,slow=6.9,SNR=5.7
BRVK Borovoye 110.81 320 *e*PKiKP **PKiKP 08 38 06.6 +0.3**
BRVK Borovoye 110.81 320 *e*PKiKP **PKiKP 08 38 06.6 +0.3**
RES Resolute Bay 111.28 16 PKiKP **PKiKP 08 38 05.2 -1.3**
comp=Z,1.4nm,0.8s,baz=266,slow=2.6,SNR=4.2
ZRNK Zerenda 111.57 320 *e*PKiKP **PKiKP 08 38 07.1 -0.7**
ZRNK Zerenda 111.57 320 *e*PKiKP **PKiKP 08 38 07.1 -0.7**
LPAZ La Paz 113.65 119 PKiKP **PKiKP 08 38 12.8 -0.8**
comp=Z,3.4nm,1.1s,baz=28,slow=4.4,SNR=7.3
LPAZ PKKPbc **PKKPbc 08 48 56.5 +0.1**
comp=Z,2.0nm,0.9s,baz=34,slow=4.5,SNR=7.6
LPAZ La Paz 113.65 119 *e*PKiKP **PKiKP 08 38 13.6 0.0**
CPUP Villa Florida 115.83 134 PKP **PKPdf 08 38 14.9 -1.9**
comp=Z,3.7nm,1.0s,baz=202,slow=3.5,SNR=6.7
ABKAR Akbulak array 117.10 316 *e*PKPdf **PKPdf 08 38 18.2 -0.3**
ARU Arti 117.66 324 PKKPbc PKKPbc 08 48 40.8 -1.8
comp=Z,2.2nm,0.3s,baz=139,slow=3.0,SNR=4.4
ARU Arti 117.66 324 *i*PKIKP **PKPdf 08 38 19.1 -0.2**
ARU 08 39 33.2
ARU PPP PPP 08 42 03.5
ARU 08 45 26.7
ARU SP SP 08 49 18.7 +5.9
ARU SS **SS 08 55 38.7 -3.7**
ARU Arti 117.66 324 *e*PKPdf **PKPdf 08 38 18.8 -0.5**
UOSS Minazif 117.79 288 *e*PKPdf **PKPdf 08 38 19.7 -0.8**
HATD Hatta, Dubai 117.83 288 *i*P **PKPdf 08 38 20.4 -0.2**
SNR=10
ASHO Ashiyiah 117.87 288 P **PKPdf 08 38 20.4 -0.3**

GEYT Alibeck 117.93 303 PKP PKPdf 08 38 20.5 0.0
comp=Z,9.1nm,0.8s,baz=259,slow=2.3,SNR=15
NAZ Nazwa, Dubai 118.28 288 P PKPdf 08 38 21.2 -0.3
FAQ Al Faqa, Dubai 118.30 288 P PKPdf 08 38 21.0 -0.6
ABTO Aybut 118.82 279 PKiKP PKiKP 08 38 23.1 +0.3
SNR=5.3
ABTO Aybut 118.82 279 P PKiKP 08 38 23.1 +0.3
SNR=5.3
BOSA Boshof 119.65 217 PKP PKPdf 08 38 23.6 -0.6
comp=Z,10nm,1.0s,baz=154,slow=2.8,SNR=10.0
BOSA Boshof 119.65 217 *e*PKPdf PKPdf 08 38 25.0 +0.7
SPA0 Spitsbergen Ar 120.62 354 *e*PKPdf PKPdf 08 38 24.4 -0.2
SAML Samuel 121.54 115 *e*PKPdf PKPdf 08 38 27.0 -1.1
SDV Santo Domingo 122.06 92 *e*PKPdf PKPdf 08 38 27.9 -1.3
LBTB Lobatse 122.15 220 *e*PKIKP PKPdf 08 38 29.1 -0.1
LBTB Lobatse 122.15 220 *e*PKPdf PKPdf 08 38 29.1 -0.1
DAG Danmarks Havn 123.45 2⇑*i*P PKPdf 08 38 28.1 -1.8
comp=Z,10nm,0.9s
DAG *i* 08 38 40.2
DAG Danmarks Havn 123.45 2⇑*i*PKIKP PKPdf 08 38 28.1 -1.8
DAG *i* 08 38 40.2
DAG pmax pmax
comp=Z,9.0nm,0.9s
APA Apatity 125.02 341⇓*i*PKIKP PKPdf 08 38 32.6 -0.5
APA pmax pmax
comp=Z,86nm,1.2s
APA MLR MLR
comp=Z,800nm,21.0s
TMCR Tamitsa 125.24 336 *i*PKIKP PKPdf 08 38 31.6 -2.0
TMCR pmax pmax
comp=Z,38nm,0.4s
ILULI Ilulissat 125.58 16 *i*P PKPdf 08 38 33.0 -1.1
comp=Z,25nm,1.0s
ILULI Ilulissat 125.58 16 *i*PKIKP PKPdf 08 38 33.0 -1.1
ILULI pmax pmax
comp=Z,25nm,1.0s
SUMG Summit 125.61 10 *i*P PKPdf 08 38 34.3 -0.4
comp=Z,19nm,1.1s
SUMG Summit 125.61 10 *i*PKIKP PKPdf 08 38 34.3 -0.4
SUMG pmax pmax
comp=Z,19nm,1.1s
SUMG Summit 125.61 10 *e*PKPdf PKPdf 08 38 34.1 -0.6
ARA0 ARCESS Array S 125.94 345 *e*PKPdf PKPdf 08 38 34.6 -0.3
ARCES ARCESS Array B 125.94 345 PKP PKPdf 08 38 34.5 -0.3
comp=Z,24nm,0.9s,baz=18,slow=1.5,SNR=26
KLMR Klimovskoe 126.14 332 *e*PKIKP PKPdf 08 38 33.3 -2.1
KLMR *e* 08 38 47.0
KLMR *e* 08 40 31.2
KLMR pmax pmax
comp=Z,103nm,1.2s
SCHQ Schefferville 126.31 36 PKP PKPdf 08 38 35.1 -0.9
comp=Z,3.1nm,0.9s,baz=319,slow=6.0,SNR=3.1
DAMY Dhamar 126.44 273 *e*PKPdf PKPdf 08 38 39.8 +2.0
LSZ Lusaka 127.20 231 *e*PKIKP PKPdf 08 38 39.2 +0.2
LSZ Lusaka 127.20 231 *e*PKPdf PKPdf 08 38 39.2 +0.2
SFJD Kangerlussuaq 127.22 18 *i*P PKPdf 08 38 36.9 -0.4
SFJD Kangerlussuaq 127.22 18 *e*PKIKP PKPdf 08 38 36.9 -0.4
KMBO Kilima Mbogo 127.58 252 *e*PKIKP PKPdf 08 38 41.0 +1.0
KMBO Kilima Mbogo 127.58 252 PKiKP PKiKP 08 38 41.8 +1.3
SNR=7.8
KMBO Kilima Mbogo 127.58 252 P PKiKP 08 38 41.8 +1.3
SNR=7.8
KMBO Kilima Mbogo 127.58 252 *e*PKPdf PKPdf 08 38 41.0 +1.0
DGRG David-gareji 127.74 307 P PKPdf 08 38 40.2 +1.0
DGRG David-gareji 127.74 307 PKIKP PKPdf 08 38 40.2 +1.0
TBLG Delisi 128.19 308 P PKPdf 08 38 41.0 +0.9
TBLG Delisi 128.19 308 PKIKP PKPdf 08 38 40.9 +0.9
PTGA Pitinga 128.28 108 *e*PKPdf PKPdf 08 38 39.8 -1.3
GUDG Gudauri 128.29 308 P PKPdf 08 38 42.4 +2.0
GNI Garni 128.34 306 *i*P PKPdf 08 38 41.7 +1.1
SNR=8.2
GNI Garni 128.34 306 *e*PKIKP PKPdf 08 38 42.2 +1.6
GNI Garni 128.34 306 PKiKP PKPdf 08 38 42.2 +1.6
SNR=16
GNI Garni 128.34 306 P PKPdf 08 38 42.2 +1.6
SNR=16
GNI Garni 128.34 306 *e*PKPdf PKPdf 08 38 42.2 +1.6
VRH Novokhopyorsk 128.40 320 *e*PKIKP PKPdf 08 38 40.2 +0.2
VRH *e* 08 40 51.6
VRH pmax pmax
comp=Z,60nm,1.2s
ZEI Tsey 128.67 309 *i*PKIKP PKPdf 08 38 41.0 -0.2
ZEI pmax pmax
comp=Z,62nm,1.1s
SJG San Juan 128.69 83 *e*PKIKP PKPdf 08 38 40.0 -1.6
SJG San Juan 128.69 83 *e*PKPdf PKPdf 08 38 40.0 -1.6
GOF Gofitskoye 128.93 312 *ce*PKIKP PKPdf 08 38 41.2 -0.1
HUMP Col San Antoni 128.97 83 *e*PKPdf PKPdf 08 38 43.3 +1.2
ONI Oni 129.03 309 P PKPdf 08 38 42.6 +0.9
ONI Oni 129.03 309 PKIKP PKPdf 08 38 42.5 +0.9
AKH Akhalkalaki 129.15 307⇓*i*P PKPdf 08 38 44.5 +2.4
AKH Akhalkalaki 129.15 307 P PKPdf 08 38 43.8 +1.7
AKH Akhalkalaki 129.15 307 PKIKP PKPdf 08 38 43.7 +1.7
MOS Moscow 129.16 326 *i*PKIKP PKPdf 08 38 41.3 -0.1
MOS pmax pmax
comp=Z,106nm,1.5s
KBZ Khabaz 129.26 310 PKP PKPdf 08 38 42.2 +0.3
comp=Z,8.0nm,1.0s,baz=52,slow=1.9,SNR=16
KVAR Kislovodsk Arr 129.37 311 PKP PKPdf 08 38 43.5 +1.2
comp=Z,19nm,0.7s,baz=337,slow=2.0,SNR=31
KIV Kislovodsk 129.38 311 *i*P PKPdf 08 38 43.2 +0.9
SNR=9.1
KIV Kislovodsk 129.38 311 *i*PKIKP PKPdf 08 38 42.4 +0.1
KIV *e* 08 40 51.3
KIV *e*PS PS 08 51 02.5 +0.4
KIV pmax pmax
comp=Z,44nm,1.1s
KIV Kislovodsk 129.38 311 *e*PKPdf PKPdf 08 38 43.5 +1.2
LPSR Galich'ya Gora 129.61 322 *e*PKIKP PKPdf 08 38 43.6 +1.3
LPSR *e* 08 40 54.0
LPSR pmax pmax
comp=Z,110nm,1.3s
VSR Storozhevoye 129.93 321 *e*PKIKP PKPdf 08 38 43.2 +0.2
VSR *e* 08 40 53.8
OBN Obninsk 129.97 326 PKP PKPdf 08 38 43.4 +0.5
comp=Z,30nm,0.3s,baz=101,slow=1.4,SNR=20
OBN Obninsk 129.97 326 *d*PKIKP PKPdf 08 38 43.1 +0.2
OBN *i* 08 38 55.3
OBN pmax pmax
comp=Z,71nm,1.4s
OBN MLR MLR
comp=Z,465nm,19.0s
OBN Obninsk 129.97 326 *e*PKPdf PKPdf 08 38 44.0 +1.1
CHVG Ch'k'valeri 130.01 309⇓*i*P PKPdf 08 38 45.6 +2.2
FIA1 FINESS Array S 131.30 337 *e*PKPdf PKPdf 08 38 45.0 -0.3
FIA1 *e*PKPdf PKiKP 08 38 45.4 -0.8
FINES FINESS Array B 131.30 337 PKP PKPdf 08 38 45.2 0.0
comp=Z,12nm,0.9s,baz=103,slow=2.5,SNR=24
FINES SKPbc SKPab 08 42 11.3 +3.0
comp=Z,8.6nm,1.0s,baz=34,slow=7.1,SNR=7.3
TSUM Tsumeb 131.34 218 *e*PKPdf PKPdf 08 38 47.5 +0.6
TSUM *e*PP PP 08 41 11.4 +7.2
SOC Sochi 131.56 311 *i*PKIKP PKPdf 08 38 47.3 +1.0
SOC *e* 08 41 04.8
ANN Anapa 132.88 313 *i*PKIKP PKPdf 08 38 48.6 -0.1
ANN *e* 08 45 52.9
ANN pmax pmax
comp=Z,45nm,1.1s
MICGM Minsk 134.68 329 *e* PKPdf 08 38 51.0 -0.8
MICGM *e*LR LR 09 39 10.0
MNK Minsk 134.68 329 *e*PKIKP PKPdf 08 38 51.0 -0.8
NACGM Naroch 134.99 329 *e* PKPdf 08 38 52.0 -0.4
NACGM *e*LR LR 09 39 07.0
SIM Simferopol' 135.10 314 *e*PKIKP PKPdf 08 38 53.6 +0.6
SIM *e* 08 41 30.0
SIM *e*PPP PPP 08 44 28.0
SIM pmax pmax
comp=Z,18nm,1.1s
AKASG Malin Array Be 135.91 323 PKP PKPdf 08 38 54.1 -0.2
comp=Z,14nm,0.9s,baz=62,slow=2.3,SNR=27
AKBB Malin Array Si 135.91 323 *e*PKIKP PKPdf 08 38 54.5 +0.2
AKBB Malin Array Si 135.91 323 *e*PKPdf PKPdf 08 38 54.5 +0.2
KIEV Kiev 135.92 323 *e*PKIKP PKPdf 08 38 53.2 -1.1
KIEV Kiev 135.92 323 *e*PKPdf PKPdf 08 38 53.1 -1.1
AK11 Malin Array Si 135.95 323 *e*PKPpre PKPpre 08 38 46.6
NC303 NORSAR Array S 136.11 344 *e*PKPdf PKPdf 08 38 54.9 +0.5
NB2 NORSAR Subarra136.31 344 PKPdf PKPdf 08 38 54.0 -0.8
comp=Z,16nm,1.1s,baz=31,slow=1.9
NB2 NORSAR Subarra136.31 344 PKPdf PKPdf 08 38 54.0 -0.8
baz=31,slow=1.9
NOA NORSAR Array B 136.31 344 PKP PKPdf 08 38 54.4 -0.4
comp=Z,7.5nm,0.8s,baz=32,slow=2.0,SNR=19
NOA SKPbc SKPab 08 42 28.3 -1.8
comp=Z,4.0nm,1.0s,baz=32,slow=2.7,SNR=3.4
NBO00 NORSAR Array S 136.43 344 *e*PKPdf PKPdf 08 38 56.6 +1.6
NAO01 NORSAR Array S 136.56 344 *e*PKPdf PKPdf 08 38 56.9 +1.7
BR131 Keskin Array S 136.83 307 *e*PKPdf PKPdf 08 38 57.8 +1.3
BRTR Keskin Array B 136.83 307 PKhKP PKPpre 08 38 49.9
comp=Z,1.8nm,0.8s,baz=101,slow=2.6,SNR=4.9
BRTR PKP PKPdf 08 38 57.5 +0.9
comp=Z,14nm,1.0s,baz=140,slow=2.7,SNR=32
BRTR PP PP 08 41 41.2 +1.4
comp=Z,4.7nm,1.1s,baz=131,slow=3.8,SNR=6.1
ANTO Ankara 137.43 307 *e*PKIKP PKPdf 08 38 59.4 +1.9
ANTO Ankara 137.43 307 *e*PKPdf PKPdf 08 38 59.4 +1.9
SORM Soroca 137.59 320⇑*i*P PKPdf 08 38 56.6 -0.8
SORM Soroca 137.59 320⇑PKIKP PKPdf 08 38 56.6 -0.8
KIS Kishinev 137.80 319 *e*PKP PP 08 41 43.0 -2.2
KIS LRM MLR 09 48 30.0
comp=Z,400nm,22.0s
KONO Kongsberg 137.91 344 *e*PKIKP PKPdf 08 38 58.7 +1.0
KONO Kongsberg 137.91 344 *e*PKPdf PKPdf 08 38 58.7 +1.0
CSS Mathiatis 137.94 300 *e*PKPdf PKPdf 08 38 57.1 -1.5
TLCR 138.54 316⇑*i*P PKPdf 08 39 00.6 +1.3
TLCR 138.54 316⇑PKIKP PKPdf 08 39 00.6 +1.3
CFR Carcaliu 138.99 316⇑*i*P PKPdf 08 39 00.9 +0.8
CFR Carcaliu 138.99 316⇑PKIKP PKPdf 08 39 00.9 +0.8
TIRR Tirgusor 139.09 315⇓*i*P PKPdf 08 39 00.8 +0.5
TIRR Tirgusor 139.09 315⇓PKIKP PKPdf 08 39 00.8 +0.5
LVV L'vov 139.22 325 *e*PKIKP PKPdf 08 38 59.8 -0.6
HARR Harsova 139.31 316⇓*i*P PKPdf 08 38 59.7 -1.0
HARR Harsova 139.31 316⇓PKIKP PKPdf 08 38 59.7 -1.0
TESR Tescani 139.35 319⇓*i*P PKPdf 08 38 59.6 -1.2
PSN Preselentsi 139.54 314 *e*P PKPdf 08 39 02.0 +0.8
VRI Vrincioaia 139.59 318⇓*i*P PKPdf 08 39 02.3 +1.1
VRI Vrincioaia 139.59 318⇓PKIKP PKPdf 08 39 02.3 +1.1
BUR08 Bucovina Ar. S 139.69 321 *e*PKPdf PKPdf 08 39 02.6 +1.1
BURAR Bucovina Array 139.70 321⇓*i*P PKPdf 08 39 03.2 +1.7
BURAR Bucovina Array 139.70 321⇓PKIKP PKPdf 08 39 03.2 +1.7
BSD Bornholm Skovb 139.94 336⇑*i*P PKPdf 08 39 04.1 +2.6
comp=Z,40nm,1.1s
BSD Bornholm Skovb 139.94 336⇑*i*PKIKP PKPdf 08 39 04.1 +2.6
BSD pmax pmax
comp=Z,40nm,1.1s
KWP Kalwaria Pacla 140.04 325 *e*PKP PKPdf 08 39 02.6 +0.7
KWP Kalwaria Pacla 140.04 325⇓*i*P PKPdf 08 39 02.7 +0.7
KWP Kalwaria Pacla 140.04 325 *e*PKIKP PKPdf 08 39 02.6 +0.7
PRD Provadia 140.25 314 *e*P PKPdf 08 39 03.0 +0.5
MLR Muntele Rosu 140.25 318⇓*i*P PKPdf 08 38 59.5 -3.1
MLR Muntele Rosu 140.25 318 ⇓PKIKP PKPdf 08 38 59.5 -3.1
MLR Muntele Rosu 140.25 318 *e*PKPpre PKPpre 08 38 55.9
KOLS Kolonicke sedl 140.67 324 *e*PKIKP PKPpre 08 38 58.1
KOLS *e* 08 39 04.3
KOLS Kolonicke sedl 140.67 324 *e* PKPpre 08 38 58.0
KOLS *e* 08 39 04.3
KOLS *e*LG Lg 09 03 39.6
UZH Uzhgorod 140.83 324⇓*i*PKIKP PKPpre 08 38 59.0
UZH *i* 08 39 04.0
UZH *i* 08 39 10.4
VOIR 140.84 318⇓*i*P PKPdf 08 39 04.0 +0.4
VOIR 140.84 318 ⇓PKIKP PKPdf 08 39 04.0 +0.4
CRVS Cervenica-Dubn 141.13 325 *e* PKPdf 08 39 05.1 +1.2
ARR Arges 141.13 318⇓*i*P PKPdf 08 39 06.2 +2.1
OJC Ojcow 141.20 328 *e*PKP PKPdf 08 39 04.6 +0.6
OJC Ojcow 141.20 328 *e*PKIKP PKPdf 08 39 04.6 +0.6
OJC Ojcow 141.20 328 *e*PKPdf PKPdf 08 39 05.0 +1.0
OJC *e*PP PP 08 42 04.4 -1.5
SZH Strazhica 141.21 315 *e*P PKPdf 08 39 04.5 +0.3
NIE Niedzica 141.44 326 *e*PKP PKPdf 08 39 05.7 +1.2
NIE Niedzica 141.44 326 *e*PKIKP PKPdf 08 39 05.7 +1.2
DRGR 141.59 321⇓*i*P PKPdf 08 39 00.5 -4.4
DRGR 141.59 321 ⇓PKIKP PKPdf 08 39 00.5 -4.4
LOT Lotru 141.63 319⇓*i*P PKPdf 08 39 00.7 -4.4
KECS Kecovo 141.90 325 *e*PKIKP PKPdf 08 39 01.9 -3.4
KECS Kecovo 141.90 325 *e*PKP PKPdf 08 39 01.9 -3.4
LANS Liptovska Anna 142.03 327 *e*PKIKP PKPdf 08 39 02.5 -3.1
LANS Liptovska Anna 142.03 327 *e*PKP PKPdf 08 39 02.5 -3.1
KDZ Kurdzhali 142.20 313 *e*P PKPdf 08 39 02.6 -3.5
OKC Ostrava-Krasne 142.27 328 AMS AMS 09 50 00.0
comp=Z,400nm,17.8s
KSP Ksiaz 142.47 331 *e*PKP PKPdf 08 39 03.3 -3.0
KSP Ksiaz 142.47 331 *e*PKIKP PKPdf 08 39 03.3 -3.0
SIRR Siria 142.48 321⇓*i*P PKPdf 08 39 04.2 -2.2
PSZ Piszkesteto 142.55 325⇓*i*P PKPdf 08 39 04.1 -2.5
PSZ Piszkesteto 142.55 325⇓*e*PKPPKPdf PKPdf 08 39 03.5 -3.1
PSZ Piszkesteto 142.55 325 *e*PKIKP PKPdf 08 39 03.5 -3.1
MORC Moravsky Berou 142.60 329⇑*i*P PKPdf 08 39 04.3 -2.3
MORC Moravsky Berou 142.60 329 *e*PKIKP PKPdf 08 39 03.9 -2.7
MORC Moravsky Berou 142.60 329 *e*PKPpre PKPdf 08 39 03.9 -2.7
MPEP Malo Peshtene 142.62 316 *e*P PKPdf 08 39 03.7 -3.1
PGB Panagyurishte 142.69 314 *e*P PKPdf 08 39 03.6 -3.4
VYHS Vyhne 142.77 326 *e*PKIKP PKPdf 08 39 04.3 -2.6
VYHS Vyhne 142.77 326 *e*PKP PKPdf 08 39 04.3 -2.6
KRLC Kraliky 142.77 330 *e*PKP PKPdf 08 39 04.5 -2.4
KRLC Kraliky 142.77 330 *e*PKIKP PKPdf 08 39 04.5 -2.4
KARP Karpathos 142.79 302 *e*PKPpre PKPpre 08 39 03.4
DPC Dobruska-Polom 142.80 330 *e*PKP PKPdf 08 39 03.9 -3.0
DPC AMS AMS 09 53 20.0
comp=Z,400nm,16.4s
DPC Dobruska-Polom 142.80 330 *e*PKIKP PKPdf 08 39 03.9 -3.0
DPC MLR MLR
comp=Z,400nm,16.4s
UPC Upice 142.84 331 *e*PKP PKPdf 08 39 03.8 -3.1
UPC *ex* x 08 39 18.1
UPC AMS AMS 09 44 40.0
comp=Z,600nm,21.7s
UPC Upice 142.84 331 *e*PKIKP PKPdf 08 39 03.8 -3.1
UPC *e* 08 39 18.1
UPC MLR MLR
comp=Z,600nm,21.7s
BZS Buzias 142.85 320⇓*i*P PKPdf 08 39 04.6 -2.5
BZS Buzias 142.85 320 ⇓PKIKP PKPdf 08 39 04.6 -2.5
MDVR Moldovita 143.22 319⇓*i*P PKPbc 08 39 06.2 +1.3
VRAC Vranov 143.38 329⇓*i*P PKPdf 08 39 06.9 -1.0
VRAC Vranov 143.38 329 ⇓PKIKP PKPdf 08 39 06.9 -1.0
MMB Musomiste 143.38 313 *e*P PKPbc 08 39 05.3 -0.1
NVR Nevrokopi 143.39 313 P PKPbc 08 39 05.3 -0.1
NVR Nevrokopi 143.39 313 P PKPbc 08 39 05.3 -0.1
SHEL Horse Pasture 143.43 190 *i*PKIKP PKPdf 08 39 08.8 -0.3
PVCC Panska Ves 143.47 332 *e*PKP PKPbc 08 39 06.2 +0.9
PVCC AMS AMS 09 48 20.0
comp=Z,700nm,18.1s
PVCC Panska Ves 143.47 332 *e*PKIKP PKPbc 08 39 06.2 +0.9
PVCC MLR MLR
comp=Z,700nm,18.1s
BRG Berggiesshubel 143.50 333 *e*PKP PKPbc 08 39 06.0 +0.7
comp=Z,105nm,1.4s
BRG *e* 08 39 18.2
comp=Z,50nm,1.4s
BRG PP PP 08 42 44.8 +25
comp=Z,10nm,1.1s
BRG Berggiesshubel 143.50 333 *e*PKIKP PKPbc 08 39 06.1 +0.7
BRG *e* 08 39 18.2
CLL Collm 143.57 334⇑*i*PKPdf PKPbc 08 39 06.3 +0.8
comp=Z,116nm,1.6s
CLL *es*PKPdf sPKPdf 08 39 33.0 +11
CLL *es*PP 08 42 43.0
CLL *e*SS SS 09 01 12.0 +13
CLL LmV 09 50 00.0
comp=Z,400nm,19.3s
CLL Collm 143.57 334⇑*i*PKIKP PKPbc 08 39 06.3 +0.8
CLL pmax pmax
comp=Z,116nm,1.6s
CLL MLR MLR
comp=Z,400nm,19.3s
CLL Collm 143.57 334 *e*PKPpre PKPpre 08 39 05.8
SRS Serrai 143.67 313 P PKPab 08 39 05.6 +0.2
SRS Serrai 143.67 313 PKIKP PKPab 08 39 05.6 +0.2
SRS Serrai 143.67 313 P PKPab 08 39 05.6 +0.2
KKB Krupnik 143.71 314 *e*P PKPbc 08 39 07.1 +0.8
OUR Ouranopolis 143.71 311 P PKPab 08 39 05.8 +0.3
OUR Ouranopolis 143.71 311 PKIKP PKPab 08 39 05.8 +0.3
OUR Ouranopolis 143.71 311 P PKPab 08 39 05.8 +0.3
CSKK Cs'ˇtkako 143.77 325⇓*e*PKPPKPdf PKPbc 08 39 07.1 +0.8
GOPC GO Pecny, Ondr 143.81 331 *e*PKP PKPbc 08 39 07.4 +1.0
GOPC *e*PKS PKSdf 08 42 51.5 +7.3
GOPC AMS AMS 09 52 30.0
comp=Z,500nm,16.5s
GOPC GO Pecny, Ondr 143.81 331 *e*PKIKP PKPbc 08 39 07.4 +1.0
GOPC MLR MLR
comp=Z,500nm,16.5s
PRU Pruhonice 143.87 331 *e*PKP PKPbc 08 39 07.4 +0.9
PRU *ex* x 08 39 20.5
PRU *ex* x 08 42 55.3
PRU AMS AMS 09 55 00.0
comp=Z,400nm,16.9s
PRU Pruhonice 143.87 331 *e*PKIKP PKPbc 08 39 07.4 +0.9
PRU *e* 08 39 20.5
PRU MLR MLR
comp=Z,400nm,16.9s
SANT Santorini 143.92 304⇓*i*P PKPab 08 39 06.7 +0.2
SANT Santorini 143.92 304 *e*PKPpre PKPpre 08 39 06.5
TREC Trest 143.92 330 *e*PKP PKPbc 08 39 07.7 +1.0
TREC AMS AMS 09 57 40.0
comp=Z,400nm,17.3s
TREC Trest 143.92 330 *e*PKIKP PKPbc 08 39 07.7 +1.0
TREC MLR MLR
comp=Z,400nm,17.3s
SOH Sokhos 143.96 312 P PKPab 08 39 06.2 -0.3
SOH Sokhos 143.96 312 PKIKP PKPab 08 39 06.2 -0.3
SOH Sokhos 143.96 312 P PKPab 08 39 06.2 -0.3
NPS Neapolis 144.09 302 P PKPbc 08 39 07.7 0.0
NPS Neapolis 144.09 302 PKIKP PKPbc 08 39 07.7 0.0
NPS Neapolis 144.09 302 P PKPbc 08 39 07.7 0.0
KNT Kendrikon 144.13 313 P PKPab 08 39 07.1 0.0
KNT Kendrikon 144.13 313 PKIKP PKPab 08 39 07.1 0.0
KNT Kendrikon 144.13 313 P PKPab 08 39 07.1 0.0
PGBU Glenifferbraes 144.21 353 *e*P PKPab 08 39 06.3 -0.6
LAST Lasithi 144.22 302⇓*i*P PKPbc 08 39 08.3 +0.1
LAST Lasithi 144.22 302 P PKPbc 08 39 08.6 +0.4
LAST Lasithi 144.22 302 *e*PKPdf PKPbc 08 39 08.3 +0.2
HORT Hortiatis 144.22 312 P PKPab 08 39 07.3 -0.3
HORT Hortiatis 144.22 312 P PKPab 08 39 07.3 -0.3
VAY Valandovo 144.29 313 P PKPab 08 39 07.6 -0.1
VAY Valandovo 144.29 313 *i*P PKPab 08 39 07.6 -0.1
VAY Valandovo 144.29 313 PKIKP PKPab 08 39 07.6 -0.1
VAY Valandovo 144.29 313 P PKPab 08 39 07.6 -0.1
SOP Sopron 144.46 327⇓*e*PKPPKPdf PKPdf 08 39 09.5 -0.3
EKA Eskdalemuir Ar 144.51 352 PKP PKPab 08 39 07.6 -0.4
comp=Z,43nm,0.9s,baz=5.1,slow=2.9,SNR=65
ESK Eskdalemuir 144.53 352 *e*P PKPab 08 39 07.1 -1.0
ESK Eskdalemuir 144.53 352 *e*PKIKP PKPab 08 39 07.9 -0.2
ESK Eskdalemuir 144.53 352 *e*PKPdf PKPab 08 39 07.9 -0.2
NKC Novy Kostel 144.61 333 *e*PKP PKPbc 08 39 09.0 +0.2
NKC *ex* x 08 39 23.0
NKC Novy Kostel 144.61 333 *e*PKIKP PKPbc 08 39 09.0 +0.2
NKC *e* 08 39 23.0
DIVS Divibare 144.63 319 P PKPbc 08 39 09.5 +0.3
XOR Xorichti 144.64 310 P PKPab 08 39 08.3 -0.8
XOR Xorichti 144.64 310 P PKPab 08 39 08.3 -0.8
MOX Moxa 144.65 334 PKIKP PKPbc 08 39 09.3 +0.4
ECK Cauldkaine Hil 144.65 352 *e*P PKPab 08 39 08.0 -0.6
IDI Anoyia 144.65 303 PKP PKPab 08 39 09.4 0.0
comp=Z,187nm,1.0s,baz=73,slow=6.1,SNR=35
IDI Anoyia 144.65 303⇓*i*P PKPbc 08 39 09.5 0.0
IDI Anoyia 144.65 303 P PKPbc 08 39 10.0 +0.5
IDI Anoyia 144.65 303 *e*PKPdf PKPab 08 39 09.1 -0.2
CONA Conrad Observa 144.66 328 *i*PKPdf PKPdf 08 39 10.2 -0.1
comp=Z,78nm,1.0s,SNR=183
RCBR Riachuelo 144.70 135 *e*PKPdf PKPab 08 39 09.6 -0.4
ATHU Athens Univers 144.70 308 P PKPab 08 39 06.5 -2.9
ATHU Athens Univers 144.70 308 P PKPab 08 39 06.5 -2.9
BWH Wardlaw 144.73 352 *e*P PKPab 08 39 09.2 -0.7
VLY Voula,Athens 144.74 307 P PKPab 08 39 08.6 -0.9
VLY Voula,Athens 144.74 307 P PKPab 08 39 08.6 -0.9
BHH Howats Hill 144.75 352 *e*P PKPbc 08 39 09.1 +0.1
SKO Skopje 144.76 315 P PKPbc 08 39 09.9 +0.4
SKO Skopje 144.76 315 *e*P PKPbc 08 39 09.8 +0.3
SKO Skopje 144.76 315 PKIKP PKPbc 08 39 09.9 +0.4
SKO Skopje 144.76 315 P PKPbc 08 39 09.9 +0.4
GMK Mull of Kintyr 144.78 354 *e*P PKPab 08 39 08.5 -0.5
SIVA Sivas 144.79 302⇓*i*P PKPbc 08 39 10.2 +0.4
SIVA Sivas 144.79 302 P PKPbc 08 39 10.3 +0.5
SIVA Sivas 144.79 302 P PKPbc 08 39 10.3 +0.5
FYTO Fytoko, Volos 144.80 310 P PKPab 08 39 09.2 -0.5
FYTO Fytoko, Volos 144.80 310 P PKPab 08 39 09.2 -0.5
LIT Litokhoron 144.85 312 P PKPab 08 39 09.1 -0.8
LIT Litokhoron 144.85 312 PKIKP PKPab 08 39 09.1 -0.8
LIT Litokhoron 144.85 312 P PKPab 08 39 09.1 -0.8
KHC Kasperske Hory 144.93 331 *e*PKP PKPdf 08 39 10.4 -0.3
KHC *ex* x 08 39 23.8
KHC *ex* x 08 42 58.7
KHC AMS AMS 09 50 40.0
comp=Z,700nm,17.0s
KHC Kasperske Hory 144.93 331 *e*PKIKP PKPdf 08 39 10.4 -0.3
KHC *e* 08 39 23.8
KHC MLR MLR
comp=Z,700nm,17.0s
KHC Kasperske Hory 144.93 331 *e*PKPbc PKPbc 08 39 10.3 +0.5
VILL Villia 144.99 308 P PKPbc 08 39 09.6 -0.9
LKR Lokris 145.04 309 P PKPbc 08 39 09.4 -1.1
LKR Lokris 145.04 309 P PKPbc 08 39 09.4 -1.1
GEC2 GERESS Array S 145.07 330 *e*PKIKP PKPab 08 39 10.7 +0.2
GEC2 GERESS Array S 145.07 330 *e*PKPbc PKPab 08 39 10.7 +0.2
GERES GERESS Array B 145.07 330 PKPbc PKPbc 08 39 10.3 -0.2
comp=Z,36nm,0.9s,baz=46,slow=3.9,SNR=123
GEA0 GERESS Array S 145.08 330 *e*PKPbc PKPbc 08 39 10.2 -0.3
BBO1 Bothel 145.10 351 *e*P PKPbc 08 39 09.6 -0.6
GAL1 Galloway 145.16 353 *e*P PKPbc 08 39 07.7 -2.7
VAM Vamos 145.17 303 P PKPdf 08 39 11.4 -0.1
VAM Vamos 145.17 303 PKIKP PKPdf 08 39 11.4 -0.1
VAM Vamos 145.17 303 P PKPdf 08 39 11.4 -0.1
IDGL Inch Island, C 145.21 356 *e*P PKPbc 08 39 10.0 -0.5
KESW Keswick, Cumbr 145.22 351 *e*P PKPbc 08 39 09.7 -0.9
WET Wettzell 145.23 331 PKIKP PKPdf 08 39 11.4 +0.2
BIA Bitola 145.26 314 *e*P PKPbc 08 39 11.1 -0.1
DID Didima 145.27 307 P PKPbc 08 39 09.7 -1.7
DID Didima 145.27 307 P PKPbc 08 39 09.7 -1.7
ARSA Arzberg 145.28 327 *i*PKPdf PKPdf 08 39 11.6 +0.3
comp=Z,49nm,1.1s,SNR=87
LTK Loutraki 145.29 308 P PKPbc 08 39 09.9 -1.5
LTK Loutraki 145.29 308 P PKPbc 08 39 09.9 -1.5
IMMV Iera Moni Meta 145.32 303 P PKPdf 08 39 11.8 +0.1
IVA Berane 145.32 317⇑*i*PKP PKPdf 08 39 11.8 +0.2
FNA Florina 145.33 313 P PKPbc 08 39 10.9 -0.6
FNA Florina 145.33 313 PKIKP PKPbc 08 39 10.9 -0.6
FNA Florina 145.33 313 P PKPbc 08 39 10.9 -0.6
WTSB Winterswijk 145.34 340 *e*PKP PKPbc 08 39 10.6 -0.4
comp=Z,482nm,1.3s
KRND KRANIDI 145.37 307 P PKPbc 08 39 10.4 -1.2
AGG Agios Georgios 145.39 310 P PKPbc 08 39 10.7 -1.0
AGG Agios Georgios 145.39 310 *e*PKIKP PKPbc 08 39 10.7 -1.0
AGG Agios Georgios 145.39 310 *e*PKPbc PKPbc 08 39 10.7 -1.0
THL Klokotos Trika 145.40 311 P PKPbc 08 39 10.3 -1.4
GVD Gavdhos 145.41 302 P PKPbc 08 39 11.5 -0.3
GVD Gavdhos 145.41 302 P PKPbc 08 39 11.5 -0.3
PLE Pljevlja 145.41 318⇑*i*PKP PKPab 08 39 12.4 +0.5
PVY Plav 145.42 317⇑*i*PKP PKPbc 08 39 11.8 0.0
DSF Desfina 145.47 309 P PKPdf 08 39 11.1 -0.9
DSF Desfina 145.47 309 P PKPdf 08 39 11.1 -0.9
MOA Molln 145.50 329 *i*PKPab PKPab 08 39 12.6 +0.6
comp=Z,118nm,1.0s,SNR=162
GRFO Grafenberg 145.54 334 *e*PKIKP PKPbc 08 39 12.0 +0.2
GRFO Grafenberg 145.54 334 *e*PKPdf PKPbc 08 39 12.0 +0.2
OHR Ohrid 145.58 314 *i*P PKPdf 08 39 12.0 0.0
HPK Haverah Park 145.60 350 *e*P PKPdf 08 39 11.7 +0.1
KPRO Kipourio 145.70 312 P PKPdf 08 39 11.8 -0.5
NEST Nestorio 145.72 313 P PKPdf 08 39 12.2 -0.2
ANKY Antikythira Is 145.74 304 P PKPab 08 39 13.2 0.0
ANKY Antikythira Is 145.74 304 P PKPab 08 39 13.2 0.0
VLI Veliai 145.75 306 P PKPdf 08 39 12.0 -0.4
VLI Veliai 145.75 306 P PKPdf 08 39 12.0 -0.4
KALE Kalithea 145.76 309 P PKPdf 08 39 12.7 +0.2
KALE Kalithea 145.76 309 P PKPdf 08 39 12.7 +0.2
UPM Unac-Piva 145.77 319⇑*i*PKP PKPdf 08 39 12.6 +0.1
GUR Goura 145.78 308 P PKPdf 08 39 12.4 -0.2
GUR Goura 145.78 308 P PKPdf 08 39 12.4 -0.2
EVR Evrytania 145.80 310 P PKPdf 08 39 12.8 +0.2
EVR Evrytania 145.80 310 P PKPdf 08 39 12.8 +0.2
KYTH Kithira 145.81 305 P PKPbc 08 39 13.2 +0.1
KYTH Kithira 145.81 305 P PKPbc 08 39 13.2 +0.1
LMK Market Rasen 145.84 348 *e*P PKPdf 08 39 12.2 +0.2
ANX Ano Chora 145.85 309 P PKPbc 08 39 13.3 +0.1
WIM Isle of Man 145.86 353 *e*P PKPdf 08 39 11.5 -0.6
KLV Kalavryta, Ach 145.88 308 P PKPdf 08 39 12.7 0.0
KLV Kalavryta, Ach 145.88 308 P PKPdf 08 39 12.7 0.0
PERS Pernice 145.89 326 *e*PKPbc PKPdf 08 39 12.5 0.0
GMM Mts of Mourne 145.91 354 *e*P PKPdf 08 39 12.2 +0.1
SOKA Soboth 145.91 327 *i*PKPbc PKPdf 08 39 12.3 -0.2
comp=Z,45nm,1.3s,SNR=118
EFP Efpalio 145.92 309 P PKPab 08 39 14.1 +0.3
NKY Niksic 145.92 318⇑*i*PKP PKPdf 08 39 11.9 -0.8
BLY Banja Luka 145.94 322⇓*i*P PKPab 08 39 13.8 +0.1
LAKA Lakka 145.94 309 P PKPbc 08 39 13.3 -0.2
LAKA Lakka 145.94 309 P PKPbc 08 39 13.3 -0.2
PDG Podgorica 145.96 317⇓*i*P PKPbc 08 39 13.4 +0.1
TTG Podgorica 145.96 317⇑*i*PKP PKPbc 08 39 13.2 -0.1

VLX	Vlachokerasia	145.96	307	P	PKPdf	08 39 13.3 +0.4
VLX	Vlachokerasia	145.96	307	P	PKPdf	08 39 13.3 +0.4
SISC	Sisak	145.96	324	P	PKPab	08 39 14.7 +0.9
LHO	Holmfirth	146.04	350	eP	PKPbc	08 39 12.9 -0.3
TIR	Tirane	146.09	315	⇓i P	PKPab	08 39 14.7 +0.3
TIR	Tirane	146.09	315	ePKP2	PKPab	08 39 14.3 -0.1
TIR	Tirane	146.09	315	ePKPdf	PKPab	08 39 14.3 -0.1
PVO	Paravola	146.12	310	P	PKPab	08 39 14.5 -0.1
BRY	Bratogost	146.16	318	⇑i PKP	PKPdf	08 39 12.9 -0.2
JAN	Janina	146.18	312	P	PKPbc	08 39 14.0 -0.1
JAN	Janina	146.18	312	PKP2	PKPbc	08 39 14.0 -0.1
JAN	Janina	146.18	312	P	PKPbc	08 39 14.0 -0.1
ULC	Ulcinj	146.20	317	⇑i PKP	PKPdf	08 39 13.1 0.0
DSL	Palaion Diasel	146.23	311	P	PKPbc	08 39 14.7 +0.4
DSL	Palaion Diasel	146.23	311	P	PKPbc	08 39 14.7 +0.4
DRO	Drossia	146.24	309	P	PKPab	08 39 14.9 -0.2
BUM	Brajici-Budva	146.25	317	⇑i PKP	PKPbc	08 39 14.0 -0.3
OBKA	Obir	146.27	327	i PKPab	PKPbc	08 39 14.5 +0.2
	comp=Z,25nm,1.0s,SNR=27					
ITM	Ithomi	146.36	307	P	PKPdf	08 39 13.9 +0.4
ITM	Ithomi	146.36	307	P	PKPdf	08 39 13.9 +0.4
PDO	Prodromos	146.38	310	P	PKPbc	08 39 14.4 -0.3
RLS	Riolos of Patr	146.38	309	P	PKPbc	08 39 14.8 +0.1
RLS	Riolos of Patr	146.38	309	P	PKPbc	08 39 14.8 +0.1
AXS	Araxos	146.39	309	P	PKPbc	08 39 14.9 +0.1
HCY	Herceg Novi	146.43	318	⇑i PKP	PKPdf	08 39 13.2 -0.2
KBA	Koelnbreinsper	146.49	328	i PKPbc	PKPdf	08 39 13.7 +0.1
	comp=Z,27nm,0.8s,SNR=40					
KBA	Koelnbreinsper	146.49	328	PKP2	PKPdf	08 39 13.5 -0.1
STNC	Stoke	146.53	350	eP	PKPbc	08 39 14.8 +0.2
WME	Myndd Eilian	146.55	352	eP	PKPdf	08 39 13.1 -0.1
BOJS	Bojanci	146.55	325	ePKPbc	PKPdf	08 39 14.0 +0.5
LJU	Ljubljana	146.59	326	ePKPbc	PKPdf	08 39 14.0 +0.4
LJU				e		08 39 28.5
IGT	Igoumenitsa	146.60	312	P	PKPdf	08 39 14.0 +0.2
IGT	Igoumenitsa	146.60	312	PKP2	PKPdf	08 39 14.0 +0.2
IGT	Igoumenitsa	146.60	312	P	PKPdf	08 39 14.0 +0.2
PYL	PYLOS	146.60	307	P	PKPdf	08 39 13.5 -0.3
PYL	PYLOS	146.60	307	P	PKPdf	08 39 13.5 -0.3
SGD	Sagiada	146.63	312	P	PKPdf	08 39 14.6 +0.8
WPM1	Penmaenmawr	146.63	352	eP	PKPdf	08 39 13.7 +0.3
HGN	Heimansgroeve	146.65	340	ePKP	PKPdf	08 39 13.9 +0.5
	comp=Z,252nm,1.3s					
MYKA	Terra Mystica	146.65	328	i PKPbc	PKPdf	08 39 13.7 -0.1
	comp=Z,23nm,0.9s,SNR=26					
WLF1	Llynfaes	146.67	352	eP	PKPbc	08 39 14.8 -0.2
LKD2	Lefkada island	146.68	311	P	PKPbc	08 39 15.8 +0.2
LKD2	Lefkada island	146.68	311	P	PKPbc	08 39 15.8 +0.2
BEBN	Eben Emael	146.70	340	PKPbc	PKPbc	08 39 15.8 +0.6
CWF	Charnwood Fore	146.71	349	eP	PKPdf	08 39 14.1 +0.5
CWF	Charnwood Fore	146.71	349	ePKPdf	PKPdf	08 39 14.0 +0.5
YRC	Rhoscolyn	146.73	352	eP	PKPdf	08 39 14.3 +0.8
MEM	Membach	146.75	339	PKPbc	PKPbc	08 39 15.7 +0.3
MEM				APKP	pPKPdf	08 39 29.6 +5.4
YLL	Llanberis	146.78	352	eP	PKPbc	08 39 14.7 -0.7
CEY	Cerknica	146.84	326	ePKPbc	PKPdf	08 39 14.1 +0.1
UDBI	Udbina	146.88	323	P	PKPdf	08 39 13.4 -0.8
FOEL	Foel Wylfa	146.89	351	eP	PKPdf	08 39 13.8 -0.1
KEK	Kerkira	146.89	313	P	PKPdf	08 39 15.1 +0.8
KEK	Kerkira	146.89	313	P	PKPdf	08 39 15.1 +0.8
DSB	Dublin	146.93	354	ePKPdf	PKPdf	08 39 14.6 +0.8
VLS	Valsamata	146.97	310	P	PKPbc	08 39 16.6 +0.1
VLS	Valsamata	146.97	310	PKP2	PKPbc	08 39 16.6 +0.1
VLS	Valsamata	146.97	310	P	PKPbc	08 39 16.6 +0.1
STU	Stuttgart	147.09	334	ePKP2	PKPdf	08 39 15.1 +0.8
STU	Stuttgart	147.09	334	ePKPdf	PKPdf	08 39 15.1 +0.8
ABTA	Abfaltersbach	147.13	329	i PKPdf	PKPdf	08 39 14.3 -0.3
	comp=Z,32nm,0.7s,SNR=48					
BCLA	Clavier	147.15	340	PKPbc	PKPbc	08 39 16.6 +0.1
WTTA	Wattenberg	147.17	330	i PKPbc	PKPdf	08 39 15.4 +0.7
	comp=Z,43nm,1.0s,SNR=56					
HLM1	Long Mynd	147.20	350	eP	PKPbc	08 39 16.4 -0.2
TRI	Trieste	147.21	326	ePKP2	PKPbc	08 39 17.1 +0.3
TRI	Trieste	147.21	326	ePKPbc	PKPbc	08 39 17.1 +0.3
NVLJ	Novalja	147.36	324	P	PKPdf	08 39 12.6 -2.2
MOTA	Moosalm	147.36	331	i PKPdf	PKPdf	08 39 14.9 -0.1
	comp=Z,86nm,1.0s,SNR=41					
SNF	Seneffe	147.39	341	PKPbc	PKPbc	08 39 17.5 +0.3
SNF				APKP	pPKPdf	08 39 30.0 +4.7
RETA	Reutte	147.41	331	i PKPbc	PKPdf	08 39 15.4 +0.5
	comp=Z,39nm,1.0s,SNR=48					
LANF	Langenberg	147.47	336	PKP	PKPdf	08 39 15.5 +0.5
LANF	Langenberg	147.47	336	PKIKP	PKPdf	08 39 15.8 +0.8
WLF	Walferdange	147.51	338	PKPbc	PKPab	08 39 18.7 -0.9
WLF				APKP	pPKPdf	08 39 31.5 +6.0
WLF	Walferdange	147.51	338	ePKP2	PKPbc	08 39 16.4 -1.2
WLF	Walferdange	147.51	338	ePKPdf	PKPbc	08 39 16.4 -1.2
SSW	Stow on the Wo	147.55	349	eP	PKPbc	08 39 16.8 -0.8
DOU	Dourbes	147.65	340	PKPbc	PKPbc	08 39 18.4 +0.4
DOU				APKP	pPKPdf	08 39 31.5 +5.8
ELSH	Elham, Standar	147.68	345	eP	PKPbc	08 39 18.3 +0.4
MCH1	Michaelchurch	147.72	350	eP	PKPbc	08 39 16.9 -1.1
FETA	Feichten	147.77	331	i PKPdf	PKPdf	08 39 15.7 0.0
	comp=Z,107nm,1.1s,SNR=114					
BFO	Black Forest	147.79	335	ePKIKP	PKPdf	08 39 15.2 -0.3
BFO	Black Forest	147.79	335	ePKPdf	PKPdf	08 39 15.2 -0.3
DAVA	Damuels	147.95	332	i PKPbc	PKPdf	08 39 16.7 +0.7
	comp=Z,76nm,0.9s,SNR=50					
SWN1	Swindon	147.97	348	eP	PKPbc	08 39 18.8 +0.1
WOL	Wolverton	148.05	348	eP	PKPbc	08 39 18.7 -0.2
WLS	Welschbruch	148.11	336	PKP	PKPdf	08 39 16.4 +0.3
HMNX	Herstmonceux	148.13	346	eP	PKPbc	08 39 19.6 +0.4
BATH	Bath	148.14	349	eP	PKPbc	08 39 18.8 -0.4
FUORN	Ofenpass-Fuorn	148.28	331	ePKPdf	PKPdf	08 39 17.2 +0.6
DAVOX	Davos/Dischmat	148.34	331	PKPbc	PKPbc	08 39 20.9 +0.8
	comp=Z,179nm,0.9s,baz=243,slow=2.0,SNR=27					
ECH	Echery	148.35	336	PKP	PKPdf	08 39 16.2 -0.2
VAL	Valentia	148.47	358	eP	PKPbc	08 39 20.1 +0.1
MATE	Matera	148.51	316	⇓i P	PKPbc	08 39 21.3 +0.8
MOF	Molkenrain	148.65	335	PKP	PKPdf	08 39 16.9 -0.1
MOF	Molkenrain	148.65	335	PKIKP	PKPdf	08 39 17.7 +0.7
TUE	Stuetta	148.81	331	ePKPdf	PKPdf	08 39 17.6 +0.1
HTL	Hartland	148.92	351	eP	PKPbc	08 39 21.2 0.0
LOMF	Lomont	149.18	335	PKP	PKPdf	08 39 17.9 0.0
LOMF	Lomont	149.18	335	PKIKP	PKPdf	08 39 18.8 +0.9
TIP	Timpagrande	149.22	314	⇓i P	PKPbc	08 39 23.6 +1.1
TIP	Timpagrande	149.22	314	P	PKPdf	08 39 18.6 +0.4
TIP	Timpagrande	149.22	314	ePKPdf	PKPdf	08 39 18.9 +0.7
DYA	Yadsworthy	149.38	350	eP	PKPbc	08 39 21.4 -1.0
DYA	Yadsworthy	149.38	350	ePKPbc	PKPbc	08 39 22.4 0.0
CUC	Castrocucco	149.44	316	ePKPbc	PKPbc	08 39 22.3 -0.6
AQU	L'Aquila	149.57	322	ePKP2	PKPbc	08 39 23.2 0.0
AQU	L'Aquila	149.57	322	ePKPbc	PKPbc	08 39 23.1 0.0
SENIN	Lac Senin/Sane	149.78	333	ePKPdf	PKPdf	08 39 19.7 +0.6
VLC	Villacollemand	150.02	327	ePKPbc	PKPbc	08 39 24.0 -0.2
OG01	Vacheresse	150.07	334	PKP	PKPdf	08 39 19.6 +0.3
CEL	Celeste	150.26	313	ePKPbc	PKPbc	08 39 24.9 -0.1
RSL	Roselend	150.61	333	PKP	PKPdf	08 39 20.7 +0.4
GDM	Grand'Maison	151.21	333	PKP	PKPdf	08 39 22.2 +1.0
GRN	Grenoble	151.33	334	PKP	PKPdf	08 39 22.3 +1.0
PLDF	La Plantade	151.55	337	PKP	PKPdf	08 39 22.2 +0.6
AUTN	L'Aution	151.58	330	PKP	PKPdf	08 39 21.8 -0.1
AGO	Saint Agoulin	151.65	338	PKP	PKPdf	08 39 22.6 +0.9
VAE	Valguarnera	151.66	313	PKPbc	PKPbc	08 39 29.9 +1.6
	comp=Z,19nm,0.3s,baz=114,slow=5.8,SNR=5.3					
LUCF	Luceram	151.69	330	PKP	PKPdf	08 39 21.8 -0.1
ASCN	Ascension	151.75	174	ePKPbc	PKPbc	08 39 30.9 +1.8
MVIF	Mont Vial	151.78	330	PKP	PKPdf	08 39 22.3 +0.2
SSB	Saint Sauveur	151.79	335	PKP	PKPdf	08 39 22.4 +0.4
SSB	Saint Sauveur	151.79	335	ePKIKP	PKPdf	08 39 22.2 +0.2
SSB	Saint Sauveur	151.79	335	ePKPdf	PKPdf	08 39 22.2 +0.2
REVF	Revere	151.80	330	PKP	PKPdf	08 39 20.9 -1.1
PYM	Petit Puy Mans	151.96	338	PKP	PKPdf	08 39 23.0 +0.7
CALN	Calern	152.01	331	PKP	PKPdf	08 39 21.0 -1.5
LBL	Lubilhac	152.32	337	PKP	PKPdf	08 39 23.7 +0.9
CLTB	Caltabellotta	152.43	314	ePKPdf	PKPdf	08 39 23.6 +0.3
CLTB				ePKPbc	PKPbc	08 39 30.2 +0.1
FRNF	Fournols	152.43	338	PKP	PKPdf	08 39 22.8 -0.1
VSL	Villasalto	153.74	321	ePKPdf	PKPdf	08 39 25.4 +0.4
KEST	Kesra	156.04	314	PKP	PKPdf	08 39 28.7 +0.4
	comp=Z,12nm,1.0s,baz=327,slow=6.1,SNR=6.5					
KEST				PKPab	PKPab	08 39 56.9 +1.2
	comp=Z,22nm,0.9s,baz=140,slow=3.5,SNR=8.1					
KEST	Kesra	156.04	314	ePKPdf	PKPdf	08 39 29.2 +0.9
KEST				PKPab	PKPab	08 39 57.0 +1.2
PBRG	Braganca	158.23	350	ePKPab	PKPab	08 40 03.9 -0.9
PBRG	Braganca	158.23	350	eLR	LR	09 33 07.0
	comp=Z,424nm,18.0s					
PGAV	Gavieira, Arco	158.28	353	ePKPab	PKPab	08 40 04.7 -0.4
PGAV	Gavieira, Arco	158.28	353	eLR	LR	09 33 32.0
	comp=Z,630nm,18.0s					
PCAB	Cabril	158.50	353	ePKPab	PKPab	08 40 06.0 0.0
POLO	Lamas de Olo	158.81	352	ePKPab	PKPab	08 40 06.4 -1.0
POLO	Lamas de Olo	158.81	352	eLR	LR	09 33 51.5
	comp=Z,308nm,18.0s					
PVRL	Vila Real	158.89	352	ePKPab	PKPab	08 40 06.9 -0.8
MVO	Moncorvo	158.90	350	ePKPab	PKPab	08 40 07.4 -0.3
MVO	Moncorvo	158.90	350	eLR	LR	09 33 13.4
	comp=Z,500nm,18.0s					
PVIS	Viseu	159.47	352	ePKPab	PKPab	08 40 09.6 -0.6
ES19	SONSECA Array	159.62	343	ePKPab	PKPab	08 40 11.2 +0.4
ESDC	Sonseca Array	159.66	343	PKPab	PKPab	08 40 11.0 0.0
	comp=Z,9.3nm,0.9s,baz=14,slow=3.4,SNR=16					
ESDC				PP	PP	08 43 48.1 -3.6
	comp=Z,0.3nm,0.3s,baz=11,slow=6.8,SNR=5.3					
ESLA	Sonseca Array	159.66	343	ePKPab	PKPab	08 40 12.0 +0.9
MTE	Manteigas	159.73	351	ePKPab	PKPab	08 40 11.0 -0.3
MTE	Manteigas	159.73	351	eLR	LR	09 36 19.6
	comp=Z,443nm,20.0s					
MTE	Manteigas	159.73	351	ePKPab	PKPab	08 40 12.0 +0.7
PCAS	Casmilo, Conde	160.20	353	ePKPab	PKPab	08 40 12.8 -0.5
PCAS	Casmilo, Conde	160.20	353	eLR	LR	09 35 26.9
	comp=Z,430nm,18.0s					
PCBR	Castelo Branco	160.27	350	ePKPab	PKPab	08 40 13.0 -0.6
PTOM	Tomar	160.62	352	ePKPab	PKPab	08 40 14.8 -0.3
PMRV	Marv??o	160.66	350	ePKPab	PKPab	08 40 14.1 -1.2
PMRV	Marv??o	160.66	350	eLR	LR	09 36 06.3
	comp=Z,360nm,18.0s					
PMTG	Montargil	161.13	352	ePKPab	PKPab	08 40 16.9 -0.5
PMTG	Montargil	161.13	352	eLR	LR	09 36 47.2
	comp=Z,439nm,18.0s					
PESTR	Estremoz	161.24	350	ePKPab	PKPab	08 40 18.1 +0.2
PESTR	Estremoz	161.24	350	eLR	LR	09 37 13.9
PMAFR	Mafra	161.37	354	ePKPab	PKPab	08 40 18.3 -0.1
EVO	Evora	161.63	351	ePKPab	PKPab	08 40 19.2 -0.4
PBAR	Barrancos	161.81	348	ePKPab	PKPab	08 40 20.8 +0.4
PBEJ	Beja	162.10	350	ePKPab	PKPab	08 40 21.5 -0.2
PNCL	Nicolau / Gran	162.11	352	ePKPab	PKPab	08 40 21.5 -0.2
PNCL	Nicolau / Gran	162.11	352	eLR	LR	09 35 28.4
	comp=Z,547nm,18.0s					
MESJ	Messejana	162.34	351	ePKPab	PKPab	08 40 23.1 +0.4
PCVE	Castro Verde	162.51	350	ePKPab	PKPab	08 40 24.0 +0.5
PCVE	Castro Verde	162.51	350	eLR	LR	09 38 06.8
	comp=Z,565nm,18.0s					
PVAQ	Vaqueiros	162.69	349	eLR	LR	09 37 53.3
	comp=Z,664nm,20.0s					
PBDV	Barranco-do-Ve	162.88	350	eLR	LR	09 36 29.6
	comp=Z,632nm,20.0s					
MORF	Marmelete	162.92	352	ePKPab	PKPab	08 40 25.1 -0.2
PFVI	Vila Bisbo	163.12	352	ePKPab	PKPab	08 40 26.2 +0.1
PFVI	Vila Bisbo	163.12	352	eLR	LR	09 36 24.5
TAM	Tamanrasset	163.84	282	ePKIKP	PKPdf	08 39 38.4 +0.8
TAM	Tamanrasset	163.84	282	ePKPdf	PKPdf	08 39 38.4 +0.8
TAM				ePKPab	PKPab	08 40 31.4 +1.2
DBIC	Dimbokro	164.87	207	PKP	PKPdf	08 39 38.9 +0.4
	comp=Z,16nm,1.0s,baz=140,slow=4.1,SNR=6.7					
DBIC				PKPab	PKPab	08 40 33.9 -0.5
	comp=Z,14nm,0.9s,baz=125,slow=6.2,SNR=5.7					
TOA0	Torodi Ar. Sit	165.35	243	ePKPdf	PKPdf	08 39 38.2 -0.7
TOA0				ePKPdf	PKPdf	08 39 38.6 -0.3
TORD	Torodi Ar. Bea	165.35	243	PKP	PKPdf	08 39 38.6 -0.3
	comp=Z,31nm,1.0s,baz=87,slow=0.9,SNR=109					
TORD				PKPab	PKPab	08 40 36.2 -0.5
	comp=Z,21nm,1.2s,baz=120,slow=4.3,SNR=7.9					
TORD				PP	PP	08 44 20.9 -2.6
	comp=Z,4.8nm,1.1s,baz=138,slow=3.7,SNR=4.6					
MDT	Midelt	166.10	335	PKP	PKPdf	08 39 39.6 +0.4
	comp=Z,2.4nm,0.8s,baz=267,slow=3.4,SNR=5.1					
MDT				PKPab	PKPab	08 40 40.4 +0.8
	comp=Z,23nm,1.2s,baz=39,slow=4.8,SNR=10					
PMOZ	Porto Moniz, M	166.65	21	eLR	LR	09 37 19.7
	comp=Z,391nm,18.0s					

*IDC **11** 08:23:49.0±1.6, 20°.77S×168°.64E, h0km, mb4.3/5, mb1 4.5/6, mb1mx4.1/39, mbtmp4.3/6, ML3.5/1, Error ellipse: s-maj=65.4km s-min=21.2km az=148.0*

ISC 11 08:23:53.3±1.7, 20°.9S±0°.4×168°.7E±0°.3, h30km, n7, σ0°78/8, mb4.3/5, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	2.41	240	Pn	Pn	08 24 29.8	-1.0
	12nm,0.3s,baz=90,slow=20,SNR=8.2						
DZM				Sn	Sn	08 25 00.6	+1.2
	32nm,0.3s,baz=270,slow=20,SNR=4.0						
WRA	Warramunga Arr	32.18	265	P	P	08 30 18.3	-0.4
	1.6nm,0.8s,baz=91,slow=8.4,SNR=2.8						
ASAR	Alice Springs	32.27	258	P	P	08 30 19.6	+0.1
	3.5nm,0.7s,baz=86,slow=8.5,SNR=4.6						
USRK	Ussuriysk Ar.	72.95	333	P	P	08 35 19.7	+0.1
	2.1nm,0.8s,baz=129,slow=5.8,SNR=3.6						
YBH	Yreka Blue Hor	88.82	44	P	P	08 36 45.1	+0.5
	8.0nm,1.2s,baz=187,slow=3.9,SNR=5.4						
NVAR	Mina Array Bea	90.26	49	P	P	08 36 51.5	0.0
	2.5nm,0.9s,baz=230,slow=8.5,SNR=4.4						
ARCES	ARCESS Array B	126.50	345	PKP	PKPdf	08 42 52.9	+0.2
	3.1nm,0.9s,baz=45,slow=1.4,SNR=2.9						

TAP 11 08:30:56.8, 22°.77N×121°.31E, h19km, ML3.7, 12C-3D, B, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TTN	Taitung	0.15	265	⇓i P	Pg	08 31 01.9	+0.6
	baz=262						
TTN				eS	Sg	08 31 05.4	+1.2
	baz=262						
TWG	Pinlang	0.23	284	⇓i P	Pg	08 31 02.4	+0.1
	baz=288						
TWG				i S	Sg	08 31 07.1	+1.0
	baz=288						
CHKT	Chengkung	0.34	9	⇓i P	Pb	08 31 04.6	+0.3
	baz=23						
CHKT				i S	Sb	08 31 09.8	+0.6
	baz=23						
ECL	Taimali	0.37	243	i P	Pg	08 31 04.7	0.0
	baz=240						
ECL				S	Sg	08 31 09.9	-0.1
	baz=240						
ELDTW	Lidau	0.50	327	⇑i P	Pg	08 31 06.6	-0.5
	baz=327						
ELDTW				eS	Sg	08 31 12.3	-1.6
	baz=327						
TAW	Tawu	0.56	223	P	Pg	08 31 08.1	0.0
	baz=231						
TAW				eS	Sb	08 31 15.5	0.0
	baz=231						
EAST	Anshuo	0.57	228	P	Pb	08 31 08.1	-0.1
	baz=236						
EAST				eS	Sb	08 31 15.4	-0.5
	baz=236						
TWF1	Yuli	0.58	359	i P	Pb	08 31 07.8	-0.5
	baz=351						
SSD	Sandimen	0.63	268	⇑i P	Pb	08 31 08.7	-0.3
	baz=266						
STYT	Tauyuan	0.64	308	⇑i P	Pb	08 31 09.3	-0.1
	baz=308						
STYT				S	Sb	08 31 18.1	+0.1
	baz=308						
EHY	Hungye	0.74	1	eP	Pn	08 31 11.8	-0.4
	baz=4.0						
SGST	Jiashian	0.74	295	⇑i P	Pg	08 31 11.7	+0.3
	baz=295						
SGST				eS	Sg	08 31 21.5	+0.2
	baz=295						
SCZT	Fangliau	0.75	238	⇑P	Pb	08 31 11.3	+0.1
	baz=230						
SGLT	Jiouru	0.76	267	eP	Pn	08 31 12.4	0.0
	baz=265						
LAY	Lan-yu	0.76	163	eP	Pb	08 31 10.5	-1.0
	baz=152						
LAY				eS	Sb	08 31 21.4	0.0
	baz=152						
YUS	Yu-Shan	0.79	335	⇑i P	Pb	08 31 12.0	-0.2
	baz=328						
WTP	Ta-pu	0.80	307	⇑i P	Pg	08 31 12.6	+0.1
	baz=315						
TWM1	Shoushan	0.82	274	eP	Pn	08 31 13.4	0.0
	baz=272						
CHN1	Nanshi	0.83	300	⇑P	Pn	08 31 13.7	+0.1
	baz=307						
CHN1				eS	Sn	08 31 26.1	+0.8
	baz=307						
ALS	Alishan	0.87	328	⇑i P	Pb	08 31 13.8	+0.2
	baz=328						
CHN4	Tsaushan	0.88	311	⇑i P	Pn	08 31 14.1	0.0
	baz=311						
CHN4				eS	Sn	08 31 28.4	+1.9
	baz=311						
TWK	Hsinying	0.91	303	eP	Pg	08 31 14.4	-0.1
	baz=303						
TWK				eS	Sn	08 31 29.0	+1.9
	baz=303						
CHN3	Shinhua	0.92	290	eP	Pg	08 31 16.2	+1.3
	baz=288						
HEN	Hengchun	0.92	215	eP	Pg	08 31 15.3	+0.4
	baz=200						
TSEB	Hengchuen, Pin	0.94	204	eP	Pb	08 31 14.6	+0.1
	baz=194						
TWK1	Hengchun	0.94	210	eP	Pb	08 31 14.1	-0.5
	baz=195						
KAU	Kaohsiung	0.95	258	eP	Pg	08 31 17.2	+1.9
	baz=246						
TWP	Hsiaoliuchiu	0.97	245	eP	Pg	08 31 17.2	+1.5
	baz=235						
WDT	Danda	1.00	351	eP	Pb	08 31 15.1	-0.6
	baz=4.0						
CHN5	Tsauling	1.01	325	⇑i P	Pg	08 31 16.3	-0.2
	baz=324						
CHN5				eS	Sg	08 31 31.9	+2.1
	baz=324						
ESL	Shilin	1.05	6	eP	Pn	08 31 16.7	+0.2
	baz=358						
CHN2	Minshiung	1.08	315	eP	Pg	08 31 18.2	+0.3
	baz=313						
CHN2				eS	Sg	08 31 33.6	+1.5
	baz=313						
CHY	Chiayi	1.09	312	⇑P	Pg	08 31 18.3	+0.2
	baz=311						
CHY				S	Sg	08 31 33.4	+1.0
	baz=311						
SCLT	Jiali	1.11	292	eP	Pn	08 31 17.2	0.0
	baz=289						
WGK	Gukeng	1.15	323	eP	Pg	08 31 18.6	-0.5
	baz=311						
WGK				S	Sg	08 31 35.3	+1.2
	baz=311						
SMLT	Sun Moon Lake	1.17	341	eP	Pb	08 31 18.9	+0.4
	baz=349						
SMLT				S	Sg	08 31 35.3	+0.3
	baz=349						
TYC	Yuchr	1.21	340	eP	Pg	08 31 19.6	-0.6
	baz=346						
TYC				S	Sg	08 31 36.2	+0.2
	baz=346						
WNT	Mingjian	1.25	333	eP	Pg	08 31 20.8	-0.1
	baz=330						
WNT				eS	Sg	08 31 37.8	+0.5
	baz=330						
WSF	Szhu	1.32	311	eP	Pg	08 31 21.8	-0.7
	baz=308						
TWD	Chiawan	1.33	11	eP	Pn	08 31 20.7	+0.3
	baz=1.0						
WHF	Hehuan Shan	1.37	358	eP	Pn	08 31 20.9	-0.4
	baz=15						
TWT	Tachien	1.48	355	eP	Pb	08 31 23.8	-0.1
	baz=10.0						
TCU	Taichung	1.49	337	eP	Pb	08 31 24.5	+0.6
	baz=334						
WDGT	Dungji	1.60	288	eP	Pn	08 31 24.6	+0.6
	baz=286						
WDGT				eS	Sn	08 31 44.2	+0.1
	baz=286						
TWQ1	Liyutan	1.65	343	eP	Pb	08 31 27.0	+0.4
	baz=340						
TWQ1				eS	Sg	08 31 48.6	-1.5
	baz=340						
NNS	Nan Shan	1.67	2	eP	Pb	08 31 27.2	+0.2
	baz=21						
ENA	Nanau	1.70	13	eP	Pn	08 31 26.0	+0.6
	baz=5.0						
NSY	Sanyi	1.72	343	eP	Pb	08 31 28.0	+0.2
	baz=340						
NSY				eS	Sb	08 31 49.7	+0.7
	baz=340						
PNG	Penghu	1.80	297	eP	Pn	08 31 27.8	+0.9
	baz=293						
NSTT	Nanjuang	1.88	351	eP	Pb	08 31 29.3	-1.2
	baz=9.0						
NSTT				eS	Sb	08 31 52.9	-0.7
	baz=9.0						
ENTT	Nioudou	1.88	7	eP	Pb	08 31 29.5	-1.0
	baz=12						
TWC	Suao	1.90	15	eP	Pn	08 31 29.3	+1.2
	baz=4.0						
TWC				eS	Sn	08 31 52.5	+0.9
	baz=4.0						
NSK	Sanguang	1.90	1	eP	Pb	08 31 30.

baz=100,slow=326,SNR=8.2
KURK Kurchatov 6.75 249 ⇓Pn **Pn 08 43 08.8 +0.9**
8.4nm,0.7s
KURK ⇑Sn **Sn 08 44 26.0 +2.6**
18nm,1.0s
KURBB Kurchatov Arra 6.84 248 Pn **Pn 08 43 10.5 +1.3**
0.4nm,0.3s,baz=62,slow=14,SNR=24
KURBB Sn **Sn 08 44 22.4 -3.4**
baz=57,slow=28,SNR=2.6
KURBB Lg Lg 08 44 55.0
0.1nm,0.3s,baz=64,slow=32,SNR=3.9
MK31 Makanchi Array 7.91 213 ⇑Pn **Pn 08 43 23.9 +0.1**
0.8nm,0.5s,baz=33,slow=12,SNR=5.0
MK31 ⇓Sn **Sn 08 44 51.9 -0.1**
1.9nm,0.7s,baz=34,slow=28,SNR=3.5
MK31 ⇑Lg Lg 08 45 33.3
2.2nm,0.7s,baz=123,slow=51,SNR=3.9
MKAR Makanchi Array 7.91 213 Pn Pn 08 43 28.0 +4.2
0.3nm,0.3s,baz=27,slow=12,SNR=6.5
MKAR Sn **Sn 08 44 51.2 -0.8**
0.2nm,0.3s,baz=41,slow=29,SNR=4.0
MKAR Lg Lg 08 45 34.8
0.3nm,0.3s,baz=24,slow=28,SNR=4.2
MAKZ Makanchi 8.00 214 ⇑Pn **Pn 08 43 24.3 -0.8**
3.1nm,0.7s
MAKZ ⇓Lg Lg 08 45 34.8
6.0nm,1.1s
BVAR Borovoye Array 10.87 274 Pn **Pn 08 44 05.0 +0.7**
0.2nm,0.3s,baz=77,slow=12,SNR=3.7
BVAR Sn Sn 08 45 56.3 -8.2
0.3nm,0.3s,baz=90,slow=22,SNR=3.2

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*JMA **11** 08:43:49.9±0.5,37.°01N×143.°68E,h40km,M3.4*
*ISCJB **11** 08:43:51.6±1.7,37.°05N±0.°07×143.°6E±0.°1,h33km,*
mb3.6/3,MS4.1/2,Error ellipse: s-maj=15.3km
s-min=10.0km az=13.2
*IDC **11** 08:43:51.1±2.6,36.°27N×143.°60E,h0km,mb3.7/3,*
mb1 3.8/4,mb1mx3.4/47,mbtmp3.6/4,ML3.5/1,MS4.2/2,
Ms1 4.2/2,ms1mx3.2/49,Error ellipse: s-maj=74.5km
s-min=29.4km az=65.0
ISC 11 08:43:51.0±1.9,37.°04N±0.°08×143.°7E±0.°1,h35km,n18,
σ0.90/16,mb3.7/3,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**2.31**	**279**	P	**Pn**	**08 44 26.7**	**+0.1**
ONAJ	**Iwakimizuishiy**	**2.35**	**272**	*e*S	**Sn**	**08 44 54.4**	**-0.5**
JIO	**Ouri**	**2.36**	**307**	P	**Pn**	**08 44 27.6**	**+0.3**
JIO				*e*S	**Sn**	**08 44 54.9**	**-0.1**
JMM	**Marumori**	**2.48**	**290**	P	**Pn**	**08 44 29.5**	**+0.5**
OFUJ	**Ofunato**	**2.61**	**322**	P	**Pn**	**08 44 30.6**	**-0.1**
JMK	**Ichinoseki**	**2.76**	**314**	P	**Pn**	**08 44 33.0**	**+0.3**
JOU	**Okura**	**2.77**	**299**	P	**Pn**	**08 44 33.8**	**+0.8**
JOM	**Ohasama**	**3.10**	**322**	S	**Sn**	**08 45 13.0**	**-0.2**
JYK	**Kaneyama**	**3.26**	**306**	P	**Pn**	**08 44 40.6**	**+0.9**
JAG	**Ashikaga**	**3.50**	**261**	P	**Pn**	**08 44 43.5**	**+0.6**
JRY	**Ryogami san**	**4.03**	**257**	P	**Pn**	**08 44 50.4**	**+0.1**
MJAR	**Matsushiro Arr**	**4.47**	**265**	Pn	**Pn**	**08 44 57.8**	**+1.5**
	2.3nm,0.3s,baz=88,slow=15,SNR=11						
MAT	**Matsushiro**	**4.47**	**265**	P	**Pn**	**08 44 58.0**	**+1.7**
MAT				S	**Sn**	**08 45 45.5**	**-1.6**
GUMO	**Guam**	**23.38**	**177**	LR	LR	08 55 02.8	
	comp=Z,295nm,20.1s,baz=163,slow=30						
ZALV	**Zalesovo Beam**	**43.28**	**312**	P	P	08 51 56.9	+7.9
	0.5nm,0.3s,baz=77,slow=7.6,SNR=2.2						
KURBB	**Kurchatov Arra**	**47.46**	**308**	P	P	08 52 31.2	+9.0
	0.5nm,0.5s,baz=80,slow=8.0,SNR=3.2						
WRA	**Warramunga Arr**	**57.37**	**191**	P	**P**	**08 53 35.5**	**-0.4**
	0.3nm,0.6s,baz=8.2,slow=7.2,SNR=5.3						
MMAI	**Mount Meron Ar**	**83.47**	**307**	LR	LR	09 39 50.8	
	comp=Z,208nm,18.4s,baz=180,slow=40						

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*IGIL **11** 08:56:34.8,37.°59N×13.°17W,h0km,ML2.4*
*MDD **11** 08:56:36.2±1.6,37.°56N×13.°06W,h0km,mb4.3/12,Error*
ellipse: s-maj=14.9km s-min=11.8km az=54.0,PRXIMO
*INMG **11** 08:56:38.4±0.9,37.°41N×13.°40W,h10km,ML2.7,Error*
ellipse: s-maj=4.5km s-min=3.3km az=86.0
*CSEM **11** 08:56:39.4±0.3,37.°69N×12.°79W,h10km,ML3.4/34,Error*
ellipse: s-maj=5.9km s-min=4.6km az=59.0
ISC 11 08:56:32.8±3.1,37.°56N±0.°08×13.°2W±0.°1,h10km,n92,
σ2.09/175,Azores-Cape St. Vincent Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMAFR	**Mafra**	**3.38**	**64**	*e*Pn	**Pn**	**08 57 28.3**	**+2.6**
PMAFR				*e*Sn	**Sn**	**08 58 05.8**	**-0.1**
PMAFR				A	A	08 58 10.1	
	41nm,0.2s						
PMAFR	**Mafra**	**3.38**	**64**	Pn	**Pn**	**08 57 28.1**	**+2.4**
	1.4nm,0.2s,SNR=9.5						
PMAFR				Sn	**Sn**	**08 58 07.6**	**+1.7**
	32nm,0.2s,SNR=7.9						
PMAFR	**Mafra**	**3.38**	**64**	Pn	**Pn**	**08 57 28.1**	**+2.4**
	1.4nm,0.2s,SNR=9.5						
PMAFR				*e*Sn	**Sn**	**08 58 05.8**	**-0.1**
	41nm,0.2s						
PFVI	**Vila Bisbo**	**3.51**	**96**	*e*Pn	**Pn**	**08 57 29.1**	**+1.7**
PFVI				*e*Sn	**Sn**	**08 58 06.4**	**-2.5**
PFVI				A	A	08 58 20.7	
	16nm,0.6s						
PFVI	**Vila Bisbo**	**3.51**	**96**	Pn	**Pn**	**08 57 28.9**	**+1.5**
	1.5nm,0.1s,SNR=7.9						
PFVI				Sn	**Sn**	**08 58 06.5**	**-2.5**
	18nm,0.2s,SNR=7.9						
PFVI	**Vila Bisbo**	**3.51**	**96**	*e*Pn	**Pn**	**08 57 29.1**	**+1.7**
PFVI				Sn	**Sn**	**08 58 06.5**	**-2.5**
	18nm,0.2s,SNR=7.9						
PTEO	**Sao Teotonio**	**3.56**	**89**	*e*Pn	**Pn**	**08 57 29.7**	**+1.7**
PTEO				*e*Sn	**Sn**	**08 58 08.0**	**-2.1**
PTEO				A	A	08 58 11.4	
	10nm,0.4s						
PTEO	**Sao Teotonio**	**3.56**	**89**	Pn	**Pn**	**08 57 29.7**	**+1.7**
PTEO				Sn	**Sn**	**08 58 08.0**	**-2.1**
	5.2nm,0.4s						
PTEO	**Sao Teotonio**	**3.56**	**89**	Pn	**Pn**	**08 57 29.7**	**+1.7**
PTEO				*e*Sn	**Sn**	**08 58 08.0**	**-2.1**
	10nm,0.4s						
MORF	**Marmelete**	**3.63**	**93**	*e*P	**Pn**	**08 57 30.3**	**+1.2**
MORF				*e*S	**Sn**	**08 58 10.2**	**-1.8**
MORF				AML	AML	08 58 10.2	
	comp=N,10nm,0.2s						
MORF	**Marmelete**	**3.63**	**93**	*e*Pn	**Pn**	**08 57 30.6**	**+1.5**
MORF				*e*Sn	**Sn**	**08 58 09.9**	**-2.1**
MORF				A	A	08 58 14.8	
	comp=N,14nm,0.2s						
MORF	**Marmelete**	**3.63**	**93**	Pn	**Pn**	**08 57 30.6**	**+1.5**
MORF				Sn	**Sn**	**08 58 09.9**	**-2.1**
	comp=N,14nm,0.2s						
MORF	**Marmelete**	**3.63**	**93**	Pn	**Pn**	**08 57 30.6**	**+1.5**
MORF				*e*Sn	**Sn**	**08 58 09.9**	**-2.1**
	comp=N,14nm,0.2s						
PNCL	**Nicolau / Gran**	**3.74**	**80**	*e*Pn	**Pn**	**08 57 32.7**	**+2.2**
PNCL				*e*Sn	**Sn**	**08 58 13.3**	**-1.3**
PNCL				A	A	08 58 20.1	
	comp=N,17nm,0.1s						
PNCL	**Nicolau / Gran**	**3.74**	**80**	*e*Pn	**Pn**	**08 57 32.7**	**+2.2**
PNCL				*e*Sn	**Sn**	**08 58 13.3**	**-1.3**
	comp=N,17nm,0.1s						
MESJ	**Messejana**	**3.96**	**84**	*e*S	**Sn**	**08 58 18.4**	**-1.7**
MESJ				AML	AML	08 58 20.8	
	comp=E,8.5nm,0.1s						
MESJ	**Messejana**	**3.96**	**84**	*e*Pn	**Pn**	**08 57 35.3**	**+1.7**
MESJ				*e*Sn	**Sn**	**08 58 18.3**	**-1.7**
MESJ				A	A	08 58 21.1	
	comp=E,10nm,0.5s						
MESJ	**Messejana**	**3.96**	**84**	Pn	**Pn**	**08 57 35.3**	**+1.7**
MESJ				Sn	**Sn**	**08 58 18.3**	**-1.7**
	comp=E,10nm,0.5s						
MESJ	**Messejana**	**3.96**	**84**	Pn	**Pn**	**08 57 35.3**	**+1.7**
MESJ				*e*Sn	**Sn**	**08 58 18.3**	**-1.7**
	comp=E,10nm,0.5s						
PCVE	**Castro Verde**	**4.10**	**87**	*e*Pn	**Pn**	**08 57 37.9**	**+2.4**
PCVE				*e*Sn	**Sn**	**08 58 21.8**	**-1.7**
PCVE				A	A	08 58 26.7	
	comp=E,8.7nm,0.3s						
PCVE	**Castro Verde**	**4.10**	**87**	Pn	**Pn**	**08 57 37.9**	**+2.4**
PCVE				Sn	**Sn**	**08 58 21.8**	**-1.7**
	comp=E,8.7nm,0.3s						
PCVE	**Castro Verde**	**4.10**	**87**	Pn	**Pn**	**08 57 37.9**	**+2.4**
PCVE				*e*Sn	**Sn**	**08 58 21.8**	**-1.7**
	comp=E,8.7nm,0.3s						
PMTG	**Montargil**	**4.19**	**67**	*e*Pn	**Pn**	**08 57 39.3**	**+2.5**
PMTG				*e*Sn	**Sn**	**08 58 24.5**	**-1.3**
PMTG				A	A	08 58 31.7	
	comp=E,8.0nm,0.5s						
PMTG	**Montargil**	**4.19**	**67**	*e*Pn	**Pn**	**08 57 39.3**	**+2.5**
PMTG				*e*Sn	**Sn**	**08 58 24.5**	**-1.3**
	comp=E,8.0nm,0.5s						
PBDV	**Barranco-do-Ve**	**4.21**	**93**	*e*Pn	**Pn**	**08 57 38.5**	**+1.5**
PBDV				*e*Sn	**Sn**	**08 58 24.7**	**-1.5**
PBDV				A	A	08 58 30.9	
	comp=E,13nm,0.6s						
PBDV	**Barranco-do-Ve**	**4.21**	**93**	Pn	**Pn**	**08 57 38.5**	**+1.5**
PBDV				Sn	**Sn**	**08 58 24.7**	**-1.5**
	comp=E,13nm,0.6s						
PBDV	**Barranco-do-Ve**	**4.21**	**93**	Pn	**Pn**	**08 57 38.5**	**+1.5**
PBDV				*e*Sn	**Sn**	**08 58 24.7**	**-1.5**
	comp=E,13nm,0.6s						
EVO	**Evora**	**4.21**	**75**	*e*Pn	**Pn**	**08 57 39.7**	**+2.7**
EVO				*e*Sn	**Sn**	**08 58 25.1**	**-1.1**
EVO				A	A	08 58 29.9	
	comp=E,20nm,0.1s						
EVO	**Evora**	**4.21**	**75**	Pn	**Pn**	**08 57 39.7**	**+2.7**
EVO				Sn	**Sn**	**08 58 25.1**	**-1.1**
	comp=E,20nm,0.1s						
EVO	**Evora**	**4.21**	**75**	Pn	**Pn**	**08 57 39.7**	**+2.7**
EVO				*e*Sn	**Sn**	**08 58 25.1**	**-1.1**
	comp=E,20nm,0.1s						
PBEJ	**Beja**	**4.25**	**82**	*e*Pn	**Pn**	**08 57 40.2**	**+2.6**
PBEJ				*e*Sn	**Sn**	**08 58 25.7**	**-1.5**
PBEJ				A	A	08 58 30.9	
	comp=E,9.4nm,0.8s						
PBEJ	**Beja**	**4.25**	**82**	Pn	**Pn**	**08 57 40.2**	**+2.6**
PBEJ				Sn	**Sn**	**08 58 25.7**	**-1.5**
	comp=E,4.7nm,0.8s						
PBEJ	**Beja**	**4.25**	**82**	Pn	**Pn**	**08 57 40.2**	**+2.6**
PBEJ				*e*Sn	**Sn**	**08 58 25.7**	**-1.5**
	comp=E,9.4nm,0.8s						
PTOM	**Tomar**	**4.28**	**60**	*e*Pn	**Pn**	**08 57 40.5**	**+2.6**
PTOM				*e*Sn	**Sn**	**08 58 27.1**	**-0.8**
PTOM				A	A	08 58 31.8	
	comp=E,10.0nm,0.3s						
PTOM	**Tomar**	**4.28**	**60**	Pn	**Pn**	**08 57 40.5**	**+2.6**
PTOM				Sn	**Sn**	**08 58 27.1**	**-0.8**
	comp=E,5.0nm,0.3s						
PTOM	**Tomar**	**4.28**	**60**	Pn	**Pn**	**08 57 40.5**	**+2.6**
PTOM				*e*Sn	**Sn**	**08 58 27.1**	**-0.8**
	comp=E,10.0nm,0.3s						
PVAQ	**Vaqueiros**	**4.36**	**90**	*e*Pn	**Pn**	**08 57 41.2**	**+2.1**
PVAQ				*e*Sn	**Sn**	**08 58 28.2**	**-1.8**
PVAQ				A	A	08 58 33.3	
	comp=E,15nm,0.8s						
PVAQ	**Vaqueiros**	**4.36**	**90**	Pn	**Pn**	**08 57 41.2**	**+2.1**
PVAQ				Sn	**Sn**	**08 58 28.2**	**-1.8**
	comp=E,15nm,0.8s						
PVAQ	**Vaqueiros**	**4.36**	**90**	Pn	**Pn**	**08 57 41.2**	**+2.1**
PVAQ				*e*Sn	**Sn**	**08 58 28.2**	**-1.8**
	comp=E,15nm,0.8s						
PCAS	**Casmilo, Conde**	**4.43**	**54**	*e*Pn	**Pn**	**08 57 42.3**	**+2.2**
PCAS				*e*Sn	**Sn**	**08 58 31.1**	**-0.7**
PCAS				A	A	08 58 34.7	
	comp=E,5.9nm,0.7s						
PCAS	**Casmilo, Conde**	**4.43**	**54**	*e*Pn	**Pn**	**08 57 42.3**	**+2.2**
PCAS				*e*Sn	**Sn**	**08 58 31.1**	**-0.7**
	comp=E,5.9nm,0.7s						
EGRO	**El Granado**	**4.54**	**89**	Pn	**Pn**	**08 57 43.5**	**+1.9**
	comp=E,2.9nm,0.2s,SNR=10						
EGRO				Sn	**Sn**	**08 58 33.3**	**-1.1**
	comp=E,12nm,0.2s,SNR=10						
EGRO	**El Granado**	**4.54**	**89**	Pn	**Pn**	**08 57 43.5**	**+1.9**
	comp=E,2.9nm,0.2s,SNR=10						
EGRO				Sn	**Sn**	**08 58 33.3**	**-1.1**
	comp=E,12nm,0.2s,SNR=10						
PESTR	**Estremoz**	**4.61**	**72**	*e*Pn	**Pn**	**08 57 45.0**	**+2.5**
PESTR				*e*Sn	**Sn**	**08 58 34.3**	**-1.7**
PESTR				A	A	08 58 41.6	
	comp=E,8.1nm,0.2s						
PESTR	**Estremoz**	**4.61**	**72**	*e*Pn	**Pn**	**08 57 45.0**	**+2.5**
PESTR				*e*Sn	**Sn**	**08 58 34.3**	**-1.7**
	comp=E,8.1nm,0.2s						
PBAR	**Barrancos**	**4.91**	**81**	*e*Pn	**Pn**	**08 57 49.4**	**+2.7**
PBAR				*e*Sn	**Sn**	**08 58 41.5**	**-2.1**
PBAR				A	A	08 58 43.9	
	comp=E,11nm,0.3s						
PBAR	**Barrancos**	**4.91**	**81**	Pn	**Pn**	**08 57 49.4**	**+2.7**
PBAR				Sn	**Sn**	**08 58 41.5**	**-2.1**
	comp=E,11nm,0.3s						
PBAR	**Barrancos**	**4.91**	**81**	Pn	**Pn**	**08 57 49.4**	**+2.7**
PBAR				*e*Sn	**Sn**	**08 58 41.5**	**-2.1**
	comp=E,11nm,0.3s						
PMRV	**Marv??o**	**4.92**	**66**	*e*Pn	**Pn**	**08 57 49.3**	**+2.5**
PMRV				*e*Sn	**Sn**	**08 58 42.5**	**-1.3**
PMRV				A	A	08 58 46.3	
	comp=E,9.3nm,0.2s						
PMRV	**Marv??o**	**4.92**	**66**	Pn	**Pn**	**08 57 49.3**	**+2.5**
PMRV				Sn	**Sn**	**08 58 42.5**	**-1.3**
	comp=E,9.3nm,0.2s						
PMRV	**Marv??o**	**4.92**	**66**	Pn	**Pn**	**08 57 49.3**	**+2.5**
PMRV				*e*Sn	**Sn**	**08 58 42.5**	**-1.3**
	comp=E,9.3nm,0.2s						
EBAD	**Badajoz**	**5.02**	**74**	Pn	**Pn**	**08 57 50.5**	**+2.3**
	comp=E,2.2nm,0.1s,SNR=10.0						
EBAD				Sn	**Sn**	**08 58 43.6**	**-2.6**
	comp=E,4.4nm,0.1s,SNR=6.0						
EBAD	**Badajoz**	**5.02**	**74**	Pn	**Pn**	**08 57 50.5**	**+2.3**
	comp=E,2.2nm,0.1s,SNR=10.0						
EBAD				Sn	**Sn**	**08 58 43.6**	**-2.6**
	comp=E,4.4nm,0.1s,SNR=6.0						
PCBR	**Castelo Branco**	**5.02**	**61**	*e*Pn	**Pn**	**08 57 50.8**	**+2.6**
PCBR				*e*Sn	**Sn**	**08 58 45.0**	**-1.2**
PCBR				A	A	08 58 48.0	
	comp=E,5.1nm,0.2s						
PCBR	**Castelo Branco**	**5.02**	**61**	Pn	**Pn**	**08 57 50.8**	**+2.6**
PCBR				Sn	**Sn**	**08 58 45.0**	**-1.2**
	comp=E,2.6nm,0.2s						
PCBR	**Castelo Branco**	**5.02**	**61**	Pn	**Pn**	**08 57 50.8**	**+2.6**
PCBR				*e*Sn	**Sn**	**08 58 45.0**	**-1.2**
	comp=E,5.1nm,0.2s						
EMIN	**Mina Concepcio**	**5.18**	**86**	Pn	**Pn**	**08 57 52.3**	**+1.9**
	comp=E,1.1nm,0.1s,SNR=11						
EMIN				Sn	**Sn**	**08 58 47.7**	**-2.5**
	comp=E,3.8nm,0.2s,SNR=11						
EMIN	**Mina Concepcio**	**5.18**	**86**	Pn	**Pn**	**08 57 52.3**	**+1.9**
	comp=E,1.1nm,0.1s,SNR=11						
EMIN				Sn	**Sn**	**08 58 47.7**	**-2.5**
	comp=E,3.8nm,0.2s,SNR=11						
PVIS	**Viseu**	**5.19**	**51**	*e*Pn	**Pn**	**08 57 53.7**	**+3.2**
PVIS				*e*Sn	**Sn**	**08 58 49.1**	**-1.4**
PVIS				A	A	08 58 53.4	
	comp=E,4.2nm,0.3s						
PVIS	**Viseu**	**5.19**	**51**	Pn	**Pn**	**08 57 53.7**	**+3.2**
PVIS				Sn	**Sn**	**08 58 49.1**	**-1.4**
	comp=E,2.1nm,0.3s						
PVIS	**Viseu**	**5.19**	**51**	Pn	**Pn**	**08 57 53.7**	**+3.2**
PVIS				*e*Sn	**Sn**	**08 58 49.1**	**-1.4**
	comp=E,4.2nm,0.3s						
MTE	**Manteigas**	**5.24**	**56**	*e*Sn	**Sn**	**08 58 51.2**	**-0.5**
MTE				A	A	08 58 54.6	
	comp=E,5.9nm,0.6s						
MTE	**Manteigas**	**5.24**	**56**	Sn	**Sn**	**08 58 51.2**	**-0.5**
	comp=E,3.0nm,0.6s						
MTE	**Manteigas**	**5.24**	**56**	*e*Sn	**Sn**	**08 58 51.2**	**-0.5**
	comp=E,5.9nm,0.6s						
POLO	**Lamas de Olo**	**5.66**	**46**	*e*Pn	**Pn**	**08 57 58.9**	**+1.9**
POLO				*e*Sn	**Sn**	**08 59 00.3**	**-1.7**
POLO				A	A	08 59 09.0	
	comp=E,1.4nm,0.8s						
POLO	**Lamas de Olo**	**5.66**	**46**	*e*Pn	**Pn**	**08 57 58.9**	**+1.9**
POLO				*e*Sn	**Sn**	**08 59 00.3**	**-1.7**
	comp=E,1.4nm,0.8s						
PCAB	**Cabril**	**5.75**	**42**	*e*Pn	**Pn**	**08 58 00.2**	**+1.9**
PCAB				*e*Sn	**Sn**	**08 59 02.4**	**-1.9**
PCAB				A	A	08 59 13.3	
	comp=E,3.5nm,0.3s						
PCAB	**Cabril**	**5.75**	**42**	Pn	**Pn**	**08 58 00.2**	**+1.9**
PCAB				Sn	**Sn**	**08 59 02.4**	**-1.9**
	comp=E,1.8nm,0.3s						
PCAB	**Cabril**	**5.75**	**42**	Pn	**Pn**	**08 58 00.2**	**+1.9**
PCAB				*e*Sn	**Sn**	**08 59 02.4**	**-1.9**
	comp=E,3.5nm,0.3s						
PGAV	**Gavieira, Arco**	**5.81**	**39**	*e*Pn	**Pn**	**08 58 01.1**	**+2.0**
PGAV				*e*Sn	**Sn**	**08 59 03.4**	**-2.4**
PGAV				A	A	08 59 06.2	
	comp=E,4.3nm,0.8s						
PGAV	**Gavieira, Arco**	**5.81**	**39**	*e*Pn	**Pn**	**08 58 01.1**	**+2.0**
PGAV				*e*Sn	**Sn**	**08 59 03.4**	**-2.4**
	comp=E,4.3nm,0.8s						
ELOB	**Lobios**	**5.85**	**41**	Pn	**Pn**	**08 58 01.1**	**+1.5**
	comp=E,1.8nm,0.1s,SNR=9.5						
ELOB				Sn	**Sn**	**08 59 03.1**	**-3.6**
	comp=E,3.2nm,0.2s						
ELOB	**Lobios**	**5.85**	**41**	Pn	**Pn**	**08 58 01.1**	**+1.5**
	comp=E,1.8nm,0.1s,SNR=9.5						
ESPR	**Espera**	**5.90**	**95**	Pn	**Pn**	**08 58 02.6**	**+2.4**
	comp=E,3.7nm,0.2s,SNR=5.8						
ESPR				Sn	**Sn**	**08 59 06.5**	**-1.4**
	comp=E,7.9nm,0.2s						
ESPR	**Espera**	**5.90**	**95**	Pn	**Pn**	**08 58 02.6**	**+2.4**
	comp=E,3.7nm,0.2s,SNR=5.8						
ESPR				Sn	**Sn**	**08 59 06.5**	**-1.4**
	comp=E,7.9nm,0.2s						
MVO	**Moncorvo**	**5.98**	**51**	*e*Pn	**Pn**	**08 58 03.8**	**+2.3**
MVO				*e*Sn	**Sn**	**08 59 08.0**	**-2.0**
MVO				A	A	08 59 11.9	
	comp=E,4.3nm,0.5s						
MVO	**Moncorvo**	**5.98**	**51**	Pn	**Pn**	**08 58 03.8**	**+2.3**
	comp=E,1.3nm,0.1s,SNR=7.9						
MVO				Sn	**Sn**	**08 59 08.0**	**-2.0**
	comp=E,2.0nm,0.1s,SNR=7.9						
MVO	**Moncorvo**	**5.98**	**51**	Pn	**Pn**	**08 58 03.8**	**+2.3**
	comp=E,1.3nm,0.1s,SNR=7.9						
MVO				*e*Sn	**Sn**	**08 59 08.0**	**-2.0**
	comp=E,4.3nm,0.5s						
ECAB	**El Cabril**	**6.18**	**83**	Pn	**Pn**	**08 58 06.0**	**+1.9**
	comp=E,0.7nm,0.1s,SNR=6.9						
ECAB				Sn	**Sn**	**08 59 11.3**	**-3.6**
	comp=E,4.2nm,0.2s,SNR=6.5						
ECAB	**El Cabril**	**6.18**	**83**	Pn	**Pn**	**08 58 06.0**	**+1.9**
	comp=E,0.7nm,0.1s,SNR=6.9						
ECAB				Sn	**Sn**	**08 59 11.3**	**-3.6**
	comp=E,4.2nm,0.2s,SNR=6.5						
EMAZ	**Mazaricos**	**6.28**	**30**	Pn	**Pn**	**08 58 06.5**	**+1.1**
	comp=E,1.9nm,0.1s,SNR=7.9						
EMAZ				Sn	**Sn**	**08 59 12.3**	**-4.8**
	comp=E,1.8nm,0.2s,SNR=7.9						
EMAZ	**Mazaricos**	**6.28**	**30**	Pn	**Pn**	**08 58 06.5**	**+1.1**
	comp=E,1.9nm,0.1s,SNR=7.9						
EAGO	**Agolada(Pontev**	**6.53**	**35**	Pn	**Pn**	**08 58 09.4**	**+0.4**
	comp=E,2.9nm,0.1s,SNR=7.9						
EAGO				Sn	**Sn**	**08 59 21.0**	**-2.6**
	comp=E,0.5nm,0.1s,SNR=7.9						
EAGO	**Agolada(Pontev**	**6.53**	**35**	Sn	**Sn**	**08 59 21.0**	**-2.6**
	comp=E,0.5nm,0.1s,SNR=7.9						
ECAL	**Calabor**	**6.63**	**47**	Pn	**Pn**	**08 58 12.9**	**+2.6**
	comp=E,2.3nm,0.2s,SNR=7.3						
ECAL				Sn	**Sn**	**08 59 23.4**	**-2.5**
	comp=E,4.6nm,0.3s						
ECAL	**Calabor**	**6.63**	**47**	Pn	**Pn**	**08 58 12.9**	**+2.6**
	comp=E,2.3nm,0.2s,SNR=7.3						
ECAL				Sn	**Sn**	**08 59 23.4**	**-2.5**
	comp=E,4.6nm,0.3s						
EADA	**Adamuz**	**6.85**	**82**	Pn	**Pn**	**08 58 15.1**	**+1.8**
	comp=E,1.5nm,0.1s,SNR=7.9						
EADA				Sn	**Sn**	**08 59 29.2**	**-2.1**
	comp=E,2.2nm,0.2s,SNR=7.9						
EADA	**Adamuz**	**6.85**	**82**	Pn	**Pn**	**08 58 15.1**	**+1.8**
	comp=E,1.5nm,0.1s,SNR=7.9						
EADA				Sn	**Sn**	**08 59 29.2**	**-2.1**
	comp=E,2.2nm,0.2s,SNR=7.9						
ESDC	**Sonseca Array**	**7.53**	**71**	Pn	**Pn**	**08 58 24.4**	**+1.7**
	comp=E,4.7nm,0.1s,baz=255,slow=13,SNR=5.1						
ESDC				Sn	**Sn**	**08 59 45.1**	**-3.1**
	comp=E,1.5nm,0.2s,baz=254,slow=23,SNR=4.0						
ESDC	**Sonseca Array**	**7.53**	**71**	Pn	**Pn**	**08 58 24.4**	**+1.7**
	comp=E,4.7nm,0.1s,baz=255,slow=13,SNR=5.1						
ESDC				Sn	**Sn**	**08 59 45.1**	**-3.1**
	comp=E,1.5nm,0.2s,slow=23,SNR=4.0						
GUD	**Guadarrama**	**7.68**	**64**	Sn	**Sn**	**08 59 49.6**	**-2.3**
	comp=E,0.9nm,0.2s,SNR=7.9						
GUD	**Guadarrama**	**7.68**	**64**	Sn	**Sn**	**08 59 49.6**	**-2.3**
	comp=E,0.9nm,0.2s,SNR=7.9						

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*IDC **11** 08:57:49.3±1.4,20.°50S×168.°27E,h0km,mb4.2/10,*
mb1 4.3/11,mb1mx4.1/34,mbtmp4.2/11,ML3.7/1,MS4.0/4,
Ms1 4.0/4,ms1mx3.4/34,Error ellipse: s-maj=41.9km
s-min=17.7km az=141.0
*ISCJB **11** 08:57:53.1±1.1,20.°4S±0.°1×168.°1E±0.°2,h32km,mb4.1/9,*
MS3.8/3,Error ellipse: s-maj=28.8km s-min=9.7km
az=36.9
ISC 11 08:57:54.3±1.2,20.°5S±0.°2×168.°2E±0.°2,h32km,n14,
σ0.92/13,mb4.2/9,MS3.8/3,Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.27**	**226**	Pn	**Pn**	**08 58 29.0**	**-0.7**
	20nm,0.3s,baz=118,slow=10,SNR=39						
DZM				Sn	**Sn**	**08 58 57.4**	**+0.7**
	40nm,0.3s,baz=277,slow=23,SNR=10.0						
RAO	**Raoul Island**	**15.29**	**127**	LR	LR	09 05 00.1	
	comp=Z,2μm,21.5s,baz=146,slow=28						
CTA	**Charters Tower**	**20.60**	**267**	P	**P**	**09 02 30.1**	**-0.9**
	2.3nm,0.3s,baz=359,slow=4.7,SNR=3.2						
PMG	**Port Moresby**	**23.11**	**295**	P	**P**	**09 02 56.9**	**-0.8**
	11nm,0.8s,ba

IDC 11 09:08:06.1±1.7,3°12N×125°94E, h0km, mb3.8/4, mb1 3.9/4, mb1mx3.6/41, mbtmp3.8/4, Error ellipse: s-maj=165.8km s-min=21.6km az=65.0, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**24.35**	**161**	P	P	09 13 26.0	0.0
	1.4nm,0.5s,baz=338,slow=10,SNR=18						
ASAR	**Alice Springs**	**27.73**	**164**	P	P	09 13 57.0	+0.5
	0.2nm,0.3s,baz=346,slow=7.8,SNR=5.1						
MKAR	**Makanchi Array**	**57.61**	**326**	P	P	09 17 57.6	-0.4
	1.2nm,0.5s,baz=116,slow=8.4,SNR=12						
BVAR	**Borovoye Array**	**67.41**	**327**	P	P	09 19 03.9	+0.6
	0.5nm,0.4s,baz=129,slow=5.7,SNR=4.2						
TORD	**Torodi Ar. Bea**	**122.36**	**288**	PKP	PKPdf	09 27 03.7	-0.7
	0.2nm,0.5s,baz=96,slow=3.4,SNR=2.2						

IDC 11 09:10:51.0±3.1,31°30S×178°79W, h0km, mb3.7/2, mb1 4.0/3, mb1mx3.6/28, mbtmp3.8/3, ML3.3/1, Error ellipse: s-maj=69.0km s-min=36.1km az=106.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**7.71**	**205**	Pn	Pn	09 12 44.6	0.0
	0.4nm,0.3s,baz=217,slow=20,SNR=3.6						
URZ				Sn	Sn	09 14 11.2	-1.4
	0.3nm,0.3s,baz=312,slow=12,SNR=2.5						
ASAR	**Alice Springs**	**42.39**	**268**	P	P	09 18 47.6	+0.2
	0.9nm,0.8s,baz=104,slow=7.6,SNR=7.0						
WRA	**Warramunga Arr**	**43.46**	**274**	P	P	09 18 56.0	-0.1
	0.6nm,0.5s,baz=112,slow=7.9,SNR=6.4						
FINES	**FINESS Array B**	**145.75**	**339**	PKPbc	PKPdf	09 30 30.2	-0.6
	0.9nm,0.6s,baz=52,slow=2.5,SNR=4.9						

*IDC **11** 09:16:19.6±0.5,20°40S×168°40E, h0km, mb4.8/20, mb1 4.9/22, mb1mx4.8/30, mbtmp4.8/22, ML4.4/2, Error ellipse: s-maj=16.1km s-min=14.0km az=142.0*

*NEIC **11** 09:16:21.5±0.1,20°36S×168°33E, h10km, mb5.2/17, Error ellipse: s-maj=5.6km s-min=3.5km az=159.0*

*ISCJB **11** 09:16:21.1±1.9,20°38S±0°05×168°34E±0°03, h17km±13km, mb5.1/71, MS4.7/5, Error ellipse: s-maj=8.0km s-min=4.6km az=169.4*

*GCMT **11** 09:16:21.5±0.3,20°47S×168°25E, h19km±1km, MW5.0/85, Moment Tensor Solution. s32,c35; s85,c111; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-4.49±.27; $M_{\theta\theta}$1.48±.18; $M_{\phi\phi}$3.01±.18; $M_{r\theta}$-1.39±.38; $M_{\theta\phi}$-1.61±.10; $M_{\phi r}$0.60±.35; Best double couple: $M_0$4.50800×10^{16} NP1:ϕ_s138.00000°, δ54.00000°, λ-101.00000°. NP2: ϕ_s336.00000°, δ37.00000°, λ-75.00000°. Principal axes: T 4.2110, Plg8.0000°, Azm236.0000°; N 0.5950, Plg9.0000°, Azm144.0000°; P -4.8050, Plg78.0000°, Azm9.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

*MOS **11** 09:16:23.6±1.0,20°33S×168°27E, h33km, mb5.3/21 Error ellipse: s-maj=9.0km s-min=7.9km az=169.4*

*BJI **11** 09:16:25.0,19°93S×168°41E, h35km, mb5.1/44, mB5.3/29, Ms5.1/17, Ms7 4.6/13*

ISC 11 09:16:23.7±0.4,20°39S±0°05×168°35E±0°05, h26km±2km, h25km:pP-P, n413, σ1§22/432, mb5.2/70, MS4.8/5, 12C-5D, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.44**	**226**	Pn	**Pn**	**09 16 59.4**	**-2.5**
	146nm,0.3s,baz=191,slow=20,SNR=60						
DZM				Sn	**Sn**	**09 17 26.0**	**-5.0**
	114nm,0.3s,baz=7.7,slow=18,SNR=5.5						
MSVF	**Nonsavu**	**9.55**	**76**	*e*P	**Pn**	**09 18 40.3**	**+0.6**
MSVF	**Nonsavu**	**9.55**	**76**	*e*Pn	**Pn**	**09 18 40.3**	**+0.6**
HNR	**Honiara**	**13.58**	**322**	P	Pn	09 19 26.0	-8.7
HNR	**Honiara**	**13.58**	**322**	*e*P	**Pn**	**09 19 35.5**	**+0.8**
HNR	**Honiara**	**13.58**	**322**	*e*Pn	**Pn**	**09 19 35.5**	**+0.8**
EIDS	**Eidsvold**	**16.66**	**249**	*e*Pn	**Pn**	**09 20 16.5**	**+1.0**
	83nm,1.6s						
ARMA	**Armidale**	**18.08**	**233**	P	**P**	**09 20 37.7**	**+4.2**
	baz=18,SNR=16						
ARMA	**Armidale**	**18.08**	**233**	*e*Pn	**P**	**09 20 34.5**	**+1.0**
	81nm,1.4s						
RMQ	**Roma**	**18.96**	**248**	P	**Pn**	**09 20 46.0**	**+2.2**
	baz=19,SNR=5.1						
URZ	**Urewera**	**19.36**	**159**	P	**P**	**09 20 47.5**	**+0.2**
	0.7nm,0.3s,baz=1.1,slow=8.8,SNR=6.3						
CTA	**Charters Tower**	**20.73**	**267**	P	**P**	**09 21 03.7**	**+1.2**
	23nm,1.1s,baz=102,slow=14,SNR=10.0						
CTA	**Charters Tower**	**20.73**	**267**	P	Pn	09 21 04.6	-0.3
	baz=21						
CTAO	**Charters Tower**	**20.73**	**267**	*e*P	**P**	**09 21 02.7**	**+0.2**
CTAO				pmax	pmax		
	comp=Z,541nm,1.2s						
CTAO	**Charters Tower**	**20.73**	**267**	*e*P	**P**	**09 21 02.7**	**+0.2**
	comp=Z,541nm,1.2s						
CAN	**Canberra**	**22.61**	**225**	P	**P**	**09 21 26.8**	**+4.3**
	baz=23						
CAN	**Canberra**	**22.61**	**225**	*e*P	**P**	**09 21 24.5**	**+2.0**
CAN				pmax	pmax		
	comp=Z,105nm,1.4s						
CAN	**Canberra**	**22.61**	**225**	*e*P	**P**	**09 21 24.5**	**+2.0**
	comp=Z,105nm,1.4s						
MTSU	**Mount Surprise**	**22.79**	**272**	P	**P**	**09 21 25.9**	**+1.3**
	baz=23,SNR=16						
QLP	**Quilpie**	**22.94**	**250**	P	**P**	**09 21 27.6**	**+1.6**
	baz=23,SNR=9.8						
OXZ	**Oxford**	**23.08**	**173**	*e*P	**P**	**09 21 30.0**	**+2.8**
CMSA	**Cobar Meteorol**	**23.15**	**237**	P	**P**	**09 21 29.3**	**+1.1**
	baz=23,SNR=8.9						
PMG	**Port Moresby**	**23.17**	**295**	P	**P**	**09 21 29.5**	**+1.1**
	comp=Z,21nm,0.9s,baz=116,slow=5.4,SNR=7.2						
PMG	**Port Moresby**	**23.17**	**295**	*d i*P	**P**	**09 21 28.3**	**-0.2**
PMG				pmax	pmax		
	comp=Z,90nm,0.9s						
PMG	**Port Moresby**	**23.17**	**295**	*e*P	**P**	**09 21 28.6**	**+0.1**
COEN	**Coen**	**24.87**	**281**	P	**P**	**09 21 45.5**	**+1.0**
	baz=25,SNR=7.3						
COEN	**Coen**	**24.87**	**281**	*e*P	**P**	**09 21 43.2**	**-1.3**
STKA	**Stephens Creek**	**26.53**	**239**	P	**P**	**09 22 00.1**	**+0.8**
	comp=Z,12nm,0.9s,baz=78,slow=10,SNR=27						
STKA	**Stephens Creek**	**26.53**	**239**	P	**P**	**09 22 00.6**	**+1.3**
	baz=27,SNR=11						
STKA	**Stephens Creek**	**26.53**	**239**	*e*P	**P**	**09 22 00.2**	**+0.8**
STKA				pmax	pmax		
	comp=Z,50nm,1.6s						
STKA	**Stephens Creek**	**26.53**	**239**	*e*P	**P**	**09 22 00.2**	**+0.8**
	comp=Z,50nm,1.6s						
MANU	**Manus Island**	**27.42**	**309**	*e*P	**P**	**09 22 04.8**	**-2.8**
	comp=Z,902nm,0.8s						
HTT	**Hallett**	**29.16**	**237**	P	**P**	**09 22 23.8**	**+0.8**
	baz=29,SNR=5.6						
BBOO	**Buckleboo**	**31.28**	**240**	*e*pP	pP	09 22 51.6	+2.3
WR5	**Warramunga Arr**	**31.81**	**265**	P	**P**	**09 22 45.4**	**-1.1**
	baz=32						
WB2	**Warramunga Arr**	**31.88**	**265**	*e*P	**P**	**09 22 46.9**	**-0.2**
WB2				*e*pP	**sP**	**09 22 55.7**	**-2.2**
WRAB	**Tennant Creek**	**31.89**	**265**	*i* P	**P**	**09 22 46.8**	**-0.3**
WRAB				pmax	pmax		
	comp=Z,38nm,1.5s						
WRAB	**Tennant Creek**	**31.89**	**265**	*e*P	**P**	**09 22 46.6**	**-0.5**
WRAB				*e*pP	**sP**	**09 22 55.6**	**-2.4**
WRA	**Warramunga Arr**	**31.89**	**265**	P	**P**	**09 22 45.4**	**-1.8**
	comp=Z,2.9nm,0.7s,baz=92,slow=8.5,SNR=25						
AS01	**Alice Springs**	**32.01**	**258**	*e*P	**P**	**09 22 47.4**	**-0.8**
AS01				*e*S	**S**	**09 27 57.6**	**-1.0**
AS31	**Alice Springs**	**32.05**	**258**	*e*P	**P**	**09 22 47.6**	**-0.9**
	comp=Z,23nm,0.9s						
AS31				*e*S	**S**	**09 27 58.2**	**-1.0**
ASAR	**Alice Springs**	**32.05**	**258**	P	**P**	**09 22 47.7**	**-0.9**
	comp=Z,23nm,0.7s,baz=86,slow=8.9,SNR=118						
JAY	**Jayapura**	**32.29**	**300**	P	**P**	**09 22 49.6**	**-1.1**
GENI	**Genyem**	**32.69**	**299**	P	**P**	**09 22 54.7**	**+0.6**
	comp=Z,90nm,1.6s						
MTN	**Manton Dam**	**36.38**	**276**	P	**P**	**09 23 26.1**	**0.0**
	baz=36						
WRKA	**Warakurna**	**37.14**	**255**	P	**P**	**09 23 32.1**	**-0.5**
	baz=37,SNR=8.4						
FAKI	**Fak Fak**	**39.24**	**292**	P	**P**	**09 23 50.6**	**+0.3**
PPT2	**Papeete2**	**39.81**	**93**	*e*S	**S**	**09 29 55.5**	**-2.7**
	comp=Z,144nm,24.1s						
PPT2				*e*LQ	LQ	09 33 07.4	
	comp=Z,959nm,27.0s						
PPT2				*e*LR	LR	09 34 47.6	
	comp=Z,989nm,28.5s						
PPT	**Papeete**	**39.81**	**93**	P	**P**	**09 23 54.3**	**-0.7**
	comp=Z,52nm,0.8s,baz=41,slow=6.3,SNR=6.7						
TIAR	**Tiarei**	**40.03**	**93**	*e*P	**P**	**09 23 56.4**	**-0.5**
	comp=Z,31nm,0.9s						
FITZ	**Fitzroy Crossi**	**40.30**	**266**	P	**P**	**09 23 59.2**	**+0.1**
	comp=Z,10nm,0.8s,baz=136,slow=8.5,SNR=12						
FITZ	**Fitzroy Crossi**	**40.30**	**266**	P	**P**	**09 23 59.5**	**+0.4**
	baz=40,SNR=6.7						
FITZ	**Fitzroy Crossi**	**40.30**	**266**	*e*P	**P**	**09 23 59.3**	**+0.1**
FITZ				*e*pP	**sP**	**09 24 08.9**	**-1.2**
BNDI	**Bandanaira**	**40.57**	**288**	P	**P**	**09 24 02.8**	**+1.5**
SWI	**Sorong**	**41.11**	**294**	P	**P**	**09 24 08.1**	**+2.3**
	comp=Z,23nm,1.0s,comp=Z,2μm						
SWI	**Sorong**	**41.11**	**294**	P	**P**	**09 24 04.0**	**-1.8**
SWI				pmax	pmax		
	comp=Z,22nm,1.0s						
LBMI	**Labuha**	**44.48**	**291**	P	**P**	**09 24 36.0**	**+2.8**
	comp=Z,48nm,2.0s,comp=Z,40μm						
SANI	**Sanana**	**45.16**	**288**	P	**P**	**09 24 40.3**	**+1.7**
	comp=Z,90nm,1.1s,comp=Z,1μm						
MMRI	**Maumere**	**45.99**	**278**	P	**P**	**09 24 47.3**	**+2.1**
NWAO	**Narrogin (SRO)**	**46.95**	**244**	*e*P	**P**	**09 24 52.8**	**+0.3**
NWAO				*e**PP	**pP**	**09 25 01.0**	**+0.6**
NWAO	**Narrogin (SRO)**	**46.95**	**244**	*e*P	**P**	**09 24 52.8**	**+0.3**
NWAO				*e*pP	**pP**	**09 25 01.0**	**+0.6**
WSI	**Waingapu**	**47.46**	**276**	P	**P**	**09 25 00.2**	**+3.5**
	comp=Z,381nm,0.5s,comp=Z,27μm						
LUWI	**Luwuk**	**48.49**	**288**	P	**P**	**09 25 05.7**	**+1.1**
	comp=Z,78nm,1.2s,comp=Z,8μm						
LUWI	**Luwuk**	**48.49**	**288**	*e*P	**P**	**09 25 05.4**	**+0.8**
	comp=Z,65nm,1.0s						
LUWI				*e*pP	**sP**	**09 25 15.1**	**-0.6**
KAPI	**Kappang**	**49.60**	**281**	*e*P	**P**	**09 25 13.9**	**+0.8**
	comp=Z,106nm,1.5s						
SPSI	**Sidrap Palu**	**49.99**	**282**	P	P	09 25 26.0	+10
TWSI	**Taliwang, Sumb**	**50.95**	**275**	P	**P**	**09 25 26.2**	**+2.8**
	comp=Z,41nm,1.3s						
TAOE	**Nuku Hiva Isla**	**50.95**	**85**	*e*LR	LR	09 39 56.2	
	comp=Z,551nm,27.9s						
PCI	**Palu**	**51.18**	**286**	P	**P**	**09 25 25.2**	**0.0**
KIP	**Kipapa**	**52.99**	**40**	⇑*i*P	**P**	**09 25 36.1**	**-2.3**
JCJ	**Chichijima**	**53.58**	**331**	P	**P**	**09 25 42.8**	**+0.1**
	comp=Z,49nm,0.8s,baz=143,slow=18,SNR=4.4						
CBIJ	**Chichi jima**	**53.58**	**331**	P	**P**	**09 25 42.8**	**+0.1**
MYLDM	**Lahad Datu**	**55.15**	**292**	*e*pP	pP	09 26 05.5	+3.1
VNDA	**Vanda**	**57.26**	**182**	P	**P**	**09 26 08.3**	**-0.2**
	comp=Z,1.9nm,0.8s,baz=352,slow=7.8,SNR=7.8						
SBA	**Scott Base**	**57.51**	**180**	*e*P	**P**	**09 26 11.5**	**+1.3**
SBA				pmax	pmax		
	comp=Z,30nm,1.4s						
SBA	**Scott Base**	**57.51**	**180**	*e*P	**P**	**09 26 11.5**	**+1.3**
	comp=Z,30nm,1.4s						
KKM	**Kota Kinabalu**	**57.56**	**292**	*e*P	**P**	**09 26 11.6**	**-0.1**
	comp=Z,40nm,1.1s						
KKM				*e*pP	**sP**	**09 26 22.9**	**+0.1**
BTM	**Bintulu**	**59.03**	**287**	⇑P	**P**	**09 26 20.1**	**-1.8**
STKI	**Sintang**	**59.18**	**283**	P	**P**	**09 26 24.2**	**+1.3**
	comp=Z,55nm,0.9s,comp=Z,25μm						
SBUM	**Sibu**	**59.49**	**286**	*e*P	**P**	**09 26 25.7**	**+0.7**
SBUM				*e*pP	**sP**	**09 26 36.4**	**+0.2**
KSM	**Kuching**	**60.82**	**284**	⇓P	**P**	**09 26 33.2**	**-1.0**
KSM	**Kuching**	**60.82**	**284**	*e*P	**P**	**09 26 33.5**	**-0.6**
KSM				*e*pP	**sP**	**09 26 43.9**	**-1.5**
MJAR	**Matsushiro Arr**	**63.38**	**333**	P	**P**	**09 26 50.7**	**-0.2**
	comp=Z,14nm,1.0s,baz=168,slow=6.9,SNR=21						
MAJO	**Matsushiro**	**63.38**	**333**	*d i*P	**P**	**09 26 50.6**	**-0.3**
MAJO				pmax	pmax		
	comp=Z,120nm,1.0s						
MAJO	**Matsushiro**	**63.38**	**333**	*e*P	**P**	**09 26 51.0**	**+0.1**
	comp=Z,30nm,1.3s						
MAT	**Matsushiro**	**63.38**	**333**	P	**P**	**09 26 50.6**	**-0.3**
MJB9	**Matsu-Tunnel**	**63.39**	**333**	*e*P	**P**	**09 26 51.1**	**+0.2**
	comp=Z,7.4nm,1.2s						
TPUB	**Ta-pu**	**63.64**	**311**	*e*P	**P**	**09 26 52.5**	**-0.4**
	comp=Z,39nm,0.9s						
YHNB	**Yeheng**	**63.98**	**312**	*e*P	**P**	**09 26 54.6**	**-0.6**
MYKOM	**Kota Tinggi**	**66.86**	**281**	*e*P	**P**	**09 27 14.8**	**+0.9**
	comp=Z,18nm,0.3s						
ASAJ	**Asahikawa**	**68.39**	**340**	*e*P	**P**	**09 27 24.5**	**+1.6**
	comp=Z,23nm,1.0s						
BKNI	**Bangkinang**	**68.90**	**279**	*e*P	**P**	**09 27 27.3**	**+0.5**
KSRS	**Korea Array**	**68.99**	**326**	P	**P**	**09 27 27.4**	**+0.6**
	comp=Z,4.5nm,0.9s,baz=141,slow=6.8,SNR=12						
KSAR	**Wonju Array Be**	**69.00**	**326**	P	**P**	**09 27 27.4**	**+0.5**
KSAR	**Wonju Array Be**	**69.00**	**326**	P	**P**	**09 27 27.4**	**+0.5**
KS01	**Wonju Array Si**	**69.02**	**326**	*e*P	**P**	**09 27 26.5**	**-0.5**
QSPA	**South Pole Qui**	**69.67**	**180**	*e*P	**P**	**09 27 31.0**	**+0.1**
VLA	**Vladivostok**	**71.55**	**333**	⇑*i*P	**P**	**09 27 42.5**	**+0.2**
VLA				pmax	pmax		
	comp=Z,45nm,1.1s						
PSI	**Prapat**	**71.79**	**280**	*e*P	**P**	**09 27 43.2**	**-1.5**
PSI				*e**PP	**sP**	**09 27 54.1**	**-1.9**
PSI				pmax	pmax		
	comp=Z,24nm,1.1s						
PSI	**Prapat**	**71.79**	**280**	*e*P	**P**	**09 27 43.2**	**-1.5**
	comp=Z,24nm,1.1s						
PSI				*e*pP	**sP**	**09 27 54.1**	**-1.9**
USRK	**Ussuriysk Ar.**	**72.38**	**333**	P	**P**	**09 27 48.4**	**+1.1**
	comp=Z,26nm,1.0s,baz=145,slow=4.5,SNR=52						
SKNT	**Sakolnakorn**	**73.27**	**296**	P	**P**	**09 27 53.6**	**+0.4**
	comp=Z,37nm,0.9s						
DL2	**Dalian**	**73.43**	**324**	P	**P**	**09 27 54.5**	**+0.8**
DL2				pmax	pmax		
	comp=Z,41nm,0.8s						
MDJ	**Mudanjiang**	**73.74**	**332**	P	**P**	**09 27 56.4**	**+1.0**
MDJ				pP	sP	09 28 06.9	+0.2
MDJ				sP	PcP	09 28 09.3	-1.6
MDJ				pmax	pmax		
	comp=Z,35nm,1.1s						
MDJ				pmax	pmax		
	comp=Z,370nm,10.6s						
MDJ	**Mudanjiang**	**73.74**	**332**	*e*P	**P**	**09 27 55.4**	**+0.1**
	comp=Z,7.1nm,0.4s						
PETK	**Petropavlovsk-**	**73.77**	**353**	P	**P**	**09 27 56.1**	**+0.7**
	comp=Z,11nm,0.8s,baz=142,slow=8.1,SNR=12						
HABR	**Khabarovsk**	**74.74**	**338**	*e*P	**P**	**09 27 59.4**	**-1.7**
HABR				*e*		09 28 13.6	
HABR				*e*		09 30 46.5	
HABR				*e*S	**S**	**09 37 31.9**	**-3.8**
HABR				*e**SS	SKSac	09 37 56.4	-11
HABR				*e*		09 38 06.6	
HABR				*e*SS	**SS**	**09 42 20.4**	**-3.8**
HABR				*e*SSS	SSS	09 45 43.0	
HABR				pmax	pmax		
	comp=N,19nm,1.9s						
HABR				pmax	pmax		
	comp=Z,25nm,1.9s						
HABR				pmax	pmax		
	comp=E,8.0nm,0.7s						
HABR				MLR	MLR		
	comp=Z,71nm,16.0s						
CN2	**Changchun**	**75.01**	**329**	*e*P	**P**	**09 28 03.4**	**+0.6**
CN2				*e*pP	sP	09 28 14.2	+0.1
CN2				pmax	pmax		
	comp=Z,20nm,0.8s						
PBKT	**Sadao Pong**	**75.65**	**294**	P	**P**	**09 28 08.6**	**+1.6**
	comp=Z,16nm,1.3s,comp=Z,1μm						
NIKH	**Nikolski High**	**75.69**	**14**	*e*P	**P**	**09 28 06.1**	**-0.4**
ENH	**Enshi**	**75.76**	**310**	*e*P	**P**	**09 28 07.4**	**-0.1**
	comp=Z,11nm,0.8s						
GYA	**Guiyang**	**75.79**	**306**	P	**P**	**09 28 10.2**	**+2.4**
GYA				pP	PcP	09 28 21.8	+1.4
GYA				PP	**PP**	**09 31 02.6**	**+4.3**
GYA				S	**S**	**09 37 48.0**	**-0.7**
GYA				SKS	**SKSac**	**09 38 12.4**	**-4.5**
GYA				SS	**SS**	**09 42 43.0**	**+1.7**
GYA				pmax	pmax		
	comp=Z,20nm,1.0s						
GYA				pmax	pmax		
	comp=Z,130nm,6.4s						
GYA				LR	LR		
	comp=Z,530nm,19.4s						
GYA				LR	LR		
	comp=Z,460nm,20.0s						
GYA				LR	LR		
	comp=Z,510nm,19.6s						
UTTA	**Uttaradit**	**76.53**	**295**	P	**P**	**09 28 13.6**	**+1.6**
	comp=Z,4.2nm,1.1s						
UNV	**Unalaska Valle**	**77.05**	**15**	*e*P	**P**	**09 28 13.5**	**-0.7**
MAW	**Mawson**	**77.06**	**202**	P	**P**	**09 28 15.4**	**+1.3**
	comp=Z,12nm,1.1s,baz=109,slow=8.3,SNR=8.2						
MAW	**Mawson**	**77.06**	**202**	*e*P	**P**	**09 28 15.5**	**+1.3**
MAW				*e**PP	**PcP**	**09 28 25.5**	**+0.5**
MAW	**Mawson**	**77.06**	**202**	*e*P	**P**	**09 28 15.5**	**+1.3**
MAW				*e*pP	**PcP**	**09 28 25.5**	**+0.5**
NKL	**Nikolayevsk**	**77.06**	**343**	*i* P	**P**	**09 28 15.2**	**+1.0**
NKL				pmax	pmax		
	comp=Z,30nm,1.0s						
BJI	**Beijing**	**77.31**	**322**	P	**P**	**09 28 13.2**	**-2.7**
BJI				pmax	pmax		
	comp=Z,5.0nm,1.1s						
BJI				pmax	pmax		
	comp=Z,180nm,4.7s						
LAMP	**Lampang**	**77.66**	**295**	P	**P**	**09 28 20.6**	**+2.2**
	comp=Z,16nm,0.9s						
CRAI	**Chiangrai**	**77.80**	**297**	P	**P**	**09 28 20.2**	**+1.0**
	comp=Z,114nm,2.6s,comp=Z,5μm						
KMI	**Kunming**	**78.17**	**302**	P	**P**	**09 28 23.1**	**+1.7**
KMI				pmax	pmax		
	comp=Z,31nm,1.0s						
KMI				pmax	pmax		
	comp=Z,130nm,4.5s						
CMAR	**Chiang Mai Arr**	**78.22**	**295**	P	**P**	**09 28 22.8**	**+1.3**
	comp=Z,12nm,0.6s,baz=133,slow=4.6,SNR=54						
CMAR	**Chiang Mai Arr**	**78.22**	**295**	*ce*P	**P**	**09 28 23.2**	**+1.7**
CMAR				pmax	pmax		
	comp=Z,12nm,0.6s						
CMMT	**Chiang Mai**	**78.37**	**295**	P	**P**	**09 28 23.4**	**+1.1**
	comp=Z,34nm,1.0s						
CHTO	**Chiang Mai**	**78.37**	**295**	P	**P**	**09 28 23.5**	**+1.1**
	comp=Z,151nm,1.0s						
CHTO	**Chiang Mai**	**78.37**	**295**	*e*P	**P**	**09 28 22.1**	**-0.2**
CHTO	**Chiang Mai**	**78.37**	**295**	*e*P	**P**	**09 28 22.1**	**-0.2**
CMAI	**Chiengmai2**	**78.78**	**296**	P	**P**	**09 28 26.4**	**+1.6**
	comp=Z,25nm,1.1s,comp=Z,711nm						
CD2	**Chengdu**	**80.27**	**308**	P	**P**	**09 28 32.1**	**-0.4**
CD2				sP	sP	09 28 48.3	+4.4
CD2				PP	**PP**	**09 31 34.9**	**-0.8**
CD2				S	**S**	**09 38 35.4**	**-1.2**
CD2				sS	ScS	09 38 55.3	-1.5
CD2				SS	**SS**	**09 43 48.1**	**-0.5**
CD2				pmax	pmax		
	comp=Z,30nm,1.0s						
CD2				pmax	pmax		
	comp=Z,330nm,7.2s						
CD2				LR	LR		
	comp=Z,300nm,13.2s						
CD2				LR	LR		
	comp=Z,270nm,18.0s						
HHC	**Hu-ho-hao-te**	**80.55**	**320**	*e*P	**P**	**09 28 35.3**	**+1.4**
HHC				S	**S**	**09 38 42.7**	**+3.4**
HHC				pmax	pmax		
	comp=Z,31nm,1.4s						
HHC				pmax	pmax		
	comp=Z,240nm,7.6s						
HHC				LR	LR		
	comp=Z,230nm,18.0s						
HHC				LR	LR		
	comp=Z,200nm,17.6s						
HHC				LR	LR		
	comp=Z,180nm,17.6s						
LZH	**Lanzhou**	**82.88**	**313**	*e*P	**P**	**09 28 47.8**	**+1.4**
LZH				pP	sP	09 29 00.9	+3.1
LZH				sP	pP	09 29 05.1	+10
LZH				PP	**PP**	**09 32 00.4**	**+3.2**
LZH				*e*S	**S**	**09 39 00.0**	**-3.6**
LZH				sS	ScS	09 39 16.0	-2.1
LZH				SS	**SS**	**09 44 29.1**	**+1.6**
LZH				pmax	pmax		
	comp=Z,25nm,1.0s						
LZH				pmax	pmax		
	comp=Z,110nm,4.0s						
LZH				LR	LR		
	comp=Z,1μm,18.3s						
SYO	**Syowa Base**	**83.60**	**196**	⇑*e*P	**P**	**09 28 48.0**	**-1.3**
SEY	**Seymchan**	**84.00**	**353**	⇑*i*P	**P**	**09 28 51.6**	**+0.4**
KDAK	**Kodiak Island**	**84.39**	**20**	*ce*P	**P**	**09 28 54.2**	**+0.9**
ULN	**Ulaanbaatar**	**87.29**	**324**	*d i*P	**P**	**09 29 08.4**	**+0.2**
ULN				pmax	pmax		
	comp=Z,26nm,1.3s						
ULN	**Ulaanbaatar**	**87.29**	**324**	*e*P	**P**	**09 29 08.3**	**+0.2**
GTA	**Gaotai**	**87.31**	**314**	*e*P	**P**	**09 29 09.3**	**+0.8**
GTA				pP	sP	09 29 19.6	-0.3
GTA				sP	pP	09 29 23.6	+6.7
GTA				pmax	pmax		
	comp=Z,7.0nm,1.0s						
KMRM	**Mail Ridge**	**87.31**	**45**	*e*P	**P**	**09 29 09.6**	**+1.2**
PKM	**Mcpherson Peak**	**87.53**	**51**	P	**P**	**09 29 09.5**	**-0.2**
	baz=243						
SMMC	**Simmler**	**87.59**	**51**	P	**P**	**09 29 09.3**	**-0.5**
	baz=243						
KHMM	**Horse Mountain**	**87.62**	**45**	*e*P	**P**	**09 29 11.2**	**+1.3**
SCI2	**San Clemente I**	**87.62**	**54**	P	**P**	**09 29 09.9**	**0.0**
	baz=244						
SONM	**Songino Array**	**87.64**	**323**	P	**P**	**09 29 10.2**	**+0.4**
	comp=Z,2.5nm,0.4s,baz=251,slow=23,SNR=4.0						
SONA1	**Songino Array**	**87.64**	**323**	*e*P	**P**	**09 29 10.7**	**+0.8**
YAK	**Yakutsk**	**87.72**	**343**	*e*P	**P**	**09 29 09.3**	**-0.3**
YAK				pmax	pmax		
	comp=Z,36nm,1.4s						
YAK				pmax	pmax		
	comp=N,9.0nm,1.2s						
YAK				pmax	pmax		
	comp=E,7.0nm,1.6s						
YAK	**Yakutsk**	**87.72**	**343**	*e*P	**P**	**09 29 10.0**	**+0.3**
SNAA	**Sanae**	**87.98**	**183**	P	**P**	**09 29 10.8**	**-0.4**
SNAA	**Sanae**	**87.98**	**183**	⇑*i*P	**P**	**09 29 10.0**	**-1.1**
SNAA	**Sanae**	**87.98**	**183**	*e*P	**P**	**09 29 10.2**	**-1.0**
SNAA				*e*pP	**sP**	**09 29 20.5**	**-2.1**
BILL	**

MLAC	Mammoth, Mammo	89.46	49	P		P	09 29 18.9	+0.1
	baz=244,SNR=5.3							
PFO	Pinyon Flats O	89.47	54	eP		P	09 29 19.0	+0.1
PFO	Pinyon Flats O	89.47	54	eP		P	09 29 19.0	+0.1
TPFO	Pinon Flats	89.47	54	P		P	09 29 18.4	-0.5
	baz=245,SNR=7.4							
RRX	Edison Barstow	89.60	52	P		P	09 29 18.5	-0.8
	baz=245							
TIN	Tinemaha, Big	89.64	50	P		P	09 29 19.4	-0.1
	baz=244							
SWSC	Sam W. Stewart	89.70	55	P		P	09 29 19.4	-0.3
	baz=245,SNR=6.4							
MPMC	Manual Prospec	89.75	51	P		P	09 29 19.9	-0.3
	baz=244,SNR=22							
K04D	Chiloquin, OR	89.76	44	P		P	09 29 20.1	+0.1
	baz=242							
DAC	Darwin (Calif)	89.76	51	eP		P	09 29 20.4	+0.1
DAC	Darwin (Calif)	89.76	51	eP		P	09 29 20.4	+0.1
I04A	Tendick Farm,	89.89	43	P		P	09 29 20.0	-0.5
	baz=241							
GSC	Goldstone, Bar	89.93	52	P		P	09 29 20.5	-0.4
	baz=245,SNR=7.0							
GSC	Goldstone, Bar	89.93	52	eP		P	09 29 21.1	+0.2
GSC	Goldstone, Bar	89.93	52	eP		P	09 29 21.1	+0.2
BELC	Belle Mtn. Jos	89.98	54	P		P	09 29 21.0	-0.3
	baz=245,SNR=18							
BOD	Bodaibo	90.00	334	eP		P	09 29 19.7	-0.8
BOD								
	comp=Z,2.0nm,1.3s							
PAHR	Pah Rah Range	90.00	47	eP		P	09 29 21.6	+0.3
G03D	McMinnville, O	90.05	41	P		P	09 29 21.2	+0.1
	baz=241,SNR=6.2							
HEC	Hector,Ludlow	90.08	53	P		P	09 29 21.2	-0.4
	baz=245,SNR=5.9							
NVAR	Mina Array Bea	90.19	49	P		P	09 29 22.2	0.0
	comp=Z,14nm,0.8s,baz=227,slow=8.1,SNR=94							
GRAC	Grapevine Rang	90.24	50	P		P	09 29 22.3	+0.1
	baz=244,SNR=20							
BC3	Big Chuckawall	90.25	54	P		P	09 29 22.0	-0.5
	baz=246,SNR=8.0							
K05A	Summer Lake	90.36	44	eP		P	09 29 23.8	+0.9
MOD	Modoc Plateau	90.37	45	eP		P	09 29 23.2	+0.3
FURC	Furnace Creek,	90.38	51	P		P	09 29 22.6	-0.2
	baz=245,SNR=19							
J05D	Fort Rock, OR	90.40	43	P		P	09 29 22.9	-0.1
	baz=242,SNR=67							
H04A	Detroit Lake	90.46	42	eP		P	09 29 22.4	-0.7
GLA	Glamis	90.48	55	P		P	09 29 23.7	+0.2
	baz=246,SNR=5.2							
GLA	Glamis	90.48	55	eP		P	09 29 24.9	+1.4
GLA	Glamis	90.48	55	eP		P	09 29 24.9	+1.4
E03A	Lebam	90.52	40	eP		P	09 29 24.2	+1.0
GMRC	Granite Mounta	90.56	53	P		P	09 29 23.8	-0.1
	baz=246,SNR=8.7							
F04D	Rainier, OR	90.62	40	P		P	09 29 24.0	+0.3
	baz=241							
TUQ	Turquoise Moun	90.64	52	P		P	09 29 23.9	-0.4
	baz=245,SNR=16							
IRM	Iron Mountain	90.69	54	P		P	09 29 24.3	-0.2
	baz=246,SNR=17							
ZAK	Zakamensk	90.74	325	eP		P	09 29 22.8	-1.5
ZAK				pmax		pmax		
	comp=Z,8.0nm,1.4s							
NLWA	Neilton Lookou	90.75	39	eP		P	09 29 25.1	+0.8
I05D	Terrebonne, OR	90.83	43	P		P	09 29 24.8	0.0
	baz=242,SNR=12							
F04A	Amboy	90.91	41	eP		P	09 29 25.6	+0.5
Y12C	Blythe	91.00	54	P		P	09 29 25.9	+0.1
	baz=246,SNR=8.6							
Y12C	Blythe	91.00	54	eP		P	09 29 25.8	+0.1
TPNV	Topopah Spring	91.03	51	P		P	09 29 25.8	-0.2
	baz=245,SNR=30							
TPNV	Topopah Spring	91.03	51	eP		P	09 29 26.2	+0.1
TPNV	Topopah Spring	91.03	51	eP		P	09 29 26.2	+0.1
LDFC	Landfair	91.10	53	eP		P	09 29 27.1	+0.7
CCB	Clear Creek Bu	91.22	17	eP		P	09 29 28.1	+2.1
WRAK	Wrangell Islan	91.25	29	eP		P	09 29 26.6	+0.3
G05D	Wamic, OR	91.27	42	P		P	09 29 26.7	-0.1
	baz=242							
MDM	Murphy Dome	91.34	17	eP		P	09 29 25.2	-1.4
COLA	College	91.38	17	eP		P	09 29 26.1	-0.7
COLA				pmax		pmax		
	comp=Z,5.0nm,1.3s							
PDMCI	Parker Dam,Lak	91.51	54	P		P	09 29 28.2	0.0
	baz=246,SNR=8.6							
ILAR	Eielson Array	91.58	18	P		P	09 29 25.9	-1.8
	comp=Z,2.7nm,0.8s,baz=236,slow=4.8,SNR=19							
ILB	Eielson Array	91.58	18	eP		P	09 29 28.2	+0.5
IL1	Eielson Array	91.58	18	eP		P	09 29 25.1	-2.6
214A	Organ Pipe Nat	91.61	57	P		P	09 29 28.7	0.0
	baz=247,SNR=7.9							
PGC	Sidney	91.62	38	eP		P	09 29 29.1	+0.9
SHPR	Sheep Range	91.64	52	eP		P	09 29 29.4	+0.5
LON	Longmire	91.67	40	eP		P	09 29 29.1	+0.4
LON	Longmire	91.67	40	eP		P	09 29 29.1	+0.4
G06A	Carlson Farm,	91.69	42	eP		P	09 29 28.9	+0.1
WVOR	Wild Horse Val	91.72	45	eP		P	09 29 29.5	+0.4
WVOR	Wild Horse Val	91.72	45	eP		P	09 29 29.5	+0.4
D05A	Enumclaw	91.77	40	eP		P	09 29 30.0	+1.0
SKAG	Skagway	91.84	25	eP		P	09 29 29.4	+0.4
A04D	Lummi Island	92.08	38	P		P	09 29 30.3	-0.2
	baz=241							
R11A	Troy Canyon, C	92.09	50	P		P	09 29 30.7	-0.3
	baz=246,SNR=9.6							
R11A	Troy Canyon, C	92.09	50	eP		P	09 29 30.8	-0.1
B05A	Bryant	92.22	39	P		P	09 29 30.9	-0.2
	baz=242,SNR=9.0							
COLD	Coldfoot	92.60	15	eP		P	09 29 32.6	+0.2
G08A	Pilot Rock	92.77	42	eP		P	09 29 33.9	0.0
HAWA	Hanford	92.90	41	eP		P	09 29 34.6	+0.3
LCMT	Little Creek M	93.25	52	eP		P	09 29 36.5	+0.2
EGAK	Eagle	93.28	19	eP		P	09 29 34.8	-0.9
ELK	Elko	93.31	48	eP		P	09 29 36.8	+0.1
ELK	Elko	93.31	48	eP		P	09 29 36.8	+0.1
TUC	Tucson	93.34	57	P		P	09 29 36.3	-0.5
	baz=248							
TUC	Tucson	93.34	57	eP		P	09 29 37.4	+0.7
TUC	Tucson	93.34	57	eP		P	09 29 37.4	+0.7
PSUT	Pine Spring	93.41	50	eP		P	09 29 37.6	+0.5
KNB	Kanab	93.57	52	eP		P	09 29 38.3	+0.5
KNB	Kanab	93.57	52	eP		P	09 29 38.3	+0.5
D08A	Wollman Farm,	93.58	41	eP		P	09 29 39.0	+1.6
B08A	Colville Reser	93.90	40	eP		P	09 29 40.0	+1.0
MFID	Camas Ranch	94.00	45	eP		P	09 29 39.6	0.0
WUAZ	Wupatki	94.08	54	P		P	09 29 40.2	0.0
	baz=248							
WUAZ	Wupatki	94.08	54	eP		P	09 29 41.1	+0.9
PKCU	Pink Cliffs	94.11	52	eP		P	09 29 42.1	+1.6
F10A	Beach Ranch, E	94.16	42	eP		P	09 29 40.0	-0.2
MTPU	Mount Pierson	94.43	51	eP		P	09 29 42.7	+0.7
MSU	Marysvale	94.61	51	eP		P	09 29 43.3	+0.6
MSU	Marysvale	94.61	51	eP		P	09 29 43.3	+0.6
DUG	Dugway, Tooele	94.80	49	P		P	09 29 42.9	-0.5
	baz=247							
HLID	Hailey	95.00	45	P		P	09 29 43.9	-0.3
	baz=247							
HLID	Hailey	95.00	45	eP		P	09 29 44.3	0.0
W18A	Petrified Fore	95.18	55	P		P	09 29 44.8	-0.5
	baz=249							
NEW	Newport	95.19	40	P		P	09 29 44.2	-0.7
	baz=245							
HVU	Hansel Valley	95.43	47	eP		P	09 29 46.5	+0.3
HVU	Hansel Valley	95.43	47	eP		P	09 29 46.5	+0.3
Q16A	Castle Valley	95.49	51	eP		P	09 29 47.6	+0.9
TMUT	Trail Mountain	95.61	50	eP		P	09 29 48.1	+0.8
TIXI	Tiksi	95.69	348	⇑iP		P	09 29 45.6	-0.9
TIXI				pmax		pmax		
	comp=Z,2.0nm,1.0s							
SRU	San Rafael Swe	96.03	51	eP		P	09 29 49.4	+0.3
SRU	San Rafael Swe	96.03	51	eP		P	09 29 49.4	+0.3
TCUT	Toone Canyon	96.13	48	eP		P	09 29 50.0	+0.4
HWUT	Hardware Ranch	96.20	48	eP		P	09 29 48.8	-1.0
DLMT	Dillon	96.90	44	eP		P	09 29 52.5	-0.3
REDW	Red Top Meadow	97.33	47	eP		Pdif	09 29 55.7	+0.6
WMQ	Urumqi	97.39	314	eP		Pdif	09 29 56.2	+1.1
MNTX	Cornudas Mount	97.42	59	P		P	09 29 54.9	-0.5
	baz=251							
MNTX	Cornudas Mount	97.42	59	eP		P	09 29 55.6	+0.3
IMW	Indian Meadow	97.46	46	eP		P	09 29 55.8	+0.2
	comp=Z,3.5nm,1.0s							
BOZ	Bozeman (W)	97.64	44	P		P	09 29 55.6	-0.5
	baz=249							
BW06	Boulder Array	98.01	47	P		P	09 29 57.7	-0.4
	baz=250							
BW06	Boulder Array	98.01	47	eP		P	09 29 56.9	-1.1
PDAR	Pinedale Array	98.01	47	P		P	09 29 57.0	-1.0
	comp=Z,0.8nm,0.8s,baz=203,slow=3.1,SNR=6.3							
TXAR	Lajitas Array	98.05	62	P		Pdif	09 29 58.8	+0.4
	comp=Z,0.7nm,0.9s,baz=186,slow=2.5,SNR=4.6							
S22A	4UR Ranch, Cre	98.28	53	Pdiff		P	09 29 59.4	-0.1
	baz=251							
RLMT	Red Lodge	99.01	45	Pdiff		Pdif	09 30 03.1	+0.7
	baz=250							
EGMT	Eagleton	99.67	42	Pdiff		Pdif	09 30 05.8	+0.6
	baz=250							
ISCO	Idaho Springs	99.84	51	Pdiff		Pdif	09 30 06.4	0.0
	baz=252							
T25A	Trinidad	99.91	54	Pdiff		Pdif	09 30 07.1	+0.4
	baz=252							
LAO	LASA Array	101.53	44	Pdiff		Pdif	09 30 14.3	+1.0
	baz=253							
MKAR	Makanchi Array	101.97	316	P		Pdif	09 30 15.4	+0.1
	comp=Z,0.3nm,0.6s,baz=96,slow=5.5,SNR=2.9							
YKA	Yellowknife Ar	102.07	28	P		Pdif	09 30 14.8	-0.5
	comp=Z,0.7nm,0.7s,baz=255,slow=4.7,SNR=24							
ZALV	Zalesovo Beam	102.53	323	P		Pdif	09 30 16.1	-1.4
	comp=Z,0.6nm,0.4s,baz=45,slow=32,SNR=2.3							
334A	Lometa	103.12	61	Pdiff		Pdif	09 30 22.4	+1.6
	baz=254							
736A	Circle Diamond	103.45	64	Pdiff		Pdif	09 30 23.1	+0.9
	baz=254							
C25A	Freed Ranch, W	103.75	44	Pdiff		Pdif	09 30 23.6	+0.3
	baz=255							
C26A	Wahner Farm, P	104.54	44	Pdiff		Pdif	09 30 27.9	+1.2
	baz=256							
E27A	Carson	104.55	46	Pdiff		Pdif	09 30 27.8	+1.0
	baz=256							
BRVK	Borovoye	110.83	320	⇑iPKIKP		PKiKP	09 34 53.6	-0.5
BRVK				pmax		pmax		
	comp=Z,4.0nm,1.7s							
ARU	Arti	117.67	324	iPKIKP		PKPdf	09 35 06.7	-0.4
ARU							09 36 17.4	
ARU							09 42 14.3	
AKTO	Aktyubinsk	118.34	317	PKP		PKPdf	09 35 08.4	-0.2
	comp=Z,1.9nm,0.8s,baz=204,slow=3.1,SNR=5.5							
ARCES	ARCESS Array B	125.96	345	PKP		PKPdf	09 35 22.3	-0.4
	comp=Z,2.5nm,0.6s,baz=49,slow=2.4,SNR=13							
KLMR	Klimovskoe	126.15	332	ePKIKP		PKPdf	09 35 21.7	-1.6
KLMR				e			09 37 16.5	
KLMR				pmax		pmax		
	comp=Z,17nm,1.0s							
KIV	Kislovodsk	129.39	311	ePKIKP		PKPdf	09 35 29.9	-0.2
KIV				pmax		pmax		
	comp=Z,7.0nm,1.1s							
LPSR	Galich'ya Gora	129.63	322	ePKIKP		PKPdf	09 35 30.4	+0.3
LPSR				pmax		pmax		
	comp=Z,20nm,1.6s							
VSR	Storozhevoye	129.94	321	ePKIKP		PKPdf	09 35 28.5	-2.3
VSR				pmax		pmax		
	comp=Z,10.0nm,1.4s							
OBN	Obninsk	129.99	326	⇑iPKIKP		PKPdf	09 35 32.1	+1.4
OBN				pmax		pmax		
	comp=Z,6.0nm,0.5s							
FINES	FINESS Array B	131.32	337	PKP		PKPdf	09 35 31.6	-1.5
	comp=Z,3.5nm,0.9s,baz=358,slow=9.9,SNR=6.7							
AKASG	Malin Array Be	135.92	323	PKP		PKPdf	09 35 41.6	-0.5
	comp=Z,0.5nm,0.2s,baz=64,slow=2.2,SNR=4.3							
NB2	NORSAR Subarra	136.32	344	PKPdf		PKPdf	09 35 43.4	+0.8
	comp=Z,2.2nm,1.0s,baz=31,slow=1.9							
NOA	NORSAR Array B	136.32	344	PKP		PKPdf	09 35 41.7	-0.9
	comp=Z,1.5nm,0.8s,baz=31,slow=2.0,SNR=4.5							
BRTR	Keskin Array B	136.84	307	PKP		PKPdf	09 35 44.0	-0.3
	comp=Z,1.5nm,1.0s,baz=100,slow=2.8,SNR=7.4							
EIL	Elat	137.01	292	PKP		PKPdf	09 35 44.6	-0.2
	comp=Z,2.8nm,0.7s,baz=244,slow=3.2,SNR=4.1							
KOLS	Kolonicke sedl	140.69	324	ePKIKP		PKPdf	09 35 51.4	+0.5
KOLS	Kolonicke sedl	140.69	324	ePKP		PKPdf	09 35 51.4	+0.5
CRVS	Cervenica-Dubn	141.14	325	ePKIKP		PKPdf	09 35 52.9	+1.1
CRVS	Cervenica-Dubn	141.14	325	ePKP		PKPdf	09 35 52.9	+1.1
KECS	Kecovo	141.91	325	ePKIKP		PKPdf	09 35 54.8	+1.7
KECS	Kecovo	141.91	325	ePKP		PKPdf	09 35 54.8	+1.7
VYHS	Vyhne	142.78	326	ePKIKP		PKPdf	09 35 53.2	-1.5
VYHS	Vyhne	142.78	326	ePKP		PKPdf	09 35 53.2	-1.5
BRG	Berggiesshubel	143.51	333	ePKP		PKPbc	09 35 53.7	+0.5
	comp=Z,26nm,1.6s							
BRG	Berggiesshubel	143.51	333	ePKIKP		PKPbc	09 35 53.7	+0.5
BRG				pmax		pmax		
	comp=Z,11nm,1.6s							
CLL	Collm	143.59	334	iPKPdf		PKPab	09 35 53.2	+0.7
	comp=Z,15nm,1.3s							
CLL	Collm	143.59	334	iPKIKP		PKPab	09 35 53.2	+0.7
CLL				pmax		pmax		
	comp=Z,15nm,1.3s							
PRU	Pruhonice	143.89	331	ePKP		PKPbc	09 35 54.6	+0.3
PRU	Pruhonice	143.89	331	ePKIKP		PKPbc	09 35 54.6	+0.3
NKC	Novy Kostel	144.63	333	ePKP		PKPbc	09 35 57.5	+0.8
NKC	Novy Kostel	144.63	333	ePKIKP		PKPbc	09 35 57.5	+0.8
DIVS	Divibare	144.65	319	P		PKPab	09 35 56.9	0.0
CONA	Conrad Observa	144.68	327	iPKPdf		PKPdf	09 35 58.1	0.0
	comp=Z,51nm,1.3s,SNR=21							
KHC	Kasperske Hory	144.94	331	ePKP		PKPdf	09 35 58.4	-0.1
KHC				ex		x	09 36 19.2	
KHC	Kasperske Hory	144.94	331	ePKIKP		PKPab	09 35 57.9	+0.2
KHC	Kasperske Hory	144.94	331	ePKPdf		PKPab	09 35 57.9	+0.2
GERES	GERESS Array B	145.09	330	PKPbc		PKPab	09 35 58.8	+0.4
	comp=Z,4.6nm,0.8s,baz=64,slow=3.1,SNR=22							
ARSA	Arzberg	145.29	327	iPKPdf		PKPbc	09 35 58.8	-0.1
	comp=Z,32nm,1.2s,SNR=15							
FNA	Florina	145.35	313	P		PKPbc	09 35 58.1	-1.2
KOGS	Kog	145.43	325	ePKPbc		PKPbc	09 35 57.5	-1.8
MOA	Molin	145.52	329	iPKPab		PKPab	09 36 00.4	+0.5
	comp=Z,55nm,1.2s,SNR=28							
GRFO	Grafenberg	145.56	333	ePKIKP		PKPab	09 36 00.1	+0.2
GRFO	Grafenberg	145.56	333	ePKPbc		PKPab	09 36 00.1	+0.2
GUR	Goura	145.79	308	P		PKPdf	09 36 00.2	-0.2
ANX	Ano Chora	145.86	309	P		PKPbc	09 36 01.4	+0.3
KLV	Kalavryta, Ach	145.90	308	P		PKPdf	09 36 00.8	+0.3
PERS	Pernice	145.91	326	ePKPbc		PKPdf	09 35 59.5	-0.7
SOKA	Soboth	145.93	327	iPKPab		PKPdf	09 36 00.8	+0.4
	comp=Z,36nm,1.5s,SNR=14							
LAKA	Lakka	145.95	309	P		PKPdf	09 36 00.9	+0.3
GOLS	Golise	146.05	325	iPKPbc		PKPbc	09 36 01.7	+0.4
DSL	Palaion Diasel	146.24	311	P		PKPdf	09 36 01.8	+0.8
OBKA	Obir	146.29	327	iPKPab		PKPab	09 36 02.9	0.0
	comp=Z,15nm,1.2s							
PDO	Prodromos	146.39	310	P		PKPbc	09 36 02.5	0.0
AXS	Araxos	146.41	309	P		PKPbc	09 36 02.8	+0.2
KBA	Koelnbreinsper	146.50	328	iPKPdf		PKPdf	09 36 00.6	-0.8
	comp=Z,12nm,0.9s,SNR=6.5							
BOJS	Bojanci	146.57	325	ePKPbc		PKPdf	09 36 01.8	+0.5
MYKA	Terra Mystica	146.67	328	iPKPab		PKPbc	09 36 03.1	-0.1
	comp=Z,5.7nm,0.6s							
BEBN	Eben Emael	146.72	340	PKPbc		PKPab	09 36 04.2	0.0
MEM	Membach	146.77	339	PKPbc		PKPbc	09 36 03.9	+0.7
MEM				APKP		pPKPdf	09 36 14.7	+4.5
STU	Stuttgart	147.11	334	ePKP2		PKPbc	09 36 05.0	+0.7
STU	Stuttgart	147.11	334	ePKPbc		PKPbc	09 36 05.0	+0.7
ABTA	Abfaltersbach	147.14	329	iPKPdf		PKPdf	09 36 02.2	-0.2
	comp=Z,16nm,1.0s							
BCLA	Clavier	147.17	340	PKPbc		PKPbc	09 36 04.7	+0.3
WTTA	Wattenberg	147.19	330	iPKPdf		PKPdf	09 36 02.2	-0.4
	comp=Z,42nm,1.5s,SNR=6.3							
SNF	Seneffe	147.41	341	PKPbc		PKPab	09 36 07.2	+0.2
LANF	Langenberg	147.49	336	PKP		PKPbc	09 36 05.9	+0.5
WLF	Walferdange	147.53	338	PKPbc		PKPbc	09 36 06.7	+1.3
WLF				APKP		pPKPdf	09 36 18.2	+6.7
WLF	Walferdange	147.53	338	ePKP2		PKPbc	09 36 06.5	+1.1
WLF	Walferdange	147.53	338	ePKPbc		PKPbc	09 36 06.5	+1.1
DOU	Dourbes	147.67	340	PKPbc		PKPbc	09 36 06.3	+0.5
DOU				APKP		pPKPdf	09 36 16.9	+5.2
BFO	Black Forest	147.81	335	cPKP2		PKPbc	09 36 06.6	+0.3
BFO	Black Forest	147.81	335	ePKPbc		PKPbc	09 36 06.3	+0.1
WLS	Welschbruch	148.13	336	PKP		PKPbc	09 36 07.4	+0.3
ECH	Echery	148.36	336	PKP		PKPbc	09 36 07.5	-0.2
MOF	Molkenrain	148.67	335	PKP		PKPbc	09 36 08.2	-0.4
TUE	Stuetta	148.83	331	ePKPdf		PKPdf	09 36 05.1	-0.3
TUE				ePKPbc		PKPbc	09 36 09.6	+0.4
LOMF	Lomont	149.20	335	PKP		PKPbc	09 36 09.8	-0.2
TIP	Timpagrande	149.23	314	ePKPbc		PKPbc	09 36 11.1	+0.8
CEL	Celeste	150.27	313	ePKPdf		PKPdf	09 36 05.1	-2.6
CEL				ePKPab		PKiKP	09 36 16.5	+2.8
BNI	Bardonecchia	151.11	333	ePKIKP		PKPpre	09 35 59.9	
BNI	Bardonecchia	151.11	333	ePKPdf		PKPpre	09 35 59.9	
PLDF	La Plantade	151.57	337	PKP		PKPbc	09 36 15.9	+0.2
AUTN	L'Aution	151.59	330	PKP		PKPbc	09 36 15.1	-0.9
AGO	Saint Agoulin	151.67	338	PKP		PKPbc	09 36 15.1	-0.7
LUCF	Luceram	151.71	330	PKP		PKPbc	09 36 15.6	-0.5
MVIF	Mont Vial	151.80	330	PKP		PKPbc	09 36 16.5	+0.1
SSB	Saint Sauveur	151.80	335	ePKIKP		PKPdf	09 36 10.3	+0.5
SSB				e			09 36 16.5	
SSB	Saint Sauveur	151.80	335	ePKPdf		PKPdf	09 36 10.3	+0.5
SSB				ePKPbc		PKPbc	09 36 16.4	+0.3
REVF	Revere	151.82	330	PKP		PKPbc	09 36 15.8	-0.5
PYM	Petit Puy Mans	151.98	338	PKP		PKPbc	09 36 16.7	+0.1
CALN	Calern	152.03	331	PKP		PKPbc	09 36 16.3	-0.6
LBL	Lubilhac	152.34	337	PKP		PKPbc	09 36 18.0	+0.6
ESDC	Sonseca Array	159.68	343	PKP		PKPdf	09 36 21.1	+0.6
	comp=Z,0.3nm,0.3s,baz=103,slow=17,SNR=4.1							
ESDC				PKPab		PKPab	09 36 58.4	-0.5
	comp=Z,0.2nm,0.3s,baz=34,slow=2.9,SNR=6.3							
TORD	Torodi Ar. Bea	165.33	243	PKP		PKPdf	09 36 25.2	-1.5
	comp=Z,5.9nm,1.1s,baz=40,slow=0.5,SNR=17							
TORD				PKPab		PKPab	09 37 24.4	0.0
	comp=Z,1.0nm,0.8s,baz=87,slow=2.5,SNR=4.1							

JMA ***11*** *09:18:10.8±0.1,24°.28N×122°.24E,h47km±3km,M1.7*
ISCJB ***11*** *09:18:11.4±0.4,24°.38N±0°.04×122°.25E±0°.02,h28km±5km,*
Error ellipse: s-maj=6.4km s-min=3.3km az=175.6
TAP ***11*** *09:18:11.5,24°.40N×122°.21E,h23km,ML2.9,D*
ISC 11 09:18:11.1±1.2,24°.39N±0°.04×122°.27E±0°.03,h25km±12km,
n23,σ0§48/42,Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWC	Suao	0.44	299	P	Pb	09 18 20.4	+0.1
	baz=302						
TWC				S	Sb	09 18 26.8	+0.2
	baz=302						
ENA	Nanau	0.48	274	P	Pb	09 18 20.8	-0.2
	baz=273						
ENA				eS	Sb	09 18 27.1	-0.6
	baz=273						
EGS		0.54	326	P	Pn	09 18 22.7	-0.6
	baz=330						
EGS				S	Sb	09 18 30.2	+0.6
	baz=330						
JYNG	Yonagunijimaku	0.62	85	P	Pn	09 18 23.9	-0.3
JYNG				eS	Sn	09 18 33.3	-0.1
TWE	Neicheng	0.64	301	P	Pb	09 18 23.6	0.0
	baz=303						
TWE				S	Sb	09 18 32.3	+0.2
	baz=303						
TWB1	Santiao Chiao	0.66	337	P	Pb	09 18 23.9	-0.1
	baz=341						
TWB1				S	Sn	09 18 34.2	-0.2
	baz=341						
YOJ	Yonaguni jima	0.68	84	P	Pn	09 18 25.0	-0.1
YOJ				eS	Sn	09 18 35.6	+0.7
ENTT	Nioudou	0.69	291	P	Pb	09 18 24.4	-0.1
	baz=292						
ENTT				eS	Sb	09 18 33.6	+0.1
	baz=292						
TWD	Chiawan	0.69	243	eP	Pb	09 18 24.6	+0.1
	baz=240						
TWD				eS	Sb	09 18 33.5	-0.1
	baz=240						
NWF	Wu-fen Shan	0.81	327	P	Pb	09 18 26.3	-0.3
	baz=329						
NWF				S	Sb	09 18 37.3	+0.2
	baz=329						
NNS	Nan Shan	0.82	273	eP	Pb	09 18 26.6	-0.1
	baz=272						
NNS				eS	Sb	09 18 37.7	+0.3
	baz=272						
NSK	Sanguang	0.88	289	P	Pb	09 18 27.5	-0.2
	baz=289						
NSK				S	Sb	09 18 39.2	+0.2
	baz=289						
WHF	Hehuan Shan	0.95	255	P	Pb	09 18 29.1	0.0
	baz=253						
WHF				eS	Sb	09 18 41.8	+0.3
	baz=253						
NSTT	Nanjuang	1.18	282	eP	Pb	09 18 32.4	-0.4
	baz=281						
NSTT				eS	Sb	09 18 48.7	+1.1
	baz=281						
SMLT	Sun

BKZ	Black Stump Fm	19.91	161	eP	Pn	09 26 06.7 +0.4
	57nm,1.1s					
CTA	Charters Tower	20.78	267	P	P	09 26 13.3 -0.7
	21nm,1.0s,baz=77,slow=13,SNR=5.4					
CTA	Charters Tower	20.78	267	P	Pn	09 26 16.1 -0.5
	baz=21					
CTAO	Charters Tower	20.78	267	eP	Pn	09 26 15.4 -1.2
CTAO				pmax	pmax	
	comp=Z,634nm,1.4s					
CTAO	Charters Tower	20.78	267	eP	Pn	09 26 15.3 -1.2
	comp=Z,634nm,1.4s					
CNB	Canberra Magne	22.36	225	P	P	09 26 34.1 +3.1
	baz=22,SNR=5.4					
YNG	Young	22.43	228	P	P	09 26 33.9 +2.2
	baz=22					
LTZ	Lake Taylor	22.50	173	eP	P	09 26 34.9 +2.5
	comp=Z,168nm,1.6s					
CAN	Canberra	22.60	225	P	P	09 26 36.0 +2.5
	baz=23					
CAN	Canberra	22.60	225	eP	P	09 26 34.2 +0.6
CAN				pmax	pmax	
	comp=Z,68nm,1.3s					
CAN	Canberra	22.60	225	eP	P	09 26 34.1 +0.6
	comp=Z,68nm,1.3s					
MTSU	Mount Surprise	22.84	272	P	P	09 26 37.1 +0.9
	baz=23,SNR=21					
QLP	Quilpie	22.97	250	P	P	09 26 38.4 +1.0
	baz=23,SNR=16					
CMSA	Cobar Meteorol	23.16	237	P	P	09 26 40.2 +0.9
	baz=23,SNR=16					
PMG	Port Moresby	23.25	295	P	P	09 26 39.9 -0.4
	comp=Z,8.5nm,0.7s,baz=115,slow=11,SNR=6.4					
PMG				LR	LR	09 34 11.5
	comp=Z,962nm,18.1s,baz=133,slow=33					
PMG	Port Moresby	23.25	295	ceP	P	09 26 40.3 0.0
PMG				pmax	pmax	
	comp=Z,149nm,1.3s					
PMG	Port Moresby	23.25	295	eP	P	09 26 40.1 -0.2
RPZ	Rata Peaks	23.30	175	LR	LR	09 34 41.3
	comp=Z,1μm,18.3s,baz=342,slow=34					
COEN	Coen	24.93	281	P	P	09 26 55.5 -0.5
	baz=25,SNR=3.7					
COEN	Coen	24.93	281	eP	P	09 26 55.8 -0.3
	comp=Z,129nm,2.0s					
STKA	Stephens Creek	26.54	239	P	P	09 27 10.3 -0.2
	comp=Z,12nm,0.8s,baz=72,slow=10,SNR=11					
STKA	Stephens Creek	26.54	239	P	P	09 27 11.1 +0.5
	baz=26,SNR=5.9					
STKA	Stephens Creek	26.54	239	eP	P	09 27 11.1 +0.5
STKA				pmax	pmax	
	comp=Z,45nm,1.9s					
STKA	Stephens Creek	26.54	239	eP	P	09 27 11.1 +0.5
	comp=Z,45nm,1.9s					
MANU	Manus Island	27.50	309	eP	P	09 27 18.2 -1.0
	comp=Z,1μm,0.6s					
MANU				epwP	sP	09 27 39.8 +8.6
HTT	Hallett	29.18	238	P	P	09 27 34.7 +0.6
	baz=29,SNR=3.5					
WB2	Warramunga Arr	31.93	265	eP	P	09 27 59.8 +1.2
WB2				epP	pP	09 28 07.5 +0.4
WRAB	Tennant Creek	31.93	265	i P	P	09 27 58.7 +0.1
WRAB				pmax	pmax	
	comp=Z,129nm,3.5s					
WRA	Warramunga Arr	31.94	265	P	P	09 27 56.5 -2.1
	comp=Z,4.1nm,0.9s,baz=94,slow=8.4,SNR=10.0					
AS01	Alice Springs	32.04	258	eP	P	09 27 58.1 -1.4
AS01				ePcP	PcP	09 30 47.9 -1.0
AS01				eScP	ScP	09 34 32.0 +1.5
AS31	Alice Springs	32.09	258	eP	P	09 27 58.9 -1.0
	comp=Z,15nm,0.6s					
AS31				eScP	ScP	09 34 32.5 +1.8
ASAR	Alice Springs	32.09	258	P	P	09 27 58.5 -1.4
	comp=Z,24nm,0.9s,baz=84,slow=8.8,SNR=31					
ASAR				PcP	PcP	09 30 47.9 -1.1
	comp=Z,1.1nm,0.8s,baz=102,slow=2.6,SNR=4.5					
ASAR				LR	LR	09 40 27.9
	comp=Z,2μm,19.3s,baz=88,slow=36					
WRKA	Warakurna	37.17	255	P	P	09 28 43.5 -0.4
	baz=37,SNR=6.0					
FAKI	Fak Fak	39.31	292	P	P	09 29 06.3 +4.4
PPT2	Papeete2	39.75	93	eLQ	LQ	09 38 21.0
	comp=Z,2μm,27.2s					
PPT2				eLR	LR	09 39 56.4
	comp=Z,2μm,29.2s					
FITZ	Fitzroy Crossi	40.35	266	P	P	09 29 09.8 -0.8
	comp=Z,5.3nm,0.9s,baz=159,slow=5.2,SNR=5.5					
FITZ	Fitzroy Crossi	40.35	266	P	P	09 29 10.2 -0.3
	baz=40,SNR=9.8					
FITZ	Fitzroy Crossi	40.35	266	eP	P	09 29 10.0 -0.5
	comp=Z,21nm,0.8s					
SWI	Sorong	41.18	294	P	P	09 29 20.6 +3.2
LBMI	Labuha	44.55	291	P	P	09 29 48.1 +3.3
	comp=Z,48nm,1.9s,comp=Z,1μm					
SANI	Sanana	45.23	288	P	P	09 29 51.8 +1.6
	comp=Z,58nm,1.0s,comp=Z,1μm					
KLBR	Kellerberrin	46.49	245	P	P	09 29 59.0 -1.0
	baz=46,SNR=6.0					
NWAO	Narrogin (SRO)	46.97	244	P	P	09 30 02.3 -1.3
	comp=Z,15nm,1.1s,baz=265,slow=6.1,SNR=3.0					
NWAO	Narrogin (SRO)	46.97	244	eP	P	09 30 02.7 -1.0
NWAO				e*PP	pP	09 30 13.2 +0.8
NWAO	Narrogin (SRO)	46.97	244	eP	P	09 30 02.6 -1.0
NWAO				epP	pP	09 30 13.2 +0.8
WSI	Waingapu	47.52	276	P	P	09 30 09.4 +1.2
	comp=Z,262nm,0.6s,comp=Z,16μm					
MORW	Morawa	47.99	249	P	P	09 30 11.4 -0.3
	baz=48					
LUWI	Luwuk	48.55	288	P	P	09 30 17.7 +1.5
	comp=Z,56nm,1.1s,comp=Z,3μm					
KAPI	Kappang	49.66	281	P	P	09 30 23.4 -1.3
	comp=Z,13nm,0.9s,baz=104,slow=3.7,SNR=7.0					
KAPI	Kappang	49.66	281	eP	P	09 30 24.4 -0.2
	comp=Z,72nm,1.4s					
TTSI	Tana Toraja	50.37	284	P	P	09 30 31.8 +1.7
TAOE	Nuku Hiva Isla	50.90	85	eLR	LR	09 45 08.3
	comp=Z,1μm,28.9s					
TWSI	Taliwang, Sumb	51.01	275	P	P	09 30 34.4 -0.5
PCI	Palu	51.25	286	P	P	09 30 39.9 +3.2
	comp=Z,103nm,1.5s,comp=Z,2μm					
RKT	Rikitea	52.37	104	eLR	LR	09 45 43.8
	comp=Z,606nm,32.2s					
DNP	Denpasar	52.59	275	P	P	09 30 48.0 +1.3
JAGI	Jajag, Banyuwa	53.64	275	P	P	09 30 55.8 +1.3
CBIJ	Chichi jima	53.66	331	P	P	09 30 52.8 -1.4
JCJ	Chichijima	53.66	331	P	P	09 30 52.8 -1.4
	comp=Z,23nm,0.6s,baz=302,slow=3.1,SNR=3.6					
MYLDM	Lahad Datu	55.22	292	eP	P	09 31 04.9 -1.0
	comp=Z,85nm,1.7s					
VNDA	Vanda	57.20	182	P	P	09 31 17.4 -1.7
	comp=Z,4.7nm,1.1s,baz=350,slow=7.3,SNR=6.7					
VNDA	Vanda	57.20	182	eP	P	09 31 18.3 -0.8
VNDA				pmax	pmax	
	comp=Z,20nm,1.5s					
VNDA	Vanda	57.20	182	eP	P	09 31 18.3 -0.8
	comp=Z,20nm,1.5s					
SBA	Scott Base	57.45	180	eP	P	09 31 22.1 +1.3
SBA				pmax	pmax	
	comp=Z,50nm,1.3s					
SBA	Scott Base	57.45	180	eP	P	09 31 22.1 +1.3
	comp=Z,50nm,1.3s					
KKM	Kota Kinabalu	57.63	292	eP	P	09 31 23.3 +0.1
	comp=Z,63nm,1.3s					
SBUM	Sibu	59.56	286	eP	P	09 31 36.5 0.0
	comp=Z,35nm,1.5s					
KSM	Kuching	60.88	284	eP	P	09 31 45.5 -0.2
	comp=Z,81nm,1.6s					
CGJI	Cibinong	62.17	273	P	P	09 31 54.2 -0.1
	comp=Z,60nm,1.2s,comp=Z,13μm					
MJAR	Matsushiro Arr	63.46	333	P	P	09 32 00.8 -1.6
	comp=Z,3.0nm,0.6s,baz=172,slow=7.5,SNR=8.7					
MAJO	Matsushiro	63.46	333	c iP	P	09 32 01.8 -0.6
MAJO				pmax	pmax	
	comp=Z,176nm,1.6s					
MAT	Matsushiro	63.46	333	P	P	09 32 01.1 -1.3
ERM	Erimo	66.39	340	eP	P	09 32 18.9 -2.4
ERM				pmax	pmax	
	comp=Z,13nm,0.9s					
KSRS	Korea Array	69.06	326	P	P	09 32 38.2 -0.1
	comp=Z,2.6nm,1.0s,baz=134,slow=5.4,SNR=6.3					
KSAR	Wonju Array Be	69.08	326	P	P	09 32 38.2 -0.2
KSAR	Wonju Array Be	69.08	326	P	P	09 32 38.2 -0.2
KS01	Wonju Array Si	69.10	326	eP	P	09 32 37.9 -0.6
QSPA	South Pole Qui	69.61	180	eP	P	09 32 41.1 -0.4
	comp=Z,31nm,1.3s					
NJ2	Nanjing	70.54	317	eP	P	09 32 48.5 +1.0
NJ2				pmax	pmax	
	comp=Z,11nm,0.6s					
PSI	Prapat	71.85	280	eP	P	09 32 54.6 -1.4
PSI				pmax	pmax	
	comp=Z,59nm,1.6s					
PSI	Prapat	71.85	280	eP	P	09 32 54.6 -1.4
	comp=Z,59nm,1.6s					
SKLT	Songkhla	72.01	285	P	P	09 32 58.0 +1.2
	comp=Z,28nm,1.2s					
USRK	Ussuriysk Ar.	72.45	333	P	P	09 32 59.2 +0.4
	comp=Z,6.0nm,0.7s,baz=141,slow=3.9,SNR=22					
SKNT	Salnakorn	73.34	296	P	P	09 33 05.2 +0.6
	comp=Z,40nm,2.0s					
MDJ	Mudanjiang	73.81	332	P	P	09 33 07.0 +0.2
MDJ				pmax	pmax	
	comp=Z,23nm,1.4s					
MDJ				pmax	pmax	
	comp=Z,110nm,4.9s					
PEA0	Petropavlovsk-	73.83	353	eP	P	09 33 06.7 0.0
PETK	Petropavlovsk-	73.83	353	P	P	09 33 06.3 -0.4
	comp=Z,6.8nm,0.8s,baz=116,slow=4.2,SNR=7.6					
NAYO	Nakonayok	74.42	292	P	P	09 33 13.2 +2.2
	comp=Z,10nm,2.0s					
NONG	Nongkai	74.55	296	P	P	09 33 12.5 +0.8
	comp=Z,33nm,1.6s					
CN2	Changchun	75.08	329	eP	P	09 33 14.6 +0.4
CN2				epP	sP	09 33 24.2 -2.6
CN2				pmax	pmax	
	comp=Z,10.0nm,1.2s					
PBKT	Sadao Pong	75.72	294	P	P	09 33 20.0 +1.6
	comp=Z,32nm,1.1s					
NIKH	Nikolski High	75.74	14	eP	P	09 33 16.8 -1.0
	comp=Z,52nm,0.6s					
NIKH				epP	sP	09 33 28.8 -1.5
ENH	Enshi	75.84	310	eP	P	09 33 18.2 -0.7
	comp=Z,12nm,1.0s					
GYA	Guiyang	75.87	305	P	P	09 33 21.0 +1.7
GYA				pP	PcP	09 33 32.0 +0.3
GYA				PP	PP	09 36 13.8 +3.8
GYA				S	S	09 43 00.2 0.0
GYA				SKS	SKSac	09 43 23.6 -4.6
GYA				SS	SS	09 47 55.8 +2.5
GYA				pmax	pmax	
	comp=Z,20nm,1.0s					
GYA				pmax	pmax	
	comp=Z,130nm,6.4s					
GYA				LR	LR	
	comp=Z,540nm,19.2s					
GYA				LR	LR	
	comp=Z,480nm,20.0s					
GYA				LR	LR	
	comp=Z,520nm,19.8s					
UTTA	Uttaradit	76.60	295	P	P	09 33 25.6 +2.2
	comp=Z,2.1nm,1.3s					
KLR	Kul'dur	76.65	336	P	P	09 33 22.6 -0.5
	comp=Z,2.5nm,0.7s,baz=131,slow=4.6,SNR=13					
NANT	Nan	76.95	296	P	P	09 33 26.4 +1.0
	comp=Z,5.2nm,0.7s					
MAW	Mawson	77.02	202	P	P	09 33 25.2 +0.3
	comp=Z,14nm,1.0s,baz=115,slow=7.3,SNR=12					
MAW	Mawson	77.02	202	P	P	09 33 25.4 +0.4
	baz=77,SNR=7.7					
MAW	Mawson	77.02	202	eP	P	09 33 25.8 +0.8
MAW				pmax	pmax	
	comp=Z,8.0nm,1.3s					
MAW	Mawson	77.02	202	eP	P	09 33 25.8 +0.8
	comp=Z,7.7nm,1.3s					
NKL	Nikolayevsk	77.13	343	eP	P	09 33 26.8 +1.2
NKL				e		09 33 37.8
SUKH	Sukhothai	77.27	294	P	P	09 33 29.1 +1.9
	comp=Z,2.5nm,1.3s					
BJI	Beijing	77.38	322	P	P	09 33 27.9 +0.5
BJI				pmax	pmax	
	comp=Z,10.0nm,1.8s					
BJI				pmax	pmax	
	comp=Z,240nm,4.3s					
CRAI	Chiangrai	77.87	297	P	P	09 33 31.5 +0.9
	comp=Z,83nm,1.5s					
KMI	Kunming	78.25	302	P	P	09 33 33.8 +1.0
KMI				pmax	pmax	
	comp=Z,29nm,1.1s					
KMI				pmax	pmax	
	comp=Z,130nm,5.4s					
CMAR	Chiang Mai Arr	78.29	295	P	P	09 33 33.1 +0.2
	comp=Z,7.3nm,0.9s,baz=130,slow=4.1,SNR=25					
CMMT	Chiang Mai	78.44	295	P	P	09 33 34.5 +0.8
	comp=Z,18nm,1.5s					
CHTO	Chiang Mai	78.44	295	P	P	09 33 34.6 +0.8
	comp=Z,80nm,1.5s					
CHTO	Chiang Mai	78.44	295	eP	P	09 33 33.9 +0.1
CHTO				pmax	pmax	
	comp=Z,50nm,1.6s					
CHTO	Chiang Mai	78.44	295	eP	P	09 33 33.9 +0.1
	comp=Z,50nm,1.6s					
CMAI	Chiengmai2	78.85	296	P	P	09 33 37.5 +1.3
	comp=Z,19nm,1.8s					
CD2	Chengdu	80.35	308	P	P	09 33 43.5 -0.5
CD2				pmax	pmax	
	comp=Z,20nm,0.8s					
HHC	Hu-ho-hao-te	80.63	320	eP	P	09 33 45.6 +0.3
HHC				pmax	pmax	
	comp=Z,44nm,1.3s					
HHC				pmax	pmax	
	comp=Z,170nm,7.2s					
LZH	Lanzhou	82.96	313	eP	P	09 33 59.2 +1.4
LZH				pP	sP	09 34 11.0 +0.6
LZH				sP	pP	09 34 15.6 +8.6
LZH				PP	PP	09 37 09.6 +0.7
LZH				eS	S	09 44 15.6 +0.5
LZH				sS	ScS	09 44 33.4 +3.9
LZH				SS	SS	09 49 35.6 -3.8
LZH				pmax	pmax	
	comp=Z,35nm,1.2s					
LZH				pmax	pmax	
	comp=Z,310nm,5.5s					
LZH				LR	LR	
	comp=Z,130nm,15.4s					
LZH				LR	LR	
	comp=Z,220nm,12.5s					
LZH				LR	LR	
	comp=Z,210nm,16.8s					
SYO	Syowa Base	83.56	196	eP	P	09 33 58.6 -1.5
SEY	Seymchan	84.06	353	P	P	09 34 01.9 -0.7
	comp=Z,3.4nm,0.8s,baz=144,slow=4.9,SNR=5.2					
SEY	Seymchan	84.06	353	i P	P	09 34 02.5 -0.1
KDAK	Kodiak Island	84.43	20	ceP	P	09 34 05.1 +0.6
ULN	Ulaanbaatar	87.37	324	d iP	P	09 34 19.3 -0.3
ULN				pmax	pmax	
	comp=Z,26nm,1.4s					
ULN	Ulaanbaatar	87.37	324	eP	P	09 34 19.3 -0.3
	comp=Z,36nm,1.5s					
SBC	Santa Barbara	87.40	52	P	P	09 34 19.6 -0.2
	baz=243					
SMMC	Simmler	87.58	51	P	P	09 34 20.1 -0.7
	baz=243					
KHMM	Horse Mountain	87.62	45	eP	P	09 34 21.4 +0.5
	comp=Z,49nm,1.4s					
SONM	Songino Array	87.71	323	P	P	09 34 21.1 -0.1
	comp=Z,5.6nm,0.7s,baz=90,slow=1.5,SNR=4.7					
SONA1	Songino Array	87.72	323	eP	P	09 34 21.6 +0.3
YAK	Yakutsk	87.79	343	P	P	09 34 20.6 -0.3
	comp=Z,12nm,0.3s,baz=168,slow=1.3,SNR=3.3					
CIS	Catalina Islan	87.90	53	P	P	09 34 22.1 -0.2
	baz=244					
SNAA	Sanae	87.92	183	P	P	09 34 21.4 -0.4
SNAA	Sanae	87.92	183	d iP	P	09 34 20.7 -1.2
SNAA	Sanae	87.92	183	eP	P	09 34 21.3 -0.6
	comp=Z,2μm,1.2s					
SNAA				epP	sP	09 34 32.9 -1.6
BILL	Bilibino	88.24	359	i P	P	09 34 22.3 -0.8
BILL				i		09 34 32.6
BILL				pmax	pmax	
	comp=Z,22nm,1.1s					
BILL	Bilibino	88.24	359	eP	P	09 34 22.6 -0.5
	comp=Z,70nm,1.6s					
WDC	Whiskeytown Da	88.27	45	eP	P	09 34 24.3 +0.5
WDC				pmax	pmax	
	comp=Z,53nm,1.5s					
WDC	Whiskeytown Da	88.27	45	eP	P	09 34 24.3 +0.5
	comp=Z,53nm,1.5s					
L02D	Cave Junction,	88.34	44	P	P	09 34 24.2 +0.1
	baz=240					
N02D	Trinity Center	88.35	45	P	P	09 34 24.5 +0.2
	baz=241,SNR=17					
ARVC	Arvin	88.35	52	P	P	09 34 23.9 -0.5
	baz=244					
M02C	Callahan	88.45	45	P	P	09 34 25.0 +0.2
	baz=241,SNR=13					
ORV	Oroville	88.48	47	eP	P	09 34 24.9 0.0
ORV				pmax	pmax	
	comp=Z,36nm,1.4s					
ORV	Oroville	88.48	47	eP	P	09 34 24.9 0.0
	comp=Z,36nm,1.4s					
VES	Vestal, Richgr	88.48	51	P	P	09 34 24.5 -0.5
	baz=244					
MWC	Mount Wilson	88.53	53	eP	P	09 34 25.3 -0.2
MWC				pmax	pmax	
	comp=Z,31nm,1.4s					
MWC	Mount Wilson	88.53	53	eP	P	09 34 25.2 -0.2
	comp=Z,30nm,1.4s					
VNA3	Neumayer Olymp	88.54	181	P	P	09 34 23.5 -1.3
CMB	Columbia Colle	88.55	48	eP	P	09 34 25.4 +0.1
CMB				pmax	pmax	
	comp=Z,33nm,1.5s					
CMB	Columbia Colle	88.55	48	eP	P	09 34 25.4 +0.1
	comp=Z,33nm,1.5s					
AFDM	Forest Hills D	88.56	47	eP	P	09 34 25.4 +0.1
	comp=Z,28nm,1.3s					
O03D	Paynes Creek	88.63	46	P	P	09 34 25.3 -0.3
	baz=242,SNR=16					
YBH	Yreka Blue Hor	88.71	44	eP	P	09 34 26.5 +0.4
YBH				pmax	pmax	
	comp=Z,31nm,1.4s					
YBH	Yreka Blue Hor	88.71	44	eP	P	09 34 26.4 +0.4
	comp=Z,31nm,1.4s					
VNA2	Neumayer--Watz	88.82	181	P	P	09 34 25.3 -0.8
	baz=169,slow=4.9					
BFSC	Mount Baldy Ra	88.83	53	P	P	09 34 26.3 -0.5
	baz=244					
ISA	Isabella, Lake	88.85	51	P	P	09 34 26.2 -0.6
	baz=244					
ISA	Isabella, Lake	88.85	51	eP	P	09 34 26.8 0.0
ISA				pmax	pmax	
	comp=Z,38nm,1.4s					
ISA	Isabella, Lake	88.85	51	eP	P	09 34 26.8 0.0
	comp=Z,38nm,1.4s					
EDW2	Edwards Air Fo	88.86	52	P	P	09 34 26.6 -0.2
	baz=244,SNR=5.8					
MURC	Murrieta	88.90	54	P	P	09 34 26.4 -0.6
	baz=245					
HUMO	Hull Mountain	88.98	43	eP	P	09 34 27.6 +0.4
	comp=Z,37nm,1.4s					
VNA1	Neumayer--Stat	89.12	181	P	P	09 34 27.6 +0.3
CAST	Castle Rocks	89.13	17	eP	P	09 34 26.9 -0.5
	comp=Z,13nm,1.6s					
MONP2	Monument Peak	89.19	54	P	P	09 34 28.4 -0.3
	baz=245					
I03D	Drain, OR	89.26	42	P	P	09 34 28.0 -0.4
	baz=241					
M04C	Macdoel	89.31	45	P	P	09 34 28.5 -0.4
	baz=242,SNR=7.4					
IKP	In-Ko-Pah, Jac	89.33	55	P	P	09 34 28.7 -0.5
	baz=245					
LRMC	Laurel Mtn Rad	89.35	52	P	P	09 34 28.9 -0.3
	baz=244,SNR=10					
BBRC	Big Bear Solar	89.39	53	P	P	09 34 29.2 -0.4
	baz=245					
WAKR	Walker	89.42	48	eP	P	09 34 29.7 +0.1
MLAC	Mammoth, Mammo	89.46	49	P	P	09 34 30.5 +0.7
	baz=244					
SWSC	Sam W. Stewart	89.69	55	P	P	09 34 30.2 -0.5
	baz=245					
COR	Corvallis	89.72	42	eP	P	09 34 30.1 -0.4
COR				pmax	pmax	
	comp=Z,54nm,1.4s					
COR	Corvallis	89.72	42	eP	P	09 34 30.1 -0.4
	comp=Z,54nm,1.4s					
MPMC	Manual Prospec	89.74	51	P	P	09 34 31.0 -0.2
	baz=244,SNR=11					
DAC	Darwin (Calif)	89.76	51	eP	P	09 34 31.0 -0.2
DAC				pmax	pmax	
	comp=Z,19nm,1.4s					
DAC	Darwin (Calif)	89.76	51	eP	P	09 34 31.0 -0.2
	comp=Z,19nm,1.4s					
I04A	Tendick Farm,	89.90	43	P	P	09 34 30.7 -0.8
	baz=241					
GSC	Goldstone, Bar	89.92	52	P	P	09 34 31.2 -0.7
	baz=245,SNR=5.5					
GSC	Goldstone, Bar	89.92	52	eP	P	09 34 32.0 +0.2
GSC				pmax	pmax	
	comp=Z,24nm,1.5s					
GSC	Goldstone, Bar	89.92	52	eP	P	09 34 32.0 +0.2
	comp=Z,24nm,1.5s					
BELC	Belle Mtn. Jos	89.98	54	P	P	09 34 31.9 -0.3
	baz=245,SNR=10.0					
PAHR	Pah Rah Range	90.00	47	eP	P	09 34 32.4 +0.2
	comp=Z,29nm,1.4s					
G03D	McMinnville, O	90.06	41	P	P	09 34 32.0 -0.1
	baz=241					
HEC	Hector,Ludlow	90.07	53	P	P	09 34 32.1 -0.4
	baz=245					
BOD	Bodaibo	90.07	334	eP	P	09 34 30.6 -1.3
BOD				pmax	pmax	
	comp=Z,12nm,1.6s					
NV01	Mina Array Sit	90.19	49	eP	P	09 34 32.8 -0.4
NVAR	Mina Array Bea	90.19	49	P	P	09 34 32.9 -0.3
	comp=Z,5.4nm,0.8s,baz=229,slow=7.0,SNR=29					
GRAC	Grapevine Rang	90.23	50	P	P	09 34 32.9 -0.3
	baz=244,SNR=13					
BC3	Big Chuckawall	90.25	54	P	P	09 34 33.4 0.0
	baz=246,SNR=6.5					
NV11	Mina Array Sit	90.29	49	eP	P	09 34 33.8 +0.1
	comp=Z,26nm,1.4s					
K05A	Summer Lake	90.37	44	eP	P	09 34 34.4 +0.5
	comp=Z,38nm,1.4s					
FURC	Furnace Creek,	90.37	51	P	P	09 34 33.3 -0.5
	baz=245,SNR=8.4					
MOD	Modoc Plateau	90.38	45	eP	P	09 34 34.1 +0.1
	comp=Z,13nm,1.0s					
J05D	Fort Rock, OR	90.41	43	P	P	09 34 33.8 -0.3
	baz=242,SNR=17					
H04A	Detroit Lake	90.47	42	eP	P	09 34 33.6 -0.5
	comp=Z,40nm,1.4s					
GLA	Glamis	90.48	55	P	P	09 34 34.6 +0.2
	baz=246					
GLA	Glamis	90.48	55	eP	P	09 34 34.9 +0.5
GLA				e*PP	sP	09 34 47.7 +0.6
GLA				pmax	pmax	
	comp=Z,38nm,1.4s					
GLA	Glamis	90.48	55	eP	P	09 34 34.9 +0.5
	comp=Z,38nm,1.4s					
GLA				epP	sP	09 34 47.7 +0.6
E03A	Lebam	90.53	40	eP	P	09 34 34.8 +0.5
	comp=Z,45nm,1.0s					
GMRC	Granite Mounta	90.56	53	P	P	09 34 34.3 -0.6
	baz=246,SNR=5.9					
SHOC	Shoshone, Teco	90.56	52	P	P	09 34 34.7 -0.1
	baz=245					
TUQ	Turquoise Moun	90.63	52	P	P	09 34 34.9 -0.4
	baz=245,SNR=8.1					
F04D	Rainier, OR	90.64	40	P	P	09 34 34.8 0.0
	baz=241					
IRM	Iron Mountain	90.69	54	P	P	09 34 35.6 +0.2
	baz=246,SNR=7.4					
ZAK	Zakamensk	90.82	324	eP	P	09 34 33.4 -2.3
ZAK				pmax	pmax	
	comp=Z,9.0nm,1.6s					
I05D	Terrebonne, OR	90.84	42	P	P	09 34 35.5 -0.4
	baz=242,SNR=5.7					
F04A	Amboy	90.92	41	eP	P	09 34 35.9 -0.3
	comp=Z,52nm,1.5s					
Y12C	Blythe	90.99	54	P	P	09 34 36.5 -0.2
	baz=246					
Y12C	Blythe	90.99	54	eP	P	09 34 36.8 0.0
	comp=Z,22nm,1.3s					
TPNV	Topopah Spring	91.02	51	P	P	09 34 36.7 -0.4
	baz=245,SNR=13					
TPNV	Topopah Spring	91.02	51	eP	P	09 34 36.5 -0.6
TPNV	Topopah Spring	91.02	51	eP	P	09 34 36.5 -0.6
113A	Mohawk Valley,	91.18	55	eP	P	09 34 37.9 +0.2
	comp=Z,21nm,1.4s					
G05D	Wamic, OR	91.28	42	P	P	09 34 37.9 0.0
	baz=242					
TLY	Talaya	91.31	326	eP	P	09 34 38.4 +0.6
TLY				pmax	pmax	
	comp=Z,11nm,1.0s					
PDMCI	Parker Dam,Lak

	comp=Z,20nm,1.5s							
LON	**Longmire**	91.69	40	*e*P		**P**	09 34 38.7	-1.1
LON				pmax		pmax		
	comp=Z,10.0nm,1.4s							
LON	**Longmire**	91.69	40	*e*P		**P**	09 34 38.7	-1.1
	comp=Z,10.0nm,1.4s							
G06A	**Carlson Farm,**	91.70	42	*e*P		**P**	09 34 37.6	-2.3
	comp=Z,24nm,1.5s							
WVOR	**Wild Horse Val**	91.72	45	*e*P		**P**	09 34 40.1	0.0
WVOR				pmax		pmax		
	comp=Z,25nm,1.4s							
WVOR	**Wild Horse Val**	91.72	45	*e*P		**P**	09 34 40.1	0.0
	comp=Z,25nm,1.4s							
D05A	**Enumclaw**	91.79	40	*e*P		**P**	09 34 40.9	+0.7
	comp=Z,104nm,1.6s							
W13A	**Hualapai Mount**	92.02	53	*e*P		**P**	09 34 42.0	+0.3
	comp=Z,16nm,1.4s							
R11A	**Troy Canyon, C**	92.09	50	P		**P**	09 34 41.5	-0.5
	baz=246							
R11A	**Troy Canyon, C**	92.09	50	*e*P		**P**	09 34 40.9	-1.1
	comp=Z,12nm,1.8s							
A04D	**Lummi Island**	92.10	38	P		**P**	09 34 41.7	+0.2
	baz=241							
Y14A	**Wickenburg**	92.23	55	*e*P		**P**	09 34 42.7	+0.1
	comp=Z,66nm,0.2s							
B05A	**Bryant**	92.23	39	P		**P**	09 34 42.3	+0.2
	baz=242							
COLD	**Coldfoot**	92.64	15	*e*P		**P**	09 34 44.4	+0.8
	comp=Z,14nm,1.8s							
G08A	**Pilot Rock**	92.78	42	*e*P		**P**	09 34 44.6	-0.3
	comp=Z,14nm,1.5s							
TUC	**Tucson**	93.32	57	P		**P**	09 34 47.7	0.0
	baz=248							
TUC	**Tucson**	93.32	57	*e*P		**P**	09 34 47.2	-0.5
TUC				pmax		pmax		
	comp=Z,9.0nm,1.3s							
TUC	**Tucson**	93.32	57	*e*P		**P**	09 34 47.2	-0.5
	comp=Z,9.2nm,1.3s							
KNB	**Kanab**	93.56	52	*e*P		**P**	09 34 48.9	+0.1
KNB				pmax		pmax		
	comp=Z,16nm,1.5s							
KNB	**Kanab**	93.56	52	*e*P		**P**	09 34 48.9	+0.1
	comp=Z,16nm,1.5s							
X16A	**Lo Mia Camp, P**	93.61	55	*e*P		**P**	09 34 49.1	0.0
	comp=Z,9.2nm,1.3s							
U15A	**North Rim**	93.73	53	*e*P		**P**	09 34 50.2	+0.5
	comp=Z,8.9nm,1.3s							
MFID	**Camas Ranch**	94.01	45	*e*P		**P**	09 34 49.7	-0.9
	comp=Z,2.7nm,0.9s							
WUAZ	**Wupatki**	94.07	54	P		**P**	09 34 51.0	-0.1
	baz=248							
319A	**Douglas**	94.17	58	*e*P		**P**	09 34 52.2	+0.5
	comp=Z,24nm,1.5s							
MTPU	**Mount Pierson**	94.42	51	*e*P		**P**	09 34 52.9	-0.1
	comp=Z,13nm,1.8s							
DUG	**Dugway, Tooele**	94.80	49	P		**P**	09 34 54.4	0.0
	baz=247							
HLID	**Hailey**	95.01	45	P		**P**	09 34 54.8	-0.5
	baz=247							
TIXI	**Tiksi**	95.76	348	*ce*P		**P**	09 34 57.3	-0.5
TIXI				pmax		pmax		
	comp=Z,3.0nm,1.1s							
MNTX	**Cornudas Mount**	97.40	59	P		**P**	09 35 06.2	-0.1
	baz=251							
WMQ	**Urumqi**	97.47	314	*e*P		Pdif	09 35 07.3	+0.9
ANMO	**Albuquerque**	97.63	56	P		**P**	09 35 07.1	-0.4
	baz=250							
BOZ	**Bozeman (W)**	97.64	44	P		**P**	09 35 06.9	-0.3
	baz=249							
BW06	**Boulder Array**	98.01	47	P		**P**	09 35 08.4	-0.6
	baz=250							
PDAR	**Pinedale Array**	98.01	47	P		**P**	09 35 07.9	-1.1
	comp=Z,0.2nm,0.4s,baz=154,slow=4.8,SNR=3.9							
TXAR	**Lajitas Array**	98.03	62	P		**P**	09 35 09.3	+0.1
	comp=Z,0.2nm,0.6s,baz=205,slow=2.6,SNR=3.8							
RLMT	**Red Lodge**	99.02	45	Pdiff		**Pdif**	09 35 13.4	-0.1
	baz=250							
SDCO	**Great Sand Dun**	99.27	53	Pdiff		**Pdif**	09 35 14.1	-0.8
	baz=252							
EGMT	**Eagleton**	99.68	42	Pdiff		**Pdif**	09 35 16.3	+0.1
	baz=250							
YKA	**Yellowknife Ar**	102.10	28	P		**Pdif**	09 35 26.9	+0.5
	comp=Z,0.3nm,0.6s,baz=258,slow=4.9,SNR=8.8							
433A	**Art**	102.24	62	Pdiff		**Pdif**	09 35 28.1	+0.2
	baz=254							
V32A	**Arapaho**	103.64	57	Pdiff		**Pdif**	09 35 34.0	-0.1
	baz=255							
L31A	**Butterfield Fa**	105.42	50	Pdiff		**Pdif**	09 35 42.1	+0.3
	baz=256							
S35A	**Otter Creek Ra**	106.25	55	Pdiff		**Pdif**	09 35 45.4	-0.2
	baz=257							
BRVK	**Borovoye**	110.91	320	*i* PKIKP		**PKiKP**	09 40 05.7	+0.4
BRVK				pmax		pmax		
	comp=Z,4.0nm,1.0s							
ARU	**Arti**	117.75	324	PKIKP		**PKPdf**	09 40 17.3	-1.0
ARCES	**ARCESS Array B**	126.03	345	PKP		**PKPdf**	09 40 32.2	-1.6
	comp=Z,5.0nm,1.0s,baz=46,slow=3.5,SNR=10							
KLMR	**Klimovskoe**	126.23	332	*e*PKIKP		**PKPdf**	09 40 32.0	-2.4
KLMR				*e*			09 40 46.2	
KLMR				pmax		pmax		
	comp=Z,23nm,1.3s							
KMBO	**Kilima Mbogo**	127.60	252	*e*PKIKP		**PKPdf**	09 40 40.6	+1.8
KMBO	**Kilima Mbogo**	127.60	252	*e*PKPdf		**PKPdf**	09 40 40.6	+1.8
PTGA	**Pitinga**	128.21	108	*e*PKPdf		**PKPdf**	09 40 39.6	-0.1
GNI	**Garni**	128.42	305⇑	*i* PKIKP		**PKPdf**	09 40 40.4	+0.9
GNI				pmax		pmax		
	comp=Z,42nm,1.7s							
VRH	**Novokhopyorsk**	128.49	320	*e*PKIKP		**PKPdf**	09 40 38.7	-0.3
VRH				pmax		pmax		
	comp=Z,10.0nm,1.3s							
KBZ	**Khabaz**	129.35	310	PKP		**PKPdf**	09 40 41.0	+0.1
	comp=Z,1.0nm,0.6s,baz=76,slow=3.2,SNR=5.9							
KIV	**Kislovodsk**	129.46	311	*e*PKIKP		**PKPdf**	09 40 40.9	-0.4
KIV				pmax		pmax		
	comp=Z,7.0nm,1.0s							
LPSR	**Galich'ya Gora**	129.71	322	*e*PKIKP		**PKPdf**	09 40 41.3	0.0
LPSR				pmax		pmax		
	comp=Z,20nm,1.6s							
VSR	**Storozhevoye**	130.02	320	*e*PKIKP		**PKPdf**	09 40 41.5	-0.4
VSR				pmax		pmax		
	comp=Z,10.0nm,1.4s							
OBN	**Obninsk**	130.06	326	*i* PKIKP		**PKPdf**	09 40 42.1	+0.2
OBN				pmax		pmax		
	comp=Z,5.0nm,0.7s							
VSU	**Vasula**	133.01	334⇑	*i* PKIKP		**PKPdf**	09 40 49.0	+1.7
VSU				pmax		pmax		
	comp=Z,8.0nm,0.3s							
BRTR	**Keskin Array B**	136.92	307	PKP		**PKPdf**	09 40 56.5	+1.0
	comp=Z,1.4nm,1.0s,baz=151,slow=2.8,SNR=6.6							
BR231	**Keskin MP Arra**	137.54	307	*e*PKPdf		**PKPdf**	09 40 56.8	+0.2
KOLS	**Kolonicke sedl**	140.76	324	*e*PKIKP		**PKPdf**	09 41 02.9	+0.8
KOLS	**Kolonicke sedl**	140.76	324	*e*PKP		**PKPdf**	09 41 02.9	+0.8
CRVS	**Cervenica-Dubn**	141.22	325	*e*PKIKP		**PKPdf**	09 41 04.1	+1.2
CRVS	**Cervenica-Dubn**	141.22	325	*e*PKP		**PKPdf**	09 41 04.1	+1.2
VYHS	**Vyhne**	142.86	326	*e*PKIKP		**PKPdf**	09 41 07.0	+1.2
VYHS	**Vyhne**	142.86	326	*e*PKP		**PKPdf**	09 41 07.0	+1.2
VYHS				*e*			10 02 59.1	
BRG	**Berggiesshubel**	143.59	333	*e*PKP		PKPbc	09 41 04.6	+0.2
	comp=Z,28nm,1.6s							
BRG	**Berggiesshubel**	143.59	333	*e*PKIKP		PKPbc	09 41 04.6	+0.2
BRG				pmax		pmax		
	comp=Z,26nm,1.6s							
CLL	**Collm**	143.67	334	*i* PKPdf		PKPbc	09 41 04.3	-0.3
CLL	**Collm**	143.67	334	*i* PKIKP		PKPbc	09 41 04.3	-0.3
TREC	**Trest**	144.01	330	*e*PKP		PKPbc	09 41 06.7	+0.9
TREC	**Trest**	144.01	330	*e*PKIKP		PKPbc	09 41 06.7	+0.9
NKC	**Novy Kostel**	144.71	333	*e*PKP		PKPbc	09 41 08.5	+0.6
NKC				*ex*		x	09 41 27.8	
NKC	**Novy Kostel**	144.71	333	*e*PKIKP		PKPbc	09 41 08.5	+0.6
DIVS	**Divibare**	144.72	319	P		PKPbc	09 41 08.3	0.0
IDI	**Anoyia**	144.74	303	PKP		PKPbc	09 41 09.0	+0.4
	comp=Z,44nm,1.3s,baz=131,slow=12,SNR=5.7							
CONA	**Conrad Observa**	144.75	327	*i* PKPdf		**PKPdf**	09 41 09.2	0.0
	comp=Z,63nm,1.4s,SNR=32							
KHC	**Kasperske Hory**	145.02	331	*e*PKP		**PKPdf**	09 41 09.5	-0.1
KHC	**Kasperske Hory**	145.02	331	*e*PKIKP		**PKPdf**	09 41 09.5	-0.1
KHC	**Kasperske Hory**	145.02	331	*e*PKPdf		**PKPdf**	09 41 09.5	-0.1
GEC2	**GERESS Array S**	145.17	330	*e*PKIKP		**PKPab**	09 41 09.8	+0.2
GEC2	**GERESS Array S**	145.17	330	*e*PKPbc		**PKPab**	09 41 09.8	+0.2
GERES	**GERESS Array B**	145.17	330	PKPbc		**PKPbc**	09 41 08.9	-0.6
	comp=Z,3.3nm,0.8s,baz=60,slow=3.2,SNR=21							
GEA0	**GERESS Array S**	145.17	330	*e*PKPbc		**PKPbc**	09 41 09.2	-0.3
ARSA	**Arzberg**	145.37	327	*i* PKPdf		**PKPab**	09 41 11.0	+0.6
	comp=Z,45nm,1.5s,SNR=18							
AGG	**Agios Georgios**	145.48	310	*e*PKIKP		**PKPdf**	09 41 09.9	-0.8
AGG	**Agios Georgios**	145.48	310	*e*PKPbc		**PKPdf**	09 41 09.8	-0.8
KOGS	**Kog**	145.51	325	*e*PKPbc		**PKPdf**	09 41 10.5	0.0
MOA	**Molln**	145.60	329	*i* PKPab		**PKPbc**	09 41 10.8	0.0
	comp=Z,68nm,1.4s,SNR=22							
GRFO	**Grafenberg**	145.63	334	*e*PKP2		**PKPab**	09 41 11.5	+0.3
GRFO	**Grafenberg**	145.63	334	*e*PKPdf		**PKPab**	09 41 11.5	+0.3
ANX	**Ano Chora**	145.94	309	P		**PKPbc**	09 41 12.1	-0.2
KLV	**Kalavryta, Ach**	145.97	308	P		**PKPdf**	09 41 10.9	-0.7
PERS	**Pernice**	145.99	326	*e*PKPbc		**PKPdf**	09 41 11.1	-0.2
SOKA	**Soboth**	146.00	326	*i* PKPab		**PKPdf**	09 41 11.6	+0.2
	comp=Z,36nm,1.4s,SNR=17							
LAKA	**Lakka**	146.03	309	P		**PKPdf**	09 41 11.8	+0.1
DSL	**Palaion Diasel**	146.31	311	P		**PKPdf**	09 41 08.4	-3.7
OBKA	**Obir**	146.36	327	*i* PKPdf		**PKPdf**	09 41 09.4	-2.7
	comp=Z,4.1nm,0.5s							
PDO	**Prodromos**	146.47	310	P		**PKPdf**	09 41 12.7	+0.3
KBA	**Koelnbreinsper**	146.58	328	*i* PKPab		**PKPbc**	09 41 13.8	-0.3
	comp=Z,16nm,1.4s							
BOJS	**Bojanci**	146.65	325	*e*PKPbc		**PKPdf**	09 41 12.8	+0.4
MYKA	**Terra Mystica**	146.74	328	*i* PKPbc		**PKPdf**	09 41 13.4	+0.8
	comp=Z,9.8nm,1.0s							
BEBN	**Eben Emael**	146.79	340	PKPab		**PKPab**	09 41 15.4	-0.1
CWF	**Charnwood Fore**	146.80	349	*e*PKPdf		**PKPbc**	09 41 14.2	-0.1
MEM	**Membach**	146.85	339	PKPbc		**PKPbc**	09 41 14.5	+0.1
STU	**Stuttgart**	147.19	334	*e*PKIKP		**PKPdf**	09 41 13.1	-0.2
STU				*e*			09 41 15.8	
STU	**Stuttgart**	147.19	334	*e*PKPdf		**PKPdf**	09 41 13.1	-0.2
STU				*e*PKPbc		**PKPbc**	09 41 15.8	+0.4
UCC	**Uccle**	147.20	341	PKPbc		**PKPbc**	09 41 16.3	+0.9
ABTA	**Abfaltersbach**	147.22	329	*i* PKPdf		**PKPdf**	09 41 13.5	0.0
	comp=Z,18nm,1.2s							
BCLA	**Clavier**	147.24	340	PKPbc		**PKPbc**	09 41 15.9	+0.3
WTTA	**Wattenberg**	147.27	330	*i* PKPbc		**PKPbc**	09 41 14.9	-1.1
	comp=Z,47nm,1.5s,SNR=7.6							
MOTA	**Moosalm**	147.45	331	*i* PKPab		**PKPbc**	09 41 17.5	+1.0
	comp=Z,40nm,1.3s,SNR=8.1							
RETA	**Reutte**	147.50	331	*i* pPKPdf		**PKPbc**	09 41 16.2	-0.3
	comp=Z,24nm,1.3s,SNR=8.1							
LANF	**Langenberg**	147.57	336	PKP		**PKPbc**	09 41 17.0	+0.4
WLF	**Walferdange**	147.60	338	PKPbc		**PKPbc**	09 41 17.3	+0.8
WLF	**Walferdange**	147.60	338	*e*PKP2		**PKPbc**	09 41 17.4	+0.8
WLF	**Walferdange**	147.60	338	*e*PKPbc		**PKPbc**	09 41 17.4	+0.8
DOU	**Dourbes**	147.75	340	PKPbc		**PKPbc**	09 41 17.0	+0.1
FETA	**Feichten**	147.87	331	*i* PKPdf		**PKPdf**	09 41 13.9	-0.8
	comp=Z,27nm,1.3s,SNR=6.9							
BFO	**Black Forest**	147.89	335	*e*PKP2		**PKPbc**	09 41 17.2	-0.3
BFO	**Black Forest**	147.89	335	*e*PKPbc		**PKPbc**	09 41 17.2	-0.3
DAVA	**Damuels**	148.05	332	*i* sPKPdf		**PKPbc**	09 41 18.6	+0.5
	comp=Z,39nm,1.7s,SNR=7.8							
FUORN	**Ofenpass-Fuorn**	148.38	331	*e*PKPbc		**PKPbc**	09 41 19.7	+0.6
ECH	**Echery**	148.44	336	PKP		**PKPbc**	09 41 18.7	-0.2
MOF	**Molkenrain**	148.75	335	PKP		**PKPbc**	09 41 19.5	-0.3
TUE	**Stuetta**	148.90	331	*e*PKPbc		**PKPbc**	09 41 20.1	-0.3
LOMF	**Lomont**	149.27	335	PKP		**PKPbc**	09 41 21.9	+0.8
TIP	**Timpagrande**	149.31	314	*e*PKPbc		**PKPbc**	09 41 22.0	+0.5
SENIN	**Lac Senin/Sane**	149.88	333	*e*PKPbc		**PKPbc**	09 41 23.0	+0.1
PLDF	**La Plantade**	151.64	337	PKP		**PKPbc**	09 41 27.1	+0.3
AUTN	**L'Aution**	151.67	330	PKP		**PKPbc**	09 41 27.5	+0.3
AGO	**Saint Agoulin**	151.75	338	PKP		**PKPbc**	09 41 27.6	+0.6
LUCF	**Luceram**	151.79	330	PKP		**PKPbc**	09 41 26.7	-0.6
MVIF	**Mont Vial**	151.87	330	PKP		**PKPbc**	09 41 27.6	+0.1
SSB	**Saint Sauveur**	151.88	335	*e*PKIKP		**PKPbc**	09 41 27.7	+0.4
SSB	**Saint Sauveur**	151.88	335	*e*PKPbc		**PKPbc**	09 41 27.7	+0.4
REVF	**Revere**	151.89	330	PKP		**PKPbc**	09 41 27.6	+0.2
CALN	**Calern**	152.11	331	PKP		**PKPbc**	09 41 26.7	-1.3
LBL	**Lubilhac**	152.41	337	PKP		**PKPbc**	09 41 29.6	+1.0
TORD	**Torodi Ar. Bea**	165.35	242	PKP		**PKPdf**	09 41 37.5	-0.2
	comp=Z,6.5nm,1.1s,baz=80,slow=0.8,SNR=21							
TORD				PKPab		**PKPab**	09 42 33.9	-1.7
	comp=Z,3.2nm,1.2s,baz=122,slow=4.3,SNR=5.3							

ISCJB ***11*** *09:27:31.8±1.1, 35°.76S±0°.04×73°.4W±0°.1, h33km, Error ellipse: s-maj=12.7km s-min=5.6km az=179.1*
GUC ***11*** *09:27:31.7±0.7, 35°.75S×73°.31W, h25km±13km, ML4.2*
ISC 11 09:27:33.0±2.0, 35°.81S±0°.05×73°.3W±0°.1, h35km, n16, σ1°58/18, 1D, Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
COCH	**Cobquecura**	**0.55**	**126**	⇓*i* P	**Pn**	**09 27 42.7**	**-1.7**
COCH				*i* S	**Sn**	**09 27 50.5**	**-1.8**
CCSP	**San Pedro de C**	**1.05**	**170**	*e*P	**Pn**	**09 27 51.2**	**0.0**
CCSP				*i* S	**Sn**	**09 28 05.2**	**+0.6**
CCSP				IAML		09 28 10.3	
	comp=N,2μm,0.4s						
CCHI	**Chillan**	**1.29**	**128**	*e*P	**Pn**	**09 27 54.8**	**+0.3**
CCHI				*i* S	**Sn**	**09 28 11.8**	**+1.2**
CCHI				IAML		09 28 22.1	
	comp=N,2μm,0.5s						
TALC	**Talca**	**1.45**	**74**	*e*P	**Pn**	**09 27 55.9**	**-0.8**
TALC				*i* S	**Sn**	**09 28 14.2**	**-0.3**
CHPI	**Pichilemu**	**1.79**	**38**	*e*P	**Pn**	**09 27 59.6**	**-1.8**
ANTU	**Antumapu**	**3.16**	**46**	IAML		09 29 13.0	
	comp=E,964nm,0.8s						
CLCH	**Cerro Calan**	**3.34**	**45**	*e*P	**Pn**	**09 28 23.0**	**+0.2**
CLCH				IAML		09 29 25.2	
	comp=N,1μm,1.3s						
ROC1	**El Roble**	**3.42**	**35**	*i* P	**Pn**	**09 28 23.8**	**-0.3**
ROC1				*i* S	Sn	09 29 18.4	+15
ROCH	**El Roble**	**3.42**	**35**	IAML		09 29 29.0	
	comp=N,515nm,0.7s						
PEL	**Peldehue**	**3.45**	**40**	*e*P	**Pn**	**09 28 23.8**	**-0.4**
PEL				IAML		09 29 21.7	
	comp=N,588nm,1.4s						
ARCO	**CERRO ARCO**	**4.70**	**52**	*i* P	**Pn**	**09 28 45.4**	**+3.8**
ARCO				*i* S	Sn	09 29 56.2	+21
ARCO				IAML		09 30 06.3	
	comp=Z,39nm,0.6s						
ASAL	**Salagasta**	**4.92**	**51**	*i* P	**Pn**	**09 28 47.2**	**+2.7**
RTLS	**Leoncito**	**5.23**	**41**	*i* P	**Pn**	**09 28 49.0**	**+0.1**
RTCV	**Cerro Valdivia**	**5.61**	**47**	*i* P	**Pn**	**09 28 55.5**	**+1.6**
RTLL	**Cerro Villicun**	**6.04**	**44**	*i* P	**Pn**	**09 28 59.5**	**-0.4**
AMOG	**MOGNA**	**6.33**	**41**	*i* P	**Pn**	**09 29 02.8**	**-1.1**

IDC ***11*** *09:28:04.2±0.8, 20°.49S×168°.32E, h0km, mb4.3/16, mb1 4.5/17, mb1mx4.3/39, mbtmp4.3/17, ML3.9/1, Error ellipse: s-maj=23.7km s-min=16.4km az=125.0*
NEIC ***11*** *09:28:05.6±0.3, 20°.50S×168°.34E, h10km, mb4.9/12, Error ellipse: s-maj=9.6km s-min=6.6km az=156.0*
ISCJB ***11*** *09:28:06.5±0.4, 20°.51S±0°.07×168°.29E±0°.07, h26km, mb4.6/24, Error ellipse: s-maj=11.2km s-min=7.2km az=139.9*
ISC 11 09:28:08.1±0.6, 20°.54S±0°.10×168°.30E±0°.09, h26km, n40, σ0°70/41, mb4.6/24, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.30**	**228**	Pn	**Pn**	**09 28 43.9**	**-0.5**
	31nm,0.3s,baz=51,slow=16,SNR=12						
DZM				Sn	**Sn**	**09 29 12.0**	**0.0**
	114nm,0.3s,baz=340,slow=22,SNR=10						
RAO	**Raoul Island**	**15.21**	**127**	*e*Pn	**Pn**	**09 31 40.4**	**-0.8**
	342nm,1.0s						
EIDS	**Eidsvold**	**16.56**	**250**	*e*P	**P**	**09 32 00.6**	**-0.4**
	28nm,1.5s						
ARMA	**Armidale**	**17.96**	**233**	P	**Pn**	**09 32 15.7**	**-0.4**
	32nm,1.5s						
CTA	**Charters Tower**	**20.68**	**267**	P	Pn	09 32 48.2	-0.5
	14nm,1.1s,baz=115,slow=11,SNR=6.5						
CTAO	**Charters Tower**	**20.68**	**267**	*e*P	**P**	**09 32 45.7**	**-0.6**
	78nm,0.9s						
STKA	**Stephens Creek**	**26.41**	**239**	P	**P**	**09 33 44.3**	**+1.6**
	9.5nm,0.8s,baz=70,slow=8.5,SNR=9.8						
WRAB	**Tennant Creek**	**31.82**	**265**	*e*P	**P**	**09 34 30.4**	**-0.6**
	6.6nm,0.9s						
WRA	**Warramunga Arr**	**31.83**	**265**	P	**P**	**09 34 29.5**	**-1.6**
	2.1nm,0.9s,baz=91,slow=8.5,SNR=11						
ASAR	**Alice Springs**	**31.97**	**258**	P	**P**	**09 34 32.2**	**-0.1**
	13nm,0.8s,baz=83,slow=9.0,SNR=59						
FITZ	**Fitzroy Crossi**	**40.25**	**266**	P	**P**	**09 35 42.7**	**-0.3**
	3.6nm,0.8s,baz=145,slow=9.8,SNR=5.2						
MBWA	**Marble Bar**	**45.24**	**260**	P	P	09 36 33.5	+10
	12nm,0.6s						
KAPI	**Kappang**	**49.58**	**281**	P	**P**	**09 36 56.7**	**-0.7**
	3.6nm,0.4s,baz=305,slow=20,SNR=4.3						
KAPI	**Kappang**	**49.58**	**281**	*e*P	**P**	**09 36 57.6**	**+0.2**
VNDA	**Vanda**	**57.11**	**182**	P	**P**	**09 37 52.6**	**+0.8**
	0.8nm,0.9s,baz=348,slow=5.2,SNR=3.5						
KSM	**Kuching**	**60.81**	**284**	*e*P	**P**	**09 38 18.8**	**+0.3**
	4.7nm,0.5s						
MJAR	**Matsushiro Arr**	**63.49**	**333**	P	**P**	**09 38 35.0**	**-1.0**
	0.3nm,0.3s,baz=174,slow=8.0,SNR=5.0						
KSRS	**Korea Array**	**69.08**	**327**	P	**P**	**09 39 12.6**	**+0.8**
	0.7nm,0.6s,baz=97,slow=33,SNR=3.0						
KSAR	**Wonju Array Be**	**69.09**	**326**	P	**P**	**09 39 12.6**	**+0.7**
USRK	**Ussuriysk Ar.**	**72.49**	**333**	P	**P**	**09 39 33.3**	**+0.9**
	6.5nm,1.0s,baz=161,slow=4.6,SNR=11						
PETK	**Petropavlovsk-**	**73.91**	**353**	P	**P**	**09 39 40.1**	**-0.5**
	4.9nm,0.8s,baz=146,slow=8.2,SNR=4.0						
KLR	**Kul'dur**	**76.69**	**336**	P	**P**	**09 39 56.9**	**+0.2**
	0.6nm,0.5s,baz=161,slow=5.3,SNR=4.7						
MAW	**Mawson**	**76.90**	**202**	P	**P**	**09 39 57.9**	**+0.2**
	4.6nm,1.1s,baz=12,slow=16,SNR=3.1						
CMAR	**Chiang Mai Arr**	**78.23**	**295**	P	**P**	**09 40 06.5**	**+0.5**
	5.3nm,0.9s,baz=132,slow=4.6,SNR=19						
CHTO	**Chiang Mai**	**78.39**	**295**	*e*P	**P**	**09 40 08.4**	**+1.5**
	4.1nm,0.8s						
CHTO				*e*PcP	**sP**	**09 40 18.9**	**+0.6**
SNAA	**Sanae**	**87.83**	**183**	*e*P	**P**	**09 40 55.4**	**+0.6**
	436nm,1.0s						
VNA3	**Neumayer Olymp**	**88.45**	**181**	P	**P**	**09 40 57.4**	**-0.3**
CMB	**Columbia Colle**	**88.68**	**48**	*e*P	**P**	**09 40 59.1**	**-0.2**
	26nm,1.0s						
VNA2	**Neumayer--Watz**	**88.73**	**181**	P	**P**	**09 40 59.5**	**+0.4**
	baz=164,slow=6.1						
YBH	**Yreka Blue Hor**	**88.85**	**44**	*e*P	**P**	**09 40 59.7**	**-0.4**
	13nm,1.4s						
HUMO	**Hull Mountain**	**89.11**	**43**	*e*P	**P**	**09 41 01.5**	**+0.2**
	27nm,0.9s						
NVAR	**Mina Array Bea**	**90.32**	**49**	P	**P**	**09 41 07.0**	**-0.3**
	3.6nm,0.8s,baz=226,slow=8.7,SNR=27						
ILAR	**Eielson Array**	**91.73**	**18**	P	**P**	**09 41 13.0**	**+0.1**
	0.7nm,0.7s,baz=233,slow=5.2,SNR=6.4						
WVOR	**Wild Horse Val**	**91.86**	**45**	*e*P	**P**	**09 41 13.6**	**-0.6**
	5.3nm,1.1s						
YKA	**Yellowknife Ar**	**102.23**	**28**	P	**Pdif**	**09 41 59.6**	**-0.8**
	0.2nm,0.6s,baz=256,slow=4.8,SNR=5.5						
GERES	**GERESS Array B**	**145.19**	**330**	PKPbc	**PKPbc**	**09 47 42.6**	**-0.4**
	0.4nm,0.3s,baz=321,slow=1.7,SNR=5.1						
WLF	**Walferdange**	**147.65**	**338**	*e*PKPdf	**PKPdf**	**09 47 46.8**	**-0.6**
WLF				*e*PKPbc	**PKPbc**	**09 47 50.6**	**+0.5**
BFO	**Black Forest**	**147.92**	**334**	*e*PKPbc	**PKPbc**	**09 47 51.7**	**+0.7**
TUE	**Stuetta**	**148.94**	**331**	*e*PKPbc	**PKPbc**	**09 47 54.2**	**+0.3**
TORD	**Torodi Ar. Bea**	**165.22**	**242**	PKP	**PKPdf**	**09 48 10.6**	**-0.4**
	1.5nm,1.0s,baz=321,slow=1.8,SNR=5.3						

CSEM ***11*** *09:38:56.9, 41°.75N×13°.74E, h13km, MD1.9/7*
ROM 11 09:38:56.9±0.1, 41°.75N×13°.74E, h13km±2km, Md1.9/7, Ml1.3/5, 2C-2D, Error ellipse: s-maj=1.7km s-min=1.1km az=52.0, Southern Italy

| Code | Station Name | Δ° | AZ°

YNG	Young	22.43 228	P	P	09 48 28.8	+2.3
	baz=22,SNR=4.8					
CAN	Canberra	22.61 225	eP	P	09 48 26.8	-1.5
CAN			e*PP	sP	09 48 40.5	-1.2
CAN	Canberra	22.61 225	eP	P	09 48 26.8	-1.5
CAN			epP	sP	09 48 40.5	-1.2
MTSU	Mount Surprise	22.80 272	P	P	09 48 31.2	+0.7
	baz=23,SNR=66					
QLP	Quilpie	22.94 250	P	P	09 48 31.8	0.0
	baz=23,SNR=8.8					
OXZ	Oxford	23.07 173	eP	P	09 48 32.3	-0.7
OXZ			epP	sP	09 48 45.0	-1.4
CMSA	Cobar Meteorol	23.15 237	P	P	09 48 34.2	+0.3
	baz=23,SNR=35					
PMG	Port Moresby	23.18 295	P	P	09 48 34.8	+0.4
	comp=Z,17nm,0.9s,baz=112,slow=5.6,SNR=7.1					
PMG			LR	LR	09 56 17.0	
	comp=Z,845nm,18.2s,baz=137,slow=33					
PMG	Port Moresby	23.18 295	d iP	P	09 48 34.0	-0.3
PMG			pmax	pmax		
	comp=Z,204nm,1.2s					
PMG	Port Moresby	23.18 295	eP	P	09 48 34.5	+0.2
	comp=Z,107nm,1.4s					
RPZ	Rata Peaks	23.36 175	P	P	09 48 34.9	-1.0
	comp=Z,20nm,0.8s,baz=7.0,slow=8.6,SNR=4.5					
RPZ			LR	LR	09 56 55.6	
	comp=Z,1µm,18.6s,baz=344,slow=35					
COEN	Coen	24.87 281	P	P	09 48 50.9	+0.7
	baz=25,SNR=8.8					
COEN	Coen	24.87 281	eP	P	09 48 49.8	-0.4
	comp=Z,40nm,1.1s					
COEN			epP	sP	09 49 13.1	+9.0
TOO	Toolangi	26.21 224	P	P	09 49 03.6	+1.4
	baz=26,SNR=4.7					
TOO	Toolangi	26.21 224	P	P	09 49 02.1	-0.1
TOO			pmax	pmax		
	comp=Z,29nm,2.1s					
STKA	Stephens Creek	26.53 239	P	P	09 49 05.6	+0.5
	comp=Z,14nm,0.6s,baz=76,slow=10.0,SNR=38					
STKA			LR	LR	09 59 00.2	
	comp=Z,2µm,19.3s,baz=52,slow=35					
STKA	Stephens Creek	26.53 239	P	P	09 49 05.6	+0.5
	baz=26,SNR=21					
STKA	Stephens Creek	26.53 239	eP	P	09 49 05.7	+0.5
	comp=Z,33nm,1.4s					
QIS	Mount Isa	26.92 265	P	P	09 49 11.2	+2.5
	baz=27,SNR=4.4					
MANU	Manus Island	27.43 309	eP	P	09 49 08.8	-4.5
	comp=Z,359nm,0.7s					
MANU			ePcP	PcP	09 52 32.7	+1.0
MANU			eS	S	09 53 50.2	-1.5
ARPS	Mount Arapiles	28.29 229	P	P	09 49 21.6	+0.8
	baz=28					
HTT	Hallett	29.16 237	P	P	09 49 29.5	+0.8
	baz=29,SNR=9.5					
RAR	Rarotonga	29.78 97	LR	LR	10 00 46.4	
	comp=Z,245nm,18.2s,baz=236,slow=35					
BBOO	Buckleboo	31.28 240	P	P	09 49 47.1	-0.3
	baz=31,SNR=5.3					
WB2	Warramunga Arr	31.89 265	eP	P	09 49 52.9	0.0
	comp=Z,34nm,1.3s					
WRAB	Tennant Creek	31.89 265	eP	P	09 49 51.5	-1.4
WRAB			pmax	pmax		
	comp=Z,26nm,1.1s					
WRAB	Tennant Creek	31.89 265	eP	P	09 49 51.5	-1.4
	comp=Z,26nm,1.1s					
WRA	Warramunga Arr	31.90 265	P	P	09 49 51.2	-1.7
	comp=Z,2.7nm,0.5s,baz=92,slow=8.5,SNR=66					
WRA			PcP	PcP	09 52 43.0	-0.1
	comp=Z,3.4nm,1.1s,baz=94,slow=3.4,SNR=4.8					
WRA			LR	LR	10 02 34.7	
	comp=Z,772nm,19.0s,baz=95,slow=36					
AS01	Alice Springs	32.01 258	eP	P	09 49 53.4	-0.5
AS31	Alice Springs	32.05 258	eP	P	09 49 53.8	-0.5
	comp=Z,23nm,0.9s					
ASAR	Alice Springs	32.05 258	P	P	09 49 53.0	-1.3
	comp=Z,24nm,0.6s,baz=86,slow=8.9,SNR=335					
ASAR			LR	LR	10 02 22.3	
	comp=Z,2µm,19.1s,baz=95,slow=35					
JAY	Jayapura	32.30 300	P	P	09 49 56.3	-0.2
	comp=Z,2.1nm,1.1s,baz=90,slow=23,SNR=3.2					
JAY			LR	LR	10 02 15.0	
	comp=Z,14nm,20.7s,baz=88,slow=35					
JAY	Jayapura	32.30 300	P	P	09 49 58.2	+1.7
GENI	Genyem	32.69 299	P	P	09 50 01.9	+2.0
	comp=Z,112nm,1.3s					
WRKA	Warakurna	37.14 255	P	P	09 50 37.4	-0.9
	baz=37,SNR=15					
SAUI	Saumlaki	37.88 284	P	P	09 50 45.8	+1.2
FAKI	Fak Fak	39.24 292	P	P	09 50 57.2	+1.2
PPT2	Papeete2	39.80 93	eS	S	09 57 07.2	+4.1
	comp=Z,344nm,26.0s					
PPT2			eLQ	LQ	10 00 20.1	
	comp=Z,2µm,28.0s					
PPT2			eLR	LR	10 02 00.7	
	comp=Z,2µm,29.0s,baz=252					
PPT	Papeete	39.81 93	LR	LR	10 03 22.0	
	comp=Z,566nm,21.1s,baz=262,slow=30					
FITZ	Fitzroy Crossi	40.31 266	P	P	09 51 04.4	-0.4
	comp=Z,8.1nm,0.8s,baz=108,slow=7.7,SNR=17					
FITZ			LR	LR	10 06 37.7	
	comp=Z,739nm,21.9s,baz=96,slow=34					
FITZ	Fitzroy Crossi	40.31 266	P	P	09 51 04.7	-0.2
	baz=40,SNR=9.9					
FITZ	Fitzroy Crossi	40.31 266	eP	P	09 51 04.5	-0.3
	comp=Z,51nm,1.0s					
GUMO	Guam	40.91 324	LR	LR	10 04 25.7	
	comp=Z,158nm,21.4s,baz=152,slow=31					
SWI	Sorong	41.12 294	P	P	09 51 13.7	+2.2
	comp=Z,37nm,1.2s					
SWI	Sorong	41.12 294	P	P	09 51 13.7	+2.2
SWI			pmax	pmax		
	comp=Z,37nm,1.2s					
KMBL	Kambalda	42.94 246	P	P	09 51 25.8	-0.4
	baz=43,SNR=8.5					
PALU	Palau	43.24 306	P	P	09 51 29.5	+0.7
	baz=43					
LBMI	Labuha	44.49 291	P	P	09 51 40.8	+1.9
SANI	Sanana	45.17 288	P	P	09 51 46.1	+1.8
	comp=Z,135nm,1.2s,comp=Z,2µm					
MBWA	Marble Bar	45.32 260	eP	P	09 51 45.1	-0.4
	comp=Z,108nm,1.0s					
KLBR	Kellerberrin	46.47 245	P	P	09 51 54.2	-0.2
	baz=46,SNR=7.6					
NWAO	Narrogin (SRO)	46.95 244	LR	LR	10 11 10.5	
	comp=Z,2µm,19.8s,baz=328,slow=35					
NWAO	Narrogin (SRO)	46.95 244	P	P	09 51 57.5	-0.7
	baz=47,SNR=4.6					
WSI	Waingapu	47.46 276	P	P	09 52 04.3	+1.9
	comp=Z,239nm,0.4s,comp=Z,19µm					
MUN	Mundaring	47.79 245	P	P	09 52 04.8	0.0
	baz=48					
LUWI	Luwuk	48.49 288	P	P	09 52 11.2	+0.8
	comp=Z,125nm,1.2s,comp=Z,2µm					
LUWI	Luwuk	48.49 288	eP	P	09 52 11.2	+0.8
	comp=Z,124nm,1.1s					
KAPI	Kappang	49.60 281	P	P	09 52 19.4	+0.6
	comp=Z,21nm,1.1s,baz=130,slow=3.9,SNR=4.1					
KAPI	Kappang	49.60 281	eP	P	09 52 19.5	+0.6
	comp=Z,90nm,1.4s					
SPSI	Sidrap Palu	49.99 282	P	P	09 52 22.0	+0.2
TAOE	Nuku Hiva Isla	50.95 85	eS	S	09 59 46.9	+2.8
	comp=Z,336nm,26.5s					
TAOE			eLR	LR	10 07 10.2	
	comp=Z,1µm,29.0s					
PCI	Palu	51.19 286	P	P	09 52 32.2	+1.3
PCI			pmax	pmax		
	comp=Z,166nm,1.4s					
RKT	Rikitea	52.43 104	eLR	LR	10 07 51.2	
	comp=Z,549nm,31.8s					
CBIJ	Chichi jima	53.59 331	eP	P	09 52 48.3	0.0
	comp=Z,78nm,1.0s					
JCJ	Chichijima	53.59 331	P	P	09 52 47.4	-0.9
	comp=Z,55nm,0.9s,baz=143,slow=7.4,SNR=4.4					
JAGI	Jajag, Banyuwa	53.59 275	eP	P	09 52 47.1	-1.6
	comp=Z,102nm,1.2s					
TSM	Tawau	55.28 291	‖P	P	09 53 01.2	+0.2
SDKM	Sandakan	56.52 292	‖P	P	09 53 09.7	-0.2
VNDA	Vanda	57.25 182	P	P	09 53 13.2	-0.9
	comp=Z,1.3nm,0.7s,baz=2.2,slow=8.5,SNR=17					
VNDA			LR	LR	10 15 21.7	
	comp=Z,196nm,18.1s,baz=310,slow=34					
VNDA	Vanda	57.25 182	eP	P	09 53 13.5	-0.6
SBA	Scott Base	57.50 180	eP	P	09 53 16.4	+0.5
SBA			e*PP	pP	09 53 27.3	+1.1
SBA	Scott Base	57.50 180	eP	P	09 53 16.4	+0.5
SBA			epP	pP	09 53 27.3	+1.1
KKM	Kota Kinabalu	57.56 292	eP	P	09 53 17.9	+0.6
KKM			epP	pP	09 53 28.6	+0.8
STKI	Sintang	59.19 283	P	P	09 53 29.8	+1.2
	comp=Z,117nm,0.7s,comp=Z,30µm					
SBUM	Sibu	59.50 286	eP	P	09 53 31.5	+0.8
SBUM			epP	pP	09 53 42.0	+0.9
LEM	Lembang	60.24 274	P	P	09 53 42.5	+6.4
KSM	Kuching	60.82 284	eP	P	09 53 39.6	-0.2
KSM			epP	pP	09 53 50.7	+0.4
CBJI	Citeko	61.10 274	P	P	09 53 46.6	+4.9
CGJI	Cibinong	62.12 273	P	P	09 53 48.0	-0.6
MJAR	Matsushiro Arr	63.39 333	P	P	09 53 55.5	-1.1
	comp=Z,11nm,0.9s,baz=168,slow=7.1,SNR=26					
MJAR			LR	LR	10 24 16.6	
	comp=Z,86nm,18.0s,baz=135,slow=39					
MAJO	Matsushiro	63.39 333	d iP	P	09 53 55.6	-1.0
MAJO			pmax	pmax		
	comp=Z,206nm,1.3s					
MAJO	Matsushiro	63.39 333	eP	P	09 53 56.3	-0.3
MAT	Matsushiro	63.39 333	P	P	09 53 55.5	-1.1
MJB9	Matsu-Tunnel	63.40 333	eP	P	09 53 56.5	-0.1
TPUB	Ta-pu	63.65 311	eP	P	09 53 58.0	-0.5
YHNB	Yeheng	63.99 312	eP	P	09 54 00.7	-0.2
	comp=Z,50nm,1.2s					
ASAJ	Asahikawa	68.40 340	eP	P	09 54 29.6	+1.0
	comp=Z,14nm,1.1s					
BKNI	Bangkinang	68.91 279	eP	P	09 54 32.6	+0.1
KSRS	Korea Array	69.00 326	P	P	09 54 31.6	-0.8
	comp=Z,3.5nm,0.9s,baz=148,slow=7.1,SNR=10					
KSAR	Wonju Array Be	69.01 326	P	P	09 54 31.7	-0.9
KSAR	Wonju Array Be	69.01 326	P	P	09 54 31.6	-0.9
NJ2	Nanjing	70.47 317	eP	P	09 54 39.8	-1.8
NJ2			pmax	pmax		
	comp=Z,14nm,0.5s					
KULM	Kulim	71.17 283	eP	P	09 54 46.6	+0.2
	comp=Z,100nm,1.8s					
USRK	Ussurlysk Ar.	72.39 333	P	P	09 54 53.4	+0.4
	comp=Z,35nm,1.0s,baz=149,slow=4.0,SNR=43					
USRK			LR	LR	10 25 49.6	
	comp=Z,104nm,19.1s,baz=146,slow=35					
PANO	Nakornpanom	72.82 296	P	P	09 54 57.4	+1.2
	comp=Z,54nm,1.0s					
SKNT	Sakolnakorn	73.28 296	P	P	09 54 59.3	+0.5
	comp=Z,51nm,1.1s					
MDJ	Mudanjiang	73.75 332	P	P	09 55 01.7	+0.7
MDJ			pmax	pmax		
	comp=Z,31nm,1.1s					
MDJ			pmax	pmax		
	comp=Z,190nm,6.2s					
MDJ	Mudanjiang	73.75 332	eP	P	09 55 02.0	+1.0
	comp=Z,14nm,0.8s					
PETK	Petropavlovsk-	73.78 353	P	P	09 55 00.4	-0.6
	comp=Z,17nm,1.0s,baz=120,slow=8.8,SNR=9.7					
PETK			LR	LR	10 24 32.9	
	comp=Z,203nm,19.0s,baz=148,slow=33					
CHAI	Chaiyaphum	74.48 294	P	P	09 55 07.2	+1.3
	comp=Z,4.0nm,1.0s					
NONG	Nongkai	74.49 296	P	P	09 55 06.8	+0.9
	comp=Z,31nm,1.3s					
CN2	Changchun	75.02 329	eP	P	09 55 08.6	+0.2
CN2			epP	pP	09 55 20.2	+1.1
CN2			pmax	pmax		
	comp=Z,20nm,1.0s					
ENH	Enshi	75.77 310	eP	P	09 55 09.4	-3.7
	comp=Z,20nm,0.8s					
GYA	Guiyang	75.80 306	eP	P	09 55 15.0	+1.5
GYA			pmax	pmax		
	comp=Z,10.0nm,1.0s					
UTTA	Uttaradit	76.53 295	P	P	09 55 18.9	+1.3
	comp=Z,4.3nm,1.1s					
NANT	Nan	76.89 296	P	P	09 55 21.0	+1.4
	comp=Z,9.7nm,0.9s					
MAW	Mawson	77.05 202	P	P	09 55 19.5	-0.2
	comp=Z,5.3nm,0.7s,baz=116,slow=9.9,SNR=11					
MAW			LR	LR	10 28 27.6	
	comp=Z,137nm,18.1s,baz=64,slow=35					
MAW	Mawson	77.05 202	P	P	09 55 20.1	+0.3
	baz=77,SNR=5.4					
NKL	Nikolayevsk	77.07 343	eP	P	09 55 20.3	+0.5
NKL			pmax	pmax		
	comp=Z,50nm,1.1s					
BJI	Beijing	77.31 322	P	P	09 55 21.1	-0.5
BJI			pmax	pmax		
	comp=Z,12nm,2.2s					
BJI			pmax	pmax		
	comp=Z,160nm,5.0s					
LAMP	Lampang	77.66 295	P	P	09 55 26.1	+2.1
	comp=Z,20nm,0.8s					
CRAI	Chiangrai	77.81 297	P	P	09 55 25.7	+0.9
	comp=Z,141nm,1.2s					
KMI	Kunming	78.18 302	P	P	09 55 28.3	+1.3
KMI			pmax	pmax		
	comp=Z,40nm,1.0s					
KMI			pmax	pmax		
	comp=Z,210nm,4.5s					
CMAR	Chiang Mai Arr	78.22 295	P	P	09 55 28.1	+1.0
	comp=Z,17nm,0.9s,baz=132,slow=4.3,SNR=60					
CMMT	Chiang Mai	78.37 295	P	P	09 55 29.0	+1.0
	comp=Z,37nm,0.9s					
CHTO	Chiang Mai	78.38 295	P	P	09 55 29.0	+1.0
	comp=Z,163nm,0.9s					
CHTO	Chiang Mai	78.38 295	eP	P	09 55 29.0	+1.0
CHTO			pmax	pmax		
	comp=Z,28nm,0.8s					
CHTO	Chiang Mai	78.38 295	eP	P	09 55 29.0	+1.0
	comp=Z,28nm,0.8s					
CMAI	Chiengmai2	78.79 296	P	P	09 55 31.6	+1.2
	comp=Z,28nm,1.2s					
CD2	Chengdu	80.28 308	P	P	09 55 38.9	+0.7
CD2			pmax	pmax		
	comp=Z,7.0nm,0.7s					
HHC	Hu-ho-hao-te	80.56 320	eP	P	09 55 39.6	+0.1
HHC	Hu-ho-hao-te	80.56 320	S	S	10 05 40.0	-4.1
HHC			pmax	pmax		
	comp=Z,29nm,1.3s					
HHC			pmax	pmax		
	comp=Z,220nm,7.1s					
HHC			LR	LR		
	comp=N,200nm,17.7s					
HHC			LR	LR		
	comp=E,240nm,17.6s					
HHC			LR	LR		
	comp=Z,130nm,17.8s					
LZH	Lanzhou	82.89 313	eP	P	09 55 53.0	+1.0
LZH			pP	sP	09 56 05.0	-1.7
LZH			sP	pP	09 56 10.1	+7.3
LZH			PP	PP	09 59 04.0	+1.0
LZH	Lanzhou	82.89 313	eS	S	10 06 03.3	-5.2
LZH	Lanzhou	82.89 313	sS	sS	10 06 24.0	-2.3
LZH	Lanzhou	82.89 313	SS	SS	10 11 29.0	-3.5
LZH			pmax	pmax		
	comp=Z,20nm,1.0s					
LZH			pmax	pmax		
	comp=Z,77nm,4.0s					
LZH			LR	LR		
	comp=N,1µm,16.2s					
LZH			LR	LR		
	comp=E,1µm,16.0s					
LZH			LR	LR		
	comp=Z,2µm,17.2s					
SYO	Syowa Base	83.59 196	‖eP	P	09 55 52.8	-2.1
SEY	Seymchan	84.00 353	i P	P	09 55 55.8	-1.0
CLNS	Chul'man	85.14 338	eP	P	09 56 03.1	+0.3
CLNS			pmax	pmax		
	comp=Z,26nm,1.1s					
CLNS			pmax	pmax		
	comp=E,3.0nm,1.1s					
CLNS			pmax	pmax		
	comp=N,12nm,1.2s					
GAMB	Gambell	85.33 9	eP	P	09 56 04.2	+0.7
GAMB			epP	pP	09 56 15.7	+1.4
ULN	Ulaanbaatar	87.30 324	i P	P	09 56 13.9	+0.1
ULN			pmax	pmax		
	comp=Z,52nm,2.5s					
ULN	Ulaanbaatar	87.30 324	eP	P	09 56 14.0	+0.1
	comp=Z,17nm,1.1s					
GTA	Gaotai	87.32 314	eP	P	09 56 14.8	+0.7
GTA			pP	PcP	09 56 19.0	+2.9
GTA			sP	pP	09 56 22.5	-2.4
GTA			pmax	pmax		
	comp=Z,8.0nm,0.9s					
PKM	Mcpherson Peak	87.53 51	P	P	09 56 15.2	-0.1
	baz=243					
TNA	Tin City	87.58 10	eP	P	09 56 12.0	-2.5
	comp=Z,33nm,1.9s					
SMMC	Simmler	87.59 51	P	P	09 56 15.3	0.0
	baz=243					
SONM	Songino Array	87.64 323	P	P	09 56 16.0	+0.5
	comp=Z,6.5nm,0.8s,baz=140,slow=4.7,SNR=6.7					
SONM	Songino Array	87.64 323	P	P	09 56 16.0	+0.5
SONM			pmax	pmax		
	comp=Z,7.0nm,0.8s					
YAK	Yakutsk	87.72 343	eP	P	09 56 14.6	-0.7
YAK			pmax	pmax		
	comp=Z,27nm,1.0s					
SNAA	Sanae	87.97 183	P	P	09 56 15.8	-0.9
SNAA	Sanae	87.97 183	eP	P	09 56 15.4	-1.3
SNAA	Sanae	87.97 183	eP	P	09 56 15.4	-1.3
	comp=Z,2µm,1.8s					
FMP	Fort Macarthur	88.13 53	P	P	09 56 17.3	-0.7
	baz=244					
BILL	Bilibino	88.19 359	d iP	P	09 56 16.6	-0.8
BILL			pmax	pmax		
	comp=Z,54nm,1.2s					
BILL	Bilibino	88.19 359	eP	P	09 56 16.9	-0.5
	comp=Z,49nm,1.2s					
OSI	Osito Audit: C	88.21 52	P	P	09 56 17.9	-0.5
	baz=244					
L02D	Cave Junction,	88.33 44	P	P	09 56 18.8	+0.1
	baz=240					
N02D	Trinity Center	88.34 45	P	P	09 56 19.0	+0.1
	baz=241,SNR=19					
ARVC	Arvin	88.36 52	P	P	09 56 18.3	-0.6
	baz=244					
M02C	Callahan	88.45 45	P	P	09 56 19.8	+0.5
	baz=241,SNR=24					
VES	Vestal, Richgr	88.49 51	P	P	09 56 18.8	-0.7
	baz=243					
CMB	Columbia Colle	88.55 48	eP	P	09 56 19.3	-0.6
CMB			pmax	pmax		
	comp=Z,117nm,1.1s					
CMB	Columbia Colle	88.55 48	eP	P	09 56 19.3	-0.6
	comp=Z,117nm,1.1s					
RCTC	Rector, Farmer	88.58 50	P	P	09 56 19.1	-0.8
	baz=243					
VNA3	Neumayer Olymp	88.59 181	P	P	09 56 17.8	-1.8
O03D	Paynes Creek	88.62 46	P	P	09 56 19.5	-0.7
	baz=242,SNR=14					
109C	Camp Elliot, M	88.68 54	P	P	09 56 19.3	-1.2
	baz=244					
YBH	Yreka Blue Hor	88.71 44	eP	P	09 56 20.7	+0.1
YBH			pmax	pmax		
	comp=Z,35nm,1.2s					
YBH	Yreka Blue Hor	88.71 44	eP	P	09 56 20.7	+0.1
	comp=Z,35nm,1.2s					
BFSC	Mount Baldy Ra	88.84 53	P	P	09 56 20.8	-0.6
	baz=244					
ISA	Isabella, Lake	88.85 51	P	P	09 56 20.9	-0.5
	baz=244					
EDW2	Edwards Air Fo	88.87 52	P	P	09 56 21.0	-0.5
	baz=244,SNR=5.8					
VNA2	Neumayer--Watz	88.87 181	P	P	09 56 20.0	-0.9
	baz=180,slow=4.8					
MURC	Murrieta	88.91 54	P	P	09 56 20.9	-0.8
	baz=244					
HUMO	Hull Mountain	88.97 43	eP	P	09 56 21.7	0.0
	comp=Z,167nm,1.1s					
VNA1	Neumayer--Stat	89.17 181	P	P	09 56 21.4	-0.8
MONP2	Monument Peak	89.20 54	P	P	09 56 22.6	-0.7
	baz=245					
I03D	Drain, OR	89.25 42	P	P	09 56 22.4	-0.6
	baz=240,SNR=6.7					
M04C	Macdoel	89.30 45	P	P	09 56 22.9	-0.6
	baz=242,SNR=10					
IKP	In-Ko-Pah, Jac	89.34 55	P	P	09 56 23.1	-0.6
	baz=245					
LRMC	Laurel Mtn Rad	89.36 52	P	P	09 56 23.2	-0.6
	baz=244,SNR=8.8					
BBRC	Big Bear Solar	89.40 53	P	P	09 56 23.3	-0.9
	baz=245					
MLAC	Mammoth, Mammo	89.46 49	P	P	09 56 24.3	-0.2
	baz=244					
PFO	Pinyon Flats O	89.47 54	LR	LR	10 27 02.9	
	comp=Z,159nm,20.6s,baz=267,slow=29					
TPFO	Pinon Flats	89.47 54	P	P	09 56 23.6	-0.8
	baz=245					
RRX	Edison Barstow	89.60 52	P	P	09 56 24.4	-0.5
	baz=245					
TIN	Tinemaha, Big	89.64 50	P	P	09 56 24.8	-0.3
	baz=244					
SWSC	Sam W. Stewart	89.70 55	P	P	09 56 24.5	-0.8
	baz=245,SNR=5.8					
COR	Corvallis	89.72 42	eP	P	09 56 24.2	-0.9
COR			e*PP	sP	09 56 38.4	-1.5
COR	Corvallis	89.72 42	eP	P	09 56 24.2	-0.9
COR			epP	sP	09 56 38.4	-1.5
MPMC	Manual Prospec	89.75 51	P	P	09 56 25.1	-0.7
	baz=244,SNR=14					
K04D	Chiloquin, OR	89.76 44	P	P	09 56 25.2	-0.3
	baz=242					
DAC	Darwin (Calif)	89.76 51	eP	P	09 56 25.5	-0.3
DAC			pmax	pmax		
	comp=Z,27nm,1.2s					
DAC	Darwin (Calif)	89.76 51	eP	P	09 56 25.5	-0.3
	comp=Z,27nm,1.2s					
I04A	Tendick Farm,	89.89 43	P	P	09 56 25.4	-0.7
	baz=241					
GSC	Goldstone, Bar	89.93 52	P	P	09 56 25.7	-0.8
	baz=245,SNR=5.3					
BELC	Belle Mtn. Jos	89.98 54	P	P	09 56 26.1	-0.7
	baz=245,SNR=12					
BOD	Bodaibo	90.00 334	eP	P	09 56 25.3	-0.8
BOD			pmax	pmax		
	comp=Z,14nm,1.8s					
G03D	McMinnville, O	90.05 41	P	P	09 56 26.2	-0.4
	baz=240					
HEC	Hector,Ludlow	90.08 53	P	P	09 56 26.3	-0.8
	baz=245,SNR=5.6					
NVAR	Mina Array Bea	90.19 49	P	P	09 56 27.3	-0.5
	comp=Z,12nm,0.9s,baz=229,slow=7.1,SNR=51					
NVAR			LR	LR	10 33 20.8	
	comp=Z,227nm,18.1s,baz=125,slow=33					
GRAC	Grapevine Rang	90.24 50	P	P	09 56 27.2	-0.6
	baz=244,SNR=13					
BC3	Big Chuckawall	90.25 54	P	P	09 56 27.0	-1.0
	baz=245,SNR=6.7					
MOD	Modoc Plateau	90.38 45	eP	P	09 56 28.1	-0.4
	comp=Z,28nm,1.1s					
FURC	Furnace Creek,	90.38 51	P	P	09 56 27.8	-0.6
	baz=245,SNR=16					
J05D	Fort Rock, OR	90.41 43	P	P	09 56 28.4	-0.2
	baz=242,SNR=34					
GLA	Glamis	90.48 55	P	P	09 56 29.0	-0.1
	baz=246,SNR=9.4					
GMRC	Granite Mounta	90.56 53	P	P	09 56 29.2	-0.3
	baz=245,SNR=7.1					
SHOC	Shoshone, Teco	90.57 52	P	P	09 56 28.5	-0.8
	baz=245,SNR=7.4					
F04D	Rainier, OR	90.63 40	P	P	09 56 29.3	0.0
	baz=241					
TUQ	Turquoise Moun	90.64 52	P	P	09 56 28.9	-0.9
	baz=245,SNR=9.4					
LPIG	La Paz	90.67 65	LR	LR	10 28 29.4	
	comp=Z,157nm,20.9s,baz=226,slow=30					
IRM	Iron Mountain	90.69 54	P	P	09 56 29.2	-0.8
	baz=246,SNR=6.6					
OOW	Octopus West	90.74 39	P	P	09 56 30.7	+0.9
ZAK	Zakamensk	90.75 325	eP	P	09 56 28.2	-1.7
ZAK			pmax	pmax		
	comp=Z,10.0nm,1.6s					
NLWA	Neilton Lookou	90.76 39	eP	P	09 56 25.2	-4.8
	comp=Z,21nm,1.1s					
I05D	Terrebonne, OR	90.83 43	P	P	09 56 30.0	-0.5
	baz=242					
Y12C	Blythe	91.00 54	P	P	09 56 30.6	-0.8
	baz=246,SNR=6.8					
TPNV	Topopah Spring	91.03 51	P	P	09 56 31.3	-0.4
	baz=245,SNR=19					
WRAK	Wrangell Islan	91.26 29	eP	P	09 56 31.3	-0.7
	comp=Z,13nm,1.0s					
G05D	Wamic, OR	91.27 42	P	P	09 56 31.9	-0.5
	baz=242					
COLA	College	91.39 17	eP	P	09 56 32.7	+0.3
COLA			pmax	pmax		
	comp=Z,4.0nm,1.0s					
COLA	College	91.39 17	eP	P	09 56 29.9	-2.5
	comp=Z,6.5nm,1.0s					
PDMCI	Parker Dam,Lak	91.51 54	P	P	09 56 33.2	-0.5
	baz=246,SNR=8.0					
ILAR	Eielson Array	91.58 18	P	P	09 56 33.3	0.0
	comp=

214A	Organ Pipe Nat	91.61	57	P		P	09 56 33.8	-0.6
	baz=247							
214A	Organ Pipe Nat	91.61	57	*e*P		P	09 56 34.2	-0.1
	comp=Z,83nm,1.2s							
WVOR	Wild Horse Val	91.72	45	*e*P		P	09 56 34.3	-0.4
WVOR				pmax	pmax			
	comp=Z,33nm,1.1s							
WVOR	Wild Horse Val	91.72	45	*e*P		P	09 56 34.3	-0.4
	comp=Z,33nm,1.1s							
SKAG	Skagway	91.85	25	*e*P		P	09 56 33.7	-0.9
	comp=Z,36nm,1.9s							
A04D	Lummi Island	92.09	38	P		P	09 56 35.7	-0.3
	baz=241							
R11A	Troy Canyon, C	92.09	50	P		P	09 56 35.2	-1.4
	baz=246,SNR=7.5							
R11A	Troy Canyon, C	92.09	50	*e*P		P	09 56 35.5	-1.0
	comp=Z,8.1nm,1.1s							
B05A	Bryant	92.22	39	P		P	09 56 36.3	-0.4
	baz=241							
COLD	Coldfoot	92.60	15	*e*P		P	09 56 37.3	-0.7
	comp=Z,5.6nm,1.1s							
EGAK	Eagle	93.29	19	*e*P		P	09 56 40.5	-0.7
	comp=Z,18nm,1.4s							
ELK	Elko	93.31	48	*e*P		P	09 56 41.4	-0.8
ELK				pmax	pmax			
	comp=Z,4.0nm,1.0s							
ELK	Elko	93.31	48	*e*P		P	09 56 41.4	-0.8
	comp=Z,3.8nm,1.0s							
TUC	Tucson	93.33	57	P		P	09 56 41.9	-0.4
	baz=248							
TUC	Tucson	93.33	57	*e*P		P	09 56 42.3	0.0
TUC				pmax	pmax			
	comp=Z,13nm,1.1s							
TUC	Tucson	93.33	57	*e*P		P	09 56 42.3	0.0
	comp=Z,13nm,1.1s							
DAWY	Dawson	93.36	20	*e*P		P	09 56 41.4	-0.3
	comp=Z,5.1nm,1.2s							
MFID	Camas Ranch	94.00	45	*e*P		P	09 56 43.9	-1.3
	comp=Z,4.5nm,0.9s							
WUAZ	Wupatki	94.08	54	P		P	09 56 45.4	-0.4
	baz=248							
WUAZ	Wupatki	94.08	54	*e*P		P	09 56 45.8	0.0
	comp=Z,5.0nm,0.9s							
DUG	Dugway, Tooele	94.80	49	P		P	09 56 47.8	-1.1
	baz=247							
HLID	Hailey	95.01	45	P		P	09 56 48.8	-1.1
	baz=246							
HLID	Hailey	95.01	45	*e*P		P	09 56 49.1	-0.8
	comp=Z,4.5nm,1.1s							
W18A	Petrified Fore	95.18	55	P		P	09 56 50.1	-0.8
	baz=249							
NEW	Newport	95.19	40	P		P	09 56 51.3	+0.9
	baz=245							
TIXI	Tiksi	95.70	348	*i* P		P	09 56 51.2	-0.9
TIXI				pmax	pmax			
	comp=Z,2.0nm,1.0s							
TIXI	Tiksi	95.70	348	*e*P		P	09 56 50.5	-1.6
	comp=Z,2.3nm,0.6s							
WMQ	Urumqi	97.40	314	*e*P			Pdif	09 57 02.9 +2.2
MNTX	Cornudas Mount	97.42	59	P		P	09 57 00.4	-0.5
	baz=251							
IMW	Indian Meadow	97.47	46	*e*P		P	09 57 00.4	-0.8
	comp=Z,5.8nm,1.4s							
BOZ	Bozeman (W)	97.64	44	P		P	09 57 01.5	-0.3
	baz=249							
ANMO	Albuquerque	97.64	56	P		P	09 57 01.3	-0.8
	baz=250							
ANMO	Albuquerque	97.64	56	*e*P		P	09 57 01.9	-0.2
ANMO				pmax	pmax			
	comp=Z,1.0nm,1.0s							
BW06	Boulder Array	98.01	47	P		P	09 57 03.2	-0.4
	baz=250							
PDAR	Pinedale Array	98.01	47	P		P	09 57 02.4	-1.2
	comp=Z,0.3nm,0.5s,baz=266,slow=4.5,SNR=4.5							
O20A	White River Ci	98.04	50	P		P	09 57 03.3	-0.4
	baz=250							
TXAR	Lajitas Array	98.05	62	P		P	09 57 03.2	-0.7
	comp=Z,0.6nm,0.9s,baz=212,slow=4.4,SNR=6.1							
TXAR				LR		LR	10 36 05.1	
	comp=Z,228nm,18.1s,baz=0.0,slow=32							
PLCA	Paso Flores	98.22	139	LR		LR	10 33 49.2	
	comp=Z,77nm,18.8s,baz=162,slow=31							
S22A	4UR Ranch, Cre	98.28	53	Pdiff		P	09 57 04.9	-0.1
	baz=251							
SDCO	Great Sand Dun	99.28	53	Pdiff		Pdif	09 57 09.4	0.0
	baz=251							
MSTX	Muleshoe	100.22	58	Pdiff		Pdif	09 57 12.8	-0.7
	baz=252							
MKAR	Makanchi Array	101.97	316	P		Pdif	09 57 20.0	-0.9
	comp=Z,0.4nm,0.6s,baz=93,slow=7.4,SNR=3.8							
YKA	Yellowknife Ar	102.08	28	P		Pdif	09 57 20.7	-0.1
	comp=Z,0.5nm,0.6s,baz=256,slow=4.7,SNR=15							
C30A	Mose, Pekin	106.89	45	Pdiff		Pdif	09 57 43.3	+0.6
	baz=258							
Z40A	Long Farm, Mag	107.57	60	Pdiff		Pdif	09 57 47.1	+1.1
	baz=257							
K38A	Parkersburg	109.92	51	Pdiff		Pdif	09 57 58.2	+2.0
	baz=260							
ARU	Arti	117.68	324	PKIKP		PKPdf	10 02 12.6	-0.1
ARCES	ARCESS Array B	125.97	345	PKP		PKPdf	10 02 27.4	-0.9
	comp=Z,2.7nm,0.6s,baz=85,slow=1.0,SNR=12							
KLMR	Klimovskoe	126.16	332	*e*PKIKP		PKPdf	10 02 25.6	-3.2
KLMR				*e*			10 02 40.0	
KLMR				pmax	pmax			
	comp=Z,17nm,1.1s							
VRH	Novokhopyorsk	128.42	320	*e*PKIKP		PKPdf	10 02 32.7	-0.7
VRH				pmax	pmax			
	comp=Z,6.0nm,0.3s							
ZEI	Tsey	128.69	309	*i* PKIKP		PKPdf	10 02 34.7	+0.2
ZEI				pmax	pmax			
	comp=Z,13nm,1.2s							
KIV	Kislovodsk	129.39	311	*e*PKIKP		PKPdf	10 02 35.1	-0.6
KIV				pmax	pmax			
	comp=Z,8.0nm,1.0s							
LPSR	Galich'ya Gora	129.64	322	*e*PKIKP		PKPdf	10 02 35.9	+0.2
LPSR				pmax	pmax			
	comp=Z,10.0nm,1.4s							
VSR	Storozhevoye	129.95	321	*e*PKIKP		PKPdf	10 02 35.2	-1.1
VSR				pmax	pmax			
	comp=Z,10.0nm,1.5s							
OBN	Obninsk	129.99	326	*i* PKIKP		PKPdf	10 02 36.1	-0.2
OBN				pmax	pmax			
	comp=Z,6.0nm,1.1s							
FINES	FINESS Array B	131.33	337	PKP		PKPdf	10 02 38.5	-0.2
	comp=Z,1.5nm,0.8s,baz=46,slow=14,SNR=4.4							
AKASG	Malin Array Be	135.93	323	PKP		PKPdf	10 02 46.3	-1.3
	comp=Z,0.9nm,0.5s,baz=58,slow=2.0,SNR=5.1							
AKASG	Malin Array Be	135.93	323	PKIKP		PKPdf	10 02 46.3	-1.3
AKASG				pmax	pmax			
	comp=Z,2.0nm,0.6s							
BRTR	Keskin Array B	136.85	307	PKP		PKPdf	10 02 49.5	-0.4
	comp=Z,1.7nm,0.9s,baz=116,slow=2.9,SNR=7.9							
BRTR	Keskin Array B	136.85	307	PKIKP		PKPdf	10 02 49.5	-0.4
BRTR				pmax	pmax			
	comp=Z,3.0nm,1.1s							
KOLS	Kolonicke sedl	140.69	324	*e*PKIKP		PKPdf	10 02 57.2	+0.7
KOLS	Kolonicke sedl	140.69	324	*e*PKP		PKPdf	10 02 57.2	+0.7
CRVS	Cervenica-Dubn	141.15	325	*e*PKIKP		PKPdf	10 02 58.0	+0.7
CRVS	Cervenica-Dubn	141.15	325	*e*PKP		PKPdf	10 02 58.0	+0.7
BRG	Berggiesshubel	143.52	333	*e*PKP		PKPab	10 02 58.7	+0.9
	comp=Z,19nm,1.4s							
BRG	Berggiesshubel	143.52	333	*e*PKIKP		PKPab	10 02 58.7	+0.9
BRG				pmax	pmax			
	comp=Z,28nm,1.4s							
CLL	Collm	143.60	334	*i* PKPdf		PKPab	10 02 58.4	+0.3
	comp=Z,21nm,1.4s							
CLL				*i*			10 03 20.5	
	comp=Z,12nm,1.4s							
CLL				*e*			10 03 34.0	
CLL	Collm	143.60	334	*i* PKIKP		PKPab	10 02 58.4	+0.3
CLL				pmax	pmax			
	comp=Z,21nm,1.4s							
ESK	Eskdalemuir	144.56	352	*e*PKIKP		PKPab	10 03 00.8	-0.8
ESK	Eskdalemuir	144.56	352	*e*PKPdf		PKPab	10 03 00.8	-0.8
NKC	Novy Kostel	144.64	333	*e*PKP		PKPbc	10 03 02.8	+0.5
NKC	Novy Kostel	144.64	333	*e*PKIKP		PKPbc	10 03 02.8	+0.5
DIVS	Divibare	144.65	319	P		PKPab	10 03 02.6	+0.2
CONA	Conrad Observa	144.68	327	*i* PKPdf		PKPab	10 03 02.6	+0.2
	comp=Z,57nm,1.4s,SNR=15							
LIT	Litokhoron	144.87	312	P		PKPab	10 03 02.2	-1.1
LIT	Litokhoron	144.87	312	PKIKP		PKPab	10 03 02.2	-1.1
LIT	Litokhoron	144.87	312	P		PKPab	10 03 02.2	-1.1
KHC	Kasperske Hory	144.95	331	*e*PKP		PKPbc	10 03 03.8	+0.5
KHC				*ex*		x	10 03 16.0	
KHC	Kasperske Hory	144.95	331	*e*PKIKP		PKPab	10 03 02.5	-0.8
KHC	Kasperske Hory	144.95	331	*e*PKPdf		PKPab	10 03 02.5	-0.8
GERES	GERESS Array B	145.10	330	PKPbc		PKPbc	10 03 03.8	-0.1
	comp=Z,4.4nm,0.7s,baz=46,slow=3.9,SNR=21							
ARSA	Arzberg	145.30	327	*i* PKPdf		PKPbc	10 03 04.7	+0.2
	comp=Z,45nm,1.4s,SNR=11							
MOA	Molln	145.53	329	*i* PKPab		PKPdf	10 03 05.1	0.0
	comp=Z,70nm,1.2s,SNR=29							
GRFO	Grafenberg	145.57	333	*e*PKP2		PKPab	10 03 06.0	+0.5
GRFO	Grafenberg	145.57	333	*e*PKPbc		PKPab	10 03 06.0	+0.5
GUR	Goura	145.80	308	P		PKPdf	10 03 05.6	-0.3
GUR	Goura	145.80	308	P		PKPdf	10 03 05.6	-0.3
ANX	Ano Chora	145.87	309	P		PKPdf	10 03 06.6	+0.6
KLV	Kalavryta, Ach	145.90	308	P		PKPdf	10 03 06.1	0.0
KLV	Kalavryta, Ach	145.90	308	P		PKPdf	10 03 06.1	0.0
PERS	Pernice	145.92	326	*e*PKPbc		PKPdf	10 03 05.5	-0.3
SOKA	Soboth	145.93	327	*i* PKPab		PKPdf	10 03 06.1	+0.2
	comp=Z,34nm,1.5s,SNR=17							
LAKA	Lakka	145.96	309	P		PKPdf	10 03 06.1	0.0
LAKA	Lakka	145.96	309	P		PKPdf	10 03 06.1	0.0
DSL	Palaion Diasel	146.25	311	P		PKPdf	10 03 07.5	+0.9
DSL	Palaion Diasel	146.25	311	P		PKPdf	10 03 07.5	+0.9
OBKA	Obir	146.29	327	*i* PKPbc		PKPdf	10 03 06.5	0.0
	comp=Z,15nm,1.2s							
PDO	Prodromos	146.40	310	P		PKPbc	10 03 08.0	-0.1
AXS	Araxos	146.41	309	P		PKPbc	10 03 08.4	+0.2
KBA	Koelnbreinsper	146.51	328	*i* PKPdf		PKPdf	10 03 05.6	-1.3
	comp=Z,14nm,1.1s,SNR=5.2							
KBA	Koelnbreinsper	146.51	328	PKP2		PKPbc	10 03 08.2	-0.2
BOJS	Bojanci	146.58	325	*e*PKPbc		PKPdf	10 03 07.4	+0.5
LJU	Ljubljana	146.61	326	*e*PKPdf		PKPdf	10 03 07.1	+0.2
MYKA	Terra Mystica	146.67	328	*i* PKPab		PKPbc	10 03 08.4	-0.4
	comp=Z,8.2nm,0.8s							
BEBN	Eben Emael	146.73	340	PKPab		PKPbc	10 03 09.4	+0.8
MEM	Membach	146.78	339	PKPbc		PKPbc	10 03 09.2	+0.4
MEM				APKP		pPKPdf	10 03 21.7	+3.4
STU	Stuttgart	147.12	334	*e*PKIKP		PKPdf	10 03 07.5	-0.2
STU				*e*			10 03 09.8	
STU	Stuttgart	147.12	334	*e*PKPdf		PKPdf	10 03 07.5	-0.2
STU				*e*PKPbc		PKPbc	10 03 09.8	-0.1
ABTA	Abfaltersbach	147.15	329	*i* PKPdf		PKPdf	10 03 07.5	-0.4
	comp=Z,20nm,1.1s,SNR=5.9							
BCLA	Clavier	147.17	340	PKPbc		PKPbc	10 03 09.9	0.0
WTTA	Wattenberg	147.20	330	*i* PKPbc		PKPdf	10 03 08.3	+0.2
	comp=Z,36nm,1.4s,SNR=7.7							
MOTA	Moosalm	147.38	331	*i* PKPbc		PKPdf	10 03 09.6	+1.2
	comp=Z,27nm,1.0s,SNR=8.6							
RETA	Reutte	147.43	331	*i* PKPdf		PKPdf	10 03 08.3	0.0
	comp=Z,22nm,1.4s,SNR=7.0							
LANF	Langenberg	147.50	336	PKP		PKPbc	10 03 10.9	0.0
WLF	Walferdange	147.53	338	PKPbc		PKPbc	10 03 12.1	+1.1
WLF				APKP		pPKPdf	10 03 24.8	+5.3
WLF	Walferdange	147.53	338	*e*PKP2		PKPbc	10 03 11.6	+0.7
WLF	Walferdange	147.53	338	*e*PKPbc		PKPbc	10 03 11.6	+0.7
DOU	Dourbes	147.68	340	PKPbc		PKPbc	10 03 11.5	+0.1
FETA	Feichten	147.80	331	*i* PKPdf		PKPdf	10 03 08.7	-0.4
	comp=Z,33nm,1.0s,SNR=11							
BFO	Black Forest	147.82	335	*e*PKP2		PKPbc	10 03 11.6	-0.2
BFO	Black Forest	147.82	335	*e*PKPbc		PKPbc	10 03 11.6	-0.2
DAVA	Damuels	147.98	332	*i* PKPbc		PKPdf	10 03 09.8	+0.4
	comp=Z,23nm,1.0s,SNR=6.5							
ECH	Echery	148.37	336	PKP		PKPbc	10 03 12.8	-0.5
TUE	Stuetta	148.84	331	*e*PKPdf		PKPdf	10 03 11.1	+0.2
TUE				*e*PKPbc		PKPbc	10 03 14.9	+0.1
TUE				*e*PKPab		PKPab	10 03 18.7	0.0
LOMF	Lomont	149.21	335	PKP		PKPbc	10 03 15.4	-0.1
AQU	L'Aquila	149.60	322	*e*PKP2		PKPbc	10 03 17.3	+0.7
AQU	L'Aquila	149.60	322	*e*PKPbc		PKPbc	10 03 17.2	+0.7
AQU				*e*PKPab		PKPab	10 03 22.2	+0.5
PLDF	La Plantade	151.58	337	PKP		PKPbc	10 03 22.5	+1.3
AUTN	L'Aution	151.60	330	PKP		PKPbc	10 03 21.4	-0.1
AGO	Saint Agoulin	151.68	338	PKP		PKPbc	10 03 22.2	+0.8
LUCF	Luceram	151.72	330	PKP		PKPbc	10 03 21.3	-0.4
MVIF	Mont Vial	151.81	330	PKP		PKPbc	10 03 20.9	-1.0
SSB	Saint Sauveur	151.81	335	*e*PKIKP		PKPbc	10 03 22.1	+0.4
SSB	Saint Sauveur	151.81	335	*e*PKPbc		PKPbc	10 03 22.1	+0.4
REVF	Revere	151.82	330	PKP		PKPbc	10 03 20.9	-0.9
PYM	Petit Puy Mans	151.98	338	PKP		PKPbc	10 03 22.9	+0.7
CALN	Calern	152.04	331	PKP		PKPbc	10 03 22.5	+0.1
LBL	Lubilhac	152.34	337	PKP		PKPbc	10 03 24.4	+1.4
TORD	Torodi Ar. Bea	165.34	243	PKP		PKPdf	10 03 31.2	-1.0
	comp=Z,4.6nm,1.1s,baz=218,slow=0.2,SNR=17							
TORD				PKPab		PKPab	10 04 29.9	-0.2
	comp=Z,1.0nm,0.6s,baz=109,slow=5.8,SNR=6.3							

IDC 11 09:48:17.8±1.6, 20°.47S×168°.43E, h0km, mb4.1/7,
mb1 4.3/8, mb1mx4.0/32, mbtmp4.1/8, ML3.5/1, Error
ellipse: s-maj=67.6km s-min=21.5km az=147.0
ISCJB 11 09:48:20.5±1.3, 20°.4S±0°.2×168°.3E±0°.3, h26km, mb4.0/7,
Error ellipse: s-maj=45.7km s-min=11.2km az=42.9

ISC 11 09:48:21.6±1.5, 20°.6S±0°.3×168°.4E±0°.3, h26km, n9, σ1.9 17/10, mb4.1/7, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	2.38	231	Pn		Pn	09 48 58.9	-0.2
	10nm,0.3s,baz=108,slow=13,SNR=6.8							
DZM				Sn		Sn	09 49 27.3	-0.2
	45nm,0.3s,baz=316,slow=24,SNR=6.9							
STKA	Stephens Creek	26.50	239	P		P	09 53 58.8	+1.7
	3.3nm,0.8s,baz=84,slow=8.3,SNR=3.6							
WRA	Warramunga Arr	31.96	265	P		P	09 54 44.1	-1.6
	0.4nm,0.5s,baz=96,slow=8.3,SNR=4.1							
ASAR	Alice Springs	32.09	258	P		P	09 54 45.9	-1.0
	3.4nm,0.8s,baz=82,slow=9.1,SNR=7.7							
FITZ	Fitzroy Crossi	40.37	266	P		P	09 55 58.7	+1.0
	4.0nm,1.0s,baz=148,slow=9.5,SNR=2.2							
CMAR	Chiang Mai Arr	78.36	295	P		P	10 00 21.4	+1.2
	0.9nm,0.3s,baz=117,slow=5.2,SNR=1.9							
NVAR	Mina Array Bea	90.25	49	P		P	10 01 20.1	-0.3
	1.3nm,0.8s,baz=227,slow=8.7,SNR=7.8							
ILAR	Eielson Array	91.72	18	P		P	10 01 25.9	-0.5
	0.5nm,0.8s,baz=218,slow=4.2,SNR=3.6							
YKA	Yellowknife Ar	102.19	28	P		Pdif	10 02 14.3	+0.6
	0.1nm,0.7s,baz=297,slow=1.7,SNR=5.6							

IDC 11 09:48:36.8±2.0, 20°.38S×168°.35E, h0km, mb4.0/3,
mb1 4.3/4, mb1mx3.8/33, mbtmp4.0/4, ML3.9/1, Error
ellipse: s-maj=83.3km s-min=31.1km az=149.0, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	2.45	226	Pn		Pn	09 49 17.3	-0.8
	25nm,0.3s,baz=49,slow=20,SNR=5.6							
DZM				Sn		Sn	09 49 45.4	-3.4
	35nm,0.3s,baz=311,slow=19,SNR=4.4							
WRA	Warramunga Arr	31.89	265	P		P	09 55 03.7	-0.5
	0.7nm,0.7s,baz=94,slow=8.5,SNR=3.9							
ASAR	Alice Springs	32.05	258	P		P	09 55 06.4	+0.9
	3.0nm,0.7s,baz=82,slow=9.1,SNR=4.8							
NVAR	Mina Array Bea	90.18	49	P		P	10 01 39.4	-0.1
	0.8nm,0.8s,baz=225,slow=7.5,SNR=4.2							

ISN 11 09:51:56.4±1.0, 31°.28N×48°.18E, h0km±16km, ML3.2
CSEM 11 09:51:59.2±0.3, 31°.64N×48°.21E, h10km, ML3.1, Error
ellipse: s-maj=9.2km s-min=5.8km az=172.0

TEH 11 09:52:01.3, 31°.80N×48°.32E, h10km, ML3.2, Western Iran

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
IKMR	Kamar-syah	1.72	2	*e*Pn		Pn	09 52 30.9	-0.3
IKMR	Kamar-syah	1.72	2	*e*Pn		Pn	09 52 30.9	-0.3
NSR	Nasriya	2.02	248	*e*Pg		Pn	09 52 34.0	-1.5
	SNR=9.0							
NSR				*e*Sg		Sn	09 52 59.5	-1.3
	SNR=9.0							
IPIR	Pirpir	2.35	67	*e*Pn		Pn	09 52 40.2	-0.1
IPIR				*e*Sg		Sb	09 53 14.2	+1.1
IPIR				*e*AMB		AMB	09 53 31.4	
	comp=Z,909nm,0.2s							
IPIR	Pirpir	2.35	67	*e*Pn		Pn	09 52 40.2	-0.1
IPIR				*e*Sg		Sb	09 53 14.2	+1.1
KHMZ	Khomeyn	2.38	35	*e*Pn		Pn	09 52 41.1	+0.5
KHMZ				*e*Sg		Sb	09 53 13.8	0.0
ASAO	Ashtian	3.09	27	*e*Pn		Pn	09 52 51.0	+0.6
IKLH	Kolahrood	3.14	60	*e*Pn		Pn	09 52 51.4	+0.3
IKLH				*e*AMB		AMB	09 52 52.7	
	comp=Z,1μm,0.2s							
IKLH	Kolahrood	3.14	60	*e*Pn		Pn	09 52 51.4	+0.3
IGAR	Gharneh	3.21	78	*e*Pn		Pn	09 52 51.8	-0.3
ILIN	Lien	3.31	340	*e*Pn		Pn	09 52 53.1	-0.4
ILIN				*e*AMB		AMB	09 54 05.3	
	comp=Z,342nm,0.2s							
ILIN	Lien	3.31	340	*e*Pn		Pn	09 52 53.1	-0.4
IDHR	Dehrash	3.32	331	*e*Pn		Pn	09 52 52.6	-0.9
IDHR				*e*AMB		AMB	09 53 50.8	
	comp=Z,665nm,0.2s							
IDHR	Dehrash	3.32	331	*e*Pn		Pn	09 52 52.6	-0.9
SNGE	Sanandaj	3.39	346	*e*Pn		Pn	09 52 55.2	+0.8
IZEF	Zefreh	3.56	71	*e*Pn		Pn	09 52 56.6	-0.3
IZEF				*e*AMB		AMB	09 52 57.9	
	comp=Z,337nm,0.1s							
IZEF	Zefreh	3.56	71	*e*Pn		Pn	09 52 56.6	-0.3
IKAZ	Kazeroun	3.63	123	*e*Pn		Pn	09 52 57.2	-0.7
IKAZ				*e*AMB		AMB	09 53 51.2	
	comp=Z,552nm,0.3s							
IKAZ	Kazeroun	3.63	123	*e*Pn		Pn	09 52 57.2	-0.7
BHD	Baghdad	3.64	295	*e*Pn		Pn	09 52 57.0	-0.7
	SNR=3.0							
GHVR	GHOM	3.66	42	*e*Pn		Pn	09 52 58.0	0.0
IRAZ	Razeghan	3.84	20	*e*Pn		Pn	09 53 00.8	+0.1
IRAZ	Razeghan	3.84	20	*e*Pn		Pn	09 53 00.8	+0.1
NASN	Na'in	3.93	74	*e*Pn		Pn	09 53 02.1	+0.1
IVRN	Varamin	4.28	41	*e*AMB		AMB	09 53 26.7	
	comp=Z,228nm,0.2s							
IVRN				*e*Pn		Pn	09 53 05.8	-0.7

IDC 11 09:55:51.8±7.0, 20°.27S×169°.16E, h0km, mb3.7/3,
mb1 3.8/4, mb1mx3.6/32, mbtmp3.7/4, ML3.3/1, Error
ellipse: s-maj=149.4km s-min=56.9km az=121.0,
Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	3.10	234	Pn		Pn	09 56 40.2	-1.9
	3.5nm,0.3s,baz=98,slow=16,SNR=6.1							
DZM				Sn		Sn	09 57 22.3	+2.3
	4.6nm,0.3s,baz=312,slow=23,SNR=3.5							
STKA	Stephens Creek	27.24	239	P		P	10 01 37.9	+0.1
	2.2nm,0.9s,baz=79,slow=11,SNR=3.9							
WRA	Warramunga Arr	32.66	264	P		P	10 02 25.7	-0.3
	0.4nm,0.8s,baz=91,slow=8.4,SNR=4.6							
ASAR	Alice Springs	32.82	258	P		P	10 02 27.9	+0.6
	1.2nm,0.6s,baz=88,slow=9.2,SNR=13							

GRAL 11 10:14:10.9±0.3, 34°.43N×36°.80E, h0km±4km, MD2.9
NSSC 11 10:14:10.3±1.1, 34°.48N×36°.79E, h0km±8km, MD1.5, ML2.2
CSEM 11 10:14:10.0±0.8, 34°.51N×36°.73E, h2km, ML2.9, Error
ellipse: s-maj=12.6km s-min=8.2km az=13.0

ISC 11 10:14:09.8±2.7, 34°.6N±0°.1×36°.59E±0°.07, h17km±8km, n17, σ0.38/30, Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
FKH	Fakeheh	0.37	203	*e*P		Pg	10 14 17.4	0.0
FKH				*e*S		Sg	10 14 22.5	-0.1
FKH	Fakeheh	0.37	203	*e*P		Pg	10 14 17.5	0.0
FKH				*e*S		Sg	10 14 22.5	-0.1
HWQ	Hawqa	0.61	240	*e*P		Pn	10 14 23.9	+0.1
HWQ				*e*S		Sn	10 14 33.4	+0.1
HWQ	Hawqa	0.61	240	*e*P		Pn	10 14 23.9	+0.1
HWQ				*e*S		Sn	10 14 33.4	+0.1
QASN	Qassioun	1.08	194	*e*P		Pg	10 14 30.7	0.0
QASN				*e*S		Sg	10 14 44.5	-0.3
QASN				AML		AML	10 14 54.0	
	comp=N,230nm,0.4s							
QASN				AML		AML	10 14 59.0	
	comp=E,84nm,0.7s							
QASN	Qassioun	1.08	194	*e*P		Pg	10 14 30.7	0.0
QASN				*e*S		Sg	10 14 44.5	-0.3
	comp=E,84nm,0.7s							
DQRL	Deir Qamar	1.22	224	*e*P		Pg	10 14 33.2	0.0
DQRL	Deir Qamar	1.22	224	*e*P		Pg	10 14 33.2	0.0
TOTH	TOTAH	1.23	186	*e*P		Pn	10 14 32.0	-0.2
TOTH	TOTAH	1.23	186	*e*P		Pn	10 14 32.0	-0.2
RCY	Rachaya	1.25	210	*e*P		Pb	10 14 32.9	-0.1
RCY				*e*S		Sn	10 14 49.1	-0.1
BRBR	Barbar	1.28	204	*e*P		Pg

CASC 11 10:28:07.1±1.7,9.12N×83.89W,h26km±5km,MD3.6, 1C-1D,Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
QCR	**Quepos**	**0.41**	**319**	*eP*	Pb	10 28 15.9	0.0
QCR				*eS*	Sn	10 28 23.2	-0.8
BUS	**Buena Vista**	**0.46**	**17**	‖*eP*	Pb	10 28 17.5	+0.5
BUS				*eS*	Sn	10 28 25.7	-0.2
ACR	**Cerro Adams**	**0.85**	**123**	*eP*	Pb	10 28 22.0	-1.3
ACR				*eS*	Sb	10 28 34.2	-0.2
CGA2	**Cerro Gallo 2**	**1.06**	**328**	↑*iP*	Pn	10 28 26.5	+0.2
CGA2				*eS*	Sb	10 28 41.5	+1.2
BRU2	**Volcan**	**1.23**	**105**	*eP*	Pn	10 28 28.6	-0.2
BRU2				*eS*	Sb	10 28 46.0	+0.6
TBS2		**1.26**	**105**	*eP*	Pn	10 28 29.7	+0.5
TBS2				*eS*	Sb	10 28 47.1	+0.8
JCR	**Jicaral**	**1.41**	**301**	*eP*	Pn	10 28 29.9	-1.2
JTS	**JuntasAbangare**	**1.57**	**318**	*eP*	Pn	10 28 33.1	-0.2
JTS				*eS*	Sn	10 28 52.9	+0.2

*IDC **11** 10:32:19.1±0.6,20.°47S×168.°43E,h0km,mb4.5/17, mb1 4.6/18,mb1mx4.5/37,mbtmp4.5/18,ML3.8/1,Error ellipse: s-maj=19.8km s-min=14.8km az=113.0*
*NEIC **11** 10:32:21.2±0.2,20.°42S×168.°43E,h10km,mb5.1/43,Error ellipse: s-maj=7.4km s-min=4.6km az=158.0*
*ISCJB **11** 10:32:22.9±2.5,20.°53S±0.°06×168.°41E±0.°04,h32km±17km, mb4.9/80,MS5.0/3,Error ellipse: s-maj=9.6km s-min=6.4km az=174.9*
*MOS **11** 10:32:23.0±1.1,20.°48S×168.°37E,h33km,mb5.2/22,Error ellipse: s-maj=12.1km s-min=9.6km az=164.8*
*BJI **11** 10:32:26.5,20.°09S×168.°37E,h44km,mb4.8/31,mB5.2/20, Ms5.2/11,Ms7 4.8/11*
ISC 11 10:32:23.7±0.3,20.°51S±0.°06×168.°39E±0.°05,h28km±1km, h27km:pP-P,n251,σ1°08/288,mb5.0/80,MS4.9/3,1C-1D, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.39**	**229**	Pn	**Pn**	**10 32 59.6**	**-1.5**
	23nm,0.3s,baz=64,slow=16,SNR=91						
DZM				Sn	**Sn**	**10 33 25.0**	**-4.7**
	89nm,0.3s,baz=67,slow=20,SNR=3.9						
MSVF	**Nonsavu**	**9.54**	**75**	*eP*	**Pn**	**10 34 40.7**	**+1.4**
MSVF	**Nonsavu**	**9.54**	**75**	*ePn*	**Pn**	**10 34 40.7**	**+1.4**
EIDS	**Eidsvold**	**16.66**	**250**	*ePn*	**P**	**10 36 18.0**	**+0.5**
EIDS				*epP*	**sP**	**10 36 28.5**	**-0.1**
URZ	**Urewera**	**19.23**	**159**	P	**Pn**	**10 36 47.8**	**+1.0**
	0.4nm,0.3s,baz=343,slow=7.1,SNR=4.6						
CTAO	**Charters Tower**	**20.77**	**267**	*eP*	Pn	10 37 05.1	-0.1
CTAO				pmax	pmax		
	comp=Z,238nm,1.0s						
CTAO	**Charters Tower**	**20.77**	**267**	*eP*	Pn	10 37 05.1	-0.1
	comp=Z,238nm,1.0s						
CAN	**Canberra**	**22.55**	**225**	*eP*	**P**	**10 37 25.8**	**+4.0**
CAN				*e*PP*	**sP**	**10 37 32.8**	**-0.1**
CAN	**Canberra**	**22.55**	**225**	*eP*	**P**	**10 37 25.8**	**+4.0**
CAN				*epP*	**sP**	**10 37 32.8**	**-0.1**
RPZ	**Rata Peaks**	**23.25**	**175**	P	**P**	**10 37 29.9**	**+1.1**
	comp=Z,21nm,0.9s,baz=24,slow=10.0,SNR=3.4						
PMG	**Port Moresby**	**23.26**	**295**	*eP*	**P**	**10 37 29.5**	**+0.3**
PMG				pmax	pmax		
	comp=Z,46nm,1.1s						
PMG	**Port Moresby**	**23.26**	**295**	*eP*	**P**	**10 37 30.4**	**+1.3**
	comp=Z,108nm,2.0s						
COEN	**Coen**	**24.93**	**281**	*eP*	**P**	**10 37 44.4**	**-0.4**
COEN				*epP*	**sP**	**10 37 55.0**	**-1.3**
STKA	**Stephens Creek**	**26.51**	**239**	P	**P**	**10 38 00.3**	**+1.3**
	comp=Z,5.8nm,0.7s,baz=80,slow=11,SNR=15						
STKA	**Stephens Creek**	**26.51**	**239**	*eP*	**P**	**10 38 00.7**	**+1.8**
STKA				*e*PP*	**pP**	**10 38 07.5**	**+0.4**
STKA	**Stephens Creek**	**26.51**	**239**	*eP*	**P**	**10 38 00.7**	**+1.8**
STKA				*epP*	**pP**	**10 38 07.5**	**+0.4**
BBOO	**Buckleboo**	**31.26**	**240**	*eP*	**P**	**10 38 42.0**	**+0.7**
BBOO				*epP*	**sP**	**10 38 52.4**	**-0.4**
WRAB	**Tennant Creek**	**31.92**	**265**	*eP*	**P**	**10 38 45.6**	**-1.6**
WRAB				pmax	pmax		
	comp=Z,15nm,1.1s						
WRAB	**Tennant Creek**	**31.92**	**265**	*eP*	**P**	**10 38 45.9**	**-1.3**
WRAB				*epP*	**pP**	**10 38 55.0**	**-0.3**
WRA	**Warramunga Arr**	**31.93**	**265**	P	**P**	**10 38 45.5**	**-1.8**
	comp=Z,3.1nm,1.0s,baz=91,slow=9.9,SNR=9.2						
AS01	**Alice Springs**	**32.02**	**258**	*eP*	**P**	**10 38 48.7**	**+0.6**
AS31	**Alice Springs**	**32.07**	**258**	*eP*	**P**	**10 38 48.7**	**+0.2**
	comp=Z,20nm,0.8s						
ASAR	**Alice Springs**	**32.07**	**258**	P	**P**	**10 38 47.6**	**-0.8**
	comp=Z,10.0nm,0.7s,baz=85,slow=8.6,SNR=71						
PPT2	**Papeete2**	**39.76**	**93**	*eLR*	LR	10 50 49.4	
	comp=Z,219nm,30.2s						
PPT	**Papeete**	**39.76**	**93**	P	**P**	**10 39 53.8**	**-0.7**
	comp=Z,49nm,1.0s,baz=68,slow=8.5,SNR=4.3						
SWI	**Sorong**	**41.20**	**294**	P	**P**	**10 40 05.3**	**-1.0**
SWI				pmax	pmax		
	comp=Z,29nm,1.1s						
LUWI	**Luwuk**	**48.56**	**288**	*eP*	**P**	**10 41 05.0**	**+0.1**
LUWI				*epP*	**sP**	**10 41 15.8**	**-0.9**
KAPI	**Kappang**	**49.66**	**281**	*eP*	**P**	**10 41 14.4**	**+1.0**
KAPI				*epP*	**sP**	**10 41 24.8**	**-0.4**
TAOE	**Nuku Hiva Isla**	**50.91**	**85**	*eS*	**S**	**10 48 34.9**	**-3.4**
	comp=Z,73nm,29.0s						
TAOE				*eLR*	LR	10 55 58.2	
	comp=Z,192nm,27.3s						
PCI	**Palu**	**51.26**	**286**	P	**P**	**10 41 27.0**	**+1.5**
PCI				pmax	pmax		
	comp=Z,103nm,1.2s						
RKT	**Rikitea**	**52.37**	**104**	*eLR*	LR	10 56 36.0	
	comp=Z,123nm,32.0s						
VNDA	**Vanda**	**57.14**	**182**	P	**P**	**10 42 06.9**	**-0.5**
	comp=Z,1.4nm,0.9s,baz=4.6,slow=8.8,SNR=7.0						
SBA	**Scott Base**	**57.39**	**180**	*eP*	**P**	**10 42 10.9**	**+1.7**
SBA				*e*PP*	**pP**	**10 42 19.2**	**+1.4**
SBA	**Scott Base**	**57.39**	**180**	*eP*	**P**	**10 42 10.9**	**+1.7**
SBA				*epP*	**pP**	**10 42 19.2**	**+1.4**
KKM	**Kota Kinabalu**	**57.64**	**292**	*eP*	**P**	**10 42 12.2**	**+0.2**
KKM				*epP*	**sP**	**10 42 24.5**	**+0.6**
KSM	**Kuching**	**60.89**	**284**	*eP*	**P**	**10 42 34.3**	**-0.1**
KSM				*epP*	**sP**	**10 42 45.1**	**-1.2**
MJAR	**Matsushiro Arr**	**63.51**	**333**	P	**P**	**10 42 50.2**	**-1.2**
	comp=Z,3.5nm,0.9s,baz=170,slow=6.4,SNR=6.5						
MAT	**Matsushiro**	**63.51**	**333**	P	**P**	**10 42 51.0**	**-0.5**
ASAJ	**Asahikawa**	**68.51**	**340**	P	**P**	**10 43 24.0**	**+0.5**
	comp=Z,3.4nm,0.7s,baz=229,slow=12,SNR=3.8						
BKNI	**Bangkinang**	**68.96**	**279**	*eP*	**P**	**10 43 27.8**	**+0.8**
	comp=Z,89nm,0.4s						
KSRS	**Korea Array**	**69.11**	**326**	P	**P**	**10 43 28.1**	**+0.8**
	comp=Z,1.2nm,0.9s,baz=114,slow=33,SNR=4.3						
KSAR	**Wonju Array Be**	**69.12**	**326**	P	**P**	**10 43 28.1**	**+0.7**
KSAR	**Wonju Array Be**	**69.12**	**326**	P	**P**	**10 43 28.1**	**+0.7**
QSPA	**South Pole Qui**	**69.55**	**180**	*eP*	**P**	**10 43 30.4**	**+0.5**
	comp=Z,38nm,1.9s						
USRK	**Ussuriysk Ar.**	**72.50**	**333**	P	**P**	**10 43 48.3**	**+0.5**
	comp=Z,9.7nm,1.0s,baz=136,slow=4.6,SNR=11						
SKNT	**Sakolnakorn**	**73.36**	**296**	P	**P**	**10 43 54.8**	**+1.3**
	comp=Z,21nm,1.0s						
MDJ	**Mudanjiang**	**73.86**	**332**	P	**P**	**10 43 57.7**	**+1.9**
MDJ				pmax	pmax		
	comp=Z,10.0nm,0.9s						
MDJ				pmax	pmax		
	comp=Z,140nm,6.8s						
PEA0	**Petropavlovsk-**	**73.89**	**353**	*eP*	**P**	**10 43 57.1**	**+1.2**
PEA0				*epP*	**sP**	**10 44 08.7**	**+0.8**
PETK	**Petropavlovsk-**	**73.89**	**353**	P	**P**	**10 43 56.2**	**+0.3**
	comp=Z,3.4nm,0.7s,baz=137,slow=5.4,SNR=6.6						
CN2	**Changchun**	**75.13**	**329**	*eP*	**P**	**10 44 05.5**	**+2.3**
CN2				*epP*	sP	10 44 15.2	-0.1
CN2				pmax	pmax		
	comp=Z,10.0nm,1.0s						
GYA	**Guiyang**	**75.90**	**306**	P	**P**	**10 44 10.0**	**+1.8**
GYA				pP	PcP	10 44 23.6	+3.0
GYA				PP	**PP**	**10 47 03.8**	**+4.9**
GYA				S	**S**	**10 53 48.5**	**-0.9**
GYA				SKS	**SKSac**	**10 54 11.0**	**-6.2**
GYA				SS	**SS**	**10 58 43.2**	**+0.7**
GYA				pmax	pmax		
	comp=Z,20nm,1.0s						
GYA				pmax	pmax		
	comp=Z,120nm,6.6s						
GYA				LR	LR		
	comp=Z,490nm,19.4s						
GYA				LR	LR		
	comp=Z,440nm,20.0s						
GYA				LR	LR		
	comp=Z,470nm,19.6s						
KLR	**Kul'dur**	**76.70**	**336**	P	**P**	**10 44 12.8**	**+0.8**
	comp=Z,2.4nm,0.8s,baz=140,slow=5.7,SNR=6.2						
MAW	**Mawson**	**76.96**	**202**	P	**P**	**10 44 14.1**	**+0.7**
	comp=Z,7.2nm,0.9s,baz=92,slow=4.9,SNR=6.6						
MAW	**Mawson**	**76.96**	**202**	*eP*	**P**	**10 44 14.6**	**+1.2**
MAW				pmax	pmax		
	comp=Z,2.0nm,1.0s						
MAW	**Mawson**	**76.96**	**202**	*eP*	**P**	**10 44 14.6**	**+1.2**
	comp=Z,2.2nm,1.0s						
NANT	**Nan**	**76.97**	**296**	P	**P**	**10 44 17.1**	**+2.8**
	comp=Z,3.0nm,0.9s,comp=Z,520nm						
UNV	**Unalaska Valle**	**77.15**	**15**	*eP*	**P**	**10 44 13.7**	**-0.8**
UNV				*epP*	**PcP**	**10 44 24.2**	**-0.9**
NKL	**Nikolayevsk**	**77.19**	**343**	*eP*	**P**	**10 44 15.0**	**+0.4**
NKL				*e*		10 44 28.0	
BJI	**Beijing**	**77.42**	**322**	P	**P**	**10 44 15.5**	**-0.8**
BJI				pmax	pmax		
	comp=Z,5.0nm,0.6s						
BJI				pmax	pmax		
	comp=Z,100nm,3.2s						
CRAI	**Chiangrai**	**77.89**	**297**	P	**P**	**10 44 21.3**	**+1.9**
	comp=Z,88nm,0.8s,comp=Z,6μm						
KMI	**Kunming**	**78.27**	**302**	P	**P**	**10 44 23.2**	**+1.5**
KMI				pmax	pmax		
	comp=Z,15nm,1.1s						
KMI				pmax	pmax		
	comp=Z,89nm,6.9s						
CM01	**Chiang Mai Arr**	**78.27**	**295**	*eP*	**P**	**10 44 22.4**	**+0.9**
CMMT	**Chiang Mai**	**78.46**	**295**	P	**P**	**10 44 24.1**	**+1.5**
	comp=Z,14nm,1.2s						
CHTO	**Chiang Mai**	**78.46**	**295**	P	**P**	**10 44 24.2**	**+1.6**
	comp=Z,61nm,1.2s						
CHTO	**Chiang Mai**	**78.46**	**295**	*eP*	**P**	**10 44 23.4**	**+0.8**
CHTO				*e*PP*	**sP**	**10 44 35.0**	**+0.3**
CHTO				pmax	pmax		
	comp=Z,11nm,0.9s						
CHTO	**Chiang Mai**	**78.46**	**295**	*eP*	**P**	**10 44 23.4**	**+0.8**
	comp=Z,11nm,0.9s						
CHTO				*epP*	**sP**	**10 44 35.0**	**+0.3**
CMAI	**Chiengmai2**	**78.87**	**296**	P	**P**	**10 44 27.1**	**+2.1**
	comp=Z,11nm,1.0s						
CD2	**Chengdu**	**80.38**	**308**	P	**P**	**10 44 33.2**	**+0.3**
CD2				pP	sP	10 44 46.5	+1.5
CD2				PP	**PP**	**10 47 36.6**	**+0.3**
CD2				S	**S**	**10 54 36.7**	**-0.6**
CD2				sS	ScS	10 54 59.5	+2.3
CD2				SS	**SS**	**10 59 50.4**	**+0.6**
CD2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
CD2				pmax	pmax		
	comp=Z,160nm,5.4s						
CD2				LR	LR		
	comp=Z,300nm,8.4s						
CD2				LR	LR		
	comp=Z,220nm,7.8s						
HHC	**Hu-ho-hao-te**	**80.67**	**320**	*eP*	**P**	**10 44 35.9**	**+1.6**
HHC				pmax	pmax		
	comp=Z,38nm,1.2s						
HHC				pmax	pmax		
	comp=Z,210nm,7.1s						
LZH	**Lanzhou**	**82.99**	**313**	*eP*	**P**	**10 44 49.3**	**+2.6**
LZH				pP	sP	10 45 03.2	+4.4
LZH				sP	pP	10 45 08.7	+13
LZH				*eS*	**S**	**10 55 04.6**	**+0.3**
LZH				sS	sS	10 55 27.0	+7.9
LZH				SS	**SS**	**11 00 30.1**	**+1.4**
LZH				pmax	pmax		
	comp=Z,13nm,1.1s						
LZH				pmax	pmax		
	comp=Z,65nm,4.2s						
LZH				LR	LR		
	comp=Z,1μm,14.7s						
LZH				LR	LR		
	comp=Z,1μm,14.8s						
LZH				LR	LR		
	comp=Z,1μm,16.5s						
SYO	**Syowa Base**	**83.50**	**196**	‖*eP*	**P**	**10 44 47.0**	**-1.6**
SEY	**Seymchan**	**84.12**	**353**	P	**P**	**10 44 51.3**	**-0.3**
	comp=Z,3.1nm,0.8s,baz=190,slow=10,SNR=3.8						
ULN	**Ulaanbaatar**	**87.41**	**324**	*eP*	**P**	**10 45 07.6**	**-0.9**
ULN				pmax	pmax		
	comp=Z,5.0nm,1.1s						
ULN	**Ulaanbaatar**	**87.41**	**324**	*eP*	**P**	**10 45 08.9**	**+0.4**
ULN				*epP*	**sP**	**10 45 20.3**	**-0.4**
SBC	**Santa Barbara**	**87.44**	**52**	P	**P**	**10 45 09.1**	**+0.3**
	baz=243						
PKM	**Mcpherson Peak**	**87.57**	**51**	P	**P**	**10 45 09.9**	**+0.3**
	baz=243						
KHMM	**Horse Mountain**	**87.67**	**45**	*eP*	**P**	**10 45 10.0**	**+0.1**
KHMM				*epP*	**sP**	**10 45 21.8**	**-0.4**
SONA1	**Songino Array**	**87.76**	**323**	*eP*	**P**	**10 45 10.5**	**+0.3**
BLG	**Laguna Peak, P**	**87.77**	**52**	P	**P**	**10 45 10.9**	**+0.5**
	baz=243						
SNAA	**Sanae**	**87.86**	**183**	P	**P**	**10 45 10.2**	**-0.2**
FMP	**Fort Macarthur**	**88.17**	**53**	P	**P**	**10 45 12.3**	**0.0**
	baz=244						
BILL	**Bilibino**	**88.30**	**359**	*c iP*	**P**	**10 45 11.7**	**-0.4**
BILL				*i*		10 45 22.5	
BILL				*i*		10 48 42.1	
BILL				pmax	pmax		
	comp=Z,11nm,1.1s						
BILL	**Biiibino**	**88.30**	**359**	*eP*	**P**	**10 45 11.5**	**-0.6**
	comp=Z,13nm,1.1s						
WDC	**Whiskeytown Da**	**88.31**	**45**	*eP*	**P**	**10 45 13.3**	**+0.5**
WDC				pmax	pmax		
	comp=Z,20nm,1.3s						
WDC	**Whiskeytown Da**	**88.31**	**45**	*eP*	**P**	**10 45 13.3**	**+0.5**
	comp=Z,20nm,1.3s						
L02D	**Cave Junction,**	**88.39**	**44**	P	**P**	**10 45 13.5**	**+0.4**
	baz=240						
ARVC	**Arvin**	**88.39**	**52**	P	**P**	**10 45 13.2**	**-0.1**
	baz=244						
N02D	**Trinity Center**	**88.39**	**45**	P	**P**	**10 45 13.4**	**+0.1**
	baz=241,SNR=9.5						
VNA3	**Neumayer Olymp**	**88.48**	**181**	P	**P**	**10 45 12.0**	**-1.2**
M02C	**Callahan**	**88.50**	**45**	P	**P**	**10 45 14.2**	**+0.4**
	baz=241,SNR=15						
CMB	**Columbia Colle**	**88.59**	**48**	*eP*	**P**	**10 45 14.3**	**+0.1**
CMB				*e*PP*	**sP**	**10 45 25.6**	**-0.9**
CMB	**Columbia Colle**	**88.59**	**48**	*eP*	**P**	**10 45 14.3**	**+0.1**
CMB				*epP*	**sP**	**10 45 25.6**	**-0.9**
AFDM	**Forest Hills D**	**88.61**	**47**	*eP*	**P**	**10 45 14.3**	**0.0**
AFDM				*epP*	**sP**	**10 45 25.7**	**-0.8**
O03D	**Paynes Creek**	**88.67**	**46**	P	**P**	**10 45 14.8**	**+0.2**
	baz=242,SNR=8.7						
YBH	**Yreka Blue Hor**	**88.76**	**44**	*eP*	**P**	**10 45 15.2**	**+0.2**
YBH				pmax	pmax		
	comp=Z,10.0nm,0.9s						
YBH	**Yreka Blue Hor**	**88.76**	**44**	*eP*	**P**	**10 45 15.2**	**+0.2**
	comp=Z,9.7nm,0.9s						
VNA2	**Neumayer--Watz**	**88.76**	**181**	P	**P**	**10 45 12.0**	**-2.5**
	baz=159,slow=4.2						
BFSC	**Mount Baldy Ra**	**88.87**	**53**	P	**P**	**10 45 15.2**	**-0.6**
	baz=244						
ISA	**Isabella, Lake**	**88.89**	**51**	*eP*	**P**	**10 45 16.0**	**+0.2**
ISA				pmax	pmax		
	comp=Z,16nm,0.5s						
ISA	**Isabella, Lake**	**88.89**	**51**	*eP*	**P**	**10 45 15.9**	**+0.2**
	comp=Z,16nm,0.5s						
EDW2	**Edwards Air Fo**	**88.90**	**52**	P	**P**	**10 45 15.6**	**-0.2**
	baz=244						
HUMO	**Hull Mountain**	**89.02**	**43**	*eP*	**P**	**10 45 16.5**	**+0.3**
	comp=Z,15nm,1.0s						
VNA1	**Neumayer--Stat**	**89.06**	**181**	P	P	10 45 10.7	-5.2
MONP2	**Monument Peak**	**89.23**	**54**	P	**P**	**10 45 17.1**	**-0.5**
	baz=245						
I03D	**Drain, OR**	**89.31**	**42**	P	**P**	**10 45 17.2**	**-0.2**
	baz=240						
M04C	**Macdoel**	**89.36**	**45**	P	**P**	**10 45 18.2**	**+0.3**
	baz=242,SNR=6.2						
IKP	**In-Ko-Pah, Jac**	**89.37**	**55**	P	**P**	**10 45 17.9**	**-0.2**
	baz=245						
LRMC	**Laurel Mtn Rad**	**89.39**	**52**	P	**P**	**10 45 18.3**	**+0.1**
	baz=244,SNR=5.9						
WAKR	**Walker**	**89.47**	**48**	*eP*	**P**	**10 45 19.0**	**+0.4**
WAKR				*epP*	**sP**	**10 45 30.0**	**-0.7**
TPFO	**Pinon Flats**	**89.51**	**54**	P	**P**	**10 45 18.8**	**0.0**
	baz=245						
SWSC	**Sam W. Stewart**	**89.73**	**55**	P	**P**	**10 45 19.6**	**-0.1**
	baz=245						
MPMC	**Manual Prospec**	**89.78**	**51**	P	**P**	**10 45 20.0**	**-0.1**
	baz=244,SNR=11						
DAC	**Darwin (Calif)**	**89.80**	**51**	*eP*	**P**	**10 45 20.3**	**+0.1**
DAC				*e*PP*	**sP**	**10 45 32.1**	**-0.3**
DAC				pmax	pmax		
	comp=Z,9.0nm,1.0s						
DAC	**Darwin (Calif)**	**89.80**	**51**	*eP*	**P**	**10 45 20.3**	**+0.1**
	comp=Z,9.4nm,1.0s						
DAC				*epP*	**sP**	**10 45 32.1**	**-0.3**
K04D	**Chiloquin, OR**	**89.81**	**44**	P	**P**	**10 45 19.6**	**-0.4**
	baz=242						
I04A	**Tendick Farm,**	**89.95**	**43**	P	**P**	**10 45 20.1**	**-0.4**
	baz=241,SNR=5.8						
GSC	**Goldstone, Bar**	**89.96**	**52**	P	**P**	**10 45 20.1**	**-0.7**
	baz=245						
GSC	**Goldstone, Bar**	**89.96**	**52**	*eP*	**P**	**10 45 20.3**	**-0.5**
GSC				pmax	pmax		
	comp=Z,24nm,1.9s						
GSC	**Goldstone, Bar**	**89.96**	**52**	*eP*	**P**	**10 45 20.3**	**-0.5**
	comp=Z,24nm,1.9s						
BELC	**Belle Mtn. Jos**	**90.02**	**54**	P	**P**	**10 45 21.2**	**0.0**
	baz=245,SNR=7.8						
PAHR	**Pah Rah Range**	**90.05**	**47**	*eP*	**P**	**10 45 20.8**	**-0.3**
	comp=Z,11nm,1.0s						
G03D	**McMinnville, O**	**90.10**	**41**	P	**P**	**10 45 20.9**	**-0.1**
	baz=241						
HEC	**Hector,Ludlow**	**90.11**	**53**	P	**P**	**10 45 20.9**	**-0.6**
	baz=245						
BOD	**Bodaibo**	**90.12**	**334**	*eP*	**P**	**10 45 20.2**	**-0.6**
BOD				pmax	pmax		
	comp=Z,5.0nm,1.3s						
NV01	**Mina Array Sit**	**90.23**	**49**	*eP*	**P**	**10 45 21.8**	**-0.3**
NVAR	**Mina Array Bea**	**90.23**	**49**	P	**P**	**10 45 21.8**	**-0.4**
	comp=Z,6.8nm,0.8s,baz=228,slow=7.9,SNR=50						
GRAC	**Grapevine Rang**	**90.28**	**50**	P	**P**	**10 45 21.9**	**-0.3**
	baz=244,SNR=12						
BC3	**Big Chuckawall**	**90.29**	**54**	P	**P**	**10 45 22.4**	**0.0**
	baz=246						
NV11	**Mina Array Sit**	**90.34**	**49**	*eP*	**P**	**10 45 22.1**	**-0.5**
	comp=Z,12nm,0.9s						
FURC	**Furnace Creek,**	**90.42**	**51**	P	**P**	**10 45 22.7**	**0.0**
	baz=245,SNR=9.7						
K05A	**Summer Lake**	**90.42**	**44**	*eP*	**P**	**10 45 22.9**	**0.0**
	comp=Z,14nm,0.8s						
MOD	**Modoc Plateau**	**90.42**	**45**	*eP*	**P**	**10 45 22.4**	**-0.4**
	comp=Z,11nm,0.9s						
J05D	**Fort Rock, OR**	**90.46**	**43**	P	**P**	**10 45 23.1**	**+0.1**
	baz=242,SNR=24						
GLA	**Glamis**	**90.52**	**55**	P	**P**	**10 45 23.1**	**-0.3**
	baz=246						
GLA	**Glamis**	**90.52**	**55**	*eP*	**P**	**10 45 23.8**	**+0.4**
GLA				pmax	pmax		
	comp=Z,16nm,0.9s						
GLA	**Glamis**	**90.52**	**55**	*eP*	**P**	**10 45 23.8**	**+0.4**
	comp=Z,16nm,0.9s						
H04A	**Detroit Lake**	**90.52**	**42**	*eP*	**P**	**10 45 22.5**	**-0.6**
	comp=Z,15nm,0.9s						
E03A	**Lebam**	**90.58**	**40**	*eP*	**P**	**10 45 23.0**	**-0.2**
	comp=Z,41nm,1.2s						
GMRC	**Granite Mounta**	**90.60**	**53**	P	**P**	**10 45 23.4**	**-0.5**
	baz=245,SNR=6.2						
SHOC	**Shoshone, Teco**	**90.61**	**52**	P	**P**	**10 45 23.4**	**-0.3**
	baz=245						
TUQ	**Turquoise Moun**	**90.67**	**52**	P	**P**	**10 45 24.1**	**-0.1**
	baz=245,SNR=6.6						
IRM	**Iron Mountain**	**90.73**	**54**	P	**P**	**10 45 24.7**	**+0.4**
	baz=246,SNR=5.9						
ZAK	**Zakamensk**	**90.86**	**324**	*eP*	**P**	**10 45 24.0**	**-0.6**
ZAK				pmax	pmax		
	comp=Z,3.0nm,1.3s						
I05D	**Terrebonne, OR**	**90.89**	**42**	P	**P**	**10 45 25.3**	**+0.5**
	baz=242,SNR=5.0						
F04A	**Amboy**	**90.97**	**41**	*eP*	**P**	**10 45 25.2**	**+0.1**
	comp=Z,17nm,0.9s						
Y12C	**Blythe**	**91.03**	**54**	P	**P**	**10 45 25.9**	**+0.2**
	baz=246						
Y12C	**Blythe**	**91.03**	**54**	*eP*	**P**	**10 45 26.2**	**+0.5**
	comp=Z,9.3nm,0.9s						
Y12C				*epP*	**sP**	**10 45 38.5**	**+0.6**
TPNV	**Topopah Spring**	**91.07**	**51**	P	**P**	**10 45 25.3**	**-0.7**
	baz=245,SNR=15						
TPNV	**Topopah Spring**	**91.07**	**51**	*eP*	**P**	**10 45 25.8**	**-0.2**
TPNV				pmax	pmax		
	comp=Z,13nm,1.0s						
TPNV	**Topopah Spring**	**91.07**	**51**	*eP*	**P**	**10 45 25.8**	**-0.2**
	comp=Z,13nm,1.0s						
G05D	**Wamic, OR**	**91.33**	**42**	P	**P**	**10 45 26.8**	**0.0**
	baz=242						
COLA	**College**	**91.48**	**17**	*eP*	**P**	**10 45 27.1**	**+0.1**
COLA				pmax	pmax		
	comp=Z,2.0nm,0.9s						
PDMCI	**Parker Dam,Lak**	**91.55**	**54**	P	**P**	**10 45 28.2**	**+0.2**
	baz=246						
214A	**Organ Pipe Nat**	**91.64**	**57**	P	**P**	**10 45 29.0**	**+0.4**
	baz=247						
IL1	**Eielson Array**	**91.67**	**18**	*eP*	**P**	**10 45 25.5**	**-2.4**
ILAR	**Eielson Array**	**91.67**	**18**	P	**P**	**10 45 26.4**	**-1.5**
	comp=Z,1.3nm,0.9s,baz=238,slow=5.4,SNR=7.8						
SHPR	**Sheep Range**	**91.68**	**52**	*eP*	**P**	**10 45 29.0**	**+0.1**
	comp=Z,8.1nm,1.2s						
SHPR				*epP*	**sP**	**10 45 40.8**	**-0.3**
LON	**Longmire**	**91.73**	**40**	*eP*	**P**	**10 45 28.8**	**+0.1**
LON				pmax	pmax		
	comp=Z,6.0nm,1.2s						
LON	**Longmire**	**91.73**	**40**	*eP*	**P**	**10 45 28.8**	**+0.1**
	comp=Z,6.0nm,1.2s						
WVOR	**Wild Horse Val**	**91.77**	**45**	*eP*	**P**	**10 45 28.9**	**-0.2**
WVOR				pmax	pmax		
	comp=Z,11nm,1.0s						
WVOR	**Wild Horse Val**	**91.77**	**45**	*eP*	**P**

comp=Z,4.0nm,1.0s
WMQ Urumqi 97.51 314 P Pdif 10 45 58.1 +2.8
WMQ pmax pmax
comp=Z,5.0nm,0.6s
WMQ pmax pmax
comp=Z,71nm,6.6s
WMQ LR LR
comp=Z,180nm,20.2s
WMQ LR LR
comp=Z,100nm,16.4s
WMQ LR LR
comp=Z,110nm,22.6s
ANMO Albuquerque 97.67 56 *e*P **P 10 45 55.3 -1.1**
ANMO pmax pmax
comp=Z,1.0nm,1.1s
BOZ Bozeman (W) 97.69 44 P Pdif 10 45 56.3 +0.1
baz=249
PDAR Pinedale Array 98.06 47 P **P 10 45 56.6 -1.3**
comp=Z,0.6nm,0.9s,baz=222,slow=2.0,SNR=4.5
EGMT Eagleton 99.73 42 Pdiff **Pdif 10 46 05.7 +0.6**
baz=250
N23A Red Feather La 99.98 50 Pdiff **Pdif 10 46 06.3 -0.3**
baz=252
633A Saathoff Ranch 101.83 63 Pdiff **Pdif 10 46 15.3 +0.5**
baz=253
035Z Hargill 101.90 66 Pdiff **Pdif 10 46 16.0 +0.8**
baz=253
YKA Yellowknife Ar 102.16 28 P **Pdif 10 46 14.0 -1.4**
comp=Z,0.2nm,0.5s,baz=257,slow=4.7,SNR=7.0
936A North Padre Is 102.83 65 Pdiff **Pdif 10 46 19.6 +0.4**
baz=253
C26A Wahner Farm, P 104.59 44 Pdiff **Pdif 10 46 26.2 -0.4**
baz=256
738A Farr-Stevens R 104.63 64 Pdiff **Pdif 10 46 26.2 -1.0**
baz=254
ARU Arti 117.79 324 *i* PKIKP **PKPdf 10 51 06.9 -0.2**
ARU 10 52 22.8
ARU 10 58 15.5
ARU SS SS 11 08 24.3 -7.7
ARCES ARCESS Array B 126.08 345 PKP **PKPdf 10 51 20.1 -2.6**
comp=Z,3.0nm,0.9s,baz=232,slow=1.4,SNR=6.3
KLMR Klimovskoe 126.28 332 *e*PKIKP **PKPdf 10 51 19.9 -3.3**
KLMR pmax pmax
comp=Z,12nm,1.1s
BRG Berggiesshubel 143.64 333 *e*PKP PKPbc 10 51 54.2 +0.9
comp=Z,5.9nm,1.0s
BRG Berggiesshubel 143.64 333 *e*PKIKP PKPbc 10 51 54.2 +0.9
BRG pmax pmax
comp=Z,19nm,1.0s
EKA Eskdalemuir Ar 144.65 352 PKP **PKPab 10 51 54.6 -1.5**
comp=Z,3.9nm,0.9s,baz=336,slow=1.8,SNR=7.5
NKC Novy Kostel 144.75 333 *e*PKP **PKPdf 10 51 57.8 -0.1**
NKC Novy Kostel 144.75 333 *e*PKIKP **PKPdf 10 51 57.8 -0.1**
CONA Conrad Observa 144.80 327 *i* pPKPbc **PKPdf 10 51 58.7 +0.6**
comp=Z,19nm,1.3s,SNR=9.0
KHC Kasperske Hory 145.06 331 *e*PKP **PKPdf 10 51 58.7 +0.2**
KHC Kasperske Hory 145.06 331 *e*PKIKP **PKPab 10 51 58.1 +0.2**
KHC Kasperske Hory 145.06 331 *e*PKPbc **PKPab 10 51 58.1 +0.2**
GEC2 GERESS Array S 145.21 330 *e*PKIKP **PKPdf 10 51 59.8 +1.0**
GEC2 GERESS Array S 145.21 330 *e*PKPbc **PKPdf 10 51 59.8 +1.0**
GERES GERESS Array B 145.21 330 PKPbc **PKPbc 10 51 57.7 -0.7**
comp=Z,1.8nm,0.7s,baz=42,slow=4.3,SNR=8.0
GEA0 GERESS Array S 145.22 330 *e*PKPbc **PKPdf 10 51 58.9 +0.1**
ARSA Arzberg 145.42 327 *i* PKPdf **PKPab 10 51 59.9 +0.6**
comp=Z,13nm,1.4s,SNR=6.1
MOA Molln 145.64 329 *i* PKPab **PKPbc 10 51 59.7 0.0**
comp=Z,29nm,1.5s,SNR=11
SOKA Soboth 146.05 326 *i* PKPab **PKPab 10 52 01.8 +0.1**
comp=Z,9.9nm,1.3s,SNR=5.5
KBA Koelnbreinsper 146.63 328 *i* PKPdf **PKPdf 10 52 00.1 -1.2**
comp=Z,6.5nm,1.1s
CWF Charnwood Fore 146.85 349 *e*PKPdf **PKPbc 10 52 03.2 +0.1**
MEM Membach 146.90 339 PKPbc **PKPab 10 52 04.3 -0.4**
MEM PKP **PKiKP 10 52 06.7 +0.7**
ABTA Abfaltersbach 147.27 329 *i* PKPdf **PKPdf 10 52 02.0 -0.4**
comp=Z,9.1nm,1.2s
BCLA Clavier 147.29 340 PKPbc **PKPbc 10 52 05.2 +0.8**
WTTA Wattenberg 147.31 330 *i* PKPdf **PKPdf 10 52 00.9 -1.6**
comp=Z,14nm,1.2s
MOTA Moosalm 147.50 331 *i* pPKPdf **PKPbc 10 52 05.0 -0.4**
comp=Z,13nm,1.0s
RETA Reutte 147.55 331 *i* PKPdf **PKPdf 10 52 03.0 +0.2**
comp=Z,7.7nm,1.1s
LANF Langenberg 147.62 336 PKP **PKPbc 10 52 06.1 +0.7**
WLF Walferdange 147.65 338 *e*PKP2 **PKPbc 10 52 06.4 +0.9**
WLF Walferdange 147.65 338 *e*PKPbc **PKPbc 10 52 06.4 +0.9**
DOU Dourbes 147.80 340 PKPbc **PKPbc 10 52 06.5 +0.6**
FETA Feichten 147.91 331 *i* pPKPdf **PKPbc 10 52 06.7 +0.2**
comp=Z,14nm,0.9s,SNR=7.4
BFO Black Forest 147.94 335 *e*PKP2 **PKPbc 10 52 06.3 0.0**
BFO Black Forest 147.94 335 *e*PKPbc **PKPbc 10 52 06.3 0.0**
DAVA Damuels 148.09 332 *i* PKPbc **PKPbc 10 52 06.2 -0.8**
comp=Z,9.8nm,0.9s
WLS Welschbruch 148.25 336 PKP **PKPbc 10 52 07.7 +0.5**
FUORN Ofenpass-Fuorn 148.42 331 *e*PKPbc **PKPbc 10 52 08.5 +0.5**
DAVOX Davos/Dischmat 148.48 331 PKPbc **PKPbc 10 52 07.5 -0.6**
comp=Z,15nm,0.9s,baz=58,slow=2.2,SNR=16
ECH Echery 148.49 336 PKP **PKPbc 10 52 07.5 -0.3**
MOF Molkenrain 148.80 335 PKP **PKPbc 10 52 08.7 0.0**
TUE Stuetta 148.95 331 *e*PKPbc **PKPbc 10 52 09.3 0.0**
LOMF Lomont 149.32 335 PKP **PKPbc 10 52 11.0 +1.0**
SENIN Lac Senin/Sane 149.93 333 *e*PKPbc **PKPbc 10 52 12.2 +0.5**
AUTN L'Aution 151.72 330 PKP **PKPbc 10 52 16.5 +0.5**
LUCF Luceram 151.83 330 PKP **PKPbc 10 52 17.3 +1.2**
MVIF Mont Vial 151.92 330 PKP **PKPbc 10 52 17.0 +0.6**
SSB Saint Sauveur 151.93 335 *e*PKIKP **PKPbc 10 52 16.5 +0.3**
SSB Saint Sauveur 151.93 335 *e*PKPbc **PKPbc 10 52 16.5 +0.3**
REVF Revere 151.94 330 PKP **PKPbc 10 52 16.8 +0.5**
CALN Calern 152.15 331 PKP **PKPbc 10 52 16.8 -0.1**
TORD Torodi Ar. Bea 165.32 242 PKP **PKPdf 10 52 26.2 -0.2**
comp=Z,1.9nm,1.0s,baz=74,slow=0.5,SNR=7.5
TORD PKPab **PKPab 10 53 23.4 -0.7**
comp=Z,0.4nm,0.7s,baz=119,slow=3.9,SNR=2.4

IDC ***11*** *10:32:52.0±6.2, 10°.69S×161°.92E, h100km±48km, mb3.6/4, mb1 3.9/6, mb1mx3.5/44, mbtmp4.1/6, MS3.3/1, Ms1 3.3/1, ms1mx2.7/30, Error ellipse: s-maj=58.8km s-min=23.8km az=130.0*

ISC 11 10:32:45.0±1.2, 11°.00S±0°.2×162°.4E±0°.1, h46km, n8, σ1§81/11, mb3.7/4, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	**Honiara**	**2.81**	**302**	P	**Pn**	**10 33 27.9**	**+0.4**
	186nm,0.3s,baz=162,slow=2.6,SNR=45						
HNR				S	**Sn**	**10 33 57.6**	**-2.5**
	159nm,0.3s,baz=110,slow=3.7,SNR=4.1						
HNR				LR	LR	10 34 38.7	
	comp=Z,635nm,19.9s,baz=128,slow=46						
HNR	**Honiara**	**2.81**	**302**	*e*P	**Pn**	**10 33 27.0**	**-0.5**
HNR				*e*S	**Sn**	**10 34 03.0**	**+2.9**
CTA	**Charters Tower**	**17.97**	**238**	P	**P**	**10 36 54.1**	**+2.4**
	0.8nm,0.3s,baz=72,slow=11,SNR=8.4						
WRA	**Warramunga Arr**	**28.41**	**248**	P	**P**	**10 38 34.2**	**-1.3**
	1.2nm,0.8s,baz=76,slow=9.5,SNR=12						
WRA				PcP	**PcP**	**10 41 46.9**	**-0.3**
	0.8nm,0.8s,baz=76,slow=3.3,SNR=4.9						
ASAR	**Alice Springs**	**29.89**	**241**	PcP	**PcP**	**10 41 50.8**	**-0.1**
	1.1nm,1.0s,baz=81,slow=3.2,SNR=3.6						
FITZ	**Fitzroy Crossi**	**36.20**	**254**	P	**P**	**10 39 41.9**	**-1.8**
	2.3nm,0.5s,baz=66,slow=8.2,SNR=14						
ILAR	**Eielson Array**	**84.50**	**19**	P	**P**	**10 45 13.3**	**+0.6**
	0.4nm,0.6s,baz=243,slow=5.0,SNR=5.9						
YKA	**Yellowknife Ar**	**96.42**	**28**	P	**P**	**10 46 08.7**	**-0.1**
	0.1nm,0.4s,baz=257,slow=4.8,SNR=4.9						

ISCJB ***11*** *10:39:32.5±3.1, 20°.42S±0°.05×168°.31E±0°.04, h3km±18km, mb5.0/99, MS4.3/11, Error ellipse: s-maj=9.3km s-min=5.3km az=160.1*

IDC ***11*** *10:39:33.4±0.8, 20°.45S×168°.33E, h0km, mb4.7/20, mb1 4.8/22, mb1mx4.6/37, mbtmp4.7/22, ML4.3/2, MS4.0/10, Ms1 4.0/10, ms1mx3.7/30, Error ellipse: s-maj=22.7km s-min=15.4km az=132.0*

GCMT ***11*** *10:39:35.0±0.4, 20°.70S×168°.29E, h22km±1km, MW4.9/65, Moment Tensor Solution. s32,c38; s65,c91; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-2.98±.26; $M_{\theta\theta}$0.79±.15; $M_{\phi\phi}$2.19±.15; $M_{r\theta}$-1.65±.25; $M_{\theta\phi}$-0.33±.08; $M_{r\phi}$0.01±.21; Best double couple: $M_0$2.95200×10^{16} NP1:φs 144.00000°, δ54.00000°, λ-115.00000°. NP2: φs 2.00000°, δ43.00000°, λ-60.00000°. Principal axes: T 2.3010, Plg6.0000°, Azm252.0000°; N 1.2970,*

Plg20.0000°, Azm160.0000°; P -3.6030, Plg69.0000°, Azm357.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.

NEIC ***11*** *10:39:35.0±0.2, 20°.42S×168°.33E, h10km, mb5.0/49 Error ellipse: s-maj=7.3km s-min=4.3km az=160.0*

BJI ***11*** *10:39:37.3, 20°.40S×168°.30E, h37km, mb5.0/38, mB5.1/28, Ms5.0/16, Ms7 4.7/12*

MOS ***11*** *10:39:37.4±1.1, 20°.34S×168°.25E, h33km, mb5.3/25, Error ellipse: s-maj=10.3km s-min=8.9km az=12.5*

ISC 11 10:39:37.8±0.4, 20°.46S±0°.06×168°.31E±0°.06, h29km±2km, h29km:pP-P, n264, σ0§97/281, mb5.0/98, MS4.2/11, 1C-3D, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.37**	**227**	Pn	**Pn**	**10 40 13.2**	**-1.6**
	24nm,0.3s,baz=63,slow=16,SNR=56						
DZM				Sn	**Sn**	**10 40 42.2**	**-0.8**
	82nm,0.3s,baz=107,slow=19,SNR=9.1						
DZM				LR	LR	10 41 02.9	
	comp=Z,2μm,21.1s,baz=29,slow=38						
MSVF	**Nonsavu**	**9.60**	**75**	*e*P	**Pn**	**10 41 54.8**	**+0.6**
MSVF	**Nonsavu**	**9.60**	**75**	*e*Pn	**Pn**	**10 41 54.8**	**+0.6**
HNR	**Honiara**	**13.61**	**322**	Pn	**Pn**	**10 42 47.6**	**-1.3**
	5.4nm,0.3s,baz=218,slow=22,SNR=4.0						
HNR				LR	LR	10 47 21.4	
	comp=Z,168nm,21.2s,baz=158,slow=34						
EIDS	**Eidsvold**	**16.61**	**250**	*e*Pn	**Pn**	**10 43 29.4**	**+0.9**
EIDS				*e*pP	**sP**	**10 43 42.7**	**+0.5**
CTA	**Charters Tower**	**20.69**	**267**	P	Pn	10 44 17.2	-1.0
	44nm,1.0s,baz=93,slow=12,SNR=18						
CTAO	**Charters Tower**	**20.69**	**267**	*e*P	Pn	10 44 17.4	-0.9
CTAO				pmax	pmax		
	comp=Z,345nm,1.0s						
CTAO	**Charters Tower**	**20.69**	**267**	*e*P	Pn	10 44 17.4	-0.9
	comp=Z,345nm,1.0s						
CAN	**Canberra**	**22.54**	**225**	*e*P	**P**	**10 44 35.4**	**-0.1**
CAN				pmax	pmax		
	comp=Z,55nm,1.3s						
CAN	**Canberra**	**22.54**	**225**	*e*P	**P**	**10 44 35.4**	**-0.1**
	comp=Z,54nm,1.3s						
PMG	**Port Moresby**	**23.17**	**295**	P	**P**	**10 44 42.7**	**+0.5**
	comp=Z,23nm,0.8s,baz=110,slow=3.7,SNR=9.8						
PMG	**Port Moresby**	**23.17**	**295**	*i* P	**P**	**10 44 42.0**	**-0.2**
PMG				pmax	pmax		
	comp=Z,158nm,1.0s						
PMG	**Port Moresby**	**23.17**	**295**	*e*P	**P**	**10 44 42.4**	**+0.2**
	comp=Z,32nm,0.9s						
COEN	**Coen**	**24.84**	**281**	*e*P	**P**	**10 44 57.9**	**0.0**
	comp=Z,21nm,0.9s						
STKA	**Stephens Creek**	**26.47**	**239**	P	**P**	**10 45 13.1**	**+0.5**
	comp=Z,16nm,0.9s,baz=75,slow=9.2,SNR=26						
STKA				LR	LR	10 55 07.7	
	comp=Z,591nm,19.0s,baz=44,slow=35						
STKA	**Stephens Creek**	**26.47**	**239**	*e*P	**P**	**10 45 13.8**	**+1.3**
STKA				pmax	pmax		
	comp=Z,16nm,1.4s						
STKA	**Stephens Creek**	**26.47**	**239**	*e*P	**P**	**10 45 13.8**	**+1.3**
	comp=Z,16nm,1.4s						
RAR	**Rarotonga**	**29.82**	**97**	LR	LR	10 55 02.2	
	comp=Z,165nm,21.3s,baz=253,slow=31						
WRAB	**Tennant Creek**	**31.84**	**265**	*i* P	**P**	**10 45 58.3**	**-2.2**
WRAB				pmax	pmax		
	comp=Z,13nm,1.0s						
WRA	**Warramunga Arr**	**31.85**	**265**	P	**P**	**10 45 59.2**	**-1.4**
	comp=Z,5.6nm,0.9s,baz=93,slow=8.4,SNR=22						
WRA				LR	LR	10 58 05.6	
	comp=Z,394nm,18.3s,baz=95,slow=35						
AS01	**Alice Springs**	**31.96**	**258**	*e*P	**P**	**10 46 00.7**	**-0.8**
AS31	**Alice Springs**	**32.00**	**258**	*e*P	**P**	**10 46 01.3**	**-0.5**
	comp=Z,15nm,0.8s						
ASAR	**Alice Springs**	**32.00**	**258**	P	**P**	**10 46 01.3**	**-0.6**
	comp=Z,39nm,0.8s,baz=82,slow=9.1,SNR=219						
ASAR				PcP	**PcP**	**10 48 51.4**	**-0.1**
	comp=Z,1.5nm,0.9s,baz=96,slow=3.7,SNR=5.2						
ASAR				LR	LR	10 59 10.5	
	comp=Z,579nm,18.7s,baz=104,slow=37						
JAY	**Jayapura**	**32.29**	**300**	P	**P**	**10 46 03.2**	**-1.2**
	comp=Z,2.9nm,0.9s,baz=267,slow=23,SNR=6.9						
JAY	**Jayapura**	**32.29**	**300**	P	**P**	**10 46 05.1**	**+0.6**
	comp=Z,35nm,1.0s,comp=Z,337nm						
FAKI	**Fak Fak**	**39.23**	**292**	P	**P**	**10 47 01.5**	**-2.4**
PPT2	**Papeete2**	**39.84**	**93**	*e*LQ	LQ	10 56 36.5	
	comp=Z,302nm,24.5s						
PPT2				*e*LR	LR	10 58 16.6	
	comp=Z,498nm,28.2s						
FITZ	**Fitzroy Crossi**	**40.27**	**266**	LR	LR	11 02 55.4	
	comp=Z,353nm,18.8s,baz=92,slow=35						
FITZ	**Fitoy Crossi**	**40.27**	**266**	*e*P	**P**	**10 47 12.3**	**-0.3**
	comp=Z,28nm,0.9s						
FITZ				*e*pP	**pP**	**10 47 22.9**	**+1.7**
GUMO	**Guam**	**40.94**	**324**	LR	LR	11 02 28.0	
	comp=Z,78nm,18.6s,baz=118,slow=34						
SWI	**Sorong**	**41.10**	**294**	P	**P**	**10 47 19.9**	**+0.4**
	comp=Z,22nm,0.9s,comp=Z,1μm						
SWI	**Sorong**	**41.10**	**294**	P	**P**	**10 47 19.9**	**+0.4**
SWI				pmax	pmax		
	comp=Z,22nm,0.9s						
NLAI	**Namlea**	**43.63**	**288**	P	**P**	**10 47 41.2**	**+1.2**
LBMI	**Labuha**	**44.48**	**291**	P	**P**	**10 47 48.3**	**+1.5**
SANI	**Sanana**	**45.15**	**288**	P	**P**	**10 47 54.0**	**+1.8**
	comp=Z,97nm,1.0s,comp=Z,968nm						
MMRI	**Maumere**	**45.97**	**278**	P	**P**	**10 47 59.2**	**+0.5**
NWAO	**Narrogin (SRO)**	**46.89**	**244**	LR	LR	11 08 16.3	
	comp=Z,587nm,18.1s,baz=341,slow=37						
LUWI	**Luwuk**	**48.47**	**288**	P	**P**	**10 48 19.1**	**+0.9**
	comp=Z,83nm,1.0s,comp=Z,1μm						
LUWI	**Luwuk**	**48.47**	**288**	*e*P	**P**	**10 48 18.7**	**+0.4**
	comp=Z,64nm,0.9s						
KAPI	**Kappang**	**49.58**	**281**	*e*P	**P**	**10 48 27.7**	**+1.1**
	comp=Z,40nm,1.0s						
MRSI	**Marisa**	**49.90**	**289**	P	**P**	**10 48 29.7**	**+0.6**
	comp=Z,24nm,0.8s,comp=Z,5μm						
SPSI	**Sidrap Palu**	**49.97**	**282**	P	**P**	**10 48 29.4**	**-0.3**
	comp=Z,17nm,1.0s						
TTSI	**Tana Toraja**	**50.29**	**284**	P	**P**	**10 48 33.2**	**+1.1**
	comp=Z,19nm,1.1s,comp=Z,3μm						
TWSI	**Taliwang, Sumb**	**50.92**	**275**	P	**P**	**10 48 39.6**	**+2.7**
TAOE	**Nuku Hiva Isla**	**50.99**	**85**	*e*LR	LR	11 03 24.4	
	comp=Z,323nm,28.6s						
PCI	**Palu**	**51.17**	**286**	P	**P**	**10 48 42.1**	**+3.4**
PCI	**Palu**	**51.17**	**286**	P	**P**	**10 48 39.5**	**+0.8**
PCI				pmax	pmax		
	comp=Z,87nm,1.3s						
RKT	**Rikitea**	**52.45**	**104**	*e*LR	LR	11 04 08.0	
	comp=Z,193nm,27.5s						
MYLDM	**Lahad Datu**	**55.14**	**292**	*e*P	**P**	**10 49 09.3**	**+1.3**
MYLDM				*e*pP	**sP**	**10 49 19.4**	**-0.9**
SBA	**Scott Base**	**57.45**	**180**	*e*P	**P**	**10 49 24.7**	**+1.2**
SBA				*e**PP	**sP**	**10 49 35.3**	**-0.5**
SBA	**Scott Base**	**57.45**	**180**	*e*P	**P**	**10 49 24.7**	**+1.2**
SBA				*e*pP	**sP**	**10 49 35.3**	**-0.5**
KKM	**Kota Kinabalu**	**57.55**	**292**	*e*P	**P**	**10 49 25.1**	**-0.2**
	comp=Z,51nm,1.3s						
KKM				*e*pP	**sP**	**10 49 36.2**	**-1.4**
STKI	**Sintang**	**59.16**	**283**	P	**P**	**10 49 37.9**	**+1.4**
	comp=Z,163nm,0.4s,comp=Z,28μm						
LEM	**Lembang**	**60.21**	**274**	P	P	10 49 50.3	+6.4
KSM	**Kuching**	**60.80**	**284**	*e*P	**P**	**10 49 47.9**	**+0.2**
	comp=Z,26nm,0.8s						
KSM				*e*pP	**pP**	**10 49 58.0**	**+1.3**
CGJI	**Cibinong**	**62.08**	**273**	P	**P**	**10 49 57.3**	**+0.9**
	comp=Z,63nm,1.0s						
MJAR	**Matsushiro Arr**	**63.42**	**333**	P	**P**	**10 50 04.0**	**-0.8**
	comp=Z,9.3nm,0.9s,baz=167,slow=7.1,SNR=12						
MAJO	**Matsushiro**	**63.43**	**333**	*e*P	**P**	**10 50 03.8**	**-1.1**
MAJO				pmax	pmax		
	comp=Z,97nm,0.9s						
MAJO	**Matsushiro**	**63.43**	**333**	*e*P	**P**	**10 50 04.5**	**-0.4**
	comp=Z,14nm,0.5s						
MAT	**Matsushiro**	**63.43**	**333**	P	**P**	**10 50 03.7**	**-1.2**
MJB9	**Matsu-Tunnel**	**63.43**	**333**	*e*P	**P**	**10 50 04.6**	**-0.3**
	comp=Z,3.7nm,0.5s						
JNU	**Nakatsue**	**64.16**	**325**	P	**P**	**10 50 09.8**	**0.0**
	comp=Z,16nm,1.1s,baz=90,slow=12,SNR=4.5						
ASAJ	**Asahikawa**	**68.44**	**340**	P	**P**	**10 50 38.0**	**+1.1**
	comp=Z,12nm,0.9s,baz=204,slow=15,SNR=5.7						
KSRS	**Korea Array**	**69.02**	**326**	P	**P**	**10 50 41.3**	**+0.6**
	comp=Z,3.2nm,0.9s,baz=150,slow=5.9,SNR=7.7						
KSAR	**Wonju Array Be**	**69.03**	**326**	P	**P**	**10 50 41.3**	**+0.5**
KSAR	**Wonju Array Be**	**69.03**	**326**	P	**P**	**10 50 41.3**	**+0.5**
KS01	**Wonju Array Si**	**69.05**	**326**	*e*P	**P**	**10 50 41.0**	**+0.1**
QSPA	**South Pole Qui**	**69.60**	**180**	*e*P	**P**	**10 50 44.5**	**+0.4**
	comp=Z,18nm,1.4s						
NJ2	**Nanjing**	**70.48**	**317**	*e*P	**P**	**10 50 49.7**	**-0.1**
NJ2				pmax	pmax		
	comp=Z,13nm,0.5s						
KULM	**Kulim**	**71.15**	**283**	*e*P	**P**	**10 50 54.2**	**-0.1**
	comp=Z,24nm,1.1s						
PSI	**Prapat**	**71.77**	**280**	*e*P	**P**	**10 50 57.5**	**-0.7**
PSI				pmax	pmax		
	comp=Z,23nm,1.1s						
PSI	**Prapat**	**71.77**	**280**	*e*P	**P**	**10 50 57.5**	**-0.7**
	comp=Z,23nm,1.1s						
USRK	**Ussuriysk Ar.**	**72.42**	**333**	P	**P**	**10 51 02.0**	**+0.7**
	comp=Z,15nm,0.9s,baz=149,slow=4.4,SNR=26						
SKNT	**Sakolnakorn**	**73.26**	**296**	P	**P**	**10 51 07.9**	**+1.0**
	comp=Z,28nm,1.2s						
MDJ	**Mudanjiang**	**73.78**	**332**	P	**P**	**10 51 10.1**	**+0.8**
MDJ				pmax	pmax		
	comp=Z,19nm,1.1s						
MDJ				pmax	pmax		
	comp=Z,130nm,6.3s						
PEA0	**Petropavlovsk-**	**73.83**	**353**	*e*P	**P**	**10 51 08.9**	**-0.5**
PETK	**Petropavlovsk-**	**73.83**	**353**	P	**P**	**10 51 10.1**	**+0.7**
	comp=Z,7.0nm,0.8s,baz=107,slow=5.8,SNR=6.8						
NONG	**Nongkai**	**74.48**	**296**	P	**P**	**10 51 15.1**	**+1.2**
	comp=Z,40nm,1.1s						
CN2	**Changchun**	**75.05**	**329**	*e*P	**P**	**10 51 17.2**	**+0.5**
CN2				*e*pP	sP	10 51 27.6	-1.6
CN2				pmax	pmax		
	comp=Z,20nm,0.8s						
PBKT	**Sadao Pong**	**75.64**	**294**	P	**P**	**10 51 22.5**	**+1.8**
	comp=Z,11nm,1.2s						
NIKH	**Nikolski High**	**75.76**	**14**	*e*P	**P**	**10 51 20.1**	**-0.4**
	comp=Z,78nm,0.8s						
ENH	**Enshi**	**75.78**	**310**	*e*P	**P**	**10 51 21.3**	**+0.1**
	comp=Z,10nm,1.0s						
GYA	**Guiyang**	**75.80**	**306**	P	**P**	**10 51 23.2**	**+1.6**
GYA				pP	sP	10 51 34.7	+0.6
GYA				PP	**PP**	**10 54 16.0**	**+3.9**
GYA				S	**S**	**11 01 02.4**	**+0.2**
GYA				SKS	**SKSac**	**11 01 25.8**	**-4.6**
GYA				SS	**SS**	**11 05 57.2**	**+2.3**
GYA				pmax	pmax		
	comp=Z,20nm,1.0s						
GYA				pmax	pmax		
	comp=Z,120nm,6.6s						
GYA				LR	LR		
	comp=Z,480nm,19.4s						
GYA				LR	LR		
	comp=Z,430nm,20.0s						
GYA				LR	LR		
	comp=Z,460nm,19.6s						
LOEI	**Loei**	**75.81**	**295**	P	**P**	**10 51 21.4**	**-0.3**
	comp=Z,6.3nm,1.6s,comp=Z,703nm						
UTTA	**Uttaradit**	**76.52**	**295**	P	**P**	**10 51 28.1**	**+2.4**
	comp=Z,2.5nm,1.0s,comp=Z,46nm						
KLR	**Kul'dur**	**76.62**	**336**	P	**P**	**10 51 26.4**	**+0.8**
	comp=Z,7.5nm,1.1s,baz=115,slow=4.6,SNR=8.1						
NANT	**Nan**	**76.88**	**296**	P	**P**	**10 51 29.2**	**+1.5**
	comp=Z,6.0nm,0.8s						
MAW	**Mawson**	**76.98**	**202**	P	**P**	**10 51 28.2**	**+0.8**
	comp=Z,5.5nm,0.9s,baz=110,slow=7.9,SNR=6.3						
NKL	**Nikolayevsk**	**77.11**	**343**	*e*P	**P**	**10 51 28.6**	**+0.4**
NKL				pmax	pmax		
	comp=Z,20nm,1.0s						
UNV	**Unalaska Valle**	**77.12**	**15**	*e*P	**P**	**10 51 27.0**	**-1.2**
	comp=Z,22nm,0.8s						
BJI	**Beijing**	**77.33**	**322**	P	**P**	**10 51 30.3**	**+0.6**
BJI				pmax	pmax		
	comp=Z,8.0nm,1.0s						
BJI				pmax	pmax		
	comp=Z,160nm,4.2s						
LAMP	**Lampang**	**77.65**	**295**	P	**P**	**10 51 34.4**	**+2.4**
	comp=Z,12nm,0.9s						
CRAI	**Chiangrai**	**77.80**	**297**	P	**P**	**10 51 34.2**	**+1.4**
	comp=Z,88nm,1.2s						
KMI	**Kunming**	**78.18**	**303**	P	**P**	**10 51 36.5**	**+1.4**
KMI				pmax	pmax		
	comp=Z,27nm,0.9s						
KMI				pmax	pmax		
	comp=Z,150nm,5.9s						
CM01	**Chiang Mai Arr**	**78.18**	**295**	*e*P	**P**	**10 51 36.6**	**+1.7**
CM31	**Chiang Mai Arr**	**78.21**	**295**	*e*P	**P**	**10 51 37.0**	**+1.9**
CMAR	**Chiang Mai Arr**	**78.21**	**295**	P	**P**	**10 51 37.2**	**+2.0**
	comp=Z,12nm,0.9s,baz=134,slow=4.4,SNR=51						
CMMT	**Chiang Mai**	**78.36**	**295**	P	**P**	**10 51 37.3**	**+1.3**
	comp=Z,26nm,1.1s						
CHTO	**Chiang Mai**	**78.37**	**295**	P	**P**	**10 51 37.4**	**+1.4**
	comp=Z,115nm,1.2s						
CHTO	**Chiang Mai**	**78.37**	**295**	*e*P	**P**	**10 51 37.5**	**+1.4**
CHTO				*e**PP	**sP**	**10 51 48.0**	**-0.6**
CHTO				pmax	pmax		
	comp=Z,22nm,0.9s						
CHTO	**Chiang Mai**	**78.37**	**295**	*e*P	**P**	**10 51 37.5**	**+1.4**
	comp=Z,22nm,0.9s						
CHTO				*e*pP	**sP**	**10 51 48.0**	**-0.6**
CMAI	**Chiengmai2**	**78.78**	**296**	P	**P**	**10 51 40.0**	**+1.5**
	comp=Z,18nm,1.1s						
CD2	**Chengdu**	**80.29**	**308**	P	**P**	**10 51 46.8**	**+0.5**
CD2				pmax	pmax		
	comp=Z,11nm,0.6s						
HHC	**Hu-ho-hao-te**	**80.58**	**320**	*e*P	**P**	**10 51 48.6**	**+0.9**
HHC				S	**S**	**11 01 51.7**	**-1.2**
HHC				pmax	pmax		
	comp=Z,32nm,1.3s						
HHC				pmax	pmax		
	comp=Z,100nm,7.6s						
HHC				LR	LR		
	comp=Z,200nm,17.8s						
HHC				LR	LR		
	comp=Z,250nm,18.1s						
LZH	**Lanzhou**	**82.90**	**313**	*e*P	**P**	**10 52 02.0**	**+1.9**
LZH				pP	sP	10 52 13.0	+0.3
LZH				sP	pP	10 52 18.0	+8.6
LZH				PP	**PP**	**10 55 08.2**	**-2.9**
LZH				*e*S	**S**	**11 02 15.0**	**-2.2**
LZH				sS	sS	11 02 35.0	+2.5
LZH				SS	**SS**	**11 07 42.5**	**+1.3**
LZH	

CMB pmax pmax
comp=Z,5.0nm,0.8s
CMB Columbia Colle 88.61 48 *e*P **P 10 52 27.9 -0.4**
comp=Z,5.4nm,0.8s
CMB *e*pP **sP 10 52 39.8 -1.1**
AFDM Forest Hills D 88.63 47 *e*P **P 10 52 28.4 +0.1**
comp=Z,9.8nm,1.0s
O03D Paynes Creek 88.69 46 P **P 10 52 28.4 -0.3**
baz=242,SNR=5.8
109C Camp Elliot, M 88.74 54 P **P 10 52 28.6 -0.3**
baz=245
YBH Yreka Blue Hor 88.78 44 *e*P **P 10 52 29.8 +0.8**
YBH pmax pmax
comp=Z,8.0nm,0.9s
YBH Yreka Blue Hor 88.78 44 *e*P **P 10 52 29.8 +0.8**
comp=Z,7.6nm,0.9s
BFSC Mount Baldy Ra 88.90 53 P **P 10 52 29.1 -0.7**
baz=244
ISA Isabella, Lake 88.92 51 P **P 10 52 29.7 -0.1**
baz=244
EDW2 Edwards Air Fo 88.93 52 P **P 10 52 29.6 -0.2**
baz=244
HUMO Hull Mountain 89.04 43 *e*P **P 10 52 31.1 +0.9**
comp=Z,9.4nm,0.9s
MONP2 Monument Peak 89.26 54 P **P 10 52 31.4 -0.3**
baz=245
I03D Drain, OR 89.32 42 P **P 10 52 31.6 +0.2**
baz=241
M04C Macdoel 89.37 45 P **P 10 52 32.2 +0.3**
baz=242
IKP In-Ko-Pah, Jac 89.40 55 P **P 10 52 32.4 +0.3**
baz=245
LRMC Laurel Mtn Rad 89.42 52 P **P 10 52 32.8 +0.6**
baz=244
WAKR Walker 89.49 48 *e*P **P 10 52 33.2 +0.6**
WAKR *e*pP **sP 10 52 44.7 -0.5**
TPFO Pinon Flats 89.54 54 P **P 10 52 32.7 -0.1**
baz=245
SWSC Sam W. Stewart 89.76 55 P **P 10 52 33.9 +0.2**
baz=245
MPMC Manual Prospec 89.81 51 P **P 10 52 33.9 -0.3**
baz=244,SNR=7.2
K04D Chiloquin, OR 89.83 44 P **P 10 52 34.2 +0.2**
baz=242
DAC Darwin (Calif) 89.83 51 *e*P **P 10 52 34.3 +0.1**
DAC pmax pmax
comp=Z,5.0nm,0.9s
DAC Darwin (Calif) 89.83 51 *e*P **P 10 52 34.3 +0.1**
comp=Z,4.9nm,0.9s
I04A Tendick Farm, 89.96 43 P **P 10 52 34.3 -0.1**
baz=241
BOD Bodaibo 90.04 334 *e*P **P 10 52 34.0 -0.4**
BOD pmax pmax
comp=Z,7.0nm,1.1s
BELC Belle Mtn. Jos 90.05 54 P **P 10 52 35.3 +0.1**
baz=245
PAHR Pah Rah Range 90.07 47 *e*P **P 10 52 35.5 +0.3**
comp=Z,7.5nm,1.0s
G03D McMinnville, O 90.11 41 P **P 10 52 34.9 -0.1**
baz=241
HEC Hector,Ludlow 90.14 53 P **P 10 52 35.8 +0.2**
baz=245
NV01 Mina Array Sit 90.26 49 *e*P **P 10 52 35.9 -0.3**
NVAR Mina Array Bea 90.26 49 P **P 10 52 36.4 +0.2**
comp=Z,5.1nm,0.8s,baz=227,slow=8.7,SNR=48
GRAC Grapevine Rang 90.30 50 P **P 10 52 36.4 +0.1**
baz=244,SNR=7.4
BC3 Big Chuckawall 90.32 54 P **P 10 52 36.8 +0.4**
baz=246
NV11 Mina Array Sit 90.36 49 *e*P **P 10 52 36.5 -0.1**
comp=Z,9.2nm,0.9s
K05A Summer Lake 90.43 44 *e*P **P 10 52 37.1 +0.2**
comp=Z,12nm,0.8s
MOD Modoc Plateau 90.44 45 *e*P **P 10 52 37.1 +0.2**
comp=Z,9.9nm,0.9s
FURC Furnace Creek, 90.44 51 P **P 10 52 36.3 -0.5**
baz=245,SNR=8.2
J05D Fort Rock, OR 90.47 43 P **P 10 52 37.6 +0.6**
baz=242
H04A Detroit Lake 90.53 42 *e*P **P 10 52 37.1 0.0**
comp=Z,8.7nm,0.8s
GLA Glamis 90.55 55 P **P 10 52 38.0 +0.6**
baz=246
GMRC Granite Mounta 90.63 53 P **P 10 52 38.0 +0.1**
baz=245
TUQ Turquoise Moun 90.70 52 P **P 10 52 38.0 -0.2**
baz=245,SNR=5.3
PAX Paxson 90.72 19 *e*P **P 10 52 36.2 -1.4**
PAX pmax pmax
comp=Z,11nm,0.6s
PAX Paxson 90.72 19 *e*P **P 10 52 36.2 -1.4**
comp=Z,11nm,0.6s
IRM Iron Mountain 90.76 54 P **P 10 52 38.8 +0.4**
baz=246
ZAK Zakamensk 90.77 325 *e*P **P 10 52 37.2 -0.9**
ZAK pmax pmax
comp=Z,5.0nm,1.6s
I05D Terrebonne, OR 90.90 43 P **P 10 52 39.2 +0.3**
baz=242
F04A Amboy 90.98 41 *e*P **P 10 52 38.7 -0.4**
comp=Z,11nm,0.8s
Y12C Blythe 91.06 54 P **P 10 52 40.0 +0.3**
baz=246
TPNV Topopah Spring 91.09 51 P **P 10 52 39.7 -0.3**
baz=245,SNR=11
TPNV Topopah Spring 91.09 51 *e*P **P 10 52 40.0 -0.1**
TPNV pmax pmax
comp=Z,8.0nm,0.9s
TPNV Topopah Spring 91.09 51 *e*P **P 10 52 40.0 -0.1**
comp=Z,8.0nm,0.9s
G05D Wamic, OR 91.34 42 P **P 10 52 41.1 +0.3**
baz=242
COLA College 91.45 17 *e*P **P 10 52 40.1 -0.7**
COLA pmax pmax
comp=Z,3.0nm,0.9s
PDMCI Parker Dam,Lak 91.58 54 P **P 10 52 42.4 +0.3**
baz=246
IL1 Eielson Array 91.65 18 *e*P **P 10 52 40.1 -1.6**
ILAR Eielson Array 91.65 18 P **P 10 52 40.2 -1.5**
comp=Z,1.2nm,0.8s,baz=230,slow=5.5,SNR=12
DOT Dot Lake 91.65 19 *e*P **P 10 52 40.9 -0.9**
comp=Z,48nm,1.0s
SHPR Sheep Range 91.71 52 *e*P **P 10 52 42.2 -0.7**
SHPR *e*pP **sP 10 52 55.0 -0.6**
WVOR Wild Horse Val 91.79 45 *e*P **P 10 52 42.8 -0.3**
WVOR pmax pmax
comp=Z,6.0nm,0.9s
WVOR Wild Horse Val 91.79 45 *e*P **P 10 52 42.8 -0.3**
comp=Z,6.5nm,0.9s
W13A Hualapai Mount 92.09 53 *e*P **P 10 52 44.5 -0.3**
comp=Z,4.7nm,1.0s
R11A Troy Canyon, C 92.16 50 P **P 10 52 44.6 -0.3**
baz=246
R11A Troy Canyon, C 92.16 50 *e*P **P 10 52 44.8 -0.2**
comp=Z,2.5nm,1.2s
B05A Bryant 92.29 39 P **P 10 52 45.4 +0.3**
baz=242
COLD Coldfoot 92.67 15 *e*P **P 10 52 46.4 0.0**
comp=Z,3.7nm,1.1s
COLD *e*pP **sP 10 52 58.9 -0.2**
G08A Pilot Rock 92.84 42 *e*P **P 10 52 47.4 -0.5**
comp=Z,4.3nm,0.9s
LCMT Little Creek M 93.32 52 *e*P **P 10 52 50.6 +0.3**
comp=Z,3.7nm,1.0s
EGAK Eagle 93.35 19 *e*P **P 10 52 49.5 -0.1**
comp=Z,3.0nm,0.8s
TUC Tucson 93.40 57 P **P 10 52 50.6 -0.1**
baz=248
TUC Tucson 93.40 57 *e*P **P 10 52 51.1 +0.4**
TUC *e*PP **sP 10 53 03.3 -0.1**
TUC pmax pmax
comp=Z,3.0nm,1.1s
TUC Tucson 93.40 57 *e*P **P 10 52 51.1 +0.4**
comp=Z,3.4nm,1.1s
TUC *e*pP **sP 10 53 03.3 -0.1**
CCUT Cedar City 93.44 51 *e*P **P 10 52 50.5 -0.5**
comp=Z,11nm,1.8s
CCUT *e*pP **sP 10 53 05.5 +1.9**
KNB Kanab 93.63 52 *e*P **P 10 52 52.6 +0.8**
KNB *e**PP **sP 10 53 04.4 -0.1**
KNB Kanab 93.63 52 *e*P **P 10 52 52.6 +0.8**
KNB *e*pP **sP 10 53 04.4 -0.1**
X16A Lo Mia Camp, P 93.68 55 *e*P **P 10 52 52.2 +0.1**
comp=Z,3.3nm,1.0s
X16A *e*pP **sP 10 53 04.6 -0.2**
MFID Camas Ranch 94.07 45 *e*P **P 10 52 53.1 -0.5**
comp=Z,2.2nm,0.8s

WUAZ Wupatki 94.14 54 P **P 10 52 54.4 +0.2**
baz=248
HLID Hailey 95.07 45 P **P 10 52 58.4 +0.1**
baz=247
TIXI Tiksi 95.75 348 *e*P **P 10 52 59.7 -0.7**
TIXI pmax pmax
comp=Z,1.0nm,0.9s
WMQ Urumqi 97.41 314 *e*P Pdif 10 53 12.4 +3.6
PDAR Pinedale Array 98.08 47 LR LR 11 32 21.6
comp=Z,45nm,19.5s,baz=78,slow=32
TXAR Lajitas Array 98.11 62 P Pdif 10 53 13.9 +1.6
comp=Z,0.2nm,0.7s,baz=235,slow=4.7,SNR=3.5
934A Benavides 101.90 65 Pdiff **Pdif 10 53 28.7 -0.3**
baz=253
YKA Yellowknife Ar 102.14 28 P **Pdif 10 53 30.0 +0.8**
comp=Z,0.2nm,0.8s,baz=253,slow=4.6,SNR=5.7
ARU Arti 117.70 324 *i* PKIKP **PKPdf 10 58 20.3 -0.5**
ARU 10 59 33.4
ARU 11 05 28.9
KLMR Klimovskoe 126.19 332 *e*PKIKP **PKPdf 10 58 36.4 -0.6**
KLMR pmax pmax
comp=Z,9.0nm,1.1s
GNI Garni 128.36 305 *i* PKIKP **PKPdf 10 58 43.1 +1.1**
VSR Storozhevoye 129.97 320 *e*PKIKP **PKPdf 10 58 43.9 -0.6**
VSR pmax pmax
comp=Z,10.0nm,1.5s
OBN Obninsk 130.02 326 *i* PKIKP **PKPdf 10 58 44.2 -0.2**
OBN pmax pmax
comp=Z,8.0nm,1.1s
BRTR Keskin Array B 136.85 307 PKP **PKPdf 10 58 58.2 +0.2**
comp=Z,0.8nm,0.9s,baz=90,slow=1.2,SNR=4.6
BRTR Keskin Array B 136.85 307 *c* PKIKP **PKPdf 10 59 00.0 +2.0**
BRTR pmax pmax
comp=Z,1.0nm,0.9s
BR231 Keskin MP Arra 137.47 307 *e*PKPdf **PKPdf 10 58 59.0 -0.1**
KOLS Kolonicke sedl 140.72 324 *e*PKIKP **PKPdf 10 59 05.7 +1.1**
KOLS Kolonicke sedl 140.72 324 *e*PKP **PKPdf 10 59 05.6 +0.9**
BRG Berggiesshubel 143.56 333 *e*PKP PKPbc 10 59 07.3 +0.3
comp=Z,16nm,1.8s
BRG Berggiesshubel 143.56 333 *e*PKIKP PKPbc 10 59 07.3 +0.3
BRG pmax pmax
comp=Z,6.0nm,1.8s
IDI Anoyia 144.67 303 PKP **PKPdf 10 59 11.3 -0.3**
comp=Z,23nm,1.1s,baz=3.4,slow=7.6,SNR=3.5
NKC Novy Kostel 144.67 333 *e*PKP **PKPdf 10 59 11.3 -0.3**
NKC *e*x x 10 59 21.1
NKC Novy Kostel 144.67 333 *e*PKIKP **PKPdf 10 59 11.3 -0.3**
NKC *e* 10 59 21.1
CONA Conrad Observa 144.71 327 *i* PKPdf **PKPdf 10 59 11.8 0.0**
comp=Z,25nm,1.3s,SNR=12
KHC Kasperske Hory 144.98 331 *e*PKP **PKPdf 10 59 12.4 +0.2**
KHC *e*x x 10 59 22.3
KHC Kasperske Hory 144.98 331 *e*PKIKP **PKPdf 10 59 12.4 +0.2**
KHC *e* 10 59 22.3
KHC Kasperske Hory 144.98 331 *e*PKPbc **PKPdf 10 59 11.9 -0.3**
GEC2 GERESS Array S 145.13 330 *e*PKIKP **PKPdf 10 59 13.2 +0.6**
GEC2 GERESS Array S 145.13 330 *e*PKPbc **PKPdf 10 59 13.2 +0.6**
GERES GERESS Array B 145.13 330 PKPbc **PKPbc 10 59 10.2 -1.9**
comp=Z,1.4nm,0.3s,baz=76,slow=1.7,SNR=5.2
GEA0 GERESS Array S 145.13 330 *e*PKPbc **PKPab 10 59 12.2 0.0**
ARSA Arzberg 145.33 327 *i* PKPdf **PKPdf 10 59 13.8 +0.9**
comp=Z,17nm,1.1s,SNR=7.0
MOA Molln 145.56 329 *i* PKPab **PKPab 10 59 14.1 +0.4**
comp=Z,31nm,1.2s,SNR=12
PERS Pernice 145.94 326 *e*PKPbc **PKPbc 10 59 14.6 -0.1**
SOKA Soboth 145.96 326 *i* PKPab **PKPbc 10 59 14.6 -0.2**
comp=Z,16nm,1.5s,SNR=7.7
OBKA Obir 146.32 327 *i* pPKPdf **PKPab 10 59 17.8 +1.1**
comp=Z,7.3nm,1.1s
KBA Koelnbreinsper 146.54 328 *i* PKPbc **PKPdf 10 59 15.2 0.0**
comp=Z,8.2nm,1.1s
MYKA Terra Mystica 146.70 328 *i* PKPab **PKPbc 10 59 16.9 0.0**
comp=Z,5.3nm,0.9s
CWF Charnwood Fore 146.79 348 *e*PKPdf **PKPbc 10 59 16.9 0.0**
JAVS Javornik 146.98 326 *e*PKPbc **PKPbc 10 59 17.0 -0.8**
ABTA Abfaltersbach 147.18 329 *i* PKPdf **PKPdf 10 59 15.3 -0.8**
comp=Z,11nm,1.3s
WTTA Wattenberg 147.23 330 *i* pPKPdf **PKPbc 10 59 18.5 -0.1**
comp=Z,15nm,1.3s
MOTA Moosalm 147.41 331 *i* PKPab **PKPbc 10 59 19.8 +0.7**
comp=Z,11nm,0.9s
RETA Reutte 147.47 331 *i* pPKPdf **PKPbc 10 59 19.3 +0.2**
comp=Z,8.1nm,1.1s
LANF Langenberg 147.53 336 PKP **PKPbc 10 59 20.1 +1.0**
WLF Walferdange 147.57 338 PKPbc **PKPbc 10 59 20.2 +1.0**
WLF Walferdange 147.57 338 *e*PKP2 **PKPab 10 59 20.6 -0.7**
WLF Walferdange 147.57 338 *e*PKPbc **PKPab 10 59 20.6 -0.7**
FETA Feichten 147.83 331 *i* sPKPdf **PKPbc 10 59 20.9 +0.7**
comp=Z,17nm,1.1s,SNR=7.4
BFO Black Forest 147.85 335 *i* PKP2 **PKPbc 10 59 20.6 +0.6**
BFO Black Forest 147.85 335 *e*PKPdf **PKPbc 10 59 20.2 +0.2**
DAVA Damuels 148.01 332 *i* sPKPdf **PKPbc 10 59 21.4 +0.7**
comp=Z,10nm,0.8s
WLS Welschbruch 148.17 336 PKP **PKPbc 10 59 21.1 +0.2**
FUORN Ofenpass-Fuorn 148.34 331 *e*PKPbc **PKPbc 10 59 22.4 +0.7**
DAVOX Davos/Dischmat 148.39 331 PKPbc **PKPbc 10 59 22.3 +0.6**
comp=Z,16nm,0.9s,baz=17,slow=1.3,SNR=17
MOF Molkenrain 148.71 335 PKP **PKPbc 10 59 23.3 +0.9**
TUE Stuetta 148.87 331 *e*PKPbc **PKPbc 10 59 23.2 +0.2**
LOMF Lomont 149.24 335 PKP **PKPbc 10 59 24.5 +0.8**
SENIN Lac Senin/Sane 149.84 333 *e*PKPbc **PKPbc 10 59 26.0 +0.6**
SSB Saint Sauveur 151.85 335 *e*PKIKP **PKPbc 10 59 30.3 +0.4**
SSB Saint Sauveur 151.85 335 *e*PKPbc **PKPbc 10 59 30.3 +0.4**
ESDC Sonseca Array 159.73 343 PKPab **PKPab 11 00 12.2 -0.7**
comp=Z,0.2nm,0.3s,baz=17,slow=6.2,SNR=4.0
TOA0 Torodi Ar. Sit 165.28 243 *e*PKPdf **PKPdf 10 59 40.0 -0.4**
TORD Torodi Ar. Bea 165.28 243 PKP **PKPdf 10 59 39.4 -0.9**
comp=Z,1.8nm,0.9s,baz=63,slow=0.5,SNR=8.1
TORD PKPab **PKPab 11 00 37.1 -0.8**
comp=Z,1.2nm,1.0s,baz=107,slow=4.7,SNR=4.7

NIED ***11*** *10:44:00,38.˙30N×142.˙30E,h32km,Mw3.6 Best double couple: M0=2.62000×10^14 NP1:φs=199.00000°,δ25.00000°, λ-111.00000°. NP2:φs=42.00000°,δ67.00000°, λ-80.00000°.*
JMA ***11*** *10:44:42.4±0.1,38.˙30N×142.˙23E,h40km±2km,M4.0*
JMA Felt I J1.
IDC ***11*** *10:44:44.4±2.6,38.˙20N×142.˙32E,h52km±23km,mb3.3/11, mb1 3.6/15,mb1mx3.4/60,mbtmp3.7/15,ML3.2/4,MS2.8/1, Ms1 2.8/1,ms1mx2.4/27,Error ellipse: s-maj=25.1km s-min=16.9km az=91.0*
ISC 11 10:44:39.0±2.2,38.˙23N±0.˙05×142.˙40E±0.˙08,h11km±12km, n30,σ2s20/32,mb3.7/11,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.86**	**286**	P	**Pg**	**10 44 56.1**	**+0.5**
JIO				S	**Sg**	**10 45 05.5**	**-1.3**
OFUJ	**Ofunato**	**1.02**	**326**	P	**Pb**	**10 44 58.7**	**-0.1**
OFUJ				*e*S	**Sb**	**10 45 10.2**	**-2.1**
JMK	**Ichinoseki**	**1.17**	**308**	P	**Pn**	**10 45 00.8**	**-0.6**
JMM	**Marumori**	**1.32**	**255**	P	**Pn**	**10 45 03.1**	**-0.3**
JMM				*e*S	**Sb**	**10 45 17.7**	**-3.1**
JOU	**Okura**	**1.37**	**276**	P	**Pn**	**10 45 03.8**	**-0.4**
JFK	**Kawauchi**	**1.48**	**235**	P	**Pn**	**10 45 05.3**	**-0.4**
JFK				*e*S	**Sn**	**10 45 21.8**	**-3.3**
JOM	**Ohasama**	**1.51**	**325**	P	**Pn**	**10 45 06.1**	**0.0**
JOM				S	**Sn**	**10 45 24.4**	**-1.4**
MJAR	**Matsushiro Arr**	**3.74**	**245**	P	**Pn**	**10 45 39.8**	**+3.1**
MJAR	1.1nm,0.3s,baz=82,slow=17,SNR=9.3			S	**Sn**	**10 46 26.5**	**+5.7**
	2.0nm,0.3s,baz=142,slow=29,SNR=4.4						
MAT	**Matsushiro**	**3.74**	**245**	P	**Pn**	**10 45 40.8**	**+4.1**
MAT				S	**Sn**	**10 46 24.1**	**+3.3**
JHJ	**Hachijo jima 2**	**5.53**	**203**	P	**Pn**	**10 46 02.2**	**+0.9**
	7.2nm,0.3s,baz=73,slow=20,SNR=3.8						
JHJ				S	**Sn**	**10 47 01.6**	**-3.2**
	11nm,0.3s,baz=73,slow=19,SNR=4.2						
ASAJ	**Asahikawa**	**5.88**	**1**	P	**Pn**	**10 46 08.0**	**+1.9**
	0.8nm,0.3s,baz=219,slow=17,SNR=8.9						
ASAJ				S	**Sn**	**10 47 13.2**	**-0.4**
	0.9nm,0.3s,baz=120,slow=20,SNR=2.8						
USRK	**Ussuriysk Ar.**	**9.85**	**311**	P	**Pn**	**10 47 04.4**	**+3.9**
	0.5nm,0.3s,baz=110,slow=16,SNR=6.8						
JNU	**Nakatsue**	**10.67**	**245**	LR	LR	10 51 42.7	
	comp=Z,50nm,19.1s,baz=308,slow=40						
H11N2	**WAKE ISLAND Hy 28.12**	**124**		T	T	11 20 43.9	
	baz=316,slow=76,SNR=97						
H11N1	**WAKE ISLAND Hy 28.13**	**124**		T	T	11 20 56.3	
	baz=316,slow=76,SNR=135						
H11N3	**WAKE ISLAND Hy 28.14**	**124**		T	T	11 20 59.8	
	baz=316,slow=76,SNR=59						
H11S1	**WAKE ISLAND Hy 28.89**	**126**		T	T	11 21 47.8	
	baz=318,slow=76,SNR=52						
H11S3	**WAKE ISLAND Hy 28.89**	**126**		T	T	11 21 50.5	
	baz=318,slow=76,SNR=59						
H11S2	**WAKE ISLAND Hy 28.90**	**126**		T	T	11 21 43.5	
	baz=318,slow=76,SNR=39						
ZALV	**Zalesovo Beam**	**41.70**	**311**	P	**P**	**10 52 26.5**	**-1.1**
	0.7nm,0.s,baz=75,slow=6.1,SNR=3.0						
MKAR	**Makanchi Array**	**44.16**	**301**	P	**P**	**10 52 48.5**	**+0.8**
	0.5nm,0.7s,baz=83,slow=12,SNR=3.7						
KURBB	**Kurchatov Arra**	**45.90**	**307**	P	**P**	**10 53 00.8**	**-0.6**
	1.1nm,0.5s,baz=80,slow=8.0,SNR=8.5						
WRA	**Warramunga Arr**	**58.36**	**189**	P	**P**	**10 54 33.7**	**-0.6**
	0.4nm,0.5s,baz=7.2,slow=6.9,SNR=9.4						
ASAR	**Alice Springs**	**62.08**	**189**	P	**P**	**10 54 59.2**	**-0.6**
	0.2nm,0.8s,baz=7.8,slow=7.5,SNR=3.4						
YKA	**Yellowknife Ar**	**62.38**	**31**	P	**P**	**10 55 02.0**	**+0.7**
	0.2nm,0.6s,baz=300,slow=6.1,SNR=4.8						
FINES	**FINESS Array B**	**68.12**	**332**	P	**P**	**10 55 37.4**	**-1.2**
	1.1nm,0.8s,baz=51,slow=11,SNR=3.2						
NOA	**NORSAR Array B**	**73.39**	**338**	P	**P**	**10 56 09.8**	**-0.9**
	0.3nm,0.5s,baz=63,slow=4.1,SNR=2.7						
PDAR	**Pinedale Array**	**76.27**	**46**	P	**P**	**10 56 28.7**	**+0.7**
	0.2nm,0.5s,baz=11,slow=1.7,SNR=3.8						
BRTR	**Keskin Array B**	**78.64**	**312**	P	**P**	**10 56 41.9**	**+0.6**
	0.4nm,0.5s,baz=54,slow=0.8,SNR=2.7						
TXAR	**Lajitas Array**	**88.77**	**53**	P	**P**	**10 57 34.0**	**+0.7**
	0.2nm,0.5s,baz=291,slow=2.2,SNR=4.8						

NIED ***11*** *10:51:00,38.˙10N×142.˙50E,h35km,Mw3.8 Best double couple: M0=5.69000×10^14 NP1:φs=242.00000°,δ40.00000°, λ153.00000°. NP2:φs=353.00000°,δ73.00000°,λ53.00000°.*
ISCJB ***11*** *10:51:05.6±0.6,38.˙02N±0.˙05×142.˙67E±0.˙07,h14km, mb3.6/9,Error ellipse: s-maj=7.7km s-min=6.7km az=25.5*
JMA ***11*** *10:51:08.0±0.2,38.˙06N×142.˙54E,h36km±3km,M4.1*
IDC ***11*** *10:51:10.9±3.2,38.˙02N×142.˙57E,h38km±28km,mb3.4/9, mb1 3.6/13,mb1mx3.4/53,mbtmp3.6/13,ML3.4/4,Error ellipse: s-maj=24.3km s-min=15.5km az=94.0*
ISC 11 10:51:07.2±0.9,38.˙01N±0.˙05×142.˙57E±0.˙07,h14km,n32, σ1s50/29,mb3.6/9,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.06**	**295**	P	**Pb**	**10 51 26.3**	**-1.0**
JIO				S	**Sb**	**10 51 38.8**	**-2.1**
OFUJ	**Ofunato**	**1.28**	**327**	P	**Pn**	**10 51 29.1**	**-1.6**
JMM	**Marumori**	**1.41**	**265**	P	**Pn**	**10 51 31.7**	**-0.8**
JMK	**Ichinoseki**	**1.41**	**312**	P	**Pn**	**10 51 31.5**	**-1.0**
JFK	**Kawauchi**	**1.49**	**245**	P	**Pn**	**10 51 32.8**	**-0.8**
JOU	**Okura**	**1.54**	**284**	P	**Pn**	**10 51 33.4**	**-0.9**
MIYJ	**Miyakonagasawa**	**1.67**	**340**	P	**Pn**	**10 51 34.7**	**-1.3**
JOM	**Ohasama**	**1.77**	**326**	P	**Pn**	**10 51 36.7**	**-0.7**
JFT	**Otama**	**1.83**	**255**	P	**Pb**	**10 51 39.1**	**-1.5**
JYK	**Kaneyama**	**1.96**	**298**	P	**Pn**	**10 51 40.0**	**0.0**
JYS	**Shiratake**	**1.98**	**277**	P	**Pb**	**10 51 42.4**	**-0.7**
JKZ	**Kuzumaki**	**2.19**	**334**	P	**Pn**	**10 51 43.4**	**+0.1**
MJAR	**Matsushiro Arr**	**3.77**	**248**	Pn	**Pn**	**10 52 07.5**	**+2.5**
	2.0nm,0.3s,baz=64,slow=11,SNR=16						
MAT	**Matsushiro**	**3.77**	**248**	P	**Pn**	**10 52 07.7**	**+2.7**
MAT				*e*S	**Sn**	**10 52 51.1**	**+1.9**
JHJ	**Hachijo jima 2**	**5.38**	**206**	Pn	**Pn**	**10 52 27.4**	**+0.4**
	22nm,0.3s,baz=75,slow=21,SNR=8.4						
JHJ				Sn	**Sn**	**10 53 24.8**	**-4.1**
	7.1nm,0.3s,baz=73,slow=19,SNR=2.1						
ASAJ	**Asahikawa**	**6.10**	**0**	Pn	**Pn**	**10 52 38.0**	**+1.0**
	0.5nm,0.3s,baz=72,slow=19,SNR=5.2						
KSRS	**Korea Array**	**11.61**	**272**	Pn	**Pn**	**10 53 55.0**	**+2.5**
	0.2nm,0.3s,baz=80,slow=14,SNR=6.5						
H11N2	**WAKE ISLAND Hy 27.90**	**124**		T	T	11 26 46.2	
	baz=316,slow=75,SNR=26						
H11N1	**WAKE ISLAND Hy 27.91**	**124**		T	T	11 26 47.8	
	baz=316,slow=75,SNR=32						
H11N3	**WAKE ISLAND Hy 27.91**	**124**		T	T	11 26 55.2	
	baz=316,slow=75,SNR=23						
H11S1	**WAKE ISLAND Hy 28.66**	**126**		T	T	11 27 52.2	
	baz=318,slow=76,SNR=17						
H11S3	**WAKE ISLAND Hy 28.66**	**126**		T	T	11 27 52.4	
	baz=318,slow=76,SNR=27						
H11S2	**WAKE ISLAND Hy 28.67**	**126**		T	T	11 28 21.0	
	baz=318,slow=76,SNR=14						
ZALV	**Zalesovo Beam**	**41.94**	**312**	P	**P**	**10 58 57.6**	**+0.4**
	0.4nm,0.3s,baz=81,slow=12,SNR=2.2						
MKAR	**Makanchi Array**	**44.38**	**301**	P	**P**	**10 59 17.7**	**+0.5**
	0.3nm,0.5s,baz=72,slow=11,SNR=2.9						
KURBB	**Kurchatov Arra**	**46.13**	**307**	P	**P**	**10 59 30.6**	**-0.3**
	1.5nm,0.4s,baz=81,slow=8.0,SNR=16						
ILAR	**Eielson Array**	**48.18**	**33**	P	**P**	**10 59 46.8**	**+0.1**
	0.3nm,0.8s,baz=280,slow=5.4,SNR=3.1						
BVAR	**Borovoye Array**	**50.60**	**312**	P	**P**	**11 00 05.3**	**-0.1**
	0.4nm,0.4s,baz=120,slow=8.5,SNR=1.9						
FITZ	**Fitzroy Crossi**	**58.04**	**199**	P	**P**	**11 01 00.0**	**+0.3**
	2.6nm,0.9s,baz=180,slow=20,SNR=1.8						
WRA	**Warramunga Arr**	**58.16**	**189**	P	**P**	**11 01 00.5**	**-0.1**
	0.3nm,0.5s,baz=7.0,slow=7.4,SNR=5.9						
ASAR	**Alice Springs**	**61.89**	**189**	P	**P**	**11 01 26.6**	**+0.4**
	0.2nm,0.7s,baz=359,slow=4.6,SNR=3.7						
YKA	**Yellowknife Ar**	**62.50**	**31**	P	**P**	**11 01 30.3**	**+0.5**
	0.1nm,0.6s,baz=303,slow=6.3,SNR=3.6						

IDC ***11*** *10:52:11.7±0.5,8.˚07S×68.˚13E,h0km,mb4.2/29, mb1 4.3/29,mb1mx4.2/61,mbtmp4.2/29,MS4.0/17, Ms1 4.0/17,ms1mx3.7/43,Error ellipse: s-maj=14.5km s-min=13.5km az=84.0*
ISCJB ***11*** *10:52:12.6±0.4,8.˚02S±0.˚07×68.˚13E±0.˚08,h15km, mb4.3/35,MS4.0/16,Error ellipse: s-maj=11.5km s-min=10.3km az=23.5*
NEIC ***11*** *10:52:13.4±0.3,8.˚04S×68.˚11E,h10km,mb4.6/8,Error ellipse: s-maj=10.4km s-min=8.6km az=121.0*
ISC 11 10:52:14.3±0.5,8.˚08S±0.˚10×68.˚1E±0.˚1,h15km,n79, σ0s85/69,mb4.4/35,MS4.0/16,Chagos Archipelago region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08N3	**Diego Garcia H**	**3.32**	**59**	T	T	10 56 33.4	
	baz=237,slow=74,SNR=540						
H08N2	**Diego Garcia H**	**3.34**	**59**	T	T	10 56 41.6	
	baz=237,slow=74,SNR=582						
H08N1	**Diego Garcia H**	**3.34**	**59**	T	T	10 56 37.0	
	baz=237,slow=74,SNR=405						
H08S1	**Diego Garcia H**	**4.32**	**85**	T	T	10 58 01.2	
	baz=268						
H08S3	**Diego Garcia H**	**4.33**	**84**	T	T	10 58 00.2	
	baz=268						
H08S2	**Diego Garcia H**	**4.34**	**85**	T	T	10 58 04.5	
	baz=268						
PALK	**Pallekele**	**19.74**	**40**	LR	LR	11 02 31.1	
	comp=Z,693nm,19.8s,baz=296,slow=31						
OPO	**Ambohidratompo**	**22.87**	**241**	P	**P**	**10 57 18.7**	**+1.1**
	2.4nm,0.8s,baz=74,slow=7.9,SNR=4.0						
OPO				LR	LR	11 03 56.1	
	comp=Z,526nm,19.1s,baz=62,slow=31						
LEM	**Lembang**	**39.16**	**91**	LR	LR	11 12 36.2	
	comp=Z,210nm,21.8s,baz=203,slow=31						
LSZ	**Lusaka**	**39.72**	**256**	P	**P**	**10 59 48.0**	**+1.2**
	4.1nm,0.8s,baz=101,slow=8.0,SNR=5.1						
LSZ	**Lusaka**	**39.72**	**256**	*e*P	**P**	**10 59 47.6**	**+0.9**
	18nm,1.5s						
CMAR	**Chiang Mai Arr**	**40.24**	**49**	P	**P**	**10 59 51.9**	**+1.1**
	1.9nm,0.7s,baz=245,slow=9.8,SNR=5.5						
CHTO	**Chiang Mai**	**40.46**	**48**	*e*P	**P**	**10 59 54.5**	**+1.8**
	9.5nm,1.0s						
BOSA	**Boshof**	**45.21**	**237**	P	**P**	**11 00 31.0**	**-0.3**
	1.3nm,0.6s,baz=114,slow=18,SNR=3.1						
BOSA				LR	LR	11 17 26.6	
	comp=Z,258nm,18.7s,baz=40,slow=34						
GEYT	**Alibeck**	**46.72**	**349**	P	**P**	**11 00 44.2**	**+1.3**
	1.1nm,0.3s,baz=139,slow=11,SNR=2.9						
GEYT				LR

2.8nm,1.0s,baz=140,slow=9.7,SNR=8.8
ABKAR **Akbulak array 57.55 354** *e*P **P 11 02 02.6 -0.6**
9.7nm,1.1s
KURBB **Kurchatov Arra 59.16 8** P **P 11 02 13.6 -0.8**
6.4nm,1.1s,baz=199,slow=6.8,SNR=10.0
KURK **Kurchatov 59.26 8** P **P 11 02 13.6 -1.5**
MAW **Mawson 59.55 182** P **P 11 02 16.5 -0.3**
4.3nm,0.7s,baz=2.8,slow=8.5,SNR=6.7
BVAR **Borovoye Array 60.90 2** P **P 11 02 26.0 -0.4**
3.1nm,0.8s,baz=145,slow=5.4,SNR=8.4
BRVK **Borovoye 60.93 1** *e*P **P 11 02 26.5 0.0**
4.8nm,0.9s
BRVK *e*PcP **PcP 11 03 10.3 +0.4**
ZALV **Zalesovo Beam 63.38 11** P **P 11 02 42.7 -0.3**
2.4nm,0.9s,baz=205,slow=6.4,SNR=5.7
ZALV LR LR 11 30 53.6
comp=Z,85nm,18.0s,baz=256,slow=37
ASAR **Alice Springs 64.64 112** P **P 11 02 52.2 +0.2**
2.9nm,0.8s,baz=275,slow=6.3,SNR=26
ARU **Arti 64.77 354** P **P 11 02 51.3 -0.7**
17nm,1.3s
WRA **Warramunga Arr 64.96 108** P **P 11 02 54.7 +0.6**
6.2nm,1.0s,baz=280,slow=6.1,SNR=21
SONM **Songino Array 65.13 27** P **P 11 02 55.7 +1.0**
7.5nm,1.0s,baz=203,slow=7.1,SNR=7.3
SONM LR LR 11 30 45.3
comp=Z,202nm,20.0s,baz=269,slow=36
TLY **Talaya 66.89 23** LR LR 11 32 15.2
comp=Z,181nm,18.1s,baz=233,slow=36
AKASG **Malin Array Be 67.53 334** P **P 11 03 08.4 -1.4**
0.5nm,0.2s,baz=137,slow=5.4,SNR=4.3
TORD **Torodi Ar. Bea 69.27 287** P **P 11 03 20.7 -0.8**
0.8nm,0.9s,baz=94,slow=4.8,SNR=3.7
KOLS **Kolonicke sedl 69.53 330** *e*P **P 11 03 22.5 0.0**
CRVS **Cervenica-Dubn 69.92 329** *e*P **P 11 03 27.1 +2.2**
VYHS **Vyhne 71.02 328** *e*P **P 11 03 30.5 -1.1**
STKA **Stephens Creek 71.75 121** P **P 11 03 36.4 0.0**
3.2nm,0.8s,baz=312,slow=6.8,SNR=3.0
KSAR **Wonju Array Be 71.79 46** P **P 11 03 37.0 +0.6**
KSRS **Korea Array 71.82 46** P **P 11 03 37.0 +0.4**
3.4nm,1.0s,baz=228,slow=6.9,SNR=7.3
KSRS LR LR 11 35 45.8
comp=Z,42nm,18.1s,baz=90,slow=36
CTA **Charters Tower 76.15 109** P **P 11 04 02.1 -0.3**
5.7nm,0.8s,baz=296,slow=7.8,SNR=7.1
FINES **FINESS Array B 76.66 341** P **P 11 04 03.8 -0.6**
2.3nm,0.9s,baz=146,slow=21,SNR=4.2
USRK **Ussuriysk Ar. 77.48 41** P **P 11 04 09.0 -0.3**
2.5nm,0.9s,baz=238,slow=8.3,SNR=3.7
USRK LR LR 11 38 40.4
comp=Z,62nm,21.6s,baz=180,slow=36
NRIK **Noril'sk 78.41 7** LR LR 11 39 39.2
comp=Z,80nm,20.1s,baz=145,slow=36
MJAR **Matsushiro Arr 79.11 50** P **P 11 04 18.8 +0.3**
2.7nm,0.9s,baz=245,slow=6.2,SNR=5.9
MJAR LR LR 11 38 07.2
comp=Z,42nm,21.9s,baz=175,slow=35
KLR **Kul'dur 79.46 37** P **P 11 04 18.6 -1.6**
3.9nm,1.1s,baz=290,slow=4.5,SNR=7.7
ESDC **Sonseca Array 81.60 312** P **P 11 04 32.1 +0.1**
0.4nm,0.4s,baz=95,slow=5.3,SNR=6.4
NOA **NORSAR Array B 81.89 336** P **P 11 04 32.7 -0.3**
1.5nm,0.9s,baz=116,slow=5.5,SNR=2.9
ARCES **ARCESS Array B 82.79 346** P **P 11 04 37.5 0.0**
5.9nm,0.9s,baz=145,slow=4.4,SNR=11
VNDA **Vanda 82.97 167** P **P 11 04 37.9 -0.5**
1.4nm,0.9s,baz=300,slow=4.9,SNR=9.5
YAK **Yakutsk 84.31 25** LR LR 11 41 56.2
comp=Z,133nm,20.9s,baz=247,slow=35
TIXI **Tiksi 88.81 16** P **P 11 05 07.1 -0.1**
2.9nm,0.7s,baz=24,slow=0.5,SNR=7.5
TIXI LR LR 11 45 58.0
comp=Z,233nm,19.2s,baz=242,slow=36
SPITS **Spitsbergen Ar 90.59 351** LR LR 11 48 17.0
comp=Z,64nm,19.9s,baz=320,slow=37
PETK **Petropavlovsk- 96.14 37** LR LR 11 50 59.5
comp=Z,43nm,21.4s,baz=267,slow=37
BORG **Borgarnes 97.02 334** LR LR 11 51 41.3
comp=Z,40nm,18.8s,baz=165,slow=37
INK **Inuvik 118.15 9** PKP **PKPdf 11 10 57.8 -2.6**
0.6nm,0.6s,baz=18,slow=3.4,SNR=5.8
ILAR **Eielson Array 118.28 16** PKP **PKPdf 11 10 59.5 -1.3**
0.8nm,1.0s,baz=306,slow=2.7,SNR=5.2
YKA **Yellowknife Ar 125.66 2** PKP **PKPdf 11 11 14.3 -0.6**
1.1nm,0.8s,baz=351,slow=2.3,SNR=19
HUMO **Hull Mountain 144.25 14** *e*PKPdf PKPbc 11 11 48.8 +0.5
IMW **Indian Meadow 144.32 359** *e*PKPdf **PKPdf 11 11 51.2 +0.6**
MOOW **Moose Ponds 144.46 359** *e*PKPdf PKPbc 11 11 49.8 +0.7
HLID **Hailey 144.59 3** *e*PKPdf PKPbc 11 11 50.2 +0.7
SNOW **Snow King Moun 144.75 359** *e*PKPdf **PKPdf 11 11 51.0 -0.3**
YBH **Yreka Blue Hor 145.14 14** *e*PKPbc **PKPdf 11 11 51.6 -0.2**
K22A **Casper 145.25 353** *e*PKPbc **PKPbc 11 11 51.2 -0.5**
WVOR **Wild Horse Val 145.27 9** *e*PKPbc **PKPdf 11 11 52.0 -0.1**
BW06 **Boulder Array 145.40 357** *e*PKPbc **PKPbc 11 11 52.2 -0.1**
PDAR **Pinedale Array 145.40 357** PKPbc **PKPbc 11 11 52.1 -0.1**
2.1nm,0.7s,baz=64,slow=1.7,SNR=19
MOD **Modoc Plateau 145.50 11** *e*PKPbc **PKPab 11 11 52.8 +0.1**
OTAV **Otavalo 145.80 258** *e*PKPbc **PKPab 11 11 55.6 +0.6**
HWUT **Hardware Ranch 146.61 360** *e*PKPdf **PKPdf 11 11 53.9 -0.5**
HWUT *e*PKPbc **PKPab 11 11 56.7 -0.3**
CBKS **Cedar Bluff 147.51 342** *e*PKPbc **PKPab 11 12 00.8 +0.4**
ISCO **Idaho Springs 147.93 351** *e*PKPdf **PKPdf 11 11 56.4 -0.4**
ISCO *e*PKPbc **PKPbc 11 11 59.9 0.0**
ISCO *e*PKPab **PKPab 11 12 02.4 +0.1**
DUG **Dugway, Tooele 148.01 1** *e*PKPbc **PKPbc 11 12 00.2 +0.4**
SMCO **Snowmass 148.73 353** *e*PKPbc **PKPbc 11 12 02.4 +0.3**
NVAR **Mina Array Bea 149.23 10** PKPbc **PKPdf 11 12 00.2 +1.3**
3.1nm,0.9s,baz=282,slow=1.2,SNR=17
DAC **Darwin (Calif) 151.45 10** *e*PKPbc **PKPbc 11 12 09.5 +1.0**
DAC *e*PKPab **PKPab 11 12 17.1 +0.5**
TXAR **Lajitas Array 157.50 341** PKP **PKPdf 11 12 10.0 -0.9**
0.6nm,1.0s,baz=96,slow=1.3,SNR=4.4
TXAR PKPab **PKPab 11 12 42.6 +0.3**
2.4nm,1.1s,baz=40,slow=4.1,SNR=7.6

NIED ***11*** *10:53:00,40.°30N×142.°30E,h62km,Mw4.2 Best double couple: M₀1.88000×10¹⁵ NP1:φs244.00000°,δ29.00000°, λ134.00000°. NP2:φs16.00000°,δ70.00000°,λ69.00000°.*
IDC ***11*** *10:53:02.9±3.3,40.°36N×142.°38E,h55km±26km,mb3.5/6, mb1 3.5/9,mb1mx3.3/54,mbtmp3.7/9,ML3.0/2,Error ellipse: s-maj=42.9km s-min=28.5km az=134.0*
JMA ***11*** *10:53:02.6±0.1,40.°29N×142.°28E,h37km±1km,M3.9*
JMA Felt I J1.
ISC 11 10:53:00.1±1.7,**40.°34N**±0.°05×**142.°42E**±0.°08,**h28**km±12km, **n15**,σ1°**10**/22,**mb3.9**/6,**Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**0.59**	**227**	P	**Pn**	**10 53 12.9**	**+0.3**
JTH				S	**Sn**	**10 53 20.6**	**-0.6**
JANG	**Nango**	**0.69**	**273**	P	**Pn**	**10 53 14.5**	**+0.5**
JANG				S	**Sn**	**10 53 22.9**	**-0.9**
JKZ	**Kuzumaki**	**0.91**	**247**	P	**Pb**	**10 53 17.6**	**+0.3**
JKZ				S	**Sb**	**10 53 28.1**	**-0.9**
JTM	**Tenmabayashi**	**1.12**	**294**	P	**Pb**	**10 53 20.8**	**0.0**
JTM				S	**Sb**	**10 53 34.7**	**-0.3**
JOM	**Ohasama**	**1.23**	**225**	P	**Pb**	**10 53 22.2**	**-0.4**
JOM				S	**Sb**	**10 53 36.9**	**-1.1**
JAH	**Hinai**	**1.37**	**264**	P	**Pb**	**10 53 24.2**	**-0.9**
JAH				S	**Sn**	**10 53 39.3**	**-1.3**
ASAJ	**Asahikawa**	**3.77**	**2**	P	**Pn**	**10 53 57.5**	**+1.1**
ASAJ				S	**Sb**	**10 54 50.3**	**-0.9**
MJAR	**Matsushiro Arr**	**5.03**	**222**	P	**Pn**	**10 54 15.5**	**+1.8**
USRK	**Ussuriysk Ar.**	**8.64**	**300**	P	**Pn**	**10 55 05.9**	**+2.7**
ZALV	**Zalesovo Beam**	**40.34**	**310**	P	**P**	**11 00 34.7**	**-0.2**
MKAR	**Makanchi Array**	**43.11**	**299**	P	**P**	**11 00 56.8**	**-0.9**
KURBB	**Kurchatov Arra**	**44.65**	**306**	P	**P**	**11 01 09.2**	**-0.8**
BVAR	**Borovoye Array**	**48.98**	**310**	P	**P**	**11 01 42.9**	**-1.0**
YKA	**Yellowknife Ar**	**60.56**	**31**	P	**P**	**11 03 07.5**	**-0.1**
FINES	**FINESS Array B**	**66.26**	**332**	P	**P**	**11 03 44.8**	**-0.4**

ISCJB ***11*** *10:56:45.7±0.5,40.°29N×0.°02×25.°29E±0.°03,h8km±5km, Error ellipse: s-maj=4.2km s-min=3.8km az=156.4*
ATH ***11*** *10:56:45.5,40.°29N×25.°26E,h15km±6km,ML2.3/3,Error ellipse: s-maj=6.4km s-min=1.0km az=60.0*
ISK ***11*** *10:56:45.8,40.°24N×25.°34E,h5km,ML2.4*
THE ***11*** *10:56:46.1,40.°29N×25.°30E,h12km±2km,ML2.2/3,Error ellipse: s-maj=2.7km s-min=0.4km az=120.0*
CSEM ***11*** *10:56:46.0±0.1,40.°28N×25.°29E,h10km,ML2.2,Error ellipse: s-maj=3.8km s-min=2.9km az=177.0*
ISC 11 10:56:45.8±0.9,**40.°29N**±0.°02×**25.°28E**±0.°02,**h13**km±8km, **n51**,σ0°**48**/72,**Aegean Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SMTH	**Samothraki Isl**	**0.26**	**46**	P	**Pg**	**10 56 51.5**	**+0.2**
SMTH				S	**Sg**	**10 56 55.1**	**+0.1**
SMTH	**Samothraki Isl**	**0.26**	**46**	P	**Pg**	**10 56 51.5**	**+0.2**
SMTH				S	**Sg**	**10 56 55.1**	**+0.1**
SMTH	**Samothraki Isl**	**0.26**	**46**	P	**Pg**	**10 56 51.4**	**+0.2**
SMTH				S	**Sg**	**10 56 54.7**	**-0.3**
SMTH				AML	AML	10 56 55.6	
	comp=N,1081μm,0.2s						
SMTH				AML	AML	10 56 55.7	
	comp=E,809μm,0.1s						
LIA	**Limnos Island**	**0.40**	**191**	P	**Pg**	**10 56 54.3**	**+0.6**
LIA				S	**Sb**	**10 57 00.2**	**-0.5**
LIA	**Limnos Island**	**0.40**	**191**	P	**Pg**	**10 56 54.0**	**+0.3**
LIA				S	**Sb**	**10 57 00.2**	**-0.5**
ENEZ	**Enez**	**0.80**	**56**	*e*PG	**Pg**	**10 57 01.4**	**+0.1**
ENEZ				*e*SG	**Sb**	**10 57 12.8**	**+0.5**
ENEZ	**Enez**	**0.80**	**56**	P	**Pg**	**10 57 00.9**	**-0.4**
ENEZ	**Enez**	**0.80**	**56**	P	**Pg**	**10 57 00.9**	**-0.4**
ENEZ	**Enez**	**0.80**	**56**	*e*Pg	**Pg**	**10 57 01.4**	**+0.1**
ENEZ				*e*Sg	**Sb**	**10 57 12.8**	**+0.5**
ALN	**Alexandroupoli**	**0.84**	**43**	*e*PG	**Pb**	**10 57 02.7**	**+0.4**
ALN	**Alexandroupoli**	**0.84**	**43**	P	**Pg**	**10 57 01.8**	**-0.3**
ALN				S	**Sb**	**10 57 13.8**	**+0.3**
ALN	**Alexandroupoli**	**0.84**	**43**	P	**Pg**	**10 57 01.8**	**-0.3**
ALN	**Alexandroupoli**	**0.84**	**43**	*e*Pg	**Pb**	**10 57 02.7**	**+0.4**
ALN				S	**Sb**	**10 57 13.8**	**+0.3**
ALN	**Alexandroupoli**	**0.84**	**43**	P	**Pg**	**10 57 01.7**	**-0.3**
ALN				S	**Sb**	**10 57 14.0**	**+0.5**
ALN				AML	AML	10 57 15.9	
	comp=E,360μm,0.4s						
ALN				AML	AML	10 57 17.0	
	comp=N,375μm,0.4s						
GELI	**Tayfur-Gelibol**	**0.92**	**83**	*e*PG	**Pb**	**10 57 03.8**	**+0.2**
GELI				*e*SG	**Sb**	**10 57 16.1**	**+0.4**
GELI	**Tayfur-Gelibol**	**0.92**	**83**	*e*Pg	**Pb**	**10 57 03.8**	**+0.2**
GELI				*e*Sg	**Sb**	**10 57 16.1**	**+0.4**
KAVA	**Kavala**	**0.92**	**321**	P	**Pg**	**10 57 03.6**	**+0.1**
KAVA	**Kavala**	**0.92**	**321**	P	**Pg**	**10 57 03.6**	**+0.1**
KAVA				S	**Sb**	**10 57 16.1**	**+0.3**
KAVA	**Kavala**	**0.92**	**321**	P	**Pg**	**10 57 03.2**	**-0.3**
EZN	**Ezine**	**0.92**	**120**	*e*PG	**Pg**	**10 57 03.3**	**-0.3**
EZN				*e*SG	**Sg**	**10 57 14.7**	**-1.0**
EZN	**Ezine**	**0.92**	**120**	*e*Pg	**Pg**	**10 57 03.3**	**-0.3**
EZN				*e*Sg	**Sg**	**10 57 14.7**	**-1.0**
OUR	**Ouranopolis**	**1.00**	**273**	*e*PG	**Pn**	**10 57 05.8**	**+0.3**
OUR	**Ouranopolis**	**1.00**	**273**	P	**Pb**	**10 57 04.9**	**0.0**
OUR	**Ouranopolis**	**1.00**	**273**	P	**Pb**	**10 57 04.9**	**0.0**
OUR	**Ouranopolis**	**1.00**	**273**	*e*Pg	**Pn**	**10 57 05.8**	**+0.3**
OUR				S	**Sb**	**10 57 17.8**	**-0.2**
OUR	**Ouranopolis**	**1.00**	**273**	P	**Pb**	**10 57 05.2**	**+0.3**
OUR				S	**Sb**	**10 57 17.8**	**-0.2**
OUR				AML	AML	10 57 19.8	
	comp=N,995μm,0.3s						
OUR				AML	AML	10 57 20.9	
	comp=E,854μm,0.3s						
SIGR	**SIGRI**	**1.16**	**158**	*e*PN	**Pb**	**10 57 07.0**	**-0.8**
SIGR	**SIGRI**	**1.16**	**158**	*e*Pn	**Pb**	**10 57 07.0**	**-0.8**
SIGR	**SIGRI**	**1.16**	**158**	P	**Pb**	**10 57 07.9**	**+0.1**
SIGR				S	**Sg**	**10 57 23.4**	**+0.1**
SIGR	**SIGRI**	**1.16**	**158**	P	**Pb**	**10 57 07.9**	**+0.1**
SIGR				S	**Sg**	**10 57 23.4**	**+0.1**
PAIG	**Paliouri**	**1.28**	**254**	P	**Pn**	**10 57 09.3**	**-0.2**
PAIG	**Paliouri**	**1.28**	**254**	P	**Pn**	**10 57 09.3**	**-0.2**
PRK	**Paraskevi**	**1.29**	**144**	P	**Pn**	**10 57 09.4**	**-0.1**
PRK	**Paraskevi**	**1.29**	**144**	P	**Pn**	**10 57 09.4**	**-0.1**
PLG	**Polygyros**	**1.41**	**274**	P	**Pn**	**10 57 10.6**	**-0.6**
PLG	**Polygyros**	**1.41**	**274**	P	**Pn**	**10 57 10.6**	**-0.6**
PLG				S	**Sn**	**10 57 30.2**	**+0.5**
PLG	**Polygyros**	**1.41**	**274**	P	**Pn**	**10 57 10.3**	**-0.9**
PLG				S	**Sn**	**10 57 30.2**	**+0.5**
RKY	**Sarkoy-Tekirda**	**1.50**	**74**	*e*PN	**Pb**	**10 57 13.6**	**+0.1**
RKY	**Sarkoy-Tekirda**	**1.50**	**74**	*e*Pn	**Pb**	**10 57 13.6**	**+0.1**
NVR	**Nevrokopi**	**1.51**	**315**	P	**Pn**	**10 57 12.1**	**-0.6**
NVR	**Nevrokopi**	**1.51**	**315**	P	**Pn**	**10 57 12.1**	**-0.6**
SRS	**Serrai**	**1.53**	**303**	P	**Pn**	**10 57 12.3**	**-0.6**
SRS	**Serrai**	**1.53**	**303**	P	**Pn**	**10 57 12.3**	**-0.6**
HORT	**Hortiatis**	**1.69**	**281**	*e*PN	**Pb**	**10 57 17.7**	**+0.8**
HORT	**Hortiatis**	**1.69**	**281**	*e*Pn	**Pb**	**10 57 17.7**	**+0.8**
MRMT	**Marmara Adasi**	**1.79**	**79**	*e*PN	**Pb**	**10 57 17.8**	**-0.8**
MRMT	**Marmara Adasi**	**1.79**	**79**	*e*Pn	**Pb**	**10 57 17.8**	**-0.8**
CHOS	**Chios island**	**1.99**	**162**	*e*PN	**Pn**	**10 57 20.4**	**+1.1**
CHOS	**Chios island**	**1.99**	**162**	*e*Pn	**Pn**	**10 57 20.4**	**+1.1**
KNT	**Kendrikon**	**2.01**	**296**	*e*PN	**Pb**	**10 57 21.9**	**-0.4**
KNT	**Kendrikon**	**2.01**	**296**	*e*Pn	**Pb**	**10 57 21.9**	**-0.4**

NIED ***11*** *10:57:00,34.°90N×142.°80E,h5km,Mw3.8 Best double couple: M₀5.82000×10¹⁴ NP1:φs28.00000°,δ27.00000°, λ-47.00000°. NP2:φs162.00000°,δ70.00000°, λ-109.00000°.*
JMA ***11*** *10:57:21.6±0.9,34.°90N×142.°76E,h8km,M3.7*
ISCJB ***11*** *10:57:23.0±0.6,34.°78N±0.°06×142.°78E±0.°05,h33km, mb3.8/15,MS3.9/2,Error ellipse: s-maj=9.3km s-min=5.8km az=176.7*
IDC ***11*** *10:57:25.1±6.0,34.°89N×142.°76E,h33km±46km,mb3.6/15, mb1 3.8/17,mb1mx3.7/52,mbtmp3.8/17,ML3.5/2,MS3.3/4, Ms1 3.3/4,ms1mx2.8/48,Error ellipse: s-maj=23.0km s-min=16.7km az=88.0*
ISC 11 10:57:24.9±0.7,**34.°78N**±0.°08×**142.°77E**±0.°08,**h35**km,**n28**, σ0°**98**/31,**mb3.8**/15,**Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**1.48**	**266**	P	**Pn**	**10 57 48.5**	**0.0**
BSO1				X		10 58 08.6	
CHOJ	**Chosi**	**1.81**	**301**	P	**Pn**	**10 57 53.0**	**-0.6**
BSO3	**Boso 3**	**1.86**	**271**	P	**Pn**	**10 57 54.6**	**+0.6**
BSO3				*e*X		10 58 18.8	
BSO4	**Boso 4**	**2.01**	**277**	P	**Pn**	**10 57 57.3**	**+1.1**
BSO4				*e*X		10 58 23.9	
JCN	**Nagara**	**2.20**	**288**	*e*S	**Sn**	**10 58 27.1**	**+2.2**
JIM2	**Oshima 3**	**2.75**	**270**	P	**Pn**	**10 58 05.5**	**-1.0**
JIM2				S	**Sn**	**10 58 37.6**	**-0.9**
JHJ	**Hachijo jima 2**	**2.98**	**237**	Pn	**Pn**	**10 58 09.7**	**0.0**
	29nm,0.3s,baz=307,slow=17,SNR=11						
JHJ				Sn	**Sn**	**10 58 42.8**	**-1.5**
	47nm,0.3s,baz=94,slow=23,SNR=12						
JOD2	**Odawara 2**	**3.06**	**280**	P	**Pn**	**10 58 10.3**	**-0.4**
JOD2				S	**Sn**	**10 58 44.8**	**-1.3**
MJAR	**Matsushiro Arr**	**4.11**	**297**	Pn	**Pn**	**10 58 24.4**	**-0.8**
	2.0nm,0.3s,baz=229,slow=29,SNR=14						
MJAR				Sn	**Sn**	**10 59 11.4**	**-0.6**
	1.4nm,0.3s,baz=126,slow=29,SNR=4.7						
MJAR				LR	LR	11 00 16.3	
	comp=Z,86nm,21.3s,baz=185,slow=43						
MAT	**Matsushiro**	**4.11**	**297**	P	**Pn**	**10 58 25.0**	**-0.2**
MAT				S	**Sn**	**10 59 14.4**	**+2.4**
JNU	**Nakatsue**	**10.02**	**264**	LR	LR	11 03 39.5	
	comp=Z,79nm,20.3s,baz=64,slow=37						
SEY	**Seymchan**	**28.81**	**9**	P	**P**	**11 03 19.1**	**-0.3**
	2.2nm,0.9s,baz=225,slow=14,SNR=3.3						
ZALV	**Zalesovo Beam**	**44.26**	**314**	P	**P**	**11 05 31.0**	**+0.3**
	0.4nm,0.4s,baz=98,slow=7.4,SNR=3.6						
MKAR	**Makanchi Array**	**46.27**	**304**	P	**P**	**11 05 46.5**	**-0.3**
	0.8nm,0.8s,baz=91,slow=12,SNR=4.5						
MKAR				LR	LR	11 26 55.7	
	comp=Z,133nm,18.1s,baz=206,slow=38						
KURBB	**Kurchatov Arra**	**48.27**	**310**	P	**P**	**11 06 02.6**	**+0.3**
	0.9nm,0.7s,baz=84,slow=7.6,SNR=7.9						
ILAR	**Eielson Array**	**50.82**	**31**	P	**P**	**11 06 21.6**	**+0.1**
	0.4nm,0.9s,baz=283,slow=8.0,SNR=3.6						
WRA	**Warramunga Arr**	**55.01**	**190**	P	**P**	**11 06 53.9**	**+1.0**
	2.7nm,0.8s,baz=8.8,slow=7.5,SNR=16						
ASAR	**Alice Springs**	**58.73**	**190**	P	**P**	**11 07 20.9**	**+1.7**
	0.7nm,0.7s,baz=17,slow=13,SNR=8.9						
YKA	**Yellowknife Ar**	**65.20**	**30**	P	**P**	**11 08 01.3**	**-0.9**
	0.1nm,0.4s,baz=294,slow=6.6,SNR=3.7						
FINES	**FINESS Array B**	**71.32**	**333**	P	**P**	**11 08 40.3**	**-0.2**
	1.9nm,0.8s,baz=46,slow=11,SNR=4.8						
KBZ	**Khabaz**	**73.21**	**312**	P	**P**	**11 08 51.7**	**-0.5**
	1.0nm,0.6s,baz=212,slow=1.2,SNR=4.4						
NVAR	**Mina Array Bea**	**75.45**	**53**	P	**P**	**11 09 06.0**	**+0.4**
	0.5nm,0.7s,baz=279,slow=7.3,SNR=4.1						
NB2	**NORSAR Subarra**	**76.69**	**338**	P	**P**	**11 09 12.4**	**+0.4**
	comp=Z,0.4nm,0.6s,baz=40,slow=5.6						
NOA	**NORSAR Array B**	**76.69**	**338**	P	**P**	**11 09 11.3**	**-0.7**
	comp=Z,0.8nm,0.7s,baz=40,slow=5.7,SNR=3.7						
AKASG	**Malin Array Be**	**76.75**	**323**	P	**P**	**11 09 12.0**	**-0.5**
	comp=Z,0.5nm,0.4s,baz=49,slow=5.1,SNR=4.1						
BRTR	**Keskin Array B**	**81.17**	**312**	P	**P**	**11 09 38.0**	**+0.9**
	comp=Z,1.0nm,0.9s,baz=101,slow=2.5,SNR=3.9						
GERES	**GERESS Array B**	**85.20**	**329**	P	**P**	**11 09 57.1**	**-0.6**
	comp=Z,1.1nm,0.4s,baz=280,slow=24,SNR=3.8						
DAVOX	**Davos/Dischmat**	**88.42**	**330**	LR	LR	11 54 23.4	
	comp=Z,47nm,18.1s,baz=262,slow=39						

ISCJB ***11*** *10:57:29.4±0.4,39.°27N±0.°02×23.°13E±0.°03,h8km±3km, Error ellipse: s-maj=4.2km s-min=3.7km az=169.9*
CSEM ***11*** *10:57:29.3±0.1,39.°27N×23.°12E,h5km,ML2.5,Error ellipse: s-maj=2.9km s-min=2.5km az=88.0*
THE ***11*** *10:57:29.4,39.°28N×23.°13E,h12km±1km,ML2.5/10,Error ellipse: s-maj=1.0km s-min=0.3km az=19.0*
ATH ***11*** *10:57:29.1,39.°27N×23.°13E,h11km±2km,ML2.4/6,Error ellipse: s-maj=2.7km s-min=0.9km az=14.0*
ISC 11 10:57:29.0±0.8,**39.°27N**±0.°02×**23.°12E**±0.°02,**h12**km±5km, **n34**,σ0°**38**/65,**Aegean Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NEO	**Neokhori**	**0.09**	**65**	P	**Pg**	**10 57 31.9**	**+0.2**
NEO				S	**Sg**	**10 57 33.5**	**-0.3**
NEO	**Neokhori**	**0.09**	**65**	P	**Pg**	**10 57 31.9**	**+0.2**
NEO				S	**Sg**	**10 57 33.5**	**-0.3**
NEO	**Neokhori**	**0.09**	**65**	P	**Pg**	**10 57 32.0**	**+0.2**
NEO				S	**Sg**	**10 57 33.6**	**-0.3**
NEO				AML	AML	10 57 34.2	
	comp=E,20529μm,0.2s						
NEO				AML	AML	10 57 34.2	
	comp=N,37598μm,0.3s						
XOR	**Xorichti**	**0.11**	**30**	P	**Pg**	**10 57 32.1**	**+0.1**
XOR				S	**Sg**	**10 57 34.3**	**0.0**
XOR	**Xorichti**	**0.11**	**30**	P	**Pg**	**10 57 32.1**	**+0.1**
XOR				S	**Sg**	**10 57 34.3**	**0.0**
XOR	**Xorichti**	**0.11**	**30**	P	**Pg**	**10 57 32.2**	**+0.1**
XOR				S	**Sg**	**10 57 34.3**	**0.0**
XOR				AML	AML	10 57 34.5	
	comp=E,12737μm,0.2s						
XOR				AML	AML	10 57 34.8	
	comp=N,12985μm,0.3s						
FYTO	**Fytoko, Volos**	**0.20**	**315**	P	**Pg**	**10 57 33.5**	**+0.2**
FYTO				S	**Sg**	**10 57 36.5**	**+0.2**
FYTO	**Fytoko, Volos**	**0.20**	**315**	P	**Pg**	**10 57 33.5**	**+0.2**
FYTO				S	**Sg**	**10 57 36.5**	**+0.2**
FYTO	**Fytoko, Volos**	**0.20**	**315**	P	**Pg**	**10 57 33.5**	**+0.2**
FYTO				S	**Sg**	**10 57 35.9**	**-0.5**
FYTO				AML	AML	10 57 37.1	
	comp=N,2205μm,0.1s						
FYTO				AML	AML	10 57 37.3	
	comp=E,2486μm,0.2s						
SKIA	**Skiathos**	**0.29**	**111**	P	**Pg**	**10 57 35.1**	**+0.1**
SKIA				S	**Sg**	**10 57 39.4**	**+0.5**
SKIA	**Skiathos**	**0.29**	**111**	P	**Pg**	**10 57 35.1**	**+0.1**
SKIA				S	**Sg**	**10 57 39.4**	**+0.5**
SKIA	**Skiathos**	**0.29**	**111**	S	**Sg**	**10 57 38.7**	**-0.2**
SKIA	**Skiathos**	**0.29**	**111**	P	**Pg**	**10 57 35.0**	**+0.1**
SKIA				S	**Sg**	**10 57 38.7**	**-0.2**
SKIA				AML	AML	10 57 41.1	
	comp=E,1104μm,0.3s						
SKIA				AML	AML	10 57 41.9	
	comp=N,534μm,0.3s						
SMIA	**Simia**	**0.40**	**170**	P	**Pg**	**10 57 37.3**	**+0.4**
SMIA				S	**Sg**	**10 57 43.2**	**+1.0**
SMIA	**Simia**	**0.40**	**170**	P	**Pg**	**10 57 37.3**	**+0.4**
SMIA				S	**Sg**	**10 57 43.2**	**+1.0**
AOS	**Alonnisos**	**0.60**	**99**	P	**Pg**	**10 57 40.4**	**-0.3**
AOS				S	**Sg**	**10 57 48.9**	**+0.3**
AOS	**Alonnisos**	**0.60**	**99**	P	**Pg**	**10 57 40.4**	**-0.3**
AOS				S	**Sg**	**10 57 48.9**	**+0.3**
AOS	**Alonnisos**	**0.60**	**99**	P	**Pg**	**10 57 40.2**	**-0.5**
AOS				S	**Sg**	**10 57 48.2**	**-0.4**
LKR	**Lokris**	**0.62**	**189**	P	**Pg**	**10 57 41.6**	**+0.4**
LKR				S	**Sb**	**10 57 50.6**	**+0.1**
LKR	**Lokris**	**0.62**	**189**	P	**Pg**	**10 57 41.3**	**+0.1**
LKR				S	**Sb**	**10 57 50.6**	**+0.1**
LKR	**Lokris**	**0.62**	**189**	P	**Pg**	**10 57 41.3**	**+0.1**
LKR				S	**Sb**	**10 57 51.2**	**+0.7**
LKR				AML	AML	10 57 52.9	
	comp=E,550μm,0.2s						
LKR				AML	AML	10 57 54.2	
	comp=N,644μm,0.2s						
AGG	**Agios Georgios**	**0.66**	**248**	P	**Pg**	**10 57 41.7**	**-0.2**
AGG				S	**Sb**	**10 57 51.7**	**0.0**
AGG	**Agios Georgios**	**0.66**	**248**	P	**Pg**	**10 57 41.7**	**-0.2**
AGG				S	**Sb**	**10 57 51.6**	**0.0**
AGG	**Agios Georgios**	**0.66**	**248**	P	**Pg**	**10 57 41.4**	**-0.5**
AGG				S	**Sb**	**10 57 51.6**	**0.0**
AGG				AML

SUSE				*i* S	**Sb**	**11 10 17.4**	**+0.6**
SVSK	**Karacayir**	**1.13**	**215**	*e*PN	**Pb**	**11 10 14.0**	**-0.7**
SVSK				*e*SN	**Sn**	**11 10 30.6**	**+0.6**
SVSK	**Karacayir**	**1.13**	**215**	*e*Pn	**Pb**	**11 10 14.0**	**-0.7**
SVSK				*e*Sn	**Sn**	**11 10 30.7**	**+0.6**
KELT	**Kelkit**	**1.28**	**122**	P	**Pg**	**11 10 17.7**	**-0.4**
KELT				S	**Sg**	**11 10 35.0**	**+0.3**
KELT	**Kelkit**	**1.28**	**122**	*i* P	**Pg**	**11 10 17.7**	**-0.4**
KELT				*i* S	**Sg**	**11 10 35.0**	**+0.3**
GUMT	**Gumushane**	**1.30**	**107**	*e*PN	**Pn**	**11 10 17.2**	**-0.1**
GUMT	**Gumushane**	**1.30**	**107**	*e*Pn	**Pn**	**11 10 17.2**	**-0.1**
KVT	**Kavak**	**1.38**	**280**	*e*PN	**Pb**	**11 10 18.8**	**-0.2**
KVT	**Kavak**	**1.38**	**280**	*e*Pn	**Pb**	**11 10 18.8**	**-0.2**
CUKAN	**kangal_SIVAS**	**1.55**	**191**	*i* P	**Pg**	**11 10 23.7**	**+0.5**
CUKAN				*i* S	**Sg**	**11 10 45.5**	**+2.1**
BAYT	**Ayd¨–ntepe-Bay**	**1.81**	**104**	*e*PN	**Pb**	**11 10 25.5**	**-0.9**
BAYT	**Ayd¨–ntepe-Bay**	**1.81**	**104**	*e*Pn	**Pb**	**11 10 25.5**	**-0.9**
PTK	**Pertek**	**2.28**	**148**	*e*PN	**Pb**	**11 10 32.8**	**-1.7**
PTK	**Pertek**	**2.28**	**148**	*e*Pn	**Pb**	**11 10 32.8**	**-1.7**

BUC 11 11:09:55.5±0.1, 45°.22N×28°.36E, h3km±1km, MD2.0/2, 4C-2D, Error ellipse: s-maj=1.3km s-min=0.4km az=1.0, Ukraine-Moldova-Southwestern Russia region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CFR	**Carcaliu**	**0.16**	**256**	⇑*i*P	Pg	11 09 59.3	+0.6
CFR				S	Sg	11 10 02.0	+1.2
CFR	**Carcaliu**	**0.16**	**256**	⇑*i*P	Pg	11 09 59.3	+0.6
CFR				*i* S	Sg	11 10 02.0	+1.2
TLCR		**0.32**	**96**	S	Sb	11 10 07.8	-1.7
TLCR		**0.32**	**96**	*i* S	Sb	11 10 07.8	-1.7
TIRR	**Tirgusor**	**0.76**	**177**	⇑*i*P	Pb	11 10 11.5	+0.2
TIRR	**Tirgusor**	**0.76**	**177**	⇑*i*P	Pb	11 10 11.5	+0.2
TIRR				*i* S	Sb	11 10 22.3	+0.2
VRI	**Vrincioaia**	**1.32**	**300**	⇓*i*P	Pb	11 10 22.0	+1.1
VRI	**Vrincioaia**	**1.32**	**300**	⇓*i*P	Pb	11 10 22.0	+1.1
VRI				*i* S	Sn	11 10 39.7	+0.8
PLOR	**Plostina**	**1.36**	**298**	S	Sn	11 10 41.1	+1.2
PLOR	**Plostina**	**1.36**	**298**	*i* S	Sn	11 10 41.1	+1.2

KRNET ***11*** *11:15:46.2±0.1, 41°.31N×72°.40E, h22km, mb3.0*
SOME ***11*** *11:15:46.2, 41°.33N×72°.37E, h10km*
NNC ***11*** *11:15:47.2±0.9, 41°.37N×72°.51E, h9km±7km, mb3.1, mpv2.7, Error ellipse: s-maj=7.9km s-min=2.7km az=64.0*
ISC 11 11:15:45.8±1.2, 41°.31N±0°.02×72°.39E±0°.02, h1km±11km, n29, σ1§41/58, 25C-11D, Kyrgyzstan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ARSB	**Arslanbob**	**0.45**	**88**	⇑*e*P	**Pg**	**11 15 54.9**	**+0.5**
ARSB	baz=87			⇑*e*S	**Sg**	**11 16 01.9**	**+1.7**
ARK	**Arkit**	**0.59**	**327**	⇓*e*P	**Pg**	**11 15 57.7**	**+0.6**
ARK	baz=327			⇓*e*S	**Sg**	**11 16 05.7**	**+1.0**
OHH	**Osh**	**0.84**	**159**	⇑*e*P	**Pg**	**11 16 01.8**	**-0.1**
OHH	baz=159			⇑*e*S	**Sg**	**11 16 13.6**	**+0.9**
MNAS	**Manas**	**1.18**	**4**	⇑*e*P	**Pb**	**11 16 08.7**	**-0.5**
MNAS	baz=4.0			⇑*i*S	**Sg**	**11 16 24.6**	**+0.8**
MNAS	**Manas**	**1.18**	**4**	⇓P	**Pb**	**11 16 08.1**	**-1.1**
MNAS	3.2nm,0.2s			⇑S	**Sb**	**11 16 24.0**	**-1.0**
AML	**Almayashu**	**1.28**	**49**	*i* P	**Pn**	**11 16 09.5**	**-1.7**
AML	baz=49			*i* S	**Sb**	**11 16 26.8**	**-1.2**
SFK	**Sufi-Kurgan**	**1.54**	**146**	⇑*e*P	**Pb**	**11 16 14.7**	**-0.7**
SFK	baz=146			⇑*e*S	**Sb**	**11 16 35.0**	**-0.5**
SFK	**Sufi-Kurgan**	**1.54**	**146**	⇓P	**Pb**	**11 16 14.7**	**-0.7**
SFK	3.4nm,0.3s			⇓S	**Sg**	**11 16 35.7**	**+0.2**
MRKS	**Merke**	**1.56**	**23**	*e*P	**Pn**	**11 16 14.6**	**-0.3**
MRKS	36nm,0.1s			*e*S	**Sb**	**11 16 35.4**	**-0.6**
EKS2	**Erkin-Say**	**1.70**	**37**	⇑*i*P	**Pb**	**11 16 17.2**	**-0.8**
EKS2	baz=37			⇑*i*S	**Sb**	**11 16 39.4**	**-0.6**
BTK	**Batken**	**1.73**	**224**	⇑*e*P	**Pb**	**11 16 17.7**	**-0.7**
BTK	baz=224			⇑*e*S	**Sb**	**11 16 40.6**	**-0.1**
UCH	**Uchtor**	**1.83**	**59**	⇓*i*P	**Pn**	**11 16 19.0**	**+0.1**
UCH	baz=59			⇓*i*S	**Sb**	**11 16 43.7**	**-0.4**
IUG	**Iuzhnay**	**1.96**	**296**	*e*P	**Pb**	**11 16 21.4**	**-0.9**
IUG	18nm,0.3s			*e*S	**Sb**	**11 16 46.6**	**-0.7**
AAK	**Ala-Archa**	**2.05**	**49**	⇑*i*P	**Pb**	**11 16 22.5**	**-1.5**
AAK	baz=49			⇑*i*S	**Sb**	**11 16 49.4**	**-0.7**
AAK	**Ala-Archa**	**2.05**	**49**	⇓Pg	**Pb**	**11 16 22.7**	**-1.3**
AAK	3.1nm,0.4s			⇑Lg	Lg	11 16 49.7	
KK31	**Karatay Array**	**2.27**	**323**	Pn	**Pn**	**11 16 24.9**	**+0.3**
KK31	0.7nm,0.3s,baz=126,slow=13,SNR=11			⇑Pg	**Pg**	**11 16 30.4**	**+1.0**
KK31	0.9nm,0.2s,baz=138,slow=16,SNR=13			⇑Sn	**Sb**	**11 16 54.3**	**-2.0**
KK31	8.3nm,0.5s,baz=143,slow=26,SNR=7.5			Lg	Lg	11 17 01.0	
KZA	**Kyzart**	**2.27**	**69**	⇑*i*P	**Pn**	**11 16 25.6**	**+0.7**
KZA	baz=69			⇑*i*S	**Sb**	**11 16 55.7**	**-1.0**
BRLS	**Borolday**	**2.50**	**307**	*e*P	**Pb**	**11 16 31.6**	**+0.1**
BRLS	0.4nm,0.1s			*e*S	**Sb**	**11 17 04.3**	**+1.5**
USP	**Ospenovka**	**2.51**	**38**	⇑*i*P	**Pn**	**11 16 28.0**	**+0.2**
USP	baz=38			⇑*i*S	**Sn**	**11 17 00.0**	**+1.0**
NRN	**Naryn**	**2.72**	**86**	⇑*e*P	**Pn**	**11 16 31.2**	**+0.3**
NRN	baz=86			⇑*e*S	**Sn**	**11 17 04.0**	**-0.6**
TKM2	**Tokmak 2**	**2.88**	**55**	⇓Pn	**Pn**	**11 16 33.5**	**+0.5**
TKM2	0.6nm,0.5s			⇓Pg	**Pb**	**11 16 37.9**	**-0.2**
TKM2	3.7nm,0.5s			⇑Lg	Lg	11 17 15.3	
DGS	**Degeres**	**3.17**	**51**	*e*P	**Pb**	**11 16 42.6**	**-0.4**
DGS	6.1nm,0.6s			*e*S	**Sb**	**11 17 23.6**	**+1.5**
KST	**Kastek**	**3.17**	**56**	*e*P	**Pb**	**11 16 43.3**	**+0.3**
KST	3.1nm,0.2s			*e*S	**Sb**	**11 17 24.6**	**+2.3**
MTBS	**Maitube**	**3.51**	**57**	*e*P	**Pb**	**11 16 49.4**	**+0.6**
MTBS	6.6nm,0.3s			*e*S	**Sb**	**11 17 34.5**	**+2.6**
IZV	**Izvestkoviy**	**3.58**	**60**	*e*P	**Pb**	**11 16 52.0**	**+1.9**
IZV	3.7nm,0.3s			*e*S	**Sg**	**11 17 39.0**	**-1.9**
KUU	**Kurty**	**3.89**	**47**	*e*P	**Pb**	**11 16 56.4**	**+1.0**
KUU	6.1nm,0.3s			⇓*i*S	**Sb**	**11 17 46.4**	**+3.4**
MDOK	**Medeo**	**3.92**	**60**	*e*P	**Pb**	**11 16 56.9**	**+1.0**
MDOK	4.4nm,0.3s			*e*S	**Sb**	**11 17 47.6**	**+3.7**

KOTS	**Kotyrbulak**	**4.00**	**60**	*e*P	**Pg**	**11 16 59.9**	**-2.5**
KOTS				*e*S	**Sg**	**11 17 53.3**	**-0.9**
CHKK	**Chushkaly**	**4.26**	**51**	*e*P	**Pb**	**11 17 03.5**	**+2.0**
CHKK	2.2nm,0.6s			*e*S	**Sg**	**11 17 58.8**	**-3.8**
	7.0nm,0.7s						

ISK ***11*** *11:17:02.2, 37°.25N×28°.24E, h5km, MD2.5*
ISCJB ***11*** *11:17:03.1±0.6, 37°.24N±0°.04×28°.21E±0°.05, h1km±10km, Error ellipse: s-maj=8.5km s-min=4.5km az=34.5*
CSEM ***11*** *11:17:03.4±0.2, 37°.24N×28°.20E, h2km, MD2.5, Error ellipse: s-maj=4.9km s-min=3.9km az=39.0*
DDA ***11*** *11:17:03.2, 37°.23N×28°.18E, h7km, Md2.4*
ISC 11 11:17:02.1±1.0, 37°.27N±0°.04×28°.24E±0°.03, h8km±8km, n15, σ0§40/26, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.14**	**165**	PG	**Pg**	**11 17 05.2**	**0.0**
YER				*e*SG	**Sg**	**11 17 07.3**	**0.0**
YER	**Yerkesik**	**0.14**	**165**	*i* Pg	**Pg**	**11 17 05.2**	**0.0**
YER				*e*Sg	**Sg**	**11 17 07.3**	**0.0**
AYDN	**Tasoluk**	**0.48**	**324**	P	**Pb**	**11 17 12.6**	**-0.3**
AYDN				S	**Sb**	**11 17 20.0**	**-0.1**
AYDN	**Tasoluk**	**0.48**	**324**	*i* P	**Pb**	**11 17 12.6**	**-0.3**
AYDN				*i* S	**Sb**	**11 17 20.0**	**-0.1**
TURN	**Turunc**	**0.49**	**143**	*e*P	**Pg**	**11 17 10.9**	**-0.8**
TURN				*i* S	**Sg**	**11 17 18.9**	**+0.7**
DALY	**Dalyan (Mu¨la**	**0.56**	**143**	*e*PG	**Pb**	**11 17 14.1**	**-0.1**
DALY				*e*SG	**Sb**	**11 17 22.7**	**+0.4**
DALY	**Dalyan (Mu¨la**	**0.56**	**143**	*e*Pg	**Pb**	**11 17 14.1**	**-0.1**
DALY				*e*Sg	**Sb**	**11 17 22.7**	**+0.4**
BDRM	**Kayabasi**	**0.67**	**252**	P	**Pg**	**11 17 14.9**	**0.0**
BDRM				S	**Sb**	**11 17 24.9**	**-0.5**
BDRM	**Kayabasi**	**0.67**	**252**	*i* P	**Pg**	**11 17 14.9**	**0.0**
BDRM				*i* S	**Sb**	**11 17 24.9**	**-0.5**
AYDB	**Zeytinkoy-Aydi**	**0.73**	**338**	*e*PG	**Pb**	**11 17 17.7**	**+0.6**
AYDB	**Zeytinkoy-Aydi**	**0.73**	**338**	*e*Pg	**Pb**	**11 17 17.7**	**+0.6**
BODT	**Bodrum**	**0.77**	**255**	*e*PG	**Pb**	**11 17 18.1**	**+0.4**
BODT	**Bodrum**	**0.77**	**255**	*e*Pg	**Pb**	**11 17 18.1**	**+0.4**
DNZL	**Cakiroluk**	**0.77**	**57**	P	**Pn**	**11 17 19.1**	**-0.3**
DNZL				S	**Sn**	**11 17 31.6**	**+0.4**
DNZL	**Cakiroluk**	**0.77**	**57**	*i* P	**Pn**	**11 17 19.1**	**-0.3**
DNZL				*i* S	**Sn**	**11 17 31.6**	**+0.4**

ISCJB ***11*** *11:40:54.5±0.4, 37°.79N±0°.03×27°.36E±0°.03, h9km±7km, Error ellipse: s-maj=5.1km s-min=3.8km az=30.9*
DDA ***11*** *11:40:54.3, 37°.79N×27°.35E, h2km, Md2.6*
CSEM ***11*** *11:40:54.9±0.2, 37°.82N×27°.40E, h12km, MD2.6, Error ellipse: s-maj=6.0km s-min=4.5km az=62.0*
ISK ***11*** *11:40:54.3, 37°.80N×27°.40E, h14km, MD2.6*
ISC 11 11:40:53.8±1.2, 37°.83N±0°.03×27°.32E±0°.03, h1km±12km, n23, σ0§47/37, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GCAM	**G?zelcaml?**	**0.14**	**209**	*i* P	**Pg**	**11 40 56.5**	**-0.1**
GCAM				*i* S	**Sg**	**11 40 58.9**	**+0.5**
DGB	**¨zmir**	**0.41**	**303**	*i* P	**Pb**	**11 41 03.2**	**-0.7**
DGB				*i* S	**Sb**	**11 41 10.3**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**0.47**	**75**	*e*PG	**Pg**	**11 41 02.3**	**-0.4**
AYDB				*e*SG	**Sg**	**11 41 09.9**	**+1.1**
AYDB	**Zeytinkoy-Aydi**	**0.47**	**75**	*e*Pg	**Pg**	**11 41 02.3**	**-0.4**
AYDN	**Tasoluk**	**0.47**	**110**	P	**Pg**	**11 41 02.7**	**-0.1**
AYDN				S	**Sg**	**11 41 09.1**	**+0.2**
AYDN	**Tasoluk**	**0.47**	**110**	*i* P	**Pg**	**11 41 02.7**	**-0.1**
AYDN				*i* S	**Sg**	**11 41 09.1**	**+0.2**
IZM	**Izmir**	**0.57**	**355**	*e*PG	**Pb**	**11 41 06.5**	**-0.1**
IZM				*e*SG	**Sb**	**11 41 15.6**	**+0.3**
IZM	**Izmir**	**0.57**	**355**	*e*Pg	**Pb**	**11 41 06.5**	**-0.1**
IZM				*e*Sg	**Sb**	**11 41 15.6**	**+0.3**
BODT	**Bodrum**	**0.76**	**181**	*e*PG	**Pb**	**11 41 09.3**	**-0.5**
BODT	**Bodrum**	**0.76**	**181**	*e*Pg	**Pb**	**11 41 09.3**	**-0.5**
BDRM	**Kayabasi**	**0.77**	**173**	P	**Pb**	**11 41 10.0**	**+0.1**
BDRM				S	**Sb**	**11 41 20.3**	**-0.4**
BDRM	**Kayabasi**	**0.77**	**173**	*e*P	**Pb**	**11 41 10.0**	**+0.1**
BDRM				*i* S	**Sb**	**11 41 20.3**	**-0.4**
ZEY	**¨zmir**	**0.77**	**303**	*i* P	**Pb**	**11 41 09.6**	**-0.3**
ZEY				*i* S	**Sb**	**11 41 22.1**	**+1.3**
URLA	**Izmir**	**0.78**	**313**	P	**Pb**	**11 41 10.0**	**-0.2**
URLA				S	**Sn**	**11 41 24.0**	**-0.3**
URLA	**Izmir**	**0.78**	**313**	*i* P	**Pb**	**11 41 10.0**	**-0.2**
URLA				*i* S	**Sn**	**11 41 24.0**	**-0.3**
CHOS	**Chios island**	**1.15**	**300**	*e*PN	**Pn**	**11 41 17.3**	**+0.3**
CHOS	**Chios island**	**1.15**	**300**	*e*Pn	**Pn**	**11 41 17.3**	**+0.3**
MANT	**Manisa**	**1.18**	**55**	P	**Pn**	**11 41 18.1**	**+0.6**
MANT				S	**Sg**	**11 41 31.3**	**-0.3**
MANT	**Manisa**	**1.18**	**55**	*i* P	**Pn**	**11 41 18.1**	**+0.6**
MANT				*i* S	**Sg**	**11 41 31.3**	**-0.3**
KULA	**Kula-Manisa**	**1.26**	**57**	*e*PN	**Pg**	**11 41 17.4**	**-0.5**
KULA	**Kula-Manisa**	**1.26**	**57**	*e*Pn	**Pg**	**11 41 17.4**	**-0.5**
DKL	**Dikili**	**1.28**	**345**	*e*PN	**Pn**	**11 41 19.0**	**+0.2**
DKL	**Dikili**	**1.28**	**345**	*e*Pn	**Pn**	**11 41 19.0**	**+0.2**

IDC ***11*** *11:44:31.8±1.7, 20°.35S×167°.25E, h0km, mb4.1/5, mb1 4.4/5, mb1mx3.9/22, mbtmp4.1/5, Error ellipse: s-maj=41.7km s-min=24.4km az=118.0*
ISCJB ***11*** *11:44:35.8±1.4, 20°.23S±0°.10×167°.1E±0°.2, h33km, mb3.9/5, Error ellipse: s-maj=30.8km s-min=12.7km az=11.4*
ISC 11 11:44:36.9±1.5, 20°.4S±0°.1×167°.2E±0°.2, h35km, n6, σ1§74/7, mb4.0/5, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**1.86**	**203**	Pn	**Pn**	**11 45 04.1**	**-2.3**
DZM	4.6nm,0.3s,baz=93,slow=10,SNR=27			Sn	**Sn**	**11 45 31.0**	**+2.3**
	30nm,0.3s,baz=307,slow=23,SNR=9.8						
STKA	**Stephens Creek**	**25.65**	**238**	P	**P**	**11 50 04.0**	**+0.5**
	1.6nm,0.5s,baz=82,slow=10,SNR=7.0						
WRA	**Warramunga Arr**	**30.86**	**265**	P	**P**	**11 50 50.0**	**-0.2**
	0.5nm,0.6s,baz=95,slow=8.5,SNR=8.7						
ASAR	**Alice Springs**	**31.03**	**258**	P	**P**	**11 50 52.2**	**+0.5**
	3.3nm,0.7s,baz=85,slow=8.8,SNR=56						
CMAR	**Chiang Mai Arr**	**77.25**	**295**	P	**P**	**11 56 27.8**	**-0.3**
	0.9nm,0.3s,baz=125,slow=4.5,SNR=4.8						
NVAR	**Mina Array Bea**	**90.96**	**49**	P	**P**	**11 57 38.5**	**+0.8**
	0.6nm,0.8s,baz=240,slow=7.2,SNR=4.3						

IDC 11 11:58:06.4±1.9, 14°.29S×173°.66W, h0km, mb3.5/4, mb1 3.8/4, mb1mx3.5/29, mbtmp3.5/4, Error ellipse: s-maj=225.5km s-min=32.3km az=153.0, Samoa Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**44.38**	**239**	P	P	12 06 19.1	+0.1
	2.6nm,1.0s,baz=73,slow=17,SNR=3.2						
WRA	**Warramunga Arr**	**49.86**	**256**	P	P	12 07 02.1	+0.1
	0.3nm,0.9s,baz=88,slow=7.2,SNR=3.0						
ASAR	**Alice Springs**	**50.22**	**251**	P	P	12 07 04.2	-0.5
	0.4nm,0.6s,baz=86,slow=9.1,SNR=4.9						
TXAR	**Lajitas Array**	**80.21**	**56**	P	P	12 10 19.3	0.0
	0.3nm,0.8s,baz=238,slow=6.9,SNR=3.6						

IDC 11 11:58:29.6±2.1, 20°.41S×168°.29E, h0km, mb3.6/3, mb1 3.9/4, mb1mx3.7/27, mbtmp3.6/4, ML3.1/1, Error ellipse: s-maj=76.5km s-min=27.2km az=142.0, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.39**	**226**	Pn	Pn	11 59 10.0	0.0
DZM	4.4nm,0.3s,baz=108,slow=11,SNR=13			Sn	Sn	11 59 40.2	+0.1
	11nm,0.3s,baz=264,slow=23,SNR=9.2						
WRA	**Warramunga Arr**	**31.84**	**265**	P	P	12 04 55.5	-1.0
	0.3nm,0.6s,baz=95,slow=8.2,SNR=5.0						
ASAR	**Alice Springs**	**31.99**	**258**	P	P	12 04 58.7	+0.9
	1.0nm,0.7s,baz=85,slow=8.7,SNR=10.0						
NVAR	**Mina Array Bea**	**90.24**	**49**	P	P	12 11 32.5	-0.1
	0.2nm,0.5s,baz=240,slow=7.2,SNR=3.9						

IDC 11 12:03:02.4±17.0, 22°.21S×174°.77W, h0km, mb4.2/6, mb1 4.3/6, mb1mx3.9/35, mbtmp4.2/6, Error ellipse: s-maj=331.4km s-min=87.8km az=82.0, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**36.35**	**266**	P	P	12 10 09.7	+1.3
	3.7nm,0.5s,baz=102,slow=10,SNR=7.1						
PMG	**Port Moresby**	**38.66**	**283**	P	P	12 10 27.9	-0.1
	2.2nm,0.3s,baz=131,slow=11,SNR=3.4						
STKA	**Stephens Creek**	**39.81**	**246**	P	P	12 10 36.5	-1.0
	1.9nm,0.8s,baz=104,slow=12,SNR=4.9						
ASAR	**Alice Springs**	**47.08**	**258**	P	P	12 11 35.9	-0.5
	0.9nm,0.7s,baz=94,slow=7.5,SNR=16						
WRA	**Warramunga Arr**	**47.36**	**263**	P	P	12 11 37.9	-0.7
	1.6nm,0.4s,baz=96,slow=8.4,SNR=54						
FITZ	**Fitzroy Crossi**	**55.79**	**263**	P	P	12 12 42.1	+0.4
	2.5nm,0.9s,baz=117,slow=4.5,SNR=3.0						

GUC 11 12:03:31.7±0.4, 23°.14S×67°.48W, h260km±8km, ML3.8, 2C, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB06	**IPOC Station P**	**1.98**	**282**	⇑*i*P	Pn	12 04 16.4	+1.5
PB06				*i* S	S	12 04 50.7	+1.6
PB06				IAML		12 04 52.5	
	comp=N,125nm,0.1s						
PB09	**IPOC Station P**	**2.10**	**309**	⇑*i*P	Pn	12 04 18.0	+1.9
PB09				*i* S	S	12 04 53.2	+2.0
PB09				IAML		12 04 56.4	
	comp=N,206nm,0.1s						
PB04	**IPOC Station P**	**2.59**	**287**	*i* P	Pn	12 04 23.2	+2.4
PB04				*i* S	S	12 05 01.7	+2.1
PB04				IAML		12 05 06.2	
	comp=N,100nm,0.1s						
PB07	**IPOC Station P**	**2.63**	**302**	*i* P	Pn	12 04 23.5	+2.3
PB07				*i* S	S	12 05 02.5	+2.2
PB07				IAML		12 05 04.7	
	comp=E,197nm,0.2s						
PB01	**IPOC Station P**	**2.79**	**318**	*i* P	Pn	12 04 24.7	+1.9
PB01				*i* S	S	12 05 05.4	+2.2
PB01				IAML		12 05 07.7	
	comp=E,131nm,0.4s						
PB10	**IPOC Station P**	**2.85**	**262**	*i* P	Pn	12 04 25.4	+2.2
PB10				*e*S	S	12 05 04.8	+0.8
PB10				IAML		12 05 07.6	
	comp=E,178nm,0.4s						
PB14	**IPOC Station P**	**3.06**	**240**	*e*P	Pn	12 04 26.3	+0.5
PB14				*e*S	S	12 05 08.1	-0.5
PB14				IAML		12 05 09.7	
	comp=E,93nm,0.4s						
PB08	**IPOC Station P**	**3.36**	**332**	*i* P	Pn	12 04 31.7	+2.5
PB08				*i* S	S	12 05 17.7	+2.9
PB08				IAML		12 05 21.8	
	comp=N,56nm,0.3s						
PATCX	**Punta Patache**	**3.38**	**312**	*i* P	Pn	12 04 31.5	+2.4
PATCX				*e*S	S	12 05 15.6	+1.0
PATCX				IAML		12 05 19.3	
	comp=N,56nm,0.3s						

ATH ***11*** *12:09:33.6, 35°.33N×27°.72E, h7km±3km, ML2.3/2, Error ellipse: s-maj=3.9km s-min=1.2km az=336.0*
ISCJB ***11*** *12:09:34.1±1.4, 35°.47N±0°.06×27°.76E±0°.05, h7km±8km, Error ellipse: s-maj=10.9km s-min=5.0km az=144.8*
CSEM ***11*** *12:09:34.8±0.7, 35°.43N×27°.78E, h10km, ML2.3, Error ellipse: s-maj=16.0km s-min=7.4km az=147.0*
DDA ***11*** *12:09:35.0, 35°.80N×28°.27E, h5km, Md2.8*
ISC 11 12:09:33.7±1.4, 35°.36N±0°.06×27°.71E±0°.05, h18km±9km, n21, σ0§88/33, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KARP	**Karpathos**	**0.49**	**293**	P	**Pg**	**12 09 43.4**	**-0.1**
KARP				S	**Sg**	**12 09 50.3**	**+0.1**
KARP	**Karpathos**	**0.49**	**293**	P	**Pg**	**12 09 43.4**	**-0.1**
KARP				S	**Sg**	**12 09 50.3**	**+0.1**
KARP				AML	AML	12 09 50.6	
	comp=E,1140μm,0.3s						
KARP				AML	AML	12 09 50.9	
	comp=N,1896μm,0.4s						
ARG	**Arkhangelos**	**0.92**	**21**	P	**Pg**	**12 09 51.2**	**-0.4**
ARG				S	**Sg**	**12 10 03.8**	**+0.1**
ZKR	**Zakros**	**1.25**	**259**	P	**Pb**	**12 09 56.2**	**-0.5**
ZKR				S	**Sn**	**12 10 14.4**	**+1.7**
ZKR				AML	AML	12 10 24.2	
	comp=N,181μm,0.7s						
ZKR				AML	AML	12 10 24.8	
	comp=E,261μm,0.8s						
NIS1	**Nisyros lsl.**	**1.32**	**341**	P	**Pg**	**12 09 59.7**	**+0.6**
NIS1	**Nisyros lsl.**	**1.32**	**341**	P	**Pg**	**12 09 59.7**	**+0.6**
NISR	**Nisiros**	**1.34**	**339**	P	**Pg**	**12 10 00.4**	**+0.9**
NISR	**Nisiros**	**1.34**	**339**	P	**Pg**	**12 10 00.4**	**+0.9**
TURN	**Turunc**	**1.68**	**25**	*i* P	**Pn**	**12 10 00.9**	**-1.2**
TURN				*i* S	**Sn**	**12 10 20.9**	**-2.2**
BDRM	**Kayabasi**	**1.72**	**353**	P	**Pn**	**12 10 02.6**	**-0.1**
BDRM				S	**Sn**	**12 10 23.9**	**-0.4**
BDRM	**Kayabasi**	**1.72**	**353**	*i* P	**Pn**	**12 10 02.6**	**-0.1**
BDRM				*i* S	**Sn**	**12 10 23.9**	**-0.4**
NPS	**Neapolis**	**1.72**	**267**	P	**Pb**	**12 10 05.7**	**+0.9**
NPS	**Neapolis**	**1.72**	**267**	P	**Pb**	**12 10 05.7**	**+0.9**
AKAS	**Kas**	**1.77**	**60**	P	**Pn**	**12 10 03.4**	**-0.1**
AKAS				S	**Sn**	**12 10 26.9**	**+1.2**
AKAS	**Kas**	**1.77**	**60**	*i* P	**Pn**	**12 10 03.4**	**-0.1**
AKAS				*i* S	**Sn**	**12 10 26.9**	**+1.2**
LAST	**Lasithi**	**1.84**	**265**	P	**Pg**	**12 10 08.4**	**-0.6**
LAST				S	**Sg**	**12 10 31.9**	**-1.0**
LAST	**Lasithi**	**1.84**	**265**	P	**Pg**	**12 10 08.4**	**-0.6**
AYDN	**Tasoluk**	**2.30**	**3**	P	**Pn**	**12 10 11.3**	**+0.5**
AYDN				S	**Sn**	**12 10 37.6**	**-1.2**
AYDN	**Tasoluk**	**2.30**	**3**	*i* P	**Pn**	**12 10 11.3**	**+0.5**
AYDN				*i* S	**Sn**	**12 10 37.6**	**-1.2**
IDI	**Anoyia**	**2.31**	**269**	P	**Pb**	**12 10 15.3**	**+0.4**
IDI	**Anoyia**	**2.31**	**269**	P	**Pb**	**12 10 15.3**	**+0.4**

IDC 11 12:15:22.3±3.0, 26°.71S×133°.10E, h0km, mb1 3.5/3, mb1mx3.3/33, mbtmp3.4/3, ML2.9/4, Error ellipse: s-maj=30.3km s-min=21.9km az=74.0, South Australia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**3.12**	**14**	Pn	Pn	12 16 14.1	+1.3
	0.2nm,0.3s,baz=194,slow=12,SNR=9.2						
ASAR				Sn	Sn	12 16 52.0	+1.2
	0.8nm,0.3s,baz=197,slow=17,SNR=8.8						
ASAR				Lg	Lg	12 17 01.1	
	1.9nm,0.3s,baz=193,slow=26,SNR=13						
WRA	**Warramunga Arr**	**6.83**	**10**	Pn	Pn

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.10**	**248**	⇑P	**Pb**	**12 16 35.1**	**+0.4**
CHOJ				S	**Sb**	**12 16 38.9**	**-0.4**
JCN	**Nagara**	**0.71**	**243**	P	**Pn**	**12 16 44.6**	**+1.6**
JYT	**Yasato**	**0.80**	**308**	P	**Pb**	**12 16 43.3**	**-0.1**
JYT				S	**Sb**	**12 16 52.9**	**-0.8**
JHO	**Hitachi**	**0.93**	**339**	P	**Pb**	**12 16 45.2**	**-0.4**
BSO3	**Boso 3**	**1.01**	**202**	P	**Pn**	**12 16 48.3**	**+1.3**
BSO1	**Boso 1**	**1.09**	**180**	P	**Pb**	**12 16 48.9**	**+0.9**
JAG	**Ashikaga**	**1.41**	**299**	P	**Pn**	**12 16 52.2**	**-0.5**
MJAR	**Matsushiro Arr**	**2.38**	**290**	Pn	**Pn**	**12 17 07.1**	**+1.1**
	3.6nm,0.3s,baz=97,slow=7.9,SNR=28						
MAT	**Matsushiro**	**2.38**	**290**	P	**Pn**	**12 17 06.8**	**+0.7**
MAT				*e*S	**Sn**	**12 17 35.6**	**+1.0**
JHJ	**Hachijo jima 2**	**2.80**	**201**	Pn	**Pn**	**12 17 13.6**	**+1.8**
	9.2nm,0.3s,baz=45,slow=17,SNR=4.6						
JHJ				Sn	**Sb**	**12 17 49.2**	**-2.0**
	28nm,0.3s,baz=216,slow=19,SNR=3.8						
JHJ				LR	LR	12 18 10.9	
	comp=Z,200nm,18.2s,baz=51,slow=37						
ASAJ	**Asahikawa**	**8.46**	**8**	Pn	**Pn**	**12 18 27.9**	**-1.6**
	1.1nm,0.3s,baz=216,slow=12,SNR=10.0						
ASAJ				Sn	**Sn**	**12 20 06.0**	**+1.8**
	0.9nm,0.3s,baz=180,slow=19,SNR=4.5						
JCJ	**Chichijima**	**8.68**	**173**	Pn	**Pn**	**12 18 31.6**	**-1.0**
	6.3nm,0.3s,baz=308,slow=18,SNR=5.1						
JCJ				Sn	**Sn**	**12 20 08.5**	**-1.4**
	4.0nm,0.3s,baz=270,slow=20,SNR=3.2						
JNU	**Nakatsue**	**8.74**	**256**	LR	LR	12 22 16.5	
	comp=Z,97nm,19.6s,baz=130,slow=39						
KSRS	**Korea Array**	**10.63**	**283**	LR	LR	12 22 37.9	
	comp=Z,49nm,21.8s,baz=90,slow=34						
USRK	**Ussuriysk Ar.**	**10.90**	**324**	LR	LR	12 23 00.2	
	comp=Z,108nm,19.0s,baz=187,slow=36						
KLR	**Kul'dur**	**15.08**	**336**	LR	LR	12 24 58.1	
	comp=Z,89nm,20.0s,baz=165,slow=34						
H11N2	**WAKE ISLAND Hy**	**27.82**	**118**	T	T	12 51 18.1	
	baz=311,slow=75,SNR=124						
H11N1	**WAKE ISLAND Hy**	**27.83**	**118**	T	T	12 51 18.7	
	baz=311,slow=75,SNR=129						
H11N3	**WAKE ISLAND Hy**	**27.84**	**118**	T	T	12 51 25.2	
	baz=311,slow=75,SNR=135						
SONM	**Songino Array**	**28.24**	**306**	P	**P**	**12 22 20.1**	**+0.3**
	1.0nm,0.5s,baz=167,slow=13,SNR=2.0						
H11S1	**WAKE ISLAND Hy**	**28.48**	**120**	T	T	12 52 10.5	
	baz=312,slow=75,SNR=135						
H11S3	**WAKE ISLAND Hy**	**28.48**	**120**	T	T	12 52 12.2	
	baz=312,slow=75,SNR=128						
H11S2	**WAKE ISLAND Hy**	**28.50**	**120**	T	T	12 52 15.0	
	baz=312,slow=75,SNR=105						
ZALV	**Zalesovo Beam**	**42.53**	**313**	P	**P**	**12 24 23.2**	**+1.1**
	0.7nm,0.4s,baz=84,slow=5.9,SNR=2.6						
MKAR	**Makanchi Array**	**44.52**	**303**	P	**P**	**12 24 39.0**	**+0.8**
	1.0nm,0.8s,baz=89,slow=9.1,SNR=5.4						
MKAR				LR	LR	12 43 12.0	
	comp=Z,37nm,19.5s,baz=208,slow=36						
ILAR	**Eielson Array**	**50.77**	**32**	P	**P**	**12 25 26.0**	**-0.5**
	0.4nm,0.8s,baz=269,slow=6.8,SNR=3.5						
WRA	**Warramunga Arr**	**55.74**	**188**	P	**P**	**12 26 03.3**	**-0.1**
	1.7nm,1.1s,baz=5.0,slow=7.5,SNR=9.8						
ASAR	**Alice Springs**	**59.46**	**188**	P	**P**	**12 26 29.7**	**+0.1**
	0.4nm,0.8s,baz=19,slow=9.6,SNR=5.4						
YKA	**Yellowknife Ar**	**65.10**	**30**	P	**P**	**12 27 06.5**	**-0.5**
	0.2nm,0.8s,baz=290,slow=7.1,SNR=2.9						
FINES	**FINESS Array B**	**69.79**	**332**	P	**P**	**12 27 36.0**	**-0.6**
	0.7nm,0.6s,baz=42,slow=4.3,SNR=3.1						
NOA	**NORSAR Array B**	**75.24**	**337**	P	**P**	**12 28 09.7**	**+0.6**
	0.2nm,0.4s,baz=56,slow=4.8,SNR=2.4						
PFO	**Pinyon Flats O**	**80.05**	**56**	LR	LR	12 59 59.0	
	comp=Z,20nm,20.4s,baz=145,slow=33						
SYO	**Syowa Base**	**126.89**	**206**	‖*e*P	**Pdif**	**12 32 05.0**	**-5.5**
LPAZ	**La Paz**	**147.64**	**61**	PKPbc	**PKPdf**	**12 36 10.3**	**+0.7**
	0.7nm,0.6s,baz=246,slow=10.0,SNR=2.0						

*ISK **11** 12:39:53.9, 38°.78N×39°.06E, h17km, MD2.5*
*CSEM **11** 12:39:55.4±0.3, 38°.80N×39°.12E, h8km, MD2.5, Error ellipse: s-maj=9.6km s-min=6.5km az=117.0*
*DDA **11** 12:39:56.1, 38°.75N×39°.19E, h7km, Md2.3*
ISC 11 12:39:55.5±1.0, 38°.75N±0°.03×39°.18E±0°.04, h16km±9km, n16, σ1§14/28, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PTK	**Pertek**	**0.21**	**50**	*e*PG	**Pg**	**12 40 00.5**	**-0.2**
PTK				*e*SG	**Sb**	**12 40 05.0**	**0.0**
PTK	**Pertek**	**0.21**	**50**	*e*Pg	**Pg**	**12 40 00.5**	**-0.2**
PTK				*e*Sg	**Sb**	**12 40 05.0**	**0.0**
ELZG	**Elazig**	**0.30**	**211**	P	**Pg**	**12 40 01.8**	**-0.2**
ELZG				S	**Sb**	**12 40 07.7**	**+0.3**
ELZG	**Elazig**	**0.30**	**211**	*i* P	**Pg**	**12 40 01.8**	**-0.2**
ELZG				*i* S	**Sb**	**12 40 07.7**	**+0.3**
SVRC	**Sivrice-ELAZID**	**0.39**	**165**	*e*PG	**Pg**	**12 40 03.0**	**-0.5**
SVRC				*e*SG	**Sb**	**12 40 10.4**	**+0.5**
SVRC	**Sivrice-ELAZID**	**0.39**	**165**	*e*Pg	**Pg**	**12 40 03.0**	**-0.5**
SVRC				*e*Sg	**Sb**	**12 40 10.4**	**+0.5**
TNCL	**Tunceli-Merkez**	**0.46**	**38**	P	**Pg**	**12 40 04.4**	**-0.4**
TNCL				S	**Sb**	**12 40 12.9**	**+1.0**
TNCL	**Tunceli-Merkez**	**0.46**	**38**	*i* P	**Pg**	**12 40 04.4**	**-0.4**
TNCL				*i* S	**Sb**	**12 40 12.9**	**+1.0**
ILIC	**ilic-Erzincan**	**0.84**	**326**	*e*PG	**Pb**	**12 40 09.4**	**-2.5**
ILIC	**ilic-Erzincan**	**0.84**	**326**	*e*Pg	**Pb**	**12 40 09.4**	**-2.5**
ERZN	**Erzincan**	**0.93**	**27**	*e*PG	**Pb**	**12 40 12.8**	**-0.6**
EZC	**Erzincan**	**1.00**	**8**	*e*Pg	**Pb**	**12 40 12.8**	**-1.9**
AKCD	**Akcadag**	**1.09**	**246**	P	**Pg**	**12 40 16.9**	**+0.3**
AKCD				S	**Sn**	**12 40 32.0**	**+1.0**
AKCD	**Akcadag**	**1.09**	**246**	*i* P	**Pg**	**12 40 16.9**	**+0.3**
AKCD				*i* S	**Sn**	**12 40 32.0**	**+1.0**
KELT	**Kelkit**	**1.39**	**2**	P	**Pg**	**12 40 22.0**	**-0.4**
KELT				S	**Sg**	**12 40 42.7**	**+2.1**
KELT	**Kelkit**	**1.39**	**2**	*i* P	**Pg**	**12 40 22.0**	**-0.4**
KELT				*i* S	**Sg**	**12 40 42.7**	**+2.1**

*NIED **11** 12:40:00, 38°.00N×142°.50E, h20km, Mw3.9 Best double couple: M0 7.87000×10^14 NP1:φ=238.00000°, δ30.00000°, λ163.00000°. NP2:φ=343.00000°, δ81.00000°, λ61.00000°.*
*JMA **11** 12:40:27.6±0.3, 38°.03N×142°.45E, h20km±3km, M3.9*
*NEIC **11** 12:40:28.7±0.8, 37°.92N×142°.79E, h40km±7km, mb4.5/5, Error ellipse: s-maj=10.3km s-min=6.4km az=104.0*
*IDC **11** 12:40:29.6±2.2, 37°.95N×142°.60E, h44km±22km, mb3.4/8, mb1 3.7/12, mb1mx3.5/46, mbtmp3.8/12, ML3.8/4, MS3.4/1, Ms1 3.6/1, ms1mx2.6/33, Error ellipse: s-maj=27.3km s-min=15.1km az=98.0*
ISC 11 12:40:25.3±0.7, 37°.93N±0°.04×142°.54E±0°.06, h14km, n42, σ2§06/43, mb3.9/14, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.07**	**299**	P	**Pb**	**12 40 45.3**	**-0.3**
JIO				S	**Sb**	**12 40 57.8**	**-1.6**
OFUJ	**Ofunato**	**1.33**	**330**	P	**Pn**	**12 40 49.0**	**-0.5**
OFUJ				*e*S	**Sb**	**12 41 04.7**	**-2.3**
JMM	**Marumori**	**1.38**	**268**	P	**Pg**	**12 40 51.2**	**-0.6**
JFK	**Kawauchi**	**1.44**	**247**	P	**Pb**	**12 40 51.7**	**-0.1**
MIYJ	**Miyakonagasawa**	**1.73**	**341**	P	**Pn**	**12 40 55.2**	**+0.2**
JFT	**Otama**	**1.79**	**257**	P	**Pg**	**12 40 58.8**	**-0.9**
JOM	**Ohasama**	**1.82**	**328**	P	**Pb**	**12 40 57.3**	**-1.1**
JYS	**Shirataka**	**1.97**	**279**	P	**Pb**	**12 41 01.1**	**+0.2**
MJAR	**Matsushiro Arr**	**3.72**	**249**	P	**Pn**	**12 41 26.2**	**+3.9**
	3.4nm,0.3s,baz=64,slow=11,SNR=30						
MAJO	**Matsushiro**	**3.72**	**249**	*e*Pn	**Pb**	**12 41 26.4**	**-4.4**
MAT	**Matsushiro**	**3.72**	**249**	P	**Pn**	**12 41 26.2**	**+3.8**
MAT				S	**Sb**	**12 42 12.0**	**-3.8**
ERM	**Erimo**	**4.10**	**6**	*e*Pn	**Pn**	**12 41 28.6**	**+1.0**
ERM				*e*Sn	**Sn**	**12 42 15.4**	**0.0**
JHJ2	**Mitsune**	**5.30**	**206**	*e*Pn	**Pn**	**12 41 45.9**	**+1.9**
JHJ2				*e*Sn	**Sn**	**12 42 44.0**	**-0.8**
JHJ	**Hachijo jima 2**	**5.30**	**206**	P	**Pn**	**12 41 46.4**	**+2.3**
	37nm,0.3s,baz=68,slow=21,SNR=15						
JHJ				S	**Sn**	**12 42 43.6**	**-1.4**
	12nm,0.3s,baz=221,slow=3.7,SNR=2.5						
ASAJ	**Asahikawa**	**6.18**	**0**	P	**Pn**	**12 41 57.9**	**+1.8**
	0.6nm,0.3s,baz=231,slow=10.0,SNR=4.9						
ASAJ				S	**Sn**	**12 43 03.7**	**-2.7**
	0.3nm,0.3s,baz=90,slow=18,SNR=2.2						
ASAJ	**Asahikawa**	**6.18**	**0**	*e*Pn	**Pn**	**12 41 57.1**	**+1.0**
ASAJ				S	**Sn**	**12 43 03.7**	**-2.7**
ASAJ				*e*Sn	**Sn**	**12 43 06.2**	**-0.2**
USRK	**Ussuriysk Ar.**	**10.12**	**312**	P	Pn	12 42 57.2	+7.1
	0.3nm,0.3s,baz=120,slow=15,SNR=5.8						
CBIJ	**Chichi jima**	**10.81**	**182**	P	**Pn**	**12 43 00.3**	**+0.7**
CBIJ				S	**Sn**	**12 44 55.6**	**-4.9**
JCJ	**Chichijima**	**10.81**	**182**	P	**Pn**	**12 43 00.3**	**+0.7**
	4.6nm,0.3s,baz=319,slow=20,SNR=3.8						
JCJ				S	**Sn**	**12 44 55.6**	**-4.9**
	3.0nm,0.3s,baz=142,slow=19,SNR=3.1						
KSRS	**Korea Array**	**11.59**	**272**	P	Pn	12 43 16.5	+6.3
	0.1nm,0.3s,baz=91,slow=14,SNR=7.5						
KSAR	**Wonju Array Be**	**11.62**	**272**	P	Pn	12 43 16.5	+5.8
SEY	**Seymchan**	**25.74**	**10**	P	**P**	**12 45 55.7**	**+0.6**
	2.2nm,0.8s,baz=233,slow=5.7,SNR=3.8						
ULN	**Ulaanbaatar**	**27.61**	**302**	*e*P	**P**	**12 46 14.3**	**+2.1**
	3.5nm,1.5s						
H11N2	**WAKE ISLAND Hy**	**27.87**	**124**	T	T	13 15 30.6	
	baz=316,slow=75,SNR=53						
H11N1	**WAKE ISLAND Hy**	**27.88**	**124**	T	T	13 15 35.8	
	baz=316,slow=75,SNR=47						
H11N3	**WAKE ISLAND Hy**	**27.89**	**124**	T	T	13 15 29.6	
	baz=316,slow=75,SNR=36						
ENH	**Enshi**	**28.30**	**264**	P	**P**	**12 46 21.2**	**+2.7**
	13nm,1.0s						
H11S1	**WAKE ISLAND Hy**	**28.63**	**126**	T	T	13 16 26.1	
	baz=318,slow=76,SNR=22						
H11S3	**WAKE ISLAND Hy**	**28.63**	**126**	T	T	13 16 28.0	
	baz=318,slow=76,SNR=24						
H11S2	**WAKE ISLAND Hy**	**28.65**	**126**	T	T	13 16 27.6	
	baz=318,slow=76,SNR=22						
ZALV	**Zalesovo Beam**	**41.98**	**312**	P	**P**	**12 48 15.8**	**+0.2**
	0.7nm,0.5s,baz=107,slow=4.8,SNR=3.2						
CMAR	**Chiang Mai Arr**	**42.59**	**255**	LR	LR	13 09 36.5	
	comp=Z,46nm,18.4s,baz=227,slow=41						
MKAR	**Makanchi Array**	**44.40**	**302**	P	**P**	**12 48 35.6**	**+0.2**
	0.6nm,0.7s,baz=89,slow=10,SNR=4.0						
KURK	**Kurchatov**	**46.09**	**308**	*e*P	**P**	**12 48 49.2**	**+0.6**
	17nm,0.8s						
ILAR	**Eielson Array**	**48.26**	**33**	P	**P**	**12 49 05.7**	**+0.3**
	0.5nm,0.7s,baz=270,slow=6.9,SNR=7.9						
TKM2	**Tokmak 2**	**49.99**	**298**	*e*P	**P**	**12 49 20.5**	**+1.2**
	4.0nm,1.0s						
ABKAR	**Akbulak array**	**58.04**	**310**	*e*P	**P**	**12 50 18.2**	**+0.5**
	2.6nm,0.6s						
WRAB	**Tennant Creek**	**58.07**	**189**	*e*P	**P**	**12 50 17.7**	**-0.4**
	5.4nm,1.1s						
WRA	**Warramunga Arr**	**58.08**	**189**	P	**P**	**12 50 18.4**	**+0.3**
	1.2nm,0.8s,baz=7.2,slow=7.2,SNR=9.4						
ASAR	**Alice Springs**	**61.81**	**189**	P	**P**	**12 50 44.4**	**+0.7**
	0.6nm,0.9s,baz=357,slow=4.8,SNR=8.4						
YKA	**Yellowknife Ar**	**62.58**	**31**	P	**P**	**12 50 48.3**	**-0.2**
	0.2nm,0.7s,baz=304,slow=6.5,SNR=6.9						
FINES	**FINESS Array B**	**68.43**	**332**	P	**P**	**12 51 26.5**	**+0.2**
	0.9nm,0.8s,baz=30,slow=11,SNR=2.5						

MEX 11 12:52:05.7±0.6, 17°.89N×101°.10W, h53km±10km, MD3.5, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZIIG	**Zihuatanejo**	**0.45**	**231**	*e*P	Pn	12 52 15.1	-1.5
ZIIG				*e*S	Sn	12 52 22.9	-1.5
ARIG	**Puente Sto Nin**	**0.81**	**61**	*e*P	Pn	12 52 19.2	-1.8
ARIG				*e*S	Sn	12 52 30.2	-2.0
CAIG	**El Cayaco**	**1.15**	**137**	*e*P	Pn	12 52 24.1	-1.5
CAIG				*e*S	Sn	12 52 37.7	-2.6
MEIG	**Mezcala**	**1.41**	**88**	*e*P	Pn	12 52 28.1	-1.0
MEIG				*e*S	Sn	12 52 45.1	-1.5
MOIG	**Morelia**	**1.78**	**357**	*e*P	Pn	12 52 32.7	-1.6
MOIG				*i* S	Sn	12 52 54.0	-1.9
YAIG	**Yautepec**	**2.15**	**63**	*e*P	Pn	12 52 37.7	-1.6
YAIG				*i* S	Sn	12 53 03.4	-1.6

*IDC **11** 12:52:25.2±1.2, 20°.26S×168°.34E, h0km, mb4.2/8, mb1 4.4/9, mb1mx4.0/36, mbtmp4.2/9, ML3.6/1, MS3.4/4, Ms1 3.3/4, ms1mx3.0/25, Error ellipse: s-maj=46.5km s-min=19.8km az=142.0*
*ISCJB **11** 12:52:26.6±0.7, 20°.39S±0°.09×168°.37E±0°.09, h26km, mb4.1/9, MS3.4/3, Error ellipse: s-maj=16.5km s-min=8.2km az=138.0*
*NEIC **11** 12:52:26.3±0.5, 20°.40S×168°.38E, h10km, mb4.4/5, Error ellipse: s-maj=12.9km s-min=7.5km az=155.0*
ISC 11 12:52:28.7±0.8, 20°.4S±0°.1×168°.37E±0°.10, h26km, n20, σ0§90/21, mb4.2/9, MS3.4/3, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.44**	**227**	Pn	**Pn**	**12 53 07.3**	**+0.3**
	13nm,0.3s,baz=70,slow=8.3,SNR=43						
DZM				Sn	**Sn**	**12 53 34.6**	**-1.5**
	43nm,0.3s,baz=157,slow=16,SNR=6.1						
DZM				LR	LR	12 53 57.9	
	comp=Z,318nm,21.7s,baz=347,slow=37						
MSVF	**Nonsavu**	**9.54**	**75**	*e*Pn	**Pn**	**12 54 43.8**	**-0.7**
HNR	**Honiara**	**13.60**	**322**	Pn	**Pn**	**12 55 39.4**	**-0.7**
EIDS	**Eidsvold**	**16.67**	**250**	*e*Pn	**Pn**	**12 56 19.8**	**-0.9**
	38nm,2.1s						
ARMA	**Armidale**	**18.09**	**233**	*e*P	**Pn**	**12 56 37.6**	**-0.8**
	73nm,2.1s						
CTA	**Charters Tower**	**20.75**	**267**	P	**P**	**12 57 08.4**	**+0.8**
	5.8nm,0.9s,baz=82,slow=14,SNR=6.2						
CTAO	**Charters Tower**	**20.75**	**267**	*e*P	**P**	**12 57 08.5**	**+0.9**
	92nm,1.1s						
PMG	**Port Moresby**	**23.20**	**295**	LR	LR	13 05 27.0	
	comp=Z,67nm,20.1s,baz=190,slow=34						
PMG	**Port Moresby**	**23.20**	**295**	*e*P	**P**	**12 57 33.6**	**-0.2**
	17nm,1.3s						
STKA	**Stephens Creek**	**26.54**	**239**	P	**P**	**12 58 06.5**	**+2.1**
	5.2nm,0.6s,baz=67,slow=9.5,SNR=13						
STKA				LR	LR	13 08 49.1	
	comp=Z,93nm,18.2s,baz=205,slow=37						
WRAB	**Tennant Creek**	**31.90**	**265**	*e*P	**P**	**12 58 51.5**	**-0.8**
	0.9nm,0.4s						
WRA	**Warramunga Arr**	**31.91**	**265**	P	**P**	**12 58 51.0**	**-1.4**
	0.9nm,0.5s,baz=92,slow=8.5,SNR=32						
WRA				PcP	**PcP**	**13 01 43.3**	**+0.7**
	0.5nm,0.8s,baz=92,slow=5.4,SNR=3.3						
ASAR	**Alice Springs**	**32.06**	**258**	P	**P**	**12 58 53.5**	**-0.2**
	5.5nm,0.7s,baz=88,slow=8.8,SNR=91						
ASAR				LR	LR	13 12 08.5	
	comp=Z,112nm,18.5s,baz=143,slow=37						
USRK	**Ussuriysk Ar.**	**72.40**	**333**	P	**P**	**13 03 52.4**	**0.0**
	2.8nm,0.9s,baz=129,slow=4.1,SNR=3.4						
CMAR	**Chiang Mai Arr**	**78.24**	**295**	P	**P**	**13 04 27.6**	**+0.9**
	1.5nm,0.6s,baz=134,slow=4.5,SNR=8.4						
NVAR	**Mina Array Bea**	**90.19**	**49**	P	**P**	**13 05 26.9**	**-0.4**
	1.0nm,0.8s,baz=224,slow=7.5,SNR=7.5						
ILAR	**Eielson Array**	**91.59**	**18**	P	**P**	**13 05 33.3**	**+0.5**
	0.3nm,0.7s,baz=227,slow=5.6,SNR=5.4						
YKA	**Yellowknife Ar**	**102.08**	**28**	P	**Pdif**	**13 06 20.2**	**-0.1**
	0.2nm,0.7s,baz=263,slow=4.6,SNR=3.1						
GERES	**GERESS Array B**	**145.11**	**330**	PKP	**PKPdf**	**13 12 03.7**	**-0.2**
	0.7nm,0.7s,baz=2.9,slow=2.0,SNR=3.6						
TORD	**Torodi Ar. Bea**	**165.34**	**243**	PKPab	**PKPab**	**13 13 29.9**	**+0.4**
	0.1nm,0.4s,baz=98,slow=2.9,SNR=3.2						

IDC 11 12:57:17.1±2.3, 24°.15S×68°.03W, h240km±20km, mb3.0/2, mb1 3.2/3, mb1mx3.0/21, mbtmp3.5/3, Error ellipse: s-maj=59.9km s-min=36.1km az=90.0, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LVC	**Limon Verde**	**1.73**	**332**	P	Pn	12 57 57.1	+0.3
	55nm,0.3s,baz=147,slow=5.7,SNR=3.1						
LVC				S	S	12 58 27.8	-0.2
	272nm,0.3s,baz=139,slow=6.9,SNR=6.4						
LPAZ	**La Paz**	**7.82**	**359**	P	Pn	12 59 10.7	+1.9
	0.5nm,0.3s,baz=178,slow=5.9,SNR=10						
LPAZ				S	S	13 00 37.9	-0.4
	0.1nm,0.3s,baz=327,slow=16,SNR=2.5						
TORD	**Torodi Ar. Bea**	**77.50**	**69**	P	P	13 08 46.6	-0.1
	0.3nm,0.4s,baz=260,slow=5.1,SNR=6.3						
YKA	**Yellowknife Ar**	**93.94**	**340**	P	P	13 10 06.6	-0.4
	0.1nm,0.4s,baz=122,slow=3.1,SNR=2.6						

IDC 11 12:58:58.6±2.0, 20°.18S×168°.13E, h0km, mb3.7/3, mb1 4.0/4, mb1mx3.7/31, mbtmp3.7/4, ML3.1/1, MS3.9/2, Ms1 4.0/2, ms1mx3.1/20, Error ellipse: s-maj=71.9km s-min=31.4km az=146.0, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.46**	**220**	Pn	Pn	12 59 38.9	-1.2
	4.2nm,0.3s,baz=120,slow=18,SNR=25						
DZM				Sn	Sn	13 00 07.8	-3.1
	8.1nm,0.3s,baz=1.0,slow=22,SNR=9.8						
AFI	**Afiamalu**	**20.19**	**75**	LR	LR	13 10 22.7	
	comp=Z,367nm,21.7s,baz=326,slow=34						
WRA	**Warramunga Arr**	**31.71**	**264**	P	P	13 05 24.3	-0.1
	0.6nm,1.0s,baz=90,slow=8.7,SNR=3.2						
ASAR	**Alice Springs**	**31.90**	**257**	P	P	13 05 26.5	+0.5
	1.3nm,1.0s,baz=87,slow=9.4,SNR=8.1						
CMAR	**Chiang Mai Arr**	**77.94**	**295**	LR	LR	13 47 20.9	
	comp=Z,66nm,18.2s,baz=0.0,slow=37						
NVAR	**Mina Array Bea**	**90.20**	**49**	P	P	13 12 01.3	-0.1
	0.4nm,0.6s,baz=224,slow=8.3,SNR=3.9						

*NIED **11** 13:03:00, 38°.50N×142°.10E, h32km, Mw3.5 Best double couple: M0 1.75000×10^14 NP1:φ=288.00000°, δ40.00000°, λ-116.00000°. NP2:φ=140.00000°, δ55.00000°, λ-70.00000°.*
*IDC **11** 13:03:04.2±1.8, 38°.19N×142°.72E, h0km, mb3.5/3, mb1 3.6/6, mb1mx3.4/38, mbtmp3.6/6, ML3.4/3, MS2.3/1, Ms1 2.3/1, ms1mx2.1/45, Error ellipse: s-maj=47.7km s-min=23.7km az=91.0*
*ISCJB **11** 13:03:06.3±1.3, 38°.45N±0°.04×142°.18E±0°.09, h30km±7km, mb3.5/3, Error ellipse: s-maj=11.6km s-min=6.0km az=9.4*
*JMA **11** 13:03:08.6±0.1, 38°.53N×142°.06E, h34km±1km, M3.5*
JMA Felt I J1.
ISC 11 13:03:07.7±1.8, 38°.47N±0°.04×141°.99E±0°.08, h24km±14km, n17, σ1§18/24, mb3.5/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.50**	**269**	P	**Pn**	**13 03 19.8**	**+0.4**
JIO				S	**Sn**	**13 03 27.5**	**+0.2**
OFUJ	**Ofunato**	**0.66**	**338**	P	**Pb**	**13 03 20.8**	**+0.3**
OFUJ				S	**Sb**	**13 03 29.4**	**+0.1**
JMK	**Ichinoseki**	**0.77**	**309**	P	**Pn**	**13 03 23.1**	**0.0**
JMK				S	**Sn**	**13 03 33.7**	**-0.2**
JOU	**Okura**	**1.05**	**265**	P	**Pb**	**13 03 28.1**	**+1.0**
JOU				S	**Sn**	**13 03 42.2**	**+1.5**
JMM	**Marumori**	**1.12**	**238**	P	**Pb**	**13 03 28.3**	**0.0**
JOM	**Ohasama**	**1.14**	**332**	P	**Pn**	**13 03 28.2**	**0.0**
JOM				S	**Sb**	**13 03 42.0**	**-1.1**
JYK	**Kaneyama**	**1.35**	**290**	P	**Pb**	**13 03 32.0**	**-0.3**
JRG	**Rokugo**	**1.41**	**312**	P	**Pb**	**13 03 33.4**	**+0.2**
JFK	**Kawauchi**	**1.41**	**219**	P	**Pn**	**13 03 32.2**	**+0.3**
JYS	**Shirataka**	**1.53**	**261**	P	**Pb**	**13 03 35.2**	**-0.2**
MJAR	**Matsushiro Arr**	**3.57**	**239**	Pn	**Pn**	**13 04 03.7**	**+2.1**
	1.3nm,0.3s,baz=51,slow=10.0,SNR=15						
MJAR				LR	LR	13 05 46.0	
	comp=Z,42nm,19.3s,baz=105,slow=41						
MAT	**Matsushiro**	**3.57**	**239**	P	**Pn**	**13 04 04.1**	**+2.5**
MAT				*e*S	**Sb**	**13 04 51.1**	**-1.9**
JHJ	**Hachijo jima 2**	**5.63**	**199**	Pn	**Pn**	**13 04 30.4**	**+0.5**
	11nm,0.3s,baz=46,slow=14,SNR=3.7						
JHJ				Sn	**Sn**	**13 05 34.1**	**+0.3**
	3.8nm,0.3s,baz=240,slow=20,SNR=2.5						
ASAJ	**Asahikawa**	**5.66**	**4**	Pn	**Pn**	**13 04 31.3**	**+1.1**
	0.6nm,0.3s,baz=209,slow=8.5,SNR=5.9						
ASAJ				Sn	**Sn**	**13 05 36.2**	**+1.7**
	baz=80,slow=18,SNR=2.9						
ZALV	**Zalesovo Beam**	**41.30**	**311**	P	P	13 10 57.6	+6.6
	0.4nm,0.5s,baz=78,slow=7.7,SNR=2.3						
WRA	**Warramunga Arr**	**58.54**	**188**	P	**P**	**13 13 01.2**	**-1.1**
	0.6nm,0.8s,baz=6.6,slow=7.3,SNR=8.2						
ASAR	**Alice Springs**	**62.27**	**188**	P	**P**	**13 13 26.0**	**-1.7**
	0.4nm,0.9s,baz=356,slow=6.9,SNR=3.2						

*NIED **11** 13:12:00, 26°.10N×128°.60E, h14km, Mw4.0 Best double couple: M0 9.65000×10^14 NP1:φ=214.00000°, δ29.00000°, λ69.00000°. NP2:φ=58.00000°, δ63.00000°, λ101.00000°.*
*IDC **11** 13:12:54.7±0.8, 26°.20N×128°.56E, h0km, mb3.8/13, mb1 4.0/16, mb1mx3.9/37, mbtmp3.8/16, ML3.3/3, MS3.0/1, Ms1 3.0/1, ms1mx2.5/50, Error ellip

0.8nm,0.6s,baz=26,slow=4.9,SNR=8.3
AKASG Malin Array Be 75.86 320 P **P 13 24 42.3 +0.3**
1.0nm,0.5s,baz=52,slow=6.2,SNR=4.2
BRTR Keskin Array B 77.39 308 P **P 13 24 52.0 +0.8**
1.1nm,0.6s,baz=123,slow=6.1,SNR=7.8
YKA Yellowknife Ar 78.51 25 P **P 13 24 57.1 +0.4**
0.1nm,0.3s,baz=307,slow=5.4,SNR=3.5
NB2 NORSAR Subarra 79.59 334 P **P 13 25 03.0 +0.3**
comp=Z,0.6nm,0.6s,baz=53,slow=5.6
NOA NORSAR Array B 79.59 334 P **P 13 25 02.3 -0.4**
comp=Z,1.1nm,0.7s,baz=51,slow=5.5,SNR=4.7

IDC 11 13:18:28.9±1.9, 20°.41S×168°.31E, h0km, mb3.7/3, mb1 4.0/4, mb1mx3.8/18, mbtmp3.7/4, ML3.2/1, MS2.9/2, Ms1 2.9/2, ms1mx2.5/39, Error ellipse: s-maj=83.4km s-min=28.8km az=149.0, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.40**	**226**	Pn	Pn	13 19 09.0	-0.6
DZM	6.0nm,0.3s,baz=102,slow=7.9,SNR=69			LR	LR	13 19 30.7	
DZM	comp=Z,106nm,19.7s,baz=48,slow=26			Sn	Sn	13 19 37.0	-2.8
AFI	15nm,0.3s,baz=98,slow=22,SNR=8.8 **Afiamalu**	**20.09**	**74**	LR	LR	13 30 11.9	
WRA	comp=Z,62nm,18.1s,baz=280,slow=35 **Warramunga Arr**	**31.86**	**265**	P	P	13 24 55.2	-0.8
ASAR	0.2nm,0.8s,baz=92,slow=8.3,SNR=3.4 **Alice Springs**	**32.01**	**258**	P	P	13 24 58.1	+0.9
NVAR	1.7nm,0.9s,baz=87,slow=8.9,SNR=17 **Mina Array Bea**	**90.23**	**49**	P	P	13 31 31.8	-0.1
	1.0nm,0.7s,baz=227,slow=7.3,SNR=7.0						

MEX 11 13:25:17.0±0.4, 16°.25N×96°.21W, h59km±4km, MD3.9, Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HUIG	**Huatulco**	**0.49**	**168**	*i* P	Pn	13 25 27.4	-1.4
HUIG				*i* S	Sn	13 25 35.4	-1.9
PANG	**Puerto Angel**	**0.63**	**203**	*e*P	Pn	13 25 28.8	-1.6
PANG				*e*S	Sn	13 25 38.7	-1.4
OXBJ	**Oaxaca**	**0.95**	**329**	*e*P	Pn	13 25 32.9	-1.6
OXBJ				*e*S	Sn	13 25 45.3	-2.2
VHO	**Vista Hermosa**	**0.96**	**329**	*i* P	Pn	13 25 33.1	-1.6
VHO				*i* S	Sn	13 25 45.6	-2.1
PNIG	**Pinotepa**	**1.84**	**275**	*e*P	Pn	13 25 45.0	-1.3
PNIG				*e*S	Sn	13 26 06.1	-2.6
TLIG	**Tlapa**	**2.60**	**300**	*e*P	Pn	13 25 55.6	-1.2
TLIG				*e*S	Sn	13 26 25.8	-1.6
PCIG		**2.93**	**100**	*e*P	Pn	13 26 00.1	-1.0
PCIG				*i* S	Sn	13 26 33.3	-1.8
TGIG		**3.01**	**80**	*i* P	Pn	13 26 00.3	-2.1
TGIG				*i* S	Sn	13 26 34.9	-2.3

IDC 11 13:30:03.9±11.0, 20°.15S×167°.57E, h0km, mb3.9/3, mb1 4.0/4, mb1mx3.7/26, mbtmp3.8/4, ML2.9/1, MS3.0/1, Ms1 3.0/1, ms1mx2.5/45, Error ellipse: s-maj=191.7km s-min=39.0km az=89.0, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.18**	**209**	Pn	Pn	13 30 41.1	-0.4
DZM	3.2nm,0.3s,baz=68,slow=11,SNR=9.6			Sn	Sn	13 31 09.3	0.0
DZM	21nm,0.3s,baz=122,slow=21,SNR=15			LR	LR	13 31 38.5	
STKA	comp=Z,285nm,18.8s,baz=246,slow=44 **Stephens Creek**	**26.03**	**238**	P	P	13 35 40.0	+1.1
WRA	1.7nm,0.7s,baz=50,slow=9.4,SNR=3.0 **Warramunga Arr**	**31.19**	**265**	P	P	13 36 24.6	-0.4
ASAR	0.7nm,0.9s,baz=92,slow=8.3,SNR=5.5 **Alice Springs**	**31.39**	**257**	P	P	13 36 26.6	-0.2
	1.3nm,0.7s,baz=88,slow=8.6,SNR=19						

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*IDC **11** 13:47:55.8±0.8, 41°.62N×81°.15E, h0km, mb3.8/11, mb1 3.8/18, mb1mx3.7/56, mbtmp3.7/18, ML3.4/7, MS3.3/2, Ms1 3.3/2, ms1mx2.5/67, Error ellipse: s-maj=15.2km s-min=11.7km az=52.0*
*SOME **11** 13:47:58.6, 41°.73N×81°.18E, h10km, MS3.0*
*NNC **11** 13:47:58.4±0.5, 41°.63N×81°.38E, h0km±3km, mb4.3, mpv4.0, Error ellipse: s-maj=4.2km s-min=3.2km az=159.0*
*BJI **11** 13:47:59.9, 41°.67N×81°.17E, h7km, mb3.9/1, ML3.8/11*
*MOS **11** 13:47:59.2±1.4, 41°.63N×81°.38E, h33km, mb4.1/5, Error ellipse: s-maj=12.2km s-min=7.5km az=117.1*
*NEIC **11** 13:48:02.7±1.4, 41°.75N×81°.26E, h51km±12km, mb4.0/1, Error ellipse: s-maj=14.4km s-min=10.9km az=170.0*

ISC 11 13:47:57.3±1.1, 41°.50N±0°.04×81°.49E±0°.03, h10km±8km, n79, σ1°62/109, mb3.8/11, 21C-9D, Southern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHLS	**Shalkode**	**2.04**	**325**	*e*P	**Pn**	**13 48 32.6**	**+0.6**
SHLS	692nm,0.3s			*e*S	**Sn**	**13 48 56.7**	**-0.9**
KTMS	1μm,0.3s **Ketmen**	**2.12**	**337**	*e*P	**Pb**	**13 48 34.6**	**-1.3**
KTMS	321nm,0.3s			*e*S	**Sn**	**13 49 00.3**	**+0.8**
PDGK	981nm,0.4s **Podgornoye**	**2.36**	**322**	⇑Pn	**Pn**	**13 48 36.6**	**+0.6**
PDGK	570nm,0.4s			⇑Sn	**Sn**	**13 49 05.5**	**+0.6**
PDGK	377nm,0.6s **Podgornoye**	**2.36**	**322**	PN	**Pn**	**13 48 36.6**	**+0.6**
PDGK				S	**Sn**	**13 49 05.5**	**+0.6**
PDGK	comp=Z,570nm,0.4s			pmax	pmax		
PDGK	comp=N,377nm,0.6s			smax	smax		
SATY	**Saty**	**2.77**	**305**	*e*P	**Pb**	**13 48 45.5**	**-1.5**
SATY	comp=N,520nm,0.4s			*e*S	**Sb**	**13 49 19.2**	**-1.7**
ZHN	comp=N,714nm,0.4s **Zhinishke**	**2.81**	**307**	*e*P	**Pb**	**13 48 45.3**	**-2.4**
ZHN	comp=N,287nm,0.2s			*e*S	**Sn**	**13 49 18.1**	**+1.6**
KPKS	comp=N,2μm,0.3s **Kokpek**	**2.86**	**314**	*e*P	**Pb**	**13 48 45.8**	**-2.7**
KPKS	comp=N,466nm,0.2s			*e*S	**Sn**	**13 49 19.2**	**+1.7**
DJR	comp=N,887nm,0.4s **Jarkent**	**3.10**	**337**	*e*P	**Pb**	**13 48 51.4**	**-1.1**
DJR	comp=N,160nm,0.4s			*e*S	**Sb**	**13 49 29.5**	**-0.9**
KURS	comp=N,574nm,0.5s **Kuram**	**3.16**	**310**	*e*P	**Pb**	**13 48 52.3**	**-1.2**
KURS	comp=N,96nm,0.6s			*e*S	**Sb**	**13 49 30.9**	**-1.2**
MNBS	comp=N,257nm,0.7s **Baschi**	**3.44**	**320**	*e*P	Pn	13 48 54.1	+3.0
MNBS	comp=N,48nm,0.4s			*e*S	**Sn**	**13 49 33.8**	**+1.9**
KOTS	comp=N,1μm,0.5s **Kotyrbulak**	**3.68**	**300**	*e*P	**Pb**	**13 49 02.4**	**-0.1**
KOTS				*e*S	**Sb**	**13 49 48.5**	**+1.3**
MDOK	**Medeo**	**3.69**	**298**	*e*P	Pb	13 48 59.3	-3.4
MDOK	comp=N,49nm,0.4s			*e*S	**Sb**	**13 49 43.9**	**-3.5**
TNSS	comp=N,142nm,0.3s **Tian-Shan**	**3.71**	**296**	*e*P	**Pb**	**13 49 02.6**	**-0.5**
TNSS	comp=N,88nm,0.5s			*e*S	**Sb**	**13 49 48.6**	**+0.3**
KNDC	comp=N,183nm,0.5s **Almaty**	**3.77**	**299**	⇑Pn	**Pn**	**13 48 56.7**	**+1.2**
KNDC				⇑Lg	Lg	13 49 53.5	
AAA	**Alma-Ata**	**3.80**	**299**	⇑*i*P	**Pb**	**13 49 03.9**	**-0.6**
AAA	comp=N,190nm,0.2s			⇑*i*S	**Sb**	**13 49 52.6**	**+1.9**
AAA	comp=N,383nm,0.3s **Alma-Ata**	**3.80**	**299**	*i* PN	**Pb**	**13 49 03.9**	**-0.6**
AAA				*i* S	**Sb**	**13 49 52.6**	**+1.9**
AAA	comp=Z,190nm,0.3s			pmax	pmax		
AAA	comp=E,383nm,0.3s			smax	smax		
ARXS	**Arharly**	**3.82**	**316**	*e*P	**Pb**	**13 49 04.0**	**-0.9**
ARXS	comp=E,60nm,0.3s			*e*S	**Sb**	**13 49 50.7**	**-0.5**
	comp=E,241nm,0.4s						

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IZV	**Izvestkoviy**	**3.93**	**295**	*e*P	**Pb**	**13 49 06.1**	**-0.7**
IZV	comp=E,54nm,0.3s			*e*S	**Sb**	**13 49 54.6**	**+0.2**
CHKK	comp=E,374nm,0.4s **Chushkaly**	**4.07**	**307**	*e*P	**Pb**	**13 49 07.2**	**-1.8**
CHKK	comp=E,57nm,0.3s			*e*S	**Sb**	**13 49 56.7**	**-1.6**
MTBS	comp=E,289nm,0.2s **Maitube**	**4.09**	**295**	*e*P	**Pb**	**13 49 08.0**	**-1.4**
MTBS	comp=E,62nm,0.3s			⇓*i*S	**Sb**	**13 49 57.6**	**-1.3**
KAPS	comp=E,128nm,0.7s **Kapalarasan**	**4.09**	**338**	*e*P	**Pb**	**13 49 06.5**	**-3.0**
KAPS	comp=E,58nm,0.3s			*e*S	**Sb**	**13 49 54.9**	**-4.1**
TDK	comp=E,170nm,0.5s **Taldyqorghan**	**4.17**	**328**	*e*P	**Pb**	**13 49 10.5**	**-0.2**
TDK	comp=E,107nm,0.4s			*e*S	**Sb**	**13 50 02.2**	**+1.1**
KST	comp=E,287nm,0.7s **Kastek**	**4.38**	**292**	*e*P	**Pb**	**13 49 12.4**	**-2.0**
KST	comp=E,24nm,0.6s			*e*S	**Sb**	**13 50 06.2**	**-1.1**
KUU	comp=E,162nm,0.4s **Kurty**	**4.49**	**304**	*e*P	**Pb**	**13 49 16.0**	**-0.2**
KUU	comp=E,114nm,0.3s			*e*S	**Sb**	**13 50 11.3**	**+1.0**
DGS	comp=E,126nm,0.4s **Degeres**	**4.58**	**294**	*e*P	**Pb**	**13 49 17.3**	**-0.5**
DGS	comp=E,36nm,0.4s			*e*S	**Sb**	**13 50 14.4**	**+1.4**
TKM2	comp=E,224nm,0.6s **Tokmak 2**	**4.60**	**290**	⇑Pn	**Pn**	**13 49 07.3**	**+0.2**
TKM2	comp=E,21nm,0.3s			⇓Pg	Pb	13 49 20.8	+2.5
TKM2	comp=E,27nm,0.4s			⇑Lg	Lg	13 50 21.3	
TKM2	comp=E,70nm,0.5s **Tokmak 2**	**4.60**	**290**	*e*PN	**Pn**	**13 49 07.3**	**+0.2**
TKM2				*e*		13 50 15.0	
TKM2	**Tokmak 2**	**4.60**	**290**	*e*Pn	**Pn**	**13 49 07.3**	**+0.2**
TKM2				*e*Sg	**Sb**	**13 50 15.0**	**+1.2**
KSH	**Kashi**	**4.64**	**247**	*e*Pn	Pb	13 49 15.1	-3.8
KSH				Sg	**Sg**	**13 50 28.1**	**+1.7**
KSH				smax	smax		
KSH	comp=E,87nm,0.8s			smax	smax		
KSH	comp=E,82nm,0.6s			smax	smax		
WMQ	**Urumqi**	**5.13**	**61**	Pg	**Pg**	**13 49 37.1**	**+1.5**
WMQ				Sg	Sg	13 50 47.5	+5.4
WMQ				smax	smax		
WMQ	comp=E,180nm,0.3s			smax	smax		
WMQ	comp=E,100nm,0.3s			smax	smax		
FRU	**Bishkek**	**5.28**	**287**	*e*PN	Pb	13 49 26.0	-3.7
FRU				*i*		13 49 33.0	
FRU				*e*S	**Sb**	**13 50 37.0**	**+3.9**
FRU				pmax	pmax		
FRU	comp=Z,175nm,1.0s			smax	smax		
FRU	comp=E,280nm,1.8s			smax	smax		
AAK	**Ala-Archa**	**5.33**	**285**	Pn	**Pn**	**13 49 14.4**	**-2.6**
AAK	comp=E,2.1nm,0.3s,baz=102,slow=9.8,SNR=14			Pg	**Pb**	**13 49 28.4**	**-2.2**
AAK	comp=E,1.8nm,0.3s,baz=86,slow=19,SNR=9.3			Lg	Lg	13 50 38.0	
AAK	comp=E,4.0nm,0.3s,baz=261,slow=18,SNR=5.2			LR	LR	13 50 42.5	
AAK	comp=E,35nm,18.2s,baz=112,slow=33 **Ala-Archa**	**5.33**	**285**	⇑Pn	**Pn**	**13 49 17.1**	**0.0**
AAK	comp=E,1.8nm,0.4s			⇓Pg	Pb	13 49 33.2	+2.7
AAK	comp=E,30nm,0.7s			⇑Lg	Lg	13 50 44.0	
AAK	comp=E,82nm,1.1s **Ala-Archa**	**5.33**	**285**	*e*Pn	**Pn**	**13 49 17.0**	**0.0**
AAK				Pg	**Pb**	**13 49 28.4**	**-2.2**
AAK				Lg	Lg	13 50 38.0	
MK31	**Makanchi Array**	**5.33**	**6**	⇑Pn	**Pn**	**13 49 17.9**	**+1.0**
MK31	comp=E,14nm,0.6s			⇑Sn	**Sn**	**13 50 19.3**	**+1.0**
MK31	comp=E,34nm,0.5s			⇓Lg	Lg	13 50 43.2	
MKAR	comp=E,41nm,0.5s **Makanchi Array**	**5.33**	**6**	Pn	**Pn**	**13 49 17.7**	**+0.8**
MKAR	comp=E,4.1nm,0.3s,baz=191,slow=13,SNR=75			Sn	**Sn**	**13 50 18.6**	**+0.3**
MKAR	comp=E,8.1nm,0.3s,baz=195,slow=25,SNR=6.4			Lg	Lg	13 50 42.6	
MKAR	comp=E,9.7nm,0.3s,baz=195,slow=31,SNR=5.9 **Makanchi Array**	**5.33**	**6**	*i* PN	**Pn**	**13 49 18.0**	**+1.1**
MKAR				pmax	pmax		
EKS2	comp=Z,5.0nm,0.3s **Erkin-Say**	**5.86**	**284**	*e*PN	**Pn**	**13 49 24.6**	**+0.4**
EKS2				pmax	pmax		
EKS2	comp=Z,23nm,0.6s **Erkin-Say**	**5.86**	**284**	*e*Pn	**Pn**	**13 49 24.6**	**+0.4**
SFK	comp=Z,23nm,0.6s **Sufi-Kurgan**	**6.24**	**259**	⇑Pn	**Pn**	**13 49 30.9**	**+1.2**
SFK	comp=Z,0.6nm,0.4s			⇑Pg	Pg	13 49 51.1	-5.7
SFK	comp=Z,6.2nm,0.6s			⇑Lg	Lg	13 51 15.3	
SFK	comp=Z,35nm,1.1s **Sufi-Kurgan**	**6.24**	**259**	PN	**Pn**	**13 49 30.9**	**+1.2**
SFK				P	Pg	13 49 51.1	-5.7
SFK				pmax	pmax		
SFK	comp=Z,600nm,0.6s			pmax	pmax		
SFK	comp=Z,620nm,0.6s			pmax	pmax		
ZSN	**Zaisan**	**6.31**	**18**	*e*P	**Pg**	**13 49 56.0**	**-2.0**
ZSN	comp=Z,11nm,0.4s			*e*S	**Sg**	**13 51 21.5**	**+1.8**
MNAS	comp=Z,53nm,0.5s **Manas**	**6.77**	**281**	⇑Pn	**Pn**	**13 49 38.1**	**+1.3**
MNAS	comp=Z,1.3nm,0.5s			⇓Pg	Pb	13 49 59.8	+4.7
MNAS	comp=Z,12nm,0.8s			⇓Lg	Lg	13 51 31.5	
MNAS	comp=Z,34nm,1.0s **Manas**	**6.77**	**281**	PN	**Pn**	**13 49 38.1**	**+1.3**
MNAS				P	Pb	13 49 59.8	+4.7
MNAS				pmax	pmax		
KK31	comp=Z,1μm,0.5s **Karatay Array**	**8.29**	**285**	⇑Pg	Pb	13 50 27.4	+6.4
KK31	comp=Z,3.0nm,0.5s,baz=88,slow=16,SNR=9.4			⇑Lg	Lg	13 52 19.6	
KURBB	comp=Z,11nm,0.7s,baz=97,slow=29,SNR=10 **Kurchatov Arra**	**9.36**	**348**	Pn	**Pn**	**13 50 11.2**	**-0.8**
KURBB	comp=Z,0.2nm,0.3s,baz=175,slow=12,SNR=7.6			Lg	Lg	13 52 48.5	
OTUK	comp=Z,0.3nm,0.3s,baz=171,slow=32,SNR=6.4 **Ortayu**	**9.36**	**319**	⇑Pn	**Pn**	**13 50 12.1**	**-0.1**
OTUK	comp=Z,4.6nm,0.5s			⇑Sn	**Sn**	**13 51 58.5**	**+1.0**
OTUK	comp=Z,7.2nm,0.7s			⇓Lg	Lg	13 52 50.3	
OTUK	comp=Z,32nm,1.1s **Ortayu**	**9.36**	**319**	P	**Pn**	**13 50 12.1**	**-0.1**
OTUK				S	**Sn**	**13 51 58.5**	**+1.0**
OTUK				pmax	pmax		
KURK	comp=Z,5.0nm,0.5s **Kurchatov**	**9.43**	**349**	⇓Pn	**Pn**	**13 50 14.2**	**+1.1**
KURK	comp=Z,27nm,0.6s			⇓Sn	**Sn**	**13 51 59.9**	**+0.7**
KURK	comp=Z,29nm,1.0s			⇑Lg	Lg	13 52 53.6	
KURK	comp=Z,149nm,1.4s **Kurchatov**	**9.43**	**349**	P	**Pn**	**13 50 14.2**	**+1.1**
KURK				S	**Sn**	**13 51 59.9**	**+0.7**
KURK				pmax	pmax		
KURK	comp=Z,27nm,0.6s			smax	smax		
KURK	comp=N,29nm,1.0s			smax	smax		
KURK	**Kurchatov**	**9.43**	**349**	*e*Pn	**Pn**	**13 50 11.7**	**-1.4**
KURK				Lg	Lg	13 52 48.5	
CHCP	**Chirah Chowk**	**10.18**	**222**	P	**Pn**	**13 50 26.3**	**+2.8**
CEP	**Cherat**	**10.78**	**228**	P	**Pn**	**13 50 32.9**	**+1.1**
CEP				S	**Sn**	**13 52 30.0**	**-2.5**
THW	**Thamme Wali**	**11.65**	**225**	P	**Pn**	**13 50 42.1**	**-1.5**
ZALV	**Zalesovo Beam**	**12.66**	**9**	Pn	**Pn**	**13 50 55.2**	**-2.1**
NVS	comp=N,0.5nm,0.3s,baz=184,slow=14,SNR=4.1 **Novosibirsk**	**13.40**	**4**	*e*P	**Pn**	**13 51 09.8**	**+2.4**
NVS				*e*		13 53 30.8	
BVA0	**Borovoye Array**	**13.76**	**331**	Pn	**Pn**	**13 51 12.4**	**+0.2**
BVAR	comp=N,2.3nm,0.7s,baz=142,slow=12,SNR=6.3 **Borovoye Array**	**13.76**	**331**	Pn	Pn	13 51 04.6	-7.6
BVAR	comp=N,0.1nm,0.3s,baz=139,slow=8.5,SNR=2.7			Lg	Lg	13 55 06.1	
BRVK	comp=N,0.2nm,0.3s,baz=132,slow=30,SNR=4.0 **Borovoye**	**13.82**	**331**	P	**Pn**	**13 51 12.9**	**-0.2**
BRVK				pmax	pmax		
BRVK	comp=Z,4.0nm,0.8s **Borovoye**	**13.82**	**331**	Pn	**Pn**	**13 51 12.9**	**-0.2**
AB31	comp=Z,4.3nm,0.8s **Akbulak array**	**16.97**	**304**	Pn	**Pn**	**13 51 54.9**	**+0.3**
AB31	comp=Z,0.7nm,0.5s,baz=118,slow=10,SNR=17 **Akbulak array**	**16.97**	**304**	P	**Pn**	**13 51 54.9**	**+0.3**
ABKAR	**Akbulak array**	**16.97**	**304**	*e*Pn	**Pn**	**13 51 50.1**	**-4.5**
AKTO	comp=Z,1.8nm,0.6s **Aktyubinsk**	**18.54**	**307**	P	**P**	**13 52 09.7**	**-4.2**
SONM	comp=Z,0.1nm,0.3s,baz=91,slow=12,SNR=4.1 **Songino Array**	**18.77**	**62**	P	**Pn**	**13 52 17.9**	**+0.9**
ARU	comp=Z,0.3nm,0.3s,baz=261,slow=11,SNR=2.5 **Arti**	**21.06**	**323**	P	**P**	**13 52 39.6**	**-1.7**
ARU	comp=Z,4.2nm,0.5s,baz=108,slow=3.3,SNR=4.8 **Arti**	**21.06**	**323**	*e*P	**P**	**13 52 39.6**	**-1.7**
CMAR	comp=Z,4.5nm,0.6s **Chiang Mai Arr**	**27.39**	**142**	P	**P**	**13 53 44.3**	**+1.4**
BRTR	comp=Z,0.7nm,0.7s,baz=320,slow=9.4,SNR=5.5 **Keskin Array B**	**36.01**	**283**	P	**P**	**13 54 57.9**	**-0.7**
FINES	comp=Z,0.6nm,0.4s,baz=103,slow=8.1,SNR=4.8 **FINESS Array B**	**38.39**	**320**	P	**P**	**13 55 16.4**	**-2.0**
ARCES	comp=Z,0.4nm,0.4s,baz=81,slow=9.0,SNR=3.8 **ARCESS Array B**	**40.03**	**333**	P	**P**	**13 55 30.3**	**-1.7**
NB2	comp=Z,2.9nm,0.7s,baz=92,slow=8.2,SNR=18 **NORSAR Subarra**	**45.57**	**320**	P	**P**	**13 56 15.9**	**-1.2**
NOA	comp=Z,1.1nm,0.4s,baz=83,slow=8.6 **NORSAR Array B**	**45.57**	**320**	P	**P**	**13 56 15.7**	**-1.4**
JMIC	comp=Z,0.9nm,0.4s,baz=68,slow=7.6,SNR=7.2 **Jan Mayen**	**51.42**	**335**	LR	LR	14 19 40.3	
ILAR	comp=Z,210nm,19.7s,baz=78,slow=37 **Eielson Array**	**67.51**	**20**	P	**P**	**13 58 51.2**	**-1.9**
TORD	comp=Z,0.2nm,0.7s,baz=321,slow=6.9,SNR=3.3 **Torodi Ar. Bea**	**73.81**	**273**	P	**P**	**13 59 30.1**	**-2.1**
YKA	comp=Z,0.2nm,0.5s,baz=339,slow=6.5,SNR=4.1 **Yellowknife Ar**	**75.55**	**8**	P	**P**	**13 59 41.0**	**-0.5**
WRA	comp=Z,0.2nm,0.5s,baz=339,slow=5.4,SNR=7.6 **Warramunga Arr**	**78.29**	**130**	P	**P**	**13 59 59.9**	**+2.4**
ASAR	comp=Z,0.4nm,0.5s,baz=329,slow=5.4,SNR=7.6 **Alice Springs**	**80.99**	**133**	P	**P**	**14 00 14.6**	**+2.4**
	comp=Z,0.3nm,0.4s,baz=327,slow=5.4,SNR=8.0						

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*IDC **11** 13:48:05.4±1.8, 20°.29S×168°.40E, h0km, mb3.9/5, mb1 4.2/6, mb1mx3.8/36, mbtmp3.9/6, ML3.3/1, Error ellipse: s-maj=67.0km s-min=27.6km az=144.0*
*NEIC **11** 13:48:07.0±1.0, 20°.40S×168°.40E, h10km, mb4.3/1, Error ellipse: s-maj=28.2km s-min=18.1km az=139.0*
*ISCJB **11** 13:48:08.1±1.1, 20°.4S±0°.2×168°.3E±0°.2, h26km, mb3.8/6, Error ellipse: s-maj=31.4km s-min=12.1km az=41.9*

ISC 11 13:48:09.5±1.2, 20°.5S±0°.2×168°.4E±0°.2, h26km, n8, σ1°05/9, mb4.0/6, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.41**	**228**	Pn	**Pn**	**13 48 46.6**	**-0.8**
DZM	6.7nm,0.3s,baz=112,slow=13,SNR=7.7			Sn	**Sn**	**13 49 15.8**	**-0.3**
STKA	48nm,0.3s,baz=302,slow=21,SNR=6.5 **Stephens Creek**	**26.51**	**239**	P	**P**	**13 53 47.0**	**+1.9**
WRA	1.4nm,0.9s,baz=104,slow=6.6,SNR=3.1 **Warramunga Arr**	**31.91**	**265**	P	**P**	**13 54 32.8**	**-0.4**
ASAR	0.3nm,0.6s,baz=90,slow=8.3,SNR=2.9 **Alice Springs**	**32.05**	**258**	P	**P**	**13 54 34.0**	**-0.5**
QSPA	1.4nm,0.7s,baz=86,slow=8.7,SNR=11 **South Pole Qui**	**69.61**	**180**	*e*P	**P**	**13 59 17.0**	**+0.6**
CMAR	**Chiang Mai Arr**	**78.26**	**295**	P	**P**	**14 00 08.2**	**+0.7**
CHTO	1.1nm,0.8s,baz=129,slow=4.2,SNR=6.8 **Chiang Mai**	**78.42**	**295**	*e*P	**P**	**14 00 08.8**	**+0.3**
NVAR	2.5nm,0.8s **Mina Array Bea**	**90.22**	**49**	P	**P**	**14 01 07.2**	**-1.0**
	1.2nm,0.9s,baz=224,slow=9.0,SNR=7.3						

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*IDC **11** 13:48:25.4±1.7, 20°.61S×168°.39E, h0km, mb4.2/8, mb1 4.4/9, mb1mx4.1/37, mbtmp4.3/9, ML4.0/1, Error ellipse: s-maj=47.1km s-min=23.2km az=143.0*
*NEIC **11** 13:48:27.0±1.0, 20°.64S×168°.41E, h10km, mb4.6/3, Error ellipse: s-maj=21.5km s-min=17.0km az=156.0*
*ISCJB **11** 13:48:27.9±1.0, 20°.6S±0°.1×168°.3E±0°.1, h26km, mb4.3/10, Error ellipse: s-maj=23.7km s-min=11.7km az=43.0*

ISC 11 13:48:29.5±1.2, 20°.6S±0°.2×168°.4E±0°.2, h26km, n13, σ1°02/14, mb4.4/10, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.29**	**231**	Pn	**Pn**	**13 49 05.1**	**-0.7**
DZM	36nm,0.3s,baz=119,slow=12,SNR=29			Sn	**Sn**	**13 49 33.6**	**+0.3**
CTA	90nm,0.3s,baz=143,slow=20,SNR=9.4 **Charters Tower**	**20.75**	**268**	P	**P**	**13 53 09.8**	**+1.3**
CTAO	5.2nm,0.9s,baz=84,slow=13,SNR=5.4 **Charters Tower**	**20.75**	**268**	*e*P	**P**	**13 53 10.1**	**+1.6**
PMG	**Port Moresby**	**23.31**	**295**	P	**P**	**13 53 35.5**	**-0.2**
STKA	8.1nm,0.8s,baz=66,slow=13,SNR=3.4 **Stephens Creek**	**26.43**	**239**	P	**P**	**13 54 04.5**	**+0.2**
WRAB	6.5nm,0.7s,baz=68,slow=9.5,SNR=15 **Tennant Creek**	**31.89**	**265**	*e*P	**P**	**13 54 51.8**	**-1.2**
WRA	6.9nm,1.2s **Warramunga Arr**	**31.90**	**265**	P	**P**	**13 54 51.4**	**-1.7**
ASAR	1.5nm,0.8s,baz=90,slow=8.5,SNR=7.7 **Alice Springs**	**32.03**	**258**	P	**P**	**13 54 53.8**	**-0.4**
FITZ	10nm,0.7s,baz=80,slow=8.5,SNR=38 **Fitzroy Crossi**	**40.32**	**266**	P	**P**	**13 56 04.4**	**-0.7**
QSPA	3.9nm,0.8s,baz=97,slow=8.3,SNR=6.8 **South Pole Qui**	**69.42**	**180**	*e*P	**P**	**13 59 35.8**	**+0.6**
CMAR	9.5nm,0.8s **Chiang Mai Arr**	**78.35**	**295**	P	**P**	**14 00 29.0**	**+0.9**
CHTO	2.0nm,0.8s,baz=135,slow=4.1,SNR=8.2 **Chiang Mai**	**78.50**	**295**	*e*P	**P**	**14 00 29.2**	**+0.3**
NVAR	4.6nm,1.0s **Mina Array Bea**	**90.33**	**49**	P	**P**	**14 01 28.3**	**-0.4**
	0.2nm,0.4s,baz=226,slow=7.4,SNR=2.7						

IDC 11 14:06:00.9±339.0, 56°.99N×29°.77E, h0km, Error ellipse: s-maj=141.1km s-min=89.1km az=99.0, Baltic States-Belarus-Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I43RU	**DUBNA INFRASON**	**4.10**	**91**	*i*		14 31 21.1	
I26DE	baz=277,slow=295,SNR=1.1 **FREYUNG INFRAS**	**12.63**	**237**	*i*		15 22 00.0	
I31KZ	baz=44,slow=328,SNR=1.3 **AKTYUBINSK INF**	**17.90**	**100**	*i*		15 58 30.0	
I48TN	baz=300,slow=329,SNR=0.2 **KESRA INFRASON**	**25.27**	**222**	*i*		16 42 00.0	
	baz=25,slow=318,SNR=0.4						

IDC 11 14:08:06.9±2.0, 20°.27S×168°.18E, h0km, mb3.6/3, mb1 3.9/4, mb1mx3.6/41, mbtmp3.6/4, ML3.3/1, MS3.3/2, Ms1 3.3/2, ms1mx2.8/35, Error ellipse: s-maj=59.3km s-min=28.2km az=139.0, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.42**	**222**	Pn	Pn	14 08 48.1	+0.4
DZM	6.7nm,0.3s,baz=43,slow=22,SNR=13			Sn	Sn	14 09 17.3	-0.8
DZM	13nm,0.3s,baz=356,slow=23,SNR=16			LR	LR	14 09 46.0	
WRA	comp=Z,194nm,19.5s,baz=280,slow=41 **War

Ms1 3.8/11, ms1mx3.3/57, Error ellipse: s-maj=13.4km s-min=11.3km az=120.0
*ISCJB **11** 14:17:06.4±0.8, 36°.37N±0°.02×142°.57E±0°.02, h9km±5km, mb4.6/132, MS4.1/25, Error ellipse: s-maj=4.2km s-min=2.8km az=166.2*
*NEIC **11** 14:17:07.8±2.0, 36°.29N×142°.59E, h10km±12km, mb4.8/74, Error ellipse: s-maj=4.8km s-min=3.6km az=136.0*
*JMA **11** 14:17:08.4±0.2, 36°.33N×142°.60E, h77km, M4.5*
*MOS **11** 14:17:11.4±0.9, 36°.66N×142°.55E, h33km, mb4.9/61, Error ellipse: s-maj=7.2km s-min=4.7km az=109.4*
ISC 11 14:17:09.8±0.5, 36°.32N±0°.04×142°.62E±0°.04, h25km±2km, n300, σ1§81/338, mb4.7/133, MS4.2/26, 13C-4D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase Op	ID ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.56**	**247**	P	**Pn**	**14 17 34.6**	**-1.2**
CHOJ				S	**Sn**	**14 17 54.8**	**-0.4**
ONAJ	**Iwakimizuishiy**	**1.66**	**299**	P	**Pn**	**14 17 35.7**	**-1.6**
ONAJ				*e*S	**Sn**	**14 17 56.5**	**-1.4**
JHO	**Hitachi**	**1.68**	**281**	P	**Pn**	**14 17 36.0**	**-1.6**
JHO				S	**Sn**	**14 17 56.3**	**-2.0**
JFK	**Kawauchi**	**1.75**	**307**	P	**Pn**	**14 17 36.7**	**-1.8**
JFK				*e*S	**Sn**	**14 17 58.1**	**-1.9**
BSO1	**Boso 1**	**2.14**	**219**	P	**Pn**	**14 17 42.5**	**-0.8**
BSO1				*e*S	**Sn**	**14 18 08.4**	**-0.4**
JFT	**Otama**	**2.19**	**304**	P	**Pn**	**14 17 44.1**	**-0.4**
JFT				*e*S	**Sn**	**14 18 10.2**	**-0.6**
JAG	**Ashikaga**	**2.56**	**273**	P	**Pn**	**14 17 48.4**	**-1.3**
JAG				S	**Sn**	**14 18 17.9**	**-2.1**
JMK	**Ichinoseki**	**2.85**	**337**	P	**Pn**	**14 17 52.6**	**-1.1**
JRY	**Ryogami san**	**3.03**	**265**	P	**Pn**	**14 17 54.8**	**-1.3**
JOD2	**Odawara 2**	**3.06**	**251**	P	**Pn**	**14 17 55.9**	**-0.7**
JOD2				*e*S	**Sn**	**14 18 31.0**	**-1.4**
JYK	**Kaneyama**	**3.15**	**326**	P	**Pn**	**14 17 56.8**	**-1.0**
JOM	**Ohasama**	**3.32**	**342**	P	**Pn**	**14 17 59.0**	**-1.1**
JOM				S	**Sn**	**14 18 37.1**	**-1.6**
JYN	**Shimob**	**3.41**	**257**	P	**Pn**	**14 18 01.0**	**-0.4**
MJAR	**Matsushiro Arr**	**3.57**	**275**	Pn	**Pn**	**14 18 03.2**	**-0.3**
	11nm,0.3s,baz=105,slow=9.0,SNR=115						
MJAR				Sn	**Sn**	**14 18 47.2**	**+2.4**
	16nm,0.3s,baz=84,slow=16,SNR=4.9						
MAJO	**Matsushiro**	**3.57**	**275**	*c i*P	**Pn**	**14 18 03.5**	**0.0**
MAJO	**Matsushiro**	**3.57**	**275**	*e*Pn	**Pn**	**14 18 03.3**	**-0.2**
MAT	**Matsushiro**	**3.57**	**275**	P	**Pn**	**14 18 03.2**	**-0.3**
MAT				S	**Sn**	**14 18 46.4**	**+1.5**
MAT	**Matsushiro**	**3.57**	**275**	P	**Pn**	**14 18 03.7**	**+0.2**
MJB9	**Matsu-Tunnel**	**3.57**	**275**	*e*Pn	**Pn**	**14 18 03.4**	**-0.2**
JSD	**Sado**	**3.88**	**297**	P	**Pn**	**14 18 07.0**	**-0.8**
JHJ2	**Mitsune**	**3.95**	**217**	P	**Pn**	**14 18 07.6**	**-1.1**
JHJ2				S	**Sn**	**14 18 49.6**	**-4.6**
JHJ2	**Mitsune**	**3.95**	**217**	*e*Pn	**Pn**	**14 18 06.9**	**-1.8**
JHJ2				*e*Sn	**Sn**	**14 18 50.3**	**-3.9**
JHJ	**Hachijo jima 2**	**3.96**	**217**	Pn	**Pn**	**14 18 06.8**	**-2.1**
	68nm,0.3s,baz=282,slow=23,SNR=22						
JHJ				Sn	**Sn**	**14 18 49.5**	**-5.0**
	263nm,0.3s,baz=43,slow=20,SNR=5.3						
JANG	**Nango**	**4.14**	**348**	P	**Pn**	**14 18 09.5**	**-1.8**
INU	**Inuyama**	**4.66**	**260**	*e*Pn	**Pn**	**14 18 19.0**	**+0.6**
ERM	**Erimo**	**5.70**	**4**	*c i*P	**Pn**	**14 18 30.7**	**-2.1**
ERM				pmax	pmax		
	comp=Z,84nm,1.2s						
ERM	**Erimo**	**5.70**	**4**	*e*Pn	**Pn**	**14 18 30.3**	**-2.5**
ASAJ	**Asahikawa**	**7.79**	**360**	Pn	**Pn**	**14 19 00.1**	**-1.3**
	comp=Z,6.6nm,0.3s,baz=211,slow=10,SNR=48						
ASAJ				Sn	**Sn**	**14 20 24.9**	**-3.8**
	comp=Z,2.8nm,0.3s,baz=50,slow=26,SNR=9.2						
ASAJ	**Asahikawa**	**7.79**	**360**	*e*Pn	**Pn**	**14 18 59.8**	**-1.7**
ASAJ				Sn	**Sn**	**14 20 24.9**	**-3.8**
YUK	**Yuzh-Kuril'sk**	**8.09**	**17**	*e*P	**Pn**	**14 19 04.0**	**-1.6**
YUK				*e*S	**Sn**	**14 20 27.3**	**-8.9**
YUK				pmax	pmax		
	comp=N,54nm,0.4s						
YUK				pmax	pmax		
	comp=E,22nm,0.4s						
YUK				pmax	pmax		
	comp=Z,44nm,0.4s						
YUK				MLR	MLR		
	comp=Z,2μm,11.0s						
YUK				MLR	MLR		
	comp=N,2μm,13.0s						
YUK				MLR	MLR		
	comp=E,1μm,12.0s						
SHO	**Shikotan**	**8.20**	**22**	*e*P	**Pn**	**14 19 04.7**	**-2.3**
SHO				*e*S	Sn	14 20 28.2	-11
SHO				pmax	pmax		
	comp=Z,38nm,0.7s						
SHO				pmax	pmax		
	comp=N,28nm,0.6s						
SHO				pmax	pmax		
	comp=E,14nm,0.9s						
CBIJ	**Chichi jima**	**9.21**	**182**	*e*Pn	Pn	14 19 15.8	-5.2
CBIJ				*e*Sn	Sn	14 20 53.9	-10
JCJ	**Chichijima**	**9.21**	**182**	Pn	**Pn**	**14 19 16.4**	**-4.6**
	comp=E,20nm,0.3s,baz=279,slow=23,SNR=8.8						
JCJ				Sn	Sn	14 20 52.8	-11
	comp=E,18nm,0.3s,baz=42,slow=23,SNR=4.5						
KUR	**Kuril'sk**	**9.75**	**22**	*e*P	**Pn**	**14 19 27.4**	**-0.9**
KUR				*e*S	Sn	14 21 07.0	-10
KUR				pmax	pmax		
	comp=E,15nm,0.9s						
KUR				pmax	pmax		
	comp=Z,37nm,0.9s						
KUR				pmax	pmax		
	comp=N,18nm,1.0s						
KUR				MLR	MLR		
	comp=Z,1μm,12.0s						
KUR				MLR	MLR		
	comp=N,2μm,13.0s						
JNU	**Nakatsue**	**10.18**	**255**	Pn	**Pn**	**14 19 35.8**	**+1.5**
	comp=N,0.4nm,0.3s,baz=42,slow=8.7,SNR=5.8						
YSS	**Yuzh-Sakhalins**	**10.62**	**0**	‖*e*P	**Pn**	**14 19 38.9**	**-1.4**
YSS				*e*S	**Sn**	**14 21 33.1**	**-5.2**
YSS				pmax	pmax		
	comp=Z,40nm,1.0s						
YSS				MLR	MLR		
	comp=Z,1μm,15.0s						
YSS				MLR	MLR		
	comp=N,900nm,13.0s						
YSS				MLR	MLR		
	comp=E,600nm,10.0s						
VLA	**Vladivostok**	**10.70**	**313**	*c i*P	**Pn**	**14 19 42.1**	**+0.9**
USRK	**Ussuriysk Ar.**	**11.30**	**317**	Pn	**Pn**	**14 19 50.5**	**+0.9**
	comp=E,0.3nm,0.3s,baz=122,slow=14,SNR=10						
USRK				LR	LR	14 23 36.0	
	comp=E,299nm,19.5s,baz=117,slow=34						
KSRS	**Korea Array**	**11.83**	**280**	Pn	**Pn**	**14 19 59.5**	**+2.7**
	comp=E,0.4nm,0.3s,baz=96,slow=13,SNR=24						
KS01	**Wonju Array Si**	**11.85**	**280**	*e*Pn	**Pn**	**14 19 54.7**	**-2.4**
KS15	**Wonju Array Si**	**11.86**	**280**	*e*Pn	**Pn**	**14 19 55.0**	**-2.2**
KSAR	**Wonju Array Be**	**11.86**	**280**	P	**Pn**	**14 19 59.5**	**+2.3**
KSAR	**Wonju Array Be**	**11.86**	**280**	Pn	**Pn**	**14 19 59.5**	**+2.3**
TJN	**Taejon**	**12.31**	**275**	*c i*P	**Pn**	**14 20 03.7**	**+0.4**
MDJ	**Mudanjiang**	**12.91**	**314**	P	**Pn**	**14 20 11.2**	**-0.4**
MDJ				S	**Sn**	**14 22 33.8**	**-0.6**
MDJ				PcP	**PcP**	**14 25 45.0**	**0.0**
MDJ				ScP	**ScP**	**14 29 15.6**	**-0.8**
MDJ				PcS	**PcS**	**14 29 19.5**	**+0.3**
MDJ	**Mudanjiang**	**12.91**	**314**	ScS	ScS	14 32 52.6	-0.1
MDJ				pmax	pmax		
	comp=Z,6.0nm,0.9s						
MDJ				pmax	pmax		
	comp=Z,250nm,8.4s						
MDJ				LR	LR		
	comp=N,790nm,12.6s						
MDJ				LR	LR		
	comp=E,840nm,11.5s						
MDJ				LR	LR		
	comp=Z,670nm,10.3s						
HABR	**Khabarovsk**	**13.36**	**338**	*e*P	**Pn**	**14 20 16.3**	**-1.4**
HABR				*e*S	**Sn**	**14 22 44.2**	**-1.0**
HABR				pmax	pmax		
	comp=E,16nm,1.8s						
HABR				pmax	pmax		
	comp=N,9.0nm,1.8s						
HABR				pmax	pmax		
	comp=Z,31nm,1.8s						
HABR				MLR	MLR		
	comp=Z,570nm,13.0s						
TYV	**Tymovskoe**	**14.54**	**0**	*e*P	**Pn**	**14 20 31.5**	**-2.2**
TYV				*e*		14 23 14.0	
TYV				pmax	pmax		
	comp=Z,22nm,1.0s						
TYV				MLR	MLR		
	comp=Z,1μm,12.0s						
CN2	**Changchun**	**15.11**	**305**	*e*P	P	14 20 54.8	+8.4
CN2				*e*pP	sP	14 21 03.7	+7.1
CN2				*e*S	**S**	**14 23 40.2**	**-4.5**
CN2				pmax	pmax		
	comp=Z,10.0nm,1.2s						
CN2				LR	LR		
	comp=N,1μm,14.0s						
CN2				LR	LR		
	comp=E,900nm,14.0s						
CN2				LR	LR		
	comp=Z,800nm,14.0s						
KLR	**Kul'dur**	**15.15**	**332**	Pn	**Pn**	**14 20 42.1**	**+0.1**
	comp=Z,0.2nm,0.3s,baz=150,slow=12,SNR=5.4						
KLR				LR	LR	14 26 55.9	
	comp=Z,268nm,20.1s,baz=136,slow=39						
DL2	**Dalian**	**16.83**	**285**	P	**Pn**	**14 21 02.7**	**-0.9**
DL2				*e*S	**Sn**	**14 24 06.9**	**-3.0**
DL2				pmax	pmax		
	comp=Z,17nm,0.7s						
DL2				pmax	pmax		
	comp=Z,310nm,9.4s						
DL2				LR	LR		
	comp=N,630nm,13.4s						
DL2				LR	LR		
	comp=E,1μm,13.0s						
DL2				LR	LR		
	comp=Z,1μm,13.2s						
NKL	**Nikolayevsk**	**16.88**	**356**	*e*P	**Pn**	**14 21 03.5**	**-0.6**
NKL				pmax	pmax		
	comp=N,23nm,1.6s						
NKL				pmax	pmax		
	comp=Z,50nm,1.6s						
NKL				MLR	MLR		
	comp=E,400nm,14.0s						
NKL				MLR	MLR		
	comp=N,700nm,18.0s						
NKL				MLR	MLR		
	comp=Z,1μm,18.0s						
PEA0	**Petropavlovsk-**	**19.84**	**28**	*e*P	**P**	**14 21 39.0**	**+0.4**
PETK	**Petropavlovsk-**	**19.84**	**28**	P	**P**	**14 21 38.1**	**-0.5**
	comp=Z,0.1nm,0.3s,baz=194,slow=9.2,SNR=4.0						
PET	**Petropavlovsk**	**20.14**	**29**	*e*P	**P**	**14 21 39.3**	**-2.5**
PET				*e*S	**S**	**14 25 21.0**	**-5.6**
PET				pmax	pmax		
	comp=Z,33nm,1.2s						
PET				MLR	MLR		
	comp=Z,300nm,17.0s						
TIA	**Tai'an**	**20.55**	**277**	*e*P	**P**	**14 21 44.3**	**-2.1**
TIA				S	**S**	**14 25 35.4**	**+0.4**
TIA				pmax	pmax		
	comp=Z,10.0nm,1.4s						
TIA				LR	LR		
	comp=N,400nm,13.0s						
TIA				LR	LR		
	comp=E,730nm,15.0s						
TIA				LR	LR		
	comp=Z,670nm,14.0s						
BJI	**Beijing**	**21.09**	**288**	P	**P**	**14 21 50.7**	**-1.5**
BJI				pP	**pP**	**14 21 58.0**	**-1.2**
BJI				sP	**sP**	**14 22 01.4**	**-1.1**
BJI				S	**S**	**14 25 43.6**	**-2.0**
BJI				sS	**sS**	**14 25 55.5**	**-1.3**
BJI				pmax	pmax		
	comp=Z,16nm,1.2s						
BJI				pmax	pmax		
	comp=Z,110nm,3.2s						
BJI				LR	LR		
	comp=N,290nm,15.8s						
BJI				LR	LR		
	comp=E,540nm,13.3s						
BJI				LR	LR		
	comp=Z,220nm,14.8s						
HIA	**Hailar**	**21.10**	**315**	*e*P	**P**	**14 21 50.3**	**-2.0**
HIA				pmax	pmax		
	comp=Z,24nm,1.1s						
HIA	**Hailar**	**21.10**	**315**	*e*P	**P**	**14 21 50.2**	**-2.0**
	comp=Z,24nm,1.1s						
GUMO	**Guam**	**22.73**	**174**	LR	LR	14 32 38.7	
	comp=Z,67nm,19.2s,baz=354,slow=41						
MA2	**Magadan**	**23.86**	**10**	LR	LR	14 32 25.4	
	comp=Z,159nm,20.5s,baz=228,slow=38						
WHN	**Wuhan**	**24.24**	**264**	‖P	**P**	**14 22 24.5**	**-0.2**
WHN				*e*S	**S**	**14 26 32.2**	**-10**
WHN				LR	LR		
	comp=N,1μm,13.2s						
WHN				LR	LR		
	comp=E,3μm,17.0s						
WHN				LR	LR		
	comp=Z,2μm,13.0s						
HHC	**Hu-ho-hao-te**	**24.62**	**290**	*e*P	**P**	**14 22 28.4**	**+0.2**
HHC				sP	sP	14 22 41.1	+2.2
HHC				PP	**PnPn**	**14 23 09.8**	**+10**
HHC				S	**S**	**14 26 38.9**	**-9.2**
HHC				sS	sS	14 26 57.2	-3.2
HHC				pmax	pmax		
	comp=Z,30nm,0.8s						
HHC				pmax	pmax		
	comp=Z,230nm,4.3s						
HHC				LR	LR		
	comp=N,590nm,12.5s						
HHC				LR	LR		
	comp=E,460nm,11.8s						
HHC				LR	LR		
	comp=Z,400nm,11.7s						
CIT	**Chita**	**25.86**	**317**	*e*P	**P**	**14 22 40.5**	**+1.2**
CIT				*e*		14 22 51.4	
CIT				pmax	pmax		
	comp=Z,168nm,2.0s						
H11N2	**WAKE ISLAND Hy**	**26.95**	**121**	T	T	14 50 55.1	
	baz=313,slow=75,SNR=12						
H11N1	**WAKE ISLAND Hy**	**26.95**	**121**	T	T	14 50 55.9	
	baz=313,slow=75,SNR=11						
H11N3	**WAKE ISLAND Hy**	**26.96**	**121**	T	T	14 50 57.2	
	baz=313,slow=75,SNR=10						
YAK	**Yakutsk**	**26.98**	**347**	P	**P**	**14 22 48.7**	**-0.4**
	comp=Z,8.1nm,0.3s,baz=132,slow=2.1,SNR=6.7						
YAK	**Yakutsk**	**26.98**	**347**	*e*P	**P**	**14 22 49.3**	**+0.2**
YAK				pmax	pmax		
	comp=Z,35nm,1.3s						
YAK				pmax	pmax		
	comp=E,10.0nm,1.5s						
YAK				pmax	pmax		
	comp=N,22nm,1.3s						
YAK	**Yakutsk**	**26.98**	**347**	*e*P	**P**	**14 22 49.6**	**+0.5**
	comp=N,38nm,0.9s						
SEY	**Seymchan**	**27.31**	**10**	P	**P**	**14 22 52.9**	**+0.8**
	comp=N,6.6nm,1.0s,baz=177,slow=9.0,SNR=8.8						
SEY	**Seymchan**	**27.31**	**10**	P	**P**	**14 22 52.9**	**+0.8**
SEY				pmax	pmax		
	comp=Z,5.0nm,0.9s						
XAN	**Xi'an**	**27.56**	**275**	P	**P**	**14 22 54.2**	**-0.6**
XAN				pP	sP	14 23 03.8	-1.6
XAN				PP	**PnPn**	**14 23 40.9**	**+0.7**
XAN				S	**S**	**14 27 29.4**	**-5.2**
XAN				SS	**SnSn**	**14 28 45.2**	**-0.9**
XAN				pmax	pmax		
	comp=Z,20nm,1.3s						
XAN				pmax	pmax		
	comp=Z,130nm,9.6s						
XAN				LR	LR		
	comp=N,270nm,17.2s						
XAN				LR	LR		
	comp=E,360nm,13.5s						
XAN				LR	LR		
	comp=Z,440nm,13.8s						
H11S1	**WAKE ISLAND Hy**	**27.66**	**123**	T	T	14 51 51.9	
	baz=315,slow=76,SNR=14						
H11S3	**WAKE ISLAND Hy**	**27.66**	**124**	T	T	14 51 58.1	
	baz=315,slow=76,SNR=12						
H11S2	**WAKE ISLAND Hy**	**27.67**	**124**	T	T	14 51 52.7	
	baz=315,slow=76,SNR=11						
ENH	**Enshi**	**28.26**	**267**	*e*P	**P**	**14 23 01.1**	**+0.2**
	comp=Z,28nm,0.9s						
ULN	**Ulaanbaatar**	**28.56**	**305**	*c i*P	**P**	**14 23 03.6**	**0.0**
ULN				pmax	pmax		
	comp=Z,48nm,2.5s						
ULN	**Ulaanbaatar**	**28.56**	**305**	*e*P	**P**	**14 23 04.2**	**+0.5**
	comp=Z,20nm,1.1s						
BOD	**Bodaibo**	**28.65**	**328**	*e*P	**P**	**14 23 07.6**	**+3.5**
BOD				pmax	pmax		
	comp=Z,30nm,1.2s						
SONA1	**Songino Array**	**28.99**	**305**	*e*P	**P**	**14 23 07.5**	**+0.1**
SONM	**Songino Array**	**28.99**	**305**	P	**P**	**14 23 08.8**	**+1.3**
	comp=Z,7.2nm,0.9s,baz=109,slow=8.5,SNR=25						
LZH	**Lanzhou**	**31.15**	**281**	*e*P	**P**	**14 23 28.2**	**+1.5**
LZH				pP	sP	14 23 37.3	-0.1
LZH				sP	pP	14 23 43.1	+8.8
LZH				PP	**PnPn**	**14 24 29.5**	**+0.9**
LZH				*e*S	**S**	**14 28 32.0**	**+0.8**
LZH				sS	sS	14 28 48.7	+5.0
LZH				SS	**SnSn**	**14 30 10.0**	**-3.7**
LZH				pmax	pmax		
	comp=Z,26nm,1.4s						
LZH				pmax	pmax		
	comp=Z,110nm,6.6s						
LZH				LR	LR		
	comp=N,1μm,13.8s						
LZH				LR	LR		
	comp=E,2μm,13.4s						
LZH				LR	LR		
	comp=Z,2μm,14.7s						
IRK	**Irkutsk**	**31.30**	**313**	*e*P	**P**	**14 23 28.6**	**+1.0**
IRK				pmax	pmax		
	comp=Z,30nm,3.0s						
ZAK	**Zakamensk**	**31.47**	**309**	*e*P	**P**	**14 23 29.9**	**+0.6**
ZAK				pmax	pmax		
	comp=Z,11nm,1.3s						
TLY	**Talaya**	**31.53**	**312**	P	**P**	**14 23 30.6**	**+0.9**
	comp=Z,2.9nm,0.7s,baz=146,slow=3.6,SNR=1.6						
TLY	**Talaya**	**31.53**	**312**	*e*P	**P**	**14 23 30.3**	**+0.6**
TLY				*e*S	**S**	**14 28 35.3**	**-1.2**
TLY				pmax	pmax		
	comp=Z,7.0nm,0.9s						
TLY				MLR	MLR		
	comp=Z,400nm,15.0s						
GYA	**Guiyang**	**32.08**	**262⇑**	*i*P	**P**	**14 23 33.7**	**-1.2**
GYA				pP	sP	14 23 44.8	-0.8
GYA				PP	**PnPn**	**14 24 41.0**	**+0.3**
GYA				PcP	**PcP**	**14 26 24.3**	**+0.3**
GYA				S	**S**	**14 28 42.6**	**-3.1**
GYA				sS	sS	14 29 00.2	+2.0
GYA				ScP	**ScP**	**14 30 03.9**	**-1.9**
GYA				SS	**SnSn**	**14 30 35.0**	**-1.3**
GYA	**Guiyang**	**32.08**	**262**	ScS	ScS	14 34 01.5	-3.3
GYA				pmax	pmax		
	comp=Z,20nm,1.0s						
GYA				pmax	pmax		
	comp=Z,100nm,7.5s						
GYA				LR	LR		
	comp=N,480nm,16.8s						
GYA				LR	LR		
	comp=E,450nm,17.0s						
GYA				LR	LR		
	comp=Z,470nm,17.6s						
CD2	**Chengdu**	**32.66**	**272**	P	**P**	**14 23 38.2**	**-1.7**
CD2				pmax	pmax		
	comp=Z,5.0nm,0.6s						
MOY	**Mondy**	**33.14**	**311**	*e*P	**P**	**14 23 45.2**	**+1.3**
MOY				pmax	pmax		
	comp=Z,37nm,3.4s						
QIZ	**Qiongzhong**	**33.54**	**248**	P	**P**	**14 23 48.2**	**+0.6**
QIZ				S	**S**	**14 29 07.2**	**-1.1**
QIZ				LR	LR		
	comp=N,160nm,13.2s						
QIZ				LR	LR		
	comp=E,95nm,13.8s						
GTA	**Gaotai**	**33.71**	**288**	*e*P	**P**	**14 23 50.0**	**+1.0**
GTA				pP	sP	14 23 59.0	-0.7
GTA				sP	pP	14 24 03.5	+6.9
GTA				S	**S**	**14 29 12.7**	**+1.9**
GTA				sS	sS	14 29 28.4	+5.1
GTA				SS	**SnSn**	**14 31 20.5**	**+4.9**
GTA				pmax	pmax		
	comp=Z,12nm,1.5s						
GTA				pmax	pmax		
	comp=Z,96nm,4.3s						
GTA				LR	LR		
	comp=N,340nm,12.8s						
GTA				LR	LR		
	comp=E,310nm,12.4s						
GTA				LR	LR		
	comp=Z,260nm,13.5s						
BILL	**Bilibino**	**34.44**	**15**	*c i*P	**P**	**14 23 54.8**	**-0.1**
BILL	**Bilibino**	**34.44**	**15**	*e*P	**P**	**14 23 55.0**	**+0.1**
	comp=Z,15nm,1.1s						
KMI	**Kunming**	**35.83**	**263**	P	**P**	**14 24 07.5**	**-0.1**
KMI				pmax	pmax		
	comp=Z,8.0nm,0.6s						
KMI				pmax	pmax		
	comp=Z,76nm,7.1s						
TIXI	**Tiksi**	**36.12**	**353**	P	**P**	**14 24 09.1**	**-0.1**
	comp=Z,0.4nm,0.4s,baz=182,slow=5.6,SNR=4.4						
TIXI	**Tiksi**	**36.12**	**353**	*i* P	**P**	**14 24 09.3**	**+0.1**
TIXI				pmax	pmax		
	comp=Z,2.0nm,1.7s						
TIXI	**Tiksi**	**36.12**	**353**	*e*P	**P**	**14 24 08.7**	**-0.5**
	comp=Z,4.1nm,1.0s						
MYLDM	**Lahad Datu**	**38.09**	**221**	*e*P	**P**	**14 24 27.5**	**+0.9**
	comp=Z,26nm,1.3s						
NONG	**Nongkai**	**39.22**	**253**	P	**P**	**14 24 37.7**	**+1.6**
	comp=Z,54nm,0.9s,comp=Z,5μm						
SKNT	**Sakolnakorn**	**39.22**	**251**	P	**P**	**14 24 38.2**	**+2.1**
	comp=Z,16nm,2.1s						
CRAI	**Chiangrai**	**40.17**	**258**	P	**P**	**14 24 46.5**	**+2.4**
	comp=Z,142nm,1.1s						
LOEI	**Loei**	**40.99**	**254**	P	**P**	**14 24 49.9**	**-0.9**
	comp=Z,40nm,2.0s						
WMQ	**Urumqi**	**42.03**	**298**	P	**P**	**14 25 01.7**	**+2.5**
WMQ				pP	sP	14 25 08.9	-1.1
WMQ				sP	pP	14 25 14.5	+7.6
WMQ				S	**S**	**14 31 16.3**	**-0.4**
WMQ				ScS	**ScS**	**14 34 59.7**	**-0.3**
WMQ				pmax	pmax		
	comp=Z,11nm,1.2s						
WMQ				pmax	pmax		
	comp=Z,37nm,4.8s						
WMQ				LR	LR		
	comp=N,95nm,18.2s						
WMQ				LR	LR		
	comp=E,130nm,13.2s						
WMQ				LR	LR		
	comp=Z,68nm,16.4s						
CHTO	**Chiang Mai**	**42.07**	**257**	*e*P	**P**	**14 24 59.2**	**-0.5**
CHTO				pmax	pmax		
	comp=Z,11nm,1.4s						
CHTO	**Chiang Mai**	**42.07**	**257**	*e*P	**P**	**14 24 59.1**	**-0.5**
	comp=Z,11nm,1.4s						
CMAR	**Chiang Mai Arr**	**42.27**	**257**	P	**P**	**14 25 02.6**	**+1.3**
	comp=Z,1.2nm,0.6s,baz=48,slow=7.7,SNR=7.9						
ZAA0	**Zalesovo Array**	**43.11**	**313**	*e*P	**P**	**14 25 07.4**	**-0.2**
ZALV	**Zalesovo Beam**	**43.11**	**313**	P	**P**	**14 25 07.5**	**-0.2**
	comp=Z,4.2nm,0.9s,baz=94,slow=6.7,SNR=15						
ZALV				PcP	**PcP**	**14 26 57.5**	**+0.4**
	comp=Z,1.2nm,0.5s,baz=97,slow=3.6,SNR=2.2						
ZALV				LR	LR	14 44 20.7	
	comp=Z,162nm,19.5s,baz=70,slow=38						
NVS	**Novosibirsk**	**44.03**	**314**	‖*i*P	**P**	**14 25 16.9**	**+1.8**
NVS				pmax	pmax		
	comp=Z,28nm,2.2s						
NRIK	**Noril'sk**	**44.32**	**335**	P	**P**	**14 25 17.9**	**+0.7**
	comp=Z,0.9nm,0.3s,baz=131,slow=8.7,SNR=2.7						
NRIK				LR	LR	14 46 00.5	
	comp=Z,174nm,19.5s,baz=111,slow=39						
MK01	**Makanchi Array**	**45.32**	**303**	*e*P	**P**	**14 25 25.6**	**+0.1**
MK31	**Makanchi Array**	**45.32**	**303**	*e*P	**P**	**14 25 25.9**	**+0.3**
MK31	**Makanchi Array**	**45.32**	**303**	*e*P	**P**	**14 25 25.9**	**+0.3**
MKAR	**Makanchi Array**	**45.32**	**303**	P	**P**	**14 25 25.7**	**+0.1**
	comp=Z,12nm,1.0s,baz=87,slow=10,SNR=26						
MKAR				LR	LR	14 43 56.5	
	comp=Z,75nm,18.4s,baz=67,slow=36						
MKAR	**Makanchi Array**	**45.32**	**303**	*c i*P	**P**	**14 25 29.6**	**+4.1**
MKAR				pmax	pmax		
	comp=Z,12nm,1.0s						
MAKZ	**Makanchi**	**45.53**	**303**	*e*P	**P**	**14 25 27.8**	**+0.6**
MAKZ				pmax	pmax		
	comp=Z,15nm,1.0s						
MAKZ	**Makanchi**	**45.53**	**303**	*e*P	**P**	**14 25 27.8**	**+0.6**
	comp=Z,15nm,1.0s						
PMG	**Port Moresby**	**45.68**	**174**	P	**P**	**14 25 28.2**	**-0.4**
	comp=Z,11nm,0.8s,baz=2.8,slow=4.7,SNR=3.7						

KURK pmax pmax
comp=Z,13nm,0.9s
KURK Kurchatov 47.14 309 *eP* **P** 14 25 39.2 -0.5
comp=Z,13nm,0.9s
KURBB Kurchatov Arra 47.21 309 P **P** 14 25 40.2 -0.1
comp=Z,7.2nm,0.9s,baz=84,slow=8.3,SNR=34
CAST Castle Rocks 47.27 34 *eP* **P** 14 25 41.8 +1.2
comp=Z,7.1nm,1.2s
KTH Kantishna Hill 47.80 34 *eP* **P** 14 25 45.6 +0.9
comp=Z,20nm,1.4s
MLY Manley 47.94 32 *eP* **P** 14 25 46.9 +1.0
comp=Z,9.5nm,1.1s
PDGK Podgornoye 47.97 299 P **P** 14 25 47.3 +1.0
PDGK pmax pmax
comp=Z,18nm,1.2s
GUN Gumba 48.20 277 *eP* **P** 14 25 49.7 +1.0
COLD Coldfoot 48.30 29 *eP* **P** 14 25 49.7 +1.1
comp=Z,11nm,1.6s
KKN Kakani 48.73 277 *eP* **P** 14 25 53.6 +1.0
MDM Murphy Dome 49.00 32 *eP* **P** 14 25 54.9 +0.9
comp=Z,18nm,1.2s
GKN Gorkha 49.16 278 *eP* **P** 14 25 56.6 +0.8
COLA College 49.16 32 *eP* **P** 14 25 56.2 +1.1
COLA pmax pmax
comp=Z,4.0nm,1.0s
IL1 Eielson Array 49.58 32 *eP* **P** 14 25 58.3 0.0
ILAR Eielson Array 49.58 32 P **P** 14 25 58.6 +0.3
comp=Z,3.5nm,0.9s,baz=265,slow=6.3,SNR=32
ILB Eielson Array 49.58 32 *eP* **P** 14 25 58.4 0.0
COEN Coen 50.01 179 *eP* **P** 14 26 01.7 -0.4
comp=Z,14nm,0.9s
KOLN Koldanda 50.09 278 *eP* **P** 14 26 03.9 +0.9
comp=Z,27nm,1.2s
DIV Divide 50.26 37 *eP* **P** 14 26 04.6 +1.0
comp=Z,14nm,1.0s
PYUN Piuthan 50.43 279 *eP* **P** 14 26 06.7 +1.1
comp=Z,112nm,1.3s
TKM2 Tokmak 2 50.83 299 *eP* **P** 14 26 08.7 +0.3
TKM2 pmax pmax
comp=Z,18nm,1.0s
TKM2 Tokmak 2 50.83 299 *eP* **P** 14 26 08.7 +0.3
comp=Z,18nm,1.0s
FRU Bishkek 51.54 299 *eP* P 14 26 19.0 +5.5
FRU *e* 14 26 30.0
FRU *e* 14 28 13.0
FRU pmax pmax
comp=Z,30nm,1.8s
KSH Kashi 51.59 295 P P 14 26 19.2 +5.2
KSH *es*P sP 14 26 33.0 +8.1
KSH *eP*cP **PcP** **14 27 31.2 +3.5**
KSH S **S** **14 33 38.4 +5.0**
KSH ScS **ScS** **14 36 03.1 +0.3**
KSH Kashi 51.59 295 SS **SS** **14 37 14.1 +4.7**
KSH pmax pmax
comp=Z,130nm,4.9s
KSH LR LR
comp=N,160nm,8.8s
KSH LR LR
comp=E,200nm,9.3s
KSH LR LR
comp=Z,380nm,13.6s
AAK Ala-Archa 51.69 299 *eP* **P** 14 26 14.9 +0.1
AAK pmax pmax
comp=Z,7.0nm,1.0s
AAK Ala-Archa 51.69 299 *eP* **P** 14 26 15.1 +0.3
comp=Z,6.7nm,1.0s
BRVK Borovoye 51.83 313*c iP* **P** 14 26 16.0 +0.6
BRVK pmax pmax
comp=Z,13nm,2.5s
BRVK Borovoye 51.83 313 *eP* **P** 14 26 15.7 +0.3
comp=Z,16nm,1.7s
EKS2 Erkin-Say 52.18 299 *eP* **P** 14 26 18.7 +0.3
EKS2 pmax pmax
comp=Z,5.0nm,1.0s
EKS2 Erkin-Say 52.18 299 *eP* **P** 14 26 18.7 +0.3
comp=Z,4.7nm,1.0s
ZRNK Zerenda 52.60 313 *eP* **P** 14 26 20.9 -0.3
ZRNK pmax pmax
comp=Z,11nm,1.2s
ZRNK Zerenda 52.60 313 *eP* **P** 14 26 20.9 -0.3
comp=Z,11nm,1.2s
MNAS Manas 53.13 300 P **P** 14 26 27.0 +1.5
MNAS pmax pmax
comp=Z,11nm,1.0s
SFK Sufi-Kurgan 53.22 296 P **P** 14 26 27.6 +1.3
SFK pmax pmax
comp=Z,12nm,1.3s
KKAR Karatay Array 54.32 301 *eP* **P** 14 26 34.7 +0.7
KKAR Karatay Array 54.32 301 *eP* **P** 14 26 34.7 +0.7
INK Inuvik 54.58 27 P **P** 14 26 35.7 +0.3
comp=Z,2.6nm,0.6s,baz=305,slow=6.9,SNR=17
INK Inuvik 54.58 27 *eP* **P** 14 26 36.3 +0.9
comp=Z,24nm,1.8s
SVE Sverdlovsk 56.32 319|| *eP* **P** 14 26 48.2 0.0
SVE pmax pmax
comp=Z,13nm,0.9s
WRAB Tennant Creek 56.49 189*c iP* **P** 14 26 49.1 -0.6
WRAB pmax pmax
comp=Z,84nm,2.5s
WRAB Tennant Creek 56.49 189 *eP* **P** 14 26 48.8 -0.9
comp=Z,12nm,0.9s
WB2 Warramunga Arr 56.50 189 *eP* **P** 14 26 48.9 -0.9
comp=Z,15nm,0.9s
WRA Warramunga Ar 56.50 189 P **P** 14 26 47.9 -1.9
comp=Z,6.3nm,0.8s,baz=7.3,slow=7.4,SNR=47
ARU Arti 57.54 319*c iP* **P** 14 26 57.2 +0.4
ARU S **S** 14 34 54.6 +1.9
ARU SS **SS** 14 38 41.6 -0.5
ARU pmax pmax
comp=Z,40nm,2.5s
ARU Arti 57.54 319 *eP* **P** 14 26 56.9 +0.2
comp=Z,15nm,1.1s
DLBC Dease Lake 58.59 38 P **P** 14 27 04.8 +0.6
comp=Z,3.0nm,1.0s,baz=281,slow=6.9,SNR=5.6
DLBC Dease Lake 58.59 38 *eP* **P** 14 27 05.6 +1.4
comp=Z,22nm,1.8s
ABKAR Akbulak array 59.14 311 *eP* **P** 14 27 07.5 -0.6
AS01 Alice Springs 60.22 189 *eP* **P** 14 27 14.3 -1.4
AS31 Alice Springs 60.23 189 *eP* **P** 14 27 15.4 -0.4
comp=Z,1.6nm,0.8s
ASAR Alice Springs 60.23 189 P **P** 14 27 15.1 -0.7
comp=Z,2.7nm,0.9s,baz=1.9,slow=6.4,SNR=40
RES Resolute Bay 63.05 15 P **P** 14 27 34.0 -0.1
comp=Z,7.1nm,0.9s,baz=314,slow=6.3,SNR=16
RES Resolute Bay 63.05 15 *eP* **P** 14 27 34.3 +0.2
comp=Z,13nm,1.0s
YKW3 Yellowknife Ar 63.90 30 *eP* **P** 14 27 39.9 -0.1
comp=Z,4.6nm,1.0s
YKA Yellowknife Ar 63.93 30 P **P** 14 27 40.2 0.0
comp=Z,2.7nm,0.9s,baz=296,slow=6.7,SNR=16
YKB5 Yellowknife Ar 63.93 30 *eP* **P** 14 27 39.1 -1.1
KLMR Klimovskoe 64.88 328 *eP* **P** 14 27 44.6 -1.8
KLMR pmax pmax
comp=Z,10.0nm,1.3s
ARCES ARCESS Array B 65.00 340 LR LR 14 59 23.9
comp=Z,41nm,18.1s,baz=60,slow=39
GEYT Alibeck 65.03 300 P **P** 14 27 48.6 +0.7
comp=Z,1.6nm,0.6s,baz=123,slow=5.5,SNR=5.1
AFI Afiamalu 65.93 131 LR LR 14 50 57.2
comp=Z,154nm,20.8s,baz=122,slow=31
DAG Danmarks Havn 66.56 355 *i P* sP 14 28 09.0 +0.9
comp=Z,9.4nm,1.0s
DAG Danmarks Havn 66.56 355 *i P* **sP** 14 28 09.0 +0.9
DAG pmax pmax
comp=Z,9.0nm,1.0s
B08A Colville Reser 68.65 45 *eP* **P** 14 28 11.4 +0.6
comp=Z,7.0nm,1.1s
VRH Novokhopyorsk 68.76 318 *eP* **P** 14 28 11.9 +0.6
VRH pmax pmax
comp=Z,3.0nm,0.3s
VRH MLR MLR
comp=Z,250nm,14.0s
OBN Obninsk 69.25 324 *i P* **P** 14 28 15.6 +1.4
OBN pmax pmax
comp=Z,8.0nm,0.7s
LPSR Galich'ya Gora 69.47 321 *eP* **sP** 14 28 27.8 +1.0
LPSR pmax pmax
comp=Z,6.0nm,0.8s
LPSR MLR MLR
comp=Z,180nm,13.0s
FIA1 FINESS Array S 69.89 333 *eP* **P** 14 28 18.4 +0.3
comp=Z,21nm,1.3s
FINES FINESS Array B 69.89 333 P **P** 14 28 19.4 +1.2
comp=Z,3.5nm,0.8s,baz=56,slow=7.1,SNR=9.3
NEW Newport 69.96 44 *eP* **P** 14 28 20.3 +1.4
NEW Newport 69.96 44 *eP* **P** 14 28 20.2 +1.4

VSR Storozhevoye 70.11 319 *eP* **P** 14 28 20.2 +0.6
VSR pmax pmax
comp=Z,10.0nm,0.9s
VSR MLR MLR
comp=Z,520nm,24.0s
K05A Summer Lake 70.64 51 *eP* **P** 14 28 24.8 +1.4
comp=Z,18nm,1.1s
WDC Whiskeytown Da 70.71 54 *eP* **P** 14 28 24.6 +1.0
WDC pmax pmax
comp=Z,9.0nm,1.3s
WDC Whiskeytown Da 70.71 54 *eP* **P** 14 28 24.6 +1.0
comp=Z,9.3nm,1.3s
SUMG Summit 71.39 0 *i P* **P** 14 28 29.2 +1.6
comp=Z,15nm,1.1s
SUMG Summit 71.39 0 *eP* **P** 14 28 28.9 +1.3
SUMG pmax pmax
comp=Z,20nm,1.1s
SUMG Summit 71.39 0 *eP* **P** 14 28 28.9 +1.3
comp=Z,20nm,1.1s
MOD Modoc Plateau 71.45 51 *eP* **P** 14 28 29.0 +0.8
comp=Z,3.9nm,0.9s
VSU Vasula 71.56 330 *i P* **P** 14 28 28.8 +0.5
VSU pmax pmax
comp=Z,48nm,2.5s
BMO Blue Mountains 71.69 48 *eP* **P** 14 28 30.2 +0.7
comp=Z,4.6nm,1.1s
JTMT Jette 71.84 44 *eP* **P** 14 28 31.3 +0.9
YBMT Yellow Bay 71.92 44 *eP* **P** 14 28 32.0 +1.1
ZEI Tsey 72.00 310 *eP* **P** 14 28 31.5 -0.1
ZEI pmax pmax
comp=Z,9.0nm,1.0s
KBZ Khabaz 72.10 311 P **P** 14 28 32.5 +0.6
comp=Z,5.1nm,0.8s,baz=53,slow=4.7,SNR=13
KIV Kislovodsk 72.11 312 *eP* **P** 14 28 31.8 -0.2
KIV pmax pmax
comp=Z,13nm,1.1s
SWMT Swartz Lake 72.13 44 *eP* **P** 14 28 32.6 +0.5
WVOR Wild Horse Val 72.20 50 *eP* **P** 14 28 33.6 +0.9
WVOR pmax pmax
comp=Z,41nm,2.3s
WVOR Wild Horse Val 72.20 50 *eP* **P** 14 28 33.6 +0.9
comp=Z,41nm,2.3s
GNI Garni 72.91 307 *eP* **P** 14 28 37.9 +0.9
GNI pmax pmax
comp=Z,13nm,0.8s
PAHR Pah Rah Range 73.22 53 *eP* **P** 14 28 39.2 +0.4
comp=Z,6.9nm,1.0s
MFID Camas Ranch 73.38 48 *eP* **P** 14 28 40.3 +0.7
comp=Z,4.6nm,0.9s
CMB Columbia Colle 73.49 55 *eP* **P** 14 28 41.0 +0.7
CMB pmax pmax
comp=Z,8.0nm,0.9s
CMB Columbia Colle 73.49 55 *eP* **P** 14 28 41.0 +0.7
comp=Z,8.3nm,0.9s
WAKR Walker 73.85 54 *eP* **P** 14 28 43.3 +0.7
LRM Limekiln Ridge 73.97 45 *eP* **P** 14 28 43.9 +0.7
BOZ Bozeman (W) 74.54 44 *eP* **P** 14 28 47.3 +0.9
BOZ pmax pmax
comp=Z,6.0nm,1.0s
BOZ Bozeman (W) 74.54 44 *eP* **P** 14 28 47.3 +0.9
comp=Z,6.4nm,1.0s
NV01 Mina Array Sit 74.63 54 *eP* **P** 14 28 48.1 +0.9
NVAR Mina Array Bea 74.63 54 P **P** 14 28 48.5 +1.3
comp=Z,7.4nm,0.8s,baz=285,slow=6.2,SNR=48
NB2 NORSAR Subarra 75.22 338 P **P** 14 28 50.7 +0.8
comp=Z,6.7nm,1.1s,baz=40,slow=5.9
NOA NORSAR Array B 75.22 338 P **P** 14 28 50.5 +0.6
comp=Z,1.1nm,0.8s,baz=39,slow=5.7,SNR=3.2
NOA LR LR 15 06 09.2
comp=Z,125nm,18.1s,baz=205,slow=39
NOA NORSAR Array B 75.22 338 P **P** 14 28 50.5 +0.6
NOA pmax pmax
comp=Z,2.0nm,1.0s
NOA MLR MLR
comp=Z,125nm,18.1s
ELK Elko 75.26 50 *eP* **P** 14 28 52.2 +1.4
ELK pmax pmax
comp=Z,4.0nm,1.1s
ELK Elko 75.26 50 *eP* **P** 14 28 52.2 +1.4
comp=Z,4.3nm,1.1s
NBO02 NORSAR Array S 75.32 338 *eP* **P** 14 28 51.1 +0.6
AKASG Malin Array Be 75.45 323 P **P** 14 28 51.7 +0.3
comp=Z,1.8nm,0.6s,baz=45,slow=6.3,SNR=7.5
AKASG Malin Array Be 75.45 323*ceP* **P** 14 28 52.0 +0.6
AKASG pmax pmax
comp=Z,2.0nm,0.6s
KIEV Kiev 75.47 323 *eP* **P** 14 28 51.8 +0.4
KIEV pmax pmax
comp=Z,4.0nm,1.0s
KIEV Kiev 75.47 323 *eP* **P** 14 28 51.5 +0.1
comp=Z,12nm,1.2s
H17A Grant Village 75.89 45 *eP* **P** 14 28 56.9 +2.6
comp=Z,14nm,1.0s
IMW Indian Meadow 75.98 46 *eP* **P** 14 28 56.5 +1.6
comp=Z,7.0nm,1.0s
FLWY Flagg Ranch 76.01 45 *eP* **P** 14 28 56.5 +1.6
comp=Z,16nm,1.3s
HVU Hansel Valley 76.16 48 *eP* **P** 14 28 56.7 +0.9
HVU pmax pmax
comp=Z,7.0nm,1.1s
HVU Hansel Valley 76.16 48 *eP* **P** 14 28 56.7 +0.9
comp=Z,6.6nm,1.1s
MOOW Moose Ponds 76.18 46 *eP* **P** 14 28 57.5 +1.5
comp=Z,14nm,1.6s
RLMT Red Lodge 76.19 44 *eP* **P** 14 28 56.0 +0.1
comp=Z,11nm,1.4s
LAO LASA Array 76.87 41 *eP* **P** 14 29 00.4 +0.7
comp=Z,25nm,1.5s
HWUT Hardware Ranch 76.99 48 *eP* **P** 14 29 01.0 +0.5
comp=Z,11nm,1.0s
DUG Dugway, Tooele 77.08 50 *eP* **P** 14 29 01.9 +0.8
DUG pmax pmax
comp=Z,10.0nm,0.9s
DUG Dugway, Tooele 77.08 50 *eP* **P** 14 29 01.9 +0.8
comp=Z,10nm,0.9s
TCUT Toone Canyon 77.38 48 *eP* **P** 14 29 03.9 +1.0
comp=Z,13nm,1.0s
BW06 Boulder Array 77.47 46 *eP* **P** 14 29 03.6 +0.4
PD31 Pinedale Array 77.47 46 *eP* **P** 14 29 03.5 +0.2
PDAR Pinedale Array 77.47 46 P **P** 14 29 03.4 +0.1
comp=Z,1.6nm,0.8s,baz=262,slow=3.3,SNR=15
NLU North Lily Min 77.68 49 *eP* **P** 14 29 05.5 +1.1
comp=Z,6.5nm,0.9s
LVV L'vov 78.53 325 *eP* P 14 28 58.6 -10
P17A Butcher Ranch, 78.79 49 *eP* **P** 14 29 11.6 +1.0
comp=Z,17nm,1.0s
Q16A Castle Valley 78.86 50 *eP* **P** 14 29 12.1 +1.1
comp=Z,13nm,1.1s
P18A Preston Nutter 78.99 49 *eP* **P** 14 29 12.6 +0.7
comp=Z,8.6nm,1.1s
SRU San Rafael Swe 79.14 49 *eP* **P** 14 29 13.3 +0.7
SRU pmax pmax
comp=Z,16nm,1.0s
SRU San Rafael Swe 79.14 49 *eP* **P** 14 29 13.3 +0.7
comp=Z,16nm,1.0s
BRTR Keskin Array B 80.05 312 P **P** 14 29 18.4 +1.0
comp=Z,1.3nm,0.8s,baz=104,slow=4.0,SNR=7.3
STHS Stebnicka Huta 80.10 326 *e* sP 14 29 30.3 +1.8
CRVS Cervenica-Dubn 80.36 325 *e* sP 14 29 30.9 +0.9
PV09 Paradox Valley 80.37 49 *eP* **P** 14 29 20.7 +1.3
BR231 Keskin MP Arra 80.49 313 *eP* **P** 14 29 19.0 -0.8
PV10 Paradox Valley 80.51 49 *eP* **P** 14 29 21.2 +1.2
PV04 Paradox Valley 80.58 49 *eP* **P** 14 29 21.5 +1.2
PV05 Paradox Valley 80.66 49 *eP* **P** 14 29 22.0 +1.2
N23A Red Feather La 80.74 46 *eP* **P** 14 29 22.3 +1.0
comp=Z,18nm,1.1s
WUAZ Wupatki 80.83 53 *eP* **P** 14 29 22.9 +1.3
comp=Z,7.8nm,0.3s
113A Mohawk Valley, 80.94 56 *eP* **P** 14 29 22.8 +0.7
comp=Z,7.5nm,0.9s
PV01 Paradox Valley 80.95 49 *eP* **P** 14 29 23.3 +0.9
SMCO Snowmass 81.25 47 *eP* **P** 14 29 25.2 +1.1
comp=Z,6.9nm,1.1s
X16A Lo Mia Camp, P 81.46 53 *eP* **P** 14 29 26.3 +1.2
comp=Z,7.3nm,0.9s
DPC Dobruska-Polom 81.58 329 *eP* **P** 14 29 27.2 +2.0
DPC *ex* x 14 29 38.0
DPC Dobruska-Polom 81.58 329 *eP* **P** 14 29 27.2 +2.0
DPC *e* 14 29 38.0
MVCO Mesa Verde 81.58 50 *eP* **P** 14 29 26.6 +0.9
comp=Z,7.1nm,0.6s
VYHS Vyhne 81.86 326 *eP* **P** 14 29 28.8 +2.1
VYHS Vyhne 81.86 326 *eP* **P** 14 29 28.8 +2.1
BRG Berggiesshubel 82.16 330 *e*(P) P 14 29 33.9 +5.7
comp=Z,2.5nm,0.6s
BRG Berggiesshubel 82.16 330 *eP* P 14 29 33.9 +5.7

BRG pmax pmax
comp=Z,16nm,0.6s
CLL Collm 82.19 331 *i* P **P** 14 29 29.4 +1.0
comp=Z,6.0nm,1.1s
CLL *i* pP **sP** 14 29 39.9 +0.3
comp=Z,12nm,1.4s
CLL *ep*PP 14 32 48.0
CLL LmH 15 14 00.0
comp=N,600nm,18.8s
CLL LmH 15 14 00.0
comp=E,600nm,18.1s
CLL L L 15 15 00.0
comp=Z,200nm,18.4s
CLL Collm 82.19 331 *i* P **P** 14 29 29.4 +1.0
CLL *i* *PP **sP** 14 29 39.9 +0.3
CLL pmax pmax
comp=Z,6.0nm,1.1s
S22A 4UR Ranch, Cre 82.25 49 *eP* **P** 14 29 30.7 +1.3
comp=Z,6.5nm,1.0s
SDCO Great Sand Dun 83.05 48 *eP* **P** 14 29 34.4 +0.9
comp=Z,6.9nm,1.4s
TUC Tucson 83.20 55 *eP* **P** 14 29 34.9 +0.8
TUC pmax pmax
comp=Z,4.0nm,1.0s
TUC Tucson 83.20 55 *eP* **P** 14 29 34.9 +0.8
comp=Z,4.4nm,1.0s
KHC Kasperske Hory 83.66 329 *eP* **P** 14 29 37.7 +1.6
KHC *ex* x 14 29 48.3
KHC Kasperske Hory 83.66 329 *eP* **P** 14 29 37.4 +1.3
KHC pmax pmax
comp=Z,2.0nm,1.1s
KHC Kasperske Hory 83.66 329 *eP* **P** 14 29 37.4 +1.3
comp=Z,2.3nm,1.1s
GERES GERESS Array B 83.83 329 P **P** 14 29 37.4 +0.4
comp=Z,0.5nm,0.4s,baz=46,slow=5.6,SNR=4.4
GEA0 GERESS Array S 83.83 329 *eP* **P** 14 29 36.8 -0.2
T25A Trinidad 84.11 48 *eP* **P** 14 29 39.8 +1.0
comp=Z,9.5nm,1.0s
LAZ Ladron 84.22 51 *eP* **P** 14 29 40.6 +1.2
ANMO Albuquerque 84.30 50*c iP* **P** 14 29 40.9 +1.1
ANMO pmax pmax
comp=Z,10.0nm,1.2s
ANMO Albuquerque 84.30 50 *eP* **P** 14 29 40.9 +1.1
comp=Z,7.5nm,1.0s
319A Douglas 84.78 55 *eP* **P** 14 29 43.0 +0.8
comp=Z,15nm,1.0s
TX31 Lajitas Ar. Si 89.78 53 *eP* **P** 14 30 06.8 +0.4
TXAR Lajitas Array 89.78 53 P **P** 14 30 06.5 0.0
comp=Z,3.6nm,0.9s,baz=292,slow=3.6,SNR=19
MIAR Mount Ida 92.18 43 *eP* **P** 14 30 17.9 +0.6
MIAR pmax pmax
comp=Z,34nm,1.6s
MIAR Mount Ida 92.18 43 *eP* **P** 14 30 17.9 +0.6
comp=Z,34nm,1.6s
TORD Torodi Ar. Bea 118.52 316 PKP **PKPdf** 14 35 54.7 -1.1
comp=Z,0.2nm,0.3s,baz=2.9,slow=2.9,SNR=3.3
TORD PP **PP** 14 37 09.4 -2.6
comp=Z,1.1nm,1.1s,baz=57,slow=5.3,SNR=3.6
LPAZ La Paz 146.19 62 PKPbc **PKPbc** 14 36 48.9 -0.2
comp=Z,4.7nm,0.7s,baz=349,slow=4.0,SNR=15
LPAZ La Paz 146.19 62 *e*PKPdf **PKPdf** 14 36 48.3 +0.3
LVC Limon Verde 149.49 72 *e*PKPbc **PKPbc** 14 36 58.3 +0.7

ISCJB **11** *14:24:23.3±0.4,24°.25N±0°.02×121°.96E±0°.02,h3km±3km,*
Error ellipse: s-maj=3.2km s-min=2.2km az=142.9
TAP **11** *14:24:23.5,24°.28N×121.87E,h7km,ML3.1,D*
JMA **11** *14:24:23.4±0.1,24°.23N×121°.91E,h5km±3km,M2.5*
ISC 11 14:24:23.7±1.0,24°.26N±0°.02×121°.93E±0°.02,h9km±8km,
n42,σ0=57/83,Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ENA	**Nanau**	**0.24**	**314**	*i* P	**Pg**	**14 24 28.3**	**-0.2**
ENA	baz=322			*e*S	**Sg**	**14 24 31.5**	**-0.3**
TWD	**Chiawan**	**0.35**	**240**	*i* P	**Pg**	**14 24 30.2**	**-0.4**
TWD	baz=231			S	**Sg**	**14 24 34.9**	**-0.4**
TWC	**Suao**	**0.36**	**348**	P	**Pg**	**14 24 30.8**	**+0.1**
TWC	baz=357			*i* S	**Sg**	**14 24 35.8**	**+0.3**
HWA	**Hwalien**	**0.41**	**227**	*e*P	**Pb**	**14 24 34.4**	**+1.3**
HWA	baz=218			*e*S	**Sb**	**14 24 41.6**	**+2.2**
ENTT	**Nioudou**	**0.50**	**319**	*i* P	**Pg**	**14 24 33.4**	**0.0**
ENTT	baz=322			S	**Sg**	**14 24 40.6**	**+0.5**
TWE	**Neicheng**	**0.52**	**333**	P	**Pg**	**14 24 33.9**	**+0.2**
TWE	baz=338			S	**Sb**	**14 24 41.7**	**-0.9**
ILA	**Ilan**	**0.53**	**342**	*e*P	**Pg**	**14 24 34.4**	**+0.4**
ILA	baz=347			*e*S	**Sb**	**14 24 42.7**	**-0.2**
NNS	**Nan Shan**	**0.54**	**290**	P	**Pg**	**14 24 33.8**	**-0.3**
NNS	baz=289			*i* S	**Sg**	**14 24 41.4**	**+0.2**
EGS		**0.58**	**0**	*e*P	**Pg**	**14 24 35.5**	**+0.5**
EGS	baz=6.0			S	**Sg**	**14 24 43.2**	**+0.5**
WHF	**Hehuan Shan**	**0.62**	**260**	P	**Pg**	**14 24 35.3**	**-0.4**
WHF	baz=256			S	**Sg**	**14 24 43.6**	**-0.3**
ESL	**Shilin**	**0.63**	**226**	*e*P	**Pg**	**14 24 36.0**	**0.0**
ESL	baz=220			S	**Sb**	**14 24 45.6**	**-0.3**
NSK	**Sanguang**	**0.67**	**309**	*i* P	**Pg**	**14 24 36.6**	**0.0**
NSK	baz=310			*i* S	**Sg**	**14 24 45.8**	**+0.5**
TWT	**Tachien**	**0.69**	**270**	*e*P	**Pg**	**14 24 36.7**	**-0.3**
TWT	baz=267			S	**Sg**	**14 24 46.4**	**+0.4**
TWB1	**Santiao Chiao**	**0.75**	**4**	P	**Pb**	**14 24 38.9**	**0.0**
TWB1	baz=8.0			S	**Sb**	**14 24 48.9**	**-0.4**
NWF	**Wu-fen Shan**	**0.82**	**351**	P	**Pb**	**14 24 40.4**	**+0.2**
NWF	baz=353			S	**Sb**	**14 24 51.2**	**-0.2**
NSTT	**Nanjuang**	**0.92**	**294**	P	**Pb**	**14 24 41.7**	**-0.2**
NSTT	baz=294			S	**Sb**	**14 24 54.1**	**-0.1**
JYNG	**Yonagunijimaku**	**0.95**	**78**	P	**Pb**	**14 24 42.2**	**-0.1**
JYNG				*e*S	**Sg**	**14 24 54.2**	**0.0**
TWS1	**Kuangyinshan**	**0.96**	**331**	*e*P	**Pb**	**14 24 42.4**	**-0.1**
TWS1	baz=333			*e*S	**Sb**	**14 24 55.8**	**+0.5**
YOJ	**Yonaguni jima**	**1.01**	**78**	P	**Pb**	**14 24 43.3**	**0.0**
YOJ				*e*S	**Sb**	**14 24 56.8**	**+0.1**
SMLT	**Sun Moon Lake**	**1.01**	**249**	*e*P	**Pg**	**14 24 43.1**	**0.0**
SMLT	baz=245			S	**Sb**	**14 24 56.8**	**-0.2**
TYC	**Yuchr**	**1.04**	**250**	*e*P	**Pn**	**14 24 44.2**	**-0.3**
TYC	baz=248			*e*S	**Sn**	**14 24 58.6**	**-0.6**
TWY	**Chenhua**	**1.06**	**344**	*e*P	**Pb**	**14 24 44.4**	**+0.2**
TWY	baz=346			*e*S	**Sn**	**14 24 59.1**	**-0.5**
TWQ1	**Liyutan**	**1.06**	**275**	*e*P	**Pn**	**14 24 44.7**	**0.0**
TWQ1	baz=273			*e*S	**Sn**	**14 25 01.0**	**+1.4**
TWF1	**Yuli**	**1.07**	**213**	*e*P	**Pg**	**14 24 43.7**	**-0.6**
TWF1	baz=209			*e*S	**Sn**	**14 24 59.8**	**-0.2**
TCU	**Taichung**	**1.15**	**265**	*e*P	**Pb**	**14 24 45.1**	**-0.7**
	baz=263						

TCU				*e*S	**Sb**	**14 25 00.9**	**+0.1**
	baz=263						
YUS	**Yu-Shan**	**1.18**	**230**	*e*P	**Pn**	**14 24 46.7**	**-0.1**
	baz=226						
YUS				*e*S	**Sn**	**14 25 02.7**	**-0.5**
	baz=226						
CHKT	**Chengkung**	**1.27**	**204**	*e*P	**Pb**	**14 24 47.8**	**0.0**
	baz=201						
CHKT				*e*S	**Sn**	**14 25 05.3**	**+0.6**
	baz=201						
ALS	**Alishan**	**1.27**	**234**	*e*P	**Pg**	**14 24 48.2**	**+0.1**
	baz=231						
ALS				*e*S	**Sn**	**14 25 05.2**	**-0.1**
	baz=231						
CHN5	**Tsauling**	**1.32**	**240**	*e*P	**Pg**	**14 24 49.8**	**+0.8**
	baz=238						
CHN5				*e*S	**Sg**	**14 25 06.9**	**+0.7**
	baz=238						
ELDTW	**Lidau**	**1.35**	**218**	*e*P	**Pn**	**14 24 48.9**	**-0.1**
	baz=215						
ELDTW				*e*S	**Sg**	**14 25 07.8**	**+0.5**
	baz=215						
WGK	**Gukeng**	**1.38**	**246**	*e*P	**Pn**	**14 24 48.9**	**-0.2**
	baz=243						
WGK				*e*S	**Sn**	**14 25 07.4**	**0.0**
	baz=243						
CHN4	**Tsaushan**	**1.52**	**234**	*e*P	**Pg**	**14 24 53.0**	**+0.1**
	baz=231						
CHN4				*e*S	**Sg**	**14 25 13.0**	**+0.4**
	baz=231						
STYT	**Tauyuan**	**1.53**	**225**	*e*P	**Pn**	**14 24 51.4**	**+0.1**
	baz=222						
STYT				*e*S	**Sg**	**14 25 12.5**	**-0.5**
	baz=222						
WTP	**Ta-pu**	**1.57**	**230**	*e*P	**Pb**	**14 24 52.5**	**-0.4**
	baz=228						
WTP				*e*S	**Sb**	**14 25 12.8**	**-0.2**
	baz=228						
TWG	**Pinlang**	**1.63**	**209**	*e*P	**Pb**	**14 24 53.5**	**-0.5**
	baz=206						
TWG				*e*S	**Sb**	**14 25 15.1**	**+0.4**
	baz=206						
IRIF	**Iriomote-Funau**	**1.65**	**87**	P	**Pn**	**14 24 52.6**	**-0.2**
IRIF				*e*S	**Sn**	**14 25 13.4**	**-0.7**
CHN1	**Nanshi**	**1.67**	**231**	*e*P	**Pb**	**14 24 54.3**	**-0.3**
	baz=228						
CHN1				*e*S	**Sn**	**14 25 14.4**	**-0.4**
	baz=228						
SGST	**Jiashian**	**1.70**	**227**	*e*P	**Pn**	**14 24 53.3**	**-0.3**
	baz=224						
SGST				*e*S	**Sn**	**14 25 15.2**	**-0.3**
	baz=224						
ECL	**Taimali**	**1.88**	**209**	*e*P	**Pn**	**14 24 56.8**	**+0.8**
	baz=206						
ECL				*e*S	**Sb**	**14 25 21.1**	**-0.8**
	baz=206						
JKRS	**Kuro-shima**	**1.90**	**90**	P	**Pn**	**14 24 56.8**	**+0.5**
JKRS				*e*S	**Sn**	**14 25 19.2**	**-1.1**
JISG	**Ishigakijimahi**	**2.19**	**81**	P	**Pn**	**14 24 59.8**	**-0.6**
JISG				*e*S	**Sn**	**14 25 26.5**	**-1.2**
JTJ	**Tarama**	**2.56**	**81**	*e*S	**Sn**	**14 25 38.4**	**+1.8**

*ISCJB **11** 14:24:34.2±0.7, 40.°84N±0.°04×42.°92E±0.°03, h0km, Error ellipse: s-maj=6.4km s-min=3.1km az=178.0*
*TIF **11** 14:24:34.4, 40.°82N×42.°95E, h34km±2km*
*CSEM **11** 14:24:34.4±0.2, 40.°84N×42.°93E, h1km, MD2.9, Error ellipse: s-maj=4.9km s-min=2.4km az=178.0, Suspected Mining explosion.*
*DDA **11** 14:24:34.5, 40.°85N×42.°94E, h7km, Md2.9, Suspected Mining explosion.*

ISC 11 14:24:32.8±1.3, 40.°85N±0.°04×42.°95E±0.°02, h0km, n17, σ0s41/34, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EAK	**Akyaka**	**0.52**	**108**	P	**Pb**	**14 24 44.9**	**-0.1**
EAK				S	**Sb**	**14 24 53.2**	**0.0**
EAK	**Akyaka**	**0.52**	**108**	*i* P	**Pb**	**14 24 44.9**	**-0.1**
EAK				*i* S	**Sb**	**14 24 53.2**	**0.0**
BGD	**Bogdanovka**	**0.64**	**50**	P	**Pb**	**14 24 47.2**	**+0.2**
BGD				S	**Sb**	**14 24 57.4**	**+0.8**
BGD	**Bogdanovka**	**0.64**	**50**	P	**Pb**	**14 24 47.2**	**+0.2**
BGD				S	**Sb**	**14 24 57.4**	**+0.8**
EPOS	**Posof**	**0.67**	**345**	P	**Pb**	**14 24 47.8**	**+0.3**
EPOS				S	**Sb**	**14 24 57.2**	**-0.2**
EPOS	**Posof**	**0.67**	**345**	*i* P	**Pb**	**14 24 47.8**	**+0.3**
EPOS				*i* S	**Sb**	**14 24 57.2**	**-0.2**
AKH	**Akhalkalaki**	**0.69**	**36**	P	**Pb**	**14 24 47.6**	**-0.3**
AKH				S	**Sb**	**14 24 57.2**	**-0.8**
AKH	**Akhalkalaki**	**0.69**	**36**	P	**Pb**	**14 24 47.6**	**-0.3**
AKH				S	**Sb**	**14 24 57.2**	**-0.8**
DAGI	**Agillar**	**0.82**	**286**	*i* P	**Pb**	**14 24 50.4**	**+0.5**
DAGI				*i* S	**Sb**	**14 25 01.8**	**+0.2**
ARTV	**Artvin**	**0.84**	**294**	P	**Pb**	**14 24 50.7**	**+0.2**
ARTV				S	**Sb**	**14 25 02.7**	**+0.3**
ARTV	**Artvin**	**0.84**	**294**	*i* P	**Pb**	**14 24 50.6**	**+0.2**
ARTV				*i* S	**Sb**	**14 25 02.7**	**+0.3**
DDEM	**Demirkent**	**0.91**	**273**	P	**Pb**	**14 24 51.7**	**+0.1**
DDEM				S	**Sb**	**14 25 03.5**	**-0.8**
DDEM	**Demirkent**	**0.91**	**273**	*i* P	**Pb**	**14 24 51.7**	**+0.1**
DDEM				*i* S	**Sb**	**14 25 03.5**	**-0.8**
DBAD	**Bademkaya**	**0.97**	**280**	P	**Pb**	**14 24 52.6**	**+0.1**
DBAD				S	**Sb**	**14 25 06.1**	**+0.2**
DBAD	**Bademkaya**	**0.97**	**280**	*i* P	**Pb**	**14 24 52.6**	**+0.1**
DBAD				*i* S	**Sb**	**14 25 06.1**	**+0.2**
DBOC	**Borcka**	**1.09**	**297**	P	**Pb**	**14 24 54.5**	**0.0**
DBOC				S	**Sb**	**14 25 09.0**	**-0.3**
DBOC	**Borcka**	**1.09**	**297**	*i* P	**Pb**	**14 24 54.5**	**0.0**
DBOC				*i* S	**Sb**	**14 25 09.0**	**-0.3**

IDC 11 14:27:29.8±2.1, 19.°62S×167.°94E, h0km, mb4.0/4, mb1 4.3/4, mb1mx3.8/35, mbtmp4.0/4, MS3.3/4, Ms1 3.2/4, ms1mx2.9/40, Error ellipse: s-maj=115.9km s-min=32.5km az=154.0, Vanuatu Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.82**	**210**	LR	LR	14 29 15.8	
	comp=Z,461nm,18.9s,baz=36,slow=38						
AFI	**Afiamalu**	**20.22**	**77**	LR	LR	14 37 29.8	
	comp=Z,30nm,21.8s,baz=235,slow=30						
STKA	**Stephens Creek**	**26.61**	**237**	P	P	14 33 09.3	-0.7
	2.2nm,0.6s,baz=81,slow=8.9,SNR=4.8						
STKA				LR	LR	14 42 34.4	
	comp=Z,85nm,18.6s,baz=201,slow=34						
WRA	**Warramunga Arr**	**31.59**	**264**	P	P	14 33 54.7	+0.2
	0.6nm,0.7s,baz=92,slow=8.5,SNR=6.1						
ASAR	**Alice Springs**	**31.85**	**257**	P	P	14 33 57.0	+0.3
	2.8nm,0.6s,baz=81,slow=8.2,SNR=16						
ASAR				LR	LR	14 45 13.4	
	comp=Z,78nm,18.4s,baz=176,slow=33						
NVAR	**Mina Array Bea**	**89.97**	**49**	P	P	14 40 31.5	0.0
	0.7nm,0.8s,baz=235,slow=7.6,SNR=4.4						

IDC 11 14:27:33.6±3.7, 18.°63S×179.°64E, h0km, mb3.9/3, mb1 4.2/3, mb1mx3.7/35, mbtmp3.9/3, Error ellipse: s-maj=265.1km s-min=33.1km az=154.0, Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**42.69**	**261**	P	P	14 35 31.8	-0.7
	0.3nm,0.3s,baz=96,slow=7.9,SNR=7.1						
ASAR	**Alice Springs**	**42.82**	**255**	P	P	14 35 33.9	+0.3
	2.5nm,0.4s,baz=90,slow=8.1,SNR=30						
NVAR	**Mina Array Bea**	**81.23**	**45**	P	P	14 39 51.9	0.0
	0.3nm,0.5s,baz=229,slow=8.2,SNR=3.6						

*CSEM **11** 14:27:38.8, 58.°93N×11.°20E, h0km, ML0.8, Mining explosion.*

UPP 11 14:27:38.8, 58.°93N×11.°20E, h0km, ML0.8, Mining explosion., Sweden

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STRU	**Stroemstad**	**0.10**	**356**	P	Pg	14 27 41.0	+0.2
STRU				S	Sg	14 27 42.6	+0.5
VANU	**Vaenersborg**	**0.64**	**134**	P	Pg	14 27 50.8	-0.2
FINU	**Finntorp**	**0.81**	**54**	P	Pg	14 27 54.0	-0.3
TJOU	**Tjoern**	**0.93**	**166**	P	Pg	14 27 56.2	-0.4
NASU	**Vaermlandsnaes**	**1.03**	**89**	P	Pg	14 27 58.1	-0.4
NASU				S	Sg	14 28 12.2	+0.3
FKPU	**Falk**	**1.54**	**119**	P	Pn	14 28 06.9	-0.5

IDC 11 14:36:13.8±1.7, 3.°58N×126.°87E, h0km, mb3.8/5, mb1 3.9/5, mb1mx3.6/42, mbtmp3.8/5, MS3.2/1, Ms1 3.2/1, ms1mx2.5/51, Error ellipse: s-maj=106.7km s-min=22.3km az=68.0, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**21.58**	**183**	P	P	14 41 05.2	-0.1
	3.4nm,1.0s,baz=16,slow=11,SNR=1.6						
FITZ				LR	LR	14 51 02.3	
	comp=Z,67nm,19.4s,baz=170,slow=41						
WRA	**Warramunga Arr**	**24.50**	**163**	P	P	14 41 34.0	-1.1
	2.2nm,0.8s,baz=342,slow=10,SNR=17						
ASAR	**Alice Springs**	**27.94**	**166**	P	P	14 42 07.3	+1.3
	0.2nm,0.4s,baz=348,slow=11,SNR=13						
STKA	**Stephens Creek**	**37.95**	**159**	P	P	14 43 32.9	-0.3
	1.1nm,0.5s,baz=343,slow=10,SNR=3.3						
MKAR	**Makanchi Array**	**57.75**	**325**	P	P	14 46 06.6	-0.1
	0.8nm,0.6s,baz=123,slow=8.4,SNR=11						

JMA 11 14:42:10.7±0.3, 29.°12N×130.°76E, h24km±5km, M3.1, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JNN	**Nakanoshima**	**1.05**	**313**	P	Pn	14 42 29.7	-0.3
JNN				*e*S	Sn	14 42 44.3	+0.3
JYAK	**Yakushimahirau**	**1.14**	**349**	P	Pb	14 42 31.6	-0.1
JYAK				*e*S	Sb	14 42 46.6	+0.6
JAM	**Amami Oshima**	**1.24**	**235**	P	Pn	14 42 32.7	+0.2
JAM				*e*S	Sb	14 42 49.5	+0.7
JTAJ	**Takarajima**	**1.36**	**272**	P	Pn	14 42 34.8	+0.6
JTAJ				*e*S	Sb	14 42 52.3	-0.2
JKC	**Kuchinoerabu**	**1.43**	**340**	P	Pn	14 42 35.4	+0.3
JKC				*e*S	Sn	14 42 52.9	-0.2
JTN	**Tanegashima 3**	**1.54**	**7**	P	Pn	14 42 37.4	+0.7
JTN				*e*S	Sb	14 42 57.4	-0.3
JAMN	**Amaminishikomi**	**1.64**	**238**	P	Pn	14 42 38.6	+0.5
JAMN				*e*S	Sb	14 42 59.6	-1.0
JTSR	**Tashiro 2**	**2.04**	**4**	P	Pn	14 42 44.9	+1.3
JTSR				*e*S	Sn	14 43 09.5	+1.1
JTK	**Tokunoshima**	**2.08**	**231**	P	Pn	14 42 44.8	+0.8
JTK				*e*S	Sn	14 43 09.9	+0.8
MAT	**Matsushiro**	**9.69**	**38**	P	Pn	14 44 26.6	-2.1

*ISCJB **11** 14:43:23.6±0.4, 37.°76N±0.°03×142.°78E±0.°05, h14km, mb4.1/24, MS2.5/1, Error ellipse: s-maj=5.6km s-min=4.7km az=176.2*
*IDC **11** 14:43:23.7±0.7, 37.°80N×142.°65E, h0km, mb4.1/19, mb1 4.2/23, mb1mx4.1/52, mbtmp4.1/23, ML4.0/3, MS3.1/3, Ms1 3.1/3, ms1mx2.7/56, Error ellipse: s-maj=18.8km s-min=14.4km az=97.0*
*NEIC **11** 14:43:24.4±3.5, 37.°79N×142.°84E, h7km±22km, mb4.4/5, Error ellipse: s-maj=12.0km s-min=7.6km az=104.0*
*JMA **11** 14:43:24.0±0.2, 37.°78N×142.°75E, h17km±2km, M4.2*

ISC 11 14:43:25.3±0.6, 37.°78N±0.°04×142.°65E±0.°06, h14km, n60, σ1s19/59, mb4.2/24, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.23**	**304**	P	**Pn**	**14 43 47.3**	**-0.8**
JIO				S	**Sb**	**14 44 03.9**	**-0.2**
JFK	**Kawauchi**	**1.47**	**254**	P	**Pn**	**14 43 51.0**	**-0.4**
JMM	**Marumori**	**1.48**	**274**	P	**Pn**	**14 43 50.9**	**-0.6**
JMM				S	**Sb**	**14 44 11.4**	**+0.3**
OFUJ	**Ofunato**	**1.51**	**330**	P	**Pn**	**14 43 51.0**	**-1.0**
OFUJ				S	**Sn**	**14 44 11.6**	**+0.1**
JMK	**Ichinoseki**	**1.63**	**317**	P	**Pn**	**14 43 53.2**	**-0.4**
JOU	**Okura**	**1.68**	**291**	P	**Pn**	**14 43 54.3**	**0.0**
JFT	**Otama**	**1.86**	**263**	P	**Pn**	**14 43 57.3**	**+0.6**
MIYJ	**Miyakonagasawa**	**1.91**	**340**	P	**Pn**	**14 43 56.8**	**-0.7**
JOM	**Ohasama**	**2.00**	**328**	P	**Pn**	**14 43 59.0**	**+0.3**
JOM				S	**Sn**	**14 44 23.4**	**-0.2**
JYS	**Shiratake**	**2.09**	**283**	P	**Pn**	**14 44 01.0**	**+1.0**
JYK	**Kaneyama**	**2.13**	**303**	P	**Pn**	**14 44 01.0**	**+0.5**
JRG	**Rokugo**	**2.26**	**316**	P	**Pn**	**14 44 03.2**	**+0.9**
JKZ	**Kuzumaki**	**2.44**	**335**	P	**Pn**	**14 44 05.2**	**+0.5**
JANG	**Nango**	**2.74**	**342**	P	**Pn**	**14 44 10.7**	**+1.8**
MJAR	**Matsushiro Arr**	**3.76**	**252**	Pn	**Pn**	**14 44 26.2**	**+3.3**
	3.5nm,0.3s,baz=352,slow=26,SNR=26						
MJAR				Sn	**Sb**	**14 45 13.9**	**-2.9**
	5.5nm,0.3s,baz=68,slow=14,SNR=5.0						
MAJO	**Matsushiro**	**3.76**	**252**	*e*Pn	**Pn**	**14 44 26.4**	**+3.5**
MAT	**Matsushiro**	**3.76**	**252**	*e*S	**Sb**	**14 45 14.8**	**-2.1**
ERM	**Erimo**	**4.25**	**5**	*e*Pn	**Pn**	**14 44 28.9**	**-0.7**
JHJ2	**Mitsune**	**5.20**	**207**	*e*Pn	**Pn**	**14 44 43.3**	**+0.6**
JHJ	**Hachijo jima 2**	**5.20**	**208**	Pn	**Pn**	**14 44 42.9**	**+0.1**
	48nm,0.3s,baz=277,slow=19,SNR=10						
JHJ				Sn	**Sn**	**14 45 41.4**	**-1.1**
	69nm,0.3s,baz=46,slow=22,SNR=6.8						
JHJ				LR	LR	14 47 04.7	
	comp=Z,325nm,20.2s,baz=326,slow=42						
ASAJ	**Asahikawa**	**6.33**	**360**	Pn	**Pn**	**14 44 58.2**	**-0.1**
	3.2nm,0.3s,baz=208,slow=11,SNR=31						
ASAJ				Sn	**Sn**	**14 46 09.0**	**-1.3**
	1.0nm,0.3s,baz=288,slow=19,SNR=2.2						
ASAJ				LR	LR	14 47 47.4	
	comp=Z,257nm,19.9s,baz=165,slow=42						
ASAJ	**Asahikawa**	**6.33**	**360**	*e*Pn	**Pn**	**14 44 58.1**	**-0.1**
	7.0nm,0.8s						
ASAJ				Sn	**Sn**	**14 46 09.0**	**-1.3**
USRK	**Ussuriysk Ar.**	**10.30**	**312**	Pn	**Pn**	**14 45 54.3**	**+1.7**
	0.4nm,0.3s,baz=119,slow=13,SNR=5.5						
CBIJ	**Chichi jima**	**10.66**	**182**	*e*Pn	**Pn**	**14 45 55.5**	**-2.1**
CBIJ				Sn	Sn	14 47 44.8	-12
JCJ	**Chichijima**	**10.66**	**182**	Pn	**Pn**	**14 45 54.9**	**-2.7**
	baz=292,slow=19						
JCJ				Sn	Sn	14 47 44.8	-12
	1.5nm,0.3s,baz=273,slow=18,SNR=2.0						
KSRS	**Korea Array**	**11.69**	**273**	Pn	Pn	14 46 17.0	+5.4
	0.2nm,0.3s,baz=90,slow=14,SNR=3.7						
KSAR	**Wonju Array Be**	**11.72**	**273**	Pn	Pn	14 46 17.0	+4.9
KLR	**Kul'dur**	**13.90**	**329**	Pn	**Pn**	**14 46 40.4**	**-1.3**
	0.4nm,0.3s,baz=137,slow=14,SNR=6.0						
MA2	**Magadan**	**22.43**	**11**	P	**P**	**14 48 22.2**	**-1.3**
	9.6nm,0.8s,baz=184,slow=13,SNR=4.4						
GUMO	**Guam**	**24.17**	**175**	LR	LR	14 57 15.0	
	comp=Z,18nm,21.8s,baz=58,slow=34						
YAK	**Yakutsk**	**25.58**	**346**	P	**P**	**14 48 53.7**	**+0.1**
	5.1nm,0.3s,baz=196,slow=1.0,SNR=5.3						
SEY	**Seynchan**	**25.88**	**10**	P	**P**	**14 48 57.7**	**+1.3**
	5.0nm,0.7s,baz=172,slow=9.4,SNR=11						
H11N2	**WAKE ISLAND Hy**	**27.71**	**124**	T	T	15 18 17.0	
	baz=316,slow=75,SNR=99						
H11N1	**WAKE ISLAND Hy**	**27.72**	**124**	T	T	15 18 21.3	
	baz=316,slow=75,SNR=129						
H11N3	**WAKE ISLAND Hy**	**27.73**	**124**	T	T	15 18 21.0	
	baz=316,slow=75,SNR=132						
ULN	**Ulaanbaatar**	**27.77**	**303**	*e*P	**P**	**14 49 14.1**	**+0.3**
	3.9nm,0.9s						
SONM	**Songino Array**	**28.20**	**303**	P	**P**	**14 49 18.1**	**+0.5**
	2.3nm,0.6s,baz=108,slow=9.3,SNR=5.9						
H11S1	**WAKE ISLAND Hy**	**28.46**	**126**	T	T	15 19 18.5	
	baz=318,slow=76,SNR=109						
H11S3	**WAKE ISLAND Hy**	**28.46**	**126**	T	T	15 19 17.4	
	baz=318,slow=76,SNR=92						
H11S2	**WAKE ISLAND Hy**	**28.48**	**126**	T	T	15 19 20.0	
	baz=318,slow=76,SNR=70						
ZALV	**Zalesovo Beam**	**42.15**	**312**	P	**P**	**14 51 17.9**	**+0.9**
	1.7nm,0.5s,baz=90,slow=7.4,SNR=9.7						
NRIK	**Noril'sk**	**43.01**	**335**	P	**P**	**14 51 23.5**	**-0.4**
	1.7nm,0.5s,baz=102,slow=3.9,SNR=3.6						
MKAR	**Makanchi Array**	**44.56**	**302**	P	**P**	**14 51 37.6**	**+0.8**
	2.8nm,0.6s,baz=85,slow=10,SNR=23						
KURK	**Kurchatov**	**46.26**	**308**	*e*P	**P**	**14 51 49.7**	**-0.3**
	7.6nm,0.4s						
ILAR	**Eielson Array**	**48.34**	**33**	P	**P**	**14 52 06.7**	**+0.6**
	0.9nm,0.6s,baz=261,slow=6.2,SNR=13						
TKM2	**Tokmak 2**	**50.15**	**298**	*e*P	**P**	**14 52 22.0**	**+1.5**
	2.7nm,0.5s						
INK	**Inuvik**	**53.28**	**27**	P	**P**	**14 52 44.2**	**+1.0**
	0.7nm,0.5s,baz=289,slow=6.1,SNR=5.6						
WRAB	**Tennant Creek**	**57.93**	**189**	*e*P	**P**	**14 53 17.3**	**+0.2**
	7.7nm,1.1s						
WRA	**Warramunga Arr**	**57.94**	**189**	P	**P**	**14 53 17.8**	**+0.6**
	2.1nm,0.6s,baz=6.9,slow=7.2,SNR=34						
ABKAR	**Akbulak array**	**58.22**	**310**	*e*P	**P**	**14 53 18.9**	**0.0**
	0.9nm,0.5s						
ASAR	**Alice Springs**	**61.67**	**189**	P	**P**	**14 53 43.8**	**+0.9**
	0.9nm,0.8s,baz=16,slow=7.6,SNR=10						
YKA	**Yellowknife Ar**	**62.67**	**31**	P	**P**	**14 53 49.8**	**+0.7**
	0.3nm,0.6s,baz=306,slow=7.0,SNR=6.5						
ARCES	**ARCESS Array B**	**63.65**	**340**	P	**P**	**14 53 54.9**	**-0.7**
	3.9nm,0.9s,baz=41,slow=8.0,SNR=4.3						
FINES	**FINESS Array B**	**68.61**	**333**	P	**P**	**14 54 28.0**	**+0.5**
	2.1nm,0.6s,baz=47,slow=8.9,SNR=7.8						
KBZ	**Khabaz**	**71.17**	**311**	P	**P**	**14 54 44.0**	**+0.6**
	1.7nm,0.6s,baz=347,slow=3.9,SNR=5.7						
NVAR	**Mina Array Bea**	**73.75**	**54**	P	**P**	**14 54 59.9**	**+0.5**
	0.3nm,0.7s,baz=292,slow=4.8,SNR=2.9						
NB2	**NORSAR Subarra**	**73.88**	**338**	P	**P**	**14 55 00.0**	**+0.6**
	comp=Z,1.0nm,0.5s,baz=37,slow=6.2						
NOA	**NORSAR Array B**	**73.88**	**338**	P	**P**	**14 54 59.5**	**+0.1**
	comp=Z,1.7nm,0.7s,baz=38,slow=5.9,SNR=8.7						
AKASG	**Malin Array Be**	**74.31**	**329**	P	**P**	**14 55 02.3**	**+0.2**
	comp=Z,2.0nm,0.6s,baz=46,slow=6.1,SNR=4.8						
PDAR	**Pinedale Array**	**76.44**	**46**	P	**P**	**14 55 15.4**	**+0.6**
	comp=Z,0.4nm,0.6s,baz=318,slow=2.0,SNR=4.6						

*NEIC **11** 14:52:11.3±1.1, 20.°56S×168.°48E, h10km, mb4.5/3, Error ellipse: s-maj=35.0km s-min=12.8km az=141.0*
*IDC **11** 14:52:15.9±1.2, 20.°53S×168.°31E, h39km±7km, mb3.9/7, mb1 4.1/8, mb1mx3.8/32, mbtmp4.1/8, ML3.7/1, MS2.9/2, Ms1 2.9/2, ms1mx2.6/40, Error ellipse: s-maj=44.5km s-min=15.8km az=142.0*

ISC 11 14:52:12.9±1.0, 20.°9S±0.°2×168.°7E±0.°2, h30km, n15, σ1s25/19, mb4.3/11, 1C, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.41**	**240**	Pn	**Pn**	**14 52 51.1**	**+0.6**
	22nm,0.3s,baz=87,slow=8.6,SNR=36						
DZM				LR	LR	14 53 05.2	
	comp=Z,172nm,21.5s,baz=15,slow=21						
DZM				Sn	**Sn**	**14 53 19.0**	**0.0**
	28nm,0.3s,baz=51,slow=17,SNR=6.1						
AFI	**Afiamalu**	**19.86**	**73**	LR	LR	15 02 32.7	
	comp=Z,46nm,20.5s,baz=263,slow=31						
CTA	**Charters Tower**	**21.05**	**268**	P	**P**	**14 56 55.3**	**+0.7**
	1.9nm,0.3s,baz=81,slow=10,SNR=3.8						
STKA	**Stephens Creek**	**26.57**	**240**	P	**P**	**14 57 50.2**	**+1.8**
	3.9nm,0.7s,baz=61,slow=11,SNR=6.0						
WRAB	**Tennant Creek**	**32.18**	**266**	*e*P	**P**	**14 58 36.9**	**-1.4**
	5.1nm,0.9s						
WRA	**Warramunga Arr**	**32.19**	**265**	P	**P**	**14 58 36.7**	**-1.8**
	0.5nm,0.4s,baz=91,slow=8.5,SNR=21						
WRA				pP	**pP**	**14 58 47.5**	**+0.3**
	0.8nm,0.5s,baz=90,slow=8.4,SNR=4.6						
ASAR	**Alice Springs**	**32.27**	**259**	P	**P**	**14 58 38.6**	**-0.6**
	5.0nm,0.8s,baz=88,slow=9.4,SNR=48						
ASAR				pP	**pP**	**14 58 49.6**	**+1.6**
	8.4nm,0.7s,baz=87,slow=8.9,SNR=25						
FITZ	**Fitzroy Crossi**	**40.60**	**266**	*e*P	**P**	**14 59 49.6**	**-0.7**
MJAR	**Matsushiro Arr**	**63.97**	**333**	P	**P**	**15 02 42.1**	**-1.3**
	1.1nm,0.6s,baz=166,slow=5.7,SNR=3.6						
USRK	**Ussuriysk Ar.**	**72.97**	**333**	P	**P**	**15 03 38.6**	**-0.8**
	1.9nm,0.6s,baz=135,slow=3.3,SNR=5.3						
CHTO	**Chiang Mai**	**78.88**	**295**	*e*P	**P**	**15 04 14.6**	**+0.8**
	3.9nm,0.6s						
SYO	**Syowa Base**	**83.22**	**196**	*e*P	**P**	**15 04 33.6**	**-2.4**
BILL	**Bilibino**	**88.68**	**359**	*e*P	**P**	**15 05 02.8**	**0.0**
	6.4nm,1.3s						
NVAR	**Mina Array Bea**	**90.26**	**49**	P	**P**	**15 05 12.5**	**+1.4**
	1.2nm,0.7s,baz=225,slow=9.1,SNR=9.4						
NVAR				pP	**sP**	**15 05 25.4**	**+1.1**
	1.2nm,0.8s,baz=224,slow=9.1,SNR=6.1						
ILAR	**Eielson Array**	**91.94**	**17**	P	**P**	**15 05 18.3**	**+0.3**
	0.2nm,0.5s,baz=244,slow=5.9,SNR=4.1						
ILAR				pP	**sP**	**15 05 31.1**	**0.0**
	0.8nm,0.9s,baz=225,slow=6.3,SNR=4.8						

*ISCJB **11** 14:53:42.9±1.3, 20.°3S±0.°2×168.°2E±0.°3, h26km, mb3.8/5, Error ellipse: s-maj=47.6km s-min=11.4km az=40.4*
*IDC **11** 14:53:46.1±1.4, 20.°39S×168.°25E, h39km±8km, mb3.7/5, mb1 4.0/6, mb1mx3.6/36, mbtmp3.9/6, ML3.7/1, Error ellipse: s-maj=63.3km s-min=19.0km az=147.0*

ISC 11 14:53:44.2±1.2, 20.°5S±0.°3×168.°3E±0.°3, h26km, n6, σ0s83/10, mb4.0/5, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.37**	**227**	Pn	**Pn**	**14 54 21.3**	**-0.2**
	18nm,0.3s,baz=107,slow=20,SNR=1.2						
DZM				Sn	**Sn**	**14 54 49.9**	**+0.1**
	22nm,0.3s,baz=307,slow=20,SNR=1.4						
STKA	**Stephens Creek**	**26.46**	**239**	P	**P**	**14 59 18.1**	**-1.2**
	2.7nm,0.7s,baz=70,slow=12,SNR=2.5						
WRA	**Warramunga Arr**	**31.85**	**265**	P	**P**	**15 00 07.1**	**-0.2**
	0.4nm,0.8s,baz=86,slow=8.3,SNR=1.4						
WRA				pP	**sP**	**15 00 18.3**	**+0.1**
	0.3nm,0.4s,baz=90,slow=8.4,SNR=2.8						
ASAR	**Alice Springs**	**32.00**	**258**	P	**P**	**15 00 10.0**	**+1.4**
	2.5nm,0.7s,baz=81

GUMT	**Gumushane**	**1.07 309**	*e*PG	**Pb**	**15 02 46.3**	**-2.2**
GUMT	**Gumushane**	**1.07 309**	*e*Pg	**Pb**	**15 02 46.3**	**-2.2**
KELT	**Kelkit**	**1.07 290**	P	**Pb**	**15 02 46.3**	**-2.2**
KELT			S	**Sn**	**15 03 09.1**	**+4.2**
KELT	**Kelkit**	**1.07 290**	*i* P	**Pb**	**15 02 46.3**	**-2.2**
KELT			*i* S	**Sn**	**15 03 09.1**	**+4.2**
PTK	**Pertek**	**1.28 226**	*e*PN	**Pg**	**15 02 51.7**	**+0.1**
PTK	**Pertek**	**1.28 226**	*e*Pn	**Pg**	**15 02 51.7**	**+0.1**
ARTV	**Artvin**	**1.74 36**	*i* P	**Pb**	**15 02 58.9**	**-0.9**
ARTV			*i* S	Sg	15 03 35.8	+13

NEIC ***11*** *15:03:57.7, 37°.20S×179°.74E, h5km, ML4.0(WEL), After WEL.*

WEL 11 15:03:57.5±0.3, 37°.19S×179°.75E, h5km, ML4.0/7, 3C-3D, Error ellipse: s-maj=3.2km s-min=3.1km az=0.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MXZ	**Matakaoa Point**	**1.21**	**251**	P*	Pg	15 04 19.9	-0.7
MXZ				S*	Sg	15 04 36.2	-0.2
MXZ				AML	AML	15 04 37.5	
MXZ				AML	AML	15 04 40.6	
MXZ	**Matakaoa Point**	**1.21**	**251**	P*	Pg	15 04 19.9	-0.7
MXZ				S*	Sg	15 04 36.2	-0.2
WMGZ	**Waiomatatini S**	**1.23**	**239**	⇓P*	Pg	15 04 20.6	-0.5
WMGZ				S*	Sb	15 04 37.7	+0.2
WMGZ	**Waiomatatini S**	**1.23**	**239**	P*	Pg	15 04 20.6	-0.5
PUZ	**Puketiti**	**1.48**	**233**	PN	Pn	15 04 24.1	-0.7
PUZ				SN	Sn	15 04 44.0	-0.5
PUZ				AML	AML	15 04 52.9	
PUZ	**Puketiti**	**1.48**	**233**	Pn	Pn	15 04 24.1	-0.7
PUZ				Sn	Sn	15 04 44.0	-0.5
PKGZ	**Pakihiroa**	**1.50**	**242**	PN	Pn	15 04 23.9	-1.2
PKGZ				SN	Sn	15 04 44.4	-0.7
HAZ	**Te Kaha**	**1.67**	**249**	⇑PN	Pn	15 04 27.0	-0.3
HAZ				SN	Sn	15 04 49.2	+0.2
TWGZ	**Tauwhareparae**	**1.72**	**234**	PN	Pn	15 04 27.0	-1.0
TWGZ	**Tauwhareparae**	**1.72**	**234**	Pn	Pn	15 04 27.1	-1.0
CNGZ	**Carnagh Statio**	**1.78**	**223**	PN	Pn	15 04 28.2	-0.7
CNGZ	**Carnagh Statio**	**1.78**	**223**	Pn	Pn	15 04 28.2	-0.7
TKGZ	**Te Karaka**	**1.96**	**230**	PN	Pn	15 04 30.0	-1.3
TKGZ	**Te Karaka**	**1.96**	**230**	Pn	Pn	15 04 30.0	-1.3
MWZ	**Matawai**	**2.10**	**236**	PN	Pn	15 04 32.1	-1.2
MWZ				AML	AML	15 05 00.2	
MWZ				AML	AML	15 05 14.8	
MWZ				AML	AML	15 05 14.8	
MWZ	**Matawai**	**2.10**	**236**	Pn	Pn	15 04 32.1	-1.2
RIGZ	**Rimuhau**	**2.18**	**225**	⇑PN	Pn	15 04 33.3	-1.2
PRGZ	**Paritu Road**	**2.27**	**220**	PN	Pn	15 04 34.4	-1.3
PRGZ	**Paritu Road**	**2.27**	**220**	Pn	Pn	15 04 34.4	-1.3
URZ	**Urewera**	**2.35**	**242**	PN	Pn	15 04 36.0	-0.8
URZ				AML	AML	15 05 05.8	
URZ				AML	AML	15 05 06.1	
URZ	**Urewera**	**2.35**	**242**	Pn	Pn	15 04 36.0	-0.7
MHGZ	**Mahia Peninsul**	**2.44**	**216**	PN	Pn	15 04 36.4	-1.6
MHGZ	**Mahia Peninsul**	**2.44**	**216**	Pn	Pn	15 04 36.4	-1.6
MUGZ	**Murupara**	**2.69**	**240**	PN	Pn	15 04 41.6	+0.2
RAHZ	**Arahi**	**2.72**	**230**	PN	Pn	15 04 40.7	-1.2
RAHZ	**Arahi**	**2.72**	**230**	Pn	Pn	15 04 40.7	-1.2
WHHZ	**Waihua**	**2.74**	**226**	PN	Pn	15 04 40.7	-1.3
ARHZ	**Aropaoanui**	**3.00**	**225**	PN	Pn	15 04 44.3	-1.4
ARHZ	**Aropaoanui**	**3.00**	**225**	Pn	Pn	15 04 44.3	-1.4
NMHZ	**Naumai**	**3.00**	**230**	PN	Pn	15 04 44.5	-1.3
NMHZ	**Naumai**	**3.00**	**230**	Pn	Pn	15 04 44.5	-1.3
BKZ	**Black Stump Fm**	**3.24**	**231**	PN	Pn	15 04 47.3	-1.8
BKZ				AML	AML	15 05 27.9	
BKZ				AML	AML	15 05 29.5	
BKZ	**Black Stump Fm**	**3.24**	**231**	Pn	Pn	15 04 47.3	-1.8
KUZ	**Kuaotunu**	**3.25**	**277**	⇑PN	Pn	15 04 47.2	-1.9
KUZ				AML	AML	15 05 08.9	
KUZ				AML	AML	15 05 13.3	
KUZ	**Kuaotunu**	**3.25**	**277**	Pn	Pn	15 04 47.2	-1.9
MCHZ	**McNeill Hill**	**3.29**	**226**	PN	Pn	15 04 48.1	-1.6
MCHZ	**McNeill Hill**	**3.29**	**226**	Pn	Pn	15 04 48.1	-1.6
TOZ	**Tahuroa Road**	**3.42**	**260**	PN	Pn	15 04 50.2	-1.3
TOZ	**Tahuroa Road**	**3.42**	**260**	Pn	Pn	15 04 50.2	-1.3
KWHZ	**Kaweka Forest**	**3.44**	**228**	PN	Pn	15 04 49.8	-1.9
KAHZ	**Kahuranaki**	**3.44**	**220**	PN	Pn	15 04 49.5	-2.3
KAHZ	**Kahuranaki**	**3.44**	**220**	Pn	Pn	15 04 49.5	-2.3
KRHZ	**Kereru**	**3.61**	**226**	PN	Pn	15 04 51.9	-2.2
PXZ	**Pawanui**	**3.63**	**218**	PN	Pn	15 04 51.4	-2.9
PXZ				AML	AML	15 06 32.7	
PXZ	**Pawanui**	**3.63**	**218**	Pn	Pn	15 04 51.4	-2.9
MKAZ	**Moumakai**	**3.67**	**270**	PN	Pn	15 04 53.5	-1.3
MKAZ	**Moumakai**	**3.67**	**270**	Pn	Pn	15 04 53.5	-1.3
BHHZ	**Black Hill Sta**	**3.70**	**230**	PN	Pn	15 04 53.6	-1.8
BHHZ	**Black Hill Sta**	**3.70**	**230**	Pn	Pn	15 04 53.6	-1.8
ETAZ	**East Tamaki Re**	**3.86**	**272**	PN	Pn	15 04 56.6	-0.9
ETAZ	**East Tamaki Re**	**3.86**	**272**	Pn	Pn	15 04 56.6	-0.9
PNHZ	**Pukenui**	**3.89**	**225**	PN	Pn	15 04 55.2	-2.8
PNHZ	**Pukenui**	**3.89**	**225**	Pn	Pn	15 04 55.2	-2.8
PRHZ	**Porangahau**	**3.92**	**217**	PN	Pn	15 04 55.1	-3.3
PRHZ	**Porangahau**	**3.92**	**217**	Pn	Pn	15 04 55.1	-3.3
AWAZ	**Awhitu Peninsu**	**4.08**	**270**	PN	Pn	15 05 00.3	-0.3
TSZ	**Takapari Road**	**4.13**	**225**	PN	Pn	15 04 57.9	-3.3
TSZ	**Takapari Road**	**4.13**	**225**	Pn	Pn	15 04 57.9	-3.3
ANWZ	**Angora Road**	**4.15**	**217**	PN	Pn	15 04 57.8	-3.6
RVAZ	**Riverhead Bore**	**4.16**	**274**	⇓PN	Pn	15 05 01.4	-0.2
RVAZ	**Riverhead Bore**	**4.16**	**274**	Pn	Pn	15 05 01.4	-0.2
DVHZ	**Dannevirke**	**4.18**	**221**	PN	Pn	15 04 58.7	-3.3
DVHZ	**Dannevirke**	**4.18**	**221**	Pn	Pn	15 04 58.7	-3.3
BFZ	**Birch Farm**	**4.43**	**217**	⇓PN	Pn	15 05 01.5	-3.9
BFZ	**Birch Farm**	**4.43**	**217**	Pn	Pn	15 05 01.5	-3.9
POWZ	**Post Office Ro**	**4.46**	**223**	PN	Pn	15 05 03.2	-2.6
POWZ	**Post Office Ro**	**4.46**	**223**	Pn	Pn	15 05 03.2	-2.6
PRWZ	**Pori Road**	**4.47**	**220**	PN	Pn	15 05 03.0	-2.9
PRWZ	**Pori Road**	**4.47**	**220**	Pn	Pn	15 05 03.0	-2.9
WCZ	**Waipu Caves**	**4.52**	**284**	PN	Pn	15 05 05.7	-0.9
WCZ	**Waipu Caves**	**4.52**	**284**	Pn	Pn	15 05 05.8	-0.9
WAZ	**Wanganui**	**4.53**	**234**	PN	Pn	15 05 06.5	-0.3
WAZ	**Wanganui**	**4.53**	**234**	Pn	Pn	15 05 06.5	-0.3
MRZ	**Mangatainoka R**	**4.75**	**222**	PN	Pn	15 05 05.8	-4.0
MRZ	**Mangatainoka R**	**4.75**	**222**	Pn	Pn	15 05 05.8	-4.0
HOWZ	**Holdsworth Sta**	**4.96**	**220**	PN	Pn	15 05 08.5	-4.2
HOWZ	**Holdsworth Sta**	**4.96**	**220**	Pn	Pn	15 05 08.5	-4.2
MTW	**Mount Morrison**	**5.16**	**218**	PN	Pn	15 05 10.7	-4.6
MTW	**Mount Morrison**	**5.16**	**218**	Pn	Pn	15 05 10.7	-4.6
CTZ	**Chatham Island**	**7.11**	**158**	Pn	Pn	15 05 39.5	-2.5

CRAAG ***11*** *15:05:12.0, 37°.70N×1°.63W, Ml4.5*

IDC ***11*** *15:05:12.8±0.7, 37°.64N×1°.59W, h0km, mb3.9/14, mb1 4.2/19, mb1mx3.9/51, mbtmp4.0/19, ML4.2/5, MS3.6/14, Ms1 3.6/14, ms1mx3.4/51, Error ellipse: s-maj=16.8km s-min=15.9km az=122.0*

CSEM ***11*** *15:05:12.0±0.1, 37°.75N×1°.72W, h0km, mb4.3/20, ML4.8/55, Mw4.5, Error ellipse: s-maj=1.9km s-min=1.4km az=167.0*

IGIL ***11*** *15:05:13.9, 37°.70N×1°.68W, h0km, ML4.2*

NEIC ***11*** *15:05:13.1, 37°.69N×1°.67W, h0km, mb4.5/13, ML4.5(LDG), MW4.5(MDD), After MDD.*

NEIC Felt [II] at Lorca and Murcia. Also felt at Aguilas, Ciudad Real, Mazarron and Velez Rubio.

MDD ***11*** *15:05:13.5±0.1, 37°.72N×1°.71W, h2km±3km, mb4.6/18, mbLg4.5/29, Error ellipse: s-maj=1.5km s-min=1.4km az=166.0, PRXIMO*

MDD EMS VI INTENSIDAD MAXIMA.

INMG ***11*** *15:05:13.0±1.0, 37°.70N×1°.70W, h0km, MD4.2, ML4.5, Error ellipse: s-maj=1.4km s-min=1.0km az=142.0*

STR ***11*** *15:05:13.0±0.8, 37°.72N×1°.67W, h5km, Ml4.5, Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*

MOS ***11*** *15:05:13.2±1.5, 37°.96N×1°.79W, h10km, mb4.4/25, Error ellipse: s-maj=7.7km s-min=3.3km az=64.6*

LDG ***11*** *15:05:13.0±0.1, 37°.60N×1°.65W, h2km, Ml4.5/47, Error ellipse: s-maj=2.6km s-min=1.3km az=142.0*

SFS ***11*** *15:05:13.0, 37°.70N×1°.67W, h0km, ML4.5*

CNRM ***11*** *15:05:15.7, 37°.73N×1°.65W, h30km, MD4.2*

ISC 11 15:05:12.7±0.6, 37°.73N±0°.02×1°.71W±0°.02, h5km±3km, n595, σ1§83/784, mb4.3/38, MS3.6/13, 28C-11D, Spain

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EXLO	**Lorca**	**0.05**	**170**	Pg	**Pg**	**15 05 14.0**	**-0.1**
	SNR=7.9						
EXLO				Lg	Lg	15 05 14.9	
	SNR=7.9						
EXLO	**Lorca**	**0.05**	**170**	Pg	**Pg**	**15 05 14.0**	**-0.1**
	SNR=7.9						
VELZ	**Velez Rubio**	**0.26**	**237**	⇑Pg	**Pg**	**15 05 18.0**	**+0.2**
	SNR=18						
VELZ				Lg	Lg	15 05 21.6	
	SNR=7.9						
VELZ	**Velez Rubio**	**0.26**	**237**	Pg	**Pg**	**15 05 18.0**	**+0.2**
	SNR=18						
VELZ				Lg	Lg	15 05 21.6	
	SNR=7.9						
EXMU	**Mula**	**0.35**	**29**	Pg	**Pg**	**15 05 20.1**	**+0.5**
EXMU				Lg	Lg	15 05 26.5	
EXMU	**Mula**	**0.35**	**29**	Pg	**Pg**	**15 05 20.1**	**+0.5**
EXMU				Lg	Lg	15 05 26.5	
EMUR	**La Murta**	**0.39**	**73**	⇑Pg	**Pg**	**15 05 20.3**	**0.0**
	4μm,0.4s,SNR=18						
EMUR				Lg	Lg	15 05 26.4	
	12μm,0.3s,SNR=5.0						
EMUR	**La Murta**	**0.39**	**73**	Pg	**Pg**	**15 05 20.3**	**0.0**
	4μm,0.4s,SNR=18						
EMUR				Lg	Lg	15 05 26.4	
	12μm,0.3s,SNR=5.0						
CART	**Cartagena**	**0.58**	**104**	Pg	**Pg**	**15 05 23.5**	**-0.4**
CART				Lg	Lg	15 05 31.5	
CART	**Cartagena**	**0.58**	**104**	Pg	**Pg**	**15 05 23.5**	**-0.4**
CART				*e*S	**Sg**	**15 05 30.2**	**-1.2**
CART				Lg	Lg	15 05 31.5	
EHUE	**Huescar**	**0.70**	**277**	⇑Pg	**Pg**	**15 05 26.0**	**-0.2**
	178nm,0.3s,SNR=18						
EHUE	**Huescar**	**0.70**	**277**	Pg	**Pg**	**15 05 26.0**	**-0.2**
	178nm,0.3s,SNR=18						
SESP	**Santiago Espad**	**0.77**	**301**	⇓Pg	**Pg**	**15 05 27.8**	**+0.4**
	868nm,0.5s,SNR=18						
SESP				Lg	Lg	15 05 39.3	
	11μm,0.4s,SNR=7.9						
SESP	**Santiago Espad**	**0.77**	**301**	Pg	**Pg**	**15 05 27.8**	**+0.4**
	868nm,0.5s,SNR=18						
SESP				Lg	Lg	15 05 39.3	
	11μm,0.4s,SNR=7.9						
ENIJ	**Nijar**	**0.85**	**208**	⇓Pg	**Pg**	**15 05 28.6**	**-0.4**
	5μm,0.4s,SNR=18						
ENIJ				Lg	Lg	15 05 40.3	
	13μm,0.5s,SNR=7.9						
ENIJ	**Nijar**	**0.85**	**208**	Pg	**Pg**	**15 05 28.6**	**-0.4**
	5μm,0.4s,SNR=18						
ENIJ				Lg	Lg	15 05 40.3	
	13μm,0.5s,SNR=7.9						
ETOB	**Tobarra**	**0.92**	**8**	⇓Pg	**Pg**	**15 05 30.4**	**-0.1**
	87nm,0.2s,SNR=18						
ETOB				Lg	Lg	15 05 44.5	
	9μm,0.4s,SNR=5.0						
ETOB	**Tobarra**	**0.92**	**8**	Pg	**Pg**	**15 05 30.4**	**-0.1**
	87nm,0.2s,SNR=18						
ETOB				Lg	Lg	15 05 44.5	
	9μm,0.4s,SNR=5.0						
EQES	**Quesada**	**1.08**	**274**	⇑Pg	**Pg**	**15 05 33.1**	**-0.3**
	288nm,0.2s,SNR=18						
EQES				Lg	Lg	15 05 51.1	
	20μm,0.7s,SNR=5.0						
EQES	**Quesada**	**1.08**	**274**	Pg	**Pg**	**15 05 33.1**	**-0.3**
	288nm,0.2s,SNR=18						
EQES				Lg	Lg	15 05 51.1	
	20μm,0.7s,SNR=5.0						
GORA	**Gorafe**	**1.08**	**257**	Pg	**Pg**	**15 05 33.4**	**-0.1**
	897nm,0.5s,SNR=18						
GORA				Lg	Lg	15 05 50.5	
	47μm,1.1s,SNR=7.9						
GORA	**Gorafe**	**1.08**	**257**	Pg	**Pg**	**15 05 33.4**	**-0.1**
	897nm,0.5s,SNR=18						
GORA				Lg	Lg	15 05 50.5	
	47μm,1.1s,SNR=7.9						
EVIA	**Vianos**	**1.10**	**326**	⇓Pg	**Pg**	**15 05 33.7**	**-0.1**
	SNR=18						
EVIA	**Vianos**	**1.10**	**326**	Pg	**Pg**	**15 05 33.7**	**-0.1**
	SNR=18						
EBER	**Berja**	**1.25**	**229**	⇓Pg	**Pg**	**15 05 36.2**	**-0.5**
	2μm,0.4s,SNR=18						
EBER				Lg	Lg	15 05 54.2	
	16μm,0.6s,SNR=5.0						
EBER	**Berja**	**1.25**	**229**	Pg	**Pg**	**15 05 36.2**	**-0.5**
	2μm,0.4s,SNR=18						
EBER				Lg	Lg	15 05 54.2	
	16μm,0.6s,SNR=5.0						
AFON	**Font Roja**	**1.31**	**44**	Pn	**Pn**	**15 05 36.5**	**-1.4**
	17nm,0.3s,SNR=70						
AFON				Lg	Lg	15 05 56.2	
	6μm,0.9s,SNR=8.7						
AFON	**Font Roja**	**1.31**	**44**	Pn	**Pn**	**15 05 36.5**	**-1.4**
	17nm,0.3s,SNR=70						
AFON				Lg	Lg	15 05 56.2	
	6μm,0.9s,SNR=8.7						
EQUE	**Quentar**	**1.47**	**250**	Pn	**Pn**	**15 05 40.0**	**0.0**
	680nm,0.5s,SNR=188						
EQUE				Lg	Lg	15 06 01.7	
	8μm,0.7s,SNR=5.0						
EQUE	**Quentar**	**1.47**	**250**	Pn	**Pn**	**15 05 40.0**	**0.0**
	680nm,0.5s,SNR=188						
EQUE				Lg	Lg	15 06 01.7	
	8μm,0.7s,SNR=5.0						
ECOG	**Cogollos-Vega**	**1.54**	**254**	Pn	**Pn**	**15 05 41.2**	**+0.2**
	511nm,0.3s,SNR=7.9						
ECOG				Pg	**Pg**	**15 05 42.9**	**+0.6**
	SNR=7.9						
ECOG	**Cogollos-Vega**	**1.54**	**254**	Pn	**Pn**	**15 05 41.2**	**+0.2**
	511nm,0.3s,SNR=7.9						
SELV	**Sierra Elvira**	**1.68**	**254**	⇑Pn	**Pb**	**15 05 44.1**	**0.0**
	419nm,0.4s,SNR=18						
SELV				Pg	**Pg**	**15 05 45.2**	**+0.3**
	SNR=7.9						
SELV				Lg	Lg	15 06 08.3	
	29μm,1.6s,SNR=7.9						
SELV	**Sierra Elvira**	**1.68**	**254**	Pn	**Pb**	**15 05 44.1**	**0.0**
	419nm,0.4s,SNR=18						
EBAN	**Banos Encina**	**1.70**	**286**	Pg	**Pn**	**15 05 43.7**	**+0.7**
	SNR=7.9						
EBAN	**Banos Encina**	**1.70**	**286**	Pg	**Pn**	**15 05 43.7**	**+0.7**
	SNR=7.9						
EGOR	**Sierra Gorda,**	**2.01**	**253**	⇑Pn	**Pb**	**15 05 48.7**	**-1.0**
	743nm,0.7s,SNR=18						
EGOR				Lg	Lg	15 06 17.8	
	8μm,1.0s,SNR=7.9						
EGOR	**Sierra Gorda,**	**2.01**	**253**	Pn	**Pb**	**15 05 48.7**	**-1.0**
	743nm,0.7s,SNR=18						
EGOR				Lg	Lg	15 06 17.8	
	8μm,1.0s,SNR=7.9						
EALB	**Alboran**	**2.08**	**211**	Pn	**Pn**	**15 05 48.7**	**+0.5**
	330nm,0.3s,SNR=24						
EALB				Lg	Lg	15 06 18.2	
	1μm,0.7s,SNR=5.0						
EALB	**Alboran**	**2.08**	**211**	Pn	**Pn**	**15 05 48.7**	**+0.5**
	330nm,0.3s,SNR=24						
EALB				Lg	Lg	15 06 18.2	
	1μm,0.7s,SNR=5.0						
USTO	**Oran**	**2.20**	**155**	P	**Pn**	**15 05 51.0**	**+1.1**
EADA	**Adamuz**	**2.31**	**282**	Pn	**Pn**	**15 05 51.3**	**-0.1**
	46nm,0.1s,SNR=18						
EADA				Sn	**Sn**	**15 06 20.5**	**+0.3**
	394nm,0.3s,SNR=8.7						
EADA				Lg	Lg	15 06 28.6	
	3μm,0.8s,SNR=5.0						
EADA	**Adamuz**	**2.31**	**282**	Pn	**Pn**	**15 05 51.3**	**-0.1**
	46nm,0.1s,SNR=18						
EADA				Sn	**Sn**	**15 06 20.5**	**+0.3**
	394nm,0.3s,SNR=8.7						
EADA				Lg	Lg	15 06 28.6	
	3μm,0.8s,SNR=5.0						
EMAL	**Malaga-Limoner**	**2.37**	**247**	*e*P	**Pn**	**15 05 53.5**	**+1.2**
OLHC	**Oulhaca**	**2.48**	**174**	P	**Pn**	**15 05 51.0**	**-2.9**
OLHC	**Oulhaca**	**2.48**	**174**	Pn	**Pn**	**15 05 51.0**	**-2.9**
OKGL	**Djebel Kef Gue**	**2.53**	**131**	P	**Pn**	**15 05 54.0**	**-0.5**
OKGL	**Djebel Kef Gue**	**2.53**	**131**	Sn	**Sn**	**15 06 22.9**	**-2.9**
	1μm,0.3s,SNR=7.9						
OKGL	**Djebel Kef Gue**	**2.53**	**131**	P	**Pn**	**15 05 54.0**	**-0.5**
OTSS	**Djebel Tessala**	**2.55**	**163**	P	**Pn**	**15 05 52.0**	**-2.8**
OTSS	**Djebel Tessala**	**2.55**	**163**	P	**Pn**	**15 05 52.0**	**-2.8**
ES19	**SONSECA Array**	**2.61**	**320**	*e*Pn	**Pn**	**15 05 54.8**	**-0.8**
ES19	**SONSECA Array**	**2.61**	**320**	*e*Pn	**Pn**	**15 05 54.8**	**-0.8**
ESDC	**Sonseca Array**	**2.62**	**319**	Pn	**Pn**	**15 05 55.2**	**-0.6**
	32nm,0.3s,baz=134,slow=14,SNR=130						
ESDC				Pg	**Pg**	**15 06 03.8**	**+0.8**
	178nm,0.3s,baz=133,slow=16,SNR=100						
ESDC				Sn	**Sg**	**15 06 36.3**	**-0.7**
	661nm,0.3s,baz=136,slow=30,SNR=17						
ESDC	**Sonseca Array**	**2.62**	**319**	Pn	**Pn**	**15 05 55.2**	**-0.6**
	15nm,0.2s,baz=128,slow=13,SNR=93						
ESDC				Pg	**Pg**	**15 06 02.9**	**-0.1**
	352nm,0.3s,baz=135,slow=17,SNR=7.9						
ESDC				Sn	**Sn**	**15 06 27.2**	**-0.8**
	120nm,0.2s,baz=133,slow=24,SNR=7.9						
ESDC				Lg	Lg	15 06 38.8	
	2μm,0.4s,baz=136,slow=30,SNR=7.9						
ESDC	**Sonseca Array**	**2.62**	**319**	Pn	**Pn**	**15 05 55.2**	**-0.6**
	15nm,0.2s,SNR=93						
ESDC	**Sonseca Array**	**2.62**	**319**	Pg	**Pg**	**15 06 02.9**	**-0.1**
	352nm,0.3s,SNR=7.9						
ESDC				Sn	**Sn**	**15 06 27.2**	**-0.8**
	120nm,0.2s,SNR=7.9						
ESDC				Lg	Lg	15 06 38.8	
	2μm,0.4s,SNR=7.9						
ESLA	**Sonseca Array**	**2.62**	**319**	*e*Pn	**Pn**	**15 05 55.3**	**-0.5**
ESLA	**Sonseca Array**	**2.62**	**319**	*e*Pn	**Pn**	**15 05 55.4**	**-0.5**
ODJA	**Bouhanifia**	**2.70**	**152**	P	**Pn**	**15 05 55.0**	**-1.9**
ODJA	**Bouhanifia**	**2.70**	**152**	P	**Pn**	**15 05 55.0**	**-1.9**
OJBR	**Djebel Berber**	**2.71**	**142**	P	**Pn**	**15 05 53.0**	**-3.9**
OJBR	**Djebel Berber**	**2.71**	**142**	P	**Pn**	**15 05 53.0**	**-3.9**
EMIJ	**Mijas**	**2.71**	**246**	Pn	**Pn**	**15 05 55.9**	**-1.0**
	5.7nm,0.3s,SNR=4.0						
EMIJ				Sn	**Sn**	**15 06 28.4**	**-1.7**
	328nm,0.4s,SNR=7.0						
EMIJ				Lg	Lg	15 06 38.7	
	864nm,0.5s,SNR=5.0						
EMIJ	**Mijas**	**2.71**	**246**	Pn	**Pn**	**15 05 55.9**	**-1.0**
	5.7nm,0.3s,SNR=4.0						
EMIJ				Sn	**Sn**	**15 06 28.4**	**-1.7**
	328nm,0.4s,SNR=7.0						
EMIJ				Lg	Lg	15 06 38.7	
	864nm,0.5s,SNR=5.0						
EIBI	**Ibiza**	**2.73**	**61**	⇑Pn	**Pn**	**15 05 55.6**	**-1.6**
	87nm,0.1s,SNR=18						
EIBI				Pg	**Pb**	**15 06 01.6**	**-0.4**
	202nm,0.3s,SNR=7.9						
EIBI				Sn	**Sn**	**15 06 28.6**	**-2.0**
	347nm,0.3s,SNR=5.3						
EIBI				Lg	Lg	15 06 40.7	
	1μm,1.9s,SNR=7.9						
EIBI	**Ibiza**	**2.73**	**61**	Pn	**Pn**	**15 05 55.6**	**-1.6**
	87nm,0.1s,SNR=18						
PAB	**San Pablo**	**2.75**	**312**	*e*P	**Pn**	**15 05 57.0**	**-0.5**
PAB	**San Pablo**	**2.75**	**312**	*e*P	**Pn**	**15 05 57.0**	**-0.5**
PAB	**San Pablo**	**2.75**	**312**	*e*Pn	**Pn**	**15 05 57.0**	**-0.5**
EMOS	**Mosqueruela**	**2.80**	**20**	⇓Pn	**Pn**	**15 05 57.9**	**-0.5**
	7.0nm,0.3s,SNR=18						
EMOS				Sn	**Sn**	**15 06 31.7**	**-1.0**
	101nm,0.3s,SNR=8.5						
EMOS				Lg	Lg	15 06 43.3	
	3μm,1.4s,SNR=7.9						
EMOS	**Mosqueruela**	**2.80**	**20**	Pn	**Pn**	**15 05 57.9**	**-0.5**
	7.0nm,0.3s,SNR=18						
EMOS				Sn	**Sn**	**15 06 31.7**	**-1.0**
	101nm,0.3s,SNR=8.5						
EMOS				Lg	Lg	15 06 43.3	
	3μm,1.4s,SNR=7.9						
EANR	**'Ain N'Sour**	**2.87**	**127**	P	**Pn**	**15 05 57.5**	**-1.7**
EANR	**'Ain N'Sour**	**2.87**	**127**	P	**Pn**	**15 05 57.5**	**-1.7**
ECHA	**Ech Chlef**	**2.93**	**122**	P	**Pn**	**15 05 55.7**	**-4.2**
ECHA	**Ech Chlef**	**2.93**	**122**	P	**Pn**	**15 05 55.7**	**-4.2**
ECAB	**El Cabril**	**2.95**	**278**	Pn	**Pn**	**15 05 59.9**	**-0.4**
	265nm,0.2s,SNR=18						
ECAB				Pg	**Pg**	**15 06 08.2**	**-1.1**
	298nm,0.3s,SNR=7.9						
ECAB				Sn	**Sn**	**15 06 36.2**	**+0.1**
	660nm,0.4s,SNR=7.9						
ECAB				Lg	Lg	15 06 48.8	
	1μm,0.5s,SNR=5.0						
ECAB	**El Cabril**	**2.95**	**278**	Pn	**Pn**	**15 05 59.9**	**-0.4**
	265nm,0.2s,SNR=18						
EBNR	**Beni Rached**	**2.96**	**118**	P	**Pb**	**15 06 06.1**	**0.0**
OJGS	**Djebel Guires**	**2.97**	**138**	P	Pn	15 05 53.0	-7.6
EJIF	**Jimena Fronter**	**3.26**	**248**	Pn	**Pn**	**15 06 03.4**	**-1.1**
	1.8nm,0.3s,SNR=4.0						
EJIF				Pg	**Pb**	**15 06 12.4**	**+1.3**
	660nm,0.9s,SNR=7.9						
EJIF				Lg	Lg	15 06 58.0	
	834nm,0.8s,SNR=7.9						
EJIF	**Jimena Fronter**	**3.26**	**248**	Pn	**Pn**	**15 06 03.4**	**-1.1**
	1.8nm,0.3s,SNR=4.0						
EJIF				Lg	Lg	15 06 58.0	

45nm,0.2s,SNR=7.9
EPLA Sn **Sn** **15 07 02.6 -2.6**
87nm,0.4s,SNR=7.9
EPLA Lg Lg 15 07 26.4
3µm,0.9s,SNR=7.9
EPLA Plasencia 4.13 306 Pn **Pn** **15 06 16.3 -0.2**
20nm,0.2s,SNR=23
EPOB Poblet 4.21 30 Pn **Pn** **15 06 17.4 -0.3**
6.0nm,0.2s,SNR=21
EPOB Lg Lg 15 07 24.5
266nm,1.2s,SNR=7.9
EPOB Poblet 4.21 30 Pn **Pn** **15 06 17.4 -0.3**
6.0nm,0.2s,SNR=21
EPOB Lg Lg 15 07 24.5
266nm,1.2s,SNR=7.9
PBAR Barrancos 4.23 278 *e*Pn **Pn** **15 06 17.6 -0.3**
PBAR *e*Sn **Sn** **15 07 07.1 -0.6**
PBAR *e*Sg **Sg** **15 07 28.8 +0.1**
PBAR A A 15 07 39.6
2µm,0.6s
PBAR Barrancos 4.23 278 *e*Pn **Pn** **15 06 17.6 -0.3**
PBAR *e*Sn **Sn** **15 07 07.1 -0.6**
PBAR *e*Sg **Sg** **15 07 28.8 +0.1**
2µm,0.6s
EBAD Badajoz 4.30 285 Pn **Pn** **15 06 18.6 -0.2**
31nm,0.2s,SNR=47
EBAD Pg **Pg** **15 06 33.2 -1.8**
91nm,0.5s,SNR=7.9
EBAD Sn **Sn** **15 07 07.2 -2.1**
60nm,0.2s,SNR=7.9
EBAD Lg Lg 15 07 30.9
3µm,0.8s,SNR=5.0
EBAD Badajoz 4.30 285 Pn **Pn** **15 06 18.6 -0.2**
31nm,0.2s,SNR=47
ADJB Djebel Djouab 4.41 109 P **Pn** **15 06 20.1 -0.3**
ADJB Djebel Djouab 4.41 109 P **Pn** **15 06 20.1 -0.3**
EGRO El Granado 4.58 269 ⇓Pn **Pn** **15 06 22.2 -0.5**
95nm,0.3s,SNR=18
EGRO Sn **Sn** **15 07 14.5 -1.8**
118nm,0.4s,SNR=7.9
EGRO Lg Lg 15 07 38.0
2µm,1.2s,SNR=7.9
EGRO El Granado 4.58 269 Pn **Pn** **15 06 22.2 -0.5**
95nm,0.3s,SNR=18
EGRO Sn **Sn** **15 07 14.5 -1.8**
118nm,0.4s,SNR=7.9
EGRO Lg Lg 15 07 38.0
2µm,1.2s,SNR=7.9
PESTR Estremoz 4.76 286 *e*Pn **Pn** **15 06 24.8 -0.3**
PESTR *e*Sn **Sn** **15 07 20.1 -0.6**
PESTR *e*Sg **Sg** **15 07 45.2 -0.4**
PESTR A A 15 07 51.8
724nm,0.6s
PESTR Estremoz 4.76 286 *e*Pn **Pn** **15 06 24.8 -0.3**
PESTR *e*Sn **Sn** **15 07 20.1 -0.6**
PESTR *e*Sg **Sg** **15 07 45.2 -0.4**
724nm,0.6s
PMRV Marv??o 4.76 293 *e*Pn **Pn** **15 06 24.8 -0.4**
PMRV *e*Sn **Sn** **15 07 19.9 -0.9**
PMRV *e*Sg **Sg** **15 07 45.2 -0.5**
PMRV A A 15 07 56.5
875nm,0.5s
PMRV Marv??o 4.76 293 *e*Pn **Pn** **15 06 24.8 -0.4**
PMRV *e*Sn **Sn** **15 07 19.9 -0.9**
PMRV *e*Sg **Sg** **15 07 45.2 -0.5**
875nm,0.5s
PVAQ Vaqueiros 4.78 268 *e*Pn **Pn** **15 06 24.7 -0.7**
PVAQ *e*Sn **Sn** **15 07 19.6 -1.6**
PVAQ *e*Sg **Sg** **15 07 44.5 -1.8**
PVAQ A A 15 07 59.3
505nm,0.6s
PVAQ Vaqueiros 4.78 268 *e*Pn **Pn** **15 06 24.7 -0.7**
PVAQ *e*Sn **Sn** **15 07 19.6 -1.6**
PVAQ *e*Sg **Sg** **15 07 44.5 -1.8**
505nm,0.6s
AKET Djebel Ketaf 4.79 109 P **Pn** **15 06 26.1 +0.5**
AKET Djebel Ketaf 4.79 109 P **Pn** **15 06 26.1 +0.5**
PBEJ Beja 4.88 275 *e*Pn **Pn** **15 06 26.8 +0.1**
PBEJ *e*Sn **Sn** **15 07 22.2 -1.4**
PBEJ *e*Sg **Sg** **15 07 48.4 -1.0**
PBEJ A A 15 08 05.8
352nm,0.6s
PBEJ Beja 4.88 275 *e*Pn **Pn** **15 06 26.8 +0.1**
PBEJ *e*Sn **Sn** **15 07 22.2 -1.4**
PBEJ *e*Sg **Sg** **15 07 48.4 -1.0**
352nm,0.6s
PBDV Barranco-do-Ve 4.97 266 *e*Pn **Pn** **15 06 27.9 -0.1**
PBDV *e*Sn **Sn** **15 07 24.2 -1.7**
PBDV *e*Sg **Sg** **15 07 52.2 -0.1**
PBDV A A 15 08 01.4
563nm,0.7s
PBDV Barranco-do-Ve 4.97 266 *e*Pn **Pn** **15 06 27.9 -0.1**
PBDV *e*Sn **Sn** **15 07 24.2 -1.7**
PBDV *e*Sg **Sg** **15 07 52.2 -0.1**
563nm,0.7s
PCBR Castelo Branco 4.97 297 *e*Pn **Pn** **15 06 28.1 +0.1**
PCBR *e*Sn **Sn** **15 07 24.6 -1.3**
PCBR *e*Sg **Sg** **15 07 51.7 -0.7**
PCBR A A 15 08 05.9
496nm,0.8s
PCBR Castelo Branco 4.97 297 *e*Pn **Pn** **15 06 28.1 +0.1**
PCBR *e*Sn **Sn** **15 07 24.6 -1.3**
PCBR *e*Sg **Sg** **15 07 51.7 -0.7**
496nm,0.8s
PCVE Castro Verde 5.02 271 *e*Pn **Pn** **15 06 28.1 -0.6**
PCVE *e*Sn **Sn** **15 07 25.3 -1.8**
PCVE *e*Sg **Sg** **15 07 51.9 -2.0**
PCVE A A 15 07 59.7
421nm,0.6s
PCVE Castro Verde 5.02 271 *e*Pn **Pn** **15 06 28.1 -0.6**
PCVE *e*Sn **Sn** **15 07 25.3 -1.8**
PCVE *e*Sg **Sg** **15 07 51.9 -2.0**
421nm,0.6s
EVO Evora 5.03 281 *e*Pn **Pn** **15 06 29.1 +0.3**
EVO *e*Sn **Sn** **15 07 26.3 -1.1**
EVO *e*Sg **Sg** **15 07 53.9 -0.4**
EVO A A 15 08 10.6
627nm,0.7s
EVO Evora 5.03 281 *e*Pn **Pn** **15 06 29.1 +0.3**
EVO *e*Sn **Sn** **15 07 26.3 -1.1**
EVO *e*Sg **Sg** **15 07 53.9 -0.4**
627nm,0.7s
EARA Aranguren 5.04 1 Pn **Pn** **15 06 30.7 +1.7**
48nm,0.4s,SNR=30
EARA Sn **Sn** **15 07 25.0 -2.6**
116nm,0.6s,SNR=7.9
EARA Lg Lg 15 07 56.2
1µm,1.8s,SNR=7.9
EARA Aranguren 5.04 1 Pn **Pn** **15 06 30.7 +1.7**
48nm,0.4s,SNR=30
EARA Sn **Sn** **15 07 25.0 -2.6**
116nm,0.6s,SNR=7.9
EARA Lg Lg 15 07 56.2
1µm,1.8s,SNR=7.9
IPRE Itoiz 5.08 3 Pn **Pn** **15 06 30.7 +1.2**
5.1nm,0.1s,SNR=7.9
IPRE Lg Lg 15 08 00.2
362nm,1.0s,SNR=7.9
IPRE Itoiz 5.08 3 Pn **Pn** **15 06 30.7 +1.2**
5.1nm,0.1s,SNR=7.9
IPRE Lg Lg 15 08 00.2
362nm,1.0s,SNR=7.9
IELO Elcoad 5.12 4 Pn **Pn** **15 06 31.2 +1.1**
7.9nm,0.3s,SNR=7.9
IELO Sn **Sn** **15 07 27.3 -2.3**
57nm,0.5s,SNR=7.9
IELO Lg Lg 15 07 57.2
3µm,2.4s,SNR=7.9
IELO Elcoad 5.12 4 Pn **Pn** **15 06 31.2 +1.1**
7.9nm,0.3s,SNR=7.9
IELO Sn **Sn** **15 07 27.3 -2.3**
57nm,0.5s,SNR=7.9
IELO Lg Lg 15 07 57.2
3µm,2.4s,SNR=7.9
ECHI Chisagues Biel 5.14 16 Pn **Pn** **15 06 31.2 +0.7**
3.5nm,0.1s,SNR=7.9
ECHI Lg Lg 15 07 58.4
445nm,1.3s,SNR=7.9
ECHI Chisagues Biel 5.14 16 Pn **Pn** **15 06 31.2 +0.7**
3.5nm,0.1s,SNR=7.9
ECHI Lg Lg 15 07 58.4
445nm,1.3s,SNR=7.9
CFON Fontmartina 5.14 37 Pn **Pn** **15 06 29.8 -0.6**
4.0nm,0.3s,SNR=12
CFON Sn **Sn** **15 07 30.0 -0.2**
24nm,0.3s,SNR=7.9
CFON Fontmartina 5.14 37 Pn **Pn** **15 06 29.8 -0.6**
4.0nm,0.3s,SNR=12
CFON Sn **Sn** **15 07 30.0 -0.2**
24nm,0.3s,SNR=7.9
MAHO Mahon 5.15 63 *e*P **Pn** **15 06 29.2 -1.2**
ATAF Djebel Tarf 5.15 109 P **Pn** **15 06 31.6 +1.0**
ATAF Djebel Tarf 5.15 109 P **Pn** **15 06 31.6 +1.0**
MESJ Messejana 5.16 273 *e*P **Pn** **15 06 30.1 -0.4**
MESJ *e*S **Sn** **15 07 27.2 -3.2**
MESJ AML AML 15 07 32.9
comp=N,126nm,0.1s
MESJ Messejana 5.16 273 *e*Pn **Pn** **15 06 30.2 -0.3**
MESJ *e*Sn **Sn** **15 07 29.1 -1.3**
MESJ *e*Sg **Sg** **15 07 58.3 0.0**
MESJ A A 15 08 02.8
comp=N,412nm,0.6s
MESJ Messejana 5.16 273 *e*P **Pn** **15 06 30.1 -0.4**
MESJ *e*S **Sn** **15 07 27.2 -3.2**
MESJ Messejana 5.16 273 *e*Pn **Pn** **15 06 30.2 -0.3**
MESJ *e*S **Sn** **15 07 27.2 -3.2**
MESJ *e*Sn **Sn** **15 07 29.1 -1.3**
MESJ *e*Sg **Sg** **15 07 58.3 0.0**
comp=N,412nm,0.6s
ETSF Etsaut 5.24 9 *e*Pn **Pn** **15 06 32.3 +0.5**
ETSF Etsaut 5.24 9 *e*Pg **Pg** **15 06 54.9 +1.8**
ETSF *e*Sg **Sg** **15 08 02.1 +1.2**
comp=N,1µm,1.4s
ETSF Etsaut 5.24 9 *e*P **Pn** **15 06 32.3 +0.5**
ETSF Etsaut 5.24 9 *e*Pn **Pn** **15 06 32.3 +0.5**
ETSF Etsaut 5.24 9 *e*Pg **Pg** **15 06 54.9 +1.8**
ETSF *e*Sg **Sg** **15 08 02.1 +1.2**
comp=N,536nm,1.4s
ETSF Etsaut 5.24 9 *e*Pn **Pn** **15 06 32.3 +0.5**
ETSF *e*Pg **Pg** **15 06 54.9 +1.8**
ETSF *e*Sg **Sg** **15 08 02.1 +1.2**
MTE Manteigas 5.26 302⇓*e*Pn **Pn** **15 06 32.1 -0.1**
MTE *e*Sn **Sn** **15 07 32.2 -1.0**
MTE *e*Sg **Sg** **15 08 01.1 -0.7**
MTE A A 15 08 19.8
comp=N,902nm,0.6s
MTE Manteigas 5.26 302 *e*Pn **Pn** **15 06 32.0 -0.1**
MTE *e*Sn **Sn** **15 07 32.2 -1.0**
MTE *e*Sg **Sg** **15 08 01.1 -0.7**
comp=N,902nm,0.6s
MTE Manteigas 5.26 302 *e*Pn **Pn** **15 06 32.0 -0.1**
PMTG Montargil 5.29 287 *e*Pn **Pn** **15 06 31.4 -1.0**
PMTG *e*Sn **Sn** **15 07 31.5 -2.2**
PMTG *e*Sg **Sg** **15 08 01.2 -1.3**
PMTG A A 15 08 15.5
comp=N,822nm,0.6s
PMTG Montargil 5.29 287 *e*Pn **Pn** **15 06 31.4 -1.0**
PMTG *e*Sn **Sn** **15 07 31.5 -2.2**
PMTG *e*Sg **Sg** **15 08 01.2 -1.3**
comp=N,822nm,0.6s
VIEF Viey 5.32 14 P **Pn** **15 06 33.2 +0.4**
VIEF S **Sn** **15 07 40.1 +5.6**
VIEF Viey 5.32 14 P **Pn** **15 06 33.2 +0.4**
MVO Moncorvo 5.36 311 *e*Pn **Pn** **15 06 33.0 -0.4**
MVO *e*Sn **Sn** **15 07 34.3 -1.2**
MVO *e*Sg **Sg** **15 08 02.9 -1.8**
MVO A A 15 08 19.4
comp=N,712nm,0.7s
MVO Moncorvo 5.36 311 Pn **Pn** **15 06 33.3 -0.1**
comp=N,18nm,0.2s,SNR=17
MVO Sn **Sn** **15 07 33.2 -2.2**
comp=N,143nm,0.4s,SNR=7.9
MVO Lg Lg 15 08 04.0
comp=N,4µm,1.5s,SNR=7.9
MVO Moncorvo 5.36 311 *e*Pn **Pn** **15 06 33.0 -0.4**
MVO *e*Sn **Sn** **15 07 34.3 -1.2**
MVO *e*Sg **Sg** **15 08 02.9 -1.8**
comp=N,712nm,0.7s
MVO Lg Lg 15 08 04.0
comp=N,4µm,1.5s,SNR=7.9
SJPF Ste Jean 5.39 4 *e*Pn **Pn** **15 06 34.4 +0.6**
SJPF Ste Jean 5.39 4 *e*Pg **Pg** **15 06 55.2 -0.8**
SJPF *e*Sg **Sg** **15 08 06.4 +0.6**
comp=N,883nm,1.2s
SJPF Ste Jean 5.39 4 *e*P **Pn** **15 06 34.4 +0.6**
SJPF Ste Jean 5.39 4 *e*Pn **Pn** **15 06 34.4 +0.6**
SJPF Ste Jean 5.39 4 *e*Pg **Pg** **15 06 55.2 -0.8**
SJPF *e*Sg **Sg** **15 08 06.4 +0.6**
comp=N,442nm,1.2s
SJPF Ste Jean 5.39 4 *e*Pn **Pn** **15 06 34.4 +0.6**
SJPF *e*Pg **Pg** **15 06 55.2 -0.8**
SJPF *e*Sg **Sg** **15 08 06.4 +0.6**
PNCL Nicolau / Gran 5.40 276 *e*Pn **Pn** **15 06 33.5 -0.4**
PNCL *e*Sn **Sn** **15 07 35.0 -1.5**
PNCL *e*Sg **Sg** **15 08 06.0 -0.2**
PNCL A A 15 08 16.2
comp=N,370nm,0.7s
PNCL Nicolau / Gran 5.40 276 *e*Pn **Pn** **15 06 33.5 -0.4**
PNCL *e*Sn **Sn** **15 07 35.0 -1.5**
PNCL *e*Sg **Sg** **15 08 06.0 -0.2**
comp=N,370nm,0.7s
ATE Arette 5.41 8 P **Pn** **15 06 34.6 +0.6**
ATE S **Sn** **15 07 40.5 +3.9**
ATE Arette 5.41 8 Pn **Pn** **15 06 34.8 +0.8**
comp=N,8.2nm,0.3s,SNR=7.9
ATE Sn **Sn** **15 07 34.9 -1.7**
comp=N,38nm,0.5s,SNR=7.9
ATE Lg Lg 15 08 05.8
comp=N,5µm,3.2s,SNR=7.9
ATE Arette 5.41 8 P **Pn** **15 06 34.6 +0.6**
ATE Sn **Sn** **15 07 34.9 -1.7**
comp=N,38nm,0.5s,SNR=7.9
ATE S **Sn** **15 07 40.5 +3.9**
ATE Lg Lg 15 08 05.8
comp=N,5µm,3.2s,SNR=7.9
CZD Col de Zad 5.42 211 *i* P **Pn** **15 06 35.0 +0.6**
MDT Midelt 5.44 207 Pn **Pn** **15 06 34.6 0.0**
comp=N,5.1nm,0.3s,baz=32,slow=15,SNR=94
MDT Sn **Sn** **15 07 32.3 -5.4**
comp=N,2.6nm,0.3s,baz=328,slow=21,SNR=3.6
MDT LR LR 15 08 45.8
comp=N,1µm,19.8s,baz=48,slow=39
VALF Valcebollere 5.47 30 P **Pn** **15 06 34.8 -0.3**
VALF Valcebollere 5.47 30 P **Pn** **15 06 34.8 -0.3**
EALK Alkurruntz 5.49 2 Pn **Pn** **15 06 35.5 +0.3**
comp=N,158nm,0.6s,SNR=76
EALK Sn **Sn** **15 07 39.3 +0.6**
comp=N,76nm,0.3s,SNR=7.9
EALK Lg Lg 15 08 08.6
comp=N,601nm,0.7s,SNR=7.9
EALK Alkurruntz 5.49 2 Pn **Pn** **15 06 35.5 +0.3**
comp=N,158nm,0.6s,SNR=76
EALK Sn **Sn** **15 07 39.3 +0.6**
comp=N,76nm,0.3s,SNR=7.9
EALK Lg Lg 15 08 08.6
comp=N,601nm,0.7s,SNR=7.9
SALF Salau 5.49 23 P **Pn** **15 06 35.0 -0.2**
SALF Salau 5.49 23 P **Pn** **15 06 35.0 -0.2**
EPF Esparros 5.52 16 *e*Pn **Pn** **15 06 36.2 +0.6**
EPF Esparros 5.52 16 *e*Pg **Pg** **15 06 59.5 +1.0**
EPF *e*Sg **Sg** **15 08 10.7 +0.7**
comp=N,365nm,0.9s
EPF Esparros 5.52 16 *e*P **Pn** **15 06 36.2 +0.6**
EPF Esparros 5.52 16 *e*Pn **Pn** **15 06 36.2 +0.6**
EPF Esparros 5.52 16 *e*Pn **Pn** **15 06 36.2 +0.6**
EPF *e*Pg **Pg** **15 06 59.5 +1.0**
EPF *e*Sg **Sg** **15 08 10.7 +0.7**
MORF Marmelete 5.53 268 *e*P **Pn** **15 06 35.2 -0.6**
MORF *e*S **Sn** **15 07 35.7 -4.1**
MORF AML AML 15 07 41.2
comp=N,518nm,0.3s
MORF Marmelete 5.53 268 *e*Pn **Pn** **15 06 35.8 0.0**
MORF *e*Sn **Sn** **15 07 38.1 -1.7**
MORF A A 15 08 13.5
comp=N,154nm,0.6s
MORF Marmelete 5.53 268 *e*P **Pn** **15 06 35.1 -0.6**
MORF *e*S **Sn** **15 07 35.7 -4.1**
MORF Marmelete 5.53 268 *e*P **Pn** **15 06 35.1 -0.6**
MORF Marmelete 5.53 268 *e*Pn **Pn** **15 06 35.8 0.0**
MORF *e*Sn **Sn** **15 07 38.1 -1.7**
comp=N,154nm,0.6s
OSSF Osses 5.53 3 P **Pn** **15 06 36.0 +0.3**
OSSF Osses 5.53 3 P **Pn** **15 06 36.0 +0.3**
PTEO Sao Teotonio 5.57 270 *e*Pn **Pn** **15 06 35.7 -0.5**
PTEO *e*Sn **Sn** **15 07 38.5 -2.1**
PTEO *e*Sg **Sg** **15 08 10.5 -1.0**
PTEO A A 15 08 20.5
comp=N,799nm,0.7s
PTEO Sao Teotonio 5.57 270 *e*Pn **Pn** **15 06 35.7 -0.5**
PTEO *e*Sn **Sn** **15 07 38.5 -2.1**
PTEO *e*Sg **Sg** **15 08 10.5 -1.0**
comp=N,799nm,0.7s
PTOM Tomar 5.57 292 *e*Pn **Pn** **15 06 36.3 +0.1**
PTOM *e*Sn **Sn** **15 07 39.3 -1.3**
PTOM *e*Sg **Sg** **15 08 12.1 +0.5**
PTOM A A 15 08 23.4
comp=N,1µm,0.6s
PTOM Tomar 5.57 292 *e*Pn **Pn** **15 06 36.3 +0.1**
PTOM *e*Sn **Sn** **15 07 39.3 -1.3**
PTOM *e*Sg **Sg** **15 08 12.1 +0.5**
comp=N,1µm,0.6s
ALMR Almeirim 5.57 287 *e*P **Pn** **15 06 35.8 -0.5**
ALMR *e*S **Sn** **15 07 37.5 -3.2**
ALMR AML AML 15 07 40.1
comp=N,310nm,0.8s
ALMR Almeirim 5.57 287 *e*P **Pn** **15 06 35.8 -0.5**
ALMR *e*S **Sn** **15 07 37.5 -3.2**
ALMR Almeirim 5.57 287 *e*P **Pn** **15 06 35.7 -0.5**
ALMR *e*S **Sn** **15 07 37.5 -3.2**
ALMR Almeirim 5.57 287 *e*P **Pn** **15 06 35.8 -0.5**
PBRG Braganca 5.62 318 *e*Pn **Pn** **15 06 36.6 -0.4**
PBRG *e*Sn **Sn** **15 07 40.5 -1.4**
PBRG *e*Sg **Sg** **15 08 12.9 -0.2**
PBRG A A 15 08 17.9
comp=N,461nm,0.6s
PBRG Braganca 5.62 318 *e*Pn **Pn** **15 06 36.6 -0.4**
PBRG *e*Sn **Sn** **15 07 40.5 -1.4**
PBRG *e*Sg **Sg** **15 08 12.9 -0.2**
comp=N,461nm,0.6s
ELAN Lanestosa 5.65 347 Pn **Pn** **15 06 38.6 +1.2**
comp=N,14nm,0.3s,SNR=14
ELAN Sn **Sn** **15 07 40.6 -2.1**
comp=N,35nm,0.2s,SNR=7.9
ELAN Lg Lg 15 08 14.3
comp=N,1µm,1.2s,SNR=7.9
ELAN Lanestosa 5.65 347 Pn **Pn** **15 06 38.6 +1.2**
comp=N,14nm,0.3s,SNR=14
ELAN Sn **Sn** **15 07 40.6 -2.1**
comp=N,35nm,0.2s,SNR=7.9
ELAN Lg Lg 15 08 14.3
comp=N,1µm,1.2s,SNR=7.9
PVIS Viseu 5.65 304 *e*Pn **Pn** **15 06 37.7 +0.3**
PVIS *e*Sn **Sn** **15 07 41.9 -0.8**
PVIS *e*Sg **Sg** **15 08 14.3 +0.1**
PVIS A A 15 08 29.2
comp=N,259nm,0.6s
PVIS Viseu 5.65 304 *e*Pn **Pn** **15 06 37.7 +0.3**
PVIS *e*Sn **Sn** **15 07 41.9 -0.8**
PVIS *e*Sg **Sg** **15 08 14.3 +0.1**
comp=N,259nm,0.6s
PFVI Vila Bisbo 5.69 266 *e*Pn **Pn** **15 06 37.5 -0.4**
PFVI *e*Sn **Sn** **15 07 41.4 -2.3**
PFVI A A 15 08 26.4
comp=N,251nm,0.7s
PFVI Vila Bisbo 5.69 266 Pn **Pn** **15 06 37.6 -0.4**
comp=N,37nm,0.3s,SNR=32
PFVI Sn **Sn** **15 07 39.9 -3.7**
comp=N,36nm,0.3s,SNR=7.9
PFVI Lg Lg 15 08 14.9
comp=N,2µm,1.2s,SNR=7.9
PFVI Vila Bisbo 5.69 266 Pn **Pn** **15 06 37.6 -0.4**
comp=N,37nm,0.3s,SNR=32
PFVI Lg Lg 15 08 14.9
comp=N,2µm,1.2s,SNR=7.9
PFVI Vila Bisbo 5.69 266 *e*Pn **Pn** **15 06 37.4 -0.6**
ECAL Calabor 5.71 319 Pn **Pn** **15 06 38.5 +0.2**
comp=N,11nm,0.2s,SNR=24
ECAL Sn **Sn** **15 07 41.1 -3.2**
comp=N,53nm,0.4s,SNR=7.9
ECAL Lg Lg 15 08 14.0
comp=N,2µm,0.6s,SNR=7.9
ECAL Calabor 5.71 319 Pn **Pn** **15 06 38.5 +0.2**
comp=N,11nm,0.2s,SNR=24
ECAL Sn **Sn** **15 07 41.1 -3.2**
comp=N,53nm,0.4s,SNR=7.9
ECAL Lg Lg 15 08 14.0
comp=N,2µm,0.6s,SNR=7.9
CARF Carcanieres 5.78 29 P **Pn** **15 06 39.4 +0.3**
CARF Carcanieres 5.78 29 P **Pn** **15 06 39.4 +0.3**
PCAS Casmilo, Conde 5.78 296 *e*Pn **Pn** **15 06 39.2 +0.1**
PCAS *e*Sn **Sn** **15 07 44.4 -1.4**
PCAS *e*Sg **Sg** **15 08 15.3 -3.0**
PCAS A A 15 08 31.7
comp=N,577nm,0.7s
PCAS Casmilo, Conde 5.78 296 *e*Pn **Pn** **15 06 39.2 +0.1**
PCAS *e*Sn **Sn** **15 07 44.4 -1.4**
PCAS *e*Sg **Sg** **15 08 15.3 -3.0**
comp=N,577nm,0.7s
PVRL Vila Real 5.84 309 *e*Pn **Pn** **15 06 40.1 +0.1**
PVRL *e*Sn **Sn** **15 07 44.6 -2.7**
PVRL *e*Sg **Sg** **15 08 17.1 -3.1**
PVRL A A 15 08 29.1
comp=N,238nm,1.0s
PVRL Vila Real 5.84 309 *e*Pn **Pn** **15 06 40.1 +0.1**
PVRL *e*Sn **Sn** **15 07 44.6 -2.7**
PVRL *e*Sg **Sg** **15 08 17.1 -3.1**
comp=N,238nm,1.0s
EJON La Jonquera 5.89 35 Pn **Pn** **15 06 42.1 +1.5**
comp=N,1.0nm,0.1s,SNR=7.9
EJON Lg Lg 15 08 19.9
comp=N,908nm,2.9s,SNR=7.9
EJON La Jonquera 5.89 35 Pn **Pn** **15 06 42.1 +1.5**
comp=N,1.0nm,0.1s,SNR=7.9
EJON Lg Lg 15 08 19.9
comp=N,908nm,2.9s,SNR=7.9
SJAF Saint Jean de 5.91 35 Pn **Pn** **15 06 41.1 +0.1**
comp=N,2.7nm,0.3s,SNR=7.9
SJAF Sn **Sn** **15 07 45.8 -3.3**
comp=N,8.2nm,0.5s,SNR=7.9
SJAF Lg Lg 15 08 23.0
comp=N,435nm,2.5s,SNR=7.9
SJAF Saint Jean de 5.91 35 Pn **Pn** **15 06 41.1 +0.1**
comp=N,2.7nm,0.3s,SNR=7.9
SJAF Sn **Sn** **15 07 45.8 -3.3**
comp=N,8.2nm,0.5s,SNR=7.9
SJAF Lg Lg 15 08 23.0
comp=N,435nm,2.5s,SNR=7.9
LIS Lisbon 5.94 282 *e*P **Pn** **15 06 40.5 -0.8**
LIS *e*S **Sn** **15 07 44.2 -5.4**
LIS AML AML 15 07 53.0
comp=N,355nm,0.5s
LIS Lisbon 5.94 282 *e*P **Pn** **15 06 40.4 -0.8**
LIS *e*S **Sn** **15 07 44.2 -5.4**
POLO Lamas de Olo 5.95 310 *e*Pn **Pn** **15 06 41.0 -0.5**
POLO *e*Sn **Sn** **15 07 48.3 -1.7**
POLO *e*Sg **Sg** **15 08 21.0 -2.6**
POLO A A 15 08 43.2
comp=N,169nm,0.6s
POLO Lamas de Olo 5.95 310 *e*Pn **Pn** **15 06 41.0 -0.5**
POLO *e*Sn **Sn** **15 07 48.3 -1.7**
POLO *e*Sg **Sg** **15 08 21.0 -2.6**
comp=N,169nm,0.6s
CKHR Kef el Ahmar 6.04 104 P **Pn** **15 06 42.5 -0.3**
CKHR Kef el Ahmar 6.04 104 P **Pn** **15 06 42.5 -0.3**
PMAFR Mafra 6.08 284 *e*Pn **Pn** **15 06 43.4 +0.2**
PMAFR *e*Sn **Sn** **15 07 51.5 -1.6**
PMAFR *e*Sg **Sg** **15 08 27.4 -0.4**
PMAFR A A 15 08 45.5
comp=N,488nm,0.8s
PMAFR Mafra 6.08 284 Pn **Pn** **15 06 43.6 +0.4**
comp=N,148nm,0.3s,SNR=33
PMAFR Sn **Sn** **15 07 50.8 -2.3**
comp=N,95nm,0.4s,SNR=7.9
PMAFR Lg Lg 15 08 26.4
comp=N,5µm,0.8s,SNR=7.9
PMAFR Mafra 6.08 284 *e*Pn **Pn** **15 06 43.4 +0.2**
PMAFR *e*Sn **Sn** **15 07 51.5 -1.6**
PMAFR Lg Lg 15 08 26.4
comp=N,5µm,0.8s,SNR=7.9
PMAFR *e*Sg **Sg** **15 08 27.4 -0.4**
comp=N,488nm,0.8s
ZFT Errachidia 6.08 202 *e*P **Pn** **15 06 43.0 -0.4**
EARI Arriondas 6.17 336 ⇑Pn **Pn** **15 06 45.1 +0.6**
comp=N,39nm,0.3s,SNR=18
EARI Sn **Sn** **15 07 51.8 -3.7**
comp=N,59nm,0.4s,SNR=7.9
EARI Lg Lg 15 08 33.0
comp=N,3µm,1.9s,SNR=7.9
EARI Arriondas 6.17 336 Pn **Pn** **15 06 45.1 +0.6**
comp=N,39nm,0.3s,SNR=18
EARI Lg Lg 15 08 33.0
comp=N,3µm,1.9s,SNR=7.9
DFRA Djebel Bou Aff 6.18 99 P **Pn** **15 06 45.0 +0.3**
DFRA Djebel Bou Aff 6.18 99 P **Pn** **15 06 45.0 +0.3**
KIB El Ksiba 6.24 216 *i* P **Pn** **15 06 45.0 -0.6**

PCAB	**Cabril**	6.29	311	*e*Pn	Pn	15 06 45.8	-0.3
PCAB				*e*Sn	Sn	15 07 54.4	-3.9
PCAB				*e*Sg	Sg	15 08 33.0	-1.5
PCAB				A	A	15 08 43.9	
	comp=N,339nm,0.7s						
PCAB	**Cabril**	**6.29**	**311**	*e*Pn	**Pn**	**15 06 45.8**	**-0.3**
PCAB				*e*Sg	Sg	15 08 33.0	-1.5
	comp=N,339nm,0.7s						
MTLF	**Montolieu**	**6.36**	**27**	*e*Pn	**Pn**	**15 06 46.5**	**-0.5**
MTLF				*e*Sg	Sg	15 08 36.4	-0.3
	comp=N,354nm,1.4s						
MTLF	**Montolieu**	**6.36**	**27**	*e*P	**Pn**	**15 06 46.5**	**-0.5**
MTLF	**Montolieu**	**6.36**	**27**	*e*Pn	**Pn**	**15 06 46.5**	**-0.5**
MTLF				*e*Sg	Sg	15 08 36.4	-0.3
	comp=N,177nm,1.4s						
MTLF	**Montolieu**	**6.36**	**27**	*e*Pn	**Pn**	**15 06 46.5**	**-0.5**
MTLF				*e*Sg	Sg	15 08 36.4	-0.3
ELOB	**Lobios**	**6.40**	**312**	Pn	**Pn**	**15 06 47.4**	**-0.3**
	comp=N,20nm,0.4s,SNR=56						
ELOB				Sn	Sn	15 07 57.1	-4.1
	comp=N,58nm,0.5s,SNR=7.9						
ELOB				Lg	Lg	15 08 36.2	
	comp=N,2µm,1.0s,SNR=7.9						
ELOB	**Lobios**	**6.40**	**312**	Pn	**Pn**	**15 06 47.4**	**-0.3**
	comp=N,20nm,0.4s,SNR=56						
ELOB				Lg	Lg	15 08 36.2	
	comp=N,2µm,1.0s,SNR=7.9						
PGAV	**Gavieira, Arco**	**6.58**	**312**	*e*Pn	**Pn**	**15 06 50.2**	**0.0**
PGAV				*e*Sg	Sg	15 08 39.6	-4.5
PGAV				A	A	15 08 52.0	
	comp=N,286nm,0.7s						
PGAV	**Gavieira, Arco**	**6.58**	**312**	*e*Pn	**Pn**	**15 06 50.2**	**0.0**
CTEI	**Djebel Teioual**	**6.71**	**102**	P	**Pn**	**15 06 52.9**	**+0.8**
CTEI	**Djebel Teioual**	**6.71**	**102**	P	**Pn**	**15 06 52.9**	**+0.8**
TZC	**Tazercounte**	**6.81**	**217**	*e*P	**Pn**	**15 06 54.0**	**+0.6**
CKFL	**Kef-Lekhel**	**6.87**	**99**	P	**Pn**	**15 06 54.5**	**+0.3**
CKFL	**Kef-Lekhel**	**6.87**	**99**	P	**Pn**	**15 06 54.5**	**+0.3**
CAEH	**'Ain El Ouahch**	**6.89**	**95**	P	**Pn**	**15 06 54.7**	**+0.3**
CAEH	**'Ain El Ouahch**	**6.89**	**95**	P	**Pn**	**15 06 54.7**	**+0.3**
EPON	**Pontenova**	**6.96**	**325**	Pn	**Pn**	**15 06 54.7**	**-0.6**
	comp=N,4.9nm,0.3s,SNR=7.9						
EPON				Sn	Sn	15 08 09.4	-5.4
	comp=N,31nm,0.4s,SNR=7.9						
EPON				Lg	Lg	15 08 56.8	
	comp=N,80nm,0.4s,SNR=7.9						
EPON	**Pontenova**	**6.96**	**325**	Pn	**Pn**	**15 06 54.7**	**-0.6**
	comp=N,4.9nm,0.3s,SNR=7.9						
EPON				Lg	Lg	15 08 56.8	
	comp=N,80nm,0.4s,SNR=7.9						
EAGO	**Agolada(Pontev**	**7.03**	**318**	Pn	**Pn**	**15 06 56.2**	**-0.1**
	comp=N,2.9nm,0.2s,SNR=7.9						
EAGO				Sn	Sn	15 08 13.1	-3.5
	comp=N,28nm,0.3s,SNR=7.9						
EAGO				Lg	Lg	15 08 56.2	
	comp=N,1µm,1.4s,SNR=7.9						
EAGO	**Agolada(Pontev**	**7.03**	**318**	Pn	**Pn**	**15 06 56.2**	**-0.1**
	comp=N,2.9nm,0.2s,SNR=7.9						
EAGO				Lg	Lg	15 08 56.2	
	comp=N,1µm,1.4s,SNR=7.9						
CMAH	**Djebel Manchou**	**7.37**	**96**	P	**Pn**	**15 07 01.5**	**+0.4**
CMAH	**Djebel Manchou**	**7.37**	**96**	P	**Pn**	**15 07 01.5**	**+0.4**
LFF	**La Frestale**	**7.44**	**14**	*e*Pn	**Pn**	**15 07 01.6**	**-0.2**
LFF				*e*Sg	Sg	15 09 09.8	-1.6
	comp=N,219nm,1.1s						
LFF	**La Frestale**	**7.44**	**14**	*e*P	**Pn**	**15 07 01.6**	**-0.2**
LFF	**La Frestale**	**7.44**	**14**	*e*Pn	**Pn**	**15 07 01.6**	**-0.2**
LFF				*e*Sg	Sg	15 09 09.8	-1.6
	comp=N,109nm,1.1s						
LFF	**La Frestale**	**7.44**	**14**	*e*Pn	**Pn**	**15 07 01.6**	**-0.2**
LFF				*e*Sg	Sg	15 09 09.8	-1.6
ABSA	**Djebel Ababsia**	**7.50**	**98**	P	**Pn**	**15 07 02.9**	**+0.1**
ABSA	**Djebel Ababsia**	**7.50**	**98**	P	**Pn**	**15 07 02.9**	**+0.1**
EMAZ	**Mazaricos**	**7.61**	**316**	Pn	**Pn**	**15 07 04.3**	**0.0**
	comp=N,18nm,0.4s,SNR=7.9						
EMAZ				Sn	Sn	15 08 25.4	-5.5
	comp=N,15nm,0.3s,SNR=7.9						
EMAZ				Lg	Lg	15 09 12.8	
	comp=N,4µm,1.7s,SNR=7.9						
EMAZ	**Mazaricos**	**7.61**	**316**	Pn	**Pn**	**15 07 04.3**	**0.0**
	comp=N,18nm,0.4s,SNR=7.9						
EMAZ				Lg	Lg	15 09 12.8	
	comp=N,4µm,1.7s,SNR=7.9						
LASF	**Ste Croix**	**7.61**	**32**	*e*Pn	**Pn**	**15 07 03.5**	**-0.8**
LASF				*e*Sg	Sg	15 09 14.4	-2.7
	comp=N,107nm,1.2s						
LASF	**Ste Croix**	**7.61**	**32**	*e*Pn	**Pn**	**15 07 03.5**	**-0.8**
LASF				*e*Sg	Sg	15 09 14.4	-2.7
	comp=N,54nm,1.2s						
LASF	**Ste Croix**	**7.61**	**32**	*e*Pn	**Pn**	**15 07 03.5**	**-0.8**
LASF				*e*Sg	Sg	15 09 14.4	-2.7
CAF	**Calviac**	**7.73**	**20**	*e*Pn	**Pn**	**15 07 04.8**	**-1.1**
CAF				*e*Sg	Sg	15 09 18.9	-1.9
	comp=N,168nm,1.1s						
CAF	**Calviac**	**7.73**	**20**	*e*P	**Pn**	**15 07 04.8**	**-1.1**
CAF	**Calviac**	**7.73**	**20**	*e*Pn	**Pn**	**15 07 04.8**	**-1.1**
CAF				*e*Sg	Sg	15 09 18.9	-1.9
	comp=N,84nm,1.1s						
CAF	**Calviac**	**7.73**	**20**	*e*Pn	**Pn**	**15 07 04.8**	**-1.1**
CAF				*e*Sg	Sg	15 09 18.9	-1.9
RJF	**Les Rejaudoux**	**7.95**	**17**	*e*Pn	**Pn**	**15 07 08.2**	**-0.7**
RJF				*e*Sg	Sg	15 09 25.3	-2.4
	comp=N,206nm,1.3s						
RJF	**Les Rejaudoux**	**7.95**	**17**	*e*P	**Pn**	**15 07 08.2**	**-0.7**
RJF	**Les Rejaudoux**	**7.95**	**17**	*e*Pn	**Pn**	**15 07 08.2**	**-0.7**
RJF				*e*Sg	Sg	15 09 25.3	-2.4
	comp=N,103nm,1.3s						
RJF	**Les Rejaudoux**	**7.95**	**17**	*e*Pn	**Pn**	**15 07 08.2**	**-0.7**
RJF				*e*Sg	Sg	15 09 25.3	-2.4
SMRF	**Simiane la Rot**	**8.33**	**39**	*e*Pn	**Pn**	**15 07 13.1**	**-1.1**
SMRF				*e*Sg	Sg	15 09 36.2	-3.8
	comp=N,115nm,1.4s						
SMRF	**Simiane la Rot**	**8.33**	**39**	*e*Pn	**Pn**	**15 07 13.1**	**-1.1**
SMRF				*e*Sg	Sg	15 09 36.2	-3.8
	comp=N,57nm,1.4s						
SMRF	**Simiane la Rot**	**8.33**	**39**	*e*Pn	**Pn**	**15 07 13.1**	**-1.1**
SMRF				*e*Sg	Sg	15 09 36.2	-3.8
LBL	**Lubilhac**	**8.37**	**25**	P	**Pn**	**15 07 13.8**	**-0.9**
LBL	**Lubilhac**	**8.37**	**25**	P	**Pn**	**15 07 13.8**	**-0.9**
LMR	**La Mourre**	**8.40**	**46**	*e*Pn	**Pn**	**15 07 13.7**	**-1.3**
LMR				*e*Sn	Sn	15 08 43.7	-6.4
	comp=N,9.7nm,0.5s						
LMR	**La Mourre**	**8.40**	**46**	*e*P	**Pn**	**15 07 13.7**	**-1.3**
LMR				*e*		15 08 43.7	
LMR	**La Mourre**	**8.40**	**46**	*e*Pn	**Pn**	**15 07 13.7**	**-1.3**
LMR	**La Mourre**	**8.40**	**46**	*e*Pn	**Pn**	**15 07 13.7**	**-1.3**
LMR				*e*Sn	Sn	15 08 43.7	-6.4
VIVF	**Saint-Julien-l**	**8.59**	**32**	*e*Pn	**Pn**	**15 07 16.8**	**-0.9**
VIVF				*e*Sg	Sg	15 09 44.7	-3.6
	comp=N,261nm,1.6s						
VIVF	**Saint-Julien-l**	**8.59**	**32**	*e*P	**Pn**	**15 07 16.8**	**-0.9**
VIVF	**Saint-Julien-l**	**8.59**	**32**	*e*Pn	**Pn**	**15 07 16.8**	**-0.9**
VIVF				*e*Sg	Sg	15 09 44.7	-3.6
	comp=N,131nm,1.6s						
VIVF	**Saint-Julien-l**	**8.59**	**32**	*e*Pn	**Pn**	**15 07 16.8**	**-0.9**
VIVF				*e*Sg	Sg	15 09 44.7	-3.6
FRF	**La Foret Royal**	**8.62**	**45**	*e*Pn	**Pn**	**15 07 16.7**	**-1.3**
FRF				*e*Sn	Sn	15 08 48.9	-6.7
	comp=N,8.0nm,0.6s						
FRF	**La Foret Royal**	**8.62**	**45**	*e*P	**Pn**	**15 07 16.7**	**-1.3**
FRF				*e*		15 08 48.9	
FRF	**La Foret Royal**	**8.62**	**45**	*e*Pn	**Pn**	**15 07 16.7**	**-1.3**
FRF	**La Foret Royal**	**8.62**	**45**	*e*Pn	**Pn**	**15 07 16.7**	**-1.3**
FRF				*e*Sn	Sn	15 08 48.9	-6.7
VSL	**Villasalto**	**8.86**	**75**	*e*Pn	**Pn**	**15 07 21.4**	**0.0**
VSL	**Villasalto**	**8.86**	**75**	*e*Pn	**Pn**	**15 07 21.4**	**0.0**
SSB	**Saint Sauveur**	**8.88**	**30**	*e*P	**Pn**	**15 07 22.7**	**+1.0**
SSB				pmax	pmax		
	comp=Z,4.0nm,0.6s						
SSB	**Saint Sauveur**	**8.88**	**30**	*e*Pn	**Pn**	**15 07 22.6**	**+0.9**
	comp=Z,3.9nm,0.6s						
SSB	**Saint Sauveur**	**8.88**	**30**	*e*Pn	**Pn**	**15 07 22.6**	**+0.9**
	comp=Z,3.9nm,0.6s						
MFF	**Saint Martin d**	**8.94**	**7**	*e*Pn	**Pn**	**15 07 22.1**	**-0.4**
MFF				*e*Sg	Sg	15 09 57.2	-2.5
	comp=Z,98nm,1.2s						
MFF	**Saint Martin d**	**8.94**	**7**	*e*P	**Pn**	**15 07 22.1**	**-0.4**
MFF	**Saint Martin d**	**8.94**	**7**	*e*Pn	**Pn**	**15 07 22.1**	**-0.4**
MFF				*e*Sg	Sg	15 09 57.2	-2.5
	comp=Z,49nm,1.2s						
MFF	**Saint Martin d**	**8.94**	**7**	*e*Pn	**Pn**	**15 07 22.1**	**-0.4**
MFF				*e*Sg	Sg	15 09 57.2	-2.5
TCF	**Toulx Ste Croi**	**9.04**	**18**	*e*Pn	**Pn**	**15 07 23.1**	**-0.7**
TCF				*e*Sg	Sn	15 09 59.8	+54
	comp=Z,361nm,1.8s						
TCF	**Toulx Ste Croi**	**9.04**	**18**	*e*P	**Pn**	**15 07 23.1**	**-0.7**
TCF	**Toulx Ste Croi**	**9.04**	**18**	*e*Pn	**Pn**	**15 07 23.1**	**-0.7**
TCF				*e*Sg	Sn	15 09 59.8	+54
	comp=Z,181nm,1.8s						
TCF	**Toulx Ste Croi**	**9.04**	**18**	*e*Pn	**Pn**	**15 07 23.1**	**-0.7**
TCF				*e*Sg	Sn	15 09 59.8	+54
AGO	**Saint Agoulin**	**9.07**	**22**	P	**Pn**	**15 07 23.5**	**-0.7**
AGO	**Saint Agoulin**	**9.07**	**22**	P	**Pn**	**15 07 23.5**	**-0.7**
KEST	**Kesra**	**9.10**	**99**	Pn	**Pn**	**15 07 25.7**	**+1.0**
	comp=Z,8.2nm,0.3s,baz=202,slow=5.9,SNR=46						
KEST				Sn	Sn	15 09 07.9	+0.3
	baz=17,slow=14,SNR=2.4						
PLDF	**La Plantade**	**9.14**	**24**	P	**Pn**	**15 07 25.1**	**-0.2**
PLDF	**La Plantade**	**9.14**	**24**	P	**Pn**	**15 07 25.1**	**-0.2**
ORIF	**Oris-en-Rattie**	**9.17**	**36**	*e*Pn	**Pn**	**15 07 24.6**	**-1.1**
ORIF				*e*Sg	Sn	15 10 02.7	+53
	comp=Z,155nm,1.8s						
ORIF	**Oris-en-Rattie**	**9.17**	**36**	*e*P	**Pn**	**15 07 24.6**	**-1.1**
ORIF	**Oris-en-Rattie**	**9.17**	**36**	*e*Pn	**Pn**	**15 07 24.6**	**-1.1**
ORIF	**Oris-en-Rattie**	**9.17**	**36**	*e*Pn	**Pn**	**15 07 24.6**	**-1.1**
ORIF				*e*Sg	Sn	15 10 02.7	+53
SBF	**Sospel**	**9.25**	**46**	*e*Pn	**Pn**	**15 07 25.6**	**-1.2**
SBF				*e*Sn	Sn	15 09 04.2	-7.1
	comp=Z,10nm,0.7s						
SBF	**Sospel**	**9.25**	**46**	*e*P	**Pn**	**15 07 25.6**	**-1.2**
SBF				*e*		15 09 04.2	
SBF	**Sospel**	**9.25**	**46**	*e*Pn	**Pn**	**15 07 25.6**	**-1.2**
SBF	**Sospel**	**9.25**	**46**	*e*Pn	**Pn**	**15 07 25.6**	**-1.2**
SBF				*e*Sn	Sn	15 09 04.2	-7.1
BGF	**Bois d'Agland**	**9.45**	**20**	*e*Pn	**Pn**	**15 07 28.3**	**-1.1**
BGF				*e*Sg	Sn	15 10 12.0	+56
	comp=Z,286nm,1.5s						
BGF	**Bois d'Agland**	**9.45**	**20**	*e*P	**Pn**	**15 07 28.3**	**-1.1**
BGF	**Bois d'Agland**	**9.45**	**20**	*e*Pn	**Pn**	**15 07 28.3**	**-1.1**
BGF	**Bois d'Agland**	**9.45**	**20**	*e*Pn	**Pn**	**15 07 28.3**	**-1.1**
BGF				*e*Sg	Sn	15 10 12.0	+56
MBDF	**Montbardon**	**9.47**	**40**	*e*Pn	**Pn**	**15 07 28.6**	**-1.2**
MBDF				*e*Sg	Sn	15 10 11.9	+55
	comp=Z,1.2nm,0.2s						
MBDF	**Montbardon**	**9.47**	**40**	*e*P	**Pn**	**15 07 28.6**	**-1.2**
MBDF	**Montbardon**	**9.47**	**40**	*e*Pn	**Pn**	**15 07 28.6**	**-1.2**
MBDF	**Montbardon**	**9.47**	**40**	*e*Pn	**Pn**	**15 07 28.6**	**-1.2**
MBDF				*e*Sg	Sn	15 10 11.9	+55
PGF	**Pioggiola**	**9.51**	**56**	*e*Pn	**Pn**	**15 07 31.1**	**+0.7**
PGF				*e*Sn	Sn	15 09 09.8	-7.8
	comp=Z,6.4nm,0.5s						
PGF	**Pioggiola**	**9.51**	**56**	*e*P	**Pn**	**15 07 31.1**	**+0.7**
PGF				*e*		15 09 09.8	
PGF	**Pioggiola**	**9.51**	**56**	*e*Pn	**Pn**	**15 07 31.1**	**+0.7**
PGF	**Pioggiola**	**9.51**	**56**	*e*Pn	**Pn**	**15 07 31.1**	**+0.7**
PGF				*e*Sn	Sn	15 09 09.8	-7.8
AVF	**Avril sur Loir**	**9.80**	**21**	*e*Pn	**Pn**	**15 07 33.3**	**-0.9**
AVF				*e*Sg	Sn	15 10 23.1	+58
	comp=Z,265nm,1.6s						
AVF	**Avril sur Loir**	**9.80**	**21**	*e*P	**Pn**	**15 07 33.3**	**-0.9**
AVF	**Avril sur Loir**	**9.80**	**21**	*e*Pn	**Pn**	**15 07 33.3**	**-0.9**
AVF	**Avril sur Loir**	**9.80**	**21**	*e*Pn	**Pn**	**15 07 33.3**	**-0.9**
AVF				*e*Sg	Sn	15 10 23.1	+58
SMF	**Signal de Mont**	**9.81**	**23**	*e*Pn	**Pn**	**15 07 33.5**	**-0.9**
SMF				*e*Sg	Sn	15 10 23.5	+59
	comp=Z,371nm,2.0s						
SMF	**Signal de Mont**	**9.81**	**23**	*e*P	**Pn**	**15 07 33.5**	**-0.9**
SMF	**Signal de Mont**	**9.81**	**23**	*e*Pn	**Pn**	**15 07 33.5**	**-0.9**
SMF	**Signal de Mont**	**9.81**	**23**	*e*Pn	**Pn**	**15 07 33.5**	**-0.9**
SMF				*e*Sg	Sn	15 10 23.5	+59
LPG	**La Plagne**	**10.02**	**37**	*e*Pn	**Pn**	**15 07 36.4**	**-1.1**
LPG				*e*Sg	Sn	15 10 29.7	+59
	comp=Z,63nm,1.6s						
LPG	**La Plagne**	**10.02**	**37**	*e*P	**Pn**	**15 07 36.4**	**-1.1**
LPG	**La Plagne**	**10.02**	**37**	*e*Pn	**Pn**	**15 07 36.4**	**-1.1**
LPG	**La Plagne**	**10.02**	**37**	*e*Pn	**Pn**	**15 07 36.4**	**-1.1**
LPG				*e*Sg	Sn	15 10 29.7	+59
LPL	**La Plagne**	**10.02**	**36**	*e*Pn	**Pn**	**15 07 36.4**	**-1.1**
LPL				*e*Sg	Sn	15 10 30.1	+60
	comp=Z,124nm,1.9s						
LPL	**La Plagne**	**10.02**	**36**	*e*P	**Pn**	**15 07 36.4**	**-1.1**
LPL	**La Plagne**	**10.02**	**36**	*e*Pn	**Pn**	**15 07 36.4**	**-1.1**
LPL	**La Plagne**	**10.02**	**36**	*e*Pn	**Pn**	**15 07 36.4**	**-1.1**
LPL				*e*Sg	Sn	15 10 30.1	+60
HYF	**Humbligny**	**10.06**	**17**	*e*Pn	**Pn**	**15 07 37.2**	**-0.6**
HYF				*e*Sg		15 10 31.7	
HYF	**Humbligny**	**10.06**	**17**	*e*Pn	**Pn**	**15 07 37.2**	**-0.6**
HYF	**Humbligny**	**10.06**	**17**	*e*Pn	**Pn**	**15 07 37.2**	**-0.6**
HYF				*e*Sg		15 10 31.7	
SSF	**Saint Saulge**	**10.09**	**21**	*e*Pn	**Pn**	**15 07 37.3**	**-0.9**
SSF				*e*Sg		15 10 32.3	
	comp=Z,289nm,2.0s						
SSF	**Saint Saulge**	**10.09**	**21**	*e*P	**Pn**	**15 07 37.3**	**-0.9**
SSF	**Saint Saulge**	**10.09**	**21**	*e*Pn	**Pn**	**15 07 37.3**	**-0.9**
SSF	**Saint Saulge**	**10.09**	**21**	*e*Pn	**Pn**	**15 07 37.3**	**-0.9**
SSF				*e*Sg		15 10 32.3	
QUIF	**Quistinic**	**10.24**	**354**	*e*Pn	**Pn**	**15 07 39.7**	**-0.5**
QUIF				*e*Sn	Sn	15 09 29.1	-6.2
	comp=Z,22nm,0.6s						
QUIF	**Quistinic**	**10.24**	**354**	*e*P	**Pn**	**15 07 39.7**	**-0.5**
QUIF				*e*		15 09 29.1	
QUIF	**Quistinic**	**10.24**	**354**	*e*Pn	**Pn**	**15 07 39.7**	**-0.5**
QUIF	**Quistinic**	**10.24**	**354**	*e*Pn	**Pn**	**15 07 39.7**	**-0.5**
QUIF				*e*Sn	Sn	15 09 29.1	-6.2
LOR	**Lormes**	**10.38**	**22**	*e*Pn	**Pn**	**15 07 41.3**	**-0.9**
LOR				*e*Sg		15 10 41.5	
	comp=Z,174nm,1.4s						
LOR	**Lormes**	**10.38**	**22**	*e*P	**Pn**	**15 07 41.3**	**-0.9**
LOR	**Lormes**	**10.38**	**22**	*e*Pn	**Pn**	**15 07 41.3**	**-0.9**
LOR	**Lormes**	**10.38**	**22**	*e*Pn	**Pn**	**15 07 41.3**	**-0.9**
LOR				*e*Sg		15 10 41.5	
SGMF	**Saint Gilles**	**10.54**	**357**	*e*Pn	**Pn**	**15 07 43.6**	**-0.7**
SGMF				*e*Sn	Sn	15 09 36.3	-6.4
	comp=Z,50nm,1.0s						
SGMF	**Saint Gilles**	**10.54**	**357**	*e*P	**Pn**	**15 07 43.6**	**-0.7**
SGMF				*e*		15 09 36.3	
SGMF	**Saint Gilles**	**10.54**	**357**	*e*Pn	**Pn**	**15 07 43.6**	**-0.7**
SGMF	**Saint Gilles**	**10.54**	**357**	*e*Pn	**Pn**	**15 07 43.6**	**-0.7**
SGMF				*e*Sn	Sn	15 09 36.3	-6.4
CABF	**La Chapelle**	**10.59**	**31**	*e*Sg		15 10 47.4	
	comp=Z,300nm,1.6s						
CABF	**La Chapelle**	**10.59**	**31**	*e*Sg		15 10 47.4	
ROSF	**Rostrenen**	**10.66**	**354**	*e*Pn	**Pn**	**15 07 45.2**	**-0.9**
ROSF				*e*Sn	Sn	15 09 39.2	-6.6
	comp=Z,47nm,1.0s						
ROSF	**Rostrenen**	**10.66**	**354**	*e*P	**Pn**	**15 07 45.2**	**-0.9**
ROSF				*e*		15 09 39.2	
ROSF	**Rostrenen**	**10.66**	**354**	*e*Pn	**Pn**	**15 07 45.2**	**-0.9**
ROSF	**Rostrenen**	**10.66**	**354**	*e*Pn	**Pn**	**15 07 45.2**	**-0.9**
ROSF				*e*Sn	Sn	15 09 39.2	-6.6
GRR	**Gorron**	**10.67**	**3**	*e*Pn	**Pn**	**15 07 45.7**	**-0.5**
GRR				*e*Sg		15 10 50.9	
	comp=Z,21nm,0.9s						
GRR	**Gorron**	**10.67**	**3**	*e*P	**Pn**	**15 07 45.7**	**-0.5**
GRR	**Gorron**	**10.67**	**3**	*e*Pn	**Pn**	**15 07 45.7**	**-0.5**
GRR	**Gorron**	**10.67**	**3**	*e*Pn	**Pn**	**15 07 45.7**	**-0.5**
GRR				*e*Sg		15 10 50.9	
LDF	**La Druitiere**	**10.92**	**6**	*e*Pn	**Pn**	**15 07 49.1**	**-0.5**
LDF				*e*Sg		15 10 58.7	
	comp=Z,19nm,0.7s						
LDF	**La Druitiere**	**10.92**	**6**	*e*P	**Pn**	**15 07 49.1**	**-0.5**
LDF	**La Druitiere**	**10.92**	**6**	*e*Pn	**Pn**	**15 07 49.1**	**-0.5**
LDF	**La Druitiere**	**10.92**	**6**	*e*Pn	**Pn**	**15 07 49.1**	**-0.5**
LDF				*e*Sg		15 10 58.7	
FLN	**La Foliniere**	**11.07**	**4**	*e*Pn	**Pn**	**15 07 50.6**	**-0.9**
FLN				*e*Sg		15 11 03.1	
	comp=Z,26nm,0.9s						
FLN	**La Foliniere**	**11.07**	**4**	*e*P	**Pn**	**15 07 50.6**	**-0.9**
FLN	**La Foliniere**	**11.07**	**4**	*e*Pn	**Pn**	**15 07 50.6**	**-0.9**
FLN	**La Foliniere**	**11.07**	**4**	*e*Pn	**Pn**	**15 07 50.6**	**-0.9**
FLN				*e*Sg		15 11 03.1	
SFTF	**Sexfontaines**	**11.57**	**23**	*e*Sg		15 11 18.6	
	comp=Z,9.4nm,0.4s						
SFTF	**Sexfontaines**	**11.57**	**23**	*e*Sg		15 11 18.6	
MEZF	**Maizieres J'vi**	**11.84**	**22**	*e*Sg		15 11 26.8	
	comp=Z,77nm,0.9s						
MEZF	**Maizieres J'vi**	**11.84**	**22**	*e*Sg		15 11 26.8	
HAU	**Haudompre**	**11.84**	**27**	*e*Sg		15 11 26.9	
	comp=Z,37nm,1.1s						
HAU	**Haudompre**	**11.84**	**27**	*e*Sg		15 11 26.9	
HINF	**Hinteralfeld**	**11.88**	**29**	*e*Sg		15 11 27.5	
	comp=Z,296nm,2.1s						
HINF	**Hinteralfeld**	**11.88**	**29**	*e*Sg		15 11 27.5	
PAGF	**Fort de Pagny**	**12.10**	**24**	*e*Sg		15 11 35.0	
	comp=Z,125nm,1.9s						
PAGF	**Fort de Pagny**	**12.10**	**24**	*e*Sg		15 11 35.0	
DAVOX	**Davos/Dischmat**	**12.46**	**40**	Pn	**Pn**	**15 08 15.2**	**+4.4**
	comp=Z,0.3nm,0.3s,baz=328,slow=18,SNR=3.6						
DAVOX				Lg	Lg	15 11 59.8	
	comp=Z,0.3nm,0.3s,baz=17,slow=14,SNR=3.3						
DAVOX				LR	LR	15 12 56.2	
	comp=Z,462nm,18.9s,baz=252,slow=37						
CDF	**Champ du Feu**	**12.53**	**29**	*e*Sg		15 11 48.2	
	comp=Z,81nm,1.5s						
CDF	**Champ du Feu**	**12.53**	**29**	*e*Sg		15 11 48.2	
FUORN	**Ofenpass-Fuorn**	**12.55**	**41**	*e*Pn	**Pn**	**15 08 15.6**	**+3.5**
VAE	**Valguarnera**	**12.79**	**86**	LR	LR	15 12 54.4	
	comp=Z,260nm,18.4s,baz=324,slow=36						
BAIF	**Baives**	**13.04**	**17**	*e*Pn	**Pn**	**15 08 17.7**	**-0.8**
BAIF				*e*Sg	S	15 12 04.4	+55
	comp=Z,25nm,0.9s						
BAIF	**Baives**	**13.04**	**17**	*e*P	**Pn**	**15 08 17.7**	**-0.8**
BAIF	**Baives**	**13.04**	**17**	*e*Pn	**Pn**	**15 08 17.7**	**-0.8**
BAIF	**Baives**	**13.04**	**17**	*e*Pn	**Pn**	**15 08 17.7**	**-0.8**
BAIF				*e*Sg	S	15 12 04.4	+55
FETA	**Feichten**	**13.05**	**41**	*i* P	**P**	**15 08 28.3**	**-1.2**
DOU	**Dourbes**	**13.17**	**18**	P	**Pn**	**15 08 22.0**	**+1.8**
GIVF	**Givet**	**13.23**	**19**	*e*Pn	**Pn**	**15 08 20.1**	**-1.0**
GIVF				*e*Sg	S	15 12 10.1	+57
	comp=Z,7.9nm,0.6s						
GIVF	**Givet**	**13.23**	**19**	*e*P	**Pn**	**15 08 20.1**	**-1.0**
GIVF	**Givet**	**13.23**	**19**	*e*Pn	**Pn**	**15 08 20.1**	**-1.0**
GIVF	**Givet**	**13.23**	**19**	*e*Pn	**Pn**	**15 08 20.1**	**-1.0**
GIVF				*e*Sg	S	15 12 10.1	+57
MOTA	**Moosalm**	**13.46**	**40**	*i* P	**P**	**15 08 33.3**	**-0.7**
WTTA	**Wattenberg**	**13.69**	**42**	*i* P	**P**	**15 08 36.8**	**+0.3**
ABTA	**Abfaltersbach**	**13.85**	**45**	*i* P	**P**	**15 08 37.0**	**-1.2**
MYKA	**Terra Mystica**	**14.43**	**47**	*i* pP	**P**	**15 08 48.1**	**+3.5**
	comp=Z,16nm,1.2s						
KBA	**Koelnbreinsper**	**14.51**	**45**	*e*P	**P**	**15 08 45.4**	**-0.2**
	comp=Z,13nm,1.1s						
KBA	**Koelnbreinsper**	**14.51**	**45**	P	**P**	**15 08 45.4**	**-0.2**
	comp=Z,13nm,1.1s						
OBKA	**Obir**	**14.90**	**49**	*i* pP	**P**	**15 08 52.5**	**+2.6**
	comp=Z,34nm,1.2s						
SOKA	**Soboth**	**15.27**	**49**	*e*pP	pP	15 08 55.0	-0.4
	comp=Z,24nm,1.3s						
SOKA	**Soboth**	**15.27**	**49**	P	pP	15 08 55.0	-0.4
	comp=Z,24nm,1.3s						
MOA	**Molln**	**15.46**	**44**	*i* P	**Pn**	**15 08 53.4**	**+2.0**
	comp=Z,8.3nm,1.3s						
MOA	**Molln**	**15.46**	**44**	P	**Pn**	**15 08 53.4**	**+2.0**
	comp=

KECS Kecovo 19.38 49 *e*P **Pn 15 09 42.1 +1.8**
KECS pmax pmax
comp=Z,3.0nm,1.2s
KECS Kecovo 19.38 49 *e*P **Pn 15 09 42.1 +1.8**
NIE Niedzica 19.69 47 *e*P **Pn 15 09 47.0 +2.9**
NIE Niedzica 19.69 47 *e*P **Pn 15 09 47.0 +2.9**
CRVS Cervenica-Dubn 20.14 49 *e*P Pn 15 09 51.8 +2.4
CRVS Cervenica-Dubn 20.14 49 *e*P Pn 15 09 51.8 +2.4
DRGR 20.15 56⇑*i*P Pn 15 09 49.8 +0.2
DRGR 20.15 56⇑P Pn 15 09 49.8 +0.2
DRGR 20.15 56 P Pn 15 09 49.8 +0.2
UZH Uzhgorod 20.53 50 *e*P Pn 15 09 54.6 +0.6
UZH *i* 15 10 11.8
KOLS Kolonicke sedl 20.64 50 *e*P Pn 15 09 55.6 +0.3
KOLS pmax pmax
comp=Z,11nm,1.3s
KOLS Kolonicke sedl 20.64 50 *e*P Pn 15 09 55.5 +0.2
ARR Arges 21.08 60⇑*i*P **P 15 10 00.4 +2.6**
VOIR 21.38 60⇑*i*P **P 15 10 02.9 +1.8**
VOIR 21.38 60⇑P **P 15 10 02.9 +1.8**
VOIR 21.38 60 P **P 15 10 02.9 +1.8**
IDI Anoyia 21.50 88 LR LR 15 18 48.8
comp=Z,62nm,18.6s,baz=238,slow=38
MLR Muntele Rosu 22.01 61 P **P 15 10 08.2 +0.3**
comp=Z,0.5nm,0.5s,baz=266,slow=3.5,SNR=2.8
MLR LR LR 15 19 00.5
comp=Z,75nm,19.6s,baz=268,slow=38
MLR Muntele Rosu 22.01 61⇑*i*P **P 15 10 11.3 +3.4**
MLR Muntele Rosu 22.01 61 *e*P **P 15 10 06.2 -1.7**
comp=Z,38nm,1.5s
BUR08 Bucovina Ar. S 22.03 55 *e*P **P 15 10 08.9 +0.9**
BUR08 Bucovina Ar. S 22.03 55 *e*P **P 15 10 08.9 +0.9**
BURAR Bucovina Array 22.03 55⇑*i*P **P 15 10 11.3 +3.2**
BURAR Bucovina Array 22.03 55⇑P **P 15 10 11.3 +3.2**
PLOR Plostina 22.56 60⇑*i*P **P 15 10 15.7 +2.0**
PLOR Plostina 22.56 60⇑P **P 15 10 15.7 +2.0**
PLOR Plostina 22.56 60 P **P 15 10 15.7 +2.0**
VRI Vrincioaia 22.62 60⇑*i*P **P 15 10 17.6 +3.3**
VRI Vrincioaia 22.62 60⇑P **P 15 10 17.6 +3.3**
TORD Torodi Ar. Bea 24.67 172 LR LR 15 20 11.8
comp=Z,226nm,19.5s,baz=15,slow=37
NOA NORSAR Array B 24.71 15 P **P 15 10 35.1 +0.5**
comp=Z,1.5nm,1.0s,baz=204,slow=8.8,SNR=2.3
NOA LR LR 15 21 13.4
comp=Z,117nm,20.6s,baz=205,slow=39
KIEV Kiev 25.47 49 *e*P **P 15 10 41.4 -0.1**
KIEV pmax pmax
comp=Z,3.0nm,0.9s
KIEV Kiev 25.47 49 *e*P **P 15 10 41.4 -0.1**
comp=Z,3.0nm,0.9s
BBTS Babate 26.47 214 LR LR 15 22 11.0
comp=Z,304nm,18.2s,baz=60,slow=38
BRTR Keskin Array B 27.55 75 P **P 15 10 59.1 -1.5**
comp=Z,0.9nm,0.8s,baz=318,slow=6.6,SNR=4.6
BRTR Keskin Array B 27.55 75*c*e**P P 15 11 00.9 +0.3**
BRTR pmax pmax
comp=Z,1.0nm,0.8s
BRTR Keskin Array B 27.55 75 *e*P **P 15 11 00.9 +0.3**
comp=Z,1.0nm,0.8s
BORG Borgarnes 29.45 343 LR LR 15 23 54.0
comp=Z,128nm,18.1s,baz=196,slow=38
ANN Anapa 30.04 64 *e*P **P 15 11 18.0 -4.5**
ANN *e**PP **pP 15 11 22.2 -1.8**
ANN *e*S S 15 16 11.5 -10
ANN pmax pmax
comp=Z,14nm,0.6s
ANN MLR MLR
comp=Z,170nm,14.0s
ANN MLR MLR
comp=N,158nm,14.0s
DBIC Dimbokro 31.05 186 LR LR 15 26 35.8
comp=N,40nm,18.9s,baz=349,slow=41
OBN Obninsk 31.09 44 *i* P **P 15 11 33.5 +1.9**
OBN pmax pmax
comp=Z,4.0nm,0.7s
KIV Kislovodsk 33.84 65 *e*P **P 15 11 57.7 +1.7**
KIV pmax pmax
comp=Z,4.0nm,1.0s
KIV MLR MLR
comp=Z,46nm,15.0s
KBZ Khabaz 34.01 66 P **P 15 11 57.9 +0.6**
comp=Z,1.5nm,1.0s,baz=204,slow=6.9,SNR=2.8
KLMR Klimovskoe 34.59 35 *e*P **P 15 12 00.6 -1.6**
KLMR *e**SP **sP 15 12 06.5 +2.2**
KLMR *e* 15 14 35.4
KLMR pmax pmax
comp=Z,17nm,1.3s
KLMR Klimovskoe 34.59 35 *e*PcP **PcP 15 14 35.4 -1.1**
ZEI Tsey 34.84 67 *e*P **P 15 12 04.3 -0.6**
ZEI pmax pmax
comp=Z,9.0nm,1.2s
ARCES ARCESS Array B 35.08 16 LR LR 15 27 28.6
comp=Z,126nm,18.0s,baz=233,slow=38
GUDG Gudauri 35.31 67 P **P 15 12 08.3 -0.6**
GUDG S **P 15 12 10.6 +1.7**
GNI Garni 35.90 71 *i* P **P 15 12 14.6 +0.7**
GNI pmax pmax
comp=Z,34nm,1.7s
ARU Arti 43.52 44*c* *i*P **P 15 13 17.8 +0.8**
ARU 15 14 57.8
ARU S **S 15 19 46.4 +0.3**
ARU SS **SS 15 22 58.4 -1.7**
ARU pmax pmax
comp=Z,13nm,1.2s
ARU Arti 43.52 44 *e*P **P 15 13 15.7 -1.2**
comp=Z,26nm,1.6s
GEYT Alibeck 46.52 70 P **P 15 13 41.9 +0.7**
comp=Z,0.5nm,0.3s,baz=280,slow=8.6,SNR=3.7
ZRNK Zerenda 49.94 48 *e*P **P 15 14 07.1 -0.2**
ZRNK pmax pmax
comp=Z,2.0nm,0.7s
ZRNK Zerenda 49.94 48 *e*P **P 15 14 07.1 -0.2**
comp=Z,2.3nm,0.7s
BRVK Borovoye 50.67 48 *e*P **P 15 14 15.1 +2.3**
BRVK pmax pmax
comp=Z,3.0nm,1.2s
EKS2 Erkin-Say 56.08 59 *e*P **P 15 14 52.3 -0.6**
EKS2 pmax pmax
comp=Z,27nm,2.0s
EKS2 Erkin-Say 56.08 59 *e*P **P 15 14 52.3 -0.6**
comp=Z,27nm,2.0s
EKS2 Erkin-Say 56.08 59 *e*P **P 15 14 52.3 -0.6**
comp=Z,27nm,2.0s
KURBB Kurchatov Arra 56.27 49 P **P 15 14 53.7 -0.2**
comp=Z,1.1nm,0.6s,baz=295,slow=8.6,SNR=8.5
KURK Kurchatov 56.29 49 *e*P **P 15 14 53.1 -1.0**
KURK pmax pmax
comp=Z,4.0nm,0.9s
KURK Kurchatov 56.29 49 *e*P **P 15 14 53.1 -1.0**
comp=Z,4.2nm,0.9s
KURK Kurchatov 56.29 49 *e*P **P 15 14 53.1 -1.0**
comp=Z,4.2nm,0.9s
AAK Ala-Archa 56.58 59 *e*P **P 15 14 57.2 +0.6**
AAK pmax pmax
comp=Z,4.0nm,0.9s
AAK Ala-Archa 56.58 59 *e*P **P 15 14 57.2 +0.6**
comp=Z,4.0nm,0.9s
NVS Novosibirsk 57.49 43 *e*P **P 15 15 04.8 +2.3**
NVS Novosibirsk 57.49 43 *e*P **P 15 15 04.8 +2.3**
ZALV Zalesovo Beam 58.68 44 P **P 15 15 12.6 +1.8**
comp=Z,0.9nm,0.5s,baz=293,slow=5.9,SNR=3.9
ZALV LR LR 15 43 07.1
comp=Z,59nm,18.1s,baz=250,slow=39
KSH Kashi 58.87 62 P **P 15 15 13.6 +1.0**
KSH *e*PcP **PcP 15 16 04.9 +2.9**
KSH *e*PP **PP 15 17 24.7 +2.2**
KSH *e*ScP **ScP 15 20 04.8 +1.6**
KSH S **S 15 23 16.8 -2.2**
KSH ScS **ScS 15 24 58.7 -4.7**
KSH Kashi 58.87 62 SS SS 15 27 11.4 -0.5
KSH pmax pmax
comp=Z,140nm,5.2s
KSH LR LR
comp=N,82nm,6.6s
KSH LR LR
comp=E,110nm,5.1s
KSH LR LR
comp=Z,100nm,5.7s
MKAR Makanchi Array 60.02 52 P **P 15 15 19.9 -0.4**
comp=Z,1.0nm,0.6s,baz=289,slow=7.6,SNR=7.0
MKAR LR LR 15 41 57.4
comp=Z,48nm,19.1s,baz=321,slow=37
MK01 Makanchi Array 60.04 52 *e*P **P 15 15 19.7 -0.8**
MK01 Makanchi Array 60.04 52 *e*P **P 15 15 19.7 -0.8**
MATP Matopo 64.45 148 P **P 15 15 50.4 +0.1**
comp=Z,1.8nm,0.9s,baz=31,slow=5.9
YKA Yellowknife Ar 66.64 332 P **P 15 16 05.6 +1.7**
comp=Z,0.3nm,0.7s,baz=52,slow=6.6,SNR=4.8
YKA Yellowknife Ar 66.64 332 P **P 15 16 05.6 +1.7**
YKA pmax pmax
comp=Z,1.0nm,0.9s
YKA Yellowknife Ar 66.64 332 P **P 15 16 05.6 +1.7**
comp=Z,1.0nm,0.9s
LBTB Lobatse 67.48 153 P **P 15 16 10.2 +0.5**
comp=Z,2.6nm,0.9s,baz=90,slow=1.0
TLY Talaya 69.75 40 *e*P **P 15 16 25.9 +2.3**
TLY pmax pmax
comp=Z,6.0nm,1.7s
TLY MLR MLR
comp=Z,126nm,15.0s
TLY Talaya 69.75 40 *e*P **P 15 16 25.9 +2.3**
comp=Z,126nm,15.0s
BOD Bodaibo 70.69 31 *e*P **P 15 16 29.4 +0.2**
BOD pmax pmax
comp=Z,3.0nm,1.6s
BOD Bodaibo 70.69 31 *e*P **P 15 16 29.4 +0.2**
comp=Z,3.0nm,1.6s
YAK Yakutsk 73.13 22 *i* P **P 15 16 47.3 +3.5**
YAK pmax pmax
comp=Z,11nm,1.7s
SONM Songino Array 73.49 42 P **P 15 16 49.2 +2.9**
comp=Z,0.5nm,0.3s,baz=317,slow=8.3,SNR=3.0
ULN Ulaanbaatar 73.81 42 *i* P **P 15 16 49.9 +1.6**
ULN pmax pmax
comp=Z,4.0nm,1.7s
ULN Ulaanbaatar 73.81 42 *i* P **P 15 16 49.9 +1.6**
comp=Z,4.0nm,1.7s
BILL Bilibino 74.16 5 *e*P **P 15 16 50.3 +0.5**
BILL *i* 15 17 09.2
BILL pmax pmax
comp=Z,3.0nm,1.2s
BILL Bilibino 74.16 5 *e*P **P 15 16 50.3 +0.5**
comp=Z,3.0nm,1.2s
WMOK Wichita Mounta 74.62 302 P **P 15 16 51.8 -1.2**
WMOK pmax pmax
comp=Z,10.0nm,1.5s
WMOK Wichita Mounta 74.62 302 P **P 15 16 51.8 -1.2**
comp=Z,10nm,1.5s
WMOK Wichita Mounta 74.62 302 P **P 15 16 51.8 -1.2**
comp=Z,10nm,1.5s
LZH Lanzhou 79.33 53 *e*P **P 15 17 20.4 +0.6**
LZH pP sP 15 17 24.6 +2.6
LZH sP PcP 15 17 27.3 -0.7
LZH pmax pmax
comp=Z,14nm,1.0s
ANMO Albuquerque 79.53 306 *i* P **P 15 17 24.1 +3.2**
ANMO pmax pmax
comp=Z,4.0nm,2.5s
HHC Hu-ho-hao-te 80.83 45 *e*P **P 15 17 25.4 -2.3**
HHC pmax pmax
comp=Z,27nm,1.4s
HHC pmax pmax
comp=Z,120nm,7.1s
TX31 Lajitas Ar. Si 81.17 300 *e*P **P 15 17 30.8 +1.1**
TX31 Lajitas Ar. Si 81.17 300 *e*P **P 15 17 30.8 +1.1**
TXAR Lajitas Array 81.17 300 P **P 15 17 31.4 +1.7**
comp=Z,0.6nm,0.8s,baz=76,slow=5.3,SNR=4.5
CPUP Villa Florida 82.36 228 P **P 15 17 36.2 +0.6**
comp=Z,2.3nm,1.0s,baz=133,slow=19,SNR=3.1
CD2 Chengdu 82.55 57 P **P 15 17 36.6 -0.3**
CD2 pmax pmax
comp=Z,1.0nm,0.5s
R11A Troy Canyon, C 82.87 314 *e*P **P 15 17 40.0 +1.4**
comp=Z,10nm,0.6s
R11A Troy Canyon, C 82.87 314 *e*P **P 15 17 40.0 +1.4**
comp=Z,10nm,0.6s
BJI Beijing 83.93 43 P **P 15 17 45.8 +2.1**
BJI pmax pmax
comp=Z,8.0nm,1.0s
TUC Tucson 83.99 306 *e*P **P 15 17 44.5 +0.2**
TUC pmax pmax
comp=Z,13nm,1.5s
TUC Tucson 83.99 306 *e*P **P 15 17 44.5 +0.2**
comp=Z,13nm,1.5s
TUC Tucson 83.99 306 *e*P **P 15 17 44.5 +0.2**
comp=Z,13nm,1.5s
KLR Kul'dur 84.11 29 *e*P **P 15 17 45.6 +1.1**
KLR Kul'dur 84.11 29 *e*P **P 15 17 45.6 +1.1**
CN2 Changchun 85.78 35 *e*P **P 15 17 54.0 +1.0**

NIED ***11*** *15:05:00,37°.80N×143°.60E,h5km,Mw3.9 Best double couple: M07.83000×10¹⁴ NP1:φ342.00000°,δ18.00000°, λ-118.00000°. NP2:φ191.00000°,δ74.00000°, λ-81.00000°.*
ISCJB ***11*** *15:05:12.9±1.5,37°.75N±0°.04×143°.65E±0°.05, h16km±11km,mb4.0/20,Error ellipse: s-maj=7.0km s-min=5.9km az=155.0*
IDC ***11*** *15:05:12.1±0.7,37°.72N×143°.78E,h0km,mb3.9/15, mb1 4.0/21,mb1mx3.9/59,mbtmp3.9/21,ML3.7/5,MS2.9/2, Ms1 2.9/2,ms1mx2.5/71,Error ellipse: s-maj=17.4km s-min=14.6km az=142.0*
JMA ***11*** *15:05:14.7±0.3,37°.83N×143°.64E,h44km,M4.2*
NEIC ***11*** *15:05:17.0±0.5,37°.71N×143°.75E,h35km,mb4.4/5,Error ellipse: s-maj=10.4km s-min=7.5km az=117.0*
ISC 11 15:05:14.5±4.5,37°.76N±0°.07×143°.68E±0°.07,h14km±29km, n53,σ1§29/53,mb4.0/20,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.97**	**291**	P	**Pn**	**15 05 45.9**	**-1.5**
JIO				S	**Sn**	**15 06 08.6**	**-3.2**
OFUJ	**Ofunato**	**2.06**	**311**	P	**Pn**	**15 05 46.8**	**-1.9**
JFK	**Kawauchi**	**2.26**	**261**	P	**Pn**	**15 05 49.8**	**-1.7**
JMK	**Ichinoseki**	**2.27**	**302**	P	**Pn**	**15 05 50.2**	**-1.4**
JMM	**Marumori**	**2.29**	**274**	P	**Pn**	**15 05 50.5**	**-1.3**
JOU	**Okura**	**2.46**	**285**	P	**Pn**	**15 05 53.5**	**-0.7**
JOU				*e*S	**Sn**	**15 06 21.6**	**-2.4**
JOM	**Ohasama**	**2.54**	**313**	P	**Pn**	**15 05 53.9**	**-1.3**
JOM				*e*S	Sn	15 06 22.1	-3.8
JFT	**Otama**	**2.67**	**266**	P	**Pn**	**15 05 56.6**	**-0.4**
JFT				*e*S	**Sn**	**15 06 26.6**	**-2.5**
JYK	**Kaneyama**	**2.86**	**295**	P	**Pn**	**15 05 58.9**	**-0.7**
JYK				*e*S	**Sn**	**15 06 31.9**	**-1.9**
JANG	**Nango**	**3.11**	**328**	P	**Pn**	**15 06 01.9**	**-1.2**
JAW	**Awa shima**	**3.56**	**283**	P	**Pn**	**15 06 09.4**	**+0.1**
JAG	**Ashikaga**	**3.63**	**250**	P	**Pn**	**15 06 09.7**	**-0.6**
JAG				*e*S	**Sn**	**15 06 50.7**	**-2.2**
JRY	**Ryogami san**	**4.21**	**247**	P	**Pn**	**15 06 17.7**	**-0.5**
ERM	**Erimo**	**4.27**	**355**	*e*Pn	**Pn**	**15 06 17.8**	**-1.3**
MJAR	**Matsushiro Arr**	**4.54**	**256**	Pn	**Pn**	**15 06 23.3**	**+0.5**
	7.6nm,0.3s,baz=209,slow=12,SNR=47						
MJAR				Sn	**Sn**	**15 07 15.7**	**+0.4**
	2.3nm,0.3s,baz=82,slow=28,SNR=6.1						
MJAR				LR	LR	15 08 20.9	
	comp=Z,91nm,21.1s,baz=105,slow=41						
MAJO	**Matsushiro**	**4.54**	**256**	*e*Pn	**Pn**	**15 06 23.6**	**+0.8**
MAT	**Matsushiro**	**4.54**	**256**	P	**Pn**	**15 06 23.8**	**+1.0**
MAT				S	**Sn**	**15 07 14.7**	**-0.6**
JHJ2	**Mitsune**	**5.61**	**215**	Pn	**Pn**	**15 06 36.4**	**-1.0**
JHJ	**Hachijo jima 2**	**5.61**	**216**	Pn	**Pn**	**15 06 35.9**	**-1.6**
	7.9nm,0.3s,baz=117,slow=23,SNR=8.3						
JHJ				Sn	Sn	15 07 32.6	-9.2
	5.2nm,0.3s,baz=41,slow=20,SNR=2.0						
ASAJ	**Asahikawa**	**6.41**	**353**	Pn	**Pn**	**15 06 47.4**	**-1.0**
	3.5nm,0.3s,baz=206,slow=11,SNR=44						
ASAJ				Sn	Sn	15 07 53.1	-8.2
	0.5nm,0.3s,baz=86,slow=19,SNR=2.0						
CBIJ	**Chichi jima**	**10.71**	**187**	*e*Pn	**Pn**	**15 07 45.7**	**-1.7**
CBIJ				Sn	Sn	15 09 34.7	-12
JCJ	**Chichijima**	**10.71**	**187**	Sn	Sn	15 09 34.7	-12
	3.2nm,0.3s,baz=282,slow=20,SNR=3.9						
USRK	**Ussuriysk Ar.**	**10.93**	**310**	Pn	**Pn**	**15 07 51.0**	**+0.7**
	0.2nm,0.3s,baz=112,slow=14,SNR=4.9						
USRK				LR	LR	15 12 24.6	
	comp=Z,101nm,20.1s,baz=108,slow=39						
JNU	**Nakatsue**	**11.42**	**250**	Pn	**Pn**	**15 07 57.8**	**+0.6**
	0.2nm,0.3s,baz=285,slow=14,SNR=2.5						
KSRS	**Korea Array**	**12.50**	**273**	Pn	**Pn**	**15 08 13.7**	**+1.7**
	0.1nm,0.3s,baz=83,slow=14,SNR=8.5						
KSAR	**Wonju Array Be**	**12.54**	**273**	Pn	**Pn**	**15 08 13.7**	**+1.3**
H11N2	**WAKE ISLAND Hy**	**27.03**	**125**	T	T	15 39 16.0	
	baz=320						
H11N1	**WAKE ISLAND Hy**	**27.04**	**125**	T	T	15 39 16.3	
	baz=320						
H11N3	**WAKE ISLAND Hy**	**27.04**	**125**	T	T	15 39 19.5	
	baz=320						
H11S1	**WAKE ISLAND Hy**	**27.80**	**127**	T	T	15 40 20.7	
	baz=314						
H11S3	**WAKE ISLAND Hy**	**27.80**	**127**	T	T	15 40 18.3	
	baz=314						
H11S2	**WAKE ISLAND Hy**	**27.81**	**127**	T	T	15 40 24.9	
	baz=314						
ULN	**Ulaanbaatar**	**28.46**	**303**	*e*P	**P**	**15 11 10.9**	**+1.8**
	1.4nm,0.6s						
SONM	**Songino Array**	**28.90**	**302**	P	**P**	**15 11 13.0**	**0.0**
	1.1nm,0.6s,baz=15,slow=29,SNR=2.7						
ENH	**Enshi**	**29.19**	**265**	*e*P	**P**	**15 11 16.9**	**+1.3**
	2.8nm,0.5s						
TLY	**Talaya**	**31.24**	**309**	P	**P**	**15 11 34.9**	**+1.4**
	1.1nm,0.5s,baz=41,slow=12,SNR=3.5						
ZALV	**Zalesovo Beam**	**42.77**	**312**	P	**P**	**15 13 11.2**	**-0.1**
	0.5nm,0.5s,baz=90,slow=8.8,SNR=2.8						
MKAR	**Makanchi Array**	**45.27**	**302**	P	**P**	**15 13 31.6**	**+0.2**
	1.2nm,0.7s,baz=85,slow=14,SNR=6.0						
KURK	**Kurchatov**	**46.91**	**308**	*e*P	**P**	**15 13 44.0**	**-0.3**
	8.4nm,0.6s						
KURBB	**Kurchatov Arra**	**46.98**	**308**	P	**P**	**15 13 44.7**	**-0.2**
	1.2nm,0.5s,baz=82,slow=8.0,SNR=20						
ILAR	**Eielson Array**	**47.91**	**33**	P	**P**	**15 13 50.1**	**-1.8**
	1.3nm,0.7s,baz=260,slow=5.9,SNR=17						
TKM2	**Tokmak 2**	**50.87**	**299**	*e*P	**P**	**15 14 16.1**	**+1.0**
	2.4nm,0.7s						
INK	**Inuvik**	**52.92**	**28**	P	**P**	**15 14 30.3**	**+0.7**
	0.6nm,0.4s,baz=293,slow=5.2,SNR=7.1						
WRAB	**Tennant Creek**	**58.05**	**190**	*e*P	**P**	**15 15 06.5**	**-0.6**
	7.0nm,1.1s						
WRA	**Warramunga Arr**	**58.06**	**190**	P	**P**	**15 15 06.6**	**-0.6**
	2.0nm,0.6s,baz=7.8,slow=6.8,SNR=19						
ABKAR	**Akbulak array**	**58.85**	**310**	*e*P	**P**	**15 15 12.8**	**+0.3**
ASAR	**Alice Springs**	**61.78**	**190**	P	**P**	**15 15 32.3**	**-0.5**
	0.4nm,0.5s,baz=6.9,slow=15,SNR=5.6						
YKA	**Yellowknife Ar**	**62.27**	**31**	P	**P**	**15 15 35.0**	**-0.5**
	0.4nm,0.7s,baz=303,slow=6.8,SNR=4.8						
ARCES	**ARCESS Array B**	**63.95**	**340**	P	**P**	**15 15 46.8**	**+0.2**
	2.6nm,0.8s,baz=332,slow=17,SNR=2.9						
KBZ	**Khabaz**	**71.79**	**311**	P	**P**	**15 16 38.2**	**+1.9**
	1.3nm,0.8s,baz=220,slow=7.9,SNR=3.6						
NVAR	**Mina Array Bea**	**73.11**	**54**	P	**P**	**15 16 44.8**	**+0.1**
	0.3nm,0.7s,baz=264,slow=6.1,SNR=2.4						
AKASG	**Malin Array Be**	**74.82**	**323**	P	**P**	**15 16 54.6**	**+0.5**
	0.4nm,0.4s,baz=47,slow=6.3,SNR=2.1						
PDAR	**Pinedale Array**	**75.87**	**47**	P	**P**	**15 17 01.0**	**+0.3**
	0.4nm,0.5s,baz=284,slow=1.5,SNR=5.3						

NIED ***11*** *15:08:00,36°.30N×142°.60E,h17km,Mw3.7 Best double couple: M07.20000×10¹⁴ NP1:φ37.00000°,δ1.00000°, λ105.00000°. NP2:φ201.00000°,δ89.00000°,λ90.00000°.*
IDC ***11*** *15:08:05.0±0.8,36°.21N×142°.70E,h0km,mb3.8/13, mb1 3.9/19,mb1mx3.8/61,mbtmp3.8/19,ML3.7/5,Error ellipse: s-maj=19.4km s-min=17.2km az=88.0*
ISCJB ***11*** *15:08:05.9±0.5,36°.29N±0°.04×142°.61E±0°.05,h15km, mb3.8/16,MS3.7/1,Error ellipse: s-maj=6.3km s-min=5.0km az=150.6*
NEIC ***11*** *15:08:06.2±0.5,36°.26N×142°.73E,h10km,mb4.1/2,Error ellipse: s-maj=11.3km s-min=8.9km az=111.0*
JMA ***11*** *15:08:08.0±0.2,36°.33N×142°.61E,h56km,M3.6*
ISC 11 15:08:07.4±0.7,36°.31N±0°.05×142°.61E±0°.07,h15km,n47, σ1§61/53,mb3.9/16,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.54**	**248**	P	**Pn**	**15 08 33.9**	**-0.5**
CHOJ				*e*S	**Sn**	**15 08 52.4**	**-1.7**
ONAJ	**Iwakimizuishiy**	**1.66**	**299**	P	**Pn**	**15 08 35.2**	**-0.8**
JHO	**Hitachi**	**1.67**	**281**	P	**Pn**	**15 08 35.4**	**-0.8**
JHO				S	**Sn**	**15 08 55.3**	**-2.1**
JFK	**Kawauchi**	**1.75**	**308**	P	**Pn**	**15 08 36.4**	**-0.9**
BSO1	**Boso 1**	**2.12**	**219**	P	**Pn**	**15 08 42.0**	**+0.2**
JFT	**Otama**	**2.19**	**304**	P	**Pn**	**15 08 43.3**	**0.0**
JFT				*e*S	**Sn**	**15 09 08.9**	**-1.2**
BSO3	**Boso 3**	**2.28**	**229**	P	**Pn**	**15 08 43.5**	**-0.7**
JIO	**Ouri**	**2.37**	**335**	P	**Pn**	**15 08 44.6**	**-1.1**
JAG	**Ashikaga**	**2.55**	**274**	P	**Pn**	**15 08 47.9**	**-0.4**
JAG				*e*S	**Sn**	**15 09 17.5**	**-1.5**
JMK	**Ichinoseki**	**2.86**	**338**	P	**Pn**	**15 08 51.8**	**-0.7**
JRY	**Ryogami san**	**3.01**	**266**	P	**Pn**	**15 08 54.3**	**-0.4**
JRY				S	**Sn**	**15 09 28.7**	**-1.8**
JOD2	**Odawara 2**	**3.05**	**251**	P	**Pn**	**15 08 55.2**	**+0.1**
JOD2				*e*S	**Sn**	**15 09 30.5**	**-0.8**
JYK	**Kaneyama**	**3.16**	**326**	P	**Pn**	**15 08 56.6**	**-0.1**
JYN	**Shimob**	**3.40**	**257**	P	**Pn**	**15 09 00.5**	**+0.5**
MJAR	**Matsushiro Arr**	**3.56**	**275**	Pn	**Pn**	**15 09 02.2**	**0.0**
	1.8nm,0.3s,baz=140,slow=5.7,SNR=14						
MAJO	**Matsushiro**	**3.56**	**275**	*e*Pn	**Pn**	**15 09 02.9**	**+0.7**
MAT	**Matsushiro**	**3.56**	**275**	P	**Pn**	**15 09 02.9**	**+0.8**
MAT				*e*S	**Sn**	**15 09 41.1**	**-2.8**
MAT	**Matsushiro**	**3.56**	**275**	P	**Pn**	**15 09 03.2**	**+1.1**
JHJ2	**Mitsune**	**3.93**	**217**	*e*Pn	**Pn**	**15 09 06.5**	**-0.7**
JHJ	**Hachijo jima 2**	**3.94**	**217**	Pn	**Pn**	**15 09 06.7**	**-0.7**
	17nm,0.3s,baz=47,slow=19,SNR=5.6						
JHJ				Sn	**Sn**	**15 09 48.1**	**-5.2**
	60nm,0.3s,baz=291,slow=23,SNR=11						
ERM	**Erimo**	**5.72**	**4**	*e*Pn	Pn	15 09 29.3	-2.5
ASAJ	**Asahikawa**	**7.80**	**360**	Pn	**Pn**	**15 09 59.2**	**-1.1**
	1.5nm,0.3s,baz=226,slow=15,SNR=7.4						
ASAJ				Sn	**Sn**	**15 11 24.4**	**-4.0**
	0.5nm,0.3s,baz=60,slow=27,SNR=3.7						
ASAJ	**Asahikawa**	**7.80**	**360**	*e*Pn	**Pn**	**15 09 58.9**	**-1.5**
	5.6nm,0.8s						
ASAJ				Sn	**Sn**	**15 11 24.4**	**-4.0**
CBIJ	**Chichi jima**	**9.19**	**182**	Pn	Pn	15 10 16.6	-2.9
CBIJ				Sn	Sn	15 11 50.9	-12
JCJ	**Chichijima**	**9.19**	**182**	Pn	Pn	15 10 15.6	-3.9
	3.5nm,0.3s,baz=276,slow=21,SNR=5.3						
JCJ				Sn	Sn	15 11 50.9	-12
	baz=233,slow=20						
USRK	**Ussuriysk Ar.**	**11.31**	**317**	Pn	**Pn**	**15 10 50.8**	**+2.4**
	0.1nm,0.3s,baz=147,slow=16,SNR=4.0						
KSRS	**Korea Array**	**11.82**	**280**	Pn	**Pn**	**15 10 58.4**	**+3.0**
	0.2nm,0.3s,baz=93,slow=14,SNR=5.7						
KSAR	**Wonju Array Be**	**11.85**	**280**	Pn	**Pn**	**15 10 58.4**	**+2.5**
KLR	**Kul'dur**	**15.16**	**332**	Pn	**P**	**15 11 45.1**	**-0.8**
	0.1nm,0.3s,baz=135,slow=9.7,SNR=3.7						
ENH	**Enshi**	**28.25**	**267**	*e*P	**P**	**15 13 59.6**	**-0.4**
SONM	**Songino Array**	**28.99**	**305**	P	**P**	**15 14 06.5**	**-0.1**
	2.0nm,0.7s,baz=98,slow=7.7,SNR=4.4						
WMQ	**Urumqi**	**42.03**	**298**	*e*P	P	15 15 55.8	-2.5
WMQ				pmax	pmax		
	comp=Z,3.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,100nm,8.6s						
WMQ				LR	LR		
	comp=N,190nm,19.6s						
WMQ				LR	LR		
	comp=E,100nm,16.8s						
WMQ				LR	LR		
	comp=Z,32nm,15.0s						
ZALV	**Zalesovo Beam**	**43.11**	**313**	P	**P**	**15 16 06.7**	**-0.1**
	comp=Z,1.0nm,0.6s,baz=94,slow=7.6,SNR=4.5						
MKAR	**Makanchi Array**	**45.32**	**303**	P	**P**	**15 16 25.9**	**+1.2**
	comp=Z,2.5nm,0.7s,baz=268,slow=4.3,SNR=13						
KURK	**Kurchatov**	**47.14**	**309**	*e*P	**P**	**15 16 38.7**	**-0.2**
KURBB	**Kurchatov Arra**	**47.21**	**309**	P	**P**	**15 16 39.0**	**-0.5**
	comp=Z,1.7nm,0.8s,baz=84,slow=7.7,SNR=5.1						
ILAR	**Eielson Array**	**49.60**	**32**	P	**P**	**15 16 58.0**	**+0.3**
	comp=Z,0.4nm,0.8s,baz=270,slow=5.9,SNR=4.2						
TKM2	**Tokmak 2**	**50.82**	**299**	*e*P	**P**	**15 17 08.3**	**+0.8**
	comp=Z,2.0nm,0.8s						
WRA	**Warramunga Arr**	**56.49**	**189**	P	**P**	**15 17 48.3**	**-0.6**
	comp=Z,1.7nm,1.1s,baz=9.8,slow=7.5,SNR=5.5						
ABKAR	**Akbulak array**	**59.14**	**311**	*e*P	**P**	**15 18 07.5**	**+0.1**
	comp=Z,1.2nm,0.8s						
ASAR	**Alice Springs**	**60.21**	**189**	P	**P**	**15 18 13.8**	**-1.1**
	comp=Z,0.2nm,0.4s,baz=2.0,slow=6.6,SNR=4.0						
YKA	**Yellowknife Ar**	**63.95**	**30**	P	**P**	**15 18 38.0**	**-1.6**
	comp=Z,0.2nm,0.7s,baz=299,slow

s-min=7.3km az=22.3

NIED **11** 15:17:00, 38°.80N× 142°.10E, h62km, Mw3.5 Best double couple: M0 1.88000×10^14 NP1:φs 177.00000°, δ37.00000°, λ70.00000°. NP2:φs 22.00000°, δ56.00000°, λ105.00000°.

JMA **11** 15:17:01.1±0.1, 38°.84N× 142°.06E, h45km±1km, M3.6

JMA Felt I J1.

IDC **11** 15:17:02.1±2.9, 38°.89N× 142°.22E, h57km±26km, mb3.6/4, mb1 3.6/6, mb1mx3.2/67, mbtmp3.7/6, ML3.1/2, MS3.0/3, Ms1 3.0/3, ms1mx2.5/68, Error ellipse: s-maj=41.7km s-min=18.0km az=95.0

ISC 11 15:17:01.3±1.7, 38°.86N±0°.06× 142°.1E±0°.1, h44km±13km, n16, σ0 68/20, mb3.8/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.37**	**307**	P	**Pn**	**15 17 10.8**	**+0.1**
OFUJ				S	**Sn**	**15 17 17.5**	**+0.3**
JMK	**Ichinoseki**	**0.65**	**279**	P	**Pn**	**15 17 14.3**	**+0.1**
JMK				*e*S	**Sn**	**15 17 23.3**	**-0.1**
JIO	**Ouri**	**0.68**	**234**	P	**Pn**	**15 17 14.2**	**-0.4**
JIO				S	**Sn**	**15 17 23.1**	**-1.0**
JOM	**Ohasama**	**0.85**	**317**	P	**Pn**	**15 17 17.1**	**+0.2**
JOM				S	**Sn**	**15 17 28.4**	**+0.2**
JOU	**Okura**	**1.19**	**246**	P	**Pn**	**15 17 21.5**	**0.0**
JOU				*e*S	**Sn**	**15 17 36.6**	**+0.1**
JRG	**Rokugo**	**1.22**	**297**	P	**Pn**	**15 17 22.2**	**+0.2**
JYK	**Kaneyama**	**1.32**	**273**	P	**Pn**	**15 17 23.4**	**+0.1**
JANG	**Nango**	**1.57**	**345**	P	**Pn**	**15 17 26.6**	**-0.1**
MJAR	**Matsushiro Arr**	**3.82**	**234**	P	**Pn**	**15 17 60.0**	**+2.3**
	0.9nm,0.3s,baz=33,slow=13,SNR=10						
ASAJ	**Asahikawa**	**5.27**	**4**	P	**Pn**	**15 18 18.0**	**+0.5**
	0.6nm,0.3s,baz=200,slow=17,SNR=15						
ASAJ				S	**Sn**	**15 19 17.1**	**+0.2**
	0.3nm,0.3s,baz=30,slow=20,SNR=1.4						
ASAJ				LR	LR	15 20 05.5	
	comp=Z,50nm,19.3s,baz=171,slow=35						
KLR	**Kul'dur**	**12.73**	**328**	LR	LR	15 25 24.3	
	comp=Z,35nm,19.6s,baz=136,slow=39						
ZALV	**Zalesovo Beam**	**41.08**	**311**	P	**P**	**15 24 40.8**	**+0.4**
	0.5nm,0.4s,baz=101,slow=6.6,SNR=3.2						
JAY	**Jayapura**	**41.19**	**182**	LR	LR	15 39 36.9	
	comp=Z,102nm,20.1s,baz=26,slow=33						
MKAR	**Makanchi Array**	**43.60**	**301**	P	**P**	**15 25 00.7**	**-0.4**
	0.6nm,0.6s,baz=79,slow=10.0,SNR=6.4						
BVAR	**Borovoye Array**	**49.73**	**311**	P	**P**	**15 25 49.1**	**+0.1**
	0.8nm,0.6s,baz=78,slow=7.5,SNR=3.9						
WRA	**Warramunga Arr**	**58.94**	**188**	P	**P**	**15 26 55.6**	**-0.5**
	1.8nm,0.6s,baz=18,slow=6.9,SNR=2.1						

IDC **11** 15:21:20.2±0.4, 6°.51S× 147°.83E, h0km, mb4.9/33, mb1 4.9/35, mb1mx4.8/43, mbtmp4.8/35, ML4.4/1, MS4.3/6, Ms1 4.3/6, ms1mx3.9/36, Error ellipse: s-maj=14.4km s-min=9.7km az=83.0

MOS **11** 15:21:23.8±1.1, 6°.49S× 147°.80E, h37km, mb5.1/34, Error ellipse: s-maj=9.6km s-min=6.0km az=94.6

ISCJB **11** 15:21:24.9±0.2, 6°.56S±0°.02× 147°.86E±0°.03, h51km, mb4.9/102, MS4.4/16, Error ellipse: s-maj=5.0km s-min=3.4km az=6.1

BJI **11** 15:21:26.4, 6°.24S× 147°.77E, h46km, mb4.7/40, mB5.0/31, Ms4.8/21, Ms7 4.5/20

GCMT **11** 15:21:26.1±0.3, 6°.60S× 148°.08E, h27km±1km, MW5.0/55, Moment Tensor Solution. s32,c45; s55,c67; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr 1.95±.19; Mθθ -0.57±.12; Mφφ -1.38±.15; Mrθ -1.93±.29; Mφφ 2.03±.09; Mφr 1.03±.27; Best double couple: M0 3.38700×10^16 NP1:φs 301.00000°, δ68.00000°, λ68.00000°. NP2: φs 167.00000°, δ31.00000°, λ132.00000°. Principal axes: T 2.9950, Plg61.0000°, Azm178.0000°; N 0.7790, Plg20.0000°, Azm309.0000°; P -3.7780, Plg20.0000°, Azm47.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.

NEIC **11** 15:21:26.1±0.6, 6°.52S× 147°.80E, h44km±5km, mb5.0/59 Error ellipse: s-maj=5.3km s-min=4.9km az=108.0

DJA **11** 15:21:29.8±0.6, 7°.3S±4°.3× 147°.8E±°, h51km±7km, M4.8/21, mb4.9/21, mB5.2/7, MLv5.0/1, Mw(mB)4.6/7

ISC 11 15:21:27.0±0.2, 6°.52S±0°.04× 147°.87E±0°.05, h51km, n295, σ1 63/309, mb4.9/100, MS4.4/18, 3C-2D, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.95**	**194**	Pn	**Pn**	**15 22 09.9**	**-1.6**
	32nm,0.3s,baz=21,slow=4.9,SNR=150						
PMG				Sn	**Sn**	**15 22 53.3**	**+7.7**
	65nm,0.3s,baz=74,slow=16,SNR=8.2						
PMG	**Port Moresby**	**2.95**	**194**	*c iP*	**Pn**	**15 22 10.3**	**-1.1**
PMG				pmax	pmax		
	comp=Z,8μm,0.8s						
MANU	**Manus Island**	**4.48**	**354**	*e*Pn	**Pn**	**15 22 36.4**	**+4.0**
RABL	**Rabaul**	**4.86**	**62**	*e*Pn	**Pn**	**15 22 37.9**	**+0.3**
JAY	**Jayapura**	**8.18**	**299**	Pn	Pn	15 23 28.8	+5.6
	comp=Z,0.3nm,0.3s,baz=90,slow=22,SNR=9.3						
JAY				LR	LR	15 26 58.4	
	comp=Z,57nm,20.0s,baz=5.0,slow=42						
JAY	**Jayapura**	**8.18**	**299**	P	Pn	15 23 28.9	+5.7
	comp=Z,60nm,1.0s,comp=Z,582nm						
GENI	**Genyem**	**8.61**	**297**	P	**Pn**	**15 23 33.5**	**+4.4**
	comp=Z,161nm,1.0s,comp=Z,2μm						
COEN	**Coen**	**8.71**	**212**	*e*Pn	**Pn**	**15 23 28.8**	**-1.7**
MTSU	**Mount Surprise**	**12.05**	**196**	P	**Pn**	**15 24 15.9**	**-0.2**
	baz=12,SNR=14						
HNR	**Honiara**	**12.30**	**104**	Pn	**Pn**	**15 24 21.0**	**+1.4**
	comp=Z,4.0nm,0.3s,baz=145,slow=10,SNR=24						
HNR				Sn	Sn	15 26 47.9	+13
	comp=Z,2.0nm,0.3s,baz=66,slow=20,SNR=2.0						
HNR	**Honiara**	**12.30**	**104**	*e*P	**Pn**	**15 24 20.0**	**+0.4**
HNR	**Honiara**	**12.30**	**104**	*e*P	**Pn**	**15 24 20.6**	**+1.0**
HNR						15 26 47.9	
HNR	**Honiara**	**12.30**	**104**	*e*Pn	**Pn**	**15 24 20.6**	**+1.0**
HNR				Sn	Sn	15 26 47.9	+13
CTA	**Charters Tower**	**13.58**	**186**	Pn	**Pn**	**15 24 37.1**	**+0.1**
	comp=Z,0.7nm,0.3s,baz=7.9,slow=14,SNR=19						
CTA				Sn	**Sn**	**15 27 08.3**	**+1.9**
	comp=Z,0.3nm,0.3s,baz=100,slow=18,SNR=2.7						
CTA				LR	LR	15 29 53.7	
	comp=Z,2μm,18.6s,baz=7.5,slow=38						
CTA	**Charters Tower**	**13.58**	**186**	P	**Pn**	**15 24 37.3**	**+0.2**
	baz=14						
CTAO	**Charters Tower**	**13.58**	**186**	*e*P	**Pn**	**15 24 36.4**	**-0.6**
CTAO	**Charters Tower**	**13.58**	**186**	*e*Pn	**Pn**	**15 24 36.4**	**-0.6**
FAKI	**Fak Fak**	**15.97**	**282**	P	**P**	**15 25 13.4**	**+2.2**
	comp=Z,114nm,1.1s,comp=Z,1μm						
FAKI	**Fak Fak**	**15.97**	**282**	*e*Pn	**Pn**	**15 25 08.4**	**-0.1**
	comp=Z,102nm,1.0s						
KDU	**Kakadu**	**16.36**	**247**	P	**P**	**15 25 15.1**	**-0.5**
	baz=16,SNR=3.6						
PATS	**Pohnpei**	**16.87**	**38**	P	**P**	**15 25 23.8**	**+2.7**
	baz=17,SNR=6.7						
PATS	**Pohnpei**	**16.87**	**38**	*e*Pn	**P**	**15 25 23.4**	**+2.2**
	comp=Z,301nm,1.1s						
SWI	**Sorong**	**17.50**	**288**	P	**P**	**15 25 30.4**	**+2.3**
	comp=Z,70nm,1.5s,comp=Z,910nm						
SWI	**Sorong**	**17.50**	**288**	P	**P**	**15 25 29.5**	**+1.4**
SWI				pmax	pmax		
	comp=Z,69nm,1.0s						
WRAB	**Tennant Creek**	**18.71**	**223**	*i* P	**P**	**15 25 40.6**	**-0.9**
WRAB				pmax	pmax		
	comp=Z,183nm,1.7s						
WRAB	**Tennant Creek**	**18.71**	**223**	*e*P	**P**	**15 25 40.0**	**-1.4**
	comp=Z,97nm,1.4s						
WB2	**Warramunga Arr**	**18.72**	**223**	*e*P	**P**	**15 25 39.7**	**-1.9**
	comp=Z,90nm,1.4s						
WRA	**Warramunga Arr**	**18.73**	**223**	P	**P**	**15 25 39.7**	**-1.9**
	comp=Z,1.1nm,0.3s,baz=48,slow=11,SNR=45						
EIDS	**Eidsvold**	**18.99**	**171**	P	**P**	**15 25 43.2**	**-1.2**
	baz=19,SNR=7.8						
EIDS	**Eidsvold**	**18.99**	**171**	*e*P	**P**	**15 25 42.7**	**-1.8**
	comp=Z,39nm,1.1s						
PALU	**Palau**	**19.19**	**316**	P	**Pn**	**15 25 50.0**	**+1.9**
	baz=20,SNR=3.8						
RMQ	**Roma**	**19.87**	**178**	P	**P**	**15 25 54.1**	**0.0**
	baz=20,SNR=23						
GUMO	**Guam**	**20.20**	**352**	P	**P**	**15 25 56.0**	**-1.7**
	comp=Z,77nm,0.6s,baz=174,slow=7.3,SNR=8.5						
GUMO				LR	LR	15 32 05.7	
	comp=Z,650nm,20.9s,baz=176,slow=32						
QLP	**Quilpie**	**20.25**	**189**	P	**P**	**15 25 57.8**	**-0.4**
	baz=20,SNR=53						
KNRA	**Kununurra**	**20.82**	**243**	P	**P**	**15 26 03.5**	**-1.0**
	baz=21						
NLAI	**Namlea**	**20.95**	**278**	P	Pn	15 26 08.0	-0.9
	comp=Z,46nm,1.2s						
AS01	**Alice Springs**	**21.67**	**217**	*e*P	**P**	**15 26 12.1**	**-1.4**
AS31	**Alice Springs**	**21.70**	**217**	*e*P	**P**	**15 26 12.8**	**-1.1**
	comp=Z,10nm,0.9s						
ASAR	**Alice Springs**	**21.70**	**217**	P	**P**	**15 26 13.2**	**-0.7**
	comp=Z,23nm,1.0s,baz=58,slow=9.1,SNR=77						
ASAR				ScP	**ScP**	**15 33 55.4**	**+8.7**
	comp=Z,1.8nm,0.9s,baz=57,slow=2.8,SNR=5.6						
ASAR				LR	LR	15 35 54.6	
	comp=Z,2μm,18.0s,baz=40,slow=40						
SANI	**Sanana**	**22.26**	**281**	P	**P**	**15 26 23.1**	**+3.1**
	comp=Z,63nm,1.1s,comp=Z,691nm						
SOEI	**Soe**	**23.58**	**261**	P	**P**	**15 26 37.3**	**+3.8**
	comp=Z,84nm,1.0s						
SOEI	**Soe**	**23.58**	**261**	*e*P	**P**	**15 26 32.8**	**-0.7**
SOEI				*e*pP	**pP**	**15 26 38.5**	**-7.5**
DZM	**Mont Dzumac**	**23.68**	**133**	P	**P**	**15 26 33.3**	**-1.0**
	comp=Z,10nm,0.7s,baz=357,slow=9.8,SNR=5.3						
ARMA	**Armidale**	**24.03**	**172**	P	**P**	**15 26 36.3**	**-1.2**
	baz=24,SNR=26						
ARMA	**Armidale**	**24.03**	**172**	*e*P	**P**	**15 26 36.2**	**-1.3**
	comp=Z,46nm,0.8s						
FITZ	**Fitzroy Crossi**	**24.54**	**240**	P	**P**	**15 26 41.5**	**-0.6**
	comp=Z,179nm,1.2s,baz=60,slow=7.6,SNR=79						
FITZ				LR	LR	15 38 04.2	
	comp=Z,1μm,18.9s,baz=58,slow=41						
FITZ	**Fitzroy Crossi**	**24.54**	**240**	P	**P**	**15 26 41.5**	**-0.6**
	baz=25,SNR=44						
FITZ	**Fitzroy Crossi**	**24.54**	**240**	*e*P	**P**	**15 26 41.4**	**-0.6**
	comp=Z,168nm,1.2s						
CMSA	**Cobar Meteorol**	**24.97**	**184**	P	**P**	**15 26 44.6**	**-1.2**
	baz=25,SNR=17						
MMRI	**Maumere**	**25.49**	**264**	*e*P	**P**	**15 26 49.9**	**-0.9**
	comp=Z,131nm,1.1s						
LUWI	**Luwuk**	**25.62**	**281**	P	**P**	**15 26 54.5**	**+2.6**
	comp=Z,150nm,1.1s,comp=Z,2μm						
LUWI	**Luwuk**	**25.62**	**281**	*e*P	**P**	**15 26 50.7**	**-1.2**
	comp=Z,178nm,1.1s						
LUWI				*e*PcP	**PcP**	**15 30 21.0**	**-1.0**
STKA	**Stephens Creek**	**25.90**	**192**	P	**P**	**15 26 52.5**	**-1.8**
	comp=Z,29nm,0.9s,baz=357,slow=8.6,SNR=25						
STKA	**Stephens Creek**	**25.90**	**192**	P	**P**	**15 26 53.2**	**-1.1**
	baz=26,SNR=20						
STKA	**Stephens Creek**	**25.90**	**192**	*e*P	**P**	**15 26 52.8**	**-1.5**
STKA				pmax	pmax		
	comp=Z,7.0nm,0.9s						
STKA	**Stephens Creek**	**25.90**	**192**	*e*P	**P**	**15 26 52.8**	**-1.5**
	comp=Z,6.9nm,0.9s						
WRKA	**Warakurna**	**26.27**	**223**	P	**P**	**15 26 56.5**	**-1.3**
	baz=26,SNR=88						
YNG	**Young**	**27.65**	**179**	P	**P**	**15 27 09.6**	**-0.4**
	baz=28,SNR=12						
KAPI	**Kappang**	**28.01**	**272**	P	**P**	**15 27 13.9**	**+0.4**
	comp=Z,21nm,1.0s,baz=117,slow=15,SNR=5.7						
KAPI				LR	LR	15 40 26.6	
	comp=Z,355nm,20.4s,baz=117,slow=41						
KAPI	**Kappang**	**28.01**	**272**	*e*P	**P**	**15 27 14.0**	**+0.4**
	comp=Z,17nm,1.0s						
HTT	**Hallett**	**28.04**	**196**	P	**P**	**15 27 13.9**	**+0.4**
	baz=28,SNR=6.3						
BBOO	**Buckleboo**	**28.37**	**201**	P	**P**	**15 27 16.3**	**-0.2**
	baz=28						
PCI	**Palu**	**28.51**	**280**	P	**P**	**15 27 21.2**	**+3.2**
PCI				pmax	pmax		
	comp=Z,84nm,1.1s						
CAN	**Canberra**	**28.68**	**178**	P	**P**	**15 27 18.7**	**-0.5**
	baz=29						
CNB	**Canberra Magne**	**28.69**	**177**	P	**P**	**15 27 19.0**	**-0.3**
	baz=29,SNR=4.5						
ARPS	**Mount Arapiles**	**30.61**	**190**	P	**P**	**15 27 35.9**	**-0.4**
	baz=31						
MYLDM	**Lahad Datu**	**31.54**	**291**	*e*pP	pP	15 27 56.0	-1.8
JAGI	**Jajag, Banyuwa**	**33.48**	**265**	*e*P	**P**	**15 27 58.4**	**-3.4**
	comp=Z,46nm,1.0s						
CBIJ	**Chichi jima**	**33.87**	**351**	P	**P**	**15 28 03.4**	**-1.5**
JCJ	**Chichijima**	**33.87**	**351**	P	**P**	**15 28 03.4**	**-1.5**
	comp=Z,43nm,0.7s,baz=271,slow=8.4,SNR=4.5						
KMBL	**Kambalda**	**34.67**	**221**	P	**P**	**15 28 11.2**	**-0.7**
	baz=35,SNR=8.7						
SBUM	**Sibu**	**36.69**	**283**	*e*P	**P**	**15 28 27.2**	**-2.1**
	comp=Z,10.0nm,1.1s						
MORW	**Morawa**	**37.48**	**229**	P	**P**	**15 28 35.5**	**-0.5**
	baz=38,SNR=10						
KLBR	**Kellerberrin**	**37.60**	**225**	P	**P**	**15 28 35.9**	**-1.0**
	baz=38,SNR=28						
BLDU	**Ballidu**	**37.80**	**227**	P	**P**	**15 28 37.8**	**-0.8**
	baz=38,SNR=6.2						
KSM	**Kuching**	**38.33**	**281**	*e*P	**P**	**15 28 42.3**	**-1.0**
	comp=Z,15nm,1.2s						
NWAO	**Narrogin (SRO)**	**38.73**	**223**	P	**P**	**15 28 45.6**	**-0.8**
	comp=Z,16nm,0.7s,baz=291,slow=7.5,SNR=10						
NWAO	**Narrogin (SRO)**	**38.73**	**223**	P	**P**	**15 28 45.8**	**-0.6**
	baz=39,SNR=7.7						
NWAO	**Narrogin (SRO)**	**38.73**	**223**	*e*P	**P**	**15 28 45.5**	**-0.9**
NWAO				pmax	pmax		
	comp=Z,97nm,0.9s						
NWAO	**Narrogin (SRO)**	**38.73**	**223**	*e*P	**P**	**15 28 45.5**	**-0.9**
	comp=Z,98nm,0.9s						
MUN	**Mundaring**	**38.90**	**225**	P	**P**	**15 28 47.6**	**-0.3**
	baz=39						
CISI	**Cisompet, Garu**	**39.76**	**266**	*e*P	**P**	**15 28 53.5**	**-1.8**
	comp=Z,158nm,1.4s						
LEM	**Lembang**	**39.97**	**267**	P	P	15 29 03.5	+6.3
	comp=Z,12nm,0.4s,baz=109,slow=3.3,SNR=5.9						
AFI	**Afiamalu**	**40.34**	**104**	P	**P**	**15 29 00.7**	**+0.6**
	comp=Z,47nm,0.9s,baz=194,slow=21,SNR=5.5						
AFI	**Afiamalu**	**40.34**	**104**	*e*P	**P**	**15 29 00.5**	**+0.4**
AFI				pmax	pmax		
	comp=Z,63nm,0.9s						
AFI	**Afiamalu**	**40.34**	**104**	*e*P	**P**	**15 29 00.5**	**+0.4**
	comp=Z,63nm,0.9s						
KNTN	**Kanton**	**40.44**	**87**	*e*P	**P**	**15 29 00.9**	**0.0**
	comp=Z,324nm,1.8s						
URZ	**Urewera**	**41.23**	**144**	P	**P**	**15 29 07.5**	**+0.5**
	comp=Z,28nm,1.1s,baz=329,slow=3.3,SNR=2.6						
RPZ	**Rata Peaks**	**42.27**	**155**	P	**P**	**15 29 15.9**	**+0.4**
	comp=Z,21nm,0.8s,baz=251,slow=4.4,SNR=4.0						
JNU	**Nakatsue**	**42.60**	**339**	P	**P**	**15 29 18.7**	**+0.4**
	comp=Z,8.5nm,0.9s,baz=173,slow=0.4,SNR=5.9						
MJAR	**Matsushiro Arr**	**43.78**	**349**	P	**P**	**15 29 27.7**	**-0.1**
	comp=Z,20nm,1.1s,baz=173,slow=8.2,SNR=22						
MAJO	**Matsushiro**	**43.78**	**349**	*i* P	**P**	**15 29 27.2**	**-0.6**
MAJO				pmax	pmax		
	comp=Z,170nm,1.1s						
MAJO	**Matsushiro**	**43.78**	**349**	*e*P	**P**	**15 29 27.6**	**-0.2**
	comp=Z,26nm,0.9s						
MJB9	**Matsu-Tunnel**	**43.79**	**349**	*e*P	**P**	**15 29 27.7**	**-0.1**
	comp=Z,6.3nm,0.9s						
MYKOM	**Kota Tinggi**	**44.71**	**279**	*e*P	**P**	**15 29 36.2**	**+0.7**
QIZ	**Qiongzhong**	**45.26**	**305**	P	**P**	**15 29 37.5**	**-2.3**
QIZ				S	**S**	**15 36 18.2**	**+1.4**
QIZ				LR	LR		
	comp=Z,98nm,6.4s						
QIZ				LR	LR		
	comp=Z,38nm,17.8s						
KSRS	**Korea Array**	**47.55**	**338**	P	**P**	**15 29 57.3**	**-0.1**
	comp=Z,5.1nm,0.8s,baz=155,slow=9.0,SNR=21						
KSAR	**Wonju Array Be**	**47.55**	**338**	P	**P**	**15 29 57.3**	**-0.2**
KSAR	**Wonju Array Be**	**47.55**	**338**	P	**P**	**15 29 57.3**	**-0.2**
KS01	**Wonju Array Si**	**47.58**	**338**	*e*P	**P**	**15 29 57.6**	**-0.1**
KULM	**Kulim**	**48.57**	**283**	*e*P	**P**	**15 30 06.2**	**+0.4**
	comp=Z,21nm,1.0s						
MCQ	**Macquarie Isla**	**48.67**	**171**	P	**P**	**15 30 04.2**	**-1.7**
MCQ	**Macquarie Isla**	**48.67**	**171**	P	**P**	**15 30 04.2**	**-1.7**
PSI	**Prapat**	**49.73**	**279**	*e*P	**P**	**15 30 15.0**	**+0.2**
PSI				pmax	pmax		
	comp=Z,28nm,1.3s						
PSI	**Prapat**	**49.73**	**279**	*e*P	**P**	**15 30 15.0**	**+0.2**
	comp=Z,28nm,1.3s						
ASAJ	**Asahikawa**	**50.63**	**355**	*e*P	**P**	**15 30 21.8**	**+0.9**
	comp=Z,36nm,1.3s						
GSI	**Gunungsitoli**	**50.80**	**277**	*e*P	**P**	**15 30 22.0**	**-0.8**
	comp=Z,19nm,0.9s						
GYA	**Guiyang**	**51.67**	**311**	P	**P**	**15 30 30.6**	**+1.4**
GYA				pP	pP	15 30 43.8	+0.7
GYA				sP	sP	15 30 50.2	+1.2
GYA				PP	**PP**	**15 32 28.6**	**+1.3**
GYA				ScP	**ScP**	**15 35 34.3**	**-0.7**
GYA				sS	sS	15 38 10.0	-0.6
GYA				SS	**SS**	**15 41 22.2**	**-2.3**
GYA				pmax	pmax		
	comp=Z,20nm,1.0s						
GYA				pmax	pmax		
	comp=Z,120nm,5.8s						
GYA				LR	LR		
	comp=Z,520nm,18.8s						
GYA				LR	LR		
	comp=Z,500nm,19.0s						
GYA				LR	LR		
	comp=Z,480nm,19.6s						
LOEI	**Loei**	**51.85**	**298**	P	**P**	**15 30 30.5**	**-0.1**
	comp=Z,124nm,1.0s,comp=Z,11μm						
USRK	**Ussuriysk Ar.**	**52.48**	**346**	P	**P**	**15 30 35.6**	**+0.8**
	comp=Z,4.0nm,0.7s,baz=169,slow=8.5,SNR=13						
NANT	**Nan**	**52.86**	**299**	P	**P**	**15 30 41.6**	**+3.6**
	comp=Z,3.0nm,0.9s,comp=Z,448nm						
YSS	**Yuzh-Sakhalins**	**53.43**	**356**	‖*e*P	**P**	**15 30 41.8**	**+0.1**
YSS				pmax	pmax		
	comp=Z,20nm,1.1s						
KMI	**Kunming**	**54.00**	**307**	P	**P**	**15 30 48.1**	**+1.5**
KMI				pmax	pmax		
	comp=Z,5.0nm,0.8s						
KMI				pmax	pmax		
	comp=Z,170nm,7.1s						
CN2	**Changchun**	**54.04**	**340**	*e*P	**P**	**15 30 49.3**	**+3.1**
CM01	**Chiang Mai Arr**	**54.23**	**298**	*e*P	**P**	**15 30 47.1**	**-1.0**
CMAR	**Chiang Mai Arr**	**54.26**	**298**	P	**P**	**15 30 49.2**	**+1.0**
	comp=Z,3.0nm,0.9s,baz=121,slow=5.5,SNR=18						
CMAR				PcP	**PcP**	**15 31 53.8**	**+1.6**
	comp=Z,2.7nm,0.9s,baz=101,slow=1.6,SNR=4.4						
CHTO	**Chiang Mai**	**54.39**	**299**	*e*P	**P**	**15 30 49.5**	**+0.2**
CHTO	**Chiang Mai**	**54.39**	**299**	*e*P	**P**	**15 30 49.5**	**+0.2**
XAN	**Xi'an**	**54.63**	**320**	P	**P**	**15 30 50.4**	**-0.4**
XAN				pP	pP	15 30 59.1	-5.7
XAN				pmax	pmax		
	comp=Z,10.0nm,1.2s						
XAN				pmax	pmax		
	comp=Z,83nm,7.3s						
BJI	**Beijing**	**54.78**	**330**	P	**P**	**15 30 51.4**	**-0.2**
BJI				pP	**pP**	**15 31 03.9**	**-1.7**
BJI				S	**S**	**15 38 33.6**	**+4.9**
BJI				pmax	pmax		
	comp=Z,12nm,1.3s						
BJI				pmax	pmax		
	comp=Z,74nm,3.8s						
BJI				LR	LR		
	comp=Z,360nm,24.0s						
BJI				LR	LR		
	comp=Z,260nm,24.0s						
BJI				LR	LR		
	comp=Z,250nm,23.0s						
HABR	**Khabarovsk**	**55.91**	**350**	*c e*P	**P**	**15 30 57.0**	**-2.6**
HABR				*e**PP	**pP**	**15 31 11.0**	**-2.6**
HABR				*e*		15 31 55.1	
HABR				*e*		15 33 02.2	
HABR				*e*S	**S**	**15 38 41.7**	**-1.8**
HABR				*e**SS	**sS**	**15 39 05.3**	**-1.7**
HABR				*e*		15 40 41.8	
HABR				*e*SS	**SS**	**15 42 29.5**	**-0.8**
HABR				pmax	pmax		
	comp=E,14nm,1.6s						
HABR				pmax	pmax		
	comp=Z,43nm,1.6s						
HABR				pmax	pmax		
	comp=N,17nm,1.6s						
HABR				MLR	MLR		
	comp=Z,245nm,18.0s						
CD2	**Chengdu**	**56.26**	**314**	P	**P**	**15 31 02.6**	**+0.1**
CD2				sP	sP	15 31 22.1	-0.3
CD2				PP	**PP**	**15 33 08.7**	**+0.3**
CD2				S	**S**	**15 38 50.7**	**+1.7**
CD2				pmax	pmax		
	comp=Z,30nm,0.5s						
CD2				pmax	pmax		
	comp=Z,190nm,4.9s						
CD2				LR	LR		
	comp=Z,350nm,12.0s						
CD2				LR	LR		
	comp=Z,260nm,16.2s						
KLR	**Kul'dur**	**57.28**	**348**	*e*P	**P**	**15 31 09.9**	**+0.5**
TYV	**Tymovskoe**	**57.33**	**356**	*e*P	**P**	**15 31 11.2**	**+1.5**
TYV				pmax	pmax		
	comp=Z,9.0nm,0.6s						
HHC	**Hu-ho-hao-te**	**57.73**	**328**	*e*P	**P**	**15 31 16.1**	**+3.3**
HHC				S	**S**	**15 39 10.2**	**+2.0**
HHC				pmax	pmax		
	comp=Z,41nm,1.3s						
HHC				pmax	pmax		
	comp=Z,120nm,7.6s						
HHC				LR	LR		
	comp=Z,230nm,16.7s						
HHC				LR	LR		
	comp=Z,230nm,16.8s						
HHC				LR	LR		
	comp=Z,270nm,17.1s						
LZH	**Lanzhou**	**59.17**	**319**	*e*P	**P**	**15 31 25.3**	**+2.3**
LZH				pP	pP	15 31 35.3	-1.8
LZH				sP	sP	15 31 39.9	-3.1
LZH				PP	**PP**	**15 33 32.2**	**-2.1**
LZH				*e*S	**S**	**15 39 27.0**	**-0.2**
LZH				sS	sS	15 39 46.1	-4.7
LZH				pmax	pmax		
	comp=Z,26nm,1.4s						
LZH				pmax	pmax		
	comp=Z,170nm,5.8s						
LZH				LR	LR		
	comp=Z,1μm,13.9s						
LZH				LR	LR		
	comp=Z,1μm,12.3s						
LZH				LR	LR		
	comp=Z,1μm,16.8s						
NKL	**Nikolayevsk**	**59.76**	**355**	*e*P	**P**	**15 31 27.4**	**+0.9**
PEA0	**Petropavlovsk-**	**59.98**	**7**	*e*P	**P**	**15 31 28.9**	**+0.7**
PETK	**Petropavlovsk-**	**59.98**	**7**	P	**P**	**15 31 28.8**	**+0.7**
	comp=Z,28nm,1.0s,baz=172,slow=5.4,SNR=12						
PET	**Petropavlovsk**	**60.02**	**7**	*i* P	**P**	**15 31 26.6**	**-1.7**
PET				pm

MOY Mondy 70.44 331 *e*P **P 15 32 36.7 +0.6**
MOY pmax pmax
comp=Z,14nm,1.7s
VNDA Vanda 71.35 177 P **P 15 32 41.4 +0.4**
comp=Z,7.1nm,0.8s,baz=331,slow=6.7,SNR=34
VNDA Vanda 71.35 177 *e*P **P 15 32 41.0 0.0**
VNDA pmax pmax
comp=Z,17nm,1.3s
VNDA Vanda 71.35 177 *e*P **P 15 32 41.0 0.0**
comp=Z,17nm,1.3s
WMQ Urumqi 73.75 319 P **P 15 32 57.5 +1.5**
WMQ pP PcP 15 33 11.0 -0.4
WMQ sP sP 15 33 15.5 -0.7
WMQ pmax pmax
comp=Z,5.0nm,1.0s
WMQ pmax pmax
comp=Z,36nm,5.8s
WMQ LR LR
comp=Z,40nm,18.6s
WMQ LR LR
comp=Z,43nm,17.4s
WMQ LR LR
comp=Z,37nm,25.0s
BILL Bilibino 75.52 7 *i* P **P 15 33 01.3 -4.3**
BILL pmax pmax
comp=Z,1.0nm,1.1s
RKT Rikitea 75.68 112 *e*LR LR 15 56 37.4
comp=Z,311nm,23.5s
MK01 Makanchi Array 78.43 320 *e*P **P 15 33 22.1 -0.4**
MK31 Makanchi Array 78.45 320 *e*P **P 15 33 22.3 -0.3**
MK31 Makanchi Array 78.45 320 *e*P **P 15 33 22.2 -0.3**
MKAR Makanchi Array 78.45 320 P **P 15 33 22.6 +0.1**
comp=Z,2.1nm,0.5s,baz=97,slow=7.7,SNR=28
MKAR Makanchi Array 78.45 320 *e*P **P 15 33 22.2 -0.4**
MAKZ Makanchi 78.65 320 *e*P **P 15 33 23.8 +0.1**
MAKZ pmax pmax
comp=Z,13nm,1.3s
MAKZ Makanchi 78.65 320 *e*P **P 15 33 23.8 +0.1**
comp=Z,13nm,1.3s
TIXI Tiksi 79.01 354 *e*P **P 15 33 23.7 -1.3**
TIXI pmax pmax
comp=Z,8.0nm,1.1s
TIXI Tiksi 79.01 354 *e*P **P 15 33 23.8 -1.3**
comp=Z,7.7nm,1.0s
ZAA0 Zalesovo Array 79.91 328 *e*P **P 15 33 29.0 -1.3**
ZALV Zalesovo Beam 79.91 328 P **P 15 33 29.4 -1.0**
comp=Z,5.5nm,0.6s,baz=115,slow=5.4,SNR=24
KSH Kashi 80.37 312 P **P 15 33 35.3 +2.0**
KSH *e*pP pP 15 33 48.3 +0.3
KSH *e*PP **PP 15 36 41.3 +4.4**
KSH S **S 15 43 37.2 +1.5**
KSH SKS **SKSac 15 43 45.4 -1.9**
KSH pmax pmax
comp=Z,89nm,5.9s
KSH LR LR
comp=Z,84nm,5.9s
KSH LR LR
comp=Z,71nm,6.1s
KSH LR LR
comp=Z,180nm,6.8s
NVS Novosibirsk 81.13 328 *e*P **P 15 33 37.0 +0.2**
NVS pmax pmax
comp=Z,7.0nm,1.4s
TKM2 Tokmak 2 81.62 315 *e*P **P 15 33 39.4 -0.6**
TKM2 pmax pmax
comp=Z,22nm,1.8s
TKM2 Tokmak 2 81.62 315 *e*P **P 15 33 39.4 -0.6**
comp=Z,22nm,1.8s
MAW Mawson 82.10 203 P **P 15 33 40.9 -0.9**
comp=Z,8.3nm,0.9s,baz=94,slow=5.5,SNR=7.4
MAW Mawson 82.10 203 P **P 15 33 41.7 -0.1**
baz=82
MAW Mawson 82.10 203 *e*P **P 15 33 41.3 -0.5**
MAW pmax pmax
comp=Z,4.0nm,1.3s
MAW Mawson 82.10 203 *e*P **P 15 33 41.3 -0.5**
comp=Z,4.0nm,1.3s
KURK Kurchatov 82.14 323 *e*P **P 15 33 41.8 -0.5**
KURK pmax pmax
comp=Z,10.0nm,1.1s
KURK Kurchatov 82.14 323 *e*P **P 15 33 41.8 -0.5**
comp=Z,9.7nm,1.1s
FRU Bishkek 82.29 315 *e*P **P 15 33 44.0 +0.7**
AAK Ala-Archa 82.32 314 *e*P **P 15 33 42.6 -1.1**
AAK pmax pmax
comp=Z,5.0nm,0.8s
AAK Ala-Archa 82.32 314 *e*P **P 15 33 42.4 -1.2**
comp=Z,3.3nm,0.9s
EKS2 Erkin-Say 82.84 314 *e*P **P 15 33 46.5 +0.2**
EKS2 pmax pmax
comp=Z,6.0nm,0.9s
EKS2 Erkin-Say 82.84 314 *e*P **P 15 33 46.5 +0.2**
comp=Z,5.7nm,0.9s
CAST Castle Rocks 82.97 23 *e*P **P 15 33 45.2 -1.1**
comp=Z,15nm,1.5s
QSPA South Pole Qui 83.45 180 *e*P **P 15 33 49.1 +0.1**
comp=Z,16nm,0.6s
SML Sawmill 83.74 25 *e*P **P 15 33 48.8 -1.6**
SML pmax pmax
comp=Z,34nm,1.2s
SML Sawmill 83.74 25 *e*P **P 15 33 48.8 -1.6**
comp=Z,34nm,1.2s
RND Reindeer 84.24 24 *e*P **P 15 33 51.4 -1.5**
RND pmax pmax
comp=Z,16nm,1.1s
RND Reindeer 84.24 24 *e*P **P 15 33 51.4 -1.5**
comp=Z,16nm,1.1s
MLY Manley 84.27 22 *e*P **P 15 33 52.6 -0.4**
comp=Z,7.4nm,1.1s
BWN Browne 84.35 23 *e*P **P 15 33 52.6 -0.8**
comp=Z,60nm,1.6s
MCK McKinley 84.36 24 *e*P **P 15 33 51.9 -1.6**
MCK pmax pmax
comp=Z,18nm,1.0s
MCK McKinley 84.36 24 *e*P **P 15 33 51.9 -1.6**
comp=Z,18nm,1.0s
KLU Klutina 84.65 26 *e*P **P 15 33 54.6 -0.5**
comp=Z,21nm,1.3s
WRH Wood River Hil 85.02 23 *e*P **P 15 33 55.2 -1.5**
comp=Z,13nm,1.2s
MDM Murphy Dome 85.18 23 *e*P **P 15 33 56.3 -1.3**
comp=Z,11nm,1.5s
CCB Clear Creek Bu 85.21 23 *e*P **P 15 33 56.1 -1.6**
comp=Z,7.7nm,1.0s
KKAR Karatay Array 85.27 314 *e*P **P 15 33 57.7 -0.8**
KKAR Karatay Array 85.27 314 *e*P **P 15 33 57.7 -0.8**
COLA College 85.29 23 *e*P **P 15 33 56.5 -1.6**
COLA pmax pmax
comp=Z,9.0nm,1.3s
COLD Coldfoot 85.52 20 *e*P **P 15 33 57.6 -1.6**
comp=Z,8.2nm,1.2s
IL1 Eielson Array 85.62 23 *e*P **P 15 33 57.6 -2.1**
ILAR Eielson Array 85.62 23 P **P 15 33 57.8 -1.9**
comp=Z,5.9nm,1.0s,baz=258,slow=5.0,SNR=24
ILB Eielson Array 85.62 23 *e*P **P 15 33 57.6 -2.1**
NRIK Noril'sk 86.03 342 P **P 15 34 01.2 -0.5**
comp=Z,6.1nm,0.8s,baz=179,slow=0.6,SNR=16
BALM Baldy 86.07 27 *e*P **P 15 34 01.9 -0.3**
BALM pmax pmax
comp=Z,14nm,1.2s
BALM Baldy 86.07 27 *e*P **P 15 34 01.9 -0.3**
comp=Z,14nm,1.2s
FYU Fort Yukon 86.99 22 *e*P **P 15 34 06.5 +0.1**
comp=Z,35nm,1.6s
BRVK Borovoye 87.77 324 *c i*P **P 15 34 09.8 -0.7**
BRVK pmax pmax
comp=Z,10.0nm,1.2s
BRVK Borovoye 87.77 324 *e*P **P 15 34 09.3 -1.2**
comp=Z,9.7nm,1.2s
EGAK Eagle 87.89 24 *e*P **P 15 34 10.3 -0.4**
comp=Z,11nm,1.0s
DAWY Dawson 88.38 25 *e*P **P 15 34 13.4 +0.2**
comp=Z,15nm,1.1s
ZRNK Zerenda 88.49 324 *e*P **P 15 34 11.5 -2.4**
ZRNK pmax pmax
comp=Z,15nm,1.6s
ZRNK Zerenda 88.49 324 *e*P **P 15 34 11.5 -2.4**
comp=Z,15nm,1.6s
SKAG Skagway 88.92 30 *e*P **P 15 34 14.7 -1.1**
comp=Z,9.9nm,1.0s
INK Inuvik 91.82 21 *e*P **P 15 34 28.3 -0.8**
INK pmax pmax
comp=Z,8.0nm,1.4s
INK Inuvik 91.82 21 *e*P **P 15 34 28.3 -0.8**
comp=Z,8.1nm,1.4s
ABKAR Akbulak array 93.54 319 *e*P **P 15 34 36.0 -1.5**

GEYT Alibeck 93.77 308 P **P 15 34 38.1 -0.7**
comp=Z,1.4nm,0.4s,baz=204,slow=3.3,SNR=5.4
YBH Yreka Blue Hor 93.86 49 P **P 15 34 39.5 +0.2**
comp=Z,2.8nm,1.0s,baz=150,slow=4.2,SNR=4.6
YBH Yreka Blue Hor 93.86 49 *e*P **P 15 34 40.2 +0.9**
YBH pmax pmax
comp=Z,7.0nm,1.4s
YBH Yreka Blue Hor 93.86 49 *e*P **P 15 34 40.2 +0.9**
comp=Z,7.4nm,1.4s
AKTO Akbuinsk 94.88 320 LR LR 16 16 10.4
comp=Z,56nm,20.7s,slow=35
ARU Arti 95.00 326 P **P 15 34 42.7 -1.3**
ARU 15 38 32.5
ARU S **SKSac 15 45 13.7 -1.6**
ARU SP **SP 15 47 09.7 -1.1**
NV01 Mina Array Sit 97.00 52 *e*P Pdif 15 34 55.8 +1.9
NVAR Mina Array Bea 97.00 52 P Pdif 15 34 56.1 +2.2
comp=Z,1.5nm,0.9s,baz=246,slow=6.2,SNR=7.2
DAC Darwin (Calif) 97.47 54 *e*P Pdif 15 34 58.8 +2.8
DAC pmax pmax
comp=Z,13nm,1.6s
DAC Darwin (Calif) 97.47 54 *e*P Pdif 15 34 58.8 +2.8
comp=Z,13nm,1.6s
WSHM Spangler Hills 97.52 55 *e*P Pdif 15 34 56.2 +0.1
YKA Yellowknife Ar 99.23 28 P **Pdif 15 35 02.6 -0.3**
comp=Z,1.6nm,1.1s,baz=276,slow=5.0,SNR=9.7
YKA PP **PP 15 39 04.0 -2.0**
comp=Z,0.7nm,0.9s,baz=275,slow=7.5,SNR=6.1
YKA PKKPbc **PKKPdf 15 51 32.0 -1.7**
comp=Z,0.2nm,0.6s,baz=89,slow=3.1,SNR=5.1
YKB5 Yellowknife Ar 99.23 28 *e*P **Pdif 15 35 02.1 -0.8**
PDAR Pinedale Array 103.63 48 Pdiff **Pdif 15 35 24.4 +1.0**
comp=Z,0.2nm,0.5s,baz=252,slow=0.9,SNR=4.1
KLMR Klimovskoe 104.57 331 P **Pdif 15 35 24.5 -2.2**
KLMR pmax pmax
comp=Z,5.0nm,0.9s
TXAR Lajitas Array 109.25 61 PKiKP **PKiKP 15 39 53.6 +1.4**
comp=Z,1.1nm,1.0s,baz=267,slow=2.4,SNR=4.3
FINES FINESS Array B 110.52 334 Pdiff **Pdif 15 35 52.4 -0.8**
comp=Z,0.8nm,0.8s,baz=120,slow=8.2,SNR=3.6
AKASG Malin Array Be 112.95 323 PKiKP **PKiKP 15 39 58.8 +0.3**
comp=Z,0.6nm,0.4s,baz=59,slow=2.5,SNR=3.1
KIEV Kiev 112.96 323 *i* PKIKP **PKiKP 15 39 57.4 -1.0**
X38A Whitesboro 116.07 55 P **PKPdf 15 40 06.0 +1.1**
baz=281
U38A Gravette 116.09 53 P **PKPdf 15 40 05.3 +0.3**
baz=282
S39A Bolivar 116.65 51 P **PKPdf 15 40 06.9 +0.9**
baz=283
X39A Fountain Ranch 116.68 55 P **PKPdf 15 40 06.8 +0.7**
baz=281
R39A Chumby, Stover 116.72 50 P **PKPdf 15 40 06.7 +0.6**
baz=284
NOA NORSAR Array B 116.76 338 PKP **PKPdf 15 40 05.5 -0.1**
comp=Z,1.0nm,0.9s,baz=51,slow=2.1,SNR=2.4
U39A Green Forest 116.81 53 P **PKPdf 15 40 06.7 +0.3**
baz=282
Q40A Laux Farm, Aux 117.29 49 P **PKPdf 15 40 07.9 +0.8**
baz=285
U40A Yellville 117.31 52 P **PKPdf 15 40 07.6 +0.3**
baz=283
W41B Gary Mavity, V 118.05 54 P **PKPdf 15 40 08.8 +0.1**
baz=283
KRLC Kraliky 120.47 326 *e*PKPdf **PKPdf 15 40 13.7 +0.7**
KRLC Kraliky 120.47 326 *e*PKIKP **PKPdf 15 40 13.7 +0.7**
PLCA Paso Flores 121.22 146 PKP **PKPdf 15 40 14.8 0.0**
comp=Z,2.1nm,0.9s,baz=275,slow=17,SNR=2.6
BRG Berggiesshubel 121.60 328 *e*PKP **PKPdf 15 40 15.6 +0.5**
comp=Z,3.6nm,0.7s
BRG Berggiesshubel 121.60 328 *e*PKIKP **PKPdf 15 40 15.6 +0.5**
BRG pmax pmax
comp=Z,3.0nm,0.7s
GOPC GO Pecny, Ondr 121.66 326 AMS AMS 16 47 10.0
comp=Z,200nm,17.0s
PRU Pruhonice 121.75 326 AMS AMS 16 47 00.0
comp=Z,200nm,15.5s
CLL Collm 121.86 328 *i* PKPdf **PKPdf 15 40 15.8 +0.3**
comp=Z,6.0nm,1.0s
CLL *e*SS SS 15 58 12.0 -10
CLL L L 16 36 00.0
comp=Z,200nm,21.8s
CLL Collm 121.86 328 *i* PKIKP **PKPdf 15 40 15.8 +0.3**
CLL pmax pmax
comp=Z,6.0nm,1.0s
CLL Collm 121.86 328 *e*PKPdf **PKPdf 15 40 15.2 -0.4**
KHC Kasperske Hory 122.74 326 *e*PKPdf **PKPdf 15 40 17.6 +0.2**
KHC AMS AMS 16 48 00.0
comp=Z,200nm,20.6s
KHC Kasperske Hory 122.74 326 *e*PKIKP **PKPdf 15 40 17.6 +0.2**
KHC MLR MLR
comp=Z,200nm,20.6s
KHC Kasperske Hory 122.74 326 *e*PKPdf **PKPdf 15 40 16.1 -1.3**
NKC Novy Kostel 122.75 328 *e*PKPdf **PKPdf 15 40 16.3 -1.1**
NKC Novy Kostel 122.75 328 *e*PKIKP **PKPdf 15 40 16.3 -1.1**
GEC2 GERESS Array S 122.82 326 *e*PKIKP **PKPdf 15 40 17.2 -0.4**
GEC2 GERESS Array S 122.82 326 *e*PKPdf **PKPdf 15 40 17.2 -0.4**
GERES GERESS Array B 122.82 326 PKP **PKPdf 15 40 18.1 +0.4**
comp=Z,2.4nm,0.7s,baz=48,slow=2.0,SNR=21
GEA0 GERESS Array S 122.83 326 *e*PKPdf **PKPdf 15 40 17.6 -0.1**
FUORN Ofenpass-Fuorn 125.98 325 *e*PKPdf **PKPdf 15 40 22.7 -1.3**
DAVOX Davos/Dischmat 126.11 325 PKP **PKPdf 15 40 24.7 +0.6**
comp=Z,6.0nm,0.7s,baz=45,slow=5.7,SNR=5.6
TUE Stuetta 126.59 325 *e*PKPdf **PKPdf 15 40 24.6 -0.5**
KEST Kesra 132.17 313 PKP **PKPdf 15 40 38.0 +2.1**
comp=Z,2.9nm,0.7s,baz=304,slow=7.3,SNR=3.5
HELC Santa Helena 136.88 88 *e*P **PKPdf 15 40 47.4 +1.8**
GUYC Guyana, Colomb 136.96 89 *e*P **PKPdf 15 40 47.4 +1.5**
PRAC Prado 137.33 92 *e*P **PKPdf 15 40 42.0 -4.1**
LPAZ La Paz 137.78 123 PKhKP PKPpre 15 40 39.2
comp=Z,0.7nm,0.6s,baz=226,slow=8.5,SNR=2.8
LPAZ PKP **PKPdf 15 40 47.8 +0.3**
comp=Z,7.6nm,1.0s,baz=329,slow=6.8,SNR=4.7
ROSC El Rosal 137.99 90 PKP **PKPdf 15 40 50.6 +2.9**
comp=Z,6.4nm,0.3s,baz=239,slow=22,SNR=3.8
CPUP Villa Florida 139.21 144 PKP **PKPdf 15 40 51.6 +2.5**
comp=Z,2.1nm,0.9s,baz=277,slow=2.3,SNR=4.8
BARC Barichara 139.22 87 *e*P **PKPdf 15 40 47.4 -2.4**
RUSC La Rusia 139.29 89 *e*P **PKPdf 15 40 43.4 -6.8**
CBRI Barrientos, No 139.64 86 *e*P **PKPdf 15 40 48.9 -1.6**
SJG San Juan 144.90 68 *e*PKIKP **PKPab 15 40 58.4 -0.2**
SJG San Juan 144.90 68 *e*PKPbc **PKPab 15 40 58.4 -0.2**
HUMP Col San Antoni 145.16 68 *e*PKPbc **PKPbc 15 40 59.5 0.0**
MTP Monte Pirata 145.45 67 *e*PKPdf **PKPdf 15 41 00.4 0.0**
TORD Torodi Ar. Bea 146.06 284 PKPbc **PKPbc 15 41 02.0 -0.4**
comp=Z,13nm,0.9s,baz=81,slow=3.2,SNR=46
TORD Torodi Ar. Bea 146.06 284 PKPbc **PKPbc 15 41 02.0 -0.4**
CDVI St. Croix 146.26 68 *e*PKPdf **PKPab 15 41 03.5 -0.2**
ABVI Anegada Island 146.39 66 *e*PKPdf **PKPab 15 41 04.0 -0.2**
SMRT St. Maarten 147.73 66 *e*PKPdf **PKPdf 15 41 05.2 +1.0**
FDF Fort de France 150.36 72 *e*PKIKP **PKPbc 15 41 15.8 +2.0**
FDF Fort de France 150.36 72 *e*PKPbc **PKPbc 15 41 15.8 +2.0**
SVB Belmont 150.56 75 *e*PKPbc **PKPbc 15 41 14.0 -0.3**
PTGA Pitinga 151.30 104 *e*PKPdf **PKPdf 15 41 12.1 +2.0**
PTGA *e*PKPbc **PKiKP 15 41 17.2 +0.6**
DBIC Dimbokro 152.91 272 PKPbc **PKPbc 15 41 20.3 +0.6**
comp=Z,4.2nm,0.7s,baz=196,slow=0.9,SNR=5.5

IDC ***11*** *15:23:47.1±2.9, 6°.41S×147°.89E, h0km, mb3.8/3, mb1 4.0/5, mb1mx3.7/40, mbtmp3.9/5, ML3.4/1, Error ellipse: s-maj=84.0km s-min=24.9km az=100.0*
ISCJB ***11*** *15:23:52.4±2.3, 6°.34S±0°.10×147°.4E±0°.3, h35km, mb3.7/3, Error ellipse: s-maj=42.6km s-min=13.2km az=172.2*
NEIC ***11*** *15:23:54.0±1.4, 6°.40S×147°.52E, h35km, mb4.2/1, Error ellipse: s-maj=36.1km s-min=15.9km az=97.0*
ISC 11 15:23:53.7±2.2, 6°.3S±0°.1×147°.5E±0°.4, h35km, n8,
σ0 96/10, mb3.8/3, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**3.07 187**		Pn	**Pn**	**15 24 38.3**	**-1.3**
	2.4nm,0.3s,baz=59,slow=10,SNR=0.9						
PMG				Sn	**Sn**	**15 25 16.2**	**+1.1**
	6.5nm,0.3s,baz=335,slow=19,SNR=1.5						
PMG	**Port Moresby**	**3.07 187**		Pn	**Pn**	**15 24 39.5**	**-0.2**
PMG				Sn	**Sn**	**15 25 16.2**	**+1.1**
WRAB	**Tennant Creek**	**18.61 222**		*e*P	**P**	**15 28 08.1**	**-0.2**
	22nm,1.3s						
WRA	**Warramunga Arr**	**18.63 222**		P	**P**	**15 28 08.8**	**+0.4**
	0.1nm,0.3s,baz=51,slow=10,SNR=1.3						
ASAR	**Alice Springs**	**21.64 216**		P	**P**	**15 28 39.9**	**-1.3**
	1.5nm,0.4s,baz=53,slow=8.5,SNR=1.0						
FITZ	**Fitzroy Crossi**	**24.34 239**		P	**P**	**15 29 08.6**	**+0.1**
	5.8nm,0.4s,baz=43,slow=6.5,SNR=6.9						
MKAR	**Makanchi Array**	**78.09 320**		P	**P**	**15 35 49.7**	**+0.6**
	0.1nm,0.5s,baz=104,slow=6.1,SNR=2.8						
TORD	**Torodi Ar. Bea**	**145.69 284**		PKPbc	**PKPdf**	**15 43 29.7**	**+0.2**
	0.3nm,0.3s,baz=74,slow=3.3,SNR=6.1						

ISCJB ***11*** *15:24:48.9±0.8, 6°.50S±0°.07×148°.0E±0°.2, h51km, mb4.1/15, Error ellipse: s-maj=26.7km s-min=9.7km az=10.6*
NEIC ***11*** *15:24:50.4±2.3, 6°.48S×147°.99E, h47km±20km, mb4.4/3, Error ellipse: s-maj=21.3km s-min=12.9km az=94.0*
IDC ***11*** *15:24:51.5±4.2, 6°.53S×147°.93E, h52km±37km, mb3.8/11, mb1 4.0/13, mb1mx3.8/40, mbtmp4.1/13, ML4.0/1, Error ellipse: s-maj=42.1km s-min=18.5km az=89.0*
ISC 11 15:24:50.7±0.8, 6°.44S±0°.08×148°.1E±0°.2, h51km, n21,
σ1 27/22, mb4.2/15, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**3.09 197**		P	**Pn**	**15 25 35.9**	**-1.1**
	12nm,0.3s,baz=273,slow=19,SNR=4.8						
PMG				S	**Sn**	**15 26 15.6**	**+2.9**
	26nm,0.3s,baz=129,slow=14,SNR=4.0						
WRA	**Warramunga Arr**	**18.93 224**		P	**P**	**15 29 06.1**	**-1.4**
	0.5nm,0.3s,baz=48,slow=11,SNR=4.1						
ASAR	**Alice Springs**	**21.89 217**		P	**P**	**15 29 38.2**	**-1.4**
	3.7nm,0.7s,baz=52,slow=8.6,SNR=4.6						
FITZ	**Fitzroy Crossi**	**24.77 240**		P	**P**	**15 30 06.7**	**-1.2**
	5.8nm,0.5s,baz=60,slow=5.5,SNR=7.9						
STKA	**Stephens Creek**	**26.02 193**		P	**P**	**15 30 18.7**	**-0.4**
	3.5nm,0.8s,baz=27,slow=9.0,SNR=2.9						
MBWA	**Marble Bar**	**31.10 239**		*e*P	**P**	**15 31 03.6**	**-0.8**
	8.8nm,0.5s						
MJAR	**Matsushiro Arr**	**43.75 348**		P	**P**	**15 32 52.1**	**+0.9**
	6.1nm,1.1s,baz=168,slow=8.4,SNR=5.7						
KSRS	**Korea Array**	**47.55 338**		P	**P**	**15 33 21.8**	**+0.6**
	2.6nm,1.0s,baz=157,slow=10,SNR=5.0						
KSAR	**Wonju Array Be**	**47.55 338**		P	**P**	**15 33 21.8**	**+0.6**
CMAR	**Chiang Mai Arr**	**54.41 298**		P	**P**	**15 34 13.8**	**+0.7**
	0.4nm,0.6s,baz=126,slow=4.6,SNR=3.1						
SONM	**Songino Array**	**65.31 330**		P	**P**	**15 35 29.5**	**+1.9**
	1.6nm,0.6s,baz=176,slow=6.9,SNR=3.4						
VNDA	**Vanda**	**71.42 177**		P	**P**	**15 36 05.9**	**+0.8**
	1.7nm,0.8s,baz=330,slow=6.1,SNR=3.9						
MKAR	**Makanchi Array**	**78.52 320**		P	**P**	**15 36 47.2**	**+0.5**
	0.4nm,0.5s,baz=99,slow=7.8,SNR=4.2						
TIXI	**Tiksi**	**78.96 354**		*e*P	**P**	**15 36 48.5**	**0.0**
	2.4nm,1.1s						
ZALV	**Zalesovo Beam**	**79.96 328**		P	**P**	**15 36 53.6**	**-0.7**
	0.5nm,0.4s,baz=101,slow=8.0,SNR=4.0						
ILAR	**Eielson Array**	**85.46 23**		P	**P**	**15 37 20.8**	**-1.9**
	1.5nm,0.9s,baz=258,slow=5.8,SNR=5.7						
BVAR	**Borovoye Array**	**87.76 324**		P	**P**	**15 37 33.4**	**-0.7**
	1.6nm,0.8s,baz=106,slow=11,SNR=4.5						
ABKAR	**Akbulak array**	**93.61 319**		*e*P	**P**	**15 38 00.3**	**-1.2**
	1.7nm,1.0s						
GERES	**GERESS Array B**	**122.88 326**		PKP	**PKPdf**	**15 43 41.8**	**+0.4**
	0.2nm,0.3s,baz=56,slow=3.4,SNR=4.3						
SAML	**Samuel**	**145.29 116**		*e*PKP	**PKPdf**	**15 44 25.2**	**+1.3**
TORD	**Torodi Ar. Bea**	**146.24 284**		PKPbc	**PKPbc**	**15 44 26.3**	**-0.4**
	4.3nm,1.1s,baz=85,slow=3.1,SNR=7.5						

MOS ***11*** *15:33:06.5±1.3, 6°.46S×147°.89E, h33km, mb5.1/32, Error ellipse: s-maj=8.7km s-min=6.1km az=102.2*
ISCJB ***11*** *15:33:07.7±0.2, 6°.56S±0°.02×147°.91E±0°.03, h51km, mb4.9/97, MS4.6/16, Error ellipse: s-maj=4.6km s-min=3.5km az=6.2*
GCMT ***11*** *15:33:09.6±0.2, 6°.54S×147°.98E, h24km±1km, MW5.0/85, Moment Tensor Solution. s31,c36; s85,c126; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-0.41±.18; $M_{\theta\theta}$0.29±.12; $M_{\phi\phi}$0.12±.14; $M_{r\theta}$-1.46±.21; $M_{\theta\phi}$3.35±.10; $M_{r\phi}$0.91±.19; Best double couple: $M_0$3.77100×10^{16} NP1:ϕ_S88.00000°,δ77.00000°,λ-23.00000°. NP2: ϕ_S184.00000°,δ67.00000°,λ-166.00000°. Principal axes: T 3.6030, Plg7.0000°, Azm137.0000°; N 0.3360, Plg64.0000°, Azm241.0000°; P -3.9390, Plg25.0000°, Azm44.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
NEIC ***11*** *15:33:09.6±0.5, 6°.52S×147°.87E, h51km±4km, mb4.9/54 Error ellipse: s-maj=4.2km s-min=3.8km az=91.0*
IDC ***11*** *15:33:10.3±2.0, 6°.56S×147°.79E, h55km±18km, mb4.6/27, mb1 4.7/31, mb1mx4.6/36, mbtmp4.8/31, ML4.4/3, MS4.6/12, Ms1 4.6/12, ms1mx4.3/30, Error ellipse: s-maj=14.9km s-min=10.2km az=71.0*
DJA ***11*** *15:33:13.8±0.6, 7°.5S±4°.×14°.8E±°, h67km±7km, M5.1/18, mb4.8/18, mB5.3/4, MLv5.3/1, Mw(mB)4.8/4*
ISC 11 15:33:09.7±0.3, 6°.53S±0°.04×147°.93E±0°.04, h51km, n308,
σ1 33/316, mb4.9/97, MS4.6/17, 10C-4D, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.96 195**		P	**Pn**	**15 33 54.0**	**-0.2**
	83nm,0.3s,baz=22,slow=7.8,SNR=58						
PMG				S	**Sn**	**15 34 31.9**	**+3.4**
	61nm,0.3s,baz=27,slow=16,SNR=6.5						
PMG	**Port Moresby**	**2.96 195**		*c i*P	**Pn**	**15 33 52.8**	**-1.4**
PMG	**Port Moresby**	**2.96 195**		*e*Pn	**Pn**	**15 33 53.3**	**-0.9**
PMG				S	**Sn**	**15 34 31.9**	**+3.4**
MANU	**Manus Island**	**4.49 353**		*e*Pn	**Pn**	**15 34 15.1**	**-0.1**
RABL	**Rabaul**	**4.81 61**		*e*Pn	**Pn**	**15 34 19.9**	**+0.2**
JAY	**Jayapura**	**8.23 299**		P	**Pn**	**15 35 06.8**	**+0.2**
	0.1nm,0.3s,baz=270,slow=20,SNR=3.3						
JAY				S	**Sn**	**15 36 40.4**	**+2.1**
	baz=90,slow=20,SNR=1.5						
JAY	**Jayapura**	**8.23 299**		P	**Pn**	**15 35 09.5**	**+2.9**
	38nm,1.5s						
GENI	**Genyem**	**8.67 296**		P	Pn	15 35 17.6	+5.1
	197nm,1.2s,3μm						
COEN	**Coen**	**8.74 212**		P	**Pn**	**15 35 13.1**	**-0.5**
	baz=8.7,SNR=10.0						
COEN	**Coen**	**8.74 212**		*e*Pn	**Pn**	**15 35 12.6**	**-0.9**
MTSU	**Mount Surprise**	**12.06 197**		P	**Pn**	**15 35 58.5**	**-0.5**
	baz=12,SNR=15						
HNR	**Honiara**	**12.25 104**		P	**Pn**	**15 36 03.6**	**+2.1**
	4.4nm,0.3s,baz=168,slow=5.3,SNR=34						
HNR	**Honiara**	**12.25 104**		*e*P	**Pn**	**15 36 03.0**	**+1.6**
HNR	**Honiara**	**12.25 104**		*e*P	**Pn**	**15 36 03.1**	**+1.6**
HNR	**Honiara**	**12.25 104**		*e*Pn	**Pn**	**15 36 03.1**	**+1.6**
CTA	**Charters Tower**	**13.58 187**		P	**Pn**	**15 36 19.9**	**+0.2**
	0.5nm,0.3s,baz=16,slow=14,SNR=10						
CTA	**Charters Tower**	**13.58 187**		P	**Pn**	**15 36 20.0**	**+0.3**
	baz=14						
CTAO	**Charters Tower**	**13.58 187**		*e*P	**Pn**	**15 36 19.6**	**-0.1**
CTAO	**Charters Tower**	**13.58 187**		*e*Pn	**Pn**	**15 36 19.6**	**-0.1**
FAKI	**Fak Fak**	**16.03 282**		P	**P**	**15 36 54.5**	**0.0**
	70nm,1.0s						
FAKI	**Fak Fak**	**16.03 282**		*e*Pn	**Pn**	**15 36 52.5**	**+0.6**
	57nm,0.9s						
QIS	**Mount Isa**	**16.11 209**		P	**Pn**	**15 36 53.1**	**+0.2**
	baz=16,SNR=9.9						
SWI	**Sorong**	**17.55 288**		P	**P**	**15 37 14.4**	**+3.0**
	61nm,0.8s						
SWI	**Sorong**	**17.55 288**		P	**P**	**15 37 12.2**	**+0.8**
SWI				pmax	pmax		
	comp=Z,61nm,0.9s						
WB9	**Warramunga Arr**	**18.63 224**		P	**P**	**15 37 22.3**	**-0.9**
	baz=19						
WRAB	**Tennant Creek**	**18.75 223**		*i*P	**P**	**15 37 24.7**	**+0.2**
WRAB				pmax	pmax		
	comp=Z,108nm,1.7s						
WRAB	**Tennant Creek**	**18.75 223**		*e*P	**P**	**15 37 24.2**	**-0.3**
	comp=Z,33nm,0.9s						
WB2	**Warramunga Arr**	**18.75 223**		*e*P	**P**	**15 37 24.0**	**-0.6**
	comp=Z,26nm,0.9s						
WRA	**Warramunga Arr**	**18.76 223**		P	**P**	**15 37 23.4**	**-1.3**
	comp=Z,2.1nm,0.3s,baz=52,slow=11,SNR=85						
WRA				S	**Sn**	**15 40 46.3**	**-8.5**
	comp=Z,0.1nm,0.3s,baz=46,slow=24,SNR=3.2						
EIDS	**Eidsvold**	**18.98 171**		P	**P**	**15 37 25.5**	**-1.5**
	baz=19,SNR=4.4						
EIDS	**Eidsvold**	**18.98 171**		*e*P	**P**	**15 37 27.1**	**+0.1**
	comp=Z,25nm,1.0s						
PALU	**Palau**	**19.23 316**		P	**P**	**15 37 30.1**	**+0.3**
	baz=19,SNR=4.7						
RMQ	**Roma**	**19.86 178**		P	**P**	**15 37 37.1**	**+0.4**
	baz=20,SNR=27						
GUMO	**Guam**	**20.21 351**		P	Pn	15 37 41.8	-1.0
	comp=Z

baz=20,SNR=49
KNRA Kununurra 20.87 243 P **P** **15 37 45.9 -1.7**
baz=21
NLAI Namlea 21.01 278 P **P** **15 37 51.4 +2.3**
comp=Z,908nmcomp=Z,49nm,0.8s
AS01 Alice Springs 21.70 217 *e*P **P** **15 37 55.6 -1.0**
AS01 *e*S Sn 15 42 01.2 -4.3
AS31 Alice Springs 21.73 217 *e*P **P** **15 37 55.9 -0.9**
comp=Z,10nm,0.6s
ASAR Alice Springs 21.73 217 P **P** **15 37 56.0 -0.9**
comp=Z,12nm,0.5s,baz=51,slow=9.3,SNR=105
ASAR S **S** **15 41 58.0 +3.3**
comp=Z,4.4nm,1.0s,baz=32,slow=20,SNR=5.6
ASAR LR LR 15 47 03.8
comp=Z,3µm,18.9s,baz=44,slow=38
ASAR Alice Springs 21.73 217 P **P** **15 37 56.0 -0.9**
ASAR S **S** **15 41 58.0 +3.3**
SANI Sanana 22.32 281 P **P** **15 38 04.9 +1.6**
comp=Z,57nm,1.3s,comp=Z,601nm
DZM Mont Dzumac 23.63 133 P **P** **15 38 15.8 -0.7**
comp=Z,31nm,1.1s,baz=330,slow=14,SNR=7.6
ARMA Armidale 24.02 172 P **P** **15 38 19.7 -0.4**
baz=24,SNR=9.8
ARMA Armidale 24.02 172 *e*P **P** **15 38 18.9 -1.1**
comp=Z,35nm,0.9s
FITZ Fitzroy Crossi 24.59 240 P **P** **15 38 24.8 -0.4**
comp=Z,46nm,0.4s,baz=55,slow=8.1,SNR=223
FITZ Fitzroy Crossi 24.59 240 P **P** **15 38 24.8 -0.4**
baz=25,SNR=40
FITZ Fitzroy Crossi 24.59 240 *e*P **P** **15 38 24.4 -0.8**
comp=Z,170nm,1.5s
CMSA Cobar Meteorol 24.97 185 P **P** **15 38 27.9 -0.6**
baz=25,SNR=13
MMRI Maumere 25.55 264 P **P** **15 38 33.2 -0.8**
comp=Z,97nm,0.9s
MMRI Maumere 25.55 264 *e*P **P** **15 38 34.0 0.0**
comp=Z,80nm,0.9s
LUWI Luwuk 25.68 281 P **P** **15 38 36.3 +1.2**
LUWI Luwuk 25.68 281 *e*P **P** **15 38 34.8 -0.3**
comp=Z,141nm,0.9s
STKA Stephens Creek 25.91 192 P **P** **15 38 36.3 -0.8**
comp=Z,15nm,0.7s,baz=7.9,slow=9.8,SNR=15
STKA LR LR 15 49 47.9
comp=Z,3µm,18.4s,baz=9.2,slow=39
STKA Stephens Creek 25.91 192 P **P** **15 38 36.7 -0.3**
baz=26,SNR=6.8
STKA Stephens Creek 25.91 192 *e*P **P** **15 38 36.0 -1.0**
STKA pmax pmax
comp=Z,4.0nm,0.8s
STKA Stephens Creek 25.91 192 *e*P **P** **15 38 36.0 -1.0**
comp=Z,3.7nm,0.8s
WRKA Warakurna 26.31 223 P **P** **15 38 39.2 -1.5**
baz=26,SNR=31
YNG Young 27.64 179 P **P** **15 38 52.6 0.0**
baz=28,SNR=5.9
KAPI Kappang 28.07 272 P **P** **15 38 56.1 -0.6**
comp=Z,3.4nm,0.4s,baz=55,slow=16,SNR=2.8
PCI Palu 28.57 280 P **P** **15 39 03.9 +2.7**
PCI pmax pmax
comp=Z,60nm,1.1s
CAN Canberra 28.67 178 P **P** **15 39 02.3 +0.4**
baz=29
CNB Canberra Magne 28.68 178 P **P** **15 39 02.2 +0.2**
baz=29
MYLDM Lahad Datu 31.59 291 ⇑P **P** **15 39 30.4 +2.5**
MYLDM Lahad Datu 31.59 291 *e*P **P** **15 39 27.3 -0.5**
KDM Kudat 33.78 293 ⇑P **P** **15 39 49.4 +2.5**
CBIJ Chichi jima 33.88 351 *e*P **P** **15 39 46.2 -1.5**
comp=Z,56nm,0.7s
KKM Kota Kinabalu 34.02 291 ⇑P **P** **15 39 51.4 +2.1**
KMBL Kambalda 34.70 221 P **P** **15 39 54.9 0.0**
baz=35,SNR=5.3
BTM Bintulu 36.10 285 ⇓P **P** **15 40 08.4 +1.3**
SBUM Sibu 36.75 283 *e*P **P** **15 40 12.0 -0.5**
comp=Z,11nm,0.9s
MORW Morawa 37.52 229 P **P** **15 40 19.0 0.0**
baz=38,SNR=7.1
KLBR Kellerberrin 37.64 225 P **P** **15 40 18.7 -1.2**
baz=38,SNR=21
BLDU Ballidu 37.84 227 P **P** **15 40 21.2 -0.4**
baz=38,SNR=10
KSM Kuching 38.38 281 ⇑P **P** **15 40 27.3 +0.9**
KSM Kuching 38.38 281 *e*P **P** **15 40 26.4 0.0**
comp=Z,15nm,1.0s
NWAO Narrogin (SRO) 38.77 223 P **P** **15 40 30.0 +0.6**
baz=39,SNR=8.5
MUN Mundaring 38.94 225 P **P** **15 40 30.8 0.0**
baz=39
AFI Afiamalu 40.28 104 P **P** **15 40 43.9 +1.6**
comp=Z,61nm,1.0s,baz=260,slow=8.6,SNR=5.0
AFI Afiamalu 40.28 104 *e*P **P** **15 40 43.1 +0.8**
AFI pmax pmax
comp=Z,101nm,1.1s
AFI Afiamalu 40.28 104 *e*P **P** **15 40 43.1 +0.8**
comp=Z,100nm,1.1s
KNTN Kanton 40.38 87 *e*P **P** **15 40 44.1 +1.0**
comp=Z,114nm,1.4s
YHNB Yeheng 40.38 321 *e*P **P** **15 40 41.8 -1.1**
URZ Urewera 41.19 144 P **P** **15 40 49.0 -0.3**
comp=Z,23nm,0.9s,baz=292,slow=19,SNR=3.3
URZ LR LR 15 57 07.5
comp=Z,2µm,18.6s,baz=316,slow=35
RPZ Rata Peaks 42.24 155 P **P** **15 40 58.2 +0.3**
comp=Z,22nm,0.6s,baz=312,slow=2.7,SNR=9.0
RPZ LR LR 15 58 39.9
comp=Z,832nm,19.2s,baz=336,slow=36
MJAR Matsushiro Arr 43.80 349 P **P** **15 41 10.1 -0.4**
comp=Z,23nm,1.1s,baz=172,slow=8.2,SNR=23
MAJO Matsushiro 43.80 349 *e*P **P** **15 41 09.5 -1.1**
MAJO pmax pmax
comp=Z,181nm,1.1s
MAJO Matsushiro 43.80 349 *e*P **P** **15 41 09.0 -1.6**
comp=Z,60nm,1.4s
MAT Matsushiro 43.80 349 P **P** **15 41 10.0 -0.6**
MAT S **S** **15 47 34.0 -3.8**
MJB9 Matsu-Tunnel 43.80 349 *e*P **P** **15 41 10.1 -0.5**
comp=Z,14nm,1.4s
MYKOM Kota Tinggi 44.77 279 *e*P **P** **15 41 18.3 -0.4**
comp=Z,24nm,1.1s
QIZ Qiongzhong 45.31 305 P **P** **15 41 22.9 0.0**
QIZ S **S** **15 48 01.4 +1.2**
QIZ LR LR
comp=N,150nm,27.0s
QIZ LR LR
comp=E,94nm,15.5s
NJ2 Nanjing 47.33 326 *e*P **P** **15 41 39.1 +0.6**
NJ2 pmax pmax
comp=Z,20nm,0.5s
KSRS Korea Array 47.57 338 P **P** **15 41 40.0 -0.3**
comp=Z,6.9nm,0.8s,baz=154,slow=8.6,SNR=25
KSRS LR LR 15 59 23.0
comp=Z,643nm,20.2s,baz=150,slow=33
KSAR Wonju Array Be 47.58 338 P **P** **15 41 40.0 -0.3**
KSAR Wonju Array Be 47.58 338 P **P** **15 41 40.0 -0.3**
KS01 Wonju Array Si 47.60 338 *e*P **P** **15 41 40.2 -0.4**
KULM Kulim 48.63 283 *e*P **P** **15 41 48.9 0.0**
comp=Z,21nm,0.7s
SKNT Sakolnakorn 49.32 299 P P 15 41 59.4 +5.3
comp=Z,11nm,1.1s
PSI Prapat 49.79 279 *e*P **P** **15 41 57.8 -0.2**
PSI pmax pmax
comp=Z,37nm,1.3s
PSI Prapat 49.79 279 *e*P **P** **15 41 57.8 -0.2**
comp=Z,37nm,1.3s
ASAJ Asahikawa 50.64 355 *e*P **P** **15 42 04.6 +0.9**
comp=Z,79nm,1.8s
GSI Gunungsitoli 50.86 277 *e*P **P** **15 42 05.2 -0.7**
comp=Z,32nm,0.7s
TIA Tai'an 51.41 328 ⇓P **P** **15 42 08.7 -0.9**
TIA pmax pmax
comp=Z,20nm,1.2s
LOEI Loei 51.91 298 P **P** **15 42 12.9 -0.8**
comp=Z,35nm,1.1s
ENH Enshi 51.93 317 *e*P **P** **15 42 12.6 -1.1**
comp=Z,8.9nm,1.0s
USRK Ussuriysk Ar. 52.50 346 P **P** **15 42 18.1 +0.5**
comp=Z,8.8nm,0.9s,baz=180,slow=8.7,SNR=21
USRK LR LR 16 03 11.1
comp=Z,238nm,18.8s,baz=146,slow=34
UTTA Uttaradit 52.62 298 P **P** **15 42 21.4 +2.5**
comp=Z,2.3nm,0.9s
CRAI Chiangrai 53.78 301 P **P** **15 42 29.5 +2.0**
comp=Z,59nm,1.2s
KMI Kunming 54.05 307 P **P** **15 42 30.6 +1.0**
KMI pmax pmax
comp=Z,6.0nm,0.5s
KMI pmax pmax

comp=Z,61nm,5.7s
CN2 Changchun 54.06 340 *e*P **P** **15 42 32.3 +3.2**
CM01 Chiang Mai Arr 54.28 298 *e*P **P** **15 42 30.1 -1.0**
CM31 Chiang Mai Arr 54.31 298 *e*P **P** **15 42 31.1 -0.3**
CMAR Chiang Mai Arr 54.31 298 P **P** **15 42 31.2 -0.1**
comp=Z,4.6nm,0.9s,baz=121,slow=5.3,SNR=22
XAN Xi'an 54.67 320 P **P** **15 42 32.8 -1.0**
XAN pP pP 15 42 41.8 -5.9
XAN pmax pmax
comp=Z,13nm,1.2s
XAN pmax pmax
comp=Z,86nm,5.9s
BJI Beijing 54.81 330 P **P** **15 42 33.9 -0.6**
BJI pmax pmax
comp=Z,13nm,1.1s
CD2 Chengdu 56.30 314 P **P** **15 42 45.0 -0.5**
CD2 pmax pmax
comp=Z,12nm,0.8s
TYV Tymovskoe 57.34 356 *e*P **P** **15 42 51.2 -1.2**
TYV pmax pmax
comp=Z,13nm,0.8s
HHC Hu-ho-hao-te 57.77 328 *e*P **P** **15 42 58.8 +3.0**
HHC pmax pmax
comp=Z,18nm,1.1s
HHC pmax pmax
comp=Z,100nm,7.0s
LZH Lanzhou 59.21 319 *e*P **P** **15 43 07.9 +1.9**
LZH pP pP 15 43 19.5 -0.6
LZH sP sP 15 43 23.4 -2.5
LZH PP **PP** **15 45 19.1 +1.7**
LZH *e*S **S** **15 51 11.5 +1.1**
LZH sS sS 15 51 32.6 -1.4
LZH Lanzhou 59.21 319 SS SS 15 55 09.3 +3.6
LZH pmax pmax
comp=Z,17nm,1.0s
LZH pmax pmax
comp=Z,120nm,5.2s
LZH LR LR
comp=N,1µm,15.2s
LZH LR LR
comp=E,2µm,15.5s
LZH LR LR
comp=Z,1µm,16.0s
NKL Nikolayevsk 59.77 355 *i*P **P** **15 43 10.0 +0.8**
NKL pmax pmax
comp=Z,28nm,1.0s
PEA0 Petropavlovsk- 59.98 7 *e*P **P** **15 43 11.7 +0.9**
PETK Petropavlovsk- 59.98 7 P **P** **15 43 11.9 +1.2**
comp=Z,25nm,0.9s,baz=167,slow=5.3,SNR=15
PETK LR LR 16 06 42.3
comp=Z,180nm,21.0s,baz=193,slow=34
PET Petropavlovsk 60.02 7 *e*P **P** **15 43 13.1 +2.1**
PET pmax pmax
comp=Z,24nm,1.1s
HIA Hailar 60.77 339 *e*P **P** **15 43 16.5 +0.2**
HIA pmax pmax
comp=Z,20nm,0.8s
HIA Hailar 60.77 339 *e*P **P** **15 43 16.4 +0.2**
comp=Z,20nm,0.8s
PPT2 Papeete2 61.86 106 *e*S **S** **15 51 37.1 -7.7**
comp=Z,461nm,25.8s
PPT2 Papeete2 61.86 106 *e*LR LR 16 01 43.5
comp=Z,459nm,23.2s
GTA Gaotai 63.73 320 *e*P **P** **15 43 36.8 +0.3**
GTA pP pP 15 43 41.0 -10
GTA sP sP 15 43 44.6 -12
GTA pmax pmax
comp=Z,5.0nm,1.3s
ULN Ulaanbaatar 65.01 331 *d i*P **P** **15 43 44.9 +0.2**
ULN pmax pmax
comp=Z,10.0nm,0.9s
ULN Ulaanbaatar 65.01 331 *e*P **P** **15 43 45.1 +0.4**
comp=Z,10.0nm,0.8s
LSA Lhasa 65.29 307 *e*P **P** **15 43 47.1 -0.1**
LSA pmax pmax
comp=Z,7.0nm,1.0s
LSA Lhasa 65.29 307 *e*P **P** **15 43 47.1 -0.1**
comp=Z,6.6nm,1.0s
SONM Songino Array 65.31 331 P **P** **15 43 46.6 0.0**
comp=Z,6.3nm,0.9s,baz=150,slow=6.6,SNR=12
SONM PKP2ab 16 12 34.9
comp=Z,0.7nm,0.5s,baz=328,slow=5.1,SNR=2.5
SONA1 Songino Array 65.32 331 *e*P **P** **15 43 46.8 +0.1**
ZAK Zakamensk 68.54 331 *e*P **P** **15 44 05.6 -1.4**
ZAK pmax pmax
comp=Z,9.0nm,0.9s
GUN Gumba 68.93 303 *e*P **P** **15 44 10.0 -0.2**
comp=Z,19nm,0.7s
TLY Talaya 69.24 332 *e*P **P** **15 44 11.7 +0.5**
TLY pmax pmax
comp=Z,5.0nm,0.9s
TLY MLR MLR
comp=Z,210nm,20.0s
SEY Seymchan 69.34 2 *i*P **P** **15 44 10.4 -1.2**
KKN Kakani 69.39 303 *e*P **P** **15 44 12.5 -0.4**
DMN Daman 69.47 303 *e*P **P** **15 44 13.5 0.0**
BOD Bodaibo 69.77 341 *e*P **P** **15 44 13.9 -0.4**
BOD pmax pmax
comp=Z,7.0nm,0.9s
YAK Yakutsk 69.80 351 *e*P **P** **15 44 14.8 +0.4**
YAK pmax pmax
comp=Z,21nm,1.2s
YAK pmax pmax
comp=N,10.0nm,1.3s
YAK Yakutsk 69.80 351 *e*P **P** **15 44 14.5 +0.1**
comp=N,21nm,1.1s
GKN Gorkha 69.99 303 *e*P **P** **15 44 16.2 -0.3**
MOY Mondy 70.48 331 *e*P **P** **15 44 19.5 +0.6**
KOLN Koldanda 70.79 302 *e*P **P** **15 44 21.0 -0.5**
comp=N,10.0nm,0.6s
VNDA Vanda 71.34 177 P **P** **15 44 24.3 +0.7**
comp=N,4.4nm,0.6s,baz=330,slow=6.7,SNR=33
VNDA Vanda 71.34 177 *e*P **P** **15 44 23.7 +0.1**
VNDA pmax pmax
comp=Z,7.0nm,0.9s
VNDA Vanda 71.34 177 *e*P **P** **15 44 23.7 +0.1**
comp=Z,6.9nm,0.9s
PYUN Piuthan 71.40 302 *e*P **P** **15 44 24.6 -0.6**
comp=Z,27nm,0.8s
HYB Hyderabad 72.51 290 *i*P **P** **15 44 32.5 +0.7**
WMQ Urumqi 73.79 319 *e*P **P** **15 44 41.5 +2.6**
WMQ pmax pmax
comp=Z,5.0nm,0.6s
WMQ pmax pmax
comp=Z,66nm,5.8s
WMQ LR LR
comp=N,120nm,17.0s
WMQ LR LR
comp=E,58nm,12.6s
WMQ LR LR
comp=Z,57nm,21.2s
BILL Bilibino 75.52 7 *i*P **P** **15 44 46.1 -2.1**
BILL pmax pmax
comp=Z,4.0nm,1.0s
BILL Bilibino 75.52 7 *e*P **P** **15 44 48.8 +0.5**
RKT Rikitea 75.62 112 *e*LR LR 16 08 05.1
comp=Z,575nm,23.5s
MK01 Makanchi Array 78.47 320 *e*P **P** **15 45 04.8 -0.5**
MK31 Makanchi Array 78.49 320 *e*P **P** **15 45 05.1 -0.4**
MK31 Makanchi Array 78.49 320 *e*P **P** **15 45 05.1 -0.4**
MKAR Makanchi Array 78.49 320 P **P** **15 45 05.0 -0.5**
comp=Z,2.3nm,0.6s,baz=98,slow=8.4,SNR=25
MKAR PKiKP **PKiKP** **15 50 41.8 +0.4**
comp=Z,0.3nm,0.6s,baz=85,slow=3.0,SNR=3.8
MKAR LR LR 16 19 25.1
comp=Z,128nm,21.4s,baz=106,slow=35
MKAR Makanchi Array 78.49 320 *ce*P **P** **15 45 05.0 -0.5**
MKAR pmax pmax
comp=Z,3.0nm,0.6s
MAKZ Makanchi 78.69 320 *e*P **P** **15 45 06.2 -0.4**
MAKZ pmax pmax
comp=Z,16nm,1.3s
MAKZ Makanchi 78.69 320 *e*P **P** **15 45 06.2 -0.4**
comp=Z,16nm,1.3s
TIXI Tiksi 79.03 354 *i*P **P** **15 45 06.0 -1.8**
TIXI pmax pmax
comp=Z,9.0nm,1.0s
TIXI Tiksi 79.03 354 *e*P **P** **15 45 06.4 -1.4**
comp=Z,8.8nm,1.0s
ZAA0 Zalesovo Array 79.95 328 *e*P **P** **15 45 11.5 -1.7**
ZALV Zalesovo Beam 79.95 328 P **P** **15 45 11.7 -1.5**
comp=Z,6.5nm,0.7s,baz=112,slow=5.3,SNR=28
ZALV LR LR 16 19 57.6
comp=Z,427nm,20.4s,baz=74,slow=35
KSH Kashi 80.42 312 P **P** **15 45 17.7 +1.4**
KSH *es*P sP 15 45 36.1 -0.5

KSH Kashi 80.42 312 S **S** **15 55 18.5 -0.4**
KSH Kashi 80.42 312 SKS **SKSac** **15 55 27.0 -3.3**
KSH pmax pmax
comp=Z,83nm,6.4s
KSH LR LR
comp=N,150nm,6.6s
KSH LR LR
comp=E,93nm,5.1s
KSH LR LR
comp=Z,130nm,5.1s
NVS Novosibirsk 81.17 328 *e*P **P** **15 45 19.4 -0.3**
NVS pmax pmax
comp=Z,13nm,1.6s
NVS pmax pmax
comp=E,8.0nm,1.0s
TKM2 Tokmak 2 81.67 315 *e*P **P** **15 45 22.2 -0.7**
TKM2 pmax pmax
comp=Z,6.0nm,0.9s
TKM2 Tokmak 2 81.67 315 *e*P **P** **15 45 22.2 -0.7**
comp=Z,6.1nm,0.9s
MAW Mawson 82.12 203 P **P** **15 45 24.5 0.0**
comp=Z,6.1nm,1.0s,baz=76,slow=6.7,SNR=5.5
MAW Mawson 82.12 203 *e*P **P** **15 45 25.2 +0.6**
MAW pmax pmax
comp=Z,2.0nm,1.0s
MAW Mawson 82.12 203 *e*P **P** **15 45 25.2 +0.6**
comp=Z,1.8nm,1.0s
KURK Kurchatov 82.18 323 *e*P **P** **15 45 24.8 -0.4**
KURK pmax pmax
comp=Z,11nm,1.2s
KURK Kurchatov 82.18 323 *e*P **P** **15 45 24.8 -0.4**
comp=Z,11nm,1.2s
KURBB Kurchatov Arra 82.20 323 P **P** **15 45 24.5 -0.8**
comp=Z,4.0nm,1.1s,baz=114,slow=4.0,SNR=14
FRU Bishkek 82.33 315 *e*P **P** **15 45 26.0 -0.2**
AAK Ala-Archa 82.36 314 P **P** **15 45 26.9 +0.4**
comp=Z,4.4nm,0.8s,baz=132,slow=2.9,SNR=17
AAK Ala-Archa 82.36 314 *c i*P **P** **15 45 26.7 +0.1**
AAK pmax pmax
comp=Z,11nm,0.9s
AAK Ala-Archa 82.36 314 *e*P **P** **15 45 26.6 0.0**
comp=Z,4.9nm,0.9s
EKS2 Erkin-Say 82.88 314 *e*P **P** **15 45 29.6 +0.4**
EKS2 pmax pmax
comp=Z,8.0nm,0.8s
EKS2 Erkin-Say 82.88 314 *e*P **P** **15 45 29.6 +0.4**
comp=Z,7.9nm,0.8s
CAST Castle Rocks 82.95 23 *e*P **P** **15 45 28.4 -0.5**
comp=Z,7.4nm,1.1s
QSPA South Pole Qui 83.44 180 *e*P **P** **15 45 31.9 +0.2**
comp=Z,44nm,0.7s
KTH Kantishna Hill 83.47 23 *e*P **P** **15 45 30.4 -1.3**
comp=Z,16nm,1.4s
TRF Thorofare Moun 83.67 23 *e*P **P** **15 45 31.5 -1.4**
SML Sawmill 83.72 25 *e*P **P** **15 45 32.6 -0.3**
SML pmax pmax
comp=Z,18nm,1.1s
SML Sawmill 83.72 25 *e*P **P** **15 45 32.6 -0.3**
comp=Z,18nm,1.1s
RND Reindeer 84.22 24 *e*P **P** **15 45 34.3 -1.2**
RND pmax pmax
comp=Z,14nm,1.1s
RND Reindeer 84.22 24 *e*P **P** **15 45 34.3 -1.2**
comp=Z,14nm,1.1s
MLY Manley 84.26 22 *e*P **P** **15 45 35.1 -0.6**
comp=Z,10nm,1.2s
MCK McKinley 84.34 24 *e*P **P** **15 45 34.9 -1.2**
MCK pmax pmax
comp=Z,14nm,1.0s
MCK McKinley 84.34 24 *e*P **P** **15 45 34.9 -1.2**
comp=Z,14nm,1.0s
KLU Klutina 84.63 26 *e*P **P** **15 45 37.9 +0.3**
comp=Z,20nm,1.3s
WRH Wood River Hil 85.00 23 *e*P **P** **15 45 38.1 -1.2**
comp=Z,13nm,1.3s
CCB Clear Creek Bu 85.19 23 *e*P **P** **15 45 38.6 -1.6**
comp=Z,9.3nm,1.2s
COLA College 85.27 23 *e*P **P** **15 45 38.6 -2.0**
COLA pmax pmax
comp=Z,9.0nm,1.1s
KKAR Karatay Array 85.32 314 *e*P **P** **15 45 40.7 -0.7**
KKAR Karatay Array 85.32 314 *e*P **P** **15 45 40.7 -0.7**
COLD Coldfoot 85.51 20 *e*P **P** **15 45 42.0 +0.2**
comp=Z,3.4nm,1.0s
IL1 Eielson Array 85.60 23 *e*P **P** **15 45 40.3 -2.0**
ILAR Eielson Array 85.60 23 P **P** **15 45 40.5 -1.9**
comp=Z,5.9nm,1.0s,baz=255,slow=4.7,SNR=30
ILB Eielson Array 85.60 23 *e*P **P** **15 45 40.2 -2.1**
BALM Baldy 86.05 27 *e*P **P** **15 45 46.3 +1.6**
BALM pmax pmax
comp=Z,14nm,1.3s
BALM Baldy 86.05 27 *e*P **P** **15 45 46.3 +1.6**
comp=Z,14nm,1.3s
NRIK Noril'sk 86.06 342 P **P** **15 45 43.7 -0.8**
comp=Z,6.4nm,0.8s,baz=105,slow=3.8,SNR=12
NRIK LR LR 16 26 26.8
comp=Z,230nm,18.3s,baz=118,slow=37
BVAR Borovoye Array 87.74 324 P **P** **15 45 51.9 -1.2**
comp=Z,7.9nm,0.8s,baz=107,slow=5.1,SNR=36
BRVK Borovoye 87.81 324 *d i*P **P** **15 45 52.0 -1.3**
BRVK pmax pmax
comp=Z,10.0nm,1.2s
BRVK Borovoye 87.81 324 *e*P **P** **15 45 52.2 -1.1**
comp=Z,8.3nm,1.0s
EGAK Eagle 87.87 24 *e*P **P** **15 45 53.5 +0.2**
comp=Z,7.2nm,0.9s
DAWY Dawson 88.36 25 *e*P **P** **15 45 56.2 +0.5**
comp=Z,12nm,1.1s
ZRNK Zerenda 88.53 324 *e*P **P** **15 45 55.2 -1.6**
ZRNK pmax pmax
comp=Z,4.0nm,0.6s
ZRNK Zerenda 88.53 324 *e*P **P** **15 45 55.2 -1.6**
comp=Z,4.0nm,0.6s
SKAG Skagway 88.89 30 *e*P **P** **15 45 58.5 +0.2**
comp=Z,9.5nm,1.1s
SYO Syowa Base 90.42 200 ⇑*e*pP pP 15 46 29.7 +9.5
INK Inuvik 91.81 21 *e*P **P** **15 46 11.0 -0.7**
INK pmax pmax
comp=Z,8.0nm,1.3s
INK Inuvik 91.81 21 *e*P **P** **15 46 11.0 -0.7**
comp=Z,8.0nm,1.3s
WSAR Wadi Sarin 91.90 293 P **P** **15 46 12.1 -1.1**
comp=Z,8.8nm,1.0s,baz=134,slow=7.4,SNR=4.1
ABKAR Akbulak array 93.58 319 *e*P **P** **15 46 18.6 -1.7**
GEYT Alibeck 93.81 308 P **P** **15 46 19.6 -2.1**
comp=Z,3.4nm,0.9s,baz=48,slow=2.2,SNR=8.1
ARU Arti 95.04 326 P **P** **15 46 24.8 -2.1**
baz=104,slow=8.3,SNR=3.4
ARU Arti 95.04 326 *c i*P **P** **15 46 25.2 -1.6**
ARU 15 56 16.4
ARU S **SKSac** **15 56 58.4 +0.2**
ARU SS **SS** **16 04 04.6 +0.8**
ARU pmax pmax
comp=Z,7.0nm,1.2s
NV01 Mina Array Sit 96.96 52 *e*P **P** **15 46 36.8 +0.5**
NVAR Mina Array Bea 96.96 52 P **P** **15 46 37.7 +1.4**
comp=Z,2.0nm,0.9s,baz=268,slow=5.4,SNR=9.3
NVAR LR LR 16 24 03.2
comp=Z,255nm,21.7s,baz=271,slow=31
DAC Darwin (Calif) 97.42 54 *e*P Pdif 15 46 38.5 0.0
DAC pmax pmax
comp=Z,16nm,0.5s
DAC Darwin (Calif) 97.42 54 *e*P **P** **15 46 38.5 0.0**
comp=Z,16nm,0.5s
YKA Yellowknife Ar 99.20 28 P **Pdif** **15 46 45.7 +0.2**
comp=Z,1.4nm,1.1s,baz=271,slow=4.6,SNR=8.3
YKA PKKPbc **PKKPbc** **16 03 14.2 +1.4**
comp=Z,0.2nm,0.7s,baz=80,slow=2.9,SNR=5.4
YKB5 Yellowknife Ar 99.20 28 *e*P **Pdif** **15 46 45.0 -0.6**
SNAA Sanae 99.63 189 *e*P **Pdif** **15 46 46.2 -1.2**
RES Resolute Bay 103.26 14 PKiKP **PKiKP** **15 51 22.6 +0.2**
comp=Z,1.4nm,0.8s,baz=98,slow=2.8,SNR=4.0
KLMR Klimovskoe 104.60 331 *e*P **Pdif** **15 47 07.1 -2.5**
KLMR *e* 15 51 28.0
KLMR pmax pmax
comp=Z,9.0nm,1.5s
TXAR Lajitas Array 109.20 61 PKiKP **PKiKP** **15 51 35.4 +0.5**
comp=Z,1.4nm,1.0s,baz=209,slow=1.7,SNR=5.9
TXAR PKKP **PKKPdf** **16 02 58.0 +0.6**
comp=Z,0.9nm,0.9s,baz=130,slow=8.4,SNR=4.1
FINES FINESS Array B 110.55 334 PKiKP **PKiKP** **15 51 36.3 +0.1**
comp=Z,1.3nm,0.8s,baz=88,slow=9.9,SNR=4.1
WMOK Wichita Mounta 112.81 55 *e*PKiKP **PKiKP** **15 51 42.0 +0.6**
WMOK Wichita Mounta 112.81 55 *e*P **PKiKP** **15 51 42.0 +0.6**
NB2 NORSAR Subarra 116.79 338 PKPdf **PKPdf** **15 51 48.5 +0.2**
comp=Z,2.8nm,1.0s,baz=31,slow=1.9

NOA	NORSAR Array B	116.79	338	PKP	PKPdf	15 51 48.8	+0.5
	comp=Z,1.6nm,0.9s,baz=268,slow=3.1,SNR=3.9						
NBO02	NORSAR Array S	116.91	338	ePKPdf	PKPdf	15 51 49.0	+0.6
MORC	Moravsky Berou	120.22	325	ePKIKP	PKPdf	15 51 55.5	+0.3
MORC	Moravsky Berou	120.22	325	ePKPdf	PKPdf	15 51 55.5	+0.3
KRLC	Kraliky	120.50	326	ePKPdf	PKPdf	15 51 56.7	+1.0
KRLC	Kraliky	120.50	326	ePKIKP	PKPdf	15 51 56.7	+1.0
DPC	Dobruska-Polom	120.62	326	ePKPdf	PKPdf	15 51 56.9	+0.9
DPC	Dobruska-Polom	120.62	326	ePKIKP	PKPdf	15 51 56.9	+0.9
PVCC	Panska Ves	121.49	327	ePKPdf	PKPdf	15 51 58.1	+0.6
PVCC	Panska Ves	121.49	327	ePKIKP	PKPdf	15 51 58.1	+0.6
BRG	Berggiesshubel	121.64	328	ePKP	PKPdf	15 51 58.1	+0.3
	comp=Z,7.8nm,1.0s						
BRG	Berggiesshubel	121.64	328	ePKIKP	PKPdf	15 51 58.1	+0.3
BRG				pmax	pmax		
	comp=Z,4.0nm,1.0s						
GOPC	GO Pecny, Ondr	121.69	326	ePKPdf	PKPdf	15 51 59.0	+1.0
GOPC	GO Pecny, Ondr	121.69	326	ePKIKP	PKPdf	15 51 59.0	+1.0
PRU	Pruhonice	121.79	327	ePKPdf	PKPdf	15 51 59.0	+0.9
PRU	Pruhonice	121.79	327	ePKIKP	PKPdf	15 51 59.0	+0.9
CLL	Collm	121.89	328	*i* PKPdf	PKPdf	15 51 59.2	+0.9
	comp=Z,7.0nm,0.9s						
CLL				*e*SS	SS	16 10 30.0	+24
CLL				LmV		16 45 00.0	
	comp=Z,300nm,21.7s						
CLL	Collm	121.89	328	*i* PKIKP	PKPdf	15 51 59.2	+0.9
CLL				pmax	pmax		
	comp=Z,7.0nm,0.9s						
CLL				MLR	MLR		
	comp=Z,300nm,21.7s						
CLL	Collm	121.89	328	ePKPdf	PKPdf	15 51 58.9	+0.6
CONA	Conrad Observa	122.09	324	*i* PKiKP	PKiKP	15 51 59.1	+0.1
	comp=Z,4.6nm,1.0s						
LRAL	Lakeview Retre	122.74	55	ePKPdf	PKPdf	15 52 00.4	-0.1
KHC	Kasperske Hory	122.78	326	ePKPdf	PKPdf	15 52 00.6	+0.5
KHC				*ex*	x	15 52 04.2	
KHC	Kasperske Hory	122.78	326	ePKIKP	PKPdf	15 52 00.6	+0.5
KHC	Kasperske Hory	122.78	326	ePKPdf	PKPdf	15 52 00.5	+0.3
NKC	Novy Kostel	122.79	328	ePKPdf	PKPdf	15 52 00.5	+0.4
NKC	Novy Kostel	122.79	328	ePKIKP	PKPdf	15 52 00.5	+0.4
GEC2	GERESS Array S	122.86	326	ePKIKP	PKPdf	15 52 00.4	0.0
GEC2	GERESS Array S	122.86	326	ePKPdf	PKPdf	15 52 00.4	0.0
GERES	GERESS Array B	122.86	326	PKP	PKPdf	15 52 00.5	0.0
	comp=Z,2.9nm,0.7s,baz=75,slow=1.5,SNR=24						
GEA0	GERESS Array S	122.86	326	ePKPdf	PKPdf	15 52 00.1	-0.3
SOKA	Soboth	123.20	323	*i* PKiKP	PKPdf	15 52 00.9	-0.2
	comp=Z,5.2nm,0.9s						
KBA	Koelnbreinsper	123.99	324	*i* PKiKP	PKPdf	15 52 01.9	-0.8
	comp=Z,5.4nm,1.1s						
ABTA	Abfaltersbach	124.65	324	*i* PKiKP	PKPdf	15 52 03.8	-0.1
	comp=Z,7.3nm,0.9s						
MOTA	Moosalm	125.14	325	*i* PKiKP	PKPdf	15 52 04.6	-0.3
	comp=Z,7.5nm,0.8s						
RETA	Reutte	125.25	326	*i* PKiKP	PKiKP	15 52 06.5	+1.1
	comp=Z,5.1nm,1.2s						
FETA	Feichten	125.53	325	*i* PKiKP	PKiKP	15 52 06.4	+0.4
	comp=Z,8.9nm,1.0s						
MEM	Membach	125.83	331	PKP	PKPdf	15 52 07.1	+1.2
DAVA	Damuels	125.86	326	*i* PKiKP	PKiKP	15 52 06.8	+0.1
	comp=Z,8.4nm,0.8s						
FUORN	Ofenpass-Fuorn	126.02	325	ePKPdf	PKPdf	15 52 06.8	0.0
EKA	Eskdalemuir Ar	126.13	340	PKP	PKPdf	15 52 06.5	+0.2
	comp=Z,4.3nm,0.9s,baz=15,slow=3.5,SNR=6.6						
DAVOX	Davos/Dischmat	126.15	325	PKP	PKPdf	15 52 07.4	+0.5
	comp=Z,6.1nm,0.8s,baz=30,slow=11,SNR=6.8						
BCLA	Clavier	126.29	331	PKP	PKPdf	15 52 08.6	+1.8
TUE	Stuetta	126.62	325	ePKPdf	PKPdf	15 52 08.0	+0.2
DOU	Dourbes	126.85	331	PKP	PKPdf	15 52 10.1	+2.3
KEST	Kesra	132.21	313	PKP	PKPdf	15 52 18.1	-0.5
	comp=Z,7.0nm,1.2s,baz=37,slow=10,SNR=2.2						
MOTC	Monteria, Cord	136.75	84	*e*P	PKPdf	15 52 28.5	+0.9
HELC	Santa Helena	136.82	88	*e*P	PKPdf	15 52 29.0	+0.8
GUYC	Guyana, Colomb	136.90	89	*e*P	PKPdf	15 52 30.2	+1.7
TOLC	Tolima	136.92	90	*e*P	PKPdf	15 52 27.8	-0.5
PRAC	Prado	137.28	92	*e*P	PKPdf	15 52 29.5	+0.9
NORC	Norcasia	137.44	89	*e*P	PKPdf	15 52 29.5	+0.6
ROSC	El Rosal	137.93	90	PKP	PKPdf	15 52 31.8	+1.6
	comp=Z,7.3nm,0.6s,baz=180,slow=20,SNR=4.6						
CPUP	Villa Florida	139.17	144	PKP	PKPdf	15 52 32.2	+0.5
	comp=Z,4.1nm,0.9s,baz=322,slow=12,SNR=2.6						
RUSC	La Rusia	139.23	89	*e*P	PKPdf	15 52 27.3	-5.5
CBRI	Barrientos, No	139.58	86	*e*P	PKPdf	15 52 32.3	-0.7
SDV	Santo Domingo	141.73	84	ePKPdf	PKPdf	15 52 37.8	+0.9
SAML	Samuel	145.39	116	ePKPdf	PKPab	15 52 43.6	+0.3
MTP	Monte Pirata	145.40	68	ePKPdf	PKPab	15 52 43.5	+0.3
TORD	Torodi Ar. Bea	146.11	284	PKPbc	PKPdf	15 52 44.5	+0.2
	comp=Z,16nm,1.0s,baz=63,slow=2.5,SNR=56						
CDVI	St. Croix	146.21	68	ePKPdf	PKPab	15 52 46.1	-0.1
ABVI	Anegada Island	146.34	66	ePKPdf	PKPab	15 52 46.7	0.0
SABA	Saba	147.64	67	ePKPbc	PKPbc	15 52 50.1	+0.6
GDHS	Morne Mazeau,	149.37	69	ePKPbc	PKPbc	15 52 55.2	+1.1
FDF	Fort de France	150.31	72	ePKIKP	PKPbc	15 52 56.0	-0.4
FDF	Fort de France	150.31	72	ePKPbc	PKPbc	15 52 56.0	-0.4
SVB	Belmont	150.50	75	ePKPbc	PKPbc	15 52 56.5	-0.3
PTGA	Pitinga	151.24	104	ePKPdf	PKPdf	15 52 54.3	+1.6
PTGA				ePKPbc	PKiKP	15 52 59.9	+0.7
DBIC	Dimbokro	152.97	272	PKPbc	PKPbc	15 53 02.5	0.0
	comp=Z,8.0nm,0.9s,baz=46,slow=3.5,SNR=8.4						

IDC 11 15:40:28.9±377.0, 47°.39N×47°.50E, h0km, Error ellipse: s-maj=155.2km s-min=134.9km az=170.0, Ukraine-Moldova-Southwestern Russia region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I31KZ	AKTYUBINSK INF	7.57	63	*i*		16 29 25.0	
	baz=250,slow=313,SNR=4.7						
I43RU	DUBNA INFRASONI	1.27	330	*i*		16 49 30.0	
	baz=141,slow=319,SNR=0.9						
I26DE	FREYUNG INFRAS	22.50	286	*i*		17 56 00.0	
	baz=82,slow=324,SNR=1.5						
I48TN	KESRA INFRASON	30.51	262	*i*		18 50 00.0	
	baz=56,slow=312,SNR=0.6						

IDC 11 15:40:49.4±52.0, 22°.12N×142°.96E, h466km±324km, mb2.9/5, mb1 3.0/5, mb1mx2.6/53, mbtmp3.7/5, Error ellipse: s-maj=783.4km s-min=52.8km az=178.0, Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MKAR	Makanchi Array	54.26	312	P	P	15 49 30.3	-0.2
	0.2nm,0.5s,baz=94,slow=8.7,SNR=1.9						
KURBB	Kurchatov Arra	57.07	317	P	P	15 49 49.8	-0.2
	0.7nm,0.4s,baz=95,slow=7.5,SNR=12						
BVAR	Borovoye Array	62.21	319	P	P	15 50 24.7	+0.3
	1.0nm,0.4s,baz=88,slow=8.2,SNR=5.6						
YKA	Yellowknife Ar	76.18	28	P	P	15 51 48.4	0.0
	0.2nm,0.4s,baz=296,slow=5.4,SNR=4.8						
FINES	FINESS Array B	82.71	334	P	P	15 52 23.0	-0.1
	0.6nm,0.5s,baz=64,slow=4.4,SNR=6.7						

*IDC **11** 15:43:05.8±1.7, 6°.38S×147°.93E, h0km, mb3.8/4, mb1 4.1/6, mb1mx3.8/34, mbtmp3.9/6, ML3.8/1, Error ellipse: s-maj=68.5km s-min=22.9km az=108.0*
*ISCJB **11** 15:43:10.9±1.2, 6°.5S±0°.1×147°.9E±0°.3, h51km, mb4.0/6, Error ellipse: s-maj=40.2km s-min=13.7km az=18.1*
*NEIC **11** 15:43:11.2±1.1, 6°.39S×147°.85E, h35km, mb4.4/3, Error ellipse: s-maj=39.1km s-min=13.2km az=108.0*
ISC 11 15:43:12.6±1.3, 6°.3S±0°.1×147°.8E±0°.3, h51km, n10, σ1§77/11, mb3.9/6, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	Port Moresby	3.12	192	Pn	Pn	15 43 57.3	-2.1
	12nm,0.3s,baz=7.7,slow=8.5,SNR=21						
PMG				Sn	Sn	15 44 39.1	+3.6
	30nm,0.3s,baz=326,slow=19,SNR=12						
WRAB	Tennant Creek	18.81	223	*e*P	Pn	15 47 29.4	+0.3
	4.3nm,0.7s						
WRA	Warramunga Arr	18.83	223	P	P	15 47 27.1	-1.3
	0.3nm,0.3s,baz=52,slow=9.9,SNR=5.7						
ASAR	Alice Springs	21.82	216	P	P	15 47 59.2	-1.5
	3.4nm,0.5s,baz=54,slow=8.8,SNR=14						
FITZ	Fitzroy Crossi	24.59	240	*e*P	P	15 48 27.9	-0.3
	10nm,0.7s						
MKAR	Makanchi Array	78.27	320	P	P	15 55 08.9	+1.7
	0.2nm,0.4s,baz=102,slow=6.5,SNR=3.0						
ZALV	Zalesovo Beam	79.72	328	P	P	15 55 15.3	+0.4
	0.7nm,0.5s,baz=103,slow=6.2,SNR=3.5						
ILAR	Eielson Array	85.47	23	P	P	15 55 44.7	0.0
	0.6nm,0.8s,baz=249,slow=6.0,SNR=4.3						
ABKAR	Akbulak array	93.36	319	*e*P	P	15 56 22.0	-0.2
	4.6nm,1.3s						
TORD	Torodi Ar. Bea	145.95	284	PKPbc	PKPab	16 02 49.1	+0.8
	1.3nm,0.6s,baz=80,slow=3.9,SNR=9.1						

WEL 11 15:45:24.4±0.4, 37°.89S×176°.03E, h148km±8km, ML3.1/2, 1C, Error ellipse: s-maj=5.9km s-min=5.7km az=0.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKZ	Black Stump Fm	1.33	164	⇑PN	Pn	15 45 52.2	+0.2
BKZ				SN	Sn	15 46 12.9	-0.4
SNGZ	Shannon Statio	1.37	131	SN	Sn	15 46 13.6	-0.2
KWHZ	Kaweka Forest	1.57	169	PN	Pn	15 45 54.6	+0.1
KWHZ				SN	Sn	15 46 17.8	+0.1
TWGZ	Tauwhareparae	1.57	101	PN	Pn	15 45 54.4	-0.1
TWGZ				SN	Sn	15 46 17.0	-0.5
ARHZ	Aropaoanui	1.57	151	PN	Pn	15 45 54.8	+0.3
ARHZ				SN	Sn	15 46 17.8	+0.2
RIGZ	Rimuhau	1.59	121	PN	Pn	15 45 54.9	+0.1
RIGZ				SN	Sn	15 46 17.0	-1.0
BHHZ	Black Hill Sta	1.60	179	PN	Pn	15 45 54.8	-0.1
KNZ	Kokohu	1.72	132	PN	Pn	15 45 55.5	-0.5
KNZ				SN	Sn	15 46 18.7	-1.8
TSZ	Takapari Road	2.17	181	PN	Pn	15 46 00.4	-0.9
TSZ	Takapari Road	2.17	181	PN	Pn	15 46 00.4	-0.9
TSZ				SN	Sn	15 46 26.4	-3.5
MRZ	Mangatainoka R	2.79	187	PN	Pn	15 46 06.8	-2.1
MRZ				SN	Sn	15 46 37.8	-5.6
BFZ	Birch Farm	2.80	177	PN	Pn	15 46 07.0	-2.1
BFZ				SN	Sn	15 46 37.4	-6.2
OGWZ	Otaki Gorge	3.00	193	PN	Pn	15 46 09.5	-2.1
OGWZ				SN	Sn	15 46 42.2	-5.9
HOWZ	Holdsworth Sta	3.03	187	PN	Pn	15 46 09.4	-2.7

IDC 11 15:46:29.8±7.0, 7°.21S×148°.44E, h96km±49km, mb3.1/1, mb1 3.4/3, mb1mx3.1/35, mbtmp3.6/3, Error ellipse: s-maj=129.2km s-min=69.9km az=118.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	Port Moresby	2.53	210	P	Pn	15 47 09.4	+0.2
	4.4nm,0.3s,baz=357,slow=12,SNR=2.7						
PMG				S	Sn	15 47 50.6	+11
	12nm,0.3s,baz=350,slow=19,SNR=6.2						
WRA	Warramunga Arr	18.64	226	P	P	15 50 40.3	+0.1
	0.2nm,0.3s,baz=51,slow=11,SNR=3.8						
ASAR	Alice Springs	21.51	219	P	P	15 51 10.9	-0.2
	1.0nm,0.5s,baz=53,slow=9.0,SNR=5.7						
TORD	Torodi Ar. Bea	146.77	283	PKPbc	PKPbc	16 06 01.2	-0.7
	0.4nm,0.5s,baz=66,slow=3.5,SNR=4.0						

*CSEM **11** 15:47:15.4±0.3, 49°.73N×18°.37E, h1km, ML1.9/4, Error ellipse: s-maj=7.0km s-min=3.3km az=28.0*
IPEC 11 15:47:14.2±0.2, 49°.79N×18°.51E, h0km, ML1.3/3, Error ellipse: s-maj=2.1km s-min=1.1km az=161.0, Czech and Slovak Republics

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OKC	Ostrava-Krasne	0.24	281	*e*PG	Pg	15 47 19.2	+0.4
OKC				*e*SG	Sg	15 47 22.6	+0.7
OKC	Ostrava-Krasne	0.24	281	Pg	Pg	15 47 19.2	+0.4
OKC				Sg	Sg	15 47 22.6	+0.7
MORC	Moravsky Berou	0.63	269	*e*Pg	Pg	15 47 26.4	+0.1
MORC	baz=88						
				*e*Sg	Sg	15 47 34.0	-0.4
	7.0nm,0.6s,baz=88						
LANS	Liptovska Anna	0.90	136	*e*Pg	Pn	15 47 33.4	-0.7
LANS				*e*Sg	Sn	15 47 47.7	-0.1
LANS	Liptovska Anna	0.90	136	*e*PG	Pn	15 47 33.4	-0.7
LANS				*e*SG	Sn	15 47 47.7	-0.1
KRLC	Kraliky	1.15	285	*e*PG	Pg	15 47 35.2	-1.1
KRLC				*e*SG	Sg	15 47 51.2	-0.1
KRLC	Kraliky	1.15	285	Pg	Pg	15 47 35.2	-1.1
KRLC				Sg	Sg	15 47 51.2	-0.1
VYHS	Vyhne	1.32	171	*e*Pg	Pg	15 47 39.1	-0.3
VYHS				*e*Sn	Sn	15 47 57.8	-0.3
VYHS	Vyhne	1.32	171	*e*PG	Pg	15 47 39.1	-0.3
VYHS				*e*SN	Sn	15 47 57.8	-0.3
VRAC	Vranov	1.34	250	*e*Pg	Pg	15 47 39.3	-0.6
VRAC	baz=68						
				*e*Sg	Sg	15 47 56.3	-1.0
	3.2nm,0.3s,baz=68						
DPC	Dobruska-Polom	1.52	292	*e*PG	Pn	15 47 42.0	-0.7
DPC				*e*SG	Sg	15 48 02.9	0.0
	comp=Z,2.4nm,0.4s						
DPC	Dobruska-Polom	1.52	292	Pg	Pn	15 47 42.0	-0.7
DPC				Sg	Sg	15 48 02.9	0.0
	2.4nm,0.4s						
KRUC	Moravsky	1.56	243	*e*Pg	Pn	15 47 42.7	-0.5
KRUC	baz=61						
				*e*Sg	Sn	15 48 03.3	-0.9
	2.4nm,0.3s,baz=61						
STHS	Stebnicka Huta	1.82	101	*e*Pn	Pg	15 47 49.4	+0.4
STHS	Stebnicka Huta	1.82	101	*e*PN	Pg	15 47 49.4	+0.4

*SJA **11** 15:50:27.5±0.5, 22°.78S×68°.40W, h138km±9km, ML2.7, MW3.2*
*GUC **11** 15:50:29.6±0.4, 22°.61S×68°.53W, h143km±4km, ML3.9*
ISC 11 15:50:29.7±1.8, 22°.71S±0°.06×68°.37W±0°.05, h130km±15km, n11, σ0§52/20, 4C-1D, Northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LVC	Limon Verde	0.50	281	*i* P	Pn	15 50 48.7	-0.5
LVC				*i* S	Sn	15 51 03.9	0.0
PB06	IPOC Station P	1.11	270	⇑*e*P	Pn	15 50 54.0	+0.3
PB06				*e*S	Sn	15 51 12.6	+0.6
PB06				IAML		15 51 15.1	
	comp=N,2μm,0.2s						
PB09	IPOC Station P	1.21	318	⇑*e*P	Pn	15 50 55.1	+0.2
PB09				*e*S	Sn	15 51 14.3	+0.3
PB09				IAML		15 51 17.5	
	comp=N,3μm,0.4s						
PB04	IPOC Station P	1.68	282	*e*P	Pn	15 51 00.0	0.0
PB04				*e*S	Sn	15 51 22.8	-0.4
PB04				IAML		15 51 26.4	
	comp=N,1μm,0.3s						
PB07	IPOC Station P	1.71	305	*e*P	Pn	15 51 00.4	+0.1
PB07				*e*S	Sn	15 51 23.1	-0.6
PB07				IAML		15 51 24.7	
	comp=E,2μm,0.3s						
PB01	IPOC Station P	1.95	328	⇑*e*P	Pn	15 51 02.9	-0.3
PB01				*e*S	Sn	15 51 27.9	-0.9
PB01				IAML		15 51 29.4	
	comp=E,890nm,0.2s						
PB10	IPOC Station P	2.16	248	⇓*e*P	Pn	15 51 05.8	+0.1
PB10				*e*S	Sn	15 51 33.6	+0.4
PB08	IPOC Station P	2.65	344	⇑*e*P	Pn	15 51 12.4	+0.2
PB08				*e*S	Sn	15 51 45.3	+0.4
PB08				IAML		15 51 49.3	
	comp=E,293nm,0.2s						
YJA	Yavi	2.70	79	*i* P	Pn	15 51 12.8	0.0
YJA				IAML		15 51 13.9	
	comp=Z,22nm,0.6s						
YJA				*i* S	Sn	15 51 47.0	+1.0
HJA	Humahuaca	2.78	101	*i* P	Pn	15 51 13.7	-0.1
AZAP	Zapla	3.39	117	*i* P	Pn	15 51 20.8	-0.8

IDC 11 15:53:38.3±6.3, 7°.17S×148°.12E, h103km±49km, mb3.4/2, mb1 3.5/4, mb1mx3.1/34, mbtmp3.6/4, Error ellipse: s-maj=93.4km s-min=61.1km az=133.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	Port Moresby	2.42	203	P	Pn	15 54 16.4	0.0
	6.2nm,0.3s,baz=296,slow=6.0,SNR=14						
PMG				S	Sn	15 54 57.4	+12
	4.7nm,0.3s,baz=17,slow=19,SNR=6.4						
WRA	Warramunga Arr	18.43	225	P	P	15 57 46.4	+0.4
	0.2nm,0.3s,baz=52,slow=11,SNR=7.7						
ASAR	Alice Springs	21.34	218	P	P	15 58 18.1	+0.8
	0.6nm,0.4s,baz=52,slow=9.1,SNR=31						
FITZ	Fitzroy Crossi	24.44	241	P	P	15 58 46.8	-0.9
	3.1nm,0.5s,baz=59,slow=9.0,SNR=18						
TORD	Torodi Ar. Bea	146.44	283	PKPbc	PKPbc	16 13 08.0	-0.6
	0.3nm,0.3s,baz=82,slow=3.2,SNR=5.1						

*MDD **11** 15:55:30.7±1.0, 36°.44N×9°.72W, h44km±41km, mb4.1/14, Error ellipse: s-maj=10.1km s-min=6.7km az=83.0, PRXIMO*
*IGIL **11** 15:55:31.7, 36°.50N×9°.59W, h14km, ML2.4*
*CSEM **11** 15:55:32.0±0.3, 36°.56N×9°.53W, h30km, ML3.6/8, Error ellipse: s-maj=5.6km s-min=3.9km az=68.0*
*INMG **11** 15:55:32.0±0.9, 36°.52N×9°.59W, h18km±3km, ML2.6, Error ellipse: s-maj=3.4km s-min=2.2km az=58.0*
*CNRM **11** 15:55:35.2, 36°.03N×9°.75W, h30km, MD3.4*
ISC 11 15:55:29.1±1.7, 36°.47N±0°.05×9°.63W±0°.06, h32km±12km, n102, σ1§63/193, 6C, West of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PFVI	Vila Bisbo	0.92	44	⇑*i* P	Pn	15 55 47.9	+2.0
PFVI				*e*S	Sn	15 55 59.5	+1.4
PFVI				A	A	15 56 00.9	
	82nm,0.1s						
PFVI	Vila Bisbo	0.92	44	P	Pn	15 55 47.6	+1.7
	19nm,0.1s,SNR=81						
PFVI				S	Sn	15 55 59.5	+1.4
	92nm,0.1s,SNR=7.9						
PFVI	Vila Bisbo	0.92	44	⇑*i* P	Pn	15 55 47.9	+2.0
PFVI				S	Sn	15 55 59.5	+1.4
	92nm,0.1s,SNR=7.9						
MORF	Marmelete	1.15	43	*e*P	Pb	15 55 50.9	+0.5
MORF				*e*S	Sb	15 56 05.0	0.0
MORF				AML	AML	15 56 05.9	
	comp=E,91nm,0.1s						
MORF	Marmelete	1.15	43	⇑*e*P	Pb	15 55 51.0	+0.5
MORF				*e*S	Sb	15 56 05.2	+0.2
MORF				A	A	15 56 06.6	
	comp=E,119nm,0.2s						
MORF	Marmelete	1.15	43	P	Pb	15 55 51.0	+0.5
MORF				S	Sb	15 56 05.0	0.0
	comp=E,91nm,0.1s						
MORF	Marmelete	1.15	43	⇑*e*P	Pb	15 55 51.0	+0.5
MORF				*e*S	Sb	15 56 05.2	+0.2
	comp=E,119nm,0.2s						
PTEO	Sao Teotonio	1.30	34	⇑*i* P	Pb	15 55 52.9	0.0
PTEO				*e*S	Sb	15 56 08.7	-0.5
PTEO				A	A	15 56 23.8	
	comp=E,38nm,0.5s						
PTEO	Sao Teotonio	1.30	34	P	Pb	15 55 52.9	0.0
PTEO				S	Sb	15 56 08.7	-0.5
	comp=E,19nm,0.5s						
PTEO	Sao Teotonio	1.30	34	⇑*i* P	Pb	15 55 52.9	0.0
PTEO				S	Sb	15 56 08.7	-0.5
	comp=E,19nm,0.5s						
PBDV	Barranco-do-Ve	1.56	60	*e*Pn	Pb	15 55 56.9	-0.6
PBDV				*e*Sn	Sn	15 56 15.2	+1.3
PBDV				A	A	15 56 16.5	
	comp=E,31nm,0.3s						
PBDV	Barranco-do-Ve	1.56	60	P	Pb	15 55 56.9	-0.6
PBDV				S	Sn	15 56 15.2	+1.3
	comp=E,31nm,0.3s						
PBDV	Barranco-do-Ve	1.56	60	P	Pb	15 55 56.9	-0.6
PBDV				S	Sn	15 56 15.2	+1.3
	comp=E,31nm,0.3s						
PCVE	Castro Verde	1.72	47	*e*Pn	Pb	15 55 59.1	-1.0
PCVE				*e*Sn	Sn	15 56 19.4	+1.6
PCVE				A	A	15 56 21.1	
	comp=E,27nm,0.1s						
PCVE	Castro Verde	1.72	47	P	Pb	15 55 59.1	-1.0
PCVE				S	Sn	15 56 19.4	+1.6
	comp=E,27nm,0.1s						
PCVE	Castro Verde	1.72	47	P	Pb	15 55 59.1	-1.0
PCVE				*e*Sn	Sn	15 56 19.4	+1.6
	comp=E,27nm,0.1s						
MESJ	Messejana	1.77	39	*e*P	Pb	15 55 59.5	-1.5
MESJ				*e*S	Sn	15 56 20.0	+1.0
MESJ				AML	AML	15 56 21.6	
	comp=N,29nm,0.3s						
MESJ	Messejana	1.77	39	*e*Pn	Pb	15 55 59.5	-1.5
MESJ				*e*Sn	Sn	15 56 20.0	+1.0
MESJ				A	A	15 56 23.5	
	comp=N,26nm,0.1s						
MESJ	Messejana	1.77	39	P	Pb	15 55 59.5	-1.5
MESJ				S	Sn	15 56 20.0	+1.0
	comp=N,26nm,0.1s						
MESJ	Messejana	1.77	39	P	Pb	15 55 59.5	-1.5
MESJ				*e*Sn	Sn	15 56 20.0	+1.0
	comp=N,26nm,0.1s						
PVAQ	Vaqueiros	1.79	58	*e*Pn	Pb	15 55 59.9	-1.4
PVAQ				*e*Sn	Sn	15 56 20.6	+1.1
PVAQ				A	A	15 56 22.2	
	comp=N,78nm,0.1s						
PVAQ	Vaqueiros	1.79	58	P	Pb	15 55 59.9	-1.4
PVAQ				S	Sn	15 56 20.6	+1.1
	comp=N,78nm,0.1s						
PVAQ	Vaqueiros	1.79	58	P	Pb	15 55 59.9	-1.4
PVAQ				*e*Sn	Sn	15 56 20.6	+1.1
	comp=N,78nm,0.1s						
PNCL	Nicolau / Gran	1.86	28	*e*Pn	Pn	15 56 00.3	+1.5
PNCL				*e*Sn	Sn	15 56 22.0	+0.8
PNCL				A	A	15 56 25.3	
	comp=N,18nm,0.1s						
PNCL	Nicolau / Gran	1.86	28	*e*Pn	Pn	15 56 00.3	+1.5
PNCL				*e*Sn	Sn	15 56 22.0	+0.8
	comp=N,18nm,0.1s						
EGRO	El Granado	2.02	58	P	Pb	15 56 03.1	-2.1
	comp=N,1.0nm,0.1s,SNR=7

PMTG Montargil 2.83 23 *e*Pn **Pn 15 56 13.5 +1.5**
PMTG *e*Sn **Sn 15 56 45.0 0.0**
PMTG A A 15 56 46.1
comp=N,16nm,0.5s
PMTG Montargil 2.83 23 *e*Pn **Pn 15 56 13.5 +1.5**
PMTG *e*Sn **Sn 15 56 45.0 0.0**
comp=N,16nm,0.5s
PESTR Estremoz 2.89 33 *e*Pn **Pn 15 56 14.1 +1.1**
PESTR *e*Sn **Sn 15 56 46.6 0.0**
PESTR A A 15 56 49.0
comp=N,11nm,0.2s
PESTR Estremoz 2.89 33 *e*Pn **Pn 15 56 14.1 +1.1**
PESTR *e*Sn **Sn 15 56 46.6 0.0**
comp=N,11nm,0.2s
ESPR Espera 3.06 81 P **Pn 15 56 17.2 +2.0**
comp=N,3.2nm,0.1s,SNR=5.6
ESPR S **Sn 15 56 51.0 +0.3**
comp=N,90nm,0.3s
ESPR Espera 3.06 81 P **Pn 15 56 17.2 +2.0**
comp=N,3.2nm,0.1s,SNR=5.6
ESPR S **Sn 15 56 51.0 +0.3**
comp=N,90nm,0.3s
EBAD Badajoz 3.09 41 P **Pn 15 56 17.0 +1.4**
comp=N,4.2nm,0.1s,SNR=7.9
EBAD S **Sn 15 56 52.4 +1.0**
comp=N,16nm,0.1s,SNR=7.9
EBAD Badajoz 3.09 41 P **Pn 15 56 17.0 +1.4**
comp=N,4.2nm,0.1s,SNR=7.9
EBAD S **Sn 15 56 52.4 +1.0**
comp=N,16nm,0.1s,SNR=7.9
EJIF Jimena Fronter 3.35 89 P **Pn 15 56 21.8 +2.5**
comp=N,1.2nm,0.2s,SNR=7.9
EJIF S **Sn 15 56 59.2 +1.2**
comp=N,5.1nm,0.2s,SNR=7.9
EJIF Jimena Fronter 3.35 89 P **Pn 15 56 21.8 +2.5**
comp=N,1.2nm,0.2s,SNR=7.9
EJIF S **Sn 15 56 59.2 +1.2**
comp=N,5.1nm,0.2s,SNR=7.9
PMRV Marv??o 3.44 30 *e*Pn **Pn 15 56 22.1 +1.5**
PMRV *e*Sn **Sn 15 56 59.7 -0.6**
PMRV A A 15 57 01.4
comp=N,14nm,0.5s
PMRV Marv??o 3.44 30 P **Pn 15 56 22.1 +1.5**
PMRV S **Sn 15 56 59.7 -0.6**
comp=N,14nm,0.5s
PMRV Marv??o 3.44 30 P **Pn 15 56 22.1 +1.5**
PMRV S **Sn 15 56 59.7 -0.6**
comp=N,14nm,0.5s
PCAS Casmilo, Conde 3.69 14 *e*Pn **Pn 15 56 25.6 +1.7**
PCAS *e*Sn **Sn 15 57 05.6 -0.7**
PCAS A A 15 57 08.3
comp=N,4.4nm,0.1s
PCAS Casmilo, Conde 3.69 14 *e*Pn **Pn 15 56 25.6 +1.7**
PCAS *e*Sn **Sn 15 57 05.6 -0.7**
comp=N,4.4nm,0.1s
ECAB El Cabril 3.72 63 P **Pn 15 56 26.2 +1.8**
comp=N,1.2nm,0.1s,SNR=16
ECAB S **Sn 15 57 06.0 -1.1**
comp=N,8.6nm,0.1s
ECAB El Cabril 3.72 63 P **Pn 15 56 26.2 +1.8**
comp=N,1.2nm,0.1s,SNR=16
ECAB S **Sn 15 57 06.0 -1.1**
comp=N,8.6nm,0.1s
PCBR Castelo Branco 3.77 26 *e*Sn **Sn 15 57 07.5 -0.8**
PCBR A A 15 57 10.7
comp=N,4.6nm,0.3s
PCBR Castelo Branco 3.77 26 S **Sn 15 57 07.5 -0.8**
comp=N,2.3nm,0.3s
PCBR Castelo Branco 3.77 26 S **Sn 15 57 07.5 -0.8**
comp=N,2.3nm,0.3s
EMIJ Mijas 3.91 87 P **Pn 15 56 29.5 +2.5**
comp=N,1.2nm,0.2s,SNR=7.9
EMIJ S **Sn 15 57 11.2 -0.7**
comp=N,5.8nm,0.3s,SNR=7.9
EMIJ Mijas 3.91 87 P **Pn 15 56 29.5 +2.5**
comp=N,1.2nm,0.2s,SNR=7.9
EMIJ S **Sn 15 57 11.1 -0.7**
comp=N,5.8nm,0.3s,SNR=7.9
EADA Adamuz 4.37 66 P **Pn 15 56 35.1 +1.8**
comp=N,0.6nm,0.1s,SNR=7.9
EADA S **Sn 15 57 21.0 -2.1**
comp=N,16nm,0.2s,SNR=7.9
EADA Adamuz 4.37 66 P **Pn 15 56 35.1 +1.8**
comp=N,0.6nm,0.1s,SNR=7.9
EADA S **Sn 15 57 21.0 -2.1**
comp=N,16nm,0.2s,SNR=7.9
EGOR Sierra Gorda, 4.47 80 P **Pn 15 56 37.1 +2.2**
comp=N,0.5nm,0.2s,SNR=7.9
EGOR S **Sn 15 57 25.5 -0.4**
comp=N,5.4nm,0.3s,SNR=7.9
EGOR Sierra Gorda, 4.47 80 P **Pn 15 56 37.1 +2.2**
comp=N,0.5nm,0.2s,SNR=7.9
EGOR S **Sn 15 57 25.5 -0.4**
comp=N,5.4nm,0.3s,SNR=7.9
EPLA Plasencia 4.55 37 P **Pn 15 56 36.4 +0.6**
comp=N,0.9nm,0.1s,SNR=7.9
EPLA S **Sn 15 57 26.5 -1.0**
comp=N,7.8nm,0.2s,SNR=7.9
EPLA Plasencia 4.55 37 P **Pn 15 56 36.4 +0.6**
comp=N,0.9nm,0.1s,SNR=7.9
EPLA S **Sn 15 57 26.5 -1.0**
comp=N,7.8nm,0.2s,SNR=7.9
KIB El Ksiba 4.88 142 P **Pn 15 56 42.0 +1.6**
KIB S **Sn 15 57 33.0 -2.9**
KIB El Ksiba 4.88 142 *i* P **Pn 15 56 42.0 +1.6**
CIA Chichaoua 4.94 171 P **Pn 15 56 41.0 -0.2**
CIA S **Sn 15 57 30.0 -7.3**
CIA Chichaoua 4.94 171 *e*P **Pn 15 56 41.0 -0.2**
TZC Tazercounte 5.03 148 P **Pn 15 56 43.0 +0.5**
TZC S **Sn 15 57 35.0 -4.7**
TZC Tazercounte 5.03 148 *i* P **Pn 15 56 43.0 +0.5**
CZD Col de Zad 5.10 131 P **Pn 15 56 47.0 +3.5**
CZD S **Sn 15 57 38.0 -3.4**
CZD Col de Zad 5.10 131 *i* P **Pn 15 56 47.0 +3.5**
MVO Moncorvo 5.11 23 *e*Pn **Pn 15 56 44.9 +1.4**
MVO *e*Sn **Sn 15 57 39.1 -2.3**
MVO A A 15 57 47.7
comp=N,4.2nm,0.5s
MVO Moncorvo 5.11 23 P **Pn 15 56 44.8 +1.4**
comp=N,0.9nm,0.1s,SNR=7.9
MVO S **Sn 15 57 39.8 -1.6**
comp=N,3.3nm,0.2s,SNR=7.9
MVO Moncorvo 5.11 23 *e*Pn **Pn 15 56 44.9 +1.4**
MVO *e*Sn **Sn 15 57 39.1 -2.3**
comp=N,4.2nm,0.5s
MVO S **Sn 15 57 39.8 -1.6**
comp=N,3.3nm,0.2s,SNR=7.9
PCAB Cabril 5.38 13 *e*Pn **Pn 15 56 47.9 +0.7**
PCAB *e*Sn **Sn 15 57 45.6 -2.5**
PCAB A A 15 57 48.8
comp=N,4.1nm,0.2s
PCAB Cabril 5.38 13 P **Pn 15 56 47.9 +0.7**
PCAB S **Sn 15 57 45.6 -2.5**
comp=N,2.0nm,0.2s
PCAB Cabril 5.38 13 P **Pn 15 56 47.9 +0.7**
PCAB S **Sn 15 57 45.6 -2.5**
comp=N,2.0nm,0.2s
EQES Quesada 5.40 74 P **Pn 15 56 49.1 +1.5**
comp=N,0.2nm,0.1s,SNR=7.9
EQES S **Sn 15 57 47.5 -1.2**
comp=N,4.4nm,0.1s,SNR=7.9
EQES Quesada 5.40 74 P **Pn 15 56 49.1 +1.5**
comp=N,0.2nm,0.1s,SNR=7.9
EQES S **Sn 15 57 47.5 -1.2**
comp=N,4.4nm,0.1s,SNR=7.9
OUK Oukaimeden 5.45 164 P **Pn 15 56 49.0 +0.6**
ESDC Sonseca Array 5.50 53 P **Pn 15 56 50.2 +1.4**
comp=N,0.5nm,0.1s,SNR=7.9
ESDC S **Sn 15 57 49.1 -1.8**
comp=N,6.4nm,0.2s,SNR=7.9
ESDC Sonseca Array 5.50 53 P **Pn 15 56 50.2 +1.4**
comp=N,0.5nm,0.1s,SNR=7.9
ESDC S **Sn 15 57 49.1 -1.8**
comp=N,6.4nm,0.2s,SNR=7.9
ELOB Lobios 5.53 12 P **Pn 15 56 50.0 +0.7**
comp=N,1.6nm,0.3s,SNR=7.9
ELOB S **Sn 15 57 48.0 -3.8**
comp=N,4.7nm,0.2s,SNR=7.9
ELOB Lobios 5.53 12 P **Pn 15 56 50.0 +0.7**
comp=N,1.6nm,0.3s,SNR=7.9
ELOB S **Sn 15 57 48.0 -3.8**
comp=N,4.7nm,0.2s,SNR=7.9
PGAV Gavieira, Arco 5.59 10 *e*Pn **Pn 15 56 51.5 +1.4**
PGAV A A 15 57 54.7
comp=N,4.0nm,0.5s
PGAV Gavieira, Arco 5.59 10 *e*Pn **Pn 15 56 51.5 +1.4**
comp=N,4.0nm,0.5s
SESP Santiago Espad 5.88 72 P **Pn 15 56 55.7 +1.5**
comp=N,1.3nm,0.4s,SNR=7.9
SESP S **Sn 15 57 58.3 -2.3**
comp=N,8.5nm,0.3s,SNR=7.9
SESP Santiago Espad 5.88 72 P **Pn 15 56 55.7 +1.5**
comp=N,1.3nm,0.4s,SNR=7.9
SESP S **Sn 15 57 58.3 -2.3**
comp=N,8.5nm,0.3s,SNR=7.9
ECAL Calabor 5.91 21 P **Pn 15 56 55.7 +1.2**
comp=N,1.1nm,0.2s,SNR=7.9
ECAL S **Sn 15 57 58.2 -2.9**
comp=N,3.8nm,0.3s,SNR=7.9
ECAL Calabor 5.91 21 P **Pn 15 56 55.7 +1.2**
comp=N,1.1nm,0.2s,SNR=7.9
ECAL S **Sn 15 57 58.2 -2.9**
comp=N,3.8nm,0.3s,SNR=7.9
GUD Guadarrama 5.98 44 P **Pn 15 56 56.7 +1.2**
comp=N,2.0nm,0.3s,SNR=7.9
GUD S **Sn 15 58 01.3 -1.7**
comp=N,4.3nm,0.3s,SNR=7.9
GUD Guadarrama 5.98 44 P **Pn 15 56 56.7 +1.2**
comp=N,2.0nm,0.3s,SNR=7.9
GUD S **Sn 15 58 01.3 -1.7**
comp=N,4.3nm,0.3s,SNR=7.9
ETOB Tobarra 6.78 69 P **Pn 15 57 08.1 +1.7**
comp=N,1.1nm,0.3s,SNR=7.9
ETOB S **Sn 15 58 20.3 -2.2**
comp=N,2.1nm,0.1s,SNR=7.9
ETOB Tobarra 6.78 69 P **Pn 15 57 08.1 +1.7**
comp=N,1.1nm,0.3s,SNR=7.9
ETOB S **Sn 15 58 20.3 -2.2**
comp=N,2.1nm,0.1s,SNR=7.9

IDC ***11*** *15:59:06.4±0.5, 17°.60S×172°.65W, h0km, mb4.7/24, mb1 4.8/24, mb1mx4.7/34, mbtmp4.7/24, MS4.3/9, Ms1 4.3/9, ms1mx3.9/29, Error ellipse: s-maj=18.1km s-min=13.1km az=143.0*
ISCJB ***11*** *15:59:08.9±0.2, 17°.46S±0°.05×172°.49W±0°.04, h21km, mb5.0/155, MS4.3/12, Error ellipse: s-maj=8.4km s-min=5.0km az=153.6*
NEIC ***11*** *15:59:09.0±4.2, 17°.49S×172°.57W, h15km±25km, mb5.1/113, Error ellipse: s-maj=8.6km s-min=4.9km az=150.0*
GCMT ***11*** *15:59:09.0±0.3, 17°.57S×172°.33W, h19km±1km, MW4.9/71, Moment Tensor Solution. s23,c25; s71,c95; Duration: 0 Moment tensor: Scale 1016Nm; Mrr=2.80±.18; Mθθ=0.61±.11; Mφφ=2.18±.12; Mrθ=-0.74±.30; Mrφ=-0.24±.08; Mθφ=0.20±.22; Best double couple: M0=2.59600×1016 NP1:φs=160.00000°, δ50.00000°, λ=105.00000°. NP2: φs=2.00000°, δ42.00000°, λ=73.00000°. Principal axes: T 2.2350, Plg4.0000°, Azm260.0000°; N 0.7160, Plg11.0000°, Azm169.0000°; P -2.9560, Plg78.0000°, Azm8.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
BJI ***11*** *15:59:10.9, 17°.31S×172°.05W, h40km, mb5.1/38, mB5.4/21, Ms5.1/10, Ms7 4.7/10*
MOS ***11*** *15:59:14.9±1.6, 16°.43S×172°.72W, h33km, mb5.2/44, Error ellipse: s-maj=11.6km s-min=8.8km az=71.2*
ISC 11 15:59:09.7±0.3, 17°.46S±0°.07×172°.49W±0°.06, h21km, n428, σ1§51/434, mb5.0/155, MS4.2/12, 25C-6D, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**3.59**	**11**	Pn	Pn	15 59 57.7	-6.6
32nm,0.3s,baz=184,slow=4.0,SNR=38							
AFI				Sn	**Sn**	**16 00 39.1**	**-7.0**
40nm,0.3s,baz=40,slow=22,SNR=7.3							
MSVF	**Nonsavu**	**9.03**	**267**	*e*P	**Pn**	**16 01 22.1**	**+3.1**
MSVF	**Nonsavu**	**9.03**	**267**	*e*Pn	**Pn**	**16 01 22.1**	**+3.1**
RAR	**Rarotonga**	**12.57**	**109**	Pn	**Pn**	**16 02 03.2**	**-4.2**
4.0nm,0.3s,baz=264,slow=9.2,SNR=3.8							
DZM	**Mont Dzumac**	**20.34**	**254**	P	**P**	**16 03 42.7**	**-2.3**
5.1nm,0.7s,baz=72,slow=18,SNR=3.5							
DZM				LR	LR	16 10 13.7	
comp=Z,608nm,20.4s,baz=68,slow=33							
PPT2	**Papeete2**	**21.85**	**94**	*e*LR	LR	16 08 49.2	
860nm,26.5s							
PPT	**Papeete**	**21.85**	**94**	LR	LR	16 10 58.3	
comp=Z,1μm,18.1s,baz=283,slow=32							
URZ	**Urewera**	**22.64**	**202**	P	**P**	**16 04 05.5**	**-3.8**
18nm,0.7s,baz=344,slow=19,SNR=3.7							
URZ	**Urewera**	**22.64**	**202**	*e*P	**P**	**16 04 09.0**	**-0.4**
135nm,1.2s							
BKZ	**Black Stump Fm**	**23.67**	**202**	*e*P	**P**	**16 04 19.3**	**-0.6**
52nm,1.0s							
HIZ	**Hauiti**	**23.72**	**205**	*e*P	**P**	**16 04 22.4**	**+2.1**
570nm,1.8s							
HNR	**Honiara**	**27.94**	**283**	P	**P**	**16 04 57.4**	**-1.4**
36nm,1.0s,baz=307,slow=20,SNR=3.4							
HNR				LR	LR	16 15 25.8	
comp=Z,530nm,19.1s,baz=106,slow=35							
RPZ	**Rata Peaks**	**29.65**	**205**	P	**P**	**16 05 13.6**	**-0.1**
11nm,0.6s,baz=42,slow=17,SNR=2.0							
TAOE	**Nuku Hiva Isla**	**32.59**	**79**	*e*LR	LR	16 13 54.3	
376nm,20.6s							
RKT	**Rikitea**	**35.57**	**105**	*e*LR	LR	16 15 13.1	
375nm,30.8s							
CTA	**Charters Tower**	**39.08**	**259**	P	**P**	**16 06 32.4**	**-3.3**
4.4nm,0.6s,baz=99,slow=12,SNR=8.8							
CTAO	**Charters Tower**	**39.08**	**259**	*e*P	P	16 06 32.1	-3.6
CTAO				pmax	pmax		
comp=Z,34nm,0.8s							
CTAO	**Charters Tower**	**39.08**	**259**	*e*P	P	16 06 32.1	-3.5
comp=Z,34nm,0.8s							
PMG	**Port Moresby**	**39.99**	**276**	P	**P**	**16 06 40.3**	**-2.9**
comp=Z,14nm,1.0s,baz=74,slow=17,SNR=1.8							
PMG	**Port Moresby**	**39.99**	**276**	*e*P	**P**	**16 06 40.6**	**-2.6**
PMG				pmax	pmax		
comp=Z,71nm,1.1s							
PMG	**Port Moresby**	**39.99**	**276**	*e*P	**P**	**16 06 39.8**	**-3.4**
comp=Z,18nm,1.0s							
H11S2	**WAKE ISLAND Hy**	**41.17**	**329**	T	T	16 51 26.3	
baz=146							
H11S3	**WAKE ISLAND Hy**	**41.18**	**329**	T	T	16 51 17.5	
baz=146							
H11S1	**WAKE ISLAND Hy**	**41.18**	**329**	T	T	16 51 41.5	
baz=146							
STKA	**Stephens Creek**	**43.81**	**242**	P	**P**	**16 07 11.8**	**-2.5**
comp=Z,8.3nm,1.1s,baz=77,slow=7.8,SNR=3.9							
STKA				LR	LR	16 24 24.1	
comp=Z,288nm,18.7s,baz=53,slow=35							
STKA	**Stephens Creek**	**43.81**	**242**	*e*P	**P**	**16 07 12.3**	**-2.0**
comp=Z,6.4nm,1.5s							
JAY	**Jayapura**	**48.26**	**283**	P	**P**	**16 07 47.9**	**-1.8**
comp=Z,1.7nm,1.0s,baz=90,slow=20,SNR=3.8							
WB2	**Warramunga Arr**	**50.24**	**258**	*e*P	P	16 08 01.1	-3.7
comp=Z,18nm,1.2s							
WRAB	**Tennant Creek**	**50.25**	**258**	*i* P	P	16 08 00.3	-4.5
WRAB				pmax	pmax		
comp=Z,37nm,1.2s							
WRAB	**Tennant Creek**	**50.25**	**258**	*e*P	P	16 08 01.1	-3.7
comp=Z,17nm,1.2s							
WRA	**Warramunga Arr**	**50.26**	**258**	P	**P**	**16 08 01.9**	**-3.0**
comp=Z,8.5nm,0.9s,baz=95,slow=7.9,SNR=42							
WRA				PcP	**PcP**	**16 09 24.6**	**+0.8**
comp=Z,3.4nm,1.1s,baz=98,slow=6.5,SNR=3.6							
AS01	**Alice Springs**	**50.29**	**253**	*e*P	**P**	**16 08 01.9**	**-3.2**
AS31	**Alice Springs**	**50.34**	**253**	*e*P	**P**	**16 08 02.6**	**-2.9**
comp=Z,26nm,1.4s							
ASAR	**Alice Springs**	**50.34**	**253**	P	**P**	**16 08 02.9**	**-2.6**
comp=Z,28nm,0.6s,baz=90,slow=8.4,SNR=399							
ASAR				PcP	**PcP**	**16 09 24.6**	**+0.5**
comp=Z,2.4nm,0.8s,baz=103,slow=3.9,SNR=4.1							
ASAR				LR	LR	16 29 07.2	
comp=Z,209nm,18.6s,baz=80,slow=36							
FITZ	**Fitzroy Crossi**	**58.66**	**259**	P	**P**	**16 09 04.5**	**-1.5**
comp=Z,5.4nm,1.0s,baz=166,slow=4.2,SNR=5.8							
VNDA	**Vanda**	**61.43**	**186**	P	**P**	**16 09 24.9**	**+0.9**
comp=Z,4.2nm,1.2s,baz=4.4,slow=7.6,SNR=6.6							
VNDA	**Vanda**	**61.43**	**186**	*e*P	**P**	**16 09 23.8**	**-0.2**
comp=Z,30nm,1.8s							
LUWI	**Luwuk**	**65.63**	**277**	*e*P	**P**	**16 09 50.0**	**-2.8**
comp=Z,79nm,1.3s							
MJAR	**Matsushiro Arr**	**71.06**	**320**	P	**P**	**16 10 26.8**	**+0.4**
comp=Z,9.7nm,1.1s,baz=154,slow=5.8,SNR=13							
MAJO	**Matsushiro**	**71.06**	**320**	*e*P	**P**	**16 10 26.1**	**-0.3**
MAJO	**Matsushiro**	**71.06**	**320**	*e*P	**P**	**16 10 23.6**	**-2.8**
comp=Z,17nm,1.1s							
MAT	**Matsushiro**	**71.06**	**320**	P	**P**	**16 10 26.8**	**+0.4**
JAGI	**Jajag, Banyuwa**	**71.70**	**267**	*e*P	P	16 10 26.9	-3.9
comp=Z,116nm,1.3s							
MYLDM	**Lahad Datu**	**71.71**	**282**	*e*P	**P**	**16 10 30.9**	**+0.1**
comp=Z,30nm,1.1s							
QSPA	**South Pole Qui**	**72.60**	**180**	*e*P	**P**	**16 10 36.9**	**+1.5**
comp=Z,23nm,1.2s							
EDW2	**Edwards Air Fo**	**73.38**	**44**	P	**P**	**16 10 41.8**	**+1.5**
baz=234							
TPFO	**Pinon Flats**	**73.69**	**46**	P	**P**	**16 10 41.6**	**-0.7**
baz=236							
ASAJ	**Asahikawa**	**73.74**	**328**	*e*P	**P**	**16 10 41.3**	**-0.8**
comp=Z,44nm,1.3s							
CMB	**Columbia Colle**	**73.74**	**40**	*e*P	**P**	**16 10 41.4**	**-1.0**
CMB				pmax	pmax		
comp=Z,7.0nm,1.1s							
CMB	**Columbia Colle**	**73.74**	**40**	*e*P	**P**	**16 10 41.4**	**-1.0**
comp=Z,7.3nm,1.1s							
LRMC	**Laurel Mtn Rad**	**73.94**	**44**	P	**P**	**16 10 44.8**	**+1.1**
baz=234							
WDC	**Whiskeytown Da**	**74.06**	**37**	*e*P	**P**	**16 10 45.0**	**+0.8**
WDC				pmax	pmax		
comp=Z,13nm,1.4s							
WDC	**Whiskeytown Da**	**74.06**	**37**	*e*P	**P**	**16 10 45.0**	**+0.8**
comp=Z,13nm,1.4s							
KKM	**Kota Kinabalu**	**74.14**	**282**	*e*P	**P**	**16 10 44.7**	**-0.6**
comp=Z,16nm,0.8s							
N02D	**Trinity Center**	**74.22**	**37**	P	**P**	**16 10 46.3**	**+1.1**
baz=229							
BELC	**Belle Mtn. Jos**	**74.23**	**46**	P	**P**	**16 10 46.5**	**+1.0**
baz=236							
O03D	**Paynes Creek**	**74.31**	**38**	P	**P**	**16 10 47.2**	**+1.5**
baz=230							
MPMC	**Manual Prospec**	**74.40**	**44**	P	**P**	**16 10 47.5**	**+1.0**
baz=234							
BC3	**Big Chuckawall**	**74.41**	**47**	P	**P**	**16 10 46.6**	**+0.1**
baz=236							
M02C	**Callahan**	**74.41**	**37**	P	**P**	**16 10 47.7**	**+1.4**
baz=229							
GSC	**Goldstone, Bar**	**74.42**	**45**	P	**P**	**16 10 46.8**	**+0.4**
baz=235							
GSC	**Goldstone, Bar**	**74.42**	**45**	*e*P	**P**	**16 10 46.5**	**0.0**
GSC				pmax	pmax		
comp=Z,9.0nm,1.2s							
GSC	**Goldstone, Bar**	**74.42**	**45**	*e*P	**P**	**16 10 46.5**	**0.0**
comp=Z,8.9nm,1.2s							
DAC	**Darwin (Calif)**	**74.46**	**43**	*e*P	**P**	**16 10 46.9**	**+0.1**
DAC				pmax	pmax		
comp=Z,8.0nm,1.4s							
DAC	**Darwin (Calif)**	**74.46**	**43**	*e*P	**P**	**16 10 46.9**	**+0.1**
comp=Z,8.2nm,1.4s							
HEC	**Hector,Ludlow**	**74.47**	**45**	P	**P**	**16 10 47.6**	**+0.8**
baz=235							
GLA	**Glamis**	**74.52**	**47**	P	**P**	**16 10 48.9**	**+1.8**
baz=237							
WAKR	**Walker**	**74.61**	**41**	*e*P	**P**	**16 10 47.8**	**+0.1**
YBH	**Yreka Blue Hor**	**74.72**	**36**	*e*P	**P**	**16 10 48.5**	**+0.4**
YBH				pmax	pmax		
comp=Z,9.0nm,1.1s							
YBH	**Yreka Blue Hor**	**74.72**	**36**	*e*P	**P**	**16 10 48.5**	**+0.4**
comp=Z,8.7nm,1.1s							
PEA0	**Petropavlovsk-**	**74.84**	**342**	*e*P	**P**	**16 10 48.8**	**+0.4**
PEA0B	**Petropavlovsk-**	**74.84**	**342**	*e*P	**P**	**16 10 48.5**	**+0.1**
comp=Z,54nm,1.3s							
PETK	**Petropavlovsk-**	**74.84**	**342**	P	**P**	**16 10 49.1**	**+0.7**
comp=Z,25nm,1.0s,baz=119,slow=9.0,SNR=12							
PETK				LR	LR	16 41 52.1	
comp=Z,98nm,19.1s,baz=178,slow=34							
GMRC	**Granite Mounta**	**74.90**	**46**	P	**P**	**16 10 50.2**	**+0.9**
baz=236							
IRM	**Iron Mountain**	**74.90**	**46**	P	**P**	**16 10 50.7**	**+1.5**
baz=236							
GRAC	**Grapevine Rang**	**75.03**	**43**	P	**P**	**16 10 51.7**	**+1.8**
baz=234							
FURC	**Furnace Creek,**	**75.05**	**44**	P	**P**	**16 10 51.9**	**+1.9**
baz=235							
TUQ	**Turquoise Moun**	**75.09**	**45**	P	**P**	**16 10 51.6**	**+1.2**
baz=235							
113A	**Mohawk Valley,**	**75.11**	**48**	*e*P	**P**	**16 10 51.4**	**+1.0**
comp=Z,16nm,1.5s							
HUMO	**Hull Mountain**	**75.15**	**36**	*e*P	**P**	**16 10 50.7**	**+0.2**
comp=Z,9.6nm,1.3s							
NV01	**Mina Array Sit**	**75.28**	**41**	*e*P	**P**	**16 10 52.1**	**+0.5**
NVAR	**Mina Array Bea**	**75.28**	**41**	P	**P**	**16 10 52.0**	**+0.5**
comp=Z,5.9nm,1.0s,baz=226,slow=9.0,SNR=24							
NVAR				LR	LR	16 39 10.2	
comp=Z,369nm,18.4s,baz=258,slow=32							
214A	**Organ Pipe Nat**	**75.37**	**49**	P	**P**	**16 10 53.6**	**+1.6**
baz=238							
NV11	**Mina Array Sit**	**75.37**	**41**	*e*P	**P**	**16 10 52.0**	**0.0**
comp=Z,16nm,1.2s							
PAHR	**Pah Rah Range**	**75.38**	**40**	*e*P	**P**	**16 10 51.4**	**-0.6**
comp=Z,16nm,1.3s							
LDFC	**Landfair**	**75.44**	**46**	*e*P	**P**	**16 10 53.0**	**+0.6**
comp=Z,27nm,1.4s							
PDMCI	**Parker Dam,Lak**	**75.68**	**47**	P	**P**	**16 10 55.1**	**+1.4**
baz=237							
TPNV	**Topopah Spring**	**75.73**	**43**	P	**P**	**16 10 55.4**	**+1.3**
baz=235							
TPNV	**Topopah Spring**	**75.73**	**43**	*e*P	**P**	**16 10 55.0**	**+0.9**
TPNV				pmax	pmax		
comp=Z,29nm,2.0s							
TPNV	**Topopah Spring**	**75.73**	**43**	*e*P	**P**	**16 10 55.0**	**+0.9**
comp=Z,29nm,2.0s							
SHPR	**Sheep Range**	**76.20**	**44**	*e*P	**P**	**16 10 57.8**	**+1.0**
comp=Z,30nm,2.0s							
MOD	**Modoc Plateau**	**76.20**	**37**	*e*P	**P**	**16 10 57.4**	**+0.7**
comp=Z,25nm,1.5s							
I04A	**Tendick Farm,**	**76.23**	**35**	P	**P**	**16 10 57.8**	**+1.1**
baz=229							
Y14A	**Wickenburg**	**76.28**	**48**	*e*P	**P**	**16 10 57.5**	**+0.4**
comp=Z,40nm,1.4s							
K05A	**Summer Lake**	**76.39**	**36**	*e*P	**P**	**16 10 58.6**	**+0.8**
comp=Z,18nm,1.1s							
SBUM	**Sibu**	**76.73**	**277**	*e*P	**P**	**16 11 00.0**	**-0.1**
comp=Z,10nm,1.2s							
R11A	**Troy Canyon, C**	**76.96**	**43**	P	**P**	**16 11 02.2**	**+1.1**
baz=235							
R11A	**Troy Canyon, C**	**76.96**	**43**	*e*P	**P**	**16 11 01.6**	**+0.5**
comp=Z,6.1nm,1.3s							
TUC	**Tucson**	**77.03**	**50**	*e*P	**P**	**16 11 02.5**	**+1.1**
TUC				pmax	pmax		
comp=Z,18nm,1.4s							
TUC	**Tucson**	**77.03**	**50**	*e*P	**P**	**16 11 02.5**	**+1.1**
comp=Z,18nm,1.4s							
WVOR	**Wild Horse Val**	**77.50**	**38**	*e*P	**P**	**16 11 04.7**	**+0.7**
WVOR				pmax	pmax		
comp=Z,19nm,1.4s							
WVOR	**Wild Horse Val**	**77.50**	**38**	*e*P	**P**	**16 11 04.7**	**+0.7**
comp=Z,20nm,1.4s							
X16A	**Lo Mia Camp, P**	**77.63**	**48**	*e*P	**P**	**16 11 06.4**	**+1.4**
comp=Z,17nm,1.4s							
319A	**Douglas**	**77.67**	**51**	*e*P	**P**	**16 11 06.4**	**+1.3**
comp=Z,14nm,1.0s							
LCMT	**Little Creek M**	**77.76**	**45**	*e*P	**P**	**16 11 06.5**	**+1.0**
comp=Z,19nm,1.8s							
KNB	**Kanab**	**78.05**	**45**	*e*P	**P**	**16 11 08.3**	**+1.1**
KNB				pmax	pmax		
comp=Z,39nm,1.8s							
KNB	**Kanab**	**78.05**	**45**	*e*P	**P**	**16 11 08.3**	**+1.1**
comp=Z,39nm,1.8s							
U15A	**North Rim**	**78.09**	**46**	*e*P	**P**	**16 11 08.8**	**+1.2**
comp=Z,20nm,1.5s							
PSUT	**Pine Spring**	**78.19**	**43**	*e*P	**P**	**16 11 08.5**	**+0.5**
comp=Z,11nm,1.3s							
KSRS	**Korea Array**	**78.23**	**315**	P	**P**	**16 11 10.2**	**+2.3**
comp=Z,22nm,1.1s,baz=130,slow=6.1,SNR=42							
KSM	**Kuching**	**78.24**	**275**	*e*P	**P**	**16 11 08.9**	**+0.4**
comp=Z,55nm,1.1s							
KS15	**Wonju Array Si**	**78.25**	**315**	*e*P	**P**	**16 11 10.7**	**+2.6**
KSAR	**Wonju Array Be**	**78.25**	**315**	P	**P**	**16 11 10.2**	**+2.2**
KSAR	**Wonju Array Be**	**78.25**	**315**	P	**P**	**16 11 10.2**	**+2.2**
KS01	**Wonju Array Si**	**78.26**	**315**	*e*P	**P**	**16 11 09.6**	**+1.5**
LEM	**Lembang**	**78.37**	**266**	P	P	16 11 14.7	+5

USRK **Ussuriysk Ar.** 79.54 323 P P 16 11 16.5 +1.6
comp=Z,8.2nm,1.1s,baz=116,slow=4.4,SNR=13
USRK LR LR 16 43 47.5
comp=Z,105nm,18.5s,baz=136,slow=34
MFID **Camas Ranch** 79.74 38 *e*P P 16 11 16.6 +0.3
comp=Z,8.2nm,1.0s
BMO **Blue Mountains** 79.74 36 *e*P P 16 11 16.3 +0.1
comp=Z,14nm,1.4s
D08A **Wollman Farm,** 80.21 34 *e*P P 16 11 19.1 +0.5
comp=Z,11nm,1.1s
TMUT **Trail Mountain** 80.34 44 *e*P P 16 11 20.9 +1.1
comp=Z,17nm,1.4s
F10A **Beach Ranch, E** 80.47 36 *e*P P 16 11 20.1 +0.1
comp=Z,12nm,1.1s
HABR **Khabarovsk** 80.53 328 *c*e P 16 11 18.2 -2.0
HABR *e* 16 11 24.7
HABR *e*PPP PPP 16 16 11.5
HABR *e*S S 16 21 26.8 +1.1
HABR *e**SS SKSac 16 21 31.7 -5.3
HABR pmax pmax
comp=Z,46nm,2.3s
HABR MLR MLR
comp=Z,47nm,22.0s
HLID **Hailey** 80.67 39 P P 16 11 22.5 +1.2
baz=235
HLID **Hailey** 80.67 39 *e*P P 16 11 22.2 +0.8
comp=Z,11nm,1.1s
MNTX **Cornudas Mount** 80.76 53 P P 16 11 22.9 +1.0
baz=243
MNTX **Cornudas Mount** 80.76 53 *e*P P 16 11 22.5 +0.7
comp=Z,12nm,1.2s
B08A **Colville Reser** 80.82 33 *e*P P 16 11 21.7 -0.1
comp=Z,17nm,1.4s
PMR **Palmer** 80.95 11 *e*P P 16 11 22.4 +0.2
PMR pmax pmax
comp=Z,26nm,1.4s
PMR **Palmer** 80.95 11 *e*P P 16 11 22.4 +0.2
comp=Z,26nm,1.4s
LPM **Los Pinos Moun** 81.03 50 *e*P P 16 11 24.5 +1.0
TX31 **Lajitas Ar. Si** 81.04 56 *e*P P 16 11 24.1 +0.5
TXAR **Lajitas Array** 81.04 56 P P 16 11 24.7 +1.2
comp=Z,6.8nm,1.2s,baz=223,slow=5.0,SNR=21
NKL **Nikolayevsk** 81.06 334 *e*P P 16 11 22.6 -0.3
PV05 **Paradox Valley** 81.12 46 *e*P P 16 11 24.8 +0.8
TT01 **Tatalina** 81.14 8 *e*P P 16 11 24.2 +1.1
TTA **Tatalina** 81.16 8 *e*P P 16 11 24.0 +0.6
TTA pmax pmax
comp=Z,21nm,1.3s
TTA **Tatalina** 81.16 8 *e*P P 16 11 24.0 +0.6
comp=Z,21nm,1.3s
TCUT **Toone Canyon** 81.17 42 *e*P P 16 11 25.1 +0.9
comp=Z,29nm,1.2s
MDJ **Mudanjiang** 81.18 322 *e*P P 16 11 25.0 +1.2
comp=Z,29nm,1.4s
DIV **Divide** 81.19 13 *e*P P 16 11 23.6 +0.1
comp=Z,50nm,1.6s
BMRM **Bremner River** 81.30 13 *e*P P 16 11 24.6 +0.4
comp=Z,74nm,1.5s
PV09 **Paradox Valley** 81.31 45 *e*P P 16 11 26.1 +1.1
ANMO **Albuquerque** 81.46 49 P P 16 11 26.4 +0.6
baz=242
ANMO **Albuquerque** 81.46 49 *e*P P 16 11 26.7 +0.9
ANMO pmax pmax
comp=Z,8.0nm,1.3s
ANMO **Albuquerque** 81.46 49 *e*P P 16 11 26.7 +0.9
comp=Z,7.7nm,1.3s
PV01 **Paradox Valley** 81.51 46 *e*P P 16 11 26.5 +0.5
BALM **Baldy** 81.88 14 *e*P P 16 11 27.8 +0.6
BALM pmax pmax
comp=Z,16nm,1.2s
BALM **Baldy** 81.88 14 *e*P P 16 11 27.8 +0.6
comp=Z,16nm,1.2s
NJ2 **Nanjing** 82.09 307 *e*P P 16 11 31.5 +2.6
NJ2 pmax pmax
comp=Z,17nm,1.1s
CAST **Castle Rocks** 82.17 9 *e*P P 16 11 27.9 -0.8
comp=Z,9.7nm,1.3s
MCMT **McKenzie Canyo** 82.31 38 *e*P P 16 11 30.5 +0.4
SKAG **Skagway** 82.41 18 *e*P P 16 11 30.9 +1.0
comp=Z,31nm,1.4s
KTH **Kantishna Hill** 82.48 10 *e*P P 16 11 29.9 -0.4
comp=Z,68nm,2.0s
TRF **Thorofare Moun** 82.48 10 *e*P P 16 11 30.2 -0.3
comp=Z,28nm,1.5s
S22A **4UR Ranch, Cre** 82.52 47 P P 16 11 33.2 +1.8
baz=241
S22A **4UR Ranch, Cre** 82.52 47 *e*P P 16 11 32.9 +1.4
comp=Z,22nm,1.4s
RND **Reindeer** 82.69 10 *e*P P 16 11 31.8 +0.4
RND pmax pmax
comp=Z,27nm,1.2s
RND **Reindeer** 82.69 10 *e*P P 16 11 31.8 +0.4
comp=Z,27nm,1.2s
KLR **Kul'dur** 82.71 327 *e*P P 16 11 32.2 +0.5
REDW **Red Top Meadow** 82.72 40 *e*P P 16 11 32.8 +0.5
comp=Z,31nm,1.5s
DLMT **Dillon** 82.75 38 *e*P P 16 11 32.8 +0.5
comp=Z,7.5nm,1.0s
FXWY **Fox Creek** 82.76 40 *e*P P 16 11 33.0 +0.5
comp=Z,15nm,1.4s
MSO **Missoula** 82.81 36 *e*P P 16 11 32.2 -0.2
comp=Z,12nm,1.4s
BSMT **Bassoo Peak** 82.93 35 *e*P P 16 11 32.9 -0.3
IMW **Indian Meadow** 82.95 40 *e*P P 16 11 33.7 +0.2
comp=Z,22nm,1.4s
MCK **McKinley** 82.97 10 *e*P P 16 11 32.5 -0.3
MCK pmax pmax
comp=Z,26nm,1.0s
MCK **McKinley** 82.97 10 *e*P P 16 11 32.5 -0.3
comp=Z,26nm,1.0s
MOOW **Moose Ponds** 82.99 40 *e*P P 16 11 34.0 +0.4
comp=Z,8.8nm,1.4s
LOHW **Long Hollow** 83.01 40 *e*P P 16 11 34.1 +0.4
comp=Z,13nm,1.4s
LRM **Limekiln Ridge** 83.09 38 *e*P P 16 11 34.4 +0.3
SMCO **Snowmass** 83.11 45 *e*P P 16 11 35.0 +0.4
comp=Z,28nm,1.5s
QLMT **Earthquake Lak** 83.16 39 *e*P P 16 11 35.6 +1.2
FLWY **Flagg Ranch** 83.20 40 *e*P P 16 11 35.1 +0.4
comp=Z,28nm,1.3s
CN2 **Changchun** 83.21 320 *e*P P 16 11 38.2 +3.7
BW06 **Boulder Array** 83.22 41 P P 16 11 35.4 +0.6
baz=239
BW06 **Boulder Array** 83.22 41 *e*P P 16 11 34.9 +0.1
comp=Z,17nm,1.4s
PD31 **Pinedale Array** 83.22 41 *e*P P 16 11 34.8 0.0
PDAR **Pinedale Array** 83.22 41 P P 16 11 35.1 +0.2
comp=Z,4.4nm,1.0s,baz=217,slow=3.7,SNR=22
DL2 **Dalian** 83.23 314 P P 16 11 36.7 +2.0
DL2 pmax pmax
comp=Z,45nm,1.0s
CHMT **Chamberlain Mo** 83.25 36 *e*P P 16 11 34.7 -0.2
MENT **Mentasta** 83.25 13 *e*P P 16 11 35.0 +0.7
comp=Z,15nm,1.3s
BWN **Browne** 83.29 10 *e*P P 16 11 33.7 -0.7
comp=Z,41nm,1.2s
DLBC **Dease Lake** 83.29 21 *e*P P 16 11 34.9 +0.3
comp=Z,30nm,1.6s
H17A **Grant Village** 83.44 40 *e*P P 16 11 38.3 +2.4
comp=Z,10.0nm,1.2s
SDCO **Great Sand Dun** 83.45 47 P P 16 11 37.3 +1.0
baz=242
SDCO **Great Sand Dun** 83.45 47 *e*P P 16 11 36.5 +0.2
comp=Z,5.0nm,1.1s
BOZ **Bozeman (W)** 83.48 38 P P 16 11 37.2 +1.2
baz=237
BOZ **Bozeman (W)** 83.48 38 *e*P P 16 11 36.9 +0.9
BOZ pmax pmax
comp=Z,15nm,1.3s
BOZ **Bozeman (W)** 83.48 38 *e*P P 16 11 36.9 +0.9
comp=Z,15nm,1.3s
LKWY **Lake** 83.63 39 *e*P P 16 11 38.6 +1.6
LKWY pmax pmax
comp=Z,12nm,0.9s
LKWY **Lake** 83.63 39 *e*P P 16 11 38.6 +1.6
comp=Z,12nm,0.9s
WRH **Wood River Hil** 83.80 10 *e*P P 16 11 37.1 +0.1
comp=Z,56nm,1.3s
DOT **Dot Lake** 83.81 12 *e*P P 16 11 37.6 +0.5
comp=Z,75nm,1.2s
MLY **Manley** 83.89 9 *e*P P 16 11 37.1 -0.5
comp=Z,17nm,1.2s
CCB **Clear Creek Bu** 84.01 10 *e*P P 16 11 38.0 -0.1
comp=Z,43nm,1.3s
WALA **Waterton Lakes** 84.10 34 *e*P P 16 11 38.6 -0.4
comp=Z,17nm,1.4s
COLA **College** 84.21 10 *d i*P P 16 11 38.7 -0.3
COLA pmax pmax
comp=Z,33nm,1.0s
COLA **College** 84.21 10 *e*P P 16 11 38.8 -0.3
comp=Z,50nm,1.0s
MDM **Murphy Dome** 84.23 10 *e*P P 16 11 38.8 -0.4
comp=Z,39nm,1.3s
IL1 **Eielson Array** 84.29 11 *e*P P 16 11 39.0 -0.5
ILAR **Eielson Array** 84.29 11 P P 16 11 39.0 -0.5
comp=Z,9.1nm,1.2s,baz=211,slow=5.4,SNR=25
ILB **Eielson Array** 84.29 11 *e*P P 16 11 39.0 -0.5
ISCO **Idaho Springs** 84.34 45 *e*P P 16 11 41.3 +0.6
ISCO pmax pmax
comp=Z,19nm,1.8s
ISCO **Idaho Springs** 84.34 45 *e*P P 16 11 41.3 +0.6
comp=Z,19nm,1.8s
MYKOM **Kota Tinggi** 84.48 274 *e*P P 16 11 42.4 +0.7
comp=Z,15nm,1.2s
RLMT **Red Lodge** 84.61 39 P P 16 11 43.2 +1.4
baz=239
RLMT **Red Lodge** 84.61 39 *e*P P 16 11 42.8 +0.9
comp=Z,11nm,1.3s
GCMT **Greycliff** 84.72 39 *e*P P 16 11 43.1 +0.7
SEY **Seymchan** 84.72 345 *e*P P 16 11 41.9 +0.2
K22A **Casper** 85.09 43 P P 16 11 45.9 +1.6
baz=241
DAWY **Dawson** 85.19 14 *e*P P 16 11 45.0 +0.9
comp=Z,34nm,1.3s
EGAK **Eagle** 85.41 13 *e*P P 16 11 45.9 +0.7
comp=Z,30nm,1.4s
ABTX **Abilene, Hawle** 85.55 54 *e*P P 16 11 47.3 +0.7
comp=Z,12nm,0.5s
COLD **Coldfoot** 86.03 9 *e*P P 16 11 49.3 +1.1
comp=Z,19nm,1.2s
MAW **Mawson** 86.13 198 P P 16 11 47.6 -1.2
comp=Z,4.1nm,1.1s,baz=99,slow=7.3,SNR=2.5
MAW LR LR 16 49 21.2
comp=Z,230nm,19.2s,baz=74,slow=35
334A **Lometa** 86.14 56 P P 16 11 51.6 +2.1
baz=247
X32A **Elmer** 86.55 52 P P 16 11 52.3 +0.8
baz=246
BILL **Bilibino** 86.65 352 *e*P P 16 11 50.4 -0.8
BILL pmax pmax
comp=Z,14nm,1.3s
BILL **Bilibino** 86.65 352 *e*P P 16 11 51.3 +0.1
134A **White-Moore Ra** 86.74 55 P P 16 11 54.9 +2.4
baz=247
W32A **Sentinel** 86.86 52 P P 16 11 54.6 +1.6
baz=246
PLCA **Paso Flores** 87.49 132 P P 16 11 55.0 -1.2
comp=Z,3.0nm,1.0s,baz=247,slow=7.7,SNR=3.7
BJT **Baijiatuau** 87.50 313 *e*P P 16 11 57.6 +1.6
BJT pmax pmax
comp=Z,72nm,1.3s
BJT **Baijiatuau** 87.50 313 *e*P P 16 11 57.6 +1.6
comp=Z,72nm,1.3s
BJI **Beijing** 87.51 313 P P 16 11 57.4 +1.4
BJI pmax pmax
comp=Z,42nm,1.4s
BJI pmax pmax
comp=Z,280nm,3.3s
ENH **Enshi** 88.75 302 *e*P P 16 12 03.3 +1.1
comp=Z,57nm,1.4s
SKNT **Sakolnakorn** 89.06 288 P P 16 12 07.1 +3.2
comp=Z,14nm,1.2s
SKLT **Songkhla** 89.17 278 P P 16 12 08.6 +4.1
comp=Z,32nm,1.2s
HIA **Hailar** 89.35 323 *e*P P 16 12 05.9 +1.3
HIA pmax pmax
comp=Z,11nm,1.1s
HIA **Hailar** 89.35 323 *e*P P 16 12 05.9 +1.3
comp=Z,11nm,1.1s
PSI **Prapat** 89.48 273 *e*P P 16 12 06.2 +0.1
PSI pmax pmax
comp=Z,46nm,1.3s
PSI **Prapat** 89.48 273 *e*P P 16 12 06.2 +0.1
comp=Z,46nm,1.3s
GYA **Guiyang** 89.77 298 *e*P P 16 12 08.6 +1.4
GYA pP sP 16 12 20.4 +3.7
GYA PP PP 16 15 44.0 +4.2
GYA SKS SKSac 16 22 33.8 -3.3
GYA S SKKSac 16 22 55.2 +5.2
GYA sS sS 16 23 16.7 +6.7
GYA SS SS 16 28 57.0 +1.0
GYA pmax pmax
comp=Z,10.0nm,1.0s
GYA pmax pmax
comp=Z,120nm,5.9s
GYA LR LR
comp=Z,480nm,19.8s
GYA LR LR
comp=Z,500nm,20.2s
GYA LR LR
comp=Z,450nm,20.6s
INK **Inuvik** 90.05 14 *e*P P 16 12 07.3 0.0
INK pmax pmax
comp=Z,16nm,1.4s
INK **Inuvik** 90.05 14 *e*P P 16 12 07.3 0.0
comp=Z,16nm,1.4s
NONG **Nongkai** 90.16 289 P P 16 12 12.0 +3.0
comp=Z,19nm,0.9s
TRTT **Trang** 90.25 278 P P 16 12 12.9 +3.4
comp=Z,55nm,1.1s
GSI **Gunungsitoli** 90.32 271 *e*P P 16 12 12.0 +2.0
comp=Z,96nm,1.4s
XAN **Xi'an** 90.53 306 P P 16 12 12.3 +1.8
XAN pP sP 16 12 21.4 +1.4
XAN pmax pmax
comp=Z,15nm,1.3s
XAN pmax pmax
comp=Z,97nm,5.8s
NAYO **Nakonayok** 90.67 285 P P 16 12 15.2 +3.8
comp=Z,67nm,1.3s
JTS **JuntasAbangare** 90.72 80 *e*P P 16 12 12.8 +1.0
JTS pmax pmax
comp=Z,33nm,1.1s
JTS **JuntasAbangare** 90.72 80 *e*P P 16 12 13.5 +1.7
comp=Z,24nm,1.0s
VNA3 **Neumayer Olymp** 90.74 175 P P 16 12 11.5 +0.7
SYO **Syowa Base** 90.76 191 ⇓*e*P P 16 12 09.8 -1.1
HHC **Hu-ho-hao-te** 91.06 313 *e*P P 16 12 13.9 +1.1
HHC S S 16 23 11.6 +2.0
HHC pmax pmax
comp=Z,28nm,1.3s
HHC pmax pmax
comp=Z,120nm,7.4s
HHC LR LR
comp=Z,120nm,17.7s
HHC LR LR
comp=Z,130nm,17.9s
HHC LR LR
comp=Z,78nm,17.9s
VNA2 **Neumayer--Watz** 91.24 175 P P 16 12 13.3 +0.2
baz=203,slow=4.2
YAK **Yakutsk** 91.34 336 *e*P P 16 12 13.2 -0.2
YAK pmax pmax
comp=Z,12nm,1.1s
YAK **Yakutsk** 91.34 336 *e*P P 16 12 12.8 -0.7
comp=Z,16nm,1.2s
VNA1 **Neumayer--Stat** 91.44 175 P P 16 12 14.0 +0.1
YKA **Yellowknife Ar** 91.63 23 P P 16 12 15.1 +0.3
comp=Z,2.1nm,1.1s,baz=233,slow=4.3,SNR=17
YKB5 **Yellowknife Ar** 91.63 23 *e*P P 16 12 14.4 -0.4
YKW3 **Yellowknife Ar** 91.67 23 *e*P P 16 12 15.2 +0.2
comp=Z,13nm,1.6s
PBKT **Sadao Pong** 91.68 287 P P 16 12 18.6 +2.5
comp=Z,16nm,1.3s
LOEI **Loei** 91.69 288 P P 16 12 16.7 +0.5
comp=Z,33nm,0.8s
UTTA **Uttaradit** 92.41 288 P P 16 12 22.0 +2.6
comp=Z,2.8nm,1.2s
NANT **Nan** 92.59 289 P P 16 12 22.7 +2.4
comp=Z,3.5nm,1.3s
KMI **Kunming** 92.69 295 P P 16 12 22.6 +1.7
KMI pmax pmax
comp=Z,14nm,0.8s
KMI pmax pmax
comp=Z,120nm,4.9s
SUKH **Sukhothai** 93.17 287 P P 16 12 26.4 +3.4
comp=Z,3.0nm,1.2s
T41A **Mountain View** 93.20 52 P P 16 12 23.4 +0.7
baz=251
CD2 **Chengdu** 93.62 301 P P 16 12 24.5 -0.3
CD2 pmax pmax
comp=Z,7.0nm,0.9s
M38A **Pleasantville** 93.62 48 P P 16 12 24.9 +0.4
baz=250
CM01 **Chiang Mai Arr** 94.06 288 *e*P P 16 12 28.7 +1.7
CMAR **Chiang Mai Arr** 94.08 288 P P 16 12 28.2 +1.0
comp=Z,2.7nm,0.9s,baz=113,slow=2.6,SNR=21
CMMT **Chiang Mai** 94.18 288 P P 16 12 30.2 +2.6
comp=Z,7.3nm,1.8s,comp=Z,513nm
CHTO **Chiang Mai** 94.18 288 P P 16 12 30.3 +2.7
comp=Z,42nm,1.8s
CHTO **Chiang Mai** 94.18 288 *e*P P 16 12 28.7 +1.1
CHTO pmax pmax
comp=Z,10.0nm,1.2s
CHTO **Chiang Mai** 94.18 288 *e*P P 16 12 28.7 +1.1
comp=Z,9.7nm,1.2s
LZH **Lanzhou** 95.14 306 *e*P P 16 12 34.2 +2.4
LZH pP sP 16 12 49.2 +7.8
LZH sP pP 16 12 53.6 +15
LZH *e*S S 16 23 45.2 -1.0
LZH sS sS 16 24 09.7 +12
LZH SS SS 16 30 09.0 -3.9
LZH pmax pmax
comp=Z,20nm,1.0s
LZH pmax pmax
comp=Z,72nm,4.3s
ULN **Ulaanbaatar** 96.54 318 *e*P P 16 12 36.8 -1.1
ULN pmax pmax
comp=Z,2.0nm,1.2s
TIXI **Tiksi** 97.21 344 *e*P P 16 12 40.0 -0.2
TIXI pmax pmax
comp=Z,5.0nm,1.3s
TIXI **Tiksi** 97.21 344 *e*P P 16 12 39.4 -0.8
comp=Z,4.9nm,1.2s
NRIK **Noril'sk** 109.71 338 PKiKP PKiKP 16 17 39.1 +0.7
comp=Z,1.0nm,0.5s,baz=34,slow=18,SNR=2.6
ZALV **Zalesovo Beam** 111.37 322 PKiKP PKiKP 16 17 42.0 +0.1
comp=Z,0.4nm,0.4s,baz=118,slow=2.2,SNR=3.8
MKAR **Makanchi Array** 112.88 314 PKiKP PKiKP 16 17 45.0 -0.1
comp=Z,0.8nm,0.6s,baz=210,slow=1.2,SNR=9.2
KURK **Kurchatov** 115.25 318 PKIKP PKPdf 16 17 49.1 -0.3
KURK pmax pmax
comp=Z,1.0nm,0.7s
KURK **Kurchatov** 115.25 318 PKP PKPdf 16 17 49.1 -0.3
KURBB **Kurchatov Arra** 115.31 318 PKP PKPdf 16 17 49.1 -0.5
comp=Z,1.3nm,0.7s,baz=83,slow=2.0,SNR=12
KSH **Kashi** 117.39 306 *e*PKP PKPdf 16 17 53.4 -0.7
KSH *es*PKP 16 18 08.1
KSH SKS SKSdf 16 25 00.1 -5.2
KSH AMB AMB
comp=Z,70nm,5.9s
KSH LR LR
comp=Z,79nm,5.8s
KSH LR LR
comp=Z,140nm,5.5s
KSH LR LR
comp=Z,130nm,8.6s
BVAR **Borovoye Array** 120.03 322 PKP PKPdf 16 17 59.0 +0.3
comp=Z,2.5nm,0.7s,baz=90,slow=1.5,SNR=15
BVAR **Borovoye Array** 120.03 322 PKIKP PKPdf 16 17 59.0 +0.3
BVAR pmax pmax
comp=Z,3.0nm,0.7s
BRVK **Borovoye** 120.09 322 *i* PKIKP PKPdf 16 17 55.5 -3.2
BRVK **Borovoye** 120.09 322 *e*PKPdf PKPdf 16 17 58.2 -0.5
ZRNK **Zerenda** 120.86 322 *e*PKIKP PKPdf 16 18 00.0 -0.3
ZRNK **Zerenda** 120.86 322 *e*PKPdf PKPdf 16 17 60.0 -0.3
ARU **Arti** 125.54 328 *i* PKIKP PKPdf 16 18 07.2 -1.9
ARU 16 19 59.5
ARU 16 25 18.4
ARU SS SS 16 36 48.6 -9.5
ARCES **ARCESS Array B** 126.75 352 PKP PKPdf 16 18 11.8 +0.8
comp=Z,3.8nm,1.0s,baz=340,slow=1.8,SNR=4.5
ABKAR **Akbulak array** 127.34 319 *e*PKPdf PKPdf 16 18 12.4 -0.3
AKTO **Aktyubinsk** 128.13 321 PKP PKPdf 16 18 14.3 0.0
comp=Z,1.1nm,0.7s,baz=221,slow=20,SNR=3.5
KLMR **Klimovskoe** 131.01 340 *e*PKIKP PKPdf 16 18 17.5 -1.9
KLMR *e* 16 20 34.0
KLMR pmax pmax
comp=Z,9.0nm,1.3s
GEYT **Alibeck** 131.42 305 PKP PKPdf 16 18 21.8 +0.8
comp=Z,1.9nm,0.9s,baz=110,slow=3.5,SNR=4.8
VSU **Vasula** 136.67 345 *i* PKIKP PKPdf 16 18 26.7 -3.3
AKASG **Malin Array Be** 142.56 337 PKhKP PKPpre 16 18 35.7
comp=Z,0.3nm,0.3s,baz=24,slow=3.2,SNR=2.3
SORM **Soroca** 144.98 335 ⇑*i*P PKPab 16 18 44.5 -0.1
SORM **Soroca** 144.98 335 ⇑PKIKP PKPab 16 18 44.5 -0.1
LVV **L'vov** 145.07 341 *e*PKIKP PKPbc 16 18 44.4 -0.5
LVV *e* 16 18 54.6
KMBO **Kilima Mbogo** 145.37 241 *e*PKPbc PKPab 16 18 48.5 +1.1
KWP **Kalwaria Pacla** 145.63 342 *e*PKP PKPbc 16 18 47.7 +0.9
KWP **Kalwaria Pacla** 145.63 342 ⇑*i*P PKPbc 16 18 47.6 +0.9
KWP **Kalwaria Pacla** 145.63 342 ⇑PKIKP PKPbc 16 18 47.6 +0.9
KIS **Kishinev** 145.69 334 *e*P PKPdf 16 18 47.0 +0.4
KIS **Kishinev** 145.69 334 *e*PKIKP PKPdf 16 18 47.0 +0.4
OJC **Ojcow** 145.85 346 *e*PKP PKPbc 16 18 48.3 +0.9
OJC **Ojcow** 145.85 346 *e*PKIKP PKPdf 16 18 47.6 +0.8
OJC **Ojcow** 145.85 346 *e*PKPdf PKPdf 16 18 47.6 +0.8
CLL **Collm** 145.94 354 *i* PKPbc PKPdf 16 18 48.1 +1.1
comp=Z,52nm,1.3s
CLL *i* 16 18 57.3
CLL **Collm** 145.94 354 *e*PKIKP PKPdf 16 18 48.0 +1.1
CLL **Collm** 145.94 354 *e*PKPdf PKPdf 16 18 48.0 +1.1
KSP **Ksiaz** 145.96 350 *e*PKP PKPdf 16 18 48.1 +1.1
KSP **Ksiaz** 145.96 350 *e*PKIKP PKPdf 16 18 48.1 +1.1
STHS **Stebnicka Huta** 146.24 344 *e*PKIKP PKPab 16 18 50.0 +0.7
STHS **Stebnicka Huta** 146.24 344 *e*PKP PKPab 16 18 50.0 +0.7
BRG **Berggiesshubel** 146.27 353 *e*PKP PKPbc 16 18 49.8 +1.2
comp=Z,57nm,1.6s
BRG *e* 16 18 59.2
comp=Z,30nm,1.4s
BRG **Berggiesshubel** 146.27 353 *e*PKIKP PKPbc 16 18 49.8 +1.2
BRG *e* 16 18 59.2
BRG pmax pmax
comp=Z,8.0nm,1.6s
UPC **Upice** 146.33 350 *e*PKP PKPab 16 18 50.1 +0.5
UPC **Upice** 146.33 350 *e*PKIKP PKPab 16 18 50.1 +0.5
KOLS **Kolonicke sedl** 146.39 342 *e*PKIKP PKPbc 16 18 49.5 +0.5
KOLS **Kolonicke sedl** 146.39 342 *e*PKP PKPbc 16 18 49.5 +0.5
DPC **Dobruska-Polom** 146.43 350 *e*PKP PKPbc 16 18 50.3 +1.1
DPC *ep*PKP pPKPdf 16 19 00.3 +5.3
DPC **Dobruska-Polom** 146.43 350 *e*PKIKP PKPbc 16 18 50.3 +1.1
DPC *e* 16 19 00.3
NIE **Niedzica** 146.48 345 *e*PKP PKPab 16 18 50.9 +0.7
NIE **Niedzica** 146.48 345 *e*PKIKP PKPab 16 18 50.9 +0.7
PVCC **Panska Ves** 146.52 352 *e*PKP PKPab 16 18 51.0 +0.7
PVCC **Panska Ves** 146.52 352 *e*PKIKP PKPab 16 18 51.0 +0.7
OKC **Ostrava-Krasne** 146.58 347 *e*PKP PKPbc 16 18 50.2 +0.7
OKC *ep*PKP pPKPdf 16 19 00.3 +5.1
OKC **Ostrava-Krasne** 146.58 347 *e*PKP2 PKPbc 16 18 50.2 +0.7
BURAR **Bucovina Array** 146.59 338 ⇑*i*P PKPab 16 18 51.5 +0.7
BURAR **Bucovina Array** 146.59 338 ⇑PKP2 PKPab 16 18 51.5 +0.7
KRLC **Kraliky** 146.61 349 *e*PKP PKPab 16 18 51.3 +0.5
KRLC *ep*PKP pPKPdf 16 18 58.9 +3.5
KRLC **Kraliky** 146.61 349 *e*PKP2 PKPab 16 18 51.3 +0.5
CRVS **Cervenica-Dubn** 146.65 343 *e*PKIKP PKPbc 16 18 50.0 +0.2
CRVS **Cervenica-Dubn** 146.65 343 *e*PKP PKPbc 16 18 50.0 +0.2
UZH **Uzhgorod** 146.65 342 *e*PKIKP PKPdf 16 18 48.8 +0.6
UZH *i* 16 18 51.4
UZH *i* 16 19 02.6
BEBN **Eben Emael** 146.71 2 PKPab PKPab 16 18 51.6 +0.7
MORC **Moravsky Berou** 146.76 348 ⇑*i*P PKPbc 16 18 51.1 +1.0
MORC **Moravsky Berou** 146.76 348 ⇑PKP2 PKPbc 16 18 51.1 +1.0
MORC **Moravsky Berou** 146.76 348 *e*PKPbc PKPbc 16 18 51.3 +1.1
MEM **Membach** 146.90 2 PKPab PKPbc 16 18 51.7 +1.3
TESR **Tescani** 146.97 335 ⇑*i*P PKPbc 16 18 52.1 +1.3
TRPA **Tarpa** 147.03 341 ⇑*e*PKPdf PKPbc 16 18 52.1 +1.2
PRU **Pruhonice** 147.06 352 *e*PKP PKPbc 16 18 51.8 +0.9
PRU *ep*PKP pPKPdf 16 19 02.1 +6.1
PRU **Pruhonice** 147.06 352 *e*PKP2 PKPbc 16 18 51.8 +0.9
NKC **Novy Kostel** 147.06 354 *e*PKP PKPbc 16 18 52.5 +1.5
NKC *ep*PKP pPKPdf 16 18 57.2 +1.1
NKC *ex* x 16 19 02.4
NKC **Novy Kostel** 147.06 354 *e*PKP2 PKPbc 16 18 52.5 +1.5
GOPC **GO Pecny, Ondr** 147.09 351 *e*PKP PKPbc 16 18 52.4 +1.4
GOPC *ex* x 16 19 02.3
GOPC **GO Pecny, Ondr** 147.09 351 *e*PKP2 PKPbc 16 18 52.4 +1.4
KECS **Kecovo** 147.29 344 *e*PKP2 PKPbc 16 18 52.9 +1.3
KECS **Kecovo** 147.29 344 *e*PKP PKPbc 16 18 52.9 +1.3
DOU **Dourbes** 147.35 3 PKPbc PKPbc 16 18 53.0 +1.3
CFR **Carcaliu** 147.42 332 ⇑*i*P PKPbc 16 18 53.5 +1.5
CFR **Carcaliu** 147.42 332 ⇑PKP2 PKPbc 16 18 53.5 +1.5
VRI **Vrincioaia** 147.47 335 ⇑*i*P PKPbc 16 18 53.5 +1.3
VRI **Vrincioaia** 147.47 335 ⇑PKP2 PKPbc 16 18 53.5 +1.3
PLOR **Plostina** 147.51 335 ⇓*i*P PKPbc 16 18 53.5 +1.1
PLOR **Plostina** 147.51 335 ⇓PKP2 PKPbc 16 18 53.5 +1.1
VYHS **Vyhne** 147.69 346 *e*PKP2 PKPbc 16 18 54.4 +1.7

VYHS	Vyhne	147.69	346	*e*PKP	PKPbc	16 18 54.4 +1.7
GRFO	Grafenberg	147.71	355	*e*PKP2	PKPbc	16 18 53.8 +1.1
GRFO	Grafenberg	147.71	355	*e*PKPbc	PKPbc	16 18 53.8 +1.1
TIRR	Tirgusor	147.85	331	*e*PKP2	PKPbc	16 18 54.0 +0.8
TIRR	Tirgusor	147.85	331	*e*PKPbc	PKPbc	16 18 54.0 +0.8
WLF	Walferdange	147.85	2	PKPbc	PKPbc	16 18 55.1 +2.0
WLF	Walferdange	147.85	2	*e*PKP2	PKPbc	16 18 54.7 +1.6
WLF	Walferdange	147.85	2	*e*PKPbc	PKPbc	16 18 54.7 +1.6
PSZ	Piszkesteto	147.97	344⇓	*i*PP	PKPbc	16 18 54.9 +1.3
PSZ	Piszkesteto	147.97	344⇓	*e*PKPdf	PKPbc	16 18 54.2 +0.6
PSZ	Piszkesteto	147.97	344	*e*PKP2	PKPbc	16 18 54.5 +0.9
PSZ	Piszkesteto	147.97	344	*e*PKPbc	PKPbc	16 18 54.5 +0.9
SMOL	Smolenice	147.98	348	*e*PKP2	PKPab	16 18 56.1 0.0
SMOL	Smolenice	147.98	348	*e*PKP	PKPab	16 18 56.1 0.0
KHC	Kasperske Hory	148.02	352	*e*PKP	PKPbc	16 18 55.1 +1.5
KHC				*ex*	x	16 19 06.0
KHC	Kasperske Hory	148.02	352	*e*PKP2	PKPbc	16 18 54.7 +1.0
KHC	Kasperske Hory	148.02	352	*e*PKPbc	PKPbc	16 18 54.7 +1.0
MLR	Muntele Rosu	148.09	335⇑	*i*PP	PKPbc	16 18 55.1 +1.0
MLR	Muntele Rosu	148.09	335⇑	PKP2	PKPbc	16 18 55.1 +1.0
MLR	Muntele Rosu	148.09	335	*e*PKPbc	PKPbc	16 18 54.8 +0.7
DRGR		148.16	340⇑	*i*PP	PKPbc	16 18 55.5 +1.4
DRGR		148.16	340⇑	PKP2	PKPbc	16 18 55.5 +1.4
BR131	Keskin Array S	148.29	320	*e*PKPbc	PKPbc	16 18 55.5 +0.7
BRTR	Keskin Array B	148.29	320	PKPbc	PKPdf	16 18 52.5 +1.0
	comp=Z,3.5nm,0.8s,baz=197,slow=1.3,SNR=21					
GEC2	GERESS Array S	148.29	352	*e*PKP2	PKPbc	16 18 55.4 +0.9
GEC2	GERESS Array S	148.29	352	*e*PKPbc	PKPbc	16 18 55.4 +0.9
GERES	GERESS Array B	148.29	352	PKPbc	PKPbc	16 18 54.8 +0.4
	comp=Z,4.4nm,0.8s,baz=38,slow=2.4,SNR=34					
GEA0	GERESS Array S	148.30	352	*e*PKPbc	PKPbc	16 18 54.9 +0.5
VOIR		148.49	336⇑	*i*PP	PKPbc	16 18 56.9 +1.9
VOIR		148.49	336⇑	PKP2	PKPbc	16 18 56.9 +1.9
LANF	Langenberg	148.56	360	PKP	PKPbc	16 18 56.3 +1.3
ARR	Arges	148.71	336⇑	*i*PP	PKPbc	16 18 58.0 +2.4
ANTO	Ankara	148.72	321	*e*PKP2	PKPbc	16 18 56.6 +0.8
ANTO	Ankara	148.72	321	*e*PKPbc	PKPbc	16 18 56.6 +0.8
BR231	Keskin MP Arra	148.74	321	*e*PKPdf	PKPdf	16 18 50.8 -1.3
BR231				*e*PKPbc	PKPbc	16 18 56.3 +0.3
CONA	Conrad Observa	148.85	349	*i*PKiKP	PKPbc	16 18 57.3 +1.4
	comp=Z,41nm,1.4s,SNR=18					
SOP	Sopron	148.95	348⇓	*e*PKPdf	PKPbc	16 18 57.2 +1.2
MOA	Molln	149.19	351	*i*PKiKP	PKPbc	16 18 57.7 +1.1
	comp=Z,19nm,1.4s,SNR=7.5					
BFO	Black Forest	149.20	359	*e*PKP2	PKPbc	16 18 58.0 +1.3
BFO	Black Forest	149.20	359	*e*PKPbc	PKPbc	16 18 57.4 +0.8
ECH	Echery	149.32	0	PKP	PKPbc	16 18 57.9 +0.9
ARSA	Arzberg	149.56	349	*i*PKiKP	PKPbc	16 18 58.3 +0.7
	comp=Z,18nm,1.5s,SNR=6.6					
MOF	Molkenrain	149.68	1	PKP	PKPbc	16 18 58.9 +0.9
ASF	Jabal al Asfar	149.69	304	PKPbc	PKPbc	16 18 59.6 +1.1
	comp=Z,15nm,1.3s,baz=103,slow=1.2,SNR=17					
RETA	Reutte	149.93	356	*i*PKiKP	PKPbc	16 18 59.3 +0.8
	comp=Z,21nm,1.3s,SNR=9.1					
MOTA	Moosalm	150.05	355	*i*PKiKP	PKPbc	16 18 59.8 +0.9
	comp=Z,21nm,1.2s,SNR=7.3					
WTTA	Wattenberg	150.08	354	*i*PKiKP	PKPbc	16 18 60.0 +0.9
	comp=Z,13nm,0.9s,SNR=5.7					
LOMF	Lomont	150.18	1	PKP	PKPbc	16 19 00.7 +1.5
DAVA	Damuels	150.19	357	*i*PKiKP	PKPbc	16 19 00.2 +0.9
	comp=Z,25nm,1.4s,SNR=6.8					
SOKA	Soboth	150.20	350	*i*PKiKP	PKPbc	16 18 59.6 +0.3
	comp=Z,22nm,1.3s,SNR=11					
PERS	Pernice	150.23	349	*e*PKPbc	PKPbc	16 18 59.7 +0.4
MDVR	Moldovita	150.26	339⇑	*i*PP	PKPbc	16 19 00.4 +1.0
FETA	Feichten	150.40	356	*i*sPKPdf	PKPbc	16 19 00.9 +1.1
	comp=Z,24nm,1.4s,SNR=8.0					
ABTA	Abfaltersbach	150.50	353	*i*PKiKP	PKPbc	16 19 00.5 +0.5
	comp=Z,33nm,1.3s,SNR=11					
MMAI	Mount Meron Ar	150.51	307	PKPbc	PKPbc	16 19 01.7 +1.2
	comp=Z,10.0nm,1.0s,baz=91,slow=3.3,SNR=12					
CRNS	Crni Vrh	150.91	350	*e*PKPdf	PKPdf	16 18 56.8 +1.5
CRNS				*e*PKPbc	PKPbc	16 19 01.3 +0.4
TUE	Stuetta	151.03	357	*e*PKPbc	PKPbc	16 19 02.7 +1.3
SENIN	Lac Senin/Sane	151.17	0	*e*PKPbc	PKPbc	16 19 03.3 +1.5
AGO	Saint Agoulin	151.25	6	PKP	PKPbc	16 19 02.1 +0.4
BOJS	Bojanci	151.30	349	*e*PKPbc	PKPbc	16 19 03.0 +1.2
LBL	Lubilhac	152.08	6	PKP	PKPbc	16 19 05.2 +1.5
EIL	Elat	152.14	301	PKP	PKPdf	16 18 58.0 +0.4
	comp=Z,1.5nm,0.4s,baz=129,slow=6.0,SNR=4.1					
EIL				PKPbc	PKPbc	16 19 05.2 +1.0
	comp=Z,5.8nm,0.7s,baz=198,slow=0.8,SNR=12					
ESDC	Sonseca Array	155.72	22	PKPab	PKPab	16 19 29.4 +0.7
	comp=Z,0.7nm,0.7s,baz=320,slow=3.8,SNR=4.4					
TORD	Torodi Ar. Bea	172.94	127	PKP	PKPdf	16 19 17.8 -0.5
	comp=Z,2.1nm,1.0s,baz=136,slow=1.4,SNR=8.9					
TORD				PKPab	PKPab	16 20 44.9 0.0
	comp=Z,2.5nm,0.9s,baz=251,slow=3.3,SNR=7.7					

IDC 11 16:02:52.4±355.0, 56°.77N×29°.79E, h0km, Error ellipse: s-maj=147.7km s-min=104.0km az=98.0, Baltic States-Belarus-Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I43RU	DUBNA INFRASON	4.09	88	*i*		16 27 40.0	
	baz=272,slow=306,SNR=1.5						
I26DE	FREYUNG INFRAS	12.52	238	*i*		17 18 10.0	
	baz=43,slow=326,SNR=0.6						
I48TN	KESRA INFRASON	25.11	222	*i*		18 38 20.0	
	baz=24,slow=320,SNR=0.2						

IDC 11 16:05:20.6±8.2, 2°.02N×124°.79E, h0km, mb3.8/4, mb1 4.0/4, mb1mx3.4/48, mbtmp3.8/4, Error ellipse: s-maj=139.1km s-min=112.6km az=116.0, Celebes Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	Fitzroy Crossi	20.01	178	P	P	16 09 55.8	+0.7
	4.7nm,1.0s,baz=17,slow=11,SNR=2.8						
WRA	Warramunga Arr	23.75	157	P	P	16 10 34.9	+0.1
	2.0nm,0.8s,baz=335,slow=10,SNR=14						
ASAR	Alice Springs	27.02	161	P	P	16 11 04.2	-0.5
	0.3nm,0.4s,baz=334,slow=7.9,SNR=5.4						
STKA	Stephens Creek	37.29	156	P	P	16 12 34.5	-0.1
	2.1nm,0.8s,baz=339,slow=8.6,SNR=3.3						

*IDC **11** 16:09:27.2±0.9, 6°.46S×147°.90E, h0km, mb4.1/11, mb1 4.2/14, mb1mx4.1/34, mbtmp4.0/14, ML3.7/2, Error ellipse: s-maj=37.3km s-min=14.6km az=99.0*

*ISCJB **11** 16:09:32.1±0.7, 6°.52S±0°.06×147°.9E±0°.2, h51km, mb4.0/11, Error ellipse: s-maj=25.0km s-min=7.0km az=10.0*

*NEIC **11** 16:09:32.4±1.5, 6°.52S×147°.97E, h37km±14km, mb4.2/2, Error ellipse: s-maj=19.8km s-min=11.2km az=104.0*

ISC 11 16:09:33.5±0.8, 6°.57S±0°.07×148°.1E±0°.2, h51km, n24, σ1§16/27, mb3.9/11, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	Port Moresby	2.98	198	Pn	Pn	16 10 18.0	-0.2
	16nm,0.3s,baz=89,slow=3.3,SNR=40						
PMG				Sn	Sn	16 10 54.1	+1.4
	18nm,0.3s,baz=338,slow=19,SNR=3.6						
PMG	Port Moresby	2.98	198	*e*Pn	Pn	16 10 16.2	-2.1
PMG				Sn	Sn	16 10 54.1	+1.4
COEN	Coen	8.80	213	*e*Pn	Pn	16 11 38.0	-0.2
CTA	Charters Tower	13.56	187	Pn	Pn	16 12 42.7	-0.6
	0.1nm,0.3s,baz=10,slow=14,SNR=4.7						
CTAO	Charters Tower	13.56	187	*e*Pn	Pn	16 12 42.7	-0.6
	42nm,1.0s						
WRAB	Tennant Creek	18.84	224	*e*P	Pn	16 13 49.4	-1.0
	5.5nm,0.8s						
WRA	Warramunga Arr	18.86	224	P	P	16 13 48.3	-1.3
	0.4nm,0.3s,baz=53,slow=10,SNR=18						
ASAR	Alice Springs	21.81	217	P	P	16 14 20.7	-0.8
	2.1nm,0.4s,baz=54,slow=8.7,SNR=35						
ASAR				S	S	16 18 22.9	+2.8
	0.4nm,0.8s,baz=40,slow=23,SNR=3.7						
FITZ	Fitzroy Crossi	24.73	240	P	P	16 14 49.4	-0.9
	6.4nm,0.3s,baz=52,slow=6.6,SNR=52						
FITZ	Fitzroy Crossi	24.73	240	*e*P	P	16 14 49.6	-0.7
	10nm,0.7s						
STKA	Stephens Creek	25.91	193	P	P	16 15 00.2	-0.6
	2.8nm,0.7s,baz=19,slow=7.8,SNR=4.4						
MJAR	Matsushiro Arr	43.88	348	P	P	16 17 34.4	-0.6
	2.5nm,0.9s,baz=168,slow=7.8,SNR=4.8						
KSRS	Korea Array	47.68	338	P	P	16 18 04.8	-0.1
	1.0nm,0.7s,baz=157,slow=9.1,SNR=4.6						
KSAR	Wonju Array Be	47.68	338	P	P	16 18 04.8	-0.1
PETK	Petropavlovsk-	60.00	7	P	P	16 19 36.4	+1.7
	4.6nm,0.9s,baz=157,slow=7.8,SNR=4.6						
VNDA	Vanda	71.29	177	P	P	16 20 49.1	+2.0
	1.4nm,0.9s,baz=329,slow=7.5,SNR=8.3						
MKAR	Makanchi Array	78.64	320	P	P	16 21 29.9	-0.2
	0.6nm,0.5s,baz=98,slow=7.3,SNR=8.7						
ZALV	Zalesovo Beam	80.08	328	P	P	16 21 36.5	-1.2
	1.1nm,0.5s,baz=110,slow=6.1,SNR=5.8						
KURK	Kurchatov	82.32	323	P	P	16 21 49.1	-0.6
KURBB	Kurchatov Arra	82.34	323	P	P	16 21 49.1	-0.8
	0.4nm,0.6s,baz=114,slow=3.9,SNR=4.1						
ILAR	Eielson Array	85.57	23	P	P	16 22 06.1	+0.1
	0.6nm,0.8s,baz=255,slow=5.2,SNR=5.8						
GERES	GERESS Array B	123.00	326	PKP	PKPdf	16 28 24.5	0.0
	0.4nm,0.6s,baz=54,slow=3.4,SNR=4.7						
TORD	Torodi Ar. Bea	146.30	284	PKPbc	PKPab	16 29 10.5	0.0
	3.3nm,0.9s,baz=66,slow=3.3,SNR=13						
DBIC	Dimbokro	153.15	272	PKPbc	PKPbc	16 29 27.4	+0.6
	2.6nm,0.7s,baz=98,slow=4.7,SNR=3.7						

IDC 11 16:12:11.7±3.2, 6°.41S×147°.94E, h0km, mb3.5/2, mb1 3.6/4, mb1mx3.4/32, mbtmp3.4/4, ML3.3/1, Error ellipse: s-maj=79.2km s-min=33.4km az=99.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	Port Moresby	3.08	194	Pn	Pn	16 13 03.3	+1.7
	1.9nm,0.3s,baz=18,slow=13,SNR=6.4						
PMG				Sn	Sn	16 13 40.3	+1.2
	3.3nm,0.3s,baz=323,slow=15,SNR=2.7						
WRA	Warramunga Arr	18.85	223	P	P	16 16 33.2	-0.3
	0.1nm,0.3s,baz=50,slow=11,SNR=3.2						
ASAR	Alice Springs	21.83	217	P	P	16 17 04.9	-1.0
	0.3nm,0.5s,baz=52,slow=9.1,SNR=7.6						
FITZ	Fitzroy Crossi	24.66	240	P	P	16 17 34.0	-0.4
	2.7nm,0.6s,baz=44,slow=10,SNR=7.9						
TORD	Torodi Ar. Bea	146.09	284	PKPbc	PKPbc	16 31 54.4	-0.4
	0.2nm,0.4s,baz=90,slow=2.9,SNR=3.8						

*ISCJB **11** 16:39:58.0±0.9, 37°.56N±0°.04×141°.76E±0°.09, h52km±8km, mb3.6/10, Error ellipse: s-maj=12.6km s-min=5.9km az=15.2*

*NIED **11** 16:40:00, 37°.60N×141°.60E, h38km, Mw3.8 Best double couple: M0:5.02000×10^14 NP1:φs=330.00000°, δ14.00000°, λ39.00000°. NP2:φs=202.00000°, δ81.00000°, λ101.00000°.*

*JMA **11** 16:40:00.1±0.1, 37°.58N×141°.60E, h47km±2km, M3.9*

JMA Felt II J1.

*IDC **11** 16:40:01.3±2.3, 37°.59N×141°.79E, h67km±21km, mb3.5/10, mb1 3.5/15, mb1mx3.4/46, mbtmp3.7/15, MS2.7/1, Ms1 2.7/1, ms1mx2.4/31, Error ellipse: s-maj=21.4km s-min=14.0km az=107.0*

ISC 11 16:39:59.0±1.1, 37°.56N±0°.04×141°.78E±0°.08, h45km±10km, n32, σ1§51/37, mb3.6/10, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	0.75	255	P	Pn	16 40 12.7	-0.5
JFK				S	Sn	16 40 21.4	-2.1
JMM	Marumori	0.84	291	P	Pn	16 40 13.8	-0.6
JMM				S	Sn	16 40 23.2	-2.5
ONAJ	Iwakimizuishiy	0.91	240	P	Pn	16 40 15.0	-0.4
ONAJ				S	Sn	16 40 25.4	-2.0
JIO	Ouri	0.95	339	P	Pn	16 40 16.3	+0.3
JIO				S	Sn	16 40 27.6	-0.9
JFT	Otama	1.15	268	P	Pn	16 40 18.6	-0.1
JFT				*e*S	Sn	16 40 32.0	-1.2
JOU	Okura	1.19	313	P	Pn	16 40 18.9	-0.4
JOU				S	Sn	16 40 33.5	-0.8
JHO	Hitachi	1.36	226	P	Pn	16 40 21.1	-0.4
JHO				*e*S	Sn	16 40 36.9	-1.4
JMK	Ichinoseki	1.46	342	P	Pn	16 40 23.5	+0.7
JYS	Shirataka	1.51	296	P	Pn	16 40 23.6	0.0
JFY	Yanaizu	1.66	265	P	Pn	16 40 25.3	-0.3
MJAR	Matsushiro Arr	3.03	251	P	Pn	16 40 45.1	+0.6
	4.0nm,0.3s,baz=74,slow=7.7,SNR=35						
MJAR				S	Sn	16 41 23.8	+4.2
	3.2nm,0.3s,baz=80,slow=24,SNR=4.6						
MJAR				LR	LR	16 42 04.2	
	comp=Z,132nm,19.8s,baz=115,slow=41						
MAT	Matsushiro	3.04	252	P	Pn	16 40 45.4	+0.9
MAT				*e*S	Sn	16 41 22.7	+3.1
JHJ	Hachijo jima 2	4.72	201	P	Pn	16 41 08.4	+0.7
	9.2nm,0.3s,baz=31,slow=19,SNR=6.9						
JHJ				S	Sn	16 41 58.5	-2.7
	8.0nm,0.3s,baz=82,slow=19,SNR=3.3						
ASAJ	Asahikawa	6.58	5	P	Pn	16 41 33.5	+0.4
	0.4nm,0.3s,baz=205,slow=15,SNR=7.3						
ASAJ				S	Sn	16 42 45.4	-1.3
	0.4nm,0.3s,baz=108,slow=20,SNR=2.3						
USRK	Ussuriysk Ar.	9.94	315	P	Pn	16 42 21.3	+2.2
	0.2nm,0.3s,baz=134,slow=14,SNR=5.5						
KSRS	Korea Array	11.01	274	P	Pn	16 42 37.8	+3.9
	0.0nm,0.3s,baz=81,slow=14,SNR=5.2						
YAK	Yakutsk	25.62	347	P	P	16 45 23.0	-0.8
	4.3nm,0.6s,baz=222,slow=0.4,SNR=5.6						
H11N2	WAKE ISLAND Hy	28.17	122	T	T	17 16 03.4	
	baz=314,slow=76,SNR=12						
H11N1	WAKE ISLAND Hy	28.18	122	T	T	17 15 52.6	
	baz=314,slow=76,SNR=19						
H11N3	WAKE ISLAND Hy	28.19	122	T	T	17 16 06.2	
	baz=314,slow=76,SNR=14						
H11S1	WAKE ISLAND Hy	28.91	124	T	T	17 16 45.9	
	baz=317,slow=74						
H11S3	WAKE ISLAND Hy	28.91	124	T	T	17 17 17.5	
	baz=317						
H11S2	WAKE ISLAND Hy	28.92	124	T	T	17 17 11.0	
	baz=317,slow=74						
ZALV	Zalesovo Beam	41.78	312	P	P	16 47 43.0	-0.7
	0.8nm,0.7s,baz=69,slow=8.1,SNR=3.6						
MKAR	Makanchi Array	44.09	302	P	P	16 48 01.7	-0.8
	0.7nm,0.7s,baz=83,slow=10,SNR=6.6						
ILAR	Eielson Array	48.89	33	P	P	16 48 41.2	+1.3
	0.4nm,0.9s,baz=266,slow=6.9,SNR=5.5						
WRA	Warramunga Arr	57.62	188	P	P	16 49 44.3	-0.1
	1.3nm,0.9s,baz=5.2,slow=7.1,SNR=7.1						
WRA				pP	pP	16 49 59.3	+2.0
	0.8nm,0.6s,baz=5.8,slow=7.4,SNR=5.1						
ASAR	Alice Springs	61.35	188	P	P	16 50 10.2	0.0
	0.3nm,0.6s,baz=11,slow=10,SNR=3.7						
YKA	Yellowknife Ar	63.20	30	P	P	16 50 23.3	+1.2
	0.1nm,0.6s,baz=301,slow=6.4,SNR=3.9						
FINES	FINESS Array B	68.48	332	P	P	16 50 55.6	-0.4
	1.4nm,1.0s,baz=57,slow=10,SNR=3.4						
NOA	NORSAR Array B	73.81	337	P	P	16 51 28.0	-0.4
	0.6nm,0.7s,baz=40,slow=6.0,SNR=3.3						
AKASG	Malin Array Be	74.06	322	P	P	16 51 28.8	-1.1
	0.5nm,0.5s,baz=44,slow=6.1,SNR=4.1						

*BJI **11** 16:47:23.7, 37°.70N×1°.70W, h5km, mb5.2/62, mB5.3/39, Ms5.4/45, Ms7 4.9/44*

*IDC **11** 16:47:24.9±0.4, 37°.64N×1°.63W, h0km, mb4.7/31, mb1 4.8/38, mb1mx4.8/44, mbtmp4.7/38, ML4.8/6, MS4.5/40, Ms1 4.5/40, ms1mx4.4/49, Error ellipse: s-maj=11.5km s-min=10.6km az=133.0*

*MOS **11** 16:47:24.6±1.2, 37°.74N×1°.67W, h10km, mb5.3/93, MS4.6/47, Error ellipse: s-maj=5.4km s-min=2.4km az=61.0*

*CSEM **11** 16:47:25.3±0.1, 37°.71N×1°.65W, h2km, mb5.3/99, ML5.4/27, Mw5.1, Error ellipse: s-maj=2.3km s-min=1.6km az=165.0*

*SFS **11** 16:47:25.0, 37°.69N×1°.67W, h0km, ML5.1*

*NEIC **11** 16:47:25.7, 37°.70N×1°.67W, h1km, mb5.3/208, ME5.2, MW5.1, ML5.6(LDG), MW5.1(MDD), Moment Tensor Solution. s10 Moment tensor: Scale 10^16Nm; Mrr0.84; Mθθ-5.02; Mφφ4.18; Mrθ-0.47; Mrφ-0.42; Mθφ1.89; Best double couple: M0:5.10000×10^16 NP1:φs45.00000°, δ70.00000°, λ15.00000°. NP2:φs310.00000°, δ76.00000°, λ159.00000°. Principal axes: T 5.0700, Plg24.0000°, Azm266.0000°; N 0.0000, Plg65.0000°, Azm97.0000°; P -5.0700, Plg4.0000°, Azm358.0000°; Broadband fault plane solution: P waves. NP1:φs113.00000°, δ42.00000°, λ157.00000°. NP2:φs220.00000°, δ75.00000°, λ50.00000°. Principal axes: T Plg45.0000°, Azm90.0000°; N Plg0.0000°, Azm0.0000°; P Plg20.0000°, Azm339.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from BB mechanism.*

After MDD.

NEIC At least ten people killed and dozens injured in the Lorca area. Felt [VI] at Lorca, [V] at Alhama de Murcia and [IV] at Huercal-Overa, Mazarron, Murcia, Lumbreras and Totana. Felt in much of southeastern Spain and in the Madrid area.

*CRAAG **11** 16:47:25.0, 37°.68N×1°.68W, Mw5.1*

*INMG **11** 16:47:25.5±1.9, 37°.72N×1°.69W, h1km±2km, MD4.5, ML5.2, Error ellipse: s-maj=1.9km s-min=1.5km az=142.0*

*GCMT **11** 16:47:25.7±0.2, 37°.70N×1°.65W, h12km, MW5.1/110, Moment Tensor Solution. s42,c68; s110,c199; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr3.43±.11; Mθθ-6.19±.08; Mφφ2.76±.11; Mrθ1.71±.26; Mθφ-0.87±.08; Mφr-0.73±.32; Best double couple: M0:5.39300×10^16 NP1:φs111.00000°, δ61.00000°, λ126.00000°. NP2: φs234.00000°, δ45.00000°, λ43.00000°. Principal axes: T 4.2440, Plg57.0000°, Azm71.0000°; N 2.2990, Plg31.0000°, Azm271.0000°; P -6.5430, Plg9.0000°, Azm175.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

*ISCJB **11** 16:47:27.0±0.1, 37°.72N±0°.01×1°.63W±0°.01, h24km, mb5.1/271, MS4.6/68 Error ellipse: s-maj=1.7km s-min=1.1km az=164.9*

*MDD **11** 16:47:26.0±0.1, 37°.72N×1°.71W, h4km, mbLg5.4/47, Error ellipse: s-maj=1.5km s-min=1.4km az=164.0, PRXIMO*

MDD EMS: VII INTENSIDAD MAXIMA.

*IGIL **11** 16:47:26.4, 37°.70N×1°.68W, h0km, ML4.8*

*CNRM **11** 16:47:27.5, 37°.71N×1°.50W, h25km, MD4.6*

*STR **11** 16:47:27.0±0.5, 37°.77N×1°.67W, h5km, Ml5.3, Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*

*LDG **11** 16:47:28.2±0.1, 37°.58N×1°.72W, h25km, Ml5.6/47, ms4.8/5, Error ellipse: s-maj=4.4km s-min=2.3km az=109.0*

ISC 11 16:47:26.0±0.4, 37°.65N±0°.02×1°.69W±0°.02, h7km±2km, h6km: pP-P, n2026, σ1§73/2311, mb5.2/276, MS4.7/73, 90C-22D, Spain

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EXLO	Lorca	0.03	350	Pg	Pg	16 47 26.7	-0.7
	SNR=7.9						
EXLO				Lg	Lg	16 47 27.7	
	SNR=7.9						
EXLO	Lorca	0.03	350	Pg	Pg	16 47 26.7	-0.7
	SNR=7.9						
EXLO				Lg	Lg	16 47 27.7	
	SNR=7.9						
VELZ	Velez Rubio	0.24	254	⇓Pg	Pg	16 47 30.1	-0.7
	SNR=18						
VELZ				Lg	Lg	16 47 34.6	
	SNR=7.9						
VELZ	Velez Rubio	0.24	254	Pg	Pg	16 47 30.1	-0.7
	SNR=18						
VELZ				Lg	Lg	16 47 34.6	
	SNR=7.9						
EMUR	La Murta	0.41	62	⇑Pg	Pg	16 47 32.7	-1.2
	5μm,0.5s,SNR=18						
EMUR				Lg	Lg	16 47 39.3	
	76μm,0.3s,SNR=7.9						
EMUR	La Murta	0.41	62	Pg	Pg	16 47 32.7	-1.2
	5μm,0.5s,SNR=18						
EMUR				Lg	Lg	16 47 39.3	
	76μm,0.3s,SNR=7.9						
EXMU	Mula	0.42	22	Pg	Pg	16 47 32.7	-1.5
EXMU				Lg	Lg	16 47 39.4	
EXMU	Mula	0.42	22	Pg	Pg	16 47 32.7	-1.5
EXMU				Lg	Lg	16 47 39.4	
CART	Cartagena	0.55	96	Pg	Pg	16 47 36.0	-0.7
CART				Lg	Lg	16 47 43.3	
CART	Cartagena	0.55	96	Pg	Pg	16 47 36.0	-0.7
CART				*e*S	Sg	16 47 42.6	-1.3
CART				Lg	Lg	16 47 43.3	
EHUE	Huescar	0.73	283	⇑Pg	Pg	16 47 38.7	-1.4
	276nm,0.4s,SNR=18						
EHUE	Huescar	0.73	283	Pg	Pg	16 47 38.7	-1.4
	276nm,0.4s,SNR=18						
ENIJ	Nijar	0.79	211	⇓Pg	Pg	16 47 41.3	+0.1
	32μm,0.4s,SNR=18						
ENIJ				Lg	Lg	16 47 53.8	
	169μm,0.7s,SNR=7.9						
ENIJ	Nijar	0.79	211	Pg	Pg	16 47 41.3	+0.1
	32μm,0.4s,SNR=18						
ENIJ				Lg	Lg	16 47 53.8	
	169μm,0.7s,SNR=7.9						
SESP	Santiago Espad	0.82	305	⇑Pg	Pg	16 47 40.6	-1.2
	9μm,0.5s,SNR=18						
SESP				Lg	Lg	16 47 54.6	
	153μm,0.7s,SNR=7.9						
SESP	Santiago Espad	0.82	305	Pg	Pg	16 47 40.6	-1.2
	9μm,0.5s,SNR=18						
SESP				Lg	Lg	16 47 54.6	
	153μm,0.7s,SNR=7.9						
ETOB	Tobarra	1.00	7	⇓Pg	Pg	16 47 43.0	-2.2
	21μm,0.2s,SNR=18						
ETOB				Lg	Lg	16 47 58.0	
	99μm,0.5s,SNR=5.0						
ETOB	Tobarra	1.00	7	Pg	Pg	16 47 43.0	-2.2
	21μm,0.2s,SNR=18						
ETOB				Lg	Lg	16 47 58.0	
	99μm,0.5s,SNR=5.0						
GORA	Gorafe	1.08	261	Pg	Pg	16 47 46.0	-0.8
	13μm,0.7s,SNR=7.9						
GORA				Lg	Lg	16 48 03.7	
	223μm,1.0s,SNR=7.9						
GOR

35µm,0.8s,SNR=7.9
EGOR Sierra Gorda, 2.00 255 Pn Pb 16 48 01.7 -1.1
3µm,0.6s,SNR=18
EGOR Sn **Sn 16 48 25.2 -0.5**
4µm,0.5s,SNR=7.9
EGOR Lg Lg 16 48 31.5
35µm,0.8s,SNR=7.9
EALB Alboran 2.02 213 Pn Pn 16 47 59.2 -1.2
132nm,0.3s,SNR=50
EALB Pg **Pb 16 48 02.0 -1.0**
2µm,0.5s,SNR=7.9
EALB Sn **Sn 16 48 24.2 -1.7**
3µm,0.5s,SNR=6.1
EALB Alboran 2.02 213 Pn Pn 16 47 59.2 -1.2
132nm,0.3s,SNR=50
USTO Oran 2.12 154 P Pn 16 48 02.0 +0.1
EADA Adamuz 2.34 284 Pn Pn 16 48 04.0 -0.9
2µm,0.7s,SNR=889
EADA Sn **Sn 16 48 32.0 -2.0**
2µm,0.4s,SNR=6.0
EADA Lg Lg 16 48 40.1
71µm,0.9s,SNR=6.6
EADA Adamuz 2.34 284 Pn Pn 16 48 04.0 -0.9
2µm,0.7s,SNR=889
EADA Sn **Sn 16 48 32.0 -2.0**
2µm,0.4s,SNR=6.0
EADA Lg Lg 16 48 40.1
71µm,0.9s,SNR=6.6
EMAL Malaga-Limoner 2.36 249 *e*P **Pn 16 48 06.8 +1.7**
OLHC Oulhaca 2.41 175 P Pb 16 48 08.5 -1.1
OLHC Oulhaca 2.41 175 P Pb 16 48 08.5 -1.1
OKGL Djebel Kef Gue 2.47 130 P Pn 16 48 08.6 +1.9
OKGL Djebel Kef Gue 2.47 130 Pn Pn 16 48 05.7 -1.0
390nm,0.2s,SNR=7.9
OKGL Sn **Sn 16 48 35.5 -1.7**
15µm,0.5s,SNR=7.9
OKGL Djebel Kef Gue 2.47 130 Pn Pn 16 48 05.7 -1.0
390nm,0.2s,SNR=7.9
OKGL Djebel Kef Gue 2.47 130 P Pn 16 48 08.6 +1.9
OTSS Djebel Tessala 2.47 163 P Pn 16 48 06.0 -0.8
OTSS Djebel Tessala 2.47 163 P Pn 16 48 06.0 -0.8
MELI Melilla 2.56 203 *i* P **Pn 16 48 06.7 -1.1**
ODJA Bouhanifia 2.63 151 P Pn 16 48 08.6 -0.3
ODJA Bouhanifia 2.63 151 P Pn 16 48 08.6 -0.3
OJBR Djebel Berber 2.63 141 P Pn 16 48 06.5 -2.5
OJBR Djebel Berber 2.63 141 P Pn 16 48 06.5 -2.5
ES19 SONSECA Array 2.68 321 *e*Pn **Pn 16 48 08.0 -1.6**
ES19 SONSECA Array 2.68 321 *e*Pn **Pn 16 48 08.0 -1.6**
EMIJ Mijas 2.69 247 Pn Pn 16 48 08.6 -1.2
195nm,0.4s,SNR=85
EMIJ Sn **Sn 16 48 41.7 -0.9**
2µm,0.5s,SNR=4.5
EMIJ Lg Lg 16 48 53.9
13µm,0.8s,SNR=5.0
EMIJ Mijas 2.69 247 Pn Pn 16 48 08.6 -1.2
195nm,0.4s,SNR=85
EMIJ Sn **Sn 16 48 41.7 -0.9**
2µm,0.5s,SNR=4.5
EMIJ Lg Lg 16 48 53.9
13µm,0.8s,SNR=5.0
ESDC Sonseca Array 2.69 319 Pn Pn 16 48 07.9 -1.9
224nm,0.3s,baz=134,slow=14,SNR=1010
ESDC Pg **Pb 16 48 15.6 +1.1**
1µm,0.3s,baz=132,slow=16,SNR=151
ESDC Sn **Sn 16 48 39.8 -2.9**
1µm,0.3s,baz=128,slow=21,SNR=11
ESDC LR LR 16 48 45.0
comp=Z,2µm,20.8s,baz=135,slow=29
ESDC Lg Lg 16 48 49.6
4µm,0.3s,baz=136,slow=28,SNR=17
ESDC Sonseca Array 2.69 319 Pn Pn 16 48 08.0 -1.8
610nm,0.4s,baz=128,slow=13,SNR=861
ESDC Pg **Pb 16 48 15.3 +0.7**
2µm,0.4s,baz=132,slow=16,SNR=7.9
ESDC Sn **Sn 16 48 40.2 -2.5**
3µm,0.4s,baz=131,slow=22,SNR=7.9
ESDC Lg Lg 16 48 50.2
8µm,0.6s,baz=137,slow=28,SNR=7.9
ESDC Sonseca Array 2.69 319 Pn Pn 16 48 08.0 -1.8
610nm,0.4s,SNR=861
ESDC Sonseca Array 2.69 319 Pg Pb 16 48 15.6 +1.1
ESDC Sn **Sn 16 48 40.2 -2.5**
3µm,0.4s,SNR=7.9
ESDC Lg Lg 16 48 50.2
8µm,0.6s,SNR=7.9
ESLA Sonseca Array 2.69 319 *e*Pn **Pn 16 48 08.4 -1.4**
ESLA Sonseca Array 2.69 319 *e*Pn **Pn 16 48 08.4 -1.4**
EIBI Ibiza 2.76 59 Pn Pn 16 48 08.2 -2.4
486nm,0.1s,SNR=771
EIBI Pg **Pb 16 48 14.9 -0.7**
999nm,0.5s,SNR=7.9
EIBI Sn **Sn 16 48 41.0 -3.2**
1µm,0.3s,SNR=5.0
EIBI Ibiza 2.76 59 Pn Pn 16 48 08.2 -2.4
486nm,0.1s,SNR=771
EANR 'Ain N'Sour 2.81 126 P Pn 16 48 10.4 -1.1
EANR 'Ain N'Sour 2.81 126 P Pn 16 48 10.4 -1.1
PAB San Pablo 2.81 313 *e*P **Pn 16 48 10.1 -1.4**
PAB San Pablo 2.81 313 *e*P **Pn 16 48 10.1 -1.4**
PAB San Pablo 2.81 313 *e*Pn **Pn 16 48 10.1 -1.4**
EMOS Mosqueruela 2.87 19 Pn Pn 16 48 10.6 -1.8
139nm,0.5s,SNR=103
EMOS Pg **Pg 16 48 19.2 -1.8**
1µm,0.6s,SNR=7.9
EMOS Sn **Sn 16 48 44.3 -3.1**
953nm,0.6s,SNR=6.3
EMOS Lg Lg 16 48 54.9
35µm,1.6s,SNR=5.0
EMOS Mosqueruela 2.87 19 Pn Pn 16 48 10.6 -1.8
139nm,0.5s,SNR=103
ECHA Ech Chlef 2.87 120 P Pn 16 48 11.4 -0.8
ECHA Ech Chlef 2.87 120 P Pn 16 48 11.4 -0.8
OJGS Djebel Guires 2.91 137 P Pn 16 48 08.5 -4.3
OJGS Djebel Guires 2.91 137 P Pn 16 48 08.5 -4.3
EBNR Beni Rached 2.92 117 P Pn 16 48 13.3 +0.4
EBNR Beni Rached 2.92 117 P Pn 16 48 13.3 +0.4
ECAB El Cabril 2.98 279 Pn Pn 16 48 12.6 -1.1
810nm,0.3s,SNR=936
ECAB Pg **Pg 16 48 21.3 -1.8**
3µm,0.6s,SNR=7.9
ECAB Sn **Sn 16 48 48.2 -1.6**
4µm,0.5s,SNR=13
ECAB Lg Lg 16 49 00.4
25µm,1.0s,SNR=11
ECAB El Cabril 2.98 279 Pn Pn 16 48 12.6 -1.1
810nm,0.3s,SNR=936
REAL Reales 3.04 249 *i* P **Pn 16 48 15.0 +0.3**
EJIF Jimena Fronter 3.25 250 Pn Pn 16 48 17.7 +0.3
32nm,0.4s,SNR=7.9
EJIF Jimena Fronter 3.25 250 Pn Pn 16 48 17.7 +0.3
32nm,0.4s,SNR=7.9
ETRT Tiaret 3.30 132 P Pn 16 48 17.8 -0.4
ETRT Tiaret 3.30 132 P Pn 16 48 17.8 -0.4
ALJ Aljibe 3.35 252 *e*P **Pn 16 48 21.0 +2.1**
ESPR Espera 3.41 258 ⇓Pn **Pn 16 48 20.9 +1.3**
104nm,0.5s,SNR=18
ESPR Pg **Pg 16 48 31.0 -0.3**
8µm,1.6s,SNR=7.9
ESPR Lg Lg 16 49 15.5
15µm,1.1s,SNR=4.1
ESPR Espera 3.41 258 Pn Pn 16 48 20.9 +1.3
104nm,0.5s,SNR=18
ECEU Ceuta 3.44 241 ⇑Pn **Pn 16 48 20.1 +0.1**
145nm,0.6s,SNR=18
ECEU Sn **Sn 16 49 00.2 -0.7**
258nm,0.6s,SNR=4.8
ECEU Ceuta 3.44 241 Pn Pn 16 48 20.1 +0.1
145nm,0.6s,SNR=18
ECEU Sn **Sn 16 49 00.2 -0.7**
258nm,0.6s,SNR=4.8
MOMI Momias 3.48 249 *e*P **Pn 16 48 23.0 +2.4**
GIBL Gibalbin 3.51 258 *e*P **Pn 16 48 22.5 +1.5**
GUD Guadarrama 3.55 328 ⇓Pn **Pn 16 48 20.1 -1.6**
294nm,0.4s,SNR=18
GUD Pg **Pg 16 48 31.2 -2.8**
1µm,0.5s,SNR=7.9
GUD Sn **Sn 16 49 00.5 -3.5**
1µm,0.4s,SNR=7.9
GUD Lg Lg 16 49 17.3
18µm,1.1s,SNR=9.6
GUD Guadarrama 3.55 328 Pn Pn 16 48 20.1 -1.6
294nm,0.4s,SNR=18
EBR Ebro Roquetas 3.59 28 Pn Pn 16 48 21.8 -0.3
967nm,0.6s,SNR=7.9
EBR Pg **Pb 16 48 30.5 +0.7**
2µm,0.7s,SNR=7.9

EBR Lg Lg 16 49 18.8
7µm,1.3s,SNR=7.9
EBR Ebro Roquetas 3.59 28 Pn Pn 16 48 21.8 -0.3
967nm,0.6s,SNR=7.9
DKH Dar Kharkhour 3.66 235 *i* P **Pn 16 48 24.0 +0.9**
DKH *i* S **Sn 16 49 05.0 -1.6**
ERTA Horta de San J 3.66 25 ⇓Pn **Pn 16 48 21.5 -1.6**
280nm,0.3s,SNR=18
ERTA Pg **Pb 16 48 30.8 -0.2**
488nm,0.6s,SNR=7.9
ERTA Sn **Sn 16 49 03.8 -2.7**
676nm,0.4s,SNR=6.3
ERTA Lg Lg 16 49 20.0
14µm,1.6s,SNR=5.7
ERTA Horta de San J 3.66 25 Pn Pn 16 48 21.5 -1.6
280nm,0.3s,SNR=18
ERTA Sn **Sn 16 49 03.8 -2.7**
676nm,0.4s,SNR=6.3
ERTA Lg Lg 16 49 20.0
14µm,1.6s,SNR=5.7
CNIL Conil 3.72 251 *e*P **Pn 16 48 27.0 +3.2**
SFS San Fernando 3.80 253 *e*P **Pn 16 48 27.5 +2.6**
ABA Alger-Bouzarea 3.87 101 P Pn 16 48 24.2 -1.7
ABA Alger-Bouzarea 3.87 101 P Pn 16 48 24.2 -1.7
EMIN Mina Concepcio 3.95 273 Pn Pn 16 48 25.8 -1.2
363nm,0.5s,SNR=230
EMIN Pg **Pb 16 48 36.1 +0.2**
2µm,1.0s,SNR=7.9
EMIN Sn **Sn 16 49 10.9 -2.7**
879nm,0.4s,SNR=6.7
EMIN Lg Lg 16 49 32.4
27µm,1.7s,SNR=5.0
EMIN Mina Concepcio 3.95 273 Pn Pn 16 48 25.8 -1.2
363nm,0.5s,SNR=230
EMIN Sn **Sn 16 49 10.9 -2.7**
879nm,0.4s,SNR=6.7
EMIN Lg Lg 16 49 32.4
27µm,1.7s,SNR=5.0
EMHD Djebel Mahouad 3.99 110 P Pn 16 48 27.1 -0.7
EMHD Djebel Mahouad 3.99 110 P Pn 16 48 27.1 -0.7
ETOS Mallorca 4.11 58 ⇑Pn **Pn 16 48 27.4 -1.9**
708nm,0.5s,SNR=18
ETOS Sn **Sn 16 49 14.2 -3.5**
183nm,0.3s,SNR=5.0
ETOS Lg Lg 16 49 39.2
5µm,2.3s,SNR=7.9
ETOS Mallorca 4.11 58 Pn Pn 16 48 27.4 -1.9
708nm,0.5s,SNR=18
ETOS Sn **Sn 16 49 14.2 -3.5**
183nm,0.3s,SNR=5.0
ETOS Lg Lg 16 49 39.2
5µm,2.3s,SNR=7.9
ESAC San Caprasio 4.18 13 Pn Pn 16 48 29.6 -0.6
328nm,0.2s,SNR=137
ESAC Pg **Pb 16 48 41.5 +1.7**
SNR=7.9
ESAC Sn **Sn 16 49 14.3 -5.0**
3µm,0.4s,SNR=4.0
ESAC Lg Lg 16 49 37.1
21µm,0.5s,SNR=5.0
ESAC San Caprasio 4.18 13 Pn Pn 16 48 29.6 -0.6
328nm,0.2s,SNR=137
EPLA Plasencia 4.19 307 Pn Pn 16 48 29.0 -1.3
196nm,0.3s,SNR=298
EPLA Pg **Pg 16 48 44.5 -1.7**
2µm,0.7s,SNR=7.9
EPLA Sn **Sn 16 49 16.6 -2.9**
732nm,0.4s,SNR=7.0
EPLA Lg Lg 16 49 39.0
26µm,1.4s,SNR=5.0
EPLA Plasencia 4.19 307 Pn Pn 16 48 29.0 -1.3
196nm,0.3s,SNR=298
PBAR Barrancos 4.26 279⇑ *e*Pn **Pn 16 48 30.2 -1.1**
PBAR *e*Sn **Sn 16 49 19.5 -1.8**
PBAR *e*Sg **Sg 16 49 41.4 -1.4**
PBAR A A 16 49 48.5
6µm,0.6s
PBAR Barrancos 4.26 279⇑ *e*Pn **Pn 16 48 30.2 -1.1**
PBAR *e*Sn **Sn 16 49 19.5 -1.8**
PBAR *e*Sg **Sg 16 49 41.4 -1.4**
6µm,0.6s
EPOB Poblet 4.28 29 ⇑Pn **Pn 16 48 29.7 -1.9**
74nm,0.4s,SNR=18
EPOB Sn **Sn 16 49 17.6 -4.1**
232nm,0.5s,SNR=6.8
EPOB Lg Lg 16 49 40.6
3µm,1.4s,SNR=5.0
EPOB Poblet 4.28 29 Pn Pn 16 48 29.7 -1.9
74nm,0.4s,SNR=18
EPOB Sn **Sn 16 49 17.6 -4.1**
232nm,0.5s,SNR=6.8
EPOB Lg Lg 16 49 40.6
3µm,1.4s,SNR=5.0
EBAD Badajoz 4.33 286 Pn Pn 16 48 30.8 -1.5
143nm,0.3s,SNR=319
EBAD Pg **Pg 16 48 45.9 -3.1**
719nm,0.6s,SNR=7.9
EBAD Sn **Sn 16 49 20.8 -2.3**
445nm,0.2s,SNR=9.0
EBAD Lg Lg 16 49 43.3
9µm,1.1s,SNR=5.0
EBAD Badajoz 4.33 286 Pn Pn 16 48 30.8 -1.5
143nm,0.3s,SNR=319
EGRO El Granado 4.60 270 Pn Pn 16 48 34.7 -1.2
273nm,0.3s,SNR=192
EGRO Sn **Sn 16 49 28.5 -1.1**
458nm,0.3s,SNR=5.2
EGRO Lg Lg 16 49 51.1
19µm,2.0s,SNR=7.9
EGRO El Granado 4.60 270 Pn Pn 16 48 34.7 -1.2
273nm,0.3s,SNR=192
EGRO Sn **Sn 16 49 28.5 -1.1**
458nm,0.3s,SNR=5.2
EGRO Lg Lg 16 49 51.1
19µm,2.0s,SNR=7.9
AKET Djebel Ketaf 4.75 108 P Pn 16 48 38.3 +0.1
AKET Djebel Ketaf 4.75 108 P Pn 16 48 38.3 +0.1
PVAQ Vaqueiros 4.79 269 *e*Pn **Pn 16 48 37.6 -1.0**
PVAQ *e*Sn **Sn 16 49 32.2 -2.3**
PVAQ *e*Sg **Sg 16 49 58.0 -1.9**
PVAQ A A 16 50 10.0
2µm,0.7s
PVAQ Vaqueiros 4.79 269 *e*Pn **Pn 16 48 37.6 -1.0**
PVAQ *e*Sn **Sn 16 49 32.2 -2.3**
PVAQ *e*Sg **Sg 16 49 58.0 -1.9**
2µm,0.7s
PESTR Estremoz 4.80 286 *e*Pn **Pn 16 48 37.5 -1.2**
PESTR *e*Sn **Sn 16 49 32.3 -2.3**
PESTR *e*Sg **Sg 16 49 57.5 -2.5**
PESTR A A 16 50 05.5
5µm,0.7s
PESTR Estremoz 4.80 286 *e*Pn **Pn 16 48 37.5 -1.2**
PESTR *e*Sn **Sn 16 49 32.3 -2.3**
PESTR *e*Sg **Sg 16 49 57.5 -2.5**
5µm,0.7s
PMRV Marv??o 4.81 293 *e*Pn **Pn 16 48 37.5 -1.3**
PMRV Marv??o 4.81 293 *e*Pg **Pg 16 48 55.6 -2.5**
PMRV *e*Sn **Sn 16 49 31.5 -3.3**
PMRV *e*Sg **Sg 16 49 55.9 -4.5**
PMRV A A 16 50 06.8
4µm,0.6s
PMRV Marv??o 4.81 293 *e*Pn **Pn 16 48 37.5 -1.3**
PMRV Marv??o 4.81 293 *e*Pg **Pg 16 48 55.6 -2.5**
PMRV *e*Sn **Sn 16 49 31.5 -3.3**
PMRV *e*Sg **Sg 16 49 55.9 -4.5**
4µm,0.6s
PBEJ Beja 4.90 276 *e*Pn **Pn 16 48 39.5 -0.6**
PBEJ *e*Sn **Sn 16 49 34.8 -2.3**
PBEJ *e*Sg **Sg 16 50 01.2 -2.1**
PBEJ A A 16 50 17.1
2µm,0.8s
PBDV Barranco-do-Ve 4.98 267 *e*Pn **Pn 16 48 40.2 -1.0**
PBDV *e*Sn **Sn 16 49 36.4 -2.7**
PBDV *e*Sg **Sg 16 50 02.1 -3.8**
PBDV A A 16 50 15.6
2µm,0.7s
PBDV Barranco-do-Ve 4.98 267 *e*Pn **Pn 16 48 40.2 -1.0**
PBDV *e*Sn **Sn 16 49 36.4 -2.7**
PBDV *e*Sg **Sg 16 50 02.1 -3.8**
2µm,0.7s
PCBR Castelo Branco 5.02 298 *e*Pn **Pn 16 48 40.7 -1.1**
PCBR *e*Sn **Sn 16 49 37.3 -2.8**
PCBR *e*Sg **Sg 16 50 05.2 -2.1**
4µm,0.6s
PCBR Castelo Branco 5.02 298 *e*Pn **Pn 16 48 40.7 -1.1**
PCBR *e*Sn **Sn 16 49 37.3 -2.8**
PCBR *e*Sg **Sg 16 50 05.2 -2.1**
4µm,0.6s
PCVE Castro Verde 5.04 272⇑ *e*Pn **Pn 16 48 41.1 -0.9**
PCVE *e*Sn **Sn 16 49 38.6 -1.8**
PCVE *e*Sg **Sg 16 50 04.5 -3.2**
PCVE A A 16 50 13.8
3µm,0.6s
PCVE Castro Verde 5.04 272⇑ *e*Pn **Pn 16 48 41.1 -0.9**
PCVE *e*Sn **Sn 16 49 38.6 -1.8**
PCVE *e*Sg **Sg 16 50 04.5 -3.2**
3µm,0.6s
EVO Evora 5.06 282 *e*Pn **Pn 16 48 41.8 -0.5**
EVO *e*Sn **Sn 16 49 39.0 -2.1**
EVO *e*Sg **Sg 16 50 06.8 -1.7**
EVO A A 16 50 26.9
2µm,0.7s
EVO Evora 5.06 282 *e*Pn **Pn 16 48 41.8 -0.5**
EVO *e*Sn **Sn 16 49 39.0 -2.1**
EVO *e*Sg **Sg 16 50 06.8 -1.7**
2µm,0.7s
ATAF Djebel Tarf 5.11 108 P Pn 16 48 43.2 +0.1
ATAF Djebel Tarf 5.11 108 P Pn 16 48 43.2 +0.1
EARA Aranguren 5.12 1 Pn Pn 16 48 43.1 0.0
201nm,0.4s,SNR=83
EARA Sn **Sn 16 49 36.3 -6.2**
482nm,0.4s,SNR=7.9
EARA Lg Lg 16 50 07.9
8µm,1.7s,SNR=7.9
EARA Aranguren 5.12 1 Pn Pn 16 48 43.1 0.0
201nm,0.4s,SNR=83
EARA Lg Lg 16 50 07.9
8µm,1.7s,SNR=7.9
MIF Mishlifen 5.12 215 *e*P **Pn 16 48 44.0 +0.7**
MIF *i* S **Sn 16 49 40.0 -2.8**
IPRE Itoiz 5.16 3 Pn Pn 16 48 43.6 -0.1
81nm,0.5s,SNR=68
IPRE Lg Lg 16 50 07.9
4µm,1.2s,SNR=7.9
IPRE Itoiz 5.16 3 Pn Pn 16 48 43.6 -0.1
81nm,0.5s,SNR=68
IPRE Lg Lg 16 50 07.9
4µm,1.2s,SNR=7.9
MAHO Mahon 5.17 62 *i* P **Pn 16 48 42.1 -1.7**
MAHO *e*S **Sn 16 49 39.0 -4.7**
MESJ Messejana 5.18 274 *e*P **Pn 16 48 42.9 -1.0**
MESJ *e*S **Sn 16 49 39.1 -4.8**
MESJ AML AML 16 49 48.1
comp=E,366nm,0.8s
MESJ Messejana 5.18 274 *e*Pn **Pn 16 48 42.9 -1.0**
MESJ *e*Sn **Sn 16 49 41.5 -2.4**
MESJ *e*Sg **Sg 16 50 10.5 -1.7**
MESJ A A 16 50 23.0
comp=E,2µm,0.6s
MESJ Messejana 5.18 274 *e*P **Pn 16 48 42.8 -1.0**
MESJ *e*S **Sn 16 49 39.0 -4.8**
MESJ Messejana 5.18 274 *e*S **Sn 16 49 39.0 -4.8**
MESJ *e*Sn **Sn 16 49 41.5 -2.4**
MESJ *e*Sg **Sg 16 50 10.5 -1.7**
comp=E,2µm,0.6s
CFON Fontmartina 5.20 36 Pn Pn 16 48 42.6 -1.6
comp=E,40nm,0.3s,SNR=74
CFON Sn **Sn 16 49 39.0 -5.5**
comp=E,153nm,0.3s,SNR=7.9
CFON Lg Lg 16 50 06.4
comp=E,714nm,0.9s,SNR=4.0
CFON Fontmartina 5.20 36 Pn Pn 16 48 42.6 -1.6
comp=E,40nm,0.3s,SNR=74
CFON Lg Lg 16 50 06.4
comp=E,714nm,0.9s,SNR=4.0
IELO Elcoad 5.20 4 Pn Pn 16 48 43.7 -0.6
comp=E,101nm,0.3s,SNR=7.9
IELO Pg **Pb 16 48 59.3 +2.0**
comp=E,698nm,0.7s,SNR=7.9
IELO Sn **Sn 16 49 39.8 -4.7**
comp=E,685nm,0.7s,SNR=7.9
IELO Lg Lg 16 50 12.5
comp=E,4µm,1.2s,SNR=7.9
IELO Elcoad 5.20 4 Pn Pn 16 48 43.7 -0.6
comp=E,101nm,0.3s,SNR=7.9
IELO Sn **Sn 16 49 39.8 -4.7**
comp=E,685nm,0.7s,SNR=7.9
IELO Lg Lg 16 50 12.5
comp=E,4µm,1.2s,SNR=7.9
ECHI Chisagues Biel 5.21 16 Pn Pn 16 48 44.3 -0.3
comp=E,23nm,0.1s,SNR=59
ECHI Sn **Sn 16 49 39.0 -6.0**
comp=E,151nm,0.4s,SNR=7.9
ECHI Lg Lg 16 50 13.2
comp=E,11µm,2.2s,SNR=7.9
ECHI Chisagues Biel 5.21 16 Pn Pn 16 48 44.3 -0.3
comp=E,23nm,0.1s,SNR=59
ECHI Lg Lg 16 50 13.2
comp=E,11µm,2.2s,SNR=7.9
ETSF Etsaut 5.32 9 *e*Pn **Pn 16 48 45.2 -0.7**
ETSF Etsaut 5.32 9 *e*Pg **Pg 16 49 07.8 0.0**
ETSF *e*Sg **Sg 16 50 16.7 +0.1**
comp=E,14µm,1.7s
ETSF Etsaut 5.32 9 *e*P **Pn 16 48 45.2 -0.7**
ETSF Etsaut 5.32 9 *e*Pn **Pn 16 48 45.2 -0.7**
ETSF Etsaut 5.32 9 *e*Pn **Pn 16 48 45.2 -0.7**
ETSF *e*Pg **Pg 16 49 07.8 0.0**
ETSF *e*Sg **Sg 16 50 16.7 +0.1**
MTE Manteigas 5.32 303 *e*Pn **Pn 16 48 44.8 -1.1**
MTE *e*Sn **Sn 16 49 45.7 -1.8**
MTE *e*Sg **Sg 16 50 13.9 -2.9**
MTE A A 16 50 26.2
comp=E,3µm,0.6s
MTE Manteigas 5.32 303 *e*Pn **Pn 16 48 44.6 -1.3**
MTE *e*Sn **Sn 16 49 45.7 -1.8**
MTE *e*Sg **Sg 16 50 13.9 -2.9**
comp=E,3µm,0.6s
MTE Manteigas 5.32 303 *e*Pn **Pn 16 48 44.6 -1.3**
PMTG Montargil 5.33 287 *e*Pn **Pn 16 48 43.9 -2.0**
PMTG *e*Sn **Sn 16 49 45.1 -2.4**
PMTG *e*Sg **Sg 16 50 14.8 -2.2**
PMTG A A 16 50 23.7
comp=E,4µm,0.6s
PMTG Montargil 5.33 287 *e*Pn **Pn 16 48 43.9 -2.0**
PMTG *e*Sn **Sn 16 49 45.1 -2.4**
PMTG *e*Sg **Sg 16 50 14.8 -2.2**
comp=E,4µm,0.6s
CZD Col de Zad 5.36 212 *i* P **Pn 16 48 48.0 +1.3**
CZD *i* S **Sn 16 49 46.0 -2.8**
MDT Midelt 5.38 207 Pn Pn 16 48 47.5 +0.7
comp=E,19nm,0.3s,baz=48,slow=15,SNR=336
MDT Sn **Sn 16 49 46.8 -2.3**
comp=E,11nm,0.3s,baz=323,slow=20,SNR=4.4
MDT LR LR 16 50 58.6
comp=E,12µm,18.9s,baz=39,slow=40
VIEF Viey 5.39 14 P Pn 16 48 45.9 -1.0
VIEF S **Sn 16 49 52.0 +2.7**
VIEF Viey 5.39 14 P Pn 16 48 45.9 -1.0
MVO Moncorvo 5.42 312 *e*Pn **Pn 16 48 45.8 -1.5**
MVO *e*Sn **Sn 16 49 46.9 -3.1**
MVO *e*Sg **Sg 16 50 16.3 -3.7**
MVO A A 16 50 27.1
comp=E,4µm,0.7s
MVO Moncorvo 5.42 312 Pn Pn 16 48 46.6 -0.7
comp=E,182nm,0.3s,SNR=141
MVO Pg **Pb 16 49 05.0 +4.0**
comp=E,313nm,0.6s,SNR=7.9
MVO Sn **Sn 16 49 45.4 -4.6**
comp=E,1µm,0.6s,SNR=7.9
MVO Lg Lg 16 50 16.2
comp=E,40µm,1.5s,SNR=7.9
MVO Moncorvo 5.42 312 Pn Pn 16 48 46.6 -0.7
comp=E,182nm,0.3s,SNR=141
MVO Moncorvo 5.42 312 Pg Pb 16 49 05.0 +4.0
comp=E,313nm,0.6s,SNR=7.9
MVO Sn **Sn 16 49 45.4 -4.6**
comp=E,1µm,0.6s,SNR=7.9
MVO Lg Lg 16 50 16.2
comp=E,40µm,1.5s,SNR=7.9
MVO *e*Sg **Sg 16 50 16.3 -3.7**
comp=E,4µm,0.7s
PNCL Nicolau / Gran 5.43 277 *e*Pn **Pn 16 48 46.8 -0.5**
PNCL *e*Sn **Sn 16 49 46.9 -3.1**
PNCL *e*Sg **Sg 16 50 18.6 -1.6**
SJPF Ste Jean 5.47 4 *e*Pn **Pn 16 48 47.4 -0.5**
SJPF Ste Jean 5.47 4 *e*Pg **Pg 16 49 09.7 -1.0**
SJPF *e*Sg **Sg 16 50 21.5 -0.1**
comp=E,12µm,1.5s
SJPF Ste Jean 5.47 4 *e*P **Pn 16 48 47.4 -0.5**
SJPF Ste Jean 5.47 4 *e*Pn **Pn 16 48 47.4 -0.5**

SJPF Ste Jean 5.47 4 *e*Pg **Pg 16 49 09.7 -1.0**
SJPF *e*Sg **Sg 16 50 21.5 -0.1**
comp=E,6µm,1.5s
SJPF Ste Jean 5.47 4 *e*Pn **Pn 16 48 47.4 -0.5**
SJPF *e*Pg **Pg 16 49 09.7 -1.0**
SJPF *e*Sg **Sg 16 50 21.5 -0.1**
ATE Arette 5.48 8 P **Pn 16 48 47.4 -0.7**
ATE S **Sn 16 49 53.8 +2.3**
ATE Arette 5.48 8 Pn **Pn 16 48 47.3 -0.8**
comp=E,81nm,0.3s,SNR=7.9
ATE Pg **Pb 16 49 05.5 +3.5**
comp=E,834nm,1.1s,SNR=7.9
ATE Sn **Sn 16 49 46.3 -5.2**
comp=E,250nm,0.5s,SNR=7.9
ATE Lg Lg 16 50 19.5
comp=E,11µm,2.3s,SNR=7.9
ATE Arette 5.48 8 Pn **Pn 16 48 47.3 -0.8**
comp=E,81nm,0.3s,SNR=7.9
ATE Lg Lg 16 50 19.5
comp=E,11µm,2.3s,SNR=7.9
VALF Valcebollere 5.54 30 P **Pn 16 48 47.8 -1.2**
VALF S **Sn 16 49 55.7 +2.7**
MORF Marmelete 5.54 269 *e*P **Pn 16 48 47.6 -1.4**
MORF *e*S **Sn 16 49 47.3 -5.7**
MORF AML AML 16 49 54.3
comp=N,2µm,0.7s
MORF Marmelete 5.54 269 *e*Pn **Pn 16 48 47.9 -1.1**
MORF *e*Sn **Sn 16 49 50.8 -2.2**
MORF *e*Sg **Sg 16 50 21.9 -2.1**
MORF A A 16 50 27.3
comp=N,810nm,0.7s
MORF Marmelete 5.54 269 *e*P **Pn 16 48 47.6 -1.4**
MORF *e*S **Sn 16 49 47.3 -5.7**
SALF Salau 5.56 22 P **Pn 16 48 48.1 -1.1**
RTC Rabat Centre 5.56 230 *e*P **Pn 16 48 50.0 +0.8**
RTC *i* S **Sn 16 49 52.0 -1.4**
EALK Alkurruntz 5.57 1 Pn **Pn 16 48 49.3 0.0**
comp=N,712nm,0.5s,SNR=345
EALK Sn **Sn 16 49 50.8 -2.8**
comp=N,894nm,0.4s,SNR=7.9
EALK Lg Lg 16 50 21.5
comp=N,7µm,1.2s,SNR=7.9
EALK Alkurruntz 5.57 1 Pn **Pn 16 48 49.3 0.0**
comp=N,712nm,0.5s,SNR=345
EALK Sn **Sn 16 49 50.8 -2.8**
comp=N,894nm,0.4s,SNR=7.9
EALK Lg Lg 16 50 21.5
comp=N,7µm,1.2s,SNR=7.9
CLLI Llivia 5.58 29 Pn **Pn 16 48 49.1 -0.5**
comp=N,60nm,0.3s,SNR=132
CLLI Sn **Sn 16 49 54.1 0.0**
comp=N,79nm,0.6s,SNR=7.9
CLLI Lg Lg 16 50 20.6
comp=N,9µm,2.5s,SNR=7.9
CLLI Llivia 5.58 29 Pn **Pn 16 48 49.1 -0.5**
comp=N,60nm,0.3s,SNR=132
CLLI Sn **Sn 16 49 54.1 0.0**
comp=N,79nm,0.6s,SNR=7.9
CLLI Lg Lg 16 50 20.6
comp=N,9µm,2.5s,SNR=7.9
PTEO Sao Teotonio 5.58 271 *e*Pn **Pn 16 48 48.7 -0.8**
PTEO *e*Sn **Sn 16 49 51.7 -2.2**
PTEO *e*Sg **Sg 16 50 24.0 -1.3**
PTEO A A 16 50 31.1
comp=N,4µm,0.7s
EPF Esparros 5.59 15 *e*Pn **Pn 16 48 48.9 -0.8**
EPF Esparros 5.59 15 *e*Pg **Pg 16 49 12.8 -0.3**
EPF *e*Sg **Sg 16 50 25.2 -0.4**
comp=N,4µm,1.1s
EPF Esparros 5.59 15 *e*P **Pn 16 48 48.9 -0.8**
EPF Esparros 5.59 15 *e*Pn **Pn 16 48 48.9 -0.8**
EPF *e*Pg **Pg 16 49 12.8 -0.3**
EPF *e*Sg **Sg 16 50 25.2 -0.4**
OSSF Osses 5.61 3 P **Pn 16 48 49.7 -0.1**
ALMR Almeirim 5.61 288 *e*P **Pn 16 48 49.1 -0.8**
ALMR *e*S **Sn 16 49 49.2 -5.4**
ALMR AML AML 16 49 52.6
comp=N,2µm,0.9s
ALMR Almeirim 5.61 288 *e*P **Pn 16 48 49.1 -0.8**
ALMR *e*S **Sn 16 49 49.2 -5.4**
ALMR Almeirim 5.61 288 *e*P **Pn 16 48 49.1 -0.8**
ALMR *e*S **Sn 16 49 49.2 -5.4**
PTOM Tomar 5.61 293 *e*Pn **Pn 16 48 49.0 -0.9**
PTOM *e*Sn **Sn 16 49 51.9 -2.8**
PTOM *e*Sg **Sg 16 50 23.7 -2.5**
PTOM A A 16 50 36.4
comp=N,5µm,0.7s
PBRG Braganca 5.69 318 *e*Pn **Pn 16 48 49.4 -1.6**
PBRG *e*Sn **Sn 16 49 52.1 -4.5**
PBRG *e*Sg **Sg 16 50 23.9 -4.7**
PBRG A A 16 50 30.8
comp=N,2µm,0.8s
PFVI Vila Bisbo 5.70 267⇑ *e*Pn **Pn 16 48 50.3 -0.8**
PFVI *e*Sn **Sn 16 49 54.4 -2.5**
PFVI *e*Sg **Sg 16 50 26.8 -2.3**
PFVI A A 16 50 43.8
comp=N,2µm,0.7s
PFVI Vila Bisbo 5.70 267 Pn **Pn 16 48 50.4 -0.8**
comp=N,271nm,0.4s,SNR=140
PFVI Sn **Sn 16 49 53.2 -3.7**
comp=N,194nm,0.3s,SNR=7.9
PFVI Lg Lg 16 50 28.4
comp=N,9µm,1.4s,SNR=7.9
PFVI Vila Bisbo 5.70 267 Pn **Pn 16 48 50.3 -0.8**
comp=N,271nm,0.4s,SNR=140
PFVI Lg Lg 16 50 28.4
comp=N,9µm,1.4s,SNR=7.9
PFVI Vila Bisbo 5.70 267 *e*Pn **Pn 16 48 50.0 -1.1**
PVIS Viseu 5.71 304⇑ *e*Pn **Pn 16 48 50.1 -1.1**
PVIS *e*Sn **Sn 16 49 53.5 -3.6**
PVIS *e*Sg **Sg 16 50 24.6 -4.6**
PVIS A A 16 50 51.6
comp=N,2µm,0.6s
ELAN Lanestosa 5.73 347 Pn **Pn 16 48 51.0 -0.6**
comp=N,111nm,0.4s,SNR=109
ELAN Pg **Pb 16 49 10.4 +4.1**
comp=N,710nm,1.0s,SNR=7.9
ELAN Sn **Sn 16 49 53.5 -4.1**
comp=N,460nm,0.5s,SNR=7.9
ELAN Lg Lg 16 50 28.0
comp=N,13µm,1.6s,SNR=7.9
ELAN Lanestosa 5.73 347 Pn **Pn 16 48 51.0 -0.6**
comp=N,111nm,0.4s,SNR=109
ELAN Lanestosa 5.73 347 Pg **Pb 16 49 10.4 +4.1**
comp=N,710nm,1.0s,SNR=7.9
ELAN Sn **Sn 16 49 53.5 -4.1**
comp=N,460nm,0.5s,SNR=7.9
ELAN Lg Lg 16 50 28.0
comp=N,13µm,1.6s,SNR=7.9
ECAL Calabor 5.78 319 Pn **Pn 16 48 50.7 -1.6**
comp=N,222nm,0.3s,SNR=293
ECAL Sn **Sn 16 49 53.7 -5.2**
comp=N,636nm,0.4s,SNR=7.9
ECAL Lg Lg 16 50 30.5
comp=N,11µm,1.1s,SNR=7.9
ECAL Calabor 5.78 319 Pn **Pn 16 48 50.7 -1.6**
comp=N,222nm,0.3s,SNR=293
ECAL Lg Lg 16 50 30.5
comp=N,11µm,1.1s,SNR=7.9
PCAS Casmilo, Conde 5.83 296 *e*Pn **Pn 16 48 52.1 -0.8**
PCAS *e*Sn **Sn 16 49 55.7 -4.2**
PCAS *e*Sg **Sg 16 50 29.9 -3.2**
PCAS A A 16 50 40.7
comp=N,3µm,0.7s
CARF Carcanieres 5.84 29 P **Pn 16 48 52.0 -1.1**
FILF Fillols 5.89 32 P **Pn 16 48 51.8 -2.0**
PVRL Vila Real 5.90 310 *e*Pn **Pn 16 48 53.1 -0.8**
PVRL *e*Sn **Sn 16 49 57.6 -4.2**
PVRL *e*Sg **Sg 16 50 30.4 -5.0**
PVRL A A 16 50 46.7
comp=N,2µm,0.6s
EJON La Jonquera 5.94 35 Pn **Pn 16 48 53.4 -1.0**
comp=N,27nm,0.5s,SNR=28
EJON Lg Lg 16 50 36.0
comp=N,2µm,1.3s,SNR=7.9
EJON La Jonquera 5.94 35 Pn **Pn 16 48 53.4 -1.0**
comp=N,27nm,0.5s,SNR=28
EJON Lg Lg 16 50 36.0
comp=N,2µm,1.3s,SNR=7.9
LIS Lisbon 5.97 283 *e*P **Pn 16 48 54.1 -0.7**
LIS *e*S **Sn 16 49 57.7 -5.8**
LIS AML AML 16 50 06.6
comp=N,1µm,0.5s
LIS Lisbon 5.97 283 *e*P **Pn 16 48 54.1 -0.7**
LIS *e*S **Sn 16 49 57.6 -5.8**

SJAF Saint Jean de 5.97 35 Pn **Pn 16 48 53.3 -1.5**
comp=N,44nm,0.5s,SNR=7.9
SJAF Sn **Sn 16 50 00.4 -3.0**
comp=N,48nm,0.5s,SNR=7.9
SJAF Lg Lg 16 50 35.3
comp=N,1µm,1.6s,SNR=7.9
SJAF Saint Jean de 5.97 35 Pn **Pn 16 48 53.3 -1.5**
comp=N,44nm,0.5s,SNR=7.9
SJAF Sn **Sn 16 50 00.4 -3.0**
comp=N,48nm,0.5s,SNR=7.9
SJAF Lg Lg 16 50 35.3
comp=N,1µm,1.6s,SNR=7.9
PMST Lisbon--Monsan 6.00 283 *e*Pn **Pn 16 48 54.9 -0.3**
PMST *e*Sn **Sn 16 49 57.8 -6.3**
PMST *e*Sg **Sg 16 50 36.9 -1.7**
PMST A A 16 50 43.7
comp=N,3µm,0.7s
CKHR Kef el Ahmar 6.00 104 P **Pn 16 48 56.3 +0.9**
POLO Lamas de Olo 6.01 310⇑ *e*Pn **Pn 16 48 53.8 -1.6**
POLO *e*Sn **Sn 16 49 59.9 -4.6**
POLO *e*Sg **Sg 16 50 35.2 -3.6**
POLO A A 16 50 41.7
comp=N,555nm,0.6s
ZFT Errachidia 6.01 202 *i* P **Pn 16 48 56.0 +0.4**
ZFT *i* S **Sn 16 50 01.0 -3.8**
PMAFR Mafra 6.11 285⇑ *e*Pn **Pn 16 48 55.9 -0.8**
PMAFR *e*Sn **Sn 16 50 04.0 -2.9**
PMAFR *e*Sg **Sg 16 50 40.6 -1.5**
PMAFR A A 16 50 46.8
comp=N,1µm,0.7s
PMAFR Mafra 6.11 285 Pn **Pn 16 48 56.3 -0.4**
comp=N,2µm,0.5s,SNR=159
PMAFR Sn **Sn 16 50 02.2 -4.6**
comp=N,1µm,0.5s,SNR=7.9
PMAFR Lg Lg 16 50 41.3
comp=N,25µm,1.0s,SNR=7.9
PMAFR Mafra 6.11 285 Pn **Pn 16 48 56.3 -0.4**
comp=N,2µm,0.5s,SNR=159
PMAFR Lg Lg 16 50 41.3
comp=N,25µm,1.0s,SNR=7.9
DFRA Djebel Bou Aff 6.15 98 P **Pn 16 48 57.1 -0.3**
KIB El Ksiba 6.19 216 *i* P **Pn 16 48 58.5 +0.6**
KIB *i* S **Sn 16 50 06.0 -3.0**
LRDF Laroque-de-Fa 6.19 30 P **Pn 16 48 56.8 -1.1**
EARI Arriondas 6.25 336 Pn **Pn 16 48 57.3 -1.4**
comp=N,604nm,0.5s,SNR=816
EARI Pg **Pb 16 49 18.7 +3.5**
comp=N,622nm,0.8s,SNR=7.9
EARI Sn **Sn 16 50 05.4 -5.0**
comp=N,710nm,0.5s,SNR=7.9
EARI Lg Lg 16 50 45.0
comp=N,30µm,2.3s,SNR=7.9
EARI Arriondas 6.25 336 Pn **Pn 16 48 57.3 -1.4**
comp=N,604nm,0.5s,SNR=816
EARI Sn **Sn 16 50 05.4 -5.0**
comp=N,710nm,0.5s,SNR=7.9
EARI Lg Lg 16 50 45.0
comp=N,30µm,2.3s,SNR=7.9
PCAB Cabril 6.35 312 *e*Pn **Pn 16 48 58.1 -1.9**
PCAB *e*Sn **Sn 16 50 08.0 -4.8**
PCAB *e*Sg **Sg 16 50 46.2 -3.6**
PCAB A A 16 50 51.6
comp=N,2µm,0.6s
PTO Porto 6.38 305 *e*Pn **Pn 16 48 59.3 -1.2**
PTO *e*Sn **Sn 16 50 09.3 -4.3**
PTO *e*Sg **Sg 16 50 47.7 -3.2**
PTO A A 16 51 08.0
comp=N,2µm,0.7s
MTLF Montolieu 6.42 26 *e*Pn **Pn 16 48 59.8 -1.2**
MTLF Montolieu 6.42 26 *e*Pg **Pg 16 49 27.2 -1.7**
MTLF *e*Sg **Sg 16 50 51.2 -0.8**
comp=N,5µm,1.7s
MTLF Montolieu 6.42 26 *e*P **Pn 16 48 59.8 -1.2**
MTLF Montolieu 6.42 26 *e*Pn **Pn 16 48 59.8 -1.2**
MTLF *e*Pg **Pg 16 49 27.2 -1.7**
MTLF *e*Sg **Sg 16 50 51.2 -0.8**
ELOB Lobios 6.46 313 Pn **Pn 16 49 00.1 -1.6**
comp=N,166nm,0.5s,SNR=250
ELOB Sn **Sn 16 50 09.5 -6.2**
comp=N,352nm,0.4s,SNR=7.9
ELOB Lg Lg 16 50 49.5
comp=N,23µm,2.4s,SNR=7.9
ELOB Lobios 6.46 313 Pn **Pn 16 49 00.1 -1.6**
comp=N,166nm,0.5s,SNR=250
ELOB Lg Lg 16 50 49.5
comp=N,23µm,2.4s,SNR=7.9
PGAV Gavieira, Arco 6.65 312⇑ *e*Pn **Pn 16 49 02.7 -1.5**
PGAV *e*Sn **Sn 16 50 14.6 -5.7**
PGAV *e*Sg **Sg 16 50 52.9 -6.5**
PGAV A A 16 51 04.5
comp=N,1µm,0.8s
CTEI Djebel Teioual 6.69 101 P **Pn 16 49 05.1 +0.4**
CASM Ain Smara 6.70 99 P Pb 16 49 14.9 -7.9
TZC Tazercounte 6.75 217 *i* P **Pn 16 49 06.0 +0.2**
TZC *i* S **Sn 16 50 20.0 -3.1**
CKFL Kef-Lekhel 6.85 98 P **Pn 16 49 07.2 +0.2**
CAEH 'Ain El Ouahch 6.87 95 P Pb 16 49 16.8 -9.0
EPON Pontenova 7.03 325 Pn **Pn 16 49 08.2 -1.1**
comp=N,84nm,0.4s,SNR=134
EPON Sn **Sn 16 50 22.3 -7.2**
comp=N,317nm,0.5s,SNR=7.9
EPON Lg Lg 16 51 09.1
comp=N,12µm,1.3s,SNR=7.9
EPON Pontenova 7.03 325 Pn **Pn 16 49 08.2 -1.1**
comp=N,84nm,0.4s,SNR=134
EPON Lg Lg 16 51 09.1
comp=N,12µm,1.3s,SNR=7.9
EAGO Agolada(Pontev 7.10 318⇑ Pn **Pn 16 49 09.4 -0.9**
comp=N,22nm,0.3s,SNR=18
EAGO Pg Pb 16 49 35.1 +5.5
comp=N,411nm,1.1s,SNR=7.9
EAGO Sn **Sn 16 50 25.2 -6.1**
comp=N,263nm,0.5s,SNR=7.9
EAGO Lg Lg 16 51 10.7
comp=N,13µm,1.3s,SNR=7.9
EAGO Agolada(Pontev 7.10 318 Pn **Pn 16 49 09.4 -0.9**
comp=N,22nm,0.3s,SNR=18
EAGO Lg Lg 16 51 10.7
comp=N,13µm,1.3s,SNR=7.9
CMAH Djebel Manchou 7.35 95 P **Pn 16 49 13.8 0.0**
ABSA Djebel Ababsia 7.47 98 P **Pn 16 49 15.8 +0.3**
LFF La Frestale 7.51 13 *e*Pn **Pn 16 49 15.0 -0.9**
LFF *e*Sg **Sg 16 51 25.6 -1.4**
comp=N,6µm,1.7s
LFF La Frestale 7.51 13 *e*P **Pn 16 49 15.0 -0.9**
LFF La Frestale 7.51 13 *e*Pn **Pn 16 49 15.0 -0.9**
LFF *e*Sg **Sg 16 51 25.6 -1.4**
LASF Ste Croix 7.67 31 *e*Pn **Pn 16 49 16.9 -1.3**
LASF Ste Croix 7.67 31 *e*Pg **Pg 16 49 51.2 -1.7**
LASF *e*Sg **Sg 16 51 30.0 -2.2**
comp=N,917nm,1.3s
LASF Ste Croix 7.67 31 *e*Pn **Pn 16 49 16.9 -1.3**
LASF *e*Pg **Pg 16 49 51.2 -1.7**
LASF *e*Sg **Sg 16 51 30.0 -2.2**
EMAZ Mazaricos 7.68 316 Pn **Pn 16 49 16.9 -1.4**
comp=N,87nm,0.3s,SNR=7.9
EMAZ Sn **Sn 16 50 38.6 -6.9**
comp=N,226nm,0.6s,SNR=7.9
EMAZ Lg Lg 16 51 28.3
comp=N,36µm,1.9s,SNR=7.9
EMAZ Mazaricos 7.68 316 Pn **Pn 16 49 16.9 -1.4**
comp=N,87nm,0.3s,SNR=7.9
EMAZ Lg Lg 16 51 28.3
comp=N,36µm,1.9s,SNR=7.9
CAF Calviac 7.80 20 *e*Pn **Pn 16 49 18.8 -1.1**
CAF *e*Sg **Sg 16 51 34.8 -1.5**
comp=N,2µm,1.5s
CAF Calviac 7.80 20 *e*P **Pn 16 49 18.8 -1.1**
CAF Calviac 7.80 20 *e*Pn **Pn 16 49 18.8 -1.1**
CAF *e*Sg **Sg 16 51 34.8 -1.5**
RJF Les Rejaudoux 8.02 16 *e*Pn **Pn 16 49 21.6 -1.3**
RJF *e*Sg **Sg 16 51 41.3 -2.0**
comp=N,3µm,1.6s
RJF Les Rejaudoux 8.02 16 *e*P **Pn 16 49 21.6 -1.3**
RJF Les Rejaudoux 8.02 16 *e*Pn **Pn 16 49 21.6 -1.3**
RJF *e*Sg **Sg 16 51 41.3 -2.0**
FRNF Fournols 8.36 21 P **Pn 16 49 25.7 -2.0**
SMRF Simiane la Rot 8.38 39 *e*Pn **Pn 16 49 29.2 +1.3**
SMRF *e*Sg **Sg 16 51 52.3 -2.6**
comp=N,2µm,2.0s
SMRF Simiane la Rot 8.38 39 *e*Pn **Pn 16 49 29.2 +1.3**
SMRF *e*Sg **Sg 16 51 52.3 -2.6**
CIA Chichaoua 8.41 226 *i* P **Pn 16 49 29.0 +0.7**
CIA *e*S **Sn 16 51 00.0 -3.6**
LBL Lubilhac 8.43 25 P **Pn 16 49 27.7 -1.0**

LMR La Mourre 8.44 45 *e*Pn **Pn 16 49 27.7 -1.0**
LMR La Mourre 8.44 45 *e*Pg **Pg 16 50 04.7 -2.9**
LMR *e*Sn **Sn 16 50 56.7 -7.5**
comp=N,360nm,1.4s
LMR La Mourre 8.44 45 *e*P **Pn 16 49 27.7 -1.0**
LMR *e* 16 50 56.7
LMR La Mourre 8.44 45 *e*Pn **Pn 16 49 27.7 -1.0**
LMR *e*Pg **Pg 16 50 04.7 -2.9**
LMR *e*Sn **Sn 16 50 56.7 -7.5**
VIVF Saint-Julien-I 8.65 32 *e*Pn **Pn 16 49 30.4 -1.2**
VIVF Saint-Julien-I 8.65 32 *e*Pg **Pg 16 50 08.9 -2.6**
VIVF *e*Sg **Sg 16 52 00.9 -2.5**
comp=N,3µm,1.8s
VIVF Saint-Julien-I 8.65 32 *e*P **Pn 16 49 30.4 -1.2**
VIVF Saint-Julien-I 8.65 32 *e*Pn **Pn 16 49 30.4 -1.2**
VIVF *e*Pg **Pg 16 50 08.9 -2.6**
VIVF *e*Sg **Sg 16 52 00.9 -2.5**
FRF La Foret Royal 8.66 44 *e*Pn **Pn 16 49 32.3 +0.6**
FRF *e*Sn **Sn 16 51 01.6 -8.1**
FRF *e*Sg **Sg 16 52 00.8 -3.1**
comp=N,641nm,1.7s
FRF La Foret Royal 8.66 44 *e*P **Pn 16 49 32.3 +0.6**
FRF *e* 16 51 01.6
FRF La Foret Royal 8.66 44 *e*Pn **Pn 16 49 32.3 +0.6**
FRF *e*Sn **Sn 16 51 01.6 -8.1**
FRF *e*Sg **Sg 16 52 00.8 -3.1**
PYM Petit Puy Mans 8.82 22 P **Pn 16 49 33.4 -0.6**
VSL Villasalto 8.87 75 *e*Pn **Pn 16 49 33.3 -1.3**
VSL Villasalto 8.87 75 *e*Pn **Pn 16 49 33.3 -1.3**
SSB Saint Sauveur 8.94 30 P **Pn 16 49 34.5 -1.0**
SSB Saint Sauveur 8.94 30 *e*P **Pn 16 49 34.6 -1.0**
SSB Saint Sauveur 8.94 30 *e*Pn **Pn 16 49 34.6 -1.0**
SSB Saint Sauveur 8.94 30 *e*Pn **Pn 16 49 34.6 -1.0**
MFF Saint Martin d 9.02 7 *e*Pn **Pn 16 49 35.3 -1.3**
MFF *e*Sg Sn 16 52 12.5 +54
comp=N,2µm,1.7s
MFF Saint Martin d 9.02 7 *e*P **Pn 16 49 35.3 -1.3**
MFF Saint Martin d 9.02 7 *e*Pn **Pn 16 49 35.3 -1.3**
MFF *e*Sg Sn 16 52 12.5 +54
KEST Kesra 9.07 99 Pn **Pn 16 49 38.3 +0.8**
comp=N,32nm,0.3s,baz=271,slow=3.5,SNR=108
KEST Sn **Sn 16 51 17.1 -2.8**
baz=198,slow=17,SNR=1.3
TCF Toulx Ste Croi 9.11 17 *e*Pn **Pn 16 49 36.0 -1.9**
TCF *e*Sn **Sn 16 51 13.0 -7.6**
TCF *e*Sg 16 52 13.9
comp=N,5µm,2.2s
TCF Toulx Ste Croi 9.11 17 *e*P **Pn 16 49 36.0 -1.9**
TCF *e* 16 51 13.0
TCF Toulx Ste Croi 9.11 17 *e*Pn **Pn 16 49 36.0 -1.9**
TCF *e*Sn **Sn 16 51 13.0 -7.6**
TCF *e*Sg 16 52 13.9
AGO Saint Agoulin 9.13 22 P **Pn 16 49 37.6 -0.6**
REVF Revere 9.18 46 P **Pn 16 49 39.0 +0.1**
PLDF La Plantade 9.21 24 P **Pn 16 49 39.3 0.0**
ORIF Oris-en-Rattie 9.23 36 *e*Pn **Pn 16 49 41.7 +2.1**
ORIF Oris-en-Rattie 9.23 36 *e*Pg Pn 16 50 20.9 +41
ORIF *e*Sg Sn 16 52 19.2 +55
comp=N,1µm,1.9s
ORIF Oris-en-Rattie 9.23 36 *e*P **Pn 16 49 41.7 +2.1**
ORIF Oris-en-Rattie 9.23 36 *e*Pn **Pn 16 49 41.7 +2.1**
ORIF *e*Pg 16 50 20.9
ORIF *e*Sg Sn 16 52 19.2 +55
SBF Sospel 9.30 45 *e*Pn **Pn 16 49 40.6 +0.1**
SBF *e*Sn **Sn 16 51 16.9 -8.5**
comp=N,152nm,0.9s
SBF Sospel 9.30 45 *e*P **Pn 16 49 40.6 +0.1**
SBF *e* 16 51 16.9
SBF Sospel 9.30 45 *e*Pn **Pn 16 49 40.6 +0.1**
SBF *e*Sn **Sn 16 51 16.9 -8.5**
BGF Bois d'Agland 9.52 19 *e*Pn **Pn 16 49 42.2 -1.3**
BGF *e*Sg Sn 16 52 28.0 +57
comp=N,258nm,0.6s
BGF Bois d'Agland 9.52 19 *e*P **Pn 16 49 42.2 -1.3**
BGF Bois d'Agland 9.52 19 *e*Pn **Pn 16 49 42.2 -1.3**
BGF *e*Sg Sn 16 52 28.0 +57
MBDF Montbardon 9.52 39 *e*Pn **Pn 16 49 41.7 -1.9**
MBDF *e*Sg Sn 16 52 28.2 +57
comp=N,652nm,1.7s
MBDF Montbardon 9.52 39 *e*P **Pn 16 49 41.7 -1.9**
MBDF Montbardon 9.52 39 *e*Pn **Pn 16 49 41.7 -1.9**
MBDF *e*Sg Sn 16 52 28.2 +57
PGF Pioggiola 9.54 56 *e*Pn **Pn 16 49 43.6 -0.3**
PGF *e*Sn **Sn 16 51 22.7 -8.7**
comp=N,40nm,0.5s
PGF Pioggiola 9.54 56 *e*P **Pn 16 49 43.6 -0.3**
PGF *e* 16 51 22.7
PGF Pioggiola 9.54 56 *e*Pn **Pn 16 49 43.6 -0.3**
PGF *e*Sn **Sn 16 51 22.7 -8.7**
AVF Avril sur Loir 9.87 21 *e*Pn **Pn 16 49 45.9 -2.3**
AVF *e*Sn **Sn 16 51 31.7 -7.6**
comp=N,2µm,1.8s
AVF Avril sur Loir 9.87 21 *e*P **Pn 16 49 45.9 -2.3**
AVF *e* 16 51 31.7
AVF Avril sur Loir 9.87 21 *e*Pn **Pn 16 49 45.9 -2.3**
AVF *e*Sn **Sn 16 51 31.7 -7.6**
SMF Signal de Mont 9.88 23 *e*Pn **Pn 16 49 46.7 -1.7**
SMF *e*Sg Sn 16 52 39.1 +60
comp=N,2µm,1.8s
SMF Signal de Mont 9.88 23 *e*P **Pn 16 49 46.7 -1.7**
SMF Signal de Mont 9.88 23 *e*Pn **Pn 16 49 46.7 -1.7**
SMF *e*Sg Sn 16 52 39.1 +60
LPG La Plagne 10.07 36 *e*Pn **Pn 16 49 52.9 +1.6**
LPG *e*Sg 16 52 46.2
comp=N,455nm,1.6s
LPG La Plagne 10.07 36 *e*P **Pn 16 49 52.9 +1.6**
LPG La Plagne 10.07 36 *e*Pn **Pn 16 49 52.9 +1.6**
LPG *e*Sg 16 52 46.2
LPL La Plagne 10.07 36 *e*Pn **Pn 16 49 52.5 +1.2**
LPL *e*Sg 16 52 45.1
comp=N,897nm,1.9s
LPL La Plagne 10.07 36 *e*P **Pn 16 49 52.5 +1.2**
LPL La Plagne 10.07 36 *e*Pn **Pn 16 49 52.5 +1.2**
LPL *e*Sg 16 52 45.1
HYF Humbligny 10.13 17 *e*Pn **Pn 16 49 50.2 -1.6**
HYF *e*Sg 16 52 47.2
HYF Humbligny 10.13 17 *e*Pn **Pn 16 49 50.2 -1.6**
HYF *e*Sg 16 52 47.2
SSF Saint Saulge 10.16 21 *e*Pn **Pn 16 49 49.6 -2.6**
SSF Saint Saulge 10.16 21 *e*P Pn 16 49 59.3 +7.1
SSF *e*Sg 16 52 48.3
comp=N,2µm,1.7s
SSF Saint Saulge 10.16 21 *e*P **Pn 16 49 49.6 -2.6**
SSF Saint Saulge 10.16 21 *e*Pn **Pn 16 49 49.6 -2.6**
SSF *e*P Pn 16 49 59.3 +7.1
SSF *e*Sg 16 52 48.3
QUIF Quistinic 10.32 354 *e*Pn **Pn 16 49 53.0 -1.4**
QUIF *e*Sn **Sn 16 51 41.4 -8.9**
comp=N,141nm,0.4s
QUIF Quistinic 10.32 354 *e*P **Pn 16 49 53.0 -1.4**
QUIF *e* 16 51 41.4
QUIF Quistinic 10.32 354 *e*Pn **Pn 16 49 53.0 -1.4**
QUIF *e*Sn **Sn 16 51 41.4 -8.9**
LOR Lormes 10.45 21 *e*Pn **Pn 16 49 54.7 -1.5**
LOR *e*Sn Sn 16 51 43.8 -10
LOR *e*Sg 16 52 56.6
comp=N,4µm,2.1s
LOR Lormes 10.45 21 *e*P **Pn 16 49 54.7 -1.5**
LOR *e* 16 51 43.8
LOR Lormes 10.45 21 *e*Pn **Pn 16 49 54.7 -1.5**
LOR *e*Sn Sn 16 51 43.8 -10
LOR *e*Sg 16 52 56.6
SGMF Saint Gilles 10.62 357 *e*Pn **Pn 16 49 56.9 -1.6**
SGMF *e*Sn **Sn 16 51 49.1 -8.5**
comp=N,91nm,0.8s
SGMF Saint Gilles 10.62 357 *e*P **Pn 16 49 56.9 -1.6**
SGMF *e* 16 51 49.1
SGMF Saint Gilles 10.62 357 *e*Pn **Pn 16 49 56.9 -1.6**
SGMF *e*Sn **Sn 16 51 49.1 -8.5**
CABF La Chapelle 10.65 30 *e*Pn **Pn 16 49 57.4 -1.7**
CABF La Chapelle 10.65 30 *e*Pg Pn 16 50 46.0 +47
CABF *e*Sg 16 53 03.4
comp=N,4µm,2.1s
CABF La Chapelle 10.65 30 *e*P **Pn 16 49 57.4 -1.7**
CABF La Chapelle 10.65 30 *e*Pn **Pn 16 49 57.4 -1.7**
CABF *e*Pg 16 50 46.0
CABF *e*Sg 16 53 03.4
ROSF Rostrenen 10.74 354 *e*Pn **Pn 16 49 58.9 -1.3**
ROSF *e*Sn **Sn 16 51 52.2 -8.5**
comp=N,159nm,0.7s
ROSF Rostrenen 10.74 354 *e*P **Pn 16 49 58.9 -1.3**
ROSF *e* 16 51 52.2

ROSF	Rostrenen	10.74	354	ePn	Pn	16 49 58.9	-1.3
ROSF				eSn	Sn	16 51 52.2	-8.5
GRR	Gorron	10.75	3	ePn	Pn	16 49 58.4	-1.9
GRR				eSg		16 53 06.6	
	comp=N,2µm,1.7s						
GRR	Gorron	10.75	3	eP	Pn	16 49 58.4	-1.9
GRR	Gorron	10.75	3	ePn	Pn	16 49 58.4	-1.9
GRR				eSg		16 53 06.6	
SENIN	Lac Senin/Sane	10.97	35	ePn	Pn	16 50 05.6	+2.0
SENIN	Lac Senin/Sane	10.97	35	ePn	Pn	16 50 05.6	+2.0
LDF	La Druitiere	11.00	5	ePn	Pn	16 50 02.4	-1.3
LDF				eSg		16 53 14.5	
	comp=N,3µm,2.2s						
LDF	La Druitiere	11.00	5	eP	Pn	16 50 02.4	-1.3
LDF	La Druitiere	11.00	5	ePn	Pn	16 50 02.4	-1.3
LDF				eSg		16 53 14.5	
FLN	La Foliniere	11.14	4	ePn	Pn	16 50 03.5	-2.2
FLN				eSg		16 53 18.5	
	comp=N,4µm,2.4s						
FLN	La Foliniere	11.14	4	eP	Pn	16 50 03.5	-2.2
FLN	La Foliniere	11.14	4	ePn	Pn	16 50 03.5	-2.2
FLN				eSg		16 53 18.5	
VLC	Villacollemand	11.21	51	ePn	Pn	16 50 06.4	-0.3
VLC	Villacollemand	11.21	51	ePn	Pn	16 50 06.4	-0.3
JSA	Saint Aubin	11.54	358	eP	Pn	16 50 10.4	-0.7
JSA				AMB	AMB	16 50 12.0	
	comp=Z,79nm,1.3s						
JSA				eS	Sn	16 52 09.7	-10
JSA	Saint Aubin	11.54	358	eP	Pn	16 50 10.4	-0.7
JSA				eS	Sn	16 52 09.7	-10
JRS	Jersey	11.54	359	eP	Pn	16 50 08.9	-2.2
JRS				eS	Sn	16 52 09.3	-11
JRS	Jersey	11.54	359	eP	Pn	16 50 08.9	-2.2
JRS				eS	Sn	16 52 09.3	-11
SFTF	Sexfontaines	11.64	23	ePn	Pn	16 50 11.5	-1.0
SFTF				eSg		16 53 34.3	
	comp=Z,997nm,1.4s						
SFTF	Sexfontaines	11.64	23	ePn	Pn	16 50 11.5	-1.0
SFTF				eSg		16 53 34.3	
CLTB	Caltabellotta	11.83	86	ePn	Pn	16 50 15.4	+0.2
CLTB	Caltabellotta	11.83	86	ePn	Pn	16 50 15.4	+0.2
HAU	Haudompre	11.91	27	ePn	Pn	16 50 18.1	+1.9
HAU				eSg		16 53 42.3	
	comp=Z,373nm,1.4s						
HAU	Haudompre	11.91	27	eP	Pn	16 50 18.1	+1.9
HAU	Haudompre	11.91	27	ePn	Pn	16 50 18.1	+1.9
HAU				eSg		16 53 42.3	
MEZF	Maizieres J'vi	11.91	22	ePn	Pn	16 50 19.0	+2.8
MEZF				eSg		16 53 43.9	
	comp=Z,4µm,1.9s						
MEZF	Maizieres J'vi	11.91	22	ePn	Pn	16 50 19.0	+2.8
MEZF				eSg		16 53 43.9	
HINF	Hinteralfeld	11.94	29	ePn	Pn	16 50 15.7	-0.9
HINF	Hinteralfeld	11.94	29	ePg	Pn	16 51 08.8	+52
HINF				eSg		16 53 44.1	
	comp=Z,3µm,2.1s						
HINF	Hinteralfeld	11.94	29	eP	Pn	16 50 15.7	-0.9
HINF	Hinteralfeld	11.94	29	ePn	Pn	16 50 15.7	-0.9
HINF				ePg		16 51 08.8	
HINF				eSg		16 53 44.1	
LGHD	Ghdames	11.98	126	i P	Pn	16 50 16.2	-1.1
	SNR=46						
TUE	Stuetta	12.03	39	ePn	Pn	16 50 20.8	+2.8
TUE	Stuetta	12.03	39	ePn	Pn	16 50 20.8	+2.8
PAGF	Fort de Pagny	12.17	24	ePn	Pn	16 50 19.2	-0.5
PAGF				eSg		16 53 51.7	
	comp=Z,1µm,2.2s						
PAGF	Fort de Pagny	12.17	24	ePn	Pn	16 50 19.2	-0.5
PAGF				eSg		16 53 51.7	
AQU	L'Aquila	12.49	63	eP	Pn	16 50 24.9	+0.7
AQU	L'Aquila	12.49	63	ePn	Pn	16 50 24.9	+0.7
AQU	L'Aquila	12.49	63	ePn	Pn	16 50 24.9	+0.7
DAVOX	Davos/Dischmat	12.51	40	Pn	Pn	16 50 25.9	+1.3
	comp=Z,0.3nm,0.3s,baz=236,slow=9.2,SNR=16						
DAVOX				Lg	Lg	16 53 49.5	
	comp=Z,0.1nm,0.3s,baz=342,slow=19,SNR=2.4						
DAVOX				LR	LR	16 55 09.3	
	comp=Z,3µm,18.9s,baz=231,slow=37						
CDF	Champ du Feu	12.59	28	ePn	Pn	16 50 26.0	+0.5
CDF				eSg		16 54 03.9	
	comp=Z,2µm,2.3s						
CDF	Champ du Feu	12.59	28	eP	Pn	16 50 26.0	+0.5
CDF	Champ du Feu	12.59	28	ePn	Pn	16 50 26.0	+0.5
CDF				eSg		16 54 03.9	
FUORN	Ofenpass-Fuorn	12.60	41	ePn	Pn	16 50 29.0	+3.1
FUORN	Ofenpass-Fuorn	12.60	41	ePn	Pn	16 50 29.0	+3.1
VAE	Valguarnera	12.78	86	Pn	Pn	16 50 32.5	+4.3
	comp=Z,0.4nm,0.3s,baz=228,slow=6.5,SNR=2.7						
VAE				LR	LR	16 55 20.5	
	comp=Z,2µm,19.9s,baz=173,slow=38						
DAVA	Damuels	12.86	38	i Pn	Pn	16 50 31.0	+1.7
	comp=Z,54nm,1.2s						
DAVA				i Sn	Sn	16 52 50.0	-2.8
DYA	Yadsworthy	12.88	354	eP	Pn	16 50 28.0	-1.5
DYA				AMB	AMB	16 50 29.7	
	comp=Z,98nm,1.2s						
DYA				AMS	AMS	16 56 09.8	
	comp=Z,6µm,11.7s						
DYA	Yadsworthy	12.88	354	ePn	Pn	16 50 27.5	-2.0
DYA	Yadsworthy	12.88	354	eP	Pn	16 50 28.0	-1.5
DYA	Yadsworthy	12.88	354	ePn	Pn	16 50 27.5	-2.0
BFO	Black Forest	12.94	31	eP	Pn	16 50 27.3	-3.0
BFO	Black Forest	12.94	31	ePn	Pn	16 50 27.3	-3.0
BFO	Black Forest	12.94	31	ePn	Pn	16 50 27.3	-3.0
EFAM	Famara	13.03	233	Pn	Pn	16 50 31.8	+0.3
	comp=Z,88nm,0.8s,SNR=7.9						
EFAM	Famara	13.03	233	Pn	Pn	16 50 31.8	+0.3
	comp=Z,88nm,0.8s,SNR=7.9						
FETA	Feichten	13.11	40	ePn	Pn	16 50 33.6	+1.0
	comp=Z,82nm,1.1s,SNR=12						
FETA				i Sn	Sn	16 53 02.1	+3.3
	comp=Z,15nm,2.1s						
FETA	Feichten	13.11	40	Pn	Pn	16 50 33.7	+1.0
	comp=Z,82nm,1.1s,SNR=12						
BAIF	Baives	13.11	17	ePn	Pn	16 50 30.6	-1.9
BAIF				eSg	S	16 54 21.3	+57
	comp=Z,1µm,1.8s						
BAIF	Baives	13.11	17	eP	Pn	16 50 30.6	-1.9
BAIF	Baives	13.11	17	ePn	Pn	16 50 30.6	-1.9
BAIF				eSg	S	16 54 21.3	+57
DOU	Dourbes	13.24	18	P	Pn	16 50 32.3	-2.0
WLF	Walferdange	13.28	23	P	Pn	16 50 35.7	+0.8
WLF	Walferdange	13.28	23	eP	Pn	16 50 33.0	-1.8
WLF	Walferdange	13.28	23	ePn	Pn	16 50 33.0	-1.8
WLF	Walferdange	13.28	23	P	Pn	16 50 35.6	+0.8
WLF	Walferdange	13.28	23	ePn	Pn	16 50 33.0	-1.8
HMNX	Herstmonceux	13.29	6	eP	Pn	16 50 34.5	-0.5
HMNX				AMB	AMB	16 50 35.2	
	comp=Z,129nm,0.9s						
HMNX				AMS	AMS	16 56 22.6	
	comp=Z,7µm,11.2s						
HMNX	Herstmonceux	13.29	6	eP	Pn	16 50 34.5	-0.5
GIVF	Givet	13.30	19	ePn	Pn	16 50 33.7	-1.4
GIVF				eSn	Sn	16 52 53.4	-10
GIVF				eSg	S	16 54 25.3	+58
	comp=Z,1µm,1.7s						
GIVF	Givet	13.30	19	eP	Pn	16 50 33.7	-1.4
GIVF				e		16 52 53.4	
GIVF	Givet	13.30	19	ePn	Pn	16 50 33.7	-1.4
GIVF				eSn	Sn	16 52 53.4	-10
GIVF				eSg	S	16 54 25.3	+58
GHAR	Gharyan	13.32	110	i P	Pn	16 50 34.5	-1.1
	SNR=45						
RETA	Reutte	13.43	39	ePn	Pn	16 50 38.1	+1.0
	comp=Z,33nm,1.1s,SNR=7.7						
RETA	Reutte	13.43	39	Pn	Pn	16 50 38.1	+1.0
	comp=Z,33nm,1.1s,SNR=7.7						
HTL	Hartland	13.49	352	eP	Pn	16 50 36.7	-1.0
HTL				AMB	AMB	16 50 38.5	
	comp=Z,33nm,1.0s						
HTL	Hartland	13.49	352	eP	Pn	16 50 36.7	-1.0
MOTA	Moosalm	13.51	40	ePn	Pn	16 50 39.9	+1.7
	comp=Z,31nm,1.0s						
SNF	Seneffe	13.55	16	P	Pn	16 50 37.4	-1.1
PMOZ	Porto Moniz, M	13.55	254	Pn	P	16 50 44.0	-4.0
PMOZ	Porto Moniz, M	13.55	254	Pn	P	16 50 44.0	-4.0
	comp=Z,32nm,0.7s,SNR=7.9						
CFUE	Fuerteventura	13.62	232	Pn	Pn	16 50 43.1	+3.5
	comp=Z,240nm,1.8s,SNR=7.9						
WOL	Wolverton	13.66	1	eP	Pn	16 50 37.6	-2.5
WOL				AMB	AMB	16 50 40.1	
	comp=Z,121nm,1.4s						
WOL				AMS	AMS	16 56 34.5	
	comp=Z,10µm,11.1s						
WOL	Wolverton	13.66	1	eP	Pn	16 50 37.6	-2.5
BCLA	Clavier	13.71	19	P	Pn	16 50 40.2	-0.6
BATH	Bath	13.80	358	AMS	AMS	16 56 44.5	
	comp=Z,7µm,10.8s						
CUC	Castrocucco	13.85	75	ePn	Pn	16 50 41.8	-1.0
CUC	Castrocucco	13.85	75	ePn	Pn	16 50 41.8	-1.0
SWN1	Swindon	13.86	360	AMS	AMS	16 56 47.3	
	comp=Z,9µm,11.5s						
CFTV	Fuerteventura	13.87	232	Pn	Pn	16 50 42.3	-0.9
	comp=Z,13nm,0.6s,SNR=7.9						
CFTV	Fuerteventura	13.87	232	Pn	Pn	16 50 42.3	-0.9
	comp=Z,13nm,0.6s,SNR=7.9						
ABTA	Abfaltersbach	13.89	45	ePn	Pn	16 50 44.9	+1.5
	comp=Z,76nm,1.4s,SNR=8.7						
OLDB	Oldbury-Upon-S	14.02	358	eP	Pn	16 50 44.1	-0.9
OLDB				AMB	AMB	16 50 44.8	
	comp=Z,117nm,0.9s						
OLDB	Oldbury-Upon-S	14.02	358	eP	Pn	16 50 44.1	-0.9
MEM	Membach	14.07	21	P	Pn	16 50 44.4	-1.3
STRD	Stroud	14.13	359	eP	Pn	16 50 45.4	-1.0
STRD	Stroud	14.13	359	eP	Pn	16 50 45.4	-1.0
SKDS	Skadanscina	14.14	51	ePn	Pn	16 50 45.8	-0.9
SKDS	Skadanscina	14.14	51	ePn	Pn	16 50 45.8	-0.9
HGN	Heimansgroeve	14.19	20	eP	Pn	16 50 46.4	-0.9
	comp=Z,46nm,1.1s						
HGN				eS	Sn	16 53 21.2	-3.8
HGN				eL	L	16 54 16.6	
MONM	Monmouth	14.21	357	eP	Pn	16 50 46.3	-1.2
MONM				AMB	AMB	16 50 48.6	
	comp=Z,77nm,0.9s						
MONM	Monmouth	14.21	357	eP	Pn	16 50 46.3	-1.2
CADS	Cadrg	14.31	48	ePn	Pn	16 50 48.6	-0.5
CADS	Cadrg	14.31	48	ePn	Pn	16 50 48.6	-0.4
SSW	Stow on the Wo	14.32	360	eP	Pn	16 50 47.8	-1.2
SSW	Stow on the Wo	14.32	360	eP	Pn	16 50 47.8	-1.2
MCH1	Michaelchurch	14.38	357	eP	Pn	16 50 48.7	-1.1
MCH1				AMB	AMB	16 50 52.1	
	comp=Z,74nm,1.4s						
MCH1				AMS	AMS	16 57 09.2	
	comp=Z,6µm,10.8s						
MCH1	Michaelchurch	14.38	357	eP	Pn	16 50 48.7	-1.1
MYKA	Terra Mystica	14.47	47	i Pn	Pn	16 50 52.2	+1.0
	comp=Z,117nm,1.6s,SNR=8.8						
MYKA				i Sn	Sn	16 53 31.0	-0.9
	comp=Z,7.8nm,1.1s						
MYKA	Terra Mystica	14.47	47	Pn	Pn	16 50 52.2	+1.0
	comp=Z,117nm,1.6s,SNR=8.8						
MYKA				Sn	Sn	16 53 31.0	-0.9
	comp=Z,7.8nm,1.1s						
KBA	Koelnbreinsper	14.55	45	ePn	Pn	16 50 54.0	+1.6
	comp=Z,57nm,1.3s,SNR=16						
KBA				i Sn	Sn	16 53 34.1	+0.1
	comp=Z,15nm,1.7s						
TIP	Timpagrande	14.55	78	⇑iP	Pn	16 50 54.6	+2.2
TIP	Timpagrande	14.55	78	ePn	Pn	16 50 49.0	-3.4
TIP	Timpagrande	14.55	78	ePn	Pn	16 50 49.0	-3.4
LPW	Lampeter	14.56	354	eP	Pn	16 50 51.1	-1.2
LPW				AMB	AMB	16 50 53.1	
	comp=Z,133nm,0.8s						
LPW	Lampeter	14.56	354	eP	Pn	16 50 51.1	-1.2
LMSR	Misrath	14.69	106	i P	Pn	16 50 52.7	-1.5
	SNR=45						
LJU	Ljubljana	14.69	50	ePn	Pn	16 50 54.1	-0.2
LJU				i P	P	16 51 01.9	+1.4
LJU				eS	S	16 54 00.3	+4.0
LJU	Ljubljana	14.69	50	ePn	Pn	16 50 54.1	-0.1
LJU	Ljubljana	14.69	50	i P	P	16 51 02.1	+1.5
LJU				eS	S	16 54 00.3	+3.9
MOZS	Mozjanca	14.77	49	ePn	Pn	16 50 54.3	-1.0
MOZS	Mozjanca	14.77	49	ePn	Pn	16 50 54.3	-1.0
HLM1	Long Mynd	14.89	357	eP	Pn	16 50 56.0	-0.9
HLM1				AMB	AMB	16 50 57.6	
	comp=Z,64nm,1.5s						
HLM1	Long Mynd	14.89	357	eP	Pn	16 50 56.0	-0.9
BOJS	Bojanci	14.89	53	ePn	Pn	16 50 56.0	-1.0
BOJS	Bojanci	14.89	53	ePn	Pn	16 50 56.0	-1.0
EOSO	Osorio	15.05	235	Pn	Pn	16 50 59.1	0.0
	comp=Z,271nm,2.0s,SNR=7.9						
EOSO	Osorio	15.05	235	Pn	Pn	16 50 59.1	0.0
	comp=Z,271nm,2.0s,SNR=7.9						
CWF	Charnwood Fore	15.09	1	eP	Pn	16 50 57.2	-2.3
CWF				AMB	AMB	16 50 58.6	
	comp=Z,52nm,2.1s						
CWF	Charnwood Fore	15.09	1	ePn	Pn	16 50 56.6	-2.9
	comp=Z,212nm,1.7s						
CWF	Charnwood Fore	15.09	1	ePn	Pn	16 50 56.6	-2.9
	comp=Z,212nm,1.7s						
IWEX	Carrickbyrne,	15.15	348	eP	Pn	16 50 59.0	-1.3
IWEX	Carrickbyrne,	15.15	348	eP	Pn	16 50 59.0	-1.3
GRFO	Grafenberg	15.21	34	eP	Pn	16 51 01.4	+0.2
GRFO				pmax	pmax		
	comp=Z,113nm,1.2s						
GRFO	Grafenberg	15.21	34	ePn	Pn	16 51 01.4	+0.2
	comp=Z,113nm,1.2s						
GRFO	Grafenberg	15.21	34	ePn	Pn	16 51 01.4	+0.2
	comp=Z,113nm,1.2s						
FOEL	Foel Wylfa	15.28	357	eP	Pn	16 51 01.8	-0.2
FOEL				AMB	AMB	16 51 04.3	
	comp=Z,86nm,1.0s						
SOKA	Soboth	15.31	49	ePn	Pn	16 51 03.4	+0.8
	comp=Z,123nm,1.3s,SNR=60						
SOKA	Soboth	15.31	49	Pn	Pn	16 51 03.4	+0.8
	comp=Z,123nm,1.3s,SNR=60						
PERS	Pernice	15.34	49	i Pn	Pn	16 51 03.0	0.0
PERS				eS	S	16 54 13.1	+3.4
PERS	Pernice	15.34	49	i Pn	Pn	16 51 03.0	+0.1
PERS				eS	S	16 54 13.1	+3.4
STNC	Stoke	15.45	359	eP	Pn	16 51 03.3	-0.9
STNC				AMB	AMB	16 51 05.5	
	comp=Z,137nm,1.1s						
STNC	Stoke	15.45	359	eP	Pn	16 51 03.3	-0.9
YRE	Yr Eifl	15.45	354	eP	Pn	16 51 03.1	-1.2
YRE	Yr Eifl	15.45	354	eP	Pn	16 51 03.1	-1.2
MOA	Molln	15.51	44	i Pn	Pn	16 51 05.3	+0.2
	comp=Z,40nm,1.2s,SNR=12						
MOA	Molln	15.51	44	Pn	Pn	16 51 05.3	+0.2
	comp=Z,40nm,1.2s,SNR=12						
VAL	Valentia	15.51	340	eP	Pn	16 51 02.6	-2.4
VAL				eS	Sn	16 53 48.9	-8.0
WTSB	Winterswijk	15.52	20	eP	Pn	16 51 05.3	+0.2
	comp=Z,70nm,1.2s						
YLL	Llanberis	15.59	354	eP	Pn	16 51 04.7	-1.4
WET	Wettzell	15.59	38	P	Pn	16 51 08.0	+1.8
WET				pmax	pmax		
	comp=Z,76nm,1.5s						
CCAN	Las Canadas	15.64	237	Pn	P	16 51 11.3	-0.1
	comp=Z,12nm,0.7s,SNR=4.0						
WPM1	Penmaenmawr	15.69	355	eP	Pn	16 51 06.1	-1.2
WPM1	Penmaenmawr	15.69	355	eP	Pn	16 51 06.1	-1.2
YRC	Rhoscolyn	15.73	354	eP	Pn	16 51 08.1	+0.2
YRC	Rhoscolyn	15.73	354	eP	Pn	16 51 08.1	+0.2
WLF1	Llynfaes	15.75	354	eP	Pn	16 51 08.1	-0.1
WLF1				AMB	AMB	16 51 10.4	
	comp=Z,34nm,1.2s						
WLF1	Llynfaes	15.75	354	eP	Pn	16 51 08.1	-0.1
GEA0	GERESS Array S	15.80	40	ePn	Pn	16 51 08.0	-1.0
GEA0	GERESS Array S	15.80	40	ePn	Pn	16 51 08.0	-1.0
GEC2	GERESS Array S	15.81	40	eP	Pn	16 51 09.5	+0.4
GEC2				pmax	pmax		
	comp=Z,62nm,0.8s						
GEC2	GERESS Array S	15.81	40	ePn	Pn	16 51 09.5	+0.4
	comp=Z,62nm,0.8s						
GEC2	GERESS Array S	15.81	40	ePn	Pn	16 51 09.5	+0.4
	comp=Z,62nm,0.8s						
GERES	GERESS Array B	15.81	40	Pn	Pn	16 51 09.0	-0.1
	comp=Z,0.6nm,0.3s,baz=226,slow=13,SNR=56						
LMK	Market Rasen	15.84	3	eP	Pn	16 51 06.9	-2.4
LMK				AMB	AMB	16 51 08.9	
	comp=Z,165nm,1.6s						
LMK	Market Rasen	15.84	3	eP	Pn	16 51 06.9	-2.4
WME	Myndd Eilian	15.85	354	eP	Pn	16 51 09.1	-0.4
WME	Myndd Eilian	15.85	354	eP	Pn	16 51 09.1	-0.4
BLY	Banja Luka	15.86	58	⇑iP	P	16 51 13.0	-0.5
BLY	Banja Luka	15.86	58	⇑iP	P	16 51 13.0	-0.5
WPS	Cemaes, Angles	15.87	354	eP	Pn	16 51 09.4	-0.3
WPS				AMB	AMB	16 51 12.8	
	comp=Z,59nm,1.0s						
WPS	Cemaes, Angles	15.87	354	eP	Pn	16 51 09.4	-0.3
ARSA	Arzberg	15.89	47	ePn	Pn	16 51 10.5	+0.4
	comp=Z,55nm,1.2s,SNR=32						
ARSA	Arzberg	15.89	47	Pn	Pn	16 51 10.5	+0.4
	comp=Z,55nm,1.2s,SNR=32						
KHC	Kasperske Hory	15.93	39	eP	Pn	16 51 12.2	+1.6
KHC				epP	P	16 51 14.0	-0.3
KHC				ePCP	PcP	16 56 09.8	+1.5
KHC				ex	x	16 56 19.7	
KHC				AMS	AMS	16 58 10.0	
	comp=Z,5µm,13.4s						
KHC	Kasperske Hory	15.93	39	eP	Pn	16 51 11.2	+0.6
KHC				pmax	pmax		
	comp=Z,25nm,0.9s						
KHC	Kasperske Hory	15.93	39	ePn	Pn	16 51 11.2	+0.6
	comp=Z,25nm,0.9s						
KHC	Kasperske Hory	15.93	39	P	Pn	16 51 12.2	+1.6
KHC	Kasperske Hory	15.93	39	ePn	Pn	16 51 11.2	+0.6
	comp=Z,25nm,0.9s						
DSB	Dublin	15.93	350	ePn	Pn	16 51 10.1	-0.4
	comp=Z,73nm,0.9s						
DSB	Dublin	15.93	350	ePn	Pn	16 51 10.1	-0.4
	comp=Z,73nm,0.9s						
KOGS	Kog	15.94	51	ePn	Pn	16 51 10.1	-0.6
KOGS				e		16 51 15.2	
KOGS	Kog	15.94	51	ePn	Pn	16 51 10.1	-0.6
TAM	Tamanrasset	16.06	155	eP	Pn	16 51 10.7	-1.8
TAM				pmax	pmax		
	comp=Z,35nm,0.7s						
TAM	Tamanrasset	16.06	155	ePn	Pn	16 51 10.7	-1.8
	comp=Z,35nm,0.7s						
TAM	Tamanrasset	16.06	155	ePn	Pn	16 51 10.7	-1.8
	comp=Z,35nm,0.7s						
MOX	Moxa	16.09	32	P	P	16 51 14.4	-1.6
MOX				pmax	pmax		
	comp=Z,70nm,1.3s						
TREB	Trebinje	16.12	65	eP	P	16 51 16.4	0.0
NKC	Novy Kostel	16.15	34	eP	Pn	16 51 14.4	+1.0
NKC				epP	sP	16 51 18.4	-1.0
NKC				AMS	AMS	16 58 30.0	
	comp=Z,6µm,10.9s						
NKC	Novy Kostel	16.15	34	eP	Pn	16 51 14.4	+1.0
NKC				MLR	MLR		
	comp=Z,6µm,10.9s						
NKC	Novy Kostel	16.15	34	P	Pn	16 51 14.4	+1.0
HCY	Herceg Novi	16.18	66	⇑iP	Pn	16 51 13.6	-0.1
HCY	Herceg Novi	16.18	66	eP	P	16 51 16.4	-0.6
BRY	Bratogost	16.30	65	eP	Pn	16 51 15.8	+0.4
BRY	Bratogost	16.30	65	eP	Pn	16 51 15.9	+0.5
BUM	Brajici-Budva	16.44	67	⇑iP	Pn	16 51 18.1	+0.9
BUM	Brajici-Budva	16.44	67	⇑iP	Pn	16 51 18.1	+0.9
CONA	Conrad Observa	16.44	46	i Pn	Pn	16 51 17.5	+0.3
	comp=Z,89nm,1.6s,SNR=32						
CONA	Conrad Observa	16.44	46	Pn	Pn	16 51 17.5	+0.3
	comp=Z,89nm,1.6s,SNR=32						
LSRT	Sirt	16.50	108	i P	Pn	16 51 17.2	-0.7
	SNR=42						
CEME	Cevo	16.50	66	⇑iP	Pn	16 51 18.1	+0.1
CEME	Cevo	16.50	66	⇑iP	Pn	16 51 18.1	+0.1
NKME	Niksic	16.57	66	eP	Pn	16 51 19.2	+0.4
NKME	Niksic	16.57	66	eP	Pn	16 51 19.2	+0.4
NKY	Niksic	16.61	65	⇑iP	Pn	16 51 19.5	+0.1
NKY	Niksic	16.61	65	⇑iP	Pn	16 51 19.5	+0.1
UPM	Unac-Piva	16.62	64	eP	Pn	16 51 19.6	0.0
UPM	Unac-Piva	16.62	64	eP	Pn	16 51 19.6	0.0
WIM	Isle of Man	16.63	354	eP	Pn	16 51 20.0	+0.5
WIM	Isle of Man	16.63	354	eP	Pn	16 51 20.0	+0.5
DRME	Dracevica, Mon	16.64	68	⇑iP	Pn	16 51 19.8	+0.2
DRME	Dracevica, Mon	16.64	68	⇑iP	Pn	16 51 19.9	+0.3
ULC	Ulcinj	16.65	68	⇑iP	Pn	16 51 19.9	+0.1
ULC	Ulcinj	16.65	68	⇑iP	Pn	16 51 19.9	+0.1
SOP	Sopron	16.72	47	ePn	Pn	16 51 20.0	-0.6
SOP	Sopron	16.72	47	P	P	16 51 24.1	+1.2
SOP				pmax	pmax		
	comp=Z,35nm,1.3s						
PDG	Podgorica	16.73	67	⇑iP	P	16 51 23.0	-0.1
PDG	Podgorica	16.73	67	P	P	16 51 23.3	+0.2
PDG	Podgorica	16.73	67	⇑iP	P	16 51 23.0	-0.1
TTG	Podgorica	16.73	67	⇑iP	Pn	16 51 21.4	+0.6
TTG	Podgorica	16.73	67	P	P	16 51 23.3	+0.2
TTG	Podgorica	16.73	67	P	P	16 51 23.3	+0.2
TTG	Podgorica	16.73	67	P	P	16 51 23.3	+0.2
HAPS	Han Pijesak,Bl	16.87	61	eP	P	16 51 23.9	-0.9
LJFR	Jufra	16.91	115	i P	Pn	16 51 22.7	-0.5
	SNR=41						
LJFR				eS	Sn	16 54 31.6	+0.3
	SNR=47						
PRU	Pruhonice	16.96	38	eP	Pn	16 51 24.0	+0.3
PRU				epP	pP	16 51 26.7	-0.9
PRU				ex	x	16 51 39.3	
PRU				ex	x	16 56 50.2	
PRU				AMS	AMS	16 58 40.0	
	comp=Z,4µm,12.6s						
PRU	Pruhonice	16.96	38	eP	Pn	16 51 24.0	+0.3
PRU				MLR	MLR		
	comp=Z,4µm,12.6s						
PRU	Pruhonice	16.96	38	P	Pn	16 51 24.0	+0.3
KESW	Keswick, Cumbr	16.97	357	eP	Pn	16 51 23.1	-0.6
KESW				AMB	AMB	16 51 30.3	
	com

DIVS	Divibare	17.60	62⇑	*i* P	Pn	16 51 30.6	-1.1
VRAC	Vranov	17.61	43	P	Pn	16 51 31.6	-0.2
	comp=Z,0.4nm,0.3s,baz=236,slow=12,SNR=27						
VRAC				LR	LR	16 58 09.8	
	comp=Z,2μm,20.7s,baz=243,slow=37						
VRAC	Vranov	17.61	43⇑	*i* P	P	16 51 32.6	-0.2
SMOL	Smolenice	17.64	46	*e* P	P	16 51 34.5	+1.3
SMOL	Smolenice	17.64	46	*e* P	P	16 51 34.5	+1.3
SMOL	Smolenice	17.64	46	*e* P	P	16 51 34.5	+1.3
ESK	Eskdalemuir	17.70	357	*e* P	Pn	16 51 33.0	+0.2
ESK	Eskdalemuir	17.70	357	*e* P	Pn	16 51 33.1	+0.2
ESK				pmax	pmax		
	comp=Z,145nm,1.5s						
ESK	Eskdalemuir	17.70	357	*e* P	Pn	16 51 33.0	+0.2
ESK	Eskdalemuir	17.70	357	*e* Pn	Pn	16 51 33.0	+0.2
	comp=Z,145nm,1.5s						
EKA	Eskdalemuir Ar	17.72	357	P	Pn	16 51 32.8	-0.3
	baz=176,slow=14,SNR=25						
EKA				S	Sn	16 54 36.3	-14
	baz=174,slow=25,SNR=4.3						
EKA				LR	LR	16 58 58.9	
	comp=Z,3μm,18.1s,baz=195,slow=39						
OHR	Ohrid	17.72	72	*e* P	Pn	16 51 32.7	-0.6
FRGS	Fruska Gora	17.76	58⇑	*i* P	Pn	16 51 32.8	-0.9
NEST	Nestorio	17.88	74	P	Pn	16 51 33.8	-1.5
PENT	Pentalofos	17.94	75	P	Pn	16 51 34.3	-1.8
PDO	Prodromos	18.02	80	P	Pn	16 51 35.6	-1.3
UPC	Upice	18.02	39	*e* P	Pn	16 51 36.6	-0.3
UPC				*ex*	x	16 57 19.8	
UPC				AMS	AMS	16 59 30.0	
	comp=Z,4μm,14.0s						
UPC	Upice	18.02	39	*e* P	Pn	16 51 36.6	-0.3
UPC				MLR	MLR		
	comp=Z,4μm,14.0s						
UPC	Upice	18.02	39	P	Pn	16 51 36.6	-0.3
LUMB	Murzuk	18.05	125	*i* P	P	16 51 37.8	0.0
	SNR=40						
LUMB				*e* S	Sn	16 54 57.5	-1.4
	SNR=47						
DPC	Dobruska-Polom	18.08	40	*e* P	Pn	16 51 37.2	-0.5
DPC				*ex*	x	16 57 20.1	
DPC				AMS	AMS	16 59 30.0	
	comp=Z,4μm,11.9s						
DPC	Dobruska-Polom	18.08	40	*e* P	Pn	16 51 37.2	-0.5
DPC				MLR	MLR		
	comp=Z,4μm,11.9s						
DPC	Dobruska-Polom	18.08	40	P	Pn	16 51 37.2	-0.5
BUD	Budapest	18.10	51	*e* Pn	P	16 51 38.0	-0.2
BIA	Bitola	18.11	72	*e* P	P	16 51 39.9	+1.5
KPRO	Kipourio	18.11	76	P	Pn	16 51 36.9	-1.2
FNA	Florina	18.14	73	P	Pn	16 51 36.5	-1.9
FNA	Florina	18.14	73	P	Pn	16 51 36.5	-1.9
FNA	Florina	18.14	73	P	Pn	16 51 36.5	-1.9
FNA	Florina	18.14	73	P	Pn	16 51 36.5	-1.9
KRLC	Kraliky	18.15	41	*e* P	P	16 51 38.7	-0.2
KRLC				*ex*	x	16 51 56.5	
KRLC				*ex*	x	16 57 26.4	
KRLC				*ex*	x	16 57 45.4	
KRLC	Kraliky	18.15	41	*e* P	P	16 51 38.7	-0.2
KRLC	Kraliky	18.15	41	P	P	16 51 38.7	-0.2
PGBU	Glenifferbraes	18.27	355	*e* P	P	16 51 40.6	+0.6
PGBU				AMB	AMB	16 51 43.4	
	comp=Z,63nm,1.2s						
PGBU	Glenifferbraes	18.27	355	*e* P	P	16 51 40.6	+0.6
SKO	Skopje	18.27	69	*e* P	P	16 51 41.1	+0.9
ESY	Stoneypath	18.29	358	*e* P	P	16 51 40.6	+0.4
ESY	Stoneypath	18.29	358	*e* P	P	16 51 40.6	+0.4
PVO	Paravola	18.29	80	P	Pn	16 51 38.9	-1.3
KSP	Ksiaz	18.37	38	*e* P	P	16 51 43.3	+2.1
	comp=Z,800nm,3.9s						
KSP				*e* S	S	16 55 17.0	+5.7
KSP				LMZ	LR	16 58 48.4	
	comp=Z,3μm,16.1s						
KSP	Ksiaz	18.37	38	*e* P	P	16 51 43.3	+2.1
KSP				pmax	pmax		
	comp=Z,800nm,3.9s						
KSP				MLR	MLR		
	comp=Z,3μm,16.1s						
MORC	Moravsky Berou	18.38	43⇑	*i* P	Pn	16 51 40.8	-0.6
MORC	Moravsky Berou	18.38	43	*e* P	Pn	16 51 39.4	-2.0
MORC				pmax	pmax		
	comp=Z,221nm,1.3s						
MORC	Moravsky Berou	18.38	43	*e* Pn	Pn	16 51 39.9	-1.5
MORC	Moravsky Berou	18.38	43⇑	*i* P	Pn	16 51 40.8	-0.6
MORC	Moravsky Berou	18.38	43	*e* Pn	Pn	16 51 39.4	-2.0
	comp=Z,221nm,1.3s						
KZN	Kozani	18.43	74	P	Pn	16 51 40.2	-1.8
KZN	Kozani	18.43	74	P	Pn	16 51 40.2	-1.8
KZN	Kozani	18.43	74	P	Pn	16 51 40.2	-1.8
KZN	Kozani	18.43	74	P	Pn	16 51 40.2	-1.8
VYHS	Vyhne	18.45	48	*e* P	P	16 51 42.3	+0.2
VYHS				pmax	pmax		
	comp=Z,40nm,1.6s						
VYHS	Vyhne	18.45	48	*e* P	P	16 51 42.3	+0.2
	comp=Z,40nm,1.6s						
VYHS	Vyhne	18.45	48	*e* P	P	16 51 42.3	+0.2
VYHS				*e* S	S	16 55 14.2	+1.3
VYHS				*e* L	L	16 59 31.6	
EVR	Evrytania	18.49	79	P	P	16 51 41.9	-0.8
EVR	Evrytania	18.49	79	P	P	16 51 41.9	-0.8
EVR	Evrytania	18.49	79	P	P	16 51 41.9	-0.8
DRO	Drossia	18.49	82	P	P	16 51 41.7	-1.0
AMT	Artemida-Makis	18.54	83	P	Pn	16 51 44.2	+0.8
ANX	Ano Chora	18.60	80	P	P	16 51 43.3	-0.6
THL	Klokotos Trika	18.62	77	P	P	16 51 42.5	-1.5
OKC	Ostrava-Krasne	18.74	43	*e* P	Pn	16 51 45.8	+0.1
OKC				*ex*	x	16 51 49.3	
OKC				*ex*	x	16 57 53.0	
OKC				AMS	AMS	17 00 00.0	
	comp=Z,4μm,14.4s						
OKC	Ostrava-Krasne	18.74	43	*e* P	Pn	16 51 45.8	+0.1
OKC				MLR	MLR		
	comp=Z,4μm,14.4s						
OKC	Ostrava-Krasne	18.74	43	P	Pn	16 51 45.8	+0.1
ITM	Ithomi	18.76	84	P	P	16 51 43.8	-1.8
ITM	Ithomi	18.76	84	P	P	16 51 43.8	-1.8
ITM	Ithomi	18.76	84	P	P	16 51 43.8	-1.8
PSZ	Piszkesteto	18.82	50⇑	*i* P	Pn	16 51 46.7	0.0
PSZ	Piszkesteto	18.82	50	*e* P	Pn	16 51 46.7	0.0
PSZ	Piszkesteto	18.82	50	*e* P	P	16 51 45.8	-0.4
PSZ				pmax	pmax		
	comp=Z,256nm,2.0s						
PSZ	Piszkesteto	18.82	50	*e* P	P	16 51 45.8	-0.4
	comp=Z,256nm,2.0s						
PSZ	Piszkesteto	18.82	50	*e* P	P	16 51 45.8	-0.4
	comp=Z,256nm,2.0s						
KLV	Kalavryta, Ach	18.83	81	P	P	16 51 45.6	-0.8
KLV	Kalavryta, Ach	18.83	81	P	P	16 51 45.6	-0.8
KLV	Kalavryta, Ach	18.83	81	P	P	16 51 45.6	-0.8
AGG	Agios Georgios	18.89	78	P	P	16 51 45.0	-2.0
AGG	Agios Georgios	18.89	78	*e* P	P	16 51 46.8	-0.2
AGG				pmax	pmax		
	comp=Z,155nm,1.2s						
AGG	Agios Georgios	18.89	78	*e* P	P	16 51 46.8	-0.2
	comp=Z,155nm,1.2s						
AGG	Agios Georgios	18.89	78	*e* P	P	16 51 46.8	-0.2
	comp=Z,155nm,1.2s						
RAC	Raciborz	18.90	43	*e* Pn	Pn	16 51 47.8	+0.2
RAC				*e* S	S	16 55 22.2	+0.2
RAC				MLR	MLR		
	comp=Z,5μm,14.1s						
RAC	Raciborz	18.90	43	*e* P	Pn	16 51 47.8	+0.2
GRG	Griva	18.92	72	P	P	16 51 46.3	-1.1
GRG	Griva	18.92	72	P	P	16 51 46.3	-1.1
GRG	Griva	18.92	72	P	P	16 51 46.3	-1.1
GRG	Griva	18.92	72	P	P	16 51 46.3	-1.1
EDU	Dundee	18.93	358	*e* P	Pn	16 51 48.6	+0.8
EDU	Dundee	18.93	358	*e* P	Pn	16 51 48.6	+0.8
MDVR	Moldovita	18.96	61⇑	*i* P	Pn	16 51 48.8	+0.4
GUR	Goura	18.99	82	P	P	16 51 47.5	-0.7
GUR	Goura	18.99	82	P	P	16 51 47.5	-0.7
GUR	Goura	18.99	82	P	P	16 51 47.5	-0.7
VAY	Valandovo	19.07	71	P	P	16 51 47.3	-1.6
VAY	Valandovo	19.07	71	*e* P	Pn	16 51 49.9	+0.3
VAY	Valandovo	19.07	71	P	P	16 51 47.3	-1.6
VAY	Valandovo	19.07	71	P	P	16 51 47.3	-1.6
VAY	Valandovo	19.07	71	P	P	16 51 47.3	-1.6
DSF	Desfina	19.09	80	P	P	16 51 44.1	-5.1
DSF	Desfina	19.09	80	P	P	16 51 44.1	-5.1
DSF	Desfina	19.09	80	P	P	16 51 44.1	-5.1
VLX	Vlachokerasia	19.09	83	P	P	16 51 48.4	-1.0
VLX	Vlachokerasia	19.09	83	P	P	16 51 48.4	-1.0
VLX	Vlachokerasia	19.09	83	P	P	16 51 48.4	-1.0
BZS	Buzias	19.11	58⇑	*i* P	Pn	16 51 50.4	+0.2
LANS	Liptovska Anna	19.13	46	*e* P	Pn	16 51 52.2	+1.8
LANS	Liptovska Anna	19.13	46	*e* P	Pn	16 51 52.2	+1.8
KNT	Kendrikon	19.31	72	P	P	16 51 50.8	-0.8
KNT	Kendrikon	19.31	72	P	P	16 51 50.8	-0.8
KNT	Kendrikon	19.31	72	P	P	16 51 50.8	-0.8
KNT	Kendrikon	19.31	72	P	P	16 51 50.8	-0.8
FYTO	Fytoko, Volos	19.34	77	P	P	16 51 50.6	-1.3
FYTO	Fytoko, Volos	19.34	77	P	P	16 51 50.6	-1.3
FYTO	Fytoko, Volos	19.34	77	P	P	16 51 50.6	-1.3
THE	Thessaloniki	19.34	73	P	P	16 51 50.5	-1.4
THE	Thessaloniki	19.34	73	P	P	16 51 50.5	-1.4
THE	Thessaloniki	19.34	73	P	P	16 51 50.5	-1.4
THE	Thessaloniki	19.34	73	P	P	16 51 50.5	-1.4
KECS	Kecovo	19.42	49	*e* P	Pn	16 51 53.8	0.0
KECS				pmax	pmax		
	comp=Z,13nm,1.1s						
KECS	Kecovo	19.42	49	*e* P	Pn	16 51 53.8	0.0
	comp=Z,12nm,1.1s						
KECS	Kecovo	19.42	49	*e* P	Pn	16 51 53.8	0.0
KECS				*e*		16 51 57.9	
HORT	Hortiatis	19.44	74	P	P	16 51 51.6	-1.5
HORT	Hortiatis	19.44	74	P	P	16 51 51.6	-1.5
HORT	Hortiatis	19.44	74	P	P	16 51 51.6	-1.5
KKB	Krupnik	19.49	70	*i* P	Pn	16 51 54.3	-0.4
SOH	Sokhos	19.64	73	P	P	16 51 54.6	-0.7
SOH	Sokhos	19.64	73	P	P	16 51 54.6	-0.7
SOH	Sokhos	19.64	73	P	P	16 51 54.6	-0.7
SOH	Sokhos	19.64	73	P	P	16 51 54.6	-0.7
MME1	Meikle Cairn	19.69	358	*e* P	Pn	16 51 57.9	+0.8
MME1	Meikle Cairn	19.69	358	*e* P	Pn	16 51 57.9	+0.8
PLG	Polygyros	19.71	74	P	P	16 51 54.8	-1.2
PLG	Polygyros	19.71	74	P	P	16 51 54.8	-1.2
PLG	Polygyros	19.71	74	P	P	16 51 54.8	-1.2
PLG	Polygyros	19.71	74	P	P	16 51 54.8	-1.2
KSB	Sheil Bridge	19.73	354	*e* P	Pn	16 51 58.5	+1.1
NIE	Niedzica	19.73	46	*e* P	Pn	16 51 57.9	+0.2
NIE	comp=Z,500nm,4.2s						
NIE				*e* S	Sn	16 55 43.7	+4.3
NIE				LMZ	LR	16 59 12.3	
	comp=Z,700nm,20.3s						
NIE	Niedzica	19.73	46⇑	*e* P	Pn	16 51 57.9	+0.2
NIE				MLR	MLR		
	comp=Z,700nm,20.3s						
SRS	Serrai	19.83	72	P	P	16 51 56.7	-0.6
SRS	Serrai	19.83	72	P	P	16 51 56.7	-0.6
SRS	Serrai	19.83	72	P	P	16 51 56.7	-0.6
SRS	Serrai	19.83	72	P	P	16 51 56.7	-0.6
OJC	Ojcow	19.85	44	*e* P	Pn	16 51 58.4	-0.6
	comp=Z,600nm,4.3s						
OJC				*e* S	Sn	16 55 48.3	+6.1
OJC				LMZ	LR	16 59 37.0	
	comp=Z,2μm,17.5s						
OJC	Ojcow	19.85	44⇑	*e* P	Pn	16 51 58.4	-0.6
OJC				MLR	MLR		
	comp=Z,2μm,17.5s						
OJC	Ojcow	19.85	44	*e* P	P	16 51 57.8	+0.4
	comp=Z,76nm,1.3s						
OJC	Ojcow	19.85	44	*e* P	P	16 51 57.8	+0.4
	comp=Z,76nm,1.3s						
KPL	Plockton	19.87	354	*e* P	Pn	16 52 00.3	+1.1
KPL	Plockton	19.87	354	*e* P	Pn	16 52 00.3	+1.1
MMB	Musomiste	19.95	71	*i* P	P	16 51 58.9	+0.3
SRE	Strehaia	19.97	62⇑	*i* P	Pn	16 52 00.1	-0.3
MCD	Coleburn Disti	19.97	358	*e* P	Pn	16 52 00.2	-0.2
MCD	Coleburn Disti	19.97	358	*e* P	Pn	16 52 00.2	-0.2
NVR	Nevrokopi	20.04	71	P	P	16 51 59.6	0.0
NVR	Nevrokopi	20.04	71	P	P	16 51 59.6	0.0
NVR	Nevrokopi	20.04	71	P	P	16 51 59.6	0.0
OUR	Ouranopolis	20.12	74	P	P	16 51 59.2	-1.2
OUR	Ouranopolis	20.12	74	P	P	16 51 59.2	-1.2
OUR	Ouranopolis	20.12	74	P	P	16 51 59.2	-1.2
OUR	Ouranopolis	20.12	74	P	P	16 51 59.2	-1.2
MPEP	Malo Peshtene	20.12	66	*i* P	P	16 52 00.9	+0.4
MUD	Monsted U'grnd	20.17	18⇑	*i* P	Pn	16 52 07.8	+5.1
	comp=Z,142nm,1.4s						
MUD	Monsted U'grnd	20.17	18⇑	*i* P	Pn	16 52 07.8	+5.1
MUD				pmax	pmax		
	comp=Z,140nm,1.4s						
CRVS	Cervenica-Dubn	20.18	49	*e* P	Pn	16 52 02.6	-0.3
CRVS				*e* S	S	16 55 48.1	+0.3
CRVS	Cervenica-Dubn	20.18	49	*e* P	Pn	16 52 02.6	-0.3
CRVS	Cervenica-Dubn	20.18	49	*e* P	Pn	16 52 02.6	-0.3
CRVS				*e* S	S	16 55 48.1	+0.3
DRGR		20.18	55⇓	*i* P	Pn	16 52 02.3	-0.7
STHS	Stebnicka Huta	20.28	47	*e* P	Pn	16 52 04.6	+0.5
STHS				*e*		16 52 08.2	
STHS				pmax	pmax		
	comp=Z,16nm,1.1s						
STHS	Stebnicka Huta	20.28	47	*e* P	Pn	16 52 04.6	+0.5
STHS				*e*		16 52 08.2	
PGB	Panagyurishte	20.34	68	*i* P	P	16 52 03.4	+0.5
MVH1	Achvaich	20.35	356	*e* P	Pn	16 52 04.6	-0.2
MVH1	Achvaich	20.35	356	*e* P	Pn	16 52 04.6	-0.2
KAVA	Kavala	20.52	72	P	P	16 52 03.2	-1.6
KAVA	Kavala	20.52	72	P	P	16 52 03.2	-1.6
KAVA	Kavala	20.52	72	P	P	16 52 03.2	-1.6
LOT	Lotru	20.53	60⇑	*i* P	P	16 52 05.7	+0.7
UZH	Uzhgorod	20.57	50	*e* P	P	16 52 05.2	-0.1
UZH				*i*		16 52 08.2	
UZH				*e* PPP	PPP	16 52 34.6	
UZH				*i* S	S	16 55 49.4	-6.0
UZH				*i* SS	SnSn	16 56 11.6	-2.5
UZH				*e* SSS	SSS	16 56 40.8	
UZH				MLR	MLR		
	comp=N,3μm,11.0s						
UZH				MLR	MLR		
	comp=E,3μm,11.0s						
UZH				MLR	MLR		
	comp=Z,2μm,11.0s						
KOLS	Kolonicke sedl	20.68	49	*e* P	Pn	16 52 07.6	-1.2
KOLS				pmax	pmax		
	comp=Z,141nm,2.1s						
KOLS	Kolonicke sedl	20.68	49	*e* P	Pn	16 52 07.6	-1.2
	comp=Z,141nm,2.1s						
KOLS	Kolonicke sedl	20.68	49	*e* P	Pn	16 52 07.6	-1.2
KOLS				*e* S	Sn	16 56 06.4	+4.2
KOLS				*e* L	L	16 59 54.0	
RZN	Rozhen	20.69	71	*i* P	P	16 52 06.6	-0.3
BSD	Bornholm Skovb	20.80	28	*i* P	P	16 52 08.3	+0.7
	comp=Z,40nm,1.0s						
BSD	Bornholm Skovb	20.80	28	*i* P	P	16 52 08.3	+0.7
BSD				pmax	pmax		
	comp=Z,40nm,1.0s						
ARR	Arges	21.11	60⇑	*i* P	P	16 52 12.1	+0.9
HUMR	Humele	21.19	63⇓	*i* P	P	16 52 12.7	+0.7
KDZ	Kurdzhali	21.22	71	*i* P	P	16 52 11.5	-0.8
KWP	Kalwaria Pacla	21.23	48	*e* P	P	16 52 13.7	+1.3
	comp=Z,700nm,3.4s						
KWP				LMZ	LR	17 00 05.1	
	comp=Z,1μm,20.0s						
KWP	Kalwaria Pacla	21.23	48⇑	*i* P	P	16 52 13.8	+1.4
KWP	Kalwaria Pacla	21.23	48⇑	*e* P	P	16 52 13.7	+1.3
KWP				pmax	pmax		
	comp=Z,700nm,3.4s						
KWP				MLR	MLR		
	comp=Z,1μm,20.0s						
KWP	Kalwaria Pacla	21.23	48⇑	*i* P	P	16 52 13.8	+1.4
BEL	Belsk	21.24	41	*e* P	P	16 52 14.0	+1.6
	comp=Z,1μm,3.0s						
BEL				*e* S	S	16 56 11.6	+3.0
BEL				LMZ	LR	17 00 52.6	
	comp=Z,1μm,18.0s						
BEL	Belsk	21.24	41	*e* P	P	16 52 14.0	+1.6
BEL				*e* S	S	16 56 11.6	+3.0
BEL				pmax	pmax		
	comp=Z,1μm,3.0s						
BEL				MLR	MLR		
	comp=Z,1μm,18.0s						
VOIR		21.41	60⇑	*i* P	P	16 52 15.4	+1.0
IDI	Anoyia	21.49	88	P	P	16 52 14.9	-0.4
	comp=Z,58nm,0.9s,baz=300,slow=13,SNR=16						
IDI				LR	LR	17 02 16.7	
	comp=Z,353nm,20.0s,baz=276,slow=42						
IDI	Anoyia	21.49	88	*i* P	P	16 52 14.6	-0.7
IDI	Anoyia	21.49	88	*e* P	P	16 52 15.2	-0.1
	comp=Z,91nm,1.0s						
IDI	Anoyia	21.49	88	*e* P	P	16 52 15.2	-0.1
	comp=Z,91nm,1.0s						
APE	Apeiranthos	21.62	83	*c i* P	P	16 52 14.5	-2.3
ALN	Alexandroupoli	21.68	73	P	P	16 52 16.7	-0.6
ALN	Alexandroupoli	21.68	73	P	P	16 52 16.7	-0.6
ALN	Alexandroupoli	21.68	73	P	P	16 52 16.7	-0.6
ALN	Alexandroupoli	21.68	73	P	P	16 52 16.7	-0.6
HOMB	Homborsund	21.69	15	*e* P	P	16 52 19.0	+1.8
HOMB				*e* P	sP	16 52 19.4	-0.6
HOMB				IAmb	IAmb	16 52 23.3	
	comp=Z,104nm,1.3s						
HOMB				*e* S	S	16 56 19.4	+2.1
HOMB				IAMs_20	IAMs_20	17 01 55.0	
	comp=Z,3μm,16.5s						
SANT	Santorini	21.70	85⇑	*i* P	P	16 52 15.6	-2.0
SANT	Santorini	21.70	85	*e* P	P	16 52 15.3	-2.2
	comp=Z,218nm,1.2s						
SANT	Santorini	21.70	85	*e* P	P	16 52 15.3	-2.2
	comp=Z,218nm,1.2s						
SZH	Strazhica	21.70	66	*i* P	P	16 52 17.3	-0.2
LAST	Lasithi	21.98	88⇑	*i* P	P	16 52 19.9	-0.8
LAST	Lasithi	21.98	88	*e* P	P	16 52 19.8	-0.9
	comp=Z,96nm,1.1s						
LAST	Lasithi	21.98	88	*e* P	P	16 52 19.8	-0.9
	comp=Z,96nm,1.1s						
MLR	Muntele Rosu	22.04	60	P	P	16 52 21.5	+0.2
	comp=Z,5.7nm,0.8s,baz=256,slow=6.4,SNR=31						
MLR				LR	LR	17 01 04.3	
	comp=Z,658nm,20.4s,baz=264,slow=37						
MLR	Muntele Rosu	22.04	60⇑	*i* P	P	16 52 22.3	+1.1
MLR	Muntele Rosu	22.04	60	*e* P	P	16 52 21.9	+0.7
MLR				pmax	pmax		
	comp=Z,144nm,1.2s						
MLR	Muntele Rosu	22.04	60	*e* P	P	16 52 21.9	+0.7
	comp=Z,144nm,1.2s						
MLR	Muntele Rosu	22.04	60	*e* P	P	16 52 21.9	+0.7
	comp=Z,144nm,1.2s						
KMY	Karmoy	22.04	10	*e* S	S	16 56 24.7	+0.6
BUR08	Bucovina Ar. S	22.06	55	*e* P	P	16 52 20.7	-0.8
BUR08	Bucovina Ar. S	22.06	55	*e* P	P	16 52 20.7	-0.8
BURAR	Bucovina Array	22.06	55⇑	*i* P	P	16 52 22.5	+1.0
LVV	L'vov	22.09	48	*e* P	P	16 52 21.1	-0.5
LVV				*e* S	S	16 56 21.4	-3.9
LVV				MLR	MLR		
	comp=N,1μm,12.0s						
LVV				MLR	MLR		
	comp=E,800nm,12.0s						
LVV				MLR	MLR		
	comp=Z,700nm,12.0s						
SULR		22.11	63⇑	*i* P	P	16 52 22.3	+0.4
JMB	Yambol	22.12	69	*i* P	P	16 52 21.1	-0.9
ISR	Istrita	22.38	62⇓	*i* P	P	16 52 24.8	-0.1
BLS5	Blasjo	22.41	11	*e* P	P	16 52 27.1	+2.1
BLS5				IAmb	IAmb	16 52 37.7	
	comp=Z,36nm,0.8s						
BLS5				*e* S	S	16 56 33.1	+1.8
PLOR	Plostina	22.59	60⇓	*i* P	P	16 52 26.3	-0.8
VRI	Vrincioaia	22.65	60⇓	*i* P	P	16 52 28.1	+0.5
TESR	Tescani	22.73	58⇑	*i* P	P	16 52 28.4	-0.1
PRD	Provadia	22.77	67	*i* P	P	16 52 30.1	+1.2
ODD1	Odda	22.91	11	*e* S	S	16 56 40.6	+0.3
ODD1	Odda	22.91	11	*e* S	S	16 56 40.6	+0.3
	SNR=30						
KONO	Kongsberg	23.18	15	*e* P	P	16 52 34.3	+1.3
KONO				IAmb	IAmb	16 52 39.0	
	comp=Z,347nm,2.2s						
KONO				*e* S	S	16 56 45.8	+0.9
KONO	Kongsberg	23.18	15	*e* P	P	16 52 33.3	+0.2
KONO				pmax	pmax		
	comp=Z,156nm,1.6s						
KONO	Kongsberg	23.18	15	*e* P	P	16 52 33.2	+0.2
	comp=Z,156nm,1.6s						
KONO	Kongsberg	23.18	15	*e* P	P	16 52 33.2	+0.2
	comp=Z,156nm,1.6s						
BER	Bergen	23.19	9	*e* S	S	16 56 50.1	+5.2
BER				IAMs_20	IAMs_20	17 04 08.5	
	comp=Z,5μm,14.6s						
HARR	Harsova	23.30	63⇓	*i* P	P	16 52 34.2	-0.1
CFR	Carcaliu	23.51	62⇑	*i* P	P	16 52 34.5	-1.9
TIRR	Tirgusor	23.61	64⇓	*i* P	P	16 52 36.6	-0.9
TIRR	Tirgusor	23.61	64	*e* P	P	16 52 35.8	-1.7
TIRR				pmax	pmax		
	comp=Z,165nm,1.6s						
TIRR	Tirgusor	23.61	64	*e* P	P	16 52 35.8	-1.7
	comp=Z,165nm,1.6s						
TIRR	Tirgusor	23.61	64	*e* P	P	16 52 35.8	-1.7
	comp=Z,165nm,1.6s						
SUW	Suwalki	23.65	38	*e* P	P	16 52 36.5	-1.3
	comp=Z,1μm,3.3s						
SUW				*e* S	S	16 56 56.0	+3.4
SUW				LMZ	LR	17 01 24.4	
	comp=Z,900nm,18.9s						
SUW	Suwalki	23.65	38⇑	*e* P	P	16 52 36.4	-1.3
SUW				*e* S	S	16 56 56.0	+3.4
SUW				MLR	MLR		
	comp=Z,900nm,18.9s						
OSL	Oslo	23.68	16	*e* S	S	16 56 59.7	+6.8
SUE	Sulen	23.78	8	*e* S	S	16 56 55.9	+1.3
SUE	Sulen	23.78	8	*e* S	S	16 56 55.8	+1.3
	SNR=29						
HYA	Hoyanger	24.06	9	*e* P	P	16 52 45.7	+4.2
HYA				*e* S	S	16 57 01.0	+2.1
SORM	Soroca	24.23	55⇓	*i* P	P	16 52 41.3	-2.1
MILM	Milestii Mici	24.27	58⇑	*i* P	P	16 52 42.0	-1.7
KIS	Kishinev	24.29	58⇑	*i* P	P	16 52 42.0	-1.9
	comp=Z,400nm,2.0s		

comp=Z,7.0nm,0.8s,baz=245,slow=10,SNR=8.2
AKASG ScP **ScP** **17 00 04.3 -1.6**
comp=Z,0.1nm,0.3s,baz=255,slow=4.2,SNR=4.1
AKASG LR LR 17 03 17.5
comp=Z,743nm,18.1s,baz=255,slow=37
AKBB Malin Array Si 25.52 49 *eP* **P 16 52 51.7 -3.3**
AKBB pmax pmax
comp=Z,17nm,1.1s
AKBB Malin Array Si 25.52 49 *eP* **P 16 52 51.7 -3.3**
comp=Z,17nm,1.1s
AKBB Malin Array Si 25.52 49 *eP* **P 16 52 51.7 -3.3**
comp=Z,17nm,1.1s
MOL Molde 25.59 10 *eS* **S 16 57 25.3 +1.9**
MOL IVMs_BB IVMs_BB 17 05 41.6
comp=Z,2μm,9.4s
NACGM Naroch 25.91 39 *e* **P 16 52 58.0 -0.4**
NACGM *e*LQ LQ 17 00 13.0
NACGM *e*LR LR 17 04 06.0
MICGM Minsk 26.27 41 *eP* **P 16 53 01.0 -0.8**
MICGM *eS* **S 16 57 32.0 -2.4**
MICGM *eSS* **SnSn 16 58 40.0 +6.5**
MICGM *e*LR LR 17 02 30.0
MICGM LRM MLR 17 04 56.0
comp=Z,2.0nm,12.0s
MNK Minsk 26.27 41 *eP* **P 16 53 01.0 -0.8**
BBTS Babate 26.42 214 P **P 16 53 04.0 +0.7**
comp=Z,72nm,1.1s,baz=36,slow=7.9,SNR=4.6
BBTS LR LR 17 04 07.8
comp=Z,3μm,18.0s,baz=28,slow=38
BR231 Keskin MP Arra 26.88 75 *eP* **P 16 53 07.7 +0.2**
BR231 Keskin MP Arra 26.88 75 *eP* **P 16 53 07.7 +0.2**
ANTO Ankara 26.89 74 *eP* **P 16 53 07.8 +0.2**
ANTO pmax pmax
comp=Z,71nm,1.4s
ANTO Ankara 26.89 74 *eP* **P 16 53 07.8 +0.2**
comp=Z,71nm,1.4s
ANTO Ankara 26.89 74 *eP* **P 16 53 07.8 +0.2**
comp=Z,71nm,1.4s
BR131 Keskin Array S 27.55 75 *eP* **P 16 53 13.6 0.0**
BR131 Keskin Array S 27.55 75 *eP* **P 16 53 13.6 0.0**
BRTR Keskin Array B 27.55 75 P **P 16 53 13.2 -0.5**
comp=Z,8.8nm,0.9s,baz=270,slow=7.4,SNR=38
BRTR PcP **PcP** **16 56 31.2 -0.2**
comp=Z,2.3nm,1.1s,baz=270,slow=2.9,SNR=3.8
BRTR ScP **ScP** **17 00 11.1 -1.4**
comp=Z,0.6nm,0.7s,baz=294,slow=1.4,SNR=3.7
BRTR LR LR 17 04 45.2
comp=Z,152nm,19.1s,baz=285,slow=38
BRTR Keskin Array B 27.55 75 *i* P **P 16 53 13.8 +0.1**
BRTR pmax pmax
comp=Z,9.0nm,0.9s
SIM Simferopol' 27.70 63*c i*P **P 16 53 14.3 -0.5**
SIM *e*S **S 16 57 54.0 -3.2**
SIM *e*SS **SnSn 16 59 17.0 +8.3**
SIM pmax pmax
comp=Z,16nm,1.0s
SIM MLR MLR
comp=N,440nm,13.7s
VSU Vasula 27.83 32 *i* P **P 16 53 15.2 -0.5**
VSU pmax pmax
comp=Z,42nm,0.7s
NSS Namsos 28.12 13 *eP* **P 16 53 18.8 +0.6**
NSS IAmb IAmb 16 53 24.8
comp=Z,101nm,1.9s
NSS *e*S **S 16 58 04.6 +1.2**
NSS IAMs_20 IAMs_20 17 04 50.3
comp=Z,4μm,22.9s
CSS Mathiatis 28.25 85 *eP* **P 16 53 19.6 -0.2**
comp=Z,10nm,1.2s
CSS Mathiatis 28.25 85 *eP* **P 16 53 19.6 -0.2**
comp=Z,10nm,1.2s
FINES FINESS Array B 29.44 27 P **P 16 53 29.6 -0.4**
comp=Z,5.9nm,0.9s,baz=226,slow=10,SNR=13
FINES PcP **PcP** **16 56 35.2 -0.2**
comp=Z,13nm,1.2s,baz=243,slow=2.1,SNR=4.7
FINES LR LR 17 04 35.3
comp=Z,379nm,19.7s,baz=218,slow=35
FIA1 FINESS Array S 29.44 27 *eP* **P 16 53 29.6 -0.4**
FIA1 FINESS Array S 29.44 27 *eP* **P 16 53 29.6 -0.4**
BORG Borgarnes 29.52 343 LR LR 17 04 21.0
comp=Z,980nm,19.4s,baz=169,slow=34
ANN Anapa 30.06 64*c i*P **P 16 53 34.4 -1.3**
ANN *i* *PP **sP** **16 53 43.0 +4.4**
ANN *e* 16 54 32.4
ANN *e*PPP PPP 16 54 40.1
ANN *e*S **S 16 58 34.7 +0.5**
ANN pmax pmax
comp=Z,68nm,2.0s
ANN MLR MLR
comp=N,828nm,16.0s
ANN MLR MLR
comp=Z,1μm,16.0s
ANN MLR MLR
comp=E,856nm,16.0s
PUL Pulkovo 30.09 32 *i* P **P 16 53 35.6 -0.2**
PUL pmax pmax
comp=Z,58nm,0.5s
ARNB Al Arnab 30.10 82 *eP* **P 16 53 35.4 -0.9**
DRWC Darouich 30.46 80 *eP* **P 16 53 38.5 -1.0**
WRDH Warideh 30.54 82 *eP* **P 16 53 40.9 +0.7**
BIDA Albida 30.60 83 *eP* **P 16 53 36.4 -4.3**
BRBR Barbar 30.79 86 *eP* **P 16 53 41.4 -1.2**
HAWK Haweek 30.81 84 *eP* **P 16 53 43.3 +0.7**
DBIC Dimbokro 30.97 186 P **P 16 53 44.9 +0.9**
comp=Z,19nm,0.8s,baz=350,slow=10.0,SNR=22
DBIC LR LR 17 06 53.5
comp=Z,2μm,18.5s,baz=346,slow=38
DBIC Dimbokro 30.97 186 *eP* **P 16 53 44.5 +0.5**
comp=Z,31nm,0.9s
DBIC Dimbokro 30.97 186 *eP* **P 16 53 44.5 +0.5**
comp=Z,31nm,0.9s
TIC Toumodi 31.01 186 *eP* **P 16 53 46.0 +1.7**
TCHB Talchebab 31.05 88 *eP* **P 16 53 45.5 +0.9**
OBN Obninsk 31.14 43⇑ *i*P **P 16 53 43.5 -1.6**
OBN *i* 16 56 40.1
OBN *i* S **S 16 58 46.2 -4.7**
OBN *i* SS **SnSn 17 00 33.2 +1.2**
OBN pmax pmax
comp=Z,23nm,1.0s
OBN MLR MLR
comp=Z,987nm,14.0s
OBN Obninsk 31.14 43 *eP* **P 16 53 44.1 -1.0**
comp=Z,39nm,1.2s
OBN Obninsk 31.14 43 *i* PcP **PcP** **16 56 40.1 +0.1**
OBN Obninsk 31.14 43 *eP* **P 16 53 44.1 -1.0**
comp=Z,39nm,1.2s
KIC Kosan Boka 31.27 186 *eP* **P 16 53 47.2 +0.6**
comp=Z,74nm,0.9s
LIC Lamto 31.43 186 *eP* **P 16 53 48.4 +0.4**
comp=Z,36nm,0.9s
LIC Lamto 31.43 186 *eP* **P 16 53 48.4 +0.4**
comp=Z,25nm,0.9s
LIC *e*R
comp=Z,4μm,20.8s
LIC Lamto 31.43 186 *eP* **P 16 53 48.4 +0.4**
comp=Z,25nm,0.9s
RABH Abou Rabah 31.46 84 *eP* **P 16 53 49.2 +0.9**
ROOS tl_alroos 31.61 84 *eP* **P 16 53 50.5 +0.9**
SALA Sala 31.64 87 *eP* **P 16 53 51.2 +1.2**
LOF Lofoten 31.69 11 *eS* **S 16 59 03.5 +4.2**
VSR Storozhevoye 31.74 51 *eP* **P 16 53 49.2 -1.2**
VSR pmax pmax
comp=Z,10.0nm,1.0s
VSR MLR MLR
comp=Z,1μm,13.0s
SOC Sochi 31.74 66*c i*P **P 16 53 50.2 -0.3**
SOC *e**SP **sP** **16 53 54.8 +1.4**
SOC *e* 16 54 56.6
SOC *e*S **S 16 59 02.0 +1.4**
SOC pmax pmax
comp=Z,48nm,0.9s
SOC MLR MLR
comp=Z,299nm,13.0s
LPSR Galich'ya Gora 31.84 49 *eP* **P 16 53 49.6 -1.7**
LPSR pmax pmax
comp=Z,20nm,1.1s
LPSR MLR MLR
comp=Z,1μm,19.0s
MOS Moscow 31.91 43 *eP* **P 16 53 49.5 -2.3**
MOS *e* 16 54 54.5
MOS *e* 16 56 39.2
MOS pmax pmax
comp=Z,65nm,1.2s
MOS MLR MLR
comp=Z,2μm,15.0s
MOS MLR MLR
comp=E,2μm,14.0s
ASF Jabal al Asfar 31.96 88 LR LR 17 09 21.2
comp=E,192nm,18.5s,baz=306,slow=41
ZALF Zalf 32.05 87 *eP* **P 16 53 54.7 +1.3**
JHLN Al Jahlan 32.09 81 *eP* **P 16 53 56.6 +2.8**
SFNV Sufian 33.20 79 *eP* **P 16 54 02.7 -0.8**
VRH Novokhopyorsk 33.33 52 *eP* **P 16 54 03.4 -1.0**
VRH pmax pmax
comp=Z,20nm,0.9s
VRH MLR MLR
comp=Z,740nm,12.0s
MZRK Al-Mazaregh 33.78 80 *eP* **P 16 54 07.7 -0.8**
KIV Kislovodsk 33.86 65 *i* P **P 16 54 09.2 0.0**
SNR=7.6
KIV Kislovodsk 33.86 65 *eP* **P 16 54 09.3 +0.1**
KIV *e*S **S 16 59 34.2 +0.5**
KIV pmax pmax
comp=Z,10.0nm,1.0s
KIV MLR MLR
comp=Z,262nm,15.0s
TRO Tromso 33.92 13 *eS* **S 16 59 31.6 -2.2**
NEY Neytrino 33.95 66 *i* P **P 16 54 10.0 -0.1**
NEY pmax pmax
comp=Z,3.0nm,0.8s
KBZ Khabaz 34.03 65 P **P 16 54 11.1 +0.6**
comp=Z,6.1nm,0.8s,baz=279,slow=6.4,SNR=16
KBZ PcP **PcP** **16 56 49.0 +0.8**
comp=Z,3.4nm,0.8s,baz=259,slow=0.8,SNR=3.6
KBZ LR LR 17 10 57.3
comp=Z,394nm,18.6s,baz=293,slow=42
KBZ Khabaz 34.03 65 PcP **PcP** **16 56 49.0 +0.8**
GOF Gofitskoye 34.03 63⇑ *eP* **P 16 54 10.5 -0.1**
GOF pmax pmax
comp=Z,45nm,1.0s
NCK Nalchik 34.56 66 *i* P **P 16 54 15.1 -0.1**
NCK pmax pmax
comp=Z,95nm,2.0s
ONI Oni 34.56 67 P **P 16 54 15.6 +0.3**
ONI Oni 34.56 67 P **P 16 54 15.6 +0.3**
KLMR Klimovskoe 34.64 35 *eP* **P 16 54 14.0 -1.7**
KLMR *e* 16 56 47.2
KLMR pmax pmax
comp=Z,85nm,1.0s
ZEI Tsey 34.86 67 *eP* **P 16 54 16.3 -1.7**
ZEI pmax pmax
comp=Z,57nm,1.3s
ZEI MLR MLR
comp=Z,522nm,16.0s
ARA0 ARCESS Array S 35.15 16 *eP* **P 16 54 20.0 +0.1**
ARA0 ARCESS Array S 35.15 16 *eP* **P 16 54 20.0 +0.1**
ARCES ARCESS Array B 35.15 16 P **P 16 54 20.9 +1.0**
comp=Z,5.0nm,0.9s,baz=210,slow=7.0,SNR=14
ARCES PcP **PcP** **16 56 50.5 -0.6**
comp=Z,9.3nm,0.8s,baz=226,slow=1.8,SNR=12
ARCES LR LR 17 09 09.1
comp=Z,944nm,18.3s,baz=226,slow=37
ARCES ARCESS Array B 35.15 16 P **P 16 54 20.9 +1.0**
ARCES 16 56 50.5
ARCES pmax pmax
comp=Z,7.0nm,0.9s
ARCES MLR MLR
comp=Z,944nm,18.3s
GUDG Gudauri 35.33 67 P **P 16 54 25.2 +3.2**
TBLG Delisi 35.63 69 P **P 16 54 24.9 +0.5**
TBLG Delisi 35.63 69 P **P 16 54 24.9 +0.5**
HAMF Hammerfest 35.65 14 *eS* **S 17 00 03.0 +2.4**
GNI Garni 35.91 71 *i* P **P 16 54 26.0 -1.0**
SNR=11
GNI Garni 35.91 71*c i*P **P 16 54 26.3 -0.7**
GNI pmax pmax
comp=Z,217nm,1.2s
GNI Garni 35.91 71 *eP* **P 16 54 27.0 0.0**
comp=Z,79nm,1.3s
GNI Garni 35.91 71 P **P 16 54 27.7 +0.7**
SNR=17
GNI Garni 35.91 71 P **P 16 54 27.7 +0.7**
SNR=17
GNI Garni 35.91 71 *eP* **P 16 54 27.0 0.0**
comp=Z,79nm,1.3s
DGRG David-gareji 36.14 69 P **P 16 54 29.2 +0.3**
DGRG David-gareji 36.14 69 P **P 16 54 29.2 +0.3**
LVZ Lovozero 36.39 22 *i* P **P 16 54 31.8 +1.1**
LVZ pmax pmax
comp=Z,61nm,1.8s
SUMG Summit 39.50 344 *i* P **P 16 54 58.1 +0.8**
comp=Z,44nm,1.5s
comp=Z,1μm,17.0s
SUMG Summit 39.50 344 *i* P **P 16 54 58.1 +0.8**
SUMG pmax pmax
comp=Z,44nm,1.5s
SUMG MLR MLR
comp=Z,2μm,17.0s
SUMG Summit 39.50 344 *eP* **P 16 54 58.3 +1.0**
comp=Z,40nm,1.4s
SUMG Summit 39.50 344 *eP* **P 16 54 58.3 +1.0**
comp=Z,40nm,1.4s
DAG Danmarks Havn 39.94 354 *i* P **P 16 55 01.6 +1.2**
comp=Z,2μm,19.0s
DAG Danmarks Havn 39.94 354 *i* P **P 16 55 01.6 +1.2**
DAG MLR MLR
comp=Z,2μm,19.0s
SFJD Kangerlussuaq 40.16 333 *i* P **P 16 55 00.4 -1.9**
comp=Z,6.8nm,0.9s
SFJD Kangerlussuaq 40.16 333 *i* P **P 16 55 00.4 -1.9**
SFJD pmax pmax
comp=Z,7.0nm,0.9s
KBS Kingsbay 41.76 4 *eP* **P 16 55 17.7 +2.3**
KBS IAmb IAmb 16 55 21.1
comp=Z,23nm,1.2s
KBS *eS* **S 17 01 34.0 +1.5**
KBS Kingsbay 41.76 4 *eP* **P 16 55 16.9 +1.5**
KBS pmax pmax
comp=Z,28nm,1.3s
KBS Kingsbay 41.76 4 *eP* **P 16 55 16.9 +1.5**
comp=Z,28nm,1.3s
KBS Kingsbay 41.76 4 *eP* **P 16 55 16.9 +1.5**
comp=Z,28nm,1.3s
ARU Arti 43.57 44*c i*P **P 16 55 29.3 -1.1**
ARU 16 57 08.5
ARU 16 57 19.0
ARU S **S** **17 01 58.6 -1.0**
ARU SS **SS** **17 05 08.2 -5.7**
ARU pmax pmax
comp=Z,48nm,1.2s
ARU MLR MLR
comp=Z,647nm,13.0s
ARU Arti 43.57 44 *eP* **P 16 55 29.0 -1.4**
comp=Z,33nm,0.9s
ARU Arti 43.57 44 PcP **PcP** **16 57 19.0 +1.1**
ARU Arti 43.57 44 *eP* **P 16 55 29.0 -1.4**
comp=Z,33nm,0.9s
SVE Sverdlovsk 44.71 44*de*P **P 16 55 37.9 -1.6**
SVE pmax pmax
comp=Z,46nm,1.5s
SVE MLR MLR
comp=Z,1μm,12.0s
ABKAR Akbulak array 45.04 55 *eP* **P 16 55 41.2 -1.1**
ABKAR Akbulak array 45.04 55 *eP* **P 16 55 41.2 -1.1**
FURI Furi 46.29 118 *eP* **P 16 55 53.0 +0.1**
comp=Z,53nm,1.0s
FURI Furi 46.29 118 *eP* **P 16 55 53.0 +0.1**
comp=Z,53nm,1.0s
SCHQ Schefferville 46.44 314 P **P 16 55 54.5 +1.3**
comp=Z,4.7nm,0.7s,baz=86,slow=14,SNR=3.7
SCHQ LR LR 17 11 23.8
comp=Z,447nm,19.2s,baz=104,slow=31
SCHQ Schefferville 46.44 314 *eP* **P 16 55 55.7 +2.5**
comp=Z,35nm,1.5s
SCHQ Schefferville 46.44 314 *eP* **P 16 55 55.7 +2.5**
comp=Z,35nm,1.5s
GEYT Alibeck 46.53 70 P **P 16 55 53.2 -1.0**
comp=Z,6.5nm,0.5s,baz=286,slow=10,SNR=28
GEYT LR LR 17 18 44.6
comp=Z,155nm,21.2s,baz=330,slow=40
DAMY Dhamar 46.76 107 *eP* **P 16 55 58.6 +2.1**
comp=Z,80nm,1.1s
DAMY Dhamar 46.76 107 *eP* **P 16 55 58.6 +2.1**
comp=Z,80nm,1.1s
NAZ Nazwa, Dubai 49.90 87 *i* P **P 16 56 19.5 -0.9**
SNR=21
BANOM Banah 49.96 86 *i* P **P 16 56 19.8 -1.1**
SNR=7.7
FAQ Al Faqa, Dubai 49.97 88 P **P 16 56 19.7 -1.2**
ZRNK Zerenda 49.98 48 *eP* **P 16 56 20.3 -0.3**
ZRNK pmax pmax
comp=Z,26nm,0.9s
ZRNK Zerenda 49.98 48 *eP* **P 16 56 20.3 -0.3**
comp=Z,26nm,0.9s
ZRNK Zerenda 49.98 48 *eP* **P 16 56 20.3 -0.3**
comp=Z,26nm,0.9s
UOSS Minazif 50.35 87 *eP* **P 16 56 21.9 -1.9**
comp=Z,1.9nm,0.9s
UOSS Minazif 50.35 87 *eP* **P 16 56 21.9 -1.9**
comp=Z,1.9nm,0.9s
HATD Hatta, Dubai 50.35 87 *i* P **P 16 56 22.8 -1.1**
SNR=20
ASHO Ashiyiah 50.37 87 *i* P **P 16 56 22.8 -1.2**
SNR=21
ASHO Ashiyiah 50.37 87 P **P 16 56 23.7 -0.3**
SNR=11
ASHO Ashiyiah 50.37 87 P **P 16 56 23.7 -0.3**
SNR=11
BRVK Borovoye 50.71 48*c i*P **P 16 56 26.0 -0.1**
BRVK pmax pmax
comp=Z,28nm,1.3s
BRVK Borovoye 50.71 48 *eP* **P 16 56 25.7 -0.4**
comp=Z,98nm,2.0s
BRVK Borovoye 50.71 48 *eP* **P 16 56 25.7 -0.4**
comp=Z,98nm,2.0s
ARQ Araqi 51.40 89 P **P 16 56 31.3 -0.4**
SNR=13
ARQ Araqi 51.40 89 P **P 16 56 31.3 -0.4**
SNR=13
ARQ Araqi 51.40 89 P **P 16 56 31.3 -0.4**
SNR=13
KMBO Kilima Mbogo 52.75 128 *eP* **P 16 56 43.7 +1.6**
KMBO pmax pmax
comp=Z,15nm,1.2s
KMBO Kilima Mbogo 52.75 128 *eP* **P 16 56 43.7 +1.6**
comp=Z,15nm,1.2s
KMBO Kilima Mbogo 52.75 128 *eP* **P 16 56 43.7 +1.6**
comp=Z,15nm,1.2s
SMDO Samad 52.75 88 P **P 16 56 41.6 -0.3**
SNR=6.7
SMDO Samad 52.75 88 P **P 16 56 41.6 -0.3**
SNR=6.7
KKAR Karatay Array 53.72 60 *eP* **P 16 56 48.1 -0.6**
KKAR Karatay Array 53.72 60 *eP* **P 16 56 48.1 -0.6**
KKAR Karatay Array 53.72 60 *eP* **P 16 56 48.1 -0.6**
RES Resolute Bay 54.93 341 *eP* **P 16 56 57.8 +0.8**
RES pmax pmax
comp=Z,14nm,1.3s
RES Resolute Bay 54.93 341 *eP* **P 16 56 57.8 +0.8**
comp=Z,14nm,1.3s
RES Resolute Bay 54.93 341 *eP* **P 16 56 57.8 +0.8**
comp=Z,14nm,1.3s
NRIK Noril'sk 55.09 26 P **P 16 56 59.2 +1.0**
comp=Z,3.5nm,0.8s,baz=277,slow=7.1,SNR=11
NRIK LR LR 17 22 34.7
comp=Z,962nm,20.3s,baz=298,slow=38
EKS2 Erkin-Say 56.11 59 *eP* **P 16 57 06.5 +0.4**
EKS2 pmax pmax
comp=Z,31nm,0.8s
EKS2 Erkin-Say 56.11 59 *eP* **P 16 57 06.5 +0.4**
comp=Z,31nm,0.8s
EKS2 Erkin-Say 56.11 59 *eP* **P 16 57 06.5 +0.4**
comp=Z,31nm,0.8s
AML Almayashu 56.26 60 P **P 16 57 08.1 +0.6**
SNR=10.0
KURK Kurchatov 56.33 49 *eP* **P 16 57 06.5 -0.9**
KURK pmax pmax
comp=Z,69nm,1.5s
KURK Kurchatov 56.33 49 *eP* **P 16 57 06.5 -0.9**
comp=Z,69nm,1.5s
KURK Kurchatov 56.33 49 *eP* **P 16 57 06.5 -0.9**
comp=Z,69nm,1.5s
AAK Ala-Archa 56.61 59*c i*P **P 16 57 10.1 +0.3**
AAK pmax pmax
comp=Z,37nm,0.8s
AAK Ala-Archa 56.61 59 *eP* **P 16 57 09.9 +0.1**
comp=Z,19nm,0.8s
AAK Ala-Archa 56.61 59 *eP* **P 16 57 09.9 +0.1**
comp=Z,19nm,0.8s
FRU Bishkek 56.62 59⇑ *i*P **P 16 57 10.0 +0.4**
FRU *e* 17 05 06.0
FRU pmax pmax
comp=Z,144nm,2.0s
FRU Bishkek 56.62 59 *i* P **P 16 57 10.0 +0.4**
comp=Z,144nm,2.0s
GDHS Morne Mazeau, 56.65 265 *eP* **P 16 57 12.6 +2.4**
comp=Z,97nm,1.0s
GDHS Morne Mazeau, 56.65 265 *eP* **P 16 57 12.6 +2.4**
comp=Z,97nm,1.0s
SMRT St. Maarten 56.70 268 *eP* **P 16 57 12.3 +1.8**
comp=Z,57nm,1.3s
SMRT St. Maarten 56.70 268 *eP* **P 16 57 12.3 +1.8**
comp=Z,57nm,1.3s
SABA Saba 57.07 267 *eP* **P 16 57 15.0 +1.9**
comp=Z,136nm,1.2s
SABA Saba 57.07 267 *eP* **P 16 57 15.0 +1.9**
comp=Z,136nm,1.2s
TKM2 Tokmak 2 57.25 58 *eP* **P 16 57 13.9 -0.4**
TKM2 pmax pmax
comp=Z,39nm,1.8s
TKM2 Tokmak 2 57.25 58 *eP* **P 16 57 13.9 -0.4**
comp=Z,39nm,1.8s
TKM2 Tokmak 2 57.25 58 *eP* **P 16 57 13.9 -0.4**
comp=Z,39nm,1.8s
ABVI Anegada Island 57.33 269 *eP* **P 16 57 17.4 +2.5**
comp=Z,82nm,0.9s
ABVI Anegada Island 57.33 269 *eP* **P 16 57 17.4 +2.5**
comp=Z,82nm,0.9s
SSPA Standing Stone 57.40 299 *eP* **P 16 57 17.4 +2.2**
comp=Z,21nm,1.0s
SSPA Standing Stone 57.40 299 *eP* **P 16 57 17.4 +2.2**
comp=Z,21nm,1.0s
NVS Novosibirsk 57.54 43⇓ *i*P **P 16 57 16.3 +0.4**
NVS pmax pmax
comp=Z,53nm,1.9s
NVS pmax pmax
comp=N,7.0nm,1.0s
NVS pmax pmax
comp=E,5.0nm,1.0s
NVS Novosibirsk 57.54 43 *i* P **P 16 57 16.3 +0.4**
comp=E,53nm,1.9s
SVB Belmont 57.97 262 *eP* **P 16 57 21.3 +1.8**
SVB Belmont 57.97 262 *eP* **P 16 57 21.3 +1.8**
AAA Alma-Ata 58.02 58 *i* P **P 16 57 20.4 +0.8**
AAA *i* S S 17 05 29.6 +9.1
AAA pmax pmax
comp=Z,400nm,1.6s
AAA smax smax
comp=N,5μm,9.6s
AAA MLR MLR
comp=Z,600nm,14.0s
AAA Alma-Ata 58.02 58 *i* P **P 16 57 20.4 +0.8**
comp=Z,400nm,1.6s
O56A Blue Knob Stat 58.02 299 P **P 16 57 19.9 +0.3**
baz=66
CDVI St. Croix 58.20 269 *eP* **P 16 57 23.6 +2.5**
CDVI St. Croix 58.20 269 *eP* **P 16 57 23.6 +2.5**
M54A Oil Creek Stat 58.28 300 P **P 16 57 22.2 +0.9**
baz=66
URVA University of 58.43 295 *eP* **P 16 57 24.1 +1.7**
URVA University of 58.43 295 *eP* **P 16 57 24.1 +1.7**
MTP Monte Pirata 58.64 269 *eP* **P 16 57 26.5 +2.4**
comp=Z,115nm,1.1s
MTP Monte Pirata 58.64 269 *eP* **P 16 57 26.5 +2.4**
comp=Z,115nm,1.1s
N54A Moraine State 58.72 300 P **P 16 57 25.8 +1.3**
baz=65
ZAA0 Zalesovo Array 58.72 44 *eP* **P 16 57 23.3 -0.9**
ZAA0 Zalesovo Array 58.72 44 *eP* **P 16 57 23.3 -0.9**
ZALV Zalesovo Beam 58.72 44 P **P 16 57 23.2 -1.0**
comp=Z,7.8nm,0.8s,baz=290,slow=7.4,SNR=28
ZALV LR LR 17 24 04.1
comp=Z,486nm,18.9s,baz=256,slow=38
ZALV Zalesovo Beam 58.72 44 *i* P **P 16 57 23.5 -0.7**
ZALV pmax pmax
comp=Z,8.0nm,0.7s
ZALV Zalesovo Beam 58.72 44 *i* P **P 16 57 23.5 -0.7**
comp=Z,8.0nm,0.7s
CBYP Canovanas 58.78 270 *eP* **P 16 57 26.9 +1.7**
comp=Z,106nm,1.2s
CBYP Canovanas 58.78 270 *eP* **P 16 57 26.9 +1.7**
comp=Z,106nm,1.2s
HUMP Col San Antoni 58.85 270 *eP* **P 16 57 27.4 +1.8**
comp=Z,105nm,1.2s
HUMP Col San Antoni 58.85 270 *eP* **P 16 57 27.4 +1.8**
comp=Z,105nm,1.2s
KSH Kashi 58.89 62 P **P 16 57 25.7 -0.1**
KSH *e*PcP **PcP** **16 58 16.5 +1.4**

KSH eP P P 16 59 36.6 +0.9
KSH eS cP S cP 17 02 16.2 +0.1
KSH S S 17 05 27.7 -4.4
KSH S cS S cS 17 07 13.5 -2.9
KSH S S S S 17 09 21.6 -3.5
KSH p max p max
comp=Z,59nm,1.2s
KSH p max p max
comp=Z,350nm,3.4s
KSH L R L R
comp=Z,890nm,15.8s
KSH L R L R
comp=Z,420nm,13.7s
KSH L R L R
comp=Z,380nm,17.3s
SJG San Juan 59.11 270 eP **P 16 57 29.3 +1.9**
SJG p max p max
comp=Z,25nm,0.9s
SJG San Juan 59.11 270 eP **P 16 57 29.3 +1.9**
comp=Z,25nm,0.9s
SJG San Juan 59.11 270 eP **P 16 57 29.3 +1.9**
comp=Z,25nm,0.9s
TSUM Tsumeb 59.39 159 L R L R 17 23 44.6
comp=Z,409nm,18.3s,baz=331,slow=37
TSUM Tsumeb 59.39 159 eP **P 16 57 29.8 +0.5**
comp=Z,16nm,1.0s
TSUM Tsumeb 59.39 159 eP **P 16 57 29.8 +0.5**
comp=Z,16nm,1.0s
CELP Cerrillos 59.47 270 eP **P 16 57 31.5 +1.7**
CELP Cerrillos 59.47 270 eP **P 16 57 31.5 +1.7**
LSZ Lusaka 59.67 146 L R L R 17 23 15.5
comp=Z,738nm,19.4s,baz=336,slow=36
LSZ Lusaka 59.67 146 eP **P 16 57 31.9 +0.6**
LSZ p max p max
comp=Z,15nm,0.9s
LSZ Lusaka 59.67 146 eP **P 16 57 31.9 +0.6**
comp=Z,15nm,0.9s
LSZ Lusaka 59.67 146 eP **P 16 57 31.9 +0.6**
comp=Z,15nm,0.9s
MAKZ Makanchi 59.86 52 eP **P 16 57 31.5 -0.7**
MAKZ p max p max
comp=Z,32nm,1.0s
MAKZ Makanchi 59.86 52 eP **P 16 57 31.5 -0.7**
comp=Z,32nm,1.0s
MAKZ Makanchi 59.86 52 eP **P 16 57 31.5 -0.7**
comp=Z,32nm,1.0s
FCC Fort Churchill 59.88 323 eP **P 16 57 33.0 +0.9**
FCC p max p max
comp=Z,25nm,1.1s
FCC Fort Churchill 59.88 323 eP **P 16 57 33.0 +0.9**
comp=Z,25nm,1.1s
FCC Fort Churchill 59.88 323 eP **P 16 57 33.0 +0.9**
comp=Z,25nm,1.1s
MK31 Makanchi Array 60.06 52 eP **P 16 57 32.3 -1.3**
MK31 Makanchi Array 60.06 52 eP **P 16 57 32.3 -1.3**
MK31 Makanchi Array 60.06 52 eP **P 16 57 32.3 -1.3**
MKAR Makanchi Array 60.06 52 P **P 16 57 32.8 -0.8**
comp=Z,24nm,0.9s,baz=294,slow=5.8,SNR=96
MKAR cP **cP 16 58 19.1 -0.4**
comp=Z,6.0nm,0.8s,baz=278,slow=3.0,SNR=6.8
MKAR L R L R 17 26 39.6
comp=Z,312nm,18.1s,baz=302,slow=39
MKAR Makanchi Array 60.06 52 *i* P **P 16 57 33.2 -0.4**
MKAR p max p max
comp=Z,24nm,0.9s
MKAR Makanchi Array 60.06 52 *i* P **P 16 57 33.2 -0.4**
comp=Z,24nm,0.9s
MKAR Makanchi Array 60.06 52 eP **P 16 57 32.4 -1.2**
MKAR cP **cP 16 58 19.1 -0.4**
MK01 Makanchi Array 60.08 52 eP **P 16 57 32.8 -0.9**
MK01 Makanchi Array 60.08 52 eP **P 16 57 32.8 -0.9**
ACSO Alum Creek Sta 61.09 300 eP **P 16 57 42.9 +2.2**
comp=Z,35nm,1.0s
ACSO Alum Creek Sta 61.09 300 eP **P 16 57 42.9 +2.2**
comp=Z,35nm,1.0s
KRAR Krasnoyarsk 62.11 39 eP **P 16 57 47.4 +0.1**
KRAR p max p max
comp=Z,13nm,0.9s
KRAR Krasnoyarsk 62.11 39 eP **P 16 57 47.4 +0.1**
comp=Z,13nm,0.9s
KMSC Kings Mountain 62.26 294 P **P 16 57 49.1 +0.4**
baz=62
KMSC Kings Mountain 62.26 294 eP **P 16 57 51.0 +2.3**
comp=Z,58nm,1.5s
KMSC Kings Mountain 62.26 294 eP **P 16 57 51.0 +2.3**
comp=Z,58nm,1.5s
BANI BANI 62.29 273 eP **P 16 57 50.2 +0.9**
BANI BANI 62.29 273 eP **P 16 57 50.1 +0.9**
C39A Grand Marais 62.36 310 P **P 16 57 49.3 +0.2**
baz=64
SDDR Presa de Saban 62.71 274 eP **P 16 57 54.1 +2.2**
comp=Z,152nm,1.1s
SDDR Presa de Saban 62.71 274 eP **P 16 57 54.1 +2.2**
comp=Z,152nm,1.1s
C38A Sawbill Land. 63.09 311 P **P 16 57 53.7 -0.3**
baz=63
EYMN Ely 63.12 311 P **P 16 57 54.4 +0.1**
baz=63
EYMN Ely 63.12 311 eP **P 16 57 54.7 +0.5**
comp=Z,24nm,1.1s
EYMN Ely 63.12 311 eP **P 16 57 54.7 +0.5**
comp=Z,24nm,1.1s
C37A Embarrass 63.63 311 P **P 16 57 58.1 +0.4**
baz=62
TKL Tuckaleechee C 63.76 296 eP **P 16 58 01.5 +2.8**
TKL p max p max
comp=Z,71nm,1.7s
TKL Tuckaleechee C 63.76 296 eP **P 16 58 01.5 +2.8**
comp=Z,71nm,1.7s
TKL Tuckaleechee C 63.76 296 eP **P 16 58 01.5 +2.8**
comp=Z,71nm,1.7s
C36A Pine Crest Far 64.01 311 P **P 16 57 59.9 -0.2**
baz=62
D37A Cotton 64.04 311 P **P 16 58 00.2 -0.2**
baz=62
B35A Bob, Littlefor 64.25 312 P **P 16 58 00.6 -1.1**
baz=62
MATP Matopo 64.38 148 L R L R 17 26 11.9
comp=Z,717nm,18.2s,baz=336,slow=36
CPCT Cooper Cave 64.40 296 eP **P 16 58 04.4 +1.6**
comp=Z,30nm,1.2s
CPCT Cooper Cave 64.40 296 eP **P 16 58 04.4 +1.6**
comp=Z,30nm,1.2s
D36A Goodland 64.48 311 P **P 16 58 03.6 +0.4**
baz=61
ULM Lac du Bonnet 64.58 315 P **P 16 58 04.0 +0.2**
comp=Z,11nm,1.0s,baz=66,slow=5.8,SNR=8.9
ULM L R L R 17 21 21.2
comp=Z,408nm,21.6s,baz=79,slow=32
ULM Lac du Bonnet 64.58 315 eP **P 16 58 04.5 +0.7**
comp=Z,26nm,1.1s
ULM Lac du Bonnet 64.58 315 eP **P 16 58 04.5 +0.7**
comp=Z,26nm,1.1s
GOGA Godfrey 64.64 294 eP **P 16 58 05.0 +0.6**
GOGA p max p max
comp=Z,29nm,1.2s
GOGA Godfrey 64.64 294 eP **P 16 58 05.0 +0.6**
comp=Z,29nm,1.2s
GOGA Godfrey 64.64 294 eP **P 16 58 05.0 +0.6**
comp=Z,29nm,1.2s
C35A Jirik Farms, M 64.71 312 P **P 16 58 04.4 -0.3**
baz=61
B34A Aery, Baudette 64.73 313 P **P 16 58 04.6 -0.2**
baz=61
WMQ Urumqi 64.80 53⇑ *i* P **P 16 58 05.8 +0.4**
WMQ cP **cP 16 58 40.1 +1.2**
WMQ S **S 17 06 50.3 +3.7**
WMQ p max p max
comp=Z,27nm,1.0s
WMQ p max p max
comp=Z,120nm,3.6s
WMQ L R L R
comp=Z,1µm,17.6s
WMQ L R L R
comp=Z,730nm,15.4s
WMQ L R L R
comp=Z,110nm,15.4s
E36A McGregor 64.85 310 P **P 16 58 05.8 +0.1**
baz=61
A33A Warroad 64.94 313 P **P 16 58 06.3 +0.1**
baz=61
D35A Remer 65.06 311 P **P 16 58 06.8 -0.2**
baz=61
SPMN Marine on St. 65.20 309 P **P 16 58 07.2 -0.7**
baz=61
SPMN Marine on St. 65.20 309 eP **P 16 58 06.4 -1.5**
comp=Z,48nm,0.2s
SPMN Marine on St. 65.20 309 eP **P 16 58 06.4 -1.5**
comp=Z,48nm,0.2s
C34A RKJ Ranch, Bem 65.29 312 P **P 16 58 07.5 -0.9**
baz=61
F36A Milaca 65.33 310 P **P 16 58 08.0 -0.7**
baz=61
B33A Robert and Kas 65.38 313 P **P 16 58 09.1 +0.1**
baz=60
I38A Scanlan Farm, 65.48 308 P **P 16 58 09.2 -0.6**
baz=61
SWET Sewanee 65.52 296 eP **P 16 58 12.6 +2.4**
comp=Z,29nm,2.0s
SWET Sewanee 65.52 296 eP **P 16 58 12.6 +2.4**
comp=Z,29nm,2.0s
E35A Pequot Lakes 65.52 311 P **P 16 58 09.8 -0.2**
baz=60
TIXI Tiksi 65.58 15*c i* P **P 16 58 10.4 +0.5**
TIXI p max p max
comp=Z,18nm,1.0s
TIXI Tiksi 65.58 15 eP **P 16 58 10.6 +0.7**
comp=Z,23nm,1.2s
TIXI Tiksi 65.58 15 eP **P 16 58 10.6 +0.7**
comp=Z,23nm,1.2s
H37A Dierke Farm, C 65.58 308 P **P 16 58 10.4 0.0**
baz=60
A32A Rocking H Ranc 65.58 314 P **P 16 58 10.0 -0.3**
baz=60
TIGA Tifton 65.71 292 P **P 16 58 12.4 +1.0**
baz=59
TIGA Tifton 65.71 292 eP **P 16 58 11.6 +0.2**
comp=Z,18nm,0.3s
TIGA Tifton 65.71 292 eP **P 16 58 11.6 +0.2**
comp=Z,18nm,0.3s
D34A Park Rapids 65.74 312 P **P 16 58 10.9 -0.5**
baz=60
C33A Trail 65.74 312 P **P 16 58 11.2 -0.2**
baz=60
G36A St. Michael 65.78 309 P **P 16 58 11.5 -0.1**
baz=60
PTGA Pitinga 65.82 249 eP **P 16 58 13.4 +1.1**
comp=Z,18nm,1.3s
PTGA Pitinga 65.82 249 eP **P 16 58 13.4 +1.1**
comp=Z,18nm,1.3s
B32A Ashes, Strandq 65.87 313 P **P 16 58 12.9 +0.7**
baz=60
F35A Swanville 65.97 310 P **P 16 58 13.3 +0.4**
baz=60
E34A Wadena 66.00 311 P **P 16 58 13.2 +0.1**
baz=60
D33A AnnSam, Waubun 66.09 312 P **P 16 58 14.1 +0.4**
baz=60
I37A Lemond, Waseca 66.16 308 P **P 16 58 13.5 -0.7**
baz=60
WVT Waverly 66.40 298 eP **P 16 58 16.3 +0.5**
WVT p max p max
comp=Z,13nm,1.0s
WVT Waverly 66.40 298 eP **P 16 58 16.3 +0.5**
comp=Z,13nm,1.0s
WVT Waverly 66.40 298 eP **P 16 58 16.3 +0.5**
comp=Z,13nm,1.0s
K38A Parkersburg 66.45 306 P **P 16 58 16.8 +0.8**
baz=60
B31A Greenbush Farm 66.50 314 P **P 16 58 16.9 +0.7**
baz=59
I36A Fitzsimmons Fa 66.55 308 P **P 16 58 16.9 +0.3**
baz=60
A30A Hoffart Farm, 66.60 314 P **P 16 58 17.3 +0.3**
baz=59
J37A Redenius Farm, 66.61 307 P **P 16 58 17.7 +0.6**
baz=60
YKW3 Yellowknife Ar 66.68 332 eP **P 16 58 16.9 -0.2**
comp=Z,9.3nm,1.1s
YKW3 Yellowknife Ar 66.68 332 eP **P 16 58 16.9 -0.2**
comp=Z,9.3nm,1.1s
H35A Sunnyside Ranc 66.71 309 P **P 16 58 17.2 -0.4**
baz=60
YKA Yellowknife Ar 66.72 332 P **P 16 58 17.4 +0.1**
comp=Z,5.9nm,1.0s,baz=55,slow=6.3,SNR=35
YKA PKPPKP P'P'df 17 26 47.3 -7.6
comp=Z,0.6nm,0.9s,baz=213,slow=2.5,SNR=5.9
YKB5 Yellowknife Ar 66.72 332 eP **P 16 58 16.4 -1.0**
YKB5 Yellowknife Ar 66.72 332 eP **P 16 58 16.4 -1.0**
D32A Dogwood Acres, 66.79 312 P **P 16 58 18.3 +0.3**
baz=59
L38A Oak Wood Farm, 66.82 306 P **P 16 58 18.8 +0.4**
baz=60
C31A Landman Farms, 66.87 313 P **P 16 58 19.0 +0.4**
baz=59
B30A Myrvik Farm, E 66.87 314 P **P 16 58 19.1 +0.5**
baz=59
G34A Benson 66.93 310 P **P 16 58 19.3 +0.3**
baz=59
K37A Belmond 66.94 307 P **P 16 58 18.9 -0.3**
baz=59
F33A 5 Mile Ranch, 67.02 311 P **P 16 58 20.3 +0.7**
baz=59
E32A Braaten, Kindr 67.09 312 P **P 16 58 20.2 +0.1**
baz=59
J36A Seneca 1, Swea 67.10 308 P **P 16 58 19.9 -0.3**
baz=59
O40A La Belle 67.14 304 P **P 16 58 20.3 -0.2**
baz=59
A29A Manning Farm, 67.14 315 P **P 16 58 20.2 -0.1**
baz=58
N39A Derby Farms, D 67.17 305 P **P 16 58 20.7 +0.1**
baz=59
I35A Creekview Farm 67.23 308 P **P 16 58 21.7 +0.7**
baz=59
H34A Spellman Lake, 67.31 310 P **P 16 58 22.0 +0.6**
baz=59
L37A Phoenix Point, 67.34 306 P **P 16 58 21.8 0.0**
baz=59
M38A Pleasantville 67.34 305 P **P 16 58 22.2 +0.5**
baz=59
C30A Mose, Pekin 67.34 313 P **P 16 58 21.1 -0.5**
baz=58
LRAL Lakeview Retre 67.38 295 eP **P 16 58 22.5 +0.4**
comp=Z,38nm,1.0s
LRAL Lakeview Retre 67.38 295 eP **P 16 58 22.5 +0.4**
comp=Z,38nm,1.0s
LBTB Lobatse 67.41 153 L R L R 17 29 32.9
comp=Z,1µm,18.0s,baz=350,slow=38
LBTB Lobatse 67.41 153 eP **P 16 58 22.6 +0.4**
LBTB p max p max
comp=Z,18nm,1.0s
LBTB Lobatse 67.41 153 eP **P 16 58 22.6 +0.4**
comp=Z,18nm,1.0s
LBTB Lobatse 67.41 153 eP **P 16 58 22.6 +0.4**
comp=Z,18nm,1.0s
G33A Ortonville 67.44 310 P **P 16 58 22.5 +0.3**
baz=59
B29A Wagenman Farm, 67.45 314 P **P 16 58 22.0 -0.2**
baz=58
Y47A UCPARC, Winfie 67.54 296 P **P 16 58 23.7 +0.6**
baz=59,SNR=14
P40A Paris 67.56 303 P **P 16 58 22.5 -0.6**
baz=59
E31A Nome 67.60 312 P **P 16 58 24.1 +0.8**
baz=58
Z48A Northport 67.61 295 P **P 16 58 24.2 +0.7**
baz=59,SNR=12
D30A Buchanan 67.82 313 P **P 16 58 25.3 +0.7**
baz=58
Q40A Laux Farm, Aux 67.85 303 P **P 16 58 25.5 +0.6**
baz=59
PBMO Poplar Bluff 67.87 300 eP **P 16 58 25.5 +0.3**
comp=Z,28nm,1.0s
PBMO Poplar Bluff 67.87 300 eP **P 16 58 25.5 +0.3**
comp=Z,28nm,1.0s
SDV Santo Domingo 67.96 264 eP **P 16 58 27.1 +0.9**
SDV Santo Domingo 67.96 264 eP **P 16 58 27.1 +0.9**
B28A Dugan Ranch, T 68.03 315 P **P 16 58 26.7 +0.8**
baz=58
G32A Webster 68.05 311 P **P 16 58 25.9 -0.2**
baz=58
MTDJ Mount Denham 68.06 277 eP **P 16 58 29.0 +2.3**
comp=Z,194nm,1.3s
MTDJ Mount Denham 68.06 277 eP **P 16 58 29.0 +2.3**
comp=Z,194nm,1.3s
Z47A Carrollton 68.06 296 P **P 16 58 26.7 +0.3**
baz=58,SNR=8.8
J34A George 68.13 308 P **P 16 58 27.3 +0.6**
baz=58
O38A Galt 68.19 304 P **P 16 58 27.8 +0.7**
baz=58
E30A Jud 68.23 312 P **P 16 58 28.2 +0.9**
baz=58
I33A Coleman 68.25 309 P **P 16 58 27.7 +0.3**
baz=58
Y46A Houston 68.27 297 P **P 16 58 27.5 -0.2**
baz=58,SNR=6.8
ECSD EROS Data Cent 68.31 309 P **P 16 58 27.8 0.0**
baz=58
ECSD EROS Data Cent 68.31 309 eP **P 16 58 28.0 +0.2**
ECSD EROS Data Cent 68.31 309 eP **P 16 58 28.0 +0.2**
OXF Oxford 68.33 297 eP **P 16 58 28.5 +0.4**
OXF p max p max
comp=Z,112nm,1.0s
OXF Oxford 68.33 297 eP **P 16 58 28.5 +0.4**
comp=Z,112nm,1.0s
OXF Oxford 68.33 297 eP **P 16 58 28.5 +0.4**
comp=Z,112nm,1.0s
N37A Lee Faris, Mou 68.34 305 P **P 16 58 28.1 +0.1**
baz=58
R40A Maddies Statio 68.34 302 P **P 16 58 28.5 +0.4**
baz=58
M36A Felix, Anita 68.36 306 P **P 16 58 28.3 +0.2**
baz=58
248A Dixon Mills 68.40 294 P **P 16 58 29.6 +1.0**
baz=58
H32A Carlson Farm, 68.40 310 P **P 16 58 28.6 +0.2**
baz=58
INK Inuvik 68.42 343 eP **P 16 58 28.5 +0.5**
INK p max p max
comp=Z,9.0nm,0.9s
INK Inuvik 68.42 343 eP **P 16 58 28.5 +0.5**
comp=Z,9.4nm,0.9s
INK Inuvik 68.42 343 eP **P 16 58 28.4 +0.5**
comp=Z,9.4nm,0.9s
Q39A Willow Grove F 68.42 303 P **P 16 58 29.2 +0.7**
baz=58
C28A Hausauer Farms 68.43 314 P **P 16 58 29.1 +0.6**
baz=57
MOY Mondy 68.45 41 eP **P 16 58 29.3 +0.6**
MOY p max p max
comp=Z,51nm,2.6s
147A Livingston 68.48 295 P **P 16 58 29.8 +0.7**
baz=58,SNR=7.5
P38A Dawn 68.49 304 P **P 16 58 29.6 +0.7**
baz=58
B27A Peters Farms, 68.55 315 P **P 16 58 30.5 +1.2**
baz=57
O37A Wolven Farm, M 68.61 305 P **P 16 58 30.2 +0.5**
baz=58
E29A Napoleon 68.62 313 P **P 16 58 30.0 +0.3**
baz=58
F30A Leola 68.65 312 P **P 16 58 30.1 +0.2**
baz=58
Z46A Louisville 68.69 296 P **P 16 58 30.4 +0.1**
baz=58
J33A Davis 68.74 309 P **P 16 58 30.8 +0.3**
baz=58
Y45A Yeager Farm, C 68.77 297 P **P 16 58 30.9 +0.1**
baz=58,SNR=6.4
D28A Regan 68.82 314 P **P 16 58 31.3 +0.3**
baz=57
R39A Chumby, Stover 68.84 303 P **P 16 58 31.8 +0.6**
baz=58,SNR=10
S40A Lebanon 68.86 302 P **P 16 58 32.0 +0.7**
baz=58,SNR=12
Q38A Cooks Store, C 68.89 303 P **P 16 58 31.3 -0.2**
baz=58
M35A Neola 68.92 307 P **P 16 58 31.7 0.0**
baz=58
P37A Lathrop 69.04 304 P **P 16 58 32.4 -0.1**
baz=58
L34A Svendsen Farm, 69.09 307 P **P 16 58 32.9 +0.2**
baz=58
G30A Faulkton 69.10 311 P **P 16 58 32.5 -0.2**
baz=57
448A Bay Minette 69.10 293 P **P 16 58 33.7 +0.8**
baz=58
Z45A Winona 69.13 296 P **P 16 58 33.3 +0.3**
baz=58
O36A Bolckow 69.16 305 P **P 16 58 32.9 -0.2**
baz=58
Y44A Strider, Charl 69.19 297 P **P 16 58 33.5 +0.1**
baz=58
N35A Tabor 69.21 306 P **P 16 58 33.3 -0.1**
baz=58
E28A Huff 69.22 313 P **P 16 58 34.5 +1.1**
baz=57
A25A Svangstu Ranch 69.29 316 P **P 16 58 33.1 -0.7**
baz=56
C26A Wahner Farm, P 69.34 315 P **P 16 58 34.6 +0.4**
baz=56
347A Saraland 69.35 294 P **P 16 58 35.3 +0.9**
baz=58
S39A Bolivar 69.36 302 P **P 16 58 34.7 +0.3**
baz=58,SNR=12
D27A Center 69.41 314 P **P 16 58 35.2 +0.6**
baz=56
246A Jackson Lee, B 69.45 295 P **P 16 58 36.1 +1.0**
baz=58
M34A Aspy Farms, Fr 69.47 307 P **P 16 58 34.0 -1.0**
baz=58
Q37A Longview Farm, 69.49 304 P **P 16 58 35.0 -0.2**
baz=58
R38A Fenwick Farm, 69.49 303 P **P 16 58 35.8 +0.6**
baz=58,SNR=14
PYUN Piuthan 69.52 70 eP **P 16 58 35.3 -0.5**
comp=Z,108nm,0.9s
G29A Hoven 69.53 312 P **P 16 58 34.8 -0.5**
baz=57
L33A Hoskins 69.55 308 P **P 16 58 35.2 -0.3**
baz=57
P36A Good Intent, A 69.59 305 P **P 16 58 35.6 -0.2**
baz=58
O35A Humboldt 69.70 306 P **P 16 58 36.4 -0.1**
baz=57
145A Houston Renfro 69.71 296 P **P 16 58 36.9 +0.3**
baz=58,SNR=5.4
Z44A Pea Ridge, Bel 69.71 297 P **P 16 58 36.9 +0.3**
baz=58
K32A Verdigre 69.72 309 P **P 16 58 36.7 +0.1**
baz=57
Y43A Makayla and Ka 69.72 298 P **P 16 58 36.8 +0.1**
baz=58
447A Lucedale 69.75 294 P **P 16 58 37.8 +0.9**
baz=58
T39A Clever 69.75 301 P **P 16 58 37.5 +0.6**
baz=58,SNR=16
U40A Yellville 69.75 301 P **P 16 58 37.0 +0.1**
baz=58,SNR=18
N34A Lincoln 69.77 306 P **P 16 58 36.7 -0.3**
baz=57
S38A Stockton 69.79 302 P **P 16 58 37.0 0.0**
baz=58,SNR=9.2
IRK Irkutsk 69.79 39 eP **P 16 58 35.5 -1.3**
IRK p max p max
comp=Z,69nm,2.2s
TLY Talaya 69.80 40*c i* P **P 16 58 35.6 -1.3**
TLY p max p max
comp=Z,31nm,1.8s
TLY MLR MLR
comp=Z,765nm,17.0s
TLY Talaya 69.80 40 eP **P 16 58 36.3 -0.6**
comp=Z,14nm,1.0s
TLY Talaya 69.80 40 eP **P 16 58 36.3 -0.6**
comp=Z,14nm,1.0s
E27A Carson 69.81 313 P **P 16 58 37.3 +0.2**
baz=56
I30A Oacoma 69.93 310 P **P 16 58 38.2 +0.4**
baz=57
WHAR Wooly Hollow 69.94 299 eP **P 16 58 38.0 0.0**
comp=Z,88nm,1.1s
WHAR Wooly Hollow 69.94 299 eP **P 16 58 38.0 0.0**
comp=Z,88nm,1.1s
W41B Gary Mavity, V 69.97 299 P **P 16 58 38.5 +0.3**
baz=58,SNR=20
D26A Manning 69.97 314 P **P 16 58 37.5 -0.6**
baz=56
X201 Greenbrier Sit 69.98 299 eP **P 16 58 38.1 -0.2**
comp=Z,81nm,1.1s
X201 Greenbrier Sit 69.98 299 eP **P 16 58 38.1 -0.2**
comp=Z,81nm,1.1s
245A Little AP, Sta 69.99 295 P **P 16 58 38.9 +0.6**
baz=57
346A Big Creek Wild 70.02 295 P **P 16 58 39.6 +1.0**
baz=57
V40A Witts Springs 70.03 300 P **P 16 58 39.0 +0.4**
baz=57,SNR=12
R37A Teagarden Farm 70.04 303 P **P 16 58 38.3 -0.3**
baz=57
X301 Greenbrier Sit 70.04 299 eP **P 16 58 38.5 -0.1**
comp=Z,61nm,1.0s

X301	Greenbrier Sit	70.04 299	eP	P	16 58 38.5	-0.1
	comp=Z,61nm,1.0s					
C25A	Freed Ranch, W	70.05 315	P	P	16 58 39.0	+0.4
	baz=56					
Q36A	Arnold C. Orve	70.11 304	P	P	16 58 38.7	-0.4
	baz=57					
DGMT	Dagmar	70.14 316	P	P	16 58 39.1	0.0
	baz=55					
KOLN	Koldanda	70.15 70	eP	P	16 58 38.6	-1.1
	comp=Z,23nm,0.9s					
P35A	Duane Minner,	70.17 305	P	P	16 58 40.0	+0.6
	baz=57					
U39A	Green Forest	70.17 301	P	P	16 58 39.7	+0.3
	baz=57,SNR=15					
UALR	University of	70.25 299	eP	P	16 58 39.8	-0.1
	comp=Z,53nm,1.3s					
UALR	University of	70.25 299	eP	P	16 58 39.8	-0.1
	comp=Z,53nm,1.3s					
O34A	Beatrice	70.25 306	P	P	16 58 40.8	+0.9
	baz=57					
446A	Poplarville	70.27 294	P	P	16 58 41.0	+0.9
	baz=57					
E26A	Carlson Angus	70.30 314	P	P	16 58 40.9	+0.7
	baz=56					
Z43A	Armstrong Fami	70.32 297	P	P	16 58 41.2	+0.8
	baz=57					
VBMS	Vicksburg	70.33 296	P	P	16 58 41.1	+0.6
	baz=57					
S37A	Fort Scott	70.34 303	P	P	16 58 39.9	-0.5
	baz=57,SNR=7.9					
T38A	Diamond	70.37 302	P	P	16 58 41.1	+0.4
	baz=57					
ZAK	Zakamensk	70.37 41	eP	P	16 58 40.0	-0.5
ZAK			pmax	pmax		
	comp=Z,12nm,2.3s					
I29A	Vivian Onida	70.40 311	P	P	16 58 41.1	+0.4
	baz=56					
D25A	Fairfield	70.41 315	P	P	16 58 41.2	+0.4
	baz=56					
345A	Thompson Farm,	70.47 295	P	P	16 58 42.7	+1.3
	baz=57					
R36A	Gordon, Harris	70.48 304	P	P	16 58 41.2	-0.1
	baz=57					
BGNE	Belgrade	70.51 308	P	P	16 58 41.0	-0.5
	baz=57					
BGNE	Belgrade	70.51 308	eP	P	16 58 41.3	-0.2
	comp=Z,49nm,0.7s					
BGNE	Belgrade	70.51 308	eP	P	16 58 41.3	-0.2
	comp=Z,49nm,0.7s					
X41A	Kaden, Bauxite	70.52 299	P	P	16 58 42.1	+0.5
	baz=57					
W40A	Ferguson Farm,	70.53 300	P	P	16 58 41.4	-0.2
	baz=57,SNR=7.7					
HHAR	Hobbs	70.53 301	eP	P	16 58 41.6	-0.1
	comp=Z,58nm,1.0s					
HHAR	Hobbs	70.53 301	eP	P	16 58 41.6	-0.1
	comp=Z,58nm,1.0s					
Q35A	Mercer Eighty,	70.54 304	P	P	16 58 42.3	+0.6
	baz=57,SNR=6.0					
244A	Avery, Jackson	70.55 296	P	P	16 58 42.8	+1.0
	baz=57					
V39A	Pettigrew	70.57 301	P	P	16 58 41.8	-0.2
	baz=57,SNR=17					
BOSA	Boshof	70.59 155	P	P	16 58 42.3	+0.3
	comp=Z,14nm,1.0s,baz=347,slow=6.7,SNR=11					
BOSA			LR	LR	17 31 00.7	
	comp=Z,1μm,19.0s,baz=340,slow=37					
BOSA	Boshof	70.59 155	eP	P	16 58 42.1	+0.1
	comp=Z,31nm,1.1s					
BOSA	Boshof	70.59 155	eP	P	16 58 42.1	+0.1
	comp=Z,31nm,1.1s					
G27A	Dupree	70.61 313	P	P	16 58 41.7	-0.3
	baz=56					
P34A	Walnut Farm, R	70.68 305	P	P	16 58 42.1	-0.4
	baz=57					
143A	Socs Landing,	70.70 297	P	P	16 58 43.1	+0.4
	baz=57					
K30A	Basset	70.72 309	P	P	16 58 43.3	+0.5
	baz=56					
T37A	Cheneyville 18	70.74 302	P	P	16 58 42.4	-0.5
	baz=57,SNR=11					
X40A	Basin Creek Fa	70.74 299	P	P	16 58 42.7	-0.2
	baz=57,SNR=16					
U38A	Gravette	70.75 301	P	P	16 58 42.4	-0.6
	baz=57,SNR=12					
BOD	Bodaibo	70.75 31	eP	P	16 58 41.4	-1.2
BOD			pmax	pmax		
	comp=Z,22nm,1.4s					
F26A	Lodgepole	70.77 313	P	P	16 58 43.4	+0.4
	baz=56					
Z42A	Norrel Spur, H	70.78 297	P	P	16 58 44.0	+0.8
	baz=57					
KSU1	Kansas State U	70.78 305	P	P	16 58 43.6	+0.5
	baz=57					
KSU1	Kansas State U	70.78 305	eP	P	16 58 44.7	+1.6
KSU1	Kansas State U	70.78 305	eP	P	16 58 44.7	+1.6
GKN	Gorkha	70.79 69	eP	P	16 58 42.6	-1.0
	comp=Z,110nm,1.0s					
E25A	Miller Ranch,	70.82 314	P	P	16 58 43.0	-0.3
	baz=55					
S36A	Lake Cedric, C	70.86 303	P	P	16 58 43.5	-0.2
	baz=57					
O33A	Hebron	70.88 306	P	P	16 58 43.8	0.0
	baz=56					
344A	Westbrook Farm	70.90 295	P	P	16 58 44.4	+0.4
	baz=57,SNR=8.9					
Y41A	Eaglette Beard	70.92 298	P	P	16 58 43.9	-0.1
	baz=57					
I28A	Midland	70.93 311	P	P	16 58 44.5	+0.5
	baz=56					
R35A	Emporia Munici	70.94 304	P	P	16 58 44.2	+0.1
	baz=57					
N32A	Stulken Farm,	70.95 307	P	P	16 58 44.6	+0.4
	baz=56					
445A	Amite	71.01 294	P	P	16 58 44.3	-0.3
	baz=57					
W39A	Magazine	71.02 300	P	P	16 58 45.1	+0.5
	baz=57,SNR=23					
G26A	Maurine	71.04 313	P	P	16 58 44.7	0.0
	baz=55					
M31A	Lambtecht Ranc	71.06 308	P	P	16 58 44.7	-0.2
	baz=56					
V38A	Canehill	71.08 301	P	P	16 58 44.6	-0.5
	baz=57,SNR=33					
Q34A	Chapman	71.10 305	P	P	16 58 44.4	-0.7
	baz=56					
H27A	Howes	71.11 312	P	P	16 58 44.7	-0.4
	baz=56					
F25A	Bowman	71.18 314	P	P	16 58 45.6	+0.1
	baz=55					
243A	Waterproof	71.20 296	P	P	16 58 46.2	+0.4
	baz=57					
O32A	Brockman Farm,	71.22 307	P	P	16 58 45.5	-0.3
	baz=56					
MIAR	Mount Ida	71.23 299	P	P	16 58 45.2	-0.7
	baz=57,SNR=27					
MIAR	Mount Ida	71.23 299	eP	P	16 58 45.7	-0.2
MIAR	Mount Ida	71.23 299	eP	P	16 58 45.7	-0.2
MIAR	Mount Ida	71.23 299	eP	P	16 58 45.7	-0.2
U37A	Salina	71.26 302	P	P	16 58 45.2	-0.9
	baz=57,SNR=14					
P33A	Williams Farm,	71.30 306	P	P	16 58 46.3	0.0
	baz=56					
Y40A	Okolona	71.31 299	P	P	16 58 47.2	+0.8
	baz=57					
DMN	Daman	71.35 69	eP	P	16 58 46.5	-0.6
	comp=Z,208nm,1.3s					
S35A	Otter Creek Ra	71.37 303	P	P	16 58 46.5	-0.2
	baz=56					
KKN	Kakani	71.38 69	eP	P	16 58 46.3	-0.9
	comp=Z,84nm,0.9s					
Z41A	Richland Creek	71.39 298	P	P	16 58 47.9	+1.0
	baz=57					
T36A	Boggs Farm, Ca	71.42 303	P	P	16 58 46.5	-0.5
	baz=56,SNR=11					
H26A	Fairpoint	71.53 312	P	P	16 58 47.9	+0.3
	baz=55					
V37A	Hulbert	71.57 301	P	P	16 58 46.9	-1.0
	baz=56,SNR=5.4					
G25A	Newell	71.58 313	P	P	16 58 48.2	+0.3
	baz=55					
242A	Grayson	71.58 297	P	P	16 58 48.8	+0.7
	baz=57					
PKIN	Phulchoki	71.59 69	eP	P	16 58 47.6	-0.9
	comp=Z,51nm,1.3s					
W38A	Poteau	71.59 300	P	P	16 58 47.9	-0.1
	baz=56,SNR=8.1					
X39A	Fountain Ranch	71.62 300	P	P	16 58 48.1	-0.1
	baz=56,SNR=25					
343A	Vidalia	71.63 296	P	P	16 58 48.5	+0.1
	baz=57					
Q33A	Connelly Farm,	71.64 305	P	P	16 58 47.9	-0.4
	baz=56					
R34A	Isabella, Hill	71.64 304	P	P	16 58 48.0	-0.4
	baz=56					
U36A	Oologah	71.69 302	P	P	16 58 47.7	-0.9
	baz=56,SNR=5.3					
GUN	Gumba	71.76 69	eP	P	16 58 48.8	-0.9
	comp=Z,170nm,1.2s					
P32A	Huiting Farm,	71.78 306	P	P	16 58 49.5	+0.3
	baz=56					
Z40A	Long Farm, Mag	71.81 298	P	P	16 58 49.6	+0.2
	baz=56					
141A	Papa Simpson,	71.82 297	P	P	16 58 49.9	+0.4
	baz=56					
S34A	Willow Spring	71.88 304	P	P	16 58 49.5	-0.4
	baz=56,SNR=7.7					
Y39A	Lockesburg	71.92 299	P	P	16 58 50.0	-0.1
	baz=56					
T35A	Sooner Cattle	71.92 303	P	P	16 58 49.9	-0.2
	baz=56,SNR=12					
O31A	Woolen Ranch,	71.95 307	P	P	16 58 50.2	0.0
	baz=56					
HYB	Hyderabad	71.98 82	i P	P	16 58 49.0	-1.7
	comp=Z,27nm,0.8s					
TUL1	Leonard	71.99 302	P	P	16 58 49.8	-0.8
	baz=56,SNR=6.1					
TUL1	Leonard	71.99 302	eP	P	16 58 50.8	+0.3
	comp=Z,95nm,1.3s					
TUL1	Leonard	71.99 302	eP	P	16 58 50.8	+0.3
	comp=Z,95nm,1.3s					
X38A	Whitesboro	72.02 300	P	P	16 58 51.0	+0.3
	baz=56,SNR=17					
342A	Flagon Creek P	72.08 296	P	P	16 58 51.5	+0.4
	baz=56					
Q32A	Meitler Ranch,	72.11 306	P	P	16 58 50.5	-0.7
	baz=56					
R33A	Olander Ranch,	72.12 305	P	P	16 58 51.3	0.0
	baz=56					
241A	Mo Tay, Goldon	72.15 297	P	P	16 58 52.2	+0.7
	baz=56					
V36A	Jenks	72.16 302	P	P	16 58 50.6	-0.9
	baz=56,SNR=6.7					
W37B	Quinton	72.17 301	P	P	16 58 51.5	-0.2
	baz=56,SNR=9.3					
140A	Cam and Jess,	72.27 298	P	P	16 58 51.5	-0.6
	baz=56					
LAO	LASA Array	72.30 316	P	P	16 58 51.7	-0.5
	baz=54					
LAO	LASA Array	72.30 316	eP	P	16 58 53.3	+1.1
	comp=Z,64nm,1.6s					
LAO	LASA Array	72.30 316	eP	P	16 58 53.3	+1.1
	comp=Z,64nm,1.6s					
T34A	McClaskey Farm	72.31 303	P	P	16 58 51.9	-0.5
	baz=56,SNR=12					
Z39A	Irene McRaven,	72.36 299	P	P	16 58 53.0	+0.2
	baz=56					
Y38A	Idabel	72.36 299	P	P	16 58 52.9	+0.2
	baz=56					
U35A	Pawnee	72.37 302	P	P	16 58 53.3	+0.5
	baz=56					
FYU	Fort Yukon	72.41 346	eP	P	16 58 53.6	+1.2
	comp=Z,40nm,1.1s					
FYU	Fort Yukon	72.41 346	eP	P	16 58 53.6	+1.2
	comp=Z,40nm,1.1s					
I25A	Rochford	72.44 312	P	P	16 58 53.7	+0.4
	baz=54,SNR=8.4					
X37A	Clayton	72.44 300	P	P	16 58 53.2	0.0
	baz=56,SNR=16					
J26A	Sides Ranch, S	72.46 311	P	P	16 58 53.8	+0.6
	baz=54					
R32A	Long Quarter,	72.53 305	P	P	16 58 53.9	+0.2
	baz=56					
S33A	Kaszmaul Farm,	72.53 304	P	P	16 58 53.5	-0.3
	baz=56,SNR=8.1					
RSSD	Black Hills	72.56 312	P	P	16 58 54.4	+0.4
	baz=54					
RSSD	Black Hills	72.56 312	eP	P	16 58 54.8	+0.8
RSSD			pmax	pmax		
	comp=Z,8.0nm,1.0s					
RSSD	Black Hills	72.56 312	eP	P	16 58 54.8	+0.8
	comp=Z,7.6nm,1.0s					
RSSD	Black Hills	72.56 312	eP	P	16 58 54.8	+0.8
	comp=Z,7.6nm,1.0s					
341A	Kurthwood	72.71 296	P	P	16 58 55.8	+1.0
	baz=56					
W36A	Wetumka	72.72 301	P	P	16 58 54.7	-0.2
	baz=56,SNR=8.8					
COLD	Coldfoot	72.73 348	eP	P	16 58 55.3	+0.9
	comp=Z,11nm,0.9s					
COLD	Coldfoot	72.73 348	eP	P	16 58 55.3	+0.9
	comp=Z,11nm,0.9s					
240A	Hunter Patters	72.74 297	P	P	16 58 56.0	+1.0
	baz=56					
SUR	Sutherland	72.77 160	LR	LR	17 30 21.4	
	comp=Z,22nm,19.7s,baz=347,slow=35					
V35A	Meyer Ranch, C	72.78 302	P	P	16 58 55.5	+0.3
	baz=56,SNR=6.5					
139A	Bunkhouse Ranc	72.82 298	P	P	16 58 56.0	+0.5
	baz=56					
U34A	Anderson Ranch	72.87 303	P	P	16 58 55.5	-0.2
	baz=56,SNR=8.3					
U34A	Anderson Ranch	72.87 303	eP	P	16 58 56.6	+0.9
	comp=Z,90nm,1.1s					
U34A	Anderson Ranch	72.87 303	eP	P	16 58 56.6	+0.9
	comp=Z,90nm,1.1s					
Z38A	Mt. Pleasant	72.92 299	P	P	16 58 56.7	+0.6
	baz=56					
Y37A	Hugo	72.95 300	P	P	16 58 56.8	+0.6
	baz=56					
CBKS	Cedar Bluff	72.97 306	P	P	16 58 56.9	+0.6
	baz=55					
CBKS	Cedar Bluff	72.97 306	eP	P	16 58 56.2	-0.1
CBKS			pmax	pmax		
	comp=Z,45nm,0.9s					
CBKS	Cedar Bluff	72.97 306	eP	P	16 58 56.2	-0.1
	comp=Z,45nm,0.9s					
CBKS	Cedar Bluff	72.97 306	eP	P	16 58 56.2	-0.1
	comp=Z,45nm,0.9s					
T33A	Patterson Ranc	72.98 304	P	P	16 58 57.0	+0.6
	baz=55					
EGAK	Eagle	73.08 343	eP	P	16 58 57.2	+0.7
	comp=Z,29nm,1.4s					
EGAK	Eagle	73.08 343	eP	P	16 58 57.1	+0.7
	comp=Z,29nm,1.4s					
S32A	Newby Ranch, P	73.08 305	P	P	16 58 57.2	+0.2
	baz=55					
X36A	Centrahoma	73.12 301	P	P	16 58 57.7	+0.4
	baz=56,SNR=9.0					
W35A	Tecumseh	73.15 301	P	P	16 58 57.4	0.0
	baz=56,SNR=13					
340A	Bronson	73.17 297	P	P	16 58 58.3	+0.7
	baz=56					
OGNE	Ogallala	73.19 309	P	P	16 58 58.7	+1.0
	baz=54					
V34A	Guthrie	73.20 302	P	P	16 58 58.4	+0.7
	baz=55					
V34A	Guthrie	73.20 302	eP	P	16 58 57.6	-0.1
	comp=Z,77nm,1.1s					
V34A	Guthrie	73.20 302	eP	P	16 58 57.6	-0.1
	comp=Z,77nm,1.1s					
YAK	Yakutsk	73.20 22	eP	P	16 58 56.5	-0.7
YAK			pmax	pmax		
	comp=Z,30nm,1.1s					
YAK			pmax	pmax		
	comp=N,15nm,1.7s					
YAK			pmax	pmax		
	comp=E,12nm,1.2s					
YAK			MLR	MLR		
	comp=Z,748nm,22.0s					
YAK			MLR	MLR		
	comp=E,615nm,17.0s					
YAK			MLR	MLR		
	comp=N,868nm,23.0s					
YAK	Yakutsk	73.20 22	eP	P	16 58 57.2	+0.1
	comp=N,28nm,0.9s					
YAK	Yakutsk	73.20 22	eP	P	16 58 57.2	+0.1
	comp=N,29nm,0.9s					
239A	Gary	73.25 298	P	P	16 58 58.5	+0.5
	baz=56					
DAWY	Dawson	73.25 342	eP	P	16 58 59.2	+1.6
	comp=N,29nm,1.3s					
DAWY	Dawson	73.25 342	eP	P	16 58 59.2	+1.6
	comp=N,29nm,1.3s					
U33A	Lingo Farm, Me	73.26 303	P	P	16 58 58.7	+0.7
	baz=55					
ROSC	El Rosal	73.31 263	LR	LR	17 28 35.4	
	comp=N,226nm,19.8s,baz=71,slow=34					
138A	Matatall Enter	73.32 298	P	P	16 58 58.3	-0.1
	baz=56					
T32A	Huddler Ranch,	73.37 304	P	P	16 58 59.2	+0.5
	baz=55					
Z37A	Pogue Cattle C	73.39 299	P	P	16 58 59.3	+0.5
	baz=56					
EGMT	Eagleton	73.40 318	P	P	16 58 58.5	-0.3
	baz=52					
EGMT	Eagleton	73.40 318	eP	P	16 58 58.5	-0.3
	comp=N,23nm,1.0s					
EGMT	Eagleton	73.40 318	eP	P	16 58 58.5	-0.3
	comp=N,23nm,1.0s					
Y36A	Durant	73.45 300	P	P	16 58 59.7	+0.5
	baz=56					
NATX	Nacogdoches	73.52 297	P	P	16 59 00.5	+0.8
	baz=56					
SONA1	Songino Array	73.53 42	eP	P	16 58 57.7	-1.9
SONA1	Songino Array	73.53 42	eP	P	16 58 57.7	-1.9
SONM	Songino Array	73.53 42	P	P	16 58 59.4	-0.3
	comp=N,5.0nm,1.0s,baz=320,slow=6.6,SNR=13					
SONM			LR	LR	17 33 22.7	
	comp=N,561nm,19.2s,baz=314,slow=38					
X35A	Drake	73.64 301	P	P	16 59 00.4	+0.1
	baz=55,SNR=7.8					
339A	Huntington	73.69 297	P	P	16 59 01.0	+0.4
	baz=56					
W34A	Bridge Creek,	73.71 302	P	P	16 59 01.3	+0.5
	baz=55					
W34A	Bridge Creek,	73.71 302	eP	P	16 59 00.6	-0.2
	comp=N,56nm,1.3s					
W34A	Bridge Creek,	73.71 302	eP	P	16 59 00.6	-0.2
	comp=N,56nm,1.3s					
238A	Jacksonville	73.71 298	P	P	16 59 01.1	+0.4
	baz=56					
V33A	Lossen Ranch,	73.72 303	P	P	16 59 00.7	-0.1
	baz=55,SNR=6.1					
137A	Heron Place, G	73.82 299	P	P	16 59 02.2	+0.8
	baz=55,SNR=8.0					
ULN	Ulaanbaatar	73.86 42	c iP	P	16 59 01.5	-0.1
ULN			pmax	pmax		
	comp=Z,41nm,2.5s					
ULN	Ulaanbaatar	73.86 42	eP	P	16 59 01.5	-0.1
	comp=Z,32nm,1.5s					
ULN	Ulaanbaatar	73.86 42	P	P	16 59 02.2	+0.6
	SNR=16					
ULN	Ulaanbaatar	73.86 42	P	P	16 59 02.2	+0.6
	SNR=16					
ULN	Ulaanbaatar	73.86 42	eP	P	16 59 01.5	-0.1
	comp=Z,32nm,1.5s					
U32A	Winter Ranch,	73.88 304	P	P	16 59 02.5	+0.8
	baz=55,SNR=8.8					
Z36A	Blue Ridge	73.91 300	P	P	16 59 02.2	+0.3
	baz=55,SNR=12					
Y35A	Marietta	73.96 301	P	P	16 59 02.5	+0.3
	baz=55,SNR=6.1					
X34A	Smith Ranch, M	74.11 301	P	P	16 59 03.6	+0.5
	baz=55,SNR=9.5					
237A	Washetta, Mont	74.19 298	P	P	16 59 04.7	+1.1
	baz=55					
338A	Crockett	74.21 297	P	P	16 59 04.8	+1.1
	baz=55					
W33A	Caddo, Fort Co	74.22 302	P	P	16 59 04.9	+1.1
	baz=55					
BILL	Bilibino	74.24 5	⇓ iP	P	16 59 04.2	+1.0
BILL			i		16 59 15.1	
BILL			pmax	pmax		
	comp=Z,12nm,1.3s					
BILL			MLR	MLR		
	comp=Z,403nm,18.0s					
BILL	Bilibino	74.24 5	eP	P	16 59 03.5	+0.3
	comp=Z,31nm,1.4s					
BILL	Bilibino	74.24 5	eP	P	16 59 03.5	+0.3
	comp=Z,31nm,1.4s					
V32A	Arapaho	74.28 303	P	P	16 59 05.3	+1.2
	baz=55,SNR=7.1					
IL1	Eielson Array	74.32 345	eP	P	16 59 04.1	+0.4
IL1	Eielson Array	74.32 345	eP	P	16 59 04.1	+0.4
ILAR	Eielson Array	74.32 345	P	P	16 59 04.8	+1.0
	comp=Z,2.7nm,0.8s,baz=3.1,slow=5.1,SNR=14					
ILAR			LR	LR	17 32 27.7	
	comp=Z,173nm,20.7s,baz=28,slow=36					
ILB	Eielson Array	74.32 345	eP	P	16 59 04.1	+0.3
ILB	Eielson Array	74.32 345	eP	P	16 59 04.1	+0.3
CIT	Chita	74.39 35	eP	P	16 59 05.0	+0.5
MDM	Murphy Dome	74.42 346	eP	P	16 59 05.1	+0.8
	comp=Z,19nm,0.9s					
MDM	Murphy Dome	74.42 346	eP	P	16 59 05.1	+0.8
	comp=Z,19nm,0.9s					
COLA	College	74.42 346	eP	P	16 59 06.6	+2.3
COLA			pmax	pmax		
	comp=Z,8.0nm,1.1s					
Y34A	Reagan Ranch,	74.42 301	P	P	16 59 05.9	+1.0
	baz=55					
136A	Ennis	74.43 299	P	P	16 59 06.0	+1.1
	baz=55					
Z35A	Perchaven, San	74.44 300	P	P	16 59 05.0	0.0
	baz=55,SNR=6.6					
539A	Cross D Ranch,	74.50 296	P	P	16 59 06.7	+1.3
	baz=55					
X33A	Lawton	74.59 302	P	P	16 59 06.7	+0.8
	baz=55					
LSA	Lhasa	74.60 64	P	P	16 59 06.6	0.0
LSA			pmax	pmax		
	comp=Z,18nm,0.8s					
LSA	Lhasa	74.60 64	eP	P	16 59 06.4	-0.2
LSA			pmax	pmax		
	comp=Z,31nm,1.3s					
LSA	Lhasa	74.60 64	eP	P	16 59 06.4	-0.2
	comp=Z,31nm,1.3s					
LSA	Lhasa	74.60 64	eP	P	16 59 06.4	-0.2
	comp=Z,31nm,1.3s					
CCB	Clear Creek Bu	74.61 346	eP	P	16 59 05.3	-0.2
	comp=Z,18nm,0.4s					
CCB	Clear Creek Bu	74.61 346	eP	P	16 59 05.3	-0.2
	comp=Z,18nm,0.4s					
337A	Centerville	74.64 298	P	P	16 59 07.6	+1.4
	baz=55					
WMOK	Wichita Mounta	74.67 302	eP	P	16 59 07.2	+0.8
WMOK			pmax	pmax		
	comp=Z,68nm,1.3s					
WMOK	Wichita Mounta	74.67 302	eP	P	16 59 07.2	+0.8
	comp=Z,68nm,1.3s					
WMOK	Wichita Mounta	74.67 302	eP	P	16 59 07.2	+0.8
	comp=Z,68nm,1.3s					
KSCO	Kaye Shedlock'	74.69 308	P	P	16 59 06.8	+0.3
	baz=54					
236A	Katherine and	74.70 299	P	P	16 59 07.6	+1.1
	baz=55					
GCMT	Greycliff	74.74 316	eP	P	16 59 06.9	+0.2
GCMT	Greycliff	74.74 316	eP	P	16 59 06.9	+0.2
W32A	Sentinel	74.76 303	P	P	16 59 07.4	+0.5
	baz=54,SNR=22					
GTA	Gaotai	74.81 52	eP	P	16 59 07.3	0.0
GTA			pP	sP	16 59 11.6	+1.3
GTA			sP	pP	16 59 14.7	+5.2
GTA			S	S	17 08 46.2	+1.7
GTA			sS	sS	17 08 53.3	+5.1
GTA			SS	SS	17 13 37.7	+6.2
GTA			pmax	pmax		
	comp=Z,14nm,1.4s					
GTA			pmax	pmax		
	comp=Z,150nm,4.0s					
GTA			LR	LR		
	comp=Z,720nm,17.6s					
GTA			LR	LR		
	comp=Z,740nm,15.9s					
GTA			LR	LR		
	comp=Z,250nm,13.8s					
MLY	Manley	74.82 347	eP	P	16 59 06.8	+0.1
	comp=Z,34nm,1.9s					
MLY	Manley	74.82 347	eP	P	16 59 06.8	+0.1
	comp=Z,34nm,1.9s					
WRH	Wood River Hil	74.83 346	eP	P	16 59 06.8	+0.1
	comp=Z,20nm,1.0s					
WRH	Wood River Hil	74.83 346	eP	P	16 59 06.8	+0.1
	comp=Z,20nm,1.0s					
Z34A	Collier Ranch,	74.87 300	P	P	16 59 07.8	+0.3
	baz=55					
K22A	Casper	74.89 312	P	P	16 59 07.7	0.0
	baz=52					
K22A	Casper	74.89 312	eP	P	16 59 07.8	+0.1
	comp=Z,41nm,1.6s					
K22A	Casper	74.89 312	eP	P	16 59 07.8	+0.1
	comp=Z,41nm,1.6s					
WALA	Waterton Lakes	74.89 321	eP	P	16 59 07.4	-0.1

comp=Z,34nm,1.3s
WALA Waterton Lakes 74.89 321 eP P 16 59 07.4 -0.1
comp=Z,34nm,1.3s
RLMT Red Lodge 74.94 316 P P 16 59 08.0 0.0
baz=52
RLMT Red Lodge 74.94 316 eP P 16 59 07.5 -0.5
comp=Z,22nm,1.4s
RLMT Red Lodge 74.94 316 eP P 16 59 07.5 -0.5
comp=Z,22nm,1.4s
Y33A Hilltop Ranch, 74.99 301 P P 16 59 08.0 -0.2
baz=54,SNR=6.8
135A Vickery Place, 74.99 300 P P 16 59 09.1 +0.9
baz=55
DLBC Dease Lake 75.03 335 eP P 16 59 09.2 +1.2
comp=Z,18nm,1.1s
DLBC Dease Lake 75.03 335 eP P 16 59 09.2 +1.2
comp=Z,18nm,1.1s
PHWY Pilot Hill 75.07 311 eP P 16 59 09.6 +0.7
comp=Z,107nm,1.9s
PHWY Pilot Hill 75.07 311 eP P 16 59 09.6 +0.7
comp=Z,107nm,1.9s
MENT Mentasta 75.24 343 eP P 16 59 11.6 +2.4
comp=Z,15nm,1.3s
MENT Mentasta 75.24 343 eP P 16 59 11.6 +2.4
comp=Z,15nm,1.3s
336A Riesel 75.27 298 P P 16 59 09.4 -0.4
baz=55,SNR=6.1
TEIG Tepich 75.32 284 eP P 16 59 09.5 -0.8
comp=Z,43nm,1.2s
TEIG Tepich 75.32 284 eP P 16 59 09.5 -0.8
comp=Z,43nm,1.2s
WHTX Lake Whitney, 75.35 299 P P 16 59 11.0 +0.8
baz=54
WHTX Lake Whitney, 75.35 299 eP P 16 59 09.1 -1.2
comp=Z,45nm,1.1s
WHTX Lake Whitney, 75.35 299 eP P 16 59 09.1 -1.2
comp=Z,45nm,1.1s
BWN Browne 75.36 346 eP P 16 59 10.4 +0.6
comp=Z,24nm,1.0s
BWN Browne 75.36 346 eP P 16 59 10.3 +0.6
comp=Z,24nm,1.0s
HKT Hockley 75.38 297 eP P 16 59 11.1 +0.7
HKT pmax pmax
comp=Z,62nm,1.3s
HKT Hockley 75.38 297 eP P 16 59 11.1 +0.7
comp=Z,62nm,1.3s
HKT Hockley 75.38 297 eP P 16 59 11.1 +0.7
comp=Z,62nm,1.3s
134A White-Moore Ra 75.44 300 P P 16 59 11.4 +0.6
baz=54
Z33A Whitaker Ranch 75.50 301 P P 16 59 12.0 +0.9
baz=54
436A Wall Ranch, Ga 75.59 298 P P 16 59 12.3 +0.7
baz=54
N23A Red Feather La 75.61 311 P P 16 59 12.3 +0.3
baz=52,SNR=9.4
N23A Red Feather La 75.61 311 eP P 16 59 12.6 +0.6
comp=Z,36nm,1.4s
N23A Red Feather La 75.61 311 eP P 16 59 12.6 +0.6
comp=Z,36nm,1.4s
537A Green Hill Far 75.65 297 P P 16 59 12.8 +0.8
baz=55
MCK McKinley 75.66 346 eP P 16 59 11.1 -0.4
MCK pmax pmax
comp=Z,47nm,1.8s
MCK McKinley 75.66 346 eP P 16 59 11.1 -0.4
comp=Z,47nm,1.8s
MCK McKinley 75.66 346 eP P 16 59 11.1 -0.4
comp=Z,47nm,1.8s
BPAW Bear Paw Mtn. 75.72 347 eP P 16 59 11.9 0.0
comp=Z,4.9nm,0.9s
BPAW Bear Paw Mtn. 75.72 347 eP P 16 59 11.9 0.0
comp=Z,4.9nm,0.9s
YBMT Yellow Bay 75.72 320 eP P 16 59 12.9 +0.6
YBMT Yellow Bay 75.72 320 eP P 16 59 12.9 +0.6
335A Moody 75.73 298 P P 16 59 13.0 +0.5
baz=54
234A Clairette 75.81 299 P P 16 59 13.8 +0.9
baz=54
738A Farr-Stevens R 75.89 296 P P 16 59 14.1 +0.7
baz=54
BOZ Bozeman (W) 75.90 317 P P 16 59 13.6 +0.2
baz=50,SNR=18
BOZ Bozeman (W) 75.90 317 eP P 16 59 13.9 +0.5
BOZ pmax pmax
comp=Z,21nm,1.3s
BOZ Bozeman (W) 75.90 317 eP P 16 59 13.9 +0.5
comp=Z,21nm,1.3s
BOZ Bozeman (W) 75.90 317 eP P 16 59 13.9 +0.5
comp=Z,21nm,1.3s
LKWY Lake 75.91 316 eP P 16 59 15.0 +1.3
LKWY Lake 75.91 316 eP P 16 59 14.9 +1.3
LKWY Lake 75.91 316 eP P 16 59 14.9 +1.3
JTMT Jette 75.93 320 eP P 16 59 13.9 +0.4
JTMT Jette 75.93 320 eP P 16 59 13.9 +0.4
RND Reindeer 75.94 345 eP P 16 59 13.8 +0.6
RND pmax pmax
comp=Z,10.0nm,1.0s
RND Reindeer 75.94 345 eP P 16 59 13.8 +0.6
comp=Z,10nm,1.0s
RND Reindeer 75.94 345 eP P 16 59 13.8 +0.6
comp=Z,10nm,1.0s
SWMT Swartz Lake 75.94 320 eP P 16 59 13.4 -0.2
SWMT Swartz Lake 75.94 320 eP P 16 59 13.4 -0.2
CHMT Chamberlain Mo 75.94 319 eP P 16 59 13.7 0.0
CHMT Chamberlain Mo 75.94 319 eP P 16 59 13.7 0.0
133A Hamilton Ranch 76.00 300 P P 16 59 14.3 +0.3
baz=54
637A Eagle Lake 76.03 296 P P 16 59 14.6 +0.4
baz=54
ISCO Idaho Springs 76.07 310 P P 16 59 14.8 +0.1
baz=52,SNR=13
ISCO Idaho Springs 76.07 310 eP P 16 59 16.2 +1.5
ISCO Idaho Springs 76.07 310 eP P 16 59 16.1 +1.4
ISCO Idaho Springs 76.07 310 eP P 16 59 16.1 +1.4
H17A Grant Village 76.12 316 P P 16 59 15.5 +0.7
baz=50
H17A Grant Village 76.12 316 P P 16 59 13.3 -1.5
H17A Grant Village 76.12 316 P P 16 59 13.3 -1.5
BSMT Bassoo Peak 76.12 320 eP P 16 59 15.4 +0.7
BSMT Bassoo Peak 76.12 320 eP P 16 59 15.4 +0.7
435B Jarrell 76.14 298 P P 16 59 15.4 +0.6
baz=54
TRF Thorofare Moun 76.17 346 eP P 16 59 13.4 -1.3
comp=Z,122nm,1.9s
TRF Thorofare Moun 76.17 346 eP P 16 59 13.4 -1.3
comp=Z,122nm,1.9s
536A Bastrop 76.18 297 P P 16 59 15.4 +0.4
baz=54
KTH Kantishna Hill 76.20 346 eP P 16 59 15.2 +0.5
comp=Z,21nm,1.0s
KTH Kantishna Hill 76.20 346 eP P 16 59 15.2 +0.5
comp=Z,21nm,1.0s
LRM Limekiln Ridge 76.23 318 eP P 16 59 16.1 +0.7
LRM Limekiln Ridge 76.23 318 eP P 16 59 16.1 +0.7
YFT Old Faithful 76.23 316 eP P 16 59 18.3 +2.9
comp=Z,22nm,1.3s
YFT Old Faithful 76.23 316 eP P 16 59 18.3 +2.9
comp=Z,22nm,1.3s
334A Lometa 76.27 299 P P 16 59 15.2 -0.4
baz=54,SNR=23
Q24A Divide 76.29 309 P P 16 59 16.4 +0.5
baz=52
QLMT Earthquake Lak 76.31 316 eP P 16 59 17.5 +1.7
QLMT Earthquake Lak 76.31 316 eP P 16 59 17.5 +1.7
233A Rising Star 76.33 300 P P 16 59 15.5 -0.5
baz=54,SNR=9.0
MSO Missoula 76.36 319 P P 16 59 16.3 +0.4
baz=49
MSO Missoula 76.36 319 eP P 16 59 18.4 +2.4
MSO Missoula 76.36 319 eP P 16 59 18.4 +2.4
ABTX Abilene, Hawle 76.48 301 P P 16 59 17.2 +0.4
baz=54,SNR=9.3
ABTX Abilene, Hawle 76.48 301 eP P 16 59 17.2 +0.4
comp=Z,73nm,1.3s
ABTX Abilene, Hawle 76.48 301 eP P 16 59 17.2 +0.4
comp=Z,73nm,1.3s
636A Smothers Creek 76.52 297 P P 16 59 18.1 +1.1
baz=54,SNR=7.3
AMTX Amarillo 76.52 304 P P 16 59 17.6 +0.5
baz=53
BALM Baldy 76.55 341 eP P 16 59 19.6 +2.8
BALM pmax pmax
comp=Z,60nm,1.7s
BALM Baldy 76.55 341 eP P 16 59 19.6 +2.8
comp=Z,60nm,1.7s
BALM Baldy 76.55 341 eP P 16 59 19.6 +2.8
comp=Z,60nm,1.7s
535A Dale 76.56 298 P P 16 59 17.8 +0.5
baz=54
TNA Tin City 76.56 354 eP P 16 59 17.3 +0.7
comp=Z,27nm,1.1s
TNA Tin City 76.56 354 eP P 16 59 17.3 +0.7
comp=Z,27nm,1.1s
BW06 Boulder Array 76.57 314 P P 16 59 16.7 -0.7
baz=51,SNR=12
BW06 Boulder Array 76.57 314 eP P 16 59 17.2 -0.2
comp=Z,37nm,1.6s
BW06 Boulder Array 76.57 314 eP P 16 59 17.2 -0.2
comp=Z,37nm,1.6s
PD31 Pinedale Array 76.57 314 eP P 16 59 17.2 -0.1
PD31 Pinedale Array 76.57 314 eP P 16 59 17.2 -0.2
PDAR Pinedale Array 76.57 314 P P 16 59 17.3 -0.1
comp=Z,4.2nm,0.8s,baz=58,slow=9.1,SNR=17
PDAR LR LR 17 29 18.5
comp=Z,241nm,20.1s,baz=62,slow=33
434A Burnet 76.59 299 P P 16 59 17.5 0.0
baz=54,SNR=17
DLMT Dillon 76.60 317 eP P 16 59 19.2 +1.8
comp=Z,43nm,1.3s
DLMT Dillon 76.60 317 eP P 16 59 19.2 +1.8
comp=Z,43nm,1.3s
MOOW Moose Ponds 76.62 315 eP P 16 59 18.9 +1.3
comp=Z,6.1nm,1.2s
MOOW Moose Ponds 76.62 315 eP P 16 59 18.9 +1.3
comp=Z,6.1nm,1.2s
LOHW Long Hollow 76.63 315 eP P 16 59 19.3 +1.6
comp=Z,21nm,1.8s
LOHW Long Hollow 76.63 315 eP P 16 59 19.3 +1.6
comp=Z,21nm,1.8s
IMW Indian Meadow 76.64 315 eP P 16 59 18.8 +1.0
comp=Z,7.8nm,1.1s
IMW Indian Meadow 76.64 315 eP P 16 59 18.8 +1.0
comp=Z,7.9nm,1.1s
333A Richland Sprin 76.79 299 P P 16 59 19.0 +0.4
baz=54,SNR=11
736A Circle Diamond 76.83 296 P P 16 59 20.1 +1.3
baz=54
FXWY Fox Creek 76.85 315 eP P 16 59 19.2 +0.2
comp=Z,6.6nm,1.1s
FXWY Fox Creek 76.85 315 eP P 16 59 19.2 +0.2
comp=Z,6.6nm,1.1s
REDW Red Top Meadow 76.93 315 eP P 16 59 19.0 -0.4
comp=Z,53nm,1.9s
REDW Red Top Meadow 76.93 315 eP P 16 59 19.1 -0.4
comp=Z,53nm,1.9s
T25A Trinidad 76.94 307 P P 16 59 19.3 -0.3
baz=52,SNR=6.5
T25A Trinidad 76.94 307 eP P 16 59 20.5 +1.0
comp=Z,31nm,1.5s
T25A Trinidad 76.94 307 eP P 16 59 20.5 +1.0
comp=Z,31nm,1.5s
NEW Newport 77.01 322 P P 16 59 19.9 +0.4
baz=47
KLU Klutina 77.01 343 eP P 16 59 20.4 +1.1
comp=Z,45nm,1.8s
KLU Klutina 77.01 343 eP P 16 59 20.4 +1.1
comp=Z,45nm,1.8s
SCM Sheep Creek Mo 77.03 344 eP P 16 59 20.4 +1.0
SCM pmax pmax
comp=Z,48nm,1.2s
SCM Sheep Creek Mo 77.03 344 eP P 16 59 20.4 +1.0
comp=Z,48nm,1.2s
SCM Sheep Creek Mo 77.03 344 eP P 16 59 20.4 +1.0
comp=Z,48nm,1.2s
PPLA Purkeypile 77.04 347 eP P 16 59 20.0 +0.5
comp=Z,36nm,1.3s
PPLA Purkeypile 77.04 347 eP P 16 59 20.0 +0.5
comp=Z,36nm,1.3s
635A Leesville 77.08 297 P P 16 59 20.4 +0.2
baz=54
MCMT McKenzie Canyo 77.08 317 eP P 16 59 21.5 +1.2
MCMT McKenzie Canyo 77.08 317 eP P 16 59 21.4 +1.2
BMRM Bremner River 77.17 342 eP P 16 59 21.8 +1.7
comp=Z,170nm,1.7s
BMRM Bremner River 77.17 342 eP P 16 59 21.8 +1.7
comp=Z,170nm,1.7s
534A Blanco 77.20 298 P P 16 59 20.6 -0.3
baz=54,SNR=7.7
433A Art 77.20 299 P P 16 59 21.8 +0.9
baz=54
SDCO Great Sand Dun 77.25 308 P P 16 59 20.3 -1.1
baz=52,SNR=18
SDCO Great Sand Dun 77.25 308 eP P 16 59 21.8 +0.4
comp=Z,39nm,1.7s
SDCO Great Sand Dun 77.25 308 eP P 16 59 21.8 +0.4
comp=Z,39nm,1.7s
SMCO Snowmass 77.28 310 eP P 16 59 22.4 +0.7
comp=Z,34nm,1.5s
SMCO Snowmass 77.28 310 eP P 16 59 22.4 +0.7
comp=Z,34nm,1.5s
735A Kenedy 77.42 297 P P 16 59 22.9 +0.8
baz=54
AHID Auburn Hatcher 77.45 315 eP P 16 59 23.3 +1.0
comp=Z,22nm,1.2s
AHID Auburn Hatcher 77.45 315 eP P 16 59 23.3 +1.0
comp=Z,22nm,1.2s
O20A White River Ci 77.45 311 P P 16 59 22.6 +0.3
baz=51
O20A White River Ci 77.45 311 eP P 16 59 23.1 +0.8
comp=Z,32nm,1.5s
O20A White River Ci 77.45 311 eP P 16 59 23.1 +0.8
comp=Z,32nm,1.5s
634A China Grove, S 77.49 297 P P 16 59 23.0 +0.5
baz=54
533A Kerrville 77.56 298 P P 16 59 22.3 -0.6
baz=54,SNR=6.5
SEY Seymchan 77.62 12 i P P 16 59 24.8 +2.2
TTA Tatalina 77.67 348 eP P 16 59 24.5 +1.5
TTA pmax pmax
comp=Z,25nm,1.4s
TTA Tatalina 77.67 348 eP P 16 59 24.5 +1.5
comp=Z,25nm,1.4s
TTA Tatalina 77.67 348 eP P 16 59 24.5 +1.5
comp=Z,25nm,1.4s
TT01 Tatalina 77.69 348 eP P 16 59 24.3 +1.3
TT01 Tatalina 77.69 348 eP P 16 59 24.3 +1.3
835A Beeville 77.77 296 P P 16 59 25.2 +1.2
baz=54
MSTX Muleshoe 77.79 303 P P 16 59 23.9 -0.4
baz=53,SNR=9.3
MSTX Muleshoe 77.79 303 eP P 16 59 24.9 +0.7
comp=Z,85nm,1.6s
MSTX Muleshoe 77.79 303 eP P 16 59 24.9 +0.7
comp=Z,85nm,1.6s
JCT Junction City 77.86 299 P P 16 59 24.5 0.0
baz=53,SNR=12
JCT Junction City 77.86 299 eP P 16 59 25.8 +1.2
JCT Junction City 77.86 299 eP P 16 59 25.8 +1.2
JCT Junction City 77.86 299 eP P 16 59 25.8 +1.2
734A La Parita Cree 77.95 297 P P 16 59 25.6 +0.5
baz=54
B08A Colville Reser 78.02 323 eP P 16 59 24.0 -1.1
comp=Z,45nm,1.9s
B08A Colville Reser 78.02 323 eP P 16 59 24.0 -1.1
comp=Z,45nm,1.9s
633A Saathoff Ranch 78.03 298 P P 16 59 26.4 +0.9
baz=53,SNR=5.5
S22A 4UR Ranch, Cre 78.08 309 P P 16 59 25.8 -0.3
baz=51,SNR=18
S22A 4UR Ranch, Cre 78.08 309 eP P 16 59 26.6 +0.6
comp=Z,55nm,1.8s
S22A 4UR Ranch, Cre 78.08 309 eP P 16 59 26.6 +0.6
comp=Z,55nm,1.8s
TGUH Tegucigalpa,Un 78.10 279 eP P 16 59 27.6 +1.6
comp=Z,68nm,1.4s
TGUH Tegucigalpa,Un 78.10 279 eP P 16 59 27.6 +1.6
comp=Z,68nm,1.4s
834A Tilden 78.37 296 P P 16 59 28.4 +1.0
baz=53
HWUT Hardware Ranch 78.46 314 eP P 16 59 28.1 +0.2
comp=Z,35nm,1.1s
HWUT Hardware Ranch 78.46 314 eP P 16 59 28.1 +0.2
comp=Z,35nm,1.1s
733A Divot King Ran 78.55 297 P P 16 59 29.2 +0.8
baz=53,SNR=8.8
GAMB Gambell 78.60 355 eP P 16 59 28.5 +0.5
comp=Z,21nm,1.0s
GAMB Gambell 78.60 355 eP P 16 59 28.5 +0.5
comp=Z,21nm,1.0s
F10A Beach Ranch, E 78.62 320 eP P 16 59 28.4 -0.2
comp=Z,61nm,1.9s
F10A Beach Ranch, E 78.62 320 eP P 16 59 28.4 -0.2
comp=Z,61nm,1.9s
934A Benavides 78.66 296 P P 16 59 29.7 +0.7
baz=53
TCUT Toone Canyon 78.69 314 eP P 16 59 29.8 +0.6
comp=Z,51nm,1.4s
TCUT Toone Canyon 78.69 314 eP P 16 59 29.8 +0.6
comp=Z,51nm,1.4s
035A Encino 78.76 295 P P 16 59 30.1 +0.6
baz=53
HLID Hailey 78.76 317 P P 16 59 30.0 +0.5
baz=48,SNR=13
HLID Hailey 78.76 317 eP P 16 59 30.2 +0.7
comp=Z,12nm,1.1s
HLID Hailey 78.76 317 eP P 16 59 30.2 +0.7
comp=Z,12nm,1.1s
833A Chaparral WMA, 78.85 297 P P 16 59 31.0 +1.0
baz=53,SNR=8.2
PV01 Paradox Valley 78.91 310 eP P 16 59 31.2 +0.7
PV01 Paradox Valley 78.91 310 eP P 16 59 31.2 +0.7
PV04 Paradox Valley 78.95 310 eP P 16 59 31.4 +0.7
PV04 Paradox Valley 78.95 310 eP P 16 59 31.4 +0.7
P18A Preston Nutter 78.97 312 eP P 16 59 31.6 +0.7
comp=Z,19nm,0.7s
P18A Preston Nutter 78.97 312 eP P 16 59 31.6 +0.7
comp=Z,19nm,0.7s
035Z Hargill 79.01 295 P P 16 59 31.8 +0.9
baz=53
PV09 Paradox Valley 79.02 310 eP P 16 59 30.9 -0.3
PV09 Paradox Valley 79.02 310 eP P 16 59 30.9 -0.3
HVU Hansel Valley 79.03 315 eP P 16 59 31.4 +0.3
HVU pmax pmax
comp=Z,37nm,1.6s
HVU Hansel Valley 79.03 315 eP P 16 59 31.4 +0.3
comp=Z,37nm,1.6s
HVU Hansel Valley 79.03 315 eP P 16 59 31.4 +0.3
comp=Z,37nm,1.6s
PV10 Paradox Valley 79.04 310 eP P 16 59 32.2 +0.9
PV10 Paradox Valley 79.04 310 eP P 16 59 32.2 +0.9
JLU Jordanelle 79.05 313 eP P 16 59 31.4 +0.1
comp=Z,57nm,1.8s
JLU Jordanelle 79.05 313 eP P 16 59 31.4 +0.1
comp=Z,57nm,1.8s
034A Hebbronville 79.10 296 P P 16 59 32.7 +1.3
baz=53,SNR=9.1
HIA Hailar 79.14 35 eP P 16 59 31.4 +0.1
HIA pmax pmax
comp=Z,49nm,1.3s
HIA Hailar 79.14 35 eP P 16 59 31.4 +0.1
comp=Z,49nm,1.3s
HIA Hailar 79.14 35 eP P 16 59 31.4 +0.1
comp=Z,49nm,1.3s
933A Laredo 79.19 296 P P 16 59 33.2 +1.3
baz=53,SNR=18
PV05 Paradox Valley 79.27 310 eP P 16 59 32.6 +0.1
PV05 Paradox Valley 79.27 310 eP P 16 59 32.6 +0.1
P17A Butcher Ranch, 79.36 312 eP P 16 59 33.0 +0.1
comp=Z,57nm,1.7s
P17A Butcher Ranch, 79.36 312 eP P 16 59 33.0 +0.1
comp=Z,57nm,1.7s
LZH Lanzhou 79.37 53 eP P 16 59 33.4 +0.4
LZH sP sP 16 59 35.8 -0.2
LZH PP PP 17 02 36.0 +3.6
LZH eS S 17 09 32.2 -2.1
LZH SKS SKSac 17 09 46.5 -3.5
LZH pmax pmax
comp=Z,64nm,1.0s
LZH pmax pmax
comp=Z,250nm,4.1s
LZH LR LR
comp=Z,2μm,12.9s
LZH LR LR
comp=Z,1μm,11.1s
LZH LR LR
comp=Z,2μm,13.4s
OTAV Otavalo 79.38 262 eP P 16 59 33.5 -0.1
comp=Z,21nm,1.5s
OTAV Otavalo 79.38 262 eP P 16 59 33.5 -0.1
comp=Z,21nm,1.5s
BMO Blue Mountains 79.43 319 eP P 16 59 32.6 -0.4
comp=Z,61nm,2.0s
BMO Blue Mountains 79.43 319 eP P 16 59 32.6 -0.4
comp=Z,61nm,2.0s
MVCO Mesa Verde 79.45 309 P P 16 59 34.2 +0.7
baz=50
MVCO Mesa Verde 79.45 309 eP P 16 59 33.7 +0.2
comp=Z,18nm,1.0s
MVCO Mesa Verde 79.45 309 eP P 16 59 33.7 +0.2
comp=Z,18nm,1.0s
SRU San Rafael Swe 79.47 311 eP P 16 59 33.3 -0.2
SRU pmax pmax
comp=Z,74nm,1.6s
SRU San Rafael Swe 79.47 311 eP P 16 59 33.3 -0.2
comp=Z,74nm,1.6s
SRU San Rafael Swe 79.47 311 eP P 16 59 33.3 -0.2
comp=Z,74nm,1.6s
PALK Pallekele 79.59 89 P P 16 59 33.5 -0.8
comp=Z,15nm,1.0s,baz=299,slow=1.3,SNR=3.7
ANMO Albuquerque 79.59 306 P P 16 59 34.7 +0.5
baz=51
ANMO Albuquerque 79.59 306 i P P 16 59 34.3 +0.1
ANMO pmax pmax
comp=Z,26nm,1.7s
ANMO Albuquerque 79.59 306 eP P 16 59 35.1 +0.8
comp=Z,29nm,1.4s
ANMO Albuquerque 79.59 306 eP P 16 59 35.1 +0.8
comp=Z,29nm,1.4s
MFID Camas Ranch 79.63 317 eP P 16 59 34.7 +0.5
comp=Z,13nm,1.0s
MFID Camas Ranch 79.63 317 eP P 16 59 34.7 +0.5
comp=Z,13nm,1.0s
BGU Big Grassy Mou 79.74 314 eP P 16 59 36.0 +1.1
comp=Z,47nm,1.5s
BGU Big Grassy Mou 79.74 314 eP P 16 59 36.0 +1.1
comp=Z,47nm,1.5s
TMUT Trail Mountain 79.75 312 eP P 16 59 34.4 -0.8
comp=Z,18nm,1.1s
TMUT Trail Mountain 79.75 312 eP P 16 59 34.4 -0.8
comp=Z,18nm,1.1s
NLU North Lily Min 79.83 313 eP P 16 59 37.0 +1.5
comp=Z,15nm,1.2s
NLU North Lily Min 79.83 313 eP P 16 59 37.0 +1.5
comp=Z,15nm,1.2s
Q16A Castle Valley 79.97 312 eP P 16 59 35.3 -1.0
comp=Z,46nm,1.6s
Q16A Castle Valley 79.97 312 eP P 16 59 35.3 -1.0
comp=Z,46nm,1.6s
DUG Dugway, Tooele 80.10 314 P P 16 59 37.4 +0.6
baz=49,SNR=8.3
DUG Dugway, Tooele 80.10 314 eP P 16 59 35.3 -1.5
DUG pmax pmax
comp=Z,25nm,1.4s
DUG Dugway, Tooele 80.10 314 eP P 16 59 35.3 -1.5
comp=Z,25nm,1.4s
DUG Dugway, Tooele 80.10 314 eP P 16 59 35.3 -1.5
comp=Z,25nm,1.4s
LPM Los Pinos Moun 80.10 306 eP P 16 59 38.0 +1.0
LPM Los Pinos Moun 80.10 306 eP P 16 59 38.0 +1.0
BTO Baotou 80.17 46 eP P 16 59 37.3 +0.2
BNM Barren Site 80.20 306 eP P 16 59 38.6 +1.0
BNM Barren Site 80.20 306 eP P 16 59 38.6 +1.0
LON Longmire 80.34 323 eP P 16 59 37.8 -0.1
LON pmax pmax
comp=Z,12nm,1.0s
LON Longmire 80.34 323 eP P 16 59 37.8 -0.1
comp=Z,12nm,1.0s
LON Longmire 80.34 323 eP P 16 59 37.8 -0.1
comp=Z,12nm,1.0s
LAZ Ladron 80.37 306 eP P 16 59 39.0 +0.5
LAZ Ladron 80.37 306 eP P 16 59 39.0 +0.5
MSU Marysvale 80.83 312 eP P 16 59 40.8 -0.1
MSU Marysvale 80.83 312 eP P 16 59 40.8 -0.1
MSU Marysvale 80.83 312 eP P 16 59 40.8 -0.1
HHC Hu-ho-hao-te 80.88 45 eP P 16 59 41.1 +0.1
HHC PP PP 17 02 50.4 +5.7
HHC S S 17 09 50.9 +1.0
HHC pmax pmax
comp=Z,29nm,1.3s
HHC pmax pmax
comp=Z,250nm,7.4s
HHC LR LR
comp=Z,830nm,17.6s
HHC LR LR
comp=Z,880nm,18.1s
HHC LR LR
comp=Z,790nm,17.6s
MNTX Cornudas Mount 80.91 303 P P 16 59 42.7 +1.5
baz=51,SNR=12
MNTX Cornudas Mount 80.91 303 eP P 16 59 40.5 -0.7
comp=Z,26nm,1.3s

MNTX	Cornudas Mount	80.91	303	eP	P	16 59 40.5 -0.7
	comp=Z,26nm,1.3s					
ELK	Elko	81.11	315	eP	P	16 59 43.2 +0.8
ELK				pmax	pmax	
	comp=Z,27nm,1.4s					
ELK	Elko	81.11	315	eP	P	16 59 43.2 +0.8
	comp=Z,27nm,1.4s					
ELK	Elko	81.11	315	eP	P	16 59 43.2 +0.8
	comp=Z,27nm,1.4s					
MTPU	Mount Pierson	81.15	312	eP	P	16 59 43.4 +0.6
	comp=Z,64nm,1.5s					
MTPU	Mount Pierson	81.15	312	eP	P	16 59 43.4 +0.6
	comp=Z,64nm,1.5s					
CROR	Criterion Ridg	81.20	321	P	P	16 59 43.9 +1.3
CROR	Criterion Ridg	81.20	321	P	P	16 59 43.9 +1.3
TX31	Lajitas Ar. Si	81.22	300	eP	P	16 59 44.0 +1.0
TX31	Lajitas Ar. Si	81.22	300	eP	P	16 59 44.0 +1.0
TXAR	Lajitas Array	81.22	300	P	P	16 59 44.0 +1.0
	comp=Z,5.6nm,0.9s,baz=77,slow=5.5,SNR=30					
TXAR				LR	LR	17 33 15.7
	comp=Z,426nm,21.4s,baz=0.0,slow=34					
TXAR	Lajitas Array	81.22	300	P	P	16 59 44.0 +1.0
TXAR				pmax	pmax	
	comp=Z,6.0nm,0.9s					
TXAR				MLR	MLR	
	comp=Z,426nm,21.4s					
TXAR	Lajitas Array	81.22	300	P	P	16 59 44.0 +1.0
F04D	Rainier, OR	81.40	323	P	P	16 59 44.4 +0.9
	baz=43					
W18A	Petrified Fore	81.56	308	P	P	16 59 44.6 -0.1
	baz=50					
WVOR	Wild Horse Val	81.80	318	eP	P	16 59 46.5 +0.6
WVOR				pmax	pmax	
	comp=Z,25nm,1.4s					
WVOR	Wild Horse Val	81.80	318	eP	P	16 59 46.5 +0.6
	comp=Z,25nm,1.4s					
WVOR	Wild Horse Val	81.80	318	eP	P	16 59 46.5 +0.6
	comp=Z,25nm,1.4s					
PSUT	Pine Spring	81.80	313	eP	P	16 59 46.3 +0.2
	comp=Z,21nm,1.2s					
PSUT	Pine Spring	81.80	313	eP	P	16 59 46.3 +0.2
	comp=Z,21nm,1.2s					
I05D	Terrebonne, OR	81.84	321	P	P	16 59 45.7 -0.2
	baz=44					
H04A	Detroit Lake	82.01	322	eP	P	16 59 46.6 -0.2
	comp=Z,17nm,1.1s					
H04A	Detroit Lake	82.01	322	eP	P	16 59 46.6 -0.2
	comp=Z,17nm,1.1s					
X18A	Snowflake	82.07	308	eP	P	16 59 48.1 +0.6
	comp=Z,6.9nm,0.9s					
X18A	Snowflake	82.07	308	eP	P	16 59 48.1 +0.6
	comp=Z,6.9nm,0.9s					
G03D	McMinnville, O	82.16	323	P	P	16 59 47.5 0.0
	baz=43					
KNB	Kanab	82.20	311	eP	P	16 59 49.1 +0.9
KNB				pmax	pmax	
	comp=Z,32nm,1.6s					
KNB	Kanab	82.20	311	eP	P	16 59 49.1 +0.9
	comp=Z,32nm,1.6s					
KNB	Kanab	82.20	311	eP	P	16 59 49.1 +0.9
	comp=Z,32nm,1.6s					
LPAZ	La Paz	82.23	243	P	P	16 59 48.8 -0.2
	comp=Z,2.0nm,1.0s,baz=107,slow=3.1,SNR=4.9					
LPAZ				LR	LR	17 36 31.1
	comp=Z,55nm,18.2s,baz=56,slow=36					
LPAZ	La Paz	82.23	243	eP	P	16 59 47.8 -1.1
	comp=Z,17nm,1.9s					
LPAZ	La Paz	82.23	243	eP	P	16 59 47.8 -1.1
	comp=Z,17nm,1.9s					
U15A	North Rim	82.28	310	eP	P	16 59 48.8 +0.1
	comp=Z,13nm,1.0s					
U15A	North Rim	82.28	310	eP	P	16 59 48.8 +0.1
	comp=Z,13nm,1.0s					
CPUP	Villa Florida	82.31	228	P	P	16 59 47.9 -0.5
	comp=Z,21nm,1.1s,baz=42,slow=5.7,SNR=16					
CPUP				LR	LR	17 36 39.2
	comp=Z,331nm,18.3s,baz=52,slow=36					
CPUP	Villa Florida	82.31	228	eP	P	16 59 48.2 -0.2
CPUP	Villa Florida	82.31	228	eP	P	16 59 48.2 -0.2
WUAZ	Wupatki	82.31	309	P	P	16 59 48.0 -0.7
	baz=49					
WUAZ	Wupatki	82.31	309	eP	P	16 59 47.1 -1.6
	comp=Z,38nm,1.3s					
WUAZ	Wupatki	82.31	309	eP	P	16 59 47.1 -1.6
	comp=Z,38nm,1.3s					
LCMT	Little Creek M	82.46	311	eP	P	16 59 49.9 +0.5
	comp=Z,5.5nm,1.2s					
LCMT	Little Creek M	82.46	311	eP	P	16 59 49.9 +0.5
	comp=Z,5.5nm,1.2s					
J05D	Fort Rock, OR	82.54	320	P	P	16 59 51.2 +1.4
	baz=44,SNR=8.5					
CD2	Chengdu	82.58	57	P	P	16 59 50.4 +0.4
CD2				PP	PP	17 02 58.7 -0.3
CD2				S	S	17 10 07.9 +0.2
CD2				SS	SS	17 15 29.0 +0.7
CD2				pmax	pmax	
	comp=Z,70nm,0.9s					
CD2				pmax	pmax	
	comp=Z,220nm,4.3s					
CD2				LR	LR	
	comp=Z,500nm,14.4s					
CD2				LR	LR	
	comp=Z,480nm,14.4s					
I04A	Tendick Farm,	82.77	321	P	P	16 59 51.6 +0.8
	baz=43					
K05A	Summer Lake	82.77	320	eP	P	16 59 52.7 +1.7
	comp=Z,89nm,1.7s					
K05A	Summer Lake	82.77	320	eP	P	16 59 52.7 +1.7
	comp=Z,89nm,1.7s					
R11A	Troy Canyon, C	82.93	314	P	P	16 59 52.8 +0.9
	baz=47,SNR=32					
R11A	Troy Canyon, C	82.93	314	eP	P	16 59 52.5 +0.6
	comp=Z,22nm,1.1s					
R11A	Troy Canyon, C	82.93	314	eP	P	16 59 52.5 +0.6
	comp=Z,22nm,1.1s					
MOD	Modoc Plateau	83.05	319	eP	P	16 59 54.0 +1.6
	comp=Z,25nm,1.3s					
MOD	Modoc Plateau	83.05	319	eP	P	16 59 54.0 +1.6
	comp=Z,25nm,1.3s					
X16A	Lo Mia Camp, P	83.08	308	eP	P	16 59 54.5 +1.7
	comp=Z,32nm,1.4s					
X16A	Lo Mia Camp, P	83.08	308	eP	P	16 59 54.5 +1.7
	comp=Z,32nm,1.4s					
K04D	Chiloquin, OR	83.28	320	P	P	16 59 54.0 +0.5
	baz=44					
I03D	Drain, OR	83.30	322	P	P	16 59 54.2 +0.8
	baz=43					
319A	Douglas	83.68	305	eP	P	16 59 57.7 +1.9
	comp=Z,156nm,1.2s					
XAN	Xi'an	83.87	51	P	P	16 59 56.5 -0.1
XAN				pP	PcP	17 00 06.0 +5.3
XAN				pmax	pmax	
	comp=Z,32nm,1.1s					
XAN				pmax	pmax	
	comp=Z,90nm,4.7s					
HUMO	Hull Mountain	83.91	321	eP	P	16 59 57.6 +0.9
	comp=Z,24nm,1.4s					
HUMO	Hull Mountain	83.91	321	eP	P	16 59 57.6 +0.9
	comp=Z,24nm,1.4s					
M04C	Macdoel	83.94	319	P	P	16 59 57.8 +0.9
	baz=44,SNR=9.4					
SHPR	Sheep Range	83.94	312	eP	P	16 59 59.2 +2.1
SHPR	Sheep Range	83.94	312	eP	P	16 59 59.2 +2.1
BJI	Beijing	83.98	43	P	P	16 59 57.7 +0.7
BJI				S	S	17 10 25.7 +4.3
BJI				pmax	pmax	
	comp=Z,33nm,1.1s					
BJI				pmax	pmax	
	comp=Z,290nm,4.3s					
BJI				LR	LR	
	comp=Z,1μm,17.2s					
BJI				LR	LR	
	comp=Z,1μm,18.7s					
BJI				LR	LR	
	comp=Z,330nm,28.7s					
BJT	Baijiatuau	83.99	43	eP	P	16 59 57.9 +0.8
BJT				pmax	pmax	
	comp=Z,58nm,1.1s					
BJT	Baijiatuau	83.99	43	eP	P	16 59 57.9 +0.8
	comp=Z,58nm,1.1s					
BJT	Baijiatuau	83.99	43	eP	P	16 59 57.9 +0.8
	comp=Z,58nm,1.1s					
TUC	Tucson	84.05	306	P	P	16 59 59.3 +1.6
	baz=49					
TUC	Tucson	84.05	306	eP	P	16 59 58.5 +0.9
TUC				pmax	pmax	
	comp=Z,96nm,1.4s					
TUC	Tucson	84.05	306	eP	P	16 59 58.5 +0.9
	comp=Z,96nm,1.4s					
TUC	Tucson	84.05	306	eP	P	16 59 58.5 +0.9
	comp=Z,96nm,1.4s					
HPIG		84.09	299	eP	P	16 59 59.0 +0.9
	comp=Z,22nm,1.1s					
HPIG		84.09	299	eP	P	16 59 59.0 +0.9
	comp=Z,22nm,1.1s					
PAHR	Pah Rah Range	84.12	317	eP	P	17 00 00.0 +2.1
PAHR	Pah Rah Range	84.12	317	eP	P	17 00 00.0 +2.1
W13A	Hualapai Mount	84.13	310	eP	P	16 59 58.9 +0.8
	comp=Z,28nm,1.4s					
W13A	Hualapai Mount	84.13	310	eP	P	16 59 58.9 +0.8
	comp=Z,28nm,1.4s					
KLR	Kul'dur	84.17	29	P	P	16 59 57.6 -0.3
	comp=Z,5.3nm,1.0s,baz=326,slow=8.0					
LHEM	Herd Peak	84.24	320	P	P	17 00 00.2 +1.5
LHEM	Herd Peak	84.24	320	P	P	17 00 00.2 +1.5
TPNV	Topopah Spring	84.27	313	P	P	17 00 00.1 +1.2
	baz=46,SNR=9.2					
TPNV	Topopah Spring	84.27	313	eP	P	16 59 59.4 +0.6
TPNV				pmax	pmax	
	comp=Z,27nm,1.4s					
TPNV	Topopah Spring	84.27	313	eP	P	16 59 59.4 +0.6
	comp=Z,27nm,1.4s					
TPNV	Topopah Spring	84.27	313	eP	P	16 59 59.4 +0.6
	comp=Z,27nm,1.4s					
Y14A	Wickenburg	84.36	309	eP	P	17 00 00.3 +1.1
	comp=Z,169nm,1.4s					
Y14A	Wickenburg	84.36	309	eP	P	17 00 00.3 +1.1
	comp=Z,169nm,1.4s					
NV01	Mina Array Sit	84.42	315	eP	P	16 59 59.6 0.0
NV01	Mina Array Sit	84.42	315	eP	P	16 59 59.6 0.0
NVAR	Mina Array Bea	84.42	315	P	P	16 59 59.7 +0.1
	comp=Z,2.2nm,0.9s,baz=58,slow=4.6,SNR=12					
NVAR				LR	LR	17 37 05.9
	comp=Z,205nm,18.4s,baz=54,slow=35					
YBH	Yreka Blue Hor	84.42	320	eP	P	16 59 59.0 -0.4
YBH				pmax	pmax	
	comp=Z,19nm,1.3s					
YBH	Yreka Blue Hor	84.42	320	eP	P	16 59 59.0 -0.4
	comp=Z,19nm,1.3s					
YBH	Yreka Blue Hor	84.42	320	eP	P	16 59 59.0 -0.4
	comp=Z,19nm,1.3s					
ZAIG	Zacatecas	84.50	294	eP	P	17 00 02.4 +2.1
	comp=Z,46nm,1.1s					
ZAIG	Zacatecas	84.50	294	eP	P	17 00 02.4 +2.1
	comp=Z,46nm,1.1s					
L02D	Cave Junction,	84.56	321	P	P	17 00 01.1 +1.2
	baz=42,SNR=6.1					
M02C	Callahan	84.74	320	P	P	17 00 02.1 +1.1
	baz=43,SNR=8.6					
PDMCI	Parker Dam,Lak	84.82	310	P	P	17 00 02.6 +1.2
	baz=47,SNR=10					
LDFC	Landfair	84.88	311	eP	P	17 00 03.0 +1.1
	comp=Z,63nm,1.3s					
LDFC	Landfair	84.88	311	eP	P	17 00 03.0 +1.1
	comp=Z,63nm,1.3s					
GRAC	Grapevine Rang	84.89	314	P	P	17 00 02.5 +0.8
	baz=46					
FURC	Furnace Creek,	84.96	313	P	P	17 00 03.1 +1.1
	baz=46,SNR=9.5					
N02D	Trinity Center	84.97	319	P	P	17 00 02.7 +0.5
	baz=43,SNR=5.2					
O03D	Paynes Creek	84.99	318	P	P	17 00 02.9 +0.7
	baz=43					
WAKR	Walker	85.00	316	eP	P	17 00 04.4 +1.9
WAKR	Walker	85.00	316	eP	P	17 00 04.4 +1.9
SHOC	Shoshone, Teco	85.01	312	P	P	17 00 03.8 +1.4
	baz=46					
TUQ	Turquoise Moun	85.12	312	P	P	17 00 03.9 +0.9
	baz=46,SNR=9.0					
WDC	Whiskeytown Da	85.17	319	eP	P	17 00 02.9 -0.2
WDC				pmax	pmax	
	comp=Z,15nm,1.4s					
WDC	Whiskeytown Da	85.17	319	eP	P	17 00 02.9 -0.2
	comp=Z,15nm,1.4s					
WDC	Whiskeytown Da	85.17	319	eP	P	17 00 02.9 -0.2
	comp=Z,15nm,1.4s					
MLAC	Mammoth, Mammo	85.28	315	P	P	17 00 05.4 +1.4
	baz=45					
TIN	Tinemaha, Big	85.34	314	P	P	17 00 05.4 +1.3
	baz=45					
ORV	Oroville	85.37	318	eP	P	17 00 04.7 +0.6
ORV				pmax	pmax	
	comp=Z,71nm,1.8s					
ORV	Oroville	85.37	318	eP	P	17 00 04.7 +0.6
	comp=Z,71nm,1.8s					
ORV	Oroville	85.37	318	eP	P	17 00 04.7 +0.6
	comp=Z,71nm,1.8s					
GMRC	Granite Mounta	85.41	311	P	P	17 00 05.2 +0.7
	baz=46,SNR=13					
Y12C	Blythe	85.42	310	P	P	17 00 05.5 +1.1
	baz=47,SNR=5.7					
Y12C	Blythe	85.42	310	eP	P	17 00 06.0 +1.6
	comp=Z,109nm,1.5s					
Y12C	Blythe	85.42	310	eP	P	17 00 05.6 +1.1
	comp=Z,72nm,1.5s					
DAC	Darwin (Calif)	85.52	313	eP	P	17 00 06.5 +1.4
DAC				pmax	pmax	
	comp=Z,52nm,1.4s					
DAC	Darwin (Calif)	85.52	313	eP	P	17 00 06.5 +1.4
	comp=Z,52nm,1.4s					
DAC	Darwin (Calif)	85.52	313	eP	P	17 00 06.5 +1.4
	comp=Z,52nm,1.4s					
AFDM	Forest Hills D	85.52	317	eP	P	17 00 04.9 0.0
	comp=Z,30nm,1.5s					
AFDM	Forest Hills D	85.52	317	eP	P	17 00 04.9 0.0
	comp=Z,30nm,1.5s					
IRM	Iron Mountain	85.53	310	P	P	17 00 05.9 +0.9
	baz=47,SNR=16					
KMI	Kunming	85.56	62	P	P	17 00 05.9 +0.4
KMI				pmax	pmax	
	comp=Z,13nm,1.1s					
KMI				pmax	pmax	
	comp=Z,150nm,5.1s					
214A	Organ Pipe Nat	85.57	307	P	P	17 00 06.0 +0.8
	baz=48					
214A	Organ Pipe Nat	85.57	307	eP	P	17 00 06.0 +0.8
	comp=Z,109nm,1.5s					
KHMM	Horse Mountain	85.57	320	eP	P	17 00 06.9 +1.6
	comp=Z,40nm,1.5s					
KHMM	Horse Mountain	85.57	320	eP	P	17 00 06.8 +1.6
	comp=Z,74nm,1.7s					
MPMC	Manual Prospec	85.61	313	P	P	17 00 06.9 +1.3
	baz=46,SNR=20					
113A	Mohawk Valley,	85.62	308	eP	P	17 00 06.9 +1.5
	comp=Z,40nm,1.5s					
GSC	Goldstone, Bar	85.73	312	P	P	17 00 07.3 +1.2
	baz=46,SNR=7.1					
GSC	Goldstone, Bar	85.73	312	eP	P	17 00 07.4 +1.3
GSC	Goldstone, Bar	85.73	312	eP	P	17 00 07.4 +1.3
GSC	Goldstone, Bar	85.73	312	eP	P	17 00 07.4 +1.3
HEC	Hector,Ludlow	85.78	311	P	P	17 00 07.4 +1.1
	baz=46,SNR=9.2					
CN2	Changchun	85.84	35	‖P	P	17 00 05.8 -0.5
CN2				eS	S	17 10 34.7 -5.1
CN2				pmax	pmax	
	comp=Z,20nm,1.0s					
CN2				LR	LR	
	comp=Z,1μm,15.0s					
CN2				LR	LR	
	comp=Z,1μm,15.0s					
CN2				LR	LR	
	comp=Z,700nm,19.0s					
CMB	Columbia Colle	85.86	316	eP	P	17 00 07.8 +1.2
CMB				pmax	pmax	
	comp=Z,33nm,1.5s					
CMB	Columbia Colle	85.86	316	eP	P	17 00 07.8 +1.2
	comp=Z,33nm,1.5s					
CMB	Columbia Colle	85.86	316	eP	P	17 00 07.8 +1.2
	comp=Z,33nm,1.5s					
BC3	Big Chuckawall	86.06	310	P	P	17 00 08.6 +0.9
	baz=46,SNR=6.7					
GLA	Glamis	86.08	309	P	P	17 00 09.1 +1.3
	baz=47					
GLA	Glamis	86.08	309	eP	P	17 00 09.3 +1.5
GLA				pmax	pmax	
	comp=Z,60nm,1.7s					
GLA	Glamis	86.08	309	eP	P	17 00 09.3 +1.5
	comp=Z,60nm,1.7s					
GLA	Glamis	86.08	309	eP	P	17 00 09.3 +1.5
	comp=Z,60nm,1.7s					
LRMC	Laurel Mtn Rad	86.12	313	P	P	17 00 09.3 +1.3
	baz=46,SNR=16					
RRX	Edison Barstow	86.14	312	P	P	17 00 09.3 +1.3
	baz=46					
BELC	Belle Mtn. Jos	86.15	311	P	P	17 00 10.0 +1.7
	baz=46,SNR=5.7					
ISA	Isabella, Lake	86.46	313	P	P	17 00 10.7 +1.0
	baz=45					
ISA	Isabella, Lake	86.46	313	eP	P	17 00 11.3 +1.7
ISA				pmax	pmax	
	comp=Z,92nm,1.8s					
ISA	Isabella, Lake	86.46	313	eP	P	17 00 11.3 +1.7
	comp=Z,92nm,1.8s					
ISA	Isabella, Lake	86.46	313	eP	P	17 00 11.3 +1.7
	comp=Z,92nm,1.8s					
PFO	Pinyon Flats O	86.69	311	eP	P	17 00 12.6 +1.7
PFO				pmax	pmax	
	comp=Z,12nm,1.1s					
PFO	Pinyon Flats O	86.69	311	eP	P	17 00 12.6 +1.7
	comp=Z,12nm,1.1s					
PFO	Pinyon Flats O	86.69	311	eP	P	17 00 12.6 +1.7
	comp=Z,12nm,1.1s					
TPFO	Pinon Flats	86.69	311	P	P	17 00 11.9 +1.0
	baz=46					
EDW2	Edwards Air Fo	86.72	312	P	P	17 00 12.2 +1.2
	baz=45					
ENH	Enshi	86.73	54	eP	P	17 00 10.4 -0.6
	comp=Z,30nm,1.0s					
ENH	Enshi	86.73	54	eP	P	17 00 10.4 -0.6
	comp=Z,30nm,1.0s					
CRAI	Chiangrai	86.95	67	P	P	17 00 12.8 +0.6
	comp=Z,388nm,2.3s,comp=Z,80μm					
BFSC	Mount Baldy Ra	86.98	312	P	P	17 00 13.1 +0.8
	baz=45					
CMAR	Chiang Mai Arr	87.00	69	P	P	17 00 11.6 -0.9
	comp=Z,2.5nm,1.1s,baz=307,slow=6.1					
CM01	Chiang Mai Arr	87.03	69	eP	P	17 00 10.8 -1.8
CM01	Chiang Mai Arr	87.03	69	eP	P	17 00 10.8 -1.8
MDJ	Mudanjiang	87.03	33	P	P	17 00 11.5 -0.7
MDJ				pmax	pmax	
	comp=Z,6.0nm,0.8s					
MDJ				pmax	pmax	
	comp=Z,57nm,4.8s					
MDJ				LR	LR	
	comp=Z,520nm,13.8s					
MDJ				LR	LR	
	comp=Z,690nm,15.0s					
MDJ				LR	LR	
	comp=Z,500nm,17.3s					
LVC	Limon Verde	87.05	239	eP	P	17 00 12.4 -0.5
	comp=Z,16nm,1.3s					
LVC	Limon Verde	87.05	239	eP	P	17 00 12.4 -0.5
	comp=Z,16nm,1.3s					
IKP	In-Ko-Pah, Jac	87.14	310	P	P	17 00 13.3 +0.2
	baz=46					
MURC	Murrieta	87.14	311	P	P	17 00 13.5 +0.5
	baz=46					
MONP2	Monument Peak	87.17	310	P	P	17 00 13.7 +0.3
	baz=46					
TIA	Tai'an	87.23	45	eP	P	17 00 13.3 0.0
TIA				pmax	pmax	
	comp=Z,30nm,1.0s					
GYA	Guiyang	87.39	58	eP	P	17 00 14.8 +0.4
GYA				PP	PP	17 03 40.2 +1.9
GYA				SKS	SKSac	17 10 40.9 -2.0
GYA				S	SKKSac	17 10 52.4 +0.3
GYA				SS	SS	17 16 40.3 +0.7
GYA				pmax	pmax	
	comp=Z,10.0nm,1.0s					
GYA				pmax	pmax	
	comp=Z,120nm,6.2s					
GYA				LR	LR	
	comp=Z,530nm,19.8s					
GYA				LR	LR	
	comp=Z,480nm,20.2s					
GYA				LR	LR	
	comp=Z,490nm,20.6s					
BAR	Barrett	87.47	310	eP	P	17 00 16.4 +1.9
	comp=Z,20nm,1.2s					
BAR	Barrett	87.47	310	eP	P	17 00 16.4 +1.9
	comp=Z,20nm,1.2s					
DL2	Dalian	87.69	41	P	P	17 00 14.9 -0.5
DL2				eS	S	17 10 55.1 -2.8
DL2				pmax	pmax	
	comp=Z,32nm,0.8s					
DL2				LR	LR	
	comp=Z,1μm,19.0s					
DL2				LR	LR	
	comp=Z,1μm,19.4s					
DL2				LR	LR	
	comp=Z,930nm,13.2s					
PKM	Mcpherson Peak	87.78	313	P	P	17 00 17.8 +1.6
	baz=44					
PETK	Petropavlovsk-	87.86	12	LR	LR	17 45 17.7
	comp=Z,232nm,18.9s,baz=331,slow=40					
CIS	Catalina Islan	88.01	312	P	P	17 00 18.1 +1.0
	baz=45					
SBC	Santa Barbara	88.04	313	P	P	17 00 18.6 +1.5
	baz=44					
SCZ2	Santa Cruz Isl	88.31	313	P	P	17 00 18.6 +0.1
	baz=44					
USRK	Ussuriysk Ar.	88.38	31	P	P	17 00 17.3 -1.3
	comp=Z,6.9nm,0.9s,baz=286,slow=4.6,SNR=11					
LOEI	Loei	89.31	68	P	P	17 00 24.9 +1.4
	comp=Z,61nm,0.9s,comp=Z,6μm					
PBKT	Sadao Pong	89.68	69	P	P	17 00 26.5 +1.3
	comp=Z,9.8nm,1.7s					
NONG	Nongkai	90.34	67	P	P	17 00 28.7 +0.5
NJ2	Nanjing	91.22	47	eP	P	17 00 33.5 +1.4
NJ2				S	S	17 11 30.4 -0.7
NJ2				pmax	pmax	
	comp=Z,27nm,0.6s					
NJ2				LR	LR	
	comp=Z,320nm,16.0s					
NJ2				LR	LR	
	comp=Z,770nm,14.6s					
NJ2				LR	LR	
	comp=Z,530nm,13.0s					
KS01	Wonju Array Si	91.94	38	eP	P	17 00 34.0 -1.4
KS01	Wonju Array Si	91.94	38	eP	P	17 00 34.0 -1.4
KSAR	Wonju Array Be	91.97	38	P	P	17 00 34.1 -1.4
KSAR	Wonju Array Be	91.97	38	P	P	17 00 34.1 -1.4
KSAR	Wonju Array Be	91.97	38	P	P	17 00 34.1 -1.4
KSRS	Korea Array	91.97	38	P	P	17 00 34.1 -1.4
	comp=Z,4.5nm,1.0s,baz=328,slow=4.0,SNR=11					
KSRS				LR	LR	17 44 12.9
	comp=Z,412nm,18.2s,baz=40,slow=37					
MJAR	Matsushiro Arr	97.38	32	P	P	17 00 59.3 -1.0
	comp=Z,2.7nm,1.0s,baz=344,slow=4.8,SNR=5.0					
QSPA	South Pole Qui	127.52	180	ePKIKP	PKPdf	17 06 30.7 -0.1
QSPA	South Pole Qui	127.52	180	ePKPdf	PKPdf	17 06 30.7 -0.1
WRA	Warramunga Arr	138.05	78	PKhKP	PKPpre	17 06 41.7
	comp=Z,0.4nm,0.8s,baz=336,slow=1.8,SNR=4.1					
WRA				PKP	PKPdf	17 06 51.0 -1.0
	comp=Z,3.1nm,1.0s,baz=296,slow=2.4,SNR=6.9					
WRA	Warramunga Arr	138.05	78	PKIKP	PKPdf	17 06 51.0 -1.0
WRA				pmax	pmax	
	comp=Z,3.0nm,1.0s					
VNDA	Vanda	139.40	175	PKhKP	PKPpre	17 06 47.9
	comp=Z,1.5nm,1.0s,baz=239,slow=2.9,SNR=4.8					
ASAR	Alice Springs	139.71	83	PKhKP	PKPpre	17 06 45.0
	comp=Z,1.3nm,0.9s,baz=291,slow=2.1,SNR=8.9					
ASAR				PKP	PKPdf	17 06 52.1 -2.8
	comp=Z,1.9nm,0.9s,baz=311,slow=2.6,SNR=5.9					
ASAR				PP	PP	17 09 48.6 -2.1
	comp=Z,1.9nm,1.0s,baz=302,slow=5.0,SNR=5.5					
ASAR	Alice Springs	139.71	83	PKIKP	PKPdf	17 06 52.2 -2.8
ASAR						17 09 48.7
ASAR				pmax	pmax	
	comp=Z,2.0nm,0.9s					
ASAR				pmax	pmax	
	comp=Z,2.0nm,1.0s					
AS01	Alice Springs	139.74	83	ePKPpre	PKPpre	17 06 41.0
PPT2	Papeete2	145.48	297	eLR	LR	17 54 58.3
	comp=Z,194nm,24.5s					
CTA	Charters Tower	147.14	67	PKPbc	PKPdf	17 07 09.2 +1.1
	comp=Z,8.4nm,0.7s,baz=308,slow=5.7,SNR=9.3					
STKA	Stephens Creek	149.43	90	PKPbc	PKPbc	17 07 14.4 -1.5
	comp=Z,18nm,0.8s,baz=308,slow=3.2,SNR=15					
STKA	Stephens Creek	149.43	90	ePKPdf	PKPbc	17 07 14.6 -1.3
STKA	Stephens Creek	149.43	90	ePKPdf	PKPbc	17 07 14.6 -1.3

*ISCJB **11** 16:51:27.5±0.3, 6°.97S±0°.03×130°.24E±0°.06, h104km, mb4.2/12, Error ellipse: s-maj=8.2km s-min=4.7km az=176.8*

*IDC **11** 16:51:30.6±2.6, 6°.92S×130°.22E, h115km±22km, mb3.9/9, mb1 4.0/11, mb1mx3.7/35, mbtmp4.4/11, MS3.1/1, Ms1 3.1/1, ms1mx2.6/29, Error ellipse: s-maj=31.6km*

s-min=17.5km az=75.0
NEIC ***11*** *16:51:31.5±0.8, 6°.95S×130°.19E, h125km±9km, mb4.2/2, Error ellipse: s-maj=11.4km s-min=9.0km az=73.0*
DJA ***11*** *16:51:32.3±0.5, 7°.S±3°×13°.1E±°, h124km±7km, M4.6/8, mB4.7/1, mb4.6/2, MLv4.5/8, Mw(mB)3.9/1*
ISC 11 16:51:29.8±0.5, 6°.85S±0°.05×130°.25E±0°.07, h104km, n44, σ1§77/37, mb4.2/12, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SAUI	**Saumlaki**	**1.54**	**137**	P	Pn	16 51 59.3	+2.6
SAUI				S	**Sn**	**16 52 18.1**	**+0.9**
SAUI	**Saumlaki**	**1.54**	**137**	*e*Pn	Pn	16 52 00.8	+4.1
BNDI	**Bandanaira**	**2.33**	**352**	P	Pn	16 52 10.1	+3.2
BNDI				S	Sn	16 52 42.5	+7.3
MSAI	**Masohi**	**3.72**	**339**	P	Pn	16 52 29.7	+4.5
FAKI	**Fak Fak**	**4.38**	**27**	P	**Pn**	**16 52 35.6**	**+1.4**
FAKI				S	**Sn**	**16 53 23.4**	**-0.9**
FAKI	**Fak Fak**	**4.38**	**27**	*e*Pn	**Pn**	**16 52 35.4**	**+1.2**
FAKI				*e*Sn	**Sn**	**16 53 22.1**	**-2.2**
NLAI	**Namlea**	**4.76**	**319**	P	Pn	16 52 45.7	+6.4
	27nm,0.8s,896nm0.1nm						
NLAI				S	Sn	16 53 44.8	+11
	27nm,0.8s,896nm0.1nm						
MTN	**Manton Dam**	**6.02**	**172**	*e*Pn	**Pn**	**16 52 56.8**	**+0.3**
SIJI	**Sorong**	**6.02**	**10**	P	**Pn**	**16 52 57.5**	**+1.1**
	20nm,0.3s,baz=175,slow=14,SNR=3.4						
SIJI				S	**Sn**	**16 54 00.2**	**-3.9**
	15nm,0.3s,baz=271,slow=24,SNR=5.9						
SWI	**Sorong**	**6.03**	**10**	P	**Pn**	**16 52 57.4**	**+0.9**
SANI	**Sanana**	**6.38**	**318**	P	Pn	16 53 09.2	+7.9
SOEI	**Soe**	**6.58**	**244**	P	**Pn**	**16 53 05.5**	**+1.3**
SOEI	**Soe**	**6.58**	**244**	*e*Pn	**Pn**	**16 53 05.4**	**+1.3**
SOEI				*e*Sn	**Sn**	**16 54 14.0**	**-3.9**
RKPI	**Ransiki, Papua**	**6.59**	**37**	P	**Pn**	**16 53 02.0**	**-2.2**
	154nm,0.7s,1.6nm						
LBMI	**Labuha**	**6.75**	**336**	P	Pn	16 53 10.4	+4.1
LBMI				S	**Sn**	**16 54 23.1**	**+1.4**
MRSI	**Marisa**	**11.03**	**311**	P	Pn	16 54 08.2	+3.7
FITZ	**Fitzroy Crossi**	**12.05**	**201**	P	Pn	16 54 13.7	-4.5
	4.4nm,0.3s,baz=19,slow=8.6,SNR=71						
FITZ				S	Sn	16 56 17.4	-13
	4.0nm,0.3s,baz=54,slow=20,SNR=8.9						
FITZ				LR	LR	16 59 49.6	
	comp=Z,85nm,18.8s,baz=154,slow=42						
WRAB	**Tennant Creek**	**13.61**	**163**	*e*Pn	Pn	16 54 35.1	-3.4
WRAB				*e*Sn	Sn	16 56 55.9	-12
WRA	**Warramunga Arr**	**13.61**	**163**	P	Pn	16 54 34.2	-4.4
	1.1nm,0.3s,baz=335,slow=14,SNR=92						
WRA				S	Sn	16 56 55.4	-13
	8.4nm,0.3s,baz=333,slow=22,SNR=15						
WB2	**Warramunga Arr**	**13.62**	**163**	*e*Pn	Pn	16 54 34.9	-3.8
COEN	**Coen**	**14.54**	**120**	*e*Pn	**Pn**	**16 54 51.6**	**+1.0**
PMG	**Port Moresby**	**16.93**	**100**	P	**P**	**16 55 24.3**	**+3.5**
	0.5nm,0.3s,baz=315,slow=14,SNR=3.1						
AS31	**Alice Springs**	**17.09**	**169**	*e*P	**Pn**	**16 55 20.4**	**-2.0**
	9.4nm,0.5s						
ASAR	**Alice Springs**	**17.09**	**169**	P	**Pn**	**16 55 20.0**	**-2.4**
	2.8nm,0.3s,baz=338,slow=9.3,SNR=73						
ASAR				S	Sn	16 58 18.0	-15
	1.2nm,0.3s,baz=354,slow=27,SNR=4.4						
ASAR				ScP	**ScP**	**17 03 23.7**	**-3.5**
	0.1nm,0.3s,baz=0.0,slow=1.0,SNR=3.9						
AS01	**Alice Springs**	**17.10**	**168**	*e*P	**Pn**	**16 55 20.3**	**-2.1**
MBWA	**Marble Bar**	**17.49**	**215**	*e*P	**P**	**16 55 25.7**	**-1.1**
SBUM	**Sibu**	**20.22**	**297**	*e*P	Pn	16 55 58.3	-1.3
	6.9nm,0.7s						
CTA	**Charters Tower**	**20.36**	**132**	P	Pn	16 56 03.0	+1.8
	2.9nm,0.8s,baz=300,slow=14,SNR=4.1						
STKA	**Stephens Creek**	**27.06**	**158**	P	**P**	**16 57 02.5**	**-0.1**
	2.6nm,0.5s,baz=336,slow=7.4,SNR=5.8						
CM01	**Chiang Mai Arr**	**39.79**	**310**	*e*P	**P**	**16 58 52.7**	**-0.2**
CMAR	**Chiang Mai Arr**	**39.82**	**310**	P	**P**	**16 58 53.3**	**+0.1**
	1.6nm,0.6s,baz=138,slow=7.1,SNR=10						
CD2	**Chengdu**	**45.30**	**327**	P	**P**	**16 59 37.3**	**-0.2**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
HHC	**Hu-ho-hao-te**	**50.48**	**342**	*e*P	**P**	**17 00 20.3**	**+3.1**
HHC				pmax	pmax		
	comp=Z,13nm,1.0s						
HHC				pmax	pmax		
	comp=Z,120nm,5.9s						
CN2	**Changchun**	**50.60**	**356**	*e*P	**P**	**17 00 17.7**	**-0.2**
ASAJ	**Asahikawa**	**51.94**	**11**	P	**P**	**17 00 28.1**	**+0.1**
	comp=Z,1.4nm,0.4s,baz=166,slow=17,SNR=4.0						
SONM	**Songino Array**	**58.37**	**341**	P	**P**	**17 01 14.7**	**+0.3**
	comp=Z,1.2nm,0.5s,baz=171,slow=5.8,SNR=3.4						
WMQ	**Urumqi**	**63.40**	**327**	*e*P	**P**	**17 01 47.9**	**-0.5**
WMQ				pmax	pmax		
	comp=Z,5.0nm,1.0s						
WMQ				pmax	pmax		
	comp=Z,44nm,6.8s						
WMQ				LR	LR		
	comp=N,1μm,18.4s						
WMQ				LR	LR		
	comp=E,1μm,13.0s						
WMQ				LR	LR		
	comp=Z,200nm,15.8s						
PETK	**Petropavlovsk-**	**64.10**	**18**	P	**P**	**17 01 53.4**	**+0.6**
	comp=Z,1.5nm,0.6s,baz=188,slow=6.2,SNR=3.9						
MKAR	**Makanchi Array**	**68.23**	**327**	P	**P**	**17 02 19.3**	**0.0**
	comp=Z,6.5nm,0.4s,baz=114,slow=8.6,SNR=121						
YAK	**Yakutsk**	**68.67**	**360**	P	**P**	**17 02 21.6**	**0.0**
	comp=Z,3.2nm,0.5s,baz=163,slow=1.5						
ZALV	**Zalesovo Beam**	**71.55**	**334**	P	**P**	**17 02 38.0**	**-1.5**
	comp=Z,1.3nm,0.5s,baz=116,slow=5.8,SNR=4.3						
GEYT	**Alibeck**	**80.30**	**310**	P	**P**	**17 03 29.6**	**0.0**
	comp=Z,0.6nm,0.4s,baz=106,slow=3.1,SNR=3.3						
YKA	**Yellowknife Ar**	**107.51**	**26**	PKiKP	**PKiKP**	**17 09 43.2**	**-0.8**
	comp=Z,0.2nm,0.6s,baz=291,slow=1.6,SNR=5.3						
TORD	**Torodi Ar. Bea**	**129.02**	**281**	PKP	**PKPdf**	**17 10 26.0**	**-0.5**
	comp=Z,0.3nm,0.3s,baz=56,slow=2.2,SNR=5.9						

INMG ***11*** *16:53:14.9±1.0, 37°.72N×1°.67W, h6km±3km, ML2.9, Error ellipse: s-maj=3.1km s-min=2.3km az=162.0*
CSEM ***11*** *16:53:14.3±0.1, 37°.69N×1°.69W, h12km, ML3.5/14, Error ellipse: s-maj=3.7km s-min=2.5km az=168.0*
IGIL ***11*** *16:53:15.4, 37°.66N×1°.63W, h11km*
MDD ***11*** *16:53:15.2±0.2, 37°.71N×1°.71W, h2km±4km, mb3.8/4, mbLg2.8/16, Error ellipse: s-maj=2.0km s-min=1.7km az=61.0, PRXIMO*
SFS ***11*** *16:53:15.0, 37°.66N×1°.62W, h11km, ML2.9*
ISC 11 16:53:13.9±0.9, 37°.71N±0°.03×1°.69W±0°.02, h9km±6km, n86, σ1§08/121, 1C-1D, Spain

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EXLO	**Lorca**	**0.04**	**198**	Pg	**Pg**	**16 53 15.4**	**-0.2**
EXLO				Lg	Lg	16 53 16.2	
EXLO	**Lorca**	**0.04**	**198**	Pg	**Pg**	**16 53 15.4**	**-0.2**
EXLO				Lg	Lg	16 53 16.2	
VELZ	**Velez Rubio**	**0.27**	**242**	⇑Pg	**Pg**	**16 53 19.5**	**+0.1**
	SNR=18						
VELZ				Lg	Lg	16 53 23.1	
	SNR=7.9						
VELZ	**Velez Rubio**	**0.27**	**242**	Pg	**Pg**	**16 53 19.5**	**+0.1**
	SNR=18						
VELZ				Lg	Lg	16 53 23.1	
	SNR=7.9						
EMUR	**La Murta**	**0.38**	**69**	Pg	**Pg**	**16 53 22.1**	**+0.8**
	27nm,0.4s,SNR=13						
EMUR				Lg	Lg	16 53 27.4	
	279nm,0.3s,SNR=5.2						
EMUR	**La Murta**	**0.38**	**69**	Pg	**Pg**	**16 53 22.1**	**+0.8**
	27nm,0.4s,SNR=13						
EMUR				Lg	Lg	16 53 27.4	
	279nm,0.3s,SNR=5.2						
CART	**Cartagena**	**0.56**	**103**	*e*P	**Pb**	**16 53 25.4**	**-0.4**
CART				*e*S	**Sg**	**16 53 32.4**	**+0.4**
EHUE	**Huescar**	**0.73**	**278**	Pg	**Pb**	**16 53 28.5**	**-0.2**
	16nm,0.4s,SNR=5.6						
EHUE				Lg	Lg	16 53 40.6	
	55nm,0.3s,SNR=6.0						
EHUE	**Huescar**	**0.73**	**278**	Pg	**Pb**	**16 53 28.5**	**-0.2**
	16nm,0.4s,SNR=5.6						
EHUE				Lg	Lg	16 53 40.6	
	55nm,0.3s,SNR=6.0						
SESP	**Santiago Espad**	**0.79**	**301**	Pg	**Pb**	**16 53 29.9**	**-0.1**
	16nm,0.2s,SNR=7.9						
SESP				Lg	Lg	16 53 42.4	
	169nm,0.2s,SNR=7.9						
SESP	**Santiago Espad**	**0.79**	**301**	Pg	**Pb**	**16 53 29.9**	**-0.1**
	16nm,0.2s,SNR=7.9						
SESP				Lg	Lg	16 53 42.4	
	169nm,0.2s,SNR=7.9						
ENIJ	**Nijar**	**0.85**	**210**	⇓Pg	**Pg**	**16 53 30.2**	**0.0**
	15nm,0.2s,SNR=18						
ENIJ				Lg	Lg	16 53 40.9	
	437nm,0.5s,SNR=7.9						
ENIJ	**Nijar**	**0.85**	**210**	Pg	**Pg**	**16 53 30.2**	**0.0**
	15nm,0.2s,SNR=18						
ENIJ				Lg	Lg	16 53 40.9	
	437nm,0.5s,SNR=7.9						
ETOB	**Tobarra**	**0.94**	**7**	Pg	**Pn**	**16 53 33.7**	**+0.4**
	50nm,0.1s,SNR=36						
ETOB				Lg	Lg	16 53 47.0	
	168nm,0.2s,SNR=377						
ETOB	**Tobarra**	**0.94**	**7**	Pg	**Pn**	**16 53 33.7**	**+0.4**
	50nm,0.1s,SNR=36						
ETOB				Lg	Lg	16 53 47.0	
	168nm,0.2s,SNR=377						
GORA	**Gorafe**	**1.10**	**258**	Pg	**Pn**	**16 53 36.6**	**+1.0**
	46nm,0.2s,SNR=7.9						
GORA				Lg	Lg	16 53 53.2	
	299nm,0.3s,SNR=7.9						
GORA	**Gorafe**	**1.10**	**258**	Pg	**Pn**	**16 53 36.6**	**+1.0**
	46nm,0.2s,SNR=7.9						
GORA				Lg	Lg	16 53 53.2	
	299nm,0.3s,SNR=7.9						
EQES	**Quesada**	**1.10**	**275**	Pg	**Pn**	**16 53 36.1**	**+0.5**
	48nm,0.2s,SNR=30						
EQES				Lg	Lg	16 53 52.5	
	91nm,0.2s,SNR=8.3						
EQES	**Quesada**	**1.10**	**275**	Pg	**Pn**	**16 53 36.1**	**+0.5**
	48nm,0.2s,SNR=30						
EQES				Lg	Lg	16 53 52.5	
	91nm,0.2s,SNR=8.3						
EVIA	**Vianos**	**1.13**	**325**	Pg	**Pn**	**16 53 36.1**	**+0.1**
	SNR=7.9						
EVIA				Lg	Lg	16 53 51.6	
	SNR=7.9						
EVIA	**Vianos**	**1.13**	**325**	Pg	**Pn**	**16 53 36.1**	**+0.1**
	SNR=7.9						
EVIA				Lg	Lg	16 53 51.6	
	SNR=7.9						
EBER	**Berja**	**1.26**	**230**	Pg	**Pg**	**16 53 38.1**	**+0.1**
	14nm,0.2s,SNR=7.6						
EBER				Lg	Lg	16 53 56.6	
	80nm,0.4s,SNR=5.8						
EBER	**Berja**	**1.26**	**230**	Pg	**Pg**	**16 53 38.1**	**+0.1**
	14nm,0.2s,SNR=7.6						
EBER				Lg	Lg	16 53 56.6	
	80nm,0.4s,SNR=5.8						
AFON	**Font Roja**	**1.31**	**43**	Pg	**Pg**	**16 53 39.6**	**+0.5**
	1.7nm,0.3s,SNR=4.0						
AFON				Lg	Lg	16 53 59.3	
	15nm,0.4s,SNR=4.0						
AFON	**Font Roja**	**1.31**	**43**	Pg	**Pg**	**16 53 39.6**	**+0.5**
	1.7nm,0.3s,SNR=4.0						
AFON				Lg	Lg	16 53 59.3	
	15nm,0.4s,SNR=4.0						
EQUE	**Quentar**	**1.48**	**251**	Pg	**Pg**	**16 53 42.3**	**-0.1**
	11nm,0.2s,SNR=955						
EQUE				Lg	Lg	16 54 04.3	
	143nm,0.4s,SNR=7.2						
EQUE	**Quentar**	**1.48**	**251**	Pg	**Pg**	**16 53 42.3**	**-0.1**
	11nm,0.2s,SNR=955						
EQUE				Lg	Lg	16 54 04.3	
	143nm,0.4s,SNR=7.2						
ECOG	**Cogollos-Vega**	**1.56**	**254**	Pg	**Pg**	**16 53 45.0**	**+1.3**
	25nm,0.2s,SNR=8.7						
ECOG				Lg	Lg	16 54 05.2	
	140nm,0.4s,SNR=9.0						
ECOG	**Cogollos-Vega**	**1.56**	**254**	Pg	**Pg**	**16 53 45.0**	**+1.3**
	25nm,0.2s,SNR=8.7						
ECOG				Lg	Lg	16 54 05.2	
	140nm,0.4s,SNR=9.0						
SELV	**Sierra Elvira**	**1.69**	**254**	Pn	**Pn**	**16 53 44.4**	**+0.7**
	6.6nm,0.3s,SNR=7.9						
SELV				Pg	**Pg**	**16 53 47.0**	**+0.7**
	12nm,0.2s,SNR=7.9						
SELV				Lg	Lg	16 54 10.4	
	70nm,0.4s,SNR=7.9						
SELV	**Sierra Elvira**	**1.69**	**254**	Pn	**Pn**	**16 53 44.4**	**+0.7**
	6.6nm,0.3s,SNR=7.9						
SELV	**Sierra Elvira**	**1.69**	**254**	Pg	**Pg**	**16 53 47.0**	**+0.7**
	12nm,0.2s,SNR=7.9						
SELV				Lg	Lg	16 54 10.4	
	70nm,0.4s,SNR=7.9						
EBAN	**Banos Encina**	**1.72**	**286**	Pn	**Pn**	**16 53 43.8**	**-0.3**
	44nm,0.2s,SNR=7.9						
EBAN				Sn	**Sb**	**16 54 08.1**	**+0.6**
	208nm,0.2s,SNR=7.9						
EBAN	**Banos Encina**	**1.72**	**286**	Pn	**Pn**	**16 53 43.8**	**-0.3**
	44nm,0.2s,SNR=7.9						
EBAN				Sn	**Sb**	**16 54 08.1**	**+0.6**
	208nm,0.2s,SNR=7.9						
EGOR	**Sierra Gorda,**	**2.02**	**253**	Pg	**Pb**	**16 53 51.1**	**+0.3**
	3.8nm,0.3s,SNR=7.9						
EGOR				Lg	Lg	16 54 20.3	
	56nm,0.4s,SNR=7.9						
EGOR	**Sierra Gorda,**	**2.02**	**253**	Pg	**Pb**	**16 53 51.2**	**+0.3**
	3.8nm,0.3s,SNR=7.9						
EGOR				Lg	Lg	16 54 20.3	
	56nm,0.4s,SNR=7.9						
EADA	**Adamuz**	**2.33**	**282**	Pn	**Pn**	**16 53 52.6**	**+0.2**
	8.2nm,0.1s,SNR=7.9						
EADA				Sn	**Sn**	**16 54 22.1**	**+0.9**
	20nm,0.2s,SNR=7.9						
EADA				Lg	Lg	16 54 30.3	
	59nm,0.2s,SNR=7.9						
EADA	**Adamuz**	**2.33**	**282**	Pn	**Pn**	**16 53 52.6**	**+0.2**
	8.2nm,0.1s,SNR=7.9						
EADA				Sn	**Sn**	**16 54 22.1**	**+0.9**
	20nm,0.2s,SNR=7.9						
EADA				Lg	Lg	16 54 30.3	
	59nm,0.2s,SNR=7.9						
OKGL	**Djebel Kef Gue**	**2.50**	**131**	Sn	**Sn**	**16 54 23.1**	**-2.4**
	152nm,0.4s,SNR=4.0						
OKGL	**Djebel Kef Gue**	**2.50**	**131**	Sn	**Sn**	**16 54 23.1**	**-2.4**
	152nm,0.4s,SNR=4.0						
ESDC	**Sonseca Array**	**2.65**	**318**	Pn	**Pn**	**16 53 57.0**	**+0.1**
	0.7nm,0.1s,baz=134,slow=12,SNR=7.9						
ESDC				Pg	**Pg**	**16 54 04.4**	**-0.3**
	2.4nm,0.1s,baz=139,slow=16,SNR=7.3						
ESDC				Lg	Lg	16 54 38.2	
	33nm,0.5s,baz=135,slow=29,SNR=6.8						
ESDC	**Sonseca Array**	**2.65**	**318**	Pn	**Pn**	**16 53 57.0**	**+0.1**
	0.7nm,0.1s,SNR=7.9						
ESDC	**Sonseca Array**	**2.65**	**318**	Pg	**Pg**	**16 54 04.4**	**-0.3**
	2.4nm,0.1s,SNR=7.3						
ESDC				Lg	Lg	16 54 38.2	
	33nm,0.5s,SNR=6.8						
EIBI	**Ibiza**	**2.72**	**60**	Pn	**Pn**	**16 53 57.9**	**+0.1**
	7.6nm,0.3s,SNR=7.9						
EIBI				Sn	**Sn**	**16 54 30.1**	**-0.7**
	7.2nm,0.3s,SNR=7.9						
EIBI	**Ibiza**	**2.72**	**60**	Pn	**Pn**	**16 53 57.9**	**+0.1**
	7.6nm,0.3s,SNR=7.9						
EIBI				Sn	**Sn**	**16 54 30.1**	**-0.7**
	7.2nm,0.3s,SNR=7.9						
ECAB	**El Cabril**	**2.98**	**278**	Pn	**Pn**	**16 54 01.6**	**+0.3**
	7.1nm,0.3s,SNR=7.9						
ECAB				Sn	**Sn**	**16 54 37.2**	**0.0**
	4.4nm,0.2s,SNR=8.8						
ECAB				Lg	Lg	16 54 50.0	
	16nm,0.3s,SNR=7.9						
ECAB	**El Cabril**	**2.98**	**278**	Pn	**Pn**	**16 54 01.6**	**+0.3**
	7.1nm,0.3s,SNR=7.9						
ECAB				Sn	**Sn**	**16 54 37.2**	**0.0**
	4.4nm,0.2s,SNR=8.8						
ECAB				Lg	Lg	16 54 50.0	
	16nm,0.3s,SNR=7.9						
GUD	**Guadarrama**	**3.50**	**328**	Sn	**Sn**	**16 54 47.9**	**-2.4**
	6.1nm,0.3s,SNR=7.9						
GUD				Lg	Lg	16 55 04.2	
	14nm,0.3s,SNR=12						
EMIN	**Mina Concepcio**	**3.95**	**272**	Sn	**Sn**	**16 54 58.4**	**-2.8**
	3.9nm,0.4s,SNR=7.9						
EMIN				Lg	Lg	16 55 19.6	
	4.4nm,0.3s,SNR=7.9						
EPLA	**Plasencia**	**4.16**	**306**	Sn	**Sn**	**16 55 05.5**	**-0.8**
	2.9nm,0.3s,SNR=7.9						
EPLA				Lg	Lg	16 55 23.9	
	7.2nm,0.2s,SNR=7.9						
EPLA	**Plasencia**	**4.16**	**306**	Sn	**Sn**	**16 55 05.5**	**-0.8**
	2.9nm,0.3s,SNR=7.9						
EPLA				Lg	Lg	16 55 23.9	
	7.2nm,0.2s,SNR=7.9						
PBAR	**Barrancos**	**4.26**	**278**	*e*Pn	**Pn**	**16 54 19.6**	**+0.7**
PBAR				*e*Sn	**Sn**	**16 55 07.8**	**-0.9**
PBAR	**Barrancos**	**4.26**	**278**	*e*Pn	**Pn**	**16 54 19.6**	**+0.7**
PBAR				*e*Sn	**Sn**	**16 55 07.8**	**-0.9**
EBAD	**Badajoz**	**4.32**	**286**	Sn	**Sn**	**16 55 09.4**	**-0.9**
	8.1nm,0.2s,SNR=7.9						
EBAD				Lg	Lg	16 55 29.1	
	20nm,0.3s,SNR=7.9						
EBAD	**Badajoz**	**4.32**	**286**	Sn	**Sn**	**16 55 09.4**	**-0.9**
	8.1nm,0.2s,SNR=7.9						
EBAD				Lg	Lg	16 55 29.1	
	20nm,0.3s,SNR=7.9						
EGRO	**El Granado**	**4.61**	**270**	Sn	**Sn**	**16 55 14.7**	**-2.6**
	1.5nm,0.3s,SNR=7.9						
EGRO				Lg	Lg	16 55 36.1	
	4.3nm,0.3s,SNR=7.9						
EGRO	**El Granado**	**4.61**	**270**	Sn	**Sn**	**16 55 14.7**	**-2.6**
	1.5nm,0.3s,SNR=7.9						
EGRO				Lg	Lg	16 55 36.1	
	4.3nm,0.3s,SNR=7.9						
PESTR	**Estremoz**	**4.79**	**286**	*e*Pn	**Pn**	**16 54 28.1**	**+1.9**
PESTR				*e*Sn	**Sn**	**16 55 21.1**	**-0.7**
PESTR				A	A	16 55 49.9	
	11nm,0.5s						
PESTR	**Estremoz**	**4.79**	**286**	*e*Pn	**Pn**	**16 54 28.1**	**+1.9**
PESTR				*e*Sn	**Sn**	**16 55 21.1**	**-0.7**
	11nm,0.5s						
PMRV	**Marv??o**	**4.79**	**293**	*e*Pn	**Pn**	**16 54 27.3**	**+1.1**
PMRV				*e*Sn	**Sn**	**16 55 20.7**	**-1.1**
PMRV				A	A	16 55 54.0	
	15nm,0.6s						
PMRV	**Marv??o**	**4.79**	**293**	*e*Pn	**Pn**	**16 54 27.3**	**+1.1**
PMRV				*e*Sn	**Sn**	**16 55 20.7**	**-1.1**
	15nm,0.6s						
PVAQ	**Vaqueiros**	**4.80**	**268**	*e*Pn	**Pn**	**16 54 26.4**	**0.0**
PVAQ				*e*Sn	**Sn**	**16 55 20.6**	**-1.5**
PVAQ				A	A	16 56 01.0	
	10nm,0.8s						
PVAQ	**Vaqueiros**	**4.80**	**268**	*e*Pn	**Pn**	**16 54 26.4**	**0.0**
PVAQ				*e*Sn	**Sn**	**16 55 20.6**	**-1.5**
	10nm,0.8s						
PBDV	**Barranco-do-Ve**	**4.99**	**267**	*e*Pn	**Pn**	**16 54 29.2**	**+0.2**
PBDV				*e*Sn	**Sn**	**16 55 25.8**	**-1.0**
PBDV				A	A	16 55 41.4	
	19nm,0.8s						
PBDV	**Barranco-do-Ve**	**4.99**	**267**	*e*Pn	**Pn**	**16 54 29.2**	**+0.2**
PBDV				*e*Sn	**Sn**	**16 55 25.8**	**-1.0**
	19nm,0.8s						
PCVE	**Castro Verde**	**5.04**	**271**	*e*Pn	**Pn**	**16 54 30.0**	**+0.3**
PCVE				*e*Sn	**Sn**	**16 55 25.4**	**-2.6**
PCVE	**Castro Verde**	**5.04**	**271**	*e*Pn	**Pn**	**16 54 30.0**	**+0.3**
PCVE				*e*Sn	**Sn**	**16 55 25.4**	**-2.6**
MESJ	**Messejana**	**5.18**	**273**	*e*P	**Pn**	**16 54 31.5**	**0.0**
MESJ	**Messejana**	**5.18**	**273**	*e*Pn	**Pn**	**16 54 31.8**	**+0.3**
MESJ				*e*Sn	**Sn**	**16 55 29.7**	**-1.7**
MESJ				A	A	16 56 09.6	
	8.3nm,0.7s						
MESJ	**Messejana**	**5.18**	**273**	*e*Pn	**Pn**	**16 54 31.8**	**+0.3**
MESJ				*e*Sn	**Sn**	**16 55 29.7**	**-1.7**
	8.3nm,0.7s						
PMTG	**Montargil**	**5.31**	**287**	*e*Pn	**Pn**	**16 54 33.6**	**+0.2**
PMTG				*e*Sn	**Sn**	**16 55 33.3**	**-1.4**
PMTG				A	A	16 56 14.2	
	12nm,0.6s						
PMTG	**Montargil**	**5.31**	**287**	*e*Pn	**Pn**	**16 54 33.6**	**+0.2**
PMTG				*e*Sn	**Sn**	**16 55 33.3**	**-1.4**
	12nm,0.6s						
MVO	**Moncorvo**	**5.38**	**311**	*e*Pn	**Pn**	**16 54 35.0**	**+0.6**
MVO				*e*Sn	**Sn**	**16 55 35.5**	**-1.1**
MVO	**Moncorvo**	**5.38**	**311**	*e*Pn	**Pn**	**16 54 35.0**	**+0.6**
MVO				*e*Sn	**Sn**	**16 55 35.5**	**-1.1**
PNCL	**Nicolau / Gran**	**5.43**	**276**	*e*Pn	**Pn**	**16 54 36.3**	**+1.4**
PNCL	**Nicolau / Gran**	**5.43**	**276**	*e*Pn	**Pn**	**16 54 36.3**	**+1.4**
PTEO	**Sao Teotonio**	**5.59**	**270**	*e*Pn	**Pn**	**16 54 37.7**	**+0.5**
PTEO				*e*Sn	**Sn**	**16 55 41.7**	**+0.2**
PTEO	**Sao Teotonio**	**5.59**	**270**	*e*Pn	**Pn**	**16 54 37.7**	**+0.5**
PTEO				*e*Sn	**Sn**	**16 55 41.7**	**+0.2**
PFVI	**Vila Bisbo**	**5.71**	**266**	*e*Pn	**Pn**	**16 54 39.4**	**+0.5**
PFVI				*e*Sn	**Sn**	**16 55 43.7**	**-0.9**
PFVI	**Vila Bisbo**	**5.71**	**266**	*e*Pn	**Pn**	**16 54 39.4**	**+0.5**
PFVI				*e*Sn	**Sn**	**16 55 43.7**	**-0.9**
PCAS	**Casmilo, Conde**	**5.81**	**296**	*e*Sn	**Sn**	**16 55 45.3**	**-1.6**
PCAS	**Casmilo, Conde**	**5.81**	**296**	*e*Sn	**Sn**	**16 55 45.3**	**-1.6**
POLO	**Lamas de Olo**	**5.97**	**310**	*e*Sn	**Sn**	**16 55 49.7**	**-1.4**
POLO	**Lamas de Olo**	**5.97**	**310**	*e*Sn	**Sn**	**16 55 49.7**	**-1.4**
PGAV	**Gavieira, Arco**	**6.61**	**312**	*e*Pn	**Pn**	**16 54 52.9**	**+1.6**
PGAV				*e*Sn	**Sn**	**16 56 04.7**	**-2.1**
PGAV	**Gavieira, Arco**	**6.61**	**312**	*e*Pn	**Pn**	**16 54 52.9**	**+1.6**
PGAV				*e*Sn	**Sn**	**16 56 04.7**	**-2.1**

MAN 11 16:53:54, 18°.66N×120°.80E, h32km, mb4.1, ML2.9, MS2.7, 1C, Luzon

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

FINES	FINESS Array B	68.93	333	P	P	17 13 16.6 +0.8
	0.6nm,0.5s,baz=47,slow=8.2,SNR=3.2					
KBZ	Khabaz	71.70	311	P	P	17 13 34.5 +1.4
	1.1nm,0.9s,baz=18,slow=6.4,SNR=3.0					
PDAR	Pinedale Array	75.90	47	P	P	17 13 58.3 +0.3
	0.2nm,0.4s,baz=293,slow=3.7,SNR=3.3					

*CSEM **11** 17:12:34.5±0.1, 42°.94N×0°.81W, h10km, ML0.9, Error ellipse: s-maj=1.6km s-min=0.9km az=168.0*
*LDG **11** 17:12:34.7±0.1, 42°.94N×0°.82W, h2km±2km, Md1.7/3, Ml1.6/1, Error ellipse: s-maj=4.1km s-min=0.5km az=15.0*
MDD 11 17:12:35.0±0.8, **42°.93N×0°.82W, h7**km±14km, **mbLg0.9**/4, **Error ellipse: s-maj=3.7km s-min=2.5km az=158.0, PRXIMO, Pyrenees**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ATE	**Arette**	**0.17**	**29**	Pg	Pg	17 12 38.3	-0.4
	SNR=7.9						
ATE				Lg	Lg	17 12 41.5	
	SNR=7.9						
ATE	**Arette**	**0.17**	**29**	Pg	Pg	17 12 38.3	-0.3
	SNR=7.9						
ATE				Lg	Lg	17 12 41.5	
	SNR=7.9						
ETSF	**Etsaut**	**0.19**	**100**	Pg	Pg	17 12 38.7	-0.2
ETSF				Lg	Lg	17 12 41.3	
	5.7nm,0.2s						
ETSF	**Etsaut**	**0.19**	**100**	*e*Pg	Pg	17 12 38.7	-0.2
ETSF				*e*Sg	Sg	17 12 41.3	-0.3
	11nm,0.2s						
ETSF	**Etsaut**	**0.19**	**100**	Pg	Pg	17 12 38.7	-0.2
ETSF				*e*Sg	Sg	17 12 41.3	-0.3
	5.7nm,0.2s						
IELO	**Elcoad**	**0.32**	**254**	Pg	Pg	17 12 41.5	+0.1
	SNR=7.9						
IELO				Lg	Lg	17 12 46.3	
	7.2nm,0.3s,SNR=7.9						
IELO	**Elcoad**	**0.32**	**254**	Pg	Pg	17 12 41.5	+0.2
	SNR=7.9						
IELO				Lg	Lg	17 12 46.3	
	7.2nm,0.3s,SNR=7.9						
YSIG	**Sigues**	**0.32**	**204**	Pg	Pg	17 12 41.3	0.0
	SNR=7.9						
YSIG				Lg	Lg	17 12 45.6	
	2.1nm,0.2s,SNR=7.9						
YSIG	**Sigues**	**0.32**	**204**	Pg	Pg	17 12 41.3	0.0
	SNR=7.9						
YSIG				Lg	Lg	17 12 45.6	
	2.1nm,0.2s,SNR=7.9						
YASP	**Aspurt**	**0.33**	**231**	Pg	Pg	17 12 41.1	-0.3
	SNR=7.9						
YASP				Lg	Lg	17 12 45.5	
	4.9nm,0.2s,SNR=7.9						
YASP	**Aspurt**	**0.33**	**231**	Pg	Pg	17 12 41.1	-0.3
	SNR=7.9						
YASP				Lg	Lg	17 12 45.5	
	4.9nm,0.2s,SNR=7.9						
SJPF	**Ste Jean**	**0.35**	**301**	Pg	Pg	17 12 41.3	-0.6
SJPF				Lg	Lg	17 12 46.1	
	1.5nm,0.2s						
SJPF	**Ste Jean**	**0.35**	**301**	*e*Pg	Pg	17 12 41.3	-0.6
SJPF				*e*Sg	Sg	17 12 46.1	-0.4
	3.0nm,0.2s						
SJPF	**Ste Jean**	**0.35**	**301**	Pg	Pg	17 12 41.3	-0.6
SJPF				*e*Sg	Sg	17 12 46.1	-0.4
	1.5nm,0.2s						
IEPA	**Eparoz**	**0.36**	**245**	Pg	Pg	17 12 41.8	-0.4
	SNR=7.9						
IEPA				Lg	Lg	17 12 45.7	
	3.8nm,0.2s,SNR=7.9						
IEPA	**Eparoz**	**0.36**	**245**	Pg	Pg	17 12 41.8	-0.3
	SNR=7.9						
IEPA				Lg	Lg	17 12 45.7	
	3.8nm,0.2s,SNR=7.9						
EPF	**Esparros**	**0.85**	**83**	Pg	Pg	17 12 50.8	-0.6
EPF				Lg	Lg	17 13 01.9	
	1.0nm,0.3s						
EPF	**Esparros**	**0.85**	**83**	*e*Pg	Pg	17 12 50.8	-0.6
EPF				*e*Sg	Sg	17 13 01.9	-0.6
	2.0nm,0.3s						
EPF	**Esparros**	**0.85**	**83**	Pg	Pg	17 12 50.8	-0.6
EPF				*e*Sg	Sg	17 13 01.9	-0.6
	1.0nm,0.3s						

*ISK **11** 17:15:56.5, 38°.26N×38°.88E, h5km, MD2.6*
*ISCJB **11** 17:15:57.4±0.7, 38°.25N±0°.05×38°.84E±0°.05, h11km, Error ellipse: s-maj=7.8km s-min=4.9km az=148.0*
*CSEM **11** 17:15:57.4±0.2, 38°.26N×38°.84E, h2km, MD2.6, Error ellipse: s-maj=5.3km s-min=3.7km az=148.0*
*DDA **11** 17:15:57.2, 38°.25N×38°.83E, h7km, Md2.6*
ISC 11 17:15:57.8±1.1, **38°.26N**±0°.04×**38°.84E**±0°.03, **h11**km, **n12**, σ0^{s}**61**/20, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ELZG	**Elazig**	**0.26**	**25**	P	**Pg**	**17 16 02.8**	**-0.5**
ELZG				S	**Sg**	**17 16 07.5**	**+0.5**
ELZG	**Elazig**	**0.26**	**25**	*i* P	**Pg**	**17 16 02.8**	**-0.5**
ELZG				*i* S	**Sg**	**17 16 07.5**	**+0.5**
SVRC	**Sivrice-ELAZID**	**0.38**	**72**	*e*PG	**Pg**	**17 16 04.5**	**-0.9**
SVRC				*e*SG	**Sg**	**17 16 10.7**	**+0.1**
SVRC	**Sivrice-ELAZID**	**0.38**	**72**	*e*Pg	**Pg**	**17 16 04.6**	**-0.9**
SVRC				*e*Sg	**Sg**	**17 16 10.7**	**+0.1**
AKCD	**Akcadag**	**0.73**	**273**	P	**Pg**	**17 16 11.2**	**-0.7**
AKCD				S	**Sg**	**17 16 21.7**	**+0.3**
AKCD	**Akcadag**	**0.73**	**273**	*i* P	**Pg**	**17 16 11.2**	**-0.7**
AKCD				*i* S	**Sg**	**17 16 21.7**	**+0.3**
PTK	**Pertek**	**0.77**	**34**	*e*PG	**Pg**	**17 16 12.1**	**-0.5**
PTK				*e*SG	**Sg**	**17 16 23.6**	**+0.9**
PTK	**Pertek**	**0.77**	**34**	*e*Pg	**Pg**	**17 16 12.1**	**-0.5**
PTK				*e*Sg	**Sg**	**17 16 23.6**	**+0.9**
URFA	**Urfa**	**0.82**	**181**	*e*PG	**Pg**	**17 16 13.3**	**-0.3**
URFA	**Urfa**	**0.82**	**181**	*e*Pg	**Pg**	**17 16 13.3**	**-0.3**
MAZI	**Mazidag**	**1.50**	**122**	*e*PN	**Pb**	**17 16 26.0**	**+0.3**
MAZI	**Mazidag**	**1.50**	**122**	*e*Pn	**Pb**	**17 16 26.0**	**+0.3**

*IDC **11** 17:31:44.5±0.9, 16°.34N×95°.94W, h45km±7km, mb3.7/12, mb1 4.0/13, mb1mx3.8/40, mbtmp3.9/13, ML3.9/2, Error ellipse: s-maj=22.3km s-min=13.7km az=49.0*
*MEX **11** 17:31:44.3±0.5, 16°.24N×96°.16W, h64km±5km, MD4.3*
*NEIC **11** 17:31:44.3, 16°.24N×96°.16W, h64km, MD4.3(MEX), After MEX.*
ISC 11 17:31:42.0±0.6, **16°.31N**±0°.03×**95°.97W**±0°.03, **h29**km±3km, **n102**, σ1^{s}**63**/108, **mb4.1**/11, **Oaxaca**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HUIG	**Huatulco**	**0.56**	**193**	*i* P	**Pn**	**17 31 55.0**	**+0.9**
HUIG				*i* S	**Sn**	**17 32 03.0**	**+0.7**
HUIG	**Huatulco**	**0.56**	**193**	*i* P	**Pn**	**17 31 55.0**	**+0.9**
HUIG				*i* S	**Sn**	**17 32 03.0**	**+0.7**
PANG	**Puerto Angel**	**0.80**	**217**	*e*P	**Pn**	**17 31 56.5**	**-0.8**
PANG				*e*S	**Sb**	**17 32 07.0**	**-0.9**
OXBJ	**Oaxaca**	**1.04**	**316**	*e*P	**Pn**	**17 32 01.1**	**+0.3**
OXBJ				*e*S	**Sn**	**17 32 13.8**	**-0.7**
VHO	**Vista Hermosa**	**1.05**	**316**	*i* P	**Pn**	**17 32 01.3**	**+0.4**
VHO				*e*S	**Sn**	**17 32 14.1**	**-0.6**
VHO	**Vista Hermosa**	**1.05**	**316**	*i* P	**Pn**	**17 32 01.3**	**+0.4**
VHO				*e*S	**Sn**	**17 32 14.1**	**-0.6**
CMIG	**Matias Romero**	**1.30**	**53**	P	**Pb**	**17 32 06.3**	**+0.5**
	288nm,0.3s,baz=242,slow=11,SNR=394						
CMIG				LR	LR	17 32 14.0	
	comp=Z,337nm,21.0s,baz=330,slow=24						
CMIG				S	**Sn**	**17 32 20.5**	**-0.1**
	311nm,0.3s,baz=234,slow=18,SNR=32						
PNIG	**Pinotepa**	**2.07**	**272**	*e*P	**Pn**	**17 32 13.2**	**-1.6**
PNIG				*e*S	**Sn**	**17 32 35.2**	**-4.5**
PNIG	**Pinotepa**	**2.07**	**272**	*e*P	**Pn**	**17 32 13.2**	**-1.6**
PNIG				*e*S	**Sn**	**17 32 35.2**	**-4.5**
TUIG	**Tuzandepetl**	**2.26**	**41**	*e*P	**Pb**	**17 32 20.0**	**-2.1**
TUIG	**Tuzandepetl**	**2.26**	**41**	*e*P	**Pb**	**17 32 20.0**	**-2.1**
PCIG		**2.72**	**103**	*e*P	**Pb**	**17 32 26.8**	**-3.1**
PCIG				*e*S	**Sb**	**17 32 58.9**	**-3.9**
PCIG		**2.72**	**103**	*e*P	**Pb**	**17 32 26.8**	**-3.1**
PCIG				*e*S	**Sb**	**17 32 58.9**	**-3.9**
TGIG		**2.77**	**80**	*e*P	**Pb**	**17 32 27.9**	**-3.0**
TGIG				*e*S	**Sb**	**17 33 02.1**	**-2.4**
TGIG		**2.77**	**80**	*e*P	**Pb**	**17 32 27.9**	**-3.0**
TGIG				*e*S	**Sb**	**17 33 02.1**	**-2.4**
TLIG	**Tlapa**	**2.77**	**297**	*e*P	**Pn**	**17 32 24.2**	**-0.4**
TLIG				*e*S	**Sn**	**17 32 54.5**	**-2.7**
CCIG	**Comitan**	**3.69**	**90**	*e*P	**Pn**	**17 32 40.5**	**+3.3**
CCIG	**Comitan**	**3.69**	**90**	*e*P	**Pn**	**17 32 40.5**	**+3.3**
TEIG	**Tepich**	**8.28**	**61**	P	**Pn**	**17 33 40.6**	**+0.4**
	15nm,0.3s,baz=88,slow=23,SNR=29						
TEIG				S	**Sn**	**17 35 09.2**	**-3.6**
	20nm,0.3s,baz=180,slow=20,SNR=6.1						
534A	**Blanco**	**13.84**	**351**	P	**Pn**	**17 34 59.9**	**+3.6**
	baz=171,SNR=7.3						
TXAR	**Lajitas Array**	**14.76**	**333**	P	**Pn**	**17 35 11.4**	**+2.4**
	0.0nm,0.3s,baz=152,slow=14,SNR=3.6						
Y34A	**Reagan Ranch,**	**17.64**	**355**	P	**P**	**17 35 47.2**	**+0.7**
	baz=175						
X35A	**Drake**	**18.03**	**357**	P	**P**	**17 35 51.6**	**+0.8**
	baz=178						
MIAR	**Mount Ida**	**18.28**	**6**	P	**P**	**17 35 53.6**	**+0.1**
	baz=188						
X33A	**Lawton**	**18.29**	**353**	P	**Pn**	**17 35 54.4**	**+0.7**
	baz=173						
X38A	**Whitesboro**	**18.31**	**3**	P	**Pn**	**17 35 54.3**	**+0.5**
	baz=184,SNR=5.6						
W38A	**Poteau**	**18.72**	**4**	P	**Pn**	**17 35 59.3**	**+0.4**
	baz=185						
W36A	**Wetumka**	**18.75**	**359**	P	**Pn**	**17 36 00.5**	**+1.3**
	baz=180						
W35A	**Tecumseh**	**18.78**	**358**	P	**Pn**	**17 35 59.9**	**+0.3**
	baz=178						
W33A	**Caddo, Fort Co**	**18.89**	**354**	P	**Pn**	**17 36 01.9**	**+0.9**
	baz=173						
W39A	**Magazine**	**18.91**	**6**	P	**P**	**17 36 01.0**	**+0.7**
	baz=187						
W34A	**Bridge Creek,**	**18.91**	**355**	P	**Pn**	**17 36 01.7**	**+0.5**
	baz=175						
W32A	**Sentinel**	**18.96**	**352**	P	**Pn**	**17 36 02.5**	**+0.7**
	baz=171						
W41B	**Gary Mavity, V**	**19.08**	**9**	P	**Pn**	**17 36 03.0**	**-0.1**
	baz=191						
V35A	**Meyer Ranch, C**	**19.39**	**358**	P	**Pn**	**17 36 06.8**	**-0.1**
	baz=178						
V37A	**Hulbert**	**19.50**	**2**	P	**P**	**17 36 07.0**	**+0.1**
	baz=183						
V38A	**Canehill**	**19.52**	**4**	P	**P**	**17 36 07.7**	**+0.6**
	baz=185,SNR=11						
V32A	**Arapaho**	**19.52**	**353**	P	**Pn**	**17 36 08.7**	**+0.1**
	baz=172						
V39A	**Pettigrew**	**19.56**	**6**	P	**P**	**17 36 07.7**	**+0.2**
	baz=187,SNR=12						
U37A	**Salina**	**20.03**	**2**	P	**P**	**17 36 13.8**	**+1.2**
	baz=183						
U38A	**Gravette**	**20.09**	**4**	P	**P**	**17 36 13.5**	**+0.1**
	baz=185						
U39A	**Green Forest**	**20.11**	**6**	P	**P**	**17 36 13.4**	**-0.1**
	baz=187,SNR=7.4						
U33A	**Lingo Farm, Me**	**20.13**	**355**	P	Pn	17 36 16.6	+0.9
	baz=175						
U40A	**Yellville**	**20.15**	**7**	P	**P**	**17 36 14.0**	**0.0**
	baz=189,SNR=17						
T35A	**Sooner Cattle**	**20.53**	**359**	P	**P**	**17 36 18.4**	**+0.3**
	baz=179						
T34A	**McClaskey Farm**	**20.66**	**357**	P	**P**	**17 36 18.8**	**-0.6**
	baz=177						
T36A	**Boggs Farm, Ca**	**20.66**	**0**	P	**P**	**17 36 19.4**	**-0.2**
	baz=181						
T38A	**Diamond**	**20.69**	**4**	P	**P**	**17 36 20.6**	**+0.7**
	baz=185,SNR=5.4						
T37A	**Cheneyville 18**	**20.75**	**2**	P	**P**	**17 36 20.1**	**-0.3**
	baz=183						
T39A	**Clever**	**20.76**	**6**	P	**P**	**17 36 18.9**	**-1.7**
	baz=188						
T33A	**Patterson Ranc**	**20.78**	**355**	P	Pn	17 36 23.1	-0.3
	baz=174						
ANMO	**Albuquerque**	**20.80**	**335**	P	Pn	17 36 23.8	+0.1
	0.9nm,0.4s,baz=157,slow=15,SNR=2.9						
TUC	**Tucson**	**20.84**	**323**	P	sP	17 36 34.7	+1.8
	baz=137						
T32A	**Huddler Ranch,**	**20.95**	**353**	P	**P**	**17 36 24.3**	**+1.7**
	baz=173						
S35A	**Otter Creek Ra**	**21.29**	**359**	P	**P**	**17 36 26.1**	**-0.2**
	baz=180,SNR=6.3						
S38A	**Stockton**	**21.31**	**5**	P	**P**	**17 36 26.1**	**-0.4**
	baz=186						
S37A	**Fort Scott**	**21.39**	**2**	P	**P**	**17 36 27.4**	**+0.2**
	baz=184						
S39A	**Bolivar**	**21.42**	**6**	P	**P**	**17 36 28.0**	**+0.3**
	baz=187						
S40A	**Lebanon**	**21.42**	**8**	P	**P**	**17 36 27.8**	**+0.1**
	baz=190						
214A	**Organ Pipe Nat**	**21.83**	**319**	P	sP	17 36 45.3	+1.7
	baz=132,SNR=6.3						
R38A	**Fenwick Farm,**	**21.86**	**4**	P	**P**	**17 36 32.1**	**-0.3**
	baz=186						
R34A	**Isabella, Hill**	**21.93**	**357**	P	**P**	**17 36 35.3**	**+2.2**
	baz=177						
R33A	**Olander Ranch,**	**21.98**	**356**	P	**P**	**17 36 34.2**	**+0.5**
	baz=175						
T25A	**Trinidad**	**22.05**	**342**	P	pP	17 36 42.0	-0.5
	baz=158						
R39A	**Chumby, Stover**	**22.07**	**6**	P	**P**	**17 36 33.8**	**-0.8**
	baz=188						
R40A	**Maddies Statio**	**22.14**	**8**	P	**P**	**17 36 34.4**	**-1.0**
	baz=190						
Q39A	**Willow Grove F**	**22.80**	**6**	P	**P**	**17 36 41.1**	**-1.3**
	baz=188						
Q40A	**Laux Farm, Aux**	**22.85**	**8**	P	**P**	**17 36 41.2**	**-1.7**
	baz=190						
P40A	**Paris**	**23.38**	**8**	P	**P**	**17 36 46.1**	**-2.2**
	baz=190						
GLA	**Glamis**	**23.83**	**318**	P	sP	17 37 07.1	+2.5
	baz=130						
Y12C	**Blythe**	**24.09**	**320**	P	sP	17 37 09.4	+2.4
	baz=132						
PDMCI	**Parker Dam,Lak**	**24.23**	**321**	P	sP	17 37 09.9	+1.6
	baz=134						
N39A	**Derby Farms, D**	**24.66**	**6**	P	**P**	**17 37 00.3**	**+0.1**
	baz=188						
IRM	**Iron Mountain**	**24.75**	**319**	P	sP	17 37 16.0	+2.9
	baz=132						
MONP2	**Monument Peak**	**24.79**	**315**	P	sP	17 37 16.8	+3.2
	baz=127						
BGNE	**Belgrade**	**25.08**	**356**	P	**P**	**17 37 06.6**	**+2.5**
	baz=176						
M31A	**Lambtecht Ranc**	**25.08**	**355**	P	**P**	**17 37 07.1**	**+3.0**
	baz=174						
BELC	**Belle Mtn. Jos**	**25.19**	**318**	P	sP	17 37 19.9	+2.7
	baz=130						
GMRC	**Granite Mounta**	**25.48**	**320**	P	sP	17 37 21.9	+2.2
	baz=132						
ECSD	**EROS Data Cent**	**27.34**	**359**	P	**P**	**17 37 26.5**	**+2.0**
	baz=179						
PDAR	**Pinedale Array**	**28.81**	**339**	P	**P**	**17 37 38.4**	**+0.5**
	0.5nm,0.7s,baz=134,slow=8.5,SNR=5.3						
NVAR	**Mina Array Bea**	**29.49**	**323**	P	**P**	**17 37 45.9**	**+1.9**
	1.0nm,0.6s,baz=146,slow=9.3,SNR=10						
NVAR				pP	**sP**	**17 37 57.4**	**+1.6**
	1.9nm,0.9s,baz=139,slow=9.5,SNR=6.7						
NVAR				PcP	**PcP**	**17 40 49.2**	**+0.1**
	0.3nm,0.5s,baz=132,slow=2.6,SNR=3.0						
D33A	**AnnSam, Waubun**	**30.74**	**0**	P	**P**	**17 37 55.3**	**+0.7**
	baz=181						
C35A	**Jirik Farms, M**	**31.34**	**3**	P	**P**	**17 38 00.7**	**+0.8**
	baz=184						
B32A	**Ashes, Strandq**	**32.00**	**359**	P	**P**	**17 38 06.5**	**+0.8**
	baz=179						
B35A	**Bob, Littlefor**	**32.01**	**3**	P	**P**	**17 38 07.1**	**+1.3**
	baz=184						
A33A	**Warroad**	**32.54**	**1**	P	**P**	**17 38 12.1**	**+1.7**
	baz=181						
ULM	**Lac du Bonnet**	**33.85**	**0**	P	**P**	**17 38 22.4**	**+0.6**
	4.2nm,0.7s,baz=181,slow=11,SNR=4.5						
M02C	**Callahan**	**34.07**	**323**	P	sP	17 38 36.7	+0.7
	baz=130						
PTGA	**Pitinga**	**39.36**	**112**	P	**P**	**17 39 09.5**	**+0.2**
	1.7nm,0.5s,baz=207,slow=6.8,SNR=2.8						
LPAZ	**La Paz**	**42.47**	**138**	P	**P**	**17 39 36.5**	**+1.0**
	1.1nm,0.7s,baz=331,slow=11,SNR=5.1						
YKA	**Yellowknife Ar**	**47.95**	**348**	P	**P**	**17 40 17.1**	**-0.6**
	0.7nm,0.7s,baz=155,slow=7.1,SNR=8.7						
YKA				pP	**sP**	**17 40 29.6**	**-0.3**
	1.5nm,0.7s,baz=154,slow=7.4,SNR=9.6						
INK	**Inuvik**	**57.16**	**344**	P	**P**	**17 41 25.2**	**-0.7**
	2.7nm,0.7s,baz=98,slow=6.0,SNR=8.6						
INK				pP	**sP**	**17 41 38.9**	**+0.8**
	3.9nm,0.9s,baz=127,slow=8.4,SNR=6.4						
ILAR	**Eielson Array**	**59.22**	**337**	P	**P**	**17 41 40.1**	**-0.2**
	1.2nm,0.7s,baz=134,slow=5.5,SNR=6.1						
ILAR				pP	**sP**	**17 41 53.4**	**+0.8**
	2.1nm,0.9s,baz=128,slow=5.3,SNR=6.3						
PLCA	**Paso Flores**	**61.47**	**158**	P	**P**	**17 41 56.8**	**+0.7**
	5.3nm,0.9s,baz=352,slow=7.3,SNR=11						
ESDC	**Sonseca Array**	**81.28**	**51**	P	**P**	**17 43 56.1**	**+0.2**
	0.2nm,0.3s,baz=287,slow=5.1,SNR=3.4						
NB2	**NORSAR Subarra**	**83.93**	**28**	P	**P**	**17 44 10.2**	**+1.0**
	comp=Z,1.6nm,0.8s,baz=297,slow=5.6						
NOA	**NORSAR Array B**	**83.93**	**28**	P	**P**	**17 44 09.2**	**0.0**
	comp=Z,0.7nm,0.8s,baz=297,slow=5.0,SNR=3.3						
BOSA	**Boshof**	**124.80**	**114**	PKP	**PKPdf**	**17 50 39.3**	**-0.6**
	comp=Z,2.7nm,0.9s,baz=206,slow=2.4,SNR=4.4						
WRA	**Warramunga Arr**	**132.19**	**258**	PKP	**PKPdf**	**17 50 52.9**	**-1.1**
	comp=Z,0.8nm,0.9s,baz=84,slow=2.5,SNR=2.8						
ASAR	**Alice Springs**	**132.75**	**253**	PKP	**PKPdf**	**17 50 54.6**	**-0.4**
	comp=Z,0.4nm,0.8s,baz=74,slow=3.3,SNR=2.9						
CMAR	**Chiang Mai Arr**	**142.46**	**336**	PKP	**PKPdf**	**17 51 15.1**	**+2.1**
	comp=Z,0.7nm,0.8s,baz=328,slow=3.2,SNR=6.2						

SJA 11 17:34:08.1±0.8, **23°.74S**×**64°.79W, h10**km, **ML2.2, MW2.7, Jujuy Province**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASTB	**Santa Barbara**	**0.37**	**124**	*i* P	Pg	17 34 16.0	+0.5
AZAP	**Zapla**	**0.54**	**207**	*i* P	Pg	17 34 18.0	-0.8
ALOL	**LOMAS DE OLMED**	**0.74**	**96**	*e*P	Pn	17 34 24.6	-0.1
ALOL				*e*S	Sn	17 34 37.6	+1.4
ALOL	**LOMAS DE OLMED**	**0.74**	**96**	*i* P	Pb	17 34 23.1	-0.1
HJA	**Humahuaca**	**0.78**	**313**	*e*P	Pg	17 34 23.5	+0.4
HJA				*e*S	Sn	17 34 36.2	-1.2
HJA	**Humahuaca**	**0.78**	**313**	*i* P	Pg	17 34 22.9	-0.3
SLA	**San Lorenzo**	**1.17**	**214**	*e*P	Pb	17 34 30.3	-0.3
	baz=358,slow=3.1						
SLA				*e*S	Sn	17 34 48.1	+1.2
SLA	**San Lorenzo**	**1.17**	**214**	*i* P	Pb	17 34 30.2	-0.4
SLA				*i* S	Sn	17 34 47.9	+1.0
YJA	**Yavi**	**1.69**	**337**	*e*P	Pg	17 34 40.9	+0.3
YJA				*e*S	Sg	17 35 03.5	+0.8
YJA	**Yavi**	**1.69**	**337**	*i* P	Pg	17 34 40.7	+0.1
YJA				*i* S	Sg	17 35 04.9	+2.2
YJA				IAML		17 35 05.1	
	comp=Z,27nm,0.3s						
AHML	**Horco Molle**	**3.07**	**189**	*e*S	Sg	17 35 43.7	-3.1

MEX 11 17:36:14.6±1.0, **18°.52N**×**101°.52W, h63**km±13km, **MD3.7, Guerrero**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZIIG	**Zihuatanejo**	**0.91**	**177**	*e*P	Pn	17 36 29.8	-1.8
ZIIG				*e*S	Sn	17 36 43.2	-1.0
ARIG	**Puente Sto Nin**	**1.14**	**102**	*e*P	Pn	17 36 32.7	-1.9
ARIG				*e*S	Sn	17 36 47.9	-1.6
MOIG	**Morelia**	**1.20**	**15**	*i* P	Pn	17 36 34.4	-1.2
MOIG				*i* S	Sn	17 36 49.1	-2.0
MMIG	**Aquila**	**1.75**	**263**	*e*P	Pn	17 36 42.1	-0.6
MMIG				*e*S	Sn	17 37 03.1	-0.8
CAIG	**El Cayaco**	**1.89**	**141**	*e*P	Pn	17 36 43.7	-0.9
CAIG				*i* S	Sn	17 37 05.3	-2.1
MEIG	**Mezcala**	**1.90**	**108**	*e*P	Pn	17 36 44.0	-0.9
MEIG				*e*S	Sn	17 37 06.1	-1.7
YAIG	**Yautepec**	**2.35**	**81**	*i* P	Pn	17 36 50.4	-0.6
YAIG				*i* S	Sn	17 37 17.1	-1.8

*ISCJB **11** 17:41:46.1±1.3, 24°.9S±0°.1×179°.4E±0°.2, h507km, mb3.8/4, Error ellipse: s-maj=25.7km s-min=15.3km az=171.5*
*IDC **11** 17:41:51.2±7.0, 25°.21S×179°.45E, h573km±88km, mb3.2/4, mb1 3.5/5, mb1mx3.0/29, mbtmp4.2/5, Error ellipse: s-maj=71.1km s-min=27.8km az=15.0*
ISC 11 17:41:46.6±1.3, **25°.0S**±0°.1×**179°.5E**±0°.2, **h507**km, **n6**, σ1^{s}**02**/7, **mb3.7**/4, **South of Fiji Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**13.41**	**188**	P	**P**	**17 44 40.0**	**+0.3**
	1.6nm,0.3s,baz=318,slow=7.9,SNR=4.9						
URZ				S	**S**	**17 47 02.2**	**-0.3**
	0.6nm,0.3s,baz=76,slow=19,SNR=4.7						
CTA	**Charters Tower**	**31.05**	**272**	P	**P**	**17 47 23.4**	**+0.7**
	5.4nm,0.4s,baz=86,slow=12,SNR=19						
ASAR	**Alice Springs**	**41.42**	**262**	P	**P**	**17 48 48.6**	**0.0**
	0.8nm,0.5s,baz=98,slow=7.3,SNR=14						
WRA	**Warramunga Arr**	**41.89**	**267**	P	**P**	**17 48 51.8**	**-0.6**
	1.5nm,0.4s,baz=98,slow=8.1,SNR=12						
TXAR	**Lajitas Array**	**91.38**	**58**	P	**P**	**17 53 58.9**	**+0.6**
	0.5nm,0.8s,baz=214,slow=6.1,SNR=5.1						
AKASG	**Malin Array Be**	**145.61**	**326**	PKPbc	**PKPdf**	**18 00 24.8**	**-1.7**
	0.1nm,0.3s,baz=41,slow=3.8,SNR=2.5						

*ISCJB **11** 17:42:14.2±0.8, 5°.90S±0°.06×130°.5E±0°.3, h124km, mb3.5/2, Error ellipse: s-maj=36.2km s-min=8.6km az=3.3*
*IDC **11** 17:42:16.8±2.7, 5°.96S×130°.50E, h131km±34km, mb3.2/2, mb1 3.2/5, mb1mx3.0/34, mbtmp3.6/5, Error ellipse: s-maj=79.7km s-min=19.6km az=87.0*
ISC 11 17:42:15.9±1.0, **5°.95S**±0°.08×**130°.5E**±0°.3, **h124**km, **n6**, σ1^{s}**88**/7, **Banda Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SIJI	**Sorong**	**5.11**	**9**	P	**Pn**	**17 43 32.0**	**+1.7**
	17nm,0.3s,baz=180,slow=14,SNR=1.9						
SIJI				S	**Sn**	**17 44 25.7**	**-2.6**
	24nm,0.3s,baz=180,slow=16,SNR=3.8

CIMO	**Cimolais**	**0.35**	**62**	*e*Pg	Pg	17 44 23.9	-1.0
CIMO	**Cimolais**	**0.35**	**62**	‖*e*Pg	Pg	17 44 23.9	-1.0
POLC	**Polcenigo**	**0.37**	**108**	Pg	Pg	17 44 25.6	+0.4
POLC				Sg	Sb	17 44 32.7	-0.5
POLC	**Polcenigo**	**0.37**	**108**	Pg	Pg	17 44 25.6	+0.4
POLC				Sg	Sb	17 44 32.7	-0.5
POLC	**Polcenigo**	**0.37**	**108**	*e*Pg	Pg	17 44 25.9	+0.7
PANI	**Panarotta**	**0.47**	**259**	‖*e*Pg	Pb	17 44 28.0	-0.8
PANI				*e*Sg	Sg	17 44 34.5	+1.3
DDS	**Dosso del Somm**	**0.62**	**245**	*e*Pg	Pg	17 44 30.6	+0.7
DDS	**Dosso del Somm**	**0.62**	**245**	*e*Pg	Pg	17 44 30.6	+0.7
APPI	**Appiano** 16nm,0.3s	**0.63**	**303**	Pg	Pg	17 44 29.9	-0.1
APPI	**Appiano** 16nm,0.3s	**0.63**	**303**	Pg	Pg	17 44 29.9	-0.1
CLUD	**Cludinico**	**0.69**	**63**	*e*Pg	Pg	17 44 31.4	+0.1
CLUD	**Cludinico**	**0.69**	**63**	*e*Pg	Pg	17 44 31.4	+0.1
ABTA	**Abfaltersbach** 0.9nm,0.1s	**0.70**	**31**	*e*Pg	Pg	17 44 31.4	-0.1
ABTA				*e*Sg	Sg	17 44 40.3	-0.4
ABTA	**Abfaltersbach** 2.4nm,0.1s,SNR=5.4	**0.70**	**31**	Pg	Pg	17 44 31.4	-0.1
ABTA				Sg	Sg	17 44 40.3	-0.4
MARN	**Marana (Italy)**	**0.74**	**227**	*e*Pg	Pb	17 44 33.2	-0.2
MARN	**Marana (Italy)**	**0.74**	**227**	*e*Pg	Pb	17 44 33.1	-0.3
ZOU	**Zoufplan**	**0.80**	**58**	*e*Pg	Pg	17 44 33.1	-0.1
VINO	**Villanova**	**0.90**	**82**	*e*Pg	Pg	17 44 35.7	+0.4
VINO	**Villanova**	**0.90**	**82**	*e*Pg	Pg	17 44 35.6	+0.3
CARE	**Lago del Cares**	**0.94**	**288**	*e*Pg	Pg	17 44 35.9	-0.2
CARE	**Lago del Cares**	**0.94**	**288**	*e*Pg	Pg	17 44 35.9	-0.2
PTCC	**Patocco-Chiusa** 13nm,0.4s	**0.98**	**74**	Pg	Pb	17 44 37.7	+0.2
PTCC	**Patocco-Chiusa** 13nm,0.4s	**0.98**	**74**	Pg	Pb	17 44 37.7	+0.2
MAGA	**Magasa** 32nm,0.3s	**1.02**	**249**	Pg	Pb	17 44 38.4	+0.2
MAGA	**Magasa** 32nm,0.3s	**1.02**	**249**	Pg	Pb	17 44 38.4	+0.2
MABI	**Malga Bissina** 9.0nm,0.3s	**1.03**	**266**	Pg	Pn	17 44 39.3	0.0
MABI	**Malga Bissina** 9.0nm,0.3s	**1.03**	**266**	Pg	Pn	17 44 39.3	0.0
ACOM	**Acomizza, Ital** 29nm,0.4s	**1.13**	**68**	Pg	Pn	17 44 41.0	+0.3
ACOM	**Acomizza, Ital** 29nm,0.4s	**1.13**	**68**	Pg	Pn	17 44 41.0	+0.3
ACOM	**Acomizza, Ital**	**1.13**	**68**	*e*Pg	Pg	17 44 39.7	+0.1
SABO	**M.te Sabotino**	**1.13**	**98**	*e*Pg	Pn	17 44 40.8	+0.3
SABO	**M.te Sabotino**	**1.13**	**98**	*e*Pg	Pn	17 44 40.8	+0.3
WTTA	**Wattenberg** 1.1nm,0.1s	**1.15**	**348**	*i* Pg	Pg	17 44 39.4	-0.6
WTTA				*i* Sg	Sg	17 44 53.5	-1.4
WTTA	**Wattenberg** 2.8nm,0.2s	**1.15**	**348**	Pg	Pg	17 44 39.4	-0.6
WTTA				Sg	Sg	17 44 53.5	-1.4
SQTA	**Sankt Quirin**	**1.21**	**334**	*i* Pg	Pg	17 44 40.3	-0.8
SQTA	**Sankt Quirin**	**1.21**	**334**	Pg	Pg	17 44 40.3	-0.8
FETA	**Feichten** 0.8nm,0.1s,SNR=4.8	**1.24**	**316**	*e*Pg	Pg	17 44 40.9	-0.8
FETA				*i* Sg	Sg	17 44 56.5	-1.2
FETA	**Feichten** 0.6nm,0.1s	**1.24**	**316**	Pg	Pg	17 44 40.9	-0.8
FETA	**Feichten** 0.8nm,0.1s,SNR=4.8						
FETA				Sg	Sg	17 44 56.5	-1.3
MYKA	**Terra Mystica** 0.5nm,0.1s	**1.24**	**66**	*e*Pg	Pn	17 44 42.9	+0.8
MYKA				Sg	Sb	17 44 58.7	+0.4
MYKA	**Terra Mystica** 6.2nm,0.3s,SNR=5.3	**1.24**	**66**	Pg	Pn	17 44 42.9	+0.8
MYKA				Sg	Sb	17 44 58.7	+0.4
KBA	**Koelnbreinsper** 0.6nm,0.1s	**1.32**	**44**	*i* Pg	Pb	17 44 43.4	0.0
KBA				*e*Sg	Sb	17 45 00.9	+0.2
KBA	**Koelnbreinsper** 3.0nm,0.3s	**1.32**	**44**	Pg	Pb	17 44 43.4	0.0
KBA				Sg	Sb	17 45 00.9	+0.2
MOTA	**Moosalm** 1.2nm,0.2s	**1.35**	**333**	*e*Pg	Pn	17 44 43.0	-0.7
MOTA				*i* Sg	Sg	17 45 00.5	-0.9
MOTA	**Moosalm** 0.9nm,0.1s	**1.35**	**333**	Pg	Pn	17 44 43.0	-0.6
MOTA				Sg	Sg	17 45 00.5	-0.8
RETA	**Reutte** 0.3nm,0.1s	**1.59**	**328**	*i* Pg	Pb	17 44 47.7	-0.2
RETA				*e*Sg	Sg	17 45 09.0	0.0
RETA	**Reutte** 1.6nm,0.2s	**1.59**	**328**	Pg	Pb	17 44 47.7	-0.2
RETA				Sg	Sg	17 45 09.0	0.0
DAVA	**Damuels** 2.2nm,0.2s	**1.85**	**309**	*i* Pg	Pg	17 44 53.0	-0.4
DAVA				*e*Sg	Sb	17 45 16.3	+0.5
DAVA	**Damuels** 2.2nm,0.2s	**1.85**	**309**	Pg	Pg	17 44 53.0	-0.4
DAVA				Sg	Sb	17 45 16.3	+0.4
NVLJ	**Novalja**	**2.57**	**127**	*e*Pn	Pn	17 45 01.6	+1.3
NVLJ				Sn	Sn	17 45 32.8	+0.9
NVLJ	**Novalja**	**2.57**	**127**	*e*Pn	Pn	17 45 01.5	+1.2
NVLJ				Sn	Sn	17 45 32.8	+0.9

LJU ***11*** *17:44:24.5, 46°.39N×15°.07E, h0km, ML1.1 Rockburst*
CSEM 11 17:44:24.5±99.0, 46°.39N×15°.07E, h0km, Mining explosion., Northwestern Balkan Peninsula

JMA 11 17:44:33.2±0.1, 39°.04N×142°.39E, h32km±2km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.56**	**274**	P	Pb	17 44 44.7	0.0
OFUJ				S	Sb	17 44 52.4	-0.2
MIYJ	**Miyakonagasawa**	**0.69**	**321**	P	Pn	17 44 46.2	-0.6
MIYJ				S	Sb	17 44 55.2	-1.1
JMK	**Ichinoseki**	**0.92**	**265**	P	Pn	17 44 50.0	+0.2
JMK				S	Sn	17 45 01.8	-0.1
JOM	**Ohasama**	**0.96**	**297**	P	Pn	17 44 50.7	+0.3
JOM				*e*S	Sb	17 45 03.5	-0.1
JIO	**Ouri**	**1.00**	**235**	P	Pn	17 44 50.6	-0.4
JIO				*e*S	Sn	17 45 02.7	-1.3
JKZ	**Kuzumaki**	**1.25**	**319**	P	Pn	17 44 55.3	+0.8
JKZ				S	Sn	17 45 11.1	+0.8
JRG	**Rokugo**	**1.41**	**285**	P	Pb	17 44 58.2	-0.7
JANG	**Nango**	**1.49**	**333**	P	Pn	17 44 58.3	+0.5
JOU	**Okura**	**1.51**	**244**	P	Pn	17 44 59.1	+1.1
JOU				*e*S	Sb	17 45 18.0	-1.4
JYK	**Kaneyama**	**1.59**	**266**	P	Pb	17 45 00.5	-1.4
JYK				*e*S	Sb	17 45 20.2	-1.4
MAT	**Matsushiro**	**4.15**	**234**	P	Pn	17 45 38.6	+4.3
MAT				*e*S	Sn	17 46 23.8	+2.1

JMA 11 17:46:20.3, 34°.20N×135°.18E, h6km±1km, M3.5, 7D Broadband fault plane solution: P waves. NP1: ϕ_s=343.00000°, δ56.00000°, λ50.00000°. NP2: ϕ_s=219.00000°, δ50.00000°, λ133.00000°. Principal axes: T Plg58.0000°, Azm195.0000°; N Plg32.0000°, Azm8.0000°; P Plg3.0000°, Azm100.0000°; Near south coast of western Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAJ2	**Tsuna**	**0.33**	**312**	‖P	Pg	17 46 27.0	+0.3
JAJ2				*e*S	Sg	17 46 31.8	+0.8
JWY	**Kouya**	**0.34**	**87**	‖P	Pg	17 46 26.8	-0.2
JWY				S	Sg	17 46 31.9	+0.4
JWM	**Minabe**	**0.38**	**157**	‖P	Pg	17 46 27.8	+0.2
JWM				S	Sg	17 46 32.9	+0.3
JHE	**Heguri**	**0.62**	**43**	‖P	Pg	17 46 32.3	+0.1
JHE				S	Sg	17 46 40.8	+0.6
JAI	**Aioi**	**0.73**	**236**	‖P	Pg	17 46 33.8	-0.5
JWZ	**Kozaga**	**0.80**	**146**	P	Pg	17 46 35.6	-0.1
JKS	**Kasai**	**0.83**	**341**	‖P	Pg	17 46 36.2	0.0
JKS				S	Sg	17 46 47.3	+0.3
JKN2	**Miekihoku**	**0.91**	**87**	‖P	Pg	17 46 37.4	-0.3
MAT	**Matsushiro**	**3.40**	**46**	P	Pn	17 47 15.8	+1.8
MAT				S	Sn	17 47 53.8	-0.8

IDC ***11*** *17:57:13.7±0.5, 37°.28N×143°.76E, h0km, mb4.4/28, mb1 4.6/35, mb1mx4.5/53, mbtmp4.5/35, ML4.0/7, MS3.9/7, Ms1 3.9/7, ms1mx3.4/69 Error ellipse: s-maj=13.0km s-min=11.4km az=121.0*
NEIC ***11*** *17:57:14.3±3.5, 37°.31N×143°.74E, h2km±21km, mb4.7/21, Error ellipse: s-maj=9.8km s-min=6.5km az=138.0*
ISCJB ***11*** *17:57:15.4±1.1, 37°.39N±0°.03×143°.58E±0°.03, h15km±6km, mb4.5/76, MS4.1/8, Error ellipse: s-maj=5.4km s-min=3.6km az=159.1*
JMA ***11*** *17:57:16.6±0.2, 37°.38N×143°.60E, h45km, M4.6*
MOS ***11*** *17:57:19.7±1.2, 37°.80N×143°.58E, h33km, mb4.8/56, Error ellipse: s-maj=8.0km s-min=4.8km az=107.4*
ISC 11 17:57:15.2±1.0, 37°.34N±0°.04×143°.69E±0°.05, h10km±5km, n204, σ1°.84/216, mb4.6/86, MS4.1/8, 5C-3D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.16**	**302**	P	**Pn**	**17 57 50.2**	**-1.1**
JIO				S	**Sn**	**17 58 14.8**	**-3.4**
JFK	**Kawauchi**	**2.24**	**271**	P	**Pn**	**17 57 51.4**	**-1.1**
JFK				S	**Sn**	**17 58 17.3**	**-3.0**
ONAJ	**Iwakimizuishiy**	**2.32**	**265**	P	**Pn**	**17 57 52.6**	**-1.0**
ONAJ				*e*S	**Sn**	**17 58 18.9**	**-3.4**
OFUJ	**Ofunato**	**2.35**	**318**	P	**Pn**	**17 57 52.4**	**-1.6**
OFUJ				S	**Sn**	**17 58 19.9**	**-3.1**
JMM	**Marumori**	**2.36**	**284**	P	**Pn**	**17 57 52.8**	**-1.3**
JMM				*e*S	**Sn**	**17 58 20.1**	**-3.0**
JMK	**Ichinoseki**	**2.52**	**310**	P	**Pn**	**17 57 55.2**	**-1.1**
JMK				S	**Sn**	**17 58 24.5**	**-2.7**
JHO	**Hitachi**	**2.60**	**255**	P	**Pn**	**17 57 56.8**	**-0.7**
JHO				*e*S	**Sn**	**17 58 25.9**	**-3.3**
JOU	**Okura**	**2.60**	**294**	P	**Pn**	**17 57 56.9**	**-0.6**
JFT	**Otama**	**2.68**	**275**	P	**Pn**	**17 57 58.3**	**-0.1**
JFT				*e*S	**Sn**	**17 58 28.9**	**-2.1**
CHOJ	**Chosi**	**2.81**	**235**	P	**Pn**	**17 58 00.2**	**0.0**
CHOJ				*e*S	**Sn**	**17 58 30.7**	**-3.5**
JOM	**Ohasama**	**2.84**	**319**	P	**Pn**	**17 57 59.6**	**-1.1**
JOM				*e*S	**Sn**	**17 58 31.8**	**-3.2**
JYK	**Kaneyama**	**3.06**	**302**	P	**Pn**	**17 58 03.1**	**-0.6**
BSO1	**Boso 1**	**3.47**	**220**	P	**Pn**	**17 58 08.4**	**-0.5**
JAG	**Ashikaga**	**3.52**	**256**	P	**Pn**	**17 58 09.7**	**-0.3**
JAG				*e*S	**Sn**	**17 58 49.2**	**-2.5**
JRY	**Ryogami san**	**4.07**	**252**	P	**Pn**	**17 58 17.1**	**-0.5**
JRY				*e*S	**Sn**	**17 59 01.7**	**-3.7**
JOD2	**Odawara 2**	**4.26**	**242**	P	**Pn**	**17 58 19.7**	**-0.5**
MJAR	**Matsushiro Arr** 36nm,0.3s,baz=89,slow=16,SNR=351	**4.46**	**261**	**Pn**	**Pn**	**17 58 23.9**	**+0.8**
MJAR				Sn	**Sn**	**17 59 14.0**	**-1.1**
MAJO	**Matsushiro** 6.4nm,0.3s,baz=103,slow=22,SNR=3.9	**4.46**	**261**	*c i*P	**Pn**	**17 58 23.9**	**+0.9**
MAJO	**Matsushiro**	**4.46**	**261**	*e*Pn	**Pn**	**17 58 24.0**	**+0.9**
MAT	**Matsushiro**	**4.46**	**261**	P	**Pn**	**17 58 24.3**	**+1.2**
MAT				*e*S	**Sn**	**17 59 11.9**	**-3.2**
ERM	**Erimo**	**4.68**	**355**	*d i*P	**Pn**	**17 58 23.8**	**-2.2**
ERM	comp=Z,99nm,0.7s			pmax	pmax		
ERM	**Erimo**	**4.68**	**355**	*e*P	**Pn**	**17 58 24.1**	**-1.9**
JHJ	**Hachijo jima 2** comp=Z,30nm,0.3s,baz=327,slow=23,SNR=14	**5.29**	**218**	Pn	**Pn**	**17 58 32.1**	**-2.3**
JHJ				Sn	**Sn**	**17 59 28.7**	**-6.7**
ASAJ	**Asahikawa** comp=Z,80nm,0.3s,baz=19,slow=22,SNR=6.3	**6.82**	**353**	Pn	**Pn**	**17 58 54.2**	**-1.1**
ASAJ				Sn	**Sn**	**18 00 06.7**	**-6.3**
ASAJ	**Asahikawa** comp=Z,17nm,0.3s,baz=207,slow=16,SNR=187	**6.82**	**353**	*e*Pn	**Pn**	**17 58 53.7**	**-1.6**
ASAJ				Sn	**Sn**	**18 00 06.7**	**-6.3**
YUK	**Yuzh-Kuril'sk** comp=Z,10nm,0.3s,baz=143,slow=20,SNR=6.6	**6.88**	**13**	*e*P	**Pn**	**17 58 52.3**	**-3.9**
YUK				*e*S	Sn	18 00 03.4	-11
YUK	comp=Z,30nm,0.6s			pmax	pmax		
YUK	comp=N,56nm,0.3s			pmax	pmax		
YUK	comp=Z,263nm,0.3s			pmax	pmax		
YUK	comp=E,105nm,0.2s			pmax	pmax		
YUK	comp=Z,666nm,10.0s			MLR	MLR		
SHO	**Shikotan**	**6.94**	**19**	*e*P	**Pn**	**17 58 53.3**	**-3.7**
SHO				*e*S	Sn	18 00 05.4	-11
SHO	comp=Z,97nm,0.7s			pmax	pmax		
SHO	comp=E,88nm,0.5s			pmax	pmax		
SHO	comp=N,96nm,0.4s			pmax	pmax		
KUR	**Kuril'sk**	**8.48**	**20**	*e*P	**Pn**	**17 59 15.0**	**-3.2**
KUR				*e*S	Sn	18 00 43.2	-11
KUR	comp=Z,205nm,3.8s			pmax	pmax		
KUR	comp=N,13nm,0.6s			pmax	pmax		
KUR	comp=E,19nm,0.6s			pmax	pmax		
KUR	comp=Z,31nm,0.6s			pmax	pmax		
CBIJ	**Chichi jima**	**10.30**	**188**	Pn	**Pn**	**17 59 38.7**	**-4.4**
CBIJ				Sn	Sn	18 01 25.0	-14
JCJ	**Chichijima** comp=Z,7.2nm,0.3s,baz=336,slow=12,SNR=4.2	**10.30**	**188**	Pn	**Pn**	**17 59 38.7**	**-4.4**
JCJ				Sn	Sn	18 01 25.0	-14
VLA	**Vladivostok** comp=Z,15nm,0.3s,baz=286,slow=23,SNR=6.3	**10.71**	**306**	*d i*P	**Pn**	**17 59 48.6**	**0.0**
MSHR	**Mys Shultsa**	**10.95**	**302**	*c i*P	**Pn**	**17 59 52.5**	**+0.6**
USRK	**Ussuriysk Ar.** comp=Z,1.2nm,0.3s,baz=120,slow=14,SNR=29	**11.20**	**311**	Pn	**Pn**	**17 59 56.6**	**+1.2**
USRK				LR	LR	18 04 00.5	
USRK	comp=Z,633nm,20.2s,baz=120,slow=36						
JNU	**Nakatsue** comp=Z,0.4nm,0.3s,baz=59,slow=7.3,SNR=8.1	**11.29**	**252**	Pn	**Pn**	**17 59 56.9**	**+0.1**
KSRS	**Korea Array** comp=Z,0.8nm,0.3s,baz=89,slow=13,SNR=56	**12.54**	**275**	Pn	**Pn**	**18 00 16.4**	**+2.6**
KSRS				LR	LR	18 04 53.3	
KSRS	comp=Z,265nm,19.3s,baz=65,slow=36						
KSAR	**Wonju Array Be**	**12.57**	**275**	P	**Pn**	**18 00 16.4**	**+2.2**
KSAR	**Wonju Array Be**	**12.57**	**275**	Pn	**Pn**	**18 00 16.4**	**+2.2**
HABR	**Khabarovsk**	**12.79**	**333**	*e*P	**Pn**	**18 00 14.5**	**-2.6**
HABR				*e*S	**Sn**	**18 02 38.0**	**-1.4**
HABR	comp=N,5.0nm,1.3s			pmax	pmax		
HABR	comp=E,6.0nm,1.3s			pmax	pmax		
HABR	comp=Z,21nm,1.3s			pmax	pmax		
HABR	comp=Z,161nm,13.0s			MLR	MLR		
MDJ	**Mudanjiang** comp=Z,18nm,1.0s	**12.88**	**309**	*e*Pn	**Pn**	**18 00 17.9**	**-0.5**
TYV	**Tymovskoe**	**13.54**	**357**	*e*P	**Pn**	**18 00 24.0**	**-3.3**
TYV	comp=Z,6.0nm,0.6s			pmax	pmax		
KLR	**Kul'dur** comp=Z,1.7nm,0.3s,baz=133,slow=12,SNR=122	**14.70**	**328**	Pn	**Pn**	**18 00 41.2**	**-1.9**
KLR				LR	LR	18 06 14.9	
KLR	comp=Z,453nm,20.7s,baz=143,slow=37						
NKL	**Nikolayevsk**	**15.95**	**353**	*e*P	**Pn**	**18 00 57.7**	**-1.9**
NKL	comp=Z,20nm,1.0s			pmax	pmax		
DL2	**Dalian**	**17.43**	**282**	P	**Pn**	**18 01 17.2**	**-1.3**
DL2				*e*S	**Sn**	**18 04 31.5**	**-0.9**
DL2	comp=Z,72nm,0.8s			pmax	pmax		
DL2	comp=Z,240nm,4.1s			pmax	pmax		
DL2	comp=N,270nm,16.2s			LR	LR		
DL2	comp=E,460nm,16.6s			LR	LR		
DL2	comp=Z,610nm,19.9s			LR	LR		
PETK	**Petropavlovsk-** comp=Z,0.2nm,0.3s,baz=244,slow=14,SNR=5.7	**18.54**	**27**	P	**P**	**18 01 30.6**	**-1.3**
PETK	comp=Z,193nm,18.0s,baz=219,slow=45			LR	LR	18 11 16.4	
HIA	**Hailar** comp=Z,13nm,0.8s	**21.01**	**312**	*e*P	**P**	**18 01 56.9**	**-2.0**
HIA				pmax	pmax		
HIA	**Hailar** comp=Z,13nm,0.8s	**21.01**	**312**	*e*P	**P**	**18 01 56.9**	**-2.0**
TIA	**Tai'an** comp=Z,30nm,1.1s	**21.29**	**275**	‖P	**P**	**18 02 01.2**	**-0.8**
TIA				pmax	pmax		
BJI	**Beijing** comp=Z,16nm,1.2s	**21.61**	**286**	P	**P**	**18 02 04.3**	**-1.1**
BJI				pmax	pmax		
BJI	comp=Z,180nm,5.5s			pmax	pmax		
BJI	comp=N,410nm,12.4s			LR	LR		
BJI	comp=E,330nm,14.6s			LR	LR		
BJI	comp=Z,230nm,27.7s			LR	LR		
CLNS	**Chul'man** comp=Z,21nm,0.9s	**23.18**	**333**	*e*P	**P**	**18 02 23.1**	**+1.1**
CLNS				pmax	pmax		
CLNS	comp=E,35nm,1.0s			pmax	pmax		
CLNS	comp=N,34nm,1.0s			pmax	pmax		
SSLB	**Suanglung** comp=N,14nm,0.9s	**23.71**	**242**	*e*P	**P**	**18 02 26.8**	**-0.7**
WHN	**Wuhan**	**25.20**	**263**	*e*P	**P**	**18 02 43.4**	**+2.3**
CIT	**Chita**	**25.74**	**314**	*e*P	**P**	**18 02 46.7**	**+0.8**
CIT				*e*		18 03 01.0	
CIT				*e*		18 03 19.8	
CIT	comp=Z,64nm,1.3s			pmax	pmax		
SEY	**Seymchan** comp=Z,4.2nm,0.4s,baz=121,slow=1.5,SNR=12	**26.17**	**9**	P	**P**	**18 02 50.5**	**+0.9**
SEY	**Seymchan** comp=Z,3.0nm,0.3s	**26.17**	**9**	P	**P**	**18 02 50.5**	**+0.9**
SEY				pmax	pmax		
YAK	**Yakutsk** comp=Z,25nm,0.8s,baz=254,slow=1.1,SNR=26	**26.20**	**345**	P	**P**	**18 02 49.5**	**-0.4**
YAK	**Yakutsk**	**26.20**	**345**	*e**PP	**sP**	**18 02 54.8**	**+0.8**
YAK				*e*		18 03 29.3	
YAK				*e*PPP	PPP	18 03 37.1	
YAK				*e*SS	SS	18 08 20.3	
YAK				*e*		18 13 44.0	
YAK	comp=E,4.0nm,1.3s			pmax	pmax		
YAK	comp=N,8.0nm,1.0s			pmax	pmax		
YAK	comp=Z,23nm,0.8s			pmax	pmax		
YAK	comp=Z,41nm,1.6s			pmax	pmax		
YAK	comp=Z,218nm,12.0s			MLR	MLR		
H11N2	**WAKE ISLAND Hy** baz=316,slow=76,SNR=9.2	**26.78**	**125**	T	T	18 30 59.3	
H11N1	**WAKE ISLAND Hy** baz=316,slow=76,SNR=5.9	**26.79**	**125**	T	T	18 31 00.6	
H11N3	**WAKE ISLAND Hy** baz=316,slow=76,SNR=5.7	**26.80**	**125**	T	T	18 31 01.9	
H11S1	**WAKE ISLAND Hy** baz=318,slow=76,SNR=4.5	**27.54**	**127**	T	T	18 31 58.5	
H11S3	**WAKE ISLAND Hy** baz=318,slow=76,SNR=4.8	**27.54**	**127**	T	T	18 31 59.7	
H11S2	**WAKE ISLAND Hy** baz=318,slow=76,SNR=4.8	**27.56**	**127**	T	T	18 31 59.4	
BOD	**Bodaibo**	**28.27**	**326**	*e*P	**P**	**18 03 08.3**	**-0.1**
BOD	comp=Z,19nm,1.2s			pmax	pmax		
XAN	**Xi'an**	**28.34**	**274**	P	**P**	**18 03 11.7**	**+2.3**
XAN				sP	sP	18 03 23.5	+10
XAN	comp=Z,18nm,0.8s			pmax	pmax		
XAN	comp=Z,110nm,5.8s			pmax	pmax		
ULN	**Ulaanbaatar**	**28.70**	**303**	*c i*P	**P**	**18 03 13.6**	**+1.0**
ULN	comp=Z,16nm,1.2s			pmax	pmax		
ULN	**Ulaanbaatar** comp=Z,9.5nm,0.8s	**28.70**	**303**	*e*P	**P**	**18 03 13.6**	**+1.0**
SONM	**Songino Array** comp=Z,5.5nm,0.7s,baz=101,slow=8.4,SNR=22	**29.13**	**303**	P	**P**	**18 03 16.2**	**-0.2**
ENH	**Enshi** comp=Z,15nm,0.8s	**29.17**	**266**	*e*P	**P**	**18 03 19.3**	**+2.4**
TLY	**Talaya**	**31.51**	**310**	*e*P	**P**	**18 03 41.0**	**+3.7**
TLY	comp=Z,9.0nm,0.9s			pmax	pmax		
TLY	comp=Z,328nm,15.0s			MLR	MLR		
ZAK	**Zakamensk**	**31.52**	**307**	*e*P	**P**	**18 03 37.6**	**+0.1**
ZAK	comp=Z,9.0nm,1.2s			pmax	pmax		
BILL	**Bilibino**	**33.23**	**15**	*e*P	**P**	**18 03 51.4**	**-0.8**
BILL				*i*		18 04 03.2	
BILL				*i*		18 06 42.4	
BILL	comp=Z,8.0nm,1.1s			pmax	pmax		
BILL	**Bilibino** comp=Z,13nm,1.0s	**33.23**	**15**	*e*P	**P**	**18 03 52.0**	**-0.2**
GTA	**Gaotai**	**34.21**	**287**	*e*P	**P**	**18 04 03.4**	**+2.2**
GTA				pP	sP	18 04 12.5	+7.2
GTA				sP	pP	18 04 17.3	+13
GTA				S	S	18 08 55.6	-32
GTA	comp=Z,9.0nm,0.8s			pmax	pmax		
GTA	comp=Z,110nm,5.7s			pmax	pmax		
GTA	comp=N,170nm,19.5s			LR	LR		
GTA	comp=E,280nm,21.6s			LR	LR		
GTA	comp=Z,340nm,19.7s			LR	LR		
TIXI	**Tiksi** comp=Z,2.5nm,0.9s,baz=137,slow=5.1,SNR=7.5	**35.22**	**352**	P	**P**	**18 04 09.0**	**-0.3**
TIXI	**Tiksi** comp=Z,6.0nm,2.5s	**35.22**	**352**	*i* P	**P**	**18 04 08.9**	**-0.4**
TIXI				pmax	pmax		
KRAR	**Krasnoyarsk** comp=Z,3.0nm,0.8s	**38.51**	**316**	*e*P	**P**	**18 04 36.0**	**-1.5**
KRAR				pmax	pmax		
ZALV	**Zalesovo Beam** comp=Z,4.8nm,0.8s,baz=90,slow=7.4,SNR=20	**43.05**	**312**	P	**P**	**18 05 15.6**	**+0.6**
ZALV				PcP	**PcP**	**18 07 05.1**	**+0.2**
CMAR	**Chiang Mai Arr** comp=Z,2.7nm,0.7s,baz=44,slow=6.9,SNR=30	**43.34**	**257**	P	**P**	**18 05 19.4**	**+1.7**
NRIK	**Noril'sk** comp=Z,2.6nm,0.5s,baz=115,slow=11,SNR=3.0	**43.76**	**335**	P	**P**	**18 05 21.2**	**+0.7**
NVS	**Novosibirsk**	**43.94**	**314**	*e*P	**P**	**18 05 23.4**	**+1.2**
NVS	comp=E,10.0nm,1.2s			pmax	pmax		
NVS	comp=Z,16nm,1.2s			pmax	pmax		
LSA	**Lhasa**	**43.99**	**276**	P	**P**	**18 05 28.1**	**+4.6**
LSA	comp=Z,5.0nm,1.0s			pmax	pmax		
LSA	**Lhasa**	**43.99**	**276**	*e*P	**P**	**18 05 23.5**	**0.0**
LSA	comp=Z,8.0nm,0.9s			pmax	pmax		
LSA	**Lhasa** comp=Z,7.8nm,0.9s	**43.99**	**276**	*e*P	**P**	**18 05 23.5**	**0.0**
MKAR	**Makanchi Array** comp=Z,4.5nm,0.8s,baz=87,slow=9.4,SNR=36	**45.49**	**302**	P	**P**	**18 05 35.1**	**+0.4**
MKAR	**Makanchi Array** comp=Z,5.0nm,0.8s	**45.49**	**302**	*i* P	**P**	**18 05 36.0**	**+1.3**
MKAR				pmax	pmax		
KDAK	**Kodiak Island** comp=Z,16nm,0.6s,baz=258,slow=5.9,SNR=18	**45.65**	**42**	P	P	18 05 51.0	+15
KDAK	**Kodiak Island**	**45.65**	**42**	*i* P	**P**	**18 05 35.0**	**-0.7**
PPLA	**Purkeypile** comp=Z,19nm,1.1s	**45.87**	**35**	*e*P	**P**	**18 05 39.3**	**+1.7**
BPAW	**Bear Paw Mtn.** comp=Z,0.8nm,0.8s	**46.47**	**33**	*e*P	**P**	**18 05 43.2**	**+1.1**
KTH	**Kantishna Hill** comp=Z,28nm,1.3s	**46.47**	**34**	*e*P	**P**	**18 05 43.3**	**+1.0**
PMG	**Port Moresby** comp=Z,56nm,1.0s	**46.62**	**175**	*e*P	**P**	**18 05 43.5**	**-0.2**
PMG				pmax	pmax		
KURK	**Kurchatov**	**47.17**	**308**	P	**P**	**18 05 48.6**	**+0.8**
KURK				pmax	pmax		

comp=Z,8.0nm,0.7s
KURK Kurchatov 47.17 308 *e*P **P 18 05 47.9 +0.1**
comp=Z,55nm,0.9s
KURBB Kurchatov Arra 47.24 308 P **P 18 05 48.6 +0.2**
comp=Z,8.1nm,0.7s,baz=83,slow=8.1,SNR=72
COLA College 47.84 32*c i*P **P 18 05 53.0 +0.2**
COLA pmax pmax
comp=Z,6.0nm,0.8s
ILAR Eielson Array 48.26 33 P **P 18 05 56.1 +0.1**
comp=Z,8.1nm,0.7s,baz=260,slow=5.9,SNR=80
DIV Divide 48.93 37 *e*P **P 18 06 02.5 +1.1**
comp=Z,5.7nm,0.8s
KKN Kakani 49.46 277 *e*P **P 18 06 06.4 +0.3**
comp=Z,20nm,0.7s
PKIN Phulchoki 49.46 276 *e*P **P 18 06 05.8 -0.3**
comp=Z,9.5nm,0.6s
GKN Gorkha 49.87 277 *e*P **P 18 06 09.8 +0.7**
comp=Z,42nm,0.9s
KOLN Koldanda 50.80 278 *e*P **P 18 06 17.2 +1.0**
PYUN Piuthan 51.13 278 *e*P **P 18 06 20.0 +1.3**
comp=Z,27nm,0.6s
BRVK Borovoye 51.76 313 *i*P **P 18 06 23.6 +0.8**
BRVK pmax pmax
comp=Z,12nm,2.5s
FRU Bishkek 51.79 299 *e*P **P 18 06 26.0 +2.8**
AAK Ala-Archa 51.94 299 *e*P **P 18 06 24.4 -0.1**
AAK pmax pmax
comp=Z,5.0nm,0.9s
INK Inuvik 53.28 27 P **P 18 06 34.5 +0.7**
comp=Z,7.0nm,0.5s,baz=290,slow=6.2,SNR=49
INK Inuvik 53.28 27 *e*P **P 18 06 34.3 +0.5**
comp=Z,8.3nm,0.6s
KKAR Karatay Array 54.54 301 *e*P **P 18 06 44.6 +1.1**
KKAR pmax pmax
comp=Z,9.0nm,1.0s
KKAR Karatay Array 54.54 301 *e*P **P 18 06 44.6 +1.1**
comp=Z,9.4nm,1.0s
SVE Sverdlovsk 56.11 319 *e*P **P 18 06 55.2 +0.6**
SVE pmax pmax
comp=Z,22nm,1.3s
DLBC Dease Lake 57.26 39 P **P 18 07 04.2 +1.5**
comp=Z,2.1nm,0.5s,baz=278,slow=3.4,SNR=7.2
ARU Arti 57.33 319*c i*P **P 18 07 03.7 +0.5**
ARU 18 07 54.0
ARU 18 09 10.8
ARU S **S 18 15 03.4 +4.0**
ARU SS **SS 18 18 43.6 -4.5**
ARU pmax pmax
comp=Z,17nm,1.7s
ARU Arti 57.33 319 *e*P **P 18 07 03.2 0.0**
comp=Z,19nm,1.2s
WRAB Tennant Creek 57.65 190 *i*P **P 18 07 04.7 -1.0**
WRAB pmax pmax
comp=Z,139nm,2.5s
WRA Warramunga Arr 57.66 190 P **P 18 07 04.7 -1.2**
comp=Z,12nm,0.6s,baz=11,slow=7.4,SNR=112
WRA PcP **PcP 18 07 58.1 -0.7**
comp=Z,3.7nm,0.8s,baz=1.1,slow=4.1,SNR=5.9
ABKAR Akbulak array 59.12 311 *e*P **P 18 07 16.2 +0.4**
comp=Z,2.9nm,0.6s
ASAR Alice Springs 61.38 190 P **P 18 07 30.6 -0.9**
comp=Z,7.0nm,0.7s,baz=16,slow=8.6,SNR=68
RES Resolute Bay 61.84 15 P **P 18 07 34.1 +0.1**
comp=Z,3.0nm,0.6s,baz=328,slow=7.3,SNR=14
YKA Yellowknife Ar 62.62 31 P **P 18 07 39.0 -0.4**
comp=Z,1.5nm,0.8s,baz=302,slow=6.7,SNR=16
ARCES ARCESS Array B 64.34 340 P **P 18 07 51.5 +0.7**
comp=Z,4.2nm,1.0s,baz=51,slow=5.9,SNR=3.8
GEYT Alibek 65.27 300 P **P 18 07 58.4 +1.0**
comp=Z,3.3nm,0.9s,baz=26,slow=3.8,SNR=7.2
DAG Danmarks Havn 65.61 356 *i*P **P 18 07 59.2 +0.3**
DAG Danmarks Havn 65.61 356 *e*P **P 18 07 59.2 +0.3**
VRH Novokhopyorsk 68.56 319 *e*P **P 18 08 16.8 -1.2**
VRH pmax pmax
comp=Z,6.0nm,0.8s
STKA Stephens Creek 68.89 182 P **P 18 08 19.7 -0.4**
comp=Z,2.3nm,0.7s,baz=324,slow=6.6,SNR=4.0
OBN Obninsk 68.93 324 *i*P **P 18 08 19.4 -0.8**
OBN pmax pmax
comp=Z,3.0nm,0.8s
LPSR Galich'ya Gora 69.22 321 *e*P **P 18 08 21.3 -0.7**
LPSR pmax pmax
comp=Z,6.0nm,0.9s
FINES FINESS Array B 69.38 333 P **P 18 08 23.0 +0.1**
comp=Z,4.2nm,0.8s,baz=46,slow=8.2,SNR=13
FINES FINESS Array B 69.38 333 P **P 18 08 23.0 +0.1**
FINES pmax pmax
comp=Z,3.0nm,0.7s
VSR Storozhevoye 69.89 320 *e*P **P 18 08 24.7 -1.5**
VSR pmax pmax
comp=Z,10.0nm,1.4s
SUMG Summit 70.37 1 *i*P **P 18 08 30.0 +0.8**
comp=Z,3.9nm,0.6s
SUMG Summit 70.37 1 *e*P **P 18 08 30.1 +0.8**
SUMG pmax pmax
comp=Z,3.0nm,0.8s
SUMG Summit 70.37 1 *e*P **P 18 08 30.1 +0.8**
comp=Z,3.4nm,0.8s
VSU Vasula 71.10 330 *i*P **P 18 08 33.1 -0.3**
VSU pmax pmax
comp=Z,56nm,2.5s
ZEI Tsey 72.00 310 *e*P **P 18 08 38.7 -0.8**
ZEI pmax pmax
comp=Z,7.0nm,0.8s
KIV Kislovodsk 72.07 312 *e*P **P 18 08 39.7 0.0**
KIV pmax pmax
comp=Z,13nm,0.9s
KIV MLR MLR
comp=Z,209nm,18.0s
KIV Kislovodsk 72.07 312 *e*P **P 18 08 42.3 +2.6**
comp=Z,4.4nm,0.7s
KBZ Khabaz 72.07 312 P **P 18 08 41.4 +1.8**
comp=Z,4.4nm,0.8s,baz=31,slow=4.6,SNR=15
GNI Garni 72.97 308 *e*P **P 18 08 44.9 -0.4**
GNI pmax pmax
comp=Z,17nm,1.5s
NVAR Mina Array Bea 73.34 54 P **P 18 08 48.0 +0.4**
comp=Z,2.1nm,0.9s,baz=286,slow=6.6,SNR=12
NB2 NORSAR Subarra 74.59 338 P **P 18 08 55.2 +1.0**
comp=Z,6.9nm,1.1s,baz=38,slow=6.2
NOA NORSAR Array B 74.59 338 P **P 18 08 54.5 +0.3**
comp=Z,1.5nm,0.7s,baz=39,slow=5.9,SNR=7.4
AKASG Malin Array Be 75.15 323 P **P 18 08 58.0 +0.4**
comp=Z,0.6nm,0.4s,baz=40,slow=5.7,SNR=8.0
AKASG Malin Array Be 75.15 323 P **P 18 08 58.0 +0.4**
AKASG pmax pmax
comp=Z,1.0nm,0.4s
KIEV Kiev 75.16 323 *e*P **P 18 08 57.9 +0.3**
KIEV pmax pmax
comp=Z,5.0nm,1.0s
DUG Dugway, Tooele 75.77 50 *e*P **P 18 09 02.5 +1.0**
DUG pmax pmax
comp=Z,5.0nm,1.3s
DUG Dugway, Tooele 75.77 50 *e*P **P 18 09 02.5 +1.0**
comp=Z,4.6nm,1.3s
PDAR Pinedale Array 76.14 47 P **P 18 09 03.9 +0.1**
comp=Z,0.9nm,0.7s,baz=258,slow=1.6,SNR=10
LVV L'vov 78.19 325 *e*P P 18 09 08.2 -6.6
KWP Kalwaria Pacla 78.92 325 *e*P **P 18 09 20.9 +2.0**
KWP Kalwaria Pacla 78.92 325 *e*P **P 18 09 20.9 +2.0**
KOLS Kolonicke sedl 79.62 325 *e*P **P 18 09 24.1 +1.3**
KOLS pmax pmax
comp=Z,10.0nm,1.7s
KOLS Kolonicke sedl 79.62 325 *e*P **P 18 09 24.0 +1.3**
STHS Stebnicka Huta 79.74 326 *e*P **P 18 09 25.7 +2.4**
STHS pmax pmax
comp=Z,3.0nm,1.2s
STHS Stebnicka Huta 79.74 326 *e*P **P 18 09 25.7 +2.4**
OJC Ojcow 79.78 327 *e*P **P 18 09 25.1 +1.7**
OJC Ojcow 79.78 327 *e*P **P 18 09 25.2 +1.7**
BRTR Keskin Array B 79.99 313 P **P 18 09 25.6 +0.5**
comp=Z,0.6nm,0.8s,baz=91,slow=5.8,SNR=3.7
CRVS Cervenica-Dubn 80.02 325 *e*P **P 18 09 27.3 +2.5**
CRVS Cervenica-Dubn 80.02 325 *e*P **P 18 09 27.3 +2.5**
CRVS *e* 18 09 47.8
NIE Niedzica 80.16 326 *e*P **P 18 09 27.2 +1.6**
NIE Niedzica 80.16 326 *e*P **P 18 09 27.2 +1.6**
MLR Muntele Rosu 80.31 321 LR LR 18 47 06.1
comp=Z,51nm,18.2s,baz=104,slow=37
LANS Liptovska Anna 80.72 327 *e*P **P 18 09 32.0 +3.3**
LANS Liptovska Anna 80.72 327 *e*P **P 18 09 32.0 +3.3**
DPC Dobruska-Polom 81.15 329 *e*P **P 18 09 32.3 +1.4**
DPC *ex* x 18 09 44.7
DPC *ex* x 18 09 53.7
DPC Dobruska-Polom 81.15 329 *e*P **P 18 09 32.3 +1.4**
DPC *e* 18 09 44.7
PSZ Piszkesteto 81.45 326 *e*P **P 18 09 33.5 +0.9**
PSZ pmax pmax
comp=Z,14nm,1.3s
PSZ Piszkesteto 81.45 326 *e*P **P 18 09 33.5 +0.9**
comp=Z,14nm,1.3s
VYHS Vyhne 81.49 326 *e*P **P 18 09 33.9 +1.2**
VYHS pmax pmax
comp=Z,3.0nm,1.2s
VYHS Vyhne 81.49 326 *e*P **P 18 09 33.9 +1.2**
VYHS *e* 18 09 55.2
BRG Berggiesshubel 81.69 331 *e*P **P 18 09 34.6 +0.9**
BRG *e* 18 09 55.8
comp=Z,11nm,1.3s
BRG Berggiesshubel 81.69 331 *e*P **P 18 09 34.6 +0.9**
BRG pmax pmax
comp=Z,6.0nm,1.0s
CLL Collm 81.72 331 *i*P **P 18 09 34.5 +0.7**
comp=Z,11nm,0.9s
CLL *i* 18 09 48.4
comp=Z,9.0nm,1.0s
CLL *i* 18 09 55.5
comp=Z,11nm,1.0s
CLL *e*PP **PP 18 12 45.0 +5.1**
CLL Collm 81.72 331 *i*P **P 18 09 34.5 +0.7**
CLL pmax pmax
comp=Z,11nm,0.9s
GOPC GO Pecny, Ondr 82.11 329 *e*P **P 18 09 37.1 +1.1**
GOPC *ex* x 18 09 57.7
GOPC GO Pecny, Ondr 82.11 329 *e*P **P 18 09 37.1 +1.1**
PRU Pruhonice 82.15 330 *e*P **P 18 09 37.2 +1.0**
PRU Pruhonice 82.15 330 *e*P **P 18 09 37.2 +1.0**
ANMO Albuquerque 82.99 51 *i*P **P 18 09 40.1 -1.0**
ANMO pmax pmax
comp=Z,4.0nm,1.2s
CONA Conrad Observa 83.21 328 *i*pP **P 18 09 43.2 +1.4**
KHC Kasperske Hory 83.21 330 *e*P **P 18 09 42.8 +1.0**
KHC *ex* x 18 09 53.9
KHC *ex* x 18 10 04.0
KHC Kasperske Hory 83.21 330 *e*P **P 18 09 42.7 +1.0**
KHC pmax pmax
comp=Z,3.0nm,0.9s
KHC Kasperske Hory 83.21 330 *e*P **P 18 09 42.7 +1.0**
comp=Z,2.5nm,0.9s
MMAI Mount Meron Ar 83.26 307 LR LR 18 48 59.8
comp=Z,189nm,19.2s,baz=65,slow=37
GERES GERESS Array B 83.39 329 P **P 18 09 42.9 +0.2**
comp=Z,1.3nm,0.6s,baz=35,slow=5.4,SNR=14
ARSA Arzberg 83.88 327 PcP **P 18 09 47.1 +1.9**
comp=Z,2.5nm,0.9s
MOA Molln 83.94 328 *i*pP **P 18 09 46.8 +1.3**
comp=Z,5.5nm,1.5s
SOKA Soboth 84.53 327 *i*PcP **P 18 09 50.3 +1.7**
comp=Z,6.0nm,1.0s
KBA Koelnbreinsper 84.93 328 *i*pP **P 18 09 51.0 +0.2**
comp=Z,3.2nm,0.9s
ABTA Abfaltersbach 85.54 329 pP **P 18 09 54.5 +0.8**
comp=Z,4.4nm,1.1s
MOTA Moosalm 85.64 330 *i*PcP **P 18 09 55.8 +1.5**
comp=Z,3.1nm,0.7s
RETA Reutte 85.66 330 *i*PcP **P 18 09 55.4 +1.2**
comp=Z,10nm,1.1s
EIL Elat 85.72 304 LR LR 18 51 22.9
comp=Z,81nm,19.6s,baz=294,slow=38
BFO Black Forest 85.91 332 *e*P **P 18 09 55.9 +0.5**
BFO pmax pmax
comp=Z,11nm,0.9s
BFO Black Forest 85.91 332 *e*P **P 18 09 55.9 +0.5**
comp=Z,11nm,0.9s
FETA Feichten 86.05 330 *i*PcP **P 18 09 57.8 +1.6**
comp=Z,4.1nm,0.8s
DAVA Damuels 86.17 331 *i*PcP **P 18 09 58.0 +1.1**
comp=Z,7.0nm,0.8s
TXAR Lajitas Array 88.48 54 P **P 18 10 08.4 +0.1**
comp=Z,1.8nm,0.7s,baz=308,slow=3.1,SNR=13
TORD Torodi Ar. Bea 118.37 317 PKP **PKPdf 18 16 02.6 -1.0**
comp=Z,0.2nm,0.5s,baz=23,slow=1.3,SNR=2.5
VNA2 Neumayer--Watz 143.11 195 PKP PKPab 18 16 41.5 -2.4
baz=140,slow=3.0
VNA3 Neumayer Olymp 143.32 194 PKP PKPab 18 16 44.9 +0.2
LPAZ La Paz 144.96 62 PKP PKPbc 18 16 53.4 +0.2
comp=Z,2.0nm,0.5s,baz=342,slow=2.0,SNR=6.2
PLCA Paso Flores 153.29 108 PKPbc **PKPbc 18 17 13.1 -0.4**
comp=Z,2.1nm,0.9s,baz=242,slow=4.4,SNR=4.7
PLCA PKPab **PKPab 18 17 26.2 +0.8**
comp=Z,2.8nm,0.8s,baz=291,slow=5.3,SNR=9.2

IDC ***11*** *18:02:38.0±1.3, 37°.14N×143°.93E, h0km, mb3.7/3, mb1 3.9/7, mb1mx3.6/45, mbtmp3.8/7, ML3.2/4, Error ellipse: s-maj=30.9km s-min=25.6km az=113.0*
ISCJB ***11*** *18:02:40.6±1.0, 37°.06N±0°.10×143°.8E±0°.1, h33km, mb3.8/3, Error ellipse: s-maj=14.1km s-min=11.3km az=165.8*
ISC 11 18:02:42.9±1.3, 37°.0N±0°.1×143°.8E±0°.1, h35km, n9, σ1§20/10, mb3.8/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**4.51 266**		Pn	**Pn**	**18 03 48.2**	**-0.5**
	3.2nm,0.3s,baz=90,slow=15,SNR=14						
MAT	**Matsushiro Ar**	**4.51 266**		P	**Pn**	**18 03 48.9**	**+0.2**
MAT				S	**Sn**	**18 04 39.8**	**-0.2**
JHJ	**Hachijo jima 2**	**5.10 221**		Pn	**Pn**	**18 03 56.3**	**-0.5**
	6.0nm,0.3s,baz=49,slow=19,SNR=3.1						
JHJ				Sn	**Sn**	**18 04 53.1**	**-1.4**
	6.5nm,0.3s,baz=73,slow=19,SNR=3.5						
ASAJ	**Asahikawa**	**7.14 353**		Pn	Pn	18 04 18.6	-6.2
	1.3nm,0.3s,baz=200,slow=16,SNR=12						
ASAJ				Sn	Sn	18 05 30.6	-14
	0.3nm,0.3s,baz=183,slow=19,SNR=3.5						
USRK	**Ussuriysk Ar.**	**11.48 312**		Pn	**Pn**	**18 05 24.1**	**-0.1**
	0.3nm,0.3s,baz=101,slow=15,SNR=4.7						
KSRS	**Korea Array**	**12.66 277**		Pn	**Pn**	**18 05 41.5**	**+1.1**
	0.1nm,0.3s,baz=88,slow=14,SNR=5.7						
ILAR	**Eielson Array**	**48.48 32**		P	**P**	**18 11 20.4**	**-1.3**
	0.6nm,0.7s,baz=259,slow=7.4,SNR=5.0						
WRA	**Warramunga Arr**	**57.36 191**		P	**P**	**18 12 29.0**	**+1.4**
	0.9nm,0.6s,baz=11,slow=7.4,SNR=7.7						
ASAR	**Alice Springs**	**61.08 190**		P	**P**	**18 12 55.0**	**+1.7**
	0.5nm,0.7s,baz=4.5,slow=7.2,SNR=7.4						

NIED ***11*** *18:10:00, 37°.40N×143°.60E, h5km, Mw4.0 Best double couple: M0 1.21000×10^15 NP1:φs33.00000°, δ21.00000°, λ-89.00000°. NP2:φs212.00000°, δ69.00000°, λ-90.00000°.*
IDC ***11*** *18:10:42.5±0.7, 37°.27N×143°.79E, h0km, mb3.8/14, mb1 4.0/19, mb1mx3.8/63, mbtmp3.9/19, ML4.0/4, Error ellipse: s-maj=18.0km s-min=14.3km az=120.0*
NEIC ***11*** *18:10:43.5±0.5, 37°.26N×143°.87E, h10km, mb4.4/4, Error ellipse: s-maj=11.6km s-min=8.9km az=108.0*
ISCJB ***11*** *18:10:44.4±1.5, 37°.36N±0°.04×143°.65E±0°.04, h25km±11km, mb3.9/18, Error ellipse: s-maj=6.9km s-min=5.6km az=151.4*
JMA ***11*** *18:10:45.5±0.2, 37°.38N×143°.63E, h51km, M4.1*
ISC 11 18:10:42.8±4.1, 37°.29N±0°.05×143°.72E±0°.07, h5km±26km, n46, σ1§92/56, mb4.0/18, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.21 303**		P	**Pn**	**18 11 19.5**	**-0.6**
JIO				*e*S	**Sn**	**18 11 44.0**	**-3.8**
JFK	**Kawauchi**	**2.27 273**		P	**Pn**	**18 11 20.6**	**-0.4**
JFK				S	**Sn**	**18 11 46.2**	**-3.2**
ONAJ	**Iwakimizuishiy**	**2.34 266**		P	**Pn**	**18 11 21.9**	**-0.1**
ONAJ				S	**Sn**	**18 11 48.3**	**-2.9**
JMK	**Ichinoseki**	**2.58 311**		P	**Pn**	**18 11 24.4**	**-0.8**
JMK				*e*S	**Sn**	**18 11 53.5**	**-3.4**
JFT	**Otama**	**2.71 276**		P	**Pn**	**18 11 27.4**	**+0.4**
JFT				S	**Sn**	**18 11 57.9**	**-2.2**
JOM	**Ohasama**	**2.90 320**		P	**Pn**	**18 11 28.9**	**-0.7**
JOM				S	**Sn**	**18 12 01.2**	**-3.6**
JYK	**Kaneyama**	**3.11 303**		P	**Pn**	**18 11 32.5**	**-0.1**
BSO1	**Boso 1**	**3.44 221**		P	**Pn**	**18 11 37.2**	**+0.6**
JANG	**Nango**	**3.53 331**		P	**Pn**	**18 11 37.5**	**-0.8**
JAG	**Ashikaga**	**3.53 257**		P	**Pn**	**18 11 38.8**	**+0.5**
JAG				S	**Sn**	**18 12 17.7**	**-2.7**
JRY	**Ryogami san**	**4.08 253**		P	**Pn**	**18 11 46.3**	**+0.4**
JOD2	**Odawara 2**	**4.25 243**		P	**Pn**	**18 11 48.6**	**+0.3**
MJAR	**Matsushiro Arr**	**4.48 262**		Pn	**Pn**	**18 11 53.1**	**+1.7**
	9.9nm,0.3s,baz=89,slow=15,SNR=50						
MJAR				Sn	**Sn**	**18 12 42.5**	**-1.4**
	3.0nm,0.3s,baz=46,slow=18,SNR=6.3						
MAJO	**Matsushiro**	**4.48 262**		*e*P	**Pn**	**18 11 53.4**	**+2.0**
MAT	**Matsushiro**	**4.48 262**		P	**Pn**	**18 11 53.7**	**+2.3**
MAT				S	**Sn**	**18 12 44.4**	**+0.5**
JOT	**Ohata**	**4.58 334**		P	**Pn**	**18 11 52.4**	**-0.3**
ERM	**Erimo**	**4.74 355**		*e*P	**Pn**	**18 11 53.0**	**-1.9**
JHJ	**Hachijo jima 2**	**5.26 219**		Pn	**Pn**	**18 12 01.1**	**-1.0**
	23nm,0.3s,baz=122,slow=22,SNR=9.2						
JHJ				Sn	**Sn**	**18 12 57.2**	**-5.9**
	27nm,0.3s,baz=73,slow=19,SNR=7.4						
ASAJ	**Asahikawa**	**6.88 353**		Pn	**Pn**	**18 12 22.9**	**-1.3**
	4.6nm,0.3s,baz=204,slow=15,SNR=68						
ASAJ				Sn	Sn	18 13 33.4	-9.4
	1.1nm,0.3s,baz=258,slow=20,SNR=2.7						
CBIJ	**Chichi jima**	**10.25 188**		Pn	**Pn**	**18 13 07.7**	**-2.8**
CBIJ				Sn	Sn	18 14 54.1	-12
JCJ	**Chichijima**	**10.25 188**		Pn	**Pn**	**18 13 07.7**	**-2.8**
	baz=270,slow=20						
JCJ				Sn	Sn	18 14 54.1	-12
	baz=288,slow=20						
USRK	**Ussuriysk Ar.**	**11.26 311**		Pn	**Pn**	**18 13 23.3**	**-1.0**
	0.2nm,0.3s,baz=116,slow=15,SNR=3.5						
KSRS	**Korea Array**	**12.57 276**		Pn	**Pn**	**18 13 45.4**	**+3.0**
	0.2nm,0.3s,baz=90,slow=14,SNR=9.6						
KSAR	**Wonju Array Be**	**12.61 275**		Pn	**Pn**	**18 13 45.4**	**+2.6**
KLR	**Kul'dur**	**14.76 328**		Pn	**Pn**	**18 14 10.3**	**-1.8**
	0.3nm,0.3s,baz=129,slow=12,SNR=24						
YAK	**Yakutsk**	**26.26 345**		P	**P**	**18 16 18.9**	**+0.3**
	4.2nm,0.6s,baz=186,slow=2.6,SNR=3.5						
SONM	**Songino Array**	**29.18 303**		P	**P**	**18 16 47.2**	**+2.0**
	0.4nm,0.3s,baz=104,slow=6.1,SNR=3.0						
TIXI	**Tiksi**	**35.28 352**		P	**P**	**18 17 37.9**	**-0.2**
	0.5nm,0.3s,baz=222,slow=5.4,SNR=3.7						
ZALV	**Zalesovo Beam**	**43.11 312**		P	**P**	**18 18 45.0**	**+1.2**
	0.4nm,0.4s,baz=86,slow=8.1,SNR=2.6						
CMAR	**Chiang Mai Arr**	**43.35 257**		P	**P**	**18 18 47.2**	**+1.1**
	0.4nm,0.6s,baz=51,slow=7.1						
MKAR	**Makanchi Array**	**45.55 302**		P	**P**	**18 19 04.0**	**+0.6**
	0.3nm,0.4s,baz=87,slow=9.5,SNR=5.5						
KURK	**Kurchatov**	**47.23 308**		*e*P	**P**	**18 19 17.6**	**+1.1**
	11nm,0.8s						
ILAR	**Eielson Array**	**48.29 33**		P	**P**	**18 19 25.2**	**+0.6**
	0.9nm,0.6s,baz=261,slow=5.7,SNR=9.2						
TKM2	**Tokmak 2**	**51.13 299**		*e*P	**P**	**18 19 49.9**	**+3.1**
	2.1nm,0.6s						
BRVK	**Borovoye**	**51.82 313**		P	**P**	**18 19 51.4**	**-0.1**
INK	**Inuvik**	**53.32 27**		P	**P**	**18 20 03.2**	**+0.9**
	1.2nm,0.5s,baz=300,slow=6.1,SNR=12						
WRAB	**Tennant Creek**	**57.60 190**		*e*P	**P**	**18 20 33.6**	**0.0**
	2.8nm,0.7s						
WRA	**Warramunga Arr**	**57.61 190**		P	**P**	**18 20 33.7**	**0.0**
	3.1nm,0.6s,baz=8.6,slow=7.4,SNR=37						
ABKAR	**Akbulak array**	**59.18 311**		*e*P	**P**	**18 20 44.9**	**+0.4**
	0.5nm,0.4s						
ASAR	**Alice Springs**	**61.33 190**		P	**P**	**18 20 59.8**	**+0.3**
	2.1nm,0.8s,baz=4.7,slow=7.0,SNR=24						
MBWA	**Marble Bar**	**62.38 205**		*e*P	**P**	**18 21 06.8**	**+0.3**
YKA	**Yellowknife Ar**	**62.65 31**		P	**P**	**18 21 07.4**	**-0.5**
	0.3nm,0.6s,baz=302,slow=5.8,SNR=3.6						
FINES	**FINESS Array B**	**69.44 333**		P	**P**	**18 21 52.2**	**+0.7**
	0.9nm,0.7s,baz=61,slow=11,SNR=2.9						
NVAR	**Mina Array Bea**	**73.35 54**		P	**P**	**18 22 18.0**	**+2.1**
	0.1nm,0.3s,baz=281,slow=6.3,SNR=3.0						
PDAR	**Pinedale Array**	**76.16 47**		P	**P**	**18 22 31.9**	**-0.3**
	0.1nm,0.4s,baz=302,slow=2.3,SNR=3.3						
QSPA	**South Pole Qui**	**127.03 180**		*e*PKPdf	**PKPdf**	**18 29 45.9**	**-1.1**

NIED ***11*** *18:14:00, 36°.10N×142°.40E, h5km, Mw5.3 Best double couple: M0 8.59000×10^16 NP1:φs191.00000°, δ45.00000°, λ66.00000°. NP2:φs44.00000°, δ50.00000°, λ113.00000°.*
IDC ***11*** *18:14:29.5±0.4, 36°.10N×142°.32E, h0km, mb4.9/47, mb1 4.9/53, mb1mx4.8/69, mbtmp4.9/53, ML4.3/5, MS4.9/43, Ms1 4.9/43, ms1mx4.7/69, Error ellipse: s-maj=10.9km s-min=9.6km az=93.0*
ISCJB ***11*** *18:14:30.6±0.8, 36°.10N±0°.02×142°.30E±0°.02, h11km±4km, mb5.0/291, MS5.3/75, Error ellipse: s-maj=3.5km s-min=2.3km az=173.6*
JMA ***11*** *18:14:31.6±0.2, 36°.09N×142°.44E, h65km, M5.4*
GCMT ***11*** *18:14:31.9±0.1, 36°.03N×142°.65E, h12km, MW5.2/110, Moment Tensor Solution. s76,c125; s110,c216; Duration: 1§0 Moment tensor: Scale 10^17Nm; Mrr0.74±.01; Mθθ-0.26±.01; Mφφ-0.48±.01; Mrθ0.14±.03; Mrφ-0.40±.01; Mθφ0.47±.03; Best double couple: M0 0.90400×10^17 NP1:φs26.00000°, δ61.00000°, λ79.00000°. NP2:φs229.00000°, δ31.00000°, λ110.00000°. Principal axes: T 0.8970, Plg71.0000°, Azm270.0000°; N 0.0150, Plg10.0000°, Azm31.0000°; P -0.9110, Plg16.0000°, Azm124.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
NEIC ***11*** *18:14:31.9±0.1, 36°.10N×142°.27E, h10km, mb5.2/172 Error ellipse: s-maj=3.9km s-min=2.7km az=154.0*
BJI ***11*** *18:14:35.3, 36°.13N×141°.90E, h36km, mb5.1/74, mB5.5/72, Ms5.7/89, Ms7 5.4/84*
MOS ***11*** *18:14:35.3±0.9, 36°.53N×142°.27E, h32km, mb5.3/121, MS5.3/32, Error ellipse: s-maj=6.6km s-min=4.0km az=113.1*
ISC 11 18:14:34.0±0.3, 36°.12N±0°.03×142°.32E±0°.03, h28km±1km, h27km:pP-P, n881, σ1§73/1003, mb5.1/295, MS5.3/77, 32C-30D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.26 251**		⇑P	**Pn**	**18 14 54.8**	**-0.9**
CHOJ				*e*S	**Sn**	**18 15 11.7**	**0.0**
JHO	**Hitachi**	**1.50 290**		P	**Pn**	**18 14 58.0**	**-1.0**
JHO				*e*S	**Sn**	**18 15 18.0**	**+0.4**
ONAJ	**Iwakimizuishiy**	**1.57 309**		⇑P	**Pn**	**18 14 59.0**	**-1.1**
ONAJ				*e*S	**Sn**	**18 15 19.8**	**+0.3**
JFK	**Kawauchi**	**1.71 317**		⇑P	**Pn**	**18 15 00.6**	**-1.3**
JFK				*e*S	**Sn**	**18 15 22.4**	**-0.4**
BSO1	**Boso 1**	**1.83 217**		P	**Pn**	**18 15 02.0**	**-1.0**
BSO3	**Boso 3**	**1.98 229**		P	**Pn**	**18 15 04.5**	**-0.9**
JFT	**Otama**	**2.12 312**		⇑P	**Pn**	**18 15 07.7**	**+0.1**
JFT				*e*S	**Sb**	**18 15 35.2**	**-2.4**
JAG	**Ashikaga**	**2.34 278**		⇑P	**Pn**	**18 15 09.7**	**-0.9**
JAG				*e*S	**Sn**	**18 15 39.2**	**+0.8**
JOD2	**Odawara 2**	**2.77 253**		P	**Pn**	**18 15 15.7**	**-0.8**
JRY	**Ryogami san**	**2.77 269**		P	**Pn**	**18 15 15.9**	**-0.7**
JMK	**Ichinoseki**	**2.96 343**		P	**Pn**	**18 15 17.8**	**-1.3**
JYN	**Shimob**	**3.13 260**		P	**Pn**	**18 15 21.2**	**-0.4**
JYK	**Kaneyama**	**3.20 331**		P	**Pn**	**18 15 21.7**	**-0.7**
MJAR	**Matsushiro Arr**	**3.35 278**		Pn	**Pn**	**18 15 24.6**	**+0.1**
	23nm,0.3s,baz=97,slow=8.1,SNR=80						
MJAR				LR	LR	18 17 04.5	
	comp=Z,22μm,18.0s,baz=115,slow=47						
MAJO	**Matsushiro**	**3.35 278**		*c i*P	**Pn**	**18 15 24.9**	**+0.4**
MAJO	**Matsushiro**	**3.35 278**		*e*Pn	**Pn**	**18 15 25.2**	**+0.7**
MAT	**Matsushiro**	**3.35 278**		P	**Pn**	**18 15 25.2**	**+0.7**
MAT				S	**Sn**	**18 16 07.6**	**+4.2**
MAT	**Matsushiro**	**3.35 278**		P	**Pn**	**18 15 25.1**	**+0.6**
MJB9	**Matsu-Tunnel**	**3.35 279**		*e*Pn	**Pn**	**18 15 25.2**	**+0.7**
JOM	**Ohasama**	**3.45 347**		P	**Pn**	**18 15 24.2**	**-1.6**
JHJ2	**Mitsune**	**3.64 215**		P	**Pn**	**18 15 27.1**	**-1.4**
JHJ2	**Mitsune**	**3.64 215**		*e*Pn	**Pn**	**18 15 26.5**	**-2.0**
JHJ	**Hachijo jima 2**	**3.65 216**		Pn	**Pn**	**18 15 27.0**	**-1.6**
	138nm,0.3s,baz=34,slow=19,SNR=24						
JHJ				Sn	**Sn**	**18 16 07.0**	**-3.8**
	249nm,0.3s,baz=107,slow=19,SNR=5.2						
JSD	**Sado**	**3.77 302**		P	**Pn**	**18 15 30.4**	**+0.2**
INU	**Inuyama**	**4.38 261**		*e*Pn	**Pn**	**18 15 39.2**	**+0.5**
ERM	**Erimo**	**5.92 6**		*i*P	**Pn**	**18 15 56.2**	**-3.6**
ERM				pmax	pmax		
	comp=Z,142nm,0.6s						
ERM	**Erimo**	**5.92 6**		*e*Pn	**Pn**	**18 15 56.5**	**-3.3**
ASAJ	**Asahikawa**	**7.99 1**		Pn	**

YUK				MLR	MLR	
	comp=Z,10μm,17.0s					
YUK				MLR	MLR	
	comp=N,7μm,12.0s					
SHO	**Shikotan**	**8.48**	**23**	*i* P	**Pn**	**18 16 30.3 -4.5**
SHO				*i* S	**Sn**	**18 18 01.3 -8.2**
SHO				pmax	pmax	
	comp=E,56nm,0.8s					
SHO				pmax	pmax	
	comp=Z,137nm,0.8s					
SHO				pmax	pmax	
	comp=N,77nm,1.0s					
CBIJ	**Chichi jima**	**9.00**	**181**	*e*Pn	Pn	18 16 36.7 -5.3
CBIJ				Sn	Sn	18 18 09.9 -12
JCJ	**Chichijima**	**9.00**	**181**	Pn	**Pn**	**18 16 37.2 -4.8**
	comp=N,44nm,0.3s,baz=264,slow=23,SNR=19					
JCJ				Sn	Sn	18 18 09.9 -12
	comp=N,60nm,0.3s,baz=86,slow=22,SNR=7.3					
JNU	**Nakatsue**	**9.89**	**256**	Pn	**Pn**	**18 16 55.1 +0.7**
	comp=N,1.3nm,0.3s,baz=54,slow=9.2,SNR=14					
JNU				LR	LR	18 21 17.2
	comp=N,13μm,20.2s,baz=86,slow=41					
JNU	**Nakatsue**	**9.89**	**256**	*e*Pn	**Pn**	**18 16 55.4 +1.1**
KUR	**Kuril'sk**	**10.03**	**23**	*i* P	**Pn**	**18 16 53.1 -2.9**
KUR				*i* S	**Sn**	**18 18 41.4 -6.1**
KUR				pmax	pmax	
	comp=Z,41nm,0.6s					
KUR				pmax	pmax	
	comp=N,17nm,0.5s					
KUR				pmax	pmax	
	comp=E,14nm,0.3s					
KUR				MLR	MLR	
	comp=Z,8μm,11.0s					
KUR				MLR	MLR	
	comp=E,16μm,12.0s					
KUR				MLR	MLR	
	comp=N,8μm,14.0s					
VLA	**Vladivostok**	**10.66**	**314***c*	*i*P	**Pn**	**18 17 05.1 +0.4**
MSHR	**Mys Shultsa**	**10.78**	**310***c*	*i*P	**Pn**	**18 17 07.1 +0.7**
YSS	**Yuzh-Sakhalins**	**10.83**	**2⇑**	*e*P	**Pn**	**18 17 06.2 -0.8**
YSS				*e*S	**Sn**	**18 19 03.5 -3.7**
YSS				pmax	pmax	
	comp=Z,100nm,0.8s					
YSS				MLR	MLR	
	comp=N,14μm,12.0s					
YSS				MLR	MLR	
	comp=Z,14μm,12.0s					
YSS				MLR	MLR	
	comp=E,10μm,13.0s					
USRK	**Ussuriysk Ar.**	**11.29**	**319**	Pn	**Pn**	**18 17 13.9 +0.5**
	comp=E,0.8nm,0.3s,baz=125,slow=12,SNR=27					
USRK				LR	LR	18 21 24.5
	comp=E,11μm,19.6s,baz=126,slow=37					
KSRS	**Korea Array**	**11.63**	**281**	Pn	**Pn**	**18 17 20.1 +2.2**
	comp=E,0.6nm,0.3s,baz=101,slow=13,SNR=59					
KSRS				LR	LR	18 21 40.3
	comp=E,3μm,19.5s,baz=69,slow=37					
KS01	**Wonju Array Si**	**11.65**	**281**	*e*Pn	**Pn**	**18 17 20.4 +2.1**
KS15	**Wonju Array Si**	**11.66**	**281**	*e*Pn	**Pn**	**18 17 21.4 +3.0**
KSAR	**Wonju Array Be**	**11.66**	**281**	P	**Pn**	**18 17 20.2 +1.8**
KSAR	**Wonju Array Be**	**11.66**	**281**	Pn	**Pn**	**18 17 20.1 +1.8**
TJN	**Taejon**	**12.08**	**276**	*i* P	**Pn**	**18 17 26.1 +1.9**
INCN	**Inchon**	**12.65**	**281**	*e*Pn	**Pn**	**18 17 35.7 +3.7**
MDJ	**Mudanjiang**	**12.88**	**315**	P	**Pn**	**18 17 36.9 +1.8**
MDJ				S	**Sn**	**18 19 59.2 +1.7**
MDJ				pmax	pmax	
	comp=E,24nm,0.9s					
MDJ				pmax	pmax	
	comp=E,2μm,10.2s					
MDJ				LR	LR	
	comp=E,15μm,11.7s					
MDJ				LR	LR	
	comp=E,4μm,11.2s					
MDJ				LR	LR	
	comp=E,11μm,12.2s					
MDJ	**Mudanjiang**	**12.88**	**315**	*e*Pn	**Pn**	**18 17 35.5 +0.4**
	comp=E,95nm,1.3s					
HABR	**Khabarovsk**	**13.46**	**339***c*	*i*P	**Pn**	**18 17 40.5 -2.4**
HABR				*e*S	**Sn**	**18 20 09.5 -2.0**
HABR				pmax	pmax	
	comp=N,32nm,1.3s					
HABR				pmax	pmax	
	comp=E,18nm,1.3s					
HABR				pmax	pmax	
	comp=Z,57nm,1.3s					
HABR				MLR	MLR	
	comp=Z,5μm,14.0s					
TYV	**Tymovskoe**	**14.74**	**1**	*e*P	**Pn**	**18 18 02.0 +1.6**
TYV				pmax	pmax	
	comp=Z,2μm,10.0s					
TYV				pmax	pmax	
	comp=Z,88nm,1.0s					
TYV				MLR	MLR	
	comp=N,12μm,14.0s					
TYV				MLR	MLR	
	comp=Z,15μm,14.0s					
CN2	**Changchun**	**15.03**	**306**	*e*P	**Pn**	**18 18 02.9 -1.4**
CN2				*e*pP	P	18 18 11.4 +2.0
CN2				*e*S	**Sn**	**18 20 48.3 -1.5**
CN2				pmax	pmax	
	comp=Z,30nm,1.2s					
CN2				pmax	pmax	
	comp=Z,200nm,9.0s					
CN2				LR	LR	
	comp=Z,13μm,13.0s					
CN2				LR	LR	
	comp=Z,17μm,13.0s					
CN2				LR	LR	
	comp=Z,14μm,12.0s					
JOW	**Kunigami**	**15.13**	**236**	*e*Pn	**P**	**18 18 11.5 +0.8**
JOW				*e*sP	**sP**	**18 18 20.6 -1.1**
KLR	**Kul'dur**	**15.21**	**333**	Pn	**Pn**	**18 18 04.0 -2.7**
	comp=Z,0.5nm,0.3s,baz=136,slow=12,SNR=24					
KLR				LR	LR	18 23 57.3
	comp=Z,7μm,18.8s,baz=144,slow=37					
DL2	**Dalian**	**16.65**	**286⇑**	*i*P	**Pn**	**18 18 25.4 +0.1**
DL2				pP	**pP**	**18 18 34.3 -0.6**
DL2				S	**Sn**	**18 21 30.2 +0.9**
DL2				pmax	pmax	
	comp=Z,70nm,0.8s					
DL2				pmax	pmax	
	comp=Z,2μm,6.1s					
DL2				LR	LR	
	comp=Z,12μm,13.1s					
DL2				LR	LR	
	comp=Z,16μm,12.8s					
DL2				LR	LR	
	comp=Z,19μm,12.6s					
NKL	**Nikolayevsk**	**17.07**	**357**	*e*P	**Pn**	**18 18 26.0 -4.4**
NKL				*e*S	**Sn**	**18 21 31.0 -8.2**
NKL				pmax	pmax	
	comp=N,12nm,0.9s					
NKL				pmax	pmax	
	comp=Z,20nm,0.9s					
NKL				smax	smax	
	comp=E,800nm,10.0s					
NKL				MLR	MLR	
	comp=E,11μm,14.0s					
NKL				MLR	MLR	
	comp=N,12μm,16.0s					
NKL				MLR	MLR	
	comp=Z,15μm,16.0s					
SSE	**Sheshan**	**18.30**	**260**	P	**P**	**18 18 44.0 -1.7**
SSE				S	**Sn**	**18 22 07.2 -2.0**
SSE				pmax	pmax	
	comp=Z,56nm,1.0s					
SSE				pmax	pmax	
	comp=Z,850nm,9.3s					
SSE				LR	LR	
	comp=Z,8μm,15.9s					
SSE				LR	LR	
	comp=Z,7μm,15.9s					
SSE				LR	LR	
	comp=Z,7μm,14.1s					
NJ2	**Nanjing**	**19.84**	**265**	*e*P	**Pn**	**18 19 04.4 +0.1**
NJ2				pmax	pmax	
	comp=Z,30nm,1.0s					
NJ2				pmax	pmax	
	comp=Z,690nm,4.3s					
NJ2				LR	LR	
	comp=Z,7μm,10.3s					
NJ2				LR	LR	
	comp=Z,3μm,9.2s					
NJ2				LR	LR	
	comp=Z,8μm,10.3s					
PEA0	**Petropavlovsk-**	**20.13**	**28**	*e*P	Pn	18 19 07.2 -0.4
PEA0	**Petropavlovsk-**	**20.13**	**28**	*e*P	**Pn**	**18 19 12.0 +4.4**
	comp=Z,114nm,1.4s					
PETK	**Petropavlovsk-**	**20.13**	**28**	P	**P**	**18 19 05.6 0.0**
	comp=Z,16nm,1.0s,baz=207,slow=3.0,SNR=7.0					
PETK				LR	LR	18 29 02.8
	comp=Z,2μm,18.7s,baz=212,slow=43					
TIA	**Tai'an**	**20.34**	**278**	⇓P	**P**	**18 19 06.2 -1.8**
TIA				pmax	pmax	
	comp=Z,30nm,1.2s					
TIA				pmax	pmax	
	comp=Z,3μm,10.0s					
TIA				LR	LR	
	comp=Z,8μm,13.0s					
TIA				LR	LR	
	comp=Z,9μm,12.0s					
TIA				LR	LR	
	comp=Z,7μm,17.0s					
PET	**Petropavlovsk**	**20.43**	**29**	*e*P	Pn	18 19 13.6 +2.5
PET				*e*S	**S**	**18 22 56.6 +0.5**
PET				pmax	pmax	
	comp=Z,52nm,1.3s					
PET				pmax	pmax	
	comp=Z,2μm,9.6s					
PET				pmax	pmax	
	comp=Z,2μm,9.3s					
PET				MLR	MLR	
	comp=Z,3μm,15.0s					
PET				MLR	MLR	
	comp=Z,3μm,15.0s					
BJI	**Beijing**	**20.93**	**289**	P	**P**	**18 19 12.9 -1.4**
BJI				pP	**pP**	**18 19 21.1 -0.8**
BJI				sP	**sP**	**18 19 26.4 +1.0**
BJI				S	**S**	**18 23 02.2 -3.9**
BJI				sS	**sS**	**18 23 16.0 -2.1**
BJI				pmax	pmax	
	comp=Z,830nm,10.0s					
BJI				LR	LR	
	comp=Z,5μm,13.8s					
BJI				LR	LR	
	comp=Z,7μm,14.3s					
BJI				LR	LR	
	comp=Z,4μm,15.8s					
BJT	**Baijiatuau**	**20.93**	**289**	*e*P	**P**	**18 19 12.4 -2.0**
BJT				pmax	pmax	
	comp=Z,20nm,0.6s					
BJT	**Baijiatuau**	**20.93**	**289**	*e*P	**P**	**18 19 12.4 -2.0**
	comp=Z,20nm,0.6s					
HIA	**Hailar**	**21.07**	**316**	*e*P	**P**	**18 19 13.0 -2.8**
HIA				pmax	pmax	
	comp=Z,91nm,1.1s					
HIA	**Hailar**	**21.07**	**316**	*e*P	**P**	**18 19 13.0 -2.8**
	comp=Z,91nm,1.1s					
SSLB	**Suanglung**	**22.17**	**242**	*e*P	**P**	**18 19 24.6 -3.3**
	comp=Z,66nm,1.3s					
YULB	**Yu-li**	**22.17**	**241**	*e*P	**P**	**18 19 30.1 +2.3**
	comp=Z,38nm,1.2s					
GUMO	**Guam**	**22.55**	**174**	P	**P**	**18 19 32.7 +0.8**
	comp=Z,78nm,0.9s,baz=353,slow=8.1,SNR=2.7					
GUMO				LR	LR	18 28 28.1
	comp=Z,668nm,21.5s,baz=353,slow=37					
GUMO	**Guam**	**22.55**	**174**	P	**P**	**18 19 32.7 +0.8**
GUMO				*e*sP	**sP**	**18 19 43.5 +0.5**
TWG	**Pinlang**	**22.70**	**240**	*e*P	**P**	**18 19 33.2 -0.2**
	comp=Z,738nm,1.8s					
TPUB	**Ta-pu**	**22.70**	**242**	*e*P	**P**	**18 19 29.1 -4.5**
	comp=Z,66nm,1.2s					
CLNS	**Chul'man**	**23.82**	**336**	*e*P	**P**	**18 19 43.8 -0.6**
CLNS				*e**PP	**sP**	**18 19 54.4 -1.5**
CLNS				*e*		18 20 08.3
CLNS				*e*		18 23 23.0
CLNS				*e*S	**S**	**18 23 59.0 +0.8**
CLNS				*e*SS	**SnSn**	**18 24 48.7 +11**
CLNS				pmax	pmax	
	comp=Z,66nm,1.1s					
CLNS				pmax	pmax	
	comp=N,69nm,0.9s					
CLNS				pmax	pmax	
	comp=E,28nm,1.0s					
CLNS				pmax	pmax	
	comp=E,33nm,0.9s					
CLNS				pmax	pmax	
	comp=Z,92nm,1.2s					
CLNS				pmax	pmax	
	comp=N,96nm,1.1s					
CLNS				smax	smax	
	comp=E,2μm,11.1s					
CLNS				smax	smax	
	comp=N,5μm,11.8s					
CLNS				MLR	MLR	
	comp=Z,7μm,11.0s					
CLNS				MLR	MLR	
	comp=N,9μm,13.0s					
CLNS				MLR	MLR	
	comp=E,7μm,12.0s					
TIY	**Taiyuan**	**23.91**	**283**	*e*P	**P**	**18 19 47.0 +1.5**
TIY				sP	**sP**	**18 20 02.3 +5.3**
TIY				PP	**PnPn**	**18 20 19.2 +5.1**
TIY				pmax	pmax	
	comp=E,42nm,1.0s					
TIY				LR	LR	
	comp=E,8μm,13.5s					
TIY				LR	LR	
	comp=E,8μm,14.4s					
TIY				LR	LR	
	comp=E,12μm,13.5s					
WHN	**Wuhan**	**23.98**	**265**	*e*P	**P**	**18 19 45.5 -0.6**
WHN				LR	LR	
	comp=E,21μm,12.6s					
WHN				LR	LR	
	comp=E,5μm,11.5s					
WHN				LR	LR	
	comp=E,16μm,14.3s					
MA2	**Magadan**	**24.11**	**11**	P	**P**	**18 19 47.0 0.0**
	comp=E,26nm,0.8s,baz=235,slow=7.8,SNR=9.9					
MA2				LR	LR	18 30 12.4
	comp=E,4μm,18.8s,baz=224,slow=39					
MA2	**Magadan**	**24.11**	**11**	P	**P**	**18 19 47.0 0.0**
MA2				pmax	pmax	
	comp=Z,26nm,0.9s					
MA2				MLR	MLR	
	comp=Z,4μm,18.8s					
HHC	**Hu-ho-hao-te**	**24.47**	**290**	*e*P	**P**	**18 19 48.4 -2.3**
HHC				S	**S**	**18 24 06.1 -3.1**
HHC				sS	sS	18 24 20.4 -2.1
HHC				pmax	pmax	
	comp=Z,21nm,0.9s					
HHC				pmax	pmax	
	comp=Z,1μm,4.3s					
HHC				LR	LR	
	comp=Z,5μm,12.1s					
HHC				LR	LR	
	comp=Z,6μm,13.5s					
HHC				LR	LR	
	comp=Z,6μm,13.4s					
BTO	**Baotou**	**25.64**	**290**	*e*P	**P**	**18 20 01.4 +0.1**
CIT	**Chita**	**25.84**	**317**	*e*P	P	18 20 12.0 +9.1
CIT				*e*		18 20 19.8
CIT				*e*		18 20 50.9
CIT				*e*S	**S**	**18 24 32.6 +1.8**
CIT				pmax	pmax	
	comp=Z,465nm,1.6s					
H11N2	**WAKE ISLAND Hy**	**27.05**	**121**	T	T	18 48 21.0
	baz=313,slow=75,SNR=189					
H11N1	**WAKE ISLAND Hy**	**27.06**	**121**	T	T	18 48 16.2
	baz=313,slow=75,SNR=254					
H11N3	**WAKE ISLAND Hy**	**27.07**	**121**	T	T	18 48 22.4
	baz=313,slow=75,SNR=205					
YAK	**Yakutsk**	**27.12**	**347**	P	**P**	**18 20 13.7 -0.6**
	comp=Z,61nm,0.8s,baz=144,slow=0.6,SNR=39					
YAK				LR	LR	18 31 14.1
	comp=Z,5μm,18.3s,baz=157,slow=37					
YAK	**Yakutsk**	**27.12**	**347***c*	*i*P	**P**	**18 20 13.8 -0.5**
YAK				*e**PP	**sP**	**18 20 24.7 -1.1**
YAK				*e*		18 20 55.6
YAK				*e*PPP	PPP	18 21 07.4
YAK				*e*		18 23 38.0
YAK				*e*S	**S**	**18 24 49.3 -1.3**
YAK				*e**SS	**sS**	**18 25 09.6 +5.5**
YAK				*e*SS	**SnSn**	**18 25 53.7 -4.9**
YAK				*e*SSS	SSS	18 26 16.9
YAK				*e*		18 31 02.2
YAK				pmax	pmax	
	comp=Z,75nm,0.9s					
YAK				pmax	pmax	
	comp=N,65nm,1.4s					
YAK				pmax	pmax	
	comp=E,23nm,1.2s					
YAK				pmax	pmax	
	comp=Z,121nm,1.5s					
YAK				pmax	pmax	
	comp=E,153nm,2.4s					
YAK				pmax	pmax	
	comp=N,219nm,2.8s					
YAK				smax	smax	
	comp=E,1μm,6.3s					
YAK				smax	smax	
	comp=N,871nm,3.6s					
YAK				MLR	MLR	
	comp=Z,13μm,13.0s					
YAK				MLR	MLR	
	comp=N,9μm,13.0s					
YAK				MLR	MLR	
	comp=E,3μm,11.0s					
YAK	**Yakutsk**	**27.12**	**347**	*e*P	**P**	**18 20 14.0 -0.3**
	comp=E,174nm,1.2s					
XAN	**Xi'an**	**27.34**	**276**	P	**P**	**18 20 16.0 -0.6**
XAN				pP	pP	18 20 25.0 +0.2
XAN				PP	**PnPn**	**18 21 04.7 +3.6**
XAN				PcP	**PcP**	**18 23 34.5 -0.9**
XAN				S	**S**	**18 24 52.8 -2.0**
XAN				pmax	pmax	
	comp=E,69nm,1.3s					
XAN				pmax	pmax	
	comp=E,930nm,8.1s					
XAN				LR	LR	
	comp=E,2μm,12.3s					
XAN				LR	LR	
	comp=E,8μm,14.4s					
XAN				LR	LR	
	comp=E,8μm,14.9s					
SEY	**Seymchan**	**27.55**	**10**	P	**P**	**18 20 18.4 +0.3**
	comp=E,4.9nm,0.8s,baz=190,slow=7.0,SNR=8.1					
SEY				LR	LR	18 33 02.8
	comp=E,4μm,18.3s,baz=152,slow=40					
H11S1	**WAKE ISLAND Hy**	**27.75**	**123**	T	T	18 49 10.8
	baz=315,slow=76,SNR=290					
H11S3	**WAKE ISLAND Hy**	**27.75**	**123**	T	T	18 49 13.7
	baz=315,slow=76,SNR=284					
H11S2	**WAKE ISLAND Hy**	**27.76**	**123**	T	T	18 49 12.0
	baz=315,slow=76,SNR=274					
ENH	**Enshi**	**28.00**	**268**	*e*P	**P**	**18 20 21.9 -0.7**
	comp=E,187nm,1.3s					
HKC	**Hong Kong Obse**	**28.05**	**248**	P	P	18 20 29.0 +6.1
GZH	**Guangzhou**	**28.23**	**251**	P	**P**	**18 20 20.7 -3.8**
GZH				S	**S**	**18 25 04.0 -4.7**
GZH				pmax	pmax	
	comp=E,1μm,9.1s					
ULN	**Ulaanbaatar**	**28.48**	**305**	*e*P	**P**	**18 20 27.6 +0.8**
ULN				pmax	pmax	
	comp=Z,110nm,1.3s					
ULN	**Ulaanbaatar**	**28.48**	**305**	P	**P**	**18 20 28.1 +1.4**
	SNR=49					
ULN	**Ulaanbaatar**	**28.48**	**305**	P	**P**	**18 20 28.1 +1.4**
	SNR=49					
ULN	**Ulaanbaatar**	**28.48**	**305**	*e*P	**P**	**18 20 27.6 +0.8**
	comp=Z,107nm,1.3s					
BOD	**Bodaibo**	**28.69**	**328**	*e*P	**P**	**18 20 28.5 +0.2**
BOD				pmax	pmax	
	comp=Z,130nm,1.6s					
SONA1	**Songino Array**	**28.90**	**305**	*e*P	**P**	**18 20 30.9 +0.4**
SONM	**Songino Array**	**28.91**	**305**	P	**P**	**18 20 31.5 +0.9**
	comp=Z,27nm,0.8s,baz=106,slow=8.4,SNR=93					
SONM				LR	LR	18 32 25.6
	comp=Z,2μm,18.1s,baz=122,slow=37					
LZH	**Lanzhou**	**30.95**	**282**	*e*P	**P**	**18 20 49.1 +0.3**
LZH				pP	sP	18 20 59.0 -1.4
LZH				sP	pP	18 21 02.3 +5.3
LZH				PP	**PnPn**	**18 21 49.1 -0.9**
LZH				*e*S	**S**	**18 25 48.4 -3.4**
LZH				sS	sS	18 26 09.3 +4.0
LZH				pmax	pmax	
	comp=Z,98nm,1.2s					
LZH				pmax	pmax	
	comp=Z,580nm,5.3s					
LZH				LR	LR	
	comp=Z,6μm,12.0s					
LZH				LR	LR	
	comp=Z,4μm,13.1s					
LZH				LR	LR	
	comp=Z,6μm,15.2s					
IRK	**Irkutsk**	**31.26**	**313**	*e*P	**P**	**18 20 51.3 +0.2**
IRK				pmax	pmax	
	comp=Z,75nm,1.6s					
ZAK	**Zakamensk**	**31.41**	**309**	*e*P	**P**	**18 20 53.4 +0.8**
ZAK				pmax	pmax	
	comp=Z,55nm,1.6s					
TLY	**Talaya**	**31.48**	**312**	LR	LR	18 33 55.7
	comp=Z,2μm,19.1s,baz=119,slow=37					
TLY	**Talaya**	**31.48**	**312***c*	*i*P	**P**	**18 20 54.0 +0.8**
TLY				*e*		18 22 16.1
TLY				*e*		18 23 49.5
TLY				pmax	pmax	
	comp=Z,85nm,1.5s					
TLY				MLR	MLR	
	comp=Z,5μm,15.0s					
TLY	**Talaya**	**31.48**	**312**	*e*P	**P**	**18 20 54.2 +1.0**
	comp=Z,63nm,1.2s					
GYA	**Guiyang**	**31.81**	**263⇑**	*i*P	**P**	**18 20 55.1 -1.3**
GYA				pP	sP	18 21 08.2 +0.2
GYA				PP	**PnPn**	**18 22 03.8 +2.7**
GYA				PcP	**PcP**	**18 23 49.0 +1.9**
GYA				sS	sS	18 26 21.4 +2.7
GYA				ScP	**ScP**	**18 27 28.2 -0.3**
GYA				SS	**SnSn**	**18 27 54.0 +0.3**
GYA				pmax	pmax	
	comp=Z,80nm,1.2s					
GYA				pmax	pmax	
	comp=Z,370nm,8.4s					
GYA				LR	LR	
	comp=Z,3μm,13.0s					
GYA				LR	LR	
	comp=Z,6μm,14.9s					
GYA				LR	LR	
	comp=Z,7μm,15.8s					
CD2	**Chengdu**	**32.42**	**272**	P	**P**	**18 20 58.8 -2.9**
CD2				sP	sP	18 21 13.4 +0.1
CD2				PP	**PP**	**18 22 12.1 -3.0**
CD2				S	**S**	**18 26 12.2 -2.3**
CD2				sS	sS	18 26 28.0 -0.1
CD2				ScP	**ScP**	**18 27 27.0 -3.4**
CD2				pmax	pmax	
	comp=Z,30nm,1.1s					
CD2				pmax	pmax	
	comp=Z,800nm,10.2s					
CD2				LR	LR	
	comp=Z,10μm,18.0s					
CD2				LR	LR	
	comp=Z,8μm,16.8s					
MOY	**Mondy**	**33.09**	**311**	*e*P	**P**	**18 21 08.1 +0.8**
MOY				pmax	pmax	
	comp=Z,66nm,3.5s					
QIZ	**Qiongzhong**	**33.24**	**248**	P	P	18 21 00.9 -7.9
QIZ				S	**S**	**18 26 29.3 +2.0**
QIZ				sS	sS	18 26 42.6 +1.7
QIZ				SS	SS	18 30 50.5
QIZ				LR	LR	
	comp=N,1μm,11.8s					
QIZ				LR	LR	
	comp=E,960nm,14.7s					
GTA	**Gaotai**	**33.54**	**289**	⇑P	**P**	**18 21 11.9 +0.5**
GTA				pP	sP	18 21 21.5 -1.6
GTA				sP	pP	18 21 25.3 +5.6
GTA				S	**S**	**18 26 26.6 -5.3**
GTA				sS	sS	18 26 44.2 -1.3
GTA				SS	**SnSn**	**18 28 29.1 -6.3**
GTA				pmax	pmax	
	comp=E,39nm,1.2s					
GTA				pmax	pmax	
	comp=E,790nm,6.7s					
GTA				LR	LR	
	comp=E,3μm,13.8s					
GTA				LR	LR	
	comp=E,4μm,13.3s					
GTA				LR	LR	
	comp=E,5μm,13.8s					
BILL	**Bilibino**	**34.70**	**16**	*e*P	**P**	**18 21 18.6 -2.4**
BILL				*i*		18 21 29.3
BILL				pmax	pmax	
	comp=Z,10.0nm,1.1s					
BILL				MLR	MLR	
	comp=Z,3μm,18.0s					
BILL	**Bilibino**	**34.70**	**16**	*e*P	**P**	**18 21 20.5 -0.5**

comp=Z,15nm,1.0s
KMI Kunming 35.56 263 P P 18 21 28.5 -0.7
KMI pP sP 18 21 40.7 -0.1
KMI sP pP 18 21 44.8 +7.4
KMI PP **PnPn 18 22 45.3 -3.4**
KMI S **S 18 26 59.2 -4.3**
KMI sS sS 18 27 19.4 +2.2
KMI SS **SnSn 18 29 16.2 -8.8**
KMI pmax pmax
comp=Z,32nm,1.2s
KMI pmax pmax
comp=Z,510nm,5.8s
KMI LR LR
comp=Z,6μm,16.5s
KMI LR LR
comp=Z,6μm,14.7s
KMI LR LR
comp=Z,5μm,15.6s
TIXI Tiksi 36.28 353 P P 18 21 33.9 -0.7
comp=Z,6.1nm,0.9s,baz=149,slow=6.1,SNR=23
TIXI Tiksi 36.28 353 *i* P **P 18 21 33.3 -1.2**
TIXI pmax pmax
comp=Z,9.0nm,1.0s
TIXI Tiksi 36.28 353 *e*P **P 18 21 34.3 -0.2**
comp=Z,24nm,1.4s
KDM Kudat 37.27 225 ⇓P **P 18 21 47.4 +3.9**
MYLDM Lahad Datu 37.78 221 ⇑P **P 18 21 49.5 +1.7**
MYLDM Lahad Datu 37.78 221 *e*P **P 18 21 49.1 +1.3**
comp=Z,122nm,1.1s
SDKM Sandakan 38.11 223 ⇓P **P 18 21 50.8 +0.1**
SWI Sorong 38.21 198 P **P 18 21 52.1 +0.7**
comp=Z,38nm,1.0s
KKM Kota Kinabalu 38.33 225 ⇑P **P 18 21 53.3 +0.7**
KKM Kota Kinabalu 38.33 225 *e*P **P 18 21 52.0 -0.5**
comp=Z,70nm,1.2s
PANO Nakornpanom 38.34 251 P **P 18 21 53.7 +1.2**
comp=Z,33nm,1.1s
KRAR Krasnoyarsk 38.63 317 *e*P **P 18 21 53.5 -1.1**
KRAR pmax pmax
comp=Z,43nm,1.0s
SKNT Sakolnakorn 38.92 251 P **P 18 21 57.8 +0.3**
comp=Z,51nm,1.2s
NONG Nongkai 38.92 253 P **P 18 21 57.9 +0.4**
comp=Z,66nm,1.1s
LBMI Labuha 39.09 204 P **P 18 22 00.3 +1.5**
comp=Z,85nm,1.9s,comp=Z,2μm
CRAI Chiangrai 39.90 258 P **P 18 22 06.1 +0.5**
comp=Z,304nm,1.4s
KHON Khomkaen 40.19 251 P **P 18 22 08.9 +0.9**
comp=Z,17nm,1.2s,comp=Z,665nm
MRSI Marisa 40.20 213 P **P 18 22 07.9 -0.2**
comp=Z,169nm,1.2s,comp=Z,6μm
LOEI Loei 40.70 254 P **P 18 22 09.4 -2.9**
comp=Z,64nm,1.2s,comp=Z,6μm
SANI Sanana 40.92 205 P **P 18 22 14.4 +0.4**
comp=Z,56nm,1.2s,comp=Z,855nm
CMAI Chiengmai2 41.11 259 P P 18 22 21.4 +5.6
UTTA Uttaradit 41.12 255 P **P 18 22 16.0 +0.3**
comp=Z,11nm,0.9s,comp=Z,86nm
LUWI Luwuk 41.21 211 P **P 18 22 14.1 -2.3**
comp=Z,72nm,1.1s,comp=Z,866nm
LUWI Luwuk 41.21 211 *e*pP pP 18 22 21.9 -2.8
LAMP Lampang 41.41 257 P **P 18 22 20.0 +1.9**
comp=Z,10nm,0.9s
PBKT Sadao Pong 41.48 253 P **P 18 22 18.8 +0.2**
comp=Z,77nm,1.4s,comp=Z,1μm
NLAI Namlea 41.66 203 P **P 18 22 23.6 +3.5**
comp=Z,33nm,1.4s
CMMT Chiang Mai 41.79 257 P **P 18 22 21.5 +0.3**
comp=Z,38nm,1.0s,comp=Z,807nm
CHTO Chiang Mai 41.79 257 P **P 18 22 21.6 +0.4**
comp=Z,215nm,0.9s,comp=Z,3μm
CHTO Chiang Mai 41.79 257 *e*P **P 18 22 21.7 +0.5**
CHTO pmax pmax
comp=Z,92nm,1.5s
CHTO Chiang Mai 41.79 257 P **P 18 22 22.3 +1.0**
SNR=13
CHTO Chiang Mai 41.79 257 P **P 18 22 22.3 +1.0**
SNR=13
CHTO Chiang Mai 41.79 257 *e*P **P 18 22 21.7 +0.5**
comp=Z,92nm,1.5s
WMQ Urumqi 41.91 298 P **P 18 22 24.4 +2.4**
WMQ pP pP 18 22 31.5 +1.1
WMQ sP sP 18 22 35.5 +1.8
WMQ S **S 18 28 40.6 +2.1**
WMQ SS **SS 18 31 40.4 -5.0**
WMQ ScS **ScS 18 32 22.0 -0.8**
WMQ pmax pmax
comp=Z,42nm,1.2s
WMQ pmax pmax
comp=Z,490nm,9.6s
WMQ LR LR
comp=Z,2μm,19.6s
WMQ LR LR
comp=Z,680nm,15.0s
WMQ LR LR
comp=Z,510nm,20.2s
CM31 Chiang Mai Arr 41.99 257 *e*P **P 18 22 24.1 +1.2**
CMAR Chiang Mai Arr 41.99 257 P **P 18 22 22.9 0.0**
comp=Z,2.4nm,0.6s,baz=48,slow=7.8,SNR=23
SUKH Sukhothai 42.00 255 P **P 18 22 23.9 +1.0**
comp=Z,14nm,1.1s,comp=Z,122nm
CM01 Chiang Mai Arr 42.00 257 *e*P **P 18 22 22.4 -0.5**
PCI Palu 42.37 215 P **P 18 22 25.1 -0.8**
comp=Z,97nm,1.1s,comp=Z,1μm
PCI Palu 42.37 215 P **P 18 22 25.7 -0.2**
PCI pmax pmax
comp=Z,100nm,1.1s
BTM Bintulu 42.44 226 ⇑P **P 18 22 26.9 +0.4**
CHBT CHBT 42.78 247 P **P 18 22 30.3 +1.0**
comp=Z,83nm,1.2s,comp=Z,1μm
LSA Lhasa 43.03 277 P **P 18 22 32.6 +0.8**
LSA pmax pmax
comp=Z,12nm,1.7s
LSA Lhasa 43.03 277 *e*P **P 18 22 32.8 +1.0**
LSA pmax pmax
comp=Z,84nm,1.1s
LSA Lhasa 43.03 277 *e*P **P 18 22 32.8 +1.0**
comp=Z,84nm,1.1s
ZAA0 Zalesovo Array 43.07 313 *e*P **P 18 22 30.9 -0.3**
ZAA0 *e*ScP **ScP 18 28 04.6 -5.4**
ZALV Zalesovo Beam 43.07 313 P **P 18 22 31.1 -0.1**
comp=Z,29nm,0.8s,baz=95,slow=5.5,SNR=72
ZALV LR LR 18 40 29.4
comp=Z,2μm,19.1s,baz=76,slow=36
SBUM Sibu 43.55 227 ⇓P **P 18 22 35.7 +0.2**
SBUM Sibu 43.55 227 *e*P **P 18 22 34.5 -1.0**
comp=Z,54nm,1.1s
KDI Kendari 43.93 209 P **P 18 22 41.9 +3.4**
comp=Z,29nm,1.2s,comp=Z,645nm
NVS Novosibirsk 44.00 314 ⇓*i* P **P 18 22 39.7 +1.0**
NVS *e*S **S 18 29 08.8 +0.1**
NVS pmax pmax
comp=E,57nm,1.4s
NVS pmax pmax
comp=Z,86nm,1.4s
NVS pmax pmax
comp=N,21nm,1.7s
SRDT SRDT 44.23 252 P **P 18 22 42.2 +1.2**
comp=N,151nm,1.4s,comp=N,7μm
NRIK Noril'sk 44.40 336 P **P 18 22 42.0 +0.3**
comp=N,14nm,0.9s,baz=131,slow=4.0,SNR=11
NRIK LR LR 18 43 13.5
comp=N,3μm,18.1s,baz=106,slow=39
NRIK Noril'sk 44.40 336 P **P 18 22 42.0 +0.3**
NRIK pmax pmax
comp=Z,14nm,0.9s
NRIK MLR MLR
comp=Z,3μm,18.1s
PHET Kaeng Krachan 44.72 250 P **P 18 22 47.1 +2.2**
comp=Z,18nm,1.2s,comp=Z,168nm
MK01 Makanchi Array 45.23 303 *e*P **P 18 22 48.5 -0.2**
MK01 *e*ScP **ScP 18 28 20.3 +1.3**
MK31 Makanchi Array 45.23 303 *e*P **P 18 22 49.1 +0.4**
MK31 Makanchi Array 45.23 303 *e*P **P 18 22 49.1 +0.4**
MKAR Makanchi Array 45.23 303 P **P 18 22 48.7 +0.1**
comp=Z,33nm,0.8s,baz=84,slow=9.0,SNR=80
MKAR LR LR 18 41 46.4
comp=Z,1μm,19.5s,baz=80,slow=36
MKAR PKPPKP **P'P'df 18 54 24.0 -5.8**
comp=Z,0.4nm,0.8s,baz=251,slow=3.7,SNR=3.6
MKAR Makanchi Array 45.23 303 *i* P **P 18 22 49.0 +0.4**
MKAR pmax pmax
comp=Z,33nm,0.8s
MKAR Makanchi Array 45.23 303 *e*P **P 18 22 49.1 +0.4**
MKAR P'P' 18 54 24.0

MAKZ Makanchi 45.44 303 *e*P **P 18 22 50.8 +0.5**
MAKZ pmax pmax
comp=Z,54nm,0.9s
MAKZ Makanchi 45.44 303 *e*P **P 18 22 50.8 +0.5**
comp=Z,54nm,0.9s
MAKZ *e*ScP **ScP 18 28 22.2 +2.3**
KSM Kuching 45.47 228 ⇑P **P 18 22 51.7 +0.9**
KSM Kuching 45.47 228 *e*P **P 18 22 51.1 +0.3**
comp=Z,51nm,1.2s
PMG Port Moresby 45.51 173 P **P 18 22 51.3 +0.2**
comp=Z,39nm,1.1s,baz=20,slow=2.4,SNR=5.2
PMG Port Moresby 45.51 173 *i* P **P 18 22 50.3 -0.7**
PMG pmax pmax
comp=Z,154nm,1.0s
PMG Port Moresby 45.51 173 *e*P **P 18 22 51.4 +0.4**
comp=Z,38nm,1.0s
KAPI Kappang 46.06 212 *e*P **P 18 22 56.3 +0.9**
comp=Z,71nm,1.2s
KURK Kurchatov 47.07 309 *e*P **P 18 23 03.2 +0.2**
KURK pmax pmax
comp=Z,100nm,1.0s
KURK Kurchatov 47.07 309 *e*P **P 18 23 03.2 +0.2**
comp=Z,103nm,1.0s
RSO Redoubt South 47.17 38 *e*P **P 18 23 05.7 +1.8**
KTGM Kuala Trenggan 47.23 239 ⇓P **P 18 23 06.7 +2.0**
PDGK Podgornoye 47.86 299 P **P 18 23 09.8 +0.6**
PDGK pmax pmax
comp=Z,113nm,0.9s
KTH Kantishna Hill 48.10 34 *e*P **P 18 23 12.9 +2.0**
comp=Z,8.2nm,1.0s
MLY Manley 48.24 32 *e*P **P 18 23 13.6 +1.7**
comp=Z,16nm,1.1s
MMRI Maumere 48.37 207 *e*P **P 18 23 15.1 +1.7**
comp=Z,88nm,1.1s
PKIN Phulchoki 48.51 277 *e*P **P 18 23 17.5 +2.6**
KKN Kakani 48.52 277 *e*P **P 18 23 15.1 +0.3**
comp=Z,124nm,1.2s
SOEI Soe 48.70 204 *e*pP pP 18 23 25.4 +0.8
BWN Browne 48.76 33 *e*P **P 18 23 19.6 +3.7**
comp=Z,92nm,1.4s
GKN Gorkha 48.94 278 *e*P **P 18 23 18.2 +0.2**
comp=Z,357nm,1.3s
KULM Kulim 49.01 241 ⇓P **P 18 23 20.7 +2.3**
KULM Kulim 49.01 241 *e*P **P 18 23 17.8 -0.7**
comp=Z,31nm,1.1s
MDM Murphy Dome 49.30 32 *e*P **P 18 23 21.6 +1.5**
comp=Z,19nm,1.1s
MYKOM Kota Tinggi 49.32 235 ⇑P **P 18 23 22.7 +1.8**
MYKOM Kota Tinggi 49.32 235 *e*P **P 18 23 22.4 +1.6**
MYKOM *e*pP **sP 18 23 31.4 -1.3**
WRH Wood River Hil 49.36 32 *e*P **P 18 23 22.7 +2.2**
comp=Z,9.7nm,1.0s
COLA College 49.46 32 *e*P **P 18 23 20.6 -0.6**
COLA pmax pmax
comp=Z,6.0nm,1.0s
KGM Kluang 49.51 236 ⇓P **P 18 23 22.2 0.0**
AAA Alma-Ata 49.67 299 *i* P **P 18 23 23.2 0.0**
AAA *i* S S 18 30 41.5 +11
AAA pmax pmax
comp=Z,600nm,4.3s
AAA MLR MLR
comp=Z,10μm,9.0s
FRIM Kepong 49.77 239 ⇓P **P 18 23 25.0 +0.7**
COEN Coen 49.81 179 *e*P **P 18 23 25.5 +1.1**
comp=Z,34nm,1.0s
MTN Manton Dam 49.83 194 *e*P **P 18 23 25.5 +0.9**
comp=Z,82nm,1.0s
KOLN Koldanda 49.87 278 *e*P **P 18 23 25.5 +0.3**
comp=Z,117nm,1.3s
IL1 Eielson Array 49.88 32 *e*P **P 18 23 24.0 -0.4**
ILAR Eielson Array 49.88 32 P **P 18 23 24.1 -0.4**
comp=Z,7.2nm,0.9s,baz=271,slow=6.3,SNR=27
ILB Eielson Array 49.88 32 *e*P **P 18 23 24.8 +0.4**
PYUN Piuthan 50.22 279 *e*P **P 18 23 28.1 +0.3**
comp=Z,416nm,1.2s
TKM2 Tokmak 2 50.71 299 *e*P **P 18 23 32.4 +1.0**
TKM2 pmax pmax
comp=Z,47nm,0.7s
TKM2 Tokmak 2 50.71 299 *e*P **P 18 23 32.4 +1.0**
comp=Z,47nm,0.7s
BMRM Bremner River 51.15 37 *e*P **P 18 23 37.0 +2.8**
comp=Z,27nm,1.0s
FRU Bishkek 51.43 299 ⇑*e*P **P 18 23 38.0 +1.5**
FRU *i* 18 23 51.0
FRU *e* 18 31 14.0
FRU pmax pmax
comp=Z,80nm,1.8s
KSH Kashi 51.45 295 P **P 18 23 41.3 +4.4**
KSH *e*pP sP 18 23 51.0 +2.3
KSH *e*PP **PP 18 25 40.8 +6.8**
KSH *e*ScP **ScP 18 28 48.7 +3.1**
KSH S **S 18 30 58.5 +3.3**
KSH SS **SS 18 34 32.2 +1.3**
KSH pmax pmax
comp=Z,19nm,1.2s
KSH pmax pmax
comp=Z,550nm,5.8s
KSH LR LR
comp=Z,3μm,12.4s
KSH LR LR
comp=Z,4μm,12.9s
KSH LR LR
comp=Z,7μm,13.0s
OTUK Ortayu 51.56 307 P **P 18 23 37.7 +0.3**
OTUK pmax pmax
comp=Z,50nm,1.2s
AAK Ala-Archa 51.57 299 LR LR 18 46 52.6
comp=Z,4μm,18.6s,baz=56,slow=38
AAK Ala-Archa 51.57 299*c i* P **P 18 23 38.0 +0.2**
AAK pmax pmax
comp=Z,32nm,1.0s
AAK Ala-Archa 51.57 299 *e*P **P 18 23 38.5 +0.7**
comp=Z,34nm,1.2s
BVAR Borovoye Array 51.73 313 P **P 18 23 38.7 +0.1**
comp=Z,4.9nm,0.5s,baz=77,slow=7.8,SNR=4.3
BVAR LR LR 18 46 43.8
comp=Z,2μm,18.9s,baz=74,slow=37
BRVK Borovoye 51.79 313*c i* P **P 18 23 39.2 +0.3**
BRVK pmax pmax
comp=Z,16nm,1.0s
BRVK Borovoye 51.79 313 *e*P **P 18 23 39.2 +0.3**
comp=Z,43nm,1.3s
PSI Prapat 51.97 241 *e*P **P 18 23 40.7 -0.3**
PSI pmax pmax
comp=Z,27nm,1.1s
PSI Prapat 51.97 241 *e*P **P 18 23 40.7 -0.3**
comp=Z,27nm,1.1s
EKS2 Erkin-Say 52.07 299 *e*P **P 18 23 42.1 +0.7**
EKS2 pmax pmax
comp=Z,14nm,0.7s
EKS2 Erkin-Say 52.07 299 *e*P **P 18 23 42.1 +0.7**
comp=Z,14nm,0.7s
EGAK Eagle 52.33 32 *e*P **P 18 23 46.7 +3.9**
comp=Z,8.7nm,1.1s
SMRI Semarang 52.35 221 *e*P **P 18 23 44.6 +1.0**
comp=Z,99nm,1.1s
ZRNK Zerenda 52.56 313 *e*P **P 18 23 45.1 +0.3**
ZRNK pmax pmax
comp=Z,71nm,1.4s
ZRNK Zerenda 52.56 313 *e*P **P 18 23 45.1 +0.3**
comp=Z,70nm,1.4s
MNAS Manas 53.02 300 P **P 18 23 49.5 +1.0**
MNAS pmax pmax
comp=Z,41nm,0.9s
UGM Wanagama 53.03 221 *e*P **P 18 23 47.4 -1.3**
comp=Z,296nm,1.2s
LEM Lembang 53.73 225 LR LR 18 45 35.1
comp=Z,468nm,21.6s,baz=26,slow=35
KLI Kotabumi 53.78 229 P **P 18 23 53.1 -1.0**
KLI pmax pmax
comp=Z,110nm,1.1s
GSI Gunungsitoli 53.97 240 *e*P **P 18 23 55.3 -0.3**
comp=Z,258nm,1.2s
KKAR Karatay Array 54.22 301 *e*P **P 18 23 57.9 +0.8**
KKAR Karatay Array 54.22 301 *e*P **P 18 23 57.9 +0.8**
INK Inuvik 54.87 27 P **P 18 24 01.2 -0.1**
comp=Z,4.0nm,0.6s,baz=278,slow=7.0,SNR=17
INK Inuvik 54.87 27 *e*P **P 18 24 01.7 +0.4**
comp=Z,9.6nm,0.9s
FITZ Fitzroy Crossi 56.19 199 *e*P **P 18 24 12.6 +1.2**
comp=Z,46nm,1.4s
WRAB Tennant Creek 56.26 189 *i* P **P 18 24 11.0 -0.9**
WRAB pmax pmax
comp=Z,219nm,1.2s
WRAB Tennant Creek 56.26 189 *e*P **P 18 24 11.2 -0.7**
comp=Z,74nm,1.1s

WB2 Warramunga Arr 56.26 189 *e*P **P 18 24 11.3 -0.6**
comp=Z,82nm,1.1s
WRA Warramunga Arr 56.27 189 P **P 18 24 09.7 -2.3**
comp=Z,66nm,1.1s,baz=7.4,slow=7.5,SNR=68
WRA LR LR 18 47 60.0
comp=Z,417nm,20.1s,baz=15,slow=36
WRA Warramunga Arr 56.27 189 *i* P **P 18 24 10.3 -1.6**
WRA pmax pmax
comp=Z,67nm,1.1s
SVE Sverdlovsk 56.32 319 ⇓*e*P **P 18 24 12.3 +0.3**
SVE *e*S **S 18 32 01.1 +0.9**
SVE pmax pmax
comp=Z,71nm,1.3s
SVE MLR MLR
comp=Z,5μm,15.0s
ARU Arti 57.53 319 P **P 18 24 19.9 -0.7**
comp=Z,37nm,0.9s,baz=72,slow=2.9,SNR=43
ARU LR LR 18 51 23.6
comp=Z,3μm,18.1s,baz=64,slow=38
ARU Arti 57.53 319*c i* P **P 18 24 20.7 +0.1**
ARU 18 25 12.3
ARU 18 26 26.4
ARU PPP PPP 18 27 45.3
ARU S **S 18 32 18.8 +2.6**
ARU 18 34 01.4
ARU pmax pmax
comp=Z,54nm,1.0s
ARU MLR MLR
comp=Z,3μm,17.0s
ARU Arti 57.53 319 *e*P **P 18 24 20.7 +0.1**
comp=Z,137nm,1.5s
KBL Kabul 58.43 292 *e*P **P 18 24 27.8 +0.3**
KBL pmax pmax
comp=Z,38nm,1.3s
KBL Kabul 58.43 292 *e*P **P 18 24 27.8 +0.3**
comp=Z,38nm,1.3s
DLBC Dease Lake 58.90 38 P **P 18 24 30.9 +0.7**
comp=Z,3.0nm,1.0s,baz=283,slow=13,SNR=4.2
HYB Hyderabad 58.92 270 *i* P **P 18 24 31.5 +0.6**
ABKAR Akbulak array 59.09 311 *e*P **P 18 24 31.5 -0.1**
AKTO Aktyubinsk 59.83 313 P **P 18 24 36.2 -0.5**
comp=Z,27nm,1.0s,baz=76,slow=6.5,SNR=35
AKTO LR LR 18 50 54.0
comp=Z,1μm,20.2s,baz=67,slow=36
AS01 Alice Springs 59.98 189 *e*P **P 18 24 36.5 -1.4**
AS31 Alice Springs 59.99 189 *e*P **P 18 24 37.3 -0.7**
comp=Z,4.1nm,0.6s
ASAR Alice Springs 59.99 189 P **P 18 24 36.5 -1.5**
comp=Z,23nm,1.1s,baz=9.8,slow=5.4,SNR=50
ASAR LR LR 18 48 27.6
comp=Z,497nm,21.9s,baz=14,slow=34
MBWA Marble Bar 60.85 204 *e*P **P 18 24 43.2 -0.6**
comp=Z,155nm,1.1s
SPITS Spitsbergen Ar 61.56 349 P **P 18 24 47.9 -0.1**
comp=Z,9.2nm,1.0s,baz=52,slow=16,SNR=3.7
SPITS LR LR 18 54 50.9
comp=Z,2μm,18.9s,baz=335,slow=39
KBS Kingsbay 61.68 350 *e*P **P 18 24 50.5 +1.7**
KBS *e**PP **pP 18 24 57.7 +0.2**
KBS Kingsbay 61.68 350 *e*P **P 18 24 50.5 +1.7**
KBS *e*pP **pP 18 24 57.7 +0.2**
EIDS Eidsvold 61.71 171 *e*P **P 18 24 49.4 -0.2**
comp=Z,24nm,1.3s
POO Poona 62.14 273 *e*P **P 18 24 50.0 -2.9**
DZM Mont Dzumac 62.21 155 P **P 18 24 54.6 +1.5**
comp=Z,21nm,0.8s,baz=357,slow=8.9,SNR=4.6
PALK Pallekele 62.90 259 LR LR 18 54 32.9
comp=Z,636nm,19.5s,baz=114,slow=38
RES Resolute Bay 63.30 14 P **P 18 24 59.4 -0.4**
comp=Z,18nm,1.0s,baz=312,slow=7.3,SNR=23
RES Resolute Bay 63.30 14 *e*P **P 18 24 59.3 -0.4**
RES pmax pmax
comp=Z,25nm,1.0s
RES Resolute Bay 63.30 14 *e*P **P 18 24 59.2 -0.4**
comp=Z,25nm,1.0s
YKW3 Yellowknife Ar 64.19 30 *e*P **P 18 25 06.1 +0.4**
comp=Z,29nm,1.7s
YKA Yellowknife Ar 64.23 30 P **P 18 25 06.0 0.0**
comp=Z,4.0nm,0.9s,baz=296,slow=6.5,SNR=24
YKA PKPPKP **P'P'df 18 53 57.2 -5.1**
comp=Z,0.7nm,1.0s,baz=119,slow=2.3,SNR=4.0
YKA Yellowknife Ar 64.23 30 P **P 18 25 06.0 0.0**
YKA pmax pmax
comp=Z,4.0nm,0.9s
YKB5 Yellowknife Ar 64.23 30 *e*P **P 18 25 06.2 +0.2**
KLMR Klimovskoe 64.92 328 *e*P **P 18 25 08.5 -2.0**
KLMR *e* 18 25 42.3
KLMR *e* 18 27 32.1
KLMR pmax pmax
comp=Z,39nm,1.1s
GEYT Alibeck 64.92 300 P **P 18 25 11.2 +0.2**
comp=Z,12nm,1.1s,baz=32,slow=3.9,SNR=23
GEYT LR LR 18 58 14.2
comp=Z,653nm,18.3s,baz=85,slow=40
ARCES ARCESS Array B 65.11 340 P **P 18 25 11.7 0.0**
comp=Z,3.0nm,0.8s,baz=17,slow=10,SNR=4.1
ARCES LR LR 18 59 23.7
comp=Z,2μm,18.7s,baz=43,slow=41
AFI Afiamalu 65.98 130 LR LR 18 48 06.4
comp=Z,443nm,20.9s,baz=270,slow=31
SGF Sodankyl 66.08 338 P **P 18 25 19.6 +1.7**
SGF pmax pmax
comp=Z,22nm,1.2s
DAG Danmarks Havn 66.75 355 *i* P **P 18 25 22.4 +0.4**
comp=Z,13nm,1.1s
DAG Danmarks Havn 66.75 355 *i* P **P 18 25 22.4 +0.4**
DAG pmax pmax
comp=Z,17nm,1.1s
ARMA Armidale 66.76 171 *e*P **P 18 25 24.3 +1.5**
comp=Z,31nm,1.3s
NLWA Neilton Lookou 66.79 48 *e*P **P 18 25 26.0 +3.1**
comp=Z,54nm,1.2s
B05A Bryant 67.42 46 P **P 18 25 27.3 +0.6**
baz=299
STKA Stephens Creek 67.64 181 P **P 18 25 27.4 -0.8**
comp=Z,15nm,1.0s,baz=349,slow=7.2,SNR=8.6
STKA LR LR 18 55 26.0
comp=Z,225nm,20.2s,baz=0.7,slow=36
STKA Stephens Creek 67.64 181 *e*P **P 18 25 28.5 +0.3**
comp=Z,4.1nm,1.0s
D05A Enumclaw 68.01 47 *e*P **P 18 25 34.8 +4.2**
comp=Z,33nm,1.1s
LON Longmire 68.33 47 *e*P **P 18 25 34.3 +1.7**
LON pmax pmax
comp=Z,14nm,1.1s
LON Longmire 68.33 47 *e*P **P 18 25 34.3 +1.7**
comp=Z,14nm,1.2s
MOS Moscow 68.42 324 *e*P **P 18 25 31.6 -1.3**
MOS *i* 18 25 43.2
MOS *e*S **S 18 34 33.8 +1.4**
MOS MLR MLR
comp=E,3μm,14.0s
MOS MLR MLR
comp=Z,3μm,14.0s
VRH Novokhopyorsk 68.75 318 *e*P **P 18 25 34.8 -0.2**
VRH *e**PP **pP 18 25 45.1 +1.3**
VRH *e**SP **sP 18 25 49.2 +2.1**
VRH *e* 18 25 59.2
VRH *e* 18 28 07.6
VRH *e*S **S 18 34 38.2 +1.7**
VRH pmax pmax
comp=Z,30nm,1.1s
VRH smax smax
comp=E,230nm,4.1s
VRH MLR MLR
comp=Z,7μm,18.0s
KULLO Kullorsuaq 68.82 6 *i* P **P 18 25 35.3 +0.2**
comp=Z,2μm,19.0s
KULLO Kullorsuaq 68.82 6 *e*P **P 18 25 35.3 +0.2**
KULLO MLR MLR
comp=Z,2μm,19.0s
I03D Drain, OR 68.92 51 P **P 18 25 37.1 +0.8**
baz=300
B08A Colville Reser 68.97 45 *e*P **P 18 25 37.6 +1.1**
B08A *e*pP **sP 18 25 47.6 -1.0**
SUF Sumiainen 69.13 334 P **P 18 25 38.2 +1.0**
SUF pmax pmax
comp=Z,21nm,1.0s
H04A Detroit Lake 69.14 49 *e*P **P 18 25 38.5 +0.8**
comp=Z,20nm,1.0s
OBN Obninsk 69.27 324 P **P 18 25 38.3 +0.2**
comp=Z,13nm,0.7s,baz=11,slow=18,SNR=7.6
OBN Obninsk 69.27 324 *i* P **P 18 25 38.1 -0.1**
OBN pmax pmax
comp=Z,25nm,1.0s
G05D Wamic, OR 69.39 49 P **P 18 25 40.3 +1.1**

baz=301
I04A Tendick Farm, 69.45 50 P P 18 25 40.5 +0.8
baz=301
LPSR Galich'ya Gora 69.47 321 *e*P **P 18 25 39.6 +0.1**
LPSR *e**PP **pP 18 25 49.2 +0.9**
LPSR *e**SP **sP 18 25 53.9 +2.3**
LPSR *e* 18 26 02.0
LPSR *e* 18 28 12.5
LPSR *e*S **S 18 34 51.0 +6.0**
LPSR pmax pmax
comp=Z,30nm,1.2s
LPSR smax smax
comp=N,70nm,3.7s
LPSR MLR MLR
comp=Z,5µm,19.0s
L02D Cave Junction, 69.53 52 P P 18 25 41.0 +0.9
baz=301
HUMO Hull Mountain 69.72 52 *e*pP pP 18 25 51.7 +1.7
G06A Carlson Farm, 69.81 48 *e*P **P 18 25 44.4 +2.5**
comp=Z,26nm,1.4s
I05D Terrebonne, OR 69.84 49 P P 18 25 43.1 +1.1
baz=301
C09A Chrisman Ranch 69.86 45 *e*P **P 18 25 44.4 +2.3**
comp=Z,22nm,1.0s
HAWA Hanford 69.87 47 *e*P **P 18 25 43.5 +1.4**
comp=Z,9.1nm,0.9s
D08A Wollman Farm, 69.88 46 *e*P **P 18 25 43.3 +1.2**
D08A *e*pP **sP 18 25 53.2 -1.0**
JCC Jacoby Creek, 69.94 54 *e*P **P 18 25 45.1 +2.5**
comp=Z,58nm,1.4s
FIA1 FINESS Array S 69.96 333 *e*P **P 18 25 42.4 +0.1**
FINES FINESS Array B 69.96 333 P P 18 25 42.3 -0.1
comp=Z,19nm,0.9s,baz=57,slow=7.0,SNR=37
FINES LR LR 18 57 17.8
comp=Z,951nm,21.0s,baz=42,slow=37
FINES FINESS Array B 69.96 333 *i* P **P 18 25 42.7 +0.3**
FINES pmax pmax
comp=Z,19nm,0.9s
KHMM Horse Mountain 70.10 54 *e*P **P 18 25 45.9 +2.0**
comp=Z,30nm,1.0s
VSR Storozhevoye 70.10 319 *e*P **P 18 25 42.7 -0.7**
VSR *e**PP **pP 18 25 52.9 +0.7**
VSR *e**SP **sP 18 25 57.0 +1.5**
VSR *e* 18 26 04.2
VSR *e* 18 28 17.3
VSR *e*S **S 18 34 52.2 -0.2**
VSR pmax pmax
comp=Z,40nm,1.5s
VSR smax smax
comp=E,160nm,3.5s
VSR MLR MLR
comp=Z,7µm,21.0s
NEW Newport 70.27 44 P P 18 25 44.8 +0.1
comp=Z,10nm,0.9s,baz=314,slow=4.3,SNR=8.7
NEW Newport 70.27 44 P P 18 25 45.0 +0.4
baz=302
NEW Newport 70.27 44 *e*P **P 18 25 45.3 +0.7**
comp=Z,16nm,1.0s
YBH Yreka Blue Hor 70.32 52 P P 18 25 45.2 +0.1
comp=Z,11nm,1.0s,baz=9.8,slow=1.6,SNR=18
YBH Yreka Blue Hor 70.32 52 *e*P **P 18 25 46.3 +1.2**
comp=Z,10nm,0.9s
M02C Callahan 70.41 53 P P 18 25 46.6 +1.1
baz=301,SNR=8.9
J05D Fort Rock, OR 70.45 50 P P 18 25 46.7 +0.8
baz=302
E09A Wood Farm, Sta 70.62 46 *e*P **P 18 25 48.2 +1.5**
comp=Z,24nm,1.1s
N02D Trinity Center 70.72 53 P P 18 25 48.5 +1.1
baz=301,SNR=9.7
G08A Pilot Rock 70.79 48 *e*P **P 18 25 49.2 +1.3**
comp=Z,41nm,1.2s
M04C Macdoel 70.85 52 P P 18 25 49.5 +1.1
baz=302,SNR=12
K05A Summer Lake 70.96 51 *e*P **P 18 25 50.5 +1.4**
comp=Z,60nm,1.0s
WDC Whiskeytown Da 71.03 53 *e*P **P 18 25 50.2 +0.9**
WDC pmax pmax
comp=Z,18nm,1.1s
WDC Whiskeytown Da 71.03 53 *e*P **P 18 25 50.2 +0.9**
comp=Z,18nm,1.1s
F10A Beach Ranch, E 71.45 46 *e*P **P 18 25 53.1 +1.3**
comp=Z,10nm,1.1s
SUMG Summit 71.60 0 *i* P **P 18 25 54.1 +1.4**
comp=Z,40nm,1.3s
comp=Z,3µm,18.0s
SUMG Summit 71.60 0 *i* P **P 18 25 54.1 +1.4**
SUMG pmax pmax
comp=Z,40nm,1.3s
SUMG MLR MLR
comp=Z,3µm,18.0s
SUMG Summit 71.60 0 *e*P **P 18 25 53.4 +0.8**
comp=Z,24nm,1.0s
VSU Vasula 71.61 330 *c i*P **P 18 25 52.6 +0.2**
VSU pmax pmax
comp=Z,78nm,1.0s
WALA Waterton Lakes 71.62 42 *e*P **P 18 25 53.7 +0.8**
comp=Z,10nm,1.0s
O03D Paynes Creek 71.66 53 P P 18 25 53.6 +0.4
baz=302
DGRG David-gareji 71.74 308 P P 18 25 54.8 +1.1
GUDG Gudauri 71.76 309 P P 18 25 56.0 +2.0
MOD Modoc Plateau 71.76 51 *e*P **P 18 25 54.7 +0.8**
comp=Z,16nm,1.0s
BSMT Bassoo Peak 71.81 44 *e*P **P 18 25 56.2 +2.0**
ZEI Tsey 71.95 310 *e*P **P 18 25 52.4 -2.7**
ZEI pmax pmax
comp=Z,34nm,1.3s
BMO Blue Mountains 72.01 47 *e*P **P 18 25 55.9 +0.7**
comp=Z,12nm,1.1s
KBZ Khabaz 72.05 311 P P 18 25 55.7 +0.3
comp=Z,22nm,0.9s,baz=76,slow=2.3,SNR=42
KIV Kislovodsk 72.06 312 *i* P **P 18 25 56.3 +0.8**
SNR=26
KIV Kislovodsk 72.06 312 *e*P **P 18 25 55.8 +0.2**
KIV *e* 18 28 36.4
KIV *e*S **S 18 35 15.8 +0.2**
KIV *e*SS **SS 18 39 54.2 +2.0**
KIV pmax pmax
comp=Z,54nm,1.0s
KIV pmax pmax
comp=Z,185nm,5.2s
KIV MLR MLR
comp=Z,2µm,18.0s
KIV Kislovodsk 72.06 312 *e*P **P 18 25 55.8 +0.2**
comp=Z,118nm,1.4s
JTMT Jette 72.15 44 *e*P **P 18 25 57.1 +0.9**
BANOM Banah 72.20 289 *i* P **P 18 25 57.1 +0.5**
SNR=10.0
BANOM Banah 72.20 289 P P 18 25 58.8 +2.1
SNR=10.0
YBMT Yellow Bay 72.24 43 *e*P **P 18 25 58.0 +1.4**
ORV Oroville 72.25 54 *e*P **P 18 25 56.9 +0.2**
ORV pmax pmax
comp=Z,11nm,0.8s
ORV Oroville 72.25 54 *e*P **P 18 25 56.9 +0.2**
comp=Z,11nm,0.8s
ONI Oni 72.33 310 P P 18 25 57.9 +0.7
SWMT Swartz Lake 72.44 44 *e*P **P 18 25 58.6 +0.8**
WVOR Wild Horse Val 72.52 50 *e*P **P 18 25 58.8 +0.4**
WVOR pmax pmax
comp=Z,24nm,1.4s
WVOR Wild Horse Val 72.52 50 *e*P **P 18 25 58.8 +0.4**
comp=Z,24nm,1.4s
UOSS Minazif 72.79 289 *e*P **P 18 26 00.4 +0.3**
comp=Z,2.3nm,1.0s
GNI Garni 72.84 307 *c i*P **P 18 26 01.4 +1.0**
GNI pmax pmax
comp=Z,49nm,1.2s
GNI Garni 72.84 307 *e*P **P 18 26 01.9 +1.6**
comp=Z,72nm,1.5s
MSO Missoula 72.86 44 P P 18 26 00.5 +0.2
baz=305,SNR=11
MSO Missoula 72.86 44 *e*P **P 18 26 00.7 +0.4**
comp=Z,13nm,1.0s
HATD Hatta, Dubai 72.91 288 *i* P **P 18 26 01.3 +0.5**
SNR=18
AFDM Forest Hills D 72.92 54 *e*P **P 18 26 01.7 +1.0**
AFDM *e*pP **sP 18 26 11.6 -1.2**
AKH Akhalkalaki 72.95 309 ‖ *i*P **P 18 26 04.0 +3.0**
BGD Bogdanovka 72.96 309 P P 18 26 01.9 +0.8
ASHO Ashiyiah 73.04 288 *i* P **P 18 26 02.0 +0.4**
SNR=20
ASHO Ashiyiah 73.04 288 P P 18 26 02.7 +1.0
SNR=14
ASHO Ashiyiah 73.04 288 P P 18 26 02.7 +1.0
SNR=20
ASHO P **P 18 26 02.7 +1.0**
SNR=14
CHVG Ch'k'valeri 73.11 311 ‖ *i*P **P 18 26 04.1 +2.4**
CHMT Chamberlain Mo 73.20 44 *e*P **P 18 26 03.2 +0.7**
FAQ Al Faqa, Dubai 73.36 289 *i* P **P 18 26 04.7 +1.1**
SNR=6.8
ARQ Araqi 73.40 287 P P 18 26 04.7 +0.9
SNR=10
ARQ Araqi 73.40 287 P P 18 26 04.7 +0.9
SNR=10
PAHR Pah Rah Range 73.54 53 *e*P **P 18 26 05.6 +1.1**
comp=Z,18nm,1.0s
MICGM Minsk 73.66 326 *e*P **P 18 26 05.0 +0.3**
MICGM *e*PcP **PcP 18 26 24.0 +3.6**
MICGM *e*PP **PP 18 28 46.0 -2.5**
MICGM *e*PPP PPP 18 30 38.0
MICGM *e*S **SKiKP 18 35 32.0 -0.4**
MICGM *e*PS **PnS 18 36 08.0 +0.3**
MICGM *e*SS **SS 18 40 10.0 -5.8**
MICGM *e*SSS SSS 18 43 12.0
MICGM *e*LQ LQ 18 51 42.0
MICGM *e*LR LR 18 57 50.0
MICGM LRM MLR 19 03 20.0
comp=Z,10nm,14.0s
MICGM LRM MLR 19 03 20.0
comp=Z,9.4nm,14.0s
MICGM LRM MLR 19 03 26.0
comp=E,6.7nm,14.0s
MNK Minsk 73.66 326 *e*P **P 18 26 05.0 +0.3**
MNK *e* 18 26 24.0
MNK *e* 18 28 48.0
MNK *e*PPP PPP 18 30 38.0
MNK *e*S **SKiKP 18 35 32.0 -0.4**
MNK *e*PS **PnS 18 36 08.0 +0.3**
MNK *e*SS **SS 18 40 10.0 -5.8**
MNK MLR MLR
comp=Z,10µm,14.0s
MNK MLR MLR
comp=E,7µm,14.0s
MFID Camas Ranch 73.69 48 *e*P **P 18 26 05.9 +0.6**
comp=E,33nm,1.5s
CMB Columbia Colle 73.80 55 *e*P **P 18 26 06.7 +0.7**
CMB pmax pmax
comp=Z,17nm,1.0s
CMB Columbia Colle 73.80 55 *e*P **P 18 26 06.7 +0.7**
comp=Z,17nm,1.0s
NACGM Naroch 73.89 327 *e* **P 18 26 06.0 0.0**
NACGM *e*LQ LQ 18 54 08.0
NACGM *e*LR LR 18 57 06.0
SOC Sochi 74.05 312 *e*P **P 18 26 06.9 -0.3**
SOC *e*PPP PPP 18 30 34.6
SOC *e*S **S 18 35 39.6 +1.5**
SOC pmax pmax
comp=Z,12nm,0.4s
WAKR Walker 74.17 54 *e*P **P 18 26 09.2 +1.0**
LRM Limekiln Ridge 74.29 45 *e*P **P 18 26 09.2 +0.3**
HLID Hailey 74.45 47 P P 18 26 10.4 +0.6
baz=305,SNR=11
HLID Hailey 74.45 47 *e*P **P 18 26 10.7 +0.9**
comp=Z,8.1nm,1.1s
EGMT Eagleton 74.47 42 P P 18 26 10.0 +0.3
baz=307,SNR=12
EGMT Eagleton 74.47 42 *e*P **P 18 26 10.3 +0.6**
comp=Z,23nm,0.9s
DLMT Dillon 74.47 45 *e*P **P 18 26 10.7 +0.8**
comp=Z,33nm,1.1s
FCC Fort Churchill 74.49 27 *e*P **P 18 26 09.8 +0.3**
FCC pmax pmax
comp=Z,18nm,1.2s
FCC Fort Churchill 74.49 27 *e*P **P 18 26 09.8 +0.3**
comp=Z,18nm,1.2s
MCMT McKenzie Canyo 74.64 46 *e*P **P 18 26 12.4 +1.5**
ANN Anapa 74.69 314 *e*P **P 18 26 11.0 +0.1**
ANN *e*S **S 18 35 44.4 -0.7**
ANN pmax pmax
comp=Z,40nm,0.8s
BOZ Bozeman (W) 74.85 44 P P 18 26 12.7 +0.6
baz=306,SNR=24
BOZ Bozeman (W) 74.85 44 *e*P **P 18 26 12.8 +0.7**
BOZ pmax pmax
comp=Z,16nm,1.0s
BOZ Bozeman (W) 74.85 44 *e*P **P 18 26 12.8 +0.7**
comp=Z,16nm,1.0s
NV01 Mina Array Sit 74.95 53 *e*P **P 18 26 13.2 +0.3**
NVAR Mina Array Bea 74.95 53 P P 18 26 13.4 +0.6
comp=Z,23nm,1.0s,baz=293,slow=5.8,SNR=55
NVAR LR LR 18 57 05.1
comp=Z,490nm,18.1s,baz=294,slow=34
RAO Raoul Island 75.01 145 LR LR 18 59 47.7
comp=Z,394nm,18.6s,baz=10.0,slow=36
NV11 Mina Array Sit 75.04 53 *e*P **P 18 26 14.6 +1.3**
comp=Z,20nm,1.3s
MLAC Mammoth, Mammo 75.05 54 P P 18 26 13.9 +0.4
baz=304
NC405 NORSAR Array S 75.10 338 *e*P **P 18 26 13.7 +0.7**
NC303 NORSAR Array S 75.12 338 *e*P **P 18 26 14.4 +1.3**
NC204 NORSAR Array S 75.26 338 *e*P **P 18 26 14.7 +0.7**
NB201 NORSAR Array S 75.28 338 *e*P **P 18 26 14.7 +0.6**
NB2 NORSAR Subarra 75.31 338 P P 18 26 14.4 +0.1
comp=Z,8.5nm,0.7s,baz=38,slow=5.9
NOA NORSAR Array B 75.31 338 P P 18 26 14.3 +0.1
comp=Z,10nm,0.8s,baz=39,slow=5.7,SNR=40
NOA LR LR 19 02 49.9
comp=Z,2µm,19.0s,baz=40,slow=38
NBO02 NORSAR Array S 75.41 338 *e*P **P 18 26 14.6 -0.2**
NC602 NORSAR Array S 75.45 337 *e*P **P 18 26 15.1 +0.1**
NBO00 NORSAR Array S 75.45 338 *e*P **P 18 26 15.6 +0.6**
QLMT Earthquake Lak 75.45 45 *e*P **P 18 26 17.2 +1.6**
AKASG Malin Array Be 75.47 323 P P 18 26 15.0 -0.2
comp=Z,11nm,0.7s,baz=46,slow=6.1,SNR=42
AKASG LR LR 19 01 17.0
comp=Z,1µm,19.6s,baz=40,slow=37
AKBB Malin Array Si 75.47 323 *e*P **P 18 26 16.0 +0.7**
AKBB pmax pmax
comp=Z,18nm,0.9s
AKBB Malin Array Si 75.47 323 *e*P **P 18 26 16.0 +0.7**
comp=Z,18nm,0.9s
KIEV Kiev 75.48 323 *c i*P **P 18 26 14.8 -0.5**
KIEV pmax pmax
comp=Z,19nm,0.9s
KIEV Kiev 75.48 323 *e*P **P 18 26 15.2 -0.1**
comp=Z,16nm,0.8s
AK11 Malin Array Si 75.51 323 *e*P **P 18 26 15.2 -0.3**
NAO01 NORSAR Array S 75.56 338 *e*P **P 18 26 16.1 +0.5**
ELK Elko 75.58 50 *e*P **P 18 26 17.5 +1.1**
ELK pmax pmax
comp=Z,8.0nm,0.9s
ELK Elko 75.58 50 *e*P **P 18 26 17.5 +1.1**
comp=Z,8.2nm,0.9s
GCMT Greycliff 75.87 43 *e*P **P 18 26 19.4 +1.5**
VES Vestal, Richgr 75.89 56 P P 18 26 18.4 +0.4
baz=304
PKM Mcpherson Peak 75.93 57 P P 18 26 19.6 +1.1
baz=304,SNR=8.2
YFT Old Faithful 76.02 45 *e*P **P 18 26 22.4 +3.6**
comp=Z,27nm,1.2s
SUW Suwalki 76.05 328 *e*P **P 18 26 18.8 +0.3**
SUW Suwalki 76.05 328 *e*P **P 18 26 18.8 +0.3**
LKWY Lake 76.20 45 *e*P **P 18 26 23.1 +3.1**
LKWY pmax pmax
comp=Z,47nm,0.3s
LKWY Lake 76.20 45 *e*P **P 18 26 23.1 +3.1**
comp=Z,47nm,0.3s
H17A Grant Village 76.20 45 P P 18 26 22.4 +2.4
baz=307,SNR=29
H17A Grant Village 76.20 45 *e*P **P 18 26 22.3 +2.4**
comp=Z,37nm,1.0s
SBC Santa Barbara 76.25 57 P P 18 26 20.2 +0.2
baz=304
IMW Indian Meadow 76.29 45 *e*P **P 18 26 22.1 +1.6**
comp=Z,18nm,0.9s
FLWY Flagg Ranch 76.32 45 *e*P **P 18 26 22.6 +2.0**
comp=Z,38nm,1.4s
GRAC Grapevine Rang 76.37 54 P P 18 26 20.9 +0.2
baz=305,SNR=8.3
FXWY Fox Creek 76.40 46 *e*P **P 18 26 22.5 +1.4**
comp=Z,16nm,1.2s
ARVC Arvin 76.46 56 P P 18 26 22.0 +0.8
baz=305
HVU Hansel Valley 76.48 48 *e*P **P 18 26 22.6 +1.2**
HVU pmax pmax
comp=Z,16nm,1.0s
HVU Hansel Valley 76.48 48 *e*P **P 18 26 22.6 +1.2**
comp=Z,16nm,1.0s
SIM Simferopol' 76.49 316 *e*P **P 18 26 22.5 +1.3**
SIM *e* 18 26 33.0
SIM *e*S **S 18 36 07.0 +1.9**
SIM *e*SS **SS 18 41 03.0 +3.8**
SIM pmax pmax
comp=Z,12nm,0.9s
SIM MLR MLR
comp=N,770nm,13.4s
MOOW Moose Ponds 76.50 45 *e*P **P 18 26 23.0 +1.4**
comp=N,19nm,1.2s
RLMT Red Lodge 76.50 44 P P 18 26 22.2 +0.6
baz=308,SNR=17
RLMT Red Lodge 76.50 44 *e*P **P 18 26 23.1 +1.6**
comp=N,12nm,0.9s
DAC Darwin (Calif) 76.63 55 *e*P **P 18 26 23.2 +0.8**
DAC pmax pmax
comp=Z,9.0nm,1.0s
DAC Darwin (Calif) 76.63 55 *e*P **P 18 26 23.2 +0.8**
comp=Z,8.9nm,1.0s
LOHW Long Hollow 76.66 46 *e*P **P 18 26 23.4 +0.8**
comp=Z,8.8nm,1.1s
SNOW Snow King Moun 76.66 46 *e*P **P 18 26 21.3 -1.3**
comp=Z,20nm,1.1s
REDW Red Top Meadow 76.67 46 *e*P **P 18 26 24.3 +1.7**
comp=Z,18nm,1.2s
SFJD Kangerlussuaq 76.73 5 P P 18 26 23.7 +1.5
comp=Z,4.6nm,0.8s,baz=0.0,slow=2.0,SNR=2.2
R11A Troy Canyon, C 76.75 52 *e*P **P 18 26 20.8 -2.2**
comp=Z,2µm,0.6s
MPMC Manual Prospec 76.83 55 P P 18 26 23.4 -0.1
baz=305,SNR=15
BGU Big Grassy Mou 76.83 49 *e*P **P 18 26 25.5 +2.1**
comp=Z,12nm,0.9s
AHID Auburn Hatcher 76.88 46 *e*P **P 18 26 25.1 +1.3**
comp=Z,25nm,1.4s
KONO Kongsberg 76.90 337 *e*P **P 18 26 23.8 +0.5**
KONO pmax pmax
comp=Z,26nm,1.4s
KONO Kongsberg 76.90 337 *e*P **P 18 26 23.8 +0.5**
comp=Z,26nm,1.4s
FURC Furnace Creek, 77.00 54 P P 18 26 24.5 +0.3
baz=305,SNR=5.8
LRMC Laurel Mtn Rad 77.03 56 P P 18 26 25.1 +0.4
baz=305
DGMT Dagmar 77.09 39 P P 18 26 24.7 +0.1
baz=310,SNR=8.5
DGMT Dagmar 77.09 39 *e*P **P 18 26 25.5 +0.9**
comp=Z,35nm,1.0s
TPNV Topopah Spring 77.13 54 P P 18 26 25.3 +0.1
baz=306,SNR=20
TPNV Topopah Spring 77.13 54 *e*P **P 18 26 25.8 +0.6**
TPNV pmax pmax
comp=Z,15nm,1.0s
TPNV Topopah Spring 77.13 54 *e*P **P 18 26 25.8 +0.6**
comp=Z,15nm,1.0s
EDW2 Edwards Air Fo 77.16 56 P P 18 26 25.4 0.0
baz=305,SNR=7.9
LAO LASA Array 77.18 41 P P 18 26 25.7 +0.5
baz=310,SNR=18
LAO LASA Array 77.18 41 *e*P **P 18 26 26.3 +1.1**
comp=Z,34nm,1.0s
HWUT Hardware Ranch 77.31 48 *e*P **P 18 26 27.3 +1.1**
comp=Z,29nm,1.1s
DUG Dugway, Tooele 77.40 49 P P 18 26 27.5 +0.9
baz=307,SNR=24
DUG Dugway, Tooele 77.40 49 *e*P **P 18 26 27.7 +1.1**
DUG pmax pmax
comp=Z,25nm,1.0s
DUG Dugway, Tooele 77.40 49 *e*P **P 18 26 27.7 +1.1**
comp=Z,25nm,1.0s
FRB Frobisher Bay 77.49 14 P P 18 26 26.2 -0.3
comp=Z,13nm,0.8s,baz=330,slow=7.2,SNR=8.7
FRB LR LR 19 05 38.9
comp=Z,2µm,18.3s,baz=354,slow=40
SORM Soroca 77.56 321 ‖ *i*P **P 18 26 27.0 -0.2**
TCUT Toone Canyon 77.70 48 *e*P **P 18 26 29.9 +1.5**
comp=Z,28nm,0.9s
GSC Goldstone, Bar 77.72 55 P P 18 26 28.4 0.0
baz=306,SNR=6.1
GSC Goldstone, Bar 77.72 55 *e*P **P 18 26 28.3 -0.1**
GSC pmax pmax
comp=Z,8.0nm,0.9s
GSC Goldstone, Bar 77.72 55 *e*P **P 18 26 28.3 -0.1**
comp=Z,8.2nm,0.9s
PSUT Pine Spring 77.74 51 *e*P **P 18 26 29.6 +1.0**
comp=Z,20nm,1.1s
BFSC Mount Baldy Ra 77.76 57 P P 18 26 29.4 +0.7
baz=306
BW06 Boulder Array 77.78 46 P P 18 26 29.1 +0.2
baz=308,SNR=11
BW06 Boulder Array 77.78 46 *e*P **P 18 26 28.6 -0.3**
PD31 Pinedale Array 77.78 46 *e*P **P 18 26 29.1 +0.2**
PDAR Pinedale Array 77.78 46 P P 18 26 28.7 -0.1
comp=Z,4.3nm,0.6s,baz=271,slow=1.2,SNR=41
A26A Wade Farm, Ken 77.89 37 P P 18 26 29.5 +0.4
baz=312
JLU Jordanelle 77.98 48 *e*P **P 18 26 31.6 +1.6**
comp=Z,12nm,0.9s
NLU North Lily Min 77.99 49 *e*P **P 18 26 31.1 +1.0**
comp=Z,18nm,1.2s
KIS Kishinev 78.06 320 *e*P **P 18 26 32.0 +2.0**
KIS Kishinev 78.06 320 *e*P **P 18 26 32.0 +2.0**
KIS *e* 18 31 18.0
KIS *e*S **S 18 36 26.0 +3.9**
KIS *e* 18 37 10.0
KIS *e*SS **SS 18 41 28.0 +5.2**
SHPR Sheep Range 78.10 53 *e*P **P 18 26 32.1 +1.5**
comp=Z,14nm,1.1s
MILM Milestii Mici 78.12 320 ‖ *i*P **P 18 26 31.1 +0.8**
TUQ Turquoise Moun 78.22 55 P P 18 26 31.5 +0.2
baz=306,SNR=6.7
HEC Hector,Ludlow 78.31 55 P P 18 26 32.1 +0.4
baz=306,SNR=5.5
D25A Fairfield 78.40 39 P P 18 26 32.5 +0.5
baz=311
LVV L'vov 78.55 324 *e*P **P 18 26 33.0 +0.4**
LVV *e* 18 26 42.4
BSD Bornholm Skovb 78.59 332 *i*P **P 18 26 33.7 +1.0**
comp=Z,3µm,17.0s
BSD Bornholm Skovb 78.59 332 *i*P **P 18 26 33.7 +1.0**
BSD MLR MLR
comp=Z,3µm,17.0s
CCUT Cedar City 78.63 52 *es*P sP 18 26 48.3 +2.5
A28A Rude Farm, Bot 78.75 37 P P 18 26 34.3 +0.5
baz=313
GMRC Granite Mounta 78.78 55 P P 18 26 34.1 -0.3
baz=306,SNR=5.6
E25A Miller Ranch, 78.79 40 P P 18 26 34.3 +0.1
baz=311,SNR=6.2
MSU Marysvale 78.80 50 *e*P **P 18 26 35.9 +1.3**
MSU Marysvale 78.80 50 *e*P **P 18 26 35.9 +1.3**
TMUT Trail Mountain 78.92 49 *e*P **P 18 26 36.9 +1.5**
comp=Z,16nm,1.1s
PFO Pinyon Flats O 78.94 57 P P 18 26 35.1 -0.1
comp=Z,8.7nm,1.0s,baz=297,slow=4.7,SNR=5.5
PFO Pinyon Flats O 78.94 57 *e*P **P 18 26 36.5 +1.3**
comp=Z,14nm,1.1s
D26A Manning 78.94 39 P P 18 26 34.9 0.0
baz=312
TPFO Pinon Flats 78.94 57 P P 18 26 35.3 +0.1
baz=306,SNR=8.3
C27A Sayler Ranch, 78.95 38 P P 18 26 34.7 -0.2
baz=312
B28A Dugan Ranch, T 79.02 37 P P 18 26 35.8 +0.6
baz=313
BELC Belle Mtn. Jos 79.02 56 P P 18 26 35.9 +0.2
baz=306
LCMT Little Creek M 79.03 52 *e*P **P 18 26 36.8 +1.1**
comp=Z,30nm,1.2s
MTPU Mount Pierson 79.08 51 *e*P **P 18 26 37.3 +1.0**
comp=Z,15nm,1.1s
P17A Butcher Ranch, 79.10 49 *e*P **P 18 26 37.7 +1.6**
comp=Z,37nm,1.1s
F25A Bowman 79.14 40 P P 18 26 36.3 +0.3
baz=311
Q16A Castle Valley 79.18 50 *e*P **P 18 26 38.3 +1.7**
comp=Z,27nm,1.1s
A29A Manning Farm, 79.24 36 P P 18 26 36.9 +0.4
baz=314,SNR=8.2
GIRR Girov 79.28 321 ‖ *i*P **P 18 26 38.0 +1.3**
E26A Carlson Angus 79.30 40 P P 18 26 37.1 +0.3
baz=312
KWP Kalwaria Pacla 79.30 325 *e*P **P 18 26 37.7 +0.9**
KWP Kalwaria Pacla 79.30 325 ‖ *i*P **P 18 26 37.9 +1.1**
KWP Kalwaria Pacla 79.30 325 *e*P **P 18 26 37.7 +0.9**
KNB Kanab 79.30 52 *e*P **P 18 26 38.6 +1.4**
KNB pmax pmax

comp=Z,36nm,1.1s
KNB Kanab 79.30 52 *e*P **P 18 26 38.6 +1.4**
comp=Z,36nm,1.1s
P18A Preston Nutter 79.31 49 *e*P **P 18 26 38.5 +1.0**
comp=Z,40nm,1.5s
D27A Center 79.35 39 P **P 18 26 37.5 +0.4**
baz=312
MONP2 Monument Peak 79.38 57 P **P 18 26 38.0 +0.2**
baz=306
SRU San Rafael Swe 79.46 49 *e*P **P 18 26 38.8 +0.7**
SRU pmax pmax
comp=Z,24nm,1.0s
SRU San Rafael Swe 79.46 49 *e*P **P 18 26 38.8 +0.7**
comp=Z,24nm,1.0s
BUR08 Bucovina Ar. S 79.47 322 *e*P **P 18 26 38.4 +0.5**
BURAR Bucovina Array 79.48 322 ||*i*P **P 18 26 38.7 +0.8**
B29A Wagenman Farm, 79.49 37 P **P 18 26 38.4 +0.5**
baz=314
IRM Iron Mountain 79.50 55 P **P 18 26 38.1 -0.1**
baz=307,SNR=8.2
TESR Tescani 79.50 321 ||*i*P **P 18 26 38.6 +0.6**
MMU Miners Mountai 79.54 50 *e*P **P 18 26 39.5 +0.9**
BC3 Big Chuckawall 79.59 56 P **P 18 26 38.5 -0.3**
baz=307,SNR=6.1
K22A Casper 79.59 44 P **P 18 26 38.9 +0.1**
baz=310
K22A Casper 79.59 44 *e*P **P 18 26 39.8 +1.0**
comp=Z,18nm,1.0s
F26A Lodgepole 79.60 40 P **P 18 26 38.8 +0.3**
baz=312
CFR Carcaliu 79.62 319 ||*i*P **P 18 26 39.0 +0.5**
A30A Hoffart Farm, 79.67 36 P **P 18 26 39.1 +0.3**
baz=314
IKP In-Ko-Pah, Jac 79.74 57 P **P 18 26 40.4 +0.9**
baz=306
W13A Hualapai Mount 79.77 54 *e*P **P 18 26 40.2 +0.4**
comp=Z,6.8nm,1.1s
D28A Regan 79.77 38 P **P 18 26 39.9 +0.5**
baz=313
SWSC Sam W. Stewart 79.77 57 P **P 18 26 40.3 +0.6**
baz=306
E27A Carson 79.78 39 P **P 18 26 39.9 +0.4**
baz=312
MDND Maddock 79.80 37 P **P 18 26 40.0 +0.4**
baz=314
MDND Maddock 79.80 37 *e*P **P 18 26 41.6 +2.1**
comp=Z,45nm,1.1s
ULM Lac du Bonnet 79.86 34 P **P 18 26 39.4 -0.4**
comp=Z,7.8nm,0.9s,baz=329,slow=6.3,SNR=4.5
ULM Lac du Bonnet 79.86 34 *e*P **P 18 26 39.6 -0.2**
comp=Z,46nm,1.9s
VRI Vrincioaia 79.90 320 ||*i*P **P 18 26 41.8 +1.7**
H25A Fruitdale 79.92 41 P **P 18 26 40.7 +0.4**
baz=312
TIRR Tirgusor 79.94 318⇑*i*P **P 18 26 41.7 +1.4**
PLOR Plostina 79.95 320 ||*i*P **P 18 26 41.4 +1.0**
KOLS Kolonicke sedl 79.99 325 *e*P **P 18 26 41.9 +1.3**
KOLS pmax pmax
comp=Z,13nm,1.2s
KOLS Kolonicke sedl 79.99 325 *e*P **P 18 26 41.9 +1.3**
KOLS *e*PP **PP 18 29 39.1 -2.8**
KOLS *e*L L 19 07 41.0
U15A North Rim 80.00 52 *e*P **P 18 26 42.2 +1.1**
comp=Z,12nm,1.0s
B30A Myrvik Farm, E 80.00 36 P **P 18 26 41.1 +0.5**
baz=314
BR131 Keskin Array S 80.01 312 *e*P **P 18 26 41.7 +0.7**
BRTR Keskin Array B 80.01 312 P **P 18 26 41.0 0.0**
comp=Z,8.7nm,1.0s,baz=104,slow=4.0,SNR=29
BRTR PP **PP 18 29 45.8 +3.3**
comp=Z,2.0nm,1.0s,baz=77,slow=7.6,SNR=4.2
BRTR LR LR 19 06 51.0
comp=Z,586nm,18.9s,baz=30,slow=39
BRTR Keskin Array B 80.01 312 *i*P **P 18 26 41.7 +0.7**
BRTR pmax pmax
comp=Z,9.0nm,1.0s
G26A Maurine 80.01 40 P **P 18 26 40.8 0.0**
baz=312,SNR=14
RSSD Black Hills 80.02 42 P **P 18 26 41.5 +0.4**
baz=311
RSSD Black Hills 80.02 42 *e*P **P 18 26 41.7 +0.6**
RSSD pmax pmax
comp=Z,6.0nm,0.9s
RSSD Black Hills 80.02 42 *e*P **P 18 26 41.7 +0.6**
comp=Z,6.4nm,0.9s
PDMCI Parker Dam,Lak 80.07 55 P **P 18 26 40.8 -0.4**
baz=307,SNR=7.4
STHS Stebnicka Huta 80.13 325 *e*P **P 18 26 42.9 +1.6**
STHS pmax pmax
comp=Z,12nm,1.2s
STHS Stebnicka Huta 80.13 325 *e*P **P 18 26 42.9 +1.6**
Y12C Blythe 80.15 55 P **P 18 26 42.3 +0.6**
baz=307
Y12C Blythe 80.15 55 *e*P **P 18 26 43.4 +1.7**
comp=Z,17nm,1.3s
UZH Uzhgorod 80.19 324 *e*P **P 18 26 42.2 +0.6**
UZH *e* 18 26 45.2
UZH *i* 18 29 44.0
UZH *i*S **S 18 36 40.6 -4.1**
UZH *i* 18 36 51.0
UZH *i*PS **PnS 18 37 23.2 -8.1**
UZH *e*SS **SS 18 41 56.4 +1.9**
UZH MLR MLR
comp=N,8μm,13.7s
UZH MLR MLR
comp=E,8μm,13.7s
UZH MLR MLR
comp=Z,4μm,13.7s
O20A White River Ci 80.20 47 P **P 18 26 42.2 +0.1**
baz=309
O20A White River Ci 80.20 47 *e*P **P 18 26 42.6 +0.5**
comp=Z,21nm,1.1s
OJC Ojcow 80.20 327 *e*P **P 18 26 42.1 +0.4**
OJC Ojcow 80.20 327 *e*P **P 18 26 42.6 +0.9**
OJC pmax pmax
comp=Z,24nm,1.0s
OJC Ojcow 80.20 327 *e*P **P 18 26 42.6 +0.9**
comp=Z,24nm,1.0s
I25A Rochford 80.25 42 P **P 18 26 42.6 +0.3**
baz=312
ARCR ARCALIA 80.27 322⇑*i*P **P 18 26 44.0 +1.9**
G27A Dupree 80.30 40 P **P 18 26 42.9 +0.5**
baz=312
D29A Pettibone, Tap 80.34 38 P **P 18 26 43.2 +0.6**
baz=314
GLA Glamis 80.37 56 P **P 18 26 43.7 +0.8**
baz=307
GLA Glamis 80.37 56 *e*P **P 18 26 44.7 +1.8**
GLA pmax pmax
comp=Z,23nm,1.2s
GLA Glamis 80.37 56 *e*P **P 18 26 44.7 +1.8**
comp=Z,22nm,1.3s
H26A Fairpoint 80.37 41 P **P 18 26 43.4 +0.6**
baz=312
CRVS Cervenica-Dubn 80.39 325 *e*P **P 18 26 43.5 +0.8**
CRVS *e* 18 26 54.1
CRVS Cervenica-Dubn 80.39 325 *e*P **P 18 26 43.5 +0.8**
CRVS *e* 18 26 54.1
ANTO Ankara 80.42 313 *e*P **P 18 26 44.8 +1.7**
ANTO *e**PP **pP 18 26 51.8 -0.2**
ANTO Ankara 80.42 313 *e*P **P 18 26 44.8 +1.7**
ANTO *e*pP **pP 18 26 51.8 -0.2**
C30A Mose, Pekin 80.45 37 P **P 18 26 43.6 +0.5**
baz=314
BR231 Keskin MP Arra 80.45 313 *e*P **P 18 26 41.6 -1.7**
A32A Rocking H Ranc 80.53 35 P **P 18 26 43.5 0.0**
baz=316
MLR Muntele Rosu 80.56 320 ||*i*P **P 18 26 45.2 +1.4**
MLR Muntele Rosu 80.56 320 *e*P **P 18 26 44.6 +0.8**
MLR pmax pmax
comp=Z,49nm,1.8s
MLR Muntele Rosu 80.56 320 *e*P **P 18 26 44.6 +0.8**
comp=Z,49nm,1.8s
NIE Niedzica 80.56 326 *e*P **P 18 26 45.1 +1.5**
NIE Niedzica 80.56 326 *e*P **P 18 26 45.1 +1.5**
PV09 Paradox Valley 80.69 49 *e*P **P 18 26 44.0 -0.8**
URZ Urewera 80.70 153 LR LR 18 57 14.9
comp=Z,384nm,21.8s,baz=0.5,slow=32
D30A Buchanan 80.72 37 P **P 18 26 44.6 0.0**
baz=314
H27A Howes 80.73 41 P **P 18 26 44.5 -0.1**
baz=312,SNR=9.4
B32A Ashes, Strandq 80.88 35 P **P 18 26 45.1 -0.2**
baz=316
PV04 Paradox Valley 80.89 49 *e*P **P 18 26 46.7 +0.8**
PV05 Paradox Valley 80.97 49 *e*P **P 18 26 47.4 +1.1**

A33A Warroad 81.02 34 P **P 18 26 45.7 -0.3**
baz=316
Y14A Wickenburg 81.05 55 *e*P **P 18 26 47.0 +0.5**
comp=Z,53nm,1.1s
Y14A *e*pP **pP 18 26 56.9 +1.4**
VOIR 81.05 321 ||*i*P **P 18 26 47.5 +1.1**
N23A Red Feather La 81.06 45 P **P 18 26 47.6 +0.9**
baz=310,SNR=20
N23A Red Feather La 81.06 45 *e*P **P 18 26 48.0 +1.2**
comp=Z,34nm,1.1s
PHWY Pilot Hill 81.07 45 *e*P **P 18 26 48.9 +2.0**
PHWY *e*pP **sP 18 26 58.2 -0.8**
J26A Sides Ranch, S 81.08 42 P **P 18 26 46.8 +0.2**
baz=312
LANS Liptovska Anna 81.13 326 *e*P **P 18 26 48.5 +1.8**
LANS Liptovska Anna 81.13 326 *e*P **P 18 26 48.5 +1.8**
WUAZ Wupatki 81.14 52 P **P 18 26 47.2 +0.1**
baz=308,SNR=7.7
WUAZ Wupatki 81.14 52 *e*P **P 18 26 49.1 +1.9**
comp=Z,24nm,1.0s
KECS Kecovo 81.14 325 *e*P **P 18 26 48.0 +1.3**
KECS *e* 18 26 57.6
KECS pmax pmax
comp=Z,6.0nm,1.4s
KECS Kecovo 81.14 325 *e*P **P 18 26 48.0 +1.3**
KECS *e* 18 26 57.6
OKC Ostrava-Krasne 81.21 327 *e*P **P 18 26 47.5 +0.4**
OKC *e*pP **PcP 18 26 54.5 +1.2**
OKC *e*PP **PP 18 29 50.9 -1.0**
OKC *e*S **S 18 36 59.6 +4.3**
OKC *e*SS **SS 18 42 16.0 +6.3**
OKC AMS AMS 19 12 50.0
comp=Z,3μm,14.4s
OKC Ostrava-Krasne 81.21 327 *e*P **P 18 26 47.5 +0.4**
OKC *e* 18 26 54.5
OKC *e* 18 29 50.9
OKC *e*S **S 18 36 59.6 +4.3**
OKC *e*SS **SS 18 42 16.0 +6.3**
OKC MLR MLR
comp=Z,3μm,14.4s
113A Mohawk Valley, 81.25 56 *e*P **P 18 26 48.5 +0.9**
comp=Z,6.7nm,0.9s
KSP Ksiaz 81.26 329 *e*P **P 18 26 47.6 +0.3**
KSP Ksiaz 81.26 329 *e*P **P 18 26 47.6 +0.3**
D31A Mcclaflin, Tow 81.27 37 P **P 18 26 47.3 -0.1**
baz=315
ARR Arges 81.31 321 ||*i*P **P 18 26 49.3 +1.5**
PRD Provadia 81.33 318 *i*P **P 18 26 49.5 +1.7**
F30A Leola 81.48 38 P **P 18 26 48.5 -0.1**
baz=314
MORC Moravsky Berou 81.52 327 ||*i*P **P 18 26 49.0 +0.2**
MORC Moravsky Berou 81.52 327 *e*P **P 18 26 49.3 +0.5**
MORC pmax pmax
comp=Z,140nm,1.6s
MORC Moravsky Berou 81.52 327 *e*P **P 18 26 49.3 +0.5**
comp=Z,138nm,1.6s
E31A Nome 81.53 37 P **P 18 26 48.8 -0.1**
baz=315
SMCO Snowmass 81.56 47 *e*P **P 18 26 50.9 +1.3**
comp=Z,15nm,1.2s
DPC Dobruska-Polom 81.62 328 *e*P **P 18 26 50.2 +0.9**
DPC *e*pP **pP 18 26 57.0 -1.2**
DPC *e*PP **PP 18 29 55.2 -0.1**
DPC AMS AMS 19 07 50.0
comp=Z,4μm,13.7s
DPC Dobruska-Polom 81.62 328 *e*P **P 18 26 50.2 +0.9**
DPC *e* 18 26 57.0
DPC *e* 18 29 55.2
DPC MLR MLR
comp=Z,4μm,13.7s
KRLC Kraliky 81.63 328 *e*P **P 18 26 50.0 +0.7**
KRLC Kraliky 81.63 328 *e*P **P 18 26 50.0 +0.7**
UPC Upice 81.63 329 *e*PP PP 18 29 58.5 +3.1
UPC *e*S **S 18 37 03.8 +4.1**
UPC *e*SS **SS 18 42 20.6 +4.7**
UPC AMS AMS 19 08 00.0
comp=Z,4μm,14.0s
I28A Midland 81.64 41 P **P 18 26 49.5 0.0**
baz=313,SNR=7.9
B34A Aery, Baudette 81.69 34 P **P 18 26 49.0 -0.6**
baz=317
LOT Lotru 81.70 321 ||*i*P **P 18 26 51.9 +2.0**
H29A Onida 81.71 40 P **P 18 26 50.2 +0.4**
baz=314
X16A Lo Mia Camp, P 81.78 53 *e*P **P 18 26 52.7 +2.1**
comp=Z,14nm,1.0s
X16A *e*pP **sP 18 27 02.7 -0.1**
PSZ Piszkesteto 81.83 325 ||*i*P **P 18 26 51.3 +0.9**
PSZ Piszkesteto 81.83 325||*e*P **P 18 26 51.3 +0.9**
PSZ Piszkesteto 81.83 325 *e*P **P 18 26 51.4 +0.9**
PSZ pmax pmax
comp=Z,35nm,1.3s
PSZ Piszkesteto 81.83 325 *e*P **P 18 26 51.4 +0.9**
comp=Z,35nm,1.3s
MVCO Mesa Verde 81.89 50 P **P 18 26 51.4 +0.2**
baz=310,SNR=6.0
MVCO Mesa Verde 81.89 50 *e*P **P 18 26 52.0 +0.8**
comp=Z,20nm,1.1s
VYHS Vyhne 81.89 326 *e*P **P 18 26 51.6 +0.8**
VYHS pmax pmax
comp=Z,5.0nm,1.0s
VYHS Vyhne 81.89 326 *e*P **P 18 26 51.5 +0.8**
VYHS *e*PP **PP 18 29 54.1 -3.5**
VYHS *e*S **S 18 37 08.6 +6.2**
VYHS *e*L L 19 07 18.5
G30A Faulkton 81.91 39 P **P 18 26 51.4 +0.5**
baz=314
E32A Braaten, Kindr 81.91 37 P **P 18 26 51.2 +0.4**
baz=315
ISCO Idaho Springs 81.96 46 P **P 18 26 52.0 +0.4**
baz=311
ISCO Idaho Springs 81.96 46 *e*P **P 18 26 54.0 +2.4**
ISCO pmax pmax
comp=Z,10.0nm,1.1s
ISCO Idaho Springs 81.96 46 *e*P **P 18 26 54.0 +2.4**
comp=Z,10nm,1.1s
SZH Strazhica 82.07 319 *i*P **P 18 26 51.8 +0.1**
I29A Vivian Onida 82.08 40 P **P 18 26 52.4 +0.6**
baz=314
B35A Bob, Littlefor 82.20 34 P **P 18 26 52.5 +0.2**
baz=317
BRG Berggiesshubel 82.21 330 P **P 18 26 54.0 +1.7**
BRG PP **PP 18 30 02.0 +1.9**
BRG Berggiesshubel 82.21 330 P **P 18 26 54.0 +1.7**
BRG 18 30 02.0
BRG Berggiesshubel 82.21 330 S **S 18 37 09.0 +3.4**
BRG SS **SS 18 42 26.0 +1.6**
PVCC Panska Ves 82.22 329 *e*PP PP 18 30 02.5 +2.4
PVCC *e*S **S 18 37 09.2 +3.5**
PVCC AMS AMS 19 08 10.0
comp=Z,4μm,13.7s
CLL Collm 82.25 331 *i*P **P 18 26 52.2 -0.3**
comp=Z,23nm,0.9s
CLL *e* 18 27 00.0
comp=Z,26nm,1.1s
CLL *e*PP **PP 18 30 01.0 +0.6**
CLL *e*PPIp 18 30 06.0
CLL *e*PPP PPP 18 31 53.0
CLL *e*S **S 18 37 06.0 0.0**
comp=N,300nm,11.5s
CLL *e*S **S 18 37 06.0 0.0**
comp=E,400nm,11.6s
CLL *e*SS **SS 18 42 25.0 0.0**
CLL Lmax 19 09 00.0
CLL Collm 82.25 331 *i*P **P 18 26 52.2 -0.3**
CLL *e*S **S 18 37 06.0 0.0**
CLL pmax pmax
comp=Z,23nm,0.9s
CLL MLR MLR
comp=Z,3μm,15.6s
CLL Collm 82.25 331 *e*P **P 18 26 52.7 +0.2**
comp=Z,27nm,0.9s
VRAC Vranov 82.28 328 ||*i*P **P 18 26 54.0 +1.2**
214A Organ Pipe Nat 82.38 56 P **P 18 26 54.1 +0.5**
baz=308
D34A Park Rapids 82.45 36 P **P 18 26 54.0 +0.4**
baz=317
E33A Westby DABS, E 82.49 36 P **P 18 26 54.0 +0.1**
baz=316
S22A 4UR Ranch, Cre 82.57 48 P **P 18 26 55.8 +1.0**
baz=310,SNR=7.5
S22A 4UR Ranch, Cre 82.57 48 *e*P **P 18 26 56.5 +1.6**
comp=Z,12nm,1.0s
C35A Jirik Farms, M 82.57 35 P **P 18 26 53.8 -0.5**
baz=317

GOPC GO Pecny, Ondr 82.60 329 *e*P **P 18 26 54.7 +0.3**
GOPC *e*pP **pP 18 27 01.6 -1.7**
GOPC *e*S **S 18 37 14.0 +4.4**
GOPC AMS AMS 19 09 00.0
comp=Z,3μm,14.1s
GOPC GO Pecny, Ondr 82.60 329 *e*P **P 18 26 54.7 +0.3**
GOPC *e* 18 27 01.6
GOPC *e*S **S 18 37 14.0 +4.4**
GOPC MLR MLR
comp=Z,3μm,14.1s
I30A Oacoma 82.61 40 P **P 18 26 55.0 +0.5**
baz=314
PRU Pruhonice 82.64 329 *e*P **P 18 26 54.9 +0.3**
PRU *e*pP **pP 18 27 02.7 -0.8**
PRU *e*PP **PP 18 30 03.0 -0.6**
PRU *e*S **S 18 37 13.7 +3.7**
PRU *e*SS **SS 18 42 36.9 +6.0**
PRU AMS AMS 19 10 50.0
comp=Z,3μm,14.0s
PRU Pruhonice 82.64 329 *e*P **P 18 26 54.9 +0.3**
PRU *e* 18 27 02.7
PRU *e* 18 30 03.0
PRU *e*S **S 18 37 13.7 +3.7**
PRU *e*SS **SS 18 42 36.9 +6.0**
PRU MLR MLR
comp=Z,3μm,14.0s
BZS Buzias 82.65 323⇑*i*P **P 18 26 55.5 +0.8**
TREC Trest 82.77 328 *e*P **P 18 26 55.6 +0.3**
TREC *e*pP **pP 18 27 03.4 -0.8**
TREC *e*S **S 18 37 14.9 +3.5**
TREC AMS AMS 19 09 50.0
comp=Z,3μm,14.3s
TREC Trest 82.77 328 *e*P **P 18 26 55.6 +0.3**
TREC *e* 18 27 03.4
TREC *e*S **S 18 37 14.9 +3.5**
TREC MLR MLR
comp=Z,3μm,14.3s
Q24A Divide 82.78 47 P **P 18 26 56.2 +0.3**
baz=311,SNR=6.0
Q24A Divide 82.78 47 *e*P **P 18 26 57.5 +1.6**
comp=Z,9.2nm,1.0s
C36A Pine Crest Far 83.05 34 P **P 18 26 57.1 +0.3**
baz=318
PMOR Pomariorio Ree 83.14 114 *e*T T 19 57 57.8
comp=Z,11nm,0.2s
MPEP Malo Peshtene 83.17 320 *i*P **P 18 26 57.8 +0.3**
MDVR Moldovita 83.20 322 ||*i*P **P 18 26 58.0 +0.4**
CSS Mathiatis 83.20 309 *e*P **P 18 26 58.4 +0.6**
comp=Z,3.9nm,1.0s
G33A Ortonville 83.22 38 P **P 18 26 58.0 +0.4**
baz=316
NKC Novy Kostel 83.31 330 *e*P **P 18 26 58.4 +0.3**
NKC *e*pP **pP 18 27 05.7 -1.3**
NKC AMS AMS 19 09 00.0
comp=Z,4μm,15.0s
NKC Novy Kostel 83.31 330 *e*P **P 18 26 58.4 +0.3**
NKC *e* 18 27 05.7
NKC MLR MLR
comp=Z,4μm,15.0s
MOX Moxa 83.32 331 P **P 18 26 59.2 +1.1**
MOX pmax pmax
comp=Z,10.0nm,0.9s
C37A Embarrass 83.36 34 P **P 18 26 58.8 +0.5**
baz=318
SDCO Great Sand Dun 83.37 48 P **P 18 26 59.3 +0.3**
baz=311,SNR=9.3
SDCO Great Sand Dun 83.37 48 *e*P **P 18 27 01.0 +2.0**
comp=Z,12nm,1.3s
K30A Basset 83.37 41 P **P 18 26 58.9 +0.3**
baz=314
H33A Prehn Over Nor 83.43 38 P **P 18 26 59.0 +0.2**
baz=316
KDZ Kurdzhali 83.46 318 *i*P **P 18 27 00.1 +1.1**
EYMN Ely 83.51 33 P **P 18 26 59.2 +0.1**
baz=319
EYMN Ely 83.51 33 *e*P **P 18 27 00.3 +1.2**
comp=Z,32nm,1.4s
TUC Tucson 83.51 55 P **P 18 27 00.6 +1.0**
baz=309
TUC Tucson 83.51 55 *e*P **P 18 27 01.6 +2.1**
TUC pmax pmax
comp=Z,19nm,1.5s
TUC Tucson 83.51 55 *e*P **P 18 27 01.6 +2.1**
comp=Z,19nm,1.5s
SOP Sopron 83.52 327 P **P 18 27 00.1 +1.0**
SOP pmax pmax
comp=Z,23nm,1.4s
PPT Papeete 83.57 117 LR LR 19 03 49.5
comp=Z,266nm,18.3s,baz=352,slow=35
PPT2 Papeete2 83.58 117 *e*LR LR 18 52 53.8
comp=Z,2μm,30.8s,baz=312
CONA Conrad Observa 83.64 327 *i*pP **P 18 27 00.8 +0.9**
comp=Z,15nm,1.1s,SNR=7.9
RPZ Rata Peaks 83.65 159 LR LR 18 58 59.9
comp=Z,298nm,21.8s,baz=14,slow=32
KHC Kasperske Hory 83.70 329 *e*P **P 18 27 00.3 +0.2**
KHC *e*pP **pP 18 27 07.1 -2.0**
KHC *e*PP **PP 18 30 13.1 +0.7**
KHC *e*S **S 18 37 24.8 +3.9**
KHC *e*SS **SS 18 42 48.6 +1.9**
KHC AMS AMS 19 09 40.0
comp=Z,3μm,14.1s
KHC Kasperske Hory 83.70 329 *e*P **P 18 27 00.3 +0.2**
KHC *e* 18 27 07.1
KHC *e* 18 30 13.1
KHC *e*S **S 18 37 24.8 +3.9**
KHC *e*SS **SS 18 42 48.6 +1.9**
KHC MLR MLR
comp=Z,3μm,14.1s
KHC Kasperske Hory 83.70 329 *e*P **P 18 27 00.2 0.0**
comp=Z,4.9nm,0.8s
E36A McGregor 83.78 35 P **P 18 27 00.1 -0.4**
baz=318
C38A Sawbill Land. 83.78 33 P **P 18 27 00.1 -0.4**
baz=319
K31A O'Neill 83.86 41 P **P 18 27 01.6 +0.6**
baz=315
GEC2 GERESS Array S 83.87 329 *e*P **P 18 27 01.7 +0.6**
GEC2 pmax pmax
comp=Z,6.0nm,0.8s
GEC2 GERESS Array S 83.87 329 *e*P **P 18 27 01.7 +0.6**
comp=Z,5.6nm,0.8s
GERES GERESS Array B 83.87 329 P **P 18 27 00.5 -0.6**
comp=Z,7.0nm,0.9s,baz=46,slow=5.8,SNR=41
GERES PP **PP 18 30 08.9 -5.0**
comp=Z,0.4nm,0.6s,baz=49,slow=9.1,SNR=4.6
GEA0 GERESS Array S 83.88 329 *e*P **P 18 27 00.8 -0.3**
WET Wettzell 83.98 329 P **P 18 27 01.9 +0.3**
WET pmax pmax
comp=Z,14nm,1.1s
L31A Butterfield Fa 84.13 41 P **P 18 27 03.1 +0.7**
baz=315
F36A Milaca 84.14 36 P **P 18 27 02.9 +0.6**
baz=318
G35A Watkins 84.15 36 P **P 18 27 03.0 +0.6**
baz=317
ECSD EROS Data Cent 84.18 39 P **P 18 27 03.0 +0.4**
baz=316
ECSD EROS Data Cent 84.18 39 *e*P **P 18 27 03.0 +0.4**
comp=Z,16nm,1.3s
GRFO Grafenberg 84.23 331 *e*P **P 18 27 03.8 +1.1**
GRFO pmax pmax
comp=Z,40nm,1.1s
GRFO Grafenberg 84.23 331 *e*P **P 18 27 03.8 +1.1**
comp=Z,40nm,1.1s
EKA Eskdalemuir Ar 84.23 341 P **P 18 27 02.8 +0.2**
comp=Z,2.9nm,0.9s,baz=27,slow=4.9,SNR=4.5
EKA Eskdalemuir Ar 84.23 341 P **P 18 27 02.8 +0.2**
EKA pmax pmax
comp=Z,1.0nm,0.6s
ARSA Arzberg 84.31 327 *i*P **P 18 27 03.6 +0.3**
comp=Z,3.0nm,0.7s
H35A Sunnyside Ranc 84.36 37 P **P 18 27 04.3 +0.7**
baz=317
MOA Molln 84.40 328 *i*P **P 18 27 03.9 +0.2**
comp=Z,7.2nm,1.1s
MMB Musomiste 84.41 319 *i*P **P 18 27 04.2 +0.3**
T25A Trinidad 84.42 48 P **P 18 27 04.6 +0.4**
baz=312,SNR=7.2
T25A Trinidad 84.42 48 *e*P **P 18 27 05.5 +1.3**
T25A *e*pP **sP 18 27 16.0 -0.5**
LAZ Ladron 84.54 51 *e*P **P 18 27 07.0 +2.1**
KKB Krupnik 84.56 319 *i*P **P 18 27 04.9 +0.3**
ANMO Albuquerque 84.61 50 P **P 18 27 05.8 +0.6**
comp=Z,14nm,1.1s,baz=308,slow=5.4,SNR=14

ANMO	Albuquerque	84.61	50	P	P	18 27 06.0	+0.8
	baz=311						
ANMO	Albuquerque	84.61	50	*i* P	P	18 27 04.0	-1.2
ANMO				pmax	pmax		
	comp=Z,16nm,1.2s						
ANMO	Albuquerque	84.61	50	*e*P	P	18 27 06.0	+0.8
	comp=Z,19nm,1.3s						
MEH	Mehetia	84.86	116	*e*T	T	20 00 24.6	
	comp=Z,16nm,0.3s						
H36A	Jessenland, He	84.89	37	P	P	18 27 06.8	+0.6
	baz=318						
LPM	Los Pinos Moun	84.91	51	*e*P	P	18 27 07.4	+0.6
SOKA	Soboth	84.96	327	*i* P	P	18 27 06.6	0.0
	comp=Z,12nm,1.2s,SNR=9.7						
BNM	Barren Site	85.02	51	*e*P	P	18 27 09.1	+1.8
319A	Douglas	85.09	55	*e*P	P	18 27 08.8	+1.2
	comp=Z,17nm,1.1s						
TAOE	Nuku Hiva Isla	85.24	104	*e*LR	LR	18 53 45.8	
	comp=Z,1μm,31.0s,baz=317						
O31A	Woolen Ranch,	85.28	43	P	P	18 27 09.1	+0.8
	baz=314						
OBKA	Obir	85.31	327	*i* PcP	P	18 27 09.8	+1.5
	comp=Z,2.1nm,0.8s						
121A	Cookes Peak, D	85.33	53	*e*P	P	18 27 08.9	+0.1
	comp=Z,18nm,1.0s						
H37A	Dierke Farm, C	85.37	36	P	P	18 27 09.3	+0.7
	baz=318						
KBA	Koelnbreinsper	85.39	328	*i* PcP	P	18 27 10.4	+1.5
	comp=Z,7.7nm,0.9s						
KBA	Koelnbreinsper	85.39	328	P	P	18 27 09.6	+0.7
KBA				pmax	pmax		
	comp=Z,8.0nm,0.9s						
MEM	Membach	85.45	334	P	P	18 27 08.5	-0.4
	comp=Z,9.7nm,1.1s						
MEM	Membach	85.45	334	P	P	18 27 09.9	+1.0
MEM				pmax	pmax		
	comp=Z,19nm,1.0s						
I37A	Lemond, Waseca	85.56	37	P	P	18 27 09.9	+0.3
	baz=318						
L34A	Svendsen Farm,	85.57	40	P	P	18 27 10.3	+0.7
	baz=316						
J36A	Seneca 1, Swea	85.61	38	P	P	18 27 10.4	+0.6
	baz=317						
STU	Stuttgart	85.76	331	*e*P	P	18 27 09.8	-0.7
STU				pmax	pmax		
	comp=Z,21nm,0.9s						
STU	Stuttgart	85.76	331	*e*P	P	18 27 09.8	-0.7
	comp=Z,21nm,0.9s						
BCLA	Clavier	85.86	334	P	P	18 27 10.8	-0.1
	comp=Z,9.1nm,1.1s						
CBKS	Cedar Bluff	85.99	44	P	P	18 27 12.3	+0.4
	baz=314						
CBKS	Cedar Bluff	85.99	44	*e*P	P	18 27 12.9	+1.0
CBKS				pmax	pmax		
	comp=Z,37nm,1.2s						
CBKS	Cedar Bluff	85.99	44	*e*P	P	18 27 12.9	+1.0
	comp=Z,37nm,1.2s						
ABTA	Abfaltersbach	86.01	328	*i* P	P	18 27 11.8	0.0
	comp=Z,4.3nm,1.0s						
SCHQ	Schefferville	86.01	16	P	P	18 27 12.4	+0.9
	comp=Z,7.6nm,0.7s,baz=299,slow=19,SNR=3.4						
SCHQ				LR	LR	19 11 19.3	
	comp=Z,596nm,18.2s,baz=350,slow=40						
J37A	Redenius Farm,	86.01	37	P	P	18 27 12.1	+0.3
	baz=318						
CWF	Charnwood Fore	86.01	339	*e*P	P	18 27 12.7	+1.1
	comp=Z,22nm,1.0s						
I38A	Scanlan Farm,	86.06	36	P	P	18 27 12.6	+0.5
	baz=319						
LANF	Langenberg	86.13	332	*e*P	P	18 27 12.1	-0.2
MOTA	Moosalm	86.13	329	*i* PcP	P	18 27 12.9	+0.4
	comp=Z,7.2nm,1.0s						
PDG	Podgorica	86.13	322	⇑*i* P	P	18 27 13.1	+0.7
RETA	Reutte	86.16	329	*i* P	P	18 27 12.7	+0.1
	comp=Z,7.3nm,1.1s,SNR=8.9						
WLF	Walferdange	86.18	333	P	P	18 27 13.4	+0.9
	comp=Z,11nm,1.4s						
WLF	Walferdange	86.18	333	P	P	18 27 13.1	+0.6
WLF				pmax	pmax		
	comp=Z,13nm,1.4s						
DOU	Dourbes	86.38	334	P	P	18 27 13.7	+0.2
	comp=Z,7.8nm,1.7s						
BFO	Black Forest	86.46	331	*i* P	P	18 27 14.4	+0.5
BFO	Black Forest	86.46	331	*e*P	P	18 27 13.8	-0.2
	comp=Z,15nm,0.9s						
Q32A	Meitler Ranch,	86.52	43	P	P	18 27 14.7	+0.3
	baz=315						
J38A	Wedel Dairy, R	86.53	37	P	P	18 27 14.5	+0.2
	baz=319						
FETA	Feichten	86.55	329	*i* P	P	18 27 14.1	-0.5
	comp=Z,6.1nm,1.0s						
BAIF	Baives	86.55	334	*e*P	P	18 27 14.8	+0.5
BAIF				pmax	pmax		
	comp=Z,7.0nm,0.8s						
P33A	Williams Farm,	86.68	42	P	P	18 27 15.5	+0.3
	baz=316						
DAVA	Damuels	86.68	330	*i* PcP	P	18 27 15.7	+0.4
	comp=Z,13nm,1.0s,SNR=5.8						
O34A	Beatrice	86.68	41	P	P	18 27 15.4	+0.2
	baz=316						
CDF	Champ du Feu	86.80	332	*e*P	P	18 27 15.2	-0.5
CDF				pmax	pmax		
	comp=Z,10.0nm,0.9s						
Q33A	Connelly Farm,	86.91	43	P	P	18 27 16.4	+0.1
	baz=315						
ECH	Echery	87.00	332	*e*P	P	18 27 16.4	-0.2
FUORN	Ofenpass-Fuorn	87.06	329	*e*P	P	18 27 17.7	+0.5
	comp=Z,30nm,1.4s						
P34A	Walnut Farm, R	87.07	42	P	P	18 27 17.3	+0.2
	baz=316						
S32A	Newby Ranch, P	87.22	44	P	P	18 27 18.0	+0.2
	baz=315						
MOF	Molkenrain	87.31	332	*e*P	P	18 27 17.4	-0.8
R33A	Olander Ranch,	87.32	43	P	P	18 27 18.1	-0.2
	baz=315						
MNTX	Cornudas Mount	87.42	52	P	P	18 27 19.7	+0.8
	baz=312						
HINF	Hinteralfeld	87.45	332	*e*P	P	18 27 19.7	+0.9
HINF				pmax	pmax		
	comp=Z,3.0nm,0.6s						
Q34A	Chapman	87.45	42	P	P	18 27 19.4	+0.4
	baz=316						
KSU1	Kansas State U	87.50	42	P	P	18 27 19.9	+0.7
	baz=316						
P35A	Duane Minner,	87.51	41	P	P	18 27 20.0	+0.8
	baz=316						
N37A	Lee Faris, Mou	87.56	39	P	P	18 27 19.9	+0.4
	baz=318						
T32A	Huddler Ranch,	87.59	44	P	P	18 27 20.5	+0.8
	baz=315						
O36A	Bolckow	87.63	40	P	P	18 27 20.3	+0.6
	baz=317						
R34A	Isabella, Hill	87.73	43	P	P	18 27 20.9	+0.6
	baz=316						
S33A	Kaszmaul Farm,	87.82	44	P	P	18 27 21.3	+0.6
	baz=315						
P36A	Good Intent, A	87.88	41	P	P	18 27 21.1	+0.2
	baz=317						
Q35A	Mercer Eighty,	87.99	42	P	P	18 27 21.8	+0.3
	baz=316						
S34A	Willow Spring	88.23	43	P	P	18 27 23.4	+0.7
	baz=316						
R35A	Emporia Munici	88.29	42	P	P	18 27 23.7	+0.8
	baz=316						
N39A	Derby Farms, D	88.34	38	P	P	18 27 23.7	+0.5
	baz=319						
V32A	Arapaho	88.54	46	P	P	18 27 24.7	+0.4
	baz=315						
R36A	Gordon, Harris	88.66	42	P	P	18 27 25.5	+0.8
	baz=317						
T34A	McClaskey Farm	88.68	44	P	P	18 27 25.5	+0.7
	baz=316						
S35A	Otter Creek Ra	88.69	43	P	P	18 27 25.4	+0.6
	baz=316						
P38A	Dawn	88.75	40	P	P	18 27 25.7	+0.7
	baz=318						
W32A	Sentinel	88.84	46	P	P	18 27 26.3	+0.7
	baz=315						
U34A	Anderson Ranch	88.90	44	P	P	18 27 26.9	+1.1
	baz=316						
T35A	Sooner Cattle	89.13	43	P	P	18 27 27.5	+0.5
	baz=316						
W33A	Caddo, Fort Co	89.28	46	P	P	18 27 27.6	-0.1
	baz=315						
V34A	Guthrie	89.34	45	P	P	18 27 28.6	+0.7
	baz=316						
T36A	Boggs Farm, Ca	89.38	43	P	P	18 27 27.9	-0.2
	baz=317						
LPL	La Plagne	89.39	331	*e*P	P	18 27 29.6	+1.3
LPL				pmax	pmax		
	comp=Z,7.0nm,1.0s						
LPG	La Plagne	89.40	331	*e*P	P	18 27 28.8	+0.4
LPG				pmax	pmax		
	comp=Z,8.0nm,1.0s						
S37A	Fort Scott	89.44	42	P	P	18 27 28.3	-0.1
	baz=317						
Q39A	Willow Grove F	89.47	40	P	P	18 27 28.4	-0.1
	baz=318						
SMF	Signal de Mont	89.56	333	*e*P	P	18 27 29.3	+0.5
SMF				pmax	pmax		
	comp=Z,15nm,1.2s						
P40A	Paris	89.58	39	P	P	18 27 28.9	-0.1
	baz=319						
AVF	Avril sur Loir	89.61	333	*e*P	P	18 27 28.6	-0.4
AVF				pmax	pmax		
	comp=Z,20nm,1.1s						
T37A	Cheneyville 18	89.86	42	P	P	18 27 30.7	+0.4
	baz=317						
R39A	Chumby, Stover	89.98	40	P	P	18 27 30.4	-0.5
	baz=318						
TX31	Lajitas Ar. Si	90.09	53	*e*P	P	18 27 31.6	-0.1
TXAR	Lajitas Array	90.09	53	P	P	18 27 31.8	+0.1
	comp=Z,8.9nm,1.0s,baz=299,slow=2.6,SNR=28						
TXAR				LR	LR	19 07 54.3	
	comp=Z,437nm,18.1s,baz=0.0,slow=36						
T38A	Diamond	90.26	42	P	P	18 27 32.1	-0.1
	baz=318						
V36A	Jenks	90.26	44	P	P	18 27 32.7	+0.4
	baz=317						
U37A	Salina	90.27	43	P	P	18 27 32.6	+0.3
	baz=317						
S39A	Bolivar	90.30	41	P	P	18 27 32.0	-0.4
	baz=318						
ABTX	Abilene, Hawle	90.36	48	P	P	18 27 32.7	-0.1
	baz=314						
R40A	Maddies Statio	90.40	40	P	P	18 27 32.7	-0.1
	baz=319						
SBF	Sospel	90.46	329	*e*P	P	18 27 33.6	+0.5
SBF				pmax	pmax		
	comp=Z,16nm,1.0s						
V37A	Hulbert	90.64	43	P	P	18 27 34.3	+0.3
	baz=317						
U38A	Gravette	90.65	42	P	P	18 27 33.9	-0.1
	baz=318						
VIVF	Saint-Julien-l	90.75	331	*e*P	P	18 27 34.9	+0.5
VIVF				pmax	pmax		
	comp=Z,10.0nm,1.0s						
X36A	Centrahoma	90.91	45	P	P	18 27 36.1	+0.8
	baz=316						
W37B	Quinton	91.02	44	P	P	18 27 36.4	+0.7
	baz=317						
V38A	Canehill	91.06	43	P	P	18 27 36.0	0.0
	baz=318						
SADO	Sadowa	91.16	28	LR	LR	19 10 58.0	
	comp=Z,315nm,20.9s,baz=7.5,slow=37						
U39A	Green Forest	91.18	42	P	P	18 27 36.4	-0.1
	baz=318						
Z35A	Perchaven, San	91.28	46	P	P	18 27 37.8	+0.8
	baz=316						
134A	White-Moore Ra	91.33	47	P	P	18 27 36.7	-0.6
	baz=315						
SFIN	Lafayette	91.35	35	P	P	18 27 37.7	+0.5
	baz=322						
Y36A	Durant	91.43	45	P	P	18 27 38.4	+0.7
	baz=316						
V39A	Pettigrew	91.49	42	P	P	18 27 37.7	-0.3
	baz=318						
U40A	Yellville	91.54	42	P	P	18 27 38.2	0.0
	baz=318						
W38A	Poteau	91.58	43	P	P	18 27 38.5	+0.2
	baz=317						
333A	Richland Sprin	91.66	49	P	P	18 27 39.8	+0.9
	baz=315						
CAF	Calviac	91.67	333	*e*P	P	18 27 39.8	+1.1
CAF				pmax	pmax		
	comp=Z,13nm,1.0s						
X38A	Whitesboro	91.70	44	P	P	18 27 39.5	+0.5
	baz=317						
Z36A	Blue Ridge	91.80	46	P	P	18 27 39.7	+0.3
	baz=316						
W39A	Magazine	91.89	43	P	P	18 27 40.2	+0.4
	baz=318						
334A	Lometa	92.11	48	P	P	18 27 41.5	+0.5
	baz=315						
LFF	La Frestale	92.14	334	*e*P	P	18 27 41.9	+1.1
LFF				pmax	pmax		
	comp=Z,11nm,0.9s						
X39A	Fountain Ranch	92.22	44	P	P	18 27 42.0	+0.6
	baz=318						
434A	Burnet	92.46	49	P	P	18 27 43.3	+0.8
	baz=315						
MIAR	Mount Ida	92.49	43	P	P	18 27 43.0	+0.4
	baz=318						
MIAR	Mount Ida	92.49	43	*e*P	P	18 27 42.6	0.0
MIAR				pmax	pmax		
	comp=Z,15nm,1.0s						
MIAR	Mount Ida	92.49	43	*e*P	P	18 27 42.6	0.0
	comp=Z,15nm,1.0s						
WHAR	Wooly Hollow	92.64	42	*e*P	P	18 27 44.6	+1.4
	comp=Z,22nm,1.2s						
W41B	Gary Mavity, V	92.75	42	P	P	18 27 44.2	+0.5
	baz=319						
534A	Blanco	92.89	49	P	P	18 27 45.2	+0.7
	baz=315						
933A	Laredo	94.08	51	P	P	18 27 51.1	+1.1
	baz=315						
KEST	Kesra	96.19	323	LR	LR	19 16 15.3	
	comp=Z,1μm,18.5s,baz=358,slow=38						
RKT	Rikitea	97.73	113	*e*LR	LR	18 59 37.2	
	comp=Z,915nm,24.8s,baz=307						
ESDC	Sonseca Array	98.43	334	P	P	18 28 08.7	-1.0
	comp=Z,0.8nm,0.7s,baz=15,slow=4.2,SNR=4.1						
ESDC				LR	LR	19 17 03.2	
	comp=Z,1μm,18.7s,baz=30,slow=38						
TORD	Torodi Ar. Bea	118.50	315	PKP	PKPdf	18 33 18.1	-1.5
	comp=Z,0.7nm,0.8s,baz=16,slow=1.5,SNR=4.7						
TORD				PP	PP	18 34 34.8	-1.0
	comp=Z,3.3nm,1.0s,baz=38,slow=6.4,SNR=7.4						
LBTB	Lobatse	125.25	263	*e*PKIKP	PKPdf	18 33 32.8	+0.5
LBTB	Lobatse	125.25	263	*e*PKPdf	PKPdf	18 33 32.8	+0.5
QSPA	South Pole Qui	125.86	180	*e*PKPdf	PKPdf	18 33 32.5	+0.3
BOSA	Boshof	127.12	259	PKP	PKPdf	18 33 36.0	+0.1
	comp=Z,5.9nm,1.0s,baz=220,slow=4.0,SNR=4.8						
SYO	Syowa Base	127.72	206	‖*e*X	PKPdf	18 33 34.6	-0.9
VNA2	Neumayer--Watz	141.64	195	PKP	PKPdf	18 33 58.9	-2.6
	baz=87,slow=2.6						
VNA3	Neumayer Olymp	141.87	194	PKP	PKPdf	18 33 57.9	-4.0
VNA1	Neumayer--Stat	142.04	195	PKP	PKPdf	18 33 59.8	-2.3
LPAZ	La Paz	146.50	62	PKPbc	PKPbc	18 34 14.1	+0.3
	comp=Z,6.7nm,1.1s,baz=315,slow=3.2,SNR=11						
LPAZ	La Paz	146.50	62	*e*PKPdf	PKPab	18 34 14.7	-0.1
LCO	Las Campanas	151.38	85	*e*PKPbc	PKPbc	18 34 25.7	+0.2
PLCA	Paso Flores	153.93	110	PKPbc	PKPbc	18 34 31.3	+0.7
	comp=Z,5.8nm,1.1s,baz=266,slow=0.4,SNR=5.1						

JMA 11 18:14:45.6,36.71N×140.59E,h8km,M1.2,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	Hitachi	0.10	190	P	Pg	18 14 48.0	0.0
JHO				S	Sg	18 14 49.6	0.0

IDC 11 18:19:35.9±1.9,20.52S×168.45E,h0km,mb4.1/3, mb1 4.3/4,mb1mx3.8/39,mbtmp4.1/4,ML3.5/1,MS3.2/1, Ms1 3.2/1,ms1mx2.9/43,Error ellipse: s-maj=106.4km s-min=26.5km az=142.0

ISC 11 18:19:39.6±1.7,20.6S±0.5×168.4E±0.4,h26km,n6, σ0.85/7,mb4.1/3,Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	2.38	231	Pn	Pn	18 20 16.6	-0.5
	11nm,0.3s,baz=110,slow=12,SNR=40						
DZM				Sn	Sn	18 20 45.5	0.0
	21nm,0.3s,baz=136,slow=23,SNR=5.9						
DZM				LR	LR	18 21 15.5	
	comp=Z,516nm,19.1s,baz=264,slow=41						
STKA	Stephens Creek	26.51	239	P	P	18 25 16.4	+1.3
	3.0nm,0.9s,baz=73,slow=11,SNR=3.6						
ASAR	Alice Springs	32.09	258	P	P	18 26 04.4	-0.4
	2.5nm,0.7s,baz=85,slow=8.9,SNR=5.9						
NVAR	Mina Array Bea	90.24	49	P	P	18 32 38.1	-0.3
	0.9nm,0.7s,baz=235,slow=6.3,SNR=5.2						
GERES	GERESS Array B	145.28	330	PKPbc	PKPbc	18 39 14.6	-0.2
	0.4nm,0.7s,baz=62,slow=3.7,SNR=2.8						
DAVOX	Davos/Dischmat	148.54	331	PKPbc	PKPbc	18 39 25.2	+0.8
	2.7nm,0.8s,baz=342,slow=3.2,SNR=4.0						

ISCJB 11 18:20:12.2±0.4,35.64N±0.03×140.89E±0.06,h45km, mb4.1/24,MS4.5/4,Error ellipse: s-maj=7.3km s-min=4.8km az=168.0

JMA 11 18:20:15.4±0.1,35.72N×140.60E,h47km±1km,M3.5 Broadband fault plane solution: P waves. NP1: φs5.00000°,δ76.00000°,λ97.00000°. NP2:φs157.00000°, δ15.00000°,λ63.00000°. Principal axes: T Plg58.0000°, Azm284.0000°; N Plg7.0000°, Azm183.0000°; P Plg31.0000°, Azm89.0000°;
JMA Felt II J1.

NEIC 11 18:20:17.6±1.2,35.61N×140.50E,h68km±10km,mb4.8/1 Error ellipse: s-maj=13.6km s-min=10.0km az=75.0

IDC 11 18:20:17.3±2.0,35.58N×140.39E,h64km±18km,mb3.8/23, mb1 3.9/26,mb1mx3.8/66,mbtmp4.1/26,MS4.5/4, Ms1 4.5/4,ms1mx3.9/59,Error ellipse: s-maj=17.1km s-min=13.3km az=70.0

ISC 11 18:20:14.7±0.6,35.64N±0.05×140.71E±0.07,h45km,n54, σ1.92/46,mb4.2/24,MS4.5/4,1C-2D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	0.13	64	⇑P	Pn	18 20 23.4	+1.3
JCN	Nagara	0.47	242	⇓P	Pn	18 20 26.4	+1.1
JYT	Yasato	0.72	324	P	Pn	18 20 27.9	-0.6
JYT				S	Sn	18 20 36.9	-1.5
BSO4	Boso 4	0.72	205	P	Pn	18 20 29.7	+1.3
BSO3	Boso 3	0.86	191	P	Pn	18 20 31.8	+1.7
JHO	Hitachi	0.97	353	P	Pn	18 20 31.8	-0.1
JAG	Ashikaga	1.28	308	P	Pn	18 20 35.7	-0.5
JOD2	Odawara 2	1.38	254	⇓P	Pn	18 20 37.4	-0.1
MJAR	Matsushiro Arr	2.22	295	P	Pn	18 20 49.8	+0.8
	35nm,0.3s,baz=102,slow=14,SNR=56						
MAJO	Matsushiro	2.22	295	*e*Pn	Pn	18 20 49.5	+0.6
MAT	Matsushiro	2.22	295	P	Pn	18 20 50.2	+1.2
MAT				*e*S	Sn	18 21 16.8	+1.6
JHJ2	Mitsune	2.63	197	*e*Pn	Pn	18 20 55.2	+0.5
JHJ	Hachijo jima 2	2.63	197	P	Pn	18 20 54.8	+0.1
	74nm,0.3s,baz=319,slow=22,SNR=13						
JHJ				S	Sn	18 21 24.4	-1.0
	120nm,0.3s,baz=307,slow=20,SNR=7.0						
JNU	Nakatsue	8.51	256	P	Pn	18 22 17.9	+2.6
	0.5nm,0.3s,baz=34,slow=8.4,SNR=3.7						
ASAJ	Asahikawa	8.59	9	P	Pn	18 22 15.7	-0.6
	0.9nm,0.3s,baz=228,slow=12,SNR=6.6						
CBIJ	Chichi jima	8.61	171	P	Pn	18 22 14.6	-2.1
CBIJ				S	Sn	18 23 44.8	-7.8
JCJ	Chichijima	8.62	171	P	Pn	18 22 14.6	-2.2
	baz=290,slow=18						
JCJ				S	Sn	18 23 44.8	-7.8
	baz=270,slow=20						
KSRS	Korea Array	10.45	284	P	Pn	18 22 45.4	+3.6
	0.4nm,0.3s,baz=99,slow=14,SNR=16						
KSAR	Wonju Array Be	10.48	284	P	Pn	18 22 45.4	+3.2
USRK	Ussuriysk Ar.	10.85	325	P	Pn	18 22 48.7	+1.4
	0.1nm,0.3s,baz=143,slow=11,SNR=4.6						
KLR	Kul'dur	15.09	337	P	Pn	18 23 44.4	-0.3
	0.1nm,0.3s,baz=163,slow=17,SNR=3.1						
ENH	Enshi	26.68	267	*e*P	P	18 25 47.6	-1.9
	22nm,0.7s						
SONM	Songino Array	28.12	306	P	P	18 26 01.0	-1.4
	1.9nm,0.7s,baz=101,slow=9.8,SNR=3.6						
LSA	Lhasa	41.78	276	*e*P	P	18 28 01.3	+0.9
ZALV	Zalesovo Beam	42.44	314	P	P	18 28 04.5	-0.4
	1.5nm,0.4s,baz=99,slow=6.4,SNR=7.6						
MKAR	Makanchi Array	44.39	303	P	P	18 28 20.4	-0.3
	2.6nm,0.6s,baz=84,slow=9.2,SNR=22						
KAPI	Kappang	44.98	210	LR	LR	18 44 38.6	
	comp=Z,363nm,22.0s,baz=25,slow=33						
KURK	Kurchatov	46.35	309	*e*P	P	18 28 35.8	-0.4
KURBB	Kurchatov Arra	46.42	309	P	P	18 28 35.2	-1.5
	2.7nm,0.4s,baz=83,slow=8.2,SNR=12						
AAK	Ala-Archa	50.66	299	P	P	18 29 09.3	-0.3
	1.3nm,0.5s,baz=108,slow=3.2,SNR=3.8						
ILAR	Eielson Array	50.97	32	P	P	18 29 11.9	+0.5
	0.9nm,0.9s,baz=269,slow=6.5,SNR=5.7						
BVAR	Borovoye Array	51.09	313	P	P	18 29 11.9	-0.7
	1.4nm,0.5s,baz=70,slow=9.3,SNR=6.0						
WRAB	Tennant Creek	55.60	187	*e*P	P	18 29 45.3	-0.6
WRA	Warramunga Arr	55.61	187	P	P	18 29 45.4	-0.6
	2.2nm,0.7s,baz=3.3,slow=7.8,SNR=17						
CTA	Charters Tower	55.67	174	LR	LR	18 54 47.9	
	comp=Z,454nm,18.1s,baz=356,slow=37						
INK	Inuvik	55.88	27	P	P	18 29 50.8	+3.5
	0.6nm,0.7s,baz=300,slow=5.1,SNR=3.9						
ARU	Arti	57.03	319	P	P	18 29 55.4	-0.3
	5.6nm,0.4s,baz=95,slow=10,SNR=8.6						
ABKAR	Akbulak array	58.41	31	*e*P	P	18 30 04.9	-0.6
AKTO	Aktyubinsk	59.19	312	P	P	18 30 09.7	-1.2
	1.9nm,0.7s,baz=67,slow=13,SNR=4.4						
ASAR	Alice Springs	59.34	187	P	P	18 30 12.2	+0.1
	0.9nm,0.7s,baz=16,slow=10,SNR=12						
BBB	Bella Bella	63.46	43	LR	LR	18 56 43.9	
	comp=Z,231nm,18.8s,baz=300,slow=34						
GEYT	Alibeck	64.01	299	P	P	18 30 44.3	+0.6
	0.8nm,0.7s,baz=60,slow=8.5,SNR=2.8						
RES	Resolute Bay	64.08	14	P	P	18 30 44.4	+1.0
	1.1nm,0.5s,baz=289,slow=7.8,SNR=4.6						
ARCES	ARCESS Array B	65.10	339	P	P	18 30 49.9	-0.3
	2.5nm,0.8s,baz=45,slow=6.5,SNR=3.6						
YKA	Yellowknife Ar	65.29	30	P	P	18 30 52.8	+1.3
	0.4nm,0.7s,baz=306,slow=7.1,SNR=4.1						
FINES	FINESS Array B	69.78	332	P	P	18 31 19.4	-0.4
	1.6nm,0.6s,baz=57,slow=7.7,SNR=10						
KBZ	Khabaz	71.38	311	P	P	18 31 30.4	+0.5
	3.3nm,0.9s,baz=29,slow=0.8,SNR=6.5						
AKASG	Malin Array Be	75.05	322	P	P	18 31 50.5	-0.9
	2.2nm,0.6s,baz=48,slow=6.2,SNR=12						
NB2	NORSAR Subarra	75.25	337	P	P	18 31 52.3	-0.2
	comp=Z,1.3nm,0.5s,baz=41,slow=5.9						
NOA	NORSAR Array B	75.25	337	P	P	18 31 52.5	0.0
	comp=Z,2.3nm,0.8s,baz=40,slow=5.8,SNR=9.4						
NVAR	Mina Array Bea	76.28	53	P	P	18 32 02.8	+3.8
	comp=Z,0.8nm,0.8s,baz=276,slow=5.4,SNR=4.2						
PDAR	Pinedale Array	79.05	45	P	P	18 32 16.0	+1.6
	comp=Z,0.3nm,0.6s,baz=326,slow=0.5,SNR=3.5						
BRTR	Keskin Array B	79.34	311	*e*P	P	18 32 15.4	-0.5
	comp=Z,1.1nm,0.8s,baz=79,slow=6.4,SNR=4.9						
ULM	Lac du Bonnet	80.97	33	LR	LR	19 11 24.9	
	comp=Z,431nm,18.7s,baz=338,slow=38						

*NIED 11 18:21:00,38.50N×141.80E,h56km,Mw4.8

JMM	**Marumori**	1.07 233	P	Pn	18 22 05.8	-0.5
JMM			S	Sn	18 22 19.0	-1.2
JYK	**Kaneyama**	1.25 289	P	Pn	18 22 08.7	+0.1
JYK			S	Sn	18 22 24.0	-0.4
JRG	**Rokugo**	1.30 312	P	Pn	18 22 09.5	+0.2
JRG			S	Sn	18 22 23.2	-2.4
JFK	**Kawauchi**	1.40 215	P	Pn	18 22 10.6	-0.2
JFK			S	Sn	18 22 26.8	-1.3
JYS	**Shiratake**	1.45 258	P	Pn	18 22 11.5	+0.1
MJAR	**Matsushiro Arr**	3.52 237	P	Pn	18 22 41.1	+1.4
	30nm,0.3s,baz=42,slow=12,SNR=10					
MAJO	**Matsushiro**	3.52 237	*e*P	Pn	18 22 40.3	+0.5
ERM	**Erimo**	3.62 15	*e*P	Pn	18 22 40.1	-1.0
ASAJ	**Asahikawa**	5.61 5	P	Pn	18 23 08.8	+0.4
	17nm,0.3s,baz=216,slow=10,SNR=31					
ASAJ			S	Sn	18 24 12.5	+1.0
	9.3nm,0.3s,baz=131,slow=20,SNR=3.6					
JHJ	**Hachijo jima 2**	5.66 198	P	Pn	18 23 09.1	+0.1
	52nm,0.3s,baz=83,slow=19,SNR=8.0					
JHJ			S	Sn	18 24 09.8	-2.8
	50nm,0.3s,baz=73,slow=19,SNR=3.8					
YUK	**Yuzh-Kuril'sk**	6.27 27	*i* P	Pn	18 23 18.2	+0.8
YUK			*i* S	Sn	18 24 23.4	-4.2
YUK			pmax	pmax		
	comp=Z,253nm,0.2s					
YUK			pmax	pmax		
	comp=N,63nm,0.1s					
YUK			pmax	pmax		
	comp=E,41nm,0.1s					
SHO	**Shikotan**	6.52 33	*i* P	Pn	18 23 19.6	-1.2
SHO			*i* S	Sn	18 24 27.6	-6.1
SHO			pmax	pmax		
	comp=Z,130nm,0.5s					
SHO			pmax	pmax		
	comp=E,96nm,0.4s					
SHO			pmax	pmax		
	comp=N,57nm,0.3s					
KUR	**Kuril'sk**	8.05 32	*d i* P	Pn	18 23 41.7	-0.1
KUR			*e*S	Sn	18 25 07.9	-3.5
KUR			pmax	pmax		
	comp=N,16nm,0.6s					
KUR			pmax	pmax		
	comp=E,22nm,0.6s					
KUR			pmax	pmax		
	comp=Z,59nm,0.6s					
KUR			smax	smax		
	comp=N,110nm,0.4s					
KUR			smax	smax		
	comp=E,150nm,0.4s					
YSS	**Yuzh-Sakhalins**	8.45 4⇑	*e*P	Pn	18 23 47.1	-0.1
YSS			*e*S	Sn	18 25 20.0	-1.1
YSS			pmax	pmax		
	comp=Z,60nm,0.7s					
VLA	**Vladivostok**	8.85 304	*e*P	Pn	18 23 53.8	+1.1
MSHR	**Mys Shultsa**	9.10 300	*e*P	Pn	18 23 56.0	-0.2
USRK	**Ussuriysk Ar.**	9.34 310	P	Pn	18 24 00.3	+0.9
	comp=Z,5.3nm,0.3s,baz=125,slow=13,SNR=36					
JNU	**Nakatsue**	10.42 242	P	Pn	18 24 15.8	+1.4
	comp=Z,2.3nm,0.3s,baz=54,slow=2.1,SNR=18					
MDJ	**Mudanjiang**	11.02 307	*e*Pn	Pn	18 24 25.3	+2.9
KSRS	**Korea Array**	11.06 269	P	Pn	18 24 25.6	+2.7
	comp=Z,1.8nm,0.3s,baz=80,slow=14,SNR=42					
KSAR	**Wonju Array Be**	11.09 269	P	Pn	18 24 25.6	+2.2
KSAR	**Wonju Array Be**	11.09 269	P	Pn	18 24 25.6	+2.2
HABR	**Khabarovsk**	11.10 336	*e*P	Pn	18 24 21.0	-2.5
HABR			S	Sn	18 26 24.0	-2.0
HABR			pmax	pmax		
	comp=E,26nm,1.8s					
HABR			pmax	pmax		
	comp=N,24nm,1.8s					
HABR			pmax	pmax		
	comp=Z,32nm,1.8s					
HABR			MLR	MLR		
	comp=Z,4μm,14.0s					
CBIJ	**Chichi jima**	11.40 179	P	Pn	18 24 26.4	-1.2
CBIJ			S	Sn	18 26 20.2	-13
JCJ	**Chichijima**	11.40 179	P	Pn	18 24 26.4	-1.2
	baz=270,slow=20					
JCJ			S	Sn	18 26 20.2	-13
	comp=Z,6.6nm,0.3s,baz=20,slow=18,SNR=2.3					
TJN	**Taejon**	11.73 264	*e*P	Pn	18 24 32.9	+0.8
TYV	**Tymovskoe**	12.35 2	*e*P	Pn	18 24 39.8	-0.7
TYV			pmax	pmax		
	comp=Z,26nm,1.0s					
KLR	**Kul'dur**	12.94 329	P	Pn	18 24 48.5	0.0
	comp=Z,0.6nm,0.3s,baz=149,slow=12,SNR=8.0					
NKL	**Nikolayevsk**	14.65 357	*e*P	Pn	18 25 09.7	-1.8
DL2	**Dalian**	15.81 278	P	Pn	18 25 27.9	+1.3
DL2			pmax	pmax		
	comp=Z,130nm,1.0s					
PETK	**Petropavlovsk-**	18.22 32	P	P	18 25 55.1	-1.1
	comp=Z,0.1nm,0.3s,baz=218,slow=9.4,SNR=4.2					
HIA	**Hailar**	19.15 311	*e*P	P	18 26 05.6	-0.9
HIA			pmax	pmax		
	comp=Z,15nm,0.8s					
HIA	**Hailar**	19.15 311	*e*P	P	18 26 05.6	-0.9
	comp=Z,15nm,0.8s					
TIA	**Tai'an**	19.79 271	⇓P	P	18 26 12.3	-1.2
TIA			pmax	pmax		
	comp=Z,60nm,1.2s					
BJI	**Beijing**	19.93 282	P	P	18 26 10.5	-4.4
BJI			pmax	pmax		
	comp=Z,18nm,1.2s					
BJT	**Baijiatuau**	19.94 282	*e*P	P	18 26 13.4	-1.6
BJT			pmax	pmax		
	comp=Z,19nm,0.6s					
BJT	**Baijiatuau**	19.94 282	*e*P	P	18 26 13.4	-1.6
	comp=Z,19nm,0.6s					
MA2	**Magadan**	21.82 12	P	P	18 26 35.2	+0.1
	comp=Z,31nm,0.6s,baz=220,slow=11,SNR=16					
SSLB	**Suanglung**	23.08 237	*e*P	P	18 26 46.0	-2.7
	comp=Z,50nm,1.1s					
YULB	**Yu-li**	23.14 235	*e*P	P	18 26 48.1	-1.2
	comp=Z,13nm,0.8s					
TPUB	**Ta-pu**	23.63 236	*e*P	P	18 26 49.8	-4.2
	comp=Z,56nm,0.9s					
TWG	**Pinlang**	23.69 235	*e*P	P	18 26 52.4	-2.1
	comp=Z,126nm,0.7s					
CIT	**Chita**	23.88 314	*e*P	P	18 26 54.7	-1.4
CIT			*e*		18 27 09.9	
CIT			*e*		18 27 29.6	
CIT			pmax	pmax		
	comp=Z,112nm,1.4s					
WHN	**Wuhan**	23.97 259	⇓*i* P	P	18 26 56.6	-0.4
WHN			pmax	pmax		
	comp=Z,72nm,0.9s					
YAK	**Yakutsk**	24.70 346	P	P	18 27 02.3	-1.1
	comp=Z,32nm,0.4s,baz=136,slow=2.3,SNR=21					
YAK	**Yakutsk**	24.70 346	*e*P	P	18 27 02.2	-1.2
YAK			pmax	pmax		
	comp=Z,79nm,1.0s					
YAK			pmax	pmax		
	comp=N,51nm,1.1s					
YAK			pmax	pmax		
	comp=E,19nm,1.1s					
SEY	**Seymchan**	25.26 11	P	P	18 27 09.9	+1.5
	comp=E,43nm,1.0s,baz=202,slow=6.8,SNR=34					
BOD	**Bodaibo**	26.48 326	*e*P	P	18 27 19.3	-0.3
BOD			pmax	pmax		
	comp=Z,34nm,0.8s					
ULN	**Ulaanbaatar**	26.85 302	*e*P	P	18 27 23.4	+0.2
ULN			pmax	pmax		
	comp=Z,12nm,1.1s					
ULN	**Ulaanbaatar**	26.85 302	*e*P	P	18 27 23.2	0.0
	comp=Z,26nm,1.3s					
XAN	**Xi'an**	26.85 271	P	P	18 27 22.6	-0.6
XAN			pP	pP	18 27 30.9	-5.6
XAN			pmax	pmax		
	comp=Z,24nm,0.6s					
XAN			pmax	pmax		
	comp=Z,1μm,13.3s					
SONM	**Songino Array**	27.29 301	P	P	18 27 26.2	-0.9
	comp=Z,5.4nm,0.7s,baz=106,slow=8.2,SNR=13					
SONM			PcP	PcP	18 30 46.0	+0.5
	comp=Z,0.8nm,0.7s,baz=119,slow=2.5,SNR=4.2					
ENH	**Enshi**	27.85 263	*e*P	P	18 27 31.0	-1.2
	comp=Z,119nm,0.8s					
H11N2	**WAKE ISLAND Hy**	28.64 124	T	T	18 58 12.4	
	baz=317,slow=75,SNR=616					
H11N1	**WAKE ISLAND Hy**	28.64 124	T	T	18 58 11.7	
	baz=317,slow=75,SNR=939					
H11N3	**WAKE ISLAND Hy**	28.66 124	T	T	18 58 14.0	
	baz=317,slow=75,SNR=920					
H11S1	**WAKE ISLAND Hy**	29.40 126	T	T	18 59 03.9	
	baz=318,slow=76,SNR=376					
H11S3	**WAKE ISLAND Hy**	29.40 126	T	T	18 58 57.1	
	baz=318,slow=76,SNR=453					
H11S2	**WAKE ISLAND Hy**	29.42 126	T	T	18 59 00.1	
	baz=318,slow=76,SNR=211					
TLY	**Talaya**	29.65 309	P	P	18 27 48.1	+0.1
	comp=Z,8.9nm,0.8s,baz=137,slow=3.1,SNR=4.7					
TLY	**Talaya**	29.65 309	*e*P	P	18 27 44.2	-3.8
TLY			pmax	pmax		
	comp=Z,21nm,1.5s					
ZAK	**Zakamensk**	29.66 306	*e*P	P	18 27 45.9	-2.2
ZAK			pmax	pmax		
	comp=Z,10.0nm,1.3s					
LZH	**Lanzhou**	30.20 277	*e*P	P	18 27 52.5	-0.7
LZH			pP	sP	18 28 14.4	+1.7
LZH			sP	pP	18 28 26.8	+20
LZH			pmax	pmax		
	comp=Z,32nm,1.0s					
MOY	**Mondy**	31.28 308	*e*P	P	18 28 02.3	-0.1
BILL	**Bilibino**	32.50 17	⇓*i* P	P	18 28 13.0	+0.3
BILL			*i*		18 28 31.0	
BILL			*i*		18 30 59.1	
BILL			pmax	pmax		
	comp=Z,12nm,1.1s					
BILL			MLR	MLR		
	comp=Z,3μm,16.0s					
BILL	**Bilibino**	32.50 17	*e*P	P	18 28 13.1	+0.3
GTA	**Gaotai**	32.50 285	*e*P	P	18 28 12.2	-1.1
GTA			pP	pP	18 28 16.7	-10
GTA			sP	sP	18 28 19.7	-13
GTA			pmax	pmax		
	comp=Z,6.0nm,1.0s					
TIXI	**Tiksi**	33.86 353	P	P	18 28 23.7	-0.8
	comp=Z,7.6nm,0.7s,baz=141,slow=6.5,SNR=21					
TIXI	**Tiksi**	33.86 353	*e*P	P	18 28 23.2	-1.4
TIXI			pmax	pmax		
	comp=Z,9.0nm,1.0s					
KRAR	**Krasnoyarsk**	36.66 315	*e*P	P	18 28 48.7	-0.1
KRAR			pmax	pmax		
	comp=Z,54nm,1.0s					
SGSI	**Sangihe**	37.74 207	P	P	18 28 56.3	-2.1
	comp=Z,2μm,0.8s,comp=Z,35μm					
NONG	**Nongkai**	39.35 250	P	P	18 29 13.0	+1.1
	comp=Z,51nm,0.7s					
SKNT	**Sakolnakorn**	39.43 248	P	P	18 29 18.9	+6.3
	comp=Z,15nm,0.8s					
CRAI	**Chiangrai**	40.10 255	P	P	18 29 19.0	+0.8
	comp=Z,194nm,0.8s,comp=Z,31μm					
LOEI	**Loei**	41.09 251	P	P	18 29 24.3	-2.0
	comp=Z,14nm,0.7s					
ZALV	**Zalesovo Beam**	41.19 311	P	P	18 29 26.6	-0.2
	comp=Z,18nm,0.5s,baz=86,slow=7.6,SNR=42					
ZALV			PcP	PcP	18 31 25.2	+0.3
	comp=Z,6.9nm,0.5s,baz=97,slow=2.7,SNR=7.1					
CMAI	**Chiengmai2**	41.28 256	P	P	18 29 24.1	-4.0
UTTA	**Uttaradit**	41.47 252	P	P	18 29 30.5	+1.1
	comp=Z,4.4nm,0.8s					
CHAI	**Chaiyaphum**	41.58 248	P	P	18 29 30.6	+0.2
	comp=Z,6.2nm,0.8s,comp=Z,106nm					
PBKT	**Sadao Pong**	41.90 250	P	P	18 29 33.8	+0.9
	comp=Z,12nm,1.1s					
CMMT	**Chiang Mai**	42.02 255	P	P	18 29 39.4	+5.4
	comp=Z,24nm,0.7s					
CHTO	**Chiang Mai**	42.02 255	P	P	18 29 39.6	+5.6
	comp=Z,103nm,0.8s					
CHTO	**Chiang Mai**	42.02 255	*e*P	P	18 29 33.8	-0.2
CHTO			pmax	pmax		
	comp=Z,14nm,0.6s					
CHTO	**Chiang Mai**	42.02 255	*e*P	P	18 29 33.8	-0.2
	comp=Z,14nm,0.6s					
MRSI	**Marisa**	42.06 211	P	P	18 29 34.9	+0.7
	comp=Z,24nm,1.2s,comp=Z,6μm					
NRIK	**Noril'sk**	42.07 335	P	P	18 29 33.4	-0.4
	comp=Z,8.5nm,0.6s,baz=102,slow=12,SNR=7.4					
NVS	**Novosibirsk**	42.09 313	⇓*i* P	P	18 29 34.5	+0.5
NVS			*i*		18 29 49.4	
NVS			*i*		18 31 29.2	
NVS			pmax	pmax		
	comp=Z,43nm,1.3s					
NVS			pmax	pmax		
	comp=N,10.0nm,1.4s					
NVS			pmax	pmax		
	comp=E,31nm,1.4s					
CMAR	**Chiang Mai Arr**	42.24 254	P	P	18 29 35.3	-0.4
	comp=E,1.4nm,0.7s,baz=30,slow=4.4,SNR=7.2					
SUKH	**Sukhothai**	42.32 252	P	P	18 29 37.6	+1.2
	comp=E,4.7nm,0.9s					
LSA	**Lhasa**	42.45 274	P	P	18 29 38.9	+1.0
LSA			pmax	pmax		
	comp=Z,14nm,0.9s					
LSA	**Lhasa**	42.45 274	*e*P	P	18 29 38.3	+0.4
LSA			pmax	pmax		
	comp=Z,15nm,0.8s					
LSA	**Lhasa**	42.45 274	*e*P	P	18 29 38.3	+0.4
	comp=Z,15nm,0.8s					
SANI	**Sanana**	42.95 204	P	P	18 29 41.2	-0.3
MKAR	**Makanchi Array**	43.65 301	P	P	18 29 47.0	+0.1
	comp=Z,26nm,0.8s,baz=86,slow=9.3,SNR=49					
MKAR	**Makanchi Array**	43.65 301	P	P	18 29 47.0	+0.1
MKAR			pmax	pmax		
	comp=Z,26nm,0.9s					
SHL	**Shillong**	43.80 268	*e*P	P	18 29 49.0	+0.5
PHET	**Kaeng Krachan**	45.26 247	P	P	18 30 01.4	+1.4
	comp=Z,13nm,0.8s					
KURK	**Kurchatov**	45.31 307	P	P	18 30 00.6	+0.6
KURK					18 31 39.4	
KURK			pmax	pmax		
	comp=Z,84nm,0.7s					
KURK	**Kurchatov**	45.31 307	P	P	18 30 00.6	+0.6
KURK			PcP	PcP	18 31 39.4	+0.5
KURBB	**Kurchatov Arra**	45.38 307	P	P	18 30 00.6	0.0
	comp=Z,84nm,0.7s,baz=81,slow=8.1,SNR=119					
KURBB			PcP	PcP	18 31 39.4	+0.3
	comp=Z,4.2nm,0.7s,baz=81,slow=4.9,SNR=4.3					
PPLA	**Purkeypile**	45.74 36	P	P	18 30 05.1	+1.6
KDAK	**Kodiak Island**	45.76 43	P	P	18 30 19.1	+16
	comp=Z,11nm,0.9s,baz=248,slow=5.0,SNR=4.4					
KTH	**Kantishna Hill**	46.31 35	*e*P	P	18 30 09.8	+1.9
	comp=Z,18nm,1.1s					
PDGK	**Podgornoye**	46.41 297	P	P	18 30 09.1	+0.3
PDGK			pmax	pmax		
	comp=Z,22nm,1.3s					
GUN	**Gumba**	47.38 275	*e*P	P	18 30 17.4	+0.4
	comp=Z,161nm,1.0s					
KKN	**Kakani**	47.91 275	*e*P	P	18 30 21.3	+0.4
	comp=Z,116nm,0.7s					
PKIN	**Phulchoki**	47.92 274	*e*P	P	18 30 21.3	+0.2
	comp=Z,29nm,0.6s					
KAPI	**Kappang**	47.93 210	*e*P	P	18 30 21.5	+0.7
	comp=Z,3.9nm,0.6s					
ILAR	**Eielson Array**	48.05 33	P	P	18 30 22.0	+0.8
	comp=Z,4.1nm,0.7s,baz=267,slow=6.2,SNR=20					
DMN	**Daman**	48.13 275	*e*P	P	18 30 22.9	+0.2
GKN	**Gorkha**	48.31 275	*e*P	P	18 30 24.1	+0.1
	comp=Z,142nm,1.0s					
KOLN	**Koldanda**	49.23 276	*e*P	P	18 30 31.4	+0.3
	comp=Z,53nm,0.8s					
TKM2	**Tokmak 2**	49.25 297	*e*P	P	18 30 31.7	+0.6
TKM2			pmax	pmax		
	comp=Z,35nm,1.0s					
TKM2	**Tokmak 2**	49.25 297	*e*P	P	18 30 31.7	+0.6
	comp=Z,35nm,1.0s					
PYUN	**Piuthan**	49.55 276	*e*P	P	18 30 33.9	+0.4
	comp=Z,168nm,1.0s					
BVAR	**Borovoye Array**	49.85 311	P	P	18 30 35.3	+0.1
	comp=Z,12nm,0.7s,baz=70,slow=7.7,SNR=28					
BVAR			PcP	PcP	18 31 55.6	+0.6
	comp=Z,12nm,0.8s,baz=78,slow=3.2,SNR=8.2					
OTUK	**Ortayu**	49.86 305	P	P	18 30 35.6	+0.2
OTUK			pmax	pmax		
	comp=Z,25nm,1.0s					
KULM	**Kulim**	49.89 239	*e*P	P	18 30 36.4	+0.4
	comp=Z,29nm,1.0s					
BRVK	**Borovoye**	49.90 312	*i* P	P	18 30 35.4	-0.2
BRVK			pmax	pmax		
	comp=Z,13nm,0.9s					
BRVK	**Borovoye**	49.90 312	*e*P	P	18 30 34.4	-1.2
FRU	**Bishkek**	49.96 298	*e*P	P	18 30 36.0	-0.3
AAK	**Ala-Archa**	50.11 297	P	P	18 30 37.4	-0.2
	comp=Z,3.5nm,0.4s,baz=106,slow=5.3,SNR=11					
AAK	**Ala-Archa**	50.11 297	*c i* P	P	18 30 37.5	-0.1
AAK			pmax	pmax		
	comp=Z,15nm,0.9s					
EKS2	**Erkin-Say**	50.60 298	*e*P	P	18 30 41.1	-0.1
EKS2	**Erkin-Say**	50.60 298	*e*P	P	18 30 41.1	-0.1
KKAR	**Karatay Array**	52.70 299	*e*P	P	18 30 56.6	-0.2
KKAR	**Karatay Array**	52.70 299	*e*P	P	18 30 56.6	-0.2
INK	**Inuvik**	52.90 28	P	P	18 30 59.1	+1.4
	comp=Z,4.7nm,0.5s,baz=290,slow=7.0,SNR=39					
INK			pP	pP	18 31 13.6	+1.7
	comp=Z,5.8nm,0.5s,baz=300,slow=4.9,SNR=8.7					
SVE	**Sverdlovsk**	54.28 318	⇓*e*P	P	18 31 08.0	0.0
SVE			pmax	pmax		
	comp=Z,57nm,0.9s					
GSI	**Gunungsitoli**	54.88 239	*e*P	P	18 31 12.7	-0.3
	comp=Z,70nm,1.0s					
KLI	**Kotabumi**	55.12 227	P	P	18 31 16.8	+2.2
ARU	**Arti**	55.49 318	P	P	18 31 16.9	+0.1
	comp=Z,20nm,0.6s,baz=77,slow=3.6,SNR=24					
ARU	**Arti**	55.49 318	*c i* P	P	18 31 16.8	0.0
ARU			*PP	pP	18 31 31.0	0.0
ARU					18 32 16.2	
ARU					18 33 18.7	
ARU			S	S	18 39 00.8	+3.0
ARU					18 40 53.0	
ARU			pmax	pmax		
	comp=Z,47nm,1.0s					
DLBC	**Dease Lake**	57.23 39	*e*P	P	18 31 21.2	-8.0
	comp=Z,2.9nm,0.8s					
ABKAR	**Akbulak array**	57.26 310	*e*P	P	18 31 29.2	-0.4
	comp=Z,20nm,0.7s					
AKTO	**Aktyubinsk**	57.95 311	P	P	18 31 33.8	-0.6
	comp=Z,15nm,0.8s,baz=70,slow=12,SNR=22					
AKTO			PcP	PcP	18 32 25.9	-0.1
	comp=Z,9.0nm,0.7s,baz=74,slow=2.9,SNR=4.3					
WRAB	**Tennant Creek**	58.58 188	*e*P	P	18 31 38.9	0.0
WRAB			pmax	pmax		
	comp=Z,37nm,1.0s					
WRA	**Warramunga Arr**	58.59 188	P	P	18 31 38.8	-0.2
	comp=Z,13nm,0.8s,baz=6.1,slow=7.3,SNR=28					
HYB	**Hyderabad**	58.61 268	*i* P	P	18 31 39.0	-0.5
SPITS	**Spitsbergen Ar**	59.13 349	P	P	18 31 42.3	+0.1
	comp=Z,1.9nm,0.6s,baz=88,slow=7.6,SNR=7.1					
KBS	**Kingsbay**	59.25 350	*e*P	P	18 31 43.3	+0.3
RES	**Resolute Bay**	61.07 15	P	P	18 31 55.8	+0.4
	comp=Z,11nm,0.8s,baz=307,slow=6.7,SNR=16					
TMCR	**Tamitsa**	61.62 331	*e*P	P	18 31 59.7	+0.5
TMCR			pmax	pmax		
	comp=Z,35nm,0.4s					
ASAR	**Alice Springs**	62.31 188	P	P	18 32 04.6	+0.2
	comp=Z,5.1nm,0.7s,baz=11,slow=5.9,SNR=27					
ASAR			PKP2bc		19 01 17.4	
	comp=Z,0.4nm,0.7s,baz=172,slow=2.4,SNR=5.3					
YKA	**Yellowknife Ar**	62.34 31	P	P	18 32 04.9	+0.8
	comp=Z,3.7nm,0.7s,baz=301,slow=6.6,SNR=33					
YKA			pP	pP	18 32 19.9	+1.4
	comp=Z,3.6nm,0.9s,baz=301,slow=6.4,SNR=4.7					
KLMR	**Klimovskoe**	62.69 327	*e*P	P	18 32 04.8	-1.7
KLMR			*e*		18 34 22.0	
KLMR			pmax	pmax		
	comp=Z,10.0nm,0.9s					
ARCES	**ARCESS Array B**	62.73 339	P	P	18 32 06.5	-0.2
	comp=Z,5.6nm,0.8s,baz=52,slow=7.9,SNR=11					
GEYT	**Alibeck**	63.44 298	P	P	18 32 11.8	-0.1
	comp=Z,8.5nm,0.7s,baz=28,slow=3.5,SNR=19					
SGF	**Sodankyl**	63.72 337	P	P	18 32 16.2	+3.0
SGF			pmax	pmax		
	comp=Z,35nm,0.8s					
MSF	**Maaselka**	63.85 335	P	P	18 32 15.5	+1.4
MSF			pmax	pmax		
	comp=Z,27nm,0.7s					
DAG	**Danmarks Havn**	64.32 355	⇑*i* P	P	18 32 17.1	+0.1
	comp=Z,15nm,1.1s					
DAG	**Danmarks Havn**	64.32 355	⇑*i* P	P	18 32 17.1	+0.1
DAG			pmax	pmax		
	comp=Z,19nm,1.1s					
JOF	**Joensuu**	64.82 332	P	P	18 32 21.0	+0.5
JOF			pmax	pmax		
	comp=Z,12nm,1.1s					
MOS	**Moscow**	66.27 323	*e*P	P	18 32 28.7	-1.2
MOS			pmax	pmax		
	comp=Z,47nm,1.2s					
VRH	**Novokhopyorsk**	66.72 318	*e*P	P	18 32 32.3	-0.6
VRH			pmax	pmax		
	comp=Z,20nm,0.9s					
OBN	**Obninsk**	67.12 323	P	P	18 32 35.0	-0.3
	comp=Z,12nm,0.6s,baz=63,slow=8.3,SNR=5.3					
OBN	**Obninsk**	67.12 323	*c i* P	P	18 32 35.1	-0.3
OBN			pmax	pmax		
	comp=Z,14nm,0.9s					
OBN			MLR	MLR		
	comp=Z,2μm,14.0s					
LPSR	**Galich'ya Gora**	67.39 320	*e*P	P	18 32 36.9	-0.2
LPSR			pmax	pmax		
	comp=Z,20nm,1.0s					
FINES	**FINESS Array B**	67.67 332	P	P	18 32 38.4	-0.3
	comp=Z,13nm,0.7s,baz=49,slow=8.6,SNR=26					
FINES			PP	PP	18 35 05.5	-2.3
	comp=Z,4.5nm,0.8s,baz=60,slow=9.1,SNR=4.1					
VAF	**Ylistaro**	67.81 335	P	P	18 32 40.5	+0.9
VAF			pmax	pmax		
	comp=Z,17nm,1.0s					
VSR	**Storozhevoye**	68.05 319	*e*P	P	18 32 41.0	-0.3
VSR			pmax	pmax		
	comp=Z,10.0nm,0.6s					
YBH	**Yreka Blue Hor**	69.15 53	P	P	18 32 50.9	+2.4
	comp=Z,3.1nm,0.7s,baz=280,slow=7.7,SNR=7.8					
SUMG	**Summit**	69.20 0	⇑*i* P	P	18 32 49.7	+1.1
	comp=Z,21nm,0.8s					
SUMG	**Summit**	69.20 0	⇑*i* P	P	18 32 49.7	+1.1
SUMG			pmax	pmax		
	comp=Z,21nm,0.8s					
SUMG	**Summit**	69.20 0	*e*P	P	18 32 49.5	+0.9
	comp=Z,23nm,0.8s					
VSU	**Vasula**	69.36 329	*e*P	P	18 32 48.4	-0.9
VSU			pmax	pmax		
	comp=Z,45nm,1.0s					
GOF	**Gofitskoye**	69.37 312	⇑*e*P	P	18 32 50.1	+0.4
GOF			pmax	pmax		
	comp=Z,33nm,0.9s					
GUDG	**Gudauri**	69.97 309	P	P	18 32 55.2	+1.5
DGRG	**David-gareji**	69.98 307	P	P	18 32 53.3	-0.3
ZEI	**Tsey**	70.14 309	*e*P	P	18 32 53.1	-1.6
ZEI			pmax	pmax		
	comp=Z,17nm,0.6s					
KIV	**Kislovodsk**	70.21 311	*i* P	P	18 32 55.6	+0.7
	SNR=26					
KIV	**Kislovodsk**	70.21 311	*e*P	P	18 32 55.4	+0.5
KIV			pmax	pmax		
	comp=Z,67nm,1.1s					
KIV	**Kislovodsk**	70.21 311	*e*P	P	18 32 55.2	+0.3
	comp=Z,50nm,0.9s					
KBZ	**Khabaz**	70.21 310	P	P	18 32 55.1	+0.3
	comp=Z,18nm,0.9s,baz=37,slow=3.7,SNR=28					
TBLG	**Delisi**	70.22 308	P	P	18 32 54.9	-0.1
ONI	**Oni**	70.52 309	P	P	18 32 57.5	+0.6
BMO	**Blue Mountains**	70.66 48	*e*P	P	18 32 59.2	+1.5
	comp=Z,2.6nm,1.0s					
GNI	**Garni**	71.11 306	*e*P	P	18 33 01.5	+0.9
GNI			pmax	pmax		
	comp=Z,17nm,1.0s					
GNI	**Garni**	71.11 306	*e*P	P	18 33 01.1	+0.5
	comp=Z,38nm,0.8s					
AKH	**Akhalkalaki**	71.17 308	⇓*i* P	P	18 33 02.3	+1.3
BGD	**Bogdanovka**	71.19 308	P	P	18 33 02.0	+0.9
CHVG	**Ch'k'valeri**	71.28 310	⇑*i* P	P	18 33 02.2	+0.8
HATD	**Hatta, Dubai**	71.82 287	*i* P	P	18 33 05.2	+0.3
	SNR=5.

comp=Z,15nm,0.8s,baz=39,slow=5.9,SNR=44
NOA PP **PP** 18 35 52.1 -1.2
comp=Z,1.6nm,0.8s,baz=42,slow=8.7,SNR=4.0
DLMT Dillon 73.03 45 *eP* **P** 18 33 13.7 +1.7
comp=Z,10nm,1.1s
AKASG Malin Array Be 73.34 322 P **P** 18 33 13.3 -0.2
comp=Z,6.7nm,0.5s,baz=47,slow=6.1,SNR=43
KIEV Kiev 73.35 322*c* *iP* **P** 18 33 13.4 -0.2
KIEV pmax pmax
comp=Z,17nm,0.9s
KIEV Kiev 73.35 322 *eP* **P** 18 33 13.0 -0.5
BOZ Bozeman (W) 73.39 45 *eP* **P** 18 33 15.6 +1.5
BOZ pmax pmax
comp=Z,4.0nm,0.8s
BOZ Bozeman (W) 73.39 45 *eP* **P** 18 33 15.6 +1.5
comp=Z,3.8nm,0.8s
NVAR Mina Array Bea 73.81 54 P **P** 18 33 18.7 +1.9
comp=Z,3.0nm,0.8s,baz=280,slow=5.7,SNR=11
NVAR pP **PcP** 18 33 32.6 +0.4
comp=Z,2.7nm,0.9s,baz=277,slow=3.7,SNR=5.1
SFJD Kangerlussuaq 74.37 5 P **P** 18 33 19.7 +0.5
comp=Z,13nm,0.8s,baz=334,slow=3.9,SNR=6.9
SFJD Kangerlussuaq 74.37 5⇑ *iP* **P** 18 33 19.7 +0.5
comp=Z,15nm,0.9s
SFJD Kangerlussuaq 74.37 5⇑ *iP* **P** 18 33 19.7 +0.5
SFJD pmax pmax
comp=Z,15nm,0.9s
SIM Simferopol' 74.52 315 *eP* **P** 18 33 20.8 +0.3
SIM pmax pmax
comp=Z,20nm,0.8s
IMW Indian Meadow 74.87 46 *eP* **P** 18 33 25.0 +2.1
comp=Z,6.0nm,0.9s
MOOW Moose Ponds 75.07 46 *eP* **P** 18 33 25.6 +1.5
comp=Z,8.5nm,1.4s
FRB Frobisher Bay 75.24 13 P **P** 18 33 24.9 +0.6
comp=Z,24nm,0.8s,baz=335,slow=6.7,SNR=15
SORM Soroca 75.47 321⇑ *iP* **P** 18 33 25.6 -0.3
LAO LASA Array 75.61 41 *eP* **P** 18 33 28.4 +1.6
comp=Z,14nm,1.0s
HWUT Hardware Ranch 75.96 48 *eP* **P** 18 33 30.6 +1.5
comp=Z,6.1nm,1.0s
DUG Dugway, Tooele 76.11 50 *eP* **P** 18 33 31.2 +1.3
DUG pmax pmax
comp=Z,4.0nm,0.8s
DUG Dugway, Tooele 76.11 50 *eP* **P** 18 33 31.2 +1.3
comp=Z,4.2nm,0.8s
BORG Borgarnes 76.22 353 P **P** 18 33 32.0 +2.2
comp=Z,12nm,0.6s,baz=18,slow=12,SNR=3.7
BORG Borgarnes 76.22 353 P **P** 18 33 32.0 +2.2
BORG pmax pmax
comp=Z,10.0nm,0.9s
SFNV Sufian 76.25 306 *eP* **P** 18 33 28.6 -2.1
MZRK Al-Mazaregh 76.26 305 *eP* **P** 18 33 29.5 -1.2
BSD Bornholm Skovb 76.30 332⇑ *iP* **P** 18 33 30.5 0.0
comp=Z,29nm,1.0s
BSD Bornholm Skovb 76.30 332⇑ *iP* **P** 18 33 30.5 0.0
BSD pmax pmax
comp=Z,29nm,1.0s
BW06 Boulder Array 76.37 46 *eP* **P** 18 33 32.4 +1.0
comp=Z,4.3nm,0.8s
PDAR Pinedale Array 76.37 46 P **P** 18 33 32.6 +1.1
comp=Z,4.8nm,0.8s,baz=266,slow=1.6,SNR=29
LVV L'vov 76.39 324 *eP* **P** 18 33 30.6 -0.5
COP Copenhagen 76.76 333 *iP* **P** 18 33 33.6 +0.6
comp=Z,18nm,0.7s
COP Copenhagen 76.76 333 *eP* **P** 18 33 33.6 +0.6
COP pmax pmax
comp=Z,18nm,0.7s
KWP Kalwaria Pacla 77.13 324 *eP* **P** 18 33 36.3 +0.9
KWP Kalwaria Pacla 77.13 324⇑ *iP* **P** 18 33 36.2 +0.9
KWP Kalwaria Pacla 77.13 324 *eP* **P** 18 33 36.3 +0.9
GIRR Girov 77.19 321⇓ *iP* **P** 18 33 36.1 +0.4
BURAR Bucovina Array 77.37 322⇓ *iP* **P** 18 33 37.6 +0.8
TESR Tescani 77.42 320⇓ *iP* **P** 18 33 37.3 +0.3
CFR Carcaliu 77.57 318⇑ *iP* **P** 18 33 37.8 0.0
VRI Vrincioaia 77.83 320⇓ *iP* **P** 18 33 40.4 +1.1
VRI Vrincioaia 77.83 320 P **P** 18 33 40.3 +1.0
KOLS Kolonicke sedl 77.83 324 *eP* **P** 18 33 39.6 +0.4
KOLS *e* 18 33 48.7
KOLS pmax pmax
comp=Z,7.0nm,1.1s
KOLS Kolonicke sedl 77.83 324 *eP* **P** 18 33 39.6 +0.4
KOLS *e* 18 33 48.7
PLOR Plostina 77.88 320⇑ *iP* **P** 18 33 40.8 +1.1
PLOR Plostina 77.88 320 P **P** 18 33 40.7 +1.1
TIRR Tirgusor 77.92 318⇑ *iP* **P** 18 33 39.9 +0.1
STHS Stebnicka Huta 77.95 325 *eP* **P** 18 33 41.3 +1.4
STHS pmax pmax
comp=Z,8.0nm,0.9s
STHS Stebnicka Huta 77.95 325 *eP* **P** 18 33 41.3 +1.4
OJC Ojcow 78.00 326 *eP* **P** 18 33 40.8 +0.6
OJC Ojcow 78.00 326 *eP* **P** 18 33 40.8 +0.6
BRTR Keskin Array B 78.14 312 P **P** 18 33 41.5 +0.2
comp=Z,2.8nm,0.6s,baz=102,slow=3.5,SNR=19
BRTR PP **PP** 18 36 35.9 -1.9
comp=Z,1.6nm,0.9s,baz=59,slow=7.4,SNR=3.5
CRVS Cervenica-Dubn 78.22 324 *eP* **P** 18 33 42.0 +0.6
CRVS Cervenica-Dubn 78.22 324 *eP* **P** 18 33 42.0 +0.6
DRWC Darouich 78.29 308 *eP* **P** 18 33 42.2 +0.1
NIE Niedzica 78.37 325 *eP* **P** 18 33 43.2 +1.0
NIE Niedzica 78.37 325 *eP* **P** 18 33 43.2 +1.0
RSSD Black Hills 78.48 42 *eP* **P** 18 33 44.1 +0.9
RSSD pmax pmax
comp=Z,2.0nm,0.8s
RSSD Black Hills 78.48 42 *eP* **P** 18 33 44.1 +0.9
comp=Z,2.0nm,0.8s
MLR Muntele Rosu 78.48 320 P **P** 18 33 43.3 +0.3
comp=Z,1.4nm,0.9s,baz=153,slow=7.8,SNR=5.1
MLR Muntele Rosu 78.48 320⇓ *iP* **P** 18 33 43.7 +0.6
CJR Cluj-Napoca 78.79 322⇑ *iP* **P** 18 33 46.4 +1.8
BTCH Batrach 78.79 307 *eP* P 18 33 37.7 -7.2
LANS Liptovska Anna 78.94 326 *eP* **P** 18 33 46.8 +1.4
LANS Liptovska Anna 78.94 326 *eP* **P** 18 33 46.8 +1.4
KECS Kecovo 78.97 325 *eP* **P** 18 33 45.5 0.0
KECS pmax pmax
comp=Z,3.0nm,0.8s
KECS Kecovo 78.97 325 *eP* **P** 18 33 45.5 0.0
VOIR 78.97 320⇑ *iP* **P** 18 33 46.3 +0.6
OKC Ostrava-Krasne 79.00 327 *eP* **P** 18 33 46.5 +0.8
OKC *e*PCP **PcP** 18 33 52.2 -1.9
OKC Ostrava-Krasne 79.00 327 *eP* **P** 18 33 46.5 +0.8
OKC *e* 18 33 52.2
DRGR 79.16 322⇓ *iP* **P** 18 33 47.5 +0.8
WRDH Warideh 79.16 307 *eP* **P** 18 33 51.5 +4.6
ARNB Al Arnab 79.21 307 *eP* P 18 33 54.6 +7.4
ARR Arges 79.23 320⇑ *iP* **P** 18 33 48.5 +1.4
MORC Moravsky Berou 79.31 327⇑ *iP* **P** 18 33 48.4 +1.0
RABH Abou Rabah 79.34 306 *eP* **P** 18 33 46.7 -1.2
DPC Dobruska-Polom 79.39 328 *eP* **P** 18 33 48.9 +1.1
DPC Dobruska-Polom 79.39 328 *eP* **P** 18 33 48.9 +1.1
UPC Upice 79.40 328 *eP* **P** 18 33 48.7 +0.9
UPC Upice 79.40 328 *eP* **P** 18 33 48.7 +0.9
KRLC Kraliky 79.41 328 *eP* **P** 18 33 48.7 +0.8
KRLC Kraliky 79.41 328 *eP* **P** 18 33 48.7 +0.8
LOT Lotru 79.60 321⇓ *iP* **P** 18 33 49.8 +0.6
PSZ Piszkesteto 79.65 325⇑ *iP* **P** 18 33 50.2 +0.8
PSZ Piszkesteto 79.65 325 *eP* **P** 18 33 50.0 +0.6
PSZ pmax pmax
comp=Z,15nm,1.0s
PSZ Piszkesteto 79.65 325 *eP* **P** 18 33 50.0 +0.6
comp=Z,15nm,1.0s
VYHS Vyhne 79.70 325 *eP* **P** 18 33 50.4 +0.8
VYHS pmax pmax
comp=Z,5.0nm,1.0s
VYHS Vyhne 79.70 325 *eP* **P** 18 33 50.4 +0.8
BRG Berggiesshubel 79.95 329 *eP* **P** 18 33 52.4 +1.5
comp=Z,16nm,0.9s
comp=N,4μm,13.7s
comp=E,2μm,13.1s
comp=Z,5μm,14.5s
BRG Berggiesshubel 79.95 329 *eP* **P** 18 33 52.3 +1.5
BRG pmax pmax
comp=Z,2.0nm,1.0s
PV01 Paradox Valley 79.96 49 *eP* **P** 18 33 52.6 +1.2
comp=Z,377nm,1.1s
PVCC Panska Ves 79.97 329 *eP* **P** 18 33 51.7 +0.8
PVCC Panska Ves 79.97 329 *eP* **P** 18 33 51.7 +0.8
CLL Collm 79.98 330⇑ *iP* **P** 18 33 51.1 +0.1
comp=Z,22nm,1.0s
CLL *i* 18 34 11.5
CLL Collm 79.98 330⇑ *iP* **P** 18 33 51.1 +0.1
CLL pmax pmax
comp=Z,22nm,1.0s
VRAC Vranov 80.07 327 P **P** 18 33 52.3 +0.8
comp=Z,11nm,0.9s,baz=52,slow=5.0,SNR=12
VRAC Vranov 80.07 327⇑ *iP* **P** 18 33 52.7 +1.2
SMCO Snowmass 80.20 47 *eP* **P** 18 33 54.2 +1.3
ZALF Zalf 80.22 304 *eP* **P** 18 33 51.8 -0.8
GOPC GO Pecny, Ondr 80.36 328 *eP* **P** 18 33 53.8 +0.7
GOPC GO Pecny, Ondr 80.36 328 *eP* **P** 18 33 53.8 +0.7
PRU Pruhonice 80.40 329 *eP* **P** 18 33 54.2 +1.0
PRU Pruhonice 80.40 329 *eP* **P** 18 33 54.2 +1.0
BZS Buzias 80.53 322⇑ *iP* **P** 18 33 53.9 -0.1
TREC Trest 80.54 328 *eP* **P** 18 33 54.8 +0.7
TREC Trest 80.54 328 *eP* **P** 18 33 54.8 +0.7
SALA Sala 80.74 304 *eP* **P** 18 33 54.9 -0.7
ASF Jabal al Asfar 80.98 304 P **P** 18 33 57.5 +0.7
comp=Z,4.3nm,1.0s,baz=26,slow=8.0,SNR=3.7
MDVR Moldovita 81.09 321⇑ *iP* **P** 18 33 57.1 0.0
TCHB Talchebab 81.26 305 *eP* **P** 18 33 57.5 -0.7
SOP Sopron 81.32 326 P **P** 18 33 59.7 +1.5
MMAI Mount Meron Ar 81.40 305 P **P** 18 33 59.4 +0.4
comp=Z,4.6nm,0.6s,baz=45,slow=6.3,SNR=6.1
CONA Conrad Observa 81.44 327 *i* PcP **P** 18 34 00.1 +1.2
comp=Z,16nm,1.4s,SNR=7.4
KHC Kasperske Hory 81.46 329 *eP* **P** 18 33 59.7 +0.7
KHC *e*pP **pP** 18 34 14.0 0.0
KHC Kasperske Hory 81.46 329 *eP* **P** 18 33 59.5 +0.5
KHC pmax pmax
comp=Z,8.0nm,1.1s
KHC Kasperske Hory 81.46 329 *eP* **P** 18 33 59.5 +0.5
comp=Z,7.7nm,1.1s
GERES GERESS Array B 81.64 328 P **P** 18 34 00.2 +0.2
comp=Z,3.2nm,0.5s,baz=36,slow=5.6,SNR=23
EKA Eskdalemuir Ar 81.85 341 P **P** 18 34 01.2 +0.4
comp=Z,1.6nm,0.5s,baz=32,slow=5.2,SNR=8.6
GRFO Grafenberg 81.96 330 *eP* **P** 18 34 02.2 +0.6
GRFO pmax pmax
comp=Z,36nm,1.2s
GRFO Grafenberg 81.96 330 *eP* **P** 18 34 02.2 +0.6
comp=Z,36nm,1.2s
ARSA Arzberg 82.10 326 *i* P **P** 18 34 02.7 +0.3
comp=Z,11nm,1.3s
MOA Molln 82.18 327 *i* PcP **P** 18 34 04.0 +1.3
comp=Z,10nm,1.1s
ECSD EROS Data Cent 82.52 39 *eP* **P** 18 34 05.1 +0.4
comp=Z,3.4nm,0.8s
PERS Pernice 82.75 326 *i* P **P** 18 34 06.2 +0.4
SOKA Soboth 82.76 326 *i* P **P** 18 34 06.3 +0.5
comp=Z,30nm,1.1s,SNR=14
OBKA Obir 83.10 326 *i* P **P** 18 34 07.8 +0.2
comp=Z,6.0nm,0.9s
MEM Membach 83.14 333 P **P** 18 34 08.2 +0.5
comp=Z,10.0nm,1.0s
KBA Koelnbreinsper 83.17 327 *i* PcP **P** 18 34 09.0 +0.9
comp=Z,13nm,0.9s,SNR=8.7
KBA Koelnbreinsper 83.17 327 P **P** 18 34 08.7 +0.6
CRES Cresnjev 83.23 325 *i* P **P** 18 34 08.1 -0.1
ANMO Albuquerque 83.35 50 P **P** 18 34 11.0 +1.7
comp=Z,1.8nm,0.9s,baz=289,slow=4.8,SNR=4.6
ANMO Albuquerque 83.35 50 *eP* **P** 18 34 10.3 +1.0
ANMO pmax pmax
comp=Z,3.0nm,1.1s
MYKA Terra Mystica 83.40 327 *i* P **P** 18 34 09.0 -0.2
comp=Z,6.7nm,0.5s
BCLA Clavier 83.55 334 P **P** 18 34 09.9 +0.2
comp=Z,5.2nm,0.9s
WTTA Wattenberg 83.73 328 *e*PcP **P** 18 34 11.3 +0.2
comp=Z,5.9nm,0.9s
ABTA Abfaltersbach 83.78 328 *i* P **P** 18 34 10.6 -0.5
comp=Z,12nm,1.2s
JAVS Javornik 83.79 326 *i* P **P** 18 34 10.6 -0.7
SCHQ Schefferville 83.81 16 P **P** 18 34 11.3 +0.3
comp=Z,6.4nm,0.8s,baz=287,slow=14,SNR=3.1
LANF Langenberg 83.84 332⇑ *eP* **P** 18 34 11.8 +0.5
EIL Elat 83.87 303 P **P** 18 34 11.9 +0.1
comp=Z,8.5nm,0.9s,baz=42,slow=4.5,SNR=6.7
MOTA Moosalm 83.89 329 *i* PcP **P** 18 34 12.0 +0.2
comp=Z,14nm,1.0s,SNR=9.8
RETA Reutte 83.91 329 *i* PcP **P** 18 34 12.4 +0.6
comp=Z,30nm,1.2s,SNR=12
GIVF Givet 83.98 334 *eP* **P** 18 34 11.8 -0.2
GIVF pmax pmax
comp=Z,6.0nm,0.7s
PDG Podgorica 84.03 321⇑ *iP* **P** 18 34 12.5 +0.1
DOU Dourbes 84.06 334 P **P** 18 34 12.4 +0.1
121A Cookes Peak, D 84.17 53 *eP* **P** 18 34 15.1 +1.6
comp=Z,3.1nm,0.8s
BFO Black Forest 84.18 331 *eP* **P** 18 34 13.2 +0.1
BFO pmax pmax
comp=Z,25nm,1.0s
BFO Black Forest 84.18 331 *eP* **P** 18 34 13.2 +0.1
comp=Z,25nm,1.0s
FETA Feichten 84.30 329 *i* PcP **P** 18 34 14.3 +0.4
comp=Z,10nm,0.8s,SNR=7.9
DAVA Damuels 84.43 329 *i* PcP **P** 18 34 14.9 +0.4
comp=Z,30nm,0.9s,SNR=12
WLS Welschbruch 84.48 331⇑ *eP* **P** 18 34 15.2 +0.6
CDF Champ du Feu 84.51 332 *eP* **P** 18 34 14.8 0.0
CDF pmax pmax
comp=Z,19nm,1.0s
ECH Echery 84.72 331⇑ *eP* **P** 18 34 15.9 +0.1
DAVOX Davos/Dischmat 84.84 329 P **P** 18 34 16.7 +0.1
comp=Z,9.9nm,0.7s,baz=348,slow=6.1,SNR=12
MOF Molkenrain 85.03 331⇑ *eP* **P** 18 34 17.4 0.0
TUE Stuetta 85.30 329 *eP* **P** 18 34 19.1 +0.1
comp=Z,14nm,1.0s
LOMF Lomont 85.56 331 *eP* **P** 18 34 19.1 -1.0
IDI Anoyia 86.24 313 P **P** 18 34 22.3 -1.3
comp=Z,9.8nm,0.6s,baz=14,slow=8.3,SNR=6.9
CABF La Chapelle 86.46 331 *eP* **P** 18 34 24.2 -0.3
CABF pmax pmax
comp=Z,7.0nm,0.8s
FLN La Foliniere 86.90 336 *eP* **P** 18 34 26.3 -0.2
FLN pmax pmax
comp=Z,9.0nm,0.8s
LPL La Plagne 87.12 330 *eP* **P** 18 34 27.9 -0.1
LPL pmax pmax
comp=Z,8.0nm,0.7s
LPG La Plagne 87.13 330 *eP* **P** 18 34 27.8 -0.3
LPG pmax pmax
comp=Z,9.0nm,0.7s
SMF Signal de Mont 87.26 333 *eP* **P** 18 34 29.2 +0.8
SMF pmax pmax
comp=Z,13nm,1.0s
AVF Avril sur Loir 87.31 333 *eP* **P** 18 34 28.5 -0.1
AVF pmax pmax
comp=Z,24nm,0.8s
PLDF La Plantade 87.91 332 *eP* **P** 18 34 32.3 +0.7
ORIF Oris-en-Rattie 87.95 330 *eP* **P** 18 34 31.9 +0.1
ORIF pmax pmax
comp=Z,4.0nm,0.6s
AGO Saint Agoulin 88.02 333 *eP* **P** 18 34 32.4 +0.4
PYM Petit Puy Mans 88.32 333 *eP* **P** 18 34 33.3 -0.2
VIVF Saint-Julien-l 88.47 331 *eP* **P** 18 34 34.2 0.0
VIVF pmax pmax
comp=Z,70nm,0.8s
LBL Lubilhac 88.68 332 *eP* **P** 18 34 33.9 -1.3
TXAR Lajitas Array 88.93 53 P **P** 18 34 37.6 +0.9
comp=Z,2.0nm,0.7s,baz=294,slow=3.3,SNR=13
TXAR pP **pP** 18 34 53.1 +1.3
comp=Z,1.7nm,0.7s,baz=295,slow=3.2,SNR=4.3
CAF Calviac 89.37 333 *eP* **P** 18 34 38.9 +0.5
CAF pmax pmax
comp=Z,6.0nm,0.7s
LFF La Frestale 89.83 334 *eP* **P** 18 34 40.9 +0.4
LFF pmax pmax
comp=Z,13nm,0.9s
VNDA Vanda 116.43 175 PKP **PKPdf** 18 40 23.7 -0.3
comp=Z,0.6nm,0.9s,baz=316,slow=3.2,SNR=3.8
TORD Torodi Ar. Bea 116.53 316 PKP **PKPdf** 18 40 25.5 -0.6
comp=Z,0.3nm,0.4s,baz=27,slow=2.1,SNR=3.6
TORD PP **PP** 18 41 29.1 -3.6
comp=Z,0.8nm,0.7s,baz=29,slow=6.9,SNR=4.2
BOSA Boshof 127.19 261 PKP **PKPdf** 18 40 46.8 +0.5
comp=Z,2.3nm,0.8s,baz=162,slow=3.2,SNR=3.4
QSPA South Pole Qui 128.27 180 *e*PKPdf **PKPdf** 18 40 46.5 -0.5
SNAA Sanae 142.28 197 *e*PKPpre PKPpre 18 41 08.4
VNA2 Neumayer--Watz 143.85 197 PKP PKPbc 18 41 14.0 +0.5
baz=98,slow=1.7
VNA3 Neumayer Olymp 144.10 195 PKP PKPbc 18 41 14.5 +0.2
VNA1 Neumayer--Stat 144.25 197 PKP PKPbc 18 41 15.3 +0.6
LPAZ La Paz 145.61 58 PKPbc **PKPab** 18 41 21.8 +0.1
comp=Z,11nm,0.9s,baz=348,slow=4.4,SNR=26
LPAZ pPKPbc pPKPbc 18 41 37.8 +0.8
comp=Z,5.1nm,0.5s,baz=342,slow=3.2,SNR=5.4
LCO Las Campanas 151.43 80 *e*PKPbc **PKPbc** 18 41 37.1 +1.1
PLCA Paso Flores 155.01 105 PKPbc PKPbc 18 41 46.3
comp=Z,1.5nm,0.9s,baz=354,slow=2.4,SNR=3.8
PLCA PKPab **PKPab** 18 42 02.0 +3.0
comp=Z,1.5nm,0.8s,baz=307,slow=1.4,SNR=5.2

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*ISCJB **11** 18:26:28.9±0.7, 37°.45N±0°.04×34°.84E±0°.04, h11km±5km, Error ellipse: s-maj=6.4km s-min=5.0km az=170.5*
*ISK **11** 18:26:28.1, 37°.44N×34°.84E, h12km, MD2.7*
*CSEM **11** 18:26:28.9±0.3, 37°.46N×34°.84E, h12km, MD2.8, Error ellipse: s-maj=6.8km s-min=5.6km az=18.0*
*DDA **11** 18:26:28.7, 37°.49N×34°.86E, h7km, Md2.8*
ISC 11 18:26:27.3±1.3, 37°.50N±0°.04×34°.78E±0°.03, h14km±10km, n22, σ0°33/34, Turkey

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
GULE	**Gulek**	**0.22**	**182**	P		**Pb**	**Pn**	**18 26 34.0**	**+0.8**
GULE				S		**Sb**	**Sn**	**18 26 37.3**	**+0.1**
GULE	**Gulek**	**0.22**	**182**	*i* P		**Pb**	**Pn**	**18 26 34.0**	**+0.8**
GULE				*i* S		**Sb**	**Sn**	**18 26 37.3**	**+0.1**
AKO	**Adana**	**0.53**	**94**	*i* P		**Pg**	**Pn**	**18 26 37.9**	**+0.2**
AKO				*i* S		**Sb**	**Sn**	**18 26 45.7**	**-0.2**
KERG	**Konya-Eregli**	**0.53**	**261**	P		**Pn**	**Pn**	**18 26 40.5**	**-0.1**
KERG				S		**Sn**	**Sn**	**18 26 48.9**	**-0.6**
KERG	**Konya-Eregli**	**0.53**	**261**	*i* P		**Pn**	**Pn**	**18 26 40.5**	**-0.1**
KERG				*i* S		**Sn**	**Sn**	**18 26 48.9**	**-0.6**
DED	**Mersin**	**0.54**	**179**	*i* P		**Pg**	**Pn**	**18 26 37.7**	**-0.2**
DED				*i* S		**Sg**	**Sn**	**18 26 44.7**	**-0.5**
NIG	**Nigde**	**0.62**	**347**	*e*PG		**Pn**	**Pn**	**18 26 42.2**	**+0.2**
NIG	**Nigde**	**0.62**	**347**	*e*Pg		**Pn**	**Pn**	**18 26 42.2**	**+0.2**
MERS	**Mersin**	**0.67**	**198**	*e*PG		**Pg**	**Pn**	**18 26 40.4**	**0.0**
MERS				*e*SG		**Sb**	**Sn**	**18 26 50.0**	**0.0**
MERS	**Mersin**	**0.67**	**198**	*e*Pg		**Pg**	**Pn**	**18 26 40.4**	**0.0**
MERS				*e*Sg		**Sb**	**Sn**	**18 26 50.0**	**0.0**
YURE	**YUREGIR**	**0.96**	**135**	P		**Pn**	**Pn**	**18 26 46.6**	**+0.2**
YURE				S		**Sn**	**Sn**	**18 26 59.7**	**-0.1**
YURE	**YUREGIR**	**0.96**	**135**	*i* P		**Pn**	**Pn**	**18 26 46.6**	**+0.2**
YURE				*i* S		**Sn**	**Sn**	**18 26 59.7**	**-0.1**
KIZK	**Mersin**	**1.14**	**207**	P		**Pg**	**Pn**	**18 26 49.3**	**0.0**
KIZK	**Mersin**	**1.14**	**207**	*i* P		**Pg**	**Pn**	**18 26 49.3**	**0.0**
ANDN	**Andirin**	**1.24**	**86**	P		**Pg**	**Pn**	**18 26 51.2**	**0.0**
ANDN	**Andirin**	**1.24**	**86**	*i* P		**Pg**	**Pn**	**18 26 51.2**	**0.0**
IKL	**Isikli**	**1.54**	**215**	*e*PN		**Pb**	**Pn**	**18 26 55.6**	**0.0**
IKL	**Isikli**	**1.54**	**215**	*e*Pn		**Pb**	**Pn**	**18 26 55.6**	**0.0**
TAHT	**Tahtakopru-Hat**	**1.59**	**135**	*e*PN		**Pb**	**Pn**	**18 26 56.2**	**-0.3**
TAHT				*e*SN		**Sn**	**Sn**	**18 27 15.4**	**-0.1**
TAHT	**Tahtakopru-Hat**	**1.59**	**135**	*e*Pn		**Pb**	**Pn**	**18 26 56.2**	**-0.3**
TAHT				*e*Sn		**Sn**	**Sn**	**18 27 15.4**	**-0.1**
ERMK	**Ermenek**	**1.73**	**241**	P		**Pg**	**Pn**	**18 27 00.9**	**+0.4**
ERMK	**Ermenek**	**1.73**	**241**	*i* P		**Pg**	**Pn**	**18 27 00.9**	**+0.4**

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*IDC **11** 18:27:28.0±1.0, 37°.26N×143°.79E, h0km, mb3.7/6, mb1 3.9/10, mb1mx3.6/63, mbtmp3.8/10, ML3.9/3, Error ellipse: s-maj=26.8km s-min=18.5km az=100.0*
*ISCJB **11** 18:27:31.0±0.7, 37°.36N±0°.05×143°.66E±0°.05, h33km, mb3.7/6, Error ellipse: s-maj=7.3km s-min=5.7km az=154.9*
*JMA **11** 18:27:31.7±0.2, 37°.38N×143°.59E, h44km, M4.0*
ISC 11 18:27:32.2±1.0, 37°.34N±0°.06×143°.72E±0°.08, h35km, n26, σ1°79/37, mb3.7/6, Off east of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.18**	**301**	P		**Pn**	**Pn**	**18 28 05.2**	**-0.7**
JIO				S		**Sn**	**Sn**	**18 28 29.8**	**-1.8**
JFK	**Kawauchi**	**2.27**	**271**	P		**Pn**	**Pn**	**18 28 06.5**	**-0.7**
JFK				S		**Sn**	**Sn**	**18 28 32.2**	**-1.7**
ONAJ	**Iwakimizuishiy**	**2.34**	**265**	P		**Pn**	**Pn**	**18 28 07.5**	**-0.7**
ONAJ				*e*S		**Sn**	**Sn**	**18 28 33.5**	**-2.3**
OFUJ	**Ofunato**	**2.37**	**318**	P		**Pn**	**Pn**	**18 28 07.5**	**-1.0**
JMM	**Marumori**	**2.38**	**284**	P		**Pn**	**Pn**	**18 28 07.8**	**-0.9**
JMM				*e*S		**Sn**	**Sn**	**18 28 35.0**	**-1.7**
JMK	**Ichinoseki**	**2.54**	**310**	P		**Pn**	**Pn**	**18 28 10.2**	**-0.7**
JOU	**Okura**	**2.62**	**294**	P		**Pn**	**Pn**	**18 28 12.0**	**-0.1**
JHO	**Hitachi**	**2.63**	**255**	P		**Pn**	**Pn**	**18 28 11.3**	**-0.8**
JFT	**Otama**	**2.70**	**275**	P		**Pn**	**Pn**	**18 28 13.5**	**+0.4**
JFT				S		**Sn**	**Sn**	**18 28 44.0**	**-0.5**
JOM	**Ohasama**	**2.86**	**319**	P		**Pn**	**Pn**	**18 28 14.6**	**-0.6**
JOM				*e*S		**Sn**	**Sn**	**18 28 46.7**	**-1.7**
JYK	**Kaneyama**	**3.08**	**302**	P		**Pn**	**Pn**	**18 28 18.3**	**0.0**
JANG	**Nango**	**3.48**	**331**	P		**Pn**	**Pn**	**18 28 23.6**	**-0.2**
JAG	**Ashikaga**	**3.54**	**256**	P		**Pn**	**Pn**	**18 28 24.8**	**+0.2**
JRY	**Ryogami san**	**4.09**	**253**	P		**Pn**	**Pn**	**18 28 32.3**	**+0.1**
JRY				*e*S		**Sn**	**Sn**	**18 29 15.9**	**-3.0**
MJAR	**Matsushiro Arr**	**4.49**	**261**	Pn		**Pn**	**Pn**	**18 28 38.8**	**+1.2**
4.3nm,0.3s,baz=89,slow=15,SNR=13									
MJAR				Sn		**Sn**	**Sn**	**18 29 27.9**	**-0.8**
baz=62,slow=25,SNR=3.2									
MAT	**Matsushiro**	**4.49**	**261**	P		**Pn**	**Pn**	**18 28 39.6**	**+1.9**
MAT				S		**Sn**	**Sn**	**18 29 30.3**	**+1.6**
JHJ	**Hachijo jima 2**	**5.30**	**219**	Pn		**Pn**	**Pn**	**18 28 46.8**	**-2.1**
11nm,0.3s,baz=107,slow=19,SNR=5.5									
JHJ				Sn		**Sn**	**Sn**	**18 29 43.5**	**-5.3**
13nm,0.3s,baz=78,slow=20,SNR=5.1									
ASAJ	**Asahikawa**	**6.82**	**353**	Pn		**Pn**	**Pn**	**18 29 09.1**	**-0.6**
2.8nm,0.3s,baz=206,slow=10,SNR=27									
ASAJ				Sn		**Sn**	**Sn**	**18 30 21.4**	**-4.6**
0.4nm,0.3s,baz=136,slow=17,SNR=3.4									
USRK	**Ussuriysk Ar.**	**11.22**	**311**	Pn		**Pn**	**Pn**	**18 30 11.4**	**+1.5**
0.2nm,0.3s,baz=100,slow=13,SNR=2.8									
KLR	**Kul'dur**	**14.71**	**328**	Pn		**Pn**	**Pn**	**18 30 56.2**	**-1.4**
0.2nm,0.3s,baz=133,slow=10,SNR=6.2									
MKAR	**Makanchi Array**	**45.51**	**302**	P		**P**	**Pn**	**18 35 49.8**	**+1.7**
0.2nm,0.6s,baz=90,slow=10,SNR=2.8									
KURBB	**Kurchatov Arra**	**47.26**	**308**	P		**P**	**Pn**	**18 36 03.3**	**+1.6**
0.5nm,0.6s,baz=81,slow=8.1,SNR=5.2									
ILAR	**Eielson Array**	**48.25**	**33**	P		**P**	**Pn**	**18 36 10.1**	**+0.9**
0.4nm,0.6s,baz=261,slow=5.4,SNR=5.1									
INK	**Inuvik**	**53.27**	**27**	P		**P**	**Pn**	**18 36 49.2**	**+2.3**
0.6nm,0.6s,baz=297,slow=8.5,SNR=5.4									
WRA	**Warramunga Arr**	**57.66**	**190**	P		**P**	**Pn**	**18 37 19.6**	**+0.5**
1.3nm,0.6s,baz=8.4,slow=7.4,SNR=11									
ASAR	**Alice Springs**	**61.38**	**190**	P		**P**	**Pn**	**18 37 45.3**	**+0.6**
0.6nm,0.7s,baz=1.8,slow=6.6,SNR=6.3									

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*IDC **11** 18:29:44.3±2.4, 36°.94N×144°.02E, h0km, mb3.6/1, mb1 3.8/5, mb1mx3.3/59, mbtmp3.8/5, ML3.6/3, Error ellipse: s-maj=48.4km s-min=28.1km az=81.0*
*ISCJB **11** 18:29:47.9±0.9, 37°.04N±0°.05×143°.76E±0°.07, h33km, mb3.7/1, Error ellipse: s-maj=8.2km s-min=6.3km az=23.1*
*JMA **11** 18:29:49.7±0.2, 37°.09N×143°.69E, h50km, M3.6*
ISC 11 18:29:48.4±1.5, 37°.01N±0°.06×143°.85E±0°.09, h35km, n20, σ1°35/29, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**2.40**	**279**	P		**Pn**	**Pn**	**18 30 25.6**	**+0.3**
JFK				S		**Sn**	**Sn**	**18 30 52.4**	**-1.1**
ONAJ	**Iwakimizuishiy**

0.1nm,0.3s,baz=123,slow=13,SNR=2.4
WRA Warramunga Arr 57.35 191 P **P 18 39 34.1 +1.1**
0.5nm,0.6s,baz=9.1,slow=7.2,SNR=5.4

IDC 11 18:36:21.2±6.9, 31°.83S×179°.41W, h0km, mb3.4/2, mb1 3.6/2, mb1mx3.4/35, mbtmp3.4/2, Error ellipse: s-maj=289.8km s-min=61.3km az=159.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**41.85**	**269**	P	P	18 44 12.7	-0.5
	0.3nm,0.7s,baz=109,slow=7.7,SNR=5.1						
WRA	**Warramunga Arr**	**42.98**	**274**	P	P	18 44 22.5	+0.2
	0.4nm,0.7s,baz=115,slow=8.0,SNR=3.8						
FINES	**FINESS Array B**	**146.04**	**338**	PKPbc	PKPdf	18 56 01.4	0.0
	0.8nm,0.7s,baz=46,slow=4.0,SNR=4.3						

IDC 11 18:38:34.8±3.3, 6°.03S×147°.90E, h0km, mb3.1/2, mb1 3.2/4, mb1mx3.1/44, mbtmp3.1/4, ML2.9/1, Error ellipse: s-maj=100.3km s-min=25.9km az=99.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**3.43**	**192**	Pn	Pn	18 39 30.5	+0.9
	1.3nm,0.3s,baz=350,slow=6.4,SNR=6.2						
PMG				Sn	Sn	18 40 09.3	-1.7
	0.9nm,0.3s,baz=350,slow=19,SNR=3.7						
WRA	**Warramunga Arr**	**19.10**	**222**	P	Pn	18 42 59.9	-0.2
	0.0nm,0.3s,baz=49,slow=11,SNR=3.2						
ASAR	**Alice Springs**	**22.11**	**216**	P	P	18 43 31.6	-0.4
	0.1nm,0.5s,baz=52,slow=8.5,SNR=7.9						
SONM	**Songino Array**	**64.87**	**330**	P	P	18 49 15.8	-0.2
	0.5nm,0.7s,baz=132,slow=6.0,SNR=2.3						

*IDC **11** 18:41:06.2±1.2, 13°.72N×92°.59E, h0km, mb3.6/6, mb1 3.6/7, mb1mx3.4/65, mbtmp3.5/7, ML3.2/1, Error ellipse: s-maj=43.7km s-min=19.5km az=54.0*
*ISCJB **11** 18:41:08.4±1.0, 13°.8N±0°.1×92°.7E±0°.2, h29km, mb3.6/6, Error ellipse: s-maj=24.1km s-min=17.0km az=140.7*
ISC 11 18:41:10.6±1.3, 13°.8N±0°.2×92°.6E±0°.2, h29km, n10, σ0§29/7, mb3.6/6, Andaman Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**7.67**	**52**	Pn	Pn	**18 43 00.5**	**+0.2**
	0.1nm,0.3s,baz=237,slow=15,SNR=3.2						
CMAR				Sn	Sn	18 44 15.5	-11
	baz=237,slow=28						
H08S3	**Diego Garcia H**	**29.17**	**224**	T	T	19 18 01.7	
	baz=42						
H08S2	**Diego Garcia H**	**29.18**	**224**	T	T	19 18 00.4	
	baz=42						
H08S1	**Diego Carcia H**	**29.19**	**224**	T	T	19 18 01.9	
	baz=42						
MKAR	**Makanchi Array**	**34.07**	**347**	P	P	**18 47 52.3**	**-0.1**
	0.5nm,0.6s,baz=169,slow=9.2,SNR=6.5						
KURBB	**Kurchatov Arra**	**38.52**	**346**	P	P	**18 48 30.1**	**-0.2**
	0.5nm,0.7s,baz=160,slow=7.9,SNR=5.1						
ZALV	**Zalesovo Beam**	**40.58**	**353**	P	P	**18 48 47.0**	**-0.4**
	0.5nm,0.3s,baz=168,slow=7.4,SNR=3.7						
WRA	**Warramunga Arr**	**52.96**	**128**	P	P	**18 50 24.6**	**-0.2**
	0.5nm,0.8s,baz=303,slow=9.5,SNR=6.4						
ASAR	**Alice Springs**	**54.88**	**132**	P	P	**18 50 38.9**	**0.0**
	0.4nm,0.4s,baz=309,slow=7.0,SNR=19						
BRTR	**Keskin Array B**	**57.56**	**308**	P	P	**18 50 58.2**	**+0.3**
	0.4nm,0.8s,baz=105,slow=5.1,SNR=2.7						

*IDC **11** 18:47:52.6±1.9, 20°.19S×168°.21E, h0km, mb4.0/5, mb1 4.2/6, mb1mx3.9/42, mbtmp4.0/6, ML3.3/1, Error ellipse: s-maj=61.8km s-min=29.5km az=147.0*
*ISCJB **11** 18:47:55.4±1.5, 20°.3S±0°.2×168°.1E±0°.2, h27km, mb3.9/4, Error ellipse: s-maj=38.6km s-min=13.6km az=36.4*
ISC 11 18:47:56.6±1.7, 20°.4S±0°.3×168°.3E±0°.3, h27km, n6, σ1§08/7, mb3.9/4, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.37**	**226**	Pn	Pn	**18 48 33.4**	**-0.4**
	6.6nm,0.3s,baz=61,slow=17,SNR=15						
DZM				Sn	Sn	18 49 02.2	0.0
	21nm,0.3s,baz=339,slow=22,SNR=9.8						
CTA	**Charters Tower**	**20.67**	**267**	P	P	**18 52 35.5**	**+1.0**
	2.4nm,0.5s,baz=101,slow=12,SNR=4.5						
STKA	**Stephens Creek**	**26.46**	**239**	P	P	**18 53 32.7**	**+1.2**
	2.1nm,0.5s,baz=64,slow=9.8,SNR=8.4						
WRA	**Warramunga Arr**	**31.83**	**265**	P	P	**18 54 18.0**	**-1.3**
	0.6nm,0.5s,baz=92,slow=8.5,SNR=16						
ASAR	**Alice Springs**	**31.98**	**258**	P	P	**18 54 20.3**	**-0.4**
	3.9nm,0.7s,baz=87,slow=9.0,SNR=70						
NVAR	**Mina Array Bea**	**90.25**	**49**	P	P	**19 00 55.2**	**0.0**
	0.1nm,0.3s,baz=225,slow=8.9,SNR=4.0						

*IDC **11** 18:50:57.6±1.0, 34°.87N×142°.85E, h0km, mb3.7/6, mb1 3.9/10, mb1mx3.6/60, mbtmp3.8/10, ML3.7/4, Error ellipse: s-maj=27.5km s-min=18.8km az=84.0*
*ISCJB **11** 18:51:00.9±0.8, 34°.87N±0°.04×142°.73E±0°.07, h33km, mb3.7/6, Error ellipse: s-maj=7.8km s-min=6.3km az=175.1*
*JMA **11** 18:51:00.1±0.3, 34°.94N×142°.87E, h43km, M3.7*
ISC 11 18:51:00.5±1.1, 34°.85N±0°.06×142°.96E±0°.09, h35km, n22, σ2§18/24, mb3.8/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**1.65**	**264**	P	Pn	**18 51 26.3**	**-0.1**
CHOJ	**Chosi**	**1.92**	**297**	P	Pn	18 51 29.3	-1.3
CHOJ				eS	Sn	18 51 51.6	-1.9
JIM2	**Oshima 3**	**2.91**	**268**	P	Pn	**18 51 44.0**	**-0.3**
JFK	**Kawauchi**	**3.03**	**327**	P	Pn	18 51 44.6	-1.3
JFK				S	Sn	18 52 17.2	-3.7
JHJ2	**Mitsune**	**3.14**	**237**	P	Pn	18 51 47.4	0.0
JHJ2				eS	Sn	18 52 21.9	-1.7
JHJ	**Hachijo jima 2**	**3.15**	**238**	Pn	Pn	18 51 47.2	-0.4
	33nm,0.3s,baz=66,slow=20,SNR=25						
JHJ				Sn	Sn	18 52 21.1	-2.9
	54nm,0.3s,baz=82,slow=19,SNR=12						
JOD2	**Odawara 2**	**3.20**	**278**	S	Sn	18 52 22.3	-3.0
JAG	**Ashikaga**	**3.26**	**300**	P	Pn	18 51 49.0	-0.1
JFT	**Otama**	**3.40**	**322**	P	Pn	18 51 50.8	-0.3
JFT				S	Sn	18 52 27.5	-2.7
MJAR	**Matsushiro Arr**	**4.22**	**295**	Pn	Pn	18 52 02.3	0.0
	1.8nm,0.3s,baz=104,slow=9.3,SNR=7.8						
MAT	**Matsushiro**	**4.22**	**295**	P	Pn	**18 52 03.1**	**+0.8**
MAT				eS	Sn	18 52 49.2	-1.2
JCJ	**Chichijima**	**7.76**	**185**	Pn	Pn	18 52 50.7	-0.2
	4.1nm,0.3s,baz=330,slow=20,SNR=3.5						
JCJ				Sn	Sn	**18 54 12.0**	**-5.6**
	9.0nm,0.3s,baz=299,slow=23,SNR=4.7						
ASAJ	**Asahikawa**	**9.26**	**358**	Pn	Pn	**18 53 09.9**	**-1.4**
	0.6nm,0.3s,baz=231,slow=13,SNR=8.8						
H11S1	**WAKE ISLAND Hy**	**26.64**	**122**	T	T	19 24 30.2	
	baz=312,slow=76,SNR=5.5						
H11S3	**WAKE ISLAND Hy**	**26.64**	**122**	T	T	19 24 30.2	
	baz=312,slow=76,SNR=4.6						
H11S2	**WAKE ISLAND Hy**	**26.65**	**122**	T	T	19 24 31.5	
	baz=312,slow=76,SNR=2.9						
ZALV	**Zalesovo Beam**	**44.32**	**314**	P	P	**18 59 08.7**	**+1.9**
	0.6nm,0.5s,baz=79,slow=7.5,SNR=3.1						
MKAR	**Makanchi Array**	**46.36**	**304**	P	P	**18 59 24.6**	**+1.5**
	0.4nm,0.7s,baz=91,slow=9.7,SNR=5.4						
WRA	**Warramunga Arr**	**55.10**	**190**	P	P	**19 00 31.5**	**+2.3**
	1.5nm,0.7s,baz=8.3,slow=7.8,SNR=7.8						
ASAR	**Alice Springs**	**58.83**	**190**	P	P	19 00 58.2	+2.8
	0.6nm,0.8s,baz=0.1,slow=6.6,SNR=7.0						
NVAR	**Mina Array Bea**	**75.28**	**53**	P	P	19 02 43.6	+3.4
	0.2nm,0.3s,baz=312,slow=4.7,SNR=2.8						
AKASG	**Malin Array Be**	**76.79**	**323**	P	P	**19 02 50.5**	**+2.2**
	0.6nm,0.5s,baz=46,slow=6.1,SNR=4.0						

IDC 11 18:54:35.9±2.4, 3°.44N×128°.03E, h0km, mb3.4/3, mb1 3.6/3, mb1mx3.3/39, mbtmp3.4/3, Error ellipse: s-maj=183.9km s-min=23.8km az=68.0, North of Halmahera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**24.05**	**165**	P	P	18 59 52.7	-0.3
	0.8nm,0.4s,baz=345,slow=9.6,SNR=15						
ASAR	**Alice Springs**	**27.54**	**168**	P	P	19 00 24.4	-0.3
	0.2nm,0.6s,baz=344,slow=11,SNR=3.0						
MKAR	**Makanchi Array**	**58.54**	**325**	P	P	19 04 34.7	+0.4
	0.3nm,0.8s,baz=121,slow=7.4,SNR=2.8						

*ISCJB **11** 18:56:22.1±0.8, 36°.61N±0°.06×71°.0E±0°.1, h188km, Error ellipse: s-maj=12.6km s-min=6.1km az=151.8*
*NNC **11** 18:56:27.5±1.4, 36°.95N×70°.83E, h190km±14km, mb2.6, mpv3.6, Error ellipse: s-maj=17.0km s-min=8.2km az=137.0*
ISC 11 18:56:22.9±1.2, 36°.63N±0°.09×70°.98E±0°.09, h188km, n12, σ1§32/15, 5C-4D, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**2.76**	**322**	⇑P	Pn	**18 57 10.1**	**+1.0**
	39nm,0.5s						
DZET				⇑S	Sn	**18 57 44.1**	**-1.2**
	152nm,0.5s						
MNAS	**Manas**	**5.96**	**11**	⇓P	Pn	**18 57 50.8**	**+1.2**
	1.5nm,0.3s						
MNAS				⇓S	Sn	**18 58 56.8**	**-1.2**
	56nm,0.6s						
KK31	**Karatay Array**	**6.47**	**357**	⇑P	Pn	**18 57 56.6**	**+0.6**
	1.3nm,0.3s,baz=184,slow=12,SNR=47						
KK31				S	Sn	**18 59 06.6**	**-3.2**
	10nm,0.6s,baz=188,slow=18,SNR=17						
AAK	**Ala-Archa**	**6.58**	**23**	⇓S	Sn	**18 59 12.7**	**+0.2**
	14nm,1.1s						
TKM2	**Tokmak 2**	**7.22**	**28**	⇓P	Pn	**18 58 07.2**	**+1.3**
	2.4nm,0.6s						
PYUN	**Piuthan**	**13.24**	**127**	eP	Pn	**18 59 22.6**	**-1.3**
	5.8nm,0.3s						
KOLN	**Koldanda**	**13.86**	**126**	eP	Pn	**18 59 31.4**	**-0.3**
	5.0nm,0.5s						
GKN	**Gorkha**	**14.39**	**123**	eP	Pn	**18 59 37.7**	**-0.6**
	4.8nm,0.2s						
AB31	**Akbulak array**	**14.96**	**331**	⇑P	P	**18 59 46.7**	**+0.9**
	0.4nm,0.4s						
KKN	**Kakani**	**14.96**	**122**	eP	Pn	**18 59 44.6**	**-0.8**
PKIN	**Phulchoki**	**15.18**	**122**	eP	Pn	**18 59 47.8**	**-0.3**
	7.6nm,0.5s						
AKTO	**Aktyubinsk**	**16.66**	**330**	⇑P	Pn	**19 00 05.7**	**+0.3**
	3.4nm,0.9s						

MAN 11 19:00:18, 13°.55N×120°.25E, h34km, mb3.6, ML2.3, MS2.3, 1C, Mindoro

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LUBP	**Lubang**	**0.18**	**358**	eP	Pb	19 00 25.9	+1.3
PGP	**Puerto Galera**	**0.68**	**94**	⇑eP	Pb	19 00 32.0	+0.4
PGP				i S	Sb	19 00 42.4	+1.4
SJMP	**San Jose**	**1.37**	**142**	eP	Pn	19 00 41.7	+0.9
SJMP				eS	Sn	19 00 58.3	+0.5

*IDC **11** 19:06:14.0±0.7, 37°.15N×104°.78W, h0km, mb4.0/9, mb1 4.1/14, mb1mx3.8/56, mbtmp3.9/14, ML3.4/5, Error ellipse: s-maj=20.2km s-min=11.3km az=76.0*
*NEIC **11** 19:06:15.3±0.2, 37°.10N×104°.67W, h5km, ML3.9, MW3.8, Error ellipse: s-maj=3.5km s-min=2.6km az=199.0, Moment Tensor Solution. s21 Moment tensor: Scale 10^{14}Nm; M_{rr}-6.19; $M_{\theta\theta}$0.12; $M_{\phi\phi}$6.07; $M_{r\theta}$0.26; $M_{r\phi}$0.95; $M_{\theta\phi}$-1.12; Best double couple: $M_0$6.30000×10^{14} NP1: ϕ_s193.00000°, δ40.00000°, λ-84.00000°. NP2:ϕ_s5.00000°, δ50.00000°, λ-95.00000°. Principal axes: T 6.3100, Plg5.0000°, Azm99.0000°; N 0.0000, Plg4.0000°, Azm8.0000°; P -6.3100, Plg84.0000°, Azm240.0000°;*
NEIC Felt [III] at Weston and [II] at Trinidad. Also felt at Aguilar, La Junta and Walsenburg.
ISC 11 19:06:14.5±0.8, 37°.18N±0°.02×104°.73W±0°.02, h4km±6km, n198, σ1§57/217, mb3.9/9, Colorado

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
T25A	**Trinidad**	**0.26**	**99**	P	Pg	**19 06 19.6**	**0.0**
	baz=261						
T25A				S	Sg	**19 06 23.6**	**+0.5**
	baz=261						
T25A	**Trinidad**	**0.26**	**99**	ePg	Pg	19 06 19.4	-0.2
T25A				eSg	Pg	19 06 19.6	0.0
SDCO	**Great Sand Dun**	**0.83**	**313**	P	Pg	**19 06 30.6**	**+0.2**
	baz=136						
SDCO				S	Sg	**19 06 42.4**	**+1.1**
	baz=136						
SDCO	**Great Sand Dun**	**0.83**	**313**	ePg	Pg	19 06 30.9	+0.4
SDCO				eSg	Sg	19 06 42.3	+1.1
S22A	**4UR Ranch, Cre**	**1.76**	**289**	P	Pb	19 06 46.9	-0.5
	baz=111						
S22A				S	Sb	19 07 10.8	+0.8
	baz=111						
S22A	**4UR Ranch, Cre**	**1.76**	**289**	ePn	Pb	19 06 47.0	-0.4
S22A				eSn	Sb	19 07 09.8	-0.3
Q24A	**Divide**	**1.81**	**350**	P	Pb	19 06 48.9	+0.6
	baz=170						
Q24A				S	Sg	19 07 13.7	+1.0
	baz=170						
Q24A	**Divide**	**1.81**	**350**	ePn	Pb	19 06 49.0	+0.7
Q24A				eSn	Sg	19 07 12.8	+0.1
KSCO	**Kaye Shedlock'**	**2.47**	**42**	P	Pb	19 06 58.7	-0.7
	baz=222						
KSCO				Sb	Sg	19 07 33.9	0.0
	baz=222						
KSCO	**Kaye Shedlock'**	**2.47**	**42**	ePn	Pb	19 06 58.8	-0.7
KSCO				eSg	Sg	19 07 33.1	-0.7
ANMO	**Albuquerque**	**2.63**	**213**	Pn	Pn	19 06 57.6	-0.2
	2.3nm,0.3s,baz=28,slow=13,SNR=42						
ANMO				Sn	Sn	19 07 30.9	+0.6
	8.6nm,0.3s,baz=105,slow=14,SNR=10.0						
ANMO	**Albuquerque**	**2.63**	**213**	P	Pn	19 06 57.4	-0.5
	baz=33						
SMCO	**Snowmass**	**2.66**	**319**	ePn	Pb	19 07 01.2	-1.7
ISCO	**Idaho Springs**	**2.70**	**345**	P	Pb	19 07 02.4	-1.2
	baz=165						
ISCO				Sb	Sg	19 07 41.4	0.0
	baz=165						
ISCO	**Idaho Springs**	**2.70**	**345**	ePn	Pb	19 07 02.3	-1.3
MVCO	**Mesa Verde**	**3.01**	**272**	Pb	Pb	19 07 08.6	-0.1
	baz=91						
MVCO				Sb	Sb	19 07 47.9	+2.1
	baz=91						
MVCO	**Mesa Verde**	**3.01**	**272**	ePn	Pn	19 07 02.9	-0.2
PV01	**Paradox Valley**	**3.19**	**289**	ePn	Pn	19 07 07.8	+2.2
LPM	**Los Pinos Moun**	**3.25**	**209**	ePn	Pn	19 07 06.0	-0.4
AMTX	**Amarillo**	**3.37**	**132**	Pb	Pb	19 07 13.3	-1.5
	baz=313						
AMTX	**Amarillo**	**3.37**	**132**	ePn	Pb	19 07 10.3	-4.6
LAZ	**Ladron**	**3.39**	**216**	ePn	Pn	19 07 07.7	-0.7
BNM	**Barren Site**	**3.40**	**208**	ePn	Pn	19 07 07.5	-0.9
Y22D	**IRIS PASSCAL I**	**3.58**	**211**	Sb	Sb	19 08 03.4	+1.3
	baz=30						
Y22D	**IRIS PASSCAL I**	**3.58**	**211**	ePn	Pn	19 07 11.0	+0.2
PV05	**Paradox Valley**	**3.58**	**286**	ePn	Pn	19 07 13.4	+2.4
MSTX	**Muleshoe**	**3.58**	**153**	Pb	Pb	19 07 17.4	-1.0
	baz=334						
MSTX	**Muleshoe**	**3.58**	**153**	ePn	Pn	19 07 07.3	-3.6
MSTX				ePg	Pb	19 07 17.2	-1.2
PV10	**Paradox Valley**	**3.61**	**291**	ePn	Pn	19 07 12.9	+1.5
PV09	**Paradox Valley**	**3.72**	**292**	ePn	Pn	19 07 11.3	-1.7
N23A	**Red Feather La**	**3.83**	**346**	P	Pn	19 07 16.7	+2.3
	baz=166						
N23A				Sb	Sg	19 08 16.4	-1.0
	baz=166						
N23A	**Red Feather La**	**3.83**	**346**	ePn	Pn	19 07 16.8	+2.5
O20A	**White River Ci**	**4.03**	**318**	P	Pn	19 07 19.6	+2.5
	baz=137						
O20A	**White River Ci**	**4.03**	**318**	ePn	Pn	19 07 17.4	+0.3
PHWY	**Pilot Hill**	**4.15**	**352**	ePn	Pn	19 07 19.4	+0.5
CBKS	**Cedar Bluff**	**4.27**	**66**	P	Pn	19 07 21.4	+1.2
	baz=248						
CBKS	**Cedar Bluff**	**4.27**	**66**	ePn	Pn	19 07 20.9	+0.6
OGNE	**Ogallala**	**4.31**	**28**	P	Pn	19 07 23.5	+2.8
	baz=209						
OGNE	**Ogallala**	**4.31**	**28**	ePn	Pn	19 07 23.6	+2.8
W18A	**Petrified Fore**	**4.54**	**245**	ePn	Pn	19 07 27.3	+3.2
T32A	**Huddler Ranch,**	**4.64**	**88**	P	Pn	19 07 26.0	+0.7
	baz=271						
S32A	**Newby Ranch, P**	**4.64**	**82**	P	Pn	19 07 25.8	+0.4
	baz=264						
S32A				S	Sn	19 08 20.1	+0.4
	baz=264						
U32A	**Winter Ranch,**	**4.67**	**98**	P	Pn	19 07 25.5	-0.3
	baz=281						
V32A	**Arapaho**	**4.81**	**106**	P	Pn	19 07 27.2	-0.5
	baz=288						
W32A	**Sentinel**	**4.89**	**113**	P	Pn	19 07 28.2	-0.6
	baz=296						
R32A	**Long Quarter,**	**4.93**	**74**	S	Sn	19 08 27.9	+1.2
	baz=256						
SRU	**San Rafael Swe**	**4.95**	**295**	ePn	Pn	19 07 31.4	+1.6
P18A	**Preston Nutter**	**4.97**	**301**	ePn	Pn	19 07 32.6	+2.5
X18A	**Snowflake**	**5.00**	**240**	ePn	Pn	19 07 32.4	+2.0
O31A	**Woolen Ranch,**	**5.17**	**53**	P	Pn	19 07 33.4	+0.8
	baz=236						
T33A	**Patterson Ranc**	**5.19**	**89**	P	Pn	19 07 32.7	-0.1
	baz=272						
Q32A	**Meitler Ranch,**	**5.19**	**68**	P	Pn	19 07 33.0	+0.1
	baz=251						
P17A	**Butcher Ranch,**	**5.25**	**298**	ePg	Pb	19 07 50.1	+3.2
U33A	**Lingo Farm, Me**	**5.36**	**96**	P	Pn	19 07 35.4	+0.2
	baz=279						
V33A	**Lossen Ranch,**	**5.37**	**103**	P	Pn	19 07 35.1	-0.2
	baz=286						
Q16A	**Castle Valley**	**5.37**	**291**	ePn	Pn	19 07 38.3	+2.8
Q16A				ePg	Pg	19 07 54.0	-3.4
S33A	**Kaszmaul Farm,**	**5.38**	**84**	P	Pn	19 07 35.4	0.0
	baz=267						
P32A	**Huiting Farm,**	**5.40**	**61**	P	Pn	19 07 36.4	+0.7
	baz=244						
WMOK	**Wichita Mounta**	**5.41**	**115**	ePn	Pn	19 07 35.5	-0.4
W33A	**Caddo, Fort Co**	**5.46**	**110**	P	Pn	19 07 36.1	-0.5
	baz=293						
R33A	**Olander Ranch,**	**5.47**	**76**	P	Pn	19 07 36.9	+0.2
	baz=259						
MNTX	**Cornudas Mount**	**5.50**	**186**	ePg	Pb	19 07 51.7	+0.7
TMUT	**Trail Mountain**	**5.52**	**294**	ePn	Pn	19 07 41.0	+3.4
WUAZ	**Wupatki**	**5.61**	**255**	ePn	Pn	19 07 41.5	+2.7
K22A	**Casper**	**5.63**	**346**	ePn	Pn	19 07 44.3	+5.2
U34A	**Anderson Ranch**	**5.82**	**95**	ePn	Pn	19 07 41.9	+0.4
U34A				ePg	Pb	19 07 59.9	+3.4
W34A	**Bridge Creek,**	**5.95**	**107**	P	Pn	19 07 42.9	-0.4
	baz=290						
W34A	**Bridge Creek,**	**5.95**	**107**	ePn	Pn	19 07 41.5	-1.9
W34A				ePg	Pb	19 08 01.1	+2.3
V34A	**Guthrie**	**5.96**	**101**	P	Pn	19 07 43.4	-0.2
	baz=284						
V34A	**Guthrie**	**5.96**	**101**	ePn	Pn	19 07 43.0	-0.5
V34A				ePg	Pb	19 08 02.0	+3.0
P33A	**Williams Farm,**	**5.97**	**66**	P	Pn	19 07 43.6	0.0
	baz=249						
MTPU	**Mount Pierson**	**5.98**	**281**	ePn	Pn	19 07 47.6	+3.6
MTPU				ePg	Pb	19 08 04.2	+4.8
T34A	**McClaskey Farm**	**6.03**	**89**	P	Pn	19 07 44.0	-0.4
	baz=273						
MSU	**Marysvale**	**6.04**	**285**	ePn	Pn	19 07 48.0	+3.2
MSU				ePg	Pg	19 08 06.1	-4.1
PKCU	**Pink Cliffs**	**6.05**	**275**	ePn	Pn	19 07 48.0	+3.1
S34A	**Willow Spring**	**6.09**	**83**	P	Pn	19 07 44.6	-0.6
	baz=267						
X16A	**Lo Mia Camp, P**	**6.11**	**245**	ePn	Pn	19 07 48.3	+2.7
U15A	**North Rim**	**6.11**	**265**	ePn	Pn	19 07 48.5	+2.7
U15A				ePg	Pb	19 07 50.8	-11
ABTX	**Abilene, Hawle**	**6.18**	**136**	ePn	Pn	19 07 46.9	+0.4
ABTX				ePg	Pb	19 08 02.8	+0.2
JLU	**Jordanelle**	**6.25**	**305**	ePn	Pn	19 07 51.3	+3.6
JLU				ePg	Pg	19 08 11.9	-2.4
J26A	**Sides Ranch, S**	**6.25**	**11**	P	Pn	19 07 49.2	+1.7
	baz=192						
O33A	**Hebron**	**6.30**	**61**	P	Pn	19 07 48.3	+0.2
	baz=244						
NLU	**North Lily Min**	**6.38**	**298**	ePg	Pg	19 08 12.7	-4.1
KNB	**Kanab**	**6.47**	**271**	ePg	Pg	19 08 14.1	-4.3
TCUT	**Toone Canyon**	**6.51**	**309**	ePn	Pn	19 07 53.8	+2.6
TCUT				ePg	Pb	19 08 13.5	+5.2
V35A	**Meyer Ranch, C**	**6.52**	**100**	P	Pn	19 07 50.0	-1.1
	baz=284						
T35A	**Sooner Cattle**	**6.58**	**90**	P	Pn	19 07 52.1	+0.1
	baz=274						
BGNE	**Belgrade**	**6.62**	**48**	ePn	Pn	19 07 53.6	+1.1
W35A	**Tecumseh**	**6.67**	**105**	P	Pn	19 07 52.8	-0.4
	baz=289						
KSU1	**Kansas State U**	**6.68**	**71**	ePn	Pn	19 07 53.0	-0.4
KSU1				ePg	Pg	19 08 17.8	-4.7
PD31	**Pinedale Array**	**6.70**	**328**	ePn	Pn	19 07 55.4	+1.6
PDAR	**Pinedale Array**	**6.70**	**328**	Pn	Pn	19 07 55.9	+2.1
	0.5nm,0.3s,baz=132,slow=14,SNR=13						
PDAR				Pg	Pb	19 08 17.1	+5.6
	0.7nm,0.3s,baz=133,slow=15,SNR=23						
PDAR				Lg	Lg	19 09 44.9	
	1.6nm,0.3s,baz=128,slow=26,SNR=6.9						
BW06	**Boulder Array**	**6.70**	**328**	P	Pn	19 07 56.0	+2.2
	baz=145						
BW06	**Boulder Array**	**6.70**	**328**	ePn	Pn	19 07 55.9	+2.2
BW06				ePg	Pg	19 08 17.8	-4.9
LCMT	**Little Creek M**	**6.80**	**271**	ePn	Pn	19 07 57.6	+2.5
LCMT				eScP	ScP	19 18 22.0	+2.0
I25A	**Rochford**	**6.87**	**6**	P	Pn	19 07 58.5	+2.3
	baz=187						
CCUT	**Cedar City**	**6.88**	**276**	ePg	Pg	19 08 29.0	+2.6
HWUT	**Hardware Ranch**	**6.89**	**312**	ePn	Pn	19 07 58.1	+1.7
HWUT				ePg	Pg	19 08 21.5	-5.0
319A	**Douglas**	**6.91**	**214**	ePn	Pn	19 07 56.5	-0.1
319A				ePg	Pg	19 08 24.9	-1.9
RSSD	**Black Hills**	**6.95**	**4**	P	Pn	19 07 59.3	+2.0
	baz=184						
RSSD	**Black Hills**	**6.95**	**4**	ePn	Pn	19 07 59.4	+2.2
TUC	**Tucson**	**6.96**	**227**	ePg	Pg	19 08 23.6	-4.2
DUG	**Dugway, Tooele**	**7.00**	**298**	ePg	Pg	19 08 23.8	-4.7
T36A	**Boggs Farm, Ca**	**7.08**	**88**	P	Pn	19 07 58.8	+0.1
	baz=273						
W36A	**Wetumka**	**7.18**	**104**	P

7.6nm,0.3s
G26A **Maurine** 8.26 11 P Pn 19 08 17.0 +1.9
baz=192
U38A **Gravette** 8.33 92 P Pn 19 08 15.8 -0.2
baz=278
T38A **Diamond** 8.34 88 P Pn 19 08 16.2 0.0
baz=274
X38A **Whitesboro** 8.42 104 P Pn 19 08 16.5 -0.7
baz=290
V38A **Canehill** 8.42 96 P Pn 19 08 17.0 -0.2
baz=282
G27A **Dupree** 8.46 14 P Pn 19 08 19.8 +2.1
baz=195
P37A **Lathrop** 8.50 70 P Pn 19 08 18.4 +0.1
baz=256
W38A **Poteau** 8.53 101 P Pn 19 08 18.5 -0.2
baz=287
S38A **Stockton** 8.63 84 P Pn 19 08 19.5 -0.5
baz=270
R38A **Fenwick Farm,** 8.64 80 P Pn 19 08 20.0 -0.3
baz=266
HHAR **Hobbs** 8.71 93 ePn Pn 19 08 21.1 -0.2
Q38A **Cooks Store, C** 8.95 75 P Pn 19 08 24.1 -0.2
baz=261
ECSD **EROS Data Cent** 9.00 41 P Pn 19 08 26.9 +1.7
baz=226
ECSD **EROS Data Cent** 9.00 41 ePn Pn 19 08 28.1 +2.8
X39A **Fountain Ranch** 9.02 104 P Pn 19 08 24.4 -1.1
baz=290
V39A **Pettigrew** 9.03 95 P Pn 19 08 24.9 -0.7
baz=281
U39A **Green Forest** 9.06 92 P Pn 19 08 25.8 -0.2
baz=278
W39A **Magazine** 9.07 99 P Pn 19 08 25.7 -0.4
baz=285
T39A **Clever** 9.07 88 P Pn 19 08 26.2 0.0
baz=274
S39A **Bolivar** 9.09 83 P Pn 19 08 26.3 -0.2
baz=270
P38A **Dawn** 9.13 71 P Pn 19 08 26.7 -0.2
baz=258
H32A **Carlson Farm,** 9.17 35 P Pn 19 08 28.9 +1.5
baz=219
O38A **Galt** 9.29 68 P Pn 19 08 29.1 +0.1
baz=255
R39A **Chumby, Stover** 9.33 79 P Pn 19 08 29.9 +0.2
baz=266
MIAR **Mount Ida** 9.43 103 P Pn 19 08 30.3 -0.8
baz=289
MIAR **Mount Ida** 9.43 103 ePn Pn 19 08 29.8 -1.3
Q39A **Willow Grove F** 9.45 75 P Pn 19 08 30.9 -0.4
baz=262
U40A **Yellville** 9.57 91 P Pn 19 08 32.7 -0.3
baz=278
W40A **Ferguson Farm,** 9.64 98 P Pn 19 08 33.5 -0.4
baz=285
V40A **Witts Springs** 9.69 95 P Pn 19 08 33.8 -0.8
baz=281
S40A **Lebanon** 9.74 84 P Pn 19 08 34.8 -0.6
baz=271
R40A **Maddies Statio** 9.94 80 P Pn 19 08 37.5 -0.5
baz=267
O39A **Kirksville** 10.01 68 P Pn 19 08 38.2 -0.7
baz=256
Q40A **Laux Farm, Aux** 10.14 76 P Pn 19 08 39.4 -1.4
baz=263
X301 **Greenbrier Sit** 10.15 97 ePn Pn 19 08 41.0 0.0
D27A **Center** 10.20 12 P Pn 19 08 43.9 +2.3
baz=194
PFO **Pinyon Flats O** 10.21 253 Lg Lg 19 11 33.3
0.2nm,0.3s,baz=90,slow=20,SNR=2.7
WHAR **Wooly Hollow** 10.23 97 ePn Pn 19 08 42.1 +0.1
P40A **Paris** 10.23 73 P Pn 19 08 41.0 -1.1
baz=260
W41B **Gary Mavity, V** 10.29 97 P Pn 19 08 41.8 -1.0
baz=284
UALR **University of** 10.32 100 ePn Pn 19 08 44.1 +0.8
UALR eLg Lg 19 11 40.6
O40A **La Belle** 10.48 70 P Pn 19 08 44.0 -1.3
baz=257
NVAR **Mina Array Bea** 10.81 281 Pn Pn 19 08 55.9 +5.7
0.1nm,0.3s,baz=94,slow=13,SNR=2.9
NVAR Pg Pg 19 09 35.6
0.1nm,0.3s,baz=104,slow=17,SNR=9.4
NVAR Lg Lg 19 11 53.9
0.1nm,0.3s,baz=100,slow=32,SNR=2.3
D30A **Buchanan** 10.86 22 P Pn 19 08 51.3 +0.7
baz=206
SPMN **Marine on St.** 12.04 44 ePn Pn 19 09 06.6 -0.2
SPMN eSn Sn 19 11 19.5 -2.0
F36A **Milaca** 12.06 41 P Pn 19 09 07.9 +0.8
baz=228
E35A **Pequot Lakes** 12.12 36 P Pn 19 09 08.2 +0.4
baz=223
BMO **Blue Mountains** 12.19 313 ePn Pn 19 09 11.3 +2.3
D36A **Goodland** 13.15 37 P Pn 19 09 22.3 +0.3
baz=224
C35A **Jirik Farms, M** 13.16 34 P Pn 19 09 20.6 -1.4
baz=221
B34A **Aery, Baudette** 13.49 30 P Pn 19 09 25.4 -1.1
baz=217
D37A **Cotton** 13.50 39 P Pn 19 09 25.5 -1.1
baz=226
A33A **Warroad** 13.58 27 P Pn 19 09 26.3 -1.4
baz=213
C36A **Pine Crest Far** 13.72 36 P Pn 19 09 29.0 -0.7
baz=224
ULM **Lac du Bonnet** 14.53 23 Pn Pn 19 09 38.6 -2.2
0.6nm,0.3s,baz=201,slow=16,SNR=3.1
ULM Lg Lg 19 13 46.1
0.9nm,0.3s,baz=294,slow=20,SNR=1.9
YBH **Yreka Blue Hor** 14.61 294 Pn P 19 09 49.0 +0.5
0.2nm,0.3s,baz=77,slow=3.7,SNR=6.2
TKL **Tuckaleechee C** 16.94 89 Pn Pn 19 10 11.4 -0.9
0.4nm,0.3s,baz=268,slow=10.0,SNR=5.1
YKA **Yellowknife Ar** 26.06 350 P P 19 11 48.9 +0.3
1.8nm,1.0s,baz=161,slow=9.4,SNR=6.4
INK **Inuvik** 35.03 342 P P 19 13 09.7 +1.9
1.0nm,0.9s,baz=143,slow=6.2,SNR=3.2
ILAR **Eielson Array** 37.11 332 P P 19 13 27.8 +2.1
1.6nm,0.8s,baz=132,slow=6.7,SNR=15
FINES **FINESS Array B** 73.92 22 P P 19 17 50.5 +0.1
2.5nm,0.9s,baz=318,slow=2.6,SNR=6.9
CPUP **Villa Florida** 77.31 137 P P 19 18 10.3 +0.2
0.7nm,0.6s,baz=323,slow=5.1,SNR=3.0
GERES **GERESS Array B** 78.43 36 P P 19 18 16.1 -0.3
0.2nm,0.3s,baz=306,slow=6.8,SNR=4.6
AKASG **Malin Array Be** 83.58 27 P P 19 18 43.5 -0.1
0.7nm,0.6s,baz=328,slow=4.3,SNR=4.2
KEST **Kesra** 85.14 48 P P 19 18 53.8 +1.9
3.2nm,0.9s,baz=262,slow=14,SNR=3.8
MKAR **Makanchi Array** 96.17 355 P P 19 19 43.4 -0.1
0.6nm,0.8s,baz=15,slow=5.0,SNR=4.3

*CSEM **11** 19:13:42.2, 41°.75N×13°.72E, h11km, ML2.1/8*
ROM 11 19:13:42.2±0.1, 41°.75N×13°.72E, h11km, Ml2.1/8, 2C-2D, Error ellipse: s-maj=2.4km s-min=0.2km az=180.0, Southern Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
POFI	**Posta Fibreno**	**0.04**	**187**	⇓iPg	Pg	19 13 44.8	+0.4
POFI				Sg	Sg	19 13 46.4	+0.5
	1μm,0.6s						
POFI	**Posta Fibreno**	**0.04**	**187**	⇓iPg	Pg	19 13 44.8	+0.4
POFI				Sg	Sg	19 13 46.4	+0.5
	1μm,0.6s						
VVLD	**Villa Vallelon**	**0.14**	**329**	Pg	Pg	19 13 46.2	+0.6
VVLD				Sg	Sg	19 13 48.8	+0.8
VVLD	**Villa Vallelon**	**0.14**	**329**	Pg	Pg	19 13 46.2	+0.6
VVLD				Sg	Sg	19 13 48.8	+0.8
CERA	**Filignano**	**0.27**	**124**	Pg	Pg	19 13 47.8	0.0
CERA				Sg	Sg	19 13 52.6	+1.0
	172nm,0.5s						
CERA	**Filignano**	**0.27**	**124**	Pg	Pg	19 13 47.8	0.0
CERA				Sg	Sg	19 13 52.6	+1.0
	172nm,0.5s						
INTR	**Introdacqua**	**0.29**	**28**	⇑iPg	Pg	19 13 48.4	+0.2
INTR				Sg	Sg	19 13 52.9	+0.7
	222nm,0.3s						
INTR	**Introdacqua**	**0.29**	**28**	⇑iPg	Pg	19 13 48.4	+0.2
INTR				Sg	Sg	19 13 52.9	+0.7
	222nm,0.3s						
GUAR	**Guarcino**	**0.31**	**278**	Pg	Pg	19 13 48.7	+0.3
	1μm,0.3s						
GUAR	**Guarcino**	**0.31**	**278**	Pg	Pg	19 13 48.7	+0.3
	1μm,0.3s						
RNI2	**Rionero Sannit**	**0.33**	**99**	Pg	Pg	19 13 49.4	+0.5
RNI2				Sg	Sb	19 13 54.9	-0.6
	171nm,0.5s						
RNI2	**Rionero Sannit**	**0.33**	**99**	Pg	Pg	19 13 49.4	+0.5
RNI2				Sg	Sb	19 13 54.9	-0.6
	171nm,0.5s						
PTQR	**Pietraquaria**	**0.36**	**319**	Pg	Pg	19 13 49.8	+0.4
PTQR				Sg	Sb	19 13 55.6	-0.7
PTQR	**Pietraquaria**	**0.36**	**319**	Pg	Pg	19 13 49.8	+0.4
PTQR				Sg	Sb	19 13 55.6	-0.7
GIUL	**Giuliano Di Ro**	**0.40**	**241**	Pg	Pg	19 13 50.4	+0.3
GIUL				Sg	Sb	19 13 56.8	-0.6
	109nm,0.3s						
GIUL	**Giuliano Di Ro**	**0.40**	**241**	Pg	Pg	19 13 50.4	+0.3
GIUL				Sg	Sb	19 13 56.8	-0.6
	109nm,0.3s						
MIDA	**Miranda**	**0.42**	**105**	Pg	Pg	19 13 50.3	-0.1
MIDA				Sg	Sg	19 13 56.6	+0.6
	59nm,0.4s						
MIDA	**Miranda**	**0.42**	**105**	Pg	Pg	19 13 50.3	-0.1
MIDA				Sg	Sg	19 13 56.6	+0.6
	59nm,0.4s						
VAGA	**Valle Agricola**	**0.51**	**131**	Pg	Pb	19 13 52.9	-0.4
VAGA	**Valle Agricola**	**0.51**	**131**	Pg	Pb	19 13 52.9	-0.4
FAGN	**Fagnano**	**0.52**	**349**	Pg	Pb	19 13 53.6	+0.2
FAGN	**Fagnano**	**0.52**	**349**	Pg	Pb	19 13 53.6	+0.2
CERT	**Cerreto**	**0.58**	**290**	Pg	Pg	19 13 53.3	-0.3
CERT				Sg	Sb	19 14 02.1	-0.7
	125nm,0.3s						
CERT	**Cerreto**	**0.58**	**290**	Pg	Pg	19 13 53.3	-0.3
CERT				Sg	Sb	19 14 02.1	-0.7
	125nm,0.3s						
VCEL	**Villa Celiera**	**0.65**	**8**	Pg	Pg	19 13 54.6	-0.2
VCEL				Sg	Sb	19 14 04.6	-0.1
	90nm,0.3s						
VCEL	**Villa Celiera**	**0.65**	**8**	Pg	Pg	19 13 54.6	-0.2
VCEL				Sg	Sb	19 14 04.6	-0.1
	90nm,0.3s						

*CSEM **11** 19:14:04.8, 41°.76N×13°.72E, h11km, MD2.0/8*
ROM 11 19:14:04.8±0.1, 41°.76N×13°.72E, h11km, Md2.0/8, Ml2.1/6, Error ellipse: s-maj=1.2km s-min=0.9km az=39.0, Southern Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
POFI	**Posta Fibreno**	**0.04**	**192**	Pg	Pg	19 14 07.3	+0.3
POFI				Sg	Sg	19 14 08.9	+0.3
	1μm,0.6s						
POFI	**Posta Fibreno**	**0.04**	**192**	Pg	Pg	19 14 07.3	+0.3
POFI				Sg	Sg	19 14 08.9	+0.3
	1μm,0.6s						
VVLD	**Villa Vallelon**	**0.14**	**326**	Pg	Pg	19 14 08.7	+0.6
VVLD				Sg	Sg	19 14 11.2	+0.7
VVLD	**Villa Vallelon**	**0.14**	**326**	Pg	Pg	19 14 08.7	+0.6
VVLD				Sg	Sg	19 14 11.2	+0.7
CERA	**Filignano**	**0.27**	**126**	Pg	Pg	19 14 10.7	+0.3
CERA				Sg	Sg	19 14 15.0	+0.8
	172nm,0.5s						
CERA	**Filignano**	**0.27**	**126**	Pg	Pg	19 14 10.7	+0.3
CERA				Sg	Sg	19 14 15.0	+0.8
	172nm,0.5s						
INTR	**Introdacqua**	**0.28**	**28**	Pg	Pg	19 14 10.9	+0.2
INTR				Sg	Sg	19 14 15.5	+0.9
	222nm,0.3s						
INTR	**Introdacqua**	**0.28**	**28**	Pg	Pg	19 14 10.9	+0.2
INTR				Sg	Sg	19 14 15.5	+0.9
	222nm,0.3s						
GUAR	**Guarcino**	**0.31**	**277**	Pg	Pg	19 14 11.5	+0.4
	1μm,0.3s						
GUAR	**Guarcino**	**0.31**	**277**	Pg	Pg	19 14 11.5	+0.4
	1μm,0.3s						
RNI2	**Rionero Sannit**	**0.33**	**100**	Pg	Pb	19 14 12.1	-0.6
RNI2				Sg	Sb	19 14 17.5	-0.5
	171nm,0.5s						
RNI2	**Rionero Sannit**	**0.33**	**100**	Pg	Pb	19 14 12.1	-0.6
RNI2				Sg	Sb	19 14 17.5	-0.5
	171nm,0.5s						
PTQR	**Pietraquaria**	**0.36**	**317**	Pg	Pg	19 14 12.3	+0.3
PTQR				Sg	Sb	19 14 18.0	-0.9
PTQR	**Pietraquaria**	**0.36**	**317**	Pg	Pg	19 14 12.3	+0.3
PTQR				Sg	Sb	19 14 18.0	-0.9
GIUL	**Giuliano Di Ro**	**0.41**	**240**	Pg	Pg	19 14 12.9	+0.1
GIUL				Sg	Sb	19 14 19.4	-0.8
	109nm,0.3s						
GIUL	**Giuliano Di Ro**	**0.41**	**240**	Pg	Pg	19 14 12.9	+0.1
GIUL				Sg	Sb	19 14 19.4	-0.8
	109nm,0.3s						
MIDA	**Miranda**	**0.41**	**106**	Pg	Pg	19 14 13.4	+0.4
	59nm,0.4s						
MIDA	**Miranda**	**0.41**	**106**	Pg	Pg	19 14 13.4	+0.4
	59nm,0.4s						

*CSEM **11** 19:14:55.3, 43°.42N×12°.43E, h5km, MD1.5/4*
ROM 11 19:14:55.3±0.1, 43°.42N×12°.43E, h5km, Md1.5/4, Ml1.2/3, 2C, Error ellipse: s-maj=0.5km s-min=0.3km az=91.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ATVO	**AVT- Monte Val**	**0.04**	**209**	Pg	Pg	19 14 56.7	+0.2
ATVO				Sg	Sg	19 14 57.6	+0.2
	98nm,0.3s						
ATVO	**AVT- Monte Val**	**0.04**	**209**	Pg	Pg	19 14 56.7	+0.2
ATVO				Sg	Sg	19 14 57.6	+0.2
	98nm,0.3s						
ATPC	**Poggio Castell**	**0.07**	**15**	⇑iPg	Pg	19 14 57.1	+0.2
ATPC				Sg	Sg	19 14 58.3	+0.3
	98nm,0.1s						
ATPC	**Poggio Castell**	**0.07**	**15**	⇑iPg	Pg	19 14 57.1	+0.2
ATPC				Sg	Sg	19 14 58.3	+0.3
	98nm,0.1s						
PIEI	**Pieia**	**0.14**	**32**	Pg	Pg	19 14 58.5	+0.4
PIEI				Sg	Sg	19 15 01.1	+1.1
	23nm,0.1s						
PIEI	**Pieia**	**0.14**	**32**	Pg	Pg	19 14 58.5	+0.4
PIEI				Sg	Sg	19 15 01.1	+1.1
	23nm,0.1s						
BADI	**Badiali**	**0.17**	**304**	Pg	Pg	19 14 59.0	+0.4
BADI				Sg	Sg	19 15 02.1	+1.3
	77nm,0.5s						
BADI	**Badiali**	**0.17**	**304**	Pg	Pg	19 14 59.0	+0.4
BADI				Sg	Sg	19 15 02.1	+1.3
	77nm,0.5s						
MURB	**Monte Urbino**	**0.17**	**157**	Pg	Pg	19 14 59.3	+0.6
MURB				Sg	Sg	19 15 02.0	+1.1
	37nm,0.3s						
MURB	**Monte Urbino**	**0.17**	**157**	Pg	Pg	19 14 59.3	+0.6
MURB				Sg	Sg	19 15 02.0	+1.1
	37nm,0.3s						

*ISCJB **11** 19:16:13.9±0.4, 6°.32N±0°.03×126°.13E±0°.05, h57km±4km, mb4.2/21, MS3.7/2, Error ellipse: s-maj=8.2km s-min=4.5km az=165.1*
*IDC **11** 19:16:15.3±1.5, 6°.29N×126°.01E, h53km±14km, mb3.9/16, mb1 4.1/16, mb1mx3.8/48, mbtmp4.2/16, ML5.2/1, MS3.6/2, Ms1 3.7/2, ms1mx3.1/37, Error ellipse: s-maj=34.0km s-min=10.5km az=76.0*
*DJA **11** 19:16:15.8±1.0, 6°N±9°×12°6E±°, h26km±22km, M4.7/7, mb4.9/7, mB5.2/6, MLv4.7/3, Mw(mB)4.6/6*
*NEIC **11** 19:16:16.2±1.1, 6°.33N×126°.06E, h63km±10km, mb4.5/5, Error ellipse: s-maj=15.6km s-min=6.4km az=83.0*
NEIC Felt [II PIVS] at Sigaboy.
*MAN **11** 19:16:16, 6°.53N×126°.08E, h39km, mb4.9, ML3.8, MS3.9*
ISC 11 19:16:15.8±0.8, 6°.31N±0°.04×126°.10E±0°.06, h57km±8km, n59, σ1§71/63, mb4.4/20, 1C-2D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MATI	**Mati**	**0.65**	**14**	eP	Pn	19 16 27.4	-1.8
MATI				eS	Sn	19 16 36.4	-2.7
DAV	**Davao City (W)**	**0.92**	**326**	P	Pn	19 16 31.5	-1.1
	502nm,0.3s,baz=133,slow=1.7,SNR=94						
DAV				S	Sn	19 16 46.0	+1.0
	520nm,0.3s,baz=90,slow=20,SNR=15						
DMPH	**Davao City--Mi**	**0.97**	**323**	⇓iP	Pn	19 16 36.5	+3.2
DMPH				eS	Sn	19 16 50.4	+4.2
GSPH	**General Santos**	**1.17**	**259**	⇑eP	Pn	19 16 34.4	-1.6
GSPH				eS	Sn	19 16 46.3	-4.8
KCP	**Kidapawan**	**1.22**	**305**	⇓iP	Pn	19 16 35.2	-1.5
KCP				iS	Sn	19 16 50.7	-1.6
BUKP	**Musuan**	**1.87**	**327**	eP	Pn	19 16 44.6	-0.8
SGSI	**Sangihe**	**2.67**	**192**	P	Pn	19 16 57.3	+0.9
SGSI				S	Sn	19 17 28.8	+1.3
PAGZ	**Pagadian**	**3.10**	**300**	eP	Pn	19 17 02.5	+0.2
DCPH	**Dipolog City**	**3.54**	**310**	eP	Pn	19 17 08.2	0.0
IPIL	**Ipil**	**3.80**	**293**	eP	Pn	19 17 11.6	-0.2
OCLP	**Ormoc**	**4.94**	**343**	eP	Pn	19 17 26.4	-1.1
LBMI	**Labuha**	**7.04**	**168**	P	Pn	19 17 57.2	+0.9
	112nm,0.8s,1μm						
MRSI	**Marisa**	**7.13**	**216**	P	Pn	19 17 56.7	-0.8
	70nm,0.7s,6μm						
LUWI	**Luwuk**	**8.02**	**205**	P	Pn	19 18 10.9	+1.1
	114nm,0.7s,1μm						
LUWI	**Luwuk**	**8.02**	**205**	ePn	Pn	19 18 11.2	+1.5
	88nm,0.6s						
SANI	**Sanana**	**8.30**	**181**	P	Pn	19 18 14.3	+0.7
	67nm,0.7s,1μm						
SWI	**Sorong**	**8.79**	**144**	P	Pn	19 18 20.3	0.0
	25nm,0.9s,592nm						
SIJI	**Sorong**	**8.80**	**144**	P	Pn	19 18 21.1	+0.7
	24nm,0.3s,baz=0.1,slow=10,SNR=2.4						
SIJI				S	Sn	19 19 58.0	-0.2
	22nm,0.3s,baz=0.0,slow=20,SNR=2.0						
NLAI	**Namlea**	**9.54**	**174**	P	Pn	19 18 29.9	-0.6
KKM	**Kota Kinabalu**	**9.83**	**269**	P	Pn	19 18 34.1	-0.6
	8.9nm,0.9s						
FAKI	**Fak Fak**	**11.03**	**146**	P	Pn	19 18 45.0	-6.0
TTSI	**Tana Toraja**	**11.21**	**214**	P	Pn	19 18 48.8	-4.6
KAPI	**Kappang**	**12.91**	**210**	P	Pn	19 19 18.2	+1.6
	1.2nm,0.3s,baz=32,slow=15,SNR=3.5						
STKI	**Sintang**	**15.86**	**248**	P	P	19 20 01.4	+3.1
KSM	**Kuching**	**16.47**	**254**	P	Pn	19 20 02.8	-0.4
	7.7nm,0.9s						
LEM	**Lembang**	**22.59**	**235**	P	P	19 21 17.6	+5.6
	12nm,0.4s,baz=48,slow=10,SNR=5.2						
FITZ	**Fitzroy Crossi**	**24.26**	**181**	P	P	19 21 27.2	-0.5
	7.8nm,0.6s,baz=6.5,slow=7.2,SNR=32						
FITZ				PcP	PcP	19 25 07.0	+0.1
	3.3nm,0.7s,baz=18,slow=3.2,SNR=4.8						
WRAB	**Tennant Creek**	**27.31**	**163**	eP	P	19 21 55.0	-0.3
	11nm,0.8s						
WRA	**Warramunga Arr**	**27.32**	**163**	P	P	19 21 54.6	-0.8
	4.7nm,0.4s,baz=349,slow=10,SNR=45						
WRA				PcP	PcP	19 25 14.1	+0.2
	1.8nm,0.7s,baz=341,slow=2.7,SNR=5.6						
ENH	**Enshi**	**28.50**	**329**	P	P	19 22 04.1	-1.8
ASAR	**Alice Springs**	**30.75**	**166**	P	P	19 22 25.8	-0.2
	1.7nm,0.5s,baz=337,slow=6.8,SNR=65						
ASAR				PcP	PcP	19 25 22.6	+0.1
	2.7nm,0.6s,baz=351,slow=2.6,SNR=13						
KSAR	**Wonju Array Be**	**31.03**	**3**	P	P	19 22 29.2	+1.1
KSRS	**Korea Array**	**31.04**	**3**	P	P	19 22 29.2	+0.9
	0.5nm,0.4s,baz=181,slow=10,SNR=3.3						
USRK	**Ussuriysk Ar.**	**38.09**	**7**	LR	LR	19 37 25.8	
	comp=Z,75nm,21.1s,baz=308,slow=33						
MDJ	**Mudanjiang**	**38.28**	**4**	eP	P	19 23 30.8	+0.2
	24nm,1.0s						
NWAO	**Narrogin (SRO)**	**39.92**	**192**	P	P	19 23 44.1	-0.3
	3.0nm,0.5s,baz=346,slow=16,SNR=4.1						
STKA	**Stephens Creek**	**40.75**	**160**	P	P	19 23 52.1	+0.8
	9.4nm,0.6s,baz=342,slow=9.1,SNR=24						
H11S3	**WAKE ISLAND Hy**	**41.34**	**69**	T	T	20 07 58.3	
	baz=258,slow=75,SNR=18						
H11S1	**WAKE ISLAND Hy**	**41.35**	**69**	T	T	20 07 58.9	
	baz=258,slow=75,SNR=19						
H11S2	**WAKE ISLAND Hy**	**41.36**	**69**	T	T	20 07 58.9	
	baz=258,slow=75,SNR=27						
SONM	**Songino Array**	**44.67**	**341**	P	P	19 24 23.5	+0.4
	0.9nm,0.8s,baz=165,slow=7.2,SNR=4.7						
SONM				PcP	PcP	19 26 04.4	-0.4
	0.3nm,0.4s,baz=168,slow=4.7,SNR=3.0						
MKAR	**Makanchi Array**	**55.10**	**325**	P	P	19 25 40.6	-1.5
	1.0nm,0.5s,baz=121,slow=7.4,SNR=13						
ZALV	**Zalesovo Beam**	**58.02**	**333**	P	P	19 26 04.4	+1.7
	0.5nm,0.4s,baz=151,slow=8.2,SNR=2.9						
KURK	**Kurchatov**	**59.24**	**327**	eP	P	19 26 10.8	-0.5
	8.7nm,0.9s						
TIXI	**Tiksi**	**65.29**	**1**	eP	P	19 26 51.9	+0.6
	2.1nm,0.8s						
ILAR	**Eielson Array**	**83.06**	**26**	P	P	19 28 34.5	-0.4
	1.0nm,0.7s,baz=252,slow=4.7,SNR=7.3						
MAW	**Mawson**	**85.94**	**200**	P	P	19 28 48.9	-0.4
	2.3nm,0.8s,baz=78,slow=5.5,SNR=4.9						
VNDA	**Vanda**	**86.05**	**173**	P	P	19 28 49.5	-0.2
	1.9nm,0.7s,baz=317,slow=6.8,SNR=9.6						
ARCES	**ARCESS Array B**	**87.83**	**340**	P	P	19 28 58.1	-0.5
	5.2nm,1.0s,baz=87,slow=6.3,SNR=6.0						
INK	**Inuvik**	**88.01**	**21**	P	P	19 28 58.8	-0.7
	0.5nm,0.5s,baz=230,slow=2.6,SNR=4.0						
FINES	**FINESS Array B**	**89.28**	**332**	P	P	19 29 05.0	-0.6
	0.4nm,0.6s,baz=72,slow=4.5,SNR=4.9						
QSPA	**South Pole Qui**	**96.20**	**180**	eP	P	19 29 37.7	+0.2
NOA	**NORSAR Array B**	**96.21**	**334**	LR	LR	20 16 24.2	
	comp=Z,37nm,18.7s,baz=220,slow=38						
YKA	**Yellowknife Ar**	**97.42**	**24**	P	Pdif	19 29 43.2	+0.2
	0.2nm,0.6s,baz=303,slow=4.1,SNR=3.4						
TXAR	**Lajitas Array**	**120.49**	**51**	PKP	**PKPdf**	19 35 01.0	-0.8
	0.5nm,0.6s,baz=307,slow=2.7,SNR=3.5						
TORD	**Torodi Ar. Bea**	**121.50**	**290**	PKP	**PKPdf**	19 35 03.4	-0.6
	1.9nm,0.7s,baz=48,slow=1.8,SNR=14						
PLCA	**Paso Flores**	**142.62**	**159**	PKP	**PKPdf**	19 35 40.1	-2.9
	1.7nm,0.9s,baz=228,slow=3.2,SNR=5.1						
TRQA	**Tornquist**	**147.56**	**168**	ePKPbc	**PKPbc**	19 35 54.2	0.0
CPUP	**Villa Florida**	**159.82**	**171**	PKPab	**PKPab**	19 36 48.9	+0.8
	2.0nm,0.8s,baz=173,slow=5.8,SNR=5.5						

*IDC **11** 19:17:20.4±1.9, 20°.38S×168°.26E, h0km, mb3.9/5, mb1 4.1/6, mb1mx3.8/34, mbtmp3.9/6, ML3.4/1, Error ellipse: s-maj=68.0km s-min=27.8km az=140.0*
*ISCJB **11** 19:17:22.8±1.5, 20°.5S±0°.2×168°.3E±0°.2, h26km, mb3.7/5, Error ellipse: s-maj=42.0km s-min=12.7km az=40.3*
ISC 11 19:17:23.8±1.6, 20°.6S±0°.3×168°.4E±0°.3, h26km, n8, σ1§33/9, mb3.7/5, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.35**	**231**	Pn	Pn	19 18 00.8	0.0
	8.6nm,0.3s,baz=59,slow=18,SNR=14						
DZM				Sn	Sn	19 18 28.2	-0.6
	19nm,0.3s,baz=72,slow=22,SNR=4.7						
CTA	**Charters Tower**	**20.78**	**268**	P	P	19 22 04.8	+1.7
	2.5nm,0.7s,baz=85,slow=12,SNR=4.0						
STKA	**Stephens Creek**	**26.48**	**239**	P	P	19 23 00.6	+1.6
	2.6nm,0.8s,baz=67,slow=11,SNR=3.4						
WRA	**Warramunga Arr**	**31.94**	**265**	P	P	19 23 45.7	-1.9
	0.4nm,0.5s,baz=86,slow=8.6,SNR=2.1						
ASAR	**Alice Springs**	**32.06**	**258**	P	P	19 23 47.8	-1.0
	1.4nm,0.6s,baz=90,slow=8.6,SNR=8.3						
CMAR	**Chiang Mai Arr**	**78.36**	**295**	P	P	19 29 22.6	+0.3
	0.6nm,0.8s,baz=133,slow=4.0,SNR=3.1						
PDAR	**Pinedale Array**	**98.10**	**47**	P	P	19 30 58.4	-0.1
	0.1nm,0.5s,baz=222,slow=2.4,SNR=2.8						
GERES	**GERESS Array B**	**145.30**	**330**	PKPbc	**PKPbc**	19 36 58.7	-0.4
	0.2nm,0.4s,baz=40,slow=3.8,SNR=4.5						

*NIED **11** 19:20:00, 36°.10N×139°.00E, h122km, Mw4.1 Best double couple: M0=1.87000×10^15 NP1:φs=143.00000°, δ38.00000°, λ-33.00000°. NP2:φs=260.00000°, δ71.00000°, λ-123.00000°.*
*ISCJB **11** 19:20:53.3±0.3, 36°.12N±0°.04×138°.91E±0°.07, h136km±2km, mb4.0/26, Error ellipse: s-maj=8.9km s-min=5.9km az=175.5*
*NEIC **11** 19:20:54.5±0.6, 36°.10N×138°.85E, h132km±5km, mb4.7/6, Error ellipse: s-maj=10.2km s-min=7.6km az=82.0*
*NEIC Recorded [2 JMA] in Yaman

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JRY	**Ryogami san**	**0.16**	**182**	⇓P	**Pn**	**19 21 12.7**	**+0.2**
JRY				S	**Sn**	**19 21 26.3**	**+0.3**
JHU	**Hanno**	**0.44**	**136**	⇓P	**Pn**	**19 21 13.5**	**0.0**
JHU				S	**Sn**	**19 21 28.1**	**+0.4**
JAG	**Ashikaga**	**0.51**	**60**	⇓P	**Pn**	**19 21 13.8**	**0.0**
JAG				S	**Sn**	**19 21 28.1**	**-0.2**
JKT	**Katashina**	**0.65**	**25**	⇓P	**Pn**	**19 21 15.2**	**+0.4**
JKT				S	**Sn**	**19 21 30.9**	**+0.7**
MJAR	**Matsushiro Arr**	**0.67**	**303**	P	**Pn**	**19 21 14.8**	**-0.1**
	696nm,0.3s,baz=138,slow=6.0,SNR=9034						
MJAR				S	**Sn**	**19 21 30.7**	**+0.5**
	136nm,0.3s,baz=132,slow=13,SNR=9.1						
MAJO	**Matsushiro**	**0.67**	**303**	*e*Pg	**Pn**	**19 21 14.7**	**-0.1**
MAT	**Matsushiro**	**0.67**	**303**	P	**Pn**	**19 21 15.2**	**+0.3**
MAT				S	**Sn**	**19 21 30.5**	**+0.2**
MAT	**Matsushiro**	**0.67**	**303**	P	**Pn**	**19 21 15.1**	**+0.2**
MAT				S	**Sn**	**19 21 30.5**	**+0.2**
JYN	**Shimob**	**0.74**	**204**	⇑P	**Pn**	**19 21 15.0**	**-0.4**
JYN				S	**Sn**	**19 21 31.0**	**-0.2**
JOD2	**Odawara 2**	**0.92**	**171**	⇑P	**Pn**	**19 21 16.2**	**-0.7**
JOD2				S	**Sn**	**19 21 32.6**	**-1.2**
JNS	**Sasagawa**	**1.67**	**11**	⇓P	**Pn**	**19 21 25.6**	**+0.9**
JNS				*e*S	**Sn**	**19 21 49.3**	**+1.6**
JHJ	**Hachijo jima 2**	**3.13**	**166**	P	**Pn**	**19 21 42.2**	**-0.7**
	188nm,0.3s,baz=69,slow=23,SNR=68						
JHJ				S	**Sn**	**19 22 21.4**	**+1.2**
	167nm,0.3s,baz=80,slow=23,SNR=7.0						
JHJ2	**Mitsune**	**3.15**	**166**	*e*Pn	**Pn**	**19 21 42.6**	**-0.5**
ERM	**Erimo**	**6.70**	**28**	*e*Pn	**Pn**	**19 22 29.2**	**-1.2**
	28nm,0.5s						
JNU	**Nakatsue**	**7.28**	**248**	P	**Pn**	**19 22 37.4**	**-1.0**
	2.6nm,0.3s,baz=140,slow=3.4,SNR=11						
ASAJ	**Asahikawa**	**8.42**	**18**	P	Pn	19 22 48.6	-5.0
	3.7nm,0.3s,baz=208,slow=13,SNR=28						
ASAJ				S	**Sn**	**19 24 22.6**	**-4.3**
	0.7nm,0.3s,baz=246,slow=20,SNR=2.0						
ASAJ	**Asahikawa**	**8.42**	**18**	*e*Pn	Pn	19 22 48.4	-5.1
	4.7nm,0.4s						
ASAJ				S	**Sn**	**19 24 22.6**	**-4.3**
KSRS	**Korea Array**	**8.90**	**282**	P	**Pn**	**19 23 02.7**	**+2.6**
	0.5nm,0.3s,baz=93,slow=14,SNR=14						
KSAR	**Wonju Array Be**	**8.93**	**281**	P	**Pn**	**19 23 02.7**	**+2.2**
CBIJ	**Chichi jima**	**9.47**	**162**	P	Pn	19 23 01.1	-6.8
CBIJ				S	Sn	19 24 38.1	-14
JCJ	**Chichijima**	**9.47**	**162**	P	Pn	19 23 01.1	-6.8
	9.0nm,0.3s,baz=273,slow=20,SNR=6.8						
JCJ				S	Sn	19 24 38.1	-14
	12nm,0.3s,baz=285,slow=20,SNR=3.9						
USRK	**Ussuriysk Ar.**	**9.60**	**329**	P	**Pn**	**19 23 11.3**	**+1.9**
	0.4nm,0.3s,baz=145,slow=13,SNR=25						
KLR	**Kul'dur**	**14.06**	**340**	P	**Pn**	**19 24 06.2**	**-1.6**
	0.5nm,0.3s,baz=144,slow=11,SNR=14						
PETK	**Petropavlovsk-**	**21.46**	**32**	P	**P**	**19 25 34.2**	**+1.8**
	5.1nm,0.8s,baz=224,slow=4.0,SNR=3.6						
MA2	**Magadan**	**24.65**	**15**	P	**P**	**19 26 03.3**	**+0.5**
	11nm,0.6s,baz=236,slow=2.2,SNR=6.5						
YAK	**Yakutsk**	**26.52**	**350**	P	**P**	**19 26 18.7**	**-0.8**
	18nm,0.6s,baz=169,slow=3.0,SNR=9.7						
YAK	**Yakutsk**	**26.52**	**350**	*e*P	**P**	**19 26 18.9**	**-0.7**
	16nm,0.6s						
H11N2	**WAKE ISLAND Hy**	**29.51**	**116**	T	T	19 57 04.7	
	baz=308,slow=75,SNR=5.2						
H11N1	**WAKE ISLAND Hy**	**29.52**	**116**	T	T	19 56 59.8	
	baz=308,slow=75,SNR=3.9						
H11N3	**WAKE ISLAND Hy**	**29.53**	**116**	T	T	19 57 00.3	
	baz=308,slow=75,SNR=4.3						
ZALV	**Zalesovo Beam**	**41.02**	**313**	P	**P**	**19 28 24.5**	**0.0**
	0.7nm,0.4s,baz=102,slow=7.4,SNR=3.1						
ZALV				PcP	**PcP**	**19 30 21.1**	**-0.9**
	1.4nm,0.4s,baz=85,slow=3.2,SNR=5.1						
ZALV				ScP	**ScP**	**19 33 57.7**	**-1.7**
	1.2nm,0.8s,baz=70,slow=4.7,SNR=4.3						
MKAR	**Makanchi Array**	**42.87**	**303**	P	**P**	**19 28 39.6**	**-0.2**
	1.0nm,0.7s,baz=87,slow=9.9,SNR=6.1						
MKAR				ScP	**ScP**	**19 34 05.3**	**-1.8**
	0.4nm,0.7s,baz=90,slow=4.0,SNR=3.8						
KURK	**Kurchatov**	**44.88**	**309**	*e*P	**P**	**19 28 55.0**	**-0.7**
	8.6nm,0.6s						
ILAR	**Eielson Array**	**51.29**	**32**	P	**P**	**19 29 45.4**	**+0.6**
	1.2nm,0.7s,baz=277,slow=5.2,SNR=8.0						
WRAB	**Tennant Creek**	**55.97**	**185**	*e*P	**P**	**19 30 17.4**	**-1.9**
	22nm,1.0s						
WRA	**Warramunga Arr**	**55.98**	**185**	P	**P**	**19 30 17.6**	**-1.8**
	14nm,0.5s,baz=0.6,slow=7.6,SNR=196						
INK	**Inuvik**	**56.06**	**27**	P	**P**	**19 30 20.1**	**+0.7**
	1.8nm,0.6s,baz=290,slow=6.3,SNR=9.0						
INK	**Inuvik**	**56.06**	**27**	*e*P	**P**	**19 30 19.9**	**+0.5**
ASAR	**Alice Springs**	**59.70**	**185**	P	**P**	**19 30 43.8**	**-1.6**
	1.5nm,0.4s,baz=20,slow=11,SNR=59						
DZM	**Mont Dzumac**	**63.52**	**151**	P	**P**	**19 31 11.3**	**+0.3**
	4.2nm,0.5s,baz=11,slow=5.2,SNR=5.4						
ARCES	**ARCESS Array B**	**64.08**	**339**	P	**P**	**19 31 14.2**	**+0.1**
	2.5nm,0.8s,baz=66,slow=9.0,SNR=5.4						
YKA	**Yellowknife Ar**	**65.55**	**29**	P	**P**	**19 31 24.3**	**+0.6**
	0.6nm,0.7s,baz=301,slow=6.9,SNR=7.0						
DAG	**Danmarks Havn**	**66.44**	**354**	*i* P	**P**	**19 31 29.1**	**-0.1**
	2.1nm,0.9s						
STKA	**Stephens Creek**	**67.74**	**178**	P	**P**	**19 31 37.0**	**-0.9**
	2.3nm,0.5s,baz=343,slow=5.5,SNR=5.7						
FINES	**FINESS Array B**	**68.62**	**332**	P	**P**	**19 31 43.0**	**0.0**
	2.6nm,0.6s,baz=78,slow=5.0,SNR=19						
KBZ	**Khabaz**	**69.92**	**310**	P	**P**	**19 31 51.6**	**+0.3**
	0.4nm,0.4s,baz=37,slow=5.1,SNR=2.5						
SUMG	**Summit**	**71.53**	**359**	*i* P	**P**	**19 32 02.6**	**+1.5**
	6.7nm,0.7s						
SUMG	**Summit**	**71.53**	**359**	*e*P	**P**	**19 32 01.7**	**+0.5**
	6.5nm,0.7s						
AKASG	**Malin Array Be**	**73.73**	**321**	P	**P**	**19 32 13.7**	**-0.3**
	1.4nm,0.5s,baz=48,slow=6.2,SNR=8.1						
NB2	**NORSAR Subarra**	**74.18**	**336**	P	**P**	**19 32 16.6**	**+0.1**
	comp=Z,1.3nm,0.6s,baz=43,slow=5.9						
NOA	**NORSAR Array B**	**74.18**	**336**	P	**P**	**19 32 16.9**	**+0.4**
	comp=Z,1.5nm,0.7s,baz=42,slow=5.7,SNR=7.9						
NVAR	**Mina Array Bea**	**77.11**	**52**	P	**P**	**19 32 34.9**	**+1.1**
	comp=Z,1.3nm,0.6s,baz=303,slow=5.3,SNR=3.9						
BRTR	**Keskin Array B**	**77.89**	**310**	P	**P**	**19 32 37.6**	**-0.4**
	comp=Z,1.2nm,0.9s,baz=82,slow=4.2,SNR=5.6						
PDAR	**Pinedale Array**	**79.70**	**44**	P	**P**	**19 32 48.5**	**+0.4**
	comp=Z,0.5nm,0.7s,baz=270,slow=0.9,SNR=5.2						
GERES	**GERESS Array B**	**82.36**	**327**	P	**P**	**19 33 01.8**	**-0.1**
	comp=Z,0.4nm,0.4s,baz=30,slow=6.3,SNR=6.7						
TXAR	**Lajitas Array**	**92.23**	**51**	P	**P**	**19 33 50.5**	**+0.5**
	comp=Z,0.5nm,0.4s,baz=297,slow=2.2,SNR=6.3						
TORD	**Torodi Ar. Bea**	**116.46**	**312**	PKP	**PKPdf**	**19 39 26.2**	**+2.8**
	comp=Z,0.1nm,0.5s,baz=93,slow=2.9,SNR=3.6						
LPAZ	**La Paz**	**148.86**	**58**	PKPbc	**PKPbc**	**19 40 28.1**	**+0.1**
	comp=Z,1.1nm,0.5s,baz=301,slow=1.9,SNR=6.1						

ISCJB ***11*** *19:28:17.5±0.4, 37°.79N±0°.02×1°.76W±0°.02, h12km±2km, Error ellipse: s-maj=3.9km s-min=2.4km az=153.2*
INMG ***11*** *19:28:18.5±0.9, 37°.70N×1°.69W, h0km, ML2.8, Error ellipse: s-maj=1.6km s-min=1.3km az=156.0*
SFS ***11*** *19:28:18.0, 37°.73N×1°.66W, h0km, ML2.9*
MDD ***11*** *19:28:19.0±0.2, 37°.73N×1°.69W, h2km±4km, mbLg2.9/26, Error ellipse: s-maj=1.8km s-min=1.7km az=3.0, PRXIMO*
CSEM ***11*** *19:28:18.1±0.1, 37°.73N×1°.72W, h5km, ML3.3/30, Error ellipse: s-maj=3.3km s-min=2.1km az=158.0*
IDC ***11*** *19:28:19.3±3.0, 37°.72N×1°.82W, h0km, mb1 3.3/3, mb1mx3.0/37, mbtmp3.1/3, ML3.2/3, Error ellipse: s-maj=32.0km s-min=19.5km az=22.0*
LDG ***11*** *19:28:19.3±0.1, 37°.70N×1°.66W, h2km, Ml2.9/3, Error ellipse: s-maj=3.6km s-min=2.0km az=151.0*
IGIL ***11*** *19:28:19.1, 37°.74N×1°.67W, h1km, ML2.1*
ISC 11 19:28:18.2±1.0, 37.72N±0°.02×1.72W±0°.02, h11km±8km, n139, σ1§29/221, 4C, Spain

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VELZ	**Velez Rubio**	**0.25**	**239**	⇑Pg	**Pg**	**19 28 23.5**	**+0.1**
	SNR=18						
VELZ				Lg	Lg	19 28 27.0	
	SNR=7.9						
VELZ	**Velez Rubio**	**0.25**	**239**	Pg	**Pg**	**19 28 23.5**	**+0.1**
	SNR=18						
VELZ				Lg	Lg	19 28 27.0	
	SNR=7.9						
EMUR	**La Murta**	**0.40**	**71**	⇑Pg	**Pg**	**19 28 25.6**	**-0.4**
	34nm,0.2s,SNR=18						
EMUR				Lg	Lg	19 28 30.7	
	491nm,0.2s,SNR=5.0						
EMUR	**La Murta**	**0.40**	**71**	Pg	**Pg**	**19 28 25.6**	**-0.4**
	34nm,0.2s,SNR=18						
EMUR				Lg	Lg	19 28 30.7	
	491nm,0.2s,SNR=5.0						
CART	**Cartagena**	**0.58**	**103**	Pg	**Pg**	**19 28 29.0**	**-0.4**
CART				Lg	Lg	19 28 35.8	
CART	**Cartagena**	**0.58**	**103**	*i* P	**Pg**	**19 28 29.1**	**-0.4**
CART				Lg	Lg	19 28 35.8	
CART				*e*S	**Sg**	**19 28 36.0**	**-1.2**
EHUE	**Huescar**	**0.70**	**278**	Pg	**Pg**	**19 28 32.3**	**+0.5**
	14nm,0.2s,SNR=7.9						
EHUE				Lg	Lg	19 28 41.6	
	31nm,0.2s,SNR=7.9						
EHUE	**Huescar**	**0.70**	**278**	Pg	**Pg**	**19 28 32.3**	**+0.5**
	14nm,0.2s,SNR=7.9						
EHUE				Lg	Lg	19 28 41.6	
	31nm,0.2s,SNR=7.9						
SESP	**Santiago Espad**	**0.77**	**302**	Pg	**Pg**	**19 28 33.2**	**+0.1**
	13nm,0.2s,SNR=7.9						
SESP				Lg	Lg	19 28 45.3	
	332nm,0.2s,SNR=7.9						
SESP	**Santiago Espad**	**0.77**	**302**	Pg	**Pg**	**19 28 33.2**	**+0.1**
	13nm,0.2s,SNR=7.9						
SESP				Lg	Lg	19 28 45.3	
	332nm,0.2s,SNR=7.9						
ENIJ	**Nijar**	**0.84**	**208**	⇑Pg	**Pg**	**19 28 34.3**	**-0.1**
	14nm,0.1s,SNR=18						
ENIJ				Lg	Lg	19 28 44.9	
	312nm,0.3s,SNR=7.9						
ENIJ	**Nijar**	**0.84**	**208**	Pg	**Pg**	**19 28 34.3**	**-0.1**
	14nm,0.1s,SNR=18						
ENIJ				Lg	Lg	19 28 44.9	
	312nm,0.3s,SNR=7.9						
ETOB	**Tobarra**	**0.94**	**8**	Pg	**Pg**	**19 28 36.1**	**-0.2**
	81nm,0.2s,SNR=332						
ETOB				Lg	Lg	19 28 50.4	
	334nm,0.3s,SNR=5.0						
ETOB	**Tobarra**	**0.94**	**8**	Pg	**Pg**	**19 28 36.1**	**-0.2**
	81nm,0.2s,SNR=332						
ETOB				Lg	Lg	19 28 50.4	
	334nm,0.3s,SNR=5.0						
EQES	**Quesada**	**1.08**	**275**	Pg	**Pb**	**19 28 39.4**	**+0.4**
	6.8nm,0.1s,SNR=150						
EQES				Lg	Lg	19 28 56.7	
	153nm,0.2s,SNR=5.0						
EQES	**Quesada**	**1.08**	**275**	Pg	**Pb**	**19 28 39.4**	**+0.4**
	6.8nm,0.1s,SNR=150						
EQES				Lg	Lg	19 28 56.7	
	153nm,0.2s,SNR=5.0						
GORA	**Gorafe**	**1.08**	**258**	Pg	**Pn**	**19 28 40.4**	**+1.0**
	16nm,0.2s,SNR=7.9						
GORA				Lg	Lg	19 28 55.2	
	199nm,0.2s,SNR=7.9						
GORA	**Gorafe**	**1.08**	**258**	Pg	**Pn**	**19 28 40.4**	**+1.0**
	16nm,0.2s,SNR=7.9						
GORA				Lg	Lg	19 28 55.2	
	199nm,0.2s,SNR=7.9						
EVIA	**Vianos**	**1.11**	**326**	Pg	**Pg**	**19 28 39.5**	**-0.1**
	11nm,0.1s,SNR=7.9						
EVIA				Lg	Lg	19 28 56.0	
	SNR=7.9						
EVIA	**Vianos**	**1.11**	**326**	Pg	**Pg**	**19 28 39.5**	**-0.1**
	11nm,0.1s,SNR=7.9						
EVIA				Lg	Lg	19 28 56.0	
	SNR=7.9						
EBER	**Berja**	**1.24**	**229**	⇑Pg	**Pg**	**19 28 42.0**	**-0.1**
	10nm,0.2s,SNR=18						
EBER				Lg	Lg	19 29 00.0	
	166nm,0.4s,SNR=5.0						
EBER	**Berja**	**1.24**	**229**	Pg	**Pg**	**19 28 42.0**	**-0.1**
	10nm,0.2s,SNR=18						
EBER				Lg	Lg	19 29 00.0	
	166nm,0.4s,SNR=5.0						
AFON	**Font Roja**	**1.32**	**44**	Pg	**Pn**	**19 28 42.0**	**-0.8**
	0.4nm,0.1s,SNR=18						
AFON				Lg	Lg	19 29 02.2	
	23nm,0.4s,SNR=5.0						
AFON	**Font Roja**	**1.32**	**44**	Pg	**Pn**	**19 28 42.0**	**-0.8**
	0.4nm,0.1s,SNR=18						
AFON				Lg	Lg	19 29 02.2	
	23nm,0.4s,SNR=5.0						
EQUE	**Quentar**	**1.46**	**250**	Pg	**Pg**	**19 28 47.1**	**+0.8**
	5.8nm,0.1s,SNR=7.9						
EQUE				Lg	Lg	19 29 07.2	
	73nm,0.3s,SNR=37						
EQUE	**Quentar**	**1.46**	**250**	Pg	**Pg**	**19 28 47.1**	**+0.8**
	5.8nm,0.1s,SNR=7.9						
EQUE				Lg	Lg	19 29 07.2	
	73nm,0.3s,SNR=37						
ECOG	**Cogollos-Vega**	**1.54**	**254**	Pg	**Pg**	**19 28 49.0**	**+1.3**
	56nm,0.2s,SNR=7.9						
ECOG				Lg	Lg	19 29 10.3	
	183nm,0.4s,SNR=17						
ECOG	**Cogollos-Vega**	**1.54**	**254**	Pg	**Pg**	**19 28 49.0**	**+1.3**
	56nm,0.2s,SNR=7.9						
ECOG				Lg	Lg	19 29 10.3	
	183nm,0.4s,SNR=17						
SELV	**Sierra Elvira**	**1.67**	**254**	Pg	**Pg**	**19 28 50.2**	**0.0**
	7.0nm,0.2s,SNR=7.9						
SELV				Lg	Lg	19 29 14.7	
	38nm,0.3s,SNR=7.9						
SELV	**Sierra Elvira**	**1.67**	**254**	Pg	**Pg**	**19 28 50.2**	**0.0**
	7.0nm,0.2s,SNR=7.9						
SELV				Lg	Lg	19 29 14.7	
	38nm,0.3s,SNR=7.9						
EBAN	**Banos Encina**	**1.70**	**286**	Pg	**Pb**	**19 28 49.8**	**+0.3**
	95nm,0.2s,SNR=7.9						
EBAN				Lg	Lg	19 29 14.0	
	169nm,0.2s,SNR=7.9						
EBAN	**Banos Encina**	**1.70**	**286**	Pg	**Pb**	**19 28 49.8**	**+0.3**
	95nm,0.2s,SNR=7.9						
EBAN				Lg	Lg	19 29 14.0	
	169nm,0.2s,SNR=7.9						
EGOR	**Sierra Gorda,**	**2.00**	**253**	Pg	**Pb**	**19 28 55.3**	**+0.6**
	2.5nm,0.2s,SNR=7.9						
EGOR				Lg	Lg	19 29 24.9	
	40nm,0.5s,SNR=7.9						
EGOR	**Sierra Gorda,**	**2.00**	**253**	Pg	**Pb**	**19 28 55.3**	**+0.6**
	2.5nm,0.2s,SNR=7.9						
EGOR				Lg	Lg	19 29 24.9	
	40nm,0.5s,SNR=7.9						
EADA	**Adamuz**	**2.31**	**282**	Pn	**Pn**	**19 28 57.3**	**+1.1**
	2.5nm,0.2s,SNR=16						
EADA				Pg	**Pg**	**19 29 02.3**	**-0.1**
	3.8nm,0.2s,SNR=7.9						
EADA				Sn	**Sn**	**19 29 26.2**	**+1.5**
	9.6nm,0.2s,SNR=5.0						
EADA				Lg	Lg	19 29 34.7	
	131nm,0.5s,SNR=7.9						
EADA	**Adamuz**	**2.31**	**282**	Pn	**Pn**	**19 28 57.3**	**+1.1**
	2.5nm,0.2s,SNR=16						
OKGL	**Djebel Kef Gue**	**2.53**	**131**	Pn	**Pn**	**19 28 59.5**	**+0.2**
	12nm,0.1s,SNR=7.9						
OKGL				Sn	**Sn**	**19 29 29.2**	**-0.9**
	26nm,0.2s,SNR=7.9						
OKGL	**Djebel Kef Gue**	**2.53**	**131**	Pn	**Pn**	**19 28 59.5**	**+0.2**
	12nm,0.1s,SNR=7.9						
OKGL				Sn	**Sn**	**19 29 29.2**	**-0.9**
	26nm,0.2s,SNR=7.9						
ESDC	**Sonseca Array**	**2.63**	**319**	Pn	**Pn**	**19 29 01.1**	**+0.3**
	2.7nm,0.3s,baz=137,slow=12,SNR=14						
ESDC				Pg	**Pb**	**19 29 07.1**	**+1.7**
	16nm,0.3s,baz=136,slow=17,SNR=54						
ESDC				Sn	**Sn**	**19 29 31.6**	**-1.0**
	10nm,0.3s,baz=132,slow=22,SNR=7.5						
ESDC				Lg	Lg	19 29 41.2	
	9.4nm,0.3s,baz=139,slow=31,SNR=4.6						
ESDC	**Sonseca Array**	**2.63**	**319**	Pn	**Pn**	**19 29 01.4**	**+0.7**
	2.2nm,0.2s,baz=129,slow=13,SNR=14						
ESDC				Pg	**Pg**	**19 29 07.7**	**-0.9**
	1.1nm,0.1s,baz=132,slow=17,SNR=7.9						
ESDC				Sn	**Sn**	**19 29 32.2**	**-0.5**
	8.9nm,0.1s,baz=129,slow=22,SNR=7.9						
ESDC				Lg	Lg	19 29 42.1	
	17nm,0.2s,baz=132,slow=30,SNR=7.9						
ESDC	**Sonseca Array**	**2.63**	**319**	Pn	**Pn**	**19 29 01.4**	**+0.7**
	2.2nm,0.2s,SNR=14						
ESDC	**Sonseca Array**	**2.63**	**319**	Pg	**Pg**	**19 29 07.7**	**-0.9**
	1.1nm,0.1s,SNR=7.9						
ESDC				Sn	**Sn**	**19 29 32.2**	**-0.5**
	8.9nm,0.1s,SNR=7.9						
ESDC				Lg	Lg	19 29 42.1	
	17nm,0.2s,baz=132,slow=30,SNR=7.9						
EIBI	**Ibiza**	**2.74**	**60**	Pn	**Pn**	**19 29 01.1**	**-1.0**
	13nm,0.1s,SNR=34						
EIBI				Sn	**Sn**	**19 29 31.7**	**-3.5**
	7.5nm,0.2s,SNR=5.0						
EIBI	**Ibiza**	**2.74**	**60**	Pn	**Pn**	**19 29 01.1**	**-1.0**
	13nm,0.1s,SNR=34						
EMOS	**Mosqueruela**	**2.82**	**20**	Pn	**Pn**	**19 29 03.3**	**-0.1**
	0.6nm,0.1s,SNR=12						
EMOS				Pg	**Pb**	**19 29 09.7**	**+1.1**
	0.6nm,0.2s,SNR=7.9						
EMOS				Sn	**Sn**	**19 29 36.9**	**-0.5**
	2.5nm,0.2s,SNR=7.9						
EMOS				Lg	Lg	19 29 46.9	
	6.2nm,0.3s,SNR=5.0						
EMOS	**Mosqueruela**	**2.82**	**20**	Pn	**Pn**	**19 29 03.3**	**-0.1**
	0.6nm,0.1s,SNR=12						
ECAB	**El Cabril**	**2.95**	**278**	Pn	**Pn**	**19 29 05.8**	**+0.7**
	12nm,0.3s,SNR=62						
ECAB				Sn	**Sn**	**19 29 41.0**	**+0.4**
	4.2nm,0.2s,SNR=7.9						
ECAB				Lg	Lg	19 29 53.8	
	23nm,0.3s,SNR=5.0						
ECAB	**El Cabril**	**2.95**	**278**	Pn	**Pn**	**19 29 05.8**	**+0.7**
	12nm,0.3s,SNR=62						
ECAB				Sn	**Sn**	**19 29 41.0**	**+0.4**
	4.2nm,0.2s,SNR=7.9						
ECAB				Lg	Lg	19 29 53.8	
	23nm,0.3s,SNR=5.0						
ESPR	**Espera**	**3.41**	**257**	Pn	**Pn**	**19 29 12.9**	**+1.6**
	0.7nm,0.1s,SNR=7.9						
ESPR				Lg	Lg	19 30 10.4	
	18nm,0.4s,SNR=7.9						
ESPR	**Espera**	**3.41**	**257**	Pn	**Pn**	**19 29 12.9**	**+1.6**
	0.7nm,0.1s,SNR=7.9						
ESPR				Lg	Lg	19 30 10.4	
	18nm,0.4s,SNR=7.9						
GUD	**Guadarrama**	**3.48**	**328**	Pn	**Pn**	**19 29 13.8**	**+1.3**
	0.8nm,0.2s,SNR=6.7						
GUD				Pg	**Pg**	**19 29 23.0**	**-1.9**
	3.0nm,0.2s,SNR=7.9						
GUD				Sn	**Sn**	**19 29 52.6**	**-1.2**
	11nm,0.3s,SNR=7.9						
GUD				Lg	Lg	19 30 08.1	
	25nm,0.3s,SNR=5.0						
GUD	**Guadarrama**	**3.48**	**328**	Pn	**Pn**	**19 29 13.8**	**+1.3**
	0.8nm,0.2s,SNR=6.7						
GUD	**Guadarrama**	**3.48**	**328**	Pg	**Pg**	**19 29 23.0**	**-1.9**
	3.0nm,0.2s,SNR=7.9						
GUD				Sn	**Sn**	**19 29 52.6**	**-1.2**
	11nm,0.3s,SNR=7.9						
GUD				Lg	Lg	19 30 08.1	
	25nm,0.3s,SNR=5.0						
ERTA	**Horta de San J**	**3.60**	**26**	Pn	**Pn**	**19 29 14.4**	**+0.3**
	2.4nm,0.2s,SNR=7.9						
ERTA				Sn	**Sn**	**19 29 56.6**	**-0.1**
	2.4nm,0.2s,SNR=7.9						
ERTA	**Horta de San J**	**3.60**	**26**	Pn	**Pn**	**19 29 14.4**	**+0.3**
	2.4nm,0.2s,SNR=7.9						
ERTA				Sn	**Sn**	**19 29 56.6**	**-0.1**
	2.4nm,0.2s,SNR=7.9						
EMIN	**Mina Concepcio**	**3.93**	**272**	Pn	**Pn**	**19 29 19.4**	**+0.9**
	0.9nm,0.2s,SNR=7.9						
EMIN				Sn	**Sn**	**19 30 03.7**	**-0.9**
	1.9nm,0.2s,SNR=7.9						
EMIN				Lg	Lg	19 30 22.9	
	20nm,0.5s,SNR=7.9						
EMIN	**Mina Concepcio**	**3.93**	**272**	Pn	**Pn**	**19 29 19.4**	**+0.9**
	0.9nm,0.2s,SNR=7.9						
EMIN				Sn	**Sn**	**19 30 03.7**	**-0.9**
	1.9nm,0.2s,SNR=7.9						
EMIN				Lg	Lg	19 30 22.9	
	20nm,0.5s,SNR=7.9						
ETOS	**Mallorca**	**4.09**	**59**	Pn	**Pn**	**19 29 20.1**	**-0.6**
	1.3nm,0.1s,SNR=7.9						
ETOS				Sn	**Sn**	**19 30 05.2**	**-3.4**
	1.4nm,0.3s,SNR=7.9						
ETOS	**Mallorca**	**4.09**	**59**	Pn	**Pn**	**19 29 20.1**	**-0.6**
	1.3nm,0.1s,SNR=7.9						
ESAC	**San Caprasio**	**4.12**	**13**	Pn	**Pn**	**19 29 21.7**	**+0.6**
	4.2nm,0.2s,SNR=7.9						
ESAC				Lg	Lg	19 30 28.4	
	53nm,0.6s,SNR=7.9						
ESAC	**San Caprasio**	**4.12**	**13**	Pn	**Pn**	**19 29 21.7**	**+0.6**
	4.2nm,0.2s,SNR=7.9						
ESAC				Lg	Lg	19 30 28.4	
	53nm,0.6s,SNR=7.9						
EPLA	**Plasencia**	**4.13**	**306**	Pn	**Pn**	**19 29 22.0**	**+0.6**
	0.3nm,0.1s,SNR=7.9						
EPLA				Pg	**Pg**	**19 29 34.9**	**-2.5**
	0.4nm,0.1s,SNR=7.9						
EPLA				Sn	**Sn**	**19 30 08.3**	**-1.4**
	2.8nm,0.2s,SNR=7.9						
EPLA				Lg	Lg	19 30 28.1	
	13nm,0.3s,SNR=7.9						
EPLA	**Plasencia**	**4.13**	**306**	Pn	**Pn**

PCBR	**Castelo Branco**	**4.98 297**	*e*Sn	**Sn**	**19 30 30.6 +0.2**
	11nm,0.6s				
EVO	**Evora**	**5.03 281**	*e*Sn	**Sn**	**19 30 31.9 +0.1**
EVO			*e*Sg	**Sg**	**19 30 57.6 -2.1**
EVO			A	A	19 31 05.5
	9.2nm,1.0s				
EVO	**Evora**	**5.03 281**	*e*Sn	**Sn**	**19 30 31.9 +0.1**
EVO			*e*Sg	**Sg**	**19 30 57.6 -2.1**
	9.2nm,1.0s				
IELO	**Elcoad**	**5.13 4**	Pn	**Pn**	**19 29 37.1 +2.0**
	0.5nm,0.0s,SNR=7.9				
IELO	**Elcoad**	**5.13 4**	Pn	**Pn**	**19 29 37.1 +2.0**
	0.5nm,0.0s,SNR=7.9				
CFON	**Fontmartina**	**5.15 37**	Pn	**Pn**	**19 29 34.5 -0.9**
	0.9nm,0.3s,SNR=7.9				
CFON	**Fontmartina**	**5.15 37**	Pn	**Pn**	**19 29 34.5 -0.9**
	0.9nm,0.3s,SNR=7.9				
MESJ	**Messejana**	**5.15 273**	*e*P	**Pn**	**19 29 35.8 +0.4**
MESJ			*e*S	**Sn**	**19 30 31.5 -3.3**
MESJ			AML	AML	19 30 35.3
	comp=E,2.9nm,0.3s				
MESJ	**Messejana**	**5.15 273**	*e*Pn	**Pn**	**19 29 36.0 +0.7**
MESJ			*e*Sn	**Sn**	**19 30 34.2 -0.6**
MESJ			*e*Sg	**Sg**	**19 31 01.8 -1.9**
MESJ			A	A	19 31 05.4
	comp=E,8.2nm,0.7s				
MESJ	**Messejana**	**5.15 273**	*e*Pn	**Pn**	**19 29 36.0 +0.7**
MESJ			*e*Sn	**Sn**	**19 30 34.2 -0.6**
MESJ			*e*Sg	**Sg**	**19 31 01.8 -1.9**
	comp=E,8.2nm,0.7s				
ETSF	**Etsaut**	**5.25 9**	*e*Pn	**Pn**	**19 29 37.6 +0.9**
ETSF			*e*Sg	**Sg**	**19 31 09.0 +2.2**
	comp=E,2.2nm,0.4s				
ETSF	**Etsaut**	**5.25 9**	*e*Pn	**Pn**	**19 29 37.6 +0.9**
ETSF			*e*Sg	**Sg**	**19 31 09.0 +2.2**
	comp=E,1.1nm,0.4s				
MTE	**Manteigas**	**5.27 302**	*e*Sg	**Sg**	**19 31 06.4 -0.9**
MTE			A	A	19 31 23.6
	comp=E,12nm,0.6s				
MTE	**Manteigas**	**5.27 302**	*e*Sg	**Sg**	**19 31 06.4 -0.9**
	comp=E,12nm,0.6s				
PMTG	**Montargil**	**5.29 287**	*e*Pn	**Pn**	**19 29 38.3 +1.1**
PMTG			*e*Sn	**Sn**	**19 30 37.2 -1.0**
PMTG			*e*Sg	**Sg**	**19 31 07.2 -0.8**
PMTG			A	A	19 31 25.1
	comp=E,14nm,0.6s				
PMTG	**Montargil**	**5.29 287**	*e*Pn	**Pn**	**19 29 38.3 +1.1**
PMTG			*e*Sn	**Sn**	**19 30 37.2 -1.0**
PMTG			*e*Sg	**Sg**	**19 31 07.2 -0.8**
	comp=E,14nm,0.6s				
MVO	**Moncorvo**	**5.36 312**	*e*Pn	**Pn**	**19 29 39.1 +0.8**
MVO			*e*Sn	**Sn**	**19 30 39.4 -0.7**
MVO			*e*Sg	**Sg**	**19 31 08.1 -2.3**
MVO			A	A	19 31 25.4
	comp=E,12nm,0.6s				
MVO	**Moncorvo**	**5.36 312**	Pn	**Pn**	**19 29 39.0 +0.8**
	comp=E,0.9nm,0.1s,SNR=7.9				
MVO			Sn	**Sn**	**19 30 38.4 -1.7**
	comp=E,5.4nm,0.3s,SNR=7.9				
MVO			Lg	Lg	19 31 10.3
	comp=E,20nm,0.5s,SNR=7.9				
MVO	**Moncorvo**	**5.36 312**	Pn	**Pn**	**19 29 39.0 +0.8**
	comp=E,0.9nm,0.1s,SNR=7.9				
MVO			*e*Sn	**Sn**	**19 30 39.4 -0.7**
MVO			*e*Sg	**Sg**	**19 31 08.1 -2.3**
	comp=E,12nm,0.6s				
MVO			Lg	Lg	19 31 10.3
	comp=E,20nm,0.5s,SNR=7.9				
PNCL	**Nicolau / Gran**	**5.40 276**	*e*Pn	**Pn**	**19 29 40.2 +1.5**
PNCL			*e*Sn	**Sn**	**19 30 40.8 -0.1**
PNCL			*e*Sg	**Sg**	**19 31 10.0 -1.6**
PNCL			A	A	19 31 22.0
	comp=E,7.3nm,0.8s				
PNCL	**Nicolau / Gran**	**5.40 276**	*e*Pn	**Pn**	**19 29 40.2 +1.5**
PNCL			*e*Sn	**Sn**	**19 30 40.8 -0.1**
PNCL			*e*Sg	**Sg**	**19 31 10.0 -1.6**
	comp=E,7.3nm,0.8s				
SJPF	**Ste Jean**	**5.41 4**	*e*Pn	**Pn**	**19 29 39.9 +1.1**
SJPF			*e*Sg	**Sg**	**19 31 13.9 +2.2**
	comp=E,11nm,0.8s				
SJPF	**Ste Jean**	**5.41 4**	*e*Pn	**Pn**	**19 29 39.9 +1.1**
SJPF			*e*Sg	**Sg**	**19 31 13.9 +2.2**
	comp=E,5.3nm,0.8s				
ATE	**Arette**	**5.42 8**	Pn	**Pn**	**19 29 41.2 +2.2**
	comp=E,4.6nm,0.0s,SNR=7.9				
ATE	**Arette**	**5.42 8**	Pn	**Pn**	**19 29 41.2 +2.2**
	comp=E,4.6nm,0.0s,SNR=7.9				
EALK	**Alkurruntz**	**5.50 2**	Pn	**Pn**	**19 29 42.4 +2.2**
	comp=E,0.1nm,0.1s,SNR=7.9				
EALK			Sn	**Sn**	**19 30 43.2 -0.2**
	comp=E,8.1nm,0.5s,SNR=7.9				
EALK	**Alkurruntz**	**5.50 2**	Pn	**Pn**	**19 29 42.4 +2.2**
	comp=E,0.1nm,0.1s,SNR=7.9				
EALK			Sn	**Sn**	**19 30 43.2 -0.2**
	comp=E,8.1nm,0.5s,SNR=7.9				
CLLI	**Llivia**	**5.54 30**	Pn	**Pn**	**19 29 41.5 +0.8**
	comp=E,0.2nm,0.1s,SNR=7.9				
CLLI	**Llivia**	**5.54 30**	Pn	**Pn**	**19 29 41.5 +0.8**
	comp=E,0.2nm,0.1s,SNR=7.9				
EPF	**Esparros**	**5.54 16**	*e*Pn	**Pn**	**19 29 41.3 +0.7**
EPF			*e*Sg	**Sg**	**19 31 17.8 +1.9**
	comp=E,5.7nm,0.6s				
EPF	**Esparros**	**5.54 16**	*e*Pn	**Pn**	**19 29 41.3 +0.7**
EPF			*e*Sg	**Sg**	**19 31 17.8 +1.9**
	comp=E,2.8nm,0.6s				
PTEO	**Sao Teotonio**	**5.57 270**	*e*Sn	**Sn**	**19 30 44.6 -0.4**
PTEO	**Sao Teotonio**	**5.57 270**	*e*Sn	**Sn**	**19 30 44.6 -0.4**
PTOM	**Tomar**	**5.57 292**	*e*Sn	**Sn**	**19 30 44.2 -0.9**
PTOM			A	A	19 31 23.0
	comp=E,14nm,0.5s				
PTOM	**Tomar**	**5.57 292**	*e*Sn	**Sn**	**19 30 44.2 -0.9**
	comp=E,14nm,0.5s				
PBRG	**Braganca**	**5.63 318**	*e*Pn	**Pn**	**19 29 42.7 +0.8**
PBRG			*e*Sn	**Sn**	**19 30 43.4 -3.1**
PBRG			*e*Sg	**Sg**	**19 31 14.1 -4.7**
PBRG			A	A	19 31 24.8
	comp=E,8.6nm,0.6s				
PBRG	**Braganca**	**5.63 318**	*e*Pn	**Pn**	**19 29 42.7 +0.8**
PVIS	**Viseu**	**5.66 304**	*e*Pn	**Pn**	**19 29 43.4 +1.1**
PVIS	**Viseu**	**5.66 304**	*e*Pn	**Pn**	**19 29 43.4 +1.1**
ELAN	**Lanestosa**	**5.66 347**	Pn	**Pn**	**19 29 43.4 +1.1**
	comp=E,0.3nm,0.2s,SNR=7.9				
ELAN			Sn	**Sn**	**19 30 43.5 -3.9**
	comp=E,4.5nm,0.5s,SNR=7.9				
ELAN			Lg	Lg	19 31 18.1
	comp=E,4.6nm,0.3s,SNR=7.9				
ELAN	**Lanestosa**	**5.66 347**	Pn	**Pn**	**19 29 43.4 +1.1**
	comp=E,0.3nm,0.2s,SNR=7.9				
ELAN			Lg	Lg	19 31 18.1
	comp=E,4.6nm,0.3s,SNR=7.9				
PFVI	**Vila Bisbo**	**5.69 266**	*e*Pn	**Pn**	**19 29 43.9 +1.2**
PFVI			*e*Sn	**Sn**	**19 30 47.3 -0.7**
PFVI	**Vila Bisbo**	**5.69 266**	*e*Pn	**Pn**	**19 29 43.9 +1.2**
PFVI			*e*Sn	**Sn**	**19 30 47.3 -0.7**
ECAL	**Calabor**	**5.72 319**	Pn	**Pn**	**19 29 44.2 +1.0**
	comp=E,0.1nm,0.0s,SNR=7.9				
ECAL			Sn	**Sn**	**19 30 46.4 -2.5**
	comp=E,14nm,0.6s,SNR=7.9				
ECAL			Lg	Lg	19 31 21.8
	comp=E,15nm,0.5s,SNR=7.9				
ECAL	**Calabor**	**5.72 319**	Pn	**Pn**	**19 29 44.2 +1.0**
	comp=E,0.1nm,0.0s,SNR=7.9				
ECAL			Lg	Lg	19 31 21.8
	comp=E,15nm,0.5s,SNR=7.9				
PCAS	**Casmilo, Conde**	**5.78 296**	*e*Pn	**Pn**	**19 29 46.1 +2.1**
PCAS			*e*Sn	**Sn**	**19 30 49.8 -0.5**
PCAS			*e*Sg	**Sg**	**19 31 21.7 -2.1**
PCAS			A	A	19 31 30.9
	comp=E,11nm,0.5s				
PCAS	**Casmilo, Conde**	**5.78 296**	*e*Pn	**Pn**	**19 29 46.1 +2.1**
PCAS			*e*Sn	**Sn**	**19 30 49.8 -0.5**
PCAS			*e*Sg	**Sg**	**19 31 21.7 -2.1**
	comp=E,11nm,0.5s				
POLO	**Lamas de Olo**	**5.95 310**	*e*Pn	**Pn**	**19 29 47.9 +1.5**
POLO	**Lamas de Olo**	**5.95 310**	*e*Pn	**Pn**	**19 29 47.9 +1.5**
PMAFR	**Mafra**	**6.08 284**	*e*Pn	**Pn**	**19 29 49.4 +1.4**
PMAFR	**Mafra**	**6.08 284**	*e*Pn	**Pn**	**19 29 49.4 +1.4**
PGAV	**Gavieira, Arco**	**6.59 312**	*e*Pn	**Pn**	**19 29 56.1 +0.9**
PGAV	**Gavieira, Arco**	**6.59 312**	*e*Pn	**Pn**	**19 29 56.1 +0.9**
CAF	**Calviac**	**7.74 20**	*e*Pn	**Pn**	**19 30 11.4 +0.5**
CAF	**Calviac**	**7.74 20**	*e*Pn	**Pn**	**19 30 11.4 +0.5**
KEST	**Kesra**	**9.10 99**	Pn	**Pn**	**19 30 32.6 +3.0**
	comp=E,0.1nm,0.3s,baz=281,slow=16,SNR=3.4				
GERES	**GERESS Array B**	**15.77 40**	Pn	**P**	**19 32 05.3 +1.0**
	comp=E,0.1nm,0.3s,baz=225,slow=9.6,SNR=5.2				

*IDC **11** 19:31:60.0±1.5, 6°40S×147°80E, h0km, mb3.9/6, mb1 4.0/8, mb1mx3.8/34, mbtmp3.8/8, ML3.8/1, MS3.4/2, Ms1 3.4/2, ms1mx2.9/36, Error ellipse: s-maj=57.1km s-min=18.1km az=113.0*
*NEIC **11** 19:32:06.5±2.4, 6°48S×147°75E, h50km±24km, mb4.3/3, Error ellipse: s-maj=33.3km s-min=15.8km az=117.0*
ISC 11 19:32:05.9±0.8, 6°51S±0°09×148°1E±0°2, h51km, n14, σ1§42/14, mb3.9/7, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**3.01**	**197**	Pn	**Pn**	**19 32 51.4**	**+0.3**
	11nm,0.3s,baz=6.8,slow=3.9,SNR=33						
PMG				Sn	**Sn**	**19 33 27.4**	**+1.4**
	8.2nm,0.3s,baz=36,slow=19,SNR=3.8						
WRAB	**Tennant Creek**	**18.84**	**224**	*e*P	**P**	**19 36 20.6**	**-1.2**
	4.3nm,0.7s						
WRA	**Warramunga Arr**	**18.85**	**224**	P	**P**	**19 36 20.3**	**-1.7**
	0.3nm,0.3s,baz=51,slow=11,SNR=11						
GUMO	**Guam**	**20.22**	**351**	LR	LR	19 42 45.0	
	comp=Z,79nm,20.8s,baz=169,slow=32						
ASAR	**Alice Springs**	**21.81**	**217**	P	**P**	**19 36 52.6**	**-1.4**
	0.9nm,0.5s,baz=53,slow=8.7,SNR=18						
ASAR				LR	LR	19 46 10.6	
	comp=Z,134nm,18.3s,baz=56,slow=39						
FITZ	**Fitzroy Crossi**	**24.70**	**240**	P	**P**	**19 37 21.5**	**-1.0**
	4.3nm,0.4s,baz=50,slow=8.9,SNR=34						
FITZ	**Fitzroy Crossi**	**24.70**	**240**	*e*P	**P**	**19 37 21.1**	**-1.4**
	5.9nm,0.6s						
MSVF	**Nonsavu**	**31.33**	**114**	*e*P	**P**	**19 38 20.5**	**-1.4**
MJAR	**Matsushiro Arr**	**43.81**	**349**	P	**P**	**19 40 05.7**	**-1.2**
	0.7nm,0.4s,baz=167,slow=9.8,SNR=3.0						
PETK	**Petropavlovsk-**	**59.95**	**7**	P	**P**	**19 42 09.3**	**+2.4**
	1.7nm,0.8s,baz=171,slow=10,SNR=4.5						
MKAR	**Makanchi Array**	**78.55**	**320**	P	**P**	**19 44 02.4**	**+0.3**
	0.3nm,0.4s,baz=98,slow=9.1,SNR=7.6						
QSPA	**South Pole Qui**	**83.46**	**180**	*e*P	**P**	**19 44 29.0**	**+1.0**
	6.8nm,0.6s						
ILAR	**Eielson Array**	**85.54**	**23**	P	**P**	**19 44 38.0**	**-0.3**
	0.6nm,0.8s,baz=244,slow=4.1,SNR=3.7						
TORD	**Torodi Ar. Bea**	**146.22**	**284**	PKPbc	**PKPbc**	**19 51 42.3**	**+0.5**
	1.1nm,0.7s,baz=69,slow=4.2,SNR=9.3						

IDC 11 19:32:42.6±2.3, 16°26S×176°28W, h355km±32km, mb3.4/5, mb1 3.6/6, mb1mx3.2/36, mbtmp4.1/6, Error ellipse: s-maj=139.1km s-min=16.4km az=150.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**4.93**	**62**	P	Pn	19 34 01.8	-0.1
	5.2nm,0.3s,baz=246,slow=19,SNR=4.3						
WRA	**Warramunga Arr**	**46.95**	**258**	P	P	19 40 39.1	-0.4
	1.2nm,0.6s,baz=96,slow=7.9,SNR=13						
ASAR	**Alice Springs**	**47.21**	**253**	P	P	19 40 41.5	+0.1
	5.1nm,0.5s,baz=89,slow=8.0,SNR=66						
FITZ	**Fitzroy Crossi**	**55.33**	**259**	P	P	19 41 41.3	+0.2
	4.8nm,0.9s,baz=127,slow=5.1,SNR=2.8						
NVAR	**Mina Array Bea**	**76.83**	**43**	P	P	19 43 57.0	+0.4
	0.4nm,0.6s,baz=215,slow=7.6,SNR=2.6						
ILAR	**Eielson Array**	**83.84**	**12**	P	P	19 44 32.0	-0.6
	0.5nm,0.7s,baz=220,slow=5.5,SNR=4.5						
BRTR	**Keskin Array B**	**145.01**	**318**	PKPbc	PKPdf	19 51 37.3	-1.2
	0.5nm,0.8s,baz=350,slow=5.9,SNR=3.0						

*IDC **11** 19:46:23.2±2.2, 6°36S×147°74E, h0km, mb3.8/4, mb1 3.9/6, mb1mx3.7/32, mbtmp3.8/6, ML3.7/1, Error ellipse: s-maj=66.4km s-min=22.5km az=103.0*
*ISCJB **11** 19:46:30.0±2.0, 6°51S±0°08×147°6E±0°3, h63km, mb3.7/4, Error ellipse: s-maj=48.6km s-min=11.8km az=0.1*
ISC 11 19:46:31.2±2.6, 6°5S±0°1×147°7E±0°5, h63km, n7, σ0§21/8, mb3.6/4, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.91**	**191**	Pn	**Pn**	**19 47 15.0**	**-0.2**
	5.7nm,0.3s,baz=13,slow=9.5,SNR=32						
PMG				Sn	**Sn**	**19 47 49.2**	**+0.2**
	4.5nm,0.3s,baz=38,slow=22,SNR=3.3						
WRA	**Warramunga Arr**	**18.61**	**223**	P	**P**	**19 50 43.6**	**-0.1**
	0.2nm,0.3s,baz=50,slow=11,SNR=11						
ASAR	**Alice Springs**	**21.59**	**216**	P	**P**	**19 51 16.2**	**+0.1**
	0.9nm,0.4s,baz=53,slow=8.6,SNR=24						
FITZ	**Fitzroy Crossi**	**24.40**	**240**	P	**P**	**19 51 43.9**	**0.0**
	6.2nm,0.5s,baz=51,slow=8.2,SNR=45						
MKAR	**Makanchi Array**	**78.34**	**320**	P	**P**	**19 58 24.7**	**-0.2**
	0.2nm,0.5s,baz=103,slow=7.3,SNR=3.4						
ZALV	**Zalesovo Beam**	**79.83**	**328**	P	**P**	**19 58 33.1**	**+0.3**
	0.4nm,0.4s,baz=107,slow=5.0,SNR=2.6						
TORD	**Torodi Ar. Bea**	**145.89**	**284**	PKPbc	**PKPab**	**20 06 05.1**	**-0.1**
	0.7nm,0.7s,baz=78,slow=3.1,SNR=11						

GUC 11 19:51:07.3±0.5, 22°39S×68°87W, h91km±2km, ML3.5, 3C-1D, Northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LVC	**Limon Verde**	**0.22**	**190**	*e*P	Pn	19 51 21.4	+0.4
LVC				*e*S	Sn	19 51 31.6	+0.5
PB09	**IPOC Station P**	**0.69**	**329⇑**	*e*P	Pn	19 51 25.5	+1.5
PB09				*e*S	Sn	19 51 37.3	+0.9
PB09				IAML		19 51 40.5	
	comp=E,3μm,0.3s						
PB06	**IPOC Station P**	**0.72**	**244⇑**	*e*P	Pn	19 51 24.7	+0.3
PB06				*e*S	Sn	19 51 37.9	+0.8
PB07	**IPOC Station P**	**1.15**	**305**	*e*P	Pn	19 51 30.0	+0.9
PB07				*e*S	Sn	19 51 46.7	+1.3
PB04	**IPOC Station P**	**1.19**	**272⇑**	*e*P	Pn	19 51 29.9	+0.4
PB04				*e*S	Sn	19 51 47.2	+1.1
PB04				IAML		19 51 51.7	
	comp=N,2μm,0.1s						
PB01	**IPOC Station P**	**1.46**	**337⇓**	*e*P	Pn	19 51 34.2	+1.5
PB01				*e*S	Sn	19 51 53.9	+2.0
PB01				IAML		19 51 55.2	
	comp=E,724nm,0.3s						
PB10	**IPOC Station P**	**1.92**	**234**	*e*P	Pn	19 51 39.1	+0.6
PB10				*e*S	Sn	19 52 03.3	+1.1
PATCX	**Punta Patache**	**1.97**	**322**	*e*P	Pn	19 51 39.8	+0.6
PATCX				*e*S	Sn	19 52 04.7	+1.2

*JMA **11** 19:58:46.9±0.2, 37°46N×142°58E, h0km, M4.0*
*IDC **11** 19:58:48.1±1.2, 37°29N×142°93E, h0km, mb3.5/4, mb1 3.7/5, mb1mx3.4/51, mbtmp3.4/5, ML3.0/1, Error ellipse: s-maj=34.1km s-min=26.4km az=103.0*
*ISCJB **11** 19:58:49.2±0.9, 37°47N±0°06×142°66E±0°07, h24km, mb3.5/4, Error ellipse: s-maj=9.1km s-min=8.4km az=159.2*
ISC 11 19:58:51.8±1.2, 37°52N±0°07×142°57E±0°09, h24km, n21, σ1§63/19, mb3.5/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.34**	**315**	P	**Pn**	**19 59 13.2**	**-1.9**
JIO				S	**Sn**	**19 59 31.8**	**-0.4**
JFK	**Kawauchi**	**1.36**	**264**	P	**Pn**	**19 59 13.1**	**-2.2**
JMM	**Marumori**	**1.45**	**285**	P	**Pn**	**19 59 14.3**	**-2.3**
JMM				*e*S	**Sn**	**19 59 34.2**	**-0.6**
ONAJ	**Iwakimizuishiy**	**1.47**	**254**	P	**Pn**	**19 59 14.7**	**-2.2**
ONAJ				*e*S	**Sn**	**19 59 34.4**	**-1.0**
JOU	**Okura**	**1.73**	**300**	P	**Pn**	**19 59 19.2**	**-1.2**
JFT	**Otama**	**1.77**	**271**	P	**Pn**	**19 59 19.7**	**-1.3**
JMK	**Ichinoseki**	**1.79**	**324**	P	**Pn**	**19 59 20.6**	**-0.6**
JYS	**Shiratake**	**2.10**	**290**	P	**Pn**	**19 59 25.6**	**+0.1**
JOM	**Ohasama**	**2.20**	**333**	P	**Pn**	**19 59 26.6**	**-0.2**
MJAR	**Matsushiro Arr**	**3.62**	**256**	Pn	**Pn**	**19 59 48.1**	**+1.6**
	1.1nm,0.3s,baz=81,slow=14,SNR=8.4						
MAT	**Matsushiro**	**3.62**	**256**	P	**Pn**	**19 59 47.5**	**+1.0**
MAT				*e*S	**Sn**	**20 00 30.5**	**+2.0**
H11N2	**WAKE ISLAND Hy**	**27.62**	**123**	T	T	20 33 33.7	
	baz=313						
H11N1	**WAKE ISLAND Hy**	**27.63**	**123**	T	T	20 33 26.6	
	baz=313						
H11N3	**WAKE ISLAND Hy**	**27.64**	**123**	T	T	20 33 29.1	
	baz=313						
H11S1	**WAKE ISLAND Hy**	**28.36**	**125**	T	T	20 34 32.9	
	baz=317						
H11S3	**WAKE ISLAND Hy**	**28.37**	**125**	T	T	20 34 31.7	
H11S2	**WAKE ISLAND Hy**	**28.38**	**125**	T	T	20 34 29.0	
	baz=317						
MKAR	**Makanchi Array**	**44.65**	**302**	P	**P**	**20 07 05.3**	**+2.9**
	0.3nm,0.7s,baz=80,slow=8.0,SNR=3.7						
ILAR	**Eielson Array**	**48.59**	**33**	P	**P**	**20 07 32.9**	**-0.2**
	0.4nm,0.7s,baz=270,slow=6.3,SNR=3.7						
WRA	**Warramunga Arr**	**57.67**	**189**	P	**P**	**20 08 39.0**	**-1.3**
	1.2nm,0.8s,baz=6.9,slow=7.3,SNR=7.5						
ASAR	**Alice Springs**	**61.40**	**189**	P	**P**	**20 09 04.9**	**-1.1**
	0.3nm,0.9s,baz=6.6,slow=14,SNR=4.5						

*SOME **11** 20:00:26.8, 47°97N×84°93E, h0km*
*NNC **11** 20:00:37.5±3.5, 47°72N×84°45E, h0km, mb2.8, mpv2.5, Error ellipse: s-maj=23.7km s-min=16.9km az=84.0*
ISC 11 20:00:28.2±3.1, 48°05N±0°08×84°8E±0°1, h10km, n6, σ2§89/11, 2C-2D, Eastern Kazakhstan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZSN	**Zaisan**	**0.65**	**202**	*e*P	**Pg**	**20 00 38.5**	**-2.2**
	5.9nm,0.1s						
ZSN				*e*S	**Sg**	**20 00 47.7**	**-1.4**
	36nm,0.5s						
MK31	**Makanchi Array**	**2.09**	**234**	P	**Pg**	**20 01 08.6**	**+0.3**
	1.2nm,0.3s,baz=52,slow=15						
MK31				⇓S	**Sb**	**20 01 32.6**	**+0.3**
	1.2nm,0.3s,baz=57,slow=28						
MAKZ	**Makanchi**	**2.26**	**238**	⇑Pn	**Pg**	**20 01 11.0**	**-0.4**
	1.5nm,0.3s						
MAKZ				⇓Sn	**Sb**	**20 01 36.8**	**-0.2**
	1.1nm,0.3s						
KAPS	**Kapalarasan**	**4.63**	**235**	*e*P	**Pg**	**20 01 53.4**	**-3.5**
	0.5nm,0.4s						
KAPS				*e*S	**Sg**	**20 02 53.9**	**-2.9**
	0.9nm,0.3s						
KURK	**Kurchatov**	**4.81**	**306**	⇑Sn	**Sb**	**20 02 51.2**	**+0.8**
	4.1nm,0.5s						
DJR	**Jarkent**	**5.07**	**225**	*e*P	**Pb**	**20 01 59.3**	**+2.3**
	0.6nm,0.1s						
DJR				*e*S	**Sb**	**20 03 03.8**	**+5.8**
	0.4nm,0.1s						

*ISCJB **11** 20:04:26.7±0.5, 43°85N±0°05×105°27W±0°06, h0km, Error ellipse: s-maj=7.0km s-min=5.9km az=175.1*
*NEIC **11** 20:04:27.5±0.7, 43°74N×105°23W, h0km, ML3.2, Error ellipse: s-maj=9.5km s-min=8.3km az=145.0, Suspected Mining explosion.*
NEIC 65 km [40 miles] SSE of Gillette.
*IDC **11** 20:04:27.8±1.8, 43°97N×105°58W, h0km, mb1 3.6/4, mb1mx3.3/65, mbtmp3.3/4, ML2.8/3, Error ellipse: s-maj=51.6km s-min=10.1km az=147.0*
ISC 11 20:04:27.7±0.9, 43°84N±0°05×105°30W±0°05, h0km, n30, σ1§21/29, Wyoming

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RSSD	**Black Hills**	**0.96**	**73**	*e*Pg	**Pg**	**20 04 45.6**	**-0.4**
K22A	**Casper**	**1.49**	**217**	*e*Pg	**Pn**	**20 04 53.6**	**-2.2**
PHWY	**Pilot Hill**	**2.54**	**183**	*e*Pn	**Pn**	**20 05 09.5**	**-0.9**
LAO	**LASA Array**	**2.92**	**347**	*e*Pn	**Pn**	**20 05 15.8**	**+0.4**
RLMT	**Red Lodge**	**3.11**	**296**	*e*Pn	**Pn**	**20 05 18.9**	**+0.7**
PDAR	**Pinedale Array**	**3.29**	**252**	Pn	**Pn**	**20 05 21.4**	**+0.8**
	5.7nm,0.3s,baz=74,slow=16,SNR=62						
PDAR				Lg	Lg	20 06 05.8	
	20nm,0.3s,baz=65,slow=37,SNR=14						
BW06	**Boulder Array**	**3.29**	**252**	*e*Pn	**Pn**	**20 05 21.9**	**+1.3**
LKWY	**Lake**	**3.73**	**283**	*e*Pg	**Pg**	**20 05 39.5**	**+0.2**
OGNE	**Ogallala**	**3.77**	**139**	*e*Pn	**Pn**	**20 05 29.0**	**+1.8**
H17A	**Grant Village**	**3.84**	**280**	*e*Pn	**Pn**	**20 05 27.2**	**-1.0**
LOHW	**Long Hollow**	**3.85**	**268**	*e*Pn	**Pn**	**20 05 29.6**	**+1.3**
FLWY	**Flagg Ranch**	**3.90**	**275**	*e*Pn	**Pn**	**20 05 29.3**	**+0.2**
MOOW	**Moose Ponds**	**3.94**	**271**	*e*Pn	**Pn**	**20 05 30.9**	**+1.3**
SNOW	**Snow King Moun**	**3.97**	**266**	Pn	**Pn**	**20 05 31.7**	**+1.6**
ISCO	**Idaho Springs**	**4.04**	**183**	*e*Pn	**Pn**	**20 05 30.9**	**-0.2**
REDW	**Red Top Meadow**	**4.06**	**265**	*e*Pn	**Pn**	**20 05 32.7**	**+1.5**
IMW	**Indian Meadow**	**4.08**	**273**	*e*Pn	**Pn**	**20 05 32.2**	**+0.7**
O20A	**White River Ci**	**4.30**	**212**	*e*Pn	**Pn**	**20 05 34.5**	**-0.1**
AHID	**Auburn Hatcher**	**4.37**	**258**	*e*Pn	**Pn**	**20 05 37.3**	**+1.9**
DGMT	**Dagmar**	**4.69**	**9**	*e*Pn	**Pn**	**20 05 41.4**	**+1.7**
SMCO	**Snowmass**	**4.83**	**196**	*e*Pg	**Pb**	**20 05 53.4**	**0.0**
BOZ	**Bozeman (W)**	**4.85**	**294**	Pn	**Pn**	**20 05 42.8**	**+0.7**
HWUT	**Hardware Ranch**	**5.12**	**246**	*e*Pn	**Pn**	**20 05 46.3**	**+0.5**
HWUT				*e*Pn	**Pn**	**20 05 47.0**	**+1.2**
EGMT	**Eagleton**	**5.21**	**325**	*e*Pn	**Pn**	**20 05 47.4**	**+0.5**
	25nm,0.9s						
PV04	**Paradox Valley**	**6.08**	**208**	*e*Pn	Pn	20 05 53.3	-5.7
ECSD	**EROS Data Cent**	**6.29**	**88**	Pn	**Pn**	**20 06 01.2**	**-0.5**
	4.6nm,0.4s						
ULM	**Lac du Bonnet**	**9.08**	**42**	Pn	**Pn**	**20 06 38.3**	**-1.6**
	0.8nm,0.3s,baz=223,slow=9.2,SNR=4.6						
ULM				Pg	Pg	20 07 12.5	
	0.5nm,0.3s,baz=237,slow=16,SNR=2.

PFVI					*e*Sn		**Sn**	**20 15 22.6 +0.7**
PFVI					A		A	20 15 24.4
	7.1nm,0.7s							
PFVI	**Vila Bisbo**	**0.85**	**70**	⇑P			**Pn**	**20 15 10.7 +1.4**
	2.5nm,0.1s,SNR=18							
PFVI					S		**Sn**	**20 15 22.0 +0.1**
	7.7nm,0.1s,SNR=13							
PFVI	**Vila Bisbo**	**0.85**	**70**	P			**Pn**	**20 15 10.7 +1.4**
	2.5nm,0.1s,SNR=18							
PFVI					S		**Sn**	**20 15 22.0 +0.1**
	7.7nm,0.1s,SNR=13							
PFVI					*e*Sn		**Sn**	**20 15 22.6 +0.7**
	7.1nm,0.7s							
PTEO	**Sao Teotonio**	**1.13**	**51**	*e*Pn			**Pn**	**20 15 15.1 +2.1**
PTEO					*e*Sn		**Sn**	**20 15 29.8 +1.1**
PTEO					A		A	20 15 35.8
	7.4nm,0.8s							
PTEO	**Sao Teotonio**	**1.13**	**51**	P			**Pn**	**20 15 15.1 +2.1**
PTEO					S		**Sn**	**20 15 29.8 +1.1**
	3.7nm,0.8s							
PTEO	**Sao Teotonio**	**1.13**	**51**	P			**Pn**	**20 15 15.1 +2.1**
PTEO					*e*Sn		**Sn**	**20 15 29.8 +1.1**
	7.4nm,0.8s							
PBDV	**Barranco-do-Ve**	**1.57**	**75**	*e*Pn			**Pg**	**20 15 20.9 -0.3**
PBDV					*e*Sn		**Sn**	**20 15 39.9 +0.2**
PBDV					A		A	20 15 45.5
	3.3nm,0.8s							
PBDV	**Barranco-do-Ve**	**1.57**	**75**	P			**Pg**	**20 15 20.9 -0.3**
PBDV					S		**Sn**	**20 15 39.9 +0.2**
	3.3nm,0.8s							
PBDV	**Barranco-do-Ve**	**1.57**	**75**	P			**Pg**	**20 15 20.9 -0.3**
PBDV					S		**Sn**	**20 15 39.9 +0.2**
	3.3nm,0.8s							
MESJ	**Messejana**	**1.62**	**52**	*e*Pn			**Pb**	**20 15 21.6 +0.4**
MESJ					*e*Sn		**Sn**	**20 15 41.5 +0.6**
MESJ					A		A	20 15 48.8
	2.9nm,0.8s							
MESJ	**Messejana**	**1.62**	**52**	P			**Pb**	**20 15 21.6 +0.4**
MESJ					S		**Sn**	**20 15 41.5 +0.6**
	2.9nm,0.8s							
MESJ	**Messejana**	**1.62**	**52**	P			**Pb**	**20 15 21.6 +0.4**
MESJ					S		**Sn**	**20 15 41.5 +0.6**
	2.9nm,0.8s							
PNCL	**Nicolau / Gran**	**1.64**	**39**	*e*Pn			**Pb**	**20 15 22.0 +0.6**
PNCL					*e*Sn		**Sn**	**20 15 42.0 +0.8**
PNCL					A		A	20 15 45.5
	2.3nm,0.5s							
PNCL	**Nicolau / Gran**	**1.64**	**39**	*e*Pn			**Pb**	**20 15 22.0 +0.6**
PNCL					*e*Sn		**Sn**	**20 15 42.0 +0.8**
	2.3nm,0.5s							
PVAQ	**Vaqueiros**	**1.78**	**71**	*e*Pn			**Pb**	**20 15 23.7 -0.2**
PVAQ					*e*Sn		**Sn**	**20 15 45.0 +0.2**
PVAQ					A		A	20 15 50.5
	2.3nm,0.7s							
PVAQ	**Vaqueiros**	**1.78**	**71**	P			**Pb**	**20 15 23.7 -0.2**
PVAQ					S		**Sn**	**20 15 45.0 +0.2**
	2.3nm,0.7s							
PVAQ	**Vaqueiros**	**1.78**	**71**	P			**Pb**	**20 15 23.7 -0.2**
PVAQ					S		**Sn**	**20 15 45.0 +0.2**
	2.3nm,0.7s							
PBEJ	**Beja**	**1.96**	**52**	*e*Sn			**Sn**	**20 15 50.4 +1.2**
PBEJ	**Beja**	**1.96**	**52**	S			**Sn**	**20 15 50.4 +1.2**
PBEJ	**Beja**	**1.96**	**52**	S			**Sn**	**20 15 50.4 +1.2**
EGRO	**El Granado**	**2.00**	**69**	P			**Pn**	**20 15 26.4 +1.4**
	0.2nm,0.1s,SNR=7.9							
EGRO					S		**Sn**	**20 15 49.7 -0.5**
	0.3nm,0.1s,SNR=7.9							
EGRO	**El Granado**	**2.00**	**69**	P			**Pn**	**20 15 26.4 +1.4**
	0.2nm,0.1s,SNR=7.9							
EGRO					S		**Sn**	**20 15 49.7 -0.5**
	0.3nm,0.1s,SNR=7.9							
PMAFR	**Mafra**	**2.15**	**11**	S			**Sn**	**20 15 53.1 -0.9**
	3.0nm,0.2s,SNR=7.9							
PMAFR	**Mafra**	**2.15**	**11**	S			**Sn**	**20 15 53.1 -0.9**
	3.0nm,0.2s,SNR=7.9							
PMAFR					*e*Sn		**Sb**	**20 15 54.3 -2.7**
EVO	**Evora**	**2.22**	**40**	*e*Sn			**Sn**	**20 15 55.8 +0.2**
EVO	**Evora**	**2.22**	**40**	S			**Sn**	**20 15 55.8 +0.2**
EVO	**Evora**	**2.22**	**40**	S			**Sn**	**20 15 55.8 +0.2**
PMTG	**Montargil**	**2.56**	**29**	*e*Sn			**Sn**	**20 16 03.5 -0.5**
PMTG					A		A	20 16 05.9
	1.8nm,0.5s							
PMTG	**Montargil**	**2.56**	**29**	*e*Sn			**Sn**	**20 16 03.5 -0.5**
	1.8nm,0.5s							
PBAR	**Barrancos**	**2.59**	**58**	*e*Sn			**Sn**	**20 16 04.9 +0.2**
PBAR	**Barrancos**	**2.59**	**58**	S			**Sn**	**20 16 04.9 +0.2**
PBAR	**Barrancos**	**2.59**	**58**	S			**Sn**	**20 16 04.9 +0.2**
EMIN	**Mina Concepcio**	**2.68**	**69**	P			**Pn**	**20 15 34.0 -0.5**
	0.1nm,0.1s,SNR=7.9							
EMIN					S		**Sn**	**20 16 06.0 -1.0**
	0.1nm,0.1s,SNR=7.9							
EMIN	**Mina Concepcio**	**2.68**	**69**	P			**Pn**	**20 15 34.0 -0.5**
	0.1nm,0.1s,SNR=7.9							
EMIN					S		**Sn**	**20 16 06.0 -1.0**
	0.1nm,0.1s,SNR=7.9							
EBAD	**Badajoz**	**2.94**	**49**	S			**Sn**	**20 16 11.3 -2.0**
	0.3nm,0.1s,SNR=7.9							
EBAD	**Badajoz**	**2.94**	**49**	S			**Sn**	**20 16 11.3 -2.0**
	0.3nm,0.1s,SNR=7.9							
ESPR	**Espera**	**3.19**	**88**	S			**Sn**	**20 16 18.7 -0.8**
	1.1nm,0.1s,SNR=7.9							
ESPR	**Espera**	**3.19**	**88**	S			**Sn**	**20 16 18.7 -0.8**
	1.1nm,0.1s,SNR=7.9							
PMRV	**Marv??o**	**3.22**	**36**	*e*Sn			**Sn**	**20 16 19.6 -0.7**
PMRV	**Marv??o**	**3.22**	**36**	S			**Sn**	**20 16 19.6 -0.7**
PMRV	**Marv??o**	**3.22**	**36**	S			**Sn**	**20 16 19.6 -0.7**
ECAB	**El Cabril**	**3.72**	**69**	P			**Pn**	**20 15 49.4 +0.7**
	0.0nm,0.1s,SNR=7.9							
ECAB					S		**Sn**	**20 16 31.5 -1.2**
	0.2nm,0.2s,SNR=7.9							
ECAB	**El Cabril**	**3.72**	**69**	P			**Pn**	**20 15 49.4 +0.7**
	SNR=7.9							
ECAB					S		**Sn**	**20 16 31.5 -1.2**
	0.2nm,0.2s,SNR=7.9							

DJA 11 20:16:51.4±0.5, 10°S±5°×10°8E±°, h10km, M4.0/17, mb4.1/3, MLv4.0/17, South of Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMJI	**Cimerak**	**2.25**	**16**	P	Pn	20 17 28.6	-0.1
CNJI	**Cibinong**	**2.72**	**345**	P	Pn	20 17 34.7	-0.5
LEM	**Lembang**	**3.12**	**356**	P	Pn	20 17 41.4	+0.6
SKJI	**Sukabumi**	**3.19**	**337**	P	Pn	20 17 42.0	+0.3
UGM	**Wanagama**	**3.35**	**53**	P	Pn	20 17 44.7	+0.8
PCJI	**Pacitan**	**3.74**	**62**	P	Pn	20 17 47.8	-1.4
PCJI				S	Sn	20 18 34.6	+1.2
CGJI	**Cibinong**	**3.94**	**327**	P	Pn	20 17 52.7	+0.7
PWJI	**Pagerwojo**	**4.37**	**64**	P	Pn	20 17 53.6	-4.3
GMJI	**Gumukmas**	**5.79**	**74**	P	Pn	20 18 19.1	+1.7
	39nm,2.0s,0.2nm						
JAGI	**Jajag, Banyuwa**	**6.41**	**77**	P	Pn	20 18 27.8	+1.8
	31nm,1.2s,0.2nm						
LHSI	**Lahat**	**7.44**	**325**	P	Pn	20 18 40.3	+0.2

*ISCJB **11** 20:17:26.7±0.4, 36°.49N±0°.04×70°.89E±0°.05, h188km, mb3.6/12, Error ellipse: s-maj=6.6km s-min=3.8km az=145.1*
*IDC **11** 20:17:28.1±0.9, 36°.39N×70°.86E, h188km±7km, mb3.4/14, mb1 3.6/19, mb1mx3.3/42, mbtmp4.0/19, Error ellipse: s-maj=14.7km s-min=10.6km az=25.0*
*NNC **11** 20:17:32.5±1.2, 36°.88N×70°.82E, h176km±9km, mb3.2, mpv4.1, Error ellipse: s-maj=12.1km s-min=6.9km az=155.0*
ISC 11 20:17:27.6±0.5, 36°.48N±0°.05×70°.88E±0°.05, h188km, n43, σ1°80/55, mb3.7/12, 7C-10D, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**2.83**	**326**	⇑P		**Pn**	**20 18 14.8 0.0**
	72nm,0.4s						
DZET				⇑S		**Sn**	**20 18 48.5 -3.1**
	479nm,0.5s						
MNAS	**Manas**	**6.13**	**11**	⇑P		**Pn**	**20 18 56.2 -0.3**
	5.1nm,0.4s						
MNAS				⇑S		**Sn**	**20 20 02.1 -4.5**
	34nm,0.6s						
DHRM	**DHARAMSHALA**	**6.16**	**132**	*e*P		**Pn**	**20 18 57.7 +0.6**
DHRM				*e*S		**Sn**	**20 20 05.6 -2.0**
DHRM				IAML			20 20 07.3
	comp=N,291nm,0.0s						
DHRM				IAML			20 20 07.6
	comp=E,326nm,0.3s						
KK31	**Karatay Array**	**6.62**	**358**	P		**Pn**	**20 19 02.4 -0.4**
	comp=E,5.1nm,0.4s,baz=188,slow=12,SNR=142						
KK31				⇓S		Sn	20 20 12.1 -5.9
	comp=E,33nm,0.6s,baz=164,slow=13,SNR=21						
AAK	**Ala-Archa**	**6.75**	**23**	P		**Pn**	**20 19 04.5 -0.1**
	comp=E,3.4nm,0.3s,baz=196,slow=8.4,SNR=42						
AAK				S		**Sn**	**20 20 19.1 -2.2**
	comp=E,0.9nm,0.3s,baz=48,slow=6.8,SNR=9.0						
AAK	**Ala-Archa**	**6.75**	**23**	⇓P		**Pn**	**20 19 04.4 -0.1**
	comp=E,4.5nm,0.3s						
AAK				⇑S		**Sn**	**20 20 19.1 -2.2**
	comp=E,14nm,0.6s						
TKM2	**Tokmak 2**	**7.39**	**28**	⇓P		**Pn**	**20 19 12.5 -0.5**
	comp=E,16nm,0.7s						
TKM2				⇓S		**Sn**	**20 20 34.3 -2.2**
	comp=E,11nm,0.9s						
SMLA	**Simla**	**7.48**	**134**	*e*P		**Pn**	**20 19 12.7 -1.4**
SMLA				*e*S		**Sn**	**20 20 35.3 -3.1**
SMLA				IAML			20 20 38.3
	comp=E,111nm,0.7s						
SMLA				IAML			20 20 39.0
	comp=N,115nm,0.3s						
DDI	**Dehra Dun**	**8.59**	**134**	*e*S		**Sn**	**20 20 59.8 -5.2**
NDI	**New Delhi**	**9.44**	**144**	*e*S		Sn	20 21 18.5 -6.7
GEYT	**Alibeck**	**10.28**	**282**	P		**Pn**	**20 19 49.4 -1.2**
	comp=N,0.8nm,0.3s,baz=115,slow=8.9,SNR=10						
GEYT				S		**Sn**	**20 21 40.8 -4.4**
	comp=N,1.9nm,0.3s,baz=130,slow=13,SNR=8.3						
PYUN	**Piuthan**	**13.21**	**126**	*e*P		**Pn**	**20 20 27.5 -1.0**
	comp=N,20nm,0.4s						
MK31	**Makanchi Array**	**13.36**	**36**	⇓P		**P**	**20 20 33.0 0.0**
	comp=N,2.2nm,0.7s,baz=227,slow=12,SNR=18						
MKAR	**Makanchi Array**	**13.36**	**36**	P		**Pn**	**20 20 30.0 +0.1**
	comp=N,0.2nm,0.3s,baz=218,slow=10,SNR=13						
KOLN	**Koldanda**	**13.84**	**125**	*e*P		**Pn**	**20 20 35.6 -0.6**
	comp=N,8.9nm,0.3s						
BHPL	**Bhopal**	**14.36**	**155**	*e*P		**P**	**20 20 45.5 +1.2**
BHPL				*ex*		x	20 23 13.5
GKN	**Gorkha**	**14.38**	**122**	*e*P		**Pn**	**20 20 42.9 0.0**
	comp=N,29nm,0.4s						
KKN	**Kakani**	**14.95**	**121**	*e*P		**P**	**20 20 51.0 0.0**
	comp=N,30nm,0.5s						
AB31	**Akbulak array**	**15.05**	**331**	⇑P		**Pn**	**20 20 50.1 -0.7**
	comp=N,3.5nm,0.6s,baz=145,slow=12,SNR=42						
AB31				⇑S		**S**	**20 23 34.4 -4.6**
	comp=N,1.7nm,0.5s,baz=158,slow=23,SNR=7.8						
PKIN	**Phulchoki**	**15.17**	**122**	*e*P		**P**	**20 20 53.9 +0.4**
	comp=N,33nm,0.5s						
KURBB	**Kurchatov Arra**	**15.17**	**19**	P		**Pn**	**20 20 50.0 -2.3**
	comp=N,0.0nm,0.3s,baz=212,slow=10.0,SNR=5.4						
ZRNK	**Zerenda**	**16.52**	**356**	⇓P		**Pn**	**20 21 09.0 +0.5**
	comp=N,1.5nm,0.6s						
BVA0	**Borovoye Array**	**16.55**	**359**	⇓P		**Pn**	**20 21 09.8 +0.9**
	comp=N,2.4nm,1.0s,baz=169,slow=21,SNR=12						
BVAR	**Borovoye Array**	**16.55**	**359**	P		**Pn**	**20 21 09.9 +1.0**
	comp=N,0.3nm,0.3s,baz=169,slow=10,SNR=12						
AKTO	**Aktyubinsk**	**16.75**	**330**	P		**Pn**	**20 21 12.1 +0.9**
	comp=N,1.9nm,0.3s,baz=140,slow=11,SNR=30						
AKTO	**Aktyubinsk**	**16.75**	**330**	⇓P		**Pn**	**20 21 11.9 +0.6**
	comp=N,9.5nm,0.6s						
AKTO				⇓S		**S**	**20 24 17.0 +1.7**
	comp=N,3.1nm,0.6s						
CHKZ	**Chkalovo**	**17.19**	**359**	⇓P		**Pn**	**20 21 16.7 +0.2**
	comp=N,1.6nm,0.6s						
ZALV	**Zalesovo Beam**	**19.97**	**25**	P		**P**	**20 21 45.9 +0.6**
	comp=N,5.3nm,0.5s,baz=223,slow=11,SNR=29						
GNI	**Garni**	**20.80**	**288**	P		**P**	**20 21 56.1 +1.6**
	comp=N,1.8nm,0.4s,baz=110,slow=16,SNR=2.9						
SONM	**Songino Array**	**28.43**	**55**	P		**P**	**20 23 06.5 +1.7**
	comp=N,0.7nm,0.7s,baz=254,slow=8.9,SNR=3.0						
CMAR	**Chiang Mai Arr**	**30.54**	**118**	P		**P**	**20 23 25.4 +1.9**
	baz=296,slow=8.8						
AKASG	**Malin Array Be**	**32.88**	**309**	P		**P**	**20 23 44.5 +0.9**
	comp=N,0.2nm,0.4s,baz=81,slow=7.7,SNR=6.2						
FINES	**FINESS Array B**	**37.44**	**326**	P		**P**	**20 24 23.9 +1.5**
	comp=N,0.8nm,0.4s,baz=121,slow=8.5,SNR=9.3						
ARCES	**ARCESS Array B**	**41.12**	**338**	P		**P**	**20 24 54.6 +1.8**
	comp=N,3.2nm,0.7s,baz=112,slow=8.6,SNR=14						
NB2	**NORSAR Subarra**	**44.33**	**323**	P		**P**	**20 25 19.8 +1.1**
	comp=Z,1.2nm,0.5s,baz=94,slow=7.9						
NOA	**NORSAR Array B**	**44.33**	**323**	P		**P**	**20 25 19.9 +1.2**
	comp=Z,1.3nm,0.5s,baz=97,slow=7.8,SNR=12						
NOA				pP		**pP**	**20 26 00.5 +1.0**
	comp=Z,1.4nm,0.9s,baz=96,slow=8.1,SNR=3.5						
KLR	**Kul'dur**	**45.24**	**54**	P		**P**	**20 25 26.5 +0.6**
	comp=Z,0.5nm,0.4s,baz=235,slow=12,SNR=3.3						
TIXI	**Tiksi**	**45.83**	**22**	P		**P**	**20 25 31.1 +0.8**
	comp=Z,2.1nm,0.6s,baz=258,slow=3.0,SNR=10						
TORD	**Torodi Ar. Bea**	**65.62**	**269**	P		**P**	**20 27 50.9 -0.8**
	comp=Z,0.2nm,0.4s,baz=51,slow=6.1,SNR=8.0						
ILAR	**Eielson Array**	**74.82**	**16**	P		**P**	**20 28 46.7 -0.2**
	comp=Z,0.4nm,0.8s,baz=322,slow=5.7,SNR=4.3						
YKA	**Yellowknife Ar**	**81.27**	**3**	P		**P**	**20 29 23.3 +1.0**
	comp=Z,0.8nm,0.4s,baz=351,slow=5.4,SNR=20						
YKA				pP		**pP**	**20 30 09.4 +1.3**
	comp=Z,0.4nm,0.7s,baz=351,slow=5.6,SNR=3.6						
WRA	**Warramunga Arr**	**82.07**	**122**	P		**P**	**20 29 26.8 -0.4**
	comp=Z,1.6nm,0.5s,baz=324,slow=4.9,SNR=31						
WRA				pP		**pP**	**20 30 13.4 +0.4**
	comp=Z,0.4nm,0.3s,baz=40,slow=31,SNR=2.1						
ASAR	**Alice Springs**	**84.33**	**125**	P		**P**	**20 29 38.5 -0.2**
	comp=Z,2.1nm,0.6s,baz=310,slow=5.0,SNR=43						

*NNC **11** 20:28:41.1±1.0, 41°.54N×81°.25E, h6km±6km, mb3.5, mpv3.1, Error ellipse: s-maj=10.4km s-min=7.6km az=161.0*
*SOME **11** 20:28:41.6, 41°.60N×80°.97E, h15km*
ISC 11 20:28:42.6±2.1, 41°.69N±0°.09×81°.03E±0°.07, h10km, n22, σ2°14/40, 4C-5D, Southern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHLS	**Shalkode**	**1.70**	**330**	*e*P		**Pb**	**20 29 14.4 +0.4**
	22nm,0.1s						
SHLS				*e*S		**Sg**	**20 29 38.1 +0.9**
	64nm,0.3s						
KTMS	**Ketmen**	**1.83**	**344**	*e*P		**Pb**	**20 29 16.6 +0.4**
	16nm,0.1s						
KTMS				*e*S		**Sg**	**20 29 41.7 +0.3**
	84nm,0.3s						
PDGK	**Podgornoye**	**2.00**	**326**	⇑P		**Pb**	**20 29 18.2 -0.8**
	18nm,0.4s						
PDGK				⇓S		**Sg**	**20 29 47.4 +0.6**
	72nm,0.8s						
SATY	**Saty**	**2.38**	**306**	*e*P		**Pb**	**20 29 26.3 +0.6**
	25nm,0.4s						
ZHN	**Zhinishke**	**2.43**	**308**	*e*P		**Pb**	**20 29 26.6 +0.2**
	12nm,0.2s						
KPKS	**Kokpek**	**2.48**	**316**	*e*P		**Pb**	**20 29 27.3 -0.1**
	36nm,0.2s						
KPKS				*e*S		**Sb**	**20 30 00.2 +2.1**
	143nm,0.4s						
KURS	**Kuram**	**2.77**	**311**	*e*P		**Pg**	**20 29 34.2 -1.6**
	5.2nm,0.4s						
KURS				*e*S		**Sg**	**20 30 11.6 -0.2**
	29nm,0.8s						
DJR	**Jarkent**	**2.79**	**341**	*e*P		**Pb**	**20 29 33.0 +0.3**
	10nm,0.4s						
DJR				*e*S		**Sb**	**20 30 10.0 +3.0**
	34nm,0.6s						
MNBS	**Baschi**	**3.07**	**322**	*e*P		**Pb**	**20 29 34.3 -3.1**
	1.3nm,0.3s						
MNBS				*e*S		**Sb**	**20 30 12.1 -2.9**
	94nm,0.4s						
KOTS	**Kotyrbulak**	**3.29**	**299**	*e*P		**Pb**	**20 29 39.6 -1.6**
KOTS				*e*S		**Sb**	**20 30 21.4 +0.1**
MDOK	**Medeo**	**3.30**	**298**	*e*P		**Pb**	**20 29 41.5 +0.2**
	6.2nm,0.4s						
MDOK				*e*S		**Sb**	**20 30 24.7 +3.2**
	19nm,0.6s						
TNSS	**Tian-Shan**	**3.32**	**295**	*e*P		**Pb**	**20 29 41.2 -0.6**
	2.1nm,0.5s						
TNSS				*e*S		**Sb**	**20 30 23.9 +1.5**
	10nm,0.4s						
ARXS	**Arharly**	**3.45**	**318**	*e*P		**Pb**	**20 29 43.6 -0.3**
	4.2nm,0.3s						
ARXS				*e*S		**Sb**	**20 30 28.1 +2.2**
	20nm,0.4s						
CHKK	**Chushkaly**	**3.68**	**308**	*e*P		**Pb**	**20 29 48.9 +1.1**
	3.5nm,0.3s						
CHKK				*e*S		**Sg**	**20 30 37.1 -3.7**
	24nm,0.3s						
MTBS	**Maitube**	**3.70**	**294**	*e*P		**Pb**	**20 29 48.6 +0.4**
	3.4nm,0.2s						
MTBS				*e*S		**Sb**	**20 30 36.4 +3.3**
	8.3nm,0.4s						
KAPS	**Kapalarasan**	**3.80**	**342**	*e*P		**Pb**	**20 29 50.5 +0.8**
	3.1nm,0.4s						
KAPS				*e*S		**Sb**	**20 30 40.2 +4.4**
	5.9nm,0.5s						
KST	**Kastek**	**3.99**	**291**	*e*P		**Pb**	**20 29 53.8 +0.7**
	3.3nm,0.7s						
KST				*e*S		**Sb**	**20 30 45.6 +4.1**
	12nm,0.8s						
KUU	**Kurty**	**4.10**	**304**	*e*P		**Pg**	**20 29 58.3 -2.8**
	4.2nm,0.5s						
KUU				*e*S		**Sg**	**20 30 53.1 -1.0**
	11nm,0.6s						
DGS	**Degeres**	**4.19**	**293**	*e*P		**Pb**	**20 29 58.0 +1.5**
	2.5nm,0.2s						
DGS				*e*S		**Sg**	**20 30 53.2 -4.0**
	9.0nm,0.4s						
TKM2	**Tokmak 2**	**4.22**	**289**	⇑Pn		**Pn**	**20 29 49.0 +1.8**
	1.0nm,0.3s						
TKM2				⇓Lg		Lg	20 31 01.2
	8.1nm,0.6s						
AAK	**Ala-Archa**	**4.95**	**283**	⇑Pg		**Pg**	**20 30 15.5 -1.9**
	1.5nm,0.5s						
AAK				⇓Lg		Lg	20 31 24.9
	7.7nm,0.8s						
MK31	**Makanchi Array**	**5.18**	**10**	⇓Pn		**Pn**	**20 30 01.4 +1.2**
	0.3nm,0.2s,baz=202,slow=14,SNR=24						
MK31				⇓Pg		**Pg**	**20 30 18.2 -3.6**
	0.7nm,0.5s						
MK31				⇑Lg		Lg	20 31 28.5
	1.9nm,0.5s,baz=195,slow=22,SNR=3.7						

SOME 11 20:29:09.3, 41°.53N×81°.32E, h5km, Southern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHLS	**Shalkode**	**1.94**	**327**	*e*P	Pb	20 29 45.2	-0.1
	38nm,0.6s						
SHLS				*e*S	Sg	20 30 11.5	-0.2
	93nm,0.5s						
SATY	**Saty**	**2.64**	**306**	*e*P	Pb	20 29 58.5	+1.3
	48nm,0.4s						
SATY				*e*S	Sg	20 30 33.7	-0.5
	67nm,0.6s						
SATY	**Saty**	**2.64**	**306**	*e*S	Pb	20 29 58.5	+1.3
	38nm,0.4s						
ZHN	**Zhinishke**	**2.69**	**308**	*e*P	Pb	20 29 59.1	+1.1
	28nm,0.4s						
ZHN				*e*S	Sg	20 30 34.7	-1.0
	44nm,0.2s						
ZHN	**Zhinishke**	**2.69**	**308**	*e*S	Pb	20 29 59.2	+1.2
	38nm,0.3s						
KPKS	**Kokpek**	**2.74**	**316**	*e*P	Pb	20 29 59.5	+0.6
	92nm,0.5s						
KPKS				*e*S	Sg	20 30 35.6	-1.8
	124nm,0.5s						
KURS	**Kuram**	**3.04**	**311**	*e*P	Pb	20 30 05.0	+1.1
	25nm,0.8s						
KURS				*e*S	Sg	20 30 44.9	-1.9
	17nm,0.7s						

IDC 11 20:34:50.1±1.6, 12°.61S×125°.21E, h0km, mb3.2/1, mb1 3.6/4, mb1mx3.3/39, mbtmp3.4/4, ML3.0/3, Error ellipse: s-maj=82.6km s-min=26.4km az=62.0, South of Timor

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**5.47**	**176**	Pn	Pn	20 36 12.7	-0.3
	0.3nm,0.3s,baz=5.4,slow=10,SNR=6.8						
WRA	**Warramunga Arr**	**11.40**	**131**	Pn	Pn	20 37 34.2	-0.1
	0.1nm,0.3s,baz=308,slow=15,SNR=6.4						
ASAR	**Alice Springs**	**13.75**	**144**	Pn	Pn	20 38 06.8	+0.4
	0.2nm,0.3s,baz=325,slow=14,SNR=16						
MKAR	**Makanchi Array**	**70.52**	**330**	P	P	20 46 06.8	0.0
	0.1nm,0.4s,baz=149,slow=5.9,SNR=3.4						

*GCMT **11** 20:35:20.0±0.5, 36°.94S×96°.29W, h15km±3km, MW4.9/64, Moment Tensor Solution. s35,c40; s64,c82; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}0.46±.12; $M_{\theta\theta}$-0.30±.11; $M_{\phi\phi}$-0.15±.12; $M_{r\theta}$1.17±.39; $M_{\theta\phi}$-2.06±.14; $M_{\phi r}$0.16±.20; Best double couple: $M_0$2.37800×10^{16} NP1:ϕ_s88.00000°, δ85.00000°, λ5.00000°. Principal axes: T 2.1590, Plg25.0000°, Azm40.0000°; N 0.4390, Plg59.0000°, Azm261.0000°; P -2.5970, Plg18.0000°, Azm139.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
IDC 11 20:35:08.5±3.9, 36°.67S×96°.30W, h0km, mb3.7/4, mb1 4.1/4, mb1mx3.9/33, mbtmp3.8/4, MS3.8/10, Ms1 3.8/10, ms1mx3.6/32 Error ellipse: s-maj=106.2km s-min=34.9km az=31.0, West Chile Rise

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLCA	**Paso Flores**	**20.48**	**109**	P	P	20 39 47.5	-0.4
	2.1nm,0.9s,baz=283,slow=10,SNR=4.5						
PLCA				LR	LR	20 45 40.9	
	comp=Z,217nm,19.8s,baz=304,slow=31						
LPAZ	**La Paz**	**32.18**	**58**	P	P	20 41 38.6	-0.2
	1.9nm,1.0s,baz=206,slow=5.3,SNR=3.9						
LPAZ				LR	LR	20 52 28.1	
	comp=Z,75nm,18.4s,baz=249,slow=32						
CPUP	**Villa Florida**	**34.59**	**84**	P	P	20 41 59.4	+0.3
	0.6nm,0.5s,baz=228,slow=5.4,SNR=2.1		

WHF				*e*S		**Sb**	**20 35 45.2 -0.3**
	baz=261						
IRIF	**Iriomote-Funau**	**1.19**	**72**	P		**Pb**	**20 35 31.6 +0.4**
IRIF				S		**Sn**	**20 35 47.0 0.0**
HATJ	**Hateruma jima**	**1.20**	**86**	P		**Pn**	**20 35 31.1 -0.3**
HATJ				*e*S		**Sn**	**20 35 47.3 -0.1**
NSK	**Sanguang**	**1.25**	**304**	P		**Pb**	**20 35 32.5 0.0**
	baz=287						
NSK				*e*S		**Sn**	**20 35 49.1 +0.3**
	baz=287						
JKRS	**Kuro-shima**	**1.41**	**79**	P		**Pg**	**20 35 36.2 +0.1**
JKRS				S		**Sb**	**20 35 53.1 +0.2**
SMLT	**Sun Moon Lake**	**1.46**	**267**	*e*P		**Pb**	**20 35 36.2 +0.1**
	baz=252						
TYC	**Yuchr**	**1.50**	**268**	*e*P		**Pb**	**20 35 36.9 +0.3**
	baz=264						
NSTT	**Nanjuang**	**1.51**	**296**	*e*P		**Pb**	**20 35 36.9 +0.1**
	baz=293						
JIJ	**Ishigaki jima**	**1.56**	**75**	P		**Pb**	**20 35 37.6 0.0**
JIJ				*e*S		**Sn**	**20 35 56.1 -0.1**
JISG	**Ishigakijimahi**	**1.77**	**69**	P		**Pn**	**20 35 38.9 -0.2**
JISG				S		**Sb**	**20 36 03.2 0.0**

IDC 11 20:36:50.9±1.5, 7°.85S×122°.38E, h0km, mb3.5/1, mb1 3.8/5, mb1mx3.5/44, mbtmp3.6/5, ML3.2/4, MS2.9/2, Ms1 2.9/2, ms1mx2.6/29, Error ellipse: s-maj=128.1km s-min=22.2km az=57.0, Flores Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAPI	**Kappang**	**3.84**	**317**	Pn	Pn	20 37 52.4	+1.1
	0.4nm,0.3s,baz=90,slow=14,SNR=2.6						
KAPI				Sn	Sb	20 38 42.0	-4.7
	0.4nm,0.3s,baz=205,slow=14,SNR=2.4						
KAPI				LR	LR	20 39 28.9	
	comp=Z,140nm,18.3s,baz=104,slow=41						
FITZ	**Fitzroy Crossi**	**10.67**	**163**	Pn	Pn	20 39 24.2	-1.0
	0.2nm,0.3s,baz=352,slow=7.1,SNR=3.4						
FITZ				Sn	Sn	20 41 15.2	-10
	0.1nm,0.3s,baz=101,slow=19,SNR=1.8						
FITZ				LR	LR	20 44 05.8	
	comp=Z,72nm,20.3s,baz=306,slow=41						
WRA	**Warramunga Arr**	**16.70**	**137**	Pn	Pn	20 40 45.6	-0.9
	0.1nm,0.3s,baz=309,slow=13,SNR=5.5						
WRA				Sn	Sn	20 43 44.2	-8.5
	0.0nm,0.3s,baz=300,slow=22,SNR=2.7						
ASAR	**Alice Springs**	**19.22**	**146**	P	Pn	20 41 18.2	+0.5
	0.2nm,0.3s,baz=328,slow=13,SNR=13						
MKAR	**Makanchi Array**	**65.03**	**331**	P	P	20 47 32.5	-0.5
	0.3nm,0.6s,baz=139,slow=7.1,SNR=5.6						

JMA 11 20:37:14.7±0.2, 37°.79N×143°.99E, h35km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.19**	**288**	P	Pn	20 37 50.2	+1.7
JIO				S	Sn	20 38 15.9	+1.6
OFUJ	**Ofunato**	**2.23**	**306**	P	Pn	20 37 50.5	+1.3
JMK	**Ichinoseki**	**2.47**	**299**	P	Pn	20 37 54.2	+1.8
JMK				S	Sn	20 38 23.4	+2.1
JFK	**Kawauchi**	**2.51**	**261**	S	Sn	20 38 22.3	-0.2
JMM	**Marumori**	**2.53**	**273**	S	Sn	20 38 24.1	+1.2
JOU	**Okura**	**2.69**	**283**	P	Pn	20 37 57.5	+2.1
JOU				S	Sn	20 38 29.7	+2.9
JOM	**Ohasama**	**2.70**	**309**	P	Pn	20 37 57.5	+1.9
JOM				S	Sn	20 38 29.9	+2.9
JTH	**Tanohata**	**2.71**	**323**	*e*S	Sn	20 38 29.5	+2.1
JFT	**Otama**	**2.91**	**266**	*e*S	Sn	20 38 34.0	+1.7
JYK	**Kaneyama**	**3.07**	**293**	P	Pn	20 38 03.1	+2.4
JYK				*e*S	Sn	20 38 38.7	+2.6
JRG	**Rokugo**	**3.08**	**302**	*e*S	Sn	20 38 40.6	+4.2

*IDC **11** 20:37:43.7±1.1, 37°.69N×1°.69W, h0km, mb3.8/3, mb1 4.0/8, mb1mx3.6/62, mbtmp3.9/8, ML4.1/5, MS3.1/4, Ms1 3.1/4, ms1mx2.7/47, Error ellipse: s-maj=22.7km s-min=14.4km az=49.0*
*ISCJB **11** 20:37:43.3±0.3, 37°.84N±0°.02×1°.80W±0°.01, h8km±2km, mb3.8/3, MS2.9/3, Error ellipse: s-maj=2.7km s-min=1.7km az=163.8*
*CSEM **11** 20:37:44.4±0.1, 37°.73N×1°.72W, h5km, ML4.3/37, Mw3.9, Error ellipse: s-maj=2.3km s-min=1.6km az=161.0*
*CRAAG **11** 20:37:44.0, 37°.76N×1°.72W, Mw3.9*
*IGIL **11** 20:37:45.8, 37°.68N×1°.64W, h6km, ML3.6*
*MDD **11** 20:37:45.4±0.2, 37°.73N×1°.70W, h4km, mbLg4.0/44, Error ellipse: s-maj=1.8km s-min=1.6km az=177.0*
MDD EMS: IV INTENSIDAD MAXIMA.
*SFS **11** 20:37:45.0, 37°.68N×1°.64W, h6km, ML3.9*
*LDG **11** 20:37:45.2±0.1, 37°.65N×1°.63W, h2km, Ml4.1/30, Error ellipse: s-maj=3.1km s-min=1.5km az=143.0*
*INMG **11** 20:37:45.5±1.0, 37°.76N×1°.68W, h5km±1km, ML3.9, Error ellipse: s-maj=1.9km s-min=1.2km az=131.0*
*STR **11** 20:37:48.3±0.7, 37°.95N×1°.67W, h5km, Ml4.2, Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*

ISC 11 20:37:44.2±1.1, 37°.74N±0°.02×1°.72W±0°.02, h6km±8km, n288, σ1$46/429, mb4.0/3, MS3.0/3, 15C-8D, Spain

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VELZ	**Velez Rubio**	**0.26**	**235**	⇑Pg	Pg	**20 37 50.0**	**+0.6**
	SNR=18						
VELZ				Lg	Lg	20 37 53.7	
	SNR=7.9						
VELZ	**Velez Rubio**	**0.26**	**235**	Pg	Pg	**20 37 50.0**	**+0.6**
	SNR=18						
VELZ				Lg	Lg	20 37 53.7	
	SNR=7.9						
EMUR	**La Murta**	**0.39**	**74**	⇑Pg	Pg	**20 37 52.1**	**+0.2**
	2μm,0.4s,SNR=18						
EMUR				Lg	Lg	20 37 58.0	
	3μm,0.2s,SNR=5.0						
EMUR	**La Murta**	**0.39**	**74**	Pg	Pg	**20 37 52.1**	**+0.2**
	2μm,0.4s,SNR=18						
EMUR				Lg	Lg	20 37 58.0	
	3μm,0.2s,SNR=5.0						
CART	**Cartagena**	**0.59**	**104**	Pg	Pg	**20 37 55.6**	**+0.1**
CART				Lg	Lg	20 38 02.3	
CART	**Cartagena**	**0.59**	**104**	*i* P	Pg	**20 37 55.6**	**+0.1**
CART				Lg	Lg	20 38 02.3	
EHUE	**Huescar**	**0.70**	**277**	⇑Pg	Pb	**20 37 58.8**	**-0.1**
	303nm,0.3s,SNR=18						
EHUE				Lg	Lg	20 38 09.3	
	554nm,0.4s,SNR=5.0						
EHUE	**Huescar**	**0.70**	**277**	Pg	Pb	**20 37 58.8**	**-0.1**
	303nm,0.3s,SNR=18						
EHUE				Lg	Lg	20 38 09.3	
	554nm,0.4s,SNR=5.0						
SESP	**Santiago Espad**	**0.76**	**301**	⇓Pg	Pb	**20 37 59.8**	**-0.2**
	416nm,0.4s,SNR=18						
SESP				Lg	Lg	20 38 12.8	
	4μm,0.2s,SNR=7.9						
SESP	**Santiago Espad**	**0.76**	**301**	Pg	Pb	**20 37 59.8**	**-0.2**
	416nm,0.4s,SNR=18						
SESP				Lg	Lg	20 38 12.8	
	4μm,0.2s,SNR=7.9						
ENIJ	**Nijar**	**0.86**	**207**	⇓Pg	Pb	**20 38 00.9**	**-0.6**
	2μm,0.5s,SNR=18						
ENIJ				Lg	Lg	20 38 11.7	
	3μm,0.3s,SNR=7.9						
ENIJ	**Nijar**	**0.86**	**207**	Pg	Pb	**20 38 00.9**	**-0.6**
	2μm,0.5s,SNR=18						
ENIJ				Lg	Lg	20 38 11.7	
	3μm,0.3s,SNR=7.9						
ETOB	**Tobarra**	**0.92**	**8**	⇓Pg	Pg	**20 38 02.4**	**+0.5**
	1μm,0.2s,SNR=18						
ETOB				Lg	Lg	20 38 16.8	
	4μm,0.2s,SNR=8.7						
ETOB	**Tobarra**	**0.92**	**8**	Pg	Pg	**20 38 02.4**	**+0.5**
	1μm,0.2s,SNR=18						
ETOB				Lg	Lg	20 38 16.8	
	4μm,0.2s,SNR=8.7						
EQES	**Quesada**	**1.08**	**274**	⇓Pg	Pb	**20 38 05.5**	**+0.1**
	938nm,0.3s,SNR=18						
EQES				Lg	Lg	20 38 23.3	
	1μm,0.2s,SNR=14						
EQES	**Quesada**	**1.08**	**274**	Pg	Pb	**20 38 05.5**	**+0.1**
	938nm,0.3s,SNR=18						
EQES				Lg	Lg	20 38 23.3	
	1μm,0.2s,SNR=14						
GORA	**Gorafe**	**1.08**	**257**	⇑Pg	Pb	**20 38 05.5**	**+0.1**
	216nm,0.2s,SNR=18						
GORA				Lg	Lg	20 38 22.8	
	3μm,0.3s,SNR=7.9						
GORA	**Gorafe**	**1.08**	**257**	Pg	Pb	**20 38 05.5**	**+0.1**
	216nm,0.2s,SNR=18						
GORA				Lg	Lg	20 38 22.8	
	3μm,0.3s,SNR=7.9						
EVIA	**Vianos**	**1.09**	**326**	⇓Pg	Pg	**20 38 05.8**	**+0.6**
	SNR=18						
EVIA	**Vianos**	**1.09**	**326**	Pg	Pg	**20 38 05.8**	**+0.6**
	SNR=18						
EBER	**Berja**	**1.25**	**229**	⇓Pn	Pb	**20 38 08.3**	**-0.1**
	344nm,0.3s,SNR=18						
EBER				Lg	Lg	20 38 26.6	
	3μm,0.6s,SNR=13						
EBER	**Berja**	**1.25**	**229**	Pn	Pb	**20 38 08.3**	**-0.1**
	344nm,0.3s,SNR=18						
EBER				Lg	Lg	20 38 26.6	
	3μm,0.6s,SNR=13						
AFON	**Font Roja**	**1.31**	**45**	Pn	Pn	**20 38 08.3**	**-0.9**
	5.1nm,0.2s,SNR=7.9						
AFON				Pg	Pn	**20 38 09.8**	**+0.6**
	32nm,0.3s,SNR=58						
AFON				Lg	Lg	20 38 27.6	
	3μm,0.9s,SNR=5.0						
AFON	**Font Roja**	**1.31**	**45**	Pn	Pn	**20 38 08.3**	**-0.9**
	5.1nm,0.2s,SNR=7.9						
AFON	**Font Roja**	**1.31**	**45**	Pg	Pn	**20 38 09.8**	**+0.6**
	32nm,0.3s,SNR=58						
AFON				Lg	Lg	20 38 27.5	
	3μm,0.9s,SNR=5.0						
EQUE	**Quentar**	**1.47**	**249**	Pn	Pb	**20 38 12.1**	**0.0**
	3.6nm,0.2s,SNR=8.5						
EQUE				Pg	Pg	**20 38 13.4**	**+1.0**
	325nm,0.3s,SNR=141						
EQUE				Lg	Lg	20 38 33.2	
	2μm,0.5s,SNR=14						
EQUE	**Quentar**	**1.47**	**249**	Pn	Pb	**20 38 12.1**	**0.0**
	3.6nm,0.2s,SNR=8.5						
ECOG	**Cogollos-Vega**	**1.54**	**253**	Pn	Pg	**20 38 14.0**	**+0.2**
	SNR=7.9						
ECOG				Pg	Pb	**20 38 15.0**	**+1.7**
	539nm,0.3s,SNR=120						
ECOG				Lg	Lg	20 38 35.6	
	SNR=7.9						
ECOG	**Cogollos-Vega**	**1.54**	**253**	Pn	Pg	**20 38 14.0**	**+0.2**
	SNR=7.9						
SELV	**Sierra Elvira**	**1.68**	**253**	Pn	Pg	**20 38 16.8**	**+0.4**
	473nm,0.7s,SNR=7.9						
SELV				Lg	Lg	20 38 40.6	
	1μm,0.6s,SNR=7.9						
SELV	**Sierra Elvira**	**1.68**	**253**	Pn	Pg	**20 38 16.8**	**+0.4**
	473nm,0.7s,SNR=7.9						
SELV				Lg	Lg	20 38 40.6	
	1μm,0.6s,SNR=7.9						
EBAN	**Banos Encina**	**1.69**	**285**	⇓Pn	Pb	**20 38 16.0**	**+0.2**
	370nm,0.2s,SNR=18						
EBAN	**Banos Encina**	**1.69**	**285**	Pn	Pb	**20 38 16.0**	**+0.2**
	370nm,0.2s,SNR=18						
EGOR	**Sierra Gorda,**	**2.00**	**253**	Pg	Pg	**20 38 21.9**	**-0.8**
	60nm,0.2s,SNR=4.0						
EGOR				Lg	Lg	20 38 48.4	
	980nm,0.5s,SNR=7.9						
EGOR	**Sierra Gorda,**	**2.00**	**253**	Pg	Pg	**20 38 21.9**	**-0.8**
	60nm,0.2s,SNR=4.0						
EGOR				Lg	Lg	20 38 48.4	
	980nm,0.5s,SNR=7.9						
EALB	**Alboran**	**2.08**	**211**	Pn	Pn	**20 38 18.1**	**-1.6**
	138nm,0.4s,SNR=5.9						
EALB	**Alboran**	**2.08**	**211**	Pn	Pn	**20 38 18.1**	**-1.6**
	138nm,0.4s,SNR=5.9						
USTO	**Oran**	**2.21**	**155**	P	Pn	**20 38 22.0**	**+0.6**
EADA	**Adamuz**	**2.30**	**282**	Pn	Pn	**20 38 23.6**	**+0.8**
	33nm,0.1s,SNR=201						
EADA				Pg	Pg	**20 38 28.8**	**+0.5**
	162nm,0.4s,SNR=33						
EADA				Sn	Sn	**20 38 52.6**	**+1.1**
	134nm,0.2s,SNR=11						
EADA				Lg	Lg	20 39 01.1	
	1μm,0.5s,SNR=5.0						
EADA	**Adamuz**	**2.30**	**282**	Pn	Pn	**20 38 23.6**	**+0.8**
	33nm,0.1s,SNR=201						
EMAL	**Malaga-Limoner**	**2.37**	**247**	*e*P	Pb	**20 38 27.2**	**-0.2**
OLHC	**Oulhaca**	**2.49**	**174**	P	Pn	**20 38 24.0**	**-1.4**
OLHC	**Oulhaca**	**2.49**	**174**	P	Pn	**20 38 24.0**	**-1.4**
OKGL	**Djebel Kef Gue**	**2.54**	**131**	P	Pg	**20 38 33.0**	**+0.1**
OKGL	**Djebel Kef Gue**	**2.54**	**131**	Pn	Pn	**20 38 25.4**	**-0.6**
	135nm,0.2s,SNR=7.9						
OKGL				Sn	Sn	**20 38 54.5**	**-2.8**
	1μm,0.4s,SNR=7.9						
OKGL	**Djebel Kef Gue**	**2.54**	**131**	Pn	Pn	**20 38 25.4**	**-0.6**
	135nm,0.2s,SNR=7.9						
ESDC	**Sonseca Array**	**2.62**	**318**	Pn	Pn	**20 38 27.5**	**+0.3**
	22nm,0.3s,baz=132,slow=14,SNR=128						
ESDC				Pg	Pg	**20 38 34.1**	**-0.2**
	118nm,0.3s,baz=134,slow=17,SNR=107						
ESDC				Sn	Sn	**20 38 58.1**	**-1.2**
	98nm,0.3s,baz=132,slow=23,SNR=13						
ESDC				Lg	Lg	20 39 08.0	
	280nm,0.3s,baz=136,slow=30,SNR=13						
ESDC	**Sonseca Array**	**2.62**	**318**	⇑Pn	Pn	**20 38 27.4**	**+0.3**
	36nm,0.3s,baz=128,slow=13,SNR=18						
ESDC				Pg	Pg	**20 38 34.0**	**-0.3**
	140nm,0.3s,baz=135,slow=17,SNR=7.3						
ESDC				Sn	Sn	**20 38 58.3**	**-0.9**
	44nm,0.2s,baz=132,slow=23,SNR=12						
ESDC				Lg	Lg	20 39 08.5	
	180nm,0.2s,baz=139,slow=29,SNR=12						
ESDC	**Sonseca Array**	**2.62**	**318**	Pn	Pn	**20 38 27.4**	**+0.3**
	36nm,0.3s,SNR=18						
ESDC	**Sonseca Array**	**2.62**	**318**	Pg	Pg	**20 38 34.0**	**-0.3**
	140nm,0.3s,SNR=7.3						
ESDC				Sn	Sn	**20 38 58.3**	**-0.9**
	44nm,0.2s,SNR=12						
ESDC				Lg	Lg	20 39 08.5	
	180nm,0.2s,SNR=12						
ODJA	**Bouhanifia**	**2.71**	**152**	P	Pn	**20 38 27.6**	**-0.8**
ODJA	**Bouhanifia**	**2.71**	**152**	P	Pn	**20 38 27.6**	**-0.8**
OJBR	**Djebel Berber**	**2.71**	**142**	P	Pn	**20 38 26.0**	**-2.4**
OJBR	**Djebel Berber**	**2.71**	**142**	P	Pn	**20 38 26.0**	**-2.4**
EIBI	**Ibiza**	**2.73**	**61**	⇑Pn	Pn	**20 38 27.4**	**-1.2**
	106nm,0.2s,SNR=18						
EIBI				Sn	Sn	**20 38 58.9**	**-3.0**
	95nm,0.2s,SNR=5.0						
EIBI	**Ibiza**	**2.73**	**61**	Pn	Pn	**20 38 27.4**	**-1.2**
	106nm,0.2s,SNR=18						
EMOS	**Mosqueruela**	**2.80**	**20**	⇑Pn	Pn	**20 38 30.0**	**+0.2**
	3.7nm,0.2s,SNR=18						
EMOS				Pg	Pg	**20 38 36.9**	**-0.9**
	38nm,0.3s,SNR=22						
EMOS				Lg	Lg	20 39 13.4	
	372nm,0.9s,SNR=12						
EMOS	**Mosqueruela**	**2.80**	**20**	Pn	Pn	**20 38 30.0**	**+0.2**
	3.7nm,0.2s,SNR=18						
EMOS	**Mosqueruela**	**2.80**	**20**	Pg	Pg	**20 38 36.9**	**-0.9**
	38nm,0.3s,SNR=22						
EMOS				Lg	Lg	20 39 13.4	
	372nm,0.9s,SNR=12						
EANR	**'Ain N'Sour**	**2.88**	**127**	P	Pn	**20 38 29.7**	**-1.0**
EANR	**'Ain N'Sour**	**2.88**	**127**	P	Pn	**20 38 29.7**	**-1.0**
ECHA	**Ech Chlef**	**2.93**	**122**	P	Pn	**20 38 30.8**	**-0.6**
ECHA	**Ech Chlef**	**2.93**	**122**	P	Pn	**20 38 30.8**	**-0.6**
ECAB	**El Cabril**	**2.95**	**278**	Pn	Pn	**20 38 32.1**	**+0.5**
	129nm,0.4s,SNR=282						
ECAB				Pg	Pg	**20 38 40.5**	**-0.2**
	126nm,0.4s,SNR=14						
ECAB				Sn	Sn	**20 39 06.9**	**-0.5**
	96nm,0.3s,SNR=8.6						
ECAB				Lg	Lg	20 39 20.2	
	269nm,0.3s,SNR=5.0						
ECAB	**El Cabril**	**2.95**	**278**	Pn	Pn	**20 38 32.1**	**+0.5**
	129nm,0.4s,SNR=282						
EBNR	**Beni Rached**	**2.97**	**118**	P	Pn	**20 38 34.5**	**+2.5**
EBNR	**Beni Rached**	**2.97**	**118**	P	Pn	**20 38 34.5**	**+2.5**
OJGS	**Djebel Guires**	**2.98**	**138**	P	Pn	20 38 25.0	-7.2
EJIF	**Jimena Fronter**	**3.26**	**248**	Pn	Pn	**20 38 37.5**	**+1.5**
	12nm,0.5s,SNR=7.9						
EJIF				Pg	Pg	**20 38 45.5**	**-1.2**
	80nm,0.6s,SNR=7.9						
EJIF				Lg	Lg	20 39 28.7	
	116nm,0.6s,SNR=7.9						
EJIF	**Jimena Fronter**	**3.26**	**248**	Pn	Pn	**20 38 37.5**	**+1.5**
	12nm,0.5s,SNR=7.9						
ETRT	**Tiaret**	**3.37**	**133**	P	Pn	**20 38 37.2**	**-0.4**
ETRT	**Tiaret**	**3.37**	**133**	P	Pn	**20 38 37.2**	**-0.4**
ESPR	**Espera**	**3.41**	**257**	Pn	Pn	**20 38 40.0**	**+2.0**
	16nm,0.4s,SNR=18						
ESPR				Pg	Pg	**20 38 49.0**	**-0.6**
	69nm,0.7s,SNR=16						
ESPR				Sn	Sn	**20 39 17.5**	**-1.3**
	44nm,0.3s,SNR=14						
ESPR				Lg	Lg	20 39 35.1	
	222nm,0.6s,SNR=5.0						
ESPR	**Espera**	**3.41**	**257**	Pn	Pn	**20 38 40.0**	**+2.0**
	16nm,0.4s,SNR=18						
ESPR	**Espera**	**3.41**	**257**	Pg	Pg	**20 38 49.0**	**-0.6**
	69nm,0.7s,SNR=16						
ESPR				Sn	Sn	**20 39 17.5**	**-1.3**
	44nm,0.3s,SNR=14						
ESPR				Lg	Lg	20 39 35.1	
	222nm,0.6s,SNR=5.0						
ECEU	**Ceuta**	**3.46**	**239**	Pn	Pn	**20 38 39.2**	**+0.5**
	2.0nm,0.1s,SNR=6.4						
ECEU				Sn	Sn	**20 39 18.0**	**-2.0**
	5.6nm,0.3s,SNR=7.9						
ECEU	**Ceuta**	**3.46**	**239**	Pn	Pn	**20 38 39.2**	**+0.5**
	2.0nm,0.1s,SNR=6.4						
GUD	**Guadarrama**	**3.47**	**328**	Pn	Pn	**20 38 39.9**	**+1.0**
	10nm,0.3s,SNR=47						
GUD				Pg	Pg	**20 38 49.8**	**-0.9**
	48nm,0.2s,SNR=31						
GUD				Sn	Sn	**20 39 19.1**	**-1.2**
	118nm,0.4s,SNR=5.8						
GUD				Lg	Lg	20 39 35.1	
	395nm,0.4s,SNR=12						
GUD	**Guadarrama**	**3.47**	**328**	Pn	Pn	**20 38 39.9**	**+1.0**
	10nm,0.3s,SNR=47						
GUD	**Guadarrama**	**3.47**	**328**	Pg	Pg	**20 38 49.8**	**-0.9**
	48nm,0.2s,SNR=31						
GUD				Sn	Sn	**20 39 19.1**	**-1.2**
	118nm,0.4s,SNR=5.8						
GUD				Lg	Lg	20 39 35.1	
	395nm,0.4s,SNR=12						
EBR	**Ebro Roquetas**	**3.53**	**28**	Pn	Pn	**20 38 40.3**	**+0.8**
	61nm,0.2s,SNR=7.9						
EBR				Pg	Pb	**20 38 49.3**	**+2.2**
	76nm,0.4s,SNR=7.9						
EBR				Sn	Sn	**20 39 20.6**	**-1.0**
	97nm,0.4s,SNR=7.9						
EBR				Lg	Lg	20 39 36.4	
	497nm,0.9s,SNR=7.9						
EBR	**Ebro Roquetas**	**3.53**	**28**	Pn	Pn	**20 38 40.3**	**+0.8**
	61nm,0.2s,SNR=7.9						
EBR				Sn	Sn	**20 39 20.6**	**-1.0**
	97nm,0.4s,SNR=7.9						
EBR				Lg	Lg	20 39 36.4	
	497nm,0.9s,SNR=7.9						
ERTA	**Horta de San J**	**3.59**	**26**	Pn	Pn	**20 38 41.0**	**+0.5**
	9.0nm,0.1s,SNR=75						
ERTA				Pg	Pb	**20 38 50.7**	**+2.6**
	28nm,0.3s,SNR=7.9						
ERTA				Sn	Sn	**20 39 22.8**	**-0.4**
	30nm,0.3s,SNR=5.4						
ERTA				Lg	Lg	20 39 36.2	
	113nm,0.4s,SNR=5.0						
ERTA	**Horta de San J**	**3.59**	**26**	Pn	Pn	**20 38 41.0**	**+0.5**
	9.0nm,0.1s,SNR=75						
EMIN	**Mina Concepcio**	**3.93**	**272**	Pn	Pn	**20 38 45.2**	**+0.1**
	8.0nm,0.1s,SNR=75						
EMIN				Sn	Sn	**20 39 30.9**	**-0.6**
	18nm,0.2s,SNR=11						
EMIN				Lg	Lg	20 39 49.5	
	196nm,0.4s,SNR=7.9						
EMIN	**Mina Concepcio**	**3.93**	**272**	Pn	Pn	**20 38 45.2**	**+0.1**
	8.0nm,0.1s,SNR=75						
EMIN				Sn	Sn	**20 39 30.9**	**-0.6**
	18nm,0.2s,SNR=11						
EMIN				Lg	Lg	20 39 49.5	
	196nm,0.4s,SNR=7.9						
EMHD	**Djebel Mahouad**	**4.04**	**111**	P	Pn	**20 38 49.9**	**+3.1**
EMHD	**Djebel Mahouad**	**4.04**	**111**	P	Pn	**20 38 49.9**	**+3.1**
ETOS	**Mallorca**	**4.08**	**59**	⇑Pn	Pn	**20 38 46.8**	**-0.5**
	42nm,0.4s,SNR=18						
ETOS				Sn	Sn	**20 39 32.8**	**-2.5**
	14nm,0.3s,SNR=5.0						
ETOS	**Mallorca**	**4.08**	**59**	Pn	Pn	**20 38 46.8**	**-0.5**
	42nm,0.4s,SNR=18						
ESAC	**San Caprasio**	**4.10**	**13**	Pn	Pn	**20 38 48.8**	**+1.3**
	78nm,0.2s,SNR=33						
ESAC				Pg	Pg	**20 39 00.9**	**-1.8**
	101nm,0.2s,SNR=9.8						
ESAC				Lg	Lg	20 39 56.1	
	1μm,0.4s,SNR=6.3						
ESAC	**San Caprasio**	**4.10**	**13**	Pn	Pn	**20 38 48.8**	**+1.3**
	78nm,0.2s,SNR=33						
EPLA	**Plasencia**	**4.12**	**306**	⇑Pn	Pn	**20 38 48.4**	**+0.6**
	13nm,0.3s,SNR=18						
EPLA				Pg	Pg	**20 39 02.1**	**-1.1**
	31nm,0.3s,SNR=14						
EPLA				Sn	Sn	**20 39 35.8**	**-0.6**
	38nm,0.2s,SNR=6.0						
EPLA				Lg	Lg	20 39 55.0	
	558nm,0.7s,SNR=5.0						
EPLA	**Plasencia**	**4.12**	**306**	Pn	Pn	**20 38 48.4**	**+0.6**
	13nm,0.3s,SNR=18						
EPOB	**Poblet**	**4.21**	**30**	⇑Pn	Pn	**20 38 48.9**	**-0.1**
	6.3nm,0.3s,SNR=18						
EPOB				Sn	Sn	**20 39 38.0**	**-0.6**
	10nm,0.3s,SNR=7.0						
EPOB				Lg	Lg	20 39 53.8	
	46nm,0.6s,SNR=5.0						
EPOB	**Poblet**	**4.21**	**30**	Pn	Pn	**20 38 48.9**	**-0.1**
	6.3nm,0.3s,SNR=18						
EPOB				Sn	Sn	**20 39 38.0**	**-0.6**
	10nm,0.3s,SNR=7.0						
EPOB				Lg	Lg	20 39 53.8	
	46nm,0.6s,SNR=5.0						
PBAR	**Barrancos**	**4.23**	**278**	*e*Pn	Pn	**20 38 49.6**	**+0.4**
PBAR				*e*Sn	Sn	**20 39 38.1**	**-0.9**
PBAR				A	A	20 40 10.9	
	253nm,0.5s						
PBAR	**Barrancos**	**4.23**	**278**	*e*Pn	Pn	**20 38 49.6**	**+0.4**
PBAR				*e*Sn	Sn	**20 39 38.1**	**-0.9**
	253nm,0.5s						
EBAD	**Badajoz**	**4.29**	**285**	Pn	Pn	**20 38 50.3**	**+0.2**
	8.3nm,0.3s,SNR=51						
EBAD				Pg	Pg	**20 39

PVAQ A A 20 40 02.5
90nm,0.5s
PVAQ Vaqueiros 4.78 268 ePn **Pn 20 38 57.0 +0.2**
PVAQ eSn **Sn 20 39 51.4 -1.1**
90nm,0.5s
PBEJ Beja 4.88 275 ePn **Pn 20 38 58.9 +0.8**
PBEJ eSn **Sn 20 39 53.5 -1.4**
PBEJ eSg **Sg 20 40 21.8 +1.0**
PBEJ A A 20 40 26.1
71nm,0.5s
PBEJ Beja 4.88 275 ePn **Pn 20 38 58.9 +0.8**
PBEJ eSn **Sn 20 39 53.5 -1.4**
PBEJ eSg **Sg 20 40 21.8 +1.0**
71nm,0.5s
PBDV Barranco-do-Ve 4.97 266 ePn **Pn 20 38 59.9 +0.5**
PBDV eSn **Sn 20 39 56.5 -0.7**
PBDV eSg **Sg 20 40 24.8 +1.0**
PBDV A A 20 40 30.7
93nm,0.5s
PBDV Barranco-do-Ve 4.97 266 ePn **Pn 20 38 59.9 +0.5**
PBDV eSn **Sn 20 39 56.5 -0.7**
PBDV eSg **Sg 20 40 24.8 +1.0**
93nm,0.5s
PCBR Castelo Branco 4.97 297 ePn **Pn 20 39 00.1 +0.7**
PCBR eSn **Sn 20 39 56.3 -0.9**
PCBR A A 20 40 34.0
135nm,0.7s
PCBR Castelo Branco 4.97 297 ePn **Pn 20 39 00.1 +0.7**
PCBR eSn **Sn 20 39 56.3 -0.9**
135nm,0.7s
EVO Evora 5.03 281 ePn **Pn 20 39 01.4 +1.2**
EVO eSn **Sn 20 39 58.3 -0.4**
EVO A A 20 40 47.6
132nm,0.5s
EVO Evora 5.03 281 ePn **Pn 20 39 01.4 +1.2**
EVO eSn **Sn 20 39 58.3 -0.4**
132nm,0.5s
EARA Aranguren 5.03 1 Pn **Pn 20 39 01.9 +1.6**
49nm,0.5s,SNR=15
EARA Pg Pg 20 39 17.8 -2.8
20nm,0.5s,SNR=7.9
EARA Sn **Sn 20 39 56.8 -2.0**
19nm,0.4s,SNR=5.6
EARA Lg Lg 20 40 24.5
119nm,0.6s,SNR=5.0
EARA Aranguren 5.03 1 Pn **Pn 20 39 01.9 +1.6**
49nm,0.5s,SNR=15
EARA Lg Lg 20 40 24.5
119nm,0.6s,SNR=5.0
IPRE Itoiz 5.07 3 Pn **Pn 20 39 02.6 +1.8**
20nm,0.3s,SNR=6.5
IPRE Lg Lg 20 40 28.8
40nm,0.5s,SNR=7.3
IPRE Itoiz 5.07 3 Pn **Pn 20 39 02.6 +1.8**
20nm,0.3s,SNR=6.5
IPRE Lg Lg 20 40 28.8
40nm,0.5s,SNR=7.3
IELO Elcoad 5.12 4 ⇓Pn **Pn 20 39 03.1 +1.6**
17nm,0.4s,SNR=18
IELO Sn **Sn 20 39 59.6 -1.3**
19nm,0.3s,SNR=7.9
IELO Lg Lg 20 40 30.5
172nm,0.9s,SNR=7.9
IELO Elcoad 5.12 4 Pn **Pn 20 39 03.1 +1.6**
17nm,0.4s,SNR=18
IELO Sn **Sn 20 39 59.6 -1.3**
19nm,0.3s,SNR=7.9
IELO Lg Lg 20 40 30.5
172nm,0.9s,SNR=7.9
ECHI Chisagues Biel 5.14 16 Pn **Pn 20 39 03.0 +1.2**
6.9nm,0.1s,SNR=13
ECHI Lg Lg 20 40 29.5
109nm,1.1s,SNR=6.6
ECHI Chisagues Biel 5.14 16 Pn **Pn 20 39 03.0 +1.2**
6.9nm,0.1s,SNR=13
ECHI Lg Lg 20 40 29.5
109nm,1.1s,SNR=6.6
CFON Fontmartina 5.14 37 Pn **Pn 20 39 01.7 -0.1**
7.2nm,0.2s,SNR=13
CFON Sn **Sn 20 39 58.5 -3.0**
14nm,0.2s,SNR=5.0
CFON Fontmartina 5.14 37 Pn **Pn 20 39 01.7 -0.1**
7.2nm,0.2s,SNR=13
MAHO Mahon 5.15 63 *i* P **Pn 20 39 01.0 -0.8**
MAHO eS **Sn 20 39 57.3 -4.2**
MESJ Messejana 5.15 273 eP **Pn 20 39 02.2 +0.3**
MESJ eS **Sn 20 39 58.1 -3.6**
MESJ AML AML 20 40 07.3
comp=N,27nm,0.6s
MESJ Messejana 5.15 273 ePn **Pn 20 39 02.5 +0.6**
MESJ eSn **Sn 20 40 00.7 -1.0**
MESJ A A 20 40 19.4
comp=N,35nm,0.5s
MESJ Messejana 5.15 273 ePn **Pn 20 39 02.5 +0.6**
MESJ eSn **Sn 20 40 00.7 -1.0**
comp=N,35nm,0.5s
ETSF Etsaut 5.23 9 ePn **Pn 20 39 04.1 +1.0**
ETSF eSg **Sg 20 40 31.4 -0.8**
comp=N,252nm,1.1s
ETSF Etsaut 5.23 9 ePn **Pn 20 39 04.1 +1.0**
ETSF eSg **Sg 20 40 31.4 -0.8**
comp=N,126nm,1.1s
MTE Manteigas 5.26 302 ePn **Pn 20 39 04.8 +1.4**
MTE eSn **Sn 20 40 03.0 -1.4**
MTE A A 20 40 46.6
comp=N,166nm,0.6s
MTE Manteigas 5.26 302 ePn **Pn 20 39 04.8 +1.4**
MTE eSn **Sn 20 40 03.0 -1.4**
comp=N,166nm,0.6s
PMTG Montargil 5.28 287 ePn **Pn 20 39 04.0 +0.3**
PMTG eSn **Sn 20 40 03.6 -1.3**
PMTG eSg **Sg 20 40 33.3 -0.6**
PMTG A A 20 40 39.0
comp=N,156nm,0.5s
PMTG Montargil 5.28 287 ePn **Pn 20 39 04.0 +0.3**
PMTG eSn **Sn 20 40 03.6 -1.3**
PMTG eSg **Sg 20 40 33.3 -0.6**
comp=N,156nm,0.5s
VIEF Viey 5.31 14 P **Pn 20 39 05.2 +1.0**
VIEF S **Sn 20 40 07.9 +2.1**
VIEF Viey 5.31 14 P **Pn 20 39 05.2 +1.0**
VIEF S **Sn 20 40 07.9 +2.1**
MVO Moncorvo 5.35 311 ePn **Pn 20 39 05.3 +0.6**
MVO eSn **Sn 20 40 05.0 -1.7**
MVO eSg **Sg 20 40 36.5 +0.5**
MVO A A 20 40 45.6
comp=N,180nm,0.6s
MVO Moncorvo 5.35 311 Pn **Pn 20 39 05.3 +0.6**
comp=N,11nm,0.2s,SNR=22
MVO Sn **Sn 20 40 04.5 -2.3**
comp=N,28nm,0.2s,SNR=5.8
MVO Lg Lg 20 40 34.4
comp=N,755nm,1.1s,SNR=8.0
MVO Moncorvo 5.35 311 Pn **Pn 20 39 05.3 +0.6**
comp=N,11nm,0.2s,SNR=22
MVO eSn **Sn 20 40 05.0 -1.7**
MVO Lg Lg 20 40 34.4
comp=N,755nm,1.1s,SNR=8.0
MVO eSg **Sg 20 40 36.5 +0.5**
comp=N,180nm,0.6s
SJPF Ste Jean 5.38 4 ePn **Pn 20 39 06.4 +1.3**
SJPF eSg **Sg 20 40 36.5 -0.6**
comp=N,200nm,1.0s
SJPF Ste Jean 5.38 4 ePn **Pn 20 39 06.4 +1.3**
SJPF eSg **Sg 20 40 36.5 -0.6**
comp=N,100nm,1.0s
PNCL Nicolau / Gran 5.40 276 ePn **Pn 20 39 06.1 +0.8**
PNCL eSn **Sn 20 40 06.8 -1.0**
PNCL eSg **Sg 20 40 38.6 +1.0**
PNCL A A 20 40 42.5
comp=N,56nm,0.6s
PNCL Nicolau / Gran 5.40 276 ePn **Pn 20 39 06.1 +0.8**
PNCL eSn **Sn 20 40 06.8 -1.0**
PNCL eSg **Sg 20 40 38.6 +1.0**
comp=N,56nm,0.6s
ATE Arette 5.40 8 Pn **Pn 20 39 06.7 +1.3**
comp=N,10nm,0.3s,SNR=7.9
ATE Sn **Sn 20 40 05.8 -2.1**
comp=N,14nm,0.3s,SNR=7.9
ATE Lg Lg 20 40 39.8
comp=N,466nm,1.8s,SNR=7.9
ATE Arette 5.40 8 Pn **Pn 20 39 06.7 +1.3**
comp=N,10nm,0.3s,SNR=7.9
ATE Lg Lg 20 40 39.8
comp=N,466nm,1.8s,SNR=7.9
MDT Midelt 5.45 207 Pn **Pn 20 39 06.3 +0.2**
comp=N,1.9nm,0.3s,baz=34,slow=12,SNR=112
MDT Sn **Sn 20 40 04.6 -4.7**
comp=N,0.6nm,0.3s,baz=23,slow=18,SNR=2.3
MDT LR LR 20 41 26.7
comp=N,171nm,18.8s,baz=158,slow=41
VALF Valcebollere 5.47 30 P **Pn 20 39 07.4 +1.0**
VALF Valcebollere 5.47 30 P **Pn 20 39 07.4 +1.0**
EALK Alkurruntz 5.48 2 ⇑Pn **Pn 20 39 08.5 +2.0**
comp=N,115nm,0.5s,SNR=18
EALK Sn **Sn 20 40 08.3 -1.6**
comp=N,64nm,0.3s,SNR=11
EALK Lg Lg 20 40 39.7
comp=N,232nm,0.6s,SNR=5.0
EALK Alkurruntz 5.48 2 Pn **Pn 20 39 08.5 +2.0**
comp=N,115nm,0.5s,SNR=18
EALK Sn **Sn 20 40 08.3 -1.6**
comp=N,64nm,0.3s,SNR=11
EALK Lg Lg 20 40 39.7
comp=N,232nm,0.6s,SNR=5.0
SALF Salau 5.49 23 P **Pn 20 39 07.1 +0.5**
SALF S **Sn 20 40 14.1 +4.0**
SALF Salau 5.49 23 P **Pn 20 39 07.1 +0.5**
CLLI Llivia 5.52 30 ⇑Pn **Pn 20 39 07.8 +0.8**
comp=N,7.5nm,0.4s,SNR=18
CLLI Lg Lg 20 40 39.2
comp=N,89nm,1.0s,SNR=5.0
CLLI Llivia 5.52 30 Pn **Pn 20 39 07.8 +0.8**
comp=N,7.5nm,0.4s,SNR=18
CLLI Lg Lg 20 40 39.2
comp=N,89nm,1.0s,SNR=5.0
EPF Esparros 5.52 16 ePn **Pn 20 39 08.0 +1.0**
EPF eSg **Sg 20 40 39.7 -1.7**
comp=N,65nm,0.5s
EPF Esparros 5.52 16 ePn **Pn 20 39 08.0 +1.0**
EPF eSg **Sg 20 40 39.7 -1.7**
comp=N,32nm,0.5s
OSSF Osses 5.53 3 P **Pn 20 39 08.6 +1.6**
OSSF Osses 5.53 3 P **Pn 20 39 08.6 +1.6**
MORF Marmelete 5.53 268 eP **Pn 20 39 07.0 -0.2**
MORF eS **Sn 20 40 07.0 -4.1**
MORF AML AML 20 40 10.9
comp=N,98nm,0.3s
MORF Marmelete 5.53 268 ePn **Pn 20 39 07.3 +0.1**
MORF eSn **Sn 20 40 10.1 -1.0**
MORF A A 20 40 46.3
comp=N,39nm,0.7s
MORF Marmelete 5.53 268 ePn **Pn 20 39 07.3 +0.1**
MORF eSn **Sn 20 40 10.1 -1.0**
comp=N,39nm,0.7s
PTEO Sao Teotonio 5.57 270 ePn **Pn 20 39 08.1 +0.5**
PTEO eSn **Sn 20 40 11.0 -0.9**
PTEO A A 20 40 52.3
comp=N,95nm,0.5s
PTEO Sao Teotonio 5.57 270 ePn **Pn 20 39 08.1 +0.5**
PTEO eSn **Sn 20 40 11.0 -0.9**
comp=N,95nm,0.5s
PTOM Tomar 5.57 292 ePn **Pn 20 39 08.4 +0.8**
PTOM eSn **Sn 20 40 10.5 -1.4**
PTOM A A 20 40 55.8
comp=N,192nm,0.5s
PTOM Tomar 5.57 292 ePn **Pn 20 39 08.4 +0.8**
PTOM eSn **Sn 20 40 10.5 -1.4**
comp=N,192nm,0.5s
ALMR Almeirim 5.57 287 eP **Pn 20 39 07.8 +0.1**
ALMR eS **Sn 20 40 08.2 -3.8**
ALMR AML AML 20 40 11.3
comp=E,126nm,0.4s
ALMR Almeirim 5.57 287 eP **Pn 20 39 07.8 +0.1**
ALMR eS **Sn 20 40 08.2 -3.8**
ALMR Almeirim 5.57 287 eP **Pn 20 39 07.8 +0.1**
PBRG Braganca 5.61 318 ePn **Pn 20 39 08.9 +0.6**
PBRG eSn **Sn 20 40 10.5 -2.6**
PBRG A A 20 40 48.0
comp=E,92nm,0.5s
PBRG Braganca 5.61 318 ePn **Pn 20 39 08.9 +0.6**
ELAN Lanestosa 5.64 347 Pn **Pn 20 39 10.0 +1.3**
comp=E,7.2nm,0.2s,SNR=42
ELAN Pg Pg 20 39 29.4 -3.0
comp=E,23nm,0.5s,SNR=7.2
ELAN Sn **Sn 20 40 11.4 -2.5**
comp=E,16nm,0.3s,SNR=4.6
ELAN Lg Lg 20 40 45.9
comp=E,210nm,1.1s,SNR=4.6
ELAN Lanestosa 5.64 347 Pn **Pn 20 39 10.0 +1.3**
comp=E,7.2nm,0.2s,SNR=42
ELAN Lg Lg 20 40 45.9
comp=E,210nm,1.1s,SNR=4.6
PVIS Viseu 5.64 304 ePn **Pn 20 39 09.7 +1.0**
PVIS eSn **Sn 20 40 11.9 -2.0**
PVIS A A 20 40 57.7
comp=E,80nm,0.5s
PVIS Viseu 5.64 304 ePn **Pn 20 39 09.7 +1.0**
PFVI Vila Bisbo 5.69 266 ePn **Pn 20 39 09.8 +0.5**
PFVI eSn **Sn 20 40 13.1 -1.9**
PFVI A A 20 40 51.9
comp=E,30nm,0.6s
PFVI Vila Bisbo 5.69 266 Pn **Pn 20 39 09.5 +0.2**
comp=E,46nm,0.4s,SNR=22
PFVI Sn **Sn 20 40 12.6 -2.4**
comp=E,22nm,0.2s,SNR=6.0
PFVI Lg Lg 20 40 47.1
comp=E,226nm,1.0s,SNR=7.9
PFVI Vila Bisbo 5.69 266 ePn **Pn 20 39 09.8 +0.5**
PFVI Lg Lg 20 40 47.1
comp=E,226nm,1.0s,SNR=7.9
ECAL Calabor 5.71 319 ⇑Pn **Pn 20 39 09.9 +0.3**
comp=E,26nm,0.4s,SNR=18
ECAL Sn **Sn 20 40 11.6 -3.9**
comp=E,57nm,0.3s,SNR=5.6
ECAL Lg Lg 20 40 45.2
comp=E,514nm,1.2s,SNR=5.1
ECAL Calabor 5.71 319 Pn **Pn 20 39 09.9 +0.3**
comp=E,26nm,0.4s,SNR=18
ECAL Lg Lg 20 40 45.2
comp=E,514nm,1.2s,SNR=5.1
CARF Carcanieres 5.77 29 P **Pn 20 39 11.2 +0.7**
CARF S **Sn 20 40 20.8 +3.7**
CARF Carcanieres 5.77 29 P **Pn 20 39 11.2 +0.7**
PCAS Casmilo, Conde 5.78 296 ePn **Pn 20 39 11.7 +1.2**
PCAS eSn **Sn 20 40 15.1 -2.0**
PCAS A A 20 41 02.9
comp=E,147nm,0.5s
PCAS Casmilo, Conde 5.78 296 ePn **Pn 20 39 11.7 +1.2**
PVRL Vila Real 5.83 309 ePn **Pn 20 39 11.8 +0.5**
PVRL eSn **Sn 20 40 16.9 -1.6**
PVRL eSg **Sg 20 40 50.2 -1.3**
PVRL A A 20 41 01.4
comp=E,77nm,0.5s
PVRL Vila Real 5.83 309 ePn **Pn 20 39 11.8 +0.5**
PVRL eSn **Sn 20 40 16.9 -1.6**
PVRL eSg **Sg 20 40 50.2 -1.3**
comp=E,77nm,0.5s
EJON La Jonquera 5.88 35 Pn **Pn 20 39 12.5 +0.5**
comp=E,0.7nm,0.1s,SNR=7.9
EJON Sn **Sn 20 40 16.6 -3.1**
comp=E,2.8nm,0.3s,SNR=7.9
EJON Lg Lg 20 40 55.4
comp=E,89nm,1.4s,SNR=7.9
EJON La Jonquera 5.88 35 Pn **Pn 20 39 12.5 +0.5**
comp=E,0.7nm,0.1s,SNR=7.9
EJON Lg Lg 20 40 55.4
comp=E,89nm,1.4s,SNR=7.9
LIS Lisbon 5.93 282 eS **Sn 20 40 16.8 -4.2**
LIS AML AML 20 40 22.9
comp=N,94nm,0.6s
POLO Lamas de Olo 5.94 310 ePn **Pn 20 39 13.2 +0.4**
POLO eSn **Sn 20 40 18.4 -2.8**
POLO eSg **Sg 20 40 52.8 -2.1**
POLO A A 20 41 00.0
comp=N,46nm,0.5s
POLO Lamas de Olo 5.94 310 ePn **Pn 20 39 13.2 +0.4**
PMST Lisbon--Monsan 5.96 282 ePn **Pn 20 39 14.2 +1.1**
PMST eSn **Sn 20 40 21.4 -0.3**
PMST A A 20 41 02.3
comp=N,131nm,0.8s
PMST Lisbon--Monsan 5.96 282 ePn **Pn 20 39 14.2 +1.1**
PMST eSn **Sn 20 40 21.4 -0.3**
comp=N,131nm,0.8s
PMAFR Mafra 6.07 284 ePn **Pn 20 39 15.3 +0.7**
PMAFR eSn **Sn 20 40 23.1 -1.3**
PMAFR A A 20 41 14.0
comp=N,140nm,0.7s
PMAFR Mafra 6.07 284 Pn **Pn 20 39 15.3 +0.7**
comp=N,103nm,0.5s,SNR=20
PMAFR Sn **Sn 20 40 22.7 -1.7**
comp=N,33nm,0.2s,SNR=6.5
PMAFR Lg Lg 20 40 60.0
comp=N,1μm,1.2s,SNR=6.6
PMAFR Mafra 6.07 284 Pn **Pn 20 39 15.3 +0.7**
comp=N,103nm,0.5s,SNR=20
PMAFR eSn **Sn 20 40 23.1 -1.3**
comp=N,140nm,0.7s
PMAFR Lg Lg 20 41 00.0
comp=N,1μm,1.2s,SNR=6.6
EARI Arriondas 6.16 336 ⇑Pn **Pn 20 39 17.1 +1.3**
comp=N,20nm,0.4s,SNR=18
EARI Sn **Sn 20 40 23.5 -3.1**
comp=N,19nm,0.3s,SNR=5.0
EARI Lg Lg 20 41 01.9
comp=N,150nm,0.7s,SNR=5.0
EARI Arriondas 6.16 336 Pn **Pn 20 39 17.1 +1.3**
comp=N,20nm,0.4s,SNR=18
EARI Lg Lg 20 41 01.9
comp=N,150nm,0.7s,SNR=5.0
PCAB Cabril 6.28 311 ePn **Pn 20 39 17.9 +0.5**
PCAB eSn **Sn 20 40 26.2 -3.3**
PCAB A A 20 41 10.2
comp=N,72nm,0.7s
PCAB Cabril 6.28 311 ePn **Pn 20 39 17.9 +0.5**
MTLF Montolieu 6.35 27 ePn **Pn 20 39 18.9 +0.5**
MTLF eSg **Sg 20 41 05.1 -3.0**
comp=N,35nm,0.7s
MTLF Montolieu 6.35 27 ePn **Pn 20 39 18.9 +0.5**
ELOB Lobios 6.39 312 ⇑Pn **Pn 20 39 19.5 +0.4**
comp=N,9.7nm,0.2s,SNR=18
ELOB Sn **Sn 20 40 27.4 -5.0**
comp=N,20nm,0.2s,SNR=5.0
ELOB Lg Lg 20 41 09.1
comp=N,543nm,1.2s,SNR=6.9
ELOB Lobios 6.39 312 Pn **Pn 20 39 19.5 +0.4**
comp=N,9.7nm,0.2s,SNR=18
ELOB Lg Lg 20 41 09.1
comp=N,543nm,1.2s,SNR=6.9
PGAV Gavieira, Arco 6.58 312 ePn **Pn 20 39 22.2 +0.6**
PGAV eSn **Sn 20 40 33.1 -3.9**
PGAV eSg **Sg 20 41 15.5 +0.1**
PGAV A A 20 41 22.5
comp=N,125nm,0.6s
PGAV Gavieira, Arco 6.58 312 ePn **Pn 20 39 22.2 +0.6**
PGAV eSg **Sg 20 41 15.5 +0.1**
comp=N,125nm,0.6s
EPON Pontenova 6.95 325 Pn **Pn 20 39 27.6 +1.0**
comp=N,6.9nm,0.3s,SNR=13
EPON Sn **Sn 20 40 41.4 -4.6**
comp=N,14nm,0.2s,SNR=5.9
EPON Lg Lg 20 41 26.8
comp=N,197nm,1.2s,SNR=6.6
EPON Pontenova 6.95 325 Pn **Pn 20 39 27.6 +1.0**
comp=N,6.9nm,0.3s,SNR=13
EPON Lg Lg 20 41 26.8
comp=N,197nm,1.2s,SNR=6.6
EAGO Agolada(Pontev 7.03 318 Pn **Pn 20 39 26.1 -1.5**
comp=N,0.3nm,0.0s,SNR=7.9
EAGO Sn **Sn 20 40 43.7 -4.2**
comp=N,13nm,0.3s,SNR=7.9
EAGO Lg Lg 20 41 27.6
comp=N,191nm,0.8s,SNR=7.9
EAGO Agolada(Pontev 7.03 318 Pn **Pn 20 39 26.1 -1.5**
comp=N,0.3nm,0.0s,SNR=7.9
EAGO Lg Lg 20 41 27.6
comp=N,191nm,0.8s,SNR=7.9
LFF La Frestale 7.43 14 ePn **Pn 20 39 34.0 +0.8**
LFF eSg **Sg 20 41 39.7 -3.0**
comp=N,53nm,1.0s
LFF La Frestale 7.43 14 ePn **Pn 20 39 34.0 +0.8**
EMAZ Mazaricos 7.61 315 Pn **Pn 20 39 36.3 +0.7**
comp=N,2.6nm,0.1s,SNR=7.9
EMAZ Sn **Sn 20 40 57.7 -4.4**
comp=N,12nm,0.4s,SNR=7.9
EMAZ Lg Lg 20 41 47.5
comp=N,567nm,1.4s,SNR=7.9
EMAZ Mazaricos 7.61 315 Pn **Pn 20 39 36.3 +0.7**
comp=N,2.6nm,0.1s,SNR=7.9
EMAZ Lg Lg 20 41 47.5
comp=N,567nm,1.4s,SNR=7.9
LASF Ste Croix 7.61 32 ePn **Pn 20 39 35.9 +0.2**
LASF eSg **Sg 20 41 44.6 -3.8**
comp=N,38nm,1.1s
LASF Ste Croix 7.61 32 ePn **Pn 20 39 35.9 +0.2**
CAF Calviac 7.73 20 ePn **Pn 20 39 37.8 +0.5**
CAF eSg **Sg 20 41 48.2 -3.9**
comp=N,44nm,1.0s
CAF Calviac 7.73 20 ePn **Pn 20 39 37.8 +0.5**
RJF Les Rejaudoux 7.94 17 ePn **Pn 20 39 40.6 +0.4**
RJF Les Rejaudoux 7.94 17 ePn **Pn 20 39 40.6 +0.4**
SMRF Simiane la Rot 8.33 39 ePn **Pn 20 39 45.5 0.0**
SMRF Simiane la Rot 8.33 39 ePn **Pn 20 39 45.5 0.0**
LMR La Mourre 8.39 46 ePn **Pn 20 39 46.6 +0.2**
LMR La Mourre 8.39 46 ePn **Pn 20 39 46.6 +0.2**
VIVF Saint-Julien-l 8.58 32 ePn **Pn 20 39 49.5 +0.5**
VIVF eSg **Sg 20 42 14.8 -4.8**
comp=N,17nm,0.8s
VIVF Saint-Julien-l 8.58 32 ePn **Pn 20 39 49.5 +0.5**
VIVF eSg **Sg 20 42 14.8 -4.8**
comp=N,8.5nm,0.8s
FRF La Foret Royal 8.62 45 ePn **Pn 20 39 51.3 +1.9**
FRF La Foret Royal 8.62 45 ePn **Pn 20 39 51.3 +1.9**
MFF Saint Martin d 8.94 7 ePn **Pn 20 39 54.2 +0.4**
MFF eSg **Sg 20 42 27.1 -3.9**
comp=N,15nm,0.7s
MFF Saint Martin d 8.94 7 ePn **Pn 20 39 54.2 +0.4**
TCF Toulx Ste Croi 9.03 18 ePn **Pn 20 39 55.3 +0.1**
TCF eSg Sn 20 42 29.7 +53
comp=N,37nm,1.2s
TCF Toulx Ste Croi 9.03 18 ePn **Pn 20 39 55.3 +0.1**
KEST Kesra 9.10 99 Pn **Pn 20 39 58.0 +1.7**
comp=N,2.3nm,0.3s,baz=247,slow=4.7,SNR=34
KEST Sn **Sn 20 41 39.6 +0.5**
comp=N,0.3nm,0.3s,baz=336,slow=20,SNR=1.8
ORIF Oris-en-Rattie 9.17 36 ePn **Pn 20 39 56.5 -0.6**
ORIF eSg Sn 20 42 32.8 +52
comp=N,6.1nm,0.9s
ORIF Oris-en-Rattie 9.17 36 ePn **Pn 20 39 56.5 -0.6**
SBF Sospel 9.25 46 ePn **Pn 20 39 59.6 +1.4**
SBF Sospel 9.25 46 ePn **Pn 20 39 59.6 +1.4**
BGF Bois d'Agland 9.44 20 ePn **Pn 20 40 01.2 +0.4**
BGF eSg Sn 20 42 42.2 +55
comp=N,31nm,0.8s
BGF Bois d'Agland 9.44 20 ePn **Pn 20 40 01.2 +0.4**
PGF Pioggiola 9.51 56 ePn **Pn 20 40 02.6 +0.8**
PGF eSn Sn 20 41 41.6 -7.4
comp=N,15nm,0.8s
PGF Pioggiola 9.51 56 ePn **Pn 20 40 02.6 +0.8**
AVF Avril sur Loir 9.79 21 ePn **Pn 20 40 04.7 -0.9**
AVF eSg Sn 20 42 52.9 +57
comp=N,8.1nm,0.6s
AVF Avril sur Loir 9.79 21 ePn **Pn 20 40 04.7 -0.9**
SMF Signal de Mont 9.81 23 ePn **Pn 20 40 05.6 -0.2**
SMF eSg Sn 20 42 53.4 +57
comp=N,5.9nm,0.6s
SMF Signal de Mont 9.81 23 ePn **Pn 20 40 05.6 -0.2**
LPG La Plagne 10.01 37 ePn **Pn 20 40 11.9 +3.1**
LPG eSg Sn 20 42 59.4 +58
comp=N,9.7nm,1.2s
LPL La Plagne 10.02 36 ePn **Pn 20 40 11.5 +2.6**
LPL eSg Sn 20 42 59.4 +58
comp=N,1.6nm,0.5s
LPL La Plagne 10.02 36 ePn **Pn 20 40 11.5 +2.6**
HYF Humbligny 10.05 17 ePn **Pn 20 40 09.2 +0.1**
HYF eSg Sn 20 43 01.3 +59
HYF Humbligny 10.05 17 ePn **Pn 20 40 09.2 +0.1**
SSF Saint Saulge 10.09 21 ePn **Pn 20 40 09.2 -0.4**
SSF eSg Sn 20 43 01.9 +59
comp=N,37nm,1.3s
SSF Saint Saulge 10.09 21 ePn **Pn 20 40 09.2 -0.4**
QUIF Quistinic 10.23 355 ePn **Pn 20 40 12.1 +0.6**
QUIF eSn Sn 20 42 01.2 -5.3
comp=N,11nm,0.5s
QUIF Quistinic 10.23 355 ePn **Pn 20 40 12.1 +0.6**
LOR Lormes 10.37 22 ePn **Pn 20 40 13.8 +0.2**
LOR eSg Sn 20 43 10.9 +61
comp=N,35nm,1.2s
LOR Lormes 10.37 22 ePn **Pn 20 40 13.8 +0.2**
SGMF Saint Gilles 10.53 357 ePn **Pn 20 40 15.9 +0.2**
SGMF eSn Sn 20 42 08.0 -5.9
comp=N,30nm,1.0s
SGMF Saint Gilles 10.53 357 ePn **Pn 20 40 15.9 +0.2**
CABF La Chapelle 10.59 31 eSg 20 43 17.9
comp=N,68nm,1.4s
ROSF Rostrenen 10.66 354 ePn **Pn 20 40 18.0 +0.6**

ROSF				*e*Sn		Sn	20 42 11.2	-5.8
	comp=N,22nm,0.8s							
ROSF	**Rostrenen**	**10.66**	**354**	*e*Pn		**Pn**	**20 40 18.0**	**+0.6**
FLN	**La Foliniere**	**11.06**	**4**	*e*Pn		**Pn**	**20 40 22.8**	**-0.1**
FLN	**La Foliniere**	**11.06**	**4**	*e*Pn		**Pn**	**20 40 22.8**	**-0.1**
FETA	**Feichten**	**13.05**	**41**	*i* P		**P**	**20 41 03.5**	**+2.6**
	comp=N,3.7nm,0.7s							
OBKA	**Obir**	**14.89**	**49**	*i* pP		**P**	**20 41 23.9**	**+2.7**
	comp=N,8.2nm,0.9s							
OBKA	**Obir**	**14.89**	**49**	P		**P**	**20 41 23.9**	**+2.7**
	comp=N,8.2nm,0.9s							
SOKA	**Soboth**	**15.27**	**49**	*i* P		**P**	**20 41 27.7**	**+2.3**
	comp=N,6.2nm,1.1s							
SOKA	**Soboth**	**15.27**	**49**	P		**P**	**20 41 27.7**	**+2.3**
	comp=N,6.2nm,1.1s							
MOA	**Molln**	**15.46**	**44**	*i* P		**P**	**20 41 28.0**	**+0.6**
	comp=N,2.1nm,0.9s							
MOA	**Molln**	**15.46**	**44**	P		**P**	**20 41 28.0**	**+0.6**
	comp=N,2.1nm,0.9s							
GERES	**GERESS Array B**	**15.76**	**40**	Pn		**Pn**	**20 41 28.6**	**+1.9**
	comp=N,0.4nm,0.3s,baz=213,slow=11,SNR=52							
ARSA	**Arzberg**	**15.85**	**48**	*i* P		**P**	**20 41 31.8**	**+0.1**
	comp=N,2.1nm,0.8s							
ARSA	**Arzberg**	**15.85**	**48**	P		**P**	**20 41 31.8**	**+0.1**
	comp=N,2.1nm,0.8s							
KHC	**Kasperske Hory**	**15.88**	**39**	*e*P		**P**	**20 41 33.6**	**+1.6**
KHC				*ex*		x	20 41 42.3	
CONA	**Conrad Observa**	**16.39**	**46**	*i* P		**P**	**20 41 38.7**	**+0.8**
	comp=N,2.8nm,0.9s							
CONA	**Conrad Observa**	**16.39**	**46**	P		**P**	**20 41 38.7**	**+0.8**
	comp=N,2.8nm,0.9s							
EKA	**Eskdalemuir Ar**	**17.63**	**357**	P		**Pn**	**20 41 51.2**	**+0.8**
	baz=181,slow=14,SNR=4.7							
UPC	**Upice**	**17.97**	**39**	AMS		AMS	20 50 00.0	
	comp=N,100nm,10.4s							
MLR	**Muntele Rosu**	**22.01**	**61**	LR		LR	20 51 55.6	
	comp=N,18nm,18.1s,baz=254,slow=39							
TORD	**Torodi Ar. Bea**	**24.68**	**172**	P		**P**	**20 43 05.6**	**-0.4**
	comp=N,1.5nm,0.8s,baz=349,slow=8.7,SNR=10							
NOA	**NORSAR Array B**	**24.70**	**15**	LR		LR	20 52 57.2	
	comp=N,42nm,18.6s,baz=275,slow=37							
SFJD	**Kangerlussuaq**	**40.07**	**333**	LR		LR	20 59 59.5	
	comp=N,38nm,18.2s,baz=172,slow=33							
ZALV	**Zalesovo Beam**	**58.67**	**44**	P		**P**	**20 47 42.0**	**-0.2**
	comp=N,0.7nm,0.6s,baz=279,slow=9.7,SNR=2.8							
MKAR	**Makanchi Array**	**60.02**	**52**	P		**P**	**20 47 52.1**	**+0.4**
	comp=N,0.7nm,0.6s,baz=297,slow=6.3,SNR=8.9							

*ISCJB **11** 20:39:14.5±0.3, 60°.00N±0°.03×153°.32W±0°.06, h142km±3km, mb3.4/3, Error ellipse: s-maj=5.7km s-min=3.4km az=38.4*
*NEIC **11** 20:39:16.5, 59°.98N×153°.32W, h136km, mb4.0/1, After AEIC.*
*IDC **11** 20:39:20.6±7.4, 60°.59N×153°.41W, h144km±65km, mb3.2/3, mb1 3.5/6, mb1mx3.0/63, mbtmp3.7/6, Error ellipse: s-maj=63.9km s-min=20.5km az=30.0*
ISC 11 20:39:15.5±0.9, 59°.99N±0°.04×153°.30W±0°.04, h140km±6km, n90, σ0s93/102, mb3.6/3, Southern Alaska

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ILW	**Iliamna West**	**0.11**	**50**	P	**Pn**	**20 39 34.2**	**-0.4**
ILW				S	**Sn**	**20 39 48.7**	**-0.5**
INE	**Iliamna NE**	**0.14**	**60**	P	**Pn**	**20 39 34.2**	**-0.4**
INE				S	**Sn**	**20 39 48.7**	**-0.4**
OPT	**Oil Point**	**0.34**	**174**	P	**Pn**	**20 39 35.1**	**0.0**
RDWB	**Redoubt West**	**0.55**	**24**	P	**Pn**	**20 39 35.9**	**-0.2**
RDWB				S	**Sn**	**20 39 51.0**	**-0.8**
AUL	**Augustine Lava**	**0.62**	**187**	P	**Pn**	**20 39 36.5**	**+0.1**
AUL				S	**Sn**	**20 39 52.1**	**-0.1**
AUE	**Augustine Isla**	**0.64**	**183**	P	**Pn**	**20 39 36.5**	**0.0**
RDJH	**Redoubt Jeurge**	**0.65**	**22**	P	**Pn**	**20 39 36.7**	**0.0**
RDJH				S	**Sn**	**20 39 52.4**	**-0.5**
AUI	**Augustine Isla**	**0.66**	**186**	P	**Pn**	**20 39 36.6**	**0.0**
AUI				S	**Sn**	**20 39 52.3**	**-0.4**
MCNL	**McNeil River**	**0.97**	**214**	P	**Pn**	**20 39 38.8**	**-0.2**
CDD	**Cape Douglas**	**1.08**	**190**	P	**Pn**	**20 39 39.9**	**-0.1**
BRLK	**Bradley Lake**	**1.24**	**100**	P	**Pn**	**20 39 41.7**	**+0.2**
BRLK				S	**Sn**	**20 40 01.1**	**-0.4**
FOPK	**Fourpeaked Vol**	**1.24**	**184**	P	**Pn**	**20 39 41.1**	**-0.5**
CKL	**Chakachamna La**	**1.30**	**21**	P	**Pn**	**20 39 42.7**	**+0.5**
SPCR	**Spurr Chakacha**	**1.33**	**23**	P	**Pn**	**20 39 42.8**	**+0.3**
SPWE	**Spurr West**	**1.34**	**16**	P	**Pn**	**20 39 43.2**	**+0.6**
SPBG	**Spurr Blockage**	**1.35**	**19**	P	**Pn**	**20 39 43.4**	**+0.7**
SPBG				S	**Sn**	**20 40 04.2**	**+0.6**
KAHC	**Katmai Hardscr**	**1.61**	**214**	P	**Pn**	**20 39 45.2**	**-0.4**
SLKM	**Skilak Lake**	**1.62**	**70**	P	**Pn**	**20 39 45.7**	**+0.1**
STLK	**Strandline Lak**	**1.67**	**25**	P	**Pn**	**20 39 46.6**	**+0.4**
KAWH	**Katmai**	**1.79**	**206**	P	**Pn**	**20 39 47.3**	**-0.3**
KVTA	**Katmai Vly 10**	**1.92**	**213**	P	**Pn**	**20 39 48.8**	**-0.1**
KAKN	**Katmai Knife C**	**1.93**	**209**	P	**Pn**	**20 39 49.1**	**-0.2**
KAKN				S	**Sn**	**20 40 13.5**	**-1.6**
SEW	**Seward**	**1.93**	**85**	P	**Pn**	**20 39 49.1**	**-0.1**
SEW				S	**Sn**	**20 40 13.7**	**-1.3**
FIB	**Fire Island**	**1.94**	**51**	P	**Pn**	**20 39 50.3**	**+1.1**
FIB				S	**Sn**	**20 40 16.9**	**+1.8**
KELA	**Mount Kelaz**	**2.00**	**220**	P	**Pn**	**20 39 49.7**	**-0.4**
KABR	**Katmai Barrier**	**2.06**	**206**	P	**Pn**	**20 39 50.3**	**-0.4**
RC01	**Rabbit Creek A**	**2.08**	**56**	P	**Pn**	**20 39 50.8**	**0.0**
RC01				S	**Sn**	**20 40 16.9**	**-1.1**
KDAK	**Kodiak Island**	**2.25**	**170**	P	Pn	20 40 06.7	+14
	11nm,0.3s,baz=22,slow=8.2,SNR=65						
KDAK				S	Sn	20 40 34.3	+13
	65nm,0.3s,baz=123,slow=22,SNR=62						
KDAK	**Kodiak Island**	**2.25**	**170**	P	**Pn**	**20 39 51.7**	**-1.2**
KDAK				S	**Sn**	**20 40 19.2**	**-2.4**
KDAK				S	Sn	20 40 34.3	+13
PMR	**Palmer**	**2.60**	**50**	P	**Pn**	**20 39 56.3**	**-0.9**
OHAK	**Old Harbor**	**2.78**	**180**	P	**Pn**	**20 39 57.9**	**-1.6**
PLK1	**Peulik 1**	**2.79**	**219**	P	**Pn**	**20 39 59.8**	**+0.1**
PLK4	**Peulik 4**	**2.85**	**215**	P	**Pn**	**20 40 00.8**	**+0.2**
PPLA	**Purkeypile**	**2.96**	**10**	P	**Pn**	**20 40 03.0**	**+0.9**
SML	**Sawmill**	**3.03**	**51**	P	**Pn**	**20 40 01.9**	**-0.9**
TT01	**Tatalina**	**3.20**	**337**	P	**Pn**	**20 40 04.5**	**-0.5**
TTA	**Tatalina**	**3.22**	**337**	P	**Pn**	**20 40 04.6**	**-0.7**
SCM	**Sheep Creek Mo**	**3.45**	**55**	P	**Pn**	**20 40 07.5**	**-0.7**
CAST	**Castle Rocks**	**3.49**	**9**	P	**Pn**	**20 40 08.9**	**+0.3**
MID	**Middleton Isla**	**3.57**	**96**	P	**Pn**	**20 40 09.6**	**-0.1**
KTH	**Kantishna Hill**	**3.75**	**17**	P	**Pn**	**20 40 12.0**	**-0.1**
TRF	**Thorofare Moun**	**3.75**	**21**	P	**Pn**	**20 40 12.2**	**-0.1**
DIV	**Divide**	**3.89**	**70**	*e*Pn	**Pn**	**20 40 14.1**	**+0.2**
KLU	**Klutina**	**3.92**	**64**	P	**Pn**	**20 40 13.7**	**-0.7**
ANNE	**Aniakchak Nort**	**3.97**	**221**	P	**Pn**	**20 40 14.9**	**-0.2**
RND	**Reindeer**	**4.03**	**30**	P	**Pn**	**20 40 15.6**	**-0.2**
ANPK	**Aniakchak Peak**	**4.05**	**221**	P	**Pn**	**20 40 16.1**	**-0.1**
BPAW	**Bear Paw Mtn.**	**4.26**	**14**	P	**Pn**	**20 40 17.9**	**-0.9**
MCK	**McKinley**	**4.28**	**27**	P	**Pn**	**20 40 18.9**	**-0.2**
RAGM	**Ragged Mountai**	**4.32**	**81**	P	**Pn**	**20 40 19.7**	**+0.1**
BMRM	**Bremner River**	**4.41**	**73**	*e*Pn	**Pn**	**20 40 20.7**	**-0.1**
BWN	**Browne**	**4.56**	**22**	P	**Pn**	**20 40 22.9**	**+0.2**
NICHA	**Nichawak Mount**	**4.67**	**83**	P	**Pn**	**20 40 24.5**	**+0.2**
PAX	**Paxson**	**4.80**	**48**	P	**Pn**	**20 40 25.6**	**-0.3**
GRIN	**Grindle Hills**	**5.00**	**82**	P	**Pn**	**20 40 29.2**	**+0.6**
VRDI	**Verde Repeater**	**5.01**	**71**	P	**Pn**	**20 40 29.2**	**+0.4**
KHIT	**Khitrov Hills**	**5.03**	**81**	P	**Pn**	**20 40 29.1**	**0.0**
WRH	**Wood River Hil**	**5.11**	**26**	P	**Pn**	**20 40 29.5**	**-0.5**
MLY	**Manley**	**5.19**	**12**	P	**Pn**	**20 40 30.5**	**-0.7**
KULT	**Kultieth River**	**5.30**	**83**	P	**Pn**	**20 40 33.1**	**+0.5**
CCB	**Clear Creek Bu**	**5.33**	**26**	P	**Pn**	**20 40 32.0**	**-0.9**
PTPK	**Patty Peak**	**5.47**	**73**	P	**Pn**	**20 40 36.0**	**+1.0**
PS08	**TAPS Pump Stn8**	**5.47**	**31**	P	**Pn**	**20 40 34.4**	**-0.5**
ISLE	**Juniper Island**	**5.49**	**79**	P	**Pn**	**20 40 35.6**	**+0.4**
KIAG	**Kiagna River**	**5.49**	**75**	P	**Pn**	**20 40 35.9**	**+0.5**
MDM	**Murphy Dome**	**5.51**	**23**	P	**Pn**	**20 40 34.8**	**-0.6**
BALM	**Baldy**	**5.51**	**74**	P	**Pn**	**20 40 35.9**	**+0.4**
COLA	**College**	**5.51**	**25**	P	**Pn**	**20 40 34.8**	**-0.5**
BAGL	**Bagley Icefiel**	**5.61**	**80**	P	**Pn**	**20 40 37.4**	**+0.7**
ILAR	**Eielson Array**	**5.64**	**29**	P	**Pn**	**20 40 36.4**	**-0.8**
	14nm,0.3s,baz=216,slow=13,SNR=898						
ILAR				S	**Sn**	**20 41 34.9**	**-6.1**
	0.7nm,0.3s,baz=210,slow=16,SNR=4.9						
IL1	**Eielson Array**	**5.65**	**29**	P	**Pn**	**20 40 36.4**	**-0.8**
MESA	**MESA**	**5.69**	**83**	P	**Pn**	**20 40 38.5**	**+0.6**
DOT	**Dot Lake**	**5.71**	**46**	*e*Pn	**Pn**	**20 40 37.5**	**-0.5**
RKAV	**Rock Avalanche**	**5.98**	**82**	P	**Pn**	**20 40 43.0**	**+1.2**
CTGM	**Chitina Glacie**	**6.00**	**75**	P	**Pn**	**20 40 43.1**	**+1.1**
IM3	**Indian Mountai**	**6.02**	**358**	P	**Pn**	**20 40 42.4**	**+0.3**
LOGN	**Logan Glacier**	**6.15**	**77**	P	**Pn**	**20 40 44.9**	**+0.8**
BCA3	**Beaver Creek A**	**6.31**	**56**	P	**Pn**	**20 40 46.1**	**+0.1**
DTNA	**Dutton South F**	**6.83**	**229**	P	**Pn**	**20 40 53.3**	**+0.2**
DRIA	**Deer Island**	**6.98**	**228**	P	**Pn**	**20 40 54.7**	**-0.4**
COLD	**Coldfoot**	**7.39**	**9**	*e*Pn	**Pn**	**20 40 59.8**	**-0.7**
EGAK	**Eagle**	**7.40**	**44**	*e*Pn	**Pn**	**20 40 59.8**	**-0.9**
DAWY	**Dawson**	**7.70**	**52**	*e*Pn	**Pn**	**20 41 04.6**	**-0.1**
BM3	**Burnt Mountain**	**8.38**	**24**	P	**Pn**	**20 41 12.3**	**-1.5**
INK	**Inuvik**	**11.94**	**37**	P	**Pn**	**20 42 00.6**	**-0.2**
	0.7nm,0.3s,baz=242,slow=14,SNR=16						
INK	**Inuvik**	**11.94**	**37**	*e*Pn	**Pn**	**20 42 00.8**	**0.0**
	2.8nm,0.6s						
YKA	**Yellowknife Ar**	**18.59**	**66**	P	**Pn**	**20 43 23.0**	**-0.4**
	0.1nm,0.3s,baz=279,slow=11,SNR=12						
PDAR	**Pinedale Array**	**31.54**	**103**	P	P	20 45 31.6	+7.2
	0.1nm,0.4s,baz=317,slow=9.1,SNR=3.0						
SONM	**Songino Array**	**54.67**	**306**	P	**P**	**20 48 31.4**	**+1.8**
	0.8nm,0.8s,baz=54,slow=7.3,SNR=3.4						
ZALV	**Zalesovo Beam**	**57.29**	**323**	P	**P**	**20 48 48.6**	**+0.8**
	1.0nm,0.5s,baz=27,slow=7.2,SNR=5.4						

*ISCJB **11** 20:46:57.0±0.9, 39°.65N±0°.04×142°.2E±0°.1, h52km±6km, mb3.3/3, Error ellipse: s-maj=13.0km s-min=6.1km az=8.4*
*JMA **11** 20:46:58.0, 39°.63N×142°.11E, h48km±1km, M3.3*
JMA Felt I J1.
*IDC **11** 20:47:02.2±2.3, 39°.92N×141°.56E, h49km±27km, mb3.2/3, mb1 3.3/5, mb1mx3.0/52, mbtmp3.3/5, ML2.9/2, Error ellipse: s-maj=42.2km s-min=17.6km az=99.0*
ISC 11 20:46:57.9±1.4, 39°.62N±0°.04×142°.13E±0°.09, h47km±9km, n15, σ0s55/22, mb3.6/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**0.24**	**260**	P	**Pn**	**20 47 06.4**	**+0.2**
MIYJ				S	**Sn**	**20 47 12.2**	**+0.1**
JTH	**Tanohata**	**0.38**	**328**	P	**Pn**	**20 47 07.6**	**0.0**
JTH				S	**Sn**	**20 47 14.3**	**-0.1**
OFUJ	**Ofunato**	**0.65**	**214**	P	**Pn**	**20 47 10.8**	**0.0**
OFUJ				S	**Sn**	**20 47 19.8**	**-0.3**
JOM	**Ohasama**	**0.66**	**258**	P	**Pn**	**20 47 11.3**	**+0.3**
JOM				S	**Sn**	**20 47 20.8**	**+0.3**
JKZ	**Kuzumaki**	**0.71**	**301**	P	**Pn**	**20 47 11.9**	**+0.1**
JKZ				S	**Sn**	**20 47 21.6**	**-0.2**
JANG	**Nango**	**0.89**	**328**	P	**Pn**	**20 47 13.8**	**-0.2**
JANG				S	**Sn**	**20 47 25.3**	**-0.6**
JMK	**Ichinoseki**	**0.97**	**227**	P	**Pn**	**20 47 15.2**	**+0.1**
JMK				S	**Sn**	**20 47 27.8**	**+0.1**
JRG	**Rokugo**	**1.18**	**260**	P	**Pn**	**20 47 18.0**	**+0.1**
JAH	**Hinai**	**1.28**	**297**	P	**Pn**	**20 47 19.6**	**+0.3**
JAH				*e*S	**Sn**	**20 47 36.2**	**+0.8**
JIO	**Ouri**	**1.31**	**208**	P	**Pn**	**20 47 20.0**	**+0.3**
MJAR	**Matsushiro Arr**	**4.36**	**226**	P	Pn	20 48 04.8	+3.3
	0.4nm,0.3s,baz=32,slow=14,SNR=6.1						
ASAJ	**Asahikawa**	**4.51**	**4**	P	**Pn**	**20 48 05.1**	**+1.5**
	0.6nm,0.3s,baz=208,slow=15,SNR=2.8						
ASAJ				S	**Sn**	**20 48 53.5**	**-1.1**
	0.3nm,0.3s,baz=225,slow=20,SNR=1.7						
ZALV	**Zalesovo Beam**	**40.63**	**310**	P	**P**	**20 54 32.8**	**-0.2**
	0.5nm,0.4s,baz=90,slow=8.5,SNR=2.4						
MKAR	**Makanchi Array**	**43.27**	**300**	P	**P**	**20 54 54.3**	**-0.4**
	0.1nm,0.5s,baz=87,slow=8.4,SNR=3.6						
WRA	**Warramunga Arr**	**59.70**	**188**	P	P	20 57 03.1	+5.6
	0.4nm,0.9s,baz=7.3,slow=7.6,SNR=4.1						

*IDC **11** 21:06:13.5±3.3, 24°.10S×66°.72W, h170km±33km, mb3.6/1, mb1 3.6/4, mb1mx3.2/38, mbtmp4.0/4, Error ellipse: s-maj=44.7km s-min=28.9km az=140.0*
*SJA **11** 21:06:14.1±0.6, 24°.15S×67°.05W, h180km±21km, ML3.0, MW3.4*
*ISCJB **11** 21:06:15.1±0.7, 24°.15S±0°.07×66°.98W±0°.09, h181km, mb3.6/1, Error ellipse: s-maj=13.7km s-min=6.6km az=148.1*
ISC 11 21:06:14.6±1.1, 24°.09S±0°.08×66°.89W±0°.09, h181km, n11, σ1s48/14, Salta Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SLA	**San Lorenzo**	**1.41**	**117**	*i* P	**Pn**	**21 06 47.4**	**+1.3**
SLA				IAML		21 06 48.9	
	comp=Z,94nm,0.5s						
HJA	**Humahuaca**	**1.62**	**58**	*i* P	**Pn**	**21 06 50.4**	**+2.2**
AZAP	**Zapla**	**1.67**	**95**	*i* P	**Pn**	**21 06 50.5**	**+1.9**
FSA	**Cafayete**	**2.18**	**158**	*i* P	**Pn**	**21 06 54.3**	**+0.4**
FSA				*i* S	**Sn**	**21 07 23.6**	**-1.0**
ASTB	**Santa Barbara**	**2.23**	**87**	*i* P	**Pn**	**21 06 56.2**	**+1.7**
YJA	**Yavi**	**2.29**	**34**	*i* P	**Pn**	**21 06 57.4**	**+1.9**
LVC	**Limon Verde**	**2.37**	**308**	P	**Pn**	**21 06 57.4**	**+1.1**
	comp=Z,483nm,0.3s,baz=129,slow=14,SNR=252						
LVC				S	**Sn**	**21 07 28.7**	**+0.2**
	comp=Z,1μm,0.3s,baz=319,slow=19,SNR=28						
LPAZ	**La Paz**	**7.85**	**351**	P	**Pn**	**21 08 07.1**	**+0.5**
	comp=Z,1.1nm,0.3s,baz=161,slow=12,SNR=19						
LPAZ				S	**Sn**	**21 09 34.9**	**-0.2**
	comp=Z,0.1nm,0.3s,baz=240,slow=20,SNR=2.5						
SIV	**San Ignacio**	**9.73**	**35**	P	**Pn**	**21 08 29.0**	**-1.8**
	comp=Z,0.4nm,0.3s,baz=255,slow=12,SNR=3.4						
TORD	**Torodi Ar. Bea**	**76.51**	**69**	P	**P**	**21 17 43.9**	**-1.3**
	comp=Z,0.7nm,0.4s,baz=257,slow=5.5,SNR=20						
MKAR	**Makanchi Array**	**146.53**	**40**	PKPbc	**PKPbc**	**21 25 34.5**	**-0.1**
	comp=Z,0.7nm,0.5s,baz=312,slow=3.3,SNR=12						

TAP 11 21:15:23.6, 24°.85N×121°.99E, h9km, ML1.9, 1C-1D, C, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EGS		**0.05**	**261**	⇑*i* P	Pg	21 15 25.8	+0.4
	baz=255						
EGS				*i* S	Sg	21 15 27.2	+0.4
	baz=255						
TWB1	**Santiao Chiao**	**0.15**	**359**	⇓*i* P	Pg	21 15 27.4	+0.5
	baz=2.0						
TWB1				*i* S	Sg	21 15 29.7	+0.5
	baz=2.0						
TWC	**Suao**	**0.28**	**208**	P	Pg	21 15 29.4	+0.3
	baz=208						
NWF	**Wu-fen Shan**	**0.29**	**319**	*e*P	Pg	21 15 30.1	+0.7
	baz=309						
NWF				S	Sb	21 15 34.8	-1.3
	baz=309						
TWE	**Neicheng**	**0.32**	**246**	P	Pg	21 15 30.4	+0.4
	baz=245						
TWE				*e*S	Sg	21 15 34.8	+0.5
	baz=245						
ENTT	**Nioudou**	**0.44**	**241**	*e*P	Pg	21 15 32.6	+0.4
	baz=241						
ENTT				*e*S	Sg	21 15 38.0	0.0
	baz=241						
ENA	**Nanau**	**0.48**	**208**	*e*P	Pg	21 15 33.1	+0.2
	baz=214						
ENA				*e*S	Sg	21 15 39.2	-0.1
	baz=214						

TAP 11 21:15:27.9, 24°.79N×121°.94E, h14km, ML1.8, 1D, C, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EGS		**0.06**	**353**	*e*P	Pg	21 15 31.1	+0.5
	baz=6.0						
EGS				S	Sg	21 15 32.8	+0.4
	baz=6.0						
TWC	**Suao**	**0.20**	**205**	*e*P	Pg	21 15 32.6	+0.2
	baz=195						
TWC				S	Sg	21 15 35.2	-0.2
	baz=195						
TWC	**Suao**	**0.20**	**205**	*e*S	Pg	21 15 32.6	+0.2
	baz=208						
TWB1	**Santiao Chiao**	**0.22**	**12**	⇓*i* P	Pg	21 15 33.0	+0.2
	baz=15						
TWB1				*i* S	Sg	21 15 35.5	-0.7
	baz=15						
NWF	**Wu-fen Shan**	**0.32**	**333**	*e*P	Pb	21 15 36.5	+1.0
	baz=321						
ENTT	**Nioudou**	**0.37**	**246**	*e*P	Pg	21 15 35.7	+0.3
	baz=245						
ENTT				*e*S	Sg	21 15 41.1	+0.6
	baz=245						

IDC 11 21:31:23.9±48.0, 16°.10S×176°.88W, h0km, mb4.1/3, mb1 4.3/3, mb1mx3.7/25, mbtmp4.1/3, Error ellipse: s-maj=902.7km s-min=170.3km az=77.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**40.79**	**240**	P	P	21 39 06.9	-0.3
	3.0nm,1.0s,baz=58,slow=9.5,SNR=2.9						
WRA	**Warramunga Arr**	**46.42**	**258**	P	P	21 39 52.9	+0.1
	0.5nm,0.4s,baz=92,slow=7.3,SNR=16						
ASAR	**Alice Springs**	**46.71**	**253**	P	P	21 39 54.9	-0.2
	3.7nm,0.5s,baz=88,slow=8.5,SNR=46						

NNC 11 21:35:24.6±2.9, 37°.27N×71°.08E, h18km±82km, mb3.6, mpv3.2, 5C-1D, Error ellipse: s-maj=98.7km s-min=8.2km az=157.0, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**2.35**	**311**	⇑P	Pn	21 36 02.2	-0.2
	7.1nm,0.4s						
DZET				⇑S	Sn	21 36 31.7	+0.9
	38nm,0.5s						
MNAS	**Manas**	**5.32**	**11**	⇑P	Pn	21 36 44.1	+0.7
	2.3nm,1.1s						
MNAS				⇑S	Sn	21 37 45.0	+0.8
	3.2nm,0.5s						
KK31	**Karatay Array**	**5.84**	**356**	⇑P	Pn	21 36 50.3	0.0
	1.4nm,0.5s,baz=174,slow=12,SNR=38						
KK31				⇓S	Sn	21 37 57.8	+1.0
	3.3nm,0.7s,baz=189,slow=26,SNR=5.8						

*CSEM **11** 21:48:22.6±0.2, 36°.75N×9°.64W, h30km, ML3.9/8, Error ellipse: s-maj=4.7km s-min=3.4km az=71.0*
*MDD **11** 21:48:22.3±0.8, 36°.68N×9°.79W, h42km±27km, mb4.7/17, Error ellipse: s-maj=7.9km s-min=5.6km az=79.0, PRXIMO*
*LDG **11** 21:48:23.7±0.6, 37°.11N×9°.33W, h10km, Ml3.2/3, Error ellipse: s-maj=12.3km s-min=6.7km az=42.0*
*IGIL **11** 21:48:23.2, 36°.67N×9°.72W, h31km, ML2.8*
*INMG **11** 21:48:23.2±0.9, 36°.67N×9°.73W, h31km±6km, ML2.9, Error ellipse: s-maj=4.2km s-min=2.4km az=60.0*
*CNRM **11** 21:48:23.6, 36°.67N×9°.41W, h30km, MD3.4*
ISC 11 21:48:22.4±1.9, 37°.04N±0°.05×9°.43W±0°.05, h9km±9km, n160, σ2s54/275, 1C-20D, Portugal

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PFVI	**Vila Bisbo**	**0.49**	**79**	*e*P	**Pn**	**21 48 37.9**	**+2.3**
PFVI				*e*S	Sb	21 48 48.4	+8.0
PFVI				A	A	21 48 49.3	
	210nm,0.3s						
PFVI	**Vila Bisbo**	**0.49**	**79**	⇓P	**Pn**	**21 48 37.9**	**+2.3**
	22nm,0.1s,SNR=18						
PFVI				S	Sb	21 48 48.7	+8.3
	395nm,0.2s,SNR=48						
PFVI	**Vila Bisbo**	**0.49**	**79**	P	**Pn**	**21 48 37.9**	**+2.3**
	22nm,0.1s,SNR=18						
PFVI				S	Sb	21 48 48.7	+8.3
	395nm,0.2s,SNR=48						
MORF	**Marmelete**	**0.67**	**67**	*e*P	**Pn**	**21 48 40.9**	**+2.7**
MORF				*e*S	**Sn**	**21 48 53.4**	**+4.6**
MORF				AML	AML	21 48 54.7	
	comp=N,374nm,0.1s						
MORF	**Marmelete**	**0.67**	**67**	⇓*e*P	**Pn**	**21 48 40.9**	**+2.7**
MORF				*e*S	**Sn**	**21 48 53.9**	**+5.1**
MORF				A	A	21 48 55.0	
	comp=N,223nm,0.1s						
MORF	**Marmelete**	**0.67**	**67**	P	**Pn**	**21 48 40.9**	**+2.7**
MORF				S	**Sn**	**21 48 53.4**	**+4.6**
	comp=N,374nm,0.1s						
MORF	**Marmelete**	**0.67**	**67**	⇓*e*P	**Pn**	**21 48 40.9**	**+2.7**
MORF				*e*S	**Sn**	**21 48 53.9**	**+5.1**
	comp=N,223nm,0.1s						
PTEO	**Sao Teotonio**	**0.75**	**48**	⇓*e*Pn	**Pn**	**21 48 42.4**	**+3.2**
PTEO				*e*Sn	**Sn**	**21 48 56.4**	**+5.7**
PTEO				A	A	21 48 57.3	
	comp=N,92nm,0.4s						
PTEO	**Sao Teotonio**	**0.75**	**48**	P	**Pn**	**21 48 42.4**	**+3.2**
PTEO				S	**Sn**	**21 48 56.4**	**+5.7**
	comp=N,46nm,0.4s						
PTEO	**Sao Teotonio**	**0.75**	**48**	P	**Pn**	**21 48 42.4**	**+3.2**
PTEO				S	**Sn**	**21 48 56.4**	**+5.7**
	comp=N,46nm,0.4s						
PBDV	**Barranco-do-Ve**	**1.21**	**80**	⇓*e*Pn	**Pn**	**21 48 47.6**	**+2.0**
PBDV				*e*Sn	**Sn**	**21 49 05.2**	**+3.1**
PBDV				A	A	21 49 16.7	
	comp=N,31nm,0.2s						
PBDV	**Barranco-do-Ve**	**1.21**	**80**	P	**Pn**	**21 48 47.

EVO A A 21 49 25.3
comp=N,88nm,0.1s
EVO Evora 1.86 37 P **Pg 21 48 57.4 -0.7**
EVO S **Sg 21 49 23.0 +0.8**
comp=N,88nm,0.1s
EVO Evora 1.86 37 P **Pg 21 48 57.4 -0.7**
EVO S **Sg 21 49 23.0 +0.8**
comp=N,88nm,0.1s
PMAFR Mafra 1.91 3⇓*e*Pn **Pb 21 48 57.4 -0.1**
PMAFR *e*Sn **Sg 21 49 23.4 -0.5**
PMAFR A 21 49 26.1
comp=N,166nm,0.2s
PMAFR Mafra 1.91 3 ⇓P **Pb 21 48 57.4 -0.1**
comp=N,50nm,0.1s,SNR=18
PMAFR S **Sg 21 49 23.5 -0.5**
comp=N,177nm,0.2s,SNR=6.4
PMAFR Mafra 1.91 3 P **Pb 21 48 57.4 -0.1**
comp=N,50nm,0.1s,SNR=18
PMAFR *e*Sn **Sg 21 49 23.4 -0.5**
comp=N,166nm,0.2s
PBAR Barrancos 2.21 58 *e*Pn **Pb 21 49 01.9 -0.6**
PBAR *e*Sn **Sg 21 49 30.9 -2.4**
PBAR A 21 49 32.4
comp=N,57nm,0.2s
PBAR Barrancos 2.21 58 P **Pb 21 49 01.9 -0.6**
PBAR S **Sg 21 49 30.9 -2.4**
comp=N,57nm,0.2s
PBAR Barrancos 2.21 58 P **Pb 21 49 01.9 -0.6**
PBAR S **Sg 21 49 30.9 -2.4**
comp=N,57nm,0.2s
ALMR Almeirim 2.21 17 *e*P **Pb 21 49 02.3 -0.3**
ALMR *e*S **Sg 21 49 31.0 -2.5**
ALMR AML AML 21 49 32.4
comp=E,28nm,0.1s
ALMR Almeirim 2.21 17 *e*P **Pb 21 49 02.3 -0.3**
ALMR *e*S **Sg 21 49 31.0 -2.5**
ALMR Almeirim 2.21 17 P **Pb 21 49 02.3 -0.3**
ALMR S **Sg 21 49 31.0 -2.5**
comp=E,14nm,0.1s
ALMR Almeirim 2.21 17 *e*P **Pb 21 49 02.3 -0.3**
ALMR S **Sg 21 49 31.0 -2.5**
comp=E,14nm,0.1s
PMTG Montargil 2.23 25 *e*Pn **Pb 21 49 02.7 -0.2**
PMTG *e*Sn **Sg 21 49 32.1 -2.1**
PMTG A A 21 49 34.0
comp=E,34nm,0.3s
PMTG Montargil 2.23 25 *e*Pn **Pb 21 49 02.7 -0.2**
PMTG *e*Sn **Sg 21 49 32.1 -2.1**
comp=E,34nm,0.3s
EMIN Mina Concepcio 2.31 71 ⇑P **Pb 21 49 02.6 -1.6**
comp=E,3.2nm,0.1s,SNR=18
EMIN S **Sb 21 49 32.0 -0.8**
comp=E,16nm,0.1s,SNR=6.3
EMIN Mina Concepcio 2.31 71 P **Pb 21 49 02.6 -1.6**
comp=E,3.2nm,0.1s,SNR=18
EMIN S **Sb 21 49 32.0 -0.8**
comp=E,16nm,0.1s,SNR=6.3
PESTR Estremoz 2.33 38 *e*Pn **Pb 21 49 03.5 -1.1**
PESTR *e*Sn **Sg 21 49 34.3 -2.9**
PESTR A A 21 49 36.8
comp=E,14nm,0.2s
PESTR Estremoz 2.33 38 *e*Pn **Pb 21 49 03.5 -1.1**
PESTR *e*Sn **Sg 21 49 34.3 -2.9**
comp=E,14nm,0.2s
EBAD Badajoz 2.56 47 ⇓P **Pb 21 49 06.6 -1.9**
comp=E,11nm,0.1s,SNR=18
EBAD S **Sb 21 49 39.7 -0.4**
comp=E,21nm,0.1s,SNR=15
EBAD Badajoz 2.56 47 P **Pb 21 49 06.6 -1.9**
comp=E,11nm,0.1s,SNR=18
EBAD S **Sb 21 49 39.7 -0.4**
comp=E,21nm,0.1s,SNR=15
PTOM Tomar 2.69 17 *e*Pn **Pb 21 49 08.7 -2.0**
PTOM *e*Sn **Sb 21 49 42.3 -1.6**
PTOM A A 21 49 45.4
comp=E,32nm,0.1s
PTOM Tomar 2.69 17 P **Pb 21 49 08.7 -2.0**
PTOM S **Sb 21 49 42.3 -1.6**
comp=E,16nm,0.1s
PTOM Tomar 2.69 17 P **Pb 21 49 08.7 -2.0**
PTOM S **Sb 21 49 42.3 -1.6**
comp=E,16nm,0.1s
ESPR Espera 2.87 92 P **Pn 21 49 09.0 +0.7**
comp=E,2.9nm,0.1s,SNR=13
ESPR S **Sn 21 49 43.2 +0.4**
comp=E,75nm,0.2s,SNR=8.4
ESPR Espera 2.87 92 P **Pn 21 49 09.0 +0.7**
comp=E,2.9nm,0.1s,SNR=13
ESPR S **Sn 21 49 43.2 +0.4**
comp=E,75nm,0.2s,SNR=8.4
PMRV Marv??o 2.87 33 *e*Pn **Pb 21 49 11.3 -2.5**
PMRV *e*Sn **Sb 21 49 46.9 -2.1**
PMRV A A 21 49 49.6
comp=E,26nm,0.3s
PMRV Marv??o 2.87 33 P **Pb 21 49 11.3 -2.5**
PMRV S **Sb 21 49 46.9 -2.1**
comp=E,26nm,0.3s
PMRV Marv??o 2.87 33 P **Pb 21 49 11.3 -2.5**
PMRV S **Sb 21 49 46.9 -2.1**
comp=E,26nm,0.3s
PCAS Casmilo, Conde 3.09 13 *e*Pn **Pn 21 49 13.9 +2.5**
PCAS *e*Sn **Sb 21 49 52.0 -3.4**
PCAS A A 21 49 54.8
comp=E,16nm,0.3s
PCAS Casmilo, Conde 3.09 13 *e*Pn **Pn 21 49 13.9 +2.5**
PCAS *e*Sn **Sb 21 49 52.0 -3.4**
comp=E,16nm,0.3s
PCBR Castelo Branco 3.18 28⇓*e*Pn **Pb 21 49 15.9 -3.2**
PCBR *e*Sn **Sb 21 49 54.9 -3.1**
PCBR A A 21 49 57.8
comp=E,11nm,0.3s
PCBR Castelo Branco 3.18 28 P **Pb 21 49 15.9 -3.2**
PCBR S **Sb 21 49 54.9 -3.1**
comp=E,5.6nm,0.3s
PCBR Castelo Branco 3.18 28 P **Pb 21 49 15.9 -3.2**
PCBR S **Sb 21 49 54.9 -3.1**
comp=E,5.6nm,0.3s
ECAB El Cabril 3.35 71 P **Pn 21 49 16.8 +1.9**
comp=E,2.1nm,0.1s,SNR=36
ECAB S **Sn 21 49 56.7 +1.9**
comp=E,16nm,0.2s,SNR=6.5
ECAB El Cabril 3.35 71 P **Pn 21 49 16.8 +1.9**
comp=E,2.1nm,0.1s,SNR=36
ECAB S **Sn 21 49 56.7 +1.9**
comp=E,16nm,0.2s,SNR=6.5
MTE Manteigas 3.66 23 *e*Pn **Pn 21 49 22.1 +2.8**
MTE *e*Sn **Sb 21 50 06.1 -5.7**
MTE A A 21 50 10.7
comp=E,12nm,0.5s
MTE Manteigas 3.66 23 P **Pn 21 49 22.1 +2.8**
MTE S **Sb 21 50 06.1 -5.7**
comp=E,6.1nm,0.5s
MTE Manteigas 3.66 23 P **Pn 21 49 22.1 +2.8**
MTE S **Sb 21 50 06.1 -5.7**
comp=E,6.1nm,0.5s
EMIJ Mijas 3.77 96 P **Pn 21 49 21.1 +0.4**
comp=E,0.0nm,0.0s,SNR=7.9
EMIJ S **Sn 21 50 05.7 +0.6**
comp=E,3.1nm,0.3s,SNR=7.9
EMIJ Mijas 3.77 96 P **Pn 21 49 21.1 +0.4**
SNR=7.9
EMIJ S **Sn 21 50 05.7 +0.6**
comp=E,3.1nm,0.3s,SNR=7.9
PVIS Viseu 3.86 18⇓*e*Pn **Pn 21 49 24.4 +2.4**
PVIS *e*Sn **Sn 21 50 10.6 +3.2**
PVIS A A 21 50 14.2
comp=E,16nm,0.2s
PVIS Viseu 3.86 18 P **Pn 21 49 24.4 +2.4**
PVIS S **Sn 21 50 10.6 +3.2**
comp=E,8.1nm,0.2s
PVIS Viseu 3.86 18 P **Pn 21 49 24.4 +2.4**
PVIS S **Sn 21 50 10.6 +3.2**
comp=E,8.1nm,0.2s
EPLA Plasencia 4.00 40 ⇓P **Pn 21 49 26.5 +2.6**
comp=E,7.2nm,0.2s,SNR=18
EPLA S **Sb 21 50 14.8 -6.7**
comp=E,34nm,0.2s
EPLA Plasencia 4.00 40 P **Pn 21 49 26.5 +2.6**
comp=E,7.2nm,0.2s,SNR=18
EPLA S **Sb 21 50 14.8 -6.7**
comp=E,34nm,0.2s
EADA Adamuz 4.01 72 P **Pn 21 49 25.9 +1.8**
comp=E,1.5nm,0.1s,SNR=25
EADA S **Sn 21 50 11.8 +0.6**
comp=E,5.8nm,0.1s,SNR=11
EADA Adamuz 4.01 72 P **Pn 21 49 25.9 +1.8**
comp=E,1.5nm,0.1s,SNR=25
EADA S **Sn 21 50 11.8 +0.6**
comp=E,5.8nm,0.1s,SNR=11
EGOR Sierra Gorda, 4.25 88 S **Sn 21 50 19.0 +1.7**
comp=E,3.8nm,0.2s,SNR=7.9
EGOR Sierra Gorda, 4.25 88 S **Sn 21 50 19.0 +1.7**
comp=E,3.8nm,0.2s,SNR=7.9
PVRL Vila Real 4.43 17 *e*Pn **Pn 21 49 32.3 +2.5**
PVRL *e*Sn **Sn 21 50 23.8 +2.3**
PVRL A A 21 50 28.1
comp=E,20nm,0.2s
PVRL Vila Real 4.43 17 P **Pn 21 49 32.3 +2.5**
PVRL S **Sn 21 50 23.8 +2.3**
comp=E,9.8nm,0.2s
PVRL Vila Real 4.43 17 P **Pn 21 49 32.3 +2.5**
PVRL S **Sn 21 50 23.8 +2.3**
comp=E,9.8nm,0.2s
POLO Lamas de Olo 4.51 16 *e*Pn **Pn 21 49 33.0 +2.1**
POLO *e*Sn **Sn 21 50 25.9 +2.4**
POLO A A 21 50 29.1
comp=E,4.3nm,0.2s
POLO Lamas de Olo 4.51 16 *e*Pn **Pn 21 49 33.0 +2.1**
POLO *e*Sn **Sn 21 50 25.9 +2.4**
comp=E,4.3nm,0.2s
MVO Moncorvo 4.52 24 *e*Pn **Pn 21 49 33.6 +2.6**
MVO *e*Sn **Sn 21 50 25.9 +2.2**
MVO A A 21 50 29.4
comp=E,15nm,0.4s
MVO Moncorvo 4.52 24 ⇓P **Pn 21 49 33.6 +2.6**
comp=E,19nm,0.2s,SNR=18
MVO S **Sn 21 50 26.6 +2.9**
comp=E,13nm,0.2s,SNR=9.1
MVO Moncorvo 4.52 24 P **Pn 21 49 33.6 +2.6**
comp=E,19nm,0.2s,SNR=18
MVO *e*Sn **Sn 21 50 25.9 +2.2**
comp=E,15nm,0.4s
MVO S **Sn 21 50 26.6 +2.9**
comp=E,13nm,0.2s,SNR=9.1
SELV Sierra Elvira 4.56 86 S **Sn 21 50 26.1 +1.4**
comp=E,1.0nm,0.2s,SNR=7.9
SELV Sierra Elvira 4.56 86 S **Sn 21 50 26.1 +1.4**
comp=E,1.0nm,0.2s,SNR=7.9
PCAB Cabril 4.78 13 *e*Pn **Pn 21 49 36.7 +2.0**
PCAB *e*Sn **Sn 21 50 31.4 +1.1**
PCAB A A 21 50 35.5
comp=E,12nm,0.1s
PCAB Cabril 4.78 13 P **Pn 21 49 36.7 +2.0**
PCAB S **Sn 21 50 31.4 +1.1**
comp=E,6.2nm,0.1s
PCAB Cabril 4.78 13 P **Pn 21 49 36.7 +2.0**
PCAB S **Sn 21 50 31.4 +1.1**
comp=E,6.2nm,0.1s
ELOB Lobios 4.93 12 ⇓P **Pn 21 49 38.7 +2.0**
comp=E,5.4nm,0.1s,SNR=18
ELOB S **Sn 21 50 34.6 +0.7**
comp=E,11nm,0.2s,SNR=8.2
ELOB Lobios 4.93 12 P **Pn 21 49 38.7 +2.0**
comp=E,5.4nm,0.1s,SNR=18
ELOB S **Sn 21 50 34.6 +0.7**
comp=E,11nm,0.2s,SNR=8.2
PGAV Gavieira, Arco 5.00 10 *e*Pn **Pn 21 49 39.8 +2.1**
PGAV *e*Sn **Sn 21 50 35.8 +0.2**
PGAV A A 21 50 40.6
comp=E,11nm,0.4s
PGAV Gavieira, Arco 5.00 10 *e*Pn **Pn 21 49 39.8 +2.1**
ESDC Sonseca Array 5.03 57 P **Pn 21 49 40.0 +1.9**
comp=E,15nm,0.1s,baz=241,slow=13,SNR=119
ESDC S **Sn 21 50 38.3 +1.9**
comp=E,8.7nm,0.1s,baz=241,slow=24,SNR=51
ESDC Sonseca Array 5.03 57 P **Pn 21 49 40.0 +1.9**
comp=E,15nm,0.1s,SNR=119
ESDC S **Sn 21 50 38.3 +1.9**
comp=E,8.7nm,0.1s,SNR=51
GORA Gorafe 5.11 83 S **Sn 21 50 38.1 -0.3**
comp=E,4.4nm,0.1s,SNR=7.9
GORA Gorafe 5.11 83 S **Sn 21 50 38.1 -0.3**
comp=E,4.4nm,0.1s,SNR=7.9
EQES Quesada 5.12 80 P **Pn 21 49 40.4 +1.1**
comp=E,0.9nm,0.2s,SNR=7.9
EQES S **Sn 21 50 38.8 +0.3**
comp=E,7.0nm,0.2s,SNR=18
EQES Quesada 5.12 80 P **Pn 21 49 40.4 +1.1**
comp=E,0.9nm,0.2s,SNR=7.9
EQES S **Sn 21 50 38.8 +0.3**
comp=E,7.0nm,0.2s,SNR=18
PBRG Braganca 5.19 23 *e*Pn **Pn 21 49 42.6 +2.3**
PBRG *e*Sn **Sn 21 50 42.4 +2.2**
PBRG A A 21 50 44.5
comp=E,7.6nm,0.2s
PBRG Braganca 5.19 23 P **Pn 21 49 42.6 +2.3**
PBRG S **Sn 21 50 42.4 +2.2**
comp=E,3.8nm,0.2s
PBRG Braganca 5.19 23 P **Pn 21 49 42.6 +2.3**
PBRG S **Sn 21 50 42.4 +2.2**
comp=E,3.8nm,0.2s
EBER Berja 5.24 90 S **Sn 21 50 41.9 +0.3**
comp=E,1.9nm,0.3s,SNR=7.9
EBER Berja 5.24 90 S **Sn 21 50 41.9 +0.3**
comp=E,1.9nm,0.3s,SNR=7.9
KIB El Ksiba 5.26 147 P Pn 21 49 35.0 -6.2
KIB S Sn 21 50 29.0 -13
KIB El Ksiba 5.26 147 *i* P Pn 21 49 35.0 -6.2
ECAL Calabor 5.32 22 P **Pn 21 49 44.6 +2.6**
comp=E,4.3nm,0.1s,SNR=23
ECAL S **Sn 21 50 46.1 +2.7**
comp=E,8.7nm,0.2s,SNR=7.0
ECAL Calabor 5.32 22 P **Pn 21 49 44.6 +2.6**
comp=E,4.3nm,0.1s,SNR=23
ECAL S **Sn 21 50 46.1 +2.7**
comp=E,8.7nm,0.2s,SNR=7.0
CZD Col de Zad 5.38 137 P Pn 21 49 37.0 -6.1
CZD S Sn 21 50 32.0 -13
CZD Col de Zad 5.38 137 *i* P Pn 21 49 37.0 -6.1
TZC Tazercounte 5.45 153 P Pn 21 49 38.0 -6.0
TZC S Sn 21 50 32.0 -15
TZC Tazercounte 5.45 153 *i* P Pn 21 49 38.0 -6.0
GUD Guadarrama 5.46 47 P **Pn 21 49 46.4 +2.3**
comp=E,4.3nm,0.2s,SNR=35
GUD S **Sn 21 50 49.8 +2.7**
comp=E,8.7nm,0.3s,SNR=9.0
GUD Guadarrama 5.46 47 P **Pn 21 49 46.4 +2.3**
comp=E,4.3nm,0.2s,SNR=35
GUD S **Sn 21 50 49.8 +2.7**
comp=E,8.7nm,0.3s,SNR=9.0
CIA Chichaoua 5.49 174 P Pn 21 49 38.0 -6.4
CIA S Sn 21 50 32.0 -16
CIA Chichaoua 5.49 174 *i* P Pn 21 49 38.0 -6.4
SESP Santiago Espad 5.57 77 S **Sn 21 50 50.3 +0.5**
comp=E,5.3nm,0.1s,SNR=7.9
SESP Santiago Espad 5.57 77 S **Sn 21 50 50.3 +0.5**
comp=E,5.3nm,0.1s,SNR=7.9
EAGO Agolada(Pontev 5.84 10 P **Pn 21 49 50.8 +1.6**
comp=E,2.7nm,0.1s,SNR=7.9
EAGO S **Sn 21 50 56.6 +0.3**
comp=E,6.6nm,0.2s,SNR=7.9
EAGO Agolada(Pontev 5.84 10 P **Pn 21 49 50.8 +1.6**
comp=E,2.7nm,0.1s,SNR=7.9
EMAZ Mazaricos 5.91 3 P **Pn 21 49 51.5 +1.4**
comp=E,4.6nm,0.1s,SNR=7.9
EMAZ S **Sn 21 50 56.9 -1.0**
comp=E,8.8nm,0.1s,SNR=7.9
EMAZ Mazaricos 5.91 3 P **Pn 21 49 51.5 +1.4**
comp=E,4.6nm,0.1s,SNR=7.9
ETOB Tobarra 6.44 73 P **Pn 21 49 58.7 +1.3**
comp=E,0.3nm,0.1s,SNR=7.9
ETOB S **Sn 21 51 10.9 -0.1**
comp=E,1.2nm,0.2s,SNR=7.9
ETOB Tobarra 6.44 73 P **Pn 21 49 58.7 +1.3**
comp=E,0.3nm,0.1s,SNR=7.9
ETOB S **Sn 21 51 10.9 -0.1**
comp=E,1.2nm,0.2s,SNR=7.9
EPON Pontenova 6.51 15 P **Pn 21 50 00.6 +2.2**
comp=E,0.8nm,0.1s,SNR=7.7
EPON S **Sn 21 51 13.1 +0.3**
comp=E,1.1nm,0.2s,SNR=7.9
EPON Pontenova 6.51 15 P **Pn 21 50 00.6 +2.2**
comp=E,0.8nm,0.1s,SNR=7.7
EARI Arriondas 7.03 26 P **Pn 21 50 08.7 +3.1**
comp=E,0.9nm,0.2s,SNR=8.4
EARI S **Sn 21 51 27.5 +1.8**
comp=E,0.6nm,0.2s
EARI Arriondas 7.03 26 P **Pn 21 50 08.7 +3.1**
comp=E,0.9nm,0.2s,SNR=8.4
EARI S **Sn 21 51 27.5 +1.8**
comp=E,0.6nm,0.2s
ELAN Lanestosa 7.70 35 P **Pn 21 50 17.8 +3.1**
comp=E,0.4nm,0.1s,SNR=6.1
ELAN S **Sn 21 51 43.4 +1.4**
comp=E,0.5nm,0.1s
EMOS Mosqueruela 7.75 62 P **Pn 21 50 18.9 +3.4**
comp=E,2.5nm,0.3s,SNR=7.9
EMOS S **Sn 21 51 44.0 +0.6**
comp=E,2.1nm,0.2s,SNR=7.3
EMOS Mosqueruela 7.75 62 P **Pn 21 50 18.9 +3.4**
comp=E,2.5nm,0.3s,SNR=7.9
EMOS S **Sn 21 51 44.0 +0.6**
comp=E,2.1nm,0.2s,SNR=7.3
IELO Elcoad 8.55 45 P **Pn 21 50 29.6 +3.3**
comp=E,0.9nm,0.1s,SNR=7.9
IELO S **Sn 21 52 03.5 +0.5**
comp=E,1.3nm,0.2s,SNR=7.9
IELO Elcoad 8.55 45 P **Pn 21 50 29.6 +3.3**
comp=E,0.9nm,0.1s,SNR=7.9
SJPF Ste Jean 8.73 43 P **Pn 21 50 31.8 +3.0**
SJPF S **Sn 21 52 06.9 -0.4**
comp=E,0.9nm,0.4s
SJPF Ste Jean 8.73 43 *e*Pn **Pn 21 50 26.0 -2.8**
SJPF Ste Jean 8.73 43 *e*P **Pn 21 50 31.8 +3.0**
SJPF *e*Sn **Sn 21 52 05.7 -1.6**
comp=E,1.7nm,0.4s
SJPF Ste Jean 8.73 43 *e*P **Pn 21 50 31.8 +3.0**
ETSF Etsaut 8.97 47 P **Pn 21 50 34.9 +2.7**
ETSF S **Sn 21 52 12.6 -0.7**
comp=E,0.6nm,0.4s
ETSF Etsaut 8.97 47 *e*Pn **Pn 21 50 29.4 -2.8**
ETSF Etsaut 8.97 47 *e*P **Pn 21 50 34.9 +2.7**
ETSF *e*Sn **Sn 21 52 11.4 -1.9**
comp=E,1.3nm,0.4s
ETSF Etsaut 8.97 47 *e*P **Pn 21 50 34.9 +2.7**
ATE Arette 9.01 45 P **Pn 21 50 35.9 +3.3**
comp=E,1.4nm,0.2s,SNR=7.9
ATE S **Sn 21 52 14.5 +0.4**
comp=E,0.6nm,0.1s,SNR=7.9
ATE Arette 9.01 45 P **Pn 21 50 35.9 +3.3**
comp=E,1.4nm,0.2s,SNR=7.9
EPF Esparros 9.58 48 P **Pn 21 50 43.3 +2.8**
EPF S **Sn 21 52 27.1 -1.2**
comp=E,0.9nm,0.3s
EPF Esparros 9.58 48 *e*Pn **Pn 21 50 37.3 -3.2**
EPF Esparros 9.58 48 *e*P **Pn 21 50 43.3 +2.8**
EPF *e*Sn **Sn 21 52 25.2 -3.1**
comp=E,1.7nm,0.3s
EPF Esparros 9.58 48 *e*P **Pn 21 50 43.3 +2.8**
CLLI Lliivia 10.31 55 P **Pn 21 50 53.0 +2.4**
comp=E,0.0nm,0.2s,SNR=7.9
CLLI S **Sn 21 52 44.4 -2.1**
comp=E,0.0nm,0.1s,SNR=7.9
CLLI Lliivia 10.31 55 P **Pn 21 50 53.0 +2.4**
SNR=7.9
MTLF Montolieu 10.90 51 P **Pn 21 50 59.7 +1.2**
MTLF S **Sn 21 52 58.7 -1.8**
comp=E,0.2nm,0.2s
MTLF Montolieu 10.90 51 P **Pn 21 50 59.7 +1.2**

IDC 11 21:55:32.5±42.0, 20°.14S×167°.83E, h0km, mb3.9/3, mb1 4.1/4, mb1mx3.7/30, mbtmp3.9/4, ML3.2/1, MS2.7/1, Ms1 2.7/1, ms1mx2.5/31, Error ellipse: s-maj=712.6km s-min=55.0km az=83.0, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.31**	**214**	Pn	Pn	21 56 10.7	-1.3
	5.9nm,0.3s,baz=43,slow=19,SNR=63						
DZM				Sn	Sn	21 56 37.8	-3.5
	14nm,0.3s,baz=157,slow=14,SNR=6.0						
DZM				LR	LR	21 57 01.0	
	comp=Z,152nm,19.0s,baz=168,slow=38						
STKA	**Stephens Creek**	**26.24**	**238**	P	P	22 01 10.9	+1.5
	2.5nm,0.9s,baz=80,slow=12,SNR=4.4						
WRA	**Warramunga Arr**	**31.43**	**264**	P	P	22 01 54.4	-1.5
	0.6nm,0.8s,baz=92,slow=8.7,SNR=3.7						
ASAR	**Alice Springs**	**31.62**	**257**	P	P	22 01 58.4	+0.8
	2.4nm,0.6s,baz=86,slow=9.1,SNR=19						

IDC 11 21:55:55.4±1.5, 2°.98S×139°.33E, h0km, mb3.3/2, mb1 3.7/3, mb1mx3.4/25, mbtmp3.5/3, ML3.7/1, Error ellipse: s-maj=33.8km s-min=15.3km az=154.0, Near north coast of Irian Jaya

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAY	**Jayapura**	**1.44**	**71**	Pg	Pb	21 56 23.3	+0.1
	1.4nm,0.3s,baz=264,slow=19,SNR=50						
JAY				Lg	Lg	21 56 40.7	
	1.6nm,0.3s,baz=271,slow=24,SNR=12						
WRA	**Warramunga Arr**	**17.55**	**196**	P	Pn	22 00 02.0	+0.4
	0.2nm,0.3s,baz=19,slow=12,SNR=8.8						
ASAR	**Alice Springs**	**21.23**	**194**	P	P	22 00 42.2	-0.8
	0.9nm,0.7s,baz=25,slow=8.9,SNR=9.8						
MKAR	**Makanchi Array**	**70.38**	**322**	P	P	22 07 11.2	-0.1
	0.2nm,0.6s,baz=104,slow=8.7,SNR=3.6						

JMA 11 22:12:55.1±0.6, 34°.96N×142°.77E, h11km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**1.51**	**259**	P	Pn	22 13 21.9	+0.4
BSO1				*e*S	Sb	22 13 41.4	-0.2
BSO2	**Boso 2**	**1.67**	**263**	*e*S	Sb	22 13 46.8	+0.2
BSO3	**Boso 3**	**1.86**	**266**	P	Pn	22 13 27.8	+1.1
BSO4	**Boso 4**	**2.00**	**272**	P	Pb	22 13 30.5	-0.9
JOD2	**Odawara 2**	**3.03**	**277**	*e*S	Sn	22 14 17.9	-1.5

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*NIED **11** 22:13:00, 42°.30N×144°.70E, h35km, Mw4.0 Best double couple: M0 1.10000×10^15 NP1:φ0=259.00000°, δ35.00000°, λ116.00000°. NP2:φ0=48.00000°, δ59.00000°, λ73.00000°.*
*SKHL **11** 22:13:30.8±0.1, 42°.11N×144°.82E, h54km±4km, mb5.1/5*
*ISCJB **11** 22:13:30.6±0.6, 42°.21N±0°.04×144°.74E±0°.04, h44km±4km, mb4.2/27, Error ellipse: s-maj=7.4km s-min=3.9km az=145.1*
*JMA **11** 22:13:31.9, 42°.34N×144°.68E, h36km±1km, M3.9*
JMA Felt I J1.
*MOS **11** 22:13:31.0±1.3, 42°.21N×144°.61E, h46km, mb4.3/14, Error ellipse: s-maj=11.4km s-min=8.5km az=82.0*
*NEIC **11** 22:13:32.1±0.9, 42°.21N×144°.70E, h40km±9km, mb4.5/11, Error ellipse: s-maj=8.4km s-min=7.1km az=170.0*
NEIC Recorded [1 JMA] in southeastern Hokkaido.
*IDC **11** 22:13:33.2±2.6, 42°.22N×144°.56E, h47km±24km, mb3.6/15, mb1 3.9/17, mb1mx3.7/38, mbtmp3.9/17, ML3.9/2, MS3.0/2, Ms1 3.0/2, ms1mx2.5/46, Error ellipse: s-maj=20.3km s-min=17.5km az=161.0*

ISC 11 22:13:31.4±1.3, 42°.25N±0°.05×144°.68E±0°.04, h32km±9km, n114, σ1§17/121, mb4.1/27, 3C-9D, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAK	**Akkeshi**	**0.74**	**1**	⇓P	**Pn**	**22 13 44.7**	**-0.9**
JAK				*e*S	**Sb**	**22 13 54.5**	**-1.2**
JOB	**Onbets**	**0.90**	**316**	⇓P	**Pn**	**22 13 47.5**	**-0.3**
MYR	**Moyori**	**1.04**	**273**	*e*P	**Pb**	**22 13 50.5**	**-0.3**
JCH	**Churui**	**1.04**	**291**	⇓P	**Pn**	**22 13 50.1**	**+0.4**
JCH				*e*S	**Sb**	**22 14 03.8**	**-0.4**
ERM	**Erimo**	**1.16**	**259**	*e*PN	**Pb**	**22 13 53.2**	**+0.3**
ERM				*e*		22 14 07.8	
ERM	**Erimo**	**1.16**	**259**	*e*Pn	**Pb**	**22 13 53.2**	**+0.3**
ERM				*e*Sn	**Sb**	**22 14 07.8**	**+0.2**
ERM	**Erimo**	**1.16**	**259**	*e*P	**Pb**	**22 13 53.2**	**+0.3**
JEM	**Erimo**	**1.16**	**259**	P	**Pb**	**22 13 52.8**	**-0.1**
JEM				*e*S	**Sb**	**22 14 07.7**	**+0.2**
JAR	**Ashorobuto**	**1.24**	**327**	⇓P	**Pn**	**22 13 51.7**	**-0.8**
JNK	**Nakash**	**1.33**	**1**	⇓P	**Pn**	**22 13 52.7**	**-1.0**
JNK				*e*S	**Sn**	**22 14 08.8**	**-1.6**
NEM2	**Nemuro 2**	**1.36**	**35**	⇓P	**Pn**	**22 13 53.7**	**-0.4**
NEM2				*e*S	**Sn**	**22 14 11.7**	**+0.7**
JNBK	**Urakawa-nobuka**	**1.43**	**272**	⇑P	**Pn**	**22 13 55.5**	**+0.4**
HRK	**Horoka**	**1.67**	**317**	*e*P	**Pn**	**22 13 58.2**	**-0.2**
JRA	**Rausu**	**1.71**	**11**	⇓P	**Pn**	**22 13 58.6**	**-0.4**
YUK	**Yuzh-Kuril'sk**	**1.98**	**25**	*d*PN	**Pn**	**22 14 02.9**	**+0.3**
YUK				*i* S	**Sn**	**22 14 26.9**	**+0.6**
YUK				pmax	pmax		
	comp=Z,350nm,0.3s						
YUK				pmax	pmax		
	comp=N,87nm,0.2s						
YUK				pmax	pmax		
	comp=E,74nm,0.2s						

YUK				smax	smax		
	comp=N,603nm,0.4s						
YUK				smax	smax		
	comp=E,2μm,0.4s						
YUK	**Yuzh-Kuril'sk**	**1.98**	**25⇓**	*i*P	**Pn**	**22 14 02.9**	**+0.3**
YUK				AMB	AMB	22 14 03.4	
	comp=E,90nm,0.2s						
YUK				AMB	AMB	22 14 03.4	
	comp=E,70nm,0.2s						
YUK				AMB	AMB	22 14 03.4	
	comp=E,350nm,0.3s						
YUK				*i* S	**Sn**	**22 14 26.9**	**+0.6**
YUK				A	A	22 14 29.9	
	comp=E,600nm,0.4s						
YUK				A	A	22 14 29.9	
	comp=E,2μm,0.4s						
SHO	**Shikotan**	**2.25**	**44***c*	*i*PN	**Pn**	**22 14 07.0**	**+0.6**
SHO				*i* S	**Sn**	**22 14 34.2**	**+1.1**
SHO				pmax	pmax		
	comp=N,20nm,0.3s						
SHO				pmax	pmax		
	comp=Z,91nm,0.3s						
SHO				pmax	pmax		
	comp=E,52nm,0.2s						
SHO				smax	smax		
	comp=N,761nm,0.7s						
SHO				smax	smax		
	comp=E,733nm,0.4s						
SHO	**Shikotan**	**2.25**	**44⇑**	*i*P	**Pn**	**22 14 07.0**	**+0.6**
SHO				AMB	AMB	22 14 09.2	
	comp=E,50nm,0.2s						
SHO				AMB	AMB	22 14 09.2	
	comp=E,20nm,0.3s						
SHO				AMB	AMB	22 14 09.2	
	comp=E,90nm,0.3s						
SHO				*i* S	**Sn**	**22 14 34.2**	**+1.1**
SHO				A	A	22 14 36.2	
	comp=E,760nm,0.7s						
SHO				A	A	22 14 36.2	
	comp=E,730nm,0.4s						
JKA	**Kamikawa-asahi**	**2.40**	**321**	*e*P	**Pn**	**22 14 09.5**	**+1.0**
JKA				*e*S	**Sb**	**22 14 41.4**	**-1.8**
ASAJ	**Asahikawa**	**2.41**	**321**	P	**Pn**	**22 14 09.4**	**+0.9**
	comp=E,24nm,0.3s,baz=175,slow=12,SNR=23						
ASAJ				S	**Sb**	**22 14 41.4**	**-1.9**
	comp=E,24nm,0.3s,baz=316,slow=9.9,SNR=7.4						
ASAJ				LR	LR	22 15 24.4	
	comp=E,230nm,21.2s,baz=182,slow=47						
ASAJ	**Asahikawa**	**2.41**	**321**	*e*Pn	**Pn**	**22 14 09.4**	**+0.9**
ASAJ				*e*Sn	**Sn**	**22 14 37.6**	**+0.7**
KUR	**Kuril'sk**	**3.77**	**37**	*e*PN	**Pn**	**22 14 28.8**	**+1.6**
KUR				*e*S	**Sn**	**22 15 12.5**	**+2.1**
KUR				A	A	22 15 16.8	
	comp=N,50nm,0.1s						
KUR				A	A	22 15 16.8	
	comp=N,110nm,0.4s						
YSS	**Yuzh-Sakhalins**	**4.90**	**344**	*e*P	**Pn**	**22 14 44.4**	**+1.7**
TEY	**Ternei**	**6.49**	**298**	*e*P	Pn	22 15 09.6	+5.1
UGL	**Uglegorsk**	**7.07**	**346**	*e*P	**Pn**	**22 15 15.0**	**+2.5**
UGL				AMB	AMB	22 15 16.1	
	comp=N,50nm,0.3s						
MJAR	**Matsushiro Arr**	**7.59**	**223**	P	**Pn**	**22 15 19.6**	**-0.2**
	comp=N,14nm,0.3s,baz=35,slow=13,SNR=7.8						
MJB9	**Matsu-Tunnel**	**7.59**	**223**	*e*Pn	**Pn**	**22 15 20.2**	**+0.4**
MAJO	**Matsushiro**	**7.59**	**223**	*e*PN	**Pn**	**22 15 19.7**	**-0.1**
MAJO	**Matsushiro**	**7.59**	**223**	*e*Pn	**Pn**	**22 15 19.7**	**-0.1**
MAJO	**Matsushiro**	**7.59**	**223**	*e*P	**Pn**	**22 15 19.7**	**-0.1**
TYV	**Tymovskoe**	**8.72**	**352**	*e*P	**Pn**	**22 15 37.3**	**+2.1**
TYV				AMB	AMB	22 15 38.4	
	comp=N,10.0nm,0.4s						
JHJ2	**Mitsune**	**9.90**	**204**	*e*Pn	**Pn**	**22 15 49.7**	**-1.7**
NKL	**Nikolayevsk**	**11.23**	**348**	*e*P	**Pn**	**22 16 11.2**	**+1.7**
KLR	**Kul'dur**	**11.41**	**312**	LR	LR	22 20 57.7	
	comp=N,108nm,18.1s,baz=130,slow=39						
SKR	**Severo-Kuril's**	**11.53**	**39**	*e*P	**Pn**	**22 16 14.5**	**+0.9**
SKR				AMB	AMB	22 16 16.0	
	comp=N,80nm,0.4s						
EKMR	**Ekimchan**	**13.38**	**328**	*e*P	**Pn**	**22 16 42.7**	**+3.8**
BMKR	**Bomnak**	**16.25**	**326**	*e*P	**Pn**	**22 17 18.0**	**+1.0**
KROS	**Kirovskiy**	**16.88**	**322**	*e*P	**Pn**	**22 17 24.4**	**-0.7**
ULN	**Ulaanbaatar**	**26.97**	**295**	*e*P	**P**	**22 19 12.7**	**+2.5**
ULN				pmax	pmax		
	comp=Z,6.0nm,1.5s						
ULN	**Ulaanbaatar**	**26.97**	**295**	*e*P	**P**	**22 19 12.7**	**+2.5**
	comp=Z,6.0nm,1.5s						
ULN	**Ulaanbaatar**	**26.97**	**295**	*e*P	**P**	**22 19 12.7**	**+2.5**
SONA1	**Songino Array**	**27.41**	**295**	*e*P	**P**	**22 19 14.6**	**+0.5**
SONA0	**Songino Array**	**27.42**	**295**	*e*P	**P**	**22 19 14.5**	**+0.4**
	comp=Z,7.7nm,1.5s						
SONM	**Songino Array**	**27.42**	**295**	P	**P**	**22 19 14.5**	**+0.4**
	comp=Z,2.0nm,0.7s,baz=73,slow=7.9,SNR=8.9						
H11N2	**WAKE ISLAND Hy**	**29.28**	**133**	T	T	22 50 49.0	
	baz=326,slow=75,SNR=47						
H11N1	**WAKE ISLAND Hy**	**29.29**	**133**	T	T	22 50 48.3	
	baz=326,slow=75,SNR=56						
H11N3	**WAKE ISLAND Hy**	**29.29**	**133**	T	T	22 50 48.5	
	baz=326,slow=75,SNR=42						
ZAK	**Zakamensk**	**29.41**	**300**	*e*P	**P**	**22 19 30.8**	**-0.9**
ZAK				pmax	pmax		
	comp=Z,3.0nm,1.3s						
ZAK	**Zakamensk**	**29.41**	**300**	*e*P	**P**	**22 19 30.8**	**-0.9**
H11S1	**WAKE ISLAND Hy**	**30.18**	**135**	T	T	22 51 58.9	
	baz=328,slow=76,SNR=87						
H11S3	**WAKE ISLAND Hy**	**30.18**	**135**	T	T	22 51 59.0	
	baz=328,slow=76,SNR=56						
H11S2	**WAKE ISLAND Hy**	**30.19**	**135**	T	T	22 52 02.0	
	baz=328,slow=76,SNR=58						
TNA	**Tin City**	**35.09**	**32**	*e*P	**P**	**22 20 19.3**	**-1.8**
	comp=Z,10nm,0.7s						
TNA	**Tin City**	**35.09**	**32**	*e*P	**P**	**22 20 19.3**	**-1.8**
TT01	**Tatalina**	**39.72**	**38**	*e*P	**P**	**22 21 01.2**	**+0.8**
ZAA1	**Zalesovo Array**	**40.47**	**308**	*e*P	**P**	**22 21 06.5**	**-0.2**
ZAA0	**Zalesovo Array**	**40.47**	**308**	*e*P	**P**	**22 21 07.2**	**+0.4**
ZALV	**Zalesovo Beam**	**40.47**	**308**	P	**P**	**22 21 06.5**	**-0.2**
	comp=Z,2.7nm,0.7s,baz=89,slow=7.8,SNR=9.9						
CAST	**Castle Rocks**	**41.52**	**37**	*e*P	**P**	**22 21 14.9**	**-0.4**
MLY	**Manley**	**42.11**	**35**	*e*P	**P**	**22 21 21.2**	**+1.0**
COLD	**Coldfoot**	**42.38**	**32**	*e*P	**P**	**22 21 20.0**	**-2.2**
MK01	**Makanchi Array**	**43.68**	**298**	*e*P	**P**	**22 21 33.1**	**0.0**
MK31	**Makanchi Array**	**43.68**	**298**	*e*P	**P**	**22 21 33.5**	**+0.4**
MK31	**Makanchi Array**	**43.68**	**298**	*e*P	**P**	**22 21 33.5**	**+0.4**
MK32	**Makanchi Array**	**43.68**	**298**	*e*P	**P**	**22 21 32.9**	**-0.2**
MKAR	**Makanchi Array**	**43.68**	**298**	P	**P**	**22 21 32.9**	**-0.2**
	comp=Z,0.7nm,0.6s,baz=84,slow=9.7,SNR=11						
MKAR	**Makanchi Array**	**43.68**	**298**	*e*P	**P**	**22 21 33.5**	**+0.3**
MKAR	**Makanchi Array**	**43.68**	**298**	*e*P	**P**	**22 21 33.4**	**+0.3**
ILAR	**Eielson Array**	**43.76**	**35**	P	**P**	**22 21 33.8**	**+0.4**
	comp=Z,1.0nm,0.8s,baz=269,slow=7.3,SNR=8.9						
ILB	**Eielson Array**	**43.76**	**35**	*e*P	**P**	**22 21 33.8**	**+0.4**
KURK	**Kurchatov**	**44.88**	**305**	*e*P	**P**	**22 21 42.2**	**-0.3**
KURK				pmax	pmax		
	comp=Z,3.0nm,0.8s						
KURK	**Kurchatov**	**44.88**	**305**	*e*P	**P**	**22 21 42.2**	**-0.3**
	comp=Z,2.7nm,0.8s						
KURK	**Kurchatov**	**44.88**	**305**	*e*P	**P**	**22 21 42.2**	**-0.3**
INK	**Inuvik**	**48.60**	**29**	P	**P**	**22 22 11.8**	**+0.4**
	comp=Z,0.5nm,0.3s,baz=284,slow=5.7,SNR=9.9						
INK	**Inuvik**	**48.60**	**29**	*e*P	**P**	**22 22 11.8**	**+0.4**
	comp=Z,7.5nm,1.6s						
BVAR	**Borovoye Array**	**49.06**	**310**	P	**P**	**22 22 15.3**	**+0.1**
	comp=Z,1.8nm,0.3s,baz=78,slow=9.1,SNR=20						
TKM2	**Tokmak 2**	**49.51**	**296**	*e*P	**P**	**22 22 19.3**	**+0.3**
TKM2				pmax	pmax		
	comp=Z,1.0nm,0.4s						
TKM2	**Tokmak 2**	**49.51**	**296**	*e*P	**P**	**22 22 19.3**	**+0.3**
	comp=Z,1.2nm,0.4s						
ZRNK	**Zerenda**	**49.87**	**310**	*e*P	**P**	**22 22 20.7**	**-0.6**
ZRNK				pmax	pmax		
	comp=Z,8.0nm,1.4s						
ZRNK	**Zerenda**	**49.87**	**310**	*e*P	**P**	**22 22 20.7**	**-0.6**
	comp=Z,7.8nm,1.4s						
ARU	**Arti**	**54.20**	**317**	P	**P**	**22 22 51.8**	**-1.7**
ARU	**Arti**	**54.20**	**317**	*e*P	**P**	**22 22 53.2**	**-0.2**
	comp=Z,3.8nm,0.8s						
ARU	**Arti**	**54.20**	**317**	*e*P	**P**	**22 22 53.3**	**-0.2**
ABKAR	**Akbulak array**	**56.58**	**309**	*e*P	**P**	**22 23 11.0**	**+0.2**
YKA	**Yellowknife Ar**	**58.04**	**33**	P	**P**	**22 23 23.2**	**+2.4**
	comp=Z,0.3nm,0.7s,baz=303,slow=7.1,SNR=5.0						
YKB5	**Yellowknife Ar**	**58.04**	**33**	*e*P	**P**	**22 23 23.2**	**+2.4**
WR1	**Warramunga Arr**	**62.62**	**191**	*e*P	**P**	**22 23 52.2**	**-0.3**
	comp=Z,54nm,1.9s						
WRA	**Warramunga Arr**	**62.62**	**191**	P	**P**	**22 23 52.2**	**-0.3**
	comp=Z,0.5nm,0.9s,baz=3.3,slow=7.6,SNR=2.9						
FIA0	**FINESS Array S**	**65.37**	**332**	*e*P	**P**	**22 24 09.6**	**-0.6**
FIA0	**FINESS Array S**	**65.37**	**332**	*e*P	**P**	**22 24 09.6**	**-0.6**
FINES	**FINESS Array B**	**65.37**	**332**	P	**P**	**22 24 09.6**	**-0.6**
	comp=Z,1.8nm,0.5s,baz=45,slow=7.2,SNR=29						
BOZ	**Bozeman (W)**	**69.25**	**47**	*e*P	**P**	**22 24 37.0**	**+1.7**
BOZ	**Bozeman (W)**	**69.25**	**47**	*e*P	**P**	**22 24 37.0**	**+1.7**
BOZ	**Bozeman (W)**	**69.25**	**47**	*e*P	**P**	**22 24 37.0**	**+1.7**
KBZ	**Khabaz**	**69.42**	**311**	P	**P**	**22 24 36.0**	**-0.1**
	comp=Z,1.7nm,0.8s,baz=317,slow=1.1,SNR=5.2						
KBZ	**Khabaz**	**69.42**	**311**	P	**P**	**22 24 36.0**	**-0.1**
KBZ				pmax	pmax		
	comp=Z,2.0nm,0.8s						
KBZ	**Khabaz**	**69.42**	**311**	*e*P	**P**	**22 24 36.0**	**-0.1**
NV01	**Mina Array Sit**	**69.91**	**56**	*e*P	**P**	**22 24 39.6**	**+0.1**
NVAR	**Mina Array Bea**	**69.91**	**56**	P	**P**	**22 24 39.6**	**+0.1**
	comp=Z,0.4nm,0.7s,baz=284,slow=8.1,SNR=3.6						
NB2	**NORSAR Subarra**	**70.33**	**338**	P	**P**	**22 24 40.8**	**-0.7**
	comp=Z,0.4nm,0.4s,baz=33,slow=6.5						
NB200	**NORSAR Array S**	**70.33**	**338**	*e*P	**P**	**22 24 40.7**	**-0.7**
NOA	**NORSAR Array B**	**70.33**	**338**	P	**P**	**22 24 40.7**	**-0.7**
	comp=Z,0.2nm,0.4s,baz=291,slow=8.2,SNR=8.0						
AKASG	**Malin Array Be**	**71.69**	**323**	P	**P**	**22 24 48.9**	**-0.9**
	comp=Z,0.8nm,0.5s,baz=44,slow=6.4,SNR=4.3						
AKBB	**Malin Array Si**	**71.69**	**323**	*e*P	**P**	**22 24 48.9**	**-0.9**
AKBB				pmax	pmax		
	comp=Z,6.0nm,0.6s						
AKBB	**Malin Array Si**	**71.69**	**323**	*e*P	**P**	**22 24 48.9**	**-0.9**
	comp=Z,5.5nm,0.6s						
PD31	**Pinedale Array**	**72.26**	**48**	*e*P	**P**	**22 24 53.6**	**-0.1**
PDAR	**Pinedale Array**	**72.26**	**48**	P	**P**	**22 24 53.6**	**-0.1**
	comp=Z,0.3nm,0.6s,baz=318,slow=2.0,SNR=3.7						
WUAZ	**Wupatki**	**76.02**	**55**	*e*P	**P**	**22 25 13.8**	**-1.8**
	comp=Z,9.4nm,0.8s						
LTX	**Lajitas**	**84.99**	**55**	*e*P	**P**	**22 26 04.8**	**+1.0**
LTX	**Lajitas**	**84.99**	**55**	*e*P	**P**	**22 26 04.8**	**+1.0**
TXAR	**Lajitas Array**	**84.99**	**55**	P	**P**	**22 26 04.8**	**+1.0**
	comp=Z,0.2nm,0.4s,baz=312,slow=3.1,SNR=3.8						
WHZ	**Wether Hill Ro**	**90.18**	**164**	*e*P	**P**	**22 26 24.0**	**-3.9**
	comp=Z,71nm,0.8s						
TORD	**Torodi Ar. Bea**	**115.22**	**320**	PKP	**PKPdf**	**22 32 09.2**	**-0.7**
	comp=Z,0.3nm,0.8s,baz=356,slow=1.4,SNR=3.7						

JMA 11 22:21:57.4, 34°.99N × 137°.35E, h40km, M2.9, 2C Broadband fault plane solution: P waves. NP1: ϕ_S=219.00000°, δ75.00000°, λ-67.00000°. **NP2:** ϕ_S=340.00000°, δ27.00000°, λ-146.00000°. **Principal axes:** T Plg27.0000°, Azm291.0000°; N Plg22.0000°, Azm33.0000°; P Plg54.0000°, Azm157.0000°; **Near south coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHZ3	**Shizuoka 3**	**0.71**	**84**	P	Pn	22 22 10.9	-0.1
SHZ3				S	Sn	22 22 21.2	+0.4
TK04	**Tokai 4**	**0.74**	**144**	P	Pn	22 22 12.2	+0.9
JIE	**Ise**	**0.80**	**222**	⇑P	Pn	22 22 12.2	0.0
JIE				S	Sn	22 22 22.5	-0.4
TSUJ	**Tsu 2**	**0.81**	**250**	P	Pn	22 22 12.5	+0.1
TSUJ				S	Sn	22 22 24.1	+0.8
JGM	**Miyama**	**0.88**	**324**	⇑P	Pn	22 22 13.8	+0.5
JGM				S	Sn	22 22 25.7	+0.8
TK02	**Tokai 2**	**1.09**	**162**	P	Pn	22 22 15.8	-0.2
TK02				S	Sn	22 22 30.9	+1.1
JYN	**Shimob**	**1.10**	**62**	P	Pn	22 22 17.1	+0.7
JKN2	**Miekihoku**	**1.16**	**230**	P	Pn	22 22 17.0	-0.2
JKN2				S	Sn	22 22 31.3	-0.5
TTO2	**TONANKAI O.B.S**	**1.28**	**192**	P	Pn	22 22 18.7	+0.2
JIZS	**Izushimoda**	**1.29**	**102**	S	Sn	22 22 33.7	-1.2
MAT	**Matsushiro**	**1.70**	**24**	P	Pn	22 22 26.3	+1.7
MAT				S	Sn	22 22 47.8	+2.7

*ISCJB **11** 22:23:37.4±1.1, 37°.41N±0°.04 × 143°.61E±0°.03, h9km±6km, mb4.5/76, MS3.5/11 Error ellipse: s-maj=6.0km s-min=4.0km az=177.9*
*IDC **11** 22:23:37.0±0.6, 37°.29N × 143°.70E, h0km, mb4.1/22, mb1 4.3/29, mb1mx4.2/59, mbtmp4.2/29, ML3.8/6, MS3.2/13, Ms1 3.2/13, ms1mx2.9/51, Error ellipse: s-maj=15.7km s-min=12.9km az=130.0*
*NEIC **11** 22:23:39.4±2.6, 37°.29N × 143°.71E, h14km±16km, mb4.8/29, Error ellipse: s-maj=6.0km s-min=5.0km az=147.0*
*JMA **11** 22:23:39.7±0.2, 37°.37N × 143°.60E, h44km, M4.3*
*MOS **11** 22:23:42.7±1.0, 37°.72N × 143°.52E, h33km, mb4.5/43, Error ellipse: s-maj=9.0km s-min=6.0km az=114.5*
ISC 11 22:23:39.2±1.9, 37°.39N±0°.05 × 143°.63E±0°.05, h10km±11km, n190, σ1§19/198, mb4.6/78, MS3.3/12, 2C-2D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.09**	**301**	P	**Pn**	**22 24 13.4**	**-0.9**
JIO				S	**Sn**	**22 24 37.8**	**-2.6**
JFK	**Kawauchi**	**2.19**	**270**	P	**Pn**	**22 24 14.6**	**-1.2**
JFK				S	**Sn**	**22 24 40.3**	**-2.7**
ONAJ	**Iwakimizuishiy**	**2.28**	**264**	P	**Pn**	**22 24 16.0**	**-0.9**
OFUJ	**Ofunato**	**2.29**	**318**	P	**Pn**	**22 24 15.7**	**-1.3**
OFUJ				*e*S	**Sn**	**22 24 42.4**	**-2.8**
JMM	**Marumori**	**2.30**	**283**	P	**Pn**	**22 24 16.0**	**-1.2**
JMM				S	**Sn**	**22 24 42.9**	**-2.7**
JMK	**Ichinoseki**	**2.46**	**310**	P	**Pn**	**22 24 18.4**	**-0.9**
JMK				*e*S	**Sn**	**22 24 47.5**	**-1.9**
JOU	**Okura**	**2.54**	**293**	P	**Pn**	**22 24 20.1**	**-0.4**
JOU				*e*S	**Sn**	**22 24 49.5**	**-2.0**
JHO	**Hitachi**	**2.57**	**253**	P	**Pn**	**22 24 19.5**	**-1.4**
JHO				S	**Sn**	**22 24 48.6**	**-3.6**
JFT	**Otama**	**2.62**	**274**	P	**Pn**	**22 24 21.6**	**0.0**
JFT				S	**Sn**	**22 24 52.9**	**-0.7**
JOM	**Ohasama**	**2.77**	**319**	P	**Pn**	**22 24 22.8**	**-0.9**
JOM				S	**Sn**	**22 24 54.8**	**-2.4**
JYK	**Kaneyama**	**3.00**	**302**	P	**Pn**	**22 24 26.4**	**-0.3**
JANG	**Nango**	**3.40**	**332**	P	**Pn**	**22 24 31.8**	**-0.6**
MJAR	**Matsushiro Arr**	**4.42**	**261**	Pn	**Pn**	**22 24 47.2**	**+0.8**
	9.9nm,0.3s,baz=89,slow=15,SNR=42						
MJAR				Sn	Sn	22 25 32.2	-5.7
	1.8nm,0.3s,baz=101,slow=6.6,SNR=4.5						
MAJO	**Matsushiro**	**4.42**	**261**	*d*P	**Pn**	**22 24 47.3**	**+0.9**
MAJO	**Matsushiro**	**4.42**	**261**	*e*Pn	**Pn**	**22 24 47.8**	**+1.4**
MAJO				*e*Sn	Sn	22 25 33.2	-4.8
MAT	**Matsushiro**	**4.42**	**261**	P	**Pn**	**22 24 47.4**	**+1.0**
MAT				S	Sn	22 25 32.8	-5.2
MJB9	**Matsu-Tunnel**	**4.43**	**261**	*e*Pn	**Pn**	**22 24 47.8**	**+1.4**
ERM	**Erimo**	**4.63**	**356**	*i* P	**Pn**	**22 24 47.0**	**-2.2**
ERM				pmax	pmax		
	comp=Z,96nm,1.2s						
ERM	**Erimo**	**4.63**	**356**	*e*Pn	**Pn**	**22 24 47.5**	**-1.7**
ERM				*e*Sn	Sn	22 25 29.1	-14
JHJ2	**Mitsune**	**5.29**	**217**	*e*Pn	**Pn**	**22 24 56.1**	**-2.2**
JHJ2				*e*Sn	**Sn**	**22 25 54.6**	**-4.7**
JHJ	**Hachijo jima 2**	**5.30**	**218**	Pn	**Pn**	**22 24 55.7**	**-2.7**
	comp=Z,7.0nm,0.3s,baz=340,slow=21,SNR=16						
JHJ				Sn	Sn	22 25 52.0	-7.4
	comp=Z,8.6nm,0.3s,baz=64,slow=14,SNR=2.9						
ASAJ	**Asahikawa**	**6.76**	**354**	Pn	**Pn**	**22 25 17.3**	**-1.2**
	comp=Z,5.9nm,0.3s,baz=207,slow=11,SNR=15						
ASAJ				Sn	Sn	22 26 27.6	-7.9
	baz=178,slow=15,SNR=2.8						
ASAJ	**Asahikawa**	**6.76**	**354**	*e*Pn	Pn	22 25 13.5	-5.0
ASAJ				*e*Sn	Sn	22 26 27.6	-7.9
SHO	**Shikotan**	**6.91**	**20**	*i* P	Pn	22 25 16.5	-4.0
SHO				*i* S	Sn	22 26 29.2	-10
SHO				pmax	pmax		
	comp=N,22nm,0.4s						
SHO				pmax	pmax		
	comp=Z,54nm,0.4s						
SHO				pmax	pmax		
	comp=E,30nm,0.5s						
KUR	**Kuril'sk**	**8.46**	**21**	P	**Pn**	**22 25 39.9**	**-1.8**
KUR				*e*S	Sn	22 27 08.8	-8.4
KUR				smax	smax		
	comp=N,20nm,0.4s						
KUR				smax	smax		
	comp=E,26nm,0.4s						
CBIJ	**Chichi jima**	**10.34**	**187**	*e*Pn	Pn	22 26 03.4	-4.2
JCJ	**Chichijima**	**10.34**	**187**	Pn	Pn	22 26 03.4	-4.2
	comp=E,2.4nm,0.3s,baz=92,slow=23,SNR=3.6						
USRK	**Ussuriysk Ar.**	**11.13**	**311**	Pn	**Pn**	**22 26 19.4**	**+1.0**
	comp=E,0.4nm,0.3s,baz=113,slow=12,SNR=12						
USRK				LR	LR	22 30 22.8	
	comp=E,125nm,18.3s,baz=122,slow=36						
JNU	**Nakatsue**	**11.26**	**252**	Pn	**Pn**	**22 26 20.3**	**+0.1**
	comp=E,0.1nm,0.3s,baz=100,slow=6.5,SNR=3.5						
JNU	**Nakatsue**	**11.26**	**252**	*e*Pn	**Pn**	**22 26 18.9**	**-1.3**
KSRS	**Korea Array**	**12.49**	**275**	Pn	**Pn**	**22 26 38.1**	**+1.2**
	comp=E,0.3nm,0.3s,baz=92,slow=13,SNR=17						
KSRS				LR	LR	22 30 54.3	
	comp=E,95nm,20.3s,baz=53,slow=35						
KS15	**Wonju Array Si**	**12.52**	**275**	*e*Pn	**Pn**	**22 26 38.1**	**+0.7**
KSAR	**Wonju Array Be**	**12.52**	**275**	P	**Pn**	**22 26 38.2**	**+0.8**
KSAR	**Wonju Array Be**	**12.52**	**275**	Pn	**Pn**	**22 26 38.1**	**+0.8**
MDJ	**Mudanjiang**	**12.82**	**309**	P	**Pn**	**22 26 41.6**	**+0.2**
MDJ				pmax	pmax		
	comp=Z,6.0nm,0.7s						
MDJ				pmax	pmax		
	comp=Z,78nm,5.9s						
MDJ				LR	LR		
	comp=E,120nm,11.2s						
MDJ				LR	LR		
	comp=Z,150nm,8.7s						
KLR	**Kul'dur**	**14.63**	**328**	Pn	**Pn**	**22 27 04.4**	**-1.8**
	comp=Z,0.4nm,0.3s,baz=133,slow=10,SNR=19						
KLR				LR	LR	22 32 35.6	
	comp=Z,98nm,20.3s,baz=113,slow=36						
NKL	**Nikolayevsk**	**15.89**	**354**	*e*P	P	22 27 32.8	+6.3
PETK	**Petropavlovsk-**	**18.52**	**27**	LR	LR	22 36 45.2	
	comp=Z,21nm,18.5s,baz=84,slow=42						
TIA	**Tai'an**	**21.24**	**275**	*e*P	**P**	**22 28 24.3**	**-1.0**
TIA				pmax	pmax		
	comp=Z,20nm,1.1s						
BJI	**Beijing**	**21.55**	**286**	P	**P**	**22 28 27.1**	**-1.6**
BJI				pmax	pmax		
	comp=Z,6.0nm,1.8s						
MA2	**Magadan**	**22.67**	**9**	LR	LR	22 37 57.0	
	comp=Z,23nm,20.6s,baz=100,slow=38						
HHC	**Hu-ho-hao-te**	**25.04**	**288**	*e*P	**P**	**22 29 03.8**	**+0.2**
HHC				sP	sP	22 29 20.4	+13
HHC				S	**S**	**22 33 25.6**	**-2.2**
HHC				pmax	pmax		
	comp=Z,24nm,0.9s						
HHC				pmax	pmax		
	comp=Z,180nm,4.1s						
HHC				LR	LR		
	comp=N,730nm,13.4s						
HHC				LR	LR		
	comp=E,880nm,13.7s						
HHC				LR	LR		
	comp=Z,830nm,12.5s						
SEY	**Seymchan**	**26.13**	**9**	P	**P**	**22 29 13.7**	**+0.6**
	comp=Z,4.0nm,0.6s,baz=161,slow=3.8,SNR=7.2						
SEY	**Seymchan**	**26.13**	**9**	P	**P**	**22 29 13.7**	**+0.6**
SEY				pmax	pmax		
	comp=Z,5.0nm,0.7s						
BOD	**Bodaibo**	**28.20**	**326**	*e*P	**P**	**22 29 31.6**	**-0.1**
BOD				pmax	pmax		
	comp=Z,6.0nm,1.0s						
ULN	**Ulaanbaatar**	**28.63**	**303**	*i* P	**P**	**22 29 35.7**	**-0.2**
ULN				pmax	pmax		
	comp=Z,8.0nm,1.2s						
ULN	**Ulaanbaatar**	**28.63**	**303**	*e*P	**P**	**22 29 37.3**	**+1.3**
	comp=Z,5.0nm,0.9s						
SONA1	**Songino Array**	**29.06**	**303**	*e*P	**P**	**22 29 41.1**	**+1.4**
SONA0	**Songino Array**	**29.07**	**303**	*e*P	**P**	**22 29 39.9**	**+0.1**
	comp=Z,5.9nm,1.0s						
SONM	**Songino Array**	**29.07**	**303**	P	**P**	**22 29 39.9**	**+0.1**
	comp=Z,1.4nm,0.6s,baz=109,slow=9.5,SNR=8.7						
SONM				LR	LR	22 41 28.5	
	comp=Z,37nm,18.2s,baz=114,slow=37						
TLY	**Talaya**	**31.45**	**310**	LR	LR	22 42 57.9	
	comp=Z,62nm,18.4s,baz=116,slow=37						
TLY	**Talaya**	**31.45**	**310**	*e*P	**P**	**22 30 02.9**	**+2.3**
TLY				pmax	pmax		
	comp=Z,2.0nm,0.9s						
TLY				MLR	MLR		
	comp=Z,80nm,17.0s						
ZAK	**Zakamensk**	**31.45**	**307**	*e*P	**P**	**22 30 00.1**	**-0.7**
ZAK				pmax	pmax		
	comp=Z,3.0nm,1.4s						
LZH	**Lanzhou**	**31.75**	**280**	*e*P	**P**	**22 30 05.3**	**+1.7**
LZH				pP	sP	22 30 14.4	+6.5
LZH				sP	pP	22 30 18.9	+12
LZH				pmax	pmax		
	comp=Z,18nm,1.2s						
GYA	**Guiyang**	**33.02**	**262**	P	**P**	**22 30 17.8**	**+3.0**
GYA				pP	sP	22 30 25.3	+6.2
GYA				PP	**PP**	**22 31 28.4**	**-1.0**
GYA				PcP	**PcP**	**22 33 02.0**	**+3.4**
GYA				S	**S**	**22 35 33.9**	**+0.3**
GYA				sS	sS	22 35 47.5	+8.9
GYA				ScP	**ScP**	**22 36 43.0**	**+0.2**
GYA			

comp=Z,7.2nm,0.8s
BWN Browne 47.12 33 *e*P **P 22 32 12.9 +1.7**
comp=Z,17nm,1.0s
KURBB Kurchatov Arra 47.18 308 P **P 22 32 11.6 -0.2**
comp=Z,4.3nm,0.7s,baz=82,slow=8.0,SNR=50
MDM Murphy Dome 47.67 32 *e*P **P 22 32 16.1 +0.7**
comp=Z,9.5nm,0.9s
WRH Wood River Hil 47.73 33 *e*P **P 22 32 15.3 -0.6**
comp=Z,19nm,1.8s
COLA College 47.83 32 *e*P **P 22 32 16.4 -0.2**
COLA pmax pmax
comp=Z,4.0nm,0.8s
SCM Sheep Creek Mo 48.13 37 *e*P **P 22 32 19.3 +0.2**
SCM pmax pmax
comp=Z,49nm,1.5s
SCM Sheep Creek Mo 48.13 37 *e*P **P 22 32 19.3 +0.2**
comp=Z,49nm,1.5s
PDGK Podgornoye 48.17 298 P **P 22 32 22.1 +2.6**
PDGK pmax pmax
comp=Z,3.0nm,0.8s
IL1 Eielson Array 48.24 33 *e*P **P 22 32 19.2 -0.7**
ILAR Eielson Array 48.24 33 P **P 22 32 19.8 -0.1**
comp=Z,5.7nm,0.9s,baz=264,slow=6.3,SNR=36
ILB Eielson Array 48.24 33 *e*P **P 22 32 19.8 -0.1**
HNR Honiara 49.02 158 *e*P **P 22 32 25.9 -0.4**
HNR Honiara 49.02 158 *e*P **P 22 32 25.9 -0.4**
comp=Z,74nm,0.5s
RAGM Ragged Mountai 49.53 38 *e*P **P 22 32 28.9 -1.0**
comp=Z,59nm,1.5s
MMRI Maumere 49.98 208 *e*P **P 22 32 33.7 +0.1**
comp=Z,67nm,1.3s
TKM2 Tokmak 2 51.01 299 *e*P **P 22 32 42.7 +1.2**
TKM2 pmax pmax
comp=Z,6.0nm,0.8s
TKM2 Tokmak 2 51.01 299 *e*P **P 22 32 42.7 +1.2**
comp=Z,6.0nm,0.8s
BVAR Borovoye Array 51.64 312 P **P 22 32 45.3 -0.5**
comp=Z,1.2nm,0.6s,baz=58,slow=8.9,SNR=7.1
BRVK Borovoye 51.69 313 *i* P **P 22 32 46.2 0.0**
BRVK pmax pmax
comp=Z,2.0nm,0.8s
KSH Kashi 51.87 295 P P 22 32 52.6 +4.7
KSH *es*P sP 22 33 06.6 +14
KSH PcS **PcS 22 38 01.1 +2.2**
KSH S **S 22 40 11.9 +1.3**
KSH pmax pmax
comp=Z,64nm,4.5s
KSH LR LR
comp=N,120nm,5.1s
KSH LR LR
comp=E,100nm,6.3s
KSH LR LR
comp=Z,150nm,6.2s
AAK Ala-Archa 51.87 299 *e*P **P 22 32 47.7 -0.2**
AAK pmax pmax
comp=Z,4.0nm,1.0s
ZRNK Zerenda 52.47 313 *e*P **P 22 32 52.5 +0.5**
ZRNK pmax pmax
comp=Z,8.0nm,1.4s
ZRNK Zerenda 52.47 313 *e*P **P 22 32 52.5 +0.5**
comp=Z,7.7nm,1.4s
INK Inuvik 53.26 27 P **P 22 32 57.8 +0.2**
comp=Z,2.7nm,0.5s,baz=304,slow=7.0,SNR=23
INK Inuvik 53.26 27 *e*P **P 22 32 57.8 +0.2**
comp=Z,8.3nm,1.3s
MNAS Manas 53.31 299 P **P 22 32 59.4 +0.9**
MNAS pmax pmax
comp=Z,7.0nm,0.9s
KKAR Karatay Array 54.47 301 *e*P **P 22 33 07.3 +0.4**
KKAR Karatay Array 54.47 301 *e*P **P 22 33 07.3 +0.4**
SVE Sverdlovsk 56.05 319 *e*P **P 22 33 17.8 -0.2**
DLBC Dease Lake 57.25 39 P **P 22 33 27.5 +0.9**
comp=Z,1.4nm,0.3s,baz=310,slow=17,SNR=2.8
DLBC Dease Lake 57.25 39 *e*P **P 22 33 27.5 +0.9**
comp=Z,22nm,1.9s
ARU Arti 57.26 319 *d i*P **P 22 33 26.6 0.0**
ARU 22 34 20.9
ARU S **S 22 41 21.0 -1.3**
ARU SS **SS 22 45 09.7 -1.2**
ARU pmax pmax
comp=Z,15nm,1.7s
ARU Arti 57.26 319 *e*P **P 22 33 26.4 -0.2**
comp=Z,19nm,1.5s
DZET Dzherino 57.28 296 P **P 22 33 27.9 +0.7**
DZET pmax pmax
comp=Z,8.0nm,0.8s
WB2 Warramunga Arr 57.69 190 *e*P **P 22 33 28.0 -2.0**
comp=Z,33nm,1.7s
WR1 Warramunga Arr 57.69 190 *e*P **P 22 33 28.4 -1.6**
comp=Z,25nm,1.5s
WRA Warramunga Arr 57.69 190 P **P 22 33 28.4 -1.6**
comp=Z,1.9nm,0.6s,baz=8.4,slow=7.1,SNR=16
ABKAR Akbulak array 59.06 311 *e*P **P 22 33 39.4 +0.1**
AS31 Alice Springs 61.42 190 *e*P **P 22 33 54.5 -1.2**
comp=Z,1.0nm,0.8s
ASAR Alice Springs 61.42 190 P **P 22 33 54.5 -1.2**
comp=Z,1.1nm,0.8s,baz=7.6,slow=6.7,SNR=12
RES Resolute Bay 61.81 15 *e*P **P 22 33 57.6 -0.1**
RES pmax pmax
comp=Z,6.0nm,1.1s
RES Resolute Bay 61.81 15 *e*P **P 22 33 57.6 -0.1**
comp=Z,6.5nm,1.1s
YKA Yellowknife Ar 62.60 31 P **P 22 34 02.3 -0.8**
comp=Z,1.6nm,1.0s,baz=297,slow=6.5,SNR=11
YKB5 Yellowknife Ar 62.60 31 *e*P **P 22 34 02.4 -0.8**
GEYT Alibeck 65.20 300 P **P 22 34 20.8 0.0**
comp=Z,1.4nm,0.7s,baz=49,slow=4.8,SNR=5.1
FIA1 FINESS Array S 69.31 333 *e*P **P 22 34 46.4 +0.1**
FIA0 FINESS Array S 69.31 333 *e*P **P 22 34 46.3 0.0**
FIA0 FINESS Array S 69.31 333 *e*P **P 22 34 46.3 0.0**
FINES FINESS Array B 69.31 333 P **P 22 34 46.3 0.0**
comp=Z,3.8nm,0.9s,baz=56,slow=4.8,SNR=10
FINES LR LR 23 08 24.9
comp=Z,52nm,19.0s,baz=45,slow=39
FINES FINESS Array B 69.31 333 *i* P **P 22 34 46.2 -0.2**
FINES pmax pmax
comp=Z,4.0nm,0.9s
VSU Vasula 71.03 330 *i* P **P 22 34 56.3 -0.6**
VSU pmax pmax
comp=Z,58nm,2.5s
KIV Kislovodsk 72.00 312 *e*P **P 22 35 03.0 -0.2**
KIV pmax pmax
comp=Z,9.0nm,0.9s
KBZ Khabaz 72.00 312 P **P 22 35 03.5 +0.4**
comp=Z,3.3nm,1.0s,baz=16,slow=3.8,SNR=8.6
NV01 Mina Array Sit 73.35 54 *e*P **P 22 35 10.7 -0.8**
NVAR Mina Array Bea 73.35 54 P **P 22 35 10.7 -0.8**
comp=Z,0.6nm,0.9s,baz=290,slow=3.7,SNR=3.6
NB2 NORSAR Subarra 74.53 338 P **P 22 35 17.4 -0.4**
comp=Z,0.5nm,0.6s,baz=36,slow=6.2
NB200 NORSAR Array S 74.53 338 *e*P **P 22 35 17.6 -0.2**
NOA NORSAR Array B 74.53 338 P **P 22 35 17.6 -0.2**
comp=Z,0.8nm,0.6s,baz=38,slow=6.0,SNR=4.7
NOA LR LR 23 10 53.2
comp=Z,16nm,20.9s,baz=40,slow=38
AKASG Malin Array Be 75.08 323 P **P 22 35 20.3 -0.8**
comp=Z,0.6nm,0.5s,baz=44,slow=4.9,SNR=8.2
AKASG Malin Array Be 75.08 323 *ce*P **P 22 35 21.7 +0.6**
AKASG pmax pmax
comp=Z,1.0nm,0.5s
AKBB Malin Array Si 75.08 323 *e*P **P 22 35 20.3 -0.8**
AKBB pmax pmax
comp=Z,5.0nm,0.6s
AKBB Malin Array Si 75.08 323 *e*P **P 22 35 20.3 -0.8**
comp=Z,4.9nm,0.6s
KIEV Kiev 75.10 323 *e*P **P 22 35 20.7 -0.4**
KIEV pmax pmax
comp=Z,3.0nm,1.1s
BUR08 Bucovina Ar. S 79.10 323 *e*P **P 22 35 44.4 +0.5**
PV10 Paradox Valley 79.20 50 *e*P **P 22 35 45.9 +1.1**
Y14A Wickenburg 79.46 55 *e*P **P 22 35 43.6 -2.5**
comp=Z,18nm,0.4s
BR101 Keskin Array S 79.93 313 *e*P **P 22 35 49.0 +0.4**
BRTR Keskin Array B 79.93 313 P **P 22 35 49.0 +0.4**
comp=Z,0.8nm,0.9s,baz=7.6,slow=3.7,SNR=4.0
BRTR Keskin Array B 79.93 313 *ce*P **P 22 35 49.5 +0.9**
BRTR pmax pmax
comp=Z,1.0nm,0.9s
MLR Muntele Rosu 80.24 321 LR LR 23 16 35.2
comp=Z,11nm,18.1s,baz=52,slow=40
MORC Moravsky Berou 81.01 328 *e*P **P 22 35 54.9 +0.8**
MORC pmax pmax
comp=Z,18nm,1.0s
MORC Moravsky Berou 81.01 328 *e*P **P 22 35 54.9 +0.8**
comp=Z,18nm,1.0s
DPC Dobruska-Polom 81.08 329 *e*P **P 22 35 55.2 +0.7**
DPC *ex* x 22 36 07.3
DPC Dobruska-Polom 81.08 329 *e*P **P 22 35 55.2 +0.7**
DPC *e* 22 36 07.3
KRLC Kraliky 81.10 329 *e*P **P 22 35 55.1 +0.5**
KRLC Kraliky 81.10 329 *e*P **P 22 35 55.1 +0.5**
VYHS Vyhne 81.42 326 *e*P **P 22 35 57.1 +0.8**
VYHS pmax pmax
comp=Z,3.0nm,1.3s
VYHS Vyhne 81.42 326 *e*P **P 22 35 57.1 +0.8**
BRG Berggiesshubel 81.63 330 *e*P **P 22 35 57.5 +0.2**
comp=Z,5.1nm,1.1s
BRG Berggiesshubel 81.63 330 *e*P **P 22 35 57.5 +0.2**
BRG pmax pmax
comp=Z,4.0nm,1.1s
CLL Collm 81.65 331 *i* P **P 22 35 57.6 +0.2**
comp=Z,7.0nm,0.9s
CLL *i* 22 36 19.8
comp=Z,12nm,1.3s
CLL Collm 81.65 331 *i* P **P 22 35 57.6 +0.2**
CLL pmax pmax
comp=Z,7.0nm,0.9s
CLL Collm 81.65 331 *e*P **P 22 35 57.5 +0.2**
comp=Z,8.0nm,1.0s
PRU Pruhonice 82.09 330 *e*P **P 22 36 00.3 +0.6**
PRU *ex* x 22 36 22.8
PRU Pruhonice 82.09 330 *e*P **P 22 36 00.3 +0.6**
TREC Trest 82.24 329 *e*P **P 22 36 01.1 +0.5**
TREC Trest 82.24 329 *e*P **P 22 36 01.1 +0.5**
KSCO Kaye Shedlock' 82.57 46 *e*P **P 22 36 04.9 +2.2**
comp=Z,50nm,0.4s
NKC Novy Kostel 82.72 331 *e*P **P 22 36 03.7 +0.6**
NKC Novy Kostel 82.72 331 *e*P **P 22 36 03.7 +0.6**
ANMO Albuquerque 83.00 51 *i* P **P 22 36 04.8 -0.2**
ANMO pmax pmax
comp=Z,7.0nm,2.5s
CONA Conrad Observa 83.14 328 *i* PcP **P 22 36 06.5 +1.1**
comp=Z,4.3nm,1.0s
KHC Kasperske Hory 83.15 330 *e*P **P 22 36 05.8 +0.5**
KHC *ep*P **PcP 22 36 13.3 +3.4**
KHC *ex* x 22 36 28.3
KHC Kasperske Hory 83.15 330 *e*P **P 22 36 05.8 +0.5**
KHC *e* 22 36 13.3
KHC Kasperske Hory 83.15 330 *e*P **P 22 36 05.8 +0.5**
comp=Z,1.9nm,1.0s
GERES GERESS Array B 83.32 329 P **P 22 36 05.9 -0.4**
comp=Z,1.6nm,0.9s,baz=46,slow=5.8,SNR=13
GEA0 GERESS Array S 83.33 329 *e*P **P 22 36 06.0 -0.4**
OXZ Oxford 84.39 160 *e*P P 22 36 14.6 +3.2
comp=Z,79nm,0.5s
SOKA Soboth 84.47 327 *i* P **P 22 36 12.5 +0.3**
comp=Z,4.5nm,1.1s
KBA Koelnbreinsper 84.87 328 P P 22 36 17.7 +3.4
KBA pmax pmax
comp=Z,5.0nm,1.4s
RETA Reutte 85.59 330 *i* PcP **P 22 36 18.2 +0.4**
comp=Z,6.4nm,1.1s
BFO Black Forest 85.84 332 *e*P **P 22 36 19.1 +0.1**
BFO pmax pmax
comp=Z,6.0nm,0.9s
BFO Black Forest 85.84 332 *e*P **P 22 36 19.1 +0.1**
comp=Z,6.1nm,0.9s
LTX Lajitas 88.49 54 *e*P **P 22 36 31.8 -0.4**
LTX Lajitas 88.49 54 *e*P **P 22 36 31.8 -0.4**
TXAR Lajitas Array 88.49 54 P **P 22 36 31.8 -0.4**
comp=Z,0.8nm,0.9s,baz=254,slow=3.4,SNR=5.6
LPAZ La Paz 144.98 62 PKP **PKPdf 22 43 18.6 +0.6**
comp=Z,0.9nm,0.7s,baz=111,slow=6.2,SNR=3.6

*ISCJB **11** 22:31:03.2±1.1, 26°.11N±0°.05×128°.76E±0°.05, h27km±7km, mb3.5/5, Error ellipse: s-maj=9.2km s-min=6.7km az=169.9*
*JMA **11** 22:31:04.0±0.3, 26°.13N×128°.73E, h34km±5km, M3.1*
*IDC **11** 22:31:15.0±5.8, 25°.62N×125°.18E, h0km, mb3.6/5, mb1 3.7/5, mb1mx3.4/54, mbtmp3.6/5, Error ellipse: s-maj=143.0km s-min=107.6km az=81.0*
ISC 11 22:31:02.9±1.5, 26°.11N±0°.06×128°.74E±0°.05, h16km±9km, n16, σ0°93/22, mb3.5/5, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JNTH	**Nagotoyohara**	**0.76**	**303**	P	**Pg**	**22 31 17.8**	**0.0**
JNTH				*e*S	**Sg**	**22 31 27.3**	**-0.6**
JOW	**Kunigami**	**0.83**	**330**	P	**Pg**	**22 31 19.2**	**0.0**
JOW				*e*S	**Sg**	**22 31 30.3**	**+0.1**
JJT2	**Tamagusuku 2**	**0.89**	**272**	P	**Pg**	**22 31 20.3**	**0.0**
JJT2				*e*S	**Sg**	**22 31 32.4**	**+0.4**
JIH	**Iheya**	**1.15**	**323**	P	**Pb**	**22 31 24.1**	**-0.4**
JOKE	**Okinoerabujima**	**1.26**	**353**	P	**Pn**	**22 31 25.7**	**-0.2**
JAGN	**Aguni-jima**	**1.43**	**290**	P	**Pn**	**22 31 28.1**	**0.0**
JAGN				*e*S	**Sn**	**22 31 45.9**	**-0.7**
JTK	**Tokunoshima**	**1.68**	**6**	P	**Pn**	**22 31 31.7**	**0.0**
JTK				*e*S	**Sn**	**22 31 51.1**	**-1.8**
JKE	**Kume jima 2**	**1.77**	**278**	P	**Pn**	**22 31 32.1**	**-0.7**
JAMN	**Amaminishikomi**	**2.16**	**10**	P	**Pn**	**22 31 38.9**	**+0.6**
JMZ	**Minamidaito 2**	**2.25**	**97**	P	**Pn**	**22 31 39.5**	**0.0**
JMZ				*e*S	**Sn**	**22 32 05.4**	**-1.6**
JAM	**Amami Oshima**	**2.42**	**18**	P	**Pn**	**22 31 41.8**	**0.0**
JAM				*e*S	**Sn**	**22 32 10.8**	**-0.3**
SONM	**Songino Array**	**27.91**	**327**	P	**P**	**22 36 54.6**	**+2.3**
0.5nm,0.7s,baz=139,slow=9.0,SNR=4.0							
MKAR	**Makanchi Array**	**41.96**	**312**	P	**P**	**22 38 52.2**	**-0.9**
0.4nm,0.6s,baz=101,slow=9.7,SNR=5.7							
KURBB	**Kurchatov Arra**	**45.26**	**316**	P	**P**	**22 39 18.9**	**-0.6**
0.3nm,0.4s,baz=102,slow=9.1,SNR=4.1							
FINES	**FINESS Array B**	**73.19**	**331**	P	P	22 42 41.5	+8.8
2.0nm,0.9s,baz=54,slow=7.2,SNR=6.4							
BRTR	**Keskin Array B**	**77.47**	**308**	P	**P**	**22 42 59.1**	**+1.2**
0.4nm,0.7s,baz=64,slow=9.8,SNR=3.0							

*NIED **11** 22:31:00, 38°.60N×144°.60E, h8km, Mw3.9 Best double couple: M0=7.58000×10^14 NP1:φs=22.00000°, δ22.00000°, λ-65.00000°. NP2:φs=176.00000°, δ70.00000°, λ-99.00000°.*
*IDC **11** 22:31:39.3±0.7, 38°.50N×144°.94E, h0km, mb3.7/15, mb1 4.0/21, mb1mx3.8/59, mbtmp3.8/21, ML3.4/6, MS2.9/3, Ms1 2.9/3, ms1mx2.5/45, Error ellipse: s-maj=18.7km s-min=15.1km az=130.0*
*ISCJB **11** 22:31:42.8±0.5, 38°.63N±0°.04×144°.69E±0°.05, h35km, mb3.7/15, MS3.1/1, Error ellipse: s-maj=6.6km s-min=4.6km az=145.7*
*JMA **11** 22:31:43.6±0.3, 38°.62N×144°.57E, h37km, M3.7*
ISC 11 22:31:44.5±0.7, 38°.63N±0°.05×144°.74E±0°.07, h35km, n39, σ2°09/51, mb3.8/15, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.44**	**282**	P	**Pn**	**22 32 20.8**	**-1.1**
MIYJ	**Miyakonagasawa**	**2.46**	**294**	P	**Pn**	**22 32 21.0**	**-1.2**
JMK	**Ichinoseki**	**2.77**	**278**	P	**Pn**	**22 32 25.7**	**-0.7**
JOM	**Ohasama**	**2.82**	**289**	P	**Pn**	**22 32 26.4**	**-0.6**
JOM				*e*S	**Sn**	**22 32 58.7**	**-1.0**
JANG	**Nango**	**3.05**	**306**	P	**Pn**	**22 32 28.4**	**-1.8**
JYK	**Kaneyama**	**3.44**	**276**	P	**Pn**	**22 32 35.2**	**-0.4**
JFT	**Otama**	**3.65**	**254**	P	**Pn**	**22 32 37.9**	**-0.6**
JFT				S	**Sn**	**22 33 19.4**	**-0.9**
JOT	**Ohata**	**3.95**	**315**	P	**Pn**	**22 32 43.5**	**+0.9**
JOT				*e*S	**Sn**	**22 33 24.3**	**-3.4**
JCH	**Churui**	**4.12**	**346**	P	**Pn**	**22 32 43.8**	**-1.1**
JCH				*e*S	**Sn**	**22 33 28.0**	**-3.8**
JKB	**Kayabe**	**4.32**	**320**	P	**Pn**	**22 32 48.8**	**+1.1**
NEM2	**Nemuro 2**	**4.79**	**9**	P	**Pn**	**22 32 50.9**	**-3.3**
NEM2				S	**Sn**	**22 33 42.7**	**-5.7**
JOSM	**Okushiri--Mats**	**5.30**	**312**	P	**Pn**	**22 33 01.2**	**+0.1**
JOSM				*e*S	**Sn**	**22 34 00.7**	**-0.3**
JRY	**Ryogami san**	**5.33**	**243**	P	**Pn**	**22 33 00.1**	**-1.6**
JRY				S	**Sn**	**22 33 58.5**	**-3.4**
JTKR	**Abashiri--Toko**	**5.38**	**354**	P	**Pn**	**22 33 00.6**	**-1.6**
JTKR				S	**Sn**	**22 33 59.1**	**-3.7**
MJAR	**Matsushiro Arr**	**5.59**	**250**	Pn	**Pn**	**22 33 04.9**	**-0.3**
4.4nm,0.3s,baz=64,slow=10,SNR=40							
MJAR				Sn	**Sn**	**22 34 07.9**	**-0.3**
baz=86,slow=31,SNR=2.0							
MAT	**Matsushiro**	**5.59**	**250**	P	**Pn**	**22 33 05.2**	**0.0**
MAT				*e*S	**Sn**	**22 34 08.5**	**+0.3**
JOD2	**Odawara 2**	**5.64**	**235**	P	**Pn**	**22 33 05.0**	**-0.8**
JOD2				*e*S	**Sn**	**22 34 05.2**	**-4.2**
ASAJ	**Asahikawa**	**5.72**	**344**	Pn	**Pn**	**22 33 06.8**	**0.0**
1.4nm,0.3s,baz=180,slow=18,SNR=2.7							
ASAJ				Sn	**Sn**	**22 34 09.2**	**-2.0**
1.1nm,0.3s,baz=32,slow=28,SNR=6.8							
JHJ	**Hachijo jima 2**	**6.81**	**218**	Pn	**Pn**	**22 33 19.2**	**-2.7**
12nm,0.3s,baz=74,slow=20,SNR=5.6							
JHJ				Sn	**Sn**	**22 34 31.8**	**-6.5**
8.4nm,0.3s,baz=60,slow=20,SNR=3.5							
USRK	**Ussuriysk Ar.**	**11.07**	**304**	Pn	**Pn**	**22 34 21.2**	**+0.9**
0.3nm,0.3s,baz=105,slow=14,SNR=7.4							
JNU	**Nakatsue**	**12.51**	**248**	LR	LR	22 40 03.7	
comp=Z,42nm,19.5s,baz=310,slow=40							
KSRS	**Korea Array**	**13.31**	**270**	Pn	**Pn**	**22 34 52.5**	**+1.5**
0.3nm,0.3s,baz=78,slow=12,SNR=3.3							
KSRS				LR	LR	22 39 59.5	
comp=Z,53nm,18.1s,baz=61,slow=37							
PETK	**Petropavlovsk-**	**17.02**	**28**	P	**Pn**	**22 35 38.5**	**-1.1**
0.1nm,0.3s,baz=238,slow=15,SNR=2.4							
SEY	**Seymchan**	**24.77**	**8**	P	**P**	**22 37 03.5**	**+0.8**
2.5nm,0.6s,baz=177,slow=8.5,SNR=4.5							
TIXI	**Tiksi**	**34.07**	**351**	P	**P**	**22 38 25.5**	**+0.4**
0.7nm,0.3s,baz=158,slow=5.4,SNR=2.6							
ZALV	**Zalesovo Beam**	**42.82**	**311**	P	**P**	**22 39 40.4**	**+1.6**
0.4nm,0.4s,baz=84,slow=7.6,SNR=2.3							
ZALV				PcP	**PcP**	**22 41 30.3**	**+0.9**
0.4nm,0.4s,baz=102,slow=4.7,SNR=2.9							
MKAR	**Makanchi Array**	**45.52**	**301**	P	**P**	**22 40 02.1**	**+1.5**
0.4nm,0.7s,baz=82,slow=10,SNR=3.3							
ILAR	**Eielson Array**	**46.73**	**33**	P	**P**	**22 40 09.3**	**-0.5**
0.3nm,0.7s,baz=260,slow=6.2,SNR=6.0							
KURBB	**Kurchatov Arra**	**47.12**	**307**	P	**P**	**22 40 14.0**	**+1.1**
0.7nm,0.7s,baz=84,slow=7.7,SNR=4.4							
BVAR	**Borovoye Array**	**51.46**	**312**	P	**P**	**22 40 48.2**	**+2.1**
0.6nm,0.6s,baz=60,slow=8.5,SNR=2.8							
INK	**Inuvik**	**51.76**	**28**	P	**P**	**22 40 48.7**	**+0.6**
0.5nm,0.5s,baz=324,slow=7.1,SNR=5.5							
WRA	**Warramunga Arr**	**59.07**	**191**	P	**P**	**22 41 40.4**	**-0.8**
1.4nm,0.7s,baz=16,slow=7.4,SNR=6.5							
YKA	**Yellowknife Ar**	**61.09**	**31**	P	**P**	**22 41 54.6**	**+0.1**
0.5nm,0.8s,baz=300,slow=6.1,SNR=6.3							
ASAR	**Alice Springs**	**62.79**	**191**	P	**P**	**22 42 06.0**	**-0.4**
0.8nm,0.8s,baz=18,slow=8.5,SNR=6.0							
KBZ	**Khabaz**	**71.84**	**312**	P	**P**	**22 43 05.6**	**+2.0**
1.5nm,0.8s,baz=82,slow=1.9,SNR=4.1							
NVAR	**Mina Array Bea**	**71.92**	**55**	P	**P**	**22 43 05.5**	**+1.0**
1.0nm,0.9s,baz=293,slow=6.8,SNR=4.2							
PDAR	**Pinedale Array**	**74.66**	**47**	P	**P**	**22 43 21.2**	**+0.6**
0.4nm,0.6s,baz=267,slow=2.5,SNR=4.7							
RPZ	**Rata Peaks**	**85.35**	**161**	LR	LR	23 15 47.2	
comp=Z,8.9nm,20.2s,baz=315,slow=31							
TXAR	**Lajitas Array**	**87.06**	**54**	P	**P**	**22 44 25.5**	**-1.2**
0.3nm,0.6s,baz=306,slow=3.2,SNR=4.0							

*CSEM **11** 23:12:52.4, 38°.42N×28°.24E, h7km, MD2.7*
DDA 11 23:12:52.4, 38°.42N×28°.24E, h7km, Md2.7, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MANT	**Manisa**	**0.26**	**74**	P	**Pg**	**23 12 58.0**	**+0.4**
MANT				S	**Sg**	**23 13 01.6**	**+0.5**
MANT	**Manisa**	**0.26**	**74**	*i* P	**Pg**	**23 12 58.0**	**+0.4**
MANT				*i* S	**Sg**	**23 13 01.6**	**+0.5**
DEMI	**Demirci**	**0.73**	**31**	P	**Pg**	**23 13 06.5**	**+0.1**
DEMI				S	**Sg**	**23 13 14.6**	**-1.3**
DEMI	**Demirci**	**0.73**	**31**	*i* P	**Pg**	**23 13 06.5**	**+0.1**
DEMI				*i* S	**Sg**	**23 13 14.6**	**-1.3**
AYDN	**Tasoluk**	**0.81**	**201**	P	**Pg**	**23 13 08.1**	**+0.1**
AYDN				S	**Sb**	**23 13 19.5**	**-0.5**
AYDN	**Tasoluk**	**0.81**	**201**	*i* P	**Pg**	**23 13 08.1**	**+0.2**
AYDN				*i* S	**Sb**	**23 13 19.5**	**-0.5**
DNZL	**Cakiroluk**	**0.97**	**139**	P	**Pg**	**23 13 11.0**	**0.0**
DNZL				S	**Sn**	**23 13 26.2**	**-0.4**
DNZL	**Cakiroluk**	**0.97**	**139**	*i* P	**Pg**	**23 13 11.0**	**0.0**
DNZL				*i* S	**Sn**	**23 13 26.2**	**-0.4**
KHAL	**Karahalli**	**0.98**	**92**	P	**Pg**	**23 13 11.1**	**-0.2**
KHAL				S	**Sg**	**23 13 24.0**	**-0.1**
KHAL	**Karahalli**	**0.98**	**92**	*i* P	**Pg**	**23 13 11.1**	**-0.2**
KHAL				*i* S	**Sg**	**23 13 23.9**	**-0.1**
DGB	**¨zmir**	**1.13**	**252**	*i* P	**Pg**	**23 13 13.1**	**-1.0**
DGB				*i* S	**Sg**	**23 13 27.9**	**-0.9**
GDZ	**Gediz**	**1.18**	**55**	P	**Pg**	**23 13 15.0**	**0.0**
GDZ				S	**Sn**	**23 13 32.0**	**+0.2**
GDZ	**Gediz**	**1.18**	**55**	*i* P	**Pg**	**23 13 15.0**	**0.0**
GDZ				*i* S	**Sn**	**23 13 32.0**	**+0.1**

*CSEM **11** 23:23:05.5, 67°.82N×20°.20E, h0km, ML1.5, Mining explosion.*
*HEL **11** 23:23:06.0±0.0, 67°.82N×20°.22E, h0km, ML1.9, ML1.5(UPP), Explosion*
UPP 11 23:23:05.5±0.1, 67°.82N×20°.20E, h0km, ML1.5, Explosion, Sweden

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUA	**Kurravaara**	**0.14**	**20**	P	Pg	23 23 08.5	+0.2
KUA				S	Sg	23 23 10.5	+0.3
KUA	**Kurravaara**	**0.14**	**20**	*i* P	Pg	23 23 08.5	+0.2
KUA				*i* S	Sg	23 23 10.5	+0.3
KUA	**Kurravaara**	**0.14**	**20**	P	Pg	23 23 11.7	+3.4
KUA				S	Sg	23 23 12.6	+2.5
KUA	**Kurravaara**	**0.14**	**20**	P	Pg	23 23 08.5	+0.2
KUA				S	Sg	23 23 10.5	+0.4
NIKU	**Nikkaluokta**	**0.45**	**277**	P	Pg	23 23 14.0	0.0
NIKU	**Nikkaluokta**	**0.45**	**277**	*i* P	Pg	23 23 14.0	0.0
NIKU	**Nikkaluokta**	**0.45**	**277**	P	Pn	23 23 20.0	+0.9
NIKU	**Nikkaluokta**	**0.45**	**277**	P	Pg	23 23 14.0	0.0
LANU	**Lannavaara**	**0.71**	**70**	P	Pg	23 23 18.8	-0.3
LANU	**Lannavaara**	**0.71**	**70**	*i* P	Pg	23 23 18.8	-0.3
LANU	**Lannavaara**	**0.71**	**70**	P	Pg	23 23 18.8	-0.3
MASU	**Masugnsbyn**	**0.78**	**117**	P	Pg	23 23 20.1	-0.2
MASU	**Masugnsbyn**	**0.78**	**117**	*i* P	Pg	23 23 20.1	-0.2
MASU	**Masugnsbyn**	**0.78**	**117**	P	Pg	23 23 20.1	-0.3
SALU	**Saltoluokta**	**0.79**	**237**	P	Pg	23 23 20.2	-0.3
SALU	**Saltoluokta**	**0.79**	**237**	*i* P	Pg	23 23 20.2	-0.3
SALU	**Saltoluokta**	**0.79**	**237**	P	Pg	23 23 20.2	-0.3
KIF	**Kilpisjarvi**	**1.21**	**10**	*e*P	Pg	23 23 28.3	-0.4
baz=186							
KIF				*e*S	Sg	23 23 44.4	0.0
KIF	**Kilpisjarvi**	**1.21**	**10**	Pg	Pg	23 23 28.2	-0.5
KIF				Sb	Sg	23 23 44.3	-0.1
HEF	**Hetta**	**1.43**	**64**	*e*P	Pn	23 23 31.3	-1.3
HEF				MSG		23 23 48.4	
comp=Z,9.1nm,0.2s							
HEF	**Hetta**	**1.43**	**64**	Pg	Pn	23 23 31.2	-1.4
ERTU	**Ertsjaerv**	**1.49**	**148**	P	Pn	23 23 32.6	-0.8
ERTU	**Ertsjaerv**	**1.49**	**148**	*e*P	Pn	23 23 32.5	-1.0
baz=326							
ERTU				*e*SN	Sg	23 23 53.2	0.0
ERTU	**Ertsjaerv**	**1.49**	**148**	Pg	Pn	23 23 32.4	-1.0
ERTU				Sn	Sg	23 23 53.2	0.0
ERTU	**Ertsjaerv**	**1.49**	**148**	P	Pn	23 23 32.6	-0.8
HARU	**Harads**	**1.69**	**169**	P	Pn	23 23 36.1	-0.1
HARU	**Harads**	**1.69**	**169**	*e*P	Pn	23 23 36.1	-0.1
HARU	**Harads**	**1.69**	**169**	P	Pn	23 23 36.1	-0.1
TOF	**Tornio**	**2.38**	**135**	*e*PB	Pn	23 23 47.0	+1.3
TOF				*e*SG	Sb	23 24 19.0	-0.1
TOF	**Tornio**	**2.38**	**135**	Pg	Pn	23 23 46.9	+1.2
TOF				Sg	Sb	23 24 19.0	-0.1
SGF	**Sodankyl**	**2.45**	**96**	*e*PG	Pb	23 23 49.4	-1.0
SGF	**Sodankyl**	**2.45**	**96**	Pg	Pb	23 23 49.3	-1.0
RNF	**Rovaniemi**	**2.57**	**116**	*e*PB	Pn	23 23 49.9

UMAU Sn Sn 23 24 54.9 +0.5
KU6 Riekki 4.22 111 *e*P Pn 23 24 11.8 +0.9
KU6 Riekki 4.22 111 Pn Pn 23 24 11.8 +0.9

IDC ***11*** *23:23:33.9±0.7, 33°.59N×12°.11W, h0km, mb4.1/22, mb1 4.3/24, mb1mx4.2/47, mbtmp4.2/24, ML5.5/2, MS3.6/25, Ms1 3.6/25, ms1mx3.5/36, Error ellipse: s-maj=17.3km s-min=14.9km az=73.0*
LDG ***11*** *23:23:33.7±0.2, 33°.58N×12°.13W, h2km, Ml4.5/14, Error ellipse: s-maj=8.5km s-min=5.2km az=113.0*
SFS ***11*** *23:23:34.0, 33°.57N×12°.40W, h37km, ML5.4*
ISCJB ***11*** *23:23:34.6±0.3, 33°.85N±0°.03×12°.17W±0°.03, h10km, mb4.3/74, MS3.7/29, Error ellipse: s-maj=4.5km s-min=3.5km az=153.4*
MDD ***11*** *23:23:34.4±1.2, 33°.59N×12°.49W, h30km±17km, mb5.4/59, Error ellipse: s-maj=12.4km s-min=3.9km az=129.0, PRXIMO*
NEIC ***11*** *23:23:34.8, 33°.58N×12°.45W, h15km, mb4.6/18, After MDD.*
PDA ***11*** *23:23:36.7, 33°.73N×12°.33W, h40km, ML5.4*
CNRM ***11*** *23:23:36.7, 33°.58N×12°.38W, h30km, MD4.4*
MOS ***11*** *23:23:36.2±1.1, 33°.89N×12°.13W, h14km, mb4.7/32, Error ellipse: s-maj=12.2km s-min=3.0km az=52.0*
CSEM ***11*** *23:23:36.9±0.2, 33°.86N×12°.16W, h10km, mb4.5/31, Error ellipse: s-maj=6.1km s-min=4.6km az=174.0*
IGIL ***11*** *23:23:37.2, 33°.74N×12°.35W, h20km, ML4.2*
INMG ***11*** *23:23:40.0±1.6, 33°.73N×12°.35W, h5km, MD4.0, ML4.2, Error ellipse: s-maj=4.1km s-min=2.2km az=135.0*
ISC 11 23:23:36.1±0.5,**33°.86N**±0°.05×**12°.14W**±0°.04,**h10km**,**n795**, σ2=**83**/951,**mb4.5**/74,**MS3.7**/30,**38C-21D**,**Madeira Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMPS	**Porto Santo**	**3.60**	**258**	⇓*e*Pn	Pn	23 24 27.5	-4.4
PMPS				*e*Sn	Sn	23 25 03.3	-11
PMPS				A	A	23 25 08.0	
	440nm,0.3s						
PMAR	**Madeira**	**4.16**	**255**	⇓*e*Pn	Pn	23 24 34.9	-4.9
PMAR				*e*Sn	Sn	23 25 15.2	-13
PMAR				A	A	23 25 22.6	
	745nm,0.2s						
FUL	**Funchal**	**4.16**	**254**	⇓*e*Pn	Pn	23 24 34.8	-4.9
FUL				*e*Sn	Sn	23 25 14.3	-14
FUL				A	A	23 25 22.6	
	585nm,0.2s						
PFVI	**Vila Bisbo**	**4.24**	**39**	⇑*e*Pn	**Pn**	**23 24 41.7**	**+1.0**
PFVI				*e*Sn	**Sn**	**23 25 27.9**	**-2.3**
PFVI				A	A	23 25 40.9	
	293nm,0.6s						
PFVI	**Vila Bisbo**	**4.24**	**39**	⇑P	**Pn**	**23 24 41.7**	**+1.0**
	200nm,0.1s,SNR=18						
PFVI				S	**Sn**	**23 25 26.7**	**-3.5**
	288nm,0.1s,SNR=6.6						
PFVI	**Vila Bisbo**	**4.24**	**39**	P	**Pn**	**23 24 41.7**	**+1.0**
	200nm,0.1s,SNR=18						
PFVI				S	**Sn**	**23 25 26.7**	**-3.5**
	288nm,0.1s,SNR=6.6						
PFVI				*e*Sn	**Sn**	**23 25 27.9**	**-2.3**
	293nm,0.6s						
PFVI	**Vila Bisbo**	**4.24**	**39**	P	**Pn**	**23 24 41.7**	**+1.0**
PMOZ	**Porto Moniz, M**	**4.36**	**258**	*e*Pn	Pn	23 24 37.9	-4.6
PMOZ				*e*Sn	Sn	23 25 21.8	-12
PMOZ				A	A	23 25 32.9	
	1μm,0.6s						
PMOZ	**Porto Moniz, M**	**4.36**	**258**	P	**Pn**	**23 24 38.1**	**-4.4**
	603nm,0.3s,SNR=7.9						
PMOZ				S	Sn	23 25 20.4	-13
	576nm,0.3s,SNR=7.9						
PMOZ	**Porto Moniz, M**	**4.36**	**258**	P	Pn	23 24 38.1	-4.4
	603nm,0.3s,SNR=7.9						
PMOZ				S	Sn	23 25 20.4	-13
	576nm,0.3s,SNR=7.9						
MORF	**Marmelete**	**4.46**	**39**	*e*P	**Pn**	**23 24 44.6**	**+0.8**
MORF				*e*S	**Sn**	**23 25 34.1**	**-1.7**
MORF				AML	AML	23 25 37.0	
	comp=N,628nm,0.1s						
MORF	**Marmelete**	**4.46**	**39**	⇑*e*Pn	**Pn**	**23 24 44.8**	**+1.0**
MORF				*e*Sn	**Sn**	**23 25 33.6**	**-2.2**
MORF				A	A	23 25 41.6	
	comp=N,395nm,0.1s						
MORF	**Marmelete**	**4.46**	**39**	*e*P	**Pn**	**23 24 44.6**	**+0.8**
MORF				*e*S	**Sn**	**23 25 34.0**	**-1.7**
MORF	**Marmelete**	**4.46**	**39**	*e*P	**Pn**	**23 24 44.6**	**+0.8**
MORF				*e*Sn	**Sn**	**23 25 33.6**	**-2.2**
	comp=N,395nm,0.1s						
MORF				*e*S	**Sn**	**23 25 34.0**	**-1.7**
PTEO	**Sao Teotonio**	**4.61**	**36**	⇑*e*Pn	**Pn**	**23 24 46.8**	**+1.0**
PTEO				*e*Sn	**Sn**	**23 25 36.7**	**-2.6**
PTEO				A	A	23 25 47.0	
	comp=N,348nm,0.8s						
PTEO	**Sao Teotonio**	**4.61**	**36**	⇑*e*Pn	**Pn**	**23 24 46.8**	**+1.0**
PTEO				*e*Sn	**Sn**	**23 25 36.7**	**-2.6**
	comp=N,348nm,0.8s						
PBDV	**Barranco-do-Ve**	**4.81**	**44**	⇑*e*Pn	**Pn**	**23 24 50.1**	**+1.5**
PBDV				*e*Sn	**Sn**	**23 25 41.6**	**-2.8**
PBDV				A	A	23 25 50.3	
	comp=N,229nm,0.2s						
PBDV	**Barranco-do-Ve**	**4.81**	**44**	⇑*e*Pn	**Pn**	**23 24 50.1**	**+1.5**
PBDV				*e*Sn	**Sn**	**23 25 41.6**	**-2.8**
	comp=N,229nm,0.2s						
EFAM	**Famara**	**4.87**	**194**	P	Pn	23 24 41.3	-8.1
	comp=N,45nm,0.2s,SNR=7.9						
EFAM				S	Sn	23 25 29.4	-17
	comp=N,228nm,0.2s,SNR=7.9						
EFAM	**Famara**	**4.87**	**194**	P	Pn	23 24 41.3	-8.1
	comp=N,45nm,0.2s,SNR=7.9						
EFAM				S	Sn	23 25 29.4	-16
	comp=N,228nm,0.2s,SNR=7.9						
EFAM	**Famara**	**4.87**	**194**	P	Pn	23 24 41.3	-8.1
EFAM				S	Sn	23 25 29.4	-17
PVAQ	**Vaqueiros**	**5.04**	**44**	*e*Pn	**Pn**	**23 24 53.2**	**+1.4**
PVAQ				*e*Sn	**Sn**	**23 25 47.7**	**-2.4**
PVAQ				A	A	23 25 53.8	
	comp=N,224nm,0.2s						
PVAQ	**Vaqueiros**	**5.04**	**44**	*e*Pn	**Pn**	**23 24 53.2**	**+1.4**
PVAQ				*e*Sn	**Sn**	**23 25 47.7**	**-2.4**
	comp=N,224nm,0.2s						
TZC	**Tazercounte**	**5.04**	**108**	*i* P	**Pn**	**23 24 52.0**	**0.0**
MESJ	**Messejana**	**5.08**	**38**	*e*P	**Pn**	**23 24 53.4**	**+1.0**
MESJ				*e*S	**Sn**	**23 25 48.5**	**-2.6**
MESJ				AML	AML	23 25 50.4	
	comp=N,118nm,0.2s						
MESJ	**Messejana**	**5.08**	**38**	⇑*e*Pn	**Pn**	**23 24 53.4**	**+1.0**
MESJ				*e*Sn	**Sn**	**23 25 48.5**	**-2.6**
MESJ				A	A	23 26 04.2	
	comp=N,205nm,0.4s						
MESJ	**Messejana**	**5.08**	**38**	*e*P	**Pn**	**23 24 53.3**	**+1.0**
MESJ				*e*S	**Sn**	**23 25 48.5**	**-2.6**
MESJ	**Messejana**	**5.08**	**38**	*e*P	**Pn**	**23 24 53.3**	**+1.0**
MESJ				*e*Sn	**Sn**	**23 25 48.5**	**-2.6**
	comp=N,205nm,0.4s						
PNCL	**Nicolau / Gran**	**5.15**	**34**	⇑*e*Pn	**Pn**	**23 24 54.1**	**+0.8**
PNCL				*e*Sn	**Sn**	**23 25 49.8**	**-2.9**
PNCL				A	A	23 25 55.3	
	comp=N,275nm,0.2s						
PNCL	**Nicolau / Gran**	**5.15**	**34**	⇑*e*Pn	**Pn**	**23 24 54.1**	**+0.8**
PNCL				*e*Sn	**Sn**	**23 25 49.8**	**-2.9**
	comp=N,275nm,0.2s						
EGRO	**El Granado**	**5.27**	**45**	⇑P	**Pn**	**23 24 56.2**	**+1.3**
	comp=N,115nm,0.2s,SNR=18						
EGRO				S	**Sn**	**23 25 52.7**	**-3.0**
	comp=N,94nm,0.3s,SNR=5.4						
EGRO	**El Granado**	**5.27**	**45**	P	**Pn**	**23 24 56.2**	**+1.3**
	comp=N,115nm,0.2s,SNR=18						
EGRO				S	**Sn**	**23 25 52.7**	**-3.0**
	comp=N,94nm,0.3s,SNR=5.4						
EGRO	**El Granado**	**5.27**	**45**	P	**Pn**	**23 24 56.2**	**+1.3**
EGRO				*e*		23 25 52.7	
KIB	**El Ksiba**	**5.27**	**102**	*i* P	**Pn**	**23 24 55.0**	**0.0**
PBEJ	**Beja**	**5.41**	**39**	*e*Pn	**Pn**	**23 24 57.6**	**+0.8**
PBEJ				*e*Sn	**Sn**	**23 25 56.5**	**-2.6**
PBEJ				A	A	23 26 09.9	
	comp=N,173nm,0.7s						
PBEJ	**Beja**	**5.41**	**39**	*e*Pn	**Pn**	**23 24 57.6**	**+0.8**
PBEJ				*e*Sn	**Sn**	**23 25 56.5**	**-2.6**
	comp=N,173nm,0.7s						
LIS	**Lisbon**	**5.41**	**26**	*e*S	**Sn**	**23 25 56.2**	**-3.0**
LIS				AML	AML	23 26 00.4	
	comp=E,304nm,0.1s						
PMST	**Lisbon--Monsan**	**5.42**	**25**	*e*Pn	**Pn**	**23 24 58.2**	**+1.3**
PMST				*e*Sn	**Sn**	**23 25 57.6**	**-1.7**
PMST	**Lisbon--Monsan**	**5.42**	**25**	*e*Pn	**Pn**	**23 24 58.2**	**+1.3**
PMST				*e*Sn	**Sn**	**23 25 57.6**	**-1.7**
CFUE	**Fuerteventura**	**5.42**	**197**	P	Pn	23 24 48.0	-9.1
	comp=E,88nm,0.2s,SNR=7.9						
CFUE				S	Sn	23 25 42.6	-17
	comp=E,439nm,0.1s,SNR=7.9						
CFUE	**Fuerteventura**	**5.42**	**197**	P	Pn	23 24 48.0	-9.1
	comp=E,88nm,0.2s,SNR=7.9						
CFUE				S	Sn	23 25 42.6	-17
	comp=E,439nm,0.1s,SNR=7.9						
INMG	**Instituto de M**	**5.47**	**26**	*e*Pn	**Pn**	**23 24 58.2**	**+0.6**
INMG	**Instituto de M**	**5.47**	**26**	*e*Pn	**Pn**	**23 24 58.2**	**+0.6**
SFS	**San Fernando**	**5.51**	**60**	P	**Pn**	**23 24 59.0**	**+0.8**
SFS				S	**Sn**	**23 26 04.1**	**+2.5**
SFS	**San Fernando**	**5.51**	**60**	P	**Pn**	**23 25 01.5**	**+3.3**
SFS				pmax	pmax		
	comp=Z,292nm,1.2s						
SFS	**San Fernando**	**5.51**	**60**	P	**Pn**	**23 24 59.0**	**+0.8**
SFS				S	**Sn**	**23 26 04.1**	**+2.5**
CNIL	**Conil**	**5.58**	**62**	P	**Pn**	**23 25 00.0**	**+0.9**
CNIL				S	**Sn**	**23 26 06.0**	**+2.7**
CNIL	**Conil**	**5.58**	**62**	P	**Pn**	**23 25 00.0**	**+0.9**
CNIL				S	**Sn**	**23 26 06.0**	**+2.7**
PMAFR	**Mafra**	**5.58**	**24**	⇑*e*Pn	**Pn**	**23 24 59.8**	**+0.6**
PMAFR				*e*Sn	**Sn**	**23 26 00.4**	**-2.9**
PMAFR				A	A	23 26 05.3	
	comp=Z,393nm,0.2s						
PMAFR	**Mafra**	**5.58**	**24**	P	**Pn**	**23 25 00.0**	**+0.9**
	comp=Z,46nm,0.1s,SNR=104						
PMAFR				S	**Sn**	**23 26 02.8**	**-0.5**
	comp=Z,206nm,0.1s,SNR=12						
PMAFR	**Mafra**	**5.58**	**24**	P	**Pn**	**23 25 00.0**	**+0.9**
	comp=Z,46nm,0.1s,SNR=104						
PMAFR				*e*Sn	**Sn**	**23 26 00.4**	**-2.9**
	comp=Z,393nm,0.2s						
PMAFR				S	**Sn**	**23 26 02.8**	**-0.5**
	comp=Z,206nm,0.1s,SNR=12						
PMAFR	**Mafra**	**5.58**	**24**	P	**Pn**	**23 25 00.0**	**+0.9**
PMAFR				S	**Sn**	**23 26 02.8**	**-0.5**
CFTV	**Fuerteventura**	**5.68**	**198**	P	Pn	23 24 51.6	-9.1
	comp=Z,14nm,0.2s,SNR=7.9						
CFTV				S	Sn	23 25 46.8	-19
	comp=Z,31nm,0.2s,SNR=7.9						
CFTV	**Fuerteventura**	**5.68**	**198**	P	Pn	23 24 51.6	-9.1
	comp=Z,14nm,0.2s,SNR=7.9						
CFTV				S	Sn	23 25 46.8	-19
	comp=Z,31nm,0.2s,SNR=7.9						
CFTV	**Fuerteventura**	**5.68**	**198**	P	Pn	23 24 52.0	-8.6
CFTV				S	Sn	23 25 46.8	-19
EVO	**Evora**	**5.73**	**34**	*e*Pn	**Pn**	**23 25 01.9**	**+0.7**
EVO				*e*Sn	**Sn**	**23 26 03.2**	**-3.8**
EVO				A	A	23 26 06.7	
	comp=Z,315nm,0.1s						
EVO	**Evora**	**5.73**	**34**	*e*Pn	**Pn**	**23 25 01.9**	**+0.7**
EVO				*e*Sn	**Sn**	**23 26 03.2**	**-3.8**
	comp=Z,315nm,0.1s						
MIF	**Mishlifen**	**5.78**	**93**	*i* P	**Pn**	**23 25 03.0**	**+0.8**
MOMI	**Momias**	**5.81**	**63**	P	**Pn**	**23 25 04.0**	**+1.7**
MOMI	**Momias**	**5.81**	**63**	P	**Pn**	**23 25 04.0**	**+1.7**
GIBL	**Gibalbin**	**5.85**	**58**	P	**Pn**	**23 25 04.0**	**+1.1**
GIBL				S	**Sn**	**23 26 11.0**	**+1.0**
GIBL	**Gibalbin**	**5.85**	**58**	P	**Pn**	**23 25 04.0**	**+1.1**
GIBL				S	**Sn**	**23 26 11.0**	**+1.0**
EMIN	**Mina Concepcio**	**5.91**	**47**	⇑P	**Pn**	**23 25 04.7**	**+1.0**
	comp=Z,68nm,0.1s,SNR=18						
EMIN				S	**Sn**	**23 26 08.3**	**-3.0**
	comp=Z,75nm,0.2s,SNR=7.9						
EMIN	**Mina Concepcio**	**5.91**	**47**	P	**Pn**	**23 25 04.7**	**+1.0**
	comp=Z,68nm,0.1s,SNR=18						
EMIN				S	**Sn**	**23 26 08.4**	**-3.0**
EMIN	**Mina Concepcio**	**5.91**	**47**	P	**Pn**	**23 25 04.6**	**+0.9**
EMIN				S	**Sn**	**23 26 08.3**	**-3.0**
ECEU	**Ceuta**	**5.92**	**68**	P	**Pn**	**23 25 05.4**	**+1.6**
	comp=Z,70nm,0.1s,SNR=47						
ECEU				S	**Sn**	**23 26 09.2**	**-2.5**
	comp=Z,46nm,0.2s,SNR=7.9						
ECEU	**Ceuta**	**5.92**	**68**	P	**Pn**	**23 25 05.4**	**+1.6**
	comp=Z,70nm,0.1s,SNR=47						
ECEU				S	**Sn**	**23 26 09.2**	**-2.5**
	comp=Z,46nm,0.2s,SNR=7.9						
ALJ	**Aljibe**	**5.94**	**62**	P	**Pn**	**23 25 05.5**	**+1.3**
ALJ				S	**Sn**	**23 26 14.0**	**+1.7**
ALJ	**Aljibe**	**5.94**	**62**	P	**Pn**	**23 25 05.5**	**+1.3**
ALJ				S	**Sn**	**23 26 14.0**	**+1.7**
ESPR	**Espera**	**5.94**	**58**	⇑P	**Pn**	**23 25 05.1**	**+0.9**
	comp=Z,440nm,0.2s,SNR=18						
ESPR				S	**Sn**	**23 26 10.0**	**-2.3**
	comp=Z,484nm,0.3s,SNR=7.9						
ESPR	**Espera**	**5.94**	**58**	P	**Pn**	**23 25 05.1**	**+0.9**
	comp=Z,440nm,0.2s,SNR=18						
ESPR				S	**Sn**	**23 26 10.0**	**-2.3**
	comp=Z,484nm,0.3s,SNR=7.9						
ESPR	**Espera**	**5.94**	**58**	P	**Pn**	**23 25 05.1**	**+0.9**
ESPR				S	**Sn**	**23 26 10.0**	**-2.3**
PBAR	**Barrancos**	**5.96**	**42**	*e*Pn	**Pn**	**23 25 05.3**	**+0.9**
PBAR				*e*Sn	**Sn**	**23 26 09.3**	**-3.5**
PBAR				A	A	23 26 14.6	
	comp=Z,252nm,0.7s						
PBAR	**Barrancos**	**5.96**	**42**	*e*Pn	**Pn**	**23 25 05.3**	**+0.9**
PBAR				*e*Sn	**Sn**	**23 26 09.3**	**-3.5**
	comp=Z,252nm,0.7s						
ALMR	**Almeirim**	**6.01**	**27**	*e*P	**Pn**	**23 25 05.5**	**+0.4**
ALMR				*e*S	**Sn**	**23 26 10.5**	**-3.4**
ALMR				AML	AML	23 26 15.1	
	comp=N,343nm,0.2s						
ALMR	**Almeirim**	**6.01**	**27**	*e*P	**Pn**	**23 25 05.5**	**+0.4**
ALMR				*e*S	**Sn**	**23 26 10.5**	**-3.4**
ALMR	**Almeirim**	**6.01**	**27**	*e*P	**Pn**	**23 25 05.4**	**+0.4**
ALMR				*e*S	**Sn**	**23 26 10.4**	**-3.4**
ALMR	**Almeirim**	**6.01**	**27**	*e*P	**Pn**	**23 25 05.5**	**+0.4**
ALMR				*e*S	**Sn**	**23 26 10.5**	**-3.4**
EJIF	**Jimena Fronter**	**6.04**	**63**	⇑P	**Pn**	**23 25 07.1**	**+1.6**
	comp=N,156nm,0.3s,SNR=18						
EJIF	**Jimena Fronter**	**6.04**	**63**	P	**Pn**	**23 25 07.1**	**+1.6**
EJIF	**Jimena Fronter**	**6.04**	**63**	P	**Pn**	**23 25 07.1**	**+1.6**
	comp=N,156nm,0.3s,SNR=18						
EJIF	**Jimena Fronter**	**6.04**	**63**	P	**Pn**	**23 25 07.1**	**+1.6**
PMTG	**Montargil**	**6.08**	**30**	⇑*e*Pn	**Pn**	**23 25 06.4**	**+0.4**
PMTG				*e*Sn	**Sn**	**23 26 12.1**	**-3.5**
PMTG				A	A	23 26 16.6	
	comp=N,124nm,0.2s						
PMTG	**Montargil**	**6.08**	**30**	⇑*e*Pn	**Pn**	**23 25 06.4**	**+0.4**
PMTG				*e*Sn	**Sn**	**23 26 12.1**	**-3.5**
	comp=N,124nm,0.2s						
PESTR	**Estremoz**	**6.20**	**35**	⇓*e*Pn	**Pn**	**23 25 08.1**	**+0.5**
PESTR				*e*Sn	**Sn**	**23 26 14.7**	**-3.8**
PESTR				A	A	23 26 22.3	
	comp=N,70nm,0.5s						
PESTR	**Estremoz**	**6.20**	**35**	⇓*e*Pn	**Pn**	**23 25 08.1**	**+0.5**
PESTR				*e*Sn	**Sn**	**23 26 14.7**	**-3.8**
	comp=N,70nm,0.5s						
REAL	**Reales**	**6.25**	**63**	P	**Pn**	**23 25 10.0**	**+1.5**
REAL				S	**Sn**	**23 26 16.0**	**-4.1**
REAL	**Reales**	**6.25**	**63**	P	**Pn**	**23 25 10.0**	**+1.5**
REAL				S	**Sn**	**23 26 16.0**	**-4.1**
MDT	**Midelt**	**6.38**	**97**	Pn	**Pn**	**23 25 10.0**	**-0.3**
	comp=N,25nm,0.3s,baz=275,slow=7.4,SNR=708						
MDT				Sn	**Sn**	**23 26 16.3**	**-7.1**
	comp=N,93nm,0.3s,baz=330,slow=1.4,SNR=11						
MDT				LR	LR	23 27 54.4	
	comp=N,362nm,18.9s,baz=282,slow=41						
EBAD	**Badajoz**	**6.40**	**39**	P	**Pn**	**23 25 11.0**	**+0.6**
	comp=N,38nm,0.2s,SNR=118						
EBAD				S	**Sn**	**23 26 19.9**	**-3.6**
	comp=N,93nm,0.2s,SNR=7.8						
EBAD	**Badajoz**	**6.40**	**39**	P	**Pn**	**23 25 11.0**	**+0.6**
	comp=N,38nm,0.2s,SNR=118						
EBAD				S	**Sn**	**23 26 19.9**	**-3.6**
	comp=N,93nm,0.2s,SNR=7.8						
EBAD	**Badajoz**	**6.40**	**39**	P	**Pn**	**23 25 11.0**	**+0.6**
EBAD				S	**Sn**	**23 26 19.9**	**-3.6**
EBAJ	**Bajamar**	**6.41**	**215**	P	Pn	23 24 59.9	-11
	comp=N,18nm,0.2s,SNR=34						
EBAJ				S	Sn	23 26 04.5	-19
	comp=N,64nm,0.2s,SNR=7.9						
EBAJ	**Bajamar**	**6.41**	**215**	P	Pn	23 24 59.9	-11
	comp=N,18nm,0.2s,SNR=34						
EBAJ				S	Sn	23 26 04.5	-19
	comp=N,64nm,0.2s,SNR=7.9						
EBAJ	**Bajamar**	**6.41**	**215**	P	Pn	23 25 00.2	-10
EBAJ				S	Sn	23 26 04.5	-19
EOSO	**Osorio**	**6.47**	**208**	P	Pn	23 25 01.6	-10
	comp=N,14nm,0.2s,SNR=31						
EOSO				S	Sn	23 26 07.0	-19
	comp=N,84nm,0.2s,SNR=5.7						
EOSO	**Osorio**	**6.47**	**208**	P	Pn	23 25 01.6	-10
	comp=N,14nm,0.2s,SNR=31						
EOSO				S	Sn	23 26 07.0	-19
	comp=N,84nm,0.2s,SNR=5.7						
EOSO	**Osorio**	**6.47**	**208**	P	Pn	23 25 02.8	-8.8
EOSO				S	Sn	23 26 07.0	-19
PTOM	**Tomar**	**6.47**	**26**	*e*Pn	**Pn**	**23 25 12.4**	**+0.9**
PTOM				*e*Sn	**Sn**	**23 26 20.9**	**-4.5**
PTOM				A	A	23 26 30.6	
	comp=N,174nm,0.8s						
PTOM	**Tomar**	**6.47**	**26**	*e*Pn	**Pn**	**23 25 12.4**	**+0.9**
PTOM				*e*Sn	**Sn**	**23 26 20.9**	**-4.5**
	comp=N,174nm,0.8s						
EMIJ	**Mijas**	**6.60**	**64**	⇑P	**Pn**	**23 25 13.3**	**0.0**
	comp=N,86nm,0.3s,SNR=18						
EMIJ				S	**Sn**	**23 26 25.3**	**-3.3**
	comp=N,22nm,0.2s,SNR=7.9						
EMIJ	**Mijas**	**6.60**	**64**	P	**Pn**	**23 25 13.3**	**0.0**
	comp=N,86nm,0.3s,SNR=18						
EMIJ				S	**Sn**	**23 26 25.3**	**-3.3**
	comp=N,22nm,0.2s,SNR=7.9						
EMIJ	**Mijas**	**6.60**	**64**	P	**Pn**	**23 25 13.3**	**0.0**
EMIJ				S	**Sn**	**23 26 25.3**	**-3.3**
PMRV	**Marv??o**	**6.74**	**33**	⇑*e*Pn	**Pn**	**23 25 15.8**	**+0.7**
PMRV				*e*Sn	**Sn**	**23 26 27.4**	**-4.5**
PMRV				A	A	23 26 31.6	
	comp=N,111nm,0.8s						
PMRV	**Marv??o**	**6.74**	**33**	⇑*e*Pn	**Pn**	**23 25 15.8**	**+0.7**
PMRV				*e*Sn	**Sn**	**23 26 27.4**	**-4.5**
	comp=N,111nm,0.8s						
CRAJ	**Montana Rajada**	**6.76**	**216**	P	Pn	23 25 04.8	-11
	comp=N,9.4nm,0.1s,SNR=8.8						
CRAJ				S	Sn	23 26 12.0	-21
	comp=N,118nm,0.1s,SNR=7.4						
CRAJ	**Montana Rajada**	**6.76**	**216**	P	Pn	23 25 04.8	-11
	comp=N,9.4nm,0.1s,SNR=8.8						
CRAJ				S	Sn	23 26 12.0	-21
	comp=N,118nm,0.1s,SNR=7.4						
CCAN	**Las Canadas**	**6.80**	**215**	P	Pn	23 25 04.8	-11
	comp=N,8.4nm,0.2s,SNR=28						
CCAN				S	Sn	23 26 13.2	-21
	comp=N,30nm,0.2s,SNR=6.8						
CCAN	**Las Canadas**	**6.80**	**215**	P	Pn	23 25 04.8	-11
	comp=N,8.4nm,0.2s,SNR=28						
CCAN				S	Sn	23 26 13.2	-21
	comp=N,30nm,0.2s,SNR=6.8						
CCAN	**Las Canadas**	**6.80**	**215**	P	Pn	23 25 05.1	-11
CCAN				S	Sn	23 26 13.2	-21
PCAS	**Casmilo, Conde**	**6.83**	**24**	*e*Pn	**Pn**	**23 25 16.9**	**+0.6**
PCAS				*e*Sn	**Sn**	**23 26 30.6**	**-3.5**
PCAS				A	A	23 26 42.0	
	comp=N,106nm,0.9s						
PCAS	**Casmilo, Conde**	**6.83**	**24**	*e*Pn	**Pn**	**23 25 16.9**	**+0.6**
PCAS				*e*Sn	**Sn**	**23 26 30.6**	**-3.5**
	comp=N,106nm,0.9s						
ECAB	**El Cabril**	**6.88**	**50**	⇑P	**Pn**	**23 25 18.1**	**+1.0**
	comp=N,138nm,0.4s,SNR=18						
ECAB				S	**Sn**	**23 26 32.1**	**-3.3**
	comp=N,48nm,0.2s,SNR=8.9						
ECAB	**El Cabril**	**6.88**	**50**	P	**Pn**	**23 25 18.1**	**+1.0**
	comp=N,138nm,0.4s,SNR=18						
ECAB				S	**Sn**	**23 26 32.1**	**-3.3**
	comp=N,48nm,0.2s,SNR=8.9						
ECAB	**El Cabril**	**6.88**	**50**	P	**Pn**	**23 25 18.1**	**+1.0**
ECAB				S	**Sn**	**23 26 32.1**	**-3.3**
EMAL	**Malaga-Limoner**	**6.93**	**63**	⇓P	**Pn**	**23 25 18.4**	**+0.6**
EMAL				S	**Sn**	**23 26 32.5**	**-4.2**
EMAL	**Malaga-Limoner**	**6.93**	**63**	P	**Pn**	**23 25 18.4**	**+0.6**
EMAL				S	**Sn**	**23 26 32.5**	**-4.2**
PCBR	**Castelo Branco**	**7.04**	**31**	⇑*e*Pn	**Pn**	**23 25 19.9**	**+0.7**
PCBR				*e*Sn	**Sn**	**23 26 34.9**	**-4.3**
PCBR				A	A	23 27 02.0	
	comp=N,63nm,0.6s						
PCBR	**Castelo Branco**	**7.04**	**31**	⇑*e*Pn	**Pn**	**23 25 19.9**	**+0.7**
PCBR				*e*Sn	**Sn**	**23 26 34.9**	**-4.3**
	comp=N,63nm,0.6s						
TBT	**Taburiente**	**7.15**	**225**	P	Pn	23 25 10.1	-11
	comp=N,14nm,0.2s,SNR=7.9						
TBT				S	Sn	23 26 22.1	-20
	comp=N,59nm,0.2s,SNR=7.9						
TBT	**Taburiente**	**7.15**	**225**	P	Pn	23 25 10.1	-11
	comp=N,14nm,0.2s,SNR=7.9						
TBT				S	Sn	23 26 22.1	-20
	comp=N,59nm,0.2s,SNR=7.9						
TBT	**Taburiente**	**7.15**	**225**	P	Pn	23 25 10.4	-10
TBT				S	Sn	23 26 22.1	-20
EGOM	**La Gomera**	**7.16**	**219**	P	Pn	23 25 09.7	-11
	comp=N,15nm,0.1s,SNR=23						
EGOM				S	Sn	23 26 22.7	-20
	comp=N,53nm,0.1s,SNR=8.4						
**E

comp=N,58nm,0.4s,SNR=75
EQUE S **Sn** **23 26 55.9 -3.1**
comp=N,14nm,0.2s,SNR=7.9
EQUE Quentar 7.83 62 P **Pn** **23 25 31.1 +0.9**
comp=N,58nm,0.4s,SNR=75
EQUE S **Sn** **23 26 55.9 -3.1**
comp=N,14nm,0.2s,SNR=7.9
CTIG El Hierro 7.83 221 P Pn 23 25 19.9 -10
comp=N,9.7nm,0.1s,SNR=7.9
CTIG S Sn 23 26 38.6 -20
comp=N,51nm,0.2s,SNR=7.9
CTIG El Hierro 7.83 221 P Pn 23 25 19.9 -10
comp=N,9.7nm,0.1s,SNR=7.9
CTIG S Sn 23 26 38.6 -20
comp=N,51nm,0.2s,SNR=7.9
EPLA Plasencia 7.86 36 P **Pn** **23 25 31.0 +0.5**
comp=N,16nm,0.3s,SNR=40
EPLA S **Sn** **23 26 55.4 -4.1**
comp=N,44nm,0.1s,SNR=8.1
EPLA Plasencia 7.86 36 P **Pn** **23 25 31.0 +0.5**
EPLA S **Sn** **23 26 55.4 -4.1**
EPLA Plasencia 7.86 36 P **Pn** **23 25 31.0 +0.5**
comp=N,16nm,0.3s,SNR=40
EPLA S **Sn** **23 26 55.4 -4.1**
comp=N,44nm,0.1s,SNR=8.1
EPLA Plasencia 7.86 36 P **Pn** **23 25 31.0 +0.5**
EPLA S **Sn** **23 26 55.4 -4.1**
CHIE El Hierro 7.90 221 P Pn 23 25 20.8 -10
comp=N,1.3nm,0.2s,SNR=7.9
CHIE S Sn 23 26 42.1 -19
comp=N,12nm,0.2s,SNR=7.9
CHIE El Hierro 7.90 221 P Pn 23 25 20.8 -10
comp=N,1.3nm,0.2s,SNR=7.9
CHIE S Sn 23 26 42.1 -19
comp=N,12nm,0.2s,SNR=7.9
CHIE El Hierro 7.90 221 P Pn 23 25 20.8 -10
CHIE S Sn 23 26 42.1 -19
EBAN Banos Encina 8.01 55 P **Pn** **23 25 33.1 +0.5**
comp=N,489nm,0.4s,SNR=7.9
EBAN S **Sn** **23 26 58.2 -5.1**
comp=N,151nm,0.2s,SNR=7.9
EBAN Banos Encina 8.01 55 P **Pn** **23 25 33.1 +0.5**
EBAN S **Sn** **23 26 58.2 -5.1**
EBAN Banos Encina 8.01 55 P **Pn** **23 25 33.1 +0.5**
comp=N,489nm,0.4s,SNR=7.9
EBAN S **Sn** **23 26 58.2 -5.1**
comp=N,151nm,0.2s,SNR=7.9
EBAN Banos Encina 8.01 55 P **Pn** **23 25 33.1 +0.5**
EBAN S **Sn** **23 26 58.2 -5.1**
EBER Berja 8.14 66 P **Pn** **23 25 34.1 -0.4**
comp=N,78nm,0.3s,SNR=71
EBER S **Sn** **23 27 03.3 -3.3**
comp=N,42nm,0.3s,SNR=7.9
EBER Berja 8.14 66 P **Pn** **23 25 34.1 -0.4**
comp=N,78nm,0.3s,SNR=71
EBER S **Sn** **23 27 03.3 -3.3**
comp=N,42nm,0.3s,SNR=7.9
EBER Berja 8.14 66 P **Pn** **23 25 34.0 -0.4**
EBER S **Sn** **23 27 03.3 -3.3**
PVRL Vila Real 8.19 24 *e*Pn **Pn** **23 25 34.2 -0.8**
PVRL *e*Sn **Sn** **23 27 02.3 -5.3**
PVRL A A 23 27 07.2
comp=N,60nm,0.3s
PVRL Vila Real 8.19 24 *e*Pn **Pn** **23 25 34.2 -0.8**
PVRL *e*Sn **Sn** **23 27 02.3 -5.3**
comp=N,60nm,0.3s
GORA Gorafe 8.23 61 P **Pn** **23 25 36.9 +1.2**
comp=N,99nm,0.1s,SNR=7.9
GORA S **Sn** **23 27 05.3 -3.5**
comp=N,88nm,0.3s,SNR=7.9
GORA Gorafe 8.23 61 P **Pn** **23 25 36.9 +1.2**
comp=N,99nm,0.1s,SNR=7.9
GORA S **Sn** **23 27 05.3 -3.5**
comp=N,88nm,0.3s,SNR=7.9
POLO Lamas de Olo 8.25 23 *e*Pn **Pn** **23 25 36.5 +0.6**
POLO *e*Sn **Sn** **23 27 03.1 -6.1**
POLO A A 23 27 22.9
comp=N,22nm,0.6s
POLO Lamas de Olo 8.25 23 *e*Pn **Pn** **23 25 36.5 +0.6**
MVO Moncorvo 8.34 28 *e*Pn **Pn** **23 25 37.4 +0.4**
MVO *e*Sn **Sn** **23 27 05.9 -5.5**
MVO A A 23 27 12.4
comp=N,71nm,0.8s
MVO Moncorvo 8.34 28 P **Pn** **23 25 37.5 +0.4**
comp=N,26nm,0.2s,SNR=64
MVO S **Sn** **23 27 07.7 -3.7**
comp=N,50nm,0.2s,SNR=8.4
MVO Moncorvo 8.34 28 P **Pn** **23 25 37.5 +0.4**
comp=N,26nm,0.2s,SNR=64
MVO *e*Sn **Sn** **23 27 05.9 -5.5**
comp=N,71nm,0.8s
MVO S **Sn** **23 27 07.7 -3.7**
comp=N,50nm,0.2s,SNR=8.4
MVO Moncorvo 8.34 28 P **Pn** **23 25 37.7 +0.5**
MVO S **Sn** **23 27 07.7 -3.7**
EQES Quesada 8.35 59 P **Pn** **23 25 37.4 +0.2**
comp=N,109nm,0.5s,SNR=284
EQES S **Sn** **23 27 06.6 -5.0**
comp=N,15nm,0.2s,SNR=7.9
EQES Quesada 8.35 59 P **Pn** **23 25 37.4 +0.2**
comp=N,109nm,0.5s,SNR=284
EQES S **Sn** **23 27 06.6 -5.0**
comp=N,15nm,0.2s,SNR=7.9
EQES Quesada 8.35 59 P **Pn** **23 25 37.4 +0.2**
EQES S **Sn** **23 27 06.6 -5.0**
PAB San Pablo 8.44 46 *e*P **Pn** **23 25 38.8 +0.3**
PAB *e* 23 27 11.2
PAB San Pablo 8.44 46 *e*P **Pn** **23 25 38.8 +0.3**
PAB *e*S **Sn** **23 27 11.2 -2.7**
PAB San Pablo 8.44 46 *e*Pn **Pn** **23 25 38.8 +0.3**
PAB *e*Sn **Sn** **23 27 11.2 -2.7**
PCAB Cabril 8.48 21⇓*e*Pn **Pn** **23 25 39.6 +0.6**
PCAB *e*Sn **Sn** **23 27 09.1 -5.7**
PCAB A A 23 27 26.3
comp=N,48nm,0.6s
PCAB Cabril 8.48 21⇓*e*Pn **Pn** **23 25 39.6 +0.6**
PCAB *e*Sn **Sn** **23 27 09.1 -5.7**
comp=N,48nm,0.6s
ELOB Lobios 8.61 21 P **Pn** **23 25 41.5 +0.6**
comp=N,8.7nm,0.2s,SNR=35
ELOB S **Sn** **23 27 13.7 -4.5**
comp=N,25nm,0.1s,SNR=62
ELOB Lobios 8.61 21 P **Pn** **23 25 41.5 +0.6**
comp=N,8.7nm,0.2s,SNR=35
ELOB S **Sn** **23 27 13.7 -4.5**
comp=N,25nm,0.1s,SNR=62
ELOB Lobios 8.61 21 P **Pn** **23 25 41.7 +0.8**
ELOB S **Sn** **23 27 13.7 -4.5**
PGAV Gavieira, Arco 8.64 20 *e*Pn **Pn** **23 25 41.9 +0.6**
PGAV *e*Sn **Sn** **23 27 12.9 -6.0**
PGAV A A 23 27 31.7
comp=N,46nm,0.6s
PGAV Gavieira, Arco 8.64 20 *e*Pn **Pn** **23 25 41.9 +0.6**
ENIJ Nijar 8.68 66 P **Pn** **23 25 42.1 +0.4**
comp=N,49nm,0.2s,SNR=7.9
ENIJ S **Sn** **23 27 15.7 -4.0**
comp=N,7.6nm,0.2s,SNR=7.9
ENIJ Nijar 8.68 66 P **Pn** **23 25 42.3 +0.6**
ENIJ S **Sn** **23 27 15.7 -4.0**
ENIJ Nijar 8.68 66 P **Pn** **23 25 42.1 +0.4**
comp=N,49nm,0.2s,SNR=7.9
ENIJ S **Sn** **23 27 15.7 -4.0**
comp=N,7.6nm,0.2s,SNR=7.9
ENIJ Nijar 8.68 66 P **Pn** **23 25 42.3 +0.6**
ENIJ S **Sn** **23 27 15.7 -4.0**
EHUE Huescar 8.69 60 P **Pn** **23 25 42.9 +0.9**
comp=N,70nm,0.1s,SNR=34
EHUE S **Sn** **23 27 16.2 -4.0**
comp=N,19nm,0.2s,SNR=7.9
EHUE Huescar 8.69 60 P **Pn** **23 25 42.9 +0.9**
EHUE S **Sn** **23 27 16.2 -4.0**
EHUE Huescar 8.69 60 P **Pn** **23 25 42.9 +0.9**
comp=N,70nm,0.1s,SNR=34
EHUE S **Sn** **23 27 16.1 -4.0**
EHUE Huescar 8.69 60 P **Pn** **23 25 42.9 +0.9**
EHUE S **Sn** **23 27 16.1 -4.0**
ESDC Sonseca Array 8.75 46 Pn **Pn** **23 25 42.9 +0.1**
comp=N,34nm,0.3s,baz=235,slow=14,SNR=272
ESDC Sn **Sn** **23 27 16.9 -4.6**
comp=N,11nm,0.3s,baz=236,slow=23,SNR=17
ESDC LR LR 23 29 11.7
comp=N,154nm,19.5s,baz=225,slow=38
ESDC Sonseca Array 8.75 46 P **Pn** **23 25 42.7 0.0**
comp=N,102nm,0.1s,baz=235,slow=13,SNR=416
ESDC S **Sn** **23 27 17.4 -4.1**
comp=N,34nm,0.6s,baz=234,slow=24,SNR=11
ESDC Sonseca Array 8.75 46 P **Pn** **23 25 42.7 0.0**
comp=N,102nm,0.1s,SNR=416
ESDC S **Sn** **23 27 17.4 -4.1**
comp=N,34nm,0.6s,SNR=11
ESDC Sonseca Array 8.75 46 P **Pn** **23 25 42.7 0.0**
ESDC S **Sn** **23 27 17.4 -4.1**
ESLA Sonseca Array 8.75 46 *e*Pn **Pn** **23 25 43.1 +0.3**
ESLA Sonseca Array 8.75 46 *e*Pn **Pn** **23 25 43.1 +0.3**
ES19 SONSECA Array 8.81 46 *e*Pn **Pn** **23 25 42.5 -1.0**
ES19 SONSECA Array 8.81 46 *e*Pn **Pn** **23 25 42.5 -1.0**
SESP Santiago Espad 8.86 59 P **Pn** **23 25 44.4 +0.1**
comp=N,166nm,0.4s,SNR=7.9
SESP S **Sn** **23 27 18.5 -5.8**
comp=N,98nm,0.2s,SNR=7.9
SESP Santiago Espad 8.86 59 P **Pn** **23 25 44.4 +0.1**
comp=N,166nm,0.4s,SNR=7.9
SESP S **Sn** **23 27 18.5 -5.8**
comp=N,98nm,0.2s,SNR=7.9
SESP Santiago Espad 8.86 59 P **Pn** **23 25 44.4 +0.1**
SESP S **Sn** **23 27 18.5 -5.8**
PBRG Braganca 9.00 27 *e*Pn **Pn** **23 25 46.8 +0.6**
PBRG *e*Sn **Sn** **23 27 22.1 -5.5**
PBRG A A 23 27 30.9
comp=N,33nm,0.6s
PBRG Braganca 9.00 27 *e*Pn **Pn** **23 25 46.8 +0.6**
PBRG *e*Sn **Sn** **23 27 22.1 -5.5**
comp=N,33nm,0.6s
VELZ Velez Rubio 9.05 63 P **Pn** **23 25 48.4 +1.5**
SNR=7.9
VELZ S **Sn** **23 27 23.8 -5.1**
SNR=7.9
VELZ Velez Rubio 9.05 63 P **Pn** **23 25 48.4 +1.5**
SNR=7.9
VELZ S **Sn** **23 27 23.8 -5.1**
SNR=7.9
ECAL Calabor 9.12 26 P **Pn** **23 25 48.4 +0.6**
comp=N,20nm,0.3s,SNR=40
ECAL S **Sn** **23 27 27.4 -3.2**
comp=N,14nm,0.2s,SNR=5.7
ECAL Calabor 9.12 26 P **Pn** **23 25 48.4 +0.6**
comp=N,20nm,0.3s,SNR=40
ECAL S **Sn** **23 27 27.4 -3.2**
comp=N,14nm,0.2s,SNR=5.7
ECAL Calabor 9.12 26 P **Pn** **23 25 48.8 +0.9**
ECAL S **Sn** **23 27 27.4 -3.2**
EVIA Vianos 9.12 56 P **Pn** **23 25 47.8 -0.1**
comp=N,28nm,0.2s,SNR=7.9
EVIA S **Sn** **23 27 24.3 -6.4**
comp=N,48nm,0.4s,SNR=7.9
EVIA Vianos 9.12 56 P **Pn** **23 25 47.8 -0.1**
comp=N,28nm,0.2s,SNR=7.9
EVIA S **Sn** **23 27 24.3 -6.4**
comp=N,48nm,0.4s,SNR=7.9
GUD Guadarrama 9.29 41 P **Pn** **23 25 50.5 +0.3**
comp=N,39nm,0.5s,SNR=114
GUD S **Sn** **23 27 31.0 -3.7**
comp=N,18nm,0.3s,SNR=6.2
GUD Guadarrama 9.29 41 P **Pn** **23 25 50.9 +0.7**
GUD S **Sn** **23 27 31.0 -3.7**
GUD Guadarrama 9.29 41 P **Pn** **23 25 50.9 +0.7**
GUD S **Sn** **23 27 31.0 -3.7**
comp=N,18nm,0.3s,SNR=6.2
GUD Guadarrama 9.29 41 P **Pn** **23 25 50.9 +0.7**
GUD S **Sn** **23 27 31.0 -3.7**
EMAZ Mazaricos 9.40 14 P **Pn** **23 25 51.7 +0.1**
comp=N,6.4nm,0.1s,SNR=7.9
EMAZ S **Sn** **23 27 30.7 -6.7**
comp=N,38nm,0.2s,SNR=7.9
EMAZ Mazaricos 9.40 14 P **Pn** **23 25 51.7 +0.1**
comp=N,6.4nm,0.1s,SNR=7.9
EMAZ S **Sn** **23 27 30.7 -6.7**
comp=N,38nm,0.2s,SNR=7.9
EMAZ Mazaricos 9.40 14 P **Pn** **23 25 51.7 +0.1**
EMAZ S **Sn** **23 27 30.7 -6.7**
EAGO Agolada(Pontev 9.47 18 P **Pn** **23 25 52.9 +0.3**
comp=N,5.5nm,0.1s,SNR=7.9
EAGO S **Sn** **23 27 33.5 -5.6**
comp=N,11nm,0.1s,SNR=7.9
EAGO Agolada(Pontev 9.47 18 P **Pn** **23 25 52.9 +0.3**
comp=N,5.5nm,0.1s,SNR=7.9
EAGO S **Sn** **23 27 33.5 -5.6**
comp=N,11nm,0.1s,SNR=7.9
EMUR La Murta 9.69 63 P **Pn** **23 25 55.2 -0.5**
comp=N,39nm,0.3s,SNR=57
EMUR S **Sn** **23 27 38.0 -6.6**
comp=N,2.8nm,0.2s,SNR=7.9
EMUR La Murta 9.69 63 P **Pn** **23 25 55.2 -0.5**
comp=N,39nm,0.3s,SNR=57
EMUR S **Sn** **23 27 38.0 -6.6**
comp=N,2.8nm,0.2s,SNR=7.9
EMUR La Murta 9.69 63 P **Pn** **23 25 55.2 -0.5**
EMUR S **Sn** **23 27 38.0 -6.6**
CART Cartagena 9.79 65 P **Pn** **23 25 56.9 0.0**
CART Cartagena 9.79 65 P **Pn** **23 25 56.8 0.0**
ETOB Tobarra 9.79 58 P **Pn** **23 25 56.6 -0.4**
comp=N,65nm,0.3s,SNR=286
ETOB S **Sn** **23 27 40.6 -6.5**
comp=N,19nm,0.1s,SNR=8.8
ETOB Tobarra 9.79 58 P **Pn** **23 25 56.6 -0.4**
comp=N,65nm,0.3s,SNR=286
ETOB S **Sn** **23 27 40.6 -6.5**
comp=N,19nm,0.1s,SNR=8.8
ETOB Tobarra 9.79 58 P **Pn** **23 25 56.6 -0.4**
ETOB S **Sn** **23 27 40.6 -6.5**
ODJA Bouhanifia 9.99 78 P **Pn** **23 26 02.0 +2.2**
ODJA Bouhanifia 9.99 78 P **Pn** **23 26 02.0 +2.2**
ODJA Bouhanifia 9.99 78 P **Pn** **23 26 02.0 +2.2**
EPON Pontenova 10.22 21 P **Pn** **23 26 03.4 +0.6**
comp=N,10nm,0.3s,SNR=29
EPON S **Sn** **23 27 52.1 -5.4**
comp=N,5.3nm,0.2s,SNR=7.9
EPON Pontenova 10.22 21 P **Pn** **23 26 03.4 +0.6**
comp=N,10nm,0.3s,SNR=29
EPON S **Sn** **23 27 52.1 -5.4**
comp=N,5.3nm,0.2s,SNR=7.9
EPON Pontenova 10.22 21 P **Pn** **23 26 03.5 +0.6**
EPON S **Sn** **23 27 52.1 -5.4**
AFON Font Roja 10.52 60 P **Pn** **23 26 06.8 -0.2**
comp=N,6.9nm,0.3s,SNR=29
AFON S **Sn** **23 27 58.0 -6.9**
comp=N,6.4nm,0.3s,SNR=5.9
AFON Font Roja 10.52 60 P **Pn** **23 26 06.8 -0.2**
comp=N,6.9nm,0.3s,SNR=29
AFON S **Sn** **23 27 58.0 -6.9**
comp=N,6.4nm,0.3s,SNR=5.9
OKGL Djebel Kef Gue 10.71 75 P **Pn** **23 26 10.0 +0.4**
comp=N,14nm,0.1s,SNR=7.9
OKGL S **Sn** **23 28 05.1 -4.5**
comp=N,3.5nm,0.1s,SNR=7.9
OKGL Djebel Kef Gue 10.71 75 P **Pn** **23 26 10.0 +0.4**
comp=N,14nm,0.1s,SNR=7.9
OKGL S **Sn** **23 28 05.1 -4.5**
comp=N,3.5nm,0.1s,SNR=7.9
OKGL Djebel Kef Gue 10.71 75 P **Pn** **23 26 10.0 +0.4**
OKGL S **Sn** **23 28 05.1 -4.5**
EARI Arriondas 10.87 28 P **Pn** **23 26 13.2 +1.5**
comp=N,2.1nm,0.2s,SNR=16
EARI S **Sn** **23 28 09.9 -3.5**
comp=N,2.8nm,0.2s,SNR=7.9
EARI Arriondas 10.87 28 P **Pn** **23 26 13.2 +1.5**
comp=N,2.1nm,0.2s,SNR=16
EARI S **Sn** **23 28 09.9 -3.5**
comp=N,2.8nm,0.2s,SNR=7.9
EARI Arriondas 10.87 28 P **Pn** **23 26 13.2 +1.5**
EARI S **Sn** **23 28 09.9 -3.5**
PSMN Pico do Norte, 11.00 290 *e*P Pn 23 26 07.7 -5.8
comp=N,102nm,1.4s
PSMN Pico do Norte, 11.00 290 *e*P Pn 23 26 07.7 -5.8
comp=N,102nm,1.4s
PSMA Santa Maria 11.05 290 *e*P Pn 23 26 09.2 -5.0
comp=N,146nm,1.8s
EMOS Mosqueruela 11.34 52 P **Pn** **23 26 19.5 +1.1**
comp=N,5.5nm,0.1s,SNR=54
EMOS S **Sn** **23 28 19.9 -5.4**
comp=N,2.2nm,0.1s,SNR=20
EMOS Mosqueruela 11.34 52 P **Pn** **23 26 19.2 +0.8**
EMOS S **Sn** **23 28 19.9 -5.4**
comp=N,2.2nm,0.1s,SNR=20
EMOS Mosqueruela 11.34 52 P **Pn** **23 26 19.2 +0.8**
EMOS S **Sn** **23 28 19.9 -5.4**
CMLA Cha da Macela 11.54 294 *e*P **Pn** **23 26 18.5 -2.5**
comp=N,232nm,1.2s
CMLA Cha da Macela 11.54 294 *e*P **Pn** **23 26 18.5 -2.5**
comp=N,232nm,1.2s
ELAN Lanestosa 11.56 33 P **Pn** **23 26 22.7 +1.4**
comp=N,2.3nm,0.2s,SNR=15
ELAN S **Sn** **23 28 24.9 -5.6**
comp=N,1.4nm,0.3s,SNR=7.9
ELAN Lanestosa 11.56 33 P **Pn** **23 26 22.7 +1.4**
comp=N,2.3nm,0.2s,SNR=15
ELAN S **Sn** **23 28 24.9 -5.6**
comp=N,1.4nm,0.3s,SNR=7.9
ELAN Lanestosa 11.56 33 P **Pn** **23 26 22.7 +1.4**
ELAN S **Sn** **23 28 24.9 -5.6**
EIBI Ibiza 12.01 61 P **Pn** **23 26 26.7 -0.7**
comp=N,7.4nm,0.1s,SNR=26
EIBI S **Sn** **23 28 32.8 -8.6**
comp=N,3.8nm,0.3s,SNR=8.4
EIBI Ibiza 12.01 61 P **Pn** **23 26 26.7 -0.7**
comp=N,7.4nm,0.1s,SNR=26
EIBI S **Sn** **23 28 32.8 -8.6**
comp=N,3.8nm,0.3s,SNR=8.4
EIBI Ibiza 12.01 61 P **Pn** **23 26 26.7 -0.7**
EIBI S **Sn** **23 28 32.8 -8.6**
ESAC San Caprasio 12.10 46 P **Pn** **23 26 30.7 +2.0**
comp=N,24nm,0.3s,SNR=15
ESAC S **Sn** **23 28 41.2 -2.5**
comp=N,10.0nm,0.2s,SNR=7.9
ESAC San Caprasio 12.10 46 P **Pn** **23 26 30.7 +2.0**
comp=N,24nm,0.3s,SNR=15
ESAC S **Sn** **23 28 41.2 -2.5**
comp=N,10.0nm,0.2s,SNR=7.9
ESAC San Caprasio 12.10 46 P **Pn** **23 26 30.7 +2.0**
ESAC S **Sn** **23 28 41.2 -2.5**
EARA Aranguren 12.15 40 P **Pn** **23 26 30.2 +0.9**
comp=N,3.7nm,0.3s,SNR=5.2
EARA S **Sn** **23 28 41.4 -3.4**
comp=N,1.6nm,0.1s,SNR=7.9
EARA Aranguren 12.15 40 P **Pn** **23 26 30.2 +0.9**
comp=N,3.7nm,0.3s,SNR=5.2
EARA S **Sn** **23 28 41.4 -3.4**
comp=N,1.6nm,0.1s,SNR=7.9
ERTA Horta de San J 12.18 51 P **Pn** **23 26 31.0 +1.4**
comp=N,3.1nm,0.2s,SNR=18
ERTA S **Sn** **23 28 37.2 -8.2**
comp=N,2.9nm,0.2s,SNR=7.9
ERTA Horta de San J 12.18 51 P **Pn** **23 26 31.0 +1.4**
comp=N,3.1nm,0.2s,SNR=18
ERTA S **Sn** **23 28 37.2 -8.2**
comp=N,2.9nm,0.2s,SNR=7.9
IEPA Eparoz 12.32 41 P **Pn** **23 26 33.6 +1.9**
SNR=7.9
IEPA S **Sn** **23 28 45.8 -3.3**
SNR=7.9
IEPA Eparoz 12.32 41 P **Pn** **23 26 33.6 +1.9**
SNR=7.9
IEPA S **Sn** **23 28 45.8 -3.3**
SNR=7.9
YMUS Pe˜-a Musera 12.33 42 P **Pn** **23 26 33.3 +1.6**
SNR=7.9
YMUS S **Sn** **23 28 46.2 -2.9**
SNR=7.9
YMUS Pe˜-a Musera 12.33 42 P **Pn** **23 26 33.3 +1.6**
SNR=7.9
YMUS S **Sn** **23 28 46.2 -2.9**
SNR=7.9
YASP Aspurt 12.35 41 P **Pn** **23 26 32.8 +0.8**
SNR=7.9
YASP S **Sn** **23 28 46.1 -3.5**
SNR=7.9
YASP Aspurt 12.35 41 P **Pn** **23 26 32.8 +0.8**
SNR=7.9
YASP S **Sn** **23 28 46.1 -3.5**
SNR=7.9
YSIG Sigues 12.38 42 P **Pn** **23 26 32.5 +0.1**
SNR=7.9
YSIG S **Sn** **23 28 43.6 -6.8**
SNR=7.9
YSIG Sigues 12.38 42 P **Pn** **23 26 32.5 +0.1**
SNR=7.9
YSIG S **Sn** **23 28 43.6 -6.8**
SNR=7.9
IELO Elcoad 12.38 40 P **Pn** **23 26 33.6 +1.2**
comp=N,6.2nm,0.2s,SNR=7.9
IELO S **Sn** **23 28 45.7 -4.8**
comp=N,7.9nm,0.3s,SNR=7.9
IELO Elcoad 12.38 40 P **Pn** **23 26 33.6 +1.2**
comp=N,6.2nm,0.2s,SNR=7.9
IELO S **Sn** **23 28 45.7 -4.8**
comp=N,7.9nm,0.3s,SNR=7.9
YBER Berdun 12.38 42 P **Pn** **23 26 32.9 +0.5**
SNR=7.9
YBER S **Sn** **23 28 45.5 -5.0**
SNR=7.9
YBER Berdun 12.38 42 P **Pn** **23 26 32.9 +0.5**
SNR=7.9
YBER S **Sn** **23 28 45.5 -5.0**
SNR=7.9
EALK Alkurruntz 12.50 39 P **Pn** **23 26 34.9 +0.8**
comp=N,21nm,0.5s,SNR=19
EALK S **Sn** **23 28 48.8 -4.6**
comp=N,8.0nm,0.2s,SNR=5.7
EALK Alkurruntz 12.50 39 P **Pn** **23 26 34.9 +0.8**
comp=N,21nm,0.5s,SNR=19
EALK S **Sn** **23 28 48.8 -4.6**
comp=N,8.0nm,0.2s,SNR=5.7
SJPF Ste Jean 12.57 40 P **Pn** **23 26 36.2 +1.2**
SJPF S **Sn** **23 28 48.3 -6.8**
comp=N,19nm,0.8s
SJPF Ste Jean 12.57 40 *e*Pn **Pn** **23 26 36.2 +1.2**
SJPF *e*Sn **Sn** **23 28 48.3 -6.8**
comp=N,37nm,0.8s
SJPF Ste Jean 12.57 40 P **Pn** **23 26 36.2 +1.2**
SJPF S **Sn** **23 28 48.3 -6.8**
comp=N,19nm,0.8s
ETSF Etsaut 12.79 42 P **Pn** **23 26 39.2 +1.2**
ETSF S **Sn** **23 28 53.7 -6.8**
comp=N,5.1nm,0.5s
ETSF Etsaut 12.79 42 *e*Pn **Pn** **23 26 39.2 +1.2**
ETSF *e*Sn **Sn** **23 28 53.7 -6.8**
comp=N,10nm,0.5s
ETSF Etsaut 12.79 42 P **Pn** **23 26 39.2 +1.2**
ETSF S **Sn** **23 28 53.7 -6.8**
comp=N,5.1nm,0.5s
EPOB Poblet 12.86 51 P **Pn** **23 26 39.5 +0.5**
comp=N,2.1nm,0.2s,SNR=7.4
EPOB S **Sn** **23 28 56.9 -5.4**
comp=N,0.6nm,0.2s,SNR=7.9
EPOB Poblet 12.86 51 P **Pn** **23 26 39.5 +0.5**
comp=N,2.1nm,0.2s,SNR=7.4
EPOB S **Sn** **23 28 56.9 -5.4**
comp=N,0.6nm,0.2s,SNR=7.9
ECHI Chisagues Biel 13.07 44 P **Pn** **23 26 42.9 +1.0**
comp=N,5.1nm,0.2s,SNR=13
ECHI S **Sn** **23 29 00.7 -6.7**
comp=N,7.8nm,0.1s,SNR=7.9
ECHI Chisagues Biel 13.07 44 P **Pn** **23 26 42.9 +1.0**
comp=N,5.1nm,0.2s,SNR=13
ECHI S **Sn** **23 29 00.7 -6.7**
comp=N,7.8nm,0.1s,SNR=7.9
ETOS Mallorca 13.34 60 P **Pn** **23 26 44.9 -0.7**
comp=N,6.2nm,0.4s,SNR=15
ETOS S Sn 23 29 04.8 -9.1
comp=N,0.5nm,0.2s,SNR=7.9
ETOS Mallorca 13.34 60 P **Pn** **23 26 44.9 -0.7**
comp=N,6.2nm,0.4s,SNR=15
ETOS S Sn 23 29 04.8 -9.2
comp=N,0.5nm,0.2s,SNR=7.9
EPF Esparros 13.38 43 P **Pn** **23 26 46.7 +0.6**
EPF S **Sn** **23 29 07.6 -7.3**
comp=N,8.7nm,0.4s
EPF Esparros 13.38 43 *e*Pn **Pn** **23 26 46.7 +0.6**
EPF *e*Sn **Sn** **23 29 07.6 -7.3**
comp=N,17nm,0.4s
EPF Esparros 13.38 43 *e*P **Pn** **23 26 46.0 -0.1**
EPF Esparros 13.38 43 P **Pn** **23 26 46.7 +0.6**
EPF S **Sn** **23 29 07.6 -7.3**
comp=N,8.7nm,0.4s
SALF Salau 13.71 46 *e*P **Pn** **23 26 52.6 +2.0**
SALF Salau 13.71 46 *e*P **Pn** **23 26 52.6 +2.0**
ROSA Rosais 13.86 295 P Pn 23 26 45.9 -6.7
comp=N,14nm,0.2s,SNR=7.9
ROSA Rosais 13.86 295 *e*P **Pn** **23 26 51.0 -1.6**
comp=N,82nm,1.3s
ROSA Rosais 13.86 295 *e*P **Pn** **23 26 51.0 -1.6**
comp=N,82nm,1.3s
PICO Pico 13.94 294 *e*P **Pn** **23 26 52.5 -1.3**
comp=N,81nm,1.0s
PICO Pico 13.94 294 *e*P **Pn** **23 26 52.5 -1.3**
comp=N,81nm,1.0s
CFON Fontmartina 13.95 51 P **Pn** **23 26 55.5 +1.6**
comp=N,4.0nm,0.3s,SNR=12
CFON Fontmartina 13.95 51 P **Pn** **23 26 55.5 +1.6**

comp=N,4.0nm,0.3s,SNR=12
VALF Valcebollere 14.01 48 *eP* **Pn 23 26 56.5 +1.7**
VALF Valcebollere 14.01 48 *eP* **Pn 23 26 56.5 +1.7**
CLLI Llivia 14.03 48 P **Pn 23 26 56.9 +1.9**
comp=N,1.4nm,0.2s,SNR=17
CLLI S **Sn 23 29 23.9 -7.0**
comp=N,0.7nm,0.2s,SNR=7.9
CLLI Llivia 14.03 48 P **Pn 23 26 56.9 +1.9**
comp=N,1.4nm,0.2s,SNR=17
CLLI S **Sn 23 29 23.9 -7.0**
comp=N,0.7nm,0.2s,SNR=7.9
CARF Carcanieres 14.24 47 *eP* **Pn 23 26 59.7 +1.8**
FILF Fillols 14.44 49 *eP* **Pn 23 27 00.7 +0.1**
EJON La Jonquera 14.59 50 P **Pn 23 27 03.8 +1.2**
comp=N,2.4nm,0.4s,SNR=7.9
EJON La Jonquera 14.59 50 P **Pn 23 27 03.8 +1.2**
comp=N,2.4nm,0.4s,SNR=7.9
SJAF Saint Jean de 14.60 50 P **Pn 23 27 03.2 +0.5**
comp=N,0.7nm,0.2s,SNR=7.9
SJAF Saint Jean de 14.60 50 P **Pn 23 27 03.2 +0.5**
comp=N,0.7nm,0.2s,SNR=7.9
MTLF Montolieu 14.66 46 P **Pn 23 27 04.8 +1.2**
MTLF S **Sn 23 29 37.9 -8.2**
comp=N,1.9nm,0.6s
MTLF Montolieu 14.66 46 *e*Pn **Pn 23 27 04.8 +1.2**
MTLF *e*Sn **Sn 23 29 37.9 -8.2**
comp=N,3.9nm,0.6s
MTLF Montolieu 14.66 46 *e*Pn **Pn 23 27 04.8 +1.2**
MTLF S **Sn 23 29 37.9 -8.2**
comp=N,1.9nm,0.6s
LFF La Frestale 14.86 38 P **Pn 23 27 05.8 -0.4**
LFF S **Sn 23 29 42.8 -8.0**
comp=N,4.8nm,0.7s
LFF La Frestale 14.86 38 *e*Pn **Pn 23 27 05.8 -0.4**
LFF *e*Sn **Sn 23 29 42.8 -8.0**
comp=N,9.5nm,0.7s
LFF La Frestale 14.86 38 *e*Pn **Pn 23 27 05.8 -0.4**
LFF S **Sn 23 29 42.8 -8.0**
comp=N,4.8nm,0.7s
RJF Les Rejaudoux 15.51 39 P **Pn 23 27 14.4 -0.5**
RJF S **Sn 23 29 58.4 -8.3**
comp=N,13nm,0.9s
RJF Les Rejaudoux 15.51 39 *e*Pn **Pn 23 27 14.4 -0.5**
RJF *e*Sn **Sn 23 29 58.4 -8.3**
comp=N,26nm,0.9s
RJF Les Rejaudoux 15.51 39 *e*P **Pn 23 27 14.4 -0.5**
RJF Les Rejaudoux 15.51 39 *e*Pn **Pn 23 27 14.4 -0.5**
RJF S **Sn 23 29 58.4 -8.3**
comp=N,13nm,0.9s
RJF Les Rejaudoux 15.51 39 *e*Pn **Pn 23 27 14.4 -0.5**
CAF Calviac 15.55 41 P **Pn 23 27 14.5 -0.9**
CAF S **Sn 23 29 59.5 -8.2**
comp=N,0.0nm,0.6s
CAF Calviac 15.55 41 *e*Pn **Pn 23 27 14.5 -0.9**
CAF *e*Sn **Sn 23 29 59.5 -8.2**
comp=N,10.0nm,0.6s
CAF Calviac 15.55 41 *e*P **Pn 23 27 14.5 -0.9**
CAF Calviac 15.55 41 *e*Pn **Pn 23 27 14.5 -0.9**
CAF S **Sn 23 29 59.5 -8.2**
CAF Calviac 15.55 41 *e*Pn **Pn 23 27 14.5 -0.9**
QUIF Quistinic 15.57 23 P **Pn 23 27 15.1 -0.5**
QUIF Quistinic 15.57 23 *e*Pn **Pn 23 27 15.1 -0.5**
QUIF Quistinic 15.57 23 *e*P **Pn 23 27 15.1 -0.5**
QUIF Quistinic 15.57 23 *e*Pn **Pn 23 27 15.1 -0.5**
QUIF Quistinic 15.57 23 *e*Pn **Pn 23 27 15.1 -0.5**
MFF Saint Martin d 15.65 32 P **Pn 23 27 17.6 +0.9**
MFF S **Sn 23 30 02.0 -8.1**
comp=N,5.2nm,0.8s
MFF Saint Martin d 15.65 32 *e*Pn **Pn 23 27 17.6 +0.9**
MFF *e*Sn **Sn 23 30 02.0 -8.1**
comp=N,10nm,0.8s
MFF Saint Martin d 15.65 32 *e*P **Pn 23 27 17.6 +0.9**
MFF Saint Martin d 15.65 32 *e*Pn **Pn 23 27 17.6 +0.9**
MFF S **Sn 23 30 02.0 -8.1**
comp=N,5.2nm,0.8s
MFF Saint Martin d 15.65 32 *e*Pn **Pn 23 27 17.6 +0.9**
ROSF Rostrenen 15.91 22 P **Pn 23 27 19.5 -0.5**
ROSF S **Sn 23 30 07.1 -9.2**
comp=N,57nm,1.5s
ROSF Rostrenen 15.91 22 *e*Pn **Pn 23 27 19.5 -0.5**
ROSF *e*Sn **Sn 23 30 07.1 -9.2**
comp=N,113nm,1.5s
ROSF Rostrenen 15.91 22 *e*P **Pn 23 27 19.5 -0.5**
ROSF *e* 23 30 07.1
ROSF Rostrenen 15.91 22 *e*Pn **Pn 23 27 19.5 -0.5**
ROSF S **Sn 23 30 07.1 -9.2**
comp=N,57nm,1.5s
ROSF Rostrenen 15.91 22 *e*Pn **Pn 23 27 19.5 -0.5**
ROSF *e*Sn **Sn 23 30 07.1 -9.2**
LASF Ste Croix 16.06 46 P **Pn 23 27 23.4 +1.4**
LASF Ste Croix 16.06 46 *e*Pn **Pn 23 27 23.4 +1.4**
LASF Ste Croix 16.06 46 *e*Pn **Pn 23 27 23.4 +1.4**
LASF Ste Croix 16.06 46 *e*Pn **Pn 23 27 23.4 +1.4**
SGMF Saint Gilles 16.07 24 P **Pn 23 27 21.6 -0.5**
SGMF Saint Gilles 16.07 24 *e*Pn **Pn 23 27 21.6 -0.5**
SGMF Saint Gilles 16.07 24 *e*P **Pn 23 27 21.6 -0.5**
SGMF Saint Gilles 16.07 24 *e*Pn **Pn 23 27 21.6 -0.5**
SGMF Saint Gilles 16.07 24 *e*Pn **Pn 23 27 21.6 -0.5**
GRR Gorron 16.79 27 P **Pn 23 27 32.0 +0.8**
GRR Gorron 16.79 27 *e*Pn **Pn 23 27 32.0 +0.8**
GRR Gorron 16.79 27 *e*P **Pn 23 27 32.0 +0.8**
GRR Gorron 16.79 27 *e*Pn **Pn 23 27 32.0 +0.8**
GRR Gorron 16.79 27 *e*Pn **Pn 23 27 32.0 +0.8**
VIVF Saint-Julien-l 16.98 45 P **P 23 27 35.4 -0.2**
VIVF Saint-Julien-l 16.98 45 *e*Pn **P 23 27 35.4 -0.2**
VIVF Saint-Julien-l 16.98 45 *e*P **P 23 27 35.4 -0.2**
VIVF Saint-Julien-l 16.98 45 P **P 23 27 35.4 -0.2**
VIVF Saint-Julien-l 16.98 45 *e*Pn **P 23 27 35.4 -0.2**
BGF Bois d'Agland 17.04 38 P **Pn 23 27 34.7 +0.3**
BGF S Sn 23 30 30.2 -14
comp=N,14nm,0.9s
BGF Bois d'Agland 17.04 38 *e*Pn **Pn 23 27 34.7 +0.3**
BGF *e*Sn Sn 23 30 30.2 -14
comp=N,28nm,0.9s
BGF Bois d'Agland 17.04 38 *e*P **Pn 23 27 34.7 +0.3**
BGF Bois d'Agland 17.04 38 *e*Pn **Pn 23 27 34.7 +0.3**
BGF S Sn 23 30 30.2 -14
comp=N,14nm,0.9s
BGF Bois d'Agland 17.04 38 *e*Pn **Pn 23 27 34.7 +0.3**
SMRF Simiane la Rot 17.05 49 P **Pn 23 27 33.8 -0.8**
SMRF Simiane la Rot 17.05 49 *e*Pn **Pn 23 27 33.8 -0.8**
SMRF Simiane la Rot 17.05 49 *e*Pn **Pn 23 27 33.8 -0.8**
SMRF Simiane la Rot 17.05 49 *e*Pn **Pn 23 27 33.8 -0.8**
LDF La Druitiere 17.24 28 *e*Pn **P 23 27 38.9 +0.5**
LDF La Druitiere 17.24 28 *e*P **P 23 27 38.9 +0.5**
LDF La Druitiere 17.24 28 *e*Pn **P 23 27 38.9 +0.5**
LDF La Druitiere 17.24 28 *e*Pn **P 23 27 38.9 +0.5**
FLN La Foliniere 17.24 27 P **P 23 27 37.8 -0.6**
FLN La Foliniere 17.24 27 *e*Pn **P 23 27 37.8 -0.6**
FLN La Foliniere 17.24 27 *e*P **P 23 27 37.8 -0.6**
FLN La Foliniere 17.24 27 P **P 23 27 37.8 -0.6**
FLN La Foliniere 17.24 27 *e*Pn **P 23 27 37.8 -0.6**
LMR La Mourre 17.34 52 P **Pn 23 27 34.4 -3.8**
LMR La Mourre 17.34 52 *e*Pn **Pn 23 27 34.4 -3.8**
LMR La Mourre 17.34 52 *e*P **Pn 23 27 34.4 -3.8**
LMR La Mourre 17.34 52 P **Pn 23 27 34.4 -3.8**
LMR La Mourre 17.34 52 *e*Pn **Pn 23 27 34.4 -3.8**
AVF Avril sur Loir 17.46 38 P **P 23 27 40.5 -0.3**
AVF Avril sur Loir 17.46 38 *e*Pn **P 23 27 40.5 -0.3**
AVF Avril sur Loir 17.46 38 *e*P **P 23 27 40.5 -0.3**
AVF Avril sur Loir 17.46 38 P **P 23 27 40.5 -0.3**
AVF Avril sur Loir 17.46 38 *e*Pn **P 23 27 40.5 -0.3**
FRF La Foret Royal 17.53 51 P **Pn 23 27 39.9 -0.7**
FRF La Foret Royal 17.53 51 *e*Pn **Pn 23 27 39.9 -0.7**
FRF La Foret Royal 17.53 51 *e*P **Pn 23 27 39.9 -0.7**
FRF La Foret Royal 17.53 51 *e*Pn **Pn 23 27 39.9 -0.7**
FRF La Foret Royal 17.53 51 *e*Pn **Pn 23 27 39.9 -0.7**
SMF Signal de Mont 17.61 39 P **P 23 27 43.3 +0.7**
SMF Signal de Mont 17.61 39 *e*Pn **P 23 27 43.3 +0.7**
SMF Signal de Mont 17.61 39 *e*P **P 23 27 43.3 +0.7**
SMF Signal de Mont 17.61 39 P **P 23 27 43.3 +0.7**
SMF Signal de Mont 17.61 39 *e*Pn **P 23 27 43.3 +0.7**
SSF Saint Saulge 17.72 37 P **P 23 27 46.5 +2.8**
SSF Saint Saulge 17.72 37 *e*Pn **P 23 27 46.5 +2.8**
SSF Saint Saulge 17.72 37 *e*P **P 23 27 46.5 +2.8**
SSF Saint Saulge 17.72 37 P **P 23 27 46.5 +2.8**
SSF Saint Saulge 17.72 37 *e*Pn **P 23 27 46.5 +2.8**
ORIF Oris-en-Rattie 17.73 46 P **P 23 27 44.4 +0.4**
ORIF Oris-en-Rattie 17.73 46 *e*Pn **P 23 27 44.4 +0.4**
ORIF Oris-en-Rattie 17.73 46 *e*P **P 23 27 44.4 +0.4**
ORIF Oris-en-Rattie 17.73 46 P **P 23 27 44.4 +0.4**
ORIF Oris-en-Rattie 17.73 46 *e*Pn **P 23 27 44.4 +0.4**

KEST Kesra 17.74 78 P **P 23 27 45.4 +1.2**
comp=N,0.4nm,0.3s,baz=232,slow=1.9,SNR=11
LOR Lormes 18.03 37 P **P 23 27 48.9 +1.7**
LOR Lormes 18.03 37 *e*Pn **P 23 27 48.9 +1.7**
LOR Lormes 18.03 37 *e*P **P 23 27 48.9 +1.7**
LOR Lormes 18.03 37 P **P 23 27 48.9 +1.7**
LOR Lormes 18.03 37 *e*Pn **P 23 27 48.9 +1.7**
VSL Villasalto 18.14 66 *e*Pn **P 23 27 48.8 +0.4**
VSL Villasalto 18.14 66 *e*Pn **P 23 27 48.8 +0.4**
MBDF Montbardon 18.17 48 P **P 23 27 51.2 +2.3**
MBDF Montbardon 18.17 48 *e*Pn **P 23 27 51.2 +2.3**
MBDF Montbardon 18.17 48 *e*P **P 23 27 51.2 +2.3**
MBDF Montbardon 18.17 48 P **P 23 27 51.2 +2.3**
MBDF Montbardon 18.17 48 *e*Pn **P 23 27 51.2 +2.3**
SBF Sospel 18.18 51 P **P 23 27 49.8 +0.9**
SBF Sospel 18.18 51 *e*Pn **P 23 27 49.8 +0.9**
SBF Sospel 18.18 51 *e*P **P 23 27 49.8 +0.9**
SBF Sospel 18.18 51 P **P 23 27 49.8 +0.9**
SBF Sospel 18.18 51 *e*Pn **P 23 27 49.8 +0.9**
LPL La Plagne 18.56 46 P **Pn 23 27 56.7 +3.3**
LPL La Plagne 18.56 46 *e*Pn **Pn 23 27 56.7 +3.3**
LPL La Plagne 18.56 46 *e*P **Pn 23 27 56.7 +3.3**
LPL La Plagne 18.56 46 P **Pn 23 27 56.7 +3.3**
LPL La Plagne 18.56 46 *e*Pn **Pn 23 27 56.7 +3.3**
LPG La Plagne 18.56 46 P **Pn 23 27 56.5 +3.0**
LPG La Plagne 18.56 46 *e*Pn **Pn 23 27 56.5 +3.0**
LPG La Plagne 18.56 46 *e*P **Pn 23 27 56.5 +3.0**
LPG La Plagne 18.56 46 P **Pn 23 27 56.5 +3.0**
LPG La Plagne 18.56 46 *e*Pn **Pn 23 27 56.5 +3.0**
PGF Pioggiola 18.70 56 P **Pn 23 27 56.5 +1.4**
PGF Pioggiola 18.70 56 *e*Pn **Pn 23 27 56.5 +1.4**
PGF Pioggiola 18.70 56 *e*P **Pn 23 27 56.5 +1.4**
PGF Pioggiola 18.70 56 P **Pn 23 27 56.5 +1.4**
PGF Pioggiola 18.70 56 *e*Pn **Pn 23 27 56.5 +1.4**
CABF La Chapelle 18.80 42 P **Pn 23 27 58.5 +2.3**
CABF La Chapelle 18.80 42 *e*Pn **Pn 23 27 58.5 +2.3**
CABF La Chapelle 18.80 42 *e*P **Pn 23 27 58.5 +2.3**
CABF La Chapelle 18.80 42 P **Pn 23 27 58.5 +2.3**
CABF La Chapelle 18.80 42 *e*Pn **Pn 23 27 58.5 +2.3**
SFTF Sexfontaines 19.25 37 P **Pn 23 28 03.2 +1.6**
SFTF Sexfontaines 19.25 37 *e*Pn **Pn 23 28 03.2 +1.6**
SFTF Sexfontaines 19.25 37 P **Pn 23 28 03.2 +1.6**
SFTF Sexfontaines 19.25 37 *e*Pn **Pn 23 28 03.2 +1.6**
SENIN Lac Senin/Sane 19.35 44 *e*P **Pn 23 28 05.5 +2.5**
comp=N,30nm,1.7s
SENIN Lac Senin/Sane 19.35 44 *e*P **Pn 23 28 05.5 +2.5**
comp=N,30nm,1.7s
MEZF Maizieres J'vi 19.46 36 P **Pn 23 28 08.8 +4.8**
MEZF Maizieres J'vi 19.46 36 *e*Pn **Pn 23 28 08.8 +4.8**
MEZF Maizieres J'vi 19.46 36 P **Pn 23 28 08.8 +4.8**
MEZF Maizieres J'vi 19.46 36 *e*Pn **Pn 23 28 08.8 +4.8**
BBTS Babate 19.53 193 LR LR 23 35 42.4
comp=N,168nm,18.5s,baz=149,slow=38
LOMF Lomont 19.65 41 *e*P **Pn 23 28 08.6 +2.2**
LOMF Lomont 19.65 41 *e*P **Pn 23 28 08.6 +2.2**
HAU Haudompre 19.79 39 P **Pn 23 28 10.4 +2.3**
HAU Haudompre 19.79 39 *e*Pn **Pn 23 28 10.4 +2.3**
HAU Haudompre 19.79 39 *e*P **Pn 23 28 10.4 +2.3**
HAU Haudompre 19.79 39 *e*Pn **Pn 23 28 10.4 +2.3**
HAU Haudompre 19.79 39 *e*Pn **Pn 23 28 10.4 +2.3**
PAGF Fort de Pagny 19.83 37 *e*Pn **Pn 23 28 10.7 +2.3**
PAGF Fort de Pagny 19.83 37 *e*Pn **Pn 23 28 10.7 +2.3**
PAGF Fort de Pagny 19.83 37 *e*Pn **Pn 23 28 10.7 +2.3**
HINF Hinteralfeld 19.94 40 P **Pn 23 28 11.1 +1.2**
HINF Hinteralfeld 19.94 40 *e*Pn **Pn 23 28 11.1 +1.2**
HINF Hinteralfeld 19.94 40 *e*P **Pn 23 28 11.1 +1.2**
HINF Hinteralfeld 19.94 40 P **Pn 23 28 11.1 +1.2**
HINF Hinteralfeld 19.94 40 *e*Pn **Pn 23 28 11.1 +1.2**
BBS Basel-Blauen 20.09 42 *e*P Pn 23 28 13.0 +1.4
MOF Molkenrain 20.11 40 *e*P Pn 23 28 13.4 +1.5
MOF Molkenrain 20.11 40 *e*P Pn 23 28 13.4 +1.5
BAIF Baives 20.17 32 P Pn 23 28 13.6 +1.2
BAIF Baives 20.17 32 *e*Pn Pn 23 28 13.6 +1.2
BAIF Baives 20.17 32 *e*P Pn 23 28 13.6 +1.2
BAIF Baives 20.17 32 P Pn 23 28 13.6 +1.2
BAIF Baives 20.17 32 *e*Pn Pn 23 28 13.6 +1.2
ECH Echery 20.35 39 *e*P Pn 23 28 16.1 +1.5
ECH Echery 20.35 39 *e*P Pn 23 28 16.1 +1.5
DOU Dourbes 20.36 32 P Pn 23 28 15.7 +0.9
comp=Z,32nm,1.3s
CWF Charnwood Fore 20.40 19 *e*P Pn 23 28 15.3 +0.2
comp=Z,9.4nm,1.0s
CWF Charnwood Fore 20.40 19 *e*P Pn 23 28 15.3 +0.1
comp=Z,9.4nm,1.0s
GIVF Givet 20.47 32 P Pn 23 28 16.6 +0.6
GIVF Givet 20.47 32 *e*Pn Pn 23 28 16.6 +0.6
GIVF Givet 20.47 32 *e*P Pn 23 28 16.6 +0.6
GIVF Givet 20.47 32 P Pn 23 28 16.6 +0.6
GIVF Givet 20.47 32 *e*Pn Pn 23 28 16.6 +0.6
SNF Seneffe 20.53 31 P Pn 23 28 17.3 +0.6
CDF Champ du Feu 20.53 39 P Pn 23 28 16.6 -0.2
CDF Champ du Feu 20.53 39 *e*Pn Pn 23 28 16.6 -0.2
CDF Champ du Feu 20.53 39 *e*P Pn 23 28 16.6 -0.2
CDF Champ du Feu 20.53 39 P Pn 23 28 16.6 -0.2
CDF Champ du Feu 20.53 39 *e*Pn Pn 23 28 16.6 -0.2
LIBD Limburg 20.55 40 *e*P Pn 23 28 17.8 +0.9
WLS Welschbruch 20.57 39 *e*P Pn 23 28 18.5 +1.2
WLS Welschbruch 20.57 39 *e*P Pn 23 28 18.5 +1.2
FELD Feldberg im Sc 20.60 41 *e*P Pn 23 28 18.5 +0.8
WLF Walferdange 20.78 35 P Pn 23 28 20.3 +0.7
comp=Z,38nm,1.5s
STR Strasbourg 20.90 39 *e*P Pn 23 28 22.1 +1.2
BCLA Clavier 20.91 32 P Pn 23 28 21.0 -0.1
comp=Z,11nm,1.4s
DAVOX Davos/Dischmat 21.09 46 P **P 23 28 23.2 +2.5**
comp=Z,9.7nm,0.8s,baz=224,slow=15,SNR=11
DAVOX LR LR 23 37 16.5
comp=Z,156nm,19.6s,baz=244,slow=39
LANF Langenberg 21.16 39 *e*P **P 23 28 24.4 +3.1**
LANF Langenberg 21.16 39 *e*P **P 23 28 24.4 +3.1**
SPAK Spaichingen-Ko 21.16 42 *e*P **P 23 28 24.5 +3.1**
FUORN Ofenpass-Fuorn 21.24 46 *e*P **P 23 28 25.6 +3.1**
comp=Z,30nm,1.3s
FUORN Ofenpass-Fuorn 21.24 46 *e*P **P 23 28 25.6 +3.1**
comp=Z,30nm,1.3s
RUP Ruppelstein 21.24 36 *e*P **P 23 28 25.1 +2.8**
DAVA Damuels 21.34 45 *i* pP **P 23 28 26.0 +2.5**
comp=Z,20nm,1.0s,SNR=9.1
DAVA Damuels 21.34 45 P **P 23 28 26.0 +2.5**
comp=Z,20nm,1.0s,SNR=9.1
BEBN Eben Emael 21.35 32 P **P 23 28 25.8 +2.5**
MEM Membach 21.36 33 P **P 23 28 25.8 +2.3**
comp=Z,18nm,1.1s
KTD Kalmit 21.51 38 *e*P **P 23 28 28.0 +2.9**
FETA Feichten 21.71 46 *i* pP **P 23 28 29.5 +2.1**
comp=Z,27nm,1.3s,SNR=12
FETA Feichten 21.71 46 P **P 23 28 29.5 +2.1**
comp=Z,27nm,1.3s,SNR=12
VAE Valguarnera 21.84 73 LR LR 23 37 38.3
comp=Z,126nm,18.2s,baz=153,slow=39
RETA Reutte 21.96 45 *i* pP **P 23 28 32.1 +2.1**
comp=Z,24nm,1.1s,SNR=14
RETA Reutte 21.96 45 P **P 23 28 32.1 +2.1**
comp=Z,24nm,1.1s,SNR=14
TOD Tromm 22.06 38 *e*P **P 23 28 33.5 +2.5**
MOTA Moosalm 22.09 46 *i* P **P 23 28 33.0 +1.5**
comp=Z,8.2nm,0.8s,SNR=16
MOTA Moosalm 22.09 46 P **P 23 28 33.0 +1.5**
comp=Z,8.2nm,0.8s,SNR=16
SQTA Sankt Quirin 22.09 46 *i* pP **P 23 28 33.5 +2.0**
SQTA Sankt Quirin 22.09 46 P **P 23 28 33.5 +2.0**
EKA Eskdalemuir Ar 22.36 14 P **P 23 28 36.9 +2.8**
comp=Z,2.7nm,0.9s,baz=175,slow=11,SNR=4.3
WTTA Wattenberg 22.37 46 *i* pP **P 23 28 36.7 +2.2**
comp=Z,17nm,0.8s,SNR=7.3
WTTA Wattenberg 22.37 46 P **P 23 28 36.7 +2.2**
comp=Z,17nm,0.8s,SNR=7.3
ABTA Abfaltersbach 22.67 48 *i* P **P 23 28 39.7 +2.1**
comp=Z,7.9nm,0.9s
ABTA Abfaltersbach 22.67 48 P **P 23 28 39.7 +2.1**
comp=Z,7.9nm,0.9s
SKDS Skadanscina 23.15 52 *i* P **P 23 28 43.6 +1.0**
MYKA Terra Mystica 23.33 49 *i* pP **P 23 28 46.3 +1.9**
comp=Z,8.1nm,0.9s,SNR=5.1
MYKA Terra Mystica 23.33 49 P **P 23 28 46.3 +1.9**
comp=Z,8.1nm,0.9s,SNR=5.1
KBA Koelnbreinsper 23.33 48 *i* P **P 23 28 45.2 +0.6**
comp=Z,14nm,1.0s,SNR=9.8
KBA Koelnbreinsper 23.33 48 P **P 23 28 45.2 +0.6**
comp=Z,14nm,1.0s,SNR=9.8
GORS Gorjuse 23.43 50 *e*P **P 23 28 46.1 +0.7**
MOZS Mozjanca 23.70 51 *i* P **P 23 28 49.0 +0.9**
OBKA Obir 23.85 50 *i* P **P 23 28 50.0 +0.4**

comp=Z,15nm,1.0s,SNR=6.3
OBKA Obir 23.85 50 P **P 23 28 50.0 +0.4**
comp=Z,15nm,1.0s,SNR=6.3
UDBI Udbina 23.99 55 Sg **S 23 33 05.5 -2.2**
MOX Moxa 24.13 39 P **P 23 28 54.2 +2.1**
MOX Moxa 24.13 39 P **P 23 28 54.2 +2.1**
TOA1 Torodi Ar. Sit 24.15 145 *e*P **P 23 28 49.9 -2.6**
comp=Z,18nm,1.0s
TOA0 Torodi Ar. Sit 24.16 145 *e*P **P 23 28 49.6 -3.0**
TORD Torodi Ar. Bea 24.16 145 P **P 23 28 49.9 -2.7**
comp=Z,11nm,0.9s,baz=323,slow=10,SNR=69
TORD LR LR 23 38 10.6
comp=Z,213nm,19.5s,baz=305,slow=37
MOA Molln 24.22 47 *i* P **P 23 28 53.3 +0.3**
comp=Z,17nm,1.3s,SNR=11
MOA Molln 24.22 47 P **P 23 28 53.3 +0.3**
comp=Z,17nm,1.3s,SNR=11
SOKA Soboth 24.23 50 *i* P **P 23 28 54.1 +1.0**
comp=Z,14nm,1.5s,SNR=9.2
SOKA Soboth 24.23 50 P **P 23 28 54.1 +1.0**
comp=Z,14nm,1.5s,SNR=9.2
GEA0 GERESS Array S 24.34 44 *e*P **P 23 28 54.8 +0.7**
GEA0 GERESS Array S 24.34 44 *e*P **P 23 28 54.9 +0.7**
GEC2 GERESS Array S 24.34 44 *e*P **P 23 28 55.7 +1.6**
GEC2 pmax pmax
comp=Z,14nm,0.8s
GEC2 GERESS Array S 24.34 44 *e*P **P 23 28 55.7 +1.6**
comp=Z,14nm,0.8s
GEC2 GERESS Array S 24.34 44 *e*P **P 23 28 55.7 +1.6**
comp=Z,14nm,0.8s
GERES GERESS Array B 24.34 44 P **P 23 28 55.1 +0.9**
comp=Z,13nm,0.8s,baz=239,slow=8.4,SNR=110
GERES GERESS Array B 24.34 44 *e*P **P 23 28 55.4 +1.3**
GERES pmax pmax
comp=Z,13nm,0.8s
NKC Novy Kostel 24.34 40 *e*P **P 23 28 55.9 +1.8**
NKC *e*pP **sP 23 29 03.0 +4.6**
NKC *e*sP pP 23 29 05.7 +8.6
NKC Novy Kostel 24.34 40 *e*P **P 23 28 55.9 +1.8**
NKC *e* 23 29 03.0
NKC Novy Kostel 24.34 40 *e*P **P 23 28 55.9 +1.8**
KHC Kasperske Hory 24.41 44 *e*P **P 23 28 55.9 +1.2**
KHC *e*pP **sP 23 29 00.1 +1.1**
KHC AMS AMS 23 41 00.0
comp=Z,200nm,12.9s
KHC Kasperske Hory 24.41 44 *e*P **P 23 28 55.9 +1.2**
KHC *e* 23 29 00.1
KHC MLR MLR
comp=Z,200nm,12.9s
KHC Kasperske Hory 24.41 44 *e*P **P 23 28 55.9 +1.2**
comp=Z,200nm,12.9s
ARSA Arzberg 24.76 49 *i* P **P 23 28 58.2 +0.4**
comp=Z,3.8nm,0.9s
ARSA Arzberg 24.76 49 P **P 23 28 58.2 +0.4**
comp=Z,3.8nm,0.9s
BLY Banja Luka 25.03 56 ||*i* P P 23 29 10.4 +10
CLL Collm 25.23 39 *i* P **P 23 29 03.9 +1.9**
comp=Z,12nm,1.3s
CLL *i* 23 29 15.6
CLL Lm MLR 23 37 00.0
comp=N,700nm,20.3s
CLL Lm MLR 23 37 00.0
comp=E,400nm,20.3s
CLL Collm 25.23 39 *i* P **P 23 29 03.9 +1.9**
CLL pmax pmax
comp=Z,12nm,1.3s
CLL Collm 25.23 39 *e*P **P 23 29 04.0 +1.9**
comp=Z,7.8nm,1.1s
CLL Collm 25.23 39 *e*P **P 23 29 04.0 +1.9**
comp=Z,7.8nm,1.1s
CONA Conrad Observa 25.23 48 *i* P **P 23 29 03.0 +0.8**
comp=Z,8.6nm,0.7s,SNR=7.9
CONA Conrad Observa 25.23 48 P **P 23 29 03.0 +0.8**
comp=Z,8.6nm,0.7s,SNR=7.9
PRU Pruhonice 25.37 43 *e*P **P 23 29 03.9 +0.6**
PRU *e*pP **sP 23 29 13.9 +6.3**
PRU *e*x x 23 29 17.6
PRU AMS AMS 23 41 30.0
comp=Z,200nm,13.3s
PRU Pruhonice 25.37 43 *e*P **P 23 29 03.9 +0.6**
PRU *e* 23 29 13.9
PRU MLR MLR
comp=Z,200nm,13.3s
PRU Pruhonice 25.37 43 P **P 23 29 03.9 +0.6**
GOPC GO Pecny, Ondr 25.48 43 *e*P **P 23 29 06.2 +1.9**
GOPC *e*x x 23 29 18.3
GOPC AMS AMS 23 41 10.0
comp=Z,200nm,13.9s
GOPC GO Pecny, Ondr 25.48 43 *e*P **P 23 29 06.2 +1.9**
GOPC MLR MLR
comp=Z,200nm,13.9s
GOPC GO Pecny, Ondr 25.48 43 P **P 23 29 06.2 +1.9**
BRG Berggiesshubel 25.49 40 *e*P **P 23 29 06.2 +1.8**
comp=Z,14nm,1.1s
BRG Berggiesshubel 25.49 40 *e*P **P 23 29 06.2 +1.8**
BRG pmax pmax
comp=Z,5.0nm,1.2s
SOP Sopron 25.57 49 P **P 23 29 08.4 +3.3**
TREC Trest 25.59 45 *e*P **P 23 29 06.6 +1.3**
TREC AMS AMS 23 40 40.0
comp=Z,300nm,14.7s
TREC Trest 25.59 45 *e*P **P 23 29 06.6 +1.3**
TREC MLR MLR
comp=Z,300nm,14.7s
TREC Trest 25.59 45 P **P 23 29 06.6 +1.3**
PVCC Panska Ves 25.66 41 *e*P **P 23 29 07.7 +1.8**
PVCC *e*pP **sP 23 29 10.6 +0.4**
PVCC Panska Ves 25.66 41 *e*P **P 23 29 07.7 +1.8**
PVCC *e* 23 29 10.6
PVCC Panska Ves 25.66 41 P **P 23 29 07.7 +1.8**
VRAC Vranov 26.25 45 P **P 23 29 11.5 +0.2**
comp=Z,8.2nm,0.9s,baz=247,slow=8.2,SNR=10
VRAC LR LR 23 39 38.0
comp=Z,164nm,18.4s,baz=253,slow=36
VRAC Vranov 26.25 45 ||*i* P **P 23 29 11.9 +0.6**
UPC Upice 26.45 43 *e*P **P 23 29 13.9 +0.8**
UPC *e*pP **sP 23 29 17.2 -0.2**
UPC Upice 26.45 43 *e*P **P 23 29 13.9 +0.8**
UPC *e* 23 29 17.2
UPC Upice 26.45 43 P **P 23 29 13.9 +0.8**
DPC Dobruska-Polom 26.55 43 *e*P **P 23 29 15.5 +1.4**
DPC *e*x x 23 29 27.3
DPC AMS AMS 23 42 20.0
comp=Z,200nm,13.9s
DPC Dobruska-Polom 26.55 43 *e*P **P 23 29 15.5 +1.4**
DPC MLR MLR
comp=Z,200nm,13.9s
DPC Dobruska-Polom 26.55 43 P **P 23 29 15.5 +1.4**
KRLC Kraliky 26.69 44 *e*P **P 23 29 17.1 +1.8**
KRLC Kraliky 26.69 44 *e*P **P 23 29 17.1 +1.8**
KRLC Kraliky 26.69 44 P **P 23 29 17.1 +1.8**
MORC Moravsky Berou 27.00 45 ||*i* P **P 23 29 13.1 -5.1**
MORC Moravsky Berou 27.00 45 *e*P **P 23 29 19.7 +1.5**
MORC pmax pmax
comp=Z,36nm,0.9s
MORC Moravsky Berou 27.00 45 *e*P **P 23 29 19.7 +1.5**
comp=Z,36nm,0.9s
MORC Moravsky Berou 27.00 45 *e*P **P 23 29 19.7 +1.5**
comp=Z,36nm,0.9s
VYHS Vyhne 27.29 48 *e*P **P 23 29 21.0 +0.3**
VYHS pmax pmax
comp=Z,2.0nm,1.1s
VYHS Vyhne 27.29 48 *e*P **P 23 29 21.0 +0.3**
comp=Z,2.3nm,1.1s
VYHS Vyhne 27.29 48 *e*P **P 23 29 21.0 +0.3**
TIC Toumodi 27.88 165 *e*P **P 23 29 22.2 -4.0**
DBIC Dimbokro 27.89 164 P **P 23 29 22.5 -3.7**
comp=Z,17nm,1.0s,baz=339,slow=11,SNR=12
DBIC LR LR 23 40 47.9
comp=Z,196nm,18.4s,baz=325,slow=37
LANS Liptovska Anna 27.91 47 *e*P **P 23 29 27.9 +1.6**
LANS Liptovska Anna 27.91 47 *e*P **P 23 29 27.9 +1.6**
LANS Liptovska Anna 27.91 47 *e*P **P 23 29 27.9 +1.6**
AGG Agios Georgios 28.09 69 *e*P **P 23 29 27.8 -0.2**
AGG pmax pmax
comp=Z,82nm,1.5s
AGG Agios Georgios 28.09 69 *e*P **P 23 29 27.8 -0.2**
comp=Z,82nm,1.5s
AGG Agios Georgios 28.09 69 *e*P **P 23 29 27.8 -0.2**
comp=Z,82nm,1.5s
MDVR Moldovita 28.18 57 ⇑*i* P **P 23 29 25.1 -3.6**
KIC Kosan Boka 28.21 164 *e*P P 23 29 24.3 -4.9
comp=Z,162nm,2.0s
BZS Buzias 28.28 55 ⇑*i* P **P 23 29 29.9 +0.3**
BZS Buzias 28.28 55 ⇑P **P 23 29 29.9 +0.3**

BZS	Buzias	28.28	55	⇑	*i* P	P	23 29 29.9	+0.3
LIC	Lamto	28.28	165		*e*P	P	23 29 24.9	-4.9
	comp=Z,47nm,1.5s							
SIRR	Siria	28.46	54	⇓	*i* P	P	23 29 27.8	-3.4
DRGR		29.29	53	⇓	*i* P	P	23 29 33.4	-5.2
DRGR		29.29	53	⇓	P	P	23 29 33.4	-5.2
KOLS	Kolonicke sedl	29.58	49		*e*P	P	23 29 42.1	+1.0
KOLS	Kolonicke sedl	29.58	49		*e*P	P	23 29 42.1	+1.0
KOLS	Kolonicke sedl	29.58	49		*e*P	P	23 29 42.1	+1.0
APE	Apeiranthos	30.71	73		*e*P	P	23 29 52.4	+1.1
APE					pmax	pmax		
	comp=Z,53nm,1.3s							
NB2	NORSAR Subarra	31.09	22		P	P	23 29 55.4	+1.0
	comp=Z,2.5nm,0.9s,baz=219,slow=9.3							
NB2	NORSAR Subarra	31.09	22		P	P	23 29 55.4	+1.0
	comp=Z,2.5nm,0.9s,SNR=4.3							
NB200	NORSAR Array S	31.09	22		*e*P	P	23 29 53.9	-0.5
NB200	NORSAR Array S	31.09	22		*e*P	P	23 29 53.9	-0.5
NOA	NORSAR Array B	31.09	22		P	P	23 29 53.9	-0.5
	comp=Z,1.2nm,0.8s,baz=218,slow=8.4,SNR=4.3							
NOA					LR	LR	23 42 17.9	
	comp=Z,39nm,19.1s,baz=220,slow=36							
NOA	NORSAR Array B	31.09	22		*e*P	P	23 29 55.7	+1.3
NOA					pmax	pmax		
	comp=Z,1.0nm,0.9s							
BURAR	Bucovina Array	31.14	53	⇑	*i* P	P	23 29 50.0	-5.0
BURAR	Bucovina Array	31.14	53	⇑	P	P	23 29 50.0	-5.0
MLR	Muntele Rosu	31.25	57	⇑	*i* P	P	23 29 52.0	-4.0
MLR	Muntele Rosu	31.25	57	⇑	P	P	23 29 52.0	-4.0
PLOR	Plostina	31.79	56	⇓	*i* P	P	23 29 55.9	-4.8
PLOR	Plostina	31.79	56	⇓	P	P	23 29 55.9	-4.8
VRI	Vrincioaia	31.84	56	⇓	*i* P	P	23 30 01.3	+0.2
VRI	Vrincioaia	31.84	56	⇓	P	P	23 30 01.3	+0.2
VRI	Vrincioaia	31.84	56	⇓	*i* P	P	23 30 01.3	+0.2
CFR	Carcaliu	32.74	58	⇓	*i* P	P	23 30 02.7	-6.2
CFR	Carcaliu	32.74	58	⇓	P	P	23 30 02.7	-6.2
TIRR	Tirgusor	32.87	59	⇑	*i* P	P	23 30 05.0	-5.1
TIRR	Tirgusor	32.87	59		*e*P	P	23 30 10.6	+0.5
TIRR					pmax	pmax		
	comp=Z,6.0nm,0.9s							
TIRR	Tirgusor	32.87	59		*e*P	P	23 30 10.6	+0.5
	comp=Z,6.0nm,0.9s							
TIRR	Tirgusor	32.87	59		*e*P	P	23 30 10.6	+0.5
	comp=Z,6.0nm,0.9s							
SORM	Soroca	33.31	52	⇑	*i* P	P	23 30 07.9	-6.0
SORM	Soroca	33.31	52	⇑	P	P	23 30 07.9	-6.0
KIEV	Kiev	34.38	48		*e*P	P	23 30 23.2	0.0
KIEV					pmax	pmax		
	comp=Z,2.0nm,0.9s							
AKASG	Malin Array Be	34.39	48		LR	LR	23 45 53.4	
	comp=Z,65nm,18.2s,baz=250,slow=39							
VSU	Vasula	35.67	34		*e*P	P	23 30 34.8	+0.6
VSU					pmax	pmax		
	comp=Z,13nm,1.0s							
ANTO	Ankara	36.15	67		*e*P	P	23 30 40.9	+2.3
ANTO					pmax	pmax		
	comp=Z,14nm,0.9s							
ANTO	Ankara	36.15	67		*e*P	P	23 30 40.9	+2.3
	comp=Z,14nm,0.9s							
ANTO	Ankara	36.15	67		*e*P	P	23 30 40.9	+2.3
	comp=Z,14nm,0.9s							
BR101	Keskin Array S	36.81	67		*e*P	P	23 30 44.7	+0.3
BR101	Keskin Array S	36.81	67		*e*P	P	23 30 44.7	+0.3
BR131	Keskin Array S	36.81	67		*e*P	P	23 30 46.5	+2.1
BR131	Keskin Array S	36.81	67		*e*P	P	23 30 46.5	+2.1
BRTR	Keskin Array B	36.81	67		P	P	23 30 44.7	+0.3
	comp=Z,2.7nm,0.9s,baz=270,slow=4.3,SNR=14							
BRTR	Keskin Array B	36.81	67		*e*P	P	23 30 45.9	+1.5
BRTR					pmax	pmax		
	comp=Z,3.0nm,0.9s							
FIA0	FINESS Array S	36.82	30		*e*P	P	23 30 45.3	+1.3
FIA0	FINESS Array S	36.82	30		*e*P	P	23 30 45.3	+1.3
FIA0	FINESS Array S	36.82	30		*e*P	P	23 30 45.3	+1.3
FINES	FINESS Array B	36.82	30		P	P	23 30 45.3	+1.3
	comp=Z,5.9nm,0.7s,baz=234,slow=6.4,SNR=30							
FINES					LR	LR	23 45 41.9	
	comp=Z,190nm,20.6s,baz=231,slow=36							
FIA1	FINESS Array S	36.82	30		*e*P	P	23 30 45.0	+1.1
FIA1	FINESS Array S	36.82	30		*e*P	P	23 30 45.0	+1.1
ARNB	Al Arnab	39.21	73		*e*P	P	23 31 09.7	+5.0
ARNB	Al Arnab	39.21	73		*e*P	P	23 31 09.5	+4.9
DRWC	Darouich	39.62	72		*e*P	P	23 31 09.0	+1.0
DRWC	Darouich	39.62	72		*e*P	P	23 31 06.7	-1.3
DRWC					*e*P	P	23 31 08.6	+0.6
WRDH	Warideh	39.64	73		*e*P	P	23 31 08.3	+0.2
WRDH	Warideh	39.64	73		*e*P	P	23 31 09.7	+1.5
BIDA	Albida	39.67	74		*e*P	P	23 31 10.6	+2.1
BIDA	Albida	39.67	74		*e*P	P	23 31 09.9	+1.5
OBN	Obninsk	39.70	43		*c i* P	P	23 31 09.0	+0.8
OBN					*i*		23 32 41.7	
OBN					pmax	pmax		
	comp=Z,12nm,1.0s							
OBN					MLR	MLR		
	comp=Z,73nm,16.0s							
OBN	Obninsk	39.70	43		*e*P	P	23 31 09.8	+1.5
	comp=Z,17nm,1.1s							
OBN	Obninsk	39.70	43		*e*P	P	23 31 09.8	+1.5
	comp=Z,17nm,1.1s							
BRBR	Barbar	39.75	77		*e*P	P	23 31 08.6	-0.7
HAWK	Haweek	39.85	75		*e*P	P	23 31 11.7	+1.7
KFRA	Kufra	40.01	74		*e*P	P	23 31 15.9	+4.7
TOTH	TOTAH	40.15	77		*e*P	P	23 31 15.5	+3.1
SALA	Sala	40.56	78		*e*P	P	23 31 17.8	+1.8
ROOS	tl_alroos	40.64	75		*e*P	P	23 31 19.3	+2.8
ROOS	tl_alroos	40.64	75		*e*P	P	23 31 18.9	+2.4
LPSR	Galich'ya Gora	40.67	47		*e*P	P	23 31 18.0	+1.6
LPSR					pmax	pmax		
	comp=Z,10.0nm,0.8s							
VSR	Storozhevoye	40.68	49		*e*P	P	23 31 17.4	+0.9
VSR					pmax	pmax		
	comp=Z,10.0nm,0.8s							
ZALF	Zalf	40.99	77		*e*P	P	23 31 20.1	+0.7
ZALF	Zalf	40.99	77		*e*P	P	23 31 20.9	+1.5
SOC	Sochi	41.02	61		*e*P	P	23 31 20.1	+0.7
SOC					*e*S	S	23 37 34.6	+2.9
SOC					pmax	pmax		
	comp=Z,10.0nm,0.4s							
SUMG	Summit	41.10	348		*i* P	P	23 31 32.7	+13
	comp=Z,31nm,1.6s							
SUMG	Summit	41.10	348		*i* P	P	23 31 32.7	+13
SUMG					pmax	pmax		
	comp=Z,31nm,1.6s							
ARA0	ARCESS Array S	41.33	19		*e*P	P	23 31 22.2	+0.6
ARA0	ARCESS Array S	41.33	19		*e*P	P	23 31 22.2	+0.6
ARCES	ARCESS Array B	41.33	19		P	P	23 31 22.2	+0.6
	comp=Z,3.2nm,0.8s,baz=228,slow=9.1,SNR=14							
ARCES					LR	LR	23 49 38.4	
	comp=Z,66nm,18.2s,baz=240,slow=38							
VRH	Novokhopyorsk	42.28	49		*e*P	P	23 31 30.7	+1.1
VRH					pmax	pmax		
	comp=Z,10.0nm,0.9s							
SFNV	Sufian	42.38	71		*e*P	P	23 31 29.9	-0.8
KLMR	Klimovskoe	42.58	35		*e*P	P	23 31 31.6	-0.3
KLMR					pmax	pmax		
	comp=Z,7.0nm,1.1s							
KBSD	Kabsdagh	42.59	70		*e*P	P	23 31 31.8	-0.6
MZRK	Al-Mazaregh	42.93	72		*e*P	P	23 31 35.5	+0.3
SCHQ	Schefferville	43.06	316		P	P	23 31 38.2	+2.3
	comp=Z,3.3nm,0.9s,baz=65,slow=6.6,SNR=4.2							
SCHQ					LR	LR	23 46 21.3	
	comp=Z,61nm,18.3s,baz=94,slow=32							
KIV	Kislovodsk	43.13	60		*e*P	P	23 31 37.5	+0.8
KIV					pmax	pmax		
	comp=Z,6.0nm,1.1s							
KIV					MLR	MLR		
	comp=Z,37nm,16.0s							
NEY	Neytrino	43.23	61		*e*P	P	23 31 39.3	+1.6
NEY					pmax	pmax		
	comp=Z,2.0nm,0.9s							
KBZ	Khabaz	43.30	60		P	P	23 31 38.6	+0.6
	comp=Z,8.2nm,1.0s,baz=280,slow=6.3,SNR=14							
KBZ					LR	LR	23 51 36.0	
	comp=Z,27nm,21.8s,baz=278,slow=39							
NCK	Nalchik	43.83	60		*e*P	P	23 31 43.0	+0.6
NCK					pmax	pmax		
	comp=Z,21nm,1.0s							
ONI	Oni	43.84	62		P	P	23 31 43.5	+1.0
ONI	Oni	43.84	62		P	P	23 31 43.5	+1.0
AKH	Akhalkalaki	44.04	63		P	P	23 31 45.0	+0.7
AKH	Akhalkalaki	44.04	63		P	P	23 31 45.0	+0.7
BGD	Bogdanovka	44.15	63		P	P	23 31 47.2	+2.1
ZEI	Tsey	44.15	61		*e*P	P	23 31 44.9	-0.2
ZEI					pmax	pmax		
	comp=Z,43nm,1.0s							
GUDG	Gudauri	44.61	62		P	P	23 31 52.9	+4.0
TBLG	Delisi	44.92	63		P	P	23 31 52.8	+1.7
TBLG	Delisi	44.92	63		P	P	23 31 52.7	+1.7
GNI	Garni	45.19	65		*e*P	P	23 31 54.7	+1.2
GNI					pmax	pmax		
	comp=Z,26nm,1.0s							
HRV	Adam Dziewonsk	46.65	299		*e*P	P	23 32 04.1	-0.6
HRV					pmax	pmax		
	comp=Z,94nm,1.6s							
HRV	Adam Dziewonsk	46.65	299		*e*P	P	23 32 04.1	-0.6
	comp=Z,94nm,1.6s							
HRV	Adam Dziewonsk	46.65	299		*e*P	P	23 32 04.0	-0.6
	comp=Z,94nm,1.6s							
ARU	Arti	52.12	42		*c i* P	P	23 32 47.0	+0.7
ARU							23 33 59.4	
ARU							23 34 43.4	
ARU					S	S	23 40 15.4	+5.2
ARU					SS	SS	23 43 49.8	+2.8
ARU					pmax	pmax		
	comp=Z,9.0nm,1.7s							
ARU	Arti	52.12	42		*e*P	P	23 32 47.4	+1.1
	comp=Z,4.9nm,1.0s							
ARU	Arti	52.12	42		*e*P	P	23 32 47.4	+1.1
	comp=Z,4.9nm,1.0s							
RES	Resolute Bay	55.77	341		P	P	23 33 13.2	+0.6
	comp=Z,1.4nm,0.9s,baz=160,slow=4.7,SNR=3.2							
GEYT	Alibeck	55.82	64		P	P	23 33 12.6	-1.0
	comp=Z,1.0nm,0.8s,baz=287,slow=7.3,SNR=4.2							
ZRNK	Zerenda	58.73	44		*e*P	P	23 33 35.3	+1.4
ZRNK					pmax	pmax		
	comp=Z,5.0nm,1.2s							
ZRNK	Zerenda	58.73	44		*e*P	P	23 33 35.3	+1.4
	comp=Z,5.4nm,1.2s							
ZRNK	Zerenda	58.73	44		*e*P	P	23 33 35.3	+1.4
	comp=Z,5.4nm,1.2s							
UOSS	Minazif	59.24	79		*e*P	P	23 33 38.1	+0.2
	comp=Z,0.3nm,0.7s							
UOSS	Minazif	59.24	79		*e*P	P	23 33 38.1	+0.2
	comp=Z,0.3nm,0.7s							
BRVK	Borovoye	59.44	44		*e*P	P	23 33 39.7	+0.9
BRVK					pmax	pmax		
	comp=Z,3.0nm,0.9s							
ULM	Lac du Bonnet	61.08	313		LR	LR	23 58 13.3	
	comp=Z,52nm,18.4s,baz=344,slow=34							
NRIK	Noril'sk	62.04	23		P	P	23 33 57.9	+1.6
	comp=Z,1.0nm,0.6s,baz=311,slow=5.1,SNR=4.5							
NRIK					LR	LR	00 02 10.5	
	comp=Z,70nm,19.7s,baz=252,slow=37							
ROSC	El Rosal	64.31	258		LR	LR	00 00 35.8	
	comp=Z,11nm,19.0s,baz=91,slow=35							
KURK	Kurchatov	65.09	44		*e*P	P	23 34 17.4	+0.7
KURK					pmax	pmax		
	comp=Z,5.0nm,0.9s							
KURK	Kurchatov	65.09	44		*e*P	P	23 34 17.4	+0.7
	comp=Z,4.7nm,0.9s							
KURK	Kurchatov	65.09	44		*e*P	P	23 34 17.4	+0.7
	comp=Z,4.7nm,0.9s							
AAK	Ala-Archa	65.77	54		*e*P	P	23 34 22.2	+0.7
AAK					pmax	pmax		
	comp=Z,8.0nm,1.0s							
FRU	Bishkek	65.77	54		*e*P	P	23 34 23.0	+1.6
YKA	Yelowknife Ar	65.93	330		P	P	23 34 23.6	+1.7
	comp=Z,0.7nm,0.8s,baz=63,slow=7.1,SNR=6.4							
YKB5	Yellowknife Ar	65.93	330		*e*P	P	23 34 23.6	+1.7
YKB5	Yellowknife Ar	65.93	330		*e*P	P	23 34 23.6	+1.7
TKM2	Tokmak 2	66.39	53		*e*P	P	23 34 26.4	+0.8
TKM2					pmax	pmax		
	comp=Z,3.0nm,1.0s							
TKM2	Tokmak 2	66.39	53		*e*P	P	23 34 26.4	+0.8
	comp=Z,3.3nm,1.0s							
TKM2	Tokmak 2	66.39	53		*e*P	P	23 34 26.4	+0.8
	comp=Z,3.3nm,1.0s							
ZAA1	Zalesovo Array	67.18	40		*e*P	P	23 34 31.1	+1.0
ZAA1	Zalesovo Array	67.18	40		*e*P	P	23 34 31.1	+1.0
ZAA0	Zalesovo Array	67.18	40		*e*P	P	23 34 30.7	+0.6
ZAA0	Zalesovo Array	67.18	40		*e*P	P	23 34 30.7	+0.6
ZALV	Zalesovo Beam	67.18	40		P	P	23 34 31.1	+1.0
	comp=Z,0.7nm,0.6s,baz=323,slow=4.5,SNR=5.0							
ZALV					LR	LR	00 04 51.0	
	comp=Z,118nm,19.5s,baz=250,slow=37							
MAKZ	Makanchi	68.77	47		*e*P	P	23 34 41.2	+0.9
MAKZ					pmax	pmax		
	comp=Z,4.0nm,0.9s							
MAKZ	Makanchi	68.77	47		*e*P	P	23 34 41.2	+0.9
	comp=Z,3.6nm,0.9s							
MAKZ	Makanchi	68.77	47		*e*P	P	23 34 41.2	+0.9
	comp=Z,3.6nm,0.9s							
MK31	Makanchi Array	68.97	47		*e*P	P	23 34 42.4	+0.8
MK31	Makanchi Array	68.97	47		*e*P	P	23 34 42.4	+0.8
MK31	Makanchi Array	68.97	47		*e*P	P	23 34 42.4	+0.8
MK32	Makanchi Array	68.97	47		*e*P	P	23 34 42.0	+0.5
MK32	Makanchi Array	68.97	47		*e*P	P	23 34 42.0	+0.5
MKAR	Makanchi Array	68.97	47		P	P	23 34 42.0	+0.5
	comp=Z,1.6nm,0.9s,baz=294,slow=6.5,SNR=14							
MKAR					LR	LR	00 06 21.4	
	comp=Z,65nm,19.1s,baz=303,slow=37							
MK01	Makanchi Array	68.99	47		*e*P	P	23 34 42.0	+0.3
MK01	Makanchi Array	68.99	47		*e*P	P	23 34 42.0	+0.3
BOSA	Boshof	71.52	146		P	P	23 34 54.9	-2.4
	comp=Z,4.1nm,1.0s,baz=52,slow=3.0,SNR=4.1							
PDAR	Pinedale Array	72.78	310		LR	LR	00 03 51.4	
	comp=Z,42nm,20.1s,baz=69,slow=33							
LPAZ	La Paz	73.00	236		LR	LR	00 02 34.9	
	comp=Z,43nm,22.0s,baz=74,slow=32							
CPUP	Villa Florida	73.65	222		LR	LR	00 04 13.3	
	comp=Z,65nm,19.8s,baz=73,slow=33							
LTX	Lajitas	75.47	296		*e*P	P	23 35 21.0	+0.2
LTX	Lajitas	75.47	296		*e*P	P	23 35 21.0	+0.2
LTX	Lajitas	75.47	296		*e*P	P	23 35 21.0	+0.2
TXAR	Lajitas Array	75.47	296		P	P	23 35 21.0	+0.2
	comp=Z,0.1nm,0.6s,baz=91,slow=5.5,SNR=2.4							
TXAR	Lajitas Array	75.47	296		P	P	23 35 21.0	+0.2
TXAR	Lajitas Array	75.47	296		P	P	23 35 21.0	+0.2
ILAR	Eielson Array	75.52	342		P	P	23 35 20.3	0.0
	comp=Z,0.5nm,0.7s,baz=30,slow=5.9,SNR=4.2							
ILAR					LR	LR	00 06 35.2	
	comp=Z,32nm,19.2s,baz=62,slow=34							
ILAR	Eielson Array	75.52	342		*e*P	P	23 35 26.1	+5.8
ILAR					pmax	pmax		
	comp=Z,1.0nm,0.6s							
ILB	Eielson Array	75.52	342		*e*P	P	23 35 20.3	0.0
ILB	Eielson Array	75.52	342		*e*P	P	23 35 20.3	0.0
COLA	College	75.69	342		*e*P	P	23 35 23.0	+1.8
COLA	College	75.69	342		*e*P	P	23 35 23.0	+1.8
	comp=Z,44nm,0.4s							
COLA	College	75.69	342		*e*P	P	23 35 23.0	+1.8
	comp=Z,44nm,0.4s							
BOD	Bodaibo	78.12	26		*e*P	P	23 35 34.2	-0.9
BOD					pmax	pmax		
	comp=Z,4.0nm,0.9s							
SONA0	Songino Array	81.83	37		*e*P	P	23 35 56.6	+1.1
	comp=Z,7.4nm,1.8s							
SONA0	Songino Array	81.83	37		*e*P	P	23 35 56.6	+1.1
	comp=Z,7.4nm,1.8s							
SONM	Songino Array	81.83	37		P	P	23 35 56.6	+1.1
	comp=Z,0.8nm,0.7s,baz=306,slow=5.1,SNR=5.5							
SONM					LR	LR	00 16 14.3	
	comp=Z,85nm,18.5s,baz=312,slow=38							
SONM	Songino Array	81.83	37		*e*P	P	23 35 57.1	+1.5
SONM					pmax	pmax		
	comp=Z,1.0nm,0.7s							
ULN	Ulaanbaatar	82.14	36		*e*P	P	23 35 58.6	+1.4
ULN					pmax	pmax		
	comp=Z,1.0nm,1.0s							
PLCA	Paso Flores	91.68	220		LR	LR	00 14 13.4	
	comp=Z,71nm,21.8s,baz=124,slow=33							
WR1	Warramunga Arr	147.21	74		*e*PKPbc	PKPbc	23 43 19.6	-0.5
WR1	Warramunga Arr	147.21	74		*e*PKPbc	PKPbc	23 43 19.6	-0.5
WRA	Warramunga Arr	147.21	74		PKPbc	PKPbc	23 43 19.6	-0.5
	comp=Z,4.2nm,0.7s,baz=312,slow=3.0,SNR=14							
WRA	Warramunga Arr	147.21	74		*e*PKIKP	PKPdf	23 43 18.8	+0.9
WRA					pmax	pmax		
	comp=Z,4.0nm,0.7s							
ASAR	Alice Springs	148.67	80		PKPbc	PKPbc	23 43 23.4	-0.5
	comp=Z,2.6nm,0.7s,baz=297,slow=1.8,SNR=21							
AS31	Alice Springs	148.67	80		*e*PKPbc	PKPbc	23 43 23.5	-0.5
AS31	Alice Springs	148.67	80		*e*PKPbc	PKPbc	23 43 23.4	-0.5

PRU 11 23:23:43.5, 50.46N×18.88E, h0km, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHZP	Chorzow	0.18	157	*e*Pg	Pg	23 23 45.9	-1.1
CHZP				*e*Sg	Sg	23 23 48.0	-1.4
OJC	Ojcow	0.64	112	*e*Pg	Pg	23 23 55.6	-0.1
OJC				*e*Sg	Sg	23 24 03.9	0.0
OKC	Ostrava-Krasne	0.78	217	*e*SG	Sg	23 24 09.1	+0.5
	comp=Z,3.2nm,0.4s						
OKC	Ostrava-Krasne	0.78	217	AMS	AMS	23 39 30.0	
	comp=Z,200nm,14.8s						
NIE	Niedzica	1.39	138	*e*Pg	Pg	23 24 09.2	-0.9
NIE				*e*Sg	Sg	23 24 27.3	-0.8
KRLC	Kraliky	1.40	255	*e*PG	Pg	23 24 09.3	-1.0
KRLC				*e*SG	Sg	23 24 27.6	-0.9
DPC	Dobruska-Polom	1.64	267	*e*SG	Sg	23 24 36.5	+0.3

ATH ***11*** *23:35:18.8, 35.43N×27.59E, h18km±2km, ML2.2/2, Error ellipse: s-maj=4.5km s-min=1.2km az=324.0*
CSEM ***11*** *23:35:19.1±0.5, 35.42N×27.62E, h10km, ML2.2, Error ellipse: s-maj=14.2km s-min=4.3km az=147.0*
DDA ***11*** *23:36:04.7, 35.46N×27.60E, h12km, Md3.4*

ISC 11 23:35:16.7±2.4, 35.30N±0.09×27.68E±0.07, h6km±13km, n20, σ0.94/33, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KARP	Karpathos	0.49	300	P	Pg	23 35 26.5	+0.4
KARP				S	Sg	23 35 32.0	-0.5
KARP	Karpathos	0.49	300	P	Pg	23 35 26.6	+0.4
KARP				S	Sg	23 35 32.0	-0.5
KARP				AML	AML	23 35 41.5	
	comp=N,502μm,0.3s						
KARP				AML	AML	23 35 41.9	
	comp=E,735μm,0.4s						
ARG	Arkhangelos	0.98	22	P	Pb	23 35 36.0	-0.1
ARG				S	Sg	23 35 47.8	-0.5
ZKR	Zakros	1.21	261	P	Pn	23 35 40.5	+0.4
ZKR				S	Sn	23 35 57.0	+0.2
ZKR	Zakros	1.21	261	P	Pn	23 35 40.5	+0.4
ZKR				S	Sn	23 35 57.0	+0.2
ZKR				AML	AML	23 36 18.5	
	comp=E,300μm,0.8s						
ZKR				AML	AML	23 36 20.7	
	comp=N,236μm,0.7s						
TURN	Turunc	1.74	25	*i* P	Pn	23 35 45.0	-2.3
TURN				*i* S	Sn	23 36 10.1	+0.3
BDRM	Kayabasi	1.77	354	P	Pn	23 35 47.9	0.0
BDRM				S	Sg	23 36 14.5	+0.9
BDRM	Kayabasi	1.77	354	*i* P	Pn	23 35 47.9	0.0
BDRM				*i* S	Sg	23 36 14.5	+0.9
LAST	Lasithi	1.81	266	P	Pb	23 35 50.6	+0.4
LAST	Lasithi	1.81	266	P	Pb	23 35 50.6	+0.4
IDI	Anoyia	2.28	270	P	Pb	23 35 57.3	-1.0
IDI	Anoyia	2.28	270	P	Pb	23 35 57.3	-1.0
AYDN	Tasoluk	2.36	4	P	Pn	23 35 56.3	+0.3
AYDN	Tasoluk	2.36	4	*i* P	Pn	23 35 56.3	+0.3
AYDN				*i* S	Sg	23 36 32.7	+0.2
GOLH	Golhisar	2.46	38	P	Pn	23 35 57.9	+0.5
GOLH				S	Sn	23 36 29.1	+1.3
GOLH	Golhisar	2.46	38	*i* P	Pn	23 35 57.9	+0.5
GOLH				*i* S	Sn	23 36 29.1	+1.3
SMG	Samos	2.49	345	P	Pn	23 35 58.5	+0.7
SMG	Samos	2.49	345	P	Pn	23 35 58.5	+0.7
DNZL	Cakiroluk	2.62	24	P	Pn	23 36 00.9	+1.1
DNZL				S	Sb	23 36 34.9	-1.9
DNZL	Cakiroluk	2.62	24	*i* P	Pn	23 36 00.9	+1.1
DNZL				*i* S	Sb	23 36 34.9	-1.9

IDC 12 00:01:59.3±1.2, 0.61N×122.21E, h0km, mb3.7/4, mb1 3.9/5, mb1mx3.6/29, mbtmp3.7/5, ML3.9/1, Error ellipse: s-maj=116.0km s-min=19.4km az=67.0, Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	Fitzroy Crossi	18.90	170	P	Pn	00 06 22.8	+0.7
	0.3nm,0.3s,baz=359,slow=9.7,SNR=11						
WRA	Warramunga Arr	23.64	150	P	P	00 07 12.2	-0.2
	3.0nm,0.5s,baz=326,slow=11,SNR=8.1						
ASAR	Alice Springs	26.68	156	P	P	00 07 39.9	-0.4
	0.9nm,0.5s,baz=345,slow=15,SNR=16						
SONM	Songino Array	49.00	346	P	P	00 10 48.9	+1.0
	0.4nm,0.5s,baz=159,slow=8.9,SNR=3.9						
MKAR	Makanchi Array	57.68	329	P	P	00 11 50.9	-0.8
	0.3nm,0.3s,baz=129,slow=8.4,SNR=9.6						

NIED ***12*** *00:06:00, 37.60N×142.00E, h11km, Mw3.3 Best double couple: M0:1.18000×10^14 NP1:φ0=294.00000°, δ39.00000°, λ-68.00000°. NP2:φ0=87.00000°, δ54.00000°, λ-107.00000°.*

JMA 12 00:06:08.5±0.2, 37.56N×142.00E, h28km±4km, M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	0.92

ellipse: s-maj=16.4km s-min=11.3km az=96.2
JMA ***12*** *00:59:52.4±0.3, 44°.58N×138°.49E, h291km±3km, M3.7*
IDC ***12*** *00:59:52.2±1.0, 44°.62N×138°.48E, h280km±10km, mb3.4/16, mb1 3.5/21, mb1mx3.4/41, mbtmp4.0/21, Error ellipse: s-maj=12.5km s-min=9.5km az=176.0*
ISC 12 00:59:52.3±0.5, 44°.51N±0°.06×138°.60E±0°.05, h287km, n52, σ1§50/63, mb3.8/16, 1C, Eastern Sea of Japan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JSK	**Shakotan**	**1.78**	**130**	P	**Pn**	**01 00 37.5**	**+1.4**
JSK				*e*S	**S**	**01 01 12.5**	**+1.5**
JYG	**Yagishiri**	**2.02**	**91**	P	**Pn**	**01 00 39.0**	**+1.0**
JRR	**Rishiri**	**2.03**	**71**	P	**Pn**	**01 00 39.4**	**+1.4**
JSH	**Shimam**	**2.14**	**150**	P	**Pn**	**01 00 40.5**	**+1.4**
JSH				*e*S	**S**	**01 01 17.8**	**+1.5**
JHR	**Hokuryu**	**2.38**	**108**	P	**Pn**	**01 00 42.9**	**+1.8**
JWK2	**Keihoku**	**2.48**	**70**	P	**Pn**	**01 00 43.9**	**+2.0**
JOSM	**Okushiri--Mats**	**2.51**	**165**	P	**Pn**	**01 00 44.0**	**+1.6**
JOSM				*e*S	**S**	**01 01 24.7**	**+2.4**
JEW	**Eniwo**	**2.66**	**128**	P	**Pn**	**01 00 45.5**	**+1.8**
JSE	**Soyaes**	**2.87**	**80**	P	**Pn**	**01 00 47.3**	**+1.5**
JSE				*e*S	**S**	**01 01 30.2**	**+1.8**
ASAJ	**Asahikawa**	**2.89**	**96**	P	**Pn**	**01 00 47.5**	**+1.5**
	24nm,0.3s,baz=278,slow=8.5,SNR=98						
JKK2	**Kamakawa 2**	**3.05**	**101**	P	**Pn**	**01 00 49.3**	**+1.7**
JKB	**Kayabe**	**3.17**	**145**	P	**Pn**	**01 00 49.5**	**+0.7**
JFR	**Furan**	**3.19**	**114**	P	**Pn**	**01 00 50.3**	**+1.3**
JNBK	**Urakawa-nobuka**	**3.76**	**125**	P	**Pn**	**01 00 56.7**	**+1.6**
JNBK				*e*S	**S**	**01 01 46.8**	**+1.5**
JTKR	**Abashiri--Toko**	**3.85**	**96**	P	**Pn**	**01 00 57.4**	**+1.3**
JAR	**Ashorobuto**	**3.93**	**106**	P	**Pn**	**01 00 58.2**	**+1.2**
JCH	**Churui**	**3.94**	**117**	P	**Pn**	**01 00 57.2**	**0.0**
JANG	**Nango**	**4.66**	**151**	P	**Pn**	**01 01 05.0**	**-0.4**
JANG				*e*S	**S**	**01 02 00.3**	**-3.7**
JAK	**Akkeshi**	**4.67**	**107**	*e*S	**S**	**01 02 03.2**	**-0.7**
JRA	**Rausu**	**4.72**	**95**	P	**Pn**	**01 01 07.6**	**+1.6**
USRK	**Ussuriysk Ar.**	**4.75**	**269**	P	**Pn**	**01 01 05.8**	**-0.6**
	1.4nm,0.3s,baz=79,slow=13,SNR=18						
USRK				S	**S**	**01 02 03.4**	**-2.4**
	0.3nm,0.3s,baz=80,slow=21,SNR=6.5						
VLA	**Vladivostok**	**5.05**	**256⇑**	*e*P	**Pn**	**01 01 10.3**	**+0.4**
VLA				*e*S	**S**	**01 02 10.7**	**-1.5**
VLA				pmax	pmax		
	comp=Z,32nm,0.6s						
NEM2	**Nemuro 2**	**5.28**	**100**	P	**Pn**	**01 01 11.7**	**-0.9**
NEM2				*e*S	**S**	**01 02 13.0**	**-4.0**
JMK	**Ichinoseki**	**5.89**	**160**	P	**Pn**	**01 01 19.9**	**0.0**
SHO	**Shikotan**	**5.95**	**93**	*i* P	**Pn**	**01 01 19.4**	**-1.1**
SHO				*i* S	**S**	**01 02 27.8**	**-3.8**
SHO				pmax	pmax		
	comp=Z,29nm,0.3s						
KLR	**Kul'dur**	**6.66**	**318**	P	**Pn**	**01 01 27.7**	**-1.4**
	comp=Z,0.6nm,0.3s,baz=131,slow=10,SNR=20						
MJAR	**Matsushiro Arr**	**7.96**	**182**	P	**Pn**	**01 01 46.9**	**+1.5**
	comp=Z,0.6nm,0.3s,baz=352,slow=11,SNR=5.3						
MA2	**Magadan**	**16.80**	**22**	P	**P**	**01 03 28.9**	**-0.4**
	comp=Z,0.8nm,0.3s,baz=246,slow=13,SNR=4.1						
SEY	**Seymchan**	**20.10**	**18**	P	**P**	**01 04 03.0**	**-1.6**
	comp=Z,0.3nm,0.3s,baz=143,slow=11,SNR=4.1						
SEY	**Seymchan**	**20.10**	**18**	P	**P**	**01 04 03.0**	**-1.6**
SONM	**Songino Array**	**22.46**	**290**	P	**P**	**01 04 26.1**	**-1.4**
	comp=Z,1.8nm,0.6s,baz=86,slow=8.7,SNR=16						
ZALV	**Zalesovo Beam**	**35.57**	**305**	P	**P**	**01 06 21.0**	**-1.5**
	comp=Z,3.4nm,0.5s,baz=86,slow=8.1,SNR=16						
ZALV	**Zalesovo Beam**	**35.57**	**305**	P	**P**	**01 06 21.0**	**-1.5**
ZALV				pmax	pmax		
	comp=Z,3.0nm,0.5s						
MKAR	**Makanchi Array**	**38.71**	**294**	P	**P**	**01 06 48.7**	**-0.2**
	comp=Z,2.8nm,0.5s,baz=82,slow=10.0,SNR=32						
BVAR	**Borovoye Array**	**44.18**	**306**	P	**P**	**01 07 32.4**	**-0.5**
	comp=Z,2.0nm,0.3s,baz=75,slow=8.7,SNR=36						
ILAR	**Eielson Array**	**44.51**	**36**	P	**P**	**01 07 34.0**	**-1.3**
	comp=Z,0.4nm,0.6s,baz=290,slow=10.0,SNR=7.5						
KKN	**Kakani**	**45.36**	**267**	*e*Pn	**P**	**01 07 43.0**	**+0.2**
	comp=Z,8.0nm,0.3s						
PKIN	**Phulchoki**	**45.40**	**267**	*e*Pn	**P**	**01 07 42.8**	**-0.3**
	comp=Z,5.6nm,0.4s						
GKN	**Gorkha**	**45.70**	**268**	*e*Pn	**P**	**01 07 45.6**	**+0.3**
	comp=Z,11nm,0.3s						
KOLN	**Koldanda**	**46.57**	**268**	*e*Pn	**P**	**01 07 52.8**	**+0.7**
	comp=Z,11nm,0.3s						
PYUN	**Piuthan**	**46.82**	**269**	*e*Pn	**P**	**01 07 54.7**	**+0.7**
	comp=Z,16nm,0.4s						
INK	**Inuvik**	**48.82**	**30**	P	**P**	**01 08 07.9**	**-0.5**
	comp=Z,3.6nm,0.5s,baz=298,slow=6.6,SNR=39						
ARCES	**ARCESS Array B**	**56.27**	**337**	P	**P**	**01 09 02.9**	**+0.2**
	comp=Z,2.2nm,0.8s,baz=52,slow=5.9,SNR=6.7						
YKA	**Yellowknife Ar**	**58.48**	**31**	P	**P**	**01 09 17.8**	**-0.4**
	comp=Z,0.3nm,0.4s,baz=306,slow=6.5,SNR=7.7						
YKA				PcP	**PcP**	**01 10 05.6**	**+0.4**
	comp=Z,0.3nm,0.5s,baz=311,slow=3.5,SNR=6.2						
GEYT	**Alibeck**	**58.59**	**294**	P	**P**	**01 09 19.5**	**+0.1**
	comp=Z,2.5nm,0.6s,baz=19,slow=5.3,SNR=5.6						
FINES	**FINESS Array B**	**61.25**	**330**	P	**P**	**01 09 37.4**	**+0.5**
	comp=Z,1.2nm,0.4s,baz=49,slow=8.1,SNR=25						
WRA	**Warramunga Arr**	**64.25**	**184**	P	**P**	**01 09 57.5**	**+0.4**
	comp=Z,0.6nm,0.4s,baz=1.2,slow=6.9,SNR=8.7						
NOA	**NORSAR Array B**	**66.49**	**335**	P	**P**	**01 10 11.7**	**+0.7**
	comp=Z,0.4nm,0.6s,baz=38,slow=6.1,SNR=3.5						
ASAR	**Alice Springs**	**67.98**	**185**	P	**P**	**01 10 22.2**	**+1.6**
	comp=Z,0.5nm,0.6s,baz=359,slow=5.0,SNR=5.5						
NVAR	**Mina Array Bea**	**72.23**	**53**	P	**P**	**01 10 48.3**	**+1.7**
	comp=Z,2.5nm,0.7s,baz=296,slow=5.5,SNR=14						
PDAR	**Pinedale Array**	**73.94**	**45**	P	**P**	**01 10 57.5**	**+1.0**
	comp=Z,11nm,0.4s,baz=337,slow=2.1,SNR=29						
TXAR	**Lajitas Array**	**87.15**	**51**	P	**P**	**01 12 06.7**	**+0.4**
	comp=Z,0.3nm,0.5s,baz=291,slow=3.5,SNR=5.8						

IDC 12 01:00:18.7±5.6, 20°.20S×167°.75E, h0km, mb3.9/3, mb1 4.1/4, mb1mx3.7/24, mbtmp3.9/4, ML3.3/1, MS4.2/1, Ms1 4.2/1, ms1mx2.8/23, Error ellipse: s-maj=90.3km s-min=39.6km az=87.0, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.22**	**213**	Pn	Pn	01 00 57.2	+0.2
	8.2nm,0.3s,baz=35,slow=21,SNR=10						
DZM				Sn	Sn	01 01 24.4	-0.7
	13nm,0.3s,baz=91,slow=18,SNR=6.2						
RAO	**Raoul Island**	**15.82**	**127**	LR	LR	01 08 32.6	
	comp=Z,956nm,20.1s,baz=298,slow=31						
STKA	**Stephens Creek**	**26.14**	**238**	P	P	01 05 55.2	+0.4
	2.2nm,0.7s,baz=62,slow=9.1,SNR=5.2						
WRA	**Warramunga Arr**	**31.35**	**265**	P	P	01 06 41.4	+0.1
	0.3nm,0.5s,baz=91,slow=8.4,SNR=5.5						
ASAR	**Alice Springs**	**31.54**	**257**	P	P	01 06 42.6	-0.4
	3.4nm,0.6s,baz=87,slow=9.0,SNR=26						

WEL 12 01:03:52.9±0.5, 38°.24S×176°.03E, h176km±4km, ML3.8/14, 29C-7D, Error ellipse: s-maj=2.1km s-min=2.0km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HRRZ	**Handcock Road**	**0.25**	**126**	PN	Pn	01 04 16.5	+0.1
TARZ	**Mount Tarawera**	**0.38**	**89**	PN	Pn	01 04 16.9	0.0
PRRZ	**Plateau Road**	**0.38**	**132**	PN	Pn	01 04 16.6	-0.2
RRRZ	**Republican Roa**	**0.40**	**104**	PN	Pn	01 04 16.6	-0.2
TLZ	**Tolley Road**	**0.40**	**257**	⇑PN	Pn	01 04 17.2	+0.4
WATZ	**Wairara**	**0.52**	**206**	⇑PN	Pn	01 04 17.4	+0.1
MUGZ	**Murupara**	**0.63**	**112**	PN	Pn	01 04 17.4	-0.4
RATZ	**Rangitukua**	**0.65**	**198**	⇑PN	Pn	01 04 17.9	-0.1
TOZ	**Tahuroa Road**	**0.66**	**321**	⇓PN	Pn	01 04 18.4	+0.5
TOZ				SN	Sn	01 04 37.3	+0.1
MRHZ	**Matea Rd**	**0.66**	**153**	⇑PN	Pn	01 04 17.8	-0.3
RITZ	**Rihia Road**	**0.74**	**190**	PN	Pn	01 04 18.8	+0.4
KATZ	**Kakaramea**	**0.78**	**200**	PN	Pn	01 04 18.7	0.0
RTZ	**Ruatahuna**	**0.84**	**117**	PN	Pn	01 04 18.9	-0.2
RTZ				SN	Sn	01 04 37.7	-1.7
URZ	**Urewera**	**0.85**	**91**	PN	Pn	01 04 18.5	-0.5
URZ				SN	Sn	01 04 36.8	-2.4
URZ				AML	AML	01 04 38.7	
KRVZ	**Karewarewa**	**0.90**	**199**	⇑PN	Pn	01 04 19.4	-0.2
WTVZ	**West Tongariro**	**0.94**	**201**	PN	Pn	01 04 19.7	-0.1
TWVZ	**Taurewa**	**0.95**	**209**	⇑PN	Pn	01 04 19.9	0.0
NGZ	**Ngauruhoe**	**0.99**	**200**	PN	Pn	01 04 20.3	0.0
BKZ	**Black Stump Fm**	**0.99**	**159**	⇑PN	Pn	01 04 19.9	-0.3
BKZ				SN	Sn	01 04 39.1	-2.2
BKZ				AML	AML	01 04 41.0	
NMHZ	**Naumai**	**1.05**	**145**	⇑PN	Pn	01 04 21.2	+0.6
NMHZ				SN	Sn	01 04 41.8	-0.3
TUVZ	**Tukino**	**1.06**	**196**	PN	Pn	01 04 20.8	0.0
RAHZ	**Arahi**	**1.07**	**129**	⇑PN	Pn	01 04 21.0	+0.3
FWVZ	**Far West T-bar**	**1.08**	**200**	⇑PN	Pn	01 04 20.9	-0.1
RAGZ	**Rawiri**	**1.12**	**103**	⇓PN	Pn	01 04 21.2	+0.1
WNVZ	**Wahianoa**	**1.13**	**197**	PN	Pn	01 04 21.2	-0.2
SNGZ	**Shannon Statio**	**1.16**	**118**	⇑PN	Pn	01 04 21.7	+0.3
MOVZ	**Moawhango**	**1.18**	**190**	⇑PN	Pn	01 04 21.1	-0.5
MWZ	**Matawai**	**1.18**	**95**	PN	Pn	01 04 21.4	-0.3
MWZ				AML	AML	01 04 42.8	
MWZ				AML	AML	01 04 43.2	
KWHZ	**Kaweka Forest**	**1.22**	**165**	PN	Pn	01 04 21.9	-0.1
MTVZ	**Mangateitei**	**1.22**	**201**	PN	Pn	01 04 21.9	-0.1
BHHZ	**Black Hill Sta**	**1.25**	**179**	⇑PN	Pn	01 04 21.7	-0.5
WHHZ	**Waihua**	**1.26**	**132**	⇑PN	Pn	01 04 22.5	+0.3
ARHZ	**Aropaoanui**	**1.27**	**144**	⇑PN	Pn	01 04 22.7	+0.4
MCHZ	**McNeill Hill**	**1.31**	**157**	⇑PN	Pn	01 04 23.2	+0.5
KRHZ	**Kereru**	**1.42**	**169**	⇑PN	Pn	01 04 23.6	-0.2
RIGZ	**Rimuhau**	**1.44**	**109**	⇑PN	Pn	01 04 24.1	+0.1
TKGZ	**Te Karaka**	**1.45**	**98**	PN	Pn	01 04 24.1	+0.2
HAZ	**Te Kaha**	**1.47**	**71**	⇓PN	Pn	01 04 23.5	-0.6
KNZ	**Kokohu**	**1.51**	**122**	⇑PN	Pn	01 04 24.4	0.0
TWGZ	**Tauwhareparae**	**1.54**	**88**	PN	Pn	01 04 25.1	+0.2
PRGZ	**Paritu Road**	**1.60**	**116**	PN	Pn	01 04 25.4	-0.1
CKHZ	**Cape Kidnapper**	**1.63**	**150**	⇑PN	Pn	01 04 26.0	+0.2
PKGZ	**Pakihiroa**	**1.66**	**78**	PN	Pn	01 04 26.1	0.0
PNHZ	**Pukenui**	**1.67**	**175**	⇑PN	Pn	01 04 25.6	-0.6
KAHZ	**Kahuranaki**	**1.68**	**157**	PN	Pn	01 04 26.4	+0.1
WAZ	**Wanganui**	**1.71**	**208**	PN	Pn	01 04 26.4	-0.2
MHGZ	**Mahia Peninsul**	**1.73**	**122**	⇑PN	Pn	01 04 27.0	+0.2
CNGZ	**Carnagh Statio**	**1.73**	**99**	PN	Pn	01 04 27.3	+0.5
PUZ	**Puketiti**	**1.77**	**85**	PN	Pn	01 04 26.9	-0.3
PUZ				AML	AML	01 04 53.0	
PUZ				AML	AML	01 04 53.6	
TSZ	**Takapari Road**	**1.81**	**182**	PN	Pn	01 04 27.0	-0.6
TSZ				AML	AML	01 04 54.1	
TSZ				AML	AML	01 04 54.7	
WPHZ	**Waipukurau**	**1.85**	**170**	⇑PN	Pn	01 04 27.5	-0.5
PXZ	**Pawanui**	**1.90**	**160**	⇑PN	Pn	01 04 28.2	-0.3
PXZ				AML	AML	01 04 56.2	
PXZ				AML	AML	01 04 56.8	
PXZ				AML	AML	01 04 56.8	
PXZ				AML	AML	01 04 57.2	
WMGZ	**Waiomatatini S**	**1.93**	**78**	PN	Pn	01 04 28.0	-0.9
DVHZ	**Dannevirke**	**2.06**	**177**	⇑PN	Pn	01 04 29.3	-1.0
PRHZ	**Porangahau**	**2.08**	**167**	⇑PN	Pn	01 04 29.9	-0.5
POWZ	**Post Office Ro**	**2.15**	**185**	PN	Pn	01 04 30.3	-1.0
ANWZ	**Angora Road**	**2.24**	**171**	⇑PN	Pn	01 04 31.6	-0.7
PRWZ	**Pori Road**	**2.31**	**181**	⇓PN	Pn	01 04 32.3	-0.8
MRZ	**Mangataiinoka R**	**2.44**	**188**	⇑PN	Pn	01 04 33.1	-1.5
BFZ	**Birch Farm**	**2.44**	**176**	PN	Pn	01 04 33.3	-1.3
BFZ				AML	AML	01 05 07.1	
BFZ				AML	AML	01 05 07.3	
TIWZ	**Tintock**	**2.53**	**182**	⇓PN	Pn	01 04 34.3	-1.4
TIWZ				AML	AML	01 05 08.3	
TIWZ				AML	AML	01 05 09.4	
OGWZ	**Otaki Gorge**	**2.66**	**194**	⇓PN	Pn	01 04 35.7	-1.4
HOWZ	**Holdsworth Sta**	**2.68**	**188**	PN	Pn	01 04 35.6	-1.8
KIW	**Kapiti Island**	**2.75**	**198**	PN	Pn	01 04 36.3	-2.0
KIW				AML	AML	01 05 10.6	
TMWZ	**Te Maipa**	**2.86**	**182**	PN	Pn	01 04 37.7	-1.9
MTW	**Mount Morrison**	**2.94**	**188**	PN	Pn	01 04 38.3	-2.2
MTW				AML	AML	01 05 15.3	
MTW				AML	AML	01 05 15.6	
CAW	**Cannon Point**	**2.96**	**194**	PN	Pn	01 04 38.8	-1.9
CAW				AML	AML	01 05 16.7	
CAW				AML	AML	01 05 17.0	
DUWZ	**D'Urville Isla**	**3.03**	**212**	PN	Pn	01 04 39.6	-2.1
TRWZ	**Traveller**	**3.16**	**185**	PN	Pn	01 04 41.2	-2.0
TRWZ				AML	AML	01 05 20.3	
TRWZ				AML	AML	01 05 20.6	
MSWZ	**Moikau Station**	**3.23**	**190**	⇓PN	Pn	01 04 41.7	-2.4
MSWZ				AML	AML	01 05 19.3	
MSWZ				AML	AML	01 05 21.9	
TCW	**Tory Channel**	**3.26**	**204**	PN	Pn	01 04 42.3	-2.1
TCW				AML	AML	01 05 21.5	
TCW				AML	AML	01 05 21.7	
PLWZ	**Palliser**	**3.38**	**190**	PN	Pn	01 04 43.3	-2.7
NNZ	**Nelson**	**3.60**	**214**	⇑PN	Pn	01 04 46.2	-2.5
QRZ	**Quartz Range**	**3.74**	**225**	PN	Pn	01 04 47.7	-2.7
BSWZ	**Blackbirch Sta**	**3.84**	**205**	PN	Pn	01 04 49.4	-2.4
THZ	**Tophouse**	**4.25**	**213**	PN	Pn	01 04 54.2	-2.9
KHZ	**Kahutara**	**4.58**	**204**	PN	Pn	01 04 58.5	-2.7

ISCJB ***12*** *01:24:44.5±0.7, 50°.24N±0°.05×19°.16E±0°.03, h0km, Error ellipse: s-maj=6.8km s-min=2.7km az=11.7*
CSEM ***12*** *01:24:45.5±0.4, 50°.27N×19°.23E, h1km, ML2.5/4, Error ellipse: s-maj=9.9km s-min=3.6km az=8.0*
PRU ***12*** *01:24:46.6, 50°.25N×19°.22E, h0km*
ISC 12 01:24:45.9±0.9, 50°.19N±0°.06×19°.21E±0°.02, h0km, n25, σ0§62/41, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OJC	**Ojcow**	**0.38**	**86**	*e*Pg	**Pg**	**01 24 53.0**	**-0.1**
OJC				*e*Sg	**Sg**	**01 24 57.4**	**-0.6**
OJC	**Ojcow**	**0.38**	**86**	*e*Pg	**Pg**	**01 24 53.0**	**-0.1**
OJC				*e*Sg	**Sg**	**01 24 57.4**	**-0.6**
OKC	**Ostrava-Krasne**	**0.77**	**243**	*e*PG	**Pn**	**01 25 03.4**	**-0.6**
OKC				*e*SG	**Sb**	**01 25 13.7**	**+0.5**
	comp=Z,4.8nm,0.3s						
OKC	**Ostrava-Krasne**	**0.77**	**243**	Pg	**Pn**	**01 25 03.4**	**-0.6**
OKC				Sg	**Sb**	**01 25 13.7**	**+0.5**
	4.8nm,0.3s						
NIE	**Niedzica**	**1.05**	**137**	*e*Pg	**Pb**	**01 25 06.9**	**0.0**
NIE				*e*Sg	**Sb**	**01 25 21.3**	**+0.1**
NIE	**Niedzica**	**1.05**	**137**	*e*Pg	**Pb**	**01 25 06.9**	**0.0**
NIE				*e*Sg	**Sb**	**01 25 21.3**	**+0.1**
LANS	**Liptovska Anna**	**1.06**	**171**	*e*PG	**Pb**	**01 25 06.8**	**-0.2**
LANS				*e*SG	**Sb**	**01 25 21.1**	**-0.3**
MORC	**Moravsky Berou**	**1.15**	**250**	*e*Pg	**Pn**	**01 25 09.4**	**+0.1**
MORC				*e*Sg	**Sb**	**01 25 24.9**	**+0.7**
STHS	**Stebnicka Huta**	**1.53**	**120**	*e*Pg	**Pg**	**01 25 15.3**	**+0.1**
STHS				*e*Sn	**Sn**	**01 25 36.6**	**+1.6**
STHS	**Stebnicka Huta**	**1.53**	**120**	*e*PG	**Pg**	**01 25 15.3**	**+0.1**
STHS				*e*SN	**Sn**	**01 25 36.6**	**+1.6**
STHS				*e*LG	Lg	01 25 37.8	
KRLC	**Kraliky**	**1.57**	**267**	*e*PG	**Pg**	**01 25 15.8**	**-0.1**
KRLC				*e*SG	**Sg**	**01 25 37.3**	**+1.1**
KRLC	**Kraliky**	**1.57**	**267**	Pg	**Pg**	**01 25 15.8**	**-0.1**
KRLC				Sg	**Sg**	**01 25 37.3**	**+1.1**
VYHS	**Vyhne**	**1.72**	**188**	*e*Pn	**Pn**	**01 25 16.9**	**-0.1**
VYHS				*e*Sn	**Sn**	**01 25 38.9**	**-0.7**
VYHS	**Vyhne**	**1.72**	**188**	*e*PN	**Pn**	**01 25 16.9**	**-0.1**
VYHS				*e*SN	**Sn**	**01 25 38.9**	**-0.7**
VYHS				*e*LG	Lg	01 25 42.0	
DPC	**Dobruska-Polom**	**1.86**	**276**	*e*PG	**Pb**	**01 25 20.0**	**-0.7**
DPC				*e*SG	**Sg**	**01 25 45.9**	**+0.3**
	comp=Z,5.1nm,0.4s						
DPC	**Dobruska-Polom**	**1.86**	**276**	Pg	**Pb**	**01 25 20.0**	**-0.7**
DPC				Sg	**Sg**	**01 25 45.9**	**+0.3**
	5.1nm,0.4s						
VRAC	**Vranov**	**1.91**	**243**	*e*Sg	**Sg**	**01 25 47.3**	**0.0**
GOPC	**GO Pecny, Ondr**	**2.86**	**266**	*e*SG	**Sg**	**01 26 17.4**	**-0.4**
GOPC	**GO Pecny, Ondr**	**2.86**	**266**	Sg	**Sg**	**01 26 17.4**	**-0.4**
PVCC	**Panska Ves**	**2.99**	**278**	*e*SG	**Sg**	**01 26 22.6**	**+0.7**
	comp=Z,5.9nm,0.4s						
PVCC	**Panska Ves**	**2.99**	**278**	Sg	**Sg**	**01 26 22.6**	**+0.7**
	5.9nm,0.4s						
PRU	**Pruhonice**	**3.01**	**268**	*e*SG	**Sg**	**01 26 22.2**	**-0.4**
	comp=Z,1.6nm,0.4s						
PRU	**Pruhonice**	**3.01**	**268**	Sg	**Sg**	**01 26 22.2**	**-0.4**
	1.6nm,0.4s						
KHC	**Kasperske Hory**	**3.81**	**256**	*e*SG	**Sg**	**01 26 48.1**	**-0.1**
KHC	**Kasperske Hory**	**3.81**	**256**	Sg	**Sg**	**01 26 48.1**	**-0.1**

IDC 12 01:30:37.5±5.7, 3°.52S×127°.00E, h123km±65km, mb3.3/2, mb1 3.7/5, mb1mx3.3/37, mbtmp4.0/5, MS3.1/1, Ms1 3.1/1, ms1mx2.4/24, Error ellipse: s-maj=56.8km s-min=19.8km az=92.0, Buru

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SIJI	**Sorong**	**5.01**	**58**	P	Pn	01 31 49.0	-1.6
	14nm,0.3s,baz=182,slow=8.5,SNR=1.9						
SIJI				S	Sn	01 32 49.1	+1.5
	11nm,0.3s,baz=170,slow=0.3,SNR=2.3						
FITZ	**Fitzroy Crossi**	**14.56**	**185**	P	Pn	01 33 58.6	+0.9
	0.1nm,0.3s,baz=348,slow=9.3,SNR=2.9						
WRA	**Warramunga Arr**	**17.83**	**157**	P	P	01 34 36.6	-0.3
	0.3nm,0.3s,baz=337,slow=11,SNR=12						
ASAR	**Alice Springs**	**21.12**	**162**	P	P	01 35 12.6	0.0
	1.3nm,0.3s,baz=344,slow=10,SNR=25						
JHJ	**Hachijo jima 2**	**38.39**	**17**	LR	LR	01 51 16.8	
	comp=Z,29nm,20.4s,baz=255,slow=32						
MKAR	**Makanchi Array**	**63.70**	**327**	P	P	01 40 56.0	0.0
	0.3nm,0.5s,baz=128,slow=6.1,SNR=4.6						

IDC ***12*** *01:32:22.6±1.0, 6°.40S×147°.90E, h0km, mb4.1/9, mb1 4.3/11, mb1mx4.1/34, mbtmp4.2/11, ML4.1/1, MS3.7/11, Ms1 3.7/11, ms1mx3.4/34, Error ellipse: s-maj=40.1km s-min=16.4km az=99.0*
ISCJB ***12*** *01:32:28.5±0.8, 6°.41S±0°.07×147°.7E±0°.2, h51km, mb4.0/9, MS3.6/11, Error ellipse: s-maj=28.1km s-min=9.0km az=5.4*
ISC 12 01:32:30.0±0.9, 6°.42S±0°.08×147°.8E±0°.3, h51km, n21, σ1§13/15, mb4.1/9, MS3.6/11, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**3.03**	**192**	Pn	**Pn**	**01 33 13.7**	**-1.8**
	21nm,0.3s,baz=8.4,slow=7.6,SNR=48						
PMG				Sn	**Sn**	**01 33 52.7**	**+2.1**
	11nm,0.3s,baz=40,slow=16,SNR=6.5						
CTA	**Charters Tower**	**13.67**	**186**	Pn	**Pn**	**01 35 42.5**	**+1.2**
	0.2nm,0.3s,baz=4.2,slow=15,SNR=5.1						
WRA	**Warramunga Arr**	**18.75**	**223**	P	**P**	**01 36 43.9**	**-1.0**
	0.6nm,0.3s,baz=48,slow=11,SNR=8.3						
GUMO	**Guam**	**20.09**	**352**	LR	LR	01 43 07.8	
	comp=Z,130nm,21.2s,baz=138,slow=32						
ASAR	**Alice Springs**	**21.74**	**216**	P	**P**	**01 37 16.4**	**-0.8**
	3.5nm,0.4s,baz=50,slow=9.4,SNR=29						
ASAR				LR	LR	01 46 15.2	
	comp=Z,259nm,21.7s,baz=50,slow=38						
DZM	**Mont Dzumac**	**23.80**	**133**	LR	LR	01 44 54.5	
	comp=Z,303nm,18.2s,baz=260,slow=32						
FITZ	**Fitzroy Crossi**	**24.53**	**240**	P	**P**	**01 37 44.5**	**-0.5**
	15nm,0.6s,baz=51,slow=7.5,SNR=48						
FITZ				LR	LR	01 48 50.2	
	comp=Z,233nm,19.5s,baz=64,slow=40						
DAV	**Davao City (W)**	**25.90**	**301**	LR	LR	01 48 17.6	
	comp=Z,73nm,19.1s,baz=324,slow=37						
STKA	**Stephens Creek**	**25.98**	**192**	P	**P**	**01 37 58.0**	**0.0**
	3.4nm,0.5s,baz=1.2,slow=13,SNR=3.4						
STKA				LR	LR	01 49 16.9	
	comp=Z,264nm,18.1s,baz=18,slow=39						
TGY	**Tagaytay City**	**33.56**	**308**	LR	LR	01 53 01.4	
	comp=Z,92nm,20.9s,baz=272,slow=37						
JCJ	**Chichijima**	**33.76**	**351**	LR	LR	01 51 49.6	
	comp=Z,303nm,19.4s,slow=35						
MJAR	**Matsushiro Arr**	**43.67**	**349**	LR	LR	01 56 33.7	
	comp=Z,37nm,21.7s,baz=220,slow=33						
KSRS	**Korea Array**	**47.43**	**338**	LR	LR	01 59 37.3	
	comp=Z,52nm,20.0s,baz=152,slow=34						
SONM	**Songino Array**	**65.15**	**331**	P	**P**	**01 43 06.7**	**+0.8**
	0.2nm,0.3s,baz=145,slow=6.3,SNR=2.9						

JMA 12 01:50:09.9±0.1, 36°.18N×141°.02E, h39km±1km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.49**	**195**	P	Pn	01 50 20.4	-0.1
JHO	**Hitachi**	**0.56**	**320**	P	Pn	01 50 21.3	-0.2
JHO				eS	Sn	01 50 29.0	-0.7
JYT	**Yasato**	**0.67**	**274**	P	Pn	01 50 23.0	+0.1
ONAJ	**Iwakimizuishiy**	**0.94**	**349**	P	Pn	01 50 26.6	0.0
ONAJ				S	Sn	01 50 38.0	-0.9
JFK	**Kawauchi**	**1.19**	**354**	P	Pn	01 50 29.9	-0.2
JFK				S	Sn	01 50 43.7	-1.3
MAT	**Matsushiro**	**2.30**	**280**	P	Pn	01 50 47.1	+1.8
MAT				S	Sn	01 51 13.7	+1.3

IDC 12 01:59:57.0±2.9, 6°.35S×147°.79E, h0km, mb4.0/2, mb1 4.1/4, mb1mx3.6/33, mbtmp3.9/4, ML3.6/1, MS3.5/5, Ms1 3.5/5, ms1mx3.0/27, Error ellipse: s-maj=67.6km s-min=31.8km az=98.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**3.10**	**192**	Pn	Pn	02 00 48.4	+1.2
	8.2nm,0.3s,baz=6.0,slow=10,SNR=18						
PMG				Sn	Sn	02 01 28.2	+3.1
	10nm,0.3s,baz=322,slow=18,SNR=3.4						
HNR	**Honiara**	**12.43**	**105**	LR	LR	02 07 02.1	
	comp=Z,106nm,21.1s,baz=286,slow=34						
WRA	**Warramunga Arr**	**18.80**	**223**	P	P	02 04 17.5	-0.7
	0.2nm,0.3s,baz=50,slow=11,SNR=4.5						
GUMO	**Guam**	**20.02**	**352**	LR	LR	02 10 51.7	
	comp=Z,141nm,18.7s,baz=149,slow=33						
ASAR	**Alice Springs**	**21.79**	**216**	P	P	02 04 50.0	-0.8
	1.4nm,0.5s,baz=49,slow=9.6,SNR=14						
FITZ	**Fitzroy Crossi**	**24.56**	**240**	P	P	02 05 18.4	-0.4
	4.7nm,0.5s,baz=61,slow=9.6,SNR=23						
FITZ				LR	LR	02 16 32.6	
	comp=Z,127nm,21.1s,baz=64,slow=40						
STKA	**Stephens Creek**	**26.05**	**192**	LR	LR	02 16 23.5	
	comp=Z,146nm,19.1s,baz=19,slow=38						
KSRS	**Korea Array**	**47.36**	**338**	LR	LR	02 26 05.5	
	comp=Z,47nm,20.6s,baz=167,slow=33						
TORD	**Torodi Ar. Bea**	**145.93**	**284**	PKPbc	PKPbc	02 19 39.4	-0.3
	0.4nm,0.3s,baz=74,slow=3.3,SNR=16						

*ISCJB **12** 02:00:25.0±0.7, 33°.14N±0°.07×73°.9E±0°.1, h10km, mb3.7/4, Error ellipse: s-maj=15.5km s-min=6.4km az=146.1*
*IDC **12** 02:00:25.1±1.3, 33°.06N×73°.70E, h0km, mb3.6/6, mb1 3.7/7, mb1mx3.4/40, mbtmp3.6/7, ML3.2/1, Error ellipse: s-maj=34.8km s-min=25.6km az=71.0*

ISC 12 02:00:27.0±0.9, 33°.18N±0°.07×74°.01E±0°.09, h10km, n17, σ2°68/20, mb3.7/4, Southwestern Kashmir

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SMLA	**Simla**	**3.36**	**126**	*e*P	**Pb**	**02 01 24.6**	**-2.1**
SMLA				*e*S	**Sg**	**02 02 13.9**	**-1.1**
SMLA				IAML		02 02 24.4	
	comp=E,196nm,0.4s						
SMLA				IAML		02 02 25.7	
	comp=N,182nm,0.6s						
KHET	**Khetri**	**5.31**	**163**	*e*P	Pb	02 01 54.5	-5.4
KHET				*e*S	**Sb**	**02 03 07.5**	**+3.7**
KHET				IAML		02 03 16.3	
	comp=N,26nm,0.3s						
KHET				IAML		02 03 21.8	
	comp=E,39nm,0.8s						
KUDL	**Kundal**	**5.45**	**156**	*e*P	**Pn**	**02 01 46.9**	**-1.3**
KUDL				*e*S	**Sn**	**02 02 54.3**	**+3.3**
KUDL				IAML		02 03 21.9	
	comp=E,36nm,0.3s						
KUDL				IAML		02 03 24.6	
	comp=N,26nm,0.6s						
KALG	**Kalgarh**	**5.46**	**131**	*e*P	**Pn**	**02 01 47.0**	**-1.3**
KALG				*e*S	Sn	02 02 34.6	-17
SONA	**Sohna**	**5.58**	**151**	*e*P	Pn	02 01 41.6	-8.4
PYUN	**Piuthan**	**9.24**	**121**	*e*Pn	**Pn**	**02 02 42.9**	**+2.4**
PYUN				*e*Sn	**Sn**	**02 04 22.7**	**-1.9**
	comp=N,22nm,0.5s						
KOLN	**Koldanda**	**9.87**	**121**	*e*Pn	**Pn**	**02 02 51.2**	**+2.1**
KOLN				*e*Sn	**Sn**	**02 04 33.3**	**-6.8**
	comp=N,17nm,0.6s						
GKN	**Gorkha**	**10.50**	**117**	*e*Pn	**Pn**	**02 03 01.0**	**+3.2**
GKN				*e*Sn	**Sn**	**02 04 57.0**	**+1.4**
	comp=N,11nm,0.3s						
KKN	**Kakani**	**11.10**	**116**	*e*Pn	**Pn**	**02 03 08.0**	**+2.0**
PKIN	**Phulchoki**	**11.30**	**117**	*e*Pn	**Pn**	**02 03 10.0**	**+1.2**
MKAR	**Makanchi Array**	**14.99**	**22**	Pn	**Pn**	**02 04 00.8**	**+1.8**
	comp=N,0.1nm,0.3s,baz=209,slow=11,SNR=3.5						
BVAR	**Borovoye Array**	**20.01**	**354**	P	Pn	02 05 01.0	-0.5
	comp=N,0.6nm,0.4s,baz=166,slow=13,SNR=4.6						
AKTO	**Aktyubinsk**	**20.89**	**330**	P	**P**	**02 05 08.8**	**-0.5**
	comp=N,1.8nm,0.5s,baz=150,slow=12,SNR=8.0						
ZALV	**Zalesovo Beam**	**22.14**	**17**	P	**P**	**02 05 23.2**	**+0.6**
	comp=N,1.2nm,0.5s,baz=216,slow=11,SNR=5.5						
ARCES	**ARCESS Array B**	**45.15**	**338**	P	**P**	**02 08 43.5**	**+0.1**
	comp=N,2.9nm,0.9s,baz=120,slow=8.4,SNR=3.4						
TORD	**Torodi Ar. Bea**	**68.21**	**272**	P	**P**	**02 11 25.8**	**-2.3**
	comp=N,0.3nm,0.7s,baz=59,slow=5.5,SNR=4.4						
WRA	**Warramunga Arr**	**78.11**	**123**	P	**P**	**02 12 27.4**	**+1.0**
	comp=N,0.3nm,0.4s,baz=318,slow=5.3,SNR=4.9						

NNC 12 02:20:03.7±4.5, 37°.15N×71°.58E, h0km, mb3.6, mpv3.2, 2C-6D, Error ellipse: s-maj=37.0km s-min=16.2km az=164.0, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**2.73**	**308**	⇓Pn	Pn	02 20 48.3	-0.6
	7.2nm,0.4s						
DZET				⇓Sn	Sn	02 21 24.3	+1.7
	22nm,0.3s						
MNAS	**Manas**	**5.38**	**7**	⇑Pn	Pn	02 21 25.3	0.0
	1.6nm,0.4s						
MNAS				⇓Sn	Sn	02 22 30.0	+2.1
	2.7nm,0.3s						
AAK	**Ala-Archa**	**5.92**	**21**	⇓Pn	Pn	02 21 33.4	+0.6
	1.5nm,0.3s						
AAK				⇑Sn	Sn	02 22 42.8	+1.5
	2.2nm,0.5s						
KK31	**Karatay Array**	**6.00**	**353**	⇓Pn	Pn	02 21 33.3	-0.4
	0.5nm,0.3s,baz=173,slow=12,SNR=4.6						
KK31				⇓Sn	Sn	02 22 41.0	-2.1
	0.9nm,0.3s,baz=177,slow=22,SNR=18						

*NIED **12** 02:30:00.38°.20N×144°.10E, h5km, Mw3.5 Best double couple: M0=2.17000×10^14 NP1:φs=12.00000°, δ=27.00000°, λ=-94.00000°. NP2:φs=197.00000°, δ=63.00000°, λ=-88.00000°.*

JMA 12 02:30:34.5±0.2, 38°.25N×144°.14E, h38km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.10**	**294**	P	Pn	02 31 08.6	+1.4
OFUJ				*e*S	Sn	02 31 33.9	+1.8
JIO	**Ouri**	**2.20**	**276**	P	Pn	02 31 10.0	+1.5
JIO				S	Sn	02 31 35.9	+1.4
JMK	**Ichinoseki**	**2.39**	**288**	P	Pn	02 31 12.8	+1.7
JMK				*e*S	Sn	02 31 41.2	+2.0
JOM	**Ohasama**	**2.54**	**300**	P	Pn	02 31 15.3	+2.2
JOM				*e*S	Sn	02 31 45.9	+3.2
JYK	**Kaneyama**	**3.04**	**284**	P	Pn	02 31 22.1	+2.1
JYK				*e*S	Sn	02 31 58.1	+3.0
JFT	**Otama**	**3.10**	**258**	P	Pn	02 31 23.4	+2.6
JFT				S	Sn	02 31 58.8	+2.2
JAG	**Ashikaga**	**4.16**	**245**	P	Pn	02 31 37.0	+1.6
JAG				*e*S	Sn	02 32 22.8	+0.1
JNBK	**Urakawa-nobuka**	**4.16**	**346**	P	Pn	02 31 36.9	+1.5
JNBK				*e*S	Sn	02 32 21.2	-1.6
JKB	**Kayabe**	**4.34**	**328**	P	Pn	02 31 41.2	+3.3
JCH	**Churui**	**4.40**	**352**	P	Pn	02 31 38.9	+0.2
JCH				*e*S	Sn	02 32 25.8	-2.8
JRY	**Ryogami san**	**4.74**	**244**	P	Pn	02 31 44.6	+1.2
JRY				*e*S	Sn	02 32 34.5	-2.7

*IGQ **12** 02:35:59.1°.63S×81°.87W, h16km±4km, Mb4.4, Error ellipse: s-maj=5.7km s-min=4.3km az=82.4*

*ISCJB **12** 02:36:00.4±0.2, 1°.80S±0°.03×81°.76W±0°.02, h10km, mb4.6/108, MS4.1/18, Error ellipse: s-maj=3.9km s-min=2.1km az=9.9*
*IDC **12** 02:36:01.0±0.7, 1°.60S×81°.55W, h0km, mb4.3/16, mb1 4.5/19, mb1mx4.4/30, mbtmp4.3/19, ML4.2/3, MS4.1/22, Ms1 4.1/22, ms1mx3.9/36, Error ellipse: s-maj=27.0km s-min=11.5km az=56.0*
*NEIC **12** 02:36:01.6±0.3, 1°.75S×81°.63W, h10km, mb4.8/102, Error ellipse: s-maj=7.5km s-min=4.5km az=224.0*
*GCMT **12** 02:36:01.5±0.3, 1°.85S×81°.70W, h23km±1km, MW5.0/88, Moment Tensor Solution. s37,c45; s88,c133; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr=0.84±.15; Mθθ=0.79±.12; Mφφ=1.63±.15; Mrθ=-0.12±.17; Mθφ=4.09±.11; Mφr=1.02±.22; Best double couple: M0=4.39500×10^16 NP1:φs=172.00000°, δ=86.00000°, λ=-165.00000°. NP2: φs=82.00000°, δ=75.00000°, λ=-4.00000°. Principal axes: T 4.7860, Plg=8.0000°, Azm=306.0000°; N -0.7770, Plg=75.0000°, Azm=186.0000°; P -4.0050, Plg=13.0000°, Azm=38.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 12 02:36:01.5±0.4, 1°.76S±0°.04×81°.61W±0°.04, h10km, n435, σ1°54/437, mb4.7/108, MS4.1/18, 9C-9D, Off coast of Ecuador

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ISPT	**Isla de la Pla**	**0.73**	**48**	⇓P	**Pg**	**02 36 16.1**	**+0.5**
	baz=64						
ISPT				⇓S	**Sb**	**02 36 26.4**	**0.0**
	baz=64						
AMANT	**Manta**	**1.20**	**47**	P	**Pb**	**02 36 23.2**	**-1.1**
	baz=58						
AMANT				S	**Sn**	**02 36 40.8**	**+0.2**
	baz=58						
JAMA	**Jama**	**2.05**	**43**	⇓P	**Pn**	**02 36 35.1**	**-1.0**
	baz=50						
MAG1	**Magdalena**	**2.49**	**48**	⇑P	**Pn**	**02 36 43.0**	**+0.9**
	baz=53						
ASDO	**Santo Domingo**	**2.90**	**59**	P	**Pn**	**02 36 50.5**	**+2.7**
	baz=63						
RIOE	**Riobamba**	**2.98**	**90**	P	**Pn**	**02 36 50.4**	**+1.2**
	baz=92						
IGUA	**Igualata**	**2.98**	**85**	P	**Pb**	**02 36 52.7**	**-2.4**
	baz=87						
IGUA				S	**Sn**	**02 37 28.1**	**+2.5**
	baz=87						
BIL2	**Estacion Bilba**	**3.12**	**85**	P	**Pb**	**02 36 54.9**	**-2.5**
	baz=86						
BBIL	**Ulba Tungurahu**	**3.14**	**84**	⇑P	**Pn**	**02 36 54.7**	**+3.3**
	baz=86						
BMAS	**Trigal station**	**3.14**	**85**	⇑P	**Pn**	**02 36 53.3**	**+1.9**
	baz=87						
BMAS				⇑S	**Sn**	**02 37 32.6**	**+3.4**
	baz=87						
PAST	**Pastocalle**	**3.15**	**70**	⇓P	**Pb**	**02 36 56.6**	**-1.4**
	baz=73						
JUI6	**Juive**	**3.16**	**84**	P	**Pn**	**02 36 54.3**	**+2.7**
	baz=86						
ARRY	**Arrayan**	**3.17**	**86**	⇑P	**Pn**	**02 36 54.5**	**+2.7**
	baz=87						
POND	**Pondoa**	**3.18**	**84**	⇑P	**Pn**	**02 36 54.9**	**+3.0**
	baz=86						
POND				⇑S	**Sb**	**02 37 34.4**	**-2.9**
	baz=86						
RETU	**Refugio**	**3.18**	**85**	⇑P	**Pb**	**02 36 55.7**	**-2.7**
	baz=86						
PAT1	**Patacocha**	**3.18**	**86**	P	**Pn**	**02 36 54.2**	**+2.1**
	baz=87						
PAT1				S	**Sb**	**02 37 35.9**	**-1.7**
	baz=87						
BPAT	**Tungurahua Vol**	**3.19**	**85**	P	**Pn**	**02 36 54.1**	**+2.0**
	baz=87						
BPAT				S	**Sb**	**02 37 35.9**	**-1.8**
	baz=87						
RUN5	**Runtun**	**3.21**	**84**	P	**Pn**	**02 36 55.6**	**+3.3**
	baz=86						
BRUN	**Tungurahua Vol**	**3.22**	**84**	P	**Pn**	**02 36 54.4**	**+2.0**
	baz=86						
BULB	**Ulba Tungurahu**	**3.22**	**84**	⇑P	**Pn**	**02 36 55.6**	**+3.1**
	baz=86						
CAMI	**Rancho Maria**	**3.29**	**71**	P	**Pb**	**02 36 57.5**	**-2.7**
	baz=74						
PISA	**Pisayambo**	**3.30**	**78**	P	**Pb**	**02 36 57.6**	**-2.9**
	baz=80						
NAS2	**Nasa**	**3.33**	**71**	P	**Pb**	**02 36 59.0**	**-2.1**
	baz=73						
MOV1	**Cotopaxi Vol s**	**3.34**	**72**	P	**Pb**	**02 36 59.1**	**-2.1**
	baz=74						
JUA2	**San Juan 2**	**3.38**	**63**	P	**Pn**	**02 36 56.3**	**+1.5**
	baz=66						
BVC2	**Cotopaxi Volca**	**3.38**	**71**	P	**Pb**	**02 36 59.8**	**-2.2**
	baz=74						
VC1	**Cotopaxi 1**	**3.40**	**71**	P	**Pb**	**02 36 59.8**	**-2.4**
	baz=74						
PINO	**Pino**	**3.40**	**62**	P	**Pn**	**02 36 56.3**	**+1.1**
	baz=65						
COV1	**Cotopaxi Volc**	**3.44**	**72**	P	**Pb**	**02 36 59.8**	**-3.3**
	baz=74						
YANA	**Yana**	**3.45**	**62**	P	**Pn**	**02 36 56.5**	**+0.7**
	baz=65						
OTAV	**Otavalo**	**3.73**	**58**	⇓P	**Pn**	**02 37 00.1**	**+0.5**
	baz=61						
OTAV				⇓S	**Sn**	**02 37 44.8**	**+0.9**
	baz=61						
OTAV	**Otavalo**	**3.73**	**58**	*e*Pn	**Pn**	**02 36 59.8**	**+0.2**
OTAV				*e*Sn	**Sn**	**02 37 42.5**	**-1.4**
OTAV	**Otavalo**	**3.73**	**58**	*e*P	**Pn**	**02 36 59.5**	**-0.1**
CUIC	**Cuicocha-Domo**	**3.84**	**58**	⇓P	**Pn**	**02 37 02.9**	**+1.7**
	baz=61						
CUIC				⇓S	**Sn**	**02 37 48.6**	**+2.0**
	baz=61						
COTA	**Cotacachi**	**3.88**	**58**	P	**Pn**	**02 37 03.0**	**+1.3**
	baz=60						
URCU	**Urcuqui**	**4.00**	**57**	⇓P	**Pn**	**02 37 05.5**	**+2.2**
	baz=60						
CAYA	**Cayambe**	**4.05**	**63**	P	**Pn**	**02 37 07.1**	**+3.0**
	baz=66						
LITE	**Lita**	**4.13**	**52**	P	**Pn**	**02 37 04.5**	**-0.3**
	baz=55						
LITE	**Lita**	**4.13**	**52**	S	**Sn**	**02 37 55.0**	**+1.7**
	baz=55						
CRUC	**La Cruz**	**5.71**	**55**	*e*P	**Pn**	**02 37 29.5**	**+2.7**
GRGC	**Isla de Gorgon**	**5.85**	**36**	*e*P	Pb	02 37 37.4	-6.3
ATAH	**Atahualpa**	**6.23**	**149**	Pn	**Pn**	**02 37 36.8**	**+2.8**
	1.9nm,0.3s,baz=328,slow=10,SNR=40						
ATAH				Sn	**Sn**	**02 38 46.0**	**+0.5**
	4.5nm,0.3s,baz=344,slow=18,SNR=4.9						
ATAH				LR	LR	02 40 28.4	
	comp=Z,4μm,18.7s,baz=333,slow=42						
POPC	**Popayan, Colom**	**6.53**	**49**	*e*P	**Pn**	**02 37 37.4**	**-0.5**
FLOC	**Florencia**	**6.82**	**61**	*e*P	**Pn**	**02 37 38.5**	**-3.2**
PRAC	**Prado**	**8.64**	**51**	*e*P	**Pn**	**02 38 10.2**	**+3.4**
PAYG	**Puerto Ayora**	**8.74**	**277**	*e*Pn	**Pn**	**02 38 08.9**	**+0.8**
PAYG				*e*Sn	**Sn**	**02 39 39.6**	**-7.2**
SOLC	**Bahia Solano**	**8.97**	**28**	*e*P	**Pn**	**02 38 13.6**	**+2.3**
SJAC	**San Juan de Ar**	**9.14**	**57**	*e*P	**Pn**	**02 38 15.3**	**+1.5**
GUYC	**Guyana, Colomb**	**9.31**	**42**	*e*P	Pn	02 38 22.6	+6.3
ROSC	**El Rosal**	**9.80**	**48**	Pn	**Pn**	**02 38 27.7**	**+4.8**
	1.1nm,0.3s,baz=241,slow=10,SNR=3.1						
ROSC				Sn	**Sn**	**02 40 18.4**	**+5.0**
	1.0nm,0.3s,baz=261,slow=19,SNR=2.2						
ROSC				LR	LR	02 42 31.8	
	comp=Z,654nm,18.7s,baz=224,slow=40						
ROSC	**El Rosal**	**9.80**	**48**	*e*Pn	**Pn**	**02 38 25.8**	**+2.8**
ROSC				*e*Sn	**Sn**	**02 40 10.7**	**-2.7**
NORC	**Norcasia**	**9.91**	**43**	*e*P	Pn	02 38 30.0	+5.8
HELC	**Santa Helena**	**9.96**	**38**	*e*P	Pn	02 38 30.0	+4.8
DBBC	**Dabeiba**	**10.25**	**32**	*e*P	**Pn**	**02 38 32.2**	**+3.4**
BCIP	**Isla Barro Col**	**11.00**	**9**	*e*P	Pn	02 38 46.4	+7.4
NNA	**Nana**	**11.21**	**155**	Pn	**Pn**	**02 38 43.7**	**+1.7**
	3.5nm,0.3s,baz=334,slow=15,SNR=7.1						
NNA				Sn	**Sn**	**02 40 49.4**	**+1.9**
	2.0nm,0.3s,baz=253,slow=19,SNR=2.8						
NNA				LR	LR	02 42 33.6	
	comp=Z,360nm,20.8s,baz=319,slow=35						
NNA	**Nana**	**11.21**	**155**	*e*Pn	**Pn**	**02 38 42.4**	**+0.4**
NNA				*e*Sn	**Sn**	**02 40 42.3**	**-5.2**
RUSC	**La Rusia**	**11.41**	**48**	*e*P	**Pn**	**02 38 49.8**	**+4.6**
MOTC	**Monteria, Cord**	**12.03**	**29**	*e*P	**Pn**	**02 38 55.4**	**+2.3**
JTS	**JuntasAbangare**	**12.42**	**345**	*e*Pn	**Pn**	**02 39 01.8**	**+3.2**
JTS				*e*Sn	Sn	02 41 06.8	-10
GRMC	**Gramalote, San**	**12.88**	**43**	*e*P	**Pn**	**02 39 09.6**	**+4.7**
CBRI	**Barrientos, No**	**12.88**	**43**	*e*P	**Pn**	**02 39 09.6**	**+4.6**
SDV	**Santo Domingo**	**15.22**	**46**	Pn	**Pn**	**02 39 38.2**	**+1.3**
	1.8nm,0.3s,baz=233,slow=14,SNR=6.0						
SDV				LR	LR	02 45 59.8	
	comp=Z,1μm,21.8s,baz=219,slow=40						
SDV	**Santo Domingo**	**15.22**	**46**	*e*Pn	**Pn**	**02 39 37.5**	**+0.7**
	57nm,0.9s						
TGUH	**Tegucigalpa,Un**	**16.68**	**341**	*e*Pn	**P**	**02 39 58.2**	**+0.3**
	130nm,1.1s						
TGUH				*e*Sn	Sn	02 42 45.9	-15
LPAZ	**La Paz**	**19.62**	**138**	P	**Pn**	**02 40 33.4**	**+1.1**
	0.6nm,0.3s,baz=327,slow=11,SNR=43						
LPAZ				LR	LR	02 49 58.0	
	comp=Z,2μm,18.3s,baz=300,slow=42						
LPAZ	**La Paz**	**19.62**	**138**	*e*P	**P**	**02 40 31.6**	**+0.6**
	164nm,1.8s						
SAML	**Samuel**	**19.68**	**112**	*e*P	**P**	**02 40 30.1**	**-0.9**
	210nm,1.6s						
SAML				*e*S	**S**	**02 44 08.5**	**-4.7**
CCIG	**Comitan**	**20.72**	**330**	*e*P	**P**	**02 40 43.2**	**+0.7**
	45nm,1.1s						
PB11	**IPOC Station P**	**21.38**	**148**	*e*P	**P**	**02 40 45.8**	**-3.7**
	36nm,1.0s						
PTGA	**Pitinga**	**21.66**	**88**	P	**P**	**02 40 53.4**	**+0.8**
	5.1nm,0.5s,baz=279,slow=9.6,SNR=12						
PTGA				LR	LR	02 50 51.6	
	comp=Z,388nm,18.4s,baz=272,slow=41						
PTGA	**Pitinga**	**21.66**	**88**	*e*P	**P**	**02 40 50.1**	**-2.5**
	22nm,1.3s						
PB01	**IPOC Station P**	**22.52**	**149**	*e*P	**P**	**02 41 00.7**	**-1.1**
	43nm,1.3s						
TEIG	**Tepich**	**22.80**	**344**	LR	LR	02 48 47.1	
	comp=Z,290nm,18.7s,baz=183,slow=34						
CMIG	**Matias Romero**	**22.85**	**326**	P	**P**	**02 41 05.9**	**+0.8**
	9.6nm,1.0s,baz=142,slow=6.6,SNR=6.3						
CMIG				LR	LR	02 48 16.2	
	comp=Z,392nm,19.6s,baz=162,slow=32						
SDDR	**Presa de Saban**	**22.97**	**26**	*e*P	**P**	**02 41 06.4**	**-0.1**
	133nm,1.9s						
LVC	**Limon Verde**	**24.12**	**150**	P	**P**	**02 41 20.3**	**+2.2**
	40nm,0.9s,baz=304,slow=7.9,SNR=7.9						
LVC				LR	LR	02 51 59.0	
	comp=Z,3μm,21.5s,baz=317,slow=40						
LVC	**Limon Verde**	**24.12**	**150**	*e*P	**P**	**02 41 19.5**	**+1.4**
	34nm,1.1s						
MPR	**Mayaguez**	**24.43**	**35**	*e*P	**P**	**02 41 22.5**	**+2.0**
	67nm,1.4s						
CELP	**Cerrillos**	**24.65**	**36**	*e*P	**P**	**02 41 24.0**	**+1.4**
SIV	**San Ignacio**	**24.69**	**126**	P	**P**	**02 41 24.7**	**+1.6**
	13nm,0.8s,baz=307,slow=9.5,SNR=32						
SIV				LR	LR	02 52 52.2	
	comp=Z,560nm,18.4s,baz=320,slow=41						
SJG	**San Juan**	**24.93**	**37**	P	**P**	**02 41 24.9**	**-0.2**
	20nm,1.0s,baz=224,slow=5.7,SNR=8.6						
SJG	**San Juan**	**24.93**	**37**	*e*P	**P**	**02 41 25.5**	**+0.4**
	32nm,1.0s						
HUMP	**Col San Antoni**	**25.14**	**37**	*e*P	**P**	**02 41 25.8**	**-1.2**
	33nm,1.2s						
CBYP	**Canovanas**	**25.23**	**37**	*e*P	**P**	**02 41 28.2**	**+0.3**
	55nm,1.1s						
CBYP				*e*S	**S**	**02 45 45.1**	**-8.6**
MTP	**Monte Pirata**	**25.29**	**38**	*e*P	**P**	**02 41 29.0**	**+0.7**
TLIG	**Tlapa**	**25.45**	**320**	*e*P	**P**	**02 41 27.0**	**-3.0**
	24nm,1.2s						
SMRT	**St. Maarten**	**26.85**	**42**	*e*P	**P**	**02 41 40.5**	**-2.0**
	58nm,1.5s						
446A	**Poplarville**	**33.20**	**348**	P	**P**	**02 42 40.3**	**+1.7**
	baz=166						
933A	**Laredo**	**33.79**	**331**	P	**P**	**02 42 44.9**	**+1.1**
	baz=147						
CPUP	**Villa Florida**	**33.79**	**138**	P	**P**	**02 42 44.4**	**+0.6**
	1.5nm,0.8s,baz=321,slow=12,SNR=4.2						
CPUP				LR	LR	02 59 09.6	
	comp=Z,90nm,21.7s,baz=313,slow=41						
834A	**Tilden**	**33.88**	**333**	P	**P**	**02 42 46.1**	**+1.5**
	baz=149						
636A	**Smothers Creek**	**34.40**	**336**	P	**P**	**02 42 50.8**	**+1.8**
	baz=152						
833A	**Chaparral WMA,**	**34.44**	**332**	P	**P**	**02 42 50.4**	**+1.0**
	baz=147						
734A	**La Parita Cree**	**34.50**	**333**	P	**P**	**02 42 51.1**	**+1.2**
	baz=149						
832A	**Faith Ranch, C**	**34.69**	**331**	P	**P**	**02 42 52.3**	**+0.7**
	baz=146						
733A	**Divot King Ran**	**34.73**	**332**	P	**P**	**02 42 52.0**	**0.0**
	baz=148						
LRAL	**Lakeview Retre**	**34.98**	**352**	*e*P	**P**	**02 42 53.9**	**-0.1**
	39nm,1.6s						
535A	**Dale**	**35.09**	**335**	P	**P**	**02 42 55.8**	**+0.8**
	baz=152						
633A	**Saathoff Ranch**	**35.30**	**333**	P	**P**	**02 42 57.9**	**+1.0**
	baz=149						
436A	**Wall Ranch, Ga**	**35.43**	**337**	P	**P**	**02 42 59.2**	**+1.2**
	baz=153						
Z46A	**Louisville**	**35.45**	**349**	P	**P**	**02 42 58.6**	**+0.5**
	baz=167						
534A	**Blanco**	**35.47**	**334**	P	**P**	**02 42 59.1**	**+0.7**
	baz=150						
142A	**Monroe**	**35.49**	**345**	P	**P**	**02 42 58.5**	**0.0**
	baz=162						
239A	**Gary**	**35.74**	**341**	P	**P**	**02 43 01.0**	**+0.4**
	baz=158						
533A	**Kerrville**	**35.76**	**334**	P	**P**	**02 43 01.0**	**+0.1**
	baz=149						
435B	**Jarrell**	**35.76**	**336**	P	**P**	**02 43 02.9**	**+2.1**
	baz=152						
Y47A	**UCPARC, Winfie**	**35.95**	**351**	P	**P**	**02 43 04.2**	**+1.8**
	baz=169						
434A	**Burnet**	**36.07**	**335**	P	**P**	**02 43 04.1**	**+0.6**
	baz=151						
Y46A	**Houston**	**36.10**	**350**	P	**P**	**02 43 06.2**	**+2.5**
	baz=168						
Y45A	**Yeager Farm, C**	**36.21**	**349**	P	**P**	**02 43 06.0**	**+1.4**
	baz=166						
433A	**Art**	**36.37**	**334**	P	**P**	**02 43 07.0**	**+0.9**
	baz=150,SNR=10						
JCT	**Junction City**	**36.45**	**333**	P	**P**	**02 43 07.5**	**+0.7**
	baz=148,SNR=

	baz=155					
Z33A	Whitaker Ranch	38.43 337	P	P	02 43 24.3	+0.8
	baz=152					
W39A	Magazine	38.49 344	P	P	02 43 25.0	+1.0
	baz=160					
W38A	Poteau	38.58 343	P	P	02 43 25.7	+1.0
	baz=159					
Y34A	Reagan Ranch,	38.64 338	P	P	02 43 26.2	+1.0
	baz=154					
X36A	Centrahoma	38.70 340	P	P	02 43 24.6	-1.1
	baz=156					
X35A	Drake	38.76 340	P	P	02 43 27.0	+0.8
	baz=155					
W37B	Quinton	38.92 342	P	P	02 43 28.5	+1.0
	baz=158					
V39A	Pettigrew	39.05 344	P	P	02 43 30.0	+1.2
	baz=161					
X34A	Smith Ranch, M	39.24 339	P	P	02 43 30.8	+0.5
	baz=154					
V38A	Canehill	39.29 343	P	P	02 43 31.2	+0.5
	baz=160					
U40A	Yellville	39.34 346	P	P	02 43 32.1	+1.0
	baz=162					
W35A	Tecumseh	39.40 340	P	P	02 43 32.5	+0.9
	baz=156					
X33A	Lawton	39.44 338	P	P	02 43 31.2	-0.7
	baz=153					
V37A	Hulbert	39.52 343	P	P	02 43 32.0	-0.6
	baz=158					
X32A	Elmer	39.63 337	P	P	02 43 34.2	+0.7
	baz=152					
V36A	Jenks	39.68 342	P	P	02 43 34.5	+0.6
	baz=157					
TUL1	Leonard	39.74 342	P	P	02 43 35.0	+0.6
	baz=158					
TUL1	Leonard	39.74 342	eP	P	02 43 34.0	-0.4
	27nm,1.4s					
W34A	Bridge Creek,	39.79 339	P	P	02 43 35.1	+0.2
	baz=154					
U38A	Gravette	39.82 344	P	P	02 43 35.7	+0.6
	baz=160					
W33A	Caddo, Fort Co	39.97 338	P	P	02 43 35.6	-0.7
	baz=153					
U37A	Salina	40.00 343	P	P	02 43 37.6	+1.0
	baz=159					
T40A	Mansfield	40.02 346	P	P	02 43 37.5	+0.8
	baz=163					
PLCA	Paso Flores	40.07 167	P	P	02 43 39.1	+1.9
	5.9nm,1.1s,baz=354,slow=9.0,SNR=6.7					
PLCA	Paso Flores	40.07 167	eP	P	02 43 36.2	-1.0
	43nm,1.8s					
T39A	Clever	40.10 345	P	P	02 43 38.6	+1.2
	baz=162					
U36A	Oologah	40.17 342	P	P	02 43 39.0	+1.0
	baz=158					
MNTX	Cornudas Mount	40.20 328	P	P	02 43 38.8	+0.5
	baz=142,SNR=15					
MNTX	Cornudas Mount	40.20 328	eP	P	02 43 37.3	-1.0
	18nm,1.4s					
W32A	Sentinel	40.24 337	P	P	02 43 39.3	+0.7
	baz=152					
V34A	Guthrie	40.24 340	P	P	02 43 39.1	+0.5
	baz=155					
T38A	Diamond	40.35 344	P	P	02 43 40.9	+1.4
	baz=160					
TRQA	Tornquist	40.37 156	eP	P	02 43 39.3	-0.4
	24nm,1.4s					
S40A	Lebanon	40.44 347	P	P	02 43 41.5	+1.3
	baz=163					
U35A	Pawnee	40.47 341	P	P	02 43 41.8	+1.3
	baz=156					
V33A	Lossen Ranch,	40.50 339	P	P	02 43 41.5	+0.7
	baz=154					
T37A	Cheneyville 18	40.61 344	P	P	02 43 43.0	+1.4
	baz=159					
V32A	Arapaho	40.69 338	P	P	02 43 43.7	+1.4
	baz=153					
S39A	Bolivar	40.72 346	P	P	02 43 43.2	+0.7
	baz=162					
MSTX	Muleshoe	40.74 333	P	P	02 43 43.5	+0.6
	baz=146,SNR=9.5					
MSTX	Muleshoe	40.74 333	eP	P	02 43 43.9	+1.0
	28nm,1.1s					
U34A	Anderson Ranch	40.79 340	P	P	02 43 43.8	+0.7
	baz=155					
U34A	Anderson Ranch	40.79 340	eP	P	02 43 43.9	+0.8
	19nm,0.8s					
S38A	Stockton	40.81 345	P	P	02 43 42.3	-1.0
	baz=161					
T36A	Boggs Farm, Ca	40.83 342	P	P	02 43 44.6	+1.1
	baz=158					
T35A	Sooner Cattle	40.90 342	P	P	02 43 44.8	+0.8
	baz=157					
AMTX	Amarillo	41.02 335	P	P	02 43 45.9	+0.7
	baz=149					
AMTX	Amarillo	41.02 335	eP	P	02 43 44.4	-0.8
	13nm,0.9s					
R40A	Maddies Statio	41.05 347	P	P	02 43 46.1	+0.9
	baz=164					
S37A	Fort Scott	41.18 344	P	P	02 43 47.2	+0.9
	baz=160					
T34A	McClaskey Farm	41.21 341	P	P	02 43 47.2	+0.7
	baz=156					
R39A	Chumby, Stover	41.25 346	P	P	02 43 48.1	+1.2
	baz=162					
U32A	Winter Ranch,	41.26 339	P	P	02 43 48.0	+1.0
	baz=153					
R38A	Fenwick Farm,	41.34 345	P	P	02 43 48.5	+0.9
	baz=161					
S36A	Lake Cedric, C	41.36 343	P	P	02 43 48.9	+1.1
	baz=159					
S35A	Otter Creek Ra	41.54 342	P	P	02 43 50.6	+1.3
	baz=158					
Q40A	Laux Farm, Aux	41.68 348	P	P	02 43 51.8	+1.4
	baz=164					
R37A	Teagarden Farm	41.70 344	P	P	02 43 51.9	+1.3
	baz=160					
S34A	Willow Spring	41.80 341	P	P	02 43 52.6	+1.2
	baz=156					
R36A	Gordon, Harris	41.90 344	P	P	02 43 53.4	+1.3
	baz=159					
Q39A	Willow Grove F	41.93 347	P	P	02 43 51.5	-0.9
	baz=163					
T32A	Huddler Ranch,	41.94 339	P	P	02 43 53.6	+1.0
	baz=154					
S33A	Kaszmaul Farm,	42.00 340	P	P	02 43 53.8	+0.8
	baz=155					
121A	Cookes Peak, D	42.15 326	P	P	02 43 56.0	+1.4
	baz=139					
319A	Douglas	42.15 324	eP	P	02 43 55.7	+1.2
	13nm,1.0s					
R34A	Isabella, Hill	42.40 342	P	P	02 43 57.3	+1.1
	baz=156					
S32A	Newby Ranch, P	42.41 340	P	P	02 43 57.7	+1.2
	baz=154					
Q36A	Arnold C. Orve	42.48 344	P	P	02 43 58.0	+1.0
	baz=159					
Q35A	Mercer Eighty,	42.55 343	P	P	02 43 58.7	+1.2
	baz=158					
BNM	Barren Site	42.77 329	eP	P	02 44 00.6	+1.0
Q34A	Chapman	42.87 342	P	P	02 44 01.3	+1.2
	baz=157					
KSU1	Kansas State U	42.94 343	P	P	02 44 01.4	+0.8
	baz=158					
KSU1	Kansas State U	42.94 343	eP	P	02 44 00.8	+0.1
KSU1			epP	sP	02 44 04.7	-0.3
R32A	Long Quarter,	42.98 340	P	P	02 44 02.0	+0.9
	baz=154					
O39A	Kirksville	42.99 348	P	P	02 44 02.3	+1.3
	baz=164					
P36A	Good Intent, A	43.03 345	P	P	02 44 01.8	+0.4
	baz=160					
LAZ	Ladron	43.23 329	eP	P	02 44 00.7	-2.6
O37A	Wolven Farm, M	43.27 346	P	P	02 44 03.3	0.0
	baz=162					
ANMO	Albuquerque	43.30 330	P	P	02 44 04.7	+0.8
	baz=142					
ANMO	Albuquerque	43.30 330	eP	P	02 44 04.8	+0.9
	13nm,0.9s					
Q32A	Meitler Ranch,	43.45 341	P	P	02 44 05.8	+1.0
	baz=155					
N38A	Joes South For	43.66 347	P	P	02 44 06.9	+0.5
	baz=163					
CBKS	Cedar Bluff	43.69 339	P	P	02 44 08.1	+1.3
	baz=153					
TUC	Tucson	43.71 323	P	P	02 44 08.1	+0.9
	baz=135					
TUC	Tucson	43.71 323	eP	P	02 44 07.5	+0.4

	7.0nm,1.1s					
N37A	Lee Faris, Mou	43.85 346	P	P	02 44 09.2	+1.2
	baz=162					
O34A	Beatrice	43.96 343	P	P	02 44 10.0	+1.1
	baz=158					
T25A	Trinidad	44.11 334	P	P	02 44 12.0	+1.6
	baz=146,SNR=12					
T25A	Trinidad	44.11 334	eP	P	02 44 11.3	+0.9
	19nm,1.2s					
O33A	Hebron	44.13 342	P	P	02 44 11.2	+1.0
	baz=157					
M38A	Pleasantville	44.24 347	P	P	02 44 09.8	-1.4
	baz=163					
N35A	Tabor	44.30 345	P	P	02 44 12.2	+0.6
	baz=160					
O32A	Brockman Farm,	44.51 342	P	P	02 44 14.5	+1.2
	baz=156					
214A	Organ Pipe Nat	44.71 321	P	P	02 44 16.3	+1.3
	baz=133,SNR=6.9					
O31A	Woolen Ranch,	44.75 341	P	P	02 44 16.5	+1.3
	baz=154					
X18A	Snowflake	44.84 326	eP	P	02 44 16.8	+0.6
	13nm,1.0s					
KSCO	Kaye Shedlock'	44.94 337	P	P	02 44 18.1	+1.1
	baz=150					
SDCO	Great Sand Dun	45.10 333	P	P	02 44 19.5	+1.1
	baz=145,SNR=13					
SDCO	Great Sand Dun	45.10 333	eP	P	02 44 18.9	+0.5
	13nm,1.2s					
W18A	Petrified Fore	45.15 327	P	P	02 44 19.7	+1.0
	baz=138					
W18A	Petrified Fore	45.15 327	eP	P	02 44 19.0	+0.3
	25nm,0.8s					
M34A	Aspy Farms, Fr	45.16 344	P	P	02 44 19.3	+0.9
	baz=159					
L36A	Harm Buss Farm	45.23 346	P	P	02 44 19.7	+0.7
	baz=162					
M33A	Taylor Creek F	45.39 344	P	P	02 44 21.1	+0.8
	baz=158					
L35A	Bielow Farm, R	45.45 345	P	P	02 44 19.8	-1.0
	baz=160					
X16A	Lo Mia Camp, P	45.60 325	eP	P	02 44 23.2	+0.9
	8.2nm,1.1s					
K37A	Belmond	45.63 348	P	P	02 44 22.2	0.0
	baz=163					
K36A	Gilmore City	45.69 347	P	P	02 44 22.7	0.0
	baz=162					
S22A	4UR Ranch, Cre	45.71 332	P	P	02 44 24.9	+1.6
	baz=144,SNR=5.6					
S22A	4UR Ranch, Cre	45.71 332	eP	P	02 44 24.7	+1.5
	16nm,1.5s					
M31A	Lambtecht Ranc	45.71 342	P	P	02 44 24.1	+1.2
	baz=155					
113A	Mohawk Valley,	45.85 321	eP	P	02 44 22.6	-1.4
	5.5nm,0.8s					
MVCO	Mesa Verde	46.10 330	P	P	02 44 27.2	+0.9
	baz=141					
MVCO	Mesa Verde	46.10 330	eP	P	02 44 26.5	+0.2
	20nm,1.3s					
J37A	Redenius Farm,	46.13 348	P	P	02 44 27.1	+1.0
	baz=163					
Y14A	Wickenburg	46.18 323	eP	P	02 44 27.2	+0.4
	28nm,1.0s					
J36A	Seneca 1, Swea	46.32 347	P	P	02 44 28.4	+0.7
	baz=162					
WUAZ	Wupatki	46.35 326	P	P	02 44 29.6	+1.4
	baz=137,SNR=12					
WUAZ	Wupatki	46.35 326	eP	P	02 44 27.8	-0.4
	18nm,1.0s					
L31A	Butterfield Fa	46.43 342	P	P	02 44 29.2	+0.7
	baz=156					
GLA	Glamis	46.70 321	P	P	02 44 32.2	+1.4
	baz=131					
K31A	O'Neill	46.81 343	P	P	02 44 31.9	+0.4
	baz=156					
ISCO	Idaho Springs	46.84 335	P	P	02 44 33.5	+1.4
	baz=146					
ISCO	Idaho Springs	46.84 335	eP	P	02 44 31.6	-0.6
	6.6nm,1.3s					
SMCO	Snowmass	46.93 333	eP	P	02 44 33.6	+0.6
	13nm,1.4s					
Y12C	Blythe	46.98 322	P	P	02 44 34.0	+1.1
	baz=132					
Y12C	Blythe	46.98 322	eP	P	02 44 34.7	+1.8
	17nm,1.4s					
PDMCI	Parker Dam,Lak	47.12 323	P	P	02 44 34.3	+0.3
	baz=133					
K30A	Basset	47.12 342	P	P	02 44 35.0	+1.0
	baz=155					
J32A	Parkston	47.24 344	P	P	02 44 37.1	+2.3
	baz=158					
ECSD	EROS Data Cent	47.25 345	P	P	02 44 35.5	+0.7
	baz=159					
ECSD	EROS Data Cent	47.25 345	eP	P	02 44 35.3	+0.4
	6.0nm,1.0s					
SWSC	Sam W. Stewart	47.26 320	P	P	02 44 35.6	+0.5
	baz=130					
BC3	Big Chuckawall	47.49 321	P	P	02 44 38.3	+1.2
	baz=131,SNR=6.9					
W13A	Hualapai Mount	47.51 324	eP	P	02 44 38.1	+0.8
	4.7nm,0.9s					
U15A	North Rim	47.52 326	eP	P	02 44 40.2	+2.7
	23nm,1.8s					
IRM	Iron Mountain	47.63 322	P	P	02 44 39.3	+1.2
	baz=132,SNR=13					
H35A	Sunnyside Ranc	47.73 347	P	P	02 44 37.7	-0.9
	baz=162					
N23A	Red Feather La	47.89 335	P	P	02 44 41.4	+1.2
	baz=146					
N23A	Red Feather La	47.89 335	eP	P	02 44 40.4	+0.2
	5.8nm,1.0s					
PHWY	Pilot Hill	48.03 336	eP	P	02 44 39.9	-1.4
	10nm,1.4s					
BELC	Belle Mtn. Jos	48.06 321	P	P	02 44 42.7	+1.1
	baz=131					
109C	Camp Elliot, M	48.07 319	P	P	02 44 42.0	+0.6
	baz=129					
I30A	Oacoma	48.19 343	P	P	02 44 44.0	+1.8
	baz=156					
KNB	Kanab	48.24 326	eP	P	02 44 42.5	-0.4
	8.5nm,1.2s					
O20A	White River Ci	48.28 333	P	P	02 44 44.5	+1.3
	baz=143					
GMRC	Granite Mounta	48.37 322	P	P	02 44 45.1	+1.2
	baz=132					
MURC	Murrieta	48.57 320	P	P	02 44 46.4	+1.1
	baz=129					
MTPU	Mount Pierson	48.64 328	eP	P	02 44 45.6	-0.6
F35A	Swanville	48.78 348	P	P	02 44 47.8	+1.1
	baz=163					
I28A	Midland	48.80 341	P	P	02 44 47.8	+0.8
	baz=154					
HEC	Hector,Ludlow	48.81 321	P	P	02 44 48.4	+1.1
	baz=131,SNR=6.2					
J26A	Sides Ranch, S	48.84 339	P	P	02 44 47.9	+0.6
	baz=151					
F34A	Alexandria	48.87 347	P	P	02 44 48.4	+1.0
	baz=162					
CCUT	Cedar City	48.93 326	eP	P	02 44 47.1	-1.1
	10nm,1.2s					
TUQ	Turquoise Moun	48.96 322	P	P	02 44 49.3	+0.8
	baz=132,SNR=6.1					
MSU	Marysvale	48.98 328	eP	P	02 44 48.9	+0.2
F33A	5 Mile Ranch,	49.15 346	P	P	02 44 49.9	+0.4
	baz=160					
SHPR	Sheep Range	49.22 324	eP	P	02 44 52.1	+1.7
	5.9nm,1.2s					
GSC	Goldstone, Bar	49.41 322	P	P	02 44 53.0	+1.1
	baz=131					
GSC	Goldstone, Bar	49.41 322	eP	P	02 44 53.2	+1.4
	13nm,1.3s					
SHOC	Shoshone, Teco	49.48 323	P	P	02 44 53.4	+1.1
	baz=132					
H27A	Howes	49.66 341	P	P	02 44 55.1	+1.5
	baz=153					
I25A	Rochford	49.69 339	P	P	02 44 55.3	+1.4
	baz=150,SNR=6.4					
RSSD	Black Hills	49.89 339	P	P	02 44 56.2	+0.7
	baz=150					
RSSD	Black Hills	49.89 339	eP	P	02 44 54.8	-0.7
	12nm,1.4s					
EDW2	Edwards Air Fo	49.89 320	P	P	02 44 56.3	+0.8
	baz=129,SNR=5.8					
PSUT	Pine Spring	49.90 327	eP	P	02 44 55.9	+0.2
	5.5nm,1.1s					
LRMC	Laurel Mtn Rad	50.08 321	P	P	02 44 57.5	+0.5
	baz=130					
D34A	Park Rapids	50.08 348	P	P	02 44 56.9	+0.2

	baz=162					
TPNV	Topopah Spring	50.16 324	eP	P	02 44 57.0	-0.7
	7.7nm,1.3s					
H25A	Fruitdale	50.17 340	P	P	02 44 58.0	+0.6
	baz=151					
JLU	Jordanelle	50.18 330	eP	P	02 44 57.0	-0.8
	7.0nm,1.2s					
FURC	Furnace Creek,	50.21 323	P	P	02 44 58.9	+1.2
	baz=131,SNR=5.4					
C36A	Pine Crest Far	50.28 350	P	P	02 44 58.7	+0.6
	baz=165					
MPMC	Manual Prospec	50.33 322	P	P	02 44 59.3	+0.4
	baz=130,SNR=5.2					
E30A	Jud	50.42 345	P	P	02 44 59.2	0.0
	baz=157					
G26A	Maurine	50.42 341	P	P	02 44 59.3	0.0
	baz=152					
DAC	Darwin (Calif)	50.53 322	eP	P	02 45 00.0	-0.5
	4.7nm,1.1s					
TCUT	Toone Canyon	50.55 331	eP	P	02 45 00.8	+0.2
	13nm,1.0s					
ISA	Isabella, Lake	50.69 321	P	P	02 45 01.1	-0.4
	baz=129					
C33A	Trail	50.84 348	P	P	02 45 02.6	+0.3
	baz=162					
F26A	Lodgepole	50.94 341	P	P	02 45 03.2	0.0
	baz=152					
D30A	Buchanan	50.94 345	P	P	02 45 03.3	+0.2
	baz=158					
BW06	Boulder Array	50.98 334	P	P	02 45 03.3	-0.5
	baz=143					
BW06	Boulder Array	50.98 334	eP	P	02 45 02.0	-1.8
	5.2nm,1.2s					
PD31	Pinedale Array	50.98 334	eP	P	02 45 02.4	-1.4
PDAR	Pinedale Array	50.98 334	P	P	02 45 03.4	-0.4
	1.7nm,0.9s,baz=137,slow=7.3,SNR=12					
PDAR			LR	LR	03 06 53.1	
	comp=Z,225nm,19.1s,baz=142,slow=36					
HWUT	Hardware Ranch	51.00 331	eP	P	02 45 03.2	-0.7
	14nm,1.2s					
E27A	Carson	51.11 342	P	P	02 45 05.1	+0.7
	baz=154					
SPUT	South Promonto	51.21 330	eP	P	02 45 04.4	-1.0
	11nm,1.1s					
BGU	Big Grassy Mou	51.21 330	eP	P	02 45 05.4	-0.1
	8.2nm,1.2s					
B34A	Aery, Baudette	51.31 349	P	P	02 45 05.9	0.0
	baz=163					
SMMC	Simmler	51.45 320	P	P	02 45 06.5	-0.7
	baz=128					
D28A	Regan	51.51 344	P	P	02 45 08.3	+0.9
	baz=156					
B32A	Ashes, Strandq	51.61 347	P	P	02 45 09.0	+0.9
	baz=161					
HVU	Hansel Valley	51.72 330	eP	P	02 45 09.3	0.0
	7.8nm,1.1s					
E25A	Miller Ranch,	51.75 341	P	P	02 45 09.5	+0.2
	baz=152					
MDND	Maddock	51.84 345	P	P	02 45 10.5	+0.7
	baz=157					
MDND	Maddock	51.84 345	eP	P	02 45 10.0	+0.2
	34nm,1.0s					
A33A	Warroad	51.89 348	P	P	02 45 10.3	+0.2
	baz=162,SNR=7.6					
REDW	Red Top Meadow	52.03 333	eP	P	02 45 10.9	-0.7
	24nm,1.4s					
SNOW	Snow King Moun	52.06 333	eP	P	02 45 10.8	-1.1
	11nm,1.2s					
A32A	Rocking H Ranc	52.10 348	P	P	02 45 12.0	+0.3
	baz=161					
LOHW	Long Hollow	52.12 334	eP	P	02 45 11.2	-1.1
	8.9nm,1.3s					
ELK	Elko	52.23 328	eP	P	02 45 13.0	-0.1
	8.5nm,1.3s					
NV11	Mina Array Sit	52.28 324	eP	P	02 45 14.4	+1.0
	15nm,1.2s					
MOOW	Moose Ponds	52.29 334	eP	P	02 45 12.8	-0.8
	5.6nm,1.3s					
D25A	Fairfield	52.30 341	P	P	02 45 14.1	+0.8
	baz=152					
FXWY	Fox Creek	52.33 333	eP	P	02 45 14.1	+0.2
	5.6nm,1.4s					
B29A	Wagenman Farm,	52.35 345	P	P	02 45 14.0	+0.4
	baz=157					
NV01	Mina Array Sit	52.37 324	eP	P	02 45 15.5	+1.3
NVAR	Mina Array Bea	52.37 324	P	P	02 45 15.2	+1.0
	7.2nm,1.0s,baz=139,slow=7.0,SNR=35					
NVAR			LR	LR	03 07 03.7	
	comp=Z,145nm,19.4s,baz=122,slow=36					
IMW	Indian Meadow	52.49 333	eP	P	02 45 15.8	+0.7
	5.8nm,1.3s					
C26A	Wahner Farm, P	52.52 343	P	P	02 45 15.3	+0.3
	baz=154					
A30A	Hoffart Farm,	52.53 346	P	P	02 45 15.8	+0.8
	baz=159					
FLWY	Flagg Ranch	52.53 334	eP	P	02 45 11.0	-4.3
	19nm,1.4s					
B28A	Dugan Ranch, T	52.60 344	P	P	02 45 16.4	+0.9
	baz=156					
H17A	Grant Village	52.72 334	eP	P	02 45 15.1	-1.7
	6.3nm,1.3s					
A29A	Manning Farm,	52.74 345	P	P	02 45 17.5	+0.9
	baz=158					
RLMT	Red Lodge	52.75 336	P	P	02 45 16.8	-0.1
	baz=144					
RLMT	Red Lodge	52.75 336	eP	P	02 45 16.8	-0.1
	9.5nm,1.4s					
LKWY	Lake	52.78 334	eP	P	02 45 18.0	+0.8
	6.5nm,1.1s					
B26A	Jensen Ranch,	53.06 343	P	P	02 45 19.4	+0.5
	baz=154					
WAKR	Walker	53.09 323	eP	P	02 45 20.4	+0.9
YMR	Madison River	53.11 334	eP	P	02 45 17.8	-1.8
	19nm,1.5s					
ULM	Lac du Bonnet	53.23 349	P	P	02 45 20.1	0.0
	11nm,0.9s,baz=159,slow=7.9,SNR=6.3					
ULM	Lac du Bonnet	53.23 349	eP	P	02 45 19.4	-0.7
	14nm,0.7s					
QLMT	Earthquake Lak	53.44 334	eP	P	02 45 22.9	+0.9
GCMT	Greycliff	53.46 336	eP	P	02 45 23.5	+1.5
A26A	Wade Farm, Ken	53.47 343	P	P	02 45 22.9	+1.0
	baz=154					
PAHR	Pah Rah Range	53.84 324	eP	P	02 45 24.9	0.0
	12nm,0.8s					
HLID	Hailey	53.86 331	P	P	02 45 25.7	+0.6
	baz=138,SNR=6.0					
HLID	Hailey	53.86 331	eP	P	02 45 24.0	-1.1
	4.8nm,1.0s					
MCMT	McKenzie Canyo	54.07 333	eP	P	02 45 25.6	-1.1
BOZ	Bozeman (W)	54.17 334	P	P	02 45 27.4	+0.2
	baz=142,SNR=15					
BOZ	Bozeman (W)	54.17 334	eP	P	02 45 28.1	+0.8
	13nm,1.2s					
AFDM	Forest Hills D	54.30 322	eP	P	02 45 27.3	-0.9
	5.8nm,1.2s					
DLMT	Dillon	54.37 333	eP	P	02 45 28.7	0.0
	11nm,1.4s					
MFID	Camas Ranch	54.45 330	eP	P	02 45 29.6	+0.3
	24nm,1.5s					
LRM	Limekiln Ridge	54.66 334	eP	P	02 45 28.6	-2.4
ORV	Oroville	55.00 323	eP	P	02 45 34.0	+0.8
	11nm,1.0s					
WVOR	Wild Horse Val	55.23 327	eP	P	02 45 35.0	0.0
	9.4nm,1.0s					
EGMT	Eagleton	55.31 337	P	P	02 45 36.2	+0.7
	baz=145					
EGMT	Eagleton	55.31 337	eP	P	02 45 35.2	-0.2
	19nm,1.4s					
O03D	Paynes Creek	55.64 323	P	P	02 45 36.6	-1.4
	baz=129					
RKT	Rikitea	55.87 243	eLQ	LQ	02 59 47.4	
	304nm,28.2s					
RKT			eLR	LR	03 02 05.4	
	395nm,31.5s,baz=76					
RKT	Rikitea	55.87 243	eT	T	03 45 32.5	
	12nm,0.3s					
MSO	Missoula	56.10 334	P	P	02 45 41.6	+0.4
	baz=140,SNR=6.7					
MSO	Missoula	56.10 334	eP	P	02 45 42.2	+1.0
	17nm,1.6s					
BMO	Blue Mountains	56.22 330	eP	P	02 45 41.1	-1.0
	6.6nm,1.3s					
M04C	Macdoel	56.60 325	P	P	02 45 45.4	+0.5
	baz=129					
YBMT	Yellow Bay	56.92 334	eP	P	02 45 47.7	+0.7
F10A	Beach Ranch, E	56.99 331	eP	P	02 45 47.5	+0.1
	9.5nm,1.1s					
J05D	Fort Rock, OR	57.22 326	P	P	02 45 49.3	+0.1

baz=131
G08A Pilot Rock 57.36 329 *e*P **P 02 45 49.9 -0.3**
17nm,1.3s
SCHQ Schefferville 57.70 10 LR LR 03 12 05.6
comp=Z,64nm,19.6s,baz=207,slow=38
WALA Waterton Lakes 57.80 335 *e*P **P 02 45 53.6 +0.3**
5.0nm,0.8s
E09A Wood Farm, Sta 57.82 331 *e*P **P 02 45 51.4 -1.8**
16nm,1.3s
I05D Terrebonne, OR 57.97 327 P **P 02 45 53.2 -1.2**
baz=131
NEW Newport 58.60 333 P **P 02 45 59.3 +0.6**
baz=137
NEW Newport 58.60 333 *e*P **P 02 45 57.9 -0.9**
10nm,1.3s
FCC Fort Churchill 61.15 353 *e*P **P 02 46 14.6 -1.3**
15nm,1.0s
PPT Papeete 68.48 252 LR LR 03 10 54.3
comp=Z,137nm,18.1s,baz=120,slow=30
PPT2 Papeete2 68.48 252 *e*LR LR 03 07 49.7
190nm,26.5s
YKA Yellowknife Ar 68.76 344 P **P 02 47 05.2 -0.2**
1.6nm,0.9s,baz=140,slow=6.5,SNR=19
YKB5 Yellowknife Ar 68.76 344 *e*P **P 02 47 04.7 -0.7**
DLBC Dease Lake 71.15 335 LR LR 03 19 49.0
comp=Z,124nm,20.0s,baz=142,slow=37
DLBC Dease Lake 71.15 335 *e*P **P 02 47 19.1 -1.2**
8.9nm,1.0s
RES Resolute Bay 76.75 356 *e*P **P 02 47 52.2 -0.5**
5.0nm,1.2s
DBIC Dimbokro 77.06 83 P **P 02 47 56.5 +0.8**
11nm,1.2s,baz=276,slow=5.9,SNR=3.3
DBIC LR LR 03 20 49.5
comp=Z,116nm,20.6s,baz=250,slow=35
INK Inuvik 78.41 343 *e*P **P 02 48 00.1 -1.9**
9.7nm,1.3s
SUMG Summit 79.01 12 *e*P **P 02 48 06.0 +0.1**
18nm,1.5s
PAX Paxson 79.97 335 *e*P **P 02 48 10.7 -0.1**
10nm,1.2s
IL1 Eielson Array 81.28 337 *e*P **P 02 48 17.3 -0.4**
ILAR Eielson Array 81.28 337 P **P 02 48 17.9 +0.1**
1.7nm,0.9s,baz=139,slow=3.9,SNR=14
ILAR LR LR 03 26 16.4
comp=Z,97nm,18.5s,baz=126,slow=37
ILB Eielson Array 81.28 337 *e*P **P 02 48 17.8 +0.1**
ESDC Sonseca Array 81.63 50 P **P 02 48 20.5 +0.3**
0.8nm,0.9s,baz=266,slow=6.1,SNR=3.4
ESDC LR LR 03 21 47.1
comp=Z,61nm,20.3s,baz=260,slow=34
ES19 SONSECA Array 81.68 50 *e*P **P 02 48 20.6 +0.2**
BPAW Bear Paw Mtn. 82.69 336 *e*P **P 02 48 24.7 -0.5**
10nm,1.0s
CAST Castle Rocks 82.93 335 *e*P **P 02 48 24.6 -1.8**
18nm,1.4s
TOA0 Torodi Ar. Sit 83.88 77 *e*P **P 02 48 29.0 -3.3**
TORD Torodi Ar. Bea 83.88 77 P **P 02 48 32.3 0.0**
0.4nm,0.7s,baz=276,slow=6.2,SNR=7.3
TORD LR LR 03 26 15.7
comp=Z,84nm,19.3s,baz=260,slow=36
KEST Kesra 91.80 54 LR LR 03 26 58.5
comp=Z,79nm,18.8s,baz=252,slow=33
KHC Kasperske Hory 94.72 41 *e*pP pP 02 49 31.2 +4.5
DPC Dobruska-Polom 96.42 40 *e*P **P 02 49 34.7 +3.7**
DPC epP **sP 02 49 37.3 +1.7**
H11S2 WAKE ISLAND Hyl11.10 289 T T 04 54 45.9
baz=86,slow=75,SNR=4.7
H11S1 WAKE ISLAND Hyl11.11 289 T T 04 54 48.8
baz=86,slow=75,SNR=2.8
H11S3 WAKE ISLAND Hyl11.12 289 T T 04 54 49.2
baz=86,slow=75,SNR=3.6
KSRS Korea Array 135.28 326 PKP **PKPdf 02 55 23.0 +1.0**
0.6nm,0.4s,baz=10,slow=2.6,SNR=2.9
KSAR Wonju Array Be 135.31 326 PKP **PKPdf 02 55 23.0 +0.9**
ASAR Alice Springs 137.21 232 PKP **PKPdf 02 55 28.0 +1.9**
0.4nm,0.8s,baz=98,slow=1.6,SNR=3.0
H01W1 Cape Leeuwin H 140.66 201 T T 05 33 12.0
baz=150,slow=76,SNR=6.2
H01W2 Cape Leeuwin H 140.66 201 T T 05 33 17.3
baz=150,slow=76,SNR=6.7
H01W3 Cape Leeuwin H 140.67 201 T T 05 33 22.2
baz=150,slow=76,SNR=7.2
LZH Lanzhou 145.47 352 *e*PKP **PKPbc 02 55 38.6 -2.0**
LZH PKP **PKPab 02 55 41.0 +0.2**
LZH pPKP PKiKP 02 55 49.5 +4.8
LZH sPKP 02 55 53.0
LZH LR LR
comp=N,140nm,18.0s
LZH LR LR
comp=E,140nm,18.1s
LZH LR LR
comp=Z,220nm,20.0s
CD2 Chengdu 150.56 351 PKPbc **PKPdf 02 55 47.1 -2.0**

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*ISCJB **12** 02:36:48.8±1.0, 36°.26N±0°.06×31°.16E±0°.04, h11km±7km, Error ellipse: s-maj=9.5km s-min=4.9km az=8.6*
*DDA **12** 02:36:49.2, 36°.37N×31°.26E, h15km, Md3.3*
*CSEM **12** 02:36:49.3±0.3, 36°.28N×31°.17E, h10km, MD3.3, Error ellipse: s-maj=8.8km s-min=4.1km az=5.0*
*ISK **12** 02:36:50.2, 36°.32N×31°.13E, h23km, MD3.3*
ISC 12 02:36:48.1±1.3, 36°.25N±0°.05×31°.17E±0°.02, h2km±11km, n49, σ1§12/68, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ANTB	**Antalya**	**0.77**	**328**	*e*PG	**Pb**	**02 37 04.5**	**+0.3**
ANTB	**Antalya**	**0.77**	**328**	*e*Pg	**Pb**	**02 37 04.5**	**+0.3**
GAZI	**Gazipasa**	**0.93**	**91**	P	**Pg**	**02 37 06.0**	**+0.1**
GAZI				S	**Sg**	**02 37 17.8**	**-0.2**
GAZI	**Gazipasa**	**0.93**	**91**	*i* P	**Pg**	**02 37 06.0**	**+0.1**
GAZI				*i* S	**Sg**	**02 37 17.8**	**-0.2**
KORT	**Korkueli**	**1.00**	**319**	P	**Pb**	**02 37 08.1**	**-0.1**
KORT	**Korkueli**	**1.00**	**319**	*i* P	**Pb**	**02 37 08.1**	**-0.1**
KORT				*i* S	**Sn**	**02 37 28.2**	**+4.3**
ELL	**Elmali**	**1.13**	**297**	*e*PG	**Pn**	**02 37 10.9**	**-0.1**
ELL	**Elmali**	**1.13**	**297**	*e*Pg	**Pn**	**02 37 11.0**	**-0.1**
SUTC	**Sutluce-Ispart**	**1.23**	**354**	*e*PN	**Pg**	**02 37 11.6**	**-0.1**
SUTC				*e*SN	**Sg**	**02 37 27.4**	**-0.3**
SUTC	**Sutluce-Ispart**	**1.23**	**354**	*e*Pn	**Pg**	**02 37 11.6**	**-0.1**
SUTC				*e*Sn	**Sg**	**02 37 27.4**	**-0.3**
ERMK	**Ermenek**	**1.46**	**74**	P	**Pn**	**02 37 15.8**	**+0.1**
ERMK	**Ermenek**	**1.46**	**74**	*i* P	**Pn**	**02 37 15.8**	**+0.1**
ERMK				*i* S	**Sn**	**02 37 39.7**	**+4.1**
GLHS	**Glhisar (BURDU**	**1.62**	**305**	*e*PN	**Pn**	**02 37 16.8**	**-1.0**
GLHS	**Glhisar (BURDU**	**1.62**	**305**	*e*Pn	**Pn**	**02 37 16.8**	**-1.0**
GOLH	**Golhisar**	**1.62**	**308**	P	**Pg**	**02 37 19.5**	**+0.3**
GOLH				S	**Sg**	**02 37 42.2**	**+2.0**
GOLH	**Golhisar**	**1.62**	**308**	*i* P	**Pg**	**02 37 19.5**	**+0.3**
GOLH				*i* S	**Sg**	**02 37 42.2**	**+2.0**
FETY	**Fethiye**	**1.72**	**284**	*e*PN	**Pn**	**02 37 19.0**	**-0.1**
FETY	**Fethiye**	**1.72**	**284**	*e*Pn	**Pn**	**02 37 19.0**	**-0.1**
BAGO	**Egridir - ISPA**	**1.76**	**350**	*i* P	**Pn**	**02 37 20.0**	**+0.2**
BAGO				*i* S	**Sb**	**02 37 43.6**	**-0.3**
KMER	**Konya-Meram**	**1.79**	**32**	P	**Pn**	**02 37 20.2**	**0.0**
KMER				S	**Sn**	**02 37 43.5**	**-0.2**
KMER	**Konya-Meram**	**1.79**	**32**	*i* P	**Pn**	**02 37 20.2**	**0.0**
KMER				*i* S	**Sn**	**02 37 43.5**	**-0.2**
KONT	**Konya--Tatoy**	**1.94**	**29**	*e*PN	**Pn**	**02 37 22.1**	**-0.1**
KONT	**Konya--Tatoy**	**1.94**	**29**	*e*Pn	**Pn**	**02 37 22.1**	**-0.1**
IKL	**Isikli**	**2.04**	**90**	*e*PN	**Pb**	**02 37 24.7**	**-1.1**
IKL	**Isikli**	**2.04**	**90**	*e*Pn	**Pb**	**02 37 24.7**	**-1.1**
DALY	**Dalyan (Mu¨la**	**2.10**	**286**	*e*PN	**Pn**	**02 37 23.8**	**-0.5**
DALY				*e*SN	**Sn**	**02 37 49.2**	**-1.7**
DALY	**Dalyan (Mu¨la**	**2.10**	**286**	*e*Pn	**Pn**	**02 37 23.8**	**-0.5**
DALY				*e*Sn	**Sn**	**02 37 49.3**	**-1.7**
LADK	**Ladik-KONYA**	**2.17**	**26**	*e*PN	**Pn**	**02 37 25.5**	**+0.1**
LADK				*e*SN	**Sn**	**02 37 51.0**	**-1.9**
LADK	**Ladik-KONYA**	**2.17**	**26**	*e*Pn	**Pn**	**02 37 25.5**	**+0.1**
LADK				*e*Sn	**Sn**	**02 37 51.0**	**-1.9**
DNZL	**Cakiroluk**	**2.22**	**311**	P	**Pb**	**02 37 27.7**	**-1.4**
DNZL	**Cakiroluk**	**2.22**	**311**	*i* P	**Pb**	**02 37 27.7**	**-1.4**
KDHN	**Kadinhani**	**2.39**	**18**	P	**Pn**	**02 37 27.3**	**-1.1**
KDHN				S	**Sn**	**02 37 58.7**	**+0.3**
KDHN	**Kadinhani**	**2.39**	**18**	*i* P	**Pn**	**02 37 27.3**	**-1.1**
KDHN				*i* S	**Sn**	**02 37 58.6**	**+0.3**
BOLV	**Bolvadin**	**2.47**	**356**	P	**Pn**	**02 37 29.6**	**+0.1**
BOLV	**Bolvadin**	**2.47**	**356**	*i* P	**Pn**	**02 37 29.6**	**+0.1**
KERG	**Konya-Eregli**	**2.64**	**63**	P	**Pn**	**02 37 33.3**	**+1.4**
KERG				S	**Sn**	**02 38 05.7**	**+1.1**
KERG	**Konya-Eregli**	**2.64**	**63**	*i* P	**Pn**	**02 37 33.3**	**+1.4**
KERG				*i* S	**Sn**	**02 38 05.7**	**+1.1**
KIZT	**Kizilcal**	**2.69**	**12**	*e*PN	**Pn**	**02 37 32.5**	**0.0**
KIZT	**Kizilcal**	**2.69**	**12**	*e*Pn	**Pn**	**02 37 32.5**	**0.0**
KULA	**Kula-Manisa**	**3.02**	**319**	*e*PN	**Pn**	**02 37 37.2**	**+0.2**
KULA	**Kula-Manisa**	**3.02**	**319**	*e*Pn	**Pn**	**02 37 37.2**	**+0.2**
SVRH	**Sivrihisar-ESK**	**3.20**	**5**	*e*PN	**Pn**	**02 37 39.0**	**-0.5**
SVRH	**Sivrihisar-ESK**	**3.20**	**5**	*e*Pn	**Pn**	**02 37 39.1**	**-0.5**
KKUL	**Konya-Kulu**	**3.23**	**25**	P	**Pn**	**02 37 38.5**	**-1.5**
KKUL	**Konya-Kulu**	**3.23**	**25**	*i* P	**Pn**	**02 37 38.5**	**-1.5**
TVSB	**Tavsanli**	**3.47**	**338**	*e*PN	**Pn**	**02 37 43.7**	**+0.5**
TVSB	**Tavsanli**	**3.47**	**338**	*e*Pn	**Pn**	**02 37 43.7**	**+0.5**
AFSR	**Af¨ar-Bala (A**	**3.53**	**25**	*e*PN	**Pn**	**02 37 44.0**	**-0.1**
AFSR	**Af¨ar-Bala (A**	**3.53**	**25**	*e*Pn	**Pn**	**02 37 44.0**	**-0.1**

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*ISCJB **12** 02:45:34.3±0.6, 36°.61N±0°.04×27°.05E±0°.03, h118km±7km, Error ellipse: s-maj=7.0km s-min=3.4km az=150.7*
*ATH **12** 02:45:34.3, 36°.69N×26°.94E, h114km±9km, ML2.9/5, Error ellipse: s-maj=9.9km s-min=1.6km az=148.0*
*ISK **12** 02:45:35.5, 36°.54N×27°.11E, h101km, ML2.9*
*THE **12** 02:45:35.9, 36°.61N×27°.03E, h138km±10km, ML3.1/5, Error ellipse: s-maj=10.3km s-min=1.3km az=134.0*
*CSEM **12** 02:45:35.1±0.3, 36°.60N×27°.07E, h114km±3km, ML2.9, Error ellipse: s-maj=5.0km s-min=2.5km az=154.0*
*DDA **12** 02:46:31.7, 36°.51N×27°.23E, h42km, Md3.0*
ISC 12 02:45:34.0±1.4, 36°.62N±0°.03×27°.06E±0°.03, h125km±9km, n73, σ1§17/115, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BODT	**Bodrum**	**0.48**	**24**	*e*PG	**Pn**	**02 45 52.8**	**+0.4**
BODT	**Bodrum**	**0.48**	**24**	*e*Pg	**Pn**	**02 45 52.8**	**+0.4**
BDRM	**Kayabasi**	**0.54**	**35**	P	**Pn**	**02 45 53.2**	**+0.4**
BDRM				S	**Sn**	**02 46 06.1**	**-0.8**
BDRM	**Kayabasi**	**0.54**	**35**	*i* P	**Pn**	**02 45 53.2**	**+0.4**
BDRM				*i* S	**Sn**	**02 46 06.1**	**-0.8**
ARG	**Arkhangelos**	**0.95**	**115**	P	**Pn**	**02 45 57.3**	**+1.3**
ARG				S	**Sn**	**02 46 12.8**	**+0.3**
ARG	**Arkhangelos**	**0.95**	**115**	P	**Pn**	**02 45 57.3**	**+1.3**
ARG				S	**Sn**	**02 46 12.8**	**+0.3**
KARP	**Karpathos**	**1.08**	**176**	*e*PG	**Pn**	**02 45 57.5**	**+0.2**
KARP				*e*SG	**Sn**	**02 46 11.2**	**-3.6**
KARP	**Karpathos**	**1.08**	**176**	P	**Pn**	**02 45 58.0**	**+0.7**
KARP				S	**Sn**	**02 46 14.2**	**-0.6**
KARP	**Karpathos**	**1.08**	**176**	*e*Pg	**Pn**	**02 45 57.5**	**+0.2**
KARP	**Karpathos**	**1.08**	**176**	P	**Pn**	**02 45 57.9**	**+0.7**
KARP				S	**Sn**	**02 46 14.2**	**-0.6**
KARP	**Karpathos**	**1.08**	**176**	P	**Pn**	**02 45 57.9**	**+0.6**
KARP				S	**Sn**	**02 46 14.7**	**-0.1**
KARP				AML	AML	02 46 19.1	
	comp=E,1226μm,0.1s						
KARP				AML	AML	02 46 19.4	
	comp=N,1676μm,0.2s						
YER	**Yerkesik**	**1.10**	**62**	*e*PN	**Pn**	**02 45 58.2**	**+0.7**
YER				*e*SN	**Sn**	**02 46 14.9**	**-0.5**
YER	**Yerkesik**	**1.10**	**62**	P	**Pn**	**02 45 58.8**	**+1.3**
YER				S	**Sn**	**02 46 14.2**	**-1.2**
YER	**Yerkesik**	**1.10**	**62**	*e*Pn	**Pn**	**02 45 58.2**	**+0.7**
YER	**Yerkesik**	**1.10**	**62**	P	**Pn**	**02 45 58.8**	**+1.3**
YER				S	**Sn**	**02 46 14.2**	**-1.2**
AYDN	**Tasoluk**	**1.23**	**32**	P	**Pn**	**02 45 58.4**	**-0.4**
AYDN				S	**Sn**	**02 46 17.8**	**+0.2**
AYDN	**Tasoluk**	**1.23**	**32**	*i* P	**Pn**	**02 45 58.4**	**-0.4**
AYDN				*i* S	**Sn**	**02 46 17.8**	**+0.2**
TURN	**Turunc**	**1.26**	**78**	*i* P	**Pn**	**02 45 56.9**	**-2.1**
TURN				*i* S	**Sn**	**02 46 13.2**	**-4.9**
DALY	**Dalyan (Mu¨la**	**1.29**	**81**	*e*PN	**Pn**	**02 45 59.8**	**+0.4**
DALY	**Dalyan (Mu¨la**	**1.29**	**81**	*e*Pn	**Pn**	**02 45 59.8**	**+0.4**
APE	**Apeiranthos**	**1.31**	**290**	*e*PN	**Pn**	**02 46 00.9**	**+1.3**
APE	**Apeiranthos**	**1.31**	**290**	*e*Pn	**Pn**	**02 46 00.9**	**+1.3**
THR2	**Thira island,**	**1.32**	**263**	P	**Pn**	**02 46 00.7**	**+0.9**
THR2	**Thira island,**	**1.32**	**263**	P	**Pn**	**02 46 00.7**	**+0.9**
THR3	**Thira Island,**	**1.36**	**261**	P	**Pn**	**02 46 01.2**	**+1.1**
THR3	**Thira Island,**	**1.36**	**261**	P	**Pn**	**02 46 01.2**	**+1.1**
THR6	**Thira Island,**	**1.37**	**259**	P	**Pn**	**02 46 01.2**	**+0.9**
THR6	**Thira Island,**	**1.37**	**259**	P	**Pn**	**02 46 01.2**	**+0.9**
THR5	**Thira Island,**	**1.40**	**262**	*e*PN	**Pn**	**02 46 02.1**	**+1.5**
THR5	**Thira Island,**	**1.40**	**262**	*e*Pn	**Pn**	**02 46 02.1**	**+1.5**
AYDB	**Zeytinkoy-Aydi**	**1.48**	**26**	*e*PN	**Pn**	**02 46 02.9**	**+1.3**
AYDB				*e*SN	**Sn**	**02 46 22.9**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**1.48**	**26**	*e*Pn	**Pn**	**02 46 02.9**	**+1.3**
AYDB				*e*Sn	**Sn**	**02 46 22.9**	**+0.2**
FETY	**Fethiye**	**1.62**	**89**	*e*PN	**Pn**	**02 46 04.4**	**+1.2**
FETY	**Fethiye**	**1.62**	**89**	P	**Pn**	**02 46 04.2**	**+1.0**
FETY				S	**Sn**	**02 46 25.6**	**+0.1**
FETY	**Fethiye**	**1.62**	**89**	P	**Pn**	**02 46 04.2**	**+1.0**
FETY	**Fethiye**	**1.62**	**89**	*e*Pn	**Pn**	**02 46 04.4**	**+1.2**
FETY				S	**Sn**	**02 46 25.6**	**+0.1**
ZKR	**Zakros**	**1.65**	**205**	P	**Pn**	**02 46 04.5**	**+0.9**
ZKR				S	**Sn**	**02 46 26.6**	**+0.5**
ZKR	**Zakros**	**1.65**	**205**	P	**Pn**	**02 46 04.5**	**+0.9**
ZKR				S	**Sn**	**02 46 26.6**	**+0.5**
ZKR	**Zakros**	**1.65**	**205**	P	**Pn**	**02 46 05.7**	**+2.1**
ZKR				AML	AML	02 46 28.6	
	comp=E,901μm,0.5s						
ZKR				S	**Sn**	**02 46 28.6**	**+2.5**
ZKR				AML	AML	02 46 30.6	
	comp=N,535μm,0.4s						
NPS	**Neapolis**	**1.80**	**221**	P	**Pn**	**02 46 05.5**	**+0.2**
NPS				S	**Sn**	**02 46 28.1**	**-1.0**
NPS	**Neapolis**	**1.80**	**221**	P	**Pn**	**02 46 05.5**	**+0.2**
NPS				S	**Sn**	**02 46 29.0**	**-0.1**
NPS	**Neapolis**	**1.80**	**221**	P	**Pn**	**02 46 05.3**	**0.0**
NPS				S	**Sn**	**02 46 29.0**	**-0.1**
NPS				AML	AML	02 46 30.1	
	comp=E,548μm,0.2s						
NPS				AML	AML	02 46 30.1	
	comp=N,427μm,0.3s						
DNZL	**Cakiroluk**	**1.91**	**55**	P	**Pn**	**02 46 07.4**	**+0.6**
DNZL				S	**Sn**	**02 46 30.8**	**-1.0**
DNZL	**Cakiroluk**	**1.91**	**55**	*i* P	**Pn**	**02 46 07.4**	**+0.6**
DNZL				*i* S	**Sn**	**02 46 30.8**	**-1.0**
LAST	**Lasithi**	**1.94**	**222**	P	**Pn**	**02 46 07.2**	**+0.1**
LAST				S	**Sn**	**02 46 31.2**	**-1.2**
LAST	**Lasithi**	**1.94**	**222**	P	**Pn**	**02 46 07.2**	**+0.1**
LAST				S	**Sn**	**02 46 31.9**	**-0.5**
LAST	**Lasithi**	**1.94**	**222**	P	**Pn**	**02 46 06.9**	**-0.2**
GLHS	**Glhisar (BURDU**	**2.02**	**74**	*e*PN	**Pn**	**02 46 08.5**	**+0.4**
GLHS	**Glhisar (BURDU**	**2.02**	**74**	*e*Pn	**Pn**	**02 46 08.5**	**+0.4**
AKAS	**Kas**	**2.09**	**100**	P	**Pn**	**02 46 08.7**	**-0.2**
AKAS				S	**Sn**	**02 46 34.7**	**-0.9**
AKAS	**Kas**	**2.09**	**100**	*i* P	**Pn**	**02 46 08.7**	**-0.2**
AKAS				*i* S	**Sn**	**02 46 34.7**	**-0.9**
GOLH	**Golhisar**	**2.09**	**72**	P	**Pn**	**02 46 10.1**	**+1.1**
GOLH				S	**Sn**	**02 46 34.7**	**-1.0**
GOLH	**Golhisar**	**2.09**	**72**	*i* P	**Pn**	**02 46 10.1**	**+1.1**
GOLH				*i* S	**Sn**	**02 46 34.7**	**-1.0**
IDI	**Anoyia**	**2.21**	**234**	P	**Pn**	**02 46 10.3**	**-0.1**
IDI				S	**Sn**	**02 46 36.7**	**-1.5**
IDI	**Anoyia**	**2.21**	**234**	P	**Pn**	**02 46 10.3**	**-0.1**
IDI				S	**Sn**	**02 46 36.8**	**-1.5**
IDI	**Anoyia**	**2.21**	**234**	P	**Pn**	**02 46 09.8**	**-0.6**
IDI				S	**Sn**	**02 46 36.8**	**-1.5**
IDI				AML	AML	02 46 37.3	
	comp=N,132μm,0.2s						
IDI				AML	AML	02 46 40.6	
	comp=E,118μm,0.4s						
ELL	**Elmali**	**2.29**	**86**	*e*PN	**Pn**	**02 46 12.8**	**+1.3**
ELL	**Elmali**	**2.29**	**86**	*e*Pn	**Pn**	**02 46 12.8**	**+1.3**
SIVA	**Sivas**	**2.43**	**229**	P	**Pn**	**02 46 14.3**	**+1.2**
SIVA				S	**Sn**	**02 46 43.9**	**+0.8**
SIVA	**Sivas**	**2.43**	**229**	P	**Pn**	**02 46 14.3**	**+1.2**
SIVA				S	**Sn**	**02 46 43.9**	**+0.8**
SIVA				AML	AML	02 46 48.1	
	comp=N,313μm,0.6s						
SIVA				AML	AML	02 46 49.0	
	comp=E,291μm,0.3s						
VAM	**Vamos**	**2.62**	**243**	P	**Pn**	**02 46 15.0**	**-0.5**
VAM	**Vamos**	**2.62**	**243**	P	**Pn**	**02 46 15.7**	**+0.2**
VAM				S	**Sn**	**02 46 45.7**	**-1.7**
KORT	**Korkueli**	**2.67**	**81**	P	**Pn**	**02 46 17.0**	**+0.8**
KORT	**Korkueli**	**2.67**	**81**	*i* P	**Pn**	**02 46 17.0**	**+0.8**
IMMV	**Iera Moni Meta**	**2.75**	**246**	P	**Pn**	**02 46 16.5**	**-0.8**
IMMV	**Iera Moni Meta**	**2.75**	**246**	P	**Pn**	**02 46 17.5**	**+0.2**
IMMV	**Iera Moni Meta**	**2.75**	**246**	P	**Pn**	**02 46 17.5**	**+0.2**
ANKY	**Antikythira Is**	**3.13**	**257**	P	**Pn**	**02 46 22.5**	**+0.3**
ANKY				S	**Sn**	**02 46 57.6**	**-1.7**
ANKY	**Antikythira Is**	**3.13**	**257**	P	**Pn**	**02 46 22.5**	**+0.3**
ANKY				S	**Sn**	**02 46 57.6**	**-1.7**
VLI	**Veliai**	**3.32**	**273**	P	**Pn**	**02 46 25.4**	**+0.8**
VLI				S	**Sn**	**02 47 01.4**	**-2.3**
VLI	**Veliai**	**3.32**	**273**	P	**Pn**	**02 46 25.4**	**+0.8**
VLI				S	**Sn**	**02 47 01.4**	**-2.3**
ITM	**Ithomi**	**4.16**	**279**	P	**Pn**	**02 46 37.8**	**+2.1**
ITM	**Ithomi**	**4.16**	**279**	P	**Pn**	**02 46 37.8**	**+2.1**

IDC 12 02:50:34.7±3.0, 56°.20S×24°.29W, h0km, mb4.1/4, mb1 4.2/4, mb1mx3.7/23, mbtmp4.1/4, Error ellipse: s-maj=99.9km s-min=35.9km az=176.0, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CPUP	**Villa Florida**	**38.16**	**308**	P	P	02 57 54.9	-0.6
	1.6nm,0.9s,baz=151,slow=8.4,SNR=3.8						
LVC	**Limon Verde**	**46.79**	**297**	P	P	02 59 06.7	+0.4
	4.6nm,0.4s,baz=135,slow=4.3,SNR=3.9						
LPAZ	**La Paz**	**51.81**	**302**	P	P	02 59 44.6	-0.3
	1.9nm,0.7s,baz=164,slow=4.9,SNR=7.1						
TORD	**Torodi Ar. Bea**	**72.42**	**27**	P	P	03 02 02.7	+0.1
	0.4nm,0.5s,baz=200,slow=6.4,SNR=11						
INK	**Inuvik**	**146.95**	**320**	PKPbc	PKPbc	03 10 17.3	-0.1
	3.2nm,1.3s,baz=116,slow=3.1,SNR=3.7						
ILAR	**Eielson Array**	**151.43**	**311**	PKPbc	PKPbc	03 10 28.1	-0.8
	0.3nm,0.6s,baz=90,slow=1.8,SNR=6.1						

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*SOME **12** 02:52:25.9, 45°.50N×82°.28E, h0km*
*NNC **12** 02:52:26.3±1.0, 45°.60N×82°.64E, h0km, mb2.5, mpv2.6, Error ellipse: s-maj=9.3km s-min=4.4km az=101.0*
ISC 12 02:52:26.5±1.3, 45°.45N±0°.05×82°.25E±0°.06, h14km±13km, n16, σ1§79/32, 4C-2D, Kazakhstan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MK31	**Makanchi Array**	**1.35**	**1**	⇑P	**Pn**	**02 52 49.1**	**-1.8**
	2.3nm,0.3s,baz=168,slow=16,SNR=135						
MK31				⇓S	**Sb**	**02 53 06.6**	**-2.0**
	3.7nm,0.2s,baz=170,slow=25,SNR=17						
MAKZ	**Makanchi**	**1.37**	**352**	⇑P	**Pn**	**02 52 50.1**	**-1.1**
	2.4nm,0.3s						
MAKZ				⇑S	**Sn**	**02 53 08.4**	**-0.9**
	4.2nm,0.3s						
KAPS	**Kapalarasan**	**2.05**	**266**	*e*P	**Pg**	**02 53 04.8**	**-1.0**
	4.0nm,0.2s						
KAPS				*e*S	**Sg**	**02 53 33.6**	**+1.2**
	15nm,0.3s						
DJR	**Jarkent**	**2.08**	**238**	*e*P	**Pb**	**02 53 04.7**	**+0.7**
	5.3nm,0.1s						
DJR				*e*S	**Sg**	**02 53 33.1**	**-0.1**
	21nm,0.2s						
KTMS	**Ketmen**	**2.42**	**215**	*e*P	**Pb**	**02 53 11.5**	**+1.6**
	1.9nm,0.2s						
KTMS				*e*S	**Sg**	**02 53 44.0**	**-0.3**
	17nm,0.1s						
ZSN	**Zaisan**	**2.49**	**36**	*e*P	**Pg**	**02 53 14.4**	**+0.1**
	5.8nm,0.2s						
ZSN				*e*S	**Sg**	**02 53 49.4**	**+2.8**
	23nm,0.7s						
SHLS	**Shalkode**	**2.85**	**217**	*e*P	**Pb**	**02 53 18.4**	**+1.0**
	2.4nm,0.2s						
SHLS				*e*S	**Sg**	**02 53 56.6**	**-1.6**
	16nm,0.3s						
PDGK	**Podgornoye**	**2.90**	**224**	⇑Pn	**Pb**	**02 53 17.8**	**-0.2**
	0.9nm,0.5s						
PDGK				⇓Sn	**Sg**	**02 53 58.6**	**-1.2**
	5.7nm,0.4s						
MNBS	**Baschi**	**3.06**	**245**	*e*P	**Pg**	**02 53 24.4**	**-0.8**
	1.0nm,0.5s						
MNBS				*e*S	**Sg**	**02 54 06.5**	**+1.6**
	23nm,0.5s						
KPKS	**Kokpek**	**3.23**	**233**	*e*P	**Pg**	**02 53 26.8**	**-1.7**
	4.9nm,0.2s						
KPKS				*e*S	**Sg**	**02 54 10.7**	**+0.3**
	34nm,0.3s						
ARXS	**Arharly**	**3.38**	**250**	*e*P	**Pg**	**02 53 30.9**	**-0.4**
	2.7nm,0.3s						
ARXS				*e*S	**Sg**	**02 54 16.9**	**+1.8**
	9.5nm,0.3s						
KURS	**Kuram**	**3.52**	**238**	*e*P	**Pg**	**02 53 33.0**	**-0.9**
	3.0nm,0.4s						
KURS				*e*S	**Sg**	**02 54 21.1**	**+1.6**
	2.8nm,0.2s						
SATY	**Saty**	**3.65**	**231**	*e*P	**Pb**	**02 53 33.6**	**+2.7**
	3.6nm,0.5s						
SATY				*e*S	**Sg**	**02 54 22.5**	**-1.3**
	13nm,0.1s						
CHKK	**Chushkaly**	**4.07**	**249**	*e*P	**Pg**	**02 53 42.4**	**-2.0**
	1.7nm,0.3s						
CHKK				*e*S	**Sg**	**02 54 36.9**	**-0.1**
	14nm,0.2s						
MDOK	**Medeo**	**4.38**	**240**	*e*P	**Pb**	**02 53 44.8**	**+1.5**
MDOK				*e*S	**Sb**	**02 54 41.2**	**+5.2**
DGS	**Degeres**	**5.14**	**247**	*e*P	**Pg**	**02 54 02.5**	**-2.5**
	0.6nm,0.1s						
DGS				*e*S	**Sg**	**02 55 12.4**	**+0.8**
	5.0nm,0.4s						

**IDC 12 02:56:49.2±3.9, 7°.01S×148°.66E, h0km, mb3.0/1, mb1 3.5/2, mb1mx3.2/

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BRRC	**Barranca, Sant**	**0.26**	**328**	⇓*i*P	**Pg**	**03 27 56.7**	**+0.8**
BRRC				*i*		03 28 01.0	
	comp=Z,7μm,0.2s						
BRRC				*e*S	**Sb**	**03 28 01.5**	**+0.1**
BTLC	**Betulia, Santa**	**0.30**	**83**	*i* P	**Pb**	**03 27 58.0**	**+0.2**
BARC	**Barichara**	**0.48**	**127**	*i* P	**Pb**	**03 28 00.7**	**-0.1**
BARC				*e*S	**Sb**	**03 28 07.6**	**-0.3**
BARC				*i*		03 28 09.1	
	comp=Z,4μm,0.2s						
PAMC	**Pamplona, Colo**	**0.98**	**62**	*i* P	**Pg**	**03 28 08.8**	**-0.5**
PAMC				*e*S	**Sb**	**03 28 21.9**	**-0.6**
RUSC	**La Rusia**	**1.10**	**154**	⇓*i*P	**Pb**	**03 28 11.0**	**-0.4**
RUSC				*e*S	**Sg**	**03 28 25.6**	**-0.3**
RUSC				*i*		03 28 30.3	
	comp=Z,811nm,0.3s						
GRMC	**Gramalote, San**	**1.13**	**43**	*i* P	**Pn**	**03 28 13.2**	**+1.3**
GRMC				*e*S	**Sn**	**03 28 30.0**	**+2.6**
CBRI	**Barrientos, No**	**1.13**	**43**	*i* P	**Pb**	**03 28 11.4**	**-0.5**
CBRI				*e*S	**Sb**	**03 28 26.1**	**-0.4**
CBRI				*i*		03 28 29.6	
	comp=Z,2μm,0.2s						
GUEC	**Guerrero, Nort**	**1.14**	**34**	*e*P	**Pb**	**03 28 11.5**	**-0.6**
OCAC	**Ocana**	**1.37**	**11**	*e*P	**Pn**	**03 28 15.2**	**-0.2**
OCAC				*e*S	**Sb**	**03 28 33.1**	**-0.4**
NORC	**Norcasia**	**1.84**	**225**	*e*P	**Pn**	**03 28 21.8**	**+0.1**
HELC	**Santa Helena**	**2.06**	**251**	*e*P	**Pn**	**03 28 24.8**	**-0.2**
HELC				*i*		03 28 58.0	
	comp=Z,217nm,0.3s						
ROSC	**El Rosal**	**2.16**	**200**	P	**Pn**	**03 28 28.2**	**+1.8**
	comp=Z,22nm,0.3s,baz=299,slow=12,SNR=54						
ROSC	**El Rosal**	**2.16**	**200**	*e*P	**Pn**	**03 28 27.8**	**+1.4**
ROSC				*i*		03 29 13.4	
	comp=Z,371nm,0.4s						
MOTC	**Monteria, Cord**	**2.80**	**312**	⇓*i*P	**Pn**	**03 28 35.6**	**+0.7**
MOTC				*e*S	**Sn**	**03 29 09.8**	**+1.2**
MOTC				*i*		03 29 24.2	
	comp=Z,112nm,0.5s						
SDV	**Santo Domingo**	**3.53**	**55**	P	**Pn**	**03 28 45.7**	**+0.6**
	comp=Z,8.7nm,0.3s,baz=212,slow=9.5,SNR=5.7						
SDV				Pg	**Pg**	**03 28 58.1**	**+0.1**
	comp=Z,21nm,0.3s,baz=234,slow=14,SNR=19						
SDV				Lg	Lg	03 29 39.0	
	comp=Z,31nm,0.3s,baz=318,slow=11,SNR=5.6						
SDV	**Santo Domingo**	**3.53**	**55**	*e*Pn	**Pn**	**03 28 46.4**	**+1.4**
SDV				*e*Pg	**Pg**	**03 28 57.5**	**-0.5**
SDV				*e*S	**Sb**	**03 29 38.5**	**+2.9**
BCIP	**Isla Barro Col**	**6.61**	**291**	*e*Pn	**Pn**	**03 29 30.0**	**+2.8**
MTDJ	**Mount Denham**	**11.92**	**341**	*e*Pn	**Pn**	**03 30 39.2**	**-1.0**
MTDJ				*e*S	Sn	03 32 42.8	-10
SAML	**Samuel**	**18.83**	**146**	*e*P	**P**	**03 32 09.5**	**-0.5**
	comp=Z,1.9nm,0.5s						
NNA	**Nana**	**19.02**	**190**	LR	LR	03 41 26.3	
	comp=Z,36nm,20.3s,baz=37,slow=43						
TXAR	**Lajitas Array**	**36.09**	**312**	P	**P**	**03 34 52.6**	**+0.5**
	comp=Z,0.1nm,0.5s,baz=110,slow=8.0,SNR=2.5						
YKA	**Yellowknife Ar**	**63.05**	**340**	P	**P**	**03 38 14.1**	**-2.9**
	comp=Z,0.4nm,0.5s,baz=133,slow=6.5,SNR=16						
YKA				pP	**sP**	**03 38 22.8**	**0.0**
	comp=Z,0.5nm,0.7s,baz=133,slow=6.6,SNR=8.4						
TORD	**Torodi Ar. Bea**	**74.17**	**78**	P	P	03 39 21.7	-5.7
	comp=Z,0.2nm,0.5s,baz=291,slow=6.4,SNR=6.3						
WRA	**Warramunga Arr**	**149.97**	**242**	PKPbc	**PKPdf**	**03 47 37.8**	**+1.2**
	comp=Z,0.8nm,0.9s,baz=106,slow=2.7,SNR=6.1						

IDC 12 03:31:05.8±6.6, 7°.09S×148°.13E, h94km±54km, mb3.0/1, mb1 3.4/3, mb1mx3.1/22, mbtmp3.6/3, ML3.5/1, MS2.2/1, Ms1 2.2/1, ms1mx2.2/6, Error ellipse: s-maj=128.1km s-min=64.8km az=123.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.49**	**203**	P	Pn	03 31 44.7	0.0
	8.9nm,0.3s,baz=15,slow=7.6,SNR=27						
PMG				LR	LR	03 32 15.7	
	comp=Z,52nm,21.3s,baz=338,slow=28						
PMG				S	Sn	03 32 18.0	+3.5
	5.6nm,0.3s,baz=40,slow=8.5,SNR=2.1						
WRA	**Warramunga Arr**	**18.50**	**225**	P	P	03 35 15.1	+0.3
	0.1nm,0.3s,baz=51,slow=11,SNR=5.2						
ASAR	**Alice Springs**	**21.41**	**218**	P	P	03 35 46.4	0.0
	1.3nm,0.5s,baz=52,slow=9.2,SNR=9.2						
TORD	**Torodi Ar. Bea**	**146.44**	**283**	PKPbc	PKPdf	03 50 36.3	+0.6
	0.3nm,0.5s,baz=78,slow=4.1,SNR=12						

*JMA **12** 03:36:23.6±0.1, 22°.66N×121°.77E, h41km, M3.5*
*TAP **12** 03:36:24.4, 22°.67N×121°.78E, h34km, ML3.6, C*
ISC 12 03:36:23.6±1.2, 22°.67N±0°.02×121°.79E±0°.03, h24km±13km, n57, σ0°89/106, 2C, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHKT	**Chengkung**	**0.58**	**318**	⇑*i*P	**Pb**	**03 36 35.1**	**0.0**
	baz=324						
CHKT				S	**Sb**	**03 36 42.8**	**-0.2**
	baz=324						
TTN	**Taitung**	**0.60**	**278**	*e*P	**Pb**	**03 36 35.5**	**0.0**
	baz=278						
TTN				*e*S	**Sb**	**03 36 44.0**	**+0.5**
	baz=278						
LAY	**Lan-yu**	**0.66**	**199**	P	**Pb**	**03 36 36.1**	**-0.4**
	baz=198						
LAY				*e*S	**Sb**	**03 36 44.7**	**-0.7**
	baz=198						
TWG	**Pinlang**	**0.68**	**283**	P	**Pb**	**03 36 36.6**	**-0.2**
	baz=288						
TWG				S	**Sb**	**03 36 46.3**	**+0.5**
	baz=288						
ECL	**Taimali**	**0.77**	**265**	*e*P	**Pb**	**03 36 37.8**	**-0.7**
	baz=265						
ECL				*e*S	**Sb**	**03 36 47.4**	**-1.1**
	baz=265						
TWF1	**Yuli**	**0.82**	**326**	P	**Pb**	**03 36 39.0**	**-0.2**
	baz=328						
TWF1				S	**Sb**	**03 36 49.9**	**+0.1**
	baz=328						
ELDTW	**Lidau**	**0.88**	**306**	⇑*i*P	**Pb**	**03 36 39.8**	**-0.5**
	baz=307						
ELDTW				*e*S	**Sb**	**03 36 50.6**	**-1.1**
	baz=307						
TAW	**Tawu**	**0.88**	**250**	*e*P	**Pb**	**03 36 39.9**	**-0.3**
	baz=260						
TAW				*e*S	**Sb**	**03 36 50.3**	**-1.3**
	baz=260						
EAST	**Anshuo**	**0.92**	**252**	P	**Pb**	**03 36 40.4**	**-0.4**
	baz=261						
EAST				*e*S	**Sb**	**03 36 51.5**	**-1.1**
	baz=261						
SSD	**Sandimen**	**1.07**	**274**	*e*P	**Pn**	**03 36 42.3**	**-0.9**
	baz=275						
STYT	**Tauyuan**	**1.07**	**298**	*e*P	**Pb**	**03 36 43.5**	**-0.1**
	baz=298						
STYT				*e*S	**Sb**	**03 36 56.3**	**-0.9**
	baz=298						
SCZT	**Fangliau**	**1.12**	**255**	*e*P	**Pb**	**03 36 44.0**	**-0.3**
	baz=255						
TSEB	**Hengchuen, Pin**	**1.12**	**227**	*e*P	**Pb**	**03 36 45.1**	**+0.7**
	baz=228						
TSEB				*e*S	**Sb**	**03 37 00.3**	**+1.8**
	baz=228						
YUS	**Yu-Shan**	**1.12**	**317**	*e*P	**Pn**	**03 36 43.8**	**-0.6**
	baz=318						
YUS				*e*S	**Sb**	**03 36 56.6**	**-2.4**
	baz=318						
TWK1	**Hengchun**	**1.16**	**232**	*e*P	**Pn**	**03 36 44.4**	**0.0**
	baz=231						
TWK1				*e*S	**Sn**	**03 36 58.8**	**-0.7**
	baz=231						
HEN	**Hengchun**	**1.18**	**236**	*e*P	**Pb**	**03 36 45.1**	**-0.1**
	baz=229						
HEN				*e*S	**Sn**	**03 36 59.6**	**-0.3**
	baz=229						
ESL	**Shilin**	**1.19**	**344**	*e*P	**Pn**	**03 36 43.6**	**-1.1**
	baz=351						
ESL				*e*S	**Sn**	**03 36 58.8**	**-1.4**
	baz=351						
SGST	**Jiashian**	**1.19**	**291**	P	**Pb**	**03 36 45.9**	**+0.5**
	baz=291						
SGST				*e*S	**Sb**	**03 37 02.0**	**+1.6**
	baz=291						
WTP	**Ta-pu**	**1.23**	**298**	P	**Pb**	**03 36 46.4**	**+0.3**
	baz=306						
WTP				*e*S	**Sb**	**03 37 03.1**	**+1.6**
	baz=306						
ALS	**Alishan**	**1.23**	**313**	*e*P	**Pb**	**03 36 46.4**	**0.0**
	baz=319						
ALS				*e*S	**Sb**	**03 37 03.0**	**+1.0**
	baz=319						
WDT	**Danda**	**1.24**	**331**	P	**Pn**	**03 36 45.9**	**+0.1**
	baz=332						
WDT				*e*S	**Sn**	**03 37 00.9**	**-1.0**
	baz=332						
TWM1	**Shoushan**	**1.27**	**277**	*e*P	**Pb**	**03 36 48.2**	**+1.3**
	baz=275						
CHN1	**Nanshi**	**1.27**	**294**	*e*P	**Pb**	**03 36 47.1**	**+0.2**
	baz=301						
CHN1				*e*S	**Sb**	**03 37 04.2**	**+1.4**
	baz=301						
CHN4	**Tsaushan**	**1.29**	**302**	*e*P	**Pb**	**03 36 47.7**	**+0.4**
	baz=310						
CHN4				*e*S	**Sb**	**03 37 04.9**	**+1.4**
	baz=310						
TWK	**Hsinying**	**1.34**	**297**	*e*P	**Pb**	**03 36 47.6**	**-0.4**
	baz=297						
TWK				*e*S	**Sb**	**03 37 05.7**	**+0.9**
	baz=297						
TWP	**Hsiaoliuchiu**	**1.36**	**257**	*e*P	**Pb**	**03 36 49.0**	**+0.6**
	baz=257						
CHN5	**Tsauling**	**1.38**	**312**	*e*P	**Pb**	**03 36 49.3**	**+0.6**
	baz=321						
CHN5				*e*S	**Sb**	**03 37 07.2**	**+1.3**
	baz=321						
TWD	**Chiawan**	**1.42**	**353**	*e*P	**Pn**	**03 36 47.6**	**-0.3**
	baz=2.0						
TWD				*e*S	**Sn**	**03 37 05.4**	**-0.4**
	baz=2.0						
SMLT	**Sun Moon Lake**	**1.46**	**326**	*e*P	**Pb**	**03 36 49.7**	**-0.4**
	baz=332						
SMLT				*e*S	**Sb**	**03 37 08.2**	**-0.1**
	baz=332						
TYC	**Yuchr**	**1.50**	**325**	*e*P	**Pb**	**03 36 50.6**	**-0.2**
	baz=332						
TYC				*e*S	**Sb**	**03 37 09.1**	**-0.3**
	baz=332						
CHY	**Chiayi**	**1.50**	**304**	*e*P	**Pb**	**03 36 50.9**	**0.0**
	baz=304						
CHY				*e*S	**Sb**	**03 37 10.6**	**+1.1**
	baz=304						
WGK	**Gukeng**	**1.52**	**312**	*e*P	**Pn**	**03 36 49.9**	**+0.6**
	baz=313						
WGK				*e*S	**Sb**	**03 37 11.4**	**+1.5**
	baz=313						
WHF	**Hehuan Shan**	**1.55**	**342**	*e*P	**Pn**	**03 36 50.2**	**+0.1**
	baz=343						
WHF				*e*S	**Sn**	**03 37 08.5**	**-1.1**
	baz=343						
WNT	**Mingjian**	**1.57**	**320**	*e*P	**Pb**	**03 36 53.0**	**+1.0**
	baz=321						
WNT				*e*S	**Sb**	**03 37 13.2**	**+1.6**
	baz=321						
TWT	**Tachien**	**1.68**	**340**	*e*P	**Pb**	**03 36 52.7**	**-1.2**
	baz=349						
TWT				*e*S	**Sn**	**03 37 11.8**	**-0.7**
	baz=349						
ENA	**Nanau**	**1.75**	**359**	*e*P	**Pn**	**03 36 52.8**	**+0.2**
	baz=8.0						
ENA				*e*S	**Sn**	**03 37 13.7**	**-0.4**
	baz=8.0						
TCU	**Taichung**	**1.79**	**325**	*e*P	**Pb**	**03 36 56.2**	**+0.4**
	baz=326						
TCU				*e*S	**Sb**	**03 37 17.6**	**-0.2**
	baz=326						
NNS	**Nan Shan**	**1.80**	**348**	*e*P	**Pn**	**03 36 54.4**	**+1.0**
	baz=348						
NNS				*e*S	**Sn**	**03 37 15.2**	**-0.4**
	baz=348						
TWQ1	**Liyutan**	**1.91**	**331**	*e*P	**Pb**	**03 36 57.0**	**-0.8**
	baz=332						
TWQ1				*e*S	**Sb**	**03 37 21.1**	**-0.3**
	baz=332						
TWC	**Suao**	**1.93**	**2**	*e*P	**Pn**	**03 36 55.2**	**+0.2**
	baz=10.0						
TWC				*e*S	**Sn**	**03 37 19.5**	**+0.9**
	baz=10.0						
ENTT	**Nioudou**	**1.97**	**354**	*e*P	**Pn**	**03 36 55.1**	**-0.5**
	baz=5.0						
ENTT				*e*S	**Sn**	**03 37 19.0**	**-0.6**
	baz=5.0						
NSY	**Sanyi**	**1.98**	**332**	*e*P	**Pb**	**03 36 58.2**	**-0.8**
	baz=332						
NSY				*e*S	**Sb**	**03 37 22.8**	**-0.4**
	baz=332						
NSK	**Sanguang**	**2.04**	**349**	*e*P	**Pn**	**03 36 57.3**	**+0.8**
	baz=1.0						
NSK				*e*S	**Sn**	**03 37 21.0**	**-0.3**
	baz=1.0						
TWE	**Neicheng**	**2.05**	**357**	*e*P	**Pn**	**03 36 57.1**	**+0.6**
	baz=358						
JYNG	**Yonagunijimaku**	**2.07**	**31**	P	**Pn**	**03 36 57.7**	**+0.8**
JYNG				*e*S	**Sn**	**03 37 20.5**	**-1.4**
NSTT	**Nanjuang**	**2.08**	**340**	*e*P	**Pb**	**03 36 59.3**	**-1.4**
	baz=340						
NSTT				*e*S	**Sn**	**03 37 23.8**	**+1.5**
	baz=340						
YOJ	**Yonaguni jima**	**2.11**	**32**	P	**Pn**	**03 36 58.3**	**+0.9**
YOJ				*e*S	**Sn**	**03 37 23.1**	**+0.2**
HATJ	**Hateruma jima**	**2.31**	**53**	P	**Pn**	**03 37 01.0**	**+0.8**
HATJ				S	**Sn**	**03 37 27.1**	**-0.8**
NWF	**Wu-fen Shan**	**2.39**	**360**	*e*P	**Pn**	**03 37 03.0**	**+1.6**
	baz=348						
IRIF	**Iriomote-Funau**	**2.44**	**47**	P	**Pn**	**03 37 02.7**	**+0.8**
IRIF				S	**Sn**	**03 37 30.7**	**-0.3**
JKRS	**Kuro-shima**	**2.57**	**52**	P	**Pn**	**03 37 04.9**	**+1.2**
JKRS				S	**Sn**	**03 37 33.6**	**-0.7**
JIJ	**Ishigaki jima**	**2.74**	**52**	P	**Pn**	**03 37 06.7**	**+0.6**
JIJ				S	**Sn**	**03 37 36.8**	**-1.7**
JISG	**Ishigakijimahi**	**3.00**	**50**	P	**Pn**	**03 37 10.0**	**+0.3**
JISG				*e*S	**Sn**	**03 37 44.3**	**-0.6**
JTJ	**Tarama**	**3.31**	**53**	P	**Pn**	**03 37 15.0**	**+1.0**
JTJ				*e*S	**Sn**	**03 37 51.9**	**-0.8**
JIRB	**Irabujima**	**3.77**	**55**	P	**Pn**	**03 37 21.5**	**+1.2**
JIRB				*e*S	**Sn**	**03 38 03.2**	**-0.8**
JIKM	**Ikemajima**	**3.88**	**54**	P	**Pn**	**03 37 23.0**	**+1.2**
JOGS	**Gusukube**	**3.92**	**57**	P	**Pn**	**03 37 23.4**	**+1.1**

*PRU **12** 03:36:59.6, 56°.53N×11°.89E, h0km*
*IDC **12** 03:37:00.9±1.2, 56°.67N×11°.99E, h0km, mb1 3.3/5, mb1mx3.1/44, mbtmp3.1/5, ML3.1/5, Error ellipse: s-maj=18.6km s-min=12.8km az=106.0*
*CSEM **12** 03:37:00.9±0.1, 56°.65N×12°.20E, h10km, ML2.7, Error ellipse: s-maj=3.6km s-min=2.6km az=16.0*
*UPP **12** 03:37:01.8±0.3, 56°.64N×12°.23E, h14km±2km, ML2.8, Probable volcanic*
*BER **12** 03:37:02.6±2.6, 56°.74N×12°.20E, h0km±7km, MD2.3, ML2.3, ML2.5(NAO)*
*NAO **12** 03:37:02.7±1.4, 56°.85N×12°.02E, ML2.5*
*HEL **12** 03:37:02.5±0.2, 56°.67N×12°.20E, h21km±1km, ML2.7, ML2.8(UPP), ML2.8(UPP)*
ISC 12 03:37:01.2±0.9, 56°.63N±0°.02×12°.25E±0°.02, h31km±8km, n125, σ1°60/197, 8C-5D, Sweden

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FABU	**Falkenberg**	**0.46**	**35**	P	**Pb**	**03 37 10.4**	**-0.5**
FABU				S	**Sb**	**03 37 16.0**	**-1.6**
FABU	**Falkenberg**	**0.46**	**35**	⇑*e*P	**Pb**	**03 37 10.4**	**-0.5**
FABU				*e*S	**Sb**	**03 37 16.0**	**-1.6**
FABU	**Falkenberg**	**0.46**	**35**	P	**Pb**	**03 37 10.4**	**-0.5**
FABU				S	**Sb**	**03 37 15.9**	**-1.6**
DEL	**Delary**	**0.91**	**99**	P	**Pb**	**03 37 18.7**	**+0.2**
DEL				S	**Sn**	**03 37 30.3**	**+0.3**
DEL	**Delary**	**0.91**	**99**	⇑*e*P	**Pb**	**03 37 18.7**	**+0.2**
DEL				*e*S	**Sn**	**03 37 30.3**	**+0.3**
DEL	**Delary**	**0.91**	**99**	⇑P	**Pb**	**03 37 18.7**	**+0.2**
DEL				S	**Sn**	**03 37 30.3**	**+0.3**
COP	**Copenhagen**	**0.95**	**174**	⇓*i*P	**Pb**	**03 37 20.4**	**+1.3**
BORU	**Boraas**	**1.05**	**16**	P	**Pb**	**03 37 20.6**	**-0.2**
BORU				S	**Sn**	**03 37 33.5**	**+0.2**
BORU	**Boraas**	**1.05**	**16**	⇓*e*P	**Pb**	**03 37 20.6**	**-0.2**
BORU				*e*S	**Sn**	**03 37 33.5**	**+0.2**
BORU	**Boraas**	**1.05**	**16**	P	**Pb**	**03 37 20.5**	**-0.2**
BORU				S	**Sn**	**03 37 33.5**	**+0.2**
GNOU	**Gnosjoe**	**1.06**	**51**	P	**Pb**	**03 37 20.9**	**-0.1**
GNOU				S	**Sb**	**03 37 34.0**	**-0.4**
GNOU	**Gnosjoe**	**1.06**	**51**	⇑*e*P	**Pb**	**03 37 20.9**	**-0.1**
GNOU				*e*S	**Sb**	**03 37 34.2**	**-0.3**
GNOU	**Gnosjoe**	**1.06**	**51**	⇑P	**Pb**	**03 37 20.9**	**-0.1**
GNOU				S	**Sb**	**03 37 34.1**	**-0.4**
LUNU	**Lund**	**1.20**	**146**	P	**Pb**	**03 37 24.0**	**+0.6**
LUNU				S	**Sb**	**03 37 40.8**	**+2.2**
LUNU	**Lund**	**1.20**	**146**	⇓*e*P	**Pb**	**03 37 24.0**	**+0.6**
LUNU				*e*S	**Sb**	**03 37 40.8**	**+2.2**
LUNU	**Lund**	**1.20**	**146**	P	**Pb**	**03 37 24.0**	**+0.6**
LUNU				S	**Sb**	**03 37 40.7**	**+2.2**
TJOU	**Tjoern**	**1.45**	**347**	P	**Pb**	**03 37 27.4**	**-0.1**
TJOU	**Tjoern**	**1.45**	**347**	⇓*e*P	**Pb**	**03 37 27.4**	**-0.1**
TJOU	**Tjoern**	**1.45**	**347**	⇓P	**Pb**	**03 37 27.4**	**-0.1**
MUD	**Monsted U'grnd**	**1.71**	**265**	*e*P	**Pb**	**03 37 30.9**	**-1.0**
MUD				*e*Pg	**Pn**	**03 37 33.1**	**+4.3**
MUD				*e*S	**Sb**	**03 37 52.7**	**-0.3**
MUD				IAML		03 38 01.5	
	comp=Z,74nm,0.2s						
MUD	**Monsted U'grnd**	**1.71**	**265**	*i* P	**Pb**	**03 37 30.9**	**-1.0**
MUD				*e*S	**Sb**	**03 37 53.5**	**+0.5**
MUD	**Monsted U'grnd**	**1.71**	**265**	*e*P	**Pb**	**03 37 30.9**	**-1.0**
MUD				*e*PB	**Pn**	**03 37 33.1**	**+4.3**
MUD				*e*S	**Sb**	**03 37 52.7**	**-0.3**
MUD				IAML		03 38 01.5	
	comp=Z,74nm,0.2s						
MUD	**Monsted U'grnd**	**1.71**	**265**	*e*P	**Pb**	**03 37 30.9**	**-1.0**
FKPU	**Falk**	**1.73**	**27**	P	**Pb**	**03 37 32.1**	**-0.3**
FKPU				S	**Sb**	**03 37 54.0**	**+0.3**
FKPU	**Falk**	**1.73**	**27**	⇑*e*P	**Pb**	**03 37 32.1**	**-0.3**
FKPU				*e*S	**Sb**	**03 37 54.0**	**+0.3**
FKPU	**Falk**	**1.73**	**27**	P	**Pb**	**03 37 32.0**	**-0.3**
FKPU				S	**Sb**	**03 37 53.9**	**+0.3**
VANU	**Vaenersborg**	**1.87**	**357**	P	**Pb**	**03 37 33.6**	**-1.1**
VANU				S	**Sb**	**03 37 57.9**	**+0.3**
VANU	**Vaenersborg**	**1.87**	**357**	*e*P	**Pb**	**03 37 34.3**	**-0.4**
VANU				*e*S	**Sb**	**03 37 57.9**	**+0.3**
VANU	**Vaenersborg**	**1.87**	**357**	P	**Pb**	**03 37 33.6**	**-1.1**
VANU				S	**Sb**	**03 37 57.9**	**+0.3**
EKSU	**Eksjoe**	**1.92**	**59**	P	**Pb**	**03 37 34.7**	**-0.8**
EKSU				S	**Sb**	**03 37 59.3**	**+0.3**
EKSU	**Eksjoe**	**1.92**	**59**	*e*P	**Pb**	**03 37 34.7**	**-0.8**
EKSU				*e*S	**Sb**	**03 37 59.8**	**+0.8**
EKSU	**Eksjoe**	**1.92**	**59**	P	**Pb**	**03 37 34.7**	**-0.8**
EKSU				S	**Sb**	**03 37 59.3**	**+0.3**
BLEU	**Blekinge**	**2.01**	**98**	P	**Pb**	**03 37 35.8**	**-1.2**
BLEU				S	**Sb**	**03 38 00.8**	**-0.6**
BLEU	**Blekinge**	**2.01**	**98**	*e*P	**Pb**	**03 37 35.8**	**-1.2**
BLEU				*e*S	**Sb**	**03 38 00.8**	**-0.6**
BLEU	**Blekinge**	**2.01**	**98**	P	**Pb**	**03 37 35.8**	**-1.2**
BLEU				S	**Sb**	**03 38 00.9**	**-0.6**
BSD	**Bornholm Skovb**	**2.14**	**134**	⇑*i*P	**Pb**	**03 37 36.9**	**-2.3**
BSD				*e*S	**Sb**	**03 38 03.4**	**-1.8**
BSD	**Bornholm Skovb**	**2.14**	**134**	⇑*i*P	**Pb**	**03 37 36.9**	**-2.3**
BSD				*e*S	**Sb**	**03 38 03.4**	**-1.8**
HOMB	**Homborsund**	**2.61**	**311**	*e*P	**Pn**	**03 37 42.1**	**+0.9**
HOMB				*e*S	**Sn**	**03 38 11.0**	**-0.7**
HOMB				IAML		03 38 23.0	
	comp=Z,27nm,0.3s						
HOMB	**Homborsund**	**2.61**	**311**	*e*P	**Pn**	**03 37 42.1**	**+0.9**
HOMB				*e*S	**Sn**	**03 38 11.0**	**-0.7**
HOMB				IAML		03 38 23.0	
	comp=Z,27nm,0.3s						
HOMB	**Homborsund**	**2.61**	**311**	*e*P	**Pn**	**03 37 42.1**	**+0.9**
HOMB				*e*S	**Sn**	**03 38 11.0**	**-0.7**
	SNR=50						
SNART	**Snartemo**	**3.21**	**304**	*e*P	**Pn**	**03 37 51.5**	**+2.0**
SNART				*e*S	**Sn**	**03 38 26.9**	**+0.1**
SNART				IAML		03 38 40.9	
	comp=Z,27nm,0.2s						
SNART	**Snartemo**	**3.21**	**304**	*e*P	**Pn**	**03 37 51.5**	**+2.0**
SNART				*e*S	**Sn**	**03 38 26.9**	**+0.1**
SNART				IAML		03 38 40.9	
	comp=Z,27nm,0.2s						
SNART	**Snartemo**	**3.21**	**304**	*e*P	**Pn**	**03 37 51.5**	**+2.0**
SNART				*e*S	**Sn**	**03 38 26.9**	**+0.1**
	SNR=50						
KONO	**Kongsberg**	**3.34**	**336**	*e*P	**Pn**	**03 37 52.3**	**+1.0**
KONO				*e*Pg	**Pb**	**03 37 59.5**	**-0.1**
KONO				*e*Sg	**Sb**	**03 38 43.8**	**+4.0**
KONO				IAML		03 38 48.9	
	comp=Z,14nm,0.2s						
KONO	**Kongsberg**	**3.34**	**336**	*e*P	**Pn**	**03 37 52.3**	**+1.0**
KONO				*e*PB	**Pb**	**03 37 59.5**	**-0.1**
KONO				*e*		03 38 43.8	
KONO				IAML		03 38 48.9	
	comp=Z,14nm,0.2s						
KONO	**Kongsberg**	**3.34**	**336**	*e*P	**Pn**	**03 37 52.3**	**+1.0**
	SNR=50						
OSL	**Oslo**	**3.42**	**347**	*e*S	**Sn**	**03 38 33.1**	**+1.5**
OSL				*e*Sg	**Sb**	**03 38 44.2**	**+2.3**
OSL	**Oslo**	**3.42**	**347**	*e*S	**Sn**	**03 38 33.1**	**+1.5**
OSL				*e*SB	**Sb**	**03 38 44.2**	**+2.3**
OSL	**Oslo**	**3.42**	**347**	*e*S	**Sn**	**03 38 33.1**	**+1.5**
	SNR=50						
HFS	**Hagfors**	**3.60**	**12**	Pn	**Pn**	**03 37 56.7**	**+1.9**
HFS				Sn	**Sn**	**03 38 36.0**	**-0.2**
	baz=192,slow=18						
HFS				Lg	Lg	03 38 49.9	
	baz=188,slow=28						
HFS	**Hagfors**	**3.60**	**12**	Pn	**Pn**	**03 37 56.6**	**+1.8**
	comp=Z,0.1nm,0.3s,baz=194,slow=13,SNR=5.3						
HFS				Lg	Lg	03 38 48.5	
	comp=Z,7.1nm,0.3s,baz=193,slow=31,SNR=13						
HFS	**Hagfors**	**3.60**	**12**	Pn	**Pn**	**03 37 56.7**	**+1.9**
HFS				Sn	**Sn**	**03 38 36.0**	**-0.2**
	baz=180,slow=22						
HFS				Lg	Lg	03 38 49.9	
	baz=180,slow=28						
HFS	**Hagfors**	**3.60**	**12**	*e*P	**Pn**	**03 37 56.7**	**+1.9**
HFS				*e*S	**Sn**	**03 38 36.0**	**-0.2**
HFS				*e*SB	**Sb**	**03 38 49.9**	**+2.7**
HFS	**Hagfors**	**3.60**	**12**	Pn	**Pn**	**03 37 56.7**	**+1.9**
HFS				Sn	**Sn**	**03

AAL	**Aland**	**5.41**	**46**	*e*P	**Pn**	**03 38 22.3**	**+2.7**
AAL				*e*S	**Sn**	**03 39 22.1**	**+1.3**
AAL	**Aland**	**5.41**	**46**	P	**Pn**	**03 38 22.3**	**+2.7**
AAL				S	**Sn**	**03 39 22.0**	**+1.3**
HYA	**Hoyanger**	**5.53**	**328**	*e*P	**Pn**	**03 38 23.4**	**+2.1**
HYA	**Hoyanger**	**5.53**	**328**	*e*P	**Pn**	**03 38 23.4**	**+2.1**
HYA	**Hoyanger**	**5.53**	**328**	*e*P	**Pn**	**03 38 23.4**	**+2.1**
	SNR=49						
SLIT	**Slitere, Latvi**	**5.56**	**75**	*e*P	**Pn**	**03 38 23.5**	**+1.8**
SLIT				*e*S	**Sn**	**03 39 23.4**	**-1.1**
SLIT	**Slitere, Latvi**	**5.56**	**75**	P	**Pn**	**03 38 23.5**	**+1.8**
BRG	**Berggiesshubel**	**5.85**	**169**	SG	**Sb**	**03 39 48.7**	**-3.3**
	comp=Z,2.8nm,0.7s						
SUE	**Sulen**	**5.90**	**322**	*e*P	**Pn**	**03 38 28.4**	**+2.0**
SUE	**Sulen**	**5.90**	**322**	*e*P	**Pn**	**03 38 28.4**	**+2.0**
SUE	**Sulen**	**5.90**	**322**	*e*P	**Pn**	**03 38 28.4**	**+2.0**
	SNR=49						
AKN	**Aaknes**	**6.18**	**336**	*e*P	**Pn**	**03 38 31.1**	**+0.9**
AKN				*e*S	**Sn**	**03 39 38.4**	**-1.4**
AKN	**Aaknes**	**6.18**	**336**	*e*P	**Pn**	**03 38 31.1**	**+0.9**
AKN				*e*S	**Sn**	**03 39 38.4**	**-1.4**
AKN	**Aaknes**	**6.18**	**336**	*e*P	**Pn**	**03 38 31.1**	**+0.9**
	SNR=49						
FOO	**Floro**	**6.21**	**326**	*e*P	**Pn**	**03 38 31.1**	**+0.5**
FOO	**Floro**	**6.21**	**326**	*e*P	**Pn**	**03 38 31.1**	**+0.5**
FOO	**Floro**	**6.21**	**326**	*e*P	**Pn**	**03 38 31.1**	**+0.5**
	SNR=49						
NKC	**Novy Kostel**	**6.41**	**179**	*e*PN	**Pn**	**03 38 32.3**	**-1.2**
NKC				*e*SN	**Sn**	**03 39 44.2**	**-1.3**
NKC	**Novy Kostel**	**6.41**	**179**	Pn	**Pn**	**03 38 32.3**	**-1.2**
NKC				Sn	**Sn**	**03 39 44.2**	**-1.3**
MTSE	**Matsula**	**6.55**	**67**	*e*P	**Pn**	**03 38 35.8**	**+0.5**
MTSE				*e*S	**Sn**	**03 39 48.0**	**-0.8**
MTSE	**Matsula**	**6.55**	**67**	P	**Pn**	**03 38 35.8**	**+0.5**
RAF	**Rauma**	**6.62**	**44**	*e*P	**Pn**	**03 38 37.9**	**+1.6**
RAF				*e*S	**Sn**	**03 39 48.8**	**-1.7**
RAF				MSG		03 40 30.6	
	comp=Z,5.5nm,0.3s						
RAF	**Rauma**	**6.62**	**44**	P	**Pn**	**03 38 37.8**	**+1.6**
HEMU	**Hemsoen**	**6.74**	**23**	*e*P	**Pn**	**03 38 40.2**	**+2.4**
HEMU				*e*S	**Sn**	**03 39 52.6**	**-0.7**
HEMU	**Hemsoen**	**6.74**	**23**	P	**Pn**	**03 38 40.2**	**+2.4**
PRU	**Pruhonice**	**6.79**	**167**	*e*SN	**Sn**	**03 39 54.4**	**-0.5**
PRU	**Pruhonice**	**6.79**	**167**	Sn	**Sn**	**03 39 54.4**	**-0.5**
MEF	**Metsahovi**	**7.32**	**56**	*e*P	**Pn**	**03 38 48.5**	**+2.6**
MEF				MSG		03 40 55.8	
	comp=Z,5.9nm,0.3s						
MEF	**Metsahovi**	**7.32**	**56**	P	**Pn**	**03 38 48.4**	**+2.6**
GERES	**GERESS Array B**	**7.85**	**173**	Pn	**Pn**	**03 38 56.6**	**+3.3**
	comp=Z,0.2nm,0.3s,baz=356,slow=13,SNR=3.3						
VSU	**Vasula**	**8.01**	**71**	*e*P	**Pn**	**03 38 57.3**	**+1.9**
VSU	**Vasula**	**8.01**	**71**	P	**Pn**	**03 38 57.2**	**+1.9**
PVF	**Pernaja**	**8.12**	**55**	*e*		03 41 10.3	
PVF				MSG		03 41 16.8	
	comp=Z,4.8nm,0.3s						
VAF	**Ylistaro**	**8.29**	**35**	*e*P	**Pn**	**03 39 01.7**	**+2.5**
VAF				*e*S	**Sn**	**03 40 30.0**	**-1.7**
VAF	**Ylistaro**	**8.29**	**35**	P	**Pn**	**03 39 01.7**	**+2.5**
UMAU	**Umeaa**	**8.39**	**26**	*e*P	**Pn**	**03 39 02.1**	**+1.5**
UMAU				*e*S	**Sn**	**03 40 31.2**	**-2.8**
UMAU	**Umeaa**	**8.39**	**26**	P	**Pn**	**03 39 02.0**	**+1.5**
KEF	**Keuruu**	**8.49**	**44**	MSG		03 41 25.8	
	comp=Z,3.7nm,0.3s						
FIA0	**FINESS Array S**	**8.60**	**50**	Pn	**Pn**	**03 39 05.5**	**+2.0**
	baz=231,slow=11						
FIA0				Sn	**Sn**	**03 40 37.1**	**-2.2**
	baz=241,slow=22						
FIA0				Lg	Lg	03 41 26.9	
	baz=239,slow=28						
FIA0	**FINESS Array S**	**8.60**	**50**	Pn	**Pn**	**03 39 05.5**	**+2.0**
	baz=231,slow=11						
FIA0				Sn	**Sn**	**03 40 37.1**	**-2.2**
	baz=241,slow=22						
FIA0				Lg	Lg	03 41 26.9	
	baz=239,slow=28						
FIA0	**FINESS Array S**	**8.60**	**50**	MSG		03 41 28.9	
	comp=Z,5.0nm,0.4s						
FIA0	**FINESS Array S**	**8.60**	**50**	Pn	**Pn**	**03 39 05.5**	**+2.0**
	SNR=0.6						
FINES	**FINESS Array B**	**8.60**	**50**	Pn	**Pn**	**03 39 05.4**	**+2.0**
	comp=Z,0.4nm,0.3s,baz=240,slow=11,SNR=22						
FINES				Sn	**Sn**	**03 40 36.9**	**-2.4**
	comp=Z,0.6nm,0.3s,baz=245,slow=20,SNR=6.4						
FINES				Lg	Lg	03 41 26.3	
	comp=Z,1.4nm,0.3s,baz=246,slow=29,SNR=9.3						
EKA	**Eskdalemuir Ar**	**8.74**	**268**	Pn	**Pn**	**03 39 04.4**	**-0.9**
	baz=80,slow=12,SNR=3.6						
EKA				Sn	**Sn**	**03 40 36.9**	**-5.8**
	baz=78,slow=24,SNR=3.6						
ARA0	**ARCESS Array S**	**14.22**	**19**	Pn	**Pn**	**03 40 17.4**	**-2.8**
	baz=209,slow=14						
ARA0				Sn	Sn	03 42 46.3	-10
	baz=206,slow=28						
ARA0	**ARCESS Array S**	**14.22**	**19**	Pn	**Pn**	**03 40 17.4**	**-2.8**
	baz=209,slow=14						
ARA0				Sn	Sn	03 42 46.3	-10
	baz=206,slow=28						
ARA0	**ARCESS Array S**	**14.22**	**19**	*e*P	**Pn**	**03 40 17.4**	**-2.8**
ARA0				*e*S	Sn	03 42 46.3	-10
ARCES	**ARCESS Array B**	**14.22**	**19**	Pn	**Pn**	**03 40 17.1**	**-3.1**
	comp=Z,0.1nm,0.3s,baz=209,slow=14,SNR=6.2						
ARCES				Sn	Sn	03 42 46.3	-10
	comp=Z,0.1nm,0.3s,baz=210,slow=25,SNR=2.8						

ISCJB ***12*** *03:40:59.1±0.4, 54.°55S±0.°06×1.°7E±0.°1, h10km, mb4.8/22, MS4.1/17, Error ellipse: s-maj=11.3km s-min=8.3km az=179.1*
IDC ***12*** *03:40:59.1±0.6, 54.°64S×1.°68E, h0km, mb4.4/12, mb1 4.5/12, mb1mx4.3/27, mbtmp4.4/12, MS4.0/14, Ms1 4.0/14, ms1mx4.0/22, Error ellipse: s-maj=18.8km s-min=17.2km az=134.0*
NEIC ***12*** *03:41:00.8±0.3, 54.°65S×1.°63E, h10km, mb5.1/13, Error ellipse: s-maj=11.5km s-min=9.9km az=86.0*
GCMT ***12*** *03:41:00.8±0.2, 54.°62S×2.°04E, h29km±1km, MW5.2/103, Moment Tensor Solution. s56,c73; s103,c159; Duration: 0 Moment tensor: Scale 10^16^Nm; M_{rr}-0.21±.18; $M_{\theta\theta}$6.30±.16; $M_{\phi\phi}$-6.09±.15; $M_{r\theta}$-1.38±.26; $M_{\phi\theta}$-0.32±.12; $M_{\phi r}$1.40±.26; Best double couple: $M_0$6.50800×10^16^ NP1:ϕ_s136.00000°, δ89.00000°, λ-18.00000°. NP2: ϕ_s227.00000°, δ72.00000°, λ-179.00000°. Principal axes: T 6.6090, Plg12.0000°, Azm183.0000°; N -0.2030, Plg72.0000°, Azm315.0000°; P -6.4060, Plg13.0000°, Azm90.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
BJI ***12*** *03:41:01.3, 54.°70S×1.°40E, h10km, mB5.5/3, Ms5.1/2, Ms7 4.7/2*

ISC 12 03:41:01.0±0.4, 54.°74S±0.°07×1.°60E±0.°10, h10km, n60, σ1°74/47, mb4.9/22, MS4.1/17, 1D, Bouvet Island region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VNA1	**Neumayer--Stat**	**16.56**	**192**	P	**P**	**03 44 56.7**	**+1.2**
VNA2	**Neumayer--Watz**	**16.72**	**190**	P	**P**	**03 44 57.6**	**+0.2**
	baz=14,slow=16						
SNAA	**Sanae**	**17.11**	**185**	P	**Pn**	**03 45 01.7**	**+1.8**
SNAA	**Sanae**	**17.11**	**185**	*e*Pn	**Pn**	**03 45 01.2**	**+1.2**
	498nm,1.1s						
SNAA				*e*S	**Sn**	**03 48 02.3**	**-7.6**
VNA3	**Neumayer Olymp**	**17.28**	**192**	P	**P**	**03 45 04.2**	**+0.7**
SYO	**Syowa Base**	**22.39**	**144**	⇓*i*P	**P**	**03 45 59.0**	**-0.1**
SUR	**Sutherland**	**26.16**	**39**	LR	LR	03 54 09.7	
	comp=Z,21nm,19.2s,baz=206,slow=30						
MAW	**Mawson**	**30.76**	**139**	P	**P**	**03 47 16.3**	**+0.2**
	6.9nm,0.9s,baz=259,slow=11,SNR=9.9						
MAW				LR	LR	03 57 58.3	
	comp=Z,351nm,19.2s,baz=260,slow=33						
BOSA	**Boshof**	**31.22**	**43**	P	**P**	**03 47 19.3**	**-1.3**
	3.6nm,1.0s,baz=191,slow=8.5,SNR=4.1						
BOSA				LR	LR	03 56 57.4	
	comp=Z,329nm,21.9s,baz=204,slow=31						
QSPA	**South Pole Qui**	**35.50**	**180**	*e*P	**P**	**03 47 58.5**	**+0.9**
	342nm,1.3s						
TSUM	**Tsumeb**	**37.52**	**25**	P	**P**	**03 48 13.7**	**-1.4**
	2.6nm,0.8s,baz=194,slow=8.5,SNR=2.5						
TSUM	**Tsumeb**	**37.52**	**25**	*e*P	**P**	**03 48 16.4**	**+1.3**
	8.2nm,1.0s						
USHA	**Ushuaia**	**38.83**	**240**	P	**P**	**03 48 25.8**	**+0.1**
	44nm,1.0s,baz=112,slow=8.3,SNR=9.5						
MATP	**Matopo**	**39.85**	**41**	P	**P**	**03 48 32.6**	**-2.2**
	3.2nm,0.9s,baz=207,slow=10,SNR=4.6						
TRQA	**Tornquist**	**45.27**	**264**	*e*P	**P**	**03 49 18.1**	**-0.4**
	15nm,0.9s						
SBA	**Scott Base**	**47.35**	**176**	*e*P	**P**	**03 49 36.3**	**+1.9**
	30nm,1.0s						
VNDA	**Vanda**	**47.43**	**174**	P	**P**	**03 49 35.9**	**+0.9**
	14nm,0.8s,baz=208,slow=8.7,SNR=74						
VNDA				LR	LR	04 09 47.8	
	comp=Z,352nm,19.6s,baz=188,slow=36						
H10S2	**ASCENSION HYDR**	**47.46**	**338**	T	T	04 40 08.0	
	baz=166,slow=75,SNR=17						
H10S3	**ASCENSION HYDR**	**47.47**	**338**	T	T	04 40 09.1	
	baz=166,slow=75,SNR=18						
H10S1	**ASCENSION HYDR**	**47.48**	**338**	T	T	04 40 10.0	
	baz=166,slow=75,SNR=16						
CASY	**Casey**	**48.02**	**149**	*e*P	**P**	**03 49 41.1**	**+1.5**
	29nm,1.1s						
PLCA	**Paso Flores**	**48.34**	**255**	P	**P**	**03 49 43.4**	**+0.7**
	4.4nm,0.9s,baz=135,slow=8.6,SNR=13						
PLCA				LR	LR	04 09 55.2	
	comp=Z,92nm,18.1s,baz=162,slow=36						
PLCA	**Paso Flores**	**48.34**	**255**	*e*P	**P**	**03 49 41.9**	**-0.8**
	12nm,1.1s						
CPUP	**Villa Florida**	**51.10**	**279**	P	**P**	**03 50 02.4**	**-1.3**
	6.5nm,0.9s,baz=134,slow=6.6,SNR=2.9						
CPUP				LR	LR	04 08 35.6	
	comp=Z,125nm,21.7s,baz=151,slow=32						
LCO	**Las Campanas**	**56.80**	**266**	*e*P	**P**	**03 50 47.9**	**+2.2**
	15nm,0.9s						
LVC	**Limon Verde**	**60.65**	**272**	*e*P	**P**	**03 51 12.3**	**-0.3**
	13nm,1.0s						
DBIC	**Dimbokro**	**61.42**	**353**	P	**P**	**03 51 18.0**	**+0.7**
	6.5nm,1.0s,baz=141,slow=7.2,SNR=3.6						
DBIC				LR	LR	04 12 54.9	
	comp=Z,121nm,18.3s,baz=132,slow=31						
LPAZ	**La Paz**	**65.16**	**277**	P	**P**	**03 51 42.5**	**-0.4**
	5.3nm,1.0s,baz=174,slow=3.1,SNR=11						
LPAZ				LR	LR	04 20 25.6	
	comp=Z,69nm,18.4s,baz=146,slow=36						
LPAZ	**La Paz**	**65.16**	**277**	P	**P**	**03 51 42.5**	**-0.4**
	15nm,1.0s						
TOA0	**Torodi Ar. Sit**	**67.62**	**0**	*e*P	**P**	**03 51 57.4**	**-0.4**
TORD	**Torodi Ar. Bea**	**67.62**	**0**	P	**P**	**03 51 56.8**	**-1.0**
	0.8nm,0.8s,baz=189,slow=7.7,SNR=3.1						
TORD				LR	LR	04 16 30.0	
	comp=Z,235nm,19.4s,baz=155,slow=32						
SAML	**Samuel**	**68.28**	**286**	*e*P	**P**	**03 51 59.9**	**-2.3**
	6.1nm,1.1s						
PTGA	**Pitinga**	**73.36**	**293**	LR	LR	04 20 59.8	
	comp=Z,148nm,19.0s,baz=154,slow=33						
NNA	**Nana**	**73.63**	**272**	LR	LR	04 23 11.6	
	comp=Z,74nm,20.3s,baz=99,slow=34						
H01W2	**Cape Leeuwin H**	**73.66**	**128**	T	T	05 14 36.4	
	baz=215,slow=75,SNR=13						
H01W3	**Cape Leeuwin H**	**73.67**	**128**	T	T	05 14 29.5	
	baz=215,slow=75,SNR=15						
H01W1	**Cape Leeuwin H**	**73.68**	**128**	T	T	05 14 38.4	
	baz=215,slow=75,SNR=15						
OTAV	**Otavalo**	**84.44**	**278**	*e*P	**P**	**03 53 35.8**	**+1.4**
	12nm,1.4s						
ROSC	**El Rosal**	**85.85**	**284**	LR	LR	04 29 28.1	
	comp=Z,144nm,19.1s,baz=190,slow=34						
BKZ	**Black Stump Fm**	**86.36**	**176**	*e*P	**P**	**03 53 44.0**	**+0.7**
	36nm,1.2s						
STKA	**Stephens Creek**	**87.12**	**147**	P	**P**	**03 53 46.5**	**-0.5**
	5.7nm,0.8s,baz=152,slow=6.0,SNR=5.5						
KEST	**Kesra**	**90.35**	**6**	LR	LR	04 33 54.7	
	comp=Z,107nm,18.1s,baz=235,slow=35						
ASAR	**Alice Springs**	**91.87**	**137**	P	**P**	**03 54 08.2**	**-1.3**
	2.7nm,0.9s,baz=205,slow=4.9,SNR=15						
AS01	**Alice Springs**	**91.89**	**137**	*e*P	**P**	**03 54 07.5**	**-2.1**
RKT	**Rikitea**	**93.99**	**219**	*e*LR	LR	04 24 44.2	
	543nm,39.0s						
ESDC	**Sonseca Array**	**94.16**	**356**	LR	LR	04 35 06.0	
	comp=Z,58nm,18.0s,baz=175,slow=34						
BRTR	**Keskin Array B**	**98.02**	**24**	LR	LR	04 40 35.1	
	comp=Z,24nm,18.1s,baz=172,slow=36						
PPT2	**Papeete2**	**103.88**	**208**	*e*LR	LR	04 29 10.7	
	146nm,25.2s						
CD2	**Chengdu**	**121.43**	**80**	PKP	**PKPdf**	**03 59 54.9**	**+0.7**
WMQ	**Urumqi**	**122.25**	**59**	*e*PKP	**PKPdf**	**03 59 54.8**	**-0.5**
LZH	**Lanzhou**	**125.27**	**76**	*e*PKP	**PKPdf**	**04 00 03.2**	**+1.7**
LZH				sPKP		04 00 07.8	
LZH				LR	LR		
	comp=N,150nm,18.0s						
LZH				LR	LR		
	comp=E,160nm,17.9s						
LZH				LR	LR		
	comp=Z,220nm,20.1s						
HHC	**Hu-ho-hao-te**	**132.92**	**77**	*e*PKP	**PKPdf**	**04 00 18.7**	**+2.8**
HHC				PP	PP	04 02 50.1	+8.0
HHC				SKS	**SKSdf**	**04 07 30.0**	**+3.1**
HHC				AMB	AMB		
	comp=Z,57nm,8.2s						
HHC				LR	LR		
	comp=N,160nm,20.8s						
HHC				LR	LR		
	comp=E,160nm,19.3s						
HHC				LR	LR		
	comp=Z,100nm,19.3s						
G08A	**Pilot Rock**	**141.74**	**281**	*e*PKPdf	**PKPdf**	**04 00 31.2**	**-0.8**
RES	**Resolute Bay**	**143.40**	**334**	PKP	**PKPdf**	**04 00 32.5**	**-1.3**
	1.5nm,0.9s,baz=90,slow=2.0,SNR=5.0						
MJAR	**Matsushiro Arr**	**145.32**	**104**	PKPbc	**PKPbc**	**04 00 37.7**	**-0.6**
	0.7nm,0.3s,baz=206,slow=3.8,SNR=6.3						
YKA	**Yellowknife Ar**	**147.19**	**310**	PKPbc	**PKPdf**	**04 00 41.2**	**+0.5**
	1.7nm,0.9s,baz=99,slow=2.8,SNR=20						
YKB5	**Yellowknife Ar**	**147.19**	**310**	*e*PKPdf	**PKPbc**	**04 00 41.8**	**-1.2**
YKW3	**Yellowknife Ar**	**147.21**	**310**	*e*PKPdf	**PKPdf**	**04 00 41.5**	**+0.8**
KLR	**Kul'dur**	**149.35**	**79**	PKPbc	**PKPbc**	**04 00 48.8**	**-0.3**
	1.8nm,0.8s,baz=254,slow=4.0,SNR=4.6						
ILAR	**Eielson Array**	**161.43**	**315**	PKPab	**PKPab**	**04 01 44.7**	**-0.3**
	0.4nm,0.8s,baz=80,slow=2.8,SNR=2.9						

IDC 12 03:51:53.6±6.2, 7.°28S×149.°21E, h0km, mb2.9/1, mb1 3.4/2, mb1mx3.2/33, mbtmp3.1/2, ML3.5/1, MS2.3/1, Ms1 2.3/1, ms1mx2.2/7, Error ellipse: s-maj=297.3km s-min=51.3km az=119.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.93**	**224**	LR	LR	03 53 40.8	
	comp=Z,51nm,21.0s,baz=117,slow=36						
WRA	**Warramunga Arr**	**19.14**	**227**	P	P	03 56 17.9	-0.7
	0.1nm,0.3s,baz=55,slow=10,SNR=4.8						
ASAR	**Alice Springs**	**21.94**	**220**	P	P	03 56 49.4	+0.4
	0.4nm,0.4s,baz=53,slow=8.8,SNR=5.2						
TORD	**Torodi Ar. Bea**	**147.52**	**283**	PKPbc	PKPbc	04 11 40.2	-0.7
	0.6nm,1.1s,baz=72,slow=3.5,SNR=5.1						

IDC ***12*** *03:54:00.2±1.7, 20.°54S×168.°43E, h0km, mb3.9/4, mb1 4.2/5, mb1mx3.8/24, mbtmp3.9/5, ML3.5/1, MS3.1/2, Ms1 3.2/2, ms1mx2.8/25, Error ellipse: s-maj=74.5km s-min=21.3km az=144.0*

ISC 12 03:54:04.1±1.5, 20.°5S±0.°3×168.°4E±0.°3, h26km, n8, σ0°77/9, mb4.1/5, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.40**	**230**	Pn	**Pn**	**03 54 41.2**	**-0.7**
	12nm,0.3s,baz=118,slow=12,SNR=59						
DZM				Sn	**Sn**	**03 55 11.4**	**+0.9**
	18nm,0.3s,baz=18,slow=20,SNR=8.3						
DZM				LR	LR	03 55 29.1	
	comp=Z,210nm,18.1s,baz=66,slow=37						
WRA	**Warramunga Arr**	**31.96**	**265**	P	**P**	**04 00 27.5**	**-0.7**
	0.3nm,0.3s,baz=95,slow=8.4,SNR=4.6						
ASAR	**Alice Springs**	**32.10**	**258**	P	**P**	**04 00 29.1**	**-0.2**
	1.4nm,0.7s,baz=88,slow=8.7,SNR=21						
CMAR	**Chiang Mai Arr**	**78.35**	**295**	P	**P**	**04 06 03.6**	**+1.0**
	1.0nm,0.3s,baz=122,slow=4.1,SNR=4.7						
CMAR				LR	LR	04 41 55.3	
	comp=Z,14nm,18.1s,baz=240,slow=37						
NVAR	**Mina Array Bea**	**90.22**	**49**	P	**P**	**04 07 03.1**	**+0.3**
	1.3nm,0.8s,baz=226,slow=8.4,SNR=6.2						
ILAR	**Eielson Array**	**91.69**	**18**	P	**P**	**04 07 08.6**	**-0.1**
	0.4nm,0.7s,baz=233,slow=5.4,SNR=4.2						
YKA	**Yellowknife Ar**	**102.16**	**28**	P	**Pdif**	**04 07 56.3**	**+0.2**
	0.1nm,0.5s,baz=253,slow=4.6,SNR=2.8						
GERES	**GERESS Array B**	**145.25**	**330**	PKPbc	**PKPbc**	**04 13 38.4**	**-0.8**
	0.6nm,0.7s,baz=35,slow=3.9,SNR=5.5						

ISCJB ***12*** *04:06:29.9±1.1, 7.°84N±0.°04×82.°92W±0.°04, h2km±6km, mb3.6/5, MS3.1/3, Error ellipse: s-maj=7.9km s-min=4.0km az=41.7*

IDC ***12*** *04:06:33.3±1.5, 8.°03N×82.°55W, h0km, mb3.8/6, mb1 4.0/6, mb1mx3.7/28, mbtmp3.8/6, MS3.1/3, Ms1 3.1/3, ms1mx2.7/36, Error ellipse: s-maj=54.4km s-min=24.8km az=54.0*
CASC ***12*** *04:06:33.6±4.0, 8.°03N×82.°97W, h4km±13km, MD4.2*
NEIC ***12*** *04:06:33.0, 7.°99N×82.°90W, h10km, MD4.5(UPA), After UPA.*

ISC 12 04:06:31.7±1.9, 7.°95N±0.°06×82.°91W±0.°05, h1km±12km, n35, σ1°35/43, mb3.8/5, MS2.8/3, 2C-2D, South of Panama

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ACR	**Cerro Adams**	**0.74**	**340**	*e*P	**Pg**	**04 06 46.3**	**+0.3**
ACR				*e*S	**Sg**	**04 06 56.2**	**+0.5**
BRU2	**Volcan**	**0.87**	**15**	⇓*i*P	**Pb**	**04 06 49.3**	**-0.5**
BRU2				*e*S	**Sn**	**04 07 02.7**	**-1.9**
TBS2		**0.88**	**17**	*e*P	**Pb**	**04 06 50.2**	**+0.3**
TBS2				*e*S	**Sn**	**04 07 03.1**	**-1.8**
BRU	**Baru**	**0.92**	**22**	⇑*i*P	**Pb**	**04 06 50.7**	**-0.1**
BUS	**Buena Vista**	**1.80**	**332**	⇓*e*P	**Pn**	**04 07 04.2**	**-0.2**
BUS				*e*S	**Sb**	**04 07 27.8**	**-1.3**
QCR	**Quepos**	**1.92**	**320**	*e*P	**Pn**	**04 07 05.9**	**+0.4**
QCR				*e*S	**Sb**	**04 07 30.5**	**-1.5**
HDC	**Heredia**	**2.36**	**330**	⇑*i*P	**Pn**	**04 07 12.1**	**+0.3**
HDC				*e*S	**Sn**	**04 07 40.6**	**-0.8**
CGA2	**Cerro Gallo 2**	**2.56**	**323**	*e*P	**Pn**	**04 07 14.0**	**-0.6**
CGA2				*e*S	**Sb**	**04 07 50.4**	**-0.4**
PNME	**Penonome**	**2.62**	**78**	*e*P	**Pn**	**04 07 15.6**	**+0.4**
PNME				*e*S	**Sn**	**04 07 46.2**	**-1.4**
AZU	**Azuero**	**2.62**	**93**	*i*P	**Pn**	**04 07 14.3**	**-0.8**
AZU				*e*S	**Sn**	**04 07 46.8**	**-0.8**
JCR	**Jicaral**	**2.88**	**311**	*e*P	**Pn**	**04 07 18.3**	**-0.6**
JTS	**JuntasAbangare**	**3.08**	**319**	*i*P	**Pn**	**04 07 22.3**	**+0.7**
JTS				*e*S	**Sn**	**04 07 57.8**	**-1.2**
JTS	**JuntasAbangare**	**3.08**	**319**	*e*Pn	**Pn**	**04 07 20.7**	**-0.8**
JTS				*e*S	**Sb**	**04 08 03.3**	**-2.1**
BCIP	**Isla Barro Col**	**3.27**	**68**	*e*P	**Pn**	**04 07 25.5**	**+1.3**
BCIP				*e*S	**Sb**	**04 08 08.8**	**-2.3**
BCIP	**Isla Barro Col**	**3.27**	**68**	*e*Pn	**Pn**	**04 07 25.6**	**+1.4**
BCIP				*e*S	**Sn**	**04 08 06.0**	**+2.2**
BCIP	**Isla Barro Col**	**3.27**	**68**	*e*P	**Pn**	**04 07 25.2**	**+1.0**
CAPC	**Capurgana**	**5.55**	**83**	*e*P	**Pn**	**04 07 54.4**	**-1.0**
SOLC	**Bahia Solano**	**5.72**	**107**	*e*P	**Pn**	**04 07 55.2**	**-2.7**
DBBC	**Dabeiba**	**6.71**	**97**	*e*P	**Pn**	**04 08 10.7**	**-0.9**
MOTC	**Monteria, Cord**	**7.22**	**83**	*e*P	**Pn**	**04 08 17.3**	**-1.2**
HELC	**Santa Helena**	**7.53**	**103**	*e*P	Pn	04 08 16.3	-6.8
GUYC	**Guyana, Colomb**	**7.95**	**109**	*e*P	**Pn**	**04 08 28.8**	**-0.2**
POPC	**Popayan, Colom**	**8.21**	**131**	*e*P	Pn	04 08 23.1	-9.2
CRUC	**La Cruz**	**8.69**	**137**	*e*P	**Pn**	**04 08 39.5**	**+0.6**
PRAC	**Prado**	**9.02**	**117**	*e*P	**Pn**	**04 08 44.0**	**+0.7**
SJAC	**San Juan de Ar**	**10.05**	**117**	*e*P	**Pn**	**04 08 55.9**	**-1.6**
NNA	**Nana**	**20.70**	**163**	P	**P**	**04 11 14.4**	**+0.7**
	3.3nm,0.4s,baz=347,slow=11,SNR=4.4						
PTGA	**Pitinga**	**24.45**	**110**	P	**P**	**04 11 52.3**	**-0.2**
	2.9nm,0.4s,baz=292,slow=11,SNR=6.6						
TXAR	**Lajitas Array**	**28.87**	**320**	LR	LR	04 24 52.5	
	comp=Z,25nm,19.1s,baz=0.0,slow=38						
LPIG	**La Paz**	**30.75**	**305**	LR	LR	04 25 10.1	
	comp=Z,20nm,21.2s,baz=248,slow=36						
FRB	**Frobisher Bay**	**56.65**	**8**	LR	LR	04 40 25.6	
	comp=Z,51nm,19.1s,baz=225,slow=36						
YKA	**Yellowknife Ar**	**59.14**	**343**	P	**P**	**04 16 34.0**	**+0.2**
	0.4nm,0.7s,baz=139,slow=6.8,SNR=7.8						
ILAR	**Eielson Array**	**71.92**	**336**	P	**P**	**04 18 00.6**	**+4.1**
	0.5nm,0.7s,baz=107,slow=4.2,SNR=5.6						
ESDC	**Sonseca Array**	**76.47**	**51**	P	**P**	**04 18 23.8**	**+0.1**
	0.5nm,0.7s,baz=280,slow=5.5,SNR=4.1						
TORD	**Torodi Ar. Bea**	**83.01**	**78**	P	**P**	**04 18 58.4**	**-1.1**
	0.6nm,1.0s,baz=285,slow=4.0,SNR=3.6						

ISCJB ***12*** *04:09:57.5±0.6, 31.°66S±0.°03×69.°77W±0.°05, h116km±6km, mb3.7/1, Error ellipse: s-maj=6.6km s-min=4.8km az=163.7*
SJA ***12*** *04:09:57.2±0.8, 31.°67S×69.°79W, h110km±10km, ML3.4*
IDC ***12*** *04:09:57.6±2.8, 31.°76S×69.°69

h43km±11km, mb3.4/11, Error ellipse: s-maj=12.7km s-min=6.8km az=163.8
*IDC **12** 04:43:30.3±1.3, 54°.42N×169°.33E, h25km±3km, mb3.3/11, mb1 3.6/12, mb1mx3.4/57, mbtmp3.5/12, ML2.9/1, MS2.8/1, Ms1 2.8/1, ms1mx2.4/22, Error ellipse: s-maj=39.0km s-min=12.9km az=1.0*
ISC 12 04:43:29.2±0.7, 54°.27N±0°.09×169°.14E±0°.06, h26km±4km, h25km:pP-P, n53, σ1°12/75, mb3.5/11, Komandorsky Islands region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
BKI	**Bering**	**2.06**	**298**	*e*P		**Pn**		**04 44 00.0**	**-2.1**
BKI				*e*S		**Sn**		**04 44 24.5**	**-2.4**
BKI	**Bering**	**2.06**	**298**	PN		**Pn**		**04 44 00.0**	**-2.1**
MKZ	**Mys Kozlova**	**4.34**	**277**	*e*P		**Pn**		**04 44 33.2**	**-0.2**
MKZ				*e*S		**Sn**		**04 45 20.6**	**-2.4**
MKZ	**Mys Kozlova**	**4.34**	**277**	PN		**Pn**		**04 44 33.2**	**-0.2**
SMKR	**Semkarok**	**4.94**	**301**	*e*P		**Pn**		**04 44 42.9**	**+1.1**
SMKR	**Semkarok**	**4.94**	**301**	PN		**Pn**		**04 44 42.9**	**+1.1**
BDR	**Baidarnaya**	**5.07**	**300**	*e*P		**Pn**		**04 44 44.2**	**+0.7**
ZLN	**Zelenaya**	**5.09**	**293**	*e*P		**Pn**		**04 44 45.4**	**+1.5**
ZLN	**Zelenaya**	**5.09**	**293**	PN		**Pn**		**04 44 45.4**	**+1.5**
SRKR	**Sorokina**	**5.12**	**301**	*e*P		**Pn**		**04 44 45.0**	**+0.7**
SRKR	**Sorokina**	**5.12**	**301**	PN		**Pn**		**04 44 45.0**	**+0.7**
TUMR	**Tumrok**	**5.30**	**285**	*e*P		**Pn**		**04 44 46.4**	**-0.4**
TUMR				*e*S		**Sn**		**04 45 46.7**	**-0.4**
TUMR	**Tumrok**	**5.30**	**285**	PN		**Pn**		**04 44 46.4**	**-0.4**
KMNR	**Kamenistaya**	**5.33**	**290**	*e*P		**Pn**		**04 44 48.2**	**+1.0**
KMNR				*e*S		**Sn**		**04 45 47.9**	**+0.1**
KMNR	**Kamenistaya**	**5.33**	**290**	PN		**Pn**		**04 44 48.2**	**+1.0**
SPN	**Mys Shipunski**	**5.54**	**261**	*e*P		**Pn**		**04 44 50.3**	**+0.3**
SPN				*e*S		**Sn**		**04 45 50.9**	**-1.9**
SPN	**Mys Shipunski**	**5.54**	**261**	PN		**Pn**		**04 44 50.3**	**+0.3**
KII	**Karymskiy**	**5.70**	**272**	*e*P		**Pn**		**04 44 52.2**	**0.0**
KII				*e*S		**Sn**		**04 45 55.2**	**-1.6**
KII	**Karymskiy**	**5.70**	**272**	PN		**Pn**		**04 44 52.2**	**0.0**
NLC	**Nalytchevo**	**5.92**	**263**	*e*P		**Pn**		**04 44 55.3**	**+0.2**
NLC				*e*S		**Sn**		**04 46 00.6**	**-1.4**
NLC	**Nalytchevo**	**5.92**	**263**	PN		**Pn**		**04 44 55.3**	**+0.2**
SMAR	**Somma**	**6.21**	**265**	*e*P		**Pn**		**04 44 59.6**	**+0.2**
SMAR				*e*S		**Sn**		**04 46 08.5**	**-1.1**
SMAR	**Somma**	**6.21**	**265**	PN		**Pn**		**04 44 59.6**	**+0.2**
UGLR	**Uglovaya**	**6.21**	**264**	*e*P		**Pn**		**04 45 00.0**	**+0.7**
KRER	**Koryakskii**	**6.23**	**265**	*e*P		**Pn**		**04 45 00.2**	**+0.5**
KRER				*e*S		**Sn**		**04 46 08.8**	**-1.3**
AVH	**Avacha**	**6.25**	**265**	*e*P		**Pn**		**04 45 00.2**	**+0.4**
AVH				*e*S		**Sn**		**04 46 08.8**	**-1.5**
AVH	**Avacha**	**6.25**	**265**	PN		**Pn**		**04 45 00.2**	**+0.4**
KRX	**Arik**	**6.28**	**266**	*e*P		**Pn**		**04 45 00.6**	**+0.4**
PET	**Petropavlovsk**	**6.36**	**263**	*e*S		**Sn**		**04 46 12.0**	**-0.9**
RUS	**Russkaya**	**6.62**	**258**	*e*P		**Pn**		**04 45 04.5**	**-0.3**
RUS				*e*S		**Sn**		**04 46 16.9**	**-2.5**
RUS	**Russkaya**	**6.62**	**258**	PN		**Pn**		**04 45 04.5**	**-0.3**
GNL	**Ganaly**	**6.63**	**270**	*e*P		**Pn**		**04 45 05.3**	**+0.3**
GNL				*e*S		**Sn**		**04 46 18.6**	**-1.1**
GNL	**Ganaly**	**6.63**	**270**	PN		**Pn**		**04 45 05.3**	**+0.3**
MTVR	**Mutnovka**	**6.79**	**259**	*e*S		**Sn**		**04 46 22.2**	**-1.6**
PETK	**Petropavlovsk-** 1.2nm,0.3s,baz=68,slow=15,SNR=19	**6.89**	**265**	Pn		**Pn**		**04 45 10.4**	**+1.9**
PETK					Sn	**Sn**		**04 46 25.9**	**-0.2**
	2.1nm,0.3s,baz=272,slow=23,SNR=7.6								
ASAK	**Asacha**	**6.99**	**259**	*e*P		**Pn**		**04 45 10.9**	**+0.9**
MA2	**Magadan** comp=Z,44nm,18.7s,baz=37,slow=38	**11.34**	**305**	LR		LR		04 50 46.7	
ILAR	**Eielson Array** 0.7nm,0.8s,baz=249,slow=6.4,SNR=10	**24.12**	**47**	P		**P**		**04 48 40.7**	**-1.9**
ILAR					pP	**pP**		**04 48 49.0**	**-1.1**
	2.2nm,0.6s,baz=254,slow=8.2,SNR=12								
INK	**Inuvik** 0.5nm,0.5s,baz=270,slow=10,SNR=3.8	**29.59**	**39**	P		**P**		**04 49 30.6**	**-1.0**
INK					pP	**pP**		**04 49 39.3**	**+0.1**
	1.2nm,0.6s,baz=276,slow=6.8,SNR=5.0								
H11S1	**WAKE ISLAND Hy 35.75 184** baz=2.3,slow=76,SNR=8.1			T		T		05 28 37.3	
H11S3	**WAKE ISLAND Hy 35.76 184** baz=2.3,slow=76,SNR=7.1			T		T		05 28 36.4	
H11S2	**WAKE ISLAND Hy 35.76 184** baz=2.3,slow=76,SNR=10			T		T		05 28 53.4	
YKA	**Yellowknife Ar** 0.2nm,0.5s,baz=293,slow=8.1,SNR=3.7	**38.55**	**46**	P		**P**		**04 50 47.8**	**-1.5**
YKA					pP	**pP**		**04 50 56.7**	**-0.2**
	0.7nm,0.6s,baz=294,slow=8.2,SNR=10								
YKA					PcP	**PcP**		**04 53 02.4**	**+1.1**
	0.2nm,0.8s,baz=303,slow=3.0,SNR=2.7								
NVAR	**Mina Array Bea** 0.3nm,0.6s,baz=296,slow=9.0,SNR=2.6	**50.25**	**77**	P		**P**		**04 52 23.2**	**-0.1**
NVAR					pP	**pP**		**04 52 31.2**	**+0.1**
	0.6nm,0.8s,baz=290,slow=8.0,SNR=3.0								
KURK	**Kurchatov**	**51.55**	**306**	P		**P**		**04 52 34.5**	**+1.9**
KURK				*PP		**pP**		**04 52 41.8**	**+1.4**
KURBB	**Kurchatov Arra** 0.3nm,0.5s,baz=54,slow=8.3,SNR=3.6	**51.65**	**306**	P		**P**		**04 52 34.5**	**+1.2**
KURBB					pP	**pP**		**04 52 41.8**	**+0.6**
	0.7nm,0.5s,baz=55,slow=7.7,SNR=5.2								
PDAR	**Pinedale Array** 0.1nm,0.5s,baz=300,slow=3.6,SNR=3.5	**52.17**	**67**	P		**P**		**04 52 38.6**	**+0.9**
PDAR					pP	**pP**		**04 52 45.4**	**-0.2**
	0.4nm,0.4s,baz=288,slow=3.5,SNR=7.2								
MKAR	**Makanchi Array** 0.1nm,0.3s,baz=51,slow=7.6,SNR=2.7	**52.36**	**300**	P		**P**		**04 52 40.2**	**+1.5**
MKAR					pP	**pP**		**04 52 46.4**	**-0.2**
	0.5nm,0.6s,baz=52,slow=7.6,SNR=3.5								
BVAR	**Borovoye Array** 0.6nm,0.6s,baz=51,slow=7.6,SNR=3.4	**53.73**	**312**	P		**P**		**04 52 50.2**	**+1.6**
BVAR					pP	**pP**		**04 52 57.1**	**+0.6**
	2.2nm,0.6s,baz=50,slow=8.0,SNR=7.0								
NB2	**NORSAR Subarra** comp=Z,1.6nm,0.8s,baz=17,slow=6.9	**63.70**	**348**	P		**P**		**04 53 57.1**	**-0.8**
NOA	**NORSAR Array B** comp=Z,0.3nm,0.5s,baz=16,slow=6.7,SNR=3.3	**63.70**	**348**	P		**P**		**04 53 58.3**	**+0.4**
NOA					pP	**pP**		**04 54 06.3**	**+0.3**
	comp=Z,0.9nm,0.6s,baz=17,slow=6.6,SNR=6.8								
TXAR	**Lajitas Array** comp=Z,0.5nm,0.5s,baz=323,slow=5.5,SNR=5.7	**65.18**	**74**	P		**P**		**04 54 07.5**	**-0.7**
TXAR					pP	**pP**		**04 54 16.1**	**-0.1**
	comp=Z,0.8nm,0.5s,baz=301,slow=4.9,SNR=8.4								
BRTR	**Keskin Array B** comp=Z,0.2nm,0.5s,baz=28,slow=3.4,SNR=2.7	**78.88**	**327**	P		**P**		**04 55 31.8**	**+1.8**
BRTR					pP	**PcP**		**04 55 39.1**	**+0.3**
	comp=Z,0.5nm,0.6s,baz=22,slow=4.5,SNR=3.6								

*ISCJB **12** 04:44:44.3±0.2, 6°.97S±0°.04×155°.83E±0°.04, h62km, mb4.9/82, Error ellipse: s-maj=5.6km s-min=5.3km az=137.1*
*MOS **12** 04:44:46.0±1.0, 6°.97S×155°.82E, h75km, mb5.0/19, Error ellipse: s-maj=9.1km s-min=8.5km az=118.9*
*IDC **12** 04:44:48.9±1.7, 7°.05S×155°.80E, h91km±15km, mb4.3/26, mb1 4.4/31, mb1mx4.3/45, mbtmp4.6/31, MS3.7/21, Ms1 3.7/21, ms1mx3.6/25, Error ellipse: s-maj=11.7km s-min=10.6km az=51.0*
*NEIC **12** 04:44:48.4±0.7, 7°.01S×155°.85E, h88km±6km, mb4.9/32, Error ellipse: s-maj=6.0km s-min=5.2km az=103.0*
*DJA **12** 04:44:50.1±0.9, 7°.5±.4°×15°.6E±°, h89km±8km, M5.1/20, mb5.0/20, mB5.9/3, Mw(mB)5.5/3*
ISC 12 04:44:45.7±0.3, 6°.98S±0°.05×155°.81E±0°.05, h62km, n222, σ1°36/225, mb4.9/82, 2C-3D, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
RABL	**Rabaul**	**4.56**	**307**	*e*Pn		Pn		04 45 57.7	+5.5
HNR	**Honiara**	**4.77**	**121**	P		**Pn**		**04 45 56.9**	**+1.8**
	14nm,0.3s,baz=236,slow=6.2,SNR=3.0								
HNR				S		**Sn**		**04 46 52.3**	**+3.1**
	25nm,0.3s,baz=224,slow=14,SNR=4.6								
HNR				LR		LR		04 47 42.9	
	comp=Z,1μm,22.0s,baz=310,slow=37								
HNR	**Honiara**	**4.77**	**121**	*e*P		**Pn**		**04 45 54.0**	**-1.1**
HNR				*e*S		**Sn**		**04 46 57.0**	**+7.8**
HNR	**Honiara**	**4.77**	**121**	*e*P		**Pn**		**04 45 55.9**	**+0.8**
HNR				*e*S		**Sn**		**04 46 47.0**	**-2.2**
HNR	**Honiara**	**4.77**	**121**	*e*Pn		**Pn**		**04 45 55.9**	**+0.8**
HNR				*e*S		**Sn**		**04 46 47.0**	**-2.2**
PMG	**Port Moresby**	**8.89**	**254**	P		**Pn**		**04 46 53.4**	**+1.9**
	30nm,0.3s,baz=59,slow=7.8,SNR=45								
PMG				S		**Sn**		**04 48 34.5**	**+4.2**
	2.3nm,0.3s,baz=339,slow=17,SNR=4.2								
PMG				LR		LR		04 50 08.0	
	comp=Z,891nm,21.0s,baz=46,slow=36								
PMG	**Port Moresby**	**8.89**	**254**	*i* P		**Pn**		**04 46 53.0**	**+1.4**
PMG					pmax	pmax			
	comp=Z,679nm,0.8s								
PMG	**Port Moresby**	**8.89**	**254**	*e*Pn		**Pn**		**04 46 53.5**	**+1.9**
PMG				*e*S		**Sn**		**04 48 29.0**	**-1.4**
MANU	**Manus Island**	**9.73**	**300**	*e*Pn		**Pn**		**04 47 06.9**	**+3.8**
PATS	**Pohnpei**	**13.95**	**10**	*e*Pn		**Pn**		**04 47 59.9**	**-0.5**
COEN	**Coen**	**14.22**	**240**	*e*Pn		**Pn**		**04 48 05.5**	**+1.4**
JAY	**Jayapura** comp=Z,0.1nm,0.3s,baz=271,slow=23,SNR=3.8	**15.68**	**286**	P		**P**		**04 48 25.9**	**0.0**
JAY	**Jayapura**	**15.68**	**286**	P		**P**		**04 48 26.0**	**0.0**
CTA	**Charters Tower** comp=Z,0.5nm,0.3s,baz=36,slow=15,SNR=14	**15.99**	**214**	P		**P**		**04 48 28.9**	**-0.4**
CTA				LR		LR		04 54 13.1	
	comp=Z,342nm,21.9s,baz=78,slow=35								
CTAO	**Charters Tower**	**15.99**	**214**	*e*P		**P**		**04 48 28.2**	**-1.1**
CTAO					pmax	pmax			
	comp=Z,423nm,1.6s								
CTAO	**Charters Tower** comp=Z,423nm,1.6s	**15.99**	**214**	*e*Pn		**P**		**04 48 28.2**	**-1.1**
DZM	**Mont Dzumac** comp=Z,0.5nm,0.3s,baz=328,slow=9.3,SNR=10	**18.18**	**147**	P		**Pn**		**04 48 56.0**	**+1.9**
DZM				LR		LR		04 54 43.5	
	comp=Z,391nm,18.0s,baz=246,slow=33								
EIDS	**Eidsvold** comp=Z,11nm,0.9s	**18.84**	**193**	*e*P		**Pn**		**04 49 03.8**	**+2.0**
GUMO	**Guam** comp=Z,102nm,20.2s,baz=172,slow=33	**23.14**	**332**	LR		LR		04 57 26.2	
FAKI	**Fak Fak**	**23.81**	**279**	P		**P**		**04 49 49.1**	**-4.1**
FAKI	**Fak Fak** comp=Z,32nm,0.8s	**23.81**	**279**	*e*P		**P**		**04 49 50.7**	**-2.5**
MSVF	**Nonsavu**	**24.19**	**118**	*e*P		**P**		**04 49 56.1**	**-0.5**
MSVF					pmax	pmax			
	comp=Z,57nm,1.1s								
MSVF	**Nonsavu** comp=Z,57nm,1.1s	**24.19**	**118**	*e*P		**P**		**04 49 56.1**	**-0.5**
WRAB	**Tennant Creek**	**24.48**	**236**	*i* P		**P**		**04 49 58.7**	**-0.6**
WRAB					pmax	pmax			
	comp=Z,62nm,1.7s								
WRAB	**Tennant Creek** comp=Z,17nm,0.8s	**24.48**	**236**	*e*P		**P**		**04 49 59.1**	**-0.1**
WB2	**Warramunga Arr** comp=Z,76nm,1.5s	**24.48**	**236**	*e*P		**P**		**04 49 59.9**	**+0.6**
WRA	**Warramunga Arr** comp=Z,6.6nm,0.6s,baz=61,slow=9.6,SNR=23	**24.49**	**236**	P		**P**		**04 49 59.4**	**0.0**
WRA				PcP		**PcP**		**04 53 36.5**	**-0.3**
	comp=Z,6.6nm,1.1s,baz=66,slow=1.9,SNR=7.3								
WRA				LR		LR		04 59 39.8	
	comp=Z,274nm,18.8s,baz=50,slow=36								
WRA	**Warramunga Arr**	**24.49**	**236**	*i* P		**P**		**04 49 59.7**	**+0.3**
WRA					pmax	pmax			
	comp=Z,12nm,0.9s								
MTN	**Manton Dam** comp=Z,78nm,1.0s	**24.98**	**255**	*e*P		**P**		**04 50 04.7**	**+0.8**
AS01	**Alice Springs**	**26.76**	**229**	*e*P		**P**		**04 50 19.2**	**-0.7**
AS31	**Alice Springs** comp=Z,2.5nm,0.6s	**26.79**	**229**	*e*P		**P**		**04 50 19.9**	**-0.3**
ASAR	**Alice Springs** comp=Z,4.8nm,0.5s,baz=59,slow=9.9,SNR=47	**26.79**	**229**	P		**P**		**04 50 19.7**	**-0.5**
ASAR				PcP		**PcP**		**04 53 41.9**	**-0.1**
	comp=Z,2.2nm,0.5s,baz=70,slow=2.7,SNR=11								
ASAR				LR		LR		05 00 09.5	
	comp=Z,303nm,21.0s,baz=94,slow=34								
H11S3	**WAKE ISLAND Hy 27.49** baz=203,slow=76,SNR=366	**23**		T		T		05 18 56.0	
H11S2	**WAKE ISLAND Hy 27.49** baz=203,slow=76,SNR=163	**23**		T		T		05 18 48.9	
H11S1	**WAKE ISLAND Hy 27.51** baz=203,slow=76,SNR=127	**23**		T		T		05 18 49.8	
STKA	**Stephens Creek** comp=Z,4.5nm,0.7s,baz=25,slow=14,SNR=5.4	**28.10**	**206**	P		**P**		**04 50 31.6**	**-0.1**
STKA				PcP		**PcP**		**04 53 44.9**	**-0.1**
	comp=Z,3.5nm,0.8s,baz=70,slow=3.7,SNR=3.5								
STKA				LR		LR		05 01 33.9	
	comp=Z,438nm,18.7s,baz=30,slow=36								
FITZ	**Fitzroy Crossi** comp=Z,32nm,0.6s	**31.40**	**247**	*e*P		**P**		**04 51 00.6**	**-0.5**
KAPI	**Kappang** comp=Z,18nm,0.8s,baz=85,slow=8.9,SNR=12	**35.90**	**271**	P		**P**		**04 51 40.1**	**-0.2**
KAPI	**Kappang**	**35.90**	**271**	*e*P		**P**		**04 51 40.4**	**+0.1**
SPSI	**Sidrap Palu** comp=Z,15nm,1.1s	**35.99**	**273**	P		**P**		**04 51 43.5**	**+2.4**
MBWA	**Marble Bar**	**37.61**	**244**	*e*P		**P**		**04 51 54.6**	**-0.2**
RPZ	**Rata Peaks** comp=Z,26nm,0.8s,baz=7.4,slow=1.3,SNR=6.2	**38.96**	**162**	P		**P**		**04 52 05.3**	**-0.6**
KKM	**Kota Kinabalu** comp=Z,52nm,0.9s	**41.57**	**287**	*e*P		**P**		**04 52 27.9**	**0.0**
STKI	**Sintang** comp=Z,29nm,0.7s,comp=Z,16μm	**44.77**	**277**	P		**P**		**04 52 55.7**	**+2.1**
KSM	**Kuching** comp=Z,12nm,0.7s	**46.17**	**279**	*e*P		**P**		**04 53 04.8**	**0.0**
MJAR	**Matsushiro Arr** comp=Z,1.3nm,0.5s,baz=160,slow=7.0,SNR=4.0	**46.33**	**340**	P		**P**		**04 53 06.8**	**+1.2**
MJAR				LR		LR		05 13 14.3	
	comp=Z,15nm,19.0s,baz=165,slow=37								
CISI	**Cisompet, Garu** comp=Z,64nm,0.9s	**47.59**	**266**	*e*P		**P**		**04 53 15.0**	**-0.9**
CGJI	**Cibinong** comp=Z,87nm,0.7s	**49.74**	**267**	P		**P**		**04 53 30.7**	**-1.7**
KSRS	**Korea Array** comp=Z,2.2nm,0.6s,baz=148,slow=8.0,SNR=8.3	**51.30**	**232**	P		**P**		**04 53 44.5**	**+0.8**
KSRS				LR		LR		05 12 17.8	
	comp=Z,35nm,21.9s,baz=141,slow=32								
KSAR	**Wonju Array Be**	**51.31**	**331**	P		**P**		**04 53 44.5**	**+0.8**
KSAR	**Wonju Array Be**	**51.31**	**331**	P		**P**		**04 53 44.5**	**+0.8**
ASAJ	**Asahikawa** comp=Z,4.2nm,0.4s,baz=165,slow=18,SNR=4.1	**52.24**	**348**	P		**P**		**04 53 51.8**	**+1.2**
NJ2	**Nanjing**	**52.41**	**320**	*e*P		**P**		**04 53 53.4**	**+1.3**
NJ2					pmax	pmax			
	comp=Z,13nm,0.5s								
PPT	**Papeete** comp=Z,37nm,21.0s,baz=302,slow=31	**54.23**	**107**	LR		LR		05 12 44.8	
PPT2	**Papeete2** comp=Z,73nm,22.8s	**54.23**	**107**	*e*LR		LR		05 10 03.4	
USRK	**Ussuriysk Ar.** comp=Z,8.8nm,1.0s,baz=158,slow=8.3,SNR=9.7	**55.29**	**339**	P		**P**		**04 54 13.8**	**+1.0**
USRK				LR		LR		05 15 21.8	
	comp=Z,52nm,21.9s,baz=138,slow=33								
PPI	**Padang Panjang** comp=Z,28nm,0.8s	**55.63**	**274**	P		**P**		**04 54 15.0**	**-0.9**
PANO	**Nakornpanom** comp=Z,29nm,1.0s	**55.98**	**296**	P		**P**		**04 54 19.6**	**+1.3**
KULM	**Kulim** comp=Z,15nm,0.8s	**56.38**	**281**	*e*P		**P**		**04 54 20.7**	**-0.5**
SKNT	**Sakolnakorn** comp=Z,49nm,1.1s	**56.48**	**296**	P		**P**		**04 54 22.7**	**+0.8**
SKNT				P		**pP**		**04 54 34.4**	**-3.9**
	comp=Z,49nm,1.1s								
MDJ	**Mudanjiang**	**56.52**	**338**	P		**P**		**04 54 22.9**	**+1.3**
MDJ					pmax	pmax			
	comp=Z,7.0nm,1.0s								
MDJ					pmax	pmax			
	comp=Z,60nm,5.2s								
NONG	**Nongkai** comp=Z,56nm,0.9s,comp=Z,12μm	**57.61**	**296**	P		**P**		**04 54 30.4**	**+0.6**
CHAI	**Chaiyaphum** comp=Z,11nm,0.7s,comp=Z,157nm	**57.92**	**294**	P		**P**		**04 54 32.3**	**+0.2**
GYA	**Guiyang**	**58.08**	**307**	*e*P		**P**		**04 54 35.6**	**+2.4**
GYA					pmax	pmax			
	comp=Z,10.0nm,0.9s								
GSI	**Gunungsitoli** comp=Z,21nm,0.6s	**58.68**	**276**	*e*P		**P**		**04 54 36.3**	**-1.2**
PBKT	**Sadao Pong** comp=Z,22nm,1.4s	**59.06**	**294**	P		**P**		**04 54 41.1**	**+1.1**
LOEI	**Loei** comp=Z,47nm,0.9s,comp=Z,878nm	**59.10**	**295**	P		**P**		**04 54 38.5**	**-1.8**
KLR	**Kul'dur** comp=Z,2.7nm,0.8s,baz=134,slow=6.5,SNR=9.5	**59.79**	**342**	P		**P**		**04 54 45.3**	**+0.9**
KLR	**Kul'dur**	**59.79**	**342**	*e*P		**P**		**04 54 44.8**	**+0.4**
UTTA	**Uttaradit** comp=Z,17nm,0.9s,comp=Z,132nm	**59.82**	**295**	P		**P**		**04 54 46.2**	**+1.0**
PETK	**Petropavlovsk-** comp=Z,6.6nm,0.9s,baz=167,slow=6.8,SNR=2.8	**59.87**	**1**	P		**P**		**04 54 46.2**	**+1.3**
PETK				LR		LR		05 16 40.1	
	comp=Z,50nm,21.6s,baz=146,slow=32								
NANT	**Nan** comp=Z,18nm,0.9s,comp=Z,153nm	**60.05**	**296**	P		**P**		**04 54 47.5**	**+0.8**
SUKH	**Sukhothai** comp=Z,15nm,0.9s,comp=Z,106nm	**60.57**	**294**	P		**P**		**04 54 51.6**	**+1.3**
SUKH				P		**pP**		**04 55 03.6**	**-3.2**
	comp=Z,15nm,0.9s,comp=Z,106nm								
LAMP	**Lampang** comp=Z,13nm,0.8s	**60.91**	**296**	P		**P**		**04 54 54.8**	**+2.2**
CM01	**Chiang Mai Arr**	**61.48**	**295**	*e*P		**P**		**04 54 57.5**	**+1.1**
CMAR	**Chiang Mai Arr** comp=Z,5.7nm,0.7s,baz=124,slow=5.2,SNR=26	**61.50**	**295**	P		**P**		**04 54 57.3**	**+0.6**
CMAR				LR		LR		05 19 39.8	
	comp=Z,20nm,21.5s,baz=120,slow=34								
CMMT	**Chiang Mai** comp=Z,23nm,1.2s,comp=Z,789nm	**61.61**	**296**	P		**P**		**04 54 59.3**	**+1.9**
CMMT				P		**pP**		**04 55 10.5**	**-3.5**
	comp=Z,23nm,1.2s,comp=Z,789nm								
CHTO	**Chiang Mai** comp=Z,41nm,1.4s	**61.62**	**296**	P		**P**		**04 54 59.3**	**+1.9**
CHTO				P		**pP**		**04 55 10.6**	**-3.4**
	comp=Z,41nm,1.4s								
CHTO	**Chiang Mai**	**61.62**	**296**	*e*P		**P**		**04 54 58.0**	**+0.5**
CHTO					pmax	pmax			
	comp=Z,26nm,1.1s								
CHTO	**Chiang Mai** comp=Z,26nm,1.1s	**61.62**	**296**	*e*P		**P**		**04 54 58.0**	**+0.5**
CMAI	**Chiengmai2** comp=Z,13nm,1.1s,comp=Z,398nm	**61.90**	**297**	P		**P**		**04 55 02.1**	**+2.6**
CD2	**Chengdu**	**62.41**	**310**	P		**P**		**04 55 02.6**	**0.0**
CD2					pmax	pmax			
	comp=Z,20nm,0.8s								
CD2					pmax	pmax			
	comp=Z,120nm,4.1s								
TAOE	**Nuku Hiva Isla** comp=Z,79nm,21.9s	**63.40**	**96**	*e*LR		LR		05 14 05.6	
LZH	**Lanzhou**	**64.87**	**315**	*e*P		**P**		**04 55 19.0**	**+0.2**
LZH				pP		sP		04 55 40.1	-2.4
LZH				sP		PcP		04 55 49.5	-2.2
LZH				*e*PP		**PP**		**04 57 45.0**	**+2.7**
LZH					pmax	pmax			
	comp=Z,20nm,1.3s								
LZH					pmax	pmax			
	comp=Z,69nm,7.5s								
LZH				LR		LR			
	comp=N,320nm,15.0s								
LZH				LR		LR			
	comp=E,290nm,14.9s								
LZH				LR		LR			
	comp=Z,360nm,15.6s								
CASY	**Casey**	**66.86**	**198**	*e*P		**P**		**04 55 30.3**	**-0.5**
ULN	**Ulaanbaatar**	**69.42**	**327**	*c i*P		**P**		**04 55 46.4**	**-1.0**
ULN					pmax	pmax			
	comp=Z,13nm,1.0s								
ULN	**Ulaanbaatar** comp=Z,10nm,0.9s	**69.42**	**327**	*e*P		**P**		**04 55 49.0**	**+1.6**
SONM	**Songino Array** comp=Z,9.9nm,0.8s,baz=128,slow=5.4,SNR=41	**69.76**	**327**	P		**P**		**04 55 50.4**	**+0.9**
SONM				PKP2bc				05 23 52.8	
	comp=Z,0.8nm,0.8s,baz=321,slow=3.7,SNR=3.5								
SONM				LR		LR		05 27 57.5	
	comp=Z,38nm,18.3s,baz=144,slow=37								
SONA1	**Songino Array**	**69.76**	**327**	*e*P		**P**		**04 55 50.4**	**+0.9**
SHL	**Shillong**	**69.98**	**300**	*e*P		**P**		**04 55 53.0**	**+1.6**
VNDA	**Vanda** comp=Z,3.5nm,1.0s,baz=334,slow=6.1,SNR=12	**70.58**	**179**	P		**P**		**04 55 53.9**	**0.0**
VNDA				LR		LR		05 20 30.3	
	comp=Z,71nm,19.9s,baz=312,slow=30								
SBA	**Scott Base**	**71.07**	**178**	*e*P		**P**		**04 55 58.6**	**+1.8**
SBA					pmax	pmax			
	comp=Z,14nm,1.3s								
SBA	**Scott Base** comp=Z,14nm,1.3s	**71.07**	**178**	*e*P		**P**		**04 55 58.6**	**+1.8**
BOD	**Bodaibo**	**72.89**	**338**	*e*P		**P**		**04 56 07.4**	**-0.6**
BOD					pmax	pmax			
	comp=Z,4.0nm,1.8s								
ZAK	**Zakamensk**	**72.90**	**328**	*e*P		**P**		**04 56 08.6**	**+0.2**
ZAK					pmax	pmax			
	comp=Z,8.0nm,1.1s								
TLY	**Talaya**	**73.46**	**329**	*e*P		**P**		**04 56 11.9**	**+0.4**
TLY					pmax	pmax			
	comp=Z,8.0nm,0.9s								
BILL	**Bilibino**	**75.20**	**4**	⇓*i*P		**P**		**04 56 22.2**	**+0.9**
BILL				*i*				04 56 35.4	
BILL				*i*				04 56 44.0	
BILL					pmax	pmax			
	comp=Z,15nm,1.0s								
BILL				MLR		MLR			
	comp=Z,222nm,22.0s								
BILL	**Bilibino** comp=Z,12nm,0.9s	**75.20**	**4**	*e*P		**P**		**04 56 22.0**	**+0.7**
PKIN	**Phulchoki** comp=Z,8.8nm,0.5s	**76.12**	**301**	*e*P		**P**		**04 56 28.0**	**+0.3**
KKN	**Kakani**	**76.28**	**301**	*e*P		**P**		**04 56 29.1**	**+0.6**
GKN	**Gorkha** comp=Z,23nm,0.6

comp=E,160nm,5.3s
KURK Kurchatov 87.31 322 P P 04 57 25.4 -0.4
KURK Kurchatov 87.31 322 P P 04 57 25.4 -0.4
KURBB Kurchatov Arra 87.35 322 P P 04 57 25.3 -0.6
comp=E,2.4nm,0.7s,baz=99,slow=5.3,SNR=26
TKM2 Tokmak 2 87.58 314 eP P 04 57 27.7 +0.1
TKM2 pmax pmax
comp=Z,3.0nm,0.6s
TKM2 Tokmak 2 87.58 314 eP P 04 57 27.7 +0.1
comp=Z,3.1nm,0.6s
DLBC Dease Lake 87.72 30 eP P 04 57 29.1 +1.5
comp=Z,20nm,1.8s
AAK Ala-Archa 88.32 313 P P 04 57 31.1 0.0
comp=Z,2.7nm,0.7s,baz=182,slow=3.8,SNR=8.6
AAK Ala-Archa 88.32 313 eP P 04 57 30.8 -0.2
AAK pmax pmax
comp=Z,6.0nm,0.8s
AAK Ala-Archa 88.32 313 eP P 04 57 31.4 +0.3
EKS2 Erkin-Say 88.85 313 eP P 04 57 33.9 +0.4
EKS2 pmax pmax
comp=Z,2.0nm,0.7s
EKS2 Erkin-Say 88.85 313 eP P 04 57 33.9 +0.4
comp=Z,2.4nm,0.7s
NRIK Noril'sk 88.98 341 P P 04 57 32.4 -0.9
comp=Z,2.5nm,0.5s,baz=106,slow=2.9,SNR=6.1
NRIK LR LR 05 37 48.5
comp=Z,39nm,20.5s,baz=94,slow=36
INK Inuvik 89.42 21 eP P 04 57 35.6 +0.3
INK pmax pmax
comp=Z,7.0nm,1.3s
INK Inuvik 89.42 21 eP P 04 57 35.6 +0.3
comp=Z,7.1nm,1.3s
NVAR Mina Array Bea 91.08 52 P P 04 57 45.6 +1.5
comp=Z,0.5nm,0.7s,baz=251,slow=5.6,SNR=3.6
NVAR LR LR 05 31 08.1
comp=Z,48nm,21.8s,baz=280,slow=30
BVAR Borovoye Array 92.76 323 P P 04 57 50.4 -0.9
comp=Z,6.0nm,0.8s,baz=101,slow=6.2,SNR=23
BRVK Borovoye 92.83 323 iP P 04 57 50.2 -1.4
BRVK pmax pmax
comp=Z,4.0nm,0.9s
BRVK Borovoye 92.83 323 eP P 04 57 51.0 -0.6
comp=Z,6.9nm,1.1s
ZRNK Zerenda 93.58 323 eP P 04 57 53.9 -1.1
ZRNK pmax pmax
comp=Z,4.0nm,0.7s
ZRNK Zerenda 93.58 323 eP P 04 57 53.9 -1.1
comp=Z,3.8nm,0.7s
YKA Yellowknife Ar 95.94 28 P P 04 58 05.4 -0.2
comp=Z,1.1nm,0.9s,baz=268,slow=4.6,SNR=15
YKA PKKPbc PKKPbc 05 14 52.3 -4.3
comp=Z,0.4nm,0.6s,baz=82,slow=2.9,SNR=17
YKB5 Yellowknife Ar 95.94 28 eP P 04 58 04.9 -0.7
PDAR Pinedale Array 98.09 48 P P 04 58 15.9 -0.2
comp=Z,0.2nm,0.5s,baz=264,slow=3.6,SNR=3.0
PDAR LR LR 05 39 06.2
comp=Z,70nm,18.4s,baz=312,slow=33
ARCES ARCESS Array B 109.80 343 PKiKP PKiKP 05 03 08.7 -0.7
comp=Z,2.3nm,0.8s,baz=64,slow=2.1,SNR=8.0
FINES FINESS Array B 114.25 336 PKP PKPdf 05 03 17.2 -0.8
comp=Z,2.2nm,0.7s,baz=107,slow=1.5,SNR=9.3
FINES FINESS Array B 114.25 336c iPKIKP PKPdf 05 03 17.5 -0.5
FINES pmax pmax
comp=Z,2.0nm,0.7s
ANN Anapa 114.87 316 iPKIKP PKPdf 05 03 16.1 -3.5
ANN e 05 03 35.1
ANN e 05 04 17.6
ANN pmax pmax
comp=Z,44nm,1.5s
PLCA Paso Flores 116.25 142 PKP PKPdf 05 03 22.0 -0.6
comp=Z,0.8nm,0.9s,baz=288,slow=3.2,SNR=3.0
AKASG Malin Array Be 117.99 325 PKP PKPdf 05 03 24.8 -0.7
comp=Z,3.0nm,0.6s,baz=49,slow=2.7,SNR=15
KIEV Kiev 118.00 325 iPKIKP PKPdf 05 03 24.5 -1.0
KIEV Kiev 118.00 325 ePKPdf PKPdf 05 03 25.0 -0.5
BRTR Keskin Array B 118.97 312 PKP PKPdf 05 03 27.3 -0.6
comp=Z,2.0nm,0.9s,baz=43,slow=1.7,SNR=8.0
BR231 Keskin MP Arra 119.58 312 ePKPdf PKPdf 05 03 26.6 -2.4
NB2 NORSAR Subarra119.94 341 PKPdf PKPdf 05 03 28.1 -0.9
comp=Z,1.3nm,0.7s,baz=37,slow=1.8
NOA NORSAR Array B 119.94 341 PKP PKPdf 05 03 28.3 -0.7
comp=Z,1.8nm,0.7s,baz=44,slow=1.9,SNR=12
BOSA Boshof 120.66 231 PKP PKPdf 05 03 30.6 -1.0
comp=Z,3.4nm,0.8s,baz=148,slow=2.6,SNR=8.4
STHS Stebnicka Huta 123.11 326 ePKIKP PKPdf 05 03 35.3 -0.1
STHS Stebnicka Huta 123.11 326 ePKP PKPdf 05 03 35.3 -0.1
CRVS Cervenica-Dubn 123.26 326 ePKIKP PKPdf 05 03 36.0 +0.3
CRVS Cervenica-Dubn 123.26 326 ePKP PKPdf 05 03 36.0 +0.3
LSZ Lusaka 123.59 247 ePKIKP PKPdf 05 03 37.6 +0.2
LSZ Lusaka 123.59 247 ePKPdf PKPdf 05 03 37.6 +0.2
BRG Berggiesshubel 126.02 331 ePKP PKPdf 05 03 41.4 +0.5
comp=Z,7.6nm,0.8s
BRG Berggiesshubel 126.02 331 ePKIKP PKPdf 05 03 41.4 +0.5
BRG pmax pmax
comp=Z,3.0nm,0.9s
CLL Collm 126.17 332 iPKPdf PKPdf 05 03 41.6 +0.4
comp=Z,8.0nm,0.6s
CLL Collm 126.17 332 iPKIKP PKPdf 05 03 41.6 +0.4
CLL pmax pmax
comp=Z,8.0nm,0.6s
CLL Collm 126.17 332 ePKPdf PKPdf 05 03 41.5 +0.4
PRU Pruhonice 126.30 330 ePKPdf PKPdf 05 03 41.7 +0.2
PRU Pruhonice 126.30 330 ePKIKP PKPdf 05 03 41.7 +0.2
CONA Conrad Observa 126.89 327 iPKIKP PKiKP 05 03 43.6 +0.3
comp=Z,2.8nm,0.5s
NKC Novy Kostel 127.16 331 ePKPdf PKPdf 05 03 43.7 +0.5
NKC Novy Kostel 127.16 331 ePKIKP PKPdf 05 03 43.7 +0.5
KHC Kasperske Hory 127.33 330 ePKPdf PKPdf 05 03 44.2 +0.6
KHC ex x 05 03 56.9
KHC Kasperske Hory 127.33 330 ePKIKP PKPdf 05 03 44.1 +0.5
KHC Kasperske Hory 127.33 330 ePKPdf PKPdf 05 03 44.1 +0.5
GERES GERESS Array B 127.45 329 PKP PKPdf 05 03 43.3 -0.6
comp=Z,3.7nm,0.7s,baz=52,slow=2.2,SNR=23
OBKA Obir 128.46 326 iPKIKP PKPdf 05 03 46.0 +0.2
comp=Z,3.6nm,0.9s
WTTA Wattenberg 129.53 329 ePKiKP PKiKP 05 03 48.6 -0.1
comp=Z,8.2nm,0.9s
MOTA Moosalm 129.75 329 iPKIKP PKiKP 05 03 48.8 -0.3
comp=Z,2.9nm,0.4s
FETA Feichten 130.15 329 iPKiKP PKiKP 05 03 49.8 -0.2
comp=Z,3.6nm,0.7s
BFO Black Forest 130.42 332 iPKIKP PKPdf 05 03 50.6 +1.1
LPAZ La Paz 130.76 118 ePKIKP PKPdf 05 03 50.0 -1.8
LPAZ La Paz 130.76 118 ePKPdf PKPdf 05 03 50.0 -1.8
TUE Stuetta 131.23 329 ePKPdf PKPdf 05 03 51.3 0.0
TSUM Tsumeb 131.31 237 ePKPdf PKPdf 05 03 52.6 +0.5
MVO Moncorvo 142.68 338 ePKP PKPdf 05 04 09.5 -2.9
ESDC Sonseca Array 142.71 334 PKP PKPdf 05 04 09.8 -2.7
comp=Z,1.1nm,0.8s,baz=7.4,slow=3.1,SNR=5.3
PVIS Viseu 143.38 339 ePKP PKPbc 05 04 11.7 +0.8
PMRV Marv??o 144.32 337 ePKP PKPbc 05 04 14.0 +0.3
PTOM Tomar 144.53 339 ePKP PKPdf 05 04 15.2 -0.4
PMTG Montargil 144.95 338 ePKP PKPbc 05 04 15.8 +0.2
PBAR Barrancos 145.27 336 ePKP PKPdf 05 04 17.1 +0.2
EVO Evora 145.34 337 ePKP PKPab 05 04 17.2 +0.1
PBEJ Beja 145.72 337 ePKP PKPbc 05 04 18.2 +0.1
PNCL Nicolau / Gran 145.91 338 ePKP PKPab 05 04 19.2 0.0
MESJ Messejana 146.03 337 ePKP PKPbc 05 04 18.8 -0.2
TAM Tamanrasset 147.36 302 ePKP2 PKPbc 05 04 24.4 +0.8
TAM Tamanrasset 147.36 302 ePKPbc PKPbc 05 04 24.4 +0.8
TORD Torodi Ar. Bea 153.80 286 PKP PKPdf 05 04 30.0 -1.1
comp=Z,1.7nm,0.8s,baz=38,slow=1.7,SNR=10
TORD PKPbc PKPbc 05 04 38.2 -0.8
comp=Z,6.3nm,0.7s,baz=68,slow=2.3,SNR=26
TORD PKPab PKPab 05 04 51.1 -1.0
comp=Z,6.5nm,0.8s,baz=80,slow=3.6,SNR=12
KIC Kosan Boka 160.67 269 ePKP2 PKPab 05 05 21.5 -0.3
comp=Z,31nm,0.7s
DBIC Dimbokro 160.80 270 PKP PKPdf 05 04 39.2 -0.7
comp=Z,6.4nm,0.9s,baz=214,slow=3.1,SNR=4.1
DBIC PKPab PKPab 05 05 22.1 -0.3
comp=Z,10nm,0.7s,baz=76,slow=3.9,SNR=16
LIC Lamto 160.94 269 ePKP2 PKPab 05 05 22.6 -0.4
comp=Z,54nm,1.7s
TIC Toumodi 160.96 270 ePKP2 PKPab 05 05 22.7 -0.4

CSEM 12 05:00:51.0, 42°.26N×13°.71E, h10km, MD1.9/8
ROM 12 05:00:51.0±0.1, 42°.26N×13°.71E, h10km±1km, Md1.9/8, Ml1.0/4, Error ellipse: s-maj=1.8km s-min=1.6km az=18.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FAGN	Fagnano	0.09	271	Pg	Pg	05 00 53.9	+0.3
FAGN				Sg	Sg	05 00 55.9	+0.5
FAGN	Fagnano	0.09	271	Pg	Pg	05 00 53.9	+0.3
FAGN				Sg	Sg	05 00 55.9	+0.5
VCEL	Villa Celiera	0.16	36	Pg	Pg	05 00 55.2	+0.6
VCEL				Sg	Sg	05 00 58.5	+1.4
VCEL	Villa Celiera	0.16	36	Pg	Pg	05 00 55.2	+0.6
VCEL				Sg	Sg	05 00 58.5	+1.4
INTR	Introdacqua	0.29	150	Pg	Pg	05 00 57.4	+0.5
INTR				Sg	Sb	05 01 02.5	-0.8
INTR	Introdacqua	0.29	150	Pg	Pg	05 00 57.4	+0.5
INTR				Sg	Sb	05 01 02.5	-0.8
T0104	Madonna delle	0.29	289	Pg	Pb	05 00 58.3	-0.1
T0104				Sg	Sb	05 01 02.6	-0.8
TERO	Teramo	0.37	348	Pg	Pg	05 00 58.8	+0.5
TERO				Sg	Sg	05 01 04.2	+1.0
	13nm,0.6s						
TERO	Teramo	0.37	348	Pg	Pg	05 00 58.8	+0.5
TERO				Sg	Sg	05 01 04.2	+1.0
	13nm,0.6s						
RM32	Poggio Cancell	0.43	315	Pg	Pg	05 00 59.7	+0.1
RM32				Sg	Sb	05 01 07.5	-0.1
	21nm,1.1s						
RM32	Poggio Cancell	0.43	315	Pg	Pg	05 00 59.7	+0.1
RM32				Sg	Sb	05 01 07.5	-0.1
	21nm,1.1s						
RM33	Pellescritta (	0.44	304	Pg	Pb	05 01 00.9	-0.1
	20nm,0.9s						
RM33	Pellescritta (	0.44	304	Pg	Pb	05 01 00.9	-0.1
	20nm,0.9s						
SMA1	SAN MARTINO	0.46	323	Pg	Pg	05 01 00.1	+0.1
	21nm,1.0s						
SMA1	SAN MARTINO	0.46	323	Pg	Pg	05 01 00.1	+0.1
	21nm,1.0s						

IDC 12 05:19:19.4±8.0, 9°.59S×13°.97W, h0km, mb3.8/4, mb1 3.9/4, mb1mx3.6/36, mbtmp3.8/4, MS3.4/2, Ms1 3.5/2, ms1mx2.9/25, Error ellipse: s-maj=231.9km s-min=146.9km az=149.0, Ascension Island region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H10S2	ASCENSION HYDR	0.92	313	Pn	Pn	05 19 52.9	+14
H10S2				T	T	05 22 08.2	
	baz=103,slow=74						
H10S1	ASCENSION HYDR	0.93	314	Pn	Pn	05 19 53.1	+13
H10S1				T	T	05 22 09.1	
	baz=103,slow=74,SNR=29						
H10S3	ASCENSION HYDR	0.93	313	Pn	Pn	05 19 53.2	+14
H10S3				T	T	05 22 16.6	
	baz=103,slow=74,SNR=480						
H10N1	ASCENSION HYDR	1.81	344	Pn	Pg	05 20 04.4	+10
	baz=272,slow=9.1,SNR=4.2						
H10N3	ASCENSION HYDR	1.82	343	Pn	Pg	05 20 05.0	+11
	baz=272,slow=9.1,SNR=4.5						
H10N2	ASCENSION HYDR	1.83	344	Pn	Pg	05 20 04.9	+10
	baz=272,slow=9.1,SNR=5.0						
TORD	Torodi Ar. Bea	27.43	35	P	P	05 25 07.1	-0.1
	1.3nm,1.1s,baz=222,slow=9.2,SNR=4.9						
CPUP	Villa Florida	44.23	242	LR	LR	05 43 46.0	
	comp=Z,48nm,18.9s,baz=115,slow=33						
LPAZ	La Paz	53.08	257	LR	LR	05 50 18.9	
	comp=Z,36nm,19.0s,baz=156,slow=35						
GERES	GERESS Array B	63.08	20	P	P	05 29 48.9	+0.2
	0.4nm,0.2s,baz=195,slow=6.1,SNR=4.2						
BRTR	Keskin Array B	65.96	39	P	P	05 30 08.0	+0.2
	0.5nm,0.8s,baz=216,slow=7.1,SNR=5.2						
AKASG	Malin Array Be	70.76	27	P	P	05 30 37.3	-0.2
	1.3nm,0.6s,baz=225,slow=5.5,SNR=12						

IDC 12 05:28:22.5±2.4, 37°.01N×142°.95E, h0km, mb3.8/4, mb1 3.8/6, mb1mx3.5/41, mbtmp3.7/6, ML3.3/1, MS3.1/4, Ms1 3.1/4, ms1mx2.7/40, Error ellipse: s-maj=59.1km s-min=28.4km az=60.0
ISCJB 12 05:28:23.2±1.2, 36°.99N±0°.08×142°.7E±0°.1, h9km, mb3.6/4, MS3.5/1, Error ellipse: s-maj=15.3km s-min=10.3km az=162.4
JMA 12 05:28:25.7±0.3, 36°.98N×142°.71E, h42km, M3.2
ISC 12 05:28:25.1±1.5, 37°.02N±0°.08×142°.6E±0°.1, h9km, n16, σ0°.83/15, mb3.7/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	1.41	285	P	Pb	05 28 51.2	-0.5
JMM	Marumori	1.66	301	P	Pn	05 28 54.7	+0.3
JMM				S	Sb	05 29 16.5	-0.4
JHO	Hitachi	1.67	257	P	Pn	05 28 53.8	-0.8
JIO	Ouri	1.74	326	P	Pn	05 28 55.8	+0.3
JIO				S	Sn	05 29 17.5	-0.3
JFT	Otama	1.86	286	P	Pb	05 28 58.3	-1.1
JOU	Okura	2.04	312	P	Pn	05 28 59.9	+0.3
OFUJ	Ofunato	2.19	341	P	Pn	05 29 01.6	-0.1
JMK	Ichinoseki	2.21	331	P	Pn	05 29 02.2	+0.2
MJAR	Matsushiro Arr	3.55	264	Pn	Pn	05 29 22.2	+1.8
	2.2nm,0.3s,baz=76,slow=14,SNR=14						
MJAR				LR	LR	05 31 00.2	
	comp=Z,118nm,19.9s,baz=95,slow=41						
KSRS	Korea Array	11.70	277	Pn	Pn	05 31 15.6	+3.4
	baz=86,slow=15,SNR=4.6						
KSRS				LR	LR	05 35 42.5	
	comp=Z,128nm,18.3s,baz=80,slow=37						
KLR	Kul'dur	14.53	331	LR	LR	05 37 24.9	
	comp=Z,61nm,19.4s,baz=116,slow=37						
SONM	Songino Array	28.58	304	P	P	05 34 22.6	+1.2
	1.9nm,0.9s,baz=101,slow=9.8,SNR=9.4						
ZALV	Zalesovo Beam	42.62	312	P	P	05 36 21.9	+0.4
	0.6nm,0.4s,baz=96,slow=7.2,SNR=3.6						
MKAR	Makanchi Array	44.92	302	P	P	05 36 40.8	+0.6
	0.3nm,0.5s,baz=88,slow=7.6,SNR=6.4						
AAK	Ala-Archa	51.32	299	LR	LR	06 00 08.1	
	comp=Z,43nm,18.9s,baz=74,slow=37						
WRA	Warramunga Arr	57.18	189	P	P	05 38 11.5	-0.9
	0.6nm,0.8s,baz=7.9,slow=6.9,SNR=3.8						

ISN 12 05:37:33.9±6.5, 32°.34N×50°.37E, h3km±340km, ML4.1
IDC 12 05:37:41.7±4.7, 33°.18N×49°.92E, h0km, mb3.5/2, mb1 3.6/4, mb1mx3.3/31, mbtmp3.6/4, ML3.6/2, Error ellipse: s-maj=83.6km s-min=44.5km az=119.0
ISCJB 12 05:37:44.7±0.4, 33°.23N±0°.04×49°.94E±0°.03, h10km, mb3.5/2, Error ellipse: s-maj=5.9km s-min=3.8km az=3.6
TEH 12 05:37:45.7, 33°.22N×49°.90E, h3km, ML4.1
CSEM 12 05:37:45.0±0.2, 33°.20N×49°.90E, h2km, ML3.9, Error ellipse: s-maj=8.0km s-min=5.2km az=21.0
THR 12 05:37:45.4±0.5, 33°.40N×49°.78E, h14km±9km, ML3.9
ISC 12 05:37:45.1±0.7, 33°.25N±0°.04×49°.92E±0°.03, h10km, n46, σ1°.47/49, Western Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KHMZ	Khomeyn	0.48	4	ePg	Pg	05 37 53.1	-1.5
IPIR	Pirpir	1.00	124	eAMB	AMB	05 38 05.4	
IPIR				ePg	Pg	05 38 03.5	-0.8
ASAO	Ashtian	1.29	4	ePg	Pn	05 38 07.4	-2.0
ASAO				AML	AML	05 38 30.9	
	comp=N,2μm,0.5s						
QAM	Ghamsar	1.37	68	ePg	Pn	05 38 10.5	0.0
QAM				eSg	Sb	05 38 29.4	+0.8
QAM				eAMB	AMB	05 38 30.4	
	comp=Z,42μm,0.2s						
IKLH	Kolahrood	1.40	87	ePg	Pn	05 38 10.3	-0.5
IKLH				eSg	Sb	05 38 29.3	0.0
IKLH				eAMB	AMB	05 38 34.5	
	comp=Z,45μm,0.2s						
IKLH	Kolahrood	1.40	87	ePg	Pn	05 38 10.3	-0.5
IKLH				eSg	Sb	05 38 29.3	0.0
SHGR	Shooshtar-Gavs	1.48	220	ePg	Pg	05 38 13.4	0.0
SHGR				AML	AML	05 38 38.8	
	comp=N,1μm,0.5s						
SHGR	Shooshtar-Gavs	1.48	220	ePg	Pg	05 38 13.4	0.0
GHVR	GHOM	1.68	43	ePg	Pn	05 38 15.2	+0.7
GHVR				AML	AML	05 38 41.0	
	comp=N,1μm,0.5s						
GHVR				AML	AML	05 38 41.7	
	comp=E,2μm,0.4s						
IGAR	Gharneh	1.98	115	ePn	Pn	05 38 20.4	+1.5
IGAR				eAMB	AMB	05 38 22.3	
	comp=Z,14μm,0.1s						
IZEF	Zefreh	2.06	99	eAMB	AMB	05 38 54.5	
	comp=Z,11μm,0.1s						
IBZA	Bozab	2.10	306	ePn	Pn	05 38 21.5	+1.0
IBZA	Bozab	2.10	306	ePn	Pn	05 38 21.5	+1.0
IRAZ	Razeghan	2.15	0	ePn	Pn	05 38 22.5	+1.4
IRAZ				eAMB	AMB	05 39 03.4	
	comp=Z,13μm,0.3s						
IRAZ	Razeghan	2.15	0	ePn	Pn	05 38 22.5	+1.4
IVRN	Varamin	2.30	40	ePn	Pn	05 38 25.2	+2.1
IVRN	Varamin	2.30	40	ePn	Pn	05 38 25.2	+2.1
IR3	Iran Long-Peri	2.40	22	ePn	Pn	05 38 26.8	+2.3
IR3	Iran Long-Peri	2.40	22	ePn	Pn	05 38 26.8	+2.3
NASN	Na'in	2.47	100	ePn	Pb	05 38 29.6	-0.3
NASN	Na'in	2.47	100	ePn	Pb	05 38 29.5	-0.3
IMHD	Mahdasht	2.50	14	ePn	Pn	05 38 28.1	+2.1
IMHD				eAMB	AMB	05 38 32.1	
	comp=Z,9μm,0.1s						
IMHD	Mahdasht	2.50	14	ePn	Pn	05 38 28.1	+2.1
IRAM	Ramesheh	2.53	124	ePn	Pn	05 38 28.3	+1.8
IRAM	Ramesheh	2.53	124	ePn	Pn	05 38 28.3	+1.8
IVIS	Veis	2.85	297	ePn	Pn	05 38 31.1	+0.4
IVIS				eAMB	AMB	05 39 20.6	
	comp=Z,3μm,0.3s						
IVIS	Veis	2.85	297	ePn	Pn	05 38 31.1	+0.4
ILIN	Lien	2.96	305	ePn	Pn	05 38 34.1	+1.8
ILIN				eAMB	AMB	05 39 28.5	
	comp=Z,929nm,0.2s						
ILIN	Lien	2.96	305	ePn	Pn	05 38 34.1	+1.8
IGHG	Ghaleghazi	2.99	292	ePn	Pn	05 38 33.1	+0.4
IGHG				eAMB	AMB	05 39 28.8	
	comp=Z,6μm,0.6s						
IGHG	Ghaleghazi	2.99	292	ePn	Pn	05 38 33.1	+0.4
IAFJ	Afjeh	2.99	29	ePn	Pn	05 38 35.8	+3.0
IAFJ	Afjeh	2.99	29	ePn	Pn	05 38 35.8	+3.0
IDHR	Dehrash	3.27	297	ePn	Pn	05 38 37.1	+0.6
IDHR				eAMB	AMB	05 38 46.3	
	comp=Z,4μm,0.1s						
IDHR	Dehrash	3.27	297	ePn	Pn	05 38 37.1	+0.6
IKAZ	Kazeroun	3.83	154	ePn	Pn	05 38 45.4	+0.9
IKAZ				eAMB	AMB	05 39 36.5	
	comp=Z,2μm,0.3s						
IKAZ	Kazeroun	3.83	154	ePn	Pn	05 38 45.4	+0.9
IMEH	Mehriz	4.39	114	ePn	Pn	05 38 52.9	+0.9
IMEH				eAMB	AMB	05 40 14.3	
	comp=Z,802nm,0.2s						
IMEH	Mehriz	4.39	114	ePn	Pn	05 38 52.9	+0.9
BHD	Baghdad	4.64	272	ePn	Pn	05 38 55.0	-0.1
	SNR=3.0						
BHD				iSn	Sn	05 39 51.0	+2.0
	SNR=3.0						
ISRV	Sarvestan	4.73	144	ePn	Pn	05 38 57.6	+0.8
ISRV	Sarvestan	4.73	144	ePn	Pn	05 38 57.6	+0.8
ASF	Jabal al Asfar	11.02	268	Pn	Pn	05 40 20.8	-2.1
	comp=Z,0.9nm,0.3s,baz=73,slow=14,SNR=5.7						
BRTR	Keskin Array B	14.59	301	Pn	Pn	05 41 13.5	+1.8
	comp=Z,0.1nm,0.3s,baz=115,slow=10,SNR=3.9						
FINES	FINESS Array B	32.12	339	P	P	05 44 11.0	-1.2
	comp=Z,0.5nm,0.5s,baz=152,slow=8.6,SNR=4.1						
TORD	Torodi Ar. Bea	48.15	257	P	P	05 46 23.6	-2.0
	comp=Z,0.3nm,0.7s,baz=60,slow=7.5,SNR=3.0						

IDC 12 05:41:02.5±1.8, 3°.11S×147°.93E, h0km, mb3.7/4, mb1 4.0/4, mb1mx3.6/31, mbtmp3.7/4, MS3.3/7, Ms1 3.3/7, ms1mx3.0/31, Error ellipse: s-maj=94.3km s-min=33.4km az=123.0, Bismarck Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	Honiara	13.49	118	LR	LR	05 49 50.2	
	comp=Z,62nm,19.8s,baz=314,slow=39						
GUMO	Guam	16.87	350	LR	LR	05 51 14.5	
	comp=Z,25nm,20.1s,baz=170,slow=36						
WRA	Warramunga Arr	21.35	217	P	P	05 45 51.4	-0.1
	1.9nm,0.8s,baz=41,slow=10,SNR=8.7						
ASAR	Alice Springs	24.52	212	P	P	05 46 24.1	+0.1
	1.7nm,0.9s,baz=40,slow=8.1,SNR=12						
ASAR				LR	LR	05 57 08.9	
	comp=Z,83nm,19.2s,baz=57,slow=39						
DZM	Mont Dzumac	26.05	138	LR	LR	05 55 24.7	
	comp=Z,105nm,21.8s,baz=270,slow=33						
FITZ	Fitzroy Crossi	26.44	234	LR	LR	05 58 15.5	
	comp=Z,60nm,20.4s,baz=84,slow=39						
H11S3	WAKE ISLAND Hy	28.32	40	T	T	06 16 31.5	
	baz=222,slow=76,SNR=489						
H11S2	WAKE ISLAND Hy	28.33	40	T	T	06 16 32.2	
	baz=222,slow=76,SNR=178						
H11S1	WAKE ISLAND Hy	28.34	40	T	T	06 16 32.7	
	baz=222,slow=76,SNR=161						
JHJ	Hachijo jima 2	36.85	349	LR	LR	06 00 11.9	
	comp=Z,140nm,18.9s,baz=96,slow=31						
VNDA	Vanda	74.73	177	P	P	05 52 43.8	+0.1
	0.9nm,0.9s,baz=333,slow=3.6,SNR=3.2						
NVAR	Mina Array Bea	94.87	52	LR	LR	06 30 55.5	
	comp=Z,20nm,18.7s,baz=12,slow=32						
YKA	Yellowknife Ar	96.20	28	P	P	05 54 32.1	-0.2
	0.2nm,0.7s,baz=273,slow=4.4,SNR=4.7						

NIED 12 06:02:00, 37°.10N×142°.40E, h17km, Mw3.9 Best double couple: M0 7.57000×10^14 NP1:φs 105.00000°, δ28.00000°, λ-23.00000°. NP2:φs 215.00000°, δ80.00000°, λ-116.00000°.
IDC 12 06:02:29.4±1.3, 37°.07N×142°.52E, h0km, mb3.8/6, mb1 3.9/9, mb1mx3.7/36, mbtmp3.8/9, ML3.6/3, MS3.0/7, Ms1 3.1/7, ms1mx2.8/34, Error ellipse: s-maj=26.9km s-min=23.7km az=130.0
JMA 12 06:02:30.9±0.4, 37°.14N×142°.35E, h15km±5km, M3.9
ISC 12 06:02:32.8±1.0, 37°.12N±0°.08×142°.17E±0°.07, h19km, n27, σ2°.21/21, mb3.8/6, MS3.3/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	1.07	284	P	Pn	06 02 53.0	+0.2
JMM	Marumori	1.33	305	P	Pn	06 02 56.3	0.0
JHO	Hitachi	1.38	249	P	Pn	06 02 57.0	-0.1
JIO	Ouri	1.49	334	P	Pn	06 02 58.2	-0.3
JFT	Otama	1.52	286	P	Pb	06 03 00.0	-0.4
JFT				eS	Sg	06 03 22.0	+0.1
JOU	Okura	1.73	317	P	Pn	06 03 02.5	+0.6
MJAR	Matsushiro Arr	3.23	261	Pn	Pb	06 03 26.1	-3.5
	4.2nm,0.3s,baz=122,slow=9.7,SNR=18						
MJAR				Sn	Sb	06 04 07.7	-0.8
	2.5nm,0.3s,baz=72,slow=16,SNR=5.1						
MJAR				LR	LR	06 04 58.4	
	comp=Z,249nm,18.8s,baz=80,slow=43						
MAT	Matsushiro	3.23	261	P	Pb	06 03 26.1	-3.5
MAT				S	Sn	06 03 58.2	-2.3
ASAJ	Asahikawa	7.00	3	Pn	Pn	06 04 14.9	+0.6
	1.2nm,0.3s,baz=205,slow=12,SNR=7.1						
ASAJ				Sn	Sn	06 05 27.9	-5.5
	0.6nm,0.3s,baz=150,slow=20,SNR=2.3						
ASAJ				LR	LR	06 07 26.3	
	comp=Z,77nm,20.6s,baz=168,slow=42						
JNU	Nakatsue	10.07	250	LR	LR	06 09 07.3	
	comp=Z,36nm,20.3s,baz=301,slow=39						
USRK	Ussuriysk Ar.	10.48	316	Pn	Pn	06 05 09.3	+7.4
	0.2nm,0.3s,baz=121,slow=14,SNR=6.6						
KSRS	Korea Array	11.36	276	Pn	Pn	06 05 18.6	+4.5
	0.3nm,0.3s,baz=88,slow=12,SNR=5.4						
KSRS				LR	LR	06 09 33.9	
	comp=Z,116nm,18.9s,ba

WRA	**Warramunga Arr**	**57.23 189**	P		**P**	**06 12 18.3**	**-0.5**
	0.5nm,0.5s,baz=6.8,slow=7.2,SNR=7.8						
FINES	**FINESS Array B**	**69.02 332**	P		**P**	**06 13 37.5**	**+0.8**
	2.2nm,0.9s,baz=54,slow=3.3,SNR=6.2						
NOA	**NORSAR Array B**	**74.34 338**	LR		LR	06 49 42.6	
	comp=Z,15nm,20.0s,baz=50,slow=38						

ISCJB ***12*** *06:14:17.9±0.6, 38°.54N±0°.03×118°.69W±0°.05, h9km, Error ellipse: s-maj=6.2km s-min=4.4km az=12.8*
NEIC ***12*** *06:14:19.0, 38°.42N×118°.73W, h4km, ML3.0(REN), After REN.*

ISC 12 06:14:18.1±0.9, 38°.49N±0°.03×118°.71W±0°.03, h9km, n14, σ1§79/22, California-Nevada border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MLAC	**Mammoth, Mammo**	**0.86**	**187**	P	**Pg**	**06 14 34.2**	**-0.5**
	baz=5.8						
MLAC				S	**Sg**	**06 14 44.3**	**-1.7**
	baz=5.8						
CMB	**Columbia Colle**	**1.40**	**252**	*e*Pn	**Pn**	**06 14 44.0**	**+0.1**
CMB				*e*Sn	**Sb**	**06 15 01.6**	**-0.8**
GRAC	**Grapevine Rang**	**1.83**	**144**	P	**Pn**	**06 14 50.8**	**+1.0**
	baz=323						
DAC	**Darwin (Calif)**	**2.38**	**158**	Pn	**Pn**	**06 14 58.1**	**+0.6**
DAC				*e*Sg	**Sb**	**06 15 31.9**	**+1.1**
TPNV	**Topopah Spring**	**2.48**	**128**	Pb	**Pb**	**06 15 03.6**	**+0.6**
	baz=308						
FURC	**Furnace Creek,**	**2.50**	**143**	Sg	**Sg**	**06 15 37.9**	**-0.4**
	baz=323						
VES	**Vestal, Richgr**	**2.66**	**187**	Sb	**Sb**	**06 15 40.1**	**+1.5**
	baz=6.1						
SAO	**San Andreas Ge**	**2.77**	**232**	*e*Pn	**Pn**	**06 15 04.4**	**+1.6**
SAO				*e*Sn	**Sb**	**06 15 40.6**	**-1.4**
ISA	**Isabella, Lake**	**2.83**	**176**	Sb	**Sb**	**06 15 44.9**	**+1.3**
	baz=356						
HOPS	**Hopland Field**	**3.45**	**280**	Pn	**Pb**	**06 15 19.2**	**-0.2**
HOPS				*e*Sg	**Sg**	**06 16 08.8**	**-0.2**
ELK	**Elko**	**3.50**	**49**	*e*Pn	**Pn**	**06 15 14.3**	**+1.4**
ELK				*e*Sg	**Sg**	**06 16 10.4**	**-0.1**
MOD	**Modoc Plateau**	**3.62**	**341**	*e*Pn	**Pb**	**06 15 20.8**	**-1.6**
MOD				*e*Sg	**Sg**	**06 16 16.9**	**+2.4**
DUG	**Dugway, Tooele**	**4.88**	**68**	Pn	**Pn**	**06 15 27.6**	**-4.2**
HLID	**Hailey**	**6.02**	**31**	Pn	**Pn**	**06 15 51.2**	**+3.7**
HLID				*e*Sg	**Sg**	**06 17 29.5**	**-1.8**

WEL 12 06:38:49.1±0.3, 37°.13S×176°.33E, h316km±4km, ML3.6/5, 1D, Error ellipse: s-maj=6.2km s-min=4.5km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MWZ	**Matawai**	**1.53**	**142**	PN	Pn	06 39 34.3	+0.2
MWZ				SN	S	06 40 08.2	-1.8
TWGZ	**Tauwhareparae**	**1.68**	**129**	PN	Pn	06 39 35.3	+0.2
TWGZ				SN	S	06 40 10.2	-1.5
MRHZ	**Matea Rd**	**1.70**	**178**	||PN	Pn	06 39 35.5	+0.3
WMGZ	**Waiomatatini S**	**1.80**	**113**	PN	Pn	06 39 35.6	-0.2
RIGZ	**Rimuhau**	**1.94**	**145**	PN	Pn	06 39 37.2	+0.3
RIGZ				SN	S	06 40 14.3	-0.7
KNZ	**Kokohu**	**2.17**	**151**	PN	Pn	06 39 38.7	+0.2
ARHZ	**Aropaoanui**	**2.19**	**166**	PN	Pn	06 39 39.0	+0.2
ARHZ				SN	S	06 40 17.2	-1.3
KWHZ	**Kaweka Forest**	**2.29**	**178**	PN	Pn	06 39 39.8	+0.1
BHHZ	**Black Hill Sta**	**2.37**	**185**	PN	Pn	06 39 40.4	+0.1
KAHZ	**Kahuranaki**	**2.69**	**171**	PN	Pn	06 39 43.1	0.0
TSZ	**Takapari Road**	**2.94**	**186**	PN	Pn	06 39 45.5	+0.1
MRZ	**Mangatainoka R**	**3.57**	**189**	PN	Pn	06 39 50.6	-1.0
OGWZ	**Otaki Gorge**	**3.79**	**193**	PN	Pn	06 39 53.1	-0.8
KIW	**Kapiti Island**	**3.89**	**196**	PN	Pn	06 39 53.9	-0.9
DUWZ	**D'Urville Isla**	**4.12**	**206**	PN	Pn	06 39 56.7	-0.7
TCW	**Tory Channel**	**4.38**	**201**	PN	Pn	06 39 59.4	-0.8
TUWZ	**Tuamarina**	**4.67**	**203**	PN	Pn	06 40 02.6	-0.9

ISCJB ***12*** *06:40:19.2±1.2, 18°.7S±0°.2×169°.2E±0°.2, h240km, mb4.2/6, Error ellipse: s-maj=43.1km s-min=18.0km az=138.3*
IDC ***12*** *06:40:20.2±3.4, 18°.69S×169°.27E, h239km±37km, mb3.7/5, mb1 3.9/6, mb1mx3.5/38, mbtmp4.3/6, Error ellipse: s-maj=66.1km s-min=20.7km az=158.0*

ISC 12 06:40:20.1±1.2, 18°.7S±0°.3×169°.3E±0°.3, h240km, n9, σ1§15/9, mb4.3/6, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**4.28**	**218**	P	**Pn**	**06 41 26.5**	**-0.3**
	7.3nm,0.3s,baz=146,slow=23,SNR=38						
CTA	**Charters Tower**	**21.76**	**263**	P	**P**	**06 44 54.0**	**+1.1**
	3.8nm,0.4s,baz=90,slow=9.9,SNR=11						
STKA	**Stephens Creek**	**28.16**	**237**	P	**P**	**06 45 50.8**	**+0.3**
	6.8nm,0.6s,baz=66,slow=8.4,SNR=18						
WRA	**Warramunga Arr**	**32.96**	**262**	P	**P**	**06 46 32.0**	**-0.7**
	4.2nm,0.6s,baz=83,slow=6.8,SNR=62						
ASAR	**Alice Springs**	**33.30**	**255**	P	**P**	**06 46 35.5**	**0.0**
	32nm,0.4s,baz=82,slow=8.9,SNR=429						
NVAR	**Mina Array Bea**	**88.42**	**49**	P	**P**	**06 52 46.3**	**+0.9**
	0.7nm,0.7s,baz=227,slow=7.9,SNR=6.8						
ILAR	**Eielson Array**	**89.71**	**17**	P	**P**	**06 52 49.8**	**-0.7**
	0.4nm,0.7s,baz=233,slow=5.0,SNR=5.6						
YKA	**Yellowknife Ar**	**100.18**	**27**	P	**Pdif**	**06 53 40.0**	**+1.8**
	0.2nm,0.7s,baz=252,slow=4.8,SNR=5.1						
ARCES	**ARCESS Array B**	**124.56**	**345**	PKP	**PKPdf**	**06 58 48.9**	**-1.3**
	1.9nm,0.8s,baz=58,slow=2.6,SNR=3.7						

ISCJB ***12*** *06:41:39.1±0.8, 17°.4S±0°.1×174°.0W±0°.1, h10km, mb4.0/5, MS3.0/3, Error ellipse: s-maj=22.4km s-min=14.9km az=158.0*
IDC ***12*** *06:41:39.6±1.2, 17°.31S×173°.96W, h0km, mb3.9/5, mb1 4.3/7, mb1mx3.9/44, mbtmp4.0/7, ML3.6/2, MS3.1/3, Ms1 3.1/3, ms1mx2.7/30, Error ellipse: s-maj=57.5km s-min=21.7km az=150.0*

ISC 12 06:41:40.9±1.0, 17°.2S±0°.1×174°.0W±0°.1, h10km, n19, σ1§50/10, mb3.8/5, MS3.1/3, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**3.84**	**33**	Pn	**Pn**	**06 42 42.2**	**+2.0**
	8.6nm,0.3s,baz=187,slow=1.7,SNR=14						
AFI				Sn	**Sn**	**06 43 22.9**	**-2.6**
	43nm,0.3s,baz=240,slow=20,SNR=8.5						
RAR	**Rarotonga**	**13.99**	**109**	Pn	**Pn**	**06 44 58.9**	**-0.4**
	1.3nm,0.3s,baz=95,slow=12,SNR=3.8						
PAE	**Paea**	**23.26**	**95**	*e*T	T	07 10 12.8	
	2.0nm,0.3s						
PPT2	**Papeete2**	**23.27**	**95**	*e*LR	LR	06 52 08.2	
	94nm,26.0s						
PPT2	**Papeete2**	**23.27**	**95**	*e*T	T	07 10 14.5	
	2.4nm,0.3s						
PPT	**Papeete**	**23.27**	**95**	LR	LR	06 53 59.0	
	comp=Z,31nm,19.7s,baz=83,slow=32						
PMOR	**Pomariorio Ree**	**25.12**	**89**	*e*T	T	07 12 42.7	
	1.8nm,0.2s						
HNR	**Honiara**	**26.51**	**283**	LR	LR	06 56 22.1	
	comp=Z,54nm,19.9s,baz=140,slow=33						
TAOE	**Nuku Hiva Isla**	**33.91**	**80**	*e*LR	LR	06 57 13.5	
	46nm,24.0s						
TAOE	**Nuku Hiva Isla**	**33.91**	**80**	*e*T	T	07 23 36.0	
	26nm,0.2s						
RKT	**Rikitea**	**37.00**	**106**	*e*T	T	07 27 20.6	
	1.8nm,0.3s						
WRA	**Warramunga Arr**	**48.95**	**258**	P	**P**	**06 50 27.6**	**-0.2**
	1.1nm,0.4s,baz=97,slow=6.9,SNR=14						
ASAR	**Alice Springs**	**49.08**	**253**	P	**P**	**06 50 28.0**	**-0.8**
	8.5nm,0.8s,baz=88,slow=8.4,SNR=40						
GUMO	**Guam**	**50.85**	**304**	LR	LR	07 07 25.0	
	comp=Z,17nm,20.4s,baz=136,slow=30						
NVAR	**Mina Array Bea**	**75.98**	**42**	P	**P**	**06 53 29.6**	**+1.1**
	0.4nm,0.7s,baz=233,slow=8.9,SNR=2.6						
PDAR	**Pinedale Array**	**83.92**	**42**	P	**P**	**06 54 11.8**	**+0.4**
	0.3nm,0.6s,baz=204,slow=3.3,SNR=4.3						
ILAR	**Eielson Array**	**84.26**	**11**	P	**P**	**06 54 12.5**	**+0.2**
	0.5nm,0.8s,baz=211,slow=5.5,SNR=6.1						
BRTR	**Keskin Array B**	**147.15**	**319**	PKPbc	**PKPab**	**07 01 26.8**	**+0.5**
	0.8nm,0.8s,baz=71,slow=1.2,SNR=3.9						
GERES	**GERESS Array B**	**147.78**	**351**	PKPbc	**PKPab**	**07 01 26.8**	**-1.6**
	0.8nm,0.7s,baz=349,slow=4.1,SNR=5.7						

IDC 12 06:51:26.4±2.9, 38°.15N×144°.38E, h0km, mb3.7/3, mb1 3.9/4, mb1mx3.4/44, mbtmp3.7/4, ML3.6/1, MS2.7/3, Ms1 2.7/3, ms1mx2.3/45, Error ellipse: s-maj=71.6km s-min=32.2km az=62.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**5.17**	**254**	Pn	Pn	06 52 44.5	-0.6
	2.1nm,0.3s,baz=67,slow=9.4,SNR=9.2						
MJAR				LR	LR	06 54 58.7	
	comp=Z,52nm,20.9s,baz=80,slow=41						
MAT	**Matsushiro**	**5.17**	**254**	P	Pn	06 52 45.1	0.0
KSRS	**Korea Array**	**13.04**	**272**	LR	LR	06 59 20.9	
	comp=Z,19nm,18.5s,baz=80,slow=36						
SONM	**Songino Array**	**29.16**	**302**	P	P	06 57 29.7	+0.3
	0.6nm,0.6s,baz=77,slow=7.8,SNR=2.4						
TLY	**Talaya**	**31.43**	**309**	LR	LR	07 11 33.5	
	comp=Z,32nm,18.6s,baz=212,slow=38						
MKAR	**Makanchi Array**	**45.53**	**302**	P	P	06 59 47.3	-0.4
	0.6nm,0.6s,baz=92,slow=8.6,SNR=6.3						
WRA	**Warramunga Arr**	**58.55**	**191**	P	P	07 01 24.7	0.0
	1.2nm,0.8s,baz=9.2,slow=7.1,SNR=6.1						

IDC ***12*** *07:01:25.9±0.8, 37°.79N×144°.32E, h0km, mb3.8/10, mb1 4.0/13, mb1mx3.8/41, mbtmp3.8/13, ML3.9/3, MS3.1/5, Ms1 3.1/5, ms1mx2.6/53, Error ellipse: s-maj=25.3km s-min=17.4km az=119.0*
ISCJB ***12*** *07:01:28.9±0.5, 37°.81N±0°.05×144°.29E±0°.06, h33km, mb3.9/15, MS3.5/1, Error ellipse: s-maj=8.7km s-min=5.1km az=135.2*
NEIC ***12*** *07:01:31.2±0.5, 37°.85N×144°.27E, h35km, mb4.2/5, Error ellipse: s-maj=11.3km s-min=7.4km az=123.0*

ISC 12 07:01:31.5±0.8, 37°.87N±0°.07×144°.30E±0°.09, h35km, n28, σ1§30/31, mb3.9/15, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ERM	**Erimo**	**4.23**	**348**	*e*Pn	**Pn**	**07 02 31.1**	**-2.2**
ERM				*e*Sn	**Sn**	**07 03 17.5**	**-4.0**
MJAR	**Matsushiro Arr**	**5.04**	**257**	Pn	**Pn**	**07 02 44.0**	**-0.5**
	6.2nm,0.3s,baz=76,slow=15,SNR=39						
MJAR				Sn	**Sn**	**07 03 40.8**	**-0.8**
	1.4nm,0.3s,baz=90,slow=26,SNR=2.6						
MJAR				LR	LR	07 04 59.7	
	comp=Z,96nm,19.9s,baz=85,slow=43						
MAJO	**Matsushiro**	**5.04**	**257**	*e*Pn	**Pn**	**07 02 44.3**	**-0.3**
	38nm,0.7s						
MAJO				*e*Sn	**Sn**	**07 03 43.1**	**+1.5**
MAT	**Matsushiro**	**5.04**	**257**	P	**Pn**	**07 02 44.2**	**-0.4**
MAT				S	**Sn**	**07 03 41.2**	**-0.4**
JHJ2	**Mitsune**	**5.99**	**219**	*e*Pn	**Pn**	**07 02 55.6**	**-2.0**
JHJ2				*e*Sn	**Sn**	**07 04 05.1**	**0.0**
JHJ	**Hachijo jima 2**	**6.00**	**219**	LR	LR	07 05 20.6	
	comp=Z,550nm,21.5s,baz=96,slow=40						
ASAJ	**Asahikawa**	**6.37**	**349**	Pn	**Pn**	**07 03 01.3**	**-1.5**
	4.2nm,0.3s,baz=196,slow=8.1,SNR=8.6						
ASAJ	**Asahikawa**	**6.37**	**349**	*e*Pn	**Pn**	**07 03 01.2**	**-1.5**
	3.5nm,0.3s						
ASAJ				*e*Sn	**Sn**	**07 04 16.9**	**+2.7**
JNU	**Nakatsue**	**11.92**	**251**	LR	LR	07 09 09.7	
	comp=Z,48nm,18.1s,baz=120,slow=39						
KSRS	**Korea Array**	**12.98**	**273**	Pn	**Pn**	**07 04 33.6**	**+0.3**
	0.2nm,0.3s,baz=75,slow=14,SNR=3.9						
KSRS				LR	LR	07 08 32.0	
	comp=Z,37nm,21.9s,baz=99,slow=33						
KSAR	**Wonju Array Be**	**13.02**	**273**	Pn	**Pn**	**07 04 33.6**	**-0.2**
SEY	**Seymchan**	**25.57**	**9**	P	**P**	**07 06 57.7**	**+0.8**
	1.4nm,0.6s,baz=160,slow=7.8,SNR=4.3						
MKAR	**Makanchi Array**	**45.62**	**302**	P	**P**	**07 09 48.4**	**+0.1**
	0.5nm,0.6s,baz=86,slow=9.0,SNR=5.2						
KURK	**Kurchatov**	**47.22**	**308**	*e*P	**P**	**07 10 01.0**	**+0.3**
	3.0nm,0.6s						
ILAR	**Eielson Array**	**47.55**	**33**	P	**P**	**07 10 03.2**	**+0.1**
	1.3nm,0.8s,baz=263,slow=6.0,SNR=14						
TKM2	**Tokmak 2**	**51.24**	**299**	*e*P	**P**	**07 10 33.2**	**+1.3**
	0.8nm,0.4s						
INK	**Inuvik**	**52.59**	**28**	P	**P**	**07 10 41.3**	**+0.1**
	0.8nm,0.5s,baz=306,slow=6.3,SNR=15						
WRAB	**Tennant Creek**	**58.26**	**191**	*e*P	**P**	**07 11 21.8**	**-0.7**
	6.3nm,1.2s						
WRA	**Warramunga Arr**	**58.27**	**191**	P	**P**	**07 11 21.3**	**-1.2**
	1.8nm,0.8s,baz=9.7,slow=7.5,SNR=13						
ABKAR	**Akbulak array**	**59.14**	**311**	*e*P	**P**	**07 11 28.7**	**+0.2**
	0.7nm,0.6s						
YKA	**Yellowknife Ar**	**61.92**	**31**	P	**P**	**07 11 47.1**	**0.0**
	0.4nm,0.7s,baz=301,slow=6.7,SNR=9.4						
ASAR	**Alice Springs**	**61.99**	**191**	P	**P**	**07 11 47.2**	**-0.9**
	0.4nm,0.7s,baz=162,slow=14,SNR=3.3						
FINES	**FINESS Array B**	**69.12**	**333**	P	**P**	**07 12 33.3**	**-0.4**
	0.9nm,0.7s,baz=75,slow=2.2,SNR=2.5						
SUMG	**Summit**	**69.83**	**1**	*e*P	**P**	**07 12 39.1**	**+0.7**
	1.3nm,0.6s						
KVAR	**Kislovodsk Arr**	**72.06**	**312**	LR	LR	07 47 58.6	
	comp=Z,23nm,18.7s,baz=52,slow=39						
NVAR	**Mina Array Bea**	**72.64**	**55**	P	**P**	**07 12 56.7**	**+1.0**
	0.5nm,0.7s,baz=277,slow=7.0,SNR=5.8						
NB2	**NORSAR Subarra**	**74.28**	**338**	P	**P**	**07 13 04.5**	**-0.2**
	comp=Z,0.6nm,0.6s,baz=40,slow=6.2						
NOA	**NORSAR Array B**	**74.28**	**338**	P	**P**	**07 13 04.8**	**+0.1**
	comp=Z,0.8nm,0.7s,baz=38,slow=5.8,SNR=5.5						

JMA 12 07:01:33.7, 37°.03N×140°.59E, h8km±1km, M2.3, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.18**	**67**	P	Pg	07 01 37.7	+0.2
ONAJ				S	Sg	07 01 40.6	+0.6
JFK	**Kawauchi**	**0.41**	**34**	P	Pg	07 01 41.7	+0.1
JFK				S	Sg	07 01 47.3	+0.3
JHO	**Hitachi**	**0.42**	**182**	P	Pg	07 01 41.6	-0.3
JHO				S	Sg	07 01 47.4	0.0
JFT	**Otama**	**0.53**	**338**	P	Pg	07 01 44.2	+0.3
JFT				S	Sg	07 01 51.4	+0.5
JSB	**Shiboa**	**0.54**	**264**	P	Pb	07 01 44.8	-0.6
JFY	**Yanaizu**	**0.80**	**298**	S	Sg	07 01 57.5	-2.0
JMM	**Marumori**	**0.85**	**11**	P	Pg	07 01 49.5	-0.6
JMM				S	Sg	07 02 01.1	0.0
JYT	**Yasato**	**0.86**	**202**	P	Pg	07 01 49.6	-0.7
JYT				*e*S	Sg	07 02 00.9	-0.6

IDC ***12*** *07:04:15.2±1.4, 10°.52S×12°.93W, h0km, mb4.2/11, mb1 4.2/12, mb1mx3.9/33, mbtmp4.1/12, ML3.6/1, MS3.9/19, Ms1 3.9/19, ms1mx3.8/28, Error ellipse: s-maj=36.4km s-min=29.0km az=166.0*
NEIC ***12*** *07:04:18.6±0.6, 10°.12S×13°.15W, h10km, mb5.2/8, Error ellipse: s-maj=18.1km s-min=11.5km az=151.0*
GCMT ***12*** *07:04:18.6±0.4, 10°.52S×13°.01W, h12km±1km, MW4.8/68, Moment Tensor Solution. s17,c18; s68,c82; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-1.69±.15; $M_{\theta\theta}$0.51±.09; $M_{\phi\phi}$1.18±.10; $M_{r\theta}$-0.26±.28; $M_{\theta\phi}$-0.49±.06; $M_{\phi r}$-0.41±.23; Best double couple: $M_0$1.62700×10^{16} NP1:ϕ_s344.00000°, δ51.00000°, λ-75.00000°. NP2: ϕ_s142.00000°, δ42.00000°, λ-107.00000°. Principal axes: T 1.4590, Plg5.0000°, Azm64.0000°; N 0.3340, Plg11.0000°, Azm155.0000°; P -1.7950, Plg78.0000°, Azm312.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
BJI ***12*** *07:04:19.2, 10°.10S×13°.10W, h10km, mB5.6/4, Ms5.1/2, Ms7 4.6/2*

ISC 12 07:04:19.2±0.7, 10°.0S±0°.1×13°.26W±0°.09, h10km, n53, σ1§63/44, mb4.4/20, MS4.0/19, Ascension Island region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H10S2	**ASCENSION HYDR**	**1.69**	**306**	Pn	**Pb**	**07 04 49.9**	**-0.4**
H10S2				T	T	07 07 14.1	
	baz=134,slow=74,SNR=683						
H10S1	**ASCENSION HYDR**	**1.70**	**307**	Pn	**Pb**	**07 04 50.1**	**-0.4**
H10S1				T	T	07 07 11.1	
	baz=134,slow=74,SNR=746						
H10S3	**ASCENSION HYDR**	**1.71**	**306**	Pn	**Pb**	**07 04 50.1**	**-0.5**
H10S3				T	T	07 07 06.3	
	baz=134,slow=74,SNR=622						
ASCN	**Ascension**	**2.29**	**332**	*e*Pn	**Pb**	**07 04 59.1**	**-1.6**
H10N1	**ASCENSION HYDR**	**2.42**	**330**	Pn	**Pb**	**07 05 01.7**	**-1.1**
	baz=157,slow=19,SNR=10						
H10N3	**ASCENSION HYDR**	**2.44**	**330**	Pn	**Pb**	**07 05 02.0**	**-1.1**
	baz=157,slow=19,SNR=11						
H10N2	**ASCENSION HYDR**	**2.44**	**330**	Pn	**Pb**	**07 05 01.9**	**-1.2**
	baz=157,slow=19,SNR=13						
DBIC	**Dimbokro**	**18.53**	**27**	P	**Pn**	**07 08 38.1**	**+2.0**
	0.2nm,0.3s,baz=198,slow=12,SNR=3.6						
DBIC				LR	LR	07 14 33.8	
	comp=Z,318nm,21.0s,baz=182,slow=33						
RCBR	**Riachuelo**	**22.79**	**279**	LR	LR	07 15 53.0	
	comp=Z,367nm,21.2s,baz=88,slow=30						
BBTS	**Babate**	**24.68**	**352**	LR	LR	07 17 23.3	
	comp=Z,185nm,20.8s,baz=172,slow=31						
TOA0	**Torodi Ar. Sit**	**27.35**	**33**	*e*P	**P**	**07 10 04.5**	**-0.1**
TORD	**Torodi Ar. Bea**	**27.35**	**33**	P	**P**	**07 10 04.5**	**-0.1**
	1.2nm,0.6s,baz=211,slow=11,SNR=8.6						
TORD				LR	LR	07 19 30.1	
	comp=Z,381nm,20.1s,baz=195,slow=33						
BOSA	**Boshof**	**40.57**	**123**	LR	LR	07 24 48.5	
	comp=Z,133nm,19.2s,baz=295,slow=31						
MATP	**Matopo**	**41.51**	**110**	P	P	07 12 00.6	-6.6
	4.5nm,1.0s,baz=283,slow=8.7,SNR=4.8						
CPUP	**Villa Florida**	**44.68**	**243**	LR	LR	07 28 13.9	
	comp=Z,259nm,20.2s,baz=92,slow=32						
SAML	**Samuel**	**49.22**	**267**	*e*P	**P**	**07 13 07.9**	**-0.4**
	13nm,1.5s						
ESDC	**Sonseca Array**	**50.13**	**9**	LR	LR	07 34 09.6	
	comp=Z,127nm,18.9s,baz=80,slow=35						
KEST	**Kesra**	**50.21**	**24**	P	**P**	**07 13 17.0**	**+1.5**
	6.1nm,1.0s,baz=204,slow=10.0,SNR=5.3						
KEST				LR	LR	07 34 44.8	
	comp=Z,145nm,18.4s,baz=46,slow=36						
KMBO	**Kilima Mbogo**	**50.98**	**83**	*e*P	**P**	**07 13 21.0**	**-0.9**
	16nm,1.7s						
TRQA	**Tornquist**	**51.78**	**229**	*e*P	**P**	**07 13 28.6**	**+1.2**
	42nm,1.6s						
LPAZ	**La Paz**	**53.68**	**257**	LR	LR	07 35 16.3	
	comp=Z,97nm,20.3s,baz=86,slow=34						
PLCA	**Paso Flores**	**58.91**	**228**	LR	LR	07 35 58.1	
	comp=Z,113nm,20.8s,baz=136,slow=32						
ROSC	**El Rosal**	**62.57**	**281**	P	**P**	**07 14 45.2**	**+0.7**
	1.6nm,0.4s,baz=112,slow=15,SNR=6.1						
ROSC				LR	LR	07 40 32.6	
	comp=Z,121nm,20.2s,baz=116,slow=35						
ROSC	**El Rosal**	**62.57**	**281**	*e*P	**P**	**07 14 45.9**	**+1.3**
	27nm,1.5s						
GEA0	**GERESS Array S**	**63.19**	**20**	*e*P	**P**	**07 14 47.6**	**+0.1**
GERES	**GERESS Array B**	**63.20**	**20**	P	**P**	**07 14 47.4**	**-0.2**
	0.2nm,0.3s,baz=198,slow=6.2,SNR=6.2						
PRA	**Prague**	**64.50**	**19**	*e*P	P	07 14 47.6	-8.4
	42nm,1.5s						
VYHS	**Vyhne**	**64.74**	**23**	*e*P	**P**	**07 14 57.8**	**+0.1**
KECS	**Kecovo**	**65.38**	**24**	*e*P	**P**	**07 15 01.6**	**-0.2**
MLR	**Muntele Rosu**	**65.50**	**29**	*e*P	**P**	**07 15 02.7**	**-0.2**
	49nm,1.9s						
OTAV	**Otavalo**	**65.63**	**275**	*e*P	**P**	**07 15 02.8**	**-1.9**
	31nm,1.8s						
BRTR	**Keskin Array B**	**65.82**	**38**	P	**P**	**07 15 04.8**	**-0.3**
	1.1nm,0.7s,baz=224,slow=6.9,SNR=8.2						
BRTR				LR	LR	07 46 49.6	
	comp=Z,35nm,18.2s,baz=234,slow=39						
CRVS	**Cervenica-Dubn**	**66.10**	**24**	*e*P	**P**	**07 15 07.8**	**+1.3**
KOLS	**Kolonicke sedl**	**66.46**	**25**	*e*P	**P**	**07 15 10.0**	**+1.2**
AK11	**Malin Array Si**	**70.73**	**27**	*e*P	**P**	**07 15 34.3**	**-1.1**
AKASG	**Malin Array Be**	**70.78**	**27**	P	**P**	**07 15 34.7**	**-0.9**
	4.8nm,0.9s,baz=227,slow=6.1,SNR=27						
NOA	**NORSAR Array B**	**73.37**	**12**	P	**P**	**07 15 50.9**	**-0.2**
	0.8nm,0.8s,baz=203,slow=7.7,SNR=3.4						
KBZ	**Khabaz**	**73.78**	**39**	P	**P**	**07 15 52.3**	**-1.5**
	1.3nm,0.4s,baz=256,slow=5.2,SNR=5.9						
MAW	**Mawson**	**75.57**	**157**	LR	LR	07 40 47.9	
	comp=Z,83nm,18.8s,baz=241,slow=29						
UOSS	**Minazif**	**76.02**	**61**	*e*P	**P**	**07 16 06.2**	**-1.0**
	1.1nm,1.1s						
FINES	**FINESS Array B**	**77.57**	**18**	P	**P**	**07 16 15.2**	**+0.1**
	1.8nm,1.0s,baz=197,slow=4.4,SNR=3.6						
FINES				LR	LR	07 50 20.9	
	comp=Z,107nm,22.0s,baz=193,slow=36						
GEYT	**Alibeck**	**81.75**	**49**	P	**P**	**07 16 37.5**	**-1.0**
	0.8nm,0.3s,baz=282,slow=6.8,SNR=2.4						
GEYT				LR	LR	07 52 41.2	
	comp=Z,61nm,21.0s,baz=175,slow=36						
ARCES	**ARCESS Array B**	**83.73**	**13**	LR	LR	07 56 13.5	
	comp=Z,35nm,18.6s,baz=220,slow=37						
SUMG	**Summit**	**84.00**	**353**	*e*P	**P**	**07 16 51.6**	**+1.8**
	18nm,1.3s						
AKTO	**Aktyubinsk**	**85.98**	**37**	LR	LR	08 01 17.3	
	comp=Z,25nm,18.0s,baz=226,slow=40						
ABKAR	**Akbulak array**	**86.75**	**39**	*e*P	**P**	**07 17 02.4**	**-1.1**
	0.1nm,0.4s						
SPITS	**Spitsbergen Ar**	**89.52**	**6**	LR	LR	07 56 41.1	
	comp=Z,18nm,19.4s,baz=35,slow=35						
VNDA	**Vanda**	**92.62**	**179**	LR	LR	07 55 13.2	
	comp=Z,97nm,21.

DEMI			S	Sg	07 05 19.1	+0.5
DEMI	**Demirci**	**0.35 294**	*i* P	**Pb**	07 05 14.6	+0.3
DEMI			*i* S	**Sg**	07 05 19.1	+0.5
KULA	**Kula-Manisa**	**0.53 224**	*e*PG	**Pb**	07 05 17.3	0.0
KULA			*e*SG	**Sg**	07 05 24.3	+0.3
KULA	**Kula-Manisa**	**0.53 224**	*e*Pg	**Pb**	07 05 17.3	0.0
KULA			*e*Sg	**Sg**	07 05 24.3	+0.3
KHAL	**Karahalli**	**0.60 151**	P	**Pb**	07 05 18.8	+0.3
KHAL			S	**Sg**	07 05 26.2	+0.1
KHAL	**Karahalli**	**0.60 151**	*i* P	**Pb**	07 05 18.8	+0.3
KHAL			*i* S	**Sg**	07 05 26.2	+0.1
MANT	**Manisa**	**0.60 228**	P	**Pb**	07 05 18.9	+0.2
MANT			S	**Sb**	07 05 27.3	+0.3
MANT	**Manisa**	**0.60 228**	*i* P	**Pb**	07 05 18.9	+0.2
MANT			*i* S	**Sb**	07 05 27.3	+0.3
TVSB	**Tavsanli**	**0.61 25**	*e*PG	**Pg**	07 05 18.4	0.0
TVSB			*e*SG	**Sb**	07 05 27.1	0.0
TVSB	**Tavsanli**	**0.61 25**	*e*Pg	**Pg**	07 05 18.4	0.0
TVSB			*e*Sg	**Sb**	07 05 27.1	0.0
KHL	**Karahalli**	**0.65 151**	*e*PG	**Pg**	07 05 18.7	-0.5
KHL	**Karahalli**	**0.65 151**	*e*Pg	**Pg**	07 05 18.7	-0.5
DST	**Dursunbey**	**0.81 331**	*e*PG	**Pb**	07 05 21.6	-0.5
DST	**Dursunbey**	**0.81 331**	*e*Pg	**Pb**	07 05 21.6	-0.5
DURS	**Dursunbey**	**0.87 324**	P	**Pn**	07 05 24.2	+0.2
DURS			S	**Sb**	07 05 34.6	+0.1
DURS	**Dursunbey**	**0.87 324**	*i* P	**Pn**	07 05 24.2	+0.2
DURS			*i* S	**Sb**	07 05 34.6	+0.1
AKS	**Akhisar**	**1.03 269**	*e*PG	**Pb**	07 05 25.0	-0.8
AKS	**Akhisar**	**1.03 269**	*e*Pg	**Pb**	07 05 25.0	-0.8
ORLT	**Orhaneli**	**1.16 351**	*e*PN	**Pb**	07 05 28.1	+0.1
ORLT	**Orhaneli**	**1.16 351**	*e*Pn	**Pb**	07 05 28.2	+0.1
BALB	**Balikesir**	**1.22 308**	*e*PN	**Pn**	07 05 28.5	-0.2
BALB	**Balikesir**	**1.22 308**	*e*Pn	**Pn**	07 05 28.5	-0.2
AYDB	**Zeytinkoy-Aydi**	**1.36 226**	*e*PN	**Pn**	07 05 30.8	0.0
AYDB	**Zeytinkoy-Aydi**	**1.36 226**	*e*Pn	**Pn**	07 05 30.8	0.0
CAVI	**Cavuskoy**	**1.42 23**	*e*PN	**Pn**	07 05 31.3	-0.2
CAVI	**Cavuskoy**	**1.42 23**	*e*Pn	**Pn**	07 05 31.3	-0.2
KCTX	**Karacabey (Bur**	**1.49 337**	*e*PN	**Pb**	07 05 33.2	-0.5
KCTX	**Karacabey (Bur**	**1.49 337**	*e*Pn	**Pb**	07 05 33.2	-0.5
ARMT	**Armutlu**	**1.68 353**	*e*PN	**Pn**	07 05 35.5	+0.4
ARMT	**Armutlu**	**1.68 353**	*e*Pn	**Pn**	07 05 35.5	+0.4
GULT	**Gulveren**	**1.87 35**	*e*PN	**Pn**	07 05 38.7	+0.9
GULT	**Gulveren**	**1.87 35**	*e*Pn	**Pn**	07 05 38.7	+0.9
YER	**Yerkesik**	**1.88 201**	*e*PN	**Pn**	07 05 37.6	-0.3
YER	**Yerkesik**	**1.88 201**	*e*Pn	**Pn**	07 05 37.6	-0.3

IDC 12 07:10:10.2±4.3, 31°.94S×178°.95W, h0km, mb3.5/2, mb1 3.8/2, mb1mx3.6/22, mbtmp3.5/2, Error ellipse: s-maj=208.6km s-min=56.7km az=164.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**42.24**	**269**	P	P	07 18 04.9	-0.5
	0.2nm,0.4s,baz=108,slow=7.9,SNR=3.4						
WRA	**Warramunga Arr**	**43.37**	**274**	P	P	07 18 14.8	+0.2
	0.6nm,0.4s,baz=115,slow=7.9,SNR=9.2						
GEYT	**Alibeck**		**133.45**	**294** PKP	PKPdf	07 29 28.3	-0.2
	1.0nm,0.5s,baz=49,slow=4.4,SNR=2.6						
FINES	**FINESS Array B**		**146.29**	**339** PKPbc	PKPdf	07 29 51.0	+0.1
	0.7nm,0.7s,baz=41,slow=4.4,SNR=4.0						

NNC ***12*** *07:25:27.1±1.1, 54°.53N×90°.01E, h0km, mb3.7, mpv3.5, Error ellipse: s-maj=8.2km s-min=7.2km az=178.0*

IDC 12 07:26:25.8±3.1, 53°.41N×87°.48E, h0km, mb1 3.1/2, mb1mx3.0/33, mbtmp3.1/2, ML2.8/2, 4C-2D, Error ellipse: s-maj=29.2km s-min=15.6km az=59.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**1.67**	**290**	*i*		07 36 40.0	
	baz=106,slow=327,SNR=2.5						
ZALV	**Zalesovo Beam**	**1.67**	**290**	Pg	Pn	07 26 55.4	-0.8
	2.1nm,0.3s,baz=110,slow=14,SNR=16						
ZALV				Lg	Lg	07 27 19.5	
	2.8nm,0.3s,baz=116,slow=28,SNR=10						
ZALV				Rg	Rg	07 27 31.8	
	3.4nm,0.6s,baz=105,slow=23,SNR=4.5						
KURK	**Kurchatov**	**6.09**	**247**	⇑Pg	Pn	07 27 51.5	-5.5
	2.1nm,0.7s						
KURK				⇓Lg	Lg	07 29 38.1	
	8.5nm,0.9s						
KURBB	**Kurchatov Arra**	**6.19**	**247**	Pn	Pn	07 27 58.6	+0.3
	0.1nm,0.3s,baz=62,slow=14,SNR=9.0						
KURBB				Lg	Lg	07 29 41.5	
	0.0nm,0.3s,baz=69,slow=36,SNR=5.4						
KURBB	**Kurchatov Arra**	**6.19**	**247**	⇑Pg	Pn	07 27 53.1	-5.2
	1.1nm,0.5s						
KURBB				⇑Lg	Lg	07 29 42.2	
	4.5nm,0.7s						
MK31	**Makanchi Array**	**7.41**	**209**	⇑Pg	Pn	07 28 14.2	-0.9
	0.9nm,0.8s,baz=30,slow=12,SNR=5.8						
MK31				⇓Lg	Lg	07 30 18.3	
	1.5nm,0.9s						
MKAR	**Makanchi Array**	**7.41**	**209**	Pn	Pn	07 28 16.8	+1.6
	0.2nm,0.3s,baz=27,slow=14,SNR=5.1						
MKAR				Lg	Lg	07 30 19.4	
	0.1nm,0.3s,baz=36,slow=28,SNR=4.6						

MOS ***12*** *07:32:07.2±0.4, 40°.20N×47°.36E, h19km, mb4.1/1, Error ellipse: s-maj=30.0km s-min=12.9km az=101.1*

CSEM ***12*** *07:32:10.4±1.2, 40°.49N×47°.36E, h10km, mb4.1, Error ellipse: s-maj=26.9km s-min=8.4km az=161.0*

TIF ***12*** *07:32:10.5, 40°.46N×47°.30E, h27km±4km*

ISC 12 07:32:10.1±3.9, 40°.3N±0°.2×47°.43E±0°.09, h35km, n21, σ0°78/31, Eastern Caucasus

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKT	**Akhty**	**1.23**	**10**	*e*PG	**Pn**	**07 32 29.9**	**-1.0**
AKT				pmax	pmax		
	comp=Z,85nm,0.3s						
AKT	**Akhty**	**1.23**	**10**	*e*Pg	**Pn**	**07 32 29.9**	**-1.0**
	comp=Z,85nm,0.3s						
KSMR	**Kasumkent**	**1.44**	**21**	*e*PG	**Pn**	**07 32 34.2**	**+0.5**
KSMR	**Kasumkent**	**1.44**	**21**	*e*Pg	**Pn**	**07 32 34.2**	**+0.5**
KMKR	**Kumukh**	**1.88**	**352**	*e*PN	**Pn**	**07 32 40.5**	**+0.6**
KMKR	**Kumukh**	**1.88**	**352**	*e*Pn	**Pn**	**07 32 40.5**	**+0.6**
DGRG	**David-gareji**	**1.96**	**308**	P	**Pn**	**07 32 40.4**	**-0.4**
DGRG				S	**Sn**	**07 33 03.8**	**-0.4**
DGRG	**David-gareji**	**1.96**	**308**	PN	**Pn**	**07 32 40.4**	**-0.4**
DGRG	**David-gareji**	**1.96**	**308**	P	**Pn**	**07 32 40.4**	**-0.4**
DGRG				S	**Sn**	**07 33 03.8**	**-0.4**
GNBR	**Gunib**	**2.15**	**351**	*e*PN	**Pn**	**07 32 44.3**	**+0.8**
GNBR				pmax	pmax		
	comp=Z,14nm,0.6s						
GNBR	**Gunib**	**2.15**	**351**	*e*Pn	**Pn**	**07 32 44.3**	**+0.8**
	comp=Z,14nm,0.6s						
SEAG	**Tbilisi Sea**	**2.49**	**308**	P	**Sn**	**07 33 19.0**	**+1.7**
TBLG	**Delisi**	**2.51**	**307**	P	**Pn**	**07 32 48.6**	**+0.1**
TBLG				S	**Sn**	**07 33 17.9**	**+0.1**
TBLG	**Delisi**	**2.51**	**307**	PN	**Pn**	**07 32 48.5**	**+0.1**
TBLG				S	**Sn**	**07 33 17.9**	**+0.1**
TBLG	**Delisi**	**2.51**	**307**	Pn	**Pn**	**07 32 48.5**	**+0.1**
TBLG				S	**Sn**	**07 33 17.9**	**+0.1**
DUS	**Dusheti**	**2.75**	**312**	P	**Sn**	**07 33 23.1**	**-0.7**
GUDG	**Gudauri**	**3.12**	**316**	P	**Pn**	**07 32 58.6**	**+1.6**
GUDG				S	**Sn**	**07 33 32.3**	**-0.9**
GUDG	**Gudauri**	**3.12**	**316**	P	**Pn**	**07 32 58.6**	**+1.6**
GUDG				S	**Sn**	**07 33 32.3**	**-0.9**
ONI	**Oni**	**3.79**	**309**	P	**Pn**	**07 33 06.2**	**+0.1**
ONI				S	**Sn**	**07 33 48.7**	**-0.6**
ONI	**Oni**	**3.79**	**309**	PN	**Pn**	**07 33 06.1**	**+0.1**
ONI				S	**Sn**	**07 33 48.7**	**-0.6**
ONI	**Oni**	**3.79**	**309**	Pn	**Pn**	**07 33 06.1**	**+0.1**
ONI				S	**Sn**	**07 33 48.7**	**-0.6**

IDC ***12*** *07:39:10.7±4.2, 36°.23N×70°.82E, h155km±35km, mb3.5/9, mb1 3.6/14, mb1mx3.3/58, mbtmp4.0/14, Error ellipse: s-maj=29.9km s-min=19.1km az=34.0*

ISCJB ***12*** *07:39:14.1±0.5, 36°.56N±0°.03×71°.11E±0°.07, h188km, mb3.5/8, Error ellipse: s-maj=8.3km s-min=3.7km az=162.2*

NNC ***12*** *07:39:19.2±1.9, 36°.94N×70°.83E, h178km±37km, mb3.0, mpv4.0, Error ellipse: s-maj=30.5km s-min=12.2km az=129.0*

ISC 12 07:39:14.5±0.6, 36°.51N±0°.05×71°.01E±0°.07, h188km, n35, σ2°97/42, mb3.5/8, 4C-7D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CEP	**Cherat**	**2.78**	**164**	⇓P	**Pn**	**07 40 02.4**	**+1.4**
CEP				S	**Sn**	**07 40 38.0**	**+0.7**
DZET	**Dzherino**	**2.88**	**324**	⇓P	**Pn**	**07 40 01.1**	**-1.0**
	35nm,0.4s						
DZET				⇓S	**Sn**	**07 40 34.4**	**-4.9**
	338nm,0.4s						
CHCP	**Chirah Chowk**	**3.39**	**146**	P	**Pn**	**07 40 10.3**	**+2.0**
THW	**Thamme Wali**	**3.75**	**171**	P	**Pn**	**07 40 13.8**	**+1.0**
SARP	**Sargodha**	**4.78**	**163**	P	**Pn**	**07 40 26.3**	**+0.6**
MNAS	**Manas**	**6.08**	**10**	⇑P	**Pn**	**07 40 42.7**	**0.0**
	6.4nm,0.4s						
MNAS				⇓S	**Sn**	**07 41 48.5**	**-3.9**
	75nm,0.5s						
DHRM	**DHARAMSHALA**	**6.09**	**133**	*e*S	**Sn**	**07 41 52.2**	**-0.6**
DHRM				IAML		07 41 53.3	
	comp=N,278nm,0.3s						
DHRM				IAML		07 41 53.6	
	comp=E,355nm,0.4s						
KK31	**Karatay Array**	**6.60**	**357**	⇑P	**Pn**	**07 40 48.6**	**-0.7**
	comp=E,3.1nm,0.2s,baz=190,slow=13,SNR=181						
KK31				⇓S	**Sn**	**07 41 58.4**	**-6.0**
	comp=E,37nm,0.4s,baz=180,slow=15,SNR=31						
AAK	**Ala-Archa**	**6.69**	**23**	P	**Pn**	**07 40 51.1**	**+0.5**
	comp=E,5.5nm,0.3s,baz=162,slow=1.6,SNR=37						
AAK				S	**Sn**	**07 42 04.3**	**-2.3**
	comp=E,1.5nm,0.3s,baz=114,slow=20,SNR=4.5						
AAK	**Ala-Archa**	**6.69**	**23**	⇓P	**Pn**	**07 40 50.8**	**+0.3**
	comp=E,3.2nm,0.3s						
AAK				⇓S	**Sn**	**07 42 03.8**	**-2.8**
	comp=E,21nm,0.6s						
TKM2	**Tokmak 2**	**7.32**	**27**	⇑P	**Pn**	**07 40 59.3**	**+0.5**
	comp=E,16nm,0.8s						
TKM2				⇑S	**Sn**	**07 42 18.1**	**-3.5**
	comp=E,9.3nm,0.7s						
SMLA	**Simla**	**7.42**	**135**	*e*S	**Sn**	**07 42 21.2**	**-2.6**
SMLA				IAML		07 42 23.2	
	comp=N,71nm,0.2s						
SMLA				IAML		07 42 23.9	
	comp=E,110nm,0.2s						
DDI	**Dehra Dun**	**8.53**	**134**	*e*S	**Sn**	**07 42 47.3**	**-3.0**
JOSI	**Joshimath**	**9.28**	**127**	*e*S	**Sn**	**07 43 03.6**	**-4.9**
KHET	**Khetri**	**9.33**	**153**	*e*S	**Sn**	**07 43 02.0**	**-7.6**
KHET				IAML		07 43 06.1	
	comp=E,24nm,0.3s						
KHET				IAML		07 43 06.3	
	comp=N,25nm,0.2s						
KUDL	**Kundal**	**9.54**	**149**	*e*S	**Sn**	**07 43 06.3**	**-8.0**
KUDL				IAML		07 43 10.5	
	comp=N,20nm,0.4s						
KUDL				IAML		07 43 11.3	
	comp=E,25nm,0.6s						
SONA	**Sohna**	**9.70**	**146**	*e*S	Sn	07 43 08.3	-10
SONA				IAML		07 43 15.1	
	comp=E,26nm,0.2s						
SONA				IAML		07 43 18.1	
	comp=N,20nm,0.3s						
PYUN	**Piuthan**	**13.14**	**126**	*e*P	**Pn**	**07 42 13.9**	**-0.4**
	comp=N,18nm,0.4s						
PYUN				*e*S	Sn	07 44 30.1	-11
MKAR	**Makanchi Array**	**13.28**	**36**	P	**Pn**	**07 42 16.6**	**+0.9**
	comp=N,0.2nm,0.3s,baz=217,slow=9.8,SNR=11						
KOLN	**Koldanda**	**13.76**	**126**	*e*P	**Pn**	**07 42 21.9**	**-0.2**
	comp=N,5.1nm,0.3s						
KOLN				*e*S	Sn	07 44 45.1	-11
GKN	**Gorkha**	**14.30**	**122**	*e*P	**P**	**07 42 33.8**	**+3.3**
	comp=N,14nm,0.3s						
GKN				*e*S	**Sn**	**07 45 04.6**	**-3.8**
KKN	**Kakani**	**14.87**	**122**	*e*P	**P**	**07 42 41.0**	**+4.0**
	comp=N,16nm,0.4s						
PKIN	**Phulchoki**	**15.09**	**122**	*e*P	**P**	**07 42 43.5**	**+4.1**
	comp=N,20nm,0.5s						
KURBB	**Kurchatov Arra**	**15.12**	**19**	P	**P**	**07 42 40.6**	**+1.5**
	comp=N,0.3nm,0.3s,baz=212,slow=9.0,SNR=22						
BVAR	**Borovoye Array**	**16.52**	**359**	P	**Pn**	**07 42 56.2**	**+0.8**
	comp=N,1.2nm,0.3s,baz=169,slow=12,SNR=11						
AKTO	**Aktyubinsk**	**16.78**	**330**	P	**Pn**	**07 42 58.5**	**0.0**
	comp=N,1.6nm,0.3s,baz=140,slow=14,SNR=27						
ZALV	**Zalesovo Beam**	**19.91**	**24**	P	**P**	**07 43 32.5**	**+1.1**
	comp=N,7.6nm,0.4s,baz=220,slow=11,SNR=18						
ARCES	**ARCESS Array B**	**41.14**	**338**	P	**P**	**07 46 40.4**	**+0.6**
	comp=N,3.5nm,1.0s,baz=119,slow=7.3,SNR=3.7						
HFS	**Hagfors**	**43.07**	**322**	P	**P**	**07 46 56.0**	**+0.6**
	comp=N,1.1nm,0.6s,baz=90,slow=9.2,SNR=3.3						
NOA	**NORSAR Array B**	**44.38**	**323**	P	**P**	**07 47 06.4**	**+0.5**
	comp=N,0.6nm,0.5s,baz=97,slow=7.8,SNR=3.8						
TORD	**Torodi Ar. Bea**	**65.72**	**269**	P	**P**	**07 49 37.5**	**-1.8**
	comp=N,0.2nm,0.5s,baz=49,slow=6.2,SNR=4.4						
INK	**Inuvik**		**73.90**	**9** P	**P**	**07 50 30.1**	**+1.8**
	comp=N,0.2nm,0.4s,baz=332,slow=5.2,SNR=3.4						
YKA	**Yellowknife Ar**		**81.24**	**3** P	**P**	**07 51 10.3**	**+1.3**
	comp=N,0.3nm,0.4s,baz=350,slow=5.4,SNR=23						
WRA	**Warramunga Arr**		**81.99**	**122** P	**P**	**07 51 13.4**	**-0.2**
	comp=N,0.8nm,0.4s,baz=327,slow=4.8,SNR=2.8						
ASAR	**Alice Springs**		**84.25**	**125** P	**P**	**07 51 25.3**	**+0.3**
	comp=N,1.4nm,0.8s,baz=303,slow=3.6,SNR=3.0						

IDC ***12*** *07:39:30.7±0.5, 17°.47S×172°.48W, h0km, mb4.8/18, mb1 4.9/18, mb1mx4.8/27, mbtmp4.8/18, MS4.1/11, Ms1 4.1/11, ms1mx3.7/41, Error ellipse: s-maj=19.4km s-min=15.8km az=115.0*

BJI ***12*** *07:39:32.1, 16°.96S×172°.56W, h7km, mb5.3/40, mB5.4/20, Ms5.2/10, Ms7 4.9/9*

ISCJB ***12*** *07:39:32.8±0.1, 17°.39S±0°.04×172°.54W±0°.04, h21km, mb5.0/201, MS4.3/17, Error ellipse: s-maj=6.3km s-min=3.9km az=143.0*

GCMT ***12*** *07:39:36.2±0.4, 17°.47S×172°.20W, h22km±1km, MW4.9/62, Moment Tensor Solution. s21,c23; s62,c82; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-2.80±.22; $M_{\theta\theta}$0.78±.14; $M_{\phi\phi}$2.02±.13; $M_{r\theta}$-0.37±.24; $M_{r\phi}$0.41±.06; $M_{\theta\phi}$-0.58±.19; Best double couple: $M_0$2.56400×10^{16} NP1:ϕ_S=20.00000°, δ53.00000°, λ-86.00000°. NP2: ϕ_S=194.00000°, δ38.00000°, λ-95.00000°. Principal axes: T 2.2310, Plg8.0000°, Azm108.0000°; N 0.6670, Plg3.0000°, Azm198.0000°; P -2.8960, Plg82.0000°, Azm309.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

NEIC ***12*** *07:39:36.1±0.1, 17°.48S×172°.48W, h35km, mb5.0/159 Error ellipse: s-maj=6.4km s-min=3.8km az=141.0*

MOS ***12*** *07:39:38.8±1.4, 16°.44S×172°.50W, h33km, mb5.2/62, MS4.4/8, Error ellipse: s-maj=12.8km s-min=7.8km az=75.1*

ISC 12 07:39:33.8±0.3, 17°.45S±0°.06×172°.45W±0°.05, h21km, n604, σ1°22/625, mb5.0/201, MS4.2/17, 52C-13D, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**3.58**	**11**	Pn	Pn	07 40 21.0	-7.2
	18nm,0.3s,baz=33,slow=0.6,SNR=24						
AFI				Sn	Sn	07 40 58.5	-11
	45nm,0.3s,baz=47,slow=17,SNR=7.2						
AFI				T	T	07 44 07.1	
	24nm,0.3s,baz=211,slow=13,SNR=7.6						
AFI	**Afiamalu**	**3.58**	**11**	*e*Pn	Pn	07 40 21.0	-7.2
AFI				*e*Sn	**Sn**	**07 41 09.3**	**-0.5**
MSVF	**Nonsavu**	**9.06**	**267**	*e*P	**Pn**	**07 41 44.6**	**+1.0**
MSVF	**Nonsavu**	**9.06**	**267**	*e*Pn	**Pn**	**07 41 44.6**	**+1.0**
RAR	**Rarotonga**	**12.54**	**109**	Pn	**Pn**	**07 42 27.6**	**-3.4**
	4.7nm,0.3s,baz=267,slow=6.1,SNR=8.2						
RAR				Sn	**Sn**	**07 44 45.7**	**-4.5**
	0.7nm,0.3s,baz=9.0,slow=19,SNR=3.4						
RAR				LR	LR	07 46 56.3	
	comp=Z,1μm,18.7s,baz=286,slow=36						
RAR	**Rarotonga**	**12.54**	**109**	*e*Pn	**Pn**	**07 42 27.7**	**-3.4**
RAR				*e*Sn	**Sn**	**07 44 46.8**	**-3.4**
OUZ	**Omahuta**	**21.63**	**212**	*e*P	**P**	**07 44 23.1**	**+0.4**
	123nm,1.3s						
PAE	**Paea**	**21.81**	**94**	*e*T	T	08 06 41.0	
	0.7nm,0.2s						
PPT2	**Papeete2**	**21.82**	**94**	*e*LQ	LQ	07 48 23.0	
	440nm,25.5s						
PPT2				*e*LR	LR	07 49 14.7	
	661nm,27.0s						
PPT	**Papeete**	**21.82**	**94**	LR	LR	07 51 21.8	
	comp=Z,780nm,18.1s,baz=250,slow=33						
MKAZ	**Moumakai**	**22.42**	**207**	PN	**P**	**07 44 32.0**	**+0.8**
URZ	**Urewera**	**22.66**	**202**	P	**P**	**07 44 33.3**	**-0.4**
	48nm,0.5s,baz=274,slow=1.7,SNR=17						
URZ	**Urewera**	**22.66**	**202**	*e*P	**P**	**07 44 33.5**	**-0.2**
TOZ	**Tahuroa Road**	**22.81**	**205**	PN	**P**	**07 44 36.9**	**+1.6**
PRRZ	**Plateau Road**	**23.13**	**203**	PN	**P**	**07 44 38.3**	**-0.4**
BKZ	**Black Stump Fm**	**23.69**	**202**	*e*P	**P**	**07 44 43.4**	**-0.8**
	32nm,0.7s						
HIZ	**Hauiti**	**23.74**	**205**	*e*P	**P**	**07 44 45.3**	**+0.7**
	138nm,1.1s						
HIZ	**Hauiti**	**23.74**	**205**	PN	**P**	**07 44 46.6**	**+2.0**
HNR	**Honiara**	**27.97**	**283**	LR	LR	07 55 48.8	
	comp=Z,466nm,18.7s,baz=123,slow=35						
LTZ	**Lake Taylor**	**28.41**	**204**	*e*P	**P**	**07 45 27.4**	**+0.5**
	136nm,1.3s						
OXZ	**Oxford**	**28.96**	**204**	*e*P	**P**	**07 45 33.0**	**+1.3**
	84nm,0.8s						
TAOE	**Nuku Hiva Isla**	**32.55**	**79**	*e*LR	LR	07 54 21.0	
	251nm,20.4s						
RKT	**Rikitea**	**35.54**	**105**	*e*LR	LR	07 55 21.0	
	414nm,33.0s						
CTAO	**Charters Tower**	**39.12**	**259**	*e*P	**P**	**07 46 56.2**	**-3.9**
CTAO				pmax	pmax		
	comp=Z,19nm,1.0s						
CTAO	**Charters Tower**	**39.12**	**259**	*e*P	**P**	**07 46 56.2**	**-3.9**
	comp=Z,19nm,1.0s						
H11S2	**WAKE ISLAND Hy**	**41.18**	**329**	T	T	08 31 49.5	
	baz=149,slow=76,SNR=5.2						
H11S3	**WAKE ISLAND Hy**	**41.19**	**329**	T	T	08 31 56.3	
	baz=149,slow=76,SNR=6.0						
H11S1	**WAKE ISLAND Hy**	**41.20**	**329**	T	T	08 31 36.0	
	baz=149,slow=76,SNR=5.3						
H11N3	**WAKE ISLAND Hy**	**42.13**	**330**	T	T	08 32 37.8	
	baz=151						
H11N1	**WAKE ISLAND Hy**	**42.13**	**330**	T	T	08 32 37.7	
	baz=151						
H11N2	**WAKE ISLAND Hy**	**42.15**	**330**	T	T	08 32 51.8	
	baz=151						
COEN	**Coen**	**42.79**	**268**	*e*P	**P**	**07 47 27.3**	**-3.1**
	comp=Z,20nm,1.1s						
STKA	**Stephens Creek**	**43.84**	**242**	P	**P**	**07 47 36.5**	**-2.2**
	comp=Z,6.8nm,0.9s,baz=89,slow=9.7,SNR=6.6						
STKA	**Stephens Creek**	**43.84**	**242**	*e*P	**P**	**07 47 36.7**	**-2.0**
STKA				pmax	pmax		
	comp=Z,14nm,1.9s						
STKA	**Stephens Creek**	**43.84**	**242**	*e*P	**P**	**07 47 36.7**	**-2.0**
	comp=Z,14nm,1.9s						
WB2	**Warramunga Arr**	**50.28**	**258**	*e*P	**P**	**07 48 25.8**	**-3.3**
	comp=Z,28nm,0.8s						
WRAB	**Tennant Creek**	**50.28**	**258**	*ce*P	**P**	**07 48 25.6**	**-3.6**
WRAB				pmax	pmax		
	comp=Z,45nm,1.0s						
WRAB				MLR	MLR		
	comp=Z,921nm,17.0s						
WRAB	**Tennant Creek**	**50.28**	**258**	*e*P	**P**	**07 48 26.2**	**-3.0**
	comp=Z,29nm,0.8s						
WR1	**Warramunga Arr**	**50.29**	**258**	*e*P	**P**	**07 48 25.7**	**-3.5**
	comp=Z,27nm,0.8s						
WRA	**Warramunga Arr**	**50.29**	**258**	P	**P**	**07 48 25.7**	**-3.5**
	comp=Z,11nm,1.0s,baz=96,slow=7.7,SNR=53						
WRA				LR	LR	08 10 18.0	
	comp=Z,324nm,18.2s,baz=115,slow=37						
AS01	**Alice Springs**	**50.33**	**253**	*e*P	**P**	**07 48 26.3**	**-3.2**
AS31	**Alice Springs**	**50.37**	**253**	*e*P	**P**	**07 48 27.2**	**-2.6**
	comp=Z,14nm,0.8s						
ASAR	**Alice Springs**	**50.37**	**253**	P	**P**	**07 48 26.4**	**-3.5**
	comp=Z,49nm,0.8s,baz=89,slow=8.5,SNR=301						
GUMO	**Guam**	**52.21**	**303**	LR	LR	08 09 50.1	
	comp=Z,86nm,18.9s,baz=88,slow=35						
SWI	**Sorong**	**57.71**	**280**	P	**P**	**07 49 22.2**	**-1.3**
SWI				pmax	pmax		
	comp=Z,97nm,1.0s						
FITZ	**Fitzroy Crossi**	**58.70**	**259**	P	**P**	**07 49 29.6**	**-0.8**
	comp=Z,5.2nm,0.9s,baz=90,slow=4.0,SNR=2.6						
FITZ	**Fitzroy Crossi**	**58.70**	**259**	*e*P	**P**	**07 49 28.5**	**-1.8**
	comp=Z,54nm,1.8s						
SBA	**Scott Base**	**61.30**	**185**	P	**P**	**07 49 50.0**	**+2.8**
SBA				pmax	pmax		
	comp=Z,28nm,1.6s						
SBA	**Scott Base**	**61.30**	**185**	*e*P	**P**	**07 49 48.5**	**+1.2**
	comp=Z,28nm,1.6s						
VNDA	**Vanda**	**61.45**	**186**	P	**P**	**07 49 48.1**	**-0.2**
	comp=Z,4.9nm,1.1s,baz=4.8,slow=7.8,SNR=8.5						
SOEI	**Soe**	**61.76**	**268**	*e*P	**P**	**07 49 52.2**	**+0.7**
	comp=Z,79nm,1.0s						
LUWI	**Luwuk**	**65.66**	**277**	*e*P	**P**	**07 50 15.0**	**-2.1**
	comp=Z,118nm,1.3s						
KAPI	**Kappang**	**67.34**	**272**	P	**P**	**07 50 26.5**	**-1.4**
	comp=Z,7.7nm,0.7s,baz=124,slow=3.6,SNR=4.8						
KAPI	**Kappang**	**67.34**	**272**	*e*P	**P**	**07 50 26.2**	**-1.7**
	comp=Z,17nm,1.0s						
CASY	**Casey**	**68.94**	**205**	*e*P	**P**	**07 50 37.2**	**+0.2**
	comp=Z,25nm,1.3s			

comp=Z,12nm,1.3s
DAC Darwin (Calif) 74.43 43 eP P 07 51 11.0 +0.2
DAC pmax pmax
comp=Z,9.0nm,1.4s
DAC Darwin (Calif) 74.43 43 eP P 07 51 11.0 +0.2
comp=Z,8.9nm,1.4s
HEC Hector,Ludlow 74.43 45 P P 07 51 11.3 +0.6
baz=235
GLA Glamis 74.48 47 P P 07 51 11.9 +1.0
baz=237
GLA Glamis 74.48 47 eP P 07 51 12.1 +1.2
GLA pmax pmax
comp=Z,15nm,1.2s
GLA Glamis 74.48 47 eP P 07 51 12.1 +1.2
comp=Z,15nm,1.2s
WAKR Walker 74.59 41 eP P 07 51 12.5 +0.8
YBH Yreka Blue Hor 74.69 36 eP P 07 51 13.0 +1.0
YBH pmax pmax
comp=Z,11nm,1.1s
YBH Yreka Blue Hor 74.69 36 eP P 07 51 13.0 +1.0
comp=Z,11nm,1.1s
PEA0 Petropavlovsk- 74.85 342 eP P 07 51 12.8 +0.2
PETK Petropavlovsk- 74.85 342 P P 07 51 12.8 +0.3
comp=Z,33nm,0.9s,baz=120,slow=7.4,SNR=13
PEA1 Petropavlovsk- 74.85 342 eP P 07 51 12.8 +0.3
GMRC Granite Mounta 74.87 46 P P 07 51 13.0 -0.3
baz=236
IRM Iron Mountain 74.87 46 P P 07 51 14.0 +0.8
baz=236
GRAC Grapevine Rang 75.00 43 P P 07 51 14.9 +1.0
baz=234
FURC Furnace Creek, 75.02 44 P P 07 51 14.7 +0.8
baz=234
TUQ Turquoise Moun 75.06 45 P P 07 51 14.8 +0.5
baz=235
113A Mohawk Valley, 75.08 48 eP P 07 51 15.1 +0.7
comp=Z,11nm,1.1s
SHOC Shoshone, Teco 75.08 44 P P 07 51 14.9 +0.6
baz=235
M04C Macdoel 75.22 37 P P 07 51 15.6 +0.5
baz=230
NV01 Mina Array Sit 75.25 41 eP P 07 51 15.4 -0.1
NVAR Mina Array Bea 75.25 41 P P 07 51 15.9 +0.4
comp=Z,8.0nm,1.0s,baz=228,slow=8.6,SNR=40
214A Organ Pipe Nat 75.34 49 P P 07 51 17.3 +1.4
baz=238
NV11 Mina Array Sit 75.34 41 eP P 07 51 16.5 +0.6
comp=Z,21nm,1.2s
PAHR Pah Rah Range 75.36 40 eP P 07 51 16.7 +0.7
comp=Z,15nm,1.3s
LDFC Landfair 75.41 46 eP P 07 51 17.5 +1.2
comp=Z,26nm,1.3s
PDMCI Parker Dam,Lak 75.64 47 P P 07 51 18.3 +0.7
baz=237
TPNV Topopah Spring 75.70 43 P P 07 51 18.8 +0.8
baz=235
TPNV Topopah Spring 75.70 43 eP P 07 51 18.6 +0.5
TPNV pmax pmax
comp=Z,10.0nm,1.2s
TPNV Topopah Spring 75.70 43 eP P 07 51 18.6 +0.5
comp=Z,9.5nm,1.2s
YSS Yuzh-Sakhalins 75.70 330⇑eP P 07 51 18.5 +0.9
SHPR Sheep Range 76.17 44 eP P 07 51 21.7 +1.0
comp=Z,16nm,1.5s
MOD Modoc Plateau 76.17 37 eP P 07 51 20.9 +0.3
comp=Z,14nm,1.1s
Y14A Wickenburg 76.24 47 eP P 07 51 21.8 +0.8
comp=Z,39nm,1.1s
W13A Hualapai Mount 76.25 46 eP P 07 51 22.1 +0.8
comp=Z,8.4nm,1.1s
K05A Summer Lake 76.36 36 eP P 07 51 22.7 +1.0
comp=Z,30nm,1.1s
J05D Fort Rock, OR 76.53 36 P P 07 51 23.0 +0.4
baz=230
H04A Detroit Lake 76.91 34 eP P 07 51 24.9 +0.3
comp=Z,16nm,1.2s
TUC Tucson 76.99 50 P P 07 51 26.5 +1.2
baz=240
TUC Tucson 76.99 50 eP P 07 51 26.6 +1.2
TUC pmax pmax
comp=Z,13nm,1.1s
TUC Tucson 76.99 50 eP P 07 51 26.6 +1.2
comp=Z,13nm,1.1s
I05D Terrebonne, OR 77.15 35 P P 07 51 26.3 +0.3
baz=230
WVOR Wild Horse Val 77.47 38 eP P 07 51 28.5 +0.6
WVOR pmax pmax
comp=Z,15nm,1.1s
WVOR Wild Horse Val 77.47 38 eP P 07 51 28.5 +0.6
comp=Z,15nm,1.1s
X16A Lo Mia Camp, P 77.60 48 eP P 07 51 30.1 +1.3
comp=Z,10nm,1.1s
319A Douglas 77.64 51 eP P 07 51 30.4 +1.3
comp=Z,18nm,1.0s
LCMT Little Creek M 77.73 45 eP P 07 51 30.4 +0.9
comp=Z,13nm,1.4s
KNB Kanab 78.02 45 eP P 07 51 32.4 +1.2
KNB pmax pmax
comp=Z,23nm,1.6s
KNB Kanab 78.02 45 eP P 07 51 32.4 +1.2
comp=Z,22nm,1.6s
TJN Taejon 78.05 314 P P 07 51 30.0 -1.1
PSUT Pine Spring 78.16 43 eP P 07 51 32.7 +0.8
comp=Z,5.8nm,0.9s
WUAZ Wupatki 78.22 47 P P 07 51 33.0 +0.8
baz=238
WUAZ Wupatki 78.22 47 eP P 07 51 33.4 +1.2
comp=Z,9.3nm,1.1s
KSRS Korea Array 78.25 315 P P 07 51 33.6 +1.5
comp=Z,18nm,1.1s,baz=132,slow=6.3,SNR=40
KSRS LR LR 08 22 19.8
comp=Z,36nm,19.6s,baz=140,slow=33
KS15 Wonju Array Si 78.27 315 eP P 07 51 34.9 +2.6
KSM Kuching 78.28 275 eP P 07 51 33.1 +0.3
comp=Z,76nm,1.0s
KS01 Wonju Array Si 78.28 315 eP P 07 51 32.7 +0.4
HPIG 78.37 57 eP P 07 51 34.5 +1.2
comp=Z,14nm,1.3s
ELK Elko 78.52 41 eP P 07 51 34.2 +0.3
ELK pmax pmax
comp=Z,11nm,1.1s
ELK Elko 78.52 41 eP P 07 51 34.2 +0.3
comp=Z,11nm,1.1s
TYV Tymovskoe 78.58 333 eP P 07 51 33.5 -0.1
TYV pmax pmax
comp=Z,11nm,0.8s
D05A Enumclaw 78.67 32 eP P 07 51 34.9 +0.7
comp=Z,51nm,1.4s
X18A Snowflake 78.71 48 eP P 07 51 36.2 +1.2
comp=Z,10nm,1.3s
VLA Vladivostok 78.97 322⇑eP P 07 51 35.6 -0.4
VLA pmax pmax
comp=Z,28nm,0.9s
MTPU Mount Pierson 78.99 44 eP P 07 51 38.5 +1.8
comp=Z,21nm,1.4s
G08A Pilot Rock 79.06 35 eP P 07 51 37.1 +0.5
comp=Z,17nm,1.1s
INCN Inchon 79.13 315 eP P 07 51 38.9 +1.9
comp=Z,69nm,1.1s
MSU Marysvale 79.25 44 eP P 07 51 39.5 +1.5
MSU Marysvale 79.25 44 eP P 07 51 39.5 +1.5
RSO Redoubt South 79.25 10 eP P 07 51 37.5 +0.1
121A Cookes Peak, D 79.31 51 P P 07 51 39.8 +1.4
baz=241
USRK Ussuriysk Ar. 79.56 323 P P 07 51 39.2 +0.1
comp=Z,7.7nm,1.0s,baz=103,slow=4.1,SNR=15
MFID Camas Ranch 79.71 38 eP P 07 51 40.6 +0.4
comp=Z,9.8nm,1.0s
DUG Dugway, Tooele 79.75 42 P P 07 51 40.8 +0.3
baz=237
DUG Dugway, Tooele 79.75 42 eP P 07 51 41.1 +0.6
DUG pmax pmax
comp=Z,8.0nm,1.1s
DUG Dugway, Tooele 79.75 42 eP P 07 51 41.1 +0.6
comp=Z,8.4nm,1.1s
BGU Big Grassy Mou 80.01 41 eP P 07 51 42.4 +0.5
comp=Z,3.5nm,1.1s
Q16A Castle Valley 80.13 44 eP P 07 51 43.9 +1.1
comp=Z,19nm,1.6s
D08A Wollman Farm, 80.19 34 eP P 07 51 43.0 +0.5
comp=Z,13nm,1.0s
E09A Wood Farm, Sta 80.27 35 eP P 07 51 43.6 +0.6
comp=Z,14nm,1.1s
TMUT Trail Mountain 80.31 44 eP P 07 51 45.1 +1.3
comp=Z,16nm,1.1s
MPU Maple Canyon 80.41 43 eP P 07 51 45.0 +0.8
comp=Z,7.2nm,1.1s

F10A Beach Ranch, E 80.44 36 eP P 07 51 44.0 -0.1
comp=Z,14nm,1.0s
HABR Khabarovsk 80.54 328ceP P 07 51 42.5 -1.9
HABR e 07 51 49.5
HABR e 07 54 44.7
HABR ePPP PPP 07 56 33.9
HABR eS S 08 01 47.9 -2.0
HABR e*SS SKSac 08 01 53.9 -7.3
HABR e 08 02 07.3
HABR eSS SS 08 06 59.7 -3.3
HABR pmax pmax
comp=Z,11nm,1.7s
HABR MLR MLR
comp=Z,61nm,19.0s
SPUT South Promonto 80.59 41 eP P 07 51 45.5 +0.5
comp=Z,9.5nm,1.2s
TLIG Tlapa 80.60 68 eP P 07 51 43.2 -2.3
comp=Z,19nm,1.3s
HLID Hailey 80.64 39 P P 07 51 45.9 +0.7
baz=235
HLID Hailey 80.64 39 eP P 07 51 46.1 +0.8
comp=Z,11nm,1.0s
HVU Hansel Valley 80.64 41 eP P 07 51 45.9 +0.6
HVU pmax pmax
comp=Z,11nm,1.2s
HVU Hansel Valley 80.64 41 eP P 07 51 45.9 +0.6
comp=Z,11nm,1.2s
SRU San Rafael Swe 80.66 44 eP P 07 51 46.4 +0.9
SRU pmax pmax
comp=Z,14nm,1.3s
SRU San Rafael Swe 80.66 44 eP P 07 51 46.4 +0.9
comp=Z,14nm,1.3s
LAZ Ladron 80.67 50 eP P 07 51 47.1 +1.4
MNTX Cornudas Mount 80.72 53 P P 07 51 46.8 +1.0
baz=243
MNTX Cornudas Mount 80.72 53 eP P 07 51 46.8 +1.0
comp=Z,16nm,1.2s
B08A Colville Reser 80.79 33 eP P 07 51 45.5 -0.3
comp=Z,9.9nm,1.0s
JLU Jordanelle 80.84 42 eP P 07 51 47.1 +0.6
comp=Z,6.9nm,1.1s
BNM Barren Site 80.93 50 eP P 07 51 48.4 +1.3
PMR Palmer 80.94 11 eP P 07 51 47.0 +0.8
PMR pmax pmax
comp=Z,40nm,1.4s
PMR Palmer 80.94 11 eP P 07 51 47.0 +0.8
comp=Z,40nm,1.4s
C09A Chrisman Ranch 80.99 34 eP P 07 51 47.2 +0.4
comp=Z,22nm,1.4s
LPM Los Pinos Moun 81.00 50 eP P 07 51 48.6 +1.1
LTX Lajitas 81.00 56 eP P 07 51 48.2 +0.7
LTX Lajitas 81.00 56 eP P 07 51 48.1 +0.7
TX31 Lajitas Ar. Si 81.00 56 eP P 07 51 48.2 +0.8
TXAR Lajitas Array 81.00 56 P P 07 51 48.1 +0.7
comp=Z,7.7nm,1.1s,baz=215,slow=6.1,SNR=20
TXAR LR LR 08 22 12.8
comp=Z,96nm,18.6s,baz=0.0,slow=32
PV05 Paradox Valley 81.09 46 eP P 07 51 49.0 +1.1
P18A Preston Nutter 81.12 44 eP P 07 51 48.8 +0.7
comp=Z,6.0nm,1.0s
TT01 Tatalina 81.12 8 eP P 07 51 47.3 +0.1
TCUT Toone Canyon 81.14 42 eP P 07 51 49.0 +0.9
comp=Z,27nm,1.1s
TTA Tatalina 81.15 8 eP P 07 51 47.8 +0.4
TTA pmax pmax
comp=Z,34nm,1.4s
TTA Tatalina 81.15 8 eP P 07 51 47.8 +0.4
comp=Z,34nm,1.4s
DIV Divide 81.18 13 eP P 07 51 47.4 -0.2
comp=Z,47nm,1.5s
MDJ Mudanjiang 81.19 322 P P 07 51 48.8 +0.8
MDJ pmax pmax
comp=Z,23nm,1.1s
MDJ pmax pmax
comp=Z,56nm,2.8s
MDJ Mudanjiang 81.19 322 eP P 07 51 49.2 +1.3
comp=Z,42nm,1.3s
PV09 Paradox Valley 81.28 45 eP P 07 51 50.1 +1.1
BMRM Bremner River 81.28 13 eP P 07 51 48.1 0.0
comp=Z,62nm,1.4s
HWUT Hardware Ranch 81.31 42 eP P 07 51 49.0 0.0
comp=Z,4.2nm,1.0s
ANMO Albuquerque 81.43 49 P P 07 51 50.5 +0.9
baz=242
ANMO Albuquerque 81.43 49⇓eP P 07 51 50.6 +0.9
ANMO pmax pmax
comp=Z,8.0nm,1.0s
ANMO MLR MLR
comp=Z,104nm,17.0s
ANMO Albuquerque 81.43 49 eP P 07 51 50.6 +0.9
comp=Z,8.8nm,1.1s
KLU Klutina 81.47 13 eP P 07 51 49.5 +0.3
comp=Z,46nm,1.7s
PV01 Paradox Valley 81.48 46 eP P 07 51 50.3 +0.3
SCM Sheep Creek Mo 81.50 12 eP P 07 51 49.2 -0.1
SCM pmax pmax
comp=Z,50nm,1.4s
SCM Sheep Creek Mo 81.50 12 eP P 07 51 49.2 -0.1
comp=Z,50nm,1.4s
BALM Baldy 81.86 14 eP P 07 51 51.6 +0.3
BALM pmax pmax
comp=Z,20nm,1.1s
BALM Baldy 81.86 14 eP P 07 51 51.6 +0.3
comp=Z,20nm,1.1s
NJ2 Nanjing 82.12 307 eP P 07 51 53.0 -0.1
NJ2 pmax pmax
comp=Z,8.0nm,0.6s
CAST Castle Rocks 82.16 9 eP P 07 51 50.9 -1.8
comp=Z,12nm,1.2s
MCMT McKenzie Canyo 82.28 38 eP P 07 51 54.3 +0.2
MA2 Magadan 82.38 342 LR LR 08 26 40.1
comp=Z,100nm,19.2s,baz=162,slow=34
SKAG Skagway 82.39 18 eP P 07 51 54.8 +0.9
comp=Z,39nm,1.5s
KTH Kantishna Hill 82.46 10 eP P 07 51 54.4 0.0
comp=Z,27nm,1.5s
TRF Thorofare Moun 82.47 10 eP P 07 51 53.8 -0.7
comp=Z,26nm,1.2s
S22A 4UR Ranch, Cre 82.49 47 P P 07 51 56.9 +1.5
baz=241
S22A 4UR Ranch, Cre 82.49 47 eP P 07 51 56.6 +1.2
comp=Z,17nm,1.1s
RND Reindeer 82.67 10 eP P 07 51 54.5 -0.9
RND pmax pmax
comp=Z,34nm,1.1s
RND Reindeer 82.67 10 eP P 07 51 54.5 -0.9
comp=Z,34nm,1.1s
REDW Red Top Meadow 82.69 40 eP P 07 51 56.6 +0.4
comp=Z,20nm,1.3s
O20A White River Ci 82.70 44 eP P 07 51 57.0 +0.7
comp=Z,14nm,1.3s
KLR Kul'dur 82.72 327⇓eP P 07 51 56.0 +0.1
DLMT Dillon 82.73 38 eP P 07 51 56.8 +0.5
comp=Z,17nm,1.3s
FXWY Fox Creek 82.73 40 eP P 07 51 56.9 +0.5
comp=Z,10nm,1.2s
MSO Missoula 82.78 36 P P 07 51 56.2 -0.2
baz=235
MSO Missoula 82.78 36 eP P 07 51 56.0 -0.4
comp=Z,11nm,1.2s
SNOW Snow King Moun 82.80 40 eP P 07 51 57.6 +0.8
comp=Z,15nm,1.0s
BSMT Bassoo Peak 82.90 35 eP P 07 51 57.0 -0.2
PAX Paxson 82.90 12 eP P 07 51 56.1 -0.5
PAX pmax pmax
comp=Z,14nm,1.2s
PAX Paxson 82.90 12 eP P 07 51 56.1 -0.5
comp=Z,14nm,1.2s
IMW Indian Meadow 82.92 40 eP P 07 51 57.7 +0.2
comp=Z,15nm,1.1s
MCK McKinley 82.96 10 eP P 07 51 56.5 -0.4
MCK pmax pmax
comp=Z,39nm,1.1s
MCK McKinley 82.96 10 eP P 07 51 56.5 -0.4
comp=Z,38nm,1.1s
MOOW Moose Ponds 82.96 40 eP P 07 51 57.8 +0.2
comp=Z,9.4nm,1.3s
BPAW Bear Paw Mtn. 82.97 9 eP P 07 51 55.6 -1.3
comp=Z,7.8nm,1.1s
LOHW Long Hollow 82.98 40 eP P 07 51 58.0 +0.3
comp=Z,12nm,1.3s
LRM Limekiln Ridge 83.07 38 eP P 07 51 58.4 +0.3
SMCO Snowmass 83.08 45 eP P 07 51 59.1 +0.6
comp=Z,28nm,1.4s
QLMT Earthquake Lak 83.13 39 eP P 07 51 59.7 +1.3
SWMT Swartz Lake 83.14 36 eP P 07 51 57.7 -0.5

FLWY Flagg Ranch 83.17 40 eP P 07 51 59.0 +0.4
comp=Z,24nm,1.1s
BW06 Boulder Array 83.19 41 P P 07 51 58.3 -0.5
baz=239
BW06 Boulder Array 83.19 41 eP P 07 51 58.7 -0.1
PD31 Pinedale Array 83.19 41 eP P 07 51 58.7 0.0
PDAR Pinedale Array 83.19 41 P P 07 51 58.2 -0.5
comp=Z,7.2nm,0.9s,baz=217,slow=3.7,SNR=37
CHMT Chamberlain Mo 83.22 36 eP P 07 51 58.6 -0.2
CN2 Changchun 83.23 320 eP P 07 51 58.0 -0.7
CN2 pmax pmax
comp=Z,20nm,1.0s
MENT Mentasta 83.23 13 eP P 07 51 58.6 +0.3
comp=Z,21nm,1.3s
DLBC Dease Lake 83.27 21 eP P 07 51 59.2 +0.5
comp=Z,15nm,1.4s
BWN Browne 83.28 10 eP P 07 51 58.3 -0.1
comp=Z,75nm,1.4s
YFT Old Faithful 83.28 39 eP P 07 52 01.7 +2.5
comp=Z,9.7nm,1.0s
YMR Madison River 83.32 39 eP P 07 52 00.7 +1.3
comp=Z,29nm,1.3s
YBMT Yellow Bay 83.33 35 eP P 07 51 59.1 -0.2
H17A Grant Village 83.41 40 P P 07 52 01.7 +1.8
baz=238
H17A Grant Village 83.41 40 eP P 07 52 01.8 +1.8
comp=Z,11nm,1.0s
SDCO Great Sand Dun 83.42 47 P P 07 52 00.9 +0.7
baz=242
SDCO Great Sand Dun 83.42 47 eP P 07 52 00.9 +0.7
comp=Z,7.1nm,1.1s
BOZ Bozeman (W) 83.45 38 P P 07 52 00.5 +0.5
baz=237
BOZ Bozeman (W) 83.45 38 eP P 07 52 00.0 0.0
BOZ pmax pmax
comp=Z,20nm,1.3s
BOZ Bozeman (W) 83.45 38 eP P 07 52 00.0 0.0
comp=Z,20nm,1.3s
832A Faith Ranch, C 83.51 58 P P 07 52 01.2 +0.7
baz=246
LKWY Lake 83.61 39 eP P 07 52 02.6 +1.6
LKWY pmax pmax
comp=Z,18nm,1.0s
LKWY Lake 83.61 39 eP P 07 52 02.6 +1.6
comp=Z,18nm,1.0s
MSTX Muleshoe 83.70 52 P P 07 52 02.1 +0.6
baz=244
MSTX Muleshoe 83.70 52 eP P 07 52 02.3 +0.8
comp=Z,28nm,1.3s
WRH Wood River Hil 83.79 10 eP P 07 52 00.7 -0.4
comp=Z,61nm,1.2s
DOT Dot Lake 83.80 12 eP P 07 52 01.1 0.0
comp=Z,62nm,1.2s
933A Laredo 83.81 59 P P 07 52 03.1 +1.0
baz=247
MLY Manley 83.88 9 eP P 07 52 00.7 -0.9
comp=Z,22nm,1.2s
T25A Trinidad 83.91 48 P P 07 52 03.2 +0.6
baz=243
T25A Trinidad 83.91 48 eP P 07 52 03.0 +0.4
comp=Z,12nm,1.4s
HRY Holter Researc 83.92 37 eP P 07 52 02.5 +0.2
CCB Clear Creek Bu 84.00 10 eP P 07 52 01.2 -0.9
comp=Z,36nm,1.2s
833A Chaparral WMA, 84.00 58 P P 07 52 04.1 +1.1
baz=246
WALA Waterton Lakes 84.07 34 eP P 07 52 03.0 -0.1
comp=Z,19nm,1.4s
COLA College 84.20 10*d* iP P 07 52 02.1 -1.0
COLA pmax pmax
comp=Z,63nm,1.1s
COLA College 84.20 10 eP P 07 52 03.1 0.0
comp=Z,49nm,0.9s
MDM Murphy Dome 84.21 10 eP P 07 52 02.8 -0.4
comp=Z,51nm,1.2s
Q24A Divide 84.23 46 P P 07 52 05.5 +1.1
baz=242
Q24A Divide 84.23 46 eP P 07 52 05.3 +1.0
comp=Z,15nm,1.1s
ILAR Eielson Array 84.27 11 P P 07 52 02.3 -1.2
comp=Z,6.4nm,1.0s,baz=208,slow=5.6,SNR=31
ILB Eielson Array 84.27 11 eP P 07 52 02.9 -0.7
IL1 Eielson Array 84.27 11 eP P 07 52 02.5 -1.0
ISCO Idaho Springs 84.30 45 P P 07 52 05.6 +0.9
baz=242
ISCO Idaho Springs 84.30 45 eP P 07 52 05.0 +0.3
ISCO pmax pmax
comp=Z,5.0nm,1.1s
ISCO Idaho Springs 84.30 45 eP P 07 52 05.0 +0.3
comp=Z,5.2nm,1.1s
QIZ Qiongzhong 84.51 292 P P 07 52 05.8 0.0
QIZ S S 08 02 33.3 +1.5
RLMT Red Lodge 84.58 39 P P 07 52 06.6 +0.7
baz=239
RLMT Red Lodge 84.58 39 eP P 07 52 06.5 +0.7
comp=Z,14nm,1.2s
N23A Red Feather La 84.60 44 P P 07 52 06.9 +0.8
baz=242
N23A Red Feather La 84.60 44 eP P 07 52 06.8 +0.7
comp=Z,8.9nm,1.1s
834A Tilden 84.60 58 P P 07 52 07.5 +1.5
baz=247
633A Saathoff Ranch 84.62 57 P P 07 52 06.7 +0.6
baz=247
GCMT Greycliff 84.69 39 eP P 07 52 07.0 +0.7
SEY Seymchan 84.72 345⇑eP P 07 52 05.6 -0.2
AMTX Amarillo 84.91 51 P P 07 52 08.2 +0.6
baz=245
AMTX Amarillo 84.91 51 eP P 07 52 08.2 +0.6
comp=Z,24nm,1.1s
533A Kerrville 84.98 57 P P 07 52 08.6 +0.7
baz=247
K22A Casper 85.06 43 P P 07 52 08.9 +0.7
baz=241
K22A Casper 85.06 43 eP P 07 52 08.9 +0.7
comp=Z,7.5nm,1.1s
PHWY Pilot Hill 85.12 44 eP P 07 52 08.3 -0.4
comp=Z,9.1nm,1.0s
DAWY Dawson 85.17 14 eP P 07 52 08.5 +0.3
comp=Z,38nm,1.1s
EGAK Eagle 85.40 13 eP P 07 52 09.4 +0.2
comp=Z,30nm,1.3s
534A Blanco 85.41 57 P P 07 52 10.5 +0.4
baz=247
333A Richland Sprin 85.51 55 P P 07 52 11.0 +0.4
baz=246
ABTX Abilene, Hawle 85.52 54 P P 07 52 11.1 +0.5
baz=246
ABTX Abilene, Hawle 85.52 54 eP P 07 52 11.3 +0.7
comp=Z,28nm,1.2s
635A Leesville 85.72 58 P P 07 52 12.7 +1.1
baz=247
EGMT Eagleton 85.81 37 P P 07 52 12.8 +1.0
baz=238
233A Rising Star 85.85 55 P P 07 52 11.9 -0.3
baz=246
434A Burnet 85.88 56 P P 07 52 12.4 0.0
baz=247
COLD Coldfoot 86.02 8 eP P 07 52 13.0 +0.7
comp=Z,21nm,1.2s
133A Hamilton Ranch 86.07 54 P P 07 52 14.0 +0.7
baz=246
334A Lometa 86.10 56 P P 07 52 14.2 +0.7
baz=247
MAW Mawson 86.15 198 P P 07 52 13.5 +0.4
comp=Z,8.0nm,1.1s,baz=99,slow=7.3,SNR=8.8
MAW Mawson 86.15 198 eP P 07 52 13.5 +0.4
comp=Z,3.4nm,1.3s
234A Clairette 86.44 55 P P 07 52 16.1 +1.0
baz=247
Z33A Whitaker Ranch 86.46 54 P P 07 52 16.2 +1.0
baz=246
X32A Elmer 86.51 52 P P 07 52 16.0 +0.5
baz=246
BILL Bilibino 86.65 352⇑iP P 07 52 15.1 -0.2
BILL *i* 07 52 28.2
BILL pmax pmax
comp=Z,20nm,1.2s
BILL MLR MLR
comp=Z,252nm,20.0s
BILL Bilibino 86.65 352 eP P 07 52 15.3 0.0
comp=Z,32nm,1.5s
W32A Sentinel 86.83 52 P P 07 52 17.7 +0.7
baz=246
Y33A Hilltop Ranch, 86.85 53 P P 07 52 17.6 +0.5
baz=247
WMOK Wichita Mounta 87.02 52 eP P 07 52 17.9 0.0

WMOK pmax pmax
comp=Z,9.0nm,1.5s
WMOK Wichita Mounta 87.02 52 *e*P **P 07 52 17.9 0.0**
comp=Z,8.6nm,1.5s
Z34A Collier Ranch, 87.14 54 P **P 07 52 19.0 +0.5**
baz=247
X33A Lawton 87.16 53 P **P 07 52 19.3 +0.7**
baz=247
LAO LASA Array 87.21 39 *e*P **P 07 52 19.0 +0.3**
comp=Z,8.5nm,1.1s
336A Riesel 87.22 56 P **P 07 52 20.1 +1.2**
baz=248
135A Vickery Place, 87.22 55 P **P 07 52 20.1 +1.1**
baz=247
RSSD Black Hills 87.36 42 P **P 07 52 19.3 -0.4**
baz=243
RSSD Black Hills 87.36 42 *e*P **P 07 52 19.2 -0.4**
RSSD pmax pmax
comp=Z,10.0nm,1.1s
RSSD Black Hills 87.36 42 *e*P **P 07 52 19.2 -0.4**
comp=Z,10nm,1.1s
PLCA Paso Flores 87.47 132 P **P 07 52 21.4 +1.2**
comp=Z,5.0nm,1.0s,baz=226,slow=3.5,SNR=9.6
PLCA LR LR 08 24 30.0
comp=Z,259nm,18.1s,baz=280,slow=31
PLCA Paso Flores 87.47 132 *e*P **P 07 52 22.0 +1.8**
comp=Z,10nm,1.2s
Y34A Reagan Ranch, 87.49 53 P **P 07 52 20.8 +0.6**
baz=247
I25A Rochford 87.50 42 P **P 07 52 20.0 -0.3**
baz=243
BJT Baijiatuau 87.52 313 *e*P **P 07 52 21.6 +1.4**
BJT pmax pmax
comp=Z,67nm,1.2s
BJT Baijiatuau 87.52 313 *e*P **P 07 52 21.6 +1.4**
comp=Z,67nm,1.2s
BJI Beijing 87.53 313 P **P 07 52 20.9 +0.7**
BJI pmax pmax
comp=Z,28nm,1.2s
Z35A Perchaven, San 87.64 54 P **P 07 52 21.9 +0.9**
baz=247
236A Katherine and 87.70 56 P **P 07 52 21.4 +0.2**
baz=248
136A Ennis 87.88 55 P **P 07 52 23.0 +0.9**
baz=248
IPM Ipoh 88.02 275 *e*P **P 07 52 24.9 +1.7**
comp=Z,65nm,1.3s
PANO Nakornpanom 88.57 288 P **P 07 52 27.6 +1.9**
comp=Z,20nm,1.2s
Y36A Durant 88.60 54 P **P 07 52 26.8 +1.4**
baz=248
ENH Enshi 88.78 302 *e*P **P 07 52 27.8 +1.4**
comp=Z,116nm,1.6s
G26A Maurine 88.80 42 P **P 07 52 26.0 -0.2**
baz=244
SKNT Sakolnakorn 89.09 288 P **P 07 52 30.0 +1.9**
comp=Z,14nm,1.7s
Y37A Hugo 89.14 54 P **P 07 52 29.6 +1.5**
baz=248
SKLT Songkhla 89.21 278 P **P 07 52 31.2 +2.4**
comp=Z,73nm,1.3s,comp=Z,926nm
DGMT Dagmar 89.26 38 P **P 07 52 28.4 +0.1**
baz=242
DGMT Dagmar 89.26 38 *e*P **P 07 52 28.7 +0.4**
comp=Z,14nm,1.0s
PSI Prapat 89.52 273 *e*P **P 07 52 30.5 +0.1**
PSI pmax pmax
comp=Z,52nm,1.2s
PSI Prapat 89.52 273 *e*P **P 07 52 30.5 +0.1**
comp=Z,52nm,1.2s
GYA Guiyang 89.80 298⇑*i*P **P 07 52 32.9 +1.5**
GYA PP **PP 07 56 04.8 +0.6**
GYA SKS **SKSac 08 03 00.2 -1.2**
GYA S **S 08 03 20.3 -2.5**
GYA SS **SS 08 09 19.0 -1.6**
GYA pmax pmax
comp=Z,30nm,1.1s
GYA pmax pmax
comp=Z,130nm,6.7s
GYA LR LR
comp=Z,550nm,19.0s
GYA LR LR
comp=Z,510nm,20.2s
GYA LR LR
comp=Z,500nm,19.8s
INK Inuvik 90.03 14 P **P 07 52 30.9 -0.5**
comp=Z,7.4nm,1.0s,baz=218,slow=3.8,SNR=18
INK Inuvik 90.03 14 *e*P **P 07 52 31.1 -0.2**
INK pmax pmax
comp=Z,19nm,1.3s
INK Inuvik 90.03 14 *e*P **P 07 52 31.1 -0.2**
comp=Z,19nm,1.3s
NONG Nongkai 90.19 289 P **P 07 52 35.6 +2.4**
comp=Z,28nm,0.8s
TRTT Trang 90.29 278 P **P 07 52 36.1 +2.3**
comp=Z,66nm,1.1s
XAN Xi'an 90.56 306 P **P 07 52 35.1 +0.4**
XAN sP sP 07 52 48.9 +4.7
XAN pmax pmax
comp=Z,18nm,1.4s
XAN pmax pmax
comp=Z,67nm,9.7s
JTS JuntasAbangare 90.68 80*d i*P **P 07 52 37.4 +1.7**
JTS pmax pmax
comp=Z,45nm,1.1s
JTS JuntasAbangare 90.68 80 *e*P **P 07 52 37.8 +2.1**
comp=Z,26nm,1.1s
NAYO Nakonayok 90.71 285 P **P 07 52 37.9 +2.2**
comp=Z,14nm,1.2s
VNA3 Neumayer Olymp 90.74 175 P **P 07 52 35.7 +0.8**
SYO Syowa Base 90.78 191‖*e*P **P 07 52 34.8 -0.2**
SYO Syowa Base 90.78 191‖*e*pP pP 07 52 44.8 +2.8
SNAA Sanae 90.82 177 P **P 07 52 35.4 0.0**
SNAA Sanae 90.82 177 *e*P **P 07 52 35.9 +0.5**
SNAA pmax pmax
comp=Z,9.0nm,1.0s
SNAA Sanae 90.82 177 *e*P **P 07 52 35.9 +0.5**
comp=Z,8.9nm,1.0s
HHC Hu-ho-hao-te 91.08 313 *e*P **P 07 52 37.4 +0.4**
HHC PP **PP 07 56 17.6 +3.6**
HHC SKS **SKSac 08 03 08.3 +0.2**
HHC S **S 08 03 34.2 +0.3**
HHC pmax pmax
comp=Z,35nm,1.4s
HHC pmax pmax
comp=Z,130nm,7.9s
HHC LR LR
comp=Z,140nm,17.6s
HHC LR LR
comp=Z,190nm,17.6s
HHC LR LR
comp=Z,290nm,17.8s
VNA2 Neumayer--Watz 91.25 175 P **P 07 52 37.4 +0.1**
baz=187,slow=2.6
VNA1 Neumayer--Stat 91.44 175 P **P 07 52 39.5 +1.4**
Y41A Eaglette Beard 91.45 55 P **P 07 52 40.4 +1.6**
baz=250
YKA Yellowknife Ar 91.61 23 P **P 07 52 38.7 -0.1**
comp=Z,3.3nm,1.1s,baz=234,slow=4.0,SNR=27
YKB5 Yellowknife Ar 91.61 23 *e*P **P 07 52 38.4 -0.4**
YKW3 Yellowknife Ar 91.64 23 *e*P **P 07 52 39.0 0.0**
comp=Z,8.9nm,1.3s
PBKT Sadao Pong 91.71 287 P **P 07 52 42.3 +2.0**
comp=Z,23nm,1.2s,comp=Z,1μm
LOEI Loei 91.72 288 P **P 07 52 40.3 -0.1**
comp=Z,11nm,1.5s,comp=Z,205nm
ECSD EROS Data Cent 92.06 45 *e*P **P 07 52 41.6 +0.2**
comp=Z,6.3nm,1.2s
A29A Manning Farm, 92.42 39 P **P 07 52 43.0 0.0**
baz=246
UTTA Uttaradit 92.44 288 P **P 07 52 45.7 +2.0**
comp=Z,4.2nm,1.1s,comp=Z,46nm
NANT Nan 92.62 289 P **P 07 52 46.4 +1.9**
comp=Z,6.2nm,1.1s,comp=Z,917nm
R39A Chumby, Stover 92.64 51 P **P 07 52 44.2 0.0**
baz=250
KMI Kunming 92.72 295 P **P 07 52 47.5 +2.3**
KMI pmax pmax
comp=Z,24nm,1.3s
S40A Lebanon 92.80 52 P **P 07 52 45.6 +0.6**
baz=250
C31A Landman Farms, 92.89 41 P **P 07 52 45.1 0.0**
baz=247
M37A Trindle Farm, 92.97 48 P **P 07 52 46.1 +0.4**
baz=249
T41A Mountain View 93.16 52 P **P 07 52 47.0 +0.3**
baz=251

R40A Maddies Statio 93.20 51 P **P 07 52 47.4 +0.6**
baz=250
SUKH Sukhothai 93.20 287 P **P 07 52 49.5 +2.3**
comp=Z,4.9nm,1.2s,comp=Z,193nm
CRAI Chiangrai 93.34 290 P **P 07 52 49.8 +1.9**
comp=Z,70nm,0.9s,comp=Z,7μm
CD2 Chengdu 93.64 301 P **P 07 52 47.0 -2.1**
CD2 PP **PP 07 56 30.8 -3.6**
CD2 SKS **SKSac 08 03 21.5 -1.3**
CD2 S **S 08 03 55.5 -1.7**
CD2 SS **SS 08 10 13.1 -2.6**
CD2 pmax pmax
comp=Z,20nm,0.4s
CD2 pmax pmax
comp=Z,50nm,3.7s
CD2 LR LR
comp=Z,170nm,7.2s
CD2 LR LR
comp=Z,140nm,7.8s
K37A Belmond 93.74 46 P **P 07 52 49.5 +0.3**
baz=250
B32A Ashes, Strandq 93.86 40 P **P 07 52 49.1 -0.5**
baz=248
N39A Derby Farms, D 93.90 48 P **P 07 52 49.6 -0.3**
baz=250
L38A Oak Wood Farm, 94.00 47 P **P 07 52 50.3 0.0**
baz=250
CM01 Chiang Mai Arr 94.09 288 *e*P **P 07 52 52.7 +1.4**
CHTO Chiang Mai 94.22 288 P **P 07 52 54.1 +2.2**
comp=Z,43nm,1.4s
CHTO Chiang Mai 94.22 288 *e*P **P 07 52 53.4 +1.5**
CHTO pmax pmax
comp=Z,14nm,1.2s
CHTO Chiang Mai 94.22 288 *e*P **P 07 52 53.4 +1.5**
comp=Z,14nm,1.2s
K38A Parkersburg 94.30 47 P **P 07 52 51.8 +0.1**
baz=250
Y46A Houston 94.40 56 P **P 07 52 53.4 +1.0**
baz=252
A33A Warroad 94.77 40 P **P 07 52 52.7 -1.0**
baz=249
B34A Aery, Baudette 95.07 41 P **P 07 52 54.1 -1.0**
baz=249
I38A Scanlan Farm, 95.07 46 P **P 07 52 55.1 -0.1**
baz=251
SPMN Marine on St. 95.14 44 *e*P **P 07 52 56.6 +1.1**
comp=Z,12nm,1.2s
LZH Lanzhou 95.16 306 *e*P **P 07 52 57.4 +1.3**
LZH pP pP 07 53 00.7 -2.4
LZH sP sP 07 53 02.0 -3.6
LZH *e*PP **PP 07 56 48.5 +2.2**
LZH SKS **SKSac 08 03 31.5 +0.4**
LZH *e*S **S 08 04 08.0 -2.5**
LZH sS ScS 08 04 15.6 +4.2
LZH *e*SS **SS 08 10 37.5 +0.2**
LZH pmax pmax
comp=Z,29nm,1.3s
LZH pmax pmax
comp=Z,140nm,9.5s
D37A Cotton 96.03 43 P **P 07 52 59.2 -0.3**
baz=251
BOD Bodaibo 96.14 329 *e*P **P 07 52 58.3 -1.5**
BOD pmax pmax
comp=Z,4.0nm,1.0s
ULN Ulaanbaatar 96.56 318⇑*e*P **P 07 53 01.4 -0.7**
ULN pmax pmax
comp=Z,2.0nm,0.7s
SONA0 Songino Array 96.97 318 *e*P **P 07 53 05.6 +1.7**
comp=Z,3.4nm,1.2s
SONM Songino Array 96.97 318 P **P 07 53 05.6 +1.7**
comp=Z,1.1nm,0.6s,baz=90,slow=4.3,SNR=3.6
TIXI Tiksi 97.21 344‖*i*P Pdif 07 53 04.4 0.0
TIXI pmax pmax
comp=Z,6.0nm,1.3s
LPAZ La Paz 98.26 110 LR LR 08 28 54.0
comp=Z,81nm,19.5s,baz=182,slow=30
ROSC El Rosal 99.18 88 LR LR 08 30 01.5
comp=Z,38nm,19.5s,baz=200,slow=31
MK01 Makanchi Array 112.89 314 *e*PKiKP **PKiKP 07 58 08.8 -0.5**
MK32 Makanchi Array 112.90 314 *e*PKiKP **PKiKP 07 58 08.9 -0.3**
MKAR Makanchi Array 112.90 314 PKiKP **PKiKP 07 58 08.9 -0.3**
comp=Z,1.5nm,0.7s,baz=72,slow=1.0,SNR=14
MKAR Makanchi Array 112.90 314 *i* PKiKP **PKiKP 07 58 09.0 -0.3**
MKAR pmax pmax
comp=Z,2.0nm,0.7s
MAKZ Makanchi 113.11 314 *e*PKiKP **PKiKP 07 58 09.4 -0.3**
MAKZ Makanchi 113.11 314 *e*PKiKP **PKiKP 07 58 09.4 -0.3**
KURK Kurchatov 115.27 318 PKiKP **PKPdf 07 58 13.4 -0.2**
KURK pmax pmax
comp=Z,2.0nm,0.9s
KURK Kurchatov 115.27 318 *e*PKiKP **PKiKP 07 58 13.2 -0.5**
KURBB Kurchatov Arra 115.33 318 PKP **PKPdf 07 58 13.4 -0.4**
comp=Z,2.3nm,0.9s,baz=88,slow=1.7,SNR=17
AAK Ala-Archa 118.49 309 *i* PKiKP **PKPdf 07 58 20.7 +0.4**
BVAR Borovoye Array 120.05 322 PKP **PKPdf 07 58 22.9 +0.1**
comp=Z,4.3nm,0.8s,baz=90,slow=2.9,SNR=18
BRVK Borovoye 120.10 322*d i*PKiKP **PKPdf 07 58 22.6 -0.3**
BRVK pmax pmax
comp=Z,5.0nm,1.0s
BRVK Borovoye 120.10 322 *e*PKPdf **PKPdf 07 58 23.2 +0.3**
ZRNK Zerenda 120.88 322 *e*PKiKP **PKPdf 07 58 24.3 -0.1**
ZRNK Zerenda 120.88 322 *e*PKPdf **PKPdf 07 58 24.3 -0.1**
KBL Kabul 122.97 300 *e*PKiKP **PKPdf 07 58 30.3 +1.0**
KBL Kabul 122.97 300 *e*PKPdf **PKPdf 07 58 30.3 +1.0**
ARA0 ARCESS Array S 126.75 352 *e*PKPdf **PKPdf 07 58 35.6 +0.4**
ARCES ARCESS Array B 126.75 352 PKP **PKPdf 07 58 35.6 +0.4**
comp=Z,3.7nm,0.8s,baz=359,slow=3.6,SNR=4.4
ABKAR Akbulak array 127.36 319 *e*PKPdf **PKPdf 07 58 37.8 +0.9**
GEYT Alibeck 131.44 305 PKP **PKPdf 07 58 45.9 +0.8**
comp=Z,2.5nm,0.3s,baz=252,slow=2.9,SNR=3.5
OBN Obninsk 136.34 336‖*i*PKiKP **PKPdf 07 58 55.7 +2.1**
OBN *e* 07 59 01.0
OBN *e* 08 01 30.9
OBN pmax pmax
comp=Z,6.0nm,0.4s
VSU Vasula 136.67 345⇑*i*PKiKP **PKPdf 07 58 55.6 +1.4**
VRH Novokhopyorsk 136.76 329 *e*PKiKP **PKPdf 07 58 55.6 +1.0**
VRH pmax pmax
comp=Z,8.0nm,0.6s
LPSR Galich'ya Gora 137.16 332 *e*PKiKP **PKPdf 07 58 58.5 +3.2**
LPSR pmax pmax
comp=Z,10.0nm,0.9s
VSR Storozhevoye 137.98 330 *e*PKiKP **PKPdf 07 58 57.4 +0.6**
VSR pmax pmax
comp=Z,8.0nm,0.9s
ZEI Tsey 140.14 317 *i* PKiKP **PKPdf 07 59 03.8 +2.4**
ZEI pmax pmax
comp=Z,8.0nm,0.9s
KIV Kislovodsk 140.34 319 *i* PKiKP **PKPdf 07 59 02.6 +1.1**
KIV pmax pmax
comp=Z,10.0nm,1.1s
NEY Neytrino 140.68 318 PKiKP **PKPdf 07 59 02.0 -0.3**
GNI Garni 140.74 313⇑*e*PKiKP **PKPdf 07 59 00.5 -2.0**
AKASG Malin Array Be 142.57 337 PKhKP PKPpre 07 59 00.6
comp=Z,0.8nm,0.5s,baz=34,slow=3.9,SNR=4.8
AKASG PKP **PKPdf 07 59 05.4 +0.3**
comp=Z,1.6nm,0.6s,baz=37,slow=2.9,SNR=8.6
KIEV Kiev 142.58 337⇑*e*PKiKP **PKPdf 07 59 03.8 -1.4**
AK11 Malin Array Si 142.61 337 *e*PKPdf **PKPdf 07 59 05.1 -0.1**
ANN Anapa 142.99 324 *i* PKHKP PKPpre 07 59 02.6
ANN *e* 07 59 10.4
ANN *e* 08 06 17.4
ANN pmax pmax
comp=Z,58nm,1.5s
LVV L'vov 145.08 341 *e*PKHKP PKPpre 07 59 08.2
KMBO Kilima Mbogo 145.40 241 *e*PKPdf **PKPab 07 59 13.3 +1.6**
KIS Kishinev 145.70 334 *e*PKiKP **PKPbc 07 59 11.0 -0.1**
KIS *e* 07 59 22.0
KIS pmax pmax
comp=Z,200nm,1.0s
DYA Yadsworthy 145.83 13 *e*PKPdf **PKPab 07 59 11.8 +0.1**
CLL Collm 145.94 354⇑*i*PKP **PKPbc 07 59 11.9 +0.2**
comp=Z,48nm,1.2s
CLL *i* 07 59 28.1
comp=Z,30nm,1.1s
CLL LmV 09 08 00.0
comp=Z,100nm,18.5s
CLL Collm 145.94 354⇑*i*PKiKP **PKPbc 07 59 11.9 +0.2**
CLL pmax pmax
comp=Z,48nm,1.2s
CLL Collm 145.94 354 *e*PKPdf **PKPbc 07 59 12.0 +0.2**
KSP Ksiaz 145.96 350 *e*PKP **PKPab 07 59 12.4 +0.1**
KSP Ksiaz 145.96 350 *e*PKiKP **PKPab 07 59 12.4 +0.1**
STHS Stebnicka Huta 146.24 344 *e*PKiKP **PKPab 07 59 13.8 +0.4**
STHS Stebnicka Huta 146.24 344 *e*PKP **PKPab 07 59 13.8 +0.4**

BRG Berggiesshubel 146.26 353 *e*PKP **PKPab 07 59 13.3 -0.1**
comp=Z,53nm,1.5s
BRG Berggiesshubel 146.26 353 *e*PKiKP **PKPab 07 59 13.3 -0.1**
BRG pmax pmax
comp=Z,8.0nm,1.5s
UPC Upice 146.33 350 *e*PKP **PKPab 07 59 14.0 +0.3**
UPC Upice 146.33 350 *e*PKiKP **PKPab 07 59 14.0 +0.3**
KOLS Kolonicke sedl 146.39 342 *e*PKP2 **PKPbc 07 59 13.2 0.0**
KOLS Kolonicke sedl 146.39 342 *e*PKP **PKPbc 07 59 13.2 0.0**
DPC Dobruska-Polom 146.43 350 *e*PKP **PKPab 07 59 13.8 -0.3**
DPC *e*pPKP **pPKPdf 07 59 22.9 +3.7**
DPC Dobruska-Polom 146.43 350 *e*PKiKP **PKPab 07 59 13.8 -0.3**
DPC *e* 07 59 22.9
NIE Niedzica 146.48 345 *e*PKP **PKPab 07 59 14.3 0.0**
NIE Niedzica 146.48 345 *e*PKiKP **PKPab 07 59 14.4 0.0**
PVCC Panska Ves 146.52 352 *e*PKP **PKPab 07 59 14.6 +0.2**
PVCC Panska Ves 146.52 352 *e*PKP2 **PKPab 07 59 14.6 +0.2**
BUR08 Bucovina Ar. S 146.58 338 *e*PKPdf **PKPab 07 59 14.8 0.0**
OKC Ostrava-Krasne 146.58 348 *e*PKP **PKPab 07 59 14.6 -0.1**
OKC *e*pPKP **pPKPdf 07 59 23.6 +4.3**
OKC Ostrava-Krasne 146.58 348 *e*PKP2 **PKPab 07 59 14.6 -0.1**
BURAR Bucovina Array 146.60 338⇑*i*P **PKPab 07 59 14.8 -0.2**
BURAR Bucovina Array 146.60 338⇑PKP2 **PKPab 07 59 14.8 -0.2**
CRVS Cervenica-Dubn 146.65 343 *e*PKP2 **PKPab 07 59 14.5 -0.5**
CRVS Cervenica-Dubn 146.65 343 *e*PKP **PKPab 07 59 14.5 -0.5**
UZH Uzhgorod 146.66 342 *e*PKiKP **PKPbc 07 59 13.9 0.0**
UZH *e* 07 59 22.3
UZH *e* 07 59 28.5
MORC Moravsky Berou 146.76 348⇑*i*P **PKPab 07 59 15.1 -0.3**
MORC Moravsky Berou 146.76 348⇑PKP2 **PKPab 07 59 15.1 -0.3**
MORC Moravsky Berou 146.76 348 *e*PKPbc **PKPab 07 59 15.1 -0.3**
MEM Membach 146.89 2 PKP **PKPbc 07 59 14.8 +0.3**
LANS Liptovska Anna 146.93 346 *e*PKP2 **PKPab 07 59 16.1 0.0**
LANS Liptovska Anna 146.93 346 *e*PKP **PKPab 07 59 16.1 0.0**
TESR Tescani 146.98 335⇑*i*P **PKPbc 07 59 15.5 +0.6**
TRPA Tarpa 147.03 341‖*e*sPKiKP **PKPbc 07 59 14.9 -0.1**
PRU Pruhonice 147.05 352 *e*PKP **PKPab 07 59 16.0 -0.5**
PRU AMS AMS 09 16 10.0
comp=Z,100nm,17.8s
PRU Pruhonice 147.05 352 *e*PKP2 **PKPab 07 59 16.0 -0.5**
PRU MLR MLR
comp=Z,100nm,17.8s
NKC Novy Kostel 147.06 354 *e*PKP **PKPbc 07 59 15.6 +0.5**
NKC Novy Kostel 147.06 354 *e*PKP2 **PKPbc 07 59 15.6 +0.5**
BCLA Clavier 147.06 3 PKP **PKPbc 07 59 15.7 +0.7**
GOPC GO Pecny, Ondr 147.09 351 *e*PKP **PKPab 07 59 16.2 -0.5**
GOPC *e*pPKP **pPKPdf 07 59 25.7 +5.4**
GOPC AMS AMS 09 09 20.0
comp=Z,100nm,14.3s
GOPC GO Pecny, Ondr 147.09 351 *e*PKP2 **PKPab 07 59 16.2 -0.5**
GOPC MLR MLR
comp=Z,100nm,14.3s
TLCR 147.12 332⇑*i*P **PKPab 07 59 16.2 -0.7**
TLCR 147.12 332⇑PKP2 **PKPab 07 59 16.2 -0.7**
KECS Kecovo 147.29 344 *e*PKP2 **PKPbc 07 59 16.5 +0.8**
KECS Kecovo 147.29 344 *e*PKP **PKPbc 07 59 16.5 +0.8**
DOU Dourbes 147.34 4 PKP **PKPbc 07 59 16.6 +0.8**
VRAC Vranov 147.38 349 PKPbc **PKPbc 07 59 16.8 +0.8**
comp=Z,2.8nm,0.3s,baz=0.5,slow=5.2,SNR=14
VRAC Vranov 147.38 349‖*i*P **PKPab 07 59 17.0 -0.9**
CFR Carcaliu 147.43 332⇑*i*P **PKPbc 07 59 17.0 +0.8**
CFR Carcaliu 147.43 332⇑PKP2 **PKPbc 07 59 17.0 +0.8**
VRI Vrincioaia 147.47 335⇑*i*P **PKPbc 07 59 16.9 +0.6**
VRI Vrincioaia 147.47 335⇑PKP2 **PKPbc 07 59 16.9 +0.6**
PLOR Plostina 147.52 335⇑*i*P **PKPbc 07 59 17.1 +0.6**
PLOR Plostina 147.52 335⇑PKP2 **PKPbc 07 59 17.1 +0.6**
TREC Trest 147.59 350 *e*PKP **PKPbc 07 59 17.4 +0.8**
TREC Trest 147.59 350 *e*PKP2 **PKPbc 07 59 17.4 +0.8**
VYHS Vyhne 147.69 346 *e*PKP2 **PKPbc 07 59 17.9 +1.0**
VYHS Vyhne 147.69 346 *e*PKP **PKPbc 07 59 17.9 +1.0**
WLF Walferdange 147.84 2 PKP **PKPbc 07 59 18.3 +1.1**
WLF Walferdange 147.84 2 *e*PKP2 **PKPbc 07 59 18.3 +1.1**
WLF Walferdange 147.84 2 *e*PKPbc **PKPbc 07 59 18.3 +1.1**
TIRR Tirgusor 147.86 331⇑*i*P **PKPbc 07 59 18.2 +0.8**
TIRR Tirgusor 147.86 331 *e*PKP2 **PKPbc 07 59 17.9 +0.5**
TIRR Tirgusor 147.86 331 *e*PKPbc **PKPbc 07 59 17.9 +0.5**
HARR Harsova 147.90 332⇑*i*P **PKPbc 07 59 18.7 +1.2**
HARR Harsova 147.90 332⇑PKP2 **PKPbc 07 59 18.7 +1.2**
DOPR Dopca 147.92 336⇑*i*P PKPab 07 59 33.9 +14
CJR Cluj-Napoca 147.94 339⇑*i*P **PKPbc 07 59 18.8 +1.2**
CJR Cluj-Napoca 147.94 339⇑PKP2 **PKPbc 07 59 18.8 +1.2**
PSZ Piszkesteto 147.97 344⇑*i*P **PKPab 07 59 19.5 -0.7**
PSZ Piszkesteto 147.97 344‖*e*sPKiKP **PKPbc 07 59 18.1 +0.4**
PSZ Piszkesteto 147.97 344⇑PKP2 **PKPab 07 59 19.6 -0.7**
PSZ Piszkesteto 147.97 344 *e*PKPbc **PKPbc 07 59 18.6 +0.9**
KHC Kasperske Hory 148.02 353 *e*PKP **PKPbc 07 59 18.7 +0.9**
KHC *e*pPKP **pPKPdf 07 59 29.5 +7.7**
KHC Kasperske Hory 148.02 353 *e*PKP2 **PKPbc 07 59 18.7 +0.9**
KHC Kasperske Hory 148.02 353 *e*PKPbc **PKPbc 07 59 18.5 +0.7**
MLR Muntele Rosu 148.10 335⇑*i*P **PKPbc 07 59 19.0 +0.8**
MLR Muntele Rosu 148.10 335⇑PKP2 **PKPbc 07 59 19.0 +0.8**
MLR Muntele Rosu 148.10 335 *e*PKPbc **PKPbc 07 59 18.9 +0.8**
ISR Istrita 148.16 334⇑*i*P **PKPbc 07 59 19.1 +0.8**
ISR Istrita 148.16 334⇑PKP2 **PKPbc 07 59 19.1 +0.8**
DRGR 148.16 340⇑*i*P **PKPbc 07 59 19.0 +0.7**
DRGR 148.16 340⇑PKP2 **PKPbc 07 59 19.0 +0.7**
GEC2 GERESS Array S 148.28 352 *e*PKP2 **PKPbc 07 59 19.7 +1.1**
GEC2 GERESS Array S 148.28 352 *e*PKPbc **PKPbc 07 59 19.7 +1.1**
GERES GERESS Array B 148.28 352 PKPbc **PKPbc 07 59 19.3 +0.7**
comp=Z,11nm,1.0s,baz=30,slow=2.4,SNR=37
GEA0 GERESS Array S 148.29 352 *e*PKPbc **PKPbc 07 59 19.2 +0.7**
BR101 Keskin Array S 148.31 320 *e*PKPdf **PKPdf 07 59 15.4 -0.2**
BR101 *e*PKPbc **PKPbc 07 59 19.2 +0.2**
BR131 Keskin Array S 148.31 320 *e*PKPdf **PKPdf 07 59 15.9 +0.3**
BR131 *e*PKPbc **PKPbc 07 59 19.2 +0.2**
BR131 *e*PKPab **PKPab 07 59 22.1 0.0**
BRTR Keskin Array B 148.31 320 PKP **PKPdf 07 59 15.4 -0.2**
comp=Z,11nm,1.0s,baz=13,slow=3.3,SNR=6.9
BRTR PKPbc **PKPbc 07 59 19.2 +0.2**
comp=Z,12nm,1.0s,baz=92,slow=1.4,SNR=34
VOIR 148.50 336⇑*i*P **PKPbc 07 59 20.1 +0.9**
VOIR 148.50 336⇑PKP2 **PKPbc 07 59 20.2 +1.0**
LANF Langenberg 148.55 360 PKP **PKPbc 07 59 19.1 0.0**
ARR Arges 148.71 336⇑*i*P **PKPbc 07 59 21.5 +1.8**
ANTO Ankara 148.73 321 *e*PKiKP **PKPdf 07 59 17.9 +1.7**
ANTO *e* 07 59 21.2
ANTO Ankara 148.73 321 *e*PKPdf **PKPdf 07 59 17.9 +1.7**
ANTO *e*PKPbc **PKiKP 07 59 21.2 -0.2**
BR231 Keskin MP Arra 148.76 321 *e*PKPdf **PKPdf 07 59 16.5 +0.2**
BR231 *e*PKPbc **PKPbc 07 59 20.3 +0.2**
BR231 *e*PKPab **PKPab 07 59 24.4 +0.6**
CONA Conrad Observa 148.85 349 *i* PKiKP **PKiKP 07 59 21.0 -0.4**
SNR=8.9
DEV Deva 148.90 339⇑*i*P **PKPbc 07 59 21.2 +1.1**
DEV Deva 148.90 339⇑PKP2 **PKPbc 07 59 21.2 +1.1**
SOP Sopron 148.95 348‖*e*sPKiKP **PKPbc 07 59 20.7 +0.6**
SIRR Siria 148.96 341⇑*i*P **PKPbc 07 59 21.5 +1.2**
LOT Lotru 148.97 338⇑*i*P **PKPbc 07 59 20.4 0.0**
MOA Molln 149.18 351 *i* PKiKP **PKiKP 07 59 21.6 -0.4**
SNR=7.3
BFO Black Forest 149.19 359 *i* PKP2 **PKPbc 07 59 21.7 +0.9**
BFO Black Forest 149.19 359 *e*PKPbc **PKPbc 07 59 21.5 +0.7**
ECH Echery 149.31 1 PKP **PKPbc 07 59 21.9 +0.8**
BZS Buzias 149.56 340⇑*i*P **PKPbc 07 59 22.6 +0.9**
BZS Buzias 149.56 340⇑PKP2 **PKPbc 07 59 22.6 +0.9**
MOF Molkenrain 149.68 1 PKP **PKPbc 07 59 22.8 +0.7**
ASF Jabal al Asfar 149.72 304 PKPbc **PKPbc 07 59 24.1 +1.5**
comp=Z,6.8nm,0.7s,baz=66,slow=1.7,SNR=11
ASF PKPab **PKPab 07 59 29.2 +1.3**
comp=Z,1.8nm,0.4s,baz=207,slow=0.4,SNR=8.5
RETA Reutte 149.93 356 *i* PKiKP **PKiKP 07 59 23.4 -0.2**
SNR=12
MOTA Moosalm 150.04 355 *i* PKiKP **PKiKP 07 59 24.0 0.0**
SNR=8.9
WTTA Wattenberg 150.07 354 *i* PKiKP **PKiKP 07 59 24.0 0.0**
SNR=6.2
LOMF Lomont 150.17 1 PKP **PKPbc 07 59 24.3 +1.0**
DAVA Damuels 150.18 357 *i* PKiKP **PKiKP 07 59 24.4 +0.1**
SNR=10
SOKA Soboth 150.20 350 *i* PKiKP **PKPbc 07 59 23.7 +0.3**
SNR=11
MDVR Moldovita 150.27 339⇑*i*P **PKPbc 07 59 24.1 +0.5**
FETA Feichten 150.39 356 *i* PKiKP **PKiKP 07 59 24.9 +0.2**
SNR=12
MYKA Terra Mystica 150.47 351 *i* PKiKP **PKPbc 07 59 24.1 +0.1**
SNR=6.2
ABTA Abfaltersbach 150.50 353 *i* PKiKP **PKPbc 07 59 24.4 +0.3**
SNR=14
MMAI Mount Meron Ar 150.54 307 PKPbc **PKPbc 07 59 25.4 +0.8**
comp=Z,15nm,1.0s,baz=61,slow=4.1,SNR=9.4
MMAI PKPab **PKPab 07 59 32.9 +1.7**
comp=Z,8.6nm,0.8s,baz=76,slow=7.0,SNR=6.8

DAVOX	Davos/Dischmat	150.69	357	PKPbc	PKPbc	07 59 25.3	+0.6
	comp=Z,9.2nm,0.7s,baz=342,slow=3.7,SNR=11						
FUORN	Ofenpass-Fuorn	150.82	356	*e*PKPbc	PKPbc	07 59 26.1	+1.1
TUE	Stuetta	151.02	357	*e*PKPdf	PKPdf	07 59 21.1	+1.4
TUE				*e*PKPbc	PKiKP	07 59 26.3	+0.2
TUE				*e*PKPab	PKPab	07 59 33.1	+0.2
SENIN	Lac Senin/Sane	151.17	0	*e*PKPdf	PKPdf	07 59 20.3	+0.4
SENIN				*e*PKPbc	PKiKP	07 59 27.2	+0.8
AGO	Saint Agoulin	151.24	6	PKP	PKPbc	07 59 26.1	+0.3
PLDF	La Plantade	151.37	6	PKP	PKPbc	07 59 27.0	+0.8
PYM	Petit Puy Mans	151.53	7	PKP	PKPbc	07 59 27.1	+0.6
BLY	Banja Luka	151.60	345⇑	*i*P	PKPbc	07 59 28.4	+1.8
LBL	Lubilhac	152.06	6	PKP	PKPbc	07 59 28.9	+1.1
SSB	Saint Sauveur	152.14	5	*e*PKIKP	PKPdf	07 59 20.7	-0.5
SSB				*e*		07 59 29.1	
SSB				*e*		07 59 36.1	
SSB	Saint Sauveur	152.14	5	*e*PKPdf	PKPdf	07 59 20.7	-0.5
SSB				*e*PKPbc	PKiKP	07 59 29.1	+0.9
SSB				*e*PKPab	PKPab	07 59 36.1	-1.3
EIL	Elat	152.17	301	PKPbc	PKPbc	07 59 28.9	+0.6
	comp=Z,13nm,1.0s,baz=336,slow=2.2,SNR=5.8						
EIL				PKPab	PKPab	07 59 38.8	+0.7
	comp=Z,21nm,1.0s,baz=73,slow=5.0,SNR=7.9						
PDG	Podgorica	153.17	341⇑	*i*P	PKPbc	07 59 30.6	+0.4
TOA0	Torodi Ar. Sit	172.92	126	*e*PKPdf	PKPdf	07 59 40.9	-1.5
TOA0				*e*PKPab	PKPab	08 01 09.3	+0.4
TORD	Torodi Ar. Bea	172.92	126	PKP	PKPdf	07 59 41.5	-0.9
	comp=Z,3.5nm,1.1s,baz=232,slow=0.4,SNR=12						
TORD				PKPab	PKPab	08 01 09.0	+0.1
	comp=Z,5.7nm,1.1s,baz=258,slow=3.7,SNR=11						
TOA1	Torodi Ar. Sit	172.92	126	*e*PKPdf	PKPdf	07 59 41.5	-0.9
TOA1				*e*PKPab	PKPab	08 01 09.0	+0.1

IDC **12** *07:41:00.5±0.7,5°.15N×94°.70E,h0km,mb4.5/33,*
mb1 4.6/33,mb1mx4.4/56,mbtmp4.5/33,MS3.6/9,
Ms1 3.6/9,ms1mx3.2/64,Error ellipse: s-maj=21.7km
s-min=13.5km az=38.0
NEIC **12** *07:41:06.0±0.3,5°.14N×94°.60E,h35km,mb4.8/20,Error*
ellipse: s-maj=10.1km s-min=5.0km az=220.0
NEIC Felt [III] at Banda Aceh.
ISCJB **12** *07:41:07.3±0.6,5°.19N±0°.03×94°.75E±0°.03,h63km±5km,*
mb4.7/93,Error ellipse: s-maj=6.5km s-min=4.4km
az=139.2
MOS **12** *07:41:07.0±1.1,5°.27N×94°.83E,h57km,mb5.0/41,Error*
ellipse: s-maj=9.9km s-min=5.3km az=113.2
DJA **12** *07:41:08.9±1.5,5°N±3°×9°5E±°,h35km±15km,M4.9/15,*
mb4.8/15,mB5.7/6,MLv4.8/10,Mw(mB)5.2/6
ISC 12 07:41:09.3±0.7,5°.18N±0°.05×94°.69E±0°.05,h71km±5km,
n206,σ1§61/219,mb4.7/94,8C-7D,Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase Op	ID ISC	Time h m s	Res ISC
MLSI	Meulaboh, Aceh	1.93	118	P	Pn	07 41 38.2	-1.9
MLSI				S	Sn	07 42 05.3	+1.7
CMBY	CAMPBELL BAY	1.97	337	*e*P	Pn	07 41 38.7	-2.0
CMBY				IAmb	IAmb	07 41 48.7	
	comp=Z,342nm,0.7s						
LHMI	Lhok Sumawe	2.25	89	P	Pn	07 41 43.5	-0.9
LHMI	Lhok Sumawe	2.25	89	*e*Pn	Pn	07 41 43.0	-1.4
LHMI				*e*Sn	Sn	07 42 08.2	-3.0
KCSI	Kotacane, Aceh	3.49	118	P	Pn	07 42 00.9	-0.3
PKDT	Phuket	4.52	53	P	Pn	07 42 14.9	-0.4
	comp=Z,287nm,0.5s,comp=Z,34µm						
GSI	Gunungsitoli	4.81	143	P	Pn	07 42 17.2	-2.1
GSI				S	Sn	07 43 12.3	-1.4
GSI	Gunungsitoli	4.81	143	*e*Pn	Pn	07 42 17.0	-2.3
PSI	Prapat	4.84	119	*e*P	Pn	07 42 20.1	+0.3
PSI	Prapat	4.84	119	*e*Pn	Pn	07 42 20.1	+0.3
TRTT	Trang	5.63	62	P	Pn	07 42 30.0	-0.5
	comp=Z,150nm,0.5s,comp=Z,4µm						
KULM	Kulim	5.94	89	*e*Pn	Pn	07 42 33.9	-0.8
	comp=Z,44nm,0.6s						
KULM				*e*Sn	Sn	07 43 40.1	-1.4
SKLT	Songkhla	6.22	71	P	Pn	07 42 38.9	+0.3
	comp=Z,125nm,0.6s,comp=Z,1µm						
IPM	Ipoh	6.35	96	*e*Pn	Pn	07 42 39.9	-0.5
	comp=Z,46nm,0.4s						
IPM				*e*Sn	Sn	07 43 49.5	-2.2
MNSI	Mandailing Nat	6.54	132	P	Pn	07 42 41.9	-1.1
	comp=Z,78nm,0.3s,comp=Z,5µmcomp=Z,0.7nm						
MNSI				S	Sn	07 43 53.8	-2.4
	comp=Z,78nm,0.3s,comp=Z,5µmcomp=Z,0.7nm						
PBA	Port Blair	6.72	343	*e*P	Pn	07 42 42.9	-2.6
PBA				IAmb	IAmb	07 42 48.0	
	comp=Z,41nm,1.0s						
PPI	Padang Panjang	7.99	134	P	Pn	07 43 03.4	+0.6
	comp=Z,29nm,1.0s,comp=Z,0.2nm						
DGPR	DIGLIPUR	8.14	348	*e*P	Pn	07 43 03.2	-1.6
DGPR				IAmb	IAmb	07 43 08.6	
	comp=Z,21nm,0.9s						
PDSI	Padang	8.36	136	P	Pn	07 43 08.0	+0.1
	comp=Z,13nm,0.8s						
SDSI	Sungai Dareh	9.06	132	P	Pn	07 43 17.5	0.0
	comp=Z,28nm,0.9s,comp=Z,20µm						
PHET	Kaeng Krachan	9.10	32	P	Pn	07 43 18.6	+0.6
CM01	Chiang Mai Arr	13.81	17	*e*P	P	07 44 28.6	+0.5
PALK	Pallekele	14.06	279	LR	LR	07 49 24.8	
	comp=Z,307nm,20.0s,baz=116,slow=36						
PALK	Pallekele	14.06	279	P	Pn	07 44 28.4	+3.1
PALK	Pallekele	14.06	279	Pn	Pn	07 44 28.4	+3.1
PALK				*e*Sn	Sn	07 46 47.8	-12
CHTO	Chiang Mai	14.18	17	*e*P	Pn	07 44 26.3	-0.5
CHTO				*e*		07 47 01.6	
CHTO	Chiang Mai	14.18	17	*e*Pn	Pn	07 44 26.3	-0.5
CHTO				*e*Sn	Sn	07 47 01.6	-1.2
KSM	Kuching	16.02	103	*e*P	P	07 44 53.1	+0.4
	comp=Z,25nm,0.8s						
BWNR	Bhubaneshwar	17.33	331	*e*P	Pn	07 45 07.0	+0.3
BWNR				IAmb	IAmb	07 45 09.6	
	comp=Z,335nm,3.0s						
STKI	Sintang	17.52	106	P	P	07 45 17.9	+8.7
LEM	Lembang	17.57	133	LR	LR	07 52 17.6	
	comp=Z,190nm,20.9s,baz=356,slow=39						
HYB	Hyderabad	19.93	309	*e*P	P	07 45 34.4	-1.4
BOK	Bokaro	20.36	336	*e*P	P	07 45 40.8	+0.5
BOK				IAmb	IAmb	07 45 44.1	
	comp=Z,111nm,1.8s						
SHL	Shillong	20.45	353	*e*P	P	07 45 38.5	-2.9
SHL				IAmb	IAmb	07 45 45.1	
	comp=Z,26nm,1.4s						
KMI	Kunming	21.29	20	P	P	07 45 54.2	+3.8
KMI				pP	pP	07 46 00.0	-5.2
KMI				S	S	07 49 40.7	-2.6
KMI				pmax	pmax		
	comp=Z,21nm,0.9s						
KMI				pmax	pmax		
	comp=Z,160nm,3.5s						
KMI				LR	LR		
	comp=N,180nm,20.4s						
KMI				LR	LR		
	comp=E,120nm,20.4s						
KMI				LR	LR		
	comp=Z,200nm,24.9s						
KKM	Kota Kinabalu	21.44	87	*e*P	P	07 45 54.0	+1.9
	comp=Z,5.2nm,0.3s						
NGP	Nagpur	21.96	318	*e*P	P	07 45 55.8	-1.6
NGP				IAmb	IAmb	07 46 01.0	
	comp=Z,27nm,1.5s						
GYA	Guiyang	24.06	27⇑	*i*P	P	07 46 18.9	+0.7
GYA	Guiyang	24.06	27	*e*P	P	07 46 19.0	+0.7
GYA				pP	pP	07 46 40.2	+5.4
GYA				sP	sP	07 46 51.8	+8.5
GYA				PP	PnPn	07 46 57.4	+6.3
GYA				S	S	07 50 28.0	-2.9
GYA				sS	sS	07 51 03.3	+3.9
GYA				pmax	pmax		
	comp=Z,50nm,0.7s						
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
GYA				pmax	pmax		
	comp=Z,90nm,5.4s						
DMN	Daman	24.10	339	*e*P	P	07 46 20.1	+1.3
	comp=Z,12nm,0.4s						
KKN	Kakani	24.21	339	*e*P	P	07 46 19.8	+0.1
	comp=Z,8.3nm,0.3s						
SRBI	Singaraja	24.34	123	P	P	07 46 24.8	+4.0
	comp=Z,93nm,1.2s						
LSA	Lhasa	24.62	353	P	P	07 46 25.1	+1.3
LSA				pmax	pmax		
	comp=Z,27nm,0.6s						
LSA	Lhasa	24.62	353	*e*P	P	07 46 25.0	+1.3
LSA				pmax	pmax		
	comp=Z,18nm,0.6s						
LSA	Lhasa	24.62	353	*e*P	P	07 46 25.0	+1.2
	comp=Z,18nm,0.6s						
GKN	Gorkha	24.63	338	*e*P	P	07 46 23.8	+0.3
	comp=Z,27nm,0.3s						
KOLN	Koldanda	24.82	336	*e*P	P	07 46 25.9	+0.6
	comp=Z,52nm,0.7s						
PYUN	Piuthan	25.36	335	*e*P	P	07 46 30.9	+0.7
	comp=Z,41nm,0.2s						
H08S2	Diego Garcia H	25.55	240	T	T	08 13 41.1	
	baz=60,slow=76,SNR=634						
H08S3	Diego Garcia H	25.55	240	T	T	08 13 38.5	
	baz=60,slow=76,SNR=555						
H08S1	Diego Carcia H	25.56	240	T	T	08 13 44.3	
	baz=60,slow=76,SNR=352						
CD2	Chengdu	26.98	17	P	P	07 46 44.8	+0.2
CD2				pmax	pmax		
	comp=Z,20nm,0.9s						
SMLA	Simla	30.62	330	*e*P	P	07 47 15.7	-1.2
XAN	Xi'an	31.61	23	P	P	07 47 24.9	-0.8
XAN				sP	pP	07 47 38.4	-4.2
XAN				pmax	pmax		
	comp=Z,26nm,1.0s						
XAN				pmax	pmax		
	comp=Z,53nm,6.4s						
LZH	Lanzhou	31.89	14	*e*P	P	07 47 27.0	-1.2
LZH				pP	pP	07 47 48.3	+3.1
LZH				sP	sP	07 47 58.2	+4.7
LZH				*e*PP	PnPn	07 48 37.1	+1.5
LZH				pmax	pmax		
	comp=Z,22nm,1.3s						
LZH				pmax	pmax		
	comp=Z,73nm,5.4s						
LZH				LR	LR		
	comp=N,310nm,13.2s						
LZH				LR	LR		
	comp=E,290nm,12.9s						
LZH				LR	LR		
	comp=Z,350nm,15.8s						
DHRM	DHARAMSHALA	31.96	330	*e*P	P	07 47 29.4	+0.4
DHRM				IAmb	IAmb	07 47 36.4	
	comp=Z,7.5nm,0.6s						
GTA	Gaotai	34.40	7	*e*P	P	07 47 49.8	-0.2
GTA				pP	pP	07 47 57.0	-10
GTA				sP	sP	07 48 00.2	-15
GTA				pmax	pmax		
	comp=Z,12nm,0.7s						
NJ2	Nanjing	35.02	37	*e*P	P	07 47 55.0	-0.3
NJ2				pmax	pmax		
	comp=Z,15nm,0.6s						
MBWA	Marble Bar	35.90	138	*e*P	P	07 48 02.5	-0.5
	comp=Z,33nm,0.8s						
TIA	Tai'an	37.13	31	⇓P	P	07 48 14.0	+0.7
TIA				pmax	pmax		
	comp=Z,20nm,0.6s						
KSH	Kashi	38.14	336	P	P	07 48 21.2	-0.7
KSH				*e*pP	pP	07 48 43.7	+4.5
KSH				*e*PP	PnPn	07 49 53.1	+0.5
KSH				S	S	07 54 05.3	-4.8
KSH				*e*ScP	ScP	07 54 12.7	-4.6
KSH				pmax	pmax		
	comp=Z,8.0nm,0.5s						
KSH				pmax	pmax		
	comp=Z,92nm,4.9s						
KSH				LR	LR		
	comp=N,360nm,14.0s						
KSH				LR	LR		
	comp=E,200nm,11.5s						
FITZ	Fitzroy Crossi	38.30	128	P	P	07 48 22.8	-0.6
	comp=E,4.0nm,0.7s,baz=180,slow=12,SNR=3.5						
HHC	Hu-ho-hao-te	38.61	21	⇑P	P	07 48 26.7	+0.9
HHC				pP	pP	07 48 48.8	+5.7
HHC				PP	PnPn	07 50 02.8	+4.6
HHC				S	S	07 54 18.0	+0.9
HHC				ScS	ScS	07 58 24.7	-4.9
HHC				pmax	pmax		
	comp=Z,37nm,0.9s						
HHC				pmax	pmax		
	comp=Z,200nm,5.3s						
HHC				LR	LR		
	comp=N,880nm,13.5s						
HHC				LR	LR		
	comp=E,770nm,14.8s						
HHC				LR	LR		
	comp=Z,940nm,14.3s						
WMQ	Urumqi	38.98	352	*e*P	P	07 48 30.8	+2.0
WMQ				pmax	pmax		
	comp=Z,6.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,49nm,5.2s						
WMQ				LR	LR		
	comp=N,19nm,27.4s						
WMQ				LR	LR		
	comp=E,58nm,37.6s						
WMQ				LR	LR		
	comp=Z,26nm,31.8s						
BJI	Beijing	39.74	26	P	P	07 48 36.4	+1.3
BJI				pmax	pmax		
	comp=Z,23nm,0.8s						
PDGK	Podgornoye	40.30	343	P	P	07 48 41.0	+1.3
PDGK				pmax	pmax		
	comp=Z,26nm,0.7s						
TKM2	Tokmak 2	41.22	339	*e*P	P	07 48 48.1	+0.5
TKM2				pmax	pmax		
	comp=Z,6.0nm,0.6s						
TKM2	Tokmak 2	41.22	339	*e*P	P	07 48 48.1	+0.5
	comp=Z,6.0nm,0.6s						
AAK	Ala-Archa	41.38	337	P	P	07 48 50.4	+1.6
	comp=Z,4.8nm,0.5s,baz=147,slow=6.2,SNR=20						
AAK	Ala-Archa	41.38	337	*c i*P	P	07 48 50.5	+1.6
AAK				pmax	pmax		
	comp=Z,18nm,0.8s						
AAK	Ala-Archa	41.38	337	*e*P	P	07 48 50.8	+2.0
	comp=Z,8.8nm,0.9s						
FRU	Bishkek	41.51	338	*e*P	P	07 48 51.0	+1.3
EKS2	Erkin-Say	41.69	337	*e*P	P	07 48 52.5	+1.2
EKS2				pmax	pmax		
	comp=Z,8.0nm,0.6s						
EKS2	Erkin-Say	41.69	337	*e*P	P	07 48 52.5	+1.2
	comp=Z,7.9nm,0.6s						
MNAS	Manas	42.06	335	P	P	07 48 55.9	+1.6
MNAS				pmax	pmax		
	comp=Z,7.0nm,1.0s						
MK01	Makanchi Array	42.80	347	*e*P	P	07 49 00.4	+0.3
MK31	Makanchi Array	42.82	347	*e*P	P	07 49 00.7	+0.4
MK31	Makanchi Array	42.82	347	*e*P	P	07 49 00.7	+0.4
MKAR	Makanchi Array	42.82	347	P	P	07 49 00.7	+0.4
	comp=Z,14nm,0.6s,baz=168,slow=8.0,SNR=124						
MKAR				LR	LR	08 08 52.7	
	comp=Z,73nm,22.0s,baz=206,slow=39						
MAKZ	Makanchi	42.91	347	*e*P	P	07 49 01.3	+0.3
MAKZ				pmax	pmax		
	comp=Z,12nm,0.6s						
MAKZ	Makanchi	42.91	347	*e*P	P	07 49 01.3	+0.3
	comp=Z,12nm,0.6s						
TJN	Taejon	43.16	40	⇓*i*P	P	07 49 03.5	+0.4
KKAR	Karatay Array	43.41	334	*e*P	P	07 49 06.0	+0.9
KKAR				pmax	pmax		
	comp=Z,4.0nm,0.6s						
KKAR	Karatay Array	43.41	334	*e*P	P	07 49 06.0	+0.9
	comp=Z,3.6nm,0.6s						
SONM	Songino Array	43.67	11	P	P	07 49 07.0	-0.2
	comp=Z,6.8nm,0.7s,baz=193,slow=8.6,SNR=28						
SONM				PcP	PcP	07 50 54.4	+1.0
	comp=Z,2.6nm,0.6s,baz=198,slow=3.6,SNR=6.1						
JNU	Nakatsue	43.67	46	P	P	07 49 06.8	-0.6
	comp=Z,7.9nm,0.8s,baz=217,slow=2.4,SNR=4.3						
SONA1	Songino Array	43.69	11	*e*P	P	07 49 07.0	-0.4
ULN	Ulaanbaatar	43.84	12	*c i*P	P	07 49 07.9	-0.7
ULN				pmax	pmax		
	comp=Z,5.0nm,0.6s						
KSAR	Wonju Array Be	44.14	39	P	P	07 49 10.9	-0.2
KSAR	Wonju Array Be	44.14	39	P	P	07 49 10.8	-0.2
KS01	Wonju Array Si	44.17	39	*e*P	P	07 49 11.1	-0.1
KSRS	Korea Array	44.17	39	P	P	07 49 10.9	-0.4
	comp=Z,3.4nm,0.6s,baz=216,slow=9.1,SNR=13						
KSRS				LR	LR	08 08 26.1	
	comp=Z,51nm,18.2s,baz=215,slow=37						
KSRS	Korea Array	44.17	39	P	P	07 49 10.9	-0.4
KSRS				pmax	pmax		
	comp=Z,4.0nm,0.6s						
KSRS				MLR	MLR		
	comp=Z,51nm,18.3s						
ZAK	Zakamensk	45.63	8	*e*P	P	07 49 22.6	-0.2
ZAK				pmax	pmax		
	comp=Z,4.0nm,1.4s						
WRA	Warramunga Arr	46.29	124	P	P	07 49 28.6	+0.3
	comp=Z,16nm,0.7s,baz=304,slow=9.1,SNR=56						
WRAB	Tennant Creek	46.29	124	*e*P	P	07 49 28.6	+0.3
WRAB				pmax	pmax		
	comp=Z,21nm,0.6s						
WRAB	Tennant Creek	46.29	124	*e*P	P	07 49 28.6	+0.3
	comp=Z,21nm,0.6s						
GEYT	Alibeck	46.58	320	P	P	07 49 31.5	+1.2
	comp=Z,6.7nm,0.5s,baz=148,slow=8.7,SNR=13						
TLY	Talaya	46.95	8	P	P	07 49 33.7	+0.7
	comp=Z,3.3nm,0.7s,baz=209,slow=5.2,SNR=4.8						
TLY	Talaya	46.95	8	*e*P	P	07 49 33.2	+0.2
TLY				pmax	pmax		
	comp=Z,4.0nm,0.8s						
TLY				MLR	MLR		
	comp=Z,70nm,15.0s						
OTUK	Ortayu	46.97	340	P	P	07 49 34.3	+1.1
OTUK				pmax	pmax		
	comp=Z,26nm,0.9s						
KURBB	Kurchatov Arra	47.28	346	P	P	07 49 36.4	+0.8
	comp=Z,19nm,0.6s,baz=168,slow=7.1,SNR=148						
KURBB				PcP	PcP	07 51 06.8	+1.2
	comp=Z,2.6nm,0.6s,baz=163,slow=2.8,SNR=6.2						
KURK	Kurchatov	47.34	346	*e*P	P	07 49 37.0	+1.0
KURK						07 51 06.8	
KURK				pmax	pmax		
	comp=Z,16nm,0.7s						
KURK	Kurchatov	47.34	346	*e*P	P	07 49 37.0	+1.0
	comp=Z,16nm,0.7s						
KURK				PcP	PcP	07 51 06.8	+0.9
ASAR	Alice Springs	47.80	129	P	P	07 49 40.0	-0.1
	comp=Z,6.5nm,0.7s,baz=300,slow=7.8,SNR=13						
ZALV	Zalesovo Beam	49.28	352	P	P	07 49 51.1	+0.2
	comp=Z,22nm,0.5s,baz=190,slow=7.3,SNR=68						
ZALV	Zalesovo Beam	49.28	352	*i* P	P	07 49 51.4	+0.5
ZALV				pmax	pmax		
	comp=Z,23nm,0.5s						
NVS	Novosibirsk	50.38	351	*i* P	P	07 49 59.5	+0.3
NVS				pmax	pmax		
	comp=Z,18nm,0.8s						
NVS				pmax	pmax		
	comp=N,9.0nm,0.5s						
MJAR	Matsushiro Arr	50.60	46	P	P	07 50 01.9	+0.7
	comp=N,2.7nm,0.7s,baz=245,slow=8.4,SNR=7.9						
USRK	Ussuriysk Ar.	50.80	34	P	P	07 50 02.8	+0.3
	comp=N,1.7nm,0.6s,baz=251,slow=9.0,SNR=6.7						
BVAR	Borovoye Array	51.70	342	P	P	07 50 09.3	+0.1
	comp=N,9.5nm,0.8s,baz=141,slow=7.6,SNR=34						
BRVK	Borovoye	51.77	341	*c i*P	P	07 50 09.9	+0.3
BRVK				pmax	pmax		
	comp=Z,16nm,1.0s						
BRVK	Borovoye	51.77	341	*e*P	P	07 50 10.2	+0.6
	comp=Z,32nm,1.4s						
ZRNK	Zerenda	52.09	341	*e*P	P	07 50 12.6	+0.6
ZRNK				pmax	pmax		
	comp=Z,6.0nm,0.7s						
ZRNK	Zerenda	52.09	341	*e*P	P	07 50 12.6	+0.6
	comp=Z,6.3nm,0.7s						
ABKAR	Akbulak array	52.85	332	*e*P	P	07 50 18.4	+0.6
	comp=Z,5.6nm,0.6s						
KLR	Kul'dur	53.94	29	LR	LR	08 15 17.9	
	comp=Z,81nm,18.5s,baz=228,slow=38						
KLR	Kul'dur	53.94	29	⇓*e*P	P	07 50 26.7	+1.0
PMG	Port Moresby	54.26	105	*e*P	P	07 50 29.2	+0.6
PMG				pmax	pmax		
	comp=Z,7.0nm,0.5s						
PMG	Port Moresby	54.26	105	*e*P	P	07 50 29.2	+0.6
	comp=Z,7.0nm,0.5s						
AKTO	Aktyubinsk	54.57	332	P	P	07 50 30.7	+0.4
	comp=Z,4.6nm,0.6s,baz=119,slow=7.8,SNR=16						
BOD	Bodaibo	54.64	13	*e*P	P	07 50 29.8	-0.9
BOD				pmax	pmax		
	comp=Z,5.0nm,1.5s						
CTAO	Charters Tower	56.54	118	*e*P	P	07 50 44.9	-0.1
CTAO				pmax	pmax		
	comp=Z,15nm,0.7s						
CTAO	Charters Tower	56.54	118	*e*P	P	07 50 44.9	-0.1
	comp=Z,15nm,0.7s						
GNI	Garni	56.72	315	LR	LR	08 16 38.2	
	comp=Z,16nm,21.9s,baz=251,slow=38						
GNI	Garni	56.72	315	P	P	07 50 47.0	+0.9
GNI				pmax	pmax		
	comp=Z,13nm,0.5s						
ZEI	Tsey	58.39	318	*e*P	P	07 50 56.9	-0.9
ZEI				pmax	pmax		
	comp=Z,12nm,0.6s						
YUK	Yuzh-Kuril'sk	59.17	41	⇓*e*P	P	07 51 01.2	-1.8
KBZ	Khabaz	59.45	319	P	P	07 51 05.3	+0.5
	comp=Z,1.9nm,0.8s,baz=143,slow=5.3,SNR=5.8						
KIV	Kislovodsk	59.68	319	*e*P	P	07 51 07.2	+0.6
KIV				pmax	pmax		
	comp=Z,12nm,1.1s						
YAK	Yakutsk	62.37	18	⇓*e*P	P	07 51 23.3	-1.1
VRH	Novokhopyorsk	63.45	326	*e*P	P	07 51 31.3	-0.4
VRH				pmax	pmax		
	comp=Z,10.0nm,0.8s						
ANN	Anapa	63.48	318	*e*P	P	07 51 28.5	-3.6
ANN				*e**PP	pP	07 51 45.7	-4.9
ANN				*e*		07 52 04.9	
ANN				*e*S	S	07 59 57.2	-2.7
ANN				pmax	pmax		
	comp=Z,23nm,1.1s						
NRIK	Noril'sk	64.25	357	P	P	07 51 37.0	+0.4
	comp=Z,6.4nm,0.7s,baz=165,slow=4.8,SNR=14						
BR131	Keskin Array S	64.61	312	*e*P	P	07 51 40.2	+0.4
BRTR	Keskin Array B	64.61	312	P	P	07 51 39.6	-0.1
	comp=Z,2.5nm,0.8s,baz=127,slow=7.6,SNR=12						
BRTR				LR	LR	08 20 58.5	
	comp=Z,21nm,21.9s,baz=126,slow=37						
VSR	Storozhevoye	64.89	325	*e*P	P	07 51 40.2	-1.0
VSR				pmax	pmax		
	comp=Z,9.0nm,0.7s						
BR231	Keskin MP Arra	65.28	312	*e*P	P	07 51 40.6	-3.5
LPSR	Galich'ya Gora	65.62	326	*e*P	P	07 51 45.5	-0.3
LPSR				pmax	pmax		
	comp=Z,8.0nm,0.7s						
OBN	Obninsk	67.94	328⇑	*e*P	P	07 52 00.6	+0.1
OBN				*e*		07 52 14.5	
OBN				*e*		07 52 25.1	
OBN				pmax	pmax		
	comp=Z,9.0nm,0.4s						
OBN				MLR	MLR		
	comp=Z,34nm,17.0s						
KLMR	Klimovskoe	69.11	335	*e*P	P	07 52 04.8	-2.9
KLMR				*e**SP	pP	07 52 25.0	-1.5
KLMR				pmax	pmax		
	comp=Z,5.0nm,0.9s						
TIXI	Tiksi	69.76	11⇑	*e*P	P	07 52 10.5	-1.1
TIXI				pmax	pmax		
	comp=Z,6.0nm,0.6s						
TIXI	Tiksi	69.76	11	*e*P	P	07 52 10.4	-1.1
	comp=Z,8.6nm,0.5s						
AKASG	Malin Array Be	70.60	322	P	P	07 52 16.5	-0.6
	comp=Z,1.6nm,0.6s,baz=88,slow=5.1,SNR=7.1						
KIEV	Kiev

FINES			pmax	pmax		
	comp=Z,1.0nm,0.4s					
KECS	**Kecovo**	**75.68 319**	*e*P	**P**	**07 52 48.3**	**+1.2**
KECS			pmax	pmax		
	comp=Z,3.0nm,0.7s					
KECS	**Kecovo**	**75.68 319**	*e*P	**P**	**07 52 48.3**	**+1.2**
LANS	**Liptovska Anna**	**76.44 319**	*e*P	**P**	**07 52 52.5**	**+1.0**
LANS	**Liptovska Anna**	**76.44 319**	*e*P	**P**	**07 52 52.5**	**+1.0**
VYHS	**Vyhne**	**76.77 319**	*e*P	**P**	**07 52 54.4**	**+1.1**
VYHS			pmax	pmax		
	comp=Z,4.0nm,1.4s					
VYHS	**Vyhne**	**76.77 319**	*e*P	**P**	**07 52 54.4**	**+1.1**
MORC	**Moravsky Berou**	**77.77 320**	P	**P**	**07 53 02.5**	**+3.6**
ARCES	**ARCESS Array B**	**77.97 340**	P	**P**	**07 53 00.4**	**+0.8**
	comp=Z,6.4nm,0.8s,baz=104,slow=6.6,SNR=27					
BILL	**Bilibino**	**78.38 21**	⇓*e*P	**P**	**07 53 01.2**	**-0.7**
BILL			pmax	pmax		
	comp=Z,3.0nm,0.9s					
BILL	**Bilibino**	**78.38 21**	*e*P	**P**	**07 53 01.1**	**-0.8**
	comp=Z,1.7nm,0.4s					
CONA	**Conrad Observa**	**78.69 318**	*i* P	**P**	**07 53 05.4**	**+1.3**
	comp=Z,2.2nm,0.6s					
ARSA	**Arzberg**	**78.86 317**	*i* P	**P**	**07 53 06.8**	**+1.7**
	comp=Z,2.9nm,0.7s					
SOKA	**Soboth**	**79.16 316**	*i* P	**P**	**07 53 08.2**	**+1.5**
	comp=Z,7.5nm,0.9s					
MOA	**Molln**	**79.75 318**	*i* P	**P**	**07 53 10.7**	**+0.8**
	comp=Z,10nm,0.8s					
GEA0	**GERESS Array S**	**80.19 319**	*e*P	**P**	**07 53 13.4**	**+1.1**
GEC2	**GERESS Array S**	**80.19 319**	*e*P	**P**	**07 53 14.2**	**+1.9**
GEC2	**GERESS Array S**	**80.19 319**	*e*P	**P**	**07 53 14.2**	**+1.9**
GERES	**GERESS Array B**	**80.19 319**	P	**P**	**07 53 13.6**	**+1.3**
	comp=Z,3.7nm,0.6s,baz=93,slow=5.3,SNR=38					
KBA	**Koelnbreinsper**	**80.34 317**	*i* P	**P**	**07 53 13.8**	**+0.6**
	comp=Z,1.4nm,0.5s					
CLL	**Collm**	**80.78 321**	*i* P	**P**	**07 53 16.9**	**+1.6**
	comp=Z,5.0nm,0.7s					
CLL	**Collm**	**80.78 321**	*i* P	**P**	**07 53 16.9**	**+1.6**
CLL			pmax	pmax		
	comp=Z,5.0nm,0.7s					
HFS	**Hagfors**	**81.05 330**	P	**P**	**07 53 17.1**	**+0.6**
	comp=Z,1.3nm,0.5s,baz=132,slow=2.2,SNR=6.2					
RETA	**Reutte**	**82.11 317**	*i* P	**P**	**07 53 23.0**	**+0.6**
	comp=Z,6.9nm,0.6s					
NOA	**NORSAR Array B**	**82.33 331**	P	**P**	**07 53 23.0**	**-0.3**
	comp=Z,0.2nm,0.4s,baz=89,slow=5.9,SNR=2.5					
NOA	**NORSAR Array B**	**82.33 331**	P	**P**	**07 53 23.0**	**-0.3**
SPITS	**Spitsbergen Ar**	**82.57 348**	P	**P**	**07 53 24.5**	**+0.3**
	comp=Z,2.8nm,0.6s,baz=106,slow=4.7,SNR=23					
DAVOX	**Davos/Dischmat**	**82.70 316**	P	**P**	**07 53 27.1**	**+1.4**
	comp=Z,9.1nm,0.6s,baz=142,slow=6.1,SNR=12					
SYO	**Syowa Base**	**83.01 197**	⇓*e*X	**P**	**07 53 22.0**	**-4.5**
KEST	**Kesra**	**83.23 305**	P	**P**	**07 53 30.5**	**+2.0**
	comp=Z,2.8nm,0.7s,baz=338,slow=3.5,SNR=3.8					
SENIN	**Lac Senin/Sane**	**84.49 316**	*e*P	**P**	**07 53 34.9**	**-0.1**
SENIN			*e*PcP	**PcP**	**07 53 36.2**	**-2.2**
VNDA	**Vanda**	**90.19 168**	LR	LR	08 28 35.3	
	comp=Z,74nm,18.7s,baz=308,slow=32					
RAO	**Raoul Island**	**90.23 119**	*e*P	**P**	**07 54 01.6**	**-1.0**
RAO	**Raoul Island**	**90.23 119**	*e*P	**P**	**07 54 01.6**	**-1.0**
EKA	**Eskdalemuir Ar**	**90.24 326**	P	**P**	**07 54 03.1**	**+1.0**
	comp=Z,1.3nm,0.6s,baz=95,slow=5.3,SNR=4.8					
ESK	**Eskdalemuir**	**90.27 326**	*i* P	**P**	**07 54 04.3**	**+2.0**
TORD	**Torodi Ar. Bea**	**91.74 283**	P	**P**	**07 54 11.2**	**+1.2**
	comp=Z,0.5nm,0.9s,baz=64,slow=3.4,SNR=2.5					
AFI	**Afiamalu**	**94.65 103**	*e*P	**P**	**07 54 23.5**	**+0.1**
AFI			pmax	pmax		
	comp=Z,21nm,0.8s					
AFI	**Afiamalu**	**94.65 103**	*e*P	**P**	**07 54 23.5**	**+0.1**
	comp=Z,21nm,0.8s					
ILAR	**Eielson Array**	**97.02 22**	P	**P**	**07 54 33.1**	**0.0**
	comp=Z,0.4nm,0.6s,baz=299,slow=4.3,SNR=6.1					
INK	**Inuvik**	**99.42 16**	P	**Pdif**	**07 54 44.3**	**+0.5**
	comp=Z,0.7nm,0.5s,baz=313,slow=3.7,SNR=6.6					
PDAR	**Pinedale Array**	**127.45 22**	PKP	**PKPdf**	**08 00 07.5**	**+0.6**
	comp=Z,0.7nm,0.6s,baz=123,slow=2.0,SNR=9.9					
DUG	**Dugway, Tooele**	**128.25 27**	*e*PKIKP	**PKPdf**	**08 00 10.0**	**+1.7**
DUG	**Dugway, Tooele**	**128.25 27**	*e*PKPdf	**PKPdf**	**08 00 10.0**	**+1.7**
ANMO	**Albuquerque**	**135.40 25**	*e*PKIKP	**PKPdf**	**08 00 23.2**	**+1.1**
ANMO	**Albuquerque**	**135.40 25**	*e*PKPdf	**PKPdf**	**08 00 23.2**	**+1.1**
JCT	**Junction City**	**141.93 21**	*e*PKIKP	**PKPdf**	**08 00 37.5**	**+3.5**
JCT	**Junction City**	**141.93 21**	*e*PKPdf	**PKPdf**	**08 00 37.5**	**+3.5**

*CSEM **12** 07:43:01.1, 39.°34N×20.°97E, h31km, ML1.7/2*
ATH 12 07:43:01.1, 39.°34N×20.°97E, h31km±2km, ML1.7/2, Error ellipse: s-maj=2.3km s-min=1.5km az=160.0, Greece-Albania border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DSL	**Palaion Diasel**	**0.23**	**155**	P	Pb	07 43 07.4	-0.4
DSL				S	Sn	07 43 13.2	+0.3
DSL	**Palaion Diasel**	**0.23**	**155**	P	Pb	07 43 07.4	-0.3
DSL				S	Sn	07 43 13.2	+0.3
DSL				AML	AML	07 43 20.1	
	comp=N,564μm,0.5s						
DSL				AML	AML	07 43 26.4	
	comp=E,418μm,0.7s						
LKD2	**Lefkada island**	**0.60**	**204**	P	Pn	07 43 14.0	+0.5
LKD2	**Lefkada island**	**0.60**	**204**	P	Pn	07 43 14.0	+0.5
SGD	**Sagiada**	**0.63**	**296**	P	Pb	07 43 13.3	-0.4
SGD	**Sagiada**	**0.63**	**296**	P	Pb	07 43 13.3	-0.4
KPRO	**Kipourio**	**0.69**	**26**	P	Pn	07 43 15.3	+0.6
KPRO				S	Sn	07 43 25.6	+1.2
KPRO	**Kipourio**	**0.69**	**26**	P	Pn	07 43 15.3	+0.6
KPRO				S	Sn	07 43 25.6	+1.3
KPRO				AML	AML	07 43 31.9	
	comp=N,112μm,0.7s						
KPRO				AML	AML	07 43 33.7	
	comp=E,129μm,1.0s						
KEK	**Kerkira**	**0.98**	**293**	P	Pb	07 43 20.4	+0.8
AGG	**Agios Georgios**	**1.10**	**106**	P	Pb	07 43 21.6	0.0
AGG	**Agios Georgios**	**1.10**	**106**	P	Pb	07 43 21.6	0.0

WEL 12 07:44:24.3±0.2, 44.°19S×168.°56E, h5km, ML3.6/14, 1C-5D, Error ellipse: s-maj=2.0km s-min=1.6km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCZ	**Jackson Bay**	**0.20**	**53**	⇑PG	Pg	07 44 28.3	+0.1
JCZ				SG	Sg	07 44 30.7	-0.1
JCZ				AML	AML	07 44 31.2	
MSZ	**Milford Sound**	**0.66**	**223**	⇓P*	Pg	07 44 37.4	+0.4
MSZ				SG	Sg	07 44 46.1	+0.5
MSZ				AML	AML	07 44 47.4	
WKZ	**Wanaka**	**0.71**	**153**	⇓P*	Pg	07 44 37.6	-0.3
WKZ				AML	AML	07 44 47.8	
WKZ				AML	AML	07 44 48.2	
FOZ	**Fox Glacier**	**1.12**	**54**	P*	Pg	07 44 44.8	-1.0
FOZ				S*	Sg	07 45 00.3	0.0
FOZ				AML	AML	07 45 03.5	
EAZ	**Earnscleugh**	**1.17**	**153**	P*	Pg	07 44 45.8	-0.8
EAZ				AML	AML	07 45 01.9	
EAZ				AML	AML	07 45 02.1	
LBZ	**Lake Benmore**	**1.18**	**100**	⇓P*	Pg	07 44 46.4	-0.5
LBZ				AML	AML	07 45 01.7	
LBZ				AML	AML	07 45 01.9	
MLZ	**Mavora Lakes**	**1.22**	**195**	⇓P*	Pg	07 44 46.7	-0.8
MLZ				AML	AML	07 45 07.1	
MLZ				AML	AML	07 45 07.1	
DCZ	**Deep Cove**	**1.62**	**218**	PN	Pn	07 44 53.5	+0.1
DCZ				AML	AML	07 45 20.8	
DCZ				AML	AML	07 45 22.4	
ODZ	**Otahua Downs**	**1.71**	**120**	PN	Pn	07 44 54.6	-0.2
ODZ				AML	AML	07 45 18.5	
ODZ				AML	AML	07 45 19.6	
ODZ				AML	AML	07 45 20.4	
ODZ				AML	AML	07 49 22.3	
WHZ	**Wether Hill Ro**	**1.75**	**194**	PN	Pn	07 44 55.0	-0.4
WHZ				AML	AML	07 46 17.9	
WHZ				AML	AML	07 51 45.3	
RPZ	**Rata Peaks**	**1.86**	**76**	⇓PN	Pn	07 44 57.5	+0.6
RPZ				AML	AML	07 45 27.4	
RPZ				AML	AML	07 45 27.6	
TUZ	**Tuapeka**	**1.92**	**157**	PN	Pn	07 44 57.5	0.0
TUZ				AML	AML	07 45 25.9	
TUZ				AML	AML	07 45 25.9	
TUZ				AML	AML	07 45 26.2	
TUZ				AML	AML	07 45 26.2	
WVZ	**Waitaha Valley**	**1.93**	**55**	PN	Pn	07 44 57.5	-0.3
WVZ				AML	AML	07 46 10.3	
WVZ				AML	AML	07 47 38.7	
HHSZ	**Highcliff Hill**	**2.22**	**140**	PN	Pn	07 45 01.9	+0.1
INZ	**Inchbonnie**	**2.56**	**56**	PN	Pn	07 45 05.0	-1.4
APZ	**The Paps**	**2.67**	**189**	PN	Pn	07 45 09.1	+1.1
APZ				AML	AML	07 47 08.2	
MQZ	**McQueen's Vall**	**2.99**	**82**	PN	Pn	07 45 11.0	-1.3

IDC 12 08:02:56.6±4.2, 53.°78N×88.°35E, h0km, mb1 2.7/3, mb1mx2.7/70, mbtmp2.7/3, ML2.2/3, Error ellipse: s-maj=42.3km s-min=28.4km az=66.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**2.10**	**276**	*i*		08 15 51.5	
	baz=92,slow=324,SNR=3.6						
ZALV	**Zalesovo Beam**	**2.10**	**276**	Pn	Pn	08 03 33.6	+0.6
	0.9nm,0.3s,baz=92,slow=13,SNR=7.4						
ZALV				Sn	Sn	08 04 00.8	+1.1
	3.1nm,0.3s,baz=100,slow=25,SNR=15						
KURBB	**Kurchatov Arra**	**6.81**	**246**	Pn	Pn	08 04 37.7	0.0
	0.1nm,0.3s,baz=62,slow=14,SNR=2.7						
KURBB				Lg	Lg	08 06 32.9	
	0.0nm,0.3s,baz=65,slow=35,SNR=3.8						
MKAR	**Makanchi Array**	**8.00**	**211**	Pn	Pn	08 04 55.3	+1.2
	0.1nm,0.3s,baz=26,slow=15,SNR=3.4						

*ISCJB **12** 08:03:10.1±0.5, 34.°07N±0.°08×136.°69E±0.°09, h376km±3km, mb3.1/9, Error ellipse: s-maj=14.4km s-min=10.8km az=146.5*
*IDC **12** 08:03:10.7±1.3, 34.°01N×136.°74E, h368km±14km, mb3.0/9, mb1 3.2/11, mb1mx2.9/74, mbtmp3.7/11, Error ellipse: s-maj=19.2km s-min=14.9km az=78.0*
*JMA **12** 08:03:11.2±0.2, 34.°15N×136.°63E, h370km±2km, M2.9*
ISC 12 08:03:11.2±0.8, 34.°11N±0.°09×136.°65E±0.°08, h369km±6km, n29, σ0°77/35, mb3.1/9, Western Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIE	**Ise**	**0.29**	**10**	P	**Pn**	**08 03 57.7**	**+0.6**
JIE				*e*S	**S**	**08 04 33.8**	**-0.4**
JKN2	**Miekihoku**	**0.34**	**293**	P	**Pn**	**08 03 57.5**	**+0.3**
JKN2				*e*S	**S**	**08 04 33.7**	**-0.6**
TTO2	**TONANKAI O.B.S**	**0.49**	**140**	P	**Pn**	**08 03 58.4**	**+1.2**
JWY	**Kouya**	**0.88**	**278**	P	**Pn**	**08 03 59.1**	**+0.5**
TK02	**Tokai 2**	**0.94**	**100**	P	**Pn**	**08 03 59.3**	**+0.9**
JWZ	**Kozaga**	**0.97**	**234**	P	**Pn**	**08 03 58.7**	**-0.2**
JWZ				*e*S	**S**	**08 04 36.3**	**-0.9**
JWT	**Wachi**	**1.56**	**319**	P	**Pn**	**08 04 01.9**	**+0.4**
JWT				*e*S	**S**	**08 04 41.1**	**-0.9**
JGM	**Miyama**	**1.59**	**2**	P	**Pn**	**08 04 02.2**	**+0.5**
JGM				*e*S	**S**	**08 04 42.5**	**+0.1**
JAI	**Aioi**	**1.85**	**261**	P	**Pn**	**08 04 03.6**	**+0.3**
JAI				*e*S	**S**	**08 04 44.7**	**-0.5**
JYN	**Shimob**	**2.09**	**48**	P	**Pn**	**08 04 04.8**	**-0.1**
JKG	**Kaga**	**2.18**	**353**	P	**Pn**	**08 04 05.6**	**+0.3**
JOD2	**Odawara 2**	**2.32**	**59**	P	**Pn**	**08 04 06.6**	**+0.2**
JMN	**Monobe**	**2.33**	**261**	P	**Pn**	**08 04 07.2**	**+0.6**
MAT	**Matsushiro**	**2.74**	**27**	P	**Pn**	**08 04 09.5**	**-0.2**
MAT				S	S	08 04 49.5	-7.5
MAT	**Matsushiro**	**2.74**	**27**	P	**Pn**	**08 04 09.5**	**-0.2**
MJAR	**Matsushiro Arr**	**2.74**	**27**	P	**Pn**	**08 04 09.4**	**-0.4**
	2.8nm,0.3s,baz=200,slow=8.9,SNR=54						
JHS	**Saijyo**	**3.05**	**288**	P	**Pn**	**08 04 13.0**	**+0.6**
JTO	**Tosashimizu**	**3.45**	**250**	P	**Pn**	**08 04 16.3**	**+0.3**
JNU	**Nakatsue**	**4.91**	**260**	P	**Pn**	**08 04 31.4**	**+0.6**
	2.6nm,0.3s,baz=120,slow=1.9,SNR=19						
KSRS	**Korea Array**	**7.84**	**298**	P	**Pn**	**08 05 01.1**	**-2.5**
	0.4nm,0.3s,baz=114,slow=11,SNR=10						
SONM	**Songino Array**	**26.45**	**310**	P	**P**	**08 08 16.9**	**+1.0**
	0.6nm,0.4s,baz=107,slow=7.7,SNR=3.9						
MKAR	**Makanchi Array**	**42.46**	**304**	P	**P**	**08 10 31.8**	**+0.5**
	1.6nm,0.6s,baz=89,slow=10.0,SNR=12						
KURBB	**Kurchatov Arra**	**44.81**	**310**	P	**P**	**08 10 49.8**	**+0.1**
	1.1nm,0.7s,baz=91,slow=6.3,SNR=14						
BVAR	**Borovoye Array**	**49.71**	**314**	P	**P**	**08 11 27.1**	**+0.1**
	0.3nm,0.3s,baz=80,slow=7.9,SNR=3.0						
WRA	**Warramunga Arr**	**53.79**	**183**	P	**P**	**08 11 55.9**	**-1.2**
	0.4nm,0.4s,baz=360,slow=7.5,SNR=9.4						
ILAR	**Eielson Array**	**54.02**	**31**	P	**P**	**08 11 58.0**	**-0.3**
	0.4nm,0.8s,baz=262,slow=5.9,SNR=5.3						
ASAR	**Alice Springs**	**57.51**	**183**	P	**P**	**08 12 22.3**	**-1.0**
	0.4nm,0.9s,baz=357,slow=3.6,SNR=4.4						
INK	**Inuvik**	**58.73**	**26**	P	**P**	**08 12 31.4**	**+0.4**
	0.2nm,0.3s,baz=307,slow=5.1,SNR=4.3						
KBZ	**Khabaz**	**69.81**	**310**	P	**P**	**08 13 43.2**	**+0.7**
	1.5nm,0.7s,baz=44,slow=7.6,SNR=3.9						

*ISCJB **12** 08:04:29.8±0.3, 5.°27N±0.°04×94.°23E±0.°03, h46km, mb4.6/66, MS3.9/4, Error ellipse: s-maj=6.3km s-min=3.3km az=41.9*
*MOS **12** 08:04:31.2±0.9, 5.°30N×94.°31E, h60km, mb4.8/18, Error ellipse: s-maj=11.8km s-min=6.3km az=112.7*
*NEIC **12** 08:04:32.6±0.7, 5.°34N×94.°31E, h54km±6km, mb4.8/18, Error ellipse: s-maj=8.3km s-min=4.5km az=50.0*
NEIC Felt [III] at Banda Aceh.
*IDC **12** 08:04:32.2±0.7, 5.°36N×94.°30E, h49km±7km, mb4.2/29, mb1 4.3/30, mb1mx4.0/67, mbtmp4.4/30, MS3.6/2, Ms1 3.6/2, ms1mx2.8/56, Error ellipse: s-maj=21.3km s-min=11.7km az=46.0*
*DJA **12** 08:04:38.2±0.8, 5°N±3'×9°5E±°, h77km±8km, M4.7/16, mb4.8/16, mB5.2/3, MLv4.7/11, Mw(mB)4.6/3, Mwp6.0/1*
ISC 12 08:04:31.8±0.4, 5.°34N±0.°05×94.°27E±0.°05, h46km, n170, σ1°46/178, mb4.6/67, MS3.9/4, 7C-5D, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMBY	**CAMPBELL BAY**	**1.70**	**348**	*e*P	**Pn**	**08 04 59.4**	**+0.4**
CMBY				*e*S	**Sn**	**08 05 19.1**	**-0.4**
CMBY				IAML		08 05 31.2	
	comp=E,9μm,0.7s						
CMBY				IAML		08 05 34.7	
	comp=N,9μm,0.6s						
MLSI	**Meulaboh, Aceh**	**2.38**	**116**	P	**Pn**	**08 05 08.4**	**+0.1**
MLSI				S	Sn	08 05 46.1	+10
LHMI	**Lhok Sumawe**	**2.67**	**92**	P	**Pn**	**08 05 12.0**	**-0.3**
LHMI	**Lhok Sumawe**	**2.67**	**92**	*e*Pn	**Pn**	**08 05 12.6**	**+0.3**
LHMI				*e*Sn	**Sn**	**08 05 42.4**	**-1.0**
KCSI	**Kotacane, Aceh**	**3.93**	**117**	P	**Pn**	**08 05 29.6**	**0.0**
TSI	**Tuntungan**	**4.65**	**113**	P	**Pn**	**08 05 40.4**	**+0.8**
PKDT	**Phuket**	**4.77**	**58**	P	**Pn**	**08 05 41.9**	**+0.8**
GSI	**Gunungsitoli**	**5.19**	**140**	P	**Pn**	**08 05 46.3**	**-0.7**
GSI	**Gunungsitoli**	**5.19**	**140**	*e*Pn	**Pn**	**08 05 46.2**	**-0.7**
PSI	**Prapat**	**5.28**	**118**	*e*P	**Pn**	**08 05 48.6**	**+0.3**
PSI	**Prapat**	**5.28**	**118**	*e*Pn	**Pn**	**08 05 48.6**	**+0.3**
SURT	**Suratani**	**5.75**	**51**	P	**Pn**	**08 05 56.0**	**+1.4**
TRTT	**Trang**	**5.93**	**65**	P	**Pn**	**08 05 58.2**	**+1.1**
KULM	**Kulim**	**6.35**	**90**	*e*Pn	**Pn**	**08 06 03.3**	**+0.4**
	comp=N,30nm,0.5s						
KULM				*e*Sn	**Sn**	**08 07 11.9**	**-2.3**
PBA	**Port Blair**	**6.46**	**347**	*e*S	Sn	08 07 15.0	-1.7
IPM	**Ipoh**	**6.78**	**97**	*e*Pn	**Pn**	**08 06 08.6**	**-0.2**
	comp=N,31nm,0.3s						
IPM				*e*Sn	**Sn**	**08 07 24.3**	**-0.6**
MNSI	**Mandailing Nat**	**6.96**	**130**	P	**Pn**	**08 06 10.6**	**-0.6**
	comp=N,90nm,0.5s,comp=N,5μmcomp=N,0.6nm						
MNSI				S	**Sn**	**08 07 23.3**	**-5.8**
	comp=N,90nm,0.5s,comp=N,5μmcomp=N,0.6nm						
DGPR	**DIGLIPUR**	**7.90**	**350**	*e*P	**Pn**	**08 06 25.7**	**+1.6**
DGPR				*e*S	**Sn**	**08 07 47.2**	**-5.1**
DGPR				*e*S	**Sn**	**08 07 50.1**	**-2.2**
PPI	**Padang Panjang**	**8.40**	**133**	P	**Pn**	**08 06 31.1**	**+0.1**
	comp=N,31nm,1.0s,comp=N,0.1nm						
PDSI	**Padang**	**8.76**	**135**	P	**Pn**	**08 06 36.2**	**+0.2**
	comp=N,13nm,0.7s						
RGRI	**Rengat**	**9.84**	**125**	P	**Pn**	**08 06 53.2**	**+2.5**
	comp=N,1μm,0.5s,comp=N,68μm						
CHBT	**CHBT**	**10.84**	**47**	P	**Pn**	**08 07 07.3**	**+2.9**
	comp=N,72nm,0.5s						
NAYO	**Nakonayok**	**11.30**	**37**	P	Pn	08 07 16.8	+6.1
	comp=N,11nm,1.1s,comp=N,412nm						
PBKT	**Sadao Pong**	**12.95**	**30**	P	**Pn**	**08 07 37.0**	**+3.7**
	comp=N,20nm,0.7s						
MNAI	**Manna**	**12.96**	**138**	*e*Pn	**Pn**	**08 07 34.7**	**+1.3**
SUKH	**Sukhothai**	**13.16**	**23**	P	**P**	**08 07 45.7**	**+0.7**
	comp=N,13nm,0.8s,comp=N,101nm						
PALK	**Pallekele**	**13.62**	**279**	P	**Pn**	**08 07 43.9**	**+1.4**
	comp=N,0.7nm,0.3s,baz=120,slow=9.4,SNR=3.5						
PALK				S	Sn	08 09 59.9	-13
	comp=N,2.8nm,0.3s,baz=296,slow=20,SNR=8.5						
PALK				LR	LR	08 12 36.4	
	comp=N,240nm,19.1s,baz=116,slow=36						
PALK	**Pallekele**	**13.62**	**279**	P	**Pn**	**08 07 43.9**	**+1.4**
PALK				*e*Sn	Sn	08 10 01.9	-11
UTTA	**Uttaradit**	**13.78**	**26**	P	**P**	**08 07 52.4**	**+0.5**
	comp=N,13nm,0.7s,comp=N,122nm						
KHON	**Khomkaen**	**13.78**	**37**	P	**P**	**08 07 53.5**	**+1.6**
LOEI	**Loei**	**13.90**	**29**	P	**P**	**08 07 52.1**	**-1.2**
	comp=N,16nm,0.9s,comp=N,526nm						
LAMP	**Lampang**	**14.11**	**21**	P	**P**	**08 07 55.9**	**+0.3**
	comp=N,23nm,0.8s						
CHTO	**Chiang Mai**	**14.15**	**18**	P	**P**	**08 07 53.6**	**-2.5**
	comp=N,202nm,0.9s,comp=N,2μm						
CHTO	**Chiang Mai**	**14.15**	**18**	*e*P	**Pn**	**08 07 51.4**	**+1.8**
CHTO				*e*		08 10 20.2	
CHTO	**Chiang Mai**	**14.15**	**18**	*e*Pn	**Pn**	**08 07 51.4**	**+1.8**
CHTO				*e*Sn	**Sn**	**08 10 20.2**	**-5.1**
CMMT	**Chiang Mai**	**14.15**	**18**	P	**P**	**08 07 53.6**	**-2.5**
	comp=N,45nm,0.7s						
SKNT	**Sakolnakorn**	**14.97**	**39**	P	**P**	**08 08 05.4**	**+0.2**
	comp=N,21nm,0.8s						
CMAI	**Chiengmai2**	**15.23**	**17**	P	**P**	**08 08 08.4**	**+0.1**
	comp=N,18nm,0.9s,comp=N,482nm						
NONG	**Nongkai**	**15.34**	**34**	P	**P**	**08 08 09.8**	**+0.5**
	comp=N,21nm,0.9s						
PANO	**Nakornpanom**	**15.50**	**40**	P	**P**	**08 08 12.1**	**+1.0**
	comp=N,14nm,0.9s,comp=N,2μm						
CRAI	**Chiangrai**	**15.95**	**21**	P	**P**	**08 08 16.9**	**+0.8**
BOK	**Bokaro**	**20.05**	**337**	*e*P	**P**	**08 09 02.0**	**+0.8**
BOK				IAmb	IAmb	08 09 05.0	
	comp=Z,48nm,1.0s						
SHL	**Shillong**	**20.25**	**354**	*e*P	**P**	**08 09 02.6**	**-0.8**
QIZ	**Qiongzhong**	**20.39**	**47**	P	Pn	08 09 09.2	+1.9
QIZ				S	Sn	08 13 00.0	+3.6
QIZ				LR	LR		
	comp=N,83nm,21.8s						
QIZ				LR	LR		
	comp=E,85nm,18.2s						
KMI	**Kunming**	**21.29**	**22**	P	**P**	**08 09 18.3**	**+3.5**
KMI				pP	sP	08 09 29.2	-2.4
KMI				sP	pP	08 09 35.0	+9.2
KMI				pmax	pmax		
	comp=Z,14nm,1.2s						
KMI				pmax	pmax		
	comp=Z,48nm,3.4s						
PKIN	**Phulchoki**	**23.68**	**340**	*e*P	**P**	**08 09 38.1**	**-1.5**
	comp=Z,19nm,0.5s						
KKN	**Kakani**	**23.91**	**340**	*e*P	**P**	**08 09 41.5**	**-0.2**
	comp=Z,13nm,0.4s						
BHPL	**Bhopal**	**24.10**	**319**	*e*P	**P**	**08 09 44.8**	**+1.5**
GYA	**Guiyang**	**24.11**	**28**	*e*P	**P**	**08 09 46.8**	**+3.3**
GYA				pP	sP	08 10 00.2	-0.9
GYA				sP	pP	08 10 06.0	+10
GYA				PP	PnPn	08 10 25.4	+11
GYA				PcP	**PcP**	**08 13 25.8**	**+1.8**
GYA				S	**S**	**08 14 02.6**	**+4.3**
GYA				sS	sS	08 14 24.0	+5.6
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
GYA				pmax	pmax		
	comp=Z,90nm,4.9s						
GKN	**Gorkha**	**24.33**	**339**	*e*P	**P**	**08 09 45.8**	**+0.3**
	comp=Z,38nm,0.4s						
LSA	**Lhasa**	**24.41**	**353**	P	**P**	**08 09 47.0**	**+0.4**
LSA				pmax	pmax		
	comp=Z,20nm,0.6s						
LSA	**Lhasa**	**24.41**	**353**	*e*P	**P**	**08 09 46.9**	**+0.4**
LSA				pmax	pmax		
	comp=Z,24nm,0.6s						
LSA	**Lhasa**	**24.41**	**353**	*e*P	**P**	**08 09 46.9**	**+0.4**
	comp=Z,24nm,0.6s						
KOLN	**Koldanda**	**24.51**	**337**	*e*P	**P**	**08 09 47.4**	**+0.2**
	comp=Z,41nm,0.6s						
PYUN	**Piuthan**	**25.05**	**336**	*e*P	**P**	**08 09 52.7**	**+0.6**
H08S3	**Diego Garcia H**	**25.27**	**240**	T	T	08 35 42.9	
	baz=60,slow=76,SNR=340						
H08S2	**Diego Garcia H**	**25.27**	**239**	T	T	08 35 40.6	
	baz=60,slow=76,SNR=542						
H08S1	**Diego Carcia H**	**25.28**	**240**	T	T	08 35 54.3	
	baz=60,slow=76,SNR=534						
CD2	**Chengdu**	**26.96**	**18**	P	**P**	**08 10 11.9**	**+2.7**
CD2				pmax	pmax		
	comp=Z,13nm,0.8s						
KAPI	**Kappang**	**27.45**	**112**	*e*P	**P**	**08 10 14.6**	**+0.9**
	comp=Z,3.3nm,0.4s						
ENH	**Enshi**	**28.65**	**28**	*e*P	**P**	**08 10 22.9**	**-1.4**
	comp=Z,18nm,0.5s						
SMLA	**Simla**	**30.27**	**330**	*e*P	**P**	**08 10 38.4

EKS2 Erkin-Say 41.38 337 *eP* **P 08 12 14.8 +1.2**
EKS2 pmax pmax
comp=Z,6.0nm,0.8s
EKS2 Erkin-Say 41.38 337 *eP* **P 08 12 14.8 +1.2**
comp=Z,6.0nm,0.8s
MK01 Makanchi Array 42.55 348 *eP* **P 08 12 23.1 +0.1**
MK31 Makanchi Array 42.58 348 *eP* **P 08 12 23.4 +0.2**
MK31 Makanchi Array 42.58 348 *eP* **P 08 12 23.4 +0.2**
MKAR Makanchi Array 42.58 348 P **P 08 12 23.2 0.0**
comp=Z,23nm,0.7s,baz=167,slow=8.1,SNR=171
MKAR Makanchi Array 42.58 348 *eP* **P 08 12 23.4 +0.2**
MAKZ Makanchi 42.66 348 *eP* **P 08 12 24.0 +0.1**
MAKZ pmax pmax
comp=Z,21nm,0.6s
MAKZ Makanchi 42.66 348 *eP* **P 08 12 24.0 +0.1**
comp=Z,21nm,0.6s
KKAR Karatay Array 43.08 334 *eP* **P 08 12 27.9 +0.5**
KKAR pmax pmax
comp=Z,2.0nm,0.5s
KKAR Karatay Array 43.08 334 *eP* **P 08 12 27.9 +0.5**
comp=Z,2.1nm,0.5s
TJN Taejon 43.30 40⇑*eP* **P 08 12 29.4 +0.2**
SONM Songino Array 43.60 12 P **P 08 12 30.9 -0.7**
comp=Z,9.7nm,0.9s,baz=194,slow=8.6,SNR=26
SONM PcP **PcP 08 14 18.7 +0.2**
comp=Z,1.5nm,0.5s,baz=199,slow=4.2,SNR=4.8
SONA1 Songino Array 43.61 12 *eP* **P 08 12 30.9 -0.8**
ULN Ulaanbaatar 43.77 12⇓*eP* **P 08 12 32.2 -0.8**
ULN pmax pmax
comp=Z,2.0nm,0.7s
JNU Nakatsue 43.86 46 LR LR 08 31 08.4
comp=Z,76nm,19.4s,baz=310,slow=36
KSAR Wonju Array Be 44.28 39 P **P 08 12 37.3 +0.2**
KSAR Wonju Array Be 44.28 39 P **P 08 12 37.2 +0.2**
KSRS Korea Array 44.31 39 P **P 08 12 37.2 0.0**
comp=Z,2.1nm,0.6s,baz=214,slow=8.8,SNR=11
GEYT Alibeck 46.19 320 P **P 08 12 53.0 +0.8**
comp=Z,4.7nm,0.4s,baz=155,slow=7.8,SNR=7.4
WRA Warramunga Arr 46.72 124 P **P 08 12 56.5 -0.1**
comp=Z,3.4nm,0.3s,baz=302,slow=9.3,SNR=72
WRA pP **pP 08 13 08.9 -0.4**
comp=Z,7.2nm,0.6s,baz=304,slow=9.1,SNR=11
WRAB Tennant Creek 46.73 124⇑*iP* **P 08 12 56.7 0.0**
WRAB pmax pmax
comp=Z,61nm,1.7s
WRAB Tennant Creek 46.73 124 *eP* **P 08 12 56.8 +0.1**
comp=Z,14nm,0.7s
WB2 Warramunga Arr 46.73 124 *eP* **P 08 12 56.8 +0.1**
comp=Z,12nm,0.7s
TLY Talaya 46.84 8 P **P 08 12 57.7 +0.5**
comp=Z,2.6nm,0.5s,baz=298,slow=6.8,SNR=5.0
TLY Talaya 46.84 8 *eP* **P 08 12 57.1 0.0**
TLY pmax pmax
comp=Z,4.0nm,0.8s
TLY Talaya 46.84 8 *eP* **P 08 12 56.6 -0.6**
comp=Z,4.3nm,0.9s
KURBB Kurchatov Arra 47.02 346 P **P 08 12 58.8 +0.3**
comp=Z,9.1nm,0.3s,baz=171,slow=6.8,SNR=126
KURK Kurchatov 47.09 346 *eP* **P 08 12 59.4 +0.4**
KURK pmax pmax
comp=Z,20nm,0.9s
KURK Kurchatov 47.09 346 *eP* **P 08 12 59.4 +0.4**
comp=Z,20nm,0.9s
AS31 Alice Springs 48.22 128 *eP* **P 08 13 08.5 +0.2**
comp=Z,4.0nm,0.3s
ASAR Alice Springs 48.22 128 P **P 08 13 08.0 -0.3**
comp=Z,4.6nm,0.6s,baz=300,slow=7.5,SNR=64
ASAR pP **pP 08 13 21.9 +0.9**
comp=Z,4.3nm,0.4s,baz=303,slow=7.9,SNR=13
ASAR Alice Springs 48.22 128 P **P 08 13 08.0 -0.3**
AS01 Alice Springs 48.26 128 *eP* **P 08 13 08.2 -0.3**
ZALV Zalesovo Beam 49.07 353 P **P 08 13 14.4 +0.2**
comp=Z,13nm,0.3s,baz=185,slow=6.5,SNR=63
NVS Novosibirsk 50.16 352⇓*iP* **P 08 13 22.7 +0.2**
NVS *e* 08 13 39.0
NVS pmax pmax
comp=Z,15nm,0.7s
NVS pmax pmax
comp=N,11nm,0.8s
NVS pmax pmax
comp=E,10.0nm,0.8s
BVAR Borovoye Array 51.42 342 P **P 08 13 32.0 -0.1**
comp=E,6.7nm,0.7s,baz=134,slow=8.5,SNR=31
BVAR Borovoye Array 51.42 342 P **P 08 13 32.0 -0.1**
BRVK Borovoye 51.48 342*c iP* **P 08 13 32.3 -0.2**
BRVK pmax pmax
comp=Z,6.0nm,1.0s
BRVK Borovoye 51.48 342 *eP* **P 08 13 32.6 +0.1**
comp=Z,6.1nm,0.6s
ZRNK Zerenda 51.80 341 *eP* **P 08 13 34.9 0.0**
ZRNK pmax pmax
comp=Z,5.0nm,0.8s
ZRNK Zerenda 51.80 341 *eP* **P 08 13 34.9 0.0**
comp=Z,4.9nm,0.8s
ABKAR Akbulak array 52.51 332 *eP* **P 08 13 40.5 +0.2**
comp=Z,3.5nm,0.4s
KLR Kul'dur 54.00 30 P **P 08 13 51.1 -0.1**
comp=Z,0.9nm,0.5s,baz=236,slow=4.7,SNR=5.6
KLR Kul'dur 54.00 30⇑*eP* **P 08 13 50.7 -0.5**
AKTO Aktyubinsk 54.23 332 P **P 08 13 52.6 -0.3**
comp=Z,2.2nm,0.5s,baz=124,slow=6.9,SNR=9.3
BOD Bodaibo 54.58 13 *eP* **P 08 13 54.0 -1.2**
BOD pmax pmax
comp=Z,11nm,0.9s
CTAO Charters Tower 56.99 118 *eP* **P 08 14 12.9 -0.3**
CTAO pmax pmax
comp=Z,17nm,0.6s
CTAO Charters Tower 56.99 118 *eP* **P 08 14 12.9 -0.3**
comp=Z,17nm,0.6s
STKA Stephens Creek 58.29 133 P **P 08 14 22.4 +0.3**
comp=Z,2.9nm,0.8s,baz=335,slow=5.1,SNR=3.8
KBZ Khabaz 59.05 319 P **P 08 14 27.6 +0.4**
comp=Z,1.6nm,0.6s,baz=176,slow=7.6,SNR=4.7
NRIK Noril'sk 64.06 357 P **P 08 15 00.0 -0.5**
comp=Z,2.7nm,0.5s,baz=158,slow=6.4,SNR=8.1
BRTR Keskin Array B 64.19 312 P **P 08 15 01.4 -0.8**
comp=Z,1.6nm,0.6s,baz=119,slow=7.5,SNR=10
BRTR Keskin Array B 64.19 312*ceP* **P 08 15 01.9 -0.3**
BRTR pmax pmax
comp=Z,2.0nm,0.6s
VSR Storozhevoye 64.53 325 *eP* **P 08 15 02.2 -1.7**
VSR pmax pmax
comp=Z,4.0nm,0.5s
BR231 Keskin MP Arra 64.86 312 *eP* **P 08 15 02.7 -3.8**
OBN Obninsk 67.59 328⇓*eP* **P 08 15 23.3 -0.2**
OBN pmax pmax
comp=Z,19nm,0.4s
KLMR Klimovskoe 68.78 335 P **P 08 15 29.2 -1.7**
KLMR pmax pmax
comp=Z,5.0nm,0.9s
TIXI Tiksi 69.68 11 *eP* **P 08 15 34.8 -1.4**
TIXI pmax pmax
comp=Z,16nm,0.7s
TIXI Tiksi 69.68 11 *eP* **P 08 15 34.8 -1.4**
comp=Z,16nm,0.7s
AKASG Malin Array Be 70.22 322 P **P 08 15 38.1 -1.8**
comp=Z,2.1nm,0.6s,baz=90,slow=5.6,SNR=6.9
KIEV Kiev 70.23 322⇑*iP* **P 08 15 38.9 -1.1**
KIEV pmax pmax
comp=Z,4.0nm,0.7s
MLR Muntele Rosu 71.07 316 P **P 08 15 45.4 -0.1**
comp=Z,0.7nm,0.5s,baz=168,slow=1.7,SNR=6.2
VSU Vasula 73.82 330⇓*eP* **P 08 16 01.4 +0.1**
VSU pmax pmax
comp=Z,66nm,2.5s
CRVS Cervenica-Dubn 74.72 319 *eP* **P 08 16 07.8 +1.0**
CRVS Cervenica-Dubn 74.72 319 *eP* **P 08 16 07.8 +1.0**
STHS Stebnicka Huta 74.94 320 *eP* **P 08 16 09.4 +1.3**
STHS pmax pmax
comp=Z,3.0nm,0.7s
STHS Stebnicka Huta 74.94 320 *eP* **P 08 16 09.4 +1.3**
FINES FINESS Array B 75.00 332 P **P 08 16 07.3 -0.9**
comp=Z,3.8nm,0.9s,baz=102,slow=8.4,SNR=10
FINES FINESS Array B 75.00 332 *iP* **P 08 16 08.0 -0.2**
FINES pmax pmax
comp=Z,2.0nm,0.6s
VYHS Vyhne 76.38 319 *eP* **P 08 16 15.9 -0.4**
VYHS pmax pmax
comp=Z,1.0nm,0.7s
VYHS Vyhne 76.38 319 *eP* **P 08 16 15.9 -0.4**
ARCES ARCESS Array B 77.68 340 P **P 08 16 23.1 -0.1**
comp=Z,1.6nm,0.5s,baz=99,slow=6.8,SNR=10
GERES GERESS Array B 79.80 319 P **P 08 16 35.9 +0.5**
comp=Z,4.5nm,0.7s,baz=88,slow=5.3,SNR=32
GERES pP **pP 08 16 50.6 +1.7**
comp=Z,2.8nm,0.8s,baz=96,slow=5.0,SNR=3.9

CLL Collm 80.40 321 *iP* **P 08 16 39.0 +0.6**
comp=Z,8.0nm,1.4s
CLL Collm 80.40 321 *iP* **P 08 16 39.0 +0.6**
CLL pmax pmax
comp=Z,8.0nm,1.4s
HFS Hagfors 80.70 330 P **P 08 16 39.6 -0.3**
comp=Z,1.5nm,0.5s,baz=107,slow=5.0,SNR=6.1
NB2 NORSAR Subarra 81.99 331 P **P 08 16 45.9 -0.8**
comp=Z,0.6nm,0.6s,baz=92,slow=5.9
NOA NORSAR Array B 81.99 331 P **P 08 16 46.0 -0.8**
comp=Z,0.8nm,0.7s,baz=93,slow=5.6,SNR=4.2
NOA NORSAR Array B 81.99 331 P **P 08 16 46.0 -0.8**
DAVOX Davos/Dischmat 82.30 316 P **P 08 16 49.5 +0.6**
comp=Z,8.4nm,0.6s,baz=129,slow=5.9,SNR=10
SPITS Spitsbergen Ar 82.33 348 P **P 08 16 48.2 0.0**
comp=Z,1.5nm,0.4s,baz=100,slow=9.4,SNR=15
EKA Eskdalemuir Ar 89.87 325 P **P 08 17 25.9 +0.2**
comp=Z,1.1nm,0.5s,baz=92,slow=5.0,SNR=4.8
ESDC Sonseca Array 92.94 310 P **P 08 17 41.0 +0.6**
comp=Z,0.3nm,0.3s,baz=27,slow=3.4,SNR=3.1
ESDC Sonseca Array 92.94 310 P **P 08 17 41.0 +0.6**
ILAR Eielson Array 97.03 22 P **P 08 17 57.9 -0.6**
comp=Z,0.4nm,0.5s,baz=313,slow=4.0,SNR=15
NVAR Mina Array Bea 127.00 32 PKP **PKPdf 08 23 32.8 +1.2**
comp=Z,0.8nm,0.7s,baz=314,slow=2.2,SNR=7.4
PDAR Pinedale Array 127.46 22 PKP **PKPdf 08 23 32.4 0.0**
comp=Z,0.9nm,0.9s,baz=72,slow=2.9,SNR=6.0
ANMO Albuquerque 135.43 24⇑*iPKIKP* **PKPdf 08 23 49.7 +2.1**
ANMO pmax pmax
comp=Z,4.0nm,2.5s
ANMO Albuquerque 135.43 24 *e*PKPdf **PKPdf 08 23 49.9 +2.3**
TRQA Tornquist 140.91 210 *e*PKPdf **PKPdf 08 23 56.9 -0.4**
TXAR Lajitas Array 141.46 26 PKP **PKPdf 08 23 57.0 -1.6**
comp=Z,0.8nm,0.5s,baz=349,slow=0.6,SNR=3.8
CPUP Villa Florida 145.77 229 PKPbc **PKPab 08 24 07.2 +0.2**
comp=Z,2.1nm,0.8s,baz=153,slow=4.5,SNR=5.3

WEL 12 08:08:50.9±0.2, 45°.18S×167°.36E, h124km±1km, ML3.5/8, 3C, Error ellipse: s-maj=1.9km s-min=1.3km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DCZ	**Deep Cove**	**0.32**	**207**	PN	Pn	08 09 08.1	-0.2
DCZ				SN	Sn	08 09 20.5	-1.1
DCZ				AML	AML	08 09 21.2	
MLZ	**Mavora Lakes**	**0.57**	**109**	⇑PN	Pn	08 09 09.7	-0.1
MLZ				SN	Sn	08 09 23.7	-0.3
MSZ	**Milford Sound**	**0.65**	**39**	PN	Pn	08 09 10.2	0.0
MSZ				SN	Sn	08 09 24.4	-0.4
MSZ				AML	AML	08 09 25.3	
PYZ	**Puysegur Point**	**1.09**	**205**	PN	Pn	08 09 14.1	0.0
WKZ	**Wanaka**	**1.23**	**74**	⇑PN	Pn	08 09 15.5	-0.1
WKZ				AML	AML	08 09 23.9	
WKZ				SN	Sn	08 09 33.6	-0.8
EAZ	**Earnscleugh**	**1.38**	**93**	⇑PN	Pn	08 09 16.9	-0.3
EAZ				AML	AML	08 10 41.0	
JCZ	**Jackson Bay**	**1.50**	**43**	PN	Pn	08 09 18.0	-0.7
JCZ				AML	AML	08 09 25.3	
JCZ				AML	AML	08 10 39.4	
APZ	**The Paps**	**1.71**	**165**	PN	Pn	08 09 20.9	-0.1
APZ				AML	AML	08 11 51.3	
APZ				AML	AML	08 14 11.3	
SYZ	**Scrubby Hill**	**1.84**	**138**	PN	Pn	08 09 22.5	0.0
SYZ				AML	AML	08 16 48.1	
SYZ				AML	AML	08 17 39.2	
ODZ	**Otahua Downs**	**2.33**	**88**	PN	Pn	08 09 27.4	-1.3
ODZ				AML	AML	08 10 58.9	
ODZ				AML	AML	08 12 28.3	

IDC 12 08:23:38.0±5.5, 5°.64S×147°.46E, h162km±59km, mb3.6/3, mb1 3.9/5, mb1mx3.3/43, mbtmp4.1/5, Error ellipse: s-maj=80.2km s-min=28.9km az=137.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**3.75**	**185**	P	Pn	08 24 37.0	+1.5
	11nm,0.3s,baz=352,slow=5.7,SNR=22						
PMG				S	Sn	08 25 19.9	-0.3
	8.6nm,0.3s,baz=193,slow=19,SNR=10						
WRA	**Warramunga Arr**	**19.10**	**221**	P	P	08 27 48.9	+0.4
	1.7nm,0.3s,baz=45,slow=11,SNR=104						
ASAR	**Alice Springs**	**22.17**	**215**	P	P	08 28 21.8	+0.7
	3.6nm,0.6s,baz=46,slow=8.6,SNR=57						
FITZ	**Fitzroy Crossi**	**24.64**	**238**	P	P	08 28 43.4	-0.5
	7.6nm,0.5s,baz=51,slow=9.5,SNR=32						
ILAR	**Eielson Array**	**84.97**	**23**	P	P	08 35 54.4	-0.4
	0.1nm,0.4s,baz=262,slow=4.4,SNR=3.3						

DDA ***12*** *08:26:27.3, 41°.36N×35°.84E, h20km, Md2.6, Suspected Mining explosion.*
ISK ***12*** *08:26:27.1, 41°.43N×35°.94E, h7km, MD2.9*
ISCJB ***12*** *08:26:28.1±0.4, 41°.39N±0°.03×35°.85E±0°.03, h0km, Error ellipse: s-maj=4.5km s-min=2.8km az=29.4*
CSEM ***12*** *08:26:28.1±0.2, 41°.37N×35°.86E, h1km, MD2.6, Error ellipse: s-maj=6.3km s-min=3.7km az=31.0, Suspected Mining explosion.*

ISC 12 08:26:27.3±0.8, 41°.42N±0°.03×35°.84E±0°.02, h0km, n37, σ0°68/59, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SAMS	**Samsun-Alacam**	**0.26**	**102**	P	**Pb**	**08 26 33.7**	**-1.2**
SAMS				S	**Sb**	**08 26 38.3**	**-1.7**
SAMS	**Samsun-Alacam**	**0.26**	**102**	*iP*	**Pb**	**08 26 33.7**	**-1.2**
SAMS				*iS*	**Sb**	**08 26 38.3**	**-1.7**
HAVZ	**Havza**	**0.35**	**196**	P	**Pg**	**08 26 33.8**	**-0.2**
HAVZ				S	**Sg**	**08 26 39.3**	**+0.7**
HAVZ	**Havza**	**0.35**	**196**	*iP*	**Pg**	**08 26 33.9**	**-0.2**
HAVZ				*iS*	**Sg**	**08 26 39.3**	**+0.7**
KVT	**Kavak**	**0.37**	**155**	*e*PG	**Pg**	**08 26 34.3**	**0.0**
KVT				*e*SG	**Sg**	**08 26 40.1**	**+1.0**
KVT	**Kavak**	**0.37**	**155**	*e*Pg	**Pg**	**08 26 34.3**	**0.0**
KVT				*e*Sg	**Sg**	**08 26 40.1**	**+1.0**
DIKM	**Dikmen**	**0.50**	**298**	*e*PG	**Pb**	**08 26 38.8**	**-0.1**
DIKM				*e*SG	**Sb**	**08 26 47.0**	**+0.2**
DIKM	**Dikmen**	**0.50**	**298**	*e*Pg	**Pb**	**08 26 38.8**	**-0.1**
DIKM				*e*Sg	**Sb**	**08 26 47.0**	**+0.2**
SNOP	**Sinop**	**0.77**	**322**	*e*PG	**Pb**	**08 26 43.5**	**0.0**
SNOP				*e*SG	**Sb**	**08 26 54.2**	**-0.4**
SNOP	**Sinop**	**0.77**	**322**	*e*Pg	**Pb**	**08 26 43.5**	**0.0**
SNOP				*e*Sg	**Sb**	**08 26 54.2**	**-0.4**
BYBT	**Boyabat**	**0.81**	**274**	*e*PG	**Pb**	**08 26 44.0**	**-0.3**
BYBT	**Boyabat**	**0.81**	**274**	*e*Pg	**Pb**	**08 26 44.0**	**-0.3**
ERBA	**Erbaa**	**1.01**	**137**	P	**Pg**	**08 26 46.1**	**-0.5**
ERBA				S	**Sb**	**08 27 01.2**	**-0.2**
ERBA	**Erbaa**	**1.01**	**137**	*iP*	**Pg**	**08 26 46.1**	**-0.5**
ERBA				*iS*	**Sb**	**08 27 01.2**	**-0.2**
TOKT	**Tokat**	**1.22**	**154**	*e*PN	**Pg**	**08 26 49.9**	**-0.7**
TOKT	**Tokat**	**1.22**	**154**	*e*Pn	**Pg**	**08 26 49.9**	**-0.7**
TOS	**Tosya**	**1.43**	**255**	*e*PN	**Pn**	**08 26 54.5**	**+0.1**
TOS	**Tosya**	**1.43**	**255**	*e*Pn	**Pn**	**08 26 54.6**	**+0.1**
BZK	**Bozkurt**	**1.48**	**292**	*e*PN	**Pg**	**08 26 55.9**	**+0.2**
BZK	**Bozkurt**	**1.48**	**292**	*e*Pn	**Pg**	**08 26 55.9**	**+0.2**
RSDY	**Resadiye-TOKAT**	**1.52**	**132**	*e*PN	**Pn**	**08 26 54.7**	**-1.0**
RSDY	**Resadiye-TOKAT**	**1.52**	**132**	*e*Pn	**Pn**	**08 26 54.7**	**-1.0**
CORM	**Corum**	**1.54**	**217**	*e*PN	**Pb**	**08 26 56.7**	**-0.1**
CORM	**Corum**	**1.54**	**217**	*e*Pn	**Pb**	**08 26 56.7**	**-0.1**
ORDU	**Ordu-Boztepe**	**1.58**	**105**	P	**Pn**	**08 26 56.1**	**-0.5**
ORDU				S	**Sg**	**08 27 18.1**	**+0.2**
ORDU	**Ordu-Boztepe**	**1.58**	**105**	*iP*	**Pn**	**08 26 56.1**	**-0.5**
ORDU				*iS*	**Sg**	**08 27 18.1**	**+0.2**
GRSN	**GIRESUNGRSN**	**1.89**	**104**	P	**Pn**	**08 27 00.8**	**-0.1**
GRSN				S	**Sb**	**08 27 25.8**	**-1.2**
GRSN	**GIRESUNGRSN**	**1.89**	**104**	*iP*	**Pn**	**08 27 00.8**	**-0.1**
GRSN				*iS*	**Sb**	**08 27 25.8**	**-1.2**
CUSAR	**Sarkisla-SIVAS**	**2.02**	**171**	P	**Pn**	**08 27 02.8**	**+0.1**
CUSAR				S	**Sn**	**08 27 28.9**	**+0.2**
CUSAR	**Sarkisla-SIVAS**	**2.02**	**171**	*iP*	**Pn**	**08 27 02.8**	**+0.1**
CUSAR				*iS*	**Sn**	**08 27 28.9**	**+0.2**
ELDT	**Eldivan**	**2.05**	**244**	P	**Pn**	**08 27 03.4**	**+0.2**
ELDT	**Eldivan**	**2.05**	**244**	*iP*	**Pn**	**08 27 03.4**	**+0.2**
ELDT				*iS*	**Sg**	**08 27 33.9**	**+0.7**
CDAG	**Cicekdag**	**2.11**	**213**	P	**Pb**	**08 27 06.1**	**-0.4**
CDAG	**Cicekdag**	**2.11**	**213**	*iP*	**Pb**	**08 27 06.1**	**-0.4**
CDAG				*iS*	**Sb**	**08 27 33.9**	**+0.6**
SUSE	**Susehri**	**2.16**	**123**	P	**Pb**	**08 27 06.2**	**-1.1**
SUSE	**Susehri**	**2.16**	**123**	*iP*	**Pb**	**08 27 06.2**	**-1.1**
SUSE				*iS*	**Sb**	**08 27 34.6**	**-0.1**
KELT	**Kelkit**	**2.88**	**115**	*iP*	**Pb**	**08 27 18.2**	**-1.5**
KELT				*iS*	**Sb**	**08 27 54.8**	**-0.8**

DJA ***12*** *08:32:38.6±1.1, 5°.1N±8°.9×9°.5E±°, h186km±9km, M4.3/5, mB5.1/1, mb4.2/2, MLv4.3/5, Mw(mB)4.4/1, Mwp6.0/1*
MOS ***12*** *08:32:38.4±1.0, 4°.80N×95°.22E, h43km, mb4.7/16, Error ellipse: s-maj=19.4km s-min=7.5km az=114.4*
NEIC ***12*** *08:32:38.9±0.4, 4°.59N×94°.88E, h35km, mb4.5/13, Error ellipse: s-maj=12.2km s-min=5.9km az=218.0*
ISCJB ***12*** *08:32:39.3±0.4, 4°.77N±0°.06×95°.05E±0°.04, h48km, mb4.4/50, MS3.7/8, Error ellipse: s-maj=9.0km s-min=4.5km az=27.7*
IDC ***12*** *08:32:41.0±0.8, 4°.71N×95°.10E, h55km±5km, mb4.0/24, mb1 4.0/24, mb1mx3.9/57, mbtmp4.2/24, MS3.5/8, Ms1 3.5/8, ms1mx3.1/52, Error ellipse: s-maj=26.5km s-min=12.7km az=44.0*

ISC 12 08:32:40.9±0.5, 4°.74N±0°.07×94°.95E±0°.06, h48km, n110, σ1°65/116, mb4.4/50, MS3.6/8, 5C-2D, Off west coast of northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MLSI	**Meulaboh, Aceh**	**1.52**	**108**	P	**Pn**	**08 33 04.8**	**-0.9**
MLSI				S	Sn	08 33 38.5	+14
LHMI	**Lhok Sumawe**	**2.05**	**76**	P	**Pn**	**08 33 13.2**	**+0.4**
LHMI				S	Sn	08 33 59.9	+23
LHMI	**Lhok Sumawe**	**2.05**	**76**	*e*Pn	**Pn**	**08 33 13.3**	**+0.4**
LHMI				*e*Sn	**Sn**	**08 33 40.3**	**+3.1**
KCSI	**Kotacane, Aceh**	**3.06**	**113**	P	**Pn**	**08 33 27.0**	**+0.2**
KCSI				S	**Sn**	**08 34 09.3**	**+7.0**
GSI	**Gunungsitoli**	**4.30**	**142**	P	Pn	08 33 34.6	-9.3
GSI	**Gunungsitoli**	**4.30**	**142**	*e*Pn	**Pn**	**08 33 41.3**	**-2.6**
PSI	**Prapat**	**4.41**	**116**	*e*P	**Pn**	**08 33 46.1**	**+0.7**
PSI	**Prapat**	**4.41**	**116**	*e*Pn	**Pn**	**08 33 46.1**	**+0.7**
KULM	**Kulim**	**5.70**	**84**	*e*Pn	**Pn**	**08 34 02.2**	**-0.9**
	18nm,0.6s						
KULM				*e*Sn	**Sn**	**08 35 04.2**	**-3.1**
IPM	**Ipoh**	**6.06**	**92**	*e*Pn	**Pn**	**08 34 07.5**	**-0.5**
	9.8nm,0.3s						
IPM				*e*Sn	**Sn**	**08 35 14.3**	**-1.9**
MNSI	**Mandailing Nat**	**6.06**	**130**	P	**Pn**	**08 34 08.7**	**+0.7**
CMAR	**Chiang Mai Arr**	**14.18**	**16**	LR	LR	08 41 05.7	
	comp=Z,153nm,20.8s,baz=205,slow=36						
PALK	**Pallekele**	**14.39**	**281**	LR	LR	08 41 00.7	
	comp=Z,85nm,20.6s,baz=116,slow=34						
CHTO	**Chiang Mai**	**14.52**	**15**	*e*P	**Pn**	**08 36 06.1**	**+2.5**
CHTO				pmax	pmax		
	comp=Z,7.0nm,0.9s						
CHTO	**Chiang Mai**	**14.52**	**15**	*e*Pn	**Pn**	**08 36 06.1**	**+2.5**
	comp=Z,7.2nm,0.9s						
KSM	**Kuching**	**15.67**	**101**	*e*P	**P**	**08 36 22.6**	**+0.6**
	comp=Z,6.8nm,0.4s						
LEM	**Lembang**	**17.09**	**132**	LR	LR	08 43 54.4	
	comp=Z,113nm,20.0s,baz=176,slow=40						
KMI	**Kunming**	**21.60**	**19**	P	**P**	**08 37 28.8**	**+1.7**
KMI				pP	sP	08 37 43.4	-1.1
KMI				sP	pP	08 37 51.5	+13
KMI				pmax	pmax		
	comp=Z,12nm,1.0s						
KMI				pmax	pmax		
	comp=Z,36nm,3.1s						
KMI				LR	LR		
	comp=N,120nm,14.6s						
KMI				LR	LR		
	comp=E,120nm,16.8s						
KMI				LR	LR		
	comp=Z,150nm,19.3s						
GYA	**Guiyang**	**24.33**	**26**	*e*P	**P**	**08 37 55.0**	**+0.6**
GYA				pP	sP	08 38 11.8	-0.8
GYA				sP	pP	08 38 21.0	+14
GYA				PP	**PnPn**	**08 38 32.4**	**+5.9**
GYA				PcP	**PcP**	**08 41 35.2**	**+1.9**
GYA				S	**S**	**08 42 05.6**	**-5.0**
GYA				sS	sS	08 42 35.0	+3.6
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
H08S3	**Diego Garcia H**	**25.56**	**241**	T	T	09 05 02.4	
	baz=62,slow=76,SNR=165						
H08S2	**Diego Garcia H**	**25.56**	**241**	T	T	09 05 10.8	
	baz=62,slow=76,SNR=197						
H08S1	**Diego Carcia H**	**25.58**	**241**	T	T	09 05 06.4	
	baz=62,slow=76,SNR=8.3						
CD2	**Chengdu**	**27.32**	**17**	P	**P**	**08 38 21.1**	**-0.2**
CD2				pmax	pmax		
	comp=Z,10.0nm,0.8s						
XAN	**Xi'an**	**31.91**	**22**	P	**P**	**08 39 00.4**	**-1.6**
XAN				pP	sP	08 39 17.5	-2.8
XAN				pmax	pmax		
	comp=Z,17nm,0.9s						
XAN				pmax	pmax		
	comp=Z,62nm,6.1s						
LZH	**Lanzhou**	**32.25**	**14**	*e*P	**P**	**08 39 05.2**	**+0.1**
LZH				pP	sP	08 39 22.5	-0.9
LZH				sP	pP	08 39 31.3	+14
LZH				*e*PP	**PnPn**	**08 40 15.0**	**+2.3**
LZH				pmax	pmax		
	comp=Z,23nm,1.1s						
LZH				pmax	pmax		
	comp=Z,71nm,5.5s						
LZH				LR	LR		
	comp=N,230nm,13.0s						
LZH				LR	LR		
	comp=E,250nm,12.7s						
LZH				LR	LR		
	comp=Z,320nm,16.5s						
GTA	**Gaotai**	**34.79**	**7**	*e*P	**P**	**08 39 25.5**	**-1.6**
GTA				pP	pP	08 39 30.2	-10
GTA				sP	sP	08 39 33.2	-12
GTA				pmax	pmax		
	comp=Z,5.0nm,0.8s						
NJ2	**Nanjing**	**35.21**	**37**	*e*P	**P**	**08 39 28.9**	**-1.7**
NJ2				pmax	pmax		
	comp=Z,11nm,0.6s						
KSH	**Kashi**	**38.64**	**336**	P	**P**	**08 40 00.0**	**+0.1**
KSH				*e*pP	sP	08 40 18.3	0.0
KSH				S	**S**	**08 45 48.4**	**-4.8**
KSH	**Kashi**	**38.64**	**336**	ScS	ScS	08 50 01.0	-5.4
KSH				pmax	pmax		
	comp=Z,76nm,5.2s						
KSH				LR	LR		
	comp=N,160nm,9.2s						
KSH				LR	LR		
	comp=E,69nm,5.4s						
HHC	**Hu-ho-hao-te**	**38.92**	**20**	*e*P	**P**	**08 40 03.4**	**+1.2**
HHC				S	**S**	**08 45 57.2**	**-0.2**
HHC				pmax	pmax		
	comp=Z,24nm,1.0s						
HHC				pmax	pmax		
	comp=Z,130nm,5.5s						
HHC				LR	LR		
	comp=N,190nm,13.6s						
HHC				LR	LR		
	comp=E,360nm,14.8s						
HHC				LR	LR		
	comp=Z,120nm,13.6s						
WMQ	**Urumqi**	**39.44**	**352**	*e*P	**P**	**08 40 06.9**	**+0.5**
WMQ				pmax	pmax		
	comp=Z,4.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,58nm,4.0s						
BJI	**Beijing**	**40.02**	**26**	P	**P**	**08 40 11.6**	**+0.4**
BJI				pmax	pmax		
	comp=Z,10.0nm,0.8s						
TKM2	**Tokmak 2**	**41.72**	**339**	*e*P	**P**	**08 40 26.6**	**+1.2**
TKM2				pmax	pmax		
	comp=Z,23nm,1.7s						
TKM2	**Tokmak 2**	**41.72**	**339**	*e*P	**P**	**08 40 26.6**	**+1.2**
	comp=Z,23nm,1.7s						
AAK	**Ala-Archa**	**41.88**	**337**	P	**P**	**08 40 28.5**	**+1.8**
	comp=Z,6.5nm,0.8s,baz=148,slow=6.6,SNR=20						
AAK	**Ala-Archa**	**41.88**	**337***c iP*		**P

MK31	Makanchi Array	43.30	347	eP	P	08 40 38.1	+0.1
MK31	Makanchi Array	43.30	347	eP	P	08 40 38.1	+0.1
MKAR	Makanchi Array	43.30	347	P	P	08 40 37.8	-0.2
	comp=Z,1.4nm,0.4s,baz=167,slow=7.4,SNR=24						
MKAR	Makanchi Array	43.30	347	eP	P	08 40 38.1	+0.1
MAKZ	Makanchi	43.38	347	eP	P	08 40 38.7	0.0
MAKZ				pmax	pmax		
	comp=Z,3.0nm,0.8s						
MAKZ	Makanchi	43.38	347	eP	P	08 40 38.7	0.0
	comp=Z,3.3nm,0.8s						
KKAR	Karatay Array	43.91	334	eP	P	08 40 43.9	+0.9
KKAR				pmax	pmax		
	comp=Z,1.0nm,0.4s						
KKAR	Karatay Array	43.91	334	eP	P	08 40 43.9	+0.9
	comp=Z,1.2nm,0.4s						
SONM	Songino Array	44.05	11	P	P	08 40 42.6	-1.4
	comp=Z,0.5nm,0.5s,baz=189,slow=8.3,SNR=3.7						
SONM				PcP	PcP	08 42 28.9	0.0
	comp=Z,1.0nm,0.7s,baz=190,slow=3.4,SNR=3.5						
KSAR	Wonju Array Be	44.32	38	P	P	08 40 45.8	-0.5
KSAR	Wonju Array Be	44.32	38	P	P	08 40 45.8	-0.5
KSRS	Korea Array	44.35	38	P	P	08 40 45.8	-0.7
	comp=Z,1.6nm,0.8s,baz=238,slow=8.7,SNR=5.6						
WRA	Warramunga Arr	45.83	124	P	P	08 40 57.1	-1.4
	comp=Z,1.1nm,0.9s,baz=302,slow=9.1,SNR=48						
WRA	Warramunga Arr	45.83	124	i P	P	08 40 57.0	-1.6
WRA				pmax	pmax		
	comp=Z,12nm,0.7s						
WRAB	Tennant Creek	45.84	124⇑	iP	P	08 40 57.2	-1.3
WRAB				pmax	pmax		
	comp=Z,49nm,0.9s						
WRAB	Tennant Creek	45.84	124	eP	P	08 40 57.3	-1.3
	comp=Z,11nm,0.7s						
WB2	Warramunga Arr	45.84	124	eP	P	08 40 57.5	-1.1
	comp=Z,16nm,0.8s						
GEYT	Alibeck	47.08	320	P	P	08 41 09.9	+1.8
	comp=Z,4.3nm,0.8s,baz=155,slow=8.2,SNR=7.1						
ASAR	Alice Springs	47.33	128	P	P	08 41 08.8	-1.5
	comp=Z,1.6nm,0.6s,baz=299,slow=8.0,SNR=23						
ASAR				pP	pP	08 41 22.2	-1.1
	comp=Z,1.9nm,0.6s,baz=305,slow=7.9,SNR=8.9						
TLY	Talaya	47.34	7⇑	eP	P	08 41 07.5	-2.4
TLY				pmax	pmax		
	comp=Z,1.0nm,0.5s						
KURBB	Kurchatov Arra	47.76	346	P	P	08 41 12.9	-0.2
	comp=Z,3.2nm,0.8s,baz=171,slow=7.2,SNR=33						
KURBB				pP	pP	08 41 29.1	+2.8
	comp=Z,1.1nm,0.6s,baz=170,slow=7.1,SNR=4.7						
KURBB				PcP	PcP	08 42 41.4	-0.2
	comp=Z,0.3nm,0.4s,baz=154,slow=3.2,SNR=7.0						
KURK	Kurchatov	47.83	346	eP	P	08 41 14.0	+0.4
KURK						08 42 41.4	
KURK				pmax	pmax		
	comp=Z,4.0nm,1.0s						
KURK	Kurchatov	47.83	346	eP	P	08 41 14.0	+0.4
	comp=Z,4.1nm,1.0s						
KURK				PcP	PcP	08 42 41.4	-0.5
ZALV	Zalesovo Beam	49.75	352	P	P	08 41 27.8	-0.5
	comp=Z,3.2nm,0.7s,baz=177,slow=8.7,SNR=6.5						
ZALV	Zalesovo Beam	49.75	352	i P	P	08 41 27.7	-0.6
ZALV				pmax	pmax		
	comp=Z,3.0nm,0.7s						
MJAR	Matsushiro Arr	50.71	45	LR	LR	09 04 22.8	
	comp=Z,39nm,19.9s,baz=215,slow=38						
USRK	Ussuriysk Ar.	51.01	34	P	P	08 41 36.7	-1.3
	comp=Z,2.2nm,0.7s,baz=243,slow=9.5,SNR=4.3						
USRK				LR	LR	09 03 24.0	
	comp=Z,50nm,19.9s,baz=145,slow=36						
BVAR	Borovoye Array	52.20	341	P	P	08 41 46.6	-0.2
	comp=Z,6.9nm,0.7s,baz=134,slow=8.5,SNR=37						
BRVK	Borovoye	52.26	341c	i P	P	08 41 47.2	0.0
BRVK				pmax	pmax		
	comp=Z,8.0nm,0.7s						
BRVK	Borovoye	52.26	341	eP	P	08 41 47.5	+0.2
	comp=Z,8.7nm,0.8s						
ZRNK	Zerenda	52.58	341	eP	P	08 41 49.8	+0.2
ZRNK				pmax	pmax		
	comp=Z,7.0nm,0.8s						
ZRNK	Zerenda	52.58	341	eP	P	08 41 49.8	+0.2
	comp=Z,6.9nm,0.8s						
ABKAR	Akbulak array	53.35	332	eP	P	08 41 55.9	+0.5
	comp=Z,3.9nm,0.8s						
PMG	Port Moresby	53.89	105	LR	LR	09 08 48.5	
	comp=Z,129nm,18.1s,baz=272,slow=40						
KLR	Kul'dur	54.19	29⇑	eP	P	08 42 00.9	-0.6
AKTO	Aktyubinsk	55.07	332	P	P	08 42 07.7	-0.2
	comp=Z,0.7nm,0.2s,baz=102,slow=7.1,SNR=3.6						
AKTO				pP	pP	08 42 21.7	+0.5
	comp=Z,1.3nm,0.6s,baz=121,slow=4.3,SNR=2.5						
GNI	Garni	57.21	316	P	P	08 42 24.0	+0.5
GNI				pmax	pmax		
	comp=Z,28nm,1.3s						
KBZ	Khabaz	59.95	319	P	P	08 42 42.5	+0.2
	comp=Z,2.5nm,0.9s,baz=160,slow=2.1,SNR=5.5						
MMAI	Mount Meron Ar	62.04	305	LR	LR	09 14 41.3	
	comp=Z,46nm,18.9s,baz=105,slow=40						
NRIK	Noril'sk	64.69	357	P	P	08 43 12.4	-1.2
	comp=Z,1.3nm,0.5s,baz=15,slow=4.1,SNR=3.9						
BRTR	Keskin Array B	65.09	312	P	P	08 43 16.3	-0.6
	comp=Z,1.8nm,0.7s,baz=125,slow=6.3,SNR=9.6						
BRTR				pP	pP	08 43 32.2	+1.7
	comp=Z,1.5nm,0.7s,baz=126,slow=6.7,SNR=7.1						
BRTR	Keskin Array B	65.09	312	i P	P	08 43 16.7	-0.2
BRTR				pmax	pmax		
	comp=Z,2.0nm,0.6s						
TIXI	Tiksi	70.13	11d	i P	P	08 43 46.1	-1.8
TIXI				pmax	pmax		
	comp=Z,4.0nm,0.9s						
TIXI	Tiksi	70.13	11	eP	P	08 43 46.2	-1.7
	comp=Z,3.9nm,0.9s						
AKASG	Malin Array Be	71.10	322	P	P	08 43 53.5	-0.7
	comp=Z,0.6nm,0.4s,baz=94,slow=4.4,SNR=8.2						
KIEV	Kiev	71.11	322⇓	eP	P	08 43 53.9	-0.3
KIEV				pmax	pmax		
	comp=Z,1.0nm,0.3s						
VRI	Vrincioaia	71.51	317	P	P	08 43 58.2	+1.4
VRI				pmax	pmax		
	comp=Z,68nm,1.2s						
MLR	Muntele Rosu	71.97	316	P	P	08 44 00.4	+0.6
	comp=Z,1.3nm,0.8s,baz=172,slow=6.2,SNR=6.1						
MLR	Muntele Rosu	71.97	316	eP	P	08 44 00.9	+1.1
MLR	Muntele Rosu	71.97	316	eP	P	08 44 00.9	+1.1
BUR08	Bucovina Ar. S	72.92	318	eP	P	08 44 06.6	+1.2
KOLS	Kolonicke sedl	75.08	319	eP	P	08 44 19.1	+1.3
KOLS	Kolonicke sedl	75.08	319	eP	P	08 44 19.1	+1.3
CRVS	Cervenica-Dubn	75.61	319	eP	P	08 44 22.9	+2.1
CRVS	Cervenica-Dubn	75.61	319	eP	P	08 44 22.9	+2.1
STHS	Stebnicka Huta	75.83	320	eP	P	08 44 24.2	+2.1
STHS				pmax	pmax		
	comp=Z,4.0nm,0.8s						
STHS	Stebnicka Huta	75.83	320	eP	P	08 44 24.2	+2.1
FINES	FINESS Array B	75.84	332	P	P	08 44 21.5	-0.3
	comp=Z,1.2nm,0.3s,baz=111,slow=5.2,SNR=15						
FINES	FINESS Array B	75.84	332	i P	P	08 44 21.7	-0.1
FINES				pmax	pmax		
	comp=Z,1.0nm,0.3s						
KECS	Kecovo	76.18	319	eP	P	08 44 24.6	+0.5
KECS				pmax	pmax		
	comp=Z,2.0nm,0.7s						
KECS	Kecovo	76.18	319	eP	P	08 44 24.6	+0.5
ARCES	ARCESS Array B	78.47	340	P	P	08 44 36.4	-0.1
	comp=Z,1.5nm,0.6s,baz=107,slow=6.5,SNR=14						
GEA0	GERESS Array S	80.69	319	eP	P	08 44 49.5	+0.5
GERES	GERESS Array B	80.69	319	P	P	08 44 49.9	+0.8
	comp=Z,1.6nm,0.7s,baz=85,slow=5.9,SNR=13						
GERES				pP	pP	08 45 05.2	+2.1
	comp=Z,0.8nm,0.4s,baz=297,slow=18,SNR=3.4						
HFS	Hagfors	81.55	330	P	P	08 44 52.9	-0.4
	comp=Z,0.7nm,0.3s,baz=132,slow=5.0,SNR=7.4						
NOA	NORSAR Array B	82.84	331	P	P	08 44 59.3	-0.7
	comp=Z,1.3nm,0.9s,baz=93,slow=5.5,SNR=2.8						
SPITS	Spitsbergen Ar	83.05	348	P	P	08 45 00.0	-0.8
	comp=Z,1.8nm,0.8s,baz=90,slow=8.6,SNR=8.4						
DAVOX	Davos/Dischmat	83.19	316	P	P	08 45 03.0	+0.6
	comp=Z,2.9nm,0.5s,baz=333,slow=2.3,SNR=3.9						
ILAR	Eielson Array	97.32	22	LR	LR	09 33 20.5	
	comp=Z,15nm,18.2s,baz=252,slow=37						
PDAR	Pinedale Array	127.75	23	PKP	PKPdf	08 51 41.1	-0.7
	comp=Z,0.7nm,1.0s,baz=81,slow=2.3,SNR=4.8						

IDC 12 09:06:41.1±8.0, 6°.37S×147°.37E, h51km±73km, mb3.5/2, mb1 3.7/4, mb1mx3.3/34, mbtmp3.7/4, ML3.1/1, Error ellipse: s-maj=67.5km s-min=50.8km az=116.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**3.03**	**184**	P	Pn	09 07 25.2	-1.4
	3.2nm,0.3s,baz=4.9,slow=7.1,SNR=6.1						
PMG				S	Sn	09 08 03.0	+1.4
	3.2nm,0.3s,baz=0.0,slow=20,SNR=2.9						
WRA	**Warramunga Arr**	**18.50**	**222**	P	P	09 10 52.6	-0.7
	0.1nm,0.3s,baz=48,slow=10,SNR=5.2						
ASAR	**Alice Springs**	**21.53**	**216**	P	P	09 11 25.2	-0.9
	0.7nm,0.4s,baz=50,slow=8.9,SNR=12						
FITZ	**Fitzroy Crossi**	**24.20**	**239**	P	P	09 11 53.0	0.0
	3.4nm,0.6s,baz=62,slow=9.0,SNR=8.1						
TORD	**Torodi Ar. Bea**	**145.54**	**284**	PKPbc	PKPbc	09 26 15.0	0.0
	0.2nm,0.3s,baz=97,slow=4.9,SNR=2.5						

NIED ***12*** *09:16:00, 37°.30N×142°.10E, h26km, Mw3.5 Best double couple: M0 1.85000×10^14 NP1:φs 329.00000°, δ32.00000°, λ-94.00000°. NP2:φs 154.00000°, δ58.00000°, λ-87.00000°.*
IDC ***12*** *09:16:28.7±2.5, 36°.70N×142°.37E, h0km, mb3.5/2, mb1 3.6/3, mb1mx3.2/59, mbtmp3.4/3, ML3.3/1, Error ellipse: s-maj=51.6km s-min=31.6km az=50.0*
JMA ***12*** *09:16:29.4±0.3, 37°.30N×142°.14E, h19km±5km, M3.8*
ISCJB ***12*** *09:16:30.2±1.5, 37°.32N±0°.08×142°.1E±0°.1, h21km, mb3.5/2, Error ellipse: s-maj=14.0km s-min=8.7km az=136.2*

ISC 12 09:16:28.3±1.6, 37°.36N±0°.09×142°.24E±0°.09, h21km, n13, σ1§39/16, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.09**	**271**	P	**Pn**	**09 16 48.0**	**-0.3**
JFK				eS	**Sb**	**09 17 01.7**	**-0.4**
JMM	**Marumori**	**1.25**	**294**	P	**Pb**	**09 16 50.9**	**-0.3**
JMM				S	**Sb**	**09 17 06.8**	**-0.1**
JIO	**Ouri**	**1.30**	**328**	P	**Pb**	**09 16 52.6**	**+0.6**
JFT	**Otama**	**1.52**	**277**	P	**Pb**	**09 16 55.5**	**-0.3**
JOU	**Okura**	**1.60**	**309**	P	**Pb**	**09 16 57.5**	**+0.3**
JMK	**Ichinoseki**	**1.78**	**334**	P	**Pb**	**09 17 00.5**	**+0.3**
JYK	**Kaneyama**	**2.15**	**317**	P	**Pb**	**09 17 05.3**	**-1.2**
JOM	**Ohasama**	**2.24**	**341**	P	**Pb**	**09 17 06.9**	**-1.1**
JAG	**Ashikaga**	**2.42**	**248**	P	**Pn**	**09 17 07.0**	**+0.4**
MJAR	**Matsushiro Arr**	**3.33**	**257**	Pn	**Pn**	**09 17 21.6**	**+2.5**
	3.1nm,0.3s,baz=85,slow=15,SNR=18						
MJAR				Sn	**Sb**	**09 18 04.2**	**-2.5**
	2.8nm,0.3s,baz=87,slow=28,SNR=5.4						
MAT	**Matsushiro**	**3.33**	**257**	P	**Pn**	**09 17 21.9**	**+2.8**
MAT				S	**Sn**	**09 17 58.9**	**+0.8**
MKAR	**Makanchi Array**	**44.51**	**302**	P	P	09 24 45.1	+6.9
	0.2nm,0.3s,baz=90,slow=9.2,SNR=2.7						
WRA	**Warramunga Arr**	**57.48**	**189**	P	**P**	**09 26 15.1**	**-0.7**
	0.3nm,0.5s,baz=6.8,slow=7.7,SNR=5.1						

JMA 12 09:18:30.0±0.2, 37°.29N×142°.24E, h3km±3km, M3.7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.09**	**274**	P	Pg	09 18 51.0	+0.1
JFK				S	Sb	09 19 05.9	-0.3
ONAJ	**Iwakimizuishiy**	**1.17**	**261**	P	Pg	09 18 52.1	-0.3
ONAJ				S	Sb	09 19 08.1	-0.3
JMM	**Marumori**	**1.28**	**297**	P	Pg	09 18 54.1	-0.5
JMM				S	Sn	09 19 12.3	-0.3
JIO	**Ouri**	**1.36**	**329**	P	Pn	09 18 55.6	-0.3
JHO	**Hitachi**	**1.50**	**244**	P	Pb	09 18 58.2	-0.3
JFT	**Otama**	**1.53**	**279**	P	Pn	09 18 58.5	+0.2
JFT				S	Sg	09 19 19.5	+0.3
JOU	**Okura**	**1.65**	**311**	P	Pn	09 19 00.4	+0.6
JOU				S	Sn	09 19 20.8	-0.7
MAT	**Matsushiro**	**3.32**	**258**	P	Pn	09 19 25.8	+3.0
MAT				S	Sn	09 20 05.3	+2.5

NIED ***12*** *09:21:00, 36°.50N×143°.90E, h5km, Mw4.0 Best double couple: M0 9.74000×10^14 NP1:φs 15.00000°, δ17.00000°, λ-108.00000°. NP2:φs 214.00000°, δ74.00000°, λ-85.00000°.*
IDC ***12*** *09:21:53.0±0.7, 36°.17N×144°.27E, h0km, mb3.7/13, mb1 3.9/17, mb1mx3.8/53, mbtmp3.7/17, ML3.4/3, MS2.7/4, Ms1 2.7/4, ms1mx2.5/37, Error ellipse: s-maj=18.7km s-min=16.2km az=152.0*
ISCJB ***12*** *09:21:56.5±0.5, 36°.25N±0°.05×144°.00E±0°.04, h33km, mb3.7/13, Error ellipse: s-maj=7.8km s-min=5.0km az=168.2*
JMA ***12*** *09:21:58.1±0.2, 36°.48N×143°.92E, h76km, M3.7*

ISC 12 09:21:58.3±0.7, 36°.28N±0°.06×144°.04E±0°.07, h35km, n38, σ1§25/36, mb3.8/13, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**2.64**	**258**	P	**Pn**	**09 22 38.9**	**+0.5**
CHOJ				eS	**Sn**	**09 23 10.4**	**+1.1**
ONAJ	**Iwakimizuishiy**	**2.73**	**288**	eS	**Sn**	**09 23 09.9**	**-1.7**
JFK	**Kawauchi**	**2.76**	**294**	P	**Pn**	**09 22 39.0**	**-1.1**
JFK				eS	**Sn**	**09 23 09.7**	**-2.6**
JHO	**Hitachi**	**2.82**	**278**	P	**Pn**	**09 22 40.0**	**-0.9**
BSO1	**Boso 1**	**2.98**	**238**	eS	**Sn**	**09 23 17.6**	**+0.8**
JFT	**Otama**	**3.22**	**294**	eS	**Sn**	**09 23 21.5**	**-1.9**
JMK	**Ichinoseki**	**3.48**	**321**	P	**Pn**	**09 22 48.7**	**-1.3**
JOD2	**Odawara 2**	**4.15**	**257**	P	**Pn**	**09 22 59.6**	**+0.4**
JOD2				eS	**Sn**	**09 23 46.4**	**-0.2**
JRY	**Ryogami san**	**4.17**	**268**	P	**Pn**	**09 22 59.1**	**-0.3**
JRY				eS	**Sn**	**09 23 45.1**	**-1.8**
JHJ2	**Mitsune**	**4.70**	**229**	P	**Pn**	**09 23 05.2**	**-1.5**
MJAR	**Matsushiro Arr**	**4.71**	**275**	Pn	**Pn**	**09 23 07.4**	**+0.6**
	1.6nm,0.3s,baz=90,slow=14,SNR=4.4						
MJAR				Sn	Sn	09 24 05.8	+5.5
	1.6nm,0.3s,baz=194,slow=25,SNR=4.6						
MJAR				LR	LR	09 25 31.4	
	comp=Z,46nm,18.4s,baz=200,slow=45						
MAT	**Matsushiro**	**4.71**	**275**	P	**Pn**	**09 23 07.6**	**+0.7**
MAT				S	**Sn**	**09 23 59.6**	**-0.8**
JHJ	**Hachijo jima 2**	**4.71**	**229**	Pn	**Pn**	**09 23 05.4**	**-1.5**
	8.4nm,0.3s,baz=131,slow=22,SNR=7.0						
JHJ				Sn	**Sn**	**09 23 56.7**	**-3.7**
	57nm,0.3s,baz=39,slow=19,SNR=5.3						
ASAJ	**Asahikawa**	**7.91**	**352**	LR	LR	09 27 23.7	
	comp=Z,51nm,19.1s,baz=324,slow=41						
JNU	**Nakatsue**	**11.28**	**258**	LR	LR	09 29 07.8	
	comp=Z,37nm,19.8s,baz=119,slow=38						
USRK	**Ussuriysk Ar.**	**12.13**	**314**	Pn	Pn	09 24 51.3	+2.8
	0.1nm,0.3s,baz=138,slow=11,SNR=4.0						
KSRS	**Korea Array**	**12.96**	**280**	Pn	P	09 25 05.4	-4.7
	0.1nm,0.3s,baz=84,slow=12,SNR=2.8						
KSRS				LR	LR	09 30 22.5	
	comp=Z,45nm,18.8s,baz=74,slow=39						
KLR	**Kul'dur**	**15.75**	**329**	Pn	**P**	**09 25 40.5**	**-0.4**
	0.1nm,0.3s,baz=132,slow=14,SNR=4.6						
H11N2	**WAKE ISLAND Hy**	**25.96**	**123**	T	T	09 54 31.8	
	baz=315,slow=75						
H11N1	**WAKE ISLAND Hy**	**25.96**	**123**	T	T	09 54 32.3	
	baz=315						
H11N3	**WAKE ISLAND Hy**	**25.98**	**123**	T	T	09 54 33.1	
	baz=315,slow=75						
H11S1	**WAKE ISLAND Hy**	**26.69**	**126**	T	T	09 55 28.4	
	baz=317						
H11S3	**WAKE ISLAND Hy**	**26.69**	**126**	T	T	09 55 29.0	
	baz=317						
H11S2	**WAKE ISLAND Hy**	**26.70**	**126**	T	T	09 55 35.8	
	baz=317						
SONM	**Songino Array**	**29.96**	**304**	P	**P**	**09 28 04.9**	**+1.6**
	0.3nm,0.5s,baz=99,slow=8.9,SNR=2.3						
ZALV	**Zalesovo Beam**	**43.98**	**313**	P	**P**	**09 30 02.9**	**+1.0**
	0.5nm,0.4s,baz=86,slow=6.4,SNR=3.6						
ZALV				PcP	**PcP**	**09 31 47.7**	**+0.6**
	0.9nm,0.6s,baz=106,slow=3.1,SNR=3.9						
MKAR	**Makanchi Array**	**46.30**	**303**	P	P	09 30 22.2	+1.7
	0.5nm,0.7s,baz=88,slow=9.0,SNR=4.8						
MKAR				PcP	**PcP**	**09 31 56.1**	**+0.7**
	0.2nm,0.5s,baz=84,slow=5.9,SNR=3.2						
KURBB	**Kurchatov Arra**	**48.12**	**309**	P	**P**	**09 30 35.8**	**+1.2**
	1.4nm,0.9s,baz=81,slow=8.4,SNR=10						
KURBB				PcP	**PcP**	**09 32 01.7**	**0.0**
	0.4nm,0.7s,baz=93,slow=3.9,SNR=5.5						
ILAR	**Eielson Array**	**49.01**	**32**	P	**P**	**09 30 40.3**	**-0.9**
	1.1nm,0.9s,baz=256,slow=6.2,SNR=11						
INK	**Inuvik**	**54.10**	**27**	P	**P**	**09 31 19.6**	**+0.5**
	0.8nm,0.6s,baz=303,slow=5.3,SNR=7.2						
WRA	**Warramunga Arr**	**56.66**	**191**	P	**P**	**09 31 37.6**	**-0.5**
	1.7nm,0.7s,baz=11,slow=7.5,SNR=14						
ASAR	**Alice Springs**	**60.39**	**191**	P	**P**	**09 32 03.9**	**-0.2**
	1.2nm,0.9s,baz=14,slow=5.1,SNR=6.2						
YKA	**Yellowknife Ar**	**63.39**	**31**	P	**P**	**09 32 23.3**	**-0.5**
	0.3nm,0.8s,baz=306,slow=6.1,SNR=5.3						
NVAR	**Mina Array Bea**	**73.73**	**54**	P	**P**	**09 33 29.2**	**+0.2**
	0.8nm,0.8s,baz=286,slow=6.4,SNR=8.1						
NB2	**NORSAR Subarra**	**75.68**	**338**	P	**P**	**09 33 40.4**	**+0.7**
	comp=Z,0.6nm,0.8s,baz=38,slow=5.9						
NOA	**NORSAR Array B**	**75.68**	**338**	P	**P**	**09 33 40.5**	**+0.8**
	comp=Z,1.0nm,0.8s,baz=38,slow=5.9,SNR=3.9						
PDAR	**Pinedale Array**	**76.67**	**47**	P	**P**	**09 33 45.8**	**-0.1**
	comp=Z,0.2nm,0.7s,baz=308,slow=3.0,SNR=2.9						
TXAR	**Lajitas Array**	**88.88**	**54**	P	**P**	**09 34 49.0**	**-0.3**
	comp=Z,0.3nm,0.6s,baz=241,slow=4.1,SNR=3.5						

RSNC 12 09:24:16.9±0.4, 6°.78N×73°.06W, h147km±6km, ML1.5, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BARC	**Barichara**	**0.22**	**213**	eP	Pn	09 24 36.5	-0.7
BARC				i		09 24 54.8	
	comp=Z,9.4nm,0.4s						
BTLC	**Betulia, Santa**	**0.25**	**304**	eP	Pn	09 24 36.8	-0.4
BTLC	**Betulia, Santa**	**0.25**	**304**	eP	Pn	09 24 36.6	-0.5
PAMC	**Pamplona, Colo**	**0.66**	**33**	eP	Pn	09 24 39.1	-0.3
PAMC				eS	Sn	09 24 56.3	-0.2
PAMC	**Pamplona, Colo**	**0.66**	**33**	eP	Pn	09 24 39.3	-0.1
PAMC				eS	Sn	09 24 56.4	-0.1
BRRC	**Barranca, Sant**	**0.72**	**297**	eP	Pn	09 24 38.6	-0.6
BRRC				i		09 24 40.3	
	comp=Z,7.1nm,0.1s						
BRRC				eS	Sn	09 24 55.7	-0.4
BRRC	**Barranca, Sant**	**0.72**	**297**	eP	Pn	09 24 38.5	-0.7
BRRC				eS	Sn	09 24 55.4	-0.7
RUSC	**La Rusia**	**0.88**	**181**	eP	Pn	09 24 40.6	-0.3
RUSC				eS	Sn	09 24 59.0	-0.2
RUSC				i		09 25 00.7	
	comp=Z,3.0nm,0.5s						
RUSC	**La Rusia**	**0.88**	**181**	eP	Pn	09 24 40.9	-0.1
RUSC				eS	Sn	09 24 59.0	-0.3
RUSC				i		09 25 00.7	
	comp=Z,2.8nm,0.4s						
GRMC	**Gramalote, San**	**0.96**	**15**	eP	Pn	09 24 42.1	+0.9
GRMC				eS	Sn	09 25 01.6	+1.7
GRMC				i		09 25 03.0	
	comp=Z,4.6nm,0.5s						
GRMC	**Gramalote, San**	**0.96**	**15**	eP	Pn	09 24 42.3	+1.0
GRMC				eS	Sn	09 25 01.7	+1.9
GRMC				i		09 25 02.9	
	comp=Z,4.4nm,0.2s						
OCAC	**Ocana**	**1.47**	**350**	eP	Pn	09 24 45.4	-0.7
OCAC				i		09 25 12.5	
	comp=Z,6.3nm,1.0s						

GUC 12 09:28:30.1±0.8, 35°.50S×73°.15W, h35km±11km, ML3.9, 4D, Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
COCH	**Cobquecura**	**0.70**	**155**	⇓iP	Pn	09 28 43.1	-0.3
COCH				i S	Sn	09 28 53.1	+0.1
COCH				IAML		09 28 54.0	
	comp=E,7μm,0.7s						
TALC	**Talca**	**1.24**	**86**	⇓iP	Pn	09 28 51.8	+0.8
TALC				i S	Sb	09 29 08.2	-0.6
CCSP	**San Pedro de C**	**1.34**	**179**	eP	Pn	09 28 53.1	+0.7
CCSP				IAML		09 29 16.6	
	comp=N,2μm,0.3s						
CCHI	**Chillan**	**1.41**	**142**	eP	Pn	09 28 54.5	+1.3
CCHI				i S	Sb	09 29 13.0	-0.4
CCHI				IAML		09 29 18.1	
	comp=N,3μm,0.6s						
CLCH	**Cerro Calan**	**3.01**	**47**	⇓iP	Pn	09 29 17.5	+2.1
CLCH				i S	Sn	09 29 51.2	+1.0
CLCH				IAML		09 30 12.6	
	comp=N,1μm,0.8s						
PEL	**Peldehue**	**3.11**	**42**	⇓iP	Pn	09 29 18.1	+1.3
PEL				i S	Sn	09 29 54.1	+1.4
PEL				IAML		09 30 12.9	
	comp=N,365nm,0.4s						

NIED ***12*** *09:46:00, 39°.70N×143°.60E, h11km, Mw4.7 Best double couple: M0 1.23000×10^16 NP1:φs 174.00000°, δ18.00000°, λ47.00000°. NP2:φs 39.00000°, δ77.00000°, λ103.00000°.*
JMA ***12*** *09:46:30.6±0.2, 39°.71N×143°.57E, h11km, M4.6*
IDC ***12*** *09:46:30.2±0.6, 39°.58N×143°.42E, h0km, mb4.3/27, mb1 4.5/30, mb1mx4.4/41, mbtmp4.3/30, ML4.2/3, MS4.0/33, Ms1 4.0/33, ms1mx3.8/54, Error ellipse: s-maj=15.7km s-min=13.5km az=116.0*
ISCJB ***12*** *09:46:33.0±0.9, 39°.76N±0°.03×143°.40E±0°.04, h23km±6km, mb4.6/81, MS4.1/39, Error ellipse: s-maj=6.0km s-min=3.4km az=40.9*
NEIC ***12*** *09:46:36.3±1.7, 39°.70N×143°.34E, h34km±12km, mb4.7/30, Error ellipse: s-maj=6.8km s-min=5.2km az=129.0*
MOS ***12*** *09:46:36.9±0.9, 40°.03N×143°.29E, h40km, mb4.8/45, Error ellipse: s-maj=9.3km s-min=4.8km az=103.1*

ISC 12 09:46:34.9±0.6, 39°.81N±0°.05×143°.38E±0°.04, h23km±3km, h23km:pP-P, n223, σ1§63/235, mb4.7/81, MS4.1/39, 12C-3D, Off east coast of Honshu

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

MAT				S	Sn	09 48 50.0	-1.1
KUR	**Kuril'sk**	**6.35**	**30**	*i* P	**Pn**	**09 48 07.1**	**+0.1**
KUR				*i* S	**Sn**	**09 49 15.3**	**-3.4**
KUR				pmax	pmax		
	comp=N,31nm,0.4s						
KUR				pmax	pmax		
	comp=Z,140nm,0.4s						
INU	**Inuyama**	**6.74**	**231**	*e*Pn	**Pn**	**09 48 11.2**	**-1.1**
YSS	**Yuzh-Sakhalins**	**7.15**	**357**	*e*P	**Pn**	**09 48 19.9**	**+1.9**
YSS				pmax	pmax		
	comp=Z,30nm,0.7s						
YSS				MLR	MLR		
	comp=Z,1μm,14.0s						
YSS				MLR	MLR		
	comp=N,1μm,13.0s						
JHJ	**Hachijo jima 2**	**7.28**	**205**	Pn	Pn	09 48 13.8	-6.0
	comp=N,22nm,0.3s,baz=132,slow=22,SNR=5.1						
VLA	**Vladivostok**	**9.24**	**295** ⇓	*i* P	Pn	09 48 52.3	+5.6
VLA				pmax	pmax		
	comp=Z,26nm,0.6s						
UGL	**Uglegorsk**	**9.31**	**355**	*e*P	**Pn**	**09 48 47.0**	**-0.6**
UGL				pmax	pmax		
	comp=Z,57nm,0.9s						
UGL				MLR	MLR		
	comp=Z,1μm,13.0s						
UGL				MLR	MLR		
	comp=N,1μm,14.0s						
UGL				MLR	MLR		
	comp=E,700nm,13.0s						
USRK	**Ussuriysk Ar.**	**9.55**	**301**	Pn	**Pn**	**09 48 53.3**	**+2.5**
	comp=E,1.1nm,0.3s,baz=96,slow=13,SNR=28						
USRK				LR	LR	09 52 37.1	
	comp=E,1μm,18.1s,baz=118,slow=38						
HABR	**Khabarovsk**	**10.52**	**328**	*e*P	**Pn**	**09 49 03.9**	**-0.2**
HABR				*e*S	**Sn**	**09 51 02.9**	**+1.7**
HABR				pmax	pmax		
	comp=E,16nm,1.7s						
HABR				pmax	pmax		
	comp=N,14nm,1.7s						
HABR				pmax	pmax		
	comp=Z,31nm,1.7s						
HABR				MLR	MLR		
	comp=Z,566nm,14.0s						
TYV	**Tymovskoe**	**11.06**	**358**	*e*P	**Pn**	**09 49 12.0**	**+0.4**
TYV				pmax	pmax		
	comp=Z,22nm,1.0s						
TYV				MLR	MLR		
	comp=N,2μm,16.0s						
TYV				MLR	MLR		
	comp=Z,2μm,16.0s						
MDJ	**Mudanjiang**	**11.29**	**300**	P	**Pn**	**09 49 15.8**	**+1.0**
MDJ				pmax	pmax		
	comp=Z,8.0nm,0.8s						
MDJ				pmax	pmax		
	comp=Z,190nm,8.9s						
MDJ	**Mudanjiang**	**11.29**	**300**	*e*Pn	**Pn**	**09 49 16.4**	**+1.6**
	comp=Z,24nm,1.0s						
JNU	**Nakatsue**	**12.07**	**240**	LR	LR	09 54 21.4	
	comp=Z,1μm,18.8s,baz=94,slow=39						
KSRS	**Korea Array**	**12.32**	**264**	Pn	**Pn**	**09 49 31.9**	**+3.1**
	comp=Z,0.4nm,0.3s,baz=88,slow=14,SNR=10.0						
KSRS				LR	LR	09 53 56.6	
	comp=Z,756nm,18.4s,baz=76,slow=36						
KSAR	**Wonju Array Be**	**12.35**	**264**	P	**Pn**	**09 49 31.9**	**+2.6**
KSAR	**Wonju Array Be**	**12.35**	**264**	Pn	**Pn**	**09 49 31.9**	**+2.6**
KLR	**Kul'dur**	**12.54**	**322**	Pn	**Pn**	**09 49 32.9**	**+1.1**
	comp=Z,0.2nm,0.3s,baz=136,slow=14,SNR=13						
KLR				LR	LR	09 54 37.5	
	comp=Z,733nm,20.4s,baz=120,slow=38						
NKL	**Nikolayevsk**	**13.47**	**353**	*e*P	**Pn**	**09 49 45.0**	**+0.6**
NKL				pmax	pmax		
	comp=Z,22nm,1.0s						
NKL				MLR	MLR		
	comp=N,500nm,14.0s						
NKL				MLR	MLR		
	comp=E,400nm,14.0s						
NKL				MLR	MLR		
	comp=Z,1μm,14.0s						
PETK	**Petropavlovsk-**	**16.51**	**32**	LR	LR	09 58 01.8	
	comp=Z,205nm,18.2s,baz=216,slow=41						
PET	**Petropavlovsk**	**16.85**	**33** ⇑	*e*P	**Pn**	**09 50 25.3**	**-3.7**
PET				pmax	pmax		
	comp=Z,17nm,1.2s						
HIA	**Hailar**	**19.25**	**307**	*e*P	**P**	**09 50 56.7**	**-0.9**
HIA				pmax	pmax		
	comp=Z,12nm,0.7s						
HIA	**Hailar**	**19.25**	**307**	*e*P	**P**	**09 50 56.7**	**-0.9**
	comp=Z,12nm,0.7s						
MA2	**Magadan**	**20.33**	**11**	P	**P**	**09 51 10.0**	**+0.9**
	comp=Z,29nm,0.8s,baz=214,slow=10,SNR=10						
MA2				LR	LR	09 59 51.8	
	comp=Z,220nm,19.0s,baz=218,slow=39						
BJI	**Beijing**	**20.84**	**279**	P	**P**	**09 51 12.6**	**-2.3**
BJI				S	**S**	**09 55 03.9**	**-2.3**
BJI				pmax	pmax		
	comp=Z,12nm,1.1s						
BJI				LR	LR		
	comp=E,810nm,15.0s						
BJI				LR	LR		
	comp=N,390nm,13.0s						
BJI				LR	LR		
	comp=Z,500nm,16.5s						
CLNS	**Chul'man**	**20.89**	**331**	*e*P	**P**	**09 51 15.5**	**+0.2**
CLNS				pmax	pmax		
	comp=Z,7.0nm,1.4s						
CLNS				pmax	pmax		
	comp=N,11nm,1.2s						
CLNS				pmax	pmax		
	comp=E,15nm,1.1s						
NJ2	**Nanjing**	**21.27**	**256**	*e*P	**P**	**09 51 21.7**	**+2.1**
NJ2				pmax	pmax		
	comp=Z,14nm,0.7s						
YAK	**Yakutsk**	**23.76**	**344**	LR	LR	10 02 00.3	
	comp=Z,188nm,18.8s,baz=153,slow=39						
YAK	**Yakutsk**	**23.76**	**344**	*e*P	**P**	**09 51 44.3**	**-0.9**
YAK				*e**PP	**pP**	**09 51 53.0**	**+0.9**
YAK				*e*		09 52 25.1	
YAK				*e**SS	Sn	09 56 40.5	+19
YAK				pmax	pmax		
	comp=Z,19nm,0.9s						
YAK				pmax	pmax		
	comp=N,13nm,1.1s						
YAK				pmax	pmax		
	comp=E,5.0nm,1.1s						
SEY	**Seymchan**	**23.78**	**10**	P	**P**	**09 51 45.7**	**+0.3**
	comp=E,25nm,1.0s,baz=192,slow=8.5,SNR=22						
HHC	**Hu-ho-hao-te**	**24.21**	**283**	*e*P	**P**	**09 51 50.1**	**+0.3**
HHC				S	**S**	**09 56 02.7**	**-4.3**
HHC				pmax	pmax		
	comp=Z,22nm,0.9s						
HHC				pmax	pmax		
	comp=Z,150nm,4.8s						
HHC				LR	LR		
	comp=N,320nm,12.1s						
HHC				LR	LR		
	comp=E,530nm,12.9s						
HHC				LR	LR		
	comp=Z,430nm,12.6s						
WHN	**Wuhan**	**25.38**	**258** ⇑	*i* P	**P**	**09 51 59.5**	**-0.8**
WHN				pmax	pmax		
	comp=Z,120nm,1.0s						
BOD	**Bodaibo**	**26.11**	**323**	*e*P	**P**	**09 52 06.9**	**+0.1**
BOD				pmax	pmax		
	comp=Z,25nm,1.1s						
ULN	**Ulaanbaatar**	**27.21**	**299**	*c i* P	**P**	**09 52 17.2**	**+0.2**
ULN				pmax	pmax		
	comp=Z,21nm,1.3s						
ULN	**Ulaanbaatar**	**27.21**	**299**	*e*P	**P**	**09 52 17.4**	**+0.4**
	comp=Z,25nm,1.3s						
SONM	**Songino Array**	**27.65**	**299**	P	**P**	**09 52 21.6**	**+0.7**
	comp=Z,7.1nm,0.8s,baz=96,slow=8.3,SNR=21						
SONM				LR	LR	10 04 01.8	
	comp=Z,717nm,19.3s,baz=105,slow=38						
XAN	**Xi'an**	**28.03**	**269**	P	**P**	**09 52 24.0**	**-0.3**
XAN				sP	sP	09 52 37.5	+3.4
XAN				PP	**PnPn**	**09 53 09.9**	**-1.9**
XAN				S	**S**	**09 57 02.6**	**-4.9**
XAN				SS	**SnSn**	**09 58 22.4**	**-0.4**
XAN				pmax	pmax		
	comp=Z,12nm,1.0s						
XAN				pmax	pmax		
	comp=Z,110nm,14.2s						
XAN				LR	LR		
	comp=N,190nm,16.8s						
XAN				LR	LR		
	comp=E,670nm,15.1s						
XAN				LR	LR		
	comp=Z,650nm,14.6s						
H11N2	**WAKE ISLAND Hy**	**28.43**	**128**	T	T	10 22 22.1	
	baz=321						
H11N1	**WAKE ISLAND Hy**	**28.44**	**128**	T	T	10 22 22.8	
	baz=321						
H11N3	**WAKE ISLAND Hy**	**28.45**	**128**	T	T	10 22 24.0	
	baz=321						
ENH	**Enshi**	**29.19**	**262**	*e*P	**P**	**09 52 33.6**	**-1.0**
	comp=Z,13nm,0.5s						
H11S1	**WAKE ISLAND Hy**	**29.26**	**130**	T	T	10 23 20.7	
	baz=316,slow=76,SNR=97						
H11S3	**WAKE ISLAND Hy**	**29.26**	**130**	T	T	10 23 19.4	
	baz=316,slow=76,SNR=61						
H11S2	**WAKE ISLAND Hy**	**29.27**	**130**	T	T	10 23 21.7	
	baz=316,slow=76,SNR=58						
TLY	**Talaya**	**29.80**	**307**	*e*P	**P**	**09 52 41.3**	**+1.5**
TLY				*e*		09 53 48.6	
TLY				*e*SS	SS	09 59 25.4	-16
TLY				pmax	pmax		
	comp=Z,10.0nm,1.2s						
TLY				MLR	MLR		
	comp=Z,308nm,15.0s						
ZAK	**Zakamensk**	**29.88**	**304**	*e*P	**P**	**09 52 40.8**	**+0.2**
ZAK				pmax	pmax		
	comp=Z,9.0nm,1.4s						
BILL	**Bilibino**	**30.93**	**17** ⇑	*i* P	**P**	**09 52 49.4**	**-0.1**
BILL				*i*		09 53 02.2	
BILL				pmax	pmax		
	comp=Z,6.0nm,1.2s						
BILL				MLR	MLR		
	comp=Z,289nm,19.0s						
LZH	**Lanzhou**	**31.23**	**276**	*e*P	**P**	**09 52 53.0**	**+0.3**
LZH				pP	sP	09 53 04.0	+1.4
LZH				sP	pP	09 53 08.1	+8.4
LZH				PP	**PnPn**	**09 53 55.6**	**+0.8**
LZH				*e*S	**S**	**09 57 55.0**	**-2.9**
LZH				sS	sS	09 58 11.5	+2.2
LZH				*e*SS	**SnSn**	**09 59 40.2**	**-0.6**
LZH				pmax	pmax		
	comp=Z,27nm,1.0s						
LZH				pmax	pmax		
	comp=Z,110nm,5.4s						
LZH				LR	LR		
	comp=N,450nm,12.7s						
LZH				LR	LR		
	comp=E,780nm,13.0s						
LZH				LR	LR		
	comp=Z,980nm,15.4s						
TIXI	**Tiksi**	**32.75**	**352**	P	**P**	**09 53 05.3**	**-0.2**
	comp=Z,0.8nm,0.3s,baz=167,slow=7.6,SNR=4.1						
TIXI				LR	LR	10 08 17.9	
	comp=Z,268nm,19.1s,baz=158,slow=40						
TIXI	**Tiksi**	**32.75**	**352**	*e*P	**P**	**09 53 06.5**	**+1.1**
TIXI				pmax	pmax		
	comp=Z,1.0nm,0.8s						
TIXI	**Tiksi**	**32.75**	**352**	P	**P**	**09 53 05.3**	**-0.2**
TIXI				*e*P	**pP**	**09 53 05.5**	**-6.9**
GYA	**Guiyang**	**33.27**	**258** ⇑	*i* P	**P**	**09 53 09.1**	**-1.6**
GYA				pP	sP	09 53 22.0	+1.5
GYA				sP	pP	09 53 26.2	+8.5
GYA				PP	**PP**	**09 54 23.6**	**-2.4**
GYA				S	**S**	**09 58 26.4**	**-3.4**
GYA				sS	sS	09 58 45.0	+3.7
GYA				ScP	**ScP**	**09 59 33.6**	**-1.9**
GYA	**Guiyang**	**33.27**	**258**	ScS	ScS	10 03 33.2	-3.2
GYA				pmax	pmax		
	comp=Z,20nm,0.8s						
GYA				pmax	pmax		
	comp=Z,120nm,5.0s						
CD2	**Chengdu**	**33.29**	**267**	P	**P**	**09 53 09.7**	**-1.1**
CD2				pmax	pmax		
	comp=Z,7.0nm,0.7s						
GTA	**Gaotai**	**33.32**	**284**	*e*P	**P**	**09 53 11.6**	**+0.6**
GTA				pP	sP	09 53 21.2	+0.3
GTA				sP	pP	09 53 25.3	+7.3
GTA				S	**S**	**09 58 28.3**	**-2.1**
GTA				sS	sS	09 58 43.9	+2.0
GTA				SS	**SnSn**	**10 00 31.5**	**-0.1**
GTA				pmax	pmax		
	comp=Z,12nm,0.8s						
GTA				pmax	pmax		
	comp=Z,110nm,5.2s						
GTA				LR	LR		
	comp=N,220nm,15.0s						
GTA				LR	LR		
	comp=E,890nm,16.9s						
GTA				LR	LR		
	comp=Z,970nm,16.4s						
QIZ	**Qiongzhong**	**35.51**	**244**	P	**P**	**09 53 30.5**	**+0.5**
QIZ				S	**S**	**09 59 04.0**	**-0.1**
QIZ				LR	LR		
	comp=N,110nm,14.4s						
QIZ				LR	LR		
	comp=E,130nm,13.8s						
KRAR	**Krasnoyarsk**	**36.61**	**313**	*c i* P	**P**	**09 53 38.2**	**-0.8**
KRAR				pmax	pmax		
	comp=Z,25nm,0.4s						
KMI	**Kunming**	**36.96**	**259**	P	**P**	**09 53 41.6**	**-1.0**
KMI				pP	sP	09 53 51.9	-0.6
KMI				sP	pP	09 53 57.6	+8.0
KMI				S	**S**	**09 59 26.5**	**-0.2**
KMI				sS	ScP	09 59 44.1	-4.9
KMI				SS	**SnSn**	**10 01 58.4**	**-1.8**
KMI				pmax	pmax		
	comp=Z,13nm,1.3s						
KMI				pmax	pmax		
	comp=Z,91nm,5.2s						
KMI				LR	LR		
	comp=N,200nm,14.0s						
KMI				LR	LR		
	comp=E,380nm,14.7s						
KMI				LR	LR		
	comp=Z,400nm,15.3s						
WMQ	**Urumqi**	**41.04**	**294**	P	**P**	**09 54 17.5**	**+1.1**
WMQ				pP	sP	09 54 25.9	-0.4
WMQ				sP	pP	09 54 32.6	+9.2
WMQ				pmax	pmax		
	comp=Z,12nm,0.8s						
WMQ				pmax	pmax		
	comp=Z,69nm,3.6s						
WMQ				LR	LR		
	comp=N,180nm,11.6s						
WMQ				LR	LR		
	comp=E,100nm,11.6s						
WMQ				LR	LR		
	comp=Z,47nm,18.0s						
ZALV	**Zalesovo Beam**	**41.25**	**310**	P	**P**	**09 54 18.3**	**+0.4**
	comp=Z,1.9nm,0.4s,baz=89,slow=8.2,SNR=10						
ZALV				LR	LR	10 12 16.5	
	comp=Z,206nm,19.4s,baz=66,slow=37						
ZALV	**Zalesovo Beam**	**41.25**	**310**	P	**P**	**09 54 18.3**	**+0.4**
ZALV				pmax	pmax		
	comp=Z,6.0nm,0.5s						
ZALV				MLR	MLR		
	comp=Z,206nm,19.4s						
NRIK	**Noril'sk**	**41.43**	**334**	LR	LR	10 12 38.1	
	comp=Z,246nm,18.8s,baz=104,slow=38						
CMAR	**Chiang Mai Arr**	**43.72**	**254**	P	**P**	**09 54 36.9**	**-1.5**
	comp=Z,0.8nm,0.3s,baz=53,slow=5.9,SNR=5.3						
CMAR				LR	LR	10 14 43.1	
	comp=Z,129nm,18.0s,baz=55,slow=39						
MK01	**Makanchi Array**	**44.01**	**300**	*e*P	**P**	**09 54 40.5**	**0.0**
MK31	**Makanchi Array**	**44.01**	**300**	*e*P	**P**	**09 54 40.8**	**+0.3**
MK31	**Makanchi Array**	**44.01**	**300**	*e*P	**P**	**09 54 40.8**	**+0.3**
MKAR	**Makanchi Array**	**44.01**	**300**	P	**P**	**09 54 40.3**	**-0.1**
	comp=Z,7.0nm,0.8s,baz=82,slow=9.9,SNR=45						
MKAR				LR	LR	10 13 59.4	
	comp=Z,318nm,18.9s,baz=80,slow=37						
MKAR	**Makanchi Array**	**44.01**	**300**	*i* P	**P**	**09 54 40.5**	**0.0**
MKAR				pmax	pmax		
	comp=Z,7.0nm,0.9s						
MKAR	**Makanchi Array**	**44.01**	**300**	*e*P	**P**	**09 54 40.8**	**+0.3**
MAKZ	**Makanchi**	**44.22**	**300**	*e*P	**P**	**09 54 42.3**	**+0.2**
MAKZ				pmax	pmax		
	comp=Z,12nm,1.0s						
MAKZ	**Makanchi**	**44.22**	**300**	*e*P	**P**	**09 54 42.3**	**+0.2**
	comp=Z,12nm,1.0s						
KURK	**Kurchatov**	**45.49**	**306**	P	**P**	**09 54 52.6**	**+0.5**
KURK				pmax	pmax		
	comp=Z,10.0nm,0.8s						
KURK	**Kurchatov**	**45.49**	**306**	*e*P	**P**	**09 54 51.5**	**-0.6**
	comp=Z,16nm,0.8s						
KURBB	**Kurchatov Arra**	**45.56**	**306**	P	**P**	**09 54 52.6**	**-0.1**
	comp=Z,10nm,0.8s,baz=80,slow=8.4,SNR=55						
IL1	**Eielson Array**	**46.33**	**34**	*e*P	**P**	**09 54 58.4**	**-0.1**
ILAR	**Eielson Array**	**46.33**	**34**	P	**P**	**09 54 58.4**	**-0.1**
	comp=Z,1.1nm,0.8s,baz=268,slow=6.5,SNR=16						
ILB	**Eielson Array**	**46.33**	**34**	*e*P	**P**	**09 54 59.4**	**+0.8**
TKM2	**Tokmak 2**	**49.71**	**297**	*e*P	**P**	**09 55 26.0**	**+0.7**
TKM2				pmax	pmax		
	comp=Z,15nm,0.8s						
TKM2	**Tokmak 2**	**49.71**	**297**	*e*P	**P**	**09 55 26.0**	**+0.7**
	comp=Z,15nm,0.8s						
BVAR	**Borovoye Array**	**49.89**	**311**	P	**P**	**09 55 26.7**	**+0.5**
	comp=Z,5.8nm,0.6s,baz=77,slow=8.1,SNR=20						
BRVK	**Borovoye**	**49.94**	**311**	*c e*P	**P**	**09 55 27.1**	**+0.5**
BRVK				pmax	pmax		
	comp=Z,8.0nm,0.9s						
BRVK	**Borovoye**	**49.94**	**311**	*e*P	**P**	**09 55 26.6**	**0.0**
	comp=Z,8.0nm,0.9s						
FRU	**Bishkek**	**50.42**	**297**	*e*P	P	09 55 37.0	+6.6
AAK	**Ala-Archa**	**50.57**	**297**	P	**P**	**09 55 31.8**	**0.0**
	comp=Z,1.9nm,0.4s,baz=80,slow=8.8,SNR=6.6						
AAK	**Ala-Archa**	**50.57**	**297**	*e*P	**P**	**09 55 32.0**	**+0.2**
	comp=Z,14nm,1.4s						
ZRNK	**Zerenda**	**50.71**	**311**	*e*P	**P**	**09 55 33.1**	**+0.6**
ZRNK				pmax	pmax		
	comp=Z,10.0nm,0.9s						
ZRNK	**Zerenda**	**50.71**	**311**	*e*P	**P**	**09 55 33.1**	**+0.6**
	comp=Z,10nm,0.9s						
KSH	**Kashi**	**50.73**	**293**	P	**P**	**09 55 37.2**	**+4.3**
KSH				*e*pP	sP	09 55 47.3	+4.3
KSH				*e*sP	pP	09 55 50.9	+11
KSH				PcS	**PcS**	**10 00 50.8**	**+3.4**
KSH				S	**S**	**10 02 50.5**	**+3.5**
KSH				ScS	**ScS**	**10 05 22.6**	**+0.2**
KSH				pmax	pmax		
	comp=Z,130nm,5.1s						
KSH				LR	LR		
	comp=N,240nm,13.2s						
KSH				LR	LR		
	comp=E,470nm,17.9s						
KSH				LR	LR		
	comp=Z,490nm,14.5s						
EKS2	**Erkin-Say**	**51.05**	**297**	*e*P	**P**	**09 55 35.6**	**+0.2**
EKS2				pmax	pmax		
	comp=Z,5.0nm,0.7s						
EKS2	**Erkin-Say**	**51.05**	**297**	*e*P	**P**	**09 55 35.6**	**+0.2**
	comp=Z,4.7nm,0.7s						
INK	**Inuvik**	**51.21**	**28**	P	**P**	**09 55 36.7**	**+0.7**
	comp=Z,1.5nm,0.7s,baz=279,slow=5.7,SNR=8.1						
INK	**Inuvik**	**51.21**	**28**	*e*P	**P**	**09 55 36.9**	**+0.9**
INK				pmax	pmax		
	comp=Z,5.0nm,1.2s						
INK	**Inuvik**	**51.21**	**28**	*e*P	**P**	**09 55 36.9**	**+0.9**
	comp=Z,4.7nm,1.2s						
HNR	**Honiara**	**51.34**	**159**	LR	LR	10 15 18.3	
	comp=Z,78nm,20.8s,baz=308,slow=34						
KKAR	**Karatay Array**	**53.10**	**299**	*e*P	**P**	**09 55 50.6**	**+0.1**
KKAR	**Karatay Array**	**53.10**	**299**	*e*P	**P**	**09 55 50.6**	**+0.1**
ABKAR	**Akbulak array**	**57.35**	**309**	*e*P	**P**	**09 56 20.8**	**-0.2**
	comp=Z,5.9nm,0.6s						
SPITS	**Spitsbergen Ar**	**58.10**	**349**	P	**P**	**09 56 26.4**	**+0.5**
	comp=Z,6.2nm,1.0s,baz=32,slow=8.5,SNR=2.6						
RES	**Resolute Bay**	**59.52**	**15**	*e*P	**P**	**09 56 36.2**	**+0.5**
RES				pmax	pmax		
	comp=Z,4.0nm,0.7s						
RES	**Resolute Bay**	**59.52**	**15**	*e*P	**P**	**09 56 36.2**	**+0.5**
	comp=Z,4.3nm,0.7s						
WRAB	**Tennant Creek**	**60.03**	**190**	*c e*P	**P**	**09 56 36.5**	**-3.3**
WRAB				pmax	pmax		
	comp=Z,21nm,1.1s						
WB2	**Warramunga Arr**	**60.04**	**190**	*e*P	**P**	**09 56 37.5**	**-2.4**
	comp=Z,9.8nm,0.9s						
WRA	**Warramunga Arr**	**60.04**	**190**	P	**P**	**09 56 36.6**	**-3.2**
	comp=Z,5.0nm,0.8s,baz=8.7,slow=7.2,SNR=28						
WRA	**Warramunga Arr**	**60.04**	**190**	*i* P	**P**	**09 56 37.0**	**-2.9**
WRA				pmax	pmax		
	comp=Z,5.0nm,0.8s						
YKA	**Yellowknife Ar**	**60.63**	**31**	P	**P**	**09 56 43.2**	**-0.3**
	comp=Z,0.3nm,0.6s,baz=298,slow=7.2,SNR=6.4						
ARCES	**ARCESS Array B**	**61.95**	**339**	P	**P**	**09 56 52.7**	**+0.4**
	comp=Z,6.6nm,1.2s,baz=57,slow=8.8,SNR=6.2						
ARCES				LR	LR	10 27 04.2	
	comp=Z,128nm,21.1s,baz=42,slow=39						
KLMR	**Klimovskoe**	**62.24**	**328**	*e*P	**P**	**09 56 52.1**	**-2.3**
KLMR				*e*		09 57 31.0	
KLMR				pmax	pmax		
	comp=Z,10.0nm,1.3s						
DAG	**Danmarks Havn**	**63.14**	**355**	*i* P	**P**	**09 56 59.9**	**-0.2**
	comp=Z,4.3nm,0.9s						
DAG	**Danmarks Havn**	**63.14**	**355**	*i* P	**P**	**09 56 59.9**	**-0.2**
DAG				pmax	pmax		
	comp=Z,4.0nm,0.9s						
AS01	**Alice Springs**	**63.76**	**190**	*e*P	**P**	**09 57 02.5**	**-2.4**
ASAR	**Alice Springs**	**63.77**	**190**	P	**P**	**09 57 02.9**	**-2.1**
	comp=Z,2.0nm,0.7s,baz=9.8,slow=6.9,SNR=18						
GEYT	**Alibeck**	**63.86**	**299**	P	**P**	**09 57 05.0**	**-0.6**
	comp=Z,2.0nm,0.5s,baz=20,slow=4.6,SNR=5.2						
GEYT				LR	LR	10 26 50.8	
	comp=Z,120nm,20.2s,baz=170,slow=38						
DZM	**Mont Dzumac**	**65.22**	**156**	LR	LR	10 24 32.2	
	comp=Z,80nm,19.0s,baz=5.0,slow=35						
OBN	**Obninsk**	**66.80**	**323**	LR	LR	10 28 49.1	
	comp=Z,44nm,18.9s,baz=86,slow=38						
OBN	**Obninsk**	**66.80**	**323** ⇓	*e*P	**P**	**09 57 23.8**	**-0.4**
OBN				*e*		09 57 53.3	
OBN				pmax	pmax		
	comp=Z,8.0nm,0.5s						
OBN				MLR	MLR		
	comp=Z,377nm,16.0s						
FIA1	**FINESS Array S**	**67.08**	**332**	*e*P	**P**	**09 57 25.9**	**0.0**
FINES	**FINESS Array B**	**67.08**	**332**	P	**P**	**09 57 26.0**	**+0.1**
	comp=Z,6.4nm,0.8s,baz=55,slow=7.2,SNR=16						
FINES				LR	LR	10 29 50.8	
	comp=Z,387nm,18.5s,baz=18,slow=39						
LPSR	**Galich'ya Gora**	**67.16**	**320**	*e*P	**P**	**09 57 26.7**	**+0.1**
LPSR				pmax	pmax		
	comp=Z,8.0nm,0.9s						
VSR	**Storozhevoye**	**67.86**	**319**	*e*P	**P**	**09 57 30.3**	**-0.8**
VSR				pmax	pmax		
	comp=Z,10.0nm,1.5s						
SUMG	**Summit**	**67.90**	**1**	*i* P	**P**	**09 57 32.2**	**+0.7**
	comp=Z,4.4nm,0.7s						
SUMG	**Summit**	**67.90**	**1**	*e*P	**P**	**09 57 32.6**	**+1.1**
SUMG				pmax	pmax		
	comp=Z,6.0nm,0.9s						
SUMG	**Summit**	**67.90**	**1**	*e*P	**P**	**09 57 32.6**	**+1.1**
	comp=Z,6.5nm,0.9s						
ZEI	**Tsey**	**70.23**	**310**	*e*P	**P**	**09 57 43.4**	**-2.8**
ZEI				pmax	pmax		
	comp=Z,14nm,0.9s						
KVAR	**Kislovodsk Arr**	**70.25**	**311**	LR	LR	10 33 51.7	
	comp=Z,318nm,18.2s,slow=40						
KIV	**Kislovodsk**	**70.25**	**311**	*e*P	**P**	**09 57 47.1**	**+0.9**
KIV				pmax	pmax		
	comp=Z,28nm,1.0s						
KIV				MLR	MLR		
	comp=Z,271nm,17.0s						
KIV	**Kislovodsk**	**70.25**	**311**	*e*P	**P**	**09 57 47.7**	**+1.5**
	comp=Z,23nm,0.9s						
KBZ	**Khabaz**	**70.27**	**311**	P	**P**	**09 57 47.2**	**+1.1**
	comp=Z,8.5nm,0.9s,baz=43,slow=4.1,SNR=14						
NEY	**Neytrino**	**70.65**	**310**	*e*P	**P**	**09 57 47.3**	**-1.4**
NEY				pmax	pmax		
	comp=Z,3.0nm,1.4s						
PAHR	**Pah Rah Range**	**70.67**	**54**	*e*P	**P**	**09 57 49.9**	**+1.1**
	comp=Z,3.3nm,1.1s						
EGMT	**Eagleton**	**71.17**	**43**	*e*P	**P**	**09 57 53.3**	**+1.6**
	comp=Z,9.5nm,1.3s						
GNI	**Garni**	**71.28**	**307**	*d i* P	**P**	**09 57 54.3**	**+1.7**
GNI				pmax	pmax		
	comp=Z,46nm,1.5s						
DLMT	**Dillon**	**71.29**	**46**	*e*P	**P**	**09 57 53.9**	**+1.4**
	comp=Z,10nm,1.5s						
BOZ	**Bozeman (

comp=Z,8.0nm,0.9s,baz=39,slow=6.2
NB2 NORSAR Subarra 72.22 338 P **P 09 57 57.3 -0.4**
NB2 pmax pmax
comp=Z,7.0nm,0.9s
NOA NORSAR Array B 72.22 338 P **P 09 57 57.8 +0.2**
comp=Z,5.5nm,0.9s,baz=38,slow=5.9,SNR=20
NOA LR LR 10 33 58.1
comp=Z,129nm,18.4s,baz=30,slow=39
NBO02 NORSAR Array S 72.31 338 *e*P **P 09 57 58.5 +0.3**
NBO02 *e*pP **sP 09 58 08.2 -0.2**
NBO00 NORSAR Array S 72.35 338 *e*P **P 09 57 59.4 +0.9**
ANN Anapa 72.71 314 *e*P **P 09 57 58.2 -2.6**
ANN *e**PP **pP 09 58 08.7 +0.4**
ANN *e*S **S 10 07 21.9 -2.8**
ANN *e*SS **SS 10 12 01.6 -2.0**
ANN pmax pmax
comp=Z,36nm,1.2s
SFJD Kangerlussuaq 72.98 6 LR LR 10 33 19.9
comp=Z,97nm,19.0s,baz=344,slow=38
H17A Grant Village 73.02 46 *e*P **P 09 58 05.8 +2.8**
H17A *e*pP **sP 09 58 15.5 +2.3**
AKASG Malin Array Be 73.04 323 P **P 09 58 02.5 -0.1**
comp=Z,1.7nm,0.4s,baz=43,slow=6.3,SNR=9.1
AKASG LR LR 10 35 11.0
comp=Z,107nm,19.1s,baz=50,slow=40
KIEV Kiev 73.05 323 ⇑*i*P **P 09 58 01.7 -1.0**
KIEV pmax pmax
comp=Z,4.0nm,0.7s
KIEV Kiev 73.05 323 *e*P **P 09 58 01.9 -0.8**
comp=Z,11nm,1.4s
TPNV Topopah Spring 74.30 55 *e*P **P 09 58 11.6 +1.0**
TPNV pmax pmax
comp=Z,5.0nm,1.0s
TPNV Topopah Spring 74.30 55 *e*P **P 09 58 11.6 +1.0**
comp=Z,5.3nm,1.0s
DUG Dugway, Tooele 74.38 51 *e*P **P 09 58 11.9 +0.9**
DUG *e* 09 58 32.0
DUG Dugway, Tooele 74.38 51 *e*P **P 09 58 11.9 +0.9**
DUG *e*PcP **PcP 09 58 31.9 +6.3**
PDAR Pinedale Array 74.63 47 P **P 09 58 12.0 -0.5**
comp=Z,0.5nm,0.6s,baz=304,slow=2.1,SNR=6.0
SHPR Sheep Range 75.26 55 *e*P **P 09 58 16.9 +0.8**
comp=Z,3.8nm,1.1s
LCMT Little Creek M 76.13 53 *e*P **P 09 58 22.3 +1.2**
comp=Z,4.0nm,1.1s
BUR08 Bucovina Ar. S 77.07 322 *e*P **P 09 58 27.0 +0.9**
STHS Stebnicka Huta 77.56 326 *e*P **P 09 58 30.0 +1.2**
STHS pmax pmax
comp=Z,3.0nm,0.8s
STHS Stebnicka Huta 77.56 326 *e*P **P 09 58 30.0 +1.2**
OJC Ojcow 77.58 327 *e*P **P 09 58 27.3 -1.5**
OJC Ojcow 77.58 327 *e*P **P 09 58 27.3 -1.5**
comp=Z,268nm,0.7s
PV10 Paradox Valley 77.79 50 *e*P **P 09 58 31.8 +1.3**
BRTR Keskin Array B 78.16 312 P **P 09 58 32.5 +0.1**
comp=Z,1.3nm,0.9s,baz=76,slow=6.1,SNR=5.3
BRTR LR LR 10 38 36.4
comp=Z,74nm,18.2s,baz=20,slow=40
MLR Muntele Rosu 78.25 320 LR LR 10 36 21.7
comp=Z,24nm,18.9s,baz=26,slow=38
BR231 Keskin MP Arra 78.57 313 *e*P **P 09 58 33.6 -1.0**
MORC Moravsky Berou 78.86 328 *e*P **P 09 58 37.2 +1.2**
MORC pmax pmax
comp=Z,27nm,1.1s
MORC Moravsky Berou 78.86 328 *e*P **P 09 58 37.1 +1.2**
comp=Z,27nm,1.1s
DPC Dobruska-Polom 78.91 329 *e*P **P 09 58 37.3 +1.0**
DPC Dobruska-Polom 78.91 329 *e*P **P 09 58 37.3 +1.0**
VYHS Vyhne 79.30 326 *e*P **P 09 58 39.1 +0.7**
VYHS Vyhne 79.30 326 *e*P **P 09 58 39.1 +0.7**
CLL Collm 79.44 331 *i* P **P 09 58 38.9 -0.1**
comp=Z,7.0nm,1.1s
CLL *i* 09 58 42.3
CLL *i* 09 58 48.8
CLL LmV 10 37 00.0
comp=Z,200nm,19.7s
CLL Collm 79.44 331 *i* P **P 09 58 38.9 -0.1**
CLL pmax pmax
comp=Z,7.0nm,1.1s
VRAC Vranov 79.62 328 LR LR 10 37 11.7
comp=Z,198nm,18.6s,baz=22,slow=38
PRU Pruhonice 79.91 329 *e*P **P 09 58 42.3 +0.7**
PRU Pruhonice 79.91 329 *e*P **P 09 58 42.3 +0.7**
KHC Kasperske Hory 80.97 329 *e*P **P 09 58 48.1 +0.7**
KHC *e*pP **sP 09 58 58.0 +0.3**
KHC Kasperske Hory 80.97 329 *e*P **P 09 58 48.2 +0.8**
KHC pmax pmax
comp=Z,3.0nm,1.2s
KHC Kasperske Hory 80.97 329 *e*P **P 09 58 48.2 +0.8**
comp=Z,3.0nm,1.2s
GERES GERESS Array B 81.15 329 P **P 09 58 48.5 0.0**
comp=Z,0.4nm,0.2s,baz=30,slow=6.2,SNR=5.7
GERES LR LR 10 38 27.6
comp=Z,155nm,18.8s,baz=10.0,slow=38
GEA0 GERESS Array S 81.16 329 *e*P **P 09 58 48.5 +0.1**
ANMO Albuquerque 81.63 51 *c*e**P P 09 58 52.3 +0.9**
ANMO pmax pmax
comp=Z,1.0nm,1.1s
ANMO Albuquerque 81.63 51 *e*P **P 09 58 52.6 +1.2**
comp=Z,3.6nm,1.1s
SCHQ Schefferville 82.24 17 LR LR 10 39 12.9
comp=Z,51nm,18.1s,baz=90,slow=38
PMOR Pomariorio Ree 83.91 115 *e*T T 11 31 24.2
comp=Z,3.1nm,0.2s
FUORN Ofenpass-Fuorn 84.31 330 *e*P **P 09 59 06.0 +0.9**
comp=Z,11nm,1.0s
DAVOX Davos/Dischmat 84.33 330 LR LR 10 40 08.4
comp=Z,104nm,19.9s,baz=82,slow=38
PPT Papeete 84.53 118 LR LR 10 30 07.6
comp=Z,94nm,19.8s,baz=341,slow=31
PPT2 Papeete2 84.55 118 *e*LR LR 10 25 49.8
comp=Z,155nm,22.8s
TAOE Nuku Hiva Isla 85.38 105 *e*LR LR 10 26 07.6
comp=Z,105nm,20.7s
TXAR Lajitas Array 87.22 54 P **P 09 59 20.4 +0.8**
comp=Z,0.3nm,0.7s,baz=299,slow=4.0,SNR=4.0
CUC Castrocucco 87.28 322 *e*P **P 09 59 17.4 -2.3**
comp=Z,9.5nm,0.4s
KEST Kesra 93.72 324 *e*P **P 09 59 51.9 +2.0**
comp=Z,4.6nm,0.5s
ESDC Sonseca Array 95.45 335 LR LR 10 48 45.2
comp=Z,84nm,18.9s,baz=50,slow=39
VNA2 Neumayer--Watz 145.41 196 PKP **PKPbc 10 06 08.1 -1.6**
baz=140,slow=3.4
VNA3 Neumayer Olymp 145.65 195 PKP **PKPab 10 06 17.9 +7.2**

ISCJB ***12*** *09:50:46.6±0.5,39°.59N×0°.05×143°.32E±0°.09,h11km, mb4.2/25,Error ellipse: s-maj=10.4km s-min=7.2km az=12.9*
IDC ***12*** *09:50:46.9±0.7,39°.64N×143°.43E,h0km,mb4.2/20, mb1 4.3/23,mb1mx4.2/40,mbtmp4.2/23,ML3.9/3,Error ellipse: s-maj=17.9km s-min=15.6km az=109.0*
NEIC ***12*** *09:50:51.1±2.2,39°.68N×143°.37E,h27km±15km,mb4.4/7, Error ellipse: s-maj=7.2km s-min=6.3km az=146.0*
ISC 12 09:50:48.3±0.7,39°.56N±0°.06×143°.3E±0°.1,h11km,n39, σ1§34/42,mb4.3/25,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
ERM	**Erimo**	**2.45**	**357**	*e*Pn		**Pn**	**09 51 27.8**	**-0.5**
ASAJ	**Asahikawa**	**4.58**	**354**	Pn		**Pn**	**09 51 57.0**	**-0.6**
	5.6nm,0.3s,baz=211,slow=17,SNR=13							
ASAJ				Sn		**Sn**	**09 52 48.0**	**-2.7**
	5.9nm,0.3s,baz=100,slow=17,SNR=3.4							
MAJO	**Matsushiro**	**5.03**	**235**	*e*Pn		**Pn**	**09 52 01.6**	**-2.1**
MAT	**Matsushiro**	**5.03**	**235**	P		**Pn**	**09 52 01.2**	**-2.5**
JHJ	**Hachijo jima 2**	**7.03**	**205**	Pn		**Pn**	**09 52 31.8**	**+0.6**
	20nm,0.3s,baz=334,slow=14,SNR=4.1							
JHJ				Sn		**Sn**	**09 53 46.3**	**-4.8**
	11nm,0.3s,baz=252,slow=20,SNR=2.6							
USRK	**Ussuriysk Ar.**	**9.63**	**302**	Pn		**Pn**	**09 53 10.1**	**+3.4**
	0.6nm,0.3s,baz=94,slow=13,SNR=13							
KLR	**Kul'dur**	**12.70**	**323**	Pn		**Pn**	**09 53 49.2**	**+0.4**
	0.1nm,0.3s,baz=122,slow=11,SNR=4.1							
HIA	**Hailar**	**19.36**	**308**	*e*P		**P**	**09 55 13.8**	**-0.1**
	9.1nm,0.6s							
MA2	**Magadan**	**20.58**	**11**	P		**P**	**09 55 26.7**	**-0.3**
	9.8nm,0.8s,baz=202,slow=12,SNR=8.1							
SEY	**Seymchan**	**24.03**	**10**	P		**P**	**09 56 02.1**	**-0.9**
	11nm,0.8s,baz=176,slow=6.7,SNR=12							
GUMO	**Guam**	**25.91**	**177**	*e*P		**P**	**09 56 22.1**	**+1.6**
ULN	**Ulaanbaatar**	**27.29**	**300**	*e*P		**P**	**09 56 32.5**	**-0.3**
	3.7nm,0.8s							
SONM	**Songino Array**	**27.73**	**300**	P		**P**	**09 56 37.8**	**+1.1**
	4.5nm,0.8s,baz=91,slow=8.8,SNR=11							
ENH	**Enshi**	**29.10**	**262**	*e*P		**P**	**09 56 50.2**	**+1.1**
	12nm,0.6s							
ZALV	**Zalesovo Beam**	**41.37**	**310**	P		**P**	**09 58 34.7**	**+0.6**
	3.9nm,0.6s,baz=92,slow=7.9,SNR=9.9							
MKAR	**Makanchi Array**	**44.09**	**300**	P		**P**	**09 58 56.8**	**+0.4**
	4.1nm,0.7s,baz=83,slow=9.1,SNR=14							
KURK	**Kurchatov**	**45.59**	**306**	*e*P		**P**	**09 59 08.1**	**-0.1**
KURK				P		**P**	**09 59 08.9**	**+0.7**
KURBB	**Kurchatov Arra**	**45.67**	**306**	P		**P**	**09 59 08.9**	**+0.1**
	7.1nm,0.8s,baz=81,slow=8.1,SNR=19							
ILAR	**Eielson Array**	**46.56**	**34**	P		**P**	**09 59 15.2**	**-0.5**
	1.2nm,0.7s,baz=265,slow=6.3,SNR=8.9							
TKM2	**Tokmak 2**	**49.78**	**297**	*e*P		**P**	**09 59 42.0**	**+0.9**
BVAR	**Borovoye Array**	**50.01**	**311**	P		**P**	**09 59 42.9**	**+0.5**
	3.2nm,0.6s,baz=69,slow=8.1,SNR=10							
BRVK	**Borovoye**	**50.06**	**311**	*e*P		**P**	**09 59 43.0**	**+0.1**
	4.1nm,0.8s							
AAK	**Ala-Archa**	**50.64**	**297**	P		**P**	**09 59 48.0**	**+0.4**
	2.0nm,0.7s,baz=152,slow=5.4,SNR=5.2							
EKS2	**Erkin-Say**	**51.12**	**297**	*e*P		**P**	**09 59 51.2**	**0.0**
	3.4nm,0.6s							
INK	**Inuvik**	**51.46**	**28**	P		**P**	**09 59 52.8**	**-0.3**
	1.1nm,0.8s,baz=290,slow=8.3,SNR=4.3							
KKAR	**Karatay Array**	**53.18**	**299**	*e*P		**P**	**10 00 06.3**	**0.0**
	1.2nm,0.6s							
ABKAR	**Akbulak array**	**57.47**	**309**	*e*P		**P**	**10 00 36.9**	**-0.2**
	10.0nm,0.7s							
WRA	**Warramunga Arr**	**59.78**	**190**	P		**P**	**10 00 53.9**	**+0.4**
	1.0nm,0.6s,baz=8.1,slow=7.0,SNR=10							
YKA	**Yellowknife Ar**	**60.88**	**31**	P		**P**	**10 00 59.5**	**-0.9**
	0.4nm,0.8s,baz=303,slow=6.5,SNR=5.4							
ASAR	**Alice Springs**	**63.51**	**190**	P		**P**	**10 01 20.5**	**+1.9**
	0.5nm,0.7s,baz=15,slow=13,SNR=5.6							
FINES	**FINESS Array B**	**67.27**	**332**	P		**P**	**10 01 42.4**	**-0.1**
	4.1nm,0.7s,baz=46,slow=8.0,SNR=11							
KBZ	**Khabaz**	**70.39**	**311**	P		**P**	**10 02 03.5**	**+1.3**
	4.6nm,0.8s,baz=31,slow=7.8,SNR=9.0							
NVAR	**Mina Array Bea**	**72.29**	**55**	P		**P**	**10 02 14.6**	**+0.4**
	0.5nm,0.8s,baz=286,slow=6.4,SNR=3.8							
NB2	**NORSAR Subarra**	**72.42**	**338**	P		**P**	**10 02 14.0**	**-0.3**
	comp=Z,5.1nm,0.8s,baz=39,slow=6.2							
NOA	**NORSAR Array B**	**72.42**	**338**	P		**P**	**10 02 14.2**	**-0.1**
	comp=Z,3.7nm,0.8s,baz=38,slow=5.9,SNR=15							
AKASG	**Malin Array Be**	**73.20**	**323**	P		**P**	**10 02 18.7**	**-0.3**
	comp=Z,2.5nm,0.6s,baz=43,slow=6.1,SNR=6.6							
PDAR	**Pinedale Array**	**74.84**	**47**	P		**P**	**10 02 28.2**	**-0.8**
	comp=Z,0.4nm,0.7s,baz=299,slow=3.1,SNR=4.1							
KHC	**Kasperske Hory**	**81.16**	**329**	*e*P		**P**	**10 03 04.3**	**+0.5**
GERES	**GERESS Array B**	**81.33**	**329**	P		**P**	**10 03 04.2**	**-0.6**
	comp=Z,0.3nm,0.3s,baz=38,slow=5.0,SNR=2.9							

JMA 12 09:51:24.3,37°.00N×140°.79E,h10km±1km,M3.7,7C Broadband fault plane solution: P waves. NP1: φ=204.00000°,δ46.00000°,λ-88.00000°. NP2: φ=20.00000°,δ44.00000°,λ-92.00000°. Principal axes: T Plg1.0000°, Azm292.0000°; N Plg2.0000°, Azm22.0000°; P Plg88.0000°, Azm170.0000°; **Eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.10**	**4**	⇑P		Pg	09 51 26.8	-0.2
ONAJ				S		Sg	09 51 28.6	-0.3
JFK	**Kawauchi**	**0.37**	**10**	⇑P		Pg	09 51 31.5	-0.2
JFK				S		Sg	09 51 36.9	+0.2
JHO	**Hitachi**	**0.43**	**205**	⇑P		Pg	09 51 32.5	-0.2
JHO				S		Sg	09 51 38.2	-0.1
JFT	**Otama**	**0.63**	**325**	⇑P		Pg	09 51 36.6	+0.1
JFT				S		Sg	09 51 45.2	+0.4
JSB	**Shiboa**	**0.70**	**268**	⇑P		Pb	09 51 38.5	-0.1
JSB				S		Sb	09 51 48.4	+0.1
JMM	**Marumori**	**0.86**	**0**	⇑P		Pg	09 51 40.3	-0.7
JMM				S		Sg	09 51 52.0	-0.2
JFY	**Yanaizu**	**0.96**	**295**	⇑P		Pg	09 51 42.4	-0.3
MAT	**Matsushiro**	**2.12**	**258**	S		Sb	09 52 29.5	+0.2

NIED ***12*** *10:03:00,38°.60N×142°.80E,h17km,Mw3.7 Best double couple: M0:3.38000×10^14 NP1:φ=94.00000°,δ21.00000°, λ-48.00000°. NP2:φ=231.00000°,δ74.00000°, λ-105.00000°.*
JMA ***12*** *10:03:42.0±0.2,38°.56N×142°.85E,h9km±2km,M4.1*
IDC ***12*** *10:03:45.4±7.4,38°.50N×142°.97E,h32km±55km,mb3.7/5, mb1 3.7/8,mb1mx3.4/39,mbtmp3.8/8,ML3.1/3,Error ellipse: s-maj=46.2km s-min=20.5km az=79.0*
ISC 12 10:03:42.2±2.4,38°.54N±0°.06×142°.78E±0°.08,h3km±13km, n18,σ1§09/24,mb3.8/6,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**1.02**	**303**	P		**Pg**	**10 04 02.1**	**+0.3**
OFUJ				S		**Sb**	**10 04 16.3**	**0.0**
JIO	**Ouri**	**1.12**	**266**	P		**Pg**	**10 04 03.8**	**+0.1**
JIO				S		**Sb**	**10 04 19.1**	**-0.1**
JMK	**Ichinoseki**	**1.28**	**289**	P		**Pn**	**10 04 06.5**	**-0.5**
JMK				*e*S		**Sb**	**10 04 23.7**	**-0.2**
JOM	**Ohasama**	**1.49**	**309**	P		**Pn**	**10 04 09.8**	**0.0**
JOM				*e*S		**Sb**	**10 04 29.5**	**-0.2**
JMM	**Marumori**	**1.70**	**247**	*e*S		**Sb**	**10 04 35.9**	**+0.1**
JYK	**Kaneyama**	**1.93**	**282**	P		**Pb**	**10 04 17.3**	**-0.7**
JANG	**Nango**	**2.08**	**332**	P		**Pn**	**10 04 18.3**	**+0.3**
JANG				*e*S		**Sn**	**10 04 44.3**	**-0.1**
MJAR	**Matsushiro Arr**	**4.14**	**243**	Pn		**Pn**	**10 04 48.1**	**+1.8**
	1.2nm,0.3s,baz=55,slow=10,SNR=7.3							
MAT	**Matsushiro**	**4.14**	**243**	P		Pn	10 04 50.5	+4.2
MAT				*e*S		**Sn**	**10 05 37.6**	**+2.4**
ASAJ	**Asahikawa**	**5.58**	**359**	Pn		**Pn**	**10 05 06.6**	**+0.6**
	1.3nm,0.3s,baz=242,slow=18,SNR=8.4							
ASAJ				Sn		**Sn**	**10 06 10.4**	**-0.2**
	0.7nm,0.3s,baz=94,slow=17,SNR=2.7							
USRK	**Ussuriysk Ar.**	**9.88**	**308**	Pn		**Pn**	**10 06 06.8**	**+1.7**
	0.2nm,0.3s,baz=113,slow=13,SNR=6.9							
KLR	**Kul'dur**	**13.31**	**327**	Pn		**P**	**10 07 00.5**	**-1.3**
	0.2nm,0.3s,baz=130,slow=12,SNR=8.7							
SEY	**Seymchan**	**25.12**	**10**	P		**P**	**10 09 10.1**	**+2.2**
	1.8nm,0.8s,baz=104,slow=7.3,SNR=3.8							
SONM	**Songino Array**	**27.89**	**301**	P		**P**	**10 09 33.5**	**+0.2**
	0.8nm,0.5s,baz=98,slow=9.9,SNR=4.9							
ZALV	**Zalesovo Beam**	**41.72**	**311**	P		**P**	**10 11 32.7**	**+0.6**
	0.8nm,0.4s,baz=91,slow=10,SNR=3.1							
MKAR	**Makanchi Array**	**44.25**	**301**	P		**P**	**10 11 52.3**	**-0.5**
	0.6nm,0.5s,baz=87,slow=10,SNR=5.6							
WRA	**Warramunga Arr**	**58.70**	**189**	P		**P**	**10 13 39.6**	**-1.6**
	1.1nm,0.7s,baz=7.8,slow=7.1,SNR=10							
ASAR	**Alice Springs**	**62.43**	**189**	P		**P**	**10 14 05.6**	**-1.0**
	0.7nm,0.7s,baz=8.6,slow=6.6,SNR=8.6							

ISK ***12*** *10:17:26.8,39°.62N×34°.74E,h5km,MD2.8*
CSEM ***12*** *10:17:28.9±0.3,39°.65N×34°.72E,h2km,MD2.6,Error ellipse: s-maj=8.3km s-min=5.6km az=148.0,Suspected Mining explosion.*
ISCJB ***12*** *10:17:29.1±0.6,39°.65N±0°.04×34°.70E±0°.04,h0km,Error ellipse: s-maj=6.3km s-min=4.1km az=152.7*
DDA ***12*** *10:17:29.1,39°.68N×34°.67E,h7km,Md2.6,Suspected Mining explosion.*
ISC 12 10:17:28.8±0.9,39°.67N±0°.05×34°.71E±0°.04,h0km,n14, σ0§84/23,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
CDAG	**Cicekdag**	**0.27**	**261**	P		**Pg**	**10 17 34.1**	**+0.2**
CDAG				S		**Sg**	**10 17 38.1**	**+0.8**
CDAG	**Cicekdag**	**0.27**	**261**	*i* P		**Pg**	**10 17 34.1**	**+0.2**
CDAG				*i* S		**Sg**	**10 17 38.1**	**+0.8**
CORM	**Corum**	**0.52**	**353**	*e*PG		**Pg**	**10 17 38.4**	**-0.3**
CORM				*e*SG		**Sb**	**10 17 48.0**	**-0.9**
CORM	**Corum**	**0.52**	**353**	*e*Pg		**Pg**	**10 17 38.4**	**-0.3**
CORM				*e*Sg		**Sb**	**10 17 48.0**	**-0.9**
COAL	**Corum-Alaca**	**0.63**	**20**	P		**Pg**	**10 17 41.3**	**+0.5**
COAL				S		**Sg**	**10 17 50.4**	**+1.5**
COAL	**Corum-Alaca**	**0.63**	**20**	*i* P		**Pg**	**10 17 41.3**	**+0.5**
COAL				*i* S		**Sg**	**10 17 50.4**	**+1.5**
KAMT	**Kaman**	**0.83**	**249**	*e*PG		**Pg**	**10 17 44.4**	**-0.2**
KAMT				*e*SG		**Sg**	**10 17 56.5**	**+1.1**
KAMT	**Kaman**	**0.83**	**249**	*e*Pg		**Pg**	**10 17 44.4**	**-0.2**
KAMT				*e*Sg		**Sg**	**10 17 56.5**	**+1.1**
CUSAR	**Sarkisla-SIVAS**	**1.21**	**101**	P		**Pb**	**10 17 52.9**	**+0.3**
CUSAR	**Sarkisla-SIVAS**	**1.21**	**101**	*i* P		**Pb**	**10 17 52.9**	**+0.3**
CUSAR				*i* S		**Sn**	**10 18 10.5**	**+0.2**
KKUL	**Konya-Kulu**	**1.48**	**251**	P		**Pg**	**10 17 57.4**	**+0.3**
KKUL	**Konya-Kulu**	**1.48**	**251**	*i* P		**Pg**	**10 17 57.4**	**+0.3**
SVSK	**Karacayir**	**1.78**	**81**	*e*PN		**Pn**	**10 17 59.6**	**-1.1**
SVSK	**Karacayir**	**1.78**	**81**	*e*Pn		**Pn**	**10 17 59.6**	**-1.1**

NIED ***12*** *10:25:00,42°.60N×145°.60E,h47km,Mw3.9 Best double couple: M0:6.88000×10^14 NP1:φ=232.00000°,δ37.00000°, λ43.00000°. NP2:φ=105.00000°,δ66.00000°,λ119.00000°.*
MOS ***12*** *10:25:46.5±1.1,42°.46N×145°.63E,h52km,mb4.1/5,Error ellipse: s-maj=22.1km s-min=11.7km az=78.2*
JMA ***12*** *10:25:47.9±0.1,42°.56N×145°.64E,h58km±2km,M4.1*
JMA Felt I J1.
ISCJB ***12*** *10:25:47.4±0.8,42°.53N±0°.05×145°.67E±0°.05,h51km±7km, mb3.8/10,Error ellipse: s-maj=9.9km s-min=4.6km az=147.0*
SKHL ***12*** *10:25:49.1±0.8,42°.60N×145°.65E,h62km±4km,mb4.7/6*
IDC ***12*** *10:25:50.0±2.9,42°.47N×145°.63E,h63km±26km,mb3.5/10, mb1 3.8/12,mb1mx3.5/53,mbtmp3.8/12,ML3.9/2,MS2.7/3, Ms1 2.7/3,ms1mx2.4/47,Error ellipse: s-maj=20.6km s-min=18.4km az=93.0*
ISC 12 10:25:48.3±1.4,42°.51N±0°.07×145°.70E±0°.05,h44km±13km, n43,σ1§26/50,mb3.7/10,12D,Hokkaido region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
NEM2	**Nemuro 2**	**0.85**	**2**	⇓P		**Pn**	**10 26 03.6**	**-0.3**
NEM2				*e*S		**Sn**	**10 26 14.8**	**-0.4**
JAK	**Akkeshi**	**0.88**	**304**	⇓P		**Pn**	**10 26 03.9**	**-0.4**
JAK				*e*S		**Sn**	**10 26 15.0**	**-1.0**
JNK	**Nakash**	**1.29**	**326**	*e*S		**Sn**	**10 26 23.8**	**-2.2**
JOB	**Onbets**	**1.43**	**286**	P		**Pn**	**10 26 11.3**	**-0.5**
JOB				*e*S		**Sn**	**10 26 28.1**	**-1.3**
JRA	**Rausu**	**1.49**	**344**	⇓P		**Pn**	**10 26 11.9**	**-0.6**
JRA				*e*S		**Sn**	**10 26 29.8**	**-0.9**
YUK	**Yuzh-Kuril'sk**	**1.53**	**4**	*d i*PN		**Pn**	**10 26 12.4**	**-0.7**
YUK				*i* S		**Sn**	**10 26 30.4**	**-1.3**
YUK				pmax	pmax			
	comp=N,708nm,0.2s							
YUK				pmax	pmax			
	comp=Z,4μm,0.2s							
YUK				pmax	pmax			
	comp=E,767nm,0.1s							
YUK				smax	smax			
	comp=N,2μm,0.3s							
YUK				smax	smax			
	comp=E,4μm,0.4s							
YUK	**Yuzh-Kuril'sk**	**1.53**	**4**	⇓*i*P		**Pn**	**10 26 12.4**	**-0.7**
YUK				AMB	AMB		10 26 13.5	
	comp=E,710nm,0.5s							
YUK				AMB	AMB		10 26 13.5	
	comp=E,770nm,0.5s							
YUK				AMB	AMB		10 26 13.5	
	comp=E,4μm,0.5s							
YUK				*i* S		**Sn**	**10 26 30.4**	**-1.3**
YUK				A	A		10 26 31.3	
	comp=E,2μm,0.4s							
YUK				A	A		10 26 31.3	
	comp=E,4μm,0.4s							
SHO	**Shikotan**	**1.59**	**31**	*d i*PN		**Pn**	**10 26 13.5**	**-0.4**
SHO				*i* S		**Sn**	**10 26 31.4**	**-1.8**
SHO				pmax	pmax			
	comp=N,96nm,0.3s							
SHO				pmax	pmax			
	comp=E,110nm,0.3s							
SHO				pmax	pmax			
	comp=Z,241nm,0.3s							
SHO				smax	smax			
	comp=N,2μm,0.5s							
SHO				smax	smax			
	comp=E,3μm,0.5s							
SHO	**Shikotan**	**1.59**	**31**	⇓*i*P		**Pn**	**10 26 13.5**	**-0.4**
SHO				AMB	AMB		10 26 14.2	
	comp=E,100nm,0.3s							
SHO				AMB	AMB		10 26 14.2	
	comp=E,110nm,0.3s							
SHO				AMB	AMB		10 26 14.2	
	comp=E,240nm,0.3s							
SHO				*i* S		**Sn**	**10 26 31.4**	**-1.8**
SHO				A	A		10 26 32.0	
	comp=E,2μm,0.5s							
SHO				A	A		10 26 32.0	
	comp=E,3μm,0.5s							
JAR	**Ashorobuto**	**1.62**	**300**	⇓P		**Pn**	**10 26 13.6**	**-0.8**
JAR				*e*S		**Sn**	**10 26 32.6**	**-1.5**
JCH	**Churui**	**1.73**	**274**	⇓P		**Pn**	**10 26 15.8**	**-0.1**
JCH				*e*S		**Sn**	**10 26 35.4**	**-1.4**
MYR	**Moyori**	**1.80**	**264**	*e*P		**Pn**	**10 26 17.1**	**+0.2**
MYR				*e*S		**Sn**	**10 26 37.3**	**-1.2**
JEM	**Erimo**	**1.95**	**256**	*e*S		**Sn**	**10 26 41.9**	**-0.3**
JTKR	**Abashiri--Toko**	**1.96**	**319**	⇓P		**Pn**	**10 26 18.8**	**-0.2**
JTKR				*e*S		**Sn**	**10 26 41.9**	**-0.5**
JKA	**Kamikawa-asahi**	**2.77**	**306**	*e*P		**Pn**	**10 26 30.9**	**+0.7**
ASAJ	**Asahikawa**	**2.78**	**306**	P		**Pn**	**10 26 30.9**	**+0.7**
	comp=E,9.5nm,0.3s,baz=136,slow=7.7,SNR=32							
ASAJ				S		**Sn**	**10 27 05.2**	**+2.8**
	comp=E,14nm,0.3s,baz=272,slow=24,SNR=11							
ASAJ				LR	LR		10 27 49.8	
	comp=E,85nm,18.7s,baz=185,slow=43							
KUR	**Kuril'sk**	**3.14**	**29**	*d i*PN		**Pn**	**10 26 36.4**	**+1.2**
KUR				*i* S		**Sn**	**10 27 10.7**	**-0.7**
KUR				pmax	pmax			
	comp=Z,81nm,0.4s							
KUR				pmax	pmax			
	comp=N,21nm,0.2s							
KUR				pmax	pmax			
	comp=E,26nm,0.2s							
KUR				smax	smax			
	comp=N,544nm,0.2s							
KUR				smax	smax			
	comp=E,416nm,0.2s							
KUR	**Kuril'sk**	**3.14**	**29**	⇓*i*P		**Pn**	**10 26 36.4**	**+1.2**
KUR				AMB	AMB		10 26 44.4	
	comp=E,80nm,0.4s							
KUR				AMB	AMB		10 26 44.4	
	comp=E,20nm,0.2s							
KUR				AMB	AMB		10 26 44.4	
	comp=E,30nm,0.2s							
KUR				*i* S		**Sn**	**10 27 10.7**	**-0.7**
KUR				A	A		10 27 12.8	
	comp=E,540nm,0.4s							
KUR				A	A		10 27 12.8	
	comp=E,420nm,0.4s							
YSS	**Yuzh-Sakhalins**	**4.91**	**336**	*e*P		**Pn**	**10 27 01.7**	**+2.2**
YSS				AMB

FINES	FINESS Array B	65.49	333	P	P	10 36 25.5 -1.0
	comp=E,2.4nm,0.5s,baz=42,slow=7.2,SNR=16					
NVAR	Mina Array Bea	69.14	57	P	P	10 36 51.0 +0.8
	comp=E,0.6nm,0.5s,baz=289,slow=7.1,SNR=7.3					
NOA	NORSAR Array B	70.37	338	P	P	10 36 55.9 -1.2
	comp=E,0.5nm,0.3s,baz=32,slow=6.5,SNR=3.8					
PDAR	Pinedale Array	71.52	49	P	P	10 37 04.8 +0.1
	comp=E,0.5nm,0.5s,baz=271,slow=1.9,SNR=7.6					
TXAR	Lajitas Array	84.22	55	P	P	10 38 15.3 -0.1
	comp=E,0.5nm,0.7s,baz=291,slow=3.7,SNR=6.4					

NIED ***12*** *10:27:00, 35°.50N×141°.30E, h23km, Mw3.7 Best double couple: M*$_3$*.89000×10*^{14} *NP1:*ϕ_s*=203.00000°,* δ*46.00000°,* λ*-72.00000°. NP2:*ϕ_s*=358.00000°,* δ*47.00000°,* λ*-108.00000°.*

JMA 12 10:27:02.9±0.1, 35°.53N×141°.33E, h23km±1km, M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	0.42	294	P	Pb	10 27 11.6	-0.1
CHOJ				S	Sb	10 27 17.7	0.0
KTR	Katsuura	0.91	246	P	Pb	10 27 20.0	0.0
BSO1	Boso 1	0.92	198	P	Pb	10 27 19.2	-0.7
JCN	Nagara	0.93	263	P	Pn	10 27 21.0	+0.5
BSO4	Boso 4	0.97	237	P	Pb	10 27 21.0	0.0
BSO3	Boso 3	0.99	223	P	Pn	10 27 20.7	-0.4
JYT	Yasato	1.16	307	P	Pn	10 27 23.2	-0.5
JYT				eS	Sn	10 27 38.6	-0.1
MAT	Matsushiro	2.73	293	P	Pn	10 27 47.5	+2.2
MAT				S	Sb	10 28 25.7	+1.7

IDC 12 10:47:19.7±12.0, 5°.99S×129°.00E, h281km±142km, mb3.1/1, mb1 3.4/4, mb1mx3.0/29, mbtmp4.0/4, Error ellipse: s-maj=78.0km s-min=48.1km az=39.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	Fitzroy Crossi	12.48	195	P	Pn	10 50 07.9	-0.6
	0.1nm,0.3s,baz=22,slow=12,SNR=4.3						
FITZ				S	S	10 52 28.4	+1.1
	0.1nm,0.3s,baz=351,slow=9.6,SNR=2.5						
WRA	Warramunga Arr	14.81	160	P	P	10 50 35.5	-0.3
	0.9nm,0.3s,baz=339,slow=12,SNR=58						
WRA				S	S	10 53 11.1	-7.6
	0.1nm,0.3s,baz=336,slow=20,SNR=4.7						
ASAR	Alice Springs	18.20	165	P	P	10 51 12.8	+0.1
	0.8nm,0.3s,baz=346,slow=10,SNR=104						
MKAR	Makanchi Array	66.84	327	P	P	10 57 41.7	+0.1
	0.5nm,0.6s,baz=139,slow=7.0,SNR=4.0						

NIED ***12*** *10:51:00, 39°.40N×143°.60E, h14km, Mw3.6 Best double couple: M*$_0$*2.97000×10*^{14} *NP1:*ϕ_s*=180.00000°,* δ*40.00000°,* λ*70.00000°. NP2:*ϕ_s*=25.00000°,* δ*52.00000°,* λ*106.00000°.*

JMA 12 10:51:03.3±0.1, 39°.39N×143°.65E, h29km, M3.9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	Miyakonagasawa	1.43	278	P	Pn	10 51 27.8	+0.5
MIYJ				eS	Sb	10 51 46.1	-1.0
JTH	Tanohata	1.48	292	P	Pn	10 51 28.7	+0.7
JTH				eS	Sn	10 51 47.4	+1.0
OFUJ	Ofunato	1.57	259	P	Pn	10 51 29.9	+0.7
OFUJ				eS	Sn	10 51 49.4	+0.9
JOM	Ohasama	1.83	273	P	Pn	10 51 34.0	+1.2
JMK	Ichinoseki	1.94	258	P	Pn	10 51 35.4	+1.1
JTM	Tenmabayashi	2.42	306	P	Pn	10 51 42.4	+1.5
JAH	Hinai	2.46	290	P	Pn	10 51 43.1	+1.7
JOU	Okura	2.54	247	P	Pn	10 51 44.1	+1.5
JYK	Kaneyama	2.60	261	P	Pn	10 51 45.0	+1.6
JCH	Churui	3.23	356	P	Pn	10 51 54.3	+2.3
JCH				S	Sn	10 52 30.4	+0.9
NEM2	Nemuro 2	4.27	21	P	Pn	10 52 08.6	+2.3
NEM2				S	Sn	10 52 55.4	+0.2
JTKR	Abashiri--Toko	4.58	2	P	Pn	10 52 13.1	+2.5
JTKR				S	Sn	10 53 04.2	+1.4
MAT	Matsushiro	5.16	238	P	Pn	10 52 21.2	+2.7

ISCJB ***12*** *10:59:46.1±1.2, 22°.9S±0°.4×179°.1E±0°.2, h579km, mb4.3/9, Error ellipse: s-maj=54.1km s-min=17.8km az=160.2*
IDC ***12*** *10:59:52.3±6.4, 22°.71S×178°.94E, h642km±79km, mb3.5/9, mb1 3.7/9, mb1mx3.2/35, mbtmp4.6/9, Error ellipse: s-maj=50.3km s-min=28.4km az=136.0*

ISC 12 10:59:47.3±1.3, 22°.8S±0°.4×179°.1E±0°.2, h579km, n10, σ0s56/9, mb4.4/9, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	Charters Tower	30.69	269	P	P	11 05 16.7	+0.5
	32nm,0.5s,baz=98,slow=12,SNR=30						
PMG	Port Moresby	33.38	288	P	P	11 05 39.0	-0.1
	40nm,0.7s,baz=106,slow=6.9,SNR=12						
STKA	Stephens Creek	34.42	247	P	P	11 05 48.0	+0.5
	4.2nm,0.4s,baz=92,slow=11,SNR=24						
ASAR	Alice Springs	41.44	260	P	P	11 06 44.2	-0.5
	11nm,0.7s,baz=86,slow=8.8,SNR=42						
WRA	Warramunga Arr	41.70	265	P	P	11 06 45.8	-0.9
	4.3nm,0.3s,baz=96,slow=8.2,SNR=267						
FITZ	Fitzroy Crossi	50.13	265	P	P	11 07 50.7	+0.1
	4.2nm,0.5s,baz=101,slow=5.2,SNR=25						
NWAO	Narrogin (SRO)	54.98	245	P	P	11 08 24.4	-0.6
	7.1nm,0.9s,baz=348,slow=7.7,SNR=7.3						
NVAR	Mina Array Bea	84.51	44	P	P	11 11 20.2	0.0
	0.2nm,0.5s,baz=229,slow=8.2,SNR=3.2						
TXAR	Lajitas Array	90.52	58	P	P	11 11 48.6	+0.1
	0.5nm,0.8s,baz=216,slow=6.2,SNR=6.7						
AKASG	Malin Array Be	143.61	327	PKP	PKPab	11 18 14.2	-1.3
	1.1nm,0.4s,baz=40,slow=4.3,SNR=8.0						

IDC ***12*** *11:00:06.3±1.2, 7°.44S×67°.99E, h0km, mb4.0/5, mb1 4.2/5, mb1mx3.7/48, mbtmp4.0/5, MS3.6/14, Ms1 3.6/14, ms1mx3.4/31, Error ellipse: s-maj=39.8km s-min=30.0km az=154.0*

ISC 12 11:00:10.6±2.4, 7°.3S±0°.3×68°.6E±0°.3, h10km, n29, σ1s47/8, mb3.9/5, MS3.6/13, Chagos Archipelago region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08N3	Diego Garcia H	2.61	68	T	T	11 04 24.8	
	baz=244,slow=76,SNR=2274						
H08N2	Diego Garcia H	2.62	68	T	T	11 04 23.8	
	baz=244,slow=76,SNR=2440						
H08N1	Diego Garcia H	2.63	69	T	T	11 04 24.0	
	baz=244,slow=76,SNR=2307						
H08S1	Diego Garcia H	3.90	95	Pn	Pn	11 01 09.7	-0.7
	baz=129,slow=74,SNR=14						
H08S3	Diego Garcia H	3.91	95	Pn	Pn	11 01 09.8	-0.7
	baz=129,slow=74,SNR=10						
H08S2	Diego Garcia H	3.92	95	Pn	Pn	11 01 10.0	-0.7
	baz=129,slow=74,SNR=16						
PALK	Pallekele	18.89	40	LR	LR	11 10 15.9	
	comp=Z,179nm,18.3s,baz=298,slow=32						
OPO	Ambohidratompo	23.61	240	LR	LR	11 11 46.1	
	comp=Z,232nm,21.3s,baz=1.0,slow=30						
CMAR	Chiang Mai Arr	39.43	49	P	P	11 07 43.6	+2.4
	2.5nm,0.3s,baz=240,slow=8.8,SNR=3.1						
LSZ	Lusaka	40.31	255	P	P	11 07 41.5	-7.1
	1.2nm,0.6s,baz=86,slow=8.4,SNR=3.0						
BOSA	Boshof	45.97	237	LR	LR	11 25 19.5	
	comp=Z,88nm,18.3s,baz=35,slow=33						
H01W3	Cape Leeuwin H	50.00	130	T	T	12 02 56.1	
	baz=291,SNR=4.0						
H01W2	Cape Leeuwin H	50.01	130	T	T	12 03 03.6	
	baz=291						
H01W1	Cape Leeuwin H	50.02	130	T	T	12 02 56.7	
	baz=291						
MKAR	Makanchi Array	55.24	11	P	P	11 09 42.4	-1.5
	0.1nm,0.2s,baz=188,slow=5.8,SNR=4.4						
KVAR	Kislovodsk Arr	56.14	338	LR	LR	11 32 48.9	
	comp=Z,24nm,22.0s,baz=328,slow=35						
BRTR	Keskin Array B	56.85	328	LR	LR	11 32 25.0	
	comp=Z,40nm,20.6s,baz=124,slow=34						
SONM	Songino Array	64.26	27	P	P	11 10 45.4	-0.7
	0.7nm,0.8s,baz=224,slow=6.2,SNR=6.7						
ASAR	Alice Springs	64.55	113	LR	LR	11 35 13.6	
	comp=Z,47nm,21.9s,baz=273,slow=32						
WRA	Warramunga Arr	64.81	109	P	P	11 10 50.4	+0.2
	3.9nm,1.1s,baz=273,slow=4.6,SNR=3.3						
TORD	Torodi Ar. Bea	69.44	287	LR	LR	11 41 15.6	
	comp=Z,120nm,18.1s,baz=225,slow=36						
KSRS	Korea Array	71.00	46	LR	LR	11 43 40.8	
	comp=Z,26nm,18.4s,baz=20,slow=37						
STKA	Stephens Creek	71.78	121	LR	LR	11 41 16.8	
	comp=Z,90nm,18.7s,baz=212,slow=34						
DBIC	Dimbokro	74.53	279	LR	LR	11 45 32.8	
	comp=Z,57nm,18.1s,baz=114,slow=37						
NRIK	Noril'sk	77.61	7	LR	LR	11 46 52.9	
	comp=Z,42nm,18.1s,baz=152,slow=36						
MJAR	Matsushiro Arr	78.30	50	LR	LR	11 47 39.2	
	comp=Z,13nm,18.1s,baz=275,slow=36						
NOA	NORSAR Array B	81.37	336	LR	LR	11 48 33.5	
	comp=Z,17nm,21.3s,baz=220,slow=36						
ARCES	ARCESS Array B	82.15	346	LR	LR	11 51 16.7	
	comp=Z,32nm,18.0s,baz=132,slow=37						
NVAR	Mina Array Bea	148.41	10	PKPbc	PKPdf	11 19 55.5	+0.8
	1.0nm,1.1s,baz=70,slow=1.7,SNR=4.4						

ISCJB ***12*** *11:01:40.4±3.5, 22°.4N±0°.2×12°.4W±0°.5, h10km, mb3.6/2, Error ellipse: s-maj=71.9km s-min=20.1km az=172.6*
IDC ***12*** *11:01:43.0±2.7, 22°.47N×12°.16W, h0km, mb3.7/2, mb1 3.8/4, mb1mx3.4/42, mbtmp3.7/4, ML3.6/2, Error ellipse: s-maj=79.1km s-min=35.9km az=91.0*

ISC 12 11:01:41.4±2.7, 22°.3N±0°.2×12°.5W±0°.4, h10km, n6, σ1s75/6, Mauritania

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TORD	Torodi Ar. Bea	16.30	122	Pn	Pn	11 05 30.5	-0.1
	0.2nm,0.3s,baz=307,slow=12,SNR=4.3						
DBIC	Dimbokro	17.22	154	Pn	P	11 05 43.6	-0.2
	0.2nm,0.3s,baz=316,slow=15,SNR=2.6						
GERES	GERESS Array B	33.66	32	P	P	11 08 21.3	-1.1
	0.4nm,0.3s,baz=206,slow=8.9,SNR=3.7						
BRTR	Keskin Array B	42.67	55	P	P	11 09 39.7	+1.1
	0.4nm,0.4s,baz=248,slow=7.6,SNR=2.7						
WRA	Warramunga Arr	149.01	92	PKPbc	PKPbc	11 21 32.5	+1.9
	0.5nm,0.9s,baz=299,slow=2.3,SNR=3.8						
ASAR	Alice Springs	149.08	99	PKPbc	PKPab	11 21 33.2	-1.7
	0.2nm,0.5s,baz=281,slow=2.3,SNR=5.3						

IDC 12 11:06:56.7±4.5, 6°.00S×146°.94E, h0km, mb3.5/2, mb1 3.6/4, mb1mx3.4/33, mbtmp3.5/4, ML2.7/2, Error ellipse: s-maj=67.5km s-min=42.0km az=58.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	Port Moresby	3.39	176	Pn	Pn	11 07 51.9	+0.9
	8.9nm,0.3s,baz=46,slow=10,SNR=15						
PMG				Sn	Sn	11 08 32.3	+0.3
	6.3nm,0.3s,baz=46,slow=2.5,SNR=3.8						
WRA	Warramunga Arr	18.50	220	P	P	11 11 14.6	-0.1
	0.1nm,0.3s,baz=44,slow=12,SNR=4.6						
ASAR	Alice Springs	21.59	214	P	P	11 11 48.1	-0.3
	0.3nm,0.4s,baz=53,slow=8.9,SNR=7.8						
FITZ	Fitzroy Crossi	24.02	238	P	P	11 12 13.5	-0.1
	4.0nm,0.9s,baz=62,slow=15,SNR=3.8						
CPUP	Villa Florida	140.16	145	PKP	PKPdf	11 26 27.2	-1.1
	1.3nm,0.3s,baz=174,slow=1.3,SNR=4.7						

JMA 12 11:08:09.8, 37°.04N×140°.65E, h5km±1km, M2.6, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.13	63	P	Pg	11 08 12.7	+0.1
JFK	Kawauchi	0.37	29	P	Pg	11 08 17.1	+0.1
JFK				S	Sg	11 08 22.2	+0.3
JHO	Hitachi	0.43	189	P	Pg	11 08 18.1	0.0
JHO				S	Sg	11 08 24.6	+0.8
JFT	Otama	0.54	332	P	Pg	11 08 20.5	+0.3
JFT				S	Sg	11 08 28.0	+0.8
JMM	Marumori	0.83	8	P	Pg	11 08 25.4	-0.4
JMM				S	Sg	11 08 36.6	0.0
JOU	Okura	1.32	0	P	Pn	11 08 34.6	-0.4
JOU				S	Sg	11 08 52.0	-0.4
MAT	Matsushiro	2.02	257	P	Pn	11 08 45.5	+0.9
MAT				S	Sb	11 09 12.5	0.0

SJA ***12*** *11:17:40.7±0.5, 21°.03S×68°.10W, h129km±121km, ML2.9, MW3.1*
ISCJB ***12*** *11:17:44.6±1.3, 21°.06S±0°.08×67°.53W±0°.07, h206km±15km, Error ellipse: s-maj=15.5km s-min=5.4km az=40.6*
GUC ***12*** *11:17:46.2±0.5, 20°.93S×67°.75W, h209km±9km, ML3.4*

ISC 12 11:17:43.9±2.4, 21°.01S±0°.08×67°.47W±0°.07, h213km±23km, n10, σ1s08/20, Chile-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB08	IPOC Station P	1.80	298	iP	Pn	11 18 22.7	+0.8
PB08				iS	S	11 18 51.0	-0.1
PB08				IAML		11 18 54.2	
	comp=E,106nm,0.1s						
PB09	IPOC Station P	1.82	244	eP	Pn	11 18 24.1	+2.2
PB09				eS	S	11 18 49.9	-1.3
PB09				IAML		11 18 56.8	
	comp=N,141nm,0.2s						
PB01	IPOC Station P	1.88	269	iP	Pn	11 18 23.1	+0.8
PB01				iS	S	11 18 50.8	-1.2
PB01				IAML		11 18 54.1	
	comp=E,188nm,0.2s						
YJA	Yavi	2.16	123	iP	Pn	11 18 25.2	-0.3
YJA				iS	S	11 18 57.7	+0.2
YJA				IAML		11 18 58.7	
	comp=Z,43nm,0.5s						
PATCX	Punta Patache	2.51	274	iP	Pn	11 18 29.7	+0.9
PATCX				iS	S	11 19 02.6	-0.9
PATCX				IAML		11 19 06.3	
	comp=N,249nm,0.2s						
MNMC	Minye Minye	2.73	313	eP	Pn	11 18 31.9	+0.4
MNMC				iS	S	11 19 07.5	-0.9
MNMC				IAML		11 19 13.4	
	comp=E,160nm,0.2s						
PSGC	Pisagua	2.86	299	eP	Pn	11 18 32.3	-0.5
PSGC				eS	S	11 19 08.3	-2.2
PSGC				IAML		11 19 10.1	
	comp=E,108nm,0.3s						
HJA	Humahuaca	2.90	139	iP	Pn	11 18 33.3	-0.2
HJA				iS	S	11 19 12.2	+0.1
PB13	IPOC Station P	3.28	324	eP	Pn	11 18 39.0	+0.9
PB13				iS	S	11 19 21.1	+0.9
AZAP	Zapla	3.89	146	iP	Pn	11 18 45.0	-0.1
AZAP				iS	S	11 19 33.1	+0.2

ISCJB ***12*** *11:33:41.8±0.7, 43°.29N±0°.05×45°.57E±0°.03, h98km±7km, Error ellipse: s-maj=8.2km s-min=3.3km az=19.7*
CSEM ***12*** *11:33:41.7±0.2, 43°.32N×45°.56E, h100km, mb4.0, Error ellipse: s-maj=7.5km s-min=3.6km az=18.0*
MOS ***12*** *11:33:42.8±1.0, 43°.22N×45°.47E, h84km, mb4.0/1, Error ellipse: s-maj=10.6km s-min=6.9km az=31.1*

ISC 12 11:33:42.7±1.5, 43°.25N±0°.04×45°.51E±0°.03, h99km±9km, n62, σ1s28/108, 2C-7D, Eastern Caucasus

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GROC	Groznyy	0.21	103	iP	Pn	11 33 56.4	-0.4
GROC				pmax	pmax		
	comp=Z,13nm,0.1s						
GROC	Groznyy	0.21	103	iP	Pn	11 33 56.4	-0.4
	comp=Z,13nm,0.1s						
VLKR	Vladikavkaz	0.64	252	eP	Pn	11 33 59.0	-0.6
VLKR				eS	Sn	11 34 12.6	+0.3
VLKR	Vladikavkaz	0.64	252	eP	Pn	11 33 59.0	-0.6
VLKR				eS	Sn	11 34 12.6	+0.3
BTKR	Batakoyurt	0.72	280	eP	Pn	11 34 00.4	+0.1
BTKR				eS	Sn	11 34 14.3	+0.9
BTKR	Batakoyurt	0.72	280	eP	Pn	11 34 00.4	+0.1
BTKR				eS	Sn	11 34 14.3	+0.9
TRKR	Terskaya	0.74	310	iP	Pn	11 34 00.5	+0.1
TRKR				pmax	pmax		
	comp=Z,154nm,0.1s						
TRKR	Terskaya	0.74	310	iP	Pn	11 34 00.5	+0.1
	comp=Z,154nm,0.1s						
ARNR	Ardon	0.90	266	eP	Pn	11 34 02.0	0.0
ARNR				eS	Sn	11 34 17.2	+0.7
ARNR	Ardon	0.90	266	eP	Pn	11 34 02.0	0.0
ARNR				eS	Sn	11 34 17.2	+0.7
LACR	Lac	0.99	245	↓iP	Pn	11 34 02.0	-1.1
LACR				eS	Sn	11 34 17.6	-0.7
LACR	Lac	0.99	245	iP	Pn	11 34 02.0	-1.1
LACR				eS	Sn	11 34 17.6	-0.7
DBC	Dubki	0.99	103	↑iP	Pn	11 34 06.4	+3.3
DBC				iS	Sn	11 34 21.0	+2.6
DBC				pmax	pmax		
	comp=Z,70nm,0.1s						
DBC	Dubki	0.99	103	iP	Pn	11 34 06.4	+3.3
	comp=Z,70nm,0.1s						
DBC				iS	Sn	11 34 21.0	+2.6
PRTR	Priterechnaya	1.02	300	iP	Pn	11 34 03.2	-0.1
PRTR				pmax	pmax		
	comp=Z,47nm,0.1s						
PRTR	Priterechnaya	1.02	300	iP	Pn	11 34 03.2	-0.1
	comp=Z,47nm,0.1s						
STDR	Stavd-Durt	1.06	277	↓iP	Pn	11 34 04.2	+0.4
STDR				eS	Sn	11 34 20.3	+0.7
STDR	Stavd-Durt	1.06	277	iP	Pn	11 34 04.2	+0.4
STDR				eS	Sn	11 34 20.3	+0.7
KORR	Kora	1.07	262	iP	Pn	11 34 03.6	-0.3
KORR				pmax	pmax		
	comp=Z,15nm,0.1s						
KORR	Kora	1.07	262	iP	Pn	11 34 03.6	-0.3
	comp=Z,15nm,0.1s						
UNCR	Uncukul	1.08	119	iP	Pn	11 34 02.7	-1.4
UNCR				iS	Sn	11 34 18.0	-2.1
UNCR				pmax	pmax		
	comp=Z,36nm,0.2s						
UNCR	Uncukul	1.08	119	iP	Pn	11 34 02.7	-1.4
	comp=Z,36nm,0.2s						
UNCR				iS	Sn	11 34 18.0	-2.1
GUDG	Gudauri	1.09	224	P	Pn	11 34 04.6	+0.3
GUDG				S	Sn	11 34 22.5	+1.9
KRNR	Karanay	1.11	112	↓iP	Pn	11 34 03.0	-1.4
KRNR				iS	Sn	11 34 18.5	-2.2
KRNR				pmax	pmax		
	comp=Z,41nm,0.2s						
KRNR	Karanay	1.11	112	iP	Pn	11 34 03.0	-1.4
	comp=Z,41nm,0.2s						
KRNR				iS	Sn	11 34 18.5	-2.2
XNZR	Khunzakh	1.13	129	eP	Pn	11 34 03.5	-1.2
XNZR				eS	Sn	11 34 19.5	-1.7
XNZR	Khunzakh	1.13	129	eP	Pn	11 34 03.5	-1.2
XNZR				eS	Sn	11 34 19.5	-1.7
LSNR	Lesken	1.23	272	iP	Pn	11 34 05.7	0.0
LSNR				pmax	pmax		
	comp=Z,23nm,0.1s						
ARKR	Arakani	1.27	120	eP	Pn	11 34 06.0	-0.2
ARKR				eS	Sn	11 34 23.0	-0.9
ARKR	Arakani	1.27	120	eP	Pn	11 34 06.0	-0.2
ARKR				eS	Sn	11 34 23.0	-0.9
ZEI	Tsey	1.27	249	↓iP	Pn	11 34 05.2	-1.1
ZEI				iS	Sn	11 34 22.7	-1.5
DUS	Dusheti	1.30	207	P	Pn	11 34 07.0	+0.3
DUS				S	Sn	11 34 26.7	+2.0
DUS	Dusheti	1.30	207	P	Pn	11 34 07.0	+0.3
DUS				S	Sn	11 34 26.7	+2.0
DUS	Dusheti	1.30	207	P	Pn	11 34 07.0	+0.3
DUS				S	Sn	11 34 26.7	+2.0
GNBR	Gunib	1.37	128	eP	Pn	11 34 07.2	-0.2
GNBR				e		11 34 25.4	
GNBR				pmax	pmax		
	comp=Z,33nm,0.1s						
GNBR				smax	smax		
	comp=E,465nm,0.4s						
GNBR				smax	smax		
	comp=E,418nm,0.5s						
GNBR				smax	smax		
	comp=N,351nm,0.3s						
GNBR	Gunib	1.37	128	eP	Pn	11 34 07.2	-0.2
	comp=N,33nm,0.1s						
GNBR				eS	Sn	11 34 25.4	-0.7
	comp=N,351nm,0.3s						
DIGR	Digorskoe uzhe	1.46	257	↓iP	Pn	11 34 07.6	-1.0
DIGR				iS	Sn	11 34 26.6	-1.6
DIGR	Digorskoe uzhe	1.46	257	iP	Pn	11 34 07.6	-1.0
DIGR				iS	Sn	11 34 26.6	-1.6
SEAG	Tbilisi Sea	1.57	200	P	Sn	11 34 30.0	-0.5
KMKR	Kumukh	1.62	133	eP	Pn	11 34 10.0	-0.6
KMKR				iS	Sn	11 34 30.5	-1.3
KMKR	Kumukh	1.62	133	eP	Pn	11 34 10.0	-0.6
KMKR				iS	Sn	11 34 30.5	-1.3
TBLG	Delisi	1.62	201	P	Pn	11 34 10.1	-0.4
TBLG				S	Sn	11 34 32.1	+0.5
TBLG	Delisi	1.62	201	P	Pn	11 34 10.1	-0.4
TBLG				S	Sn	11 34 32.1	+0.5
TBLG	Delisi	1.62	201	P	Pn	11 34 10.1	-0.4
TBLG				S	Sn	11 34 32.1	+0.5
ONI	Oni	1.65	247	P	Pn	11 34 11.5	+0.6
ONI				S	Sn	11 34 34.4	+2.2
ONI	Oni	1.65	247	P	Pn	11 34 11.4	+0.6
ONI				S	Sn	11 34 34.4	+2.2
ONI	Oni	1.65	247	P	Pn	11 34 11.4	+0.6
ONI				S	Sn	11 34 34.4	+2.2
DGRG	David-gareji	1.80	183	P	Pn	11 34 12.7	-0.1
DGRG				S	Sn	11 34 34.8	-0.8
DGRG	David-gareji	1.80	183	P	Pn	11 34 12.7	-0.1
DGRG				S	Sn	11 34 34.8	-0.8
DGRG	David-gareji	1.80	183	P	Pn	11 34 12.7	-0.1
DGRG				S	Sn	11 34 34.8	-0.8
URKR	Urkarakh	1.90	124	eP	Pn	11 34 15.5	+1.4
URKR				eS	Sn	11 34 41.0	+2.9
URKR	Urkarakh	1.90	124	eP	Pn	11 34 15.5	+1.4
URKR				eS	Sn	11 34 41.0	+2.9
NEY	Neytrino	2.04	271	↓eP	Pn	11 34 15.7	-0.2
NEY	Neytrino	2.04	271	eP	Pn	11 34 15.7	-0.2
BEYR	Belyy Ugol+	2.10	292	↓eP	Pn	11 34 15.6	-1.0
BEYR	Belyy Ugol+	2.10	292	eP	Pn	11 34 15.6	-1.0
KIV	Kislovodsk	2.17	290	↑eP	Pn	11 34 16.9	-0.6
KIV				iS	Sn	11 34 42.6	-1.5
KIV				pmax	pmax		
	comp=Z,3.0nm,0.4s						
KIV				smax	smax		
	comp=N,10.0nm,0.4s						
KIV	Kislovodsk	2.17	290	eP	Pn	11 34 16.9	-0.6
	comp=N,3.0nm,0.4s						
KIV				iS	Sn	11 34 42.6	-1.5
	comp=N,10.0nm,0.4s						
AKT	Akhty	2.42	136	eP	Pn	11 34 20.6	-0.2
AKT				e		11 34 47.5	
AKT				pmax	pmax		
	comp=Z,14nm,0.2s						
AKT				smax	smax		
	comp=E,93nm,0.4s						
AKT				smax	smax		
	comp=E,84nm,0.4s						
AKT				smax	smax		
	comp=N,56nm,0.4s						
AKT	Akhty	2.42	136	eP	Pn	11 34 20.6	-0.2
	comp=N,14nm,0.2s						
AKT				eS	Sn	11 34 47.

az=139.2
MOS ***12*** *11:59:39.4±1.0,49°.91N×154°.82E,h141km,mb3.9/16, Error ellipse: s-maj=11.7km s-min=5.8km az=66.1*
IDC ***12*** *11:59:40.7±2.2,49°.80N×154°.87E,h141km±21km, mb3.5/13,mb1 3.7/17,mb1mx3.5/43,mbtmp3.9/17,Error ellipse: s-maj=21.6km s-min=10.9km az=149.0*
ISC 12 11:59:38.6±0.6,49°.78N±0°.08×155°.01E±0°.07,h119km,n72, σ1§**97/81,mb4.0/20,2C-6D,Kuril Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**1.15**	**38**	*i* P	**Pn**	**12 00 03.3**	**+1.3**
SKR				*e*S	**Sn**	**12 00 22.1**	**+2.4**
SKR	**Severo-Kuril's**	**1.15**	**38**	*e*PN	Pn	11 59 56.5	-5.5
SKR				pmax	pmax		
	comp=N,140nm,0.5s						
SKR				pmax	pmax		
	comp=Z,260nm,0.5s						
SKR				pmax	pmax		
	comp=E,200nm,0.3s						
PAU	**Pauzhetka**	**2.04**	**34**	*i* P	**Pn**	**12 00 14.2**	**+1.8**
PAU				*i* S	**Sn**	**12 00 41.0**	**+2.7**
PAU	**Pauzhetka**	**2.04**	**34**	PN	**Pn**	**12 00 14.2**	**+1.8**
PAU				S	**Sn**	**12 00 41.0**	**+2.7**
ASAK	**Asacha**	**3.17**	**34**	*e*P	**Pn**	**12 00 29.0**	**+1.8**
MTVR	**Mutnovka**	**3.36**	**35**	*e*S	**Sn**	**12 01 10.5**	**+1.4**
APC	**Apacha**	**3.42**	**22**	*e*P	**Pn**	**12 00 34.0**	**+3.7**
APC	**Apacha**	**3.42**	**22**	PN	**Pn**	**12 00 34.0**	**+3.7**
RUS	**Russkaya**	**3.45**	**38**	*e*P	**Pn**	**12 00 30.6**	**-0.1**
RUS				*e*S	**Sn**	**12 01 09.9**	**-1.1**
RUS	**Russkaya**	**3.45**	**38**	PN	**Pn**	**12 00 30.6**	**-0.1**
RUS				S	**Sn**	**12 01 09.9**	**-1.1**
KRMR	**Karymshinskiy**	**3.62**	**31**	*e*P	**Pn**	**12 00 36.0**	**+3.0**
KRMR				*e*S	**Sn**	**12 01 18.7**	**+3.6**
KRMR	**Karymshinskiy**	**3.62**	**31**	PN	**Pn**	**12 00 36.0**	**+3.0**
KRMR				S	**Sn**	**12 01 18.7**	**+3.6**
PETK	**Petropavlovsk-**	**3.73**	**26**	P	**Pn**	**12 00 37.1**	**+2.7**
	comp=E,2.2nm,0.3s,baz=182,slow=11,SNR=37						
PET	**Petropavlovsk**	**3.96**	**34**	*e*P	**Pn**	**12 00 38.7**	**+1.2**
PET				*e*S	**Sn**	**12 01 24.9**	**+1.7**
PET	**Petropavlovsk**	**3.96**	**34**	*e*PN	**Pn**	**12 00 39.7**	**+2.2**
PET				*e*S	**Sn**	**12 01 22.7**	**-0.5**
PET				smax	smax		
	comp=N,80nm,0.5s						
DALK	**Dalny**	**4.01**	**34**	*e*P	**Pn**	**12 00 39.5**	**+1.4**
DALK				*e*S	**Sn**	**12 01 25.6**	**+1.4**
UGLR	**Uglovaya**	**4.17**	**33**	*e*P	**Pn**	**12 00 42.6**	**+2.1**
AVH	**Avacha**	**4.19**	**32**	*e*P	**Pn**	**12 00 42.8**	**+2.2**
AVH	**Avacha**	**4.19**	**32**	PN	**Pn**	**12 00 42.8**	**+2.2**
SMAR	**Somma**	**4.21**	**33**	*e*P	**Pn**	**12 00 43.3**	**+2.3**
SMAR	**Somma**	**4.21**	**33**	PN	**Pn**	**12 00 43.3**	**+2.3**
KRER	**Koryakskii**	**4.23**	**32**	*e*P	**Pn**	**12 00 43.5**	**+2.3**
KRX	**Arik**	**4.24**	**31**	*e*P	**Pn**	**12 00 43.3**	**+2.0**
SDLR	**Sedlovina**	**4.25**	**33**	*e*P	**Pn**	**12 00 43.1**	**+1.6**
SDLR	**Sedlovina**	**4.25**	**33**	PN	**Pn**	**12 00 43.1**	**+1.6**
GNL	**Ganaly**	**4.32**	**24**	*e*P	**Pn**	**12 00 45.4**	**+3.0**
GNL	**Ganaly**	**4.32**	**24**	PN	**Pn**	**12 00 45.4**	**+3.0**
NLC	**Nalytchevo**	**4.34**	**37**	*e*S	**Sn**	**12 01 30.5**	**-1.7**
MKZ	**Mys Kozlova**	**6.32**	**38**	*e*P	**Pn**	**12 01 08.1**	**-1.0**
MKZ				*e*S	**Sn**	**12 02 15.7**	**-4.1**
MKZ	**Mys Kozlova**	**6.32**	**38**	PN	**Pn**	**12 01 08.1**	**-1.0**
MKZ				S	**Sn**	**12 02 15.7**	**-4.1**
KUR	**Kuril'sk**	**6.64**	**229**	PN	**Pn**	**12 01 16.0**	**+2.4**
KUR				*e*S	**Sn**	**12 02 30.1**	**+2.2**
SHO	**Shikotan**	**8.15**	**227**	*e*PN	**Pn**	**12 01 32.1**	**-1.9**
YUK	**Yuzh-Kuril'sk**	**8.50**	**231**	*e*PN	**Pn**	**12 01 40.6**	**+1.9**
BKI	**Bering**	**8.61**	**47**	*e*S	Sn	12 03 03.8	-11
ASAJ	**Asahikawa**	**10.20**	**241**	P	**Pn**	**12 02 02.5**	**+0.8**
	comp=N,1.8nm,0.3s,baz=70,slow=10,SNR=14						
ERM	**Erimo**	**11.33**	**231⇑**	*e*PN	**Pn**	**12 02 13.7**	**-3.1**
HABR	**Khabarovsk**	**13.14**	**272**	*e*PN	**Pn**	**12 02 38.5**	**-2.0**
HABR				*e*S	**Sn**	**12 05 03.1**	**-2.0**
HABR				pmax	pmax		
	comp=Z,5.0nm,0.9s						
HABR				MLR	MLR		
	comp=Z,35nm,15.0s						
KLR	**Kul'dur**	**15.12**	**277**	P	**P**	**12 03 09.2**	**+1.2**
	comp=Z,0.2nm,0.3s,baz=70,slow=14,SNR=5.1						
USRK	**Ussuriysk Ar.**	**16.64**	**259**	P	**P**	**12 03 25.8**	**+0.9**
	comp=Z,0.2nm,0.3s,baz=64,slow=13,SNR=3.9						
MJA0	**Matsu Arr-Jizo**	**17.96**	**229**	*e*P	**Pn**	**12 03 42.8**	**+2.1**
MJAR	**Matsushiro Arr**	**17.98**	**229**	P	**Pn**	**12 03 40.4**	**-0.5**
	comp=Z,0.4nm,0.3s,baz=28,slow=12,SNR=5.0						
MAJO	**Matsushiro**	**17.98**	**229**	P	**Pn**	**12 03 42.0**	**+1.1**
MAJO				pmax	pmax		
	comp=Z,11nm,0.5s						
YAK	**Yakutsk**	**18.60**	**321⇓**	*e*P	**Pn**	**12 03 47.2**	**-0.8**
YAK				pmax	pmax		
	comp=Z,1.0nm,0.8s						
BILL	**Bilibino**	**19.15**	**13**	P	**P**	**12 03 52.5**	**+0.3**
BILL				pmax	pmax		
	comp=Z,1.0nm,0.8s						
KSRS	**Korea Array**	**23.02**	**248**	P	**P**	**12 04 32.0**	**-1.1**
	comp=Z,2.1nm,0.6s,baz=54,slow=8.3,SNR=7.4						
KSRS	**Korea Array**	**23.02**	**248**	*e*P	**P**	**12 04 33.5**	**+0.3**
KSRS				pmax	pmax		
	comp=Z,3.0nm,0.8s						
TIXI	**Tiksi**	**24.96**	**341⇓**	*e*P	**P**	**12 04 49.0**	**-1.5**
TIXI				pmax	pmax		
	comp=Z,5.0nm,1.9s						
H11N2	**WAKE ISLAND Hy**	**31.45**	**158**	T	T	12 38 41.7	
	baz=346,slow=77,SNR=9.9						
H11N1	**WAKE ISLAND Hy**	**31.47**	**158**	T	T	12 38 41.3	
	baz=346,slow=77,SNR=7.0						
H11N3	**WAKE ISLAND Hy**	**31.47**	**158**	T	T	12 38 41.3	
	baz=346,slow=77,SNR=11						
TLY	**Talaya**	**32.02**	**293⇑**	*i*P	**P**	**12 05 52.3**	**-1.2**
TLY				pmax	pmax		
	comp=Z,4.0nm,0.9s						
H11S1	**WAKE ISLAND Hy**	**32.58**	**159**	T	T	12 40 05.5	
	baz=346,slow=76,SNR=167						
H11S3	**WAKE ISLAND Hy**	**32.59**	**159**	T	T	12 40 04.4	
	baz=346,slow=76,SNR=246						
H11S2	**WAKE ISLAND Hy**	**32.60**	**159**	T	T	12 40 05.1	
	baz=346,slow=76,SNR=112						
ZAK	**Zakamensk**	**32.65**	**291**	*e*P	**P**	**12 05 58.5**	**-0.6**
ZAK				pmax	pmax		
	comp=Z,2.0nm,0.8s						
COLA	**College**	**32.99**	**41⇓**	*e*P	**P**	**12 06 02.2**	**+0.5**
COLA				pmax	pmax		
	comp=Z,5.0nm,0.9s						
ILAR	**Eielson Array**	**33.41**	**41**	P	**P**	**12 06 05.3**	**0.0**
	comp=Z,0.8nm,0.6s,baz=261,slow=6.2,SNR=16						
INK	**Inuvik**	**38.42**	**35**	P	**P**	**12 06 48.8**	**+0.9**
	comp=Z,1.6nm,0.5s,baz=298,slow=6.6,SNR=21						
ZALV	**Zalesovo Beam**	**41.92**	**304**	P	**P**	**12 07 14.7**	**-2.3**
	comp=Z,0.8nm,0.4s,baz=60,slow=5.8,SNR=2.8						
MKAR	**Makanchi Array**	**46.72**	**296**	P	**P**	**12 07 54.1**	**-1.2**
	comp=Z,1.0nm,0.5s,baz=68,slow=8.4,SNR=9.6						
MKAR	**Makanchi Array**	**46.72**	**296**	*e*P	**P**	**12 07 54.5**	**-0.9**
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.5s						
KURK	**Kurchatov**	**46.78**	**302⇓**	*e*P	**P**	**12 07 55.0**	**-0.7**
KURK				pmax	pmax		
	comp=Z,3.0nm,0.9s						
YKA	**Yellowknife Ar**	**47.75**	**39**	P	**P**	**12 08 03.4**	**+0.4**
	comp=Z,1.0nm,0.7s,baz=299,slow=7.5,SNR=13						
BVAR	**Borovoye Array**	**49.94**	**308**	P	**P**	**12 08 19.2**	**-0.7**
	comp=Z,0.8nm,0.3s,baz=58,slow=8.7,SNR=5.6						
BRVK	**Borovoye**	**49.98**	**308⇓**	*e*P	**P**	**12 08 19.8**	**-0.4**
BRVK				pmax	pmax		
	comp=Z,2.0nm,0.9s						
ARU	**Arti**	**53.65**	**317**	*d i*P	**P**	**12 08 46.7**	**-0.7**
ARU				*PP	**pP**	**12 09 19.0**	**+3.5**
ARU						12 10 45.3	
ARU				S	**S**	**12 16 09.5**	**-2.0**
ARU				SS	**SKiKP**	**12 19 48.8**	**0.0**
ARU				pmax	pmax		
	comp=Z,6.0nm,1.2s						
CMAR	**Chiang Mai Arr**	**54.34**	**256**	P	**P**	**12 08 53.2**	**+0.4**
	comp=Z,2.4nm,0.8s,baz=28,slow=7.0,SNR=10						
NVAR	**Mina Array Bea**	**59.95**	**65**	P	**P**	**12 09 32.8**	**+0.4**
	comp=Z,0.4nm,0.5s,baz=297,slow=8.2,SNR=4.2						
FINES	**FINESS Array B**	**61.83**	**335**	P	**P**	**12 09 43.3**	**-1.1**
	comp=Z,0.8nm,0.5s,baz=31,slow=8.9,SNR=5.7						
KBZ	**Khabaz**	**69.66**	**314**	P	**P**	**12 10 35.2**	**+0.3**
	comp=Z,1.8nm,0.7s,baz=57,slow=4.2,SNR=6.6						
TXAR	**Lajitas Array**	**74.93**	**62**	P	**P**	**12 11 06.3**	**-0.3**
	comp=Z,0.6nm,0.5s,baz=301,slow=5.3,SNR=8.2						
ASAR	**Alice Springs**	**75.49**	**200**	P	**P**	**12 11 08.4**	**-1.2**
	comp=Z,0.3nm,0.7s,baz=9.3,slow=5.1,SNR=6.3						

WEL 12 12:11:36.8±0.1,43°.52S×172°.70E,h11km,ML3.6/15,
5C-3D,Error ellipse: s-maj=1.7km s-min=0.9km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRLZ	**Canterbury Las**	**0.08**	**223**	PG	Pg	12 11 39.3	+0.1
CRLZ				AML	AML	12 11 39.4	
CRLZ				SG	Sg	12 11 40.6	-0.3
MQZ	**McQueen's Vall**	**0.19**	**189**	⇑PG	Pg	12 11 41.1	+0.3
MQZ				SG	Sg	12 11 44.1	+0.4
MQZ				AML	AML	12 11 44.2	
OXZ	**Oxford**	**0.52**	**292**	⇓P*	Pg	12 11 46.7	-0.1
LTZ	**Lake Taylor**	**0.80**	**337**	⇓P*	Pg	12 11 52.4	+0.2
LTZ				AML	AML	12 12 04.3	
LTZ				AML	AML	12 12 04.3	
RPZ	**Rata Peaks**	**1.21**	**260**	⇓P*	Pn	12 11 58.3	-1.3
RPZ				AML	AML	12 12 21.1	
RPZ				AML	AML	12 14 29.7	
INZ	**Inchbonnie**	**1.21**	**310**	P*	Pn	12 11 58.3	-1.3
WVZ	**Waitaha Valley**	**1.50**	**287**	PN	Pn	12 12 03.4	-0.2
WVZ				AML	AML	12 14 34.0	
THZ	**Tophouse**	**1.76**	**5**	⇑PN	Pn	12 12 06.1	-1.2
THZ				AML	AML	12 12 38.7	
THZ				AML	AML	12 12 42.0	
DSZ	**Denniston Nort**	**1.89**	**339**	⇑PN	Pn	12 12 08.5	-0.5
DSZ				AML	AML	12 12 33.8	
DSZ				AML	AML	12 12 34.0	
BSWZ	**Blackbirch Sta**	**2.00**	**26**	PN	Pn	12 12 09.6	-0.9
LBZ	**Lake Benmore**	**2.01**	**244**	PN	Pn	12 12 09.7	-0.9
LBZ				AML	AML	12 13 50.2	
LBZ				AML	AML	12 16 33.8	
FOZ	**Fox Glacier**	**2.10**	**269**	PN	Pn	12 12 12.2	+0.4
FOZ				AML	AML	12 12 58.1	
FOZ				AML	AML	12 14 43.5	
ODZ	**Otahua Downs**	**2.12**	**223**	⇑PN	Pn	12 12 11.1	-1.1
ODZ				AML	AML	12 12 49.0	
ODZ				AML	AML	12 12 49.0	
ODZ				AML	AML	12 12 52.4	
TUWZ	**Tuamarina**	**2.28**	**24**	PN	Pn	12 12 12.8	-1.6
NNZ	**Nelson**	**2.35**	**13**	PN	Pn	12 12 14.7	-0.6
QRZ	**Quartz Range**	**2.69**	**357**	PN	Pn	12 12 19.0	-1.0
JCZ	**Jackson Bay**	**2.89**	**258**	PN	Pn	12 12 21.9	-0.8
JCZ				AML	AML	12 13 24.3	
WKZ	**Wanaka**	**2.95**	**242**	PN	Pn	12 12 22.4	-1.2
WKZ				AML	AML	12 13 54.0	
EAZ	**Earnscleugh**	**2.97**	**234**	⇑PN	Pn	12 12 22.8	-1.1
EAZ				AML	AML	12 14 00.6	
CAW	**Cannon Point**	**2.98**	**37**	PN	Pn	12 12 21.9	-2.1
TUZ	**Tuapeka**	**3.27**	**221**	PN	Pn	12 12 27.2	-0.8
TUZ				AML	AML	12 14 58.5	
TUZ				AML	AML	12 14 58.5	
MRZ	**Mangatainoka R**	**3.57**	**38**	PN	Pn	12 12 30.0	-2.1
MLZ	**Mavora Lakes**	**3.76**	**239**	PN	Pn	12 12 33.5	-1.3
MLZ				AML	AML	12 17 47.9	
MLZ				AML	AML	12 17 48.0	

GUC ***12*** *12:13:03.9±0.3,35°.75S×73°.43W,h46km±1km,ML5.1*
ISCJB ***12*** *12:13:05.9±0.2,35°.71S±0°.03×73°.26W±0°.04,h33km, mb4.7/67,MS4.4/14,Error ellipse: s-maj=4.8km s-min=3.5km az=154.5*
MOS ***12*** *12:13:06.2±1.1,35°.68S×73°.31W,h33km,mb5.1/15,Error ellipse: s-maj=22.9km s-min=9.6km az=99.7*
IDC ***12*** *12:13:08.4±2.7,35°.66S×73°.29W,h42km±25km,mb4.1/11, mb1 4.3/15,mb1mx4.2/31,mbtmp4.4/15,ML4.7/4,MS4.4/16, Ms1 4.4/16,ms1mx4.3/24,Error ellipse: s-maj=25.2km s-min=13.9km az=85.0*
NEIC ***12*** *12:13:08.1±0.7,35°.66S×73°.25W,h37km±6km,mb4.9/57, Error ellipse: s-maj=7.6km s-min=4.0km az=85.0*
NEIC Felt [IV] at Hualpen; [III] at Concepcion and Talcahuano; [II] at Arauco, Coronel and San Pedro de la Paz.
ISC 12 12:13:06.8±0.3,35°.72S±0°.04×73°.36W±0°.06,h35km,n211, σ1§**46/218,mb4.9/67,MS4.4/15,3C-6D,Off coast of central Chile**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
COCH	**Cobquecura**	**0.62**	**132⇑**	*i*P	**Pn**	**12 13 17.0**	**-2.2**
COCH				*i* S	**Sn**	**12 13 27.0**	**-0.9**
COCH				IAML		12 13 27.9	
	comp=E,111μm,0.6s						
CCSP	**San Pedro de C**	**1.15**	**170**	*e*P	**Pn**	**12 13 23.9**	**-2.4**
CCSP				*i* S	**Sn**	**12 13 38.6**	**-2.2**
CCSP				IAML		12 13 44.4	
	comp=N,39μm,0.6s						
CCHI	**Chillan**	**1.37**	**131**	*e*P	**Pn**	**12 13 28.4**	**-1.0**
CCHI				*i* S	**Sn**	**12 13 45.3**	**-0.9**
CCHI				IAML		12 13 56.8	
	comp=N,54μm,0.7s						
TALC	**Talca**	**1.45**	**78⇓**	*i*P	**Pn**	**12 13 29.1**	**-1.3**
TALC				*i* S	**Sn**	**12 13 48.0**	**-0.2**
ANTU	**Antumapu**	**3.11**	**47**	*e*P	**Pn**	**12 13 52.0**	**-1.4**
ANTU				IAML		12 14 50.1	
	comp=N,5μm,1.6s						
CLCH	**Cerro Calan**	**3.29**	**46**	IAML		12 15 10.4	
	comp=N,5μm,1.6s						
PEL	**Peldehue**	**3.39**	**42⇑**	*i*P	**Pn**	**12 13 55.8**	**-1.5**
PEL				IAML		12 15 10.8	
	comp=E,3μm,1.0s						
AAGR	**Agrelo**	**4.58**	**56**	*i* P	**Pn**	**12 14 13.5**	**-0.2**
AAGR	**Agrelo**	**4.58**	**56**	*i* P	**Pn**	**12 14 14.0**	**+0.4**
AAGR				*i* P	**Pn**	**12 14 14.0**	**+0.4**
ARCO	**CERRO ARCO**	**4.66**	**53**	*i* P	**Pn**	**12 14 14.9**	**+0.1**
ARCO				*i* S	Sn	12 15 44.2	+37
ARCO				IAML		12 15 48.1	
	comp=Z,151nm,0.7s						
ARCO	**CERRO ARCO**	**4.66**	**53**	*i* P	**Pn**	**12 14 14.9**	**+0.1**
ARCO				*i* S	Sn	12 15 43.5	+36
ARCO				IAML		12 15 48.0	
	comp=Z,151nm,0.7s						
AUSP	**Uspallata**	**4.80**	**45**	*i* P	**Pn**	**12 14 17.3**	**+0.4**
AUSP	**Uspallata**	**4.80**	**45**	*i* P	**Pn**	**12 14 16.9**	**0.0**
ASAL	**Salagasta**	**4.88**	**52**	*i* P	**Pn**	**12 14 17.5**	**-0.3**
ASAL	**Salagasta**	**4.88**	**52**	*i* P	**Pn**	**12 14 18.3**	**+0.5**
RTLS	**Leoncito**	**5.17**	**42**	*i* P	**Pn**	**12 14 22.3**	**+0.3**
RTLS	**Leoncito**	**5.17**	**42**	*i* P	**Pn**	**12 14 22.0**	**+0.1**
PLCA	**Paso Flores**	**5.48**	**157**	P	**Pn**	**12 14 26.9**	**+0.9**
	comp=Z,3.6nm,0.3s,baz=348,slow=10,SNR=62						
PLCA	**Paso Flores**	**5.48**	**157**	*e*Pn	**Pn**	**12 14 26.4**	**+0.4**
RTCV	**Cerro Valdivia**	**5.56**	**48**	*i* P	**Pn**	**12 14 26.2**	**-0.9**
RTCV	**Cerro Valdivia**	**5.56**	**48**	*i* P	**Pn**	**12 14 26.4**	**-0.7**
RTLL	**Cerro Villicun**	**5.98**	**44**	*i* P	**Pn**	**12 14 32.3**	**-0.7**
LCO	**Las Campanas**	**7.05**	**19**	*e*Pn	**Pn**	**12 14 44.2**	**-3.6**
TRQA	**Tornquist**	**9.41**	**108**	*e*Pn	**Pn**	**12 15 21.6**	**+1.6**
CHRN	**Cochrane**	**11.54**	**177**	*e*Pn	**Pn**	**12 15 48.7**	**-0.3**
LVC	**Limon Verde**	**13.62**	**18**	P	**Pn**	**12 16 18.4**	**+0.5**
	comp=Z,15nm,0.3s,baz=180,slow=5.2,SNR=3.7						
LVC				LR	LR	12 22 13.1	
	comp=Z,6μm,18.9s,baz=207,slow=40						
LVC	**Limon Verde**	**13.62**	**18**	*e*Pn	**Pn**	**12 16 17.2**	**-0.6**
PB01	**IPOC Station P**	**15.01**	**14**	*e*Pn	**Pn**	**12 16 36.4**	**-0.1**
PB01				*e*P	**P**	**12 16 42.0**	**+0.5**
CPUP	**Villa Florida**	**16.61**	**60**	P	**Pn**	**12 16 52.6**	**-4.3**
	comp=Z,0.1nm,0.3s,baz=242,slow=15,SNR=2.8						
CPUP				LR	LR	12 23 31.4	
	comp=Z,753nm,21.4s,baz=238,slow=38						
CPUP	**Villa Florida**	**16.61**	**60**	*e*P	**Pn**	**12 16 57.5**	**+0.6**
CPUP	**Villa Florida**	**16.61**	**60**	*e*Pn	**Pn**	**12 16 57.5**	**+0.6**
USHA	**Ushuaia**	**19.42**	**171**	P	**Pn**	**12 17 32.2**	**+1.1**
	comp=Z,19nm,0.3s,baz=317,slow=7.0,SNR=11						
USHA				LR	LR	12 25 00.3	
	comp=Z,6μm,19.2s,baz=314,slow=37						
LPAZ	**La Paz**	**19.91**	**15**	P	**Pn**	**12 17 37.5**	**-0.3**
	comp=Z,0.2nm,0.3s,baz=193,slow=11,SNR=19						
LPAZ	**La Paz**	**19.91**	**15**	*e*P	**Pn**	**12 17 37.5**	**-0.3**
LPAZ				pmax	pmax		
	comp=Z,31nm,1.0s						
LPAZ	**La Paz**	**19.91**	**15**	*e*P	**Pn**	**12 17 37.5**	**-0.3**
	comp=Z,31nm,1.0s						
SIV	**San Ignacio**	**22.50**	**32**	P	**P**	**12 18 02.8**	**-0.7**
	comp=Z,5.3nm,0.7s,baz=231,slow=12,SNR=11						
SIV				LR	LR	12 28 39.3	
	comp=Z,2μm,19.4s,baz=224,slow=42						
NNA	**Nana**	**23.83**	**352**	P	**P**	**12 18 16.5**	**-0.2**
	comp=Z,4.4nm,0.4s,baz=164,slow=5.3,SNR=2.5						
NNA				LR	LR	12 25 17.0	
	comp=Z,510nm,20.6s,baz=183,slow=31						
SPB	**Sao Paulo**	**25.49**	**69**	*e*P	**P**	**12 18 32.4**	**+0.6**
	comp=Z,52nm,1.1s						
SAML	**Samuel**	**28.22**	**22**	*e*P	**P**	**12 18 56.9**	**+0.5**
SAML				*e*pP	**pP**	**12 19 01.3**	**-5.2**
ATAH	**Atahualpa**	**28.82**	**350**	P	**P**	**12 19 03.2**	**+1.0**
	comp=Z,8.9nm,1.1s,baz=203,slow=4.9,SNR=6.7						
ATAH				LR	LR	12 28 29.3	
	comp=Z,332nm,19.1s,baz=193,slow=32						
OTAV	**Otavalo**	**36.08**	**351**	*e*P	**P**	**12 20 08.0**	**+2.2**
	comp=Z,39nm,1.5s						
SDV	**Santo Domingo**	**44.44**	**4**	*e*P	**P**	**12 21 14.8**	**+0.2**
SDV				*e*pP	pP	12 21 16.7	-8.2
JTS	**JuntasAbangare**	**47.05**	**344⇓**	*e*P	**P**	**12 21 35.7**	**+0.6**
JTS				pmax	pmax		
	comp=Z,49nm,1.7s						
VNA3	**Neumayer Olymp**	**48.20**	**157**	P	**P**	**12 21 45.2**	**+1.8**
VNA1	**Neumayer--Stat**	**48.54**	**156**	P	**P**	**12 21 48.1**	**+2.2**
VNA2	**Neumayer--Watz**	**48.87**	**157**	P	**P**	**12 21 49.5**	**+0.9**
	baz=295,slow=9.4						
SNAA	**Sanae**	**50.42**	**157**	P	**P**	**12 22 01.9**	**+1.5**
SNAA	**Sanae**	**50.42**	**157**	*e*P	**P**	**12 22 01.5**	**+1.1**
SNAA				pmax	pmax		
	comp=Z,64nm,1.1s						
SNAA	**Sanae**	**50.42**	**157**	*e*P	**P**	**12 22 01.5**	**+1.1**
	comp=Z,64nm,1.1s						
QSPA	**South Pole Qui**	**54.52**	**180**	*e*P	**P**	**12 22 32.5**	**+1.5**
	comp=Z,27nm,0.9s						
NVL	**N'lazarevskaya**	**55.19**	**156**	*e*P	**P**	**12 22 36.4**	**+0.9**
SBA	**Scott Base**	**61.18**	**192**	*e*P	**P**	**12 23 20.2**	**+2.9**
SBA				pmax	pmax		
	comp=Z,17nm,1.4s						
SBA	**Scott Base**	**61.18**	**192**	*e*P	**P**	**12 23 20.2**	**+2.9**
	comp=Z,17nm,1.4s						
VNDA	**Vanda**	**62.21**	**192**	P	**P**	**12 23 25.6**	**+1.4**
	comp=Z,1.0nm,0.8s,baz=121,slow=3.3,SNR=4.9						
VNDA	**Vanda**	**62.21**	**192**	*e*P	**P**	**12 23 26.5**	**+2.3**
VNDA				pmax	pmax		
	comp=Z,35nm,1.9s						
VNDA	**Vanda**	**62.21**	**192**	*e*P	**P**	**12 23 26.5**	**+2.3**
	comp=Z,35nm,1.9s						
SYO	**Syowa Base**	**64.67**	**158⇓**	*e*P	**P**	**12 23 39.0**	**-1.6**
TAOE	**Nuku Hiva Isla**	**66.05**	**276**	*e*LR	LR	12 43 44.3	
	comp=Z,198nm,27.7s						
MEH	**Mehetia**	**67.56**	**264**	*e*T	T	13 37 29.6	
	comp=Z,21nm,0.2s						
TIAR	**Tiarei**	**68.76**	**263**	*e*T	T	13 38 59.7	
	comp=Z,2.9nm,0.3s						
PPT2	**Papeete2**	**68.93**	**263**	*e*S	**S**	**12 33 11.9**	**+1.0**
	comp=Z,111nm,23.5s						
PPT2	**Papeete2**	**68.93**	**263**	*e*LR	LR	12 45 05.9	
	comp=Z,343nm,25.0s						
HPIG		**69.38**	**329**	*e*P	**P**	**12 24 11.9**	**+0.7**
	comp=Z,10nm,1.1s						
NATX	**Nacogdoches**	**70.03**	**341**	*e*P	**P**	**12 24 16.0**	**+1.1**
TX31	**Lajitas Ar. Si**	**70.72**	**332**	*e*P	**P**	**12 24 19.5**	**+0.2**
TX31				*e*P	**P**	**12 24 20.0**	**+0.7**
TXAR	**Lajitas Array**	**70.72**	**332**	P	**P**	**12 24 20.0**	**+0.8**
	comp=Z,1.4nm,0.7s,baz=147,slow=7.0,SNR=11						
TXAR				LR	LR	12 50 50.1	
	comp=Z,222nm,18.2s,baz=0.0,slow=32						
WHTX	**Lake Whitney,**	**71.05**	**338**	*e*P	**P**	**12 24 21.1**	**+0.1**
SWET	**Sewanee**	**71.54**	**349**	*e*P	**P**	**12 24 24.1**	**+0.1**
	comp=Z,6.6nm,1.2s						
SWET				*e*PcP	**pP**	**12 24 32.1**	**-2.8**
CPCT	**Cooper Cave**	**71.56**	**350**	*e*P	**P**	**12 24 24.6**	**+0.4**
	comp=Z,5.6nm,1.0s						
MAW	**Mawson**	**71.84**	**164**	P	**P**	**12 24 26.3**	**+0.8**
	comp=Z,6.0nm,0.8s,baz=230,slow=8.1,SNR=10						
MAW				LR	LR	12 56 50.2	
	comp=Z,541nm,18.3s,baz=236,slow=36						
MAW	**Mawson**	**71.84**	**164**	*e*P	**P**	**12 24 26.3**	**+0.8**
MAW				pmax	pmax		
	comp=Z,4.0nm,1.0s						
MAW	**Mawson**	**71.84**	**164**	*e*P	**P**	**12 24 26.3**	**+0.8**
	comp=Z,3.7nm,1.0s						
ABTX	**Abilene, Hawle**	**72.31**	**337**	*e*P	**P**	**12 24 29.1**	**+0.4**
	comp=Z,8.8nm,0.8s						
WVT	**Waverly**	**72.74**	**348**	*e*P	**P**	**12 24 31.0**	**-0.1**
WVT				pmax	pmax		
	comp=Z,24nm,1.2s						
WVT	**Waverly**	**72.74**	**348**	*e*P	**P**	**12 24 31.0**	**-0.1

comp=Z,8.1nm,1.1s
MSU Marysvale 82.12 330 *e*P **P 12 25 25.5 +1.6**
MSU Marysvale 82.12 330 *e*P **P 12 25 25.5 +1.6**
P18A Preston Nutter 82.33 332 *e*P **P 12 25 26.3 +1.3**
comp=Z,13nm,1.1s
P17A Butcher Ranch, 82.38 332 *e*P **P 12 25 26.6 +1.5**
comp=Z,18nm,1.5s
TMUT Trail Mountain 82.41 331 *e*P **P 12 25 26.7 +1.2**
comp=Z,5.8nm,1.0s
TPNV Topopah Spring 82.54 327 *e*P **P 12 25 28.5 +2.5**
TPNV pmax pmax
comp=Z,8.0nm,1.2s
TPNV Topopah Spring 82.54 327 *e*P **P 12 25 28.5 +2.5**
comp=Z,7.6nm,1.2s
DAC Darwin (Calif) 82.60 325 *e*P **P 12 25 28.0 +1.6**
DAC pmax pmax
comp=Z,8.0nm,1.1s
DAC Darwin (Calif) 82.60 325 *e*P **P 12 25 28.0 +1.6**
comp=Z,8.2nm,1.1s
PSUT Pine Spring 82.83 329 *e*P **P 12 25 29.3 +1.7**
comp=Z,3.8nm,1.1s
NLU North Lily Min 83.32 331 *e*P **P 12 25 32.1 +2.0**
comp=Z,11nm,1.5s
JLU Jordanelle 83.63 332 *e*P **P 12 25 33.2 +1.6**
K22A Casper 83.67 336 *e*P **P 12 25 32.6 +0.9**
comp=Z,21nm,1.4s
DUG Dugway, Tooele 83.82 331 *e*P **P 12 25 33.7 +1.2**
DUG pmax pmax
comp=Z,19nm,1.4s
DUG Dugway, Tooele 83.82 331 *e*P **P 12 25 33.7 +1.2**
comp=Z,20nm,1.4s
RAO Raoul Island 84.04 238 LR LR 12 54 20.0
comp=Z,69nm,21.8s,baz=35,slow=29
BGU Big Grassy Mou 84.53 331 *e*P **P 12 25 37.5 +1.4**
comp=Z,18nm,1.8s
HWUT Hardware Ranch 84.54 332 *e*P **P 12 25 36.9 +0.6**
comp=Z,15nm,1.3s
NV11 Mina Array Sit 84.62 326 *e*P **P 12 25 38.5 +1.8**
SPUT South Promonto 84.62 332 *e*P **P 12 25 37.5 +0.9**
comp=Z,16nm,1.3s
NV01 Mina Array Sit 84.68 326 *e*P **P 12 25 37.8 +0.8**
NVAR Mina Array Bea 84.68 326 P **P 12 25 38.4 +1.4**
comp=Z,2.1nm,0.9s,baz=144,slow=5.3,SNR=15
BW06 Boulder Array 84.81 334 *e*P **P 12 25 37.5 -0.1**
BW06 *e*P **P 12 25 37.9 +0.2**
BW06 *e*pP **pP 12 25 45.4 -3.3**
PDAR Pinedale Array 84.81 334 P **P 12 25 37.6 0.0**
comp=Z,0.5nm,0.8s,baz=132,slow=4.4,SNR=5.9
PDAR LR LR 12 59 48.5
comp=Z,141nm,18.3s,baz=142,slow=33
WAKR Walker 85.26 325 *e*P **P 12 25 41.6 +1.6**
AHID Auburn Hatcher 85.37 333 *e*P **P 12 25 41.7 +1.4**
REDW Red Top Meadow 85.80 334 *e*P **P 12 25 43.1 +0.6**
TORD Torodi Ar. Bea 85.81 71 P **P 12 25 42.8 -0.1**
comp=Z,3.9nm,1.0s,baz=246,slow=4.2,SNR=12
TORD LR LR 13 02 11.3
comp=Z,232nm,19.7s,baz=205,slow=34
LOHW Long Hollow 85.92 334 *e*P **P 12 25 43.7 +0.6**
comp=Z,15nm,1.8s
MOOW Moose Ponds 86.09 334 *e*P **P 12 25 44.2 +0.3**
comp=Z,18nm,1.9s
PAHR Pah Rah Range 86.21 326 *e*P **P 12 25 46.3 +1.7**
comp=Z,7.5nm,1.2s
IMW Indian Meadow 86.29 334 *e*P **P 12 25 45.6 +0.6**
comp=Z,14nm,1.5s
AFDM Forest Hills D 86.33 325 *e*P **P 12 25 46.4 +1.4**
comp=Z,3.5nm,0.9s
FLWY Flagg Ranch 86.37 334 *e*P **P 12 25 46.8 +1.5**
comp=Z,30nm,1.8s
MDND Maddock 86.44 343 *e*P **P 12 25 45.6 +0.3**
RLMT Red Lodge 86.78 335 *e*P **P 12 25 47.8 +0.5**
YMR Madison River 86.97 334 *e*P **P 12 25 49.6 +1.4**
comp=Z,12nm,1.2s
HLID Hailey 87.31 331 *e*P **P 12 25 51.2 +1.3**
comp=Z,5.2nm,1.1s
MCMT McKenzie Canyo 87.79 333 *e*P **P 12 25 53.5 +1.4**
ULM Lac du Bonnet 87.88 346 P **P 12 25 51.2 -0.9**
comp=Z,2.2nm,0.7s,baz=136,slow=3.3,SNR=3.1
WVOR Wild Horse Val 88.09 328 *e*P **P 12 25 54.8 +1.2**
WVOR pmax pmax
comp=Z,16nm,1.5s
WVOR Wild Horse Val 88.09 328 *e*P **P 12 25 54.8 +1.2**
comp=Z,16nm,1.5s
DLMT Dillon 88.15 334 *e*P **P 12 25 55.5 +1.7**
comp=Z,15nm,1.5s
DLMT *e*pP **pP 12 26 01.7 -3.2**
MOD Modoc Plateau 88.39 327 *e*P **P 12 25 56.0 +1.0**
comp=Z,7.4nm,0.9s
LRM Limekiln Ridge 88.50 334 *e*P **P 12 25 57.2 +1.7**
K05A Summer Lake 89.31 327 *e*P **P 12 26 01.6 +2.2**
ESDC Sonseca Array 98.55 47 LR LR 13 10 25.5
comp=Z,149nm,19.0s,baz=200,slow=35
YKA Yellowknife Ar 103.33 342 Pdiff **Pdif 12 27 02.0 -0.3**
comp=Z,0.1nm,0.7s,baz=139,slow=2.9,SNR=2.4
CLL Collm 114.84 44 *e*SP SP 12 42 18.0 +1.4
CLL Lm MLR 13 19 00.0
comp=Z,100nm,20.2s
ILAR Eielson Array 115.22 333 PKP **PKPdf 12 31 43.0 -0.5**
comp=Z,0.5nm,0.9s,baz=194,slow=3.8,SNR=5.4
ILAR Eielson Array 115.22 333 PKIKP **PKPdf 12 31 43.0 -0.5**
H11S2 WAKE ISLAND Hyl 24.65 269 T T 14 49 11.0
baz=118,slow=74,SNR=7.3
H11S1 WAKE ISLAND Hyl 24.66 269 T T 14 49 09.5
baz=118,slow=74,SNR=3.8
H11S3 WAKE ISLAND Hyl 24.67 269 T T 14 49 21.1
baz=118,slow=74,SNR=4.0
H11N3 WAKE ISLAND Hyl 25.10 270 T T 14 49 31.3
baz=122,slow=76,SNR=5.8
H11N1 WAKE ISLAND Hyl 25.12 270 T T 14 49 29.9
baz=122,slow=76,SNR=6.8
H11N2 WAKE ISLAND Hyl 25.12 270 T T 14 49 29.1
baz=122,slow=76,SNR=5.3
OBN Obninsk 129.43 44 ⇓*i*PKIKP **PKPdf 12 32 13.0 +2.1**
OBN *e*PS **PS 12 44 32.6 +1.6**
OBN *e*SS SS 12 51 44.6 +3.9
OBN pmax pmax
comp=Z,38nm,2.1s
KLMR Klimovskoe 131.43 37 *e*PKIKP **PKPdf 12 32 14.8 +0.2**
KLMR *e* 12 34 35.8
KLMR pmax pmax
comp=Z,12nm,1.3s
BILL Bilibino 133.89 333 ⇓*i*PKIKP **PKPdf 12 32 20.8 +1.7**
BILL *e* 12 34 52.7
BILL pmax pmax
comp=Z,5.0nm,1.2s
ARU Arti 141.75 42 PKP **PKPdf 12 32 35.8 +2.0**
comp=Z,1.4nm,0.3s,baz=196,slow=2.7,SNR=4.2
ARU Arti 141.75 42 *i* PKIKP **PKPdf 12 32 36.0 +2.1**
ARU 12 35 36.5
ARU MLR MLR
comp=Z,186nm,22.0s
ARU Arti 141.75 42 *e*PKPdf **PKPdf 12 32 35.2 +1.3**
ARU PKP **PKPdf 12 32 35.8 +2.0**
TIXI Tiksi 142.17 349 ⇑*e*PKIKP **PKPdf 12 32 32.6 -1.6**
TIXI Tiksi 142.17 349 *e*PKPdf **PKPdf 12 32 30.9 -3.3**
ABKAR Akbulak array 143.59 53 *e*PKPdf PKPbc 12 32 34.9 0.0
NRIK Noril'sk 144.72 12 PKP PKPbc 12 32 37.8 +0.1
comp=Z,3.7nm,0.7s,baz=45,slow=4.4,SNR=6.9
HYB Hyderabad 149.13 119 *i* PKP **PKPbc 12 32 52.5 +0.6**
BRVK Borovoye 149.20 44 *i* PKP2 **PKPbc 12 32 52.0 +1.0**
BRVK Borovoye 149.20 44 *e*PKPbc **PKPbc 12 32 51.9 +1.0**
YAK Yakutsk 149.95 338 *e*PKP2 **PKPbc 12 32 52.7 +0.2**
YAK pmax pmax
comp=Z,23nm,0.9s
NKL Nikolayevsk 150.47 317 *e*PKIKP **PKPbc 12 32 54.0 0.0**
NKL pmax pmax
comp=Z,26nm,1.0s
KKAR Karatay Array 151.30 64 *e*PKIKP **PKPbc 12 32 56.9 +0.5**
KKAR Karatay Array 151.30 64 *e*PKPbc **PKPbc 12 32 56.9 +0.5**
AAK Ala-Archa 154.25 65 *e*PKIKP **PKPdf 12 32 55.2 +0.3**
AAK Ala-Archa 154.25 65 *e*PKPdf **PKPdf 12 32 55.2 +0.3**
FRU Bishkek 154.32 64 *e*PKIKP **PKPab 12 33 12.0 -5.4**
MJAR Matsushiro Arr 154.54 281 PKPbc **PKPbc 12 33 04.0 +0.3**
comp=Z,1.8nm,1.0s,baz=253,slow=3.8,SNR=4.0
MJAR PKPab **PKPab 12 33 18.9 +0.5**
comp=Z,1.0nm,0.7s,baz=161,slow=2.7,SNR=4.5
NVS Novosibirsk 154.97 33 *e*PKIKP **PKPbc 12 33 02.0 -2.0**
KSH Kashi 155.48 72 *e*PKPbc **PKPdf 12 32 56.1 -0.5**
KSH *e*pPKP pPKPdf 12 33 06.4 -1.7
KSH PKS **PKSdf 12 36 28.3 -2.5**
KSH *e*PP **PP 12 37 01.3 +1.5**
KSH SKS **SKSdf 12 39 57.1 -3.3**
KSH AMB AMB
comp=Z,110nm,5.2s
ZALV Zalesovo Beam 156.25 33 PKP **PKPdf 12 32 57.3 +0.3**
comp=Z,2.3nm,0.8s,baz=255,slow=2.9,SNR=7.6
ZALV PKPab **PKPab 12 33 25.5 +0.3**
comp=Z,4.6nm,0.9s,baz=306,slow=5.3,SNR=5.8
BOD Bodaibo 157.35 350 *e*PKP2 **PKPab 12 33 28.6 -1.1**
BOD pmax pmax
comp=Z,7.0nm,1.1s
MKAR Makanchi Array 158.70 51 PKP **PKPdf 12 33 00.6 +0.3**
comp=Z,1.1nm,0.8s,baz=259,slow=1.2,SNR=4.9
MKAR PKPab **PKPab 12 33 36.7 +0.6**
comp=Z,1.1nm,0.8s,baz=299,slow=3.0,SNR=3.3
KSRS Korea Array 162.81 282 PKPab **PKPab 12 33 54.8 +0.5**
comp=Z,1.2nm,0.7s,baz=102,slow=4.2,SNR=4.6
KSAR Wonju Array Be 162.85 282 PKP2 **PKPab 12 33 54.8 +0.4**
KSAR Wonju Array Be 162.85 282 PKPab **PKPab 12 33 54.8 +0.4**
TLY Talaya 163.90 7 *e*PKIKP PKPdf 12 33 14.3 +8.6
TLY pmax pmax
comp=Z,3.0nm,0.7s
ZAK Zakamensk 165.14 8 *e*PKP2 **PKPab 12 34 03.7 -0.3**
ZAK pmax pmax
comp=Z,4.0nm,1.4s
SONM Songino Array 167.89 1 PKP **PKPdf 12 33 09.3 +0.2**
comp=Z,0.1nm,0.4s,baz=62,slow=3.9,SNR=2.6
SONM PKPab **PKPab 12 34 16.3 +0.1**
comp=Z,1.1nm,0.8s,baz=341,slow=3.5,SNR=5.8
HHC Hu-ho-hao-te 173.57 324 *e*PKP **PKPdf 12 33 10.2 -2.2**
HHC PP **PP 12 38 32.8 -0.6**
CD2 Chengdu 174.64 153 PKP **PKPdf 12 33 13.5 +0.5**
LZH Lanzhou 177.70 80 *e*PKP **PKPdf 12 33 11.0 -2.7**
LZH sPKP sPKP 12 33 20.7
LZH pPKP pPKP 12 33 48.3
LZH PKP PKP 12 34 59.2
LZH LR LR
comp=N,160nm,18.0s
LZH LR LR
comp=E,170nm,18.3s
LZH LR LR
comp=Z,230nm,20.2s

SOME ***12*** *12:29:26.6, 44°.27N×81°.38E, h5km*
ISC 12 12:29:23.1±2.1, 44°.29N±0°.05×81°.61E±0°.08, h4km±13km, n16, σ1§25/31, 2C-4D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KTMS	**Ketmen**	**1.24**	**228**	*e*P	**Pg**	**12 29 48.3**	**+1.4**
KTMS	6.7nm,0.1s			*e*S	**Sn**	**12 30 04.0**	**-0.7**
	73nm,0.2s						
DJR	**Jarkent**	**1.31**	**273**	*e*P	**Pg**	**12 29 48.6**	**+0.4**
DJR	11nm,0.2s			*e*S	**Sb**	**12 30 04.9**	**-0.7**
	33nm,0.4s						
SHLS	**Shalkode**	**1.69**	**229**	*e*P	**Pg**	**12 29 55.9**	**+0.4**
SHLS	7.2nm,0.1s			*e*S	**Sb**	**12 30 16.9**	**+0.3**
	75nm,0.3s						
PDGK	**Podgornoye**	**1.81**	**239**	⇓P	**Pb**	**12 29 56.1**	**-0.8**
PDGK	1.5nm,0.3s			⇓S	**Sb**	**12 30 19.6**	**-0.3**
	15nm,0.6s						
KAPS	**Kapalarasan**	**1.89**	**303**	⇓*i*P	**Pg**	**12 29 59.1**	**-0.2**
KAPS	6.0nm,0.3s			⇓*i*S	**Sb**	**12 30 22.3**	**0.0**
	44nm,0.6s						
UZB	**Uzynbulak**	**2.20**	**240**	*e*P	**Pb**	**12 30 02.0**	**-1.5**
UZB	2.3nm,0.1s			*e*S	**Sn**	**12 30 27.6**	**-0.6**
	21nm,0.2s						
KPKS	**Kokpek**	**2.27**	**250**	*e*P	**Pb**	**12 30 05.2**	**+0.4**
KPKS	15nm,0.1s			*e*S	**Sb**	**12 30 32.8**	**-0.4**
	74nm,0.2s						
MNBS	**Baschi**	**2.32**	**266**	*e*P	**Pb**	**12 30 05.5**	**-0.1**
MNBS	0.9nm,0.3s			*e*S	**Sb**	**12 30 33.1**	**-1.5**
	28nm,0.3s						
MK31	**Makanchi Array**	**2.55**	**11**	⇑Pn	**Pn**	**12 30 05.1**	**-0.2**
MK31	0.5nm,0.6s,baz=197,slow=16,SNR=8.6			⇑Lg	Lg	12 30 43.1	
	2.9nm,0.5s,baz=194,slow=28,SNR=9.1						
KURS	**Kuram**	**2.61**	**253**	*e*P	**Pb**	**12 30 11.5**	**+1.0**
KURS	3.6nm,0.5s			*e*S	**Sb**	**12 30 43.5**	**+0.5**
	6.5nm,0.9s						
SATY	**Saty**	**2.63**	**243**	*e*P	**Pb**	**12 30 11.1**	**+0.2**
SATY	3.4nm,0.1s			*e*S	**Sb**	**12 30 43.0**	**-0.6**
	39nm,0.2s						
ARXS	**Arharly**	**2.72**	**270**	*e*P	**Pb**	**12 30 13.4**	**+1.0**
ARXS	2.8nm,0.3s			*e*S	**Sb**	**12 30 47.1**	**+0.9**
	17nm,0.4s						
CHKK	**Chushkaly**	**3.35**	**264**	*e*P	**Pb**	**12 30 24.0**	**+1.0**
CHKK	4.4nm,0.3s			*e*S	**Sb**	**12 31 05.5**	**+1.3**
	16nm,0.3s						
MDOK	**Medeo**	**3.50**	**253**	*e*P	**Pg**	**12 30 28.9**	**-1.1**
MDOK	2.2nm,0.3s			*e*S	**Sg**	**12 31 13.8**	**-1.6**
	3.1nm,0.2s						
KUU	**Kurty**	**3.82**	**266**	*e*P	**Pb**	**12 30 31.5**	**+0.4**
KUU	2.9nm,0.3s			*e*S	**Sb**	**12 31 18.5**	**+0.8**
	1.7nm,0.6s						
KST	**Kastek**	**4.28**	**255**	*e*P	**Pb**	**12 30 41.2**	**+2.1**
KST	3.3nm,0.3s			*e*S	**Sb**	**12 31 35.3**	**+4.1**
	4.4nm,0.5s						

BJI ***12*** *12:29:18.5, 20°.03S×177°.07W, h561km, mb4.8/34, mB4.9/23*
IDC ***12*** *12:29:23.4±1.3, 19°.77S×177°.88W, h564km±14km, mb4.0/27, mb1 4.1/29, mb1mx4.0/43, mbtmp4.9/29, Error ellipse: s-maj=11.5km s-min=9.9km az=111.0*
ISCJB ***12*** *12:29:24.8±0.2, 19°.91S±0°.03×177°.96W±0°.06, h600km, mb4.8/82, Error ellipse: s-maj=6.9km s-min=4.0km az=5.6*
NEIC ***12*** *12:29:24.2±0.6, 19°.79S×177°.86W, h579km±7km, mb5.1/42, Error ellipse: s-maj=7.5km s-min=6.0km az=113.0*
MOS ***12*** *12:29:28.2±2.1, 18°.88S×178°.35W, h583km, mb4.6/5, Error ellipse: s-maj=12.8km s-min=10.2km az=28.6*
ISC 12 12:29:25.5±0.3, 19.73S±0°.06×177.76W±0°.06, h600km, n304, σ1§59/334, mb4.9/82, 38C-24D, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSVF	**Nonsavu**	**4.44**	**296**	*e*P	**P**	**12 30 52.8**	**-1.5**
MSVF	**Nonsavu**	**4.44**	**296**	*e*P	**P**	**12 30 52.8**	**-1.5**
AFI	**Afiamalu**	**8.14**	**46**	P	**P**	**12 31 23.4**	**-3.0**
AFI	5.5nm,0.3s,baz=46,slow=10,SNR=7.6			S	**S**	**12 32 59.5**	**-5.8**
	6.9nm,0.3s,baz=215,slow=23,SNR=6.6						
AFI	**Afiamalu**	**8.14**	**46**	*e*P	**P**	**12 31 24.0**	**-2.4**
AFI				S	**S**	**12 32 59.5**	**-5.8**
AFI	**Afiamalu**	**8.14**	**46**	*e*P	**P**	**12 31 24.0**	**-2.4**
AFI				S	**S**	**12 32 59.5**	**-5.8**
RAO	**Raoul Island**	**9.48**	**181**	P	**P**	**12 31 35.4**	**-3.6**
	150nm,0.3s,baz=60,slow=20,SNR=3.2						
DZM	**Mont Dzumac**	**14.95**	**258**	P	**P**	**12 32 33.9**	**+0.6**
	6.2nm,0.3s,baz=109,slow=21,SNR=22						
OUZ	**Omahuta**	**17.22**	**205**	*e*P	**P**	**12 32 55.4**	**+1.6**
	151nm,0.7s						
WCZ	**Waipu Caves**	**17.58**	**202**	PN	**P**	**12 32 58.1**	**+1.0**
KUZ	**Kuaotunu**	**17.89**	**197**	PN	**P**	**12 33 00.1**	**+0.2**
MKAZ	**Moumakai**	**18.38**	**198**	PN	**P**	**12 33 04.9**	**+0.5**
AWAZ	**Awhitu Peninsu**	**18.50**	**199**	PN	**P**	**12 33 05.8**	**+0.3**
TGRZ	**Tauranga**	**18.68**	**195**	PN	**P**	**12 33 07.3**	**+0.2**
TWGZ	**Tauwhareparae**	**18.75**	**190**	PN	**P**	**12 33 05.6**	**-2.2**
URZ	**Urewera**	**18.99**	**192**	P	**P**	**12 33 07.3**	**-2.6**
	24nm,0.3s,baz=282,slow=3.0,SNR=55						
URZ	**Urewera**	**18.99**	**192**	*e*P	**P**	**12 33 07.4**	**-2.5**
	94nm,0.7s						
URZ	**Urewera**	**18.99**	**192**	PN	**P**	**12 33 05.8**	**-4.1**
CNGZ	**Carnagh Statio**	**19.01**	**190**	PN	**P**	**12 33 08.8**	**-1.3**
RIGZ	**Rimuhau**	**19.30**	**191**	PN	**P**	**12 33 11.1**	**-1.7**
KNZ	**Kokohu**	**19.63**	**191**	PN	**P**	**12 33 14.2**	**-1.5**
HIZ	**Hauiti**	**19.78**	**197**	*e*P	**P**	**12 33 15.7**	**-1.4**
	72nm,0.9s						
HIZ	**Hauiti**	**19.78**	**197**	PN	**P**	**12 33 17.5**	**+0.4**
NMHZ	**Naumai**	**19.86**	**193**	PN	**P**	**12 33 16.0**	**-2.0**
BKZ	**Black Stump Fm**	**20.00**	**193**	*e*P	**P**	**12 33 16.3**	**-2.8**
	32nm,0.5s						
BKZ	**Black Stump Fm**	**20.00**	**193**	PN	**P**	**12 33 15.1**	**-4.0**
WNVZ	**Wahianoa**	**20.35**	**195**	PN	**P**	**12 33 20.0**	**-2.5**
BHHZ	**Black Hill Sta**	**20.40**	**194**	PN	**P**	**12 33 19.6**	**-3.1**
PXZ	**Pawanui**	**20.75**	**192**	PN	**P**	**12 33 23.7**	**-2.1**
BFZ	**Birch Farm**	**21.50**	**193**	*e*P	**P**	**12 33 30.8**	**-1.8**
	176nm,1.7s						
DUWZ	**D'Urville Isla**	**22.17**	**197**	PN	**P**	**12 33 36.0**	**-2.6**
SNZO	**South Karori**	**22.45**	**195**	*e*P	**P**	**12 33 38.9**	**-2.0**
	61nm,0.6s						
TCW	**Tory Channel**	**22.46**	**196**	PN	**P**	**12 33 38.9**	**-2.1**
QRZ	**Quartz Range**	**22.61**	**199**	PN	**P**	**12 33 41.3**	**-1.0**
NNZ	**Nelson**	**22.71**	**198**	PN	**P**	**12 33 41.3**	**-2.0**
THZ	**Tophouse**	**23.35**	**198**	*e*P	**P**	**12 33 48.0**	**-1.1**
	65nm,1.3s						
KHZ	**Kahutara**	**23.78**	**196**	*e*P	**P**	**12 33 50.9**	**-1.9**
	83nm,1.1s						
KHZ	**Kahutara**	**23.78**	**196**	PN	**P**	**12 33 50.2**	**-2.5**
HNR	**Honiara**	**23.85**	**292**	P	**P**	**12 33 50.8**	**-2.9**
	22nm,0.4s,baz=3.5,slow=3.3,SNR=4.3						
LTZ	**Lake Taylor**	**24.47**	**198**	*e*P	**P**	**12 33 56.6**	**-2.3**
	41nm,0.5s						
LTZ	**Lake Taylor**	**24.47**	**198**	PN	**P**	**12 33 56.0**	**-2.9**
OXZ	**Oxford**	**25.04**	**198**	*e*P	**P**	**12 34 01.7**	**-2.2**
	44nm,0.9s						
RPZ	**Rata Peaks**	**25.69**	**199**	P	**P**	**12 34 08.3**	**-1.3**
	16nm,0.5s,baz=22,slow=1.7,SNR=19						
JCZ	**Jackson Bay**	**26.75**	**202**	PN	**P**	**12 34 17.6**	**-1.4**
MLZ	**Mavora Lakes**	**28.11**	**201**	*e*P	**P**	**12 34 31.0**	**+0.2**
	32nm,0.6s						
MLZ	**Mavora Lakes**	**28.11**	**201**	PN	**P**	**12 34 30.4**	**-0.3**
DCZ	**Deep Cove**	**28.54**	**203**	*e*P	**P**	**12 34 33.8**	**-0.6**
	48nm,0.7s						
WHZ	**Wether Hill Ro**	**28.63**	**201**	*e*P	**P**	**12 34 35.3**	**+0.1**
	219nm,0.5s						
RABL	**Rabaul**	**33.14**	**294**	*e*P	**P**	**12 35 12.7**	**-1.4**
	92nm,0.4s						
CTA	**Charters Tower**	**33.80**	**263**	P	**P**	**12 35 19.1**	**-0.5**
	66nm,0.3s,baz=93,slow=11,SNR=245						
CTAO	**Charters Tower**	**33.80**	**263**	*e*P	**P**	**12 35 18.6**	**-1.0**
CTAO	**Charters Tower**	**33.80**	**263**	*e*P	**P**	**12 35 18.6**	**-1.0**
	417nm,0.7s						
PMG	**Port Moresby**	**35.40**	**282**	P	**P**	**12 35 32.6**	**-0.3**
	77nm,0.8s,baz=89,slow=5.7,SNR=15						
PMG				ScP	**ScP**	**12 40 34.7**	**-0.6**
	21nm,0.8s,baz=156,slow=2.8,SNR=3.6						
PMG	**Port Moresby**	**35.40**	**282**	*d i*P	**P**	**12 35 32.4**	**-0.5**
PMG	**Port Moresby**	**35.40**	**282**	*e*P	**P**	**12 35 32.7**	**-0.3**
	82nm,0.8s						
COEN	**Coen**	**37.77**	**273**	*e*P	**P**	**12 35 52.0**	**-0.3**
	56nm,0.7s						
STKA	**Stephens Creek**	**38.33**	**243**	P	**P**	**12 35 55.8**	**-0.8**
	5.1nm,0.6s,baz=91,slow=8.2,SNR=15						
STKA				PcP	**PcP**	**12 37 55.4**	**+1.0**
	2.6nm,0.9s,baz=54,slow=3.4,SNR=2.9						
BBOO	**Buckleboo**	**43.09**	**243**	*e*P	**P**	**12 36 33.8**	**-0.5**
	35nm,0.6s						
JAY	**Jayapura**	**44.02**	**288**	P	**P**	**12 36 41.8**	**+0.1**
	8.4nm,0.5s,baz=90,slow=20,SNR=50						
AS01	**Alice Springs**	**44.88**	**256**	*e*P	**P**	**12 36 45.7**	**-2.5**
AS31	**Alice Springs**	**44.92**	**256**	*e*P	**P**	**12 36 47.9**	**-0.7**
	23nm,0.3s						
ASAR	**Alice Springs**	**44.92**	**256**	P	**P**	**12 36 47.8**	**-0.7**
	49nm,0.7s,baz=86,slow=8.2,SNR=1062						
ASAR				PcP	**PcP**	**12 38 17.1**	**+0.2**
	5.7nm,0.7s,baz=102,slow=3.7,SNR=7.9						
ASAR				S	**S**	**12 42 42.0**	**-2.2**
	7.5nm,0.8s,baz=91,slow=16,SNR=28						
WB2	**Warramunga Arr**	**44.92**	**261**	*e*P	**P**	**12 36 47.3**	**-1.3**
	30nm,0.6s						
WRAB	**Tennant Creek**	**44.93**	**261**	*c e*P	**P**	**12 36 47.1**	**-1.5**
WRAB	pmax pmax						
	comp=Z,147nm,1.3s						
WRAB	**Tennant Creek**	**44.93**	**261**	*e*P	**P**	**12 36 47.3**	**-1.3**
	comp=Z,78nm,1.3s						
WRA	**Warramunga Arr**	**44.94**	**261**	P	**P**	**12 36 47.2**	**-1.5**
	comp=Z,20nm,0.3s,baz=97,slow=7.6,SNR=1052						
WRA				S	**S**	**12 42 41.3**	**-3.2**
	comp=Z,1.5nm,0.8s,baz=91,slow=14,SNR=6.1						
MTN	**Manton Dam**	**49.39**	**270**	*e*P	**P**	**12 37 21.0**	**-1.0**
	comp=Z,43nm,0.6s						
GUMO	**Guam**	**49.49**	**309**	P	**P**	**12 37 22.1**	**-0.6**
	comp=Z,53nm,0.5s,baz=158,slow=16,SNR=6.2						
FITZ	**Fitzroy Crossi**	**53.36**	**262**	P	**P**	**12 37 50.0**	**-0.6**
	comp=Z,14nm,0.4s,baz=82,slow=4.7,SNR=125						
FITZ	**Fitzroy Crossi**	**53.36**	**262**	*e*P	**P**	**12 37 50.1**	**-0.4**
	comp=Z,16nm,0.5s						
SOEI	**Soe**	**56.71**	**271**	*e*P	**P**	**12 38 14.8**	**+0.8**
	comp=Z,112nm,0.6s						
MBWA	**Marble Bar**	**58.24**	**257**	*e*P	**P**	**12 38 23.2**	**-1.0**
	comp=Z,123nm,0.7s						
SBA	**Scott Base**	**58.65**	**184**	*e*P	**P**	**12 38 28.4**	**+2.5**
SBA	pmax pmax						
	comp=Z,16nm,1.1s						
SBA	**Scott Base**	**58.65**	**184**	*e*P	**P**	**12 38 28.4**	**+2.5**
	comp=Z,16nm,1.1s						
VNDA	**Vanda**	**58.69**	**185**	P	**P**	**12 38 27.9**	**+1.8**
	comp=Z,3.2nm,0.6s,baz=352,slow=8.5,SNR=31						
VNDA				ScP	**ScP**	**12 42 15.5**	**+4.1**
	comp=Z,1.5nm,0.9s,baz=346,slow=3.8,SNR=5.1						
VNDA	**Vanda**	**58.69**	**185**	*e*P	**P**	**12 38 28.0**	**+1.8**
VNDA	pmax pmax						
	comp=Z,4.0nm,0.7s						
VNDA	**Vanda**	**58.69**	**185**	*e*P	**P**	**12 38 27.9**	**+1.8**
	comp=Z,4.3nm,0.7s						
MMRI	**Maumere**	**58.95**	**272**	*e*P	**P**	**12 38 28.1**	**-0.9**
	comp=Z,50nm,0.5s						
LUWI	**Luwuk**	**61.02**	**280**	*e*P	**P**	**12 38 43.0**	**+0.3**
	comp=Z,50nm,0.8s						
JHJ	**Hachijo jima 2**	**66.38**	**322**	P	**P**	**12 39 15.9**	**-0.3**
	comp=Z,106nm,0.3s,baz=258,slow=17,SNR=4.2						
JAGI	**Jajag, Banyuwa**	**66.62**	**269**	*e*P	**P**	**12 39 16.2**	**-2.0**
	comp=Z,44nm,0.7s						
MYLDM	**Lahad Datu**	**67.36**	**285**	*e*P	**P**	**12 39 24.8**	**+2.1**
	comp=Z,20nm,0.8s						
MJAR	**Matsushiro Arr**	**69.73**	**323**	P	**P**	**12 39 36.8**	**+0.3**
	comp=Z,15nm,0.6s,baz=155,slow=5.8,SNR=31						
MAJO	**Matsushiro**	**69.73**	**323**	*d i*P	**P**	**12 39 36.8**	**+0.3**
MAJO	**Matsushiro**	**69.73**	**323**	*e*P	**P**	**12 39 37.1**	**+0.6**
	comp=Z,22nm,0.6s						
MAT	**Matsushiro**	**69.73**	**323**	P	**P**	**12 39 36.4**	**-0.1**
MJB9	**Matsu-Tunnel**	**69.73**	**323**	*e*P	**P**	**12 39 37.1**	**+0.6**
	comp=Z,5.8nm,0.6s						
KKM	**Kota Kinabalu**	**69.78**	**284**	*e*P	**P**	**12 39 37.6**	**+0.1**
	comp=Z,34nm,0.7s						
QSPA	**South Pole Qui**	**70.33**	**180**	*e*P	**P**	**12 39 40.7**	**+1.0**
	comp=Z,73nm,0.9s						
QSPA				*e*P	**P**	**12 39 41.0**	**+1.2**
JNU	**Nakatsue**	**71.88**	**316**	P	**P**	**12 39 49.0**	**-0.2**
	comp=Z,16nm,1.0s,baz=85,slow=12,SNR=3.9						
TWG	**Pinlang**	**73.16**	**302**	*e*P	**P**	**12 39 55.2**	**-1.5**
	comp=Z,92nm,0.6s						
ASAJ	**Asahikawa**	**73.16**	**331**	P	**P**	**12 39 58.0**	**+1.8**
	comp=Z,23nm,0.7s,baz=219,slow=5.1,SNR=20						
ASAJ	**Asahikawa**	**73.16**	**331**	*e*P	**P**	**12 39 58.4**	**+2.1**
	comp=Z,31nm,0.8s						
YULB	**Yu-li**	**73.27

HABR			*e*S	S	12 49 49.1	+1.3
HABR			*e*		12 50 04.7	
HABR			*e*SS	SS	12 55 15.9	-0.1
HABR			pmax	pmax		
	comp=E,14nm,1.3s					
HABR			pmax	pmax		
	comp=N,10.0nm,1.3s					
HABR			pmax	pmax		
	comp=Z,27nm,1.3s					
HABR			MLR	MLR		
	comp=Z,38nm,18.0s					
MDJ	**Mudanjiang**	**80.02 325**	P	**P**	**12 40 35.2**	**+1.6**
MDJ			pmax	pmax		
	comp=Z,24nm,0.8s					
MDJ			pmax	pmax		
	comp=Z,45nm,5.0s					
MDJ	**Mudanjiang**	**80.02 325**	*e*P	**P**	**12 40 35.0**	**+1.3**
	comp=Z,25nm,1.0s					
NVAR	**Mina Array Bea**	**80.31 43**	P	**P**	**12 40 38.2**	**+2.6**
	comp=Z,1.1nm,0.9s,baz=223,slow=8.5,SNR=6.8					
KLR	**Kul'dur**	**81.98 329**	P	**P**	**12 40 45.3**	**+1.7**
	comp=Z,5.0nm,1.0s,baz=94,slow=5.6,SNR=12					
KLR	**Kul'dur**	**81.98 329** ⇓	*i*P	**P**	**12 40 44.9**	**+1.3**
IPM	**Ipoh**	**83.26 277**	*e*P	**P**	**12 40 51.3**	**+0.4**
F10A	**Beach Ranch, E**	**85.26 38**	*e*P	**P**	**12 41 01.1**	**+1.2**
CAST	**Castle Rocks**	**85.28 11**	*e*P	**P**	**12 40 59.1**	**-0.5**
BJI	**Beijing**	**85.51 315**	P	**P**	**12 41 02.2**	**+1.1**
BJI			pmax	pmax		
	comp=Z,13nm,0.6s					
TRF	**Thorofare Moun**	**85.66 12**	*e*P	**P**	**12 41 02.1**	**+0.5**
SEY	**Seymchan**	**85.68 347**	P	**P**	**12 41 02.0**	**+0.6**
	comp=Z,8.4nm,0.6s,baz=136,slow=5.7,SNR=27					
SEY	**Seymchan**	**85.68 347** ⇓	*e*P	**P**	**12 41 02.2**	**+0.8**
ENH	**Enshi**	**85.80 304**	*e*P	**P**	**12 41 03.9**	**+1.0**
	comp=Z,41nm,1.2s					
RND	**Reindeer**	**85.90 13**	*e*P	**P**	**12 41 02.9**	**+0.3**
RND	**Reindeer**	**85.90 13**	*e*P	**P**	**12 41 02.9**	**+0.3**
MCK	**McKinley**	**86.18 12**	*e*P	**P**	**12 41 04.7**	**+0.9**
MCK	**McKinley**	**86.18 12**	*e*P	**P**	**12 41 04.7**	**+0.9**
TXAR	**Lajitas Array**	**86.45 57**	P	**P**	**12 41 08.5**	**+2.5**
	comp=Z,0.6nm,0.6s,baz=215,slow=6.7,SNR=7.1					
GYA	**Guiyang**	**86.47 300**	P	**P**	**12 41 07.0**	**+0.8**
GYA			pP	pP	12 43 12.2	-2.5
GYA			sP	sP	12 44 09.8	-5.0
GYA			PP	**PP**	**12 44 42.5**	**+3.0**
GYA			SKS	**SKSac**	**12 50 38.0**	**+1.5**
GYA			S	**ScS**	**12 50 56.2**	**-2.6**
GYA			sS	sS	12 54 36.4	-6.1
GYA			pmax	pmax		
	comp=Z,20nm,1.0s					
GYA			pmax	pmax		
	comp=Z,120nm,5.8s					
MLY	**Manley**	**87.00 11**	*e*P	**P**	**12 41 08.1**	**+0.4**
WRH	**Wood River Hil**	**87.01 12**	*e*P	**P**	**12 41 08.6**	**+0.9**
CCB	**Clear Creek Bu**	**87.22 12**	*e*P	**P**	**12 41 09.1**	**+0.5**
MCMT	**McKenzie Canyo**	**87.22 40**	*e*P	**P**	**12 41 11.4**	**+1.9**
COLA	**College**	**87.41 12**	*d*P	**P**	**12 41 09.5**	**0.0**
COLA			pmax	pmax		
	comp=Z,11nm,0.7s					
COLA	**College**	**87.41 12**	*e*P	**P**	**12 41 10.4**	**+0.9**
MDM	**Murphy Dome**	**87.41 12**	*e*P	**P**	**12 41 10.2**	**+0.6**
IL1	**Eielson Array**	**87.52 13**	*e*P	**P**	**12 41 10.2**	**+0.2**
ILAR	**Eielson Array**	**87.52 13**	P	**P**	**12 41 10.4**	**+0.3**
	comp=Z,3.5nm,0.9s,baz=222,slow=5.6,SNR=24					
ILB	**Eielson Array**	**87.52 13**	*e*P	**P**	**12 41 10.7**	**+0.7**
SYO	**Syowa Base**	**87.52 193** ⇓	*e*P	P	12 41 03.6	-6.6
BSMT	**Bassoo Peak**	**87.69 37**	*e*P	**P**	**12 41 09.8**	**-1.7**
XAN	**Xi'an**	**87.85 307**	P	**P**	**12 41 13.8**	**+1.4**
XAN			pP	pP	12 43 11.6	-10
XAN			pmax	pmax		
	comp=Z,24nm,1.0s					
XAN			pmax	pmax		
	comp=Z,83nm,5.2s					
IMW	**Indian Meadow**	**87.93 42**	*e*P	**P**	**12 41 15.8**	**+2.9**
PDAR	**Pinedale Array**	**88.25 43**	P	**P**	**12 41 16.2**	**+1.9**
	comp=Z,0.8nm,0.6s,baz=207,slow=1.6,SNR=8.5					
BILL	**Bilibino**	**88.30 354** ⇑	*i*P	**P**	**12 41 14.6**	**+1.0**
BILL			pmax	pmax		
	comp=Z,4.0nm,0.8s					
BOZ	**Bozeman (W)**	**88.38 40**	*e*P	**P**	**12 41 16.8**	**+2.0**
BOZ	**Bozeman (W)**	**88.38 40**	*e*P	**P**	**12 41 16.8**	**+2.0**
DAWY	**Dawson**	**88.66 16**	*e*P	**P**	**12 41 17.3**	**+1.8**
EGAK	**Eagle**	**88.81 15**	*e*P	**P**	**12 41 17.6**	**+1.6**
VNA3	**Neumayer Olymp**	**88.89 176**	P	**P**	**12 41 17.0**	**+0.5**
HHC	**Hu-ho-hao-te**	**88.98 314**	*e*P	**P**	**12 41 16.2**	**-1.4**
HHC			S	**S**	**12 51 16.1**	**0.0**
HHC			pmax	pmax		
	comp=Z,46nm,1.2s					
HHC			pmax	pmax		
	comp=Z,210nm,7.6s					
COLD	**Coldfoot**	**89.08 10**	*e*P	**P**	**12 41 19.1**	**+1.8**
KMI	**Kunming**	**89.20 297**	P	**P**	**12 41 21.3**	**+2.2**
KMI			pmax	pmax		
	comp=Z,13nm,0.8s					
VNA2	**Neumayer-Watz**	**89.33 177**	P	**P**	**12 41 19.1**	**+0.5**
	baz=200,slow=3.9					
CRAI	**Chiangrai**	**89.44 292**	P	**P**	**12 41 21.7**	**+1.6**
	comp=Z,42nm,1.8s,comp=Z,23μm					
LAMP	**Lampang**	**89.48 290**	P	**P**	**12 41 22.4**	**+2.1**
	comp=Z,12nm,0.9s					
CM31	**Chiang Mai Arr**	**90.07 289**	*e*P	**P**	**12 41 25.0**	**+2.0**
CMAR	**Chiang Mai Arr**	**90.07 289**	P	**P**	**12 41 25.1**	**+2.1**
	comp=Z,8.8nm,0.9s,baz=117,slow=2.7,SNR=44					
CHTO	**Chiang Mai**	**90.20 290**	P	**P**	**12 41 24.9**	**+1.4**
	comp=Z,76nm,0.9s					
CHTO	**Chiang Mai**	**90.20 290**	*e*P	**P**	**12 41 25.0**	**+1.4**
CHTO	**Chiang Mai**	**90.20 290**	*e*P	**P**	**12 41 25.0**	**+1.4**
CMAI	**Chiengmai2**	**90.50 291**	P	**P**	**12 41 26.6**	**+1.4**
	comp=Z,11nm,1.0s,comp=Z,409nm					
CD2	**Chengdu**	**90.57 303**	P	**P**	**12 41 25.0**	**-0.1**
CD2			pmax	pmax		
	comp=Z,2.0nm,0.5s					
YAK	**Yakutsk**	**91.49 338** ⇑	*e*P	**P**	**12 41 28.9**	**+0.4**
YAK			pmax	pmax		
	comp=Z,11nm,1.0s					
LZH	**Lanzhou**	**92.48 307**	⇓P	**P**	**12 41 34.7**	**+0.8**
LZH			pP	pP	12 43 40.5	-3.4
LZH			sP	sP	12 44 36.8	-6.6
LZH			PP	**PP**	**12 45 30.0**	**+3.6**
LZH			SKS	**SKSac**	**12 51 12.3**	**+1.6**
LZH			S	**S**	**12 51 47.3**	**-0.2**
LZH			sS	sS	12 55 32.1	-8.6
LZH			pmax	pmax		
	comp=Z,29nm,1.5s					
LZH			pmax	pmax		
	comp=Z,120nm,5.4s					
INK	**Inuvik**	**93.48 15**	P	**P**	**12 41 37.8**	**+0.3**
	comp=Z,1.5nm,0.8s,baz=274,slow=4.2,SNR=7.9					
ULN	**Ulaanbaatar**	**94.93 319** ⇓	*e*P	**P**	**12 41 44.9**	**+0.1**
ULN			pmax	pmax		
	comp=Z,5.0nm,1.8s					
SONM	**Songino Array**	**95.32 319**	P	**P**	**12 41 46.9**	**+0.4**
	comp=Z,0.4nm,0.5s,baz=130,slow=2.3,SNR=3.5					
TIXI	**Tiksi**	**98.07 345** ⇑	*e*P	**P**	**12 41 58.0**	**0.0**
TIXI			pmax	pmax		
	comp=Z,2.0nm,1.3s					
NRIK	**Noril'sk**	**109.94 338**	Pdiff	**Pdif**	**12 42 52.1**	**+1.2**
	comp=Z,3.9nm,0.6s,baz=109,slow=3.9,SNR=4.9					
NRIK			PKiKP	**PKiKP**	**12 46 48.2**	**-0.7**
	comp=Z,3.5nm,0.6s,baz=128,slow=1.8,SNR=3.7					
ZALV	**Zalesovo Beam**	**110.04 321**	PKiKP	**PKiKP**	**12 46 48.9**	**-0.6**
	comp=Z,1.5nm,0.7s,baz=162,slow=1.4,SNR=5.3					
MKAR	**Makanchi Array**	**110.83 314**	PKiKP	**PKiKP**	**12 46 51.0**	**-0.2**
	comp=Z,1.2nm,0.6s,baz=228,slow=1.0,SNR=16					
NVS	**Novosibirsk**	**111.04 322**	*e*PKiKP	**PKiKP**	**12 46 44.6**	**-6.7**
KURK	**Kurchatov**	**113.58 318**	PKiKP	**PKiKP**	**12 46 56.1**	**-0.3**
KURK	**Kurchatov**	**113.58 318**	PKiKP	**PKiKP**	**12 46 56.0**	**-0.3**
KURBB	**Kurchatov Arra**	**113.64 318**	PKiKP	**PKiKP**	**12 46 56.0**	**-0.4**
	comp=Z,1.6nm,0.7s,baz=85,slow=1.9,SNR=12					
KSH	**Kashi**	**114.63 305**	*e*PKP	PKPdf	12 46 55.9	-3.0
KSH			AMB	AMB		
	comp=Z,67nm,4.5s					
AAK	**Ala-Archa**	**116.00 309** ⇓	*i*PKIKP	**PKPdf**	**12 47 02.0**	**+0.5**
BVAR	**Borovoye Array**	**118.64 320**	PKP	**PKPdf**	**12 47 06.2**	**+0.1**
	comp=Z,3.7nm,0.5s,baz=112,slow=1.6,SNR=17					
BRVK	**Borovoye**	**118.70 320** ⇓	*i*PKIKP	**PKPdf**	**12 47 06.9**	**+0.8**
BRVK			pmax	pmax		
	comp=Z,2.0nm,1.0s					
KKAR	**Karatay Array**	**118.94 309**	*e*PKIKP	**PKPdf**	**12 47 06.8**	**-0.2**
KKAR	**Karatay Array**	**118.94 309**	*e*PKPdf	**PKPdf**	**12 47 06.8**	**-0.2**
SPITS	**Spitsbergen Ar**	**121.11 357**	PKP	**PKPdf**	**12 47 10.3**	**+0.2**
	comp=Z,4.5nm,0.8s,baz=79,slow=4.4,SNR=6.1					
ARU	**Arti**	**124.70 326**	PKP	**PKPdf**	**12 47 18.1**	**+0.5**
	comp=Z,4.9nm,0.4s,baz=85,slow=1.3,SNR=7.2					
ARU	**Arti**	**124.70 326**	*i* PKIKP	**PKPdf**	**12 47 18.2**	**+0.7**
ARU					12 49 13.4	
ARU					12 53 34.6	
ARU			SS	SS	13 05 16.3	-7.6
ABKAR	**Akbulak array**	**125.68 317**	*e*PKPdf	**PKPdf**	**12 47 20.1**	**+0.4**
AKTO	**Aktyubinsk**	**126.64 319**	PKP	**PKPdf**	**12 47 22.1**	**+0.7**
	comp=Z,2.2nm,0.7s,baz=78,slow=3.5,SNR=5.6					
ARCES	**ARCESS Array B**	**128.21 350**	PKP	**PKPdf**	**12 47 24.9**	**+1.0**
	comp=Z,2.6nm,0.5s,baz=30,slow=1.2,SNR=28					
FINES	**FINESS Array B**	**135.10 344**	PKhKP	PKPpre	12 47 34.5	
	comp=Z,1.1nm,0.4s,baz=29,slow=4.4,SNR=4.9					
FINES			PKP	**PKiKP**	**12 47 38.8**	**+0.1**
	comp=Z,1.4nm,0.3s,baz=29,slow=4.4,SNR=12					
OBN	**Obninsk**	**136.19 332** ⇑	*e*PKIKP	**PKPdf**	**12 47 38.6**	**-0.7**
OBN			*e*		12 50 29.3	
OBN			pmax	pmax		
	comp=Z,11nm,0.7s					
VSU	**Vasula**	**137.40 341** ⇑	*i*PKIKP	**PKPdf**	**12 47 44.2**	**+2.8**
NB2	**NORSAR Subarra**	**138.25 353**	PKP	PKPpre	12 47 37.0	
	comp=Z,1.1nm,0.7s,baz=16,slow=3.2					
NOA	**NORSAR Array B**	**138.25 353**	PKhKP	PKPpre	12 47 37.6	
	comp=Z,1.2nm,0.6s,baz=22,slow=3.9,SNR=6.2					
NOA			PKP	**PKiKP**	**12 47 44.2**	**-1.0**
	comp=Z,0.8nm,0.6s,baz=18,slow=4.2,SNR=6.6					
NEY	**Neytrino**	**138.82 314**	PKIKP	**PKPdf**	**12 47 43.0**	**-1.8**
AKASG	**Malin Array Be**	**142.45 332**	PKhKP	PKPpre	12 47 47.6	
	comp=Z,4.6nm,0.3s,baz=42,slow=4.4,SNR=28					
AKASG			SKPbc	**SKiKP**	**12 50 36.7**	**+2.7**
	comp=Z,0.4nm,0.4s,baz=48,slow=3.0,SNR=4.9					
AKASG	**Malin Array Be**	**142.45 332**	*c* PKIKP	**PKPdf**	**12 47 54.9**	**+4.1**
AKASG			pmax	pmax		
	comp=Z,2.0nm,0.4s					
KIEV	**Kiev**	**142.46 332** ⇓	*i*PKIKP	**PKPdf**	**12 47 51.3**	**+0.5**
SFNV	**Sufian**	**142.96 305**	*e*P	**PKPdf**	**12 47 50.9**	**-1.3**
SHEL	**Horse Pasture**	**143.68 167**	*i* PKHKP	PKPpre	12 47 57.2	
SORM	**Soroca**	**144.67 329** ⇑	*i*P	**PKPab**	**12 47 55.7**	**-0.3**
SORM	**Soroca**	**144.67 329** ⇑	PKIKP	**PKPab**	**12 47 55.7**	**-0.3**
LVV	**L'vov**	**145.31 335**	*e*PKIKP	**PKPbc**	**12 47 57.0**	**-0.1**
DRWC	**Darouich**	**145.53 307**	*e*P	**PKPab**	**12 47 59.1**	**-0.8**
KWP	**Kalwaria Pacla**	**145.98 336**	*e*PKP	**PKPab**	**12 48 00.0**	**-1.1**
KWP	**Kalwaria Pacla**	**145.98 336** ⇓	*i*P	**PKPab**	**12 48 00.2**	**-0.9**
KWP	**Kalwaria Pacla**	**145.98 336** ⇓	PKIKP	**PKPab**	**12 48 00.2**	**-0.9**
ZALF	**Zalf**	**146.08 300**	*e*P	**PKPab**	**12 48 00.9**	**-1.2**
TLCR		**146.42 325** ⇓	*i*P	**PKPab**	**12 48 01.5**	**-1.5**
TLCR		**146.42 325** ⇓	PKIKP	**PKPab**	**12 48 01.5**	**-1.5**
BRTR	**Keskin Array B**	**146.49 313**	PKPbc	**PKPbc**	**12 48 01.2**	**+0.3**
	comp=Z,8.9nm,0.7s,baz=137,slow=4.7,SNR=37					
BRTR			SKPbc	**SKiKP**	**12 50 42.8**	**-0.2**
	comp=Z,1.0nm,0.8s,baz=40,slow=2.1,SNR=3.6					
BURAR	**Bucovina Array**	**146.50 331** ⇑	*i*P	**PKPbc**	**12 48 01.6**	**+1.0**
BURAR	**Bucovina Array**	**146.50 331** ⇑	PKIKP	**PKPbc**	**12 48 01.6**	**+1.0**
OJC	**Ojcow**	**146.53 339**	*e*PKP	**PKPbc**	**12 48 01.4**	**+0.9**
OJC	**Ojcow**	**146.53 339**	*e*PKIKP	**PKPbc**	**12 48 01.4**	**+0.9**
ASF	**Jabal al Asfar**	**146.61 299**	PKPbc	**PKPbc**	**12 48 01.9**	**+0.5**
	comp=Z,7.4nm,0.7s,baz=64,slow=0.8,SNR=9.5					
TESR	**Tescani**	**146.63 329** ⇑	*i*P	**PKPbc**	**12 48 01.9**	**+1.0**
STHS	**Stebnicka Huta**	**146.70 337**	*e*PKIKP	**PKPab**	**12 48 02.5**	**-1.5**
STHS	**Stebnicka Huta**	**146.70 337**	*e*PKP	**PKPab**	**12 48 02.5**	**-1.5**
KOLS	**Kolonicke sedl**	**146.71 336**	*e*PKIKP	**PKPab**	**12 48 02.5**	**-1.6**
KOLS			*e*		12 48 05.3	
KOLS	**Kolonicke sedl**	**146.71 336**	*e*PKP	**PKPab**	**12 48 02.5**	**-1.6**
KOLS			*e*		12 48 05.3	
CFR	**Carcaliu**	**146.78 326** ⇓	*i*P	**PKPbc**	**12 48 01.9**	**+0.6**
CFR	**Carcaliu**	**146.78 326** ⇓	PKIKP	**PKPbc**	**12 48 01.9**	**+0.6**
UZH	**Uzhgorod**	**146.95 335**	*e*PKHKP	PKPpre	12 47 58.1	
UZH			*i*		12 48 02.7	
UZH			*e*		12 50 12.7	
KSP	**Ksiaz**	**147.02 344**	*e*PKP	**PKPab**	**12 48 03.4**	**-1.9**
KSP	**Ksiaz**	**147.02 344**	*e*PKIKP	**PKPab**	**12 48 03.4**	**-1.9**
NIE	**Niedzica**	**147.04 338**	*e*PKP	**PKPbc**	**12 48 03.4**	**+1.5**
NIE	**Niedzica**	**147.04 338**	*e*PKIKP	**PKPbc**	**12 48 03.4**	**+1.5**
VRI	**Vrincioaia**	**147.04 328** ⇑	*i*P	**PKPbc**	**12 48 02.7**	**+0.7**
VRI	**Vrincioaia**	**147.04 328** ⇑	PKIKP	**PKPbc**	**12 48 02.7**	**+0.7**
CRVS	**Cervenica-Dubn**	**147.04 336**	*e*PKIKP	**PKPbc**	**12 48 02.7**	**+0.8**
CRVS	**Cervenica-Dubn**	**147.04 336**	*e*PKP	**PKPbc**	**12 48 02.7**	**+0.8**
PLOR	**Plostina**	**147.09 328** ⇑	*i*P	**PKPbc**	**12 48 03.0**	**+0.8**
PLOR	**Plostina**	**147.09 328** ⇑	PKIKP	**PKPbc**	**12 48 03.0**	**+0.8**
TIRR	**Tirgusor**	**147.10 324** ⇑	*i*P	**PKPbc**	**12 48 03.1**	**+1.0**
TIRR	**Tirgusor**	**147.10 324** ⇑	PKIKP	**PKPbc**	**12 48 03.1**	**+1.0**
HARR	**Harsova**	**147.22 325** ⇑	*i*P	**PKPbc**	**12 48 02.9**	**+0.5**
HARR	**Harsova**	**147.22 325** ⇑	PKIKP	**PKPbc**	**12 48 02.9**	**+0.5**
TCHB	**Talchebab**	**147.25 300**	*e*P	**PKPbc**	**12 48 04.1**	**+1.2**
CLL	**Collm**	**147.37 347**	*e*PKPdf	**PKPbc**	**12 48 01.0**	**-1.6**
CLL			*i* PKPbc	**PKPbc**	**12 48 03.5**	**+0.9**
	comp=Z,28nm,1.0s					
CLL			*i* PKPab	**PKPab**	**12 48 07.0**	**+0.4**
	comp=Z,12nm,0.7s					
CLL	**Collm**	**147.37 347**	*i* PKIKP	**PKPbc**	**12 48 03.5**	**+0.9**
CLL			*i*		12 48 07.0	
CLL			pmax	pmax		
	comp=Z,28nm,1.0s					
CLL			pmax	pmax		
	comp=Z,12nm,0.7s					
UPC	**Upice**	**147.40 344** ⇑	*e*PKP	**PKPbc**	**12 48 04.2**	**+1.4**
UPC			*e*PKPAB	**PKPab**	**12 48 08.3**	**+1.5**
UPC	**Upice**	**147.40 344** ⇑	*e*PKIKP	**PKPbc**	**12 48 04.2**	**+1.4**
UPC			*e*		12 48 08.3	
DPC	**Dobruska-Polom**	**147.46 343** ⇑	*e*PKP	**PKPbc**	**12 48 04.5**	**+1.5**
DPC			*e*PKPAB	**PKPab**	**12 48 08.1**	**+1.0**
DPC	**Dobruska-Polom**	**147.46 343**	*e*PKIKP	**PKPbc**	**12 48 04.5**	**+1.5**
DPC			*e*		12 48 08.1	
LANS	**Liptovska Anna**	**147.55 339**	*e*PKP2	**PKPab**	**12 48 05.3**	**-2.2**
LANS	**Liptovska Anna**	**147.55 339**	*e*PKP	**PKPab**	**12 48 05.3**	**-2.2**
LANS			*e*		12 48 09.5	
BRG	**Berggiesshubel**	**147.57 346**	*i* PKP	**PKPbc**	**12 48 04.3**	**+1.2**
	comp=Z,14nm,0.7s					
BRG	**Berggiesshubel**	**147.57 346**	*i* PKIKP	**PKPbc**	**12 48 04.3**	**+1.2**
BRG			pmax	pmax		
	comp=Z,6.0nm,0.7s					
KRLC	**Kraliky**	**147.58 342** ⇑	*e*PKP	**PKPbc**	**12 48 04.7**	**+1.4**
KRLC			*e*PKPAB	**PKPab**	**12 48 08.9**	**+1.3**
KRLC	**Kraliky**	**147.58 342** ⇑	*e*PKIKP	**PKPbc**	**12 48 04.7**	**+1.4**
KRLC			*e*		12 48 08.9	
MMAI	**Mount Meron Ar**	**147.62 301**	PKPbc	**PKPbc**	**12 48 05.0**	**+1.1**
	comp=Z,8.5nm,0.5s,baz=60,slow=5.1,SNR=11					
MORC	**Moravsky Berou**	**147.63 341** ⇑	*i*P	**PKPbc**	**12 48 05.1**	**+1.7**
MORC	**Moravsky Berou**	**147.63 341** ⇑	PKIKP	**PKPbc**	**12 48 05.1**	**+1.7**
DOPR	**Dopca**	**147.63 329** ⇓	*i*P	**PKPbc**	**12 48 05.1**	**+1.6**
MLR	**Muntele Rosu**	**147.70 328**	PKPbc	**PKPbc**	**12 48 04.5**	**+0.6**
	comp=Z,1.8nm,0.5s,baz=27,slow=4.5,SNR=11					
MLR	**Muntele Rosu**	**147.70 328** ⇑	*i*P	**PKPbc**	**12 48 02.3**	**-1.5**
MLR	**Muntele Rosu**	**147.70 328** ⇑	PKIKP	**PKPbc**	**12 48 02.3**	**-1.5**
PVCC	**Panska Ves**	**147.75 345** ⇑	*e*PKP	**PKPbc**	**12 48 05.2**	**+1.6**
PVCC			*e*PKPAB	**PKPab**	**12 48 09.2**	**+1.0**
PVCC	**Panska Ves**	**147.75 345**	*e*PKIKP	**PKPbc**	**12 48 05.2**	**+1.6**
PVCC			*e*		12 48 09.2	
KECS	**Kecovo**	**147.75 337**	*e*PKIKP	**PKPbc**	**12 48 04.6**	**+0.9**
KECS			*e*		12 48 09.4	
KECS	**Kecovo**	**147.75 337**	*e*PKP	**PKPbc**	**12 48 04.6**	**+0.9**
KECS			*e*		12 48 09.4	
VOIR		**148.18 329** ⇑	*i*P	**PKPbc**	**12 48 05.8**	**+0.8**
VOIR		**148.18 329** ⇑	PKIKP	**PKPbc**	**12 48 05.8**	**+0.8**
DRGR		**148.23 333** ⇓	*i*P	**PKPbc**	**12 48 06.6**	**+1.5**
DRGR		**148.23 333** ⇓	PKIKP	**PKPbc**	**12 48 06.6**	**+1.5**
PRU	**Pruhonice**	**148.26 345** ⇑	*e*PKP	**PKPbc**	**12 48 06.2**	**+1.3**
PRU			*e*PKPAB	**PKPab**	**12 48 11.5**	**+1.2**
PRU	**Pruhonice**	**148.26 345**	*e*PKIKP	**PKPbc**	**12 48 06.2**	**+1.3**
PRU			*e*		12 48 11.5	
VRAC	**Vranov**	**148.32 342**	PKPbc	**PKPbc**	**12 48 05.7**	**+0.6**
	comp=Z,2.6nm,0.4s,baz=45,slow=2.9,SNR=6.0					
VYHS	**Vyhne**	**148.33 339**	*e*PKIKP	**PKPbc**	**12 48 06.2**	**+1.0**
VYHS			*e*		12 48 12.2	
VYHS	**Vyhne**	**148.33 339**	*e*PKP	**PKPbc**	**12 48 06.2**	**+1.0**
VYHS			*e*		12 48 12.2	
ARR	**Arges**	**148.43 329** ⇑	*i*P	**PKPbc**	**12 48 07.4**	**+1.8**
PSZ	**Piszkesteto**	**148.44 337** ⇑	*i*P	**PKPbc**	**12 48 06.9**	**+1.4**
PSZ	**Piszkesteto**	**148.44 337**	*e*PKPdf	**PKPdf**	**12 48 01.7**	**+0.6**
NKC	**Novy Kostel**	**148.50 347** ⇑	*e*PKP	**PKPbc**	**12 48 06.9**	**+1.4**
NKC			*e*PKPAB	**PKPab**	**12 48 12.2**	**+0.9**
NKC	**Novy Kostel**	**148.50 347**	*e*PKIKP	**PKPbc**	**12 48 06.9**	**+1.4**
NKC			*e*		12 48 12.2	
TREC	**Trest**	**148.65 343** ⇑	*e*PKP	**PKPbc**	**12 48 07.2**	**+1.3**
TREC			*e*PKPAB	**PKPab**	**12 48 13.1**	**+1.1**
TREC	**Trest**	**148.65 343**	*e*PKIKP	**PKPbc**	**12 48 07.2**	**+1.3**
TREC			*e*		12 48 13.1	
EIL	**Elat**	**148.77 295**	PKPbc	**PKPbc**	**12 48 07.3**	**+0.5**
	comp=Z,7.6nm,0.7s,baz=75,slow=4.3,SNR=5.2					
LOT	**Lotru**	**148.78 330** ⇑	*i*P	**PKPbc**	**12 48 07.0**	**+0.5**
HUMR	**Humele**	**148.86 328** ⇑	*i*P	**PKPbc**	**12 48 07.0**	**+0.4**
MEM	**Membach**	**149.04 355**	PKPbc	**PKPbc**	**12 48 08.0**	**+1.2**
SIRR	**Siria**	**149.09 333** ⇓	*i*P	**PKPbc**	**12 48 08.4**	**+1.3**
KHC	**Kasperske Hory**	**149.29 345** ⇑	*e*PKP	**PKPbc**	**12 48 08.8**	**+1.3**
KHC			*e*PKPAB	**PKPab**	**12 48 16.0**	**+1.3**
GERES	**GERESS Array B**	**149.52 345**	PKPbc	**PKPbc**	**12 48 09.1**	**+1.0**
	comp=Z,9.3nm,0.8s,baz=29,slow=3.0,SNR=38					
BZS	**Buzias**	**149.63 333** ⇓	*i*P	**PKPbc**	**12 48 09.2**	**+0.8**
DOU	**Dourbes**	**149.64 357**	PKPbc	**PKPbc**	**12 48 09.7**	**+1.5**
CONA	**Conrad Observa**	**149.78 342**	*i* PKiKP	**PKiKP**	**12 48 09.8**	**+0.4**
	comp=Z,11nm,0.6s					
MDVR	**Moldovita**	**150.24 331** ⇓	*i*P	**PKPbc**	**12 48 10.7**	**+0.8**
MOA	**Molln**	**150.30 344**	*i* PKiKP	**PKiKP**	**12 48 10.9**	**+0.4**
	comp=Z,4.3nm,0.6s					
BFO	**Black Forest**	**151.05 352**	*e*PKIKP	**PKPbc**	**12 48 12.2**	**+0.6**
BFO	**Black Forest**	**151.05 352**	*e*PKPdf	**PKPbc**	**12 48 12.2**	**+0.6**
SOKA	**Soboth**	**151.15 342**	*i* PKPbc	**PKPbc**	**12 48 12.5**	**+0.5**
	comp=Z,8.4nm,1.2s					
PERS	**Pernice**	**151.16 341**	*i* PKPbc	**PKPbc**	**12 48 12.2**	**+0.2**
KBA	**Koelnbreinsper**	**151.25 344**	*i* PKPbc	**PKPbc**	**12 48 12.2**	**-0.1**
	comp=Z,3.7nm,0.4s					
OBKA	**Obir**	**151.44 342**	*i* PKiKP	**PKiKP**	**12 48 14.8**	**+1.9**
	comp=Z,3.8nm,0.6s					
WTTA	**Wattenberg**	**151.49 347**	*i* PKiKP	**PKiKP**	**12 48 13.7**	**+0.6**
	comp=Z,8.0nm,0.6s					
MOTA	**Moosalm**	**151.52 347**	*i* PKiKP	**PKiKP**	**12 48 13.9**	**+0.8**
	comp=Z,4.9nm,0.7s					
MYKA	**Terra Mystica**	**151.59 343**	*i* PKPbc	**PKPbc**	**12 48 12.8**	**-0.1**
	comp=Z,4.2nm,0.5s					
ABTA	**Abfaltersbach**	**151.77 345**	*i* PKPbc	**PKPbc**	**12 48 13.5**	**+0.2**
	comp=Z,9.5nm,0.6s					
DAVA	**Damuels**	**151.82 349**	*i* PKiKP	**PKiKP**	**12 48 15.1**	**+1.4**
	comp=Z,14nm,1.2s					
FETA	**Feichten**	**151.91 348**	*i* PKPdf	**PKPdf**	**12 48 07.4**	**+0.8**
	comp=Z,6.2nm,1.1s					
VISS	**Visnje**	**152.00 341**	*i* PKPdf	**PKPdf**	**12 48 07.2**	**+0.6**
VISS			*i* PKPbc	**PKiKP**	**12 48 14.3**	**+0.4**
VISS			*i* PKPab	**PKPab**	**12 48 26.6**	**+0.5**
BOJS	**Bojanci**	**152.13 340**	*i* PKPdf	**PKPdf**	**12 48 08.2**	**+1.4**
BOJS			*i* PKPbc	**PKiKP**	**12 48 14.9**	**+0.7**
JAVS	**Javornik**	**152.15 342**	*i* PKPbc	**PKPbc**	**12 48 14.4**	**+0.2**
JAVS	

JFT	Otama	1.55 238	P	Pn	12 41 47.6	+0.4
JFT			S	Sn	12 42 05.6	-0.7
MJAR	Matsushiro Arr	3.51 240	P	Pn	12 42 15.5	+1.6
4.5nm,0.3s,baz=58,slow=10,SNR=28						
MJAR			S	Sn	12 42 58.7	+4.5
1.7nm,0.3s,baz=20,slow=28,SNR=4.2						
MAT	Matsushiro	3.51 240	P	Pn	12 42 15.5	+1.6
MAT			eS	Sn	12 42 54.6	+0.4
JHJ	Hachijo jima 2	5.53 200	P	Pn	12 42 41.8	+0.2
45nm,0.3s,baz=129,slow=21,SNR=5.7						
ASAJ	Asahikawa	5.77 4	P	Pn	12 42 43.6	-1.1
3.9nm,0.3s,baz=211,slow=12,SNR=39						
USRK	Ussuriysk Ar.	9.52 311	P	Pn	12 43 36.6	+0.6
0.6nm,0.3s,baz=120,slow=14,SNR=7.0						
SONM	Songino Array	27.45 302	P	P	12 47 01.4	-0.6
0.8nm,0.5s,baz=105,slow=8.9,SNR=7.6						
ZALV	Zalesovo Beam	41.37 311	P	P	12 49 01.2	-0.5
1.8nm,0.5s,baz=82,slow=8.1,SNR=5.0						
MKAR	Makanchi Array	43.81 301	P	P	12 49 20.5	-1.1
1.4nm,0.7s,baz=86,slow=9.4,SNR=12						
KURBB	Kurchatov Arra	45.55 307	P	P	12 49 34.9	-0.5
1.9nm,0.4s,baz=79,slow=8.2,SNR=11						

*ISCJB **12** 13:08:38.7±0.5, 50°.17N±0°.04×19°.00E±0°.03, h0km, Error ellipse: s-maj=5.9km s-min=2.5km az=11.7*
*PRU **12** 13:08:40.9, 50°.15N×19°.02E, h0km*
*WAR **12** 13:08:40.9, 50°.10N×19°.16E, h1km, Mw2.5*
*CSEM **12** 13:08:40.0±0.3, 50°.15N×19°.03E, h2km, ML2.9/6, Error ellipse: s-maj=8.4km s-min=3.3km az=5.0*

ISC 12 13:08:39.5±0.8, 50°.11N±0°.04×19°.03E±0°.02, h0km, n31, σ0°76/52, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OJC	Ojcow	0.51	77	ePg	Pg	13 08 49.0	-0.2
OJC				eSg	Sg	13 08 54.9	-0.9
OJC	Ojcow	0.51	77	ePg	Pg	13 08 49.0	-0.2
OJC				eSg	Sg	13 08 54.9	-0.9
OJC	Ojcow	0.51	77	ePg	Pg	13 08 49.0	-0.2
OJC				eSg	Sg	13 08 54.9	-0.9
OKC	Ostrava-Krasne	0.63	245	ePG	Pb	13 08 53.7	+0.2
OKC				eSG	Sb	13 09 01.8	-1.1
comp=Z,34nm,0.4s							
OKC	Ostrava-Krasne	0.63	245	Pg	Pb	13 08 53.7	+0.2
OKC				Sg	Sb	13 09 01.8	-1.1
34nm,0.4s							
LANS	Liptovska Anna	1.00	163	ePg	Pb	13 08 59.4	-0.3
LANS				eSg	Sb	13 09 13.0	-0.4
LANS	Liptovska Anna	1.00	163	ePG	Pb	13 08 59.4	-0.3
LANS				eSG	Sb	13 09 13.0	-0.4
MORC	Moravsky Berou	1.02	252	ePg	Pb	13 09 00.3	+0.2
MORC				eSg	Sn	13 09 15.3	-0.9
KRLC	Kraliky	1.45	270	ePG	Pn	13 09 06.9	-0.2
KRLC				eSG	Sn	13 09 27.1	+0.3
KRLC	Kraliky	1.45	270	Pg	Pn	13 09 06.9	-0.2
KRLC				Sg	Sn	13 09 27.1	+0.3
STHS	Stebnicka Huta	1.59	115	ePn	Pb	13 09 09.9	+0.1
STHS				eSn	Sg	13 09 31.9	+1.3
STHS	Stebnicka Huta	1.59	115	ePN	Pb	13 09 09.9	+0.1
STHS				eSN	Sg	13 09 31.9	+1.3
STHS				eLG	Lg	13 09 38.1	
VYHS	Vyhne	1.62	185	ePn	Pn	13 09 09.2	-0.2
VYHS				eSn	Sn	13 09 31.0	+0.1
VYHS	Vyhne	1.62	185	ePN	Pn	13 09 09.1	-0.3
VYHS				eSN	Sn	13 09 31.0	+0.1
VYHS				eLG	Lg	13 09 34.0	
DPC	Dobruska-Polom	1.76	279	ePG	Pg	13 09 13.4	+0.2
DPC				eSG	Sg	13 09 36.5	+0.5
comp=Z,26nm,0.5s							
DPC	Dobruska-Polom	1.76	279	Pg	Pg	13 09 13.4	+0.2
DPC				Sg	Sg	13 09 36.5	+0.5
26nm,0.5s							
VRAC	Vranov	1.77	244	ePn	Pg	13 09 13.6	+0.1
VRAC				eSg	Sg	13 09 36.8	+0.3
CRVS	Cervenica-Dubn	1.99	126	ePn	Pb	13 09 16.5	-0.1
CRVS				eSn	Sb	13 09 41.9	0.0
CRVS	Cervenica-Dubn	1.99	126	ePN	Pb	13 09 16.5	-0.1
CRVS				eSN	Sb	13 09 41.9	0.0
KOLS	Kolonicke sedl	2.42	118	ePg	Pg	13 09 27.1	+1.3
KOLS	Kolonicke sedl	2.42	118	ePG	Pg	13 09 27.1	+1.3
GOPC	GO Pecny, Ondr	2.75	268	eSG	Sg	13 10 07.3	-0.4
comp=Z,4.6nm,0.3s							
GOPC	GO Pecny, Ondr	2.75	268	Sg	Sg	13 10 07.3	-0.4
4.6nm,0.3s							
PVCC	Panska Ves	2.89	280	eSG	Sg	13 10 14.5	+2.1
comp=Z,14nm,0.4s							
PVCC	Panska Ves	2.89	280	Sg	Sg	13 10 14.5	+2.1
14nm,0.4s							
PRU	Pruhonice	2.90	269	eSG	Sg	13 10 12.3	-0.3
comp=Z,8.2nm,0.6s							
PRU	Pruhonice	2.90	269	Sg	Sg	13 10 12.3	-0.3
8.2nm,0.6s							
BRG	Berggiesshubel	3.34	285	SG	Sg	13 10 28.4	+1.6
7.1nm,0.5s							
KHC	Kasperske Hory	3.68	257	ePG	Pg	13 09 49.7	-0.3
KHC				eSG	Sg	13 10 37.0	-0.7
comp=Z,6.8nm,0.5s							
KHC	Kasperske Hory	3.68	257	Pg	Pg	13 09 49.7	-0.3
KHC				Sg	Sg	13 10 37.0	-0.7
6.8nm,0.5s							
CLL	Collm	4.02	290	eSg	Sg	13 10 50.0	+1.5

*ISCJB **12** 13:17:38.6±0.8, 50°.02N±0°.04×78°.6E±0°.1, h0km, Error ellipse: s-maj=11.0km s-min=5.3km az=160.3*
*NNC **12** 13:17:38.8±1.0, 50°.05N×78°.86E, h0km, mb3.3, mpv3.1, Error ellipse: s-maj=27.8km s-min=4.5km az=68.0, Suspected Mining explosion.*
*IDC **12** 13:17:41.2±1.1, 50°.02N×78°.77E, h0km, mb1 3.1/3, mb1mx2.9/38, mbtmp3.1/3, ML2.8/3, Error ellipse: s-maj=22.2km s-min=9.1km az=45.0*

ISC 12 13:17:39.0±0.9, 49°.97N±0°.05×78°.80E±0°.08, h0km, n8, σ1°92/13, 5C-5D, Eastern Kazakhstan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KURBB	Kurchatov Arra	0.67	345	⇑P	Pg	13 17 50.8	-1.0
49nm,0.4s							
KURBB				⇑S	Sg	13 17 59.4	-1.1
194nm,0.6s							
KURK	Kurchatov	0.75	351	⇑P	Pg	13 17 52.1	-1.3
41nm,0.4s							
KURK				⇓S	Sg	13 18 01.9	-1.2
100nm,0.7s							
MAKZ	Makanchi	3.81	145	⇓Pn	Pn	13 18 41.3	+2.3
0.6nm,0.4s							
MAKZ				⇓Pg	Pb	13 18 46.4	-0.7
2.9nm,0.5s							
MAKZ				⇑Lg	Lg	13 19 37.6	
25nm,0.7s							
MK31	Makanchi Array	3.94	142	⇓Pn	Pn	13 18 43.2	+2.5
0.7nm,0.5s,baz=321,slow=10,SNR=34							
MK31				⇓Pg	Pb	13 18 49.9	+0.5
5.6nm,0.7s,baz=336,slow=15,SNR=30							
MK31				⇑Lg	Lg	13 19 44.0	
22nm,0.6s,baz=324,slow=27,SNR=20							
MKAR	Makanchi Array	3.94	142	Pn	Pn	13 18 43.3	+2.6
0.7nm,0.3s,baz=321,slow=10,SNR=63							
MKAR				Pg	Pg	13 18 51.7	-2.8
1.7nm,0.3s,baz=321,slow=16,SNR=29							
MKAR				Lg	Lg	13 19 47.5	
4.0nm,0.3s,baz=321,slow=28,SNR=17							
I46RU	ZALESOVO INFRA	5.45	41	*i*		13 58 40.0	
baz=232,slow=315,SNR=2.8							
ZALV	Zalesovo Beam	5.45	41	Pn	Pn	13 19 03.5	+2.1
1.3nm,0.3s,baz=231,slow=14,SNR=14							
ZALV				Lg	Lg	13 20 33.0	
0.6nm,0.3s,baz=224,slow=25,SNR=8.5							
BVAR	Borovoye Array	6.07	303	Pn	Pn	13 19 10.5	+0.5
0.3nm,0.3s,baz=113,slow=15,SNR=3.7							
BVAR				Sn	Sn	13 20 19.9	-0.2
1.1nm,0.3s,baz=112,slow=24,SNR=8.5							
BVAR				Lg	Lg	13 20 48.5	
0.8nm,0.3s,baz=112,slow=32,SNR=5.1							

*IDC **12** 13:22:39.9±8.7, 11°.65N×44°.74E, h0km, mb3.8/5, mb1 3.8/5, mb1mx3.5/31, mbtmp3.8/5, MS3.3/4, Ms1 3.3/4, ms1mx2.9/36, Error ellipse: s-maj=171.3km s-min=60.1km az=20.0*
*DHMR **12** 13:22:39.1±2.3, 12°.01N×44°.54E, h9km±19km, ML4.7*

*ISCJB **12** 13:22:40.3±0.7, 11°.99N±0°.05×44°.52E±0°.06, h10km, mb3.9/5, MS3.3/4, Error ellipse: s-maj=10.2km s-min=4.3km az=44.1*
*ARO **12** 13:22:40.9, 12°.N±87°×4°.5E±1°.4, h8km±99km, ML4.6*

ISC 12 13:22:41.2±0.9, 12°.06N±0°.06×44°.45E±0°.06, h10km, n22, σ1°59/24, mb3.7/5, MS3.3/4, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ADEN	Aden	0.89	36	*i* P	Pg	13 22 55.9	-2.4
ADEN				*i* S	Sg	13 23 08.1	-1.8
ADEN				AML	AML	13 23 09.7	
comp=E,26μm,0.6s							
OBO	Obock	1.13	266	eP	Pn	13 23 02.5	-0.6
TRBA	At Turbah	1.21	345	*i* P	Pb	13 23 02.8	-1.6
TRBA				*i* S	Sg	13 23 20.1	-0.2
MCAD	Moucha	1.25	255	eP	Pn	13 23 03.5	-1.2
ATA	Atar	1.35	244	eP	Pn	13 23 05.3	-0.9
TDD	Tadjoura Ara	1.53	261	eP	Pn	13 23 08.2	-0.3
ATD	Arta Tunnel	1.65	252	eP	Pn	13 23 09.7	-0.6
ATD				eS	Sg	13 23 33.6	-0.7
SGH	Sud-Ghoubbet	1.88	251	eP	Pn	13 23 13.1	-0.4
UDYN	Al 'Udayn	1.96	346	*i* P	Pb	13 23 15.5	-1.5
UDYN				*i* S	Sg	13 23 43.5	-0.6
GBR	Grand-Bara	2.14	245	eP	Pb	13 23 17.8	-2.3
MAOD	Malaho	2.17	271	eP	Pn	13 23 18.0	+0.6
BDHA	Al Bayda'	2.20	30	*i* P	Pn	13 23 16.7	-1.3
BDHA				*i* S	Sb	13 23 47.2	-1.4
BDHA				AML	AML	13 24 01.8	
comp=E,10μm,0.6s							
DHBB	Dhamar BB	2.50	359	*i* P	Pb	13 23 23.7	-2.7
SANA	San'a	3.32	356	*i* P	Pn	13 23 35.2	+1.8
HAJJ	Hajjah	3.71	347	*i* P	Pn	13 23 38.8	0.0
GEYT	Alibeck	28.52	23	P	P	13 28 39.4	+2.4
comp=E,1.3nm,0.3s,baz=193,slow=12,SNR=4.1							
GEYT				LR	LR	13 42 52.8	
comp=E,135nm,18.8s,baz=220,slow=42							
BRTR	Keskin Array B	29.17	343	P	P	13 28 47.1	+4.2
comp=E,0.8nm,0.7s,baz=163,slow=10,SNR=4.2							
BRTR				LR	LR	13 40 45.6	
comp=E,38nm,18.0s,baz=188,slow=37							
AKASG	Malin Array Be	40.50	345	LR	LR	13 47 20.0	
comp=E,18nm,18.4s,baz=210,slow=36							
MKAR	Makanchi Array	47.03	35	P	P	13 31 14.9	+2.0
comp=E,0.4nm,0.7s,baz=219,slow=6.8,SNR=3.6							
SONM	Songino Array	62.40	42	P	P	13 33 06.1	+1.6
comp=E,0.4nm,0.7s,baz=240,slow=5.8,SNR=3.6							
NRIK	Noril'sk	63.42	16	P	P	13 33 12.4	+1.7
comp=E,2.6nm,0.6s,baz=231,slow=6.5,SNR=3.7							
SFJD	Kangerlussuaq	80.97	337	LR	LR	14 13 27.3	
comp=E,18nm,18.2s,baz=130,slow=37							

SJA 12 13:30:25.0±0.7, 31°.57S×69°.73W, h100km±6km, ML3.5, MW3.6, San Juan Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RTLS	Leoncito	0.43	122	*i* P	Pn	13 30 42.0	+1.3
AUSP	Uspallata	0.71	156	*i* P	Pn	13 30 44.1	+1.2
AUSP				*i* S	Sn	13 30 57.8	+1.5
SJA	San Juan	1.00	88	*i* P	Pn	13 30 46.3	+0.8
SJA				*i* S	Sn	13 31 02.1	+1.3
SJA				IAML		13 31 04.6	
comp=Z,2μm,0.2s							
RTCV	Cerro Valdivia	1.05	106	*i* P	Pn	13 30 46.9	+0.9
RTCV				*i* S	Sn	13 31 03.1	+1.2
RTLL	Cerro Villicun	1.10	78	*i* P	Pn	13 30 47.1	+0.6
AMOG	MOGNA	1.23	60	*i* P	Pn	13 30 49.5	+1.4
ASAL	Salagasta	1.27	144	*i* P	Pn	13 30 49.7	+1.2
ASAL				*i* S	Sn	13 31 07.6	+1.3
ARCO	CERRO ARCO	1.44	152	*i* P	Pn	13 30 51.4	+0.8
ARCO				*i* S	Sn	13 31 11.9	+1.9
ARCO				IAML		13 31 14.9	
comp=Z,529nm,0.5s							
AVFE	Valle Fertil	2.15	66	*i* P	Pn	13 31 00.5	+1.0
AVFE				*i* S	Sn	13 31 27.4	+1.4
AVFE				IAML		13 31 30.1	
comp=Z,92nm,0.3s							

*DDA **12** 13:41:26.8, 40°.28N×29°.16E, h5km, Md2.5*
*ISK **12** 13:41:26.4, 40°.27N×29°.14E, h12km, MD2.5*
*CSEM **12** 13:41:27.1±0.1, 40°.28N×29°.13E, h5km, MD2.5, Error ellipse: s-maj=2.7km s-min=2.5km az=139.0*

ISC 12 13:41:27.0±0.9, 40°.27N±0°.02×29°.14E±0°.02, h5km±7km, n53, σ0°60/66, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IGD	Bursa	0.05	100	*i* P	Pg	13 41 27.1	-1.1
ULDT	Uludag	0.13	182	P	Pg	13 41 30.1	+0.4
ULDT	Uludag	0.13	182	*i* P	Pg	13 41 30.1	+0.4
GEMT	Gemlik	0.17	12	PG	Pg	13 41 30.8	+0.5
GEMT				eSG	Sg	13 41 33.9	+1.4
GEMT	Gemlik	0.17	12	*i* Pg	Pg	13 41 30.8	+0.5
GEMT				eSg	Sg	13 41 33.9	+1.4
MDNY	Mudanya-Bursa	0.22	296	PG	Pg	13 41 31.4	+0.1
MDNY				eSG	Sg	13 41 35.0	+0.8
MDNY	Mudanya-Bursa	0.22	296	*i* Pg	Pg	13 41 31.4	+0.1
MDNY				eSg	Sg	13 41 35.0	+0.8
IZI	Iznik	0.26	76	ePG	Pg	13 41 32.3	+0.2
IZI	Iznik	0.26	76	ePg	Pg	13 41 32.3	+0.2
ORLT	Orhaneli	0.29	220	ePG	Pg	13 41 32.6	-0.1
ORLT	Orhaneli	0.29	220	ePg	Pg	13 41 32.6	-0.1
ARMT	Armutlu	0.36	324	PG	Pg	13 41 34.1	+0.1
ARMT				eSG	Sg	13 41 39.9	+1.1
ARMT	Armutlu	0.36	324	*i* Pg	Pg	13 41 34.1	+0.1
ARMT				eSg	Sg	13 41 39.9	+1.1
ADVT	Abdulvahap	0.48	70	ePG	Pg	13 41 36.3	0.0
ADVT	Abdulvahap	0.48	70	ePg	Pg	13 41 36.3	0.0
CAVI	Cavuskoy	0.54	97	ePG	Pg	13 41 37.1	-0.2
CAVI	Cavuskoy	0.54	97	ePg	Pg	13 41 37.2	-0.2
KCTX	Karacabey (Bur	0.60	270	ePG	Pg	13 41 38.6	+0.1
KCTX	Karacabey (Bur	0.60	270	ePg	Pg	13 41 38.6	+0.1
HRT	Hereke	0.68	36	ePG	Pg	13 41 39.8	-0.2
HRT	Hereke	0.68	36	ePg	Pg	13 41 39.8	-0.2
ISK	Istanbul-Kandi	0.80	355	ePG	Pg	13 41 41.7	-0.5
ISK	Istanbul-Kandi	0.80	355	ePg	Pg	13 41 41.7	-0.5
DURS	Dursunbey	0.84	218	P	Pn	13 41 44.7	-0.8
DURS	Dursunbey	0.84	218	*i* P	Pn	13 41 44.7	-0.8
DURS				*i* S	Sn	13 41 58.2	-0.1
TVSB	Tavsanli	0.86	163	ePG	Pb	13 41 43.8	-0.6
TVSB	Tavsanli	0.86	163	ePg	Pb	13 41 43.8	-0.6
GPA	Golpazari	0.89	89	ePG	Pb	13 41 45.0	0.0
GPA	Golpazari	0.89	89	ePg	Pb	13 41 45.0	0.0
SILT	Sile	0.96	23	ePG	Pb	13 41 45.6	-0.4
SILT	Sile	0.96	23	ePg	Pb	13 41 45.6	-0.4
EDC	Edincik	0.98	275	ePG	Pg	13 41 45.5	-0.2
EDC	Edincik	0.98	275	ePg	Pg	13 41 45.5	-0.2
KLYT	Kilyos	0.98	356	ePG	Pg	13 41 45.2	-0.6
KLYT	Kilyos	0.98	356	ePg	Pg	13 41 45.2	-0.6
GULT	Gulveren	1.06	81	ePG	Pg	13 41 47.3	0.0
GULT	Gulveren	1.06	81	ePg	Pg	13 41 47.3	0.0
CTKS	Kestanelik-??a	1.08	334	ePG	Pg	13 41 47.3	-0.3
CTKS	Kestanelik-??a	1.08	334	ePg	Pg	13 41 47.3	-0.3
KAND	Kocaeli-Kandir	1.15	44	P	Pn	13 41 49.1	-0.5
KAND				S	Sn	13 42 05.8	+0.2
KAND	Kocaeli-Kandir	1.15	44	*i* P	Pn	13 41 49.1	-0.5
KAND				*i* S	Sn	13 42 05.8	+0.2
BALB	Balikesir	1.16	237	ePN	Pb	13 41 49.2	-0.2
BALB	Balikesir	1.16	237	ePn	Pb	13 41 49.2	-0.2
GDZ	Gediz	1.21	167	P	Pn	13 41 50.3	-0.3
GDZ				S	Sn	13 42 08.5	+1.1
GDZ	Gediz	1.21	167	*i* P	Pn	13 41 50.3	-0.3
GDZ				*i* S	Sn	13 42 08.5	+1.1
DEMI	Demirci	1.27	195	P	Pn	13 41 50.2	-1.2
DEMI	Demirci	1.27	195	*i* P	Pn	13 41 50.2	-1.2
BALY	Balya	1.28	246	P	Pn	13 41 51.2	-0.4
BALY	Balya	1.28	246	*i* P	Pn	13 41 51.2	-0.4
SAHE	Sakarya_HENDEK	1.43	65	P	Pb	13 41 53.4	-0.6
SAHE	Sakarya_HENDEK	1.43	65	*i* P	Pb	13 41 53.4	-0.6
ESKT	Eskisehir	1.51	119	*i* P	Pg	13 41 56.7	+0.7
ESKT				*i* S	Sg	13 42 15.8	+0.2
SEYT	Eskypehyr	1.51	119	P	Pg	13 41 56.7	+0.7
SEYT				S	Sg	13 42 15.8	+0.2

IDC 12 13:44:55.3±14.0, 7°.27S×127°.57E, h103km±153km, mb3.6/2, mb1 3.5/5, mb1mx3.3/30, mbtmp3.8/5, ML3.8/3, Error ellipse: s-maj=135.0km s-min=55.9km az=40.0,

Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	Fitzroy Crossi	10.93	190	P	Pn	13 47 29.1	+0.4
0.4nm,0.3s,baz=4.4,slow=13,SNR=25							
FITZ				S	Sn	13 49 23.0	-5.9
1.7nm,0.3s,baz=261,slow=20,SNR=7.9							
WRA	Warramunga Arr	14.21	153	P	Pn	13 48 10.5	-1.4
0.6nm,0.3s,baz=323,slow=14,SNR=37							
WRA				S	Sn	13 50 34.1	-14
1.5nm,0.3s,baz=327,slow=23,SNR=12							
ASAR	Alice Springs	17.40	160	P	Pn	13 48 52.0	+0.3
0.2nm,0.3s,baz=335,slow=11,SNR=20							
ASAR				S	Sn	13 51 55.7	-10
0.5nm,0.3s,baz=330,slow=24,SNR=7.0							
MKAR	Makanchi Array	67.15	328	P	P	13 55 39.4	+1.3
0.3nm,0.4s,baz=128,slow=8.0,SNR=5.1							
ZALV	Zalesovo Beam	70.78	335	P	P	13 55 58.8	-1.6
0.6nm,0.3s,baz=131,slow=4.5,SNR=3.6							

*ISCJB **12** 13:45:11.5±0.7, 44°.5S±0°.1×37°.7E±0°.2, h10km, mb4.1/8, MS3.5/4, Error ellipse: s-maj=26.8km s-min=13.6km az=154.5*
*IDC **12** 13:45:11.4±0.9, 44°.54S×37°.90E, h0km, mb4.3/7, mb1 4.3/8, mb1mx3.9/36, mbtmp4.2/8, ML3.5/1, MS3.5/5, Ms1 3.4/5, ms1mx3.3/33, Error ellipse: s-maj=31.4km s-min=21.5km az=61.0*

ISC 12 13:45:13.5±0.8, 44°.5S±0°.1×37°.8E±0°.2, h10km, n17, σ1°18/11, mb4.0/8, MS3.5/4, Prince Edward Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BOSA	Boshof	18.73	323	P	P	13 49 32.2	-0.2
0.1nm,0.3s,baz=162,slow=9.4,SNR=3.6							
BOSA				LR	LR	13 55 19.8	
comp=Z,160nm,20.5s,baz=152,slow=32							
MATP	Matopo	25.19	339	P	P	13 50 37.9	-1.4
2.4nm,0.7s,baz=184,slow=11,SNR=4.5							
MAW	Mawson	26.70	159	P	P	13 50 54.4	+1.9
2.4nm,0.8s,baz=292,slow=7.1,SNR=2.5							
MAW				LR	LR	14 00 01.7	
comp=Z,72nm,18.1s,baz=310,slow=33							
OPO	Ambohidratompo	26.98	20	P	P	13 50 56.3	+0.7
3.1nm,0.3s,baz=260,slow=22,SNR=11							
LSZ	Lusaka	30.22	341	P	P	13 51 24.4	0.0
1.0nm,0.3s,baz=173,slow=13,SNR=4.0							
VNDA	Vanda	53.55	167	LR	LR	14 15 13.9	
comp=Z,86nm,20.4s,baz=245,slow=34							
H10S2	ASCENSION HYDR	57.39	292	T	T	14 56 58.3	
baz=138,slow=75,SNR=44							
H10S1	ASCENSION HYDR	57.41	292	T	T	14 57 03.7	
baz=138,slow=75,SNR=43							
H10S3	ASCENSION HYDR	57.41	292	T	T	14 57 00.9	
baz=138,slow=75,SNR=37							
USHA	Ushuaia	63.05	219	P	P	13 55 39.7	-0.8
26nm,1.1s,baz=336,slow=6.0,SNR=3.1							
TORD	Torodi Ar. Bea	66.07	321	P	P	13 56 00.8	+0.1
1.0nm,1.0s,baz=177,slow=4.3,SNR=3.8							
PLCA	Paso Flores	73.62	229	LR	LR	14 23 38.9	
comp=Z,15nm,20.5s,baz=147,slow=31							
CPUP	Villa Florida	75.52	247	LR	LR	14 25 56.8	
comp=Z,30nm,18.7s,baz=92,slow=32							
ASAR	Alice Springs	77.92	111	P	P	13 57 10.8	-1.2
1.3nm,0.8s,baz=218,slow=5.9,SNR=8.3							
WRA	Warramunga Arr	80.77	109	P	P	13 57 26.4	-1.1
1.1nm,0.7s,baz=222,slow=3.9,SNR=6.5							
TXAR	Lajitas Array	146.06	257	PKPbc	PKPdf	14 04 52.9	0.0
2.4nm,0.7s,baz=138,slow=5.9,SNR=21							
YKA	Yellowknife Ar	155.92	328	PKPab	PKPab	14 05 35.1	+1.3
0.5nm,1.0s,baz=55,slow=4.4,SNR=3.6							

MEX 12 13:48:23.8±0.5, 16°.64N×98°.89W, h14km±5km, MD3.7, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PNIG	Pinotepa	0.77	109	eP	Pg	13 48 36.4	-2.4
PNIG				eS	Sg	13 48 46.3	-2.6
ACX	Acapulco	0.96	284	eP	Pb	13 48 35.5	-6.8
ACX				*i* S	Sb	13 48 47.6	-7.2
TLIG	Tlapa	0.97	18	eP	Pb	13 48 39.1	-3.3
TLIG				eS	Sb	13 48 51.5	-3.7
CAIG	El Cayaco	1.38	287	eP	Pn	13 48 44.6	-4.2
CAIG				eS	Sn	13 49 02.4	-4.4
MEIG	Mezcala	1.46	331	eP	Pn	13 48 46.9	-3.0
MEIG				eS	Sn	13 49 03.6	-5.2
VHO	Vista Hermosa	2.11	78	eP	Pn	13 48 56.0	-2.9
VHO				eS	Sn	13 49 19.8	-5.3
ARIG	Puente Sto Nin	2.14	320	eP	Pn	13 48 56.5	-2.8
ARIG				eS	Sn	13 49 20.8	-4.9
YAIG	Yautepec	2.21	356	eP	Pn	13 48 57.5	-2.8
YAIG				*i* S	Sn	13 49 23.2	-4.4
ZIIG	Zihuatanejo	2.65	292	eP	Pn	13 49 03.5	-2.6
ZIIG				eS	Sn	13 49 34.2	-3.8
HUIG	Huatulco	2.81	108	eP	Pn	13 49 05.4	-3.0
HUIG				*i* S	Sn	13 49 38.6	-3.5

MEX 12 14:00:54.5±0.6, 14°.33N×92°.93W, h16km±103km, MD3.8, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THIG		0.86	48	eP	Pb	14 01 08.3	-2.8
THIG				*i* S	Sb	14 01 20.7	-1.7
PCIG		1.39	349	eP	Pn	14 01 15.4	-3.8
PCIG				eS	Sn	14 01 32.2	-5.0
CCIG	Comitan	2.08	22	*i* P	Pn	14 01 26.8	-2.2
CCIG				*i* S	Sn	14 01 50.7

mb4.7/132, MS4.3/46, Error ellipse: s-maj=3.0km s-min=2.2km az=32.4
NEIC ***12*** *14:25:59.0, 30.°94N×51.°30E, h11km, mb4.8/40, MN4.8(TEH), After TEH.*
TEH ***12*** *14:25:59.2, 30.°94N×51.°30E, h11km, ML4.8*
OMAN ***12*** *14:25:59.2, 30.°94N×51.°30E, h11km*
CSEM ***12*** *14:26:00.1±0.1, 30.°95N×51.°18E, h20km, mb4.8/77, Error ellipse: s-maj=4.5km s-min=3.3km az=31.0*
MOS ***12*** *14:26:00.7±1.4, 30.°96N×51.°14E, h33km, mb4.8/59, MS4.0/17, Error ellipse: s-maj=6.5km s-min=4.2km az=112.9*
DSN ***12*** *14:26:02.1±0.5, 30.°77N×51.°11E, h45km, mb5.0, Error ellipse: s-maj=15.9km s-min=4.6km az=62.0*

ISC 12 14:25:59.7±0.3, 30.°98N±0.°03×51.°23E±0.°03, h15km, n528, σ1§54/551, mb4.7/132, MS4.2/46, 27C-32D, Northern and central Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IRAM	**Ramesheh**	**1.29**	**50**	*e*Pg	Pn	14 26 18.0	-5.4
IRAM				*e*AMB	AMB	14 26 40.9	
	comp=Z,92μm,0.3s						
IKAZ	**Kazeroun**	**1.30**	**156**	*e*Pg	**Pn**	**14 26 21.5**	**-2.2**
IKAZ				*e*Sg	**Sb**	**14 26 38.6**	**-2.2**
IKAZ				*e*AMB	AMB	14 26 50.7	
	comp=Z,78μm,0.3s						
IKAZ	**Kazeroun**	**1.30**	**156**	*e*Pg	**Pn**	**14 26 21.5**	**-2.2**
IKAZ				*e*Sg	**Sb**	**14 26 38.6**	**-2.2**
IGAR	**Gharneh**	**1.58**	**26**	*e*Pn	**Pn**	**14 26 24.2**	**-3.2**
IGAR				*e*AMB	AMB	14 26 54.7	
	comp=Z,67μm,0.4s						
IPIR	**Pirpir**	**1.73**	**350**	*e*Pn	**Pn**	**14 26 28.5**	**-1.0**
IPIR				*e*AMB	AMB	14 26 59.4	
	comp=Z,85μm,0.4s						
IPIR	**Pirpir**	**1.73**	**350**	*e*Pn	**Pn**	**14 26 28.5**	**-1.0**
SHI	**Shiraz**	**1.73**	**140**	*e*Pn	**Pb**	**14 26 31.0**	**-0.4**
SHI				*e*AMB	AMB	14 27 07.0	
	comp=E,6μm,0.3s						
SHI	**Shiraz**	**1.73**	**140**	P	**Pb**	**14 26 30.9**	**-0.4**
SHI	**Shiraz**	**1.73**	**140**	P	**Pb**	**14 26 30.9**	**-0.4**
AHBU	**AHRAM**	**2.11**	**178**	*e*Pn	**Pn**	**14 26 36.0**	**+1.6**
IZEF	**Zefreh**	**2.13**	**26**	*e*Pn	**Pn**	**14 26 34.7**	**-0.3**
IZEF				*e*AMB	AMB	14 26 39.8	
	comp=Z,26μm,0.3s						
IZEF				*e*Sg	**Sb**	**14 27 05.6**	**+1.1**
IZEF	**Zefreh**	**2.13**	**26**	*e*Pn	**Pn**	**14 26 34.7**	**-0.3**
NASN	**Na'in**	**2.26**	**36**	*e*Pg	**Pn**	**14 26 36.5**	**-0.4**
NASN				AML	AML	14 27 22.7	
	comp=N,3μm,0.7s						
NASN	**Na'in**	**2.26**	**36**	*e*Pn	**Pn**	**14 26 35.6**	**-1.2**
IKLH	**Kolahrood**	**2.35**	**7**	*e*Pn	**Pn**	**14 26 38.1**	**0.0**
IKLH				*e*Sg	**Sg**	**14 27 14.0**	**-1.4**
IKLH				*e*AMB	AMB	14 27 30.3	
	comp=Z,44μm,0.5s						
IKLH	**Kolahrood**	**2.35**	**7**	*e*Pn	**Pn**	**14 26 38.1**	**0.0**
SHGR	**Shooshtar-Gavs**	**2.36**	**299**	*e*Pn	**Pn**	**14 26 39.7**	**+1.8**
SHGR				AML	AML	14 27 30.1	
	comp=E,6μm,0.7s						
SHGR				AML	AML	14 27 41.9	
	comp=N,4μm,0.6s						
SHGR	**Shooshtar-Gavs**	**2.36**	**299**	*e*Pn	**Pn**	**14 26 39.7**	**+1.8**
QAM	**Ghamsar**	**2.78**	**4**	*e*Pn	**Pn**	**14 26 44.5**	**+0.6**
QAM				*e*AMB	AMB	14 27 34.6	
	comp=Z,39μm,0.3s						
KHMZ	**Khomeyn**	**2.96**	**339**	*e*Pn	**Pn**	**14 26 46.7**	**+0.3**
KHMZ	**Khomeyn**	**2.96**	**339**	*e*Pn	**Pn**	**14 26 46.7**	**+0.3**
GHIR	**Ghir-Karzin**	**3.09**	**150**	*e*Pn	**Pn**	**14 26 48.5**	**+0.4**
GHIR				AML	AML	14 27 53.0	
	comp=N,1μm,0.6s						
GHIR				AML	AML	14 28 03.2	
	comp=E,1μm,0.7s						
GHIR	**Ghir-Karzin**	**3.09**	**150**	*e*Pn	**Pn**	**14 26 48.5**	**+0.4**
GHVR	**GHOM**	**3.49**	**1**	*e*Pn	**Pn**	**14 26 53.8**	**+0.2**
GHVR	**GHOM**	**3.49**	**1**	*e*Pn	**Pn**	**14 26 53.8**	**+0.2**
IKMR	**Kamar-syah**	**3.50**	**317**	*e*Pn	**Pn**	**14 26 53.6**	**0.0**
IKMR	**Kamar-syah**	**3.50**	**317**	*e*Pn	**Pn**	**14 26 53.6**	**0.0**
IKFM	**Kafar-mosalman**	**3.83**	**312**	*e*Pn	**Pn**	**14 26 59.2**	**+1.1**
IKFM	**Kafar-mosalman**	**3.83**	**312**	*e*Pn	**Pn**	**14 26 59.2**	**+1.1**
KFJS		**3.99**	**227**	S	**Sn**	**14 27 48.7**	**+1.8**
KFJS				P	**Pn**	**14 27 02.1**	**+1.7**
IVRN	**Varamin**	**4.03**	**6**	*e*Pn	**Pn**	**14 27 00.3**	**-0.6**
IVRN				*e*AMB	AMB	14 27 20.6	
	comp=Z,18μm,0.5s						
IVRN	**Varamin**	**4.03**	**6**	*e*Pn	**Pn**	**14 27 00.3**	**-0.6**
NSR	**Nassriya**	**4.37**	**272**	*e*Pn	**Pn**	**14 27 03.0**	**-2.6**
	SNR=3.0						
NSR				*e*Sn	**Sn**	**14 27 54.0**	**-2.3**
	SNR=3.0						
IR3	**Iran Long-Peri**	**4.49**	**358**	*e*Pn	**Pn**	**14 27 08.1**	**+0.8**
IR3	**Iran Long-Peri**	**4.49**	**358**	*e*Pn	**Pn**	**14 27 08.1**	**+0.8**
IBZA	**Bozab**	**4.49**	**322**	*e*Pn	**Pn**	**14 27 07.8**	**+0.3**
IBZA				*e*AMB	AMB	14 29 03.6	
	comp=Z,11μm,0.6s						
IBZA	**Bozab**	**4.49**	**322**	*e*Pn	**Pn**	**14 27 07.8**	**+0.3**
IRAZ	**Razeghan**	**4.55**	**346**	*e*Pn	**Pn**	**14 27 09.0**	**+0.8**
IRAZ				*e*AMB	AMB	14 28 46.5	
	comp=Z,16μm,0.6s						
IRAZ	**Razeghan**	**4.55**	**346**	*e*Pn	**Pn**	**14 27 09.0**	**+0.8**
IDMV	**Damavand**	**4.64**	**8**	*e*Pn	**Pn**	**14 27 08.5**	**-1.0**
IDMV				*e*AMB	AMB	14 28 50.7	
	comp=Z,9μm,0.6s						
IDMV	**Damavand**	**4.64**	**8**	*e*Pn	**Pn**	**14 27 08.5**	**-1.0**
IMHD	**Mahdasht**	**4.72**	**354**	*e*Pn	**Pn**	**14 27 11.0**	**+0.5**
IMHD				*e*AMB	AMB	14 28 43.4	
	comp=Z,10μm,0.5s						
IMHD	**Mahdasht**	**4.72**	**354**	*e*Pn	**Pn**	**14 27 11.0**	**+0.5**
IFIR	**Firoozkooh**	**4.82**	**15**	*e*Pn	**Pn**	**14 27 11.7**	**-0.3**
IFIR				*e*AMB	AMB	14 27 39.6	
	comp=Z,1μm,0.2s						
IFIR	**Firoozkooh**	**4.82**	**15**	*e*Pn	**Pn**	**14 27 11.7**	**-0.3**
CHTH	**Charan**	**4.92**	**359**	*e*Pn	**Pn**	**14 27 13.3**	**0.0**
CHTH	**Charan**	**4.92**	**359**	*e*Pn	**Pn**	**14 27 13.4**	**0.0**
IVIS	**Veis**	**5.11**	**315**	*e*Pn	**Pn**	**14 27 15.4**	**-0.5**
IVIS				*e*AMB	AMB	14 29 09.7	
	comp=Z,7μm,0.6s						
IVIS	**Veis**	**5.11**	**315**	*e*Pn	**Pn**	**14 27 15.4**	**-0.5**
IGHG	**Ghaleghazi**	**5.16**	**312**	*e*Pn	**Pn**	**14 27 17.2**	**+0.5**
IGHG				*e*AMB	AMB	14 29 36.8	
	comp=Z,63μm,1.0s						
IGHG	**Ghaleghazi**	**5.16**	**312**	*e*Pn	**Pn**	**14 27 17.2**	**+0.5**
SNGE	**Sanandaj**	**5.24**	**323**	*e*Pn	**Pn**	**14 27 19.1**	**+1.3**
SNGE	**Sanandaj**	**5.24**	**323**	*e*Pn	**Pn**	**14 27 19.1**	**+1.3**
BOQSS		**5.35**	**198**	P	**Pn**	**14 27 20.9**	**+1.9**
IDHR	**Dehrash**	**5.51**	**314**	*e*Pn	**Pn**	**14 27 21.1**	**-0.4**
IDHR				*e*AMB	AMB	14 28 33.1	
	comp=Z,5μm,0.3s						
IDHR	**Dehrash**	**5.51**	**314**	*e*Pn	**Pn**	**14 27 21.1**	**-0.4**
BNDS	**Bandar-Abbas**	**5.60**	**128**	*e*Pn	**Pn**	**14 27 21.8**	**-0.8**
BNDS	**Bandar-Abbas**	**5.60**	**128**	*e*Pn	**Pn**	**14 27 21.8**	**-0.8**
SLWS		**6.18**	**185**	P	**Pn**	**14 27 31.8**	**+1.4**
BHD	**Baghdad**	**6.25**	**293**	*e*Pn	**Pn**	**14 27 30.0**	**-1.3**
	SNR=3.0						
BHD				*i* Sn	**Sn**	**14 28 41.2**	**-1.2**
	SNR=39						
BANOM	**Banah**	**6.73**	**137**	*i* P	**Pn**	**14 27 36.5**	**-1.6**
	SNR=32						
BANOM	**Banah**	**6.73**	**137**	P	**Pn**	**14 27 37.7**	**-0.3**
	SNR=32						
BANOM	**Banah**	**6.73**	**137**	P	**Pn**	**14 27 37.7**	**-0.3**
	SNR=32						
BANOM				P	**Pn**	**14 27 37.8**	**-0.3**
	SNR=115						
BTHS		**6.91**	**183**	P	**Pn**	**14 27 41.5**	**+1.0**
NAZ	**Nazwa, Dubai**	**7.14**	**146**	*i* P	**Pn**	**14 27 43.6**	**0.0**
	SNR=12						
NAZ	**Nazwa, Dubai**	**7.14**	**146**	P	**Pn**	**14 27 43.6**	**0.0**
	SNR=12						
NAZ	**Nazwa, Dubai**	**7.14**	**146**	Pn	Pn	14 27 49.1	+5.5
	SNR=11						
IKRK	**Kirkuk**	**7.27**	**309**	*e*Pn	**Pn**	**14 27 45.0**	**-0.4**
	SNR=3.0						
IKRK				*i* Sn	**Sn**	**14 29 06.0**	**-1.6**
	SNR=3.0						
UOSS	**Minazif**	**7.45**	**143**	*e*Pn	**Pn**	**14 27 46.3**	**-1.5**
UOSS	**Minazif**	**7.45**	**143**	*e*Pn	**Pn**	**14 27 46.3**	**-1.5**
HATD	**Hatta, Dubai**	**7.51**	**144**	*i* P	**Pn**	**14 27 48.1**	**-0.6**
	SNR=29						
HATD	**Hatta, Dubai**	**7.51**	**144**	P	**Pn**	**14 27 48.1**	**-0.6**
	SNR=29						
HATD	**Hatta, Dubai**	**7.51**	**144**	P	**Pn**	**14 27 48.6**	**-0.1**
	SNR=29						
ASHO	**Ashiyiah**	**7.59**	**145**	*i* P	**Pn**	**14 27 48.7**	**-1.1**
	SNR=69						
ASHO	**Ashiyiah**	**7.59**	**145**	P	**Pn**	**14 27 48.7**	**-1.1**
	SNR=69						
ASHO				P	**Pn**	**14 27 48.8**	**-1.1**
	SNR=58						
ARQ	**Araqi**	**8.95**	**147**	P	**Pn**	**14 28 06.7**	**-1.8**
	SNR=17						
ARQ	**Araqi**	**8.95**	**147**	P	**Pn**	**14 28 06.7**	**-1.8**
	SNR=17						
GEYT	**Alibeck**	**8.96**	**37**	Pn	**Pn**	**14 28 10.5**	**+1.8**
	comp=Z,0.9nm,0.3s,baz=224,slow=12,SNR=16						
RTB	**Rutbah**	**9.50**	**285**	*e*Pn	**Pn**	**14 28 16.5**	**+0.5**
	SNR=3.0						
RTB				*i* Sn	**Sn**	**14 30 00.0**	**-2.6**
	SNR=3.0						
BIDO	**Bidbid**	**9.63**	**139**	P	**Pn**	**14 28 20.0**	**+2.2**
	SNR=9.9						
BSY	**Bisya**	**9.78**	**146**	P	**Pn**	**14 28 19.0**	**-0.8**
	SNR=19						
SMDO	**Samad**	**9.96**	**141**	P	**Pn**	**14 28 21.0**	**-1.3**
	SNR=36						
WSAR	**Wadi Sarin**	**10.14**	**138**	Pn	**Pn**	**14 28 24.1**	**-0.7**
	comp=Z,6.8nm,0.3s,baz=333,slow=13,SNR=26						
WSAR				Sn	**Sn**	**14 30 14.7**	**-3.6**
	comp=Z,2.3nm,0.3s,baz=12,slow=23,SNR=5.6						
WSAR				LR	LR	14 32 59.0	
	comp=Z,2μm,18.8s,baz=338,slow=41						
GNI	**Garni**	**10.56**	**332**	*i* P	**Pn**	**14 28 35.0**	**+4.3**
ASF	**Jabal al Asfar**	**12.28**	**279**	Pn	**Pn**	**14 28 51.6**	**-2.6**
	comp=Z,5.1nm,0.3s,baz=33,slow=7.4,SNR=16						
ASF				Sn	**Sn**	**14 31 04.8**	**-6.1**
	comp=Z,1.0nm,0.3s,baz=174,slow=18,SNR=3.1						
ASF				LR	LR	14 35 02.3	
	comp=Z,2μm,19.1s,baz=46,slow=45						
GUDG	**Gudauri**	**12.67**	**337**	P	**P**	**14 29 13.0**	**+2.1**
ONI	**Oni**	**13.15**	**334**	P	**P**	**14 29 18.3**	**+2.2**
ONI	**Oni**	**13.15**	**334**	P	**P**	**14 29 18.3**	**+2.2**
ZEI	**Tsey**	**13.16**	**336**	*e*P	**Pn**	**14 29 07.9**	**+1.7**
ZEI				pmax	pmax		
	comp=Z,43nm,0.9s						
MMAI	**Mount Meron Ar**	**13.59**	**283**	Pn	**Pn**	**14 29 12.8**	**+0.8**
	comp=Z,1.9nm,0.3s,baz=87,slow=16,SNR=8.7						
MMAI				Sn	**Sn**	**14 31 40.9**	**-1.9**
	comp=Z,1.1nm,0.3s,baz=94,slow=23,SNR=3.3						
MMAI				LR	LR	14 35 45.4	
	comp=Z,1μm,19.4s,baz=90,slow=44						
NEY	**Neytrino**	**13.99**	**333⇑**	*e*P	**Pn**	**14 29 21.0**	**+3.4**
NEY				pmax	pmax		
	comp=Z,4.0nm,1.4s						
EIL	**Elat**	**14.12**	**269**	Pn	**Pn**	**14 29 16.5**	**-2.8**
	comp=Z,0.6nm,0.3s,baz=41,slow=15,SNR=4.6						
KBZ	**Khabaz**	**14.34**	**335**	Pn	**Pn**	**14 29 25.0**	**+2.9**
	comp=Z,0.1nm,0.3s,baz=139,slow=7.7,SNR=9.1						
KBZ				LR	LR	14 34 08.8	
	comp=Z,462nm,19.6s,baz=154,slow=35						
KVAR	**Kislovodsk Arr**	**14.61**	**335**	Pn	**Pn**	**14 29 28.2**	**+2.3**
	baz=123,slow=17,SNR=17						
KIV	**Kislovodsk**	**14.61**	**335**	*i* P	**Pn**	**14 29 28.5**	**+2.6**
	SNR=11						
KIV	**Kislovodsk**	**14.61**	**335**	*e*P	**Pn**	**14 29 28.4**	**+2.4**
KIV				*e*S	**Sn**	**14 32 08.1**	**+0.5**
KIV				pmax	pmax		
	comp=Z,61nm,1.0s						
KIV				MLR	MLR		
	comp=Z,429nm,12.0s						
KIV	**Kislovodsk**	**14.61**	**335**	*e*Pn	**Pn**	**14 29 25.8**	**-0.2**
KIV	**Kislovodsk**	**14.61**	**335**	*e*Pn	**Pn**	**14 29 25.8**	**-0.2**
CSS	**Mathiatis**	**15.54**	**290**	*e*Pn	**Pn**	**14 29 37.8**	**-0.5**
	comp=Z,20nm,1.0s						
CSS	**Mathiatis**	**15.54**	**290**	*e*Pn	**Pn**	**14 29 37.8**	**-0.5**
	comp=Z,20nm,1.0s						
SOC	**Sochi**	**15.54**	**327**	*c i*P	**Pn**	**14 29 37.5**	**-0.8**
SOC				*e*		14 32 27.3	
SOC				pmax	pmax		
	comp=Z,19nm,0.7s						
SOC				MLR	MLR		
	comp=Z,938nm,13.0s						
DZET	**Dzherino**	**16.40**	**57**	P	**P**	**14 29 52.8**	**+0.6**
DZET				pmax	pmax		
	comp=Z,10.0nm,1.0s						
DZET	**Dzherino**	**16.40**	**57**	P	**P**	**14 29 52.8**	**+0.6**
	comp=Z,10.0nm,1.0s						
BR131	**Keskin Array S**	**16.78**	**306**	*e*P	**Pn**	**14 29 55.0**	**+0.7**
BR131	**Keskin Array S**	**16.78**	**306**	*e*P	**Pn**	**14 29 55.0**	**+0.7**
BRTR	**Keskin Array B**	**16.78**	**306**	Pn	**Pn**	**14 29 54.6**	**+0.3**
	comp=Z,0.4nm,0.3s,baz=126,slow=12,SNR=46						
BRTR				LR	LR	14 37 47.0	
	comp=Z,967nm,21.8s,baz=110,slow=43						
BRTR	**Keskin Array B**	**16.78**	**306**	*i* P	**Pn**	**14 29 54.5**	**+0.3**
BRTR				pmax	pmax		
	comp=Z,7.0nm,0.7s						
ANTO	**Ankara**	**17.43**	**306**	*e*P	**Pn**	**14 30 02.3**	**0.0**
ANTO	**Ankara**	**17.43**	**306**	*e*P	**Pn**	**14 30 02.3**	**0.0**
ANTO	**Ankara**	**17.43**	**306**	*e*Pn	**Pn**	**14 30 02.3**	**0.0**
DAMY	**Dhamar**	**17.50**	**203**	*e*Pn	**Pn**	**14 30 01.6**	**-1.9**
DAMY	**Dhamar**	**17.50**	**203**	*e*Pn	**Pn**	**14 30 01.6**	**-1.9**
ANN	**Anapa**	**17.54**	**326**	*e*P	**Pn**	**14 30 03.9**	**+0.3**
ANN				*e*S	**Sn**	**14 33 18.1**	**-0.6**
ANN				pmax	pmax		
	comp=Z,27nm,1.2s						
ANN				MLR	MLR		
	comp=N,1μm,15.0s						
ANN				MLR	MLR		
	comp=Z,958nm,15.0s						
ANN				MLR	MLR		
	comp=E,564nm,15.0s						
ANN	**Anapa**	**17.54**	**326**	*e*P	**Pn**	**14 30 03.9**	**+0.3**
	comp=E,27nm,1.2s						
ISP	**Isparta**	**18.39**	**297⇓**	*e*P	**P**	**14 30 11.6**	**-2.6**
ISP				pmax	pmax		
	comp=Z,33nm,1.0s						
ISP	**Isparta**	**18.39**	**297**	*e*P	**P**	**14 30 11.6**	**-2.6**
	comp=Z,33nm,1.0s						
SIM	**Simferopol'**	**19.35**	**321**	*e*P	**Pn**	**14 30 28.3**	**+2.6**
SIM				*e*S	**Sn**	**14 33 59.0**	**-3.4**
SIM				pmax	pmax		
	comp=Z,15nm,0.6s						
SIM				MLR	MLR		
	comp=N,620nm,19.1s						
ABKAR	**Akbulak array**	**19.41**	**17**	*e*P	**P**	**14 30 24.4**	**-0.8**
ABKAR	**Akbulak array**	**19.41**	**17**	*e*P	**P**	**14 30 24.4**	**-0.8**
AKTK	**Aktyubinsk**	**20.09**	**13**	P	**P**	**14 30 32.8**	**+0.2**
	comp=N,643nm,19.9s						
AKTO	**Aktyubinsk**	**20.09**	**13**	P	**P**	**14 30 32.8**	**+0.1**
	comp=N,4.8nm,0.5s,baz=194,slow=11,SNR=12						
AKTO				LR	LR	14 40 12.6	
	comp=N,643nm,19.9s,baz=190,slow=43						
KARP	**Karpathos**	**20.62**	**289**	*e*P	Pn	14 30 39.7	-1.1
	comp=N,51nm,0.9s						
KARP	**Karpathos**	**20.62**	**289**	*e*P	Pn	14 30 39.7	-1.2
	comp=N,51nm,0.9s						
ATD	**Arta Tunnel**	**20.85**	**204**	P	Pn	14 30 43.8	+0.1
	comp=N,12nm,0.6s,baz=1.7,slow=8.3,SNR=4.2						
AML	**Almayashu**	**21.14**	**52**	P	**P**	**14 30 46.1**	**+1.6**
	SNR=13						
VRH	**Novokhopyorsk**	**21.40**	**343**	*e*P	**P**	**14 30 46.5**	**-0.3**
VRH				*e*S	Sn	14 34 49.7	-2.0
VRH				pmax	pmax		
	comp=Z,140nm,0.9s						
VRH	**Novokhopyorsk**	**21.40**	**343**	*e*P	**P**	**14 30 46.5**	**-0.3**
	comp=Z,140nm,0.9s						
VRH	**Novokhopyorsk**	**21.40**	**343**	*e*PcP	**PcP**	**14 34 49.7**	**-0.3**
KSH	**Kashi**	**21.88**	**60**	P	**P**	**14 30 49.4**	**-2.8**
KSH				*es*P	sP	14 31 06.2	+7.8
KSH				*e*PP	**PnPn**	**14 31 14.6**	**+1.0**
KSH				S	S	14 34 38.9	-15
KSH				*e*PcP	**PcP**	**14 34 52.8**	**+1.4**
KSH				SS	**SnSn**	**14 35 15.9**	**-2.9**
KSH				pmax	pmax		
	comp=Z,29nm,1.0s						
KSH				pmax	pmax		
	comp=Z,120nm,1.8s						
KSH				LR	LR		
	comp=N,850nm,11.9s						
KSH				LR	LR		
	comp=E,900nm,7.8s						
KSH				LR	LR		
	comp=Z,1μm,14.5s						
AAK	**Ala-Archa**	**21.89**	**51**	P	**P**	**14 30 53.8**	**+1.5**
	comp=Z,4.1nm,0.9s,baz=216,slow=12,SNR=14						
AAK	**Ala-Archa**	**21.89**	**51**	⇑P	**P**	**14 30 54.0**	**+1.7**
AAK				pmax	pmax		
	comp=Z,19nm,1.9s						
AAK	**Ala-Archa**	**21.89**	**51**	*e*P	**P**	**14 30 54.0**	**+1.7**
	comp=Z,2.4nm,1.1s						
AAK	**Ala-Archa**	**21.89**	**51**	*e*P	**P**	**14 30 54.0**	**+1.7**
	comp=Z,2.4nm,1.1s						
LAST	**Lasithi**	**21.96**	**288**	⇑*i*P	**P**	**14 30 54.8**	**+1.8**
LAST	**Lasithi**	**21.96**	**288**	*e*P	**P**	**14 30 54.0**	**+1.0**
	comp=Z,95nm,0.8s						
LAST	**Lasithi**	**21.96**	**288**	*e*P	**P**	**14 30 54.0**	**+1.0**
	comp=Z,95nm,0.8s						
FRU	**Bishkek**	**22.05**	**51**	*e*P	**P**	**14 30 56.5**	**+2.6**
FRU				*e*S	**S**	**14 35 01.0**	**+4.3**
FRU				pmax	pmax		
	comp=Z,60nm,2.0s						
FRU	**Bishkek**	**22.05**	**51**	*e*P	**P**	**14 30 56.5**	**+2.6**
	comp=Z,60nm,2.0s						
VSR	**Storozhevoye**	**22.11**	**340**	*e*P	**P**	**14 30 54.6**	**+0.2**
VSR				*e*S	**S**	**14 34 56.4**	**-1.2**
VSR				pmax	pmax		
	comp=Z,10.0nm,0.6s						
VSR	**Storozhevoye**	**22.11**	**340**	*e*P	**P**	**14 30 54.6**	**+0.2**
	comp=Z,10.0nm,0.6s						
VSR				*e*S	**S**	**14 34 56.4**	**-1.2**
APE	**Apeiranthos**	**22.12**	**293**	⇑*i*P	**P**	**14 30 52.9**	**-1.8**
TIRR	**Tirgusor**	**22.42**	**313**	⇓*i*P	**P**	**14 30 57.4**	**-0.4**
TIRR	**Tirgusor**	**22.42**	**313**	*e*P	**P**	**14 30 55.9**	**-1.9**
TIRR				pmax	pmax		
	comp=Z,17nm,0.9s						
TIRR	**Tirgusor**	**22.42**	**313**	*e*P	**P**	**14 30 55.9**	**-1.9**
	comp=Z,17nm,0.9s						
TIRR	**Tirgusor**	**22.42**	**313**	*e*P	**P**	**14 30 55.9**	**-1.9**
	comp=Z,17nm,0.9s						
IDI	**Anoyia**	**22.45**	**288**	P	**P**	**14 30 59.7**	**+1.4**
	comp=Z,49nm,0.8s,baz=59,slow=12,SNR=17						
IDI	**Anoyia**	**22.45**	**288**	⇓*i*P	**P**	**14 31 00.2**	**+1.9**
IDI	**Anoyia**	**22.45**	**288**	*e*P	**P**	**14 30 58.2**	**0.0**
	comp=Z,62nm,0.9s						
IDI	**Anoyia**	**22.45**	**288**	*e*P	**P**	**14 30 58.2**	**0.0**
	comp=Z,62nm,0.9s						
SIVA	**Sivas**	**22.50**	**287**	⇓*i*P	**P**	**14 31 01.3**	**+2.6**
VORR	**Voronezh**	**22.50**	**340**	P	**P**	**14 31 03.0**	**+4.4**
VORR				pmax	pmax		
	comp=Z,250nm,1.2s						
TLCR		**22.54**	**315**	⇑*i*P	**P**	**14 30 59.4**	**+0.4**
ALN	**Alexandroupoli**	**22.60**	**303**	P	**P**	**14 31 02.0**	**+2.3**
ALN				pmax	pmax		
	comp=Z,26nm,1.2s						
NDI	**New Delhi**	**22.64**	**89**	*e*P	**P**	**14 30 56.0**	**-4.3**
TKM2	**Tokmak 2**	**22.74**	**52**	*e*P	**P**	**14 31 01.5**	**0.0**
TKM2				pmax	pmax		
	comp=Z,19nm,1.2s						
TKM2	**Tokmak 2**	**22.74**	**52**	*e*P	**P**	**14 31 01.5**	**0.0**
	comp=Z,19nm,1.2s						
TKM2	**Tokmak 2**	**22.74**	**52**	*e*P	**P**	**14 31 01.5**	**0.0**
	comp=Z,19nm,1.2s						
HARR	**Harsova**	**22.84**	**313**	⇓*i*P	**P**	**14 31 02.2**	**0.0**
CFR	**Carcaliu**	**22.95**	**315**	⇑*i*P	**P**	**14 31 02.8**	**-0.5**
LPSR	**Galich'ya Gora**	**23.41**	**341**	*e*P	**P**	**14 31 08.0**	**+0.1**
LPSR				*e*S	**S**	**14 35 20.8**	**+0.4**
LPSR				pmax	pmax		
	comp=Z,30nm,0.9s						
LPSR	**Galich'ya Gora**	**23.41**	**341**	*e*P	**P**	**14 31 08.0**	**+0.1**
	comp=Z,30nm,0.9s						
LPSR				*e*S	**S**	**14 35 20.8**	**+0.4**
KIS	**Kishinev**	**23.53**	**319**	*e*P	**P**	**14 31 10.0**	**+0.8**
KIS	**Kishinev**	**23.53**	**319**	*e*PP	PP	14 31 32.0	
KIS				*e*S	**S**	**14 35 18.0**	**-4.5**
KIS				LRM	MLR	14 44 10.0	
	comp=Z,500nm,16.0s						
KIS	**Kishinev**	**23.53**	**319**	*e*P	**P**	**14 31 10.0**	**+0.8**
KIS				*e*		14 31 45.0	
KIS				*e*S	**S**	**14 35 18.0**	**-4.5**
KIS				MLR	MLR		
	comp=Z,500nm,16.0s						
KIS				MLR	MLR		
	comp=Z,500nm,16.0s						
KIS	**Kishinev**	**23.53**	**319**	*e*P	**P**	**14 31 10.0**	**+0.8**
KIS				*e*S	**S**	**14 35 18.0**	**-4.5**
OTUK	**Ortayu**	**23.58**	**37**	P	**P**	**14 31 10.9**	**+1.2**
OTUK				pmax	pmax		
	comp=Z,19nm,1.1s						
OTUK	**Ortayu**	**23.58**	**37**	P	**P**	**14 31 10.9**	**+1.2**
	comp=Z,19nm,1.1s						
POO	**Poona**	**23.93**	**116**	*e*P	**P**	**14 31 14.0**	**+0.6**
VRI	**Vrincioaia**	**24.15**	**315**	⇑*i*P	**P**	**14 31 15.9**	**+0.7**
VRI	**Vrincioaia**	**24.15**	**315**	P	**P**	**14 31 18.7**	**+3.5**
VRI				pmax	pmax		
	comp=Z,153nm,1.0s						
VRI	**Vrincioaia**	**24.15**	**315**	⇑*i*P	**P**	**14 31 15.9**	**+0.7**
PLOR	**Plostina**	**24.19**	**315**	⇓*i*P	**P**	**14 31 16.3**	**+0.7**
PLOR	**Plostina**	**24.19**	**315**	P	**P**	**14 31 16.3**	**+

ARU 14 32 07.9
ARU S **S** **14 35 58.4 -2.8**
ARU pmax pmax
comp=Z,12nm,1.2s
ARU MLR MLR
comp=Z,795nm,19.0s
ARU Arti 25.96 9 *e*P **P** **14 31 31.4 0.0**
comp=Z,14nm,1.0s
ARU S **S** **14 35 58.4 -2.8**
comp=Z,795nm,19.0s
ARU Arti 25.96 9 *e*P **P** **14 31 31.4 0.0**
comp=Z,14nm,1.0s
FNA Florina 25.99 300 P **P** **14 31 34.2 +2.3**
BRVK Borovoye 26.06 27 *ce*P **P** **14 31 33.6 +1.3**
BRVK pmax pmax
comp=Z,26nm,1.2s
BRVK Borovoye 26.06 27 *e*P **P** **14 31 33.6 +1.3**
comp=Z,26nm,1.2s
BRVK Borovoye 26.06 27 *e*P **P** **14 31 33.6 +1.3**
comp=Z,26nm,1.2s
BVAR Borovoye Array 26.07 27 P **P** **14 31 32.6 +0.1**
comp=Z,6.7nm,0.6s,baz=216,slow=7.3,SNR=24
OBN Obninsk 26.29 341 *e*P **P** **14 31 35.3 +0.9**
comp=Z,21nm,0.5s,baz=161,slow=20,SNR=5.6
OBN Obninsk 26.29 341⇓ *e*P **P** **14 31 35.5 +1.1**
OBN *i* 14 32 14.2
OBN *e*S **S** **14 36 07.5 +1.2**
OBN *e*SS **SnSn** **14 37 11.0 +4.8**
OBN pmax pmax
comp=Z,14nm,0.5s
OBN MLR MLR
comp=Z,496nm,17.0s
OBN Obninsk 26.29 341 P **P** **14 31 35.3 +0.9**
OBN *e*S **S** **14 36 07.5 +1.2**
CJR Cluj-Napoca 26.46 314⇓ *i*P **P** **14 31 40.9 +4.7**
MOS Moscow 26.55 343 *e*P **P** **14 31 37.5 +0.7**
MOS *e* 14 35 04.7
MOS pmax pmax
comp=Z,62nm,1.0s
MOS Moscow 26.55 343 *e*P **P** **14 31 37.5 +0.7**
comp=Z,62nm,1.0s
SVE Sverdlovsk 26.66 12 *e*P **P** **14 31 37.9 +0.1**
SVE pmax pmax
comp=Z,15nm,1.1s
SVE Sverdlovsk 26.66 12 *e*P **P** **14 31 37.9 +0.1**
comp=Z,15nm,1.1s
MDVR Moldovita 26.90 309⇑ *i*P **P** **14 31 41.3 +1.2**
MDVR Moldovita 26.90 309⇑ *i*P **P** **14 31 41.3 +1.2**
DRGR 27.05 314⇓ *i*P **P** **14 31 43.0 +1.5**
DRGR 27.05 314⇓ *i*P **P** **14 31 43.0 +1.5**
TIR Tirane 27.22 301⇓ *i*P **P** **14 31 44.1 +1.1**
TIR Tirane 27.22 301⇓ *i*P **P** **14 31 44.1 +1.1**
BZS Buzias 27.27 311⇑ *i*P **P** **14 31 42.9 -0.5**
BZS Buzias 27.27 311⇑ *i*P **P** **14 31 42.9 -0.5**
GRUS Gruza 27.28 307 *e*P **P** **14 31 44.9 +1.4**
SIRR Siria 27.49 312⇑ *i*P **P** **14 31 46.3 +0.9**
SIRR Siria 27.49 312⇑ *i*P **P** **14 31 46.3 +0.9**
TRUS Trudelj 27.59 307 *e*P **P** **14 31 46.8 +0.5**
PYUN Piuthan 27.73 88 *e*P **P** **14 31 47.7 -0.3**
PDG Podgorica 27.91 303⇓ *i*P **P** **14 31 50.0 +0.9**
PDG Podgorica 27.91 303⇓ *i*P **P** **14 31 50.0 +0.9**
UZH Uzhgorod 28.13 317 *e*P **P** **14 31 53.0 +2.0**
UZH *i* 14 32 04.9
UZH *e* 14 32 42.7
UZH *e*S **S** **14 36 33.5 -2.1**
UZH MLR MLR
comp=N,600nm,12.0s
UZH MLR MLR
comp=E,400nm,12.0s
UZH MLR MLR
comp=Z,140nm,12.0s
KURBB Kurchatov Arra 28.24 38 P **P** **14 31 52.7 +0.7**
comp=Z,4.7nm,0.9s,baz=240,slow=9.3,SNR=18
HYB Hyderabad 28.25 112 *i*P **P** **14 31 56.0 +3.6**
KOLN Koldanda 28.34 88 *e*P **P** **14 31 53.7 +0.4**
comp=Z,7.1nm,0.6s
KURK Kurchatov 28.34 38 P **P** **14 31 52.7 -0.2**
KURK pmax pmax
comp=Z,5.0nm,0.9s
KURK Kurchatov 28.34 38 *e*P **P** **14 31 52.9 0.0**
comp=Z,9.7nm,0.9s
KURK Kurchatov 28.34 38 *e*P **P** **14 31 52.9 0.0**
comp=Z,9.7nm,0.9s
MAKZ Makanchi 28.45 47 *e*P **P** **14 31 55.2 +1.2**
MAKZ pmax pmax
comp=Z,20nm,1.8s
MAKZ Makanchi 28.45 47 *e*P **P** **14 31 55.2 +1.2**
comp=Z,20nm,1.8s
MAKZ Makanchi 28.45 47 *e*P **P** **14 31 55.2 +1.2**
comp=Z,20nm,1.8s
MK01 Makanchi Array 28.64 48 *e*P **P** **14 31 56.4 +0.8**
MK01 Makanchi Array 28.64 48 *e*P **P** **14 31 56.4 +0.8**
MK31 Makanchi Array 28.64 48 *e*P **P** **14 31 56.5 +0.8**
MK31 Makanchi Array 28.64 48 *e*P **P** **14 31 56.5 +0.8**
MK31 Makanchi Array 28.64 48 *e*P **P** **14 31 56.5 +0.8**
MKAR Makanchi Array 28.64 48 P **P** **14 31 56.8 +1.2**
comp=Z,2.1nm,0.7s,baz=241,slow=8.6,SNR=21
MKAR LR LR 14 44 13.9
comp=Z,536nm,19.1s,baz=250,slow=38
MKAR Makanchi Array 28.64 48 *i*P **P** **14 31 56.7 +1.0**
MKAR pmax pmax
comp=Z,2.0nm,0.7s
MKAR Makanchi Array 28.64 48 *e*P **P** **14 31 56.5 +0.9**
MKAR Makanchi Array 28.64 48 *e*P **P** **14 31 56.5 +0.9**
GKN Gorkha 29.17 87 *e*P **P** **14 32 01.2 +0.5**
TIP Timpagrande 29.24 296⇑ *i*P **P** **14 32 01.9 +0.8**
TIP Timpagrande 29.24 296 *e*P **P** **14 32 01.2 +0.1**
comp=Z,28nm,1.4s
TIP Timpagrande 29.24 296 *e*P **P** **14 32 01.2 +0.1**
comp=Z,28nm,1.4s
KKN Kakani 29.77 87 *e*P **P** **14 32 06.6 +0.5**
comp=Z,42nm,1.0s
PKIN Phulchoki 29.93 88 *e*P **P** **14 32 07.7 +0.2**
comp=Z,15nm,0.7s
VYHS Vyhne 30.14 315 *e*P **P** **14 32 09.4 +0.5**
VYHS Vyhne 30.14 315 *e*P **P** **14 32 09.4 +0.5**
VYHS Vyhne 30.14 315 *e*P **P** **14 32 09.4 +0.5**
OJC Ojcow 30.31 318 *e*P **P** **14 32 10.3 -0.1**
OJC Ojcow 30.31 318 *e*P **P** **14 32 10.0 -0.4**
OJC pmax pmax
comp=Z,16nm,1.2s
OJC Ojcow 30.31 318 *e*P **P** **14 32 10.0 -0.4**
comp=Z,16nm,1.2s
OJC Ojcow 30.31 318 *e*P **P** **14 32 10.0 -0.4**
comp=Z,16nm,1.2s
KLMR Klimovskoe 30.87 349 *e*P **P** **14 32 14.0 -1.2**
KLMR *e*S **S** **14 37 15.7 -2.7**
KLMR pmax pmax
comp=Z,32nm,1.0s
KLMR Klimovskoe 30.87 349 *e*P **P** **14 32 14.0 -1.2**
comp=Z,32nm,1.0s
WMQ Urumqi 31.42 56 P **P** **14 32 22.4 +2.0**
WMQ pP sP 14 32 33.7 +6.9
WMQ sP pP 14 32 40.7 +16
WMQ S **S** **14 37 30.2 +2.7**
WMQ SS **SnSn** **14 39 14.5 +2.8**
WMQ pmax pmax
comp=Z,7.0nm,1.0s
WMQ pmax pmax
comp=Z,33nm,3.6s
WMQ LR LR
comp=N,660nm,12.6s
WMQ LR LR
comp=E,370nm,17.6s
WMQ LR LR
comp=Z,180nm,22.4s
MORC Moravsky Berou 31.43 316⇑ *i*P **P** **14 32 20.5 +0.1**
MORC Moravsky Berou 31.43 316 *e*P **P** **14 32 19.6 -0.8**
MORC pmax pmax
comp=Z,18nm,0.9s
MORC Moravsky Berou 31.43 316 *e*P **P** **14 32 19.6 -0.8**
comp=Z,18nm,0.9s
MORC Moravsky Berou 31.43 316 *e*P **P** **14 32 19.6 -0.8**
comp=Z,18nm,0.9s
BOJS Bojanci 31.47 308 *i*P **P** **14 32 20.8 +0.1**
BOJS Bojanci 31.47 308 *i*P **P** **14 32 20.8 +0.1**
CONA Conrad Observa 31.78 312 *i*P **P** **14 32 23.2 -0.3**
comp=Z,8.6nm,1.5s
CONA Conrad Observa 31.78 312 P **P** **14 32 23.2 -0.3**
comp=Z,8.6nm,1.5s
ARSA Arzberg 31.78 311 *i*P **P** **14 32 23.8 +0.4**
comp=Z,6.0nm,1.1s
VISS Visnje 31.83 308 *i*P **P** **14 32 24.3 +0.5**
PERS Pernice 31.87 310 *i*P **P** **14 32 24.8 +0.6**
SOKA Soboth 31.93 310 *i*P **P** **14 32 22.9 -2.0**
comp=Z,3.9nm,0.7s
SOKA Soboth 31.93 310 P **P** **14 32 22.9 -2.0**
comp=Z,3.9nm,0.7s
VSU Vasula 32.16 336⇑ *e*P **P** **14 32 26.4 -0.2**
VSU pmax pmax
comp=Z,60nm,1.7s
VSU Vasula 32.16 336 *e*P **P** **14 32 26.2 -0.4**
comp=Z,76nm,2.0s,SNR=26
OBKA Obir 32.21 309 *i*P **P** **14 32 27.6 +0.3**
comp=Z,14nm,1.4s
JAVS Javornik 32.38 308 *e*P **P** **14 32 27.0 -1.7**
DPC Dobruska-Polom 32.38 317 AMS AMS 14 47 50.0
comp=Z,400nm,14.7s
TREC Trest 32.49 315 AMS AMS 14 47 10.0
comp=Z,600nm,17.5s
TRI Trieste 32.53 308 *e*P **P** **14 32 29.0 -1.0**
TRI pmax pmax
comp=Z,25nm,1.3s
TRI Trieste 32.53 308 *e*P **P** **14 32 29.0 -1.0**
comp=Z,25nm,1.3s
TRI Trieste 32.53 308 *e*P **P** **14 32 29.0 -1.0**
comp=Z,25nm,1.3s
UPC Upice 32.63 317 AMS AMS 14 47 20.0
comp=Z,400nm,18.2s
MOA Molln 32.78 312 *i*P **P** **14 32 32.1 -0.1**
comp=Z,11nm,1.6s
MYKA Terra Mystica 32.84 309 *i*P **P** **14 32 30.6 -2.2**
comp=Z,1.6nm,0.4s
NVS Novosibirsk 32.95 34 *e*P **P** **14 32 34.6 +1.0**
NVS Novosibirsk 32.95 34 *e*P **P** **14 32 34.6 +1.0**
GOPC GO Pecny, Ondr 33.13 315 AMS AMS 14 47 30.0
comp=Z,500nm,17.3s
KBA Koelnbreinsper 33.16 310 *i*P **P** **14 32 35.4 -0.3**
comp=Z,19nm,0.7s,SNR=12
KBA Koelnbreinsper 33.16 310 P **P** **14 32 35.9 +0.2**
KBA Koelnbreinsper 33.16 310 P **P** **14 32 35.9 +0.2**
ZALV Zalesovo Beam 33.28 37 P **P** **14 32 37.4 +1.0**
comp=Z,4.3nm,0.6s,baz=256,slow=10,SNR=16
ZALV LR LR 14 47 56.2
comp=Z,725nm,20.6s,baz=248,slow=40
PRU Pruhonice 33.31 315 AMS AMS 14 47 30.0
comp=Z,500nm,17.0s
MTSE Matsula 33.41 334 *e*P **P** **14 32 37.7 +0.3**
SNR=25
GEA0 GERESS Array S 33.44 313 *e*P **P** **14 32 35.0 -3.0**
GEA0 GERESS Array S 33.44 313 *e*P **P** **14 32 35.0 -3.0**
GERES GERESS Array B 33.44 313 P **P** **14 32 37.9 -0.2**
comp=Z,0.9nm,0.5s,baz=110,slow=10,SNR=7.9
GERES ScP **ScP** **14 39 04.7 +1.7**
comp=Z,0.2nm,0.3s,baz=90,slow=4.4,SNR=5.6
GERES LR LR 14 50 07.5
comp=Z,239nm,18.0s,baz=84,slow=44
PVCC Panska Ves 33.49 316 AMS AMS 14 48 00.0
comp=Z,500nm,16.6s
KHC Kasperske Hory 33.61 314 *e*P **P** **14 32 38.9 -0.5**
KHC *e*pP **pP** **14 32 44.4 +0.4**
KHC AMS AMS 14 49 50.0
comp=Z,500nm,16.4s
KHC Kasperske Hory 33.61 314 *e*P **P** **14 32 38.0 -1.4**
KHC pmax pmax
comp=Z,6.0nm,1.3s
KHC Kasperske Hory 33.61 314 *e*P **P** **14 32 38.0 -1.4**
comp=Z,6.0nm,1.3s
KHC Kasperske Hory 33.61 314 *e*P **P** **14 32 38.0 -1.4**
comp=Z,6.0nm,1.3s
ABTA Abfaltersbach 33.63 309 *i*P **P** **14 32 39.8 +0.1**
comp=Z,18nm,1.1s,SNR=6.7
TMCR Tamitsa 34.23 350 *e*P **P** **14 32 48.5 +4.0**
TMCR pmax pmax
comp=Z,15nm,0.5s
MEF Metsahovi 34.27 336 *e*P **P** **14 32 43.5 -1.4**
comp=Z,16nm,1.6s,SNR=155
WTTA Wattenberg 34.33 310 *i*P **P** **14 32 45.5 -0.4**
comp=Z,17nm,0.8s,SNR=8.3
FIA1 FINESS Array S 34.64 339 *e*P **P** **14 32 47.0 -1.1**
FIA1 FINESS Array S 34.64 339 *e*P **P** **14 32 47.0 -1.1**
FINES FINESS Array B 34.64 339 P **P** **14 32 47.0 -1.1**
comp=Z,2.5nm,0.4s,baz=141,slow=7.3,SNR=22
FINES LR LR 14 48 16.0
comp=Z,514nm,18.8s,baz=181,slow=39
CLL Collm 34.69 317 *i*P **P** **14 32 48.5 -0.2**
comp=Z,6.0nm,1.1s
CLL Collm 34.69 317 *i*P **P** **14 32 48.5 -0.2**
CLL pmax pmax
comp=Z,6.0nm,1.1s
CLL MLR MLR
comp=Z,400nm,23.7s
CLL Collm 34.69 317 *i*P **P** **14 32 48.5 -0.2**
comp=Z,400nm,23.7s
MOTA Moosalm 34.70 310 *i*P **P** **14 32 48.1 -1.0**
comp=Z,26nm,0.8s,SNR=12
FETA Feichten 34.88 309 *i*P **P** **14 32 50.2 -0.4**
comp=Z,24nm,0.7s,SNR=20
RETA Reutte 34.96 310 *i*P **P** **14 32 50.2 -1.0**
comp=Z,6.4nm,0.4s
VSL Villasalto 34.97 296 *e*P **P** **14 32 50.8 -0.5**
comp=Z,29nm,1.4s
VSL Villasalto 34.97 296 *e*P **P** **14 32 50.8 -0.5**
comp=Z,29nm,1.4s
FUORN Ofenpass-Fuorn 35.11 308 *e*P **P** **14 32 51.8 -0.9**
comp=Z,10.0nm,0.6s
FUORN Ofenpass-Fuorn 35.11 308 *e*P **P** **14 32 51.8 -0.9**
comp=Z,10.0nm,0.6s
KEST Kesra 35.11 289 P **P** **14 32 54.2 +1.6**
comp=Z,6.0nm,0.8s,baz=61,slow=3.6,SNR=7.0
KEST LR LR 14 49 41.3
comp=Z,134nm,20.5s,baz=356,slow=41
KEST Kesra 35.11 289 *e*P **P** **14 32 53.6 +1.0**
comp=Z,9.9nm,0.9s
KEST Kesra 35.11 289 *e*P **P** **14 32 53.6 +1.0**
comp=Z,9.9nm,0.9s
BSD Bornholm Skovb 35.23 324 *i*P **P** **14 32 51.6 -1.7**
comp=Z,9.5nm,0.7s
BSD Bornholm Skovb 35.23 324 *e*P **P** **14 32 51.6 -1.7**
BSD pmax pmax
comp=Z,10.0nm,0.7s
BSD Bornholm Skovb 35.23 324 *e*P **P** **14 32 51.6 -1.7**
comp=Z,10.0nm,0.7s
DAVA Damuels 35.50 309 *i*P **P** **14 32 54.6 -1.4**
comp=Z,35nm,0.4s,SNR=32
TUE Stuetta 35.70 308 *e*P **P** **14 32 56.8 -0.9**
comp=Z,13nm,0.8s
TUE Stuetta 35.70 308 *e*P **P** **14 32 56.8 -0.9**
comp=Z,13nm,0.8s
RAF Rauma 35.76 336 *e*P **P** **14 32 55.5 -2.2**
comp=Z,21nm,1.5s,SNR=25
SHL Shillong 36.06 88 *ex* **P** **14 33 02.5 +1.5**
BFO Black Forest 36.75 311 *e*P **P** **14 33 06.7 +0.2**
BFO pmax pmax
comp=Z,4.0nm,0.7s
BFO Black Forest 36.75 311 *e*P **P** **14 33 06.7 +0.2**
comp=Z,4.1nm,0.7s
BFO Black Forest 36.75 311 *e*P **P** **14 33 06.7 +0.2**
comp=Z,4.1nm,0.7s
FELD Feldberg im Sc 36.87 310 *e*P **P** **14 33 06.1 -1.5**
SENIN Lac Senin/Sane 37.08 307 *e*P **P** **14 33 08.0 -1.5**
comp=Z,12nm,0.8s
SENIN Lac Senin/Sane 37.08 307 *e*P **P** **14 33 08.0 -1.5**
comp=Z,12nm,0.8s
BBS Basel-Blauen 37.12 309 *e*P **P** **14 33 08.7 -0.9**
LPG La Plagne 37.34 306 *e*P **P** **14 33 10.4 -1.4**
LPG pmax pmax
comp=Z,13nm,0.6s
LPG La Plagne 37.34 306 *e*P **P** **14 33 10.4 -1.4**
comp=Z,13nm,0.6s
LPL La Plagne 37.35 306 *e*P **P** **14 33 10.4 -1.5**
LPL pmax pmax
comp=Z,22nm,0.8s
LPL La Plagne 37.35 306 *e*P **P** **14 33 10.4 -1.5**
comp=Z,22nm,0.8s
MOF Molkenrain 37.44 310⇓ *e*P **P** **14 33 11.6 -0.8**
MOF Molkenrain 37.44 310⇓ *e*P **P** **14 33 11.6 -0.8**
RSL Roselend 37.45 306⇓ *e*P **P** **14 33 11.7 -0.9**
RSL Roselend 37.45 306⇓ *e*P **P** **14 33 11.7 -0.9**
CDF Champ du Feu 37.45 310 *e*P **P** **14 33 11.7 -0.8**
CDF pmax pmax
comp=Z,6.0nm,0.7s
CDF Champ du Feu 37.45 310 *e*P **P** **14 33 11.7 -0.8**
comp=Z,6.0nm,0.7s
ECH Echery 37.49 310⇓ *e*P **P** **14 33 11.8 -1.0**
ECH Echery 37.49 310⇓ *e*P **P** **14 33 11.8 -1.0**
LOMF Lomont 37.55 309⇓ *e*P **P** **14 33 12.6 -0.8**
LOMF Lomont 37.55 309⇓ *e*P **P** **14 33 12.6 -0.8**
HINF Hinteralfeld 37.62 309 *e*P **P** **14 33 12.3 -1.6**
HINF pmax pmax
comp=Z,3.0nm,0.4s
HINF Hinteralfeld 37.62 309 *e*P **P** **14 33 12.3 -1.6**
comp=Z,3.0nm,0.4s
RUP Ruppelstein 37.86 313 *e*P **P** **14 33 14.8 -1.1**
CABF La Chapelle 37.94 307 *e*P **P** **14 33 14.7 -2.0**
CABF pmax pmax
comp=Z,39nm,0.9s
CABF La Chapelle 37.94 307 *e*P **P** **14 33 14.7 -2.0**
comp=Z,39nm,0.9s
PLDF La Plantade 39.57 306 *e*P **P** **14 33 30.4 +0.1**
PLDF La Plantade 39.57 306 *e*P **P** **14 33 30.4 +0.1**
NC405 NORSAR Array S 39.69 331 *e*P **P** **14 33 28.6 -2.5**
NC405 NORSAR Array S 39.69 331 *e*P **P** **14 33 28.6 -2.5**
LBL Lubilhac 39.77 305 *e*P **P** **14 33 32.5 +0.5**
LBL Lubilhac 39.77 305 *e*P **P** **14 33 32.5 +0.5**
AVF Avril sur Loir 39.83 307 *e*P **P** **14 33 30.9 -1.5**
AVF pmax pmax
comp=Z,14nm,1.0s
AVF Avril sur Loir 39.83 307 *e*P **P** **14 33 30.9 -1.5**
comp=Z,14nm,1.0s
NB2 NORSAR Subarra 39.87 331 P **P** **14 33 30.2 -2.3**
comp=Z,5.1nm,0.9s,baz=122,slow=8.6
NB2 NORSAR Subarra 39.87 331 P **P** **14 33 30.2 -2.3**
comp=Z,5.1nm,0.9s,SNR=9.1
NOA NORSAR Array B 39.87 331 P **P** **14 33 30.5 -2.0**
comp=Z,3.0nm,0.7s,baz=121,slow=8.3,SNR=11
NOA PP **PP** **14 35 03.4 -0.7**
comp=Z,1.8nm,0.8s,baz=134,slow=10,SNR=4.0
NOA LR LR 14 52 13.4
comp=Z,221nm,21.1s,baz=120,slow=40
AGO Saint Agoulin 39.91 306 *e*P **P** **14 33 33.7 +0.6**
AGO Saint Agoulin 39.91 306 *e*P **P** **14 33 33.7 +0.6**
GTA Gaotai 40.18 64 *e*P **P** **14 33 37.2 +1.6**
GTA pP sP 14 33 48.1 +6.0
GTA sP pP 14 33 54.0 +14
GTA S **S** **14 39 41.2 -0.7**
GTA sS sS 14 40 02.4 +13
GTA SS **SS** **14 42 33.7 -6.0**
GTA pmax pmax
comp=Z,7.0nm,1.0s
GTA pmax pmax
comp=Z,37nm,6.9s
GTA LR LR
comp=N,500nm,17.6s
GTA LR LR
comp=E,350nm,17.8s
GTA LR LR
comp=Z,370nm,16.4s
ARCES ARCESS Array B 41.27 347 P **P** **14 33 43.1 -0.9**
comp=Z,1.0nm,0.6s,baz=151,slow=7.7,SNR=5.6
ARCES PP **PP** **14 35 17.8 -1.4**
comp=Z,3.8nm,0.8s,baz=149,slow=9.6,SNR=4.7
ARCES LR LR 14 53 17.5
comp=Z,271nm,18.7s,baz=143,slow=40
TAM Tamanrasset 41.34 270 *e*P **P** **14 33 47.2 +1.9**
TAM pmax pmax
comp=Z,7.0nm,1.0s
TAM Tamanrasset 41.34 270 *e*P **P** **14 33 47.2 +1.9**
comp=Z,7.4nm,1.0s
TAM Tamanrasset 41.34 270 *e*P **P** **14 33 47.2 +1.9**
comp=Z,7.4nm,1.0s
MOY Mondy 41.73 46 *e*P **P** **14 33 50.2 +2.0**
MOY pmax pmax
comp=Z,27nm,2.7s
MOY Mondy 41.73 46 *e*P **P** **14 33 50.2 +2.0**
comp=Z,27nm,2.7s
LDF La Druitiere 42.34 310 *e*P **P** **14 33 52.3 -0.7**
LDF pmax pmax
comp=Z,5.0nm,0.4s
LDF La Druitiere 42.34 310 *e*P **P** **14 33 52.3 -0.7**
comp=Z,5.0nm,0.4s
FLN La Foliniere 42.60 310 *e*P **P** **14 33 53.2 -1.9**
FLN pmax pmax
comp=Z,12nm,0.5s
FLN La Foliniere 42.60 310 *e*P **P** **14 33 53.2 -1.9**
comp=Z,12nm,0.5s
GRR Gorron 42.81 309 *e*P **P** **14 33 55.2 -1.7**
GRR pmax pmax
comp=Z,14nm,0.7s
GRR Gorron 42.81 309 *e*P **P** **14 33 55.2 -1.7**
comp=Z,14nm,0.7s
ZAK Zakamensk 42.98 48 *e*P **P** **14 33 59.4 +1.1**
ZAK pmax pmax
comp=Z,3.0nm,1.1s
ZAK Zakamensk 42.98 48 *e*P **P** **14 33 59.4 +1.1**
comp=Z,3.0nm,1.1s
TLY Talaya 43.37 46 *e*P **P** **14 34 04.7 +3.4**
TLY *e*S **S** **14 40 25.5 -3.1**
TLY *e*SS **SnSn** **14 43 55.3 -4.7**
TLY pmax pmax
comp=Z,7.0nm,1.9s
NRIK Noril'sk 43.58 18 P **P** **14 34 04.1 +1.3**
comp=Z,11nm,1.0s,baz=218,slow=7.1,SNR=8.8
NRIK LR LR 14 55 47.6
comp=Z,828nm,18.4s,baz=226,slow=41
LZH Lanzhou 43.72 69 *e*P **P** **14 34 05.1 +0.6**
LZH pP sP 14 34 17.5 +6.4
LZH sP pP 14 34 22.8 +14
LZH *e*PP **PcP** **14 35 49.3 -2.1**
LZH pmax pmax
comp=Z,21nm,1.2s
LZH pmax pmax
comp=Z,73nm,6.0s
LZH LR LR
comp=N,340nm,14.0s
LZH LR LR
comp=E,350nm,14.3s
LZH LR LR
comp=Z,440nm,17.8s
CMAI Chiengmai2 44.26 93 P P 14 34 15.5 +6.4
comp=Z,9.8nm,1.4s
CHTO Chiang Mai 44.64 94 P **P** **14 34 15.6 +3.7**
comp=Z,42nm,1.2s
CHTO Chiang Mai 44.64 94 *e*P **P** **14 34 11.3 -0.6**
CHTO pmax pmax
comp=Z,10.0nm,1.1s
CHTO Chiang Mai 44.64 94 *e*P **P** **14 34 11.3 -0.6**
comp=Z,9.7nm,1.1s
CHTO Chiang Mai 44.64 94 *e*P **P** **14 34 11.3 -0.6**
comp=Z,9.7nm,1.1s
CD2 Chengdu 44.69 76 P **P** **14 34 10.7 -1.6**
CD2 pmax pmax
comp=Z,1.0nm,0.5s
CMAR Chiang Mai Arr 44.79 95 P **P** **14 34 13.7 +0.5**
comp=Z,1.9nm,0.6s,baz=292,slow=8.0,SNR=9.5
CMAR LR LR 14 56 45.4
comp=Z,170nm,19.9s,baz=300,slow=41
CM01 Chiang Mai Arr 44.82 95 *e*P **P** **14 34 11.9 -1.5**
CM01 Chiang Mai Arr 44.82 95 *e*P **P** **14 34 11.9 -1.5**
SONM Songino Array 44.84 52 P **P** **14 34 13.9 +0.5**
comp=Z,2.6nm,0.9s,baz=273,slow=9.6,SNR=17
SONM LR LR 14 53 17.2
comp=Z,436nm,19.4s,baz=270,slow=36
SONM Songino Array 44.84 52 P **P** **14 34 13.9 +0.5**
SONM pmax pmax
comp=Z,2.0nm,0.8s
SONM MLR MLR
comp=Z,436nm,19.4s
SONA1 Songino Array 44.85 52 *e*P **P** **14 34 13.7 +0.3**
SONA1 Songino Array 44.85 52 *e*P **P** **14 34 13.7 +0.3**
ES19 SONSECA Array 45.20 297 *e*P **P** **14 34 16.1 -0.1**
ES19 SONSECA Array 45.20 297 *e*P **P** **14 34 16.1 -0.1**
ESDC Sonseca Array 45.25 297 P **P** **14 34 15.7 -1.0**
comp=Z,0.9nm,0.5s,baz=74,slow=7.8,SNR=11
ESDC LR LR 14 56 25.9
comp=Z,121nm,18.6s,baz=90,slow=40
CRAI Chiangrai 45.28 92 P P 14 34 23.2 +6.2
comp=Z,27nm,1.6s
ULN Ulaanbaatar 45.29 52 *ce*P **P** **14 34 18.4 +1.5**
ULN pmax pmax
comp=Z,8.0nm,0.8s
ULN Ulaanbaatar 45.29 52 *e*P **P** **14 34 16.6 -0.3**
comp=Z,16nm,1.3s
ULN Ulaanbaatar 45.29 52 *e*P **P** **14 34 16.6 -0.3**
comp=Z,16nm,1.3s
KMI Kunming 45.51 84 P **P** **14 34 18.3 -0.7**
KMI pP sP 14 34 30.4 +4.8
KMI sP pP 14 34 36.2 +12
KMI PP **PP** **14 36 08.0 +2.5**
KMI S **S** **14 40 56.8 -3.9**
KMI sS sS 14 41 16.5 +8.0
KMI Kunming 45.51 84 SS SS 14 44 19.8 -4.5
KMI pmax pmax
comp=Z,10.0nm,1.4s
KMI pmax pmax
comp=Z,59nm,4.2s
KMI LR LR
comp=N,440nm,21.8s

KMI LR LR
comp=E,170nm,20.8s
KMI LR LR
comp=Z,300nm,20.8s
SUKH Sukhothai 45.80 95 P P 14 34 27.7 +6.6
comp=Z,3.3nm,1.0s
NANT Nan 46.15 93 P **P 14 34 26.9 +3.0**
comp=Z,2.3nm,0.8s
UTTA Uttaradit 46.48 95 P **P 14 34 31.0 +4.6**
comp=Z,3.3nm,1.1s
PBRG Braganca 47.10 300 *eP* **P 14 34 32.6 +1.4**
LOEI Loei 47.19 94 P **P 14 34 34.7 +2.6**
comp=Z,240nm,0.9s
PBKT Sadao Pong 47.35 96 P **P 14 34 34.2 +0.9**
comp=Z,14nm,1.0s
MVO Moncorvo 47.39 299 *eP* **P 14 34 32.6 -0.9**
PBAR Barrancos 47.84 295 *eP* **P 14 34 36.7 -0.2**
comp=Z,68nm,1.1s
MTE Manteigas 47.88 298 *eP* **P 14 34 38.4 +1.1**
MTE Manteigas 47.88 298 *eP* **P 14 34 35.8 -1.5**
comp=Z,23nm,1.0s
MTE Manteigas 47.88 298 *eP* **P 14 34 35.8 -1.5**
comp=Z,23nm,1.0s
PVRL Vila Real 47.89 299 *eP* **P 14 34 38.2 +0.9**
PMRV Marv??o 47.91 297 *eP* **P 14 34 37.3 -0.1**
PCBR Castelo Branco 47.91 298 *eP* **P 14 34 38.4 +1.0**
comp=Z,44nm,1.5s
POLO Lamas de Olo 47.94 300 *eP* **P 14 34 38.1 +0.4**
PVIS Viseu 48.10 299 *eP* **P 14 34 39.7 +0.7**
PGAV Gavieira, Arco 48.22 300 *eP* **P 14 34 39.1 -0.8**
PBEJ Beja 48.51 295 *eP* **P 14 34 41.9 -0.1**
NONG Nongkai 48.56 93 P **P 14 34 46.4 +3.7**
comp=Z,19nm,0.9s
TOA0 Torodi Ar. Sit 48.80 260 *eP* **P 14 34 44.1 -0.4**
TOA0 Torodi Ar. Sit 48.80 260 *eP* **P 14 34 44.1 -0.4**
TORD Torodi Ar. Bea 48.80 260 P **P 14 34 43.8 -0.7**
comp=Z,7.3nm,0.6s,baz=57,slow=7.8,SNR=63
TORD LR LR 14 56 28.8
comp=Z,244nm,19.4s,baz=100,slow=38
HHC Hu-ho-hao-te 48.99 61 *eP* **P 14 34 47.0 +1.1**
HHC PP **PP 14 36 36.3 -2.9**
HHC PcS **PcS 14 40 07.2 +1.0**
HHC S **S 14 41 47.1 -2.7**
HHC sS sS 14 42 11.8 +14
HHC Hu-ho-hao-te 48.99 61 SS SS 14 45 15.5 -5.0
HHC pmax pmax
comp=Z,31nm,1.0s
HHC pmax pmax
comp=Z,100nm,6.3s
HHC LR LR
comp=N,490nm,15.6s
HHC LR LR
comp=E,430nm,15.8s
HHC LR LR
comp=Z,320nm,15.8s
OPO Ambohidratompo 49.42 185 P **P 14 34 51.9 +2.6**
comp=Z,3.5nm,0.9s,baz=58,slow=8.9,SNR=3.7
SKNT Sakolnakorn 49.75 94 P P 14 34 58.5 +6.7
comp=Z,13nm,2.0s
BOD Bodaibo 49.99 38 *eP* **P 14 34 52.6 -0.5**
BOD pmax pmax
comp=Z,10.0nm,1.4s
BOD Bodaibo 49.99 38 *eP* **P 14 34 52.6 -0.5**
comp=Z,10.0nm,1.4s
PANO Nakornpanom 50.22 93 P **P 14 34 56.2 +0.9**
comp=Z,16nm,1.1s
IPM Ipoh 53.66 109 *eP* **P 14 35 22.8 +1.7**
comp=Z,14nm,0.9s
IPM Ipoh 53.66 109 *eP* **P 14 35 22.8 +1.7**
comp=Z,14nm,0.9s
QIZ Qiongzhong 53.90 88 P **P 14 35 23.6 +0.8**
QIZ S **S 14 42 55.8 -2.0**
QIZ LR LR
comp=N,88nm,20.0s
QIZ LR LR
comp=E,100nm,22.2s
NJ2 Nanjing 56.76 70 *eP* **P 14 35 42.8 -0.4**
NJ2 pmax pmax
comp=Z,25nm,0.6s
TIXI Tiksi 57.04 22 LR LR 15 03 31.6
comp=Z,698nm,19.6s,baz=262,slow=40
TIXI Tiksi 57.04 22⇓ *eP* **P 14 35 44.6 0.0**
TIXI pmax pmax
comp=Z,5.0nm,1.4s
TIXI Tiksi 57.04 22 *eP* **P 14 35 44.6 0.0**
comp=Z,5.0nm,1.4s
DBIC Dimbokro 57.65 257 P **P 14 35 49.2 -0.5**
comp=Z,5.5nm,0.6s,baz=39,slow=6.8,SNR=13
DBIC LR LR 15 01 42.9
comp=Z,225nm,20.6s,baz=38,slow=37
KIC Kosan Boka 57.72 257 *eP* **P 14 35 51.4 +1.2**
comp=Z,20nm,0.7s
TIC Toumodi 57.80 257 *eP* **P 14 35 51.8 +1.0**
YAK Yakutsk 57.81 33⇑ *eP* **P 14 35 50.4 +0.3**
YAK pmax pmax
comp=Z,7.0nm,1.3s
YAK Yakutsk 57.81 33 *eP* **P 14 35 50.4 +0.3**
comp=Z,7.0nm,1.3s
LIC Lamto 58.03 257 *eP* **P 14 35 53.5 +1.1**
comp=Z,69nm,1.7s
SUMG Summit 60.67 340 *i* P **P 14 36 09.3 -1.0**
comp=Z,19nm,1.1s
SUMG Summit 60.67 340 *eP* **P 14 36 09.3 -1.0**
SUMG pmax pmax
comp=Z,19nm,1.1s
SUMG Summit 60.67 340 *eP* **P 14 36 10.0 -0.3**
comp=Z,19nm,1.1s
SUMG Summit 60.67 340 *eP* **P 14 36 10.0 -0.3**
comp=Z,19nm,1.1s
KLR Kul'dur 61.35 47 LR LR 15 02 48.3
comp=Z,164nm,20.4s,baz=286,slow=36
KSAR Wonju Array Be 62.10 61 P **P 14 36 19.4 -0.7**
KSAR Wonju Array Be 62.10 61 P **P 14 36 19.4 -0.7**
KSAR Wonju Array Be 62.10 61 P **P 14 36 19.4 -0.7**
KSRS Korea Array 62.13 61 P **P 14 36 19.4 -0.8**
comp=Z,2.6nm,0.6s,baz=282,slow=6.3,SNR=11
KSRS Korea Array 62.13 61 P **P 14 36 19.4 -0.8**
KSRS pmax pmax
comp=Z,2.0nm,0.6s
KSRS Korea Array 62.13 61 P **P 14 36 19.4 -0.8**
comp=Z,2.0nm,0.6s
BOSA Boshof 64.22 205 P **P 14 36 35.1 +0.9**
comp=Z,3.1nm,0.6s,baz=14,slow=5.9,SNR=9.1
BOSA LR LR 15 06 08.9
comp=Z,427nm,19.9s,baz=48,slow=38
NKL Nikolayevsk 65.56 41 *eP* **P 14 36 41.5 -1.0**
NKL MLR MLR
comp=E,500nm,12.0s
NKL MLR MLR
comp=Z,600nm,12.0s
NKL Nikolayevsk 65.56 41 *eP* **P 14 36 41.5 -1.0**
LEM Lembang 65.69 115 LR LR 15 08 13.6
comp=Z,194nm,18.7s,baz=350,slow=38
JNU Nakatsue 65.92 65 LR LR 15 08 09.3
comp=Z,258nm,18.0s,baz=298,slow=38
SEY Seymchan 67.70 29⇑ *iP* **P 14 36 57.8 +1.7**
SEY Seymchan 67.70 29 *i* P **P 14 36 57.8 +1.7**
MYLDM Lahad Datu 67.88 97 *eP* **P 14 36 59.9 +1.9**
comp=Z,15nm,1.0s
MYLDM Lahad Datu 67.88 97 *eP* **P 14 36 59.9 +1.9**
comp=Z,15nm,1.0s
BILL Bilibino 70.26 21⇓ *iP* **P 14 37 12.3 +0.4**
BILL *e* 14 39 49.4
BILL pmax pmax
comp=Z,7.0nm,0.8s
BILL MLR MLR
comp=Z,326nm,16.0s
BILL Bilibino 70.26 21 *eP* **P 14 37 12.1 +0.2**
comp=Z,6.1nm,0.8s
BILL Bilibino 70.26 21 *eP* **P 14 37 12.1 +0.2**
comp=Z,6.1nm,0.8s
KAPI Kappang 74.40 106 LR LR 15 11 47.7
comp=Z,128nm,21.6s,baz=321,slow=37
PETK Petropavlovsk- 74.82 37 P **P 14 37 37.0 -2.3**
comp=Z,14nm,1.1s,baz=273,slow=8.2,SNR=3.6
PETK Petropavlovsk- 74.82 37 P **P 14 37 37.0 -2.3**
PETK pmax pmax
comp=Z,10.0nm,1.0s
PETK Petropavlovsk- 74.82 37 P **P 14 37 37.0 -2.3**
SCHQ Schefferville 79.40 329 LR LR 15 14 17.6
comp=Z,99nm,20.1s,baz=70,slow=37
COLD Coldfoot 80.76 8 *eP* **P 14 38 12.8 +0.6**
comp=Z,6.1nm,1.0s
COLD Coldfoot 80.76 8 *eP* **P 14 38 12.8 +0.6**
comp=Z,6.1nm,1.0s
MLY Manley 82.78 9 *eP* **P 14 38 23.7 +0.8**
comp=Z,4.4nm,0.8s
MLY Manley 82.78 9 *eP* **P 14 38 23.7 +0.8**
comp=Z,4.4nm,0.8s
MDM Murphy Dome 83.18 8 *eP* **P 14 38 26.3 +1.4**
comp=Z,11nm,1.1s
MDM Murphy Dome 83.18 8 *eP* **P 14 38 26.3 +1.4**
comp=Z,11nm,1.1s
COLA College 83.31 8⇓ *eP* **P 14 38 25.8 +0.3**
COLA pmax pmax
comp=Z,4.0nm,1.1s
IL1 Eielson Array 83.52 8 *eP* **P 14 38 25.6 -1.0**
IL1 Eielson Array 83.52 8 *eP* **P 14 38 25.6 -1.0**
ILAR Eielson Array 83.52 8 P **P 14 38 26.1 -0.6**
comp=Z,0.9nm,0.6s,baz=324,slow=3.8,SNR=9.5
ILAR LR LR 15 24 50.6
comp=Z,47nm,18.3s,baz=330,slow=42
BPAW Bear Paw Mtn. 83.63 10 *eP* **P 14 38 27.8 +0.5**
comp=Z,33nm,1.7s
BPAW Bear Paw Mtn. 83.63 10 *eP* **P 14 38 27.8 +0.5**
comp=Z,33nm,1.7s
EGAK Eagle 84.07 5 *eP* **P 14 38 30.4 +0.9**
comp=Z,10nm,0.9s
EGAK Eagle 84.07 5 *eP* **P 14 38 30.4 +0.9**
comp=Z,10nm,0.9s
DAWY Dawson 84.91 5 *eP* **P 14 38 34.7 +0.9**
comp=Z,14nm,1.3s
DAWY Dawson 84.91 5 *eP* **P 14 38 34.7 +0.9**
comp=Z,14nm,1.3s
DOT Dot Lake 84.92 7 *eP* **P 14 38 34.3 +0.4**
comp=Z,26nm,1.0s
DOT Dot Lake 84.92 7 *eP* **P 14 38 34.3 +0.4**
comp=Z,26nm,1.0s
YKA Yellowknife Ar 86.16 353 P **P 14 38 39.8 -0.2**
comp=Z,3.2nm,0.9s,baz=7.8,slow=5.2,SNR=22
ULM Lac du Bonnet 94.03 340 LR LR 15 23 25.3
comp=Z,119nm,18.6s,baz=58,slow=37
MAW Mawson 98.67 176 LR LR 15 21 44.0
comp=Z,65nm,18.7s,baz=52,slow=34
PLCA Paso Flores 132.59 241 PKP **PKPdf 14 45 15.3 +1.6**
comp=Z,1.7nm,0.7s,baz=47,slow=3.2,SNR=5.8
TAOE Nuku Hiva Isla 155.56 28 *e*LR LR 15 38 28.3
comp=Z,189nm,26.0s
PPT2 Papeete2 156.87 60 *e*LR LR 15 38 58.6
comp=Z,164nm,23.5s
RKT Rikitea 170.42 37 *e*LR LR 15 45 16.8
comp=Z,402nm,38.0s

SKO 12 14:31:10.3, 41˚.02N×22˚.36E, h2km, M1.0, ML1.4, 2C, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VAY	**Valandovo**	**0.34**	**28**	⇑*i*Pg	Pg	14 31 16.5	-0.4
VAY				⇑*i*Sg	Sg	14 31 21.8	+0.5
VAY				*e*Lg	Lg	14 31 21.9	
	comp=E,38nm,0.3s						
VAY				*e*Lg	Lg	14 31 22.0	
	comp=N,28nm,0.3s						

*IDC **12** 14:33:06.3±0.8, 9˚.69S×114˚.24E, h0km, mb4.0/10, mb1 4.2/11, mb1mx3.9/36, mbtmp4.1/11, ML3.9/1, MS3.2/3, Ms1 3.2/3, ms1mx2.8/34, Error ellipse: s-maj=49.2km s-min=11.8km az=49.0*
*NEIC **12** 14:33:10.8±0.6, 9˚.88S×114˚.07E, h35km, mb4.2/3, Error ellipse: s-maj=17.8km s-min=9.9km az=53.0*
*ISCJB **12** 14:33:12.5±0.7, 9˚.74S±0˚.06×114˚.10E±0˚.03, h66km±6km, mb3.9/14, Error ellipse: s-maj=9.9km s-min=4.0km az=11.8*
*DJA **12** 14:33:14.6±0.4, 10˚S±4˚×11˚4E±˚, h47km±19km, M4.7/25, mb4.9/8, mB5.2/5, MLv4.7/25, Mw(mB)4.7/5*
ISC 12 14:33:14.0±1.2, 9.68S±0.07×114.12E±0.04, h58km±11km, **n54,** σ1°**44/69, mb4.0**/14, **South of Bali**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAGI	**Jajag, Banyuwa**	**1.20**	**1**	P	**Pn**	**14 33 34.1**	**-0.5**
JAGI				S	**Sn**	**14 33 50.5**	**+0.5**
JAGI	**Jajag, Banyuwa**	**1.20**	**1**	*e*Pn	**Pn**	**14 33 33.9**	**-0.8**
JAGI				*e*Sn	**Sn**	**14 33 51.0**	**+0.9**
DNP	**Denpasar**	**1.47**	**47**	P	**Pn**	**14 33 38.5**	**+0.3**
GMJI	**Gumukmas**	**1.55**	**334**	P	**Pn**	**14 33 38.7**	**-0.6**
GMJI				S	**Sn**	**14 33 58.9**	**+0.6**
ABJI	**Asem Bagus**	**1.87**	**3**	P	**Pn**	**14 33 45.3**	**+1.6**
SRBI	**Singaraja**	**1.92**	**34**	P	**Pn**	**14 33 45.3**	**+1.0**
PWJI	**Pagerwojo**	**2.82**	**306**	P	**Pn**	**14 33 56.3**	**-0.3**
PWJI				S	**Sn**	**14 34 28.9**	**-0.5**
TWSI	**Taliwang, Sumb**	**2.88**	**71**	P	**Pn**	**14 33 57.3**	**-0.2**
TWSI				S	**Sn**	**14 34 30.7**	**-0.3**
PCJI	**Pacitan**	**3.26**	**297**	P	**Pn**	**14 34 02.3**	**-0.3**
PCJI				S	**Sn**	**14 34 39.9**	**-0.4**
NGJI	**Ngawi**	**3.49**	**311**	P	**Pn**	**14 34 07.1**	**+1.3**
NGJI				S	**Sn**	**14 34 47.9**	**+2.0**
TBJI	**Tambak Boyo**	**3.62**	**321**	P	**Pn**	**14 34 08.2**	**+0.6**
TBJI				S	**Sn**	**14 34 52.8**	**+3.6**
WOJI	**Wonogiri, Jawa**	**3.65**	**300**	P	**Pn**	**14 34 08.2**	**+0.2**
PLAI	**Plampang**	**3.71**	**77**	P	**Pn**	**14 34 10.1**	**+1.3**
PLAI				S	**Sn**	**14 34 53.7**	**+2.5**
UGM	**Wanagama**	**3.96**	**296**	P	**Pn**	**14 34 12.8**	**+0.5**
UGM				S	**Sn**	**14 34 56.9**	**-0.7**
SMRI	**Semarang**	**4.48**	**305**	P	**Pn**	**14 34 20.3**	**+0.9**
CMJI	**Cimerak**	**5.92**	**288**	P	**Pn**	**14 34 39.0**	**0.0**
	55nm,1.2s,0.4nm						
WSI	**Waingapu**	**6.09**	**90**	P	**Pn**	**14 34 42.1**	**+0.7**
	219nm,1.0s,6μm3.2nm						
BBKI	**Banjar Baru**	**6.22**	**7**	P	**Pn**	**14 34 44.6**	**+1.4**
	42nm,1.2s,0.2nm						
CISI	**Cisompet, Garu**	**6.58**	**288**	P	**Pn**	**14 34 48.6**	**+0.3**
	92nm,0.5s,3μm0.7nm						
CISI	**Cisompet, Garu**	**6.58**	**288**	*e*Pn	**Pn**	**14 34 47.4**	**-0.8**
	74nm,0.5s						
CISI				*e*Sn	**Sn**	**14 35 59.8**	**-2.2**
LEM	**Lembang**	**7.03**	**293**	Pn	**Pn**	**14 34 57.7**	**+3.2**
	baz=173,slow=22,SNR=1.5						
LEM				Sn	**Sn**	**14 36 16.3**	**+3.1**
	0.8nm,0.3s,baz=316,slow=14,SNR=1.7						
LEM	**Lembang**	**7.03**	**293**	P	**Pn**	**14 34 53.4**	**-1.1**
	264nm,1.0s,1.9nm						
KAPI	**Kappang**	**7.26**	**51**	Pn	**Pn**	**14 34 57.7**	**+0.2**
	3.1nm,0.3s,baz=235,slow=2.7,SNR=14						
KAPI				Sn	**Sn**	**14 36 16.6**	**-1.8**
	2.0nm,0.3s,baz=75,slow=20,SNR=5.9						
KAPI				LR	LR	14 38 16.7	
	comp=Z,188nm,18.1s,baz=253,slow=43						
KAPI	**Kappang**	**7.26**	**51**	Pn	**Pn**	**14 34 57.6**	**+0.2**
KAPI				*e*Sn	**Sn**	**14 36 15.6**	**-2.9**
TTSI	**Tana Toraja**	**8.69**	**41**	P	**Pn**	**14 35 17.3**	**+0.3**
	9.6nm,1.1s,722nm						
CGJI	**Cibinong**	**8.88**	**289**	P	**Pn**	**14 35 20.0**	**+0.3**
MBWA	**Marble Bar**	**12.63**	**155**	*e*Pn	Pn	14 36 02.8	-8.1
FITZ	**Fitzroy Crossi**	**13.96**	**128**	Pn	Pn	14 36 22.4	-6.6
	0.4nm,0.3s,baz=316,slow=8.7,SNR=15						
FITZ				Sn	Sn	14 38 47.7	-15
	0.8nm,0.3s,baz=7.7,slow=24,SNR=7.2						
FITZ				LR	LR	14 40 54.6	
	comp=Z,72nm,21.0s,baz=281,slow=34						
WRA	**Warramunga Arr**	**22.02**	**120**	P	**P**	**14 38 01.3**	**-2.5**
	1.3nm,0.5s,baz=295,slow=12,SNR=20						
WRA				S	**S**	**14 41 59.6**	**-4.0**
	0.4nm,0.5s,baz=294,slow=22,SNR=3.7						
WRAB	**Tennant Creek**	**22.03**	**120**	*e*P	**P**	**14 38 03.3**	**-0.5**
	1.6nm,0.5s						
NWAO	**Narrogin (SRO)**	**23.32**	**173**	P	**P**	**14 38 18.6**	**+1.6**
	4.3nm,0.8s,baz=103,slow=12,SNR=2.2						
NWAO				S	**S**	**14 42 24.3**	**-0.9**
	18nm,1.2s,baz=112,slow=19,SNR=4.2						
ASAR	**Alice Springs**	**23.46**	**129**	P	**P**	**14 38 17.4**	**-1.1**
	1.7nm,0.5s,baz=302,slow=8.3,SNR=87						
ASAR				PcP	**PcP**	**14 42 04.4**	**+1.2**
	0.5nm,0.5s,baz=304,slow=1.9,SNR=5.2						
ASAR				S	**S**	**14 42 31.6**	**+3.7**
	1.0nm,0.7s,baz=295,slow=22,SNR=3.4						
CMAR	**Chiang Mai Arr**	**31.72**	**332**	P	**P**	**14 39 34.2**	**+1.8**
	1.7nm,0.6s,baz=162,slow=8.8,SNR=11						
CHTO	**Chiang Mai**	**32.03**	**332**	*e*P	**P**	**14 39 33.4**	**-1.8**
STKA	**Stephens Creek**	**33.70**	**135**	P	**P**	**14 39 49.5**	**-0.2**
	2.0nm,0.4s,baz=314,slow=9.4,SNR=12						
LSA	**Lhasa**	**44.97**	**331**	*e*P	**P**	**14 41 23.4**	**-0.7**
GUN	**Gumba**	**46.30**	**325**	*e*P	**P**	**14 41 34.8**	**+0.3**
	24nm,0.7s						
PKIN	**Phulchoki**	**46.32**	**324**	*e*P	**P**	**14 41 34.2**	**-0.4**
	3.7nm,0.4s						
DMN	**Daman**	**46.52**	**324**	*e*P	**P**	**14 41 36.1**	**0.0**
	13nm,0.4s						
KKN	**Kakani**	**46.55**	**324**	*e*P	**P**	**14 41 35.6**	**-0.7**
	6.1nm,0.5s						
GKN	**Gorkha**	**47.09**	**324**	*e*P	**P**	**14 41 39.8**	**-0.7**
	15nm,0.4s						
KOLN	**Koldanda**	**47.53**	**322**	*e*P	**P**	**14 41 43.9**	**-0.1**
	17nm,0.5s						
PYUN	**Piuthan**	**48.14**	**322**	*e*P	**P**	**14 41 48.7**	**0.0**
DZM	**Mont Dzumac**	**51.58**	**110**	LR	LR	15 06 12.5	
	comp=Z,30nm,18.2s,baz=202,slow=39						
SONM	**Songino Array**	**57.67**	**354**	P	**P**	**14 42 58.7**	**+0.3**
	1.9nm,0.6s,baz=181,slow=7.3,SNR=12						
MKAR	**Makanchi Array**	**62.99**	**336**	P	**P**	**14 43 34.8**	**+0.1**
	1.7nm,0.6s,baz=147,slow=7.5,SNR=19						
ZALV	**Zalesovo Beam**	**68.07**	**342**	P	**P**	**14 44 06.2**	**-1.0**
	0.7nm,0.4s,baz=152,slow=3.2,SNR=4.2						
GEYT	**Alibeck**	**70.51**	**316**	P	**P**	**14 44 23.7**	**+0.9**
	1.0nm,0.4s,baz=168,slow=7.4,SNR=2.8						
VNDA	**Vanda**	**72.10**	**170**	P	**P**	**14 44 31.3**	**-0.4**
	0.8nm,0.9s,baz=333,slow=4.4,SNR=4.4						
ABKAR	**Akbulak array**	**75.41**	**327**	*e*P	**P**	**14 44 49.6**	**-1.8**
	1.7nm,0.6s						
TIXI	**Tiksi**	**81.74**	**5**	*e*P	**P**	**14 45 25.0**	**-0.8**
	3.5nm,1.0s						
BRTR	**Keskin Array B**	**88.89**	**310**	P	**P**	**14 46 03.2**	**+0.8**
	1.0nm,0.7s,baz=145,slow=5.9,SNR=6.8						
YKA	**Yellowknife Ar**	**116.74**	**23**	PKP	**PKPdf**	**14 51 51.5**	**+0.1**
	0.4nm,0.6s,baz=309,slow=2.1,SNR=3.8						
NVAR	**Mina Array Bea**	**125.14**	**50**	PKP	**PKPdf**	**14 52 09.5**	**+0.9**
	0.4nm,0.7s,baz=255,slow=3.5,SNR=2.9						

*IDC **12** 14:37:51.4±7.8, 32˚.23S×179˚.86E, h316km±94km, mb3.5/3, mb1 3.7/5, mb1mx3.3/24, mbtmp4.3/5, Error ellipse: s-maj=158.5km s-min=76.6km az=107.0*
ISC 12 14:37:58.7±1.7,**32.6S**±0.1×**179.3E**±0.2,**h363**km,**n47,** σ1°**21/54, mb3.5/3, South of Kermadec Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WMGZ	**Waiomatatini S**	**5.23**	**187**	PN	**Pn**	**14 39 23.9**	**+2.5**
HAZ	**Te Kaha**	**5.26**	**193**	PN	**Pn**	**14 39 23.0**	**+1.4**
HAZ				SN	**S**	**14 40 30.6**	**+1.7**
TWGZ	**Tauwhareparae**	**5.64**	**190**	PN	**Pn**	**14 39 27.8**	**+1.9**
TWGZ				SN	**S**	**14 40 38.2**	**+1.6**
MWZ	**Matawai**	**5.87**	**194**	*e*PN	**Pn**	**14 39 27.8**	**-0.6**
MWZ				SN	**S**	**14 40 42.9**	**+1.5**
URZ	**Urewera**	**5.89**	**197**	P	**Pn**	**14 39 27.1**	**-1.5**
	2.6nm,0.3s,baz=15,slow=16,SNR=22						
URZ				S	**S**	**14 40 41.9**	**+0.3**
	5.4nm,0.3s,baz=90,slow=22,SNR=17						
URZ	**Urewera**	**5.89**	**197**	PN	**Pn**	**14 39 28.5**	**-0.2**
URZ				SN	**S**	**14 40 42.2**	**+0.6**
CNGZ	**Carnagh Statio**	**5.91**	**188**	PN	**Pn**	**14 39 28.9**	**0.0**
TKGZ	**Te Karaka**	**5.92**	**191**	PN	**Pn**	**14 39 29.4**	**+0.5**
TKGZ				SN	**S**	**14 40 42.6**	**+0.4**
RAGZ	**Rawiri**	**6.05**	**194**	PN	**Pn**	**14 39 29.7**	**-0.8**
SNGZ	**Shannon Statio**	**6.34**	**194**	PN	**Pn**	**14 39 33.0**	**-0.8**
SNGZ				SN	**S**	**14 40 52.9**	**+1.9**
KNZ	**Kokohu**	**6.51**	**191**	PN	**Pn**	**14 39 33.8**	**-1.9**
RAHZ	**Arahi**	**6.53**	**195**	PN	**Pn**	**14 39 35.1**	**-0.7**
MRHZ	**Matea Rd**	**6.62**	**200**	PN	**P**	**14 39 37.9**	**-0.2**
WHHZ	**Waihua**	**6.65**	**194**	PN	**P**	**14 39 38.9**	**+0.5**
NMHZ	**Naumai**	**6.76**	**196**	PN	**Pn**	**14 39 36.4**	**-2.2**
ARHZ	**Aropaoanui**	**6.88**	**195**	PN	**P**	**14 39 41.2**	**+0.1**
MCHZ	**McNeill Hill**	**7.12**	**196**	PN	**P**	**14 39 44.5**	**+0.6**
KWHZ	**Kaweka Forest**	**7.17**	**198**	PN	**P**	**14 39 44.0**	**-0.5**
WNVZ	**Wahianoa**	**7.32**	**203**	*e*PN	**Pn**	**14 39 43.0**	**-2.2**
BHHZ	**Black Hill Sta**	**7.33**	**200**	PN	**P**	**14 39 45.3**	**-1.0**
PXZ	**Pawanui**	**7.64**	**194**	SN	**S**	**14 41 17.5**	**-1.0**
PNHZ	**Pukenui**	**7.69**	**198**	PN	**P**	**14 39 49.4**	**-1.0**
TSZ	**Takapari Road**	**7.88**	**199**	PN	**P**	**14 39 51.6**	**-1.1**
DVHZ	**Dannevirke**	**8.06**	**197**	PN	**Pn**	**14 39 53.1**	**-0.5**
ANWZ	**Angora Road**	**8.14**	**195**	PN	**P**	**14 39 55.0**	**-1.7**
POWZ	**Post Office Ro**	**8.25**	**199**	PN	**Pn**	**14 39 56.2**	**+0.4**
BFZ	**Birch Farm**	**8.40**	**196**	PN	**P**	**14 39 58.4**	**-1.3**
MRZ	**Mangatainoka R**	**8.55**	**199**	PN	**Pn**	**14 39 58.5**	**-0.9**
CPWZ	**Castlepoint**	**8.63**	**196**	PN	**P**	**14 40 01.3**	**-0.9**
OGWZ	**Otaki Gorge**	**8.81**	**201**	PN	**Pn**	**14 40 01.5**	**-0.9**
KIW	**Kapiti Island**	**8.93**	**202**	PN	**Pn**	**14 40 03.7**	**-0.2**
MTW	**Mount Morrison**	**9.04**	**198**	PN	**Pn**	**14 40 04.7**	**-0.4**
DUWZ	**D'Urville Isla**	**9.22**	**206**	PN	**P**	**14 40 07.4**	**-1.4**
PLWZ	**Palliser**	**9.49**	**199**	PN	**Pn**	**14 40 09.5**	**-0.9**
TUWZ	**Tuamarina**	**9.76**	**204**	PN	**Pn**	**14 40 13.4**	**-0.3**
NNZ	**Nelson**	**9.79**	**207**	PN	**Pn**	**14 40 13.7**	**-0.2**
QRZ	**Quartz Range**	**9.81**	**212**	PN	**P**	**14 40 14.8**	**-0.5**
KHZ	**Kahutara**	**10.78**	**203**	PN	**P**	**14 40 25.2**	**-0.9**
LTZ	**Lake Taylor**	**11.55**	**207**	PN	**Pn**	**14 40 35.1**	**+0.2**
RPZ	**Rata Peaks**	**12.81**	**208**	P	**Pn**	**14 40 48.9**	**-0.8**
	1.0nm,0.3s,baz=27,slow=5.1,SNR=6.1						
RPZ				S	**S**	**14 43 10.5**	**+1.1**
	0.5nm,0.3s,baz=315,slow=19,SNR=4.3						
STKA	**Stephens Creek**	**31.76**	**261**	P	**P**	**14 43 52.8**	**+2.2**
	2.0nm,0.9s,baz=94,slow=11,SNR=3.5						
ASAR	**Alice Springs**	**40.73**	**271**	P	**P**	**14 45 06.2**	**+0.4**
	1.0nm,0.4s,baz=106,slow=7.1,SNR=17						
WRA	**Warramunga Arr**	**41.93**	**276**	P	**P**	**14 45 15.2**	**-0.2**
	2.7nm,0.3s,baz=112,slow=8.1,SNR=36						
SNAA	**Sanae**	**75.98**	**179**	P	**P**	**14 49 03.2**	**-3.0**
VNA3	**Neumayer Olymp**	**76.23**	**177**	P	**P**	**14 49 07.4**	**-0.1**
VNA2	**Neumayer--Watz**	**76.64**	**178**	P	**P**	**14 49 09.3**	**-0.5**
	baz=190,slow=4.3						
VNA1	**Neumayer--Stat**	**76.88**	**177**	P	P	14 49 02.9	-8.2

*ECX **12** 14:48:23.6±1.2, 31˚.85N×115˚.08W, h10km, MD3.2, ML3.4*
*NEIC **12** 14:48:23.7, 31˚.86N×115˚.10W, h10km, ML3.2(PAS), ML3.4(ECX), After ECX.*
*MEX **12** 14:48:24.8±0.8, 31˚.87N×115˚.01W, h10km, MD3.7*
ISC 12 14:48:20.5±2.6,**31.90N**±0.03×**114.96W**±0.03,**h19**km±6km, **n32,** σ0°**96/57, 1C-4D, Gulf of California**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ECBX	**El Chinero**	**0.43**	**190⇓**	*e*P	**Pb**	**14 48 29.5**	**-0.1**
ECBX				*e*S	**Sb**	**14 48 35.4**	**-0.3**
MBIG	**Mexicali**	**0.55**	**338**	*e*P	**Pn**	**14 48 35.2**	**+1.8**
MBIG				*e*S	**Sn**	**14 48 42.1**	**+0.2**
MBIG	**Mexicali**	**0.55**	**338**	*e*P	**Pn**	**14 48 33.1**	**-0.3**
CPBX	**Cerro Prieto**	**0.59**	**331**	*e*P	**Pn**	**14 48 33.8**	**-0.2**
CPBX				*e*S	**Sn**	**14 48 42.5**	**-0.7**
SPIG	**San Pedro Mart**	**0.95**	**207**	*e*P	**Pn**	**14 48 39.8**	**+0.6**
SPIG				*e*S	**Sn**	**14 48 52.3**	**-0.1**
SPIG	**San Pedro Mart**	**0.95**	**207**	*e*P	**Pn**	**14 48 39.8**	**+0.6**
SPIG				*e*S	**Sn**	**14 48 52.3**	**-0.1**
SPIG	**San Pedro Mart**	**0.95**	**207⇓**	*e*P	**Pn**	**14 48 39.2**	**0.0**
SPX	**San Pedro Mart**	**0.95**	**207**	*e*P	**Pn**	**14 48 39.2**	**0.0**
SPX				*e*S	**Sn**	**14 48 52.1**	**-0.3**
SPX	**San Pedro Mart**	**0.95**	**207⇓**	*e*P	**Pn**	**14 48 39.2**	**0.0**
SPX				⇑*e*		14 48 53.8	
SPX				AML	AML	14 48 53.8	
	comp=N,668nm,0.2s						
GLA	**Glamis**	**1.16**	**6**	P	**Pn**	**14 48 41.7**	**-0.1**
	baz=191,

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BC3				S	**Sn**	**14 49 12.5**	**-0.6**
	baz=170						
214A	**Organ Pipe Nat**	**1.83**	**88**	P	**Pn**	**14 48 51.1**	**+0.1**
	baz=268,SNR=34						
214A				S	**Sn**	**14 49 13.2**	**-0.5**
	baz=268						
214A	**Organ Pipe Nat**	**1.83**	**88**	*e*Pn	**Pn**	**14 48 51.1**	**+0.1**
214A				*e*Sn	**Sb**	**14 49 20.1**	**+4.2**
Y12C	**Blythe**	**1.88**	**11**	P	**Pn**	**14 48 51.9**	**+0.2**
	baz=194,SNR=13						
Y12C				S	**Sn**	**14 49 15.1**	**+0.2**
	baz=194						
109C	**Camp Elliot, M**	**2.07**	**299**	P	**Pn**	**14 48 54.7**	**+0.5**
	baz=121,SNR=5.6						
109C				S	**Sn**	**14 49 19.3**	**-0.2**
	baz=121						
TPFO	**Pinon Flats**	**2.12**	**324**	P	**Pn**	**14 48 54.6**	**-0.5**
	baz=146						
TPFO				S	**Sn**	**14 49 20.4**	**-0.6**
	baz=146						
PFO	**Pinyon Flats O**	**2.13**	**324**	*e*Pn	**Pn**	**14 48 54.8**	**-0.4**
PFO				*e*Sn	**Sb**	**14 49 24.5**	**-0.1**
IRM	**Iron Mountain**	**2.26**	**356**	P	**Pn**	**14 48 57.2**	**+0.2**
	baz=179						
IRM				S	**Sn**	**14 49 24.6**	**+0.3**
	baz=179						
MURC	**Murrieta**	**2.54**	**313**	S	**Sn**	**14 49 31.8**	**+0.7**
	baz=134						
GMRC	**Granite Mounta**	**2.94**	**349**	S	**Sn**	**14 49 40.0**	**-1.2**
	baz=171						
CIS	**Catalina Islan**	**3.28**	**298**	S	**Sn**	**14 49 48.4**	**-1.0**
	baz=118						
TUC	**Tucson**	**3.57**	**82**	*e*Pn	**Pb**	**14 49 20.3**	**-2.7**
TUC				*e*Sn	**Sb**	**14 50 04.5**	**-1.5**
WUAZ	**Wupatki**	**4.69**	**39**	*e*Pn	**Pn**	**14 49 33.1**	**+2.6**

*KRNET **12** 14:51:56.2±0.1, 39°.29N×73°.46E, mb2.7*
*NNC **12** 14:52:05.3±3.5, 39°.75N×73°.56E, h0km, mb3.5, mpv3.1,*
Error ellipse: s-maj=43.7km s-min=14.0km az=132.0

ISC 12 14:51:53.9±2.0, 39°.23N±0°.07×73°.47E±0°.06, h14km±17km, n10, σ1s15/18, 11C-9D, Tajikistan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OHH	**Osh**	**1.39**	**338**	⇑*i*P	**Pg**	**14 52 22.0**	**+1.3**
	baz=337						
OHH				⇑*i*S	**Sg**	**14 52 40.6**	**+1.8**
	baz=337						
ARSB	**Arslanbob**	**2.12**	**350**	⇑*e*P	**Pg**	**14 52 33.7**	**-0.9**
	baz=350						
ARSB				⇑*e*S	**Sg**	**14 53 00.9**	**-1.2**
	baz=350						
BTK	**Batken**	**2.21**	**293**	⇓*e*P	**Pg**	**14 52 34.9**	**-1.3**
	baz=291						
BTK				⇓*i*S	**Sg**	**14 53 04.1**	**-0.8**
	baz=291						
ARLS	**Aral**	**2.70**	**14**	⇓*e*P	**Pb**	**14 52 41.8**	**-0.3**
	baz=14						
ARLS				⇓*i*S	**Sb**	**14 53 15.8**	**+0.6**
	baz=14						
TOKL	**Toktogul**	**2.74**	**351**	⇑*e*P	**Pb**	**14 52 42.7**	**0.0**
	baz=351						
TOKL				⇑*i*S	**Sb**	**14 53 17.7**	**+1.5**
	baz=351						
ARK	**Arkit**	**2.81**	**336**	⇑*e*P	**Pb**	**14 52 42.9**	**-0.9**
	baz=336						
ARK				⇑*i*S	**Sb**	**14 53 18.2**	**+0.1**
	baz=336						
NRN	**Naryn**	**2.93**	**41**	⇓*e*P	**Pb**	**14 52 45.1**	**-0.9**
	baz=41						
NRN				⇓*e*S	**Sb**	**14 53 22.8**	**+1.0**
	baz=41						
MNAS	**Manas**	**3.33**	**348**	⇓Pn	**Pb**	**14 52 51.6**	**-1.2**
	4.0nm,0.4s						
MNAS				⇑Lg	Lg	14 53 36.6	
	6.1nm,0.7s						
AAK	**Ala-Archa**	**3.48**	**13**	⇑Pn	**Pb**	**14 52 54.7**	**-0.7**
	2.2nm,0.5s						
AAK				⇑Lg	Lg	14 53 38.8	
	6.7nm,0.7s						
DZET	**Dzherino**	**3.64**	**265**	⇓Pn	**Pg**	**14 53 04.2**	**+0.6**
	3.8nm,0.4s						
DZET				⇓Sn	**Sg**	**14 53 52.1**	**+1.2**
	16nm,0.5s						

MAN 12 14:57:44, 17°.29N×119°.72E, h29km, mb5.0, ML3.9, MS4.0, 4C, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BOLP	**Bolinao**	**0.92**	**168**	*e*P	Pb	14 58 01.9	+0.5
BOLP				*e*S	Sb	14 58 14.0	+0.6
SIPP	**Brgy, Tapao**	**0.95**	**48**	⇑*i*P	Pb	14 58 01.8	-0.1
SIPP				*e*S	Sn	14 58 12.6	-1.3
BCPH	**Baguio City Da**	**1.23**	**137**	⇑*i*P	Pb	14 58 08.8	+2.1
BCPH				*e*S	Sn	14 58 13.2	-7.9
PIP	**Pasuquin**	**1.34**	**40**	⇑*i*P	Pb	14 58 08.2	-0.3
PIP				*e*S	Sb	14 58 24.9	-0.4
SCZP	**Santa Cruz**	**1.52**	**173**	*e*P	Pn	14 58 09.8	+0.6
SCZP				*e*S	Sb	14 58 29.8	-0.5
CAUP	**Cauayan**	**2.04**	**99**	*e*P	Pb	14 58 20.3	-0.1
CVP	**Callao Caves**	**2.05**	**78**	*e*P	Pb	14 58 18.7	-1.9
PCPH	**Palayan**	**2.17**	**142**	⇑*e*P	Pb	14 58 20.4	-2.2
PCPH				*e*S	Sn	14 58 46.2	+2.1
BALP	**Baler**	**2.36**	**131**	*e*P	Pn	14 58 23.1	+2.3
BALP				*e*S	Sb	14 58 54.9	+0.4
SGCP	**Mt. Cagua**	**2.41**	**67**	*e*P	Pn	14 58 23.8	+2.3
POLP	**Polilio Island**	**3.33**	**140**	*e*P	Pn	14 58 36.0	+1.9
LUBP	**Lubang**	**3.57**	**172**	*e*P	Pb	14 58 43.6	-2.9
BOAC	**Boac**	**4.33**	**151**	*e*P	Pn	14 58 52.6	+4.8
BUSP	**Coron**	**5.28**	**175**	*e*P	Pn	14 59 02.8	+1.9
BUSP				*e*S	Sn	15 00 02.6	+1.7
ENPP	**El Nido**	**6.06**	**183**	*e*P	Pn	14 59 14.2	+2.5
CUYO	**Cuyo Island**	**6.53**	**169**	*e*P	Pn	14 59 22.1	+3.9
BESP	**Borongan**	**7.92**	**135**	*e*P	Sn	15 00 59.4	-6.5

SJA 12 14:57:48.6±0.5, 31°.76S×68°.86W, h112km±9km, ML2.6, MW3.5, San Juan Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RTLS	**Leoncito**	**0.37**	**264**	*i* P	Pn	14 58 06.0	+0.7
RTLS				*i* S	Sn	14 58 19.6	+1.7
AUSP	**Uspallata**	**0.64**	**224**	*i* P	Pn	14 58 08.1	+1.1
AUSP				*i* S	Sn	14 58 22.5	+1.6
ARCO	**CERRO ARCO**	**1.08**	**183**	*i* P	Pn	14 58 12.0	+1.0
ARCO				*i* S	Sn	14 58 28.8	+0.9
ARCO				IAML		14 58 29.4	
	comp=Z,84nm,0.1s						

MAN 12 15:13:26, 18°.16N×120°.78E, h8km, mb3.5, ML2.2, MS1.7, 1C, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PIP	**Pasuquin**	**0.23**	**317**	⇑*i*P	Pg	15 13 32.5	+1.9
ABRA	**Dolores**	**0.51**	**188**	*e*P	Pb	15 13 37.1	-0.1
ABRA				*e*S	Sn	15 13 49.4	+0.8
APYP	**Conner**	**0.53**	**124**	*e*P	Pb	15 13 37.6	+0.1
APYP				*e*S	Sb	15 13 46.6	+1.4

*MAN **12** 15:15:10, 6°.71N×123°.90E, h620km, mb5.5, ML4.5, MS4.8*
*ISCJB **12** 15:15:11.6±0.1, 6°.73N±0°.02×123°.73E±0°.03, h618km±1km, mb4.8/164, Error ellipse: s-maj=3.8km s-min=2.7km az=169.8*
*IDC **12** 15:15:12.7±0.7, 6°.68N×123°.71E, h615km±8km, mb3.9/27, mb1 4.0/28, mb1mx4.0/30, mbtmp4.9/28, Error ellipse: s-maj=11.8km s-min=6.1km az=68.0*
*KLM **12** 15:15:12.3, 6°.70N×123°.81E, h601km, mb4.9, MS5.7*
*NEIC **12** 15:15:12.7±0.3, 6°.69N×123°.67E, h618km±4km, mb4.9/84, Error ellipse: s-maj=4.6km s-min=3.3km az=65.0*
*MOS **12** 15:15:12.2±0.9, 6°.76N×123°.69E, h625km, mb4.8/42, Error ellipse: s-maj=9.5km s-min=5.0km az=118.6*
*DJA **12** 15:15:13.2±0.2, 7°.N±3°.×12°.4E±°., h611km±4km, M4.5/66, mB5.1/33, mb5.0/66, MLv5.0/5, Mw(mB)4.4/33, Mwp7.3/1*

ISC 12 15:15:12.4±0.3, 6°.67N±0°.03×123°.70E±0°.04, h612km±3km, h613km: pP-P, n440, σ1s53/559, mb4.8/162, 33C-33D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTBH	**Cotabato--PC H**	**0.77**	**44**	⇓*i*P	**P**	**15 16 24.6**	**+0.2**
PAGZ	**Pagadian**	**1.22**	**345**	*e*P	**P**	**15 16 24.5**	**-0.8**
GSPH	**General Santos**	**1.37**	**115**	*e*P	**P**	**15 16 25.7**	**-0.2**
KCP	**Kidapawan**	**1.42**	**76**	⇑*e*P	**P**	**15 16 26.0**	**0.0**
IPIL	**Ipil**	**1.58**	**315**	*e*P	**P**	**15 16 26.0**	**-0.3**
IPIL				*e*S	**S**	**15 17 24.6**	**-1.8**
BUKP	**Musuan**	**1.81**	**48**	*e*P	**P**	**15 16 27.0**	**-0.2**
BUKP				*e*S	**S**	**15 17 28.9**	**+0.9**
DMPH	**Davao City--Mi**	**1.84**	**77**	⇓*e*P	**P**	**15 16 31.8**	**+4.5**
DAV	**Davao City (W)**	**1.91**	**78**	P	**P**	**15 16 27.3**	**-0.2**
	190nm,0.3s,baz=66,slow=1.4,SNR=29						
DAV	**Davao City (W)**	**1.91**	**78**	*e*P	**P**	**15 16 26.7**	**-0.8**
DCPH	**Dipolog City**	**1.94**	**350**	*e*P	**P**	**15 16 27.3**	**-0.3**
DCPH				*e*S	**S**	**15 17 27.1**	**-1.6**
CGP	**Cagayan de Oro**	**2.03**	**29**	⇓*e*P	P	15 16 34.8	+6.9
MATI	**Mati**	**2.55**	**84**	*e*P	**P**	**15 16 28.7**	**-1.6**
MATI				*e*S	**S**	**15 17 30.6**	**-3.0**
LLP	**Lapu-Lapu**	**3.64**	**4**	*e*P	**P**	**15 16 35.9**	**-0.5**
LLP				*e*S	**S**	**15 17 43.0**	**-1.8**
GUIM	**Jordan**	**4.08**	**344**	*e*P	**P**	**15 16 37.1**	**-2.3**
GUIM				*e*S	**S**	**15 17 45.1**	**-5.1**
JAP	**San Jose, Anti**	**4.41**	**337**	⇓*i*P	**P**	**15 16 41.4**	**-0.2**
JAP				*e*S	**S**	**15 17 48.9**	**-5.5**
OCLP	**Ormoc**	**4.45**	**12**	*e*P	**P**	**15 16 41.5**	**-0.4**
PLP	**Palo**	**4.64**	**16**	⇓*e*P	**P**	**15 16 43.5**	**+0.1**
PLP				*e*S	**S**	**15 17 54.7**	**-2.9**
CUYO	**Cuyo Island**	**4.93**	**328**	*e*P	**P**	**15 16 45.1**	**-0.5**
BESP	**Borongan**	**5.19**	**19**	*e*P	**P**	**15 16 45.6**	**-2.0**
BESP				*e*S	**S**	**15 18 00.1**	**-5.2**
MYLDM	**Lahad Datu**	**5.38**	**254**	*e*P	**P**	**15 16 50.9**	**+1.8**
OTRP	**Odiongan**	**5.90**	**344**	*e*P	**P**	**15 16 53.0**	**-0.3**
ENPP	**El Nido**	**6.18**	**317**	*e*P	**P**	**15 16 55.8**	**0.0**
BATP	**Bataraza**	**6.22**	**290**	*e*P	**P**	**15 16 55.6**	**-0.4**
TSM	**Tawau**	**6.26**	**248**	⇑P	**P**	**15 16 56.8**	**+0.3**
SJMP	**San Jose**	**6.29**	**336**	*e*P	**P**	**15 16 57.0**	**+0.3**
BUSP	**Coron**	**6.33**	**327**	*e*P	**P**	**15 16 56.9**	**-0.1**
MRSI	**Marisa**	**6.39**	**196**	P	**P**	**15 16 59.9**	**+2.2**
	36nm,0.8s,7μm0.2nm						
SDKM	**Sandakan**	**6.55**	**261**	⇑P	**P**	**15 16 58.7**	**-0.3**
KDM	**Kudat**	**6.83**	**272**	⇑P	**P**	**15 17 01.6**	**+0.2**
PVCP	**Virac**	**6.90**	**4**	*e*P	**P**	**15 17 00.5**	**-1.6**
BOAC	**Boac**	**6.99**	**345**	*e*P	**P**	**15 17 02.6**	**-0.3**
GQP	**Guinayangan**	**7.30**	**350**	⇑*i*P	**P**	**15 17 04.9**	**-0.8**
KKM	**Kota Kinabalu**	**7.47**	**266**	⇓P	**P**	**15 17 07.7**	**+0.3**
KKM	**Kota Kinabalu**	**7.47**	**266**	*e*P	**P**	**15 17 07.0**	**-0.3**
LQP	**Lukban**	**7.70**	**344**	⇓*e*P	**P**	**15 17 09.0**	**-0.6**
LUWI	**Luwuk**	**7.71**	**187**	P	**P**	**15 17 09.1**	**-0.4**
	139nm,1.1s,2μm1.4nm						
LUWI				S	**S**	**15 18 44.3**	**-1.1**
	139nm,1.1s,2μm1.4nm						
LUWI	**Luwuk**	**7.71**	**187**	*e*P	**P**	**15 17 09.1**	**-0.4**
LUBP	**Lubang**	**7.80**	**334**	*e*P	**P**	**15 17 10.0**	**-0.3**
LUBP				*e*S	**S**	**15 18 45.7**	**-1.1**
TGY	**Tagaytay City**	**7.87**	**340**	P	**P**	**15 17 10.6**	**-0.5**
LBMI	**Labuha**	**8.19**	**152**	P	**P**	**15 17 13.8**	**-0.2**
LBMI				S	**S**	**15 18 51.3**	**-2.3**
POLP	**Polilio Island**	**8.20**	**348**	*e*P	**P**	**15 17 12.9**	**-1.1**
PCI	**Palu**	**8.45**	**207**	P	**P**	**15 17 17.3**	**+0.8**
	50nm,1.3s,723nm						
PCI				S	**S**	**15 18 54.4**	**-3.8**
	50nm,1.3s,723nm						
PCI	**Palu**	**8.45**	**207**	P	**P**	**15 17 18.5**	**+2.0**
PCI				pmax	pmax		
	comp=Z,50nm,1.3s						
SANI	**Sanana**	**8.95**	**165**	P	**P**	**15 17 20.3**	**-1.0**
	comp=Z,483nm,0.7s,comp=Z,6μm						
SANI				S	**S**	**15 19 04.8**	**-2.1**
	comp=Z,483nm,0.7s,comp=Z,6μm						
BALP	**Baler**	**9.26**	**347**	*e*P	**P**	**15 17 22.2**	**-1.9**
BALP				*e*S	**S**	**15 19 08.6**	**-3.5**
SCZP	**Santa Cruz**	**9.79**	**338**	*e*P	**P**	**15 17 26.6**	**-2.7**
SCZP				*e*S	**S**	**15 19 18.1**	**-3.6**
BOLP	**Bolinao**	**10.34**	**339**	*e*P	**P**	**15 17 33.1**	**-1.7**
BOLP				*e*S	**S**	**15 19 34.1**	**+2.5**
CAUP	**Cauayan**	**10.38**	**350**	*e*P	**P**	**15 17 34.6**	**-0.5**
TTSI	**Tana Toraja**	**10.40**	**202**	P	**P**	**15 17 36.9**	**+1.5**
	comp=Z,58nm,1.1s,comp=Z,446nm						
TTSI				S	**S**	**15 19 32.4**	**-0.3**
	comp=Z,58nm,1.1s,comp=Z,446nm						
BKB	**Balikpapan**	**10.40**	**221**	P	**P**	**15 17 36.8**	**+1.4**
	comp=Z,126nm,1.0s						
BKB				S	**S**	**15 19 33.9**	**+1.1**
	comp=Z,126nm,1.0s						
NLAI	**Namlea**	**10.41**	**161**	P	**P**	**15 17 37.2**	**+1.7**
	comp=Z,370nm,0.7s,comp=Z,3μm						
NLAI				S	**S**	**15 19 34.4**	**+1.5**
	comp=Z,370nm,0.7s,comp=Z,3μm						
KDI	**Kendari**	**10.61**	**186**	P	**P**	**15 17 40.4**	**+2.9**
	comp=Z,39nm,1.1s,comp=Z,533nm						
SWI	**Sorong**	**10.62**	**134**	P	**P**	**15 17 38.2**	**+0.5**
	comp=Z,169nm,0.7s,comp=Z,2μm						
SWI				S	**S**	**15 19 38.4**	**+1.6**
	comp=Z,169nm,0.7s,comp=Z,2μm						
SWI	**Sorong**	**10.62**	**134**	P	**P**	**15 17 38.4**	**+0.7**
SWI				pmax	pmax		
	comp=Z,167nm,0.6s						
BTM	**Bintulu**	**11.12**	**252**	⇑P	**P**	**15 17 43.8**	**+1.1**
MSAI	**Masohi**	**11.23**	**152**	P	**P**	**15 17 45.0**	**+1.3**
SPSI	**Sidrap Palu**	**11.27**	**200**	P	**P**	**15 17 44.1**	**+0.1**
	comp=Z,20nm,0.9s						
ABRA	**Dolores**	**11.30**	**345**	*e*P	**P**	**15 17 41.6**	**-2.6**
ABRA				*e*S	**S**	**15 19 45.0**	**-3.9**
APYP	**Conner**	**11.38**	**348**	*e*P	**P**	**15 17 42.8**	**-2.2**
APYP				*e*S	**S**	**15 19 50.1**	**-0.3**
MTKI	**Muara Teweh, K**	**11.59**	**230**	P	**P**	**15 17 48.0**	**+0.8**
	comp=Z,224nm,0.7s,comp=Z,3μm						
SGCP	**Mt. Cagua**	**11.62**	**352**	*e*P	**P**	**15 17 45.1**	**-2.3**
SBUM	**Sibu**	**12.19**	**250**	⇓P	**P**	**15 17 54.7**	**+1.6**
SBUM	**Sibu**	**12.19**	**250**	*e*P	**P**	**15 17 54.4**	**+1.3**
KAPI	**Kappang**	**12.25**	**199**	*e*P	**P**	**15 17 51.3**	**-2.5**
FAKI	**Fak Fak**	**12.79**	**138**	P	**P**	**15 17 59.7**	**+0.7**
	comp=Z,533nm,0.8s,comp=Z,5μm						
FAKI	**Fak Fak**	**12.79**	**138**	*e*P	**P**	**15 17 59.8**	**+0.7**
RKPI	**Ransiki, Papua**	**13.24**	**127**	P	**P**	**15 18 05.6**	**+2.0**
	comp=Z,408nm,0.9s,comp=Z,3μm						
BBKI	**Banjar Baru**	**13.40**	**222**	P	**P**	**15 18 07.2**	**+2.1**
	comp=Z,48nm,1.1s						
STKI	**Sintang**	**13.85**	**242**	P	**P**	**15 18 10.4**	**+0.8**
	comp=Z,56nm,0.9s,comp=Z,8μm						
KSM	**Kuching**	**14.32**	**249**	⇓P	**P**	**15 18 14.9**	**+0.9**
KSM	**Kuching**	**14.32**	**249**	*e*P	**P**	**15 18 14.2**	**+0.2**
KSM				*e*ScP	**ScP**	**15 25 19.7**	**-0.8**
MMRI	**Maumere**	**15.27**	**186**	P	**P**	**15 18 23.2**	**+0.5**
	comp=Z,144nm,0.7s,comp=Z,2μm						
MMRI	**Maumere**	**15.27**	**186**	*e*P	**P**	**15 18 23.8**	**+1.1**
	comp=Z,90nm,0.8s						
TWG	**Pinlang**	**16.26**	**351**	*e*P	**P**	**15 18 30.4**	**-1.2**
	comp=Z,248nm,0.5s						
SOEI	**Soe**	**16.32**	**178**	P	P	15 18 42.1	+10
SOEI	**Soe**	**16.32**	**178**	*e*P	**P**	**15 18 31.8**	**-0.7**
	comp=Z,72nm,0.8s						
SAUI	**Saumlaki**	**16.41**	**152**	*e*P	**P**	**15 18 33.6**	**+0.6**
	comp=Z,460nm,0.8s						
PLAI	**Plampang**	**16.49**	**201**	P	**P**	**15 18 35.8**	**+2.0**
	comp=Z,255nm,0.8s,comp=Z,2μm						
TWSI	**Taliwang, Sumb**	**16.75**	**204**	P	**P**	**15 18 37.0**	**+0.9**
	comp=Z,66nm,0.9s						
YULB	**Yu-li**	**16.79**	**352**	*e*P	**P**	**15 18 35.0**	**-1.4**
	comp=Z,38nm,0.5s						
TPUB	**Ta-pu**	**16.80**	**350**	*e*P	**P**	**15 18 37.1**	**+0.6**
	comp=Z,339nm,0.8s						
SSLB	**Suanglung**	**17.23**	**351**	*e*P	**P**	**15 18 40.7**	**+0.3**
	comp=Z,90nm,0.6s						
NACB	**Ninganchiao**	**17.52**	**354**	*e*P	**P**	**15 18 40.4**	**-2.7**
	comp=Z,27nm,0.8s						
JAGI	**Jajag, Banyuwa**	**17.80**	**212**	P	**P**	**15 18 47.9**	**+2.1**
	comp=Z,113nm,0.8s						
JAGI	**Jajag, Banyuwa**	**17.80**	**212**	*e*P	**P**	**15 18 46.3**	**+0.5**
	comp=Z,80nm,0.8s						
JAGI				*e*ScP	**ScP**	**15 25 25.1**	**-2.3**
YHNB	**Yeheng**	**18.04**	**353**	*e*P	**P**	**15 18 48.0**	**+0.1**
	comp=Z,45nm,0.6s						
QIZ	**Qiongzhong**	**18.24**	**314**	P	**P**	**15 18 50.2**	**+0.4**
QIZ				S	**S**	**15 21 48.1**	**+2.1**
QIZ				LR	LR		
	comp=N,46nm,4.3s						
QIZ				LR	LR		
	comp=E,34nm,19.2s						
TATO	**Taipei**	**18.33**	**354**	*e*P	**P**	**15 18 49.8**	**-0.6**
	comp=E,205nm,1.5s						
GENI	**Genyem**	**18.84**	**119**	P	**P**	**15 18 56.6**	**+1.4**
	comp=E,350nm,0.9s,comp=E,3μm						
JAY	**Jayapura**	**19.27**	**118**	P	**P**	**15 18 59.9**	**+0.7**
	comp=E,1.0nm,0.3s,baz=85,slow=23,SNR=32						
JAY	**Jayapura**	**19.27**	**118**	P	**P**	**15 18 59.9**	**+0.7**
	comp=E,95nm,0.8s,comp=E,917nm						
MYKOM	**Kota Tinggi**	**20.38**	**257**	⇓P	**P**	**15 19 10.2**	**+1.0**
MYKOM	**Kota Tinggi**	**20.38**	**257**	*e*P	**P**	**15 19 09.7**	**+0.5**
	comp=E,42nm,0.7s						
JOW	**Kunigami**	**20.52**	**12**	*e*P	**P**	**15 19 12.0**	**+1.8**
	comp=E,97nm,1.5s						
MTN	**Manton Dam**	**20.74**	**159**	*e*P	**P**	**15 19 12.0**	**-0.3**
	comp=E,31nm,0.8s						
KGM	**Kluang**	**20.84**	**258**	⇓P	**P**	**15 19 14.2**	**+0.9**
LEM	**Lembang**	**20.91**	**230**	P	**P**	**15 19 20.1**	**+6.1**
	comp=E,46nm,0.8s,baz=343,slow=20,SNR=11						
LEM	**Lembang**	**20.91**	**230**	P	**P**	**15 19 21.2**	**+7.1**
CBJI	**Citeko**	**21.25**	**233**	P	**P**	**15 19 19.0**	**+2.0**
	comp=E,331nm,0.7s						
PANO	**Nakornpanom**	**21.36**	**301**	P	**P**	**15 19 18.9**	**+1.0**
	comp=E,82nm,1.1s						
SKNT	**Sakolnakorn**	**21.83**	**300**	P	**P**	**15 19 22.6**	**+0.5**
	comp=E,64nm,0.9s						
CHBT	**CHBT**	**21.91**	**288**	P	**P**	**15 19 23.9**	**+1.1**
	comp=E,60nm,1.0s						
GUMO	**Guam**	**21.93**	**70**	P	**P**	**15 19 23.1**	**+0.1**
	comp=E,28nm,0.3s,baz=316,slow=6.1,SNR=7.2						
GUMO	**Guam**	**21.93**	**70**	*e*P	**P**	**15 19 22.8**	**-0.2**
GUMO				pmax	pmax		
	comp=Z,197nm,1.3s						
GUMO	**Guam**	**21.93**	**70**	*e*P	**P**	**15 19 22.8**	**-0.2**
	comp=Z,197nm,1.3s						
BLSI	**Bandar Lampung**	**21.96**	**237**	P	**P**	**15 19 25.4**	**+2.1**
	comp=Z,217nm,0.8s,comp=Z,10μm						
KLI	**Kotabumi**	**22.02**	**239**	P	**P**	**15 19 24.7**	**+0.9**
	comp=Z,177nm,1.0s						
FRIM	**Kepong**	**22.25**	**262**	⇑P	**P**	**15 19 26.7**	**+0.8**
CGJI	**Cibinong**	**22.29**	**234**	P	**P**	**15 19 25.9**	**-0.3**
	comp=Z,116nm,0.7s						
KHON	**Khomkaen**	**22.58**	**297**	P	**P**	**15 19 29.7**	**+1.0**
	comp=Z,22nm,0.7s						
IPM	**Ipoh**	**22.67**	**266**	⇑P	**P**	**15 19 30.2**	**+0.5**
IPM	**Ipoh**	**22.67**	**266**	*e*P	**P**	**15 19 29.2**	**-0.4**
	comp=Z,16nm,0.9s						
KASI	**Kota Agung**	**22.67**	**238**	P	**P**	**15 19 29.5**	**-0.1**
	comp=Z,82nm,0.9s						
LHSI	**Lahat**	**22.68**	**243**	P	**P**	**15 19 30.7**	**+1.0**
	comp=Z,57nm,0.8s						
LWLI	**Liwa**	**22.78**	**240**	P	**P**	**15 19 31.2**	**+0.5**
	comp=Z,310nm,0.9s,comp=Z,15μm						
KULM	**Kulim**	**22.97**	**268**	⇓P	**P**	**15 19 33.0**	**+0.8**
KULM	**Kulim**	**22.97**	**268**	*e*P	**P**	**15 19 31.7**	**-0.6**
	comp=Z,16nm,0.9s						
NONG	**Nongkai**	**23.02**	**301**	P	**P**	**15 19 33.0**	**+0.3**
	comp=Z,42nm,1.1s						
CHAI	**Chaiyaphum**	**23.16**	**295**	P	**P**	**15 19 34.2**	**+0.2**
	comp=Z,13nm,0.7s,comp=Z,106nm						
MNAI	**Manna**	**23.43**	**243**	*e*P	**P**	**15 19 35.2**	**-1.1**
	comp=Z,120nm,0.8s						
BKNI	**Bangkinang**	**23.47**	**255**	*e*P	**P**	**15 19 35.8**	**-0.9**
	comp=Z,72nm,0.5s						
SDSI	**Sungai Dareh**	**23.48**	**252**	P	**P**	**15 19 42.0**	**+5.3**
	comp=Z,67nm,1.5s						
PPI	**Padang Panjang**	**24.31**	**254**	P	**P**	**15 19 44.2**	**+0.1**
	comp=Z,74nm,1.0s						
PBKT	**Sadao Pong**	**24.32**	**296**	P	**P**	**15 19 45.1**	**+1.0**
	comp=Z,48nm,0.9s						
PDSI	**Padang**	**24.38**	**253**	P	**P**	**15 19 44.7**	**-0.1**
	comp=Z,10nm,1.0s,comp=Z,11μm						
LOEI	**Loei**	**24.41**	**298**	P	**P**	**15 19 42.6**	**-2.4**
	comp=Z,83nm,1.0s,comp=Z,6μm						
FITZ	**Fitzroy Crossi**	**24.68**	**176**	P	**P**	**15 19 47.6**	**+0.3**
	comp=Z,14nm,0.5s,baz=4.1,slow=9.6,SNR=152						
FITZ	**Fitzroy Crossi**	**24.68**	**176**	*e*P	**P**	**15 19 47.4**	**+0.1**
	comp=Z,33nm,1.1s						
MNSI	**Mandailing Nat**	**24.76**	**257**	P	**P**	**15 19 48.1**	**0.0**
	comp=Z,25nm,0.9s						
PSI	**Prapat**	**24.98**	**262**	*e*P	**P**	**15 19 50.5**	**+0.3**
PSI				pmax	pmax		
	comp=Z,45nm,0.9s						
PSI	**Prapat**	**24.98**	**262**	*e*P	**P**	**15 19 50.5**	**+0.3**
	comp=Z,45nm,0.9s						
PSI				*e*ScP	**ScP**	**15 25 44.8**	**-1.0**
UTTA	**Uttaradit**	**25.12**	**298**	P	**P**	**15 19 52.2**	**+1.0**
	comp=Z,12nm,0.9s,comp=Z,91nm						
WHN	**Wuhan**	**25.32**	**341**	⇑*i*P	**P**	**15 19 54.9**	**+2.1**
SRDT	**SRDT**	**25.32**	**290**	P	**P**	**15 19 54.4**	**+1.4**
	comp=Z,169nm,0.9s						
NANT	**Nan**	**25.43**	**300**

WR1	**Warramunga Arr**	**28.44 159**	*e*P	**P**	**15 20 20.1**	**-0.1**
	comp=Z,206nm,0.6s					
WR1			*e*S	**S**	**15 24 22.7**	**-3.5**
WR1			*e*ScP	**ScP**	**15 25 55.1**	**-0.8**
WRA	**Warramunga Arr**	**28.44 159**	P	**P**	**15 20 20.1**	**-0.1**
	comp=Z,114nm,0.5s,baz=341,slow=9.2,SNR=414					
WRA			S	**S**	**15 24 22.7**	**-3.5**
	comp=Z,11nm,0.6s,baz=334,slow=16,SNR=13					
WRA			ScP	**ScP**	**15 25 55.1**	**-0.8**
	comp=Z,11nm,0.5s,baz=343,slow=3.2,SNR=22					
WRA	**Warramunga Arr**	**28.44 159**	*i* P	**P**	**15 20 18.3**	**-1.9**
WB2	**Warramunga Arr**	**28.44 159**	*e*P	**P**	**15 20 19.8**	**-0.4**
	comp=Z,188nm,0.6s					
WB2			*e*ScP	**ScP**	**15 25 55.1**	**-0.9**
RABL	**Rabaul**	**30.39 110**	*e*P	**P**	**15 20 38.5**	**+1.4**
	comp=Z,256nm,0.6s					
XAN	**Xi'an**	**30.48 335**	P	**P**	**15 20 37.7**	**+0.1**
XAN			sP	PcP	15 23 17.1	+0.1
XAN			pmax	pmax		
	comp=Z,31nm,0.8s					
XAN			pmax	pmax		
	comp=Z,31nm,6.9s					
CD2	**Chengdu**	**30.51 325**	P	**P**	**15 20 38.7**	**+0.8**
CD2			pP	pP	15 22 16.1	+1.1
CD2			PP	**PP**	**15 22 19.3**	**+0.8**
CD2			sP	sP	15 23 28.0	+1.7
CD2			S	**S**	**15 24 59.5**	**+1.5**
CD2			sS	sS	15 28 03.2	+3.1
CD2			SS	**SS**	**15 28 10.1**	**+2.6**
CD2			pmax	pmax		
	comp=Z,30nm,0.5s					
CD2			pmax	pmax		
	comp=Z,110nm,4.2s					
KS15	**Wonju Array Si**	**30.87 6**	*e*P	**P**	**15 20 42.4**	**+1.6**
KS15			*e*PcP	**PcP**	**15 23 18.6**	**+0.7**
KS15			*e*ScP	**ScP**	**15 26 03.7**	**+0.1**
KSAR	**Wonju Array Be**	**30.87 6**	P	**P**	**15 20 41.6**	**+0.8**
KSAR					15 23 18.6	
KSAR	**Wonju Array Be**	**30.87 6**	P	**P**	**15 20 41.6**	**+0.8**
KSAR			PcP	**PcP**	**15 23 18.6**	**+0.7**
KSAR			ScP	**ScP**	**15 26 03.7**	**+0.1**
KSRS	**Korea Array**	**30.89 7**	P	**P**	**15 20 41.6**	**+0.7**
	comp=Z,2.8nm,0.7s,baz=190,slow=9.4,SNR=10					
KSRS			PcP	**PcP**	**15 23 18.6**	**+0.7**
	comp=Z,2.0nm,0.6s,baz=181,slow=2.5,SNR=5.6					
KSRS			ScP	**ScP**	**15 26 03.7**	**+0.1**
	comp=Z,0.9nm,0.6s,baz=176,slow=3.4,SNR=4.7					
AS31	**Alice Springs**	**31.75 162**	*e*P	**P**	**15 20 49.2**	**+0.6**
	comp=Z,30nm,0.4s					
AS31			*e*S	**S**	**15 25 15.5**	**-1.5**
AS31			*e*ScP	**ScP**	**15 26 06.1**	**-0.8**
ASAR	**Alice Springs**	**31.75 162**	P	**P**	**15 20 49.4**	**+0.8**
	comp=Z,50nm,0.4s,baz=341,slow=6.9,SNR=1614					
ASAR			S	**S**	**15 25 15.5**	**-1.5**
	comp=Z,38nm,0.8s,baz=352,slow=23,SNR=42					
ASAR			ScP	**ScP**	**15 26 06.1**	**-0.8**
	comp=Z,6.6nm,0.5s,baz=346,slow=3.4,SNR=13					
AS01	**Alice Springs**	**31.77 162**	*e*P	**P**	**15 20 49.1**	**+0.5**
AS01			*e*ScP	**ScP**	**15 26 06.1**	**-0.9**
DL2	**Dalian**	**32.15 357**	P	**P**	**15 20 51.9**	**+0.3**
DL2			pmax	pmax		
	comp=Z,50nm,0.7s					
MAT	**Matsushiro**	**32.56 22**	P	**P**	**15 20 53.5**	**-1.7**
MJAR	**Matsushiro Arr**	**32.56 22**	P	**P**	**15 20 53.9**	**-1.3**
	comp=Z,4.3nm,0.7s,baz=191,slow=9.2,SNR=14					
MJAR			PcP	**PcP**	**15 23 23.0**	**+0.4**
	comp=Z,0.7nm,0.6s,baz=203,slow=3.9,SNR=4.6					
MAJO	**Matsushiro**	**32.56 22**	*e*P	**P**	**15 20 53.9**	**-1.2**
MAJO			pmax	pmax		
	comp=Z,51nm,1.6s					
MAJO	**Matsushiro**	**32.56 22**	*e*P	**P**	**15 20 53.9**	**-1.2**
	comp=Z,51nm,1.6s					
MJB9	**Matsu-Tunnel**	**32.56 22**	*e*P	**P**	**15 20 53.8**	**-1.4**
	comp=Z,13nm,1.7s					
BJT	**Baijiatuau**	**33.89 350**	*e*P	**P**	**15 21 06.0**	**-0.2**
BJT			pmax	pmax		
	comp=Z,34nm,1.2s					
BJT	**Baijiatuau**	**33.89 350**	*e*P	**P**	**15 21 06.0**	**-0.2**
	comp=Z,34nm,1.2s					
BJI	**Beijing**	**33.91 350**	P	**P**	**15 21 06.9**	**+0.6**
BJI			PcP	**PcP**	**15 23 27.0**	**+0.6**
BJI			S	**S**	**15 25 52.1**	**+3.0**
BJI			pmax	pmax		
	comp=Z,24nm,1.0s					
BJI			pmax	pmax		
	comp=Z,160nm,5.2s					
BJI			LR	LR		
	comp=N,88nm,6.7s					
BJI			LR	LR		
	comp=E,170nm,13.9s					
BJI			LR	LR		
	comp=Z,87nm,33.1s					
LZH	**Lanzhou**	**34.47 331**	⇑P	**P**	**15 21 13.1**	**+1.8**
LZH			PP	**pP**	**15 22 51.2**	**+0.2**
LZH			pP	PP	15 22 57.5	+2.4
LZH			sP	sP	15 24 04.0	+2.5
LZH			S	**S**	**15 25 59.1**	**+1.0**
LZH			sS	sS	15 29 04.5	+1.3
LZH			SS	**SS**	**15 29 06.3**	**-7.1**
LZH			pmax	pmax		
	comp=Z,75nm,1.2s					
LZH			pmax	pmax		
	comp=Z,150nm,4.1s					
CTAO	**Charters Tower**	**34.63 141**	*e*P	**P**	**15 21 13.5**	**+0.8**
CTAO	**Charters Tower**	**34.63 141**	*e*P	**P**	**15 21 13.5**	**+0.8**
	comp=Z,291nm,0.7s					
CTAO			*e*ScP	**ScP**	**15 26 15.6**	**-1.6**
SHL	**Shillong**	**35.72 305**	⇓*i* P	**P**	**15 21 20.0**	**-1.9**
HHC	**Hu-ho-hao-te**	**35.72 344**	*e*P	**P**	**15 21 24.6**	**+3.1**
HHC			PP	**PP**	**15 23 06.1**	**-0.4**
HHC			S	**S**	**15 26 22.3**	**+5.8**
HHC			sS	sS	15 29 16.1	-6.5
HHC			pmax	pmax		
	comp=Z,60nm,0.9s					
HHC			pmax	pmax		
	comp=Z,170nm,4.8s					
CN2	**Changchun**	**37.02 2**	*e*P	**P**	**15 21 35.7**	**+3.8**
CN2			*e*S	**S**	**15 26 42.4**	**+7.1**
CN2			pmax	pmax		
	comp=Z,10.0nm,0.6s					
CN2			pmax	pmax		
	comp=Z,200nm,3.0s					
CN2			LR	LR		
	comp=N,200nm,14.0s					
CN2			LR	LR		
	comp=E,200nm,14.0s					
CN2			LR	LR		
	comp=Z,300nm,16.0s					
USRK	**Ussuriysk Ar.**	**38.08 10**	P	**P**	**15 21 41.0**	**+0.4**
	comp=Z,3.8nm,0.6s,baz=193,slow=7.4,SNR=19					
USRK			PcP	**PcP**	**15 23 39.1**	**0.0**
	comp=Z,2.5nm,0.6s,baz=204,slow=3.8,SNR=5.1					
MDJ	**Mudanjiang**	**38.15 7**	P	**P**	**15 21 41.6**	**+0.5**
MDJ			pmax	pmax		
	comp=Z,10.0nm,0.6s					
MDJ			pmax	pmax		
	comp=Z,45nm,3.0s					
LSA	**Lhasa**	**38.25 311**	P	**P**	**15 21 44.3**	**+1.6**
LSA			pmax	pmax		
	comp=Z,38nm,0.8s					
LSA	**Lhasa**	**38.25 311**	*e*P	**P**	**15 21 44.0**	**+1.3**
LSA			*e*		15 23 41.0	
LSA			pmax	pmax		
	comp=Z,24nm,0.8s					
LSA	**Lhasa**	**38.25 311**	*e*P	**P**	**15 21 44.0**	**+1.3**
	comp=Z,24nm,0.8s					
LSA			*e*PcP	**PcP**	**15 23 41.0**	**+0.4**
GTA	**Gaotai**	**39.05 330**	⇓P	**P**	**15 21 49.5**	**+0.9**
GTA			pP	pP	15 23 34.1	+2.5
GTA			sP	sP	15 24 38.8	-2.3
GTA			pmax	pmax		
	comp=Z,33nm,0.9s					
HNR	**Honiara**	**39.50 113**	*e*P	**P**	**15 21 52.5**	**+0.1**
HNR			pmax	pmax		
	comp=Z,111nm,0.5s					
HNR	**Honiara**	**39.50 113**	*e*P	**P**	**15 21 52.5**	**+0.1**
	comp=Z,111nm,0.5s					
BBOO	**Buckleboo**	**40.98 164**	*e*P	**P**	**15 22 04.4**	**+0.6**
	comp=Z,107nm,0.9s					
JIRN	**Jiri**	**41.22 305**	*e*P	**P**	**15 22 05.4**	**-0.9**
EIDS	**Eidsvold**	**41.51 141**	*e*P	**P**	**15 22 08.4**	**+0.3**
	comp=Z,56nm,0.8s					
GUN	**Gumba**	**41.57 305**	*e*P	**P**	**15 22 09.3**	**+0.2**
PKIN	**Phulchoki**	**41.84 304**	*e*P	**P**	**15 22 10.8**	**-0.3**
	comp=Z,37nm,0.8s					
STKA	**Stephens Creek**	**41.96 157**	P	**P**	**15 22 12.6**	**+1.0**
	comp=Z,57nm,0.6s,baz=332,slow=8.1,SNR=143					
STKA			ScP	**ScP**	**15 26 44.6**	**-0.6**
	comp=Z,7.4nm,0.7s,baz=15,slow=6.1,SNR=6.2					
STKA	**Stephens Creek**	**41.96 157**	*e*P	**P**	**15 22 12.6**	**+1.0**
STKA			pmax	pmax		
	comp=Z,11nm,0.8s					
STKA	**Stephens Creek**	**41.96 157**	*e*P	**P**	**15 22 12.6**	**+1.0**
	comp=Z,11nm,0.8s					
STKA			*e*ScP	**ScP**	**15 26 44.4**	**-0.7**
KKN	**Kakani**	**42.02 305**	*e*P	**P**	**15 22 12.6**	**+0.2**
	comp=Z,31nm,0.5s					
DMN	**Daman**	**42.09 304**	*e*P	**P**	**15 22 13.3**	**+0.3**
HIA	**Hailar**	**42.59 356**	*e*P	**P**	**15 22 16.6**	**+0.4**
HIA			*e*		15 23 54.3	
HIA			pmax	pmax		
	comp=Z,23nm,1.0s					
HIA	**Hailar**	**42.59 356**	*e*P	**P**	**15 22 16.6**	**+0.4**
	comp=Z,23nm,1.0s					
HIA			*e*PcP	**PcP**	**15 23 54.3**	**+0.4**
GKN	**Gorkha**	**42.62 305**	*e*P	**P**	**15 22 17.1**	**+0.1**
	comp=Z,42nm,0.6s					
PALK	**Pallekele**	**42.67 273**	P	**P**	**15 22 18.3**	**+0.8**
PALK	**Pallekele**	**42.67 273**	*i* P	**P**	**15 22 19.0**	**+1.5**
PALK	**Pallekele**	**42.67 273**	*e*P	**P**	**15 22 17.8**	**+0.3**
	comp=Z,79nm,1.8s					
KLR	**Kul'dur**	**42.96 8**	PcP	**PcP**	**15 23 55.2**	**0.0**
	baz=228,slow=5.2					
KLR	**Kul'dur**	**42.96 8**	*d i* P	**P**	**15 22 18.9**	**-0.2**
KOLN	**Koldanda**	**43.39 304**	*e*P	**P**	**15 22 23.8**	**+0.8**
	comp=Z,181nm,0.7s					
ULN	**Ulaanbaatar**	**43.44 344**	*d i* P	**P**	**15 22 23.5**	**+0.5**
ULN			pmax	pmax		
	comp=Z,28nm,1.1s					
ULN	**Ulaanbaatar**	**43.44 344**	*e*P	**P**	**15 22 23.6**	**+0.5**
	comp=Z,35nm,1.2s					
ULN			*e*PcP	**PcP**	**15 23 56.4**	**-0.7**
SONA0	**Songino Array**	**43.60 343**	*e*P	**P**	**15 22 24.7**	**+0.5**
	comp=Z,23nm,1.0s					
SONA0			*e*PcP	**PcP**	**15 23 57.4**	**-0.2**
SONA0			*e*ScP	**ScP**	**15 26 50.7**	**-1.1**
SONM	**Songino Array**	**43.60 343**	P	**P**	**15 22 24.7**	**+0.5**
	comp=Z,13nm,0.8s,baz=158,slow=8.5,SNR=59					
SONM			PcP	**PcP**	**15 23 57.4**	**-0.2**
	comp=Z,5.1nm,0.7s,baz=156,slow=3.9,SNR=9.3					
SONM			ScP	**ScP**	**15 26 50.7**	**-1.0**
	comp=Z,0.9nm,0.6s,baz=151,slow=3.3,SNR=5.3					
SONA1	**Songino Array**	**43.61 343**	*e*P	**P**	**15 22 24.5**	**+0.2**
SONA1			*e*PcP	**PcP**	**15 23 57.1**	**-0.5**
SONA1			*e*ScP	**ScP**	**15 26 50.6**	**-1.2**
PYUN	**Piuthan**	**44.01 304**	*e*P	**P**	**15 22 28.7**	**+0.9**
	comp=Z,246nm,0.9s					
HYB	**Hyderabad**	**45.32 288**	*i* P	**P**	**15 22 38.5**	**+0.7**
	comp=Z,65nm,1.0s					
ARMA	**Armidale**	**45.57 145**	*e*P	**P**	**15 22 41.1**	**+1.6**
	comp=Z,74nm,0.9s					
ZAK	**Zakamensk**	**46.80 342**	*e*P	**P**	**15 22 48.5**	**+0.1**
ZAK			pmax	pmax		
	comp=Z,6.0nm,1.5s					
TLY	**Talaya**	**47.84 343**	*d i* P	**P**	**15 22 56.7**	**+0.6**
TLY			pmax	pmax		
	comp=Z,24nm,0.9s					
TLY	**Talaya**	**47.84 343**	*e*P	**P**	**15 22 57.0**	**+0.9**
	comp=Z,20nm,0.7s					
TLY			*e*PcP	**PcP**	**15 24 12.8**	**+0.3**
CAN	**Canberra**	**48.09 152**	*e*P	**P**	**15 22 59.7**	**+1.5**
CAN			pmax	pmax		
	comp=Z,38nm,0.7s					
CAN	**Canberra**	**48.09 152**	*e*P	**P**	**15 22 59.7**	**+1.5**
	comp=Z,38nm,0.7s					
NKL	**Nikolayevsk**	**48.37 14**	*e*P	**P**	**15 23 00.5**	**+0.6**
WMQ	**Urumqi**	**48.61 325**	⇑*i* P	**P**	**15 23 03.3**	**+1.3**
WMQ			PcP	**PcP**	**15 24 15.5**	**0.0**
WMQ			S	**S**	**15 29 20.8**	**+0.8**
WMQ			pmax	pmax		
	comp=Z,28nm,0.8s					
WMQ			pmax	pmax		
	comp=Z,25nm,4.0s					
WMQ			LR	LR		
	comp=N,34nm,21.2s					
WMQ			LR	LR		
	comp=E,32nm,26.6s					
WMQ			LR	LR		
	comp=Z,33nm,21.2s					
MOY	**Mondy**	**48.63 341**	*e*P	**P**	**15 23 03.1**	**+1.0**
MOY			pmax	pmax		
	comp=Z,30nm,1.6s					
TARA	**Tarawa**	**49.36 94**	*e*P	**P**	**15 23 09.5**	**+1.6**
	comp=Z,70nm,0.9s					
BOD	**Bodaibo**	**51.58 353**	⇑*i* P	**P**	**15 23 23.1**	**-0.1**
BOD			pmax	pmax		
	comp=Z,19nm,0.9s					
MK01	**Makanchi Array**	**53.42 326**	*e*P	**P**	**15 23 37.1**	**+0.5**
MK01			*e*PcP	**PcP**	**15 24 32.7**	**-0.9**
MK01			*e*ScP	**ScP**	**15 27 31.6**	**-2.0**
MK31	**Makanchi Array**	**53.44 326**	*e*P	**P**	**15 23 37.1**	**+0.4**
MK31			*e*		15 24 32.7	
MK31	**Makanchi Array**	**53.44 326**	*e*P	**P**	**15 23 37.1**	**+0.4**
MK31			*e*PcP	**PcP**	**15 24 32.7**	**-0.9**
MK31			*e*ScP	**ScP**	**15 27 32.1**	**-1.6**
MK32	**Makanchi Array**	**53.44 326**	*e*P	**P**	**15 23 37.4**	**+0.6**
MK32			*e*PcP	**PcP**	**15 24 33.2**	**-0.5**
MK32			*e*ScP	**ScP**	**15 27 32.1**	**-1.5**
MK32			*e*S	**S**	**15 30 25.1**	**+0.7**
MKAR	**Makanchi Array**	**53.44 326**	P	**P**	**15 23 37.4**	**+0.6**
	comp=Z,59nm,0.6s,baz=121,slow=8.4,SNR=526					
MKAR			PcP	**PcP**	**15 24 33.2**	**-0.5**
	comp=Z,11nm,0.6s,baz=120,slow=4.9,SNR=10.0					
MKAR			ScP	**ScP**	**15 27 32.1**	**-1.5**
	comp=Z,3.0nm,0.6s,baz=116,slow=5.5,SNR=7.0					
MKAR			S	**S**	**15 30 25.1**	**+0.7**
	comp=Z,0.6nm,0.6s,baz=122,slow=17,SNR=4.1					
MAKZ	**Makanchi**	**53.63 325**	*e*P	**P**	**15 23 38.4**	**+0.4**
MAKZ			*e*		15 24 33.7	
MAKZ			pmax	pmax		
	comp=Z,88nm,1.2s					
MAKZ	**Makanchi**	**53.63 325**	*e*P	**P**	**15 23 38.4**	**+0.4**
	comp=Z,88nm,1.2s					
MAKZ			*e*PcP	**PcP**	**15 24 33.7**	**-0.7**
KSH	**Kashi**	**53.85 315**	P	**P**	**15 23 41.7**	**+1.9**
KSH			*e*PcP	**PcP**	**15 24 37.5**	**+2.0**
KSH			*e*pP	pP	15 25 33.8	+0.2
KSH			*e*ScP	**ScP**	**15 27 38.5**	**+2.8**
KSH			PcS	**PcS**	**15 28 35.7**	**-0.3**
KSH			S	**S**	**15 30 31.9**	**+1.7**
KSH			ScS	**ScS**	**15 32 26.4**	**+0.4**
KSH			pmax	pmax		
	comp=Z,43nm,1.3s					
KSH			pmax	pmax		
	comp=Z,61nm,1.7s					
PETK	**Petropavlovsk-**	**53.95 25**	P	**P**	**15 23 40.9**	**+0.8**
	comp=Z,5.6nm,0.6s,baz=179,slow=4.4,SNR=22					
PEA1	**Petropavlovsk-**	**53.95 25**	*e*P	**P**	**15 23 40.9**	**+0.8**
YAK	**Yakutsk**	**55.43 3**	*d i* P	**P**	**15 23 50.1**	**-0.1**
YAK			*e*		15 24 39.3	
YAK			*e**PP	**pP**	**15 25 46.7**	**+1.7**
YAK			*e*		15 26 02.8	
YAK			*e*S	**S**	**15 30 50.7**	**+1.1**
YAK			*e*		15 32 39.0	
YAK			*e*SS	**SS**	**15 34 46.9**	**-0.8**
YAK			pmax	pmax		
	comp=Z,23nm,0.7s					
YAK			pmax	pmax		
	comp=N,11nm,1.0s					
YAK			pmax	pmax		
	comp=E,5.0nm,1.1s					
YAK			pmax	pmax		
	comp=Z,75nm,6.6s					
YAK			pmax	pmax		
	comp=N,101nm,6.6s					
YAK			pmax	pmax		
	comp=E,77nm,8.1s					
YAK			smax	smax		
	comp=N,27nm,1.6s					
YAK			smax	smax		
	comp=E,22nm,1.8s					
YAK	**Yakutsk**	**55.43 3**	*e*P	**P**	**15 23 50.2**	**+0.1**
	comp=E,66nm,0.7s					
YAK			*e*PcP	**PcP**	**15 24 40.6**	**-0.4**
TKM2	**Tokmak 2**	**55.56 318**	*e*P	**P**	**15 23 52.4**	**+0.6**
TKM2			pmax	pmax		
	comp=Z,37nm,1.0s					
TKM2	**Tokmak 2**	**55.56 318**	*e*P	**P**	**15 23 52.4**	**+0.6**
	comp=Z,37nm,1.0s					
AAK	**Ala-Archa**	**56.17 318**	*d i* P	**P**	**15 23 56.7**	**+0.8**
AAK			pmax	pmax		
	comp=Z,34nm,0.9s					
AAK	**Ala-Archa**	**56.17 318**	*e*P	**P**	**15 23 56.5**	**+0.5**
	comp=Z,53nm,1.8s					
AAK			*e*PcP	**PcP**	**15 24 44.6**	**0.0**
FRU	**Bishkek**	**56.17 318**	*e*P	**P**	**15 23 55.0**	**-0.8**
ZAA0	**Zalesovo Array**	**56.63 334**	*e*P	**P**	**15 23 57.5**	**-1.1**
ZAA0			*e*PcP	**PcP**	**15 24 43.4**	**-2.5**
ZALV	**Zalesovo Beam**	**56.63 334**	P	**P**	**15 23 58.0**	**-0.6**
	comp=Z,10nm,0.5s,baz=124,slow=5.6,SNR=51					
ZALV			PcP	**PcP**	**15 24 44.2**	**-1.7**
	comp=Z,3.0nm,0.6s,baz=202,slow=1.6,SNR=3.9					
ZAA1	**Zalesovo Array**	**56.63 334**	*e*P	**P**	**15 23 58.0**	**-0.7**
ZAA1			*e*PcP	**PcP**	**15 24 44.2**	**-1.8**
EKS2	**Erkin-Say**	**56.66 317**	*e*P	**P**	**15 24 00.0**	**+0.7**
EKS2			*e*		15 24 46.7	
EKS2			pmax	pmax		
	comp=Z,31nm,0.8s					
EKS2	**Erkin-Say**	**56.66 317**	*e*P	**P**	**15 23 60.0**	**+0.7**
	comp=Z,31nm,0.8s					
EKS2			*e*PcP	**PcP**	**15 24 46.7**	**+0.2**
MA2	**Magadan**	**56.67 16**	*i* P	**P**	**15 23 59.9**	**+1.1**
KBL	**Kabul**	**57.36 307**	*e*P	**P**	**15 24 04.0**	**-0.2**
KBL			pmax	pmax		
	comp=Z,31nm,0.7s					
KBL	**Kabul**	**57.36 307**	*e*P	**P**	**15 24 04.0**	**-0.2**
	comp=Z,31nm,0.7s					
KURK	**Kurchatov**	**57.66 328**	*e*P	**P**	**15 24 05.8**	**+0.1**
KURK			pmax	pmax		
	comp=Z,108nm,0.7s					
KURK	**Kurchatov**	**57.66 328**	*e*P	**P**	**15 24 05.8**	**+0.1**
	comp=Z,108nm,0.7s					
NVS	**Novosibirsk**	**57.91 334**	*e*P	**P**	**15 24 06.1**	**-1.2**
NVS			pmax	pmax		
	comp=Z,31nm,0.9s					
NVS			pmax	pmax		
	comp=N,16nm,0.8s					
NVS			pmax	pmax		
	comp=E,22nm,0.8s					
MSVF	**Nonsavu**	**58.88 115**	*e*P	**P**	**15 24 16.4**	**+1.8**
MSVF			pmax	pmax		
	comp=Z,35nm,1.1s					
MSVF	**Nonsavu**	**58.88 115**	*e*P	**P**	**15 24 16.4**	**+1.8**
	comp=Z,35nm,1.1s					
KKAR	**Karatay Array**	**59.04 317**	*e*P	**P**	**15 24 15.2**	**0.0**
KKAR	**Karatay Array**	**59.04 317**	*e*P	**P**	**15 24 15.2**	**0.0**
SEY	**Seymchan**	**59.92 15**	⇑*e*P	**P**	**15 24 22.1**	**+1.6**
BVAR	**Borovoye Array**	**63.23 327**	S	**S**	**15 32 27.2**	**-0.3**
	comp=Z,1.0nm,0.8s,baz=114,slow=15,SNR=5.6					
BRVK	**Borovoye**	**63.30 327**	*e*P	**P**	**15 24 42.6**	**-0.1**
BRVK			pmax	pmax		
	comp=Z,47nm,0.9s					
BRVK	**Borovoye**	**63.30 327**	*e*P	**P**	**15 24 42.6**	**-0.1**
	comp=Z,47nm,0.9s					
ZRNK	**Zerenda**	**63.95 327**	*e*P	**P**	**15 24 46.6**	**-0.2**
ZRNK			pmax	pmax		
	comp=Z,41nm,0.8s					
ZRNK	**Zerenda**	**63.95 327**	*e*P	**P**	**15 24 46.6**	**-0.2**
	comp=Z,41nm,0.8s					
TIXI	**Tiksi**	**64.99 2**	⇓*e*P	**P**	**15 24 52.1**	**-0.9**
TIXI			pmax	pmax		
	comp=Z,20nm,0.6s					
TIXI	**Tiksi**	**64.99 2**	*e*P	**P**	**15 24 51.8**	**-1.1**
	comp=Z,25nm,0.6s					
THZ	**Tophouse**	**65.86 142**	*e*P	**P**	**15 24 59.6**	**+0.6**
	comp=Z,36nm,0.8s					
GEYT	**Alibeck**	**66.72 308**	P	**P**	**15 25 05.1**	**+0.7**
	comp=Z,16nm,0.8s,baz=134,slow=4.3,SNR=41					
GEYT			PcP	**PcP**	**15 25 28.2**	**+0.5**
	comp=Z,5.7nm,0.8s,baz=114,slow=3.7,SNR=5.3					
BKZ	**Black Stump Fm**	**66.77 138**	*e*P	**P**	**15 25 05.5**	**+0.8**
	comp=Z,75nm,0.6s					
UOSS	**Minazif**	**66.83 294**	*e*P	**P**	**15 25 04.6**	**-0.7**
	comp=Z,1.4nm,1.4s					
NRIK	**Noril'sk**	**66.89 347**	P	**P**	**15 25 04.8**	**0.0**
	comp=Z,30nm,0.6s,baz=126,slow=6.1,SNR=98					
ASHO	**Ashiyiah**	**66.94 294**	P	**P**	**15 25 06.0**	**-0.1**
BILL	**Bilibino**	**67.54 16**	*de*P	**P**	**15 25 08.7**	**-0.1**
BILL			*i* *PP	**pP**	**15 27 11.6**	**+0.9**
BILL			pmax	pmax		
	comp=Z,12nm,1.1s					
ABKAR	**Akbulak array**	**67.98 321**	*e*P	**P**	**15 25 11.5**	**-0.3**
ABKAR			*e*PcP	**PcP**	**15 25 31.2**	**-1.4**
SVE	**Sverdlovsk**	**69.90 329**	*c i* P	**P**	**15 25 22.6**	**-0.5**
SVE			pmax	pmax		
	comp=Z,48nm,0.8s					
ARU	**Arti**	**70.86 328**	*d i* P	**P**	**15 25 27.9**	**-0.9**
ARU			*PP	**pP**	**15 27 31.9**	**-0.5**
ARU					15 28 17.0	
ARU			S	**S**	**15 33 56.3**	**+0.1**
ARU			SS	**SS**	**15 38 43.5**	**-2.4**
ARU			pmax	pmax		
	comp=Z,48nm,1.0s					
ARU	**Arti**	**70.86 328**	*e*P	**P**	**15 25 27.8**	**-0.9**
	comp=Z,37nm,0.6s					
GUDG	**Gudauri**	**77.58 312**	P	**P**	**15 26 08.7**	**+1.6**
ZEI	**Tsey**	**78.02 312**	*e*P	**P**	**15 26 07.4**	**-2.1**
ZEI			pmax	pmax		
	comp=Z,58nm,0.7s					
DAMY	**Dhamar**	**78.04 283**	*e*P	**P**	**15 26 11.0**	**+0.8**
	comp=Z,24nm,1.0s					
NCK	**Nalchik**	**78.27 313**	⇑*i* P	**P**	**15 26 10.5**	**0.0**
NCK			pmax	pmax		
	comp=Z,8.0nm,0.4s					
ONI	**Oni**	**78.35 312**	P	**P**	**15 26 11.8**	**+0.7**
ONI	**Oni**	**78.35 312**	P	**P**	**15 26 11.7**	**+0.7**
GOF	**Gofitskoye**	**78.72 315**	⇑*e*P	**P**	**15 26 10.1**	**-2.7**
KBZ	**Khabaz**	**78.78 313**	P	**P**	**15 26 12.9**	**-0.2**
	comp=Z,6.0nm,0.8s,baz=90,slow=3.5,SNR=12					
NEY	**Neytrino**	**78.90 313**	⇓*e*P	**P**	**15 26 14.8**	**+0.7**
NEY			pmax	pmax		
	comp=Z,2.0nm,0.7s					
KIV	**Kislovodsk**	**78.94 313**	*e*P	**P**	**15 26 14.8**	**+0.6**
KIV			pmax	pmax		
	comp=Z,19nm,1.0s					
CHVG	**Ch'k'valeri**	**79.36 312**	⇑*i* P	**P**	**15 26 17.4**	**+1.1**
VRH	**Novokhopyorsk**	**79.81 321**	*e*P	**P**	**15 26 17.7**	**-0.7**
VRH			pmax	pmax		
	comp=Z,40nm,0.7s					
KDAK	**Kodiak Island**	**81.05 33**	*i* P	**P**	**15 26 25.2**	**+0.6**
KDAK	**Kodiak Island**	**81.05 33**	*e*P	**P**	**15 26 25.4**	**+0.8**
	comp=Z,125nm,1.9s					
RSO	**Redoubt South**	**81.05 30**	*e*P	**P**	**15 26 25.1**	**+0.1**
KLMR	**Klimovskoe**	**81.38 330**	*d i* P	**P**	**15 26 25.6**	**-0.7**
KLMR			*e**PP	**pP**	**15 28 37.7**	**+2.9**
KLMR			pmax	pmax		
	comp=Z,46nm,0.7s					
PPLA	**Purkeypile**	**81.42 27**	*e*P	**P**	**15 26 27.3**	**+0.6**
	comp=Z,51nm,1.6s					
VSR	**Storozhevo

comp=Z,20nm,0.7s
OBN Obninsk 82.94 325 *d iP* **P 15 26 33.5 -0.7**
OBN pmax pmax
comp=Z,89nm,1.2s
OBN Obninsk 82.94 325 *eP* **P 15 26 33.6 -0.7**
comp=Z,54nm,0.8s
RND Reindeer 82.94 27 *eP* **P 15 26 34.0 -0.2**
RND pmax pmax
comp=Z,15nm,1.0s
RND Reindeer 82.94 27 *eP* **P 15 26 34.0 -0.2**
comp=Z,15nm,1.0s
MDM Murphy Dome 83.19 25 *eP* **P 15 26 35.8 +0.4**
comp=Z,19nm,1.7s
WRH Wood River Hil 83.26 26 *eP* **P 15 26 35.7 0.0**
comp=Z,7.7nm,1.0s
CCB Clear Creek Bu 83.38 26 *eP* **P 15 26 35.9 -0.3**
comp=Z,7.7nm,1.2s
ZALF Zalf 83.38 302 *eP* **P 15 26 37.9 +0.9**
LVZ Lovozero 83.51 338 P **P 15 26 36.0 -0.9**
LVZ pmax pmax
comp=Z,37nm,1.0s
ILAR Eielson Array 83.77 26 P **P 15 26 37.0 -1.2**
comp=Z,1.0nm,0.5s,baz=239,slow=5.1,SNR=24
ILAR Eielson Array 83.77 26 P **P 15 26 37.0 -1.2**
ILB Eielson Array 83.77 26 *eP* **P 15 26 37.2 -1.0**
SALA Sala 83.90 302 *eP* **P 15 26 40.7 +0.9**
PAX Paxson 84.49 27 *eP* **P 15 26 43.4 +1.5**
PAX pmax pmax
comp=Z,38nm,0.8s
PAX Paxson 84.49 27 *eP* **P 15 26 43.4 +1.5**
comp=Z,38nm,0.8s
TCHB Talchebab 84.54 302 *eP* **P 15 26 43.5 +0.8**
MAW Mawson 85.47 200 P **P 15 26 46.5 +0.3**
comp=Z,1.0nm,0.4s,baz=15,slow=4.9,SNR=6.0
MAW Mawson 85.47 200 *eP* **P 15 26 46.7 +0.4**
MAW Mawson 85.47 200 *eP* **P 15 26 46.7 +0.4**
BR101 Keskin Array S 85.84 309 *eP* **P 15 26 47.8 -1.2**
BR131 Keskin Array S 85.84 309 *eP* **P 15 26 47.4 -1.5**
BRTR Keskin Array B 85.84 309 P **P 15 26 47.8 -1.2**
comp=Z,9.3nm,0.8s,baz=119,slow=4.7,SNR=50
EGAK Eagle 86.21 25 *eP* **P 15 26 49.9 -0.1**
comp=Z,3.6nm,0.9s
BR231 Keskin MP Arra 86.49 310 *eP* **P 15 26 48.8 -3.2**
KMBO Kilima Mbogo 86.60 268 *eP* **P 15 26 53.3 +0.1**
KMBO pmax pmax
comp=Z,11nm,1.0s
KMBO Kilima Mbogo 86.60 268 *eP* **P 15 26 53.3 +0.1**
comp=Z,11nm,1.0s
ARA0 ARCESS Array S 86.67 340 *eP* **P 15 26 50.6 -1.5**
ARCES ARCESS Array B 86.67 340 P **P 15 26 51.0 -1.0**
comp=Z,8.8nm,0.7s,baz=80,slow=6.0,SNR=19
ARE0 ARCESS Array S 86.67 340 *eP* **P 15 26 50.0 -2.0**
comp=Z,99nm,2.0s
VNDA Vanda 86.71 172 P **P 15 26 52.5 +0.5**
comp=Z,0.9nm,0.7s,baz=344,slow=4.9,SNR=6.3
SPA0 Spitsbergen Ar 87.03 349 *eP* **P 15 26 52.9 -0.8**
AKASG Malin Array Be 87.72 321 P **P 15 26 56.0 -1.4**
comp=Z,3.5nm,0.6s,baz=70,slow=4.3,SNR=18
AKASG Malin Array Be 87.72 321 P **P 15 26 56.0 -1.4**
AKBB Malin Array Si 87.72 321 *eP* **P 15 26 55.8 -1.6**
AKBB pmax pmax
comp=Z,11nm,1.2s
AKBB Malin Array Si 87.72 321 *eP* **P 15 26 55.8 -1.6**
comp=Z,11nm,1.2s
KIEV Kiev 87.74 321 *eP* **P 15 26 55.8 -1.6**
KIEV pmax pmax
comp=Z,15nm,1.3s
KIEV Kiev 87.74 321 *eP* **P 15 26 55.8 -1.6**
comp=Z,15nm,1.3s
AK11 Malin Array Si 87.76 321 *eP* **P 15 26 56.1 -1.4**
FIA1 FINESS Array S 87.83 332 *eP* **P 15 26 56.0 -1.6**
FIA0 FINESS Array S 87.83 332 *eP* **P 15 26 56.4 -1.2**
FIA0 FINESS Array S 87.83 332 *eP* **P 15 26 56.4 -1.2**
FINES FINESS Array B 87.83 332 P **P 15 26 56.4 -1.2**
comp=Z,8.5nm,0.6s,baz=56,slow=4.9,SNR=44
VSU Vasula 88.01 329 *d iP* **P 15 26 57.1 -1.4**
VSU pmax pmax
comp=Z,40nm,0.7s
INK Inuvik 88.55 21 *eP* **P 15 27 00.5 -0.3**
INK pmax pmax
comp=Z,8.0nm,1.3s
INK Inuvik 88.55 21 *eP* **P 15 27 00.5 -0.3**
comp=Z,8.1nm,1.3s
TIRR Tirgusor 89.14 315 ⇓ *iP* **P 15 27 03.6 -0.5**
TIRR Tirgusor 89.14 315 ⇓ *iP* **P 15 27 03.6 -0.5**
TESR Tescani 90.05 317 ⇑ *iP* **P 15 27 07.5 -0.8**
VRI Vrincioaia 90.10 316 ⇑ *iP* **P 15 27 09.3 +0.8**
VRI Vrincioaia 90.10 316 ⇑⇑ *P* **P 15 27 09.3 +0.8**
PLOR Plostina 90.16 316 ⇑ *iP* **P 15 27 08.5 -0.3**
PLOR Plostina 90.16 316 ⇑⇑ *P* **P 15 27 08.5 -0.3**
MLR Muntele Rosu 90.71 316 ⇑ *iP* **P 15 27 11.0 -0.5**
MLR Muntele Rosu 90.71 316 ⇑⇑ *P* **P 15 27 11.0 -0.5**
MLR Muntele Rosu 90.71 316 *eP* **P 15 27 10.7 -0.8**
comp=Z,8.0nm,0.7s
BURAR Bucovina Array 90.81 318 ⇓ *iP* **P 15 27 11.5 -0.4**
BURAR Bucovina Array 90.81 318 ⇓ *P* **P 15 27 11.5 -0.4**
BUR08 Bucovina Ar. S 90.82 318 *eP* **P 15 27 11.3 -0.6**
DOPR Dopca 91.00 316 ⇑ *iP* **P 15 27 12.6 -0.1**
ARCR ARCALIA 91.49 318 ⇑ *iP* **P 15 27 11.3 -3.6**
LOT Lotru 92.22 316 ⇑ *iP* **P 15 27 18.3 -0.1**
UZH Uzhgorod 92.53 319 *eP* **P 15 27 18.7 -0.9**
DRGR 92.66 318 ⇑ *iP* **P 15 27 16.6 -3.7**
DRGR 92.66 318 ⇑⇑ *P* **P 15 27 16.6 -3.7**
CRVS Cervenica-Dubn 93.00 320 *eP* **P 15 27 21.9 +0.1**
CRVS Cervenica-Dubn 93.00 320 *eP* **P 15 27 21.9 +0.1**
STHS Stebnicka Huta 93.02 320 *eP* **P 15 27 22.4 +0.5**
STHS pmax pmax
comp=Z,4.0nm,0.7s
STHS Stebnicka Huta 93.02 320 *eP* **P 15 27 22.4 +0.5**
SIRR Siria 93.48 317 ⇓ *iP* **P 15 27 23.6 -0.5**
BZS Buzias 93.66 317 ⇑ *iP* **P 15 27 22.7 -2.1**
BZS Buzias 93.66 317 ⇑⇑ *P* **P 15 27 22.7 -2.1**
KECS Kecovo 93.73 320 *eP* **P 15 27 25.3 +0.2**
KECS pmax pmax
comp=Z,3.0nm,0.9s
KECS Kecovo 93.73 320 *eP* **P 15 27 25.3 +0.2**
KECS *e* 15 38 35.5
MDVR Moldovita 93.78 316 ⇓ *iP* **P 15 27 25.0 -0.5**
LANS Liptovska Anna 94.21 320 *eP* **P 15 27 27.5 +0.2**
LANS Liptovska Anna 94.21 320 *eP* **P 15 27 27.5 +0.2**
NC405 NORSAR Array S 94.58 333 *eP* **P 15 27 27.0 -1.7**
NC303 NORSAR Array S 94.69 333 *eP* **P 15 27 27.1 -2.0**
VYHS Vyhne 94.78 320 *eP* **P 15 27 29.2 -0.7**
VYHS pmax pmax
comp=Z,2.0nm,1.2s
VYHS Vyhne 94.78 320 *eP* **P 15 27 29.2 -0.7**
NB2 NORSAR Subarra 94.83 333 P **P 15 27 28.1 -1.8**
comp=Z,6.5nm,0.8s,baz=68,slow=4.6
NB2 NORSAR Subarra 94.83 333 P **P 15 27 28.1 -1.8**
baz=68,slow=4.6
NB2 NORSAR Subarra 94.83 333 P **P 15 27 27.9 -2.0**
NB2 pmax pmax
comp=Z,6.0nm,0.9s
NB200 NORSAR Array S 94.83 333 *eP* **P 15 27 28.3 -1.6**
NB200 *e*PP **PP 15 31 28.6 -0.5**
NOA NORSAR Array B 94.83 333 P **P 15 27 28.3 -1.6**
comp=Z,4.0nm,0.7s,baz=69,slow=4.6,SNR=16
NOA PP **PP 15 31 28.6 -0.5**
comp=Z,0.6nm,0.7s,baz=76,slow=7.9,SNR=4.0
NC204 NORSAR Array S 94.94 333 *eP* **P 15 27 28.9 -1.4**
NBO02 NORSAR Array S 94.98 333 *eP* **P 15 27 28.9 -1.7**
DPC Dobruska-Polom 95.83 322 *eP* **P 15 27 34.7 +0.1**
DPC Dobruska-Polom 95.83 322 *eP* **P 15 27 34.7 +0.1**
UPC Upice 95.97 322 *eP* **P 15 27 35.2 0.0**
UPC Upice 95.97 322 *eP* **P 15 27 35.2 0.0**
PDG Podgorica 96.08 314 ⇑ *iP* **P 15 27 32.4 -3.4**
LSZ Lusaka 97.02 255 *eP* **P 15 27 39.6 -1.2**
LSZ pmax pmax
comp=Z,5.0nm,0.8s
LSZ Lusaka 97.02 255 *eP* **P 15 27 39.6 -1.2**
comp=Z,4.7nm,0.8s
BRG Berggiesshubel 97.10 323 *e*PKP Pdif 15 27 40.0 -0.2
comp=Z,6.1nm,0.9s
BRG Berggiesshubel 97.10 323 *eP* Pdif 15 27 40.0 -0.2
BRG pmax pmax
comp=Z,7.0nm,0.9s
CLL Collm 97.50 324 *i* Pdif Pdif 15 27 40.6 -1.4
comp=Z,3.0nm,0.7s
CLL Collm 97.50 324 *i P* Pdif 15 27 40.6 -1.4
CLL pmax pmax
comp=Z,3.0nm,0.7s
KHC Kasperske Hory 97.90 321 *eP* Pdif 15 27 43.8 -0.1
KHC Kasperske Hory 97.90 321 *eP* Pdif 15 27 43.8 -0.1
GERES GERESS Array B 97.92 321 P Pdif 15 27 43.1 -1.0
comp=Z,1.0nm,0.5s,baz=86,slow=6.8,SNR=9.0
GERES PP **PP 15 31 56.9 +3.9**
comp=Z,0.2nm,0.2s,baz=95,slow=4.3,SNR=4.5
GEA0 GERESS Array S 97.93 321 *e*Pdif Pdif 15 27 42.8 -1.2
YKA Yellowknife Ar 98.06 24 P Pdif 15 27 44.0 -0.2
comp=Z,0.6nm,0.8s,baz=297,slow=5.0,SNR=6.4
YKA PKKPbc **PKKPbc 15 44 12.7 -4.3**
comp=Z,0.2nm,0.3s,baz=126,slow=2.9,SNR=4.8
NVAR Mina Array Bea 107.15 47 PKKPbc PKKPbc 15 43 49.3 -0.9
comp=Z,0.4nm,0.6s,baz=142,slow=4.6,SNR=3.9
NVAR PKKPab **PKKPab 15 44 05.1 -2.5**
comp=Z,0.2nm,0.5s,baz=134,slow=3.9,SNR=4.1
PDAR Pinedale Array 111.07 39 PKKPbc PKKPbc 15 43 46.9 +8.8
comp=Z,0.6nm,0.7s,baz=129,slow=4.0,SNR=7.1
TOA0 Torodi Ar. Sit 119.13 289 *e*PKPdf **PKPdf 15 32 52.7 -1.3**
TORD Torodi Ar. Bea 119.13 289 PKP **PKPdf 15 32 53.3 -0.6**
comp=Z,3.5nm,0.7s,baz=48,slow=1.9,SNR=26
TORD PKKPbc **PKKPbc 15 43 10.8 +1.1**
comp=Z,0.8nm,0.8s,baz=284,slow=2.8,SNR=4.7
TOA1 Torodi Ar. Sit 119.13 289 *e*PKPdf **PKPdf 15 32 53.3 -0.6**
TOA1 *e*PKKPbc **PKKPbc 15 43 10.8 +1.1**
LTX Lajitas 122.09 49 *e*PKIKP **PKPdf 15 32 59.4 0.0**
LTX Lajitas 122.09 49 *e*PKPdf **PKPdf 15 32 59.4 0.0**
LTX *e*PKKPbc **PKKPbc 15 42 58.7 -0.8**
TXAR Lajitas Array 122.09 49 PKP **PKPdf 15 32 59.4 0.0**
comp=Z,0.6nm,0.8s,baz=318,slow=3.4,SNR=4.7
TXAR PKKPab **PKKPbc 15 42 58.7 -0.8**
comp=Z,0.2nm,0.6s,baz=153,slow=4.2,SNR=3.5
MIAR Mount Ida 125.97 38 *e*PKIKP **PKPdf 15 33 07.5 +0.9**
MIAR Mount Ida 125.97 38 *e*PKPdf **PKPdf 15 33 07.5 +0.9**
KIC Kosan Boka 126.95 283 *e*PKIKP **PKPdf 15 33 09.1 +0.1**
comp=Z,24nm,0.9s
DBIC Dimbokro 126.99 283 PKP **PKPdf 15 33 08.3 -0.8**
comp=Z,5.7nm,0.8s,baz=43,slow=4.7,SNR=4.9
TIC Toumodi 127.16 283 *e*PKIKP **PKPdf 15 33 09.3 -0.1**
LIC Lamto 127.26 283 *e*PKIKP **PKPdf 15 33 09.6 0.0**
comp=Z,55nm,1.7s
WVT Waverly 128.15 33 *e*PKIKP **PKPdf 15 33 10.6 -0.1**
WVT Waverly 128.15 33 *e*PKPdf **PKPdf 15 33 10.6 -0.1**
PLCA Paso Flores 143.76 162 PKP **PKPdf 15 33 39.3 -0.1**
comp=Z,2.2nm,0.5s,baz=244,slow=3.2,SNR=16
TRQA Tornquist 148.33 171 *e*PKPbc **PKPbc 15 33 50.8 -0.6**
CPUP Villa Florida 160.42 177 PKIKP **PKPdf 15 34 04.0 +0.2**
CPUP Villa Florida 160.42 177 PKP **PKPdf 15 34 04.0 +0.2**
comp=Z,1.3nm,0.6s,baz=95,slow=3.2,SNR=4.0
LPAZ La Paz 164.98 131 PKP **PKPdf 15 34 09.8 +0.6**
comp=Z,2.7nm,0.9s,baz=46,slow=8.5,SNR=6.7
LPAZ PKPab **PKPab 15 35 11.8 +1.7**
comp=Z,2.7nm,0.7s,baz=218,slow=4.0,SNR=10
PTGA Pitinga 173.06 32 PKPab **PKPab 15 35 44.6 -0.5**
comp=Z,1.3nm,0.3s,baz=331,slow=2.4,SNR=5.7

NIED **12** *15:26:00, 36.°30N×141.°10E, h35km, Mw4.4 Best double couple: M0 4.76000×10^15 NP1:φ281.00000°, δ19.00000°, λ180.00000°. NP2:φ11.00000°, δ90.00000°, λ71.00000°.*
MOS **12** *15:26:14.3±1.2, 36.°34N×141.°11E, h37km, mb4.6/38, Error ellipse: s-maj=8.6km s-min=5.3km az=111.4*
JMA **12** *15:26:15.2±0.1, 36.°30N×141.°03E, h46km±2km, M4.3*
JMA Felt II J1.
ISCJB **12** *15:26:15.0±0.5, 36.°34N±0.°02×141.°09E±0.°04, h43km±3km, mb4.4/69, MS3.6/17, Error ellipse: s-maj=5.2km s-min=3.8km az=11.9*
NEIC **12** *15:26:17.6±0.6, 36.°35N×141.°01E, h50km±5km, mb4.6/30, Error ellipse: s-maj=6.4km s-min=5.0km az=135.0*
NEIC Recorded [2 JMA] in Fukushima, Ibaraki and Tochigi.
IDC **12** *15:26:18.4±1.6, 36.°26N×141.°01E, h58km±15km, mb4.0/30, mb1 4.1/36, mb1mx4.1/46, mbtmp4.3/36, MS3.5/18, Ms1 3.5/18, ms1mx3.3/58, Error ellipse: s-maj=13.0km s-min=8.8km az=62.0*
ISC 12 15:26:15.2±0.6, 36.°36N±0.°03×141.°04E±0.°04, h28km±3km, n203, σ1$60/221, mb4.5/69, MS3.6/18, 8C-5D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.46**	**303**	P	**Pn**	**15 26 25.8**	**0.0**
JHO				S	**Sn**	**15 26 32.9**	**-0.1**
CHOJ	**Chosi**	**0.68**	**193**	P	**Pb**	**15 26 27.5**	**-0.9**
CHOJ				S	**Sb**	**15 26 36.3**	**-1.2**
JYT	**Yasato**	**0.70**	**259**	P	**Pb**	**15 26 28.7**	**-0.1**
JYT				S	**Sb**	**15 26 37.7**	**-0.4**
ONAJ	**Iwakimizuishiy**	**0.76**	**345**	P	**Pn**	**15 26 30.1**	**0.0**
ONAJ				S	**Sb**	**15 26 40.2**	**+0.2**
JFK	**Kawauchi**	**1.01**	**352**	P	**Pn**	**15 26 33.3**	**-0.2**
JFK				S	**Sn**	**15 26 46.0**	**-0.8**
JFT	**Otama**	**1.28**	**334**	P	**Pb**	**15 26 38.7**	**0.0**
JFT				S	**Sb**	**15 26 55.1**	**+0.3**
JFY	**Yanaizu**	**1.50**	**315**	P	**Pb**	**15 26 41.3**	**-1.0**
JKT	**Katashina**	**1.50**	**286**	S	**Sb**	**15 27 00.0**	**-1.1**
MJAR	**Matsushiro Arr**	**2.29**	**275**	P	**Pn**	**15 26 52.1**	**+1.1**
	44nm,0.3s,baz=106,slow=8.7,SNR=300						
MJAR				S	**Sn**	**15 27 20.6**	**+2.2**
	64nm,0.3s,baz=101,slow=21,SNR=9.2						
MJAR				LR	LR	15 27 56.6	
	comp=Z,1μm,19.4s,baz=120,slow=44						
MAJO	**Matsushiro**	**2.29**	**275**	*de*P	**Pn**	**15 26 52.3**	**+1.2**
MAJO	**Matsushiro**	**2.29**	**275**	*e*Pn	**Pn**	**15 26 52.8**	**+1.7**
MAJO				*e*Sn	**Sn**	**15 27 12.5**	**-5.9**
MAT	**Matsushiro**	**2.29**	**275**	P	**Pn**	**15 26 52.1**	**+1.0**
MAT				S	**Sn**	**15 27 20.3**	**+1.9**
MJB9	**Matsu-Tunnel**	**2.30**	**275**	*e*Pn	**Pn**	**15 26 52.8**	**+1.6**
MJB9				*e*Sn	**Sn**	**15 27 12.8**	**-5.6**
JHJ2	**Mitsune**	**3.40**	**198**	*e*Pn	**Pn**	**15 27 07.7**	**+1.4**
JHJ2				*e*Sn	**Sn**	**15 27 46.6**	**+1.0**
JHJ	**Hachijo jima 2**	**3.40**	**198**	P	**Pn**	**15 27 07.8**	**+1.5**
	27nm,0.3s,baz=328,slow=23,SNR=8.5						
JHJ				S	**Sn**	**15 27 46.6**	**+1.0**
	66nm,0.3s,baz=207,slow=22,SNR=6.3						
INU	**Inuyama**	**3.42**	**254**	*e*Pn	**Pn**	**15 27 08.8**	**+2.2**
INU				*e*Sn	**Sn**	**15 27 41.7**	**-4.6**
ERM	**Erimo**	**5.88**	**16**	P	**Pn**	**15 27 41.0**	**+0.7**
ERM	**Erimo**	**5.88**	**16**	*e*Pn	**Pn**	**15 27 40.9**	**+0.6**
ERM				*e*Sn	Sn	15 28 36.1	-11
ASAJ	**Asahikawa**	**7.83**	**8**	P	**Pn**	**15 28 08.0**	**+0.8**
	1.6nm,0.3s,baz=223,slow=10,SNR=11						
ASAJ				LR	LR	15 31 46.0	
	comp=Z,132nm,19.7s,baz=160,slow=41						
ASAJ	**Asahikawa**	**7.83**	**8**	P	**Pn**	**15 28 08.0**	**+0.8**
ASAJ				pmax	pmax		
	comp=Z,2.0nm,0.3s						
ASAJ	**Asahikawa**	**7.83**	**8**	*e*Pn	**Pn**	**15 28 07.0**	**-0.2**
YUK	**Yuzh-Kuril'sk**	**8.50**	**24**	*i P*	**Pn**	**15 28 16.3**	**0.0**
YUK				*i* S	**Sn**	**15 29 45.6**	**-5.6**
YUK				pmax	pmax		
	comp=Z,47nm,0.4s						
YUK				pmax	pmax		
	comp=E,18nm,0.2s						
YUK				pmax	pmax		
	comp=N,24nm,0.5s						
SHO	**Shikotan**	**8.71**	**29**	*i* P	**Pn**	**15 28 18.0**	**-1.1**
SHO				pmax	pmax		
	comp=Z,7.0nm,0.6s						
SHO				pmax	pmax		
	comp=N,5.0nm,0.3s						
SHO				pmax	pmax		
	comp=E,5.0nm,0.3s						
JNU	**Nakatsue**	**8.97**	**252**	P	**Pn**	**15 28 25.5**	**+2.7**
	comp=E,0.5nm,0.3s,baz=92,slow=7.1,SNR=7.6						
JNU				LR	LR	15 32 28.3	
	comp=E,430nm,18.0s,baz=110,slow=42						
JNU	**Nakatsue**	**8.97**	**252**	*e*Pn	**Pn**	**15 28 23.6**	**+0.8**
CBIJ	**Chichi jima**	**9.29**	**174**	*e*Pn	**Pn**	**15 28 23.9**	**-3.3**
CBIJ				*e*Sn	Sn	15 29 53.8	-17
JCJ	**Chichijima**	**9.29**	**174**	P	**Pn**	**15 28 24.1**	**-3.1**
	comp=E,18nm,0.3s,baz=292,slow=23,SNR=7.1						
VLA	**Vladivostok**	**9.76**	**317**	⇑ *iP*	Pn	15 28 39.3	+5.8
VLA				pmax	pmax		
	comp=Z,40nm,1.0s						
KUR	**Kuril'sk**	**10.26**	**28**	*eP*	**Pn**	**15 28 38.6**	**-1.7**
KUR				*e*S	**Sn**	**15 30 27.5**	**-6.7**
KUR				smax	smax		
	comp=E,16nm,0.8s						
KUR				smax	smax		
	comp=N,10.0nm,0.4s						
USRK	**Ussuriysk Ar.**	**10.44**	**321**	P	**Pn**	**15 28 46.4**	**+3.6**
	comp=N,0.5nm,0.3s,baz=136,slow=12,SNR=22						
USRK				LR	LR	15 32 33.3	
	comp=N,282nm,19.1s,baz=128,slow=36						
KSRS	**Korea Array**	**10.56**	**280**	P	**Pn**	**15 28 48.1**	**+3.6**
	comp=N,0.3nm,0.3s,baz=95,slow=14,SNR=25						
KSRS				LR	LR	15 32 42.6	
	comp=N,272nm,21.1s,baz=82,slow=36						
KS01	**Wonju Array Si**	**10.59**	**280**	*e*Pn	Pn	15 28 51.4	+6.5
KS15	**Wonju Array Si**	**10.59**	**280**	*e*Pn	Pn	15 28 49.8	+4.8
KSAR	**Wonju Array Be**	**10.59**	**280**	P	**Pn**	**15 28 48.2**	**+3.2**
KSAR	**Wonju Array Be**	**10.59**	**280**	P	**Pn**	**15 28 48.1**	**+3.2**
MDJ	**Mudanjiang**	**11.99**	**317**	P	**Pn**	**15 29 06.1**	**+2.1**
MDJ				pmax	pmax		
	comp=Z,11nm,1.0s						
MDJ				pmax	pmax		
	comp=Z,73nm,5.0s						
MDJ	**Mudanjiang**	**11.99**	**317**	*e*Pn	**Pn**	**15 29 06.9**	**+2.8**
CN2	**Changchun**	**14.05**	**307**	*eP*	**Pn**	**15 29 34.5**	**+2.3**
CN2				*e*S	**Sn**	**15 32 09.3**	**+2.2**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.6s						
CN2				pmax	pmax		
	comp=Z,200nm,3.0s						
CN2				LR	LR		
	comp=N,200nm,13.0s						
CN2				LR	LR		
	comp=E,200nm,13.0s						
CN2				LR	LR		
	comp=Z,200nm,12.0s						
JOW	**Kunigami**	**14.43**	**232**	*e*Pn	**Pn**	**15 29 39.9**	**+2.3**
KLR	**Kul'dur**	**14.54**	**335**	P	**Pn**	**15 29 39.0**	**+0.1**
	comp=Z,0.1nm,0.3s,baz=141,slow=16,SNR=3.3						
KLR				LR	LR	15 35 11.7	
	comp=Z,156nm,18.7s,baz=129,slow=36						
KLR	**Kul'dur**	**14.54**	**335**	P	**Pn**	**15 29 39.0**	**+0.1**
KLR				MLR	MLR		
	comp=Z,156nm,18.7s						
TYV	**Tymovskoe**	**14.54**	**4**	*eP*	**Pn**	**15 29 41.8**	**+3.0**
TYV				pmax	pmax		
	comp=Z,10.0nm,0.5s						
NKL	**Nikolayevsk**	**16.79**	**359**	*eP*	**Pn**	**15 30 07.0**	**-1.0**
NJ2	**Nanjing**	**18.84**	**263**	*eP*	**Pn**	**15 30 33.7**	**+0.2**
NJ2				pmax	pmax		
	comp=Z,10.0nm,0.6s						
TIA	**Tai'an**	**19.28**	**277**	⇓ *P*	**P**	**15 30 36.5**	**-1.1**
TIA				pmax	pmax		
	comp=Z,20nm,0.8s						
HIA	**Hailar**	**20.17**	**316**	*eP*	Pn	15 30 51.4	+2.1
HIA				pmax	pmax		
	comp=Z,6.0nm,0.7s						
HIA	**Hailar**	**20.17**	**316**	*eP*	Pn	15 30 51.4	+2.1
	comp=Z,6.3nm,0.7s						
HHC	**Hu-ho-hao-te**	**23.41**	**290**	*eP*	**P**	**15 31 22.7**	**+0.8**
HHC				S	**S**	**15 35 34.0**	**+0.7**
HHC				pmax	pmax		
	comp=Z,49nm,0.7s						
HHC				pmax	pmax		
	comp=Z,430nm,4.1s						
HHC				LR	LR		
	comp=N,520nm,11.7s						
HHC				LR	LR		
	comp=E,860nm,12.9s						
HHC				LR	LR		
	comp=Z,820nm,12.9s						
XAN	**Xi'an**	**26.29**	**274**	P	**P**	**15 31 48.6**	**+0.3**
XAN				pP	pP	15 31 55.4	-1.1
XAN				pmax	pmax		
	comp=Z,12nm,0.6s						
XAN				pmax	pmax		
	comp=Z,64nm,10.6s						
YAK	**Yakutsk**	**26.66**	**348**	P	**P**	**15 31 50.9**	**-0.3**
	comp=Z,9.6nm,0.5s,baz=312,slow=1.4,SNR=5.6						
YAK				LR	LR	15 41 41.3	
	comp=Z,55nm,20.9s,baz=167,slow=34						
YAK	**Yakutsk**	**26.66**	**348**	⇓ *eP*	**P**	**15 31 51.2**	**0.0**
YAK				pmax	pmax		
	comp=Z,15nm,0.8s						
YAK	**Yakutsk**	**26.66**	**348**	*eP*	**P**	**15 31 50.3**	**-0.9**
	comp=Z,15nm,0.5s						
ENH	**Enshi**	**26.98**	**266**	*eP*	**P**	**15 31 53.4**	**-1.1**
	comp=Z,24nm,0.8s						
ULN	**Ulaanbaatar**	**27.49**	**305**	*c iP*	**P**	**15 31 58.9**	**-0.2**
ULN				pmax	pmax		
	comp=Z,5.0nm,1.0s						
ULN	**Ulaanbaatar**	**27.49**	**305**	*eP*	**P**	**15 31 58.7**	**-0.4**
	comp=Z,4.1nm,0.8s						
SEY	**Seymchan**	**27.50**	**11**	P	**P**	**15 32 01.6**	**+2.8**
	comp=Z,4.2nm,0.7s,baz=190,slow=6.4,SNR=7.1						
SEY	**Seymchan**	**27.50**	**11**	P	**P**	**15 32 01.6**	**+2.8**
SEY				pmax	pmax		
	comp=Z,5.0nm,0.8s						
SONA1	**Songino Array**	**27.92**	**305**	*eP*	**P**	**15 32 02.2**	**-0.7**
SONA0	**Songino Array**	**27.92**	**305**	*eP*	**P**	**15 32 02.9**	**0.0**
	comp=Z,6.9nm,0.9s						
SONM	**Songino Array**	**27.92**	**305**	P	**P**	**15 32 02.9**	**0.0**
	comp=Z,4.7nm,0.7s,baz=105,slow=8.5,SNR=17						
SONM				LR	LR	15 43 19.6	
	comp=Z,105nm,19.5s,baz=92,slow=36						
BOD	**Bodaibo**	**27.94**	**329**	*eP*	**P**	**15 32 01.5**	**-1.3**
BOD				pmax	pmax		
	comp=Z,5.0nm,0.9s						
H11N2	**WAKE ISLAND Hy 28.07**	**119**		T	T	16 01 24.0	
	baz=312,slow=75,SNR=81						
H11N1	**WAKE ISLAND Hy 28.08**	**119**		T	T	16 01 16.0	
	baz=312,slow=75,SNR=69						
H11N3	**WAKE ISLAND Hy 28.09**	**119**		T	T	16 01 28.5	
	baz=312,slow=75,SNR=81						
H11S1	**WAKE ISLAND Hy 28.76**	**121**		T	T	16 02 24.6	
	baz=314,slow=76,SNR=381						
H11S3	**WAKE ISLAND Hy 28.76**	**121**		T	T	16 02 12.4	
	baz=314,slow=76,SNR=164						
H11S2	**WAKE ISLAND Hy 28.77**	**121**		T	T	16 02 09.0	
	baz=314,slow=76,SNR=197						
LZH	**Lanzhou**	**29.89**	**281**	*eP*	**P**	**15 32 21.0**	**+0.4**
LZH				pP	sP	15 32 33.0	+0.6
LZH				sP	pP	15 32 38.5	+10
LZH				*e*PP	**PnPn**	**15 33 20.1**	**+3.0**
LZH				pmax	pmax		
	comp=Z,22nm,1.1s						
LZH				pmax	pmax		
	comp=Z,65nm,5.0s						
LZH				LR	LR		
	comp=N,310nm,12.7s						
LZH				LR	LR		
	comp=E,330nm,13.0s						
LZH				LR	LR		
	comp=Z,420nm,15.4s						
ZAK	**Zakamensk**	**30.46**	**309**	*eP*	**P**	**15 32 24.0**	**-1.3**
ZAK				pmax	pmax		
	comp=Z,2.0nm,1.2s						
TLY	**Talaya**	**30.55**	**312**	P	**P**	**15 32 26.8**	**+0.7**
	comp=Z,6.4nm,0.7s,baz=161,slow=4.0,SNR=5.6						
TLY	**Talaya**	**30.55**	**312**	*eP*	**P**	**15 32 26.8**	**+0.7**
TLY				pmax	pmax		
	comp=Z,6.0nm,0.6s						
TLY				MLR	MLR		
	comp=Z,60nm,11.0s						
TLY	**Talaya**	**30.55**	**312**	*eP*	**P**	**15 32 26.4**	**+0.3**
	comp=Z,7.1nm,0.7s						
CD2	**Chengdu**	**31.38**	**271**	P	**P**	**15 32 32.3**	**-1.3**
CD2				pmax	pmax		
	comp=Z,2.0nm,0.5s						
GTA	**Gaotai**	**32.48**	**288**	*eP*	**P**	**15 32 43.3**	**0.0**
GTA				pP	sP	15 32 54.5	-0.7
GTA				sP	pP	15 33 00.4	+8.7
GTA				pmax	pmax		
	comp=Z,4.0nm,0.8s						
KMI	**Kunming**

WMQ				sP	pP	15 34 14.2	+11
WMQ				S	S	15 40 05.6	+1.3
WMQ				SS	SS	15 42 58.3	-7.7
WMQ				pmax	pmax		
	comp=Z,8.0nm,0.8s						
WMQ				pmax	pmax		
	comp=Z,35nm,5.8s						
WMQ				LR	LR		
	comp=N,30nm,21.2s						
WMQ				LR	LR		
	comp=E,15nm,15.8s						
WMQ				LR	LR		
	comp=Z,30nm,15.8s						
CM31	**Chiang Mai Arr**	**41.04**	**256**	*e*P	**P**	**15 33 56.1**	**-0.1**
CMAR	**Chiang Mai Arr**	**41.04**	**256**	P	**P**	**15 33 55.9**	**-0.3**
	comp=Z,1.2nm,0.8s,baz=44,slow=7.6,SNR=11						
CMAR				LR	LR	15 50 45.7	
	comp=Z,38nm,20.6s,baz=28,slow=36						
CMAR	**Chiang Mai Arr**	**41.04**	**256**	P	**P**	**15 33 55.9**	**-0.3**
CMAR				pmax	pmax		
	comp=Z,2.0nm,0.7s						
CMAR				MLR	MLR		
	comp=Z,39nm,20.6s						
CM01	**Chiang Mai Arr**	**41.05**	**256**	*e*P	**P**	**15 33 56.5**	**+0.3**
LSA	**Lhasa**	**41.98**	**276**	*e*P	**P**	**15 34 05.5**	**+1.2**
LSA				pmax	pmax		
	comp=Z,5.0nm,0.9s						
LSA	**Lhasa**	**41.98**	**276**	*e*P	**P**	**15 34 05.5**	**+1.2**
	comp=Z,5.3nm,0.9s						
ZAA0	**Zalesovo Array**	**42.15**	**313**	*e*P	**P**	**15 34 04.5**	**-0.4**
ZAA0				*e*PcP	**PcP**	**15 35 57.7**	**-1.1**
ZAA1	**Zalesovo Array**	**42.15**	**313**	*e*P	**P**	**15 34 05.2**	**+0.4**
ZALV	**Zalesovo Beam**	**42.15**	**313**	P	**P**	**15 34 05.2**	**+0.4**
	comp=Z,12nm,0.7s,baz=91,slow=6.6,SNR=36						
ZALV				LR	LR	15 51 49.8	
	comp=Z,39nm,19.6s,baz=70,slow=36						
NVS	**Novosibirsk**	**43.09**	**314**	*e*P	**P**	**15 34 11.6**	**-0.8**
NRIK	**Noril'sk**	**43.75**	**336**	P	**P**	**15 34 19.2**	**+1.6**
	comp=Z,1.4nm,0.4s,baz=66,slow=6.0,SNR=4.9						
MK01	**Makanchi Array**	**44.22**	**303**	*e*P	**P**	**15 34 21.5**	**-0.3**
MK01				*e*PcP	**PcP**	**15 36 05.7**	**-0.3**
MK31	**Makanchi Array**	**44.23**	**303**	*e*P	**P**	**15 34 21.5**	**-0.3**
MK31	**Makanchi Array**	**44.23**	**303**	*e*P	**P**	**15 34 21.5**	**-0.3**
MK32	**Makanchi Array**	**44.23**	**303**	*e*P	**P**	**15 34 22.2**	**+0.5**
MKAR	**Makanchi Array**	**44.23**	**303**	P	**P**	**15 34 22.2**	**+0.5**
	comp=Z,5.0nm,0.7s,baz=88,slow=10.0,SNR=37						
MKAR				LR	LR	15 53 35.4	
	comp=Z,78nm,19.2s,baz=56,slow=37						
MKAR	**Makanchi Array**	**44.23**	**303**	*e*P	**P**	**15 34 21.9**	**+0.2**
MAKZ	**Makanchi**	**44.44**	**303**	*e*P	**P**	**15 34 22.9**	**-0.6**
MAKZ				pmax	pmax		
	comp=Z,5.0nm,0.8s						
MAKZ	**Makanchi**	**44.44**	**303**	*e*P	**P**	**15 34 22.9**	**-0.6**
	comp=Z,4.7nm,0.8s						
KSM	**Kuching**	**44.88**	**226**	*e*P	**P**	**15 34 28.0**	**+0.7**
	comp=Z,4.9nm,0.7s						
KURK	**Kurchatov**	**46.11**	**309**	P	**P**	**15 34 37.1**	**+0.5**
KURK				pmax	pmax		
	comp=Z,20nm,0.6s						
KURK	**Kurchatov**	**46.11**	**309**	*e*P	**P**	**15 34 36.1**	**-0.5**
	comp=Z,27nm,0.7s						
KURBB	**Kurchatov Arra**	**46.18**	**308**	P	**P**	**15 34 37.1**	**-0.1**
	comp=Z,20nm,0.6s,baz=84,slow=7.7,SNR=175						
PKIN	**Phulchoki**	**47.46**	**276**	*e*P	**P**	**15 34 47.4**	**-0.4**
	comp=Z,14nm,0.6s						
KKN	**Kakani**	**47.46**	**276**	*e*P	**P**	**15 34 48.2**	**+0.4**
	comp=Z,25nm,0.8s						
GKN	**Gorkha**	**47.88**	**277**	*e*P	**P**	**15 34 51.1**	**+0.1**
	comp=Z,77nm,0.8s						
KOLN	**Koldanda**	**48.81**	**277**	*e*P	**P**	**15 34 58.8**	**+0.6**
	comp=Z,22nm,0.7s						
PYUN	**Piuthan**	**49.16**	**278**	*e*P	**P**	**15 35 01.6**	**+0.7**
	comp=Z,96nm,1.0s						
MDM	**Murphy Dome**	**49.64**	**32**	*e*P	**P**	**15 35 05.2**	**+1.4**
	comp=Z,5.3nm,0.9s						
TKM2	**Tokmak 2**	**49.69**	**299**	*e*P	**P**	**15 35 05.2**	**+0.4**
TKM2				pmax	pmax		
	comp=Z,9.0nm,0.6s						
TKM2	**Tokmak 2**	**49.69**	**299**	*e*P	**P**	**15 35 05.2**	**+0.4**
	comp=Z,8.6nm,0.6s						
IL1	**Eielson Array**	**50.22**	**32**	*e*P	**P**	**15 35 07.7**	**-0.4**
ILAR	**Eielson Array**	**50.22**	**32**	P	**P**	**15 35 09.1**	**+0.9**
	comp=Z,2.0nm,0.8s,baz=268,slow=6.5,SNR=19						
ILB	**Eielson Array**	**50.22**	**32**	*e*P	**P**	**15 35 08.7**	**+0.5**
KSH	**Kashi**	**50.41**	**294**	P	**P**	**15 35 14.5**	**+4.4**
KSH				*e*pP	sP	15 35 27.0	+4.8
KSH				*e*sP	pP	15 35 32.3	+13
KSH				*e*ScP	**ScP**	**15 40 22.3**	**+0.1**
KSH				S	**S**	**15 42 25.3**	**+3.5**
KSH				pmax	pmax		
	comp=Z,62nm,4.6s						
KSH				LR	LR		
	comp=N,140nm,4.5s						
KSH				LR	LR		
	comp=E,120nm,5.9s						
AAK	**Ala-Archa**	**50.55**	**299**	P	**P**	**15 35 11.8**	**+0.6**
	comp=E,3.7nm,0.8s,baz=144,slow=3.6,SNR=8.9						
AAK	**Ala-Archa**	**50.55**	**299**	*ce*P	**P**	**15 35 11.6**	**+0.4**
AAK				pmax	pmax		
	comp=Z,9.0nm,0.9s						
AAK	**Ala-Archa**	**50.55**	**299**	*e*P	**P**	**15 35 11.2**	**+0.1**
	comp=Z,3.7nm,0.9s						
BVAR	**Borovoye Array**	**50.80**	**313**	P	**P**	**15 35 12.9**	**+0.1**
	comp=Z,4.4nm,0.5s,baz=76,slow=7.3,SNR=29						
BRVK	**Borovoye**	**50.86**	**313**	*c i*P	**P**	**15 35 13.3**	**+0.1**
BRVK				pmax	pmax		
	comp=Z,7.0nm,0.7s						
BRVK	**Borovoye**	**50.86**	**313**	*e*P	**P**	**15 35 13.2**	**+0.1**
	comp=Z,8.0nm,0.6s						
EKS2	**Erkin-Say**	**51.05**	**299**	*e*P	**P**	**15 35 15.0**	**+0.1**
EKS2				pmax	pmax		
	comp=Z,3.0nm,0.8s						
EKS2	**Erkin-Say**	**51.05**	**299**	*e*P	**P**	**15 35 15.0**	**+0.1**
	comp=Z,3.4nm,0.8s						
ZRNK	**Zerenda**	**51.64**	**313**	*e*P	**P**	**15 35 19.1**	**+0.1**
ZRNK				pmax	pmax		
	comp=Z,11nm,0.6s						
ZRNK	**Zerenda**	**51.64**	**313**	*e*P	**P**	**15 35 19.1**	**+0.1**
	comp=Z,11nm,0.6s						
KKAR	**Karatay Array**	**53.20**	**300**	*e*P	**P**	**15 35 31.1**	**+0.3**
KKAR	**Karatay Array**	**53.20**	**300**	*e*P	**P**	**15 35 31.1**	**+0.3**
INK	**Inuvik**	**55.12**	**27**	P	**P**	**15 35 44.3**	**0.0**
	comp=Z,0.8nm,0.7s,baz=267,slow=4.5,SNR=4.6						
INK	**Inuvik**	**55.12**	**27**	*e*P	**P**	**15 35 44.0**	**-0.3**
	comp=Z,12nm,1.8s						
SVE	**Sverdlovsk**	**55.45**	**319**	*e*P	**P**	**15 35 47.3**	**+0.4**
SVE				pmax	pmax		
	comp=Z,14nm,0.8s						
WRAB	**Tennant Creek**	**56.35**	**188**	‖ *i*P	**P**	**15 35 51.7**	**-1.9**
WR1	**Warramunga Arr**	**56.36**	**188**	*e*P	**P**	**15 35 52.5**	**-1.2**
	comp=Z,45nm,2.0s						
WRA	**Warramunga Arr**	**56.36**	**188**	P	**P**	**15 35 52.5**	**-1.2**
	comp=Z,1.4nm,0.4s,baz=5.5,slow=7.4,SNR=63						
ARU	**Arti**	**56.67**	**319**	P	**P**	**15 35 55.7**	**+0.1**
	comp=Z,12nm,0.7s,baz=79,slow=3.4,SNR=22						
ARU	**Arti**	**56.67**	**319**	*c i*P	**P**	**15 35 55.4**	**-0.2**
ARU						15 37 59.7	
ARU				S	**S**	**15 43 48.1**	**+2.2**
ARU				SS	**SS**	**15 47 33.4**	**+0.2**
ARU				pmax	pmax		
	comp=Z,18nm,1.0s						
ARU	**Arti**	**56.67**	**319**	*e*P	**P**	**15 35 55.4**	**-0.2**
	comp=Z,13nm,0.7s						
HYB	**Hyderabad**	**57.89**	**269**	*i*P	**P**	**15 36 05.0**	**+0.2**
ABKAR	**Akbulak array**	**58.14**	**310**	*e*P	**P**	**15 36 05.7**	**-0.4**
AKTO	**Aktyubinsk**	**58.90**	**312**	P	**P**	**15 36 11.1**	**-0.3**
	comp=Z,3.5nm,0.7s,baz=72,slow=7.8,SNR=11						
AS31	**Alice Springs**	**60.08**	**188**	*e*P	**P**	**15 36 18.9**	**-0.9**
	comp=Z,3.4nm,1.4s						
ASAR	**Alice Springs**	**60.09**	**188**	P	**P**	**15 36 18.4**	**-1.4**
	comp=Z,0.9nm,0.6s,baz=14,slow=6.6,SNR=8.8						
GEYT	**Alibeck**	**63.90**	**299**	P	**P**	**15 36 45.5**	**0.0**
	comp=Z,1.1nm,0.6s,baz=155,slow=7.8,SNR=3.2						
GEYT				LR	LR	16 05 33.0	
	comp=Z,40nm,19.2s,baz=105,slow=37						
ARA0	**ARCESS Array S**	**64.52**	**339**	*e*P	**P**	**15 36 47.9**	**-1.1**
ARCES	**ARCESS Array B**	**64.52**	**339**	P	**P**	**15 36 47.9**	**-1.1**
	comp=Z,1.2nm,0.7s,baz=64,slow=8.2,SNR=3.5						
ARCES				LR	LR	16 10 55.1	
	comp=Z,30nm,18.8s,baz=58,slow=41						
YKA	**Yellowknife Ar**	**64.54**	**30**	P	**P**	**15 36 49.4**	**+0.3**
	comp=Z,0.5nm,0.7s,baz=301,slow=6.8,SNR=3.8						
YKB5	**Yellowknife Ar**	**64.54**	**30**	*e*P	**P**	**15 36 49.4**	**+0.3**
VRH	**Novokhopyorsk**	**67.88**	**318**	*e*P	**P**	**15 37 10.5**	**-0.2**
VRH				pmax	pmax		
	comp=Z,6.0nm,0.5s						
LPSR	**Galich'ya Gora**	**68.62**	**320**	*e*P	**P**	**15 37 14.7**	**-0.7**
LPSR				pmax	pmax		
	comp=Z,10.0nm,1.3s						
VSR	**Storozhevoye**	**69.24**	**319**	*e*P	**P**	**15 37 19.0**	**-0.2**
VSR				pmax	pmax		
	comp=Z,6.0nm,0.4s						
FIA0	**FINESS Array S**	**69.27**	**332**	*e*P	**P**	**15 37 19.7**	**+0.5**
FIA0	**FINESS Array S**	**69.27**	**332**	*e*P	**P**	**15 37 19.7**	**+0.5**
FINES	**FINESS Array B**	**69.27**	**332**	P	**P**	**15 37 19.7**	**+0.5**
	comp=Z,2.8nm,0.7s,baz=80,slow=10,SNR=8.9						
FINES				LR	LR	16 12 28.7	
	comp=Z,58nm,18.0s,baz=197,slow=40						
VSU	**Vasula**	**70.88**	**330**	*d i*P	**P**	**15 37 29.4**	**+0.3**
VSU				pmax	pmax		
	comp=Z,21nm,1.2s						
KBZ	**Khabaz**	**71.11**	**311**	P	**P**	**15 37 31.2**	**+0.4**
	comp=Z,2.6nm,0.8s,baz=82,slow=2.7,SNR=7.4						
KIV	**Kislovodsk**	**71.12**	**311**	*e*P	**P**	**15 37 32.3**	**+1.3**
KIV				pmax	pmax		
	comp=Z,7.0nm,0.9s						
KIV				MLR	MLR		
	comp=Z,36nm,17.0s						
KIV	**Kislovodsk**	**71.12**	**311**	*e*P	**P**	**15 37 31.8**	**+0.7**
	comp=Z,12nm,0.7s						
AKASG	**Malin Array Be**	**74.64**	**322**	P	**P**	**15 37 51.5**	**-0.1**
	comp=Z,2.7nm,0.5s,baz=46,slow=6.0,SNR=12						
AKASG				LR	LR	16 13 43.6	
	comp=Z,69nm,19.1s,baz=205,slow=38						
KIEV	**Kiev**	**74.66**	**322** ‖	*e*P	**P**	**15 37 51.0**	**-0.7**
KIEV				pmax	pmax		
	comp=Z,4.0nm,0.7s						
NB2	**NORSAR Subarra**	**74.69**	**337**	P	**P**	**15 37 51.9**	**+0.1**
	comp=Z,3.9nm,0.9s,baz=40,slow=6.2						
NB200	**NORSAR Array S**	**74.69**	**337**	*e*P	**P**	**15 37 52.1**	**+0.3**
NOA	**NORSAR Array B**	**74.69**	**337**	P	**P**	**15 37 52.1**	**+0.3**
	comp=Z,2.0nm,0.7s,baz=40,slow=5.9,SNR=9.4						
NOA				LR	LR	16 13 54.7	
	comp=Z,40nm,19.0s,baz=40,slow=38						
FCC	**Fort Churchill**	**74.73**	**26**	*e*P	**P**	**15 37 53.5**	**+1.5**
FCC				pmax	pmax		
	comp=Z,5.0nm,0.8s						
FCC	**Fort Churchill**	**74.73**	**26**	*e*P	**P**	**15 37 53.5**	**+1.5**
	comp=Z,4.7nm,0.8s						
LRM	**Limekiln Ridge**	**74.83**	**44**	*e*P	**P**	**15 37 54.0**	**+0.8**
NV01	**Mina Array Sit**	**75.63**	**53**	*e*P	**P**	**15 37 58.8**	**+1.0**
NVAR	**Mina Array Bea**	**75.63**	**53**	P	**P**	**15 37 58.9**	**+1.1**
	comp=Z,1.3nm,0.7s,baz=289,slow=6.4,SNR=9.6						
H17A	**Grant Village**	**76.75**	**44**	*e*P	**P**	**15 38 06.5**	**+2.3**
	comp=Z,9.2nm,1.4s						
PD31	**Pinedale Array**	**78.35**	**45**	*e*P	**P**	**15 38 12.9**	**-0.2**
PDAR	**Pinedale Array**	**78.35**	**45**	P	**P**	**15 38 13.5**	**+0.4**
	comp=Z,0.6nm,0.6s,baz=280,slow=2.2,SNR=8.2						
BUR08	**Bucovina Ar. S**	**78.64**	**322**	*e*P	**P**	**15 38 14.6**	**+0.2**
BR101	**Keskin Array S**	**79.07**	**311**	*e*P	**P**	**15 38 17.9**	**+0.9**
BRTR	**Keskin Array B**	**79.07**	**311**	P	**P**	**15 38 17.9**	**+0.9**
	comp=Z,1.1nm,0.7s,baz=103,slow=4.0,SNR=7.2						
BRTR	**Keskin Array B**	**79.07**	**311**	*i* P	**P**	**15 38 17.8**	**+0.8**
BRTR				pmax	pmax		
	comp=Z,1.0nm,0.7s						
BR231	**Keskin MP Arra**	**79.52**	**312**	*e*P	**P**	**15 38 17.7**	**-1.8**
LCMT	**Little Creek M**	**79.70**	**52**	*e*P	**P**	**15 38 21.0**	**+0.5**
	comp=Z,2.2nm,0.8s						
SRU	**San Rafael Swe**	**80.08**	**49**	*e*P	**P**	**15 38 23.3**	**+0.7**
SRU				pmax	pmax		
	comp=Z,4.0nm,0.8s						
SRU	**San Rafael Swe**	**80.08**	**49**	*e*P	**P**	**15 38 23.3**	**+0.7**
	comp=Z,3.5nm,0.8s						
DPC	**Dobruska-Polom**	**80.86**	**328**	*e*P	**P**	**15 38 26.9**	**+0.5**
DPC				*e*pP	**sP**	**15 38 39.3**	**+0.5**
DPC	**Dobruska-Polom**	**80.86**	**328**	*e*P	**P**	**15 38 26.9**	**+0.5**
DPC				*e*		15 38 39.3	
KRLC	**Kraliky**	**80.87**	**327**	*e*P	**P**	**15 38 26.8**	**+0.4**
KRLC				*e*pP	**sP**	**15 38 39.0**	**+0.2**
KRLC	**Kraliky**	**80.87**	**327**	*e*P	**P**	**15 38 26.8**	**+0.4**
KRLC				*e*		15 38 39.0	
BRG	**Berggiesshubel**	**81.48**	**329**	*e*P	sP	15 38 42.4	+0.4
	comp=Z,4.5nm,1.1s						
BRG	**Berggiesshubel**	**81.48**	**329**	*e*P	**sP**	**15 38 42.4**	**+0.4**
BRG				pmax	pmax		
	comp=Z,6.0nm,1.1s						
CLL	**Collm**	**81.53**	**330**	*i* P	**P**	**15 38 28.7**	**-1.1**
	comp=Z,4.0nm,0.9s						
CLL				*i* pP	**sP**	**15 38 41.6**	**-0.6**
	comp=Z,9.0nm,1.0s						
CLL	**Collm**	**81.53**	**330**	*e*P	**P**	**15 38 28.8**	**-1.1**
CLL				pmax	pmax		
	comp=Z,9.0nm,1.0s						
CLL	**Collm**	**81.53**	**330**	*e*P	**P**	**15 38 28.8**	**-1.0**
	comp=Z,8.6nm,1.0s						
KHC	**Kasperske Hory**	**82.96**	**328**	*e*P	**P**	**15 38 37.5**	**+0.1**
KHC				*e*pP	**sP**	**15 38 49.9**	**+0.1**
KHC	**Kasperske Hory**	**82.96**	**328**	*e*P	**P**	**15 38 37.0**	**-0.4**
KHC				pmax	pmax		
	comp=Z,3.0nm,1.1s						
KHC	**Kasperske Hory**	**82.96**	**328**	*e*P	**P**	**15 38 37.0**	**-0.4**
	comp=Z,2.6nm,1.1s						
GERES	**GERESS Array B**	**83.12**	**328**	P	**P**	**15 38 38.4**	**+0.1**
	comp=Z,0.9nm,0.6s,baz=29,slow=6.1,SNR=5.1						
GEA0	**GERESS Array S**	**83.13**	**328**	*e*P	**P**	**15 38 36.6**	**-1.7**
GRFO	**Grafenberg**	**83.50**	**330**	*e*P	**P**	**15 38 38.0**	**-2.1**
GRFO				pmax	pmax		
	comp=Z,9.0nm,0.8s						
GRFO	**Grafenberg**	**83.50**	**330**	*e*P	**P**	**15 38 38.0**	**-2.1**
	comp=Z,8.9nm,0.8s						
PPT	**Papeete**	**84.60**	**116**	LR	LR	16 09 20.4	
	comp=Z,76nm,19.6s,baz=357,slow=30						
ANMO	**Albuquerque**	**85.25**	**50** ‖	*i* P	**P**	**15 38 49.5**	**0.0**
ANMO				pmax	pmax		
	comp=Z,5.0nm,2.5s						
BFO	**Black Forest**	**85.74**	**331**	*i* P	**P**	**15 38 52.1**	**+0.6**
BFO	**Black Forest**	**85.74**	**331**	*e*P	**P**	**15 38 50.5**	**-1.0**
	comp=Z,7.4nm,0.9s						
LTX	**Lajitas**	**90.77**	**52**	*e*P	**P**	**15 39 16.8**	**+0.8**
LTX	**Lajitas**	**90.77**	**52**	*e*P	**P**	**15 39 16.8**	**+0.8**
TXAR	**Lajitas Array**	**90.77**	**52**	P	**P**	**15 39 16.8**	**+0.8**
	comp=Z,0.3nm,0.6s,baz=284,slow=5.0,SNR=4.1						
TXAR	**Lajitas Array**	**90.77**	**52**	P	**P**	**15 39 16.8**	**+0.8**
TXAR				pmax	pmax		
	comp=Z,1.0nm,0.9s						
TOA1	**Torodi Ar. Sit**	**117.59**	**314**	*e*PKPdf	**PKPdf**	**15 44 57.2**	**-1.8**
TORD	**Torodi Ar. Bea**	**117.59**	**314**	PKP	**PKPdf**	**15 44 57.2**	**-1.8**
	comp=Z,0.2nm,0.6s,baz=15,slow=2.6,SNR=3.0						
LPAZ	**La Paz**	**147.29**	**60**	PKPbc	**PKPbc**	**15 45 56.7**	**-0.5**
	comp=Z,1.5nm,0.7s,baz=239,slow=1.9,SNR=5.4						

JMA 12 15:34:20.5±0.1, 36°.36N×140°.97E, h38^{km}±1^{km}, M2.9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.41**	**308**	P	Pn	15 34 29.8	+0.1
JHO				S	Sn	15 34 36.1	-0.5
JYT	**Yasato**	**0.64**	**258**	P	Pn	15 34 33.0	-0.2
JYT				S	Sn	15 34 42.2	+0.1
ONAJ	**Iwakimizuishiy**	**0.75**	**349**	P	Pn	15 34 34.5	-0.2
ONAJ				S	Sn	15 34 44.4	-0.5
JFK	**Kawauchi**	**1.01**	**356**	P	Pn	15 34 37.9	-0.2
JFK				*e*S	Sn	15 34 50.3	-0.8
JSB	**Shiboa**	**1.04**	**306**	P	Pn	15 34 39.6	+1.0
MAT	**Matsushiro**	**2.23**	**275**	P	Pn	15 34 56.5	+1.5
MAT				S	Sn	15 35 22.6	+1.3

DDA 12 15:39:21.0, 40°.68N×40°.53E, h7^{km}, Md2.5, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DBAD	**Bademkaya**	**0.95**	**69**	*i* P	Pg	15 39 39.3	+0.1
DBAD				*i* S	Sb	15 39 53.0	+0.3
DAGI	**Agillar**	**1.13**	**69**	*i* P	Pg	15 39 42.4	-0.2
DAGI				*i* S	Sn	15 39 58.5	-0.6
GUDG	**Gudauri**	**3.46**	**58**	P	Pb	15 40 22.8	+0.1

*ISCJB **12** 15:42:42.6±0.3, 6°.97S±0°.05×155°.74E±0°.05, h62^{km}, mb4.7/40, Error ellipse: s-maj=7.3km s-min=6.3km az=140.7*
*NEIC **12** 15:42:47.5±0.8, 7°.08S×155°.81E, h98^{km}±7^{km}, mb4.7/28, Error ellipse: s-maj=6.7km s-min=5.9km az=207.0*
*IDC **12** 15:42:49.0±1.9, 7°.08S×155°.80E, h107^{km}±18^{km}, mb4.0/14, mb1 4.1/17, mb1mx3.9/44, mbtmp4.4/17, MS3.4/7, Ms1 3.4/7, ms1mx3.0/40, Error ellipse: s-maj=15.3km s-min=12.4km az=172.0*

ISC 12 15:42:44.1±0.4, 6°.87S±0°.06×155°.82E±0°.05, h62^{km}, n74, σ1°.82/77, mb4.6/40, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RABL	**Rabaul**	**4.50**	**306**	*e*Pn	Pn	15 43 56.2	+6.3
RABL				*e*Sn	**Sn**	**15 44 41.5**	**+0.4**
HNR	**Honiara**	**4.82**	**122**	P	**Pn**	**15 43 56.2**	**+2.1**
	12nm,0.3s,baz=266,slow=5.7,SNR=11						
HNR				S	**Sn**	**15 44 53.0**	**+4.3**
	23nm,0.3s,baz=149,slow=23,SNR=5.8						
HNR				LR	LR	15 45 59.2	
	comp=Z,297nm,18.2s,baz=306,slow=40						
HNR	**Honiara**	**4.82**	**122**	*e*P	**Pn**	**15 43 56.0**	**+1.9**
HNR				*e*S	**Sn**	**15 44 56.0**	**+7.4**
PMG	**Port Moresby**	**8.93**	**253**	P	**Pn**	**15 44 54.5**	**+4.0**
	16nm,0.3s,baz=59,slow=9.7,SNR=37						
PMG				S	**Sn**	**15 46 34.5**	**+4.8**
	1.7nm,0.3s,baz=358,slow=13,SNR=3.9						
PMG				LR	LR	15 48 06.4	
	comp=Z,258nm,21.3s,baz=38,slow=36						
PMG	**Port Moresby**	**8.93**	**253**	*e*Pn	**Pn**	**15 44 51.5**	**+1.1**
PMG				S	**Sn**	**15 46 34.5**	**+4.8**
PATS	**Pohnpei**	**13.84**	**10**	*e*Pn	**Pn**	**15 45 58.0**	**+0.6**
COEN	**Coen**	**14.28**	**239**	*e*Pn	**Pn**	**15 46 03.9**	**+0.6**
CTA	**Charters Tower**	**16.09**	**214**	P	**P**	**15 46 28.2**	**-0.5**
	0.5nm,0.3s,baz=37,slow=15,SNR=14						
CTAO	**Charters Tower**	**16.09**	**214**	*e*Pn	**P**	**15 46 28.5**	**-0.2**
	50nm,0.8s						
DZM	**Mont Dzumac**	**18.27**	**147**	LR	LR	15 53 15.6	
	comp=Z,71nm,20.3s,baz=319,slow=35						
ARMA	**Armidale**	**23.75**	**189**	*e*P	**P**	**15 47 50.3**	**-0.7**
	20nm,1.4s						
FAKI	**Fak Fak**	**23.80**	**278**	*e*P	**P**	**15 47 50.5**	**-1.0**
	74nm,1.8s						
MSVF	**Nonsavu**	**24.23**	**118**	*e*P	**P**	**15 47 55.8**	**+0.4**
	53nm,1.7s						
WRAB	**Tennant Creek**	**24.55**	**236**	*e*P	**P**	**15 47 55.5**	**-2.7**
	10nm,1.0s						
WB2	**Warramunga Arr**	**24.55**	**236**	*e*P	**P**	**15 47 56.3**	**-1.9**
	30nm,1.6s						
WR1	**Warramunga Arr**	**24.56**	**236**	*e*P	**P**	**15 47 57.4**	**-0.9**
	41nm,1.8s						
WRA	**Warramunga Arr**	**24.56**	**236**	P	**P**	**15 47 57.4**	**-0.9**
	3.6nm,0.7s,baz=59,slow=9.3,SNR=35						
MTN	**Manton Dam**	**25.02**	**254**	*e*P	**P**	**15 48 02.2**	**-0.3**
	30nm,1.0s						
AS01	**Alice Springs**	**26.83**	**229**	*e*P	**P**	**15 48 16.4**	**-2.6**
AS31	**Alice Springs**	**26.87**	**229**	*e*P	**P**	**15 48 17.5**	**-1.7**
	1.2nm,0.8s						
ASAR	**Alice Springs**	**26.87**	**229**	P	**P**	**15 48 17.8**	**-1.5**
	1.7nm,0.5s,baz=59,slow=9.9,SNR=27						
ASAR				PcP	**PcP**	**15 51 40.2**	**-0.3**
	1.1nm,0.6s,baz=61,slow=2.5,SNR=6.3						
ASAR				LR	LR	15 58 18.8	
	comp=Z,120nm,19.2s,baz=71,slow=35						
STKA	**Stephens Creek**	**28.20**	**206**	P	**P**	**15 48 30.9**	**-0.1**
	4.2nm,0.8s,baz=20,slow=14,SNR=5.4						
STKA				LR	LR	15 59 13.6	
	comp=Z,143nm,18.9s,baz=22,slow=35						
STKA	**Stephens Creek**	**28.20**	**206**	*e*P	**P**	**15 48 30.3**	**-0.7**
	8.1nm,1.8s						
FITZ	**Fitzroy Crossi**	**31.45**	**246**	P	**P**	**15 48 58.7**	**-1.2**
	9.7nm,0.6s,baz=73,slow=7.3,SNR=35						
FITZ				LR	LR	16 01 26.4	
	comp=Z,90nm,19.5s,baz=66,slow=36						
FITZ	**Fitzroy Crossi**	**31.45**	**246**	*e*P	**P**	**15 48 58.5**	**-1.4**
	12nm,0.8s						
AFI	**Afiamalu**	**32.60**	**105**	*e*P	**P**	**15 49 07.8**	**-2.4**
	100nm,1.5s						
RAO	**Raoul Island**	**33.29**	**135**	*e*P	**P**	**15 49 12.2**	**-3.8**
	460nm,0.6s						
MMRI	**Maumere**	**33.31**	**265**	*e*P	**P**	**15 49 16.5**	**+0.2**
	61nm,1.3s						
LUWI	**Luwuk**	**33.45**	**279**	*e*P	**P**	**15 49 17.9**	**+0.3**
	23nm,0.9s						
KAPI	**Kappang**	**35.91**	**271**	P	**P**	**15 49 38.4**	**-0.3**
	5.4nm,0.6s,baz=78,slow=8.9,SNR=3.9						
KAPI	**Kappang**	**35.91**	**271**	*e*P	**P**	**15 49 38.1**	**-0.6**
	36nm,1.6s						
THZ	**Tophouse**	**37.92**	**159**	*e*P	**P**	**15 49 54.5**	**-1.0**
	91nm,1.6s						
SNZO	**South Karori**	**38.20**	**157**	*e*P	**P**	**15 49 56.0**	**-1.8**
	86nm,1.4s

*IDC **12** 15:43:35.1±0.8, 54°.80N×157°.08W, h0km, mb4.2/26, mb1 4.3/28, mb1mx4.2/52, mbtmp4.2/28, ML4.5/2, MS3.5/6, Ms1 3.5/6, ms1mx3.1/45, Error ellipse: s-maj=20.1km s-min=12.2km az=6.0*
*NEIC **12** 15:43:36.4, 54°.62N×156°.72W, h21km, mb4.5/20, ML3.9(AEIC), After AEIC.*
*ISCJB **12** 15:43:37.2±0.3, 55°.02N±0°.03×156°.91W±0°.04, h24km, mb4.3/49, MS3.5/6, Error ellipse: s-maj=5.2km s-min=2.5km az=155.4*
ISC 12 15:43:38.9±0.5, 54°.93N±0°.06×156°.93W±0°.04, h24km, n176, σ1§99/189, mb4.4/49, MS3.3/6, South of Alaska

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHGN	**Chignik**	**1.61**	**329**	*e*Pn	**Pn**	**15 44 05.7**	**0.0**
CHGN				S	**Sb**	**15 44 28.5**	**+0.8**
VNHG	**Veniaminof 1**	**1.81**	**316**	P	**Pb**	**15 44 09.9**	**-1.5**
VNNF	**Veniaminof 3**	**1.92**	**316**	P	**Pb**	**15 44 11.7**	**-1.5**
VNWF	**Veniaminof 8**	**1.93**	**310**	P	**Pb**	**15 44 11.3**	**-2.1**
ANPB	**Aniakchak Plen**	**2.02**	**338**	P	**Pn**	**15 44 12.4**	**+0.9**
SDPT	**Sand Point**	**2.08**	**283**	*e*Pn	**Pn**	**15 44 10.2**	**-2.0**
SDPT				S	**Sb**	**15 44 38.4**	**-2.9**
ANNE	**Aniakchak Nort**	**2.08**	**343**	P	**Pn**	**15 44 13.2**	**+0.8**
DOL	**Dolgoi Island**	**2.85**	**276**	P	**Pn**	**15 44 22.0**	**-0.8**
DOL				S	**Sn**	**15 44 56.2**	**-0.1**
PS4A	**Pavlof South-4**	**2.86**	**280**	P	**Pn**	**15 44 22.0**	**-0.9**
PS4A				S	**Sn**	**15 44 58.1**	**+1.5**
OHAK	**Old Harbor**	**3.07**	**40**	*e*Pn	**Pn**	**15 44 24.8**	**-1.0**
DRIA	**Deer Island**	**3.08**	**273**	P	**Pn**	**15 44 24.3**	**-1.7**
DT1	**Dutton Round H**	**3.09**	**275**	*e*Pn	**Pn**	**15 44 24.6**	**-1.5**
KABR	**Katmai Barrier**	**3.38**	**18**	P	**Pn**	**15 44 30.8**	**+0.6**
KELA	**Mount Kelaz**	**3.58**	**10**	P	**Pn**	**15 44 33.5**	**+0.7**
KAWH	**Katmai**	**3.65**	**18**	P	**Pn**	**15 44 34.5**	**+0.6**
KDAK	**Kodiak Island**	**3.74**	**38**	Pn	Pb	15 44 49.1	+4.9
	3.5nm,0.3s,baz=230,slow=6.8,SNR=28						
KDAK	**Kodiak Island**	**3.74**	**38**	*e*Pn	**Pn**	**15 44 34.0**	**-1.0**
KDAK				*e*Pg	Pb	15 44 49.1	+4.9
KDAK				*e*Sn	**Sn**	**15 45 19.3**	**+1.1**
FALS	**False Pass**	**3.75**	**271**	*e*Pn	**Pn**	**15 44 33.7**	**-1.5**
KAHC	**Katmai Hardscr**	**3.87**	**15**	P	**Pn**	**15 44 37.5**	**+0.6**
ISLZ	**Isanotski Laza**	**3.93**	**270**	P	**Pn**	**15 44 36.4**	**-1.3**
SSLN	**Shishaldin Nor**	**4.09**	**271**	P	**Pn**	**15 44 39.0**	**-0.8**
SSLS	**Shishaldin Sou**	**4.10**	**270**	P	**Pn**	**15 44 39.0**	**-1.0**
FOSS	**Fourpeaked Sta**	**4.26**	**23**	*e*Pn	**Pn**	**15 44 42.8**	**+0.6**
CDD	**Cape Douglas**	**4.39**	**23**	P	**Pn**	**15 44 44.4**	**+0.3**
WESN	**West Dahl Nort**	**4.45**	**268**	*e*Pn	**Pn**	**15 44 44.0**	**-0.8**
MCNL	**McNeil River**	**4.49**	**17**	P	**Pn**	**15 44 45.8**	**+0.4**
WEBT	**Westdahl Beart**	**4.55**	**269**	P	**Pn**	**15 44 45.5**	**-0.7**
AUH	**Augustine H**	**4.83**	**22**	P	**Pn**	**15 44 51.4**	**+1.3**
AKUT	**Akutan**	**5.21**	**265**	*e*Pn	**Pn**	**15 44 54.3**	**-1.0**
AKUT				*e*Sn	**Sn**	**15 45 48.7**	**-5.9**
HOM	**Homer**	**5.53**	**29**	*e*Pn	**Pn**	**15 44 57.7**	**-1.9**
HOM				*e*Sn	**Sn**	**15 46 01.2**	**-0.7**
UNV	**Unalaska Valle**	**5.70**	**263**	*e*Pn	**Pn**	**15 44 59.6**	**-2.3**
UNV				*e*Sn	**Sn**	**15 46 01.5**	**-5.1**
MTBL	**Makushin Table**	**5.77**	**264**	*e*Pn	**Pn**	**15 45 00.5**	**-2.5**
BRLK	**Bradley Lake**	**5.84**	**32**	P	**Pn**	**15 45 02.9**	**-1.0**
MSW	**Makushin Switc**	**5.84**	**264**	P	**Pn**	**15 45 02.2**	**-1.8**
RSO	**Redoubt South**	**5.98**	**20**	*e*Pn	**Pn**	**15 45 07.0**	**+1.1**
RDWB	**Redoubt West**	**5.98**	**20**	P	**Pn**	**15 45 06.5**	**+0.5**
NCT	**North Crescent**	**6.03**	**19**	*e*Pn	**Pn**	**15 45 07.2**	**+0.6**
SVW2	**Sparrevohn**	**6.22**	**6**	*e*Pn	**Pn**	**15 45 08.3**	**-0.8**
SEW	**Seward**	**6.56**	**35**	*e*Pn	**Pn**	**15 45 12.6**	**-1.1**
SEW				*e*Sn	**Sn**	**15 46 21.9**	**-5.8**
CKL	**Chakachamna La**	**6.73**	**19**	P	**Pn**	**15 45 16.4**	**+0.2**
SPWE	**Spurr West**	**6.76**	**18**	P	**Pn**	**15 45 17.5**	**+0.8**
SPU	**Mount Spurr**	**6.78**	**20**	*e*Pn	**Pn**	**15 45 16.9**	**+0.2**
SPU				*e*Sn	**Sn**	**15 46 34.1**	**+1.1**
STLK	**Strandline Lak**	**7.11**	**20**	P	**Pn**	**15 45 20.7**	**-0.7**
RC01	**Rabbit Creek A**	**7.25**	**29**	*e*Pn	**Pn**	**15 45 23.0**	**-0.2**
RC01				*e*Sn	**Sn**	**15 46 36.4**	**-8.4**
MID	**Middleton Isla**	**7.30**	**48**	*e*Pn	**Pn**	**15 45 23.8**	**-0.1**
PMR	**Palmer**	**7.83**	**28**	*e*Pn	**Pn**	**15 45 28.1**	**-3.0**
TT01	**Tatalina**	**8.01**	**3**	P	**Pn**	**15 45 32.7**	**-0.9**
TTA	**Tatalina**	**8.04**	**3**	*e*Pn	**Pn**	**15 45 33.8**	**-0.2**
EYAK	**Cordova Ski Ar**	**8.21**	**42**	*e*Pn	**Pn**	**15 45 35.9**	**-0.4**
EYAK				*e*Sn	**Sn**	**15 47 04.6**	**-3.5**
SML	**Sawmill**	**8.23**	**30**	P	**Pn**	**15 45 35.7**	**-1.0**
PPLA	**Purkeypile**	**8.35**	**15**	*e*Pn	**Pn**	**15 45 39.6**	**+1.2**
RAGM	**Ragged Mountai**	**8.54**	**45**	*e*Pn	**Pn**	**15 45 39.4**	**-1.5**
RAGM				*e*Sn	**Sn**	**15 47 13.0**	**-3.4**
SCM	**Sheep Creek Mo**	**8.55**	**32**	P	**Pn**	**15 45 39.7**	**-1.4**
SCM				S	**Sn**	**15 47 15.2**	**-1.6**
DIV	**Divide**	**8.57**	**39**	*e*Pn	**Pn**	**15 45 42.1**	**+0.8**
DIV				*e*Sn	**Sn**	**15 47 13.0**	**-4.1**
SUCK	**Suckling Hills**	**8.75**	**49**	P	**Pn**	**15 45 41.3**	**-2.4**
KLU	**Klutina**	**8.76**	**37**	*e*Pn	**Pn**	**15 45 43.4**	**-0.6**
KLU				*e*Sn	**Sn**	**15 47 15.7**	**-6.3**
CAST	**Castle Rocks**	**8.86**	**14**	*e*Pn	**Pn**	**15 45 45.3**	**-0.1**
BMRM	**Bremner River**	**8.91**	**42**	P	**Pn**	**15 45 43.8**	**-2.1**
BMRM				*e*Sn	Sn	15 47 15.8	-10
KTH	**Kantishna Hill**	**9.17**	**17**	*e*Pn	**Pn**	**15 45 49.1**	**-0.4**
TRF	**Thorofare Moun**	**9.19**	**19**	*e*Pn	**Pn**	**15 45 48.5**	**-1.4**
KULT	**Kultieth River**	**9.29**	**49**	P	**Pn**	**15 45 48.9**	**-2.4**
RND	**Reindeer**	**9.45**	**23**	*e*Pn	**Pn**	**15 45 52.6**	**-0.7**
RND				*e*Sn	**Sn**	**15 47 34.2**	**-4.5**
BARK	**Barkley Ridge**	**9.47**	**49**	*e*Pn	**Pn**	**15 45 52.1**	**-1.6**
BARK				*e*Sn	**Sn**	**15 47 36.5**	**-2.8**
VRDI	**Verde Repeater**	**9.51**	**43**	P	**Pn**	**15 45 51.9**	**-2.4**
BPAW	**Bear Paw Mtn.**	**9.67**	**16**	*e*Pn	**Pn**	**15 45 55.2**	**-1.2**
MCK	**McKinley**	**9.71**	**22**	*e*Pn	**Pn**	**15 45 56.3**	**-0.7**
KIAG	**Kiagna River**	**9.79**	**46**	P	**Pn**	**15 45 56.3**	**-1.8**
BALM	**Baldy**	**9.85**	**46**	*e*Pn	**Pn**	**15 45 57.3**	**-1.7**
BALM				*e*Sn	**Sn**	**15 47 43.5**	**-5.2**
PAX	**Paxson**	**9.98**	**32**	*e*Pn	**Pn**	**15 46 00.6**	**-0.1**
PAX				*e*Sn	**Sn**	**15 47 47.3**	**-4.5**
BWN	**Browne**	**10.00**	**19**	*e*Pn	**Pn**	**15 45 59.6**	**-1.3**
YKU2	**Yakutat**	**10.41**	**57**	*e*Pn	**Pn**	**15 46 05.7**	**-0.7**
WRH	**Wood River Hil**	**10.54**	**21**	*e*Pn	**Pn**	**15 46 05.6**	**-2.6**
MLY	**Manley**	**10.59**	**14**	*e*Pn	**Pn**	**15 46 07.0**	**-1.9**
CCB	**Clear Creek Bu**	**10.76**	**21**	*e*Pn	**Pn**	**15 46 08.3**	**-2.9**
DOT	**Dot Lake**	**10.91**	**32**	*e*Pn	**Pn**	**15 46 13.7**	**+0.3**
MDM	**Murphy Dome**	**10.95**	**20**	*e*Pn	**Pn**	**15 46 11.4**	**-2.4**
IL1	**Eielson Array**	**11.06**	**23**	*e*Pn	**Pn**	**15 46 13.1**	**-2.3**
ILAR	**Eielson Array**	**11.06**	**23**	Pn	**Pn**	**15 46 12.2**	**-3.3**
	1.3nm,0.3s,baz=215,slow=12,SNR=38						
ILAR				Sn	**Sn**	**15 48 13.4**	**-4.8**
	0.2nm,0.3s,baz=212,slow=19,SNR=3.2						
ILAR				LR	LR	15 51 09.4	
	comp=Z,325nm,18.1s,baz=218,slow=40						
ILB	**Eielson Array**	**11.06**	**23**	*e*Pn	**Pn**	**15 46 12.6**	**-2.9**
ILB				*e*Sn	**Sn**	**15 48 13.4**	**-4.8**
SKAG	**Skagway**	**12.53**	**60**	*e*Pn	**Pn**	**15 46 36.8**	**+1.3**
EGAK	**Eagle**	**12.61**	**32**	*e*Pn	**Pn**	**15 46 36.6**	**+0.1**
DAWY	**Dawson**	**12.72**	**37**	*e*Pn	**Pn**	**15 46 38.5**	**+0.5**
H02S1	**DAWSON INLET T**	**14.44**	**87**	T	T	16 01 46.1	
	SNR=6.3						
DLBC	**Dease Lake**	**15.14**	**66**	Pn	**P**	**15 47 16.3**	**+0.3**
	0.0nm,0.3s,baz=252,slow=21,SNR=3.7						
DLBC	**Dease Lake**	**15.14**	**66**	*e*Pn	**P**	**15 47 13.3**	**-2.7**
	12nm,1.4s						
INK	**Inuvik**	**17.25**	**30**	Pn	**Pn**	**15 47 37.5**	**-0.2**
	0.9nm,0.3s,baz=237,slow=13,SNR=29						
INK	**Inuvik**	**17.25**	**30**	*e*Pn	**Pn**	**15 47 37.6**	**-0.2**
	19nm,0.8s						
BBB	**Bella Bella**	**17.28**	**87**	LR	LR	15 52 43.4	
	comp=Z,119nm,18.3s,baz=245,slow=32						
BILL	**Bilibino**	**21.49**	**322**	*e*P	**P**	**15 48 25.0**	**-0.4**
	15nm,0.9s						
YKA	**Yellowknife Ar**	**22.86**	**54**	P	**P**	**15 48 40.8**	**+0.7**
	1.0nm,0.7s,baz=272,slow=9.4,SNR=11						
YKB5	**Yellowknife Ar**	**22.86**	**54**	*e*P	**P**	**15 48 41.2**	**+1.1**
NEW	**Newport**	**25.33**	**89**	P	**P**	**15 49 04.2**	**+0.7**
	1.8nm,0.5s,baz=309,slow=6.5,SNR=3.2						
NEW				LR	LR	15 57 24.0	
	comp=Z,76nm,19.3s,baz=319,slow=33						
YBH	**Yreka Blue Hor**	**26.00**	**106**	LR	LR	15 56 57.4	
	comp=Z,81nm,19.0s,baz=300,slow=31						
PEA1	**Petropavlovsk-**	**26.37**	**285**	*e*P	**P**	**15 49 12.4**	**-0.4**
PEA0	**Petropavlovsk-**	**26.37**	**285**	*e*P	**P**	**15 49 11.7**	**-1.2**
PETK	**Petropavlovsk-**	**26.37**	**285**	P	**P**	**15 49 12.4**	**-0.5**
	8.6nm,0.8s,baz=67,slow=14,SNR=7.0						
SEY	**Seymchan**	**26.69**	**308**	P	**P**	**15 49 15.1**	**-0.6**
	2.1nm,0.7s,baz=106,slow=9.4,SNR=9.5						
YBMT	**Yellow Bay**	**27.33**	**87**	*e*P	**P**	**15 49 22.5**	**+0.7**
MA2	**Magadan**	**28.05**	**301**	LR	LR	16 02 31.3	
	comp=Z,63nm,18.4s,baz=156,slow=40						
NV01	**Mina Array Sit**	**30.72**	**106**	*e*P	**P**	**15 49 52.6**	**+0.6**
NVAR	**Mina Array Bea**	**30.72**	**106**	P	**P**	**15 49 52.4**	**+0.3**
	0.7nm,0.7s,baz=301,slow=8.3,SNR=5.2						
NVAR				LR	LR	16 00 20.1	
	comp=Z,80nm,19.0s,baz=312,slow=33						
RES	**Resolute Bay**	**30.77**	**27**	P	**P**	**15 49 52.3**	**+0.5**
	1.5nm,0.8s,baz=261,slow=13,SNR=3.4						
RES	**Resolute Bay**	**30.77**	**27**	*e*P	**P**	**15 49 50.8**	**-1.0**
	7.7nm,1.5s						
IMW	**Indian Meadow**	**31.33**	**91**	*e*P	**P**	**15 49 58.0**	**+0.6**
	10nm,1.6s						
RLMT	**Red Lodge**	**31.57**	**88**	*e*P	**P**	**15 50 00.4**	**+0.9**
	6.7nm,1.2s						
WOFM	**Oak Flat**	**32.61**	**111**	*e*P	**P**	**15 50 11.7**	**+3.1**
PDAR	**Pinedale Array**	**32.82**	**92**	P	**P**	**15 50 11.1**	**+0.6**
	0.5nm,0.7s,baz=301,slow=6.6,SNR=4.9						
TPNV	**Topopah Spring**	**32.92**	**106**	*e*P	**P**	**15 50 11.1**	**-0.2**
	3.4nm,1.0s						
TIXI	**Tiksi**	**34.48**	**327**	P	**P**	**15 50 24.3**	**+0.1**
	6.2nm,0.9s,baz=91,slow=9.5,SNR=26						
TIXI	**Tiksi**	**34.48**	**327**	*e*P	**P**	**15 50 23.9**	**-0.3**
	5.6nm,0.8s						
YAK	**Yakutsk**	**37.06**	**311**	P	**P**	**15 50 45.5**	**-1.0**
	7.7nm,0.3s,baz=175,slow=0.4,SNR=12						
YAK	**Yakutsk**	**37.06**	**311**	*e*P	**P**	**15 50 45.1**	**-1.4**
	20nm,0.8s						
SDCO	**Great Sand Dun**	**38.45**	**95**	*e*P	**P**	**15 50 59.5**	**+0.6**
KLR	**Kul'dur**	**42.45**	**293**	P	**P**	**15 51 30.4**	**-1.1**
	0.3nm,0.3s,baz=43,slow=9.7,SNR=3.7						
H11N2	**WAKE ISLAND Hy**	**44.53**	**232**	T	T	16 39 38.0	
	baz=28,slow=76,SNR=16						
H11N3	**WAKE ISLAND Hy**	**44.53**	**232**	T	T	16 39 36.7	
	baz=28,slow=76,SNR=23						
H11N1	**WAKE ISLAND Hy**	**44.55**	**232**	T	T	16 39 38.9	
	baz=28,slow=76,SNR=14						
LTX	**Lajitas**	**45.61**	**102**	*e*P	**P**	**15 51 57.7**	**+0.5**
TXAR	**Lajitas Array**	**45.61**	**102**	P	**P**	**15 51 57.7**	**+0.5**
	1.8nm,0.9s,baz=308,slow=6.1,SNR=9.0						
H11S1	**WAKE ISLAND Hy**	**45.69**	**232**	T	T	16 41 06.9	
	baz=28,slow=76,SNR=59						
H11S2	**WAKE ISLAND Hy**	**45.70**	**232**	T	T	16 41 02.8	
	baz=28,slow=76,SNR=41						
H11S3	**WAKE ISLAND Hy**	**45.70**	**232**	T	T	16 41 07.7	
	baz=28,slow=76,SNR=36						
SUMG	**Summit**	**45.91**	**22**	*i* P	**P**	**15 52 00.0**	**+0.7**
	9.4nm,1.2s						
DAG	**Danmarks Havn**	**45.93**	**12**	*i* P	**P**	**15 51 59.4**	**+0.4**
	6.0nm,1.0s						
NRIK	**Noril'sk**	**47.52**	**334**	P	**P**	**15 52 12.6**	**+1.1**
	3.9nm,0.5s,baz=64,slow=7.9,SNR=13						
KSRS	**Korea Array**	**52.25**	**283**	P	**P**	**15 52 48.0**	**+0.2**
	1.4nm,0.6s,baz=37,slow=6.8,SNR=5.4						
KS15	**Wonju Array Si**	**52.28**	**283**	*e*P	**P**	**15 52 47.7**	**-0.4**
KSAR	**Wonju Array Be**	**52.28**	**283**	P	**P**	**15 52 48.0**	**0.0**
TLY	**Talaya**	**54.54**	**311**	*e*P	**P**	**15 53 05.2**	**+0.7**
	9.8nm,0.9s						
ULN	**Ulaanbaatar**	**55.74**	**306**	*e*P	**P**	**15 53 13.3**	**0.0**
	4.5nm,1.1s						
ARA0	**ARCESS Array S**	**55.83**	**359**	*e*P	**P**	**15 53 13.9**	**+0.4**
ARCES	**ARCESS Array B**	**55.83**	**359**	P	**P**	**15 53 13.9**	**+0.4**
	0.8nm,0.4s,baz=22,slow=8.3,SNR=9.6						
SONA1	**Songino Array**	**56.05**	**306**	*e*P	**P**	**15 53 16.0**	**+0.4**
SONA0	**Songino Array**	**56.06**	**306**	*e*P	**P**	**15 53 16.8**	**+1.1**
	7.9nm,1.0s						
SONM	**Songino Array**	**56.06**	**306**	P	**P**	**15 53 16.8**	**+1.1**
	4.6nm,0.8s,baz=47,slow=7.8,SNR=26						
HHC	**Hu-ho-hao-te**	**58.63**	**297**	*e*P	**P**	**15 53 32.9**	**-0.9**
HHC				pmax	pmax		
	comp=Z,28nm,1.1s						
HHC				pmax	pmax		
	comp=Z,44nm,7.1s						
ZAA1	**Zalesovo Array**	**60.18**	**323**	*e*P	**P**	**15 53 45.0**	**+0.8**
ZALV	**Zalesovo Beam**	**60.18**	**323**	P	**P**	**15 53 45.0**	**+0.8**
	comp=Z,2.3nm,0.8s,baz=18,slow=5.2,SNR=9.1						
FIA1	**FINESS Array S**	**63.94**	**358**	*e*P	**P**	**15 54 09.4**	**+0.1**
FIA0	**FINESS Array S**	**63.94**	**358**	*e*P	**P**	**15 54 09.8**	**+0.5**
FINES	**FINESS Array B**	**63.94**	**358**	P	**P**	**15 54 09.8**	**+0.5**
	comp=Z,6.4nm,0.9s,baz=14,slow=7.3,SNR=16						
NB2	**NORSAR Subarra**	**63.99**	**6**	P	**P**	**15 54 10.2**	**+0.5**
	comp=Z,1.5nm,0.9s,baz=352,slow=6.5						
NB200	**NORSAR Array S**	**63.99**	**6**	*e*P	**P**	**15 54 10.5**	**+0.8**
NOA	**NORSAR Array B**	**63.99**	**6**	P	**P**	**15 54 10.5**	**+0.8**
	comp=Z,2.1nm,0.8s,baz=352,slow=6.5,SNR=7.7						
KURK	**Kurchatov**	**64.99**	**325**	*e*P	**P**	**15 54 16.6**	**+0.3**
	comp=Z,6.0nm,1.1s						
ARU	**Arti**	**65.29**	**339**	*e*P	**P**	**15 54 18.2**	**0.0**
	comp=Z,6.5nm,1.1s						
GTA	**Gaotai**	**65.55**	**304**	*e*P	**P**	**15 54 20.2**	**-0.1**
GTA				pP	pP	15 54 26.7	-1.3
GTA				sP	sP	15 54 30.0	-0.8
GTA				pmax	pmax		
	comp=Z,4.0nm,1.0s						
ZRNK	**Zerenda**	**65.96**	**332**	*e*P	**P**	**15 54 22.3**	**-0.3**
	comp=Z,6.3nm,1.2s						
LZH	**Lanzhou**	**66.18**	**299**	*e*P	**P**	**15 54 23.5**	**-0.9**
LZH				pP	pP	15 54 29.8	-2.3
LZH				sP	sP	15 54 32.6	-2.3
LZH				*e*PP	**PP**	**15 56 50.4**	**+0.6**
LZH				pmax	pmax		
	comp=Z,19nm,1.3s						
LZH				pmax	pmax		
	comp=Z,52nm,7.8s						
LZH				LR	LR		
	comp=N,220nm,15.5s						
LZH				LR	LR		
	comp=E,230nm,16.2s						
LZH				LR	LR		
	comp=Z,270nm,18.7s						
MK32	**Makanchi Array**	**67.02**	**320**	*e*P	**P**	**15 54 29.9**	**+0.4**
MKAR	**Makanchi Array**	**67.02**	**320**	P	**P**	**15 54 29.9**	**+0.4**
	comp=Z,1.1nm,0.7s,baz=51,slow=7.9,SNR=9.7						
MK01	**Makanchi Array**	**67.03**	**320**	*e*P	**P**	**15 54 29.9**	**+0.4**
MAKZ	**Makanchi**	**67.12**	**320**	*e*P	**P**	**15 54 29.8**	**-0.3**
	comp=Z,3.0nm,0.8s						
WMQ	**Urumqi**	**67.39**	**315**	*e*P	**P**	**15 54 33.8**	**+1.9**
WMQ				S	**S**	**16 03 34.2**	**+8.2**
WMQ	**Urumqi**	**67.39**	**315**	SS	SS	16 07 54.7	+10
WMQ				pmax	pmax		
	comp=Z,3.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,78nm,4.4s						
WMQ				LR	LR		
	comp=N,20nm,21.4s						
WMQ				LR	LR		
	comp=E,46nm,32.2s						
WMQ				LR	LR		
	comp=Z,17nm,18.8s						
CD2	**Chengdu**	**70.30**	**296**	P	**P**	**15 54 47.6**	**-2.6**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
ABKAR	**Akbulak array**	**71.67**	**336**	*e*P	**P**	**15 54 58.3**	**+0.1**
PPT	**Papeete**	**72.48**	**173**	P	**P**	**15 55 00.0**	**-3.2**
	comp=Z,17nm,0.9s,baz=104,slow=14,SNR=3.5						
TKM2	**Tokmak 2**	**72.77**	**322**	*e*P	**P**	**15 55 05.8**	**+0.7**
	comp=Z,3.3nm,1.0s						
EKS2	**Erkin-Say**	**73.63**	**323**	*e*P	**P**	**15 55 10.1**	**0.0**
	comp=Z,2.6nm,0.8s						
AKASG	**Malin Array Be**	**74.61**	**356**	P	**P**	**15 55 15.3**	**-0.1**
	comp=Z,2.9nm,0.6s,baz=6.7,slow=6.0,SNR=9.6						
AKBB	**Malin Array Si**	**74.61**	**356**	*e*P	**P**	**15 55 14.7**	**-0.8**
	comp=Z,7.1nm,0.8s						
KIEV	**Kiev**	**74.62**	**356**	*e*P	**P**	**15 55 14.8**	**-0.7**
	comp=Z,5.0nm,0.8s						
KSH	**Kashi**	**75.62**	**320**	P	**P**	**15 55 24.7**	**+3.0**
KSH				*e*sP	PcP	15 55 33.4	-1.1
KSH				*e*PcP	**sP**	**15 55 37.1**	**+4.8**
KSH				S	**S**	**16 05 04.2**	**+3.0**
KSH	**Kashi**	**75.62**	**320**	ScS	**ScS**	**16 05 35.3**	**+1.5**
KSH	**Kashi**	**75.62**	**320**	SS	SS	16 10 00.0	+8.6
KSH				pmax	pmax		
	comp=Z,48nm,4.5s						
KSH				LR	LR		
	comp=N,110nm,4.6s						
KSH				LR	LR		
	comp=E,67nm,5.1s						
STHS	**Stebnicka Huta**	**76.01**	**1**	*e*P	**P**	**15 55 25.3**	**+1.7**
GERES	**GERESS Array B**	**76.29**	**6**	P	**P**	**15 55 25.6**	**+0.3**
	comp=E,0.5nm,0.5s,baz=14,slow=6.9,SNR=6.2						
KBZ	**Khabaz**	**80.27**	**346**	P	**P**	**15 55 49.1**	**+1.9**
	comp=E,2.4nm,0.8s,baz=224,slow=5.2,SNR=6.7						
GEYT	**Alibeck**	**82.75**	**333**	P	**P**	**15 56 00.9**	**+0.4**
	comp=E,1.1nm,0.4s,baz=2.5,slow=10,SNR=3.4						
CM31	**Chiang Mai Arr**	**82.92**	**292**	*e*P	**P**	**15 56 01.3**	**-0.3**
CMAR	**Chiang Mai Arr**	**82.92**	**292**	P	**P**	**15 56 01.7**	**0.0**
	comp=E,2.5nm,0.8s,baz=12,slow=5.8,SNR=15						
ES19	**SONSECA Array**	**82.95**	**21**	*e*P	**P**	**15 56 02.5**	**+1.0**
ESDC	**Sonseca Array**	**82.96**	**21**	P	**P**	**15 56 02.9**	**+1.2**
	comp=E,2.5nm,0.8s,baz=341,slow=5.0,SNR=9.0						
BR101	**Keskin Array S**	**85.28**	**352**	*e*P	**P**	**15 56 14.8**	**+1.2**
BRTR	**Keskin Array B**	**85.28**	**352**	P	**P**	**15 56 14.8**	**+1.2**
	comp=E,0.9nm,0.8s,baz=270,slow=1.2,SNR=4.7						

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*IDC **12** 15:47:17.7±1.2, 54°.81N×157°.07W, h0km, mb3.9/12, mb1 4.0/14, mb1mx3.8/56, mbtmp3.9/14, ML4.0/2, Error ellipse: s-maj=30.4km s-min=17.2km az=3.0*
*ISCJB **12** 15:47:19.0±0.5, 54°.93N±0°.05×156°.89W±0°.05, h24km, mb3.9/17, Error ellipse: s-maj=7.8km s-min=2.8km az=154.9*
*NEIC **12** 15:47:19.5, 54°.62N×156°.74W, h26km, mb4.2/6, ML3.6(AEIC), After AEIC.*
ISC 12 15:47:21.4±0.6, 55°.00N±0°.07×157°.02W±0°.04, h24km, n106, σ1§97/115, mb4.0/17, South of Alaska

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHGN	**Chignik**	**1.52**	**329**	*e*Pn	**Pn**	**15 47 48.3**	**+1.2**
VNHG	**Veniaminof 1**	**1.73**	**316**	P	**Pb**	**15 47 52.9**	**+0.5**
VNNF	**Veniaminof 3**	**1.83**	**316**	P	**Pb**	**15 47 54.3**	**+0.1**
VNWF	**Veniaminof 8**	**1.85**	**310**	P	**Pb**	**15 47 54.3**	**-0.2**
ANNE	**Aniakchak Nort**	**2.00**	**343**	P	**Pn**	**15 47 55.9**	**+2.1**
SDPT	**Sand Point**	**2.01**	**281**	*e*Pn	**Pn**	**15 47 53.7**	**-0.1**
PS4A	**Pavlof South-4**	**2.79**	**279**	P	**Pn**	**15 48 04.5**	**-0.1**
HAG	**Hague Volcano**	**2.82**	**278**	P	**Pn**	**15 48 05.9**	**+0.9**
HAG				S	**Sn**	**15 48 40.6**	**+2.5**
DTNA	**Dutton South F**	**3.01**	**275**	*e*Pn	**Pn**	**15 48 07.5**	**0.0**
DRIA	**Deer Island**	**3.02**	**272**	P	**Pn**	**15 48 07.0**	**-0.7**
DT1	**Dutton Round H**	**3.03**	**274**	*e*Pn	**Pn**	**15 48 07.3**	**-0.4**
DT1				*e*Sn	**Sn**	**15 48 44.1**	**+0.9**
OHAK	**Old Harbor**	**3.06**	**42**	*e*Pn	**Pn**	**15 48 07.6**	**-0.5**
OHAK				*e*Sn	**Sn**	**15 48 44.0**	**+0.1**
KABR	**Katmai Barrier**	**3.34**	**19**	P	**Pn**	**15 48 13.9**	**+1.8**
FALS	**False Pass**	**3.69**	**270**	*e*Pn	**Pn**	**15 48 15.6**	**-1.3**
KDAK	**Kodiak Island**	**3.72**	**40**	Pn	Pb	15 48 31.7	+5.3
	1.8nm,0.3s,baz=199,slow=4.0,SNR=7.1						
KDAK				Sn	Sb	15 49 12.4	+1.4
	7.6nm,0.3s,baz=62,slow=23,SNR=7.4						
KDAK	**Kodiak Island**	**3.72**	**40**	*e*Pn	**Pn**	**15 48 16.5**	**-0.8**
KDAK				*e*Pg	Pb	15 48 31.7	+5.3
KDAK				*e*Sn	**Sn**	**15 49 03.2**	**+2.9**
KDAK				*e*Sg	**Sb**	**15 49 12.4**	**+1.4**
ISLZ	**Isanotski Laza**	**3.88**	**269**	P	**Pn**	**15 48 19.1**	**-0.4**
SSLN	**Shishaldin Nor**	**4.03**	**270**	P	**Pn**	**15

ZALV Zalesovo Beam 60.10 323 P **P 15 57 28.0 +1.9**
0.3nm,0.4s,baz=3.8,slow=4.3,SNR=2.4
FIA0 FINESS Array S 63.87 358 *e*P **P 15 57 52.4 +1.1**
FINES FINESS Array B 63.87 358 P **P 15 57 52.4 +1.1**
2.6nm,0.9s,baz=32,slow=11,SNR=5.4
NB200 NORSAR Array S 63.93 6 *e*P **P 15 57 52.8 +0.9**
NOA NORSAR Array B 63.93 6 P **P 15 57 52.8 +0.9**
0.8nm,0.8s,baz=354,slow=6.6,SNR=3.7
MK32 Makanchi Array 66.93 320 *e*P **P 15 58 11.8 +0.3**
MKAR Makanchi Array 66.93 320 P **P 15 58 11.8 +0.3**
0.2nm,0.4s,baz=42,slow=6.6,SNR=3.1
AKASG Malin Array Be 74.54 356 P **P 15 58 57.3 -0.2**
0.5nm,0.4s,baz=6.3,slow=5.0,SNR=4.5
CMAR Chiang Mai Arr 82.84 292 P **P 15 59 44.3 +0.5**
0.6nm,0.8s,baz=5.5,slow=5.4,SNR=4.7

WEL 12 15:47:32.6±0.9, 46°.32S×166°.01E, h28km±3km, ML3.8/11, Error ellipse: s-maj=8.9km s-min=5.4km az=90.0, Off west coast of South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PYZ	**Puysegur Point**	**0.49**	**72**	P*	Pb	15 47 42.6	-0.1
PYZ				S*	Sb	15 47 48.3	-1.4
PYZ				S*	Sn	15 47 48.5	-2.9
DCZ	**Deep Cove**	**1.17**	**44**	PN	Pn	15 47 52.2	-0.9
DCZ				AML	AML	15 48 07.7	
DCZ				AML	AML	15 48 07.7	
DCZ				AML	AML	15 48 08.6	
WHZ	**Wether Hill Ro**	**1.41**	**73**	PN	Pn	15 47 56.6	+0.1
WHZ				SN	Sn	15 48 13.7	-0.5
WHZ				SN	Sb	15 48 13.8	-2.2
APZ	**The Paps**	**1.46**	**111**	PN	Pn	15 47 56.3	-0.8
APZ				SN	Sn	15 48 12.4	-3.0
APZ				AML	AML	15 48 15.5	
MLZ	**Mavora Lakes**	**1.75**	**58**	PN	Pn	15 48 02.5	+1.3
MLZ				SN	Sn	15 48 23.3	+0.7
MLZ				AML	AML	15 48 32.8	
MSZ	**Milford Sound**	**2.13**	**40**	PN	Pn	15 48 07.2	+0.9
MSZ				AML	AML	15 48 48.9	
MSZ				AML	AML	15 48 50.6	
SYZ	**Scrubby Hill**	**2.18**	**97**	PN	Pn	15 48 06.9	0.0
SYZ				SN	Sn	15 48 31.7	-1.2
SYZ				AML	AML	15 48 34.3	
SYZ				AML	AML	15 48 34.8	
SYZ				AML	AML	15 48 34.8	
TUZ	**Tuapeka**	**2.54**	**83**	PN	Pn	15 48 12.0	0.0
TUZ				AML	AML	15 48 41.4	
TUZ				AML	AML	15 48 41.4	
TUZ				AML	AML	15 48 42.9	
TUZ				AML	AML	15 48 42.9	
EAZ	**Earnscleugh**	**2.55**	**66**	*e*PN	Pn	15 48 13.2	+1.0
EAZ				AML	AML	15 48 47.3	
EAZ				AML	AML	15 48 47.9	
WKZ	**Wanaka**	**2.59**	**56**	PN	Pn	15 48 15.4	+2.7
WKZ				AML	AML	15 49 00.9	
WKZ				AML	AML	15 56 11.8	
JCZ	**Jackson Bay**	**2.98**	**42**	*e*PN	Pn	15 48 20.3	+2.1
JCZ				AML	AML	15 49 14.2	
JCZ				AML	AML	15 49 16.7	
FOZ	**Fox Glacier**	**3.88**	**46**	*e*PN	Pn	15 48 32.7	+2.3
FOZ				AML	AML	15 50 36.4	

JMA 12 15:48:03.2, 37°.10N×140°.83E, h7km, M2.9, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.03**	**274**	P	Pg	15 48 04.5	-0.1
ONAJ				S	Sg	15 48 05.6	0.0
JFK	**Kawauchi**	**0.27**	**8**	P	Pg	15 48 08.8	+0.3
JFK				S	Sg	15 48 12.8	+0.7
JMM	**Marumori**	**0.77**	**358**	P	Pg	15 48 17.7	-0.2
JMM				S	Sg	15 48 28.0	+0.1
MAT	**Matsushiro**	**2.18**	**256**	P	Pn	15 48 40.6	+0.7
MAT				S	Sb	15 49 09.3	-0.8

NEIC 12 16:02:53.0, 54°.54N×156°.64W, h16km, ML3.5(AEIC), After AEIC., South of Alaska

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHGN	**Chignik**	**2.04**	**331**	*e*Pn	Pn	16 03 23.5	-3.1
VNHG	**Veniaminof 1**	**2.22**	**321**	P	Pn	16 03 27.9	-1.3
VNWF	**Veniaminof 8**	**2.32**	**315**	P	Pn	16 03 29.3	-1.3
SDPT	**Sand Point**	**2.36**	**292**	*e*Pn	Pn	16 03 28.3	-2.6
SDPT				*e*Sn	Sn	16 03 58.6	-0.9
ANNE	**Aniakchak Nort**	**2.51**	**342**	P	Pn	16 03 31.1	-2.0
AZAC	**Aniakchak**	**2.53**	**340**	P	Pn	16 03 31.4	-2.0
PS4A	**Pavlof South-4**	**3.12**	**287**	P	Pn	16 03 39.6	-1.8
OHAK	**Old Harbor**	**3.29**	**34**	*e*Pn	Pn	16 03 42.2	-1.6
DTNA	**Dutton South F**	**3.30**	**283**	*e*Pn	Pn	16 03 42.5	-1.4
DT1	**Dutton Round H**	**3.31**	**282**	*e*Pn	Pn	16 03 42.8	-1.3
BALA	**Baldy Mountain**	**3.61**	**283**	*e*Pn	Pn	16 03 47.1	-1.1
KABR	**Katmai Barrier**	**3.72**	**14**	P	Pn	16 03 48.2	-1.5
KABR				S	Sn	16 04 31.1	-2.1
KELA	**Mount Kelaz**	**3.94**	**7**	P	Pn	16 03 50.9	-2.0
FALS	**False Pass**	**3.94**	**277**	*e*Pn	Pn	16 03 51.1	-1.6
KDAK	**Kodiak Island**	**3.96**	**33**	*e*Pn	Pn	16 03 49.5	-3.5
KDAK				*e*Pg	Pn	16 03 51.8	-1.2
KDAK				*e*Sn	Sn	16 04 35.9	-3.2
SSLN	**Shishaldin Nor**	**4.28**	**277**	P	Pn	16 03 56.6	-0.8
WESN	**West Dahl Nort**	**4.62**	**274**	*e*Pn	Pn	16 04 01.2	-0.9
CDD	**Cape Douglas**	**4.70**	**19**	P	Pn	16 04 02.4	-0.8
WEBT	**Westdahl Beart**	**4.72**	**274**	P	Pn	16 04 02.9	-0.6
WECS	**Westdahl Cape**	**4.74**	**273**	P	Pn	16 04 03.0	-0.7
AKUT	**Akutan**	**5.36**	**269**	*e*Pn	Pn	16 04 11.9	-0.3
HOM	**Homer**	**5.81**	**26**	*e*Pn	Pn	16 04 21.4	+3.1
UNV	**Unalaska Valle**	**5.83**	**267**	*e*Pn	Pn	16 04 17.5	-1.2
MSOM	**Makushin Julie**	**6.10**	**267**	*e*Pn	Pn	16 04 20.3	-2.0
BRLK	**Bradley Lake**	**6.10**	**29**	*e*Pn	Pn	16 04 20.8	-1.6
BRLK				*e*Sn	Sn	16 05 24.1	-7.7
RSO	**Redoubt South**	**6.30**	**18**	*e*Pn	Pn	16 04 24.8	-0.4
RDWB	**Redoubt West**	**6.31**	**17**	P	Pn	16 04 24.4	-0.9
SEW	**Seward**	**6.80**	**32**	*e*Pn	Pn	16 04 30.7	-1.2
SLKM	**Skilak Lake**	**6.91**	**27**	*e*Pn	Pn	16 04 32.0	-1.5
SPU	**Mount Spurr**	**7.09**	**18**	*e*Pn	Pn	16 04 35.0	-1.1
RC01	**Rabbit Creek A**	**7.53**	**26**	*e*Pn	Pn	16 04 41.5	-0.5
TT01	**Tatalina**	**8.40**	**2**	*e*Pn	Pn	16 04 52.2	-1.6
TTA	**Tatalina**	**8.42**	**2**	*e*Pn	Pn	16 04 51.7	-2.6
PPLA	**Purkeypile**	**8.69**	**14**	*e*Pn	Pn	16 04 56.2	-1.9
RAGM	**Ragged Mountai**	**8.71**	**43**	*e*Pn	Pn	16 04 56.9	-1.2
SCM	**Sheep Creek Mo**	**8.80**	**30**	*e*Pn	Pn	16 04 57.7	-1.8
KLU	**Klutina**	**8.99**	**35**	*e*Pn	Pn	16 05 01.0	-1.0
CAST	**Castle Rocks**	**9.21**	**13**	*e*P	Pn	16 05 03.6	-1.4
KTH	**Kantishna Hill**	**9.50**	**16**	*e*Pn	Pn	16 05 04.4	-4.7
TRF	**Thorofare Moun**	**9.51**	**18**	*e*Pn	Pn	16 05 05.6	-3.7
BPAW	**Bear Paw Mtn.**	**10.01**	**14**	*e*Pn	Pn	16 05 12.7	-3.2
BALM	**Baldy**	**10.02**	**44**	*e*P	Pn	16 05 15.6	-0.5
PAX	**Paxson**	**10.24**	**30**	*e*Pn	Pn	16 05 19.1	-0.1
MLY	**Manley**	**10.93**	**13**	*e*P	Pn	16 05 25.6	-2.9
CCB	**Clear Creek Bu**	**11.07**	**20**	*e*P	Pn	16 05 28.6	-1.8
MDM	**Murphy Dome**	**11.27**	**19**	*e*Pn	Pn	16 05 28.4	-4.7
INK	**Inuvik**	**17.51**	**29**	*e*Pn	Pn	16 06 56.2	+0.2

NEIC ***12*** *16:02:54.0±1.2, 20°.44S×168°.34E, h10km, mb4.8/4, Error ellipse: s-maj=33.2km s-min=13.2km az=134.0*
ISCJB ***12*** *16:02:56.2±0.9, 20°.4S±0°.1×168°.2E±0°.1, h32km, mb4.4/12, MS3.1/4, Error ellipse: s-maj=22.8km s-min=9.5km az=35.6*
IDC ***12*** *16:02:57.8±1.1, 20°.44S×168°.26E, h31km±6km, mb3.8/8, mb1 4.1/9, mb1mx3.8/30, mbtmp4.0/9, ML3.6/1, MS3.2/5, Ms1 3.2/5, ms1mx2.9/38, Error ellipse: s-maj=30.4km s-min=18.4km az=146.0*
ISC 12 16:02:57.8±0.9, 20°.4S±0°.1×168°.2E±0°.2, h32km, n19, σ0°.93/20, mb4.2/12, MS3.2/4, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.33**	**225**	Pn	**Pn**	**16 03 33.1**	**-1.0**
16nm,0.3s,baz=86,slow=15,SNR=121							
DZM				Sn	**Sn**	**16 04 01.1**	**-0.6**
105nm,0.3s,baz=323,slow=20,SNR=15							
DZM				LR	LR	16 04 22.1	
comp=Z,296nm,18.6s,baz=38,slow=36							
AFI	**Afiamalu**	**20.17**	**74**	LR	LR	16 13 57.0	
comp=Z,32nm,19.7s,baz=220,slow=33							
CTA	**Charters Tower**	**20.61**	**267**	P	Pn	16 07 36.5	-0.4
2.9nm,0.9s,baz=90,slow=19,SNR=2.5							
PMG	**Port Moresby**	**23.07**	**295**	LR	LR	16 15 59.5	
comp=Z,65nm,18.4s,baz=140,slow=34							
STKA	**Stephens Creek**	**26.41**	**239**	P	**P**	**16 08 32.0**	**+0.4**
4.1nm,0.7s,baz=68,slow=11,SNR=10							
STKA				LR	LR	16 18 26.4	
comp=Z,96nm,21.4s,baz=197,slow=35							
STKA	**Stephens Creek**	**26.41**	**239**	*e*P	**P**	**16 08 33.3**	**+1.7**
2.1nm,1.0s							
KWAJ	**Kwajalein Atol**	**29.04**	**359**	*e*P	**P**	**16 08 54.7**	**-0.5**
118nm,1.0s							
WR1	**Warramunga Arr**	**31.77**	**265**	*e*P	**P**	**16 09 18.1**	**-1.2**
44nm,1.9s							
WRA	**Warramunga Arr**	**31.77**	**265**	P	**P**	**16 09 18.1**	**-1.3**
0.5nm,0.5s,baz=92,slow=8.5,SNR=10							
WRA				pP	**pP**	**16 09 28.6**	**-0.1**
1.0nm,0.4s,baz=91,slow=8.5,SNR=7.3							
AS01	**Alice Springs**	**31.88**	**258**	*e*P	**P**	**16 09 20.4**	**0.0**
AS31	**Alice Springs**	**31.92**	**258**	*e*P	**P**	**16 09 20.8**	**0.0**
3.0nm,0.9s							
ASAR	**Alice Springs**	**31.92**	**258**	P	**P**	**16 09 21.1**	**+0.4**
5.1nm,0.7s,baz=87,slow=9.0,SNR=79							
ASAR				pP	**pP**	**16 09 30.9**	**+0.8**
6.4nm,0.7s,baz=86,slow=8.7,SNR=20							
ASAR				LR	LR	16 21 38.1	
comp=Z,53nm,20.2s,baz=146,slow=35							
SAUI	**Saumlaki**	**37.76**	**284**	*e*P	**P**	**16 10 11.2**	**+0.1**
431nm,1.0s							
VNDA	**Vanda**	**57.23**	**182**	P	**P**	**16 12 42.1**	**+0.6**
1.0nm,1.0s,baz=360,slow=7.2,SNR=5.9							
CMAR	**Chiang Mai Arr**	**78.11**	**295**	P	**P**	**16 14 55.8**	**+1.7**
1.0nm,0.8s,baz=128,slow=4.6,SNR=8.0							
SONA0	**Songino Array**	**87.58**	**324**	*e*P	**P**	**16 15 43.1**	**+0.4**
7.1nm,1.9s							
SONM	**Songino Array**	**87.58**	**324**	P	**P**	**16 15 43.1**	**+0.4**
0.4nm,0.8s,baz=142,slow=2.5,SNR=3.9							
NVAR	**Mina Array Bea**	**90.30**	**49**	P	**P**	**16 15 55.5**	**-0.4**
1.2nm,0.8s,baz=229,slow=8.1,SNR=7.4							
NVAR				pP	**pP**	**16 16 05.8**	**-0.4**
0.3nm,0.4s,baz=236,slow=11,SNR=2.6							
GERES	**GERESS Array B**	**145.05**	**330**	PKPbc	**PKPbc**	**16 22 29.7**	**-1.6**
0.2nm,0.3s,baz=27,slow=6.1,SNR=3.6							

NIED ***12*** *16:20:00, 39°.70N×142°.10E, h47km, Mw4.8 Best double couple: M0:1.78000×10^16 NP1:φ=216.00000°, δ=17.00000°, λ=117.00000° NP2:φ=8.00000°, δ=75.00000°, λ=82.00000°.*
ISCJB ***12*** *16:20:58.4±0.3, 39°.65N±0°.02×142°.15E±0°.03, h54km±2km, mb4.8/146, MS3.9/31, Error ellipse: s-maj=4.4km s-min=3.2km az=30.2*
MOS ***12*** *16:20:58.9±0.9, 39°.77N×142°.04E, h52km, mb5.1/74, Error ellipse: s-maj=6.6km s-min=4.1km az=108.7*
JMA ***12*** *16:20:59.3, 39°.66N×142°.14E, h49km±1km, M4.7*
JMA Felt III J1.
IDC ***12*** *16:21:00.9±1.6, 39°.65N×142°.01E, h62km±13km, mb4.3/30, mb1 4.4/37, mb1mx4.3/58, mbtmp4.6/37, MS3.8/29, Ms1 3.8/29, ms1mx3.7/45, Error ellipse: s-maj=13.2km s-min=10.2km az=107.0*
NEIC ***12*** *16:21:00.9±0.6, 39°.66N×142°.02E, h63km±5km, mb4.7/64, Error ellipse: s-maj=5.4km s-min=4.1km az=124.0*
NEIC Recorded [3 JMA] in Iwate and Miyagi.
ISC 12 16:20:59.2±0.5, 39°.65N±0°.03×142°.22E±0°.04, h50km±3km, h50km:pP-P, n397, σ1°.55/439, mb4.8/150, MS3.9/32, 24C-18D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**0.32**	**256**	P	**Pn**	**16 21 08.0**	**-0.5**
MIYJ				S	**Sn**	**16 21 14.1**	**-1.1**
JTH	**Tanohata**	**0.40**	**316**	P	**Pn**	**16 21 08.8**	**-0.5**
JTH				S	**Sn**	**16 21 15.5**	**-1.1**
OFUJ	**Ofunato**	**0.71**	**217**	P	**Pn**	**16 21 12.6**	**-0.6**
OFUJ				S	**Sn**	**16 21 22.3**	**-1.0**
JOM	**Ohasama**	**0.74**	**256**	P	**Pn**	**16 21 13.0**	**-0.5**
JOM				S	**Sn**	**16 21 22.9**	**-1.0**
JKZ	**Kuzumaki**	**0.76**	**296**	P	**Pn**	**16 21 13.2**	**-0.6**
JKZ				S	**Sn**	**16 21 23.0**	**-1.5**
JANG	**Nango**	**0.90**	**323**	P	**Pn**	**16 21 14.9**	**-0.7**
JANG				S	**Sn**	**16 21 26.4**	**-1.3**
JMK	**Ichinoseki**	**1.05**	**228**	P	**Pn**	**16 21 17.2**	**-0.3**
JMK				S	**Sn**	**16 21 30.1**	**-1.0**
JRG	**Rokugo**	**1.25**	**259**	P	**Pn**	**16 21 20.0**	**-0.4**
JAH	**Hinai**	**1.33**	**294**	P	**Pn**	**16 21 21.1**	**-0.3**
JAH				S	**Sn**	**16 21 37.7**	**-0.3**
ERM	**Erimo**	**2.46**	**16**	⇓*e*P	**Pn**	**16 21 37.7**	**+0.8**
ERM				pmax	pmax		
comp=Z,92nm,1.2s							
ERM	**Erimo**	**2.46**	**16**	*e*Pn	**Pn**	**16 21 37.6**	**+0.7**
MAJO	**Matsushiro**	**4.43**	**227**	⇓*e*P	**Pn**	**16 22 05.5**	**+1.5**
MAJO	**Matsushiro**	**4.43**	**227**	*e*Pn	**Pn**	**16 22 05.3**	**+1.3**
MAT	**Matsushiro**	**4.43**	**227**	P	**Pn**	**16 22 05.4**	**+1.4**
MAT				S	**Sn**	**16 23 02.3**	**+8.0**
MJAR	**Matsushiro Arr**	**4.43**	**227**	P	**Pn**	**16 22 05.8**	**+1.9**
comp=Z,28nm,0.3s,baz=29,slow=12,SNR=487							
MJAR				LR	LR	16 24 07.6	
comp=Z,1μm,21.7s,baz=55,slow=43							
MJB9	**Matsu-Tunnel**	**4.43**	**227**	*e*Pn	**Pn**	**16 22 05.5**	**+1.6**
ASAJ	**Asahikawa**	**4.47**	**3**	P	**Pn**	**16 22 06.0**	**+1.7**
comp=Z,8.9nm,0.3s,baz=217,slow=10,SNR=45							
ASAJ				S	**Sn**	**16 23 00.9**	**+5.9**
comp=Z,14nm,0.3s,baz=52,slow=29,SNR=6.8							
ASAJ				LR	LR	16 24 21.2	
comp=Z,966nm,21.6s,baz=192,slow=45							
ASAJ	**Asahikawa**	**4.47**	**3**	*e*Pn	**Pn**	**16 22 05.3**	**+0.9**
ASAJ				S	**Sn**	**16 23 00.9**	**+5.9**
YUK	**Yuzh-Kuril'sk**	**5.15**	**31**	*i* P	**Pn**	**16 22 13.3**	**-0.4**
YUK				*i* S	**Sn**	**16 23 10.7**	**-1.2**
YUK				pmax	pmax		
comp=Z,280nm,0.7s							
YUK				pmax	pmax		
comp=N,154nm,0.3s							
YUK				pmax	pmax		
comp=E,116nm,0.2s							
YUK				MLR	MLR		
comp=Z,868nm,11.0s							
YUK				MLR	MLR		
comp=E,1μm,16.0s							
YUK				MLR	MLR		
comp=N,2μm,9.0s							
SHO	**Shikotan**	**5.44**	**38**	*i* P	**Pn**	**16 22 18.2**	**+0.5**
SHO				*i* S	**Sn**	**16 23 14.4**	**-4.6**
SHO				pmax	pmax		
comp=Z,90nm,0.6s							
SHO				pmax	pmax		
comp=N,89nm,0.3s							
SHO				pmax	pmax		
comp=E,68nm,0.3s							
INU	**Inuyama**	**5.96**	**226**	*e*Pn	**Pn**	**16 22 26.6**	**+1.7**
JHJ	**Hachijo jima 2**	**6.81**	**198**	P	**Pn**	**16 22 36.6**	**0.0**
comp=E,32nm,0.3s,baz=50,slow=15,SNR=4.3							
JHJ				S	**Sn**	**16 23 50.3**	**-2.4**
comp=E,49nm,0.3s,baz=73,slow=19,SNR=3.9							
JHJ2	**Mitsune**	**6.81**	**197**	*e*Pn	**Pn**	**16 22 35.9**	**-0.6**
KUR	**Kuril'sk**	**6.96**	**35**	*e*P	**Pn**	**16 22 38.5**	**-0.1**
KUR				*e*S	**Sn**	**16 23 54.0**	**-2.4**
KUR				pmax	pmax		
comp=N,19nm,0.6s							
KUR				pmax	pmax		
comp=Z,48nm,0.6s							
KUR				smax	smax		
comp=N,72nm,0.6s							
KUR				smax	smax		
comp=E,30nm,0.6s							
KUR				smax	smax		
comp=N,462nm,3.0s							
KUR				smax	smax		
comp=E,209nm,1.8s							
YSS	**Yuzh-Sakhalins**	**7.31**	**3**	⇑*e*P	**Pn**	**16 22 46.2**	**+2.9**
YSS				*e*S	**Sn**	**16 24 05.0**	**+0.2**
YSS				MLR	MLR		
comp=Z,300nm,13.0s							
VLA	**Vladivostok**	**8.51**	**297**	P	**Pn**	**16 23 01.0**	**+1.3**
MSHR	**Mys Shultsa**	**8.85**	**293**	⇓*e*P	**Pn**	**16 23 06.4**	**+2.0**
USRK	**Ussuriysk Ar.**	**8.88**	**304**	P	**Pn**	**16 23 05.3**	**+0.6**
comp=Z,2.1nm,0.3s,baz=112,slow=12,SNR=64							
USRK				LR	LR	16 26 15.0	
comp=Z,1μm,21.6s,baz=104,slow=36							
HABR	**Khabarovsk**	**10.21**	**332**	*c*e*P	**Pn**	**16 23 21.1**	**-1.9**
HABR				*e*S	**Sn**	**16 25 13.1**	**-2.8**
HABR				pmax	pmax		
comp=E,20nm,1.1s							
HABR				pmax	pmax		
comp=N,4.0nm,1.1s							
HABR				pmax	pmax		
comp=Z,7.0nm,1.1s							
HABR				MLR	MLR		
comp=Z,516nm,18.0s							
MDJ	**Mudanjiang**	**10.61**	**302**	P	**Pn**	**16 23 28.2**	**-0.2**
MDJ				S	**Sn**	**16 25 26.3**	**+0.6**
MDJ				PcP	**PcP**	**16 29 28.2**	**-0.2**
MDJ				ScP	**ScP**	**16 32 56.5**	**-0.1**
MDJ	**Mudanjiang**	**10.61**	**302**	ScS	ScS	16 36 31.4	-0.1
MDJ	**Mudanjiang**	**10.61**	**302**	*e*Pn	**Pn**	**16 23 30.7**	**+2.2**
TYV	**Tymovskoe**	**11.21**	**1**	*e*P	**Pn**	**16 23 38.2**	**+1.5**
TYV				pmax	pmax		
comp=Z,18nm,1.0s							
JNU	**Nakatsue**	**11.22**	**238**	P	**Pn**	**16 23 37.5**	**+0.5**
comp=Z,1.8nm,0.3s,baz=103,slow=1.9,SNR=14							
JNU	**Nakatsue**	**11.22**	**238**	*e*Pn	**Pn**	**16 23 38.0**	**+1.0**
KSRS	**Korea Array**	**11.41**	**263**	P	**Pn**	**16 23 40.5**	**+1.1**
comp=Z,4.5nm,0.3s,baz=68,slow=14,SNR=60							
KSRS				LR	LR	16 27 49.4	
comp=Z,445nm,18.3s,baz=86,slow=36							
KS01	**Wonju Array Si**	**11.43**	**264**	*e*Pn	**Pn**	**16 23 43.5**	**+3.8**
KS15	**Wonju Array Si**	**11.44**	**263**	*e*Pn	**Pn**	**16 23 44.0**	**+4.1**
KSAR	**Wonju Array Be**	**11.44**	**263**	P	**Pn**	**16 23 40.6**	**+0.7**
KSAR	**Wonju Array Be**	**11.44**	**263**	P	**Pn**	**16 23 40.5**	**+0.7**
KLR	**Kul'dur**	**12.14**	**325**	P	**Pn**	**16 23 50.2**	**+0.9**
comp=Z,0.2nm,0.3s,baz=129,slow=12,SNR=12							
KLR				LR	LR	16 28 31.3	
comp=Z,538nm,19.0s,baz=141,slow=37							
TJN	**Taejon**	**12.17**	**259**	⇓*e*P	**Pn**	**16 23 51.3**	**+1.5**
CBIJ	**Chichi jima**	**12.52**	**180**	*e*Pn	**Pn**	**16 23 54.3**	**-0.4**
CN2	**Changchun**	**13.19**	**294**	*e*P	**Pn**	**16 24 05.4**	**+1.6**
CN2				*e*sP	sP	16 24 24.1	
CN2				*e*S	**Sn**	**16 26 31.2**	**+2.3**
NKL	**Nikolayevsk**	**13.54**	**356**	*e*P	**Pn**	**16 24 07.0**	**-1.4**
NKL				pmax	pmax		
comp=Z,17nm,1.0s							
DL2	**Dalian**	**15.97**	**274**	P	**Pn**	**16 24 40.8**	**+0.4**
DL2				S	**Sn**	**16 27 38.0**	**+1.7**
HIA	**Hailar**	**18.64**	**308**	*e*P	**P**	**16 25 09.5**	**-3.2**
HIA				pmax	pmax		
comp=Z,24nm,1.2s							
HIA	**Hailar**	**18.64**	**308**	*e*P	**P**	**16 25 09.5**	**-3.2**
comp=Z,24nm,1.2s							
SSE	**Sheshan**	**19.13**	**250**	P	**Pn**	**16 25 19.0**	**-0.3**
SSE				sP	**sP**	**16 25 37.6**	**+1.7**
SSE				S	**S**	**16 28 47.6**	**-4.7**
BJI	**Beijing**	**19.98**	**279**	P	**P**	**16 25 25.0**	**-2.3**
BJI				S	**S**	**16 29 03.8**	**-5.5**
BJT	**Baijiatuau**	**19.99**	**279**	*e*P	**P**	**16 25 24.7**	**-2.8**
BJT				pmax	pmax		
comp=Z,26nm,0.8s							
BJT	**Baijiatuau**	**19.99**	**279**	*e*P	**P**	**16 25 24.7**	**-2.8**
comp=Z,26nm,0.8s							
TIA	**Tai'an**	**20.07**	**268**	⇓P	**P**	**16 25 27.0**	**-1.4**
TIA				S	S	16 28 58.5	-13
NJ2	**Nanjing**	**20.37**	**255**	*e*P	**P**	**16 25 32.5**	**+0.9**
NJ2				S	**S**	**16 29 19.3**	**+2.3**
MA2	**Magadan**	**20.66**	**12**	P	**P**	**16 25 35.2**	**+0.6**
comp=Z,9.1nm,0.9s,baz=189,slow=19,SNR=3.7							
MA2				LR	LR	16 33 51.6	
comp=Z,147nm,20.9s,baz=206,slow=37							
CIT	**Chita**	**23.32**	**312**	*e*P	**P**	**16 26 00.6**	**-2.2**
CIT				*e*		16 26 15.5	
CIT				*e*		16 26 40.2	
CIT				pmax	pmax		
comp=Z,99nm,1.1s							
HHC	**Hu-ho-hao-te**	**23.38**	**283**	*e*P	**P**	**16 26 02.6**	**-0.8**
HHC				sP	pP	16 26 17.5	+1.9
HHC				S	**S**	**16 30 14.4**	**+1.7**
HHC				sS	sS	16 30 32.5	-1.7
YAK	**Yakutsk**	**23.68**	**345**	P	**P**	**16 26 04.9**	**-1.0**
comp=Z,44nm,0.7s,baz=171,slow=2.4,SNR=23							
YAK				LR	LR	16 35 22.6	
comp=Z,95nm,18.3s,baz=164,slow=36							
YAK	**Yakutsk**	**23.68**	**345**	*d* i P	**P**	**16 26 04.5**	**-1.4**
YAK				*e**PP	**sP**	**16 26 22.9**	**-1.6**
YAK				*e*		16 29 47.0	
YAK				*e*S	**S**	**16 30 14.0**	**-2.9**
YAK				*e*SS	**SnSn**	**16 31 02.8**	**+4.5**
YAK				*e*		16 37 02.6	
YAK				pmax	pmax		
comp=Z,40nm,0.9s							
YAK				pmax	pmax		
comp=N,25nm,1.1s							
YAK				pmax	pmax		
comp=E,7.0nm,1.0s							
YAK				smax	smax		
comp=N,111nm,2.3s							
YAK				smax	smax		
comp=E,63nm,2.3s							
YAK	**Yakutsk**	**23.68**	**345**	*e*P	**P**	**16 26 04.0**	**-2.0**
comp=E,44nm,0.7s							
SSLB	**Suanglung**	**23.94**	**235**	*e*P	**P**	**16 26 05.6**	**-3.1**
comp=E,18nm,0.9s							
YULB	**Yu-li**	**24.01**	**234**	*e*P	**P**	**16 26 05.0**	**-4.4**
comp=E,55nm,1.6s							
SEY	**Seymchan**	**24.10**	**11**	P	**P**	**16 26 09.3**	**-0.5**
comp=E,18nm,0.9s,baz=204,slow=6.8,SNR=19							
WHN	**Wuhan**	**24.47**	**257**	⇑P	**P**	**16 26 13.2**	**-0.3**
WHN				S	**S**	**16 30 24.8**	**-5.4**
TPUB	**Ta-pu**	**24.50**	**235**	*e*P	**P**	**16 26 10.7**	**-3.1**
comp=E,29nm,1.0s							

GYA PcP **PcP** **16 30 12.4 +1.5**
GYA S **S** **16 32 36.8 +2.0**
GYA sS sS 16 32 58.0 +1.3
GYA ScP **ScP** **16 33 50.2 -0.1**
GYA Guiyang 32.36 257 ScS ScS 16 37 48.6 -1.2
CD2 Chengdu 32.39 266 P **P** **16 27 23.1 -1.1**
GTA Gaotai 32.49 283 *e*P **P** **16 27 26.6 +1.5**
GTA pP pP 16 27 37.7 -0.4
GTA sP sP 16 27 43.8 -0.2
GTA PcP **PcP** **16 30 12.0 +1.0**
GTA S **S** **16 32 37.5 +0.9**
GTA sS sS 16 32 57.7 -0.8
GTA SS **SnSn** **16 34 33.4 0.0**
TIXI Tiksi 32.78 352 P **P** **16 27 27.1 0.0**
comp=Z,6.0nm,0.8s,baz=160,slow=6.2,SNR=24
TIXI Tiksi 32.78 352⇑ *e*P **P** **16 27 26.2 -0.8**
TIXI pmax pmax
comp=Z,6.0nm,0.8s
TIXI Tiksi 32.78 352 *e*P **P** **16 27 26.4 -0.6**
comp=Z,5.7nm,0.7s
QIZ Qiongzhong 34.63 243 P **P** **16 27 43.3 -0.4**
QIZ S **S** **16 33 09.8 0.0**
KMI Kunming 36.05 258 P **P** **16 27 55.4 -0.7**
KMI pP pP 16 28 10.6 +1.4
KMI sP sP 16 28 16.4 +1.3
KMI PP **PP** **16 29 19.8 +1.1**
KMI S **S** **16 33 35.0 +3.1**
KMI SS **SnSn** **16 35 55.5 -4.7**
KRAR Krasnoyarsk 36.06 314⇑ *i*P **P** **16 27 56.8 +1.2**
KRAR pmax pmax
comp=Z,65nm,1.3s
NONG Nongkai 40.00 249 P **P** **16 28 29.5 +0.3**
comp=Z,152nm,0.8s,comp=Z,8μm
WMQ Urumqi 40.28 294 P **P** **16 28 31.9 +0.5**
WMQ pP pP 16 28 47.6 +2.9
WMQ sP sP 16 28 54.4 +3.9
WMQ ScS ScS 16 38 21.5 -12
MYLDM Lahad Datu 40.45 218 *e*P **P** **16 28 34.9 +2.0**
comp=Z,34nm,1.3s
CRAI Chiangrai 40.66 254 P **P** **16 28 34.9 +0.2**
comp=Z,256nm,0.8s
ZAA0 Zalesovo Array 40.67 310 *e*P **P** **16 28 33.7 -0.6**
ZAA1 Zalesovo Array 40.67 310 *e*P **P** **16 28 34.2 -0.1**
ZAA1 *e*PcP **PcP** **16 30 35.5 +0.4**
ZALV Zalesovo Beam 40.67 310 P **P** **16 28 34.2 -0.1**
comp=Z,10.0nm,0.4s,baz=86,slow=7.7,SNR=60
ZALV PcP **PcP** **16 30 35.5 +0.4**
comp=Z,2.6nm,0.3s,baz=108,slow=3.0,SNR=5.3
ZALV LR LR 16 46 13.8
comp=Z,254nm,19.2s,baz=70,slow=37
NRIK Noril'sk 41.18 334 P **P** **16 28 37.3 -1.0**
comp=Z,3.2nm,0.5s,baz=98,slow=14,SNR=8.2
NRIK LR LR 16 46 43.4
comp=Z,337nm,19.8s,baz=108,slow=38
KHON Khomkaen 41.37 247 P **P** **16 28 41.0 +0.5**
comp=Z,10nm,0.8s,comp=Z,635nm
NVS Novosibirsk 41.53 312 *e*P **P** **16 28 40.4 -1.0**
LOEI Loei 41.72 250 P **P** **16 28 40.4 -3.0**
comp=Z,22nm,1.0s,comp=Z,1μm
CMAI Chiengmai2 41.83 255 P **P** **16 28 45.1 +0.6**
comp=Z,21nm,0.8s,comp=Z,611nm
UTTA Uttaradit 42.09 251 P **P** **16 28 46.3 0.0**
comp=Z,3.6nm,0.9s
PBKT Sadao Pong 42.54 249 P **P** **16 28 51.0 +1.0**
comp=Z,12nm,0.9s
CHTO Chiang Mai 42.59 254 P **P** **16 28 50.6 +0.1**
comp=Z,65nm,1.5s,comp=Z,1μm
CHTO Chiang Mai 42.59 254 *e*P **P** **16 28 50.2 -0.3**
CHTO pmax pmax
comp=Z,21nm,1.1s
CHTO Chiang Mai 42.59 254 *e*P **P** **16 28 50.2 -0.3**
comp=Z,21nm,1.1s
LSA Lhasa 42.66 273 P **P** **16 28 52.2 +0.7**
LSA Lhasa 42.66 273 *e*P **P** **16 28 51.7 +0.2**
LSA pmax pmax
comp=Z,30nm,1.4s
LSA Lhasa 42.66 273 *e*P **P** **16 28 51.7 +0.2**
comp=Z,30nm,1.4s
CM31 Chiang Mai Arr 42.82 253 *e*P **P** **16 28 52.5 +0.2**
CM31 *e*ScP **ScP** **16 34 29.1 -0.4**
CMAR Chiang Mai Arr 42.82 253 P **P** **16 28 52.3 0.0**
comp=Z,3.4nm,0.8s,baz=44,slow=6.6,SNR=30
CMAR ScP **ScP** **16 34 29.1 -0.4**
comp=Z,1.1nm,0.9s,baz=39,slow=1.8,SNR=6.0
CM01 Chiang Mai Arr 42.83 253 *e*P **P** **16 28 52.1 -0.3**
CM01 *e*PcP **PcP** **16 30 43.3 +0.5**
SUKH Sukhothai 42.93 252 P **P** **16 28 53.4 +0.2**
comp=Z,7.1nm,0.8s,comp=Z,76nm
MRSI Marisa 43.16 210 P **P** **16 28 56.5 +1.4**
comp=Z,45nm,1.1s,comp=Z,6μm
MK01 Makanchi Array 43.31 300 *e*P **P** **16 28 55.4 -0.7**
MK01 *e*PP **PcP** **16 30 42.5 -1.6**
MK31 Makanchi Array 43.31 300 *e*P **P** **16 28 55.5 -0.6**
MK31 Makanchi Array 43.31 300 *e*P **P** **16 28 55.5 -0.6**
MK32 Makanchi Array 43.31 300 *e*P **P** **16 28 55.9 -0.2**
MK32 *e*PP **PcP** **16 30 42.4 -1.7**
MKAR Makanchi Array 43.31 300 P **P** **16 28 55.9 -0.2**
comp=Z,16nm,0.8s,baz=83,slow=9.9,SNR=112
MKAR PcP **PcP** **16 30 42.4 -1.7**
comp=Z,2.4nm,0.8s,baz=174,slow=1.4,SNR=3.8
MKAR LR LR 16 47 36.2
comp=Z,241nm,21.0s,baz=72,slow=37
MKAR Makanchi Array 43.31 300 *e*P **P** **16 28 55.5 -0.5**
MKAR PcP **PcP** **16 30 42.4 -1.7**
MAKZ Makanchi 43.52 300 *e*P **P** **16 28 57.3 -0.4**
MAKZ pmax pmax
comp=Z,16nm,0.8s
MAKZ Makanchi 43.52 300 *e*P **P** **16 28 57.3 -0.4**
comp=Z,16nm,0.8s
SHL Shillong 44.12 267 *ex* P **P** **16 29 06.5 +3.5**
CHBT CHBT 44.16 244 P **P** **16 29 04.6 +1.5**
comp=Z,33nm,1.2s
CAST Castle Rocks 44.72 36 *e*P **P** **16 29 09.7 +2.7**
comp=Z,10nm,1.4s
KDAK Kodiak Island 44.75 44 LR LR 16 47 27.1
comp=Z,115nm,21.8s,baz=283,slow=35
SPU Mount Spurr 44.78 39 *e*P **P** **16 29 06.8 -0.8**
KURK Kurchatov 44.86 306 *e*P **P** **16 29 07.7 -0.6**
KURK pmax pmax
comp=Z,37nm,0.9s
KURK Kurchatov 44.86 306 *e*P **P** **16 29 07.7 -0.6**
comp=Z,37nm,0.9s
PCI Palu 45.27 212 P **P** **16 29 12.3 +0.4**
comp=Z,49nm,1.1s
MLY Manley 45.31 33 *e*P **P** **16 29 14.5 +2.7**
comp=Z,7.1nm,1.3s
COLD Coldfoot 45.57 30 *e*P **P** **16 29 15.7 +2.0**
comp=Z,11nm,1.6s
PDGK Podgornoye 46.16 296 P **P** **16 29 18.3 -0.4**
PDGK pmax pmax
comp=Z,13nm,1.0s
BKB Balikpapan 46.86 216 P **P** **16 29 25.5 +1.1**
comp=Z,100nm,1.0s
ILAR Eielson Array 46.95 34 P **P** **16 29 26.4 +1.7**
comp=Z,2.0nm,0.9s,baz=266,slow=6.0,SNR=16
ILAR LR LR 16 51 24.2
comp=Z,55nm,18.7s,baz=214,slow=39
ILB Eielson Array 46.95 34 *e*P **P** **16 29 26.1 +1.5**
IL1 Eielson Array 46.96 34 *e*P **P** **16 29 25.7 +1.1**
GUN Gumba 47.58 274 *e*P **P** **16 29 30.3 -0.1**
comp=Z,136nm,0.8s
KSM Kuching 47.83 225 *e*P **P** **16 29 32.2 +0.2**
comp=Z,29nm,1.4s
KKN Kakani 48.10 274 *e*P **P** **16 29 34.2 -0.1**
comp=Z,65nm,0.7s
PKIN Phulchoki 48.11 274 *e*P **P** **16 29 33.8 -0.6**
comp=Z,21nm,0.9s
DMN Daman 48.32 274 *e*P **P** **16 29 35.7 -0.3**
GKN Gorkha 48.49 275 *e*P **P** **16 29 36.9 -0.3**
comp=Z,39nm,0.7s
TKM2 Tokmak 2 48.98 297 *e*P **P** **16 29 40.9 0.0**
TKM2 pmax pmax
comp=Z,18nm,0.8s
TKM2 Tokmak 2 48.98 297 *e*P **P** **16 29 40.9 0.0**
comp=Z,18nm,0.8s
KAPI Kappang 49.04 210 *e*P **P** **16 29 41.4 +0.1**
comp=Z,21nm,0.9s
BVAR Borovoye Array 49.31 311 P **P** **16 29 42.3 -0.7**
comp=Z,4.4nm,0.6s,baz=79,slow=7.7,SNR=33
BVAR PcP **PcP** **16 31 04.1 -0.9**
comp=Z,4.9nm,0.8s,baz=90,slow=4.4,SNR=5.3
BRVK Borovoye 49.37 311 *c i*P **P** **16 29 43.1 -0.3**
BRVK pmax pmax
comp=Z,13nm,1.2s
BRVK Borovoye 49.37 311 *e*P **P** **16 29 41.8 -1.6**
comp=Z,9.5nm,0.9s
KOLN Koldanda 49.40 275 *e*P **P** **16 29 44.3 +0.1**
comp=Z,32nm,0.7s
OTUK Ortayu 49.44 304 P **P** **16 29 43.7 -0.4**
OTUK pmax pmax
comp=Z,14nm,1.1s
FRU Bishkek 49.69 297 *e*P **P** **16 29 45.0 -1.1**
FRU *e* 16 30 04.0
PYUN Piuthan 49.70 276 *e*P **P** **16 29 46.6 0.0**
comp=Z,142nm,1.1s
BBKI Banjar Baru 49.75 217 P **P** **16 29 46.9 +0.2**
comp=Z,33nm,1.3s
AAK Ala-Archa 49.84 297⇑ *i*P **P** **16 29 47.1 -0.3**
AAK pmax pmax
comp=Z,14nm,0.9s
AAK Ala-Archa 49.84 297 *e*P **P** **16 29 46.6 -0.8**
comp=Z,4.9nm,0.8s
KSH Kashi 49.96 292 P **P** **16 29 52.2 +3.9**
KSH *e*pP pP 16 30 04.6 +2.7
KSH *e*sP sP 16 30 10.4 +2.7
KSH *e*PP **PP** **16 31 48.6 +5.3**
KSH *e*ScP **ScP** **16 35 01.4 +2.2**
KSH S **S** **16 36 59.8 +4.6**
ZRNK Zerenda 50.14 311 *e*P **P** **16 29 49.1 -0.2**
ZRNK pmax pmax
comp=Z,14nm,0.8s
ZRNK Zerenda 50.14 311 *e*P **P** **16 29 49.1 -0.2**
comp=Z,14nm,0.8s
EKS2 Erkin-Say 50.33 297 *e*P **P** **16 29 50.2 -0.8**
EKS2 pmax pmax
comp=Z,7.0nm,0.8s
EKS2 Erkin-Say 50.33 297 *e*P **P** **16 29 50.2 -0.8**
comp=Z,7.4nm,0.8s
KULM Kulim 50.70 239 *e*P **P** **16 29 54.1 +0.2**
comp=Z,15nm,0.9s
MNAS Manas 51.27 297 P **P** **16 29 58.2 +0.1**
MNAS pmax pmax
comp=Z,26nm,0.9s
INK Inuvik 51.78 28 P **P** **16 30 03.2 +1.9**
comp=Z,2.2nm,0.3s,baz=294,slow=7.0,SNR=27
INK LR LR 16 52 57.3
comp=Z,69nm,21.2s,baz=298,slow=37
INK Inuvik 51.78 28 *e*P **P** **16 30 03.1 +1.9**
comp=Z,8.3nm,1.3s
KKAR Karatay Array 52.40 299 *e*P **P** **16 30 05.7 -0.6**
KKAR Karatay Array 52.40 299 *e*P **P** **16 30 05.7 -0.6**
SVE Sverdlovsk 53.63 318⇑ *i*P **P** **16 30 15.7 +0.6**
SVE pmax pmax
comp=Z,49nm,0.9s
PSI Prapat 53.70 238 *e*P **P** **16 30 16.0 -0.3**
PSI pmax pmax
comp=Z,13nm,1.0s
PSI Prapat 53.70 238 *e*P **P** **16 30 16.0 -0.3**
comp=Z,13nm,1.0s
ARU Arti 54.84 318 *c i*P **P** **16 30 23.8 -0.2**
ARU 16 31 23.8
ARU 16 32 26.8
ARU S **S** **16 38 02.9 +1.7**
ARU SS **SS** **16 41 41.2 -3.2**
ARU pmax pmax
comp=Z,46nm,1.0s
ARU Arti 54.84 318 *e*P **P** **16 30 23.6 -0.4**
comp=Z,34nm,0.8s
SDSI Sungai Dareh 54.96 233 P **P** **16 30 26.4 +1.1**
comp=Z,40nm,1.0s,comp=Z,23μm
PWJI Pagerwojo 55.16 218 P **P** **16 30 25.8 -1.0**
DZET Dzherino 55.31 294 P **P** **16 30 27.4 -0.4**
DZET pmax pmax
comp=Z,21nm,0.7s
GSI Gunungsitoli 55.70 238 *e*P **P** **16 30 30.7 -0.1**
comp=Z,30nm,1.0s
DLBC Dease Lake 56.19 39 LR LR 16 56 11.3
comp=Z,40nm,18.3s,baz=332,slow=38
ABKAR Akbulak array 56.76 309 *e*P **P** **16 30 37.5 -0.4**
KBL Kabul 57.10 290 *e*P **P** **16 30 40.1 -0.7**
KBL pmax pmax
comp=Z,18nm,0.9s
KBL Kabul 57.10 290 *e*P **P** **16 30 40.1 -0.7**
comp=Z,18nm,0.9s
AKTO Aktyubinsk 57.42 311 P **P** **16 30 41.4 -1.1**
comp=Z,11nm,0.7s,baz=70,slow=12,SNR=29
HYB Hyderabad 58.93 267 *i* P **P** **16 30 53.0 -0.6**
HYB *e* 16 31 11.5
WRAB Tennant Creek 59.73 189⇑ *e*P **P** **16 30 58.1 -0.7**
WRAB pmax pmax
comp=Z,57nm,2.5s
WB2 Warramunga Arr 59.74 189 *e*P **P** **16 30 58.4 -0.4**
comp=Z,11nm,0.8s
WR1 Warramunga Arr 59.74 189 *e*P **P** **16 30 57.8 -1.0**
comp=Z,13nm,0.8s
WRA Warramunga Arr 59.74 189 P **P** **16 30 57.8 -1.0**
comp=Z,12nm,0.8s,baz=7.0,slow=7.0,SNR=80
WRA Warramunga Arr 59.74 189 *i* P **P** **16 30 58.4 -0.5**
WRA pmax pmax
comp=Z,12nm,0.8s
RES Resolute Bay 59.91 15 *e*P **P** **16 30 59.9 +0.5**
RES pmax pmax
comp=Z,5.0nm,0.8s
RES Resolute Bay 59.91 15 *e*P **P** **16 30 59.9 +0.5**
comp=Z,4.6nm,0.8s
YKA Yellowknife Ar 61.23 31 P **P** **16 31 10.0 +1.5**
comp=Z,0.7nm,0.7s,baz=301,slow=6.8,SNR=7.3
YKB5 Yellowknife Ar 61.23 31 *e*P **P** **16 31 09.1 +0.5**
ARA0 ARCESS Array S 61.78 339 *e*P **P** **16 31 11.5 -0.7**
ARCES ARCESS Array B 61.78 339 P **P** **16 31 11.5 -0.7**
comp=Z,6.6nm,0.8s,baz=61,slow=6.9,SNR=5.7
ARCES LR LR 17 02 40.7
comp=Z,77nm,18.6s,baz=46,slow=40
KLMR Klimovskoe 61.89 327 *e*P **P** **16 31 11.4 -1.7**
KLMR *e* 16 31 52.7
KLMR *e* 16 33 27.3
KLMR pmax pmax
comp=Z,20nm,1.2s
POO Poona 61.92 271⇑ *i*P **P** **16 31 11.0 -2.9**
comp=Z,30nm,1.0s
GEYT Alibeck 63.14 298 P **P** **16 31 20.8 -1.1**
comp=Z,7.5nm,0.7s,baz=29,slow=3.4,SNR=17
GEYT LR LR 17 01 19.1
comp=Z,57nm,18.6s,baz=195,slow=38
DAG Danmarks Havn 63.22 355 *i* P **P** **16 31 21.8 +0.1**
comp=Z,4.8nm,0.9s
DAG Danmarks Havn 63.22 355 *i* P **P** **16 31 21.8 +0.1**
DAG pmax pmax
comp=Z,4.0nm,0.9s
AS01 Alice Springs 63.46 188 *e*P **P** **16 31 23.9 0.0**
AS31 Alice Springs 63.47 189 *e*P **P** **16 31 23.9 0.0**
comp=Z,2.0nm,0.8s
ASAR Alice Springs 63.47 189 P **P** **16 31 23.4 -0.5**
comp=Z,5.4nm,0.7s,baz=13,slow=6.7,SNR=50
ASAR LR LR 16 58 12.8
comp=Z,46nm,22.0s,baz=56,slow=35
ASAR Alice Springs 63.47 189 P **P** **16 31 23.5 -0.5**
ASAR pmax pmax
comp=Z,6.0nm,0.7s
ASAR MLR MLR
comp=Z,46nm,22.0s
MOS Moscow 65.53 323 *e*P **P** **16 31 36.4 -0.7**
MOS pmax pmax
comp=Z,43nm,1.1s
VRH Novokhopyorsk 66.08 317 *e*P **P** **16 31 39.9 -0.8**
VRH pmax pmax
comp=Z,20nm,1.0s
OBN Obninsk 66.39 323⇓ *i*P **P** **16 31 42.8 +0.2**
OBN *i* 16 34 09.3
OBN *e*S **S** **16 40 28.0 -0.5**
OBN pmax pmax
comp=Z,45nm,1.7s
OBN MLR MLR
comp=Z,144nm,16.0s
LPSR Galich'ya Gora 66.71 320 *e*P **P** **16 31 44.8 +0.1**
LPSR pmax pmax
comp=Z,10.0nm,0.6s
FIA1 FINESS Array S 66.80 332 *e*P **P** **16 31 44.7 -0.4**
FIA0 FINESS Array S 66.80 332 *e*P **P** **16 31 45.1 0.0**
FIA0 FINESS Array S 66.80 332 *e*P **P** **16 31 45.1 0.0**
FINES FINESS Array B 66.80 332 P **P** **16 31 45.1 0.0**
comp=Z,11nm,0.7s,baz=57,slow=7.0,SNR=34
FINES LR LR 17 02 50.6
comp=Z,196nm,21.2s,baz=28,slow=38
VSR Storozhevoye 67.39 318 *e*P **P** **16 31 49.0 0.0**
VSR pmax pmax
comp=Z,10.0nm,0.8s
NEW Newport 67.82 45 LR LR 16 57 10.0
comp=Z,29nm,21.1s,baz=271,slow=32
SUMG Summit 68.07 0 *i* P **P** **16 31 53.9 +0.4**
comp=Z,3.7nm,0.8s
SUMG Summit 68.07 0 *e*P **P** **16 31 54.5 +1.0**
SUMG pmax pmax
comp=Z,7.0nm,0.9s
SUMG Summit 68.07 0 *e*P **P** **16 31 54.5 +1.0**
comp=Z,7.0nm,0.9s
YBH Yreka Blue Hor 68.26 53 LR LR 16 55 07.2
comp=Z,21nm,21.9s,baz=326,slow=30
VSU Vasula 68.53 329⇓ *i*P **P** **16 31 56.5 +0.5**
VSU pmax pmax
comp=Z,65nm,1.2s
GOF Gofitskoye 68.83 311⇑ *e*P **P** **16 31 57.9 -0.3**
GOF pmax pmax
comp=Z,38nm,0.9s
NCK Nalchik 69.41 310⇓ *e*P **P** **16 32 02.4 +0.5**
NCK pmax pmax
comp=Z,29nm,1.3s
ZEI Tsey 69.64 309 *e*P **P** **16 32 02.2 -1.3**
ZEI pmax pmax
comp=Z,41nm,1.4s
KIV Kislovodsk 69.68 311 *i* P **P** **16 32 04.4 +0.8**
SNR=7.2
KIV Kislovodsk 69.68 311 *e*P **P** **16 32 04.0 +0.4**
KIV pmax pmax
comp=Z,57nm,1.1s
KIV MLR MLR
comp=Z,77nm,17.0s
KIV Kislovodsk 69.68 311 *e*P **P** **16 32 03.9 +0.4**
comp=Z,59nm,1.1s
KBZ Khabaz 69.69 310 P **P** **16 32 03.6 +0.1**
comp=Z,14nm,0.9s,baz=63,slow=4.3,SNR=26
KBZ LR LR 17 04 43.7
comp=Z,65nm,19.0s,baz=54,slow=38
SWMT Swartz Lake 69.97 44 *e*P **P** **16 32 06.1 +0.7**
NEY Neytrino 70.07 310⇓ *e*P **P** **16 32 07.5 +1.4**
NEY pmax pmax
comp=Z,2.0nm,0.9s
CHVG Ch'k'valeri 70.76 310⇑ *i*P **P** **16 32 12.5 +2.4**
BANOM Banah 70.99 288 *i* P **P** **16 32 11.9 +0.1**
SNR=6.6
STKA Stephens Creek 71.17 181 P **P** **16 32 12.7 +0.2**
comp=Z,2.7nm,0.7s,baz=330,slow=11,SNR=5.0
STKA Stephens Creek 71.17 181 *e*P **P** **16 32 12.9 +0.4**
STKA pmax pmax
comp=Z,4.0nm,1.5s
STKA Stephens Creek 71.17 181 *e*P **P** **16 32 12.9 +0.4**
comp=Z,4.2nm,1.5s
UOSS Minazif 71.62 287 *e*P **P** **16 32 15.2 -0.5**
comp=Z,1.4nm,0.9s
HATD Hatta, Dubai 71.75 287 *i* P **P** **16 32 16.5 +0.1**
SNR=7.0
NC405 NORSAR Array S 71.81 337 *e*P **P** **16 32 15.8 -0.3**
LRM Limekiln Ridge 71.84 45 *e*P **P** **16 32 15.0 -1.9**
ASHO Ashiyiah 71.88 287 *i* P **P** **16 32 16.8 -0.4**
SNR=6.6
NC204 NORSAR Array S 71.97 338 *e*P **P** **16 32 17.4 +0.3**
NB201 NORSAR Array S 71.99 337 *e*P **P** **16 32 17.1 -0.1**
NB2 NORSAR Subarra 72.02 337 P **P** **16 32 17.2 -0.2**
comp=Z,8.2nm,0.8s,baz=42,slow=6.2
NB2 NORSAR Subarra 72.02 337 P **P** **16 32 17.1 -0.3**
NB2 pmax pmax
comp=Z,7.0nm,0.9s
NB200 NORSAR Array S 72.02 337 *e*P **P** **16 32 17.5 +0.1**
NOA NORSAR Array B 72.02 337 P **P** **16 32 17.5 +0.1**
comp=Z,7.2nm,0.8s,baz=40,slow=6.0,SNR=25
NBO00 NORSAR Array S 72.16 337 *e*P **P** **16 32 18.1 -0.1**
ANN Anapa 72.18 314 *e*P **P** **16 32 15.5 -3.1**
ANN *e**PP **pP** **16 32 32.8 0.0**
ANN *e*PPP PPP 16 36 37.6
ANN *e*S **S** **16 41 32.1 -5.1**
ANN *e*SS **SS** **16 46 08.6 -5.9**
ANN *e*SSS SSS 16 49 27.0
ANN pmax pmax
comp=Z,20nm,1.4s
FAQ Al Faqa, Dubai 72.19 288 P **P** **16 32 18.4 -0.6**
AKASG Malin Array Be 72.62 322 P **P** **16 32 20.9 -0.2**
comp=Z,3.7nm,0.4s,baz=45,slow=6.2,SNR=24
AKASG LR LR 17 07 50.0
comp=Z,84nm,18.3s,baz=65,slow=39
AKASG Malin Array Be 72.62 322 *i* P **P** **16 32 20.8 -0.3**
AKASG pmax pmax
comp=Z,4.0nm,0.4s
AKBB Malin Array Si 72.62 322 *e*P **P** **16 32 20.9 -0.2**
AKBB pmax pmax
comp=Z,16nm,1.1s
AKBB Malin Array Si 72.62 322 *e*P **P** **16 32 20.9 -0.2**
comp=Z,16nm,1.1s
KIEV Kiev 72.63 322 *c i*P **P** **16 32 20.8 -0.4**
KIEV pmax pmax
comp=Z,14nm,1.1s
KIEV Kiev 72.63 322 *e*P **P** **16 32 20.8 -0.4**
comp=Z,12nm,1.0s
NVAR Mina Array Bea 72.93 54 LR LR 16 57 32.4
comp=Z,26nm,21.5s,baz=268,slow=30
H17A Grant Village 73.77 45 *e*P **P** **16 32 28.2 -0.2**
comp=Z,6.7nm,0.9s
IMW Indian Meadow 73.89 46 *e*P **P** **16 32 30.4 +1.2**
comp=Z,6.1nm,1.2s
MOOW Moose Ponds 74.09 46 *e*P **P** **16 32 31.6 +1.3**
comp=Z,7.8nm,1.7s
SORM Soroca 74.77 321⇓ *i*P **P** **16 32 34.0 +0.2**
TPNV Topopah Spring 75.12 54 *e*P **P** **16 32 38.6 +2.3**
TPNV pmax pmax
comp=Z,5.0nm,0.9s
TPNV Topopah Spring 75.12 54 *e*P **P** **16 32 38.6 +2.3**
comp=Z,5.3nm,0.9s
BW06 Boulder Array 75.39 46 *e*P **P** **16 32 38.9 +1.2**
PD31 Pinedale Array 75.39 46 *e*P **P** **16 32 38.8 +1.1**
PDAR Pinedale Array 75.39 46 P **P** **16 32 39.5 +1.7**
comp=Z,1.0nm,0.7s,baz=251,slow=1.8,SNR=9.2
BSD Bornholm Skovb 75.44 332 *i* P **P** **16 32 37.1 -0.4**
comp=Z,14nm,1.0s
BSD Bornholm Skovb 75.44 332 *i* P **P** **16 32 37.1 -0.4**
BSD pmax pmax
comp=Z,14nm,1.0s
SHPR Sheep Range 76.08 54 *e*P **P** **16 32 44.9 +3.2**
comp=Z,4.7nm,1.1s
KWP Kalwaria Pacla 76.37 324 *e*P **P** **16 32 43.9 +1.0**
KWP Kalwaria Pacla 76.37 324 *e*P **P** **16 32 43.9 +1.0**
BUR08 Bucovina Ar. S 76.64 322 *e*P **P** **16 32 45.0 +0.4**
BURAR Bucovina Array 76.65 322⇑ *i*P **P** **16 32 45.1 +0.4**
BURAR Bucovina Array 76.65 322 P **P** **16 32 45.1 +0.4**
TESR Tescani 76.73 320⇑ *i*P **P** **16 32 45.4 +0.4**
CFR Carcaliu 76.91 318⇓ *i*P **P** **16 32 46.5 +0.5**
LCMT Little Creek M 76.94 53 *e*P **P** **16 32 48.4 +1.8**
comp=Z,5.6nm,1.0s
VRI Vrincioaia 77.14 320⇑ *i*P **P** **16 32 49.3 +1.9**
VRI Vrincioaia 77.14 320 P **P** **16 32 49.4 +2.0**
VRI pmax pmax
comp=Z,60nm,1.5s
STHS Stebnicka Huta 77.18 325 *e*P **P** **16 32 49.2 +1.7**
STHS pmax pmax
comp=Z,6.0nm,1.0s
STHS Stebnicka Huta 77.18 325 *e*P **P** **16 32 49.2 +1.7**
OJC Ojcow 77.22 326 *e*P **P** **16 32 48.4 +0.7**
OJC Ojcow 77.22 326 *e*P **P** **16 32 48.0 +0.3**
OJC pmax pmax
comp=Z,14nm,0.8s
OJC Ojcow 77.22 326 *e*P **P** **16 32 48.0 +0.3**
comp=Z,14nm,0.8s
SRU San Rafael Swe 77.22 50 *e*P **P** **16 32 50.1 +1.9**
SRU pmax pmax
comp=Z,9.0nm,1.1s
SRU San Rafael Swe 77.22 50 *e*P **P** **16 32 50.1 +1.9**
comp=Z,9.2nm,1.1s
TIRR Tirgusor 77.26 318⇓ *i*P **P** **16 32 48.5 +0.5**
TIRR Tirgusor 77.26 318 P **P** **16 32 48.5 +0.5**
CRVS Cervenica-Dubn 77.46 324 *e*P **P** **16 32 49.7 +0.6**
CRVS Cervenica-Dubn 77.46 324 *e*P **P** **16 32 49.7 +0.6**
BR101 Keskin Array S 77.59 312 *e*P **P** **16 32 50.2 0.0**
BRTR Keskin Array B 77.59 312 P **P** **16 32 50.2 0.0**
comp=Z,2.0nm,0.9s,baz=108,slow=2.9,SNR=11
BRTR LR LR 17 11 44.1
comp=Z,58nm,19.0s,baz=48,slow=39
BRTR Keskin Array B 77.59 312 P **P** **16 32 50.2 0.0**
BRTR pmax pmax
comp=Z,3.0nm,1.0s
BRTR MLR MLR
comp=Z,58nm,19.0s
NIE Niedzica 77.60 325 *e*P **P** **16 32 51.0 +1.1**
NIE Niedzica 77.60 325 *e*P **P** **16 32 51.0 +1.1**
ISR Istrita 77.76 319⇑ *i*P **P** **16 32 52.3 +1.4**
MLR Muntele Rosu 77.80 320⇓ *i*P **P** **16 32 53.1 +1.9**
MLR Muntele Rosu 77.80 320 *e*P **P** **16 32 50.5 -0.7**
MLR pmax pmax
comp=Z,13nm,1.3s

MLR	Muntele Rosu	77.80	320	eP	P	16 32 50.5	-0.7
	comp=Z,12nm,1.3s						
LANS	Liptovska Anna	78.16	326	eP	P	16 32 54.5	+1.5
LANS				e		16 33 15.4	
LANS	Liptovska Anna	78.16	326	eP	P	16 32 54.5	+1.5
LANS				e		16 33 15.4	
KSP	Ksiaz	78.21	328	eP	P	16 32 54.0	+0.8
KSP	Ksiaz	78.21	328	eP	P	16 32 54.0	+0.8
VOIR		78.28	320	⇑iP	P	16 32 55.1	+1.3
VOIR		78.28	320	P	P	16 32 54.8	+1.0
VOIR				pmax	pmax		
	comp=Z,5.0nm,1.2s						
MORC	Moravsky Berou	78.51	327	⇓iP	P	16 32 56.2	+1.2
MORC	Moravsky Berou	78.51	327	eP	P	16 32 55.2	+0.2
MORC				pmax	pmax		
	comp=Z,34nm,0.9s						
MORC	Moravsky Berou	78.51	327	eP	P	16 32 55.2	+0.2
	comp=Z,34nm,0.9s						
DPC	Dobruska-Polom	78.58	328	eP	P	16 32 56.3	+1.0
DPC				epP	sP	16 33 15.9	+0.6
DPC	Dobruska-Polom	78.58	328	eP	P	16 32 56.3	+1.0
DPC				e		16 33 15.9	
UPC	Upice	78.58	328	eP	P	16 32 56.1	+0.8
UPC	Upice	78.58	328	eP	P	16 32 56.1	+0.8
UPC				MLR	MLR		
	comp=Z,2μm,17.3s						
KRLC	Kraliky	78.60	328	eP	P	16 32 56.3	+0.9
KRLC				ePCP	PcP	16 33 05.7	+1.4
KRLC				epP	sP	16 33 15.2	-0.3
KRLC	Kraliky	78.60	328	eP	P	16 32 56.3	+0.9
KRLC				e		16 33 05.7	
KRLC				e		16 33 15.2	
PSZ	Piszkesteto	78.89	325	⇑iP	P	16 32 58.0	+0.9
PSZ	Piszkesteto	78.89	325	eP	P	16 32 56.9	-0.3
PSZ				pmax	pmax		
	comp=Z,8.0nm,1.0s						
PSZ	Piszkesteto	78.89	325	eP	P	16 32 56.9	-0.3
	comp=Z,8.0nm,1.0s						
VYHS	Vyhne	78.93	326	eP	P	16 32 58.0	+0.8
VYHS				pmax	pmax		
	comp=Z,3.0nm,1.0s						
VYHS	Vyhne	78.93	326	eP	P	16 32 58.0	+0.8
WUAZ	Wupatki	79.06	53	eP	P	16 32 59.0	+0.6
	comp=Z,11nm,1.1s						
BRG	Berggiesshubel	79.12	330	eP	P	16 32 58.5	+0.3
	comp=Z,6.6nm,0.9s						
BRG	Berggiesshubel	79.12	330	eP	P	16 32 58.5	+0.3
BRG				pmax	pmax		
	comp=Z,2.0nm,0.9s						
BRG				MLR	MLR		
	comp=E,144nm,12.7s						
BRG				MLR	MLR		
	comp=Z,69nm,14.2s						
CLL	Collm	79.14	330	iP	P	16 32 58.5	+0.2
	comp=Z,13nm,0.9s						
CLL				L	L	17 10 00.0	
	comp=Z,100nm,19.9s						
CLL	Collm	79.14	330	iP	P	16 32 58.5	+0.2
CLL				pmax	pmax		
	comp=Z,13nm,0.9s						
CLL	Collm	79.14	330	eP	P	16 32 58.0	-0.3
	comp=Z,12nm,0.9s						
PVCC	Panska Ves	79.15	329	eP	P	16 32 59.2	+0.9
PVCC	Panska Ves	79.15	329	eP	P	16 32 59.2	+0.9
VRAC	Vranov	79.27	327	⇑iP	P	16 32 59.8	+0.7
GOPC	GO Pecny, Ondr	79.54	329	eP	P	16 33 01.7	+1.2
GOPC	GO Pecny, Ondr	79.54	329	eP	P	16 33 01.7	+1.2
PRU	Pruhonice	79.58	329	eP	P	16 33 01.4	+0.7
PRU	Pruhonice	79.58	329	eP	P	16 33 01.4	+0.7
TREC	Trest	79.74	328	eP	P	16 33 02.3	+0.7
TREC				AMS	AMS	17 10 30.0	
	comp=Z,100nm,16.9s						
TREC	Trest	79.74	328	eP	P	16 33 02.3	+0.7
TREC				MLR	MLR		
	comp=Z,100nm,16.9s						
X16A	Lo Mia Camp, P	79.74	54	eP	P	16 33 03.7	+1.6
	comp=Z,4.6nm,0.9s						
NKC	Novy Kostel	80.21	330	eP	P	16 33 05.1	+0.9
NKC	Novy Kostel	80.21	330	eP	P	16 33 05.1	+0.9
MDVR	Moldovita	80.38	322	⇑iP	P	16 33 05.3	+0.1
KHC	Kasperske Hory	80.64	329	eP	P	16 33 07.3	+0.8
KHC				epP	sP	16 33 26.5	-0.1
KHC				AMS	AMS	17 11 40.0	
	comp=Z,200nm,14.8s						
KHC	Kasperske Hory	80.64	329	eP	P	16 33 07.3	+0.8
KHC				e		16 33 26.5	
KHC				MLR	MLR		
	comp=Z,200nm,14.8s						
KHC	Kasperske Hory	80.64	329	eP	P	16 33 06.1	-0.4
	comp=Z,3.7nm,0.9s						
CONA	Conrad Observa	80.64	327	iP	P	16 33 07.1	+0.5
	comp=Z,2.6nm,0.6s						
GERES	GERESS Array B	80.82	328	P	P	16 33 07.8	+0.2
	comp=Z,2.5nm,0.8s,baz=36,slow=5.0,SNR=20						
GEA0	GERESS Array S	80.83	328	eP	P	16 33 07.3	-0.2
WET	Wettzell	80.91	329	P	P	16 33 09.2	+1.2
WET				pmax	pmax		
	comp=Z,10.0nm,1.1s						
GRF	Grafenberg Arr	81.12	330	P	P	16 33 10.6	+1.6
GRF				pmax	pmax		
	comp=Z,26nm,1.0s						
GRFO	Grafenberg	81.12	330	eP	P	16 33 09.6	+0.6
GRFO				pmax	pmax		
	comp=Z,14nm,0.9s						
GRFO	Grafenberg	81.12	330	eP	P	16 33 09.6	+0.6
	comp=Z,14nm,0.9s						
ARSA	Arzberg	81.32	326	iP	P	16 33 10.9	+0.8
	comp=Z,2.0nm,0.5s						
MOA	Molln	81.38	328	iP	P	16 33 11.1	+0.7
	comp=Z,0.8nm,0.4s						
SOKA	Soboth	81.97	326	iP	P	16 33 14.3	+0.7
	comp=Z,1.7nm,0.3s,SNR=8.7						
OBKA	Obir	82.31	327	iP	P	16 33 15.5	0.0
	comp=Z,4.0nm,0.7s						
KBA	Koelnbreinsper	82.37	328	iPcP	P	16 33 16.6	+0.7
	comp=Z,0.9nm,0.2s						
KBA	Koelnbreinsper	82.37	328	P	P	16 33 17.2	+1.3
KBA				pmax	pmax		
	comp=Z,9.0nm,1.0s						
ANMO	Albuquerque	82.42	51	P	P	16 33 18.5	+2.1
	comp=Z,1.1nm,0.5s,baz=318,slow=9.2,SNR=3.3						
ANMO	Albuquerque	82.42	51	⇓eP	P	16 33 18.2	+1.8
ANMO				pmax	pmax		
	comp=Z,4.0nm,1.2s						
ANMO	Albuquerque	82.42	51	eP	P	16 33 17.2	+0.8
	comp=Z,5.4nm,1.0s						
MYKA	Terra Mystica	82.60	327	iP	P	16 33 17.0	+0.1
	comp=Z,2.0nm,0.4s						
SCHQ	Schefferville	82.65	16	LR	LR	17 12 12.2	
	comp=Z,55nm,21.2s,baz=322,slow=37						
MOTA	Moosalm	83.06	329	iPcP	P	16 33 20.4	+1.0
	comp=Z,3.6nm,0.6s,SNR=5.3						
RETA	Reutte	83.08	329	iPcP	P	16 33 20.3	+0.9
	comp=Z,13nm,1.2s,SNR=6.2						
PDG	Podgorica	83.32	321	⇑iP	P	16 33 20.9	+0.3
BFO	Black Forest	83.33	331	eP	P	16 33 20.2	-0.4
BFO				pmax	pmax		
	comp=Z,5.0nm,0.8s						
BFO	Black Forest	83.33	331	eP	P	16 33 20.2	-0.4
	comp=Z,4.9nm,0.8s						
FETA	Feichten	83.48	329	iPcP	P	16 33 22.1	+0.5
	comp=Z,4.7nm,0.8s						
DAVA	Damuels	83.59	330	iPcP	P	16 33 22.9	+0.7
	comp=Z,12nm,1.0s						
FUORN	Ofenpass-Fuorn	83.99	329	eP	P	16 33 24.8	+0.5
	comp=Z,17nm,0.8s						
TUE	Stuetta	84.47	329	eP	P	16 33 26.6	-0.1
	comp=Z,6.5nm,0.9s						
PMOR	Pomariorio Ree	84.66	114	eT	T	18 06 57.0	
	comp=Z,32nm,0.2s						
PPT	Papeete	85.25	117	LR	LR	17 01 54.2	
	comp=Z,93nm,21.6s,baz=332,slow=29						
PPT2	Papeete2	85.27	117	eLR	LR	17 00 14.0	
	comp=Z,159nm,22.5s						
SENIN	Lac Senin/Sane	85.35	331	eP	P	16 33 31.0	-0.1
	comp=Z,4.4nm,0.7s						
TIAR	Tiarei	85.40	117	eT	T	18 07 51.5	
	comp=Z,3.9nm,0.2s						
TAOE	Nuku Hiva Isla	86.20	105	eLR	LR	17 00 49.0	
	comp=Z,183nm,32.4s						
LPL	La Plagne	86.28	330	eP	P	16 33 35.9	+0.1
LPL				pmax	pmax		
	comp=Z,9.0nm,1.0s						
LPG	La Plagne	86.29	330	eP	P	16 33 36.0	+0.1
LPG				pmax	pmax		
	comp=Z,8.0nm,0.8s						
GRR	Gorron	86.42	336	eP	P	16 33 36.3	+0.2
GRR				pmax	pmax		
	comp=Z,24nm,1.3s						
AVF	Avril sur Loir	86.43	333	eP	P	16 33 36.4	+0.2
AVF				pmax	pmax		
	comp=Z,16nm,0.8s						
MEH	Mehetia	86.50	117	eT	T	18 09 14.3	
	comp=Z,137nm,0.3s						
LTX	Lajitas	88.03	53	eP	P	16 33 46.3	+1.9
LTX	Lajitas	88.03	53	eP	P	16 33 46.2	+1.9
TXAR	Lajitas Array	88.03	53	P	P	16 33 46.2	+1.9
	comp=Z,0.3nm,0.5s,baz=292,slow=3.7,SNR=3.7						
CAF	Calviac	88.50	333	eP	P	16 33 46.1	-0.1
CAF				pmax	pmax		
	comp=Z,4.0nm,0.8s						
TKL	Tuckaleechee C	93.89	36	P	P	16 34 10.5	-0.9
	comp=Z,4.7nm,0.3s,baz=139,slow=23,SNR=7.2						
TKL	Tuckaleechee C	93.89	36	P	P	16 34 10.5	-0.9
TKL				pmax	pmax		
	comp=Z,4.0nm,0.3s						
CBN	Corbin Frederi	94.43	30	eP	P	16 34 10.0	-3.8
	comp=Z,92nm,0.8s						
ESDC	Sonseca Array	95.21	334	LR	LR	17 22 50.7	
	comp=Z,63nm,18.1s,baz=180,slow=39						
TOA1	Torodi Ar. Sit	115.90	316	ePP	PP	16 40 38.3	-1.9
TORD	Torodi Ar. Bea	115.90	316	PP	PP	16 40 38.3	-1.9
	comp=Z,2.4nm,0.9s,baz=34,slow=6.5,SNR=10.0						
SNAA	Sanae	143.43	198	PKP	PKPbc	16 40 23.9	-0.4
VNA2	Neumayer--Watz	145.01	197	PKP	PKPab	16 40 29.2	+0.1
	baz=99,slow=2.0						
VNA3	Neumayer Olymp	145.26	196	PKP	PKPbc	16 40 29.6	-0.3
VNA1	Neumayer--Stat	145.40	197	PKP	PKPab	16 40 30.5	0.0

*IDC **12** 16:22:07.5±1.5, 16°.51S×178°.69W, h0km, mb4.1/8, mb1 4.3/8, mb1mx3.9/40, mbtmp4.1/8, Error ellipse: s-maj=79.7km s-min=21.2km az=145.0*
*NEIC **12** 16:22:12.4±0.5, 16°.60S×178°.57W, h35km, mb4.7/6, Error ellipse: s-maj=22.7km s-min=9.6km az=149.0*
ISC 12 16:22:12.3±0.7, 16°.6S±0°.2×178°.5W±0°.1, h35km, n18, σ1§09/17, mb4.2/13, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	Afiamalu	7.04	68	ePn	Pn	16 23 51.1	-2.0
URZ	Urewera	21.90	189	eP	P	16 27 03.4	+1.0
	112nm,1.5s						
STKA	Stephens Creek	39.17	240	P	P	16 29 36.1	-0.9
	3.5nm,0.8s,baz=93,slow=7.4,SNR=7.7						
STKA	Stephens Creek	39.17	240	eP	P	16 29 37.3	+0.2
	3.6nm,1.5s						
BBOO	Buckleboo	43.95	240	eP	P	16 30 14.9	-1.3
	85nm,1.8s						
WR1	Warramunga Arr	44.78	258	eP	P	16 30 22.2	-0.8
	13nm,0.8s						
WRA	Warramunga Arr	44.78	258	P	P	16 30 22.2	-0.8
	0.3nm,0.4s,baz=96,slow=7.6,SNR=9.1						
AS01	Alice Springs	45.01	253	eP	P	16 30 24.2	-0.6
AS31	Alice Springs	45.05	253	eP	P	16 30 24.7	-0.5
	2.0nm,0.8s						
ASAR	Alice Springs	45.05	253	P	P	16 30 24.6	-0.6
	4.8nm,0.5s,baz=90,slow=7.8,SNR=103						
QSPA	South Pole Qui	73.43	180	eP	P	16 33 33.3	-7.6
	19nm,1.9s						
SEY	Seymchan	82.50	347	P	P	16 34 31.3	+0.4
	1.9nm,0.8s,baz=122,slow=9.5,SNR=4.1						
ILAR	Eielson Array	84.66	13	P	P	16 34 42.2	+0.2
	0.2nm,0.3s,baz=235,slow=3.2,SNR=3.8						
LTX	Lajitas	85.40	58	eP	P	16 34 48.4	+1.8
TXAR	Lajitas Array	85.40	58	P	P	16 34 48.4	+1.8
	0.7nm,0.6s,baz=221,slow=4.5,SNR=4.3						
PD31	Pinedale Array	86.49	44	eP	P	16 34 52.4	+0.5
PDAR	Pinedale Array	86.49	44	P	P	16 34 52.5	+0.6
	0.6nm,0.5s,baz=216,slow=4.2,SNR=3.7						
INK	Inuvik	90.67	15	P	P	16 35 10.9	+0.1
	1.4nm,1.0s,baz=196,slow=7.4,SNR=3.3						

DJA 12 16:22:31.3±0.5, 10°S±4°×10°8E±°, h10km, M3.8/12, MLv3.8/12, South of Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMJI	Cimerak	2.11	18	P	Pn	16 23 06.9	+0.3
CISI	Cisompet, Garu	2.23	1	P	Pn	16 23 08.4	0.0
CNJI	Cibinong	2.56	345	P	Pn	16 23 13.2	+0.3
CNJI				S	Sn	16 23 43.1	-1.0
LEM	Lembang	2.96	357	P	Pb	16 23 22.9	-1.4
LEM				S	Sn	16 23 57.1	+2.9
UGM	Wanagama	3.29	55	P	Pn	16 23 23.1	+0.2
UGM				S	Sn	16 24 00.1	-2.1
PCJI	Pacitan	3.71	65	P	Pn	16 23 29.2	+0.5
PCJI				S	Sn	16 24 08.0	-4.4
CGJI	Cibinong	3.79	327	P	Pn	16 23 29.8	+0.1
PWJI	Pagerwojo	4.34	66	P	Pn	16 23 36.8	-0.6
NGJI	Ngawi	4.36	57	P	Pg	16 23 58.0	+3.1

*NEIC **12** 16:23:49.0, 38°.42N×118°.72W, h0km, MW3.9, ML4.1(REN), Moment Tensor Solution. s78 Moment tensor: Scale 1014Nm; Mrr-9.19; Mθθ1.51; Mφφ7.68; Mrθ0.17; Mφθ4.42; Mφr-1.08; Best double couple: Mo9.70000×1014 NP1: φs212.00000°, δ43.00000°, λ-84.00000°. NP2:φs23.00000°, δ48.00000°, λ-96.00000°. Principal axes: T 10.0000, Plg3.0000°, Azm117.0000°; N -0.7000, Plg4.0000°, Azm27.0000°; P -9.3000, Plg85.0000°, Azm239.0000°; After REN.*
NEIC Felt [III] at Hawthorne. Also felt at Carson City.
*IDC **12** 16:23:48.7±0.9, 38°.44N×118°.80W, h0km, mb3.6/1, mb1 3.8/5, mb1mx3.5/55, mbtmp3.4/5, ML3.8/3, MS3.3/7, Ms1 3.3/7, ms1mx2.9/41 Error ellipse: s-maj=8.9km s-min=6.7km az=20.0*
ISC 12 16:23:47.8±1.1, 38°.39N±0°.02×118°.72W±0°.02, h2km±9km, n114, σ1§84/151, MS3.1/3, California-Nevada border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NV01	Mina Array Sit	0.33	84	ePg	Pg	16 23 55.4	+1.3
NV01				eSg	Sb	16 24 00.8	-1.5
NVAR	Mina Array Bea	0.33	84	Pg	Pg	16 23 55.6	+1.4
	2μm,0.3s,baz=261,slow=20						
NVAR				Lg	Lg	16 24 00.9	
	4μm,0.3s,baz=258,slow=33,SNR=62						
NVAR				LR	LR	16 24 26.1	
	comp=Z,2μm,18.6s,baz=22,slow=74						
NV11	Mina Array Sit	0.44	85	ePg	Pb	16 23 57.8	-0.7
WAKR	Walker	0.58	281	ePg	Pg	16 23 59.9	+1.0
WAKR				eSg	Sg	16 24 07.8	+1.4
MLAC	Mammoth, Mammo	0.77	187	P	Pb	16 24 04.0	-0.1
	baz=6.3						
MLAC				S	Sb	16 24 14.9	-0.1
	baz=6.3						
MTUM	Tungsten Hills	1.05	173	ePg	Pn	16 24 09.1	-0.6
CMB	Columbia Colle	1.36	255	ePg	Pb	16 24 14.0	-0.1
CMB				eSn	Sb	16 24 29.2	-2.8
TIN	Tinemaha, Big	1.39	164	P	Pg	16 24 15.4	+0.9
	baz=344						
TIN				S	Sg	16 24 34.6	+2.1
	baz=344						
PAHR	Pah Rah Range	1.41	339	ePn	Pb	16 24 14.9	-0.1
GRAC	Grapevine Rang	1.76	142	P	Pb	16 24 20.6	-0.3
	baz=323						
GRAC				S	Sb	16 24 43.7	+0.3
	baz=323						
AFDM	Forest Hills D	1.85	288	ePn	Pb	16 24 21.6	-0.7
AFDM				eSn	Sn	16 24 44.0	-0.6
RCTC	Rector, Farmer	2.13	192	Sb	Sg	16 24 56.5	+0.4
	baz=11						
WLHM	Little Horse	2.26	172	ePn	Pg	16 24 31.5	+0.4
DAC	Darwin (Calif)	2.29	157	ePn	Pn	16 24 28.2	+1.4
DAC				eSn	Sb	16 24 57.0	-1.9
FURC	Furnace Creek,	2.42	142	Pb	Pb	16 24 32.8	+0.7
	baz=323						
FURC				Sb	Sg	16 25 04.8	-0.9
	baz=323						
TPNV	Topopah Spring	2.43	126	P	Pn	16 24 29.5	+0.8
	baz=308						
TPNV				Sb	Sg	16 25 06.3	+0.3
	baz=308						
TPNV	Topopah Spring	2.43	126	ePn	Pn	16 24 29.9	+1.2
TPNV				eSn	Sn	16 24 60.0	+0.9
ORV	Oroville	2.46	299	ePn	Pn	16 24 29.8	+0.9
ORV				eSn	Sn	16 24 56.8	-2.8
R11A	Troy Canyon, C	2.46	90	ePn	Pn	16 24 29.2	+0.1
R11A				eSn	Sn	16 25 00.2	+0.4
R11A				eSg	Sg	16 25 06.5	-0.4
MPMC	Manual Prospec	2.53	157	P	Pn	16 24 30.9	+0.8
	baz=338						
MPMC				Sb	Sg	16 25 08.6	-0.4
	baz=338						
WCHM	Chimney Peak	2.56	168	eSn	Sg	16 25 10.3	+0.3
VES	Vestal, Richgr	2.56	187	P	Pb	16 24 32.8	-1.7
	baz=6.2						
VES				Sb	Sg	16 25 09.8	-0.5
	baz=6.2						
SAO	San Andreas Ge	2.71	234	ePn	Pn	16 24 33.8	+1.4
SAO				eSn	Sn	16 25 01.6	-4.2
ISA	Isabella, Lake	2.73	176	Pb	Pb	16 24 38.6	+1.1
	baz=356						
ISA				Sb	Sg	16 25 14.6	-1.0
	baz=356						
ISA	Isabella, Lake	2.73	176	ePn	Pb	16 24 36.6	-0.8
ISA				eSn	Sg	16 25 14.5	-1.2
LRMC	Laurel Mtn Rad	3.02	164	Pb	Pg	16 24 44.8	-1.0
	baz=344						
LRMC				Sb	Sg	16 25 24.5	-0.5
	baz=344						
O03D	Paynes Creek	3.05	309	P	Pn	16 24 38.8	+1.7
	baz=127						
O03D				Sb	Sb	16 25 23.0	+2.4
	baz=127						
SHOC	Shoshone, Teco	3.16	141	Pb	Pg	16 24 47.1	-1.3
	baz=323						
SHOC				Sb	Sg	16 25 29.0	-0.4
	baz=323						
SMMC	Simmler	3.24	199	P	Pn	16 24 41.0	+1.3
	baz=18						
ARVC	Arvin	3.26	182	Sb	Sg	16 25 29.9	-2.7
	baz=1.4						
MCCM	Marconi Confer	3.29	267	ePn	Pn	16 24 41.6	+1.3
MCCM				eSg	Sb	16 25 28.8	+1.6
SHPR	Sheep Range	3.40	123	ePn	Pn	16 24 43.7	+1.7
GSC	Goldstone, Bar	3.44	153	P	Pn	16 24 44.1	+1.5
	baz=334						
GSC	Goldstone, Bar	3.44	153	ePn	Pn	16 24 44.2	+1.7
GSC				ePg	Pg	16 24 53.7	-0.2
HOPS	Hopland Field	3.46	281	ePn	Pn	16 24 43.0	+0.3
EDW2	Edwards Air Fo	3.55	170	Pb	Pb	16 24 53.2	+1.8
	baz=351						
ELK	Elko	3.57	48	Pg	Pb	16 24 52.7	+0.9
	15nm,0.3s,baz=40,slow=0.1,SNR=4.3						
ELK				Lg	Lg	16 25 40.4	
	61nm,0.3s,baz=31,slow=0.0,SNR=10						
ELK	Elko	3.57	48	ePn	Pn	16 24 44.6	+0.2
ELK				Pg	Pb	16 24 52.7	+0.9
ELK				eLg	Lg	16 25 41.0	
PKM	Mcpherson Peak	3.61	194	P	Pn	16 24 46.5	+1.6
	baz=14						
WDC	Whiskeytown Da	3.68	308	ePn	Pn	16 24 47.2	+1.5
WDC				ePg	Pg	16 24 56.5	-1.8
TUQ	Turquoise Moun	3.70	142	Pb	Pb	16 24 55.9	+1.8
	baz=324						
MOD	Modoc Plateau	3.71	341	ePn	Pn	16 24 49.2	+2.9
MOD				eSg	Sg	16 25 45.5	-1.4
OSI	Osito Audit: C	3.77	180	Sb	Sg	16 25 45.3	-3.7
	baz=360						
PSUT	Pine Spring	3.82	86	ePn	Pn	16 24 49.9	+2.1
PSUT				eSg	Sg	16 25 48.2	-2.3
N02D	Trinity Center	4.01	311	Pb	Pb	16 24 60.0	+0.7
	baz=129,SNR=8.4						
N02D				Sb	Sb	16 25 50.4	+2.2
	baz=129						
SBC	Santa Barbara	4.03	192	Sb	Sb	16 25 52.1	+3.6
	baz=11						
WVOR	Wild Horse Val	4.04	1	ePn	Pn	16 24 52.2	+1.5
MWC	Mount Wilson	4.20	173	ePn	Pn	16 24 52.5	-0.5
MWC				eSg	Sg	16 26 03.0	+0.4
PASC	Pasadena Art C	4.24	174	ePn	Pn	16 24 55.6	+2.2
PASC				eSg	Sg	16 26 03.3	-0.5
KMRM	Mail Ridge	4.28	297	ePn	Pn	16 24 56.1	+2.1
CCUT	Cedar City	4.31	100	ePg	Pg	16 25 09.3	-1.2
CCUT				eSg	Sg	16 26 19.0	+13
GMRC	Granite Mounta	4.36	145	Pb	Pb	16 25 07.4	+2.2
	baz=327						
M02C	Callahan	4.37	315	Pb	Pb	16 25 06.2	+0.8
	baz=132,SNR=12						
LDFC	Landfair	4.40	138	ePn	Pn	16 24 57.4	+1.7
YBH	Yreka Blue Hor	4.53	319	Pn	Pn	16 24 58.8	+1.4
	1.0nm,0.3s,baz=146,slow=8.7,SNR=20						
YBH				LR	LR	16 26 59.9	
	comp=Z,614nm,18.9s,baz=164,slow=43						
YBH	Yreka Blue Hor	4.53	319	ePn	Pn	16 24 59.3	+1.8
LCMT	Little Creek M	4.55	106	ePn	Pn	16 24 58.8	+1.0
LCMT				eSg	Sg	16 26 12.9	-1.2
KHMM	Horse Mountain	4.60	304	ePn	Pn	16 25 01.8	+3.4
K05A	Summer Lake	4.63	340	ePn	Pn	16 24 59.7	+0.7
JCC	Jacoby Creek,	4.76	302	ePn	Pn	16 25 03.9	+3.3
K04D	Chiloquin, OR	4.82	332	P	Pn	16 25 01.5	0.0
	baz=150						
KNB	Kanab	4.87	105	ePn	Pn	16 25 03.8	+1.6
BELC	Belle Mtn. Jos	4.90	153	P	Pn	16 25 03.2	+0.5
	baz=334						
DUG	Dugway, Tooele	4.92	67	ePn	Pn	16 25 03.6	+0.7
BGU	Big Grassy Mou	5.06	58	ePn	Pn	16 25 06.0	+1.1
W13A	Hualapai Mount	5.08	129	ePn	Pn	16 25 05.8	+0.6
PFO	Pinyon Flats O	5.11	158	Pn	Pn	16 25 08.2	+2.7
	0.7nm,0.3s,baz=1.0,slow=13,SNR=5.0						
PFO				Lg	Lg	16 26 31.6	
	1.3nm,0.3s,baz=266,slow=15,SNR=2.3						
PFO				LR	LR	16 27 19.9	
	comp=Z,355nm,20.0s,baz=351,slow=41						
MSU	Marysvale	5.13	87	ePn	Pn	16 25 08.7	+2.8
MSU				eSn	Sn	16 26 09.5	+3.7
PKCU	Pink Cliffs	5.15	99	ePn	Pn	16 25 06.5	+0.3
MTPU	Mount Pierson	5.16	92	ePn	Pn	16 25 08.4	+2.1
HUMO	Hull Mountain	5.31	324	ePn	Pn	16 25 11.9	+3.9
NLU	North Lily Min	5.39	71	ePn	Pn	16 25 12.8	+3.4
MFID	Camas Ranch	5.47	23	ePn	Pn	16 25 12.0	+1.6
U15A	North Rim	5.48	109	ePn	Pn	16 25 11.2	+0.6
SPUT	South Promonto	5.63	57	ePn	Pn	16 25 16.1	+3.4
SPUT				ePg	Pg	16 25 33.7	-2.1
HVU	Hansel Valley	5.67	52	ePn	Pn	16 25 15.6	+2.4
MPU	Maple Canyon	5.74	71	ePn	Pn	16 25 16.4	+2.3
MPU				ePg	Pg	16 25 36.5	-1.2
Y12C	Blythe	5.74	143	ePn	Pn	16 25 15.8	+1.7
Y12C				ePg	Pg	16 25 36.1	-1.8
Q16A	Castle Valley	5.93	83	ePn	Pn

PDAR	**Pinedale Array**	**8.22**	**55**	Pn	**Pn**	**16 25 51.4**	**+3.0**
	0.1nm,0.3s,baz=227,slow=11,SNR=14						
PDAR				Lg	Lg	16 28 06.5	
	0.5nm,0.3s,baz=227,slow=26,SNR=5.9						
QLMT	**Earthquake Lak**	**8.43**	**38**	*e*Pn	Pn	16 25 58.1	+7.0
ANMO	**Albuquerque**	**10.43**	**106**	LR	LR	16 31 10.1	
	comp=Z,83nm,19.4s,baz=306,slow=42						
LTX	**Lajitas**	**15.41**	**121**	*e*Pn	**P**	**16 27 32.0**	**+0.9**
TXAR	**Lajitas Array**	**15.41**	**121**	Pn	**P**	**16 27 32.0**	**+0.9**
	baz=301,slow=9.2,SNR=3.4						
TXAR				LR	LR	16 34 27.0	
	comp=Z,97nm,18.8s,baz=0.0,slow=41						
BGNE	**Belgrade**	**16.07**	**73**	*e*Pn	**P**	**16 27 37.2**	**-1.0**
BGNE				*e*Sn	**Sn**	**16 30 27.8**	**-5.6**
DLBC	**Dease Lake**	**21.36**	**344**	LR	LR	16 36 49.6	
	comp=Z,62nm,20.4s,baz=350,slow=37						
YKA	**Yellowknife Ar**	**24.26**	**5**	P	**P**	**16 29 07.5**	**+1.6**
	1.2nm,0.7s,baz=187,slow=9.9,SNR=14						
TKL	**Tuckaleechee C**	**27.93**	**85**	LR	LR	16 41 17.0	
	comp=Z,76nm,20.0s,baz=356,slow=38						
SJG	**San Juan**	**49.81**	**99**	LR	LR	16 56 00.9	
	comp=Z,19nm,19.0s,baz=296,slow=39						

MAN 12 16:24:49.14°.89N×119°.79E, h22km, mb4.5, ML3.4, MS3.3, 1C-1D, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SCZP	**Santa Cruz**	**0.89**	**8**	*e*P	Pb	16 25 05.0	-0.7
LUBP	**Lubang**	**1.23**	**159**	*e*P	Pn	16 25 10.7	-0.2
PCPH	**Palayan**	**1.43**	**62**	||*e*P	Pn	16 25 12.4	-1.1
PCPH				*e*S	Sn	16 25 30.6	-1.1
BOLP	**Bolinao**	**1.48**	**5**	*e*P	Pn	16 25 13.8	-0.6
BOLP				*e*S	Sn	16 25 32.6	-0.5
BCPH	**Baguio City Da**	**1.66**	**27**	↑*i*P	Pb	16 25 19.2	+0.1
BCPH				*e*S	Sb	16 25 39.8	+0.1
BALP	**Baler**	**1.92**	**64**	*e*P	Pn	16 25 20.0	-0.4
BALP				*e*S	Sb	16 25 45.7	-1.1
POLP	**Polilio Island**	**2.08**	**94**	*e*P	Pb	16 25 24.4	-1.7
SJMP	**San Jose**	**2.74**	**152**	*e*P	Pn	16 25 33.9	+2.2
CAUP	**Cauayan**	**2.83**	**44**	*e*P	Pn	16 25 34.2	+1.4
ABRA	**Dolores**	**2.88**	**18**	*e*P	Pn	16 25 35.5	+2.0
ABRA				*e*S	Sb	16 26 15.1	+0.6
BUSP	**Coron**	**2.90**	**172**	*e*P	Pn	16 25 34.3	+0.4
APYP	**Conner**	**3.26**	**25**	*e*P	Pn	16 25 38.7	-0.2
APYP				*e*S	Sb	16 26 22.5	-3.0
ENPP	**El Nido**	**3.68**	**186**	*e*P	Pn	16 25 44.9	+0.2
ENPP				*e*S	Sn	16 26 23.7	-3.7

*ISCJB **12** 16:33:07.0±0.9, 36°.84N±0°.09×142°.49E±0°.09, h9km, mb3.6/6, MS3.6/1, Error ellipse: s-maj=12.7km s-min=9.8km az=7.3*
*IDC **12** 16:33:07.5±1.3, 36°.88N×142°.55E, h0km, mb3.6/6, mb1 3.7/8, mb1mx3.5/52, mbtmp3.6/8, ML3.5/2, MS2.8/3, Ms1 2.9/3, ms1mx2.4/49, Error ellipse: s-maj=35.0km s-min=20.8km az=82.0*
*JMA **12** 16:33:09.2±0.4, 36°.96N×142°.26E, h0km, M4.0*
ISC 12 16:33:09.3±1.2, 36°.98N±0°.10×142°.37E±0°.08, h9km, n19, σ1§00/16, mb3.6/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.25**	**289**	P	**Pn**	**16 33 32.0**	**-1.1**
ONAJ	**Iwakimizuishiy**	**1.26**	**276**	P	**Pn**	**16 33 32.5**	**-0.7**
JMM	**Marumori**	**1.53**	**306**	P	**Pb**	**16 33 37.4**	**-0.5**
JFT	**Otama**	**1.71**	**289**	P	**Pb**	**16 33 40.3**	**-0.6**
JFT				*e*S	**Sb**	**16 34 02.6**	**+0.1**
JOU	**Okura**	**1.94**	**316**	P	**Pb**	**16 33 44.5**	**-0.3**
MJAR	**Matsushiro Arr**	**3.37**	**264**	Pn	**Pn**	**16 34 03.1**	**+1.0**
	3.8nm,0.3s,baz=89,slow=15,SNR=33						
MJAR				LR	LR	16 35 25.0	
	comp=Z,45nm,20.2s,baz=140,slow=40						
MAT	**Matsushiro**	**3.37**	**264**	P	**Pn**	**16 34 03.1**	**+1.0**
MAT				*e*S	**Sn**	**16 34 41.4**	**-0.8**
ASAJ	**Asahikawa**	**7.13**	**1**	Pn	**Pn**	**16 34 53.4**	**-0.5**
	0.9nm,0.3s,baz=188,slow=12,SNR=6.6						
KLR	**Kul'dur**	**14.47**	**331**	LR	LR	16 42 55.5	
	comp=Z,27nm,19.6s,baz=128,slow=40						
SEY	**Seymchan**	**26.70**	**10**	P	**P**	**16 38 49.0**	**+0.4**
	3.5nm,1.0s,baz=232,slow=10,SNR=4.6						
H11N2	**WAKE ISLAND Hy 27.47**	**122**		T	T	17 07 41.2	
	baz=314,slow=75,SNR=6.4						
H11N1	**WAKE ISLAND Hy 27.48**	**122**		T	T	17 07 45.3	
	baz=314,slow=75,SNR=3.4						
H11N3	**WAKE ISLAND Hy 27.49**	**122**		T	T	17 07 43.1	
	baz=314,slow=75,SNR=5.5						
SONM	**Songino Array**	**28.45**	**304**	P	**P**	**16 39 05.4**	**+0.8**
	0.4nm,0.4s,baz=95,slow=7.4,SNR=2.0						
ZALV	**Zalesovo Beam**	**42.52**	**312**	P	**P**	**16 41 07.0**	**+2.2**
	0.4nm,0.5s,baz=87,slow=6.1,SNR=2.8						
MKAR	**Makanchi Array**	**44.79**	**302**	P	**P**	**16 41 23.3**	**-0.1**
	0.2nm,0.4s,baz=85,slow=7.5,SNR=2.6						
WRA	**Warramunga Arr**	**57.12**	**189**	P	**P**	**16 42 54.9**	**-1.3**
	0.7nm,0.9s,baz=6.5,slow=7.0,SNR=5.8						
ASAR	**Alice Springs**	**60.84**	**189**	P	**P**	**16 43 21.4**	**-0.7**
	1.6nm,1.3s,baz=7.3,slow=6.6,SNR=5.1						
NVAR	**Mina Array Bea**	**74.41**	**54**	LR	LR	17 13 22.7	
	comp=Z,27nm,18.6s,baz=255,slow=32						

*IDC **12** 16:34:09.6±0.9, 20°.26S×168°.24E, h0km, mb4.1/12, mb1 4.3/13, mb1mx4.1/46, mbtmp4.1/13, ML3.3/1, MS2.9/2, Ms1 2.9/2, ms1mx2.6/29, Error ellipse: s-maj=30.0km s-min=18.3km az=138.0*
*NEIC **12** 16:34:11.1±0.5, 20°.35S×168°.17E, h10km, mb4.8/13, Error ellipse: s-maj=13.9km s-min=8.0km az=137.0*
*ISCJB **12** 16:34:12.9±0.5, 20°.34S±0°.08×168°.11E±0°.09, h32km, mb4.4/21, Error ellipse: s-maj=14.7km s-min=8.1km az=42.3*
ISC 12 16:34:14.5±0.7, 20°.3S±0°.1×168°.2E±0°.1, h32km, n30, σ0§94/30, mb4.4/21, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.35**	**223**	Pn	**Pn**	**16 34 50.9**	**-0.2**
	6.7nm,0.3s,baz=57,slow=19,SNR=46						
DZM				Sn	**Sn**	**16 35 17.1**	**-1.8**
	23nm,0.3s,baz=24,slow=16,SNR=7.3						
DZM				LR	LR	16 35 47.5	
	comp=Z,254nm,20.2s,baz=24,slow=40						
HNR	**Honiara**	**13.44**	**323**	LR	LR	16 40 53.9	
	comp=Z,51nm,19.3s,baz=162,slow=30						
CTA	**Charters Tower**	**20.56**	**267**	P	**P**	**16 38 51.5**	**+0.7**
	3.1nm,0.6s,baz=88,slow=16,SNR=9.2						
STKA	**Stephens Creek**	**26.41**	**239**	P	**P**	**16 39 49.4**	**+1.1**
	3.2nm,0.6s,baz=84,slow=12,SNR=12						
STKA	**Stephens Creek**	**26.41**	**239**	*e*P	**P**	**16 39 49.9**	**+1.6**
	6.6nm,1.8s						
WB2	**Warramunga Arr**	**31.72**	**265**	*e*P	**P**	**16 40 34.9**	**-0.8**
	26nm,1.8s						
WR1	**Warramunga Arr**	**31.73**	**265**	*e*P	**P**	**16 40 34.4**	**-1.4**
	33nm,1.7s						
WRA	**Warramunga Arr**	**31.73**	**265**	P	**P**	**16 40 34.4**	**-1.4**
	0.7nm,0.5s,baz=93,slow=8.4,SNR=15						
AS01	**Alice Springs**	**31.85**	**258**	*e*P	**P**	**16 40 37.0**	**+0.1**
AS31	**Alice Springs**	**31.89**	**258**	*e*P	**P**	**16 40 37.2**	**0.0**
	1.8nm,0.6s						
ASAR	**Alice Springs**	**31.89**	**258**	P	**P**	**16 40 37.2**	**0.0**
	3.5nm,0.6s,baz=88,slow=8.9,SNR=76						
MTN	**Manton Dam**	**36.20**	**276**	*e*P	**P**	**16 41 14.6**	**-0.1**
	86nm,1.6s						
FITZ	**Fitzroy Crossi**	**40.14**	**266**	*e*P	**P**	**16 41 48.4**	**+0.6**
	33nm,1.6s						
VNDA	**Vanda**	**57.30**	**182**	P	**P**	**16 43 59.4**	**+0.6**
	0.8nm,0.8s,baz=359,slow=4.7,SNR=5.3						
VNDA	**Vanda**	**57.30**	**182**	*e*P	**P**	**16 43 59.5**	**+0.6**
	8.7nm,1.7s						
SBA	**Scott Base**	**57.56**	**180**	*e*P	**P**	**16 44 01.9**	**+1.3**
	2.9nm,1.4s						
CASY	**Casey**	**58.71**	**204**	*e*P	**P**	**16 44 07.9**	**-0.9**
	31nm,1.6s						
QSPA	**South Pole Qui**	**69.71**	**180**	*e*P	**P**	**16 45 21.8**	**+0.6**
	13nm,1.7s						
USRK	**Ussuriysk Ar.**	**72.26**	**334**	P	**P**	**16 45 36.3**	**-0.3**
	3.2nm,0.9s,baz=123,slow=7.0,SNR=4.1						
KLR	**Kul'dur**	**76.46**	**336**	P	**P**	**16 46 01.3**	**+0.3**
	0.9nm,0.9s,baz=135,slow=5.1,SNR=3.8						
CMAR	**Chiang Mai Arr**	**78.04**	**295**	P	**P**	**16 46 12.2**	**+1.6**
	1.2nm,0.9s,baz=133,slow=5.1,SNR=7.7						
SONA0	**Songino Array**	**87.50**	**324**	*e*P	**P**	**16 46 59.4**	**+0.2**
	9.6nm,2.0s						
SONM	**Songino Array**	**87.50**	**324**	P	**P**	**16 46 59.4**	**+0.2**
	0.3nm,0.5s,baz=131,slow=4.3,SNR=3.7						
YBH	**Yreka Blue Hor**	**88.79**	**44**	P	**P**	**16 47 04.9**	**-0.4**
	0.6nm,0.3s,baz=194,slow=1.0,SNR=7.8						
YBH	**Yreka Blue Hor**	**88.79**	**44**	*e*P	**P**	**16 47 04.9**	**-0.4**
	27nm,2.0s						
NVAR	**Mina Array Bea**	**90.29**	**49**	P	**P**	**16 47 12.7**	**0.0**
	1.4nm,0.7s,baz=225,slow=8.7,SNR=5.5						
NV01	**Mina Array Sit**	**90.29**	**49**	*e*P	**P**	**16 47 11.7**	**-0.9**
MOD	**Modoc Plateau**	**90.46**	**45**	*e*P	**P**	**16 47 13.3**	**0.0**
	4.5nm,0.9s						
ILAR	**Eielson Array**	**91.58**	**18**	P	**P**	**16 47 15.9**	**-1.8**
	0.7nm,0.8s,baz=232,slow=5.1,SNR=5.9						
GERES	**GERESS Array B**	**144.96**	**330**	PKP	**PKPab**	**16 53 47.4**	**-0.5**
	0.3nm,0.5s,baz=56,slow=2.4,SNR=4.7						

IDC 12 16:38:04.6±4.0, 8°.10S×109°.31E, h0km, mb3.5/3, mb1 3.7/3, mb1mx3.4/35, mbtmp3.5/3, MS3.2/1, Ms1 3.2/1, ms1mx2.5/30, Error ellipse: s-maj=215.6km s-min=28.0km az=48.0, Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**26.94**	**119**	P	P	16 43 47.9	0.0
	0.6nm,1.1s,baz=291,slow=11,SNR=3.2						
ASAR	**Alice Springs**	**28.19**	**126**	P	P	16 43 59.2	0.0
	0.3nm,0.6s,baz=299,slow=9.5,SNR=4.8						
STKA	**Stephens Creek**	**38.21**	**133**	LR	LR	17 04 14.1	
	comp=Z,34nm,18.2s,baz=28,slow=41						
MKAR	**Makanchi Array**	**59.71**	**339**	P	P	16 48 10.9	-0.1
	0.5nm,0.5s,baz=138,slow=6.8,SNR=5.0						

*NIED **12** 16:46:00.39°.10N×142°.40E, h50km, Mw3.6 Best double couple: M0=2.65000×10^14 NP1:φs=357.00000°, δ33.00000°, λ-59.00000°. NP2:φs=142.00000°, δ62.00000°, λ-109.00000°.*
*JMA **12** 16:46:53.9±0.1, 39°.13N×142°.37E, h34km±1km, M3.5*
*IDC **12** 16:46:57.2±3.4, 39°.09N×142°.45E, h68km±27km, mb3.4/4, mb1 3.4/6, mb1mx3.1/57, mbtmp3.6/6, MS2.8/2, Ms1 2.8/2, ms1mx2.3/33, Error ellipse: s-maj=48.2km s-min=22.6km az=88.0*
ISC 12 16:46:50.5±2.3, 39°.10N±0°.05×142°.49E±0°.09, h14km±12km, n22, σ0§47/22, mb3.7/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.64**	**268**	P	**Pn**	**16 47 05.2**	**+0.1**
OFUJ				S	**Sb**	**16 47 12.8**	**+0.6**
MIYJ	**Miyakonagasawa**	**0.70**	**313**	P	**Pn**	**16 47 05.9**	**-0.2**
MIYJ				S	**Sb**	**16 47 14.1**	**0.0**
JMK	**Ichinoseki**	**1.00**	**262**	P	**Pn**	**16 47 10.6**	**+0.5**
JMK				S	**Sg**	**16 47 22.7**	**-0.1**
JOM	**Ohasama**	**1.00**	**292**	P	**Pn**	**16 47 10.5**	**+0.4**
JOM				S	**Sb**	**16 47 22.7**	**+0.1**
JIO	**Ouri**	**1.10**	**234**	P	**Pg**	**16 47 12.0**	**+0.3**
JIO				S	**Sb**	**16 47 24.8**	**-0.7**
JKZ	**Kuzumaki**	**1.26**	**315**	P	**Pg**	**16 47 14.9**	**+0.2**
JKZ				S	**Sb**	**16 47 29.6**	**-0.5**
JRG	**Rokugo**	**1.47**	**282**	P	**Pg**	**16 47 18.2**	**-0.6**
JRG				S	**Sb**	**16 47 36.4**	**+0.3**
JANG	**Nango**	**1.48**	**330**	P	**Pb**	**16 47 17.9**	**+0.1**
JANG				S	**Sb**	**16 47 36.7**	**+0.3**
JOU	**Okura**	**1.60**	**243**	P	**Pb**	**16 47 19.9**	**0.0**
JYK	**Kaneyama**	**1.67**	**264**	P	**Pb**	**16 47 20.8**	**-0.2**
MJAR	**Matsushiro Arr**	**4.24**	**234**	P	Pn	16 47 58.2	+3.5
	1.2nm,0.3s,baz=40,slow=11,SNR=13						
MJAR				LR	LR	16 49 56.5	
	comp=Z,50nm,18.4s,baz=115,slow=43						
ASAJ	**Asahikawa**	**5.01**	**1**	P	Pn	16 48 10.2	+5.0
	0.4nm,0.3s,baz=203,slow=16,SNR=6.5						
YAK	**Yakutsk**	**24.26**	**345**	LR	LR	17 02 59.1	
	comp=Z,41nm,18.4s,baz=67,slow=40						
H11N2	**WAKE ISLAND Hy 28.57**	**125**		T	T	17 23 23.8	
	baz=318,slow=75,SNR=14						
H11N1	**WAKE ISLAND Hy 28.58**	**126**		T	T	17 23 19.8	
	baz=318,slow=75,SNR=14						
H11N3	**WAKE ISLAND Hy 28.59**	**125**		T	T	17 23 15.5	
	baz=318,slow=75,SNR=14						
H11S3	**WAKE ISLAND Hy 29.36**	**127**		T	T	17 24 10.0	
	baz=316,slow=74,SNR=4.1						
H11S2	**WAKE ISLAND Hy 29.37**	**127**		T	T	17 24 18.3	
	baz=252,slow=74,SNR=7.7						
ZALV	**Zalesovo Beam**	**41.18**	**311**	P	**P**	**16 54 34.8**	**+0.5**
	0.6nm,0.4s,baz=82,slow=10,SNR=3.4						
MKAR	**Makanchi Array**	**43.77**	**300**	P	**P**	**16 54 56.3**	**+0.8**
	0.4nm,0.7s,baz=96,slow=11,SNR=4.6						
WRA	**Warramunga Arr**	**59.23**	**189**	P	**P**	**16 56 51.4**	**0.0**
	0.5nm,0.6s,baz=6.6,slow=6.9,SNR=7.3						
AKASG	**Malin Array Be**	**73.18**	**322**	P	**P**	**16 58 19.6**	**-1.0**
	0.3nm,0.4s,baz=46,slow=6.3,SNR=5.9						

IDC 12 17:14:47.0±13.0, 1°.73S×127°.19E, h0km, mb3.8/2, mb1 4.0/4, mb1mx3.5/44, mbtmp3.8/4, ML3.8/2, Error ellipse: s-maj=197.9km s-min=102.3km az=141.0, Halmahera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**16.35**	**185**	Pn	P	17 18 39.7	-1.3
	0.1nm,0.3s,baz=354,slow=9.2,SNR=4.0						
WRA	**Warramunga Arr**	**19.41**	**159**	P	P	17 19 15.1	+0.2
	0.5nm,0.3s,baz=337,slow=11,SNR=48						
ASAR	**Alice Springs**	**22.76**	**164**	P	P	17 19 50.0	-1.2
	1.2nm,0.5s,baz=347,slow=12,SNR=17						
STKA	**Stephens Creek**	**32.93**	**157**	P	P	17 21 23.7	+0.5
	1.0nm,0.5s,baz=322,slow=12,SNR=3.4						

*ISCJB **12** 17:16:43.4±1.0, 28°.87S±0°.06×68°.7W±0°.1, h107km, mb3.2/2, Error ellipse: s-maj=18.9km s-min=7.7km az=167.0*
*IDC **12** 17:16:43.4±5.6, 28°.83S×68°.53W, h98km±41km, mb3.1/2, mb1 3.5/4, mb1mx3.2/26, mbtmp3.6/4, Error ellipse: s-maj=55.4km s-min=26.9km az=43.0*
*SJA **12** 17:16:45.2±0.6, 28°.94S×68°.45W, h106km±4km, ML3.7, MW3.6*
ISC 12 17:16:44.6±1.0, 28°.85S±0°.06×68°.6W±0°.1, h107km, n12, σ1§36/17, La Rioja Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VCA	**Vinchina**	**0.32**	**69**	*i*P	**Pn**	**17 17 01.7**	**+1.4**
VCA				*i*S	**Sn**	**17 17 13.1**	**+1.0**
AVFE	**Valle Fertil**	**2.04**	**152**	*i*P	**Pn**	**17 17 18.4**	**+0.4**
AVFE				*i*S	**Sn**	**17 17 42.5**	**-1.0**
AVFE				IAML		17 17 45.0	
	comp=Z,484nm,0.4s						
CYA	**Choya**	**2.45**	**81**	*i*P	**Pn**	**17 17 24.4**	**+1.1**
FSA	**Cafayete**	**3.56**	**41**	*i*P	**Pn**	**17 17 40.2**	**+2.0**
ACAN	**Cantantal**	**3.61**	**161**	*i*P	**Pn**	**17 17 38.8**	**+0.2**
LVC	**Limon Verde**	**6.22**	**357**	P	**Pn**	**17 18 14.4**	**0.0**
	comp=Z,21nm,0.3s,baz=158,slow=8.7,SNR=20						
LVC				S	**Sn**	**17 19 21.5**	**-2.8**
	comp=Z,40nm,0.3s,baz=154,slow=5.4,SNR=4.1						
CPUP	**Villa Florida**	**10.27**	**78**	P	**Pn**	**17 19 07.3**	**-1.5**
	comp=Z,0.3nm,0.3s,baz=245,slow=12,SNR=4.0						
TORD	**Torodi Ar. Bea**	**79.61**	**69**	P	**P**	**17 28 39.9**	**-0.5**
	comp=Z,0.3nm,0.7s,baz=230,slow=3.6,SNR=2.5						
TORD				pP	**pP**	**17 29 09.7**	**+1.9**
	comp=Z,0.3nm,0.6s,baz=236,slow=10,SNR=3.1						
PDAR	**Pinedale Array**	**80.64**	**331**	P	**P**	**17 28 45.6**	**0.0**
	comp=Z,0.2nm,0.5s,baz=116,slow=8.1,SNR=2.8						
WRA	**Warramunga Arr**	**126.69**	**207**	PKP	**PKPdf**	**17 35 34.6**	**-1.5**
	comp=Z,0.4nm,0.9s,baz=160,slow=1.8,SNR=7.0						
WRA				pPKP	**pPKPdf**	**17 36 05.8**	**+0.5**
	comp=Z,0.2nm,0.4s,baz=159,slow=1.8,SNR=5.4						
ZALV	**Zalesovo Beam**	**148.29**	**30**	PKPbc	**PKPbc**	**17 36 18.1**	**+0.3**
	comp=Z,0.9nm,0.5s,baz=313,slow=3.0,SNR=5.3						
MKAR	**Makanchi Array**	**151.06**	**44**	PKPbc	**PKPbc**	**17 36 24.8**	**-0.1**
	comp=Z,0.6nm,0.6s,baz=289,slow=2.1,SNR=6.9						

*IDC **12** 17:21:49.9±2.2, 35°.96N×142°.08E, h0km, mb3.5/2, mb1 3.7/4, mb1mx3.3/39, mbtmp3.5/4, ML3.5/2, Error ellipse: s-maj=51.2km s-min=30.6km az=74.0*
*ISCJB **12** 17:21:53.5±1.8, 35°.8N±0°.1×141°.7E±0°.2, h23km, mb3.5/2, Error ellipse: s-maj=20.9km s-min=14.9km az=162.8*
*JMA **12** 17:21:56.9±0.4, 35°.79N×141°.40E, h22km±3km, M3.0*
ISC 12 17:21:51.5±1.3, 35°.92N±0°.07×141°.78E±0°.09, h23km, n11, σ2§40/11, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.78**	**254**	P	**Pb**	**17 22 05.9**	**-0.4**
CHOJ				*e*S	**Sb**	**17 22 12.7**	**-3.8**
JHO	**Hitachi**	**1.20**	**306**	P	**Pb**	**17 22 16.0**	**+2.5**
BSO4	**Boso 4**	**1.50**	**232**	P	**Pb**	**17 22 18.7**	**+0.2**
BSO3	**Boso 3**	**1.52**	**223**	P	**Pb**	**17 22 18.7**	**-0.2**
JOD2	**Odawara 2**	**2.29**	**254**	P	**Pn**	**17 22 29.0**	**+1.1**
JRY	**Ryogami san**	**2.34**	**273**	P	**Pn**	**17 22 30.8**	**+2.3**
MJAR	**Matsushiro Arr**	**2.95**	**283**	Pn	**Pn**	**17 22 39.5**	**+2.5**
	4.1nm,0.3s,baz=97,slow=8.9,SNR=31						
MAT	**Matsushiro**	**2.96**	**283**	P	**Pb**	**17 22 41.0**	**-2.5**
ASAJ	**Asahikawa**	**8.21**	**4**	Pn	**Pn**	**17 23 48.0**	**-1.2**
	0.7nm,0.3s,baz=221,slow=16,SNR=5.6						
MKAR	**Makanchi Array**	**44.97**	**303**	P	P	17 30 09.1	+4.3
	0.1nm,0.2s,baz=90,slow=10,SNR=2.1						
WRA	**Warramunga Arr**	**56.00**	**188**	P	**P**	**17 31 30.5**	**+2.2**
	0.8nm,0.8s,baz=2.9,slow=8.1,SNR=4.6						

*ISCJB **12** 17:22:24.7±0.7, 36°.90N±0°.09×143°.43E±0°.09, h33km, mb3.9/16, MS3.3/1, Error ellipse: s-maj=13.7km s-min=9.2km az=159.1*
*IDC **12** 17:22:26.4±0.8, 36°.78N×143°.55E, h35km±6km, mb3.7/16, mb1 3.9/19, mb1mx3.8/39, mbtmp3.9/19, ML3.2/3, MS3.1/3, Ms1 3.1/3, ms1mx2.7/35, Error ellipse: s-maj=18.5km s-min=14.9km az=106.0*
ISC 12 17:22:26.3±0.7, 36°.84N±0°.08×143°.39E±0°.09, h35km, n31, σ1§51/30, mb3.9/16, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**4.17**	**268**	Pn	**Pn**	**17 23 28.9**	**+1.4**
	6.5nm,0.3s,baz=88,slow=15,SNR=10						
MJAR				LR	LR	17 25 20.2	
	comp=Z,179nm,19.9s,baz=125,slow=41						
MAT	**Matsushiro**	**4.17**	**268**	P	**Pn**	**17 23 29.1**	**+1.6**
MAT				*e*S	**Sn**	**17 24 13.6**	**-1.5**
JHJ	**Hachijo jima 2**	**4.74**	**220**	Sn	**Sn**	**17 24 25.2**	**-3.9**
	25nm,0.3s,baz=66,slow=16,SNR=3.1						
ASAJ	**Asahikawa**	**7.30**	**356**	Pn	**Pn**	**17 24 08.2**	**-2.1**
	3.9nm,0.3s,baz=233,slow=9.6,SNR=6.1						
ASAJ				Sn	**Sn**	**17 25 29.4**	**-2.6**
	0.4nm,0.3s,baz=29,slow=10,SNR=2.7						
USRK	**Ussuriysk Ar.**	**11.37**	**314**	Pn	**Pn**	**17 25 07.2**	**+1.1**
	0.3nm,0.3s,baz=126,slow=11,SNR=4.3						
KSRS	**Korea Array**	**12.36**	**278**	Pn	**Pn**	**17 25 21.3**	**+1.6**
	0.2nm,0.3s,baz=79,slow=15,SNR=5.5						
KSRS				LR	LR	17 29 48.3	
	comp=Z,65nm,21.3s,baz=76,slow=35						
KLR	**Kul'dur**	**15.01**	**329**	Pn	**Pn**	**17 25 53.0**	**-2.6**
	0.2nm,0.3s,baz=128,slow=13,SNR=5.6						
YAK	**Yakutsk**	**26.63**	**346**	P	**P**	**17 28 01.6**	**+0.3**
	4.3nm,0.7s,baz=353,slow=8.8,SNR=4.8						
H11N2	**WAKE ISLAND Hy 26.70**	**123**		T	T	17 56 37.1	
	baz=311,slow=75,SNR=9.4						
SEY	**Seymchan**	**26.71**	**9**	P	**P**	**17 28 02.8**	**+0.8**
	2.7nm,1.1s,baz=112,slow=6.2,SNR=4.5						
H11N1	**WAKE ISLAND Hy 26.71**	**123**		T	T	17 56 40.6	
	baz=311,slow=75,SNR=15						
H11N3	**WAKE ISLAND Hy 26.72**	**123**		T	T	17 56 38.5	
	baz=311,slow=75,SNR=15						
H11S1	**WAKE ISLAND Hy 27.44**	**125**		T	T	17 57 31.8	
	baz=312,slow=75,SNR=10						
H11S3	**WAKE ISLAND Hy 27.44**	**125**		T	T	17 57 29.9	
	baz=312,slow=75,SNR=17						
H11S2	**WAKE ISLAND Hy 27.45**	**125**		T	T	17 57 31.1	
	baz=312,slow=75,SNR=7.9						
SONM	**Songino Array**	**29.21**	**304**	P	P	17 28 27.6	+2.9
	1.7nm,0.7s,baz=95,slow=9.1,SNR=11						
ZALV	**Zalesovo Beam**	**43.22**	**313**	P	**P**	**17 30 24.1**	**+0.3**
	1.2nm,0.8s,baz=76,slow=5.0,SNR=5.6						
ZALV				PcP	**PcP**	**17 32 13.7**	**+1.2**
	0.6nm,0.5s,baz=51,slow=2.1,SNR=2.9						
ZALV				LR	LR	17 49 13.3	
	comp=Z,37nm,18.3s,baz=70,slow=37						
MKAR	**Makanchi Array**	**45.56**	**303**	P	**P**	**17 30 43.0**	**+0.4**
	0.2nm,0.3s,baz=81,slow=8.7,SNR=4.4						
ILAR	**Eielson Array**	**48.81**	**32**	P	**P**	**17 31 07.7**	**0.0**
	1.0nm,0.7s,baz=264,slow=6.5,SNR=10						
ILAR				pP	**pP**	**17 31 18.4**	**+0.2**
	0.7nm,0.8s,baz=257,slow=6.4,SNR=4.5						
INK	**Inuvik**	**53.84**	**27**	P	**P**	**17 31 44.5**	**-0.7**
	0.6nm,0.5s,baz=318,slow=6.1,SNR=4.6						
WRA	**Warramunga Arr**	**57.11**	**190**	P	**P**	**17 32 08.2**

JRY *e*S **Sn** **17 48 57.6 -1.0**
JOM Ohasama 3.20 339 *e*S **Sn** **17 49 00.5 +1.0**
JOD2 Odawara 2 3.23 249 P **Pn** **17 48 23.5 +0.7**
JOD2 *e*S **Sn** **17 49 02.1 +1.8**
JYN Shimob 3.57 255 P **Pn** **17 48 28.4 +1.0**
JYN *e*S **Sn** **17 49 09.7 +1.1**
MJAR Matsushiro Arr 3.67 272 Pn **Pn** **17 48 28.5 -0.4**
3.6nm,0.3s,baz=91,slow=10.0,SNR=20
MAT Matsushiro 3.68 272 P **Pn** **17 48 29.5 +0.6**
MAT *e*S **Sn** **17 49 07.6 -3.7**
MAT Matsushiro 3.68 272 P **Pn** **17 48 29.3 +0.4**
JHJ Hachijo jima 2 4.16 217 Pn **Pn** **17 48 35.8 +0.2**
25nm,0.3s,baz=72,slow=20,SNR=3.2
JHJ Sn **Sn** **17 49 19.0 -4.3**
23nm,0.3s,baz=216,slow=19,SNR=2.4
ASAJ Asahikawa 7.62 359 Pn **Pn** **17 49 21.1 -1.9**
1.9nm,0.3s,baz=247,slow=11,SNR=16
JNU Nakatsue 10.34 255 LR LR 17 54 37.9
comp=Z,69nm,20.6s,baz=115,slow=41
KSRS Korea Array 11.92 279 Pn **Pn** **17 50 24.4 +2.5**
0.1nm,0.3s,baz=104,slow=12,SNR=3.7
KSRS LR LR 17 55 01.5
comp=Z,7.4nm,19.0s,baz=127,slow=37
YAK Yakutsk 26.85 346 LR LR 18 04 04.6
comp=Z,40nm,19.0s,baz=132,slow=37
SONM Songino Array 28.99 304 P **P** **17 53 31.8 +0.6**
1.2nm,0.9s,baz=94,slow=7.9,SNR=6.0
ZALV Zalesovo Beam 43.08 313 P **P** **17 55 31.3 +0.1**
0.3nm,0.4s,baz=81,slow=8.9,SNR=2.6
MKAR Makanchi Array 45.33 303 P **P** **17 55 50.4 +1.0**
0.8nm,0.7s,baz=79,slow=7.5,SNR=3.2
KURBB Kurchatov Arra 47.19 309 P **P** **17 56 04.0 +0.1**
0.7nm,0.6s,baz=82,slow=7.5,SNR=8.0
ILAR Eielson Array 49.37 32 P **P** **17 56 20.2 -0.3**
0.5nm,0.7s,baz=271,slow=6.5,SNR=6.1
WRA Warramunga Arr 56.69 190 P **P** **17 57 13.9 -1.0**
0.5nm,0.9s,baz=6.5,slow=7.8,SNR=3.1
ASAR Alice Springs 60.41 189 P **P** **17 57 41.7 +0.9**
0.4nm,0.9s,baz=0.1,slow=6.1,SNR=3.9
NOA NORSAR Array B 75.10 338 LR LR 18 36 27.5
comp=Z,20nm,18.1s,baz=145,slow=39

ISCJB ***12*** *17:55:33.2±1.3,20°.8S±0°.3×168°.6E±0°.2,h30km,mb3.9/7, MS3.6/5,Error ellipse: s-maj=47.7km s-min=10.5km az=140.4*
IDC ***12*** *17:55:34.9±2.0,20°.86S×168°.64E,h33km±6km,mb3.7/8, mb1 4.0/9,mb1mx3.8/25,mbtmp3.9/9,ML3.4/1,MS3.5/6, Ms1 3.5/6,ms1mx3.0/31,Error ellipse: s-maj=66.5km s-min=19.3km az=146.0*
ISC 12 17:55:34.2±1.6,20°.8S±0°.3×168°.7E±0°.2,h30km,n11, σ0.95/14,mb3.9/8,MS3.5/5,Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.40**	**239**	Pn	**Pn**	**17 56 11.2**	**-0.4**
	8.2nm,0.3s,baz=96,slow=8.2,SNR=165						
DZM				Sn	**Sn**	**17 56 39.6**	**-0.5**
	22nm,0.3s,baz=359,slow=20,SNR=7.5						
DZM				LR	LR	17 57 00.5	
	comp=Z,572nm,21.9s,baz=10,slow=36						
CTA	**Charters Tower**	**21.01**	**268**	P	**P**	**18 00 17.4**	**+1.9**
	1.9nm,0.8s,baz=131,slow=6.8,SNR=3.7						
STKA	**Stephens Creek**	**26.56**	**240**	P	**P**	**18 01 10.8**	**+1.1**
	1.6nm,0.7s,baz=82,slow=16,SNR=2.9						
STKA				LR	LR	18 11 16.5	
	comp=Z,97nm,18.5s,baz=198,slow=36						
WRA	**Warramunga Arr**	**32.15**	**265**	P	**P**	**18 01 58.9**	**-0.5**
	0.3nm,0.5s,baz=97,slow=8.2,SNR=4.1						
WRA				pP	**pP**	**18 02 08.4**	**+0.1**
	0.3nm,0.5s,baz=92,slow=8.5,SNR=2.4						
ASAR	**Alice Springs**	**32.25**	**258**	P	**P**	**18 01 59.6**	**-0.7**
	3.1nm,0.8s,baz=85,slow=9.0,SNR=28						
ASAR				pP	**pP**	**18 02 09.5**	**+0.4**
	3.7nm,0.8s,baz=82,slow=9.0,SNR=14						
ASAR				LR	LR	18 14 39.5	
	comp=Z,98nm,20.2s,baz=134,slow=36						
CMAR	**Chiang Mai Arr**	**78.67**	**295**	P	**P**	**18 07 34.6**	**+0.7**
	1.8nm,1.1s,baz=134,slow=3.9,SNR=8.7						
CMAR				pP	**sP**	**18 07 45.5**	**-1.5**
	1.0nm,0.9s,baz=140,slow=3.6,SNR=3.9						
SONM	**Songino Array**	**88.17**	**323**	P	**P**	**18 08 21.8**	**-0.5**
	0.2nm,0.3s,baz=87,slow=2.3,SNR=5.0						
NVAR	**Mina Array Bea**	**90.26**	**49**	P	**P**	**18 08 33.1**	**+0.6**
	1.6nm,0.8s,baz=228,slow=8.3,SNR=7.0						
NVAR				LR	LR	18 45 36.7	
	comp=Z,27nm,18.0s,baz=273,slow=33						
ILAR	**Eielson Array**	**91.91**	**17**	P	**P**	**18 08 38.6**	**-0.6**
	0.2nm,0.5s,baz=234,slow=6.1,SNR=3.3						
ILAR				LR	LR	18 42 33.3	
	comp=Z,20nm,20.2s,baz=336,slow=31						
DLBC	**Dease Lake**	**93.70**	**28**	LR	LR	18 41 31.0	
	comp=Z,24nm,21.6s,baz=290,slow=29						
GERES	**GERESS Array B**	**145.62**	**330**	PKPbc	**PKPab**	**18 15 10.1**	**-0.1**
	0.1nm,0.3s,baz=242,slow=2.6,SNR=5.4						

ISCJB ***12*** *18:00:07.4±0.2,43°.22N±0°.01×0°.26W±0°.01,h6km±1km, Error ellipse: s-maj=1.9km s-min=1.7km az=162.6*
CSEM ***12*** *18:00:08.9±0.1,43°.16N×0°.22W,h5km,ML3.5/38,Error ellipse: s-maj=1.7km s-min=1.3km az=151.0*
MRB ***12*** *18:00:09.8,43°.05N×0°.25W,h0km±2km,ML2.8/11,Error ellipse: s-maj=2.8km s-min=0.7km az=314.0*
STR ***12*** *18:00:10.3±0.1,43°.11N×0°.20W,h2km,Ml3.1,Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*
MDD ***12*** *18:00:10.3±0.2,43°.09N×0°.22W,h4km±3km,mbLg2.9/25, Error ellipse: s-maj=2.6km s-min=1.6km az=169.0, PRXIMO*
LDG ***12*** *18:00:10.7±0.1,43°.12N×0°.20W,h2km,Md3.4/3,Ml3.5/36, Error ellipse: s-maj=1.5km s-min=1.1km az=146.0*
INMG ***12*** *18:00:11.0±1.1,42°.85N×0°.19W,h5km±3km,ML2.6,Error ellipse: s-maj=6.4km s-min=4.0km az=83.0*
ISC 12 18:00:08.7±0.8,43°.14N±0°.02×0°.22W±0°.01,h17km±5km, n298,σ1.45/463,1C-1D,Pyrenees

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PYLO	**Lourdes**	**0.13**	**107**	P	**Pb**	**18 00 12.9**	**+0.1**
PYLO				S	**Sg**	**18 00 15.4**	**0.0**
REYF	**Montagne du Re**	**0.14**	**242**	Pg	**Pb**	**18 00 13.6**	**+0.6**
REYF				Sg	**Sb**	**18 00 15.8**	**0.0**
REYF	**Montagne du Re**	**0.14**	**242**	Pg	**Pb**	**18 00 13.6**	**+0.6**
REYF				Sg	**Sb**	**18 00 15.8**	**0.0**
LABF	**Labassere**	**0.23**	**112**	Pg	**Pg**	**18 00 14.1**	**-0.1**
LABF				Sg	**Sg**	**18 00 17.6**	**-0.3**
LABF	**Labassere**	**0.23**	**112**	Pg	**Pg**	**18 00 14.1**	**-0.1**
LABF				Sg	**Sg**	**18 00 17.6**	**-0.3**
VIEF	**Viey**	**0.31**	**144**	Pg	**Pb**	**18 00 16.1**	**+0.3**
VIEF				Sg	**Sg**	**18 00 20.1**	**+0.1**
VIEF	**Viey**	**0.31**	**144**	Pg	**Pb**	**18 00 16.1**	**+0.3**
VIEF				Sg	**Sg**	**18 00 20.1**	**+0.1**
ETSF	**Etsaut**	**0.34**	**226**	Pg	**Pg**	**18 00 15.5**	**-0.5**
ETSF				Lg	Lg	18 00 19.5	
	806nm,0.3s						
ETSF	**Etsaut**	**0.34**	**226**	*e*Pg	**Pg**	**18 00 15.5**	**-0.5**
ETSF				*e*Sg	**Sg**	**18 00 18.8**	**-2.1**
	2μm,0.3s						
ETSF	**Etsaut**	**0.34**	**226**	*e*Pg	**Pg**	**18 00 15.5**	**-0.5**
ETSF				*e*Sg	**Sg**	**18 00 18.8**	**-2.1**
	806nm,0.3s						
ETSF				Lg	Lg	18 00 19.5	
	806nm,0.3s						
ATE	**Arette**	**0.35**	**262**	Pg	**Pb**	**18 00 17.4**	**+0.8**
ATE				Sg	**Sb**	**18 00 23.1**	**+1.3**
ATE	**Arette**	**0.35**	**262**	Pg	**Pb**	**18 00 17.4**	**+0.8**
EPF	**Esparros**	**0.42**	**104**	Pg	**Pb**	**18 00 18.0**	**+0.2**
EPF				Lg	Lg	18 00 24.1	
	120nm,0.3s						
EPF	**Esparros**	**0.42**	**104**	*e*Pg	**Pb**	**18 00 17.9**	**+0.2**
EPF				*e*Sg	**Sg**	**18 00 22.4**	**-0.9**
	239nm,0.3s						
EPF	**Esparros**	**0.42**	**104**	*e*Pg	**Pb**	**18 00 17.9**	**+0.2**
EPF				*e*Sg	**Sg**	**18 00 22.4**	**-0.9**
	120nm,0.3s						
EPF				Lg	Lg	18 00 24.1	
	120nm,0.3s						
FMON	**Montouss****	**0.47**	**99**	P	**Pb**	**18 00 19.4**	**+0.8**
FMON				S	**Sb**	**18 00 26.6**	**+1.3**
ECHI	**Chisagues Biel**	**0.56**	**147**	Pg	**Pg**	**18 00 19.5**	**-0.4**
	16nm,0.1s,SNR=7.9						
ECHI				Lg	Lg	18 00 26.3	
	508nm,0.1s,SNR=7.9						
ECHI	**Chisagues Biel**	**0.56**	**147**	Pg	**Pg**	**18 00 19.5**	**-0.4**
	16nm,0.1s,SNR=7.9						
ECHI				Lg	Lg	18 00 26.3	
	508nm,0.1s,SNR=7.9						
LARF	**Larrau**	**0.57**	**260**	Pg	**Pb**	**18 00 20.5**	**+0.3**
LARF				Sg	**Sb**	**18 00 29.5**	**+1.4**
LARF	**Larrau**	**0.57**	**260**	Pg	**Pb**	**18 00 20.5**	**+0.3**
LARF				Sg	**Sb**	**18 00 29.5**	**+1.4**
SJPF	**Ste Jean**	**0.73**	**269**	Pg	**Pg**	**18 00 23.1**	**0.0**
SJPF				Lg	Lg	18 00 33.8	
	57nm,0.2s						
SJPF	**Ste Jean**	**0.73**	**269**	*e*Pg	**Pg**	**18 00 23.1**	**0.0**
SJPF				*e*Sg	**Sg**	**18 00 32.1**	**-0.8**
	115nm,0.2s						
SJPF	**Ste Jean**	**0.73**	**269**	*e*Pg	**Pg**	**18 00 23.1**	**0.0**
SJPF				*e*Sg	**Sg**	**18 00 32.1**	**-0.8**
	57nm,0.2s						
SJPF				Lg	Lg	18 00 33.8	
	57nm,0.2s						
YBER	**Berdun**	**0.76**	**223**	Pg	**Pg**	**18 00 23.4**	**-0.1**
	50nm,0.2s,SNR=7.9						
YBER				Lg	Lg	18 00 32.6	
	168nm,0.2s,SNR=7.9						
YBER	**Berdun**	**0.76**	**223**	Pg	**Pg**	**18 00 23.4**	**-0.1**
	50nm,0.2s,SNR=7.9						
YBER				Lg	Lg	18 00 32.6	
	168nm,0.2s,SNR=7.9						
YSIG	**Sigues**	**0.76**	**229**	Pg	**Pg**	**18 00 23.4**	**-0.1**
	20nm,0.1s,SNR=7.9						
YSIG				Lg	Lg	18 00 33.0	
	81nm,0.1s,SNR=7.9						
YSIG	**Sigues**	**0.76**	**229**	Pg	**Pg**	**18 00 23.4**	**-0.1**
	20nm,0.1s,SNR=7.9						
YSIG				Lg	Lg	18 00 33.0	
	81nm,0.1s,SNR=7.9						
MELF	**Melles**	**0.77**	**110**	Pg	**Pb**	**18 00 24.2**	**+0.6**
MELF				Sg	**Sb**	**18 00 34.6**	**+0.9**
MELF	**Melles**	**0.77**	**110**	Pg	**Pb**	**18 00 24.2**	**+0.6**
MELF				Sg	**Sb**	**18 00 34.6**	**+0.9**
OSSF	**Osses**	**0.77**	**279**	Pg	**Pn**	**18 00 24.8**	**0.0**
OSSF				Sg	**Sn**	**18 00 35.4**	**-0.5**
OSSF	**Osses**	**0.77**	**279**	Pg	**Pn**	**18 00 24.8**	**0.0**
OSSF				Sg	**Sn**	**18 00 35.4**	**-0.5**
IELO	**Elcoad**	**0.80**	**249**	Pg	**Pg**	**18 00 23.9**	**-0.5**
	12nm,0.1s,SNR=7.9						
IELO				Lg	Lg	18 00 35.3	
	212nm,0.3s,SNR=7.9						
IELO	**Elcoad**	**0.80**	**249**	Pg	**Pg**	**18 00 23.9**	**-0.5**
	12nm,0.1s,SNR=7.9						
IELO				Lg	Lg	18 00 35.3	
	212nm,0.3s,SNR=7.9						
YASP	**Aspurt**	**0.80**	**240**	Pg	**Pb**	**18 00 24.6**	**+0.4**
	47nm,0.1s,SNR=7.9						
YASP				Lg	Lg	18 00 34.9	
	141nm,0.2s,SNR=7.9						
YASP	**Aspurt**	**0.80**	**240**	Pg	**Pb**	**18 00 24.6**	**+0.4**
	47nm,0.1s,SNR=7.9						
YASP				Lg	Lg	18 00 34.9	
	141nm,0.2s,SNR=7.9						
YMUS	**Pe~a Musera**	**0.81**	**227**	Pg	**Pg**	**18 00 24.4**	**-0.1**
	34nm,0.2s,SNR=7.9						
YMUS				Lg	Lg	18 00 34.4	
	206nm,0.2s,SNR=7.9						
YMUS	**Pe~a Musera**	**0.81**	**227**	Pg	**Pg**	**18 00 24.4**	**-0.1**
	34nm,0.2s,SNR=7.9						
YMUS				Lg	Lg	18 00 34.4	
	206nm,0.2s,SNR=7.9						
IEPA	**Eparoz**	**0.85**	**245**	Pg	**Pg**	**18 00 25.5**	**+0.3**
	36nm,0.2s,SNR=7.9						
IEPA				Lg	Lg	18 00 36.7	
	303nm,0.3s,SNR=7.9						
IEPA	**Eparoz**	**0.85**	**245**	Pg	**Pg**	**18 00 25.5**	**+0.3**
	36nm,0.2s,SNR=7.9						
IEPA				Lg	Lg	18 00 36.7	
	303nm,0.3s,SNR=7.9						
YARA	**Arangoiti**	**0.86**	**236**	Pg	**Pg**	**18 00 25.6**	**0.0**
	18nm,0.1s,SNR=7.9						
YARA				Lg	Lg	18 00 36.8	
	221nm,0.2s,SNR=7.9						
YARA	**Arangoiti**	**0.86**	**236**	Pg	**Pg**	**18 00 25.6**	**0.0**
	18nm,0.1s,SNR=7.9						
YARA				Lg	Lg	18 00 36.8	
	221nm,0.2s,SNR=7.9						
YUND	**Undues**	**0.87**	**230**	Pg	**Pg**	**18 00 25.7**	**0.0**
	25nm,0.2s,SNR=7.9						
YUND				Lg	Lg	18 00 36.8	
	176nm,0.2s,SNR=7.9						
YUND	**Undues**	**0.87**	**230**	Pg	**Pg**	**18 00 25.7**	**0.0**
	25nm,0.2s,SNR=7.9						
YUND				Lg	Lg	18 00 36.8	
	176nm,0.2s,SNR=7.9						
IPRE	**Itoiz**	**0.90**	**249**	Pg	**Pn**	**18 00 27.2**	**+0.7**
	16nm,0.1s,SNR=6.6						
IPRE				Lg	Lg	18 00 38.4	
	67nm,0.2s,SNR=27						
IPRE	**Itoiz**	**0.90**	**249**	Pg	**Pn**	**18 00 27.2**	**+0.7**
	16nm,0.1s,SNR=6.6						
IPRE				Lg	Lg	18 00 38.4	
	67nm,0.2s,SNR=27						
EALK	**Alkurruntz**	**0.94**	**276**	Pg	**Pg**	**18 00 27.3**	**+0.2**
	3.5nm,0.1s,SNR=32						
EALK				Lg	Lg	18 00 40.5	
	112nm,0.3s,SNR=15						
EALK	**Alkurruntz**	**0.94**	**276**	Pg	**Pg**	**18 00 27.3**	**+0.2**
	3.5nm,0.1s,SNR=32						
EALK				Lg	Lg	18 00 40.5	
	112nm,0.3s,SNR=15						
MLS	**Moulis**	**0.98**	**100**	Pg	**Pn**	**18 00 28.3**	**+0.6**
MLS				Lg	Lg	18 00 42.7	
MLS	**Moulis**	**0.98**	**100**	P	**Pn**	**18 00 28.3**	**+0.6**
MLS				S	**Sn**	**18 00 42.7**	**+1.5**
IUSE	**Utxeti**	**0.99**	**259**	Pg	**Pn**	**18 00 28.6**	**+0.7**
	28nm,0.1s,SNR=7.9						
IUSE				Lg	Lg	18 00 41.9	
	88nm,0.1s,SNR=7.9						
IUSE	**Utxeti**	**0.99**	**259**	Pg	**Pn**	**18 00 28.6**	**+0.7**
	28nm,0.1s,SNR=7.9						
IUSE				Lg	Lg	18 00 41.9	
	88nm,0.1s,SNR=7.9						
EARA	**Aranguren**	**1.06**	**250**	Pg	**Pg**	**18 00 30.3**	**+1.0**
	5.4nm,0.1s,SNR=9.4						
EARA				Lg	Lg	18 00 44.6	
	133nm,0.3s,SNR=17						
EARA	**Aranguren**	**1.06**	**250**	Pg	**Pg**	**18 00 30.3**	**+1.0**
	5.4nm,0.1s,SNR=9.4						
EARA				Lg	Lg	18 00 44.6	
	133nm,0.3s,SNR=17						
CTRE	**Tremp**	**1.09**	**138**	Pg	**Pb**	**18 00 29.6**	**+0.4**
CTRE	**Tremp**	**1.09**	**138**	P	**Pn**	**18 00 29.7**	**+0.4**
CTRE				S	**Sn**	**18 00 44.9**	**+0.8**
	68nm,0.3s						
SALF	**Salau**	**1.10**	**109**	Pg	**Pg**	**18 00 30.1**	**0.0**
SALF				Sg	**Sn**	**18 00 45.8**	**+1.6**
SALF	**Salau**	**1.10**	**109**	Pg	**Pg**	**18 00 30.1**	**0.0**
SALF				Sg	**Sn**	**18 00 45.8**	**+1.6**
CEST	**Esterri de Car**	**1.21**	**116**	Pg	**Pg**	**18 00 32.0**	**-0.1**
CEST				Lg	Lg	18 00 49.2	
	67nm,0.3s						
CEST	**Esterri de Car**	**1.21**	**116**	P	**Pg**	**18 00 32.0**	**-0.1**
CEST				S	**Sg**	**18 00 49.2**	**+1.2**
	67nm,0.3s						
ESAC	**San Caprasio**	**1.43**	**187**	Pg	**Pg**	**18 00 36.0**	**-0.2**
	330nm,0.2s,SNR=180						
ESAC				Lg	Lg	18 00 54.1	
	446nm,0.2s,SNR=6.6						
ESAC	**San Caprasio**	**1.43**	**187**	Pg	**Pg**	**18 00 36.0**	**-0.2**
	330nm,0.2s,SNR=180						
ESAC				Lg	Lg	18 00 54.1	
	446nm,0.2s,SNR=6.6						
CAVN	**Les Avellanes**	**1.45**	**150**	Pg	**Pb**	**18 00 35.5**	**+0.4**
CAVN				Lg	Lg	18 00 54.2	
	212nm,0.3s						
CAVN	**Les Avellanes**	**1.45**	**150**	P	**Pb**	**18 00 35.6**	**+0.4**
CAVN				S	**Sb**	**18 00 54.2**	**+1.0**
	424nm,0.3s						
CORG	**Organya**	**1.45**	**128**	Pg	**Pg**	**18 00 36.2**	**-0.4**
CORG				Lg	Lg	18 00 55.7	
	14nm,0.3s						
CORG	**Organya**	**1.45**	**128**	P	**Pg**	**18 00 36.3**	**-0.4**
CORG				S	**Sg**	**18 00 55.8**	**+0.2**
	28nm,0.3s						
ARBS	**La Rabassa**	**1.47**	**117**	P	**Pg**	**18 00 36.7**	**-0.4**
ARBS				S	**Sg**	**18 00 56.7**	**+0.3**
	124nm,0.2s						
CLLI	**Llivia**	**1.74**	**111**	Pg	**Pg**	**18 00 42.6**	**+0.4**
	2.8nm,0.1s,SNR=38						
CLLI				Lg	Lg	18 01 05.7	
	31nm,0.3s,SNR=21						
CLLI	**Llivia**	**1.74**	**111**	P	**Pg**	**18 00 41.6**	**-0.7**
CLLI	**Llivia**	**1.74**	**111**	Pg	**Pg**	**18 00 42.6**	**+0.4**
	2.8nm,0.1s,SNR=38						
CLLI				S	**Sg**	**18 01 04.8**	**-0.1**
	57nm,0.4s						
CLLI				Lg	Lg	18 01 05.7	
	31nm,0.3s,SNR=21						
CARF	**Carcanieres**	**1.76**	**103**	Pg	**Pg**	**18 00 42.9**	**+0.3**
CARF				Sg	**Sg**	**18 01 06.9**	**+1.4**
CARF	**Carcanieres**	**1.76**	**103**	Pg	**Pg**	**18 00 42.9**	**+0.3**
CARF				Sg	**Sg**	**18 01 06.9**	**+1.4**
MTLF	**Montolieu**	**1.79**	**83**	Pn	**Pn**	**18 00 39.7**	**+0.9**
MTLF				Pg	**Pg**	**18 00 43.9**	**+0.7**
MTLF				Lg	Lg	18 01 06.6	
	20nm,0.2s						
MTLF	**Montolieu**	**1.79**	**83**	*e*Pn	**Pn**	**18 00 39.7**	**+0.9**
MTLF	**Montolieu**	**1.79**	**83**	*e*Pg	**Pg**	**18 00 43.9**	**+0.7**
MTLF				*e*Sg	**Sg**	**18 01 05.8**	**-0.7**
	39nm,0.2s						
MTLF	**Montolieu**	**1.79**	**83**	*e*Pn	**Pn**	**18 00 39.7**	**+0.9**
MTLF	**Montolieu**	**1.79**	**83**	*e*Pg	**Pg**	**18 00 43.9**	**+0.7**
MTLF				*e*Sg	**Sg**	**18 01 05.8**	**-0.7**
	20nm,0.2s						
MTLF				Lg	Lg	18 01 06.6	
	20nm,0.2s						
VALF	**Valcebollere**	**1.80**	**113**	Pg	**Pg**	**18 00 43.3**	**-0.1**
VALF				Sg	**Sg**	**18 01 08.5**	**+1.6**
VALF	**Valcebollere**	**1.80**	**113**	Pg	**Pg**	**18 00 43.3**	**-0.1**
VALF				Sg	**Sg**	**18 01 08.5**	**+1.6**
LFF	**La Frestale**	**1.93**	**21**	Pn	**Pb**	**18 00 42.3**	**-1.1**
LFF				Pg	**Pg**	**18 00 46.8**	**+1.0**
LFF				Lg	Lg	18 01 12.2	
	89nm,0.2s						
LFF	**La Frestale**	**1.93**	**21**	*e*Pn	**Pb**	**18 00 42.3**	**-1.1**
LFF	**La Frestale**	**1.93**	**21**	*e*Pg	**Pg**	**18 00 46.8**	**+1.0**
LFF				*e*Sg	**Sg**	**18 01 12.2**	**+1.3**
	294nm,0.3s						
LFF	**La Frestale**	**1.93**	**21**	*e*Pn	**Pb**	**18 00 42.3**	**-1.1**
LFF	**La Frestale**	**1.93**	**21**	*e*Pg	**Pg**	**18 00 46.8**	**+1.0**
LFF				*e*Sg	**Sg**	**18 01 12.2**	**+1.3**
	147nm,0.3s						
CBRU	**Bruguera**	**1.96**	**115**	Pn	**Pb**	**18 00 44.1**	**0.0**
CBRU				Sn	**Sb**	**18 01 10.0**	**+1.7**
	36nm,0.5s						
CBRU	**Bruguera**	**1.96**	**115**	P	**Pb**	**18 00 44.1**	**0.0**
CBRU				S	**Sb**	**18 01 10.0**	**+1.7**
	72nm,0.5s						
EPOB	**Poblet**	**2.03**	**151**	Pg	**Pb**	**18 00 45.9**	**+0.8**
	8.7nm,0.1s,SNR=59						
EPOB				Lg	Lg	18 01 12.0	
	38nm,0.2s,SNR=5.0						
EPOB	**Poblet**	**2.03**	**151**	P	**Pb**	**18 00 44.4**	**-0.7**
EPOB	**Poblet**	**2.03**	**151**	Pg	**Pb**	**18 00 45.9**	**+0.8**
	8.7nm,0.1s,SNR=59						
EPOB				S	**Sb**	**18 01 10.0**	**0.0**
EPOB				Lg	Lg	18 01 12.0	
	38nm,0.2s,SNR=5.0						
LRDF	**Laroque-de-Fa**	**2.03**	**95**	Pg	**Pg**	**18 00 47.8**	**0.0**
LRDF				Sg	**Sg**	**18 01 16.0**	**+1.8**
LRDF	**Laroque-de-Fa**	**2.03**	**95**	Pg	**Pg**	**18 00 47.8**	**0.0**
LRDF				Sg	**Sg**	**18 01 16.0**	**+1.8**
CORI	**Orista**	**2.04**	**124**	Pn	**Pb**	**18 00 44.7**	**-0.6**
CORI				Sn	**Sb**	**18 01 11.4**	**+1.0**
	152nm,0.2s						
CORI	**Orista**	**2.04**	**124**	P	**Pb**	**18 00 44.7**	**-0.6**
CORI				Sn	**Sb**	**18 01 11.4**	**+1.0**
	152nm,0.2s						
FILF	**Fillols**	**2.12**	**105**	Pg	**Pb**	**18 00 48.2**	**+1.4**
FILF				Sg	**Sg**	**18 01 15.7**	**-1.4**
FILF	**Fillols**	**2.12**	**105**	Pg	**Pb**	**18 00 48.2**	**+1.4**
FILF				Sg	**Sg**	**18 01 15.7**	**-1.4**
ERTA	**Horta de San J**	**2.22**	**169**	⇑Pg	**Pb**	**18 00 49.7**	**+1.4**
	8.2nm,0.1s,SNR=18						
ERTA				Lg	Lg	18 01 17.2	
	37nm,0.2s,SNR=5.0						
ERTA	**Horta de San J**	**2.22**	**169**	Pg	**Pb**	**18 00 49.7**	**+1.4**
	8.2nm,0.1s,SNR=18						
ERTA				Lg	Lg	18 01 17.2	
	37nm,0.2s,SNR=5.0						
CBEU	**Beuda**	**2.31**	**111**	Pn	**Pb**	**18 00 48.7**	**-1.2**
CBEU				Sn	**Sb**	**18 01 17.5**	**-0.7**
	131nm,0.4s						
CBEU	**Beuda**	**2.31**	**111**	Pn	**Pb**	**18 00 48.7**	**-1.2**
CBEU				S	**Sb**	**18 01 17.5**	**-0.7**
	131nm,0.4s						
ELAN	**Lanestosa**	**2.35**	**273**	Pn	**Pb**	**18 00 50.9**	**+0.3**
	0.6nm,0.1s,SNR=7.9						
ELAN				Sn	**Sb**	**18 01 19.5**	**+0.1**
	12nm,0.5s,SNR=7.9						
ELAN	**Lanestosa**	**2.35**	**273**	Pn	**Pb**	**18 00 50.9**	**+0.3**
	0.6nm,0.1s,SNR=7.9						
ELAN				Sn	**Sb**	**18 01 19.5**	**+0.1**
	12nm,0.5s,SNR=7.9						
EBR	**Ebro Roquetas**	**2.37**	**167**	Pg	**Pb**	**18 00 51.9**	**+0.9**
	91nm,0.2s,SNR=7.9						
EBR				Lg	Lg	18 01 24.0	
	212nm,0.5s,SNR=7.9						
EBR	**Ebro Roquetas**	**2.37**	**167**	Pg	**Pb**	**18 00 51.9**	**+0.9**
	91nm,0.2s,SNR=7.9						
EBR				Lg	Lg	18 01 24.0	
	212nm,0.5s,SNR=7.9						
SJAF	**Saint Jean de**	**2.38**	**105**	Pn	**Pb**	**18 00 50.2**	**-0.8**
	0.3nm,0.1s,SNR=7.9						
SJAF				Pg	**Pg**	**18 00 53.5**	**-0.7**
	1.3nm,0.2s,SNR=7.9						
SJAF				Lg	Lg	18 01 25.9	
	8.8nm,0.2s,SNR=7.9						
SJAF	**Saint Jean de**	**2.38**	**105**	Pn	**Pb**	**18 00 50.2**	**-0.8**
	0.3nm,0.1s,SNR=7.9						
EJON	**La Jonquera**	**

22nm,0.4s
EMOS Mosqueruela 2.78 184 Pn **Pn 18 00 55.3 +2.8**
0.2nm,0.1s,SNR=7.9
EMOS Pg **Pb 18 00 59.4 +1.4**
19nm,0.3s,SNR=7.9
EMOS Sn **Sn 18 01 26.0 +0.3**
7.2nm,0.2s,SNR=7.9
EMOS Lg Lg 18 01 33.2
20nm,0.3s,SNR=7.9
EMOS Mosqueruela 2.78 184 Pn **Pn 18 00 55.3 +2.8**
0.2nm,0.1s,SNR=7.9
EMOS Mosqueruela 2.78 184 Pg **Pb 18 00 59.4 +1.4**
19nm,0.3s,SNR=7.9
EMOS Sn **Sn 18 01 26.0 +0.3**
7.2nm,0.2s,SNR=7.9
EMOS Lg Lg 18 01 33.2
20nm,0.3s,SNR=7.9
FRNF Fournols 3.01 41 Pn **Pn 18 00 57.5 +1.9**
FRNF Fournols 3.01 41 Pg **Pg 18 01 07.3 +0.9**
FRNF Sg **Sg 18 01 48.5 +3.1**
FRNF Fournols 3.01 41 Pn **Pn 18 00 57.5 +1.9**
FRNF Fournols 3.01 41 Pg **Pg 18 01 07.3 +0.9**
LASF Ste Croix 3.11 71 Pn **Pn 18 00 57.7 +0.8**
LASF Pg **Pg 18 01 07.8 -0.5**
LASF Lg Lg 18 01 47.2
17nm,0.4s
LASF Ste Croix 3.11 71 *e*Pn **Pn 18 00 57.7 +0.8**
LASF Ste Croix 3.11 71 *e*Pg **Pg 18 01 07.8 -0.5**
LASF *e*Sg **Sg 18 01 47.2 -1.3**
34nm,0.4s
LASF Ste Croix 3.11 71 *e*Pn **Pn 18 00 57.7 +0.8**
LASF Ste Croix 3.11 71 *e*Pg **Pg 18 01 07.8 -0.5**
LASF *e*Sg **Sg 18 01 47.2 -1.3**
17nm,0.4s
LBL Lubilhac 3.26 49 Pn **Pn 18 01 01.4 +2.4**
LBL Lubilhac 3.26 49 Pg **Pg 18 01 12.6 +1.5**
LBL Sg **Sg 18 01 56.5 +3.1**
LBL Lubilhac 3.26 49 Pn **Pn 18 01 01.4 +2.4**
LBL Lubilhac 3.26 49 Pg **Pg 18 01 12.6 +1.5**
MFF Saint Martin d 3.47 1 Pn **Pn 18 01 03.6 +1.8**
MFF Pg **Pg 18 01 14.8 -0.3**
MFF Lg Lg 18 02 00.7
12nm,0.2s
MFF Saint Martin d 3.47 1 *e*Pn **Pn 18 01 03.6 +1.8**
MFF Saint Martin d 3.47 1 *e*Pg **Pg 18 01 14.8 -0.3**
MFF *e*Sg **Sg 18 02 00.7 +0.7**
46nm,0.3s
MFF Saint Martin d 3.47 1 *e*Pn **Pn 18 01 03.6 +1.8**
MFF Saint Martin d 3.47 1 *e*Pg **Pg 18 01 14.8 -0.3**
MFF *e*Sg **Sg 18 02 00.7 +0.7**
23nm,0.3s
PYM Petit Puy Mans 3.49 40 Pn **Pn 18 01 04.0 +1.8**
PYM Petit Puy Mans 3.49 40 Pg **Pg 18 01 15.8 +0.2**
PYM Sg **Sg 18 02 04.1 +3.3**
PYM Petit Puy Mans 3.49 40 Pn **Pn 18 01 04.0 +1.8**
PYM Petit Puy Mans 3.49 40 Pg **Pg 18 01 15.8 +0.2**
TCF Toulx Ste Croi 3.60 28 Pn **Pn 18 01 04.5 +0.9**
TCF Pg **Pg 18 01 17.4 -0.2**
TCF Lg Lg 18 02 04.1
24nm,0.3s
TCF Toulx Ste Croi 3.60 28 *e*Pn **Pn 18 01 04.5 +0.9**
TCF Toulx Ste Croi 3.60 28 *e*Pg **Pg 18 01 17.4 -0.2**
TCF *e*Sg **Sg 18 02 04.1 -0.1**
55nm,0.2s
TCF Toulx Ste Croi 3.60 28 *e*Pn **Pn 18 01 04.5 +0.9**
TCF Toulx Ste Croi 3.60 28 *e*Pg **Pg 18 01 17.4 -0.2**
TCF *e*Sg **Sg 18 02 04.1 -0.1**
27nm,0.2s
EARI Arriondas 3.65 274 Pn **Pn 18 01 07.9 +3.5**
1.0nm,0.2s,SNR=9.6
EARI Sn **Sn 18 01 49.1 +2.0**
6.9nm,0.4s,SNR=5.0
EARI Arriondas 3.65 274 Pn **Pn 18 01 07.9 +3.5**
1.0nm,0.2s,SNR=9.6
EARI Sn **Sn 18 01 49.1 +2.0**
6.9nm,0.4s,SNR=5.0
AGO Saint Agoulin 3.77 38 Pn **Pn 18 01 08.4 +2.3**
AGO Saint Agoulin 3.77 38 Pg **Pg 18 01 22.4 +1.4**
AGO Saint Agoulin 3.77 38 Pn **Pn 18 01 08.4 +2.3**
AGO Saint Agoulin 3.77 38 Pg **Pg 18 01 22.4 +1.4**
GUD Guadarrama 3.85 231 Pn **Pn 18 01 09.3 +2.1**
1.1nm,0.2s,SNR=9.1
GUD Sn **Sn 18 01 52.8 +0.7**
13nm,0.3s,SNR=5.0
GUD Guadarrama 3.85 231 Pn **Pn 18 01 09.3 +2.1**
1.1nm,0.2s,SNR=9.1
GUD Sn **Sn 18 01 52.8 +0.7**
13nm,0.3s,SNR=5.0
VIVF Saint-Julien-l 3.93 62 Pn **Pn 18 01 09.7 +1.5**
VIVF Pg **Pg 18 01 23.6 -0.3**
VIVF Lg Lg 18 02 13.2
19nm,0.5s
VIVF Saint-Julien-l 3.93 62 *e*Pn **Pn 18 01 09.7 +1.5**
VIVF Saint-Julien-l 3.93 62 *e*Pg **Pg 18 01 23.6 -0.3**
VIVF *e*Sg **Sg 18 02 13.2 -1.6**
38nm,0.5s
VIVF Saint-Julien-l 3.93 62 *e*Pn **Pn 18 01 09.7 +1.5**
VIVF Saint-Julien-l 3.93 62 *e*Pg **Pg 18 01 23.6 -0.3**
VIVF *e*Sg **Sg 18 02 13.2 -1.6**
19nm,0.5s
PLDF La Plantade 3.95 43 Pn **Pn 18 01 10.0 +1.5**
PLDF La Plantade 3.95 43 Pg **Pg 18 01 25.2 +0.9**
PLDF La Plantade 3.95 43 Pn **Pn 18 01 10.0 +1.5**
PLDF La Plantade 3.95 43 Pg **Pg 18 01 25.2 +0.9**
BGF Bois d'Agland 4.06 31 Pn **Pn 18 01 11.0 +1.0**
BGF Pg **Pg 18 01 26.0 -0.4**
BGF Lg Lg 18 02 18.4
54nm,0.4s
BGF Bois d'Agland 4.06 31 *e*Pn **Pn 18 01 11.0 +1.0**
BGF Bois d'Agland 4.06 31 *e*Pg **Pg 18 01 26.0 -0.4**
BGF *e*Sg **Sg 18 02 18.4 -0.5**
127nm,0.4s
BGF Bois d'Agland 4.06 31 *e*Pn **Pn 18 01 11.0 +1.0**
BGF Bois d'Agland 4.06 31 *e*Pg **Pg 18 01 26.0 -0.4**
BGF *e*Sg **Sg 18 02 18.4 -0.5**
63nm,0.4s
ETOS Mallorca 4.07 145 Pn **Pn 18 01 12.0 +1.9**
0.3nm,0.1s,SNR=6.8
ETOS Sn **Sn 18 01 56.9 -0.4**
2.6nm,0.3s,SNR=7.9
ETOS Mallorca 4.07 145 Pn **Pn 18 01 12.0 +1.9**
0.3nm,0.1s,SNR=6.8
ETOS Sn **Sn 18 01 56.9 -0.4**
2.6nm,0.3s,SNR=7.9
EIBI Ibiza 4.27 163 Pn **Pn 18 01 14.8 +1.9**
0.5nm,0.2s,SNR=7.9
EIBI Sn **Sn 18 02 00.0 -2.3**
3.0nm,0.2s,SNR=7.9
EIBI Ibiza 4.27 163 Pn **Pn 18 01 14.8 +1.9**
0.5nm,0.2s,SNR=7.9
SMRF Simiane la Rot 4.30 77 Pn **Pn 18 01 14.5 +1.2**
SMRF Lg Lg 18 02 24.3
8.6nm,0.5s
SMRF Simiane la Rot 4.30 77 *e*Pn **Pn 18 01 14.5 +1.2**
SMRF *e*Sg **Sg 18 02 24.3 -2.3**
8.6nm,0.5s
SMRF Simiane la Rot 4.30 77 *e*Pn **Pn 18 01 14.5 +1.2**
SMRF *e*Sg **Sg 18 02 24.3 -2.3**
4.3nm,0.5s
AVF Avril sur Loir 4.45 34 Pn **Pn 18 01 17.0 +1.7**
AVF Pg **Pg 18 01 32.9 -1.0**
AVF Lg Lg 18 02 30.5
11nm,0.4s
AVF Avril sur Loir 4.45 34 *e*Pn **Pn 18 01 17.0 +1.7**
AVF Avril sur Loir 4.45 34 *e*Pg **Pg 18 01 32.9 -1.0**
AVF *e*Sg **Sg 18 02 30.5 -0.9**
38nm,0.5s
AVF Avril sur Loir 4.45 34 *e*Pn **Pn 18 01 17.0 +1.7**
AVF Avril sur Loir 4.45 34 *e*Pg **Pg 18 01 32.9 -1.0**
AVF *e*Sg **Sg 18 02 30.5 -0.9**
19nm,0.5s
ESDC Sonseca Array 4.46 220 Pn **Pn 18 01 16.6 +1.1**
2.4nm,0.2s,baz=41,slow=14,SNR=10
ESDC Sn **Sn 18 02 05.6 -1.4**
5.1nm,0.1s,baz=41,slow=24,SNR=11
ESDC Lg Lg 18 02 27.4
2.9nm,0.5s,SNR=7.9
ESDC Sonseca Array 4.46 220 Pn **Pn 18 01 16.6 +1.1**
2.4nm,0.2s,SNR=10
ESDC Sn **Sn 18 02 05.6 -1.4**
5.1nm,0.1s,SNR=11
ESDC Lg Lg 18 02 27.4
2.9nm,0.5s,SNR=7.9
SMF Signal de Mont 4.54 38 Pn **Pn 18 01 18.5 +1.9**
SMF Pg **Pg 18 01 35.0 -0.7**
SMF Lg Lg 18 02 33.2
8.9nm,0.3s
SMF Signal de Mont 4.54 38 *e*Pn **Pn 18 01 18.5 +1.9**
SMF Signal de Mont 4.54 38 *e*Pg **Pg 18 01 35.0 -0.7**
SMF *e*Sg **Sg 18 02 33.2 -1.3**
18nm,0.3s
SMF Signal de Mont 4.54 38 *e*Pn **Pn 18 01 18.5 +1.9**
SMF Signal de Mont 4.54 38 *e*Pg **Pg 18 01 35.0 -0.7**
SMF *e*Sg **Sg 18 02 33.2 -1.3**
8.9nm,0.3s
ETOB Tobarra 4.60 193 Pn **Pn 18 01 19.3 +1.9**
0.6nm,0.2s,SNR=7.9
ETOB Sn **Sn 18 02 06.7 -3.8**
1.1nm,0.2s,SNR=7.9
ETOB Lg Lg 18 02 31.8
1.5nm,0.3s,SNR=7.9
ETOB Tobarra 4.60 193 Pn **Pn 18 01 19.3 +1.9**
0.6nm,0.2s,SNR=7.9
ETOB Lg Lg 18 02 31.8
1.5nm,0.3s,SNR=7.9
HYF Humbligny 4.60 25 Pn **Pn 18 01 19.6 +2.2**
HYF Pg **Pg 18 01 35.7 -1.1**
HYF Lg Lg 18 02 35.6
HYF Humbligny 4.60 25 *e*Pn **Pn 18 01 19.6 +2.2**
HYF Humbligny 4.60 25 *e*Pg **Pg 18 01 35.7 -1.1**
HYF *e*Sg **Sg 18 02 35.6 -0.7**
HYF Humbligny 4.60 25 *e*Pn **Pn 18 01 19.6 +2.2**
HYF Humbligny 4.60 25 *e*Pg **Pg 18 01 35.7 -1.1**
HYF *e*Sg **Sg 18 02 35.6 -0.7**
SSF Saint Saulge 4.73 33 Pn **Pn 18 01 19.9 +0.7**
SSF Pg **Pg 18 01 37.9 -1.3**
SSF Lg Lg 18 02 39.1
12nm,0.3s
SSF Saint Saulge 4.73 33 *e*Pn **Pn 18 01 19.9 +0.7**
SSF Saint Saulge 4.73 33 *e*Pg **Pg 18 01 37.9 -1.3**
SSF *e*Sg **Sg 18 02 39.1 -1.4**
24nm,0.3s
SSF Saint Saulge 4.73 33 *e*Pn **Pn 18 01 19.9 +0.7**
SSF Saint Saulge 4.73 33 *e*Pg **Pg 18 01 37.9 -1.3**
SSF *e*Sg **Sg 18 02 39.1 -1.4**
12nm,0.3s
ORIF Oris-en-Rattie 4.75 66 Pn **Pn 18 01 20.8 +1.3**
ORIF Lg Lg 18 02 38.7
7.2nm,0.9s
ORIF Oris-en-Rattie 4.75 66 *e*Pn **Pn 18 01 20.8 +1.3**
ORIF *e*Sg **Sg 18 02 38.7 -2.3**
14nm,0.9s
ORIF Oris-en-Rattie 4.75 66 *e*Pn **Pn 18 01 20.8 +1.3**
ORIF *e*Sg **Sg 18 02 38.7 -2.3**
7.2nm,0.9s
ECAL Calabor 4.96 258 Pn **Pn 18 01 24.8 +2.4**
2.0nm,0.1s,SNR=7.9
ECAL Sn **Sn 18 02 19.9 +0.5**
9.4nm,0.2s,SNR=7.9
ECAL Lg Lg 18 02 43.5
7.9nm,0.3s,SNR=7.9
ECAL Calabor 4.96 258 Pn **Pn 18 01 24.8 +2.4**
2.0nm,0.1s,SNR=7.9
ECAL Sn **Sn 18 02 19.9 +0.5**
9.4nm,0.2s,SNR=7.9
ECAL Lg Lg 18 02 43.5
7.9nm,0.3s,SNR=7.9
PBRG Braganca 5.00 257 *e*Pn **Pn 18 01 25.6 +2.6**
PBRG *e*Sn **Sn 18 02 21.4 +1.0**
PBRG A A 18 02 22.3
6.7nm,0.3s
PBRG Braganca 5.00 257 Pn **Pn 18 01 25.6 +2.6**
PBRG Sn **Sn 18 02 21.4 +1.0**
3.3nm,0.3s
PBRG Braganca 5.00 257 *e*Pn **Pn 18 01 25.6 +2.6**
PBRG Sn **Sn 18 02 21.4 +1.0**
3.3nm,0.3s
FRF La Foret Royal 5.03 83 Pn **Pn 18 01 24.2 +0.9**
FRF Lg Lg 18 02 46.8
3.0nm,0.5s
FRF La Foret Royal 5.03 83 *e*Pn **Pn 18 01 24.2 +0.9**
FRF *e*Sg **Sg 18 02 46.8 -3.2**
5.9nm,0.5s
FRF La Foret Royal 5.03 83 *e*Pn **Pn 18 01 24.2 +0.9**
FRF *e*Sg **Sg 18 02 46.8 -3.2**
3.0nm,0.5s
LOR Lormes 5.04 33 Pn **Pn 18 01 24.8 +1.4**
LOR Pg **Pg 18 01 44.0 -1.1**
LOR Lg Lg 18 02 49.0
9.4nm,0.3s
LOR Lormes 5.04 33 *e*Pn **Pn 18 01 24.8 +1.4**
LOR Lormes 5.04 33 *e*Pg **Pg 18 01 44.0 -1.1**
LOR *e*Sg **Sg 18 02 49.0 -1.4**
19nm,0.3s
LOR Lormes 5.04 33 *e*Pn **Pn 18 01 24.8 +1.4**
LOR Lormes 5.04 33 *e*Pg **Pg 18 01 44.0 -1.1**
LOR *e*Sg **Sg 18 02 49.0 -1.4**
9.4nm,0.3s
EPON Pontenova 5.07 275 Pn **Pn 18 01 26.9 +3.1**
1.0nm,0.2s,SNR=7.9
EPON Sn **Sn 18 02 23.4 +1.5**
4.3nm,0.3s,SNR=7.9
EPON Pontenova 5.07 275 Pn **Pn 18 01 26.9 +3.1**
1.0nm,0.2s,SNR=7.9
EPON Sn **Sn 18 02 23.4 +1.5**
4.3nm,0.3s,SNR=7.9
QUIF Quistinic 5.21 338 Pn **Pn 18 01 27.1 +1.4**
QUIF Lg Lg 18 02 55.1
11nm,0.5s
QUIF Quistinic 5.21 338 *e*Pn **Pn 18 01 27.1 +1.4**
QUIF *e*Sg **Sg 18 02 55.1 -0.7**
22nm,0.5s
QUIF Quistinic 5.21 338 *e*Pn **Pn 18 01 27.1 +1.4**
QUIF *e*Sg **Sg 18 02 55.1 -0.7**
11nm,0.5s
GRR Gorron 5.27 355 Pg **Pg 18 01 48.2 -1.4**
GRR Lg Lg 18 02 56.9
9.6nm,0.4s
GRR Gorron 5.27 355 *e*Pg **Pg 18 01 48.2 -1.4**
GRR *e*Sg **Sg 18 02 56.9 -0.9**
19nm,0.4s
GRR Gorron 5.27 355 *e*Pg **Pg 18 01 48.2 -1.4**
GRR *e*Sg **Sg 18 02 56.9 -0.9**
9.6nm,0.4s
EPLA Plasencia 5.36 237 Pn **Pn 18 01 29.8 +1.9**
0.2nm,0.1s,SNR=7.9
EPLA Sn **Sn 18 02 28.3 -0.8**
2.2nm,0.2s,SNR=7.9
EPLA Plasencia 5.36 237 Pn **Pn 18 01 29.8 +1.9**
0.2nm,0.1s,SNR=7.9
EPLA Sn **Sn 18 02 28.3 -0.8**
2.2nm,0.2s,SNR=7.9
SGMF Saint Gilles 5.37 343 Pn **Pn 18 01 29.5 +1.5**
SGMF Lg Lg 18 02 56.7
8.4nm,0.5s
SGMF Saint Gilles 5.37 343 *e*Pn **Pn 18 01 29.5 +1.5**
SGMF *e*Sg **Sg 18 02 56.7 -4.4**
17nm,0.5s
SGMF Saint Gilles 5.37 343 *e*Pn **Pn 18 01 29.5 +1.5**
SGMF *e*Sg **Sg 18 02 56.7 -4.4**
8.4nm,0.5s
MVO Moncorvo 5.43 251 *e*Pn **Pn 18 01 30.7 +1.8**
MVO *e*Sn **Sn 18 02 30.6 -0.4**
MVO A A 18 03 00.7
6.8nm,0.4s
MVO Moncorvo 5.43 251 Pn **Pn 18 01 31.4 +2.5**
1.4nm,0.1s,SNR=7.9
MVO Sn **Sn 18 02 31.2 +0.2**
6.3nm,0.3s,SNR=7.9
MVO Moncorvo 5.43 251 *e*Pn **Pn 18 01 30.7 +1.8**
MVO Sn **Sn 18 02 31.2 +0.2**
6.3nm,0.3s,SNR=7.9
LDF La Druitiere 5.46 1 *e*Pn **Pn 18 01 30.3 +1.1**
LDF La Druitiere 5.46 1 *e*Pg **Pg 18 01 50.3 -2.9**
LDF *e*Sg **Sg 18 03 03.1 -0.7**
18nm,0.4s
LDF La Druitiere 5.46 1 *e*Pn **Pn 18 01 30.3 +1.1**
LDF La Druitiere 5.46 1 *e*Pg **Pg 18 01 50.3 -2.9**
LDF *e*Sg **Sg 18 03 03.1 -0.7**
8.9nm,0.4s
LPL La Plagne 5.53 62 Pn **Pn 18 01 31.6 +1.3**
LPL Pg **Pg 18 01 52.6 -1.9**
LPL Lg Lg 18 03 03.4
3.1nm,0.6s
LPL La Plagne 5.53 62 *e*Pn **Pn 18 01 31.6 +1.3**
LPL La Plagne 5.53 62 *e*Pg **Pg 18 01 52.6 -1.9**
LPL *e*Sg **Sg 18 03 03.4 -2.7**
6.1nm,0.6s
LPL La Plagne 5.53 62 *e*Pn **Pn 18 01 31.6 +1.3**
LPG La Plagne 5.53 62 Pn **Pn 18 01 31.7 +1.2**
LPG Pg **Pg 18 01 53.0 -1.6**
LPG Lg Lg 18 03 03.7
1.9nm,0.5s
LPG La Plagne 5.53 62 *e*Pn **Pn 18 01 31.7 +1.2**
LPG La Plagne 5.53 62 *e*Pg **Pg 18 01 53.0 -1.6**
LPG *e*Sg **Sg 18 03 03.7 -2.5**
3.9nm,0.5s
LPG La Plagne 5.53 62 *e*Pn **Pn 18 01 31.7 +1.2**
ROSF Rostrenen 5.62 339 Pn **Pn 18 01 31.9 +0.5**
ROSF Lg Lg 18 03 08.5
4.8nm,0.4s
ROSF Rostrenen 5.62 339 *e*Pn **Pn 18 01 31.9 +0.5**
ROSF *e*Sg **Sg 18 03 08.5 -0.6**
9.7nm,0.4s
ROSF Rostrenen 5.62 339 *e*Pn **Pn 18 01 31.9 +0.5**
ROSF *e*Sg **Sg 18 03 08.5 -0.6**
4.8nm,0.4s
FLN La Foliniere 5.63 358 Pn **Pn 18 01 31.8 +0.3**
FLN Lg Lg 18 03 08.5
11nm,0.5s
FLN La Foliniere 5.63 358 *e*Pn **Pn 18 01 31.8 +0.3**
FLN *e*Sg **Sg 18 03 08.5 -0.8**
21nm,0.5s
FLN La Foliniere 5.63 358 *e*Pn **Pn 18 01 31.8 +0.3**
FLN *e*Sg **Sg 18 03 08.5 -0.8**
11nm,0.5s
CABF La Chapelle 5.67 50 Pn **Pn 18 01 33.5 +1.3**
CABF Pg **Pg 18 01 55.3 -2.0**
CABF Lg Lg 18 03 08.2
10nm,0.7s
CABF La Chapelle 5.67 50 *e*Pn **Pn 18 01 33.5 +1.3**
CABF La Chapelle 5.67 50 *e*Pg **Pg 18 01 55.3 -2.0**
CABF *e*Sg **Sg 18 03 08.2 -2.5**
20nm,0.7s
CABF La Chapelle 5.67 50 *e*Pn **Pn 18 01 33.5 +1.3**
CABF La Chapelle 5.67 50 *e*Pg **Pg 18 01 55.3 -2.0**
CABF *e*Sg **Sg 18 03 08.2 -2.5**
10nm,0.7s
EAGO Agolada(Pontev 5.78 269 Pn **Pn 18 01 36.2 +2.5**
3.3nm,0.3s,SNR=7.9
EAGO Agolada(Pontev 5.78 269 Pn **Pn 18 01 36.2 +2.5**
3.3nm,0.3s,SNR=7.9
ELOB Lobios 5.93 260 Pn **Pn 18 01 37.5 +1.7**
0.4nm,0.2s,SNR=7.9
ELOB Sn **Sn 18 02 43.9 +0.5**
4.4nm,0.4s,SNR=7.9
ELOB Lobios 5.93 260 Pn **Pn 18 01 37.5 +1.7**
0.4nm,0.2s,SNR=7.9
ELOB Sn **Sn 18 02 43.9 +0.5**
4.4nm,0.4s,SNR=7.9
EADA Adamuz 5.97 215 Pn **Pn 18 01 37.8 +1.6**
0.3nm,0.1s,SNR=7.9
EADA Sn **Sn 18 02 40.4 -3.7**
0.7nm,0.2s,SNR=7.9
EADA Adamuz 5.97 215 Pn **Pn 18 01 37.8 +1.6**
0.3nm,0.1s,SNR=7.9
PGAV Gavieira, Arco 6.06 262 *e*Sn **Sn 18 02 48.4 +1.9**
PGAV Gavieira, Arco 6.06 262 *e*Sn **Sn 18 02 48.4 +1.9**
SFTF Sexfontaines 6.27 34 Pn **Pn 18 01 41.9 +1.6**
SFTF Lg Lg 18 03 27.1
25nm,0.8s
SFTF Sexfontaines 6.27 34 *e*Pn **Pn 18 01 41.9 +1.6**
SFTF *e*Sg **Sg 18 03 27.1 -2.6**
25nm,0.8s
SFTF Sexfontaines 6.27 34 *e*Pn **Pn 18 01 41.9 +1.6**
SFTF *e*Sg **Sg 18 03 27.1 -2.6**
12nm,0.8s
PCBR Castelo Branco 6.37 241 *e*Sn **Sn 18 02 52.2 -1.7**
PCBR Castelo Branco 6.37 241 Sn **Sn 18 02 52.2 -1.7**
ECAB El Cabril 6.42 220 Pn **Pn 18 01 43.4 +1.0**
0.3nm,0.2s,SNR=7.9
ECAB Sn **Sn 18 02 51.7 -3.5**
0.7nm,0.2s,SNR=7.9
ECAB El Cabril 6.42 220 Pn **Pn 18 01 43.4 +1.0**
0.3nm,0.2s,SNR=7.9
MEZF Maizieres J'vi 6.51 33 Pn **Pn 18 01 45.4 +1.8**
MEZF Lg Lg 18 03 34.7
20nm,0.6s
MEZF Maizieres J'vi 6.51 33 *e*Pn **Pn 18 01 45.4 +1.8**
MEZF *e*Sg **Sg 18 03 34.7 -2.7**
20nm,0.6s
MEZF Maizieres J'vi 6.51 33 *e*Pn **Pn 18 01 45.4 +1.8**
MEZF *e*Sg **Sg 18 03 34.7 -2.7**
10nm,0.6s
PMRV Marv??o 6.55 238 *e*Pn **Pn 18 01 45.6 +1.4**
PMRV *e*Sn **Sn 18 02 56.6 -1.8**
PMRV A A 18 02 58.9
4.1nm,0.4s
PMRV Marv??o 6.55 238 Pn **Pn 18 01 45.6 +1.4**
PMRV Sn **Sn 18 02 56.6 -1.8**
4.1nm,0.4s
PMRV Marv??o 6.55 238 *e*Pn **Pn 18 01 45.6 +1.4**
EBAD Badajoz 6.75 232 Pn **Pn 18 01 48.2 +1.3**
0.3nm,0.1s,SNR=7.9
EBAD Sn **Sn 18 03 00.7 -2.7**
2.9nm,0.2s,SNR=7.9
EBAD Badajoz 6.75 232 Pn **Pn 18 01 48.2 +1.3**
0.3nm,0.1s,SNR=7.9
PAGF Fort de Pagny 6.83 35 *e*Pn **Pn 18 01 49.4 +1.4**
PAGF *e*Sg **Sg 18 03 44.4 -3.2**
5.9nm,0.8s
PAGF Fort de Pagny 6.83 35 *e*Pn **Pn 18 01 49.4 +1.4**
HINF Hinteralfeld 6.83 44 Pn **Pn 18 01 49.6 +1.6**
HINF Lg Lg 18 03 44.5
2.2nm,0.3s
HINF Hinteralfeld 6.83 44 *e*Pn **Pn 18 01 49.6 +1.6**
HINF *e*Sg **Sg 18 03 44.5 -3.2**
4.4nm,0.3s
HINF Hinteralfeld 6.83 44 *e*Pn **Pn 18 01 49.6 +1.6**
HINF Lg Lg 18 03 44.5
2.2nm,0.3s
PCAS Casmilo, Conde 6.93 246 *e*Sn **Sn 18 03 06.3 -1.4**
PESTR Estremoz 7.02 235 *e*Pn **Pn 18 01 51.6 +1.0**
PESTR *e*Sn **Sn 18 03 07.4 -2.6**
PESTR Estremoz 7.02 235 *e*Pn **Pn 18 01 51.6 +1.0**
PBAR Barrancos 7.17 229 *e*Sn **Sn 18 03 10.6 -3.1**
PBAR Barrancos 7.17 229 Sn **Sn 18 03 10.6 -3.1**
EMIN Mina Concepcio 7.28 225 Pn **Pn 18 01 55.2 +1.1**
0.8nm,0.3s,SNR=7.9
EMIN Sn **Sn 18 03 11.7 -4.6**
0.4nm,0.2s,SNR=7.9
EMIN Mina Concepcio 7.28 225 Pn **Pn 18 01 55.2 +1.1**
0.8nm,0.3s,SNR=7.9
CDF Champ du Feu 7.43 42 Pn **Pn 18 01 57.8 +1.4**
CDF Lg Lg 18 04 03.6
1.9nm,0.5s
CDF Champ du Feu 7.43 42 *e*Pn **Pn 18 01 57.8 +1.4**
CDF *e*Sg **Sg 18 04 03.6 -3.5**
3.9nm,0.5s
CDF Champ du Feu 7.43 42 *e*Pn **Pn 18 01 57.8 +1.4**
CDF Lg Lg 18 04 03.6
1.9nm,0.5s

NIED ***12*** *18:05:00,39.°60N×143.°80E,h11km,Mw3.6 Best double couple: M0 2.55000×10^14 NP1:φs=174.00000°,δ35.00000°, λ47.00000° NP2:φs=43.00000°,δ65.00000°,λ116.00000°.*

JMA 12 18:05:47.8±0.3,39.°59N×143.°77E,h20km,M3.6,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	ISC	Res
MIYJ	**Miyakonagasawa**	**1.51**	**270**	P	Pn	18 06 14.1		+0.4
JTH	**Tanohata**	**1.51**	**284**	P	Pn	18 06 13.8		+0.1
OFUJ	**Ofunato**	**1.71**	**253**	P	Pn	18 06 17.0		+0.6
JOM	**Ohasama**	**1.92**	**267**	P	Pn	18 06 20.5		+1.2
JOM				*e*S	Sn	18 06 43.9		+1.0
JMK	**Ichinoseki**	**2.08**	**253**	P	Pn	18 06 22.9		+1.4
JTM	**Tenmabayashi**	**2.39**	**301**	P	Pn	18 06 27.3		+1.5
JRG	**Rokugo**	**2.43**	**266**	P	Pn	18 06 28.1		+1.7
JAH	**Hinai**	**2.48**	**285**	P	Pn	18 06 28.6		+1.5
JYK	**Kaneyama**	**2.73**	**257**	P	Pn	18 06 31.6		+1.1
JNBK	**Urakawa-nobuka**	**2.80**	**344**	P	Pn	18 06 34.0		+2.6
JNBK				S	Sn	18 07 06.9		+2.4
JCH	**Churui**	**3.04**	**354**	P	Pn	18 06 36.3		+1.6
JCH				S	Sn	18 07 10.3		-0.1
JAR	**Ashorobuto**	**3.70**	**360**	P	Pn	18 06 44.9		+1.0
JAR				S	Sn	18 07 27.8		+0.9
NEM2	**Nemuro 2**	**4.05**	**21**	P	Pn	18 06 49.5		+0.9
NEM2				S	Sn	18 07 34.1		-1.4
JTKR	**Abashiri--Toko**	**4.38**	**1**	P	Pn	18 06 55.0		+1.9
JTKR				S	Sn	18 07 42.8		-0.7

NEIC **12** *18:17:53.8±0.7, 30°.76S×178°.46W, h126km±6km, mb5.1/23, Error ellipse: s-maj=10.2km s-min=5.9km az=111.0*
BJI **12** *18:17:54.7, 30°.17S×178°.35W, h136km, mb5.1/26, mB5.2/19*
MOS **12** *18:17:55.9±1.7, 30°.30S×178°.86W, h133km, mb4.6/5, Error ellipse: s-maj=15.5km s-min=12.4km az=108.0*
ISCJB **12** *18:17:56.1±0.3, 30°.72S±0°.03×178°.69W±0°.08, h150km, mb4.9/42, Error ellipse: s-maj=9.5km s-min=3.7km az=15.1*
IDC **12** *18:17:56.8±0.7, 30°.26S×178°.63W, h139km±6km, mb4.4/10, mb1 4.5/12, mb1mx4.3/18, mbtmp4.8/12, MS3.3/4, Ms1 3.3/4, ms1mx2.9/27, Error ellipse: s-maj=17.7km s-min=12.7km az=112.0*
ISC 12 18:17:57.2±0.3, 30°.63S±0°.04×178°.74W±0°.08, h150km, n272, σ1§79/261, mb5.0/40, 20C-11D, Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.55**	**27**	P		Pn	18 18 22.7	-4.6
	2μm,0.3s,baz=102,slow=6.2,SNR=29							
RAO				S		Sn	18 18 41.2	-9.2
	874nm,0.3s,baz=248,slow=23,SNR=5.7							
PUZ	**Puketiti**	**7.82**	**198**	PN		**Pn**	**18 19 46.5**	**-1.8**
PUZ				SN		**Sn**	**18 21 14.4**	**-1.0**
OUZ	**Omahuta**	**7.90**	**233**	*e*Pn		Pn	18 19 54.8	+5.5
TWGZ	**Tauwhareparae**	**8.00**	**199**	SN		**Sn**	**18 21 21.0**	**+1.3**
URZ	**Urewera**	**8.34**	**203**	P		Pn	18 19 59.0	+3.9
	4.7nm,0.3s,baz=335,slow=3.8,SNR=11							
URZ	**Urewera**	**8.34**	**203**	*e*Pn		Pn	18 19 51.2	-3.9
URZ				P		Pn	18 19 59.0	+3.9
URZ				*e*Sn		**Sn**	**18 21 31.1**	**+3.2**
URZ	**Urewera**	**8.34**	**203**	*e*PN		**Pn**	**18 19 52.0**	**-3.1**
URZ				SN		**Sn**	**18 21 30.4**	**+2.6**
RIGZ	**Rimuhau**	**8.55**	**199**	PN		Pn	18 20 01.5	+3.6
SNGZ	**Shannon Statio**	**8.74**	**201**	PN		**Pn**	**18 19 59.0**	**-1.5**
MRHZ	**Matea Rd**	**9.10**	**205**	PN		**Pn**	**18 20 07.3**	**+2.0**
ARHZ	**Aropaoanui**	**9.29**	**201**	PN		**Pn**	**18 20 08.0**	**+0.2**
BKZ	**Black Stump Fm**	**9.37**	**203**	*e*Pn		**Pn**	**18 20 06.0**	**-2.9**
HIZ	**Hauiti**	**9.47**	**212**	*e*Pn		**Pn**	**18 20 08.8**	**-1.3**
BHHZ	**Black Hill Sta**	**9.81**	**204**	PN		**Pn**	**18 20 17.9**	**+3.3**
BHHZ	**Black Hill Sta**	**9.81**	**204**	SN		**Pn**	**18 20 18.1**	**+3.4**
KRHZ	**Kereru**	**9.84**	**203**	PN		**Pn**	**18 20 14.7**	**-0.3**
TSZ	**Takapari Road**	**10.35**	**203**	PN		**Pn**	**18 20 20.1**	**-1.7**
ANWZ	**Angora Road**	**10.55**	**200**	PN		**Pn**	**18 20 24.5**	**+0.1**
BFZ	**Birch Farm**	**10.82**	**201**	*e*Pn		Pn	18 20 21.4	-6.6
BFZ				*e*Sn		**Sn**	**18 22 27.8**	**+0.2**
BFZ	**Birch Farm**	**10.82**	**201**	PN		Pn	18 20 23.7	-4.3
DUWZ	**D'Urville Isla**	**11.76**	**208**	*e*PN		**Pn**	**18 20 38.3**	**-2.0**
SNZO	**South Karori**	**11.90**	**205**	*e*Pn		**Pn**	**18 20 39.8**	**-2.3**
SNZO				*e*Sn		**Sn**	**18 22 49.7**	**-3.8**
QRZ	**Quartz Range**	**12.39**	**212**	PN		**Pn**	**18 20 47.3**	**-1.2**
THZ	**Tophouse**	**12.99**	**209**	*e*Pn		**Pn**	**18 20 53.6**	**-2.6**
THZ				*e*Sn		**Sn**	**18 23 16.6**	**-3.2**
THZ	**Tophouse**	**12.99**	**209**	PN		Pn	18 20 52.2	-4.0
KHZ	**Kahutara**	**13.29**	**206**	*e*Pn		Pn	18 20 55.7	-4.3
KHZ				*e*Sn		**Sn**	**18 23 20.7**	**-6.3**
DSZ	**Denniston Nort**	**13.45**	**212**	PN		**Pn**	**18 21 01.1**	**-1.1**
LTZ	**Lake Taylor**	**14.10**	**208**	*e*Pn		**Pn**	**18 21 07.2**	**-3.1**
OXZ	**Oxford**	**14.64**	**208**	*e*Pn		Pn	18 21 13.5	-3.6
OXZ				*e*Sn		Sn	18 23 50.0	-10
MQZ	**McQueen's Vall**	**14.73**	**205**	*e*Pn		**Pn**	**18 21 14.8**	**-3.4**
RPZ	**Rata Peaks**	**15.37**	**209**	P		**Pn**	**18 21 25.8**	**-0.2**
	1.3nm,0.3s,baz=274,slow=3.2,SNR=6.8							
RPZ	**Rata Peaks**	**15.37**	**209**	*e*Pn		**Pn**	**18 21 23.5**	**-2.6**
	76nm,1.3s							
FOZ	**Fox Glacier**	**15.76**	**212**	*e*Pn		**P**	**18 21 37.0**	**+5.2**
	96nm,1.3s							
DZM	**Mont Dzumac**	**15.77**	**299**	P		**P**	**18 21 32.0**	**-0.2**
	0.4nm,0.3s,baz=104,slow=9.8,SNR=6.7							
DZM				LR		LR	18 26 09.2	
	comp=Z,154nm,20.3s,baz=176,slow=31							
ODZ	**Otahua Downs**	**16.63**	**207**	*e*P		**P**	**18 21 39.1**	**-2.2**
	187nm,1.9s							
WKZ	**Wanaka**	**17.13**	**211**	*e*P		**P**	**18 21 44.1**	**-2.8**
	340nm,1.9s							
MLZ	**Mavora Lakes**	**17.95**	**211**	*e*P		**P**	**18 21 54.2**	**-1.7**
	65nm,1.5s							
ARMA	**Armidale**	**25.50**	**263**	*e*P		**P**	**18 23 16.3**	**+4.5**
	58nm,1.5s							
EIDS	**Eidsvold**	**27.11**	**274**	*e*P		**P**	**18 23 28.4**	**+2.1**
	98nm,1.9s							
PPT2	**Papeete2**	**29.52**	**71**	*e*P		**P**	**18 23 48.4**	**+0.7**
	49nm,1.3s							
PPT2				*e*LR		LR	18 31 22.1	
	109nm,26.0s							
PPT	**Papeete**	**29.53**	**71**	LR		LR	18 34 39.0	
	comp=Z,55nm,18.7s,baz=190,slow=34							
TIAR	**Tiarei**	**29.72**	**71**	*e*P		**P**	**18 23 50.1**	**+0.7**
	14nm,0.8s							
CTAO	**Charters Tower**	**33.21**	**280**	*e*P		**P**	**18 24 21.9**	**+1.9**
CTAO	**Charters Tower**	**33.21**	**280**	*e*P		**P**	**18 24 21.9**	**+1.9**
	257nm,0.7s							
STKA	**Stephens Creek**	**33.81**	**257**	P		P	18 24 28.4	+3.3
	42nm,0.7s,baz=99,slow=10,SNR=79							
STKA	**Stephens Creek**	**33.81**	**257**	*e*P		P	18 24 27.9	+2.8
STKA				pmax		pmax		
	comp=Z,10.0nm,0.8s							
STKA	**Stephens Creek**	**33.81**	**257**	*e*P		P	18 24 27.9	+2.9
	comp=Z,9.6nm,0.8s							
BBOO	**Buckleboo**	**38.29**	**255**	*e*P		**P**	**18 25 04.9**	**+1.7**
	comp=Z,99nm,1.7s							
COEN	**Coen**	**38.73**	**287**	*e*P		**P**	**18 25 03.5**	**-3.5**
COEN				*e*			18 25 08.4	
AS01	**Alice Springs**	**42.42**	**268**	*e*P		**P**	**18 25 38.0**	**+0.7**
AS01				*e*			18 25 38.2	
AS31	**Alice Springs**	**42.46**	**268**	*e*P		**P**	**18 25 38.4**	**+0.8**
AS31				*e*			18 25 38.6	
ASAR	**Alice Springs**	**42.46**	**268**	P		**P**	**18 25 38.4**	**+0.7**
	comp=Z,14nm,0.4s,baz=105,slow=7.4,SNR=506							
ASAR				PcP		**PcP**	**18 27 28.3**	**+0.5**
	comp=Z,3.8nm,0.9s,baz=115,slow=3.3,SNR=5.9							
ASAR				ScP		**ScP**	**18 31 06.8**	**+2.2**
	comp=Z,2.8nm,0.9s,baz=118,slow=4.4,SNR=8.9							
WB2	**Warramunga Arr**	**43.46**	**273**	*e*P		**P**	**18 25 46.6**	**+0.9**
	comp=Z,69nm,0.9s							
WRAB	**Tennant Creek**	**43.47**	**273**	*d iP*		**P**	**18 25 46.7**	**+1.0**
WRAB	**Tennant Creek**	**43.47**	**273**	*e*P		**P**	**18 25 46.2**	**+0.5**
WRAB				*e*			18 25 46.6	
WRA	**Warramunga Arr**	**43.47**	**273**	P		**P**	**18 25 46.3**	**+0.5**
	comp=Z,34nm,0.3s,baz=110,slow=8.1,SNR=1116							
WRA				PcP		**PcP**	**18 27 31.9**	**+0.6**
	comp=Z,7.9nm,0.8s,baz=116,slow=3.0,SNR=7.8							
WRA				ScP		**ScP**	**18 31 10.4**	**+1.8**
	comp=Z,1.2nm,0.6s,baz=102,slow=3.8,SNR=7.4							
SBA	**Scott Base**	**47.76**	**184**	*e*P		P	18 26 23.2	+4.6
SBA				pmax		pmax		
	comp=Z,55nm,0.8s							
SBA	**Scott Base**	**47.76**	**184**	*e*P		P	18 26 23.1	+4.6
	comp=Z,55nm,0.8s							
VNDA	**Vanda**	**47.80**	**186**	P		P	18 26 23.5	+4.6
	comp=Z,6.6nm,0.8s,baz=358,slow=8.1,SNR=27							
VNDA				PcP		**PcP**	**18 27 48.4**	**+3.1**
	comp=Z,3.1nm,1.0s,baz=311,slow=4.9,SNR=3.9							
VNDA				ScP		**ScP**	**18 31 29.2**	**+3.7**
	comp=Z,0.9nm,0.6s,baz=330,slow=5.0,SNR=6.7							
VNDA	**Vanda**	**47.80**	**186**	*e*P		P	18 26 24.2	+5.3
VNDA							18 27 48.4	
VNDA				pmax		pmax		
	comp=Z,7.0nm,0.8s							
VNDA	**Vanda**	**47.80**	**186**	*e*P		P	18 26 24.2	+5.3
	comp=Z,6.8nm,0.8s							
VNDA				PcP		**PcP**	**18 27 48.4**	**+3.1**
VNDA				ScP		**ScP**	**18 31 29.2**	**+3.7**
FITZ	**Fitzroy Crossi**	**51.72**	**270**	*e*P		**P**	**18 26 50.5**	**+1.2**
	comp=Z,14nm,0.7s							
CASY	**Casey**	**54.64**	**208**	*e*P		**P**	**18 27 11.1**	**+1.2**
	comp=Z,47nm,1.6s							
QSPA	**South Pole Qui**	**59.48**	**180**	*e*P		P	18 27 49.1	+4.9
	comp=Z,23nm,0.8s							
MAW	**Mawson**	**71.86**	**201**	P		**P**	**18 29 05.8**	**+2.5**
	comp=Z,8.5nm,0.7s,baz=137,slow=7.8,SNR=13							
MAW	**Mawson**	**71.86**	**201**	*e*P		**P**	**18 29 06.0**	**+2.7**
MAW				pmax		pmax		
	comp=Z,2.0nm,0.8s							
MAW	**Mawson**	**71.86**	**201**	*e*P		**P**	**18 29 06.0**	**+2.7**
	comp=Z,2.3nm,0.8s							
SYO	**Syowa Base**	**76.74**	**193⇑**	*e*P		**P**	**18 29 32.4**	**+0.9**
SYO	**Syowa Base**	**76.74**	**193⇓**	*e*PcP		**PcP**	**18 29 39.9**	**-2.3**
SNAA	**Sanae**	**77.94**	**179**	P		**P**	**18 29 41.2**	**+3.0**
SNAA	**Sanae**	**77.94**	**179**	*e*P		**P**	**18 29 41.1**	**+2.8**
SNAA				pmax		pmax		
	comp=Z,9.0nm,0.8s							
SNAA	**Sanae**	**77.94**	**179**	*e*P		**P**	**18 29 41.0**	**+2.8**
	comp=Z,9.4nm,0.8s							
MJAR	**Matsushiro Arr**	**78.08**	**326**	P		**P**	**18 29 38.5**	**-0.9**
	comp=Z,6.2nm,1.0s,baz=169,slow=5.5,SNR=8.9							
MAJO	**Matsushiro**	**78.08**	**326⇓**	*e*P		**P**	**18 29 38.5**	**-0.8**
MAJO				pmax		pmax		
	comp=Z,272nm,2.7s							
VNA3	**Neumayer Olymp**	**78.11**	**176**	P		**P**	**18 29 42.2**	**+3.0**
VNA2	**Neumayer--Watz**	**78.54**	**177**	P		**P**	**18 29 45.0**	**+3.5**
	baz=170,slow=4.4							
NVL	**N'lazarevskaya**	**78.61**	**184**	*e*P		**P**	**18 29 45.2**	**+3.4**
VNA1	**Neumayer--Stat**	**78.77**	**177**	P		P	18 29 46.4	+3.7
SSLB	**Suanglung**	**79.18**	**306**	*e*P		**P**	**18 29 43.2**	**-2.5**
	comp=Z,25nm,0.6s							
ASAJ	**Asahikawa**	**82.36**	**333**	LR		LR	18 59 46.4	
	comp=Z,13nm,20.8s,baz=304,slow=31							
KSRS	**Korea Array**	**84.12**	**320**	P		**P**	**18 30 11.9**	**+0.8**
	comp=Z,2.4nm,0.8s,baz=144,slow=6.1,SNR=6.5							
KSAR	**Wonju Array Be**	**84.13**	**320**	P		**P**	**18 30 12.0**	**+0.7**
KSAR	**Wonju Array Be**	**84.13**	**320**	P		**P**	**18 30 11.9**	**+0.7**
KS01	**Wonju Array Si**	**84.15**	**320**	*e*P		**P**	**18 30 11.4**	**0.0**
YSS	**Yuzh-Sakhalins**	**84.68**	**335⇑**	*i*P		**P**	**18 30 15.2**	**+1.4**
GSI	**Gunungsitoli**	**85.22**	**274**	*e*P		**P**	**18 30 17.5**	**+0.1**
	comp=Z,31nm,0.8s							
PETK	**Petropavlovsk-**	**85.88**	**346**	P		**P**	**18 30 19.2**	**-0.4**
	comp=Z,18nm,0.7s,baz=110,slow=7.0,SNR=26							
NJ2	**Nanjing**	**85.92**	**311**	*e*P		**P**	**18 30 19.5**	**-0.8**
NJ2				pmax		pmax		
	comp=Z,13nm,0.5s							
USRK	**Ussuriysk Ar.**	**87.01**	**327**	P		**P**	**18 30 26.2**	**+0.9**
	comp=Z,4.7nm,0.8s,baz=181,slow=2.9,SNR=8.3							
SDPT	**Sand Point**	**87.06**	**10**	*e*P		**P**	**18 30 24.7**	**-0.5**
MDJ	**Mudanjiang**	**88.46**	**326**	P		**P**	**18 30 33.3**	**+1.1**
MDJ				pmax		pmax		
	comp=Z,8.0nm,0.9s							
MDJ				pmax		pmax		
	comp=Z,68nm,3.1s							
NVAR	**Mina Array Bea**	**88.84**	**43**	P		**P**	**18 30 35.4**	**+0.9**
	comp=Z,1.5nm,0.6s,baz=213,slow=7.7,SNR=7.4							
HABR	**Khabarovsk**	**88.94**	**331**	*ce*P		**P**	**18 30 33.5**	**-0.9**
HABR				*e*PP		**pP**	**18 31 07.0**	**-5.3**
HABR				*e*SP		**sP**	**18 31 20.8**	**-7.2**
HABR				*e*			18 34 03.5	
HABR				*e*PPP		PPP	18 36 00.1	
HABR				*e*S		**SKSac**	**18 40 49.9**	**+0.4**
HABR				*e*			18 41 13.8	
HABR				*e*SS		**SS**	**18 47 04.2**	**-2.3**
HABR				*e*SSS		SSS	18 50 39.6	
HABR				pmax		pmax		
	comp=Z,7.0nm,1.1s							
HABR				MLR		MLR		
	comp=Z,133nm,20.0s							
HUMO	**Hull Mountain**	**89.09**	**38**	*e*P		**P**	**18 30 36.6**	**+1.3**
	comp=Z,26nm,1.8s							
CN2	**Changchun**	**89.95**	**323**	*e*P		**P**	**18 30 39.4**	**+0.2**
CN2				pmax		pmax		
	comp=Z,20nm,1.0s							
NKL	**Nikolayevsk**	**90.60**	**337**	*e*P		**P**	**18 30 42.0**	**0.0**
KLR	**Kul'dur**	**90.92**	**330**	*c iP*		**P**	**18 30 44.8**	**+1.2**
GYA	**Guiyang**	**91.12**	**300**	P		**P**	**18 30 46.2**	**+0.9**
GYA				pP		pP	18 31 21.6	-1.6
GYA				sP		sP	18 31 35.0	-3.9
GYA				PP		**PP**	**18 34 27.8**	**+3.4**
GYA				SKS		**SKSac**	**18 41 04.2**	**+0.7**
GYA				S		**ScS**	**18 41 30.9**	**-2.5**
GYA				sS		sS	18 42 31.0	-5.7
GYA				pmax		pmax		
	comp=Z,20nm,1.0s							
GYA				pmax		pmax		
	comp=Z,120nm,5.8s							
ENH	**Enshi**	**91.21**	**305**	*e*P		**P**	**18 30 46.2**	**+0.7**
	comp=Z,19nm,0.8s							
BJI	**Beijing**	**92.65**	**316**	P		**P**	**18 30 52.7**	**+0.9**
BJI				pmax		pmax		
	comp=Z,10.0nm,0.9s							
CM01	**Chiang Mai Arr**	**92.85**	**290**	*e*P		**P**	**18 30 55.3**	**+2.1**
CMAR	**Chiang Mai Arr**	**92.88**	**290**	P		**P**	**18 30 54.7**	**+1.3**
	comp=Z,1.2nm,0.8s,baz=141,slow=4.1,SNR=10							
KMI	**Kunming**	**93.36**	**297**	P		**P**	**18 30 57.2**	**+1.4**
KMI				sP		sP	18 31 42.2	-7.3
KMI				pmax		pmax		
	comp=Z,5.0nm,0.7s							
KMI				pmax		pmax		
	comp=Z,87nm,8.0s							
TCUT	**Toone Canyon**	**94.65**	**44**	*e*P		**P**	**18 30 57.0**	**-4.4**
	comp=Z,18nm,1.1s							
CD2	**Chengdu**	**95.67**	**303**	P		**P**	**18 31 06.6**	**+0.6**
CD2				pmax		pmax		
	comp=Z,10.0nm,0.5s							
HHC	**Hu-ho-hao-te**	**95.94**	**314**	*e*P		P	18 31 09.9	+2.8
HHC				pmax		pmax		
	comp=Z,26nm,1.0s							
HHC				pmax		pmax		
	comp=Z,210nm,7.9s							
SEY	**Seymchan**	**96.06**	**347**	LR		LR	19 09 57.1	
	comp=Z,790nm,21.3s,baz=330,slow=33							
SEY	**Seymchan**	**96.06**	**347⇓**	*i*P		**P**	**18 31 07.4**	**+0.5**
PDAR	**Pinedale Array**	**96.74**	**44**	PKKPbc		PKKPbc	18 47 52.9	-0.9
	comp=Z,0.8nm,0.8s,baz=51,slow=4.7,SNR=5.8							
PDAR				LR		LR	19 06 55.0	
	comp=Z,12nm,20.4s,baz=66,slow=30							
CCB	**Clear Creek Bu**	**98.01**	**13**	*e*P		Pdif	18 31 14.1	-1.6
	comp=Z,3.0nm,1.0s							
LZH	**Lanzhou**	**98.35**	**307**	*e*P		Pdif	18 31 18.2	0.0
LZH				pP		pP	18 31 52.5	-3.8
LZH				sP		sP	18 32 06.8	-5.1
LZH				PP		**PP**	**18 35 22.6**	**+2.1**
LZH				pmax		pmax		
	comp=Z,18nm,1.4s							
LZH				pmax		pmax		
	comp=Z,93nm,8.9s							
PHWY	**Pilot Hill**	**98.43**	**47**	*e*P		Pdif	18 31 17.7	-0.8
	comp=Z,8.0nm,0.6s							
BILL	**Bilibino**	**99.01**	**354⇓**	*e*P		Pdif	18 31 19.5	-0.6
BILL				pmax		pmax		
	comp=Z,2.0nm,1.1s							
YAK	**Yakutsk**	**101.22**	**338⇑**	*e*P		**Pdif**	**18 31 29.7**	**-0.3**
YAK				pmax		pmax		
	comp=Z,2.0nm,0.6s							
YKA	**Yellowknife Ar**	**105.93**	**26**	PKKPbc		PKKPbc	18 47 24.5	-2.8
	comp=Z,0.2nm,0.5s,baz=40,slow=2.9,SNR=5.4							
KRAR	**Krasnoyarsk**	**113.95**	**322**	*i iP*KIKP		**PKiKP**	**18 36 19.4**	**+1.7**
BOSA	**Boshof**	**116.80**	**204**	PKP		**PKPdf**	**18 36 24.7**	**+0.3**
	comp=Z,2.3nm,0.6s,baz=112,slow=3.4,SNR=7.0							
MK01	**Makanchi Array**	**117.42**	**310**	*e*PKPdf		**PKPdf**	**18 36 24.0**	**-0.8**
MK31	**Makanchi Array**	**117.44**	**310**	*e*PKIKP		**PKPdf**	**18 36 24.1**	**-0.7**
MK31	**Makanchi Array**	**117.44**	**310**	*e*PKPdf		**PKPdf**	**18 36 24.1**	**-0.7**
MKAR	**Makanchi Array**	**117.44**	**310**	PKP		**PKPdf**	**18 36 24.2**	**-0.6**
	comp=Z,1.5nm,0.5s,baz=114,slow=0.7,SNR=21							
MAKZ	**Makanchi**	**117.65**	**310**	*e*PKIKP		**PKPdf**	**18 36 24.2**	**-1.0**
MAKZ	**Makanchi**	**117.65**	**310**	*e*PKPdf		**PKPdf**	**18 36 24.2**	**-1.0**
ZALV	**Zalesovo Beam**	**117.78**	**318**	PKP		**PKPdf**	**18 36 24.2**	**-0.9**
	comp=Z,1.9nm,0.6s,baz=163,slow=2.5,SNR=8.8							
KSH	**Kashi**	**119.81**	**301**	*e*PKP		**PKPdf**	**18 36 31.4**	**+1.7**
KSH				SKS		**SKSdf**	**18 43 25.6**	**-2.2**
KSH				AMB		AMB		
	comp=Z,40nm,4.2s							
KSH				LR		LR		
	comp=Z,74nm,5.6s							
KSH				LR		LR		
	comp=Z,67nm,7.8s							
KSH				LR		LR		
	comp=Z,130nm,6.0s							
KURK	**Kurchatov**	**120.75**	**314**	*e*PKIKP		**PKPdf**	**18 36 30.3**	**-0.7**
KURK	**Kurchatov**	**120.75**	**314**	*e*PKPdf		**PKPdf**	**18 36 30.3**	**-0.7**
TKM2	**Tokmak 2**	**121.00**	**304**	*e*PKIKP		**PKPdf**	**18 36 31.9**	**-0.2**
TKM2	**Tokmak 2**	**121.00**	**304**	*e*PKPdf		**PKPdf**	**18 36 31.9**	**-0.2**
AAK	**Ala-Archa**	**121.72**	**304⇑**	*i*PKIKP		**PKPdf**	**18 36 34.1**	**+0.7**
AAK	**Ala-Archa**	**121.72**	**304**	*e*PKPdf		**PKPdf**	**18 36 33.6**	**+0.2**
EKS2	**Erkin-Say**	**122.23**	**304**	*e*PKIKP		**PKPdf**	**18 36 34.7**	**+0.4**
EKS2	**Erkin-Say**	**122.23**	**304**	*e*PKPdf		**PKPdf**	**18 36 34.7**	**+0.4**
KBL	**Kabul**	**123.73**	**293**	*e*PKIKP		**PKPdf**	**18 36 38.5**	**+1.0**
KBL	**Kabul**	**123.73**	**293**	*e*PKPdf		**PKPdf**	**18 36 38.5**	**+1.0**
KKAR	**Karatay Array**	**124.67**	**304**	*e*PKIKP		**PKPdf**	**18 36 39.0**	**+0.2**
KKAR	**Karatay Array**	**124.67**	**304**	*e*PKPdf		**PKPdf**	**18 36 39.0**	**+0.2**
BRVK	**Borovoye**	**126.19**	**316⇓**	*e*PKIKP		**PKPdf**	**18 36 41.0**	**-0.3**
BRVK	**Borovoye**	**126.19**	**316**	*e*PKPdf		**PKPdf**	**18 36 41.1**	**-0.3**
ZRNK	**Zerenda**	**126.96**	**316**	*e*PKIKP		**PKPdf**	**18 36 42.6**	**-0.3**
ZRNK	**Zerenda**	**126.96**	**316**	*e*PKPdf		**PKPdf**	**18 36 42.6**	**-0.3**
ABKAR	**Akbulak array**	**132.58**	**311**	*e*PKPdf		**PKPdf**	**18 36 54.9**	**+1.2**
ARU	**Arti**	**132.87**	**320**	*i*PKIKP		**PKPdf**	**18 36 54.8**	**+0.9**
ARU							18 39 19.3	
ARU	**Arti**	**132.87**	**320**	*e*PKPdf		**PKPdf**	**18 36 54.2**	**+0.3**
GEYT	**Alibeck**	**133.08**	**295**	PKP		**PKPdf**	**18 36 55.2**	**+0.2**
	comp=Z,5.7nm,0.7s,baz=243,slow=0.7,SNR=16							
GEYT				SKPbc		**SKPab**	**18 40 08.0**	**-3.0**
	comp=Z,1.0nm,0.5s,baz=35,slow=5.4,SNR=3.9							
ARCES	**ARCESS Array B**	**138.68**	**347**	PKPbc		PKPpre	18 36 56.3	
	comp=Z,0.7nm,0.3s,baz=55,slow=2.1,SNR=27							
ARCES				PKP		**PKiKP**	**18 37 05.1**	**-1.5**
	comp=Z,3.2nm,0.5s,baz=28,slow=0.9,SNR=12							
KLMR	**Klimovskoe**	**140.66**	**331**	*e*PKIKP		**PKPdf**	**18 37 08.5**	**+0.3**
KLMR				pmax		pmax		
	comp=Z,10.0nm,0.9s							
DGRG	**David-gareji**	**143.09**	**299**	P		**PKPdf**	**18 37 11.3**	**-2.0**
DGRG	**David-gareji**	**143.09**	**299**	PKIKP		**PKPdf**	**18 37 11.3**	**-2.0**
TBLG	**Delisi**	**143.55**	**300**	P		**PKPdf**	**18 37 12.8**	**-1.2**
TBLG	**Delisi**	**143.55**	**300**	PKIKP		**PKPdf**	**18 37 12.8**	**-1.2**
GNI	**Garni**	**143.61**	**297**	*e*PKIKP		**PKPdf**	**18 37 12.4**	**-2.0**
GNI	**Garni**	**143.61**	**297**	*e*P		**PKPdf**	**18 37 12.4**	**-2.0**
GUDG	**Gudauri**	**143.69**	**301**	P		**PKPdf**	**18 37 14.4**	**-0.1**
VRH	**Novokhopyorsk**	**143.78**	**316**	*e*PKHKP		PKPpre	18 37 10.7	
VRH				pmax		pmax		
	comp=Z,6.0nm,0.5s							
ZEI	**Tsey**	**144.09**	**302**	*i* PKIKP		**PKPdf**	**18 37 16.3**	**+1.1**
ZEI				pmax		pmax		
	comp=Z,45nm,1.3s							
NCK	**Nalchik**	**144.24**	**303⇓**	*e*PKIKP		**PKPdf**	**18 37 15.2**	**0.0**
GOF	**Gofitskoye**	**144.41**	**306⇑**	*e*PKIKP		**PKPdf**	**18 37 14.7**	**-0.7**
GOF				pmax		pmax		
	comp=Z,49nm,0.9s							
ONI	**Oni**	**144.44**	**301**	P		**PKPdf**	**18 37 15.4**	**-0.2**
ONI	**Oni**	**144.44**	**301**	PKIKP		**PKPdf**	**18 37 15.4**	**-0.2**
AKH	**Akhalkalaki**	**144.50**	**299⇑**	*i*P		**PKPdf**	**18 37 16.1**	**+0.2**
KBZ	**Khabaz**	**144.71**	**304**	PKP		**PKPdf**	**18 37 15.9**	**0.0**
	comp=Z,11nm,0.7s,baz=106,slow=2.5,SNR=28							
KVAR	**Kislovodsk Arr**	**144.83**	**304**	PKP		**PKPdf**	**18 37 15.3**	**-1.0**
	comp=Z,13nm,0.7s,baz=16,slow=3.4,SNR=11							
KIV	**Kislovodsk**	**144.83**	**304**	*e*PKIKP		**PKPdf**	**18 37 16.2**	**-0.1**
KIV				pmax		pmax		
	comp=Z,23nm,1.1s							
KIV	**Kislovodsk**	**144.83**	**304**	*e*PKPdf		**PKPdf**	**18 37 16.0**	**-0.3**
LPSR	**Galich'ya Gora**	**144.88**	**320**	*e*PKIKP		**PKPdf**	**18 37 15.0**	**-0.9**
LPSR				pmax		pmax		
	comp=Z,20nm,1.5s							
NEY	**Neytrino**	**144.90**	**303**	*ce*PKIKP		**PKPdf**	**18 37 17.1**	**+0.6**
OBN	**Obninsk**	**145.00**	**325**	*d iP*KIKP		**PKPdf**	**18 37 15.2**	**-0.8**
OBN				pmax		pmax		
	comp=Z,54nm,0.9s							
OBN	**Obninsk**	**145.00**	**325**	*e*PKPbc		**PKPdf**	**18 37 15.4**	**-0.6**
FIA1	**FINESS Array S**	**145.14**	**339**	*e*PKPbc		**PKPdf**	**18 37 15.0**	**-1.1**
FINES	**FINESS Array B**	**145.14**	**339**	PKP		**PKPdf**	**18 37 15.1**	**-1.0**
	comp=Z,35nm,0.4s,baz=52,slow=4.2,SNR=234							
VSR	**Storozhevoye**	**145.28**	**317**	*e*PKIKP		**PKP

comp=Z,2.7nm,0.8s
MYKA Terra Mystica 161.37 332 *i* PKPab **PKPab 18 38 24.0 -0.7**
comp=Z,2.3nm,0.6s
VISS Visnje 161.52 329 *i* PKPdf **PKPab 18 38 24.9 -0.4**
WTTA Wattenberg 161.57 337 *i* PKPab **PKPab 18 38 25.8 +0.1**
comp=Z,5.5nm,0.9s
RETA Reutte 161.65 339 *i* sPKPdf **PKPab 18 38 26.2 +0.4**
comp=Z,7.1nm,0.8s
MOTA Moosalm 161.67 338 *i* PKPab **PKPab 18 38 25.7 -0.4**
comp=Z,11nm,1.2s
ABTA Abfaltersbach 161.70 335 *i* PKPab **PKPab 18 38 25.2 -1.0**
comp=Z,8.9nm,1.3s
JAVS Javornik 161.78 330 *i* PKPdf **PKPab 18 38 25.5 -1.0**
FETA Feichten 162.08 339 *i* PKPab **PKPab 18 38 28.4 +0.6**
comp=Z,6.2nm,0.9s
DAVA Damuels 162.09 341 *i* PKPab **PKPab 18 38 28.0 +0.1**
comp=Z,9.0nm,0.7s
FUORN Ofenpass-Fuorn 162.58 339 *e*PKPab **PKPab 18 38 30.3 +0.1**
TORD Torodi Ar. Bea 162.59 181 PKP **PKPdf 18 37 42.8 +0.9**
comp=Z,3.2nm,1.1s,baz=164,slow=0.3,SNR=12
TORD PKPab **PKPab 18 38 32.6 +2.0**
comp=Z,9.2nm,0.7s,baz=173,slow=4.0,SNR=32
SENIN Lac Senin/Sane 163.61 345 *e*PKPab **PKPab 18 38 35.0 +0.4**
ES19 SONSECA Array 170.02 24 *e*PKPdf **PKPdf 18 37 48.6 +1.6**
ESDC Sonseca Array 170.02 24 PKP **PKPdf 18 37 47.6 +0.6**
comp=Z,0.3nm,0.5s,baz=344,slow=3.5,SNR=5.2
KEST Kesra 171.53 309 PKPab **PKPab 18 39 10.7 +0.8**
comp=Z,5.2nm,1.1s,baz=11,slow=1.0,SNR=4.5

WEL 12 18:18:54.5±0.4, 37°.01S×176°.26E, h265km±5km, ML3.3/1, Error ellipse: s-maj=6.4km s-min=5.3km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**1.42**	**152**	PN	Pn	18 19 33.6	0.0
HAZ	**Te Kaha**	**1.42**	**122**	PN	Pn	18 19 33.9	+0.3
MWZ	**Matawai**	**1.66**	**143**	PN	Pn	18 19 35.6	+0.2
MWZ				SN	S	18 20 07.1	-0.7
RTZ	**Ruatahuna**	**1.70**	**161**	PN	Pn	18 19 36.0	+0.2
RAGZ	**Rawiri**	**1.74**	**149**	PN	Pn	18 19 36.3	+0.2
RAGZ				SN	S	18 20 08.9	-0.1
TWGZ	**Tauwhareparae**	**1.79**	**131**	PN	Pn	18 19 36.9	+0.4
MRHZ	**Matea Rd**	**1.83**	**176**	PN	Pn	18 19 37.4	+0.6
TKGZ	**Te Karaka**	**1.90**	**139**	PN	Pn	18 19 37.3	0.0
TKGZ				SN	S	18 20 08.8	-2.4
PUZ	**Puketiti**	**1.91**	**124**	PN	Pn	18 19 36.9	-0.5
SNGZ	**Shannon Statio**	**1.96**	**155**	PN	Pn	18 19 38.2	+0.3
RAHZ	**Arahi**	**2.01**	**161**	PN	Pn	18 19 38.7	+0.4
RIGZ	**Rimuhau**	**2.07**	**145**	PN	Pn	18 19 38.9	+0.1
RIGZ				SN	S	18 20 12.0	-1.9
NMHZ	**Naumai**	**2.13**	**169**	PN	Pn	18 19 40.1	+0.7
NMHZ				SN	S	18 20 15.1	+0.1
CNGZ	**Carnagh Statio**	**2.13**	**134**	PN	Pn	18 19 39.5	+0.2
BKZ	**Black Stump Fm**	**2.16**	**175**	PN	Pn	18 19 39.7	0.0
BKZ				SN	S	18 20 14.2	-1.2
WHHZ	**Waihua**	**2.20**	**160**	PN	Pn	18 19 40.1	+0.2
KNZ	**Kokohu**	**2.30**	**151**	PN	Pn	18 19 40.3	-0.5
ARHZ	**Aropaoanui**	**2.32**	**166**	PN	Pn	18 19 41.2	+0.1
ARHZ				SN	S	18 20 17.0	-1.0
WNVZ	**Wahianoa**	**2.37**	**193**	PN	Pn	18 19 42.5	+0.8
KWHZ	**Kaweka Forest**	**2.42**	**177**	PN	Pn	18 19 42.2	+0.2
MCHZ	**McNeill Hill**	**2.46**	**172**	PN	Pn	18 19 42.6	+0.3
BHHZ	**Black Hill Sta**	**2.48**	**184**	PN	Pn	18 19 42.5	-0.2
KRHZ	**Kereru**	**2.63**	**178**	PN	Pn	18 19 43.7	-0.4
CKHZ	**Cape Kidnapper**	**2.72**	**167**	PN	Pn	18 19 44.5	-0.5
CKHZ				SN	S	18 20 23.3	-1.8
KAHZ	**Kahuranaki**	**2.82**	**170**	PN	Pn	18 19 45.5	-0.6
PXZ	**Pawanui**	**3.05**	**171**	PN	Pn	18 19 47.5	-0.9
TSZ	**Takapari Road**	**3.06**	**184**	PN	Pn	18 19 47.6	-0.8
BFZ	**Birch Farm**	**3.67**	**180**	PN	Pn	18 19 54.0	-1.1
MRZ	**Mangatainoka R**	**3.69**	**188**	PN	Pn	18 19 53.4	-1.9
OGWZ	**Otaki Gorge**	**3.90**	**192**	PN	Pn	18 19 56.2	-1.5
KIW	**Kapiti Island**	**3.99**	**195**	PN	Pn	18 19 57.2	-1.6
DUWZ	**D'Urville Isla**	**4.21**	**205**	PN	Pn	18 20 00.2	-1.1

*MOS **12** 18:20:30.1±1.9, 41°.65N×79°.72E, h18km, mb4.2/5, Error ellipse: s-maj=12.4km s-min=7.6km az=101.2*
*BJI **12** 18:20:30.1, 41°.83N×79°.45E, h11km, mb3.9/6, mB4.3/3, ML3.8/10*
*KRNET **12** 18:20:31.8±0.1, 41°.74N×79°.56E, h24km, mb4.6*
*SOME **12** 18:20:32.0, 41°.80N×79°.52E, h10km, MS3.1*
*NNC **12** 18:20:36.4±3.7, 42°.00N×79°.32E, h0km, mb4.5, mpv4.2, Error ellipse: s-maj=34.6km s-min=12.8km az=139.0*
*IDC **12** 18:20:37.4±2.8, 41°.83N×79°.55E, h75km±25km, mb3.4/6, mb1 3.6/13, mb1mx3.4/42, mbtmp3.8/13, MS2.8/4, Ms1 2.8/4, ms1mx2.6/33, Error ellipse: s-maj=23.7km s-min=16.3km az=160.0*
ISC 12 18:20:33.9±1.4, 41°.76N±0°.05×79°.55E±0°.03, h31km±10km, n87, σ2911/133, mb3.6/6, 24C-29D, Kyrgyzstan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PRZ	**Przheval'sk**	**1.12**	**311**	⇓*iP*	**Pn**	**18 20 53.2**	**-0.5**
PRZ	baz=311			⇓*iS*	**Sn**	**18 21 08.8**	**+0.6**
SHLS	**Shalkode**	**1.42**	**10**	*e*P	**Pb**	**18 20 58.5**	**-1.5**
SHLS	630nm,0.3s			*e*S	**Sb**	**18 21 17.7**	**-0.2**
UZB	**Uzynbulak**	**1.44**	**345**	*e*P	**Pb**	**18 20 58.4**	**-1.9**
UZB	701nm,0.3s			*e*S	**Sb**	**18 21 17.2**	**-1.2**
SATY	**Saty**	**1.55**	**327**	*e*P	**Pb**	**18 21 00.3**	**-1.9**
SATY	2μm,0.4s			*e*S	**Sb**	**18 21 20.7**	**-0.8**
PDGK	**Podgornoye**	**1.57**	**358**	⇓*iP*	**Pb**	**18 21 00.7**	**-1.7**
PDGK	baz=349			⇓*iS*	**Sb**	**18 21 26.0**	**+4.2**
PDGK	**Podgornoye**	**1.57**	**358**	⇓*iP*	**Pb**	**18 21 00.7**	**-1.7**
PDGK	baz=358			⇓*iS*	**Sb**	**18 21 22.3**	**+0.5**
PDGK	**Podgornoye**	**1.57**	**358**	⇓P	**Pb**	**18 21 00.6**	**-1.7**
PDGK	529nm,0.2s			⇑S	**Sb**	**18 21 21.4**	**-0.4**
PDGK	**Podgornoye**	**1.57**	**358**	PN	**Pb**	**18 21 00.6**	**-1.8**
PDGK				S	**Sb**	**18 21 21.4**	**-0.4**
PDGK	comp=Z,529nm,0.2s			pmax	pmax		
ZHN	**Zhinishke**	**1.63**	**330**	*e*P	**Pb**	**18 21 01.8**	**-1.8**
ZHN	comp=Z,550nm,0.1s			*e*S	**Sb**	**18 21 23.2**	**-0.6**
ANVS	**Anan'yevo**	**1.73**	**307**	⇓*iP*	**Pb**	**18 21 04.2**	**-1.0**
ANVS	baz=307			⇓*iS*	**Sb**	**18 21 27.2**	**+0.5**
KTMS	**Ketmen**	**1.79**	**19**	*e*P	**Pb**	**18 21 04.8**	**-1.4**
KTMS	comp=Z,425nm,0.4s			*e*S	**Sb**	**18 21 28.3**	**0.0**
KDJ	**Kajisay**	**1.81**	**283**	⇓*iP*	**Pb**	**18 21 04.7**	**-1.8**
KDJ	baz=283			⇓*iS*	**Sb**	**18 21 28.3**	**-0.5**
KPKS	**Kokpek**	**1.82**	**340**	*e*P	**Pb**	**18 21 05.3**	**-1.5**
KPKS	comp=Z,3μm,0.4s			*e*S	**Sb**	**18 21 29.0**	**-0.2**
KURS	**Kuram**	**2.01**	**330**	*e*P	**Pb**	**18 21 08.3**	**-1.5**
KURS	comp=Z,957nm,0.7s			*e*S	**Sb**	**18 21 35.1**	**+0.7**
TNSS	**Tian-Shan**	**2.32**	**305**	*e*P	**Pb**	**18 21 13.8**	**-1.6**
TNSS	comp=Z,295nm,0.4s			*e*S	**Sb**	**18 21 43.9**	**+0.2**
MDOK	**Medeo**	**2.32**	**308**	*e*P	**Pb**	**18 21 13.6**	**-1.6**
MDOK	comp=Z,934nm,0.5s			*e*S	**Sb**	**18 21 43.9**	**+0.3**
KOTS	**Kotyrbulak**	**2.33**	**310**	*e*P	**Pb**	**18 21 15.2**	**-0.2**
KOTS	comp=Z,2μm,0.6s			*e*S	**Sb**	**18 21 46.2**	**+2.5**
KNDC	**Almaty**	**2.40**	**308**	⇑Pg	**Pb**	**18 21 14.6**	**-2.0**
AAA	**Alma-Ata**	**2.45**	**309**	*e*P	**Pb**	**18 21 16.6**	**-0.7**
AAA	comp=Z,2μm,0.4s			*e*S	**Sb**	**18 21 48.4**	**+1.3**
AAA	**Alma-Ata**	**2.45**	**309**	*e*PN	**Pb**	**18 21 15.1**	**-2.2**
AAA	comp=Z,4μm,0.5s			pmax	pmax		
MNBS	**Baschi**	**2.47**	**340**	*e*P	**Pb**	**18 21 15.0**	**-2.8**
MNBS	comp=Z,515nm,0.3s			*e*S	**Sb**	**18 21 46.0**	**-1.8**
ULHL	**Ulahol**	**2.51**	**282**	⇓*iP*	**Pn**	**18 21 15.1**	**+2.2**
ULHL	baz=287			⇓*iS*	**Sb**	**18 21 49.7**	**+0.6**
DJR	**Jarkent**	**2.58**	**4**	*e*P	**Pb**	**18 21 16.8**	**-2.8**
DJR	comp=Z,207nm,0.2s			*e*S	**Sb**	**18 21 49.0**	**-1.9**
NRN	**Naryn**	**2.68**	**264**	⇓*e*P	**Pn**	**18 21 17.1**	**+1.8**
NRN	baz=264			⇓*e*S	**Sb**	**18 21 50.8**	**-3.2**
MTBS	**Maitube**	**2.69**	**302**	*e*P	**Pb**	**18 21 19.7**	**-1.7**
MTBS	comp=Z,127nm,0.3s			*e*S	**Sb**	**18 21 54.1**	**+0.2**
ARXS	**Arharly**	**2.76**	**333**	*e*P	**Pb**	**18 21 21.0**	**-1.6**
ARXS	comp=Z,227nm,0.4s			*e*S	**Sb**	**18 21 56.5**	**+0.4**
BOOM	**Boomskoye usch**	**2.78**	**286**	⇓*iP*	**Pn**	**18 21 18.2**	**+1.6**
BOOM	baz=287			⇓*iS*	**Sb**	**18 21 53.7**	**-3.1**
CHKK	**Chushkaly**	**2.83**	**319**	*e*P	**Pb**	**18 21 23.3**	**-0.4**
CHKK	comp=Z,226nm,0.3s			*e*S	**Sb**	**18 22 00.2**	**+2.3**
KST	**Kastek**	**2.95**	**297**	*e*P	**Pb**	**18 21 23.7**	**-2.2**
KST	comp=Z,46nm,0.5s			*e*S	**Sb**	**18 22 00.2**	**-1.4**
TKM2	**Tokmak 2**	**3.15**	**293**	⇑*iP*	**Pn**	**18 21 24.3**	**+2.6**
TKM2	baz=296			⇑*iS*	**Sb**	**18 22 06.2**	**-1.3**
TKM2	**Tokmak 2**	**3.15**	**293**	⇑Pn	**Pn**	**18 21 24.3**	**+2.6**
TKM2	comp=Z,50nm,0.4s			⇓Lg	Lg	18 22 08.9	
TKM2	**Tokmak 2**	**3.15**	**293**	*e*PN	**Pn**	**18 21 24.3**	**+2.6**
DGS	**Degeres**	**3.16**	**299**	*e*P	**Pb**	**18 21 29.1**	**-0.4**
DGS	comp=Z,92nm,0.7s			*e*S	**Sb**	**18 22 10.1**	**+2.4**
KUU	**Kurty**	**3.18**	**313**	*e*P	**Pb**	**18 21 28.9**	**-0.9**
KUU	comp=Z,108nm,0.4s			⇑*iS*	**Sb**	**18 22 09.8**	**+1.7**
KZA	**Kyzart**	**3.22**	**277**	⇓*iP*	**Pn**	**18 21 25.0**	**+2.2**
KZA	baz=282			⇓*iS*	**Sb**	**18 22 07.3**	**-2.4**
TDK	**Taldyqorghan**	**3.35**	**346**	*e*P	**Pb**	**18 21 31.5**	**-1.2**
TDK	comp=Z,144nm,0.4s			*e*S	**Sb**	**18 22 14.5**	**+1.4**
KSH	**Kashi**	**3.52**	**232**	Pg	Pb	18 21 42.8	+7.2
KSH				Sg	Sb	18 22 31.7	+14
KSH	comp=Z,90nm,0.8s			smax	smax		
KSH	comp=Z,170nm,1.1s			smax	smax		
KAPS	**Kapalarasan**	**3.53**	**358**	*e*P	**Pb**	**18 21 34.8**	**-0.9**
KAPS	comp=Z,108nm,0.3s			*e*S	**Sb**	**18 22 19.9**	**+1.7**
KBK	**Karagaybulak**	**3.53**	**286**	⇑*iP*	**Pn**	**18 21 29.4**	**+2.5**
KBK	baz=290			⇑*iS*	**Sb**	**18 22 15.0**	**-3.4**
CHMS	**Chumysh**	**3.76**	**291**	⇑*iP*	**Pn**	**18 21 32.8**	**+2.9**
CHMS	baz=294			⇑*iS*	**Sb**	**18 22 21.2**	**-3.7**
UCH	**Uchtor**	**3.78**	**279**	⇑*iP*	**Pn**	**18 21 32.7**	**+2.2**
UCH	baz=283			⇑*iS*	**Sb**	**18 22 20.7**	**-5.1**
FRU1	**Bishkek**	**3.80**	**288**	⇑*e*P	**Pn**	**18 21 33.0**	**+2.6**
FRU1	baz=288			⇑*e*S	**Sn**	**18 22 17.5**	**+3.4**
AAK	**Ala-Archa**	**3.86**	**285**	P	**Pn**	**18 21 34.3**	**+3.0**
AAK	comp=Z,3.1nm,0.3s,baz=100,slow=9.5,SNR=20			S	**Sb**	**18 22 28.3**	**+0.7**
AAK	comp=Z,15nm,0.3s,baz=210,slow=21,SNR=13			LR	LR	18 23 22.0	
AAK	comp=Z,121nm,20.9s,baz=106,slow=43			pmax	pmax		
AAK	**Ala-Archa**	**3.86**	**285**	⇑*iP*	**Pn**	**18 21 33.7**	**+2.4**
AAK	baz=288			⇑*iS*	**Sb**	**18 22 23.5**	**-4.1**
AAK	**Ala-Archa**	**3.86**	**285**	⇓Pn	**Pn**	**18 21 34.3**	**+3.0**
AAK	comp=Z,5.7nm,0.5s			⇑Pg	**Pb**	**18 21 43.0**	**+1.7**
AAK	comp=Z,53nm,0.6s			⇓Lg	Lg	18 22 30.7	
AAK	comp=Z,255nm,1.0s						
AAK	**Ala-Archa**	**3.86**	**285**	PN	**Pn**	**18 21 34.3**	**+3.0**
AAK				S	**Sb**	**18 22 28.3**	**+0.7**
AAK	comp=Z,3.0nm,0.3s			pmax	pmax		
AAK	comp=N,15nm,0.3s			smax	smax		
ARLS	**Aral**	**3.91**	**273**	⇑*iP*	**Pn**	**18 21 33.9**	**+1.9**
ARLS	baz=278			⇑*iS*	**Sb**	**18 22 23.4**	**-5.7**
USP	**Ospenovka**	**4.03**	**294**	⇓*iP*	**Pn**	**18 21 36.6**	**+3.1**
USP	baz=296			⇓*iS*	**Sb**	**18 22 30.0**	**-2.4**
MRKS	**Merke**	**4.80**	**284**	*e*P	**Pb**	**18 21 59.0**	**+1.7**
MRKS	comp=N,62nm,0.5s			⇓*iS*	**Sb**	**18 23 01.3**	**+6.8**
MNAS	**Manas**	**5.29**	**280**	⇑Pg	**Pb**	**18 22 08.9**	**+3.2**
MNAS	comp=N,15nm,0.6s			⇓Lg	Lg	18 23 18.0	
MNAS	**Manas**	**5.29**	**280**	PN	**Pb**	**18 22 08.9**	**+3.2**
MNAS	comp=N,94nm,1.1s			pmax	pmax		
MKAR	**Makanchi Array**	**5.41**	**20**	P	**Pn**	**18 21 53.8**	**+1.4**
MKAR	comp=Z,7.5nm,0.3s,baz=188,slow=12,SNR=164			S	**Sn**	**18 22 55.8**	**+2.2**
MKAR	comp=Z,5.4nm,0.3s,baz=205,slow=23,SNR=3.8			LR	LR	18 23 39.9	
MKAR	comp=Z,48nm,20.8s,baz=192,slow=34			pmax	pmax		
MKAR	**Makanchi Array**	**5.41**	**20**	*i* PN	**Pn**	**18 21 53.7**	**+1.2**
MKAR	comp=Z,7.0nm,0.3s			pmax	pmax		
WMQ	**Urumqi**	**6.34**	**68**	Pn	**Pn**	**18 22 06.9**	**+1.6**
WMQ				Sn	**Sn**	**18 23 22.6**	**+5.9**
WMQ	comp=Z,55nm,0.5s			smax	smax		
WMQ	comp=Z,100nm,0.4s			smax	smax		
KK31	**Karatay Array**	**6.82**	**284**	⇑Pg	Pb	18 22 38.8	+7.1
KK31	comp=Z,11nm,0.5s,baz=89,slow=18			⇓Lg	Lg	18 24 05.5	
KK31	**Karatay Array**	**6.82**	**284**	P*	Pb	18 22 38.8	+7.1
KK31	comp=Z,46nm,0.6s,baz=89,slow=25			pmax	pmax		
KK31	comp=Z,11nm,0.5s						
OTUK	**Ortayu**	**8.26**	**324**	⇓Pn	**Pn**	**18 22 32.8**	**+1.3**
OTUK	comp=Z,5.2nm,0.5s			⇑Lg	Lg	18 24 47.0	
OTUK	**Ortayu**	**8.26**	**324**	P	**Pn**	**18 22 32.8**	**+1.3**
OTUK	comp=Z,48nm,0.8s			pmax	pmax		
OTUK	comp=Z,5.0nm,0.5s						
KURBB	**Kurchatov Arra**	**8.90**	**356**	P	**Pn**	**18 22 41.4**	**+1.2**
	comp=Z,0.1nm,0.3s,baz=182,slow=12,SNR=12						
KURK	**Kurchatov**	**8.98**	**356**	P	**Pn**	**18 22 41.4**	**-0.1**
CEP	**Cherat**	**9.96**	**220**	P	**Pn**	**18 22 56.5**	**+1.5**
CEP				S	**Sn**	**18 24 44.0**	**-1.8**
ZALV	**Zalesovo Beam**	**12.70**	**14**	P	**Pn**	**18 23 34.2**	**+2.0**
	comp=Z,2.5nm,0.3s,baz=200,slow=13,SNR=41						
ZALV				S	**Sn**	**18 25 50.5**	**-1.9**
	comp=Z,1.8nm,0.3s,baz=197,slow=22,SNR=13						
ZALV				LR	LR	18 28 44.9	
	comp=Z,60nm,18.8s,baz=248,slow=39						
ZALV	**Zalesovo Beam**	**12.70**	**14**	P	**Pn**	**18 23 34.2**	**+2.0**
ZALV				S	**Sn**	**18 25 50.5**	**-1.9**
ZALV				pmax	pmax		
	comp=Z,3.0nm,0.3s						
ZALV				smax	smax		
	comp=N,2.0nm,0.3s						
ZALV				MLR	MLR		
	comp=Z,60nm,18.8s						
BVAR	**Borovoye Array**	**12.86**	**334**	P	**Pn**	**18 23 33.5**	**-0.9**
	comp=Z,0.2nm,0.3s,baz=148,slow=11,SNR=4.9						
BVAR	**Borovoye Array**	**12.86**	**334**	P	**Pn**	**18 23 33.5**	**-0.9**
BRVK	**Borovoye**	**12.92**	**334**	P	P	18 23 40.0	-5.6
GTA	**Gaotai**	**15.57**	**92**	*e*P	**P**	**18 24 15.7**	**+0.4**
GTA				pP	pP	18 24 20.0	-3.4
GTA				sP	sP	18 24 23.0	-4.4
GTA				pmax	pmax		
	comp=Z,3.0nm,1.2s						
AKTO	**Aktyubinsk**	**17.22**	**308**	P	**Pn**	**18 24 32.1**	**+0.1**
	comp=Z,0.4nm,0.3s,baz=114,slow=14,SNR=6.9						
AKTO	**Aktyubinsk**	**17.22**	**308**	P	**Pn**	**18 24 32.2**	**+0.1**
ZAK	**Zakamensk**	**18.53**	**54**	*e*P	**P**	**18 24 47.0**	**-0.8**
ZAK				pmax	pmax		
	comp=Z,2.0nm,1.1s						
TLY	**Talaya**	**19.19**	**51**	⇑*e*P	**Pn**	**18 24 56.6**	**+0.5**
TLY				pmax	pmax		
	comp=Z,2.0nm,0.7s						
SONM	**Songino Array**	**19.94**	**63**	P	**P**	**18 25 03.6**	**+0.2**
	comp=Z,0.9nm,0.3s,baz=263,slow=11,SNR=39						
SONM	**Songino Array**	**19.94**	**63**	P	**P**	**18 25 03.6**	**+0.2**
SONM				pmax	pmax		
	comp=Z,1.0nm,0.3s						
ARU	**Arti**	**19.99**	**324**	P	**P**	**18 25 03.7**	**+0.1**
	comp=Z,0.0nm,0.3s,baz=96,slow=15,SNR=5.3						
ARU				LR	LR	18 33 12.1	
	comp=Z,41nm,21.1s,baz=85,slow=38						
ARU	**Arti**	**19.99**	**324**	*c iP*	**P**	**18 25 03.6**	**-0.1**
ARU				S	**Sn**	**18 28 47.9**	**-1.4**
ARU				pmax	pmax		
	comp=Z,5.0nm,1.7s						
ULN	**Ulaanbaatar**	**20.38**	**63**	⇓*iP*	**P**	**18 25 08.3**	**+0.1**
ULN				pmax	pmax		
	comp=Z,5.0nm,0.9s						
BRTR	**Keskin Array B**	**34.53**	**282**	P	**P**	**18 27 19.2**	**-0.3**
	comp=Z,0.4nm,0.6s,baz=111,slow=6.8,SNR=3.7						
BRTR	**Keskin Array B**	**34.53**	**282**	*i* P	**P**	**18 27 21.0**	**+1.4**
YAK	**Yakutsk**	**35.78**	**38**	*e*P	**P**	**18 27 32.6**	**+2.7**
YAK				pmax	pmax		
	comp=Z,16nm,3.3s						
ILAR	**Eielson Array**	**67.76**	**20**	P	**P**	**18 31 26.2**	**-2.0**
	comp=Z,0.6nm,0.9s,baz=324,slow=5.9,SNR=5.6						
TORD	**Torodi Ar. Bea**	**72.34**	**272**	P	**P**	**18 31 54.9**	**-2.1**
	comp=Z,0.2nm,0.3s,baz=41,slow=5.3,SNR=3.8						
YKA	**Yellowknife Ar**	**75.48**	**7**	P	**P**	**18 32 12.6**	**-2.0**
	comp=Z,0.2nm,0.5s,baz=347,slow=5.6,SNR=6.4						
YKA	**Yellowknife Ar**	**75.48**	**7**	P	**P**	**18 32 12.6**	**-2.0**
WRA	**Warramunga Arr**	**79.58**	**129**	P	**P**	**18 32 37.3**	**-0.8**
	comp=Z,1.0nm,0.9s,baz=329,slow=5.0,SNR=4.6						
WRA	**Warramunga Arr**	**79.58**	**129**	P	**P**	**18 32 37.3**	**-0.8**
WRA				pmax	pmax		
	comp=Z,1.0nm,0.9s						
ASAR	**Alice Springs**	**82.24**	**131**	P	**P**	**18 32 50.0**	**-2.3**
	comp=Z,0.9nm,0.8s,baz=314,slow=4.8,SNR=6.4						
ASAR	**Alice Springs**	**82.24**	**131**	P	**P**	**18 32 50.0**	**-2.3**
ASAR				pmax	pmax		
	comp=Z,1.0nm,0.8s						

IDC 12 18:25:38.3±5.5, 20°.05S×167°.56E, h0km, mb3.9/4, mb1 4.0/5, mb1mx3.7/30, mbtmp3.8/5, ML3.0/1, MS3.0/2, Ms1 3.0/2, ms1mx2.7/30, Error ellipse: s-maj=111.3km s-min=31.6km az=98.0, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.27**	**207**	Pn	Pn	18 26 16.6	-0.5
	4.6nm,0.3s,baz=198,slow=6.5,SNR=4.7						
DZM				Sn	Sn	18 26 45.8	0.0
	15nm,0.3s,baz=63,slow=19,SNR=8.3						
AFI	**Afiamalu**	**20.67**	**76**	LR	LR	18 37 46.8	
	comp=Z,26nm,19.4s,baz=158,slow=35						
PMG	**Port Moresby**	**22.36**	**295**	LR	LR	18 37 39.7	
	comp=Z,74nm,19.9s,baz=154,slow=32						
STKA	**Stephens Creek**	**26.08**	**238**	P	P	18 31 14.1	+0.4
	2.2nm,0.9s,baz=76,slow=12,SNR=4.4						
WRA	**Warramunga Arr**	**31.19**	**264**	P	P	18 31 59.1	-0.3
	0.2nm,0.5s,baz=90,slow=8.5,SNR=4.8						
ASAR	**Alice Springs**	**31.40**	**257**	P	P	18 32 01.4	+0.1
	2.4nm,0.7s,baz=86,slow=9.0,SNR=23						
CMAR	**Chiang Mai Arr**	**77.40**	**295**	P	P	18 37 35.8	+0.1
	1.1nm,0.9s,baz=147,slow=4.4,SNR=5.4						

ROM 12 18:36:18.4±0.1, 42°.57N×13°.08E, h9km±1km, Md1.5/3, Ml0.5/3, Error ellipse: s-maj=1.8km s-min=0.8km az=122.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RM29	**Verrico (Monte**	**0.09**	**93**	Pg	Pg	18 36 21.1	+0.2
RM29				Sg	Sg	18 36 23.1	+0.5
	14nm,0.3s						
RM33	**Pellescritta (**	**0.12**	**120**	Pg	Pg	18 36 21.7	+0.5
RM33				Sg	Sg	18 36 23.8	+0.7
	19nm,0.6s						
SMA1	**SAN MARTINO**	**0.20**	**71**	Pg	Pg	18 36 23.2	+0.6
SMA1				Sg	Sg	18 36 26.8	+1.4
	9.0nm,0.2s						

*IDC **12** 18:39:07.0±2.2, 43°.41N×105°.28W, h0km, mb1 3.7/3, mb1mx3.3/50, mbtmp3.4/3, ML3.5/3, Error ellipse: s-maj=48.8km s-min=9.3km az=154.0*
*ISCJB **12** 18:39:09.2±0.5, 43°.66N±0°.05×105°.26W±0°.06, h0km, Error ellipse: s-maj=6.8km s-min=6.1km az=156.3*
*NEIC **12** 18:39:10.6±0.5, 43°.64N×105°.27W, h0km, ML3.0, Error ellipse: s-maj=6.5km s-min=5.7km az=154.0, Suspected Mining explosion.*
NEIC 75 km [46 miles] SSE of Gillette.
ISC 12 18:39:09.5±0.9, 43°.69N±0°.05×105°.29W±0°.05, h0km, n26, σ1960/27, Wyoming

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RSSD	**Black Hills**	**1.00**	**64**	*e*Pg	**Pb**	**18 39 29.2**	**-0.6**
K22A	**Casper**	**1.38**	**221**	*e*Pg	**Pg**	**18 39 34.7**	**-1.2**
PHWY	**Pilot Hill**	**2.39**	**183**	*e*Pn	**Pn**	**18 39 51.1**	**+0.9**
LAO	**LASA Array**	**3.07**	**348**	*e*Pn	**Pn**	**18 40 00.0**	**+0.7**
RLMT	**Red Lodge**	**3.19**	**298**	*e*Pn	**Pn**	**18 40 02.0**	**+0.8**
BW06	**Boulder Array**	**3.26**	**255**	*e*Pn	**Pn**	**18 40 02.8**	**+0.8**
PDAR	**Pinedale Array**	**3.26**	**255**	Pn	**Pn**	**18 40 03.0**	**+1.0**
	2.8nm,0.3s,baz=84,slow=17,SNR=41						
PDAR				Pg	**Pb**	**18 40 07.5**	**-0.8**
	9.7nm,0.3s,baz=83,slow=16,SNR=64						
PDAR				Lg	Lg	18 40 46.0	
	7.8nm,0.3s,baz=80,slow=32,SNR=6.1						
OGNE	**Ogallala**	**3.65**	**138**	*e*Pn	**Pn**	**18 40 08.1**	**+0.8**
LKWY	**Lake**	**3.78**	**285**	*e*Pn	**Pn**	**18 40 07.8**	**-1.5**
LOHW	**Long Hollow**	**3.86**	**271**	*e*Pn	**Pn**	**18 40 11.3**	**+1.0**
H17A	**Grant Village**	**3.88**	**282**	*e*Pn	**Pn**	**18 40 13.2**	**+2.6**
ISCO	**Idaho Springs**	**3.90**	**184**	*e*Pn	**Pn**	**18 40 11.3**	**+0.4**
FLWY	**Flagg Ranch**	**3.93**	**278**	*e*Pn	**Pn**	**18 40 13.7**	**+2.4**
MOOW	**Moose Ponds**	**3.96**	**273**	*e*Pn	**Pn**	**18 40 12.8**	**+1.1**
REDW	**Red Top Meadow**	**4.06**	**267**	*e*Pn	**Pn**	**18 40 15

YKA Yellowknife Ar 19.61 347 P Pn 18 43 41.3 +1.0
0.1nm,0.3s,baz=154,slow=8.9,SNR=5.0

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*ISCJB **12** 18:40:57.9±0.6,50.°30N±0.°04×18.°71E±0.°03,h0km,Error ellipse: s-maj=6.3km s-min=2.7km az=6.2*
*CSEM **12** 18:40:58.5±0.3,50.°30N×18.°75E,h2km,ML2.5/4,Error ellipse: s-maj=7.6km s-min=3.1km az=3.0*
*PRU **12** 18:40:59.6,50.°28N×18.°71E,h0km*
*WAR **12** 18:40:59.1,50.°26N×18.°82E,h1km,Mw2.3*
ISC 12 18:40:58.5±0.8,50.°24N±0.°04×18.°72E±0.°02,h0km,n33,
σ0°59/53,Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHZP	**Chorzow**	**0.18**	**74**	*e*Pg	**Pg**	**18 41 01.6**	**-0.3**
CHZP	**Chorzow**	**0.18**	**74**	*e*Pg	**Pg**	**18 41 01.6**	**-0.3**
CHZP	**Chorzow**	**0.18**	**74**	*e*Pg	**Pg**	**18 41 01.6**	**-0.3**
OKC	**Ostrava-Krasne**	**0.55**	**223**	*e*PG	**Pb**	**18 41 11.4**	**+0.4**
OKC				*e*SG	**Sb**	**18 41 19.8**	**+0.4**
	comp=Z,8.2nm,0.2s						
OKC	**Ostrava-Krasne**	**0.55**	**223**	Pg	**Pb**	**18 41 11.4**	**+0.4**
	1.6nm,0.4s						
OKC				Sg	**Sb**	**18 41 19.8**	**+0.4**
	8.2nm,0.2s						
OJC	**Ojcow**	**0.69**	**92**	*e*Pg	**Pg**	**18 41 11.1**	**-0.6**
OJC				*e*Sg	**Sg**	**18 41 20.8**	**+0.1**
OJC	**Ojcow**	**0.69**	**92**	*e*Pg	**Pg**	**18 41 11.1**	**-0.6**
OJC				*e*Sg	**Sg**	**18 41 20.8**	**+0.1**
OJC	**Ojcow**	**0.69**	**92**	*e*Pgd	**Pg**	**18 41 11.1**	**-0.6**
OJC				*e*Sg	**Sg**	**18 41 20.8**	**+0.2**
MORC	**Moravsky Berou**	**0.89**	**239**	*e*Pg	**Pb**	**18 41 16.8**	**-0.1**
MORC				*e*Sg	**Sb**	**18 41 29.5**	**+0.1**
LANS	**Liptovska Anna**	**1.20**	**156**	*e*Pg	**Pb**	**18 41 21.9**	**-0.1**
LANS				*e*Sg	**Sb**	**18 41 38.5**	**+0.4**
LANS	**Liptovska Anna**	**1.20**	**156**	*e*PG	**Pb**	**18 41 21.9**	**-0.1**
LANS				*e*SG	**Sb**	**18 41 38.5**	**+0.4**
KRLC	**Kraliky**	**1.26**	**263**	*e*PG	**Pn**	**18 41 23.4**	**0.0**
KRLC				*e*SG	**Sb**	**18 41 40.4**	**+0.5**
KRLC	**Kraliky**	**1.26**	**263**	Pg	**Pn**	**18 41 23.4**	**0.0**
KRLC				Sg	**Sb**	**18 41 40.4**	**+0.5**
NIE	**Niedzica**	**1.31**	**128**	*e*Pg	**Pg**	**18 41 23.4**	**-0.2**
NIE				*e*Sg	**Sn**	**18 41 42.1**	**-0.3**
NIE	**Niedzica**	**1.31**	**128**	*e*Pg	**Pg**	**18 41 23.4**	**-0.2**
NIE				*e*Sg	**Sn**	**18 41 42.1**	**-0.3**
NIE	**Niedzica**	**1.31**	**128**	*e*Pg	**Pg**	**18 41 23.4**	**-0.2**
NIE				*e*Sg	**Sn**	**18 41 42.1**	**-0.3**
DPC	**Dobruska-Polom**	**1.54**	**275**	*e*PG	**Pb**	**18 41 27.9**	**-0.1**
DPC				*e*SG	**Sb**	**18 41 49.1**	**+1.0**
	comp=Z,3.9nm,0.3s						
DPC	**Dobruska-Polom**	**1.54**	**275**	Pg	**Pb**	**18 41 27.9**	**-0.1**
DPC				Sg	**Sb**	**18 41 49.1**	**+1.0**
	3.9nm,0.3s						
VRAC	**Vranov**	**1.67**	**237**	*e*Pn	**Pb**	**18 41 30.2**	**+0.1**
VRAC				*e*Sg	**Sg**	**18 41 53.1**	**+1.1**
VYHS	**Vyhne**	**1.75**	**178**	*e*Pn	**Pn**	**18 41 29.8**	**-0.3**
VYHS				*e*Sn	**Sn**	**18 41 53.2**	**0.0**
VYHS	**Vyhne**	**1.75**	**178**	*e*PN	**Pn**	**18 41 29.8**	**-0.3**
VYHS				*e*SN	**Sn**	**18 41 53.2**	**0.0**
VYHS				*e*LG	Lg	18 42 00.4	
STHS	**Stebnicka Huta**	**1.83**	**116**	*e*Pn	**Pb**	**18 41 32.6**	**-0.2**
STHS				*e*Sn	**Sg**	**18 41 58.3**	**+1.1**
STHS	**Stebnicka Huta**	**1.83**	**116**	*e*PN	**Pb**	**18 41 32.6**	**-0.2**
STHS				*e*SN	**Sg**	**18 41 58.3**	**+1.1**
STHS				*e*LG	Lg	18 42 11.7	
CRVS	**Cervenica-Dubn**	**2.23**	**126**	*e*Pn	**Pb**	**18 41 39.8**	**+0.1**
CRVS	**Cervenica-Dubn**	**2.23**	**126**	*e*PN	**Pb**	**18 41 39.8**	**+0.1**
GOPC	**GO Pecny, Ondr**	**2.56**	**264**	*e*SG	**Sg**	**18 42 20.4**	**-0.2**
GOPC	**GO Pecny, Ondr**	**2.56**	**264**	Sg	**Sg**	**18 42 20.4**	**-0.2**
PVCC	**Panska Ves**	**2.67**	**278**	*e*SG	**Sg**	**18 42 25.7**	**+1.3**
	comp=Z,3.6nm,0.2s						
PVCC	**Panska Ves**	**2.67**	**278**	Sg	**Sg**	**18 42 25.7**	**+1.3**
	3.6nm,0.2s						
PRU	**Pruhonice**	**2.70**	**266**	*e*SG	**Sg**	**18 42 24.4**	**-0.9**
	comp=Z,1.7nm,0.2s						
PRU	**Pruhonice**	**2.70**	**266**	Sg	**Sg**	**18 42 24.4**	**-0.9**
	1.7nm,0.2s						
KHC	**Kasperske Hory**	**3.52**	**254**	*e*SG	**Sg**	**18 42 50.3**	**-1.3**
KHC	**Kasperske Hory**	**3.52**	**254**	Sg	**Sg**	**18 42 50.3**	**-1.3**

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*IDC **12** 18:45:54.1±1.3,29.°02N×56.°54E,h0km,mb3.5/8, mb1 3.6/9,mb1mx3.4/54,mbtmp3.6/9,ML3.4/1,MS4.5/1, Ms1 4.5/1,ms1mx2.5/40,Error ellipse: s-maj=30.9km s-min=22.2km az=137.0*
*ISCJB **12** 18:45:55.9±0.3,28.°99N±0.°02×56.°82E±0.°05,h10km, mb3.4/8,MS4.5/1,Error ellipse: s-maj=6.8km s-min=3.1km az=5.4*
*THR **12** 18:45:56.7±0.4,29.°02N×56.°82E,h31km±3km,ML3.5*
*CSEM **12** 18:45:56.8±0.2,29.°00N×56.°80E,h2km,ML3.5,Error ellipse: s-maj=8.3km s-min=4.0km az=92.0*
*OMAN **12** 18:45:58.5,29.°07N×56.°80E,h5km*
*DSN **12** 18:45:58.4±0.1,28.°92N×56.°65E,h10km,ML3.5,Error ellipse: s-maj=18.8km s-min=4.8km az=272.0*
*TEH **12** 18:45:58.5,29.°07N×56.°80E,h5km,ML3.5*
ISC 12 18:45:55.8±0.6,29.°01N±0.°02×56.°75E±0.°05,h10km,n77,
σ1°91/88,mb3.5/8,Southern Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NGRK	**Negar Kerman**	**0.64**	**359**	*e*Pg	**Pg**	**18 46 08.8**	**+0.6**
NGRK	**Negar Kerman**	**0.64**	**359**	*e*Pg	**Pg**	**18 46 08.8**	**+0.6**
KRBR	**Kerman**	**0.97**	**1**	*e*Pg	**Pg**	**18 46 14.8**	**+0.3**
KRBR				*e*Sg	**Sg**	**18 46 28.2**	**+1.0**
KRBR				AML	AML	18 46 30.3	
	comp=N,2μm,0.4s						
KRBR				AML	AML	18 46 34.8	
	comp=E,1μm,0.3s						
KRBR	**Kerman**	**0.97**	**1**	*e*Pg	**Pg**	**18 46 14.8**	**+0.3**
KRBR				*e*Sg	**Sg**	**18 46 28.2**	**+1.0**
TVBK	**TV Kerman**	**0.98**	**1**	*e*Pg	**Pg**	**18 46 15.0**	**+0.4**
TVBK	**TV Kerman**	**0.98**	**1**	*e*Pg	**Pg**	**18 46 15.0**	**+0.4**
CHMN	**Cheshme madani**	**1.10**	**39**	*e*Pg	**Pg**	**18 46 16.5**	**-0.4**
CHMN	**Cheshme madani**	**1.10**	**39**	*e*Pg	**Pg**	**18 46 16.5**	**-0.4**
KHGB	**Koh Gabri**	**1.38**	**350**	*e*Pn	**Pn**	**18 46 21.8**	**+0.4**
KHGB	**Koh Gabri**	**1.38**	**350**	*e*Pn	**Pn**	**18 46 21.8**	**+0.4**
NIAN	**Nian**	**1.44**	**177**	*e*Pn	**Pg**	**18 46 23.6**	**+0.1**
NIAN	**Nian**	**1.44**	**177**	*e*Pn	**Pg**	**18 46 23.6**	**+0.1**
IBND	**Bandar-abas**	**1.56**	**187**	*e*Pn	**Pg**	**18 46 27.1**	**+1.3**
IBND				*e*AMB	AMB	18 47 09.0	
	comp=Z,7μm,0.2s						
IBND	**Bandar-abas**	**1.56**	**187**	*e*Pn	**Pg**	**18 46 27.1**	**+1.3**
GENO	**Geno**	**1.68**	**198**	*e*Pn	**Pb**	**18 46 27.5**	**+0.6**
GENO	**Geno**	**1.68**	**198**	*e*Pn	**Pb**	**18 46 27.5**	**+0.6**
BNDS	**Bandar-Abbas**	**1.68**	**198**	*e*Pg	**Pb**	**18 46 27.4**	**+0.5**
BNDS				*e*Sg	**Sg**	**18 46 50.3**	**+0.5**
BNDS				AML	AML	18 46 54.6	
	comp=E,401nm,0.6s						
BNDS				AML	AML	18 46 56.6	
	comp=N,444nm,0.5s						
BNDS	**Bandar-Abbas**	**1.68**	**198**	*e*Pn	**Pb**	**18 46 27.2**	**+0.3**
BNDS				*e*Sg	**Sg**	**18 46 50.3**	**+0.5**
KHSK	**Kohestak**	**2.26**	**173**	*e*Pn	**Pb**	**18 46 36.7**	**+0.1**
KHSK	**Kohestak**	**2.26**	**173**	*e*Pn	**Pb**	**18 46 36.7**	**+0.1**
IMEH	**Mehriz**	**3.01**	**323**	*e*Pn	**Pn**	**18 46 47.2**	**+3.5**
IMEH				*e*AMB	AMB	18 46 56.7	
	comp=Z,1μm,0.1s						
IMEH				*e*Sg	**Sg**	**18 47 31.3**	**-1.2**
IMEH	**Mehriz**	**3.01**	**323**	*e*Pn	**Pn**	**18 46 47.2**	**+3.5**
BANOM	**Banah**	**3.10**	**187**	*i* P	**Pn**	**18 46 46.0**	**+1.3**
	SNR=39						
BANOM				S	**Sn**	**18 47 23.1**	**+1.2**
BANOM	**Banah**	**3.10**	**187**	P	**Pn**	**18 46 46.1**	**+1.3**
	SNR=39						
BANOM				S	**Sn**	**18 47 23.1**	**+1.2**
BANOM	**Banah**	**3.10**	**187**	P	**Pn**	**18 46 46.1**	**+1.4**
	SNR=39						
BANOM	**Banah**	**3.10**	**187**	Pn	**Pn**	**18 46 46.1**	**+1.3**
	SNR=39						
GHIR	**Ghir-Karzin**	**3.38**	**259**	*e*Pn	**Pn**	**18 46 50.5**	**+1.7**
GHIR	**Ghir-Karzin**	**3.38**	**259**	*e*Pn	**Pn**	**18 46 50.5**	**+1.7**
ICHK	**Chekchek**	**3.81**	**329**	*e*Pn	**Pn**	**18 46 57.3**	**+2.6**
ICHK				*e*Sg	**Sg**	**18 47 55.9**	**-2.1**
ICHK				*e*AMB	AMB	18 48 07.5	
	comp=Z,1μm,0.2s						
ICHK	**Chekchek**	**3.81**	**329**	*e*Pn	**Pn**	**18 46 57.3**	**+2.6**
ISAD	**Sadrabad**	**3.92**	**318**	*e*Pn	**Pn**	**18 47 00.1**	**+3.8**
ISAD				*e*AMB	AMB	18 48 17.1	
	comp=Z,582nm,0.3s						
ISAD	**Sadrabad**	**3.92**	**318**	*e*Pn	**Pn**	**18 47 00.1**	**+3.8**
IKOO	**Kooshah**	**3.92**	**29**	*e*Pn	**Pn**	**18 46 58.5**	**+2.2**
IKOO				*e*AMB	AMB	18 48 07.9	
	comp=Z,1μm,0.2s						
IKOO	**Kooshah**	**3.92**	**29**	*e*Pn	**Pn**	**18 46 58.5**	**+2.2**
NAZ	**Nazwa, Dubai**	**4.12**	**194**	P	**Pn**	**18 46 59.2**	**+0.4**
NAZ	**Nazwa, Dubai**	**4.12**	**194**	P	**Pn**	**18 46 59.2**	**+0.4**
HATD	**Hatta, Dubai**	**4.20**	**188**	P	**Pn**	**18 47 01.4**	**+1.5**
HATD	**Hatta, Dubai**	**4.20**	**188**	P	**Pn**	**18 47 01.4**	**+1.5**
ITEG	**Tejag**	**4.24**	**23**	*e*Pn	**Pn**	**18 47 03.3**	**+2.6**
ITEG				*e*AMB	AMB	18 48 19.2	
	comp=Z,623nm,0.2s						
ITEG	**Tejag**	**4.24**	**23**	*e*Pn	**Pn**	**18 47 03.3**	**+2.6**
ASHO	**Ashiyiah**	**4.35**	**188**	*i* P	**Pn**	**18 47 04.3**	**+2.3**
	SNR=12						
ASHO	**Ashiyiah**	**4.35**	**188**	P	**Pn**	**18 47 04.3**	**+2.3**
	SNR=12						
ASHO	**Ashiyiah**	**4.35**	**188**	Pn	**Pn**	**18 47 04.7**	**+2.7**
	SNR=12						
ASHO	**Ashiyiah**	**4.35**	**188**	P	**Pn**	**18 47 04.7**	**+2.7**
	SNR=12						
ASHO	**Ashiyiah**	**4.35**	**188**	Pn	**Pn**	**18 47 04.7**	**+2.7**
	SNR=12						
IKAZ	**Kazeroun**	**4.35**	**281**	*e*Pn	**Pn**	**18 47 03.6**	**+1.3**
IKAZ				*e*AMB	AMB	18 48 00.2	
	comp=Z,669nm,0.1s						
IKAZ	**Kazeroun**	**4.35**	**281**	*e*Pn	**Pn**	**18 47 03.6**	**+1.3**
FAQ	**Al Faqa, Dubai**	**4.37**	**194**	*i* P	**Pn**	**18 47 03.6**	**+1.4**
	SNR=9.0						
FAQ	**Al Faqa, Dubai**	**4.37**	**194**	P	**Pn**	**18 47 03.6**	**+1.4**
	SNR=9.0						
FAQ	**Al Faqa, Dubai**	**4.37**	**194**	Pn	**Pn**	**18 47 05.0**	**+2.8**
	SNR=9.0						
FAQ	**Al Faqa, Dubai**	**4.37**	**194**	P	**Pn**	**18 47 05.0**	**+2.8**
	SNR=9.0						
FAQ	**Al Faqa, Dubai**	**4.37**	**194**	Pn	**Pn**	**18 47 05.0**	**+2.8**
	SNR=9.0						
IDAH	**Dahanechah**	**4.59**	**35**	*e*AMB	AMB	18 47 28.3	
	comp=Z,314nm,0.2s						
IDAH				*e*Pn	**Pn**	**18 47 08.7**	**+3.2**
IRAM	**Ramesheh**	**4.69**	**308**	*e*Pn	**Pn**	**18 47 09.5**	**+2.6**
IRAM				*e*AMB	AMB	18 48 48.0	
	comp=Z,148nm,0.4s						
IRAM	**Ramesheh**	**4.69**	**308**	*e*Pn	**Pn**	**18 47 09.5**	**+2.6**
CHBR	**Chabahar**	**4.75**	**135**	*e*Pn	**Pn**	**18 47 08.0**	**+0.5**
CHBR	**Chabahar**	**4.75**	**135**	*e*Pn	**Pn**	**18 47 08.0**	**+0.5**
IMON	**Monand**	**4.87**	**30**	*e*Pn	**Pn**	**18 47 12.1**	**+2.8**
IMON				*e*AMB	AMB	18 47 33.5	
	comp=Z,393nm,0.1s						
IMON	**Monand**	**4.87**	**30**	*e*Pn	**Pn**	**18 47 12.1**	**+2.8**
IGAR	**Gharneh**	**5.28**	**311**	*e*Pn	**Pn**	**18 47 16.7**	**+1.8**
IZEF	**Zefreh**	**5.42**	**317**	*e*Pn	**Pn**	**18 47 20.0**	**+3.0**
IZEF				*e*AMB	AMB	18 49 20.7	
	comp=Z,101nm,0.4s						
IZEF	**Zefreh**	**5.42**	**317**	*e*Pn	**Pn**	**18 47 20.0**	**+3.0**
WSAR	**Wadi Sarin**	**5.99**	**163**	Pn	**Pn**	**18 47 25.4**	**+0.9**
	comp=Z,1.0nm,0.3s,baz=348,slow=6.8,SNR=30						
WSAR				Sn	**Sn**	**18 48 29.0**	**-4.2**
	comp=Z,2.8nm,0.3s,baz=164,slow=7.2,SNR=7.5						
IPIR	**Pirpir**	**6.23**	**308**	*e*Pn	**Pn**	**18 47 30.9**	**+2.9**
IPIR				*e*AMB	AMB	18 47 39.7	
	comp=Z,84nm,0.2s						
IPIR	**Pirpir**	**6.23**	**308**	*e*Pn	**Pn**	**18 47 30.9**	**+2.9**
SLWS		**6.87**	**234**	S	**Sn**	**18 48 52.2**	**-2.8**
SLWS				P	**Pn**	**18 47 37.5**	**+0.9**
BTHS		**7.23**	**228**	S	**Sn**	**18 49 01.6**	**-2.2**
BTHS				P	**Pn**	**18 47 42.1**	**+0.6**
BOQSS		**7.26**	**246**	S	**Sn**	**18 49 02.5**	**-1.9**
BOQSS				P	**Pn**	**18 47 41.1**	**-0.8**
AKTO	**Aktyubinsk**	**21.42**	**2**	P	**P**	**18 50 43.3**	**-0.5**
	comp=Z,0.8nm,0.4s,baz=0.0,slow=0.0,SNR=2.6						
BRTR	**Keskin Array B**	**21.81**	**305**	P	**P**	**18 50 46.4**	**-1.9**
	comp=Z,0.3nm,0.6s,baz=135,slow=14,SNR=2.4						
BVAR	**Borovoye Array**	**26.02**	**19**	P	**P**	**18 51 30.0**	**+1.1**
	comp=Z,1.2nm,0.7s,baz=207,slow=6.2,SNR=8.7						
MKAR	**Makanchi Array**	**26.68**	**41**	P	**P**	**18 51 35.4**	**+0.5**
	comp=Z,0.4nm,0.7s,baz=220,slow=7.9,SNR=5.6						
KURBB	**Kurchatov Arra**	**27.13**	**31**	P	**P**	**18 51 39.2**	**+0.3**
	comp=Z,0.2nm,0.5s,baz=233,slow=9.2,SNR=5.6						
ZALV	**Zalesovo Beam**	**32.22**	**31**	P	**P**	**18 52 24.6**	**+0.6**
	comp=Z,0.8nm,0.4s,baz=243,slow=9.5,SNR=5.1						
TLY	**Talaya**	**41.40**	**43**	LR	LR	19 11 33.7	
	comp=Z,621nm,20.4s,baz=147,slow=37						
TORD	**Torodi Ar. Bea**	**53.29**	**265**	P	**P**	**18 55 13.6**	**-1.6**
	comp=Z,0.8nm,0.5s,baz=60,slow=7.7,SNR=8.8						
YKA	**Yellowknife Ar**	**88.56**	**356**	P	**P**	**18 58 47.9**	**-0.5**
	comp=Z,0.2nm,0.6s,baz=358,slow=5.4,SNR=4.9						

IDC 12 18:56:04.9±1.6,0.°20N×126.°08E,h0km,mb3.5/3, mb1 3.7/3,mb1mx3.3/49,mbtmp3.6/3,MS3.8/1,Ms1 3.8/1, ms1mx2.4/38,Error ellipse: s-maj=175.2km s-min=21.3km az=65.0,Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LEM	**Lembang**	**19.70**	**249**	LR	LR	19 07 37.4	
	comp=Z,308nm,21.1s,baz=235,slow=35						
WRA	**Warramunga Arr**	**21.59**	**158**	P	P	19 00 56.5	0.0
	0.5nm,0.4s,baz=337,slow=11,SNR=5.4						
ASAR	**Alice Springs**	**24.91**	**163**	P	P	19 01 29.9	0.0
	0.5nm,0.4s,baz=342,slow=11,SNR=11						
MKAR	**Makanchi Array**	**60.10**	**327**	P	P	19 06 13.6	-0.5
	7.3nm,0.4s,baz=111,slow=8.9,SNR=12						
KURBB	**Kurchatov Arra**	**64.37**	**329**	P	P	19 06 43.0	+0.4
	0.3nm,0.2s,baz=122,slow=7.5,SNR=3.1						

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*ISCJB **12** 19:13:35.7±0.7,36.°44N±0.°05×70.°92E±0.°08,h100km, mb3.2/2,Error ellipse: s-maj=10.4km s-min=5.4km az=143.0*
*IDC **12** 19:13:40.8±5.5,36.°80N×70.°61E,h102km±37km,mb3.1/2, mb1 3.2/9,mb1mx2.9/51,mbtmp3.5/9,MS3.1/2,Ms1 3.1/2, ms1mx2.4/24,Error ellipse: s-maj=64.1km s-min=17.0km az=152.0*
*NNC **12** 19:13:43.2±4.2,37.°05N×70.°34E,h180km±46km,mb2.7, mpv3.8,Error ellipse: s-maj=52.8km s-min=27.2km az=136.0*
ISC 12 19:13:34.1±0.8,36.°34N±0.°07×70.°86E±0.°07,h100km,n19,
σ2°55/26,4C-5D,Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**2.94**	**327**	⇑P	**Pn**	**19 14 21.4**	**+2.2**
	23nm,0.4s						
DZET				⇓S	**Sn**	**19 14 52.0**	**-1.9**
	61nm,0.2s						
MNAS	**Manas**	**6.27**	**11**	⇓P	**Pn**	**19 15 06.3**	**+2.1**
	2.2nm,0.3s						
MNAS				⇑S	**Sn**	**19 16 11.8**	**-2.6**
	4.3nm,0.3s						
KK31	**Karatay Array**	**6.76**	**358**	⇓P	**Pn**	**19 15 12.4**	**+1.7**
	2.7nm,0.2s,baz=174,slow=12,SNR=236						
KK31				⇓S	**Sn**	**19 16 20.2**	**-6.0**
	4.5nm,0.3s,baz=186,slow=25,SNR=6.0						
AAK	**Ala-Archa**	**6.88**	**23**	P	**Pn**	**19 15 15.4**	**+2.8**
	2.2nm,0.3s,baz=194,slow=7.8,SNR=25						
AAK				S	**Sn**	**19 16 29.8**	**+0.4**
	0.8nm,0.3s,baz=326,slow=22,SNR=8.2						
AAK	**Ala-Archa**	**6.88**	**23**	⇑P	**Pn**	**19 15 15.0**	**+2.5**
	5.1nm,0.5s						
AAK				⇑S	**Sn**	**19 16 28.8**	**-0.6**
	6.4nm,0.5s						
GEYT	**Alibeck**	**10.30**	**283**	P	**Pn**	**19 16 00.7**	**+1.8**
	0.6nm,0.3s,baz=132,slow=11,SNR=7.3						
GEYT				S	**Sn**	**19 17 50.5**	**-1.8**
	1.8nm,0.3s,baz=297,slow=33,SNR=9.3						
GEYT				LR	LR	19 20 48.3	
	comp=Z,31nm,20.4s,baz=205,slow=43						
PYUN	**Piuthan**	**13.14**	**125**	*e*P	**P**	**19 16 42.3**	**-1.1**
PYUN				*e*S	**Sn**	**19 19 01.3**	**-0.4**
MKAR	**Makanchi Array**	**13.49**	**36**	P	**Pn**	**19 16 43.4**	**+2.1**
	0.1nm,0.3s,baz=222,slow=14,SNR=5.6						
KOLN	**Koldanda**	**13.76**	**125**	*e*P	**P**	**19 16 50.3**	**0.0**
KOLN				*e*S	**Sn**	**19 19 16.6**	**-0.1**
	3.2nm,0.4s						
GKN	**Gorkha**	**14.31**	**122**	*e*P	**P**	**19 16 55.7**	**-0.7**
GKN				*e*S	**Sn**	**19 19 26.8**	**-3.2**
KKN	**Kakani**	**14.89**	**121**	*e*P	**P**	**19 17 03.6**	**+0.7**
KKN				*e*S	**Sn**	**19 19 39.5**	**-4.5**
AB31	**Akbulak array**	**15.17**	**332**	⇓P	**Pn**	**19 16 58.5**	**-4.3**
	0.3nm,0.3s,baz=145,slow=8.5,SNR=4.3						
KURBB	**Kurchatov Arra**	**15.31**	**19**	P	**P**	**19 17 06.5**	**-0.6**
	0.0nm,0.3s,baz=209,slow=10,SNR=4.5						
BVAR	**Borovoye Array**	**16.69**	**359**	P	**P**	**19 17 22.9**	**+0.5**
	0.3nm,0.3s,baz=170,slow=12,SNR=7.7						
AKTO	**Aktyubinsk**	**16.86**	**331**	P	**P**	**19 17 24.9**	**+0.6**
	0.1nm,0.3s,baz=156,slow=18,SNR=2.6						
ZALV	**Zalesovo Beam**	**20.11**	**25**	P	Pn	19 18 02.0	-0.4
	0.3nm,0.3s,baz=200,slow=11,SNR=4.1						
KLR	**Kul'dur**	**45.33**	**54**	LR	LR	19 41 10.4	
	comp=Z,77nm,20.1s,baz=216,slow=36						
TORD	**Torodi Ar. Bea**	**65.60**	**269**	P	P	19 24 14.1	+6.5
	0.4nm,0.8s,baz=47,slow=6.4,SNR=4.6						
ILAR	**Eielson Array**	**74.97**	**16**	P	**P**	**19 25 07.5**	**+3.5**
	0.2nm,0.5s,baz=314,slow=3.8,SNR=3.2						

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*ISCJB **12** 19:14:24.6±0.5,6.°7S±0.°2×106.°5E±0.°1,h200km,mb3.4/7, Error ellipse: s-maj=27.1km s-min=8.2km az=37.1*
*DJA **12** 19:14:27.6±0.4,7.°S±7.°×10.°7E±.°,h168km±5km,M3.9/11, mb4.0/2,MLv3.8/11*
*IDC **12** 19:14:29.5±1.8,6.°24S×106.°50E,h203km±14km,mb3.2/7, mb1 3.3/7,mb1mx3.0/47,mbtmp3.7/7,MS3.2/2,Ms1 3.2/2, ms1mx2.7/13,Error ellipse: s-maj=57.8km s-min=13.5km az=52.0*
ISC 12 19:14:26.3±0.9,6.°8S±0.°2×106.°4E±0.°1,h200km,n19,
σ2°93/19,mb3.5/7,Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKJI	**Sukabumi**	**0.32**	**142**	P	**Pn**	**19 14 51.5**	**-1.4**
SKJI				S	**Sn**	**19 15 10.2**	**-3.3**
CBJI	**Citeko**	**0.59**	**56**	P	**Pn**	**19 14 51.3**	**-2.5**
SBJI	**Serang**	**0.67**	**340**	P	**Sn**	**19 15 10.0**	**-5.8**
CGJI	**Cibinong**	**0.68**	**282**	P	**Pn**	**19 14 53.7**	**-0.5**
CNJI	**Cibinong**	**0.94**	**126**	P	**Pn**	**19 14 53.8**	**-1.9**
CNJI				S	**Sn**	**19 15 14.7**	**-3.8**
LEM	**Lembang**	**1.25**	**94**	P	**Pn**	**19 15 01.6**	**+3.5**
	35nm,0.3s,baz=16,slow=23,SNR=54						
CISI	**Cisompet, Garu**	**1.65**	**119**	P	**Pn**	**19 15 00.9**	**-0.6**
KASI	**Kota Agung**	**2.22**	**303**	P	**Pn**	**19 15 06.9**	**-0.2**
CMJI	**Cimerak**	**2.31**	**116**	P	**Pn**	**19 15 06.6**	**-1.5**
CMJI				S	**Sn**	**19 15 36.6**	**-4.1**
MNAI	**Manna**	**4.14**	**305**	P	**Pn**	**19 15 30.4**	**+0.5**
FITZ	**Fitzroy Crossi**	**21.92**	**123**	LR	LR	19 29 20.5	
	comp=Z,35nm,18.3s,baz=164,slow=40						
PALK	**Pallekele**	**29.14**	**298**	LR	LR	19 30 33.0	
	comp=Z,70nm,21.5s,baz=296,slow=33						
WRA	**Warramunga Arr**	**30.15**	**119**	P	**P**	**19 20 21.4**	**+3.5**
	0.3nm,0.4s,baz=307,slow=8.6,SNR=9.9						
ASAR	**Alice Springs**	**31.35**	**125**	P	**P**	**19 20 32.5**	**+4.1**
	0.7nm,0.4s,baz=296,slow=7.6,SNR=17						
STKA	**Stephens Creek**	**41.28**	**132**	P	P	19 21 57.6	+5.4
	1.6nm,0.4s,baz=313,slow=7.9,SNR=14						
SONM	**Songino Array**	**54.35**	**0**	P	**P**	**19 23 32.4**	**0.0**
	0.2nm,0.5s,baz=188,slow=8.7,SNR=2.1						
MKAR	**Makanchi Array**	**57.44**	**341**	P	**P**	**19 23 53.1**	**-1.1**
	0.3nm,0.4s,baz=166,slow=6.9,SNR=4.6						
BVAR	**Borovoye Array**	**66.89**	**337**	P	**P**	**19 24 56.3**	**-0.5**
	0.5nm,0.5s,baz=141,slow=9.6,SNR=4.5						
BRTR	**Keskin Array B**	**81.19**	**312**	P	**P**	**19 26 22.2**	**+2.1**
	1.0nm,0.6s,baz=137,slow=6.5,SNR=8.0						

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*CSEM **12** 19:15:04.6±0.2,50.°30N×18.°75E,h2km,Error ellipse: s-maj=6.6km s-min=2.7km az=12.0*
PRU 12 19:15:05.9,50.°30N×18.°74E,h0km,Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OJC	**Ojcow**	**0.68**	**96**	*e*Pg	Pg	19 15 18.0	-1.0
OJC				*e*Sg	Sg	19 15 27.2	-0.6
OJC	**Ojcow**	**0.68**	**96**	*e*Pg	Pg	19 15 18.0	-1.0
OJC				*e*Sg	Sg	19 15 27.2	-0.6
MORC	**Moravsky Berou**	**0.93**	**236**	*e*Sg	Sg	19 15 35.9	+0.1
**

4.3nm,0.2s
KHC Kasperske Hory 3.26 255 eSG Sg Sg 19 18 44.7 -1.7
KHC Kasperske Hory 3.26 255 Sg Sg Sg 19 18 44.7 -1.7

IDC 12 19:17:05.3±42.0, 19°38S×167°65E, h0km, mb3.9/4, mb1 4.1/4, mb1mx3.7/28, mbtmp3.9/4, Error ellipse: s-maj=718.9km s-min=107.7km az=78.0, Vanuatu Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	Stephens Creek	26.51	237	P	P	19 22 45.0	+0.3
	2.7nm,0.9s,baz=73,slow=14,SNR=3.4						
WRA	Warramunga Arr	31.35	263	P	P	19 23 27.5	-0.4
	0.3nm,0.5s,baz=93,slow=7.9,SNR=6.2						
ASAR	Alice Springs	31.64	256	P	P	19 23 30.1	-0.4
	1.1nm,0.7s,baz=87,slow=9.1,SNR=16						
FITZ	Fitzroy Crossi	39.74	265	P	P	19 24 40.4	+0.4
	3.5nm,0.9s,baz=104,slow=10,SNR=3.5						

ISCJB 12 19:29:26.3±0.6, 36°17N±0°05×70°07E±0°06, h124km, mb3.6/2, Error ellipse: s-maj=7.0km s-min=5.8km az=136.6
IDC 12 19:29:27.1±5.0, 36°13N×70°01E, h117km±38km, mb3.5/3, mb1 3.5/7, mb1mx3.1/38, mbtmp4.0/7, Error ellipse: s-maj=53.7km s-min=18.0km az=153.0
NNC 12 19:29:33.2±1.3, 36°58N×70°02E, h141km±15km, mb3.5, mpv4.2, Error ellipse: s-maj=14.1km s-min=8.5km az=142.0

ISC 12 19:29:27.0±0.9, 36°15N±0°08×70°07E±0°07, h124km, n19, σ1§42/26, 5C-5D, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	Dzherino	2.83	340	⇓P	Pn	19 30 12.7	+1.5
	26nm,0.4s						
DZET				⇓S	Sn	19 30 44.2	-1.2
	452nm,0.6s						
MNAS	Manas	6.60	16	⇓P	Pn	19 31 02.9	+1.3
	13nm,0.6s						
MNAS				⇑S	Sn	19 32 12.9	-2.7
	18nm,0.5s						
KK31	Karatay Array	6.95	3	P	Pn	19 31 07.2	+1.0
	7.3nm,0.3s,baz=197,slow=13,SNR=370						
KK31				⇑S	Sn	19 32 20.0	-3.8
	12nm,0.5s,baz=190,slow=27,SNR=9.8						
AAK	Ala-Archa	7.32	27	P	Pn	19 31 13.0	+1.6
	5.5nm,0.3s,baz=196,slow=10,SNR=93						
AAK				S	Sn	19 32 33.0	-0.1
	2.1nm,0.3s,baz=12,slow=20,SNR=9.5						
AAK	Ala-Archa	7.32	27	⇓P	Pn	19 31 12.8	+1.5
	15nm,0.5s						
AAK				⇑S	Sn	19 32 31.7	-1.3
	32nm,0.9s						
TKM2	Tokmak 2	8.00	31	⇓P	Pn	19 31 21.4	+1.0
	11nm,0.7s						
TKM2				⇑S	Sn	19 32 48.4	-1.0
	11nm,0.9s						
GEYT	Alibeck	9.72	284	P	Pn	19 31 43.4	-0.2
	2.1nm,0.3s,baz=98,slow=12,SNR=18						
GEYT				S	Sn	19 33 30.1	-0.8
	1.7nm,0.3s,baz=80,slow=20,SNR=5.3						
PYUN	Piuthan	13.57	123	eP	Pn	19 32 34.5	-0.1
	13nm,0.2s						
MKAR	Makanchi Array	14.02	37	P	Pn	19 32 40.1	+0.1
	0.1nm,0.3s,baz=225,slow=16,SNR=9.8						
KOLN	Koldanda	14.19	122	eP	Pn	19 32 42.4	-0.2
	15nm,0.3s						
GKN	Gorkha	14.77	119	eP	Pn	19 32 49.5	-0.4
	27nm,0.3s						
AB31	Akbulak array	15.04	334	P	Pn	19 32 53.5	+0.6
	2.4nm,0.3s,baz=149,slow=12,SNR=178						
KKN	Kakani	15.35	119	eP	P	19 32 57.6	-1.5
	16nm,0.5s						
PKIN	Phulchoki	15.56	119	eP	Pn	19 32 59.8	-0.1
	8.0nm,0.2s						
AKTO	Aktyubinsk	16.72	332	P	P	19 33 14.8	+1.0
	0.7nm,0.3s,baz=157,slow=19,SNR=13						
AKTO				S	Sn	19 36 07.6	-12
	0.1nm,0.3s,baz=156,slow=21,SNR=5.0						
AKTO	Aktyubinsk	16.72	332	⇑P	P	19 33 14.9	+1.0
	4.9nm,0.8s						
ZALV	Zalesovo Beam	20.55	25	P	P	19 33 57.0	+1.6
	3.8nm,0.5s,baz=222,slow=11,SNR=14						
ARU	Arti	21.73	343	P	P	19 34 09.3	+1.3
	3.0nm,0.7s,baz=319,slow=0.8,SNR=6.7						
TORD	Torodi Ar. Bea	64.96	268	P	P	19 39 53.9	+0.2
	0.4nm,0.6s,baz=51,slow=6.6,SNR=5.0						

NIED 12 19:52:00, 35°70N×140°80E, h50km, Mw4.0 Best double couple: M0=1.25000×10^15 NP1:φ=118.00000°, δ=23.00000°, λ=26.00000°. NP2:φ=3.00000°, δ=80.00000°, λ=111.00000°.
ISCJB 12 19:52:17.5±0.6, 35°82N±0°04×140°81E±0°10, h57km±4km, mb3.6/7, MS2.8/2, Error ellipse: s-maj=13.5km s-min=6.2km az=172.7
IDC 12 19:52:18.7±2.7, 35°85N×140°81E, h52km±21km, mb3.4/7, mb1 3.5/11, mb1mx3.4/49, mbtmp3.7/11, ML3.4/4, MS2.8/7, Ms1 2.9/7, ms1mx2.7/28, Error ellipse: s-maj=35.8km s-min=12.1km az=82.0
JMA 12 19:52:18.4±0.1, 35°75N×140°66E, h49km±1km, M3.4
JMA Felt I J1.

ISC 12 19:52:19.0±0.9, 35°80N±0°04×140°73E±0°08, h48km±8km, n29, σ1§30/24, mb3.6/7, 1C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	0.14	132	⇑P	Pn	19 52 26.2	-0.6
CHOJ				S	Sn	19 52 32.7	+0.5
JCN	Nagara	0.57	228	P	Pn	19 52 30.3	-0.7
JYT	Yasato	0.61	315	P	Pn	19 52 31.0	-0.5
JYT				S	Sn	19 52 40.0	-0.4
JHO	Hitachi	0.82	351	P	Pn	19 52 35.1	+0.8
JHO				eS	Sn	19 52 47.7	+2.3
BSO3	Boso 3	1.01	190	P	Pn	19 52 35.7	-0.9
BSO3				eS	Sn	19 52 50.4	+0.8
BSO1	Boso 1	1.16	170	P	Pn	19 52 37.8	-0.6
JOD2	Odawara 2	1.44	249	P	Pn	19 52 41.7	-1.0
MJAR	Matsushiro Arr	2.17	291	P	Pn	19 52 52.9	+0.2
	13nm,0.3s,baz=96,slow=14,SNR=39						
MJAR				LR	LR	19 53 53.8	
	comp=Z,238nm,18.6s,baz=125,slow=44						
JHJ	Hachijo jima 2	2.79	197	P	Pn	19 53 01.2	+0.1
	24nm,0.3s,baz=111,slow=23,SNR=6.7						
JHJ				S	Sn	19 53 35.5	+2.0
	54nm,0.3s,baz=226,slow=20,SNR=4.9						
ASAJ	Asahikawa	8.43	9	P	Pn	19 54 17.0	-1.5
	0.5nm,0.3s,baz=156,slow=20,SNR=5.3						
ASAJ				LR	LR	19 58 24.8	
	comp=Z,25nm,18.9s,baz=184,slow=44						
KSRS	Korea Array	10.42	283	P	Pn	19 54 48.0	+2.2
	0.2nm,0.3s,baz=94,slow=16,SNR=5.0						
KSRS				LR	LR	19 58 53.3	
	comp=Z,61nm,18.2s,baz=88,slow=38						
USRK	Ussuriysk Ar.	10.73	324	LR	LR	19 58 35.2	
	comp=Z,61nm,18.4s,baz=127,slow=35						
KLR	Kul'dur	14.95	337	LR	LR	20 00 56.3	
	comp=Z,49nm,19.3s,baz=104,slow=35						
PETK	Petropavlovsk-	21.03	29	LR	LR	20 05 11.4	
	comp=Z,24nm,20.1s,baz=196,slow=37						
BOLP	Bolinao	26.79	229	eP	P	19 57 56.2	+1.5
H11N2	WAKE ISLAND Hy 28.03	118		T	T	20 27 16.3	
	baz=310,slow=75,SNR=43						
H11N1	WAKE ISLAND Hy 28.04	118		T	T	20 27 16.9	
	baz=310,slow=75,SNR=36						
SONM	Songino Array	28.04	306	P	P	19 58 05.3	-0.9
	0.8nm,0.8s,baz=73,slow=5.1,SNR=4.4						
H11N3	WAKE ISLAND Hy 28.05	118		T	T	20 27 17.6	
	baz=310,slow=75,SNR=44						
H11S3	WAKE ISLAND Hy 28.69	120		T	T	20 28 10.6	
	baz=312,slow=76,SNR=32						
H11S1	WAKE ISLAND Hy 28.69	120		T	T	20 28 00.5	
	baz=312,slow=76,SNR=38						
H11S2	WAKE ISLAND Hy 28.70	120		T	T	20 28 08.3	
	baz=312,slow=76,SNR=28						
CMAR	Chiang Mai Arr	40.66	256	LR	LR	20 18 25.3	
	comp=Z,20nm,19.7s,baz=210,slow=38						
ZALV	Zalesovo Beam	42.35	313	P	P	20 00 07.9	-0.3
	0.4nm,0.3s,baz=93,slow=7.2,SNR=3.5						
MKAR	Makanchi Array	44.31	303	P	P	20 00 22.7	-1.5
	0.7nm,0.4s,baz=81,slow=9.2,SNR=10						
WRA	Warramunga Arr	55.77	187	P	P	20 01 50.0	-1.1
	0.4nm,0.3s,baz=2.4,slow=7.4,SNR=9.0						
ASAR	Alice Springs	59.49	187	P	P	20 02 18.2	+0.9
	0.3nm,0.7s,baz=24,slow=11,SNR=4.2						
FINES	FINESS Array B	69.65	332	P	P	20 03 20.9	-2.2
	0.9nm,0.9s,baz=72,slow=15,SNR=3.4						
NOA	NORSAR Array B	75.11	337	P	P	20 03 56.3	+0.6
	0.4nm,0.6s,baz=39,slow=5.7,SNR=2.8						

MAN 12 19:57:37, 16°30N×120°86E, h52km, mb4.1, ML2.9, MS2.7, 2C, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BCPH	Baguio City Da	0.28	287	⇑iP	Pn	19 57 47.7	+1.3
BCPH				eS	Sn	19 57 53.1	0.0
PCPH	Palayan	0.76	163	⇑eP	Pn	19 57 53.5	+1.9
PCPH				eS	Sn	19 58 06.5	+4.2
BALP	Baler	0.88	129	eP	Pn	19 57 53.9	+0.7
BALP				eS	Sn	19 58 06.6	+1.5
CAUP	Cauayan	1.12	55	eP	Pn	19 57 57.2	+0.8
CAUP				eS	Sn	19 58 13.5	+2.6
ABRA	Dolores	1.35	354	eP	Pn	19 58 00.6	+1.0
ABRA				eS	Sn	19 58 18.5	+2.0
APYP	Conner	1.60	13	eP	Pn	19 58 04.5	+1.6
APYP				eS	Sn	19 58 26.3	+3.8

NIED 12 20:03:00, 38°80N×142°10E, h50km, Mw3.9 Best double couple: M0=7.71000×10^14 NP1:φ=173.00000°, δ=25.00000°, λ=65.00000°. NP2:φ=21.00000°, δ=68.00000°, λ=101.00000°.
ISCJB 12 20:03:02.9±0.6, 38°83N±0°05×142°12E±0°07, h51km, mb3.8/15, MS2.8/2, Error ellipse: s-maj=7.9km s-min=5.8km az=34.5
JMA 12 20:03:03.8±0.1, 38°84N×142°10E, h44km±1km, M3.8
JMA Felt I J1.
IDC 12 20:03:05.7±2.2, 38°82N×142°07E, h60km±19km, mb3.5/15, mb1 3.7/20, mb1mx3.6/38, mbtmp3.8/20, MS2.7/7, Ms1 2.7/7, ms1mx2.5/43, Error ellipse: s-maj=20.7km s-min=13.1km az=109.0

ISC 12 20:03:04.7±0.7, 38°81N±0°05×142°03E±0°08, h51km, n37, σ0§99/33, mb3.8/15, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.39	314	P	Pn	20 03 13.7	-1.1
OFUJ				S	Sn	20 03 20.5	-1.5
JIO	Ouri	0.64	237	P	Pn	20 03 17.2	-0.5
JIO				S	Sn	20 03 26.2	-0.8
JMK	Ichinoseki	0.65	283	P	Pn	20 03 17.3	-0.5
JMK				S	Sn	20 03 26.7	-0.5
JOM	Ohasama	0.88	320	P	Pn	20 03 20.1	-0.7
JOM				S	Sn	20 03 31.7	-0.9
JOU	Okura	1.16	248	P	Pn	20 03 24.6	+0.1
JRG	Rokugo	1.23	299	P	Pn	20 03 25.4	-0.2
JYK	Kaneyama	1.31	275	P	Pn	20 03 26.6	0.0
MJAR	Matsushiro Arr	3.78	234	P	Pn	20 04 02.5	+2.0
	3.1nm,0.3s,baz=37,slow=12,SNR=30						
MJAR				LR	LR	20 05 51.6	
	comp=Z,76nm,19.4s,baz=70,slow=44						
MAT	Matsushiro	3.78	234	P	Pn	20 04 02.8	+2.3
MAT				eS	Sn	20 04 51.5	+7.8
ASAJ	Asahikawa	5.32	4	P	Pn	20 04 20.5	-1.0
	2.0nm,0.3s,baz=218,slow=10,SNR=13						
ASAJ				S	Sn	20 05 23.8	+2.3
	1.5nm,0.3s,baz=102,slow=20,SNR=2.6						
ASAJ				LR	LR	20 06 49.6	
	comp=Z,55nm,21.2s,baz=102,slow=42						
JHJ	Hachijo jima 2	5.96	198	S	Sn	20 05 35.3	-2.0
	10nm,0.3s,baz=126,slow=18,SNR=2.4						
USRK	Ussuriysk Ar.	9.26	309	P	Pn	20 05 16.8	+1.4
	0.4nm,0.3s,baz=120,slow=14,SNR=10						
JNU	Nakatsue	10.66	241	LR	LR	20 09 37.0	
	comp=Z,38nm,19.1s,baz=104,slow=37						
KSRS	Korea Array	11.19	267	P	Pn	20 05 45.0	+3.1
	0.3nm,0.3s,baz=78,slow=13,SNR=4.2						
KSRS				LR	LR	20 09 29.6	
	comp=Z,35nm,21.7s,baz=114,slow=34						
KLR	Kul'dur	12.76	328	P	Pn	20 06 02.5	-0.8
	0.1nm,0.3s,baz=143,slow=16,SNR=3.5						
KLR				LR	LR	20 10 46.2	
	comp=Z,38nm,21.6s,baz=114,slow=36						
SEY	Seymchan	24.96	11	P	P	20 08 23.4	+0.4
	3.3nm,0.9s,baz=150,slow=9.5,SNR=4.1						
SONM	Songino Array	27.24	301	P	P	20 08 43.9	0.0
	0.2nm,0.4s,baz=96,slow=8.4,SNR=5.4						
SONM				LR	LR	20 19 38.4	
	comp=Z,35nm,19.9s,baz=128,slow=36						
H11N2	WAKE ISLAND Hy 28.69	124		T	T	20 39 22.1	
	baz=317,slow=75,SNR=1767						
H11N1	WAKE ISLAND Hy 28.70	124		T	T	20 39 22.8	
	baz=317,slow=75,SNR=1048						
H11N3	WAKE ISLAND Hy 28.71	124		T	T	20 39 23.4	
	baz=317,slow=75,SNR=812						
H11S1	WAKE ISLAND Hy 29.47	126		T	T	20 40 20.2	
	baz=319,slow=76,SNR=116						
H11S3	WAKE ISLAND Hy 29.47	126		T	T	20 40 20.3	
	baz=319,slow=76,SNR=137						
H11S2	WAKE ISLAND Hy 29.48	126		T	T	20 40 21.4	
	baz=319,slow=76,SNR=98						
TLY	Talaya	29.57	308	LR	LR	20 20 44.7	
	comp=Z,19nm,18.5s,baz=84,slow=36						
ZALV	Zalesovo Beam	41.10	311	P	P	20 10 43.1	-0.1
	1.8nm,0.5s,baz=83,slow=7.8,SNR=10						
MKAR	Makanchi Array	43.61	301	P	P	20 11 04.0	+0.2
	1.6nm,0.4s,baz=87,slow=10.0,SNR=23						
ILAR	Eielson Array	47.74	33	P	P	20 11 35.7	-0.5
	0.6nm,0.7s,baz=264,slow=6.6,SNR=6.9						
INK	Inuvik	52.59	28	P	P	20 12 12.6	-0.1
	1.1nm,1.0s,baz=243,slow=2.3,SNR=3.2						
WRA	Warramunga Arr	58.88	188	P	P	20 12 58.0	-0.3
	0.8nm,0.5s,baz=6.4,slow=7.1,SNR=20						
YKA	Yellowknife Ar	62.03	31	P	P	20 13 19.7	+0.3
	0.2nm,0.6s,baz=292,slow=6.6,SNR=3.5						
ASAR	Alice Springs	62.61	188	P	P	20 13 23.7	0.0
	0.4nm,0.7s,baz=0.9,slow=4.3,SNR=5.4						
GEYT	Alibeck	63.41	298	P	P	20 13 29.2	+0.2
	0.5nm,0.3s,baz=23,slow=4.8,SNR=3.1						
FINES	FINESS Array B	67.47	332	P	P	20 13 54.3	-0.4
	1.4nm,0.7s,baz=72,slow=6.2,SNR=6.4						
KBZ	Khabaz	70.12	310	P	P	20 14 11.7	+0.1
	0.6nm,0.5s,baz=169,slow=5.2,SNR=4.0						
AKASG	Malin Array Be	73.19	322	P	P	20 14 29.8	0.0
	0.4nm,0.4s,baz=47,slow=5.0,SNR=3.0						
BRTR	Keskin Array B	78.04	312	P	P	20 14 58.2	+0.2
	0.4nm,0.5s,baz=100,slow=4.0,SNR=4.5						
GERES	GERESS Array B	81.46	328	P	P	20 15 16.6	+0.3
	0.4nm,0.7s,baz=81,slow=6.1,SNR=2.6						

MAN 12 20:08:44, 9°08N×122°81E, h27km, mb4.1, ML2.9, MS2.7, 1C, Negros

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SNPH	Sibulan	0.50	58	⇑iP	Pn	20 08 56.7	+1.3
SNPH				iS	Sn	20 09 04.8	+1.7
DCPH	Dipolog City	0.73	133	eP	Pn	20 08 58.5	0.0
DCPH				eS	Sb	20 09 08.1	+0.4
IPIL	Ipil	1.30	190	eP	Pb	20 09 07.5	-0.4
IPIL				eS	Sn	20 09 23.6	+0.6
PAGZ	Pagadian	1.35	155	eP	Pb	20 09 09.0	+0.4
PAGZ				eS	Sb	20 09 26.2	+0.7
CUYO	Cuyo Island	2.49	315	eP	Pn	20 09 24.5	+1.7

IDC 12 20:11:16.0±2.0, 46°67N×27°93W, h0km, mb3.4/2, mb1 3.7/3, mb1mx3.2/46, mbtmp3.5/3, ML4.7/1, MS3.0/1, Ms1 3.0/1, ms1mx2.4/30, Error ellipse: s-maj=111.0km s-min=29.6km az=40.0, Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ESDC	Sonseca Array	18.78	103	P	P	20 15 36.8	+0.1
	0.5nm,0.3s,baz=295,slow=13,SNR=9.8						
GERES	GERESS Array B	27.82	70	LR	LR	20 28 23.4	
	comp=Z,25nm,18.5s,baz=219,slow=37						
TORD	Torodi Ar. Bea	41.66	134	P	P	20 19 06.1	-0.1
	1.0nm,0.8s,baz=334,slow=8.5,SNR=6.2						
YKA	Yellowknife Ar	48.65	322	P	P	20 20 01.0	-0.2
	0.1nm,0.3s,baz=62,slow=6.5,SNR=3.7						
H10N2	ASCENSION HYDR	55.56	164	T	T	21 20 51.3	
	baz=350,slow=75,SNR=5.4						
H10N3	ASCENSION HYDR	55.57	164	T	T	21 20 53.3	
	baz=350,slow=75,SNR=5.2						
H10N1	ASCENSION HYDR	55.58	164	T	T	21 20 52.9	
	baz=350,slow=75,SNR=4.1						
H10S1	ASCENSION HYDR	56.61	164	T	T	21 22 12.9	
	baz=350,slow=75,SNR=6.9						
H10S3	ASCENSION HYDR	56.62	164	T	T	21 22 14.5	
	baz=350,slow=75,SNR=9.4						
H10S2	ASCENSION HYDR	56.63	164	T	T	21 22 13.9	
	baz=350,slow=75,SNR=8.4						

IDC 12 20:14:45.6±2.1, 34°87N×142°93E, h0km, mb3.5/2, mb1 3.7/5, mb1mx3.4/46, mbtmp3.6/5, ML3.4/3, Error ellipse: s-maj=46.6km s-min=29.7km az=80.0
ISCJB 12 20:14:47.8±1.0, 34°92N±0°06×142°91E±0°07, h33km, mb3.6/2, Error ellipse: s-maj=8.7km s-min=8.3km az=145.6
JMA 12 20:14:48.2±0.5, 34°88N×142°90E, h50km, M3.3

ISC 12 20:14:49.9±1.6, 34°90N±0°07×142°9E±0°1, h35km, n14, σ1§09/21, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	Boso 1	1.57	262	P	Pn	20 15 14.3	-0.5
BSO1				S	Sn	20 15 34.9	+1.2
CHOJ	Chosi	1.83	297	P	Pn	20 15 18.8	0.0
CHOJ				eS	Sn	20 15 41.1	+0.4
BSO3	Boso 3	1.94	268	P	Pn	20 15 20.3	+0.2
BSO3				eS	Sn	20 15 43.6	+0.5
BSO4	Boso 4	2.08	273	P	Pn	20 15 22.8	+0.6
JHJ	Hachijo jima 2	3.12	236	Pn	Pn	20 15 35.2	-1.3
	29nm,0.3s,baz=75,slow=22,SNR=5.2						
JHJ				Sn	Sn	20 16 10.5	-2.0
	17nm,0.3s,baz=253,slow=19,SNR=2.3						
JOD2	Odawara 2	3.12	278	P	Pn	20 15 35.7	-0.9
JOD2				eS	Sn	20 16 10.4	-2.2
JAG	Ashikaga	3.17	300	P	Pn	20 15 37.2	0.0
JFT	Otama	3.32	323	P	Pn	20 15 39.2	-0.1
JFT				S	Sn	20 16 15.3	-2.2
JRY	Ryogami san	3.42	290	P	Pn	20 15 41.3	+0.5
JRY				eS	Sn	20 16 20.5	+0.4
JYN	Shimob	3.59	281	P	Pn	20 15 43.4	+0.3
MJAR	Matsushiro Arr	4.13	295	Pn	Pn	20 15 51.0	+0.5
	1.2nm,0.3s,baz=105,slow=9.3,SNR=8.4						
ASAJ	Asahikawa	9.21	359	Pn	Pn	20 16 59.7	-0.4
	0.4nm,0.3s,baz=237,slow=8.0,SNR=3.9						
WRA	Warramunga Arr	55.14	190	P	P	20 24 19.8	+0.9
	0.6nm,0.8s,baz=12,slow=7.6,SNR=4.9						
ASAR	Alice Springs	58.86	190	P	P	20 24 45.9	+0.7
	0.4nm,0.8s,baz=14,slow=12,SNR=2.8						

NIED 12 20:24:00, 38°60N×141°90E, h47km, Mw3.6 Best double couple: M0=3.30000×10^14 NP1:φ=171.00000°, δ=22.00000°, λ=57.00000°. NP2:φ=26.00000°, δ=72.00000°, λ=102.00000°.
IDC 12 20:24:23.8±4.7, 38°53N×143°12E, h0km, mb3.8/5, mb1 3.7/8, mb1mx3.5/43, mbtmp3.7/8, ML3.0/3, MS2.5/3, Ms1 2.5/3, ms1mx2.2/47, Error ellipse: s-maj=84.5km s-min=37.7km az=126.0
ISCJB 12 20:24:36.0±1.4, 38°65N±0°06×141°9E±0°1, h54km±6km, mb3.6/5, Error ellipse: s-maj=19.7km s-min=7.7km az=16.5
JMA 12 20:24:36.6±0.1, 38°64N×141°91E, h48km±1km, M3.8
JMA Felt I J1.

ISC 12 20:24:34.9±2.1, 38°60N±0°06×142°1E±0°1, h45km±15km, n18, σ1§32/22, mb3.5/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.58	327	P	Pn	20 24 47.5	+0.7
OFUJ				S	Sn	20 24 55.1	-0.2
JIO	Ouri	0.58	256	P	Pn	20 24 47.4	+0.5
JIO				S	Sn	20 24 54.7	-0.8
JMK	Ichinoseki	0.76	298	P	Pn	20 24 49.4	+0.3
JMK				S	Sn	20 24 58.4	-1.1
JOM	Ohasama	1.06	325	P	Pn	20 24 54.0	+0.6
JOM				S	Sn	20 25 05.3	-1.7
JOU	Okura	1.13	259	P	Pn	20 24 54.5	+0.3
JOU				S	Sn	20 25 07.6	-1.0
JMM	Marumori	1.24	234	P	Pn	20 24 56.1	+0.3
JMM				S	Sn	20 25 10.6	-0.8
JRG	Rokugo	1.38	306	P	Pn	20 24 57.7	+0.1
JYK	Kaneyama	1.38	284	P	Pn	20 24 57.7	+0.1
MJAR	Matsushiro Arr	3.69	237	Pn	Pn	20 25 31.6	+2.2
	1.9nm,0.3s,baz=40,slow=12,SNR=22						
MJAR				LR	LR	20 27 17.3	
	comp=Z,43nm,18.6s,baz=125,slow=40						
ASAJ	Asahikawa	5.53	4	Pn	Pn	20 25 49.2	-5.4
	0.6nm,0.3s,baz=30,slow=20,SNR=3.6						
ASAJ				LR	LR	20 28 04.1	
	comp=Z,23nm,20.6s,baz=149,slow=39						
JHJ	Hachijo jima 2	5.77	199	Sn	Sn	20 27 01.7	-1.2
	5.8nm,0.3s,baz=232,slow=19,SNR=2.9						
USRK	Ussuriysk Ar.	9.42	310	Pn	Pn	20 26 48.8	+0.9
	0.2nm,0.3s,baz=114,slow=14,SNR=3.0						
JNU	Nakatsue	10.60	242	LR	LR	20 31 15.6	
	comp=Z,46nm,18.8s,baz=288,slow=36						
SONM	Songino Array	27.38	301	P	P	20 30 19.1	+3.1
	0.3nm,0.5s,baz=107,slow=7.0,SNR=2.3						
ZALV	Zalesovo Beam	41.27	311	P	P	20 32 15.7	+0.3
	0.9nm,0.4s,baz=79,slow=7.7,SNR=5.0						
MKAR	Makanchi Array	43.75	301	P	P	20 32 36.2	+0.5
	0.3nm,0.4s,baz=89,slow=11,SNR=6.5						
KURBB	Kurchatov Arra	45.47	307	P	P	20 32 49.4	0.0
	3.8nm,0.5s,baz=80,slow=8.0,SNR=54						
NOA	NORSAR Array B	72.95	337	P	P	20 35 56.7	-2.5
	0.5nm,0.8s,baz=37,slow=6.2,SNR=2.5						

IDC 12 20:46:55.9±8.2, 34°60N×142°63E, h0km, mb3.5/3, mb1 3.4/4, mb1mx3.2/56, mbtmp3.4/4, ML3.3/1, Error ellipse: s-maj=274.7km s-min=110.3km az=18.0
JMA 12 20:47:10.1±0.3, 36°25N×142°11E, h62km, M3.1

ISC 12 20:47:07.6±2.0, 36°20N±0°07×142°3E±0°2, h10km, n19, σ0§60/12, mb3.6/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	1.26	247	P	Pn	20 47 30.5	-0.7
JHO	Hitachi	1.44	287	P	Pn	20 47 32.3	-1.5
ONAJ	Iwakimizuishiy	1.50	307	P	Pn	20 47 33.0	-1.5
BSO1	Boso 1	1.88	215	P	Pn	20 47 39.2	0.0
BSO1				eS	Sn	20 48 03.6	+1.0
BSO3	Boso 3	2.01	227

NEIC Recorded [2 JMA] in Chiba, Ibaraki, Kanagawa, Saitama and Tokyo.
JMA ***12*** *20:52:09.7±0.3, 35°.66N×140°.06E, h70km±3km, M4.1 Broadband fault plane solution: P waves. NP1: φ±359.00000°, δ76.00000°, λ106.00000°. NP2: φ±129.00000°, δ21.00000°, λ42.00000°. Principal axes: T Plg56.0000°, Azm290.0000°; N Plg16.0000°, Azm175.0000°; P Plg29.0000°, Azm76.0000°;*
JMA Felt II J1.
IDC ***12*** *20:52:10.7±1.4, 35°.50N×139°.95E, h72km±14km, mb3.8/25, mb1 3.9/26, mb1mx3.8/61, mbtmp4.2/26, MS3.3/7, Ms1 3.3/7, ms1mx2.9/48 Error ellipse: s-maj=17.3km s-min=9.6km az=75.0*

ISC 12 20:52:10.4±0.7, 35°.55N±0°.05×140°.07E±0°.06, h72km±6km, n72, σ1§25/69, mb4.3/34, 1C-4D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCN	**Nagara**	**0.17**	**139**	⇑P	**Pn**	**20 52 21.3**	**+0.3**
JCN				S	**Sn**	**20 52 30.1**	**+1.3**
TOK	**Tokyo**	**0.29**	**299**	⇓P	**Pn**	**20 52 21.8**	**+0.2**
TOK				S	**Sn**	**20 52 30.7**	**+0.9**
JOD2	**Odawara 2**	**0.85**	**251**	⇓P	**Pn**	**20 52 26.5**	**-0.6**
JOD2				S	**Sn**	**20 52 38.7**	**-0.9**
JAG	**Ashikaga**	**1.01**	**331**	⇓P	**Pn**	**20 52 27.6**	**-1.4**
JAG				S	**Sn**	**20 52 40.9**	**-2.0**
JRY	**Ryogami san**	**1.06**	**297**	⇓P	**Pn**	**20 52 29.2**	**-0.5**
JRY				S	**Sn**	**20 52 45.7**	**+1.6**
MJAR	**Matsushiro Arr**	**1.80**	**304**	P	**Pn**	**20 52 38.8**	**-0.6**
	72nm,0.3s,baz=138,slow=15,SNR=248						
MJAR				LR	LR	20 53 18.9	
	comp=Z,551nm,18.7s,baz=125,slow=40						
MAJO	**Matsushiro**	**1.81**	**304**	*e*Pn	**Pn**	**20 52 38.9**	**-0.6**
MAT	**Matsushiro**	**1.81**	**304**	P	**Pn**	**20 52 38.9**	**-0.5**
MAT				*e*S	**Sn**	**20 53 01.1**	**-0.4**
JHJ	**Hachijo jima 2**	**2.43**	**186**	P	**Pn**	**20 52 48.8**	**+0.9**
	133nm,0.3s,baz=332,slow=22,SNR=20						
JHJ				S	**Sn**	**20 53 16.1**	**-0.5**
	196nm,0.3s,baz=65,slow=23,SNR=8.9						
JHJ2	**Mitsune**	**2.44**	**185**	*e*Pn	**Pn**	**20 52 48.3**	**+0.4**
JNU	**Nakatsue**	**7.98**	**255**	P	**Pn**	**20 54 05.1**	**+1.5**
	0.7nm,0.3s,baz=288,slow=1.5,SNR=4.1						
JNU				LR	LR	20 57 32.9	
	comp=Z,164nm,19.8s,baz=120,slow=41						
CBIJ	**Chichi jima**	**8.62**	**167**	P	**Pn**	**20 54 09.4**	**-2.9**
JCJ	**Chichijima**	**8.62**	**167**	P	**Pn**	**20 54 09.4**	**-2.9**
	baz=357,slow=18						
ASAJ	**Asahikawa**	**8.78**	**12**	P	**Pn**	**20 54 11.7**	**-2.7**
	3.5nm,0.3s,baz=213,slow=12,SNR=23						
KSRS	**Korea Array**	**9.96**	**285**	P	Pn	20 54 33.7	+3.1
	0.4nm,0.3s,baz=101,slow=14,SNR=9.6						
KSAR	**Wonju Array Be**	**9.99**	**284**	P	**Pn**	**20 54 33.7**	**+2.7**
USRK	**Ussuriysk Ar.**	**10.63**	**327**	P	**Pn**	**20 54 42.2**	**+2.4**
	0.2nm,0.3s,baz=138,slow=13,SNR=5.2						
KLR	**Kul'dur**	**14.97**	**338**	P	Pn	20 55 34.4	-3.5
	0.2nm,0.3s,baz=156,slow=12,SNR=4.2						
KLR				LR	LR	21 00 43.2	
	comp=Z,64nm,21.8s,baz=113,slow=34						
NACB	**Ninganchiao**	**19.59**	**240**	*e*P	**P**	**20 56 32.5**	**-0.2**
PETK	**Petropavlovsk-**	**21.52**	**30**	P	**P**	**20 56 53.5**	**+0.3**
	2.1nm,0.7s,baz=226,slow=5.8,SNR=2.6						
PETK				LR	LR	21 05 45.3	
	comp=Z,17nm,20.1s,baz=218,slow=38						
ENH	**Enshi**	**26.15**	**267**	*e*P	**P**	**20 57 33.5**	**-4.4**
	3.0nm,0.5s						
SONM	**Songino Array**	**27.75**	**307**	P	**P**	**20 57 50.9**	**-1.4**
	0.7nm,0.4s,baz=111,slow=9.4,SNR=7.1						
SONM				LR	LR	21 09 08.4	
	comp=Z,75nm,19.9s,baz=138,slow=37						
H11N2	**WAKE ISLAND Hy**	**28.39**	**117**	T	T	21 27 53.2	
	baz=309,slow=75,SNR=41						
H11N1	**WAKE ISLAND Hy**	**28.40**	**117**	T	T	21 27 38.5	
	baz=309,slow=75,SNR=62						
H11N3	**WAKE ISLAND Hy**	**28.41**	**117**	T	T	21 27 49.5	
	baz=309,slow=75,SNR=51						
H11S3	**WAKE ISLAND Hy**	**29.03**	**119**	T	T	21 28 03.3	
	baz=311,slow=76,SNR=14						
H11S1	**WAKE ISLAND Hy**	**29.03**	**119**	T	T	21 28 05.2	
	baz=311,slow=76,SNR=23						
H11S2	**WAKE ISLAND Hy**	**29.05**	**119**	T	T	21 28 32.0	
	baz=311,slow=76,SNR=21						
TIXI	**Tiksi**	**36.64**	**354**	P	**P**	**20 59 08.8**	**-0.7**
	2.4nm,0.4s,baz=144,slow=6.7,SNR=16						
ZALV	**Zalesovo Beam**	**42.13**	**314**	P	**P**	**20 59 55.5**	**+0.2**
	2.6nm,0.4s,baz=105,slow=8.2,SNR=16						
ZALV				PcP	**PcP**	**21 01 48.8**	**+0.2**
	1.4nm,0.6s,baz=106,slow=3.2,SNR=3.9						
MKAR	**Makanchi Array**	**44.00**	**303**	P	**P**	**21 00 10.9**	**+0.4**
	3.4nm,0.6s,baz=85,slow=9.6,SNR=45						
MKAR				LR	LR	21 17 43.3	
	comp=Z,38nm,21.8s,baz=96,slow=35						
NRIK	**Noril'sk**	**44.17**	**336**	P	**P**	**21 00 11.6**	**0.0**
	2.0nm,0.3s,baz=117,slow=9.3,SNR=4.1						
KURK	**Kurchatov**	**46.01**	**309**	*e*P	**P**	**21 00 26.0**	**-0.3**
	16nm,0.6s						
KURBB	**Kurchatov Arra**	**46.07**	**309**	P	**P**	**21 00 26.6**	**-0.3**
	3.6nm,0.4s,baz=83,slow=7.6,SNR=50						
PKIN	**Phulchoki**	**46.75**	**276**	*e*P	**P**	**21 00 31.7**	**-1.2**
	5.1nm,0.6s						
KKN	**Kakani**	**46.76**	**277**	*e*P	**P**	**21 00 33.0**	**+0.1**
GKN	**Gorkha**	**47.20**	**277**	*e*P	**P**	**21 00 36.3**	**+0.1**
	12nm,0.7s						
KOLN	**Koldanda**	**48.13**	**277**	*e*P	**P**	**21 00 43.5**	**0.0**
	3.5nm,0.4s						
PYUN	**Piuthan**	**48.49**	**278**	*e*P	**P**	**21 00 46.6**	**+0.3**
	19nm,0.5s						
KDAK	**Kodiak Island**	**48.93**	**41**	P	P	21 01 03.9	+15
	4.3nm,0.7s,baz=284,slow=8.3,SNR=3.2						
TKM2	**Tokmak 2**	**49.39**	**299**	*e*P	**P**	**21 00 54.4**	**+1.4**
	4.0nm,0.6s						
AAK	**Ala-Archa**	**50.25**	**299**	P	**P**	**21 00 59.9**	**+0.4**
	1.0nm,0.4s,baz=85,slow=8.8,SNR=5.4						
AAK	**Ala-Archa**	**50.25**	**299**	*e*P	**P**	**21 00 59.5**	**+0.1**
	1.2nm,0.6s						
BVAR	**Borovoye Array**	**50.78**	**313**	P	**P**	**21 01 02.8**	**-0.2**
	0.7nm,0.3s,baz=100,slow=7.9,SNR=10						
BVAR				PcP	**PcP**	**21 02 19.0**	**0.0**
	0.5nm,0.5s,baz=90,slow=2.9,SNR=2.0						
ILAR	**Eielson Array**	**51.33**	**32**	P	**P**	**21 01 08.4**	**+1.4**
	0.3nm,0.5s,baz=270,slow=5.3,SNR=5.1						
KKAR	**Karatay Array**	**52.94**	**301**	*e*P	**P**	**21 01 20.2**	**+1.0**
	0.9nm,0.4s						
WRA	**Warramunga Arr**	**55.45**	**187**	P	**P**	**21 01 37.4**	**-0.3**
	1.9nm,0.6s,baz=2.7,slow=7.6,SNR=26						
INK	**Inuvik**	**56.20**	**27**	P	**P**	**21 01 42.5**	**+0.1**
	0.4nm,0.5s,baz=316,slow=7.1,SNR=4.6						
ARU	**Arti**	**56.76**	**319**	P	**P**	**21 01 46.6**	**0.0**
	5.4nm,0.5s,baz=82,slow=3.9,SNR=14						
ARU	**Arti**	**56.76**	**319**	*e*P	**P**	**21 01 46.5**	**0.0**
	5.5nm,0.5s						
ABKAR	**Akbulak array**	**58.07**	**310**	*e*P	**P**	**21 01 55.7**	**-0.2**
	1.7nm,0.5s						
AKTO	**Aktyubinsk**	**58.86**	**312**	P	**P**	**21 02 01.3**	**-0.2**
	1.0nm,0.5s,baz=72,slow=10,SNR=4.0						
ASAR	**Alice Springs**	**59.18**	**187**	P	**P**	**21 02 03.2**	**-0.6**
	0.5nm,0.5s,baz=21,slow=11,SNR=10						
DLBC	**Dease Lake**	**60.46**	**37**	P	**P**	**21 02 13.1**	**+0.7**
	2.8nm,0.4s,baz=0.0,slow=8.1,SNR=2.8						
SPITS	**Spitsbergen Ar**	**61.77**	**349**	P	**P**	**21 02 21.8**	**+1.0**
	0.8nm,0.4s,baz=88,slow=6.8,SNR=7.3						
BBB	**Bella Bella**	**63.89**	**43**	LR	LR	21 26 42.5	
	comp=Z,16nm,19.7s,baz=112,slow=32						
ARCES	**ARCESS Array B**	**65.00**	**339**	P	**P**	**21 02 42.7**	**+0.4**
	1.9nm,0.7s,baz=46,slow=8.6,SNR=11						
FINES	**FINESS Array B**	**69.62**	**332**	P	**P**	**21 03 11.7**	**+0.1**
	3.1nm,0.4s,baz=76,slow=5.5,SNR=45						
KBZ	**Khabaz**	**71.04**	**310**	P	**P**	**21 03 20.8**	**+0.3**
	1.9nm,0.8s,baz=11,slow=5.0,SNR=5.7						
AKASG	**Malin Array Be**	**74.80**	**322**	P	**P**	**21 03 42.6**	**0.0**
	1.3nm,0.3s,baz=49,slow=6.2,SNR=9.1						
NB2	**NORSAR Subarra**	**75.13**	**337**	P	**P**	**21 03 44.4**	**0.0**
	comp=Z,1.7nm,0.5s,baz=42,slow=5.9						
NOA	**NORSAR Array B**	**75.13**	**337**	P	**P**	**21 03 44.7**	**+0.3**
	comp=Z,1.8nm,0.6s,baz=39,slow=13,SNR=8.8						
RAO	**Raoul Island**	**75.64**	**143**	LR	LR	21 33 50.1	
	comp=Z,159nm,19.2s,baz=330,slow=33						
BOZ	**Bozeman (W)**	**76.53**	**43**	*e*P	**P**	**21 03 52.4**	**-0.5**
	comp=Z,15nm,1.0s						
NVAR	**Mina Array Bea**	**76.75**	**52**	P	**P**	**21 03 56.9**	**+2.6**
	comp=Z,0.5nm,0.6s,baz=300,slow=6.1,SNR=2.7						
BRTR	**Keskin Array B**	**79.01**	**311**	P	**P**	**21 04 07.4**	**+0.6**
	comp=Z,1.1nm,0.9s,baz=84,slow=3.8,SNR=5.4						
HWUT	**Hardware Ranch**	**79.04**	**46**	*e*P	P	21 04 02.5	-4.4
	comp=Z,7.8nm,0.9s						
GERES	**GERESS Array B**	**83.39**	**328**	P	**P**	**21 04 30.2**	**+0.5**
	comp=Z,0.2nm,0.4s,baz=33,slow=5.1,SNR=3.6						
ECSD	**EROS Data Cent**	**85.75**	**37**	*e*P	**P**	**21 04 39.3**	**-2.3**
	comp=Z,8.0nm,1.0s						
KMSC	**Kings Mountain**	**99.77**	**33**	*e*P	**Pdif**	**21 05 45.1**	**-1.5**
	comp=Z,16nm,0.7s						
TORD	**Torodi Ar. Bea**	**117.58**	**313**	PKP	**PKPdf**	**21 10 48.2**	**-0.4**
	comp=Z,0.3nm,0.4s,baz=84,slow=1.4,SNR=7.1						
LPAZ	**La Paz**	**148.38**	**60**	PKPbc	**PKPbc**	**21 11 50.6**	**+0.8**
	comp=Z,0.5nm,0.5s,baz=18,slow=6.4,SNR=2.9						

NIED ***12*** *20:55:00, 29°.50N×141°.20E, h71km, Mw4.2 Best double couple: M0=2.23000×10^15 NP1:φ=190.00000°, δ56.00000°, λ37.00000°. NP2:φ=77.00000°, δ60.00000°, λ140.00000°.*
ISCJB ***12*** *20:55:08.1±0.3, 29°.58N±0°.03×141°.08E±0°.08, h67km, mb4.1/30, Error ellipse: s-maj=10.3km s-min=3.1km az=165.8*
IDC ***12*** *20:55:08.4±1.1, 29°.53N×140°.91E, h49km±11km, mb3.9/28, mb1 4.1/31, mb1mx3.9/60, mbtmp4.2/31, ML4.0/2, MS3.2/4, Ms1 3.3/4, ms1mx2.7/48, Error ellipse: s-maj=17.4km s-min=7.4km az=70.0*
NEIC ***12*** *20:55:09.8±0.9, 29°.49N×140°.91E, h64km±8km, mb4.5/4, Error ellipse: s-maj=10.7km s-min=6.8km az=70.0*
JMA ***12*** *20:55:09.5±0.1, 29°.55N×141°.16E, h52km, M4.5*

ISC 12 20:55:10.1±0.5, 29°.57N±0°.05×141°.06E±0°.10, h67km, n58, σ1§27/68, mb4.2/30, Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**2.66**	**158**	P	**Pn**	**20 55 50.5**	**-0.1**
CBIJ				*e*S	**Sn**	**20 56 19.3**	**-2.4**
CBIJ	**Chichi jima**	**2.66**	**158**	*e*P	**Pn**	**20 55 49.3**	**-1.3**
CBIJ				S	**Sn**	**20 56 20.3**	**-1.3**
JCJ	**Chichijima**	**2.66**	**158**	P	**Pn**	**20 55 50.4**	**-0.2**
	43nm,0.3s,baz=70,slow=19,SNR=11						
JCJ				S	**Sn**	**20 56 20.3**	**-1.4**
	117nm,0.3s,baz=294,slow=23,SNR=9.9						
JHHJ	**Haha-jima-NKT**	**3.09**	**161**	P	**Pn**	**20 55 56.7**	**+0.2**
JHHJ				*e*S	**Sn**	**20 56 30.3**	**-2.0**
JHJ	**Hachijo jima 2**	**3.70**	**343**	P	**Pn**	**20 56 04.8**	**0.0**
	17nm,0.3s,baz=66,slow=19,SNR=3.8						
JHJ				S	**Sn**	**20 56 45.5**	**-1.6**
	37nm,0.3s,baz=78,slow=20,SNR=4.3						
BSO1	**Boso 1**	**5.07**	**359**	P	**Pn**	**20 56 23.7**	**+0.7**
BSO1				*e*S	**Sn**	**20 57 20.1**	**+0.2**
BSO3	**Boso 3**	**5.24**	**355**	*e*S	**Sn**	**20 57 26.5**	**+2.1**
BSO4	**Boso 4**	**5.44**	**354**	P	**Pn**	**20 56 28.7**	**+0.3**
BSO4				*e*S	**Sn**	**20 57 27.3**	**-2.3**
JOD2	**Odawara 2**	**5.92**	**344**	P	**Pn**	**20 56 38.0**	**+2.9**
JNY	**Yasuok**	**6.37**	**336**	P	Pn	20 56 46.2	+4.8
JHU	**Hanno**	**6.44**	**347**	P	**Pn**	**20 56 43.2**	**+1.0**
JHU				*e*S	**Sn**	**20 57 52.6**	**-1.7**
JRY	**Ryogami san**	**6.68**	**345**	P	**Pn**	**20 56 46.2**	**+0.7**
JRY				*e*S	**Sn**	**20 58 02.4**	**+2.2**
JAG	**Ashikaga**	**6.97**	**349**	P	**Pn**	**20 56 48.9**	**-0.6**
JAG				*e*S	**Sn**	**20 58 03.9**	**-3.3**
JHO	**Hitachi**	**7.03**	**357**	P	**Pn**	**20 56 48.9**	**-1.5**
JHO				*e*S	Sn	20 58 00.8	-8.0
MJAR	**Matsushiro Arr**	**7.35**	**342**	P	**Pn**	**20 56 56.2**	**+1.5**
	1.5nm,0.3s,baz=166,slow=12,SNR=11						
MAT	**Matsushiro**	**7.35**	**342**	P	**Pn**	**20 56 56.7**	**+2.0**
MAT				*e*S	**Sn**	**20 58 15.5**	**-1.2**
JFK	**Kawauchi**	**7.78**	**359**	P	**Pn**	**20 56 58.1**	**-2.5**
JFK				S	Sn	20 58 18.5	-8.6
JTO	**Tosashimizu**	**7.79**	**297**	P	Pn	20 57 03.7	+3.0
ASAJ	**Asahikawa**	**14.57**	**4**	LR	LR	21 05 37.9	
	comp=Z,47nm,18.7s,baz=198,slow=43						
USRK	**Ussuriysk Ar.**	**16.29**	**336**	P	**Pn**	**20 58 53.2**	**-1.2**
	0.2nm,0.3s,baz=152,slow=13,SNR=5.8						
USRK				LR	LR	21 03 28.0	
	comp=Z,36nm,21.8s,baz=244,slow=31						
SSLB	**Suanglung**	**18.86**	**257**	*e*P	**Pn**	**20 59 28.2**	**+2.1**
	12nm,0.8s						
KLR	**Kul'dur**	**20.88**	**343**	P	**P**	**20 59 46.4**	**-0.2**
	4.9nm,0.7s,baz=159,slow=9.3,SNR=14						
SONM	**Songino Array**	**32.27**	**314**	P	**P**	**21 01 30.6**	**-1.7**
	0.5nm,0.6s,baz=132,slow=6.2,SNR=3.9						
SONM				PcP	**PcP**	**21 04 20.0**	**+0.8**
	0.4nm,0.4s,baz=138,slow=3.1,SNR=5.9						
YAK	**Yakutsk**	**33.32**	**350**	PcP	**PcP**	**21 04 21.8**	**+0.2**
	21nm,0.4s,baz=186,slow=0.9,SNR=3.5						
CHTO	**Chiang Mai**	**39.69**	**264**	*e*P	**P**	**21 02 36.2**	**+0.2**
	7.0nm,0.8s						
CMAR	**Chiang Mai Arr**	**39.83**	**264**	P	**P**	**21 02 37.3**	**+0.2**
	2.5nm,0.7s,baz=62,slow=5.9,SNR=15						
CMAR				LR	LR	21 20 04.7	
	comp=Z,63nm,18.9s,baz=153,slow=38						
TIXI	**Tiksi**	**42.66**	**354**	P	**P**	**21 02 59.6**	**0.0**
	2.0nm,0.6s,baz=146,slow=8.8,SNR=8.0						
ZALV	**Zalesovo Beam**	**46.98**	**318**	P	**P**	**21 03 32.9**	**-1.3**
	0.7nm,0.5s,baz=71,slow=9.3,SNR=3.3						
ZALV				PcP	**PcP**	**21 05 05.8**	**+0.2**
	2.1nm,0.7s,baz=103,slow=2.8,SNR=7.6						
MKAR	**Makanchi Array**	**48.16**	**308**	P	**P**	**21 03 42.8**	**-0.7**
	1.2nm,0.7s,baz=91,slow=8.9,SNR=9.0						
MKAR				PcP	**PcP**	**21 05 10.7**	**+0.7**
	1.3nm,0.7s,baz=84,slow=5.4,SNR=9.2						
WRA	**Warramunga Arr**	**49.65**	**188**	P	**P**	**21 03 54.3**	**-0.8**
	2.6nm,0.6s,baz=6.7,slow=7.7,SNR=8.7						
NRIK	**Noril'sk**	**49.99**	**338**	P	**P**	**21 03 56.4**	**-0.7**
	3.5nm,0.5s,baz=118,slow=11,SNR=3.8						
KURK	**Kurchatov**	**50.56**	**313**	P	**P**	**21 04 01.4**	**-0.3**
KURBB	**Kurchatov Arra**	**50.62**	**313**	P	**P**	**21 04 01.4**	**-0.7**
	1.3nm,0.5s,baz=90,slow=7.7,SNR=12						
ASAR	**Alice Springs**	**53.38**	**188**	P	**P**	**21 04 21.8**	**-1.0**
	0.6nm,0.7s,baz=23,slow=12,SNR=5.8						
BVAR	**Borovoye Array**	**55.56**	**316**	P	**P**	**21 04 38.3**	**-0.2**
	3.0nm,0.6s,baz=97,slow=8.2,SNR=15						
KKAR	**Karatay Array**	**56.85**	**304**	*e*P	**P**	**21 04 47.1**	**-0.7**
	3.0nm,0.7s						
STKA	**Stephens Creek**	**61.11**	**179**	P	**P**	**21 05 16.9**	**-0.3**
	2.6nm,1.0s,baz=126,slow=19,SNR=2.9						
INK	**Inuvik**	**61.21**	**25**	P	**P**	**21 05 18.1**	**+0.7**
	0.5nm,0.3s,baz=303,slow=7.9,SNR=6.1						
ARU	**Arti**	**61.87**	**321**	P	**P**	**21 05 22.1**	**0.0**
	12nm,0.6s,baz=90,slow=3.5,SNR=20						
ABKAR	**Akbulak array**	**62.67**	**313**	*e*P	**P**	**21 05 27.0**	**-0.6**
	5.2nm,0.7s						
AKTO	**Aktyubinsk**	**63.58**	**315**	P	**P**	**21 05 33.1**	**-0.5**
	3.4nm,0.8s,baz=66,slow=15,SNR=9.2						
GEYT	**Alibeck**	**67.34**	**302**	P	**P**	**21 05 58.2**	**0.0**
	0.6nm,0.5s,baz=94,slow=10,SNR=2.7						
SPITS	**Spitsbergen Ar**	**67.78**	**349**	P	**P**	**21 06 01.9**	**+1.7**
	2.9nm,1.0s,baz=104,slow=12,SNR=6.0						
YKA	**Yellowknife Ar**	**70.45**	**29**	P	**P**	**21 06 17.2**	**+0.3**
	0.9nm,0.6s,baz=294,slow=6.2,SNR=6.0						
ARCES	**ARCESS Array B**	**70.89**	**340**	P	**P**	**21 06 20.1**	**+0.6**
	2.8nm,0.7s,baz=41,slow=8.1,SNR=6.7						
YBH	**Yreka Blue Hor**	**75.24**	**50**	P	**P**	**21 06 47.9**	**+2.0**
	0.5nm,0.3s,baz=352,slow=12,SNR=3.7						
FINES	**FINESS Array B**	**75.30**	**333**	P	**P**	**21 06 45.9**	**+0.2**
	3.0nm,0.4s,baz=65,slow=5.4,SNR=36						
KBZ	**Khabaz**	**75.61**	**312**	P	**P**	**21 06 48.2**	**+0.4**
	4.2nm,0.8s,baz=72,slow=3.0,SNR=13						
NEW	**Newport**	**75.76**	**42**	P	**P**	**21 06 49.4**	**+0.8**
	3.9nm,0.8s,baz=292,slow=5.4,SNR=4.7						
RPZ	**Rata Peaks**	**77.94**	**158**	LR	LR	21 39 45.3	
	comp=Z,46nm,21.1s,baz=194,slow=34						
AKASG	**Malin Array Be**	**80.04**	**323**	P	**P**	**21 07 10.8**	**-1.4**
	1.2nm,0.5s,baz=48,slow=5.5,SNR=7.1						
NB2	**NORSAR Subarra**	**80.95**	**338**	P	**P**	**21 07 16.9**	**-0.1**
	comp=Z,1.9nm,0.8s,baz=43,slow=5.3						
NOA	**NORSAR Array B**	**80.95**	**338**	P	**P**	**21 07 16.8**	**-0.2**
	comp=Z,2.2nm,0.7s,baz=43,slow=5.4,SNR=11						
BRTR	**Keskin Array B**	**83.60**	**312**	P	**P**	**21 07 32.0**	**+0.6**
	comp=Z,5.0nm,0.8s,baz=93,slow=4.0,SNR=27						
GERES	**GERESS Array B**	**88.89**	**329**	P	**P**	**21 07 56.6**	**-0.5**
	comp=Z,0.9nm,0.8s,baz=53,slow=5.3,SNR=7.0						
TXAR	**Lajitas Array**	**94.91**	**52**	P	**P**	**21 08 27.0**	**+1.6**
	comp=Z,0.4nm,0.5s,baz=297,slow=2.7,SNR=3.8						
TORD	**Torodi Ar. Bea**	**122.21**	**311**	PKP	**PKPdf**	**21 13 58.0**	**0.0**
	comp=Z,0.5nm,0.6s,baz=67,slow=1.1,SNR=8.1						
PLCA	**Paso Flores**	**152.00**	**122**	PKPbc	**PKPbc**	**21 14 59.0**	**+1.3**
	comp=Z,3.3nm,1.0s,baz=223,slow=1.5,SNR=6.7						

IDC 12 20:55:16.6±4.3, 3°.73S×151°.78E, h0km, mb3.6/3, mb1 3.8/3, mb1mx3.4/45, mbtmp3.6/3, Error ellipse: s-maj=166.0km s-min=37.3km az=111.0, New Ireland region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**23.43**	**225**	P	P	21 00 26.9	-0.7
	1.1nm,0.9s,baz=52,slow=9.8,SNR=5.9						
ASAR	**Alice Springs**	**26.29**	**219**	P	P	21 00 54.9	+0.8
	0.3nm,0.7s,baz=59,slow=8.2,SNR=2.5						
BVAR	**Borovoye Array**	**87.78**	**323**	P	P	21 08 06.2	-1.3
	0.9nm,0.6s,baz=86,slow=6.1,SNR=4.8						
TORD	**Torodi Ar. Bea**	**149.00**	**289**	PKPbc	PKPbc	21 15 08.7	+1.0
	0.4nm,0.8s,baz=77,slow=3.1,SNR=3.0						

MEX 12 21:00:13.2±0.7, 16°.61N×98°.90W, h22km±7km, MD3.8, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PNIG	**Pinotepa**	**0.78**	**106**	*e*P	Pb	21 00 25.6	-2.4
PNIG				*e*S	Sb	21 00 35.8	-2.4
ACX	**Acapulco**	**0.95**	**286**	*e*P	Pb	21 00 24.1	-6.9
ACX				*e*S	Sb	21 00 35.8	-7.3
TLIG	**Tlapa**	**1.00**	**19**	*i* P	Pb	21 00 28.5	-3.4
TLIG				*e*S	Sb	21 00 40.7	-4.0
CAIG	**El Cayaco**	**1.38**	**289**	*e*P	Pn	21 00 33.8	-3.3
CAIG				*i* S	Sn	21 00 50.2	-4.5
MEIG	**Mezcala**	**1.48**	**333**	*e*P	Pn	21 00 35.8	-2.8
MEIG				*e*S	Sn	21 00 54.1	-3.2
VHO	**Vista Hermosa**	**2.13**	**77**	*e*P	Pn	21 00 45.4	-2.3
VHO				*i* S	Sn	21 01 09.6	-4.0
ARIG	**Puente Sto Nin**	**2.16**	**321**	*e*P	Pn	21 00 45.7	-2.2
ARIG				*e*S	Sn	21 01 10.6	-3.4
YAIG	**Yautepec**	**2.25**	**356**	*e*P	Pn	21 00 47.5	-1.8
YAIG				*e*S	Sn	21 01 12.5	-3.9
PPM	**Popocatepetl**	**2.46**	**6**	*e*P	Pn	21 00 50.6	-1.9
PPM				*i* S	Sn	21 01 19.5	-2.6
HUIG	**Huatulco**	**2.81**	**107**	*e*P	Pn	21 00 54.7	-2.2
HUIG				*i* S	Sn	21 01 26.8	-3.4

IDC ***12*** *21:07:14.6±1.0, 1°.84S×99°.72E, h0km, mb4.2/15, mb1 4.2/15, mb1mx4.0/50, mbtmp4.2/15, MS3.3/1, Ms1 3.3/1, ms1mx2.7/41, Error ellipse: s-maj=35.0km s-min=16.7km az=57.0*
NEIC ***12*** *21:07:20.6±1.9, 1°.89S×99°.67E, h45km±13km, mb4.4/2, Error ellipse: s-maj=21.6km s-min=12.3km az=223.0*
DJA ***12*** *21:07:22.2±0.7, 2°.5±3°×10°0E±°, h15km±8km, M4.3/18, mB5.0/2, mb4.4/6, MLv4.2/18, Mw(mB)4.3/2*

ISC 12 21:07:19.8±0.7, 1°.71S±0°.08×99°.70E±0°.08, h30km, n43, σ1§11/35, mb4.3/16, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PPSI	**Pulau Pagai**	**1.09**	**163**	P	**Pn**	**21 07 40.2**	**+1.1**
PDSI	**Padang**	**1.10**	**44**	P	**Pb**	**21 07 41.2**	**+0.9**
PPI	**Padang Panjang**	**1.43**	**29**	P	**Pb**	**21 07 46.8**	**+1.0**
SDSI	**Sungai Dareh**	**1.90**	**66**	P	**Pb**	**21 07 52.4**	**-1.3**
BKNI	**Bangkinang**	**2.43**	**34**	P	**Pb**	**21 08 01.8**	**-1.0**
BKNI	**Bangkinang**	**2.43**	**34**	*e*Pn	**Pb**	**21 08 01.5**	**-1.3**
MNSI	**Mandailing Nat**	**2.49**	**357**	P	**Pb**	**21 08 03.1**	**-0.7**
MASI	**Maura Aman, Be**	**2.91**	**119**	P	**Pn**	**21 08 04.9**	**+0.7**
GSI	**Gunungsitoli**	**3.67**	**325**	P	Pb	21 08 19.8	-4.1
GSI	**Gunungsitoli**	**3.67**	**325**	*e*Pn	**Pn**	**21 08 15.8**	**+1.3**
**LH

H11S2 WAKE ISLAND Hy 22.62 72 T T 21 44 12.5
baz=257,slow=75,SNR=27
H11N1 WAKE ISLAND Hy 23.08 69 T T 21 44 41.8
baz=255,slow=75,SNR=54
H11N2 WAKE ISLAND Hy 23.09 69 T T 21 44 47.9
baz=255,slow=75,SNR=55
H11N3 WAKE ISLAND Hy 23.10 69 T T 21 44 43.5
baz=255,slow=75,SNR=46
JNU Nakatsue 23.96 332 P **P 21 20 50.9 -0.5**
18nm,0.8s,baz=169,slow=10,SNR=3.8
JNU LR LR 21 29 12.5
comp=Z,212nm,19.6s,baz=132,slow=34
JNU Nakatsue 23.96 332 *eP* **P 21 20 51.1 -0.2**
MJAR Matsushiro Arr 24.67 349 P **P 21 20 56.8 -1.0**
9.9nm,0.9s,baz=173,slow=9.7,SNR=6.3
MJAR LR LR 21 29 33.8
comp=Z,360nm,18.4s,baz=190,slow=34
MAJO Matsushiro 24.67 349⇑ *eP* **P 21 21 00.0 +2.2**
MAJO pmax pmax
comp=Z,148nm,1.0s
MAT Matsushiro 24.67 349 P **P 21 21 00.7 +2.9**
SSLB Suanglung 24.73 301 *eP* **P 21 20 57.9 -0.6**
comp=Z,12nm,0.7s
MRSI Marisa 24.95 243 P **P 21 21 02.4 +1.9**
comp=Z,93nm,1.2s,comp=Z,2μm
LUWI Luwuk 25.01 239 P **P 21 21 01.0 0.0**
comp=Z,102nm,1.1s,comp=Z,896nm
LUWI Luwuk 25.01 239 *eP* **P 21 20 59.9 -1.1**
comp=Z,156nm,1.2s
HNR Honiara 26.76 143 LR LR 21 32 11.8
comp=Z,210nm,19.0s,baz=309,slow=37
PCI Palu 27.45 243 P **P 21 21 24.1 +1.0**
PCI pmax pmax
comp=Z,25nm,1.3s
KSRS Korea Array 28.90 333 P **P 21 21 35.6 -0.1**
comp=Z,1.8nm,0.8s,baz=141,slow=9.6,SNR=6.4
KSRS LR LR 21 32 43.0
comp=Z,202nm,18.2s,baz=144,slow=36
KSAR Wonju Array Be 28.91 333 P **P 21 21 35.6 -0.2**
KSAR Wonju Array Be 28.91 333 P **P 21 21 35.6 -0.2**
KAPI Kappang 29.72 236 LR LR 21 34 03.9
comp=Z,88nm,20.9s,baz=64,slow=37
CTA Charters Tower 32.30 176 P **P 21 22 06.6 +0.7**
comp=Z,3.7nm,0.7s,baz=90,slow=3.0,SNR=2.7
USRK Ussuriysk Ar. 33.41 344 P **P 21 22 15.8 +0.4**
comp=Z,1.5nm,0.6s,baz=159,slow=9.0,SNR=5.9
USRK ScP **ScP 21 28 41.8 +2.4**
comp=Z,1.8nm,0.9s,baz=122,slow=2.2,SNR=4.2
USRK LR LR 21 33 33.0
comp=Z,289nm,20.9s,baz=154,slow=32
WRAB Tennant Creek 33.48 197⇓ *eP* **P 21 22 15.7 -0.6**
WRAB pmax pmax
comp=Z,32nm,1.3s
WRA Warramunga Arr 33.49 197 P **P 21 22 15.6 -0.9**
comp=Z,2.6nm,0.8s,baz=20,slow=9.6,SNR=17
STKI Sintang 34.59 252 P **P 21 22 26.4 +0.3**
comp=Z,18nm,1.1s,comp=Z,27μm
KSM Kuching 35.19 255 *eP* **P 21 22 30.7 -0.6**
comp=Z,31nm,1.0s
FITZ Fitzroy Crossi 35.32 211 LR LR 21 37 30.3
comp=Z,139nm,20.7s,baz=16,slow=37
ENH Enshi 36.65 305 *eP* **P 21 22 43.5 -0.2**
comp=Z,23nm,1.3s
ASAR Alice Springs 37.15 196 P **P 21 22 47.8 -0.2**
comp=Z,5.5nm,0.8s,baz=20,slow=10,SNR=15
ASAR PcP **PcP 21 25 08.3 +0.5**
comp=Z,1.0nm,0.8s,baz=9.2,slow=3.4,SNR=4.3
ASAR LR LR 21 38 29.1
comp=Z,203nm,21.0s,baz=3.5,slow=37
KLR Kul'dur 38.17 347 P **P 21 22 55.8 -0.5**
comp=Z,5.7nm,0.8s,baz=134,slow=7.0,SNR=18
KLR PcP **PcP 21 25 11.1 +0.6**
comp=Z,2.4nm,0.7s,baz=345,slow=6.6,SNR=4.8
KLR Kul'dur 38.17 347⇑ *eP* **P 21 22 56.3 +0.1**
TPI Tanjungpandan 39.20 250 P P 21 23 10.1 +4.8
comp=Z,21nm,0.8s,comp=Z,650nm
DZM Mont Dzumac 40.62 147 LR LR 21 37 35.5
comp=Z,121nm,20.6s,baz=326,slow=32
KMI Kunming 41.02 294 P **P 21 23 20.9 +0.3**
PBKT Sadao Pong 41.92 281 P **P 21 23 29.6 +1.8**
comp=Z,8.4nm,1.6s
SKJI Sukabumi 41.98 245 P P 21 23 37.0 +8.7
PETK Petropavlovsk- 42.09 12 LR LR 21 39 36.9
comp=Z,163nm,20.6s,baz=195,slow=34
CRAI Chiangrai 42.60 286 P **P 21 23 33.9 +0.6**
comp=Z,577nm,1.3s
SKLT Songkhla 43.12 267 P **P 21 23 39.8 +2.2**
comp=Z,27nm,1.0s
LZH Lanzhou 43.23 310 *eP* **P 21 23 37.5 -0.9**
LZH pP pP 21 23 44.7 -1.9
LZH sP sP 21 23 48.2 -1.6
LZH pmax pmax
comp=Z,20nm,1.3s
LZH pmax pmax
comp=Z,57nm,5.6s
CMAR Chiang Mai Arr 43.87 284 P **P 21 23 44.0 +0.4**
comp=Z,2.8nm,0.7s,baz=87,slow=6.0,SNR=21
CMAR PcP **PcP 21 25 31.1 +1.4**
comp=Z,1.9nm,0.6s,baz=89,slow=1.9,SNR=11
CMAR LR LR 21 39 52.5
comp=Z,165nm,20.8s,baz=92,slow=33
STKA Stephens Creek 44.03 183 P **P 21 23 44.7 +0.1**
comp=Z,2.2nm,0.9s,baz=0.0,slow=18,SNR=3.3
MASI Maura Aman, Be 44.35 252 P **P 21 23 48.5 +1.0**
comp=Z,131nm,1.2s,comp=Z,5μm
PPI Padang Panjang 45.20 257 P **P 21 23 55.9 +1.7**
comp=Z,12nm,0.7s
KCSI Kotacane, Aceh 46.65 263 P **P 21 24 06.9 +1.2**
comp=Z,45nm,1.3s,comp=Z,3μm
ULN Ulaanbaatar 46.98 326⇓ *eP* **P 21 24 08.5 +0.5**
ULN pmax pmax
comp=Z,6.0nm,1.8s
SONM Songino Array 47.33 326 P **P 21 24 10.8 +0.2**
comp=Z,1.7nm,0.8s,baz=144,slow=9.4,SNR=9.6
SONM PcP **PcP 21 25 41.4 +0.1**
comp=Z,2.1nm,1.0s,baz=140,slow=3.9,SNR=6.4
SONM ScP **ScP 21 29 35.7 +2.0**
comp=Z,0.6nm,0.9s,baz=90,slow=1.5,SNR=3.8
SONM LR LR 21 45 22.5
comp=Z,306nm,18.1s,baz=146,slow=38
GSI Gunungsitoli 47.40 260 P **P 21 24 10.9 -0.6**
comp=Z,31nm,1.1s
GSI Gunungsitoli 47.40 260 *eP* **P 21 24 10.5 -1.0**
comp=Z,32nm,1.0s
GTA Gaotai 47.45 313 *eP* **P 21 24 11.8 0.0**
GTA pP pP 21 24 16.6 -3.4
GTA sP sP 21 24 19.5 -3.8
GTA pmax pmax
comp=Z,7.0nm,0.9s
ZAK Zakamensk 50.46 327 *eP* **P 21 24 34.4 -0.3**
ZAK *e* 21 25 52.6
ZAK pmax pmax
comp=Z,3.0nm,1.4s
BOD Bodaibo 50.81 340 *eP* **P 21 24 35.4 -1.6**
SHL Shillong 50.81 293 *eP* **P 21 24 41.0 +3.2**
GUN Gumba 56.34 295 *eP* **P 21 25 18.1 -0.4**
comp=Z,24nm,0.5s
PKIN Phulchoki 56.74 295 *eP* **P 21 25 20.3 -1.0**
comp=Z,5.9nm,0.6s
KKN Kakani 56.86 295 *eP* **P 21 25 20.9 -1.2**
GKN Gorkha 57.44 295 *eP* **P 21 25 25.3 -0.8**
BILL Bilibino 57.51 10 *eP* **P 21 25 28.6 +2.9**
BILL *e* 21 25 37.4
KOLN Koldanda 58.34 295 *eP* **P 21 25 31.8 -0.7**
comp=Z,12nm,0.8s
PYUN Piuthan 58.90 295 *eP* **P 21 25 35.6 -0.8**
TIXI Tiksi 59.99 354 P **P 21 25 42.3 -0.6**
comp=Z,0.3nm,0.4s,baz=124,slow=3.6,SNR=4.6
TIXI PcP **PcP 21 26 29.2 +0.5**
comp=Z,1.7nm,0.8s,baz=126,slow=3.0,SNR=5.3
MKAR Makanchi Array 61.87 317 P **P 21 25 56.5 +0.4**
comp=Z,6.3nm,0.7s,baz=94,slow=8.8,SNR=90
MKAR LR LR 21 53 43.4
comp=Z,127nm,19.8s,baz=98,slow=37
ZALV Zalesovo Beam 62.20 325 P **P 21 25 57.6 -0.6**
comp=Z,1.4nm,0.6s,baz=105,slow=6.6,SNR=7.7
ZALV PcP **PcP 21 26 37.1 -0.9**
comp=Z,3.8nm,0.7s,baz=121,slow=3.7,SNR=8.1
ZALV LR LR 21 52 44.9
comp=Z,155nm,20.7s,baz=70,slow=36
PDGK Podgornoye 63.20 312 P **P 21 26 05.2 +0.2**
PDGK pmax pmax
comp=Z,7.0nm,0.8s
KURK Kurchatov 65.05 320 *eP* **P 21 26 16.5 -0.5**
KURK pmax pmax
comp=Z,38nm,1.1s
KURK Kurchatov 65.05 320 *eP* **P 21 26 16.5 -0.5**
comp=Z,38nm,1.1s
AAK Ala-Archa 66.76 311⇓ *iP* **P 21 26 28.5 +0.1**
AAK pmax pmax
comp=Z,10.0nm,1.0s
AAK Ala-Archa 66.76 311 *eP* **P 21 26 28.0 -0.4**
comp=Z,2.5nm,0.8s
NRIK Noril'sk 67.06 341 LR LR 21 56 36.6
comp=Z,125nm,18.5s,baz=112,slow=37
BPAW Bear Paw Mtn. 68.11 25 *eP* **P 21 26 36.6 +0.2**
comp=Z,2.4nm,1.7s
MNAS Manas 68.22 311 P **P 21 26 37.5 -0.1**
MNAS pmax pmax
comp=Z,3.0nm,1.2s
OTUK Ortayu 68.75 317 P **P 21 26 40.8 +0.1**
OTUK pmax pmax
comp=Z,7.0nm,0.9s
COLD Coldfoot 69.38 22 *eP* **P 21 26 43.9 -0.3**
comp=Z,4.2nm,0.9s
KKAR Karatay Array 69.71 311 *eP* **P 21 26 46.6 -0.2**
KKAR pmax pmax
comp=Z,7.0nm,0.9s
KKAR Karatay Array 69.71 311 *eP* **P 21 26 46.6 -0.2**
comp=Z,7.1nm,0.9s
ILAR Eielson Array 70.00 25 P **P 21 26 46.2 -1.9**
comp=Z,1.9nm,0.7s,baz=257,slow=4.7,SNR=19
ILAR LR LR 21 56 21.7
comp=Z,101nm,20.6s,baz=284,slow=35
BRVK Borovoye 70.50 322 *eP* **P 21 26 51.1 -0.3**
BRVK pmax pmax
comp=Z,7.0nm,0.7s
BRVK Borovoye 70.50 322 *eP* **P 21 26 51.1 -0.3**
comp=Z,7.4nm,0.7s
DOT Dot Lake 70.97 27 *eP* **P 21 26 53.3 -0.7**
comp=Z,11nm,0.8s
PPT Papeete 71.90 113 LR LR 21 52 32.6
comp=Z,87nm,19.4s,baz=350,slow=31
PPT2 Papeete2 71.91 113 *eS* **S 21 36 16.9 -3.5**
comp=Z,91nm,25.2s
PPT2 Papete2 71.91 113 *eLR* LR 21 48 53.8
comp=Z,150nm,23.8s
DAWY Dawson 73.08 27 *eP* **P 21 27 07.2 +0.5**
comp=Z,8.3nm,1.5s
INK Inuvik 75.80 22 P **P 21 27 21.8 -0.5**
baz=262,slow=5.5
INK Inuvik 75.80 22 *eP* **P 21 27 21.9 -0.4**
INK Inuvik 75.80 22 *eP* **P 21 27 21.9 -0.4**
SVE Sverdlovsk 76.20 326⇑ *iP* **P 21 27 24.6 -0.3**
SVE pmax pmax
comp=Z,14nm,1.3s
ABKAR Abkulak array 76.96 318 *eP* **P 21 27 28.8 -0.6**
comp=Z,11nm,0.7s
ARU Arti 77.36 325 *d iP* **P 21 27 30.5 -0.9**
ARU 21 30 25.0
ARU S **S 21 37 21.5 +1.5**
ARU pmax pmax
comp=Z,13nm,0.7s
ARU Arti 77.36 325 *eP* **P 21 27 30.6 -0.8**
comp=Z,11nm,0.8s
DLBC Dease Lake 77.43 33 P **P 21 27 31.2 -0.7**
comp=Z,3.5nm,0.9s,baz=225,slow=1.4,SNR=5.5
GEYT Alibeck 79.39 307 P **P 21 27 43.2 +0.1**
comp=Z,10nm,1.0s,baz=90,slow=1.5,SNR=25
GEYT LR LR 22 05 32.4
comp=Z,155nm,20.8s,baz=135,slow=38
HUMO Hull Mountain 83.90 48 *eP* **P 21 28 05.6 -1.2**
comp=Z,6.3nm,0.7s
YBH Yreka Blue Hor 84.25 49 P **P 21 28 09.5 +0.8**
comp=Z,1.8nm,0.6s,baz=3.6,slow=5.4,SNR=4.7
YKA Yellowknife Ar 84.30 27 P **P 21 28 08.5 +0.1**
comp=Z,1.9nm,0.6s,baz=289,slow=5.3,SNR=23
SPITS Spitsbergen Ar 85.15 351 LR LR 22 06 56.0
comp=Z,105nm,20.4s,baz=290,slow=36
RES Resolute Bay 85.93 13 P **P 21 28 16.6 +0.4**
comp=Z,11nm,0.7s,baz=320,slow=5.5,SNR=19
RES Resolute Bay 85.93 13 *eP* **P 21 28 16.4 +0.1**
RES pmax pmax
comp=Z,13nm,0.8s
RES Resolute Bay 85.93 13 *eP* **P 21 28 16.4 +0.1**
comp=Z,13nm,0.8s
KLMR Klimovskoe 86.29 332 *eP* **P 21 28 15.2 -3.1**
KLMR pmax pmax
comp=Z,10.0nm,1.3s
NEW Newport 86.65 41 P **P 21 28 21.3 +0.8**
comp=Z,7.6nm,0.7s,baz=294,slow=2.5,SNR=11
BMO Blue Mountains 87.39 45 *eP* **P 21 28 24.3 +0.1**
BMO pmax pmax
comp=Z,4.0nm,0.9s
BMO Blue Mountains 87.39 45 *eP* **P 21 28 24.3 +0.1**
comp=Z,4.5nm,0.9s
ARCES ARCESS Array B 88.03 342 P **P 21 28 27.0 +0.3**
comp=Z,2.3nm,0.8s,baz=71,slow=9.1,SNR=5.9
ARCES LR LR 22 10 49.9
comp=Z,81nm,20.0s,baz=72,slow=38
ARCES ARCESS Array B 88.03 342 P **P 21 28 27.0 +0.3**
VRH Novokhopyorsk 88.09 322 *eP* **P 21 28 25.2 -2.1**
VRH pmax pmax
comp=Z,20nm,0.8s
NVAR Mina Array Bea 88.28 51 P **P 21 28 29.9 +1.2**
comp=Z,2.4nm,0.7s,baz=262,slow=6.2,SNR=18
MFID Camas Ranch 88.80 46 *eP* **P 21 28 31.3 +0.4**
comp=Z,5.9nm,0.9s
ZEI Tsey 89.06 314 *eP* **P 21 28 29.1 -3.2**
ZEI pmax pmax
comp=Z,13nm,1.0s
NCK Nalchik 89.08 314⇓ *eP* **P 21 28 30.9 -1.3**
LPSR Galich'ya Gora 89.29 324 *eP* **P 21 28 31.3 -1.6**
LPSR pmax pmax
comp=Z,10.0nm,0.5s
KBZ Khabaz 89.50 315 P **P 21 28 32.7 -1.4**
comp=Z,3.6nm,0.9s,baz=113,slow=7.6,SNR=8.0
KBZ LR LR 22 12 21.0
comp=Z,120nm,20.2s,baz=47,slow=38
KVAR Kislovodsk Arr 89.58 315 LR LR 22 11 31.5
comp=Z,133nm,21.3s,slow=38
KIV Kislovodsk 89.58 315 *eP* **P 21 28 32.9 -1.7**
KIV pmax pmax
comp=Z,5.0nm,1.0s
KIV MLR MLR
comp=Z,128nm,19.0s
VSR Storozhevoye 89.61 323 *eP* **P 21 28 31.9 -2.5**
VSR pmax pmax
comp=Z,10.0nm,0.6s
OBN Obninsk 89.73 327⇓ *iP* **P 21 28 33.3 -1.6**
OBN *i* 21 32 06.6
OBN *e*SS SS 21 45 16.0 -5.1
OBN pmax pmax
comp=Z,20nm,1.0s
NEY Neytrino 89.76 314⇑ *eP* **P 21 28 34.7 -0.9**
NEY pmax pmax
comp=Z,1.0nm,0.7s
ELK Elko 89.95 48 *eP* **P 21 28 37.4 +0.8**
ELK pmax pmax
comp=Z,5.0nm,1.0s
ELK Elko 89.95 48 *eP* **P 21 28 37.4 +0.8**
comp=Z,5.1nm,1.0s
VNDA Vanda 90.28 176 LR LR 22 04 46.0
comp=Z,46nm,21.3s,baz=348,slow=33
R11A Troy Canyon, C 90.36 51 *eP* **P 21 28 39.7 +1.2**
comp=Z,1.4nm,1.2s
FINES FINESS Array B 91.97 335 P **P 21 28 43.2 -2.0**
comp=Z,3.0nm,0.6s,baz=65,slow=4.3,SNR=23
FINES LR LR 22 10 47.0
comp=Z,110nm,21.2s,baz=25,slow=36
FLWY Flagg Ranch 92.14 44 *eP* **P 21 28 46.5 -0.1**
comp=Z,3.2nm,0.6s
RLMT Red Lodge 92.75 43 *eP* **P 21 28 50.2 +0.7**
comp=Z,4.8nm,0.7s
ANN Anapa 92.89 317 *eP* **P 21 28 46.1 -3.7**
ANN *e*PPP PPP 21 34 29.4
ANN *e*S **SKSac 21 39 19.6 -2.4**
ANN *e*SS **SS 21 46 06.0 -1.2**
ANN pmax pmax
comp=Z,22nm,1.3s
VSU Vasula 93.18 332⇓ *eP* **P 21 28 49.5 -1.3**
VSU pmax pmax
comp=Z,25nm,0.9s
PDAR Pinedale Array 93.37 45 P **P 21 28 52.0 -0.4**
comp=Z,0.3nm,0.7s,baz=306,slow=3.0,SNR=3.2
PDAR LR LR 22 07 01.4
comp=Z,75nm,19.6s,baz=280,slow=33
LAO LASA Array 94.15 41 *eP* **P 21 28 55.4 -0.3**
comp=Z,7.3nm,0.8s
AKASG Malin Array Be 95.59 325 P **P 21 29 00.4 -1.7**
comp=Z,0.8nm,0.5s,baz=47,slow=4.9,SNR=6.3
AKASG LR LR 22 15 53.3
comp=Z,134nm,18.1s,baz=75,slow=38
AKASG Malin Array Be 95.59 325 *ceP* **P 21 29 02.2 +0.1**
AKASG pmax pmax
comp=Z,1.0nm,0.5s
KIEV Kiev 95.61 325 P **P 21 29 00.0 -2.1**
KIEV pmax pmax
comp=Z,2.0nm,1.1s
BRTR Keskin Array B 97.37 313 P **P 21 29 08.6 -2.0**
comp=Z,1.1nm,0.8s,baz=75,slow=1.6,SNR=6.9
BRTR LR LR 22 16 42.6
comp=Z,43nm,21.7s,baz=72,slow=38
BRTR Keskin Array B 97.37 313 *ceP* **P 21 29 09.6 -1.0**
BRTR pmax pmax
comp=Z,1.0nm,0.8s
ASF Jabal al Asfar 97.62 305 LR LR 22 20 33.3
comp=Z,73nm,18.1s,slow=40
NOA NORSAR Array B 97.94 339 P **P 21 29 11.4 -1.2**
comp=Z,0.7nm,0.8s,baz=48,slow=4.2,SNR=2.5
NOA LR LR 22 14 20.6
comp=Z,37nm,21.9s,baz=55,slow=36
MAW Mawson 98.00 202 LR LR 22 11 22.3
comp=Z,50nm,20.6s,baz=58,slow=34
GERES GERESS Array B 105.01 329 PKiKP **PKiKP 21 33 59.7 +0.6**
comp=Z,0.2nm,0.5s,baz=22,slow=3.2,SNR=2.6
TAM Tamanrasset 126.47 311 *e*PKIKP **PKPdf 21 34 41.9 +1.2**
TAM Tamanrasset 126.47 311 *e*PKPdf **PKPdf 21 34 41.9 +1.2**
TORD Torodi Ar. Bea 134.93 303 PKP **PKPdf 21 34 57.4 +0.6**
comp=Z,1.2nm,0.7s,baz=47,slow=1.8,SNR=8.4
PLCA Paso Flores 138.50 139 PKP **PKPdf 21 35 03.6 +0.9**
comp=Z,1.7nm,0.9s,baz=278,slow=7.1,SNR=3.5
DBIC Dimbokro 143.82 300 PKP PKPbc 21 35 10.8 +0.2
comp=Z,7.5nm,0.7s,baz=41,slow=6.3,SNR=7.4
LPAZ La Paz 148.54 101 PKPbc **PKPbc 21 35 25.9 +0.7**
comp=Z,2.0nm,0.8s,baz=52,slow=4.1,SNR=6.6
LPAZ La Paz 148.54 101 PKP2 **PKPbc 21 35 26.0 +0.7**

ISCJB ***12*** *21:21:38.0±0.5, 6°82N±0°04×73°04W±0°05, h160km±5km, Error ellipse: s-maj=9.8km s-min=4.0km az=42.5*
FUNV ***12*** *21:21:39.1, 6°82N×73°15W, h159km, MW3.1*
RSNC ***12*** *21:21:40.7±1.0, 6°79N×73°11W, h145km±5km, ML3.4*
ISC 12 21:21:37.7±1.4, 6°84N±0°05×73°07W±0°05, h164km±8km, n29, σ1°34/43, 2C, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BTLC	**Betulia, Santa**	**0.21**	**291**	*i* P	**Pn**	**21 22 00.5**	**+0.6**
GIRC	**Giron, Santand**	**0.27**	**332**	*e*P	**Pn**	**21 22 00.3**	**+0.4**
BARC	**Barichara**	**0.27**	**205**	*i* P	**Pn**	**21 22 00.2**	**+0.1**
BARC				*e*S	**Sn**	**21 22 15.1**	**-2.1**
BARC				*i*		21 22 16.6	
comp=Z,634nm,0.2s							
PAMC	**Pamplona, Colo**	**0.62**	**36**	*i* P	**Pn**	**21 22 03.0**	**+1.2**
PAMC				*e*S	**Sn**	**21 22 19.8**	**-0.3**
BRRC	**Barranca, Sant**	**0.69**	**293⇑**	*i* P	**Pn**	**21 22 02.0**	**+0.4**
BRRC				*e*S	**Sn**	**21 22 19.0**	**-0.9**
BRRC				*i*		21 22 23.2	
comp=Z,344nm,0.2s							
CBRI	**Barrientos, No**	**0.91**	**17**	*i* P	**Pn**	**21 22 04.7**	**+1.4**
CBRI				*i*		21 22 25.1	
comp=Z,237nm,0.3s							
GRMC	**Gramalote, San**	**0.91**	**17**	*i* P	**Pn**	**21 22 06.0**	**+2.8**
GRMC				*e*S	**Sn**	**21 22 24.6**	**+1.7**
GRMC				*i*		21 22 26.7	
comp=Z,254nm,0.4s							
RUSC	**La Rusia**	**0.94**	**181⇑**	*i* P	**Pn**	**21 22 04.2**	**+0.3**
RUSC				*e*S	**Sn**	**21 22 22.5**	**-1.5**
RUSC				*i*		21 22 24.3	
comp=Z,220nm,0.2s							
CAPV	**Capacho**	**1.26**	**36**	*e*P	**Pn**	**21 22 06.7**	**+0.4**
CAPV				*e*S	**Sn**	**21 22 28.1**	**-0.2**
OCAC	**Ocana**	**1.41**	**350**	*e*P	**Pn**	**21 22 08.8**	**+1.2**
OCAC				*i*		21 22 33.8	
comp=Z,349nm,0.2s							
NORC	**Norcasia**	**2.20**	**235**	*e*P	**Pn**	**21 22 16.2**	**+0.2**
NORC				*e*S	**Sn**	**21 22 43.9**	**-1.6**
ROSC	**El Rosal**	**2.35**	**212**	*e*P	**Pn**	**21 22 20.2**	**+2.1**
ROSC				*i*		21 22 57.0	
comp=Z,247nm,0.5s							
HELC	**Santa Helena**	**2.53**	**255**	*e*P	**Pn**	**21 22 20.8**	**+0.5**
HELC				*e*S	**Sn**	**21 22 52.9**	**-0.1**
HELC				*i*		21 23 01.0	
comp=Z,120nm,0.2s							
VIGV	**El Vigia**	**2.61**	**40**	*e*P	**Pn**	**21 22 22.1**	**+1.3**
VIGV				*e*S	**Sn**	**21 22 53.1**	**-1.2**
SOCV	**Socops**	**2.62**	**57**	*e*P	**Pn**	**21 22 22.6**	**+1.7**
SOCV				*e*S	**Sn**	**21 22 53.5**	**-0.9**
VILC	**Villavicencio,**	**2.78**	**193**	*e*P	**Pn**	**21 22 24.0**	**+0.9**
VILC				*e*S	**Sn**	**21 22 58.6**	**+0.3**
VILC				*i*		21 23 02.4	
comp=Z,98nm,0.4s							
GUYC	**Guyana, Colomb**	**2.81**	**235**	*e*P	**Pn**	**21 22 25.0**	**+1.2**
GUYC				*i*		21 23 06.7	
comp=Z,153nm,0.3s							
DBBC	**Dabeiba**	**3.13**	**273**	*e*P	**Pn**	**21 22 28.2**	**+1.0**
SDV	**Santo Domingo**	**3.15**	**50**	*e*P	**Pn**	**21 22 29.7**	**+2.0**
SDV				*i*		21 22 30.6	
comp=Z,80nm,0.1s							
TOLC	**Tolima**	**3.17**	**225**	*e*P	**Pn**	**21 22 29.6**	**+1.5**
ELOV	**Elorza**	**3.56**	**87**	*e*P	**Pn**	**21 22 34.1**	**+1.4**
PRAC	**Prado**	**3.59**	**210**	*e*P	**Pn**	**21 22 33.6**	**+0.5**
PRAC				*e*S	**Sn**	**21 23 16.5**	**+0.1**
SJAC	**San Juan de Ar**	**3.65**	**194**	*e*P	**Pn**	**21 22 34.3**	**+0.3**
SJAC				*i*		21 23 28.5	
comp=Z,172nm,0.4s							
VIRV	**Villa del Rosa**	**3.70**	**10**	*e*P	**Pn**	**21 22 35.6**	**+1.1**
VIRV				*e*S	**Sn**	**21 23 15.4**	**-3.3**
CURV	**Curarigua**	**4.40**	**44**	*e*P	**Pn**	**21 22 45.0**	**+1.5**
CURV				*e*S	**Sn**	**21 23 33.4**	**-1.7**
BAUV	**El Baul**	**5.40**	**67**	*e*P	**Pn**	**21 22 55.5**	**-1.1**
MAPV	**Macapo**	**5.44**	**57**	*e*P	**Pn**	**21 22 58.0**	**+0.8**
MONV	**Montecano**	**5.93**	**31**	*e*P	**Pn**	**21 23 03.0**	**-0.6**
CUPV	**Cœpira**	**7.88**	**66**	*e*P	**Pn**	**21 23 29.4**	**-0.1**

IDC ***12*** *21:21:33.3±1.3, 6°30S×147°45E, h0km, mb3.6/6, mb1 3.8/8, mb1mx3.7/39, mbtmp3.6/8, ML3.4/1, Error ellipse: s-maj=43.0km s-min=20.1km az=98.0*
ISCJB ***12*** *21:21:40.3±1.0, 6°34S±0°08×147°3E±0°2, h63km, mb3.6/6, Error ellipse: s-maj=29.6km s-min=10.8km az=1.7*
ISC 12 21:21:41.9±1.2, 6°3S±0°1×147°3E±0°3, h63km, n9, σ0°88/9, mb3.6/6, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**3.05**	**182**	Pn	Pn	21 22 21.8	-5.9
5.7nm,0.3s,baz=340,slow=13,SNR=11							
PMG				Sn	**Sn**	**21 23 02.7**	**-0.2**
5.9nm,0.3s,baz=337,slow=15,SNR=9.1							
WRA	**Warramunga Arr**	**18.47**	**222**	P	**P**	**21 25 51.7**	**-1.1**
0.1nm,0.3s,baz=49,slow=10,SNR=3.2							
ASAR	**Alice Springs**	**21.50**	**215**	P	**P**	**21 26 25.0**	**-0.7**
1.5nm,0.4s,baz=52,slow=9.2,SNR=19							
FITZ	**Fitzroy Crossi**	**24.14**	**239**	P	**P**	**21 26 53.1**	**+0.9**
5.6nm,0.8s,baz=50,slow=8.4,SNR=12							
SONM	**Songino Array**	**64.84**	**331**	P	**P**	**21 32 15.0**	**+0.5**
0.2nm,0.6s,baz=139,slow=6.8,SNR=2.3							
VNDA	**Vanda**	**71.56**	**177**	P	**P**	**21 32 56.8**	**+1.0**
1.2nm,1.0s,baz=323,slow=6.0,SNR=5.3							
MKAR	**Makanchi Array**	**77.94**	**320**	P	**P**	**21 33 32.9**	**-0.4**
0.1nm,0.3s,baz=102,slow=8.8,SNR=1.8							
ILAR	**Eielson Array**	**85.68**	**23**	P	**P**	**21 34 12.8**	**-0.8**
0.4nm,1.0s,baz=225,slow=8.5,SNR=2.2							
TORD	**Torodi Ar. Bea**	**145.45**	**284**	PKPbc	**PKPab**	**21 41 14.4**	**+0.2**
0.7nm,0.7s,baz=53,slow=3.6,SNR=4.6							

JMA 12 21:34:29.7±0.2, 36°71N×141°43E, h45km±2km, M3.2, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.64**	**308**	P	Pn	21 34 42.3	-0.2
ONAJ				S	Sn	21 34 51.3	-0.4
JHO	**Hitachi**	**0.70**	**262**	P	Pn	21 34 43.1	-0.2
JHO				S	Sn	21 34 52.8	-0.2
JFK	**Kawauchi**	**0.79**	**326**	P	Pn	21 34 44.2	-0.3
JFK				S	Sn	21 34 54.6	-0.7
JFT	**Otama**	**1.19**	**313**	P	Pn	21 34 51.0	+1.1
JFT				S	Sn	21 35 06.3	+1.4
JMM	**Marumori**	**1.26**	**336**	P	Pn	21 34 50.9	0.0
JMM				*e*S	Sn	21 35 06.3	-0.3
JOU	**Okura**	**1.76**	**340**	*e*S	Sn	21 35 21.0	+2.0
MAT	**Matsushiro**	**2.60**	**267**	P	Pn	21 35 11.4	+2.2
MAT				S	Sn	21 35 44.7	+5.1

IDC 12 21:36:45.8±2.4, 23°.59S×115°.36W, h0km, mb3.6/4, mb1 4.0/4, mb1mx3.7/25, mbtmp3.6/4, MS3.7/2, Ms1 3.7/2, ms1mx3.2/22, Error ellipse: s-maj=95.3km s-min=43.6km az=29.0, Southern East Pacific Rise

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
PLCA	**Paso Flores**	**41.13**	**125**	LR	LR		21 57 15.5	
	comp=Z,106nm,20.7s,baz=303,slow=30							
LPAZ	**La Paz**	**44.83**	**90**	P	P		21 45 02.9	+0.1
	0.9nm,0.6s,baz=228,slow=8.0,SNR=3.4							
CPUP	**Villa Florida**	**52.30**	**106**	LR	LR		22 03 46.6	
	comp=Z,65nm,18.2s,baz=238,slow=31							
PDAR	**Pinedale Array**	**66.24**	**5**	P	P		21 47 34.9	-0.9
	0.2nm,0.6s,baz=185,slow=9.1,SNR=3.0							
YKA	**Yellowknife Ar**	**85.78**	**0**	P	P		21 49 27.1	+0.7
	0.4nm,0.6s,baz=198,slow=4.4,SNR=5.6							
H11S2	**WAKE ISLAND Hy**	**86.76**	**292**	T	T		23 25 13.5	
	baz=116							
H11S1	**WAKE ISLAND Hy**	**86.77**	**292**	T	T		23 25 08.2	
	baz=116							
H11S3	**WAKE ISLAND Hy**	**86.78**	**292**	T	T		23 25 07.4	
	baz=116							
H11N3	**WAKE ISLAND Hy**	**87.12**	**293**	T	T		23 25 36.7	
	baz=117,slow=76,SNR=8.7							
H11N1	**WAKE ISLAND Hy**	**87.14**	**293**	T	T		23 25 42.6	
	baz=117,slow=76,SNR=4.6							
H11N2	**WAKE ISLAND Hy**	**87.14**	**293**	T	T		23 25 42.4	
	baz=117,slow=76,SNR=14							
ILAR	**Eielson Array**	**91.39**	**347**	P	P		21 49 53.6	+0.4
	0.2nm,0.5s,baz=179,slow=6.3,SNR=3.8							
ZALV	**Zalesovo Beam**	**146.09**	**339**	PKPbc	PKPbc		21 56 27.8	+0.2
	1.2nm,0.6s,baz=48,slow=4.4,SNR=5.7							
BRTR	**Keskin Array B**	**149.29**	**51**	PKPbc	PKPbc		21 56 36.0	-1.0
	1.0nm,0.9s,baz=212,slow=4.4,SNR=5.4							
MKAR	**Makanchi Array**	**152.84**	**333**	PKPbc	PKPbc		21 56 43.6	-1.3
	0.3nm,0.6s,baz=34,slow=3.4,SNR=4.2							

GUC 12 21:40:31.0±0.5, 23°.75S×67°.46W, h257km±14km, ML3.5, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
PB06	**IPOC Station P**	**2.20**	**298**	*i* P		Pn	21 41 17.9	+1.8
PB06				*i* S		S	21 41 53.5	+1.8
PB06				IAML			21 41 55.4	
	comp=E,86nm,0.3s							
PB09	**IPOC Station P**	**2.54**	**319**	*i* P		Pn	21 41 21.3	+1.9
PB09				*i* S		S	21 42 00.1	+2.4
PB09				IAML			21 42 03.3	
	comp=N,100nm,0.3s							
PB04	**IPOC Station P**	**2.84**	**299**	*i* P		Pn	21 41 25.2	+2.7
PB04				*i* S		S	21 42 05.7	+2.5
PB04				IAML			21 42 08.4	
	comp=N,45nm,0.4s							
PB07	**IPOC Station P**	**3.01**	**311**	*i* P		Pn	21 41 26.5	+2.3
PB07				*i* S		S	21 42 08.6	+2.3
PB07				IAML			21 42 09.8	
	comp=N,55nm,0.4s							

IDC 12 21:47:21.4±1.4, 37°.22N×144°.51E, h0km, mb3.5/3, mb1 3.8/4, mb1mx3.4/43, mbtmp3.5/4, ML3.5/1, Error ellipse: s-maj=50.4km s-min=29.2km az=123.0
ISCJB 12 21:47:24.7±0.9, 37°.43N±0°.05×144°.13E±0°.06, h33km, mb3.6/3, Error ellipse: s-maj=7.4km s-min=7.0km az=21.6
JMA 12 21:47:25.8±0.2, 37°.51N×144°.08E, h50km, M3.6
ISC 12 21:47:26.1±1.3, 37°.48N±0°.07×144°.17E±0°.09, h35km, n21, σ1§04/25, mb3.6/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.43**	**294**	P		**Pn**	**21 48 03.4**	**+0.1**
JIO				*e*S		**Sn**	**21 48 31.5**	**-0.3**
OFUJ	**Ofunato**	**2.53**	**310**	P		**Pn**	**21 48 04.5**	**-0.2**
OFUJ				*e*S		**Sn**	**21 48 33.4**	**-0.9**
JFK	**Kawauchi**	**2.62**	**269**	P		**Pn**	**21 48 06.1**	**+0.1**
JFK				S		**Sn**	**21 48 35.6**	**-1.0**
JMK	**Ichinoseki**	**2.75**	**303**	P		**Pn**	**21 48 07.7**	**0.0**
JMK				S		**Sn**	**21 48 39.2**	**-0.4**
JOM	**Ohasama**	**3.01**	**312**	P		**Pn**	**21 48 11.3**	**0.0**
JOM				*e*S		**Sn**	**21 48 44.8**	**-1.3**
JFT	**Otama**	**3.05**	**272**	P		**Pn**	**21 48 12.7**	**+0.9**
JFT				S		**Sn**	**21 48 47.6**	**+0.6**
JYK	**Kaneyama**	**3.33**	**297**	P		**Pn**	**21 48 16.6**	**+1.0**
JYK				*e*S		**Sn**	**21 48 54.8**	**+0.9**
JANG	**Nango**	**3.55**	**325**	S		Sn	21 48 54.8	-4.7
JAG	**Ashikaga**	**3.92**	**256**	P		**Pn**	**21 48 24.1**	**+0.3**
JAG				*e*S		**Sn**	**21 49 07.2**	**-1.4**
JRY	**Ryogami san**	**4.47**	**253**	P		**Pn**	**21 48 31.3**	**-0.1**
JRY				S		**Sn**	**21 49 20.8**	**-1.5**
MJAR	**Matsushiro Arr**	**4.86**	**261**	Pn		**Pn**	**21 48 38.5**	**+1.8**
	1.8nm,0.3s,baz=90,slow=15,SNR=12							
MJAR				Sn		**Sn**	**21 49 32.8**	**+1.0**
	0.7nm,0.3s,baz=70,slow=22,SNR=4.2							
MAT	**Matsushiro**	**4.86**	**261**	P		**Pn**	**21 48 38.9**	**+2.2**
MAT				*e*S		**Sn**	**21 49 30.6**	**-1.2**
H11N2	**WAKE ISLAND Hy**	**26.55**	**125**	T		T	22 20 33.4	
	baz=318,slow=75,SNR=7.3							
H11N1	**WAKE ISLAND Hy**	**26.56**	**126**	T		T	22 20 36.3	
	baz=318,slow=75,SNR=2.8							
H11N3	**WAKE ISLAND Hy**	**26.57**	**125**	T		T	22 20 34.8	
	baz=318,slow=75,SNR=8.8							
H11S1	**WAKE ISLAND Hy**	**27.32**	**128**	T		T	22 20 59.6	
	baz=326							
H11S3	**WAKE ISLAND Hy**	**27.32**	**128**	T		T	22 21 18.4	
	baz=326							
H11S2	**WAKE ISLAND Hy**	**27.34**	**128**	T		T	22 21 33.7	
	baz=326							
ILAR	**Eielson Array**	**47.94**	**33**	P		**P**	**21 56 01.8**	**+1.0**
	0.5nm,0.7s,baz=246,slow=6.8,SNR=5.4							
WRA	**Warramunga Arr**	**57.86**	**191**	P		**P**	**21 57 13.6**	**-0.8**
	0.5nm,0.6s,baz=9.3,slow=7.0,SNR=6.2							
ASAR	**Alice Springs**	**61.58**	**191**	P		**P**	**21 57 38.9**	**-1.0**
	0.2nm,0.5s,baz=17,slow=6.8,SNR=3.1							

IDC 12 22:05:04.0±1.7, 26°.85N×143°.71E, h0km, mb3.6/6, mb1 3.8/7, mb1mx3.5/55, mbtmp3.7/7, ML4.0/1, Error ellipse: s-maj=33.2km s-min=26.3km az=64.0
ISCJB 12 22:05:06.4±1.2, 26°.8N±0°.2×143°.8E±0°.1, h33km, mb3.6/6, Error ellipse: s-maj=22.8km s-min=14.4km az=9.9
ISC 12 22:05:08.7±1.4, 27°.0N±0°.1×143°.8E±0°.1, h35km, n8, σ1§43/9, mb3.8/6, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
JCJ	**Chichijima**	**1.42**	**276**	Pn		**Pn**	**22 05 30.5**	**-1.5**
	4.8nm,0.3s,baz=242,slow=23,SNR=2.4							
JCJ				Sn		**Sn**	**22 05 50.6**	**+1.2**
	77nm,0.3s,baz=285,slow=20,SNR=20							
MJAR	**Matsushiro Arr**	**10.67**	**335**	Pn		**Pn**	**22 07 37.1**	**-1.9**
	1.0nm,0.3s,baz=164,slow=12,SNR=7.6							
KLR	**Kul'dur**	**24.11**	**340**	P		**P**	**22 10 22.0**	**+0.9**
	0.8nm,0.6s,baz=188,slow=7.1,SNR=4.2							
SONM	**Songino Array**	**35.80**	**316**	P		**P**	**22 12 05.4**	**+0.7**
	0.3nm,0.4s,baz=131,slow=5.9,SNR=3.1							
WRA	**Warramunga Arr**	**47.50**	**192**	P		**P**	**22 13 39.9**	**-0.6**
	0.7nm,0.7s,baz=12,slow=8.7,SNR=4.6							
MKAR	**Makanchi Array**	**51.66**	**310**	P		**P**	**22 14 13.0**	**+1.0**
	0.4nm,0.4s,baz=87,slow=9.7,SNR=6.8							
KURBB	**Kurchatov Arra**	**54.15**	**314**	P		**P**	**22 14 31.1**	**+0.8**
	0.6nm,0.6s,baz=90,slow=8.1,SNR=12							
BVAR	**Borovoye Array**	**59.10**	**318**	P		**P**	**22 15 06.6**	**+1.1**
	0.3nm,0.3s,baz=83,slow=7.0,SNR=4.0							

IDC 12 22:07:24.1±0.9, 12°.21N×144°.03E, h0km, mb3.9/13, mb1 4.1/13, mb1mx3.8/56, mbtmp3.9/13, Error ellipse: s-maj=27.2km s-min=17.3km az=113.0
ISCJB 12 22:07:26.5±0.6, 12°.16N±0°.09×144°.0E±0°.1, h26km, mb4.0/15, Error ellipse: s-maj=18.4km s-min=9.0km az=36.0
NEIC 12 22:07:29.2±1.9, 12°.19N×144°.13E, h36km±16km, mb4.3/2, Error ellipse: s-maj=17.8km s-min=13.5km az=113.0
ISC 12 22:07:27.9±0.8, 12°.2N±0°.1×144°.1E±0°.2, h26km, n25, σ0§90/20, mb4.0/15, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**1.58**	**29**	Pn		**Pn**	**22 07 54.2**	**+0.1**
	153nm,0.3s,baz=331,slow=0.3,SNR=23							
GUMO				Sn		**Sb**	**22 08 15.6**	**-0.3**
	212nm,0.3s,baz=14,slow=21,SNR=20							
H11S3	**WAKE ISLAND Hy**	**22.66**	**71**	T		T	22 36 06.4	
	baz=256,slow=75,SNR=7.6							
H11S1	**WAKE ISLAND Hy**	**22.68**	**71**	T		T	22 36 05.6	
	baz=256,slow=75,SNR=5.4							
H11S2	**WAKE ISLAND Hy**	**22.68**	**71**	T		T	22 36 06.0	
	baz=256,slow=75,SNR=6.4							
H11N1	**WAKE ISLAND Hy**	**23.14**	**68**	T		T	22 36 33.1	
	baz=255,slow=75,SNR=10							
H11N2	**WAKE ISLAND Hy**	**23.15**	**68**	T		T	22 36 37.9	
	baz=255,slow=75,SNR=12							
H11N3	**WAKE ISLAND Hy**	**23.16**	**68**	T		T	22 36 37.3	
	baz=255,slow=75,SNR=7.6							
WRA	**Warramunga Arr**	**33.35**	**197**	P		**P**	**22 14 04.3**	**+0.2**
	0.9nm,0.8s,baz=21,slow=9.6,SNR=7.4							
ASAR	**Alice Springs**	**37.01**	**196**	P		**P**	**22 14 35.6**	**0.0**
	0.2nm,0.5s,baz=21,slow=11,SNR=4.7							
CMAR	**Chiang Mai Arr**	**43.89**	**284**	P		**P**	**22 15 32.6**	**-0.1**
	0.6nm,0.4s,baz=67,slow=6.9,SNR=4.5							
SONM	**Songino Array**	**47.44**	**326**	P		**P**	**22 16 01.3**	**+0.9**
	0.3nm,0.6s,baz=132,slow=4.1,SNR=3.2							
MKAR	**Makanchi Array**	**61.96**	**317**	P		**P**	**22 17 46.2**	**+0.5**
	0.8nm,0.6s,baz=92,slow=9.0,SNR=11							
KURK	**Kurchatov**	**65.16**	**320**	P		**P**	**22 18 06.8**	**+0.2**
KURBB	**Kurchatov Arra**	**65.19**	**320**	P		**P**	**22 18 06.8**	**0.0**
	0.9nm,0.5s,baz=106,slow=6.7,SNR=12							
BVAR	**Borovoye Array**	**70.54**	**322**	P		**P**	**22 18 40.7**	**+0.1**
	1.3nm,0.5s,baz=106,slow=7.6,SNR=15							
GEYT	**Alibeck**	**79.46**	**307**	P		**P**	**22 19 32.4**	**0.0**
	1.4nm,0.8s,baz=58,slow=3.7,SNR=5.4							
YKA	**Yellowknife Ar**	**84.43**	**27**	P		**P**	**22 19 58.6**	**+0.6**
	0.3nm,0.4s,baz=292,slow=5.8,SNR=5.9							
RES	**Resolute Bay**	**86.07**	**13**	P		**P**	**22 20 06.5**	**+0.6**
	3.2nm,0.8s,baz=282,slow=7.5,SNR=3.4							
NVAR	**Mina Array Bea**	**88.38**	**51**	P		**P**	**22 20 19.2**	**+1.0**
	0.5nm,0.7s,baz=232,slow=4.4,SNR=3.4							
R11A	**Troy Canyon, C**	**90.46**	**51**	*eP*		**P**	**22 20 28.4**	**+0.5**
	0.6nm,0.4s							
FINES	**FINESS Array B**	**92.09**	**335**	P		**P**	**22 20 33.2**	**-1.4**
	1.2nm,0.8s,baz=67,slow=6.4,SNR=7.5							
AKASG	**Malin Array Be**	**95.70**	**325**	P		**P**	**22 20 50.8**	**-0.7**
	0.5nm,0.4s,baz=101,slow=1.0,SNR=5.4							
121A	**Cookes Peak, D**	**98.31**	**54**	P		**P**	**22 21 03.0**	**-1.0**
	0.6nm,0.6s							
GOGA	**Godfrey**	**115.90**	**43**	*e*Pdif		**Pdif**	**22 22 19.3**	**-2.7**
TORD	**Torodi Ar. Bea**	**135.00**	**303**	PKP		**PKPdf**	**22 26 45.6**	**-0.2**
	0.5nm,0.9s,baz=22,slow=3.5,SNR=2.8							

CSEM 12 22:19:23.4, 39°.14N×24°.18E, h3km, ML1.5/6
ATH 12 22:19:23.4, 39°.14N×24°.18E, h3km±4km, ML1.5/6, Error ellipse: s-maj=4.2km s-min=0.9km az=93.0, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
AOS	**Alonnisos**	**0.23**	**278**	P		Pg	22 19 27.5	-0.4
AOS				S		Sg	22 19 31.8	+0.8
AOS	**Alonnisos**	**0.23**	**278**	P		Pg	22 19 27.5	-0.5
AOS				S		Sg	22 19 31.8	+0.8
AOS				AML		AML	22 19 32.4	
	comp=E,419μm,0.5s							
AOS				AML		AML	22 19 32.6	
	comp=N,571μm,0.5s							
SKIA	**Skiathos**	**0.56**	**273**	P		Pg	22 19 34.8	+0.8
SKIA				S		Sg	22 19 42.3	+1.1
SKIA	**Skiathos**	**0.56**	**273**	P		Pg	22 19 34.9	+0.8
SKIA				S		Sg	22 19 42.3	+1.1
SKIA				AML		AML	22 19 43.2	
	comp=E,76μm,0.2s							
SKIA				AML		AML	22 19 44.2	
	comp=N,54μm,0.3s							
EREA	**Eretria**	**0.74**	**195**	P		Pb	22 19 38.7	-0.3
EREA				S		Sg	22 19 48.1	+0.8
EREA	**Eretria**	**0.74**	**195**	P		Pb	22 19 38.7	-0.3
EREA				S		Sg	22 19 48.1	+0.8
EREA				AML		AML	22 19 50.6	
	comp=E,79μm,0.3s							
EREA				AML		AML	22 19 51.4	
	comp=N,82μm,0.2s							
NEO	**Neokhori**	**0.76**	**283**	P		Pb	22 19 39.0	-0.3
NEO				S		Sg	22 19 48.6	+0.7
NEO	**Neokhori**	**0.76**	**283**	P		Pb	22 19 39.0	-0.4
NEO				S		Sg	22 19 48.6	+0.7
NEO				AML		AML	22 19 50.1	
	comp=E,58μm,0.2s							
NEO				AML		AML	22 19 52.5	
	comp=N,72μm,0.4s							
SMIA	**Simia**	**0.80**	**251**	P		Pg	22 19 38.7	0.0
SMIA				S		Sg	22 19 49.5	+0.4
SMIA	**Simia**	**0.80**	**251**	P		Pg	22 19 38.7	0.0
SMIA				S		Sg	22 19 49.5	+0.4
SMIA				AML		AML	22 19 54.5	
	comp=N,214μm,0.4s							
SMIA				AML		AML	22 19 55.6	
	comp=E,171μm,0.7s							
XOR	**Xorichti**	**0.80**	**287**	P		Pg	22 19 39.0	+0.3
XOR				S		Sg	22 19 49.2	+0.1
XOR	**Xorichti**	**0.80**	**287**	P		Pg	22 19 39.0	+0.3
XOR				S		Sg	22 19 49.2	+0.1
XOR				AML		AML	22 19 51.4	
	comp=E,33μm,0.4s							
XOR				AML		AML	22 19 53.0	
	comp=N,66μm,0.2s							
PAIG	**Paliouri**	**0.88**	**334**	P		Pb	22 19 41.0	-0.3
PAIG				S		Sb	22 19 52.8	-0.6
PAIG	**Paliouri**	**0.88**	**334**	P		Pb	22 19 41.0	-0.3
PAIG				S		Sb	22 19 52.8	-0.6
FYTO	**Fytoko, Volos**	**1.00**	**286**	P		Pg	22 19 42.1	-0.4
FYTO				S		Sg	22 19 54.5	-1.0
FYTO	**Fytoko, Volos**	**1.00**	**286**	P		Pg	22 19 42.1	-0.4
FYTO				S		Sg	22 19 54.5	-1.0
LIA	**Limnos Island**	**1.08**	**45**	P		Pg	22 19 43.7	-0.5
LIA				S		Sb	22 19 59.6	+0.2
PTL	**Penteli**	**1.12**	**193**	P		Pg	22 19 44.6	-0.2
PTL				S		Sg	22 19 59.7	+0.5
PTL	**Penteli**	**1.12**	**193**	P		Pg	22 19 44.6	-0.2
PTL				S		Sg	22 19 59.7	+0.5
OUR	**Ouranopolis**	**1.20**	**353**	P		Pg	22 19 44.8	-1.7
OUR				S		Sg	22 20 00.9	-1.2
OUR	**Ouranopolis**	**1.20**	**353**	P		Pg	22 19 44.8	-1.6
OUR				S		Sg	22 20 00.9	-1.1
VLY	**Voula,Athens**	**1.32**	**193**	P		Pg	22 19 47.5	-1.2
VLY				S		Sb	22 20 06.4	+0.2
VLY	**Voula,Athens**	**1.32**	**193**	P		Pg	22 19 47.5	-1.2
VLY				S		Sb	22 20 06.4	+0.2
AGG	**Agios Georgios**	**1.44**	**266**	P		Pn	22 19 48.6	-1.9
AGG	**Agios Georgios**	**1.44**	**266**	P		Pn	22 19 48.6	-1.9

BJI 12 22:22:05.0, 12°.32N×144°.15E, h9km, mb5.2/78, mB5.3/68, Ms5.3/84, Ms7 5.2/76
ISCJB 12 22:22:05.5±0.8, 12°.41N±0°.02×143°.96E±0°.02, h3km±5km, mb5.3/279, MS5.2/234, Error ellipse: s-maj=4.2km s-min=2.8km az=167.1
IDC 12 22:22:06.9±1.6, 12°.33N×144°.07E, h10km±9km, mb5.0/31, mb1 5.0/32, mb1mx5.0/36, mbtmp5.0/32, ML3.0/1, MS5.0/41, Ms1 5.0/41, ms1mx4.9/45, Error ellipse: s-maj=15.7km s-min=9.5km az=94.0
GCMT 12 22:22:08.0±0.1, 12°.19N×143°.98E, h18km, MW5.4/108, Moment Tensor Solution. s93,c186; s108,c212; Duration: 1§3 Moment tensor: Scale 10^{17}Nm; M_{rr}1.38±.03; $M_{\theta\theta}$-1.10±.02; $M_{\phi\phi}$-0.27±.02; $M_{r\theta}$0.35±.04; $M_{\theta\phi}$-1.02±.02; $M_{r\phi}$0.61±.05; Best double couple: $M_0$1.74500×10^{17} NP1:ϕ_s43.00000°, δ57.00000°, λ73.00000°. NP2:ϕ_s252.00000°, δ36.00000°, λ114.00000°. Principal axes: T 1.5800, Plg72.0000°, Azm272.0000°; N 0.3370, Plg14.0000°, Azm52.0000°; P -1.9110, Plg11.0000°, Azm145.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.
MOS 12 22:22:08.5±1.0, 12°.34N×144°.08E, h33km, mb5.6/83, MS5.1/51 Error ellipse: s-maj=9.7km s-min=5.4km az=105.3
NEIC 12 22:22:08.0±0.6, 12°.37N×143°.97E, h12km±3km, mb5.4/166, MS5.2/142, Error ellipse: s-maj=3.9km s-min=3.3km az=136.0
NEIC Felt at Merizo.
DJA 12 22:22:12.9±0.6, 12°N±3°×14°4E±°, h43km±7km, M5.4/74, mb5.4/74, mB5.9/41, MLv5.3/1, Mw(mB)5.4/41, Mwp6.2/1
ISC 12 22:22:08.8±0.5, 12°.38N±0°.03×144°.14E±0°.03, h20km±2km, n912, σ1§71/883, mb5.3/279, MS5.2/236, 47C-27D, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**1.40**	**30**	Pn		**Pb**	**22 22 34.8**	**+0.5**
	922nm,0.3s,baz=184,slow=5.5,SNR=156							
GUMO				Sn		**Sg**	**22 22 54.8**	**+0.6**
	1μm,0.3s,baz=143,slow=20,SNR=19							
GUMO	**Guam**	**1.40**	**30**	*e*Pn		**Pb**	**22 22 34.9**	**+0.6**
MANU	**Manus Island**	**14.68**	**167**	*e*Pn		**Pn**	**22 25 37.1**	**+1.6**
MANU				*e*PcP		**PcP**	**22 30 42.9**	**-5.1**
PATS	**Pohnpei**	**15.01**	**110**	*e*Pn		**Pn**	**22 25 36.8**	**-3.3**
	943nm,1.9s							
JAY	**Jayapura**	**15.18**	**193**	Pn		**Pn**	**22 25 41.8**	**-0.5**
	0.1nm,0.3s,baz=282,slow=23,SNR=5.8							
JAY				Sn		**Sn**	**22 28 25.9**	**-4.2**
	0.0nm,0.3s,baz=90,slow=20,SNR=2.3							
JAY				LR		LR	22 31 11.9	
	comp=Z,182nm,18.6s,baz=359,slow=36							
JAY	**Jayapura**	**15.18**	**193**	P		**Pn**	**22 25 41.6**	**-0.7**
	52nm,1.0s,1μm							
GENI	**Genyem**	**15.38**	**195**	P		**Pn**	**22 25 45.1**	**+0.2**
SIJI	**Sorong**	**18.34**	**225**	P		**P**	**22 26 21.3**	**-1.0**
	9.2nm,0.3s,baz=0.0,slow=20,SNR=1.6							
SWI	**Sorong**	**18.34**	**225**	P		**Pn**	**22 26 24.5**	**+2.2**
	81nm,1.2s,2μm							
SWI	**Sorong**	**18.34**	**225**	P		**Pn**	**22 26 24.8**	**+2.5**
SWI				pmax		pmax		
	comp=Z,81nm,1.2s							
MATI	**Mati**	**18.43**	**255**	*e*P		**P**	**22 26 22.1**	**-1.1**
PLP	**Palo**	**18.80**	**268**	⇓*e*P		**P**	**22 26 27.2**	**0.0**
DAV	**Davao City (W)**	**19.03**	**256**	P		**Pn**	**22 26 31.3**	**+0.6**
	comp=Z,31nm,0.3s,baz=54,slow=4.2,SNR=22							
DAV				S		**S**	**22 30 08.1**	**+2.8**
	comp=Z,42nm,0.3s,baz=252,slow=20,SNR=1.8							
DAV				LR		LR	22 34 26.5	
	comp=Z,2μm,18.1s,baz=72,slow=39							
DAV	**Davao City (W)**	**19.03**	**256**	P		**Pn**	**22 26 32.2**	**+1.5**
	SNR=22							
DAV	**Davao City (W)**	**19.03**	**256**	P		**Pn**	**22 26 32.2**	**+1.5**
	SNR=22							
DAV	**Davao City (W)**	**19.03**	**256**	*e*P		**P**	**22 26 29.0**	**-0.8**
	comp=Z,182nm,0.5s							
DAV				S		**S**	**22 30 08.1**	**+2.8**
FAKI	**Fak Fak**	**19.25**	**219**	P		**P**	**22 26 32.4**	**+0.2**
	comp=Z,97nm,1.8s,comp=Z,2μm							
FAKI	**Fak Fak**	**19.25**	**219**	*e*P		**P**	**22 26 32.0**	**-0.2**
	comp=Z,121nm,1.2s							
BUKP	**Musuan**	**19.30**	**258**	*e*P		**P**	**22 26 32.3**	**-0.5**
CGP	**Cagayan de Oro**	**19.52**	**260**	*e*P		**P**	**22 26 35.7**	**+0.6**
LLP	**Lapu-Lapu**	**19.89**	**266**	*e*P		**P**	**22 26 39.1**	**0.0**
CTBH	**Cotabato--PC H**	**20.26**	**257**	⇓*i*P		**P**	**22 26 43.9**	**+0.6**
JOW	**Kunigami**	**20.71**	**316**	*e*P		**P**	**22 26 47.3**	**-0.8**
	comp=Z,165nm,1.3s							
PAGZ	**Pagadian**	**20.92**	**260**	*e*P		**P**	**22 26 50.9**	**+0.5**
RCP	**Roxas**	**20.95**	**270**	⇑*e*P		**P**	**22 26 50.2**	**-0.5**
AUQP	**San Andres**	**20.95**	**275**	*e*P		**P**	**22 26 51.9**	**+1.1**
LBMI	**Labuha**	**20.98**	**233**	P		**P**	**22 26 52.0**	**+1.0**
	comp=Z,292nm,1.5s,comp=Z,5μm							
JHJ	**Hachijo jima 2**	**21.03**	**350**	LR		LR	22 33 40.4	
	comp=Z,6μm,21.0s,baz=160,slow=33							
GUIM	**Jordan**	**21.19**	**268**	*e*P		**P**	**22 26 51.9**	**-1.4**
OTRP	**Odiongan**	**21.61**	**272**	*e*P		**P**	**22 26 56.0**	**-1.8**
OTRP	**Odiongan**	**21.61**	**272**	*e*P		**P**	**22 26 56.0**	**-1.8**
IPIL	**Ipil**	**21.71**	**260**	*e*P		**P**	**22 26 57.9**	**-1.0**
MSAI	**Masohi**	**21.74**	**225**	P		P	22 27 06.5	+7.3
BOAC	**Boac**	**21.76**	**275**	*e*P		**P**	**22 27 00.2**	**+0.8**
PMG	**Port Moresby**	**21.85**	**172**	P		**P**	**22 26 58.8**	**-1.5**
	comp=Z,45nm,0.9s,baz=45,slow=17,SNR=4.2							
PMG				S		S	22 30 47.1	-14
	comp=Z,10nm,0.3s,baz=172,slow=15,SNR=3.8							
PMG				LR		LR	22 34 53.2	
	comp=Z,4μm,18.2s,baz=348,slow=35							
PMG	**Port Moresby**	**21.85**	**172**	*d*iP		**P**	**22 26 58.5**	**-1.8**
PMG				pmax		pmax		
	comp=Z,517nm,1.2s							
PMG	**Port Moresby**	**21.85**	**172**	*e*P		**P**	**22 27 00.3**	**0.0**
	comp=Z,122nm,1.1s							
PMG				S		S	22 30 47.1	-14
CAUP	**Cauayan**	**22.06**	**285**	*e*P		**P**	**22 27 03.0**	**+0.4**
SGCP	**Mt. Cagua**	**22.09**	**288**	*e*P		**P**	**22 27 01.8**	**-1.1**
BALP	**Baler**	**22.14**	**281**	*e*P		**P**	**22 27 01.7**	**-1.8**
SJMP	**San Jose**	**22.48**	**273**	*e*P		**P**	**22 27 06.2**	**-1.0**
H11S3	**WAKE ISLAND Hy**	**22.56**	**72**	T		T	22 50 40.7	
	baz=258,slow=75,SNR=77							
H11S1	**WAKE ISLAND Hy**	**22.57**	**72**	T		T	22 50 41.3	
	baz=258,slow=75,SNR=59							
H11S2	**WAKE ISLAND Hy**	**22.57**	**72**	T		T	22 50 45.3	
	baz=258,slow=75,SNR=126							
CUYO	**Cuyo Island**	**22.70**	**269**	*e*P		**P**	**22 27 07.2**	**-2.4**
APYP	**Conner**	**22.76**	**287**	*e*P		**P**	**22 27 09.4**	**-0.7**

MRSI	**Marisa**	**24.99 243**	P	**P**		**22 27 32.5 +1.0**
	comp=Z,499nm,1.2s,comp=Z,5μm					
LUWI	**Luwuk**	**25.05 239**	P	**P**		**22 27 31.2 -0.9**
	comp=Z,684nm,1.0s,comp=Z,6μm					
LUWI	**Luwuk**	**25.05 239**	*e*P	**P**		**22 27 30.8 -1.4**
	comp=Z,578nm,0.9s					
BATP	**Bataraza**	**26.13 265**	*e*P	**P**		**22 27 41.0 -0.9**
COEN	**Coen**	**26.18 182**	*e*P	**P**		**22 27 41.9 -0.4**
	comp=Z,63nm,1.1s					
MYLDM	**Lahad Datu**	**26.31 256**	*e*P	**P**		**22 27 44.3 +0.7**
	comp=Z,343nm,1.1s					
MYLDM			*e*ScP	**ScP**		**22 34 51.9 +3.2**
HNR	**Honiara**	**26.76 143**	P	**P**		**22 27 46.9 -0.6**
	comp=Z,34nm,0.4s,baz=176,slow=19,SNR=2.9					
HNR			LR	LR		22 38 52.2
	comp=Z,2μm,18.5s,baz=325,slow=38					
HNR	**Honiara**	**26.76 143**	*e*P	**P**		**22 27 47.8 +0.3**
HNR			pmax	pmax		
	comp=Z,172nm,1.3s					
HNR	**Honiara**	**26.76 143**	*e*P	**P**		**22 27 47.8 +0.3**
	comp=Z,172nm,1.3s					
TSM	**Tawau**	**27.18 255**	⇓P	**P**		**22 27 51.9 +0.5**
QZH	**Quanzhou**	**27.18 301**	⇑*i*P	**P**		**22 27 45.2 -6.1**
QZH			PP	**PnPn**		**22 28 30.1 -4.7**
QZH			S	**S**		**22 32 23.0 -6.2**
QZH			pmax	pmax		
	comp=Z,990nm,10.2s					
QZH			LR	LR		
	comp=N,5μm,17.7s					
QZH			LR	LR		
	comp=E,5μm,18.8s					
QZH			LR	LR		
	comp=Z,7μm,18.4s					
SDKM	**Sandakan**	**27.42 258**	⇓P	**P**		**22 27 54.1 +0.5**
PCI	**Palu**	**27.50 243**	P	**P**		**22 27 57.8 +3.6**
	comp=Z,44nm,1.3s,comp=Z,989nm					
MTN	**Manton Dam**	**28.18 208**	*e*P	**P**		**22 28 00.1 -0.1**
	comp=Z,107nm,1.4s					
SSE	**Sheshan**	**28.21 315**	P	**P**		**22 27 58.8 -1.6**
SSE			sP	**pP**		**22 28 04.0 -2.4**
SSE			S	**S**		**22 32 42.1 -3.1**
SSE			pmax	pmax		
	comp=Z,37nm,0.8s					
SSE			pmax	pmax		
	comp=Z,400nm,7.6s					
SSE			LR	LR		
	comp=Z,810nm,17.9s					
SSE			LR	LR		
	comp=Z,2μm,17.9s					
SSE			LR	LR		
	comp=Z,2μm,18.8s					
KKM	**Kota Kinabalu**	**28.26 260**	⇓P	**P**		**22 28 01.9 +0.8**
KKM	**Kota Kinabalu**	**28.26 260**	*e*P	**P**		**22 28 00.9 -0.2**
	comp=Z,62nm,1.2s					
KKM			LR	LR		
	comp=Z,2μm,22.0s					
TJN	**Taejon**	**28.27 331**	⇑*i*P	**P**		**22 28 01.9 +1.0**
TTSI	**Tana Toraja**	**28.61 239**	P	P		22 28 11.0 +6.8
KSRS	**Korea Array**	**28.89 333**	P	**P**		**22 28 06.0 -0.4**
	comp=Z,14nm,0.9s,baz=144,slow=9.8,SNR=26					
KSRS			PcP	**PcP**		**22 31 15.8 +0.4**
	comp=Z,3.8nm,0.8s,baz=162,slow=3.1,SNR=7.0					
KSRS			ScP	**ScP**		**22 34 56.4 +0.4**
	comp=Z,3.9nm,1.0s,baz=162,slow=3.2,SNR=7.6					
KSRS			LR	LR		22 39 15.4
	comp=Z,2μm,18.0s,baz=146,slow=36					
KS15	**Wonju Array Si**	**28.90 333**	*e*P	**P**		**22 28 06.3 -0.1**
KSAR	**Wonju Array Be**	**28.90 333**	P	**P**		**22 28 06.0 -0.4**
KSAR						22 31 15.9
KSAR	**Wonju Array Be**	**28.90 333**	P	**P**		**22 28 06.0 -0.4**
KSAR			PcP	**PcP**		**22 31 15.8 +0.4**
KSAR			ScP	**ScP**		**22 34 56.4 +0.3**
KS01	**Wonju Array Si**	**28.92 333**	*e*P	**P**		**22 28 05.8 -0.9**
KS01			*e*PcP	**PcP**		**22 31 16.9 +1.4**
KS01			*e*ScP	**ScP**		**22 34 56.9 +0.8**
SPSI	**Sidrap Palu**	**29.16 238**	P	**P**		**22 28 11.3 +2.3**
	comp=Z,30nm,1.2s					
INCN	**Inchon**	**29.51 331**	PFAKE			22 28 20.0 +8.1
INCN			LR	LR		
	comp=Z,3μm,20.0s					
ERM	**Erimo**	**29.54 359**	PFAKE			22 28 20.0 +7.9
ERM			LR	LR		
	comp=Z,3μm,20.0s					
KAPI	**Kappang**	**29.77 236**	P	**P**		**22 28 12.6 -1.9**
	comp=Z,17nm,0.8s,baz=57,slow=4.2,SNR=6.1					
KAPI			LR	LR		22 40 23.3
	comp=Z,679nm,19.4s,baz=51,slow=37					
KAPI	**Kappang**	**29.77 236**	*e*P	**P**		**22 28 13.6 -0.8**
	comp=Z,39nm,1.1s					
HKC	**Hong Kong Obse**	**30.20 293**	P	**P**		**22 28 20.0 +1.8**
NJ2	**Nanjing**	**30.39 314**	*e*P	**P**		**22 28 16.0 -3.7**
NJ2			sP	**pP**		**22 28 23.7 -2.0**
NJ2			S	**S**		**22 33 16.6 -2.8**
NJ2			sS	**sS**		**22 33 32.4 +3.1**
NJ2			pmax	pmax		
	comp=Z,29nm,0.5s					
NJ2			pmax	pmax		
	comp=Z,460nm,8.1s					
NJ2			LR	LR		
	comp=Z,2μm,20.6s					
NJ2			LR	LR		
	comp=Z,2μm,18.4s					
NJ2			LR	LR		
	comp=Z,2μm,18.4s					
TARA	**Tarawa**	**30.56 109**	*e*P	**P**		**22 28 21.5 +0.1**
	comp=Z,205nm,1.4s					
TARA			LR	LR		
	comp=Z,168nm,19.0s					
GZH	**Guangzhou**	**31.14 294**	P	**P**		**22 28 25.5 -1.0**
GZH			S	**S**		**22 33 35.6 +4.1**
GZH			pmax	pmax		
	comp=Z,780nm,7.9s					
YUK	**Yuzh-Kuril'sk**	**31.58 2**	*i*P	**P**		**22 28 28.1 -2.0**
YUK			*i*S	**S**		**22 33 36.7 -1.1**
YUK			MLR	MLR		
	comp=Z,2μm,20.0s					
YUK			MLR	MLR		
	comp=E,915nm,19.0s					
YUK			MLR	MLR		
	comp=N,1μm,18.0s					
ASAJ	**Asahikawa**	**31.66 358**	LR	LR		22 41 47.3
	comp=N,2μm,20.6s,baz=176,slow=37					
ASAJ	**Asahikawa**	**31.66 358**	*e*P	**P**		**22 28 31.5 +0.8**
	comp=N,61nm,1.4s					
MTKI	**Muara Teweh, K**	**31.90 248**	P	P		22 28 39.2 +5.9
	comp=N,43nm,1.4s,comp=N,3μm					
BTM	**Bintulu**	**32.06 256**	⇓P	**P**		**22 28 35.3 +0.6**
CTAO	**Charters Tower**	**32.33 176**	*e*P	**P**		**22 28 36.5 -0.4**
CTAO			pmax	pmax		
	comp=Z,480nm,1.6s					
CTAO			MLR	MLR		
	comp=Z,3μm,19.0s					
CTAO	**Charters Tower**	**32.33 176**	*e*P	**P**		**22 28 36.5 -0.4**
	comp=Z,480nm,1.6s					
CTAO			LR	LR		
	comp=Z,3μm,19.0s					
VLA	**Vladivostok**	**32.42 343**	⇓*i*P	**P**		**22 28 35.8 -1.6**
VLA			*e*			22 29 41.6
VLA			*i*			22 31 22.6
VLA			*e*S	**S**		**22 33 50.5 -0.4**
VLA			pmax	pmax		
	comp=Z,46nm,1.5s					
KUR	**Kuril'sk**	**32.90 5**	*e*P	P		22 28 31.9 -10
KUR			*e*S	**S**		**22 33 54.4 -3.9**
KUR			MLR	MLR		
	comp=N,1μm,21.0s					
KUR			MLR	MLR		
	comp=E,631nm,21.0s					
KUR			MLR	MLR		
	comp=Z,2μm,21.0s					
WHN	**Wuhan**	**32.94 308**	⇓*i*P	**P**		**22 28 42.9 +0.7**
WHN			PP	**PnPn**		**22 29 51.1 -0.3**
WHN			S	**S**		**22 34 01.0 +1.6**
WHN			pmax	pmax		
	comp=Z,88nm,1.1s					
WHN			LR	LR		
	comp=Z,8μm,23.0s					
WHN			LR	LR		
	comp=Z,8μm,19.7s					
WHN			LR	LR		
	comp=Z,10μm,19.7s					
SBUM	**Sibu**	**33.11 255**	*e*P	**P**		**22 28 43.9 0.0**
	comp=Z,142nm,1.1s					
DL2	**Dalian**	**33.13 327**	P	**P**		**22 28 44.0 +0.3**
DL2			S	**S**		**22 34 05.6 +3.5**
DL2			pmax	pmax		
	comp=Z,510nm,6.9s					
DL2			LR	LR		
	comp=Z,3μm,19.4s					
DL2			LR	LR		
	comp=Z,2μm,19.0s					
DL2			LR	LR		
	comp=Z,4μm,21.1s					
USRK	**Ussuriysk Ar.**	**33.39 344**	P	**P**		**22 28 46.1 +0.2**
	comp=Z,5.4nm,0.7s,baz=135,slow=8.0,SNR=10					
USRK			PcP	**PcP**		**22 31 25.5 -1.8**
	comp=Z,2.8nm,0.8s,baz=191,slow=3.7,SNR=3.0					
USRK			ScP	**ScP**		**22 35 11.8 +0.9**
	comp=Z,6.3nm,0.9s,baz=197,slow=2.0,SNR=13					
USRK			LR	LR		22 40 05.1
	comp=Z,3μm,20.5s,baz=152,slow=32					
WRAB	**Tennant Creek**	**33.52 197**	⇓*e*P	**P**		**22 28 46.1 -1.2**
WRAB			pmax	pmax		
	comp=Z,44nm,0.9s					
WRAB	**Tennant Creek**	**33.52 197**	*e*P	**P**		**22 28 44.9 -2.4**
	comp=Z,32nm,0.9s					
WRAB			LR	LR		
	comp=Z,2μm,20.0s					
WB2	**Warramunga Arr**	**33.53 197**	*e*P	**P**		**22 28 46.4 -1.0**
	comp=Z,31nm,0.8s					
WRA	**Warramunga Arr**	**33.53 197**	P	**P**		**22 28 45.9 -1.5**
	comp=Z,12nm,0.8s,baz=21,slow=10.0,SNR=38					
WRA			PcP	**PcP**		**22 31 28.8 +0.7**
	comp=Z,4.4nm,0.9s,baz=9.0,slow=2.5,SNR=4.1					
WRA			ScP	**ScP**		**22 35 10.4 -1.4**
	comp=Z,1.5nm,1.0s,baz=1.6,slow=3.3,SNR=5.1					
WRA			LR	LR		22 42 54.6
	comp=Z,2μm,20.4s,baz=0.0,slow=37					
WRA	**Warramunga Arr**	**33.53 197**	*i* P	**P**		**22 28 45.5 -1.9**
WRA			pmax	pmax		
	comp=Z,12nm,0.8s					
QIZ	**Qiongzhong**	**33.63 286**	P	**P**		**22 28 47.4 -1.0**
QIZ			PP	**PP**		**22 30 04.2 -0.4**
QIZ			S	**S**		**22 34 10.9 +0.5**
QIZ			LR	LR		
	comp=Z,560nm,19.1s					
QIZ			LR	LR		
	comp=Z,1μm,19.4s					
TIA	**Tai'an**	**33.98 319**	*e*P	**P**		**22 28 51.6 +0.3**
TIA			pmax	pmax		
	comp=Z,20nm,1.3s					
TIA			pmax	pmax		
	comp=Z,730nm,9.7s					
TIA			LR	LR		
	comp=Z,2μm,16.8s					
TIA			LR	LR		
	comp=Z,3μm,18.5s					
TIA			LR	LR		
	comp=Z,5μm,19.4s					
MDJ	**Mudanjiang**	**34.47 342**	P	**P**		**22 28 56.2 +0.9**
MDJ			pP	pP		22 28 59.3 -2.0
MDJ			sP	sP		22 29 00.6 -3.2
MDJ			PP	**PP**		**22 30 13.9 +0.4**
MDJ			PcP	**PcP**		**22 31 29.9 -0.5**
MDJ			S	**S**		**22 34 25.6 +2.9**
MDJ			sS	sS		22 34 30.8 -1.8
MDJ			PcS	**PcS**		**22 35 17.2 +0.6**
MDJ			pmax	pmax		
	comp=Z,21nm,1.1s					
MDJ			pmax	pmax		
	comp=Z,290nm,6.7s					
MDJ			LR	LR		
	comp=Z,2μm,18.6s					
MDJ			LR	LR		
	comp=Z,1μm,20.7s					
MDJ			LR	LR		
	comp=Z,3μm,21.1s					
MDJ	**Mudanjiang**	**34.47 342**	*e*P	**P**		**22 28 56.0 +0.7**
	comp=Z,24nm,1.0s					
MDJ			LR	LR		
	comp=Z,3μm,20.0s					
STKI	**Sintang**	**34.63 252**	P	**P**		**22 28 57.1 -0.1**
	comp=Z,78nm,1.2s,comp=Z,38μm					
CN2	**Changchun**	**35.21 336**	*e*P	**P**		**22 29 03.6 +1.8**
CN2			*es*P	sP		22 29 10.6 +0.3
CN2			PP	**PP**		**22 30 22.6 +0.8**
CN2			*e*S	**S**		**22 34 35.6 +1.4**
CN2			SS	**SnSn**		**22 36 51.9 -0.3**
CN2			pmax	pmax		
	comp=Z,20nm,1.0s					
CN2			pmax	pmax		
	comp=Z,200nm,8.0s					
CN2			LR	LR		
	comp=Z,1μm,17.0s					
CN2			LR	LR		
	comp=Z,2μm,17.0s					
CN2			LR	LR		
	comp=Z,2μm,19.0s					
KSM	**Kuching**	**35.23 255**	⇑P	**P**		**22 29 02.3 0.0**
KSM	**Kuching**	**35.23 255**	*e*P	**P**		**22 29 01.3 -1.0**
KSM			LR	LR		
	comp=Z,166nm,1.0s					
	comp=Z,845nm,20.0s					
FITZ	**Fitzroy Crossi**	**35.36 211**	*e*P	**P**		**22 29 03.5 +0.2**
	comp=Z,27nm,1.1s					
JAGI	**Jajag, Banyuwa**	**36.29 237**	P	**P**		**22 29 13.7 +2.3**
	comp=Z,40nm,1.4s					
JAGI	**Jajag, Banyuwa**	**36.29 237**	*e*P	**P**		**22 29 11.3 -0.1**
	comp=Z,78nm,1.4s					
ENH	**Enshi**	**36.67 305**	*e*P	**P**		**22 29 14.5 0.0**
	comp=Z,90nm,1.1s					
ENH			LR	LR		
	comp=Z,4μm,20.0s					
GMJI	**Gumukmas**	**36.77 238**	P	**P**		**22 29 17.4 +2.0**
HABR	**Khabarovsk**	**36.78 350**	*e*P	**P**		**22 29 12.8 -2.2**
HABR			*e*			22 30 36.6
HABR			*e*			22 31 35.0
HABR			*e*S	**S**		**22 34 57.4 -0.6**
HABR			*e*SS	**SnSn**		**22 37 29.7 -0.1**
HABR			*e*			22 39 28.8
HABR			pmax	pmax		
	comp=N,29nm,2.2s					
HABR			pmax	pmax		
	comp=E,68nm,2.2s					
HABR			pmax	pmax		
	comp=Z,39nm,2.2s					
HABR			MLR	MLR		
	comp=Z,3μm,19.0s					
BJT	**Baijiatuau**	**36.96 323**	*e*P	**P**		**22 29 16.7 0.0**
BJT			pmax	pmax		
	comp=Z,49nm,1.1s					
BJT			MLR	MLR		
	comp=Z,4μm,19.0s					
BJT	**Baijiatuau**	**36.96 323**	*e*P	**P**		**22 29 16.7 0.0**
	comp=Z,50nm,1.1s					
BJT			LR	LR		
	comp=Z,4μm,19.0s					
BJI	**Beijing**	**36.97 323**	P	**P**		**22 29 17.0 +0.2**
BJI			PP	**PnPn**		**22 30 43.3 +1.9**
BJI			S	**S**		**22 34 57.4 -3.8**
BJI			pmax	pmax		
	comp=Z,32nm,1.2s					
BJI			pmax	pmax		
	comp=Z,600nm,5.6s					
BJI			LR	LR		
	comp=Z,3μm,19.4s					
BJI			LR	LR		
	comp=Z,3μm,20.0s					
BJI			LR	LR		
	comp=Z,2μm,20.7s					
AS01	**Alice Springs**	**37.18 196**	*e*P	**P**		**22 29 18.0 -0.8**
AS31	**Alice Springs**	**37.19 196**	*e*P	**P**		**22 29 18.7 -0.2**
	comp=Z,6.6nm,0.6s					
ASAR	**Alice Springs**	**37.19 196**	P	**P**		**22 29 18.4 -0.5**
	comp=Z,9.6nm,0.7s,baz=14,slow=8.1,SNR=42					
ASAR			PcP	**PcP**		**22 31 37.6 -1.2**
	comp=Z,5.9nm,1.0s,baz=9.6,slow=3.0,SNR=4.3					
ASAR			ScP	**ScP**		**22 35 25.4 +0.4**
	comp=Z,0.5nm,0.7s,baz=21,slow=5.4,SNR=3.7					
ASAR			LR	LR		22 44 59.7
	comp=Z,2μm,21.3s,baz=14,slow=37					
GYA	**Guiyang**	**37.86 297**	⇑*i*P	**P**		**22 29 25.7 +0.9**
GYA			PcP	**PcP**		**22 31 41.6 +0.5**
GYA			pmax	pmax		
	comp=Z,30nm,1.1s					
TIY	**Taiyuan**	**37.91 317**	*e*P	**P**		**22 29 25.4 +0.4**
TIY			S	**S**		**22 35 14.9 -0.9**
TIY			pmax	pmax		
	comp=Z,71nm,1.1s					
TIY			pmax	pmax		
	comp=Z,380nm,4.1s					
TIY			LR	LR		
	comp=Z,990nm,15.2s					
TIY			LR	LR		
	comp=Z,1μm,15.7s					
TIY			LR	LR		
	comp=Z,2μm,16.3s					
PWJI	**Pagerwojo**	**38.00 239**	P	**P**		**22 29 25.0 -0.8**
	comp=Z,74nm,1.3s					
EIDS	**Eidsvold**	**38.12 170**	*e*P	**P**		**22 29 26.4 -0.3**
	comp=Z,30nm,0.9s					
KLR	**Kul'dur**	**38.15 347**	ScP	**ScP**		**22 35 27.7 -0.5**
	comp=Z,6.8nm,1.0s,baz=229,slow=3.6,SNR=9.3					
KLR			LR	LR		22 44 07.0
	comp=Z,4μm,20.5s,baz=153,slow=35					
KLR	**Kul'dur**	**38.15 347**	*c i*P	**P**		**22 29 26.6 -0.1**
TYV	**Tymovskoe**	**38.40 358**	*e*P	**P**		**22 29 31.2 +2.4**
TYV			*e*			22 31 43.2
TYV			*e*			22 35 13.0
TYV			*e*			22 38 04.0
TYV			pmax	pmax		
	comp=Z,13nm,0.8s					
TYV			MLR	MLR		
	comp=N,2μm,18.0s					
TYV			MLR	MLR		
	comp=Z,2μm,18.0s					
XAN	**Xi'an**	**38.60 310**	P	**P**		**22 29 30.6 -0.2**
XAN			sP	pP		22 29 37.1 +0.2
XAN			PP	**PnPn**		**22 31 01.9 +0.5**
XAN			PcP	**PcP**		**22 31 43.8 +0.7**
XAN			S	**S**		**22 35 24.8 -1.5**
XAN			SS	**SnSn**		**22 38 03.8 -11**
XAN			ScS	**ScS**		**22 39 39.5 -1.3**
XAN			pmax	pmax		
	comp=Z,20nm,1.2s					
XAN			pmax	pmax		
	comp=Z,390nm,9.7s					
XAN			LR	LR		
	comp=Z,1μm,20.2s					
XAN			LR	LR		
	comp=Z,3μm,20.1s					
XAN			LR	LR		
	comp=Z,3μm,19.7s					
PCJI	**Pacitan**	**38.62 240**	P	P		22 29 36.6 +5.6
	comp=Z,100nm,1.9s					
UGM	**Wanagama**	**39.02 241**	*e*P	**P**		**22 29 33.8 -0.7**
	comp=Z,368nm,1.6s					
SKNT	**Sakolnakorn**	**39.07 282**	P	**P**		**22 29 35.7 +0.8**
	comp=Z,56nm,1.1s					
NONG	**Nongkai**	**39.90 283**	P	**P**		**22 29 42.8 +1.0**
	comp=Z,42nm,1.2s					
KHON	**Khomkaen**	**40.17 281**	P	**P**		**22 29 45.9 +1.8**
	comp=Z,11nm,1.0s					
HHC	**Hu-ho-hao-te**	**40.24 321**	*e*P	**P**		**22 29 45.3 +0.8**
HHC			PP	**PnPn**		**22 31 23.3 +2.4**
HHC			S	**S**		**22 35 53.0 +2.1**
HHC			SS	**SS**		**22 38 47.5 -1.8**
HHC			pmax	pmax		
	comp=Z,24nm,1.0s					
HHC			pmax	pmax		
	comp=Z,290nm,5.6s					
HHC			LR	LR		
	comp=Z,3μm,14.7s					
HHC			LR	LR		
	comp=Z,3μm,14.5s					
HHC			LR	LR		
	comp=Z,4μm,14.3s					
FUNA	**Funafuti**	**40.56 119**	*e*P	**P**		**22 29 46.9 -0.4**
	comp=Z,78nm,0.6s					
NKL	**Nikolayevsk**	**40.77 357**	*e*P	**P**		**22 29 46.0 -2.4**
NKL			*e*			22 35 53.0
NKL			pmax	pmax		
	comp=Z,33nm,1.1s					
NKL			pmax	pmax		
	comp=N,300nm,10.0s					
NKL			pmax	pmax		
	comp=Z,500nm,10.0s					
NKL			MLR	MLR		
	comp=N,1μm,16.0s					
NKL			MLR	MLR		
	comp=E,900nm,16.0s					
NKL			MLR	MLR		
	comp=Z,2μm,16.0s					
CHBT	**CHBT**	**40.78 275**	P	**P**		**22 29 51.4 +2.3**
	comp=Z,74nm,1.1s,comp=Z,1μm					
TPRI	**Tanjung Pinang**	**40.89 257**	P	**P**		**22 29 50.2 +0.2**
	comp=Z,56nm,1.1s,comp=Z,44μm					
KMI	**Kunming**	**41.04 294**	P	**P**		**22 29 52.5 +1.1**
KMI			pP	sP		22 30 02.6 +2.6
KMI			PP	**PP**		**22 31 27.6 +1.4**
KMI			PcS	**PcS**		**22 35 36.9 -5.7**
KMI			S	**S**		**22 36 05.6 +2.2**
KMI			SS	**SS**		**22 39 04.5 -1.3**
KMI			pmax	pmax		
	comp=Z,37nm,1.4s					
KMI			pmax	pmax		
	comp=Z,380nm,7.6s					
KMI			LR	LR		
	comp=Z,330nm,17.7s					
KMI			LR	LR		
	comp=Z,1μm,18.3s					
KMI			LR	LR		
	comp=Z,2μm,18.0s					
BTO	**Baotou**	**41.07 319**	*e*P	**P**		**22 29 50.8 -0.5**
KTGM	**Kuala Trenggan**	**41.08 264**	⇑P	**P**		**22 29 52.9 +1.3**
CISI	**Cisompet, Garu**	**41.18 243**	P	**P**		**22 29 55.0 +2.5**
	comp=Z,78nm,1.3s					
MYKOM	**Kota Tinggi**	**41.28 258**	⇓P	**P**		**22 29 54.4 +1.1**
MYKOM	**Kota Tinggi**	**41.28 258**	*e*P	**P**		**22 29 53.3 +0.1**
	comp=Z,187nm,1.5s					
CBJI	**Citeko**	**41.51 245**	P	**P**		**22 29 56.5 +1.4**
	comp=Z,200nm,0.8s					
CD2	**Chengdu**	**41.54 303**	⇑*i*P	**P**		**22 29 55.3 +0.1**
CD2			sP	pP		22 30 00.7 -0.7
CD2			PP	**PP**		**22 31 31.2 -0.2**
CD2			S	**S**		**22 36 11.3 +1.0**
CD2			sS	sS		22 36 18.4 -2.0
CD2			pmax	pmax		
	comp=Z,150nm,1.1s					
CD2			pmax	pmax		
	comp=Z,620nm,8.8s					
CD2			LR	LR		
	comp=Z,2μm,18.0s					
CD2			LR	LR		
	comp=Z,2μm,19.2s					
CNJI	**Cibinong**	**41.67 244**	P	**P**		**22 29 56.8 +0.4**
	comp=Z,83nm,1.7s,comp=Z,1μm					
KGM	**Kluang**	**41.72 259**	⇓P	**P**		**22 29 57.8 +0.9**
HIA	**Hailar**	**41.95 336**	*e*P	**P**		**22 29 59.1 +0.8**
HIA			pmax	pmax		
	comp=Z,37nm,0.9s					
HIA			MLR	MLR		
	comp=Z,2μm,21.0s					
HIA	**Hailar**	**41.95 336**	*e*P	**P**		**22 29 59.1 +0.8**
	comp=Z,37nm,0.9s					
HIA			LR	LR		
	comp=Z,2μm,21.0s					
PBKT	**Sadao Pong**	**41.95 281**	P	**P**		**22 29 59.8 +1.1**
	comp=Z,37nm,1.2s,comp=Z,2μm					
PEA0	**Petropavlovsk-**	**42.05 12**	*e*P	**P**		**22 29 59.9 +0.9**
PEA0B	**Petropavlovsk-**	**42.05 12**	*e*P	**P**		**22 30 00.1 +1.1**
	comp=Z,123nm,1.8s					
PETK	**Petropavlovsk-**	**42.05 12**	P	**P**		**22 29 59.4 +0.3**
	comp=Z,8.6nm,0.9s,baz=270,slow=4.3,SNR=3.9					
PETK			PcP	**PcP**		**22 31 53.5 -0.3**
	comp=Z,14nm,0.9s,baz=149,slow=3.9,SNR=6.0					
PETK			LR	LR		22 46 19.6
	comp=Z,2μm,21.0s,baz=193,slow=34					
PET	**Petropavlovsk**	**42.18 13**	*e*P	**P**		**22 29 55.4 -4.6**
PET			*e*S	**S**		**22 36 14.2 -4.7**
PET			MLR	MLR		
	comp=Z,2μm,15.0s					
PET			MLR	MLR		
	comp=Z,2μm,16.0s					
PET	**Petropavlovsk**	**42.18 13**	*e*P	**P**		**22 30 00.2 +0.1**
	comp=Z,69nm,1.4s					
PET			LR	LR		
	comp=Z,1μm,21.0s					
UTTA	**Uttaradit**	**42.36 283**	P	**P**		**22 30 02.5 +0.5**
	comp=Z,7.4nm,1.2s,comp=Z,76nm					
CGJI	**Cibinong**	**42.62 246**	P	**P**		**22 30 02.8 -1.4**
	comp=Z,84nm,1.0s,comp=Z,1μm					
CRAI	**Chiangrai**	**42.63 286**	P	**P**		**22 30 04.7 +0.5**
	comp=Z,162nm,1.1s,comp=Z,71μm					
ARMA	**Armidale**	**43.15 171**	*e*P	**P**		**22 30 09.1 +0.7**
	comp=Z,72nm,1.4s					
SKLT	**Songkhla**	**43.16 267**	P	**P**		**22 30 10.0 +1.4**
	comp=Z,145nm,1.3s					

SUKH	Sukhothai	43.23	282	P	P	22 30 10.2 +1.1
	comp=Z,8.7nm,1.2s,comp=Z,86nm					
KASI	Kota Agung	43.23	248	P	P	22 30 09.0 -0.2
	comp=Z,90nm,1.2s,comp=Z,1μm					
LZH	Lanzhou	43.24	310	⇑P	P	22 30 10.1 +0.9
LZH				pP	pP	22 30 14.2 -1.1
LZH				sP	sP	22 30 16.5 -1.3
LZH				PP	PP	22 31 52.1 +2.3
LZH				S	S	22 36 35.3 -0.2
LZH				sS	sS	22 36 43.2 -2.4
LZH				SS	SS	22 39 42.1 -6.8
LZH				pmax	pmax	
	comp=Z,210nm,1.4s					
LZH				pmax	pmax	
	comp=Z,540nm,6.0s					
LZH				LR	LR	
	comp=Z,2μm,14.3s					
LZH				LR	LR	
	comp=Z,2μm,15.0s					
LZH				LR	LR	
	comp=Z,4μm,17.2s					
LAMP	Lampang	43.25	284	P	P	22 30 11.1 +1.8
	comp=Z,8.7nm,1.0s					
IPM	Ipoh	43.31	263	eP	P	22 30 10.2 +0.3
	comp=Z,70nm,1.1s					
KULM	Kulim	43.50	265	eP	P	22 30 11.7 +0.3
	comp=Z,160nm,1.2s					
KULM				LR	LR	
	comp=Z,2μm,21.0s					
CMAI	Chiengmai2	43.86	286	P	P	22 30 15.5 +1.1
	comp=Z,45nm,1.2s,comp=Z,12μm					
CM01	Chiang Mai Arr	43.89	284	eP	P	22 30 14.6 +0.2
CM31	Chiang Mai Arr	43.90	284	eP	P	22 30 15.3 +0.7
CMAR	Chiang Mai Arr	43.90	284	P	P	22 30 14.9 +0.4
	comp=Z,24nm,1.0s,baz=83,slow=6.2,SNR=80					
CMAR				PcP	PcP	22 32 00.6 -0.1
	comp=Z,12nm,0.9s,baz=84,slow=2.3,SNR=7.6					
CMAR				LR	LR	22 46 56.2
	comp=Z,2μm,20.6s,baz=88,slow=34					
CHTO	Chiang Mai	43.91	284	P	P	22 30 15.4 +0.8
	comp=Z,56nm,1.2s,comp=Z,2μm					
CHTO	Chiang Mai	43.91	284	eP	P	22 30 14.6 0.0
CHTO				pmax	pmax	
	comp=Z,10.0nm,1.0s					
CHTO				MLR	MLR	
	comp=Z,1μm,21.0s					
CHTO	Chiang Mai	43.91	284	eP	P	22 30 14.6 0.0
	comp=Z,10nm,1.0s					
CHTO				LR	LR	
	comp=Z,1μm,21.0s					
TRTT	Trang	43.95	268	P	P	22 30 17.1 +2.1
	comp=Z,106nm,1.1s,comp=Z,1μm					
STKA	Stephens Creek	44.07	183	P	P	22 30 14.0 -1.5
	comp=Z,19nm,1.0s,baz=4.7,slow=8.8,SNR=12					
STKA				LR	LR	22 50 11.1
	comp=Z,2μm,18.4s,baz=358,slow=38					
STKA	Stephens Creek	44.07	183	eP	P	22 30 14.8 -0.8
STKA				pmax	pmax	
	comp=Z,5.0nm,1.0s					
STKA	Stephens Creek	44.07	183	eP	P	22 30 14.8 -0.8
	comp=Z,4.5nm,1.0s					
MNAI	Manna	44.18	250	P	P	22 30 16.2 -0.6
	comp=Z,581nm,1.3s,comp=Z,8μm					
MNAI	Manna	44.18	250	eP	P	22 30 15.8 -1.1
	comp=Z,1μm,1.4s					
BKNI	Bangkinang	44.39	258	P	P	22 30 19.7 +1.2
	comp=Z,149nm,1.2s,comp=Z,2μm					
BKNI	Bangkinang	44.39	258	eP	P	22 30 18.3 -0.2
	comp=Z,128nm,1.0s					
MASI	Maura Aman, Be	44.39	252	P	P	22 30 18.7 +0.1
	comp=Z,511nm,1.2s,comp=Z,8μm					
XMIS	Christmas Isla	44.46	241	eP	P	22 30 17.9 -1.2
	comp=Z,52nm,1.0s					
SURT	Suratani	44.65	270	P	P	22 30 24.1 +3.5
	comp=Z,24nm,0.9s,comp=Z,561nm					
MSVF	Nonsavu	44.90	131	eP	P	22 30 23.7 +1.2
MSVF				pmax	pmax	
	comp=Z,65nm,1.2s					
MSVF				MLR	MLR	
	comp=Z,2μm,19.0s					
MSVF	Nonsavu	44.90	131	eP	P	22 30 23.7 +1.2
	comp=Z,66nm,1.2s					
MSVF				LR	LR	
	comp=Z,2μm,19.0s					
JOHN	Johnston Islan	44.98	79	PFAKE		22 30 40.0 +17
JOHN				LR	LR	
	comp=Z,164nm,20.0s					
PPI	Padang Panjang	45.24	257	P	P	22 30 24.5 -0.8
	comp=Z,60nm,1.3s,comp=Z,1μm					
PKDT	Phuket	45.27	269	P	P	22 30 27.8 +2.3
	comp=Z,149nm,1.1s					
PDSI	Padang	45.32	256	P	P	22 30 24.6 -1.3
	comp=Z,27nm,1.3s,comp=Z,4μm					
BBOO	Buckleboo	45.59	190	eP	P	22 30 27.6 -0.1
	comp=Z,58nm,0.8s					
MNSI	Mandailing Nat	45.65	259	P	P	22 30 28.2 -0.3
	comp=Z,62nm,1.8s					
PSI	Prapat	45.75	262	eP	P	22 30 29.3 -0.2
PSI				pmax	pmax	
	comp=Z,97nm,1.0s					
PSI	Prapat	45.75	262	eP	P	22 30 29.3 -0.2
	comp=Z,97nm,1.0s					
TSI	Tuntungan	45.93	263	P	P	22 30 34.3 +3.6
	comp=Z,151nm,0.8s					
PPSI	Pulau Pagai	46.35	254	P	P	22 30 42.4 +8.4
KNTN	Kanton	46.36	106	eP	P	22 30 40.1 +6.0
	comp=Z,190nm,1.5s					
CIT	Chita	46.59	334	eP	P	22 30 31.5 -4.0
CIT				e		22 30 36.8
CIT				e		22 30 45.8
KCSI	Kotacane, Aceh	46.69	263	P	P	22 30 36.6 -0.2
	comp=Z,219nm,1.2s,comp=Z,3μm					
ULN	Ulaanbaatar	46.98	326	c iP	P	22 30 39.1 +0.4
ULN				pmax	pmax	
	comp=Z,32nm,1.7s					
ULN	Ulaanbaatar	46.98	326	P	P	22 30 39.5 +0.8
	SNR=12					
ULN	Ulaanbaatar	46.98	326	P	P	22 30 39.5 +0.8
	SNR=12					
ULN	Ulaanbaatar	46.98	326	eP	P	22 30 39.5 +0.8
	comp=Z,28nm,1.1s					
ULN				LR	LR	
	comp=Z,4μm,20.0s					
LHMI	Lhok Sumawe	47.12	266	eP	P	22 30 41.2 +1.1
	comp=Z,226nm,0.8s					
SONM	Songino Array	47.32	326	P	P	22 30 41.8 +0.5
	comp=Z,7.9nm,0.7s,baz=136,slow=7.6,SNR=48					
SONM				PcP	PcP	22 32 12.9 +0.8
	comp=Z,15nm,1.1s,baz=145,slow=3.8,SNR=7.5					
SONM				ScP	ScP	22 36 04.9 -0.4
	comp=Z,2.7nm,1.0s,baz=129,slow=2.8,SNR=6.3					
SONM				LR	LR	22 50 45.8
	comp=Z,4μm,19.8s,baz=125,slow=36					
SONA1	Songino Array	47.32	326	eP	P	22 30 42.0 +0.6
SONA1				eScP	ScP	22 36 05.1 -0.2
MA2	Magadan	47.37	5	PFAKE		22 30 50.0 +8.6
MA2				LR	LR	
	comp=Z,2μm,20.0s					
GSI	Gunungsitoli	47.44	260	P	P	22 30 41.5 -1.1
	comp=Z,176nm,1.1s					
GSI	Gunungsitoli	47.44	260	eP	P	22 30 41.2 -1.4
	comp=Z,190nm,1.1s					
GTA	Gaotai	47.46	313	⇑P	P	22 30 43.0 +0.4
GTA				pP	pP	22 30 47.4 -1.4
GTA				sP	sP	22 30 50.5 -0.7
GTA				PcP	PcP	22 32 14.2 +1.4
GTA				S	S	22 37 38.0 +1.7
GTA				sS	sS	22 37 44.4 -2.1
GTA				ScS	ScS	22 40 34.6 -1.2
GTA				SS	SS	22 40 59.8 -4.4
GTA				pmax	pmax	
	comp=Z,42nm,1.1s					
GTA				pmax	pmax	
	comp=Z,480nm,6.2s					
GTA				LR	LR	
	comp=Z,1μm,20.9s					
GTA				LR	LR	
	comp=Z,2μm,19.2s					
GTA				LR	LR	
	comp=Z,3μm,19.7s					
CAN	Canberra	47.66	175	PFAKE		22 31 00.0 +16
CAN				LR	LR	
	comp=Z,1μm,20.0s					
MLSI	Meulaboh, Aceh	47.85	265	P	P	22 30 45.6 -0.2
	comp=Z,128nm,1.2s					
ZAK	Zakamensk	50.46	327	eP	P	22 31 05.0 -0.3
ZAK				e		22 32 21.4
ZAK				pmax	pmax	
	comp=Z,19nm,1.3s					
YAK	Yakutsk	50.67	351	LR	LR	22 51 55.4
	comp=Z,2μm,18.3s,baz=173,slow=35					
YAK	Yakutsk	50.67	351	eP	P	22 31 06.5 0.0
YAK				e		22 32 23.4
YAK				e		22 33 00.6
YAK				ePPP	PPP	22 34 00.0
YAK				eS	S	22 38 24.6 +4.3
YAK				e*SS	sS	22 38 28.1 -2.5
YAK				e		22 40 58.5
YAK				pmax	pmax	
	comp=Z,33nm,0.9s					
YAK				pmax	pmax	
	comp=N,22nm,1.4s					
YAK				pmax	pmax	
	comp=E,10.0nm,1.4s					
YAK				pmax	pmax	
	comp=Z,84nm,2.7s					
YAK				smax	smax	
	comp=N,36nm,1.8s					
YAK				smax	smax	
	comp=E,55nm,1.7s					
YAK				MLR	MLR	
	comp=Z,2μm,17.0s					
YAK				MLR	MLR	
	comp=E,461nm,17.0s					
YAK				MLR	MLR	
	comp=N,1μm,14.0s					
YAK	Yakutsk	50.67	351	eP	P	22 31 06.6 0.0
	comp=N,73nm,1.0s					
BOD	Bodaibo	50.80	340	eP	P	22 31 06.0 -1.6
BOD				e		22 32 21.5
BOD				pmax	pmax	
	comp=Z,10.0nm,1.3s					
SEY	Seymchan	50.82	5	P	P	22 31 08.2 +0.5
	comp=Z,6.8nm,0.7s,baz=179,slow=2.9,SNR=10					
SEY				PcP	PcP	22 32 25.4 +1.1
	comp=Z,8.0nm,1.0s,baz=56,slow=3.6,SNR=2.2					
SEY	Seymchan	50.82	5⇓	eP	P	22 31 07.4 -0.3
SHL	Shillong	50.83	293	eP	P	22 31 12.0 +3.3
SHL				eS	S	22 38 27.0 +2.8
AFI	Afiamalu	50.90	119	PFAKE		22 31 20.0 +11
AFI				LR	LR	
	comp=Z,1μm,21.0s					
TLY	Talaya	51.01	329	LR	LR	22 51 45.1
	comp=Z,579nm,20.4s,baz=122,slow=35					
TLY	Talaya	51.01	329	c iP	P	22 31 10.0 +0.6
TLY				e		22 32 25.8
TLY				e		22 33 08.5
TLY				ePPP	PPP	22 34 10.7
TLY				eS	S	22 38 26.3 +0.8
TLY				e		22 40 59.9
TLY				pmax	pmax	
	comp=Z,29nm,1.1s					
TLY				MLR	MLR	
	comp=Z,787nm,12.0s					
TLY	Talaya	51.01	329	eP	P	22 31 10.2 +0.9
	comp=Z,23nm,1.0s					
IRK	Irkutsk	51.02	330	eP	P	22 31 08.6 -0.8
IRK				pmax	pmax	
	comp=Z,46nm,2.4s					
NWAO	Narrogin (SRO)	51.86	209	PFAKE		22 31 30.0 +14
NWAO				LR	LR	
	comp=Z,2μm,19.0s					
LSA	Lhasa	51.93	298	P	P	22 31 17.6 +0.4
LSA				pmax	pmax	
	comp=Z,37nm,1.0s					
LSA	Lhasa	51.93	298	eP	P	22 31 17.5 +0.4
LSA				pmax	pmax	
	comp=Z,37nm,0.9s					
LSA				MLR	MLR	
	comp=Z,1μm,20.0s					
LSA	Lhasa	51.93	298	eP	P	22 31 17.5 +0.4
	comp=Z,37nm,0.9s					
LSA				LR	LR	
	comp=Z,1μm,20.0s					
MOY	Mondy	52.37	327	eP	P	22 31 20.4 +0.7
MOY				pmax	pmax	
	comp=Z,39nm,1.6s					
TAU	Tasmania Unive	55.09	177	PFAKE		22 31 50.0 +11
TAU				LR	LR	
	comp=Z,3μm,20.0s					
RAO	Raoul Island	55.26	139	LR	LR	22 52 41.5
	comp=Z,2μm,20.8s,baz=354,slow=33					
RAO	Raoul Island	55.26	139	PFAKE		22 31 50.0 +9.1
RAO				LR	LR	
	comp=Z,343μm,19.0s					
KIP	Kipapa	55.82	72	PFAKE		22 32 00.0 +15
KIP				LR	LR	
	comp=Z,2μm,20.0s					
GUN	Gumba	56.36	295	eP	P	22 31 49.4 0.0
	comp=Z,280nm,0.9s					
PKIN	Phulchoki	56.77	295	eP	P	22 31 51.5 -0.7
KKN	Kakani	56.88	295	eP	P	22 31 52.4 -0.6
	comp=Z,94nm,1.1s					
DMN	Daman	57.02	295	eP	P	22 31 53.8 -0.2
GKN	Gorkha	57.46	295	eP	P	22 31 56.7 -0.3
	comp=Z,88nm,0.8s					
WMQ	Urumqi	57.47	314	P	P	22 31 57.7 +1.1
WMQ				pP	pP	22 32 00.3 -2.6
WMQ				sP	sP	22 32 08.8 +3.5
WMQ				PcP	PcP	22 32 53.0 +2.8
WMQ				PP	PP	22 34 10.1 +5.9
WMQ				S	S	22 39 52.1 -0.9
WMQ				SS	SS	22 43 46.0 +3.1
WMQ				pmax	pmax	
	comp=Z,35nm,1.0s					
WMQ				pmax	pmax	
	comp=Z,130nm,5.0s					
WMQ				LR	LR	
	comp=Z,540nm,18.8s					
WMQ				LR	LR	
	comp=Z,620nm,20.4s					
WMQ				LR	LR	
	comp=Z,510nm,20.4s					
BILL	Biliibino	57.47	10	d iP	P	22 31 56.4 +0.3
BILL				eS	S	22 39 53.9 +1.7
BILL				eSS	SS	22 43 45.2 +3.3
BILL				pmax	pmax	
	comp=Z,16nm,1.1s					
BILL				MLR	MLR	
	comp=Z,1μm,18.0s					
BILL	Biiibino	57.47	10	eP	P	22 31 55.6 -0.5
	comp=Z,45nm,1.5s					
BILL				LR	LR	
	comp=Z,1μm,19.0s					
POHA	Pohakuloa	58.19	74	PFAKE		22 32 20.0 +18
POHA				LR	LR	
	comp=Z,2μm,20.0s					
KOLN	Koldanda	58.37	295	eP	P	22 32 02.9 -0.5
	comp=Z,66nm,0.9s					
KRAR	Krasnoyarsk	58.70	329	⇑eP	P	22 32 04.7 -0.2
KRAR				pmax	pmax	
	comp=Z,23nm,0.5s					
PYUN	Piuthan	58.92	295	eP	P	22 32 06.8 -0.5
	comp=Z,174nm,0.9s					
URZ	Urewera	59.07	150	LR	LR	22 55 43.8
	comp=Z,891nm,19.4s,baz=335,slow=34					
BKZ	Black Stump Fm	59.49	151	eP	P	22 32 12.0 +1.3
	comp=Z,60nm,1.4s					
TIXI	Tiksi	59.97	354	⇑eP	P	22 32 13.3 -0.1
TIXI				pmax	pmax	
	comp=Z,7.0nm,1.2s					
TIXI	Tiksi	59.97	354	eP	P	22 32 13.7 +0.2
	comp=Z,12nm,1.1s					
TIXI				LR	LR	
	comp=Z,923nm,19.0s					
SNZO	South Karori	60.41	154	PFAKE		22 32 30.0 +13
SNZO				LR	LR	
	comp=Z,2μm,21.0s					
SDPT	Sand Point	60.54	33	eP	P	22 32 17.8 +0.2
	comp=Z,64nm,0.9s					
RPZ	Rata Peaks	60.98	158	eP	P	22 32 23.1 +2.3
	comp=Z,216nm,1.7s					
DCZ	Deep Cove	61.21	162	esP	sP	22 32 28.2 -2.8
MK01	Makanchi Array	61.86	317	eP	P	22 32 26.9 +0.1
MK31	Makanchi Array	61.87	317	eP	P	22 32 26.8 -0.1
MK31	Makanchi Array	61.87	317	eP	P	22 32 26.8 -0.1
MKAR	Makanchi Array	61.87	317	P	P	22 32 26.9 0.0
	comp=Z,21nm,0.7s,baz=93,slow=8.1,SNR=200					
MKAR				S	S	22 40 50.0 +0.2
	comp=Z,0.9nm,1.0s,baz=81,slow=8.9,SNR=3.5					
MKAR				LR	LR	23 00 15.5
	comp=Z,1μm,19.7s,baz=94,slow=37					
MKAR				PKP2bc		23 01 44.6
	comp=Z,0.6nm,0.8s,baz=318,slow=1.9,SNR=5.9					
MAKZ	Makanchi	62.09	317	eP	P	22 32 27.9 -0.4
MAKZ				pmax	pmax	
	comp=Z,43nm,0.8s					
MAKZ	Makanchi	62.09	317	eP	P	22 32 27.9 -0.4
	comp=Z,43nm,0.8s					
ZAA0	Zalesovo Array	62.20	325	eP	P	22 32 28.5 -0.4
ZALV	Zalesovo Beam	62.20	325	P	P	22 32 28.4 -0.5
	comp=Z,4.0nm,0.6s,baz=103,slow=6.4,SNR=25					
ZALV				PcP	PcP	22 33 07.3 -1.5
	comp=Z,18nm,0.8s,baz=124,slow=4.1,SNR=11					
ZALV				LR	LR	22 59 27.3
	comp=Z,2μm,20.4s,baz=80,slow=36					
ZALV				PKP2bc		23 01 43.3
	comp=Z,0.6nm,0.5s,baz=234,slow=8.8,SNR=4.4					
PALK	Pallekele	62.60	272	LR	LR	22 59 17.9
	comp=Z,668nm,20.1s,baz=116,slow=36					
PALK	Pallekele	62.60	272	P	P	22 32 32.6 +0.3
HYB	Hyderabad	63.33	283	i P	P	22 32 37.5 +0.4
	comp=Z,7.1nm,1.2s					
NVS	Novosibirsk	63.35	326	⇑iP	P	22 32 36.6 0.0
NVS				eS	S	22 41 05.8 -2.1
NVS				e		22 42 25.3
NVS				pmax	pmax	
	comp=Z,58nm,1.5s					
NVS				pmax	pmax	
	comp=N,15nm,1.6s					
NVS				pmax	pmax	
	comp=E,40nm,1.6s					
NVS				smax	smax	
	comp=E,43nm,2.2s					
OHAK	Old Harbor	64.94	32	eP	P	22 32 48.2 +1.3
	comp=E,51nm,1.4s					
AAA	Alma-Ata	65.04	312	eP	P	22 32 48.3 +0.4
AAA				eS	S	22 41 26.7 -2.7
AAA				pmax	pmax	
	comp=Z,500nm,7.8s					
AAA				smax	smax	
	comp=E,500nm,17.7s					
AAA				MLR	MLR	
	comp=Z,1μm,20.0s					
KURK	Kurchatov	65.06	320	eP	P	22 32 47.3 -0.5
KURK				pmax	pmax	
	comp=Z,133nm,1.2s					
KURK				MLR	MLR	
	comp=Z,6μm,20.0s					
KURK	Kurchatov	65.06	320	eP	P	22 32 47.3 -0.5
	comp=Z,133nm,1.2s					
KURK				LR	LR	
	comp=Z,6μm,20.0s					
KSH	Kashi	65.42	308	P	P	22 32 53.4 +2.8
KSH				epP	sP	22 32 58.3 -1.0
KSH				ePcP	PcP	22 33 25.0 +2.5
KSH				PcS		22 37 27.7
KSH				S	S	22 41 37.0 +2.7
KSH				ScS	ScS	22 42 45.7 +0.3
KSH				SS	SS	22 45 52.9 +5.2
KSH				pmax	pmax	
	comp=Z,38nm,1.3s					
KSH				pmax	pmax	
	comp=Z,390nm,5.2s					
KSH				LR	LR	
	comp=Z,680nm,17.5s					
KSH				LR	LR	
	comp=Z,940nm,16.1s					
KSH				LR	LR	
	comp=Z,1μm,16.6s					
KDAK	Kodiak Island	65.47	32	PFAKE		22 33 00.0 +10
KDAK				LR	LR	
	comp=Z,936nm,20.0s					
TT01	Tatalina	65.54	26	eP	P	22 32 51.3 +0.5
TTA	Tatalina	65.55	26	eP	P	22 32 50.9 0.0
TTA				pmax	pmax	
	comp=Z,13nm,1.0s					
TTA	Tatalina	65.55	26	eP	P	22 32 50.9 0.0
	comp=Z,12nm,1.0s					
TKM2	Tokmak 2	65.98	312	eP	P	22 32 54.7 +0.4
TKM2				pmax	pmax	
	comp=Z,27nm,1.0s					
TKM2				MLR	MLR	
	comp=Z,949nm,21.0s					
TKM2	Tokmak 2	65.98	312	eP	P	22 32 54.7 +0.4
	comp=Z,27nm,1.0s					
TKM2				LR	LR	
	comp=Z,949nm,21.0s					
TRD	Trivandrum	66.04	274	⇓eP	P	22 33 03.6 +8.8
TRD				eS	S	22 42 05.6 +23
RSO	Redoubt South	66.17	29	eP	P	22 32 55.4 +0.3
FRU	Bishkek	66.69	311	eP	P	22 32 56.5 -2.1
FRU				pmax	pmax	
	comp=Z,80nm,1.8s					
AAK	Ala-Archa	66.77	311	c iP	P	22 32 59.5 +0.3
AAK				pmax	pmax	
	comp=Z,55nm,1.1s					
AAK	Ala-Archa	66.77	311	eP	P	22 32 59.5 +0.3
	comp=Z,23nm,1.1s					
AAK				LR	LR	
	comp=Z,2μm,20.0s					
BRLK	Bradley Lake	66.87	30	eP	P	22 32 59.1 -0.3
	comp=Z,38nm,1.3s					
NRIK	Noril'sk	67.04	341	P	P	22 32 58.6 -1.7
	comp=Z,13nm,1.1s,baz=124,slow=7.3,SNR=16					
NRIK				LR	LR	23 03 09.4
	comp=Z,1μm,19.0s,baz=116,slow=37					
PPLA	Purkeypile	67.18	26	eP	P	22 33 02.2 +0.7
	comp=Z,27nm,1.2s					
EKS2	Erkin-Say	67.30	311	eP	P	22 33 03.0 +0.4
EKS2				pmax	pmax	
	comp=Z,35nm,1.2s					
EKS2				MLR	MLR	
	comp=Z,2μm,20.0s					
EKS2	Erkin-Say	67.30	311	eP	P	22 33 03.0 +0.4
	comp=Z,35nm,1.2s					
EKS2				LR	LR	
	comp=Z,2μm,20.0s					
CAST	Castle Rocks	67.39	26	eP	P	22 33 03.4 +0.8
	comp=Z,25nm,1.0s					
SEW	Seward	67.66	30	eP	P	22 33 05.1 +0.8
	comp=Z,38nm,1.2s					
RC01	Rabbit Creek A	67.77	29	eP	P	22 33 05.2 +0.1
	comp=Z,45nm,1.2s					
KTH	Kantishna Hill	67.93	26	eP	P	22 33 06.2 +0.2
	comp=Z,34nm,1.1s					
BPAW	Bear Paw Mtn.	68.07	25	eP	P	22 33 07.5 +0.6
	comp=Z,18nm,0.9s					
TRF	Thorofare Moun	68.17	26	eP	P	22 33 07.6 -0.2
	comp=Z,16nm,1.0s					
PMR	Palmer	68.18	28	eP	P	22 33 07.1 -0.5
PMR				pmax	pmax	
	comp=Z,15nm,0.7s					
PMR	Palmer	68.18	28	eP	P	22 33 07.1 -0.5
	comp=Z,15nm,0.7s					
MLY	Manley	68.45	24	eP	P	22 33 09.8 +0.5
	comp=Z,20nm,1.0s					
SML	Sawmill	68.61	28	eP	P	22 33 10.4 +0.1
SML				pmax	pmax	
	comp=Z,48nm,1.1s					
SML	Sawmill	68.61	28	eP	P	22 33 10.3 +0.1
	comp=Z,48nm,1.1s					
RND	Reindeer	68.78	26	eP	P	22 33 11.6 +0.2
RND				pmax	pmax	
	comp=Z,17nm,1.0s					
RND	Reindeer	68.78	26	eP	P	22 33 11.6 +0.2
	comp=Z,17nm,1.0s					
MCK	McKinley	68.83	26	eP	P	22 33 11.6 -0.1
MCK				pmax	pmax	
	comp=Z,16nm,1.0s					
MCK	McKinley	68.83	26	eP	P	22 33 11.6 -0.1
	comp=Z,16nm,1.0s					
SCM	Sheep Creek Mo	69.08	28	eP	P	22 33 14.0 +0.7
SCM				pmax	pmax	
	comp=Z,69nm,1.0s					
SCM	Sheep Creek Mo	69.08	28	eP	P	22 33 14.0 +0.7
	comp=Z,69nm,1.0s					
COLD	Coldfoot	69.33	22	eP	P	22 33 15.6 +0.9
	comp=Z,18nm,0.9s					
WRH	Wood River Hil	69.39	25	eP	P	22 33 14.8 -0.2
	comp=Z,20nm,0.9s					
MDM	Murphy Dome	69.45	25	eP	P	22 33 15.4 -0.1
	comp=Z,14nm,0.8s					
CCB	Clear Creek Bu	69.55	25	eP	P	22 33 15.6 -0.5
	comp=Z,14nm,1.0s					
COLA	College	69.59	25	⇑eP	P	22 33 16.5 +0.3
COLA				pmax	pmax	
	comp=Z,10.0nm,0.9s					
COLA	College	69.59	25	PFAKE		22 33 30.0 +14
COLA				LR	LR	

comp=Z,2µm,21.0s
DIV Divide 69.65 29 eP P 22 33 17.9 +1.1
comp=Z,37nm,1.1s
KLU Klutina 69.66 29 eP P 22 33 17.9 +1.0
comp=Z,24nm,0.9s
KKAR Karatay Array 69.72 311 eP P 22 33 16.9 -0.6
KKAR Karatay Array 69.72 311 eP P 22 33 16.9 -0.6
IL1 Eielson Array 69.96 25 eP P 22 33 16.6 -2.0
ILAR Eielson Array 69.96 25 P P 22 33 17.4 -1.3
comp=Z,10nm,0.8s,baz=259,slow=4.5,SNR=64
ILAR PKP2ab 23 01 25.9
comp=Z,0.6nm,1.0s,baz=44,slow=2.7,SNR=4.2
ILAR LR LR 23 02 52.8
comp=Z,967nm,20.5s,baz=257,slow=35
ILB Eielson Array 69.96 25 eP P 22 33 16.4 -2.2
RAGM Ragged Mountai 70.04 30 eP P 22 33 21.5 +2.2
comp=Z,29nm,1.1s
PAX Paxson 70.17 27 eP P 22 33 20.3 +0.3
PAX pmax pmax
comp=Z,25nm,1.1s
PAX Paxson 70.17 27 eP P 22 33 20.3 +0.3
comp=Z,26nm,1.1s
BMRM Bremner River 70.18 29 eP P 22 33 21.1 +1.0
comp=Z,41nm,1.1s
BVAR Borovoye Array 70.44 322 LR LR 23 05 10.0
comp=Z,4µm,19.4s,baz=86,slow=37
BRVK Borovoye 70.50 322*c i*P **P 22 33 22.3 +0.2**
BRVK pmax pmax
comp=Z,131nm,1.7s
BRVK Borovoye 70.50 322 *e*P **P 22 33 22.1 0.0**
comp=Z,116nm,1.3s
BRVK LR LR
comp=Z,4µm,20.0s
KBL Kabul 70.88 302 *e*P **P 22 33 24.6 -0.4**
KBL pmax pmax
comp=Z,86nm,1.1s
KBL Kabul 70.88 302 *e*P **P 22 33 24.6 -0.4**
comp=Z,86nm,1.1s
DOT Dot Lake 70.93 27 *e*P **P 22 33 24.6 +0.1**
comp=Z,59nm,0.8s
MENT Mentasta 70.95 27 *e*P **P 22 33 23.4 -1.3**
comp=Z,65nm,0.2s
ZRNK Zerenda 71.27 322 *e*P **P 22 33 26.2 -0.6**
ZRNK pmax pmax
comp=Z,98nm,1.1s
ZRNK Zerenda 71.27 322 *e*P **P 22 33 26.2 -0.6**
comp=Z,98nm,1.1s
BALM Baldy 71.28 30 *e*P **P 22 33 26.3 -0.6**
BALM pmax pmax
comp=Z,20nm,1.0s
BALM Baldy 71.28 30 *e*P **P 22 33 26.3 -0.6**
comp=Z,20nm,1.0s
PPT Papeete 71.88 113 LR LR 22 58 42.5
comp=Z,684nm,19.1s,baz=290,slow=30
PPT2 Papeete2 71.89 113 *e*P P 22 33 39.6 +8.4
comp=Z,60nm,1.3s
PPT2 *e*S **S 22 42 50.6 -1.0**
comp=Z,704nm,28.5s
PPT2 Papeete2 71.89 113 *e*LR LR 22 55 06.5
comp=Z,2µm,29.0s,baz=291
PAE Paea 71.91 113 *e*P P 22 33 38.9 +7.7
comp=Z,13nm,1.3s
TVO Taravao 72.24 113 *e*P P 22 33 40.8 +7.5
comp=Z,26nm,1.3s
EGAK Eagle 72.37 26 *e*P **P 22 33 33.5 +0.3**
comp=Z,28nm,1.3s
EGAK LR LR
comp=Z,1µm,21.0s
DAWY Dawson 73.04 27 *e*P **P 22 33 38.2 +1.0**
comp=Z,25nm,1.0s
SKAG Skagway 74.62 31 *e*P **P 22 33 48.3 +1.8**
INK Inuvik 75.75 22 *e*P **P 22 33 53.1 +0.2**
INK pmax pmax
comp=Z,40nm,1.1s
INK Inuvik 75.75 22 *e*P **P 22 33 53.1 +0.2**
comp=Z,40nm,1.1s
SVE Sverdlovsk 76.19 326⇓*i*P **P 22 33 55.5 -0.1**
SVE *e*S S 22 43 29.1 -10
SVE pmax pmax
comp=Z,96nm,1.2s
SVE MLR MLR
comp=Z,2µm,18.0s
WRAK Wrangell Islan 76.21 35 *e*P **P 22 33 57.5 +1.9**
comp=Z,30nm,0.9s
WRAK LR LR
comp=Z,1µm,20.0s
ABKAR Akbulak array 76.96 318 *e*P **P 22 33 59.3 -0.8**
ARU Arti 77.36 325*c i*P **P** 22 36 52.8
ARU S **S 22 43 51.3 -0.1**
ARU SS **SS 22 48 46.4 -3.2**
ARU SSS SSS 22 51 59.8
ARU pmax pmax
comp=Z,77nm,1.0s
ARU MLR MLR
comp=Z,981nm,20.0s
ARU Arti 77.36 325 *e*P **P 22 34 00.5 -1.7**
comp=Z,72nm,1.0s
ARU LR LR
comp=Z,1µm,19.0s
DLBC Dease Lake 77.38 33 *e*P **P 22 34 03.6 +1.3**
comp=Z,43nm,1.3s
AKTO Aktyubinsk 78.12 319 LR LR 23 08 54.5
comp=Z,904nm,22.0s,baz=85,slow=36
TAOE Nuku Hiva Isla 78.13 102 *e*S **S 22 43 58.5 -2.9**
comp=Z,355nm,27.9s
TAOE Nuku Hiva Isla 78.13 102 *e*LR LR 22 58 06.8
comp=Z,1µm,30.7s
GEYT Alibeck 79.40 307 P **P 22 34 14.5 +0.5**
comp=Z,59nm,1.0s,baz=66,slow=1.8,SNR=139
GEYT LR LR 23 12 04.1
comp=Z,2µm,20.7s,baz=75,slow=38
BIDO Bidbid 81.56 292 P **P 22 34 26.2 +0.5**
SNR=13
BIDO Bidbid 81.56 292 P **P 22 34 26.2 +0.5**
SNR=13
CASY Casey 82.27 193 *e*P **P 22 34 25.1 -3.4**
comp=Z,48nm,0.8s
NLWA Neilton Lookou 82.35 43 *e*P **P 22 34 30.9 +1.5**
comp=Z,1.6nm,0.3s
NLWA LR LR
comp=Z,728nm,21.0s
PGC Sidney 82.41 42 *e*P **P 22 34 32.4 +2.7**
comp=Z,80nm,1.5s
BANOM Banah 82.78 295 *i*P **P 22 34 32.4 +0.3**
SNR=13
BANOM Banah 82.78 295 P **P 22 34 33.7 +1.5**
SNR=7.9
BANOM Banah 82.78 295 P **P 22 34 33.7 +1.5**
SNR=7.9
A04D Lummi Island 82.88 42 P **P 22 34 34.0 +1.9**
baz=281
UOSS Minazif 83.04 294 *e*P **P 22 34 33.2 -0.2**
comp=Z,2.7nm,1.1s
ARQ Araqi 83.04 292 P **P 22 34 33.9 +0.3**
SNR=18
ARQ Araqi 83.04 292 P **P 22 34 33.9 +0.3**
SNR=18
HATD Hatta, Dubai 83.12 294 *i*P **P 22 34 34.0 +0.1**
SNR=14
HATD Hatta, Dubai 83.12 294 P **P 22 34 35.0 +1.0**
SNR=10
HATD Hatta, Dubai 83.12 294 P **P 22 34 35.0 +1.0**
SNR=10
G03D McMinnville, O 83.14 45 P **P 22 34 35.1 +1.5**
baz=281
F04D Rainier, OR 83.16 44 P **P 22 34 35.3 +1.6**
baz=281
ASHO Ashiyiah 83.21 294 *i*P **P 22 34 34.3 -0.2**
SNR=23
ASHO Ashiyiah 83.21 294 P **P 22 34 35.7 +1.3**
SNR=13
ASHO Ashiyiah 83.21 294 P **P 22 34 35.7 +1.3**
SNR=13
B05A Bryant 83.36 42 P **P 22 34 36.3 +1.7**
baz=281
I03D Drain, OR 83.36 47 P **P 22 34 36.3 +1.5**
baz=281
L02D Cave Junction, 83.47 48 P **P 22 34 36.7 +1.3**
baz=281
JCW Jim Creek 83.49 42 P **P 22 34 37.6 +2.3**
NAZ Nazwa, Dubai 83.51 294 *i*P **P 22 34 35.7 -0.2**
SNR=8.2
NAZ Nazwa, Dubai 83.51 294 P **P 22 34 37.0 +1.1**
SNR=6.2
NAZ Nazwa, Dubai 83.51 294 P **P 22 34 37.0 +1.1**
SNR=6.2

F04A Amboy 83.59 45 *e*P **P 22 34 37.8 +1.9**
comp=Z,43nm,1.2s
KHMM Horse Mountain 83.61 50 *e*P **P 22 34 39.4 +3.1**
comp=Z,37nm,1.1s
FAQ Al Faqa, Dubai 83.62 294 *i*P **P 22 34 36.3 -0.2**
SNR=6.6
FAQ Al Faqa, Dubai 83.62 294 P **P 22 34 37.0 +0.5**
SNR=6.9
FAQ Al Faqa, Dubai 83.62 294 P **P 22 34 37.0 +0.5**
SNR=6.9
D05A Enumclaw 83.64 43 *e*P **P 22 34 39.1 +3.0**
comp=Z,38nm,1.1s
TDL Tradedollar La 83.65 44 P **P 22 34 38.4 +2.0**
LON Longmire 83.85 44 *e*P **P 22 34 39.4 +2.1**
LON pmax pmax
comp=Z,11nm,1.1s
LON Longmire 83.85 44 *e*P **P 22 34 39.4 +2.1**
comp=Z,10nm,1.1s
HUMO Hull Mountain 83.85 48 *e*P **P 22 34 39.7 +2.3**
comp=Z,30nm,1.1s
BROR Big Rock Looko 83.89 46 P **P 22 34 40.2 +2.8**
H04A Detroit Lake 84.00 46 *e*P **P 22 34 39.7 +1.6**
comp=Z,41nm,1.1s
I04A Tendick Farm, 84.01 47 P **P 22 34 39.5 +1.3**
baz=281
M02C Callahan 84.16 49 P **P 22 34 41.0 +2.0**
baz=281,SNR=9.2
YBH Yreka Blue Hor 84.20 49 *e*P **P 22 34 40.5 +1.2**
YBH pmax pmax
comp=Z,26nm,0.9s
YBH Yreka Blue Hor 84.20 49 *e*P **P 22 34 40.5 +1.2**
comp=Z,26nm,0.9s
C06D Leavenworth 84.22 42 P **P 22 34 40.8 +1.7**
baz=282
YKA Yellowknife Ar 84.26 27 P **P 22 34 38.7 -0.2**
comp=Z,20nm,1.0s,baz=288,slow=5.2,SNR=95
N02D Trinity Center 84.35 49 P **P 22 34 41.6 +1.6**
baz=282
G05D Wamic, OR 84.49 45 P **P 22 34 42.0 +1.4**
baz=282
WDC Whiskeytown Da 84.55 50 *e*P **P 22 34 42.8 +1.9**
WDC pmax pmax
comp=Z,22nm,1.2s
WDC Whiskeytown Da 84.55 50 *e*P **P 22 34 42.8 +1.9**
comp=Z,22nm,1.2s
I05D Terrebonne, OR 84.66 46 P **P 22 34 43.0 +1.5**
baz=282
K04D Chiloquin, OR 84.72 48 P **P 22 34 43.0 +1.1**
baz=282
CROR Criterion Ridg 84.77 45 P **P 22 34 43.6 +1.5**
M04C Macdoel 84.83 49 P **P 22 34 44.0 +1.6**
baz=282,SNR=14
J05D Fort Rock, OR 84.95 47 P **P 22 34 44.8 +1.7**
baz=282,SNR=16
SPA0 Spitsbergen Ar 85.13 351 *e*P **P 22 34 45.3 +2.2**
B08A Colville Reser 85.15 42 *e*P **P 22 34 45.0 +1.2**
comp=Z,36nm,1.0s
O03D Paynes Creek 85.16 50 P **P 22 34 45.1 +0.9**
baz=282
KBS Kingsbay 85.29 352 PFAKE 22 35 00.0 +16
KBS LR LR
comp=Z,805nm,20.0s
K05A Summer Lake 85.32 47 *e*P **P 22 34 46.5 +1.5**
comp=Z,17nm,0.7s
HAWA Hanford 85.46 44 *e*P **P 22 34 48.1 +2.7**
comp=Z,14nm,0.9s
HAWA LR LR
comp=Z,899nm,19.0s
D08A Wollman Farm, 85.72 43 *e*P **P 22 34 48.5 +1.8**
comp=Z,36nm,1.3s
LVZ Lovozero 85.77 339⇑*e*P **P 22 34 44.6 -1.9**
LVZ pmax pmax
comp=Z,94nm,2.1s
LVZ Lovozero 85.77 339 PFAKE 22 35 00.0 +13
LVZ LR LR
comp=Z,1µm,20.0s
TMCR Tamitsa 85.83 335 *e*P **P 22 34 45.7 -1.1**
TMCR pmax pmax
comp=Z,44nm,1.1s
RES Resolute Bay 85.89 13 P **P 22 34 47.4 +0.5**
comp=Z,61nm,0.9s,baz=311,slow=5.6,SNR=48
RES Resolute Bay 85.89 13 *e*P **P 22 34 47.7 +0.8**
RES Resolute Bay 85.89 13 *e*P **P 22 34 47.7 +0.8**
MOD Modoc Plateau 85.92 48 *e*P **P 22 34 49.3 +1.3**
comp=Z,26nm,1.1s
C09A Chrisman Ranch 85.97 42 *e*P **P 22 34 49.6 +1.7**
comp=Z,38nm,1.0s
HSPB Hornsund (broa 86.02 350 *e*P **P 22 34 47.6 +0.1**
HSPB *e*S **S 22 45 19.4 -0.8**
HSPB MLR MLR
comp=Z,1µm,20.4s
AFDM Forest Hills D 86.08 51 *e*P **P 22 34 50.6 +2.0**
comp=Z,22nm,1.2s
G08A Pilot Rock 86.10 45 *e*P **P 22 34 50.4 +1.6**
comp=Z,22nm,1.4s
KLMR Klimovskoe 86.28 332 *e*P **P 22 34 46.7 -2.4**
KLMR pmax pmax
comp=Z,31nm,1.0s
APA Apatity 86.34 339⇑*i*P **P 22 34 49.0 -0.2**
APA pmax pmax
comp=Z,68nm,1.2s
APA MLR MLR
comp=Z,1µm,17.0s
E09A Wood Farm, Sta 86.36 43 *e*P **P 22 34 51.8 +1.9**
comp=Z,24nm,1.0s
RKT Rikitea 86.60 114 *e*S **S 22 45 28.1 +0.5**
comp=Z,943nm,28.8s
RKT Rikitea 86.60 114 *e*LR LR 23 01 44.1
comp=Z,996nm,24.5s,baz=290
NEW Newport 86.60 41 P **P 22 34 52.1 +1.1**
baz=285
NEW Newport 86.60 41 *e*P **P 22 34 52.3 +1.2**
NEW pmax pmax
comp=Z,37nm,0.8s
NEW MLR MLR
comp=Z,643nm,20.0s
NEW Newport 86.60 41 *e*P **P 22 34 52.3 +1.2**
comp=Z,37nm,0.8s
NEW LR LR
comp=Z,643nm,20.0s
CMB Columbia Colle 86.73 52 *e*P **P 22 34 53.5 +1.6**
CMB pmax pmax
comp=Z,20nm,1.3s
CMB Columbia Colle 86.73 52 *e*P **P 22 34 53.5 +1.6**
comp=Z,20nm,1.3s
WVOR Wild Horse Val 87.01 47 *e*P **P 22 34 55.0 +1.8**
WVOR pmax pmax
comp=Z,21nm,1.1s
WVOR MLR MLR
comp=Z,1µm,20.0s
WVOR Wild Horse Val 87.01 47 *e*P **P 22 34 55.0 +1.8**
comp=Z,21nm,1.1s
WVOR LR LR
comp=Z,1µm,20.0s
PAHR Pah Rah Range 87.11 50 *e*P **P 22 34 55.6 +1.8**
comp=Z,25nm,1.2s
F10A Beach Ranch, E 87.11 44 *e*P **P 22 34 54.3 +0.6**
comp=Z,45nm,1.3s
BMO Blue Mountains 87.34 45 *e*P **P 22 34 56.0 +1.2**
BMO pmax pmax
comp=Z,54nm,1.1s
BMO MLR MLR
comp=Z,1µm,20.0s
BMO Blue Mountains 87.34 45 *e*P **P 22 34 56.0 +1.2**
comp=Z,54nm,1.1s
BMO LR LR
comp=Z,1µm,20.0s
WAKR Walker 87.35 51 *e*P **P 22 34 58.2 +3.1**
KEV Kevo 87.45 342 PFAKE 22 35 10.0 +15
KEV LR LR
comp=Z,855nm,19.0s
SMMC Simmler 87.66 55 P **P 22 34 58.7 +2.3**
baz=284
PKM Mcpherson Peak 87.90 55 P **P 22 34 59.7 +1.9**
baz=284
ARA0 ARCESS Array S 88.01 342 *e*P **P 22 34 57.2 -0.2**
ARCES ARCESS Array B 88.01 342 P **P 22 34 57.1 -0.3**
comp=Z,13nm,0.9s,baz=81,slow=6.5,SNR=21
ARCES PKiKP **PKiKP 22 40 00.6 +1.2**
comp=Z,2.6nm,0.9s,baz=25,slow=3.2,SNR=4.3
ARCES LR LR 23 17 21.7
comp=Z,918nm,20.2s,baz=74,slow=38
MLAC Mammoth, Mammo 88.02 52 P **P 22 35 00.2 +1.9**
baz=284
SBC Santa Barbara 88.08 55 P **P 22 35 00.3 +1.9**
baz=284
VRH Novokhopyorsk 88.09 322 *e*P **P 22 34 56.4 -1.6**

VRH pmax pmax
comp=Z,80nm,0.8s
VRH MLR MLR
comp=Z,2µm,19.0s
BSMT Bassoo Peak 88.22 41 *e*P **P 22 35 00.7 +1.6**
NV01 Mina Array Sit 88.23 51 *e*P **P 22 35 00.8 +1.4**
NVAR Mina Array Bea 88.23 51 P **P 22 35 00.7 +1.4**
comp=Z,14nm,0.8s,baz=261,slow=6.6,SNR=20
NVAR LR LR 23 10 47.3
comp=Z,247nm,19.5s,baz=286,slow=33
VES Vestal, Richgr 88.25 54 P **P 22 35 00.4 +1.2**
baz=284
SCZ2 Santa Cruz Isl 88.25 56 P **P 22 35 00.2 +0.9**
baz=284
NV11 Mina Array Sit 88.34 51 *e*P **P 22 35 01.6 +1.9**
WALA Waterton Lakes 88.43 40 *e*P **P 22 35 02.2 +2.3**
BLMT Blacktail Moun 88.45 41 *e*P **P 22 35 02.0 +1.8**
SNCC San Nicolas Is 88.52 56 P **P 22 35 02.4 +1.9**
baz=284
JTMT Jette 88.58 41 *e*P **P 22 35 02.2 +1.5**
TIN Tinemaha, Big 88.62 52 P **P 22 35 02.9 +1.8**
baz=284
ARVC Arvin 88.63 54 P **P 22 35 02.2 +1.3**
baz=284
BLG Laguna Peak, P 88.68 55 P **P 22 35 02.4 +1.1**
baz=284
YBMT Yellow Bay 88.72 41 *e*P **P 22 35 02.9 +1.6**
GUDG Gudauri 88.75 313 P **P 22 35 01.6 -0.1**
MFID Camas Ranch 88.75 46 *e*P **P 22 35 02.8 +1.2**
comp=Z,62nm,1.3s
TBLG Delisi 88.75 312 P **P 22 35 00.5 -1.0**
TBLG Delisi 88.75 312 P **P 22 35 00.5 -1.0**
ISA Isabella, Lake 88.78 54 P **P 22 35 02.9 +1.1**
baz=284
MOS Moscow 88.94 327 *e*P **P 22 35 00.0 -1.9**
MOS pmax pmax
comp=Z,200nm,1.2s
MOS pmax pmax
comp=Z,140nm,1.1s
MOS MLR MLR
comp=Z,2µm,18.0s
GOF Gofitskoye 89.03 316⇑*i*P **P 22 35 01.7 -1.0**
GOF pmax pmax
comp=Z,59nm,1.5s
ZEI Tsey 89.07 314 *e*P **P 22 35 00.8 -2.4**
ZEI pmax pmax
comp=Z,36nm,0.8s
NCK Nalchik 89.09 314⇓*i*P **P 22 35 02.3 -0.7**
NCK pmax pmax
comp=Z,22nm,0.9s
GNI Garni 89.17 311 *e*P **P 22 35 03.6 -0.1**
GNI pmax pmax
comp=Z,82nm,1.0s
GNI MLR MLR
comp=Z,886nm,19.0s
GNI Garni 89.17 311 *e*P **P 22 35 03.6 -0.1**
comp=Z,82nm,1.0s
GNI LR LR
comp=Z,886nm,19.0s
DECC Green Verdugo 89.24 55 P **P 22 35 05.1 +1.2**
baz=284
LPSR Galich'ya Gora 89.29 324 *e*P **P 22 35 02.0 -1.7**
LPSR pmax pmax
comp=Z,70nm,1.0s
LPSR MLR MLR
comp=Z,890nm,20.0s
GRAC Grapevine Rang 89.31 52 P **P 22 35 06.2 +2.0**
baz=285
DAC Darwin (Calif) 89.32 53 P **P 22 35 05.7 +1.3**
DAC pmax pmax
comp=Z,4.0nm,0.7s
DAC Darwin (Calif) 89.32 53 P **P 22 35 05.7 +1.3**
comp=Z,4.3nm,0.7s
EDW2 Edwards Air Fo 89.35 55 P **P 22 35 06.2 +1.7**
baz=285,SNR=7.0
SCI2 San Clemente I 89.38 56 P **P 22 35 06.0 +1.5**
baz=284
CIS Catalina Islan 89.38 56 P **P 22 35 05.7 +1.1**
baz=284
ONI Oni 89.44 313 P **P 22 35 03.6 -1.2**
ONI Oni 89.44 313 P **P 22 35 03.5 -1.2**
LRMC Laurel Mtn Rad 89.45 54 P **P 22 35 06.7 +1.7**
baz=285,SNR=10
MWC Mount Wilson 89.47 55 *e*P **P 22 35 07.0 +1.8**
MWC pmax pmax
comp=Z,34nm,1.2s
MWC Mount Wilson 89.47 55 *e*P **P 22 35 07.0 +1.8**
comp=Z,34nm,1.2s
CHMT Chamberlain Mo 89.49 42 *e*P **P 22 35 06.1 +1.0**
KBZ Khabaz 89.51 315 P **P 22 35 03.8 -1.1**
comp=Z,20nm,1.0s,baz=132,slow=3.6,SNR=22
KBZ LR LR 23 18 53.0
comp=Z,1µm,20.1s,baz=60,slow=38
KIV Kislovodsk 89.59 315 *i*P **P 22 35 04.3 -1.2**
SNR=8.9
KIV Kislovodsk 89.59 315 *e*P **P 22 35 03.9 -1.5**
KIV *e* 22 45 33.3
KIV *e*SS SS 22 51 50.7 -0.7
KIV pmax pmax
comp=Z,75nm,6.0s
KIV pmax pmax
comp=Z,18nm,1.1s
KIV MLR MLR
comp=Z,1µm,19.0s
KIV Kislovodsk 89.59 315 *e*P **P 22 35 03.7 -1.7**
comp=Z,14nm,0.8s
KIV LR LR
comp=Z,1µm,20.0s
VSR Storozhevoye 89.61 323 *e*P **P 22 35 02.8 -2.4**
VSR pmax pmax
comp=Z,60nm,0.8s
VSR MLR MLR
comp=Z,2µm,20.0s
HLID Hailey 89.70 45 P **P 22 35 07.2 +1.2**
baz=287
HLID Hailey 89.70 45 *e*P **P 22 35 07.7 +1.6**
comp=Z,15nm,0.9s
HLID LR LR
comp=Z,1µm,20.0s
BGD Bogdanovka 89.70 312 P **P 22 35 05.4 -0.8**
OBN Obninsk 89.72 327*c i*P **P 22 35 04.1 -1.5**
OBN *i*S **SKSac 22 45 32.7 -2.5**
OBN *i*SS **SS 22 51 53.2 +0.8**
OBN pmax pmax
comp=Z,189nm,1.7s
OBN Obninsk 89.72 327 *e*P **P 22 35 04.4 -1.2**
comp=Z,98nm,1.0s
OBN LR LR
comp=Z,939nm,20.0s
AKH Akhalkalaki 89.74 312⇑*i*P **P 22 35 05.7 -0.6**
AKH Akhalkalaki 89.74 312 P **P 22 35 05.7 -0.6**
AKH Akhalkalaki 89.74 312 P **P 22 35 05.6 -0.7**
NEY Neytrino 89.77 314*de*P **P 22 35 06.2 -0.2**
NEY pmax pmax
comp=Z,3.0nm,0.8s
BFSC Mount Baldy Ra 89.78 55 P **P 22 35 07.5 +1.0**
baz=285
FURC Furnace Creek, 89.84 53 P **P 22 35 08.5 +1.9**
baz=285,SNR=8.4
ELK Elko 89.91 48 *e*P **P 22 35 08.9 +1.7**
ELK pmax pmax
comp=Z,26nm,1.1s
ELK Elko 89.91 48 *e*P **P 22 35 08.8 +1.7**
comp=Z,26nm,1.1s
RRX Edison Barstow 90.15 54 P **P 22 35 09.9 +1.8**
baz=285
TPNV Topopah Spring 90.18 52 P **P 22 35 10.1 +1.6**
baz=286,SNR=20
TPNV Topopah Spring 90.18 52 *e*P **P 22 35 10.0 +1.5**
TPNV pmax pmax
comp=Z,18nm,0.9s
TPNV Topopah Spring 90.18 52 *e*P **P 22 35 10.0 +1.5**
comp=Z,18nm,0.9s
GSC Goldstone, Bar 90.19 54 P **P 22 35 10.1 +1.7**
baz=285,SNR=14
GSC Goldstone, Bar 90.19 54 *e*P **P 22 35 10.3 +1.9**
GSC pmax pmax
comp=Z,20nm,0.9s
GSC Goldstone, Bar 90.19 54 *e*P **P 22 35 10.3 +1.9**
comp=Z,20nm,0.9s
VNDA Vanda 90.31 176 P **P 22 35 08.2 +0.4**
comp=Z,1.6nm,1.0s,baz=307,slow=6.4,SNR=5.3
VNDA PKKPbc **PKKPdf 22 52 38.1 +1.5**
comp=Z,0.7nm,0.9s,baz=194,slow=4.2,SNR=3.3
VNDA LR LR 23 13 59.9
comp=Z,235nm,18.8s,baz=348,slow=34

VNDA Vanda 90.31 176 eP P 22 35 10.0 +2.2
VNDA Vanda 90.31 176 eP P 22 35 09.9 +2.2
VNDA PKKPbc PKKPdf 22 52 38.1 +1.5
R11A Troy Canyon, C 90.31 51 P P 22 35 10.7 +1.7
baz=286,SNR=14
R11A Troy Canyon, C 90.31 51 eP P 22 35 10.8 +1.7
LRM Limekiln Ridge 90.36 43 eP P 22 35 10.2 +1.0
CHVG Ch'k'valeri 90.37 314 P P 22 35 08.4 -0.6
MCMT McKenzie Canyo 90.40 44 eP P 22 35 11.1 +1.7
DLMT Dillon 90.40 43 eP P 22 35 13.1 +3.8
comp=Z,11nm,1.1s
DAG Danmarks Havn 90.44 356⇑iP P 22 35 07.6 -1.0
comp=Z,16nm,0.8s
DAG Danmarks Havn 90.44 356⇑iP P 22 35 07.6 -1.0
DAG pmax pmax
comp=Z,12nm,0.8s
SHOC Shoshone, Teco 90.44 53 P P 22 35 11.2 +1.7
baz=286
109C Camp Elliot, M 90.58 56 P P 22 35 11.4 +1.2
baz=285
HEC Hector,Ludlow 90.68 54 P P 22 35 12.3 +1.6
baz=286,SNR=14
TUQ Turquoise Moun 90.84 54 P P 22 35 13.2 +1.7
baz=286,SNR=16
PFO Pinyon Flats O 90.91 55 eP P 22 35 13.7 +1.8
PFO pmax pmax
comp=Z,21nm,1.3s
PFO MLR MLR
comp=Z,1µm,20.0s
PFO Pinyon Flats O 90.91 55 eP P 22 35 13.7 +1.8
comp=Z,22nm,1.3s
PFO LR LR
comp=Z,1µm,20.0s
TPFO Pinon Flats 90.91 55 P P 22 35 13.3 +1.4
baz=286
BOZ Bozeman (W) 90.96 43 P P 22 35 13.3 +1.4
baz=289
BOZ Bozeman (W) 90.96 43 eP P 22 35 13.2 +1.4
BOZ pmax pmax
comp=Z,14nm,1.3s
BOZ MLR MLR
comp=Z,537nm,21.0s
BOZ Bozeman (W) 90.96 43 eP P 22 35 13.2 +1.4
comp=Z,14nm,1.3s
BOZ LR LR
comp=Z,537nm,21.0s
BAR Barrett 90.98 56 eP P 22 35 14.4 +2.3
comp=Z,13nm,1.0s
MONP2 Monument Peak 91.13 56 P P 22 35 14.3 +1.3
baz=286,SNR=8.6
SHPR Sheep Range 91.15 52 eP P 22 35 15.2 +2.2
comp=Z,12nm,1.0s
BELC Belle Mtn. Jos 91.17 55 P P 22 35 14.4 +1.3
baz=286,SNR=7.0
GMRC Granite Mounta 91.23 54 P P 22 35 15.0 +1.7
baz=286,SNR=20
QLMT Earthquake Lak 91.35 44 eP P 22 35 16.1 +2.4
HVU Hansel Valley 91.38 47 eP P 22 35 16.0 +2.1
HVU pmax pmax
comp=Z,24nm,1.3s
HVU Hansel Valley 91.38 47 eP P 22 35 16.0 +2.1
comp=Z,24nm,1.3s
EGMT Eagleton 91.38 40 P P 22 35 14.8 +1.1
baz=290
EGMT Eagleton 91.38 40 PFAKE 22 35 30.0 +16
EGMT LR LR
comp=Z,673nm,19.0s
IKP In-Ko-Pah, Jac 91.45 56 P P 22 35 15.9 +1.5
baz=286
BGU Big Grassy Mou 91.46 48 eP P 22 35 16.1 +1.8
comp=Z,6.7nm,1.1s
PSUT Pine Spring 91.56 50 eP P 22 35 16.9 +2.0
comp=Z,12nm,0.8s
SWSC Sam W. Stewart 91.62 56 P P 22 35 16.3 +1.3
baz=286
BC3 Big Chuckawall 91.70 55 P P 22 35 17.2 +1.7
baz=286,SNR=9.6
SOC Sochi 91.75 315 eP P 22 35 11.9 -3.5
SOC e 22 38 54.4
SOC eS SKSac 22 45 43.3 -4.1
SOC eSS SS 22 52 21.7 -0.7
SOC pmax pmax
comp=Z,10.0nm,0.6s
SOC MLR MLR
comp=Z,2µm,20.0s
SPUT South Promonto 91.76 47 eP P 22 35 17.6 +1.9
comp=Z,19nm,1.2s
IRM Iron Mountain 91.81 55 P P 22 35 17.7 +1.8
baz=286,SNR=18
DUG Dugway, Tooele 91.84 48 P P 22 35 17.4 +1.4
baz=286
DUG Dugway, Tooele 91.84 48 eP P 22 35 17.5 +1.4
DUG pmax pmax
comp=Z,21nm,1.3s
DUG MLR MLR
comp=Z,1µm,20.0s
DUG Dugway, Tooele 91.84 48 eP P 22 35 17.5 +1.4
comp=Z,21nm,1.3s
DUG LR LR
comp=Z,1µm,20.0s
YFT Old Faithful 91.88 44 eP P 22 35 20.1 +3.8
comp=Z,25nm,1.1s
FIA1 FINESS Array S 91.95 335 eP P 22 35 13.9 -2.0
FINES FINESS Array B 91.96 335 P P 22 35 13.8 -2.0
comp=Z,8.6nm,0.4s,baz=68,slow=4.4,SNR=82
FINES LR LR 23 17 19.1
comp=Z,1µm,21.8s,baz=45,slow=36
IMW Indian Meadow 91.99 44 eP P 22 35 18.6 +1.8
FXWY Fox Creek 92.02 45 eP P 22 35 18.5 +1.6
H17A Grant Village 92.07 44 P P 22 35 19.9 +2.7
baz=290
H17A Grant Village 92.07 44 eP P 22 35 20.3 +3.1
FLWY Flagg Ranch 92.09 44 eP P 22 35 19.3 +2.1
LKWY Lake 92.14 44 eP P 22 35 21.2 +3.7
LKWY pmax pmax
comp=Z,18nm,1.0s
LKWY MLR MLR
comp=Z,776nm,20.0s
LKWY Lake 92.14 44 eP P 22 35 21.2 +3.7
comp=Z,18nm,1.0s
LKWY LR LR
comp=Z,776nm,20.0s
MOOW Moose Ponds 92.17 44 eP P 22 35 19.5 +1.9
GCMT Greycliff 92.21 42 eP P 22 35 19.6 +2.0
REDW Red Top Meadow 92.22 45 eP P 22 35 19.7 +1.9
AHID Auburn Hatcher 92.25 45 eP P 22 35 19.4 +1.4
comp=Z,16nm,1.0s
AHID LR LR
comp=Z,1µm,20.0s
HWUT Hardware Ranch 92.30 47 eP P 22 35 19.5 +1.3
comp=Z,16nm,1.0s
HWUT LR LR
comp=Z,906nm,20.0s
LOHW Long Hollow 92.31 45 eP P 22 35 20.1 +1.8
GLA Glamis 92.38 56 P P 22 35 20.4 +1.8
baz=286,SNR=8.9
GLA Glamis 92.38 56 eP P 22 35 20.6 +2.1
GLA pmax pmax
comp=Z,16nm,0.8s
GLA Glamis 92.38 56 eP P 22 35 20.6 +2.1
comp=Z,16nm,0.8s
Y12C Blythe 92.42 55 P P 22 35 20.1 +1.4
baz=287
Y12C Blythe 92.42 55 eP P 22 35 20.6 +1.9
NLU North Lily Min 92.45 48 eP P 22 35 20.7 +1.7
comp=Z,6.0nm,0.8s
LCMT Little Creek M 92.47 51 eP P 22 35 21.4 +2.3
TCUT Toone Canyon 92.56 47 eP P 22 35 21.5 +2.0
comp=Z,11nm,0.8s
PDMCI Parker Dam,Lak 92.57 54 P P 22 35 20.9 +1.6
baz=287,SNR=12
JLU Jordanelle 92.70 48 eP P 22 35 21.8 +1.7
comp=Z,31nm,1.6s
RLMT Red Lodge 92.70 43 P P 22 35 21.4 +1.4
baz=291
RLMT Red Lodge 92.70 43 eP P 22 35 22.0 +2.0
comp=Z,11nm,0.7s
RLMT LR LR
comp=Z,585nm,22.0s
KNB Kanab 92.80 51 eP P 22 35 22.9 +2.3
KNB Kanab 92.80 51 eP P 22 35 22.9 +2.3
MSU Marysvale 92.82 50 eP P 22 35 22.6 +1.8
MSU Marysvale 92.82 50 eP P 22 35 22.6 +1.8
ANN Anapa 92.89 317 eP P 22 35 17.4 -3.2
ANN eS SKSac 22 45 50.7 -2.9
ANN pmax pmax
comp=Z,69nm,1.3s
MTPU Mount Pierson 92.96 50 eP P 22 35 24.0 +2.4
VSU Vasula 93.17 332c iP P 22 35 20.2 -1.3
VSU pmax pmax
comp=Z,106nm,1.0s
TMUT Trail Mountain 93.29 49 eP P 22 35 25.3 +2.3
113A Mohawk Valley, 93.31 56 eP P 22 35 25.0 +2.2
BW06 Boulder Array 93.32 45 eP P 22 35 23.9 +0.9
comp=Z,3.4nm,0.9s
BW06 LR LR
comp=Z,1µm,21.0s
PD31 Pinedale Array 93.32 45 eP P 22 35 23.9 +0.9
PDAR Pinedale Array 93.32 45 P P 22 35 23.1 +0.2
comp=Z,0.6nm,0.5s,baz=264,slow=1.2,SNR=8.7
PDAR PP PP 22 39 06.2 -0.3
comp=Z,0.8nm,1.0s,baz=256,slow=6.0,SNR=3.9
PDAR LR LR 23 13 02.8
comp=Z,821nm,20.6s,baz=314,slow=33
Q16A Castle Valley 93.44 49 eP P 22 35 25.7 +2.1
Y14A Wickenburg 93.58 54 eP P 22 35 25.9 +1.8
SRU San Rafael Swe 93.86 49 eP P 22 35 26.8 +1.4
SRU San Rafael Swe 93.86 49 eP P 22 35 26.8 +1.4
P18A Preston Nutter 93.89 48 eP P 22 35 27.2 +1.5
comp=Z,10nm,1.4s
LAO LASA Array 94.10 41 P P 22 35 27.4 +1.2
baz=293
LAO LASA Array 94.10 41 eP P 22 35 27.5 +1.2
LAO LR LR
comp=Z,680nm,21.0s
214A Organ Pipe Nat 94.32 56 P P 22 35 28.7 +1.2
baz=288
214A Organ Pipe Nat 94.32 56 eP P 22 35 29.1 +1.5
comp=Z,35nm,1.0s
WUAZ Wupatki 94.37 52 P P 22 35 29.3 +1.4
baz=289
WUAZ Wupatki 94.37 52 eP P 22 35 30.2 +2.4
WUAZ LR LR
comp=Z,678nm,20.0s
MICGM Minsk 94.54 328 eP P 22 35 27.0 -1.0
MICGM eLR LR 23 16 40.0
MICGM LRM MLR 23 21 34.0
comp=Z,3.2nm,18.0s
MNK Minsk 94.54 328 eP P 22 35 27.0 -1.0
MNK MLR MLR
comp=Z,3µm,18.0s
DGMT Dagmar 94.65 38 P P 22 35 30.1 +1.4
baz=294
DGMT Dagmar 94.65 38 PFAKE 22 35 40.0 +11
DGMT LR LR
comp=Z,1µm,21.0s
SIM Simferopol' 95.03 318 eP P 22 35 28.9 -1.5
SIM S S 22 46 40.0 -4.3
SIM ePS PS 22 48 01.0 -2.0
SIM pmax pmax
comp=Z,23nm,0.9s
A25A Svangstu Ranch 95.11 38 P P 22 35 32.1 +1.4
baz=295
O20A White River Ci 95.16 47 P P 22 35 32.5 +1.1
baz=291
PV10 Paradox Valley 95.20 49 eP P 22 35 33.5 +1.8
SUMG Summit 95.22 1 iP P 22 35 30.0 -1.2
comp=Z,16nm,1.2s
comp=Z,590nm,23.0s
SUMG Summit 95.22 1 iP P 22 35 30.0 -1.2
SUMG pmax pmax
comp=Z,16nm,1.2s
SUMG MLR MLR
comp=Z,590nm,23.0s
SUMG Summit 95.22 1 eP P 22 35 31.2 -0.1
B25A Knox Farm, Ray 95.36 38 P P 22 35 33.7 +1.8
baz=295
AKASG Malin Array Be 95.59 325 P P 22 35 30.9 -1.9
comp=Z,4.0nm,0.7s,baz=53,slow=4.5,SNR=16
AKASG LR LR 23 22 25.5
comp=Z,1µm,18.3s,baz=80,slow=38
AKASG Malin Array Be 95.59 325 iP P 22 35 31.2 -1.6
AKASG pmax pmax
comp=Z,1.0nm,0.3s
KIEV Kiev 95.60 325⇑eP P 22 35 30.7 -2.2
KIEV pmax pmax
comp=Z,12nm,1.2s
KIEV Kiev 95.60 325 eP P 22 35 30.9 -2.0
KIEV LR LR
comp=Z,1µm,19.0s
PV01 Paradox Valley 95.63 49 eP P 22 35 34.8 +1.2
AK11 Malin Array Si 95.63 325 eP P 22 35 31.5 -1.6
D25A Fairfield 95.74 39 P P 22 35 34.7 +0.9
baz=295
A26A Wade Farm, Ken 95.76 37 P P 22 35 34.5 +0.8
baz=296
TUC Tucson 95.85 55 P P 22 35 35.9 +1.4
baz=289
TUC Tucson 95.85 55 eP P 22 35 37.0 +2.4
TUC MLR MLR
comp=Z,888nm,20.0s
TUC Tucson 95.85 55 eP P 22 35 37.0 +2.4
TUC LR LR
comp=Z,888nm,20.0s
E25A Miller Ranch, 95.96 40 P P 22 35 35.7 +0.9
baz=295
MVCO Mesa Verde 96.00 50 PFAKE 22 35 50.0 +15
MVCO LR LR
comp=Z,678nm,20.0s
F25A Bowman 96.17 40 P P 22 35 37.3 +1.6
baz=295
D26A Manning 96.34 39 P P 22 35 37.5 +1.0
baz=296
SMCO Snowmass 96.42 48 eP P 22 35 38.9 +1.5
N23A Red Feather La 96.51 46 eP P 22 35 43.4 +5.7
RSSD Black Hills 96.54 42 eP P 22 35 39.6 +2.0
RSSD Black Hills 96.54 42 eP P 22 35 39.6 +2.0
H25A Fruitdale 96.62 42 P P 22 35 38.6 +0.8
baz=295
PHWY Pilot Hill 96.70 45 eP P 22 35 44.5 +6.0
F26A Lodgepole 96.70 40 P P 22 35 39.0 +0.9
baz=296
I25A Rochford 96.78 42 P P 22 35 39.6 +0.9
baz=294
SCO Scoresbysund 96.79 355 iP P 22 35 36.2 -1.7
comp=Z,5.6nm,0.9s
SCO Scoresbysund 96.79 355 eP P 22 35 36.2 -1.7
SCO pmax pmax
comp=Z,6.0nm,0.9s
A28A Rude Farm, Bot 96.80 37 P P 22 35 39.9 +1.4
baz=298
D27A Center 96.86 39 P P 22 35 40.4 +1.6
baz=296
B28A Dugan Ranch, T 96.96 37 P P 22 35 40.8 +1.6
baz=298
G26A Maurine 96.98 41 P P 22 35 40.6 +1.2
baz=296
S22A 4UR Ranch, Cre 97.05 49 P Pdif 22 35 40.7 +0.4
baz=292
H26A Fairpoint 97.16 41 P Pdif 22 35 41.3 +1.0
baz=295
ISCO Idaho Springs 97.16 47 PFAKE 22 35 50.0 +9.2
ISCO LR LR
comp=Z,1µm,20.0s
SUW Suwalki 97.17 329 eP P 22 35 38.7 -1.2
SUW LMZ LR 23 17 35.3
comp=Z,1µm,26.4s
SUW Suwalki 97.17 329 eP P 22 35 38.7 -1.2
SORM Soroca 97.28 323⇓iP P 22 35 37.8 -2.7
SORM Soroca 97.28 323 ⇓P P 22 35 37.9 -2.6
G27A Dupree 97.37 41 P Pdif 22 35 41.8 +0.6
baz=296
BR131 Keskin Array S 97.38 313 eP P 22 35 39.9 -1.6
BRTR Keskin Array B 97.38 313 P P 22 35 39.8 -1.6
comp=Z,5.2nm,0.9s,baz=71,slow=3.2,SNR=28
BRTR PP PP 22 39 36.3 -1.7
comp=Z,1.5nm,1.0s,baz=106,slow=4.7,SNR=3.8
BRTR LR LR 23 23 14.7
comp=Z,443nm,21.8s,baz=60,slow=38
A29A Manning Farm, 97.40 36 P Pdif 22 35 41.9 +0.7
baz=298
D28A Regan 97.41 38 P Pdif 22 35 41.9 +0.6
baz=297
J26A Sides Ranch, S 97.51 43 P Pdif 22 35 42.6 +0.7
baz=295
B29A Wagenman Farm, 97.55 37 P Pdif 22 35 42.5 +0.6
baz=298
H27A Howes 97.60 41 P Pdif 22 35 42.9 +0.7
baz=296
E28A Huff 97.61 39 P Pdif 22 35 43.2 +0.9
baz=297
MDND Maddock 97.69 38 P Pdif 22 35 43.4 +0.8
baz=298
NC405 NORSAR Array S 97.70 339 eP P 22 35 41.3 -0.9
NC303 NORSAR Array S 97.74 339 eP P 22 35 41.0 -1.4
NB201 NORSAR Array S 97.89 339 eP P 22 35 41.7 -1.4
NC204 NORSAR Array S 97.92 339 eP P 22 35 42.6 -0.7
ANTO Ankara 97.92 314 PFAKE 22 35 50.0 +6.2
ANTO LR LR
comp=Z,13nm,20.0s
NB2 NORSAR Subarra 97.92 339 P P 22 35 41.1 -2.2
comp=Z,8.6nm,1.1s,baz=54,slow=4.6
NB2 NORSAR Subarra 97.92 339 P P 22 35 41.1 -2.2
baz=54,slow=4.6
NB2 NORSAR Subarra 97.92 339 P P 22 35 40.2 -3.1
NB2 pmax pmax
comp=Z,7.0nm,1.1s
NOA NORSAR Array B 97.92 339 P P 22 35 41.6 -1.7
comp=Z,4.7nm,1.0s,baz=57,slow=4.1,SNR=8.3
NOA LR LR 23 23 31.4
comp=Z,306nm,18.7s,baz=60,slow=38
A30A Hoffart Farm, 97.93 36 P Pdif 22 35 44.3 +0.7
baz=299
BR231 Keskin MP Arra 97.94 314 eP P 22 35 40.4 -3.5
SDCO Great Sand Dun 98.03 49 P Pdif 22 35 45.1 +0.4
baz=292
SDCO Great Sand Dun 98.03 49 PFAKE 22 36 00.0 +15
SDCO LR LR
comp=Z,531nm,21.0s
MAW Mawson 98.04 202 P P 22 35 42.0 -1.4
comp=Z,3.1nm,0.9s,baz=6.3,slow=9.2,SNR=4.1
MAW LR LR 23 18 02.4
comp=Z,419nm,19.1s,baz=66,slow=34
NBO02 NORSAR Array S 98.04 339 eP P 22 35 42.1 -1.7
D29A Pettibone, Tap 98.06 38 P Pdif 22 35 44.7 +0.5
baz=298
ANMO Albuquerque 98.35 52⇓eP P 22 35 45.9 -0.1
ANMO pmax pmax
comp=Z,12nm,2.6s
ANMO Albuquerque 98.35 52 eP Pdif 22 35 47.4 +1.4
ANMO LR LR
comp=Z,579nm,19.0s
ULM Lac du Bonnet 98.64 34 LR LR 23 16 52.0
comp=Z,549nm,21.8s,baz=282,slow=33
TIRR Tirgusor 98.92 319⇓iP P 22 35 46.9 -1.1
TIRR Tirgusor 98.92 319 ⇓P P 22 35 46.9 -1.1
LVV L'vov 98.93 325 eP P 22 35 45.0 -3.0
LVV MLR MLR
comp=N,400nm,18.0s
LVV MLR MLR
comp=E,1µm,18.0s
LVV MLR MLR
comp=Z,900nm,18.0s
TESR Tescani 99.06 322⇑iP Pdif 22 35 47.1 -1.6
OGNE Ogallala 99.20 45 PFAKE 22 36 00.0 +10
OGNE LR LR
comp=Z,1µm,21.0s
VRI Vrincioaia 99.32 321⇓iP Pdif 22 35 49.2 -0.6
VRI Vrincioaia 99.32 321 ⇓P Pdif 22 35 49.2 -0.6
BUR08 Bucovina Ar. S 99.37 323 eP Pdif 22 35 49.4 -0.8
BURAR Bucovina Array 99.38 323⇑iP Pdif 22 35 49.1 -1.1
BURAR Bucovina Array 99.38 323 ⇑P Pdif 22 35 49.1 -1.1
PLOR Plostina 99.38 321⇑iP Pdif 22 35 48.8 -1.3
PLOR Plostina 99.38 321 ⇑P Pdif 22 35 48.8 -1.3
CSS Mathiatis 99.42 309 PFAKE 22 36 00.0 +9.5
CSS LR LR
comp=Z,237nm,21.0s
KONO Kongsberg 99.47 338 PFAKE 22 36 00.0 +10
KONO LR LR
comp=Z,1µm,19.0s
KWP Kalwaria Pacla 99.76 326 eP Pdif 22 35 51.1 -0.6
KWP LMZ LR 23 21 39.4
comp=Z,900nm,22.1s
KWP Kalwaria Pacla 99.76 326⇑iP Pdif 22 35 51.2 -0.5
KWP Kalwaria Pacla 99.76 326 eP Pdif 22 35 51.1 -0.6
KWP MLR MLR
comp=Z,900nm,22.1s
MLR Muntele Rosu 99.98 321⇑iP Pdif 22 35 52.3 -0.6
MLR Muntele Rosu 99.98 321 ⇑P Pdif 22 35 52.4 -0.5
DOPR Dopca 100.09 322⇑iP Pdif 22 35 51.3 -2.0
SFJD Kangerlussuaq 100.11 6 PFAKE 22 36 00.0 +7.2
SFJD LR LR
comp=Z,521nm,20.0s
BMR Baia Mare 100.35 324⇑iP Pdif 22 35 54.8 +0.5
BMR Baia Mare 100.35 324 ⇑P Pdif 22 35 54.8 +0.5
ISP Isparta 100.37 312 PFAKE 22 36 10.0 +15
ISP LR LR
comp=Z,807nm,22.0s
MNTX Cornudas Mount 100.37 54 ePdif Pdif 22 35 56.6 +1.8
BSD Bornholm Skovb 100.41 333 iP Pdif 22 35 51.7 -2.7
comp=Z,3.6nm,0.9s
comp=Z,650nm,21.0s
BSD Bornholm Skovb 100.41 333 eP Pdif 22 35 51.7 -2.7
BSD pmax pmax
comp=Z,4.0nm,0.9s
BSD MLR MLR
comp=Z,660nm,21.0s
UZH Uzhgorod 100.53 325 eP Pdif 22 35 54.9 -0.2
UZH eS Sdif 22 47 22.9 -8.0
UZH ePS PS 22 49 05.5 +3.1
UZH MLR MLR
comp=N,400nm,17.0s
UZH MLR MLR
comp=E,600nm,17.0s
UZH MLR MLR
comp=Z,400nm,17.0s
VOIR 100.56 321⇑iP Pdif 22 35 53.4 -2.0
VOIR 100.56 321 ⇑P Pdif 22 35 53.4 -2.0
STHS Stebnicka Huta 100.68 326 eP Pdif 22 35 56.3 +0.4
STHS pmax pmax
comp=Z,7.0nm,1.1s
STHS Stebnicka Huta 100.68 326 eP Pdif 22 35 56.2 +0.4
CJR Cluj-Napoca 100.79 323⇑iP Pdif 22 35 55.7 -0.7
CJR Cluj-Napoca 100.79 323 ⇑P Pdif 22 35 55.7 -0.7
CRVS Cervenica-Dubn 100.84 326 eP Pdif 22 35 56.1 -0.4
CRVS Cervenica-Dubn 100.84 326 eP Pdif 22 35 56.1 -0.4
ARR Arges 100.85 321⇓iP Pdif 22 35 56.5 -0.2
OJC Ojcow 101.00 327 eP Pdif 22 35 56.5 -0.7
OJC LMZ LR 23 25 38.8
comp=Z,2µm,18.0s
OJC Ojcow 101.00 327 eP Pdif 22 35 56.5 -0.7
OJC MLR MLR
comp=Z,2µm,18.0s
OJC Ojcow 101.00 327 ePdif Pdif 22 35 56.5 -0.7
HUMR Humele 101.05 320⇑iP Pdif 22 35 55.7 -1.8
NIE Niedzica 101.19 326 eP Pdif 22 35 57.8 -0.3
NIE LMZ LR 23 28 11.2
comp=Z,1µm,18.6s
NIE Niedzica 101.19 326 eP Pdif 22 35 57.8 -0.3
NIE MLR MLR
comp=Z,1µm,18.6s
DRGR 101.27 323⇑iP Pdif 22 35 58.3 -0.2
DRGR 101.27 323 ⇑P Pdif 22 35 58.3 -0.2
ECSD EROS Data Cent 101.50 40 PFAKE 22 36 10.0 +10
ECSD LR LR
comp=Z,621nm,22.0s
KECS Kecovo 101.61 326 eP Pdif 22 35 59.4 -0.5
KECS pmax pmax
comp=Z,6.0nm,1.0s
KECS Kecovo 101.61 326 eP Pdif 22 35 59.4 -0.5
CBKS Cedar Bluff 101.72 46 PFAKE 22 36 10.0 +9.3
CBKS LR LR
comp=Z,1µm,20.0s
OKC Ostrava-Krasne 102.09 328 ePDIFF Pdif 22 36 01.2 -0.8
OKC ePP PP 22 40 16.3 +3.1
OKC eSKS 22 46 43.6
OKC eSP SP 22 49 15.3 -0.7
OKC AMS AMS 23 26 10.0
comp=Z,2µm,17.9s
OKC Ostrava-Krasne 102.09 328 eP Pdif 22 36 01.2 -0.8
OKC e 22 40 16.3
OKC eSP SP 22 49 15.3 -0.7
OKC MLR MLR
comp=Z,2µm,17.9s
QSPA South Pole Qui 102.22 180 PFAKE 22 36 10.0 +7.7
QSPA LR LR
comp=Z,904nm,20.0s
PSZ Piszkesteto 102.26 325 PFAKE 22 36 10.0 +7.1
PSZ LR LR
comp=Z,1µm,19.0s
EYMN Ely 102.31 35 PFAKE 22 36 20.0 +17
EYMN LR LR
comp=Z,728nm,21.0s
VYHS Vyhne 102.51 326 eP Pdif 22 36 03.7 -0.3
VYHS pmax pmax
comp=Z,12nm,1.1s

VYHS	**Vyhne**	**102.51**	**326**	*e*P	**Pdif**	**22 36 03.7**	**-0.3**
TXAR	**Lajitas Array**	**102.62**	**56**	P	**Pdif**	**22 36 06.1**	**+1.2**
	comp=Z,0.3nm,0.6s,baz=245,slow=5.0,SNR=4.0						
TXAR				PKKP	**PKKPdf**	**22 52 12.8**	**+0.6**
	comp=Z,0.1nm,0.3s,baz=60,slow=2.2,SNR=3.5						
DPC	**Dobruska-Polom**	**102.73**	**329**	*e*PDIFF	**Pdif**	**22 36 04.3**	**-0.6**
DPC				*e*pP		22 36 12.3	
DPC				*e*PP	**PP**	**22 40 15.3**	**-2.7**
DPC				AMS	AMS	23 27 30.0	
	comp=Z,1μm,18.2s						
DPC	**Dobruska-Polom**	**102.73**	**329**	*e*P	**Pdif**	**22 36 04.3**	**-0.6**
DPC				*e*		22 40 15.3	
DPC				MLR	MLR		
	comp=Z,1μm,18.2s						
UPC	**Upice**	**102.79**	**329**	*e*PP	PP	22 40 21.4	+3.1
UPC				*e*SKS		22 46 42.7	
UPC				*e*SP	**SP**	**22 49 22.6**	**-0.7**
UPC				AMS	AMS	23 27 10.0	
	comp=Z,2μm,17.3s						
MDVR	**Moldovita**	**102.92**	**322**	⇑ *i* P	**Pdif**	**22 36 05.5**	**-0.4**
PVCC	**Panska Ves**	**103.49**	**330**	*e*PP	PP	22 40 26.8	+3.2
PVCC				*e*SP	SP	22 49 30.1	-0.6
PVCC				AMS	AMS	23 27 20.0	
	comp=Z,2μm,18.1s						
BRG	**Berggiesshubel**	**103.58**	**330**	*e*PKP	**Pdif**	**22 36 07.2**	**-1.4**
	comp=Z,4.9nm,1.0s						
	comp=N,786nm,18.9s						
	comp=E,774nm,19.6s						
	comp=Z,2μm,20.1s						
BRG	**Berggiesshubel**	**103.58**	**330**	*e*P	**Pdif**	**22 36 07.2**	**-1.4**
BRG				pmax	pmax		
	comp=Z,7.0nm,1.0s						
BRG				MLR	MLR		
	comp=N,5μm,18.9s						
BRG				MLR	MLR		
	comp=E,786nm,19.6s						
BRG				MLR	MLR		
	comp=Z,774nm,20.1s						
CLL	**Collm**	**103.75**	**331**	*i* Pdif	**Pdif**	**22 36 09.3**	**-0.1**
	comp=Z,7.0nm,1.1s						
CLL				*e*PP	**PKiKP**	**22 40 31.0**	**+3.6**
CLL				*e*SKSac	**SKSac**	**22 46 46.0**	**-2.4**
CLL				*e*SP	**SP**	**22 49 41.0**	**+7.6**
CLL				*e*SS	SKKPbc	22 55 30.0	-12
CLL				L	L	23 26 00.0	
	comp=Z,1μm,19.4s						
CLL	**Collm**	**103.75**	**331**	*i* P	**Pdif**	**22 36 09.3**	**-0.1**
CLL				*e*		22 46 46.0	
CLL				pmax	pmax		
	comp=Z,7.0nm,1.1s						
CLL				MLR	MLR		
	comp=Z,1μm,19.4s						
KSU1	**Kansas State U**	**103.75**	**44**	PFAKE		22 36 20.0	+10
KSU1				LR	LR		
	comp=Z,928nm,20.0s						
GOPC	**GO Pecny, Ondr**	**103.77**	**329**	*e*SKS	**SKSac**	**22 46 46.5**	**-2.2**
GOPC				*e*SP	**SP**	**22 49 36.9**	**+3.2**
GOPC				AMS	AMS	23 28 00.0	
	comp=Z,1μm,17.7s						
TREC	**Trest**	**103.80**	**328**	*e*PS	PS	22 49 41.2	+4.0
TREC				AMS	AMS	23 25 00.0	
	comp=Z,2μm,21.7s						
PRU	**Pruhonice**	**103.85**	**329**	*e*SKS	**SKSac**	**22 46 46.0**	**-2.9**
PRU				*e*PS	PS	22 49 41.7	+4.2
PRU				*e*SS	**SS**	**22 55 14.2**	**+2.5**
PRU				AMS	AMS	23 28 10.0	
	comp=Z,2μm,17.4s						
WMOK	**Wichita Mounta**	**104.21**	**49**	PFAKE		22 36 20.0	+8.1
WMOK				LR	LR		
	comp=Z,548nm,19.0s						
CONA	**Conrad Observa**	**104.45**	**327**	*i* Pdiff	**Pdif**	**22 36 10.1**	**-2.6**
	comp=Z,15nm,1.1s						
SCIA	**State Center**	**104.58**	**41**	PFAKE		22 36 30.0	+17
SCIA				LR	LR		
	comp=Z,590nm,21.0s						
SANT	**Santorini**	**104.64**	**313**	PFAKE		22 36 20.0	+6.3
SANT				LR	LR		
	comp=Z,495nm,20.0s						
COWI	**Conover**	**104.69**	**35**	PFAKE		22 36 30.0	+16
COWI				LR	LR		
	comp=Z,1μm,21.0s						
NKC	**Novy Kostel**	**104.72**	**330**	AMS	AMS	23 27 20.0	
	comp=Z,1μm,20.4s						
KHC	**Kasperske Hory**	**104.88**	**329**	*e*PDIFF	**Pdif**	**22 36 13.6**	**-0.9**
KHC				*e*pP		22 36 21.4	
KHC				*e*PP	**PKiKP**	**22 40 30.0**	**+0.4**
KHC				*e*SKS		22 46 52.4	
KHC				*e*SP	**SP**	**22 49 47.2**	**+1.9**
KHC				*e*SS	**SS**	**22 55 25.8**	**-0.2**
KHC				AMS	AMS	23 29 00.0	
	comp=Z,2μm,18.3s						
KHC	**Kasperske Hory**	**104.88**	**329**	*e*P	**Pdif**	**22 36 13.6**	**-0.9**
KHC				*e*		22 40 30.0	
KHC				*e*		22 46 52.4	
KHC				*e*SP	SP	22 49 47.2	+1.9
KHC				*e*SS	**SS**	**22 55 25.8**	**-0.2**
KHC				MLR	MLR		
	comp=Z,2μm,18.3s						
GERES	**GERESS Array B**	**105.00**	**329**	Pdiff	**Pdif**	**22 36 13.7**	**-1.5**
	comp=Z,1.0nm,0.9s,baz=39,slow=6.3,SNR=7.7						
GERES				PKiKP	**PKiKP**	**22 40 30.2**	**+0.3**
	comp=Z,0.9nm,0.8s,baz=76,slow=4.1,SNR=3.3						
GEA0	**GERESS Array S**	**105.00**	**329**	*e*Pdif	**Pdif**	**22 36 14.3**	**-0.8**
ARSA	**Arzberg**	**105.04**	**327**	*i* Pdiff	**Pdif**	**22 36 11.7**	**-3.6**
	comp=Z,12nm,1.1s						
T36A	**Boggs Farm, Ca**	**105.23**	**46**	PKiKP	**PKiKP**	**22 40 30.2**	**-0.3**
	baz=299						
JCT	**Junction City**	**105.25**	**54**	PFAKE		22 40 40.0	
JCT				LR	LR		
	comp=Z,728nm,21.0s						
SOKA	**Soboth**	**105.66**	**326**	*i* Pdiff	**Pdif**	**22 36 17.4**	**-0.7**
	comp=Z,11nm,1.2s						
JFWS	**Jewell Farm**	**105.87**	**38**	PFAKE		22 40 40.0	
JFWS				LR	LR		
	comp=Z,956nm,20.0s						
TIR	**Tirane**	**105.91**	**320**	PFAKE		22 40 40.0	
TIR				LR	LR		
	comp=Z,957nm,21.0s						
OBKA	**Obir**	**106.03**	**326**	*i* Pdiff	**Pdif**	**22 36 19.2**	**-0.6**
	comp=Z,6.0nm,1.4s						
KMBO	**Kilima Mbogo**	**106.74**	**273**	PFAKE		22 40 50.0	
KMBO				LR	LR		
	comp=Z,424nm,19.0s						
136A	**Ennis**	**106.90**	**50**	PKiKP	**PKiKP**	**22 40 33.6**	**-0.1**
	baz=297						
ESK	**Eskdalemuir**	**107.19**	**341**	PFAKE		22 40 50.0	
ESK				LR	LR		
	comp=Z,689nm,19.0s						
735A	**Kenedy**	**107.51**	**54**	PKiKP	**PKiKP**	**22 40 34.3**	**-0.6**
	baz=296						
Y38A	**Idabel**	**107.56**	**48**	PKiKP	**PKiKP**	**22 40 34.4**	**-0.5**
	baz=299						
FETA	**Feichten**	**107.70**	**329**	*i* Pdiff	**Pdif**	**22 36 20.4**	**-6.9**
	comp=Z,1.5nm,0.4s						
HDIL	**Hopedale**	**107.79**	**40**	PFAKE		22 40 50.0	
HDIL				LR	LR		
	comp=Z,625nm,19.0s						
437A	**Phantom Ranch,**	**107.94**	**52**	PKiKP	**PKiKP**	**22 40 35.3**	**-0.4**
	baz=297						
BFO	**Black Forest**	**108.00**	**331**	PFAKE		22 40 50.0	
BFO				LR	LR		
	comp=Z,1μm,19.0s						
WLF	**Walferdange**	**108.05**	**333**	PFAKE		22 40 50.0	
WLF				LR	LR		
	comp=Z,2μm,20.0s						
MIAR	**Mount Ida**	**108.09**	**47**	PFAKE		22 40 50.0	
MIAR				LR	LR		
	comp=Z,1μm,20.0s						
NATX	**Nacogdoches**	**108.64**	**50**	PFAKE		22 40 50.0	
NATX				LR	LR		
	comp=Z,659nm,21.0s						
538A	**Harpers Horsep**	**108.72**	**52**	PKiKP	**PKiKP**	**22 40 36.5**	**-0.7**
	baz=297						
TUE	**Stuetta**	**108.78**	**329**	PFAKE		22 40 50.0	
TUE				LR	LR		
	comp=Z,1μm,19.0s						
TIP	**Timpagrande**	**109.09**	**319**	PFAKE		22 40 50.0	
TIP				LR	LR		
	comp=Z,1μm,21.0s						
CUC	**Castrocucco**	**109.22**	**320**	PFAKE		22 40 50.0	
CUC				LR	LR		
	comp=Z,692nm,21.0s						
AQU	**L'Aquila**	**109.25**	**323**	PFAKE		22 40 50.0	
AQU				LR	LR		
	comp=Z,1μm,20.0s						
440A	**Kirbyville**	**109.65**	**51**	PKiKP	**PKiKP**	**22 40 38.3**	**-0.6**
	baz=298						
VLC	**Villacollemand**	**109.79**	**326**	PFAKE		22 40 50.0	
VLC				LR	LR		
	comp=Z,429nm,20.0s						
AAM	**Ann Arbor**	**110.13**	**36**	PFAKE		22 40 50.0	
AAM				LR	LR		
	comp=Z,2μm,21.0s						
CEL	**Celeste**	**110.17**	**319**	PFAKE		22 40 50.0	
CEL				LR	LR		
	comp=Z,761nm,20.0s						
BNI	**Bardonecchia**	**111.11**	**329**	PFAKE		22 40 50.0	
BNI				LR	LR		
	comp=Z,2μm,19.0s						
ACSO	**Alum Creek Sta**	**111.84**	**37**	PFAKE		22 41 00.0	
ACSO				LR	LR		
	comp=Z,1μm,20.0s						
SSB	**Saint Sauveur**	**112.00**	**330**	PFAKE		22 40 50.0	
SSB				LR	LR		
	comp=Z,833nm,19.0s						
CLTB	**Caltabellotta**	**112.28**	**320**	PFAKE		22 41 00.0	
CLTB				LR	LR		
	comp=Z,315nm,20.0s						
WDD	**Wied Dalam**	**112.45**	**317**	PFAKE		22 41 00.0	
WDD				LR	LR		
	comp=Z,464nm,21.0s						
LONY	**Lake Ozonia**	**113.29**	**29**	PFAKE		22 41 00.0	
LONY				LR	LR		
	comp=Z,818nm,22.0s						
VSL	**Villasalto**	**113.42**	**323**	PFAKE		22 41 00.0	
VSL				LR	LR		
	comp=Z,770nm,20.0s						
BRAL	**Brewton**	**114.53**	**47**	PFAKE		22 41 00.0	+12
BRAL				LR	LR		
	comp=Z,1μm,21.0s						
PKME	**Peaks-Kenny Pk**	**115.16**	**25**	PFAKE		22 41 00.0	+11
PKME				LR	LR		
	comp=Z,543nm,19.0s						
BLA	**Blacksburg**	**115.31**	**38**	PFAKE		22 41 00.0	+10
BLA				LR	LR		
	comp=Z,1μm,21.0s						
GOGA	**Godfrey**	**115.74**	**43**	PFAKE		22 41 00.0	+10
GOGA				LR	LR		
	comp=Z,610nm,21.0s						
CBN	**Corbin Frederi**	**116.44**	**36**	PFAKE		22 41 00.0	+8.3
CBN				LR	LR		
	comp=Z,1μm,21.0s						
LSZ	**Lusaka**	**117.93**	**259**	*e*PKIKP	**PKPdf**	**22 40 55.5**	**+0.3**
LSZ				MLR	MLR		
	comp=Z,299nm,19.0s						
LSZ	**Lusaka**	**117.93**	**259**	*e*PKPdf	**PKPdf**	**22 40 55.5**	**+0.3**
LSZ				LR	LR		
	comp=Z,299nm,19.0s						
NHSC	**New Hope**	**118.10**	**42**	PFAKE		22 41 10.0	+15
NHSC				LR	LR		
	comp=Z,536nm,20.0s						
VNA2	**Neumayer--Watz**	**118.91**	**190**	PKP	**PKPdf**	**22 40 56.0**	**+0.5**
	baz=109,slow=1.6						
VNA3	**Neumayer Olymp**	**119.02**	**189**	PKP	**PKPdf**	**22 40 55.1**	**-0.6**
TEIG	**Tepich**	**119.11**	**58**	PFAKE		22 41 10.0	+13
TEIG				LR	LR		
	comp=Z,303nm,21.0s						
PBRG	**Braganca**	**119.79**	**335**	*e*LR	LR	23 20 15.2	
	comp=Z,643nm,22.0s						
PGAV	**Gavieira, Arco**	**120.26**	**336**	*e*PP	PP	22 42 27.7	+4.1
PGAV	**Gavieira, Arco**	**120.26**	**336**	*e*SS	SS	22 58 59.0	+9.2
PGAV	**Gavieira, Arco**	**120.26**	**336**	*e*LR	LR	23 19 44.6	
	comp=Z,592nm,20.0s						
ESDC	**Sonseca Array**	**120.32**	**332**	PKP	**PKPdf**	**22 40 59.4**	**+0.2**
	comp=Z,0.5nm,0.5s,baz=33,slow=2.1,SNR=6.1						
MVO	**Moncorvo**	**120.44**	**335**	*e*PKPdf	**PKPdf**	**22 41 00.7**	**+1.3**
MVO	**Moncorvo**	**120.44**	**335**	*e*PP	PP	22 42 28.2	+3.3
MVO				*e*SKSac	**SKSac**	**22 47 57.9**	**+1.7**
MVO	**Moncorvo**	**120.44**	**335**	*e*SS	SS	22 59 00.0	+7.9
MVO	**Moncorvo**	**120.44**	**335**	*e*LQ	LQ	23 16 19.3	
MVO				*e*LR	LR	23 19 52.7	
	comp=Z,600nm,20.0s						
POLO	**Lamas de Olo**	**120.58**	**336**	*e*PKPdf	**PKPdf**	**22 41 00.6**	**+0.9**
POLO	**Lamas de Olo**	**120.58**	**336**	*e*LR	LR	23 19 29.7	
	comp=Z,329nm,22.0s						
PAB	**San Pablo**	**120.60**	**332**	PFAKE		22 41 10.0	+10
PAB				LR	LR		
	comp=Z,949nm,20.0s						
PVRL	**Vila Real**	**120.63**	**336**	*e*PKPdf	**PKPdf**	**22 41 01.3**	**+1.6**
BOSA	**Boshof**	**121.09**	**244**	PKP	**PKPdf**	**22 41 01.1**	**+0.1**
	comp=Z,2.2nm,0.9s,baz=85,slow=6.6,SNR=4.1						
MTE	**Manteigas**	**121.29**	**335**	*e*PKPdf	**PKPdf**	**22 41 01.3**	**+0.2**
MTE	**Manteigas**	**121.29**	**335**	*e*PP	PP	22 42 38.3	+7.6
MTE				*e*SKSac	**SKSac**	**22 48 05.0**	**+5.9**
MTE	**Manteigas**	**121.29**	**335**	*e*LR	LR	23 19 52.8	
	comp=Z,782nm,20.0s						
MTE				*e*LQ	LQ	23 23 12.6	
MTE	**Manteigas**	**121.29**	**335**	PFAKE		22 41 10.0	+8.9
MTE				LR	LR		
	comp=Z,887nm,20.0s						
PCBR	**Castelo Branco**	**121.73**	**335**	*e*PKPdf	**PKPdf**	**22 41 03.4**	**+1.6**
PCAS	**Casmilo, Conde**	**121.98**	**335**	*e*PKPdf	**PKPdf**	**22 41 03.2**	**+0.9**
PCAS	**Casmilo, Conde**	**121.98**	**335**	*e*LR	LR	23 20 07.6	
	comp=Z,643nm,22.0s						
PMRV	**Marv??o**	**122.04**	**334**	*e*PKPdf	**PKPdf**	**22 41 03.3**	**+0.8**
PMRV	**Marv??o**	**122.04**	**334**	*e*PP	PP	22 42 45.3	+10
PMRV				*e*SKSac	**SKSac**	**22 48 03.7**	**+2.1**
PMRV	**Marv??o**	**122.04**	**334**	*e*LR	LR	23 20 30.7	
	comp=Z,849nm,18.0s						
PMRV				*e*LQ	LQ	23 24 36.7	
PTOM	**Tomar**	**122.31**	**335**	*e*PKPdf	**PKPdf**	**22 41 04.5**	**+1.6**
PESTR	**Estremoz**	**122.60**	**334**	*e*LR	LR	23 20 53.7	
	comp=Z,506nm,20.0s						
PMTG	**Montargil**	**122.70**	**335**	*e*PKPdf	**PKPdf**	**22 41 04.6**	**+0.9**
PMTG	**Montargil**	**122.70**	**335**	*e*LR	LR	23 20 30.8	
	comp=Z,970nm,18.0s						
PBAR	**Barrancos**	**122.93**	**333**	*e*PKPdf	**PKPdf**	**22 41 05.3**	**+1.1**
PBAR	**Barrancos**	**122.93**	**333**	*e*LR	LR	23 19 29.5	
	comp=Z,1μm,20.0s						
PMAFR	**Mafra**	**123.23**	**335**	*e*LR	LR	23 21 16.2	
	comp=Z,755nm,22.0s						
PBEJ	**Beja**	**123.42**	**334**	*e*PKPdf	**PKPdf**	**22 41 06.8**	**+1.7**
PNCL	**Nicolau / Gran**	**123.63**	**334**	*e*PKPdf	**PKPdf**	**22 41 06.8**	**+1.3**
PNCL	**Nicolau / Gran**	**123.63**	**334**	*e*LR	LR	23 21 09.0	
	comp=Z,772nm,18.0s						
MESJ	**Messejana**	**123.72**	**334**	*e*PKPdf	**PKPdf**	**22 41 06.4**	**+0.7**
PCVE	**Castro Verde**	**123.82**	**334**	*e*PKPdf	**PKPdf**	**22 41 07.3**	**+1.4**
PCVE	**Castro Verde**	**123.82**	**334**	*e*LR	LR	23 21 46.5	
	comp=Z,587nm,20.0s						
PVAQ	**Vaqueiros**	**123.87**	**333**	*e*PP	PP	22 42 54.1	+6.0
PVAQ				*e*SKSac	**SKSac**	**22 48 09.7**	**+2.1**
PVAQ				*e*SS	SS	22 59 48.0	+12
PVAQ	**Vaqueiros**	**123.87**	**333**	*e*LQ	LQ	23 17 32.1	
PVAQ				*e*LR	LR	23 21 39.1	
	comp=Z,832nm,18.0s						
MORF	**Marmelete**	**124.36**	**334**	*e*LR	LR	23 19 52.4	
	comp=Z,556nm,22.0s						
PFVI	**Vila Bisbo**	**124.58**	**334**	*e*LR	LR	23 22 01.9	
	comp=Z,508nm,20.0s						
PAYG	**Puerto Ayora**	**124.81**	**82**	PFAKE		22 41 20.0	+12
PAYG				LR	LR		
	comp=Z,833nm,20.0s						
JTS	**JuntasAbangare**	**126.29**	**67**	PFAKE		22 41 20.0	+8.8
JTS				LR	LR		
	comp=Z,474nm,21.0s						
TAM	**Tamanrasset**	**126.48**	**311**	*e*PKIKP	**PKPdf**	**22 41 12.6**	**+1.0**
TAM				MLR	MLR		
	comp=Z,351nm,20.0s						
TAM	**Tamanrasset**	**126.48**	**311**	*e*PKPdf	**PKPdf**	**22 41 12.6**	**+1.0**
TAM				LR	LR		
	comp=Z,351nm,20.0s						
BBSR	**BB Station**	**127.65**	**31**	PFAKE		22 41 30.0	+17
BBSR				LR	LR		
	comp=Z,798nm,19.0s						
TSUM	**Tsumeb**	**128.29**	**255**	PFAKE		22 41 30.0	+15
TSUM				LR	LR		
	comp=Z,341nm,21.0s						
MTDJ	**Mount Denham**	**128.86**	**54**	PFAKE		22 41 30.0	+14
MTDJ				LR	LR		
	comp=Z,325nm,20.0s						
GTBY	**Guantanamo Bay**	**129.77**	**51**	PFAKE		22 41 30.0	+12
GTBY				LR	LR		
	comp=Z,526nm,19.0s						
BCIP	**Isla Barro Col**	**131.34**	**66**	PFAKE		22 41 30.0	+9.2
BCIP				LR	LR		
	comp=Z,397nm,20.0s						
GRTK	**Grand Turk**	**131.69**	**46**	PFAKE		22 41 30.0	+8.7
GRTK				LR	LR		
	comp=Z,839nm,20.0s						
SDDR	**Presa de Saban**	**133.20**	**49**	PFAKE		22 41 40.0	+16
SDDR				LR	LR		
	comp=Z,639nm,19.0s						
TORD	**Torodi Ar. Bea**	**134.94**	**303**	PKP	**PKPdf**	**22 41 26.5**	**-1.1**
	comp=Z,10nm,1.0s,baz=34,slow=1.8,SNR=18						
TORD				PP	**PP**	**22 43 57.8**	**-3.9**
	comp=Z,2.0nm,1.0s,baz=58,slow=5.5,SNR=4.6						
TORD				SKPbc	**SKPbc**	**22 44 56.7**	**-0.5**
	comp=Z,3.2nm,1.0s,baz=58,slow=4.7,SNR=4.2						
OTAV	**Otavalo**	**135.93**	**77**	PFAKE		22 41 40.0	+10
OTAV				LR	LR		
	comp=Z,609nm,20.0s						
SJG	**San Juan**	**137.44**	**45**	PFAKE		22 41 40.0	+7.9
SJG				LR	LR		
	comp=Z,576nm,21.0s						
PLCA	**Paso Flores**	**138.50**	**139**	PKP	**PKPdf**	**22 41 33.2**	**-0.4**
	comp=Z,8.4nm,1.0s,baz=247,slow=5.3,SNR=11						
PLCA				SKPbc	**SKPbc**	**22 45 08.8**	**+1.6**
	comp=Z,6.9nm,1.2s,baz=270,slow=8.1,SNR=3.0						
SDV	**Santo Domingo**	**139.50**	**60**	PFAKE		22 41 50.0	+14
SDV				LR	LR		
	comp=Z,364nm,21.0s						
NNA	**Nana**	**139.97**	**94**	PFAKE		22 41 50.0	+13
NNA				LR	LR		
	comp=Z,299nm,20.0s						
ANWB	**Willy Bob**	**140.67**	**41**	PFAKE		22 41 50.0	+12
ANWB				LR	LR		
	comp=Z,1μm,22.0s						
FDF	**Fort de France**	**143.22**	**44**	PFAKE		22 42 00.0	+17
FDF				LR	LR		
	comp=Z,717nm,21.0s						
LCO	**Las Campanas**	**143.62**	**122**	*e*PKPdf	**PKPdf**	**22 41 44.1**	**+0.7**
LCO				LR	LR		
	comp=Z,520nm,19.0s						
DBIC	**Dimbokro**	**143.84**	**300**	PKP	PKPbc	22 41 41.6	+0.2
	comp=Z,35nm,0.8s,baz=33,slow=3.7,SNR=27						
KIC	**Kosan Boka**	**143.90**	**299**	*e*PKP1	PKPbc	22 41 41.4	-0.2
	comp=Z,120nm,1.1s						
TIC	**Toumodi**	**143.99**	**300**	*e*PKP1	PKPbc	22 41 42.1	+0.2
LIC	**Lamto**	**144.21**	**299**	*e*PKP1	**PKPab**	**22 41 42.3**	**+0.1**
	comp=Z,84nm,0.9s						
GRGR	**Grenville**	**144.67**	**47**	PFAKE		22 42 00.0	+15
GRGR				LR	LR		
	comp=Z,704nm,22.0s						
TRQA	**Tornquist**	**145.41**	**142**	*e*PKPdf	**PKPab**	**22 41 47.0**	**+1.0**
TRQA				LR	LR		
	comp=Z,376nm,22.0s						
BBGH	**Gun Hill**	**145.43**	**44**	PFAKE		22 42 00.0	+13
BBGH				LR	LR		
	comp=Z,850nm,21.0s						
LVC	**Limon Verde**	**146.95**	**112**	*e*PKPdf	**PKPbc**	**22 41 50.4**	**-0.9**
LVC				*e*PKPbc	**PKPab**	**22 41 52.8**	**+0.1**
LVC				LR	LR		
	comp=Z,486nm,20.0s						
LPAZ	**La Paz**	**148.51**	**101**	PKPbc	**PKPdf**	**22 41 54.0**	**+1.6**
	comp=Z,13nm,0.8s,baz=354,slow=1.4,SNR=36						
LPAZ	**La Paz**	**148.51**	**101**	PKIKP	**PKPdf**	**22 41 54.0**	**+1.6**
SAML	**Samuel**	**152.94**	**85**	*e*PKPbc	**PKPbc**	**22 42 07.0**	**+1.1**
SAML				*e*PKPab	**PKPab**	**22 42 15.7**	**-1.4**
SAML				LR	LR		
	comp=Z,670nm,21.0s						
CPUP	**Villa Florida**	**155.50**	**128**	PKP	**PKPdf**	**22 41 59.6**	**-2.2**
	comp=Z,1.3nm,0.8s,baz=31,slow=5.9,SNR=2.2						
ASCN	**Ascension**	**158.39**	**280**	PFAKE		22 42 20.0	+14
ASCN				LR	LR		
	comp=Z,2μm,22.0s						
SPB	**Sao Paulo**	**164.34**	**137**	PFAKE		22 42 20.0	+8.2
SPB				LR	LR		
	comp=Z,465nm,20.0s						
RCBR	**Riachuelo**	**173.49**	**0**	PFAKE		22 42 30.0	+12
RCBR				LR	LR		
	comp=Z,769nm,19.0s						

IDC 12 22:31:49.1±1.1, 12°.33N×144°.50E, h0km, mb3.7/6, mb1 3.9/6, mb1mx3.6/46, mbtmp3.7/6, Error ellipse: s-maj=51.7km s-min=26.1km az=98.0, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**33.59**	**197**	P	P	22 38 31.4	+0.1
	0.5nm,0.7s,baz=20,slow=9.2,SNR=2.3						
ASAR	**Alice Springs**	**37.25**	**196**	P	P	22 39 02.3	-0.5
	0.4nm,0.7s,baz=19,slow=9.2,SNR=4.5						
MKAR	**Makanchi Array**	**62.14**	**317**	P	P	22 42 12.7	+0.4
	0.5nm,0.4s,baz=90,slow=8.4,SNR=6.9						
YKA	**Yellowknife Ar**	**84.14**	**27**	P	P	22 44 21.9	0.0
	0.2nm,0.4s,baz=293,slow=5.2,SNR=3.7						
NVAR	**Mina Array Bea**	**87.98**	**51**	P	P	22 44 42.0	+0.2
	0.1nm,0.3s,baz=292,slow=3.6,SNR=1.6						
FINES	**FINESS Array B**	**92.14**	**335**	P	P	22 44 58.8	-1.6
	0.9nm,0.8s,baz=57,slow=5.1,SNR=6.1						
TORD	**Torodi Ar. Bea**	**135.26**	**303**	PKP	PKPdf	22 51 13.7	+1.8
	0.5nm,1.0s,baz=50,slow=0.6,SNR=2.3						

PRU 12 22:34:15.5, 49°.77N×18°.59E, h0km, Czech and Slovak Republics

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OKC	**Ostrava-Krasne**	**0.29**	**283**	*e*PG	Pg	22 34 21.9	+0.8
OKC				*e*SG	Sg	22 34 25.3	+0.3
KRLC	**Kraliky**	**1.21**	**285**	*e*SG	Sg	22 34 54.1	-0.2
DPC	**Dobruska-Polom**	**1.57**	**293**	*e*SG	Sn	22 35 05.1	-0.7

*ISCJB **12** 22:36:06.3±1.0, 36°.59N±0°.05×140°.73E±0°.07, h13km±4km, mb3.5/9, Error ellipse: s-maj=11.2km s-min=5.9km az=41.7*

*IDC **12** 22:36:06.2±0.9, 36°.82N×140°.62E, h0km, mb3.6/9, mb1 3.8/10, mb1mx3.6/50, mbtmp3.6/10, ML3.5/1, Error ellipse: s-maj=22.6km s-min=18.9km az=92.0*

*JMA **12** 22:36:08.4, 36°.67N×140°.60E, h6km±1km, M3.6 Broadband fault plane solution: P waves. NP1: φs=351.00000°, δ53.00000°, λ-90.00000°. NP2: φs=171.00000°, δ37.00000°, λ-90.00000°. Principal axes: T Plg8.0000°, Azm81.0000°; N Plg0.0000°, Azm171.0000°; P Plg82.0000°, Azm261.0000°;*

JMA Felt III J1.

ISC 12 22:36:06.9±1.0, 36°.60N±0°.05×140°.66E±0°.05, h10km±6km, n23, σ1°.14/23, mb3.5/9, 5C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.07**	**281**	⇑P	**Pg**	**22 36 09.9**	**+0.6**
JHO				S	**Sg**	**22 36 11.0**	**0.0**
ONAJ	**Iwakimizuishi

ASAR Alice Springs 60.28 187 P P 22 46 17.9 +2.4
0.2nm,0.5s,baz=15,slow=7.7,SNR=4.1
YKA Yellowknife Ar 64.49 30 P P 22 46 43.2 -0.1
0.3nm,0.6s,baz=303,slow=6.9,SNR=2.0
AKASG Malin Array Be 74.27 322 P P 22 47 43.7 -0.3
0.4nm,0.4s,baz=55,slow=3.7,SNR=1.7
NOA NORSAR Array B 74.35 337 P P 22 47 43.2 -1.2
0.3nm,0.6s,baz=41,slow=5.5,SNR=1.9
PDAR Pinedale Array 78.40 45 P P 22 48 09.6 +1.6
0.3nm,0.6s,baz=283,slow=5.4,SNR=1.8

IDC 12 22:40:51.0±11.0, 20°.10S×167°.57E, h0km, mb4.0/3, mb1 4.1/4, mb1mx3.7/33, mbtmp3.9/4, ML3.0/1, Error ellipse: s-maj=192.5km s-min=39.0km az=88.0, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.23**	**208**	Pn	Pn	22 41 28.3	-0.9
	3.9nm,0.3s,baz=152,slow=23,SNR=22						
DZM				Sn	Sn	22 41 56.9	-0.7
	12nm,0.3s,baz=271,slow=21,SNR=5.1						
STKA	**Stephens Creek**	**26.06**	**238**	P	P	22 46 26.9	+0.6
	2.1nm,0.6s,baz=96,slow=10,SNR=4.7						
WRA	**Warramunga Arr**	**31.20**	**264**	P	P	22 47 12.0	-0.2
	0.5nm,0.5s,baz=90,slow=8.5,SNR=5.0						
ASAR	**Alice Springs**	**31.40**	**257**	P	P	22 47 14.2	+0.2
	2.0nm,0.6s,baz=86,slow=8.8,SNR=26						

IDC 12 22:43:27.4±1.0, 26°.94N×143°.79E, h0km, mb3.6/8, mb1 3.8/9, mb1mx3.6/51, mbtmp3.6/9, ML4.0/1, Error ellipse: s-maj=23.8km s-min=21.2km az=48.0
ISCJB 12 22:43:30.3±0.8, 26°.9N±0°.1×143°.84E±0°.09, h33km, mb3.7/8, Error ellipse: s-maj=18.6km s-min=11.3km az=6.0
ISC 12 22:43:32.6±1.0, 27°.0N±0°.1×143°.8E±0°.1, h35km, n10, σ1§06/11, mb3.8/8, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCJ	**Chichijima**	**1.41**	**274**	Pn	Pn	22 43 55.1	-0.7
	5.9nm,0.3s,baz=300,slow=20,SNR=2.0						
JCJ				Sn	Sn	22 44 14.0	+0.9
	33nm,0.3s,baz=96,slow=23,SNR=5.9						
MJAR	**Matsushiro Arr**	**10.60**	**335**	Pn	Pn	22 46 00.2	-1.8
	1.0nm,0.3s,baz=166,slow=12,SNR=8.5						
SONM	**Songino Array**	**35.75**	**316**	P	P	22 50 29.4	+1.2
	0.2nm,0.4s,baz=120,slow=8.8,SNR=3.9						
WRA	**Warramunga Arr**	**47.57**	**192**	P	P	22 52 04.1	-0.8
	0.6nm,0.7s,baz=12,slow=8.2,SNR=5.2						
ASAR	**Alice Springs**	**51.28**	**192**	P	P	22 52 32.6	-0.6
	0.3nm,0.7s,baz=13,slow=8.6,SNR=3.9						
MKAR	**Makanchi Array**	**51.61**	**310**	P	P	22 52 36.7	+1.1
	0.6nm,0.4s,baz=89,slow=9.3,SNR=5.0						
KURBB	**Kurchatov Arra**	**54.10**	**314**	P	P	22 52 54.1	+0.3
	0.5nm,0.4s,baz=91,slow=8.0,SNR=5.3						
BVAR	**Borovoye Array**	**59.05**	**318**	P	P	22 53 29.2	+0.2
	0.6nm,0.5s,baz=73,slow=6.5,SNR=3.3						
INK	**Inuvik**	**62.52**	**25**	P	P	22 53 52.5	+0.2
	0.4nm,0.5s,baz=253,slow=2.8,SNR=3.7						
NVAR	**Mina Array Bea**	**79.46**	**52**	P	P	22 55 36.5	+0.6
	0.3nm,0.4s,baz=298,slow=1.9,SNR=2.7						

ISCJB 12 22:47:39.1±0.5, 35°.55N±0°.04×69°.90E±0°.06, h87km, mb3.8/7, Error ellipse: s-maj=8.3km s-min=4.1km az=146.9
IDC 12 22:47:41.3±4.2, 35°.64N×69°.66E, h78km±31km, mb3.5/7, mb1 3.6/11, mb1mx3.3/45, mbtmp4.0/11, MS3.4/1, Ms1 3.4/1, ms1mx2.9/37, Error ellipse: s-maj=39.1km s-min=16.3km az=157.0
NNC 12 22:47:46.0±1.5, 35°.94N×69°.77E, h114km±15km, mb3.8, mpv4.6, Error ellipse: s-maj=13.2km s-min=10.0km az=165.0
ISC 12 22:47:39.7±0.7, 35°.48N±0°.06×69°.86E±0°.06, h87km, n38, σ2§42/50, mb4.0/7, 10C-6D, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**3.42**	**346**	⇑P	Pn	22 48 31.6	+0.6
	31nm,0.5s						
DZET				⇓S	Sn	22 49 07.5	-3.1
	784nm,0.5s						
MNAS	**Manas**	**7.30**	**16**	⇑P	Pn	22 49 24.8	+1.1
	18nm,0.5s						
MNAS				⇓S	Sn	22 50 42.1	-2.9
	26nm,0.4s						
SMLA	**Simla**	**7.50**	**123**	*e*P	Pn	22 49 29.6	+3.3
SMLA				*e*S	Sn	22 50 50.8	+1.0
SMLA				IAML		22 50 54.4	
	comp=E,142nm,0.5s						
SMLA				IAML		22 50 55.0	
	comp=N,164nm,0.4s						
KK31	**Karatay Array**	**7.63**	**4**	⇑P	Pn	22 49 28.8	+0.6
	comp=N,9.7nm,0.3s,baz=187,slow=12,SNR=318						
KK31				⇓S	Sn	22 50 48.2	-4.9
	comp=N,11nm,0.5s,baz=187,slow=21,SNR=8.2						
AAK	**Ala-Archa**	**8.01**	**25**	P	Pn	22 49 35.3	+1.9
	comp=N,29nm,0.3s,baz=179,slow=5.7,SNR=308						
AAK				S	Sn	22 51 00.6	-1.7
	comp=N,3.5nm,0.3s,baz=314,slow=22,SNR=15						
AAK	**Ala-Archa**	**8.01**	**25**	⇑P	Pn	22 49 35.3	+1.9
	comp=N,45nm,0.5s						
AAK				⇑S	Sn	22 51 00.8	-1.5
	comp=N,83nm,0.8s						
RTK	**Rohtak**	**8.49**	**137**	*e*S	Sn	22 51 11.8	-2.1
TKM2	**Tokmak 2**	**8.66**	**29**	⇑P	Pn	22 49 43.6	+1.2
	comp=N,19nm,0.4s						
TKM2				⇑S	Sn	22 51 15.4	-3.1
	comp=N,17nm,0.7s						
KHET	**Khetri**	**8.95**	**144**	*e*S	Sn	22 51 19.7	-5.5
KHET				IAML		22 51 25.6	
	comp=N,12nm,0.3s						
KHET				IAML		22 51 25.9	
	comp=E,19nm,0.3s						
BHGR	**Bahadurgarh**	**9.04**	**136**	*e*S	Sn	22 51 25.6	-2.0
KUDL	**Kundal**	**9.23**	**141**	*e*P	Pn	22 49 51.7	+1.7
KUDL				*e*S	Sn	22 51 28.8	-3.3
KUDL				IAML		22 51 35.0	
	comp=E,27nm,0.3s						
KUDL				IAML		22 51 35.4	
	comp=N,16nm,0.7s						
JOSI	**Joshimath**	**9.51**	**118**	*e*P	Pn	22 49 56.6	+2.7
JOSI				*e*S	Sn	22 51 39.0	-0.1
JOSI				IAML		22 51 44.1	
	comp=E,190nm,1.0s						
JOSI				IAML		22 51 45.4	
	comp=N,139nm,0.9s						
GEYT	**Alibeck**	**9.74**	**288**	P	Pn	22 49 56.6	-0.3
	comp=N,0.9nm,0.3s,baz=112,slow=9.9,SNR=9.4						
GEYT				S	Sn	22 51 40.5	-4.1
	comp=N,1.0nm,0.3s,baz=143,slow=27,SNR=4.8						
PDGK	**Podgornoye**	**10.81**	**41**	⇓P	Pn	22 50 11.8	+0.5
	comp=N,3.4nm,0.8s						
OTUK	**Ortayu**	**12.89**	**7**	⇓P	Pn	22 50 38.1	-1.3
	comp=N,7.2nm,0.6s						
PYUN	**Piuthan**	**13.36**	**120**	*e*P	Pn	22 50 46.4	+0.4
	comp=N,18nm,0.4s						
PYUN				*e*S	Sn	22 53 07.6	-5.4
KOLN	**Koldanda**	**13.99**	**119**	*e*P	Pn	22 50 54.5	+0.3
	comp=N,9.6nm,0.3s						
KOLN				*e*S	Sn	22 53 22.8	-5.5
GKN	**Gorkha**	**14.61**	**117**	*e*P	Pn	22 51 02.5	+0.4
	comp=N,21nm,0.5s						
GKN				*e*S	Sn	22 53 37.3	-5.7
MK31	**Makanchi Array**	**14.66**	**36**	P	Pn	22 51 02.6	0.0
	comp=N,2.8nm,0.6s,baz=203,slow=8.7,SNR=35						
MKAR	**Makanchi Array**	**14.66**	**36**	P	Pn	22 51 02.8	+0.2
	comp=N,0.1nm,0.3s,baz=220,slow=12,SNR=23						
KKN	**Kakani**	**15.20**	**116**	*e*P	Pn	22 51 09.6	-0.1
	comp=N,19nm,0.6s						
PKIN	**Phulchoki**	**15.40**	**116**	*e*P	Pn	22 51 12.7	+0.3
	comp=N,19nm,0.5s						
AB31	**Akbulak array**	**15.58**	**335**	P	Pn	22 51 12.3	-1.9
	comp=N,1.9nm,0.5s,baz=144,slow=14,SNR=49						
KURBB	**Kurchatov Arra**	**16.39**	**20**	P	Pn	22 51 22.5	-1.9
	comp=N,0.2nm,0.3s,baz=211,slow=10,SNR=19						
AKTO	**Aktyubinsk**	**17.25**	**334**	P	P	22 51 35.0	-0.1
	comp=N,1.0nm,0.3s,baz=141,slow=10,SNR=16						
AKTO	**Aktyubinsk**	**17.25**	**334**	⇑P	Pn	22 51 34.3	-0.5
	comp=N,5.6nm,0.8s						
BVA0	**Borovoye Array**	**17.55**	**1**	⇓P	Pn	22 51 38.8	+0.3
	comp=N,3.5nm,0.6s,baz=177,slow=11,SNR=29						
BVAR	**Borovoye Array**	**17.55**	**1**	P	P	22 51 37.7	-0.7
	comp=N,1.5nm,0.3s,baz=171,slow=10,SNR=23						
BRVK	**Borovoye**	**17.58**	**1**	⇑P	P	22 51 38.4	-0.3
	comp=N,13nm,0.9s						
CHKZ	**Chkalovo**	**18.21**	**1**	⇑P	Pn	22 51 46.0	-0.4
	comp=N,4.8nm,0.8s						
ZALV	**Zalesovo Beam**	**21.23**	**25**	P	P	22 52 19.5	+1.2
	comp=N,7.0nm,0.6s,baz=222,slow=11,SNR=37						
ARU	**Arti**	**22.32**	**343**	P	P	22 52 30.9	+0.9
	comp=N,3.9nm,0.5s,baz=148,slow=6.2,SNR=7.3						
KVAR	**Kislovodsk Arr**	**22.47**	**300**	LR	LR	23 02 26.1	
	comp=N,84nm,18.3s,baz=295,slow=40						
SONM	**Songino Array**	**29.68**	**54**	P	P	22 53 40.3	+3.0
	comp=N,0.5nm,0.8s,baz=230,slow=9.2,SNR=4.5						
NRIK	**Noril'sk**	**35.30**	**11**	P	P	22 54 27.6	+1.7
	comp=N,1.5nm,0.5s,baz=234,slow=1.9,SNR=4.8						
ARCES	**ARCESS Array B**	**41.74**	**338**	P	P	22 55 20.9	+1.1
	comp=N,2.9nm,0.9s,baz=104,slow=8.9,SNR=7.7						
NOA	**NORSAR Array B**	**44.65**	**324**	P	P	22 55 43.6	+0.2
	comp=N,0.4nm,0.6s,baz=89,slow=8.0,SNR=2.8						
TORD	**Torodi Ar. Bea**	**64.77**	**268**	P	P	22 58 10.4	+1.1
	comp=N,0.6nm,0.6s,baz=54,slow=5.9,SNR=11						

ISCJB 12 22:51:10.0±0.4, 18°.29N±0°.04×72°.95W±0°.03, h6km, mb3.5/6, Error ellipse: s-maj=5.6km s-min=4.0km az=159.5
NEIC 12 22:51:12.1±0.6, 18°.43N×72°.94W, h10km, MW3.9, Error ellipse: s-maj=12.1km s-min=7.5km az=180.0, Moment Tensor Solution. s10 Moment tensor: Scale 10^{14}Nm; M_{rr}4.77; $M_{\theta\theta}$-2.79; $M_{\phi\phi}$-1.98; $M_{r\theta}$0.16; $M_{r\phi}$7.35; $M_{\theta\phi}$2.63; Best double couple: $M_0$8.80000×10^{14} NP1:ϕ_s348.00000°, δ66.00000°, λ141.00000°. NP2:ϕ_s96.00000°, δ55.00000°, λ31.00000°. Principal axes: T 6.9800, Plg45.0000°, Azm308.0000°; N 2.9600, Plg45.0000°, Azm141.0000°; P -9.9400, Plg7.0000°, Azm44.0000°;
NEIC Felt at Grand-Goave.
IDC 12 22:51:13.2±1.6, 18°.60N×72°.98W, h0km, mb3.6/5, mb1 3.9/6, mb1mx3.7/32, mbtmp3.7/6, ML2.6/1 Error ellipse: s-maj=45.3km s-min=32.8km az=38.0
ISC 12 22:51:11.7±0.7, 18°.34N±0°.07×72°.94W±0°.04, h6km, n39, σ1§71/41, mb3.6/6, Haiti region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PAPH	**Port-au-Prince**	**0.63**	**74**	*e*Pg	Pg	22 51 23.4	-0.5
PAPH				*e*Sg	Sg	22 51 32.6	+0.5
SDDR	**Presa de Saban**	**1.69**	**68**	*e*Pn	Pn	22 51 40.0	-1.8
SDDR				*e*Sn	Sn	22 52 01.1	-2.7
BANI	**BANI**	**2.45**	**88**	*e*Pn	Pn	22 51 53.8	+1.4
BANI				*e*Sn	Sn	22 52 23.1	+0.4
GTBY	**Guantanamo Bay**	**2.59**	**308**	*e*Pn	Pn	22 51 52.6	-1.6
GTBY				*e*Sn	Sn	22 52 25.9	-0.1
SDD	**Santo Domingo**	**2.87**	**87**	*e*Pn	Pn	22 51 56.6	-1.4
GRTK	**Grand Turk**	**3.58**	**28**	*e*Pn	Pn	22 52 04.7	-3.0
MTDJ	**Mount Denham**	**4.37**	**269**	*e*Pn	Pn	22 52 19.5	+0.8
MPR	**Mayaguez**	**5.51**	**90**	*e*Pn	Pn	22 52 35.6	+1.3
CELP	**Cerrillos**	**6.05**	**92**	*e*Pn	Pn	22 52 42.8	+1.0
SJG	**San Juan**	**6.46**	**91**	*e*Pn	Pn	22 52 49.2	+1.9
URIC	**Uribia, Colomb**	**6.67**	**172**	*e*P	Pn	22 52 49.2	-1.0
CBYP	**Canovanas**	**6.73**	**89**	*e*Pn	Pn	22 52 50.2	-1.0
CBYP				*e*Sn	Sn	22 54 04.1	-4.1
HUMP	**Col San Antoni**	**6.74**	**91**	*e*Pn	Pn	22 52 52.1	+0.9
HUMP				*e*Sn	Sn	22 54 05.9	-2.5
MTP	**Monte Pirata**	**7.02**	**91**	*e*Pn	Pn	22 52 55.1	0.0
STVI	**Saint Thomas**	**7.58**	**89**	*e*Pn	Pn	22 53 05.8	+3.0
SMRT	**St. Maarten**	**9.38**	**90**	*e*Pn	Pn	22 53 27.4	-0.1
SDV	**Santo Domingo**	**9.66**	**166**	*e*Pn	Pn	22 53 32.1	+0.5
SDV	**Santo Domingo**	**9.66**	**166**	*e*P	Pn	22 53 30.7	-0.8
MOTC	**Monteria, Cord**	**9.87**	**196**	*e*P	Pn	22 53 33.6	-0.6
GRMC	**Gramalote, San**	**10.56**	**179**	*e*P	Pn	22 53 44.4	+0.5
PAMC	**Pamplona, Colo**	**10.94**	**179**	*e*P	Pn	22 53 48.8	-0.5
BCIP	**Isla Barro Col**	**11.32**	**217**	*e*Pn	Pn	22 53 53.8	-0.3
BCIP	**Isla Barro Col**	**11.32**	**217**	*e*P	Pn	22 53 53.8	-0.3
BARC	**Barichara**	**11.68**	**181**	*e*P	Pn	22 53 59.1	-0.2
DBBC	**Dabeiba**	**11.70**	**196**	*e*P	Pn	22 53 59.9	+0.5
HELC	**Santa Helena**	**12.34**	**192**	*e*P	Pn	22 54 11.4	+3.0
RUSC	**La Rusia**	**12.38**	**181**	*e*P	Pn	22 54 10.6	+1.6
NORC	**Norcasia**	**12.84**	**189**	*e*P	Pn	22 54 18.4	+3.4
GUYC	**Guyana, Colomb**	**13.26**	**191**	*e*P	Pn	22 54 24.6	+3.6
ROSC	**El Rosal**	**13.49**	**186**	Pn	P	22 54 31.1	-2.5
	0.6nm,0.3s,baz=15,slow=17,SNR=5.2						
OTAV	**Otavalo**	**18.79**	**197**	*e*P	P	22 55 29.4	-3.0
VWCC	**Virginia Weste**	**19.82**	**343**	*e*P	Pn	22 55 44.1	-0.5
TXAR	**Lajitas Array**	**30.07**	**297**	P	P	22 57 27.9	+5.8
	0.3nm,0.6s,baz=104,slow=3.8,SNR=3.0						
PDAR	**Pinedale Array**	**39.38**	**316**	P	P	22 58 43.2	+0.8
	0.3nm,0.7s,baz=100,slow=14,SNR=1.7						
YKA	**Yellowknife Ar**	**52.66**	**337**	P	P	23 00 26.1	-0.4
	0.5nm,0.7s,baz=124,slow=7.3,SNR=5.2						
NOA	**NORSAR Array B**	**71.32**	**31**	P	P	23 02 34.4	+2.3
	0.9nm,0.8s,baz=274,slow=6.2,SNR=2.5						
TORD	**Torodi Ar. Bea**	**71.58**	**82**	P	P	23 02 35.4	+0.9
	0.7nm,0.9s,baz=302,slow=4.4,SNR=3.9						
KHC	**Kasperske Hory**	**74.11**	**43**	*e*P	P	23 02 56.3	+7.4
GERES	**GERESS Array B**	**74.24**	**43**	P	P	23 02 52.5	+2.7
	1.0nm,0.8s,baz=293,slow=5.0,SNR=7.5						

NIED 12 23:11:00, 37°.90N×141°.80E, h65km, Mw3.8 Best double couple: $M_0$6.60000×10^{14} NP1:ϕ_s205.00000°, δ34.00000°, λ43.00000°. NP2:ϕ_s78.00000°, δ68.00000°, λ116.00000°.
JMA 12 23:11:35.5±0.1, 37°.91N×141°.80E, h52km±1km, M3.8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.65**	**327**	P	Pn	23 11 48.8	+0.1
JIO				S	Sn	23 11 58.2	0.0
JMM	**Marumori**	**0.80**	**267**	P	Pn	23 11 50.7	+0.1
JMM				S	Sn	23 12 01.8	+0.2
JFK	**Kawauchi**	**0.91**	**234**	P	Pn	23 11 52.0	-0.2
JFK				S	Sn	23 12 04.1	-0.3
JOU	**Okura**	**1.00**	**297**	P	Pn	23 11 53.6	+0.2
JOU				S	Sn	23 12 06.8	+0.3
JMK	**Ichinoseki**	**1.14**	**337**	P	Pn	23 11 55.5	+0.4
JMK				S	Sn	23 12 10.2	+0.6
JFT	**Otama**	**1.23**	**252**	P	Pn	23 11 57.2	+0.9
JFT				S	Sn	23 12 13.2	+1.4
JYS	**Shiratake**	**1.40**	**283**	P	Pn	23 11 59.6	+0.9
JYS				S	Sn	23 12 17.9	+1.8
JYK	**Kaneyama**	**1.52**	**312**	P	Pn	23 12 00.7	+0.5
JYK				*e*S	Sn	23 12 19.7	+0.9
JOM	**Ohasama**	**1.61**	**346**	P	Pn	23 12 02.2	+0.7
JOM				S	Sn	23 12 21.9	+0.7
JFY	**Yanaizu**	**1.74**	**254**	P	Pn	23 12 04.3	+1.0
JFY				S	Sn	23 12 25.5	+1.2

IDC 12 23:22:16.5±5.9, 23°.76N×92°.85E, h0km, mb3.6/2, mb1 3.8/3, mb1mx3.2/38, mbtmp3.5/3, ML3.5/1, Error ellipse: s-maj=155.6km s-min=105.8km az=35.0, India-Bangladesh border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**7.76**	**132**	Pn	Pn	23 24 10.8	+0.1
	0.2nm,0.3s,baz=308,slow=14,SNR=1.8						
WRA	**Warramunga Arr**	**59.35**	**134**	P	P	23 32 20.1	-0.6
	0.8nm,0.9s,baz=319,slow=7.7,SNR=2.9						
ASAR	**Alice Springs**	**61.74**	**137**	P	P	23 32 37.4	+0.4
	0.3nm,0.4s,baz=318,slow=6.6,SNR=4.5						

IDC 12 23:30:39.2±0.8, 12°.21N×144°.11E, h0km, mb3.9/10, mb1 4.1/10, mb1mx3.9/36, mbtmp3.9/10, Error ellipse: s-maj=28.4km s-min=17.0km az=121.0
ISCJB 12 23:30:41.3±0.7, 12°.17N±0°.10×144°.0E±0°.1, h26km, mb4.0/14, Error ellipse: s-maj=21.0km s-min=9.4km az=34.4
NEIC 12 23:30:44.3±0.5, 12°.23N×144°.05E, h35km, mb4.3/3, Error ellipse: s-maj=18.9km s-min=12.5km az=119.0
ISC 12 23:30:43.0±0.8, 12°.2N±0°.1×144°.1E±0°.2, h26km, n23, σ0§92/20, mb4.1/14, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**1.58**	**30**	Pn	Pn	23 31 09.2	-0.2
	77nm,0.3s,baz=200,slow=4.0,SNR=20						
GUMO				Sn	Sn	23 31 28.8	-0.3
	106nm,0.3s,baz=159,slow=23,SNR=12						
GUMO	**Guam**	**1.58**	**30**	Pn	Pn	23 31 09.2	-0.2
GUMO				Sn	Sn	23 31 28.8	-0.3
GUMO				*e*Sg	Sb	23 31 32.2	+0.9
H11S3	**WAKE ISLAND Hy**	**22.68**	**71**	T	T	23 59 19.2	
	baz=258,slow=75,SNR=4.9						
H11S1	**WAKE ISLAND Hy**	**22.70**	**71**	T	T	23 59 19.1	
	baz=258,slow=75,SNR=4.7						
H11S2	**WAKE ISLAND Hy**	**22.70**	**71**	T	T	23 59 22.3	
	baz=258,slow=75,SNR=6.3						
H11N1	**WAKE ISLAND Hy**	**23.16**	**68**	T	T	23 59 47.8	
	baz=255,slow=75,SNR=10						
H11N2	**WAKE ISLAND Hy**	**23.17**	**68**	T	T	23 59 49.7	
	baz=255,slow=75,SNR=15						
H11N3	**WAKE ISLAND Hy**	**23.18**	**68**	T	T	23 59 48.8	
	baz=255,slow=75,SNR=9.2						
WRA	**Warramunga Arr**	**33.35**	**197**	P	P	23 37 18.6	-0.6
	0.5nm,0.8s,baz=22,slow=9.8,SNR=5.2						
ASAR	**Alice Springs**	**37.01**	**196**	P	P	23 37 50.5	-0.2
	0.3nm,0.5s,baz=14,slow=8.6,SNR=3.5						
CMAR	**Chiang Mai Arr**	**43.87**	**284**	P	P	23 38 48.3	+0.6
	0.8nm,0.4s,baz=84,slow=6.0,SNR=4.5						
MKAR	**Makanchi Array**	**61.95**	**317**	P	P	23 41 01.2	+0.5
	1.2nm,0.6s,baz=93,slow=8.8,SNR=18						
KURK	**Kurchatov**	**65.14**	**320**	*e*P	P	23 41 21.3	-0.4
	5.2nm,0.8s						
KKAR	**Karatay Array**	**69.77**	**312**	*e*P	P	23 41 51.5	+0.3
	0.7nm,0.6s						
ILAR	**Eielson Array**	**70.15**	**25**	P	P	23 41 51.4	-1.7
	0.6nm,0.8s,baz=258,slow=4.9,SNR=5.5						
INK	**Inuvik**	**75.94**	**22**	P	P	23 42 27.0	-0.2
	1.5nm,0.9s,baz=257,slow=10.0,SNR=5.9						
ABKAR	**Akbulak array**	**77.04**	**318**	*e*P	P	23 42 33.5	-0.3
	2.8nm,0.8s						
GEYT	**Alibeck**	**79.44**	**307**	P	P	23 42 48.4	+0.9
	3.5nm,1.0s,baz=79,slow=2.3,SNR=9.6						
YKA	**Yellowknife Ar**	**84.44**	**27**	P	P	23 43 13.0	-0.1
	1.3nm,0.9s,baz=290,slow=5.2,SNR=8.9						
NVAR	**Mina Array Bea**	**88.39**	**51**	P	P	23 43 34.9	+1.5
	1.0nm,0.8s,baz=255,slow=5.8,SNR=5.5						
FINES	**FINESS Array B**	**92.08**	**335**	P	P	23 43 47.8	-1.9
	3.8nm,1.0s,baz=74,slow=8.1,SNR=5.9						
PDAR	**Pinedale Array**	**93.49**	**45**	P	P	23 43 57.3	+0.2
	0.1nm,0.3s,baz=296,slow=8.9,SNR=3.2						
LPAZ	**La Paz**	**148.55**	**101**	PKPbc	PKPbc	23 50 30.9	+1.5
	0.5nm,0.5s,baz=224,slow=1.2,SNR=3.8						

JMA 12 23:34:48.1±0.2, 37°.93N×143°.46E, h31km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.74**	**288**	P	Pn	23 35 17.3	+1.1
OFUJ	**Ofunato**	**1.81**	**310**	P	Pn	23 35 18.3	+1.1
JMK	**Ichinoseki**	**2.03**	**301**	P	Pn	23 35 21.6	+1.4
JMM	**Marumori**	**2.11**	**269**	P	Pn	23 35 22.2	+0.9
JMM				*e*S	Sn	23 35 47.8	+1.4
JOU	**Okura**	**2.25**	**282**	P	Pn	23 35 24.9	+1.7
JOM	**Ohasama**	**2.29**	**313**	P	Pn	23 35 25.5	+1.7
JOM				S	Sn	23 35 53.5	+2.6
JFT	**Otama**	**2.51**	**262**	P	Pn	23 35 28.1	+1.3
JFT				S	Sn	23 35 57.7	+1.4

NIED 12 23:35:00, 36°.20N×140°.10E, h68km, Mw3.8 Best double couple: $M_0$5.06000×10^{14} NP1:ϕ_s298.00000°, δ26.00000°, λ148.00000°. NP2:ϕ_s58.00000°, δ77.00000°, λ68.00000°.
IDC 12 23:35:50.7±2.8, 36°.84N×140°.19E, h0km, mb3.5/4, mb1 3.7/4, mb1mx3.4/29, mbtmp3.5/4, Error ellipse: s-maj=70.8km s-min=32.9km az=165.0
ISCJB 12 23:35:54.6±1.5, 36°.2N±0°.4×140°.0E±0°.1, h58km±5km, mb3.3/4, Error ellipse: s-maj=74.1km s-min=10.8km az=9.1
JMA 12 23:35:55.4±0.1, 36°.17N×140°.10E, h50km±1km, M3.9 Broadband fault plane solution: P waves. NP1: ϕ_s42.00000°, δ73.00000°, λ85.00000°. NP2:ϕ_s238.00000°, δ18.00000°, λ105.00000°. Principal axes: T Plg62.0000°, Azm305.0000°; N Plg5.0000°, Azm44.0000°; P Plg28.0000°, Azm136.0000°;
JMA Felt II J1.
ISC 12 23:35:54.8±2.3, 36°.1N±0°.4×140°.04E±0°.09, h51km±10km, n8, σ1§20/12, mb3.4/4, 1C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JYT	**Yasato**	**0.17**	**45**	⇑P	Pn	23 36 03.3	+0.2
JYT				S	Sn	23 36 08.8	-0.3
JAG	**Ashikaga**	**0.57**	**304**	⇓P	Pn	23 36 07.7	+0.6
JAG				S	Sn	23 36 16.3	+0.4
MJAR	**Matsushiro Arr**	**1.54**	**287**	Pn	Pn	23 36 20.4	+0.4
	29nm,0.3s,baz=85,slow=10,SNR=74						
MJAR				Sn	Sn	23 36 38.8	-0.1
	16nm,0.3s,baz=88,slow=17,SNR=3.7						
MAT	**Matsushiro**	**1.55**	**287**	P	Pn	23 36 21.7	+1.7
MAT				S	Sn	23 36 36.9	-2.1
SONM	**Songino Array**	**27.41**	**306**	P	P	23 41 33.9	-1.6
	0.3nm,0.5s,baz=109,slow=7.8,SNR=1.0						
ZALV	**Zalesovo Beam**	**41.73**	**313**	P	P	23 43 38.9	+0.4
	0.7nm,0.5s,baz=100,slow=6.9,SNR=2.8						
MKAR	**Makanchi Array**	**

KSRS	Korea Array	69.03	326	P		P	00 17 26.2	+0.2
	1.0nm,0.6s,baz=140,slow=2.8,SNR=3.0							
KSAR	Wonju Array Be	69.05	326	P		P	00 17 26.1	+0.1
QSPA	South Pole Qui	69.66	180	eP		P	00 17 29.7	0.0
	15nm,0.9s							
KULM	Kulim	71.24	283	eP		P	00 17 40.3	+0.2
	7.2nm,1.1s							
USRK	Ussuriysk Ar.	72.42	333	P		P	00 17 46.2	-0.3
	3.9nm,0.9s,baz=132,slow=3.7,SNR=5.5							
USRK				pP		sP	00 17 58.8	+1.0
	5.2nm,0.9s,baz=157,slow=3.4,SNR=5.2							
MDJ	Mudanjiang	73.78	332	eP		P	00 17 54.5	+0.1
	1.4nm,0.4s							
CMAR	Chiang Mai Arr	78.29	295	P		P	00 18 21.8	+1.0
	1.0nm,0.3s,baz=131,slow=4.3,SNR=10							
CMAR				pP		sP	00 18 33.6	+1.5
	3.1nm,0.8s,baz=134,slow=4.3,SNR=4.4							
CHTO	Chiang Mai	78.44	295	eP		P	00 18 21.7	0.0
	2.8nm,0.8s							
SONM	Songino Array	87.69	323	P		P	00 19 08.4	-0.5
	1.4nm,1.0s,baz=144,slow=5.5,SNR=6.3							
SONM				pP		sP	00 19 20.7	+0.3
	0.8nm,0.5s,baz=130,slow=5.9,SNR=5.2							
BILL	Bilibino	88.19	359	eP		P	00 19 10.3	-0.4
	3.2nm,0.9s							
CMB	Columbia Colle	88.50	48	eP		P	00 19 12.8	-0.2
	12nm,0.8s							
NVAR	Mina Array Bea	90.14	49	P		P	00 19 21.2	+0.4
	2.4nm,0.9s,baz=228,slow=8.7,SNR=12							
NVAR				pP		sP	00 19 33.2	+0.9
	2.7nm,0.8s,baz=225,slow=7.6,SNR=9.1							
MCK	McKinley	90.19	18	eP		P	00 19 20.2	0.0
	1.1nm,0.7s							
ILAR	Eielson Array	91.56	18	P		P	00 19 27.4	+0.8
	0.5nm,0.9s,baz=230,slow=5.7,SNR=4.3							
ILAR				pP		sP	00 19 37.5	-0.6
	0.9nm,0.8s,baz=239,slow=5.4,SNR=4.4							
WALA	Waterton Lakes	97.42	40	eP		P	00 19 52.0	-2.0
	1.6nm,0.6s							
ANMO	Albuquerque	97.58	56	eP		Pdif	00 19 55.3	+0.2
	0.3nm,0.5s							
LVC	Limon Verde	109.60	124	ePKP		PKiKP	00 24 50.7	-1.5
CONA	Conrad Observa	144.72	328	i PKPdf		PKPab	00 25 55.9	0.0
	5.6nm,1.2s							
GERES	GERESS Array B	145.13	330	PKPbc		PKPbc	00 25 56.2	-1.1
	0.9nm,0.8s,baz=64,slow=3.1,SNR=7.5							
GERES				pPKPbc		pPKPbc	00 26 09.6	+3.4
	0.8nm,0.7s,baz=23,slow=4.4,SNR=4.0							
ARSA	Arzberg	145.34	327	i PKPdf		PKPbc	00 25 58.1	+0.2
	4.7nm,1.3s							
MOA	Molln	145.56	329	i PKPab		PKPdf	00 25 58.4	-0.1
	7.3nm,0.9s							
SOKA	Soboth	145.97	327	i PKPab		PKPdf	00 25 59.4	+0.1
	5.8nm,1.2s							
OBKA	Obir	146.33	327	i PKPab		PKPdf	00 26 00.6	+0.7
	2.3nm,0.6s							
ABTA	Abfaltersbach	147.19	329	i PKPdf		PKPdf	00 25 58.7	-2.6
	4.0nm,1.3s							
MOTA	Moosalm	147.42	331	i PKPdf		PKPdf	00 26 01.6	-0.2
	3.2nm,0.9s							
RETA	Reutte	147.47	331	i PKPbc		PKPbc	00 26 03.6	-0.7
	3.8nm,1.2s							
WLF	Walferdange	147.56	338	ePKPbc		PKPbc	00 26 04.5	+0.1
FETA	Feichten	147.83	331	i PKPbc		PKPdf	00 26 03.5	+1.0
	5.6nm,1.0s							
DAVA	Damuels	148.01	332	i PKPdf		PKPdf	00 26 01.6	-1.2
	4.4nm,0.9s							

*IDC **13** 00:07:07.3±2.3, 19°.91S×167°.74E, h38km±8km, mb3.9/6, mb1 4.2/6, mb1mx3.8/25, mbtmp4.1/6, MS3.8/2, Ms1 3.8/2, ms1mx3.2/26, Error ellipse: s-maj=77.9km s-min=23.5km az=138.0*

*ISCJB **13** 00:07:10.9±0.5, 19°.5S±0°.1×166°.8E±0°.1, h33km, mb4.5/21, MS4.0/1, Error ellipse: s-maj=19.6km s-min=11.3km az=136.4*

*NEIC **13** 00:07:12.6±0.4, 19°.48S×166°.83E, h35km, mb4.6/13, Error ellipse: s-maj=17.0km s-min=9.5km az=140.0*

ISC 13 00:07:12.4±0.7, 19°.5S±0°.1×166°.8E±0°.1, h35km, n27, σ1§07/25, mb4.5/21, Vanuatu Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	2.59	187	Sn	Sn	00 08 10.8	-11
	8.6nm,0.3s,baz=305,slow=22,SNR=1.4						
EIDS	Eidsvold	15.63	245	ePn	Pn	00 10 52.1	-1.8
	1.7nm,0.6s						
RAO	Raoul Island	17.00	128	LR	LR	00 15 05.3	
	comp=Z,306nm,18.2s,baz=348,slow=30						
STKA	Stephens Creek	25.75	236	P	P	00 12 39.4	-0.4
	2.0nm,0.7s,baz=57,slow=7.8,SNR=3.1						
STKA				pP	pP	00 12 50.9	+1.1
	1.8nm,0.5s,baz=69,slow=7.6,SNR=1.9						
TAU	Tasmania Unive	28.53	211	eP	P	00 13 06.3	+1.6
	55nm,1.2s						
WRA	Warramunga Arr	30.50	264	P	P	00 13 23.8	+1.4
	1.0nm,0.8s,baz=91,slow=9.1,SNR=2.7						
WRA				pP	sP	00 13 35.3	-1.5
	1.0nm,0.7s,baz=90,slow=8.4,SNR=2.5						
ASAR	Alice Springs	30.80	256	P	P	00 13 25.7	+0.6
	3.2nm,0.8s,baz=84,slow=9.1,SNR=3.3						
ASAR				pP	sP	00 13 37.4	-2.0
	3.1nm,0.7s,baz=85,slow=8.8,SNR=2.7						
CASY	Casey	58.98	203	eP	P	00 17 08.2	+0.1
	0.1nm,0.4s						
TATO	Taipei	62.40	313	eP	P	00 17 30.9	-1.0
	13nm,0.5s						
KULM	Kulim	69.51	284	eP	P	00 18 18.2	+0.2
	1.1nm,0.4s						
USRK	Ussuriysk Ar.	70.91	334	P	P	00 18 25.0	-0.8
	1.9nm,0.8s,baz=139,slow=7.5,SNR=2.5						
MDJ	Mudanjiang	72.25	333	eP	P	00 18 34.9	+0.9
	3.1nm,0.6s						
CMAR	Chiang Mai Arr	76.48	295	P	P	00 19 00.8	+1.6
	1.5nm,0.3s,baz=120,slow=6.4,SNR=2.7						
MA2	Magadan	79.85	352	eP	P	00 19 17.5	+0.6
	3.2nm,0.4s						
YAK	Yakutsk	86.42	343	eP	P	00 19 50.0	-0.7
	8.0nm,0.6s						
BILL	Bilibino	87.27	360	eP	P	00 19 55.0	+0.2
	0.8nm,0.5s						
PMSA	Palmer Station	87.47	161	eP	P	00 19 54.7	-1.3
	1.9nm,0.5s						
PMR	Palmer	88.12	19	eP	P	00 19 59.3	+0.4
	2.7nm,0.5s						
CMB	Columbia Colle	89.07	49	eP	P	00 20 03.7	-0.4
	1.1nm,0.3s						
MCK	McKinley	89.80	18	eP	P	00 20 07.0	+0.1
	0.6nm,0.3s						
PFO	Pinyon Flats O	90.15	54	LR	LR	00 51 40.4	
	comp=Z,52nm,19.4s,baz=40,slow=30						
PFO	Pinyon Flats O	90.15	54	eP	P	00 20 11.2	+1.8
	51nm,0.2s						
ILAR	Eielson Array	91.17	18	P	P	00 20 07.8	-5.5
	1.1nm,0.9s,baz=227,slow=5.8,SNR=4.3						
ILAR				pP	pP	00 20 19.8	-4.6
	0.4nm,0.7s,baz=236,slow=5.4,SNR=1.5						
NEW	Newport	95.47	41	eP	P	00 20 34.0	+0.5
	0.9nm,0.6s						
HWUT	Hardware Ranch	96.71	48	eP	P	00 20 39.6	+0.1
	0.6nm,0.4s						
RSSD	Black Hills	102.74	48	ePdif	Pdif	00 21 06.6	+0.2
ARU	Arti	116.06	324	ePKPdf	PKPdf	00 25 50.4	-0.9

*ISCJB **13** 00:20:34.5±0.3, 12°.52N±0°.04×143°.97E±0°.04, h27km, mb4.5/51, MS4.7/3, Error ellipse: s-maj=6.3km s-min=6.1km az=28.9*

*NEIC **13** 00:20:37.1±0.2, 12°.53N×143°.97E, h35km, mb4.8/25, Error ellipse: s-maj=5.8km s-min=5.3km az=116.0*

*IDC **13** 00:20:38.4±2.0, 12°.37N×144°.11E, h56km±18km, mb4.0/22, mb1 4.1/22, mb1mx3.9/49, mbtmp4.2/22, Error ellipse: s-maj=19.3km s-min=14.6km az=105.0*

ISC 13 00:20:36.2±0.4, 12°.57N±0°.06×143°.97E±0°.06, h27km, n101, σ1§35/107, mb4.7/51, MS4.6/3, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	Guam	1.34	41	P	Pb	00 21 00.1	-0.6
	218nm,0.3s,baz=186,slow=9.9,SNR=40						
GUMO				S	Sb	00 21 20.0	+2.6
	218nm,0.3s,baz=167,slow=18,SNR=8.8						
H11S3	WAKE ISLAND Hy	22.66	72	T	T	00 48 56.9	
	baz=258,slow=75,SNR=7.1						
H11S1	WAKE ISLAND Hy	22.67	72	T	T	00 49 27.6	
	baz=258,slow=75,SNR=5.7						
H11S2	WAKE ISLAND Hy	22.67	72	T	T	00 49 08.4	
	baz=258,slow=75,SNR=6.1						
H11N1	WAKE ISLAND Hy	23.12	69	T	T	00 49 39.8	
	baz=255,slow=75,SNR=12						
H11N2	WAKE ISLAND Hy	23.13	69	T	T	00 49 45.7	
	baz=255,slow=75,SNR=13						
H11N3	WAKE ISLAND Hy	23.14	69	T	T	00 49 39.6	
	baz=255,slow=75,SNR=14						
JNU	Nakatsue	23.70	332	P	P	00 25 47.5	+1.5
	9.9nm,0.8s,baz=145,slow=12,SNR=3.6						
SAUI	Saumlaki	23.99	212	eP	P	00 25 49.4	+0.6
	554nm,1.1s						
TWG	Pinlang	24.04	298	eP	P	00 25 48.6	-0.7
	152nm,1.4s						
YULB	Yu-li	24.06	300	eP	P	00 25 49.8	+0.3
	50nm,1.6s						
NACB	Ninganchiao	24.12	302	eP	P	00 25 49.4	-0.6
	93nm,1.8s						
MJAR	Matsushiro Arr	24.42	349	P	P	00 25 52.4	-0.2
	2.0nm,0.9s,baz=24,slow=31,SNR=2.8						
MAJO	Matsushiro	24.42	349	eP	P	00 25 52.8	+0.2
	47nm,1.8s						
MJB9	Matsu-Tunnel	24.43	349	eP	P	00 25 53.2	+0.5
	13nm,1.8s						
LUWI	Luwuk	25.01	239	eP	P	00 25 58.2	+0.1
	40nm,0.9s						
MYLDM	Lahad Datu	26.20	256	eP	P	00 26 09.7	+0.8
	28nm,1.0s						
KSRS	Korea Array	28.64	333	P	P	00 26 31.6	+1.1
	1.4nm,0.7s,baz=144,slow=10,SNR=3.9						
KSAR	Wonju Array Be	28.64	333	P	P	00 26 31.6	+1.0
KS01	Wonju Array Si	28.67	333	eP	P	00 26 31.3	+0.5
INCN	Inchon	29.25	331	eP	P	00 26 36.3	+0.3
	51nm,1.4s						
MMRI	Maumere	30.17	227	eP	P	00 26 45.6	+1.2
	61nm,0.5s						
SBUM	Sibu	33.00	255	eP	P	00 27 09.5	+0.2
	8.8nm,0.9s						
WRAB	Tennant Creek	33.66	196	eP	P	00 27 15.6	+0.6
WB2	Warramunga Arr	33.67	196	eP	P	00 27 14.8	-0.3
	19nm,1.4s						
WRA	Warramunga Arr	33.67	196	P	P	00 27 11.6	-3.5
	1.9nm,0.8s,baz=21,slow=9.4,SNR=6.4						
MDJ	Mudanjiang	34.23	342	P	P	00 27 18.2	-1.4
MDJ				pP	pP	00 27 26.6	-1.0
MDJ				sP	sP	00 27 30.7	-0.2
MDJ				S	S	00 32 39.3	-5.4
MDJ				sS	sS	00 32 56.6	-1.3
MDJ				pmax	pmax		
	comp=Z,11nm,2.3s						
MDJ				pmax	pmax		
	comp=Z,42nm,2.9s						
MDJ				LR	LR		
	comp=N,850nm,20.3s						
MDJ				LR	LR		
	comp=E,270nm,16.9s						
MDJ				LR	LR		
	comp=Z,1μm,19.7s						
MDJ	Mudanjiang	34.23	342	eP	P	00 27 18.7	-0.9
	comp=Z,41nm,1.9s						
KSM	Kuching	35.12	254	eP	P	00 27 27.1	-0.6
	comp=Z,15nm,1.1s						
ENH	Enshi	36.42	304	eP	P	00 27 38.7	0.0
BJT	Baijiatuan	36.70	323	eP	P	00 27 41.6	+0.7
AS01	Alice Springs	37.32	195	eP	P	00 27 46.5	+0.1
AS31	Alice Springs	37.34	195	eP	P	00 27 47.0	+0.5
ASAR	Alice Springs	37.34	195	P	P	00 27 44.6	-1.9
	comp=Z,1.4nm,0.9s,baz=22,slow=11,SNR=7.6						
GYA	Guiyang	37.62	297	eP	P	00 27 50.8	+1.6
GYA				pP	sP	00 28 01.4	+0.9
GYA				PP	PnPn	00 29 19.0	+2.7
GYA				S	S	00 33 37.2	-0.3
GYA				ScP	ScP	00 33 52.8	+0.5
GYA				SS	SS	00 36 43.7	+21
GYA	Guiyang	37.62	297	ScS	ScS	00 37 59.0	-2.1
GYA				pmax	pmax		
	comp=Z,20nm,1.0s						
GYA				pmax	pmax		
	comp=Z,120nm,5.3s						
GYA				LR	LR		
	comp=N,490nm,15.8s						
GYA				LR	LR		
	comp=E,450nm,16.6s						
GYA				LR	LR		
	comp=Z,460nm,18.0s						
HHC	Hu-ho-hao-te	39.98	321	eP	P	00 28 10.0	+1.3
HHC				PP	PnPn	00 29 42.9	-1.5
HHC				S	S	00 34 14.6	+1.9
HHC				sS	sS	00 34 30.2	+4.1
HHC				SS	SS	00 37 06.8	-3.4
HHC				pmax	pmax		
	comp=Z,25nm,1.0s						
HHC				pmax	pmax		
	comp=Z,120nm,5.3s						
HHC				LR	LR		
	comp=N,1μm,14.4s						
HHC				LR	LR		
	comp=E,1μm,14.1s						
HHC				LR	LR		
	comp=Z,2μm,14.7s						
KMI	Kunming	40.80	294	P	P	00 28 18.1	+2.2
KMI				pP	pP	00 28 25.3	+1.3
KMI				sP	sP	00 28 28.3	+1.0
KMI				pmax	pmax		
	comp=Z,6.0nm,1.6s						
MYKOM	Kota Tinggi	41.15	258	eP	P	00 28 19.0	+0.4
HIA	Hailar	41.70	336	eP	P	00 28 22.7	+0.1
LZH	Lanzhou	42.98	310	eP	P	00 28 37.7	+4.2
LZH				pP	sP	00 28 48.3	+3.4
LZH				sP	pP	00 28 52.5	+11
LZH				PP	PcP	00 30 20.5	-3.2
LZH				pmax	pmax		
	comp=Z,20nm,1.3s						
LZH				pmax	pmax		
	comp=Z,63nm,5.8s						
KULM	Kulim	43.35	264	eP	P	00 28 36.3	-0.2
CM01	Chiang Mai Arr	43.68	284	eP	P	00 28 39.6	+0.5
CMAR	Chiang Mai Arr	43.69	284	P	P	00 28 40.2	+1.0
	comp=Z,1.9nm,0.6s,baz=88,slow=5.8,SNR=7.5						
CMAR				PcP	PcP	00 30 27.2	+1.1
	comp=Z,0.7nm,0.3s,baz=61,slow=1.2,SNR=4.3						
CHTO	Chiang Mai	43.70	284	eP	P	00 28 39.3	0.0
MNAI	Manna	44.09	250	eP	P	00 28 42.2	-0.2
JOHN	Johnston Islan	45.10	79	eP	P	00 28 51.3	+0.8
MSVF	Nonsavu	45.15	131	eP	P	00 28 51.1	+0.1
PSI	Prapat	45.61	262	eP	P	00 28 54.3	-0.4
	comp=Z,7.6nm,0.9s						
ULN	Ulaanbaatar	46.72	326	eP	P	00 29 03.7	+0.6
LHMI	Lhok Sumawe	46.97	265	eP	P	00 29 05.4	+0.2
SONM	Songino Array	47.06	326	P	P	00 29 07.5	+1.8
	comp=Z,1.3nm,0.7s,baz=151,slow=9.4,SNR=7.4						
SONM				PcP	PcP	00 30 37.7	+0.2
	comp=Z,1.1nm,0.9s,baz=128,slow=4.9,SNR=4.6						
SONA1	Songino Array	47.07	326	eP	P	00 29 06.2	+0.4
GSI	Gunungsitoli	47.30	260	eP	P	00 29 06.7	-1.2
TLY	Talaya	50.75	329	eP	P	00 29 34.2	+0.5
AFI	Afiamalu	51.14	120	eP	P	00 29 37.7	+0.4
LSA	Lhasa	51.69	298	eP	P	00 29 41.9	+0.2
RAO	Raoul Island	55.52	139	eP	P	00 30 09.3	+0.2
HON	Honolulu	55.93	73	eP	P	00 30 12.9	+0.6
BILL	Bilibino	57.30	10	eP	P	00 30 23.6	+2.3
HLK	Haleakala	57.59	73	eP	P	00 30 24.8	+0.4
UWE	Uwekahuna	58.54	75	eP	P	00 30 31.7	+0.7
MK01	Makanchi Array	61.60	317	eP	P	00 30 51.9	+0.5
MK31	Makanchi Array	61.62	317	eP	P	00 30 52.5	+1.0
MKAR	Makanchi Array	61.62	317	P	P	00 30 52.4	+0.9
	comp=Z,3.9nm,0.6s,baz=92,slow=8.7,SNR=46						
MAKZ	Makanchi	61.83	317	eP	P	00 30 53.8	+0.9
	comp=Z,6.9nm,0.7s						
ZALV	Zalesovo Beam	61.94	325	P	P	00 30 53.4	-0.1
	comp=Z,0.8nm,0.5s,baz=100,slow=5.3,SNR=4.2						
ZALV				PcP	PcP	00 31 33.0	-1.1
	comp=Z,2.2nm,0.8s,baz=116,slow=3.6,SNR=5.8						
KURK	Kurchatov	64.80	320	eP	P	00 31 12.2	-0.2
	comp=Z,10.0nm,1.0s						
KURBB	Kurchatov Arra	64.83	320	P	P	00 31 13.0	+0.3
	comp=Z,7.9nm,1.0s,baz=104,slow=6.7,SNR=47						
KSH	Kashi	65.16	308	eP	P	00 31 18.5	+3.2
KSH				ePP	sP	00 31 29.0	+2.1
KSH				eScP		00 35 49.8	
KSH				PcS		00 35 54.4	
KSH				S	S	00 39 57.2	+0.4
KSH				ScS	SKSac	00 41 07.0	-1.9
KSH				pmax	pmax		
	comp=Z,55nm,3.7s						
KSH				LR	LR		
	comp=N,98nm,7.8s						
KSH				LR	LR		
	comp=E,130nm,5.1s						
KSH				LR	LR		
	comp=Z,150nm,6.2s						
TKM2	Tokmak 2	65.73	311	eP	P	00 31 19.7	+0.8
	comp=Z,3.2nm,0.8s						
AAK	Ala-Archa	66.51	311	P	P	00 31 24.5	+0.6
	comp=Z,0.6nm,0.3s,baz=19,slow=4.5,SNR=4.1						
EKS2	Erkin-Say	67.04	311	eP	P	00 31 28.0	+0.8
	comp=Z,3.3nm,1.0s						
SCM	Sheep Creek Mo	68.98	28	eP	P	00 31 38.7	-0.3
	comp=Z,11nm,0.9s						
COLD	Coldfoot	69.22	22	eP	P	00 31 41.3	+1.0
	comp=Z,7.8nm,1.5s						
KKAR	Karatay Array	69.46	311	eP	P	00 31 42.6	+0.3
ILAR	Eielson Array	69.86	25	P	P	00 31 42.5	-1.8
	comp=Z,0.8nm,0.7s,baz=253,slow=4.7,SNR=7.7						
BVAR	Borovoye Array	70.18	322	P	P	00 31 46.8	+0.3
	comp=Z,3.7nm,0.6s,baz=101,slow=7.7,SNR=21						
KBL	Kabul	70.63	302	eP	P	00 31 50.1	+0.2
	comp=Z,9.3nm,1.0s						
ZRNK	Zerenda	71.01	322	eP	P	00 31 51.3	-0.2
	comp=Z,9.3nm,1.0s						
INK	Inuvik	75.64	22	P	P	00 32 17.5	-1.0
	comp=Z,1.8nm,0.9s,baz=268,slow=7.1,SNR=5.7						
ABKAR	Akbulak array	76.70	318	eP	P	00 32 24.8	-0.1
ARU	Arti	77.10	325	P	P	00 32 26.8	-0.2
	comp=Z,5.3nm,0.8s,baz=156,slow=2.7,SNR=10.0						
ARU	Arti	77.10	325	eP	P	00 32 26.7	-0.3
	comp=Z,7.5nm,0.9s						
AKTO	Aktyubinsk	77.86	319	P	P	00 32 31.0	-0.4
	comp=Z,2.7nm,0.6s,baz=90,slow=8.6,SNR=9.6						
GEYT	Alibeck	79.15	307	P	P	00 32 39.4	+0.6
	comp=Z,6.9nm,0.9s,baz=0,0,slow=1.5,SNR=20						
YKA	Yellowknife Ar	84.16	27	P	P	00 33 04.1	-0.6
	comp=Z,0.9nm,0.7s,baz=288,slow=5.4,SNR=10						
YKB5	Yellowknife Ar	84.16	27	eP	P	00 33 03.7	-1.0
WVOR	Wild Horse Val	87.00	47	eP	P	00 33 20.5	+1.1
	comp=Z,7.9nm,0.8s						
MFID	Camas Ranch	88.73	46	eP	P	00 33 28.3	+0.5
	comp=Z,2.4nm,0.8s						
KBZ	Khabaz	89.25	315	P	P	00 33 28.6	-1.3
	comp=Z,2.5nm,0.9s,baz=130,slow=3.7,SNR=5.7						
DAC	Darwin (Calif)	89.33	53	eP	P	00 33 30.8	-0.1
DAC				ePP	PP	00 37 00.0	-1.6
BGD	Bogdanovka	89.45	312	P	P	00 33 36.9	+5.6
FINES	FINESS Array B	91.71	335	P	P	00 33 38.9	-2.1
	comp=Z,2.3nm,0.7s,baz=72,slow=6.7,SNR=15						
PDAR	Pinedale Array	93.30	45	P	P	00 33 48.7	-0.5
	comp=Z,0.3nm,0.8s,baz=291,slow=2.8,SNR=3.1						
PHWY	Pilot Hill	96.68	45	eP	P	00 34 03.6	-1.0
PHWY				ePP	PP	00 37 49.2	-10
BRTR	Keskin Array B	97.12	313	P	P	00 34 05.0	-1.6
	comp=Z,0.7nm,0.9s,baz=52,slow=5.6,SNR=5.3						
TOA0	Torodi Ar. Sit	134.70	303	ePKPdf	PKPdf	00 39 52.7	-0.6
TORD	Torodi Ar. Bea	134.70	303	PKP	PKPdf	00 39 51.2	-2.2
	comp=Z,0.9nm,0.8s,baz=62,slow=1.0,SNR=5.8						
DBIC	Dimbokro	143.59	300	PKP	PKPab	00 40 06.2	+0.1
	comp=Z,5.0nm,0.7s,baz=34,slow=5.0,SNR=5.3						
LPAZ	La Paz	148.71	101	PKPbc	PKPbc	00 40 21.9	-0.9
	comp=Z,1.0nm,0.8s,baz=341,slow=8.1,SNR=5.2						

*ISCJB **13** 00:25:43.9±0.2, 12°.32N±0°.03×144°.07E±0°.03, h10km, mb4.9/147, MS4.8/59, Error ellipse: s-maj=4.0km s-min=3.5km az=38.8*

*IDC **13** 00:25:43.6±0.5, 12°.36N×144°.05E, h0km, mb4.7/34, mb1 4.8/34, mb1mx4.7/47, mbtmp4.7/34, MS4.6/19, Ms1 4.6/19, ms1mx4.4/38, Error ellipse: s-maj=15.8km s-min=11.7km az=101.0*

*MOS **13** 00:25:46.8±1.2, 12°.30N×144°.02E, h33km, mb5.1/54, MS4.9/24, Error ellipse: s-maj=9.6km s-min=5.4km az=110.4*

*BJI **13** 00:25:46.2, 12°.38N×144°.19E, h30km, mb4.9/57, mB5.2/45, Ms5.0/58, Ms7 4.8/53*

*NEIC **13** 00:25:48.8±0.2, 12°.31N×144°.13E, h35km, mb5.1/70, Error ellipse: s-maj=5.2km s-min=4.8km az=116.0*

*GCMT **13** 00:25:48.8±0.2, 12°.24N×143°.95E, h19km, MW5.2/97, Moment Tensor Solution. s74,c116; s97,c163; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}6.27±.20; $M_{\theta\theta}$-4.15±.14; $M_{\phi\phi}$-2.12±.15; $M_{r\theta}$-0.75±.28; $M_{\theta\phi}$-4.25±.11; $M_{\phi r}$2.33±.32; Best double couple: $M_0$7.38000×10^{16} NP1:ϕ_s32.00000°, δ52.00000°, λ63.00000°. NP2: ϕ_s252.00000°, δ45.00000°, λ120.00000°. Principal axes: T 7.2000, Plg69.0000°, Azm240.0000°; N 0.3600, Plg21.0000°, Azm49.0000°; P -7.5600, Plg4.0000°, Azm141.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

*DJA **13** 00:25:50.3±1.6, 12°.N±5°.×14°.4E±°, h39km±15km, M5.4/28, mb5.3/28, mB5.9/15, MLv5.1/1, Mw(mB)5.5/15, Mwp6.3/1*

ISC 13 00:25:45.7±0.6, 12°.32N±0°.04×144°.25E±0°.04, h17km±3km, n388, σ1§94/406, mb5.0/145, MS4.8/61, 25C-13D, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	Guam	1.40	26	Pn	Pb	00 26 12.7	+1.2
	406nm,0.3s,baz=20,slow=6.8,SNR=38						
GUMO				Sn	Sg	00 26 32.2	+1.1
	650nm,0.3s,baz=193,slow=12,SNR=11						
MANU	Manus Island	14.60	168	ePn	Pn	00 29 14.0	+2.3
JCJ	Chichijima	14.83	353	LR	LR	00 33 30.1	
	comp=Z,1μm,18.9s,baz=106,slow=32						
PATS	Pohnpei	14.90	110	ePn	Pn	00 29 15.2	-0.5
GENI	Genyem	15.36	196	P	Pn	00 29 23.3	+1.5
	86nm,0.9s						
SWI	Sorong	18.38	225	P	P	00 30 01.4	+1.5
	35nm,0.9s,986nm74μm						
DAV	Davao City (W)	19.12	256	LR	LR	00 37 55.8	
	comp=Z,2μm,18.8s,baz=72,slow=39						
FAKI	Fak Fak	19.27	219	eP	Pn	00 30 10.7	0.0
	27nm,0.9s						
JOW	Kunigami	20.82	316	eP	P	00

comp=Z,31nm,1.1s
MAT Matsushiro 24.73 348 P P 00 31 06.3 0.0
MAT S **S** **00 35 35.2 +7.5**
MJB9 Matsu-Tunnel 24.73 348 *e*P **P 00 31 05.1 -1.3**
comp=Z,8.1nm,1.2s
SSLB Suanglung 24.87 301 *e*P **P 00 31 06.6 -1.2**
comp=Z,124nm,1.7s
TATO Taipei 24.92 304 *e*P **P 00 31 06.9 -1.3**
comp=Z,129nm,1.4s
TPUB Ta-pu 24.96 299 *e*P **P 00 31 09.3 +0.7**
comp=Z,97nm,1.8s
MRSI Marisa 25.06 244 P **P 00 31 10.2 +0.7**
comp=Z,135nm,1.1s,comp=Z,2μm
LUWI Luwuk 25.11 240 P **P 00 31 09.6 -0.4**
comp=Z,155nm,0.7s,comp=Z,7μm
LUWI Luwuk 25.11 240 *e*P **P 00 31 09.1 -0.9**
comp=Z,114nm,0.8s
COEN Coen 26.12 182 *e*P **P 00 31 18.4 -0.7**
comp=Z,52nm,1.4s
MYLDM Lahad Datu 26.40 257 ⇑P **P 00 31 21.1 -0.6**
MYLDM Lahad Datu 26.40 257 *e*P **P 00 31 23.2 +1.5**
comp=Z,70nm,0.9s
MYLDM *e*S **S** **00 36 02.4 +7.7**
HNR Honiara 26.65 143 LR LR 00 42 30.0
comp=Z,930nm,18.6s,baz=321,slow=38
HNR Honiara 26.65 143 *e*P **P 00 31 23.3 -0.6**
HNR pmax pmax
comp=Z,44nm,0.4s
HNR Honiara 26.65 143 *e*P **P 00 31 23.2 -0.6**
comp=Z,44nm,0.4s
QZH Quanzhou 27.30 301 P **P 00 31 25.0 -4.7**
QZH S **S** **00 36 07.0 -1.7**
QZH LR LR
comp=Z,4μm,22.9s
QZH LR LR
comp=Z,2μm,16.0s
QZH LR LR
comp=Z,3μm,16.8s
SDKM Sandakan 27.51 258 ⇑P **P 00 31 30.6 -1.2**
MTN Manton Dam 28.18 208 *e*P **P 00 31 37.6 0.0**
comp=Z,137nm,2.0s
SSE Sheshan 28.32 315 P **P 00 31 36.0 -2.8**
SSE S **S** **00 36 25.2 +0.5**
SSE sS **sS** **00 36 33.8 +0.8**
SSE pmax pmax
comp=Z,16nm,0.8s
SSE pmax pmax
comp=Z,190nm,6.3s
SSE LR LR
comp=Z,330nm,20.5s
SSE LR LR
comp=Z,920nm,20.5s
SSE LR LR
comp=Z,890nm,20.2s
KSRS Korea Array 28.99 333 P **P 00 31 45.8 +1.2**
comp=Z,5.4nm,0.7s,baz=141,slow=9.2,SNR=8.4
KSRS PcP **PcP** **00 34 55.2 +2.1**
comp=Z,1.6nm,0.7s,baz=167,slow=4.1,SNR=4.4
KSRS LR LR 00 42 52.7
comp=Z,838nm,18.1s,baz=148,slow=36
KS15 Wonju Array Si 29.00 332 *e*P **P 00 31 43.9 -0.8**
KSAR Wonju Array Be 29.00 332 P **P 00 31 45.8 +1.1**
KSAR 00 34 55.2
KSAR Wonju Array Be 29.00 332 P **P 00 31 45.8 +1.1**
KSAR PcP **PcP** **00 34 55.2 +2.1**
KS01 Wonju Array Si 29.02 333 *e*P **P 00 31 44.9 0.0**
INCN Inchon 29.61 331 *e*P **P 00 31 49.8 -0.4**
comp=Z,176nm,1.9s
KAPI Kappang 29.82 236 P **P 00 31 52.1 -0.2**
comp=Z,6.1nm,0.5s,baz=112,slow=7.0,SNR=3.1
KAPI LR LR 00 44 02.3
comp=Z,398nm,19.1s,baz=58,slow=37
KAPI Kappang 29.82 236 *e*P **P 00 31 51.8 -0.4**
comp=Z,23nm,1.4s
MMRI Maumere 30.20 227 *e*P **P 00 31 55.6 0.0**
comp=Z,43nm,1.0s
ASAJ Asahikawa 31.72 358 P P 00 32 15.0 +6.3
comp=Z,9.0nm,0.7s,baz=271,slow=32,SNR=3.5
ASAJ Asahikawa 31.72 358 *e*P **P 00 32 07.2 -1.4**
comp=Z,178nm,2.0s
CTAO Charters Tower 32.26 176 *e*P **P 00 32 14.2 +0.5**
CTAO pmax pmax
comp=Z,72nm,0.9s
CTAO Charters Tower 32.26 176 *e*P **P 00 32 14.2 +0.5**
comp=Z,72nm,0.9s
WHN Wuhan 33.06 308 ⇑P **P 00 32 16.7 -3.9**
WHN S **S** **00 37 32.8 -6.1**
WHN LR LR
comp=Z,5μm,25.5s
WHN LR LR
comp=Z,4μm,20.4s
WHN LR LR
comp=Z,4μm,18.7s
SBUM Sibu 33.20 255 ⇑P **P 00 32 20.8 -1.2**
SBUM Sibu 33.20 255 *e*P **P 00 32 22.1 +0.1**
comp=Z,30nm,0.7s
USRK Ussuriysk Ar. 33.48 344 P **P 00 32 25.0 +0.9**
comp=Z,2.9nm,0.6s,baz=148,slow=11,SNR=6.0
WRAB Tennant Creek 33.49 197⇓*e*P **P 00 32 24.6 +0.1**
WRAB pmax pmax
comp=Z,25nm,0.7s
WRAB MLR MLR
comp=Z,3μm,21.0s
WRAB Tennant Creek 33.49 197 *e*P **P 00 32 24.6 +0.1**
comp=Z,54nm,0.6s
WB2 Warramunga Arr 33.50 197 *e*P **P 00 32 24.6 +0.1**
comp=Z,9.8nm,0.7s
WRA Warramunga Arr 33.51 197 P **P 00 32 24.3 -0.2**
comp=Z,7.0nm,0.7s,baz=18,slow=9.4,SNR=20
WRA LR LR 00 45 50.6
comp=Z,1μm,21.7s,baz=15,slow=36
WRA Warramunga Arr 33.51 197 *i* P **P 00 32 24.2 -0.4**
WRA pmax pmax
comp=Z,7.0nm,0.7s
QIZ Qiongzhong 33.75 286 P **P 00 32 28.6 +1.8**
QIZ PP **PP** **00 33 42.9 -0.3**
QIZ S **S** **00 37 53.0 +3.1**
QIZ LR LR
comp=Z,550nm,17.5s
QIZ LR LR
comp=Z,250nm,22.2s
MDJ Mudanjiang 34.55 341 P **P 00 32 34.0 +0.6**
MDJ S **S** **00 38 04.0 +2.3**
MDJ pmax pmax
comp=Z,10.0nm,1.6s
MDJ pmax pmax
comp=Z,31nm,3.1s
MDJ LR LR
comp=Z,460nm,23.2s
MDJ LR LR
comp=Z,360nm,18.0s
MDJ LR LR
comp=Z,1μm,19.5s
STKI Sintang 34.72 252 P **P 00 32 35.8 +0.6**
comp=Z,81nm,0.7s,comp=Z,21μm
CN2 Changchun 35.31 336 *e*P **P 00 32 40.0 +0.1**
CN2 *e*S **S** **00 38 13.3 -0.1**
CN2 pmax pmax
comp=Z,10.0nm,0.8s
CN2 pmax pmax
comp=Z,200nm,3.0s
CN2 LR LR
comp=Z,1μm,14.0s
CN2 LR LR
comp=Z,500nm,14.0s
CN2 LR LR
comp=Z,900nm,15.0s
KSM Kuching 35.32 255 *e*P **P 00 32 39.0 -1.4**
comp=Z,26nm,0.6s
FITZ Fitzroy Crossi 35.37 212 *e*P **P 00 32 41.3 +0.7**
comp=Z,68nm,1.8s
JAGI Jajag, Banyuwa 36.35 237 *e*P **P 00 32 48.9 -0.4**
comp=Z,100nm,1.9s
ENH Enshi 36.78 305 *e*P **P 00 32 52.7 -0.1**
comp=Z,22nm,1.0s
HABR Khabarovsk 36.85 350 *e*P **P 00 32 51.1 -2.0**
HABR *e* 00 34 15.3
HABR *e* 00 35 12.0
HABR *e*S **S** **00 38 37.1 +0.3**
HABR *e*SS **SnSn** **00 41 10.5 +1.4**
HABR *e*SSS SSS 00 41 27.4
HABR *e* 00 43 06.2
HABR pmax pmax
comp=Z,24nm,1.0s
HABR MLR MLR
comp=Z,1μm,18.0s

BJT Baijiatuau 37.07 323 *e*P **P 00 32 55.6 +0.5**
BJT pmax pmax
comp=Z,15nm,0.6s
BJT Baijiatuau 37.07 323 *e*P **P 00 32 55.6 +0.5**
comp=Z,15nm,0.6s
BJI Beijing 37.08 323 P **P 00 32 55.1 0.0**
BJI pmax pmax
comp=Z,13nm,1.1s
BJI Beijing 37.08 323 P **P 00 32 56.5 +1.4**
BJI PP **PnPn** **00 34 20.8 +0.7**
BJI S **S** **00 38 44.6 +4.1**
BJI pmax pmax
comp=Z,67nm,1.7s
BJI pmax pmax
comp=Z,200nm,4.2s
BJI LR LR
comp=Z,1μm,18.4s
BJI LR LR
comp=Z,1μm,19.6s
BJI LR LR
comp=Z,880nm,24.1s
AS01 Alice Springs 37.15 196 *e*P **P 00 32 55.9 0.0**
AS31 Alice Springs 37.16 196 *e*P **P 00 32 56.6 +0.6**
ASAR Alice Springs 37.16 196 P **P 00 32 56.4 +0.3**
comp=Z,4.2nm,0.6s,baz=19,slow=9.7,SNR=42
ASAR LR LR 00 48 27.6
comp=Z,1μm,21.2s,baz=14,slow=37
GYA Guiyang 37.98 297 *e*P **P 00 33 03.8 +0.6**
GYA PP **PnPn** **00 34 33.2 +1.8**
GYA PcP **PcP** **00 35 20.4 +1.6**
GYA S **S** **00 38 56.0 +1.1**
GYA ScP **ScP** **00 39 07.6 +1.6**
GYA SS **SnSn** **00 41 31.8 -5.5**
GYA ScS **ScS** **00 43 15.3 -0.2**
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,120nm,5.5s
GYA LR LR
comp=Z,530nm,16.8s
GYA LR LR
comp=Z,480nm,17.6s
GYA LR LR
comp=Z,510nm,18.0s
EIDS Eidsvold 38.04 170 *e*P **P 00 33 04.1 +0.7**
comp=Z,9.8nm,0.6s
KLR Kul'dur 38.23 347⇓*e*P **P 00 33 05.0 +0.2**
XAN Xi'an 38.72 310 P **P 00 33 08.6 -0.6**
XAN PP **PnPn** **00 34 41.0 +0.9**
XAN PcP **PcP** **00 35 21.6 +0.7**
XAN S **S** **00 39 04.5 -1.2**
XAN SS **SnSn** **00 41 44.8 -10**
XAN pmax pmax
comp=Z,10.0nm,1.0s
XAN pmax pmax
comp=Z,190nm,8.4s
XAN LR LR
comp=Z,630nm,18.6s
XAN LR LR
comp=Z,1μm,20.3s
XAN LR LR
comp=Z,2μm,19.4s
HHC Hu-ho-hao-te 40.35 321 *e*P **P 00 33 23.2 +0.4**
HHC PP **PnPn** **00 35 01.5 +2.0**
HHC S **S** **00 39 31.6 +1.4**
HHC pmax pmax
comp=Z,23nm,1.1s
HHC pmax pmax
comp=Z,290nm,5.6s
HHC LR LR
comp=Z,1μm,14.5s
HHC LR LR
comp=Z,1μm,14.5s
HHC LR LR
comp=Z,2μm,14.3s
KMI Kunming 41.16 294 P **P 00 33 29.9 +0.1**
KMI pP sP 00 33 36.5 -0.5
KMI sP pP 00 33 38.7 +3.8
KMI PP **PnPn** **00 35 07.8 -1.5**
KMI S **S** **00 39 38.6 -4.2**
KMI SS SS 00 42 34.5 -11
KMI pmax pmax
comp=Z,16nm,1.3s
KMI pmax pmax
comp=Z,240nm,8.6s
KMI LR LR
comp=Z,310nm,15.2s
KMI LR LR
comp=Z,640nm,17.3s
KMI LR LR
comp=Z,780nm,17.7s
KTGM Kuala Trenggan 41.17 264 ⇑P **P 00 33 29.4 -0.4**
MYKOM Kota Tinggi 41.37 259 *e*P **P 00 33 31.3 -0.1**
comp=Z,21nm,0.8s
CBJI Citeko 41.58 245 P **P 00 33 35.4 +2.4**
comp=Z,381nm,0.3s
CD2 Chengdu 41.66 303⇓*i*P **P 00 33 32.2 -1.4**
CD2 PP **PP** **00 35 08.5 -1.5**
CD2 S **S** **00 39 50.3 +0.6**
CD2 pmax pmax
comp=Z,60nm,0.8s
CD2 pmax pmax
comp=Z,270nm,7.1s
CD2 LR LR
comp=Z,1μm,15.6s
CD2 LR LR
comp=Z,1μm,19.2s
PBKT Sadao Pong 42.06 281 P **P 00 33 37.9 +0.9**
comp=Z,15nm,0.5s
PETK Petropavlovsk- 42.09 12 LR LR 00 49 56.2
comp=Z,733nm,20.6s,baz=194,slow=34
PET Petropavlovsk 42.21 13 *e*P **P 00 33 37.5 -0.2**
PET *e*S **S** **00 39 55.1 -2.0**
PET MLR MLR
comp=Z,700nm,19.0s
PET MLR MLR
comp=Z,1μm,15.0s
UTTA Uttaradit 42.47 283 P **P 00 33 41.6 +1.3**
comp=Z,3.3nm,1.0s
CGJI Cibinong 42.69 246 P **P 00 33 42.2 +0.1**
comp=Z,31nm,0.7s,comp=Z,7μm
CRAI Chiangrai 42.74 286 P **P 00 33 42.9 +0.4**
comp=Z,59nm,0.8s
SKLT Songkhla 43.26 267 P **P 00 33 48.6 +1.8**
comp=Z,49nm,1.1s,comp=Z,1μm
SUKH Sukhothai 43.35 282 P **P 00 33 49.6 +2.2**
comp=Z,3.3nm,1.1s,comp=Z,61nm
LZH Lanzhou 43.36 310 ⇑P **P 00 33 47.2 -0.3**
LZH PP **PP** **00 35 29.0 +0.7**
LZH S **S** **00 40 14.0 -0.9**
LZH SS **SS** **00 43 20.1 -8.7**
LZH pmax pmax
comp=Z,45nm,1.0s
LZH pmax pmax
comp=Z,250nm,6.0s
LZH LR LR
comp=Z,650nm,13.5s
LZH LR LR
comp=Z,930nm,14.0s
LZH LR LR
comp=Z,2μm,17.0s
IPM Ipoh 43.41 263 *e*P **P 00 33 48.4 +0.4**
comp=Z,15nm,0.8s
KULM Kulim 43.60 265 *e*P **P 00 33 50.3 +0.8**
comp=Z,39nm,1.1s
CMAI Chiengmai2 43.97 286 P **P 00 33 53.0 +0.3**
comp=Z,17nm,0.9s,comp=Z,3μm
CM01 Chiang Mai Arr 44.00 284 *e*P **P 00 33 52.4 -0.3**
STKA Stephens Creek 44.01 183 P **P 00 33 52.4 -0.1**
comp=Z,3.7nm,0.7s,baz=355,slow=7.2,SNR=6.4
STKA LR LR 00 53 39.9
comp=Z,1μm,18.8s,baz=359,slow=38
CM31 Chiang Mai Arr 44.02 284 *e*P **P 00 33 54.4 +1.5**
CMAR Chiang Mai Arr 44.02 284 P **P 00 33 52.4 -0.4**
comp=Z,8.0nm,0.7s,baz=88,slow=6.3,SNR=23
CMAR PcP **PcP** **00 35 39.0 +0.6**
comp=Z,4.7nm,0.5s,baz=90,slow=2.0,SNR=8.3
MNAI Manna 44.26 251 P P 00 34 04.3 +9.5
MNAI Manna 44.26 251 *e*P **P 00 33 54.1 -0.7**
comp=Z,161nm,0.9s
MNAI *e*sP **pP** **00 33 59.4 -0.7**
MASI Maura Aman, Be 44.47 253 P **P 00 33 57.3 +0.7**
comp=Z,150nm,1.0s,comp=Z,3μm
MSVF Nonsavu 44.78 131 *e*P **P 00 33 58.6 -0.4**
MSVF Nonsavu 44.78 131 *e*P **P 00 33 58.6 -0.4**
MSVF *e*sP **pP** **00 34 01.3 -2.8**

PPI Padang Panjang 45.33 257 P **P 00 34 03.4 +0.1**
comp=Z,24nm,0.9s
BBOO Buckleboo 45.55 190 *e*P **P 00 34 04.9 +0.1**
comp=Z,95nm,1.7s
MNSI Mandailing Nat 45.74 259 P **P 00 34 09.3 +2.7**
comp=Z,23nm,0.7s
PSI Prapat 45.84 262 *e*P **P 00 34 07.3 -0.3**
PSI pmax pmax
comp=Z,28nm,0.9s
PSI Prapat 45.84 262 *e*P **P 00 34 07.3 -0.3**
comp=Z,28nm,0.9s
KCSI Kotacane, Aceh 46.79 263 P **P 00 34 15.3 +0.4**
comp=Z,75nm,1.0s,comp=Z,6μm
ULN Ulaanbaatar 47.09 326⇑*e*P **P 00 34 16.6 -0.3**
ULN pmax pmax
comp=Z,8.0nm,1.7s
ULN MLR MLR
comp=Z,1μm,20.0s
ULN Ulaanbaatar 47.09 326 *e*P **P 00 34 17.1 +0.1**
comp=Z,5.7nm,1.0s
LHMI Lhok Sumawe 47.22 266 *e*P **P 00 34 19.4 +1.2**
comp=Z,107nm,0.7s
SONM Songino Array 47.43 326 P **P 00 34 19.5 0.0**
comp=Z,3.7nm,0.7s,baz=143,slow=8.0,SNR=22
SONM PcP **PcP** **00 35 50.7 +0.8**
comp=Z,3.1nm,0.7s,baz=146,slow=4.1,SNR=5.8
SONM LR LR 00 54 23.1
comp=Z,2μm,19.8s,baz=124,slow=36
SONA1 Songino Array 47.43 326 *e*P **P 00 34 19.1 -0.4**
GSI Gunungsitoli 47.53 260 P **P 00 34 19.8 -0.9**
comp=Z,49nm,1.0s
GSI Gunungsitoli 47.53 260 *e*P **P 00 34 19.2 -1.4**
GSI *e*sP **P** **00 34 19.8 -0.9**
GTA Gaotai 47.57 313 *e*P **P 00 34 20.7 -0.1**
GTA pP pP 00 34 25.0 -1.1
GTA PcP **PcP** **00 35 51.7 +1.1**
GTA S **S** **00 41 15.8 +0.2**
GTA SS **SS** **00 44 38.1 -5.6**
GTA pmax pmax
comp=Z,18nm,0.7s
GTA pmax pmax
comp=Z,220nm,5.5s
GTA LR LR
comp=Z,590nm,17.8s
GTA LR LR
comp=Z,980nm,18.5s
GTA LR LR
comp=Z,1μm,19.0s
MLSI Meulaboh, Aceh 47.95 265 P **P 00 34 25.2 +1.3**
comp=Z,50nm,0.7s
ZAK Zakamensk 50.56 327 *e*P **P 00 34 42.7 -0.8**
ZAK pmax pmax
comp=Z,5.0nm,1.2s
YAK Yakutsk 50.74 351 P **P 00 34 45.3 +0.8**
comp=Z,30nm,0.4s,baz=165,slow=0.6,SNR=4.2
YAK Yakutsk 50.74 351⇑*e*P **P 00 34 46.7 +2.2**
YAK pmax pmax
comp=Z,27nm,0.6s
YAK MLR MLR
comp=Z,838nm,16.6s
AFI Afiamalu 50.78 120 *e*P **P 00 34 43.6 -2.0**
AFI pmax pmax
comp=Z,129nm,1.7s
AFI Afiamalu 50.78 120 *e*P **P 00 34 43.6 -2.0**
comp=Z,129nm,1.7s
SEY Seymchan 50.87 5⇑*e*P **P 00 34 46.5 +1.0**
BOD Bodaibo 50.89 340 *e*P **P 00 34 43.7 -2.0**
BOD pmax pmax
comp=Z,4.0nm,1.8s
TLY Talaya 51.11 329 LR LR 00 55 22.2
comp=Z,250nm,20.2s,baz=106,slow=35
TLY Talaya 51.11 329*c i*P **P 00 34 47.2 -0.3**
TLY *e* 00 36 45.0
TLY *e*S **S** **00 42 05.0 +0.3**
TLY pmax pmax
comp=Z,5.0nm,0.6s
TLY MLR MLR
comp=Z,450nm,15.0s
LSA Lhasa 52.04 298 P **P 00 34 56.3 +0.9**
LSA pmax pmax
comp=Z,19nm,0.8s
LSA Lhasa 52.04 298 *e*P **P 00 34 56.0 +0.6**
LSA pmax pmax
comp=Z,16nm,0.8s
LSA Lhasa 52.04 298 *e*P **P 00 34 56.0 +0.6**
comp=Z,16nm,0.8s
MOY Mondy 52.47 327 *e*P **P 00 35 01.3 +3.5**
GUN Gumba 56.48 295 *e*P **P 00 35 27.1 -0.5**
comp=Z,87nm,0.8s
PKIN Phulchoki 56.88 295 *e*P **P 00 35 29.8 -0.6**
comp=Z,12nm,0.6s
KKN Kakani 57.00 295 *e*P **P 00 35 30.7 -0.5**
comp=Z,25nm,0.8s
DMN Daman 57.14 295 *e*P **P 00 35 31.9 -0.4**
comp=Z,42nm,0.8s
BILL Bilibino 57.51 10⇓*e*P **P 00 35 33.5 -0.3**
BILL *i* 00 35 47.2
BILL *e* 00 37 42.9
BILL pmax pmax
comp=Z,17nm,2.5s
BILL MLR MLR
comp=Z,462nm,18.0s
BILL Bilibino 57.51 10 *e*P **P 00 35 34.5 +0.7**
comp=Z,6.4nm,0.8s
GKN Gorkha 57.58 295 *e*P **P 00 35 34.5 -0.7**
comp=Z,51nm,0.9s
WMQ Urumqi 57.58 314 P **P 00 35 36.0 +1.2**
WMQ pP pP 00 35 39.9 -0.2
WMQ PP **PP** **00 37 45.9 +3.3**
WMQ S **S** **00 43 33.5 +1.2**
WMQ ScS **ScS** **00 45 23.2 -0.7**
WMQ SS **SS** **00 47 23.7 +1.4**
WMQ pmax pmax
comp=Z,13nm,0.6s
WMQ pmax pmax
comp=Z,84nm,4.2s
WMQ LR LR
comp=Z,180nm,15.2s
WMQ LR LR
comp=Z,180nm,22.8s
WMQ LR LR
comp=Z,210nm,20.2s
HPO Honuapo 58.12 75 *e*P **P 00 35 37.3 -1.6**
UWE Uwekahuna 58.35 75 *e*P **P 00 35 38.5 -2.1**
comp=Z,196nm,1.4s
KOLN Koldanda 58.48 295 *e*P **P 00 35 41.3 -0.3**
comp=Z,32nm,0.7s
XMAS Kiritimati 58.63 95 *e*P **P 00 35 41.0 -1.5**
comp=Z,90nm,1.0s
PYUN Piuthan 59.04 295 *e*P **P 00 35 45.0 -0.5**
comp=Z,69nm,0.8s
TIXI Tiksi 60.03 354⇑*e*P **P 00 35 50.3 -1.0**
TIXI pmax pmax
comp=Z,7.0nm,2.5s
TIXI MLR MLR
comp=Z,361nm,18.0s
MK01 Makanchi Array 61.98 317 *e*P **P 00 36 04.5 -0.5**
MK31 Makanchi Array 61.99 317 *e*P **P 00 36 05.0 -0.1**
MK31 Makanchi Array 61.99 317 *e*P **P 00 36 05.0 -0.1**
MKAR Makanchi Array 61.99 317 P **P 00 36 05.0 -0.1**
comp=Z,15nm,0.6s,baz=92,slow=8.7,SNR=150
MKAR Makanchi Array 61.99 317 *e*P **P 00 36 05.0 -0.1**
MAKZ Makanchi 62.20 317 *e*P **P 00 36 06.0 -0.5**
MAKZ pmax pmax
comp=Z,24nm,0.6s
MAKZ Makanchi 62.20 317 *e*P **P 00 36 06.0 -0.5**
comp=Z,24nm,0.6s
ZAA0 Zalesovo Array 62.30 325 *e*P **P 00 36 06.2 -0.8**
ZALV Zalesovo Beam 62.30 325 P **P 00 36 06.1 -0.9**
comp=Z,2.7nm,0.6s,baz=109,slow=6.7,SNR=13
HYB Hyderabad 63.44 283 *i* P **P 00 36 15.0 -0.3**
NVS Novosibirsk 63.46 326 *e*P **P 00 36 12.1 -2.5**
KURK Kurchatov 65.17 320 P **P 00 36 25.4 -0.5**
KURK pmax pmax
comp=Z,13nm,0.6s
KURK Kurchatov 65.17 320 *e*P **P 00 36 25.1 -0.8**
comp=Z,21nm,0.8s
KURBB Kurchatov Arra 65.20 320 P **P 00 36 25.4 -0.8**
comp=Z,13nm,0.6s,baz=106,slow=6.9,SNR=111
KDAK Kodiak Island 65.47 32 *i* P **P 00 36 30.7 +3.0**
KSH Kashi 65.53 308 P **P 00 36 31.4 +2.7**
KSH *e*pP sP 00 36 36.2 +0.1
KSH PcS 00 41 05.6
KSH S **S** **00 45 16.8 +3.3**
KSH ScS **SKSac** **00 46 23.5 -0.4**
KSH pmax pmax

comp=Z,8.0nm,0.7s
KSH pmax pmax
comp=Z,210nm,5.1s
KSH LR LR
comp=Z,89nm,6.8s
KSH LR LR
comp=Z,460nm,17.3s
KSH LR LR
comp=Z,610nm,20.2s
TKM2 Tokmak 2 66.10 312 *eP* **P 00 36 32.3 -0.1**
TKM2 pmax pmax
comp=Z,7.0nm,0.8s
TKM2 Tokmak 2 66.10 312 *eP* **P 00 36 32.3 -0.1**
comp=Z,6.7nm,0.8s
AAK Ala-Archa 66.88 311 P **P 00 36 37.0 -0.4**
comp=Z,4.6nm,0.9s,baz=118,slow=4.9,SNR=11
AAK Ala-Archa 66.88 311⇑*eP* **P 00 36 36.8 -0.6**
AAK pmax pmax
comp=Z,19nm,1.1s
AAK MLR MLR
comp=Z,2μm,20.0s
AAK Ala-Archa 66.88 311 *eP* **P 00 36 37.2 -0.1**
comp=Z,47nm,0.9s
NRIK Noril'sk 67.13 341 P **P 00 36 38.1 -0.1**
comp=Z,1.6nm,0.4s,baz=106,slow=7.3,SNR=3.3
NRIK LR LR 01 06 55.5
comp=Z,470nm,18.4s,baz=116,slow=37
EKS2 Erkin-Say 67.41 311 *eP* **P 00 36 41.2 +0.5**
EKS2 pmax pmax
comp=Z,6.0nm,1.0s
EKS2 Erkin-Say 67.41 311 *eP* **P 00 36 41.2 +0.5**
comp=Z,6.5nm,1.0s
POO Poona 67.79 285⇓*iP* **P 00 36 40.0 -3.4**
comp=Z,40nm,1.0s
KTH Kantishna Hill 67.94 26 *eP* **P 00 36 44.0 +0.5**
comp=Z,8.1nm,0.9s
BPAW Bear Paw Mtn. 68.08 25 *eP* **P 00 36 45.0 +0.6**
comp=Z,7.2nm,1.2s
TRF Thorofare Moun 68.18 26 *eP* **P 00 36 46.5 +1.3**
comp=Z,5.5nm,0.8s
MLY Manley 68.46 24 *eP* **P 00 36 47.8 +1.1**
comp=Z,7.8nm,1.1s
SML Sawmill 68.61 28 *eP* **P 00 36 48.6 +0.9**
SML pmax pmax
comp=Z,15nm,1.1s
SML Sawmill 68.61 28 *eP* **P 00 36 48.6 +0.9**
comp=Z,14nm,1.1s
SCM Sheep Creek Mo 69.08 28 *eP* **P 00 36 51.1 +0.4**
SCM pmax pmax
comp=Z,24nm,1.0s
SCM Sheep Creek Mo 69.08 28 *eP* **P 00 36 51.1 +0.4**
comp=Z,24nm,1.0s
COLD Coldfoot 69.35 22 *eP* **P 00 36 53.8 +1.6**
comp=Z,5.1nm,0.7s
WRH Wood River Hil 69.39 25 *eP* **P 00 36 52.7 +0.2**
comp=Z,8.8nm,1.0s
MDM Murphy Dome 69.46 25 *eP* **P 00 36 53.9 +1.0**
comp=Z,17nm,1.7s
KLU Klutina 69.66 29 *eP* **P 00 36 55.6 +1.3**
comp=Z,7.9nm,0.9s
KKAR Karatay Array 69.83 311 *eP* **P 00 36 55.3 -0.4**
KKAR Karatay Array 69.83 311 *eP* **P 00 36 55.2 -0.4**
ILAR Eielson Array 69.97 25 P **P 00 36 55.0 -1.0**
comp=Z,2.6nm,0.6s,baz=251,slow=5.9,SNR=22
ILAR LR LR 01 06 29.4
comp=Z,471nm,20.7s,baz=260,slow=35
ILB Eielson Array 69.97 25 *eP* **P 00 36 55.1 -1.0**
IL1 Eielson Array 69.97 25 *eP* **P 00 36 54.2 -1.8**
PAX Paxson 70.17 27 *eP* **P 00 36 58.3 +0.8**
PAX pmax pmax
comp=Z,7.0nm,1.1s
PAX Paxson 70.17 27 *eP* **P 00 36 58.3 +0.8**
comp=Z,7.1nm,1.1s
BMRM Bremner River 70.18 29 *eP* **P 00 36 58.5 +1.1**
comp=Z,9.5nm,1.0s
BVAR Borovoye Array 70.55 322 P **P 00 36 59.2 -0.6**
comp=Z,12nm,0.6s,baz=104,slow=8.1,SNR=61
BRVK Borovoye 70.61 322*c iP* **P 00 37 00.0 -0.3**
BRVK pmax pmax
comp=Z,33nm,1.2s
BRVK MLR MLR
comp=Z,2μm,19.0s
BRVK Borovoye 70.61 322 *eP* **P 00 36 59.9 -0.3**
comp=Z,18nm,0.7s
DOT Dot Lake 70.93 27 *eP* **P 00 37 02.8 +0.8**
comp=Z,26nm,1.1s
KBL Kabul 71.00 302 *eP* **P 00 37 03.1 -0.1**
KBL pmax pmax
comp=Z,21nm,1.0s
KBL Kabul 71.00 302 *eP* **P 00 37 03.1 -0.1**
comp=Z,21nm,1.0s
BALM Baldy 71.28 30 *eP* **P 00 37 05.3 +1.1**
BALM pmax pmax
comp=Z,8.0nm,1.1s
BALM Baldy 71.28 30 *eP* **P 00 37 05.3 +1.1**
comp=Z,8.2nm,1.1s
ZRNK Zerenda 71.38 322 *eP* **P 00 37 04.1 -0.8**
ZRNK pmax pmax
comp=Z,21nm,0.9s
ZRNK Zerenda 71.38 322 *eP* **P 00 37 04.1 -0.8**
comp=Z,21nm,0.9s
PPT Papeete 71.76 113 LR LR 01 02 07.3
comp=Z,332nm,19.5s,baz=320,slow=30
PPT2 Papeete2 71.77 113 *eS* **S 00 46 26.1 -1.9**
comp=Z,272nm,26.5s
PPT2 Papeete2 71.77 113 *eLR* LR 00 58 47.6
comp=Z,664nm,23.8s,baz=293
DAWY Dawson 73.04 27 *eP* **P 00 37 16.2 +1.6**
comp=Z,4.7nm,0.8s
INK Inuvik 75.77 22 P **P 00 37 30.1 -0.2**
comp=Z,4.5nm,0.8s,baz=270,slow=6.8,SNR=16
INK Inuvik 75.77 22 *eP* **P 00 37 30.0 -0.3**
SVE Sverdlovsk 76.30 326 *eP* **P 00 37 31.4 -2.2**
SVE pmax pmax
comp=Z,26nm,1.2s
SVE MLR MLR
comp=Z,1μm,19.0s
ABKAR Abkulak array 77.08 318 *eP* **P 00 37 37.2 -0.9**
DLBC Dease Lake 77.38 33 *eP* **P 00 37 41.8 +2.0**
ARU Arti 77.46 325 P **P 00 37 39.2 -1.0**
comp=Z,16nm,0.7s,baz=112,slow=1.7,SNR=35
ARU Arti 77.46 325*c iP* **P 00 37 39.0 -1.2**
ARU 00 40 30.2
ARU S **S 00 47 31.7 +1.4**
ARU SS **SS 00 52 23.0 -5.9**
ARU pmax pmax
comp=Z,19nm,0.7s
ARU MLR MLR
comp=Z,413nm,20.0s
ARU Arti 77.46 325 *eP* **P 00 37 38.8 -1.4**
comp=Z,19nm,0.7s
TAOE Nuku Hiva Isla 78.01 102 *eLR* LR 01 01 46.8
comp=Z,394nm,21.5s
AKTO Aktyubinsk 78.23 319 P **P 00 37 43.5 -1.1**
comp=Z,11nm,0.6s,baz=92,slow=7.9,SNR=39
GEYT Alibeck 79.52 307 P **P 00 37 51.8 -0.2**
comp=Z,19nm,0.8s,baz=48,slow=2.2,SNR=56
WSAR Wadi Sarin 81.27 292 P **P 00 38 01.4 -0.3**
comp=Z,6.6nm,0.6s,baz=154,slow=6.1,SNR=9.8
HUMO Hull Mountain 83.81 48 *eP* **P 00 38 16.5 +1.9**
M02C Callahan 84.12 49 P **P 00 38 18.2 +2.0**
baz=281
YBH Yreka Blue Hor 84.16 49 *eP* **P 00 38 19.3 +2.8**
YBH Yreka Blue Hor 84.16 49 *eP* **P 00 38 19.3 +2.8**
YKA Yellowknife Ar 84.26 27 P **P 00 38 16.3 0.0**
comp=Z,2.4nm,0.6s,baz=288,slow=5.4,SNR=23
M04C Macdoel 84.79 49 P **P 00 38 21.1 +1.4**
baz=282
J05D Fort Rock, OR 84.92 47 P **P 00 38 22.2 +1.9**
baz=282
B08A Colville Reser 85.12 42 *eP* **P 00 38 22.7 +1.6**
RES Resolute Bay 85.92 13 *eP* **P 00 38 25.1 +0.6**
RES Resolute Bay 85.92 13 *eP* **P 00 38 25.1 +0.6**
KLMR Klimovskoe 86.38 332 *eP* **P 00 38 25.1 -1.9**
KLMR pmax pmax
comp=Z,10.0nm,1.0s
RKT Rikitea 86.48 114 *eS* **S 00 48 56.6 -7.6**
comp=Z,395nm,27.5s
RKT Rikitea 86.48 114 *eLR* LR 01 05 38.6
comp=Z,521nm,25.0s,baz=295
NEW Newport 86.58 41 P **P 00 38 29.9 +1.5**
baz=285
NEW Newport 86.58 41 *eP* **P 00 38 30.2 +1.9**
NEW Newport 86.58 41 *eP* **P 00 38 30.2 +1.9**
F10A Beach Ranch, E 87.09 44 *eP* **P 00 38 33.0 +2.1**
BMO Blue Mountains 87.31 45 *eP* **P 00 38 32.9 +0.8**
BMO pmax pmax
comp=Z,2.0nm,0.6s
BMO Blue Mountains 87.31 45 *eP* **P 00 38 32.9 +0.8**
comp=Z,2.5nm,0.6s
ARCES ARCESS Array B 88.10 342 P **P 00 38 35.0 -0.2**
comp=Z,2.9nm,0.6s,baz=60,slow=7.2,SNR=14
ARCES LR LR 01 20 58.7
comp=Z,370nm,20.1s,baz=76,slow=38
NV01 Mina Array Sit 88.19 51 *eP* **P 00 38 38.0 +1.5**
NVAR Mina Array Bea 88.19 51 P **P 00 38 38.7 +2.1**
comp=Z,3.9nm,0.7s,baz=263,slow=5.5,SNR=11
BSMT Bassoo Peak 88.20 41 *eP* **P 00 38 38.8 +2.5**
VRH Novokhopyorsk 88.20 322 *eP* **P 00 38 33.7 -2.3**
VRH pmax pmax
comp=Z,30nm,0.8s
VRH MLR MLR
comp=Z,900nm,20.0s
NV11 Mina Array Sit 88.30 51 *eP* **P 00 38 39.7 +2.7**
MFID Camas Ranch 88.72 46 *eP* **P 00 38 41.2 +2.4**
GOF Gofitskoye 89.14 316⇑*eP* **P 00 38 42.1 +1.5**
ZEI Tsey 89.18 314 *eP* **P 00 38 39.3 -1.8**
ZEI pmax pmax
comp=Z,15nm,0.7s
NCK Nalchik 89.20 314⇑*iP* **P 00 38 40.1 -0.8**
NCK pmax pmax
comp=Z,8.0nm,0.8s
DAC Darwin (Calif) 89.27 53 *eP* **P 00 38 43.9 +2.3**
DAC Darwin (Calif) 89.27 53 *eP* **P 00 38 43.9 +2.3**
LPSR Galich'ya Gora 89.40 324 *eP* **P 00 38 40.5 -1.1**
LPSR pmax pmax
comp=Z,10.0nm,0.9s
LPSR MLR MLR
comp=Z,400nm,21.0s
LRMC Laurel Mtn Rad 89.40 54 P **P 00 38 44.4 +2.2**
baz=285
KBZ Khabaz 89.62 315 P **P 00 38 41.8 -1.0**
comp=Z,6.4nm,0.9s,baz=158,slow=2.9,SNR=12
HLID Hailey 89.67 45 P **P 00 38 45.2 +1.9**
baz=287
HLID Hailey 89.67 45 *eP* **P 00 38 45.8 +2.5**
KIV Kislovodsk 89.70 315*c iP* **P 00 38 41.4 -2.0**
KIV *e* 00 42 15.4
KIV *e*PPP PPP 00 44 17.0
KIV pmax pmax
comp=Z,5.0nm,0.8s
KIV MLR MLR
comp=Z,591nm,21.0s
KIV Kislovodsk 89.70 315 *eP* **P 00 38 42.4 -1.0**
VSR Storozhevoye 89.72 323 *eP* **P 00 38 40.7 -2.4**
VSR pmax pmax
comp=Z,20nm,0.7s
VSR MLR MLR
comp=Z,1μm,21.0s
FURC Furnace Creek, 89.79 53 P **P 00 38 45.7 +1.9**
baz=285
OBN Obninsk 89.83 327⇓*eP* **P 00 38 42.0 -1.5**
OBN *i* 00 38 47.9
OBN *eS* S 00 49 20.5 -14
OBN pmax pmax
comp=Z,50nm,1.7s
OBN Obninsk 89.83 327 *eP* **P 00 38 42.8 -0.7**
ELK Elko 89.87 48 *eP* **P 00 38 46.2 +1.8**
ELK Elko 89.87 48 *eP* **P 00 38 46.2 +1.8**
NEY Neytrino 89.88 314⇓*eP* **P 00 38 43.3 -1.0**
NEY pmax pmax
comp=Z,2.0nm,0.7s
NEY MLR MLR
comp=Z,355nm,19.0s
GSC Goldstone, Bar 90.14 54 P **P 00 38 47.7 +2.1**
baz=285
GSC Goldstone, Bar 90.14 54 *eP* **P 00 38 48.4 +2.8**
GSC Goldstone, Bar 90.14 54 *eP* **P 00 38 48.4 +2.8**
TPNV Topopah Spring 90.14 52 P **P 00 38 47.7 +2.0**
baz=286
TPNV Topopah Spring 90.14 52 *eP* **P 00 38 47.2 +1.6**
TPNV Topopah Spring 90.14 52 *eP* **P 00 38 47.2 +1.6**
R11A Troy Canyon, C 90.27 51 P **P 00 38 48.4 +2.1**
baz=286
R11A Troy Canyon, C 90.27 51 *eP* **P 00 38 47.2 +0.9**
comp=Z,2.9nm,1.2s
TUQ Turquoise Moun 90.80 54 P **P 00 38 51.1 +2.4**
baz=286
BOZ Bozeman (W) 90.93 43 P **P 00 38 50.5 +1.3**
baz=289
BOZ Bozeman (W) 90.93 43 *eP* **P 00 38 50.7 +1.6**
BOZ Bozeman (W) 90.93 43 *eP* **P 00 38 50.7 +1.6**
MONP2 Monument Peak 91.08 56 P **P 00 38 52.8 +2.6**
baz=285
SHPR Sheep Range 91.10 52 *eP* **P 00 38 53.0 +2.8**
GMRC Granite Mounta 91.18 54 P **P 00 38 52.8 +2.3**
baz=286
IKP In-Ko-Pah, Jac 91.39 56 P **P 00 38 53.6 +2.1**
baz=286
PSUT Pine Spring 91.52 50 *eP* **P 00 38 54.6 +2.5**
BC3 Big Chuckawall 91.65 55 P **P 00 38 55.3 +2.6**
baz=286
IRM Iron Mountain 91.76 55 P **P 00 38 55.6 +2.5**
baz=286
DUG Dugway, Tooele 91.80 48 P **P 00 38 55.4 +2.1**
baz=288
IMW Indian Meadow 91.96 44 *eP* **P 00 38 56.5 +2.4**
FIA1 FINESS Array S 92.05 335 *eP* **P 00 38 52.1 -1.6**
FINES FINESS Array B 92.05 335 P **P 00 38 52.0 -1.8**
comp=Z,4.7nm,0.6s,baz=70,slow=5.0,SNR=32
FINES LR LR 01 20 56.0
comp=Z,452nm,21.8s,baz=22,slow=36
FINES FINESS Array B 92.05 335 *iP* **P 00 38 51.7 -2.0**
FINES pmax pmax
comp=Z,5.0nm,0.6s
FLWY Flagg Ranch 92.06 44 *eP* **P 00 38 57.5 +3.0**
MOOW Moose Ponds 92.14 44 *eP* **P 00 38 57.2 +2.3**
GLA Glamis 92.32 56 P **P 00 38 57.7 +1.9**
baz=286
Y12C Blythe 92.37 55 P **P 00 38 58.1 +2.3**
baz=286
PDMCI Parker Dam,Lak 92.52 54 P **P 00 38 58.6 +2.1**
baz=287
RLMT Red Lodge 92.67 43 P **P 00 38 59.8 +2.5**
baz=290
RLMT Red Lodge 92.67 43 *eP* **P 00 38 58.6 +1.3**
comp=Z,3.1nm,0.5s
KNB Kanab 92.75 51 *eP* **P 00 39 00.9 +3.1**
KNB Kanab 92.75 51 *eP* **P 00 39 00.9 +3.1**
ANN Anapa 93.00 317 *eP* **P 00 38 56.9 -1.6**
ANN pmax pmax
comp=Z,25nm,1.0s
ANN MLR MLR
comp=Z,450nm,22.0s
PDAR Pinedale Array 93.29 45 P **P 00 39 01.4 +1.2**
comp=Z,0.3nm,0.4s,baz=240,slow=2.9,SNR=6.0
LAO LASA Array 94.08 41 P **P 00 39 05.5 +2.0**
baz=293
LAO LASA Array 94.08 41 *eP* **P 00 39 05.7 +2.1**
AKASG Malin Array Be 95.70 325 P **P 00 39 08.7 -2.0**
comp=Z,1.1nm,0.6s,baz=54,slow=5.0,SNR=4.7
AKASG Malin Array Be 95.70 325 *iP* **P 00 39 11.0 +0.3**
BR131 Keskin Array S 97.49 313 *eP* **P 00 39 18.6 -0.8**
BRTR Keskin Array B 97.49 313 P **P 00 39 17.8 -1.5**
comp=Z,1.6nm,0.7s,baz=66,slow=4.1,SNR=15
BRTR LR LR 01 26 52.5
comp=Z,194nm,21.6s,baz=50,slow=38
BRTR Keskin Array B 97.49 313 *iP* **P 00 39 18.5 -0.8**
BRTR pmax pmax
comp=Z,2.0nm,0.7s
ASF Jabal al Asfar 97.75 305 P **P 00 39 20.1 -0.5**
comp=Z,2.1nm,0.8s,baz=47,slow=8.5,SNR=3.7
NOA NORSAR Array B 98.02 339 P **P 00 39 20.0 -1.1**
comp=Z,0.5nm,0.7s,baz=58,slow=4.2,SNR=2.7
BR231 Keskin MP Arra 98.06 314 *eP* **P 00 39 18.0 -3.9**
ANMO Albuquerque 98.31 52 P Pdif 00 39 27.3 +4.1
comp=Z,0.6nm,0.6s,baz=64,slow=5.6,SNR=3.2
ULM Lac du Bonnet 98.63 34 P Pdif 00 39 25.6 +1.6
comp=Z,2.9nm,0.7s,baz=303,slow=5.6,SNR=2.4
TIRR Tirgusor 99.03 319⇑*iP* **Pdif 00 39 24.4 -1.5**
TIRR Tirgusor 99.03 319⇑**P** **Pdif 00 39 24.4 -1.5**
TESR Tescani 99.17 322⇑*iP* **Pdif 00 39 25.0 -1.5**
VRI Vrincioaia 99.43 321⇓*iP* **Pdif 00 39 27.7 0.0**
VRI Vrincioaia 99.43 321⇓**P** **Pdif 00 39 27.7 0.0**
BUR08 Bucovina Ar. S 99.48 323 *eP* **Pdif 00 39 27.5 -0.6**
BURAR Bucovina Array 99.48 323⇓*iP* **Pdif 00 39 26.6 -1.4**
BURAR Bucovina Array 99.48 323⇓**P** **Pdif 00 39 26.6 -1.4**
KWP Kalwaria Pacla 99.87 326⇑*iP* **Pdif 00 39 29.5 -0.1**
KWP Kalwaria Pacla 99.87 326⇑**P** **Pdif 00 39 29.5 -0.1**
STHS Stebnicka Huta 100.79 326 *eP* **Pdif 00 39 33.3 -0.4**
STHS pmax pmax
comp=Z,2.0nm,1.0s
STHS Stebnicka Huta 100.79 326 *eP* **Pdif 00 39 33.3 -0.4**
CRVS Cervenica-Dubn 100.95 326 *eP* **Pdif 00 39 34.1 -0.3**
CRVS Cervenica-Dubn 100.95 326 *eP* **Pdif 00 39 34.1 -0.3**
NIE Niedzica 101.30 326 *eP* **Pdif 00 39 36.1 +0.1**
NIE Niedzica 101.30 326 *eP* **Pdif 00 39 36.1 +0.1**
DRGR 101.37 323⇓*iP* **Pdif 00 39 36.2 -0.2**
DRGR 101.37 323⇓**P** **Pdif 00 39 36.2 -0.2**
OKC Ostrava-Krasne 102.20 328 AMS AMS 01 29 40.0
comp=Z,900nm,17.4s
MORC Moravsky Berou 102.55 328⇑*iP* **Pdif 00 39 51.2 +10**
MORC Moravsky Berou 102.55 328⇑**P** **Pdif 00 39 51.2 +10**
VYHS Vyhne 102.62 326 *eP* **Pdif 00 39 41.8 0.0**
VYHS pmax pmax
comp=Z,2.0nm,1.0s
VYHS Vyhne 102.62 326 *eP* **Pdif 00 39 41.8 0.0**
DPC Dobruska-Polom 102.83 329 AMS AMS 01 31 00.0
comp=Z,500nm,16.1s
UPC Upice 102.89 329 AMS AMS 01 30 30.0
comp=Z,700nm,17.3s
PVCC Panska Ves 103.60 330 AMS AMS 01 32 00.0
comp=Z,900nm,16.6s
CLL Collm 103.85 331 *e*(Pdif) **Pdif 00 39 51.0 +3.8**
CLL *e*PP **PP 00 44 01.0 -2.6**
CLL *e*SS SS 00 59 00.0 +11
CLL LmV 01 30 00.0
comp=Z,600nm,19.2s
CLL Collm 103.85 331 *eP* **Pdif 00 39 51.0 +3.8**
CLL MLR MLR
comp=Z,600nm,19.2s
GOPC GO Pecny, Ondr 103.88 329 AMS AMS 01 31 30.0
comp=Z,600nm,15.8s
TREC Trest 103.91 328 AMS AMS 01 28 30.0
comp=Z,600nm,17.9s
PRU Pruhonice 103.95 329 AMS AMS 01 31 30.0
comp=Z,700nm,16.1s
NKC Novy Kostel 104.82 330 AMS AMS 01 31 00.0
comp=Z,500nm,19.3s
KHC Kasperske Hory 104.98 329 AMS AMS 01 32 20.0
comp=Z,800nm,16.7s
GERES GERESS Array B 105.10 329 PKiKP **PKiKP 00 44 08.7 +1.2**
comp=Z,0.5nm,0.6s,baz=79,slow=2.9,SNR=4.8
BLY Banja Luka 105.72 324⇑*iP* **Pdif 00 39 55.8 +0.1**
SNAA Sanae 117.43 191 P **PKPdf 00 44 26.4 -3.6**
LSZ Lusaka 118.02 259 *e*PKIKP **PKPdf 00 44 33.6 +0.8**
LSZ Lusaka 118.02 259 *e*PKPdf **PKPdf 00 44 33.6 +0.8**
VNA2 Neumayer--Watz 118.87 190 P **PKPdf 00 44 33.4 +0.7**
baz=13,slow=0.7
VNA3 Neumayer Olymp 118.98 189 P **PKPdf 00 44 33.0 +0.1**
PGAV Gavieira, Arco 120.36 336 *e*LR LR 01 24 44.7
comp=Z,222nm,20.0s
PGAV *e*LQ LQ 01 25 04.7
ESDC Sonseca Array 120.42 332 PKP **PKPdf 00 44 37.4 +0.6**
comp=Z,0.4nm,0.6s,baz=0.8,slow=3.2,SNR=5.4
MVO Moncorvo 120.54 335 *e*PKPdf **PKPdf 00 44 38.0 +1.0**
MVO Moncorvo 120.54 335 *e*LR LR 01 24 17.9
comp=Z,214nm,20.0s
MVO *e*LQ LQ 01 29 48.6
POLO Lamas de Olo 120.67 336 *e*PKPdf **PKPdf 00 44 37.6 +0.3**
BOSA Boshof 121.16 244 PKP **PKPdf 00 44 39.5 +0.9**
comp=Z,2.0nm,0.9s,baz=278,slow=2.4,SNR=3.7
MTE Manteigas 121.39 335 *e*PKPdf **PKPdf 00 44 39.9 +1.2**
MTE Manteigas 121.39 335 *e*LR LR 01 24 46.8
comp=Z,900nm,20.0s
MTE *e*LQ LQ 01 29 25.0
PCAS Casmilo, Conde 122.07 335 *e*PKPdf **PKPdf 00 44 41.1 +1.2**
PMRV Marv??o 122.14 334 *e*LR LR 01 25 00.0
comp=Z,300nm,20.0s
PMRV *e*LQ LQ 01 28 56.2
PTOM Tomar 122.41 335 *e*PKPdf **PKPdf 00 44 41.5 +1.0**
PBAR Barrancos 123.03 333 *e*PKPdf **PKPdf 00 44 42.0 +0.2**
PNCL Nicolau / Gran 123.73 334 *e*PKPdf **PKPdf 00 44 42.9 -0.2**
PVAQ Vaqueiros 123.97 333 *e*LR LR 01 25 15.6
comp=Z,346nm,20.0s
TAM Tamanrasset 126.59 311 *e*PKIKP **PKPdf 00 44 50.6 +1.4**
TAM Tamanrasset 126.59 311 *e*PKPdf **PKPdf 00 44 50.6 +1.4**
TORD Torodi Ar. Bea 135.06 303 PKhKP PKPpre 00 44 49.6
comp=Z,0.4nm,0.7s,baz=47,slow=2.5,SNR=3.9
TORD PKP **PKPdf 00 45 03.8 -1.4**
comp=Z,2.5nm,0.7s,baz=357,slow=1.7,SNR=11
PLCA Paso Flores 138.38 139 PKP **PKPdf 00 45 13.8 +3.0**
comp=Z,2.6nm,0.9s,baz=259,slow=6.3,SNR=4.0
DBIC Dimbokro 143.95 300 PKP PKPbc 00 45 19.7 +0.5
comp=Z,20nm,0.7s,baz=42,slow=4.4,SNR=25
KIC Kosan Boka 144.01 299 *e*PKP1 PKPbc 00 45 19.5 +0.1
comp=Z,27nm,0.7s
TIC Toumodi 144.10 300 *e*PKP1 **PKPab 00 45 19.2 -0.1**
LIC Lamto 144.33 299 *e*PKP1 **PKPab 00 45 18.6 -1.5**
comp=Z,258nm,1.6s
LVC Limon Verde 146.83 113 *e*PKPab **PKPab 00 45 30.8 +1.1**
LPAZ La Paz 148.40 101 PKPbc **PKPbc 00 45 35.1 +2.0**
comp=Z,6.7nm,0.8s,baz=317,slow=1.4,SNR=18
CPUP Villa Florida 155.38 128 PKPab **PKPab 00 46 07.0 +2.6**
comp=Z,2.5nm,0.9s,baz=244,slow=7.2,SNR=5.0

MEX 13 00:25:49.3±0.7, 13°.94N×92°.40W, h20km±22km, MD3.6, Off coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THIG		**0.98**	**8**	*e*P	Pb	00 26 04.4	-3.1
THIG				*i* S	Sb	00 26 15.7	-4.3
PCIG		**1.93**	**336**	*e*P	Pn	00 26 18.3	-2.7
PCIG				*i* S	Sn	00 26 40.6	-4.1
TGIG		**2.91**	**346**	*e*P	Pn	00 26 33.0	-1.5
TGIG				*e*S	Sn	00 27 05.2	-3.9

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*NEIC **13** 00:33:43.3, 18°.84N×96°.43W, h27km, MD4.0(MEX), After MEX.*

MEX 13 00:33:43.2±0.4, 18°.82N×96°.42W, h31km±9km, MD4.0, Veracruz

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LVIG	**Laguna Verde**	**0.89**	**0**	*i* P	Pn	00 33 47.8	-12
LVIG				*e*S	Sn	00 33 58.9	-13
LVIG	**Laguna Verde**	**0.89**	**0**	*i* P	Pn	00 33 47.8	-12
LVIG				*e*S	Sn	00 33 58.9	-13
TPIG	**Tehuac#an**	**0.98**	**246**	*e*P	Pn	00 33 58.6	-2.3
TPIG				*e*S	Sn	00 34 10.9	-2.9
TPIG	**Tehuac#an**	**0.98**	**246**	*e*P	Pn	00 33 58.6	-2.3
TPIG				*e*S	Sn	00 34 10.9	-2.9
PPM	**Popocatepetl**	**2.10**	**277**	*e*P	Pn	00 34 15.4	-1.2
PPM				*e*S	Sn	00 34 39.0	-3.0
PPM	**Popocatepetl**	**2.10**	**277**	*e*P	Pn	00 34 15.4	-1.2
PPM				*e*S	Sn	00 34 39.0	-3.0
IIO	**Organos**	**2.30**	**290**	*e*P	Pn	00 34 17.4	-2.0
IIO				*i* S	Sn	00 34 44.8	-2.0
IIO	**Organos**	**2.30**	**290**	*e*P	Pn	00 34 17.4	-2.0
IIO				*i* S	Sn	00 34 44.8	-2.0
YAIG	**Yautepec**	**2.50**	**271**	*e*P	Pn	00 34 20.6	-1.3
YAIG				*i* S	Sn	00 34 48.8	-2.7
YAIG	**Yautepec**	**2.50**	**271**	*e*P	Pn	00 34 20.6	-1.3
YAIG				*i* S	Sn	00 34 48.8	-2.7
DEIG	**Demacu**	**2.87**	**301**	*i* P	Pn	00 34 25.9	-1.1
DEIG				*i* S	Sn	00 34 57.4	-3.2
DEIG	**Demacu**	**2.87**	**301**	*i* P	Pn	00 34 25.9	-1.1
DEIG				*i* S	Sn	00 34 57.4	-3.2

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*IDC **13** 00:36:03.8±1.8, 5°.40S×116°.55E, h0km, mb3.3/3, mb1 3.5/4, mb1mx3.4/29, mbtmp3.3/4, ML3.1/1, Error ellipse: s-maj=45.4km s-min=26.6km az=39.0*

*ISCJB **13** 00:36:07.6±0.7, 2°.34S±0°.06×121°.29E±0°.08, h10km, mb3.2/3, Error ellipse: s-maj=12.8km s-min=7.8km az=21.6*

*DJA **13** 00:36:08.0±0.4, 2°.S±4°×12°.1E±°, h10km, M3.5/8, MLv3.5/8*

ISC 13 00:36:09.0±1.1, 2°.35S±0°.06×121°.20E±0°.07, h10km, n10, σ2°.44/11, mb3.3/3, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TTSI	**Tana Toraja**	**1.54**	**243**	P	**Pn**	**00 36 31.9**	**-4.7**
PCI	**Palu**	**1.98**	**317**	P	**Pn**	**00 36 43.5**	**+0.9**
LUWI	**Luwuk**	**2.04**	**50**	P	**Pn**	**00 36 41.6**	**-1.9**
KDI	**Kendari**	**2.13**	**138**	P	**Pn**	**00 36 43.2**	**-1.5**
SPSI	**Sidrap Palu**	**2.14**	**222**	P	**Pn**	**00 36 44.5**	**-0.4**
MRSI	**Marisa**	**2.91**	**15**	P	**Pn**	**00 36 54.4**	**-1.0**
KAPI	**Kappang**	**3.01**	**209**	Pn	**Pn**	**00 36 56.7**	**-0.1**
	2.3nm,0.3s,baz=45,slow=13,SNR=11						
KAPI				Sn	**Sn**	**00 37 35.0**	**+2.0**
	1.5nm,0.3s,baz=239,slow=23,SNR=8.0						

WRA	**Warramunga Arr**	**21.69 145**	P	**P**	**00 41 03.9**	**+3.6**
	0.8nm,0.9s,baz=318,slow=10.0,SNR=3.0					
ASAR	**Alice Springs**	**24.50 151**	P	**P**	**00 41 27.8**	**-1.0**
	0.6nm,0.8s,baz=317,slow=7.3,SNR=5.0					
MKAR	**Makanchi Array**	**59.70 330**	P	**P**	**00 46 13.5**	**-0.4**
	0.2nm,0.5s,baz=125,slow=8.4,SNR=3.5					

JMA 13 00:48:41.9±0.2, 39°.34N×143°.84E, h8km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**1.58**	**279**	P	Pn	00 49 10.5	+0.3
MIYJ				S	Sn	00 49 30.3	-0.6
JTH	**Tanohata**	**1.64**	**292**	P	Pn	00 49 11.3	+0.3
JTH				*e*S	Sn	00 49 32.4	+0.1
OFUJ	**Ofunato**	**1.71**	**262**	P	Pn	00 49 12.3	+0.4
JOM	**Ohasama**	**1.98**	**275**	P	Pn	00 49 16.5	+0.8
JOM				*e*S	Sb	00 49 42.9	0.0
JANG	**Nango**	**2.07**	**301**	P	Pn	00 49 17.3	+0.4
JMK	**Ichinoseki**	**2.07**	**260**	P	Pn	00 49 17.1	+0.1
JRG	**Rokugo**	**2.49**	**272**	P	Pn	00 49 24.2	+1.5
JRG				*e*S	Sn	00 49 55.0	+1.8
JTM	**Tenmabayashi**	**2.57**	**305**	P	Pn	00 49 25.1	+1.3
JTM				*e*S	Sn	00 49 57.5	+2.2
JOU	**Okura**	**2.66**	**250**	P	Pn	00 49 26.4	+1.3
JYK	**Kaneyama**	**2.74**	**262**	P	Pn	00 49 27.5	+1.3
JNBK	**Urakawa-nobuka**	**3.05**	**345**	*e*S	Sn	00 50 08.5	+1.4

*JMA **13** 00:51:04.5±0.2, 39°.35N×143°.83E, h19km, M4.1*
*ISCJB **13** 00:51:05.9±1.5, 39°.37N±0°.05×143°.72E±0°.06, h16km±11km, mb3.7/10, Error ellipse: s-maj=9.4km s-min=5.2km az=137.6*
*IDC **13** 00:51:09.9±1.0, 39°.27N×143°.63E, h31km±4km, mb3.5/10, mb1 3.7/14, mb1mx3.6/37, mbtmp3.7/14, ML3.3/4, Error ellipse: s-maj=22.0km s-min=16.1km az=154.0*

ISC 13 00:51:09.0±0.8, 39°.45N±0°.05×143°.67E±0°.06, h23km±3km, n37, σ1§61/49, mb3.7/10, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**1.43**	**276**	P	**Pn**	**00 51 31.9**	**-1.7**
MIYJ				*e*S	**Sn**	**00 51 51.8**	**+0.1**
JTH	**Tanohata**	**1.48**	**290**	P	**Pn**	**00 51 32.6**	**-1.6**
OFUJ	**Ofunato**	**1.59**	**257**	P	**Pn**	**00 51 33.8**	**-2.0**
OFUJ				*e*S	**Sn**	**00 51 54.9**	**-0.7**
JOM	**Ohasama**	**1.84**	**272**	P	**Pn**	**00 51 38.0**	**-1.1**
JOM				*e*S	**Sn**	**00 52 02.8**	**+1.1**
JANG	**Nango**	**1.90**	**300**	P	**Pn**	**00 51 38.1**	**-1.9**
JANG				*e*S	**Sn**	**00 52 03.2**	**+0.1**
JMK	**Ichinoseki**	**1.96**	**256**	P	**Pn**	**00 51 39.3**	**-1.6**
JMK				*e*S	**Sn**	**00 52 03.3**	**-1.5**
JRG	**Rokugo**	**2.35**	**270**	P	**Pn**	**00 51 45.3**	**-0.9**
JTM	**Tenmabayashi**	**2.40**	**305**	P	**Pn**	**00 51 46.0**	**-0.9**
JAH	**Hinai**	**2.45**	**289**	P	**Pn**	**00 51 46.9**	**-0.6**
JOU	**Okura**	**2.58**	**246**	*e*S	**Sn**	**00 52 18.0**	**-2.0**
JYK	**Kaneyama**	**2.62**	**259**	P	**Pn**	**00 51 48.9**	**-1.1**
JOT	**Ohata**	**2.78**	**315**	P	**Pn**	**00 51 52.8**	**+0.7**
JNBK	**Urakawa-nobuka**	**2.91**	**347**	P	**Pn**	**00 51 54.4**	**+0.5**
JNBK				*e*S	**Sn**	**00 52 29.9**	**+1.7**
JCH	**Churui**	**3.17**	**356**	P	**Pn**	**00 51 57.1**	**-0.4**
JCH				*e*S	**Sn**	**00 52 34.5**	**-0.1**
JAR	**Ashorobuto**	**3.85**	**1**	P	**Pn**	**00 52 05.9**	**-0.9**
JAR				*e*S	**Sn**	**00 52 48.7**	**-2.6**
NEM2	**Nemuro 2**	**4.21**	**21**	P	**Pn**	**00 52 10.6**	**-1.2**
NEM2				*e*S	**Sn**	**00 52 56.8**	**-3.5**
JTKR	**Abashiri--Toko**	**4.52**	**2**	P	**Pn**	**00 52 15.4**	**-0.6**
JTKR				*e*S	**Sn**	**00 53 05.5**	**-2.4**
ASAJ	**Asahikawa**	**4.73**	**351**	Pn	**Pn**	**00 52 20.4**	**+1.5**
	1.6nm,0.3s,baz=213,slow=14,SNR=4.0						
ASAJ				Sn	**Sb**	**00 53 21.9**	**-5.9**
	1.7nm,0.3s,baz=263,slow=28,SNR=3.6						
MJAR	**Matsushiro Arr**	**5.19**	**238**	Pn	**Pn**	**00 52 25.2**	**-0.1**
	3.5nm,0.3s,baz=37,slow=12,SNR=28						
MAT	**Matsushiro**	**5.20**	**238**	P	**Pn**	**00 52 25.0**	**-0.3**
USRK	**Ussuriysk Ar.**	**9.92**	**302**	Pn	**Pn**	**00 53 32.3**	**+2.1**
	0.3nm,0.3s,baz=232,slow=42,SNR=4.1						
KLR	**Kul'dur**	**12.96**	**323**	Pn	**Pn**	**00 54 13.3**	**+1.7**
	0.1nm,0.3s,baz=140,slow=16,SNR=3.4						
SEY	**Seymchan**	**24.10**	**10**	P	**P**	**00 56 23.6**	**+1.0**
	0.9nm,0.4s,baz=193,slow=11,SNR=3.5						
SONM	**Songjino Array**	**28.02**	**300**	P	**P**	**00 56 58.9**	**+0.5**
	0.8nm,0.7s,baz=80,slow=9.1,SNR=3.6						
SONM				pP	**sP**	**00 57 08.6**	**+0.7**
	2.0nm,0.7s,baz=78,slow=8.9,SNR=6.5						
H11N2	**WAKE ISLAND Hy**	**28.04**	**128**	T	T	01 26 10.8	
	baz=320,slow=74,SNR=9.4						
H11N1	**WAKE ISLAND Hy**	**28.05**	**128**	T	T	01 26 17.7	
	baz=320,slow=74,SNR=7.1						
H11N3	**WAKE ISLAND Hy**	**28.06**	**128**	T	T	01 26 12.4	
	baz=320,slow=74,SNR=8.2						
H11S1	**WAKE ISLAND Hy**	**28.86**	**130**	T	T	01 27 24.5	
	SNR=3.8						
ZALV	**Zalesovo Beam**	**41.65**	**310**	P	**P**	**00 58 55.6**	**+0.3**
	1.8nm,0.5s,baz=84,slow=8.3,SNR=9.2						
MKAR	**Makanchi Array**	**44.38**	**300**	P	**P**	**00 59 17.4**	**-0.2**
	1.8nm,0.9s,baz=82,slow=8.9,SNR=12						
MKAR				pP	**sP**	**00 59 27.2**	**-0.1**
	2.6nm,0.9s,baz=89,slow=9.8,SNR=9.2						
ILAR	**Eielson Array**	**46.51**	**34**	P	**P**	**00 59 35.5**	**+1.3**
	0.2nm,0.6s,baz=263,slow=7.2,SNR=3.8						
ILAR				pP	**sP**	**00 59 44.4**	**+0.4**
	0.5nm,0.6s,baz=258,slow=6.4,SNR=5.1						
INK	**Inuvik**	**51.43**	**28**	P	**P**	**01 00 13.3**	**+1.5**
	0.5nm,0.4s,baz=270,slow=3.2,SNR=4.8						
INK				pP	**sP**	**01 00 22.3**	**+0.7**
	1.2nm,0.5s,baz=310,slow=7.0,SNR=4.6						
WRA	**Warramunga Arr**	**59.72**	**190**	P	**P**	**01 01 09.8**	**-2.1**
	0.9nm,1.0s,baz=9.0,slow=7.1,SNR=4.5						
YKA	**Yellowknife Ar**	**60.83**	**31**	P	**P**	**01 01 20.4**	**+1.4**
	0.2nm,0.5s,baz=300,slow=6.1,SNR=3.6						
YKA				pP	**sP**	**01 01 29.3**	**+0.4**
	0.3nm,0.6s,baz=300,slow=6.2,SNR=4.5						
KBZ	**Khabaz**	**70.67**	**311**	P	**P**	**01 02 23.6**	**+0.9**
	2.1nm,0.9s,baz=87,slow=3.6,SNR=5.0						
NOA	**NORSAR Array B**	**72.64**	**338**	P	**P**	**01 02 33.9**	**-0.5**
	0.4nm,0.6s,baz=39,slow=5.8,SNR=3.2						
NOA				pP	**sP**	**01 02 44.0**	**-0.3**
	0.8nm,0.8s,baz=38,slow=6.1,SNR=3.1						
PDAR	**Pinedale Array**	**74.72**	**47**	pP	pP	01 02 57.6	+3.1
	0.3nm,0.6s,baz=253,slow=1.5,SNR=2.0						

*BJI **13** 01:04:32.0, 12°.17N×144°.45E, h10km, mb5.2/82, mB5.4/68, Ms5.4/86, Ms7 5.2/80*
*ISCJB **13** 01:04:35.7±0.7, 12°.46N±0°.02×143°.98E±0°.02, h7km±4km, mb5.4/289, MS5.2/213, Error ellipse: s-maj=4.0km s-min=2.7km az=169.1*
*NEIC **13** 01:04:36.8±2.1, 12°.43N×143°.99E, h6km±13km, mb5.6/198, MS5.2/146, MW5.5, Error ellipse: s-maj=3.6km s-min=3.3km az=105.0*
NEIC Felt [II] at Santa Rita. Also felt at Apra Harbor, Barrigada, Hagatna Heights, Mangilao, Talofofo and Yigo.
*GCMT **13** 01:04:36.8±0.1, 12°.23N×144°.08E, h19km, MW5.5/115, Moment Tensor Solution. s98,c185; s115,c256; Duration: 1§3 Moment tensor: Scale 10^{17}Nm; M_{rr}1.46±.03; $M_{\theta\theta}$-0.82±.02; $M_{\phi\phi}$-0.64±.02; $M_{r\theta}$0.53±.05; $M_{\theta\phi}$-1.17±.02; $M_{\phi r}$0.87±.05; Best double couple: $M_0$1.97400×10^{17} NP1:ϕ_s37.00000°, δ61.00000°, λ78.00000°. NP2:ϕ_s240.00000°, δ31.00000°, λ110.00000°. Principal axes: T 1.7770, Plg71.0000°, Azm280.0000°; N 0.3930, Plg10.0000°, Azm43.0000°; P -2.1700, Plg15.0000°, Azm136.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*
*IDC **13** 01:04:37.4±1.5, 12°.45N×143°.97E, h10km±8km, mb5.0/37, mb1 5.1/37, mb1mx5.0/40, mbtmp5.0/37, ML2.9/1, MS5.1/21, Ms1 5.1/21, ms1mx5.0/25 Error ellipse: s-maj=13.7km s-min=9.3km az=86.0*
*MOS **13** 01:04:38.6±0.9, 12°.38N×144°.05E, h33km, mb5.7/88, MS5.2/48, Error ellipse: s-maj=11.8km s-min=5.9km az=104.1*
*NEIC **13** 01:04:39.0±0.0, 12°.45N×144°.60E, h18km, Moment Tensor Solution. s12 Moment tensor: Scale 10^{17}Nm; M_{rr}1.30; $M_{\theta\theta}$-0.70; $M_{\phi\phi}$-0.60; $M_{r\theta}$1.30; $M_{\theta\phi}$-1.30; $M_{\phi r}$-0.50; Best double couple: $M_0$2.00000×10^{17} NP1:ϕ_s79.00000°, δ65.00000°, λ129.00000°. NP2:ϕ_s196.00000°, δ45.00000°, λ36.00000°. Principal axes: T 2.3000, Plg52.0000°, Azm36.0000°; N -0.3000, Plg34.0000°, Azm240.0000°; P -2.0000, Plg11.0000°, Azm142.0000°;*
*DJA **13** 01:04:44.0±0.5, 13°.N±4°.×14°.4E±°, h67km±8km, M5.5/27, mb5.3/27, mB6.0/18, MLv5.6/1, Mw(mB)5.6/18, Mwp7.0/1*

ISC 13 01:04:39.2±0.5, 12°.43N±0°.03×144°.14E±0°.03, h23km±3km, n993, σ1§64/1007, mb5.5/301, MS5.2/213, 62C-25D, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**1.35**	**32**	Pn	**Pb**	**01 05 04.4**	**+0.6**
	849nm,0.3s,baz=202,slow=6.9,SNR=359						
GUMO				Sn	**Sb**	**01 05 24.4**	**+3.6**
	3μm,0.3s,baz=152,slow=23,SNR=27						
GUMO	**Guam**	**1.35**	**32**	*e*Pn	**Pb**	**01 05 04.5**	**+0.6**
GUMO				*e*Sn	**Sb**	**01 05 20.5**	**-0.3**
CBIJ	**Chichi jima**	**14.70**	**353**	*e*Pn	**Pn**	**01 08 06.6**	**+0.7**
MANU	**Manus Island**	**14.73**	**167**	*e*Pn	**Pn**	**01 08 05.9**	**-0.5**
PATS	**Pohnpei**	**15.03**	**110**	*e*Pn	**Pn**	**01 08 05.9**	**-4.6**
	471nm,1.3s						
PATS				*e*Sn	**Sn**	**01 10 46.4**	**-10**
JAY	**Jayapura**	**15.24**	**193**	Pn	**Pn**	**01 08 11.7**	**-1.5**
	0.1nm,0.3s,baz=278,slow=23,SNR=4.6						
JAY				LR	LR	01 13 51.5	
	comp=Z,287nm,18.8s,baz=359,slow=36						
JAY	**Jayapura**	**15.24**	**193**	P	**Pn**	**01 08 15.3**	**+2.2**
	61nm,1.6s,1μm						
GENI	**Genyem**	**15.44**	**195**	P	**P**	**01 08 19.0**	**-1.1**
	333nm,2.0s,6μm						
RABL	**Rabaul**	**18.34**	**154**	*e*P	**Pn**	**01 08 53.7**	**+1.4**
SWI	**Sorong**	**18.38**	**225**	P	**Pn**	**01 08 54.6**	**+1.8**
	76nm,2.5s,3μm						
SWI	**Sorong**	**18.38**	**225**	P	**Pn**	**01 08 54.6**	**+1.8**
SWI				pmax	pmax		
	comp=Z,55nm,1.2s						
MATI	**Mati**	**18.45**	**254**	*e*P	**P**	**01 08 52.0**	**-1.5**
PLP	**Palo**	**18.80**	**268**	⇓*e*P	**P**	**01 08 57.1**	**-0.3**
DAV	**Davao City (W)**	**19.05**	**255**	P	**Pn**	**01 09 00.9**	**0.0**
	comp=Z,56nm,0.3s,baz=45,slow=3.8,SNR=15						
DAV				LR	LR	01 16 47.6	
	comp=Z,4μm,18.2s,baz=73,slow=39						
DAV	**Davao City (W)**	**19.05**	**255**	P	**Pn**	**01 09 02.0**	**+1.1**
	SNR=18						
DAV	**Davao City (W)**	**19.05**	**255**	P	**Pn**	**01 09 02.0**	**+1.1**
	SNR=18						
DAV	**Davao City (W)**	**19.05**	**255**	*e*P	**P**	**01 09 00.4**	**+0.4**
	comp=Z,2μm,1.7s						
OCLP	**Ormoc**	**19.17**	**268**	*e*P	**P**	**01 09 01.5**	**+0.1**
FAKI	**Fak Fak**	**19.29**	**219**	P	**Pn**	**01 09 07.7**	**+3.9**
	comp=Z,102nm,1.8s,comp=Z,3μm						
FAKI	**Fak Fak**	**19.29**	**219**	*e*P	**P**	**01 09 02.9**	**+0.1**
	comp=Z,90nm,1.0s						
BUKP	**Musuan**	**19.31**	**258**	*e*P	**P**	**01 09 03.0**	**0.0**
CTBH	**Cotabato--PC H**	**20.27**	**257**	⇓*i*P	**P**	**01 09 12.9**	**-0.4**
JOW	**Kunigami**	**20.67**	**316**	*e*P	**P**	**01 09 16.4**	**-1.2**
	comp=Z,147nm,1.1s						
JOW				LR	LR		
	comp=Z,6μm,20.0s						
PAGZ	**Pagadian**	**20.93**	**259**	*e*P	**P**	**01 09 20.1**	**-0.5**
RCP	**Roxas**	**20.95**	**270**	⇓*e*P	**P**	**01 09 20.4**	**-0.4**
JHJ2	**Mitsune**	**20.96**	**350**	*e*P	**P**	**01 09 20.9**	**+0.2**
	comp=Z,678nm,1.3s						
JHJ2				LR	LR		
	comp=Z,10μm,21.0s						
JHJ	**Hachijo jima 2**	**20.97**	**350**	LR	LR	01 16 09.4	
	comp=Z,7μm,21.1s,baz=141,slow=33						
LBMI	**Labuha**	**21.01**	**233**	P	**P**	**01 09 23.3**	**+1.9**
	comp=Z,6μmcomp=Z,202nm,2.2s						
GUIM	**Jordan**	**21.19**	**267**	*e*P	**P**	**01 09 19.1**	**-4.3**
OTRP	**Odiongan**	**21.60**	**272**	*e*P	**P**	**01 09 26.3**	**-1.5**
IPIL	**Ipil**	**21.72**	**260**	*e*P	**P**	**01 09 27.3**	**-1.8**
BOAC	**Boac**	**21.75**	**275**	*e*P	**P**	**01 09 27.4**	**-2.0**
MSAI	**Masohi**	**21.78**	**225**	P	P	01 09 40.9	+11
PMG	**Port Moresby**	**21.90**	**172**	P	**P**	**01 09 32.7**	**+1.8**
	comp=Z,38nm,1.0s,baz=338,slow=11,SNR=3.4						
PMG				LR	LR	01 17 41.3	
	comp=Z,5μm,18.1s,baz=348,slow=36						
PMG	**Port Moresby**	**21.90**	**172**	⇓*e*P	**P**	**01 09 31.7**	**+0.8**
PMG				pmax	pmax		
	comp=Z,765nm,1.7s						
PMG				MLR	MLR		
	comp=Z,19μm,18.0s						
PMG	**Port Moresby**	**21.90**	**172**	*e*P	**P**	**01 09 32.7**	**+1.8**
	comp=Z,170nm,1.3s						
CAUP	**Cauayan**	**22.04**	**284**	*e*P	**P**	**01 09 32.9**	**+0.4**
BALP	**Baler**	**22.13**	**281**	*e*P	**P**	**01 09 32.0**	**-1.4**
SJMP	**San Jose**	**22.48**	**273**	*e*P	**P**	**01 09 30.1**	**-7.1**
H11S3	**WAKE ISLAND Hy**	**22.54**	**72**	T	T	01 33 04.7	
	baz=258,slow=75,SNR=48						
H11S1	**WAKE ISLAND Hy**	**22.55**	**72**	T	T	01 33 08.8	
	baz=258,slow=75,SNR=26						
H11S2	**WAKE ISLAND Hy**	**22.56**	**72**	T	T	01 33 07.1	
	baz=258,slow=75,SNR=40						
CUYO	**Cuyo Island**	**22.70**	**268**	*e*P	**P**	**01 09 37.0**	**-2.6**
H11N1	**WAKE ISLAND Hy**	**23.01**	**69**	T	T	01 33 41.2	
	baz=255,slow=75,SNR=121						
H11N2	**WAKE ISLAND Hy**	**23.02**	**69**	T	T	01 33 41.4	
	baz=255,slow=75,SNR=119						
H11N3	**WAKE ISLAND Hy**	**23.03**	**69**	T	T	01 33 41.7	
	baz=255,slow=75,SNR=116						
ABRA	**Dolores**	**23.20**	**286**	*e*P	P	01 09 32.1	-13
YOJ	**Yonaguni jima**	**23.30**	**304**	*e*P	**P**	**01 09 45.4**	**-0.3**
YOJ				pmax	pmax		
	comp=Z,150nm,1.1s						
YOJ	**Yonaguni jima**	**23.30**	**304**	*e*P	**P**	**01 09 45.4**	**-0.3**
	comp=Z,151nm,1.1s						
YOJ				LR	LR		
	comp=Z,8μm,20.0s						
LUBP	**Lubang**	**23.31**	**276**	*e*P	**P**	**01 09 44.2**	**-1.6**
KWAJ	**Kwajalein Atol**	**23.35**	**97**	*e*P	**P**	**01 09 48.8**	**+2.6**
KWAJ				pmax	pmax		
	comp=Z,730nm,1.6s						
KWAJ	**Kwajalein Atol**	**23.35**	**97**	PFAKE		01 10 00.0	+14
KWAJ				LR	LR		
	comp=Z,2μm,19.0s						
BUSP	**Coron**	**23.40**	**272**	*e*P	**P**	**01 09 40.5**	**-6.2**
INU	**Inuyama**	**23.71**	**345**	*e*P	**P**	**01 09 49.7**	**+0.2**
INU				*e*pP	**pP**	**01 09 52.1**	**-4.2**
INU				LR	LR		
	comp=Z,5μm,20.0s						
JNU	**Nakatsue**	**23.90**	**332**	P	**P**	**01 09 51.1**	**-0.3**
	comp=Z,126nm,1.1s,baz=132,slow=7.9,SNR=17						
JNU				LR	LR	01 17 53.4	
	comp=Z,2μm,19.5s,baz=168,slow=33						
JNU	**Nakatsue**	**23.90**	**332**	*e*P	**P**	**01 09 52.3**	**+0.8**
	comp=Z,222nm,1.1s						
SAUI	**Saumlaki**	**23.96**	**213**	*e*P	**P**	**01 09 52.2**	**+0.1**
	comp=Z,563nm,1.0s						
ENPP	**El Nido**	**24.22**	**270**	*e*P	**P**	**01 09 51.6**	**-2.9**
TWG	**Pinlang**	**24.26**	**298**	*e*P	**P**	**01 09 52.7**	**-2.1**
	comp=Z,762nm,1.9s						
YULB	**Yu-li**	**24.28**	**300**	*e*P	**P**	**01 09 54.0**	**-1.0**
	comp=Z,140nm,1.5s						
NACB	**Ninganchiao**	**24.34**	**302**	*e*P	**P**	**01 09 52.1**	**-3.5**
	comp=Z,96nm,1.3s						
MJAR	**Matsushiro Arr**	**24.59**	**348**	P	**P**	**01 09 56.8**	**-0.9**
	comp=Z,69nm,1.1s,baz=172,slow=9.7,SNR=26						
MJAR				ScP	**ScP**	**01 17 13.6**	**+0.7**
	comp=Z,9.1nm,1.0s,baz=184,slow=2.5,SNR=13						
MJAR				LR	LR	01 19 02.0	
	comp=Z,8μm,18.0s,baz=190,slow=35						
MAJO	**Matsushiro**	**24.59**	**348**	⇓*e*P	**P**	**01 09 57.1**	**-0.6**
MAJO				pmax	pmax		
	comp=Z,352nm,1.2s						
MAJO				MLR	MLR		
	comp=Z,47μm,17.0s						
MAJO	**Matsushiro**	**24.59**	**348**	*e*P	**P**	**01 09 57.4**	**-0.4**
	comp=Z,98nm,1.0s						
MAJO				*e*ScP	**ScP**	**01 17 14.0**	**+1.1**
MAJO				LR	LR		
	comp=Z,8μm,18.0s						
MAT	**Matsushiro**	**24.59**	**348**	P	**P**	**01 09 57.0**	**-0.7**
MAT				S	**S**	**01 14 25.6**	**+8.0**
MJB9	**Matsu-Tunnel**	**24.60**	**348**	*e*P	**P**	**01 09 57.4**	**-0.4**
	comp=Z,25nm,1.0s						
MJB9				*e*ScP	**ScP**	**01 17 14.1**	**+1.1**
SSLB	**Suanglung**	**24.72**	**300**	*e*P	**P**	**01 09 58.6**	**-0.4**
	comp=Z,148nm,1.2s						
YHNB	**Yeheng**	**24.73**	**303**	*e*P	**P**	**01 09 58.1**	**-1.0**
	comp=Z,72nm,1.0s						
YHNB				LR	LR		
	comp=Z,10μm,20.0s						
TATO	**Taipei**	**24.77**	**303**	PFAKE		01 10 10.0	+11
TATO				LR	LR		
	comp=Z,10μm,20.0s						
TPUB	**Ta-pu**	**24.81**	**299**	*e*P	**P**	**01 09 58.6**	**-1.2**
	comp=Z,88nm,1.1s						
MRSI	**Marisa**	**25.02**	**243**	P	**P**	**01 10 02.3**	**+0.5**
	comp=Z,327nm,1.3s,comp=Z,6μm						
LUWI	**Luwuk**	**25.08**	**239**	P	**P**	**01 10 01.1**	**-1.3**
LUWI	**Luwuk**	**25.08**	**239**	*e*P	**P**	**01 10 00.7**	**-1.7**
	comp=Z,666nm,1.2s						
BATP	**Bataraza**	**26.13**	**265**	*e*P	**P**	**01 10 11.2**	**-0.7**
COEN	**Coen**	**26.24**	**182**	*e*P	**P**	**01 10 12.9**	**+0.1**
	comp=Z,131nm,1.3s						
MYLDM	**Lahad Datu**	**26.32**	**256**	*e*P	**P**	**01 10 14.7**	**+1.1**
	comp=Z,548nm,1.4s						
MYLDM				*e*ScP	**ScP**	**01 17 21.5**	**+3.2**
HNR	**Honiara**	**26.80**	**143**	P	**P**	**01 10 18.4**	**+0.5**
	comp=Z,23nm,0.3s,baz=171,slow=10.0,SNR=3.4						
HNR	**Honiara**	**26.80**	**143**	P	**P**	**01 10 18.4**	**+0.5**
HNR				MLR	MLR		
	comp=Z,3μm,19.0s						
HNR	**Honiara**	**26.80**	**143**	P	**P**	**01 10 18.4**	**+0.5**
HNR				LR	LR		
	comp=Z,3μm,19.0s						
QZH	**Quanzhou**	**27.15**	**301**	⇑*i*P	**P**	**01 10 15.8**	**-5.2**
QZH				PP	**PnPn**	**01 10 59.7**	**-4.8**
QZH				S	**S**	**01 14 55.0**	**-3.4**
QZH				pmax	pmax		
	comp=Z,1μm,10.4s						
QZH				LR	LR		
	comp=N,4μm,14.8s						
QZH				LR	LR		
	comp=E,9μm,22.5s						
QZH				LR	LR		
	comp=Z,8μm,18.9s						
TSM	**Tawau**	**27.19**	**255**	⇑P	**P**	**01 10 22.6**	**+1.1**
KDM	**Kudat**	**27.46**	**261**	⇑P	**P**	**01 10 25.3**	**+1.4**
SSE	**Sheshan**	**28.17**	**315**	P	**P**	**01 10 30.6**	**+0.6**
SSE				S	**S**	**01 15 16.2**	**+1.9**
SSE				pmax	pmax		
	comp=Z,44nm,0.7s						
SSE				pmax	pmax		
	comp=Z,280nm,7.3s						
SSE				LR	LR		
	comp=Z,690nm,16.9s						
SSE				LR	LR		
	comp=Z,2μm,16.8s						
SSE				LR	LR		
	comp=Z,2μm,18.8s						
TJN	**Taejon**	**28.22**	**330**	*c i*P	**P**	**01 10 29.9**	**-0.5**
MTN	**Manton Dam**	**28.23**	**208**	*e*P	**P**	**01 10 30.2**	**-0.5**
	comp=Z,36nm,0.9s						
KKM	**Kota Kinabalu**	**28.27**	**260**	⇓P	**P**	**01 10 31.3**	**+0.1**
KKM	**Kota Kinabalu**	**28.27**	**260**	*e*P	**P**	**01 10 28.9**	**-2.3**
	comp=Z,167nm,2.0s						
KKM				LR	LR		
	comp=Z,3μm,22.0s						
TTSI	**Tana Toraja**	**28.64**	**239**	P	P	01 10 40.8	+6.4
KSRS	**Korea Array**	**28.84**	**333**	P	**P**	**01 10 35.8**	**-0.1**
	comp=Z,18nm,0.9s,baz=143,slow=9.7,SNR=21						
KSRS				PcP	**PcP**	**01 13 46.9**	**+1.6**
	comp=Z,3.2nm,0.8s,baz=160,slow=2.4,SNR=5.6						
KSRS				ScP	**ScP**	**01 17 27.1**	**+1.7**
	comp=Z,18nm,1.3s,baz=160,slow=3.0,SNR=13						
KSRS				LR	LR	01 21 44.4	
	comp=Z,2μm,18.0s,baz=148,slow=36						
KS15	**Wonju Array Si**	**28.84**	**332**	*e*P	**P**	**01 10 35.0**	**-1.0**
KSAR	**Wonju Array Be**	**28.84**	**332**	P	**P**	**01 10 35.8**	**-0.2**
KSAR						01 13 46.9	
KSAR	**Wonju Array Be**	**28.84**	**332**	P	**P**	**01 10 35.8**	**-0.2**
KSAR				PcP	**PcP**	**01 13 46.9**	**+1.6**
KSAR				ScP	**ScP**	**01 17 27.1**	**+1.7**
KS01	**Wonju Array Si**	**28.87**	**333**	*e*P	**P**	**01 10 35.3**	**-0.8**
KS01				*e*PcP	**PcP**	**01 13 46.3**	**+0.9**
KS01				*e*ScP	**ScP**	**01 17 26.0**	**+0.4**
INCN	**Inchon**	**29.46**	**331**	PFAKE		01 10 50.0	+8.5
INCN				LR	LR		
	comp=Z,4μm,20.0s						
ERM	**Erimo**	**29.48**	**359**	PFAKE		01 10 50.0	+8.4
ERM				LR	LR		
	comp=Z,3μm,20.0s						
SOEI	**Soe**	**29.59**	**223**	*e*P	**P**	**01 10 42.5**	**-0.5**
	comp=Z,75nm,1.0s						
KAPI	**Kappang**	**29.80**	**236**	P	**P**	**01 10 42.9**	**-1.8**
	comp=Z,7.9nm,0.7s,baz=106,slow=4.3,SNR=4.5						
KAPI				ScP	**ScP**	**01 17 31.0**	**+2.0**
	comp=Z,1.9nm,0.4s,baz=198,slow=4.6,SNR=3.5						
KAPI	**Kappang**	**29.80**	**236**	*e*P	**P**	**01 10 43.0**	**-1.7**
	comp=Z,23nm,1.1s						
KAPI				ScP	**ScP**	**01 17 31.0**	**+2.0**
KAPI				LR	LR		
	comp=Z,846nm,21.0s						
NJ2	**Nanjing**	**30.34**	**314**	*e*P	**P**	**01 10 50.3**	**+1.0**
NJ2				PP	**PnPn**	**01 11 49.0**	**+1.1**
NJ2				S	**S**	**01 15 53.6**	**+5.1**
NJ2				pmax	pmax		
	comp=Z,18nm,0.7s						

comp=Z,3μm,19.6s,baz=5.0,slow=38
WRA Warramunga Arr 33.59 197 *i* P **P 01 11 17.1 -0.8**
WRA pmax pmax
comp=Z,18nm,0.9s
QIZ Qiongzhong 33.62 286 P **P 01 11 17.9 -0.3**
QIZ PP **PP 01 12 33.8 -0.7**
QIZ S **S 01 16 40.5 +0.6**
QIZ LR LR
comp=Z,1μm,17.6s
QIZ LR LR
comp=Z,460nm,20.6s
TIA Tai'an 33.94 319 ⇑P **P 01 11 20.5 -0.4**
TIA PP **PnPn 01 12 32.2 -1.9**
TIA S S 01 16 54.0 +9.5
TIA pmax pmax
comp=Z,20nm,1.2s
TIA pmax pmax
comp=Z,830nm,5.7s
TIA LR LR
comp=Z,3μm,16.7s
TIA LR LR
comp=Z,4μm,16.7s
TIA LR LR
comp=Z,5μm,17.2s
MDJ Mudanjiang 34.41 341 P **P 01 11 23.1 -1.7**
MDJ pP pP 01 11 26.1 -5.7
MDJ S **S 01 16 48.8 -2.7**
MDJ ScP **ScP 01 17 44.3 +0.2**
MDJ PcS **PcS 01 17 46.7 +0.3**
MDJ pmax pmax
comp=Z,85nm,3.5s
MDJ LR LR
comp=Z,1μm,22.2s
MDJ LR LR
comp=Z,1μm,21.2s
MDJ LR LR
comp=Z,4μm,20.9s
MDJ Mudanjiang 34.41 341 *e*P **P 01 11 23.7 -1.1**
comp=Z,55nm,1.2s
MDJ LR LR
comp=Z,4μm,20.0s
YSS Yuzh-Sakhalins 34.43 358 *e*P **P 01 11 20.3 -4.6**
YSS *e*S **S 01 16 53.3 +1.6**
YSS MLR MLR
comp=Z,3μm,16.0s
CN2 Changchun 35.16 336 *e*P **P 01 11 30.0 -1.3**
CN2 *e*PP **PnPn 01 12 49.2 0.0**
CN2 PcP **PcP 01 14 02.4 +0.1**
CN2 *e*S **S 01 17 01.9 -1.2**
CN2 ScP **ScP 01 17 46.4 -0.4**
CN2 pmax pmax
comp=Z,20nm,1.0s
CN2 pmax pmax
comp=Z,200nm,3.0s
CN2 LR LR
comp=Z,1μm,15.0s
CN2 LR LR
comp=Z,2μm,15.0s
CN2 LR LR
comp=Z,2μm,16.0s
KSM Kuching 35.25 255 *e*P **P 01 11 31.8 -0.6**
comp=Z,124nm,1.1s
KSM LR LR
comp=Z,941nm,20.0s
FITZ Fitzroy Crossi 35.41 211 *e*P **P 01 11 33.3 -0.4**
comp=Z,46nm,1.5s
ENH Enshi 36.63 304 *e*P **P 01 11 44.2 0.0**
comp=Z,182nm,1.4s
ENH LR LR
comp=Z,5μm,20.0s
HABR Khabarovsk 36.72 350 *e*P **P 01 11 42.1 -2.5**
HABR *e**SP **pP 01 11 48.7 -2.8**
HABR *e* 01 13 05.6
HABR *e* 01 14 04.4
HABR *e*S **S 01 17 25.7 -1.1**
HABR *e*SS **SnSn 01 19 57.7 -0.7**
HABR *e* 01 21 57.4
HABR pmax pmax
comp=Z,68nm,1.6s
HABR MLR MLR
comp=Z,3μm,16.0s
BJT Baijiatuau 36.91 323 *e*P **P 01 11 45.4 -1.0**
BJT pmax pmax
comp=Z,121nm,1.3s
BJT MLR MLR
comp=Z,4μm,19.0s
BJT Baijiatuau 36.91 323 *e*P **P 01 11 45.4 -1.0**
comp=Z,121nm,1.3s
BJT LR LR
comp=Z,4μm,19.0s
BJI Beijing 36.92 323 P **P 01 11 46.2 -0.2**
BJI PP **PnPn 01 13 11.4 +0.5**
BJI S **S 01 17 31.9 +1.7**
BJI pmax pmax
comp=Z,67nm,1.6s
BJI pmax pmax
comp=Z,490nm,3.6s
BJI LR LR
comp=Z,3μm,18.9s
BJI LR LR
comp=Z,3μm,19.3s
BJI LR LR
comp=Z,3μm,19.8s
AS01 Alice Springs 37.23 196 *e*P **P 01 11 47.8 -1.5**
AS31 Alice Springs 37.25 196 *e*P **P 01 11 49.1 -0.3**
comp=Z,6.3nm,0.6s
ASAR Alice Springs 37.25 196 P **P 01 11 48.3 -1.1**
comp=Z,7.5nm,0.9s,baz=19,slow=6.8,SNR=47
ASAR LR LR 01 27 08.8
comp=Z,3μm,21.9s,baz=13,slow=36
GYA Guiyang 37.84 297⇑*i*P **P 01 11 55.0 +0.4**
GYA PP **PnPn 01 13 24.8 +2.4**
GYA PcP **PcP 01 14 12.0 +1.1**
GYA S **S 01 17 44.6 -0.1**
GYA ScP **ScP 01 17 58.2 +1.0**
GYA ScS **ScS 01 22 05.5 -1.0**
GYA pmax pmax
comp=Z,40nm,1.0s
GYA pmax pmax
comp=Z,160nm,6.2s
GYA LR LR
comp=Z,930nm,17.8s
GYA LR LR
comp=Z,780nm,17.6s
GYA LR LR
comp=Z,810nm,18.0s
TIY Taiyuan 37.87 317 *e*P **P 01 11 55.3 +0.7**
TIY PP **PnPn 01 13 22.0 -0.6**
TIY S **S 01 17 42.9 -2.0**
TIY pmax pmax
comp=Z,140nm,1.4s
TIY pmax pmax
comp=Z,590nm,5.0s
TIY LR LR
comp=Z,1μm,15.7s
TIY LR LR
comp=Z,2μm,17.7s
TIY LR LR
comp=Z,2μm,16.3s
KLR Kul'dur 38.09 347 P **P 01 11 55.8 -0.5**
comp=Z,15nm,0.9s,baz=149,slow=8.6,SNR=38
KLR ScP **ScP 01 17 58.2 +0.6**
comp=Z,8.5nm,1.2s,baz=156,slow=2.7,SNR=7.8
KLR Kul'dur 38.09 347*c i*P **P 01 11 55.6 -0.6**
EIDS Eidsvold 38.18 170 *e*P **P 01 11 55.4 -1.8**
comp=Z,57nm,1.3s
TYV Tymovskoe 38.34 358 *e*P **P 01 12 00.5 +2.2**
TYV *e*S **SS 01 20 37.0 -3.5**
TYV pmax pmax
comp=E,35nm,1.0s
TYV pmax pmax
comp=Z,22nm,1.0s
TYV smax smax
comp=E,2μm,20.0s
TYV MLR MLR
comp=N,2μm,18.0s
TYV MLR MLR
comp=Z,2μm,18.0s
XAN Xi'an 38.57 310 P **P 01 12 00.0 -0.5**
XAN pP pP 01 12 04.6 -2.9
XAN PP **PnPn 01 13 31.3 +0.3**
XAN PcP **PcP 01 14 13.7 +0.8**
XAN S **S 01 17 54.7 -0.7**
XAN pmax pmax
comp=Z,26nm,1.4s
XAN pmax pmax
comp=Z,390nm,9.5s
XAN LR LR
comp=Z,2μm,19.3s
XAN LR LR
comp=Z,3μm,20.6s
XAN LR LR
comp=Z,4μm,19.6s
SKNT Sakolnakorn 39.06 282 P **P 01 12 05.6 +0.8**
comp=Z,72nm,0.8s
NONG Nongkai 39.88 283 P **P 01 12 12.1 +0.4**
comp=Z,36nm,1.1s
KHON Khomkaen 40.16 281 P P 01 12 20.3 +6.3
HHC Hu-ho-hao-te 40.20 321 *e*P **P 01 12 14.8 +0.7**
HHC PP **PnPn 01 13 53.4 +3.0**
HHC S **S 01 18 22.2 +2.3**
HHC SS **SnSn 01 21 21.0 -1.8**
HHC pmax pmax
comp=Z,35nm,1.1s
HHC pmax pmax
comp=Z,430nm,5.8s
HHC LR LR
comp=Z,3μm,14.3s
HHC LR LR
comp=Z,3μm,14.0s
HHC LR LR
comp=Z,5μm,14.5s
FUNA Funafuti 40.59 119 *e*P **P 01 12 16.8 -0.7**
comp=Z,141nm,1.4s
NKL Nikolayevsk 40.71 357 *e*P **P 01 12 17.0 -0.9**
NKL *e* 01 18 26.0
NKL pmax pmax
comp=Z,500nm,6.0s
NKL pmax pmax
comp=N,17nm,1.1s
NKL pmax pmax
comp=Z,55nm,1.1s
NKL MLR MLR
comp=N,1μm,16.0s
NKL MLR MLR
comp=E,700nm,16.0s
NKL MLR MLR
comp=Z,2μm,16.0s
CHBT CHBT 40.77 275 P **P 01 12 20.5 +1.5**
comp=Z,56nm,1.4s,comp=Z,11μm
TPRI Tanjung Pinang 40.90 257 P P 01 12 29.9 +10
KMI Kunming 41.01 294 P **P 01 12 22.0 +0.8**
KMI pP sP 01 12 31.1 0.0
KMI PP **PnPn 01 14 00.5 +0.1**
KMI PcP **PcP 01 14 22.2 +1.1**
KMI S **S 01 18 30.7 -2.0**
KMI sS sS 01 18 45.3 +1.0
KMI pmax pmax
comp=Z,59nm,1.3s
KMI pmax pmax
comp=Z,550nm,7.4s
KMI LR LR
comp=Z,670nm,17.5s
KMI LR LR
comp=Z,1μm,17.5s
KMI LR LR
comp=Z,2μm,15.3s
BTO Baotou 41.03 319 *e*P **P 01 12 20.7 -0.3**
MBWA Marble Bar 41.10 216 *e*P **P 01 12 20.4 -1.2**
comp=Z,587nm,1.9s
MBWA LR LR
comp=Z,919nm,19.0s
CISI Cisompet, Garu 41.21 243 *e*P **P 01 12 21.4 -1.3**
MYKOM Kota Tinggi 41.29 258 *e*P **P 01 12 23.1 -0.2**
comp=Z,337nm,1.9s
CD2 Chengdu 41.51 303⇑*i*P **P 01 12 24.7 -0.3**
CD2 sP pP 01 12 32.7 +0.7
CD2 PP **PP 01 14 00.5 -0.6**
CD2 PcP **PcP 01 14 22.8 +0.4**
CD2 S **S 01 18 38.8 -0.7**
CD2 SS **SS 01 21 44.1 -0.4**
CD2 pmax pmax
comp=Z,150nm,1.4s
CD2 pmax pmax
comp=Z,750nm,7.5s
CD2 LR LR
comp=Z,3μm,16.8s
CD2 LR LR
comp=Z,3μm,21.6s
HIA Hailar 41.89 336 *e*P **P 01 12 27.7 -0.1**
HIA pmax pmax
comp=Z,67nm,1.1s
HIA MLR MLR
comp=Z,3μm,19.0s
HIA Hailar 41.89 336 *e*P **P 01 12 27.7 -0.1**
comp=Z,67nm,1.1s
HIA *e*ScP **ScP 01 18 12.5 +0.1**
HIA LR LR
comp=Z,3μm,19.0s
PBKT Sadao Pong 41.94 281 P **P 01 12 29.5 +0.9**
comp=Z,41nm,0.9s
PETK Petropavlovsk- 42.00 12 LR LR 01 28 48.1
comp=Z,2μm,21.3s,baz=194,slow=34
PET Petropavlovsk 42.12 13 *e*P **P 01 12 31.9 +2.3**
PET *e*S **S 01 18 50.1 +2.3**
PET MLR MLR
comp=Z,2μm,14.0s
PET MLR MLR
comp=Z,2μm,13.0s
PET Petropavlovsk 42.12 13 PFAKE 01 12 40.0 +10
PET LR LR
comp=Z,1μm,20.0s
NANT Nan 42.23 284 P **P 01 12 30.6 -0.4**
comp=Z,9.5nm,1.2s,comp=Z,178nm
UTTA Uttaradit 42.34 283 P **P 01 12 32.5 +0.6**
comp=Z,11nm,1.2s
CRAI Chiangrai 42.61 286 P **P 01 12 34.4 +0.3**
comp=Z,186nm,1.2s
CGJI Cibinong 42.65 246 P **P 01 12 31.9 -2.5**
SKLT Songkhla 43.16 267 P **P 01 12 39.7 +1.1**
comp=Z,173nm,1.2s,comp=Z,2μm
LZH Lanzhou 43.20 310 ⇑P **P 01 12 39.6 +0.7**
LZH pP pP 01 12 45.2 -0.7
LZH sP sP 01 12 47.7 -1.0
LZH PP **PP 01 14 23.0 +3.6**
LZH S **S 01 19 05.0 +0.4**
LZH sS sS 01 19 14.2 -2.1
LZH SS **SS 01 22 12.3 -5.7**
LZH pmax pmax
comp=Z,320nm,1.5s
LZH pmax pmax
comp=Z,790nm,5.0s
LZH LR LR
comp=Z,1μm,13.5s
LZH LR LR
comp=Z,4μm,15.0s
LZH LR LR
comp=Z,4μm,17.3s
ARMA Armidale 43.21 171 *e*P **P 01 12 38.9 +0.1**
comp=Z,148nm,1.4s
SUKH Sukhothai 43.22 282 P **P 01 12 39.9 +0.9**
comp=Z,11nm,1.3s,comp=Z,106nm
LAMP Lampang 43.23 284 P **P 01 12 41.1 +1.9**
comp=Z,7.8nm,1.1s
IPM Ipoh 43.32 263 *e*P **P 01 12 40.4 +0.5**
comp=Z,92nm,1.2s
LWLI Liwa 43.45 249 P **P 01 12 45.5 +4.5**
comp=Z,121nm,0.8s,comp=Z,7μm
KULM Kulim 43.51 265 *e*P **P 01 12 41.8 +0.4**
comp=Z,238nm,1.4s
KULM LR LR
comp=Z,2μm,19.0s
CMAI Chiengmai2 43.84 286 P **P 01 12 44.5 +0.3**
comp=Z,52nm,1.3s,comp=Z,833nm
CM01 Chiang Mai Arr 43.87 284 *e*P **P 01 12 44.5 +0.2**
CM31 Chiang Mai Arr 43.89 284 *e*P **P 01 12 45.9 +1.5**
CMAR Chiang Mai Arr 43.89 284 P **P 01 12 44.7 +0.3**
comp=Z,23nm,1.0s,baz=84,slow=6.3,SNR=56
CMAR LR LR 01 29 16.3
comp=Z,2μm,21.2s,baz=90,slow=34
CHTO Chiang Mai 43.90 284 P **P 01 12 45.0 +0.5**
comp=Z,66nm,1.6s,comp=Z,2μm
CHTO Chiang Mai 43.90 284 *e*P **P 01 12 43.1 -1.4**
CHTO *e* 01 14 31.1
CHTO pmax pmax
comp=Z,45nm,1.6s
CHTO MLR MLR
comp=Z,2μm,21.0s
CHTO Chiang Mai 43.90 284 P **P 01 12 44.2 -0.3**
SNR=6.9
CHTO Chiang Mai 43.90 284 P **P 01 12 44.2 -0.3**
SNR=6.9
CHTO Chiang Mai 43.90 284 *e*P **P 01 12 43.1 -1.4**
comp=Z,45nm,1.6s
CHTO *e*PcP **PcP 01 14 31.1 +0.5**
CHTO LR LR
comp=Z,2μm,21.0s
TRTT Trang 43.95 268 P **P 01 12 46.7 +1.7**
comp=Z,80nm,1.6s,comp=Z,1μm
STKA Stephens Creek 44.12 183 P **P 01 12 44.8 -1.2**
comp=Z,19nm,1.1s,baz=18,slow=8.0,SNR=7.6
STKA LR LR 01 32 41.0
comp=Z,2μm,18.5s,baz=358,slow=38
STKA Stephens Creek 44.12 183 *e*P **P 01 12 45.3 -0.7**
STKA pmax pmax
comp=Z,5.0nm,1.0s
STKA Stephens Creek 44.12 183 *e*P **P 01 12 45.2 -0.7**
comp=Z,4.9nm,1.0s
MNAI Manna 44.20 250 P **P 01 12 45.9 -1.1**
MNAI Manna 44.20 250 *e*P **P 01 12 45.0 -1.9**
comp=Z,848nm,1.3s
BKNI Bangkinang 44.40 258 *e*P **P 01 12 47.8 -0.8**
comp=Z,170nm,1.3s
XMIS Christmas Isla 44.49 241 *e*P **P 01 12 48.2 -1.1**
comp=Z,286nm,1.8s
SURT Suratani 44.65 270 P **P 01 12 53.1 +2.5**
comp=Z,24nm,1.2s,comp=Z,568nm
MSVF Nonsavu 44.94 131 *e*P **P 01 12 53.1 +0.3**
MSVF pmax pmax
comp=Z,51nm,1.1s
MSVF Nonsavu 44.94 131 *e*P **P 01 12 53.1 +0.3**
comp=Z,51nm,1.1s
MSVF LR LR
comp=Z,2μm,19.0s
JOHN Johnston Islan 44.97 79 *e*P **P 01 12 52.5 -0.5**
comp=Z,594nm,1.8s
PKDT Phuket 45.27 269 P **P 01 12 57.4 +1.9**
comp=Z,83nm,1.7s
BBOO Buckleboo 45.65 190 *e*P **P 01 12 57.2 -1.0**
comp=Z,152nm,1.4s
PSI Prapat 45.76 262 *e*P **P 01 12 59.3 -0.2**
PSI pmax pmax
comp=Z,120nm,1.2s
PSI Prapat 45.76 262 *e*P **P 01 12 59.3 -0.2**
comp=Z,117nm,1.2s
KNTN Kanton 46.38 106 *e*P **P 01 13 05.1 +0.8**
CIT Chita 46.54 334 *e*P **P 01 13 05.3 +0.2**
CIT *e* 01 13 13.4
CIT *e* 01 14 39.7
CIT pmax pmax
comp=Z,127nm,1.6s
SMY Shemya 46.80 25 *e*P **P 01 13 06.7 -0.3**
SMY pmax pmax
comp=Z,310nm,1.3s
SMY Shemya 46.80 25 *e*P **P 01 13 06.7 -0.3**
comp=Z,309nm,1.3s
ULN Ulaanbaatar 46.93 326*c i*P **P 01 13 08.5 +0.2**
ULN MLR MLR
comp=Z,4μm,20.0s
ULN Ulaanbaatar 46.93 326 P **P 01 13 09.0 +0.7**
SNR=20
ULN Ulaanbaatar 46.93 326 P **P 01 13 09.0 +0.7**
SNR=20
ULN Ulaanbaatar 46.93 326 *e*P **P 01 13 08.2 -0.2**
ULN *e*PcP **PcP 01 14 41.3 +0.6**
ULN *e*ScP **ScP 01 18 33.1 -0.1**
ULN LR LR
comp=Z,4μm,20.0s
LHMI Lhok Sumawe 47.12 266 *e*P **P 01 13 06.4 -3.6**
comp=Z,285nm,1.1s
SONM Songino Array 47.27 326 P **P 01 13 11.2 +0.2**
comp=Z,8.2nm,0.8s,baz=141,slow=7.6,SNR=62
SONM PcP **PcP 01 14 42.4 +0.5**
comp=Z,22nm,1.2s,baz=138,slow=3.7,SNR=7.0
SONM ScP **ScP 01 18 34.8 +0.1**
comp=Z,3.2nm,0.9s,baz=144,slow=4.3,SNR=6.7
SONM LR LR 01 33 04.9
comp=Z,4μm,20.1s,baz=123,slow=36
SONA1 Songino Array 47.28 326 *e*P **P 01 13 10.6 -0.4**
SONA1 *e*ScP **ScP 01 18 34.4 -0.3**
MA2 Magadan 47.31 5 P **P 01 13 10.3 -0.6**
comp=Z,6.5nm,0.3s,baz=220,slow=16,SNR=3.4
MA2 Magadan 47.31 5 *e*P **P 01 13 10.2 -0.7**
MA2 pmax pmax
comp=Z,166nm,1.1s
MA2 MLR MLR
comp=Z,2μm,20.0s
MA2 Magadan 47.31 5 *e*P **P 01 13 10.2 -0.7**
comp=Z,166nm,1.1s
MA2 LR LR
comp=Z,2μm,20.0s
GTA Gaotai 47.42 313 ⇑P **P 01 13 12.5 +0.3**
GTA pP pP 01 13 18.8 -0.6
GTA sP sP 01 13 21.0 -1.2
GTA PcP **PcP 01 14 42.9 +0.3**
GTA S **S 01 20 03.8 -1.6**
GTA sS sS 01 20 14.0 -3.1
GTA SS **SS 01 23 25.0 -8.2**
GTA pmax pmax
comp=Z,53nm,1.2s
GTA pmax pmax
comp=Z,630nm,6.2s
GTA LR LR
comp=Z,2μm,19.5s
GTA LR LR
comp=Z,2μm,19.5s
GTA LR LR
comp=Z,3μm,19.2s
GSI Gunungsitoli 47.45 260 *e*P **P 01 13 11.2 -1.4**
comp=Z,166nm,1.1s
CAN Canberra 47.71 175 *e*P **P 01 13 14.3 0.0**
CAN pmax pmax
comp=Z,85nm,1.5s
CAN MLR MLR
comp=Z,2μm,20.0s
CAN Canberra 47.71 175 *e*P **P 01 13 14.3 0.0**
comp=Z,86nm,1.5s
CAN LR LR
comp=Z,2μm,20.0s
ZAK Zakamensk 50.41 327 *e*P **P 01 13 35.0 +0.1**
ZAK *e* 01 14 53.7
ZAK pmax pmax
comp=Z,30nm,1.3s
YAK Yakutsk 50.61 351 P **P 01 13 35.7 -0.4**
comp=Z,53nm,0.6s,baz=15,slow=1.7,SNR=9.2
YAK Yakutsk 50.61 351 *e*P **P 01 13 35.9 -0.2**
YAK *e*PP **PP 01 15 27.8 -4.2**
YAK *e*S **S 01 20 45.0 -4.2**
YAK pmax pmax
comp=Z,66nm,0.9s
YAK Yakutsk 50.61 351 *e*P **P 01 13 36.1 0.0**
comp=Z,71nm,0.8s
YAK LR LR
comp=Z,2μm,20.0s
BOD Bodaibo 50.74 340 *e*P **P 01 13 36.0 -1.2**
BOD *e* 01 14 50.4
BOD pmax pmax
comp=Z,17nm,1.5s
SEY Seymchan 50.77 5 P **P 01 13 37.8 +0.5**
comp=Z,5.6nm,0.6s,baz=185,slow=6.3,SNR=9.1
AFI Afiamalu 50.93 120 *e*P **P 01 13 38.6 -0.7**
AFI pmax pmax
comp=Z,100nm,1.5s
AFI Afiamalu 50.93 120 *e*P **P 01 13 38.6 -0.7**
comp=Z,104nm,1.5s
AFI LR LR
comp=Z,2μm,21.0s
TLY Talaya 50.96 329*c i*P **P 01 13 39.2 +0.2**
TLY *e* 01 14 54.6
TLY *e* 01 15 38.1
TLY *e*S **S 01 20 54.6 +0.1**
TLY *e* 01 23 29.7
TLY pmax pmax
comp=Z,58nm,1.8s
TLY MLR MLR
comp=Z,2μm,20.0s
TLY Talaya 50.96 329 *e*P **P 01 13 39.4 +0.4**
comp=Z,47nm,1.3s
TLY LR LR
comp=Z,1μm,19.0s
LSA Lhasa 51.90 298 *e*P **P 01 13 47.2 +0.3**
LSA pmax pmax
comp=Z,41nm,0.9s
LSA MLR MLR
comp=Z,2μm,21.0s
LSA Lhasa 51.90 298 *e*P **P 01 13 47.2 +0.3**
comp=Z,41nm,0.9s
LSA LR LR

comp=Z,2μm,21.0s
NWAO Narrogin (SRO) 51.91 209 PFAKE 01 14 00.0 +14
NWAO LR LR
comp=Z,2μm,19.0s
MOY Mondy 52.32 327 *e*P **P 01 13 49.2 -0.1**
MOY pmax pmax
comp=Z,68nm,3.6s
RAO Raoul Island 55.30 139 PFAKE 01 14 20.0 +8.8
RAO LR LR
comp=Z,4μm,19.0s
GUN Gumba 56.33 295 *e*P **P 01 14 18.9 -0.3**
comp=Z,294nm,1.0s
PKIN Phulchoki 56.74 295 *e*P **P 01 14 21.8 -0.2**
KKN Kakani 56.85 295 *e*P **P 01 14 22.1 -0.7**
comp=Z,104nm,1.2s
DMN Daman 57.00 295 *e*P **P 01 14 23.2 -0.6**
comp=Z,102nm,0.8s
BILL Bilibino 57.41 10⇓*i*P **P 01 14 26.0 +0.3**
BILL *i* 01 14 38.8
BILL *e* 01 16 32.3
BILL *e*S **S 01 22 24.9 +3.8**
BILL pmax pmax
comp=Z,14nm,0.8s
BILL MLR MLR
comp=Z,694nm,19.0s
BILL Bilibino 57.41 10 *e*P **P 01 14 25.1 -0.6**
comp=Z,32nm,1.2s
BILL LR LR
comp=Z,1μm,22.0s
WMQ Urumqi 57.42 314⇑*i*P **P 01 14 26.9 +0.6**
WMQ pP pP 01 14 33.0 -0.6
WMQ sP sP 01 14 37.7 +1.4
WMQ PP **PP 01 16 39.3 +5.5**
WMQ S **S 01 22 25.3 +3.1**
WMQ ScS **ScS 01 24 14.6 0.0**
WMQ SS **SS 01 26 14.7 +2.8**
WMQ pmax pmax
comp=Z,33nm,1.2s
WMQ pmax pmax
comp=Z,74nm,3.6s
WMQ LR LR
comp=Z,780nm,18.8s
WMQ LR LR
comp=Z,620nm,18.8s
WMQ LR LR
comp=Z,600nm,18.8s
GKN Gorkha 57.44 295 *e*P **P 01 14 26.1 -0.7**
CHLP Challavanipeta 58.01 284 *e*P **P 01 14 30.9 +0.2**
CHLP IAmb IAmb 01 14 32.4
comp=Z,214nm,1.7s
CHLP *e*S **S 01 22 27.9 -2.5**
CHLP IVMs_BB IVMs_BB 01 47 43.2
comp=Z,276nm,4.5s
POHA Pohakuloa 58.17 74 PFAKE 01 14 50.0 +18
POHA LR LR
comp=Z,2μm,21.0s
KOLN Koldanda 58.34 295 *e*P **P 01 14 32.6 -0.6**
comp=Z,39nm,0.7s
KRAR Krasnoyarsk 58.65 329⇓*e*P **P 01 14 34.6 0.0**
KRAR pmax pmax
comp=Z,13nm,0.3s
KRAR MLR MLR
comp=Z,797nm,16.0s
PYUN Piuthan 58.89 295 *e*P **P 01 14 36.4 -0.7**
comp=Z,234nm,1.0s
BKZ Black Stump Fm 59.54 151 *e*P **P 01 14 43.8 +2.8**
comp=Z,34nm,1.2s
TIXI Tiksi 59.91 354 P **P 01 14 42.8 -0.2**
comp=Z,3.6nm,0.8s,baz=142,slow=7.3,SNR=7.6
TIXI Tiksi 59.91 354⇑*e*P **P 01 14 42.4 -0.5**
TIXI pmax pmax
comp=Z,6.0nm,1.0s
TIXI MLR MLR
comp=Z,1μm,19.0s
TIXI Tiksi 59.91 354 *e*P **P 01 14 42.5 -0.5**
comp=Z,9.6nm,1.0s
TIXI LR LR
comp=Z,1μm,20.0s
PVM Polavaram 60.41 283 *e*P **P 01 14 47.2 -0.1**
PVM IAmb IAmb 01 14 48.9
comp=Z,81nm,1.4s
PVM *e*S **S 01 22 58.7 -2.8**
PVM IVMs_BB IVMs_BB 01 35 56.1
comp=Z,284nm,22.2s
SNZO South Karori 60.46 154 PFAKE 01 15 00.0 +13
SNZO LR LR
comp=Z,2μm,19.0s
SDPT Sand Point 60.49 33 *e*P **P 01 14 46.9 -0.3**
comp=Z,64nm,0.8s
MK01 Makanchi Array 61.82 317 *e*P **P 01 14 55.9 -0.6**
MK31 Makanchi Array 61.83 317 *e*P **P 01 14 56.9 +0.3**
MK31 Makanchi Array 61.83 317 *e*P **P 01 14 56.9 +0.3**
MKAR Makanchi Array 61.83 317 P **P 01 14 56.8 +0.2**
comp=Z,22nm,0.8s,baz=95,slow=8.8,SNR=151
MKAR S **S 01 23 19.2 +0.4**
comp=Z,1.9nm,1.0s,baz=106,slow=13,SNR=5.7
MKAR LR LR 01 42 45.3
comp=Z,2μm,19.8s,baz=94,slow=37
MKAR PKP2bc 01 44 14.2
comp=Z,0.9nm,0.9s,baz=284,slow=4.9,SNR=5.4
CHGN Chignik 61.93 32 *e*P **P 01 14 56.4 -0.5**
MAKZ Makanchi 62.04 317 *e*P **P 01 14 58.0 0.0**
MAKZ pmax pmax
comp=Z,275nm,1.8s
MAKZ Makanchi 62.04 317 *e*P **P 01 14 58.0 0.0**
comp=Z,274nm,1.8s
ADKI Addanki 62.12 281 *e*P **P 01 14 58.8 -0.2**
ADKI IAmb IAmb 01 15 00.5
comp=Z,107nm,1.5s
ADKI *e*S **S 01 23 20.5 -2.7**
ADKI IVMs_BB IVMs_BB 01 37 35.1
comp=Z,236nm,4.3s
ZAA0 Zalesovo Array 62.15 325 *e*P **P 01 14 58.0 -0.6**
ZALV Zalesovo Beam 62.15 325 P **P 01 14 57.5 -1.1**
comp=Z,4.3nm,0.8s,baz=112,slow=5.2,SNR=25
ZALV PcP **PcP 01 15 37.4 -1.1**
comp=Z,8.3nm,0.6s,baz=104,slow=5.0,SNR=7.6
ZALV LR LR 01 41 46.4
comp=Z,2μm,20.8s,baz=72,slow=36
ZALV PKP2ab 01 44 19.9
comp=Z,0.6nm,0.3s,baz=297,slow=4.8,SNR=4.0
RPR Rampur 62.49 285 *e*P **P 01 15 00.8 -0.6**
RPR IAmb IAmb 01 15 02.3
comp=Z,126nm,1.4s
RPR *e*S **S 01 23 28.4 +0.5**
RPR IVMs_BB IVMs_BB 01 42 18.8
comp=Z,349nm,25.5s
NGP Nagpur 62.56 287 *e*P **P 01 15 01.3 -0.6**
PALK Pallekele 62.60 272 P **P 01 15 02.4 +0.2**
PALK Pallekele 62.60 272 *e*P **P 01 15 02.0 -0.3**
PALK pmax pmax
comp=Z,34nm,1.2s
PALK Pallekele 62.60 272 *e*P **P 01 15 01.9 -0.3**
comp=Z,34nm,1.2s
SKHT Srikalahasti 62.60 279 *e*P **P 01 15 02.2 0.0**
SKHT IAmb IAmb 01 15 03.6
comp=Z,179nm,1.5s
SKHT IVMs_BB IVMs_BB 01 42 20.0
comp=Z,405nm,18.5s
NJS Nagarjunasagar 62.68 282 *e*P **P 01 15 02.3 -0.4**
NJS IAmb IAmb 01 15 03.8
comp=Z,119nm,1.4s
NJS *e*S **S 01 23 31.2 +0.8**
NJS IVMs_BB IVMs_BB 01 39 51.4
comp=Z,280nm,27.7s
SRLM Srisailam 63.12 282 *e*P **P 01 15 05.1 -0.6**
SRLM IAmb IAmb 01 15 06.5
comp=Z,125nm,1.3s
SRLM *e*S **S 01 23 33.6 -2.3**
SRLM IVMs_BB IVMs_BB 01 39 18.2
comp=Z,308nm,27.7s
RCLA Racherla 63.13 281 *e*P **P 01 15 04.1 -1.7**
RCLA IAmb IAmb 01 15 06.5
comp=Z,70nm,1.5s
RCLA *e*S **S 01 23 34.7 -1.4**
RCLA IVMs_BB IVMs_BB 01 38 54.0
comp=Z,354nm,23.6s
NVS Novosibirsk 63.30 326⇑*i*P **P 01 15 05.8 -0.4**
NVS *e*S **S 01 23 35.3 -1.7**
NVS *e* 01 24 49.5
NVS pmax pmax
comp=N,34nm,1.7s
NVS pmax pmax
comp=Z,131nm,1.7s
NVS pmax pmax
comp=E,75nm,1.6s
NVS smax smax
comp=E,80nm,2.6s
HYB Hyderabad 63.31 283 *i*P **P 01 15 07.0 0.0**
comp=E,86nm,1.2s
HYBB Hyderabad (bro 63.31 283 *e*P **P 01 15 06.3 -0.7**
HYBB IAmb IAmb 01 15 07.7
comp=Z,73nm,1.1s
HYBB *e*S **S 01 23 34.1 -4.3**
HYBB IVMs_BB IVMs_BB 01 41 03.0
comp=Z,247nm,11.2s
SRSP Sriramsagar 63.38 285 *e*P **P 01 15 06.2 -1.1**
SRSP IAmb IAmb 01 15 07.9
comp=Z,94nm,1.5s
SRSP *e*S **S 01 23 39.1 0.0**
SRSP IVMs_BB IVMs_BB 01 44 30.8
comp=Z,218nm,3.8s
SMLA Simla 64.04 299 *e*P **P 01 15 10.5 -1.1**
OHAK Old Harbor 64.90 32 *e*P **P 01 15 16.4 -0.2**
comp=Z,87nm,1.4s
AAA Alma-Ata 65.00 312 *i*P **P 01 15 18.8 +1.1**
AAA *i*S **S 01 24 03.7 +5.2**
AAA pmax pmax
comp=Z,600nm,3.8s
AAA smax smax
comp=E,800nm,15.4s
AAA MLR MLR
comp=Z,1μm,21.0s
KURK Kurchatov 65.01 320 *e*P **P 01 15 17.1 -0.4**
KURK pmax pmax
comp=Z,200nm,1.3s
KURK Kurchatov 65.01 320 *e*P **P 01 15 17.1 -0.4**
comp=Z,204nm,1.3s
KURK *e*S **S 01 23 57.1 -1.1**
KURK LR LR
comp=Z,6μm,20.0s
KLRI Killari 65.11 284 *e*P **P 01 15 17.8 -1.0**
KLRI IAmb IAmb 01 15 19.0
comp=Z,272nm,1.7s
KLRI *e*S **S 01 23 57.9 -2.7**
KLRI IVMs_BB IVMs_BB 01 41 48.1
comp=Z,407nm,24.5s
KSH Kashi 65.38 308 P **P 01 15 22.7 +2.4**
KSH *e*pP pP 01 15 28.7 +1.0
KSH *e*sP sP 01 15 31.3 +0.9
KSH *e*PP **PP 01 17 49.1 +4.9**
KSH PcS 01 19 57.4
KSH S **S 01 24 04.4 +0.9**
KSH ScS **SKSac 01 25 13.2 -1.4**
KSH pmax pmax
comp=Z,90nm,1.6s
KSH pmax pmax
comp=Z,520nm,4.9s
KSH LR LR
comp=Z,830nm,18.5s
KSH LR LR
comp=Z,1μm,16.9s
KSH LR LR
comp=Z,1μm,17.1s
KDAK Kodiak Island 65.42 32 P P 01 15 35.9 +16
comp=Z,5.0nm,0.4s,baz=266,slow=3.9,SNR=7.4
KDAK Kodiak Island 65.42 32 *e*P **P 01 15 19.7 -0.3**
KDAK pmax pmax
comp=Z,77nm,1.5s
KDAK MLR MLR
comp=Z,890nm,20.0s
KDAK Kodiak Island 65.42 32 *e*P **P 01 15 19.7 -0.3**
comp=Z,77nm,1.5s
KDAK LR LR
comp=Z,890nm,20.0s
TT01 Tatalina 65.49 26 *e*P **P 01 15 19.9 -0.4**
TTA Tatalina 65.50 26 *e*P **P 01 15 20.7 +0.2**
TTA pmax pmax
comp=Z,30nm,1.3s
TTA Tatalina 65.50 26 *e*P **P 01 15 20.7 +0.2**
comp=Z,30nm,1.4s
TKM2 Tokmak 2 65.94 312 *e*P **P 01 15 24.3 +0.3**
TKM2 pmax pmax
comp=Z,51nm,1.2s
TKM2 Tokmak 2 65.94 312 *e*P **P 01 15 24.3 +0.3**
comp=Z,51nm,1.3s
TKM2 LR LR
comp=Z,1μm,19.0s
RSO Redoubt South 66.12 29 *e*P **P 01 15 24.6 -0.1**
FRU Bishkek 66.65 311 *e*P **P 01 15 28.0 -0.3**
FRU pmax pmax
comp=Z,120nm,1.8s
SPU Mount Spurr 66.67 28 *e*P **P 01 15 28.4 +0.3**
AAK Ala-Archa 66.73 311*c i*P **P 01 15 28.7 -0.3**
AAK pmax pmax
comp=Z,104nm,1.5s
AAK MLR MLR
comp=Z,4μm,19.0s
AAK Ala-Archa 66.73 311 *e*P **P 01 15 29.0 0.0**
comp=Z,46nm,1.4s
AAK LR LR
comp=Z,2μm,20.0s
BRLK Bradley Lake 66.82 30 *e*P **P 01 15 28.3 -0.7**
comp=Z,42nm,1.2s
NRIK Noril'sk 66.99 341 P **P 01 15 29.2 -0.7**
comp=Z,6.2nm,0.7s,baz=124,slow=6.6,SNR=22
NRIK LR LR 01 45 47.4
comp=Z,1μm,18.6s,baz=117,slow=37
PPLA Purkeypile 67.13 26 *e*P **P 01 15 31.4 +0.3**
comp=Z,50nm,1.2s
EKS2 Erkin-Say 67.26 311 *e*P **P 01 15 32.5 +0.2**
EKS2 pmax pmax
comp=Z,72nm,1.4s
EKS2 Erkin-Say 67.26 311 *e*P **P 01 15 32.5 +0.2**
comp=Z,72nm,1.4s
EKS2 LR LR
comp=Z,2μm,20.0s
CAST Castle Rocks 67.34 26 *e*P **P 01 15 32.5 +0.2**
comp=Z,35nm,1.0s
SEW Seward 67.61 30 *e*P **P 01 15 33.9 -0.1**
comp=Z,56nm,1.1s
RC01 Rabbit Creek A 67.72 29 *e*P **P 01 15 34.2 -0.4**
comp=Z,57nm,1.1s
KTH Kantishna Hill 67.88 26 *e*P **P 01 15 35.4 -0.3**
comp=Z,61nm,1.2s
BPAW Bear Paw Mtn. 68.02 25 *e*P **P 01 15 36.6 0.0**
comp=Z,46nm,1.2s
TRF Thorofare Moun 68.12 26 *e*P **P 01 15 36.6 -0.8**
comp=Z,43nm,1.3s
PMR Palmer 68.13 28 *e*P **P 01 15 36.1 -1.1**
PMR pmax pmax
comp=Z,61nm,1.3s
PMR Palmer 68.13 28 *e*P **P 01 15 36.1 -1.1**
comp=Z,61nm,1.4s
MLY Manley 68.40 24 *e*P **P 01 15 39.2 +0.3**
comp=Z,30nm,1.1s
SML Sawmill 68.56 28 *e*P **P 01 15 39.9 -0.1**
SML pmax pmax
comp=Z,75nm,1.1s
SML Sawmill 68.56 28 *e*P **P 01 15 39.9 -0.1**
comp=Z,75nm,1.1s
RND Reindeer 68.73 26 *e*P **P 01 15 40.2 -0.9**
RND pmax pmax
comp=Z,29nm,1.0s
RND Reindeer 68.73 26 *e*P **P 01 15 40.2 -0.9**
comp=Z,29nm,1.1s
MCK McKinley 68.78 26 *e*P **P 01 15 40.8 -0.5**
MCK pmax pmax
comp=Z,39nm,1.3s
MCK McKinley 68.78 26 *e*P **P 01 15 40.8 -0.5**
comp=Z,39nm,1.3s
SCM Sheep Creek Mo 69.03 28 *e*P **P 01 15 43.2 +0.3**
SCM pmax pmax
comp=Z,120nm,1.1s
SCM Sheep Creek Mo 69.03 28 *e*P **P 01 15 43.2 +0.3**
comp=Z,124nm,1.2s
COLD Coldfoot 69.28 22 *e*P **P 01 15 45.2 +0.9**
comp=Z,24nm,0.8s
WRH Wood River Hil 69.33 25 *e*P **P 01 15 44.1 -0.6**
comp=Z,26nm,1.0s
MDM Murphy Dome 69.40 25 *e*P **P 01 15 45.2 0.0**
comp=Z,17nm,1.0s
CCB Clear Creek Bu 69.50 25 *e*P **P 01 15 44.7 -1.0**
comp=Z,29nm,1.2s
EYAK Cordova Ski Ar 69.50 30 *e*P **P 01 15 46.3 +0.5**
comp=Z,35nm,1.1s
COLA College 69.54 25*c i*P **P 01 15 45.0 -0.9**
COLA pmax pmax
comp=Z,27nm,1.5s
COLA College 69.54 25 *e*P **P 01 15 45.8 -0.1**
comp=Z,6.2nm,0.6s
COLA LR LR
comp=Z,2μm,21.0s
DIV Divide 69.61 29 *e*P **P 01 15 47.1 +0.6**
comp=Z,57nm,1.2s
KLU Klutina 69.61 29 *e*P **P 01 15 46.9 +0.4**
comp=Z,37nm,1.0s
KKAR Karatay Array 69.68 311 *e*P **P 01 15 47.1 -0.2**
KKAR Karatay Array 69.68 311 *e*P **P 01 15 47.1 -0.2**
comp=Z,37nm,0.9s
ILAR Eielson Array 69.91 25 P **P 01 15 47.2 -1.0**
comp=Z,12nm,0.9s,baz=258,slow=4.5,SNR=69
ILAR PKP2bc 01 43 51.3
comp=Z,0.4nm,1.0s,baz=63,slow=4.2,SNR=3.0
ILAR LR LR 01 45 21.5
comp=Z,1μm,20.7s,baz=258,slow=35
ILB Eielson Array 69.91 25 *e*P **P 01 15 46.9 -1.3**
IL1 Eielson Array 69.91 25 *e*P **P 01 15 45.4 -2.9**
RAGM Ragged Mountai 69.99 30 *e*P **P 01 15 50.2 +1.3**
comp=Z,61nm,1.3s
PAX Paxson 70.12 27 *e*P **P 01 15 49.8 +0.1**
PAX pmax pmax
comp=Z,45nm,1.2s
PAX Paxson 70.12 27 *e*P **P 01 15 49.8 +0.1**
comp=Z,46nm,1.2s
BMRM Bremner River 70.13 29 *e*P **P 01 15 50.2 +0.5**
comp=Z,82nm,1.2s
BRVK Borovoye 70.46 322*c i*P **P 01 15 51.5 -0.3**
BRVK pmax pmax
comp=Z,175nm,1.7s
BRVK MLR MLR
comp=Z,5μm,20.0s
BRVK Borovoye 70.46 322 *e*P **P 01 15 51.7 -0.1**
comp=Z,182nm,1.4s
BRVK LR LR
comp=Z,5μm,20.0s
KBL Kabul 70.84 302 *e*P **P 01 15 54.1 -0.7**
KBL pmax pmax
comp=Z,88nm,1.1s
KBL Kabul 70.84 302 *e*P **P 01 15 54.1 -0.7**
comp=Z,88nm,1.1s
DOT Dot Lake 70.88 27 *e*P **P 01 15 54.2 0.0**
comp=Z,66nm,0.8s
ZRNK Zerenda 71.22 322 *e*P **P 01 15 56.0 -0.5**
ZRNK pmax pmax
comp=Z,150nm,1.2s
ZRNK Zerenda 71.22 322 *e*P **P 01 15 56.0 -0.5**
comp=Z,146nm,1.2s
BALM Baldy 71.23 30 *e*P **P 01 15 56.8 +0.3**
BALM pmax pmax
comp=Z,36nm,1.1s
BALM Baldy 71.23 30 *e*P **P 01 15 56.8 +0.3**
comp=Z,36nm,1.2s
PPT Papeete 71.90 113 LR LR 01 42 50.0
comp=Z,749nm,18.8s,baz=280,slow=32
PPT2 Papeete2 71.91 113 *e*S **S 01 25 18.6 -2.9**
comp=Z,861nm,29.5s
PPT2 *e*LQ LQ 01 35 02.2
comp=Z,592nm,27.0s
PPT2 *e*LR LR 01 37 55.0
comp=Z,2μm,23.2s,baz=293
EGAK Eagle 72.32 26 *e*P **P 01 16 02.9 +0.1**
comp=Z,46nm,1.3s
EGAK LR LR
comp=Z,1μm,21.0s
DAWY Dawson 72.98 27 *e*P **P 01 16 07.2 +0.3**
comp=Z,46nm,1.2s
SKAG Skagway 74.57 32 *e*P **P 01 16 17.5 +1.3**
comp=Z,117nm,1.8s
INK Inuvik 75.70 22 P **P 01 16 22.1 -0.3**
comp=Z,32nm,1.1s,baz=268,slow=6.7,SNR=69
INK Inuvik 75.70 22 *e*P **P 01 16 22.3 -0.2**
INK pmax pmax
comp=Z,51nm,1.1s
INK Inuvik 75.70 22 *e*P **P 01 16 22.2 -0.2**
comp=Z,51nm,1.1s
SVE Sverdlovsk 76.15 326*de*P **P 01 16 25.0 -0.3**
SVE *e*S **S 01 26 10.1 +2.3**
SVE pmax pmax
comp=Z,136nm,1.4s
SVE MLR MLR
comp=Z,2μm,18.0s
WRAK Wrangell Islan 76.16 35 *e*P **P 01 16 26.8 +1.4**
comp=Z,79nm,1.3s
WRAK LR LR
comp=Z,1μm,21.0s
ABKAR Akbulak array 76.92 318 *e*P **P 01 16 29.2 -0.7**
ARU Arti 77.31 325*c i*P **P 01 16 31.1 -0.8**
ARU PPP PPP 01 21 11.3
ARU S **S 01 26 20.3 -0.2**
ARU SSS SSS 01 34 39.5
ARU pmax pmax
comp=Z,142nm,1.7s
ARU MLR MLR
comp=Z,1μm,17.0s
ARU Arti 77.31 325 *e*P **P 01 16 31.0 -0.8**
comp=Z,86nm,1.1s
ARU LR LR
comp=Z,1μm,20.0s
DLBC Dease Lake 77.33 33 *e*P **P 01 16 33.2 +1.1**
comp=Z,78nm,1.3s
TAOE Nuku Hiva Isla 78.14 102 *e*S **S 01 26 26.6 -4.5**
comp=Z,404nm,28.8s
TAOE Nuku Hiva Isla 78.14 102 *e*LR LR 01 40 51.6
comp=Z,952nm,20.0s,baz=292
GEYT Alibeck 79.37 307 P **P 01 16 43.8 +0.1**
comp=Z,71nm,1.1s,baz=48,slow=2.2,SNR=99
BIDO Bidbid 81.53 292 P **P 01 16 56.0 +0.4**
SNR=24
BIDO Bidbid 81.53 292 P **P 01 16 56.0 +0.4**
SNR=24
SMDO Samad 81.68 292 P **P 01 16 57.6 +1.1**
SNR=5.9
SMDO Samad 81.68 292 P **P 01 16 57.6 +1.1**
SNR=5.9
NLWA Neilton Lookou 82.31 43 *e*P **P 01 17 01.9 +2.6**
comp=Z,91nm,1.4s
NLWA LR LR
comp=Z,764nm,20.0s
CASY Casey 82.33 193 *e*P **P 01 17 01.9 +3.2**
comp=Z,76nm,1.7s
BANOM Banah 82.75 295 *i*P **P 01 17 02.0 +0.1**
SNR=16
BANOM Banah 82.75 295 P **P 01 17 02.8 +0.8**
SNR=11
BANOM Banah 82.75 295 P **P 01 17 02.8 +0.8**
SNR=11
A04D Lummi Island 82.84 42 P **P 01 17 03.3 +1.5**
baz=281
UOSS Minazif 83.01 294 *e*P **P 01 17 02.9 -0.4**
comp=Z,3.7nm,1.1s
HATD Hatta, Dubai 83.10 294 *i*P **P 01 17 03.5 -0.3**
SNR=12
G03D McMinnville, O 83.11 45 P **P 01 17 04.9 +1.5**
baz=281
F04D Rainier, OR 83.12 44 P **P 01 17 03.8 +0.4**
baz=281
ASHO Ashiyiah 83.19 294 *i*P **P 01 17 03.9 -0.4**
SNR=16
ASHO Ashiyiah 83.19 294 P **P 01 17 04.7 +0.4**
SNR=8.6
ASHO Ashiyiah 83.19 294 P **P 01 17 04.7 +0.4**
SNR=8.6
CMW Cultus Mountai 83.28 42 P **P 01 17 06.1 +1.7**
B05A Bryant 83.32 42 P **P 01 17 05.8 +1.4**
baz=281
I03D Drain, OR 83.33 47 P **P 01 17 05.8 +1.3**
baz=281,SNR=8.3
L02D Cave Junction, 83.43 48 P **P 01 17 06.6 +1.5**
baz=281,SNR=5.6
JCW Jim Creek 83.44 42 P **P 01 17 06.5 +1.4**
NAZ Nazwa, Dubai 83.49 294 *i*P **P 01 17 05.3 -0.4**
SNR=7.8
F04A Amboy 83.55 45 *e*P **P 01 17 07.7 +2.0**
comp=Z,51nm,1.2s
KHMM Horse Mountain 83.57 50 *e*P **P 01 17 08.5 +2.4**
comp=Z,112nm,1.6s
FAQ Al Faqa, Dubai 83.59 294 *i*P **P 01 17 05.7 -0.6**
SNR=8.2
D05A Enumclaw 83.60 43 *e*P **P 01 17 08.4 +2.5**
comp=Z,70nm,1.1s
TDL Tradedollar La 83.61 44 P **P 01 17 07.1 +1.0**
LON Longmire 83.81 44 *e*P **P 01 17 08.9 +1.9**
LON pmax pmax
comp=Z,13nm,1.0s
LON Longmire 83.81 44 *e*P **P 01 17 08.9 +1.9**
comp=Z,13nm,1.0s
HUMO Hull Mountain 83.81 48 *e*P **P 01 17 09.0 +1.9**
comp=Z,90nm,1.5s
H04A Detroit Lake 83.96 46 *e*P **P 01 17 08.9 +1.1**

comp=Z,59nm,1.4s
I04A Tendick Farm, 83.97 47 P **P 01 17 08.4 +0.4**
baz=282,SNR=8.6
TDH Tom, Dick, Har 84.11 45 P **P 01 17 09.5 +0.8**
M02C Callahan 84.12 49 P **P 01 17 10.0 +1.2**
baz=281,SNR=8.7
YBH Yreka Blue Hor 84.16 49 *e*P **P 01 17 10.4 +1.4**
YBH pmax pmax
comp=Z,33nm,1.2s
YBH Yreka Blue Hor 84.16 49 *e*P **P 01 17 10.4 +1.4**
comp=Z,34nm,1.3s
C06D Leavenworth 84.18 42 P **P 01 17 09.8 +1.0**
baz=282
YKA Yellowknife Ar 84.21 27 P **P 01 17 08.4 -0.2**
comp=Z,26nm,1.0s,baz=288,slow=5.3,SNR=134
N02D Trinity Center 84.32 49 P **P 01 17 10.9 +1.1**
baz=282,SNR=9.4
G05D Wamic, OR 84.45 45 P **P 01 17 11.5 +1.2**
baz=282
NAC Naches 84.47 44 P **P 01 17 11.9 +1.5**
NLW Nelson Butte 84.51 42 P **P 01 17 11.8 +1.1**
WDC Whiskeytown Da 84.52 50 *e*P **P 01 17 11.8 +1.1**
WDC pmax pmax
comp=Z,46nm,1.4s
WDC Whiskeytown Da 84.52 50 *e*P **P 01 17 11.8 +1.1**
comp=Z,46nm,1.4s
ETW Entiat 84.62 43 P **P 01 17 12.3 +1.1**
I05D Terrebonne, OR 84.62 46 P **P 01 17 12.1 +0.9**
baz=282,SNR=6.5
K04D Chiloquin, OR 84.68 48 P **P 01 17 12.7 +1.0**
baz=282
PNT Penticton 84.71 41 P **P 01 17 12.3 +0.8**
PNT Penticton 84.71 41 P **P 01 17 12.3 +0.8**
M04C Macdoel 84.79 49 P **P 01 17 13.1 +0.9**
baz=282,SNR=13
J05D Fort Rock, OR 84.92 47 P **P 01 17 13.4 +0.5**
baz=282,SNR=17
G06A Carlson Farm, 84.92 45 *e*P **P 01 17 14.1 +1.4**
comp=Z,84nm,1.9s
SPA0 Spitsbergen Ar 85.07 351 *e*P **P 01 17 14.8 +2.0**
B08A Colville Reser 85.11 42 *e*P **P 01 17 14.7 +1.1**
comp=Z,98nm,1.4s
O03D Paynes Creek 85.13 50 P **P 01 17 14.6 +0.7**
baz=282,SNR=8.5
SAW Saint Andrews 85.21 42 P **P 01 17 15.0 +1.0**
KBS Kingsbay 85.24 352 PFAKE 01 17 30.0 +16
KBS LR LR
comp=Z,691nm,20.0s
K05A Summer Lake 85.28 47 *e*P **P 01 17 16.4 +1.7**
comp=Z,60nm,1.2s
HAWA Hanford 85.42 44 *e*P **P 01 17 16.5 +1.4**
comp=Z,84nm,1.7s
HAWA LR LR
comp=Z,956nm,20.0s
ORV Oroville 85.51 51 *e*P **P 01 17 16.9 +1.2**
ORV pmax pmax
comp=Z,65nm,1.6s
ORV Oroville 85.51 51 *e*P **P 01 17 16.9 +1.2**
comp=Z,65nm,1.6s
D08A Wollman Farm, 85.67 43 *e*P **P 01 17 16.2 -0.2**
comp=Z,93nm,1.4s
LVZ Lovozero 85.72 339⇑ *e*P **P 01 17 14.2 -2.0**
LVZ pmax pmax
comp=Z,51nm,1.2s
LVZ Lovozero 85.72 339 *e*P **P 01 17 15.0 -1.1**
comp=Z,54nm,1.2s
LVZ LR LR
comp=Z,1μm,19.0s
TMCR Tamitsa 85.78 335 *e*P **P 01 17 15.2 -1.3**
TMCR pmax pmax
comp=Z,95nm,1.5s
RES Resolute Bay 85.83 13 P **P 01 17 16.8 +0.3**
comp=Z,61nm,0.9s,baz=304,slow=5.5,SNR=46
RES Resolute Bay 85.83 13 *e*P **P 01 17 17.3 +0.8**
RES pmax pmax
comp=Z,120nm,1.2s
RES Resolute Bay 85.83 13 *e*P **P 01 17 17.3 +0.8**
comp=Z,124nm,1.2s
MOD Modoc Plateau 85.89 48 *e*P **P 01 17 19.1 +1.3**
comp=Z,35nm,1.3s
C09A Chrisman Ranch 85.93 42 *e*P **P 01 17 18.8 +1.2**
comp=Z,78nm,1.4s
HSPB Hornsund (broa 85.96 350 *e*P **P 01 17 17.0 -0.2**
AFDM Forest Hills D 86.04 51 *e*P **P 01 17 19.9 +1.5**
comp=Z,27nm,1.2s
G08A Pilot Rock 86.06 45 *e*P **P 01 17 19.7 +1.2**
comp=Z,40nm,1.4s
KLMR Klimovskoe 86.23 332*c i*P **P 01 17 17.0 -1.8**
KLMR pmax pmax
comp=Z,59nm,1.3s
APA Apatity 86.28 339⇑ *i*P **P 01 17 18.8 -0.1**
APA pmax pmax
comp=Z,103nm,1.4s
APA MLR MLR
comp=Z,1μm,19.0s
E09A Wood Farm, Sta 86.32 43 *e*P **P 01 17 21.1 +1.6**
comp=Z,92nm,1.4s
NEW Newport 86.56 41 P **P 01 17 21.4 +0.6**
comp=Z,33nm,0.9s,baz=280,slow=4.2,SNR=36
NEW Newport 86.56 41 P **P 01 17 21.6 +0.9**
baz=285
NEW Newport 86.56 41 *e*P **P 01 17 21.9 +1.1**
NEW pmax pmax
comp=Z,89nm,1.2s
NEW Newport 86.56 41 *e*P **P 01 17 21.9 +1.1**
comp=Z,89nm,1.3s
NEW LR LR
comp=Z,582nm,20.0s
RKT Rikitea 86.62 114 *e*S **S 01 27 57.4 -0.1**
comp=Z,1μm,27.8s
RKT Rikitea 86.62 114 *e*LR LR 01 44 30.0
comp=Z,1μm,24.0s,baz=294
CMB Columbia Colle 86.69 52 *e*P **P 01 17 23.0 +1.3**
CMB pmax pmax
comp=Z,39nm,1.3s
CMB Columbia Colle 86.69 52 *e*P **P 01 17 23.0 +1.3**
comp=Z,39nm,1.3s
WVOR Wild Horse Val 86.97 47 *e*P **P 01 17 22.9 -0.1**
WVOR pmax pmax
comp=Z,40nm,1.3s
WVOR MLR MLR
comp=Z,2μm,20.0s
WVOR Wild Horse Val 86.97 47 *e*P **P 01 17 22.9 -0.1**
comp=Z,40nm,1.3s
WVOR LR LR
comp=Z,2μm,20.0s
PAHR Pah Rah Range 87.07 50 *e*P **P 01 17 24.9 +1.4**
comp=Z,37nm,1.4s
F10A Beach Ranch, E 87.07 44 *e*P **P 01 17 24.4 +1.0**
comp=Z,100nm,1.8s
MIR Mirnyy 87.17 198 *i*P **P 01 17 25.0 +1.9**
MIR pmax pmax
comp=Z,4.0nm,1.5s
BMO Blue Mountains 87.31 45 *e*P **P 01 17 25.2 +0.6**
BMO pmax pmax
comp=Z,59nm,1.2s
BMO Blue Mountains 87.31 45 *e*P **P 01 17 25.2 +0.6**
comp=Z,59nm,1.3s
BMO LR LR
comp=Z,1μm,20.0s
WAKR Walker 87.31 51 *e*P **P 01 17 26.7 +1.9**
KEV Kevo 87.39 342 *e*P **P 01 17 24.2 -0.1**
KEV pmax pmax
comp=Z,64nm,1.4s
KEV Kevo 87.39 342 *e*P **P 01 17 24.2 -0.1**
comp=Z,64nm,1.4s
KEV LR LR
comp=Z,1μm,20.0s
SMMC Simmler 87.62 55 P **P 01 17 27.6 +1.4**
baz=284
PKM Mcpherson Peak 87.87 55 P **P 01 17 28.8 +1.2**
baz=284
ARA0 ARCESS Array S 87.96 342 *e*P **P 01 17 26.1 -0.9**
ARCES ARCESS Array B 87.96 342 P **P 01 17 26.4 -0.6**
comp=Z,20nm,1.2s,baz=70,slow=5.3,SNR=13
ARE0 ARCESS Array S 87.96 342 *e*P **P 01 17 27.2 +0.1**
comp=Z,62nm,1.5s
MLAC Mammoth, Mammo 87.98 52 P **P 01 17 29.0 +0.9**
baz=284
RCTC Rector, Farmer 87.98 53 P **P 01 17 28.7 +0.9**
baz=284
VRH Novokhopyorsk 88.05 322 *e*P **P 01 17 26.0 -1.8**
VRH pmax pmax
comp=Z,80nm,0.9s
VRH MLR MLR
comp=Z,2μm,20.0s
SBC Santa Barbara 88.05 55 P **P 01 17 29.3 +1.1**
baz=284
BSMT Bassoo Peak 88.18 41 *e*P **P 01 17 29.8 +1.0**
NV01 Mina Array Sit 88.19 51 *e*P **P 01 17 29.5 +0.4**
NVAR Mina Array Bea 88.19 51 P **P 01 17 30.4 +1.3**
comp=Z,13nm,0.8s,baz=266,slow=6.3,SNR=36
VES Vestal, Richgr 88.22 54 P **P 01 17 29.4 +0.5**
baz=284
SCZ2 Santa Cruz Isl 88.22 56 P **P 01 17 30.0 +0.9**
baz=284
NV11 Mina Array Sit 88.31 51 *e*P **P 01 17 30.8 +1.2**
WALA Waterton Lakes 88.39 40 *e*P **P 01 17 31.2 +1.6**
BLMT Blacktail Moun 88.41 41 *e*P **P 01 17 31.3 +1.4**
SNCC San Nicolas Is 88.49 56 P **P 01 17 31.0 +0.7**
baz=284
JTMT Jette 88.54 41 *e*P **P 01 17 31.4 +1.0**
TIN Tinemaha, Big 88.59 52 P **P 01 17 32.3 +1.4**
baz=285
ARVC Arvin 88.59 54 P **P 01 17 31.7 +0.9**
baz=284
BLG Laguna Peak, P 88.65 56 P **P 01 17 32.0 +0.9**
baz=284
YBMT Yellow Bay 88.68 41 *e*P **P 01 17 32.0 +0.9**
GUDG Gudauri 88.71 313 P **P 01 17 31.3 -0.1**
MFID Camas Ranch 88.71 46 *e*P **P 01 17 32.4 +1.1**
comp=Z,84nm,1.3s
TBLG Delisi 88.72 312 P **P 01 17 30.3 -0.9**
TBLG Delisi 88.72 312 P **P 01 17 30.3 -0.9**
ISA Isabella, Lake 88.75 54 P **P 01 17 32.3 +0.7**
baz=284
SWMT Swartz Lake 88.79 42 *e*P **P 01 17 32.1 +0.6**
OSI Osito Audit: C 88.80 55 P **P 01 17 33.3 +1.5**
baz=284
CWC Cottonwood Cre 88.86 53 P **P 01 17 33.7 +1.5**
baz=285
MOS Moscow 88.89 327 *e*P **P 01 17 30.1 -1.6**
MOS *e* 01 17 35.4
MOS pmax pmax
comp=Z,192nm,1.4s
MOS MLR MLR
comp=E,2μm,19.0s
MOS MLR MLR
comp=Z,2μm,19.0s
GOF Gofitskoye 88.99 316⇑ *e*P **P 01 17 31.3 -1.1**
GOF pmax pmax
comp=Z,95nm,1.4s
MSO Missoula 89.03 42 P **P 01 17 33.4 +0.7**
baz=287
MSO Missoula 89.03 42 *e*P **P 01 17 33.1 +0.5**
comp=Z,18nm,1.4s
ZEI Tsey 89.03 314 *e*P **P 01 17 29.2 -3.7**
ZEI *e*S **SKSac 01 27 56.6 -5.1**
ZEI pmax pmax
comp=Z,57nm,0.8s
NCK Nalchik 89.05 314⇓ *i*P **P 01 17 31.6 -1.1**
NCK pmax pmax
comp=Z,30nm,0.9s
GNI Garni 89.13 311 *e*P **P 01 17 32.6 -0.8**
GNI pmax pmax
comp=Z,225nm,1.4s
GNI Garni 89.13 311 *e*P **P 01 17 32.6 -0.8**
comp=Z,225nm,1.4s
DECC Green Verdugo 89.20 55 P **P 01 17 35.1 +1.4**
baz=285
LPSR Galich'ya Gora 89.25 324 *e*P **P 01 17 31.5 -1.9**
LPSR pmax pmax
comp=Z,70nm,1.0s
LPSR MLR MLR
comp=Z,740nm,17.0s
GRAC Grapevine Rang 89.28 52 P **P 01 17 35.4 +1.4**
baz=285
DAC Darwin (Calif) 89.28 53 *e*P **P 01 17 35.3 +1.1**
DAC pmax pmax
comp=Z,29nm,1.2s
DAC Darwin (Calif) 89.28 53 *e*P **P 01 17 35.3 +1.1**
comp=Z,29nm,1.3s
EDW2 Edwards Air Fo 89.32 55 P **P 01 17 35.7 +1.5**
baz=285,SNR=9.6
PASC Pasadena Art C 89.34 55 *e*P **P 01 17 35.8 +1.5**
comp=Z,38nm,1.2s
SCI2 San Clemente I 89.35 56 P **P 01 17 35.0 +0.7**
baz=284
CIS Catalina Islan 89.35 56 P **P 01 17 35.2 +0.8**
baz=284
FMP Fort Macarthur 89.37 56 P **P 01 17 35.5 +1.1**
baz=285
ONI Oni 89.40 313 P **P 01 17 33.5 -1.0**
ONI Oni 89.40 313 P **P 01 17 33.5 -1.0**
LRMC Laurel Mtn Rad 89.42 54 P **P 01 17 36.0 +1.2**
baz=285,SNR=6.9
MWC Mount Wilson 89.43 55 *e*P **P 01 17 36.4 +1.4**
MWC pmax pmax
comp=Z,40nm,1.2s
MWC Mount Wilson 89.43 55 *e*P **P 01 17 36.4 +1.4**
comp=Z,40nm,1.2s
CHMT Chamberlain Mo 89.45 42 *e*P **P 01 17 35.2 +0.4**
KBZ Khabaz 89.47 315 P **P 01 17 33.5 -1.2**
comp=Z,10nm,0.9s,baz=101,slow=3.1,SNR=18
KIV Kislovodsk 89.55 315 *e*P **P 01 17 35.7 +0.5**
KIV Kislovodsk 89.55 315 *i*P **P 01 17 33.9 -1.3**
SNR=5.3
KIV Kislovodsk 89.55 315*c i*P **P 01 17 33.4 -1.8**
KIV *e* 01 21 03.9
KIV *e*PPP PPP 01 23 04.6
KIV *e*SS SS 01 34 19.5 -1.0
KIV pmax pmax
comp=Z,20nm,1.0s
KIV MLR MLR
comp=Z,2μm,21.0s
KIV Kislovodsk 89.55 315 *e*P **P 01 17 33.7 -1.5**
comp=Z,104nm,2.0s
KIV LR LR
comp=Z,2μm,20.0s
VSR Storozhevoye 89.57 323 *e*P **P 01 17 32.6 -2.4**
VSR pmax pmax
comp=Z,80nm,1.1s
VSR MLR MLR
comp=Z,2μm,20.0s
HLID Hailey 89.66 45 P **P 01 17 36.8 +0.9**
baz=287
HLID Hailey 89.66 45 *e*P **P 01 17 37.0 +1.1**
comp=Z,34nm,1.3s
HLID LR LR
comp=Z,1μm,20.0s
OBN Obninsk 89.68 327*c i*P **P 01 17 33.4 -1.9**
OBN *i* 01 17 48.6
OBN *e* 01 21 06.7
OBN *e*S **SKSac 01 28 02.3 -2.2**
OBN pmax pmax
comp=Z,247nm,1.7s
OBN Obninsk 89.68 327 *e*P **P 01 17 33.5 -1.9**
comp=Z,205nm,1.3s
OBN LR LR
comp=Z,1μm,20.0s
AKH Akhalkalaki 89.70 312 P **P 01 17 35.5 -0.6**
AKH Akhalkalaki 89.70 312 P **P 01 17 35.5 -0.6**
NEY Neytrino 89.73 314*de*P **P 01 17 35.7 -0.4**
NEY pmax pmax
comp=Z,4.0nm,0.8s
NEY MLR MLR
comp=Z,509nm,18.0s
BFSC Mount Baldy Ra 89.75 55 P **P 01 17 37.2 +0.9**
baz=285
FURC Furnace Creek, 89.80 53 P **P 01 17 37.3 +1.0**
baz=285,SNR=9.1
ELK Elko 89.87 48 *e*P **P 01 17 38.6 +1.6**
ELK pmax pmax
comp=Z,65nm,1.6s
ELK Elko 89.87 48 *e*P **P 01 17 38.6 +1.6**
comp=Z,65nm,1.6s
CLDR Caldiran 90.02 310 *e*P **P 01 17 37.0 -0.7**
RRX Edison Barstow 90.11 54 P **P 01 17 39.3 +1.4**
baz=285
TPNV Topopah Spring 90.15 52 P **P 01 17 39.4 +1.2**
baz=286,SNR=28
TPNV Topopah Spring 90.15 52 *e*P **P 01 17 39.6 +1.3**
TPNV pmax pmax
comp=Z,33nm,1.1s
TPNV Topopah Spring 90.15 52 *e*P **P 01 17 39.6 +1.3**
comp=Z,33nm,1.1s
GSC Goldstone, Bar 90.15 54 P **P 01 17 39.5 +1.3**
baz=285,SNR=20
GSC Goldstone, Bar 90.15 54 *e*P **P 01 17 39.5 +1.3**
GSC pmax pmax
comp=Z,36nm,1.1s
GSC Goldstone, Bar 90.15 54 *e*P **P 01 17 39.5 +1.3**
comp=Z,36nm,1.1s
KARS Kars 90.22 312 *e*P **P 01 17 39.3 +0.8**
EPOS Posof 90.23 313 *i*P **P 01 17 35.8 -2.7**
R11A Troy Canyon, C 90.28 51 P **P 01 17 39.9 +1.0**
baz=286,SNR=22
R11A Troy Canyon, C 90.28 51 *e*P **P 01 17 39.9 +1.0**
comp=Z,37nm,1.4s
MURC Murrieta 90.29 56 P **P 01 17 39.8 +1.0**
baz=285
LRM Limekiln Ridge 90.31 43 *e*P **P 01 17 39.6 +0.7**
CHVG Ch'k'valeri 90.33 314 *e*P **P 01 17 39.2 +0.5**
CHVG Ch'k'valeri 90.33 314 P **P 01 17 36.0 -2.7**
MCMT McKenzie Canyo 90.36 44 *e*P **P 01 17 40.3 +1.1**
DLMT Dillon 90.36 43 *e*P **P 01 17 40.2 +1.1**
comp=Z,49nm,1.6s
VNDA Vanda 90.36 176 P **P 01 17 40.2 +2.2**
comp=Z,5.5nm,1.2s,baz=315,slow=6.6,SNR=8.7
VNDA LR LR 01 56 20.2
comp=Z,306nm,19.2s,baz=348,slow=34
VNDA Vanda 90.36 176 *e*P **P 01 17 40.7 +2.7**
VNDA pmax pmax
comp=Z,21nm,1.6s
VNDA Vanda 90.36 176 *e*P **P 01 17 40.7 +2.7**
comp=Z,21nm,1.6s
DAG Danmarks Havn 90.39 356⇑ *i*P **P 01 17 37.1 -1.2**
comp=Z,19nm,1.0s
DAG Danmarks Havn 90.39 356⇑ *i*P **P 01 17 37.1 -1.2**
DAG pmax pmax
comp=Z,19nm,1.0s
SHOC Shoshone, Teco 90.41 53 P **P 01 17 40.3 +1.0**
baz=286,SNR=11
HRY Holter Researc 90.44 42 *e*P **P 01 17 40.7 +1.4**
109C Camp Elliot, M 90.54 56 P **P 01 17 40.8 +0.9**
baz=285
VANB Van 90.57 310 *e*P **P 01 17 40.3 +0.2**
HEC Hector,Ludlow 90.65 54 P **P 01 17 41.4 +0.9**
baz=286,SNR=11
SENK Senkaya-Erzuru 90.77 312 *e*P **P 01 17 39.6 -1.5**
CUKT Cukurca 90.78 308 *e*P **P 01 17 41.0 -0.1**
TUQ Turquoise Moun 90.81 54 P **P 01 17 42.3 +1.0**
baz=286,SNR=15
PUL Pulkovo 90.87 332⇑ *e*P **P 01 17 40.4 -0.4**
PUL pmax pmax
comp=Z,63nm,1.2s
PFO Pinyon Flats O 90.88 55 P **P 01 17 42.7 +1.1**
baz=286
PFO Pinyon Flats O 90.88 55 *e*P **P 01 17 43.0 +1.3**
PFO pmax pmax
comp=Z,33nm,1.2s
PFO Pinyon Flats O 90.88 55 *e*P **P 01 17 43.0 +1.3**
comp=Z,33nm,1.2s
PFO LR LR
comp=Z,1μm,20.0s
TPFO Pinon Flats 90.88 55 P **P 01 17 42.5 +0.8**
baz=286,SNR=9.5
ARTV Artvin 90.90 312 *i*P **P 01 17 40.4 -1.3**
BOZ Bozeman (W) 90.92 43 P **P 01 17 42.7 +1.1**
baz=289
BOZ Bozeman (W) 90.92 43 *e*P **P 01 17 42.4 +0.8**
BOZ pmax pmax
comp=Z,37nm,1.5s
BOZ Bozeman (W) 90.92 43 *e*P **P 01 17 42.4 +0.8**
comp=Z,37nm,1.5s
BOZ *e*PP **PP 01 21 15.1 -2.4**
BOZ LR LR
comp=Z,679nm,22.0s
DAGI Agillar 90.94 312 *i*P **P 01 17 40.4 -1.4**
BAR Barrett 90.95 56 *e*P **P 01 17 43.3 +1.4**
comp=Z,34nm,1.2s
SBA Scott Base 91.03 175 *e*P **P 01 17 45.8 +4.7**
SBA pmax pmax
comp=Z,27nm,1.5s
SBA Scott Base 91.03 175 *e*P **P 01 17 45.8 +4.7**
comp=Z,26nm,1.5s
MONP2 Monument Peak 91.10 56 P **P 01 17 43.6 +0.8**
baz=286,SNR=16
SHPR Sheep Range 91.11 52 *e*P **P 01 17 44.8 +2.1**
comp=Z,32nm,1.3s
DBAD Bademkaya 91.11 312 *i*P **P 01 17 41.5 -1.1**
BELC Belle Mtn. Jos 91.14 55 P **P 01 17 43.6 +0.7**
baz=286,SNR=11
GMRC Granite Mounta 91.20 54 P **P 01 17 44.1 +0.9**
baz=286,SNR=19
QLMT Earthquake Lak 91.31 44 *e*P **P 01 17 45.5 +1.9**
EGMT Eagleton 91.34 40 P **P 01 17 43.8 +0.4**
baz=290
EGMT Eagleton 91.34 40 PFAKE 01 18 00.0 +17
EGMT LR LR
comp=Z,634nm,19.0s
HVU Hansel Valley 91.34 47 *e*P **P 01 17 45.3 +1.6**
HVU pmax pmax
comp=Z,32nm,1.3s
HVU Hansel Valley 91.34 47 *e*P **P 01 17 45.3 +1.6**
comp=Z,32nm,1.3s
EKAR Karacoaban 91.37 311 *i*P **P 01 17 44.2 +0.3**
IKP In-Ko-Pah, Jac 91.42 56 P **P 01 17 43.8 -0.4**
baz=286
PTCN Pitcairn Islan 91.42 115 PFAKE 01 18 00.0 +16
PTCN LR LR
comp=Z,2μm,19.0s
BGU Big Grassy Mou 91.42 48 *e*P **P 01 17 45.4 +1.3**
comp=Z,10nm,1.3s
PSUT Pine Spring 91.53 50 *e*P **P 01 17 45.8 +1.2**
comp=Z,24nm,1.1s
LDFC Landfair 91.55 54 *e*P **P 01 17 46.6 +1.9**
comp=Z,116nm,1.3s
SWSC Sam W. Stewart 91.59 56 P **P 01 17 45.8 +1.0**
baz=286
BC3 Big Chuckawall 91.67 55 P **P 01 17 46.5 +1.2**
baz=286,SNR=15
ERZM Erzurum 91.69 311 *i*P **P 01 17 45.2 -0.2**
EZM Erzurum 91.69 311 *e*P **P 01 17 45.1 -0.4**
SOC Sochi 91.71 315 *e*P **P 01 17 41.6 -3.5**
SOC MLR MLR
comp=Z,1μm,16.0s
SPUT South Promonto 91.72 47 *e*P **P 01 17 46.8 +1.3**
comp=Z,20nm,1.2s
IRM Iron Mountain 91.78 55 P **P 01 17 47.0 +1.3**
baz=286,SNR=24
DUG Dugway, Tooele 91.80 48 P **P 01 17 46.7 +0.9**
baz=288
DUG Dugway, Tooele 91.80 48 *e*P **P 01 17 47.1 +1.3**
DUG pmax pmax
comp=Z,26nm,1.2s
DUG Dugway, Tooele 91.80 48 *e*P **P 01 17 47.1 +1.3**
comp=Z,26nm,1.2s
DUG LR LR
comp=Z,1μm,20.0s
YFT Old Faithful 91.84 44 *e*P **P 01 17 49.4 +3.3**
comp=Z,27nm,1.0s
FIA1 FINESS Array S 91.90 335 *e*P **P 01 17 44.1 -1.5**
FINES FINESS Array B 91.90 335 P **P 01 17 43.5 -2.1**
comp=Z,10nm,0.8s,baz=66,slow=5.3,SNR=35
FINES FINESS Array B 91.90 335 *i*P **P 01 17 44.0 -1.6**
FINES pmax pmax
comp=Z,10.0nm,0.8s
IMW Indian Meadow 91.95 44 *e*P **P 01 17 48.2 +1.6**
comp=Z,14nm,1.0s
IMW *e*PP **PP 01 21 24.6 -1.2**
FXWY Fox Creek 91.97 45 *e*P **P 01 17 48.2 +1.5**
comp=Z,13nm,1.1s
H17A Grant Village 92.03 44 P **P 01 17 49.5 +2.5**
baz=290
H17A Grant Village 92.03 44 *e*P **P 01 17 50.1 +3.1**
FLWY Flagg Ranch 92.05 44 *e*P **P 01 17 49.0 +2.1**
comp=Z,32nm,1.1s
LKWY Lake 92.09 44 *e*P **P 01 17 50.1 +2.9**
LKWY pmax pmax
comp=Z,35nm,1.1s
LKWY Lake 92.09 44 *e*P **P 01 17 50.1 +2.9**
comp=Z,35nm,1.1s
LKWY LR LR
comp=Z,835nm,19.0s
MOOW Moose Ponds 92.13 44 *e*P **P 01 17 48.7 +1.4**
comp=Z,15nm,1.3s
MOOW *e*PP **PP 01 21 25.7 -1.5**
KULLO Kullorsuaq 92.14 6⇑ *i*P **P 01 17 45.4 -1.0**
comp=Z,53nm,1.4s
KULLO Kullorsuaq 92.14 6⇑ *i*P **P 01 17 45.4 -1.0**
KULLO pmax pmax
comp=Z,53nm,1.4s
GCMT Greycliff 92.17 42 *e*P **P 01 17 49.7 +2.3**
REDW Red Top Meadow 92.19 45 *e*P **P 01 17 49.0 +1.4**
REDW *e*PP **PP 01 21 24.4 -3.2**
AHID Auburn Hatcher 92.21 45 *e*P **P 01 17 49.1 +1.3**
comp=Z,70nm,1.8s
AHID LR LR

comp=Z,1µm,20.0s
HWUT Hardware Ranch 92.26 47 eP P 01 17 48.8 +0.8
comp=Z,32nm,1.4s
HWUT LR LR
comp=Z,970nm,20.0s
LOHW Long Hollow 92.27 45 eP P 01 17 49.3 +1.3
comp=Z,7.4nm,0.9s
KOPT Kop Dagi 92.29 312 i P P 01 17 48.3 0.0
GLA Glamis 92.34 56 P P 01 17 49.8 +1.4
baz=286,SNR=14
GLA Glamis 92.34 56 eP P 01 17 50.2 +1.9
GLA pmax pmax
comp=Z,29nm,1.1s
GLA Glamis 92.34 56 eP P 01 17 50.2 +1.9
comp=Z,29nm,1.1s
Y12C Blythe 92.39 55 P P 01 17 49.6 +1.1
baz=287,SNR=12
Y12C Blythe 92.39 55 eP P 01 17 50.2 +1.7
NLU North Lily Min 92.41 48 eP P 01 17 50.1 +1.3
comp=Z,7.7nm,1.0s
LCMT Little Creek M 92.44 51 eP P 01 17 50.3 +1.5
comp=Z,21nm,1.2s
BNGB Bing¶ll 92.47 311 eP P 01 17 47.4 -1.6
W13A Hualapai Mount 92.51 53 eP P 01 17 50.0 +0.7
TCUT Toone Canyon 92.53 47 eP P 01 17 50.9 +1.6
comp=Z,18nm,1.1s
PDMCI Parker Dam,Lak 92.53 54 P P 01 17 50.4 +1.2
baz=287,SNR=14
JLU Jordanelle 92.66 48 eP P 01 17 51.2 +1.2
comp=Z,62nm,1.8s
RLMT Red Lodge 92.66 43 P P 01 17 50.7 +0.9
baz=291
RLMT Red Lodge 92.66 43 eP P 01 17 51.2 +1.4
comp=Z,23nm,0.8s
RLMT ePP PP 01 21 28.3 -2.9
RLMT LR LR
comp=Z,592nm,21.0s
KNB Kanab 92.76 51 eP P 01 17 52.4 +2.0
KNB pmax pmax
comp=Z,33nm,1.2s
KNB Kanab 92.76 51 eP P 01 17 52.4 +2.0
comp=Z,33nm,1.2s
ANN Anapa 92.85 317c iP P 01 17 47.9 -2.4
ANN eS SKSac 01 28 20.7 -2.3
ANN pmax pmax
comp=Z,57nm,1.1s
GUMT Gumushane 92.89 312 eP P 01 17 50.3 -0.5
MTPU Mount Pierson 92.93 50 eP P 01 17 53.4 +2.0
comp=Z,34nm,2.0s
PKCU Pink Cliffs 93.02 51 eP P 01 17 55.0 +3.2
comp=Z,27nm,1.3s
VSU Vasula 93.12 332⇓eP P 01 17 49.3 -1.9
VSU pmax pmax
comp=Z,176nm,1.3s
KELT Kelkit 93.15 312 i P P 01 17 51.4 -0.8
TMUT Trail Mountain 93.26 49 eP P 01 17 54.7 +2.0
comp=Z,12nm,1.0s
113A Mohawk Valley, 93.28 56 eP P 01 17 54.1 +1.5
BW06 Boulder Array 93.28 45 P P 01 17 52.7 0.0
baz=290
BW06 Boulder Array 93.28 45 eP P 01 17 53.4 +0.6
comp=Z,12nm,1.4s
BW06 LR LR
comp=Z,1µm,21.0s
PD31 Pinedale Array 93.28 45 eP P 01 17 54.3 +1.6
PDAR Pinedale Array 93.28 45 P P 01 17 53.2 +0.5
comp=Z,1.2nm,0.8s,baz=302,slow=2.8,SNR=8.9
PDAR PP PP 01 21 35.0 -1.2
comp=Z,2.0nm,1.1s,baz=274,slow=4.3,SNR=5.5
PDAR LR LR 01 55 31.5
comp=Z,977nm,20.5s,baz=316,slow=33
Q16A Castle Valley 93.41 49 eP P 01 17 55.0 +1.6
comp=Z,34nm,1.6s
PTK Pertek 93.46 311 eP P 01 17 52.8 -0.8
P17A Butcher Ranch, 93.54 48 eP P 01 17 55.8 +1.9
comp=Z,38nm,1.8s
Y14A Wickenburg 93.54 54 eP P 01 17 54.5 +0.6
SVRC Sivrice-ELAZID 93.69 310 eP P 01 17 53.9 -0.7
SRU San Rafael Swe 93.82 49 eP P 01 17 56.2 +1.0
SRU pmax pmax
comp=Z,7.0nm,0.9s
SRU San Rafael Swe 93.82 49 eP P 01 17 56.2 +1.0
comp=Z,6.5nm,0.9s
ELZG Elazig 93.89 311 i P P 01 17 55.4 -0.1
SUSE Susehri 93.89 312 i P P 01 17 54.6 -0.9
LAO LASA Array 94.06 41 P P 01 17 56.8 +0.8
baz=293
LAO LASA Array 94.06 41 eP P 01 17 57.1 +1.1
comp=Z,85nm,1.4s
LAO LR LR
comp=Z,653nm,20.0s
214A Organ Pipe Nat 94.29 56 P P 01 17 58.6 +1.2
baz=288
214A Organ Pipe Nat 94.29 56 eP P 01 17 58.2 +0.9
comp=Z,108nm,1.3s
CUZAR Zara_SIVAS 94.31 312 i P P 01 17 56.3 -1.1
WUAZ Wupatki 94.34 52 P P 01 17 58.7 +1.1
baz=289
WUAZ Wupatki 94.34 52 eP P 01 17 59.1 +1.5
comp=Z,19nm,1.0s
WUAZ LR LR
comp=Z,738nm,21.0s
DGMT Dagmar 94.61 38 P P 01 17 58.4 0.0
baz=295
DGMT Dagmar 94.61 38 PFAKE 01 18 10.0 +12
DGMT LR LR
comp=Z,1µm,20.0s
X16A Lo Mia Camp, P 94.63 53 eP P 01 18 01.1 +2.1
ERBA Erbaa 94.77 313 i P P 01 17 58.1 -1.2
SIM Simferopol' 94.99 318deP P 01 17 58.5 -1.7
SIM e 01 21 47.0
SIM pmax pmax
comp=Z,21nm,0.8s
PV09 Paradox Valley 95.05 49 eP P 01 18 02.0 +1.0
A25A Svangstu Ranch 95.06 38 P P 01 18 01.0 +0.5
baz=295
KVT Kavak 95.12 314 eP P 01 18 00.6 -0.4
O20A White River Ci 95.12 47 P P 01 18 01.1 -0.1
baz=291
O20A White River Ci 95.12 47 eP P 01 18 03.7 +2.5
PV10 Paradox Valley 95.16 49 eP P 01 18 02.4 +0.9
SUMG Summit 95.17 1 i P P 01 18 00.1 -0.8
comp=Z,16nm,1.2s
SUMG Summit 95.17 1 i P P 01 18 00.4 -0.5
comp=Z,14nm,1.2s
SUMG Summit 95.17 1 i P P 01 18 00.1 -0.8
SUMG pmax pmax
comp=Z,14nm,1.2s
SUMG Summit 95.17 1 eP P 01 17 59.4 -1.5
PV04 Paradox Valley 95.25 49 eP P 01 18 01.3 -0.5
B25A Knox Farm, Ray 95.32 38 P P 01 18 01.9 +0.2
baz=295
K22A Casper 95.41 44 P P 01 18 02.7 +0.3
baz=292
K22A Casper 95.41 44 eP P 01 18 03.5 +1.1
C25A Freed Ranch, W 95.50 39 P P 01 18 03.0 +0.4
baz=295
AKASG Malin Array Be 95.54 325 P P 01 18 00.6 -2.0
comp=Z,2.8nm,0.7s,baz=51,slow=5.1,SNR=26
AKASG PP PP 01 21 56.0 +2.7
comp=Z,0.2nm,0.3s,baz=56,slow=7.5,SNR=4.0
AKASG Malin Array Be 95.54 325ceP P 01 18 00.8 -1.8
AKASG pmax pmax
comp=Z,3.0nm,0.7s
KIEV Kiev 95.56 325 eP P 01 18 00.3 -2.3
KIEV pmax pmax
comp=Z,31nm,1.6s
KIEV Kiev 95.56 325 eP P 01 18 00.3 -2.3
comp=Z,31nm,1.6s
AK11 Malin Array Si 95.59 325 eP P 01 18 01.4 -1.4
PV01 Paradox Valley 95.59 49 eP P 01 18 02.7 -0.7
PV01 ePP PP 01 21 52.1 -2.2
D25A Fairfield 95.69 39 P P 01 18 03.9 +0.4
baz=295
A26A Wade Farm, Ken 95.72 37 P P 01 18 03.7 +0.2
baz=296
W18A Petrified Fore 95.73 52 P P 01 18 05.3 +1.2
baz=290
TUC Tucson 95.82 55 P P 01 18 05.8 +1.4
baz=289
TUC Tucson 95.82 55 eP P 01 18 05.8 +1.4
TUC Tucson 95.82 55 eP P 01 18 05.8 +1.4
comp=Z,10nm,1.3s
TUC LR LR
comp=Z,983nm,20.0s
B26A Jensen Ranch, 95.83 38 P P 01 18 04.7 +0.7
baz=296
E25A Miller Ranch, 95.92 40 P P 01 18 05.1 +0.6
baz=295
MVCO Mesa Verde 95.96 50 P P 01 18 04.7 -0.5
baz=291
MVCO Mesa Verde 95.96 50 eP P 01 18 04.0 -1.1
comp=Z,15nm,1.4s
MVCO LR LR
comp=Z,860nm,20.0s
F25A Bowman 96.12 40 P P 01 18 05.9 +0.5
baz=295
C26A Wahner Farm, P 96.15 38 P P 01 18 06.0 +0.5
baz=296
A27A Ledoux Ranch, 96.17 37 P P 01 18 05.7 +0.2
baz=297
D26A Manning 96.29 39 P P 01 18 06.8 +0.6
baz=296
SMCO Snowmass 96.38 48 eP P 01 18 08.2 +0.9
SMCO ePP PP 01 21 57.7 -3.0
G25A Newell 96.45 41 P P 01 18 06.7 -0.3
baz=295
N23A Red Feather La 96.47 46 P P 01 18 08.0 +0.6
baz=293
N23A Red Feather La 96.47 46 eP P 01 18 09.6 +2.1
RSSD Black Hills 96.50 42 P P 01 18 07.5 +0.1
baz=294
RSSD Black Hills 96.50 42 eP P 01 18 07.2 -0.2
RSSD e 01 21 59.3
RSSD Black Hills 96.50 42 eP P 01 18 07.2 -0.2
RSSD ePP PP 01 21 59.3 -1.8
C27A Sayler Ranch, 96.56 38 P P 01 18 07.9 +0.5
baz=297
H25A Fruitdale 96.58 42 P P 01 18 07.9 +0.3
baz=295
F26A Lodgepole 96.65 40 P P 01 18 08.1 +0.2
baz=296
SCO Scoresbysund 96.73 355 i P P 01 18 06.8 -0.7
comp=Z,25nm,1.3s
SCO Scoresbysund 96.73 355 i P P 01 18 06.8 -0.7
SCO pmax pmax
comp=Z,25nm,1.3s
I25A Rochford 96.74 42 P P 01 18 08.4 -0.1
baz=294
A28A Rude Farm, Bot 96.76 37 P P 01 18 09.7 +1.5
baz=298
D27A Center 96.82 39 P P 01 18 08.8 +0.2
baz=296
B28A Dugan Ranch, T 96.91 37 P P 01 18 09.0 +0.2
baz=298
G26A Maurine 96.94 41 P P 01 18 09.5 +0.3
baz=296
S22A 4UR Ranch, Cre 97.01 49 P P 01 18 09.6 -0.4
baz=292
S22A 4UR Ranch, Cre 97.01 49 eP Pdif 01 18 11.3 +1.2
E27A Carson 97.09 39 P Pdif 01 18 10.3 +0.4
baz=296
H26A Fairpoint 97.11 41 P P 01 18 09.9 -0.1
baz=295
SUW Suwalki 97.12 329 eP P 01 18 08.4 -1.2
SUW Suwalki 97.12 329 eP P 01 18 08.4 -1.2
ISCO Idaho Springs 97.13 47 P P 01 18 10.4 0.0
baz=293
ISCO Idaho Springs 97.13 47 PFAKE 01 18 20.0 +9.5
ISCO LR LR
comp=Z,1µm,20.0s
SORM Soroca 97.23 323⇑iP P 01 18 06.5 -3.8
SORM Soroca 97.23 323⇑P P 01 18 06.5 -3.8
G27A Dupree 97.33 41 P P 01 18 10.8 -0.1
baz=296
BR131 Keskin Array S 97.33 313 eP P 01 18 09.4 -1.7
BRTR Keskin Array B 97.34 313 P P 01 18 09.3 -1.8
comp=Z,5.1nm,1.0s,baz=61,slow=3.1,SNR=22
BRTR Keskin Array B 97.34 313ceP P 01 18 08.8 -2.4
BRTR pmax pmax
comp=Z,5.0nm,1.0s
A29A Manning Farm, 97.35 36 P P 01 18 10.9 0.0
baz=298
D28A Regan 97.36 38 P Pdif 01 18 11.3 +0.3
baz=297
J26A Sides Ranch, S 97.47 43 P Pdif 01 18 11.9 +0.2
baz=295
KIS Kishinev 97.47 321 eP P 01 18 09.0 -2.4
KIS eL L 01 52 38.0
KIS LRM MLR 02 03 48.0
comp=Z,2µm,20.0s
KIS Kishinev 97.47 321 eP P 01 18 09.0 -2.4
KIS MLR MLR
comp=Z,2µm,20.0s
KIS MLR MLR
comp=Z,2µm,20.0s
KIS MLR MLR
comp=E,1µm,19.0s
B29A Wagenman Farm, 97.50 37 P P 01 18 11.0 -0.5
baz=298
H27A Howes 97.56 41 P P 01 18 11.9 -0.1
baz=296
E28A Huff 97.57 39 P Pdif 01 18 12.0 0.0
baz=297
MDND Maddock 97.64 38 P P 01 18 12.1 -0.1
baz=298
NB2 NORSAR Subarra 97.87 339 P P 01 18 10.8 -2.2
comp=Z,7.9nm,1.1s,baz=51,slow=5.1
NOA NORSAR Array B 97.87 339 P P 01 18 11.2 -1.8
comp=Z,3.6nm,1.0s,baz=59,slow=4.3,SNR=4.9
NOA PP PP 01 22 08.8 -2.0
comp=Z,0.5nm,0.7s,baz=318,slow=26,SNR=2.7
A30A Hoffart Farm, 97.88 36 P P 01 18 13.0 -0.3
baz=299
BR231 Keskin MP Arra 97.90 314 eP P 01 18 09.1 -4.5
NBO02 NORSAR Array S 97.99 339 eP P 01 18 12.1 -1.4
SDCO Great Sand Dun 97.99 49 P P 01 18 13.5 -0.9
baz=293
SDCO Great Sand Dun 97.99 49 eP P 01 18 14.3 0.0
comp=Z,14nm,2.0s
SDCO LR LR
comp=Z,625nm,21.0s
MAW Mawson 98.09 202 P P 01 18 13.2 -0.4
comp=Z,3.0nm,0.8s,baz=64,slow=4.9,SNR=4.4
B30A Myrvik Farm, E 98.11 37 P P 01 18 14.0 -0.3
baz=299
121A Cookes Peak, D 98.14 54 eP P 01 18 14.6 -0.4
comp=Z,7.0nm,0.9s
ANMO Albuquerque 98.31 52 P P 01 18 15.7 0.0
baz=292
ANMO Albuquerque 98.31 52⇓iP Pdif 01 18 17.2 +1.4
ANMO pmax pmax
comp=Z,4.0nm,1.2s
ANMO MLR MLR
comp=Z,745nm,17.0s
ANMO Albuquerque 98.31 52 eP Pdif 01 18 17.1 +1.3
ANMO LR LR
comp=Z,771nm,19.0s
C30A Mose, Pekin 98.38 37 P P 01 18 14.7 -0.8
baz=299
F29A Eureka 98.44 39 Pdiff **P 01 18 15.3 -0.6**
baz=298
D30A Buchanan 98.50 38 Pdiff **P 01 18 15.5 -0.6**
baz=299
ULM Lac du Bonnet 98.59 34 P P 01 18 16.3 -0.1
comp=Z,4.0nm,0.6s,baz=256,slow=6.5,SNR=4.1
E30A Jud 98.69 39 Pdiff **P 01 18 16.6 -0.3**
baz=298
CFR Carcaliu 98.72 320⇑iP P 01 18 15.8 -1.3
CFR Carcaliu 98.72 320⇑P P 01 18 15.8 -1.3
C31A Landman Farms, 98.77 37 Pdiff **P 01 18 16.7 -0.6**
baz=300
LVV L'vov 98.88 325 eP P 01 18 16.2 -1.5
LVV MLR MLR
comp=Z,700nm,19.0s
A32A Rocking H Ranc 98.93 36 Pdiff **P 01 18 17.9 -0.1**
baz=301
TESR Tescani 99.02 322⇑iP Pdif 01 18 16.4 -2.0
OGNE Ogallala 99.17 45 PFAKE 01 18 30.0 +11
OGNE LR LR
comp=Z,1µm,20.0s
B32A Ashes, Strandq 99.17 36 Pdiff **Pdif 01 18 18.3 -0.7**
baz=301
G30A Faulkton 99.19 40 Pdiff **Pdif 01 18 18.5 -0.7**
baz=298
VRI Vrincioaia 99.28 321⇑iP Pdif 01 18 19.1 -0.5
VRI Vrincioaia 99.28 321⇑P Pdif 01 18 19.1 -0.5
BUR08 Bucovina Ar. S 99.33 323 eP Pdif 01 18 19.0 -0.9
PLOR Plostina 99.33 321⇓iP Pdif 01 18 18.8 -1.1
PLOR Plostina 99.33 321⇓P Pdif 01 18 18.8 -1.1
CSS Mathiatis 99.38 309 eP Pdif 01 18 19.6 -0.7
CSS LR LR
comp=Z,260nm,22.0s
KONO Kongsberg 99.42 338 PFAKE 01 18 30.0 +10
KONO LR LR
comp=Z,1µm,20.0s
A33A Warroad 99.54 35 Pdiff **Pdif 01 18 20.7 0.0**
baz=302
KWP Kalwaria Pacla 99.71 326 eP Pdif 01 18 21.0 -0.4
KWP Kalwaria Pacla 99.71 326⇓iP Pdif 01 18 20.9 -0.5
KWP Kalwaria Pacla 99.71 326⇓P Pdif 01 18 20.9 -0.5
J30A Dallas 99.81 42 Pdiff **Pdif 01 18 22.4 +0.3**
baz=298
MLR Muntele Rosu 99.94 321⇑iP Pdif 01 18 21.5 -1.1
MLR Muntele Rosu 99.94 321⇑P Pdif 01 18 21.6 -1.1
EIL Elat 100.03 303 LR LR 02 08 19.5
comp=Z,470nm,21.0s,baz=116,slow=38
DOPR Dopca 100.05 322⇑iP Pdif 01 18 20.6 -2.4
SFJD Kangerlussuaq 100.05 6 PFAKE 01 18 30.0 +7.5
SFJD LR LR
comp=Z,703nm,21.0s
SULR 100.14 320⇓iP Pdif 01 18 22.5 -0.9
BMR Baia Mare 100.30 324⇑iP Pdif 01 18 23.5 -0.6
BMR Baia Mare 100.30 324⇑P Pdif 01 18 23.5 -0.6
ISP Isparta 100.33 312 PFAKE 01 18 40.0 +15
ISP LR LR
comp=Z,885nm,21.0s
MNTX Cornudas Mount 100.34 54 ePdif Pdif 01 18 26.3 +1.7
E33A Westby DABS, E 100.44 38 Pdiff **Pdif 01 18 24.6 -0.2**
baz=301
UZH Uzhgorod 100.48 325⇑iP Pdif 01 18 24.1 -0.7
VOIR 100.52 321⇑iP Pdif 01 18 24.0 -1.2
VOIR 100.52 321⇑P Pdif 01 18 24.0 -1.2
STHS Stebnicka Huta 100.63 326 eP Pdif 01 18 25.4 -0.1
STHS pmax pmax
comp=Z,8.0nm,1.3s
STHS Stebnicka Huta 100.63 326 eP Pdif 01 18 25.4 -0.1
CJR Cluj-Napoca 100.74 323⇑iP Pdif 01 18 35.2 +9.1
CJR Cluj-Napoca 100.74 323⇑P Pdif 01 18 35.2 +9.1
B35A Bob, Littlefor 100.79 35 Pdiff **Pdif 01 18 26.3 +0.1**
baz=303
CRVS Cervenica-Dubn 100.80 326 eP Pdif 01 18 25.6 -0.7
CRVS Cervenica-Dubn 100.80 326 eP Pdif 01 18 25.6 -0.7
H33A Prehn Over Nor 100.91 39 Pdiff **Pdif 01 18 27.1 +0.2**
baz=300
OJC Ojcow 100.96 327 eP Pdif 01 18 26.3 -0.6
OJC Ojcow 100.96 327 eP Pdif 01 18 26.3 -0.6
OJC Ojcow 100.96 327 ePdif Pdif 01 18 26.3 -0.6
C35A Jirik Farms, M 101.00 36 Pdiff **Pdif 01 18 27.1 -0.1**
baz=302
NIE Niedzica 101.14 326 eP Pdif 01 18 27.7 -0.1
NIE Niedzica 101.14 326 eP Pdif 01 18 27.7 -0.1
DRGR 101.22 323⇓iP Pdif 01 18 27.3 -1.0
DRGR 101.22 323⇓P Pdif 01 18 27.3 -1.0
ECSD EROS Data Cent 101.45 40 Pdiff **Pdif 01 18 29.3 -0.1**
baz=300
ECSD EROS Data Cent 101.45 40 ePdif Pdif 01 18 30.0 +0.7
ECSD LR LR
comp=Z,603nm,21.0s
KECS Kecovo 101.56 326 eP Pdif 01 18 29.8 +0.1
KECS pmax pmax
comp=Z,8.0nm,1.2s
KECS Kecovo 101.56 326 eP Pdif 01 18 29.8 +0.1
CBKS Cedar Bluff 101.68 46 PFAKE 01 18 40.0 +10
CBKS LR LR
comp=Z,1µm,20.0s
LANS Liptovska Anna 101.74 327 eP Pdif 01 18 31.6 +1.1
LANS Liptovska Anna 101.74 327 eP Pdif 01 18 31.6 +1.1
OKC Ostrava-Krasne 102.05 328 ePDIFF Pdif 01 18 31.6 -0.2
OKC AMS AMS 02 08 40.0
comp=Z,2µm,16.9s
OKC Ostrava-Krasne 102.05 328 eP Pdif 01 18 31.6 -0.2
OKC MLR MLR
comp=Z,2µm,16.9s
PSZ Piszkesteto 102.21 325⇑iP Pdif 01 18 23.6 -9.1
PSZ Piszkesteto 102.21 325⇑ePdif Pdif 01 18 31.5 -1.2
PSZ Piszkesteto 102.21 325 eP Pdif 01 18 32.1 -0.6
PSZ MLR MLR
comp=Z,1µm,19.0s
PSZ Piszkesteto 102.21 325 ePdif Pdif 01 18 32.1 -0.6
PSZ LR LR
comp=Z,1µm,19.0s
F36A Milaca 102.25 37 Pdiff **Pdif 01 18 32.9 +0.2**
baz=303
EYMN Ely 102.26 35 PFAKE 01 18 40.0 +7.2
EYMN LR LR
comp=Z,693nm,20.0s
MORC Moravsky Berou 102.40 328⇑iP Pdif 01 18 33.1 -0.3
MORC Moravsky Berou 102.40 328 eP Pdif 01 18 32.7 -0.7
MORC Moravsky Berou 102.40 328 ePdif Pdif 01 18 32.7 -0.7
VYHS Vyhne 102.46 326 eP Pdif 01 18 32.8 -0.9
VYHS pmax pmax
comp=Z,18nm,1.3s
VYHS Vyhne 102.46 326 eP Pdif 01 18 32.8 -0.9
VYHS ePP PP 01 22 47.6 +1.6
VYHS eS SKSac 01 28 56.9 -15
BZS Buzias 102.49 323⇑iP Pdif 01 18 34.3 +0.5
BZS Buzias 102.49 323⇑P Pdif 01 18 34.3 +0.5
C38A Sawbill Land. 102.51 35 Pdiff **Pdif 01 18 33.3 -0.6**
baz=305
TX31 Lajitas Ar. Si 102.59 56 ePdif Pdif 01 18 36.4 +1.6
TXAR Lajitas Array 102.59 56 P Pdif 01 18 36.5 +1.7
comp=Z,0.5nm,0.9s,baz=288,slow=3.5,SNR=3.9
TXAR PP PP 01 22 48.7 +0.9
comp=Z,0.2nm,0.9s,baz=83,slow=4.0,SNR=2.7
TXAR PKiKP PKiKP 01 22 54.9 -1.1
comp=Z,0.5nm,0.9s,baz=319,slow=5.3,SNR=3.8
TXAR PKKPbc PKKPbc 01 34 35.0 -0.1
comp=Z,0.3nm,0.8s,baz=145,slow=4.6,SNR=3.4
KRLC Kraliky 102.61 328 ePDIFF Pdif 01 18 33.6 -0.8
KRLC Kraliky 102.61 328 eP Pdif 01 18 33.6 -0.8
DPC Dobruska-Polom 102.68 329 ePDIFF Pdif 01 18 33.8 -0.8
DPC AMS AMS 02 10 00.0
comp=Z,2µm,17.2s
DPC Dobruska-Polom 102.68 329 eP Pdif 01 18 33.8 -0.8
DPC MLR MLR
comp=Z,2µm,17.2s
UPC Upice 102.74 329 ePDIFF Pdif 01 18 34.7 -0.2
UPC AMS AMS 02 09 20.0
comp=Z,2µm,18.2s
UPC Upice 102.74 329 eP Pdif 01 18 34.7 -0.2
UPC MLR MLR
comp=Z,2µm,18.2s
MDVR Moldovita 102.88 322⇑iP Pdif 01 18 34.0 -1.7
VRAC Vranov 103.17 328⇑iP Pdif 01 18 36.2 -0.6
VRAC Vranov 103.17 328⇑P Pdif 01 18 36.2 -0.6
PVCC Panska Ves 103.44 330 ePDIFF Pdif 01 18 37.3 -0.7
PVCC AMS AMS 02 11 00.0
comp=Z,2µm,17.1s
PVCC Panska Ves 103.44 330 eP Pdif 01 18 37.3 -0.7
PVCC MLR MLR
comp=Z,2µm,17.1s
BRG Berggiesshubel 103.53 330 ePKP Pdif 01 18 38.2 -0.2
comp=Z,7.7nm,1.5s
comp=N,352nm,14.7s
comp=E,769nm,22.0s
comp=Z,2µm,18.9s
BRG Berggiesshubel 103.53 330 eP Pdif 01 18 38.2 -0.2
BRG pmax pmax
comp=Z,8.0nm,1.5s
BRG MLR MLR
comp=N,352nm,14.7s
BRG MLR MLR
comp=E,769nm,22.0s
BRG MLR MLR
comp=Z,2µm,18.9s
CLL Collm 103.70 331 ePdif Pdif 01 18 38.0 -1.1
CLL ePP PP 01 22 55.0 -0.1
CLL eSS SS 01 38 00.0 +21
CLL LmV 02 09 00.0
comp=Z,1µm,19.1s
CLL Collm 103.70 331 eP Pdif 01 18 38.0 -1.1
CLL pmax pmax
comp=Z,9.0nm,1.2s
CLL MLR MLR
comp=Z,1µm,19.1s
KSU1 Kansas State U 103.71 44 PFAKE 01 18 50.0 +11
KSU1 LR LR
comp=Z,1µm,20.0s
GOPC GO Pecny, Ondr 103.72 329 AMS AMS 02 10 30.0
comp=Z,2µm,17.3s
TREC Trest 103.75 328 AMS AMS 02 07 20.0
comp=Z,2µm,20.0s
PRU Pruhonice 103.80 329 ePDIFF Pdif 01 18 39.3 -0.3
PRU AMS AMS 02 10 30.0
comp=Z,2µm,16.3s
PRU Pruhonice 103.80 329 eP Pdif 01 18 39.3 -0.3

PRU MLR MLR
comp=Z,2μm,16.3s
WMOK Wichita Mounta 104.17 49 PFAKE 01 18 50.0 +8.4
WMOK LR LR
comp=Z,711nm,19.0s
CONA Conrad Observa 104.40 327 *i* pPdiff **Pdif 01 18 42.4 -0.1**
comp=Z,24nm,1.4s
SCIA State Center 104.54 40 PFAKE 01 19 00.0 +17
SCIA LR LR
comp=Z,701nm,21.0s
SANT Santorini 104.60 313 PFAKE 01 18 50.0 +6.5
SANT LR LR
comp=Z,587nm,20.0s
COWI Conover 104.64 35 PFAKE 01 19 00.0 +17
COWI LR LR
comp=Z,1μm,21.0s
NKC Novy Kostel 104.67 330 *e*PDIFF **Pdif 01 18 42.8 -0.7**
NKC AMS AMS
comp=Z,1μm,20.5s
NKC Novy Kostel 104.67 330 *e*P **Pdif 01 18 42.8 -0.7**
NKC MLR MLR
comp=Z,1μm,20.5s
KHC Kasperske Hory 104.83 329 *e*PDIFF **Pdif 01 18 42.0 -2.2**
KHC *ex* x 01 21 55.0
KHC *ex* x 01 22 22.0
KHC *e*PP **PP 01 23 03.0 -0.6**
KHC AMS AMS 02 11 20.0
comp=Z,2μm,17.3s
KHC Kasperske Hory 104.83 329 *e*P **Pdif 01 18 42.0 -2.2**
KHC *e* 01 23 03.0
KHC MLR MLR
comp=Z,2μm,17.3s
GERES GERESS Array B 104.95 329 Pdiff **Pdif 01 18 43.4 -1.5**
comp=Z,0.6nm,0.9s,baz=26,slow=2.5,SNR=6.0
GERES PP **PP 01 23 03.3 -1.3**
comp=Z,0.2nm,0.3s,baz=60,slow=3.2,SNR=4.1
GEA0 GERESS Array S 104.95 329 *e*Pdif **Pdif 01 18 43.3 -1.6**
ARSA Arzberg 105.00 327 *i* pPdiff **Pdif 01 18 44.6 -0.4**
comp=Z,16nm,1.4s
P37A Lathrop 105.00 43 Pdiff **Pdif 01 18 45.0 -0.1**
baz=301
JCT Junction City 105.22 53 PFAKE 01 23 10.0
JCT LR LR
comp=Z,779nm,20.0s
Y34A Reagan Ranch, 105.28 49 PKiKP **PKiKP 01 22 59.7 -1.0**
baz=297
MOA Molln 105.29 328 *i* pPdiff **Pdif 01 18 46.0 -0.3**
comp=Z,6.1nm,1.5s
BLY Banja Luka 105.57 324⇑ *i*P **Pdif 01 18 47.8 +0.2**
PERS Pernice 105.59 326 *e*Pdiff **Pdif 01 18 46.5 -1.2**
SOKA Soboth 105.61 326 *i* Pdiff **Pdif 01 18 47.1 -0.7**
comp=Z,20nm,1.4s
PDG Podgorica 105.65 321⇑ *i*P **Pdif 01 18 46.7 -1.3**
JFWS Jewell Farm 105.83 38 PFAKE 01 23 10.0
JFWS LR LR
comp=Z,906nm,20.0s
TIR Tirane 105.87 320 PFAKE 01 23 10.0
TIR LR LR
comp=Z,1μm,19.0s
Z35A Perchaven, San 105.94 50 PKiKP **PKiKP 01 23 01.5 -0.4**
baz=297
OBKA Obir 105.98 326 *i* pPdiff **Pdif 01 18 48.9 -0.6**
comp=Z,5.4nm,1.1s
KBA Koelnbreinsper 106.26 327 *i* sPdiff **Pdif 01 18 55.0 +4.2**
comp=Z,5.0nm,1.1s
LJU Ljubljana 106.28 326 *i* Pdiff **Pdif 01 18 49.5 -1.3**
T38A Diamond 106.31 45 PKiKP **PKiKP 01 23 01.9 -0.6**
baz=300
MYKA Terra Mystica 106.39 327 *i* Pdiff **Pdif 01 18 50.4 -0.9**
comp=Z,2.6nm,0.9s
CEY Cerknica 106.52 326 *e*Pdiff **Pdif 01 18 50.5 -1.4**
KMBO Kilima Mbogo 106.73 273 *e*PKP 01 23 04.3
KMBO *e*PP **PP 01 23 17.7 -1.9**
KMBO LR LR
comp=Z,446nm,20.0s
SYO Syowa Base 106.74 201⇓ *e*PKiKP **PKiKP 01 23 03.0 +0.8**
ABTA Abfaltersbach 106.91 328 *i* Pdiff **Pdif 01 18 50.2 -3.4**
comp=Z,4.2nm,1.3s
ESK Eskdalemuir 107.13 341 PFAKE 01 23 20.0
ESK LR LR
comp=Z,836nm,19.0s
FETA Feichten 107.66 329 *i* Pdiff **Pdif 01 18 52.5 -4.6**
comp=Z,5.9nm,2.0s
HDIL Hopedale 107.75 40 PFAKE 01 23 20.0
HDIL LR LR
comp=Z,654nm,19.0s
DAVA Damuels 107.91 329 *i* Pdiff **Pdif 01 18 54.9 -3.2**
comp=Z,8.5nm,1.9s
BFO Black Forest 107.94 331 PFAKE 01 23 20.0
BFO LR LR
comp=Z,1μm,19.0s
WLF Walferdange 108.00 333 PFAKE 01 23 20.0
WLF LR LR
comp=Z,2μm,20.0s
MIAR Mount Ida 108.06 47 PFAKE 01 23 20.0
MIAR LR LR
comp=Z,1μm,20.0s
NATX Nacogdoches 108.60 50 PFAKE 01 23 20.0
NATX LR LR
comp=Z,763nm,19.0s
TUE Stuetta 108.73 329 PFAKE 01 23 20.0
TUE LR LR
comp=Z,2μm,20.0s
TIP Timpagrande 109.05 319 PFAKE 01 23 20.0
TIP LR LR
comp=Z,1μm,20.0s
CUC Castrocucco 109.17 320 PFAKE 01 23 20.0
CUC LR LR
comp=Z,684nm,21.0s
AQU L'Aquila 109.20 324 *e*P **Pdif 01 19 04.8 +0.9**
AQU L'Aquila 109.20 324 *e*Pdif **Pdif 01 19 04.8 +0.9**
AQU LR LR
comp=Z,1μm,20.0s
VLC Villacollemand 109.74 326 PFAKE 01 23 20.0
VLC LR LR
comp=Z,429nm,20.0s
AAM Ann Arbor 110.08 36 PFAKE 01 23 20.0
AAM LR LR
comp=Z,2μm,21.0s
CEL Celeste 110.13 319 PFAKE 01 23 20.0
CEL LR LR
comp=Z,766nm,20.0s
BNI Bardonecchia 111.06 329 PFAKE 01 23 20.0
BNI LR LR
comp=Z,2μm,19.0s
ACSO Alum Creek Sta 111.79 37 PFAKE 01 23 20.0
ACSO LR LR
comp=Z,2μm,21.0s
SSB Saint Sauveur 111.94 330 PFAKE 01 23 20.0
SSB LR LR
comp=Z,918nm,20.0s
CLTB Caltabellotta 112.24 320 PFAKE 01 23 30.0
CLTB LR LR
comp=Z,379nm,19.0s
WDD Wied Dalam 112.41 317 PFAKE 01 23 30.0
WDD LR LR
comp=Z,478nm,20.0s
LONY Lake Ozonia 113.24 29 PFAKE 01 23 30.0
LONY LR LR
comp=Z,1μm,22.0s
VSL Villasalto 113.37 323 PFAKE 01 23 30.0
VSL LR LR
comp=Z,860nm,20.0s
BRAL Brewton 114.50 47 PFAKE 01 23 30.0 +12
BRAL LR LR
comp=Z,2μm,21.0s
PKME Peaks-Kenny Pk 115.11 25 PFAKE 01 23 30.0 +11
PKME LR LR
comp=Z,723nm,21.0s
BLA Blacksburg 115.27 38 PFAKE 01 23 30.0 +11
BLA LR LR
comp=Z,1μm,21.0s
GOGA Godfrey 115.70 43 PFAKE 01 23 30.0 +10
GOGA LR LR
comp=Z,704nm,21.0s
KEST Kesra 115.82 320 PKP **PKPdf 01 23 20.8 +0.2**
comp=Z,1.5nm,0.6s,baz=239,slow=6.1,SNR=5.7
CBN Corbin Frederi 116.39 36 PFAKE 01 23 30.0 +8.5
CBN LR LR
comp=Z,2μm,20.0s
SNAA Sanae 117.52 191 *e*PKIKP **PKPdf 01 23 22.6 -0.1**
SNAA Sanae 117.52 191 *e*PKPdf **PKPdf 01 23 22.6 -0.1**
LSZ Lusaka 117.94 259 *e*PKIKP **PKPdf 01 23 25.7 +0.5**
LSZ Lusaka 117.94 259 *e*P **PKPdf 01 23 25.7 +0.5**
NHSC New Hope 118.06 42 PFAKE 01 23 40.0 +15
NHSC LR LR
comp=Z,673nm,20.0s
VNA2 Neumayer--Watz 118.97 190 PKP **PKPdf 01 23 25.9 +0.4**
baz=106,slow=0.9
TEIG Tepich 119.08 58 PFAKE 01 23 40.0 +13
TEIG LR LR
comp=Z,295nm,20.0s
VNA3 Neumayer Olymp 119.08 189 PKP **PKPdf 01 23 25.9 +0.2**
PBRG Braganca 119.73 335 *e*PKPdf **PKPdf 01 23 29.5 +1.6**
PBRG Braganca 119.73 335 *e*LR LR 02 01 15.6
comp=Z,652nm,22.0s
PGAV Gavieira, Arco 120.21 336 *e*LR LR 02 02 17.1
comp=Z,597nm,20.0s
ESDC Sonseca Array 120.27 332 PKP **PKPdf 01 23 29.2 +0.2**
comp=Z,0.7nm,0.6s,baz=22,slow=2.9,SNR=7.0
ESDC PP **PP 01 24 53.4 -0.3**
comp=Z,1.0nm,0.9s,baz=57,slow=4.7,SNR=4.0
MVO Moncorvo 120.39 335 *e*PKPdf **PKPdf 01 23 30.4 +1.2**
MVO Moncorvo 120.39 335 *e*LR LR 02 02 28.8
comp=Z,646nm,18.0s
POLO Lamas de Olo 120.52 336 *e*PKPdf **PKPdf 01 23 30.8 +1.3**
POLO Lamas de Olo 120.52 336 *e*LR LR 02 02 17.9
comp=Z,333nm,22.0s
PAB San Pablo 120.55 332 PFAKE 01 23 40.0 +10
PAB LR LR
comp=Z,978nm,20.0s
BOSA Boshof 121.12 244 PKP **PKPdf 01 23 31.7 +0.7**
comp=Z,3.6nm,0.9s,baz=162,slow=3.7,SNR=4.9
MTE Manteigas 121.24 335 *e*PKPdf **PKPdf 01 23 32.1 +1.2**
MTE Manteigas 121.24 335 *e*LR LR 02 02 36.2
comp=Z,893nm,20.0s
PCBR Castelo Branco 121.68 335 *e*PKPdf **PKPdf 01 23 32.5 +0.9**
PCAS Casmilo, Conde 121.92 335 *e*PKPdf **PKPdf 01 23 33.1 +1.0**
PCAS Casmilo, Conde 121.92 335 *e*LR LR 02 02 27.7
comp=Z,685nm,22.0s
PMRV Marv??o 121.99 334 *e*PKPdf **PKPdf 01 23 33.3 +1.0**
PMRV Marv??o 121.99 334 *e*LR LR 02 02 58.2
comp=Z,805nm,18.0s
PTOM Tomar 122.26 335 *e*PKPdf **PKPdf 01 23 33.6 +0.8**
PESTR Estremoz 122.54 334 *e*LR LR 02 03 08.6
comp=Z,636nm,20.0s
PMTG Montargil 122.64 335 *e*PKPdf **PKPdf 01 23 34.2 +0.7**
PMTG Montargil 122.64 335 *e*LR LR 02 03 18.9
comp=Z,971nm,18.0s
PBAR Barrancos 122.88 333 *e*PKPdf **PKPdf 01 23 35.1 +1.1**
PBAR Barrancos 122.88 333 *e*LR LR 02 02 00.8
comp=Z,1μm,20.0s
PMAFR Mafra 123.18 335 *e*LR LR 02 03 39.7
comp=Z,782nm,22.0s
PBEJ Beja 123.36 334 *e*PKPdf **PKPdf 01 23 36.2 +1.3**
PNCL Nicolau / Gran 123.58 334 *e*PKPdf **PKPdf 01 23 36.2 +0.9**
PNCL Nicolau / Gran 123.58 334 *e*LR LR 02 04 03.5
comp=Z,857nm,18.0s
MESJ Messejana 123.67 334 *e*PKPdf **PKPdf 01 23 36.9 +1.4**
PCVE Castro Verde 123.77 334 *e*PKPdf **PKPdf 01 23 37.1 +1.4**
PVAQ Vaqueiros 123.82 333 *e*LR LR 02 05 11.9
comp=Z,890nm,18.0s
PFVI Vila Bisbo 124.53 334 *e*LR LR 02 04 20.5
comp=Z,564nm,20.0s
PAYG Puerto Ayora 124.80 82 PFAKE 01 23 50.0 +12
PAYG LR LR
comp=Z,925nm,19.0s
JTS JuntasAbangare 126.27 67 PFAKE 01 23 50.0 +8.9
JTS LR LR
comp=Z,562nm,21.0s
TAM Tamanrasset 126.44 311 *e*PKIKP **PKPdf 01 23 42.5 +1.1**
TAM MLR MLR
comp=Z,383nm,19.0s
TAM Tamanrasset 126.44 311 *e*PKPdf **PKPdf 01 23 42.5 +1.1**
TAM LR LR
comp=Z,383nm,19.0s
BBSR BB Station 127.60 31 PFAKE 01 24 00.0 +17
BBSR LR LR
comp=Z,897nm,21.0s
TSUM Tsumeb 128.30 255 *e*PKPdf **PKPdf 01 23 45.1 +0.1**
TSUM LR LR
comp=Z,335nm,20.0s
MTDJ Mount Denham 128.83 54 PFAKE 01 24 00.0 +14
MTDJ LR LR
comp=Z,360nm,20.0s
GTBY Guantanamo Bay 129.74 51 PFAKE 01 24 00.0 +12
GTBY LR LR
comp=Z,637nm,19.0s
BCIP Isla Barro Col 131.32 66 PFAKE 01 24 00.0 +9.3
BCIP LR LR
comp=Z,502nm,20.0s
PMOZ Porto Moniz, M 131.59 339 *e*LR LR 02 06 34.6
comp=Z,214nm,18.0s
GRTK Grand Turk 131.66 46 PFAKE 01 24 00.0 +8.8
GRTK LR LR
comp=Z,956nm,19.0s
SDDR Presa de Saban 133.16 49 PFAKE 01 24 10.0 +16
SDDR LR LR
comp=Z,780nm,20.0s
TORD Torodi Ar. Bea 134.91 303 PKhKP PKPpre 01 23 42.7
comp=Z,0.3nm,0.4s,baz=50,slow=2.1,SNR=7.6
TORD PKP **PKiKP 01 23 58.6 -0.3**
comp=Z,8.0nm,1.0s,baz=49,slow=2.2,SNR=21
TORD SKPbc **SKPbc 01 27 27.7 +1.0**
comp=Z,3.2nm,1.0s,baz=60,slow=3.6,SNR=5.7
OTAV Otavalo 135.91 77 *e*PKPdf **PKPdf 01 24 02.9 +2.9**
OTAV LR LR
comp=Z,668nm,20.0s
SJG San Juan 137.40 45 PFAKE 01 24 10.0 +8.0
SJG LR LR
comp=Z,581nm,20.0s
OCAC Ocana 137.48 63 *e*P **PKPdf 01 24 09.7 +7.3**
ATAH Atahualpa 137.79 87 PKP **PKPdf 01 24 05.3 +2.0**
comp=Z,3.9nm,0.8s,baz=246,slow=6.5,SNR=3.3
GRMC Gramalote, San 138.18 63 *e*P PKPdf 01 24 17.1 +13
CBRI Barrientos, No 138.18 63 *e*P PKPdf 01 24 20.5 +17
PAMC Pamplona, Colo 138.44 64 *e*P PKPdf 01 24 30.7 +26
PLCA Paso Flores 138.54 139 PKP **PKPdf 01 24 04.3 +0.8**
comp=Z,5.6nm,0.9s,baz=252,slow=3.2,SNR=8.6
PLCA SKP 01 27 39.3
comp=Z,11nm,1.3s,baz=202,slow=3.1,SNR=4.1
SDV Santo Domingo 139.47 60 PKP **PKPdf 01 24 07.5 +1.4**
comp=Z,12nm,0.6s,baz=199,slow=9.9,SNR=4.5
SDV SKPab **SKPab 01 27 53.8 +3.0**
comp=Z,5.3nm,0.3s,baz=103,slow=6.5,SNR=4.6
SDV Santo Domingo 139.47 60 PKP **PKPdf 01 24 07.5 +1.4**
SDV SKPab **SKPab 01 27 53.8 +3.0**
SDV LR LR
comp=Z,431nm,19.0s
NNA Nana 139.97 94 PFAKE 01 24 20.0 +13
NNA LR LR
comp=Z,310nm,20.0s
ANWB Willy Bob 140.63 41 PFAKE 01 24 20.0 +12
ANWB LR LR
comp=Z,1μm,20.0s
FDF Fort de France 143.18 44 PFAKE 01 24 20.0 +7.4
FDF LR LR
comp=Z,827nm,21.0s
LCO Las Campanas 143.66 122 *e*PKPdf PKPbc 01 24 11.6 +0.8
LCO LR LR
comp=Z,717nm,19.0s
DBIC Dimbokro 143.81 300 PKP PKPbc 01 24 11.1 -0.2
comp=Z,30nm,0.8s,baz=45,slow=3.6,SNR=18
KIC Kosan Boka 143.87 299 *e*PKP1 PKPab 01 24 10.9 0.0
comp=Z,207nm,1.4s
TIC Toumodi 143.96 300 *e*PKP1 PKPab 01 24 10.8 -0.4
LIC Lamto 144.18 299 *e*PKP1 **PKPab 01 24 11.6 -0.4**
comp=Z,216nm,1.5s
GRGR Grenville 144.63 47 PFAKE 01 24 30.0 +15
GRGR LR LR
comp=Z,912nm,21.0s
BBGH Gun Hill 145.39 44 PFAKE 01 24 30.0 +14
BBGH LR LR
comp=Z,1μm,22.0s
TRQA Tornquist 145.46 142 *e*PKPbc **PKPab 01 24 16.1 0.0**
TRQA LR LR
comp=Z,464nm,19.0s
LVC Limon Verde 146.97 112 *e*PKPbc **PKPab 01 24 22.7 0.0**
LVC LR LR
comp=Z,681nm,19.0s
LPAZ La Paz 148.52 101 PKP **PKPdf 01 24 23.9 +1.5**
comp=Z,14nm,0.9s,baz=12,slow=0.5,SNR=7.5
LPAZ PKPbc **PKiKP 01 24 27.3 -0.2**
comp=Z,22nm,0.9s,baz=351,slow=2.3,SNR=45
SAML Samuel 152.94 85 *e*PKPbc **PKPbc 01 24 36.9 +1.1**
SAML LR LR
comp=Z,806nm,21.0s
PTGA Pitinga 153.42 66 PKPab **PKPab 01 24 49.6 +0.6**
comp=Z,6.9nm,0.8s,baz=351,slow=6.8,SNR=6.2
CPUP Villa Florida 155.53 128 PKP **PKPdf 01 24 32.3 +0.5**
comp=Z,4.6nm,1.2s,baz=50,slow=7.1,SNR=3.0
CPUP PKPab **PKPab 01 24 59.0 +1.4**
comp=Z,10nm,1.0s,baz=231,slow=4.8,SNR=7.6
ASCN Ascension 158.38 280 PFAKE 01 24 50.0 +14
ASCN LR LR
comp=Z,2μm,20.0s
RCBR Riachuelo 173.44 0 PFAKE 01 25 00.0 +12
RCBR LR LR
comp=Z,945nm,20.0s

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*ISCJB **13** 01:07:13.1±0.4, 12°.29N±0°.05×143°.92E±0°.07, h27km, mb4.6/36, Error ellipse: s-maj=10.6km s-min=6.8km az=21.8*
*NEIC **13** 01:07:16.0±1.5, 12°.36N×144°.02E, h36km±14km, mb4.7/25, Error ellipse: s-maj=11.3km s-min=7.4km az=90.0*
*IDC **13** 01:07:19.6±2.0, 12°.39N×144°.13E, h64km±18km, mb4.2/13, mb1 4.3/13, mb1mx4.0/42, mbtmp4.5/13, Error ellipse: s-maj=29.7km s-min=16.2km az=107.0*
ISC 13 01:07:14.7±0.5, 12°.34N±0°.07×144°.01E±0°.09, h27km, n52, σ1º06/47, mb4.7/36, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**1.50**	**34**	P	**Pb**	**01 07 41.1**	**-0.8**
GUMO	291nm,0.3s,baz=5.9,slow=4.7,SNR=11			S	**Sb**	**01 08 00.6**	**+0.1**
	737nm,0.3s,baz=8.3,slow=22,SNR=14						
GUMO	**Guam**	**1.50**	**34**	*e*Pn	**Pn**	**01 07 39.8**	**0.0**
GUMO				S	**Sb**	**01 08 00.6**	**+0.1**
H11S3	**WAKE ISLAND Hy**	**22.69**	**72**	T	T	01 35 44.6	
	baz=236						
H11S1	**WAKE ISLAND Hy**	**22.70**	**71**	T	T	01 35 45.4	
	baz=236						
H11S2	**WAKE ISLAND Hy**	**22.70**	**72**	T	T	01 35 44.6	
	baz=236						
H11N1	**WAKE ISLAND Hy**	**23.16**	**69**	T	T	01 36 20.3	
	baz=256						
H11N2	**WAKE ISLAND Hy**	**23.17**	**69**	T	T	01 36 19.0	
	baz=256						
H11N3	**WAKE ISLAND Hy**	**23.18**	**69**	T	T	01 36 22.2	
	baz=256						
JNU	**Nakatsue**	**23.93**	**332**	P	**P**	**01 12 27.2**	**+0.6**
	13nm,0.7s,baz=153,slow=3.8,SNR=3.3						
JNU	**Nakatsue**	**23.93**	**332**	*e*P	**P**	**01 12 26.4**	**-0.2**
	5.6nm,0.7s						
YULB	**Yu-li**	**24.22**	**300**	*e*P	**P**	**01 12 28.7**	**-0.6**
	12nm,1.0s						
COEN	**Coen**	**26.14**	**182**	*e*P	**P**	**01 12 47.5**	**+0.7**
	15nm,1.0s						
KAPI	**Kappang**	**29.64**	**236**	*e*P	**P**	**01 13 16.6**	**-1.6**
	19nm,1.2s						
CTAO	**Charters Tower**	**32.30**	**176**	*e*P	**P**	**01 13 41.7**	**+0.2**
	48nm,0.9s						
WRAB	**Tennant Creek**	**33.45**	**197**	*e*P	**P**	**01 13 52.2**	**+0.6**
	32nm,1.3s						
WRA	**Warramunga Arr**	**33.46**	**197**	P	**P**	**01 13 53.4**	**+1.7**
	2.4nm,0.6s,baz=18,slow=9.2,SNR=2.8						
KSM	**Kuching**	**35.10**	**255**	*e*P	**P**	**01 14 05.8**	**-0.3**
	11nm,0.6s						
FITZ	**Fitzroy Crossi**	**35.26**	**211**	*e*P	**P**	**01 14 04.2**	**-3.1**
	12nm,0.9s						
ASAR	**Alice Springs**	**37.12**	**195**	P	**P**	**01 14 25.3**	**+2.1**
	6.2nm,1.0s,baz=17,slow=4.0,SNR=4.0						
EIDS	**Eidsvold**	**38.10**	**170**	*e*P	**P**	**01 14 31.4**	**-0.1**
	3.9nm,0.6s						
HIA	**Hailar**	**41.93**	**336**	*e*P	**P**	**01 15 03.5**	**+0.4**
	6.6nm,0.6s						
MSVF	**Nonsavu**	**44.97**	**131**	*e*P	**P**	**01 15 27.8**	**-0.1**
	11nm,0.9s						
SONM	**Songino Array**	**47.28**	**326**	P	**P**	**01 15 47.7**	**+1.8**
	2.4nm,0.7s,baz=148,slow=9.3,SNR=2.9						
BILL	**Bilibino**	**57.53**	**10**	*e*P	**P**	**01 17 01.4**	**0.0**
	12nm,1.2s						
MKAR	**Makanchi Array**	**61.81**	**317**	P	**P**	**01 17 32.4**	**+1.0**
	6.1nm,0.6s,baz=90,slow=8.4,SNR=5.9						
KURK	**Kurchatov**	**65.00**	**320**	*e*P	**P**	**01 17 52.2**	**-0.1**
	18nm,0.6s						
TKM2	**Tokmak 2**	**65.91**	**312**	*e*P	**P**	**01 17 58.9**	**+0.2**
	4.0nm,0.9s						
AAK	**Ala-Archa**	**66.70**	**311**	*e*P	**P**	**01 18 03.7**	**+0.1**
	5.8nm,1.0s						
EKS2	**Erkin-Say**	**67.23**	**311**	*e*P	**P**	**01 18 07.1**	**+0.2**
	4.8nm,0.9s						
SEW	**Seward**	**67.75**	**30**	*e*P	**P**	**01 18 09.8**	**+0.1**
	26nm,1.4s						
KKAR	**Karatay Array**	**69.65**	**311**	*e*P	**P**	**01 18 22.2**	**+0.2**
	5.8nm,0.8s						
ILAR	**Eielson Array**	**70.05**	**25**	P	**P**	**01 18 22.2**	**-1.7**
	1.0nm,0.6s,baz=248,slow=5.8,SNR=4.5						
BRVK	**Borovoye**	**70.46**	**322**	*e*P	**P**	**01 18 26.5**	**-0.1**
	9.0nm,0.8s						
INK	**Inuvik**	**75.84**	**22**	P	**P**	**01 18 58.6**	**+0.5**
	3.1nm,0.9s,baz=245,slow=8.8,SNR=3.1						
ABKAR	**Akbulak array**	**76.91**	**318**	*e*P	**P**	**01 19 04.6**	**0.0**
	15nm,0.7s						
ARU	**Arti**	**77.32**	**325**	*e*P	**P**	**01 19 06.0**	**-0.7**
	7.5nm,0.7s						
GEYT	**Alibeck**	**79.32**	**307**	P	**P**	**01 19 19.4**	**+1.1**
	6.4nm,0.8s,baz=45,slow=0.4,SNR=3.8						
YKA	**Yellowknife Ar**	**84.35**	**27**	P	**P**	**01 19 44.4**	**+0.2**
	1.4nm,0.8s,baz=290,slow=5.1,SNR=4.3						
RES	**Resolute Bay**	**85.95**	**13**	P	**P**	**01 19 52.8**	**+0.8**
	5.7nm,0.9s,baz=313,slow=10,SNR=2.8						
RES	**Resolute Bay**	**85.95**	**13**	*e*P	**P**	**01 19 52.4**	**+0.4**
	5.4nm,0.8s						
NEW	**Newport**	**86.72**	**41**	*e*P	**P**	**01 19 56.1**	**-0.3**
	2.6nm,0.6s						
ARCES	**ARCESS Array B**	**88.01**	**342**	P	**P**	**01 20 02.6**	**+0.5**
	3.6nm,0.8s,baz=75,slow=8.5,SNR=3.6						
OBN	**Obninsk**	**89.69**	**327**	*e*P	**P**	**01 20 09.1**	**-1.1**
	7.9nm,0.7s						
HLID	**Hailey**	**89.81**	**45**	*e*P	**P**	**01 20 11.6**	**+0.3**
	1.6nm,0.7s						
FINES	**FINESS Array B**	**91.94**	**335**	P	**P**	**01 20 19.3**	**-1.3**
	1.9nm,0.5s,baz=70,slow=5.2,SNR=7.2						
BRTR	**Keskin Array B**	**97.31**	**313**	P	**P**	**01 20 45.0**	**-0.8**
	1.0nm,0.8s,baz=57,slow=4.1,SNR=4.0						
LSZ	**Lusaka**	**117.80**	**259**	*e*PKPdf	**PKPdf**	**01 26 00.6**	**+0.9**
TAM	**Tamanrasset**	**126.41**	**311**	*e*PKPdf	**PKPdf**	**01 26 18.4**	**+2.3**
TSUM	**Tsumeb**	**128.16**	**255**	*e*PKPdf	**PKPdf**	**01 26 17.6**	**-1.9**
TORD	**Torodi Ar. Bea**	**134.86**	**303**	PKP	**PKPdf**	**01 26 33.5**	**+1.3**
	1.1nm,0.7s,baz=32,slow=2.6,SNR=4.6						
DBIC	**Dimbokro**	**143.75**	**300**	PKP	PKPbc	01 26 46.6	+0.6
	7.8nm,0.8s,baz=63,slow=2.3,SNR=4.5						
TRQA	**Tornquist**	**145.46**	**142**	*e*PKPbc	**PKPbc**	**01 26 49.4**	**-1.3**

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*ISCJB **13** 01:19:18.4±0.3, 19°.64N±0°.03×70°.36W±0°.03, h25km, mb3.7/14, Error ellipse: s-maj=4.6km s-min=3.3km az=20.1*
*IDC **13** 01:19:18.6±1.0, 19°.76N×70°.14W, h0km, mb3.8/7, mb1 4.1/9, mb1mx3.8/31, mbtmp3.9/9, ML3.8/2, Error ellipse: s-maj=28.6km s-min=15.2km az=32.0*
*NEIC **13** 01:19:20.0±2.4, 19°.55N×70°.46W, h23km±21km, mb3.8/8, Error ellipse: s-maj=9.9km s-min=5.1km az=185.0*
NEIC Felt [III] at San Francisco de Macoris and Santiago; [II] at Jarabacoa, Santo Domingo and Sosua. Also felt at Azua, Baitoa, Mao, Moca and Tamboril.
ISC 13 01:19:20.0±0.5, 19°.61N±0°.04×70°.43W±0°.04, h25km, n62, σ1º99/69, mb3.7/14, Dominican Republic region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SDDR	**Presa de Saban**	**1.02**	**232**	*e*Pn	**Pn**	**01 19 36.9**	**-2.0**
SDDR				*e*Sn	**Sb**	**01 19 51.0**	**-1.2**
BANI	**BANI**	**1.22**	**177**	*e*Pn	**Pn**	**01 19 39.8**	**-1.8**
BANI				*e*Sn	**Sn**	**01 19 55.9**	**-1.3**
SDD	**Santo Domingo**	**1.25**	**157**	*e*Pn	**Pn**	**01 19 39.5**	**-2.4**
SDD				*e*Sn	**Sn**	**01 19 55.4**	**-2.5**
GRTK	**Grand Turk**	**2.00**	**341**	*e*Pn	**Pb**	**01 19 53.5**	**-2.2**
GRTK				*e*Sn	**Sn**	**01 20 15.5**	**-1.0**
PAPH	**Port-au-Prince**	**2.08**	**239**	*e*Pn	**Pb**	**01 19 55.3**	**-1.7**
AGP	**Aguadilla**	**3.33**	**111**	*e*Pn	**Pn**	**01 20 10.8**	**+0.2**
MPR	**Mayaguez**	**3.41**	**114**	*e*Pn	**Pn**	**01 20 13.2**	**+1.6**
LRS	**Lares**	**3.64**	**111**	*e*Pn	**Pn**	**01 20 16.9**	**+2.1**
CELP	**Cerrillos**	**3.95**	**112**	*e*Pn	**Pn**	**01 20 21.3**	**+2.1**
SJG	**San Juan**	**4.32**	**110**	Pn	**Pn**	**01 20 24.3**	**+0.2**
	13nm,0.3s,baz=292,slow=10,0,SNR=15						
SJG				Sn	**Sn**	**01 21 13.0**	**-0.7**
	53nm,0.3s,baz=267,slow=22,SNR=5.6						
SJG				Lg	Lg	01 21 27.0	
	89nm,0.3s,baz=147,slow=22,SNR=10						
SJG	**San Juan**	**4.32**	**110**	*e*Pn	**Pn**	**01 20 23.1**	**-1.0**
SJG				*e*Sn	**Sn**	**01 21 11.1**	**-2.6**

SJG			Lg	Lg	01 21 27.0	
GTBY	**Guantanamo Bay**	**4.42 275**	*e*Pn	**Pn**	**01 20 24.7**	**-0.8**
GTBY			*e*Sn	**Sn**	**01 21 13.4**	**-2.8**
CBYP	**Canovanas**	**4.53 106**	*e*Pn	**Pn**	**01 20 26.7**	**-0.4**
HUMP	**Col San Antoni**	**4.58 108**	*e*Pn	**Pn**	**01 20 27.6**	**0.0**
MTP	**Monte Pirata**	**4.86 107**	*e*Pn	**Pn**	**01 20 33.1**	**+1.5**
STVI	**Saint Thomas**	**5.33 103**	*e*Pn	**Pn**	**01 20 38.7**	**+0.7**
STVI			*e*Sn	**Sn**	**01 21 36.4**	**-2.3**
CDVI	**St. Croix**	**5.68 108**	*e*Pn	**Pn**	**01 20 44.4**	**+1.5**
CDVI			*e*Sn	**Sn**	**01 21 47.2**	**0.0**
ABVI	**Anegada Island**	**5.83 98**	*e*Pn	**Pn**	**01 20 44.0**	**-0.9**
MTDJ	**Mount Denham**	**6.87 260**	*e*Pn	**Pn**	**01 20 60.0**	**+0.7**
SABA	**Saba**	**7.10 105**	*e*Pn	**Pn**	**01 21 02.4**	**+0.1**
SABA			*e*Sn	**Sn**	**01 22 21.4**	**-0.9**
SMRT	**St. Maarten**	**7.14 101**	*e*Pn	**Pn**	**01 21 01.6**	**-1.2**
SMRT			*e*Sn	**Sn**	**01 22 19.0**	**-4.3**
URIC	**Uribia, Colomb**	**8.01 191**	*e*P	**Sn**	**01 22 38.6**	**-6.1**
ANWB	**Willy Bob**	**8.42 102**	*e*P	**Pn**	**01 21 19.4**	**-1.1**
GDHS	**Morne Mazeau,**	**8.89 111**	*e*Pn	**Pn**	**01 21 26.1**	**-0.9**
PCM	**Pelee Case Pet**	**10.02 117**	*e*P	**Pn**	**01 21 43.0**	**+0.6**
CXM	**Morne La Croix**	**10.05 117**	*e*P	Pn	01 21 51.7	+8.7
GBMF	**Grand Be**	**10.06 117**	*e*P	Pn	01 21 48.7	+5.5
BAMF	**Morne Balai**	**10.07 117**	*e*P	**Pn**	**01 21 43.7**	**+0.5**
FDF	**Fort de France**	**10.11 117**	*e*P	**Pn**	**01 21 42.0**	**-1.7**
FDF	**Fort de France**	**10.11 117**	*e*Pn	**Pn**	**01 21 42.2**	**-1.5**
TRMF	**Trois Ilets**	**10.29 118**	*e*P	**Pn**	**01 21 48.7**	**+2.5**
ZAM	**Aeronautique**	**10.29 118**	*e*P	**Pn**	**01 21 47.5**	**+1.4**
MVM	**Montagne Vaucl**	**10.41 117**	*e*P	**Pn**	**01 21 52.0**	**+4.2**
SDV	**Santo Domingo**	**10.67 181**	Pn	**Pn**	**01 21 55.6**	**+4.2**
	3.4nm,0.3s,baz=4.5,slow=6.8,SNR=3.3					
MCLT	**Moule a Chique**	**10.82 121**	*e*P	**Pn**	**01 21 48.8**	**-4.6**
SVB	**Belmont**	**10.83 124**	*e*P	**Pn**	**01 21 54.3**	**+0.8**
SVB	**Belmont**	**10.83 124**	*e*Pn	**Pn**	**01 21 54.2**	**+0.8**
GRGR	**Grenville**	**11.25 130**	*e*Pn	**Pn**	**01 22 00.1**	**+0.8**
BBGH	**Gun Hill**	**12.25 120**	*e*Pn	**Pn**	**01 22 11.5**	**-1.5**
BBSR	**BB Station**	**13.71 21**	*e*Pn	**Pn**	**01 22 30.7**	**-2.1**
BCIP	**Isla Barro Col**	**13.81 223**	*e*Pn	**Pn**	**01 22 33.1**	**-1.2**
HELC	**Santa Helena**	**14.23 201**	*e*P	**Pn**	**01 22 42.6**	**+2.1**
GUYC	**Guyana, Colomb**	**15.10 199**	*e*P	**P**	**01 22 55.0**	**-2.3**
ROSC	**El Rosal**	**15.17 195**	Pn	**P**	**01 23 01.3**	**+3.3**
	1.2nm,0.3s,baz=71,slow=13,SNR=6.1					
ROSC	**El Rosal**	**15.17 195**	*e*Pn	**Pn**	**01 22 52.9**	**-0.2**
	7.7nm,0.8s					
SJAC	**San Juan de Ar**	**16.60 192**	*e*P	**P**	**01 23 12.6**	**-1.0**
FLOC	**Florencia**	**18.64 197**	*e*P	**Pn**	**01 23 39.2**	**+2.8**
OTAV	**Otavalo**	**20.80 203**	*e*P	Pn	01 24 03.5	+0.9
PTGA	**Pitinga**	**22.67 152**	P	**P**	**01 24 20.8**	**+1.1**
	3.7nm,0.8s,baz=323,slow=14,SNR=4.9					
WMOK	**Wichita Mounta**	**29.25 307**	*e*P	**P**	**01 25 20.2**	**0.0**
	1.3nm,0.5s					
TXAR	**Lajitas Array**	**31.67 294**	P	P	01 25 46.7	+5.0
	0.3nm,0.5s,baz=102,slow=8.5,SNR=4.4					
MNTX	**Cornudas Mount**	**33.58 298**	*e*P	**P**	**01 25 58.6**	**+0.3**
	2.2nm,0.9s					
ANMO	**Albuquerque**	**35.26 303**	*e*P	**P**	**01 26 13.0**	**0.0**
	0.8nm,0.7s					
SDCO	**Great Sand Dun**	**35.41 308**	*e*P	**P**	**01 26 14.3**	**-0.1**
	0.5nm,0.6s					
LOHW	**Long Hollow**	**41.19 315**	*e*P	**P**	**01 27 03.1**	**+0.2**
	1.2nm,0.8s					
MOOW	**Moose Ponds**	**41.34 315**	*e*P	**P**	**01 27 05.7**	**+1.6**
	1.2nm,0.9s					
DUG	**Dugway, Tooele**	**41.59 309**	*e*P	**P**	**01 27 05.0**	**-1.1**
	1.0nm,0.6s					
NVAR	**Mina Array Bea**	**45.32 305**	P	**P**	**01 27 39.8**	**+3.5**
	0.3nm,0.4s,baz=96,slow=8.3,SNR=3.5					
YKA	**Yellowknife Ar**	**52.45 336**	P	**P**	**01 28 30.5**	**+0.2**
	0.3nm,0.8s,baz=108,slow=6.6,SNR=5.2					
ESDC	**Sonseca Array**	**59.82 55**	P	**P**	**01 29 25.1**	**+1.5**
	1.0nm,0.5s,baz=280,slow=7.0,SNR=17					
TORD	**Torodi Ar. Bea**	**69.07 83**	P	**P**	**01 30 25.1**	**+0.8**
	0.4nm,0.5s,baz=300,slow=7.0,SNR=5.0					
ARCES	**ARCESS Array B**	**73.86 21**	P	**P**	**01 30 52.9**	**+0.6**
	1.4nm,0.8s,baz=289,slow=3.7,SNR=4.8					

*ISCJB **13** 01:27:13.6±0.6, 6°.88N±0°.05×73°.07W±0°.05, h168km±5km, Error ellipse: s-maj=10.5km s-min=4.2km az=135.3*
*FUNV **13** 01:27:13.5, 6°.93N×73°.26W, h180km, MW2.4*
*RSNC **13** 01:27:16.7±0.8, 6°.77N×73°.09W, h147km±4km, ML2.5*

ISC 13 01:27:12.9±1.3, 6°.89N±0°.05×73°.06W±0°.05, h173km±7km, n27, σ1°.71/45, 1C, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BTLC	**Betulia, Santa**	**0.21**	**279**	*i* P	**Pn**	**01 27 36.7**	**+0.4**
BTLC				*e*S	**Sn**	**01 27 51.6**	**-2.5**
GIRC	**Giron, Santand**	**0.23**	**326**	*e*P	**Pn**	**01 27 36.5**	**+0.3**
GIRC				*e*S	**Sn**	**01 27 51.8**	**-2.3**
BARC	**Barichara**	**0.32**	**202**	*i* P	**Pn**	**01 27 36.4**	**-0.2**
BARC				*e*S	**Sn**	**01 27 51.4**	**-3.3**
BARC				*i*		01 27 53.2	
	comp=Z,60nm,0.4s						
PAMC	**Pamplona, Colo**	**0.58**	**38**	*e*P	**Pn**	**01 27 39.2**	**+1.3**
PAMC				*e*S	**Sn**	**01 27 56.6**	**-0.4**
BRRC	**Barranca, Sant**	**0.68**	**289**	‖ *i* P	**Pn**	**01 27 38.4**	**+0.6**
BRRC				*e*S	**Sn**	**01 27 55.9**	**-1.0**
BRRC				*i*		01 27 57.6	
	comp=Z,57nm,0.1s						
CBRI	**Barrientos, No**	**0.87**	**18**	*e*P	**Pn**	**01 27 41.0**	**+1.8**
CBRI				*e*S	**Sn**	**01 27 59.6**	**+0.2**
CBRI				*i*		01 28 02.6	
	comp=Z,23nm,0.1s						
GRMC	**Gramalote, San**	**0.87**	**17**	*i* P	**Pn**	**01 27 42.2**	**+3.1**
GRMC				*e*S	**Sn**	**01 28 01.9**	**+2.5**
GRMC				*i*		01 28 03.0	
	comp=Z,33nm,0.3s						
GUEC	**Guerrero, Nort**	**0.95**	**8**	*e*P	**Pn**	**01 27 41.7**	**+1.8**
RUSC	**La Rusia**	**0.99**	**181**	*e*P	**Pn**	**01 27 40.3**	**-0.1**
RUSC				*i*		01 28 00.8	
	comp=Z,33nm,0.4s						
CAPV	**Capacho**	**1.22**	**37**	*e*P	**Pn**	**01 27 43.0**	**+1.0**
CAPV				*e*S	**Sn**	**01 28 05.1**	**+0.6**
OCAC	**Ocana**	**1.37**	**349**	*e*P	**Pn**	**01 27 45.2**	**+2.0**
OCAC				*i*		01 28 13.2	
	comp=Z,24nm,0.2s						
NORC	**Norcasia**	**2.23**	**234**	*e*P	**Pn**	**01 27 52.4**	**+0.3**
NORC				*e*S	**Sn**	**01 28 20.5**	**-2.0**
ROSC	**El Rosal**	**2.39**	**212**	*e*P	**Pn**	**01 27 56.7**	**+2.4**
ROSC				*e*S	**Sn**	**01 28 27.8**	**+1.4**
HELC	**Santa Helena**	**2.55**	**254**	*e*P	**Pn**	**01 27 58.0**	**+1.8**
HELC				*e*S	**Sn**	**01 28 29.3**	**-0.4**
HELC				*i*		01 28 34.9	
	comp=Z,18nm,0.6s						
VIGV	**El Vigia**	**2.57**	**41**	*e*P	**Pn**	**01 27 58.0**	**+1.9**
VIGV				*e*S	**Sn**	**01 28 30.3**	**+0.6**
SOCV	**Socops**	**2.59**	**57**	*e*P	**Pn**	**01 27 58.6**	**+2.2**
SOCV				*e*S	**Sn**	**01 28 30.9**	**+0.8**
GUYC	**Guyana, Colomb**	**2.84**	**235**	*e*P	**Pn**	**01 28 01.5**	**+1.6**
GUYC				*e*S	**Sn**	**01 28 35.2**	**-1.1**
DBBC	**Dabeiba**	**3.13**	**273**	*e*P	**Pn**	**01 28 05.0**	**+2.0**
MOTC	**Monteria, Cord**	**3.19**	**306**	*e*P	**Pn**	**01 28 03.5**	**-0.1**
TOLC	**Tolima**	**3.21**	**225**	*e*P	**Pn**	**01 28 06.1**	**+1.9**
PRAC	**Prado**	**3.64**	**210**	*e*P	**Pn**	**01 28 10.1**	**+0.8**
PRAC				*e*S	**Sn**	**01 28 52.2**	**-1.1**
PRAC				*i*		01 28 56.3	
	comp=Z,26nm,0.1s						
VIRV	**Villa del Rosa**	**3.65**	**10**	*e*P	**Pn**	**01 28 09.0**	**-0.5**
VIRV				*e*S	**Sn**	**01 28 49.4**	**-4.2**
SJCC	**San Jacinto, C**	**3.65**	**325**	*e*P	**Pn**	**01 28 10.2**	**+0.7**
SJCC				*i*		01 28 56.0	
	comp=Z,5.3nm,0.4s						
SJAC	**San Juan de Ar**	**3.70**	**194**	*e*P	**Pn**	**01 28 10.1**	**0.0**
SJAC				*i*		01 28 59.6	
	comp=Z,17nm,0.2s						
CURV	**Curarigua**	**4.37**	**44**	*e*P	**Pn**	**01 28 18.9**	**+0.3**
CURV				*e*S	**Sn**	**01 29 08.3**	**-1.8**
BAUV	**El Baul**	**5.38**	**67**	*e*P	**Pn**	**01 28 31.9**	**+0.2**
BAUV				*e*S	**Sn**	**01 29 31.2**	**-2.3**
MONV	**Montecano**	**5.89**	**31**	*e*P	**Pn**	**01 28 38.9**	**+0.4**

*IDC **13** 01:30:42.5±0.7, 12°.37N×144°.03E, h0km, mb4.2/14, mb1 4.4/14, mb1mx4.2/38, mbtmp4.2/14, MS3.7/1, Ms1 3.9/1, ms1mx3.0/41, Error ellipse: s-maj=22.9km s-min=16.1km az=116.0*
*ISCJB **13** 01:30:44.4±0.4, 12°.28N±0°.06×143°.96E±0°.08, h27km, mb4.4/30, MS3.7/1, Error ellipse: s-maj=12.5km s-min=7.7km az=30.0*
*NEIC **13** 01:30:45.1±4.7, 12°.33N×144°.03E, h19km±29km, mb4.6/17, Error ellipse: s-maj=11.6km s-min=8.8km az=92.0*

ISC 13 01:30:46.2±0.6, 12°.34N±0°.08×144°.1E±0°.1, h27km, n45, σ0°.95/41, mb4.4/29, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**1.45**	**31**	Pn	**Pb**	**01 31 11.7**	**-0.8**
	200nm,0.3s,baz=2.1,slow=4.0,SNR=52						
GUMO				Sn	**Sb**	**01 31 31.0**	**+0.4**
	319nm,0.3s,baz=347,slow=22,SNR=12						
JOW	**Kunigami**	**20.71**	**316**	*e*P	**P**	**01 35 23.1**	**-1.4**
	7.0nm,0.8s						
PMG	**Port Moresby**	**21.81**	**172**	*e*P	**P**	**01 35 36.4**	**-0.1**
	32nm,0.9s						
H11S3	**WAKE ISLAND Hy**	**22.61**	**71**	T	T	01 59 31.6	
	baz=253,slow=75,SNR=18						
H11S1	**WAKE ISLAND Hy**	**22.62**	**71**	T	T	01 59 23.3	
	baz=253,slow=75,SNR=13						
H11S2	**WAKE ISLAND Hy**	**22.62**	**71**	T	T	01 59 18.9	
	baz=253,slow=75,SNR=19						
H11N1	**WAKE ISLAND Hy**	**23.08**	**69**	T	T	01 59 50.0	
	baz=255,slow=75,SNR=29						
H11N2	**WAKE ISLAND Hy**	**23.09**	**69**	T	T	01 59 51.6	
	baz=255,slow=75,SNR=25						
H11N3	**WAKE ISLAND Hy**	**23.10**	**69**	T	T	01 59 51.3	
	baz=255,slow=75,SNR=22						
COEN	**Coen**	**26.14**	**182**	*e*P	**P**	**01 36 16.2**	**-2.1**
	10nm,0.8s						
WRA	**Warramunga Arr**	**33.48**	**197**	P	**P**	**01 37 23.1**	**-0.3**
	2.5nm,0.8s,baz=20,slow=9.6,SNR=5.6						
ASAR	**Alice Springs**	**37.15**	**196**	P	**P**	**01 37 55.1**	**+0.2**
	0.8nm,0.7s,baz=20,slow=9.9,SNR=9.4						
CD2	**Chengdu**	**41.52**	**303**	PKP	P	01 38 25.1	-6.4
CMAR	**Chiang Mai Arr**	**43.87**	**284**	P	**P**	**01 38 52.3**	**+1.6**
	1.2nm,0.3s,baz=78,slow=5.7,SNR=5.3						
CMAR				LR	LR	01 54 31.0	
	comp=Z,91nm,21.1s,baz=115,slow=33						
SONM	**Songino Array**	**47.33**	**326**	P	**P**	**01 39 18.6**	**+0.8**
	0.8nm,0.5s,baz=155,slow=8.0,SNR=4.5						
SONM				PcP	**PcP**	**01 40 49.1**	**+0.7**
	1.0nm,0.8s,baz=145,slow=3.1,SNR=4.8						
GSI	**Gununguitoli**	**47.39**	**260**	*e*P	**P**	**01 39 18.0**	**-0.6**
	7.3nm,0.6s						
MKAR	**Makanchi Array**	**61.87**	**317**	P	**P**	**01 41 04.1**	**+0.8**
	3.2nm,0.6s,baz=92,slow=8.7,SNR=32						
MKAR				PcP	**PcP**	**01 41 44.2**	**+0.3**
	1.1nm,0.7s,baz=93,slow=6.5,SNR=2.6						
ZALV	**Zalesovo Beam**	**62.21**	**325**	P	**P**	**01 41 05.1**	**-0.2**
	0.6nm,0.3s,baz=99,slow=8.9,SNR=3.4						
ZALV				PcP	**PcP**	**01 41 44.4**	**-0.8**
	1.6nm,0.6s,baz=137,slow=2.6,SNR=4.9						
KURK	**Kurchatov**	**65.06**	**320**	*e*P	**P**	**01 41 23.9**	**-0.3**
	8.9nm,0.8s						
TKM2	**Tokmak 2**	**65.98**	**312**	*e*P	**P**	**01 41 30.3**	**-0.3**
	1.3nm,0.6s						
TRF	**Thorofare Moun**	**68.23**	**26**	*e*P	**P**	**01 41 43.9**	**-0.5**
	2.9nm,0.8s						
KKAR	**Karatay Array**	**69.71**	**311**	*e*P	**P**	**01 41 54.0**	**+0.1**
	1.9nm,0.6s						
ILAR	**Eielson Array**	**70.01**	**25**	P	**P**	**01 41 54.1**	**-1.1**
	0.5nm,0.4s,baz=249,slow=5.4,SNR=10						
BVAR	**Borovoye Array**	**70.44**	**322**	P	**P**	**01 41 58.3**	**+0.2**
	4.6nm,0.5s,baz=102,slow=7.7,SNR=36						
BRVK	**Borovoye**	**70.51**	**322**	*e*P	**P**	**01 41 58.5**	**+0.1**
	3.1nm,0.5s						
DOT	**Dot Lake**	**70.98**	**27**	*e*P	**P**	**01 42 00.8**	**-0.4**
	7.1nm,0.8s						
INK	**Inuvik**	**75.80**	**22**	*e*P	**P**	**01 42 29.4**	**0.0**
	3.3nm,1.0s						
ABKAR	**Akbulak array**	**76.97**	**318**	*e*P	**P**	**01 42 36.1**	**-0.3**
	5.0nm,0.6s						
ARU	**Arti**	**77.36**	**325**	*e*P	**P**	**01 42 37.8**	**-0.7**
	2.7nm,0.7s						
YKA	**Yellowknife Ar**	**84.31**	**27**	P	**P**	**01 43 15.7**	**+0.3**
	3.5nm,1.1s,baz=288,slow=5.4,SNR=17						
RES	**Resolute Bay**	**85.94**	**13**	*e*P	**P**	**01 43 23.6**	**+0.2**
	5.9nm,0.8s						
NEW	**Newport**	**86.66**	**41**	*e*P	**P**	**01 43 28.4**	**+0.8**
	2.6nm,0.7s						
ARCES	**ARCESS Array B**	**88.04**	**342**	P	**P**	**01 43 33.9**	**+0.1**
	1.6nm,0.8s,baz=78,slow=7.6,SNR=5.4						
NVAR	**Mina Array Bea**	**88.28**	**51**	P	**P**	**01 43 38.0**	**+2.1**
	1.3nm,0.7s,baz=268,slow=5.4,SNR=8.5						
KBZ	**Khabaz**	**89.51**	**315**	P	**P**	**01 43 40.0**	**-1.1**
	1.6nm,0.8s,baz=139,slow=3.9,SNR=3.7						
HLID	**Hailey**	**89.75**	**45**	*e*P	**P**	**01 43 43.1**	**+0.5**
	1.6nm,0.9s						
FINES	**FINESS Array B**	**91.97**	**335**	P	**P**	**01 43 50.9**	**-1.3**
	1.6nm,0.5s,baz=71,slow=4.8,SNR=25						
BRTR	**Keskin Array B**	**97.37**	**313**	P	**P**	**01 44 17.1**	**-0.6**
	0.5nm,0.8s,baz=60,slow=3.0,SNR=4.0						
CSS	**Mathiatis**	**99.41**	**309**	*e*P	**Pdif**	**01 44 26.6**	**-0.1**
	3.8nm,1.1s						
ESDC	**Sonseca Array**	**120.33**	**332**	PKP	**PKPdf**	**01 49 36.3**	**+0.8**
	0.1nm,0.4s,baz=342,slow=4.6,SNR=3.4						
TORD	**Torodi Ar. Bea**	**134.93**	**303**	PKhKP	PKPpre	01 49 50.1	
	0.3nm,0.9s,baz=76,slow=2.9,SNR=2.4						
TORD				PKP	**PKiKP**	**01 50 05.3**	**+0.1**
	0.8nm,0.7s,baz=48,slow=2.4,SNR=7.5						
PLCA	**Paso Flores**	**138.49**	**139**	PKP	**PKPdf**	**01 50 12.5**	**+2.7**
	1.4nm,0.9s,baz=221,slow=0.1,SNR=3.0						
DBIC	**Dimbokro**	**143.82**	**300**	PKP	PKPbc	01 50 17.9	+0.2
	3.5nm,0.6s,baz=44,slow=6.8,SNR=5.4						
TRQA	**Tornquist**	**145.41**	**142**	*e*PKPbc	**PKPbc**	**01 50 21.9**	**-0.1**
LPAZ	**La Paz**	**148.54**	**101**	PKPbc	**PKPab**	**01 50 34.2**	**-1.5**
	1.4nm,0.8s,baz=21,slow=3.0,SNR=6.2						

*CSEM **13** 01:39:33.6, 36°.88N×23°.96W, h10km, ML3.0*

PDA 13 01:39:33.6±1.1, 36°.88N×23°.96W, h10km, MD3.7, ML3.0, Error ellipse: s-maj=7.7km s-min=5.4km az=58.0, Azores Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PSMN	**Pico do Norte,**	**0.89**	**278**	*e*P	Pg	01 39 47.7	-3.1
PSMN				*e*S	Sg	01 39 57.6	-4.8
PSMN	**Pico do Norte,**	**0.89**	**278**	*e*P	Pg	01 39 47.7	-3.1
PSMN				*e*S	Sg	01 39 57.6	-4.8
PSMA	**Santa Maria**	**0.94**	**277**	*e*P	Pg	01 39 47.8	-3.9
PSMA				*e*S	Sg	01 39 59.0	-5.0
PSMA				A	A	01 40 02.5	
	77nm,0.1s						
BART	**Pico Bartolome**	**1.31**	**313**	*e*P	Pn	01 39 53.6	-4.5
BART				*e*S	Sb	01 40 07.7	-7.7
BART	**Pico Bartolome**	**1.31**	**313**	*e*P	Pn	01 39 53.6	-4.5
BART				*e*S	Sb	01 40 07.7	-7.7
BART				A	A	01 40 10.4	
	94nm,0.3s						
PCALD	**Caldeiras da R**	**1.52**	**307**	*e*S	Sn	01 40 12.9	-7.9
PCALD				A	A	01 40 13.8	
	48nm,0.2s						
CMLA	**Cha da Macela**	**1.53**	**306**	*e*P	Pn	01 39 55.7	-5.2
CMLA				*e*S	Sn	01 40 13.6	-7.3
CMLA	**Cha da Macela**	**1.53**	**306**	*e*P	Pn	01 39 55.7	-5.2
CMLA				*e*S	Sn	01 40 13.6	-7.3
GRON	**Grota Negra**	**1.53**	**306**	*e*P	Pn	01 39 54.9	-6.2
GRON				*e*S	Sn	01 40 11.3	-10
GRON				A	A	01 40 15.0	
	37nm,0.2s						
PDA	**Ponta Delgada**	**1.61**	**303**	*e*P	Pn	01 39 57.3	-4.7
PDA				*e*S	Sn	01 40 15.4	-7.5
PDA	**Ponta Delgada**	**1.61**	**303**	*e*P	Pn	01 39 57.3	-4.7
PDA				*e*S	Sn	01 40 15.4	-7.5
PDA				A	A	01 40 17.6	
	53nm,0.1s						
PSET	**Sete Cidades**	**1.69**	**304**	*e*P	Pn	01 39 58.8	-4.4
PSET				*e*S	Sn	01 40 17.8	-7.1
PSET	**Sete Cidades**	**1.69**	**304**	*e*P	Pn	01 39 58.8	-4.4
PSET				*e*S	Sn	01 40 17.8	-7.1
PSET				A	A	01 40 22.3	
	82nm,0.3s						
ADH	**Angra Heroismo**	**3.14**	**305**	*e*P	Pn	01 40 19.0	-4.1
ADH				*e*S	Sn	01 40 52.4	-8.3
ADH	**Angra Heroismo**	**3.14**	**305**	*e*P	Pn	01 40 19.0	-4.1
ADH				*e*S	Sn	01 40 52.4	-8.3
ROSA	**Rosais**	**3.85**	**300**	*e*P	Pn	01 40 29.0	-4.0
ROSA				*e*S	Sn	01 41 10.3	-8.0
ROSA	**Rosais**	**3.85**	**300**	*e*P	Pn	01 40 29.0	-4.0
ROSA				*e*S	Sn	01 41 10.3	-8.0
ROSA				A	A	01 41 16.1	
	19nm,0.6s						
PCAN	**Candelaria**	**3.92**	**295**	*e*P	Pn	01 40 29.7	-4.2
PCAN				*e*S	Sn	01 41 11.6	-8.4
PCAN	**Candelaria**	**3.92**	**295**	*e*P	Pn	01 40 29.7	-4.2
PCAN				*e*S	Sn	01 41 11.6	-8.4
PCAN				A	A	01 41 14.8	
	12nm,0.3s						

CALA	**Caldeiria**	**4.12**	**296**	*e*P	Pn	01 40 32.8 -3.9
CALA				*e*S	Sn	01 41 17.0 -8.0
CALA	**Caldeiria**	**4.12**	**296**	*e*P	Pn	01 40 32.8 -3.9
CALA				*e*S	Sn	01 41 17.0 -8.0

MEX 13 01:45:16.8±0.6, 16°.80N×100°.50W, h5km±5km, MD3.6, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CAIG	**El Cayaco**	**0.33**	**42**	*i* P	Pg	01 45 22.6	-0.6
CAIG				*i* S	Sg	01 45 28.0	+0.4
ACP2	**Acapulco**	**0.59**	**83**	*e*P	Pg	01 45 27.7	-0.5
ACP2				*e*S	Sg	01 45 36.1	+0.2
MEIG	**Mezcala**	**1.40**	**37**	*e*P	Pn	01 45 39.7	-3.4
MEIG				*e*S	Sb	01 45 57.4	-4.4
ARIG	**Puente Sto Nin**	**1.48**	**6**	*e*P	Pn	01 45 40.9	-3.3
ARIG				*e*S	Sn	01 45 58.3	-5.6
TLIG	**Tlapa**	**2.00**	**67**	*e*P	Pn	01 45 47.9	-3.5
TLIG				*e*S	Sn	01 46 12.8	-4.1

JMA 13 01:56:26.7±0.2, 39°.37N×143°.92E, h19km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**1.64**	**278**	P	Pn	01 56 55.1	+0.6
MIYJ				S	Sn	01 57 15.6	+0.6
JTH	**Tanohata**	**1.69**	**290**	P	Pn	01 56 55.8	+0.7
OFUJ	**Ofunato**	**1.77**	**261**	P	Pn	01 56 57.2	+0.1
JOM	**Ohasama**	**2.04**	**274**	P	Pn	01 57 01.1	+1.1
JOM				*e*S	Sn	01 57 24.7	-0.2
JANG	**Nango**	**2.10**	**299**	P	Pn	01 57 01.3	+0.4
JMK	**Ichinoseki**	**2.14**	**260**	P	Pn	01 57 02.4	+1.0
JRG	**Rokugo**	**2.55**	**272**	P	Pn	01 57 08.6	+1.6
JTM	**Tenmabayashi**	**2.61**	**304**	P	Pn	01 57 09.7	+1.9
JTM				*e*S	Sn	01 57 38.1	-0.8
JAH	**Hinai**	**2.66**	**289**	*e*S	Sn	01 57 41.5	+1.3
JOU	**Okura**	**2.73**	**249**	P	Pn	01 57 11.1	+1.5
JYK	**Kaneyama**	**2.81**	**262**	P	Pn	01 57 12.2	+1.7

IDC 13 01:58:00.0±12.0, 17°.21S×178°.86W, h498km±165km, mb3.1/4, mb1 3.5/4, mb1mx3.0/28, mbtmp3.9/4, Error ellipse: s-maj=193.9km s-min=36.6km az=162.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**44.34**	**259**	P	P	02 05 25.4	-0.2
	1.4nm,0.8s,baz=97,slow=6.8,SNR=6.0						
ASAR	**Alice Springs**	**44.57**	**254**	P	P	02 05 27.3	-0.1
	7.3nm,0.7s,baz=86,slow=8.4,SNR=65						
NVAR	**Mina Array Bea**	**79.22**	**44**	P	P	02 09 13.4	0.0
	0.6nm,0.8s,baz=237,slow=6.3,SNR=2.7						
TXAR	**Lajitas Array**	**85.99**	**58**	P	P	02 09 47.7	0.0
	0.3nm,0.6s,baz=231,slow=6.6,SNR=5.7						
GERES	**GERESS Array B**	**146.83**	**345**	PKPbc	PKPbc	02 16 45.4	-0.7
	0.4nm,0.4s,baz=48,slow=2.0,SNR=5.7						

*NEIC **13** 02:10:58.4, 17°.13N×61°.74W, h27km, MD4.0(TRN), After TRN.*
NEIC Felt [II] at Saint John's, Antigua. Also felt at Carlisle and Potters Village.

TRN 13 02:10:56.8, 17°.19N×61°.63W, h23km, MD4.0, 10D, Leeward Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BPA	**Boggy Peak**	**0.26**	**236**	*e*P	Pn	02 11 05.8	+0.5
BPA				*e*S	Sn	02 11 09.9	-0.6
BPA	**Boggy Peak**	**0.26**	**236**	*e*Pn	Pn	02 11 05.8	+0.5
BPA				*e*S	Sn	02 11 09.9	-0.6
ANWB	**Willy Bob**	**0.49**	**343**	*e*P	Pn	02 11 08.3	-0.1
ANWB				*e*S	Sn	02 11 15.8	-0.5
ANWB	**Willy Bob**	**0.49**	**343**	‖ *i*P	Pb	02 11 07.2	+0.3
AN

Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**1.38**	**48**	Pn	Pg	02 21 25.7	-0.5
	28nm,0.3s,baz=177,slow=21,SNR=14						
GUMO				Sn	Sn	02 21 46.1	+0.8
	78nm,0.3s,baz=20,slow=22,SNR=14						
H11S3	**WAKE ISLAND Hy**	**22.77**	**72**	T	T	02 49 30.0	
	baz=256,slow=74						
H11S1	**WAKE ISLAND Hy**	**22.78**	**72**	T	T	02 49 28.0	
	baz=256						
H11S2	**WAKE ISLAND Hy**	**22.78**	**72**	T	T	02 49 37.4	
	baz=256,slow=74,SNR=6.5						
H11N1	**WAKE ISLAND Hy**	**23.22**	**69**	T	T	02 50 04.1	
	baz=255,slow=75,SNR=7.5						
H11N2	**WAKE ISLAND Hy**	**23.23**	**69**	T	T	02 50 05.3	
	baz=255,slow=75,SNR=5.2						
H11N3	**WAKE ISLAND Hy**	**23.24**	**69**	T	T	02 50 03.1	
	baz=255,slow=75,SNR=6.8						
WRA	**Warramunga Arr**	**33.71**	**196**	P	P	02 27 43.5	+0.5
	0.6nm,0.8s,baz=20,slow=10,SNR=3.0						
ASAR	**Alice Springs**	**37.38**	**195**	P	P	02 28 13.8	-0.8
	0.3nm,0.6s,baz=20,slow=11,SNR=4.3						
MKAR	**Makanchi Array**	**61.46**	**317**	P	P	02 31 17.9	-0.4
	0.3nm,0.4s,baz=99,slow=8.0,SNR=5.5						
ILAR	**Eielson Array**	**69.84**	**25**	P	P	02 32 12.8	+0.7
	0.3nm,0.8s,baz=264,slow=5.3,SNR=2.8						

NIED ***13*** *02:29:00,38°.70N×142°.20E,h44km,Mw3.9 Best double couple: M₀8.11000×10^14 NP1:φ₀s158.00000°,δ30.00000°, λ55.00000°. NP2:φ₀s17.00000°,δ66.00000°,λ109.00000°.*
ISCJB ***13*** *02:29:47.3±0.5,38°.68N±0°.04×142°.21E±0°.05,h41km, mb3.8/17,Error ellipse: s-maj=7.0km s-min=5.2km az=142.3*
JMA ***13*** *02:29:47.8±0.1,38°.66N×142°.17E,h38km±2km,M3.9*
JMA Felt I J1.
IDC ***13*** *02:29:51.1±2.3,38°.67N×142°.05E,h63km±19km,mb3.5/16, mb1 3.7/20,mb1mx3.6/39,mbtmp3.8/20,MS2.7/1, Ms1 2.7/1,ms1mx2.4/27,Error ellipse: s-maj=20.4km s-min=14.1km az=127.0*

ISC 13 02:29:48.8±0.7,38°.68N±0°.06×142°.08E±0°.07,h41km,n38, σ1§06/33,mb3.8/17,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.51**	**321**	P	**Pn**	**02 29 59.6**	**-0.1**
OFUJ				*e*S	**Sn**	**02 30 07.9**	**+0.5**
JIO	**Ouri**	**0.62**	**248**	P	**Pn**	**02 30 00.8**	**-0.3**
JIO				S	**Sn**	**02 30 10.0**	**+0.1**
JMK	**Ichinoseki**	**0.72**	**292**	P	**Pn**	**02 30 02.8**	**+0.2**
JMK				S	**Sn**	**02 30 13.6**	**+1.1**
JOM	**Ohasama**	**1.00**	**322**	P	**Pn**	**02 30 06.7**	**+0.3**
JOM				S	**Sn**	**02 30 18.5**	**-0.7**
JOU	**Okura**	**1.15**	**254**	P	**Pn**	**02 30 08.8**	**+0.3**
JRG	**Rokugo**	**1.33**	**303**	P	**Pn**	**02 30 11.8**	**+0.9**
JYK	**Kaneyama**	**1.36**	**280**	P	**Pn**	**02 30 12.0**	**+0.6**
MAT	**Matsushiro**	**3.74**	**236**	P	Pn	02 30 47.6	+3.5
MAT				*e*S	**Sn**	**02 31 30.2**	**+3.3**
MJAR	**Matsushiro Arr**	**3.74**	**236**	P	**Pn**	**02 30 46.0**	**+1.9**
	3.9nm,0.3s,baz=40,slow=11,SNR=30						
MJAR				LR	LR	02 32 41.3	
	comp=Z,103nm,19.6s,baz=200,slow=46						
ASAJ	**Asahikawa**	**5.44**	**4**	P	**Pn**	**02 31 08.8**	**+1.5**
	1.7nm,0.3s,baz=207,slow=18,SNR=3.7						
ASAJ				S	**Sn**	**02 32 11.4**	**+2.8**
	1.6nm,0.3s,baz=168,slow=26,SNR=2.8						
USRK	**Ussuriysk Ar.**	**9.36**	**309**	P	Pn	02 32 03.8	+2.7
	0.9nm,0.3s,baz=119,slow=13,SNR=19						
KSRS	**Korea Array**	**11.23**	**268**	P	Pn	02 32 30.5	+3.8
	0.1nm,0.3s,baz=78,slow=15,SNR=3.2						
KLR	**Kul'dur**	**12.89**	**328**	P	P	02 32 55.0	-4.2
	0.1nm,0.3s,baz=151,slow=19,SNR=4.3						
SEY	**Seymchan**	**25.07**	**11**	P	**P**	**02 35 10.3**	**+1.2**
	3.0nm,0.6s,baz=200,slow=9.3,SNR=4.9						
H11N2	**WAKE ISLAND Hy**	**28.59**	**124**	T	T	03 05 57.3	
	baz=317,slow=75,SNR=425						
H11N1	**WAKE ISLAND Hy**	**28.60**	**124**	T	T	03 06 03.0	
	baz=317,slow=75,SNR=299						
H11N3	**WAKE ISLAND Hy**	**28.61**	**124**	T	T	03 05 58.7	
	baz=317,slow=75,SNR=108						
H11S1	**WAKE ISLAND Hy**	**29.36**	**126**	T	T	03 06 58.4	
	baz=318,slow=76,SNR=20						
H11S3	**WAKE ISLAND Hy**	**29.36**	**126**	T	T	03 06 58.5	
	baz=318,slow=76,SNR=39						
H11S2	**WAKE ISLAND Hy**	**29.38**	**126**	T	T	03 07 00.1	
	baz=318,slow=76,SNR=24						
ZALV	**Zalesovo Beam**	**41.21**	**311**	P	**P**	**02 37 29.3**	**0.0**
	1.2nm,0.4s,baz=77,slow=7.9,SNR=4.4						
MKAR	**Makanchi Array**	**43.71**	**301**	P	**P**	**02 37 49.6**	**-0.1**
	0.8nm,0.4s,baz=87,slow=9.6,SNR=8.1						
ILAR	**Eielson Array**	**47.82**	**33**	P	**P**	**02 38 22.0**	**0.0**
	0.4nm,0.7s,baz=271,slow=6.6,SNR=7.0						
INK	**Inuvik**	**52.68**	**28**	P	**P**	**02 38 58.2**	**-0.4**
	0.7nm,1.0s,baz=288,slow=3.2,SNR=3.1						
WRA	**Warramunga Arr**	**58.77**	**189**	P	**P**	**02 39 41.3**	**-1.4**
	0.5nm,0.5s,baz=5.6,slow=6.8,SNR=5.4						
YKA	**Yellowknife Ar**	**62.12**	**31**	P	**P**	**02 40 04.7**	**-0.5**
	0.1nm,0.7s,baz=297,slow=11,SNR=2.9						
ASAR	**Alice Springs**	**62.49**	**188**	P	P	02 40 17.8	+10
	0.7nm,0.8s,baz=14,slow=7.8,SNR=4.5						
ARCES	**ARCESS Array B**	**62.64**	**339**	P	**P**	**02 40 08.5**	**-0.1**
	1.8nm,0.9s,baz=60,slow=7.2,SNR=3.8						
FINES	**FINESS Array B**	**67.60**	**332**	P	**P**	**02 40 40.2**	**-0.6**
	2.6nm,0.7s,baz=63,slow=8.8,SNR=5.5						
KBZ	**Khabaz**	**70.23**	**310**	P	**P**	**02 40 57.6**	**+0.2**
	1.3nm,0.8s,baz=31,slow=5.9,SNR=4.8						
NB2	**NORSAR Subarra**	**72.87**	**337**	P	**P**	**02 41 12.4**	**-0.7**
	comp=Z,0.6nm,0.5s,baz=38,slow=6.2						
NOA	**NORSAR Array B**	**72.87**	**337**	P	**P**	**02 41 12.7**	**-0.5**
	comp=Z,0.7nm,0.6s,baz=39,slow=6.0,SNR=4.6						
AKASG	**Malin Array Be**	**73.31**	**322**	P	**P**	**02 41 15.4**	**-0.5**
	comp=Z,0.9nm,0.5s,baz=47,slow=6.1,SNR=2.8						
NVAR	**Mina Array Bea**	**73.58**	**54**	P	**P**	**02 41 18.8**	**+0.8**
	comp=Z,0.2nm,0.5s,baz=334,slow=6.0,SNR=2.3						
PDAR	**Pinedale Array**	**76.14**	**46**	P	**P**	**02 41 32.6**	**-0.2**
	comp=Z,0.2nm,0.4s,baz=192,slow=1.4,SNR=3.9						
GERES	**GERESS Array B**	**81.58**	**328**	P	**P**	**02 42 02.0**	**-0.3**
	comp=Z,0.4nm,0.7s,baz=319,slow=5.9,SNR=4.5						
TXAR	**Lajitas Array**	**88.70**	**53**	P	**P**	**02 42 38.3**	**+0.1**
	comp=Z,0.3nm,0.7s,baz=250,slow=4.7,SNR=2.7						
LPAZ	**La Paz**	**145.39**	**58**	PKPbc	**PKPab**	**02 49 23.0**	**-0.6**
	comp=Z,0.4nm,0.6s,baz=262,slow=3.9,SNR=3.2						

WEL 13 02:40:37.5±0.7,38°.23S×175°.93E,h154km±5km,ML3.6/11, 6C,Error ellipse: s-maj=4.7km s-min=4.1km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RTZ	**Ruatahuna**	**0.92**	**116**	PN	Pn	02 41 02.2	+0.1
URZ	**Urewera**	**0.93**	**92**	⇑PN	Pn	02 41 02.0	-0.1
URZ				SN	Sn	02 41 20.2	-0.6
URZ				AML	AML	02 41 21.8	
BKZ	**Black Stump Fm**	**1.04**	**155**	⇑PN	Pn	02 41 03.0	0.0
NMHZ	**Naumai**	**1.11**	**142**	PN	Pn	02 41 04.5	+0.8
NMHZ				SN	Sn	02 41 24.6	+0.8
WNVZ	**Wahianoa**	**1.13**	**193**	PN	Pn	02 41 04.2	+0.2
RAHZ	**Arahi**	**1.14**	**128**	⇑PN	Pn	02 41 04.5	+0.6
MOVZ	**Moawhango**	**1.19**	**187**	PN	Pn	02 41 04.2	-0.2
SNGZ	**Shannon Statio**	**1.24**	**117**	⇑PN	Pn	02 41 05.1	+0.3
SNGZ				SN	Sn	02 41 25.1	-0.7
KWHZ	**Kaweka Forest**	**1.26**	**162**	PN	Pn	02 41 05.1	0.0
MWZ	**Matawai**	**1.27**	**95**	PN	Pn	02 41 05.0	-0.1
MWZ				SN	Sn	02 41 25.3	-0.9
MWZ				AML	AML	02 41 26.6	
BHHZ	**Black Hill Sta**	**1.27**	**175**	PN	Pn	02 41 04.8	-0.3
ARHZ	**Aropaoanui**	**1.33**	**141**	PN	Pn	02 41 05.9	+0.3
KRHZ	**Kereru**	**1.46**	**166**	⇑PN	Pn	02 41 06.7	-0.3
RIGZ	**Rimuhau**	**1.52**	**109**	PN	Pn	02 41 07.5	0.0
TKGZ	**Te Karaka**	**1.53**	**99**	PN	Pn	02 41 07.9	+0.3
HAZ	**Te Kaha**	**1.54**	**73**	PN	Pn	02 41 07.4	-0.3
KNZ	**Kokohu**	**1.58**	**121**	PN	Pn	02 41 07.7	-0.4
CKHZ	**Cape Kidnapper**	**1.69**	**148**	PN	Pn	02 41 09.2	-0.2
PNHZ	**Pukenui**	**1.70**	**173**	PN	Pn	02 41 08.7	-0.8
KAHZ	**Kahuranaki**	**1.73**	**155**	PN	Pn	02 41 09.6	-0.3
TSZ	**Takapari Road**	**1.83**	**179**	PN	Pn	02 41 10.1	-0.8
PUZ	**Puketiti**	**1.84**	**86**	PN	Pn	02 41 10.6	-0.5
PXZ	**Pawanui**	**1.94**	**158**	PN	Pn	02 41 11.4	-0.8
PXZ				AML	AML	02 41 39.5	
DVHZ	**Dannevirke**	**2.08**	**175**	PN	Pn	02 41 12.4	-1.4
ANWZ	**Angora Road**	**2.27**	**169**	PN	Pn	02 41 14.8	-1.2
PRWZ	**Pori Road**	**2.33**	**179**	PN	Pn	02 41 15.3	-1.3
MRZ	**Mangatainoka R**	**2.45**	**186**	⇑PN	Pn	02 41 16.2	-1.9
BFZ	**Birch Farm**	**2.46**	**174**	PN	Pn	02 41 16.5	-1.9
TIWZ	**Tintock**	**2.55**	**181**	AML	AML	02 41 49.5	
TIWZ				AML	AML	02 41 50.4	
TIWZ				AML	AML	02 41 51.8	
OGWZ	**Otaki Gorge**	**2.65**	**193**	PN	Pn	02 41 18.7	-2.0
MTW	**Mount Morrison**	**2.95**	**186**	PN	Pn	02 41 21.6	-2.7
CAW	**Cannon Point**	**2.95**	**193**	PN	Pn	02 41 22.1	-2.3
TRWZ	**Traveller**	**3.17**	**183**	PN	Pn	02 41 24.3	-2.8
TCW	**Tory Channel**	**3.24**	**203**	AML	AML	02 42 55.6	
PLWZ	**Palliser**	**3.38**	**189**	PN	Pn	02 41 26.5	-3.3
NNZ	**Nelson**	**3.58**	**213**	PN	Pn	02 41 34.9	+2.7

JMA 13 02:45:05.6±0.1,37°.19N×141°.40E,h48km±1km,M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.46**	**293**	P	Pn	02 45 16.1	-0.1
JFK				S	Sn	02 45 23.3	-0.5
ONAJ	**Iwakimizuishiy**	**0.49**	**260**	P	Pn	02 45 16.6	-0.1
ONAJ				S	Sn	02 45 24.3	-0.2
JMM	**Marumori**	**0.83**	**325**	P	Pn	02 45 20.9	-0.1
JMM				S	Sn	02 45 32.0	-0.2
JHO	**Hitachi**	**0.88**	**229**	P	Pn	02 45 21.3	-0.4
JFT	**Otama**	**0.91**	**291**	P	Pn	02 45 22.9	+0.8
JFT				S	Sn	02 45 35.0	+0.9
JIO	**Ouri**	**1.26**	**358**	P	Pn	02 45 26.7	-0.1
JIO				S	Sn	02 45 41.5	-1.2
JOU	**Okura**	**1.31**	**334**	P	Pn	02 45 28.9	+1.4
JFY	**Yanaizu**	**1.37**	**280**	P	Pn	02 45 29.4	+1.1

FUNV ***13*** *02:55:03.7,5°.62N×71°.97W,h35km,MW2.5*
RSNC ***13*** *02:55:14.0±0.7,6°.18N×71°.99W,h15km±41km,ML1.8*

ISC 13 02:55:07.3±1.9,6°.08N±0°.08×71°.70W±0°.05,h14km±13km, n11,σ0§99/18,Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RUSC	**La Rusia**	**1.39**	**262**	*e*P	**Pg**	**02 55 34.5**	**+0.3**
RUSC				*e*S	**Sn**	**02 55 49.6**	**-1.6**
RUSC				*i*		02 55 52.6	
	comp=Z,14nm,0.4s						
BARC	**Barichara**	**1.56**	**289**	*e*P	**Pb**	**02 55 36.5**	**+0.3**
PAMC	**Pamplona, Colo**	**1.60**	**322**	*e*P	**Pb**	**02 55 37.4**	**+0.5**
PAMC				*e*S	**Sn**	**02 55 56.1**	**-0.2**
BTLC	**Betulia, Santa**	**1.77**	**298**	*e*P	**Pn**	**02 55 38.7**	**+1.0**
CAPV	**Capacho**	**1.87**	**341**	*e*P	**Pn**	**02 55 38.1**	**-1.1**
CAPV				*e*S	**Sn**	**02 56 03.5**	**+0.7**
CBRI	**Barrientos, No**	**1.96**	**326**	*e*P	**Pb**	**02 55 43.6**	**+0.7**
GRMC	**Gramalote, San**	**1.96**	**326**	*e*S	**Sg**	**02 56 09.3**	**-1.2**
BRRC	**Barranca, Sant**	**2.25**	**297**	*e*P	**Pn**	**02 55 45.4**	**+1.3**
BRRC				*i*		02 55 57.6	
	comp=Z,8.0nm,0.3s						
BRRC				*e*S	**Sn**	**02 56 10.6**	**-1.1**
SOCV	**Socops**	**2.34**	**21**	*e*P	**Pn**	**02 55 46.5**	**+1.1**
SOCV				*e*S	**Sb**	**02 56 17.4**	**-0.8**
CURV	**Curarigua**	**4.27**	**24**	*e*P	**Pn**	**02 56 12.0**	**-0.1**
CURV				*e*S	**Sn**	**02 57 02.8**	**+1.1**
BAUV	**El Baul**	**4.61**	**52**	*e*P	**Pn**	**02 56 15.9**	**-0.7**
BAUV				*e*S	**Sn**	**02 57 09.8**	**-0.2**

IDC ***13*** *02:56:31.8±1.6,37°.20N×143°.80E,h0km,mb3.5/2, mb1 3.9/4,mb1mx3.4/32,mbtmp3.7/4,ML3.4/2,Error ellipse: s-maj=43.9km s-min=25.8km az=138.0*
ISCJB ***13*** *02:56:34.6±0.9,37°.37N±0°.05×143°.64E±0°.06,h33km, mb3.6/2,Error ellipse: s-maj=7.5km s-min=6.7km az=21.3*
JMA ***13*** *02:56:35.3±0.3,37°.38N×143°.55E,h41km,M3.3*

ISC 13 02:56:35.8±1.3,37°.34N±0°.05×143°.68E±0°.09,h35km,n16, σ1§53/27,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.15**	**302**	P	**Pn**	**02 57 08.5**	**-0.6**
JIO				S	**Sn**	**02 57 32.3**	**-2.3**
JFK	**Kawauchi**	**2.23**	**272**	P	**Pn**	**02 57 09.7**	**-0.6**
JFK				S	**Sn**	**02 57 35.0**	**-1.6**
JMM	**Marumori**	**2.35**	**284**	P	**Pn**	**02 57 11.0**	**-0.8**
JMM				S	**Sn**	**02 57 37.8**	**-1.6**
OFUJ	**Ofunato**	**2.35**	**318**	P	**Pn**	**02 57 10.9**	**-1.0**
OFUJ				S	**Sn**	**02 57 37.7**	**-1.8**
JMK	**Ichinoseki**	**2.52**	**311**	P	**Pn**	**02 57 13.5**	**-0.7**
JMK				S	**Sn**	**02 57 43.1**	**-0.5**
JHO	**Hitachi**	**2.59**	**255**	P	**Pn**	**02 57 14.3**	**-0.9**
JHO				S	**Sn**	**02 57 43.8**	**-1.6**
JOU	**Okura**	**2.60**	**294**	P	**Pn**	**02 57 15.3**	**+0.1**
JFT	**Otama**	**2.66**	**275**	P	**Pn**	**02 57 16.8**	**+0.6**
JFT				*e*S	**Sn**	**02 57 46.8**	**-0.5**
JOM	**Ohasama**	**2.84**	**319**	P	**Pn**	**02 57 18.1**	**-0.5**
JOM				S	**Sn**	**02 57 50.4**	**-1.1**
JYK	**Kaneyama**	**3.06**	**302**	P	**Pn**	**02 57 21.7**	**+0.2**
JANG	**Nango**	**3.47**	**332**	P	**Pn**	**02 57 26.9**	**-0.3**
MJAR	**Matsushiro Arr**	**4.45**	**261**	Pn	**Pn**	**02 57 42.1**	**+1.4**
	2.5nm,0.3s,baz=90,slow=15,SNR=17						
MJAR				Sn	**Sn**	**02 58 33.6**	**+2.3**
	0.4nm,0.3s,baz=356,slow=18,SNR=3.1						
MAT	**Matsushiro**	**4.45**	**261**	P	**Pn**	**02 57 42.6**	**+1.8**
MAT				*e*S	**Sn**	**02 58 33.3**	**+1.9**
JHJ	**Hachijo jima 2**	**5.28**	**218**	Pn	**Pn**	**02 57 51.4**	**-0.8**
	2.6nm,0.3s,baz=309,slow=23,SNR=2.7						
JHJ				Sn	**Sn**	**02 58 47.6**	**-4.1**
	7.0nm,0.3s,baz=161,slow=23,SNR=2.6						
ILAR	**Eielson Array**	**48.27**	**33**	P	**P**	**03 05 14.4**	**+1.5**
	0.3nm,0.6s,baz=249,slow=5.8,SNR=4.5						
WRA	**Warramunga Arr**	**57.65**	**190**	P	**P**	**03 06 22.9**	**+0.4**
	0.6nm,0.7s,baz=7.7,slow=7.2,SNR=5.2						

ISCJB ***13*** *02:57:33.9±0.5,37°.86N±0°.02×27°.95E±0°.06,h2km±10km, Error ellipse: s-maj=7.5km s-min=3.6km az=11.1*
ISK ***13*** *02:57:33.4,37°.85N×27°.95E,h6km,MD2.5*
DDA ***13*** *02:57:33.9,37°.84N×27°.88E,h7km,Md2.4*
CSEM ***13*** *02:57:34.0±0.2,37°.85N×27°.90E,h5km,MD2.5,Error ellipse: s-maj=5.2km s-min=2.7km az=99.0*

ISC 13 02:57:34.1±1.0,37°.85N±0°.02×27°.95E±0°.04,h6km±9km, n21,σ0§38/35,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AYDB	**Zeytinkoy-Aydi**	**0.10**	**332**	*e*PG	**Pg**	**02 57 36.5**	**0.0**
AYDB				*e*SG	**Sg**	**02 57 38.1**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**0.10**	**332**	*e*Pg	**Pg**	**02 57 36.5**	**0.0**
AYDB				*e*Sg	**Sg**	**02 57 38.1**	**0.0**
AYDN	**Tasoluk**	**0.20**	**197**	P	**Pg**	**02 57 38.1**	**0.0**
AYDN				S	**Sg**	**02 57 40.6**	**-0.2**
AYDN	**Tasoluk**	**0.20**	**197**	*i* P	**Pg**	**02 57 38.1**	**0.0**
AYDN				*i* S	**Sg**	**02 57 40.6**	**-0.2**
YER	**Yerkesik**	**0.77**	**160**	*e*PG	**Pg**	**02 57 48.9**	**+0.1**
YER				*e*SG	**Sg**	**02 57 59.0**	**+0.3**
YER	**Yerkesik**	**0.77**	**160**	*e*Pg	**Pg**	**02 57 48.9**	**+0.1**
YER				*e*Sg	**Sg**	**02 57 59.0**	**+0.3**
MANT	**Manisa**	**0.80**	**37**	P	**Pg**	**02 57 49.3**	**-0.1**
MANT				S	**Sg**	**02 57 59.9**	**+0.2**
MANT	**Manisa**	**0.80**	**37**	*i* P	**Pg**	**02 57 49.3**	**-0.1**
MANT				*i* S	**Sg**	**02 57 59.9**	**+0.2**
KULA	**Kula-Manisa**	**0.86**	**40**	*e*PG	**Pg**	**02 57 50.4**	**-0.3**
KULA				*e*SG	**Sb**	**02 58 03.1**	**-0.3**
KULA	**Kula-Manisa**	**0.86**	**40**	*e*Pg	**Pg**	**02 57 50.4**	**-0.3**
KULA				*e*Sg	**Sb**	**02 58 03.1**	**-0.3**
DNZL	**Cakiroluk**	**0.88**	**100**	P	**Pn**	**02 57 53.1**	**-0.1**
DNZL	**Cakiroluk**	**0.88**	**100**	*i* P	**Pn**	**02 57 53.1**	**-0.1**
BDRM	**Kayabasi**	**0.89**	**207**	P	**Pg**	**02 57 50.2**	**-0.9**
BDRM				S	**Sb**	**02 58 04.8**	**+0.9**
BDRM	**Kayabasi**	**0.89**	**207**	*i* P	**Pg**	**02 57 50.2**	**-0.9**
BDRM				*i* S	**Sb**	**02 58 04.8**	**+0.9**
BODT	**Bodrum**	**0.94**	**213**	*e*PG	**Pg**	**02 57 51.6**	**-0.5**
BODT	**Bodrum**	**0.94**	**213**	*e*Pg	**Pg**	**02 57 51.7**	**-0.5**
AKHS	**Akhisar**	**1.03**	**354**	P	**Pg**	**02 57 53.9**	**0.0**
AKHS	**Akhisar**	**1.03**	**354**	*i* P	**Pg**	**02 57 53.9**	**0.0**
AKS	**Akhisar**	**1.03**	**354**	*e*PG	**Pg**	**02 57 54.0**	**+0.1**
AKS				*e*SG	**Sb**	**02 58 08.3**	**+0.2**
AKS	**Akhisar**	**1.03**	**354**	*e*Pg	**Pg**	**02 57 54.0**	**+0.1**
AKS				*e*Sg	**Sb**	**02 58 08.3**	**+0.2**
TURN	**Turunc**	**1.11**	**152**	*i* P	**Pn**	**02 57 56.1**	**0.0**

KRSC 13 02:57:38.9±1.7,53°.17N×163°.10E,h60km±22km,ML3.6, Off east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MKZ	**Mys Kozlova**	**1.61**	**330**	*e*P	Pn	02 58 07.5	+2.4
MKZ				*e*S	Sn	02 58 26.8	+2.0
NLC	**Nalytchevo**	**2.26**	**272**	*e*P	Pn	02 58 16.8	+2.9
NLC				*e*S	Sn	02 58 42.1	+1.5
SDLR	**Sedlovina**	**2.54**	**274**	*e*P	Pn	02 58 20.8	+3.0
SDLR				S	Sn	02 58 49.3	+1.7
UGLR	**Uglovaya**	**2.57**	**273**	*e*P	Pn	02 58 21.6	+3.3
UGLR				*e*S	Sn	02 58 51.0	+2.6
SMAR	**Somma**	**2.59**	**274**	*e*P	Pn	02 58 21.5	+2.9
SMAR				S	Sn	02 58 50.8	+1.9
KRER	**Koryakskii**	**2.62**	**275**	*e*P	Pn	02 58 22.3	+3.3
KRER				*e*S	Sn	02 58 52.5	+2.8
AVH	**Avacha**	**2.62**	**274**	*e*P	Pn	02 58 22.4	+3.5
AVH				S	Sn	02 58 52.0	+2.3
BKI	**Bering**	**2.65**	**38**	S	Sn	02 58 50.1	+0.1
KRX	**Arik**	**2.68**	**276**	*e*P	Pn	02 58 22.9	+3.1
KRX				*e*S	Sn	02 58 52.9	+1.8
PET	**Petropavlovsk**	**2.69**	**269**	S	Sn	02 58 54.4	+3.4
RUS	**Russkaya**	**2.88**	**257**	*e*P	Pn	02 58 24.8	+2.5
RUS				S	Sn	02 58 56.8	+1.0
KRMR	**Karymshinskiy**	**3.02**	**266**	P	Pn	02 58 27.4	+3.1
KRMR				*e*S	Sn	02 59 00.9	+1.7
KMNR	**Kamenistaya**	**3.08**	**328**	*e*P	Pn	02 58 28.1	+2.9
KMNR				S	Sn	02 59 04.4	+3.5
KBG	**Krutoberegovo**	**3.10**	**356**	S	Sn	02 59 05.3	+4.1
GNL	**Ganaly**	**3.13**	**282**	*e*P	Pn	02 58 30.0	+4.1
GNL				S	Sn	02 59 06.4	+4.3
ZLN	**Zelenaya**	**3.15**	**336**	P	Pn	02 58 30.3	+4.1
ZLN				*e*S	Sn	02 59 06.1	+3.5
ASAK	**Asacha**	**3.25**	**258**	*e*P	Pn	02 58 31.0	+3.4
KRSR	**Krestovskiy**	**3.39**	**335**	S	Sn	02 59 11.9	+3.5
SMKR	**Semkarok**	**3.55**	**345**	P	Pn	02 58 34.3	+2.7
APC	**Apacha**	**3.59**	**268**	S	Sn	02 59 17.8	+4.5
ESO	**Esso**	**3.77**	**319**	S	Sn	02 59 22.2	+4.6

MEX 13 03:11:59.1±0.4,14°.41N×92°.51W,h16km±52km,MD3.6, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THIG		**0.55**	**25**	*i* P	Pg	03 12 08.2	-1.8
THIG				*e*S	Sg	03 12 14.8	-2.5
PCIG		**1.46**	**332**	*e*P	Pn	03 12 21.4	-3.4
PCIG				*e*S	Sn	03 12 38.0	-5.6
TGIG		**2.43**	**346**	*e*P	Pn	03 12 35.0	-3.2
TGIG				*e*S	Sn	03 13 03.4	-4.2

ISCJB ***13*** *03:18:35.9±0.6,41°.07N±0°.03×26°.30E±0°.03,h9km±4km, Error ellipse: s-maj=5.3km s-min=3.8km az=161.3*
CSEM ***13*** *03:18:36.1±0.2,41°.08N×26°.28E,h10km,MD2.8,Error ellipse: s-maj=4.6km s-min=3.3km az=169.0*
THE ***13*** *03:18:36.0,41°.06N×26°.31E,h11km±1km,ML2.1/4,Error ellipse: s-maj=2.9km s-min=0.9km az=120.0*
ISK ***13*** *03:18:36.2,41°.05N×26°.31E,h14km,MD2.8*
DDA ***13*** *03:18:37.4,40°.97N×26°.32E,h7km,Md2.7*

ISC 13 03:18:35.8±0.9,41°.05N±0°.03×26°.30E±0°.02,h17km±7km, n46,σ0§40/65,Greece-Bulgaria border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ALN	**Alexandroupoli**	**0.25**	**233**	*e*PG	**Pb**	**03 18 42.4**	**+0.6**
ALN	**Alexandroupoli**	**0.25**	**233**	P	**Pg**	**03 18 41.5**	**+0.1**
ALN				S	**Sg**	**03 18 44.9**	**-0.3**
ALN	**Alexandroupoli**	**0.25**	**233**	P	**Pg**	**03 18 41.5**	**+0.1**
ALN	**Alexandroupoli**	**0.25**	**233**	*e*Pg	**Pb**	**03 18 42.4**	**+0.6**
ALN				S	**Sg**	**03 18 44.9**	**-0.3**
ENEZ	**Enez**	**0.33**	**200**	*e*PG	**Pb**	**03 18 43.4**	**+0.2**
ENEZ				*e*SG	**Sb**	**03 18 48.8**	**+0.5**
ENEZ	**Enez**	**0.33**	**200**	P	**Pb**	**03 18 43.2**	**0.0**
ENEZ				S	**

s-min=6.5km az=18.4
*NEIC **13** 03:28:18.9±1.2, 12.°29N×144.°16E, h40km±11km, mb4.5/26, Error ellipse: s-maj=9.2km s-min=6.3km az=92.0*
*IDC **13** 03:28:20.9±2.1, 12.°31N×144.°20E, h55km±18km, mb4.0/17, mb1 4.2/18, mb1mx4.0/37, mbtmp4.3/18, MS3.7/2, Ms1 3.7/2, ms1mx2.9/46, Error ellipse: s-maj=22.3km s-min=15.3km az=109.0*

ISC 13 03:28:17.4±0.5, 12.°27N±0.°07×144.°14E±0.°10, h27km, n61, σ0=89/59, mb4.4/42, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**1.49**	**28**	P		**Pn**	**03 28 43.1**	**+0.6**
	131nm,0.3s,baz=132,slow=9.7,SNR=40							
GUMO				S		**Sb**	**03 29 02.8**	**-0.2**
	540nm,0.3s,baz=350,slow=21,SNR=19							
GUMO				LR		LR	03 29 09.2	
	comp=Z,223nm,21.8s,baz=219,slow=34							
CBIJ	**Chichi jima**	**14.87**	**353**	P		**Pn**	**03 31 46.1**	**+0.2**
JCJ	**Chichijima**	**14.87**	**353**	P		**Pn**	**03 31 46.1**	**+0.2**
PMG	**Port Moresby**	**21.74**	**172**	*e*P		**P**	**03 33 06.2**	**-0.7**
	26nm,1.0s							
H11N1	**WAKE ISLAND Hy**	**23.07**	**68**	T		T	03 57 20.7	
	baz=255,slow=75,SNR=34							
H11N2	**WAKE ISLAND Hy**	**23.08**	**68**	T		T	03 57 26.7	
	baz=255,slow=75,SNR=26							
H11N3	**WAKE ISLAND Hy**	**23.09**	**68**	T		T	03 57 26.2	
	baz=255,slow=75,SNR=38							
JNU	**Nakatsue**	**24.05**	**332**	P		**P**	**03 33 32.4**	**+1.9**
	9.7nm,0.8s,baz=86,slow=6.6,SNR=5.2							
JNU	**Nakatsue**	**24.05**	**332**	*e*P		**P**	**03 33 32.0**	**+1.5**
	6.0nm,0.8s							
YULB	**Yu-li**	**24.36**	**300**	*e*P		**P**	**03 33 34.2**	**+0.7**
	12nm,0.9s							
MJAR	**Matsushiro Arr**	**24.75**	**349**	P		**P**	**03 33 35.3**	**-1.5**
	3.2nm,0.9s,baz=179,slow=9.7,SNR=4.7							
MJAR				LR		LR	03 42 38.8	
	comp=Z,184nm,18.1s,baz=195,slow=35							
SSLB	**Suanglung**	**24.80**	**301**	*e*P		**P**	**03 33 36.2**	**-1.3**
	9.5nm,0.6s							
KSRS	**Korea Array**	**28.98**	**333**	P		**P**	**03 34 16.0**	**+1.2**
	1.0nm,0.6s,baz=138,slow=13,SNR=4.5							
KSAR	**Wonju Array Be**	**28.99**	**333**	P		**P**	**03 34 16.0**	**+1.1**
ERM	**Erimo**	**29.65**	**359**	*e*P		**P**	**03 34 19.4**	**-1.2**
	51nm,1.2s							
CTAO	**Charters Tower**	**32.22**	**176**	*e*P		**P**	**03 34 42.3**	**-1.3**
	34nm,1.0s							
WRAB	**Tennant Creek**	**33.42**	**197**	*e*P		**P**	**03 34 54.0**	**-0.1**
	6.3nm,0.9s							
WRA	**Warramunga Arr**	**33.43**	**197**	P		**P**	**03 34 54.9**	**+0.7**
	1.1nm,0.8s,baz=20,slow=10,SNR=4.6							
USRK	**Ussuriysk Ar.**	**33.49**	**344**	LR		LR	03 46 11.3	
	comp=Z,95nm,21.6s,baz=156,slow=32							
ASAR	**Alice Springs**	**37.09**	**196**	P		**P**	**03 35 26.8**	**+1.1**
	0.9nm,0.6s,baz=16,slow=11,SNR=6.9							
EIDS	**Eidsvold**	**38.02**	**170**	*e*P		**P**	**03 35 34.7**	**+1.3**
	4.2nm,0.8s							
KULM	**Kulim**	**43.49**	**265**	*e*P		**P**	**03 36 19.1**	**+0.2**
	7.1nm,0.7s							
CMAR	**Chiang Mai Arr**	**43.93**	**284**	P		**P**	**03 36 22.6**	**+0.2**
	2.2nm,0.7s,baz=81,slow=6.6,SNR=8.6							
CMAR				PcP		**PcP**	**03 38 09.7**	**+1.4**
	1.1nm,0.4s,baz=98,slow=1.8,SNR=4.7							
SONM	**Songino Array**	**47.41**	**326**	P		**P**	**03 36 50.4**	**+0.7**
	1.0nm,0.6s,baz=145,slow=9.3,SNR=5.1							
SONM				PcP		**PcP**	**03 38 20.2**	**+0.2**
	1.3nm,0.9s,baz=151,slow=3.4,SNR=5.0							
GSI	**Gunungsitoli**	**47.42**	**260**	*e*P		**P**	**03 36 48.7**	**-1.4**
	24nm,1.1s							
KKN	**Kakani**	**56.93**	**295**	*e*P		**P**	**03 38 00.6**	**-0.3**
GKN	**Gorkha**	**57.51**	**295**	*e*P		**P**	**03 38 04.8**	**-0.1**
KOLN	**Koldanda**	**58.41**	**295**	*e*P		**P**	**03 38 10.8**	**-0.5**
	8.6nm,0.7s							
PYUN	**Piuthan**	**58.97**	**295**	*e*P		**P**	**03 38 15.0**	**-0.2**
MKAR	**Makanchi Array**	**61.95**	**317**	P		**P**	**03 38 35.5**	**+0.4**
	4.3nm,0.6s,baz=92,slow=8.8,SNR=37							
ZALV	**Zalesovo Beam**	**62.28**	**325**	P		**P**	**03 38 36.6**	**-0.5**
	1.0nm,0.4s,baz=107,slow=11,SNR=3.4							
KURK	**Kurchatov**	**65.14**	**320**	*e*P		**P**	**03 38 55.6**	**-0.3**
	17nm,0.8s							
KSH	**Kashi**	**65.48**	**308**	SKKS		**SKKSdf**	**04 06 26.3**	**-0.5**
TKM2	**Tokmak 2**	**66.05**	**312**	*e*P		**P**	**03 39 02.6**	**+0.3**
	1.9nm,0.8s							
AAK	**Ala-Archa**	**66.84**	**311**	*e*P		**P**	**03 39 06.5**	**-0.7**
	2.0nm,0.7s							
EKS2	**Erkin-Say**	**67.37**	**311**	*e*P		**P**	**03 39 10.7**	**+0.1**
	2.2nm,0.8s							
RC01	**Rabbit Creek A**	**67.86**	**29**	*e*P		**P**	**03 39 11.5**	**-1.7**
	12nm,1.2s							
KTH	**Kantishna Hill**	**68.03**	**26**	*e*P		**P**	**03 39 13.1**	**-1.2**
	2.7nm,0.7s							
SML	**Sawmill**	**68.70**	**28**	*e*P		**P**	**03 39 17.8**	**-0.7**
	1.5nm,1.1s							
KKAR	**Karatay Array**	**69.79**	**312**	*e*P		**P**	**03 39 25.4**	**-0.1**
	4.4nm,0.8s							
ILAR	**Eielson Array**	**70.06**	**25**	P		**P**	**03 39 25.2**	**-1.5**
	0.7nm,0.5s,baz=250,slow=5.7,SNR=16							
PAX	**Paxson**	**70.26**	**27**	*e*P		**P**	**03 39 27.8**	**-0.4**
	1.2nm,0.5s							
BRVK	**Borovoye**	**70.59**	**322**	*e*P		**P**	**03 39 30.1**	**-0.2**
	4.5nm,0.6s							
DOT	**Dot Lake**	**71.02**	**27**	*e*P		**P**	**03 39 31.8**	**-0.9**
	3.7nm,0.6s							
INK	**Inuvik**	**75.85**	**22**	*e*P		**P**	**03 40 00.1**	**-0.8**
	2.8nm,1.0s							
ABKAR	**Akbulak array**	**77.04**	**318**	*e*P		**P**	**03 40 07.5**	**-0.7**
	7.5nm,0.6s							
ARU	**Arti**	**77.44**	**325**	*e*P		**P**	**03 40 09.5**	**-0.7**
	3.7nm,0.6s							
DLBC	**Dease Lake**	**77.47**	**33**	*e*P		**P**	**03 40 11.1**	**+0.6**
	1.4nm,0.6s							
GEYT	**Alibeck**	**79.47**	**307**	P		**P**	**03 40 22.6**	**+0.8**
	6.2nm,0.8s,baz=126,slow=2.0,SNR=8.8							
YKA	**Yellowknife Ar**	**84.35**	**27**	P		**P**	**03 40 47.0**	**0.0**
	0.5nm,0.4s,baz=289,slow=5.3,SNR=15							
YKA	**Yellowknife Ar**	**84.35**	**27**	P		**P**	**03 40 47.0**	**0.0**
NEW	**Newport**	**86.68**	**41**	*e*P		**P**	**03 40 59.4**	**+0.4**
	4.0nm,0.9s							
ARCES	**ARCESS Array B**	**88.11**	**342**	P		**P**	**03 41 05.7**	**+0.4**
	4.3nm,1.0s,baz=74,slow=7.6,SNR=5.3							
NVAR	**Mina Array Bea**	**88.29**	**51**	P		**P**	**03 41 07.8**	**+0.6**
	1.5nm,0.9s,baz=257,slow=5.3,SNR=5.9							
KBZ	**Khabaz**	**89.58**	**315**	P		**P**	**03 41 12.1**	**-0.7**
	1.5nm,0.7s,baz=360,slow=1.9,SNR=3.6							
FINES	**FINESS Array B**	**92.05**	**335**	P		**P**	**03 41 22.2**	**-1.6**
	1.7nm,0.5s,baz=65,slow=6.0,SNR=14							
BRTR	**Keskin Array B**	**97.45**	**313**	P		**P**	**03 41 48.0**	**-1.2**
	0.6nm,0.7s,baz=92,slow=3.0,SNR=5.7							
LSZ	**Lusaka**	**117.91**	**259**	*e*PKPdf		**PKPdf**	**03 47 03.1**	**+0.4**
TORD	**Torodi Ar. Bea**	**135.00**	**303**	PKhKP		PKPpre	03 47 23.0	
	0.1nm,0.4s,baz=308,slow=0.9,SNR=2.5							
TORD				PKP		**PKiKP**	**03 47 36.6**	**-0.1**
	1.0nm,0.7s,baz=47,slow=2.4,SNR=5.3							
DBIC	**Dimbokro**	**143.89**	**300**	PKP		PKPbc	03 47 49.8	+0.6
	4.4nm,0.6s,baz=19,slow=5.0,SNR=7.4							
TRQA	**Tornquist**	**145.33**	**142**	*e*PKPbc		**PKPdf**	**03 47 54.5**	**+1.2**

*IASPEI **13** 03:31:32.1±0.8, 32.°68N±0.°03×115.°79W±0.°02, h16km±5km, Error ellipse: s-maj=3.7km s-min=2.8km az=160.0, GT5 selection from ISC bulletin GT5 identified by Bond¨jr and McLaughlin (2009) selection criteria Bond¨jr and McLaughlin, A new ground truth data set for seismic studies, Seism. Res. Let., 80, 465-472, 2009*
*ISCJB **13** 03:31:32.3±0.4, 32.°68N±0.°02×115.°77W±0.°02, h14km±2km, Error ellipse: s-maj=3.0km s-min=2.6km az=25.7*
*ECX **13** 03:31:33.6±0.7, 32.°65N×115.°79W, h3km, MD3.4, ML3.6*
*MEX **13** 03:31:33.4±0.9, 32.°91N×115.°80W, h17km±16km, MD3.7*
*NEIC **13** 03:31:33.2, 32.°66N×115.°79W, h14km, ML3.6(PAS), After PAS.*
NEIC Felt [III] at El Centro. Also felt at Calexico, Coachella and Imperial. Felt at Mexicali, Baja California.

ISC 13 03:31:32.0±0.8, 32.°67N±0.°02×115.°77W±0.°02, h16km±3km, n54, σ0=87/91, 11C-2D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
SGL	**Mount Signal**	**0.05**	**121**	⇑*i*P		**Pg**	**03 31 34.5**	**-0.5**
WESC	**Westside Schoo**	**0.09**	**22**	*e*P		**Pb**	**03 31 35.8**	**+0.4**
WESC				*e*S		**Sb**	**03 31 38.4**	**+0.8**
YUH	**Yuha Desert**	**0.13**	**259**	⇑*i*P		**Pg**	**03 31 35.6**	**-0.2**
COK	**Cook Ranch**	**0.18**	**12**	⇓*i*P		**Pb**	**03 31 37.5**	**+0.6**
RMX	**La Rumorosa**	**0.27**	**255**	⇑*e*P		**Pg**	**03 31 37.7**	**-0.3**
RMX				*e*S		**Sg**	**03 31 41.4**	**-0.7**
CRR	**Carrizo Plain**	**0.27**	**322**	⇓*i*P		**Pb**	**03 31 38.6**	**+0.2**
SWSC	**Sam W. Stewart**	**0.27**	**355**	P		**Pb**	**03 31 38.7**	**+0.2**
	baz=181,SNR=970							
SWSC				S		**Sb**	**03 31 42.7**	**-0.2**
	baz=181							
SWSC	**Sam W. Stewart**	**0.27**	**355**	*e*P		**Pb**	**03 31 38.8**	**+0.2**
IKP	**In-Ko-Pah, Jac**	**0.28**	**265**	P		**Pb**	**03 31 38.6**	**-0.2**
	baz=92,SNR=1000							
IKP				S		**Sg**	**03 31 42.4**	**-0.1**
	baz=92							
IKP	**In-Ko-Pah, Jac**	**0.28**	**265**	⇑*i*P		**Pb**	**03 31 38.6**	**-0.2**
IKP				⇑*e*P		**Pb**	**03 31 38.6**	**-0.2**
DREC	**Desert Rsrch C**	**0.30**	**64**	⇑*e*P		**Pb**	**03 31 40.2**	**+1.2**
CPBX	**Cerro Prieto**	**0.47**	**123**	⇑*e*P		**Pb**	**03 31 42.6**	**+0.7**
CPBX				*e*S		**Sb**	**03 31 49.2**	**+0.7**
CPBX				AML		AML	03 31 53.6	
	comp=N,11μm,0.2s							
CPBX				*e*			03 31 53.6	
CPBX				⇑*e*			03 31 54.5	
CPBX				AML		AML	03 31 54.5	
	comp=N,21μm,0.2s							
MBIG	**Mexicali**	**0.55**	**119**	*e*P		**Pn**	**03 31 45.0**	**-0.2**
MBIG				*i*S		**Sn**	**03 31 53.6**	**-0.4**
MBIG	**Mexicali**	**0.55**	**119**	*e*P		**Pb**	**03 31 43.8**	**+0.5**
MONP2	**Monument Peak**	**0.59**	**292**	P		**Pb**	**03 31 44.3**	**+0.2**
	baz=116,SNR=147							
MONP2				S		**Sg**	**03 31 51.7**	**0.0**
	baz=116							
BAR	**Barrett**	**0.76**	**271**	*e*P		**Pb**	**03 31 47.1**	**+0.2**
TJIG	**Tijuana**	**0.80**	**253**	*i*P		**Pb**	**03 31 47.5**	**0.0**
TJIG				*i*S		**Sg**	**03 31 57.6**	**-0.5**
TJIG	**Tijuana**	**0.80**	**253**	*e*P		**Pb**	**03 31 47.4**	**0.0**
CBX	**Cerro Bola**	**0.83**	**245**	*i*P		**Pb**	**03 31 48.4**	**+0.3**
CBX				*e*S		**Sb**	**03 31 59.1**	**0.0**
CBX	**Cerro Bola**	**0.83**	**245**	*i*P		**Pb**	**03 31 48.4**	**+0.3**
CBX				*e*S		**Sb**	**03 31 59.1**	**0.0**
CBX	**Cerro Bola**	**0.83**	**245**	⇑*e*P		**Pb**	**03 31 48.5**	**+0.3**
CBX				*e*S		**Sb**	**03 31 59.3**	**+0.1**
CBX				⇑*e*			03 32 00.3	
CBX				AML		AML	03 32 00.3	
	comp=E,2μm,0.4s							
GLA	**Glamis**	**0.88**	**64**	P		**Pg**	**03 31 49.1**	**-0.1**
	baz=244,SNR=137							
GLA				S		**Sg**	**03 32 01.0**	**+0.2**
	baz=244							
SDRC	**San Diego Road**	**0.99**	**274**	*e*P		**Pg**	**03 31 50.9**	**-0.2**
BC3	**Big Chuckawall**	**1.01**	**15**	P		**Pb**	**03 31 51.4**	**+0.1**
	baz=196,SNR=185							
BC3				S		**Sb**	**03 32 04.4**	**0.0**
	baz=196							
TPFO	**Pinon Flats**	**1.09**	**329**	P		**Pb**	**03 31 52.3**	**-0.3**
	baz=150,SNR=153							
TPFO				S		**Sb**	**03 32 06.4**	**-0.2**
	baz=150							
PFO	**Pinyon Flats O**	**1.10**	**329**	P		**Pb**	**03 31 52.4**	**-0.2**
	baz=150							
PFO				S		**Sb**	**03 32 06.7**	**-0.1**
	baz=150							
PFO	**Pinyon Flats O**	**1.10**	**329**	*e*Pn		**Pb**	**03 31 52.1**	**-0.6**
PFO				*e*Sn		**Sb**	**03 32 06.5**	**-0.3**
109C	**Camp Elliot, M**	**1.14**	**281**	P		**Pn**	**03 31 53.6**	**+0.3**
	baz=103,SNR=71							
109C				S		**Sb**	**03 32 08.0**	**+0.1**
	baz=103							
PBX	**Punta Banda**	**1.23**	**221**	⇑*e*P		**Pn**	**03 31 54.7**	**+0.2**
ECNX	**Esteban Cantu**	**1.23**	**215**	*e*P		**Pn**	**03 31 54.6**	**0.0**
ZAX	**El Zacaton**	**1.23**	**200**	*e*P		**Pn**	**03 31 54.7**	**+0.1**
BELC	**Belle Mtn. Jos**	**1.34**	**352**	P		**Pn**	**03 31 56.0**	**-0.1**
	baz=173,SNR=178							
BELC				S		**Sb**	**03 32 13.5**	**-0.2**
	baz=173							
Y12C	**Blythe**	**1.50**	**44**	P		**Pn**	**03 31 58.3**	**+0.1**
	baz=224,SNR=50							
MURC	**Murrieta**	**1.51**	**308**	P		**Pn**	**03 31 58.6**	**+0.2**
	baz=129,SNR=120							
MURC				Sb		**Sg**	**03 32 20.0**	**-0.7**
	baz=129							
IRM	**Iron Mountain**	**1.57**	**19**	P		**Pn**	**03 31 59.6**	**+0.4**
	baz=200,SNR=42							
SPIG	**San Pedro Mart**	**1.64**	**171**	*e*P		**Pn**	**03 32 01.1**	**+0.6**
SPIG				*e*S		**Sg**	**03 32 24.1**	**-1.0**
SPIG	**San Pedro Mart**	**1.64**	**171**	*e*P		**Pn**	**03 32 01.1**	**+0.6**
SPIG				*e*S		**Sg**	**03 32 24.1**	**-1.0**
SPIG	**San Pedro Mart**	**1.64**	**171**	*e*P		**Pn**	**03 32 01.1**	**+0.6**
SPX	**San Pedro Mart**	**1.65**	**171**	*e*P		**Pn**	**03 32 01.1**	**+0.6**
SPX				*e*S		**Sg**	**03 32 24.3**	**-0.8**
SPX	**San Pedro Mart**	**1.65**	**171**	*e*P		**Pn**	**03 32 01.2**	**+0.6**
SPX				*e*S		**Sg**	**03 32 24.3**	**-0.8**
BBRC	**Big Bear Solar**	**1.85**	**329**	P		**Pn**	**03 32 04.1**	**+0.9**
	baz=150,SNR=42							
BBRC				S		**Sn**	**03 32 27.4**	**+0.9**
	baz=150							
HEC	**Hector,Ludlow**	**2.20**	**348**	S		**Sn**	**03 32 35.5**	**+0.7**
	baz=168							
BFSC	**Mount Baldy Ra**	**2.22**	**315**	Sb		**Sb**	**03 32 41.1**	**+2.0**
	baz=136							
FMP	**Fort Macarthur**	**2.35**	**297**	Sb		**Sb**	**03 32 44.9**	**+2.1**
	baz=117							
SCI2	**San Clemente I**	**2.36**	**278**	S		**Sn**	**03 32 40.0**	**+1.4**
	baz=98							
PASC	**Pasadena Art C**	**2.51**	**307**	*e*Pn		**Pn**	**03 32 12.7**	**+0.6**
PASC				*e*Pg		**Pg**	**03 32 19.1**	**-1.1**
PASC				*e*Sn		**Sn**	**03 32 42.7**	**+0.3**
PASC				*e*Sg		**Sg**	**03 32 50.3**	**-2.4**
214A	**Organ Pipe Nat**	**2.61**	**105**	P		**Pn**	**03 32 13.1**	**-0.5**
	baz=286							
214A				S		**Sn**	**03 32 44.2**	**-0.7**
	baz=286							
214A	**Organ Pipe Nat**	**2.61**	**105**	*e*Pn		**Pn**	**03 32 13.0**	**-0.5**
214A				*e*Pg		**Pg**	**03 32 23.1**	**+1.0**
DECC	**Green Verdugo**	**2.66**	**307**	Sb		**Sb**	**03 32 54.3**	**+2.7**
	baz=127							
DAC	**Darwin (Calif)**	**3.90**	**338**	*e*Pn		**Pn**	**03 32 32.5**	**+1.1**
DAC				*e*Pg		**Pg**	**03 32 44.9**	**-1.8**
DAC				*e*Sg		**Sg**	**03 33 35.9**	**-1.3**
TUC	**Tucson**	**4.23**	**94**	*e*Pn		**Pn**	**03 32 36.0**	**+0.2**
TUC				*e*Pg		**Pg**	**03 32 51.0**	**-2.1**
TUC				*e*Sg		**Sg**	**03 33 45.7**	**-2.2**
WUAZ	**Wupatki**	**4.62**	**51**	*e*Pn		**Pn**	**03 32 43.1**	**+1.8**
WUAZ				*e*Pg		**Pg**	**03 33 00.2**	**-0.4**
WUAZ				*e*Sg		**Sg**	**03 33 58.4**	**-2.0**
R11A	**Troy Canyon, C**	**5.67**	**1**	*e*Pn		**Pn**	**03 32 56.0**	**+0.3**
	comp=E,1.9nm,0.6s							
R11A				*e*Pg		**Pg**	**03 33 20.7**	**+0.3**
R11A				*e*Sg		Sg	03 34 27.1	-6.8
121A	**Cookes Peak, D**	**6.74**	**89**	*e*Pn		**Pn**	**03 33 11.6**	**+1.1**
	comp=E,9.5nm,0.6s							
121A				*e*Sg		Sg	03 35 00.2	-8.2

*ISCJB **13** 03:34:26.9±0.4, 21.°84S±0.°04×67.°36W±0.°04, h195km±4km, mb3.7/8, Error ellipse: s-maj=7.0km s-min=5.3km az=42.1*
*IDC **13** 03:34:26.8±0.8, 21.°81S×67.°12W, h174km±8km, mb3.5/7, mb1 3.7/10, mb1mx3.5/23, mbtmp4.0/10, Error ellipse: s-maj=14.7km s-min=11.4km az=128.0*
*GUC **13** 03:34:28.5±0.7, 21.°80S×67.°78W, h218km±8km, ML4.2*
*SJA **13** 03:34:30.4±0.8, 21.°99S×67.°26W, h160km±11km, ML3.3, MW3.5*

ISC 13 03:34:27.6±0.7, 21.°81S±0.°05×67.°27W±0.°05, h186km±7km, n33, σ1=80/48, mb3.8/8, 9C-1D, Chile-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
YJA	**Yavi**	**1.67**	**103**	*e*P		**Pn**	**03 35 04.0**	**+1.9**
YJA				*e*S		**Sn**	**03 35 28.4**	**-0.5**
YJA				IAML			03 35 34.1	
	comp=Z,116nm,0.4s							
LVC	**Limon Verde**	**1.71**	**242**	*e*P		**Pn**	**03 35 03.1**	**+0.6**
LVC				*e*S		**Sn**	**03 35 27.7**	**-1.8**
LVC	**Limon Verde**	**1.71**	**242**	P		**Pn**	**03 35 03.0**	**+0.6**
	comp=Z,3μm,0.3s,baz=232,slow=20,SNR=655							
LVC				S		**Sn**	**03 35 29.1**	**-0.3**
	comp=Z,834nm,0.3s,baz=276,slow=21,SNR=14							
PB09	**IPOC Station P**	**1.83**	**270**	⇑*i*P		**Pn**	**03 35 04.3**	**+0.9**
PB09				*i*S		**Sn**	**03 35 31.0**	**-0.2**
PB09				IAML			03 35 34.7	
	comp=E,2μm,0.5s							
PB01	**IPOC Station P**	**2.20**	**290**	⇑*i*P		**Pn**	**03 35 07.6**	**+0.4**
PB01				*i*S		**Sn**	**03 35 37.0**	**-1.1**
PB01				IAML			03 35 38.4	
	comp=N,2μm,0.3s							
HJA	**Humahuaca**	**2.22**	**129**	*e*P		**Pn**	**03 35 09.5**	**+1.8**
PB06	**IPOC Station P**	**2.31**	**247**	⇑*i*P		**Pn**	**03 35 08.5**	**-0.1**
PB06				*i*S		**Sn**	**03 35 39.6**	**-0.8**
PB06				IAML			03 35 41.7	
	comp=E,557nm,0.3s							
PB08	**IPOC Station P**	**2.42**	**313**	⇑*i*P		**Pn**	**03 35 11.5**	**+1.5**
PB08				*i*S		**Sn**	**03 35 43.9**	**+0.8**
PB08				IAML			03 35 45.0	
	comp=N,671nm,0.5s							
PB07	**IPOC Station P**	**2.43**	**271**	⇑*i*P		**Pn**	**03 35 09.9**	**-0.1**
PB04	**IPOC Station P**	**2.72**	**258**	⇑*i*P		**Pn**	**03 35 13.0**	**-0.3**
PB04				*i*S		**Sn**	**03 35 46.4**	**-2.5**
PB04				IAML			03 35 48.8	
	comp=N,662nm,0.4s							
PATCX	**Punta Patache**	**2.86**	**290**	*e*P		**Pn**	**03 35 14.8**	**0.0**
PATCX				*e*S		**Sn**	**03 35 49.5**	**-2.2**
AZAP	**Zapla**	**3.15**	**140**	*e*P		**Pn**	**03 35 19.4**	**+0.9**
ASTB	**Santa Barbara**	**3.36**	**130**	*e*P		**Pn**	**03 35 22.1**	**+1.0**
MNMC	**Minye Minye**	**3.44**	**320**	⇓*i*P		**Pn**	**03 35 22.8**	**+0.6**
MNMC				*i*S		**Sn**	**03 36 04.2**	**-0.6**
PSGC	**Pisagua**	**3.46**	**309**	⇑*i*P		**Pn**	**03 35 21.2**	**-1.0**
PSGC				*e*S		**Sn**	**03 36 01.6**	**-3.2**
PB10	**IPOC Station P**	**3.47**	**240**	⇑*i*P		**Pn**	**03 35 21.3**	**-0.9**
PB10				*e*S		**Sn**	**03 36 00.5**	**-4.5**
PB14	**IPOC Station P**	**4.02**	**225**	⇑*i*P		**Pn**	**03 35 28.4**	**-1.0**
PB14				*e*S		**Sn**	**03 36 13.8**	**-4.1**
PB12	**IPOC Station P**	**4.28**	**317**	*e*P		**Pn**	**03 35 30.7**	**-1.8**
PB12				*e*S		**Sn**	**03 36 19.6**	**-3.9**
FSA	**Cafayete**	**4.44**	**165**	*e*P		**Pn**	**03 35 35.9**	**+1.2**
LPAZ	**La Paz**	**5.55**	**351**	P		**Pn**	**03 35 50.8**	**+1.3**
	comp=N,6.3nm,0.3s,baz=153,slow=6.5,SNR=222							
LPAZ				S		**Sn**	**03 36 54.3**	**+0.6**
	comp=N,0.7nm,0.3s,baz=295,slow=14,SNR=4.7							
SIV	**San Ignacio**	**8.24**	**46**	P		**Pn**	**03 36 22.8**	**-1.3**
	comp=N,2.8nm,0.3s,baz=252,slow=12,SNR=47							
SIV				S		**Sn**	**03 37 51.9**	**-4.7**
	comp=N,4.6nm,0.3s,baz=136,slow=22,SNR=13							
AVFE	**Valle Fertil**	**8.82**	**181**	IAML			03 36 57.5	
	comp=Z,2.4nm,0.5s							
CPUP	**Villa Florida**	**10.14**	**118**	P		**Pn**	**03 36 47.8**	**-1.0**
	comp=Z,0.7nm,0.3s,baz=290,slow=10,SNR=13							
NNA	**Nana**	**13.38**	**315**	P		**P**	**03 37 35.2**	**+1.7**
	comp=Z,0.9nm,0.3s,baz=176,slow=10,SNR=6.5							
PTGA	**Pitinga**	**22.13**	**20**	P		**P**	**03 39 06.0**	**-2.3**
	comp=Z,2.1nm,0.3s,baz=197,slow=24,SNR=10							
TXAR	**Lajitas Array**	**61.76**	**324**	P		**P**	**03 44 27.4**	**+0.7**
	comp=Z,0.2nm,0.5s,baz=137,slow=9.8,SNR=2.8							
DBIC	**Dimbokro**	**67.37**	**73**	P		**P**	**03 45 02.9**	**-0.4**
	comp=Z,4.4nm,0.7s,baz=194,slow=6.7,SNR=4.6							
PDAR	**Pinedale Array**	**75.14**	**329**	P		**P**	**03 45 51.7**	**+2.1**
	comp=Z,0.1nm,0.4s,baz=133,slow=6.3,SNR=2.4							
TORD	**Torodi Ar. Bea**	**76.03**	**70**	P		**P**	**03 45 54.6**	**-0.3**
	comp=Z,12nm,0.4s,baz=253,slow=5.4,SNR=419							
SCHQ	**Schefferville**	**76.33**	**0**	P		**P**	**03 45 55.5**	**-0.2**
	comp=Z,2.0nm,0.9s,baz=219,slow=14,SNR=2.4							
BOSA	**Boshof**	**81.96**	**117**	P		**P**	**03 46 27.0**	**-0.2**
	comp=Z,0.6nm,0.4s,baz=270,slow=2.0,SNR=3.6							
YKA	**Yellowknife Ar**	**91.99**	**340**	P		**P**	**03 47 15.1**	**+0.4**
	comp=Z,0.3nm,0.6s,baz=130,slow=4.8,SNR=11							
MKAR	**Makanchi Array**	**144.97**	**37**	PKP		**PKPdf**	**03 53 42.9**	**+0.3**
	comp=Z,2.4nm,0.8s,baz=322,slow=3.7,SNR=16							

*MOS **13** 03:35:53.4±1.5, 43.°12N×44.°17E, h9km, mb3.9/1, Error ellipse: s-maj=8.5km s-min=6.4km az=97.6*
*TIF **13** 03:35:53.9, 43.°09N×44.°20E, h9km±1km*
*IASPEI **13** 03:35:54.4±0.9, 43.°09N±0.°03×44.°16E±0.°03, h10km±7km, Error ellipse: s-maj=4.0km s-min=3.5km az=32.3, GT5 selection from ISC bulletin GT5 identified by Bond¨j

GOF pmax pmax
comp=Z,23nm,0.4s
GOF Gofitskoye 2.12 338 *e*Pn Pg 03 36 40.1 +5.2
comp=Z,23nm,0.4s
ARTV Artvin 2.52 222 P **Pb 03 36 39.1 -0.4**
ARTV Artvin 2.52 222 *i* P **Pb 03 36 39.1 -0.4**
ARTV *i* S **Sg 03 37 14.4 -0.8**
DAGI Agillar 2.61 220 *i* P **Pb 03 36 41.2 +0.3**
DAGI *i* S **Sg 03 37 19.0 +1.0**
DBAD Bademkaya 2.76 222 P **Pb 03 36 43.5 0.0**
DBAD Bademkaya 2.76 222 *i* P **Pb 03 36 43.5 0.0**
DBAD *i* S **Sg 03 37 20.9 -2.0**
SOC Sochi 3.27 280 ⇑ *i*PN **Pn 03 36 42.9 -2.3**
SOC Sochi 3.27 280 *i* Pn **Pn 03 36 42.9 -2.3**
ANN Anapa 5.14 292 *e*PN **Pn 03 37 11.0 +0.1**
ANN *e*S **Sn 03 38 13.5 +3.4**
ANN pmax pmax
comp=Z,29nm,1.4s
ANN Anapa 5.14 292 *e*Pn **Pn 03 37 11.0 +0.1**
comp=Z,29nm,1.4s
ANN *e*Sn **Sn 03 38 13.5 +3.4**
OBN Obninsk 13.01 340 ⇓ *e*P **Pn 03 38 56.4 -2.2**
OBN pmax pmax
comp=Z,5.0nm,0.6s
OBN Obninsk 13.01 340 *e*P **Pn 03 38 56.4 -2.2**
comp=Z,5.0nm,0.6s
ARU Arti 16.23 30 *c i*P **Pn 03 39 42.1 +0.3**
ARU S **Sn 03 42 43.9 +2.3**
ARU pmax pmax
comp=Z,7.0nm,2.5s
ARU Arti 16.23 30 *i* P **Pn 03 39 42.1 +0.3**
comp=Z,7.0nm,2.5s
ARU S **Sn 03 42 43.9 +2.3**
BRVK Borovoye 20.00 51 *i* P **P 03 40 26.2 -0.3**
BRVK Borovoye 20.00 51 *i* P **P 03 40 26.2 -0.3**
AAK Ala-Archa 22.20 81 *i* P **P 03 40 48.3 -2.1**
AAK pmax pmax
comp=Z,3.0nm,1.3s
AAK Ala-Archa 22.20 81 *i* P **P 03 40 48.3 -2.1**

ISCJB ***13*** *03:36:48.7±0.3,59.°45S±0.°07×151.°4W±0.°1,h10km, mb5.0/26,MS5.3/168,Error ellipse: s-maj=9.4km s-min=9.1km az=177.8*
IDC ***13*** *03:36:48.6±0.5,59.°34S×151.°61W,h0km,mb4.5/12, mb1 4.6/12,mb1mx4.4/28,mbtmp4.5/12,MS5.3/17, Ms1 5.3/17,ms1mx5.2/19,Error ellipse: s-maj=23.4km s-min=15.0km az=1.0*
GCMT ***13*** *03:36:50.5±0.1,59.°64S×151.°31W,h15km,MW5.7/124, Moment Tensor Solution. s113,c204; s124,c329; Duration: 1s7 Moment tensor: Scale 10^{17}Nm; M_{rr}-0.25±.03; $M_{\theta\theta}$3.36±.04; $M_{\phi\phi}$-3.11±.04; $M_{r\theta}$-0.69±.08; $M_{\theta\phi}$2.24±.03; $M_{\phi r}$-0.14±.06; Best double couple: M_o3.99100×10^{17} NP1:ϕ_s298.00000°,δ85.00000°, λ7.00000°. NP2:ϕ_s207.00000°,δ83.00000°,λ174.00000°. Principal axes: T 4.1700, Plg9.0000°, Azm163.0000°; N -0.3630, Plg81.0000°, Azm335.0000°; P -3.8110, Plg1.0000°, Azm73.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*
NEIC ***13*** *03:36:50.5±0.3,59.°44S×151.°35W,h10km,mb5.0/13, MS5.3/150 Error ellipse: s-maj=13.5km s-min=10.1km az=191.0*

ISC 13 03:36:50.6±0.3,59.°48S±0.°08×151.°17W±0.°08,h10km, n295,σ1$82/110,mb4.9/26,MS5.3/168,1C-1D, Pacific-Antarctic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SBA	**Scott Base**	**22.97**	**201**	*e*P	**P**	**03 41 55.7**	**+1.0**
	376nm,1.8s						
SBA				LR	LR		
	comp=Z,5μm,20.0s						
VNDA	**Vanda**	**23.78**	**203**	P	**P**	**03 42 03.6**	**+0.9**
	comp=Z,9.1nm,1.1s,baz=65,slow=7.6,SNR=26						
VNDA				LR	LR	03 49 04.5	
	comp=Z,5μm,18.2s,baz=72,slow=31						
VNDA	**Vanda**	**23.78**	**203**	*e*P	**P**	**03 42 03.7**	**+1.0**
	comp=Z,61nm,1.4s						
RPZ	**Rata Peaks**	**27.79**	**288**	LR	LR	03 50 59.9	
	comp=Z,3μm,18.5s,baz=130,slow=31						
SNZO	**South Karori**	**27.90**	**295**	PFAKE		03 42 50.0	+10
SNZO				LR	LR		
	comp=Z,2μm,20.0s						
URZ	**Urewera**	**29.30**	**302**	LR	LR	03 52 04.9	
	comp=Z,5μm,20.7s,baz=156,slow=32						
QSPA	**South Pole Qui**	**30.65**	**180**	*e*P	**P**	**03 43 04.5**	**-0.3**
	comp=Z,586nm,1.7s						
QSPA				LR	LR		
	comp=Z,8μm,21.0s						
RAO	**Raoul Island**	**35.28**	**317**	PFAKE		03 44 00.0	+15
RAO				LR	LR		
	comp=Z,3μm,20.0s						
PMSA	**Palmer Station**	**38.00**	**136**	LR	LR	03 56 12.6	
	comp=Z,5μm,20.8s,baz=234,slow=30						
PMSA	**Palmer Station**	**38.00**	**136**	PFAKE		03 44 20.0	+12
PMSA				LR	LR		
	comp=Z,6μm,22.0s						
RKT	**Rikitea**	**38.10**	**25**	*e*S	**S**	**03 50 01.3**	**-0.7**
	comp=Z,1μm,31.0s						
RKT				*e*LQ	LQ	03 52 45.5	
	comp=Z,8μm,33.2s						
RKT				*e*LR	LR	03 54 19.2	
	comp=Z,6μm,27.2s,baz=190						
RKT	**Rikitea**	**38.10**	**25**	*e*T	T	04 24 16.2	
	comp=Z,8.0nm,0.3s						
RAR	**Rarotonga**	**38.73**	**347**	LR	LR	03 56 38.2	
	comp=Z,4μm,18.7s,baz=230,slow=31						
RAR	**Rarotonga**	**38.73**	**347**	PFAKE		03 44 30.0	+15
RAR				LR	LR		
	comp=Z,7μm,20.0s						
TAU	**Tasmania Unive**	**40.34**	**266**	PFAKE		03 44 40.0	+12
TAU				LR	LR		
	comp=Z,7μm,20.0s						
CASY	**Casey**	**40.83**	**218**	PFAKE		03 44 40.0	+8.3
CASY				LR	LR		
	comp=Z,1μm,19.0s						
MEH	**Mehetia**	**41.61**	**4**	*e*T	T	04 28 40.4	
	comp=Z,14nm,0.2s						
TVO	**Taravao**	**41.67**	**3**	*e*T	T	04 28 44.8	
	comp=Z,1.9nm,0.3s						
PAE	**Paea**	**41.78**	**2**	*e*T	T	04 28 53.0	
	comp=Z,2.4nm,0.3s						
PPT2	**Papeete2**	**41.85**	**2**	*e*S	**S**	**03 50 57.9**	**-0.5**
	comp=Z,1μm,24.2s						
PPT2				*e*LQ	LQ	03 54 13.7	
	comp=Z,9μm,29.2s						
PPT2				*e*LR	LR	03 56 01.9	
	comp=Z,14μm,25.0s,baz=185						
PPT2	**Papeete2**	**41.85**	**2**	*e*T	T	04 28 58.5	
	comp=Z,6.0nm,0.3s						
PPT	**Papeete**	**41.87**	**2**	LR	LR	03 57 48.3	
	comp=Z,4μm,19.2s,baz=184,slow=30						
RPN	**Rapa Nui**	**43.20**	**60**	PFAKE		03 45 00.0	+8.5
RPN				LR	LR		
	comp=Z,2μm,22.0s						
VAH	**Vaihoa**	**44.25**	**5**	*e*T	T	04 31 58.0	
	comp=Z,139nm,0.3s						
PMOR	**Pomariorio Ree**	**44.47**	**5**	*e*T	T	04 32 14.7	
	comp=Z,2.9nm,0.3s						
CAN	**Canberra**	**45.20**	**275**	PFAKE		03 45 20.0	+13
CAN				LR	LR		
	comp=Z,4μm,21.0s						
VNA3	**Neumayer Olymp**	**46.80**	**164**	P	**P**	**03 45 18.6**	**-1.0**
SNAA	**Sanae**	**47.28**	**167**	P	**P**	**03 45 24.5**	**+1.0**
SNAA	**Sanae**	**47.28**	**167**	*e*P	**P**	**03 45 22.3**	**-1.2**
	comp=Z,105nm,1.7s						
MSVF	**Nonsavu**	**47.30**	**318**	PFAKE		03 45 40.0	+16
MSVF				LR	LR		
	comp=Z,2μm,20.0s						
VNA2	**Neumayer--Watz**	**47.40**	**165**	P	**P**	**03 45 23.4**	**-0.9**
	baz=196,slow=7.3						
VNA1	**Neumayer--Stat**	**47.54**	**164**	P	**P**	**03 45 24.7**	**-0.7**
DZM	**Mont Dzumac**	**47.86**	**303**	LR	LR	04 02 47.4	
	comp=Z,1μm,18.8s,baz=168,slow=33						
AFI	**Afiamalu**	**47.99**	**333**	LR	LR	04 02 11.0	
	comp=Z,4μm,19.4s,baz=182,slow=32						
AFI	**Afiamalu**	**47.99**	**333**	PFAKE		03 45 40.0	+10
AFI				LR	LR		
	comp=Z,4μm,19.0s						
EFI	**East Falkland**	**49.03**	**125**	PFAKE		03 45 50.0	+13
EFI				LR	LR		
	comp=Z,2μm,20.0s						
MAW	**Mawson**	**50.78**	**196**	P	**P**	**03 45 50.4**	**+0.2**
	comp=Z,5.3nm,0.8s,baz=126,slow=4.9,SNR=11						
MAW				LR	LR	04 05 00.8	
	comp=Z,3μm,21.0s,baz=154,slow=33						
TAOE	**Nuku Hiva Isla**	**51.20**	**14**	*e*S	**S**	**03 53 12.1**	**-0.3**
	comp=Z,831nm,25.8s						
TAOE				*e*LQ	LQ	03 58 20.8	
	comp=Z,2μm,23.5s						
TAOE				*e*LR	LR	04 00 29.6	
	comp=Z,6μm,24.8s,baz=200						
PLCA	**Paso Flores**	**51.52**	**107**	P	**P**	**03 45 57.6**	**+1.4**
	comp=Z,8.5nm,1.2s,baz=218,slow=8.2,SNR=9.0						
PLCA				LR	LR	04 02 29.2	
	comp=Z,2μm,19.5s,baz=242,slow=30						
PLCA	**Paso Flores**	**51.52**	**107**	*e*P	**P**	**03 45 57.7**	**+1.4**
	comp=Z,45nm,1.6s						
SYO	**Syowa Base**	**51.57**	**185**	⇓ *e*P	**P**	**03 45 53.0**	**-3.1**
SYO	**Syowa Base**	**51.57**	**185**	⇑ *p*P	pP	03 45 59.0	-0.2
STKA	**Stephens Creek**	**51.69**	**271**	P	**P**	**03 45 57.5**	**+0.1**
	comp=Z,1.4nm,0.5s,baz=113,slow=11,SNR=2.8						
STKA				LR	LR	04 04 36.8	
	comp=Z,3μm,18.2s,baz=133,slow=32						
EIDS	**Eidsvold**	**52.21**	**284**	*e*P	**P**	**03 46 01.9**	**+0.5**
	comp=Z,60nm,1.7s						
HOPE	**Hope Point**	**55.13**	**140**	PFAKE		03 46 40.0	+18
HOPE				LR	LR		
	comp=Z,3μm,19.0s						
FUNA	**Funafuti**	**55.57**	**324**	PFAKE		03 46 40.0	+14
FUNA				LR	LR		
	comp=Z,7μm,19.0s						
TRQA	**Tornquist**	**57.75**	**111**	*e*P	**P**	**03 46 42.0**	**+0.6**
	comp=Z,67nm,1.9s						
TRQA				LR	LR		
	comp=Z,2μm,21.0s						
CTAO	**Charters Tower**	**59.03**	**283**	*e*P	**P**	**03 46 51.0**	**+0.4**
	comp=Z,503nm,2.0s						
CTAO				LR	LR		
	comp=Z,3μm,19.0s						
LCO	**Las Campanas**	**60.73**	**98**	PFAKE		03 47 20.0	+18
LCO				LR	LR		
	comp=Z,3μm,20.0s						
HNR	**Honiara**	**61.89**	**303**	PFAKE		03 47 20.0	+10
HNR				LR	LR		
	comp=Z,1μm,21.0s						
AS01	**Alice Springs**	**62.27**	**270**	*e*P	**P**	**03 47 09.8**	**-2.8**
AS31	**Alice Springs**	**62.29**	**270**	*e*P	**P**	**03 47 11.8**	**-1.0**
	comp=Z,2.0nm,0.8s						
ASAR	**Alice Springs**	**62.29**	**270**	P	**P**	**03 47 10.6**	**-2.2**
	comp=Z,2.6nm,0.7s,baz=138,slow=6.2,SNR=31						
ASAR				LR	LR	04 11 15.9	
	comp=Z,4μm,18.4s,baz=156,slow=33						
H01W1	**Cape Leeuwin H**	**62.90**	**247**	T	T	04 56 07.9	
	baz=145,slow=76,SNR=59						
H01W2	**Cape Leeuwin H**	**62.91**	**247**	T	T	04 56 08.4	
	baz=145,slow=76,SNR=63						
H01W3	**Cape Leeuwin H**	**62.92**	**247**	T	T	04 55 57.9	
	baz=145,slow=76,SNR=40						
NWAO	**Narrogin (SRO)**	**63.05**	**251**	PFAKE		03 47 30.0	+12
NWAO				LR	LR		
	comp=Z,4μm,19.0s						
WRA	**Warramunga Arr**	**65.17**	**273**	P	**P**	**03 47 30.6**	**-1.1**
	comp=Z,4.7nm,1.1s,baz=153,slow=5.7,SNR=8.4						
WRA				LR	LR	04 11 51.7	
	comp=Z,2μm,21.3s,baz=135,slow=32						
WRAB	**Tennant Creek**	**65.17**	**273**	*e*P	**P**	**03 47 30.9**	**-0.8**
	comp=Z,3.5nm,0.6s						
WRAB				LR	LR		
	comp=Z,2μm,21.0s						
PAF	**Port-aux-Franc**	**66.41**	**208**	PFAKE		03 47 50.0	+11
PAF				LR	LR		
	comp=Z,7μm,20.0s						
TARA	**Tarawa**	**66.86**	**320**	PFAKE		03 47 50.0	+7.5
TARA				LR	LR		
	comp=Z,135nm,22.0s						
LVC	**Limon Verde**	**66.91**	**95**	P	**P**	**03 47 44.2**	**+0.9**
	comp=Z,37nm,0.9s,baz=244,slow=6.5,SNR=11						
LVC	**Limon Verde**	**66.91**	**95**	*e*P	**P**	**03 47 44.2**	**+0.9**
	comp=Z,3.6nm,0.6s						
LVC				LR	LR		
	comp=Z,2μm,21.0s						
PMG	**Port Moresby**	**67.75**	**290**	*e*P	**P**	**03 47 48.0**	**-0.2**
	comp=Z,4.3nm,0.5s						
PMG				LR	LR		
	comp=Z,2μm,21.0s						
CPUP	**Villa Florida**	**69.59**	**107**	P	**P**	**03 47 59.7**	**+0.1**
	comp=Z,10nm,0.9s,baz=229,slow=4.1,SNR=8.9						
CPUP				LR	LR	04 14 09.2	
	comp=Z,1μm,19.2s,baz=210,slow=32						
CPUP	**Villa Florida**	**69.59**	**107**	*e*P	**P**	**03 47 59.1**	**-0.6**
MBWA	**Marble Bar**	**71.57**	**260**	*e*P	**P**	**03 48 11.2**	**-0.6**
	comp=Z,208nm,1.4s						
MBWA				LR	LR		
	comp=Z,2μm,19.0s						
NNA	**Nana**	**71.80**	**83**	PFAKE		03 48 30.0	+17
NNA				LR	LR		
	comp=Z,2μm,20.0s						
LPAZ	**La Paz**	**72.59**	**93**	P	**P**	**03 48 20.1**	**+1.4**
	comp=Z,10nm,1.2s,baz=197,slow=4.8,SNR=19						
LPAZ				LR	LR	04 12 31.4	
	comp=Z,2μm,21.5s,baz=186,slow=29						
LPAZ	**La Paz**	**72.59**	**93**	*e*P	**P**	**03 48 20.1**	**+1.4**
	comp=Z,55nm,1.5s						
PAYG	**Puerto Ayora**	**75.03**	**65**	PFAKE		03 48 40.0	+7.8
PAYG				LR	LR		
	comp=Z,4μm,20.0s						
SIV	**San Ignacio**	**76.43**	**98**	P	**P**	**03 48 41.4**	**+1.1**
	comp=Z,3.8nm,1.0s,baz=236,slow=7.8,SNR=5.9						
SPB	**Sao Paulo**	**76.64**	**114**	PFAKE		03 48 50.0	+8.7
SPB				LR	LR		
	comp=Z,1μm,20.0s						
JOHN	**Johnston Islan**	**77.41**	**342**	PFAKE		03 49 00.0	+15
JOHN				LR	LR		
	comp=Z,203nm,20.0s						
POHA	**Pohakuloa**	**79.03**	**356**	PFAKE		03 49 10.0	+15
POHA				LR	LR		
	comp=Z,3μm,21.0s						
KIP	**Kipapa**	**80.80**	**354**	PFAKE		03 49 20.0	+16
KIP				LR	LR		
	comp=Z,5μm,20.0s						
SAML	**Samuel**	**81.34**	**93**	*e*P	**P**	**03 49 07.0**	**-0.2**
	comp=Z,5.9nm,1.0s						
SAML				LR	LR		
	comp=Z,451nm,19.0s						
OTAV	**Otavalo**	**81.48**	**75**	*e*P	**P**	**03 49 11.5**	**+3.0**
	comp=Z,34nm,2.0s						
OTAV				LR	LR		
	comp=Z,1μm,21.0s						
BDFB	**Brasilia**	**83.19**	**109**	P	**P**	**03 49 19.3**	**+2.2**
	comp=Z,5μm,0.5s,SNR=2.3						
POPC	**Popayan, Colom**	**84.35**	**75**	*e*P	P	03 49 16.9	-6.2
BETC	**Betania**	**85.08**	**76**	*e*P	**P**	**03 49 24.8**	**-1.7**
KAPI	**Kappang**	**85.25**	**268**	PFAKE		03 49 40.0	+13
KAPI				LR	LR		
	comp=Z,2μm,20.0s						
JTS	**JuntasÀbangare**	**87.14**	**64**	PFAKE		03 49 50.0	+13
JTS				LR	LR		
	comp=Z,3μm,19.0s						
ROSC	**El Rosal**	**87.50**	**76**	P	**P**	**03 49 41.0**	**+2.1**
	comp=Z,4.6nm,0.9s,baz=109,slow=18,SNR=2.7						
ROSC				LR	LR	04 21 11.0	
	comp=Z,1μm,21.4s,baz=216,slow=30						
HELC	**Santa Helena**	**88.07**	**75**	*e*P	**P**	**03 49 38.1**	**-3.4**
SUR	**Sutherland**	**88.24**	**173**	P	**P**	**03 49 42.0**	**0.0**
	comp=Z,0.7nm,0.9s,baz=153,slow=4.5						
SUR	**Sutherland**	**88.24**	**173**	*e*P	**P**	**03 49 41.9**	**-0.1**
	comp=Z,20nm,1.0s						
SUR				LR	LR		
	comp=Z,4μm,21.0s						
BCIP	**Isla Barro Col**	**88.56**	**69**	PFAKE		03 49 50.0	+6.7
BCIP				LR	LR		
	comp=Z,1μm,20.0s						
RUSC	**La Rusia**	**89.02**	**77**	*e*P	**P**	**03 49 42.1**	**-4.1**
GUMO	**Guam**	**89.02**	**299**	PFAKE		03 50 00.0	+15
GUMO				LR	LR		
	comp=Z,639nm,22.0s						
PTGA	**Pitinga**	**89.99**	**91**	PFAKE		03 50 00.0	+10
PTGA				LR	LR		
	comp=Z,44μm,20.0s						
COCO	**West Island**	**90.37**	**245**	PFAKE		03 50 00.0	+8.1
COCO				LR	LR		
	comp=Z,854nm,20.0s						
GRMC	**Gramalote, San**	**90.73**	**76**	*e*P	**P**	**03 49 52.7**	**-1.0**
OCAC	**Ocana**	**90.92**	**75**	*e*P	P	03 49 46.1	-8.5
BOSA	**Boshof**	**92.18**	**177**	P	**P**	**03 50 02.1**	**+1.7**
	comp=Z,2.8nm,0.9s,baz=157,slow=7.7,SNR=4.5						
BOSA				LR	LR	04 26 35.5	
	comp=Z,6μm,21.9s,baz=178,slow=32						
DAV	**Davao City (W)**	**92.62**	**279**	PFAKE		03 50 10.0	+7.7
DAV				LR	LR		
	comp=Z,479nm,19.0s						
SDV	**Santo Domingo**	**92.81**	**77**	PFAKE		03 50 10.0	+6.6
SDV				LR	LR		
	comp=Z,2μm,21.0s						
TEIG	**Tepich**	**94.43**	**57**	PFAKE		03 50 20.0	+10
TEIG				LR	LR		
	comp=Z,552nm,22.0s						
KSM	**Kuching**	**95.60**	**263**	PFAKE		03 50 30.0	+14
KSM				LR	LR		
	comp=Z,759nm,20.0s						
KKM	**Kota Kinabalu**	**96.50**	**271**	PFAKE		03 50 30.0	+10
KKM				LR	LR		
	comp=Z,359nm,20.0s						
PFO	**Pinyon Flats O**	**97.11**	**29**	PFAKE		03 50 30.0	+7.4
PFO				LR	LR		
	comp=Z,1μm,19.0s						
TUC	**Tucson**	**97.37**	**34**	PFAKE		03 50 30.0	+6.3
TUC				LR	LR		
	comp=Z,584nm,19.0s						
RCBR	**Riachuelo**	**97.47**	**115**	PFAKE		03 50 40.0	+15
RCBR				LR	LR		
	comp=Z,842nm,19.0s						
MTDJ	**Mount Denham**	**97.51**	**67**	PFAKE		03 50 40.0	+15
MTDJ				LR	LR		
	comp=Z,358nm,20.0s						
JCT	**Junction City**	**99.15**	**43**	PFAKE		03 50 40.0	+8.4
JCT				LR	LR		
	comp=Z,639nm,19.0s						
SHEL	**Horse Pasture**	**99.74**	**146**	PFAKE		03 50 50.0	+15
SHEL				LR	LR		
	comp=Z,861nm,19.0s						
GRGR	**Grenville**	**100.10**	**83**	PFAKE		03 50 50.0	+14
GRGR				LR	LR		
	comp=Z,1μm,22.0s						
GTBY	**Guantanamo Bay**	**100.12**	**68**	PFAKE		03 50 50.0	+14
GTBY				LR	LR		
	comp=Z,1μm,20.0s						
WUAZ	**Wupatki**	**100.22**	**32**	PFAKE		03 50 50.0	+14
WUAZ				LR	LR		
	comp=Z,687nm,19.0s						
TSUM	**Tsumeb**	**101.06**	**169**	PFAKE		03 50 50.0	+9.3
TSUM				LR	LR		
	comp=Z,2μm,21.0s						
ANMO	**Albuquerque**	**101.10**	**36**	PFAKE		03 50 50.0	+10
ANMO				LR	LR		
	comp=Z,768nm,19.0s						
SDDR	**Presa de Saban**	**101.14**	**72**	PFAKE		03 50 50.0	+9.2
SDDR				LR	LR		
	comp=Z,801nm,19.0s						
BBGH	**Gun Hill**	**102.02**	**85**	PFAKE		03 51 00.0	+15
BBGH				LR	LR		
	comp=Z,2μm,22.0s						
NATX	**Nacogdoches**	**102.16**	**47**	PFAKE		03 51 00.0	+15
NATX				LR	LR		
	comp=Z,824nm,20.0s						
FDF	**Fort de France**	**102.56**	**82**	PFAKE		03 51 00.0	+13
FDF				LR	LR		
	comp=Z,2μm,19.0s						
MVCO	**Mesa Verde**	**102.61**	**34**	PFAKE		03 51 00.0	+13
MVCO				LR	LR		
	comp=Z,620nm,19.0s						
SJG	**San Juan**	**102.92**	**76**	PFAKE		03 51 00.0	+11
SJG				LR	LR		
	comp=Z,1μm,21.0s						
GRTK	**Grand Turk**	**103.37**	**71**	PFAKE		03 51 00.0	+9.4
GRTK				LR	LR		
	comp=Z,748nm,20.0s						
WMOK	**Wichita Mounta**	**103.37**	**42**	PFAKE		03 51 00.0	+10
WMOK				LR	LR		
	comp=Z,600nm,21.0s						
KULM	**Kulim**	**103.73**	**257**	PFAKE		03 51 00.0	+7.6
KULM				LR	LR		
	comp=Z,596nm,19.0s						
SDCO	**Great Sand Dun**	**103.98**	**36**	PFAKE		03 51 00.0	+6.8
SDCO				LR	LR		
	comp=Z,747nm,22.0s						
DUG	**Dugway, Tooele**	**104.26**	**29**	PFAKE		03 51 10.0	+16
DUG				LR	LR		
	comp=Z,896nm,22.0s						
ASCN	**Ascension**	**104.52**	**136**	PFAKE		03 51 10.0	+14
ASCN				LR	LR		
	comp=Z,897nm,20.0s						
BRAL	**Brewton**	**104.59**	**53**	PFAKE		03 51 10.0	+14
BRAL				LR	LR		
	comp=Z,668nm,20.0s						
ANWB	**Willy Bob**	**104.72**	**80**	PFAKE		03 51 10.0	+13
ANWB				LR	LR		
	comp=Z,719nm,19.0s						
DGAR	**Diego Garcia**	**104.84**	**225**	PFAKE		03 51 10.0	+13
DGAR				LR	LR		
	comp=Z,1μm,20.0s						
WVOR	**Wild Horse Val**	**105.05**	**24**	PFAKE		03 55 20.0	
WVOR				LR	LR		
	comp=Z,807nm,19.0s						
MIAR	**Mount Ida**	**105.05**	**46**	PFAKE		03 55 20.0	
MIAR				LR	LR		
	comp=Z,465nm,20.0s						
LSZ	**Lusaka**	**105.50**	**179**	PFAKE		03 55 30.0	
LSZ				LR	LR		
	comp=Z,5μm,20.0s						
ISCO	**Idaho Springs**	**105.84**	**35**	PFAKE		03 55 30.0	
ISCO				LR	LR		
	comp=Z,879nm,22.0s						
HWUT	**Hardware Ranch**	**105.90**	**30**	PFAKE		03 55 30.0	
HWUT				LR	LR		
	comp=Z,571nm,20.0s						
CBKS	**Cedar Bluff**	**106.75**	**40**	PFAKE		03 55 30.0	
CBKS				LR	LR		
	comp=Z,857nm,20.0s						
HLID	**Hailey**	**107.06**	**27**	PFAKE		03 55 30.0	
HLID				LR	LR		
	comp=Z,1μm,20.0s						
AHID	**Auburn Hatcher**	**107.11**	**30**	PFAKE		03 55 30.0	
AHID				LR	LR		
	comp=Z,533nm,20.0s						
BW06	**Boulder Array**	**107.51**	**31**	PFAKE		03 55 30.0	
BW06				LR	LR		
	comp=Z,782nm,21.0s						
BMO	**Blue Mountains**	**107.64**	**25**	PFAKE		03 55 30.0	
BMO				LR	LR		
	comp=Z,926nm,19.0s						
OGNE	**Ogallala**	**107.97**	**37**	PFAKE		03 55 30.0	
OGNE				LR	LR		
	comp=Z,894nm,19.0s						
GOGA	**Godfrey**	**108.02**	**54**	PFAKE		03 55 30.0	
GOGA				LR	LR		
	comp=Z,648nm,20.0s						
KSU1	**Kansas State U**	**108.06**	**42**	PFAKE		03 55 30.0	
KSU1				LR	LR		
	comp=Z,362nm,19.0s						
HAWA	**Hanford**	**108.66**	**23**	PFAKE		03 55 30.0	
HAWA				LR	LR		
	comp=Z,2μm,20.0s						
NLWA	**Neilton Lookou**	**108.84**	**19**	PFAKE		03 55 30.0	
NLWA				LR	LR		
	comp=Z,1μm,20.0s						
LKWY	**Lake**	**108.97**	**30**	PFAKE		03 55 30.0	
LKWY				LR	LR		
	comp=Z,1μm,19.0s						
NHSC	**New Hope**	**109.15**	**57**	PFAKE		03 55 30.0	
NHSC				LR	LR		
	comp=Z,937nm,19.0s						
YHNB	**Yeheng**	**109.66**	**285**	PFAKE		03 55 30.0	
YHNB				LR	LR		
	comp=Z,625nm,22.0s						
BOZ	**Bozeman (W)**	**109.68**	**28**	PFAKE		03 55 30.0	
BOZ				LR	LR		
	comp=Z,663nm,20.0s						
RLMT	**Red Lodge**	**109.78**	**30**	PFAKE		03 55 30.0	
RLMT				LR	LR		
	comp=Z,677nm,19.0s						
TATO	**Taipei**	**109.86**	**285**	PFAKE		03 55 30.0	
TATO				LR	LR		
	comp=Z,646nm,20.0s						
NEW	**Newport**	**110.93**	**24**	PFAKE		03 55 30.0	
NEW				LR	LR		
	comp=Z,1μm,20.0s						
SCIA	**State Center**	**111.72**	**43**	PFAKE		03 55 40.0	
SCIA				LR	LR		
	comp=Z,610nm,19.0s						
MAJO	**Matsushiro**	**111.93**	**305**	PFAKE		03 55 40.0	
MAJO				LR	LR		

comp=Z,524nm,20.0s
HDIL Hopedale 111.94 46 PFAKE 03 55 40.0
HDIL LR LR
comp=Z,582nm,20.0s
LAO LASA Array 112.03 32 PFAKE 03 55 40.0
LAO LR LR
comp=Z,721nm,21.0s
ECSD EROS Data Cent 112.20 40 PFAKE 03 55 40.0
ECSD LR LR
comp=Z,872nm,20.0s
EGMT Eagleton 112.36 29 PFAKE 03 55 40.0
EGMT LR LR
comp=Z,845nm,20.0s
BLA Blacksburg 112.55 55 PFAKE 03 55 40.0
BLA LR LR
comp=Z,889nm,19.0s
JFWS Jewell Farm 113.66 45 PFAKE 03 55 40.0
JFWS LR LR
comp=Z,519nm,19.0s
ACSO Alum Creek Sta 114.08 51 PFAKE 03 55 40.0 +11
ACSO LR LR
comp=Z,490nm,19.0s
DGMT Dagmar 114.21 32 PFAKE 03 55 40.0 +11
DGMT LR LR
comp=Z,846nm,19.0s
ERM Erimo 114.63 312 PFAKE 03 55 40.0 +10
ERM LR LR
comp=Z,1μm,22.0s
CBN Corbin Frederi 114.67 56 PFAKE 03 55 40.0 +10
CBN LR LR
comp=Z,2μm,20.0s
BBSR BB Station 115.57 69 PFAKE 03 55 40.0 +7.9
BBSR LR LR
comp=Z,613nm,21.0s
AAM Ann Arbor 115.58 49 PFAKE 03 55 40.0 +8.2
AAM LR LR
comp=Z,500nm,19.0s
CHTO Chiang Mai 116.11 263 PFAKE 03 55 40.0 +6.4
CHTO LR LR
comp=Z,688nm,20.0s
WRAK Wrangell Islan 116.52 12 PFAKE 03 55 40.0 +6.9
WRAK LR LR
comp=Z,1μm,20.0s
COWI Conover 116.82 44 PFAKE 03 55 50.0 +16
COWI LR LR
comp=Z,495nm,19.0s
KDAK Kodiak Island 116.93 359 PFAKE 03 55 50.0 +16
KDAK LR LR
comp=Z,2μm,20.0s
EYMN Ely 117.61 41 PFAKE 03 55 50.0 +14
EYMN LR LR
comp=Z,985nm,19.0s
INCN Inchon 117.78 297 PFAKE 03 55 50.0 +14
INCN LR LR
comp=Z,375nm,20.0s
GYA Guiyang 118.52 274 *e*Pdif **Pdif 03 51 57.8 -0.2**
GYA PKP **PKiKP 03 55 39.0 +0.8**
GYA PP **PP 03 57 01.3 +5.7**
GYA AMB AMB
comp=Z,120nm,7.8s
KMBO Kilima Mbogo 119.20 190 PFAKE 03 55 50.0 +10
KMBO LR LR
comp=Z,2μm,19.0s
PET Petropavlovsk 119.21 328 PFAKE 03 55 50.0 +12
PET LR LR
comp=Z,1μm,21.0s
KMI Kunming 119.43 270 P **PKPdf 03 55 44.8 +4.7**
KMI pmax pmax
comp=Z,6.0nm,2.0s
ENH Enshi 120.20 279 PFAKE 03 55 50.0 +8.8
ENH LR LR
comp=Z,422nm,20.0s
PMR Palmer 120.76 1 *e*PKPdf **PKPdf 03 55 40.2 -0.9**
LONY Lake Ozonia 121.16 54 PFAKE 03 55 50.0 +7.5
LONY LR LR
comp=Z,769nm,20.0s
MDJ Mudanjiang 122.27 304 PFAKE 03 56 00.0 +15
MDJ LR LR
comp=Z,610nm,20.0s
TRF Thorofare Moun 122.61 0 *e*PKPdf **PKPdf 03 55 44.0 -0.9**
KTH Kantishna Hill 122.71 0 *e*PKPdf **PKPdf 03 55 44.8 -0.2**
MCK McKinley 122.91 1 *e*PKPdf **PKPdf 03 55 47.2 +2.0**
CD2 Chengdu 123.62 275 PKP **PKPdf 03 55 47.8 +0.1**
PKME Peaks-Kenny Pk 123.91 57 PFAKE 03 56 00.0 +12
PKME LR LR
comp=Z,658nm,19.0s
IL1 Eielson Array 123.98 2 *e*PKPdf **PKPdf 03 55 45.8 -1.4**
ILAR Eielson Array 123.98 2 PKP **PKPdf 03 55 46.7 -0.6**
comp=Z,3.8nm,1.0s,baz=226,slow=2.1,SNR=15
ILB Eielson Array 123.98 2 *e*PKPdf **PKPdf 03 55 49.0 +1.7**
COLA College 124.07 2 *e*PKPdf **PKPdf 03 55 46.9 -0.4**
COLA LR LR
comp=Z,1μm,19.0s
EGAK Eagle 124.17 5 PFAKE 03 56 00.0 +12
EGAK LR LR
comp=Z,2μm,20.0s
BJT Baijiatuan 124.68 291 PFAKE 03 56 00.0 +11
BJT LR LR
comp=Z,505nm,21.0s
YKA Yellowknife Ar 124.84 20 PKP **PKPdf 03 55 48.1 -0.9**
comp=Z,1.6nm,1.0s,baz=197,slow=2.2,SNR=12
MA2 Magadan 127.08 327 PFAKE 03 56 00.0 +6.7
MA2 LR LR
comp=Z,1μm,19.0s
HHC Hu-ho-hao-te 127.54 288 *e*PKP **PKPdf 03 55 57.0 +2.0**
HHC PP **PP 03 58 03.3 +6.8**
HHC SKKS 04 04 52.4
HHC Hu-ho-hao-te 127.54 288 SS SS 04 15 12.0 +4.7
HHC AMB AMB
comp=Z,60nm,9.0s
HHC LR LR
comp=N,300nm,20.2s
HHC LR LR
comp=E,230nm,19.9s
HHC LR LR
comp=Z,200nm,19.9s
LZH Lanzhou 127.68 279 *e*PKP **PKPdf 03 55 55.1 -0.4**
LZH pPKP pPKPdf 03 55 58.3 -0.6
LZH sPKP 03 55 59.6
LZH LR LR
comp=N,140nm,18.0s
LZH LR LR
comp=E,140nm,18.1s
LZH LR LR
comp=Z,180nm,20.0s
LSA Lhasa 129.06 263 PFAKE 03 56 10.0 +11
LSA LR LR
comp=Z,505nm,21.0s
TORD Torodi Ar. Bea 129.55 145 PKP **PKPdf 03 56 01.7 +2.2**
comp=Z,0.3nm,0.7s,baz=350,slow=1.8,SNR=2.9
HIA Hailar 130.13 301 PFAKE 03 56 10.0 +10
HIA LR LR
comp=Z,804nm,22.0s
BILL Bilibino 130.95 340 PFAKE 03 56 10.0 +10
BILL LR LR
comp=Z,1μm,19.0s
SCHQ Schefferville 132.24 51 PKP **PKPdf 03 56 03.5 +0.2**
comp=Z,4.1nm,1.0s,baz=107,slow=3.4,SNR=3.0
ULN Ulaanbaatar 134.91 291 PFAKE 03 56 20.0 +11
ULN LR LR
comp=Z,407nm,20.0s
SONM Songino Array 135.20 291 PKP **PKPdf 03 56 08.7 -0.6**
comp=Z,0.4nm,0.7s,baz=90,slow=3.0,SNR=2.5
YAK Yakutsk 135.49 319 PFAKE 03 56 20.0 +11
YAK LR LR
comp=Z,818nm,22.0s
TLY Talaya 139.13 293 PFAKE 03 56 30.0 +14
TLY LR LR
comp=Z,454nm,21.0s
TAM Tamanrasset 139.80 146 PFAKE 03 56 30.0 +11
TAM LR LR
comp=Z,930nm,20.0s
WMQ Urumqi 141.66 273 PKP **PKPdf 03 56 21.6 +0.4**
WMQ PP **PP 03 59 27.3 +1.3**
TIXI Tiksi 141.96 330 PKP **PKPdf 03 56 18.3 -2.5**
comp=Z,2.0nm,0.7s,baz=62,slow=1.3,SNR=5.2
TIXI Tiksi 141.96 330 *e*PKPdf **PKPdf 03 56 18.4 -2.3**
TIXI LR LR
comp=Z,737nm,21.0s
KSH Kashi 144.44 257 *e*PKP **PKPdf 03 56 25.6 -0.7**
KSH *e*PP **PP 03 59 37.3 -5.4**
KSH SKS **SKSdf 04 03 29.4 -6.1**
SFJD Kangerlussuaq 145.84 43 PFAKE 03 56 40.0 +11
SFJD LR LR
comp=Z,1μm,21.0s

MKAR Makanchi Array 146.47 272 PKPbc **PKPdf 03 56 28.5 -0.9**
comp=Z,17nm,0.9s,baz=106,slow=4.4,SNR=25
KULLO Kullorsuaq 146.93 29 *i* P **PKPbc 03 56 31.7 +0.4**
TKM2 Tokmak 2 147.17 261 *e*PKPdf **PKPdf 03 56 31.4 +0.4**
TKM2 *e*PKPbc **PKPab 03 56 35.0 0.0**
TKM2 LR LR
comp=Z,484nm,22.0s
MORF Marmelete 147.34 116 *e*LR LR 04 45 23.4
comp=Z,691nm,20.0s
PTEO Sao Teotonio 147.50 116 *e*PKP **PKPab 03 56 39.6 +3.5**
AAK Ala-Archa 147.52 259 *e*PKPdf **PKPdf 03 56 32.0 +0.5**
AAK *e*PKPbc **PKPbc 03 56 35.0 +0.9**
AAK LR LR
comp=Z,480nm,22.0s
PBDV Barranco-do-Ve 147.62 117 *e*PKP **PKPbc 03 56 35.0 +0.6**
PVAQ Vaqueiros 147.85 117 *e*SS SS 04 19 13.3 +5.9
PVAQ Vaqueiros 147.85 117 *e*LR LR 04 46 12.8
comp=Z,456nm,20.0s
PCVE Castro Verde 147.89 116 *e*LR LR 04 48 38.4
comp=Z,602nm,22.0s
EKS2 Erkin-Say 147.90 259 *e*PKPbc **PKPbc 03 56 36.0 +0.8**
EKS2 LR LR
comp=Z,565nm,20.0s
MESJ Messejana 147.97 116 *e*PKP **PKPdf 03 56 32.2 0.0**
PNCL Nicolau / Gran 148.05 115 *e*PKP **PKPab 03 56 38.9 +0.6**
PBEJ Beja 148.29 116 *e*PKP **PKPbc 03 56 36.2 +0.1**
EVO Evora 148.63 115 *e*PKP **PKPbc 03 56 37.5 +0.5**
PBAR Barrancos 148.79 117 *e*LR LR 04 45 52.4
comp=Z,1μm,20.0s
PMTG Montargil 148.96 115 *e*PKP **PKPab 03 56 42.5 +0.6**
PESTR Estremoz 149.09 116 *e*PKP **PKPbc 03 56 37.3 -0.9**
PTOM Tomar 149.32 114 *e*PKP **PKPab 03 56 42.4 -1.0**
ZALV Zalesovo Beam 149.59 285 PKPbc **PKPdf 03 56 36.4 +2.1**
comp=Z,4.2nm,0.7s,baz=151,slow=2.6,SNR=10.0
PMRV Marv??o 149.64 115 *e*PKP **PKPab 03 56 44.9 +0.2**
PMRV Marv??o 149.64 115 *e*SS SS 04 19 37.1 +10
PMRV Marv??o 149.64 115 *e*LR LR 04 49 13.1
comp=Z,571nm,18.0s
KKAR Karatay Array 149.85 256 *e*PKPbc **PKPbc 03 56 41.5 +1.6**
KURK Kurchatov 150.84 275 PFAKE 03 56 50.0 +0.7
KURK LR LR
comp=Z,1μm,21.0s
PVRL Vila Real 150.95 112 *e*PKP **PKPab 03 56 49.8 -0.3**
POLO Lamas de Olo 150.99 112 *e*PKP **PKPbc 03 56 43.2 +0.4**
PAB San Pablo 151.12 119 PFAKE 03 56 50.0 -0.9
PAB LR LR
comp=Z,724nm,20.0s
MVO Moncorvo 151.18 113 *e*PKP **PKPab 03 56 51.7 +0.6**
MVO Moncorvo 151.18 113 *e*PP PP 04 00 26.2 +4.2
MVO Moncorvo 151.18 113 *e*SS SS 04 19 48.7 +3.8
MVO Moncorvo 151.18 113 *e*LR LR 04 48 20.9
comp=Z,604nm,20.0s
PGAV Gavieira, Arco 151.22 111 *e*PP PP 04 00 20.4 -1.9
PGAV Gavieira, Arco 151.22 111 *e*SS SS 04 19 50.2 +4.8
PGAV Gavieira, Arco 151.22 111 *e*LR LR 04 44 42.4
comp=Z,628nm,18.0s
ESDC Sonseca Array 151.39 119 PKPbc **PKPbc 03 56 42.8 -1.0**
comp=Z,1.5nm,0.7s,baz=230,slow=1.6,SNR=8.9
GEYT Alibeck 151.45 234 PKPbc **PKPbc 03 56 42.7 -1.2**
comp=Z,1.5nm,0.3s,baz=132,slow=2.2,SNR=6.3
SUMG Summit 151.57 36 *i* P **PKPbc 03 56 42.6 -1.0**
comp=Z,10nm,0.9s
SUMG Summit 151.57 36 *e*PKPbc **PKPbc 03 56 42.2 -1.4**
PBRG Braganca 151.82 113 *e*PKP **PKPbc 03 56 43.1 -1.5**
KEST Kesra 153.05 143 PKPab **PKPab 03 56 58.1 -0.9**
comp=Z,2.7nm,0.9s,baz=172,slow=7.1,SNR=3.3
NRIK Noril'sk 153.90 316 PKPab **PKPab 03 56 59.0 -2.7**
comp=Z,1.3nm,0.3s,baz=187,slow=4.4,SNR=3.2
WDD Wied Dalam 154.59 152 PFAKE 03 56 50.0 -0.8
WDD LR LR
comp=Z,1μm,22.0s
CSS Mathiatis 155.29 189 PFAKE 03 56 50.0 +6.6
CSS LR LR
comp=Z,271nm,20.0s
CLTB Caltabellotta 155.88 148 PFAKE 03 57 00.0 -11
CLTB LR LR
comp=Z,611nm,19.0s
BVAR Borovoye Array 156.35 273 PKPab **PKPab 03 57 11.0 -1.7**
comp=Z,0.7nm,0.6s,baz=216,slow=35,SNR=3.1
BRVK Borovoye 156.43 273 PFAKE 03 57 00.0 -13
BRVK LR LR
comp=Z,811nm,21.0s
BORG Borgarnes 156.50 56 PFAKE 03 57 00.0 -13
BORG LR LR
comp=Z,1μm,21.0s
VSL Villasalto 156.51 140 PFAKE 03 57 00.0 -14
VSL LR LR
comp=Z,899nm,19.0s
SANT Santorini 156.77 173 PFAKE 03 57 00.0 +15
SANT LR LR
comp=Z,897nm,19.0s
CEL Celeste 157.20 153 PFAKE 03 57 00.0 +14
CEL LR LR
comp=Z,1μm,19.0s
GNI Garni 158.20 214 PFAKE 03 57 00.0 +13
GNI LR LR
comp=Z,1μm,20.0s
TIP Timpagrande 158.27 154 PFAKE 03 57 00.0 +13
TIP LR LR
comp=Z,1μm,21.0s
ISP Isparta 158.29 184 PFAKE 03 57 00.0 +13
ISP LR LR
comp=Z,821nm,22.0s
CUC Castrocucco 158.83 151 PFAKE 03 57 00.0 +12
CUC LR LR
comp=Z,643nm,20.0s
SSB Saint Sauveur 159.62 123 PFAKE 03 57 00.0 +12
SSB LR LR
comp=Z,1μm,21.0s
KBS Kingsbay 159.75 9 PFAKE 03 57 00.0 +12
KBS LR LR
comp=Z,844nm,19.0s
BRTR Keskin Array B 159.99 191 PKP **PKPdf 03 56 50.2 +1.0**
comp=Z,0.5nm,0.8s,baz=343,slow=1.5,SNR=2.6
BRTR PKPab **PKPab 03 57 28.9 +0.1**
comp=Z,1.4nm,0.9s,baz=157,slow=4.0,SNR=5.0
BNI Bardonecchia 160.33 127 PFAKE 03 57 00.0 +11
BNI LR LR
comp=Z,871nm,20.0s
AQU L'Aquila 160.37 144 PFAKE 03 57 00.0 +11
AQU LR LR
comp=Z,1μm,19.0s
VLC Villacollemand 160.99 136 PFAKE 03 57 00.0 +10
VLC LR LR
comp=Z,393nm,21.0s
TIR Tirane 161.00 159 PFAKE 03 57 00.0 +10
TIR LR LR
comp=Z,1μm,20.0s
KIV Kislovodsk 162.30 215 PFAKE 03 57 00.0 +8.5
KIV LR LR
comp=Z,739nm,20.0s
ESK Eskdalemuir 162.35 90 PFAKE 03 57 00.0 +9.0
ESK LR LR
comp=Z,1μm,19.0s
TUE Stuetta 162.56 130 PFAKE 03 57 00.0 +8.2
TUE LR LR
comp=Z,977nm,20.0s
BFO Black Forest 163.63 124 PFAKE 03 57 00.0 +7.5
BFO LR LR
comp=Z,852nm,19.0s
WLF Walferdange 163.67 117 PFAKE 03 57 00.0 +7.5
WLF LR LR
comp=Z,1μm,20.0s
ARU Arti 164.00 272 PFAKE 03 57 00.0 +7.5
ARU LR LR
comp=Z,903nm,20.0s
MLR Muntele Rosu 165.88 172 PKPab **PKPab 03 57 52.6 -1.9**
comp=Z,0.5nm,0.7s,baz=248,slow=6.6,SNR=4.1
GERES GERESS Array B 166.18 134 PKPab **PKPab 03 57 54.9 -0.9**
comp=Z,0.3nm,0.6s,baz=255,slow=5.2,SNR=3.5
KHC Kasperske Hory 166.37 133 AMS AMS 05 16 40.0
comp=Z,900nm,19.1s
NKC Novy Kostel 166.81 127 AMS AMS 05 23 50.0
comp=Z,700nm,16.3s
TREC Trest 167.20 137 AMS AMS 05 18 30.0
comp=Z,1μm,19.8s
PSZ Piszkesteto 167.28 152 PFAKE 03 57 10.0 +14
PSZ LR LR
comp=Z,1μm,20.0s
PRU Pruhonice 167.43 133 AMS AMS 05 16 20.0
comp=Z,1μm,21.5s
GOPC GO Pecny, Ondr 167.46 134 AMS AMS 05 20 00.0
comp=Z,900nm,18.2s
VYHS Vyhne 167.54 148 *e*PKP **PKPdf 03 56 53.9 -1.8**
VYHS *e* 03 57 58.5

PVCC Panska Ves 167.88 131 AMS AMS 05 19 20.0
comp=Z,900nm,22.5s
DPC Dobruska-Polom 168.38 136 AMS AMS 05 19 30.0
comp=Z,800nm,20.1s
UPC Upice 168.40 135 AMS AMS 05 17 30.0
comp=Z,800nm,23.1s
OKC Ostrava-Krasne 168.54 143 AMS AMS 05 21 40.0
comp=Z,800nm,21.5s
CRVS Cervenica-Dubn 168.56 155 *e*PKP **PKPab 03 58 06.1 -0.1**
CRVS *e* 04 00 12.9
KEV Kevo 169.66 4 PFAKE 03 57 10.0 +14
KEV LR LR
comp=Z,858nm,20.0s
KONO Kongsberg 170.24 81 PFAKE 03 57 10.0 +13
KONO LR LR
comp=Z,979nm,22.0s
LVZ Lovozero 171.17 346 PFAKE 03 57 10.0 +13
LVZ LR LR
comp=Z,2μm,20.0s
KIEV Kiev 171.19 182 PFAKE 03 57 10.0 +12
KIEV LR LR
comp=Z,1μm,22.0s
AKASG Malin Array Be 171.19 182 PKP **PKPdf 03 56 57.5 -0.3**
comp=Z,0.1nm,0.3s,baz=258,slow=0.9,SNR=4.3
AKASG PKPab **PKPab 03 58 16.9 -0.8**
comp=Z,0.8nm,0.6s,baz=180,slow=4.7,SNR=7.1
OBN Obninsk 173.94 227 PFAKE 03 57 10.0 +11
OBN LR LR
comp=Z,732nm,20.0s

NIED ***13*** *03:47:00,37.°60N×141.°80E,h44km,Mw3.7 Best double couple: M0 3.45000×10^14 NP1:φ0=135.00000°,δ17.00000°, λ70.00000°. NP2:φ0=336.00000°,δ74.00000°,λ96.00000°.*
ISCJB ***13*** *03:47:34.8±1.3,37.°54N±0.°04×141.°97E±0.°07,h15km±8km, mb3.4/4, Error ellipse: s-maj=9.6km s-min=6.4km az=24.0*
IDC ***13*** *03:47:34.1±1.0,37.°53N×141.°98E,h0km,mb3.4/4, mb1 3.7/6,mb1mx3.4/64,mbtmp3.5/6,ML3.6/2,MS2.7/1, Ms1 2.7/1,ms1mx2.3/32, Error ellipse: s-maj=32.0km s-min=19.7km az=130.0*
JMA ***13*** *03:47:37.5±0.1,37.°58N×141.°84E,h32km±3km,M3.8*
JMA Felt I J1.

ISC 13 03:47:36.2±2.0,37.°55N±0.°04×141.°89E±0.°06,h16km±12km, n23,σ1§45/27,mb3.4/4,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.82**	**257**	P	**Pg**	**03 47 52.5**	**+0.2**
JFK				S	**Sb**	**03 48 02.4**	**-0.7**
JMM	**Marumori**	**0.92**	**290**	P	**Pb**	**03 47 53.8**	**0.0**
JMM				S	**Sb**	**03 48 04.7**	**-1.1**
ONAJ	**Iwakimizuishiy**	**0.98**	**243**	P	**Pb**	**03 47 54.7**	**-0.1**
ONAJ				S	**Sb**	**03 48 06.2**	**-1.2**
JIO	**Ouri**	**0.99**	**335**	P	**Pb**	**03 47 54.7**	**-0.3**
JIO				S	**Sb**	**03 48 06.1**	**-1.8**
JFT	**Otama**	**1.23**	**269**	P	**Pb**	**03 47 59.2**	**+0.1**
JFT				S	**Sb**	**03 48 13.9**	**-0.8**
JOU	**Okura**	**1.26**	**310**	P	**Pn**	**03 47 59.1**	**-0.1**
JOU				*e*S	**Sb**	**03 48 14.2**	**-1.4**
JHO	**Hitachi**	**1.41**	**229**	P	**Pn**	**03 48 00.4**	**-0.8**
JHO				*e*S	**Sn**	**03 48 16.1**	**-3.4**
JFY	**Yanaizu**	**1.74**	**266**	P	**Pn**	**03 48 06.6**	**+0.8**
JFY				S	**Sn**	**03 48 28.1**	**+0.5**
MJAR	**Matsushiro Arr**	**3.11**	**252**	Pn	**Pn**	**03 48 26.1**	**+1.5**
	3.6nm,0.3s,baz=72,slow=19,SNR=19						
MJAR				Sn	**Sb**	**03 49 06.2**	**-2.6**
	4.9nm,0.3s,baz=85,slow=30,SNR=5.2						
MAT	**Matsushiro**	**3.11**	**252**	P	**Pn**	**03 48 26.4**	**+1.8**
MAT				S	**Sn**	**03 49 05.0**	**+3.6**
JHJ	**Hachijo jima 2**	**4.75**	**202**	Pn	**Pn**	**03 48 48.1**	**+1.1**
	18nm,0.3s,baz=138,slow=23,SNR=8.1						
JHJ				Sn	**Sn**	**03 49 41.7**	**-0.1**
	12nm,0.3s,baz=238,slow=23,SNR=4.3						
JNU	**Nakatsue**	**10.02**	**247**	LR	LR	03 54 07.3	
	comp=Z,46nm,21.1s,baz=297,slow=39						
H11N2	**WAKE ISLAND Hy**	**28.10**	**122**	T	T	04 22 55.8	
	baz=315,slow=75,SNR=84						
H11N1	**WAKE ISLAND Hy**	**28.11**	**122**	T	T	04 23 04.3	
	baz=315,slow=75,SNR=90						
H11N3	**WAKE ISLAND Hy**	**28.12**	**122**	T	T	04 23 05.0	
	baz=315,slow=75,SNR=83						
H11S1	**WAKE ISLAND Hy**	**28.83**	**124**	T	T	04 23 58.8	
	baz=316,slow=76,SNR=92						
H11S3	**WAKE ISLAND Hy**	**28.84**	**124**	T	T	04 23 52.2	
	baz=316,slow=76,SNR=106						
H11S2	**WAKE ISLAND Hy**	**28.85**	**124**	T	T	04 23 59.5	
	baz=316,slow=76,SNR=72						
MKAR	**Makanchi Array**	**44.16**	**302**	P	**P**	**03 55 44.1**	**0.0**
	0.5nm,0.6s,baz=90,slow=8.5,SNR=4.6						
WRA	**Warramunga Arr**	**57.63**	**188**	P	**P**	**03 57 25.2**	**-0.3**
	0.3nm,0.6s,baz=4.4,slow=7.3,SNR=3.2						
YKA	**Yellowknife Ar**	**63.17**	**30**	P	**P**	**03 58 03.2**	**+0.3**
	0.1nm,0.7s,baz=306,slow=7.2,SNR=3.4						
TXAR	**Lajitas Array**	**89.51**	**53**	P	**P**	**04 00 33.6**	**+0.6**
	0.1nm,0.5s,baz=308,slow=4.4,SNR=3.0						
LPAZ	**La Paz**	**146.11**	**59**	PKPbc	**PKPab**	**04 07 17.2**	**-0.1**
	0.5nm,0.5s,baz=336,slow=2.5,SNR=3.9						

IDC 13 03:53:10.3±15.0,6.°21S×146.°99E,h363km±141km, mb3.3/2,mb1 3.2/4,mb1mx2.8/47,mbtmp3.8/4,Error ellipse: s-maj=106.6km s-min=60.2km az=26.0,Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**13.82**	**183**	P	P	03 56 11.3	-0.2
	0.2nm,0.3s,baz=0.1,slow=16,SNR=2.4						
WRA	**Warramunga Arr**	**18.37**	**221**	P	P	03 56 59.6	-1.1
	0.3nm,0.3s,baz=49,slow=11,SNR=8.1						
ASAR	**Alice Springs**	**21.44**	**215**	P	P	03 57 31.8	+1.1
	2.4nm,0.8s,baz=50,slow=8.4,SNR=16						
FITZ	**Fitzroy Crossi**	**23.95**	**239**	P	P	03 57 53.2	-0.2
	3.3nm,0.7s,baz=49,slow=9.3,SNR=4.2						
TORD	**Torodi Ar. Bea**	**145.13**	**284**	PKPbc	PKPdf	04 12 05.0	-1.1
	0.2nm,0.6s,baz=72,slow=3.4,SNR=4.7						

ISCJB ***13*** *03:59:04.7±0.1,51.°47N±0.°01×16.°14E±0.°02,h0km, mb4.4/64,MS4.3/5,Error ellipse: s-maj=1.5km s-min=1.4km az=165.9*
LDG ***13*** *03:59:04.9±0.1,51.°51N×16.°25E,h1km,Ml4.5/34,Error ellipse: s-maj=2.4km s-min=1.6km az=175.0,Suspected Mining induced.*
MOS ***13*** *03:59:05.3±1.7,51.°51N×15.°94E,h10km,mb4.4/27,Error ellipse: s-maj=4.6km s-min=3.0km az=70.2*
IPEC ***13*** *03:59:06.0±0.3,51.°52N×16.°31E,h0km,ML3.7/3,Error ellipse: s-maj=3.2km s-min=1.7km az=67.0*
CSEM ***13*** *03:59:06.6±0.1,51.°47N×16.°13E,h0km,mb4.4/44, ML4.5/16,Error ellipse: s-maj=2.0km s-min=1.8km az=149.0*
PRU ***13*** *03:59:07.3,51.°46N×16.°19E,h0km,M4.5,Felt In Harrachov*
WAR ***13*** *03:59:07.8,51.°46N×16.°16E,h1km,Mw3.7*
IDC ***13*** *03:59:07.3±0.4,51.°46N×16.°00E,h0km,mb4.1/23, mb1 4.2/36,mb1mx4.1/52,mbtmp4.0/36,ML4.1/11,MS4.2/3, Ms1 4.2/3,ms1mx2.7/54,Error ellipse: s-maj=7.6km s-min=5.6km az=89.0*
STR ***13*** *03:59:07.0±0.5,51.°54N×16.°08E,h5km,Ml4.7,Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*
BGR ***13*** *03:59:08.0±0.4,51.°41N×16.°18E,h1km,ML4.1/16,Error ellipse: s-maj=5.6km s-min=3.3km az=17.0*
NEIC ***13*** *03:59:08.0±0.2,51.°41N×16.°18E,h5km,mb4.5/31, ML4.4(CSEM),Error ellipse: s-maj=3.9km s-min=3.6km az=139.0*
NEIC Felt at Lubin.
BNS ***13*** *03:59:10.1±0.8,51.°52N×16.°00E,h5km,ML3.9*
UPP ***13*** *03:59:11.1±2.8,51.°76N×15.°84E,h0km,ML3.4,Suspected explosion*

ISC 13 03:59:06.4±0.3,51.°49N±0.°02×16.°11E±0.°02,h0km,n612, σ1§88/776,mb4.4/64,MS4.4/6,20C-38D,Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.66**	**170**	*i* Pg	**Pg**	**03 59 19.6**	**+0.6**
KSP				*i* Sg	**Sg**	**03 59 28.0**	**+0.4**
KSP				*e*		03 59 31.6	
KSP	**Ksiaz**	**0.66**	**170**	P	**Pg**	**03 59 19.6**	**+0.6**

KSP	**Ksiaz**	**0.66 170**	*i* Pg	**Pg**	**03 59 19.6**	**+0.6**
KSP			*i* Sg	**Sg**	**03 59 28.0**	**+0.4**
KSP	**Ksiaz**	**0.66 170**	*e*Pg	**Pg**	**03 59 19.7**	**+0.6**
KSP	**Ksiaz**	**0.66 170**	P	**Pg**	**03 59 19.6**	**+0.6**
UPC	**Upice**	**0.99 183**⇓	*i*PG	**Pg**	**03 59 25.8**	**+0.5**
UPC			*e*SG	**Sg**	**03 59 38.6**	**+0.5**
	comp=Z,2µm,0.3s					
UPC			AMS	AMS	03 59 50.0	
	comp=Z,2µm,3.2s					
UPC	**Upice**	**0.99 183**⇓	*i*P	**Pg**	**03 59 25.8**	**+0.5**
UPC			*e*		03 59 38.6	
UPC			smax	smax		
	comp=N,2µm,0.3s					
UPC			MLR	MLR		
	comp=Z,2µm,3.2s					
UPC	**Upice**	**0.99 183**	Pg	**Pg**	**03 59 25.8**	**+0.5**
UPC			Sg	**Sg**	**03 59 38.6**	**+0.5**
	comp=Z,2µm,0.3s					
DPC	**Dobruska-Polom**	**1.15 173**⇓	*i*PG	**Pg**	**03 59 28.4**	**-0.1**
DPC			*e*SG	**Sg**	**03 59 41.8**	**-1.6**
	comp=Z,981nm,0.4s					
DPC			AMS	AMS	03 59 50.0	
	comp=Z,2µm,4.2s					
DPC	**Dobruska-Polom**	**1.15 173**⇓	*i*P	**Pg**	**03 59 28.4**	**-0.1**
DPC			*e*		03 59 41.8	
DPC			smax	smax		
	comp=N,981nm,0.4s					
DPC			MLR	MLR		
	comp=Z,2µm,4.2s					
DPC	**Dobruska-Polom**	**1.15 173**	*i* P	**Pg**	**03 59 28.4**	**-0.1**
	comp=Z,981nm,0.4s					
DPC			Sg	**Sg**	**03 59 41.8**	**-1.6**
	comp=Z,981nm,0.4s					
DPC	**Dobruska-Polom**	**1.15 173**	*e*Pg	**Pg**	**03 59 28.4**	**-0.1**
DPC			*e*Sg	**Sg**	**03 59 43.6**	**+0.3**
PVCC	**Panska Ves**	**1.37 226**⇓	*i*PG	**Pb**	**03 59 33.0**	**+0.1**
PVCC			*e*SG	**Sn**	**03 59 51.5**	**-0.1**
	comp=Z,2µm,0.5s					
PVCC			AMS	AMS	04 00 10.0	
	comp=Z,4µm,1.7s					
PVCC	**Panska Ves**	**1.37 226**⇓	*i*P	**Pb**	**03 59 33.0**	**+0.1**
PVCC			*e*		03 59 51.5	
PVCC			smax	smax		
	comp=N,2µm,0.5s					
PVCC			MLR	MLR		
	comp=Z,4µm,1.7s					
PVCC	**Panska Ves**	**1.37 226**	Pg	**Pb**	**03 59 33.0**	**+0.1**
PVCC			Sg	**Sn**	**03 59 51.5**	**-0.1**
	comp=Z,2µm,0.5s					
KRLC	**Kraliky**	**1.48 163**⇓	*i*PG	**Pn**	**03 59 34.0**	**-0.4**
KRLC			*e*SG	**Sg**	**03 59 51.8**	**-2.2**
KRLC	**Kraliky**	**1.48 163**	*i* P	**Pn**	**03 59 34.0**	**-0.4**
KRLC			*e*		03 59 51.8	
KRLC	**Kraliky**	**1.48 163**	Pg	**Pn**	**03 59 34.0**	**-0.4**
KRLC			Sg	**Sg**	**03 59 51.8**	**-2.2**
BRG	**Berggiesshubel**	**1.50 246**	PN	**Pn**	**03 59 34.5**	**0.0**
BRG			PG	**Pg**	**03 59 36.5**	**+1.4**
BRG			SG	**Sn**	**03 59 56.6**	**+1.9**
	comp=Z,925nm,0.5s					
BRG	**Berggiesshubel**	**1.50 246**	P	**Pn**	**03 59 34.5**	**0.0**
BRG					03 59 56.6	
BRG			smax	smax		
	comp=N,925nm,0.5s					
BRG	**Berggiesshubel**	**1.50 246**	P	**Pn**	**03 59 34.5**	**0.0**
BRG	**Berggiesshubel**	**1.50 246**	Pg	**Pg**	**03 59 35.2**	**+0.1**
BRG			Sg	**Sn**	**03 59 55.6**	**+0.9**
BRG			S	**Sn**	**03 59 56.6**	**+1.9**
	comp=N,925nm,0.5s					
BRG	**Berggiesshubel**	**1.50 246**	*e*Pn	**Pn**	**03 59 34.4**	**0.0**
BRG			*e*Pg	**Pg**	**03 59 35.2**	**+0.1**
BRG			*e*Sg	**Sn**	**03 59 55.6**	**+0.9**
GOPC	**GO Pecny, Ondr**	**1.79 208**⇓	*i*PN	**Pn**	**03 59 38.4**	**-0.2**
GOPC			*e*PG	**Pb**	**03 59 40.4**	**+0.3**
GOPC			*e*SG	**Sb**	**04 00 02.8**	**-0.2**
	comp=N,705nm,0.6s					
GOPC			AMS	AMS	04 00 10.0	
	comp=N,1µm,3.6s					
GOPC	**GO Pecny, Ondr**	**1.79 208**⇓	*i*P	**Pn**	**03 59 38.4**	**-0.2**
GOPC			*e*		04 00 02.8	
GOPC			smax	smax		
	comp=N,705nm,0.6s					
GOPC			MLR	MLR		
	comp=Z,1µm,3.6s					
GOPC	**GO Pecny, Ondr**	**1.79 208**	Pn	**Pn**	**03 59 38.4**	**-0.2**
PRU	**Pruhonice**	**1.80 214**⇓	*i*PN	**Pn**	**03 59 38.7**	**-0.1**
PRU			*e*SG	**Sg**	**04 00 04.3**	**0.0**
	comp=Z,1µm,0.6s					
PRU			AMS	AMS	04 00 20.0	
	comp=Z,1µm,4.2s					
PRU	**Pruhonice**	**1.80 214**⇓	*i*P	**Pn**	**03 59 38.7**	**-0.1**
PRU			*e*		04 00 04.3	
PRU			smax	smax		
	comp=N,1µm,0.6s					
PRU			MLR	MLR		
	comp=Z,1µm,4.2s					
PRU	**Pruhonice**	**1.80 214**	Pn	**Pn**	**03 59 38.7**	**-0.1**
PRU			Sg	**Sg**	**04 00 04.3**	**0.0**
	comp=Z,1µm,0.6s					
RAC	**Raciborz**	**1.94 136**	*e*P	**Pn**	**03 59 39.2**	**-1.4**
RAC			*e*		04 00 08.4	
RAC	**Raciborz**	**1.94 136**	*e*Pn	**Pn**	**03 59 39.2**	**-1.4**
RAC	**Raciborz**	**1.94 136**	*e*Pg	**Pg**	**03 59 43.2**	**-0.3**
RAC			*e*Sg	**Sg**	**04 00 08.4**	**-0.2**
MORC	**Moravsky Berou**	**1.94 151**⇓	*i*P	**Pn**	**03 59 40.3**	**-0.5**
MORC	**Moravsky Berou**	**1.94 151**	S	**Sn**	**04 00 05.0**	**-0.9**
MORC	**Moravsky Berou**	**1.94 151**	*e*P	**Pn**	**03 59 40.3**	**-0.5**
MORC	**Moravsky Berou**	**1.94 151**⇓	*i*P	**Pn**	**03 59 40.3**	**-0.5**
MORC			*e*Sg	**Sn**	**04 00 05.8**	**-0.1**
	comp=Z,273nm,0.4s					
MORC	**Moravsky Berou**	**1.94 151**	*e*Pn	**Pn**	**03 59 40.3**	**-0.5**
MORC	**Moravsky Berou**	**1.94 151**	*e*Pn	**Pn**	**03 59 40.3**	**-0.5**
CLL	**Collm**	**1.95 266**	*i* Pn	**Pn**	**03 59 40.9**	**+0.1**
	comp=Z,65nm,0.5s					
CLL			*i* Pg	**Pg**	**03 59 45.0**	**+1.2**
CLL			*i*		03 59 48.4	
CLL			*e*Sn	**Sn**	**03 59 59.0**	**-7.0**
CLL			*i* Sg	**Sg**	**04 00 11.5**	**+2.4**
	comp=Z,626nm,0.6s					
CLL	**Collm**	**1.95 266**	*i* P	**Pn**	**03 59 40.9**	**+0.1**
CLL			pmax	pmax		
	comp=Z,65nm,0.5s					
CLL	**Collm**	**1.95 266**	*i* P	**Pn**	**03 59 40.9**	**+0.1**
	comp=Z,65nm,0.5s					
CLL			Sg	**Sg**	**04 00 11.2**	**+2.1**
CLL	**Collm**	**1.95 266**	*e*Pn	**Pn**	**03 59 40.7**	**-0.1**
CLL			*e*Sg	**Sg**	**04 00 11.2**	**+2.1**
CLL	**Collm**	**1.95 266**	*e*Pn	**Pn**	**03 59 40.6**	**-0.2**
OKC	**Ostrava-Krasne**	**2.10 141**⇓	*i*PN	**Pn**	**03 59 41.7**	**-1.2**
OKC			*e*SG	**Sb**	**04 00 11.6**	**-0.5**
	comp=Z,478nm,0.6s					
OKC			AMS	AMS	04 00 30.0	
	comp=Z,700nm,3.8s					
OKC	**Ostrava-Krasne**	**2.10 141**⇓	*i*P	**Pn**	**03 59 41.7**	**-1.2**
OKC			*e*		04 00 11.6	
OKC			smax	smax		
	comp=N,478nm,0.6s					
OKC			MLR	MLR		
	comp=Z,700nm,3.8s					
OKC	**Ostrava-Krasne**	**2.10 141**	Pn	**Pn**	**03 59 41.8**	**-1.2**
OKC			Sg	**Sb**	**04 00 11.6**	**-0.5**
	comp=Z,478nm,0.6s					
OKC	**Ostrava-Krasne**	**2.10 141**	*e*Pn	**Pn**	**03 59 41.8**	**-1.2**
OKC			*e*Sg	**Sb**	**04 00 11.4**	**-0.7**
CHZP	**Chorzow**	**2.19 122**	Pn	**Pb**	**03 59 46.9**	**+0.1**
CHZP			Pg	**Pg**	**03 59 52.4**	**+4.1**
CHZP	**Chorzow**	**2.19 122**	Pn	**Pb**	**03 59 46.9**	**+0.1**
CHZP	**Chorzow**	**2.19 122**	Pn	**Pb**	**03 59 46.9**	**+0.1**
CHZP			Pg	**Pg**	**03 59 52.4**	**+4.1**
VRAC	**Vranov**	**2.21 172**	Pn	**Pn**	**03 59 44.3**	**-0.1**
	comp=Z,34nm,0.3s,baz=338,slow=15,SNR=108					
VRAC			Lg	Lg	04 00 16.4	
	comp=Z,75nm,0.3s,baz=269,slow=23,SNR=8.8					
VRAC	**Vranov**	**2.21 172**⇓	*i*P	**Pn**	**03 59 44.2**	**-0.1**
VRAC	**Vranov**	**2.21 172**	S	**Sb**	**04 00 15.2**	**+0.1**
VRAC	**Vranov**	**2.21 172**	*e*Pn	**Pn**	**03 59 44.2**	**-0.1**
VRAC			*e*Sg	**Sb**	**04 00 15.9**	**+0.8**
	comp=Z,460nm,0.7s					
VRAC			Lg	Lg	04 00 16.4	
TREC	**Trest**	**2.23 190**⇓	*e*PN	**Pn**	**03 59 45.0**	**+0.3**
TREC			*e*PG	**Pb**	**03 59 48.5**	**+0.8**
TREC			*e*SG	**Sg**	**04 00 17.3**	**-0.9**
	comp=Z,271nm,0.3s					
TREC	**Trest**	**2.23 190**	*e*P	**Pn**	**03 59 45.0**	**+0.3**
TREC			*e*		04 00 17.3	
TREC			smax	smax		
	comp=N,271nm,0.3s					
TREC	**Trest**	**2.23 190**	Pn	**Pn**	**03 59 45.0**	**+0.3**
KRUC	**Moravsky**	**2.44 176**	*e*Pn	**Pn**	**03 59 47.4**	**-0.1**
KRUC			*e*Sg	**Sb**	**04 00 23.3**	**+1.6**
	comp=N,452nm,1.0s					
TANN	**Tannenbergstha**	**2.54 246**	Pn	**Pn**	**03 59 49.6**	**+0.6**
TANN			Sg	**Sg**	**04 00 28.3**	**+0.2**
TANN	**Tannenbergstha**	**2.54 246**	*e*Pn	**Pn**	**03 59 49.6**	**+0.6**
TANN			*e*Sg	**Sg**	**04 00 28.3**	**+0.2**
WERD	**Werda**	**2.62 248**	Pn	**Pn**	**03 59 50.6**	**+0.6**
WERD	**Werda**	**2.62 248**	Pg	**Pg**	**03 59 57.1**	**+0.5**
WERD			Sg	**Sg**	**04 00 32.0**	**+1.5**
WERD	**Werda**	**2.62 248**	*e*Pn	**Pn**	**03 59 50.6**	**+0.6**
WERD			*e*Pg	**Pg**	**03 59 57.1**	**+0.5**
WERD			*e*Sg	**Sg**	**04 00 32.0**	**+1.5**
NKC	**Novy Kostel**	**2.64 243**⇑	*i*PN	**Pn**	**03 59 51.0**	**+0.7**
NKC			*e*SG	**Sg**	**04 00 32.9**	**+1.8**
	comp=N,622nm,0.4s					
NKC			AMS	AMS	04 00 50.0	
	comp=N,600nm,4.1s					
NKC	**Novy Kostel**	**2.64 243**⇑	*i*P	**Pn**	**03 59 51.0**	**+0.7**
NKC			MLR	MLR		
	comp=Z,600nm,4.1s					
NKC	**Novy Kostel**	**2.64 243**	Pn	**Pn**	**03 59 51.0**	**+0.7**
NKC			Sg	**Sg**	**04 00 32.9**	**+1.8**
	comp=Z,622nm,0.4s					
OJC	**Ojcow**	**2.67 117**	*e*Pn	**Pn**	**03 59 48.4**	**-2.2**
OJC			*e*Pg	**Pb**	**03 59 56.1**	**+1.1**
OJC			*e*Sg	**Sg**	**04 00 31.5**	**-0.5**
OJC	**Ojcow**	**2.67 117**	*e*P	**Pn**	**03 59 48.4**	**-2.2**
OJC			*e*		04 00 31.5	
OJC	**Ojcow**	**2.67 117**	Pn	**Pn**	**03 59 48.5**	**-2.2**
OJC	**Ojcow**	**2.67 117**	*e*Pn	**Pn**	**03 59 48.5**	**-2.2**
OJC	**Ojcow**	**2.67 117**	*e*Pn	**Pn**	**03 59 48.4**	**-2.2**
OJC	**Ojcow**	**2.67 117**	*e*Pn	**Pn**	**03 59 48.4**	**-2.2**
OJC			*e*Pg	**Pb**	**03 59 56.1**	**+1.1**
OJC			*e*Sg	**Sg**	**04 00 31.5**	**-0.5**
KHC	**Kasperske Hory**	**2.87 215**⇓	*i*PN	**Pn**	**03 59 53.4**	**0.0**
KHC			*e*SN	**Sn**	**04 00 27.4**	**-1.2**
KHC			*e*SG	**Sg**	**04 00 37.4**	**-1.0**
	comp=Z,313nm,0.5s					
KHC			AMS	AMS	04 00 50.0	
	comp=Z,500nm,5.3s					
KHC	**Kasperske Hory**	**2.87 215**⇓	*i*P	**Pn**	**03 59 53.4**	**0.0**
KHC			*e*		04 00 27.4	
KHC			smax	smax		
	comp=N,313nm,0.5s					
KHC			MLR	MLR		
	comp=Z,500nm,5.3s					
KHC	**Kasperske Hory**	**2.87 215**	*e*Pn	**Pn**	**03 59 53.5**	**0.0**
KHC	**Kasperske Hory**	**2.87 215**	*e*Pg	**Pg**	**04 00 00.0**	**-1.3**
KHC			Sn	**Sn**	**04 00 28.0**	**-0.6**
KHC			Sg	**Sg**	**04 00 37.4**	**-1.0**
	comp=Z,313nm,0.5s					
KHC	**Kasperske Hory**	**2.87 215**	*e*Pn	**Pn**	**03 59 53.5**	**0.0**
KHC			*e*Pg	**Pg**	**04 00 00.0**	**-1.3**
KHC			*e*Sn	**Sn**	**04 00 28.9**	**+0.4**
KHC			*e*Sg	**Sg**	**04 00 39.3**	**+0.9**
BEL	**Belsk**	**2.94 81**	*e*Pn	**Pn**	**03 59 54.5**	**+0.2**
BEL			*e*Pg	**Pb**	**03 59 56.4**	**-3.2**
BEL			*e*Sn	Sg	04 00 56.5	+16
BEL	**Belsk**	**2.94 81**	*e*P	**Pn**	**03 59 54.5**	**+0.2**
BEL	**Belsk**	**2.94 81**	*e*Pn	**Pn**	**03 59 54.5**	**+0.2**
BEL	**Belsk**	**2.94 81**	*e*Pn	**Pn**	**03 59 54.5**	**+0.2**
BEL			*e*Pg	**Pb**	**03 59 56.4**	**-3.2**
BEL			*e*Sn	Sg	04 00 56.5	+16
MANZ	**Manzenberg**	**2.95 241**	Pn	**Pn**	**03 59 55.5**	**+0.9**
MANZ			Sg	**Sg**	**04 00 42.4**	**+1.2**
MANZ	**Manzenberg**	**2.95 241**	*e*Pn	**Pn**	**03 59 55.5**	**+0.9**
MANZ			*e*Sg	**Sg**	**04 00 42.4**	**+1.2**
MOX	**Moxa**	**2.96 255**	P	**Pn**	**03 59 55.1**	**+0.4**
MOX	**Moxa**	**2.96 255**	Pn	**Pn**	**03 59 55.0**	**+0.4**
MOX	**Moxa**	**2.96 255**	*e*Pn	**Pn**	**03 59 55.0**	**+0.4**
MOX			*e*Pg	**Pg**	**04 00 03.3**	**+0.3**
MOX			*e*Sg	**Sg**	**04 00 43.6**	**+2.2**
ROTZ	**Rotzenmuhle**	**3.02 237**	Pn	**Pn**	**03 59 56.3**	**+0.8**
ROTZ			Sg	**Sg**	**04 00 42.9**	**-0.6**
ROTZ	**Rotzenmuhle**	**3.02 237**	*e*Pn	**Pn**	**03 59 56.3**	**+0.8**
ROTZ			*e*Sg	**Sg**	**04 00 42.9**	**-0.6**
GEC2	**GERESS Array S**	**3.07 211**	*e*P	**Pn**	**03 59 56.6**	**+0.4**
GEC2	**GERESS Array S**	**3.07 211**	Pn	**Pn**	**03 59 56.3**	**+0.1**
GEC2	**GERESS Array S**	**3.07 211**	*e*P	**Pn**	**03 59 56.6**	**+0.4**
GEC2	**GERESS Array S**	**3.07 211**	*e*Pn	**Pn**	**03 59 56.3**	**+0.1**
GEC2			*e*Pg	**Pb**	**04 00 03.5**	**+1.6**
GEC2			*e*Sg	**Sb**	**04 00 42.6**	**+2.7**
GEC2	**GERESS Array S**	**3.07 211**	*e*Pn	**Pn**	**03 59 56.6**	**+0.4**
GERES	**GERESS Array B**	**3.07 211**	Pn	**Pn**	**03 59 56.3**	**+0.1**
	comp=Z,14nm,0.3s,baz=30,slow=13,SNR=238					
GERES			Lg	Lg	04 00 44.1	
	comp=Z,55nm,0.3s,baz=33,slow=26,SNR=9.3					
GEA0	**GERESS Array S**	**3.07 211**	*e*Pn	**Pn**	**03 59 56.2**	**-0.1**
GEA0	**GERESS Array S**	**3.07 211**	*e*Pn	**Pn**	**03 59 56.2**	**-0.1**
SMOL	**Smolenice**	**3.10 164**	*e*P	**Pg**	**04 00 05.6**	**-0.2**
SMOL	**Smolenice**	**3.10 164**	*e*Pg	**Pg**	**04 00 05.6**	**-0.2**
SMOL			*e*Sg	**Sg**	**04 00 46.1**	**+0.1**
SMOL	**Smolenice**	**3.10 164**	*e*PG	**Pg**	**04 00 05.6**	**-0.2**
SMOL			*e*SG	**Sg**	**04 00 46.1**	**+0.1**
WET	**Wettzell**	**3.13 223**	P	**Pn**	**03 59 57.3**	**+0.3**
WET	**Wettzell**	**3.13 223**	Pn	**Pn**	**03 59 57.3**	**+0.3**
WET	**Wettzell**	**3.13 223**	*e*Pn	**Pn**	**03 59 57.3**	**+0.3**
LANS	**Liptovska Anna**	**3.18 136**	*e*P	**Pn**	**03 59 57.8**	**0.0**
LANS			*e*		04 00 47.3	
LANS	**Liptovska Anna**	**3.18 136**	*e*P	**Pn**	**03 59 57.8**	**0.0**
LANS	**Liptovska Anna**	**3.18 136**	*e*	**Pn**	**03 59 57.8**	**0.0**
LANS	**Liptovska Anna**	**3.18 136**	*e*PG	**Pg**	**04 00 06.6**	**-0.8**
LANS			*e*SG	**Sg**	**04 00 47.3**	**-1.4**
NIE	**Niedzica**	**3.39 126**	*e*Pn	**Pn**	**04 00 00.5**	**-0.1**
NIE			*e*Pg	**Pg**	**04 00 10.3**	**-1.0**
NIE			*e*Sg	**Sg**	**04 00 54.8**	**-0.5**
NIE	**Niedzica**	**3.39 126**	*e*P	**Pn**	**04 00 00.5**	**-0.1**
NIE	**Niedzica**	**3.39 126**	*e*Pn	**Pn**	**04 00 00.5**	**-0.1**
NIE	**Niedzica**	**3.39 126**	*e*Pn	**Pn**	**04 00 00.5**	**-0.1**
NIE			*e*Pg	**Pg**	**04 00 10.4**	**-1.0**
NIE			*e*Sg	**Sg**	**04 00 54.8**	**-0.5**
ASSE	**Asse, Remlinge**	**3.43 283**	Pn	**Pn**	**04 00 01.5**	**+0.4**
ASSE	**Asse, Remlinge**	**3.43 283**	*e*Pn	**Pn**	**04 00 01.5**	**+0.4**
VYHS	**Vyhne**	**3.48 149**	*e*P	**Pn**	**04 00 01.1**	**-0.7**
VYHS			pmax	pmax		
	comp=N,80nm,1.1s					
VYHS	**Vyhne**	**3.48 149**	*e*P	**Pn**	**04 00 01.1**	**-0.7**
	comp=N,80nm,1.1s					
VYHS	**Vyhne**	**3.48 149**	*e*Pg	**Pg**	**04 00 11.3**	**-1.8**
VYHS			*e*Sg	**Sg**	**04 00 57.2**	**-1.0**
VYHS	**Vyhne**	**3.48 149**	*e*PG	**Pg**	**04 00 11.3**	**-1.8**
VYHS			*e*SG	**Sg**	**04 00 57.2**	**-1.0**
VYHS			*e*LG	Lg	04 01 13.8	
VYHS	**Vyhne**	**3.48 149**	*e*	**Pn**	**04 00 01.1**	**-0.7**
RGN	**Rugen**	**3.49 332**	*e*Pn	**Pn**	**04 00 01.0**	**-1.0**
RGN			*e*Sn	**Sn**	**04 00 42.0**	**-2.0**
RGN	**Rugen**	**3.49 332**	*e*Pn	**Pn**	**04 00 01.0**	**-1.0**
RGN			*e*Sn	**Sn**	**04 00 42.0**	**-2.0**
CONA	**Conrad Observa**	**3.57 183**	*e*Pn	**Pn**	**04 00 03.3**	**+0.2**
	comp=N,17nm,0.3s,SNR=32					
CONA			*e*Sn	**Sn**	**04 00 47.3**	**+1.3**
	comp=N,53nm,0.5s					
CONA	**Conrad Observa**	**3.57 183**	Pn	**Pn**	**04 00 03.3**	**+0.2**
	comp=N,17nm,0.3s,SNR=32					
CONA			Sn	**Sn**	**04 00 47.3**	**+1.3**
	comp=N,53nm,0.5s					
CLZ	**Clausthal**	**3.59 278**	Pn	**Pn**	**04 00 04.7**	**+1.4**
CLZ			Sg	**Sg**	**04 01 04.8**	**+3.2**
CLZ	**Clausthal**	**3.59 278**	*e*Pn	**Pn**	**04 00 04.7**	**+1.4**
CLZ			*e*Sg	**Sg**	**04 01 04.8**	**+3.2**
GRA1	**Grafenberg Arr**	**3.59 242**	P	**Pn**	**04 00 04.2**	**+0.8**
GRA1	**Grafenberg Arr**	**3.59 242**	Pn	**Pn**	**04 00 04.5**	**+1.1**
GRF	**Grafenberg Arr**	**3.59 242**	P	**Pn**	**04 00 04.2**	**+0.8**
GRF	**Grafenberg Arr**	**3.59 242**	*e*Pn	**Pn**	**04 00 04.5**	**+1.1**
GRFO	**Grafenberg**	**3.60 242**	*e*P	**Pn**	**04 00 04.3**	**+0.8**
GRFO	**Grafenberg**	**3.60 242**	*e*Pn	**Pn**	**04 00 04.2**	**+0.8**
GRFO	**Grafenberg**	**3.60 242**	*e*Pn	**Pn**	**04 00 04.2**	**+0.8**
GRFO			*e*Pg	**Pg**	**04 00 15.9**	**+0.6**
GRFO			*e*Sg	**Sg**	**04 01 03.7**	**+1.8**
BSD	**Bornholm Skovb**	**3.70 349**⇓	*i*P	**Pn**	**04 00 03.9**	**-0.9**
BSD			*i* S	**Sn**	**04 00 44.9**	**-4.1**
BSD	**Bornholm Skovb**	**3.70 349**⇓	*i*P	**Pn**	**04 00 03.9**	**-0.9**
BSD			*i* S	**Sn**	**04 00 44.9**	**-4.1**
BSD	**Bornholm Skovb**	**3.70 349**	*i* P	**Pn**	**04 00 03.9**	**-0.9**
SOP	**Sopron**	**3.82 175**⇑	*e*Pn	**Pn**	**04 00 06.8**	**+0.3**
SOP			*e*Sb	**Sb**	**04 00 59.3**	**-2.2**
SOP	**Sopron**	**3.82 175**	P	**Pn**	**04 00 07.4**	**+0.9**
SOP	**Sopron**	**3.82 175**⇑	*e*Pn	**Pn**	**04 00 06.8**	**+0.3**
SOP	**Sopron**	**3.82 175**	P	**Pn**	**04 00 07.4**	**+0.9**
MOA	**Molln**	**3.84 199**	*i* Pn	**Pn**	**04 00 07.0**	**+0.3**
	comp=N,51nm,0.6s,SNR=54					
MOA			Sn	**Sn**	**04 00 52.9**	**+0.4**
	comp=N,99nm,0.5s					
MOA	**Molln**	**3.84 199**	Pn	**Pn**	**04 00 07.0**	**+0.3**
	comp=N,51nm,0.6s,SNR=54					
MOA			Sn	**Sn**	**04 00 52.9**	**+0.4**
	comp=N,99nm,0.5s					
STHS	**Stebnicka Huta**	**3.88 120**	*e*P	**Pn**	**04 00 07.3**	**-0.1**
STHS			pmax	pmax		
	comp=N,153nm,0.7s					
STHS	**Stebnicka Huta**	**3.88 120**	*e*P	**Pn**	**04 00 07.3**	**-0.1**
	comp=N,153nm,0.7s					
STHS	**Stebnicka Huta**	**3.88 120**	*e*Pg	**Pg**	**04 00 20.7**	**-0.2**
STHS			*e*Sg	**Sg**	**04 01 11.0**	**-0.2**
STHS	**Stebnicka Huta**	**3.88 120**	*e*	**Pn**	**04 00 07.3**	**-0.1**
STHS	**Stebnicka Huta**	**3.88 120**	*e*PG	**Pg**	**04 00 20.6**	**-0.3**
STHS			*e*SG	**Sg**	**04 01 11.0**	**-0.2**
STHS			*e*LG	Lg	04 01 39.6	
KECS	**Kecovo**	**4.13 135**	*e*P	**Pn**	**04 00 10.1**	**-0.6**
KECS			pmax	pmax		
	comp=N,35nm,0.8s					
KECS	**Kecovo**	**4.13 135**	*e*P	**Pn**	**04 00 10.1**	**-0.6**
	comp=N,35nm,0.8s					
KECS	**Kecovo**	**4.13 135**	*e*Pg	**Pg**	**04 00 24.8**	**-0.7**
KECS	**Kecovo**	**4.13 135**	*e*	**Pn**	**04 00 10.1**	**-0.6**
KECS	**Kecovo**	**4.13 135**	*e*PG	**Pg**	**04 00 24.8**	**-0.7**
KECS			*e*LG	Lg	04 01 37.0	
ARSA	**Arzberg**	**4.26 185**	*e*Pn	**Pn**	**04 00 13.9**	**+1.3**
	comp=N,12nm,0.3s,SNR=26					
ARSA	**Arzberg**	**4.26 185**	Pn	**Pn**	**04 00 13.9**	**+1.3**
	comp=N,12nm,0.3s,SNR=26					
CRVS	**Cervenica-Dubn**	**4.31 125**	*e*Pg	**Pg**	**04 00 28.6**	**-0.3**
CRVS			*e*Sg	**Sg**	**04 01 21.6**	**-3.1**
CRVS	**Cervenica-Dubn**	**4.31 125**	*e*PG	**Pg**	**04 00 28.6**	**-0.3**
CRVS			*e*SG	**Sg**	**04 01 21.6**	**-3.1**
PSZ	**Piszkesteto**	**4.34 144**⇓	*i*P	**Pn**	**04 00 13.4**	**-0.3**
PSZ	**Piszkesteto**	**4.34 144**⇑	*e*Pn	**Pn**	**04 00 14.1**	**+0.4**
PSZ	**Piszkesteto**	**4.34 144**	*e*P	**Pn**	**04 00 13.8**	**+0.1**
PSZ	**Piszkesteto**	**4.34 144**	*e*P	**Pn**	**04 00 13.8**	**+0.1**
PSZ	**Piszkesteto**	**4.34 144**	*e*Pn	**Pn**	**04 00 13.8**	**+0.1**
CSKK	**Cs^‡kako**	**4.37 160**⇑	*e*Pn	**Pn**	**04 00 14.0**	**0.0**
CSKK			*e*Sb	**Sb**	**04 01 14.9**	**-2.2**
CSKK	**Cs^‡kako**	**4.37 160**⇑	*e*Pn	**Pn**	**04 00 14.0**	**0.0**
KWP	**Kalwaria Pacla**	**4.60 111**	*e*Pn	**Pn**	**04 00 16.2**	**-1.0**
KWP			*e*Pg	**Pb**	**04 00 30.4**	**+2.3**
KWP	**Kalwaria Pacla**	**4.60 111**⇓	*i*P	**Pn**	**04 00 16.5**	**-0.7**
KWP	**Kalwaria Pacla**	**4.60 111**	S	**Sg**	**04 01 34.0**	**-0.2**
KWP	**Kalwaria Pacla**	**4.60 111**	*e*P	**Pn**	**04 00 16.2**	**-1.0**
KWP	**Kalwaria Pacla**	**4.60 111**	*e*Pn	**Pn**	**04 00 16.2**	**-1.0**
KWP	**Kalwaria Pacla**	**4.60 111**⇓	*i*P	**Pn**	**04 00 16.5**	**-0.7**
KWP	**Kalwaria Pacla**	**4.60 111**	*e*Pn	**Pn**	**04 00 16.2**	**-1.0**
KWP			*e*Pg	**Pb**	**04 00 30.4**	**+2.3**
KBA	**Koelnbreinsper**	**4.77 203**	*i* Pn	**Pn**	**04 00 20.4**	**+0.7**
	comp=N,33nm,0.5s,SNR=40					
KBA	**Koelnbreinsper**	**4.77 203**	P	**Pn**	**04 00 20.5**	**+0.7**
KBA	**Koelnbreinsper**	**4.77 203**	Pn	**Pn**	**04 00 20.4**	**+0.7**
	comp=N,33nm,0.5s,SNR=40					
BLEU	**Blekinge**	**4.83 358**	P	**Pn**	**04 00 20.0**	**-0.2**
BLEU			S	**Sn**	**04 01 13.1**	**-3.7**
BLEU	**Blekinge**	**4.83 358**	P	**Pn**	**04 00 20.0**	**-0.2**
BLEU			S	**Sn**	**04 01 13.1**	**-3.7**
SOKA	**Soboth**	**4.87 189**	*e*Pn	**Pn**	**04 00 21.6**	**+0.6**
	comp=N,8.1nm,0.4s,SNR=15					
SOKA	**Soboth**	**4.87 189**	Pn	**Pn**	**04 00 21.6**	**+0.6**
	comp=N,8.1n

ASPU Aespoe 5.95 3 P **Pn 04 00 35.6 0.0**
ASPU Aespoe 5.95 3 P **Pn 04 00 35.6 0.0**
GNOU Gnosjoe 5.97 348 P **Pn 04 00 35.4 -0.6**
GNOU Gnosjoe 5.97 348 P **Pn 04 00 35.4 -0.6**
TRI Trieste 5.99 196 *e*P **Pn 04 00 36.4 +0.1**
TRI Trieste 5.99 196 *e*Pn **Pn 04 00 36.4 +0.1**
TRI Trieste 5.99 196 *e*Pn **Pn 04 00 36.4 +0.1**
TRI *e*Pg **Pg 04 00 59.7 -1.5**
TRI *e*Sg **Sg 04 02 16.2 -2.5**
RUP Ruppelstein 6.03 256 P **Pn 04 00 38.4 +1.5**
RUP Ruppelstein 6.03 256 P **Pn 04 00 37.3 +0.4**
HILG Hillesheim 6.08 262 Pn **Pn 04 00 39.2 +1.6**
HILG Hillesheim 6.08 262 *e*Pn **Pn 04 00 39.2 +1.6**
EKSU Eksjoe 6.11 356 P **Pn 04 00 37.7 -0.2**
EKSU Eksjoe 6.11 356 P **Pn 04 00 37.7 -0.2**
VSTU Vaestervik 6.19 2 P **Pn 04 00 38.8 -0.1**
VSTU Vaestervik 6.19 2 P **Pn 04 00 38.8 -0.1**
FUORN Ofenpass-Fuorn 6.20 220 *e*Pn **Pn 04 00 40.3 +0.8**
FUORN Ofenpass-Fuorn 6.20 220 *e*Pn **Pn 04 00 40.3 +0.8**
KLL Kalltalsperre 6.23 266 Pn **Pn 04 00 40.8 +1.2**
KLL Kalltalsperre 6.23 266 *e*Pn **Pn 04 00 40.8 +1.2**
DAVOX Davos/Dischmat 6.24 223 Pn **Pn 04 00 40.6 +0.7**
comp=N,2.5nm,0.3s,baz=78,slow=19,SNR=25
DAVOX Lg Lg 04 02 25.4
comp=N,2.8nm,0.3s,baz=18,slow=12,SNR=6.7
DREG Dreilaegerbach 6.28 266 Pn **Pn 04 00 40.8 +0.6**
DREG Dreilaegerbach 6.28 266 *e*Pn **Pn 04 00 40.8 +0.6**
GOTU Gotland 6.37 12 P **Pn 04 00 41.2 -0.3**
GOTU Gotland 6.37 12 P **Pn 04 00 41.2 -0.3**
FELD Feldberg im Sc 6.38 239 P **Pn 04 00 40.8 -1.0**
SIRR Siria 6.38 143 ⇑ *i*P **Pn 04 00 41.3 -0.4**
DRGR 6.39 135 ‖ *i*P **Pn 04 00 41.3 -0.6**
MEM Membach 6.43 266 P **Pn 04 00 42.8 +0.5**
WLS Welschbruch 6.43 245 P **Pn 04 00 42.4 0.0**
WLS Welschbruch 6.43 245 P **Pn 04 00 42.4 0.0**
HGN Heimansgroeve 6.45 267 *e*Pn **Pn 04 00 44.6 +2.1**
comp=N,2.8nm,0.3s
HGN *e*Pg **Pg 04 01 11.6 +1.7**
HGN *e*Sn **Sb 04 02 13.3 -3.7**
HGN *e*Sg **Sg 04 02 29.2 -4.1**
HGN Heimansgroeve 6.45 267 *e*Pn **Pn 04 00 44.6 +2.1**
comp=N,2.8nm,0.3s
BORU Boraas 6.45 344 P **Pn 04 00 42.1 -0.5**
BORU Boraas 6.45 344 P **Pn 04 00 42.1 -0.5**
CDF Champ du Feu 6.48 245 *e*Pn **Pn 04 00 41.0 -2.0**
CDF *e*Sg **Sg 04 02 30.1 -4.2**
comp=N,261nm,1.0s
CDF Champ du Feu 6.48 245 P **Pn 04 00 41.6 -1.4**
CDF Champ du Feu 6.48 245 *e*Pn **Pn 04 00 41.0 -2.0**
CDF Champ du Feu 6.48 245 P **Pn 04 00 41.6 -1.4**
CDF Champ du Feu 6.48 245 *e*Pn **Pn 04 00 41.0 -2.0**
CDF *e*Sg **Sg 04 02 30.1 -4.2**
WLF Walferdange 6.60 258 P **Pn 04 00 46.6 +2.0**
WLF Walferdange 6.60 258 *e*P **Pn 04 00 45.3 +0.7**
WLF *e* 04 02 00.4
WLF Walferdange 6.60 258 *e*Pn **Pn 04 00 45.3 +0.7**
WLF *e*S **Sn 04 02 00.4 -0.1**
WLF Walferdange 6.60 258 *e*Pn **Pn 04 00 45.3 +0.7**
WLF *e*Sn **Sn 04 02 00.3 -0.1**
WLF *e*Sg **Sg 04 02 36.7 -1.5**
ECH Echery 6.65 244 P **Pn 04 00 45.1 -0.2**
ECH Echery 6.65 244 P **Pn 04 00 45.1 -0.2**
TUE Stuetta 6.71 224 *e*Pn **Pn 04 00 46.9 +0.6**
TUE *e*Sn **Sn 04 02 03.6 +0.1**
TUE Stuetta 6.71 224 *e*Pn **Pn 04 00 46.9 +0.6**
TUE *e*Sn **Sn 04 02 03.6 +0.1**
TUE *e*Sg **Sg 04 02 42.4 +0.7**
LNKU Linkoeping 6.76 357 P **Pn 04 00 46.2 -0.5**
LNKU Linkoeping 6.76 357 P **Pn 04 00 46.2 -0.5**
BLY Banja Luka 6.79 173 ‖ *i*P **Pn 04 00 47.9 +0.7**
MOF Molkenrain 6.87 241 P **Pn 04 00 47.7 -0.7**
MOF Molkenrain 6.87 241 P **Pn 04 00 47.7 -0.7**
BCLA Clavier 6.91 265 P **Pn 04 00 49.7 +0.8**
BZS Buzias 6.92 146 ⇑ *i*P **Pn 04 00 49.5 +0.4**
UDBI Udbina 6.97 182 P **Pn 04 00 51.5 +1.6**
UDBI Udbina 6.97 182 *i*P **Pn 04 00 51.4 +1.6**
NVLJ Novalja 6.98 187 P **Pn 04 00 51.0 +1.1**
NVLJ Novalja 6.98 187 *i*P **Pn 04 00 50.9 +1.1**
HINF Hinteralfeld 7.04 242 *e*Pn **Pn 04 00 47.6 -3.2**
HINF *e*Sg **Sg 04 02 48.3 -4.1**
comp=N,163nm,1.0s
HINF Hinteralfeld 7.04 242 *e*P **Pn 04 00 47.6 -3.2**
HINF Hinteralfeld 7.04 242 *e*Pn **Pn 04 00 47.6 -3.2**
HINF *e*Sg **Sg 04 02 48.3 -4.1**
BUR08 Bucovina Ar. S 7.06 120 *e*Pn **Pn 04 00 51.2 +0.2**
BUR08 Bucovina Ar. S 7.06 120 *e*Pn **Pn 04 00 51.2 +0.2**
BURAR Bucovina Array 7.08 120 ⇑ *i*P **Pn 04 00 50.9 -0.5**
HAU Haudompre 7.22 245 *e*Pn **Pn 04 00 52.0 -1.2**
HAU Haudompre 7.22 245 *e*Pg **Pg 04 01 24.6 -0.1**
HAU *e*Sg **Sg 04 02 53.7 -4.4**
comp=N,137nm,1.0s
HAU Haudompre 7.22 245 *e*P **Pn 04 00 52.0 -1.2**
HAU Haudompre 7.22 245 *e*Pn **Pn 04 00 52.0 -1.2**
HAU Haudompre 7.22 245 *e*Pn **Pn 04 00 52.0 -1.2**
HAU *e*Pg **Pg 04 01 24.6 -0.1**
HAU *e*Sg **Sg 04 02 53.7 -4.4**
NACGM Naroch 7.27 58 *e* **Pn 04 00 52.0 -1.8**
NACGM *e*LR LR 05 11 26.0
GIVF Givet 7.29 263 *e*Pn **Pn 04 00 51.1 -2.9**
GIVF *e*Sg **Sg 04 02 55.8 -4.5**
comp=N,246nm,1.1s
GIVF Givet 7.29 263 *e*P **Pn 04 00 51.1 -2.9**
GIVF Givet 7.29 263 *e*Pn **Pn 04 00 51.1 -2.9**
GIVF *e*Sg **Sg 04 02 55.8 -4.5**
PAGF Fort de Pagny 7.30 250 *e*Pn **Pn 04 00 51.3 -3.0**
PAGF Fort de Pagny 7.30 250 *e*Pg **Pg 04 01 28.6 +2.3**
PAGF *e*Sg **Sg 04 02 56.1 -4.7**
comp=N,53nm,1.1s
PAGF Fort de Pagny 7.30 250 *e*Pn **Pn 04 00 51.3 -3.0**
PAGF *e*Pg **Pg 04 01 28.6 +2.3**
PAGF *e*Sg **Sg 04 02 56.1 -4.7**
LOMF Lomont 7.33 239 P **Pn 04 00 55.2 +0.4**
LOMF Lomont 7.33 239 P **Pn 04 00 55.2 +0.4**
IZAR Zarasai 7.38 51 *e*P **Pn 04 00 56.9 +1.5**
IZAR IAmb IAmb 04 01 35.6
comp=Z,17nm,0.7s
IZAR Zarasai 7.38 51 *e*P **Pn 04 00 56.9 +1.5**
IDID Didziasalis 7.42 55 *e*P **Pn 04 00 56.2 +0.4**
IDID IAmb IAmb 04 01 33.6
comp=Z,10nm,0.8s
IDID Didziasalis 7.42 55 *e*P **Pn 04 00 56.2 +0.4**
DOU Dourbes 7.43 264 P **Pn 04 00 58.4 +2.4**
BAIF Baives 7.68 264 *e*Pn **Pn 04 00 56.2 -3.2**
BAIF *e*Sg **Sg 04 03 07.6 -5.3**
comp=Z,192nm,1.1s
BAIF Baives 7.68 264 *e*P **Pn 04 00 56.2 -3.2**
BAIF Baives 7.68 264 *e*Pn **Pn 04 00 56.2 -3.2**
BAIF *e*Sg **Sg 04 03 07.6 -5.3**
MDVR Moldovita 7.69 149 ‖ *i*P **Pn 04 01 00.3 +0.7**
MICGM Minsk 7.72 62 *e*P **Pg 04 01 30.0 -4.2**
MICGM *e*S **Sg 04 03 20.0 +5.9**
MEZF Maizieres J'vi 7.73 252 *e*Pn **Pn 04 00 58.3 -1.8**
MEZF *e*Sg **Sg 04 03 09.3 -5.1**
comp=Z,187nm,1.1s
MEZF Maizieres J'vi 7.73 252 *e*Pn **Pn 04 00 58.3 -1.8**
MEZF Maizieres J'vi 7.73 252 *e*Pn **Pn 04 00 58.3 -1.8**
MEZF *e*Sg **Sg 04 03 09.3 -5.1**
SENIN Lac Senin/Sane 7.74 232 *e*Pn **Pn 04 01 00.7 +0.2**
SENIN Lac Senin/Sane 7.74 232 *e*Pg **Pg 04 01 35.0 +0.3**
SENIN Lac Senin/Sane 7.74 232 *e*Pn **Pn 04 01 00.7 +0.2**
SENIN *e*Pg **Pg 04 01 35.0 +0.3**
SFTF Sexfontaines 7.87 250 *e*Pn **Pn 04 00 59.6 -2.5**
SFTF Sexfontaines 7.87 250 *e*Pg **Pg 04 01 37.4 +0.2**
SFTF *e*Sg **Sg 04 03 14.1 -5.0**
comp=Z,314nm,1.3s
SFTF Sexfontaines 7.87 250 *e*Pn **Pn 04 00 59.6 -2.5**
SFTF *e*Pg **Pg 04 01 37.4 +0.2**
SFTF *e*Sg **Sg 04 03 14.1 -5.0**
LOT Lotru 7.90 137 ‖ *i*P **Pn 04 01 02.8 +0.2**
CABF La Chapelle 8.19 237 *e*Pn **Pn 04 01 03.6 -3.0**
CABF *e*Sg **Sg 04 03 23.8 -5.5**
comp=Z,261nm,1.1s
CABF La Chapelle 8.19 237 *e*P **Pn 04 01 03.6 -3.0**
CABF La Chapelle 8.19 237 *e*Pn **Pn 04 01 03.6 -3.0**
CABF *e*Sg **Sg 04 03 23.8 -5.5**
DOPR Dopca 8.26 128 ‖ *i*P **Pn 04 01 06.0 -1.4**
AK11 Malin Array Si 8.27 91 *e*Pn **Pn 04 01 04.5 -3.0**
AKASG Malin Array Be 8.30 90 Pn **Pn 04 01 05.9 -2.0**
comp=Z,9.9nm,0.3s,baz=281,slow=12,SNR=36
AKASG Sn **Sn 04 02 38.1 -4.2**
comp=Z,5.6nm,0.3s,baz=275,slow=23,SNR=5.1
AKASG Lg Lg 04 03 35.1
baz=272,slow=25,SNR=4.1
AKBB Malin Array Si 8.30 90 *e*P **Pn 04 01 06.2 -1.7**
AKBB Malin Array Si 8.30 90 *e*Pn **Pn 04 01 06.2 -1.7**
AKBB Malin Array Si 8.30 90 *e*Pn **Pn 04 01 06.2 -1.7**
VOIR 8.48 132 ⇑ *i*P **Pn 04 01 10.5 -0.1**
VOIR 8.48 132 P **Pn 04 01 13.6 +3.0**
VOIR pmax pmax
comp=Z,6.0nm,0.8s
VOIR 8.48 132 ⇑ *i*P **Pn 04 01 10.5 -0.1**
TESR Tescani 8.53 122 ⇑ *i*P **Pn 04 01 10.7 -0.5**
SORM Soroca 8.60 108 ⇑ *i*P **Pn 04 01 11.2 -0.9**
LPL La Plagne 8.62 230 *e*Pn **Pn 04 01 12.4 -0.2**
LPL *e*Sg **Sg 04 03 37.2 -6.0**
comp=Z,104nm,1.3s
LPL La Plagne 8.62 230 *e*P **Pn 04 01 12.4 -0.2**
LPL La Plagne 8.62 230 *e*Pn **Pn 04 01 12.4 -0.2**
LPL La Plagne 8.62 230 *e*Pn **Pn 04 01 12.4 -0.2**
LPL *e*Sg **Sg 04 03 37.2 -6.0**
LPG La Plagne 8.63 230 *e*Pn **Pn 04 01 13.5 +0.7**
LPG *e*Sg **Sg 04 03 37.2 -6.2**
comp=Z,94nm,1.1s
LPG La Plagne 8.63 230 *e*P **Pn 04 01 13.5 +0.7**
LPG La Plagne 8.63 230 *e*Pn **Pn 04 01 13.5 +0.7**
LPG La Plagne 8.63 230 *e*Pn **Pn 04 01 13.5 +0.7**
LPG *e*Sg **Sg 04 03 37.2 -6.2**
HFS Hagfors 8.77 352 Pn **Pn 04 01 13.2 -1.2**
comp=Z,1.4nm,0.3s,baz=165,slow=14,SNR=48
HFS Sn **Sn 04 02 49.5 -4.3**
comp=Z,2.2nm,0.3s,baz=160,slow=22,SNR=5.6
HFS Lg Lg 04 03 52.1
baz=174,slow=29,SNR=2.4
MLR Muntele Rosu 8.87 129 Pn **Pn 04 01 17.6 +1.7**
comp=Z,0.0nm,0.3s,baz=84,slow=16,SNR=2.3
MLR Lg Lg 04 03 59.5
comp=Z,0.0nm,0.3s,baz=291,slow=18,SNR=3.0
MLR Muntele Rosu 8.87 129 ⇑ *i*P **Pn 04 01 15.8 -0.1**
PLOR Plostina 8.97 125 ‖ *i*P **Pn 04 01 16.8 -0.4**
VRI Vrincioaia 9.00 125 ‖ *i*P **Pn 04 01 17.3 -0.3**
VRI Vrincioaia 9.00 125 P **Pn 04 01 17.2 -0.3**
VRI Vrincioaia 9.00 125 P **Pn 04 01 17.2 -0.3**
LOR Lormes 9.04 247 *e*Pn **Pn 04 01 16.2 -1.9**
LOR *e*Sg Sn 04 03 50.2 +50
comp=Z,164nm,1.3s
LOR Lormes 9.04 247 *e*P **Pn 04 01 16.2 -1.9**
LOR Lormes 9.04 247 *e*Pn **Pn 04 01 16.2 -1.9**
LOR *e*Sg Sn 04 03 50.2 +50
comp=Z,82nm,1.3s
LOR Lormes 9.04 247 *e*Pn **Pn 04 01 16.2 -1.9**
LOR *e*Sg Sn 04 03 50.2 +50
MBDF Montbardon 9.20 226 *e*Pn **Pn 04 01 18.3 -2.2**
MBDF *e*Sg Sn 04 03 55.0 +50
comp=Z,38nm,0.9s
MBDF Montbardon 9.20 226 *e*P **Pn 04 01 18.3 -2.2**
MBDF Montbardon 9.20 226 *e*Pn **Pn 04 01 18.3 -2.2**
MBDF Montbardon 9.20 226 *e*Pn **Pn 04 01 18.3 -2.2**
MBDF *e*Sg Sn 04 03 55.0 +50
VSU Vasula 9.27 37 *d i*P **Pn 04 01 21.9 +0.7**
VSU pmax pmax
comp=Z,201nm,1.7s
VSU Vasula 9.27 37 *i*P **Pn 04 01 21.9 +0.7**
comp=Z,201nm,1.7s
AQU L'Aquila 9.32 192 *e*P **Pn 04 01 22.1 0.0**
AQU L'Aquila 9.32 192 *e*Pn **Pn 04 01 22.1 0.0**
AQU L'Aquila 9.32 192 *e*Pn **Pn 04 01 22.1 0.0**
SSF Saint Saulge 9.35 247 *e*Pn **Pn 04 01 18.9 -3.5**
SSF *e*Sg Sn 04 03 59.8 +52
comp=Z,112nm,1.3s
SSF Saint Saulge 9.35 247 *e*P **Pn 04 01 18.9 -3.5**
SSF Saint Saulge 9.35 247 *e*Pn **Pn 04 01 18.9 -3.5**
SSF *e*Sg Sn 04 03 59.8 +52
SMF Signal de Mont 9.39 244 *e*Pn **Pn 04 01 20.1 -2.9**
SMF *e*Sg Sn 04 04 01.5 +52
comp=Z,56nm,1.0s
SMF Signal de Mont 9.39 244 *e*P **Pn 04 01 20.1 -2.9**
SMF Signal de Mont 9.39 244 *e*Pn **Pn 04 01 20.1 -2.9**
SMF *e*Sg Sn 04 04 01.5 +52
ORIF Oris-en-Rattie 9.47 230 *e*Pn **Pn 04 01 23.9 -0.2**
ORIF *e*Sg Sn 04 04 03.6 +52
comp=Z,80nm,1.2s
ORIF Oris-en-Rattie 9.47 230 *e*P **Pn 04 01 23.9 -0.2**
ORIF Oris-en-Rattie 9.47 230 *e*Pn **Pn 04 01 23.9 -0.2**
ORIF Oris-en-Rattie 9.47 230 *e*Pn **Pn 04 01 23.9 -0.2**
ORIF *e*Sg Sn 04 04 03.6 +52
AVF Avril sur Loir 9.59 246 *e*Pn **Pn 04 01 22.5 -3.1**
AVF *e*Sg Sn 04 04 07.5 +54
comp=Z,94nm,1.2s
AVF Avril sur Loir 9.59 246 *e*P **Pn 04 01 22.5 -3.1**
AVF Avril sur Loir 9.59 246 *e*Pn **Pn 04 01 22.5 -3.1**
AVF *e*Sg Sn 04 04 07.5 +54
NC602 NORSAR Array S 9.61 346 *e*Pn **Pn 04 01 24.2 -1.6**
NC602 NORSAR Array S 9.61 346 *e*Pn **Pn 04 01 24.2 -1.6**
SBF Sospel 9.61 221 *e*Pn **Pn 04 01 25.7 -0.3**
SBF Sospel 9.61 221 *e*P **Pn 04 01 25.7 -0.3**
SBF Sospel 9.61 221 *e*Pn **Pn 04 01 25.7 -0.3**
SBF Sospel 9.61 221 *e*Pn **Pn 04 01 25.7 -0.3**
HYF Humbligny 9.74 250 *e*Sg Sn 04 04 12.2 +54
NAO01 NORSAR Array S 9.81 345 *e*Pn **Pn 04 01 26.2 -2.4**
NB201 NORSAR Array S 9.95 346 *e*Pn **Pn 04 01 28.6 -1.9**
NC405 NORSAR Array S 9.95 348 *e*Pn **Pn 04 01 28.9 -1.6**
NC405 NORSAR Array S 9.95 348 *e*Pn **Pn 04 01 28.9 -1.6**
NOA NORSAR Array B 9.95 346 Pn **Pn 04 01 27.7 -2.8**
comp=Z,1.1nm,0.3s,baz=151,slow=12,SNR=25
NOA Sn **Sn 04 03 16.8 -6.0**
comp=Z,0.8nm,0.3s,baz=134,slow=18,SNR=4.0
BGF Bois d'Agland 10.01 246 *e*Pn **Pn 04 01 28.2 -3.2**
BGF *e*Sg Sn 04 04 20.4 +56
comp=Z,59nm,0.7s
BGF Bois d'Agland 10.01 246 *e*P **Pn 04 01 28.2 -3.2**
BGF Bois d'Agland 10.01 246 *e*Pn **Pn 04 01 28.2 -3.2**
BGF *e*Sg Sn 04 04 20.4 +56
NBO00 NORSAR Array S 10.01 345 *e*Pn **Pn 04 01 29.1 -2.3**
NBO02 NORSAR Array S 10.01 345 *e*Pn **Pn 04 01 28.8 -2.6**
NC303 NORSAR Array S 10.10 347 *e*Pn **Pn 04 01 30.8 -1.8**
VIVF Saint-Julien-l 10.11 233 *e*Pn **Pn 04 01 30.8 -2.0**
VIVF *e*Sg Sn 04 04 23.4 +57
comp=Z,52nm,1.2s
VIVF Saint-Julien-l 10.11 233 *e*P **Pn 04 01 30.8 -2.0**
VIVF Saint-Julien-l 10.11 233 *e*Pn **Pn 04 01 30.8 -2.0**
VIVF Saint-Julien-l 10.11 233 *e*Pn **Pn 04 01 30.8 -2.0**
VIVF *e*Sg Sn 04 04 23.4 +57
FRF La Foret Royal 10.18 223 *e*Pn **Pn 04 01 34.2 +0.4**
FRF La Foret Royal 10.18 223 *e*P **Pn 04 01 34.2 +0.4**
FRF La Foret Royal 10.18 223 *e*Pn **Pn 04 01 34.2 +0.4**
FRF La Foret Royal 10.18 223 *e*Pn **Pn 04 01 34.2 +0.4**
CFR Carcaliu 10.19 124 ⇑ *i*P **Pn 04 01 33.0 -0.9**
NC204 NORSAR Array S 10.24 345 *e*Pn **Pn 04 01 32.4 -2.2**
LMR La Mourre 10.43 222 *e*Pn **Pn 04 01 36.9 -0.2**
LMR La Mourre 10.43 222 *e*P **Pn 04 01 36.9 -0.2**
LMR La Mourre 10.43 222 *e*Pn **Pn 04 01 36.9 -0.2**
LMR La Mourre 10.43 222 *e*Pn **Pn 04 01 36.9 -0.2**
TCF Toulx Ste Croi 10.52 246 *e*Pn **Pn 04 01 36.1 -2.3**
TCF *e*Sg Sn 04 04 36.6 +60
comp=Z,45nm,0.9s
TCF Toulx Ste Croi 10.52 246 *e*P **Pn 04 01 36.1 -2.3**
TCF Toulx Ste Croi 10.52 246 *e*Pn **Pn 04 01 36.1 -2.3**
TCF *e*Sg Sn 04 04 36.6 +60
LDF La Druitiere 10.83 261 *e*Pn **Pn 04 01 39.3 -3.3**
LDF *e*Sg 04 04 46.5
comp=Z,55nm,1.2s
LDF La Druitiere 10.83 261 *e*P **Pn 04 01 39.3 -3.3**
LDF La Druitiere 10.83 261 *e*Pn **Pn 04 01 39.3 -3.3**
LDF *e*Sg 04 04 46.5
FLN La Foliniere 10.99 262 *e*P **Pn 04 01 46.5 +1.7**
FLN pmax pmax
comp=Z,20nm,1.3s
FLN La Foliniere 10.99 262 *e*P **Pn 04 01 46.5 +1.7**
comp=Z,20nm,1.3s
LASF Ste Croix 11.08 233 *e*Pn **Pn 04 01 44.5 -1.5**
LASF *e*Sg 04 04 53.2
comp=Z,92nm,1.5s
LASF Ste Croix 11.08 233 *e*Pn **Pn 04 01 44.5 -1.5**
LASF Ste Croix 11.08 233 *e*Pn **Pn 04 01 44.5 -1.5**
LASF *e*Sg 04 04 53.2
GRR Gorron 11.36 261 *e*Pn **Pn 04 01 46.9 -3.0**
GRR *e*Sg 04 05 02.5
comp=Z,81nm,1.4s
GRR Gorron 11.36 261 *e*P **Pn 04 01 46.9 -3.0**
GRR Gorron 11.36 261 *e*Pn **Pn 04 01 46.9 -3.0**
GRR *e*Sg 04 05 02.5
FINES FINESS Array B 11.38 25 Pn **Pn 04 01 47.3 -2.8**
comp=Z,1.7nm,0.3s,baz=202,slow=11,SNR=38
FINES Sn **Sn 04 03 50.9 -6.9**
comp=Z,2.3nm,0.3s,baz=205,slow=19,SNR=7.6
FIA1 FINESS Array S 11.38 25 *e*Pn **Pn 04 01 48.0 -2.1**
CAF Calviac 11.43 240 *e*Pn **Pn 04 01 47.4 -3.5**
CAF *e*Sg 04 05 05.1
comp=Z,43nm,1.1s
CAF Calviac 11.43 240 *e*P **Pn 04 01 47.4 -3.5**
CAF Calviac 11.43 240 *e*Pn **Pn 04 01 47.4 -3.5**
CAF *e*Sg 04 05 05.1
RJF Les Rejaudoux 11.49 243 *e*Pn **Pn 04 01 48.5 -3.2**
RJF *e*Sg 04 05 06.6
comp=Z,54nm,1.1s
RJF Les Rejaudoux 11.49 243 *e*P **Pn 04 01 48.5 -3.2**
RJF Les Rejaudoux 11.49 243 *e*Pn **Pn 04 01 48.5 -3.2**
RJF *e*Sg 04 05 06.6
PUL Pulkovo 11.52 38 ‖ *e*P **Pn 04 01 51.1 -0.9**
PUL Pulkovo 11.52 38 *e*P **Pn 04 01 51.1 -0.9**
MFF Saint Martin d 11.73 252 *e*Pn **Pn 04 01 51.3 -3.6**
MFF *e*Sg 04 05 14.3
comp=Z,60nm,1.3s
MFF Saint Martin d 11.73 252 *e*P **Pn 04 01 51.3 -3.6**
MFF Saint Martin d 11.73 252 *e*Pn **Pn 04 01 51.3 -3.6**
MFF *e*Sg 04 05 14.3
VAF Ylistaro 12.11 14 P **Pn 04 02 00.2 +0.3**
VAF pmax pmax
comp=Z,27nm,0.7s
VAF Ylistaro 12.11 14 P **Pn 04 02 00.2 +0.3**
comp=Z,27nm,0.7s
EKA Eskdalemuir Ar 12.11 296 Pn **Pn 04 01 56.4 -3.7**
baz=100,slow=14,SNR=22
EKA Sn **Sn 04 04 12.3 -3.4**
baz=102,slow=26,SNR=3.2
ESK Eskdalemuir 12.13 296 *e*P **Pn 04 01 58.0 -2.4**
ESK Eskdalemuir 12.13 296 *e*Pn **Pn 04 01 58.0 -2.4**
LFF La Frestale 12.15 243 *e*Pn **Pn 04 01 57.2 -3.5**
LFF *e*Sg 04 05 27.2
comp=Z,40nm,1.0s
LFF La Frestale 12.15 243 *e*P **Pn 04 01 57.2 -3.5**
LFF La Frestale 12.15 243 *e*Pn **Pn 04 01 57.2 -3.5**
LFF *e*Sg 04 05 27.2
MTLF Montolieu 12.43 234 *e*Pn **Pn 04 02 01.2 -3.3**
MTLF *e*Sg 04 05 35.8
comp=Z,47nm,1.5s
MTLF Montolieu 12.43 234 *e*P **Pn 04 02 01.2 -3.3**
MTLF Montolieu 12.43 234 *e*Pn **Pn 04 02 01.2 -3.3**
MTLF *e*Sg 04 05 35.8
OBN Obninsk 12.75 65 Pn **Pn 04 02 04.7 -4.1**
comp=Z,7.5nm,0.3s,baz=259,slow=24,SNR=4.1
OBN Obninsk 12.75 65 ‖ *e*P **Pn 04 02 04.4 -4.4**
OBN *e*S **Sn 04 04 26.4 -5.0**
OBN pmax pmax
comp=Z,18nm,0.7s
OBN MLR MLR
comp=Z,53nm,13.0s
MOS Moscow 13.45 63 *e*P **P 04 02 27.7 -0.2**
JOF Joensuu 14.06 30 P **Pn 04 02 24.7 -1.9**
JOF pmax pmax
comp=Z,19nm,2.1s
LPSR Galich'ya Gora 14.08 77 *e*P Pn 04 02 21.3 -5.7
LPSR pmax pmax
comp=Z,20nm,0.7s
VSR Storozhevoye 14.40 82 *e*P Pn 04 02 25.2 -6.2
VSR pmax pmax
comp=Z,6.0nm,0.3s
KLMR Klimovskoe 15.97 45 *e*P Pn 04 02 42.1 -10
KLMR pmax pmax
comp=Z,6.0nm,0.8s
VRH Novokhopyorsk 15.99 81 *e*P Pn 04 02 45.1 -7.3
VRH pmax pmax
comp=Z,50nm,1.4s
VRH MLR MLR
comp=Z,1μm,25.0s
KEST Kesra 16.48 200 Pn **P 04 03 02.4 +0.5**
comp=Z,0.1nm,0.3s,baz=282,slow=8.8,SNR=5.4
BRTR Keskin Array B 16.95 127 Pn **P 04 03 08.0 +1.0**
comp=Z,0.0nm,0.3s,baz=314,slow=9.8,SNR=4.9
BRTR PcP **PcP 04 07 51.9 +0.4**
comp=Z,0.1nm,0.3s,baz=321,slow=1.7,SNR=4.7
BRTR Keskin Array B 16.95 127 *i*P **P 04 03 10.6 +3.6**
BRTR pmax pmax
comp=Z,1.0nm,1.0s
TMCR Tamitsa 17.12 34 *e*P **Pn 04 03 01.6 -5.2**
TMCR *e* 04 06 07.3
TMCR pmax pmax
comp=Z,42nm,1.1s
ESDC Sonseca Array 18.29 238 P **P 04 03 22.9 +1.3**
comp=Z,0.1nm,0.3s,baz=45,slow=11,SNR=5.6
ESDC Sonseca Array 18.29 238 P **P 04 03 23.0 +1.3**
ARCES ARCESS Array B 18.64 10 Pn **P 04 03 21.7 -3.7**
comp=Z,2.6nm,0.3s,baz=193,slow=12,SNR=48
KIV Kislovodsk 19.33 103 ‖ *e*P **Pn 04 03 35.6 +1.4**
KIV *e*S **S 04 07 13.0 +0.3**
KIV pmax pmax
comp=Z,2.0nm,0.5s
KIV MLR MLR
comp=Z,35nm,13.0s
KIV Kislovodsk 19.33 103 *e*P **Pn 04 03 35.6 +1.4**
comp=Z,35nm,13.0s
KIV *e*S **S 04 07 13.0 +0.3**
KBZ Khabaz 19.58 103 P **Pn 04 03 36.5 -0.5**
comp=Z,0.1nm,0.3s,baz=287,slow=10,SNR=3.7
NEY Neytrino 19.74 104 ‖ *e*P **Pn 04 03 38.7 -0.4**
NEY pmax pmax
comp=Z,1.0nm,1.2s
NEY Neytrino 19.74 104 *e*P **Pn 04 03 38.7 -0.4**
comp=Z,1.0nm,1.2s
NCK Nalchik 20.13 103 P Pn 04 03 44.1 +0.4
NCK pmax pmax
comp=Z,11nm,0.4s
NCK Nalchik 20.13 103 P Pn 04 03 44.1 +0.4
comp=Z,11nm,0.4s
ZEI Tsey 20.71 104 *e*P **P 04 03 48.1 -0.3**
ZEI pmax pmax
comp=Z,17nm,1.1s
ZEI Tsey 20.71 104 *e*P **P 04 03 48.1 -0.3**
comp=Z,17nm,1.1s
ARU Arti 25.15 62 P **P 04 04 32.1 -0.8**
comp=Z,5.1nm,0.3s,baz=266,slow=7.3,SNR=13
ARU Arti 25.15 62 *d i*P **P 04 04 31.9 -1.0**
ARU 04 05 03.7
ARU S **S 04 08 57.7 -0.9**
ARU pmax pmax
comp=Z,17nm,1.0s
ARU Arti 25.15 62 *e*P **P 04 04 32.7 -0.2**
comp=Z,14nm,0.8s
ARU S **S 04 08 57.7 -0.9**
ARU Arti 25.15 62 *e*P **P 04 04 32.7 -0.2**
comp=Z,14nm,0.8s
EIL Elat 25.93 140 P **P 04 04 40.4 +0.2**
comp=Z,7.0nm,1.1s,baz=354,slow=4.5,SNR=2.9
AKTK Aktyubinsk 26.16 76 P **P 04 04 42.2 0.0**
comp=Z,5.0nm,0.6s
AKTO Aktyubinsk 26.16 76 P **P 04 04 42.2 0.0**
comp=Z,4.9nm,0.6s,baz=282,slow=11,SNR=9.6
SPITS Spitsbergen Ar 26.80 0 P **P 04 04 49.0 +1.4**
comp=Z,1.4nm,0.5s,baz=151,slow=10,SNR=14
SPITS LR LR 04 16 26.3
comp=Z,77nm,20.3s,baz=315,slow=39
ABKAR Akbulak array 27.74 77 *e*P **P 04 04 56.0 -0.4**
comp=Z,2.2nm,0.6s
ABKAR Akbulak array 27.74 77 *e*P **P 04 04 56.0 -0.4**
comp=Z,2.2nm,0.6s
ZRNK Zerenda 31.83 66 *e*P **P 04 05 33.7 +1.1**
ZRNK pmax pmax
comp=Z,5.0nm,0.9s
ZRNK Zerenda 31.83 66 *e*P **P 04 05 33.7 +1.1**
comp=Z,4.7nm,0.9s
ZRNK Zerenda 31.83 66 *e*P **P 04 05 33.7 +1.1**
comp=Z,4.7nm,0.9s
GEYT Alibeck 32.32 98 P **P 04 05 39.2 +2.1**
comp=Z,1.1nm,0.3s,baz=308,slow=7.1,SNR=2.9
BRVK Borovoye 32.53 66 ‖ *e*P **P 04 05 39.7 +1.0**
BRVK pmax pmax
comp=Z,6.0nm,1.0s
BRVK Borovoye 32.53 66 *e*P **P 04 05 39.2 +0.5**
comp=Z,4.9nm,0.8s
BRVK Borovoye 32.53 66 *e*P **P 04 05 39.2 +0.5**
comp=Z,4.9nm,0.8s
BVAR Borovoye Array 32.60 66 P **P 04 05 40.5 +1.2**
comp=Z,2.7nm,0.5s,baz=293,slow=8.1,SNR=14
NRIK Noril'sk 36.85 34 P **P 04 06 17.5 +1.7**
comp=Z,1.4nm,0.3s,baz=322,slow=1.5,SNR=2.8
KKAR Karatay Array 37.07 81 *e*P **P 04 06 18.5 +0.4**
KKAR pmax pmax
comp=Z,2.0nm,0.8s

KKAR	Karatay Array	37.07	81	eP	P	04 06 18.5	+0.4
	comp=Z,2.0nm,0.8s						
KKAR	Karatay Array	37.07	81	eP	P	04 06 18.5	+0.4
	comp=Z,2.0nm,0.8s						
KURBB	Kurchatov Arra	38.19	66	P	P	04 06 27.7	+0.3
	comp=Z,3.9nm,1.0s,baz=297,slow=9.2,SNR=13						
KURK	Kurchatov	38.20	66	P	P	04 06 27.7	+0.3
KURK				pmax	pmax		
	comp=Z,2.0nm,0.7s						
KURK	Kurchatov	38.20	66	P	P	04 06 27.7	+0.3
	comp=Z,2.0nm,0.7s						
KURK	Kurchatov	38.20	66	P	P	04 06 27.7	+0.3
NVS	Novosibirsk	38.99	58	eP	P	04 06 34.6	+0.5
NVS	Novosibirsk	38.99	58	eP	P	04 06 34.6	+0.5
EKS2	Erkin-Say	39.32	80	eP	P	04 06 38.7	+1.5
EKS2				pmax	pmax		
	comp=Z,4.0nm,0.8s						
EKS2	Erkin-Say	39.32	80	eP	P	04 06 38.7	+1.5
	comp=Z,3.6nm,0.8s						
EKS2	Erkin-Say	39.32	80	eP	P	04 06 38.6	+1.5
	comp=Z,3.6nm,0.8s						
AAK	Ala-Archa	39.78	79	P	P	04 06 42.4	+1.4
	comp=Z,2.9nm,0.7s,baz=275,slow=5.6,SNR=9.3						
AAK	Ala-Archa	39.78	79	⇓eP	P	04 06 42.5	+1.5
AAK				pmax	pmax		
	comp=Z,24nm,1.4s						
AAK	Ala-Archa	39.78	79	eP	P	04 06 42.2	+1.2
	comp=Z,10nm,1.3s						
AAK	Ala-Archa	39.78	79	eP	P	04 06 42.2	+1.2
	comp=Z,10nm,1.3s						
TOA0	Torodi Ar. Sit	39.98	202	eP	P	04 06 43.0	+0.3
TOA0	Torodi Ar. Sit	39.98	202	eP	P	04 06 43.0	+0.3
TORD	Torodi Ar. Bea	39.98	202	P	P	04 06 43.1	+0.4
	comp=Z,4.6nm,1.0s,baz=8.2,slow=7.9,SNR=18						
ZAA0	Zalesovo Array	40.21	59	eP	P	04 06 45.2	+1.0
ZAA0	Zalesovo Array	40.21	59	eP	P	04 06 45.2	+1.0
ZALV	Zalesovo Beam	40.21	59	P	P	04 06 45.0	+0.8
	comp=Z,0.7nm,0.4s,baz=286,slow=11,SNR=6.5						
TKM2	Tokmak 2	40.30	78	eP	P	04 06 44.7	-0.7
TKM2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
TKM2	Tokmak 2	40.30	78	eP	P	04 06 44.7	-0.7
	comp=Z,0.9nm,0.5s						
TKM2	Tokmak 2	40.30	78	eP	P	04 06 44.7	-0.7
	comp=Z,0.9nm,0.5s						
MKAR	Makanchi Array	42.22	69	P	P	04 07 01.6	+0.6
	comp=Z,0.5nm,0.4s,baz=298,slow=7.8,SNR=9.2						
MK01	Makanchi Array	42.24	69	eP	P	04 07 01.6	+0.5
MK01	Makanchi Array	42.24	69	eP	P	04 07 01.6	+0.5
KSH	Kashi	42.49	82	P	P	04 07 05.1	+1.8
KSH				PcS	PcS	04 12 49.4	+1.3
KSH				S	S	04 13 27.1	+0.8
KSH				SS	SS	04 16 29.8	-5.2
KSH				pmax	pmax		
	comp=Z,80nm,4.6s						
KRAR	Krasnoyarsk	43.44	53	⇓eP	P	04 07 13.2	+2.6
KRAR				pmax	pmax		
	comp=Z,51nm,0.5s						
KRAR	Krasnoyarsk	43.44	53	eP	P	04 07 13.2	+2.6
	comp=Z,51nm,0.5s						
WMQ	Urumqi	47.05	70	eP	P	04 07 42.6	+3.1
WMQ				S	S	04 14 40.0	+7.8
WMQ	Urumqi	47.05	70	SS	SS	04 17 55.3	-3.2
WMQ				pmax	pmax		
	comp=Z,5.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,41nm,4.0s						
WMQ				LR	LR		
	comp=N,94nm,31.8s						
WMQ				LR	LR		
	comp=E,110nm,39.8s						
WMQ				LR	LR		
	comp=Z,28nm,39.8s						
SCHQ	Schefferville	47.07	308	P	P	04 07 39.5	0.0
	comp=Z,2.2nm,0.7s,baz=49,slow=5.5,SNR=6.3						
TIXI	Tiksi	48.42	23	P	P	04 07 51.1	+1.4
	comp=Z,0.8nm,0.4s,baz=342,slow=4.2,SNR=3.9						
TIXI	Tiksi	48.42	23	⇑eP	P	04 07 50.6	+0.9
TIXI				pmax	pmax		
	comp=Z,1.0nm,0.7s						
TIXI	Tiksi	48.42	23	eP	P	04 07 50.6	+0.9
	comp=Z,1.0nm,0.7s						
TLY	Talaya	51.14	53	P	P	04 08 13.6	+2.8
	comp=Z,1.4nm,0.6s,baz=310,slow=7.9,SNR=3.1						
SONA1	Songino Array	54.92	55	eP	P	04 08 40.2	+1.4
SONA1	Songino Array	54.92	55	eP	P	04 08 40.2	+1.4
SONM	Songino Array	54.93	55	P	P	04 08 40.4	+1.5
	comp=Z,1.9nm,0.8s,baz=288,slow=10.0,SNR=9.5						
ULN	Ulaanbaatar	55.25	55	iP	P	04 08 42.3	+1.1
ULN				pmax	pmax		
	comp=Z,4.0nm,1.7s						
ULN	Ulaanbaatar	55.25	55	iP	P	04 08 42.3	+1.1
	comp=Z,4.0nm,1.7s						
BILL	Bilibino	58.72	13	⇑eP	P	04 09 06.1	+0.8
BILL				pmax	pmax		
	comp=Z,6.0nm,1.5s						
BILL	Bilibino	58.72	13	eP	P	04 09 06.1	+0.8
	comp=Z,6.0nm,1.5s						
YKW3	Yellowknife Ar	59.82	336	eP	P	04 09 14.1	+1.1
	comp=Z,6.8nm,1.3s						
YKW3	Yellowknife Ar	59.82	336	eP	P	04 09 14.1	+1.1
	comp=Z,6.8nm,1.3s						
YKA	Yellowknife Ar	59.87	336	P	P	04 09 14.1	+0.8
	comp=Z,1.6nm,0.5s,baz=27,slow=7.0,SNR=52						
YKB5	Yellowknife Ar	59.87	336	eP	P	04 09 12.9	-0.4
YKB5	Yellowknife Ar	59.87	336	eP	P	04 09 12.9	-0.4
LZH	Lanzhou	61.47	67	eP	P	04 09 22.1	-2.7
LZH				pP	P	04 09 23.8	-1.0
LZH				sP	P	04 09 24.5	-0.3
LZH				ePP	PP	04 11 39.0	-0.7
LZH				pmax	pmax		
	comp=Z,21nm,1.3s						
LZH				pmax	pmax		
	comp=Z,45nm,7.5s						
LZH				LR	LR		
	comp=N,180nm,16.5s						
LZH				LR	LR		
	comp=E,190nm,16.2s						
LZH				LR	LR		
	comp=Z,250nm,18.8s						
HHC	Hu-ho-hao-te	62.39	58	eP	P	04 09 33.8	+2.9
HHC				pmax	pmax		
	comp=Z,32nm,1.2s						
HHC				pmax	pmax		
	comp=Z,110nm,7.1s						
ILAR	Eielson Array	63.33	352	P	P	04 09 37.5	+0.8
	comp=Z,0.3nm,0.6s,baz=354,slow=4.6,SNR=5.4						
ULM	Lac du Bonnet	63.37	318	LR	LR	04 37 09.4	
	comp=Z,671nm,21.1s,baz=219,slow=36						
CD2	Chengdu	65.11	71	P	P	04 09 48.5	-0.4
CD2				pmax	pmax		
	comp=Z,1.0nm,0.6s						
KLR	Kul'dur	65.67	40	P	P	04 09 52.5	+0.3
	comp=Z,3.3nm,1.0s,baz=259,slow=7.0,SNR=4.8						
KLR				LR	LR	04 41 02.3	
	comp=Z,454nm,22.0s,baz=150,slow=38						
KMI	Kunming	68.73	76	P	P	04 10 10.5	-1.7
KMI				pmax	pmax		
	comp=Z,5.0nm,2.0s						
ECSD	EROS Data Cent	68.74	314	eP	P	04 10 12.9	+1.1
	comp=Z,9.2nm,1.4s						
ECSD	EROS Data Cent	68.74	314	eP	P	04 10 12.9	+1.1
	comp=Z,9.2nm,1.4s						
LAO	LASA Array	70.37	322	eP	P	04 10 22.9	+1.0
	comp=Z,22nm,1.5s						
LAO	LASA Array	70.37	322	eP	P	04 10 22.9	+1.0
	comp=Z,22nm,1.5s						
EGMT	Eagleton	70.57	325	eP	P	04 10 24.8	+1.7
	comp=Z,33nm,1.6s						
EGMT	Eagleton	70.57	325	eP	P	04 10 24.8	+1.7
	comp=Z,33nm,1.6s						
CMAR	Chiang Mai Arr	71.36	84	P	P	04 10 29.1	+0.9
	comp=Z,1.5nm,0.4s,baz=311,slow=6.4,SNR=8.7						
SWMT	Swartz Lake	72.50	327	eP	P	04 10 35.3	+0.5
SWMT	Swartz Lake	72.50	327	eP	P	04 10 35.3	+0.5
NJ2	Nanjing	72.84	60	eP	P	04 10 35.3	-1.6
NJ2				pmax	pmax		
	comp=Z,12nm,0.5s						
MSO	Missoula	73.07	327	eP	P	04 10 39.8	+1.7
	comp=Z,3.8nm,1.0s						
MSO	Missoula	73.07	327	eP	P	04 10 39.9	+1.7
	comp=Z,3.8nm,1.0s						
BOZ	Bozeman (W)	73.27	325	eP	P	04 10 39.5	+0.1
BOZ				pmax	pmax		
	comp=Z,4.0nm,1.0s						
BOZ	Bozeman (W)	73.27	325	eP	P	04 10 39.5	+0.1
	comp=Z,3.7nm,1.0s						
BOZ	Bozeman (W)	73.27	325	eP	P	04 10 39.5	+0.1
	comp=Z,3.7nm,1.0s						
H17A	Grant Village	73.95	323	eP	P	04 10 47.1	+3.5
	comp=Z,11nm,1.4s						
IMW	Indian Meadow	74.52	323	eP	P	04 10 49.6	+2.7
	comp=Z,2.4nm,0.8s						
IMW	Indian Meadow	74.52	323	eP	P	04 10 49.6	+2.7
	comp=Z,2.4nm,0.8s						
MOOW	Moose Ponds	74.57	323	eP	P	04 10 49.5	+2.3
	comp=Z,9.9nm,1.6s						
MOOW	Moose Ponds	74.57	323	eP	P	04 10 49.5	+2.3
	comp=Z,9.9nm,1.6s						
LOHW	Long Hollow	74.63	323	eP	P	04 10 49.9	+2.4
	comp=Z,3.2nm,1.0s						
LOHW	Long Hollow	74.63	323	eP	P	04 10 49.9	+2.4
	comp=Z,3.2nm,1.0s						
FXWY	Fox Creek	74.77	323	eP	P	04 10 50.8	+2.4
	comp=Z,3.9nm,1.1s						
FXWY	Fox Creek	74.77	323	eP	P	04 10 50.8	+2.4
	comp=Z,3.9nm,1.1s						
BW06	Boulder Array	74.95	322	eP	P	04 10 50.0	+0.6
BW06	Boulder Array	74.95	322	eP	P	04 10 50.0	+0.6
PD31	Pinedale Array	74.95	322	eP	P	04 10 50.8	+1.4
PD31	Pinedale Array	74.95	322	eP	P	04 10 50.8	+1.4
PDAR	Pinedale Array	74.95	322	P	P	04 10 50.4	+1.0
	comp=Z,0.9nm,0.5s,baz=41,slow=6.2,SNR=12						
BMO	Blue Mountains	75.94	328	eP	P	04 10 56.3	+1.4
	comp=Z,22nm,1.6s						
BMO	Blue Mountains	75.94	328	eP	P	04 10 56.3	+1.4
	comp=Z,22nm,1.6s						
HLID	Hailey	76.07	325	eP	P	04 10 57.7	+1.9
	comp=Z,2.9nm,0.9s						
HLID	Hailey	76.07	325	eP	P	04 10 57.7	+1.9
	comp=Z,2.9nm,0.9s						
O20A	White River Ci	76.66	319	eP	P	04 11 01.0	+1.8
	comp=Z,18nm,1.5s						
O20A	White River Ci	76.66	319	eP	P	04 11 01.0	+1.8
	comp=Z,18nm,1.5s						
HWUT	Hardware Ranch	76.72	322	eP	P	04 11 00.2	+0.8
	comp=Z,6.7nm,1.3s						
HWUT	Hardware Ranch	76.72	322	eP	P	04 11 00.2	+0.8
	comp=Z,6.7nm,1.3s						
TCUT	Toone Canyon	77.08	322	eP	P	04 11 04.3	+2.7
	comp=Z,15nm,1.3s						
TCUT	Toone Canyon	77.08	322	eP	P	04 11 04.3	+2.7
	comp=Z,15nm,1.3s						
QIZ	Qiongzhong	77.62	75	P	P	04 11 05.5	+0.9
QIZ				S	S	04 20 58.0	+0.6
QIZ				LR	LR		
	comp=N,110nm,24.5s						
QIZ				LR	LR		
	comp=E,170nm,26.1s						
BGU	Big Grassy Mou	77.86	323	eP	P	04 11 08.2	+2.3
	comp=E,17nm,1.5s						
BGU	Big Grassy Mou	77.86	323	eP	P	04 11 08.2	+2.3
	comp=E,17nm,1.5s						
P18A	Preston Nutter	77.90	320	eP	P	04 11 08.0	+1.7
	comp=E,5.4nm,1.1s						
P18A	Preston Nutter	77.90	320	eP	P	04 11 08.0	+1.7
	comp=E,5.4nm,1.1s						
NLU	North Lily Min	78.34	322	eP	P	04 11 11.4	+2.8
	comp=E,7.2nm,1.3s						
NLU	North Lily Min	78.34	322	eP	P	04 11 11.4	+2.8
	comp=E,7.2nm,1.3s						
DUG	Dugway, Tooele	78.41	323	eP	P	04 11 10.1	+1.2
DUG				pmax	pmax		
	comp=Z,4.0nm,0.8s						
DUG	Dugway, Tooele	78.41	323	eP	P	04 11 10.1	+1.2
	comp=Z,4.1nm,0.8s						
DUG	Dugway, Tooele	78.41	323	eP	P	04 11 10.1	+1.2
	comp=Z,4.1nm,0.8s						
SRU	San Rafael Swe	78.45	320	eP	P	04 11 10.7	+1.5
SRU				pmax	pmax		
	comp=Z,8.0nm,1.4s						
SRU	San Rafael Swe	78.45	320	eP	P	04 11 10.7	+1.5
	comp=Z,8.2nm,1.4s						
SRU	San Rafael Swe	78.45	320	eP	P	04 11 10.7	+1.5
	comp=Z,8.2nm,1.4s						
BOSA	Boshof	80.16	172	P	P	04 11 19.2	+0.9
	comp=Z,2.1nm,0.8s,baz=334,slow=6.1,SNR=3.7						
PSUT	Pine Spring	80.25	322	eP	P	04 11 22.0	+3.0
	comp=Z,3.9nm,1.1s						
PSUT	Pine Spring	80.25	322	eP	P	04 11 22.1	+3.0
	comp=Z,3.9nm,1.1s						
ANMO	Albuquerque	80.29	315	eP	P	04 11 22.6	+3.3
ANMO				pmax	pmax		
	comp=Z,8.0nm,1.7s						
ANMO	Albuquerque	80.29	315	eP	P	04 11 22.6	+3.3
	comp=Z,8.4nm,1.7s						
NVAR	Mina Array Bea	81.98	325	P	P	04 11 31.0	+2.7
	comp=Z,0.7nm,0.8s,baz=26,slow=3.1,SNR=4.0						
TX31	Lajitas Ar. Si	83.72	310	eP	P	04 11 38.8	+1.5
TX31	Lajitas Ar. Si	83.72	310	eP	P	04 11 38.8	+1.5
TXAR	Lajitas Array	83.72	310	P	P	04 11 38.8	+1.4
	comp=Z,0.6nm,0.5s,baz=64,slow=3.6,SNR=10						
ASAR	Alice Springs	125.37	84	PKP	PKPdf	04 18 09.2	0.0
	comp=Z,0.5nm,0.6s,baz=5.5,slow=2.3,SNR=4.7						
VNDA	Vanda	150.95	165	PKPbc	PKPbc	04 18 59.9	+0.5
	comp=Z,0.5nm,0.8s,baz=124,slow=0.6,SNR=3.4						

*IASPEI **13** 04:09:05.5±1.0, 32°.67N×0°.03×115°.82W±0°.02, h12km±7km, Error ellipse: s-maj=4.9km s-min=3.2km az=175.7, GT5 selection from ISC bulletin GT5 identified by Bond˘¡r and McLaughlin (2009) selection criteria Bond˘¡r and McLaughlin, A new ground truth data set for seismic studies, Seism. Res. Let., 80, 465-472, 2009*

*ECX **13** 04:09:06.5±0.7, 32°.66N×115°.79W, h4km, MD2.7, ML2.9*

*NEIC **13** 04:09:06.2, 32°.65N×115°.80W, h4km, ML2.7(PAS), After PAS.*

*MEX **13** 04:09:06.8±0.7, 32°.81N×115°.75W, h17km±999km, MD3.4*

ISC 13 04:09:06.0±0.9, 32°.64N±0°.03×115°.81W±0°.02, h10km±7km, n29, σ0°79/43, 6C-6D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SGL	Mount Signal	0.07	84	⇑iP	Pg	04 09 07.4	-0.9
YUH	Yuha Desert	0.09	274	iP	Pg	04 09 08.5	-0.1
WESC	Westside Schoo	0.14	30	eP	Pg	04 09 08.7	-0.5
ERPC	Ernies Place	0.16	51	⇑iP	Pg	04 09 09.4	-0.2
COK	Cook Ranch	0.22	19	⇓iP	Pg	04 09 10.5	-0.1
RMX	La Rumorosa	0.23	260	⇑eP	Pg	04 09 10.6	-0.2
RMX				eS	Sg	04 09 14.5	+0.4
IKP	In-Ko-Pah, Jac	0.25	272	⇑eP	Pg	04 09 11.5	+0.3
CRR	Carrizo Plain	0.28	332	⇓iP	Pg	04 09 11.5	-0.1
SWSC	Sam W. Stewart	0.30	2	⇓iP	Pg	04 09 11.7	-0.5
DREC	Desert Rsrch C	0.35	62	eP	Pg	04 09 13.0	0.0
CPBX	Cerro Prieto	0.48	117	eP	Pg	04 09 16.3	+0.8
CPBX				eS	Sb	04 09 24.2	+0.4
CPBX	Cerro Prieto	0.48	117	eP	Pg	04 09 15.3	-0.1
CPBX				eS	Sg	04 09 21.9	0.0
CPBX				⇓e		04 09 25.1	
CPBX				AML	AML	04 09 25.1	
	comp=E,3μm,0.7s						
CPBX				⇓e		04 09 28.2	
CPBX				AML	AML	04 09 28.2	
	comp=N,3μm,0.2s						
MBIG	Mexicali	0.57	114	eP	Pg	04 09 16.8	-0.3
MBIG				eS	Sg	04 09 25.1	+0.5
BAR	Barrett	0.73	273	⇑eP	Pg	04 09 19.9	-0.1
TJIG	Tijuana	0.76	254	iP	Pg	04 09 20.5	-0.2
TJIG				eS	Sg	04 09 30.6	0.0
TJIG	Tijuana	0.76	254	eP	Pg	04 09 20.3	-0.4
CBX	Cerro Bola	0.79	246	iP	Pg	04 09 21.3	0.0
CBX				iS	Sg	04 09 32.2	+0.5
CBX	Cerro Bola	0.79	246	iP	Pg	04 09 21.3	0.0
CBX				iS	Sg	04 09 32.2	+0.5
CBX	Cerro Bola	0.79	246	⇑eP	Pg	04 09 21.4	+0.1
CBX				eS	Sg	04 09 32.0	+0.4
SDRC	San Diego Road	0.96	276	eP	Pg	04 09 23.9	-0.6
PFO	Pinyon Flats O	1.11	331	ePg	Pg	04 09 26.1	-1.3
PFO				eSg	Sg	04 09 39.5	-2.4
PBX	Punta Banda	1.18	221	eP	Pg	04 09 27.4	-1.4
ECNX	Esteban Cantu	1.19	214	eP	Pg	04 09 27.8	-1.1
ZAX	El Zacaton	1.19	199	eP	Pg	04 09 27.6	-1.3
ZAX				eS	Sg	04 09 43.7	-0.6
ZAX				AML	AML	04 09 51.2	
	comp=E,343nm,0.6s						
ZAX				⇓e		04 09 51.2	
SPIG	San Pedro Mart	1.62	169	eP	Pn	04 09 34.5	-0.4
SPIG				eS	Sn	04 09 55.0	-1.0
SPIG	San Pedro Mart	1.62	169	eP	Pn	04 09 34.5	-0.4
SPIG				eS	Sn	04 09 55.0	-1.0
SPX	San Pedro Mart	1.62	169	eP	Pn	04 09 34.7	-0.3
SPX				eS	Sn	04 09 57.3	+1.3
PASC	Pasadena Art C	2.50	308	ePn	Pn	04 09 48.3	+1.4
214A	Organ Pipe Nat	2.63	104	ePn	Pn	04 09 47.9	-0.7
214A				ePg	Pb	04 09 54.2	+0.9

IDC 13 04:17:24.4±349.0, 45°.53S×64°.72W, h0km, Error ellipse: s-maj=189.0km s-min=163.4km az=59.0, South Atlantic Ocean

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I02AR	USHUAIA INFRAS	9.21	189	i		05 09 10.0	
	baz=12,slow=318,SNR=0.7						
I41PY	VILLA FLORIDA	20.05	20	i		06 23 00.0	
	baz=193,slow=323,SNR=0.8						
I27DE	GEORG VON NEUM	36.86	153	i		08 07 10.0	
	baz=285,slow=342,SNR=0.3						

*KRNET **13** 04:21:12.9±0.1, 43°.08N×80°.25E, h15km, mb2.7*

*NNC **13** 04:21:13.9±2.0, 43°.14N×80°.19E, h6km±11km, mb3.5, mpv3.1, Error ellipse: s-maj=17.4km s-min=12.5km az=150.0*

*SOME **13** 04:21:14.4, 43°.10N×80°.25E, h15km*

ISC 13 04:21:15.3±1.4, 43°.19N±0°.04×80°.17E±0°.05, h11km±8km, n37, σ1°68/69, 23C-18D, Kazakhstan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHLS	Shalkode	0.21	261	⇓iP	Pg	04 21 20.1	+0.2
	430nm,0.2s						
SHLS				⇑iS	Sg	04 21 25.0	+2.0
	1μm,0.4s						
KTMS	Ketmen	0.29	28	eP	Pb	04 21 21.6	-1.1
	99nm,0.1s						
KTMS				eS	Sb	04 21 26.7	-0.8
	684nm,0.2s						
PDGK	Podgornoye	0.52	286	⇑eP	Pg	04 21 25.2	-0.2
	baz=295						
PDGK				⇑eS	Sb	04 21 33.8	-0.1
	baz=295						
PDGK	Podgornoye	0.52	286	⇑P	Pg	04 21 25.1	-0.2
	10nm,0.2s						
PDGK				⇑S	Sb	04 21 33.5	-0.5
	150nm,0.4s						
UZB	Uzynbulak	0.84	267	eP	Pg	04 21 30.2	-1.3
	23nm,0.1s						
UZB				eS	Sg	04 21 42.5	0.0
	332nm,0.1s						
KPKS	Kokpek	1.12	285	eP	Pb	04 21 35.4	-1.3
	130nm,0.3s						
DJR	Jarkent	1.17	347	eP	Pn	04 21 37.5	-0.3
	37nm,0.3s						
DJR				eS	Sn	04 21 54.9	+1.0
	314nm,0.3s						
ZHN	Zhinishke	1.27	270	eP	Pn	04 21 38.1	-1.0
	98nm,0.3s						
ZHN				eS	Sb	04 21 55.1	-0.6
	506nm,0.2s						
SATY	Saty	1.30	265	⇑iP	Pn	04 21 38.6	-0.9
	196nm,0.1s						
SATY				⇑iS	Sb	04 21 56.7	+0.2
	531nm,0.1s						
PRZ	Przheval'sk	1.48	242	⇑eP	Pn	04 21 41.3	-0.8
	baz=247						
PRZ				⇑eS	Sb	04 22 02.3	+0.5
	baz=247						
KURS	Kuram	1.49	282	⇑eP	Pb	04 21 42.6	-0.4
	20nm,0.3s						
KURS				⇓eS	Sg	04 22 03.2	+0.1
	52nm,0.5s						
MNBS	Baschi	1.56	305	eP	Pn	04 21 42.4	-0.7
	21nm,0.3s						
MNBS				eS	Sn	04 22 02.5	-1.0
	1μm,0.5s						
ANVS	Anan'yevo	1.88	258	⇓eP	Pb	04 21 48.5	-1.3
	baz=262						
ANVS				⇓eS	Sb	04 22 14.4	+1.0
	baz=262						
ARXS	Arharly	1.98	302	eP	Pg	04 21 52.2	-1.1
	20nm,0.4s						
ARXS				eS	Sg	04 22 19.0	0.0
	148nm,0.4s						
KAPS	Kapalarasan	2.17	345	eP	Pb	04 21 54.7	-0.1
	18nm,0.3s						
KAPS				eS	Sb	04 22 22.4	+0.7
	97nm,0.4s						
TDK	Taldyqorghan	2.22	326	eP	Pb	04 21 55.1	-0.3
	37nm,0.2s						
TDK				eS	Sg	04 22 25.3	-1.2
	152nm,0.4s						
KOTS	Kotyrbulak	2.23	272	eP	Pb	04 21 54.0	-1.8
KOTS				eS	Sb	04 22 22.0	-1.6
MDOK	Medeo	2.28	270	eP	Pb	04 21 54.5	-2.1
	12nm,0.4s						
MDOK				eS	Sb	04 22 25.0	+0.1
	54nm,0.4s						
KNDC	Almaty	2.34	272	⇓Pn	Pn	04 21 50.7	-3.2
	22nm,0.4s						
KNDC				⇓Lg	Lg	04 22 28.9	
	68nm,0.6s						
TNSS	Tian-Shan	2.37	268	eP	Pb	04 21 58.6	+0.4
	19nm,0.5s						
TNSS				eS	Sg	04 22 31.0	-0.3
	22nm,0.5s						
CHKK	Chushkaly	2.40	288	eP	Pb	04 21 58.2	-0.4
	7.6nm,0.3s						
CHKK				⇓iS	Sb	04 22 29.7	+1.4
	90nm,0.3s						
KDJ	Kajisay	2.44	245	⇓eP	Pn	04 21 55.9	+0.5
	baz=248						
KDJ				⇓eS	Sb	04 22 28.7	-0.9
	baz=248						
IZV	Izvestkoviy	2.61	268	eP	Pb	04 22 01.9	-0.3
	16nm,0.5s						
IZV				eS	Sb	04 22 35.7	+1.4
	104nm,0.7s						
MTBS	Maitube	2.74	270	eP	Pb	04 22 03.4	-0.9
	6.1nm,0.3s						
MTBS				⇑iS	Sb	04 22 38.7	+0.8
	60nm,0.4s						
KUU	Kurty	2.87	285	eP	Pb	04 22 06.2	-0.4
	10nm,0.2s						
KUU				eS	Sb	04 22 43.0	+1.2
	53nm,0.2s						
ULHL	Ulahol	3.04	253	⇑iP	Pb	04 22 07.1	-2.5
	baz=255						
ULHL				⇑iS	Sb	04 22 46.7	-0.2
	baz=255						
KST	Kastek	3.08	269	⇑iP	Pb	04 22 09.2	-1.1
	2.8nm,0.4s						
KST				eS	Sb	04 22 49.1	+1.2
	30nm,0.5s						
BOOM	Boomskoye usch	3.19	259	⇓eP	Pn	04 22 06.6	+1.0
	baz=261						
BOOM				⇓eS	Sn	04 22 46.4	+2.7
	baz=261						
DGS	Degeres	3.

1.5nm,0.3s
MK31 **Makanchi Array** 3.91 22 ⇑Pn Pn 04 22 16.1 +0.8
1.2nm,0.3s,baz=199,slow=13,SNR=46
MK31 ⇑Sn Sn 04 23 01.9 +0.8
0.5nm,0.2s,baz=198,slow=27,SNR=4.5
MK31 ⇓Lg Lg 04 23 19.3
4.8nm,0.6s,baz=204,slow=27,SNR=4.0
AAK **Ala-Archa** 4.20 264 ⇓Pg Pb 04 22 31.0 +1.6
2.7nm,0.7s
AAK ⇓Lg Lg 04 23 25.5
9.4nm,0.9s
MRKS **Merke** 5.11 267 *eS* Sb 04 23 52.5 +6.2
4.9nm,0.3s

MEX 13 04:28:28.7±0.7, 30.°64N×105.°36W, h16km±43km, MD3.9, Texas-Mexico border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CGIG		**2.27**	**264**	*eP*	Pn	04 29 03.0	-2.8
CGIG				*eS*	Sn	04 29 28.6	-5.0
319A	**Douglas**	**3.44**	**283**	*eP*	Pn	04 29 19.3	-2.5
319A				*eS*	Sn	04 29 59.6	-2.8

GUC 13 04:31:18.0±0.3, 23.°99S×67.°68W, h230km±11km, ML4.0, 4C-1D, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB06	**IPOC Station P**	**2.16**	**306**	⇑*iP*	Pn	04 32 02.2	+1.5
PB06				*i* S	S	04 32 35.7	+1.7
PB06				IAML		04 32 38.3	
	comp=E,334nm,0.1s						
PB09	**IPOC Station P**	**2.62**	**326**	⇓*iP*	Pn	04 32 07.3	+1.9
PB09				*i* S	S	04 32 44.8	+2.3
PB09				IAML		04 32 47.2	
	comp=N,302nm,0.3s						
PB04	**IPOC Station P**	**2.81**	**305**	*eP*	Pn	04 32 09.5	+2.0
PB04				*i* S	S	04 32 48.7	+2.5
PB04				IAML		04 32 52.2	
	comp=N,214nm,0.3s						
PB07	**IPOC Station P**	**3.04**	**317**	⇑*iP*	Pn	04 32 11.9	+1.8
PB07				*i* S	S	04 32 53.1	+2.4
PB07				IAML		04 32 55.0	
	comp=N,167nm,0.3s						
PB08	**IPOC Station P**	**4.07**	**340**	⇑*iP*	Pn	04 32 23.6	+1.3
PB08				*i* S	S	04 33 14.4	+1.5
MNMC	**Minye Minye**	**5.16**	**339**	⇑*iP*	Pn	04 32 36.2	+0.7
MNMC				*i* S	S	04 33 38.7	+1.8

GUC 13 04:38:49.6±0.6, 21.°97S×67.°87W, h210km±7km, ML3.5, 2C-5D, Chile-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB09	**IPOC Station P**	**1.29**	**278**	⇓*iP*	Pn	04 39 23.9	+1.1
PB09				*i* S	S	04 39 50.0	+1.8
PB06	**IPOC Station P**	**1.74**	**245**	⇑*iP*	Pn	04 39 27.4	+0.8
PB06				*i* S	S	04 39 56.8	+1.7
PB06				IAML		04 39 58.2	
	comp=E,237nm,0.1s						
PB01	**IPOC Station P**	**1.77**	**301**	⇓*iP*	Pn	04 39 27.9	+1.1
PB01				*i* S	S	04 39 57.2	+1.9
PB01				IAML		04 39 58.5	
	comp=E,374nm,0.3s						
PB07	**IPOC Station P**	**1.89**	**277**	⇓*iP*	Pn	04 39 29.7	+1.7
PB07				*i* S	S	04 39 59.8	+2.2
PB04	**IPOC Station P**	**2.15**	**260**	⇑*iP*	Pn	04 39 32.2	+1.6
PB04				*i* S	S	04 40 04.0	+1.9
PB04				IAML		04 40 06.1	
	comp=N,200nm,0.1s						
PB08	**IPOC Station P**	**2.18**	**326**	⇓*iP*	Pn	04 39 32.9	+1.6
PB08				*i* S	S	04 40 05.4	+2.2
PB08				IAML		04 40 06.2	
	comp=N,69nm,0.6s						
PATCX	**Punta Patache**	**2.42**	**298**	*eP*	Pn	04 39 35.2	+1.8
PATCX				*i* S	S	04 40 09.3	+2.2
MNMC	**Minye Minye**	**3.26**	**330**	⇓*iP*	Pn	04 39 44.5	+1.3
MNMC				*i* S	S	04 40 26.3	+1.7

*JMA **13** 04:40:38.3±0.1, 39.°53N×142.°62E, h27km±1km, M3.8*
*IDC **13** 04:40:39.0±0.9, 40.°00N×142.°40E, h0km, mb3.7/10, mb1 3.9/11, mb1mx3.7/36, mbtmp3.7/11, ML3.6/1, Error ellipse: s-maj=25.3km s-min=18.9km az=91.0*
ISC 13 04:40:35.9±2.4, 39.°50N±0.°05×142.°60E±0.°09, h1km±14km, n27, σ0.°48/23, mb3.8/10, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**0.61**	**277**	P	**Pb**	**04 40 50.3**	**+0.9**
MIYJ				S	**Sb**	**04 40 58.7**	**+0.2**
JTH	**Tanohata**	**0.72**	**308**	P	**Pb**	**04 40 51.8**	**+0.5**
OFUJ	**Ofunato**	**0.84**	**240**	P	**Pb**	**04 40 54.0**	**+0.7**
OFUJ				S	**Sb**	**04 41 05.3**	**+0.2**
JOM	**Ohasama**	**1.01**	**269**	P	**Pn**	**04 40 57.1**	**-0.3**
JOM				S	**Sb**	**04 41 10.4**	**+0.2**
JKZ	**Kuzumaki**	**1.09**	**297**	P	**Pn**	**04 40 58.2**	**-0.3**
JKZ				S	**Sb**	**04 41 12.2**	**-0.3**
JMK	**Ichinoseki**	**1.21**	**243**	P	**Pn**	**04 41 00.1**	**+0.1**
JMK				S	**Sb**	**04 41 15.7**	**0.0**
JANG	**Nango**	**1.21**	**317**	P	**Pg**	**04 40 59.1**	**0.0**
JANG				S	**Sb**	**04 41 15.8**	**+0.1**
JIO	**Ouri**	**1.43**	**223**	P	**Pn**	**04 41 02.9**	**-0.2**
JIO				S	**Sg**	**04 41 21.0**	**-0.9**
MAT	**Matsushiro**	**4.56**	**231**	P	Pn	04 41 50.3	+4.2
MAT				S	Sn	04 42 26.7	-13
MJAR	**Matsushiro Arr**	**4.56**	**231**	Pn	Pn	04 41 50.0	+3.9
	2.7nm,0.3s,baz=37,slow=12,SNR=33						
KSRS	**Korea Array**	**11.69**	**265**	Pn	Pn	04 43 30.2	+6.3
	0.4nm,0.3s,baz=76,slow=14,SNR=2.7						
SONM	**Songino Array**	**27.28**	**300**	P	**P**	**04 46 21.0**	**-0.9**
	0.4nm,0.4s,baz=106,slow=9.3,SNR=2.3						
H11N2	**WAKE ISLAND Hy 28.73**	**126**		T	T	05 17 07.3	
	baz=318,slow=75,SNR=48						
H11N1	**WAKE ISLAND Hy 28.74**	**126**		T	T	05 17 07.7	
	baz=318,slow=75,SNR=30						
H11N3	**WAKE ISLAND Hy 28.75**	**126**		T	T	05 17 06.3	
	baz=318,slow=75,SNR=23						
H11S1	**WAKE ISLAND Hy 29.53**	**128**		T	T	05 18 06.3	
	baz=320,slow=76,SNR=8.5						
H11S3	**WAKE ISLAND Hy 29.53**	**128**		T	T	05 18 05.2	
	baz=320,slow=76,SNR=14						
H11S2	**WAKE ISLAND Hy 29.55**	**128**		T	T	05 18 04.6	
	baz=320,slow=76,SNR=14						
ZALV	**Zalesovo Beam**	**40.99**	**310**	P	**P**	**04 48 20.1**	**-0.2**
	0.9nm,0.4s,baz=99,slow=9.1,SNR=2.5						
MKAR	**Makanchi Array**	**43.65**	**300**	P	**P**	**04 48 42.0**	**0.0**
	0.5nm,0.6s,baz=89,slow=11,SNR=5.2						
KURBB	**Kurchatov Arra**	**45.26**	**306**	P	**P**	**04 48 54.9**	**0.0**
	2.0nm,0.5s,baz=80,slow=8.7,SNR=13						
ILAR	**Eielson Array**	**46.92**	**34**	P	**P**	**04 49 07.9**	**+0.2**
	0.5nm,0.7s,baz=273,slow=6.4,SNR=7.1						
WRA	**Warramunga Arr**	**59.64**	**189**	P	P	04 50 48.1	+6.3
	1.3nm,0.8s,baz=7.1,slow=7.0,SNR=7.2						
YKA	**Yellowknife Ar**	**61.21**	**31**	P	**P**	**04 50 52.2**	**+0.1**
	0.2nm,0.6s,baz=301,slow=6.2,SNR=4.7						
ASAR	**Alice Springs**	**63.36**	**189**	P	P	04 51 13.6	+6.7
	0.5nm,0.8s,baz=9.8,slow=5.0,SNR=3.5						
FINES	**FINESS Array B**	**67.07**	**332**	P	**P**	**04 51 31.1**	**+0.6**
	0.6nm,0.6s,baz=66,slow=6.8,SNR=2.7						
NOA	**NORSAR Array B**	**72.27**	**337**	P	**P**	**04 52 02.2**	**-0.5**
	0.4nm,0.7s,baz=23,slow=2.5,SNR=3.2						

*IDC **13** 04:41:29.4±0.9, 36.°16N×142.°74E, h0km, mb3.8/10, mb1 3.9/12, mb1mx3.8/37, mbtmp3.8/12, ML3.7/2, Error ellipse: s-maj=23.1km s-min=19.4km az=153.0*
*ISCJB **13** 04:41:31.3±0.6, 36.°31N±0.°06×142.°61E±0.°05, h18km, mb3.9/13, Error ellipse: s-maj=9.3km s-min=4.9km az=150.9*
*NEIC **13** 04:41:32.0±3.9, 36.°06N×142.°71E, h21km±27km, mb4.2/3, Error ellipse: s-maj=13.8km s-min=10.4km az=61.0*
*JMA **13** 04:41:33.4±0.2, 36.°37N×142.°50E, h23km, M4.0*
ISC 13 04:41:32.5±0.7, 36.°25N±0.°06×142.°61E±0.°06, h18km, n32, σ1.°18/40, mb4.0/13, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.52**	**250**	P	**Pn**	**04 41 59.2**	**+0.4**
CHOJ				*eS*	**Sn**	**04 42 18.2**	**0.0**
JHO	**Hitachi**	**1.69**	**283**	P	**Pn**	**04 42 00.5**	**-0.6**
JHO				S	**Sn**	**04 42 20.4**	**-1.9**
JYT	**Yasato**	**1.95**	**270**	P	**Pn**	**04 42 04.3**	**-0.5**
JYT				*eS*	**Sn**	**04 42 26.8**	**-2.0**
KTR	**Katsuura**	**2.17**	**240**	S	**Sn**	**04 42 34.7**	**+0.6**
BSO4	**Boso 4**	**2.24**	**237**	S	**Sb**	**04 42 41.2**	**+1.6**
BSO3	**Boso 3**	**2.24**	**231**	S	**Sb**	**04 42 38.5**	**-1.0**
JAG	**Ashikaga**	**2.56**	**275**	P	**Pn**	**04 42 13.4**	**+0.3**
JAG				S	**Sn**	**04 42 41.8**	**-1.9**
JRY	**Ryogami san**	**3.01**	**267**	P	**Pn**	**04 42 19.5**	**+0.1**
JRY				*eS*	**Sn**	**04 42 53.3**	**-1.7**
JOD2	**Odawara 2**	**3.03**	**252**	P	**Pn**	**04 42 21.1**	**+1.5**
JOD2				S	**Sn**	**04 42 55.1**	**-0.3**
JYN	**Shimob**	**3.39**	**258**	P	**Pn**	**04 42 25.5**	**+0.9**
JYN				*eS*	**Sn**	**04 43 06.4**	**+2.1**
MJAR	**Matsushiro Arr**	**3.56**	**276**	Pn	**Pn**	**04 42 27.8**	**+0.8**
	4.7nm,0.3s,baz=112,slow=8.8,SNR=10						
MAJO	**Matsushiro**	**3.57**	**276**	*ePn*	**Pn**	**04 42 27.7**	**+0.7**
MAT	**Matsushiro**	**3.57**	**276**	P	**Pn**	**04 42 28.0**	**+1.0**
JHJ2	**Mitsune**	**3.88**	**217**	P	**Pn**	**04 42 32.2**	**+0.9**
JHJ2				S	**Sn**	**04 43 15.2**	**-1.2**
JHJ2	**Mitsune**	**3.88**	**217**	*ePn*	Pn	04 42 28.6	-2.8
JHJ	**Hachijo jima 2**	**3.89**	**218**	Pn	**Pn**	**04 42 32.0**	**+0.6**
	23nm,0.3s,baz=209,slow=22,SNR=8.0						
JHJ				Sn	**Sn**	**04 43 13.2**	**-3.6**
	59nm,0.3s,baz=332,slow=20,SNR=7.8						
ULN	**Ulaanbaatar**	**28.59**	**305**	*eP*	**P**	**04 47 27.8**	**0.0**
	1.3nm,0.4s						
SONM	**Songino Array**	**29.02**	**305**	P	**P**	**04 47 32.8**	**+1.3**
	0.9nm,0.6s,baz=118,slow=11,SNR=5.2						
ZALV	**Zalesovo Beam**	**43.16**	**313**	P	**P**	**04 49 31.7**	**-0.2**
	1.2nm,0.4s,baz=104,slow=9.1,SNR=3.4						
MKAR	**Makanchi Array**	**45.35**	**303**	P	**P**	**04 49 50.6**	**+1.0**
	2.1nm,0.7s,baz=90,slow=9.7,SNR=12						
KURK	**Kurchatov**	**47.18**	**309**	P	**P**	**04 50 04.4**	**+0.6**
KURBB	**Kurchatov Arra**	**47.24**	**309**	P	**P**	**04 50 04.4**	**0.0**
	1.1nm,0.7s,baz=84,slow=8.1,SNR=3.5						
ILAR	**Eielson Array**	**49.65**	**32**	P	**P**	**04 50 22.2**	**-0.5**
	0.4nm,0.7s,baz=273,slow=6.6,SNR=3.0						
TKM2	**Tokmak 2**	**50.85**	**299**	*eP*	**P**	**04 50 32.8**	**+0.3**
	2.1nm,0.6s						
INK	**Inuvik**	**54.65**	**27**	P	**P**	**04 50 59.7**	**0.0**
	0.4nm,0.5s,baz=252,slow=9.6,SNR=3.2						
WRA	**Warramunga Arr**	**56.43**	**189**	P	**P**	**04 51 11.5**	**-1.6**
	0.5nm,0.5s,baz=7.9,slow=7.4,SNR=8.6						
ABKAR	**Akbulak array**	**59.18**	**311**	*eP*	**P**	**04 51 31.9**	**-0.3**
	0.9nm,0.4s						
YKA	**Yellowknife Ar**	**64.00**	**30**	P	**P**	**04 52 05.0**	**+0.5**
	0.2nm,0.7s,baz=298,slow=6.8,SNR=3.3						
FINES	**FINESS Array B**	**69.96**	**333**	P	**P**	**04 52 42.6**	**+0.2**
	2.2nm,0.9s,baz=101,slow=3.5,SNR=2.9						
TXAR	**Lajitas Array**	**89.83**	**53**	P	**P**	**04 54 30.4**	**-0.2**
	0.3nm,0.6s,baz=309,slow=3.8,SNR=4.7						
SAML	**Samuel**	**144.10**	**47**	*ePKPdf*	**PKPab**	**05 01 06.0**	**+0.8**
LPAZ	**La Paz**	**146.24**	**62**	PKPbc	**PKPdf**	**05 01 12.1**	**0.0**
	0.5nm,0.5s,baz=26,slow=5.1,SNR=7.0						

*IDC **13** 04:52:42.4±0.9, 35.°24N×141.°48E, h0km, mb3.8/7, mb1 4.0/8, mb1mx3.7/41, mbtmp3.8/8, ML3.7/2, MS3.6/1, Ms1 3.6/1, ms1mx2.8/39, Error ellipse: s-maj=30.4km s-min=19.9km az=68.0*
*ISCJB **13** 04:52:43.9±0.7, 35.°16N±0.°05×141.°54E±0.°08, h27km, mb3.8/9, Error ellipse: s-maj=10.7km s-min=6.8km az=150.9*
*JMA **13** 04:52:44.9±0.3, 35.°15N×141.°43E, h17km±4km, M3.3*
*NEIC **13** 04:52:47.3±0.6, 35.°32N×141.°51E, h35km, mb4.1/1, Error ellipse: s-maj=13.0km s-min=10.4km az=79.0*
ISC 13 04:52:45.3±0.9, 35.°22N±0.°06×141.°51E±0.°08, h27km, n28, σ1.°31/22, mb3.7/9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**0.71**	**218**	P	**Pb**	**04 52 56.8**	**-1.9**
BSO1				*eX*		04 53 03.7	
CHOJ	**Chosi**	**0.72**	**312**	P	**Pn**	**04 52 59.0**	**-0.7**
CHOJ				*eS*	**Sn**	**04 53 07.9**	**-1.9**
BSO3	**Boso 3**	**0.92**	**244**	P	**Pn**	**04 53 00.1**	**-2.1**
BSO3				*eX*		04 53 13.4	
BSO4	**Boso 4**	**0.99**	**257**	P	**Pb**	**04 53 02.1**	**-1.6**
JCN	**Nagara**	**1.09**	**281**	P	**Pb**	**04 53 06.4**	**+1.0**
JYT	**Yasato**	**1.47**	**314**	P	**Pb**	**04 53 10.1**	**-1.8**
JYT				S	**Sb**	**04 53 30.5**	**+0.3**
MJAR	**Matsushiro Arr**	**2.99**	**297**	Pn	**Pn**	**04 53 31.4**	**+0.4**
	2.3nm,0.3s,baz=100,slow=14,SNR=9.8						
MAJO	**Matsushiro**	**2.99**	**297**	*ePn*	**Pn**	**04 53 31.7**	**+0.8**
MAT	**Matsushiro**	**2.99**	**297**	P	**Pn**	**04 53 32.3**	**+1.4**
MAT				*eS*	**Sn**	**04 54 03.8**	**-2.1**
ERM	**Erimo**	**6.91**	**10**	*ePn*	**Pn**	**04 54 24.3**	**-0.4**
ASAJ	**Asahikawa**	**8.93**	**5**	Pn	**Pn**	**04 54 50.6**	**-1.7**
	1.6nm,0.3s,baz=207,slow=16,SNR=3.1						
JNU	**Nakatsue**	**9.05**	**260**	LR	LR	04 58 51.4	
	comp=Z,359nm,18.1s,baz=116,slow=41						
H11N2	**WAKE ISLAND Hy 27.19**	**118**		T	T	05 27 03.6	
	baz=310,slow=75,SNR=21						
H11N1	**WAKE ISLAND Hy 27.20**	**118**		T	T	05 27 03.6	
	baz=310,slow=75,SNR=18						
H11N3	**WAKE ISLAND Hy 27.21**	**118**		T	T	05 27 04.1	
	baz=310,slow=75,SNR=20						
H11S3	**WAKE ISLAND Hy 27.84**	**120**		T	T	05 27 52.6	
	baz=312,slow=75,SNR=61						
H11S1	**WAKE ISLAND Hy 27.84**	**120**		T	T	05 27 51.5	
	baz=312,slow=75,SNR=79						
H11S2	**WAKE ISLAND Hy 27.86**	**120**		T	T	05 27 52.0	
	baz=312,slow=75,SNR=34						
SONM	**Songino Array**	**28.90**	**307**	P	**P**	**04 58 42.9**	**+1.0**
	0.3nm,0.6s,baz=100,slow=7.9,SNR=2.1						
ZALV	**Zalesovo Beam**	**43.21**	**314**	P	**P**	**05 00 44.6**	**+0.8**
	0.5nm,0.3s,baz=91,slow=10,SNR=2.7						
MKAR	**Makanchi Array**	**45.17**	**304**	P	**P**	**05 01 00.2**	**+0.6**
	0.5nm,0.5s,baz=92,slow=10.0,SNR=7.2						
TKM2	**Tokmak 2**	**50.58**	**300**	*eP*	**P**	**05 01 42.2**	**+0.4**
	0.7nm,0.4s						
WRAB	**Tennant Creek**	**55.27**	**188**	*eP*	**P**	**05 02 16.8**	**+0.6**
	4.7nm,0.9s						
WRA	**Warramunga Arr**	**55.28**	**188**	P	**P**	**05 02 16.7**	**+0.5**
	4.0nm,0.8s,baz=7.1,slow=7.6,SNR=18						
ASAR	**Alice Springs**	**59.00**	**188**	P	P	05 02 44.5	+1.9
	0.9nm,0.6s,baz=15,slow=7.7,SNR=7.1						
NOA	**NORSAR Array B**	**75.89**	**337**	P	**P**	**05 04 29.6**	**+0.5**
	0.6nm,0.7s,baz=30,slow=7.7,SNR=3.3						
NVAR	**Mina Array Bea**	**76.02**	**53**	P	P	05 04 31.5	+1.1
	0.3nm,0.7s,baz=296,slow=8.7,SNR=3.1						
LPAZ	**La Paz**	**147.51**	**62**	PKPbc	**PKPab**	**05 12 30.8**	**+0.6**
	0.3nm,0.5s,baz=7.8,slow=6.5,SNR=2.4						

MAN 13 04:52:53, 14.°70N×123.°86E, h44km, mb4.4, ML3.2, MS3.0, 1D, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PVCP	**Virac**	**1.13**	**165**	*eP*	Pn	04 53 13.3	+0.9
PVCP				*eS*	Sn	04 53 28.3	+1.6
GQP	**Guinayangan**	**1.58**	**240**	⇓*iP*	Pn	04 53 20.4	+1.8
GQP				*i* S	Sn	04 53 39.9	+2.0
BALP	**Baler**	**2.44**	**296**	*eP*	Pn	04 53 30.7	+0.3
BALP				*eS*	Sn	04 54 00.7	+1.7
CAUP	**Cauayan**	**2.98**	**319**	*eP*	Pn	04 53 39.5	+1.7
APYP	**Conner**	**4.03**	**322**	*eP*	Pn	04 53 55.2	+2.9

MEX 13 04:53:22.3±0.7, 15.°14N×90.°89W, h82km±46km, MD3.7, Guatemala

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THIG		**1.35**	**260**	*iP*	Pn	04 53 44.4	-1.4
THIG				*i* S	Sn	04 54 01.4	-1.9
PCIG		**2.32**	**284**	*eP*	Pn	04 53 56.9	-1.5
PCIG				*i* S	Sn	04 54 25.1	-1.1
TGIG		**2.70**	**308**	*eP*	Pn	04 54 01.8	-1.8
TGIG				*eS*	Sn	04 54 34.1	-1.3

*IDC **13** 04:55:13.5±0.9, 12.°43N×144.°02E, h0km, mb3.7/6, mb1 3.9/6, mb1mx3.6/39, mbtmp3.7/6, MS3.9/1, Ms1 3.9/1, ms1mx2.8/41, Error ellipse: s-maj=40.4km s-min=16.8km az=116.0*
*ISCJB **13** 04:55:15.9±0.7, 12.°4N±0.°1×143.°9E±0.°1, h27km, mb3.8/10, MS4.0/1, Error ellipse: s-maj=23.8km s-min=9.4km az=38.5*
*NEIC **13** 04:55:18.9±1.8, 12.°44N×144.°12E, h38km±18km, mb4.2/4, Error ellipse: s-maj=26.9km s-min=13.1km az=103.0*
ISC 13 04:55:17.5±0.9, 12.°4N±0.°2×144.°0E±0.°2, h27km, n17, σ0.°85/15, mb4.1/10, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**1.41**	**35**	Pn	**Pb**	**04 55 42.5**	**-0.7**
	44nm,0.3s,baz=172,slow=9.1,SNR=13						
GUMO				Sn	**Sb**	**04 56 01.7**	**+0.9**
	205nm,0.3s,baz=144,slow=23,SNR=27						
GUMO	**Guam**	**1.41**	**35**	*ePn*	**Pn**	**04 55 41.4**	**0.0**
GUMO				Sn	**Sb**	**04 56 01.7**	**+0.9**
H11N1	**WAKE ISLAND Hy 23.11**	**69**		T	T	05 24 12.7	
	baz=255,slow=75,SNR=11						
H11N2	**WAKE ISLAND Hy 23.12**	**69**		T	T	05 24 11.6	
	baz=255,slow=75,SNR=8.6						
H11N3	**WAKE ISLAND Hy 23.13**	**69**		T	T	05 24 11.6	
	baz=255,slow=75,SNR=9.0						
WRA	**Warramunga Arr**	**33.55**	**197**	P	**P**	**05 01 55.5**	**+0.1**
	0.7nm,0.8s,baz=21,slow=9.6,SNR=5.9						
ASAR	**Alice Springs**	**37.22**	**195**	P	**P**	**05 02 27.3**	**+0.5**
	0.3nm,0.5s,baz=21,slow=11,SNR=3.6						
TIXI	**Tiksi**	**59.90**	**355**	LR	LR	05 35 14.4	
	comp=Z,92nm,18.0s,baz=294,slow=40						
MKAR	**Makanchi Array**	**61.76**	**317**	P	**P**	**05 05 35.0**	**+1.2**
	0.9nm,0.6s,baz=93,slow=7.6,SNR=11						
TKM2	**Tokmak 2**	**65.87**	**312**	*eP*	**P**	**05 06 01.9**	**+0.7**
	0.9nm,0.6s						
MCK	**McKinley**	**68.83**	**26**	*eP*	**P**	**05 06 19.7**	**+0.4**
	1.5nm,0.6s						
ILAR	**Eielson Array**	**69.96**	**25**	P	**P**	**05 06 24.9**	**-1.3**
	0.3nm,0.7s,baz=247,slow=6.6,SNR=3.4						
BRVK	**Borovoye**	**70.39**	**322**	*eP*	**P**	**05 06 28.7**	**-0.4**
	1.4nm,0.5s						
ABKAR	**Akbulak array**	**76.85**	**318**	*eP*	**P**	**05 07 07.0**	**-0.1**
	1.5nm,0.6s						
YKA	**Yellowknife Ar**	**84.26**	**27**	P	**P**	**05 07 46.7**	**+0.1**
	0.1nm,0.5s,baz=288,slow=5.2,SNR=4.9						
FINES	**FINESS Array B**	**91.86**	**335**	P	**P**	**05 08 21.6**	**-1.4**
	1.2nm,0.8s,baz=116,slow=4.4,SNR=3.9						
TORD	**Torodi Ar. Bea**	**134.82**	**303**	PKP	**PKPdf**	**05 14 35.7**	**+0.7**
	0.3nm,0.9s,baz=72,slow=2.1,SNR=2.3						

MAN 13 05:08:29, 14.°20N×121.°22E, h1km, mb4.4, ML3.2, MS3.1, 1C, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LQP	**Lukban**	**0.32**	**105**	⇑*eP*	Pg	05 08 35.6	+0.4
POLP	**Polilio Island**	**0.88**	**53**	*eP*	Pn	05 08 59.1	+11
BALP	**Baler**	**1.57**	**13**	*eP*	Pn	05 08 58.3	+0.2
BALP				*eS*	Sg	05 09 22.3	+3.1
AUQP	**San Andres**	**1.66**	**121**	*eP*	Pn	05 08 59.6	+0.3
AUQP				*eS*	Sg	05 09 35.1	+13
SJMP	**San Jose**	**1.73**	**183**	*eP*	Pn	05 09 00.5	+0.3
SJMP				*eS*	Sb	05 09 24.1	+0.3

*ISCJB **13** 05:11:53.8±0.3, 0.°01S±0.°03×124.°31E±0.°02, h88km±3km, mb4.5/67, Error ellipse: s-maj=5.1km s-min=3.3km az=28.7*
*DJA **13** 05:11:55.4±0.2, 0.°S±3.°×124.°4E±.°, h46km±10km, M5.3/17, mb5.5/10, mB5.6/8, MLv5.5/17, Mw(mB)5.1/8*
*KLM **13** 05:11:55.4, 0.°04N×124.°30E, h32km, mb4.8, ML5.1, MS6.2*
*IDC **13** 05:11:55.3±1.8, 0.°04N×124.°13E, h93km±16km, mb4.1/22, mb1 4.1/24, mb1mx4.1/36, mbtmp4.3/24, MS3.2/2, Ms1 3.2/2, ms1mx2.9/28, Error ellipse: s-maj=16.1km s-min=10.2km az=80.0*
*NEIC **13** 05:11:57.2±0.7, 0.°00S×124.°21E, h108km±6km, mb4.7/28, Error ellipse: s-maj=6.8km s-min=4.6km az=52.0*
ISC 13 05:11:55.5±0.7, 0.°03S±0.°04×124.°32E±0.°04, h91km±6km, n136, σ1.°58/156, mb4.6/67, 4C-2D, Southern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KMSI	**Cibinong**	**0.69**	**330**	P	**Pn**	**05 12 10.1**	**-1.8**
KMSI				S	**Sn**	**05 12 21.6**	**-2.6**
LUWI	**Luwuk**	**1.85**	**237**	P	**Pn**	**05 12 24.5**	**-1.2**
LUWI				S	**Sn**	**05 12 47.5**	**-1.2**
LUWI	**Luwuk**	**1.85**	**237**	*ePn*	**Pn**	**05 12 24.9**	**-0.8**
LUWI				*eSn*	**Sn**	**05 12 52.8**	**+4.0**
MRSI	**Marisa**	**2.43**	**282**	P	**Pn**	**05 12 30.9**	**-2.5**
MRSI				S	**Sn**	**05 13 02.9**	**+0.4**
SANI	**Sanana**	**2.61**	**140**	P	**Pn**	**05 12 35.2**	**-0.6**
SANI				S	**Sn**	**05 13 04.6**	**-2.2**
LBMI	**Labuha**	**3.24**	**101**	P	**Pn**	**05 12 44.2**	**0.0**
LBMI				S	**Sn**	**05 13 20.4**	**-1.5**
NLAI	**Namlea**	**4.23**	**139**	P	**Pn**	**05 12 57.1**	**-0.6**
NLAI				S	**Sn**	**05 13 42.8**	**-3.2**
KDI	**Kendari**	**4.26**	**203**	P	**Pn**	**05 12 57.1**	**-0.9**
KDI				S	Sn	05 13 38.8	-7.8
PCI	**Palu**	**4.57**	**259**	P	**Pn**	**05 13 00.8**	**-1.4**
PCI				S	**Sn**	**05 13 55.3**	**+1.1**
TTSI	**Tana Toraja**	**5.41**	**236**	P	**Pn**	**05 13 13.2**	**-0.4**
	1μm,0.5s,26μm6.5nm						
TTSI				S	**Sn**	**05 14 10.6**	**-4.0**
	1μm,0.5s,26μm6.5nm						
MSAI	**Masohi**	**5.67**	**126**	P	**Pn**	**05 13 17.4**	**+0.2**
	135nm,1.2s,2μm1.1nm						
MSAI				S	**Sn**	**05 14 19.6**	**-1.3**
	135nm,1.2s,2μm1.1nm						
SPSI	**Sidrap

15nm,1.1s
IPM Ipoh 23.70 281 *e*P **P 05 16 59.0 -0.3**
26nm,0.7s
KULM Kulim 24.22 283 *e*P **P 05 17 03.2 -0.7**
14nm,0.7s
SKLT Songkhla 24.70 287 P **P 05 17 11.4 +3.1**
42nm,0.8s
CHBT CHBT 25.23 301 P **P 05 17 15.9 +2.7**
74nm,1.4s,2μm
AS31 Alice Springs 25.27 159 *e*P **P 05 17 15.8 +2.3**
6.7nm,1.4s
ASAR Alice Springs 25.27 159 P **P 05 17 14.2 +0.7**
4.1nm,0.8s,baz=334,slow=7.2,SNR=37
ASAR PcP **PcP 05 20 45.6 +1.0**
0.9nm,0.5s,baz=344,slow=2.5,SNR=4.2
ASAR ScP **ScP 05 24 16.6 +0.8**
0.5nm,0.6s,baz=344,slow=2.9,SNR=4.4
ASAR LR LR 05 28 11.7
comp=Z,87nm,20.0s,baz=316,slow=38
AS01 Alice Springs 25.29 159 *e*P **P 05 17 14.8 +1.2**
TRTT Trang 25.76 288 P P 05 17 24.5 +6.5
20nm,1.2s
PANO Nakornpanom 25.85 312 P **P 05 17 19.9 +1.2**
33nm,1.0s
SKNT Sakolnakorn 26.21 311 P **P 05 17 24.3 +2.3**
34nm,0.8s
KHON Khomkaen 26.72 309 P **P 05 17 27.5 +0.9**
21nm,0.9s
GSI Gunungsitoli 26.77 273 *e*P **P 05 17 26.9 -0.2**
21nm,1.0s
NAYO Nakonayok 26.85 303 P **P 05 17 32.5 +4.7**
19nm,1.0s,1μm
CHAI Chaiyaphum 27.14 307 P **P 05 17 30.9 +0.6**
6.8nm,0.8s
NONG Nongkai 27.51 312 P **P 05 17 36.6 +3.0**
19nm,0.9s,8μm
LOEI Loei 28.61 309 P **P 05 17 40.9 -2.6**
15nm,0.7s,690nm
UTTA Uttaradit 29.30 308 P **P 05 17 50.5 +1.0**
4.2nm,0.8s
SUKH Sukhothai 29.89 307 P **P 05 17 56.1 +1.4**
5.2nm,0.7s,51nm
CM01 Chiang Mai Arr 30.93 308 *e*P **P 05 18 04.9 +0.9**
CMAR Chiang Mai Arr 30.97 308 P **P 05 18 04.2 -0.1**
4.0nm,0.7s,baz=133,slow=7.1,SNR=16
CHTO Chiang Mai 31.16 308 P **P 05 18 06.7 +0.7**
65nm,1.2s
CHTO Chiang Mai 31.16 308 *e*P **P 05 18 06.3 +0.2**
12nm,0.9s
GYA Guiyang 31.35 328 P **P 05 18 10.0 +2.3**
GYA pmax pmax
comp=Z,10.0nm,0.8s
KMI Kunming 32.57 322 P **P 05 18 20.5 +2.0**
KMI pmax pmax
comp=Z,4.0nm,1.2s
STKA Stephens Creek 35.65 154 P **P 05 18 46.0 +1.1**
comp=Z,1.8nm,0.4s,baz=306,slow=14,SNR=2.9
CD2 Chengdu 36.44 329 P **P 05 18 52.3 +0.7**
CD2 pmax pmax
comp=Z,2.0nm,1.0s
HNR Honiara 36.67 106 P **P 05 18 55.0 +1.2**
comp=Z,41nm,0.3s,baz=330,slow=20,SNR=3.6
MJAR Matsushiro Arr 38.60 18 P **P 05 19 08.8 -0.9**
comp=Z,7.3nm,1.0s,baz=195,slow=8.9,SNR=6.2
ARMA Armidale 39.84 142 *e*P **P 05 19 22.3 +1.9**
comp=Z,17nm,1.1s
SHL Shillong 40.35 312 *e*P P 05 19 29.0 +4.3
LZH Lanzhou 40.66 334 *e*P **P 05 19 28.5 +1.4**
LZH pP pP 05 19 52.0 +3.5
LZH sP sP 05 20 03.6 +4.7
LZH *e*PP **PnPn 05 21 06.8 -0.5**
LZH pmax pmax
comp=Z,25nm,1.3s
LZH pmax pmax
comp=Z,70nm,5.8s
LZH LR LR
comp=N,330nm,13.8s
LZH LR LR
comp=E,350nm,14.0s
LZH LR LR
comp=Z,420nm,17.5s
HHC Hu-ho-hao-te 42.30 346 *e*P **P 05 19 42.1 +1.7**
HHC pmax pmax
comp=Z,25nm,1.0s
HHC pmax pmax
comp=Z,120nm,5.7s
CN2 Changchun 43.65 1 *e*P **P 05 19 53.5 +2.5**
USRK Ussuriysk Ar. 44.56 8 P **P 05 19 58.2 -0.1**
comp=Z,2.1nm,0.5s,baz=191,slow=7.6,SNR=8.5
MDJ Mudanjiang 44.70 5 P **P 05 19 59.9 +0.5**
MDJ Mudanjiang 44.70 5 P **P 05 20 00.9 +1.5**
MDJ pmax pmax
comp=Z,8.0nm,1.0s
MDJ pmax pmax
comp=Z,120nm,4.5s
MDJ pmax pmax
comp=Z,10.0nm,1.8s
MDJ pmax pmax
comp=Z,13nm,2.2s
GTA Gaotai 45.20 333 *e*P **P 05 20 04.3 +0.7**
GTA pP pP 05 20 26.6 +1.2
GTA sP sP 05 20 38.8 +3.1
GTA S **S 05 26 37.6 +0.7**
GTA sS sS 05 27 17.8 +3.6
GTA SS **ScS 05 29 53.3 +1.5**
GTA pmax pmax
comp=Z,10.0nm,1.0s
GTA pmax pmax
comp=Z,140nm,5.0s
GTA LR LR
comp=N,180nm,17.8s
GTA LR LR
comp=E,180nm,15.4s
GTA LR LR
comp=Z,190nm,18.5s
PKIN Phulchoki 46.34 310 *e*P **P 05 20 12.4 -0.6**
comp=Z,3.7nm,0.4s
KKN Kakani 46.53 310 *e*P **P 05 20 14.0 -0.4**
comp=Z,14nm,0.7s
GKN Gorkha 47.13 310 *e*P **P 05 20 18.5 -0.5**
comp=Z,7.1nm,0.3s
KOLN Koldanda 47.83 309 *e*P **P 05 20 23.7 -0.8**
comp=Z,42nm,0.7s
PYUN Piuthan 48.46 309 *e*P **P 05 20 29.0 -0.3**
comp=Z,41nm,0.6s
KLR Kul'dur 49.48 6 P **P 05 20 35.3 -1.2**
comp=Z,1.9nm,0.4s,baz=212,slow=5.2,SNR=13
SONM Songino Array 50.16 344 P **P 05 20 40.4 -1.4**
comp=Z,2.6nm,0.7s,baz=160,slow=8.0,SNR=11
SONA1 Songino Array 50.16 344 *e*P **P 05 20 40.8 -1.1**
WMQ Urumqi 54.51 328 *e*P **P 05 21 15.3 +1.3**
WMQ pmax pmax
comp=Z,4.0nm,0.6s
WMQ pmax pmax
comp=Z,100nm,12.0s
KSH Kashi 59.08 318 *e*P **P 05 21 48.1 +1.5**
KSH *e*pP pP 05 22 12.0 +2.8
KSH *e*PP **PP 05 24 00.8 +2.7**
KSH PcS **PcS 05 26 37.5 +1.0**
KSH S **S 05 29 43.8 -3.1**
KSH pmax pmax
comp=Z,78nm,5.6s
KSH LR LR
comp=N,130nm,8.6s
KSH LR LR
comp=E,110nm,8.3s
KSH LR LR
comp=Z,160nm,7.0s
MK01 Makanchi Array 59.31 328 *e*P **P 05 21 46.2 -1.7**
MK31 Makanchi Array 59.34 328 *e*P **P 05 21 46.4 -1.6**
MKAR Makanchi Array 59.34 328 P **P 05 21 46.4 -1.6**
comp=Z,3.4nm,0.4s,baz=123,slow=8.2,SNR=36
MAKZ Makanchi 59.51 328 *e*P **P 05 21 47.7 -1.5**
comp=Z,4.8nm,0.8s
PETK Petropavlovsk- 59.80 23 P **P 05 21 51.9 +0.9**
comp=Z,8.5nm,0.9s,baz=217,slow=6.7,SNR=5.2
TKM2 Tokmak 2 61.03 321 *e*P **P 05 21 58.7 -1.2**
comp=Z,7.7nm,0.8s
AAK Ala-Archa 61.59 320 *e*P **P 05 22 02.8 -0.9**
comp=Z,7.2nm,0.9s
KBL Kabul 61.97 310 *e*P **P 05 22 04.5 -1.9**
comp=Z,9.2nm,0.6s
YAK Yakutsk 62.03 3 P **P 05 22 04.9 -1.1**
comp=Z,16nm,0.4s,baz=349,slow=3.3,SNR=5.5
YAK Yakutsk 62.03 3 *e*P **P 05 22 05.5 -0.5**
comp=Z,34nm,0.8s
EKS2 Erkin-Say 62.07 320 *e*P **P 05 22 06.2 -0.6**
comp=Z,8.2nm,0.8s
ZALV Zalesovo Beam 62.89 335 P **P 05 22 09.2 -2.7**
comp=Z,2.3nm,0.5s,baz=124,slow=6.2,SNR=8.3
MA2 Magadan 62.92 15 P **P 05 22 12.6 +0.7**
comp=Z,11nm,0.5s,baz=182,slow=8.0,SNR=5.5
KURK Kurchatov 63.66 329 *e*P **P 05 22 15.5 -1.6**
comp=Z,13nm,0.7s
KKAR Karatay Array 64.39 319 *e*P **P 05 22 21.0 -1.0**
SEY Seymchan 66.22 14 P **P 05 22 33.9 +0.5**
comp=Z,2.3nm,0.5s,baz=227,slow=4.9,SNR=5.2
BRVK Borovoye 69.26 329 *e*P **P 05 22 52.5 -0.2**
comp=Z,9.9nm,1.1s
ZRNK Zerenda 69.88 328 *e*P **P 05 22 54.5 -2.1**
comp=Z,6.3nm,0.6s
NRIK Noril'sk 73.51 347 P **P 05 23 17.0 -0.9**
comp=Z,5.5nm,0.6s,baz=125,slow=6.9,SNR=5.2
ABKAR Akbulak array 73.56 322 *e*P **P 05 23 16.7 -2.0**
ARU Arti 76.84 329 *e*P **P 05 23 36.6 -0.7**
comp=Z,8.9nm,1.0s
VNDA Vanda 80.04 172 P **P 05 23 55.3 +0.8**
comp=Z,0.5nm,0.6s,baz=307,slow=5.1,SNR=3.3
KBZ Khabaz 83.81 314 P **P 05 24 13.2 -1.8**
comp=Z,1.6nm,0.7s,baz=30,slow=1.7,SNR=4.5
OHAK Old Harbor 85.89 33 *e*P **P 05 24 26.7 +1.6**
comp=Z,54nm,1.7s
COLD Coldfoot 88.27 23 *e*P **P 05 24 36.9 +0.5**
comp=Z,6.6nm,1.4s
RND Reindeer 88.60 27 *e*P **P 05 24 39.0 +0.8**
comp=Z,16nm,1.9s
ILAR Eielson Array 89.51 25 P **P 05 24 41.6 -0.7**
comp=Z,0.2nm,0.5s,baz=257,slow=4.7,SNR=3.4
KLU Klutina 89.91 29 *e*P **P 05 24 44.9 +0.6**
comp=Z,6.1nm,0.6s
BR131 Keskin Array S 90.54 310 *e*P **P 05 24 45.0 -2.8**
BRTR Keskin Array B 90.54 310 P **P 05 24 45.1 -2.7**
comp=Z,1.0nm,0.7s,baz=130,slow=5.7,SNR=7.7
BR231 Keskin MP Arra 91.21 310 *e*P P 05 24 45.4 -5.5
ARCES ARCESS Array B 93.11 340 P **P 05 24 58.2 -0.7**
comp=Z,3.2nm,1.0s,baz=91,slow=7.6,SNR=6.7
AKASG Malin Array Be 93.26 321 P **P 05 24 57.7 -2.2**
comp=Z,0.2nm,0.3s,baz=69,slow=4.5,SNR=4.0
SPA1 Spitsbergen Ar 93.67 349 *e*P **P 05 25 02.1 +0.8**
SPA2 Spitsbergen Ar 93.67 349 *e*P **P 05 25 01.8 +0.4**
SPB5 Spitsbergen Ar 93.67 349 *e*P **P 05 25 02.2 +0.8**
SPA0 Spitsbergen Ar 93.67 349 *e*P **P 05 25 02.5 +1.1**
SPA3 Spitsbergen Ar 93.67 349 *e*P **P 05 25 01.4 0.0**
SPB3 Spitsbergen Ar 93.67 349 *e*P **P 05 25 01.2 -0.2**
SPB4 Spitsbergen Ar 93.67 349 *e*P **P 05 25 01.9 +0.6**
FINES FINESS Array B 93.97 332 P **P 05 25 00.6 -2.4**
comp=Z,2.8nm,0.9s,baz=74,slow=8.1,SNR=4.5
BUR08 Bucovina Ar. S 96.17 318 *e*P **P 05 25 12.2 -1.3**
CRVS Cervenica-Dubn 98.47 319 *e*P **P 05 25 23.2 -0.5**
TORD Torodi Ar. Bea 121.69 285 PKP **PKPdf 05 30 39.1 -0.7**
comp=Z,1.0nm,0.5s,baz=83,slow=1.6,SNR=12
PAYG Puerto Ayora 145.39 91 *e*PKPdf **PKPdf 05 31 24.5 +0.5**

*IDC **13** 05:15:24.1±1.1,38°.73N×144°.59E,h0km,mb3.6/6,*
mb1 3.9/9,mb1mx3.7/34,mbtmp3.7/9,ML3.5/3,Error
ellipse: s-maj=30.0km s-min=21.8km az=137.0
*ISCJB **13** 05:15:26.1±0.7,38°.88N±0°.04×144°.48E±0°.05,h19km,*
mb3.6/6,Error ellipse: s-maj=6.6km s-min=4.8km az=44.1
*JMA **13** 05:15:28.5±0.2,38°.81N×144°.43E,h48km,M4.2*
ISC 13 05:15:27.4±0.9,38°.84N±0°.06×144°.50E±0°.07,h19km,n23,
σ1°35/33,mb3.5/6,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**2.21**	**290**	P		**Pn**		**05 16 03.2**	**+0.2**
MIYJ				S		**Sn**		**05 16 28.4**	**-1.3**
OFUJ	**Ofunato**	**2.22**	**277**	P		**Pn**		**05 16 03.4**	**+0.3**
OFUJ				*e*S		**Sn**		**05 16 29.1**	**-0.9**
JMK	**Ichinoseki**	**2.56**	**273**	P		**Pn**		**05 16 08.4**	**+0.6**
JMK				S		**Sn**		**05 16 38.2**	**-0.3**
JOM	**Ohasama**	**2.57**	**285**	P		**Pn**		**05 16 08.3**	**+0.3**
JOM				S		**Sn**		**05 16 37.8**	**-0.9**
JANG	**Nango**	**2.77**	**304**	P		**Pn**		**05 16 10.5**	**-0.2**
JYK	**Kaneyama**	**3.23**	**273**	P		**Pn**		**05 16 18.2**	**+1.1**
JFT	**Otama**	**3.54**	**249**	P		**Pn**		**05 16 21.9**	**+0.6**
JFT				S		**Sn**		**05 17 01.8**	**-0.8**
JOT	**Ohata**	**3.67**	**315**	P		**Pn**		**05 16 24.5**	**+1.5**
JOT				*e*S		**Sn**		**05 17 04.3**	**-1.4**
JNBK	**Urakawa-nobuka**	**3.68**	**339**	P		**Pn**		**05 16 23.5**	**+0.3**
JNBK				*e*S		**Sn**		**05 17 04.8**	**-1.3**
JCH	**Churui**	**3.87**	**347**	P		**Pn**		**05 16 25.7**	**-0.1**
JCH				*e*S		**Sn**		**05 17 08.1**	**-2.5**
JKB	**Kayabe**	**4.03**	**320**	P		**Pn**		**05 16 30.9**	**+2.9**
JRY	**Ryogami san**	**5.27**	**239**	P		**Pn**		**05 16 44.9**	**-0.2**
JRY				S		**Sn**		**05 17 41.9**	**-3.5**
ASAJ	**Asahikawa**	**5.46**	**345**	Pn		**Pn**		**05 16 48.3**	**+0.6**
	2.0nm,0.3s,baz=202,slow=11,SNR=4.9								
ASAJ				Sn		**Sn**		**05 17 48.8**	**-1.1**
	1.4nm,0.3s,baz=143,slow=20,SNR=2.5								
MJAR	**Matsushiro Arr**	**5.49**	**247**	Pn		**Pn**		**05 16 48.3**	**+0.2**
	2.9nm,0.3s,baz=75,slow=14,SNR=10.0								
MJAR				Sn		**Sn**		**05 17 51.6**	**+0.8**
	1.7nm,0.3s,baz=197,slow=24,SNR=4.5								
MAT	**Matsushiro**	**5.49**	**247**	P		**Pn**		**05 16 49.7**	**+1.5**
MAT				*e*S		**Sn**		**05 17 49.6**	**-1.2**
JHJ	**Hachijo jima 2**	**6.87**	**215**	Sn		Sn		05 18 18.3	-6.4
	17nm,0.3s,baz=92,slow=22,SNR=3.0								
USRK	**Ussuriysk Ar.**	**10.80**	**304**	Pn		**Pn**		**05 18 03.6**	**+2.8**
	0.5nm,0.3s,baz=104,slow=16,SNR=6.5								
ILAR	**Eielson Array**	**46.66**	**33**	P		**P**		**05 23 54.0**	**-0.1**
	0.5nm,0.8s,baz=255,slow=7.2,SNR=4.9								
WRA	**Warramunga Arr**	**59.24**	**191**	P		P		05 25 26.1	-1.3
	0.9nm,0.7s,baz=13,slow=7.3,SNR=4.7								
YKA	**Yellowknife Ar**	**61.01**	**31**	P		**P**		**05 25 38.9**	**-0.2**
	0.1nm,0.4s,baz=304,slow=6.1,SNR=5.2								
FINES	**FINESS Array B**	**68.33**	**333**	P		**P**		**05 26 26.4**	**-0.6**
	2.0nm,0.7s,baz=64,slow=8.7,SNR=3.9								
NVAR	**Mina Array Bea**	**71.95**	**55**	P		**P**		**05 26 50.7**	**+0.8**
	0.3nm,0.6s,baz=289,slow=8.5,SNR=2.5								
TXAR	**Lajitas Array**	**87.09**	**54**	P		**P**		**05 28 12.6**	**+0.4**
	0.1nm,0.4s,baz=319,slow=2.6,SNR=4.0								

MAN 13 05:24:14,14°.12N×121°.18E,h1km,mb3.9,ML2.7,MS2.4,
2D,Luzon

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
TGY	**Tagaytay City**	**0.24**	**266**	⇓*i*P			Pg	05 24 20.8	+2.2
TGY				*i*S			Sg	05 24 25.9	+4.2
LQP	**Lukban**	**0.35**	**91**	⇓*e*P			Pg	05 24 20.8	+0.1
BOAC	**Boac**	**0.92**	**136**	*e*P			Pb	05 24 32.9	+0.2
LUBP	**Lubang**	**0.99**	**247**	*e*P			Pg	05 24 33.4	+0.5
LUBP				*e*S			Sn	05 24 50.9	+1.3
SJMP	**San Jose**	**1.65**	**182**	*e*P			Pb	05 24 45.3	+0.1
SJMP				*e*S			Sg	05 25 09.1	+2.0
AUQP	**San Andres**	**1.65**	**118**	*e*P			Pb	05 24 45.0	-0.3
BALP	**Baler**	**1.66**	**13**	*e*P			Pn	05 24 43.9	-0.3
BALP				*e*S			Sg	05 25 08.1	+0.8

*KRNET **13** 05:49:41.9±0.1,41°.13N×72°.30E,h16km,mb2.0*
*SOME **13** 05:49:42.6,41°.12N×72°.30E,h5km*
*NNC **13** 05:49:45.0±3.1,41°.22N×72°.35E,h0km,mb2.5,mpv2.3,*
Error ellipse: s-maj=20.8km s-min=15.7km az=10.0
ISC 13 05:49:42.0±1.9,41°.13N±0°.08×72°.29E±0°.03,h0km±13km,
n13,σ0°54/26,18C-3D,Kyrgyzstan

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
ARSB	**Arslanbob**	**0.55**	**69**	⇑*e*P			**Pg**	**05 49 52.3**	**-0.3**
	baz=68								
ARSB				⇑*e*S			**Sg**	**05 50 00.7**	**+0.9**
	baz=68								
ARK	**Arkit**	**0.71**	**340**	⇑*e*P			**Pg**	**05 49 55.7**	**+0.1**
	baz=340								
ARK				⇑*e*S			**Sg**	**05 50 05.7**	**+0.8**
	baz=340								
TOKL	**Toktogul**	**0.92**	**28**	⇑*e*P			**Pg**	**05 49 59.9**	**+0.3**
	baz=28								
TOKL				⇑*e*S			**Sb**	**05 50 12.8**	**-0.8**
	baz=28								
MNAS	**Manas**	**1.36**	**7**	⇑*e*P			**Pg**	**05 50 08.0**	**-0.1**
	baz=6.0								
MNAS				⇑*e*S			**Sb**	**05 50 26.9**	**+0.4**
	baz=6.0								
MNAS	**Manas**	**1.36**	**7**	⇑P			**Pb**	**05 50 08.6**	**+0.1**
	2.5nm,0.4s								
MNAS				⇑S			**Sb**	**05 50 26.6**	**+0.1**
	6.3nm,0.4s								
AML	**Almayashu**	**1.45**	**46**	⇑*i*P			**Pg**	**05 50 09.6**	**-0.2**
	baz=45								
AML				⇑*i*S			**Sn**	**05 50 29.4**	**-0.3**
	baz=45								
MRKS	**Merke**	**1.76**	**23**	*e*P			**Pb**	**05 50 14.9**	**-0.2**
	6.3nm,0.3s								
MRKS				*e*S			**Sb**	**05 50 37.9**	**+0.1**
	9.3nm,0.5s								
EKS2	**Erkin-Say**	**1.89**	**35**	⇑*i*P			**Pb**	**05 50 17.0**	**-0.4**
	baz=35								
EKS2				⇑*i*S			**Sg**	**05 50 42.3**	**-0.4**
	baz=35								
IUG	**Iuzhnay**	**1.98**	**302**	*e*P			**Pb**	**05 50 18.6**	**-0.2**
	12nm,0.4s								
IUG				*e*S			**Sg**	**05 50 45.5**	**0.0**
	46nm,0.4s								
UCH	**Uchtor**	**1.99**	**56**	⇑*i*P			**Pn**	**05 50 17.6**	**+0.3**
	baz=56								
UCH				⇑*i*S			**Sg**	**05 50 45.8**	**-0.2**
	baz=56								
AAK	**Ala-Archa**	**2.23**	**47**	⇓Pn			**Pn**	**05 50 20.4**	**+0.2**
	0.9nm,0.8s								
AAK				⇓Sn			**Sb**	**05 50 51.7**	**+0.4**
	2.5nm,0.5s								
KK31	**Karatay Array**	**2.38**	**327**	Pn			**Pb**	**05 50 24.6**	**-1.0**
	0.7nm,0.3s,baz=132,slow=14,SNR=25								
KK31				⇑Sn			**Sb**	**05 50 55.9**	**+0.4**
	1.8nm,0.3s,baz=135,slow=29,SNR=12								
BRLS	**Borolday**	**2.56**	**311**	⇑*i*P			**Pb**	**05 50 29.5**	**+0.8**
	0.7nm,0.4s								
BRLS				⇓*i*S			**Sg**	**05 51 03.0**	**-1.1**
	9.2nm,0.4s								

*IDC **13** 05:56:57.7±1.1,34°.86N×142°.88E,h0km,mb3.5/5,*
mb1 3.8/6,mb1mx3.6/33,mbtmp3.4/6,ML3.1/1,Error
ellipse: s-maj=29.8km s-min=26.2km az=69.0
*ISCJB **13** 05:57:00.6±0.8,34°.96N±0°.07×142°.85E±0°.07,h33km,*
mb3.6/5,Error ellipse: s-maj=10.6km s-min=7.5km
az=28.4
*JMA **13** 05:57:01.7±0.4,34°.88N×142°.71E,h78km,M3.4*
ISC 13 05:57:02.9±1.0,34°.98N±0°.08×142°.82E±0°.09,h35km,n15,
σ1°21/17,mb3.6/5,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**1.55**	**259**	P			**Pn**	**05 57 26.2**	**-1.2**
BSO1				*e*S			**Sn**	**05 57 44.9**	**-1.1**
CHOJ	**Chosi**	**1.76**	**295**	P			**Pn**	**05 57 30.8**	**0.0**
CHOJ				*e*S			**Sn**	**05 57 51.9**	**0.0**
BSO3	**Boso 3**	**1.90**	**265**	P			**Pn**	**05 57 32.1**	**-0.5**
BSO4	**Boso 4**	**2.04**	**271**	P			**Pn**	**05 57 34.3**	**-0.2**
JFK	**Kawauchi**	**2.86**	**327**	P			**Pn**	**05 57 44.7**	**-1.3**
JFK				*e*S			**Sn**	**05 58 16.9**	**-2.3**
JAG	**Ashikaga**	**3.10**	**299**	P			**Pn**	**05 57 48.6**	**-0.6**
JAG				*e*S			**Sn**	**05 58 24.7**	**-0.3**
MJAR	**Matsushiro Arr**	**4.06**	**294**	Pn			**Pn**	**05 58 02.3**	**-0.2**
	1.2nm,0.3s,baz=100,slow=8.9,SNR=5.6								
MJAR				Sn			**Sn**	**05 58 50.9**	**+2.1**
	1.0nm,0.3s,baz=300,slow=43,SNR=4.9								
H11N2	**WAKE ISLAND Hy**	**26.14**	**119**	T			T	06 29 41.7	
	baz=308,slow=76,SNR=6.0								
H11N1	**WAKE ISLAND Hy**	**26.14**	**119**	T			T	06 29 42.6	
	baz=308								
H11N3	**WAKE ISLAND Hy**	**26.15**	**119**	T			T	06 29 42.6	
	baz=308,slow=76,SNR=5.9								
MKAR	**Makanchi Array**	**46.19**	**304**	P			**P**	**06 05 25.5**	**+1.3**
	0.2nm,0.3s,baz=92,slow=8.8,SNR=2.5								
WRA	**Warramunga Arr**	**55.21**	**190**	P			**P**	**06 06 31.2**	**-1.1**
	1.4nm,0.9s,baz=9.9,slow=7.6,SNR=6.3								
ASAR	**Alice Springs**	**58.93**	**190**	P			**P**	**06 06 58.2**	**-0.5**
	0.4nm,0.5s,baz=13,slow=11,SNR=3.7								
YKA	**Yellowknife Ar**	**65.02**	**30**	P			**P**	**06 07 38.6**	**-0.4**
	0.2nm,0.8s,baz=302,slow=6.8,SNR=2.7								
NVAR	**Mina Array Bea**	**75.31**	**53**	P			**P**	**06 08 44.4**	**+1.6**
	0.4nm,0.7s,baz=286,slow=6.4,SNR=2.7								

*ISCJB **13** 06:16:30.7±1.3,73°.60N±0°.08×7°.7E±0°.4,h10km,Error*
ellipse: s-maj=15.9km s-min=9.3km az=147.9
*CSEM **13** 06:16:37.8±0.7,73°.78N×9°.26E,h10km,ML1.6,Error*
ellipse: s-maj=18.3km s-min=6.8km az=69.0
*BER **13** 06:16:37.7±2.1,73°.68N×8°.97E,h0km±27km,ML1.6,*
ML2.9(NAO)
*NAO **13** 06:16:40.0±3.4,73°.84N×10°.25E,ML2.9*
ISC 13 06:16:34.1±1.5,73°.64N±0°.09×8°.0E±0°.1,h10km,n18,
σ0°88/21,Greenland Sea

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
BJO	**Bjornoya**	**3.21**	**69**	*e*P			**Pn**	**06 17 23.2**	**-1.2**
BJO	**Bjornoya**	**3.21**	**69**	*e*P			**Pn**	**06 17 23.2**	**-1.2**
	SNR=50								
SPA0	**Spitsbergen Ar**	**5.00**	**20**	Pn			**Pn**	**06 17 49.8**	**+0.8**
	baz=203,slow=14								
SPA0	**Spitsbergen Ar**	**5.00**	**20**	Pn			**Pn**	**06 17 49.8**	**+0.8**
	baz=203,slow=14								
SPA0	**Spitsbergen Ar**	**5.00**	**20**	Pn			**Pn**	**06 17 49.8**	**+0.8**
	baz=203,slow=13,SNR=50								
HOPEN	**Hopen**	**5.25**	**49**	Pn			**Pn**	**06 17 52.0**	**-0.4**
HOPEN				Sn			Sn	06 18 46.3	-6.5
HOPEN	**Hopen**	**5.25**	**49**	Pn			**Pn**	**06 17 52.0**	**-0.4**
HOPEN				*e*S			Sn	06 18 46.2	-6.5
HOPEN				IAML				06 18 50.1	
	comp=Z,1.7nm,0.4s								
HOPEN	**Hopen**	**5.25**	**49**	Pn			**Pn**	**06 17 52.0**	**-0.4**
	SNR=50								
HOPEN				Sn			Sn	06 18 46.3	-6.5
KBS	**Kingsbay**	**5.40**	**8**	Pn			**Pn**	**06 17 55.2**	**+0.7**
KBS				Sn			**Sn**	**06 18 56.5**	**-0.1**
KBS	**Kingsbay**	**5.40**	**8**	Pn			**Pn**	**06 17 55.2**	**+0.7**
KBS				Sn			**Sn**	**06 18 56.5**	**-0.1**
KBS				IAML				06 18 57.0	
	comp=Z,2.1nm,0.7s								
KBS	**Kingsbay**	**5.40**	**8**	Pn			**Pn**	**06 17 55.2**	**+0.7**
	SNR=50								
KBS				Sn			**Sn**	**06 18 56.5**	**-0.1**
	SNR=50								
ARA0	**ARCESS Array S**	**6.89**	**118**	Pn			**Pn**	**06 18 16.1**	**+1.1**
	baz=319,slow=12								
ARA0				Sn			Sn	06 19 27.3	-5.9
	baz=315,slow=22								
ARA0	**ARCESS Array S**	**6.89**	**118**	Pn			**Pn**	**06 18 16.1**	**+1.1**
	baz=319,slow=12								
ARA0				Sn			Sn	06 19 27.3	-5.9
	baz=315,slow=22								
ARA0	**ARCESS Array S**	**6.89**	**118**	Pn			**Pn**	**06 18 16.0**	**+1.1**
	baz=319,slow=12,SNR=50								
DAG	**Danmarks Havn**	**7.45**	**307**	*i*P			**Pn**	**06 18 20.9**	**-1.7**
DAG				*e*S			Sn	06 19 28.2	-19
APA0	**Apatity Array**	**10.19**	**114**	Pn			**Pn**	**06 18 59.7**	**-0.4**
APA0	**Apatity Array**	**10.19**	**114**	Pn			**Pn**	**06 18 59.7**	**-0.4**
APA0	**Apatity Array**	**10.19**	**114**	Pn			**Pn**	**06 18 59.7**	**-0.4**
	SNR=50								

JMA 13 06:19:25.5±0.2,37°.11N×141°.81E,h29km±3km,M3.5,
Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.79**	**289**	P			Pb	06 19 40.3	-0.4
JFK				S			Sb	06 19 51.0	-0.1
ONAJ	**Iwakimizuishiy**	**0.81**	**270**	S			Sb	06 19 51.2	-0.5
JMM	**Marumori**	**1.11**	**313**	P			Pn	06 19 44.8	-0.2
JMM				S			Sn	06 19 58.9	-0.4
JHO	**Hitachi**	**1.11**	**244**	P			Pn	06 19 45.1	0.0
JHO				S			Sn	06 19 59.0	-0.5
JFT	**Otama**	**1.24**	**290**	P			Pb	06 19 48.0	-0.3
JIO	**Ouri**	**1.39**	**345**	P			Pn	06 19 48.6	-0.3

*ISK **13** 06:24:28.8,36°.91N×29°.36E,h6km,ML2.9*
*CSEM **13** 06:24:29.6±0.1,36°.92N×29°.36E,h5km,ML2.9,Error*
ellipse: s-maj=3.0km s-min=2.7km az=158.0
*DDA **13** 06:

GLHS				*e*Sg	**Sg**	**06 24 38.9**	**+0.8**
FETY	**Fethiye**	**0.36**	**217**	*e*PG	**Pg**	**06 24 36.2**	**-0.3**
FETY				*e*SG	**Sg**	**06 24 41.5**	**+0.4**
FETY	**Fethiye**	**0.36**	**217**	*e*Pg	**Pg**	**06 24 36.2**	**-0.3**
FETY				*e*Sg	**Sg**	**06 24 41.5**	**+0.4**
GOLH	**Golhisar**	**0.36**	**28**	P	**Pg**	**06 24 37.0**	**+0.5**
GOLH				S	**Sb**	**06 24 43.2**	**-1.5**
GOLH	**Golhisar**	**0.36**	**28**	*i* P	**Pg**	**06 24 37.0**	**+0.5**
GOLH				*i* S	**Sb**	**06 24 43.2**	**-1.5**
ELL	**Elmali**	**0.48**	**111**	*e*PG	**Pg**	**06 24 38.5**	**-0.3**
ELL				*e*SG	**Sg**	**06 24 45.5**	**+0.4**
ELL	**Elmali**	**0.48**	**111**	*e*Pg	**Pg**	**06 24 38.5**	**-0.3**
ELL				*e*Sg	**Sg**	**06 24 45.5**	**+0.4**
DALY	**Dalyan (Mu¨la**	**0.57**	**260**	*e*PG	**Pg**	**06 24 40.2**	**-0.3**
DALY	**Dalyan (Mu¨la**	**0.57**	**260**	*e*Pg	**Pg**	**06 24 40.2**	**-0.3**
TURN	**Turunc**	**0.60**	**266**	*i* P	**Pn**	**06 24 45.7**	**+0.7**
TURN				*i* S	**Sn**	**06 24 59.0**	**+3.8**
AKAS	**Kas**	**0.72**	**163**	P	**Pb**	**06 24 44.6**	**-0.1**
AKAS	**Kas**	**0.72**	**163**	*i* P	**Pb**	**06 24 44.6**	**-0.1**
AKAS				*i* S	**Sn**	**06 24 58.5**	**+0.3**
DNZL	**Cakiroluk**	**0.80**	**343**	P	**Pg**	**06 24 44.4**	**-0.6**
DNZL	**Cakiroluk**	**0.80**	**343**	*i* P	**Pg**	**06 24 44.4**	**-0.6**
KORT	**Korkueli**	**0.81**	**84**	P	**Pg**	**06 24 44.9**	**-0.1**
KORT	**Korkueli**	**0.81**	**84**	*i* P	**Pg**	**06 24 44.9**	**-0.1**
KORT				*i* S	**Sn**	**06 25 01.6**	**+1.1**
DENT	**Denizli**	**0.87**	**343**	*e*PG	**Pg**	**06 24 45.8**	**-0.4**
DENT	**Denizli**	**0.87**	**343**	*e*Pg	**Pg**	**06 24 45.8**	**-0.4**
YER	**Yerkesik**	**0.88**	**284**	*e*PG	**Pg**	**06 24 46.6**	**+0.1**
YER	**Yerkesik**	**0.88**	**284**	*e*Pg	**Pg**	**06 24 46.6**	**+0.1**
AYDN	**Tasoluk**	**1.39**	**303**	P	**Pg**	**06 24 56.2**	**0.0**
AYDN				S	**Sg**	**06 25 13.6**	**-0.6**
AYDN	**Tasoluk**	**1.39**	**303**	*i* P	**Pg**	**06 24 56.2**	**0.0**
AYDN				*i* S	**Sg**	**06 25 13.6**	**-0.6**
SUTC	**Sutluce-Ispart**	**1.43**	**67**	*e*PN	**Pn**	**06 24 55.7**	**-0.8**
SUTC	**Sutluce-Ispart**	**1.43**	**67**	*e*Pn	**Pn**	**06 24 55.7**	**-0.8**
KHAL	**Karahalli**	**1.45**	**4**	P	**Pg**	**06 24 57.3**	**-0.1**
KHAL				S	**Sn**	**06 25 16.5**	**+0.1**
KHAL	**Karahalli**	**1.45**	**4**	*i* P	**Pg**	**06 24 57.4**	**-0.1**
KHAL				*i* S	**Sn**	**06 25 16.5**	**+0.1**
BDRM	**Kayabasi**	**1.53**	**276**	P	**Pb**	**06 24 58.2**	**-0.4**
BDRM				S	**Sg**	**06 25 19.2**	**+0.4**
BDRM	**Kayabasi**	**1.53**	**276**	*i* P	**Pb**	**06 24 58.2**	**-0.4**
BDRM				*i* S	**Sg**	**06 25 19.2**	**+0.4**
AYDB	**Zeytinkoy-Aydi**	**1.55**	**312**	*e*PN	**Pn**	**06 24 57.8**	**-0.4**
AYDB	**Zeytinkoy-Aydi**	**1.55**	**312**	*e*Pn	**Pn**	**06 24 57.8**	**-0.4**
BAGO	**Egridir - ISPA**	**1.56**	**47**	*i* P	**Pg**	**06 25 00.1**	**+0.6**
BAGO				*i* S	**Sg**	**06 25 22.0**	**+2.1**
BODT	**Bodrum**	**1.64**	**276**	*e*PN	**Pn**	**06 24 59.0**	**-0.3**
BODT	**Bodrum**	**1.64**	**276**	*e*Pn	**Pn**	**06 24 59.0**	**-0.3**
MANT	**Manisa**	**1.69**	**338**	P	**Pn**	**06 25 00.3**	**+0.2**
MANT	**Manisa**	**1.69**	**338**	*i* P	**Pn**	**06 25 00.3**	**+0.2**
NIS1	**Nisyros Isl.**	**1.77**	**260**	*e*PN	**Pn**	**06 25 00.8**	**-0.3**
NIS1	**Nisyros Isl.**	**1.77**	**260**	*e*Pn	**Pn**	**06 25 00.8**	**-0.3**
DEMI	**Demirci**	**2.18**	**347**	P	**Pn**	**06 25 06.8**	**0.0**
DEMI	**Demirci**	**2.18**	**347**	*i* P	**Pn**	**06 25 06.8**	**0.0**

*IDC **13** 06:28:06.8±0.8, 35°.10N×141°.45E, h0km, mb3.8/8, mb1 4.1/8, mb1mx3.8/34, mbtmp3.8/8, ML3.0/1, MS2.9/5, Ms1 2.9/5, ms1mx2.7/55, Error ellipse: s-maj=24.5km s-min=20.2km az=100.0*
*ISCJB **13** 06:28:08.7±0.6, 35°.17N±0°.05×141°.45E±0°.06, h27km, mb3.9/10, MS2.6/1, Error ellipse: s-maj=7.4km s-min=6.6km az=168.4*
*JMA **13** 06:28:09.2±0.3, 35°.15N×141°.39E, h13km±5km, M3.3*
*NEIC **13** 06:28:11.8±0.6, 35°.17N×141°.40E, h35km, mb4.5/2, Error ellipse: s-maj=14.4km s-min=13.5km az=77.0*

ISC 13 06:28:10.5±0.8, 35°.17N±0°.05×141°.39E±0°.07, h27km, n30, σ1§21/23, mb3.8/10, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**0.62**	**213**	P	**Pb**	**06 28 20.7**	**-1.7**
BSO1				*e*X		06 28 27.9	
CHOJ	**Chosi**	**0.69**	**321**	P	**Pb**	**06 28 22.6**	**-1.2**
CHOJ				*e*S	**Sb**	**06 28 31.6**	**-1.3**
BSO3	**Boso 3**	**0.81**	**243**	P	**Pb**	**06 28 24.0**	**-1.8**
BSO4	**Boso 4**	**0.88**	**258**	P	**Pb**	**06 28 26.9**	**-0.2**
TATJ	**Tateyama 2**	**1.24**	**264**	P	**Pn**	**06 28 32.0**	**0.0**
JYT	**Yasato**	**1.44**	**318**	P	**Pn**	**06 28 35.3**	**+0.6**
MJAR	**Matsushiro Arr**	**2.92**	**299**	Pn	**Pn**	**06 28 56.3**	**+1.1**
	1.9nm,0.3s,baz=112,slow=8.4,SNR=8.9						
MJAR				LR	LR	06 30 23.9	
	comp=Z,124nm,19.7s,baz=130,slow=46						
MAJO	**Matsushiro**	**2.93**	**299**	*e*Pn	**Pn**	**06 28 55.7**	**+0.5**
MAT	**Matsushiro**	**2.93**	**299**	P	**Pn**	**06 28 56.3**	**+1.1**
MAT				*e*S	**Sn**	**06 29 28.2**	**-1.3**
ERM	**Erimo**	**6.97**	**11**	*e*Pn	**Pn**	**06 29 48.8**	**-2.0**
ERM				*e*Sn	**Sn**	**06 31 08.6**	**-0.5**
ASAJ	**Asahikawa**	**8.98**	**6**	LR	LR	06 34 41.7	
	comp=Z,64nm,19.8s,baz=164,slow=44						
KSRS	**Korea Array**	**11.10**	**286**	LR	LR	06 35 16.7	
	comp=Z,84nm,18.6s,baz=94,slow=38						
KLR	**Kul'dur**	**15.74**	**336**	LR	LR	06 37 18.1	
	comp=Z,90nm,21.9s,baz=16,slow=35						
PETK	**Petropavlovsk-**	**21.32**	**28**	LR	LR	06 43 34.1	
	comp=Z,21nm,18.2s,baz=216,slow=43						
H11N2	**WAKE ISLAND Hy**	**27.26**	**118**	T	T	07 02 32.1	
	baz=310,slow=75,SNR=13						
H11N1	**WAKE ISLAND Hy**	**27.26**	**118**	T	T	07 02 33.8	
	baz=310,slow=75,SNR=13						
H11N3	**WAKE ISLAND Hy**	**27.27**	**118**	T	T	07 02 32.1	
	baz=310,slow=75,SNR=13						
H11S1	**WAKE ISLAND Hy**	**27.91**	**120**	T	T	07 03 18.7	
	baz=312,slow=75,SNR=22						
H11S3	**WAKE ISLAND Hy**	**27.91**	**120**	T	T	07 03 15.5	
	baz=312,slow=75,SNR=12						
H11S2	**WAKE ISLAND Hy**	**27.92**	**120**	T	T	07 03 18.7	
	baz=312,slow=75,SNR=6.6						
ZALV	**Zalesovo Beam**	**43.17**	**314**	P	**P**	**06 36 10.4**	**+1.7**
	0.9nm,0.4s,baz=93,slow=10,SNR=2.7						
MKAR	**Makanchi Array**	**45.11**	**304**	P	**P**	**06 36 24.2**	**-0.2**
	0.4nm,0.4s,baz=89,slow=7.9,SNR=5.5						
ILAR	**Eielson Array**	**51.08**	**32**	P	**P**	**06 37 10.6**	**+0.4**
	0.7nm,0.7s,baz=267,slow=7.0,SNR=7.9						
WRAB	**Tennant Creek**	**55.21**	**188**	*e*P	**P**	**06 37 39.7**	**-1.3**
	14nm,1.4s						
WRA	**Warramunga Arr**	**55.22**	**188**	P	**P**	**06 37 40.4**	**-0.7**
	3.4nm,0.8s,baz=4.2,slow=7.5,SNR=17						
INK	**Inuvik**	**56.05**	**27**	*e*P	**P**	**06 37 47.5**	**+1.0**
	2.9nm,1.1s						
ASAR	**Alice Springs**	**58.95**	**188**	P	**P**	**06 38 08.0**	**+0.6**
	0.9nm,0.7s,baz=12,slow=11,SNR=9.2						
YKA	**Yellowknife Ar**	**65.43**	**30**	P	**P**	**06 38 50.5**	**0.0**
	0.3nm,0.7s,baz=301,slow=5.9,SNR=6.0						
NVAR	**Mina Array Bea**	**76.12**	**53**	P	**P**	**06 39 58.2**	**+2.0**
	0.8nm,0.7s,baz=282,slow=6.0,SNR=6.1						
PDAR	**Pinedale Array**	**78.98**	**45**	P	**P**	**06 40 12.8**	**+0.7**
	0.3nm,0.5s,baz=300,slow=1.6,SNR=4.6						

MEX 13 06:35:46.1±0.8, 14°.57N×92°.77W, h65km±20km, MD3.6, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THIG		**0.59**	**55**	*e*P	Pn	06 35 58.0	-1.4
THIG				*e*S	Sn	06 36 06.9	-2.3
PCIG		**1.21**	**339**	*i* P	Pn	06 36 06.0	-1.0
PCIG				*e*S	Sn	06 36 20.4	-2.3
TGIG		**2.22**	**351**	*e*P	Pn	06 36 19.5	-1.2
TGIG				*e*S	Sn	06 36 44.5	-2.6

IDC 13 06:40:24.6±1.1, 12°.53N×143°.57E, h0km, mb3.8/4, mb1 4.0/4, mb1mx3.6/53, mbtmp3.8/4, MS3.0/1, Ms1 3.0/1, ms1mx2.5/48, Error ellipse: s-maj=52.0km s-min=18.7km az=123.0, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**1.65**	**50**	Pn	Pn	06 40 55.3	+0.5
	61nm,0.3s,baz=256,slow=4.2,SNR=22						
GUMO				Sn	Sn	06 41 15.9	-0.9
	58nm,0.3s,baz=198,slow=16,SNR=7.4						
H11S3	**WAKE ISLAND Hy**	**23.04**	**72**	T	T	07 09 04.7	
	baz=262,slow=74,SNR=3.8						
H11S1	**WAKE ISLAND Hy**	**23.06**	**72**	T	T	07 09 02.0	
	baz=262						
H11S2	**WAKE ISLAND Hy**	**23.06**	**72**	T	T	07 09 01.7	
	baz=262,slow=74,SNR=5.5						
H11N1	**WAKE ISLAND Hy**	**23.50**	**69**	T	T	07 09 32.7	
	baz=255,slow=75,SNR=6.3						
H11N2	**WAKE ISLAND Hy**	**23.51**	**69**	T	T	07 09 33.2	
	baz=255,slow=75,SNR=7.1						
H11N3	**WAKE ISLAND Hy**	**23.52**	**69**	T	T	07 09 32.7	
	baz=255,slow=75,SNR=6.0						
ASAJ	**Asahikawa**	**31.48**	**359**	LR	LR	06 57 22.4	
	comp=Z,26nm,20.7s,baz=343,slow=32						
WRA	**Warramunga Arr**	**33.52**	**196**	P	P	06 47 05.8	-0.4
	0.7nm,0.7s,baz=19,slow=9.6,SNR=2.8						
ASAR	**Alice Springs**	**37.20**	**195**	P	P	06 47 37.9	+0.1
	0.6nm,0.7s,baz=18,slow=9.5,SNR=6.3						
YKA	**Yellowknife Ar**	**84.38**	**27**	P	P	06 52 59.1	+0.5
	0.5nm,0.8s,baz=288,slow=5.0,SNR=5.6						
FINES	**FINESS Array B**	**91.58**	**335**	P	P	06 53 32.7	-0.5
	1.7nm,0.9s,baz=78,slow=3.4,SNR=2.9						

*IDC **13** 06:46:05.2±0.5, 12°.34N×144°.05E, h0km, mb4.4/24, mb1 4.5/24, mb1mx4.4/47, mbtmp4.4/24, MS3.9/18, Ms1 3.9/18, ms1mx3.6/40, Error ellipse: s-maj=17.3km s-min=12.0km az=89.0*
*ISCJB **13** 06:46:07.9±0.2, 12°.25N±0°.03×144°.02E±0°.04, h26km, mb4.7/84, MS4.1/29, Error ellipse: s-maj=6.2km s-min=4.7km az=7.5*
*MOS **13** 06:46:08.6±1.1, 12°.26N×143°.97E, h33km, mb5.1/20, Error ellipse: s-maj=13.0km s-min=7.5km az=92.3*
*NEIC **13** 06:46:10.7±3.0, 12°.28N×144°.06E, h34km±21km, mb4.9/48, Error ellipse: s-maj=7.3km s-min=5.2km az=97.0*

ISC 13 06:46:09.6±0.3, 12°.22N±0°.05×144°.13E±0°.06, h26km, n170, σ1§42/168, mb4.8/84, MS4.0/29, 1C-1D, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**1.54**	**28**	Pn	**Pn**	**06 46 34.7**	**-0.7**
	315nm,0.3s,baz=259,slow=1.4,SNR=88						
GUMO				Sn	**Sn**	**06 46 54.4**	**-0.2**
	1μm,0.3s,baz=156,slow=23,SNR=22						
GUMO				LR	LR	06 47 09.1	
	comp=Z,356nm,20.3s,baz=216,slow=43						
GUMO	**Guam**	**1.54**	**28**	*e*P	**Pn**	**06 46 34.5**	**-0.9**
GUMO				*e*		06 46 57.6	
GUMO	**Guam**	**1.54**	**28**	*e*Pn	**Pn**	**06 46 34.5**	**-0.9**
GUMO				*e*Sn	**Sb**	**06 46 57.6**	**+1.0**
PATS	**Pohnpei**	**14.97**	**110**	*e*Pn	**Pn**	**06 49 36.3**	**-3.3**
	263nm,1.4s						
RABL	**Rabaul**	**18.16**	**153**	*e*Pn	**P**	**06 50 22.0**	**+1.8**
	172nm,0.4s						
DAV	**Davao City (W)**	**18.98**	**256**	LR	LR	06 56 17.6	
	comp=Z,260nm,21.9s,baz=128,slow=32						
JHJ	**Hachijo jima 2**	**21.18**	**350**	LR	LR	06 57 27.6	
	comp=Z,507nm,21.8s,baz=98,slow=32						
PMG	**Port Moresby**	**21.70**	**172**	LR	LR	06 58 53.6	
	comp=Z,161nm,18.8s,baz=255,slow=35						
H11S3	**WAKE ISLAND Hy**	**22.62**	**71**	T	T	07 14 38.8	
	baz=258,slow=75,SNR=21						
H11S1	**WAKE ISLAND Hy**	**22.63**	**71**	T	T	07 14 40.5	
	baz=258,slow=75,SNR=12						
H11S2	**WAKE ISLAND Hy**	**22.63**	**71**	T	T	07 14 40.5	
	baz=258,slow=75,SNR=18						
TGY	**Tagaytay City**	**22.66**	**277**	LR	LR	06 59 59.8	
	comp=Z,270nm,18.2s,baz=162,slow=37						
H11N1	**WAKE ISLAND Hy**	**23.10**	**68**	T	T	07 15 13.3	
	baz=255,slow=75,SNR=39						
H11N2	**WAKE ISLAND Hy**	**23.11**	**68**	T	T	07 15 13.2	
	baz=255,slow=75,SNR=38						
H11N3	**WAKE ISLAND Hy**	**23.12**	**68**	T	T	07 15 12.6	
	baz=255,slow=75,SNR=30						
JNU	**Nakatsue**	**24.08**	**332**	P	**P**	**06 51 24.5**	**+1.4**
	25nm,0.8s,baz=123,slow=6.3,SNR=12						
JNU	**Nakatsue**	**24.08**	**332**	*e*P	**P**	**06 51 25.0**	**+1.9**
	29nm,0.8s						
MJAR	**Matsushiro Arr**	**24.80**	**349**	P	**P**	**06 51 27.7**	**-1.9**
	8.6nm,0.9s,baz=175,slow=9.4,SNR=11						
MJAR				ScP	**ScP**	**06 58 43.7**	**+0.6**
	3.0nm,0.8s,baz=192,slow=3.4,SNR=5.7						
MJAR				LR	LR	07 00 32.1	
	comp=Z,472nm,18.1s,baz=190,slow=35						
MAJO	**Matsushiro**	**24.80**	**349**	*e*P	**P**	**06 51 30.5**	**+0.9**
MAJO				pmax	pmax		
	comp=Z,27nm,1.2s						
MAJO	**Matsushiro**	**24.80**	**349**	*e*P	**P**	**06 51 30.5**	**+0.9**
	comp=Z,27nm,1.2s						
MAT	**Matsushiro**	**24.80**	**349**	P	**P**	**06 51 30.4**	**+0.8**
MAT				*e*S	**S**	**06 55 55.4**	**+4.8**
MJB9	**Matsu-Tunnel**	**24.80**	**349**	*e*P	**P**	**06 51 30.6**	**+1.0**
	comp=Z,11nm,1.5s						
SSLB	**Suanglung**	**24.82**	**301**	*e*P	**P**	**06 51 28.9**	**-1.0**
	comp=Z,122nm,2.0s						
COEN	**Coen**	**26.03**	**182**	*e*P	**P**	**06 51 41.3**	**+0.5**
	comp=Z,39nm,1.3s						
MYLDM	**Lahad Datu**	**26.26**	**257**	*e*P	**P**	**06 51 42.6**	**-0.4**
	comp=Z,50nm,1.0s						
KSRS	**Korea Array**	**29.02**	**333**	P	**P**	**06 52 06.1**	**-1.3**
	comp=Z,1.9nm,0.6s,baz=139,slow=9.6,SNR=3.5						
KSRS				LR	LR	07 01 32.8	
	comp=Z,109nm,21.5s,baz=148,slow=32						
KSAR	**Wonju Array Be**	**29.03**	**333**	P	**P**	**06 52 06.2**	**-1.4**
KSAR	**Wonju Array Be**	**29.03**	**333**	P	**P**	**06 52 06.2**	**-1.4**
CTAO	**Charters Tower**	**32.17**	**176**	*e*P	**P**	**06 52 36.5**	**+1.0**
CTAO				pmax	pmax		
	comp=Z,68nm,1.1s						
CTAO	**Charters Tower**	**32.17**	**176**	*e*P	**P**	**06 52 36.5**	**+1.0**
	comp=Z,68nm,1.1s						
SBUM	**Sibu**	**33.06**	**255**	*e*P	**P**	**06 52 44.0**	**+0.6**
	comp=Z,12nm,0.9s						
WRAB	**Tennant Creek**	**33.37**	**197**	*i* P	**P**	**06 52 45.9**	**-0.1**
WRAB				pmax	pmax		
	comp=Z,9.0nm,0.5s						
WRAB	**Tennant Creek**	**33.37**	**197**	*e*P	**P**	**06 52 45.8**	**-0.2**
	comp=Z,6.2nm,0.8s						
WB2	**Warramunga Arr**	**33.38**	**197**	*e*P	**P**	**06 52 46.0**	**0.0**
	comp=Z,8.7nm,0.8s						
WRA	**Warramunga Arr**	**33.38**	**197**	P	**P**	**06 52 46.1**	**0.0**
	comp=Z,4.0nm,0.7s,baz=21,slow=9.8,SNR=39						
WRA				PcP	**PcP**	**06 55 27.8**	**+0.2**
	comp=Z,0.7nm,0.7s,baz=17,slow=3.5,SNR=3.7						
WRA	**Warramunga Arr**	**33.38**	**197**	*i* P	**P**	**06 52 46.0**	**-0.1**
WRA				pmax	pmax		
	comp=Z,4.0nm,0.6s						
USRK	**Ussuriysk Ar.**	**33.53**	**344**	P	**P**	**06 52 44.8**	**-2.3**
	comp=Z,1.2nm,0.6s,baz=155,slow=11,SNR=3.2						
USRK				LR	LR	07 04 03.9	
	comp=Z,166nm,19.5s,baz=150,slow=32						
QIZ	**Qiongzhong**	**33.66**	**286**	P	**P**	**06 52 47.8**	**-0.8**
QIZ				S	**S**	**06 58 10.6**	**+0.3**
QIZ				LR	LR		
	comp=N,130nm,17.7s						
QIZ				LR	LR		
	comp=E,120nm,20.1s						
MDJ	**Mudanjiang**	**34.61**	**342**	P	**P**	**06 52 56.8**	**+0.3**
MDJ				pP	pP	06 53 02.8	-1.4
MDJ				sP	sP	06 53 05.4	-2.0
MDJ				S	**S**	**06 58 25.8**	**+1.5**
MDJ				sS	sS	06 58 36.3	-0.7
MDJ				pmax	pmax		
	comp=Z,4.0nm,0.9s						
MDJ				pmax	pmax		
	comp=Z,110nm,4.8s						
MDJ				LR	LR		
	comp=N,170nm,7.7s						
MDJ				LR	LR		
	comp=E,210nm,9.4s						
MDJ				LR	LR		
	comp=Z,290nm,10.3s						
KSM	**Kuching**	**35.18**	**255**	*e*P	**P**	**06 53 01.2**	**-0.7**
	comp=Z,27nm,1.2s						
CN2	**Changchun**	**35.35**	**336**	*e*P	**P**	**06 53 00.5**	**-2.4**
AS01	**Alice Springs**	**37.03**	**196**	*e*P	**P**	**06 53 17.5**	**0.0**
AS31	**Alice Springs**	**37.04**	**196**	*e*P	**P**	**06 53 18.5**	**+0.9**
	comp=Z,1.9nm,0.6s						
ASAR	**Alice Springs**	**37.04**	**196**	P	**P**	**06 53 18.2**	**+0.6**
	comp=Z,2.0nm,0.6s,baz=19,slow=10.0,SNR=31						
ASAR				PcP	**PcP**	**06 55 38.9**	**+0.7**
	comp=Z,1.1nm,0.7s,baz=35,slow=3.0,SNR=6.5						
GYA	**Guiyang**	**37.92**	**297**	P	**P**	**06 53 24.8**	**-0.4**
GYA				pmax	pmax		
	comp=Z,10.0nm,1.0s						
GYA				pmax	pmax		
	comp=Z,110nm,5.8s						
GYA				LR	LR		
	comp=N,430nm,16.4s						
GYA				LR	LR		
	comp=E,480nm,16.6s						
GYA				LR	LR		
	comp=Z,410nm,16.8s						
EIDS	**Eidsvold**	**37.97**	**170**	*e*P	**P**	**06 53 25.4**	**+0.1**
	comp=Z,31nm,1.5s						
KLR	**Kul'dur**	**38.30**	**347**	*i* P	**P**	**06 53 27.3**	**-0.6**
HHC	**Hu-ho-hao-te**	**40.35**	**321**	*e*P	**P**	**06 53 46.4**	**+1.1**
HHC				PcS	**PcS**	**06 59 44.0**	**+5.0**
HHC				S	**S**	**06 59 55.3**	**+3.4**
HHC				sS	sS	07 00 04.3	-0.5
HHC				pmax	pmax		
	comp=Z,25nm,0.7s						
HHC				pmax	pmax		
	comp=Z,110nm,3.9s						
HHC				LR	LR		
	comp=N,610nm,12.4s						
HHC				LR	LR		
	comp=E,770nm,11.7s						
HHC				LR	LR		
	comp=Z,810nm,11.7s						
DZM	**Mont Dzumac**	**40.50**	**147**	P	**P**	**06 53 46.3**	**-0.5**
	comp=Z,6.9nm,0.6s,baz=284,slow=5.3,SNR=8.6						
MBWA	**Marble Bar**	**40.93**	**216**	*e*P	**P**	**06 53 50.2**	**+0.1**
	comp=Z,288nm,1.5s						
KMI	**Kunming**	**41.09**	**294**	P	**P**	**06 53 50.8**	**-1.0**
KMI				pmax	pmax		
	comp=Z,10.0nm,1.1s						
CD2	**Chengdu**	**41.61**	**303**	P	**P**	**06 53 54.8**	**-1.0**
CD2				sP	pP	06 54 04.8	+1.2
CD2				PP	**PP**	**06 55 31.3**	**-0.9**
CD2				S	**S**	**07 00 10.3**	**-0.5**
CD2				sS	sS	07 00 22.3	-1.4
CD2				SS	**SS**	**07 03 16.9**	**+0.6**
CD2				pmax	pmax		
	comp=Z,20nm,1.0s						
CD2				pmax	pmax		
	comp=Z,90nm,3.7s						
CD2				LR	LR		
	comp=N,230nm,16.2s						
CD2				LR	LR		
	comp=Z,200nm,14.4s						
PETK	**Petropavlovsk-**	**42.20**	**12**	LR	LR	07 10 49.8	
	comp=Z,135nm,19.0s,baz=201,slow=35						
ARMA	**Armidale**	**43.00**	**170**	*e*P	**P**	**06 54 08.0**	**+0.9**
	comp=Z,88nm,1.9s						
LZH	**Lanzhou**	**43.33**	**310**	*e*P	**P**	**06 54 09.0**	**-0.8**
LZH				pP	pP	06 54 16.0	-1.7
LZH				sP	sP	06 54 18.8	-2.1
LZH				PP	**PP**	**06 55 52.1**	**+1.3**
LZH				pmax	pmax		
	comp=Z,25nm,1.3s						
LZH				pmax	pmax		
	comp=Z,93nm,6.3s						
LZH				LR	LR		
	comp=N,400nm,13.8s						
LZH				LR	LR		
	comp=E,400nm,14.2s						
LZH				LR	LR		
	comp=Z,530nm,18.4s						
KULM	**Kulim**	**43.47**	**265**	*e*P	**P**	**06 54 12.4**	**+1.3**
	comp=Z,22nm,1.3s						
CM01	**Chiang Mai Arr**	**43.91**	**284**	*e*P	**P**	**06 54 14.4**	**-0.2**
STKA	**Stephens Creek**	**43.91**	**183**	P	**P**	**06 54 13.9**	**-0.3**
	comp=Z,2.9nm,0.8s,baz=347,slow=16,SNR=3.0						
STKA	**Stephens Creek**	**43.91**	**183**	P	**P**	**06 54 14.0**	**-0.3**
CMAR	**Chiang Mai Arr**	**43.93**	**284**	P	**P**	**06 54 13.8**	**-0.9**
	comp=Z,1.7nm,0.4s,baz=84,slow=6.7,SNR=11						
MSVF	**Nonsavu**	**44.80**	**131**	*e*P	**P**	**06 54 23.5**	**+1.7**
MSVF	**Nonsavu**	**44.80**	**131**	*e*P	**P**	**06 54 23.5**	**+1.7**
BBOO	**Buckleboo**	**45.44**	**190**	*e*P	**P**	**06 54 26.8**	**+0.4**
	comp=Z,157nm,1.9s						
PSI	**Prapat**	**45.72**	**262**	*e*P	**P**	**06 54 28.7**	**-0.5**
PSI				pmax	pmax		
	comp=Z,9.0nm,0.6s						
PSI	**Prapat**	**45.72**	**262**	*e*P	**P**	**06 54 28.7**	**-0.5**
	comp=Z,9.1nm,0.6s						
SONM	**Songino Array**	**47.44**	**326**	P	**P**	**06 54 41.8**	**-0.4**
	comp=Z,2.4nm,0.7s,baz=144,slow=7.7,SNR=7.2						
SONM				PcP	**PcP**	**06 56 12.2**	**-0.2**
	comp=Z,1.6nm,0.8s,baz=149,slow=5.9,SNR=3.4						
SONM				LR	LR	07 14 34.6	
	comp=Z,243nm,20.0s,baz=132,slow=36						
SONA1	**Songino Array**	**47.44**	**326**	*e*P	**P**	**06 54 42.5**	**+0.3**
YAK	**Yakutsk**	**50.82**	**351**	*i* P	**P**	**06 55 08.3**	**+0.7**
YAK				pmax	pmax		
	comp=Z,28nm,0.7s						
SEY	**Seymchan**	**50.98**	**5**	*i* P	**P**	**06 55 09.0**	**+0.2**
NWAO	**Narrogin (SRO)**	**51.72**	**209**	*e*P	**P**	**06 55 14.6**	**-0.2**
NWAO	**Narrogin (SRO)**	**51.72**	**209**	*e*P	**P**	**06 55 14.6**	**-0.2**
	comp=Z,260nm,1.6s						
WMQ	**Urumqi**	**57.56**	**314**	*e*P	**P**	**06 56 00.1**	**+2.9**
WMQ				pmax	pmax		
	comp=Z,13nm,1.0s						
WMQ				pmax	pmax		
	comp=Z,79nm,3.6s						
WMQ				LR	LR		
	comp=N,32nm,22.0s						
WMQ				LR	LR		
	comp=E,29nm,24.0s						
WMQ				LR	LR		
	comp=Z,34nm,32.0s						
BILL	**Bilibino**	**57.62**	**10**	*i* P	**P**	**06 55

INK	**Inuvik**	**75.90**	**22**	P	**P**	**06 57 52.4**	**-1.2**
	comp=Z,1.5nm,0.8s,baz=247,slow=4.9,SNR=8.3						
INK	**Inuvik**	**75.90**	**22**	*e*P	**P**	**06 57 52.8**	**-0.8**
INK				pmax	pmax		
	comp=Z,12nm,1.3s						
INK	**Inuvik**	**75.90**	**22**	*e*P	**P**	**06 57 52.8**	**-0.8**
	comp=Z,12nm,1.3s						
ABKAR	**Akbulak array**	**77.07**	**318**	*e*P	**P**	**06 58 00.1**	**-0.5**
ARU	**Arti**	**77.48**	**325**	P	**P**	**06 58 01.4**	**-1.3**
	comp=Z,4.3nm,0.6s,baz=108,slow=9.3,SNR=4.4						
ARU	**Arti**	**77.48**	**325***c*	*i*P	**P**	**06 58 01.7**	**-1.0**
ARU						07 00 55.3	
ARU				S	**S**	**07 07 51.5**	**-0.5**
ARU				pmax	pmax		
	comp=Z,11nm,1.7s						
DLBC	**Dease Lake**	**77.52**	**32**	*e*P	**P**	**06 58 03.0**	**-0.1**
	comp=Z,14nm,1.6s						
AKTO	**Aktyubinsk**	**78.22**	**319**	P	**P**	**06 58 05.7**	**-1.3**
	comp=Z,2.9nm,0.5s,baz=6.3,slow=9.2,SNR=3.6						
AKTO				LR	LR	07 33 04.6	
	comp=Z,71nm,21.4s,baz=77,slow=36						
GEYT	**Alibeck**	**79.48**	**307**	P	**P**	**06 58 13.4**	**-0.9**
	comp=Z,3.5nm,0.5s,baz=67,slow=5.0,SNR=6.7						
GEYT				LR	LR	07 35 31.8	
	comp=Z,107nm,21.3s,baz=80,slow=37						
YBH	**Yreka Blue Hor**	**84.31**	**49**	*e*P	**P**	**06 58 40.1**	**+0.4**
YBH	**Yreka Blue Hor**	**84.31**	**49**	*e*P	**P**	**06 58 40.1**	**+0.4**
YKW3	**Yellowknife Ar**	**84.38**	**27**	*e*P	**P**	**06 58 40.3**	**+0.9**
	comp=Z,6.9nm,1.1s						
YKA	**Yellowknife Ar**	**84.40**	**27**	P	**P**	**06 58 38.7**	**-0.8**
	comp=Z,1.6nm,0.7s,baz=287,slow=5.2,SNR=20						
YKB5	**Yellowknife Ar**	**84.40**	**27**	*e*P	**P**	**06 58 38.7**	**-0.8**
B08A	**Colville Reser**	**85.27**	**42**	*e*P	**P**	**06 58 45.1**	**+0.8**
	comp=Z,8.3nm,1.1s						
RES	**Resolute Bay**	**86.04**	**13**	*e*P	**P**	**06 58 47.5**	**0.0**
RES				pmax	pmax		
	comp=Z,6.0nm,0.6s						
RES	**Resolute Bay**	**86.04**	**13**	*e*P	**P**	**06 58 47.1**	**-0.4**
RES				pmax	pmax		
	comp=Z,6.0nm,0.6s						
RES	**Resolute Bay**	**86.04**	**13**	*e*P	**P**	**06 58 47.5**	**0.0**
	comp=Z,6.3nm,0.6s						
RES	**Resolute Bay**	**86.04**	**13**	*e*P	**P**	**06 58 47.1**	**-0.4**
	comp=Z,6.3nm,0.6s						
KLMR	**Klimovskoe**	**86.41**	**332**	P	**P**	**06 58 46.1**	**-3.5**
KLMR				pmax	pmax		
	comp=Z,12nm,1.3s						
NEW	**Newport**	**86.73**	**41**	*e*P	**P**	**06 58 51.8**	**+0.3**
NEW				pmax	pmax		
	comp=Z,9.0nm,0.8s						
NEW	**Newport**	**86.73**	**41**	*e*P	**P**	**06 58 51.8**	**+0.3**
	comp=Z,8.6nm,0.8s						
BMO	**Blue Mountains**	**87.46**	**45**	*e*P	**P**	**06 58 55.9**	**+0.7**
BMO				pmax	pmax		
	comp=Z,7.0nm,1.0s						
BMO	**Blue Mountains**	**87.46**	**45**	*e*P	**P**	**06 58 55.9**	**+0.7**
	comp=Z,7.4nm,1.0s						
ARCES	**ARCESS Array B**	**88.16**	**342**	P	**P**	**06 58 57.1**	**-0.8**
	comp=Z,5.9nm,1.0s,baz=74,slow=6.7,SNR=3.5						
VRH	**Novokhopyorsk**	**88.20**	**322**	*e*P	**P**	**06 58 55.6**	**-2.8**
VRH				pmax	pmax		
	comp=Z,10.0nm,0.9s						
NV01	**Mina Array Sit**	**88.33**	**51**	*e*P	**P**	**06 59 00.2**	**+0.5**
NVAR	**Mina Array Bea**	**88.33**	**51**	P	**P**	**06 59 00.5**	**+0.8**
	comp=Z,1.3nm,0.6s,baz=265,slow=5.4,SNR=12						
BSMT	**Bassoo Peak**	**88.35**	**41**	*e*P	**P**	**06 59 00.5**	**+1.0**
MFID	**Camas Ranch**	**88.87**	**46**	*e*P	**P**	**06 59 02.5**	**+0.5**
	comp=Z,7.2nm,1.0s						
LPSR	**Galich'ya Gora**	**89.41**	**324**	*e*P	**P**	**06 59 01.7**	**-2.4**
LPSR				pmax	pmax		
	comp=Z,7.0nm,0.7s						
KBZ	**Khabaz**	**89.61**	**315**	LR	LR	07 42 42.2	
	comp=Z,84nm,20.4s,baz=62,slow=38						
KVAR	**Kislovodsk Arr**	**89.68**	**315**	LR	LR	07 42 13.2	
	comp=Z,97nm,20.8s,baz=33,slow=38						
VSR	**Storozhevoye**	**89.73**	**323**	*e*P	**P**	**06 59 01.3**	**-4.3**
VSR				pmax	pmax		
	comp=Z,9.0nm,0.5s						
HLID	**Hailey**	**89.81**	**45**	*e*P	**P**	**06 59 06.9**	**+0.4**
	comp=Z,2.7nm,0.9s						
OBN	**Obninsk**	**89.85**	**327**	⇓*i*P	**P**	**06 59 03.8**	**-2.3**
OBN				*e*S	**SKSac**	**07 09 31.2**	**-3.8**
OBN				pmax	pmax		
	comp=Z,11nm,1.0s						
VNDA	**Vanda**	**90.16**	**176**	LR	LR	07 36 19.9	
	comp=Z,32nm,20.5s,baz=348,slow=33						
TPNV	**Topopah Spring**	**90.29**	**52**	*e*P	**P**	**06 59 09.8**	**+1.0**
TPNV				pmax	pmax		
	comp=Z,5.0nm,0.8s						
TPNV	**Topopah Spring**	**90.29**	**52**	*e*P	**P**	**06 59 09.8**	**+1.0**
	comp=Z,4.7nm,0.8s						
R11A	**Troy Canyon, C**	**90.42**	**51**	*e*P	**P**	**06 59 10.1**	**+0.7**
	comp=Z,12nm,1.9s						
FIA1	**FINESS Array S**	**92.09**	**335**	*e*P	**P**	**06 59 14.4**	**-2.0**
FINES	**FINESS Array B**	**92.09**	**335**	P	**P**	**06 59 14.1**	**-2.3**
	comp=Z,1.6nm,0.4s,baz=77,slow=4.2,SNR=9.4						
FINES	**FINESS Array B**	**92.09**	**335**	*i* P	**P**	**06 59 14.3**	**-2.1**
FINES				pmax	pmax		
	comp=Z,2.0nm,0.4s						
RLMT	**Red Lodge**	**92.82**	**43**	*e*P	**P**	**06 59 22.5**	**+2.0**
	comp=Z,26nm,1.9s						
PDAR	**Pinedale Array**	**93.44**	**45**	P	**P**	**06 59 23.2**	**-0.2**
	comp=Z,0.2nm,0.5s,baz=310,slow=4.4,SNR=2.8						
Y14A	**Wickenburg**	**93.68**	**54**	*e*P	**P**	**06 59 25.5**	**+1.1**
	comp=Z,8.7nm,0.8s						
LAO	**LASA Array**	**94.23**	**41**	*e*P	**P**	**06 59 27.0**	**+0.3**
	comp=Z,7.9nm,0.8s						
AKASG	**Malin Array Be**	**95.71**	**325**	P	**P**	**06 59 31.4**	**-1.9**
	comp=Z,0.2nm,0.3s,baz=52,slow=5.3,SNR=5.1						
AKASG	**Malin Array Be**	**95.71**	**325**	*i* P	**P**	**06 59 30.8**	**-2.4**
BRTR	**Keskin Array B**	**97.47**	**313**	P	**P**	**06 59 40.0**	**-1.7**
	comp=Z,0.5nm,0.7s,baz=81,slow=3.7,SNR=2.9						
BRTR				LR	LR	07 46 17.5	
	comp=Z,38nm,21.7s,baz=69,slow=37						
BRTR	**Keskin Array B**	**97.47**	**313**	P	**P**	**06 59 40.0**	**-1.7**
NOA	**NORSAR Array B**	**98.06**	**339**	LR	LR	07 45 25.6	
	comp=Z,29nm,21.9s,baz=35,slow=36						
UPC	**Upice**	**102.91**	**329**	AMS	AMS	07 50 40.0	
	comp=Z,200nm,15.2s						
PVCC	**Panska Ves**	**103.62**	**330**	AMS	AMS	07 52 20.0	
	comp=Z,200nm,16.1s						
TREC	**Trest**	**103.93**	**328**	AMS	AMS	07 50 00.0	
	comp=Z,300nm,18.2s						
KHC	**Kasperske Hory**	**105.00**	**329**	AMS	AMS	07 53 00.0	
	comp=Z,100nm,15.8s						
TORD	**Torodi Ar. Bea**	**135.02**	**303**	PKP	**PKPdf**	**07 05 28.0**	**+0.5**
	comp=Z,0.5nm,0.6s,baz=32,slow=2.5,SNR=3.4						
TORD				SKPbc	**SKPbc**	**07 08 57.3**	**+0.7**
	comp=Z,0.6nm,0.8s,baz=25,slow=3.8,SNR=2.5						
PLCA	**Paso Flores**	**138.39**	**139**	PKP	**PKPdf**	**07 05 33.8**	**+0.6**
	comp=Z,1.2nm,0.8s,baz=226,slow=3.3,SNR=5.1						
PLCA	**Paso Flores**	**138.39**	**139**	*e*PKIKP	**PKPdf**	**07 05 34.4**	**+1.2**
PLCA	**Paso Flores**	**138.39**	**139**	*e*PKPdf	**PKPdf**	**07 05 34.4**	**+1.2**
DBIC	**Dimbokro**	**143.90**	**300**	PKP	PKPbc	07 05 41.4	-0.1
	comp=Z,4.5nm,0.9s,baz=22,slow=1.2,SNR=5.5						
LVC	**Limon Verde**	**146.90**	**113**	*e*PKPdf	**PKPdf**	**07 05 49.3**	**+0.2**
LPAZ	**La Paz**	**148.49**	**101**	PKPbc	**PKPbc**	**07 05 56.7**	**+0.9**
	comp=Z,1.6nm,0.6s,baz=303,slow=3.2,SNR=12						
CPUP	**Villa Florida**	**155.41**	**128**	PKPab	**PKPab**	**07 06 27.4**	**+0.4**
	comp=Z,1.2nm,0.6s,baz=254,slow=7.4,SNR=3.7						

IDC ***13*** *06:48:10.6±0.7, 41°.95N×82°.37E, h0km, mb4.2/19, mb1 4.4/26, mb1mx4.2/54, mbtmp4.2/26, ML3.9/7, MS3.5/14, Ms1 3.5/14, ms1mx3.3/42, Error ellipse: s-maj=12.8km s-min=11.8km az=17.0*

ISCJB ***13*** *06:48:11.3±0.2, 41°.93N±0°.03×82°.51E±0°.03, h13km, mb4.5/56, MS3.6/18, Error ellipse: s-maj=4.4km s-min=3.4km az=22.1*

SOME ***13*** *06:48:12.6, 41°.92N×82°.17E, h15km, MS4.1*

BJI ***13*** *06:48:12.0, 41°.97N×82°.33E, h7km, mb4.3/25, mB4.6/22, ML4.6/12, Ms4.4/21, Ms7 4.1/16*

MOS ***13*** *06:48:14.2±1.0, 41°.99N×82°.39E, h33km, mb4.7/26, Error ellipse: s-maj=7.3km s-min=5.5km az=113.3*

NNC ***13*** *06:48:14.7±2.3, 42°.14N×82°.49E, h4km±12km, mb5.2, mpv4.8, Error ellipse: s-maj=18.5km s-min=9.0km az=140.0*

NEIC ***13*** *06:48:16.2±1.5, 41°.98N×82°.36E, h34km±10km, mb4.8/32, Error ellipse: s-maj=7.6km s-min=4.3km az=173.0*

ISC 13 06:48:13.3±0.3,**41°.96N**±0°.03×**82°.28E**±0°.02,**h13**km,**n205,** σ1**95**/252,**mb4.7**/56,**MS3.6**/18,**16C-22D,Southern Xinjiang**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KTMS	**Ketmen**	**2.06**	**317**	*e*P	**Pg**	**06 48 51.8**	**-1.0**
	717nm,0.6s						
KTMS				*e*S	**Sg**	**06 49 18.9**	**-0.6**
	2μm,0.6s						
SHLS	**Shalkode**	**2.14**	**305**	*e*P	**Pb**	**06 48 52.8**	**+0.8**
	884nm,0.6s						
SHLS				⇓*i*S	**Sg**	**06 49 22.4**	**+0.3**
	6μm,0.4s						
PDGK	**Podgornoye**	**2.47**	**305**	⇑Pn	**Pb**	**06 48 56.3**	**-1.3**
	981nm,0.8s						
PDGK				⇓Sn	**Sb**	**06 49 29.6**	**+1.6**
	4μm,0.9s						
UZB	**Uzynbulak**	**2.68**	**297**	*e*P	**Pb**	**06 49 01.1**	**-0.2**
	310nm,0.4s						
UZB				*e*S	**Sg**	**06 49 37.6**	**-1.9**
	2μm,0.5s						
DJR	**Jarkent**	**2.99**	**323**	*e*P	**Pb**	**06 49 06.5**	**0.0**
	414nm,0.6s						
DJR				*e*S	**Sg**	**06 49 47.2**	**-2.2**
	8μm,8.7s						
KPKS	**Kokpek**	**3.05**	**301**	*e*P	**Pb**	**06 49 05.7**	**-1.8**
	871nm,0.3s						
KPKS				*e*S	**Sb**	**06 49 43.0**	**-1.6**
	2μm,0.4s						
SATY	**Saty**	**3.07**	**292**	*e*P	**Pb**	**06 49 08.0**	**+0.1**
	612nm,0.7s						
SATY				*e*S	**Sg**	**06 49 50.1**	**-1.7**
	1μm,0.6s						
ZHN	**Zhinishke**	**3.09**	**294**	*e*P	**Pb**	**06 49 08.4**	**+0.3**
	236nm,0.4s						
ZHN				*e*S	**Sg**	**06 49 50.1**	**-2.3**
	457nm,0.5s						
KURS	**Kuram**	**3.39**	**298**	*e*P	**Pb**	**06 49 13.2**	**-0.1**
	174nm,0.5s						
KURS				*e*S	**Sb**	**06 49 57.2**	**+2.7**
	334nm,1.3s						
MNBS	**Baschi**	**3.55**	**308**	*e*P	**Pb**	**06 49 16.8**	**+0.8**
	318nm,0.6s						
MNBS				*e*S	**Sb**	**06 50 02.0**	**+3.0**
	2μm,0.5s						
KAPS	**Kapalarasan**	**3.95**	**328**	⇓*i*P	**Pn**	**06 49 16.9**	**+3.3**
	309nm,0.5s						
KAPS				⇓*i*S	**Sn**	**06 50 01.2**	**+1.4**
	402nm,0.5s						
ARXS	**Arharly**	**3.96**	**306**	*e*P	**Pg**	**06 49 26.6**	**-2.6**
	320nm,0.6s						
ARXS				*e*S	**Sg**	**06 50 18.8**	**-1.8**
	630nm,1.1s						
MDOK	**Medeo**	**4.05**	**289**	*e*P	**Pb**	**06 49 26.3**	**+1.8**
	246nm,1.1s						
MDOK				⇓*i*S	**Sb**	**06 50 17.9**	**+4.5**
	528nm,0.6s						
TNSS	**Tian-Shan**	**4.09**	**287**	⇓*i*P	**Pb**	**06 49 26.0**	**+0.5**
	245nm,0.7s						
TNSS				⇓*i*S	**Sb**	**06 50 19.4**	**+4.5**
	188nm,0.7s						
KNDC	**Almaty**	**4.12**	**290**	⇑Pn	**Pn**	**06 49 19.3**	**+3.3**
	609nm,0.8s						
KNDC				⇓Lg	Lg	06 50 24.6	
	936nm,0.8s						
AAA	**Alma-Ata**	**4.15**	**290**	*e*P	**Pb**	**06 49 26.5**	**+0.2**
	784nm,0.6s						
AAA				⇓*i*S	**Sb**	**06 50 19.0**	**+2.7**
	849nm,1.1s						
AAA	**Alma-Ata**	**4.15**	**290**	*e*PN	**Pb**	**06 49 26.4**	**+0.2**
AAA				*i* S	**Sb**	**06 50 18.9**	**+2.7**
AAA				pmax	pmax		
	comp=Z,784nm,0.6s						
AAA				smax	smax		
	comp=N,849nm,1.1s						
TDK	**Taldyqorghan**	**4.15**	**319**	*e*P	**Pg**	**06 49 31.1**	**-1.7**
	comp=N,322nm,0.5s						
TDK				*e*S	**Sg**	**06 50 28.4**	**+1.8**
	comp=N,1μm,0.9s						
CHKK	**Chushkaly**	**4.32**	**298**	*e*P	**Pb**	**06 49 31.8**	**+2.7**
	comp=N,93nm,0.6s						
CHKK				⇑*i*S	**Sg**	**06 50 28.6**	**-3.4**
	comp=N,323nm,0.2s						
WMQ	**Urumqi**	**4.40**	**63**	Pn	**Pn**	**06 49 20.6**	**+0.8**
WMQ				Sn	**Sn**	**06 50 11.8**	**+0.9**
WMQ				smax	smax		
	comp=N,540nm,0.6s						
WMQ				smax	smax		
	comp=N,620nm,0.8s						
WMQ	**Urumqi**	**4.40**	**63**	PN	**Pn**	**06 49 20.6**	**+0.8**
WMQ						06 50 11.8	
WMQ	**Urumqi**	**4.40**	**63**	Pn	**Pn**	**06 49 20.6**	**+0.8**
WMQ				Sn	**Sn**	**06 50 11.8**	**+0.9**
MTBS	**Maitube**	**4.48**	**287**	*e*P	**Pb**	**06 49 30.5**	**-1.4**
	comp=N,95nm,0.3s						
MTBS				*e*S	**Sb**	**06 50 26.9**	**+1.1**
	comp=N,177nm,0.6s						
KUU	**Kurty**	**4.77**	**296**	⇑*i*P	**Pb**	**06 49 39.6**	**+2.8**
	comp=N,180nm,0.6s						
KUU				⇑*i*S	**Sg**	**06 50 43.0**	**-3.4**
	comp=N,244nm,0.5s						
KST	**Kastek**	**4.79**	**285**	*e*P	**Pb**	**06 49 37.5**	**+0.3**
	comp=N,53nm,0.9s						
KST				*e*S	**Sb**	**06 50 37.9**	**+3.0**
	comp=N,231nm,1.0s						
MK01	**Makanchi Array**	**4.81**	**0**	*e*Pn	**Pn**	**06 49 26.7**	**+1.2**
MK31	**Makanchi Array**	**4.84**	**0**	⇑Pn	**Pn**	**06 49 27.8**	**+2.0**
	comp=N,16nm,0.4s,baz=184,slow=13,SNR=816						
MK31				⇓Pg	**Pg**	**06 49 41.7**	**-4.2**
	comp=N,192nm,0.9s,baz=170,slow=16,SNR=14						
MK31				⇓Sn	**Sn**	**06 50 20.4**	**-1.3**
	comp=N,110nm,0.6s,baz=168,slow=12,SNR=5.6						
MK31				⇓Lg	Lg	06 50 41.5	
	comp=N,424nm,0.7s,baz=174,slow=27,SNR=4.8						
MK31	**Makanchi Array**	**4.84**	**0**	*e*PN	**Pn**	**06 49 27.9**	**+2.0**
MK31	**Makanchi Array**	**4.84**	**0**	*e*Pn	**Pn**	**06 49 27.9**	**+2.0**
MKAR	**Makanchi Array**	**4.84**	**0**	Pn	**Pn**	**06 49 27.9**	**+2.1**
	comp=N,17nm,0.3s,baz=187,slow=13,SNR=231						
MKAR				Sn	**Sn**	**06 50 23.0**	**+1.3**
	comp=N,23nm,0.3s,baz=169,slow=16,SNR=5.5						
MKAR				Lg	Lg	06 50 44.0	
	comp=N,50nm,0.3s,baz=181,slow=28,SNR=7.6						
MAKZ	**Makanchi**	**4.86**	**358**	⇑Pn	**Pn**	**06 49 28.1**	**+2.0**
	comp=N,177nm,0.8s						
MAKZ				⇓Sn	**Sn**	**06 50 20.5**	**-1.7**
	comp=N,302nm,1.1s						
MAKZ				⇑Lg	Lg	06 50 40.3	
	comp=N,594nm,0.8s						
MAKZ	**Makanchi**	**4.86**	**358**	*e*PN	**Pn**	**06 49 27.9**	**+1.9**
MAKZ	**Makanchi**	**4.86**	**358**	*e*Pn	**Pn**	**06 49 28.0**	**+1.9**
TKM2	**Tokmak 2**	**5.04**	**283**	⇓Pn	**Pn**	**06 49 31.0**	**+2.3**
	comp=N,245nm,1.1s						
TKM2				⇓Lg	Lg	06 51 00.2	
	comp=N,398nm,0.9s						
TKM2	**Tokmak 2**	**5.04**	**283**	*e*PN	**Pn**	**06 49 31.2**	**+2.4**
TKM2	**Tokmak 2**	**5.04**	**283**	*e*Pn	**Pn**	**06 49 31.2**	**+2.4**
TKM2				*e*Sn	**Sg**	**06 50 50.3**	**-4.7**
KSH	**Kashi**	**5.37**	**245**	Pn	**Pb**	**06 49 43.1**	**-4.0**
KSH				Sn	**Sb**	**06 50 50.1**	**-1.4**
KSH				smax	smax		
	comp=N,370nm,0.9s						
KSH				smax	smax		
	comp=N,940nm,1.4s						
ZSN	**Zaisan**	**5.70**	**15**	⇑*i*P	**Pg**	**06 49 58.2**	**-4.2**
	comp=N,127nm,0.9s						
ZSN				*e*S	**Sg**	**06 51 14.3**	**-1.9**
	comp=N,938nm,0.8s						
FRU	**Bishkek**	**5.74**	**281**	⇓*e*PN	**Pn**	**06 49 39.5**	**+1.3**
FRU				*i*		06 50 00.0	
FRU				*e*		06 51 14.0	
FRU				pmax	pmax		
	comp=Z,440nm,1.8s						
FRU				smax	smax		
	comp=E,2μm,1.9s						
AAK	**Ala-Archa**	**5.81**	**279**	Pn	**Pn**	**06 49 41.8**	**+2.4**
	comp=E,3.6nm,0.3s,baz=95,slow=8.2,SNR=21						
AAK				Lg	Lg	06 51 16.7	
	comp=E,12nm,0.3s,baz=90,slow=20,SNR=6.9						
AAK	**Ala-Archa**	**5.81**	**279**	⇓Pn	**Pn**	**06 49 42.6**	**+3.2**
	comp=E,67nm,0.9s						
AAK				⇓Lg	Lg	06 51 22.2	
	comp=E,408nm,1.2s						
AAK	**Ala-Archa**	**5.81**	**279**	*e*Pn	**Pn**	**06 49 42.5**	**+3.1**
AAK				Lg	Lg	06 51 16.7	
EKS2	**Erkin-Say**	**6.34**	**279**	*e*PN	**Pn**	**06 49 46.7**	**+0.1**
EKS2	**Erkin-Say**	**6.34**	**279**	*e*Pn	**Pn**	**06 49 46.7**	**+0.1**
MRKS	**Merke**	**6.75**	**280**	*e*P	**Pb**	**06 50 12.2**	**+1.6**
	comp=E,48nm,0.8s						
MRKS				*e*S	**Sb**	**06 51 39.4**	**+8.2**
	comp=E,49nm,0.7s						
MNAS	**Manas**	**7.28**	**277**	⇓Pn	**Pn**	**06 50 02.1**	**+2.6**
	comp=E,30nm,1.0s						
MNAS				⇑Lg	Lg	06 52 09.2	
	comp=E,101nm,1.0s						
MNAS	**Manas**	**7.28**	**277**	P	**Pn**	**06 50 02.0**	**+2.6**
SEM	**Semipalatinsk**	**8.57**	**351**	*e*P	Pg	06 50 48.1	-9.2
	comp=E,20nm,0.6s						
SEM				*e*S	Sg	06 52 38.8	-9.3
	comp=E,123nm,1.1s						
KK31	**Karatay Array**	**8.77**	**281**	⇑Pg	**Pg**	**06 50 58.3**	**-2.7**
	comp=E,6.9nm,0.6s						
KK31				⇑Lg	Lg	06 52 53.1	
	comp=E,18nm,0.6s,baz=77,slow=27,SNR=5.0						
KKAR	**Karatay Array**	**8.77**	**281**	*e*P	**Pn**	**06 50 23.2**	**+3.5**
KKAR	**Karatay Array**	**8.77**	**281**	*e*Pn	**Pn**	**06 50 23.2**	**+3.5**
KKAR				*e*Sn	**Sg**	**06 52 52.6**	**-1.8**
KURBB	**Kurchatov Arra**	**9.05**	**345**	Pn	**Pn**	**06 50 23.3**	**-0.3**
	comp=E,0.5nm,0.3s,baz=169,slow=13,SNR=24						
KURBB				Sn	**Sn**	**06 52 07.8**	**+2.6**
	comp=E,1.0nm,0.3s,baz=55,slow=23,SNR=4.0						
KURBB				Lg	Lg	06 52 59.7	
	comp=E,1.1nm,0.3s,baz=170,slow=24,SNR=6.2						
KURK	**Kurchatov**	**9.12**	**345**	⇓Pn	**Pn**	**06 50 24.4**	**-0.1**
	comp=E,151nm,1.0s						
KURK				⇑Lg	Lg	06 53 00.6	
	comp=E,1μm,1.1s						
KURK	**Kurchatov**	**9.12**	**345**	P	**Pn**	**06 50 23.3**	**-1.2**
KURK						06 52 07.8	
KURK				pmax	pmax		
	comp=Z,1.0nm,0.3s						
KURK				smax	smax		
	comp=N,1.0nm,0.3s						
KURK	**Kurchatov**	**9.12**	**345**	Pn	**Pn**	**06 50 23.3**	**-1.2**
KURK				Sn	**Sn**	**06 52 07.8**	**+0.9**
KURK				Lg	Lg	06 52 59.7	
CHCP	**Chirah Chowk**	**10.92**	**224**	P	**Pn**	**06 50 49.7**	**+0.4**
CEP	**Cherat**	**11.53**	**229**	P	**Pn**	**06 50 57.8**	**+0.1**
ZAA0	**Zalesovo Array**	**12.12**	**7**	*e*Pn	**Pn**	**06 51 04.0**	**-1.5**
ZALV	**Zalesovo Beam**	**12.12**	**7**	Pn	**Pn**	**06 51 04.5**	**-1.0**
	comp=N,1.6nm,0.3s,baz=189,slow=12,SNR=17						
ZALV				Sn	**Sn**	**06 53 19.9**	**-0.6**
	comp=N,1.7nm,0.3s,baz=190,slow=24,SNR=4.0						
ZALV				Lg	Lg	06 54 34.0	
	baz=194,slow=24,SNR=5.1						
THW	**Thamme Wali**	**12.39**	**226**	P	**Pn**	**06 51 08.9**	**-0.5**
SARP	**Sargodha**	**12.61**	**221**	P	**Pn**	**06 51 10.7**	**-1.7**
NVS	**Novosibirsk**	**12.91**	**2**	*e*P	**Pn**	**06 51 13.8**	**-2.5**
NVS				*e*		06 53 35.8	
GTA	**Gaotai**	**13.55**	**95**	*e*P	**Pn**	**06 51 27.1**	**+1.8**
GTA				pP	P	06 51 32.3	-2.1
GTA				sP		06 51 36.4	
GTA				S	**Sn**	**06 53 57.1**	**+1.3**
GTA				sS	S	06 54 06.6	-13
GTA				SS	**SnSn**	**06 54 12.8**	**+4.9**
GTA				pmax	pmax		
	comp=N,5.0nm,0.7s						
GTA				pmax	pmax		
	comp=N,120nm,4.8s						
GTA				LR	LR		
	comp=N,650nm,7.6s						
GTA				LR	LR		
	comp=N,850nm,8.6s						
GTA				LR	LR		
	comp=N,700nm,9.0s						
BVAR	**Borovoye Array**	**13.66**	**328**	Pn	**Pn**	**06 51 27.0**	**+0.4**
	comp=N,1.0nm,0.3s,baz=144,slow=13,SNR=18						
BVAR				Lg	Lg	06 55 23.4	
	comp=N,0.4nm,0.3s,baz=131,slow=25,SNR=3.6						
BRVK	**Borovoye**	**13.73**	**328**	*e*P	**Pn**	**06 51 28.3**	**+0.8**
BRVK	**Borovoye**	**13.73**	**328**	*e*Pn	**Pn**	**06 51 28.3**	**+0.8**
NDI	**New Delhi**	**13.87**	**199**	*e*P	Pn	06 51 21.0	-8.6
CHKZ	**Chkalovo**	**14.08**	**330**	P	**Pn**	**06 51 30.0**	**-2.3**
ZRNK	**Zerenda**	**14.17**	**325**	*e*P	**Pn**	**06 51 32.6**	**-1.0**
ZRNK	**Zerenda**	**14.17**	**325**	*e*Pn	**Pn**	**06 51 32.7**	**-1.0**
KRAR	**Krasnoyarsk**	**15.66**	**22**	*e*P	**Pn**	**06 51 52.0**	**-1.5**
KRAR				pmax	pmax		
	comp=Z,25nm,1.2s						
MOY	**Mondy**	**16.03**	**46**	*e*P	**P**	**06 52 03.3**	**+1.4**
ZAK	**Zakamensk**	**16.77**	**53**	*e*P	**Pn**	**06 52 06.4**	**-1.5**
ZAK				*e*		06 55 04.6	
ZAK				pmax	pmax		
	comp=Z,13nm,1.4s						
ABKAR	**Akbulak array**	**17.21**	**303**	*e*Pn	**Pn**	**06 52 11.9**	**-1.4**
LZH	**Lanzhou**	**17.73**	**102**	*e*P	**Pn**	**06 52 16.5**	**-3.6**
LZH				pP	pP	06 52 23.0	-1.6
LZH				sP	sP	06 52 27.3	+1.0
LZH				PP	**PnPn**	**06 52 31.6**	**+1.0**
LZH				sS	Sn	06 55 39.8	+2.2
LZH				*e*SS	**SnSn**	**06 55 52.8**	**+1.9**
LZH				pmax	pmax		
	comp=Z,28nm,1.0s						
LZH				pmax	pmax		
	comp=Z,140nm,4.5s						
LZH				LR	LR		
	comp=Z,500nm,11.5s						
LZH				LR	LR		
	comp=Z,490nm,12.0s						
LZH				LR	LR		
	comp=Z,690nm,13.0s					

comp=Z,160nm,11.2s
KMI LR LR

comp=Z,220nm,15.5s
HYB Hyderabad 24.66 189 *i* P **P 06 53 33.0 -0.9**
GYA Guiyang 25.29 120 pP pP 06 53 47.6 +4.1
GYA PP **PnPn 06 54 18.3 +4.2**
GYA PcP **PcP 06 57 14.0 +1.5**
GYA S **S 06 58 01.8 -3.5**
GYA sS sS 06 58 14.3 +2.5
GYA SS **SnSn 06 59 01.0 +4.7**
BOD Bodaibo 25.55 41 *eP* **P 06 53 40.7 -0.9**
BOD pmax pmax

comp=Z,11nm,1.3s
WSAR Wadi Sarin 27.15 234 LR LR 07 07 29.1

comp=Z,121nm,19.8s,baz=82,slow=43
CMAR Chiang Mai Arr 27.39 144 P **P 06 53 57.9 -0.6**

comp=Z,1.2nm,0.3s,baz=324,slow=9.0,SNR=4.9
NRIK Noril'sk 27.59 4 P **P 06 53 59.3 -0.5**

comp=Z,3.6nm,0.5s,baz=215,slow=4.1,SNR=5.3
NRIK LR LR 07 05 06.1

comp=Z,62nm,18.4s,baz=70,slow=37
KBZ Khabaz 28.75 287 LR LR 07 06 08.5

comp=Z,46nm,20.3s,baz=72,slow=37
KVAR Kislovodsk Arr 28.85 288 LR LR 07 06 13.6

comp=Z,46nm,18.4s,baz=37,slow=37
KIV Kislovodsk 28.86 288⇑ *eP* **P 06 54 13.3 +1.8**
KIV *e* 06 55 08.6
KIV pmax pmax

comp=Z,2.0nm,0.8s
KIV MLR MLR

comp=Z,73nm,14.0s
CN2 Changchun 31.43 72 *eP* **P 06 54 31.5 -2.6**
KLMR Klimovskoe 31.91 321 *eP* **P 06 54 35.3 -2.8**
KLMR *e**PP **sP 06 54 46.1 +2.4**
KLMR pmax pmax

comp=Z,14nm,1.0s
OBN Obninsk 32.39 310 LR LR 07 09 36.2

comp=Z,28nm,18.7s,baz=90,slow=40
OBN Obninsk 32.39 310⇓ *eP* **P 06 54 42.7 +0.3**
OBN *eS* **S 06 59 55.3 -0.8**
OBN pmax pmax

comp=Z,10.0nm,1.0s
OBN MLR MLR

comp=Z,129nm,17.0s
OBN Obninsk 32.39 310 *eP* **P 06 54 42.7 +0.3**

comp=Z,27nm,0.4s
QIZ Qiongzhong 32.71 126 P **P 06 54 45.9 +0.3**
QIZ S **S 07 00 01.8 0.0**
YAK Yakutsk 34.37 38 *eP* **P 06 54 58.0 -1.6**
YAK pmax pmax

comp=Z,28nm,1.1s
KLR Kul'dur 34.84 61 *eP* **P 06 55 03.7 -0.2**
KSAR Wonju Array Be 35.06 82 P **P 06 55 03.5 -2.4**
KSAR Wonju Array Be 35.06 82 P **P 06 55 03.5 -2.4**
KSRS Korea Array 35.08 82 P **P 06 55 03.5 -2.6**

comp=Z,0.8nm,0.3s,baz=283,slow=7.6,SNR=4.6
VLA Vladivostok 36.14 71⇑ *iP* **P 06 55 12.5 -2.6**
VLA *e**PP **sP 06 55 22.0 +1.3**
VLA *e* 06 56 33.8
VLA *i* 06 57 37.9
VLA *eS* **S 07 00 50.3 -4.0**
VLA pmax pmax

comp=Z,14nm,0.7s
BR131 Keskin Array S 36.47 283 *eP* **P 06 55 19.5 +1.4**
BRTR Keskin Array B 36.47 283 P **P 06 55 19.1 +1.0**

comp=Z,1.7nm,0.6s,baz=88,slow=7.9,SNR=10
AKASG Malin Array Be 36.95 302 P **P 06 55 21.1 -0.8**

comp=Z,1.6nm,0.7s,baz=69,slow=8.9,SNR=8.2
KIEV Kiev 36.96 302 *eP* **P 06 55 21.4 -0.6**
KIEV pmax pmax

comp=Z,4.0nm,0.9s
KIEV Kiev 36.96 302 *eP* **P 06 55 21.4 -0.6**

comp=Z,3.9nm,0.9s
BR231 Keskin MP Arra 37.06 284 *eP* **P 06 55 20.0 -3.1**
TIXI Tiksi 37.43 22 P **P 06 55 24.8 -0.9**

comp=Z,5.0nm,0.7s,baz=248,slow=4.6,SNR=10
TIXI Tiksi 37.43 22 *eP* **P 06 55 25.1 -0.6**
TIXI pmax pmax

comp=Z,8.0nm,0.9s
TIXI Tiksi 37.43 22 *eP* **P 06 55 25.1 -0.6**

comp=Z,7.6nm,0.9s
FIA1 FINESS Array S 38.41 320 *eP* **P 06 55 34.4 +0.3**
FINES FINESS Array B 38.42 320 P **P 06 55 34.1 0.0**

comp=Z,2.7nm,0.7s,baz=105,slow=12,SNR=5.9
FINES LR LR 07 12 06.2

comp=Z,206nm,18.5s,baz=124,slow=37
KEV Kevo 39.44 333 *eP* **P 06 55 42.7 +0.1**
KEV pmax pmax

comp=Z,119nm,1.8s
KEV Kevo 39.44 333 *eP* **P 06 55 42.7 +0.1**

comp=Z,119nm,1.8s
ARA0 ARCESS Array S 39.89 333 *eP* **P 06 55 46.7 +0.3**
ARCES ARCESS Array B 39.89 333 P **P 06 55 46.5 0.0**

comp=Z,5.5nm,0.7s,baz=87,slow=9.0,SNR=34
ARCES LR LR 07 13 02.1

comp=Z,102nm,20.9s,baz=70,slow=37
MLR Muntele Rosu 40.16 295 *eP* **P 06 55 51.2 +2.1**
MLR pmax pmax

comp=Z,8.0nm,1.2s
MLR Muntele Rosu 40.16 295 *eP* **P 06 55 51.2 +2.1**

comp=Z,7.9nm,1.2s
KWP Kalwaria Pacla 41.26 302 *eP* **P 06 55 59.2 +1.2**
KWP Kalwaria Pacla 41.26 302 *eP* **P 06 55 59.2 +1.2**
OJC Ojcow 42.96 303 *eP* **P 06 56 12.2 +0.4**
OJC Ojcow 42.96 303 *eP* **P 06 56 12.2 +0.4**
OJC Ojcow 42.96 303 *eP* **P 06 56 12.2 +0.4**

comp=Z,13nm,1.0s
MJAR Matsushiro Arr 43.00 78 P **P 06 56 11.1 -1.3**

comp=Z,1.3nm,0.6s,baz=291,slow=10,SNR=3.0
MJAR Matsushiro Arr 43.00 78 P **P 06 56 11.1 -1.3**
MJAR pmax pmax

comp=Z,2.0nm,0.7s
LAST Lasithi 44.23 281 *eP* **P 06 56 23.7 +1.3**

comp=Z,195nm,1.7s
MORC Moravsky Berou 44.48 303 *eP* **P 06 56 25.1 +1.0**
MORC pmax pmax

comp=Z,34nm,1.2s
MORC Moravsky Berou 44.48 303 *eP* **P 06 56 25.1 +1.0**

comp=Z,34nm,1.2s
HFS Hagfors 44.52 318 LR LR 07 15 35.7

comp=Z,132nm,21.0s,baz=76,slow=37
DPC Dobruska-Polom 45.08 304 *eP* **P 06 56 29.7 +0.8**
DPC Dobruska-Polom 45.08 304 *eP* **P 06 56 29.7 +0.8**
VRAC Vranov 45.20 303 LR LR 07 18 36.2

comp=Z,37nm,19.1s,baz=126,slow=40
UPC Upice 45.23 305 *eP* **P 06 56 30.7 +0.7**
UPC Upice 45.23 305 *eP* **P 06 56 30.7 +0.7**
NC405 NORSAR Array S 45.35 320 *eP* **P 06 56 31.1 +0.3**
NB2 NORSAR Subarra 45.60 320 P **P 06 56 32.3 -0.6**

comp=Z,3.8nm,0.7s,baz=82,slow=8.6
NOA NORSAR Array B 45.60 320 P **P 06 56 32.3 -0.6**

comp=Z,2.9nm,0.7s,baz=83,slow=7.2,SNR=12
NOA LR LR 07 16 17.4

comp=Z,129nm,18.2s,baz=95,slow=37
NC204 NORSAR Array S 45.78 320 *eP* **P 06 56 34.5 +0.3**
GOPC GO Pecny, Ondr 46.15 304 AMS AMS 07 16 20.0

comp=Z,200nm,13.1s
PRU Pruhonice 46.28 304 *eP* **P 06 56 38.9 +0.6**
PRU Pruhonice 46.28 304 *eP* **P 06 56 38.9 +0.6**
BRG Berggiesshubel 46.39 306 *eP* **P 06 56 39.5 +0.3**

comp=Z,5.4nm,1.1s
BRG Berggiesshubel 46.39 306 *eP* **P 06 56 39.5 +0.3**
BRG pmax pmax

comp=Z,5.0nm,1.1s
CLL Collm 46.83 306 *iP* **P 06 56 42.8 +0.2**

comp=Z,12nm,1.3s
CLL Collm 46.83 306 *iP* **P 06 56 42.8 +0.2**
CLL pmax pmax

comp=Z,12nm,1.3s
KHC Kasperske Hory 47.14 303 *eP* **P 06 56 45.7 +0.6**
KHC AMS AMS 07 17 00.0

comp=Z,200nm,13.9s
KHC Kasperske Hory 47.14 303 *eP* **P 06 56 45.7 +0.6**
KHC MLR MLR

comp=Z,200nm,13.9s
GERES GERESS Array B 47.15 303 P **P 06 56 45.9 +0.6**

comp=Z,1.0nm,0.6s,baz=60,slow=7.9,SNR=7.4
GERES LR LR 07 15 41.7

comp=Z,29nm,18.3s,baz=76,slow=35
GEA0 GERESS Array S 47.16 303 *eP* **P 06 56 45.9 +0.5**
TIP Timpagrande 48.75 290 *eP* **P 06 56 58.4 +0.6**

comp=Z,16nm,1.3s
BILL Bilibino 49.72 29 *eP* **P 06 57 03.6 -1.1**
BILL pmax pmax

comp=Z,3.0nm,1.0s
ESK Eskdalemuir 54.54 316 *i* P **P 06 57 41.7 +1.0**
ES19 SONSECA Array 62.47 300 *eP* **P 06 58 36.6 +0.2**
ESDC Sonseca Array 62.53 300 P **P 06 58 36.6 -0.2**

comp=Z,0.7nm,0.4s,baz=54,slow=6.7,SNR=6.7
COLD Coldfoot 64.11 20 *eP* **P 06 58 46.5 -0.2**

comp=Z,7.0nm,0.9s
TT01 Tatalina 65.63 25 *eP* **P 06 58 57.1 +0.5**
MLY Manley 65.63 22 *eP* **P 06 58 56.8 +0.2**

comp=Z,4.1nm,1.0s
BPAW Bear Paw Mtn. 66.27 23 *eP* **P 06 59 00.6 -0.1**

comp=Z,8.3nm,1.1s
MDM Murphy Dome 66.37 21 *eP* **P 06 59 01.4 0.0**

comp=Z,9.2nm,1.5s
CAST Castle Rocks 66.46 24 *eP* **P 06 59 02.3 +0.3**

comp=Z,5.7nm,0.8s
KTH Kantishna Hill 66.70 23 *eP* **P 06 59 03.7 0.0**

comp=Z,14nm,1.1s
CCB Clear Creek Bu 66.73 21 *eP* **P 06 59 03.5 -0.2**

comp=Z,8.2nm,1.4s
PPLA Purkeypile 66.83 24 *eP* **P 06 59 04.7 +0.2**

comp=Z,10.0nm,0.6s
INK Inuvik 66.83 14 P **P 06 59 03.9 -0.4**

comp=Z,3.2nm,0.5s,baz=339,slow=4.1,SNR=12
INK Inuvik 66.83 14 *eP* **P 06 59 04.2 0.0**
INK pmax pmax

comp=Z,12nm,1.3s
INK Inuvik 66.83 14 *eP* **P 06 59 04.2 0.0**

comp=Z,12nm,1.3s
IL1 Eielson Array 66.87 21 *eP* **P 06 59 03.2 -1.4**
ILAR Eielson Array 66.87 21 P **P 06 59 03.5 -1.1**

comp=Z,2.9nm,0.8s,baz=311,slow=5.1,SNR=16
ILB Eielson Array 66.87 21 *eP* **P 06 59 04.2 -0.4**
EGAK Eagle 68.30 18 *eP* **P 06 59 13.4 -0.2**

comp=Z,8.6nm,1.3s
SML Sawmill 68.81 23 *eP* **P 06 59 16.6 -0.3**
SML pmax pmax

comp=Z,9.0nm,0.8s
SML Sawmill 68.81 23 *eP* **P 06 59 16.6 -0.3**

comp=Z,8.5nm,0.8s
RC01 Rabbit Creek A 68.96 24 *eP* **P 06 59 17.6 -0.1**

comp=Z,5.5nm,0.8s
SCM Sheep Creek Mo 69.09 23 *eP* **P 06 59 18.4 -0.3**
SCM pmax pmax

comp=Z,10.0nm,0.7s
SCM Sheep Creek Mo 69.09 23 *eP* **P 06 59 18.4 -0.3**

comp=Z,10nm,0.7s
DAWY Dawson 69.32 18 *eP* **P 06 59 19.3 -0.7**

comp=Z,8.7nm,1.4s
OHAK Old Harbor 70.76 28 *eP* **P 06 59 28.9 0.0**

comp=Z,31nm,1.5s
BALM Baldy 71.13 21 *eP* **P 06 59 31.7 +0.5**
BALM pmax pmax

comp=Z,8.0nm,1.0s
BALM Baldy 71.13 21 *eP* **P 06 59 31.7 +0.5**

comp=Z,8.4nm,1.0s
TOA0 Torodi Ar. Sit 74.37 274 *eP* **P 06 59 50.4 -0.6**
TORD Torodi Ar. Bea 74.37 274 P **P 06 59 50.4 -0.7**

comp=Z,4.0nm,0.8s,baz=43,slow=5.2,SNR=26
YKW3 Yellowknife Ar 74.95 8 *eP* **P 06 59 52.6 -1.0**

comp=Z,6.9nm,1.1s
YKA Yelloknife Ar 75.02 8 P **P 06 59 53.0 -1.0**

comp=Z,3.6nm,0.8s,baz=342,slow=5.6,SNR=28
YKB5 Yelloknife Ar 75.02 8 *eP* **P 06 59 52.6 -1.4**
COEN Coen 78.90 120 *eP* **P 07 00 14.6 -2.0**

comp=Z,41nm,1.4s
ASAR Alice Springs 80.87 133 P **P 07 00 25.8 -1.3**

comp=Z,1.7nm,0.8s,baz=321,slow=7.1,SNR=3.8
AS01 Alice Springs 80.89 133 *eP* **P 07 00 27.8 +0.6**
ULM Lac du Bonnet 88.16 359 LR LR 07 42 51.7

comp=Z,47nm,18.6s,baz=319,slow=37
BSMT Bassoo Peak 89.31 11 *eP* **P 07 01 09.5 +0.1**
JTMT Jette 89.48 11 *eP* **P 07 01 09.3 -0.8**
EGMT Eagleton 89.77 8 *eP* **P 07 01 10.7 -0.7**

comp=Z,4.1nm,0.7s
CHMT Chamberlain Mo 90.44 11 *eP* **P 07 01 13.8 -0.9**
MCMT McKenzie Canyo 92.55 11 *eP* **P 07 01 24.5 0.0**
ECSD EROS Data Cent 94.69 359 *eP* **P 07 01 33.6 -0.6**

comp=Z,18nm,1.9s
BW06 Boulder Array 94.99 9 *eP* **P 07 01 35.1 -0.7**
PDAR Pinedale Array 94.99 9 P **P 07 01 34.8 -1.0**

comp=Z,0.3nm,0.5s,baz=46,slow=4.3,SNR=4.0
LVC Limon Verde 149.15 300 *e*PKPbc **PKPbc 07 08 02.1 +0.1**

JMA 13 06:50:42.2±0.1, 37°.89N×144°.02E, h0^{km}, M3.7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.18**	**286**	P	Pn	06 51 20.4	+0.7
JIO				S	Sn	06 51 48.6	+1.2
OFUJ	**Ofunato**	**2.19**	**304**	P	Pn	06 51 20.9	+1.0
OFUJ				S	Sn	06 51 49.1	+1.3
JMK	**Ichinoseki**	**2.44**	**297**	*e*S	Sn	06 51 55.4	+1.5
JOM	**Ohasama**	**2.66**	**307**	*e*S	Sn	06 52 01.1	+1.9
JFT	**Otama**	**2.94**	**264**	P	Pn	06 51 31.6	+1.3
JFT				S	Sn	06 52 07.7	+1.4
JYK	**Kaneyama**	**3.05**	**291**	P	Pn	06 51 33.7	+2.0
JYK				*e*S	Sn	06 52 11.6	+2.6

IDC 13 06:53:35.5±8.7, 7°.16S×128°.06E, h60^{km}±81^{km}, mb3.8/3, mb1 4.4/6, mb1mx3.7/37, mbtmp4.4/6, ML4.6/3, Error ellipse: s-maj=137.4km s-min=27.6km az=58.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**11.13**	**192**	P	Pn	06 56 12.0	0.0

2.6nm,0.3s,baz=20,slow=11,SNR=47

FITZ				S	Sn	06 58 05.0	-10

3.9nm,0.3s,baz=300,slow=20,SNR=5.3

WRA	**Warramunga Arr**	**14.10**	**155**	P	Pn	06 56 51.5	-0.8

2.7nm,0.3s,baz=323,slow=14,SNR=36

WRA				S	Sn	06 59 14.8	-12

5.2nm,0.3s,baz=320,slow=25,SNR=13

ASAR	**Alice Springs**	**17.35**	**162**	P	P	06 57 34.9	+0.6

3.9nm,0.3s,baz=342,slow=12,SNR=234

ASAR				S	Sn	07 00 35.9	-10

1.6nm,0.3s,baz=350,slow=26,SNR=10

STKA	**Stephens Creek**	**27.65**	**155**	P	P	06 59 17.4	-0.3

2.1nm,0.4s,baz=326,slow=8.2,SNR=6.5

MKAR	**Makanchi Array**	**67.31**	**328**	P	P	07 04 23.1	-1.0

0.5nm,0.6s,baz=135,slow=6.5,SNR=3.5

ZALV	**Zalesovo Beam**	**70.88**	**335**	P	P	07 04 46.9	+0.9

0.4nm,0.3s,baz=251,slow=4.5,SNR=4.3

LPAZ	**La Paz**	**151.73**	**146**	PKPbc	PKPbc	07 13 25.0	-0.1

0.8nm,0.8s,baz=214,slow=3.6,SNR=3.3

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*IDC **13** 06:54:47.0±7.8, 24°.74N×125°.80E, h0^{km}, mb3.6/3, mb1 3.8/3, mb1mx3.4/38, mbtmp3.6/3, MS4.0/5, Ms1 4.0/5, ms1mx3.3/35, Error ellipse: s-maj=207.0km s-min=51.4km az=13.0*

*ISCJB **13** 06:55:07.7±0.5, 26°.3N±0°.1×125°.7E±0°.1, h113^{km}±14^{km}, mb3.4/3, Error ellipse: s-maj=28.3km s-min=3.6km az=142.4*

*JMA **13** 06:55:09.0±0.2, 26°.18N×125°.76E, h117^{km}±4^{km}, M3.2*

ISC 13 06:55:08.8±0.9, 26°.3N±0°.1×125°.7E±0°.1, h114^{km}±15^{km}, n27, σ1§05/34, mb3.4/3, Northeast of Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JKE	**Kume jima 2**	**0.97**	**85**	P	**Pn**	**06 55 30.4**	**+0.4**
JKE				*e*S	**Sn**	**06 55 46.1**	**+0.1**
JIKM	**Ikemajima**	**1.39**	**198**	P	**Pn**	**06 55 34.9**	**+0.4**
JIKM				S	**Sn**	**06 55 53.8**	**-0.2**
JAGN	**Aguni-jima**	**1.41**	**76**	P	**Pn**	**06 55 35.2**	**+0.4**
JAGN				S	**Sn**	**06 55 54.8**	**+0.2**
JMJ	**Miyako jima 2**	**1.48**	**195**	*e*S	**Sn**	**06 55 55.7**	**-0.2**
JIRB	**Irabujima**	**1.50**	**199**	P	**Pn**	**06 55 35.9**	**+0.1**
JIRB				S	**Sn**	**06 55 55.2**	**-1.1**
JOGS	**Gusukube**	**1.51**	**191**	P	**Pn**	**06 55 36.1**	**+0.1**
JOGS				S	**Sn**	**06 55 56.2**	**-0.4**
JJT2	**Tamagusuku 2**	**1.83**	**93**	P	**Pn**	**06 55 40.6**	**+0.7**
JTJ	**Tarama**	**1.84**	**210**	P	**Pn**	**06 55 39.9**	**-0.1**
JTJ				S	**Sn**	**06 56 02.4**	**-1.4**
JISG	**Ishigakijimahi**	**2.08**	**218**	P	**Pn**	**06 55 42.8**	**-0.3**
JISG				S	**Sn**	**06 56 07.7**	**-1.5**
JNTH	**Nagotoyohara**	**2.09**	**82**	P	**Pn**	**06 55 43.2**	**+0.1**
JNTH				*e*S	**Sn**	**06 56 07.9**	**-1.4**
JIH	**Iheya**	**2.17**	**68**	P	**Pn**	**06 55 44.6**	**+0.6**
JIH				*e*S	**Sn**	**06 56 10.2**	**-0.8**
JOW	**Kunigami**	**2.37**	**75**	P	**Pn**	**06 55 46.6**	**-0.1**
JOW				S	**Sn**	**06 56 13.7**	**-2.0**
JKRS	**Kuro-shima**	**2.53**	**218**	*e*S	**Sn**	**06 56 17.9**	**-1.5**
IRIF	**Iriomote-Funau**	**2.62**	**224**	S	**Sn**	**06 56 20.3**	**-1.2**
HATJ	**Hateruma jima**	**2.79**	**219**	*e*S	**Sn**	**06 56 24.2**	**-1.2**
JOKE	**Okinoerabujima**	**2.79**	**66**	P	**Pn**	**06 55 51.9**	**-0.2**
JTK	**Tokunoshima**	**3.27**	**61**	P	**Pn**	**06 55 58.3**	**-0.2**
JTK				*e*S	**Sn**	**06 56 35.5**	**-1.3**
JAMN	**Amaminishikomi**	**3.67**	**56**	P	**Pn**	**06 56 03.0**	**-0.7**
JAM	**Amami Oshima**	**4.08**	**57**	P	**Pn**	**06 56 08.6**	**-0.6**
JAM				S	**Sn**	**06 56 54.1**	**-2.0**
SONM	**Songino Array**	**26.36**	**330**	P	**P**	**07 00 37.0**	**+2.7**

0.6nm,0.4s,baz=151,slow=10,SNR=5.4

TLY	**Talaya**	**30.41**	**332**	LR	LR	07 15 21.0	

comp=Z,88nm,19.2s,baz=127,slow=39

MKAR	**Makanchi Array**	**39.84**	**313**	P	**P**	**07 02 30.9**	**-0.2**

0.2nm,0.4s,baz=93,slow=9.1,SNR=5.0

EIL	**Elat**	**78.10**	**297**	LR	LR	07 48 33.5	

comp=Z,70nm,18.7s,baz=36,slow=41

YKA	**Yellowknife Ar**	**79.45**	**24**	P	**P**	**07 07 02.4**	**+0.1**

0.4nm,0.6s,baz=300,slow=5.6,SNR=9.9

IDI	**Anoyia**	**83.39**	**306**	LR	LR	07 48 34.5	

comp=Z,264nm,19.5s,baz=64,slow=38

GERES	**GERESS Array B**	**83.81**	**322**	LR	LR	07 48 18.0	

comp=Z,96nm,22.0s,baz=57,slow=38

DAVOX	**Davos/Dischmat**	**87.10**	**322**	LR	LR	07 50 54.2	

comp=Z,92nm,20.2s,baz=62,slow=38

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*ISCJB **13** 07:11:29.8±0.7, 10°.29N±0°.09×141°.0E±0°.1, h40^{km}, mb3.7/6, MS3.2/1, Error ellipse: s-maj=19.1km s-min=8.8km az=37.8*

*IDC **13** 07:11:32.8±3.0, 10°.28N×141°.05E, h53^{km}±32^{km}, mb3.5/6, mb1 3.8/8, mb1mx3.5/42, mbtmp3.8/8, ML3.8/2, MS3.4/1, Ms1 3.4/1, ms1mx2.5/27, Error ellipse: s-maj=30.5km s-min=14.5km az=114.0*

ISC 13 07:11:31.9±0.8, 10°.3N±0°.1×140°.9E±0°.1, h40^{km}, n15, σ1§17/9, mb3.7/6, Western Caroline Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**5.04**	**50**	P	**Pn**	**07 12 46.0**	**+0.9**

16nm,0.3s,baz=167,slow=3.4,SNR=10

GUMO				S	**Sn**	**07 13 41.5**	**-0.7**

13nm,0.3s,baz=198,slow=20,SNR=3.4

JAY	**Jayapura**	**12.76**	**181**	P	**Pn**	**07 14 31.7**	**+0.8**

0.1nm,0.3s,baz=90,slow=20,SNR=3.9

PMG	**Port Moresby**	**20.56**	**162**	LR	LR	07 24 05.5	

comp=Z,94nm,18.2s,baz=186,slow=37

H11S3	**WAKE ISLAND Hy 26.22**	**69**		T	T	07 45 10.6	

baz=256,slow=75,SNR=147

H11S1	**WAKE ISLAND Hy 26.23**	**69**		T	T	07 45 11.7	

baz=256,slow=75,SNR=57

H11S2	**WAKE ISLAND Hy 26.23**	**69**		T	T	07 45 11.7	

baz=256,slow=75,SNR=148

H11N1	**WAKE ISLAND Hy 26.73**	**67**		T	T	07 46 00.0	

baz=254,slow=75,SNR=28

H11N2	**WAKE ISLAND Hy 26.74**	**66**		T	T	07 46 00.6	

baz=254,slow=75,SNR=22

H11N3	**WAKE ISLAND Hy 26.75**	**67**		T	T	07 46 00.6	

baz=254,slow=75,SNR=23

WRA	**Warramunga Arr**	**30.77**	**192**	P	**P**	**07 17 42.5**	**-1.3**

2.8nm,0.7s,baz=11,slow=9.8,SNR=23

ASAR	**Alice Springs**	**34.48**	**191**	P	**P**	**07 18 15.9**	**-0.3**

0.8nm,0.6s,baz=17,slow=13,SNR=16

CMAR	**Chiang Mai Arr**	**41.38**	**286**	P	**P**	**07 19 14.0**	**-0.6**

1.2nm,0.3s,baz=93,slow=7.4,SNR=2.9

MKAR	**Makanchi Array**	**61.23**	**318**	P	**P**	**07 21 44.3**	**+1.4**

0.1nm,0.5s,baz=99,slow=8.9,SNR=2.2

ILAR	**Eielson Array**	**73.15**	**25**	P	**P**	**07 22 56.6**	**-1.5**

0.3nm,0.4s,baz=234,slow=6.2,SNR=6.1

YKA	**Yelloknife Ar**	**87.50**	**27**	P	**P**	**07 24 15.6**	**+0.3**

0.1nm,0.5s,baz=287,slow=4.8,SNR=5.0

MAN 13 07:23:37, 6°.93N×123°.73E, h9^{km}, mb4.5, ML3.3, MS3.2, 1C-1D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTBH	**Cotabato--PC H**	**0.58**	**60⇑**	*i*P	Pg	07 23 48.8	+0.5
CTBH				*i* S	Sg	07 23 56.6	+0.6
PAGZ	**Pagadian**	**0.98**	**339**	*e*P	Pg	07 23 55.9	+0.1
PAGZ				*e*S	Sn	07 24 10.3	-0.6
IPIL	**Ipil**	**1.44**	**307**	*e*P	Pb	07 24 03.7	-0.2
IPIL				*e*S	Sn	07 24 22.1	-0.1
GSPH	**General Santos**	**1.47**	**125**	*e*P	Pg	07 24 06.8	+1.6
GSPH				*i* S	Sg	07 24 28.5	+4.1
BUKP	**Musuan**	**1.62**	**54**	*e*P	Pn	07 24 05.4	-0.4
BUKP				*e*S	Sb	07 24 27.4	-0.3
DCPH	**Dipolog City**	**1.69**	**347**	*e*P	Pn	07 24 06.9	+0.2
DCPH				*e*S	Sb	07 24 29.7	+0.1
CGP	**Cagayan de Oro**	**1.79**	**32⇓**	*e*P	Pn	07 24 08.9	+0.8
CGP				*e*S	Sb	07 24 32.2	-0.4
SNPH	**Sibulan**	**2.45**	**348**	*e*P	Pn	07 24 18.1	+0.9

DJA 13 07:26:46.0±1.3, 7°S±8°×107°3E±°, h10^{km}, M3.8/5, MLv3.8/5, Southwest of Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KASI	**Kota Agung**	**2.13**	**42**	P	Pn	07 27 21.4	-0.3
LWLI	**Liwa**	**2.31**	**26**	P	Pn	07 27 24.2	0.0
CGJI	**Cibinong**	**2.67**	**80**	P	Pn	07 27 29.3	+0.2
CGJI				S	Sn	07 28 02.9	+1.4
MNAI	**Manna**	**2.73**	**358**	P	Pn	07 27 30.0	0.0
MNAI				S	Sn	07 28 04.4	+1.3
CNJI	**Cibinong**	**4.05**	**93**	P	Pn	07 27 47.8	-0.3

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*ISCJB **13** 07:36:08.3±1.6, 32°.58N±0°.05×76°.3E±0°.1, h2^{km}±10^{km}, Error ellipse: s-maj=18.8km s-min=5.7km az=161.4*

*NDI **13** 07:36:11.6±2.3, 32°.44N×76°.34E, h10^{km}, ML3.9*

ISC 13 07:36:10.6±1.7, 32°.49N±0°.06×76°.2E±0°.1, h4^{km}±11^{km}, n8, σ1§89/15, 2C-2D, Kashmir-India border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DHRM	**DHARAMSHALA**	**0.24**	**166**	*e*P	**Pg**	**07 36 14.5**	**-0.8**
DHRM				*e*S	**Sg**	**07 36 17.9**	**-0.7**
DHRM				IAML		07 36 18.0	

comp=N,12μm,0.2s

DHRM				IAML		07 36 18.5	

comp=E,14μm,0.3s

PONG	**Pong**	**0.58**	**204**	*ex*	**Pn**	**07 36 26.0**	**+0.4**
PONG				*e*S	**Sn**	**07 36 33.0**	**-2.6**
JWA	**Jwalamukhi**	**0.62**	**172**	*e*P	**Pg**	**07 36 23.0**	**+0.4**
JWA				*e*S	**Sg**	**07 36 30.0**	**-0.7**
SMLA	**Simla**	**1.57**	**149**	*e*P	**Pn**	**07 36 38.3**	**-0.9**
SMLA				*e*S	**Sb**	**07 37 00.0**	**-0.4**
SMLA				IAML		07 37 00.5	

comp=N,3μm,0.4s

SMLA				IAML		07 37 00.7	

comp=E,2μm,0.3s

DDI	**Dehra Dun**	**2.66**	**144**	*e*S	**Sn**	**07 37 25.3**	**-1.8**
NDI	**New Delhi**	**3.89**	**167**	*e*P	**Pn**	**07 37 14.0**	**+2.9**
NDI				*e*S	**Sn**	**07 38 00.0**	**+2.8**
MNAS	**Manas**	**10.41**	**345**	⇑Pn	**Pn**	**07 38 42.2**	**+1.4**

comp=E,1.2nm,0.4s

MNAS				⇓Sn	**Sn**	**07 40 36.0**	**-2.0**

comp=E,1.3nm,0.4s

KK31	**Karatay Array**	**11.52**	**339**	⇑Pn	**Pn**	**07 38 57.2**	**+1.4**

comp=

*ISCJB **13** 07:43:15.0±0.6, 6°.93S±0°.06×147°.79E±0°.09, h54km, mb4.5/18, MS3.6/11, Error ellipse: s-maj=12.7km s-min=8.6km az=15.1*
*NEIC **13** 07:43:17.0±0.9, 6°.88S×147°.79E, h62km±8km, mb4.4/11, Error ellipse: s-maj=13.2km s-min=7.5km az=134.0*
ISC 13 07:43:16.5±0.6, 6°.855±0°.07×147°.9E±0°.1, h54km, n45, σ2§22/37, mb4.7/18, MS3.4/11, 1D, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.64**	**196**	Pn	**Pn**	**07 43 56.7**	**0.0**
	27nm,0.3s,baz=16,slow=4.0,SNR=30						
PMG				Sn	**Sn**	**07 44 34.0**	**+6.5**
	12nm,0.3s,baz=28,slow=14,SNR=3.9						
PMG				LR	LR	07 44 49.6	
	comp=Z,162nm,21.6s,baz=20,slow=34						
RABL	**Rabaul**	**5.00**	**58**	*e*Pn	**Pn**	**07 44 30.9**	**+1.9**
COEN	**Coen**	**8.45**	**213**	*e*Pn	**Pn**	**07 45 15.8**	**-0.5**
CTA	**Charters Tower**	**13.26**	**187**	Pn	**Pn**	**07 46 20.8**	**-1.3**
	0.4nm,0.3s,baz=23,slow=15,SNR=3.1						
WRAB	**Tennant Creek**	**18.50**	**224**	*e*P	**P**	**07 47 26.6**	**-1.7**
	7.2nm,0.8s						
WB2	**Warramunga Arr**	**18.50**	**224**	*e*P	**Pn**	**07 47 28.3**	**-0.8**
	24nm,1.4s						
WRA	**Warramunga Arr**	**18.51**	**224**	P	**P**	**07 47 26.9**	**-1.5**
	0.5nm,0.3s,baz=52,slow=11,SNR=18						
WRA				PcP	**PcP**	**07 51 56.1**	**-0.7**
	0.0nm,0.3s,baz=41,slow=2.0,SNR=3.2						
EIDS	**Eidsvold**	**18.66**	**171**	*e*P	**Pn**	**07 47 30.0**	**-1.0**
	21nm,1.7s						
GUMO	**Guam**	**20.53**	**352**	LR	LR	07 53 52.3	
	comp=Z,116nm,20.9s,baz=144,slow=32						
AS01	**Alice Springs**	**21.43**	**217**	*e*P	**P**	**07 47 58.9**	**-1.2**
AS31	**Alice Springs**	**21.45**	**217**	*e*P	**P**	**07 48 00.3**	**-0.2**
	3.3nm,1.0s						
ASAR	**Alice Springs**	**21.46**	**217**	P	**P**	**07 47 59.4**	**-1.1**
	4.6nm,0.7s,baz=57,slow=9.4,SNR=22						
ASAR				LR	LR	07 56 57.6	
	comp=Z,149nm,20.8s,baz=42,slow=38						
DZM	**Mont Dzumac**	**23.44**	**132**	LR	LR	07 54 58.1	
	comp=Z,142nm,20.8s,baz=352,slow=30						
ARMA	**Armidale**	**23.71**	**172**	*e*P	**P**	**07 48 23.5**	**-0.1**
	67nm,1.8s						
FITZ	**Fitzroy Crossi**	**24.41**	**241**	P	**P**	**07 48 28.5**	**-1.6**
	9.5nm,0.5s,baz=51,slow=8.8,SNR=34						
FITZ	**Fitzroy Crossi**	**24.41**	**241**	*e*P	**P**	**07 48 28.5**	**-1.6**
	83nm,1.7s						
STKA	**Stephens Creek**	**25.59**	**192**	P	**P**	**07 48 39.0**	**-1.6**
	3.8nm,0.7s,baz=349,slow=7.2,SNR=6.5						
STKA				LR	LR	07 59 51.5	
	comp=Z,210nm,18.5s,baz=21,slow=39						
STKA	**Stephens Creek**	**25.59**	**192**	*e*P	**P**	**07 48 39.3**	**-1.4**
	8.4nm,2.0s						
CAN	**Canberra**	**28.35**	**178**	*e*P	**P**	**07 49 05.7**	**+0.2**
	52nm,1.7s						
AFI	**Afiamalu**	**40.23**	**103**	LR	LR	08 04 52.2	
	comp=Z,109nm,18.7s,baz=229,slow=32						
URZ	**Urewera**	**40.95**	**144**	LR	LR	08 06 59.8	
	comp=Z,208nm,18.7s,baz=310,slow=35						
RPZ	**Rata Peaks**	**41.96**	**155**	LR	LR	08 06 15.2	
	comp=Z,83nm,18.5s,baz=282,slow=33						
MJAR	**Matsushiro Arr**	**44.11**	**349**	LR	LR	08 08 40.4	
	comp=Z,45nm,18.5s,baz=180,slow=35						
BKNI	**Bangkinang**	**47.29**	**277**	*e*P	**P**	**07 51 44.7**	**-0.4**
	163nm,0.5s						
KSRS	**Korea Array**	**47.86**	**338**	LR	LR	08 10 31.2	
	comp=Z,38nm,19.6s,baz=158,slow=35						
KMI	**Kunming**	**54.22**	**308**	P	**P**	**07 52 41.6**	**+4.3**
KMI				pmax	pmax		
	comp=Z,8.0nm,0.7s						
BJI	**Beijing**	**55.08**	**331**	P	**P**	**07 52 44.9**	**+2.0**
BJI				pmax	pmax		
	comp=Z,5.0nm,0.9s						
CD2	**Chengdu**	**56.50**	**314**	P	**P**	**07 52 52.9**	**-0.6**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.6s						
KLR	**Kul'dur**	**57.60**	**348**	LR	LR	08 14 52.4	
	comp=Z,26nm,20.9s,baz=182,slow=33						
HHC	**Hu-ho-hao-te**	**58.02**	**328**	*e*P	**P**	**07 53 00.4**	**-3.6**
HHC				pmax	pmax		
	comp=Z,23nm,1.5s						
HHC				pmax	pmax		
	comp=Z,56nm,3.1s						
LZH	**Lanzhou**	**59.43**	**319**	*e*P	**P**	**07 53 15.3**	**+1.3**
LZH				pP	sP	07 53 33.0	-1.9
LZH				sP	pP	07 53 40.3	+12
LZH				*e*PP	**PP**	**07 55 29.5**	**+3.6**
LZH				pmax	pmax		
	comp=Z,19nm,1.4s						
LZH				pmax	pmax		
	comp=Z,51nm,8.0s						
LZH				LR	LR		
	comp=N,170nm,15.3s						
LZH				LR	LR		
	comp=E,190nm,16.0s						
LZH				LR	LR		
	comp=Z,280nm,19.2s						
SONM	**Songino Array**	**65.58**	**331**	P	P	07 53 49.8	-4.9
	comp=Z,0.6nm,0.6s,baz=113,slow=3.7,SNR=4.4						
VNDA	**Vanda**	**71.02**	**177**	P	**P**	**07 54 26.8**	**-1.4**
	comp=Z,1.3nm,0.6s,baz=320,slow=6.2,SNR=8.7						
VNDA	**Vanda**	**71.02**	**177**	*e*P	**P**	**07 54 28.0**	**-0.2**
	comp=Z,2.0nm,0.7s						
WMQ	**Urumqi**	**74.02**	**319**	*e*P	**P**	**07 54 47.5**	**+0.8**
WMQ				pmax	pmax		
	comp=Z,3.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,53nm,4.8s						
QSPA	**South Pole Qui**	**83.12**	**180**	*e*P	**P**	**07 55 35.3**	**-1.1**
	comp=Z,18nm,1.5s						
ILAR	**Eielson Array**	**85.91**	**23**	P	P	07 55 45.4	-4.9
	comp=Z,0.3nm,0.6s,baz=261,slow=4.5,SNR=3.7						
BRVK	**Borovoye**	**88.05**	**324**	*e*P	P	07 56 06.9	+6.0
	comp=Z,24nm,1.6s						
SYO	**Syowa Base**	**90.11**	**200**	⇓*e*X	**P**	**07 56 13.2**	**+2.9**
GERES	**GERESS Array B**	**123.11**	**326**	PKP	**PKPdf**	**08 02 01.6**	**-5.7**
	comp=Z,0.4nm,0.2s,baz=8.1,slow=1.4,SNR=2.6						
STVI	**Saint Thomas**	**146.03**	**67**	*e*PKPdf	**PKPdf**	**08 02 50.9**	**+0.5**
TOA0	**Torodi Ar. Sit**	**146.16**	**283**	*e*PKPdf	**PKPdf**	**08 02 50.2**	**-0.6**
TORD	**Torodi Ar. Bea**	**146.16**	**283**	PKPbc	**PKPdf**	**08 02 49.3**	**-1.5**
	comp=Z,1.8nm,0.7s,baz=88,slow=2.9,SNR=15						
SMRT	**St. Maarten**	**147.83**	**67**	*e*PKPdf	**PKPdf**	**08 02 54.4**	**+0.9**
PTGA	**Pitinga**	**151.19**	**104**	*e*PKPbc	**PKPbc**	**08 03 04.0**	**-1.0**

*NIED **13** 07:49:00.37°.80N×141°.80E, h41km, Mw4.0 Best double couple: M0=1.17000×10^15 NP1:φ=205.00000°, δ=38.00000°, λ=81.00000°. NP2:φ=37.00000°, δ=52.00000°, λ=97.00000°.*
*ISCJB **13** 07:49:33.0±0.8, 37°.76N±0°.03×141°.83E±0°.08, h64km±6km, mb3.7/9, Error ellipse: s-maj=11.3km s-min=5.2km az=15.1*
*JMA **13** 07:49:34.1, 37°.77N×141°.78E, h49km±1km, M4.2*
JMA Felt I J1.
*IDC **13** 07:49:35.9±2.3, 37°.79N×141°.67E, h72km±21km, mb3.4/9, mb1 3.6/13, mb1mx3.4/58, mbtmp3.7/13, MS2.8/7, Ms1 2.9/7, ms1mx2.7/26, Error ellipse: s-maj=25.4km s-min=16.0km az=93.0*
ISC 13 07:49:33.5±1.5, 37°.75N±0°.04×141°.91E±0°.09, h49km±14km, n38, σ1§66/42, mb3.7/9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.83**	**328**	P	**Pn**	**07 49 48.6**	**-0.2**
JIO				S	**Sn**	**07 49 58.9**	**-1.1**
JMM	**Marumori**	**0.89**	**278**	P	**Pn**	**07 49 49.0**	**-0.7**
JMM				S	**Sn**	**07 49 59.9**	**-1.6**
JFK	**Kawauchi**	**0.91**	**245**	P	**Pn**	**07 49 49.5**	**-0.5**
JFK				S	**Sn**	**07 50 00.4**	**-1.6**
ONAJ	**Iwakimizuishiy**	**1.10**	**234**	P	**Pn**	**07 49 52.3**	**-0.2**
ONAJ				S	**Sn**	**07 50 05.8**	**-0.8**
JOU	**Okura**	**1.16**	**302**	P	**Pn**	**07 49 52.9**	**-0.4**
JOU				S	**Sn**	**07 50 07.2**	**-0.8**
JFT	**Otama**	**1.27**	**260**	P	**Pn**	**07 49 55.1**	**+0.3**
JFT				S	**Sn**	**07 50 10.5**	**-0.2**
JMK	**Ichinoseki**	**1.31**	**336**	P	**Pn**	**07 49 55.7**	**+0.3**
JMK				*e*S	**Sn**	**07 50 11.3**	**-0.5**
JYS	**Shiratake**	**1.53**	**288**	P	**Pn**	**07 49 58.3**	**-0.1**
JYS				S	**Sn**	**07 50 17.9**	**+0.8**
JYK	**Kaneyama**	**1.68**	**314**	P	**Pn**	**07 50 00.5**	**0.0**
JYK				S	**Sn**	**07 50 18.8**	**-2.1**
JFY	**Yanaizu**	**1.78**	**259**	P	**Pn**	**07 50 02.3**	**+0.4**
JOM	**Ohasama**	**1.78**	**345**	P	**Pn**	**07 50 02.9**	**+1.1**
JOM				*e*S	**Sn**	**07 50 24.3**	**+1.0**
JRG	**Rokugo**	**1.92**	**329**	P	**Pn**	**07 50 04.5**	**+0.8**
JRG				*e*S	**Sn**	**07 50 27.6**	**+0.9**
JYA	**Atsumi**	**1.92**	**297**	P	**Pn**	**07 50 03.8**	**+0.1**
MJAR	**Matsushiro Arr**	**3.19**	**249**	P	**Pn**	**07 50 22.4**	**+1.2**
	3.4nm,0.3s,baz=58,slow=10,SNR=19						
MJAR				S	**Sn**	**07 51 03.8**	**+5.8**
	8.3nm,0.3s,baz=149,slow=28,SNR=6.6						
MJAR				LR	LR	07 51 47.0	
	comp=Z,141nm,20.1s,baz=70,slow=44						
MAT	**Matsushiro**	**3.19**	**249**	P	**Pn**	**07 50 22.6**	**+1.4**
MAT				*e*S	**Sn**	**07 50 57.3**	**-0.7**
JHJ	**Hachijo jima 2**	**4.94**	**201**	P	**Pn**	**07 50 46.5**	**+1.4**
	14nm,0.3s,baz=61,slow=19,SNR=3.9						
JHJ				S	**Sn**	**07 51 38.4**	**-2.5**
	24nm,0.3s,baz=90,slow=20,SNR=3.6						
ASAJ	**Asahikawa**	**6.38**	**4**	P	**Pn**	**07 51 05.2**	**+0.4**
	1.2nm,0.3s,baz=248,slow=19,SNR=3.2						
USRK	**Ussuriysk Ar.**	**9.88**	**314**	P	**Pn**	**07 51 54.4**	**+1.6**
	0.5nm,0.3s,baz=128,slow=14,SNR=15						
USRK				LR	LR	07 55 34.7	
	comp=Z,83nm,19.6s,baz=172,slow=37						
JNU	**Nakatsue**	**10.11**	**246**	LR	LR	07 56 08.7	
	comp=Z,76nm,20.1s,baz=116,slow=39						
KSRS	**Korea Array**	**11.10**	**273**	P	**Pn**	**07 52 13.5**	**+4.0**
	0.4nm,0.3s,baz=91,slow=13,SNR=5.2						
KSRS				LR	LR	07 55 38.3	
	comp=Z,57nm,21.0s,baz=36,slow=33						
KLR	**Kul'dur**	**13.62**	**331**	LR	LR	07 58 13.8	
	comp=Z,26nm,18.2s,baz=126,slow=38						
PETK	**Petropavlovsk-**	**18.87**	**30**	LR	LR	08 02 03.7	
	comp=Z,30nm,18.9s,baz=218,slow=40						
SONM	**Songino Array**	**27.72**	**303**	P	**P**	**07 55 15.1**	**-2.1**
	0.9nm,0.7s,baz=91,slow=7.2,SNR=3.4						
H11N2	**WAKE ISLAND Hy**	**28.19**	**123**	T	T	08 25 39.7	
	baz=315,slow=75,SNR=217						
H11N1	**WAKE ISLAND Hy**	**28.20**	**123**	T	T	08 25 40.5	
	baz=315,slow=75,SNR=248						
H11N3	**WAKE ISLAND Hy**	**28.21**	**123**	T	T	08 25 39.4	
	baz=315,slow=75,SNR=205						
H11S1	**WAKE ISLAND Hy**	**28.93**	**125**	T	T	08 26 34.9	
	baz=317,slow=76,SNR=112						
H11S3	**WAKE ISLAND Hy**	**28.93**	**125**	T	T	08 26 34.9	
	baz=317,slow=76,SNR=79						
H11S2	**WAKE ISLAND Hy**	**28.95**	**125**	T	T	08 26 34.3	
	baz=317,slow=76,SNR=67						
ZALV	**Zalesovo Beam**	**41.73**	**312**	P	**P**	**07 57 15.0**	**-2.5**
	0.8nm,0.4s,baz=96,slow=7.4,SNR=2.5						
CMAR	**Chiang Mai Arr**	**42.06**	**255**	LR	LR	08 15 22.2	
	comp=Z,13nm,18.5s,baz=310,slow=37						
MKAR	**Makanchi Array**	**44.07**	**302**	P	**P**	**07 57 36.1**	**-0.5**
	0.8nm,0.7s,baz=83,slow=10.0,SNR=6.1						
ILAR	**Eielson Array**	**48.68**	**33**	P	**P**	**07 58 11.7**	**-0.7**
	0.3nm,0.6s,baz=264,slow=6.1,SNR=4.0						
WRA	**Warramunga Arr**	**57.83**	**188**	P	**P**	**07 59 20.1**	**0.0**
	0.5nm,0.4s,baz=7.8,slow=7.7,SNR=16						
ASAR	**Alice Springs**	**61.55**	**188**	P	**P**	**07 59 44.6**	**-1.1**
	0.5nm,0.8s,baz=357,slow=3.7,SNR=3.9						
YKA	**Yellowknife Ar**	**62.99**	**30**	P	**P**	**07 59 56.4**	**+1.6**
	0.2nm,0.7s,baz=297,slow=4.1,SNR=3.1						
FINES	**FINESS Array B**	**68.36**	**332**	P	**P**	**08 00 27.9**	**-1.5**
	1.7nm,0.8s,baz=188,slow=8.4,SNR=3.0						
TXAR	**Lajitas Array**	**89.37**	**53**	P	**P**	**08 02 27.2**	**+2.0**
	0.2nm,0.5s,baz=267,slow=6.0,SNR=3.0						

IDC 13 08:00:19.7±1.5, 14°.58S×165°.31E, h0km, mb4.0/4, mb1 4.3/5, mb1mx3.8/34, mbtmp4.1/5, ML4.3/1, Error ellipse: s-maj=35.5km s-min=28.6km az=139.0, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**7.53**	**172**	Pn	Pn	08 02 11.8	+0.9
	4.9nm,0.3s,baz=27,slow=8.6,SNR=34						
DZM				Sn	Sn	08 03 37.1	0.0
	1.6nm,0.3s,baz=322,slow=19,SNR=3.5						
STKA	**Stephens Creek**	**27.67**	**227**	P	P	08 06 09.1	-0.4
	2.5nm,0.4s,baz=53,slow=10,SNR=12						
WRA	**Warramunga Arr**	**30.02**	**255**	P	P	08 06 30.9	+0.4
	0.9nm,0.5s,baz=86,slow=9.2,SNR=12						
ASAR	**Alice Springs**	**30.96**	**248**	P	P	08 06 38.8	-0.1
	1.9nm,0.5s,baz=78,slow=9.1,SNR=44						
NVAR	**Mina Array Bea**	**88.62**	**50**	P	P	08 13 15.0	-0.1
	0.2nm,0.5s,baz=237,slow=5.0,SNR=2.4						

*IDC **13** 08:06:34.7±2.0, 12°.39N×144°.24E, h64km±21km, mb3.3/5, mb1 3.5/5, mb1mx3.3/43, mbtmp3.5/5, MS3.5/2, Ms1 3.6/2, ms1mx2.8/18, Error ellipse: s-maj=48.4km s-min=17.3km az=107.0*
ISC 13 08:06:30.7±1.1, 12°.4N±0°.2×144°.1E±0°.3, h27km, n11, σ1§16/7, mb3.6/5, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**1.39**	**31**	P	**Pb**	**08 06 55.8**	**-0.3**
	98nm,0.3s,baz=218,slow=12,SNR=44						
GUMO				S	**Sb**	**08 07 14.7**	**+1.2**
	70nm,0.3s,baz=33,slow=22,SNR=7.5						
H11N1	**WAKE ISLAND Hy**	**23.04**	**69**	T	T	08 35 16.9	
	baz=255,slow=75,SNR=8.8						
H11N2	**WAKE ISLAND Hy**	**23.05**	**69**	T	T	08 35 16.9	
	baz=255,slow=75,SNR=8.7						
H11N3	**WAKE ISLAND Hy**	**23.06**	**69**	T	T	08 35 19.2	
	baz=255,slow=75,SNR=6.4						
CTA	**Charters Tower**	**32.34**	**176**	LR	LR	08 25 54.2	
	comp=Z,364nm,18.9s,baz=110,slow=36						
WRA	**Warramunga Arr**	**33.54**	**197**	P	**P**	**08 13 08.4**	**0.0**
	0.6nm,0.8s,baz=19,slow=10,SNR=4.0						
ASAR	**Alice Springs**	**37.20**	**196**	P	**P**	**08 13 40.9**	**+1.0**
	0.4nm,0.6s,baz=16,slow=10,SNR=5.4						
CMAR	**Chiang Mai Arr**	**43.89**	**284**	LR	LR	08 31 18.6	
	comp=Z,15nm,20.1s,baz=260,slow=34						
MKAR	**Makanchi Array**	**61.85**	**317**	P	**P**	**08 16 48.0**	**+0.4**
	1.0nm,0.6s,baz=94,slow=8.3,SNR=7.0						
ILAR	**Eielson Array**	**69.95**	**25**	P	**P**	**08 17 37.8**	**-1.6**
	0.3nm,0.5s,baz=248,slow=5.5,SNR=3.9						
YKA	**Yellowknife Ar**	**84.25**	**27**	P	**P**	**08 18 59.9**	**+0.2**
	0.1nm,0.4s,baz=286,slow=5.1,SNR=4.9						

*KRNET **13** 08:13:23.1±0.1, 39°.50N×72°.02E, h16km, mb2.7*
*NNC **13** 08:13:28.6±10.0, 39°.37N×72°.24E, h24km±84km, mb3.3, mpv2.9, Error ellipse: s-maj=70.8km s-min=20.2km az=140.0*
ISC 13 08:13:23.6±1.6, 39°.56N±0°.06×71°.95E±0°.04, h7km±12km, n15, σ2§24/29, 13C-17D, Tajikistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BTK	**Batken**	**1.00**	**300**	⇓*e*P	**Pg**	**08 13 44.0**	**+1.1**
	baz=302						
BTK				⇓*e*S	**Sn**	**08 14 00.0**	**+1.3**
	baz=302						
OHH	**Osh**	**1.15**	**33**	⇑*e*P	**Pg**	**08 13 46.4**	**+0.7**
	baz=29						
OHH				⇑*e*S	**Sg**	**08 14 03.3**	**+2.6**
	baz=29						
ARSB	**Arslanbob**	**1.93**	**24**	⇓*e*P	**Pg**	**08 14 00.4**	**-0.1**
	baz=21						
ARSB				⇓*e*S	**Sg**	**08 14 26.3**	**+0.8**
	baz=21						
ARK	**Arkit**	**2.23**	**0**	⇓*e*P	**Pb**	**08 14 04.7**	**+0.3**
	baz=359						
ARK				⇓*e*S	**Sg**	**08 14 34.9**	**-0.5**
	baz=359						
TOKL	**Toktogul**	**2.48**	**16**	⇓*e*P	**Pb**	**08 14 07.3**	**-1.2**
	baz=15						
TOKL				⇓*e*S	**Sb**	**08 14 39.4**	**+0.2**
	baz=15						
DZET	**Dzherino**	**2.54**	**254**	⇑Pn	**Pb**	**08 14 09.5**	**-0.2**
	9.3nm,0.4s						
DZET				⇑Sn	**Sg**	**08 14 43.2**	**-2.1**
	14nm,0.6s						
AML	**Almayashu**	**2.89**	**27**	⇑*i*P	**Pb**	**08 14 16.6**	**+0.9**
	baz=25						
AML				⇑*i*S	**Sb**	**08 14 53.2**	**+1.9**
	baz=25						
MNAS	**Manas**	**2.95**	**8**	⇑*e*P	**Pb**	**08 14 13.8**	**-2.8**
	baz=7.0						
MNAS				⇑*e*S	**Sb**	**08 14 51.5**	**-1.5**
	baz=7.0						
MNAS	**Manas**	**2.95**	**8**	⇓Pn	**Pb**	**08 14 16.7**	**+0.1**
	1.1nm,0.5s						
MNAS				⇓Sn	**Sb**	**08 14 52.5**	**-0.4**
	1.6nm,0.4s						
UCH	**Uchtor**	**3.29**	**35**	⇑*i*P	**Pb**	**08 14 21.6**	**-1.1**
	baz=34						
UCH				⇑*i*S	**Sb**	**08 15 03.4**	**-0.2**
	baz=34						
KZA	**Kyzart**	**3.55**	**44**	⇑*i*P	**Pb**	**08 14 24.8**	**-2.1**
	baz=43						
KZA				⇑*i*S	**Sb**	**08 15 09.2**	**-1.1**
	baz=43						
NRN	**Naryn**	**3.61**	**58**	⇓*e*P	**Pn**	**08 14 22.1**	**+1.9**
	baz=56						
NRN				⇓*e*S	**Sn**	**08 15 05.0**	**+1.7**
	baz=56						
AAK	**Ala-Archa**	**3.62**	**31**	⇓Pn	**Pb**	**08 14 25.4**	**-2.6**
	1.8nm,0.5s						
AAK				⇓Sn	**Sb**	**08 15 07.8**	**-4.5**
	1.6nm,0.5s						
KK31	**Karatay Array**	**3.70**	**343**	⇓Pn	**Pb**	**08 14 26.2**	**-3.1**
	0.4nm,0.3s,baz=143,slow=11,SNR=12						
KK31				⇑Sn	**Sb**	**08 15 14.1**	**-0.3**
	1.1nm,0.3s,baz=147,slow=29,SNR=4.3						
TKM2	**Tokmak 2**	**4.34**	**38**	⇓Pn	Pb	08 14 34.9	-5.4
	0.9nm,0.4s						
TKM2				⇓Sn	**Sb**	**08 15 26.3**	**-6.6**
	1.6nm,0.7s						

*IDC **13** 08:13:58.1±0.7, 20°.57S×168°.33E, h0km, mb4.3/15, mb1 4.5/17, mb1mx4.4/37, mbtmp4.4/17, ML4.1/2, MS3.5/9, Ms1 3.5/9, ms1mx3.1/31, Error ellipse: s-maj=21.1km s-min=16.0km az=120.0*
*NEIC **13** 08:13:59.6±0.3, 20°.55S×168°.32E, h10km, mb4.9/10, Error ellipse: s-maj=9.0km s-min=7.0km az=139.0*
*ISCJB **13** 08:14:00.4±0.4, 20°.59S±0°.06×168°.27E±0°.07, h26km, mb4.5/22, MS3.5/9, Error ellipse: s-maj=10.6km s-min=7.1km az=42.9*
ISC 13 08:14:01.9±0.5, 20°.61S±0°.09×168°.3E±0°.1, h26km, n59, σ0§97/51, mb4.6/21, MS3.6/9, 1D, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.24**	**229**	Pn	**Pn**	**08 14 36.7**	**-0.8**
	86nm,0.3s,baz=74,slow=7.4,SNR=773						
DZM				Sn	**Sn**	**08 15 04.1**	**-0.2**
	259nm,0.3s,baz=359,slow=20,SNR=13						
DZM				LR	LR	08 15 24.1	
	comp=Z,932nm,20.4s,baz=11,slow=37						
EIDS	**Eidsvold**	**16.53**	**250**	*e*P	**Pn**	**08 17 52.0**	**0.0**
	5.1nm,0.9s						
ARMA	**Armidale**	**17.90**	**234**	*e*P	**P**	**08 18 10.8**	**+1.1**
	5.3nm,0.5s						
URZ	**Urewera**	**19.17**	**158**	P	**Pn**	**08 18 25.3**	**+0.8**
	0.3nm,0.3s,baz=8.1,slow=7.1,SNR=3.8						
AFI	**Afiamalu**	**20.17**	**74**	LR	LR	08 25 29.9	
	comp=Z,29nm,20.1s,baz=240,slow=34						
CTA	**Charters Tower**	**20.66**	**268**	P	Pn	08 18 41.8	-0.5
	7.2nm,0.7s,baz=94,slow=13,SNR=7.3						
CTAO	**Charters Tower**	**20.66**	**268**	*e*P	Pn	08 18 41.3	-0.9
	135nm,1.2s						
THZ	**Tophouse**	**21.45**	**171**	*e*P	**P**	**08 18 48.9**	**+0.8**
RPZ	**Rata Peaks**	**23.15**	**175**	LR	LR	08 27 02.9	
	comp=Z,115nm,18.9s,baz=178,slow=34						
PMG	**Port Moresby**	**23.21**	**296**	LR	LR	08 26 40.4	
	comp=Z,112nm,18.8s,baz=32,slow=33						
STKA	**Stephens Creek**	**26.36**	**239**	P	**P**	**08 19 38.0**	**+1.9**
	4.9nm,0.7s,baz=76,slow=8.9,SNR=13						
STKA				LR	LR	08 29 20.1	
	comp=Z,163nm,20.1s,baz=55,slow=35						
RAR	**Rarotonga**	**29.82**	**97**	LR	LR	08 28 45.5	
	comp=Z,71nm,21.8s,baz=260,slow=30						
WRAB	**Tennant Creek**	**31.80**	**265**	*e*P	**P**	**08 20 23.9**	**-0.7**
	8.0nm,1.0s						
WRA	**Warramunga Arr**	**31.81**	**265**	P	**P**	**08 20 23.7**	**-0.9**
	2.2nm,0.5s,baz=91,slow=8.5,SNR=49						
ASAR	**Alice Springs**	**31.94**	**258**	P	**P**	**08 20 25.8**	**-0.1**
	15nm,0.7s,baz=84,slow=9.0,SNR=146						
ASAR				LR	LR	08 33 27.4	
	comp=Z,140nm,19.0s,baz=130,slow=37						
PPT2	**Papeete2**	**39.86**	**93**	*e*LR	LR	08 32 55.9	
	164nm,28.5s						
FITZ	**Fitzroy Crossi**	**40.23**	**266**	*e*P	**P**	**08 21 36.8**	**+0.2**
	26nm,1.2s						
TAOE	**Nuku Hiva Isla**	**51.03**	**85**	*e*S	S	08 30 42.0	+24
	41nm,25.0s						
TAOE				*e*LR	LR	08 38 07.6	
	113nm,28.4s						
VNDA	**Vanda**	**57.04**	**182**	P	**P**	**08 23 45.0**	**-0.1**
	1.1nm,0.8s,baz=11,slow=6.0,SNR=6.4						
SBA	**Scott Base**	**57.29**	**180**	*e*P	**P**	**08 23 47.7**	**+0.9**
	8.8nm,1.0s						
MJAR	**Matsushiro Arr**	**63.55**	**333**	P	**P**	**08 24 29.4**	**-0.7**
	2.1nm,0.8s,baz=164,slow=6.0,SNR=4.4						
KSRS	**Korea Array**	**69.14**	**327**	P	**P**	**08 25 06.1**	**+0.2**
	1.4nm,0.8s,baz=117,slow=4.7,SNR=3.7						
KSAR	**Wonju Array Be**	**69.15**	**326**	P	**P**	**08 25 06.1**	**+0.1**
QSPA	**South Pole Qui**	**69.45**	**180**	*e*P	**P**	**08 25 07.5**	**-0.2**
	38nm,1.3s						
USRK	**Ussuriysk Ar.**	**72.55**	**333**	P	**P**	**08 25 27.4**	**+0.9**
	4.9nm,0.8s,baz=140,slow=3.4,SNR=7.7						
PETK	**Petropavlovsk-**	**73.98**	**353**	P	**P**	**08 25 35.9**	**+1.1**
	11nm,1.0s,baz=148,slow=8.7,SNR=5.9						
MAW	**Mawson**	**76.83**	**202**

0.8nm,1.0s,baz=108,slow=3.2,SNR=3.1

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*IDC **13** 08:14:53.2±1.0,37°.20N×143°.79E,h0km,mb3.6/5, mb1 3.8/8,mb1mx3.6/45,mbtmp3.7/8,ML3.8/3,MS2.7/1, Ms1 2.7/1,ms1mx2.1/49,Error ellipse: s-maj=28.6km s-min=18.8km az=118.0*

*ISCJB **13** 08:14:56.1±0.8,37°.38N±0°.05×143°.70E±0°.07,h33km, mb3.7/5,Error ellipse: s-maj=8.2km s-min=6.3km az=33.4*

*JMA **13** 08:14:56.9±0.3,37°.35N×143°.59E,h47km,M3.6*

ISC 13 08:14:57.5±1.1,37°.34N±0°.06×143°.72E±0°.09,h35km,n24, σ1§75/30,mb3.7/5,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	2.18	301	P	Pn	08 15 30.5	-0.7
OFUJ	Ofunato	2.37	318	P	Pn	08 15 32.8	-1.0
JMM	Marumori	2.38	284	P	Pn	08 15 33.1	-0.9
JMK	Ichinoseki	2.54	310	P	Pn	08 15 35.6	-0.6
JOU	Okura	2.62	294	P	Pn	08 15 37.3	0.0
JHO	Hitachi	2.63	255	P	Pn	08 15 36.4	-1.0
JFT	Otama	2.70	275	P	Pn	08 15 38.8	+0.5
JOM	Ohasama	2.85	319	P	Pn	08 15 40.2	-0.3
JOM				eS	Sn	08 16 12.4	-1.2
JYK	Kaneyama	3.08	302	P	Pn	08 15 44.0	+0.4
JANG	Nango	3.48	331	P	Pn	08 15 49.1	0.0
JANG				eS	Sn	08 16 26.9	-2.1
JAG	Ashikaga	3.54	256	P	Pn	08 15 49.9	0.0
JAG				S	Sn	08 16 28.3	-2.3
JRY	Ryogami san	4.09	253	P	Pn	08 15 57.3	-0.2
JRY				S	Sn	08 16 41.1	-3.1
JOD2	Odawara 2	4.28	242	P	Pn	08 15 59.7	-0.4
MJAR	Matsushiro Arr	4.49	261	Pn	Pn	08 16 04.2	+1.2
MJAR	5.6nm,0.3s,baz=89,slow=15,SNR=37			Sn	Sn	08 16 55.7	+1.8
MAT	Matsushiro	4.49	261	P	Pn	08 16 04.6	+1.6
MAT	0.9nm,0.3s,baz=71,slow=24,SNR=3.0			eS	Sn	08 16 55.1	+1.2
JHJ	Hachijo jima 2	5.30	219	Pn	Pn	08 16 10.7	-3.5
JHJ	7.9nm,0.3s,baz=46,slow=18,SNR=2.5			Sn	Sn	08 17 08.8	-5.3
ASAJ	Asahikawa	6.82	353	Pn	Pn	08 16 34.9	0.0
ASAJ	1.6nm,0.3s,baz=231,slow=17,SNR=3.8			Sn	Sn	08 17 48.2	-3.1
ASAJ	0.7nm,0.3s,baz=144,slow=16,SNR=3.2			LR	LR	08 19 56.4	
KSRS	comp=Z,54nm,20.0s,baz=132,slow=44 Korea Array	12.56	275	Pn	Pn	08 17 57.8	+4.1
KLR	0.2nm,0.3s,baz=88,slow=15,SNR=4.2 Kul'dur	14.71	328	Pn	Pn	08 18 21.6	-1.2
MKAR	0.2nm,0.3s,baz=138,slow=14,SNR=5.8 Makanchi Array	45.51	302	P	P	08 23 15.6	+2.2
ILAR	0.3nm,0.7s,baz=90,slow=7.2,SNR=3.1 Eielson Array	48.24	33	P	P	08 23 36.4	+2.0
INK	0.5nm,0.8s,baz=275,slow=6.2,SNR=4.2 Inuvik	53.27	27	P	P	08 24 13.6	+1.4
WRA	0.4nm,0.5s,baz=274,slow=8.4,SNR=6.1 Warramunga Arr	57.66	190	P	P	08 24 44.7	+0.4
ASAR	0.8nm,0.5s,baz=12,slow=7.6,SNR=7.6 Alice Springs	61.38	190	P	P	08 25 09.8	-0.1
	0.5nm,0.6s,baz=359,slow=6.6,SNR=4.2						

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*NIED **13** 08:19:00,37°.10N×140°.70E,h5km,Mw3.7 Best double couple: M0:8.84000×10^14 NP1:φ=26.00000°,δ=23.00000°, λ=-109.00000°. NP2:φ=226.00000°,δ=68.00000°, λ=-82.00000°.*

*ISCJB **13** 08:19:41.3±0.9,37°.07N±0°.03×140°.84E±0°.05,h15km±6km, mb3.6/8,Error ellipse: s-maj=7.2km s-min=5.0km az=178.9*

*JMA **13** 08:19:41.9,37°.09N×140°.70E,h6km±1km,M3.5 Broadband fault plane solution: P waves. NP1: φ=19.00000°,δ=49.00000°,λ=-99.00000°. NP2:φ=212.00000°, δ=41.00000°,λ=-80.00000°. Principal axes: T Plg4.0000°, Azm115.0000°; N Plg7.0000°, Azm25.0000°; P Plg82.0000°, Azm235.0000°;*

JMA Felt II J1.

*IDC **13** 08:19:46.0±3.9,36°.99N×140°.82E,h38km±36km,mb3.4/8, mb1 3.7/11,mb1mx3.5/40,mbtmp3.6/11,ML2.9/3 Error ellipse: s-maj=28.6km s-min=17.5km az=99.0*

ISC 13 08:19:41.9±0.9,37°.09N±0°.03×140°.73E±0°.04,h9km±5km, n24,σ0§57/26,mb3.6/8,5C,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.06	74	↑P	Pg	08 19 43.8	-0.1
ONAJ				S	Sg	08 19 45.2	-0.2
JFK	Kawauchi	0.30	22	↑P	Pg	08 19 48.0	0.0
JFK				S	Sg	08 19 52.3	+0.3
JHO	Hitachi	0.49	195	P	Pg	08 19 51.3	-0.2
JHO				S	Sg	08 19 58.2	+0.2
JFT	Otama	0.53	324	↑P	Pg	08 19 52.1	-0.2
JFT				S	Sg	08 19 59.3	0.0
JMM	Marumori	0.78	4	↑P	Pg	08 19 56.4	-0.5
JMM				S	Sg	08 20 07.0	-0.1
JFY	Yanaizu	0.88	292	↑P	Pg	08 19 58.4	-0.5
JFY				S	Sg	08 20 09.7	-0.6
MJAR	Matsushiro Arr	2.10	256	Pn	Pn	08 20 18.1	+0.9
MJAR	14nm,0.3s,baz=73,slow=15,SNR=75			Sn	Sb	08 20 46.2	-0.1
MAT	Matsushiro	2.10	256	P	Pn	08 20 18.3	+1.1
MAT	20nm,0.3s,baz=226,slow=2.0,SNR=8.7			S	Sb	08 20 46.8	+0.5
JHJ	Hachijo jima 2	4.03	191	Pn	Pn	08 20 44.2	+0.3
JHJ	3.8nm,0.3s,baz=81,slow=23,SNR=1.8			Sn	Sn	08 21 30.7	-0.5
USRK	7.8nm,0.3s,baz=44,slow=23,SNR=2.6 Ussuriysk Ar.	9.72	320	Pn	Pn	08 22 05.8	+3.9
H11N2	0.1nm,0.3s,baz=138,slow=13,SNR=5.4 WAKE ISLAND Hy 28.64	120		T	T	08 55 25.5	
H11N1	baz=313,slow=75,SNR=50 WAKE ISLAND Hy 28.65	120		T	T	08 55 27.6	
H11N3	baz=313,slow=75,SNR=40 WAKE ISLAND Hy 28.66	120		T	T	08 55 29.4	
H11S1	baz=313,slow=75,SNR=43 WAKE ISLAND Hy 29.35	122		T	T	08 56 20.4	
H11S3	baz=314,slow=76,SNR=46 WAKE ISLAND Hy 29.35	122		T	T	08 56 20.3	
H11S2	baz=314,slow=76,SNR=62 WAKE ISLAND Hy 29.36	122		T	T	08 56 21.5	
MKAR	baz=314,slow=76,SNR=36 Makanchi Array	43.63	302	P	P	08 27 47.2	+0.6
ILAR	0.3nm,0.7s,baz=90,slow=11,SNR=2.9 Eielson Array	49.74	32	P	P	08 28 33.2	-0.9
WRA	0.5nm,0.7s,baz=270,slow=6.3,SNR=4.6 Warramunga Arr	57.04	187	P	P	08 29 27.0	-1.3
ASAR	2.5nm,0.7s,baz=4.4,slow=7.5,SNR=23 Alice Springs	60.77	187	P	P	08 29 53.6	-0.5
YKA	0.7nm,0.7s,baz=11,slow=6.7,SNR=6.6 Yellowknife Ar	64.03	30	P	P	08 30 16.1	+0.5
NVAR	0.3nm,0.9s,baz=294,slow=5.8,SNR=4.0 Mina Array Bea	75.39	53	P	P	08 31 26.4	+0.2
PDAR	0.3nm,0.5s,baz=303,slow=5.3,SNR=3.1 Pinedale Array	78.02	45	P	P	08 31 41.2	+0.2
TXAR	0.3nm,0.6s,baz=201,slow=2.9,SNR=3.9 Lajitas Array	90.52	52	P	P	08 32 44.8	+0.2
	0.3nm,0.7s,baz=270,slow=3.7,SNR=4.9						

JMA 13 08:21:08.8,37°.09N×140°.70E,h7km±1km,M2.8,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.08	82	P	Pg	08 21 10.6	-0.2
ONAJ				S	Sg	08 21 12.0	-0.2
JFK	Kawauchi	0.31	27	P	Pg	08 21 14.8	-0.1
JFK				S	Sg	08 21 19.1	+0.1
JHO	Hitachi	0.49	192	P	Pg	08 21 18.2	-0.1
JHO				S	Sg	08 21 25.2	+0.5
JFT	Otama	0.52	326	P	Pg	08 21 19.3	+0.5
JFT				S	Sg	08 21 26.1	+0.5
JMM	Marumori	0.78	5	P	Pg	08 21 23.4	-0.4
JMM				S	Sg	08 21 33.7	-0.2
JFY	Yanaizu	0.85	292	P	Pg	08 21 25.5	+0.3
JFY				S	Sg	08 21 36.4	+0.1
MAT	Matsushiro	2.07	255	P	Pb	08 21 46.3	-0.5
MAT				S	Sb	08 22 13.5	+0.7

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*IDC **13** 08:26:24.2±0.9,34°.89N×141°.17E,h0km,mb3.5/7, mb1 3.6/9,mb1mx3.5/47,mbtmp3.5/9,ML2.9/2,MS2.9/2, Ms1 2.9/2,ms1mx2.4/50,Error ellipse: s-maj=26.2km s-min=19.2km az=86.0*

*JMA **13** 08:26:25.8±0.2,35°.06N×141°.14E,h47km±4km,M2.9*

*ISCJB **13** 08:26:28.7±0.7,34°.90N±0°.06×140°.92E±0°.09,h48km, mb3.5/7,MS2.9/2,Error ellipse: s-maj=11.3km s-min=7.7km az=165.6*

ISC 13 08:26:29.8±0.9,34°.97N±0°.05×140°.97E±0°.09,h48km,n17, σ2§38/17,mb3.6/7,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	Boso 1	0.32	179	P	Pn	08 26 35.8	-2.6
BSO3	Boso 3	0.42	246	P	Pn	08 26 38.0	-1.7
BSO4	Boso 4	0.52	272	P	Pn	08 26 39.6	-1.5
KTR	Katsuura	0.57	288	P	Pn	08 26 39.7	-2.1
KTR				eS	Sn	08 26 48.5	-1.8
CHOJ	Chosi	0.73	353	P	Pn	08 26 39.2	-4.7
CHOJ				eS	Sn	08 26 48.8	-5.4
JCN	Nagara	0.77	305	P	Pn	08 26 42.0	-2.4
JHJ	Hachijo jima 2	2.10	208	Pn	Pn	08 27 00.9	-1.6
JHJ	11nm,0.3s,baz=72,slow=20,SNR=3.4			Sn	Sn	08 27 25.1	-2.3
MJAR	30nm,0.3s,baz=111,slow=23,SNR=6.0 Matsushiro Arr	2.74	306	Pn	Pn	08 27 11.7	+0.4
PETK	1.7nm,0.3s,baz=99,slow=15,SNR=8.5 Petropavlovsk-	21.66	28	LR	LR	08 40 46.1	
ZALV	comp=Z,12nm,19.1s,baz=309,slow=40 Zalesovo Beam	43.06	314	P	P	08 34 26.4	+1.7
MKAR	0.7nm,0.3s,baz=79,slow=6.7,SNR=3.2 Makanchi Array	44.94	304	P	P	08 34 41.8	+1.8
KURBB	0.2nm,0.4s,baz=90,slow=9.5,SNR=2.3 Kurchatov Arra	47.01	309	P	P	08 34 59.0	+2.9
ILAR	0.4nm,0.3s,baz=86,slow=8.3,SNR=5.3 Eielson Array	51.43	31	P	P	08 35 29.8	+0.1
WRA	0.2nm,0.7s,baz=277,slow=7.2,SNR=4.2 Warramunga Arr	54.98	188	P	P	08 35 56.5	+0.3
ASAR	0.8nm,0.5s,baz=3.9,slow=7.3,SNR=15 Alice Springs	58.70	188	P	P	08 36 23.2	+0.6
DZM	0.3nm,0.6s,baz=21,slow=11,SNR=4.2 Mont Dzumac	61.67	153	LR	LR	08 58 45.3	
PDAR	comp=Z,32nm,20.5s,baz=294,slow=32 Pinedale Array	79.37	45	P	P	08 38 32.6	+1.7
	0.1nm,0.4s,baz=343,slow=2.8,SNR=2.8						

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*NIED **13** 08:26:00,36°.90N×141°.10E,h53km,Mw3.9 Best double couple: M0:8.69000×10^14 NP1:φ=306.00000°,δ=48.00000°, λ=153.00000°. NP2:φ=55.00000°,δ=70.00000°,λ=45.00000°.*

*ISCJB **13** 08:26:47.9±0.7,36°.84N±0°.04×141°.18E±0°.07,h53km±5km, mb3.8/12,MS2.2/1,Error ellipse: s-maj=10.0km s-min=6.1km az=19.0*

*JMA **13** 08:26:49.7±0.1,36°.87N×141°.06E,h49km±1km,M4.0*

JMA Felt II J1.

*IDC **13** 08:26:51.7±2.7,36°.82N×140°.98E,h70km±26km,mb3.5/12, mb1 3.6/14,mb1mx3.5/47,mbtmp3.8/14,MS2.4/1, Ms1 2.4/1,ms1mx2.2/42,Error ellipse: s-maj=22.0km s-min=16.6km az=78.0*

ISC 13 08:26:48.8±1.2,36°.86N±0°.04×141°.18E±0°.07,h43km±10km, n25,σ0§98/34,mb3.8/12,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.39	309	P	Pn	08 26 58.8	+0.5
ONAJ				S	Sn	08 27 05.0	0.0
JHO	Hitachi	0.55	243	P	Pn	08 27 00.4	+0.1
JHO				S	Sn	08 27 07.8	-0.6
JFK	Kawauchi	0.56	334	P	Pn	08 27 00.8	+0.3
JFK				eS	Sn	08 27 08.5	-0.3
JFT	Otama	0.94	315	P	Pn	08 27 06.3	+0.7
JFT				S	Sn	08 27 17.9	0.0
JSB	Shiboa	1.02	277	P	Pn	08 27 06.8	+0.2
JSB				S	Sn	08 27 18.9	-0.8
JMM	Marumori	1.05	343	P	Pn	08 27 07.3	+0.2
JMM				S	Sn	08 27 20.6	+0.1
JFY	Yanaizu	1.30	295	P	Pn	08 27 10.6	+0.1
JAG	Ashikaga	1.45	253	P	Pn	08 27 12.6	0.0
JKT	Katashina	1.55	267	P	Pn	08 27 14.6	+0.6
JKT				eS	Sn	08 27 31.6	-1.4
MJAR	Matsushiro Arr	2.41	263	P	Pn	08 27 26.7	+1.0
MJAR	16nm,0.3s,baz=85,slow=15,SNR=40			S	Sn	08 27 57.1	+3.2
MAT	Matsushiro	2.41	263	P	Pn	08 27 26.9	+1.2
MAT	14nm,0.3s,baz=82,slow=14,SNR=8.2			eS	Sn	08 27 55.1	+1.1
JHJ	Hachijo jima 2	3.90	197	P	Pn	08 27 47.1	+0.9
JHJ	49nm,0.3s,baz=54,slow=19,SNR=13			S	Sn	08 28 29.8	-1.0
GUMO	56nm,0.3s,baz=264,slow=19,SNR=4.2 Guam	23.41	171	LR	LR	08 41 46.8	
SONM	comp=Z,8.8nm,18.7s,baz=56,slow=38 Songino Array	27.73	304	P	P	08 32 33.3	+0.1
ZALV	0.5nm,0.3s,baz=111,slow=8.6,SNR=4.5 Zalesovo Beam	41.90	313	P	P	08 34 33.4	-1.3
MKAR	1.8nm,0.5s,baz=79,slow=7.9,SNR=4.3 Makanchi Array	44.05	302	P	P	08 34 51.5	-0.8
KURBB	0.9nm,0.7s,baz=89,slow=10,SNR=7.6 Kurchatov Arra	45.96	308	P	P	08 35 06.3	-1.1
ILAR	1.1nm,0.4s,baz=85,slow=8.0,SNR=6.2 Eielson Array	49.74	32	P	P	08 35 37.4	+0.9
INK	0.5nm,0.7s,baz=260,slow=6.5,SNR=5.9 Inuvik	54.63	27	P	P	08 36 13.9	+1.3
WRA	0.8nm,0.6s,baz=296,slow=4.8,SNR=6.7 Warramunga Arr	56.86	188	P	P	08 36 29.1	-0.1
ASAR	0.8nm,0.6s,baz=5.7,slow=7.2,SNR=9.8 Alice Springs	60.59	188	P	P	08 36 54.3	-0.8
YKA	0.4nm,0.8s,baz=0.9,slow=7.6,SNR=3.1 Yellowknife Ar	64.05	30	P	P	08 37 17.7	-0.1
FINES	0.2nm,0.6s,baz=300,slow=6.3,SNR=5.2 FINESS Array B	68.88	332	P	P	08 37 48.3	-0.4
AKASG	2.1nm,0.7s,baz=175,slow=29,SNR=3.4 Malin Array Be	74.32	322	P	P	08 38 20.6	-0.9
PDAR	1.0nm,0.4s,baz=50,slow=5.9,SNR=4.3 Pinedale Array	77.92	45	P	P	08 38 43.6	+1.1
	0.2nm,0.6s,baz=340,slow=2.2,SNR=3.7						

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*IDC **13** 08:35:57.0±0.8,35°.03N×141°.08E,h0km,mb3.6/8, mb1 3.8/10,mb1mx3.6/50,mbtmp3.6/10,ML3.2/2,MS2.7/4, Ms1 2.7/4,ms1mx2.4/53,Error ellipse: s-maj=23.9km s-min=18.2km az=94.0*

*JMA **13** 08:35:59.5±0.2,35°.05N×141°.13E,h44km±4km,M3.3*

*ISCJB **13** 08:36:01.1±0.6,34°.95N±0°.05×140°.97E±0°.07,h48km, mb3.6/8,Error ellipse: s-maj=7.7km s-min=6.7km az=163.4*

ISC 13 08:36:03.0±0.8,34°.95N±0°.05×140°.93E±0°.08,h48km,n21, σ1§41/21,mb3.6/8,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	Boso 1	0.30	172	P	Pn	08 36 09.2	-2.1
BSO3	Boso 3	0.37	246	P	Pn	08 36 11.4	-1.0
BSO4	Boso 4	0.48	275	P	Pn	08 36 12.7	-1.1
KTR	Katsuura	0.54	292	P	Pn	08 36 12.9	-1.7
KTR				eS	Sn	08 36 22.2	-0.7
CHOJ	Chosi	0.75	356	P	Pn	08 36 12.7	-4.7
JCN	Nagara	0.75	308	P	Pn	08 36 15.9	-1.5
JIM2	Oshima 3	1.25	260	P	Pn	08 36 22.7	-1.4
JIM2				eS	Sn	08 36 39.1	-0.8
JYT	Yasato	1.41	335	P	Pn	08 36 24.2	-2.0
JHJ	Hachijo jima 2	2.06	208	Pn	Pn	08 36 35.6	+0.4
JHJ	22nm,0.3s,baz=95,slow=20,SNR=8.5			Sn	Sn	08 36 57.0	-2.6
MJAR	30nm,0.3s,baz=105,slow=20,SNR=6.1 Matsushiro Arr	2.72	306	Pn	Pn	08 36 43.7	-0.5
MJAR	2.4nm,0.3s,baz=106,slow=8.8,SNR=9.1			Sn	Sn	08 37 16.3	+0.4
KSRS	2.9nm,0.3s,baz=127,slow=12,SNR=5.8 Korea Array	10.80	287	LR	LR	08 37 51.8	
KLR	comp=Z,66nm,20.9s,baz=140,slow=42 Kul'dur	15.79	337	LR	LR	08 46 01.1	
MKAR	comp=Z,37nm,18.5s,baz=146,slow=38 Makanchi Array	44.92	304	P	P	08 44 14.1	+1.2
KURBB	0.2nm,0.5s,baz=100,slow=7.6,SNR=2.7 Kurchatov Arra	46.99	309	P	P	08 44 29.6	+0.4
ILAR	1.0nm,0.5s,baz=85,slow=8.0,SNR=12 Eielson Array	51.47	31	P	P	08 45 03.2	0.0
	0.5nm,0.8s,baz=262,slow=5.7,SNR=5.2						
BVAR	Borovoye Array	51.70	313	P	P	08 45 05.3	+0.3
WRA	0.4nm,0.5s,baz=99,slow=6.0,SNR=2.2 Warramunga Arr	54.95	188	P	P	08 45 29.6	+0.4
ASAR	1.0nm,0.4s,baz=5.3,slow=7.6,SNR=19 Alice Springs	58.68	188	P	P	08 45 57.2	+1.6
YKA	0.5nm,0.5s,baz=8.9,slow=8.7,SNR=5.3 Yellowknife Ar	65.81	30	P	P	08 46 41.4	-1.5
PDAR	0.2nm,0.7s,baz=298,slow=6.1,SNR=5.3 Pinedale Array	79.41	45	P	P	08 48 06.0	+1.7
	0.2nm,0.6s,baz=281,slow=1.4,SNR=3.3						

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*IDC **13** 08:44:58.4±3.1,6°.50N×126°.47E,h48km±28km,mb3.8/12, mb1 3.9/12,mb1mx3.6/50,mbtmp4.0/12,MS3.1/4, Ms1 3.2/4,ms1mx2.7/47,Error ellipse: s-maj=51.1km s-min=11.5km az=68.0*

*NEIC **13** 08:44:59.0±2.0,6°.48N×126°.38E,h53km±17km,mb4.2/3, Error ellipse: s-maj=38.3km s-min=8.3km az=70.0*

*MAN **13** 08:44:59,6°.55N×126°.21E,h15km,mb4.6,ML3.5,MS3.5*

ISC 13 08:44:56.6±1.7,6°.38N±0°.05×126°.29E±0°.06,h32km±11km, n32,σ1§59/40,mb4.2/15,MS3.5/3,2C-2D,Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MATI	Mati	0.57	357	eP	Pn	08 45 08.7	+0.2
MATI				eS	Sn	08 45 17.6	+0.9
DAV	Davao City (W)	0.99	314	P	Pb	08 45 16.5	+1.3
DAV	169nm,0.3s,baz=108,slow=9.6,SNR=15			S	Sb	08 45 30.9	+3.0
DAV	Davao City (W)	0.99	314	ePn	Pb	08 45 16.5	+1.3
DAV	150nm,0.3s,baz=266,slow=17,SNR=8.2			eSn	Sb	08 45 29.7	+1.8
KCP	Kidapawan	1.35	298	↑iP	Pb	08 45 20.2	-1.0
KCP				i S	Sn	08 45 36.8	+0.6
GSPH	General Santos	1.36	258	eP	Pn	08 45 18.4	-1.1
GSPH				eS	Sn	08 45 35.3	-1.3
BIPH	Bislig	1.80	2	↓iP	Pb	08 45 28.1	-0.8
BIPH				i S	Sb	08 45 49.8	-1.3
BUKP	Musuan	1.93	321	eP	Pn	08 45 29.1	+1.8
BUKP				eS	Sb	08 45 54.9	+0.1
CTBH	Cotabato--PC H	2.20	293	↑iP	Pb	08 45 33.6	-2.0
CTBH				i S	Sb	08 46 00.3	-2.2
CGP	Cagayan de Oro	2.60	323	↓eP	Pb	08 45 40.3	-2.2
CGP				eS	Sn	08 46 09.3	+2.3
BESP	Borongan	5.26	351	eP	Pb	08 46 20.8	-7.0
BESP				eS	Sb	08 47 25.7	-4.8
GUMO	Guam	19.64	67	LR	LR	08 55 51.4	
FITZ	comp=Z,18nm,21.2s,baz=185,slow=34 Fitzroy Crossi	24.33	182	P	P	08 50 13.2	+1.5
FITZ	2.3nm,0.4s,baz=1.2,slow=8.0,SNR=10.0 Fitzroy Crossi	24.33	182	eP	P	08 50 13.1	+1.5
WRAB	23nm,1.5s Tennant Creek	27.32	163	eP	P	08 50 41.2	+2.5
WRA	5.4nm,0.9s Warramunga Arr	27.33	163	P	P	08 50 39.4	+0.6
WRA	0.8nm,0.6s,baz=339,slow=10,SNR=15			PcP	PcP	08 53 58.2	+0.3
CMAR	0.2nm,0.6s,baz=341,slow=2.6,SNR=2.8 Chiang Mai Arr	29.23	297	LR	LR	09 01 50.1	
ASAR	comp=Z,21nm,21.3s,baz=155,slow=34 Alice Springs	30.77	166	P	P	08 51 10.2	+0.8
ASAR	1.0nm,0.5s,baz=344,slow=6.9,SNR=19			PcP	PcP	08 54 06.7	+0.2
NWAO	0.4nm,0.6s,baz=341,slow=2.0,SNR=5.0 Narrogin (SRO)	40.02	192	eP	P	08 52 30.1	+1.4
STKA	80nm,1.3s Stephens Creek	40.75	160	P	P	08 52 33.9	-0.8
SONM	1.6nm,0.8s,baz=332,slow=11,SNR=5.0 Songino Array	44.67	341	P	P	08 53 06.4	-0.1
SONM	1.7nm,1.2s,baz=162,slow=5.9,SNR=3.9			PcP	PcP	08 54 49.7	+0.9
MKAR	0.5nm,0.6s,baz=165,slow=6.0,SNR=3.1 Makanchi Array	55.15	324	P	P	08 54 25.6	-0.5
KURK	1.8nm,0.6s,baz=127,slow=7.6,SNR=14 Kurchatov	59.29	327	P	P	08 54 54.1	-1.1
KURBB	Kurchatov Arra	59.30	327	P	P	08 54 54.1	-1.1
BVAR	1.9nm,0.7s,baz=125,slow=6.6,SNR=11 Borovoye Array	64.88	326	P	P	08 55 32.9	+0.2
NRIK	1.3nm,0.7s,baz=105,slow=9.3,SNR=6.3 Noril'sk	67.77	346	P	P	08 55 50.0	-0.9
ABKAR	3.4nm,0.5s,baz=121,slow=7.3,SNR=6.2 Abkulak array	69.84	320	eP	P	08 56 04.8	+0.6
AKTO	1.9nm,0.9s Aktyubinsk	71.33	321	LR	LR	09 29 03.7	
MAW	comp=Z,23nm,19.0s,slow=37 Mawson	86.07	200	LR	LR	09 33 06.2	
VNDA	comp=Z,34nm,19.5s,baz=42,slow=34 Vanda	86.09	173	P	P	08 57 34.4	+0.6
ARCES	0.4nm,0.7s,baz=308,slow=3.1,SNR=3.2 ARCESS Array B	87.83	340	P	P	08 57 40.9	-1.6
YKA	2.4nm,0.8s,baz=82,slow=7.4,SNR=6.1 Yellowknife Ar	97.28	24	P	P	08 58 26.2	-0.1
TORD	0.1nm,0.6s,baz=300,slow=4.3,SNR=3.6 Torodi Ar. Bea	121.65	290	PKP	PKPdf	09 03 47.6	-0.6
	0.9nm,0.6s,baz=57,slow=1.9,SNR=7.5						

IDC 13 08:51:41.9±2.0,0°.96N×125°.67E,h0km,mb3.6/3, mb1 3.9/3,mb1mx3.5/46,mbtmp3.7/3,Error ellipse: s-maj=177.9km s-min=26.2km az=65.0,Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	22.45	158	P	P	08 56 42.0	-0.7
ASAR	1.6nm,0.8s,baz=337,slow=11,SNR=7.2 Alice Springs	25.76	162	P	P	08 57 14.9	+0.4
MKAR	1.1nm,0.6s,baz=337,slow=6.7,SNR=25 Makanchi Array	59.24	327	P	P	09 01 45.1	0.0
	0.4nm,0.5s,baz=128,slow=7.5,SNR=4.6						

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*NSSC **13** 08:53:44.2±5.3,37°.30N×35°.20E,h0km±49km,ML2.9*

*DDA **13** 08:53:46.6,37°.15N×35°.29E,h46km,Md3.3*

*ISK **13** 08:53:47.9,37°.14N×35°.18E,h28km,ML3.1*

*ISCJB **13** 08:53:48.4±0.3,37°.18N±0°.02×35°.23E±0°.02,h31km±3km, Error ellipse: s-maj=3.8km s-min=2.7km az=25.7*

*CSEM **13** 08:53:48.5±0.2,37°.17N×35°.22E,h24km±2km,ML3.1, Error ellipse: s-maj=3.8km s-min=2.7km az=39.0*

ISC 13 08:53:48.7±0.9,37°.17N±0°.02×35°.24E±0°.02,h26km±6km, n75,σ0§88/113,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KARA	Karaisali	0.18	302	ePG	Pb	08 53 54.0	-0.2
KARA				eSG	Sb	08 53 58.2	+0.2
KARA	Karaisali	0.18	302	ePg	Pb	08 53 54.0	-0.2
KARA				eSg	Sb	08 53 58.2	+0.2
AKO	Adana	0.34	29	i P	Pb	08 53 56.5	+0.1
AKO				i S	Sn	08 54 03.1	-0.9
GULE	Gulek	0.39	287	P	Pb	08 53 56.9	-0.4
GULE				S	Sb	08 54 03.3	+0.2
GULE	Gulek	0.39	287	i P	Pb	08 53 56.9	-0.4
GULE				i S	Sb	08 54 03.3	+0.2
DED	Mersin	0.41	240	i P	Pb	08 53 57.0	-0.5
DED				i S	Sb	08 54 03.6	+0.2
CEYT	Ceyhan	0.43	111	ePG	Pb	08 53 58.1	+0.2
CEYT				eSG	Sn	08 54 06.1	-0.2
CEYT	Ceyhan

YAYL	**Yayladag**	**1.33 148**	P	**Pn**	**08 54 10.4**	**-1.3**
YAYL			S	**Sn**	**08 54 28.0**	**-0.6**
YAYL	**Yayladag**	**1.33 148**	*i* P	**Pn**	**08 54 10.4**	**-1.3**
YAYL			*i* S	**Sn**	**08 54 28.0**	**-0.6**
HCB	**Kahramanmara¯**	**1.34 82**	*i* P	**Pn**	**08 54 10.7**	**-1.1**
HCB			*i* S	**Sn**	**08 54 27.8**	**-1.0**
ARNB	**Al Arnab**	**1.43 155**	*e*P	**Pn**	**08 54 13.1**	**0.0**
ARNB			*e*S	**Sb**	**08 54 32.6**	**0.0**
ARNB			AML	AML	08 54 34.7	
	comp=N,439nm,0.2s					
ARNB			AML	AML	08 54 35.5	
	comp=E,636nm,0.5s					
ARNB	**Al Arnab**	**1.43 155**	*e*P	**Pn**	**08 54 13.1**	**0.0**
ARNB			*e*S	**Sb**	**08 54 32.6**	**0.0**
	comp=E,636nm,0.5s					
BTCH	**Batrach**	**1.49 139**	*e*P	**Pn**	**08 54 13.6**	**-0.3**
BTCH			*e*S	**Sb**	**08 54 34.4**	**-0.1**
BTCH			AML	AML	08 54 36.3	
	comp=E,638nm,0.3s					
BTCH			AML	AML	08 54 39.4	
	comp=N,451nm,0.2s					
BTCH	**Batrach**	**1.49 139**	*e*P	**Pn**	**08 54 13.6**	**-0.3**
BTCH			*e*S	**Sb**	**08 54 34.3**	**-0.1**
	comp=N,451nm,0.2s					
GAZ	**Gaziantep**	**1.57 89**	*e*PN	**Pn**	**08 54 15.4**	**+0.4**
GAZ	**Gaziantep**	**1.57 89**	*e*Pn	**Pn**	**08 54 15.4**	**+0.4**
AVNS	**Nevsehir-Avano**	**1.67 349**	P	**Pn**	**08 54 15.8**	**-0.5**
AVNS			S	**Sn**	**08 54 37.2**	**+0.3**
AVNS	**Nevsehir-Avano**	**1.67 349**	*i* P	**Pn**	**08 54 15.8**	**-0.5**
AVNS			*i* S	**Sn**	**08 54 37.2**	**+0.3**
BNN	**Bunyan**	**1.75 16**	*e*PN	**Pn**	**08 54 17.6**	**+0.1**
BNN	**Bunyan**	**1.75 16**	*e*Pn	**Pn**	**08 54 17.6**	**+0.1**
GZT	**Gaziantep**	**1.86 84**	*i* P	**Pn**	**08 54 16.8**	**-2.2**
GZT			*i* S	**Sn**	**08 54 41.6**	**-0.2**
AKSY	**AKSARAY - Alti**	**1.89 322**	P	**Pn**	**08 54 18.3**	**-1.0**
AKSY			S	**Sn**	**08 54 41.7**	**-0.6**
AKSY	**AKSARAY - Alti**	**1.89 322**	*i* P	**Pn**	**08 54 18.3**	**-1.0**
AKSY			*i* S	**Sn**	**08 54 41.7**	**-0.6**
ERMK	**Ermenek**	**1.94 255**	P	**Pn**	**08 54 21.1**	**+0.9**
ERMK			S	**Sn**	**08 54 45.0**	**+1.2**
ERMK	**Ermenek**	**1.94 255**	*i* P	**Pn**	**08 54 21.1**	**+0.9**
ERMK			*i* S	**Sn**	**08 54 45.0**	**+1.2**
SERE	**Sereflikochisa**	**2.21 324**	*e*PN	**Pn**	**08 54 23.2**	**-0.6**
SERE	**Sereflikochisa**	**2.21 324**	*e*Pn	**Pn**	**08 54 23.2**	**-0.6**
DARE	**Darende-Malaty**	**2.26 51**	*e*PN	**Pn**	**08 54 25.3**	**+0.8**
DARE	**Darende-Malaty**	**2.26 51**	*e*Pn	**Pn**	**08 54 25.3**	**+0.8**
KFRA	**Kufra**	**2.32 147**	*e*P	**Pn**	**08 54 25.2**	**-0.1**
KFRA			*e*S	**Sn**	**08 54 54.6**	**+1.6**
KFRA			AML	AML	08 55 03.5	
	comp=N,375nm,0.7s					
KFRA			AML	AML	08 55 10.2	
	comp=E,128nm,0.6s					
KFRA	**Kufra**	**2.32 147**	*e*P	**Pn**	**08 54 25.2**	**-0.1**
KFRA			*e*S	**Sn**	**08 54 54.6**	**+1.6**
	comp=E,129nm,0.6s					
CHBY	**Cihanbeyli**	**2.34 308**	*e*PN	**Pn**	**08 54 24.9**	**-0.6**
CHBY	**Cihanbeyli**	**2.34 308**	*e*Pn	**Pn**	**08 54 24.9**	**-0.6**
LFK	**Lefkose**	**2.34 217**	*e*PN	**Pn**	**08 54 24.6**	**-0.9**
LFK	**Lefkose**	**2.34 217**	*e*Pn	**Pn**	**08 54 24.6**	**-0.9**
KMER	**Konya-Meram**	**2.36 286**	P	**Pn**	**08 54 26.1**	**+0.2**
KMER	**Konya-Meram**	**2.36 286**	*i* P	**Pn**	**08 54 26.1**	**+0.2**
KMER			*i* S	**Sb**	**08 55 01.9**	**+2.5**
CUSAR	**Sarkisla-SIVAS**	**2.38 19**	P	**Pn**	**08 54 27.0**	**+0.8**
CUSAR	**Sarkisla-SIVAS**	**2.38 19**	*i* P	**Pn**	**08 54 27.0**	**+0.8**
CUSAR			*i* S	**Sb**	**08 55 03.5**	**+3.6**
AKCD	**Akcadag**	**2.41 61**	P	**Pn**	**08 54 26.0**	**-0.5**
AKCD			S	**Sn**	**08 54 53.9**	**-1.3**
AKCD	**Akcadag**	**2.41 61**	*i* P	**Pn**	**08 54 26.0**	**-0.5**
AKCD			*i* S	**Sn**	**08 54 53.9**	**-1.3**
KONT	**Konya--Tatoy**	**2.42 290**	*e*PN	**Pn**	**08 54 26.2**	**-0.3**
KONT	**Konya--Tatoy**	**2.42 290**	*e*Pn	**Pn**	**08 54 26.3**	**-0.3**
LADK	**Ladik-KONYA**	**2.50 295**	*e*PN	**Pn**	**08 54 27.3**	**-0.5**
LADK	**Ladik-KONYA**	**2.50 295**	*e*Pn	**Pn**	**08 54 27.3**	**-0.5**
KAMT	**Kaman**	**2.50 332**	*e*PN	**Pn**	**08 54 27.8**	**-0.1**
KAMT	**Kaman**	**2.50 332**	*e*Pn	**Pn**	**08 54 27.8**	**-0.1**
GAZI	**Gazipasa**	**2.53 249**	P	**Pn**	**08 54 29.2**	**+1.1**
GAZI			S	**Sn**	**08 54 58.6**	**+0.5**
GAZI	**Gazipasa**	**2.53 249**	*i* P	**Pn**	**08 54 29.2**	**+1.1**
GAZI			*i* S	**Sn**	**08 54 58.6**	**+0.5**
AKDN	**Akdeniz- K¯–br**	**2.62 225**	*e*PN	**Pn**	**08 54 28.6**	**-0.7**
AKDN	**Akdeniz- K¯–br**	**2.62 225**	*e*Pn	**Pn**	**08 54 28.6**	**-0.7**
HAWK	**Haweek**	**2.81 160**	*e*P	**Pn**	**08 54 32.0**	**0.0**
HAWK			*e*S	**Sn**	**08 55 06.0**	**+1.0**
HAWK			AML	AML	08 55 20.4	
	comp=N,28nm,0.5s					
HAWK			AML	AML	08 55 22.8	
	comp=E,23nm,0.4s					
HAWK	**Haweek**	**2.81 160**	*e*P	**Pn**	**08 54 32.0**	**0.0**
HAWK			*e*S	**Sn**	**08 55 06.0**	**+1.0**
	comp=E,23nm,0.4s					
HWQ	**Hawqa**	**2.94 169**	*e*P	**Pn**	**08 54 33.2**	**-0.6**
HWQ	**Hawqa**	**2.94 169**	*e*P	**Pn**	**08 54 33.2**	**-0.6**
KIZT	**Kizilcal**	**3.16 304**	*e*PN	**Pn**	**08 54 36.8**	**0.0**
KIZT	**Kizilcal**	**3.16 304**	*e*Pn	**Pn**	**08 54 36.8**	**0.0**
RABH	**Abou Rabah**	**3.16 149**	*e*P	**Pn**	**08 54 38.0**	**+1.2**
RABH			*e*S	**Sb**	**08 55 22.2**	**0.0**
RABH			AML	AML	08 55 29.5	
	comp=N,21nm,0.3s					
RABH			AML	AML	08 55 32.9	
	comp=E,16nm,0.7s					
RABH	**Abou Rabah**	**3.16 149**	*e*P	**Pn**	**08 54 38.0**	**+1.2**
SUTC	**Sutluce-Ispart**	**3.40 276**	*e*PN	**Pn**	**08 54 40.0**	**-0.1**
SUTC	**Sutluce-Ispart**	**3.40 276**	*e*Pn	**Pn**	**08 54 40.0**	**-0.1**
RCY	**Rachaya**	**3.69 172**	*e*P	**Pn**	**08 54 43.9**	**-0.3**

IDC ***13*** *08:59:58.0±0.9, 39.°02N×144.°92E, h0km, mb3.5/6, mb1 3.8/8, mb1mx3.6/47, mbtmp3.5/8, ML3.1/2, MS2.5/4, Ms1 2.5/4, ms1mx2.3/43, Error ellipse: s-maj=29.4km s-min=19.7km az=132.0*

ISCJB ***13*** *08:59:59.5±0.8, 39.°21N±0.°09×144.°71E±0.°07, h19km, mb3.5/6, MS2.9/1, Error ellipse: s-maj=12.8km s-min=7.7km az=172.5*

NIED ***13*** *09:00:00, 39.°20N×144.°50E, h5km, Mw3.7 Best double couple: M₀4.50000×10¹⁴ NP1:φ₀30.00000°, δ25.00000°, λ-81.00000°. NP2:φ₀200.00000°, δ66.00000°, λ-94.00000°.*

JMA ***13*** *09:00:03.2±0.1, 39.°15N×144.°49E, h33km, M3.8*

ISC 13 09:00:01.3±0.9, 39.°2N±0.°1×144.°70E±0.°08, h19km, n16, σ1§60/15, mb3.5/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MIYJ	**Miyakonagasawa**	**2.26**	**280**	P	**Pn**	**09 00 37.3**	**-0.3**
MIYJ				S	**Sn**	**09 01 02.7**	**-2.2**
JTH	**Tanohata**	**2.30**	**289**	*e*S	**Sn**	**09 01 04.2**	**-1.8**
OFUJ	**Ofunato**	**2.36**	**267**	P	**Pn**	**09 00 38.6**	**-0.4**
JMK	**Ichinoseki**	**2.72**	**265**	P	**Pn**	**09 00 43.9**	**-0.1**
MJAR	**Matsushiro Arr**	**5.79**	**244**	Pn	**Pn**	**09 01 26.8**	**+0.5**
	2.4nm,0.3s,baz=54,slow=11,SNR=19						
MJAR				Sn	**Sn**	**09 02 34.5**	**+2.3**
	0.5nm,0.3s,baz=82,slow=30,SNR=2.9						
MJAR				LR	LR	09 04 09.2	
	comp=Z,9.0nm,18.6s,baz=70,slow=43						
MAT	**Matsushiro**	**5.79**	**244**	P	**Pn**	**09 01 26.9**	**+0.7**
USRK	**Ussuriysk Ar.**	**10.71**	**302**	Pn	**Pn**	**09 02 36.7**	**+3.0**
	0.2nm,0.3s,baz=100,slow=14,SNR=3.9						
JNU	**Nakatsue**	**12.72**	**246**	LR		09 07 54.8	
	comp=Z,39nm,19.7s,baz=116,slow=37						
KSRS	**Korea Array**	**13.29**	**268**	LR		09 07 13.0	
	comp=Z,22nm,19.5s,baz=139,slow=32						
SONM	**Songino Array**	**28.82**	**300**	LR		09 17 31.8	
	comp=Z,34nm,21.2s,baz=98,slow=36						
MKAR	**Makanchi Array**	**45.18**	**301**	P	**P**	**09 08 17.8**	**+1.0**
	0.2nm,0.3s,baz=84,slow=11,SNR=3.9						
ILAR	**Eielson Array**	**46.24**	**33**	P	**P**	**09 08 24.4**	**-0.5**
	0.6nm,0.7s,baz=266,slow=6.3,SNR=7.9						
WRA	**Warramunga Arr**	**59.66**	**191**	P	**P**	**09 10 02.2**	**-2.0**
	0.9nm,0.7s,baz=8.6,slow=6.9,SNR=6.1						
YKA	**Yellowknife Ar**	**60.59**	**32**	P	**P**	**09 10 11.1**	**+0.8**
	0.2nm,0.7s,baz=305,slow=7.3,SNR=4.0						
ASAR	**Alice Springs**	**63.38**	**191**	P	**P**	**09 10 28.3**	**-1.1**
	0.4nm,1.0s,baz=12,slow=5.3,SNR=4.4						
TXAR	**Lajitas Array**	**86.73**	**54**	P	**P**	**09 12 44.5**	**+0.2**
	0.1nm,0.4s,baz=258,slow=2.7,SNR=2.6						

NNC 13 09:02:08.9±11.0, 36.°84N×70.°99E, h14km±235km, mb4.0, mpv3.7,7C-3D, Error ellipse: s-maj=251.5km s-min=33.4km az=168.0, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZET	**Dzherino**	**2.60**	**320**	⇑P	Pn	09 02 50.0	-0.7
	14nm,0.3s						
DZET				⇑S	Sn	09 03 22.8	+0.7
	99nm,0.5s						
MNAS	**Manas**	**5.76**	**11**	⇓P	Pn	09 03 35.1	+1.0
	3.0nm,0.5s						
MNAS				⇓S	Sn	09 04 42.3	+2.3
	0.4nm,0.3s						
KK31	**Karatay Array**	**6.27**	**357**	⇑P	Pn	09 03 39.5	-1.5
	1.2nm,0.3s,baz=175,slow=12,SNR=54						
KK31				⇑S	Sn	09 04 50.7	-1.6
	0.8nm,0.5s,baz=165,slow=31,SNR=4.6						
AAK	**Ala-Archa**	**6.38**	**24**	⇑P	Pn	09 03 44.2	+1.5
	2.9nm,0.5s						
AAK				⇓S	Sn	09 04 58.8	+3.3
	3.4nm,0.5s						
TKM2	**Tokmak 2**	**7.03**	**29**	⇑P	Pn	09 03 52.9	+1.3
	6.3nm,0.6s						
TKM2				⇑S	Sn	09 05 12.6	+1.2
	0.4nm,0.4s						

CASC 13 09:04:58.2±1.8, 11.°96N×87.°77W, h23km±11km, MD3.8, ML2.7,1C, Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
COPN	**Copaltepe**	**1.17**	**79**	⇑*i*P	Pn	09 05 18.9	-0.3
COPN				*e*P	Pb	09 05 19.0	-0.9
COPN				*e*S	Sb	09 05 35.0	+0.4
CNGN	**Cerro Negro**	**1.18**	**63**	*e*P	Pn	09 05 18.4	-0.9
CNGN				*e*S	Sb	09 05 37.1	+2.3
CNGN				AML	AML	09 05 38.1	
	comp=N,144nm,0.2s						
MOMN	**Momotombo**	**1.28**	**69**	*e*P	Pn	09 05 20.0	-0.8
APYN	**Apoyeque**	**1.42**	**79**	*e*P	Pn	09 05 22.3	-0.2
TISN	**Laguna Tiscapa**	**1.48**	**83**	*e*P	Pn	09 05 23.5	+0.1
VSM	**San Miguel**	**1.54**	**341**	*e*P	Pn	09 05 25.1	+0.6
VSM				*e*S	Sb	09 05 44.8	-0.7
LCY	**Lacayo**	**1.54**	**341**	*e*P	Pn	09 05 25.0	+0.5
PACA	**Pacayal**	**1.60**	**340**	*e*P	Pn	09 05 25.7	+0.5
PACA				*e*S	Sn	09 05 46.0	+0.8
ESTN	**Estel**	**1.78**	**50**	*e*P	Pn	09 05 26.1	-1.5
ESTN				*e*S	Sn	09 05 50.0	+0.4
BOAB	**BOACO BROADBAN**	**2.11**	**76**	*e*P	Pn	09 05 31.7	-0.5
TGUH	**Tegucigalpa,Un**	**2.14**	**13**	*e*P	Pn	09 05 32.7	+0.1
LBRS	**Las Brisas**	**2.16**	**325**	*e*S	Sn	09 05 59.5	+0.4

ISCJB ***13*** *09:11:33.5±1.2, 40.°62N±0.°09×26.°54E±0.°04, h14km±7km, Error ellipse: s-maj=15.0km s-min=5.4km az=174.8*

DDA ***13*** *09:11:33.4, 40.°63N×26.°50E, h7km, Md2.8*

CSEM ***13*** *09:11:33.3±0.3, 40.°62N×26.°54E, h10km, ML1.7, Error ellipse: s-maj=10.0km s-min=3.7km az=177.0*

THE ***13*** *09:11:33.5, 40.°63N×26.°53E, h19km±3km, ML1.7/2, Error ellipse: s-maj=3.4km s-min=1.2km az=350.0*

ISC 13 09:11:32.4±1.2, 40.°6N±0.°1×26.°59E±0.°04, h24km±10km, n10, σ0§17/20, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KESN	**Edirne-Kesan**	**0.20**	**19**	P	**Pb**	**09 11 38.3**	**-0.1**
KESN				S	**Sb**	**09 11 42.8**	**+0.3**
KESN	**Edirne-Kesan**	**0.20**	**19**	*i* P	**Pb**	**09 11 38.3**	**-0.1**
KESN				*i* S	**Sb**	**09 11 42.8**	**+0.3**
ENEZ	**Enez**	**0.35**	**287**	P	**Pb**	**09 11 40.0**	**-0.2**
ENEZ				S	**Sb**	**09 11 45.4**	**0.0**
ENEZ	**Enez**	**0.35**	**287**	P	**Pb**	**09 11 40.0**	**-0.2**
ENEZ				S	**Sb**	**09 11 45.4**	**0.0**
SART	**Tekirdag**	**0.45**	**83**	P	**Pn**	**09 11 43.3**	**-0.1**
SART				S	**Sn**	**09 11 50.8**	**0.0**
SART	**Tekirdag**	**0.45**	**83**	*i* P	**Pn**	**09 11 43.3**	**-0.1**
SART				*i* S	**Sn**	**09 11 50.8**	**0.0**
ALN	**Alexandroupoli**	**0.49**	**302**	P	**Pb**	**09 11 42.4**	**-0.1**
ALN				S	**Sb**	**09 11 49.5**	**+0.2**
ALN	**Alexandroupoli**	**0.49**	**302**	P	**Pb**	**09 11 42.4**	**-0.1**
ALN				S	**Sb**	**09 11 49.5**	**+0.2**
SMTH	**Samothraki Isl**	**0.83**	**259**	P	**Pb**	**09 11 48.2**	**+0.1**
SMTH				S	**Sb**	**09 11 59.0**	**+0.1**
SMTH	**Samothraki Isl**	**0.83**	**259**	P	**Pb**	**09 11 48.2**	**+0.1**
SMTH				S	**Sb**	**09 11 59.0**	**+0.1**

TAP 13 09:20:08.0, 24.°83N×121.°86E, h98km, ML3.5, B, Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
EGS		**0.07**	**81**	P	Pn	09 20 21.8	+0.2
	baz=83						
EGS				S	Sn	09 20 31.9	+0.1
	baz=83						
ILA	**Ilan**	**0.12**	**236**	*e*S	Sn	09 20 32.7	+0.7
	baz=233						
TWE	**Neicheng**	**0.21**	**237**	P	Pn	09 20 22.5	+0.5
	baz=234						
TWE				*e*S	Sn	09 20 33.0	+0.6
	baz=234						
TWB1	**Santiao Chiao**	**0.21**	**34**	P	Pn	09 20 22.2	+0.2
	baz=36						
TWB1				S	Sn	09 20 32.0	-0.5
	baz=36						
TWC	**Suao**	**0.22**	**182**	P	Pn	09 20 22.3	+0.2
	baz=179						
TWC				S	Sn	09 20 32.6	0.0
	baz=179						
NWF	**Wu-fen Shan**	**0.25**	**343**	P	Pn	09 20 22.3	0.0
	baz=343						
NWF				*e*S	Sn	09 20 32.3	-0.6
	baz=343						
TWA	**Mucha**	**0.29**	**300**	P	Pn	09 20 22.5	+0.2
	baz=300						
TWA				S	Sn	09 20 33.1	+0.1
	baz=300						
ENTT	**Nioudou**	**0.33**	**234**	P	Pn	09 20 22.9	+0.3
	baz=232						
ENTT				*e*S	Sn	09 20 33.9	+0.5
	baz=232						
TAP1	**Taipei**	**0.37**	**304**	P	Pn	09 20 22.9	+0.2
	baz=302						
TAP1				S	Sn	09 20 33.7	0.0
	baz=302						
TAP	**Taipei**	**0.38**	**303**	*e*S	Sn	09 20 34.0	+0.1
	baz=302						
ENA	**Nanau**	**0.42**	**195**	P	Pn	09 20 23.3	+0.2
	baz=193						
ENA				S	Sn	09 20 34.8	+0.6
	baz=193						
TWS1	**Kuangyinshan**	**0.48**	**304**	P	Pn	09 20 24.0	+0.5
	baz=304						
TWS1				*e*S	Sn	09 20 35.7	+0.7
	baz=304						
NSK	**Sanguang**	**0.48**	**251**	P	Pn	09 20 23.4	-0.2
	baz=250						
NSK				*e*S	Sn	09 20 34.1	-1.0
	baz=250						
TWY	**Chenhua**	**0.50**	**332**	P	Pn	09 20 23.9	+0.3
	baz=332						
TWY				S	Sn	09 20 35.7	+0.5
	baz=332						
NNS	**Nan Shan**	**0.59**	**229**	P	Pn	09 20 24.6	+0.1
	baz=227						
NNS				S	Sn	09 20 36.7	-0.1
	baz=227						
NCU	**National Centr**	**0.62**	**283**	*e*P	Pn	09 20 24.9	+0.3
	baz=282						
NCU				*e*S	Sn	09 20 37.1	+0.1
	baz=282						
TWD	**Chiawan**	**0.79**	**198**	*e*P	Pn	09 20 25.3	-0.8
	baz=197						
TWD				*e*S	Sn	09 20 39.1	-0.5
	baz=197						
NSTT	**Nanjuang**	**0.81**	**256**	P	Pn	09 20 26.2	0.0
	baz=255						
NSTT				*e*S	Sn	09 20 39.7	-0.3
	baz=255						
PCYT	**Pengchaiyu**	**0.81**	**14**	*i* P	Pn	09 20 26.8	+0.5
	baz=14						
PCYT				*e*S	Sn	09 20 41.0	+0.9
	baz=14						
TWT	**Tachien**	**0.85**	**227**	P	Pn	09 20 27.6	+0.7
	baz=227						
TWT				S	Sn	09 20 41.6	+0.5
	baz=227						
WHF	**Hehuan Shan**	**0.87**	**218**	P	Pn	09 20 27.6	+0.2
	baz=217						
WHF				S	Sn	09 20 42.0	0.0
	baz=217						
NSY	**Sanyi**	**1.08**	**248**	*e*P	Pn	09 20 29.5	+0.3
	baz=247						
NSY				*e*S	Sn	09 20 45.5	+0.2
	baz=247						
TWQ1	**Liyutan**	**1.10**	**244**	P	Pn	09 20 29.6	+0.1
	baz=243						
TWQ1				S	Sn	09 20 45.4	-0.2
	baz=243						
WDT	**Danda**	**1.26**	**212**	P	Pn	09 20 32.0	+0.4
	baz=211						
WDT				*e*S	Sn	09 20 49.5	+0.1
	baz=211						
SMLT	**Sun Moon Lake**	**1.29**	**223**	P	Pn	09 20 32.2	+0.4
	baz=222						
SMLT				S	Sn	09 20 49.9	+0.3
	baz=222						
TYC	**Yuchr**	**1.30**	**225**	P	Pn	09 20 32.0	+0.3
	baz=224						
TYC				*e*S	Sn	09 20 50.0	+0.4
	baz=224						
TWF1	**Yuli**	**1.56**	**199**	*e*P	Pn	09 20 35.4	+0.4
	baz=198						
TWF1				*e*S	Sn	09 20 55.4	-0.1
	baz=198						
YUS	**Yu-Shan**	**1.57**	**212**	*e*P	Pn	09 20 36.3	+0.7
	baz=211						
YUS				*e*S	Sn	09 20 57.7	+1.2
	baz=211						
ALS	**Alishan**	**1.63**	**216**	*e*S	Sn	09 20 58.4	+1.0
	baz=215						
CHN5	**Tsauling**	**1.64**	**221**	*e*P	Pn	09 20 36.4	+0.4
	baz=221						
CHN5				*e*S	Sn	09 20 57.4	+0.2
	baz=221						
CHKT	**Chengkung**	**1.79**	**195**	*e*P	Pn	09 20 38.5	+0.7
	baz=194						
CHKT				*e*S	Sn	09 20 59.6	-0.8
	baz=194						
ELDTW	**Lidau**	**1.81**	**205**	*e*P	Pn	09 20 38.1	-0.1
	baz=204						
ELDTW				S	Sn	09 21 00.9	-0.3
	baz=204						
CHN4	**Tsaushan**	**1.88**	**218**	*e*P	Pn	09 20 39.7	+0.7
	baz=218						
CHN4				*e*S	Sn	09 21 02.1	-0.4
	baz=218						
STYT	**Tauyuan**	**1.94**	**211**	*e*P	Pn	09 20 40.5	+0.6
	baz=210						
STYT				*e*S	Sn	09 21 04.4	+0.2
	baz=210						
CHN1	**Nanshi**	**2.04**	**217**	*e*P	Pn	09 20 41.9	+0.8
	baz=216						
CHN1				*e*S	Sn	09 21 06.0	-0.4
	baz=216						
SGST	**Jiashian**	**2.10**	**214**	*e*P	Pn	09 20 42.9	+1.0
	baz=213						
SGST				*e*S	Sn	09 21 08.2	+0.5
	baz=213						
TWG	**Pinlang**	**2.13**	**200**	*e*P	Pn	09 20 41.1	-1.2
	baz=199						
TWG				*e*S	Sn	09 21 06.9	-1.5
	baz=199						

DHMR 13 10:12:43.0±1.9, 12.°05N×44.°53E, h7km±9km, ML4.5, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ADEN	**Aden**	**0.84**	**31**	*i* P	Pg	10 12 59.6	+0.3
ADEN				*i* S	Sb	10 13 11.0	-0.6
ADEN				AML	AML	10 13 17.2	
	comp=E,16μm,0.3s						
TRBA	**At Turbah**	**1.24**	**341**	*i* P	Pg	10 13 06.1	-0.8
TRBA				*i* S	Sg	10 13 23.0	0.0
UDYN	**Al 'Udayn**	**1.98**	**344**	*i* P	Pb	10 13 18.5	-1.0
UDYN				*i* S	Sg	10 13 45.9	-0.9
BDHA	**Al Bayda'**	**2.16**	**28**	*i* P	Pn	10 13 19.5	-0.2
BDHA				*i* S	Sb	10 13 50.9	+1.1
DHBB	**Dhamar BB**	**2.51**	**357**	*i* P	Pb	10 13 27.1	-1.5
DHBB				*i* S	Sb	10 14 01.4	+1.6
HAJJ	**Hajjah**	**3.74**	**346**	*i* P	Pn	10 13 43.8	+2.5
HAJJ				*i* S	Sb	10 14 31.4	-3.7

IDC ***13*** *10:16:56.0±0.5, 37.°68N×143.°63E, h0km, mb4.3/22, mb1 4.5/29, mb1mx4.3/55, mbtmp4.3/29, ML4.5/3, MS3.4/16, Ms1 3.5/16, ms1mx3.3/35, Error ellipse: s-maj=14.7km s-min=12.8km az=133.0*

NEIC ***13*** *10:16:58.0±0.2, 37.°71N×143.°62E, h10km, mb4.6/51, Error ellipse: s-maj=6.1km s-min=4.1km az=152.0*

NIED ***13*** *10:17:00, 37.°90N×143.°50E, h14km, Mw4.3 Best double couple: M₀2.70000×10¹⁵ NP1:φ₀38.00000°, δ30.00000°, λ-103.00000°. NP2:φ₀232.00000°, δ61.00000°, λ-83.00000°.*

JMA ***13*** *10:17:00.1±0.2, 37.°88N×143.°53E, h45km, M4.7*

ISCJB ***13*** *10:17:00.5±0.2, 37.°86N±0.°03×143.°51E±0.°03, h33km, mb4.4/99, MS3.7/20, Error ellipse: s-maj=4.5km s-min=2.7km az=165.0*

MOS ***13*** *10:17:01.3±1.0, 38.°06N×143.°44E, h33km, mb4.7/45, Error ellipse: s-maj=8.7km s-min=5.8km az=97.0*

ISC 13 10:17:01.2±1.8, 37.°84N±0.°04×143.°58E±0.°05, h32km±12km, n229, σ1§39/231, mb4.5/104, MS3.6/21, 15C, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	**Ouri**	**1.86**	**290**	P	**Pn**	**10 17 29.9**	**-1.0**
JIO				S	**Sn**	**10 17 51.7**	**-1.6**
OFUJ	**Ofunato**	**1.95**	**310**	P	**Pn**	**10 17 30.9**	**-1.1**
JMK	**Ichinoseki**	**2.16**	**302**	P	**Pn**	**10 17 34.2**	**-0.8**
JMK				*e*S	**Sn**	**10 17 59.4**	**-1.3**
JOM	**Ohasama**	**2.42**	**313**	P	**Pn**	**10 17 38.0**	**-0.6**
JOM				S	**Sn**	**10 18 06.5**	**-0.7**
JFT	**Otama**	**2.59**	**264**	P	**Pn**	**10 17 40.6**	**-0.3**
JFT				S	**Sn**	**10 18 09.7**	**-1.6**
JYK	**Kaneyama**	**2.75**	**294**	P	**Pn**	**10 17 42.9**	**-0.2**
JYK				*e*S	**Sn**	**10 18 14.5**	**-0.8**
JANG	**Nango**	**3.00**	**328**	P	**Pn**	**10 17 44.8**	**-1.7**
JANG				*e*S	**Sn**	**10 18 19.0**	**-2.4**
JAW	**Awa shima**	**3.47**	**282**	P	**Pn**	**10 17 53.4**	**+0.4**

ASAJ Asahikawa 6.32 354 *e*Pn **Pn 10 18 31.4 -0.7**
ASAJ *e*Sn **Sn 10 19 45.6 +2.4**
YUK Yuzh-Kuril'sk 6.43 15 *i* P Pn 10 18 30.4 -3.2
YUK *i* S Sn 10 19 38.3 -7.5
YUK pmax pmax
comp=Z,637nm,0.2s
YUK pmax pmax
comp=N,96nm,0.1s
YUK pmax pmax
comp=E,213nm,0.1s
KUR Kuril'sk 8.06 22 *e*P Pn 10 18 52.8 -3.2
KUR *e*S Sn 10 20 18.0 -7.9
KUR pmax pmax
comp=Z,27nm,0.4s
KUR smax smax
comp=E,88nm,0.4s
KUR smax smax
comp=N,33nm,0.2s
VLA Vladivostok 10.35 304⇑ *i*P Pn 10 19 32.5 +5.1
VLA pmax pmax
comp=Z,24nm,0.7s
CBIJ Chichi jima 10.77 187 *e*Pn Pn 10 19 28.1 -5.1
CBIJ Sn Sn 10 21 18.6 -14
JCJ Chichijima 10.77 187 Pn Pn 10 19 27.6 -5.6
baz=270,slow=20
JCJ Sn Sn 10 21 18.6 -14
comp=Z,13nm,0.3s,baz=264,slow=19,SNR=3.8
USRK Ussuriysk Ar. 10.81 310 Pn **Pn 10 19 33.7 -0.1**
comp=Z,0.9nm,0.3s,baz=112,slow=14,SNR=11
USRK LR LR 10 23 58.1
comp=Z,182nm,18.6s,baz=126,slow=39
JNU Nakatsue 11.37 249 LR LR 10 24 23.6
comp=Z,150nm,20.7s,baz=303,slow=39
KSRS Korea Array 12.42 273 Pn **Pn 10 19 55.7 0.0**
comp=Z,0.2nm,0.3s,baz=81,slow=14,SNR=3.4
KSRS LR LR 10 24 27.9
comp=Z,160nm,19.3s,baz=85,slow=36
KSAR Wonju Array Be 12.45 273 P **Pn 10 19 55.7 -0.4**
KSAR Wonju Array Be 12.45 273 Pn **Pn 10 19 55.7 -0.4**
MDJ Mudanjiang 12.51 307 P **Pn 10 19 56.8 -0.1**
MDJ pmax pmax
comp=Z,6.0nm,1.3s
MDJ pmax pmax
comp=Z,26nm,3.7s
KLR Kul'dur 14.24 327 Pn **Pn 10 20 18.6 -1.8**
comp=Z,0.7nm,0.3s,baz=130,slow=11,SNR=19
KLR LR LR 10 26 11.1
comp=Z,194nm,18.6s,baz=126,slow=39
NKL Nikolayevsk 15.45 353 *e*P **Pn 10 20 33.0 -3.6**
PETK Petropavlovsk- 18.15 28 Pn **P 10 21 11.8 +1.1**
comp=Z,0.2nm,0.3s,baz=210,slow=8.1,SNR=3.7
PETK LR LR 10 30 10.3
comp=Z,59nm,18.5s,baz=232,slow=44
MA2 Magadan 22.24 10 LR LR 10 32 17.7
comp=Z,48nm,18.2s,baz=250,slow=41
GUMO Guam 24.18 177 LR LR 10 30 38.2
comp=Z,35nm,20.1s,baz=70,slow=34
HHC Hu-ho-hao-te 24.87 287 *e*P **P 10 22 22.1 +1.1**
HHC S **S 10 26 37.6 -4.4**
HHC pmax pmax
comp=Z,32nm,0.8s
HHC pmax pmax
comp=Z,230nm,4.5s
HHC LR LR
comp=N,890nm,12.0s
HHC LR LR
comp=E,940nm,11.5s
HHC LR LR
comp=Z,1μm,12.1s
WHN Wuhan 25.18 262 ⇑P **P 10 22 25.8 +2.1**
WHN S **S 10 26 45.0 -1.9**
WHN LR LR
comp=Z,430nm,17.2s
SEY Seymchan 25.70 9 P **P 10 22 29.3 +1.2**
comp=Z,3.9nm,0.8s,baz=176,slow=6.4,SNR=8.5
YAK Yakutsk 25.71 345 LR LR 10 32 35.4
comp=Z,46nm,20.4s,baz=340,slow=36
YAK Yakutsk 25.71 345 *e*P **P 10 22 28.9 +0.7**
YAK pmax pmax
comp=Z,13nm,0.6s
H11N2 WAKE ISLAND Hy 27.14 125 T T 10 51 05.0
baz=317,slow=75,SNR=19
H11N1 WAKE ISLAND Hy 27.15 125 T T 10 51 06.0
baz=317,slow=75,SNR=14
H11N3 WAKE ISLAND Hy 27.16 125 T T 10 51 05.6
baz=317,slow=75,SNR=50
BOD Bodaibo 27.81 326 *e*P **P 10 22 46.2 -1.0**
BOD pmax pmax
comp=Z,8.0nm,0.9s
H11S1 WAKE ISLAND Hy 27.91 127 T T 10 52 01.6
baz=319,slow=76,SNR=8.7
H11S3 WAKE ISLAND Hy 27.91 127 T T 10 52 01.8
baz=319,slow=76,SNR=9.1
H11S2 WAKE ISLAND Hy 27.92 127 T T 10 52 01.0
baz=319,slow=76,SNR=9.2
ULN Ulaanbaatar 28.36 302 *e*P P 10 22 55.9 +3.5
ULN pmax pmax
comp=Z,5.0nm,0.6s
ULN Ulaanbaatar 28.36 302 *e*P P 10 22 55.9 +3.5
comp=Z,5.2nm,0.6s
SONA1 Songino Array 28.79 302 *e*P **P 10 22 57.2 +1.0**
SONM Songino Array 28.79 302 P **P 10 22 57.3 +1.1**
comp=Z,2.1nm,0.7s,baz=99,slow=9.4,SNR=6.0
SONM PcP **PcP 10 26 05.0 -0.5**
comp=Z,0.9nm,0.7s,baz=132,slow=2.1,SNR=4.1
SONM LR LR 10 34 46.5
comp=Z,74nm,18.9s,baz=122,slow=37
TLY Talaya 31.13 309 *e*P P 10 23 23.8 +7.0
TLY *e*S **S 10 28 23.4 +3.1**
TLY pmax pmax
comp=Z,3.0nm,0.6s
TLY MLR MLR
comp=Z,88nm,17.0s
ZAK Zakamensk 31.15 307 *e*P **P 10 23 16.8 -0.2**
ZAK pmax pmax
comp=Z,5.0nm,1.4s
LZH Lanzhou 31.64 279 *e*P **P 10 23 21.8 +0.3**
LZH pP pP 10 23 31.0 +0.3
LZH sP sP 10 23 35.0 +0.4
LZH *e*PP **PnPn 10 24 26.0 +0.3**
LZH pmax pmax
comp=Z,21nm,1.1s
LZH pmax pmax
comp=Z,60nm,5.3s
LZH LR LR
comp=N,320nm,12.9s
LZH LR LR
comp=E,310nm,13.2s
LZH LR LR
comp=Z,390nm,16.4s
MOY Mondy 32.76 309 *e*P P 10 23 36.9 +5.7
BILL Bilibino 32.78 16⇑ *i*P **P 10 23 31.1 +0.1**
BILL *i* 10 23 40.2
BILL *e* 10 24 42.4
BILL pmax pmax
comp=Z,8.0nm,1.7s
BILL MLR MLR
comp=Z,135nm,23.0s
CD2 Chengdu 33.40 270 P **P 10 23 36.1 -0.8**
CD2 pmax pmax
comp=Z,2.0nm,0.6s
GTA Gaotai 33.98 287 *e*P **P 10 23 44.0 +2.0**
GTA pP sP 10 23 53.3 -1.7
GTA sP pP 10 23 57.0 +5.8
GTA S **S 10 29 06.1 +1.0**
GTA sS sS 10 29 23.4 +3.1
GTA SS **SnSn 10 31 13.6 +0.8**
GTA pmax pmax
comp=Z,8.0nm,0.9s
GTA pmax pmax
comp=Z,100nm,4.3s
GTA LR LR
comp=N,93nm,15.4s
GTA LR LR
comp=E,170nm,16.4s
GTA LR LR
comp=Z,170nm,15.2s
TIXI Tiksi 34.72 352 *e*P **P 10 23 46.6 -1.2**
TIXI pmax pmax
comp=Z,1.0nm,1.0s
KMI Kunming 36.78 262 P **P 10 24 04.5 -1.8**
KMI pP pP 10 24 12.5 -3.1
KMI sP sP 10 24 16.1 -3.3
KMI S **S 10 29 44.0 -4.5**
KMI pmax pmax
comp=Z,5.0nm,1.6s
KMI pmax pmax
comp=Z,75nm,5.6s
KMI LR LR
comp=N,83nm,15.8s
KMI LR LR
comp=E,110nm,15.8s
KMI LR LR
comp=Z,120nm,14.7s
KRAR Krasnoyarsk 38.09 315 *e*P **P 10 24 18.7 +1.9**
KRAR pmax pmax
comp=Z,7.0nm,0.9s
WMQ Urumqi 42.02 296 *e*P **P 10 24 51.8 +2.2**
WMQ pmax pmax
comp=Z,5.0nm,0.6s
WMQ pmax pmax
comp=Z,37nm,5.0s
WMQ LR LR
comp=N,16nm,26.6s
WMQ LR LR
comp=Z,13nm,31.8s
ZAA0 Zalesovo Array 42.66 312 *e*P **P 10 24 55.3 +0.8**
ZALV Zalesovo Beam 42.66 312 P **P 10 24 55.1 +0.6**
comp=Z,2.2nm,0.4s,baz=86,slow=6.4,SNR=4.0
ZALV PcP **PcP 10 26 45.9 -0.1**
comp=Z,2.8nm,0.5s,baz=108,slow=2.8,SNR=4.9
NRIK Noril'sk 43.27 335 LR LR 10 44 23.8
comp=Z,135nm,18.5s,baz=126,slow=38
CMAR Chiang Mai Arr 43.36 256 LR LR 10 43 27.7
comp=Z,59nm,18.2s,baz=204,slow=37
NVS Novosibirsk 43.54 313 *e*P P 10 25 07.8 +6.1
TTA Tatalina 43.78 35 *e*P **P 10 25 04.9 +1.3**
TTA pmax pmax
comp=Z,19nm,1.9s
TTA Tatalina 43.78 35 *e*P **P 10 25 04.9 +1.3**
comp=Z,19nm,1.9s
MK01 Makanchi Array 45.16 302 *e*P **P 10 25 15.4 +0.7**
MK31 Makanchi Array 45.16 302 *e*P **P 10 25 15.9 +1.1**
MK31 Makanchi Array 45.16 302 *e*P **P 10 25 15.8 +1.1**
MKAR Makanchi Array 45.16 302 P **P 10 25 15.4 +0.6**
comp=Z,2.2nm,0.8s,baz=86,slow=8.8,SNR=16
MKAR Makanchi Array 45.16 302*ce*P **P 10 25 15.8 +1.0**
MKAR pmax pmax
comp=Z,3.0nm,0.6s
MKAR Makanchi Array 45.16 302 *e*P **P 10 25 15.8 +1.0**
RSO Redoubt South 45.20 39 *e*P **P 10 25 13.4 -1.7**
KDAK Kodiak Island 45.35 43 P P 10 25 30.8 +15
comp=Z,8.3nm,0.9s,baz=277,slow=6.5,SNR=6.7
KDAK Kodiak Island 45.35 43*ce*P **P 10 25 16.2 +0.2**
MAKZ Makanchi 45.37 302 *e*P **P 10 25 17.5 +1.1**
MAKZ pmax pmax
comp=Z,4.0nm,0.8s
MAKZ Makanchi 45.37 302 *e*P **P 10 25 17.5 +1.1**
comp=Z,4.4nm,0.8s
SPU Mount Spurr 45.55 38 *e*P **P 10 25 19.2 +1.5**
CAST Castle Rocks 45.59 35 *e*P **P 10 25 19.8 +1.8**
comp=Z,3.4nm,0.8s
KTH Kantishna Hill 46.12 34 *e*P **P 10 25 23.9 +1.7**
comp=Z,10nm,1.2s
MLY Manley 46.25 32 *e*P **P 10 25 24.8 +1.6**
comp=Z,5.2nm,1.0s
KURK Kurchatov 46.80 308 P **P 10 25 28.8 +1.2**
KURK pmax pmax
comp=Z,7.0nm,0.8s
KURK Kurchatov 46.80 308 P **P 10 25 28.8 +1.2**
KURBB Kurchatov Arra 46.87 308 P **P 10 25 28.8 +0.6**
comp=Z,6.6nm,0.8s,baz=82,slow=8.1,SNR=38
PMR Palmer 46.95 37 *e*P **P 10 25 29.0 +0.4**
PMR pmax pmax
comp=Z,16nm,1.2s
PMR Palmer 46.95 37 *e*P **P 10 25 29.0 +0.4**
comp=Z,16nm,1.2s
RND Reindeer 47.04 35 *e*P **P 10 25 30.0 +0.6**
RND Reindeer 47.04 35 *e*P **P 10 25 30.0 +0.6**
MDM Murphy Dome 47.32 33 *e*P **P 10 25 33.0 +1.5**
comp=Z,8.9nm,0.8s
SML Sawmill 47.32 37 *e*P **P 10 25 32.6 +1.0**
SML pmax pmax
comp=Z,10.0nm,1.0s
SML Sawmill 47.32 37 *e*P **P 10 25 32.6 +1.0**
comp=Z,10nm,1.0s
WRH Wood River Hil 47.38 33 *e*P **P 10 25 29.9 -2.1**
SCM Sheep Creek Mo 47.80 37 *e*P **P 10 25 36.5 +1.2**
SCM pmax pmax
comp=Z,11nm,1.0s
SCM Sheep Creek Mo 47.80 37 *e*P **P 10 25 36.5 +1.2**
comp=Z,11nm,1.0s
ILAR Eielson Array 47.89 33 P **P 10 25 36.4 +0.4**
comp=Z,4.5nm,0.7s,baz=264,slow=6.6,SNR=57
ILAR Eielson Array 47.89 33 P **P 10 25 36.4 +0.4**
ILAR pmax pmax
comp=Z,4.0nm,0.7s
ILB Eielson Array 47.89 33 *e*P **P 10 25 36.3 +0.4**
IL1 Eielson Array 47.89 33 *e*P **P 10 25 36.2 +0.3**
KLU Klutina 48.49 37 *e*P **P 10 25 41.8 +1.1**
comp=Z,11nm,1.1s
DIV Divide 48.59 38 *e*P **P 10 25 42.5 +1.0**
comp=Z,14nm,1.0s
BMRM Bremner River 49.18 38 *e*P **P 10 25 47.4 +1.5**
comp=Z,16nm,1.3s
DOT Dot Lake 49.18 34 *e*P **P 10 25 46.0 +0.1**
comp=Z,7.0nm,0.7s
KKN Kakani 49.31 276 *e*P **P 10 25 47.5 -0.1**
comp=Z,15nm,0.6s
MENT Mentasta 49.39 35 *e*P **P 10 25 49.3 +1.8**
comp=Z,6.4nm,1.0s
GKN Gorkha 49.72 277 *e*P **P 10 25 51.3 +0.6**
comp=Z,39nm,1.0s
BALM Baldy 50.26 37 *e*P **P 10 25 55.5 +1.3**
BALM pmax pmax
comp=Z,9.0nm,1.1s
BALM Baldy 50.26 37 *e*P **P 10 25 55.5 +1.3**
comp=Z,8.9nm,1.1s
KOLN Koldanda 50.65 277 *e*P **P 10 25 58.4 +0.7**
comp=Z,10nm,0.9s
TKM2 Tokmak 2 50.77 298 *e*P **P 10 25 59.9 +1.4**
TKM2 pmax pmax
comp=Z,11nm,0.9s
TKM2 Tokmak 2 50.77 298 *e*P **P 10 25 59.9 +1.4**
comp=Z,11nm,0.9s
PYUN Piuthan 50.97 278 *e*P **P 10 26 01.2 +1.0**
BRVK Borovoye 51.36 312*ce*P **P 10 26 03.9 +1.4**
BRVK pmax pmax
comp=Z,3.0nm,1.0s
BRVK Borovoye 51.36 312 *e*P **P 10 26 03.5 +1.0**
comp=Z,3.3nm,0.9s
AAK Ala-Archa 51.63 298 *e*P **P 10 26 05.5 +0.7**
AAK pmax pmax
comp=Z,9.0nm,1.0s
AAK Ala-Archa 51.63 298 *e*P **P 10 26 05.8 +1.0**
comp=Z,3.6nm,0.9s
ZRNK Zerenda 52.14 312 *e*P **P 10 26 09.3 +1.0**
ZRNK pmax pmax
comp=Z,8.0nm,1.1s
ZRNK Zerenda 52.14 312 *e*P **P 10 26 09.3 +1.0**
comp=Z,7.7nm,1.1s
INK Inuvik 52.88 28 P **P 10 26 14.1 +0.5**
comp=Z,1.7nm,0.7s,baz=295,slow=7.6,SNR=21
KKAR Karatay Array 54.21 300 *e*P **P 10 26 24.6 +0.8**
KKAR pmax pmax
comp=Z,1.0nm,0.5s
KKAR Karatay Array 54.21 300 *e*P **P 10 26 24.6 +0.8**
comp=Z,1.2nm,0.5s
ARU Arti 56.90 319*c i*P **P 10 26 42.3 -0.5**
ARU 10 28 46.4
ARU S **S 10 34 36.2 +2.0**
ARU SS **SS 10 38 21.8 -0.3**
ARU pmax pmax
comp=Z,17nm,1.7s
DLBC Dease Lake 56.93 39 P **P 10 26 44.5 +1.4**
comp=Z,1.9nm,0.8s,baz=296,slow=11,SNR=5.5
DLBC Dease Lake 56.93 39 *e*P **P 10 26 43.8 +0.8**
comp=Z,2.1nm,0.8s
WRAB Tennant Creek 58.11 190*ce*P **P 10 26 49.9 -1.8**
WRAB pmax pmax
comp=Z,48nm,1.7s
WRAB Tennant Creek 58.11 190 *e*P **P 10 26 50.3 -1.4**
comp=Z,13nm,0.9s
WB2 Warramunga Arr 58.12 190 *e*P **P 10 26 50.5 -1.3**
comp=Z,16nm,1.0s
WRA Warramunga Arr 58.12 190 P **P 10 26 50.3 -1.4**
comp=Z,6.7nm,0.7s,baz=10.0,slow=7.1,SNR=43
WRA Warramunga Arr 58.12 190*ce*P P 10 26 48.5 -3.2
WRA pmax pmax
comp=Z,7.0nm,0.7s
ABKAR Akbulak array 58.74 310 *e*P **P 10 26 56.3 +0.5**
comp=Z,1.5nm,0.4s
AS01 Alice Springs 61.84 190 *e*P **P 10 27 15.7 -1.6**
ASAR Alice Springs 61.85 190 P **P 10 27 16.1 -1.1**
comp=Z,2.5nm,0.9s,baz=9.3,slow=12,SNR=21
ASAR Alice Springs 61.85 190 P **P 10 27 16.2 -1.1**
ASAR pmax pmax
comp=Z,2.0nm,0.8s
YKA Yellowknife Ar 62.24 31 P **P 10 27 19.6 +0.1**
comp=Z,1.2nm,0.7s,baz=304,slow=6.7,SNR=4.1
ARCES ARCESS Array B 63.85 340 P **P 10 27 30.7 +0.6**
comp=Z,3.5nm,0.8s,baz=65,slow=8.7,SNR=8.0
ARCES LR LR 10 58 43.3
comp=Z,30nm,18.5s,baz=69,slow=39
KLMR Klimovskoe 63.99 328 *e*P **P 10 27 29.8 -1.3**
KLMR pmax pmax
comp=Z,7.0nm,1.3s
GEYT Alibeck 64.95 300 P **P 10 27 38.3 +0.5**
comp=Z,4.3nm,0.7s,baz=0.0,slow=4.4,SNR=7.5
OBN Obninsk 68.48 324 *e*P **P 10 27 59.7 -0.2**
OBN pmax pmax
comp=Z,5.0nm,0.9s
OBN MLR MLR
comp=Z,57nm,16.0s
FINES FINESS Array B 68.90 333 P **P 10 28 02.8 +0.3**
comp=Z,5.0nm,0.7s,baz=57,slow=7.0,SNR=11
FINES LR LR 11 00 42.2
comp=Z,88nm,18.6s,baz=168,slow=38
SUMG Summit 69.88 1 *e*P **P 10 28 09.8 +1.0**
SUMG pmax pmax
comp=Z,5.0nm,0.8s
SUMG Summit 69.88 1 *e*P **P 10 28 09.8 +1.0**
comp=Z,5.1nm,0.8s
ZEI Tsey 71.61 310 *e*P **P 10 28 19.0 -0.7**
ZEI pmax pmax
comp=Z,13nm,0.9s
KIV Kislovodsk 71.67 312*c i*P **P 10 28 21.5 +1.6**
KIV *e* 10 31 07.2
KIV *e*PPP PPP 10 32 44.7
KIV *e*S S 10 37 27.3 -10
KIV pmax pmax
comp=Z,36nm,1.7s
KIV MLR MLR
comp=Z,22nm,17.0s
KIV Kislovodsk 71.67 312 *e*P **P 10 28 20.0 +0.1**
comp=Z,14nm,0.7s
KBZ Khabaz 71.68 311 P **P 10 28 20.9 +1.1**
comp=Z,6.9nm,0.9s,baz=49,slow=2.6,SNR=14
DLMT Dillon 72.55 46 *e*P **P 10 28 26.4 +1.1**
comp=Z,4.0nm,1.0s
HLID Hailey 72.56 48 *e*P **P 10 28 26.1 +0.8**
comp=Z,1.3nm,0.7s
BOZ Bozeman (W) 72.93 45 *e*P **P 10 28 28.2 +0.7**
BOZ pmax pmax
comp=Z,4.0nm,0.3s
BOZ Bozeman (W) 72.93 45 *e*P **P 10 28 28.2 +0.7**
comp=Z,4.3nm,0.3s
NV01 Mina Array Sit 73.12 54 *e*P **P 10 28 29.4 +0.6**
NVAR Mina Array Bea 73.12 54 P **P 10 28 29.5 +0.7**
comp=Z,1.3nm,0.7s,baz=292,slow=5.8,SNR=12
NB2 NORSAR Subarra 74.10 338 P **P 10 28 33.8 -0.2**
comp=Z,1.3nm,0.8s,baz=38,slow=5.9
NB2 NORSAR Subarra 74.10 338 P **P 10 28 33.7 -0.2**
NB2 pmax pmax
comp=Z,1.0nm,0.8s
NOA NORSAR Array B 74.10 338 P **P 10 28 34.0 +0.1**
comp=Z,2.2nm,0.8s,baz=40,slow=5.8,SNR=6.9
NOA LR LR 11 06 49.3
comp=Z,31nm,18.5s,baz=30,slow=40
NOA NORSAR Array B 74.10 338 P **P 10 28 34.0 +0.1**
NOA pmax pmax
comp=Z,2.0nm,0.8s
H17A Grant Village 74.28 46 *e*P **P 10 28 38.0 +2.5**
comp=Z,6.0nm,0.8s
IMW Indian Meadow 74.38 46 *e*P **P 10 28 37.6 +1.4**
comp=Z,5.2nm,0.9s
MOOW Moose Ponds 74.58 46 *e*P **P 10 28 38.5 +1.2**
comp=Z,3.2nm,0.9s
AKASG Malin Array Be 74.70 323 P **P 10 28 37.6 +0.1**
comp=Z,1.7nm,0.5s,baz=41,slow=6.0,SNR=8.9
AKASG Malin Array Be 74.70 323*ce*P **P 10 28 37.2 -0.3**
AKASG pmax pmax
comp=Z,3.0nm,0.6s
KIEV Kiev 74.72 323 *e*P **P 10 28 38.0 +0.4**
KIEV pmax pmax
comp=Z,6.0nm,1.1s
SNOW Snow King Moun 74.75 47 *e*P **P 10 28 39.9 +1.6**
comp=Z,3.7nm,0.8s
REDW Red Top Meadow 74.76 47 *e*P **P 10 28 39.8 +1.5**
comp=Z,4.0nm,0.9s
R11A Troy Canyon, C 74.91 53 *e*P **P 10 28 39.9 +0.7**
comp=Z,3.5nm,1.4s
HWUT Hardware Ranch 75.41 49 *e*P **P 10 28 43.3 +1.3**
comp=Z,10nm,1.4s
DUG Dugway, Tooele 75.52 50 *e*P **P 10 28 43.9 +1.2**
DUG pmax pmax
comp=Z,5.0nm,1.0s
DUG Dugway, Tooele 75.52 50 *e*P **P 10 28 43.9 +1.2**
comp=Z,4.8nm,1.0s
BW06 Boulder Array 75.87 47 *e*P **P 10 28 44.6 -0.1**
comp=Z,3.7nm,1.1s
PD31 Pinedale Array 75.87 47 *e*P **P 10 28 44.3 -0.5**
PDAR Pinedale Array 75.87 47 P **P 10 28 44.9 +0.1**
comp=Z,2.5nm,0.8s,baz=269,slow=1.9,SNR=22
LCMT Little Creek M 77.19 53 *e*P **P 10 28 53.5 +1.3**
comp=Z,4.5nm,1.1s
P17A Butcher Ranch, 77.23 50 *e*P **P 10 28 53.7 +1.3**
comp=Z,6.8nm,1.0s
SRU San Rafael Swe 77.58 50 *e*P **P 10 28 55.3 +0.9**
SRU pmax pmax
comp=Z,5.0nm,0.9s
SRU San Rafael Swe 77.58 50 *e*P **P 10 28 55.3 +0.9**
comp=Z,4.9nm,0.9s
BUR08 Bucovina Ar. S 78.72 323 *e*P **P 10 29 01.6 +1.2**
PV10 Paradox Valley 78.95 50 *e*P **P 10 29 03.4 +1.3**
PV05 Paradox Valley 79.10 50 *e*P **P 10 29 04.1 +1.2**
N23A Red Feather La 79.14 46 *e*P **P 10 29 04.3 +1.2**
comp=Z,5.0nm,0.9s
WUAZ Wupatki 79.31 53 *e*P **P 10 29 05.1 +1.2**
comp=Z,0.8nm,0.3s
PV01 Paradox Valley 79.38 50 *e*P **P 10 29 05.2 +0.8**
BRTR Keskin Array B 79.60 313 P **P 10 29 05.7 +0.3**
comp=Z,1.2nm,0.9s,baz=52,slow=2.0,SNR=6.2
BRTR LR LR 11 10 34.8
comp=Z,19nm,18.2s,baz=106,slow=40
BRTR Keskin Array B 79.60 313*ce*P **P 10 29 05.6 +0.2**
BRTR pmax pmax
comp=Z,1.0nm,0.9s
BR231 Keskin MP Arra 80.02 313 *e*P **P 10 29 05.7 -2.0**
S22A 4UR Ranch, Cre 80.68 49 *e*P **P 10 29 12.9 +1.4**
comp=Z,2.4nm,0.9s
BRG Berggiesshubel 81.22 330 *e*(P) P 10 29 02.3 -11
comp=Z,2.3nm,0.7s
BRG Berggiesshubel 81.22 330 *e*P P 10 29 02.3 -11
BRG pmax pmax
comp=Z,2.0nm,0.7s
CLL Collm 81.24 331 *i* P **P 10 29 14.3 +0.5**
comp=Z,4.0nm,0.7s
CLL Collm 81.24 331 *i* P **P 10 29 14.3 +0.5**
CLL pmax pmax
comp=Z,4.0nm,0.7s
SDCO Great Sand Dun 81.47 48 *e*P **P 10 29 16.6 +0.9**
comp=Z,1.6nm,0.9s
ECSD EROS Data Cent 82.21 39 *e*P **P 10 29 19.1 -0.1**
comp=Z,3.0nm,0.8s
T25A Trinidad 82.53 48 *e*P **P 10 29 21.5 +0.3**
comp=Z,4.3nm,0.9s
CONA Conrad Observa 82.75 328 *i* pP **P 10 29 23.1 +1.1**
comp=Z,4.2nm,1.0s
KHC Kasperske Hory 82.75 330 *e*P **P 10 29 22.5 +0.7**
KHC Kasperske Hory 82.75 330 *e*P **P 10 29 22.5 +0.7**
ANMO Albuquerque 82.75 51 *e*P **P 10 29 23.2 +0.9**
ANMO pmax pmax
comp=Z,4.0nm,1.3s
ANMO Albuquerque 82.75 51 *e*P **P 10 29 23.2 +0.9**
comp=Z,4.3nm,1.3s
GERES GERESS Array B 82.92 329 P **P 10 29 23.1 +0.3**
comp=Z,0.4nm,0.3s,baz=46,slow=3.9,SNR=5.0
GERES LR LR 11 09 22.7
comp=Z,56nm,18.6s,baz=2.5,slow=38
ARSA Arzberg 83.42 327 *i* sP P 10 29 29.2 +3.9
comp=Z,4.1nm,1.0s
MOA Molln 83.48 328 *i* P **P 10 29 26.2 +0.6**
comp=Z,6.0nm,1.4s
SOKA Soboth 84.07 327 *i* P **P 10 29 27.2 -1.6**
comp=Z,3.8nm,0.7s
KBA Koelnbreinsper 84.47 328 *i* P **P 10 29 31.0 +0.1**
comp=Z,4.4nm,1.0s
MYKA Terra Mystica 84.70 328 *i* pP **P 10 29 33.4 +1.4**

comp=Z,6.2nm,1.0s
MOTA Moosalm 85.17 330 *i* P P 10 29 31.8 -2.6
comp=Z,2.0nm,0.4s
RETA Reutte 85.19 330 *i* PcP **P 10 29 35.3 +0.9**
comp=Z,3.8nm,0.6s
BFO Black Forest 85.43 332 *ce*P **P 10 29 36.8 +1.3**
FETA Feichten 85.58 330 *i* P **P 10 29 36.8 +0.4**
comp=Z,4.2nm,0.8s
DAVA Damuels 85.70 330 *i* PcP **P 10 29 37.8 +0.8**
comp=Z,6.3nm,0.8s
FUORN Ofenpass-Fuorn 86.09 330 *e*P **P 10 29 39.8 +0.7**
comp=Z,9.2nm,0.8s
TX31 Lajitas Ar. Si 88.26 54 *e*P **P 10 29 49.6 -0.1**
TXAR Lajitas Array 88.26 54 P **P 10 29 49.6 -0.1**
comp=Z,0.6nm,0.7s,baz=290,slow=3.2,SNR=9.6
MIAR Mount Ida 90.55 44 *e*P **P 10 30 00.5 +0.2**
MIAR pmax pmax
comp=Z,5.0nm,0.9s
MIAR Mount Ida 90.55 44 *e*P **P 10 30 00.5 +0.2**
comp=Z,5.0nm,0.9s
VNA2 Neumayer--Watz 143.56 196 PKP PKPbc 10 36 28.8 -0.2
baz=137,slow=3.0
VNA3 Neumayer Olymp 143.77 194 PKP PKPab 10 36 27.6 -1.3
VNA1 Neumayer--Stat 143.96 196 PKP PKPab 10 36 29.8 +0.3
LPAZ La Paz 144.80 61 PKP PKPbc 10 36 35.4 +0.3
comp=Z,1.4nm,0.7s,baz=321,slow=2.8,SNR=5.9
LVC Limon Verde 148.28 71 *e*PKPdf **PKPdf 10 36 40.4 -1.1**
LVC *e*PKPbc **PKPbc 10 36 42.8 -2.0**
LVC *e*PKPab **PKiKP 10 36 45.8 -0.8**
LCO Las Campanas 150.20 83 *e*PKPdf **PKPdf 10 36 44.0 -0.3**
LCO *e*PKPbc **PKPbc 10 36 49.4 0.0**
LCO *e*PKPab **PKPab 10 36 56.2 +0.7**
PLCA Paso Flores 153.52 107 PKPbc **PKPbc 10 36 56.3 -0.1**
comp=Z,1.5nm,0.9s,baz=247,slow=4.2,SNR=4.6

*IDC **13** 10:23:10.2±1.3, 7.°43S×154.°69E, h0km, mb3.7/7, mb1 4.0/8, mb1mx3.8/32, mbtmp3.7/8, ML1.7/1, Error ellipse: s-maj=50.6km s-min=21.1km az=138.0*
*ISCJB **13** 10:23:13.1±1.0, 7.°5S±0.°2×154.°7E±0.°1, h27km, mb3.6/7, Error ellipse: s-maj=36.1km s-min=10.6km az=153.0*
ISC 13 10:23:14.3±1.2, 7.°5S±0.°3×154.°8E±0.°2, h27km, n9, σ0s95/10, mb3.7/7, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**7.77**	**255**	Pn	**Pn**	**10 25 06.0**	**+0.2**
	0.7nm,0.3s,baz=107,slow=17,SNR=2.6						
PMG				Sn	**Sn**	**10 26 34.1**	**+1.1**
	0.7nm,0.3s,baz=50,slow=15,SNR=3.1						
WRA	**Warramunga Arr**	**23.36**	**236**	P	**P**	**10 28 19.3**	**-1.7**
	0.9nm,0.7s,baz=56,slow=9.1,SNR=2.9						
ASAR	**Alice Springs**	**25.68**	**229**	P	**P**	**10 28 42.3**	**-0.1**
	0.8nm,0.9s,baz=60,slow=8.9,SNR=3.6						
SONM	**Songino Array**	**69.64**	**328**	P	**P**	**10 34 20.7**	**-0.7**
	0.6nm,0.5s,baz=140,slow=9.1,SNR=3.4						
MKAR	**Makanchi Array**	**83.63**	**319**	P	**P**	**10 35 40.3**	**-0.3**
	0.5nm,0.6s,baz=101,slow=6.3,SNR=5.8						
ILAR	**Eielson Array**	**83.91**	**22**	P	**P**	**10 35 41.5**	**0.0**
	0.4nm,0.8s,baz=246,slow=5.7,SNR=4.2						
NVAR	**Mina Array Bea**	**92.20**	**52**	P	**P**	**10 36 23.4**	**+1.1**
	0.4nm,0.7s,baz=246,slow=8.8,SNR=3.6						
YKA	**Yellowknife Ar**	**96.87**	**28**	P	**P**	**10 36 43.1**	**+0.4**
	0.1nm,0.5s,baz=268,slow=5.5,SNR=4.3						
TORD	**Torodi Ar. Bea**	**152.94**	**284**	PKPbc	**PKPbc**	**10 43 09.8**	**-0.5**
	0.3nm,0.7s,baz=90,slow=2.9,SNR=2.5						

WEL 13 10:45:48.8±0.1, 43.°57S×172.°40E, h5km, ML3.5/11, 3C-4D, Error ellipse: s-maj=0.9km s-min=0.8km az=0.0, South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRLZ	**Canterbury Las**	**0.16**	**93**	⇓PG	Pg	10 45 52.2	+0.1
CRLZ				SG	Sg	10 45 54.7	+0.5
CRLZ				AML	AML	10 45 54.9	
CRLZ				AML	AML	10 45 55.0	
CRLZ				AML	AML	10 45 55.2	
MQZ	**McQueen's Vall**	**0.23**	**127**	⇓PG	Pg	10 45 53.3	0.0
MQZ				SG	Sg	10 45 56.8	+0.4
MQZ				AML	AML	10 45 56.9	
OXZ	**Oxford**	**0.35**	**312**	⇑PG	Pg	10 45 55.4	-0.2
LTZ	**Lake Taylor**	**0.79**	**353**	P*	Pg	10 46 04.2	+0.3
LTZ				AML	AML	10 46 15.5	
LTZ				AML	AML	10 46 15.6	
RPZ	**Rata Peaks**	**0.99**	**261**	⇓P*	Pg	10 46 07.4	-0.3
RPZ				AML	AML	10 46 22.6	
RPZ				AML	AML	10 46 30.4	
INZ	**Inchbonnie**	**1.09**	**320**	⇓P*	Pg	10 46 09.6	-0.1
WVZ	**Waitaha Valley**	**1.31**	**292**	P*	Pn	10 46 12.9	-0.8
WVZ				AML	AML	10 46 34.1	
WVZ				AML	AML	10 46 40.0	
LBZ	**Lake Benmore**	**1.79**	**242**	PN	Pn	10 46 18.8	-1.6
LBZ				AML	AML	10 46 46.5	
LBZ				AML	AML	10 46 53.3	
DSZ	**Denniston Nort**	**1.87**	**346**	PN	Pn	10 46 20.3	-1.2
DSZ				AML	AML	10 46 51.4	
DSZ				AML	AML	10 46 53.3	
FOZ	**Fox Glacier**	**1.88**	**270**	PN	Pn	10 46 21.4	-0.1
FOZ				AML	AML	10 46 45.4	
ODZ	**Otahua Downs**	**1.94**	**220**	⇑PN	Pn	10 46 20.2	-2.1
ODZ				AML	AML	10 46 55.4	
ODZ				AML	AML	10 46 58.4	
WKZ	**Wanaka**	**2.74**	**241**	PN	Pn	10 46 31.5	-1.9
EAZ	**Earnscleugh**	**2.77**	**232**	⇑PN	Pn	10 46 31.7	-2.1
EAZ				AML	AML	10 47 18.2	
EAZ				AML	AML	10 47 18.5	
TUZ	**Tuapeka**	**3.10**	**219**	PN	Pn	10 46 36.0	-2.2
TUZ				AML	AML	10 47 35.1	
TUZ				AML	AML	10 47 41.0	
MLZ	**Mavora Lakes**	**3.55**	**238**	PN	Pn	10 46 42.3	-2.2
SYZ	**Scrubby Hill**	**3.76**	**217**	PN	Pn	10 46 45.6	-1.8
WHZ	**Wether Hill Ro**	**3.93**	**232**	PN	Pn	10 46 46.7	-3.1

*ISCJB **13** 10:52:06.5±0.4, 49.°89N±0.°03×18.°39E±0.°03, h0km, Error ellipse: s-maj=4.7km s-min=2.2km az=17.7*
*CSEM **13** 10:52:07.9±0.2, 49.°84N×18.°40E, h2km, ML3.1/8, Error ellipse: s-maj=6.3km s-min=3.0km az=13.0*
*IPEC **13** 10:52:07.7±0.2, 49.°84N×18.°52E, h0km, ML2.4/3, Error ellipse: s-maj=2.1km s-min=1.1km az=161.0*
*PRU **13** 10:52:09.0, 49.°85N×18.°38E, h0km*
ISC 13 10:52:08.0±0.7, 49.°86N±0.°03×18.°45E±0.°02, h0km, n40, σ0s85/66, 4D, Czech and Slovak Republics

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OKC	**Ostrava-Krasne**	**0.19**	**263**	⇓*i*PG	**Pg**	**10 52 12.9**	**+1.2**
OKC				*e*SG	**Sg**	**10 52 14.7**	**+0.5**
	comp=Z,201nm,0.3s						
OKC	**Ostrava-Krasne**	**0.19**	**263**	Pg	**Pg**	**10 52 12.9**	**+1.2**
OKC				Sg	**Sg**	**10 52 14.7**	**+0.5**
	201nm,0.3s						
MORC	**Moravsky Berou**	**0.59**	**262**	*e*Pg	**Pg**	**10 52 19.7**	**+0.4**
MORC				*e*Sg	**Sg**	**10 52 27.5**	**+0.6**
	51nm,0.3s						
OJC	**Ojcow**	**0.94**	**67**	*e*Pg	**Pg**	**10 52 25.4**	**-0.7**
OJC				*e*Sg	**Sg**	**10 52 38.4**	**+0.1**
OJC	**Ojcow**	**0.94**	**67**	*e*Pg	**Pg**	**10 52 25.4**	**-0.7**
OJC				*e*Sg	**Sg**	**10 52 38.4**	**+0.1**
LANS	**Liptovska Anna**	**0.97**	**136**	*e*Pg	**Pg**	**10 52 26.9**	**+0.3**
LANS				*e*Sg	**Sn**	**10 52 42.9**	**-0.6**
LANS	**Liptovska Anna**	**0.97**	**136**	*e*PG	**Pg**	**10 52 26.9**	**+0.3**
LANS				*e*SG	**Sn**	**10 52 42.9**	**-0.6**
KRLC	**Kraliky**	**1.09**	**282**	*e*SG	**Sg**	**10 52 42.7**	**-0.4**
KRLC	**Kraliky**	**1.09**	**282**	Sg	**Sg**	**10 52 42.7**	**-0.4**
NIE	**Niedzica**	**1.28**	**109**	*e*Pg	**Pb**	**10 52 32.8**	**-0.2**
NIE				*e*Sg	**Sn**	**10 52 51.1**	**0.0**
NIE	**Niedzica**	**1.28**	**109**	*e*Pg	**Pb**	**10 52 32.8**	**-0.2**
NIE				*e*Sg	**Sn**	**10 52 51.1**	**0.0**
VRAC	**Vranov**	**1.33**	**246**	*e*Pg	**Pg**	**10 52 33.2**	**-0.2**
VRAC				*e*Sg	**Sg**	**10 52 50.3**	**-0.2**
	63nm,0.3s						
VYHS	**Vyhne**	**1.39**	**169**	*e*Pg	**Pg**	**10 52 34.0**	**-0.6**
VYHS	**Vyhne**	**1.39**	**169**	*e*PG	**Pg**	**10 52 34.0**	**-0.6**
VYHS				*e*SN	**Sg**	**10 52 52.1**	**-0.6**
VYHS				*e*LG	Lg	10 53 00.6	
DPC	**Dobruska-Polom**	**1.45**	**291**	*e*PG	**Pn**	**10 52 35.3**	**-0.2**
DPC				*e*SG	**Sg**	**10 52 54.7**	**+0.1**
	comp=Z,39nm,0.4s						
DPC	**Dobruska-Polom**	**1.45**	**291**	Pg	**Pn**	**10 52 35.3**	**-0.2**
DPC				Sg	**Sg**	**10 52 54.7**	**+0.1**
	39nm,0.4s						
SMOL	**Smolenice**	**1.50**	**207**	*e*Pg	**Pn**	**10 52 35.7**	**-0.5**
SMOL				*e*Sn	**Sn**	**10 52 56.5**	**0.0**
SMOL	**Smolenice**	**1.50**	**207**	*e*PG	**Pn**	**10 52 35.7**	**-0.5**
SMOL				*e*SN	**Sn**	**10 52 56.5**	**0.0**
KRUC	**Moravsky**	**1.56**	**240**	*e*Pg	**Pn**	**10 52 36.7**	**-0.2**
UPC	**Upice**	**1.69**	**293**	⇓*e*SG	**Sb**	**10 53 01.9**	**+0.1**
	comp=Z,52nm,0.7s						
UPC	**Upice**	**1.69**	**293**	Sg	**Sb**	**10 53 01.9**	**+0.1**
	52nm,0.7s						
KSP	**Ksiaz**	**1.69**	**306**	*e*Pg	**Pg**	**10 52 40.5**	**+0.1**
KSP				*e*Sg	**Sg**	**10 53 02.5**	**+0.2**
KSP	**Ksiaz**	**1.69**	**306**	*e*Pg	**Pg**	**10 52 40.5**	**+0.1**
KSP				*e*Sg	**Sg**	**10 53 02.5**	**+0.2**
STHS	**Stebnicka Huta**	**1.87**	**103**	*e*Pn	**Pg**	**10 52 43.6**	**-0.3**
STHS	**Stebnicka Huta**	**1.87**	**103**	*e*PN	**Pg**	**10 52 43.6**	**-0.3**
STHS				*e*LG	Lg	10 53 18.2	
KECS	**Kecovo**	**1.92**	**135**	*e*Pg	**Pb**	**10 52 43.8**	**-0.1**
KECS				*e*Sn	**Sn**	**10 53 06.9**	**+0.1**
KECS	**Kecovo**	**1.92**	**135**	*e*PG	**Pb**	**10 52 43.8**	**-0.1**
KECS				*e*SN	**Sn**	**10 53 06.9**	**+0.1**
KECS				*e*LG	Lg	10 53 14.4	
CRVS	**Cervenica-Dubn**	**2.19**	**115**	*e*Pn	**Pb**	**10 52 49.0**	**+0.5**
CRVS				*e*Sg	**Sg**	**10 53 20.9**	**+2.5**
CRVS	**Cervenica-Dubn**	**2.19**	**115**	*e*PN	**Pb**	**10 52 49.0**	**+0.5**
CRVS				*e*SG	**Sg**	**10 53 20.9**	**+2.5**
GOPC	**GO Pecny, Ondr**	**2.37**	**273**	*e*SG	**Sb**	**10 53 21.3**	**+0.1**
GOPC	**GO Pecny, Ondr**	**2.37**	**273**	Sg	**Sb**	**10 53 21.3**	**+0.1**
PRU	**Pruhonice**	**2.53**	**274**	⇓*e*PG	**Pg**	**10 52 55.5**	**-0.9**
PRU				*e*SG	**Sb**	**10 53 26.4**	**+0.6**
	comp=Z,29nm,0.9s						
PRU	**Pruhonice**	**2.53**	**274**	Pg	**Pg**	**10 52 55.5**	**-0.9**
PRU				Sg	**Sb**	**10 53 26.4**	**+0.6**
	29nm,0.9s						
PVCC	**Panska Ves**	**2.58**	**286**	⇓*e*SG	**Sg**	**10 53 29.2**	**-1.6**
PVCC	**Panska Ves**	**2.58**	**286**	Sg	**Sg**	**10 53 29.2**	**-1.6**
BRG	**Berggiesshubel**	**3.06**	**291**	PG	**Pb**	**10 53 04.6**	**+1.4**
BRG				Sg	**Sg**	**10 53 44.8**	**-1.3**
	12nm,0.6s						
KHC	**Kasperske Hory**	**3.26**	**259**	*e*PN	**Pn**	**10 53 00.0**	**-0.3**
KHC				*e*PG	**Pb**	**10 53 08.2**	**+1.6**
KHC				*e*SG	**Sg**	**10 53 49.8**	**-2.7**
	comp=Z,13nm,0.4s						
KHC	**Kasperske Hory**	**3.26**	**259**	Pn	**Pn**	**10 53 00.0**	**-0.3**
NKC	**Novy Kostel**	**3.88**	**278**	*e*SG	**Sg**	**10 54 11.5**	**-1.2**
	comp=Z,15nm,0.6s						
NKC	**Novy Kostel**	**3.88**	**278**	Sg	**Sg**	**10 54 11.5**	**-1.2**
	15nm,0.6s						

*IDC **13** 10:56:38.9±1.3, 22.°00N×120.°44E, h0km, mb3.7/4, mb1 3.9/4, mb1mx3.5/33, mbtmp3.7/4, MS3.3/8, Ms1 3.3/8, ms1mx3.0/46, Error ellipse: s-maj=74.7km s-min=25.8km az=67.0*
*ISCJB **13** 10:56:43.7±0.5, 22.°09N±0.°02×120.°43E±0.°03, h51km±3km, mb3.6/4, MS3.3/6, Error ellipse: s-maj=5.1km s-min=3.7km az=148.1*
*TAP **13** 10:56:43.2, 22.°07N×120.°42E, h46km, ML3.9, D*
*JMA **13** 10:56:43.4±0.2, 21.°98N×120.°53E, h51km±3km, MS3.7*
ISC 13 10:56:44.1±1.2, 22.°05N±0.°04×120.°37E±0.°04, h37km±1km, n68, σ0s97/103, mb3.6/4, MS3.2/6, 2D, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWP	**Hsiaoliuchiu**	**0.29**	**359**	P	**Pn**	**10 56 52.2**	**-0.1**
TWP				*e*S	**Sn**	**10 56 59.9**	**+0.4**
	baz=350						
HEN	**Hengchun**	**0.34**	**98**	P	**Pn**	**10 56 52.0**	**-0.5**
HEN				S	**Sn**	**10 56 59.4**	**+0.1**
	baz=102						
SCZT	**Fangliau**	**0.40**	**36**	⇓*i*P	**Pn**	**10 56 52.4**	**-0.7**
SCZT				S	**Sn**	**10 56 59.4**	**-0.5**
	baz=32						
TWK1	**Hengchun**	**0.42**	**105**	⇓*i*P	**Pn**	**10 56 53.0**	**-0.3**
TWK1				S	**Sn**	**10 57 00.7**	**+0.5**
	baz=109						
TSEB	**Hengchuen, Pin**	**0.52**	**107**	P	**Pn**	**10 56 53.9**	**-1.1**
TSEB				S	**Sn**	**10 57 02.5**	**0.0**
	baz=112						
KAU	**Kaohsiung**	**0.52**	**354**	*e*P	**Pn**	**10 56 54.0**	**-1.0**
KAU				*e*S	**Sn**	**10 57 03.9**	**+1.4**
	baz=348						
EAST	**Anshio**	**0.55**	**53**	P	**Pn**	**10 56 54.7**	**-0.9**
EAST				S	**Sn**	**10 57 03.3**	**-0.3**
	baz=52						
TAW	**Tawu**	**0.57**	**58**	P	**Pn**	**10 56 54.9**	**-1.0**
TAW				S	**Sn**	**10 57 03.8**	**-0.3**
	baz=57						
SGLT	**Jiouru**	**0.68**	**9**	*e*P	**Pn**	**10 56 57.3**	**0.0**
SGLT				*e*S	**Sn**	**10 57 08.0**	**+1.4**
	baz=6.0						
SSD	**Sandimen**	**0.73**	**19**	P	**Pn**	**10 56 57.0**	**-0.9**
SSD				S	**Sn**	**10 57 07.5**	**-0.4**
	baz=16						
ECL	**Taimali**	**0.77**	**45**	P	**Pn**	**10 56 57.5**	**-0.8**
	baz=43						
TWM1	**Shoushan**	**0.77**	**4**	*e*P	**Pn**	**10 56 59.2**	**+0.7**
TWM1				*e*S	**Sn**	**10 57 09.6**	**+0.8**
TAI1	**Yung-k'ang**	**0.99**	**352**	*e*S	**Sn**	**10 57 14.4**	**+0.2**
	baz=349						
TTN	**Taitung**	**1.00**	**46**	*e*P	**Pn**	**10 57 02.1**	**+0.5**
	baz=44						
TWG	**Pinlang**	**1.00**	**40**	P	**Pn**	**10 57 01.3**	**-0.3**
	baz=39						
CHN3	**Shinhua**	**1.02**	**360**	*e*S	**Sn**	**10 57 16.2**	**+1.3**
	baz=357						
SGST	**Jiashian**	**1.04**	**11**	P	**Pn**	**10 57 02.1**	**-0.1**
SGST				*e*S	**Sn**	**10 57 15.8**	**+0.3**
	baz=8.0						
LAY	**Lan-yu**	**1.10**	**90**	*e*P	**Pn**	**10 57 01.4**	**-1.6**
	baz=91						
CHN1	**Nanshi**	**1.14**	**7**	P	**Pn**	**10 57 03.5**	**0.0**
CHN1				*e*S	**Sn**	**10 57 17.5**	**-0.4**
	baz=5.0						
STYT	**Tauyuan**	**1.16**	**18**	P	**Pn**	**10 57 03.1**	**-0.8**
STYT				S	**Sn**	**10 57 18.0**	**-0.5**
	baz=16						
WTP	**Ta-pu**	**1.21**	**11**	P	**Pn**	**10 57 04.5**	**-0.1**
WTP				*e*S	**Sn**	**10 57 18.8**	**-0.9**
	baz=9.0						
TWK	**Hsinying**	**1.22**	**5**	*e*S	**Sn**	**10 57 17.8**	**-2.0**
	baz=3.0						
ELDTW	**Lidau**	**1.28**	**28**	P	**Pn**	**10 57 05.1**	**-0.4**
	baz=26						
CHN4	**Tsaushan**	**1.31**	**9**	*e*P	**Pn**	**10 57 05.3**	**-0.6**
CHN4				*e*S	**Sn**	**10 57 21.4**	**-0.7**
	baz=7.0						
WDGT	**Dungji**	**1.37**	**332**	*e*P	**Pn**	**10 57 05.5**	**-1.1**
WDGT				*e*S	**Sn**	**10 57 21.5**	**-2.1**
	baz=329						
CHKT	**Chengkung**	**1.39**	**41**	P	**Pn**	**10 57 07.1**	**+0.1**
CHKT				S	**Sn**	**10 57 24.0**	**-0.1**
	baz=40						
CHY	**Chiayi**	**1.44**	**2**	*e*S	**Sn**	**10 57 24.6**	**-0.7**
ALS	**Alishan**	**1.51**	**15**	*e*P	**Pn**	**10 57 08.7**	**-0.1**
ALS				*e*S	**Sn**	**10 57 25.2**	**-2.1**
	baz=14						
YUS	**Yu-Shan**	**1.53**	**20**	*e*P	**Pn**	**10 57 09.1**	**-0.2**
	baz=19						
TWF1	**Yuli**	**1.55**	**33**	P	**Pn**	**10 57 09.4**	**+0.2**
TWF1				S	**Sn**	**10 57 27.3**	**-0.7**
	baz=32						
CHN5	**Tsauling**	**1.56**	**10**	P	**Pn**	**10 57 08.9**	**-0.6**
	baz=8.0						
CHN5				S	**Sn**	**10 57 27.5**	**-1.0**
	baz=8.0						
WSF	**Szhu**	**1.58**	**355**	*e*P	**Pn**	**10 57 07.4**	**-2.2**
WSF				*e*S	**Sn**	**10 57 27.1**	**-1.8**
	baz=353						
WGK	**Gukeng**	**1.64**	**6**	*e*S	**Sn**	**10 57 29.5**	**-0.6**
	baz=4.0						
PNG	**Penghu**	**1.69**	**334**	*e*P	**Pn**	**10 57 10.7**	**-0.3**
PNG				*e*S	**Sn**	**10 57 30.2**	**-1.1**
	baz=332						
WDT	**Danda**	**1.84**	**22**	*e*P	**Pn**	**10 57 13.2**	**-0.2**
	baz=21						
WNT	**Mingjian**	**1.84**	**9**	*e*S	**Sn**	**10 57 33.6**	**-1.6**
	baz=7.0						
SMLT	**Sun Moon Lake**	**1.89**	**15**	*e*P	**Pn**	**10 57 13.9**	**0.0**
SMLT				*e*S	**Sn**	**10 57 35.5**	**-1.0**
	baz=13						
TYC	**Yuchr**	**1.90**	**14**	*e*P	**Pn**	**10 57 14.8**	**+0.9**
TYC				*e*S	**Sn**	**10 57 34.0**	**-2.6**
	baz=12						
ESL	**Shilin**	**2.01**	**29**	*e*P	**Pn**	**10 57 15.5**	**0.0**
ESL				*e*S	**Sn**	**10 57 38.5**	**-0.9**
	baz=28						
TCU	**Taichung**	**2.11**	**8**	*e*S	**Sn**	**10 57 41.3**	**-0.4**
	baz=6.0						
WHF	**Hehuan Shan**	**2.24**	**21**	*e*P	**Pn**	**10 57 19.4**	**+0.3**
	baz=20						
TWD	**Chiawan**	**2.31**	**29**	*e*P	**Pn**	**10 57 19.6**	**0.0**
TWD				*e*S	**Sn**	**10 57 47.3**	**+0.5**
	baz=28						
TWT	**Tachien**	**2.31**	**19**	*e*P	**Pn**	**10 57 20.1**	**+0.3**
TWT				*e*S	**Sn**	**10 57 46.6**	**-0.5**
	baz=17						
TWQ1	**Liyutan**	**2.32**	**9**	*e*P	**Pn**	**10 57 21.3**	**+1.6**
TWQ1				*e*S	**Sn**	**10 57 45.9**	**-1.1**
	baz=8.0						
NSY	**Sanyi**	**2.38**	**9**	*e*S	**Sn**	**10 57 46.9**	**-1.6**
	baz=7.0						
NNS	**Nan Shan**	**2.55**	**21**	*e*P	**Pn**	**10 57 23.4**	**+0.4**
NNS				*e*S	**Sn**	**10 57 52.9**	**+0.1**
	baz=20						
NSTT	**Nanjuang**	**2.63**	**13**	*e*P	**Pn**	**10 57 23.6**	**-0.4**
NSTT				*e*S	**Sn**	**10 57 52.5**	**-2.2**
	baz=11						
NSK	**Sanguang**	**2.77**	**19**	*e*P	**Pn**	**10 57 26.8**	**+0.8**
NSK				*e*S	**Sn**	**10 57 57.0**	**-1.1**
	baz=18						
ENTT	**Nioudou**	**2.80**	**23**	*e*P	**Pn**	**10 57 27.8**	**+1.4**
ENTT				*e*S	**Sn**	**10 57 58.1**	**-0.8**
	baz=22						
TWE	**Neicheng**	**2.91**	**24**	*e*P	**Pn**	**10 57 29.1**	**+1.2**
	baz=23						
JYNG	**Yonagunijimaku**	**3.36**	**44**	P	**Pn**	**10 57 34.9**	**+0.8**
JYNG				*e*S	**Sn**	**10 58 13.4**	**+0.6**
YOJ	**Yonaguni jima**	**3.41**	**45**	P	**Pn**	**10 57 35.7**	**+0.9**
YOJ				*e*S	**Sn**	**10 58 14.7**	**+0.7**
HATJ	**Hateruma jima**	**3.74**	**57**	P	**Pn**	**10 57 37.4**	**-1.9**
HATJ				*e*S	**Sn**	**10 58 20.6**	**-1.5**
IRIF	**Iriomote-Funau**	**3.84**	**53**	P	**Pn**	**10 57 40.9**	**+0.3**
IRIF				*e*S	**Sn**	**10 58 24.7**	**+0.3**
JKRS	**Kuro-shima**	**4.00**	**56**	P	**Pn**	**10 57 43.0**	**+0.3**
JKRS				*e*S	**Sn**	**10 58 28.4**	**+0.1**
JIJ	**Ishigaki jima**	**4.17**	**56**	P	**Pn**	**10 57 45.0**	**-0.1**
JIJ				*e*S	**Sn**	**10 58 30.9**	**-1.6**
JISG	**Ishigakijimahi**	**4.42**	**54**	P	**Pn**	**10 57 47.9**	**-0.6**
JISG				*e*S	**Sn**	**10 58 36.9**	**-1.8**
JTJ	**Tarama**	**4.74**	**56**	P	**Pn**	**10 57 53.7**	**+0.7**
JTJ				*e*S	**Sn**	**10 58 46.3**	**-0.5**
TGY	**Tagaytay City**	**7.92**	**176**	LR	LR	11 02 39.1	
	comp=Z,132nm,18.5s,slow=46						
KSRS	**Korea Array**	**16.68**	**21**	LR	LR	11 07 42.8	
	comp=Z,54nm,20.2s,baz=209,slow=40						
JCJ	**Chichijima**	**20.46**	**71**	LR	LR	11 06 58.2	
	comp=Z,328nm,20.6s,baz=160,slow=30						
MJAR	**Matsushiro Arr**	**21.17**	**43**	LR	LR	11 10 20.6	
	comp=Z,32nm,20.1s,baz=295,slow=39						
SONM	**Songino Array**	**28.07**	**340**	P	**P**	**11 02 33.1**	**+1.0**
	0.8nm,0.7s,baz=145,slow=11,SNR=3.5						
SONM				LR	LR	11 14 47.9	
	comp=Z,55nm,20.2s,baz=134,slow=39						
MKAR	**Makanchi Array**	**39.38**	**318**	P	**P**	**11 04 10.5**	**+0.4**
	0.5nm,0.7s,baz=98,slow=10,SNR=3.9						
MKAR				LR	LR	11 22 01.4	
	comp=Z,29nm,18.0s,baz=184,slow=39						
PETK	**Petropavlovsk-**	**42.05**	**33**	LR	LR	11 23 04.4	
	comp=Z,42nm,19.5s,baz=215,slow=38						
WRA	**Warramunga Arr**	**43.91**	**161**	P	**P**	**11 04 46.9**	**-0.5**
	1.5nm,1.0s,baz=343,slow=9.2,SNR=3.3						
NOA	**NORSAR Array B**	**79.75**	**332**	LR	LR	11 47 22.9	
	comp=Z,22nm,18.5s,baz=205,slow=38						
YKA	**Yellowknife Ar**	**85.22**	**22**	P	**P**	**11 09 17.1**	**+0.6**
	0.7nm,1.0s,baz=313,slow=4.6,SNR=8.9						

IDC 13 11:27:02.5±1.8, 8.°03S×68.°17E, h0km, mb3.8/6, mb1 3.9/6, mb1mx3.5/52, mbtmp3.8/6, Error ellipse: s-maj=53.3km s-min=31.9km az=44.0, Chagos Archipelago region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08N3	**Diego Garcia H**	**3.27**	**59**	T	T	11 31 21.7	
	baz=238,slow=75,SNR=583						
H08N2	**Diego Garcia H**	**3.28**	**59**	T	T	11 31 24.2	
	baz=238,slow=75,SNR=646						
H08N1	**Diego Garcia H**	**3.29**	**59**	T	T	11 31 23.8	
	baz=238,slow=75,SNR=425						
CMAR	**Chiang Mai Arr**	**40.19**	**49**	P	P	11 34 41.1	+0.2
	0.8nm,0.3s,baz=235,slow=9.5,SNR=5.2						
BRTR	**Keskin Array B**	**57.26**	**329**	P	P	11 36 52.1	0.0
	0.4nm,0.6s,baz=152,slow=9.7,SNR=3.9						
AKTO	**Aktyubinsk**	**58.89**	**352**	P	P	11 37 02.3	-0.8
	0.8nm,0.3s,baz=162,slow=3.2,SNR=4.4						
KURBB	**Kurchatov Arra**	**59.10**	**8**	P	P	11 37 03.7	-0.9
	0.4nm,0.5s,baz=207,slow=6.7,SNR=4.2						
ASAR	**Alice Springs**	**64.62**	**112**	P	P	11 37 42.0	-0.5
	0.5nm,0.8s,baz=266,slow=6.4,SNR=4.9						
SONM	**Songino Array**	**65.07**	**27**	P	P	11 37 45.5	+0.6
	0.6nm,0.6s,baz=223,slow=7.9,SNR=4.8						
PDAR	**Pinedale Array**

baz=97,slow=37
APA0 Apatity Array 0.43 280 P **Pg** **11 34 13.0 +0.3**
APA0 S **Sg** **11 34 19.4 +1.2**
APA0 Apatity Array 0.43 280 Lg Lg 11 34 19.0
VRF Varrio 1.73 279 *e*PG **Pn** **11 34 36.1 +0.4**
VRF MSG 11 34 57.5
comp=Z,65nm,0.2s
VRF *e*S **Sn** **11 34 59.0 +0.5**
VRF Varrio 1.73 279 Pg **Pn** **11 34 36.1 +0.4**
VRF S **Sn** **11 34 59.0 +0.5**
KU6 Riekki 2.25 230 *e*P **Pb** **11 34 46.0 -0.1**
KU6 *e*S **Sg** **11 35 17.2 +0.4**
KU6 MSG 11 35 19.1
comp=Z,32nm,0.2s
KU6 Riekki 2.25 230 P **Pb** **11 34 45.9 -0.1**
KU6 S **Sg** **11 35 17.2 +0.4**
MSF Maaselka 2.59 233 *e*PB **Pg** **11 34 53.3 -0.7**
MSF *e*S **Sg** **11 35 26.6 -0.9**
MSF Maaselka 2.59 233 Pb **Pg** **11 34 53.3 -0.7**
MSF S **Sg** **11 35 26.6 -0.9**
SGF Sodankyl 2.91 272 *e*PB **Pb** **11 34 56.2 -1.0**
SGF *e*SG **Sg** **11 35 36.4 -1.6**
SGF Sodankyl 2.91 272 Pb **Pb** **11 34 56.2 -1.0**
RNF Rovaniemi 3.30 257 *e*P **Pn** **11 34 58.8 +1.4**
RNF *e*S **Sn** **11 35 40.9 +3.7**
RNF Rovaniemi 3.30 257 P **Pn** **11 34 58.7 +1.4**
RNF S **Sn** **11 35 40.8 +3.7**
KEV Kevo 3.42 314 *e*PB **Pn** **11 34 59.7 +0.8**
KEV *e*SB **Sn** **11 35 40.4 +0.4**
KEV Kevo 3.42 314 Pb **Pn** **11 34 59.7 +0.8**
KEV Sb **Sn** **11 35 40.4 +0.4**
ARA0 ARCESS Array S 3.74 306 Pn **Pn** **11 35 05.3 +1.9**
baz=123,slow=16
ARA0 Sn **Sn** **11 35 46.8 -1.2**
baz=126,slow=28
ARA0 Lg Lg 11 36 00.9
baz=109,slow=28
ARA0 ARCESS Array S 3.74 306 Pn **Pn** **11 35 05.3 +1.9**
baz=123,slow=16
ARA0 Sn **Sn** **11 35 46.8 -1.2**
baz=126,slow=28
ARA0 Lg Lg 11 36 00.9
baz=109,slow=28
ARA0 ARCESS Array S 3.74 306 Pn **Pn** **11 35 05.3 +1.9**
SNR=50
ARA0 Sn **Sn** **11 35 46.8 -1.2**
SNR=50
ARA0 Lg Lg 11 36 00.9
SNR=0.4
ARCES ARCESS Array B 3.74 306 Pn **Pn** **11 35 03.5 +0.2**
comp=Z,11nm,0.3s,baz=122,slow=14,SNR=292
ARCES Sn **Sn** **11 35 47.2 -0.8**
comp=Z,4.8nm,0.3s,baz=121,slow=25,SNR=12
ARCES Lg Lg 11 35 57.0
comp=Z,13nm,0.3s,baz=122,slow=32,SNR=14
ARE0 ARCESS Array S 3.74 306 *e*PB **Pn** **11 35 03.3 -0.1**
ARE0 *e*S **Sn** **11 35 46.8 -1.2**
ARE0 ARCESS Array S 3.74 306 Pb **Pn** **11 35 03.3 -0.1**
ARE0 S **Sn** **11 35 46.8 -1.2**
HEF Hetta 4.03 287 *e*P **Pn** **11 35 08.6 +1.3**
HEF *e*S **Sn** **11 35 55.8 +0.7**
HEF Hetta 4.03 287 P **Pn** **11 35 08.6 +1.3**
HEF S **Sn** **11 35 55.8 +0.7**
OUL Oulu 4.12 237 *e*PB **Pb** **11 35 17.3 -0.5**
TOF Tornio 4.13 254 *e*P **Pn** **11 35 10.7 +2.0**
TOF *e*S **Sn** **11 36 01.0 +3.3**
TOF Tornio 4.13 254 P **Pn** **11 35 10.7 +2.0**
TOF S **Sn** **11 36 01.0 +3.3**
PAJU Pajala 4.29 268 P **Pn** **11 35 12.6 +1.6**
KTK1 Kautokeino 4.30 295 *e*P **Pn** **11 35 13.3 +2.2**
KTK1 IAML 11 36 17.7
comp=Z,24nm,0.3s
KTK1 Kautokeino 4.30 295 *e*P **Pn** **11 35 13.3 +2.2**
SNR=49
LANU Lannavaara 4.62 282 P **Pn** **11 35 15.6 +0.1**
HAMF Hammerfest 4.86 315 *e*P **Pn** **11 35 20.6 +1.9**
HAMF *e*S **Sn** **11 36 13.9 -1.6**
HAMF IAML 11 36 15.2
comp=E,19nm,0.4s
HAMF Hammerfest 4.86 315 *e*P **Pn** **11 35 20.6 +1.9**
SNR=49
HAMF *e*S **Sn** **11 36 13.9 -1.6**
SNR=49
KUA Kurravaara 5.25 281 P **Pn** **11 35 25.4 +1.4**
FIA0 FINESS Array S 7.02 213 Pn **Pn** **11 35 51.8 +3.3**
baz=27,slow=14
FIA0 Sn **Sn** **11 37 10.3 +1.5**
baz=30,slow=28
FIA0 Lg Lg 11 37 43.6
baz=16,slow=28
FIA0 FINESS Array S 7.02 213 Pn **Pn** **11 35 51.8 +3.3**
baz=27,slow=14
FIA0 Sn **Sn** **11 37 10.3 +1.5**
baz=30,slow=28
FIA0 Lg Lg 11 37 43.6
baz=16,slow=28
FIA0 FINESS Array S 7.02 213 Pn **Pn** **11 35 51.8 +3.3**
SNR=50
FIA0 Sn **Sn** **11 37 10.3 +1.5**
SNR=50
FIA0 Lg Lg 11 37 43.6
SNR=28
FINES FINESS Array B 7.02 213 Pn **Pn** **11 35 51.4 +2.9**
comp=E,0.2nm,0.3s,baz=24,slow=14,SNR=5.7
FINES Sn **Sn** **11 37 09.3 +0.5**
comp=E,0.4nm,0.3s,baz=32,slow=21,SNR=3.5
FINES Lg Lg 11 37 42.9
comp=E,1.4nm,0.3s,baz=21,slow=24,SNR=7.4
HFS Hagfors 11.61 240 Pn **Pn** **11 36 51.0 -0.2**
baz=19,slow=11
HFS Sn **Sn** **11 38 56.6 -4.9**
baz=48,slow=28
HFS Hagfors 11.61 240 Pn **Pn** **11 36 51.2 0.0**
comp=E,0.2nm,0.3s,baz=43,slow=11,SNR=4.2
HFS Sn **Sn** **11 38 55.1 -6.4**
comp=E,0.2nm,0.3s,baz=52,slow=26,SNR=3.6
HFS Lg Lg 11 40 03.9
comp=E,0.3nm,0.3s,baz=49,slow=31,SNR=2.9
HFS Hagfors 11.61 240 Pn **Pn** **11 36 51.0 -0.2**
baz=19,slow=11
HFS Sn **Sn** **11 38 56.6 -4.9**
baz=48,slow=28
SPA0 Spitsbergen Ar 11.80 342 Pn **Pn** **11 36 52.7 -1.1**
baz=144,slow=14
SPA0 Spitsbergen Ar 11.80 342 Pn **Pn** **11 36 52.7 -1.1**
baz=144,slow=14
SPA0 Spitsbergen Ar 11.80 342 Pn **Pn** **11 36 52.7 -1.1**
SNR=50
SPITS Spitsbergen Ar 11.80 342 Pn **Pn** **11 36 53.0 -0.8**
baz=142,slow=16,SNR=12
SPITS Sn Sn 11 38 45.2 -21
baz=149,slow=25,SNR=2.5
NOA NORSAR Array B 11.82 248 Pn **Pn** **11 36 54.3 +0.2**
comp=E,0.2nm,0.3s,baz=42,slow=10,SNR=4.8
NOA Sn **Sn** **11 39 01.4 -5.1**
comp=E,0.2nm,0.3s,baz=33,slow=23,SNR=2.3

JMA 13 11:35:05.7,37.°11N×140.°69E,h8km±1km,M2.6,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.09**	**95**	P	Pg	11 35 07.9	0.0
ONAJ				S	Sg	11 35 09.5	0.0
JFK	**Kawauchi**	**0.29**	**30**	P	Pg	11 35 11.6	0.0
JFK				S	Sg	11 35 15.7	+0.2
JFT	**Otama**	**0.49**	**325**	P	Pg	11 35 15.7	+0.4
JFT				S	Sg	11 35 22.4	+0.6
JHO	**Hitachi**	**0.51**	**191**	P	Pg	11 35 15.3	-0.2
JHO				S	Sg	11 35 22.0	-0.2
MAT	**Matsushiro**	**2.07**	**255**	P	Pb	11 35 42.4	-1.1
MAT				S	Sb	11 36 10.3	+0.8

*IDC **13** 11:46:46.8±3.2,36.°39N×71.°29E,h162km±27km,mb3.3/6, mb1 3.4/12,mb1mx3.2/42,mbtmp3.9/12,Error ellipse: s-maj=26.9km s-min=20.2km az=164.0*
*ISCJB **13** 11:46:49.7±0.5,36.°71N±0.°05×71.°23E±0.°06,h200km, mb3.4/6,Error ellipse: s-maj=7.1km s-min=5.6km az=135.4*
*NNC **13** 11:46:56.4±3.5,37.°27N×71.°16E,h194km±62km,mb2.8, mpv3.9,Error ellipse: s-maj=53.9km s-min=21.1km az=129.0*

ISC 13 11:46:50.1±0.6,36.°76N±0.°06×71.°35E±0.°06,h200km,n23, σ2§81/33,mb3.5/6,5C-4D,Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**2.86**	**316**	⇓P	**Pn**	**11 47 38.3**	**+0.2**
	27nm,0.3s						
DZET				⇑S	**Sn**	**11 48 12.7**	**-3.1**
	436nm,0.5s						
MNAS	**Manas**	**5.79**	**8**	⇑P	**Pn**	**11 48 15.5**	**+0.8**
	5.6nm,0.4s						
MNAS				⇓S	**Sn**	**11 49 18.8**	**-2.9**
	32nm,0.6s						
AAK	**Ala-Archa**	**6.35**	**21**	P	**Pn**	**11 48 23.2**	**+1.3**
	2.4nm,0.3s,baz=178,slow=5.3,SNR=17						
AAK				S	**Sn**	**11 49 34.4**	**-0.4**
	2.8nm,0.3s,baz=138,slow=23,SNR=33						
AAK	**Ala-Archa**	**6.35**	**21**	⇑P	**Pn**	**11 48 23.2**	**+1.3**
	4.9nm,0.6s						
AAK				⇓S	**Sn**	**11 49 33.3**	**-1.5**
	23nm,0.7s						
KK31	**Karatay Array**	**6.37**	**354**	P	**Pn**	**11 48 23.1**	**+1.0**
	7.6nm,0.3s,baz=173,slow=12,SNR=94						
KK31				⇑S	**Sn**	**11 49 27.6**	**-7.4**
	3.3nm,0.4s,baz=177,slow=17,SNR=3.9						
TKM2	**Tokmak 2**	**6.97**	**27**	⇓P	**Pn**	**11 48 31.6**	**+1.6**
	6.1nm,0.5s						
TKM2				⇑S	**Sn**	**11 49 43.7**	**-5.6**
	10.0nm,0.9s						
SMLA	**Simla**	**7.41**	**138**	*e*P	**Pn**	**11 48 35.4**	**-0.2**
SMLA				*e*S	**Sn**	**11 49 54.2**	**-5.3**
GEYT	**Alibeck**	**10.60**	**280**	P	**Pn**	**11 49 15.1**	**-2.0**
	1.3nm,0.3s,baz=107,slow=9.9,SNR=6.5						
GEYT				S	**Sn**	**11 51 10.1**	**-5.2**
	1.0nm,0.3s,baz=101,slow=15,SNR=3.9						
MKAR	**Makanchi Array**	**12.92**	**36**	P	**P**	**11 49 48.5**	**-1.2**
	0.2nm,0.3s,baz=226,slow=9.3,SNR=3.6						
MKAR				S	**S**	**11 52 07.6**	**-2.8**
	baz=294,slow=24,SNR=3.5						
PYUN	**Piuthan**	**13.07**	**128**	*e*P	**Pn**	**11 49 48.1**	**-0.6**
	12nm,0.2s						
KOLN	**Koldanda**	**13.69**	**127**	*e*P	**Pn**	**11 49 56.1**	**-0.3**
	13nm,0.3s						
GKN	**Gorkha**	**14.21**	**124**	*e*P	**P**	**11 50 03.9**	**-0.5**
	20nm,0.3s						
KKN	**Kakani**	**14.78**	**123**	*e*P	**P**	**11 50 11.3**	**+0.5**
	11nm,0.2s						
PKIN	**Phulchoki**	**15.00**	**124**	*e*P	**P**	**11 50 14.8**	**+1.6**
	14nm,0.3s						
BVAR	**Borovoye Array**	**16.28**	**358**	P	**Pn**	**11 50 30.5**	**+3.0**
	0.5nm,0.3s,baz=165,slow=13,SNR=3.6						
AKTO	**Aktyubinsk**	**16.70**	**329**	P	**Pn**	**11 50 34.5**	**+1.9**
	1.6nm,0.3s,baz=130,slow=10,SNR=20						
AKTO				S	**S**	**11 53 36.4**	**+0.8**
	0.3nm,0.3s,baz=158,slow=23,SNR=4.7						
ZALV	**Zalesovo Beam**	**19.56**	**24**	P	**Pn**	**11 51 05.0**	**-1.2**
	0.5nm,0.3s,baz=225,slow=13,SNR=3.1						
FINES	**FINESS Array B**	**37.43**	**326**	P	**P**	**11 53 45.9**	**+2.3**
	1.4nm,0.7s,baz=124,slow=10,SNR=3.3						
ARCES	**ARCESS Array B**	**41.01**	**337**	P	**P**	**11 54 16.7**	**+3.5**
	1.8nm,0.9s,baz=120,slow=8.9,SNR=5.9						
TORD	**Torodi Ar. Bea**	**66.00**	**269**	P	**P**	**11 57 15.6**	**+0.2**
	0.7nm,0.5s,baz=46,slow=6.2,SNR=7.8						
INK	**Inuvik**	**73.60**	**9**	P	**P**	**11 58 04.5**	**+3.6**
	0.3nm,0.6s,baz=5.7,slow=3.6,SNR=3.5						
YKA	**Yellowknife Ar**	**80.97**	**3**	P	**P**	**11 58 44.4**	**+2.5**
	0.2nm,0.4s,baz=352,slow=5.4,SNR=8.1						
WRA	**Warramunga Arr**	**81.89**	**122**	P	**P**	**11 58 47.7**	**+0.4**
	0.8nm,0.8s,baz=327,slow=5.1,SNR=5.6						

*NIED **13** 12:19:00,35.°40N×141.°10E,h11km,Mw4.1 Best double couple: M0:1.46000×10^15 NP1:φ=328.00000°,δ=43.00000°, λ=-70.00000°. NP2:φ=121.00000°,δ=50.00000°, λ=-108.00000°.*
*IDC **13** 12:19:09.4±0.6,35.°36N×140.°92E,h0km,mb4.0/16, mb1 4.2/19,mb1mx4.1/48,mbtmp4.0/19,ML3.7/3,MS3.3/11, Ms1 3.3/11,ms1mx3.0/43,Error ellipse: s-maj=19.7km s-min=14.2km az=109.0*
*ISCJB **13** 12:19:11.8±0.7,35.°41N±0.°03×141.°03E±0.°05,h21km±5km, mb4.2/36,MS3.3/10,Error ellipse: s-maj=7.6km s-min=4.9km az=11.0*
*JMA **13** 12:19:11.7±0.1,35.°44N×141.°04E,h24km±1km,M4.3 JMA Felt I J1.*
*NEIC **13** 12:19:15.2±0.4,35.°38N×140.°96E,h35km,mb4.3/14,Error ellipse: s-maj=10.1km s-min=8.2km az=152.0*
NEIC Recorded [1 JMA] in Chiba.

ISC 13 12:19:12.2±1.2,35.°41N±0.°03×140.°99E±0.°05,h14km±7km, n77,σ1§63/72,mb4.2/36,MS3.3/10,5C,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.31**	**341**	⇑P	**Pg**	**12 19 18.6**	**-0.1**
CHOJ				S	**Sg**	**12 19 23.5**	**+0.3**
KTR	**Katsuura**	**0.61**	**245**	P	**Pg**	**12 19 24.3**	**+0.2**
KTR				*e*S	**Sb**	**12 19 33.4**	**+0.5**
JCN	**Nagara**	**0.64**	**271**	⇑P	**Pg**	**12 19 25.3**	**+0.5**
JCN				S	**Sb**	**12 19 34.7**	**+0.8**
BSO4	**Boso 4**	**0.67**	**232**	⇑P	**Pg**	**12 19 26.2**	**+0.9**
BSO3	**Boso 3**	**0.72**	**213**	⇑P	**Pb**	**12 19 26.4**	**+0.1**
BSO1	**Boso 1**	**0.75**	**181**	⇑P	**Pb**	**12 19 26.0**	**-0.7**
BSO1				X		12 19 36.4	
JYT	**Yasato**	**1.04**	**322**	P	**Pb**	**12 19 30.3**	**-1.7**
JYT				S	**Sb**	**12 19 44.4**	**-1.1**
JHO	**Hitachi**	**1.25**	**344**	P	**Pn**	**12 19 33.2**	**-2.0**
JHO				S	**Sb**	**12 19 49.6**	**-1.9**
JHJ2	**Mitsune**	**2.48**	**203**	*e*Pn	**Pn**	**12 19 50.1**	**-2.0**
JHJ2				*e*Sn	**Sn**	**12 20 18.8**	**-3.5**
JHJ	**Hachijo jima 2**	**2.49**	**204**	Pn	**Pn**	**12 19 50.1**	**-2.1**
	25nm,0.3s,baz=349,slow=20,SNR=31						
JHJ				Sn	**Sn**	**12 20 18.2**	**-4.1**
	65nm,0.3s,baz=62,slow=18,SNR=3.5						
MJAR	**Matsushiro Arr**	**2.52**	**298**	Pn	**Pn**	**12 19 52.9**	**+0.2**
	8.4nm,0.3s,baz=103,slow=7.1,SNR=47						
MJAR				LR	LR	12 20 20.5	
	comp=Z,43nm,20.0s,baz=110,slow=29						
MAJO	**Matsushiro**	**2.52**	**298**	*e*Pn	**Pb**	**12 19 55.0**	**-2.3**
MAT	**Matsushiro**	**2.52**	**298**	P	**Pn**	**12 19 53.3**	**+0.6**
MAT				*e*S	**Sb**	**12 20 27.9**	**-0.3**
MJB9	**Matsu-Tunnel**	**2.53**	**298**	*e*Pn	**Pb**	**12 19 55.2**	**-2.1**
INU	**Inuyama**	**3.24**	**270**	*e*Pn	**Pn**	**12 20 05.6**	**+3.0**
ERM	**Erimo**	**6.81**	**14**	*e*Pn	**Pn**	**12 20 50.8**	**-0.8**
ERM				*e*Sn	**Sn**	**12 22 14.9**	**+6.0**
JNU	**Nakatsue**	**8.67**	**258**	LR	LR	12 24 43.9	
	comp=Z,132nm,18.0s,baz=117,slow=39						
ASAJ	**Asahikawa**	**8.79**	**8**	Pn	**Pn**	**12 21 16.4**	**-2.3**
	1.8nm,0.3s,baz=225,slow=6.7,SNR=10.0						
KSRS	**Korea Array**	**10.72**	**285**	LR	LR	12 26 10.9	
	comp=Z,133nm,18.5s,baz=92,slow=39						
USRK	**Ussuriysk Ar.**	**11.17**	**325**	LR	LR	12 26 15.2	
	comp=Z,87nm,18.2s,baz=143,slow=38						
MDJ	**Mudanjiang**	**12.67**	**320**	P	**Pn**	**12 22 14.4**	**+2.5**
MDJ				pmax	pmax		
	comp=Z,11nm,1.9s						
MDJ				pmax	pmax		
	comp=Z,280nm,4.7s						
PETK	**Petropavlovsk-**	**21.27**	**29**	P	**P**	**12 23 58.3**	**+0.4**
	comp=Z,5.5nm,0.9s,baz=205,slow=6.4,SNR=3.4						
PETK				LR	LR	12 31 41.7	
	comp=Z,39nm,21.6s,baz=232,slow=35						
HHC	**Hu-ho-hao-te**	**23.71**	**292**	*e*P	**P**	**12 24 23.8**	**+0.1**
HHC				pmax	pmax		
	comp=Z,30nm,0.8s						
HHC				pmax	pmax		
	comp=Z,120nm,4.8s						
MA2	**Magadan**	**25.02**	**12**	P	**P**	**12 24 35.5**	**+0.2**
	comp=Z,9.7nm,0.8s,baz=214,slow=5.2,SNR=5.6						
MA2				LR	LR	12 36 09.0	
	comp=Z,55nm,18.3s,baz=152,slow=41						
H11N2	**WAKE ISLAND Hy**	**27.66**	**118**	T	T	12 53 53.4	
	baz=310,slow=76,SNR=907						
H11N1	**WAKE ISLAND Hy**	**27.66**	**118**	T	T	12 53 55.1	
	baz=310,slow=76,SNR=987						
H11N3	**WAKE ISLAND Hy**	**27.68**	**118**	T	T	12 53 54.7	
	baz=310,slow=76,SNR=838						
H11S3	**WAKE ISLAND Hy**	**28.31**	**120**	T	T	12 54 44.7	
	baz=312,slow=76,SNR=2688						
H11S1	**WAKE ISLAND Hy**	**28.31**	**120**	T	T	12 54 41.6	
	baz=312,slow=76,SNR=3985						
H11S2	**WAKE ISLAND Hy**	**28.32**	**120**	T	T	12 54 42.6	
	baz=312,slow=76,SNR=2625						
SONM	**Songino Array**	**28.44**	**307**	P	**P**	**12 25 06.0**	**-0.6**
	comp=Z,0.6nm,0.7s,baz=100,slow=9.3,SNR=4.6						
SEY	**Seymchan**	**28.45**	**11**	P	**P**	**12 25 06.5**	**+0.3**
	comp=Z,2.6nm,0.8s,baz=203,slow=8.1,SNR=4.8						
LZH	**Lanzhou**	**30.04**	**282**	*e*P	**P**	**12 25 21.5**	**+0.6**
LZH				pP	sP	12 25 35.6	+8.5
LZH				sP	pP	12 25 41.8	+16
LZH				*e*PP	**PnPn**	**12 26 20.4**	**+2.8**
LZH				pmax	pmax		
	comp=Z,18nm,1.0s						
LZH				pmax	pmax		
	comp=Z,45nm,5.2s						
LZH				LR	LR		
	comp=N,220nm,12.8s						
LZH				LR	LR		
	comp=E,200nm,13.1s						
LZH				LR	LR		
	comp=Z,280nm,15.7s						
TLY	**Talaya**	**31.16**	**313**	LR	LR	12 38 44.0	
	comp=Z,23nm,19.0s,baz=114,slow=38						
CD2	**Chengdu**	**31.36**	**273**	P	**P**	**12 25 30.1**	**-2.4**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
KMI	**Kunming**	**34.40**	**263**	P	**P**	**12 26 02.3**	**+3.0**
KMI				pmax	pmax		
	comp=Z,6.0nm,1.1s						
KMI				LR	LR		
	comp=Z,34nm,19.6s						
TIXI	**Tiksi**	**36.86**	**354**	*e*P	**P**	**12 26 19.9**	**+0.3**
	comp=Z,3.4nm,0.9s						
CMAR	**Chiang Mai Arr**	**40.77**	**257**	LR	LR	12 46 28.3	
	comp=Z,57nm,18.2s,baz=236,slow=40						
WMQ	**Urumqi**	**41.29**	**298**	*e*P	**P**	**12 26 57.4**	**+0.3**
WMQ				pmax	pmax		
	comp=Z,4.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,41nm,5.0s						
NRIK	**Noril'sk**	**44.60**	**336**	LR	LR	12 49 14.9	
	comp=Z,30nm,18.7s,baz=46,slow=40						
KURK	**Kurchatov**	**46.68**	**309**	P	**P**	**12 27 39.7**	**-0.5**
KURBB	**Kurchatov Arra**	**46.74**	**309**	P	**P**	**12 27 39.7**	**-1.0**
	comp=Z,1.2nm,0.5s,baz=85,slow=7.9,SNR=8.6						
KDAK	**Kodiak Island**	**48.55**	**41**	P	P	12 28 09.8	+15
	comp=Z,5.9nm,0.8s,baz=318,slow=5.0,SNR=6.2						
MLY	**Manley**	**49.41**	**31**	*e*P	**P**	**12 28 02.8**	**+1.6**
	comp=Z,3.0nm,0.8s						
TRF	**Thorofare Moun**	**49.58**	**33**	*e*P	**P**	**12 28 04.1**	**+1.6**
	comp=Z,8.4nm,1.1s						
TKM2	**Tokmak 2**	**50.12**	**300**	*e*P	**P**	**12 28 08.2**	**+1.1**
	comp=Z,2.8nm,0.6s						
MDM	**Murphy Dome**	**50.48**	**31**	*e*P	**P**	**12 28 10.3**	**+1.1**
	comp=Z,6.5nm,0.8s						
ILAR	**Eielson Array**	**51.05**	**32**	P	**P**	**12 28 13.1**	**-0.5**
	comp=Z,2.7nm,0.8s,baz=268,slow=6.3,SNR=32						
ILB	**Eielson Array**	**51.05**	**32**	*e*P	**P**	**12 28 13.7**	**+0.1**
IL1	**Eielson Array**	**51.06**	**32**	*e*P	**P**	**12 28 13.2**	**-0.4**
BVAR	**Borovoye Array**	**51.42**	**313**	P	**P**	**12 28 15.0**	**-1.4**
	comp=Z,0.6nm,0.5s,baz=69,slow=13,SNR=3.9						
ZRNK	**Zerenda**	**52.26**	**313**	*e*P	**P**	**12 28 22.3**	**-0.5**
	comp=Z,4.2nm,1.1s						
LEM	**Lembang**	**52.46**	**224**	LR	LR	12 50 40.9	
	comp=Z,53nm,18.5s,baz=158,slow=36						
WRAB	**Tennant Creek**	**55.39**	**188**	*e*P	**P**	**12 28 44.7**	**-1.3**
	comp=Z,4.7nm,0.7s						
WRA	**Warramunga Arr**	**55.40**	**188**	P	**P**	**12 28 44.4**	**-1.6**
	comp=Z,2.3nm,0.5s,baz=2.8,slow=7.7,SNR=30						
INK	**Inuvik**	**55.99**	**27**	P	**P**	**12 28 50.0**	**+0.4**
	comp=Z,1.6nm,0.7s,baz=303,slow=7.2,SNR=14						
ABKAR	**Akbulak array**	**58.73**	**311**	*e*P	**P**	**12 29 08.4**	**-0.9**
	comp=Z,0.8nm,0.5s						
ASAR	**Alice Springs**	**59.13**	**188**	P	**P**	**12 29 11.8**	**-0.5**
	comp=Z,0.5nm,0.4s,baz=4.5,slow=7.6,SNR=11						
YKA	**Yellowknife Ar**	**65.39**	**30**	P	**P**	**12 29 53.7**	**-0.1**
	comp=Z,1.1nm,0.8s,baz=298,slow=6.5,SNR=17						
YKB5	**Yellowknife Ar**	**65.39**	**30**	*e*P	**P**	**12 29 53.3**	**-0.5**
NB2	**NORSAR Subarra**	**75.55**	**337**	P	**P**	**12 30 55.2**	**-0.8**
	comp=Z,2.2nm,0.8s,baz=41,slow=5.9						
NOA	**NORSAR Array B**	**75.55**	**337**	P	**P**	**12 30 55.4**	**-0.6**
	comp=Z,1.8nm,0.8s,baz=40,slow=5.8,SNR=5.9						
NOA				LR	LR	13 06 37.1	
	comp=Z,18nm,21.9s,baz=105,slow=38						
LRM	**Limekiln Ridge**	**75.56**	**44**	*e*P	**P**	**12 30 57.4**	**+0.8**
NV01	**Mina Array Sit**	**76.24**	**53**	*e*P	**P**	**12 31 01.7**	**+1.1**
NVAR	**Mina Array Bea**	**76.24**	**53**	P	**P**	**12 31 01.6**	**+1.1**
	comp=Z,1.2nm,0.8s,baz=272,slow=5.6,SNR=8.9						
H17A	**Grant Village**	**77.47**	**44**	*e*P	**P**	**12 31 10.2**	**+2.8**
	comp=Z,2.6nm,0.8s						
DUG	**Dugway, Tooele**	**78.69**	**49**	*e*P	**P**	**12 31 15.3**	**+1.2**
	comp=Z,0.8nm,0.4s						
PDAR	**Pinedale Array**	**79.06**	**45**	P	**P**	**12 31 15.2**	**-1.1**
	comp=Z,0.5nm,0.6s,baz=268,slow=2.4,SNR=4.8						
BRTR	**Keskin Array B**	**79.67**	**312**	P	**P**	**12 31 19.0**	**-0.5**
	comp=Z,0.4nm,0.6s,baz=125,slow=6.5,SNR=3.8						
PFO	**Pinyon Flats O**	**80.23**	**56**	*e*P	**P**	**12 31 23.9**	**+1.2**
	comp=Z,3.9nm,1.0s						
SRU	**San Rafael Swe**	**80.75**	**48**	*e*P	**P**	**12 31 26.3**	**+0.9**
	comp=Z,2.5nm,0.7s						
WUAZ	**Wupatki**	**82.44**	**52**	*e*P	**P**	**12 31 35.5**	**+1.1**
	comp=Z,1.2nm,0.6s						
S22A	**4UR Ranch, Cre**	**83.85**	**48**	*e*P	**P**	**12 31 43.6**	**+1.8**
	comp=Z,3.3nm,1.1s						
GERES	**GERESS Array B**	**83.91**	**328**	LR	LR	13 10 18.1	
	comp=Z,39nm,18.6s,baz=15,slow=37						
TX31	**Lajitas Ar. Si**	**91.39**	**52**	*e*P	**P**	**12 32 18.2**	**+0.1**
TXAR	**Lajitas Array**	**91.39**	**52**	P	**P**	**12 32 17.6**	**-0.5**
	comp=Z,0.1nm,0.3s,baz=225,slow=0.4,SNR=6.4						
LPAZ	**La Paz**	**147.79**	**61**	PKPbc	**PKPbc**	**12 38 57.8**	**0.0**
	comp=Z,1.9nm,0.8s,baz=274,slow=5.3,SNR=6.2						

*IDC **13** 12:38:40.0±6.0,36.°44N×71.°66E,h96km±53km,mb3.5/3, mb1 3.4/9,mb1mx3.1/43,mbtmp3.7/9,Error ellipse: s-maj=59.5km s-min=38.9km az=128.0*
*ISCJB **13** 12:38:44.6±1.3,36.°91N±0.°09×71.°43E±0.°09,h114km, mb3.7/3,Error ellipse: s-maj=13.1km s-min=8.8km az=155.4*
*NNC **13** 12:38:46.4±2.6,37.°00N×71.°25E,h137km±39km,mb2.8, mpv3.6,Error ellipse: s-maj=25.3km s-min=14.8km az=146.0*

ISC 13 12:38:44.2±1.6,36.°8N±0.°1×71.°42E±0.°10,h114km,n16, σ1§17/22,mb3.6/3,6C-6D,Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**2.88**	**315**	⇑P	**Pn**	**12 39 28.3**	**-0.5**
	3.9nm,0.3s						
DZET				⇓S	**Sn**	**12 40 01.8**	**-1.4**
	88nm,0.5s						
MNAS	**Manas**	**5.76**	**8**	⇓P	**Pn**	**12 40 07.6**	**+0.2**
	4.7nm,0.4s						
MNAS				⇑S	**Sn**	**12 41 11.6**	**-0.6**
	15nm,0.6s						
AAK	**Ala-Archa**	**6.31**	**21**	P	**Pn**	**12 40 15.9**	**+1.1**
	1.9nm,0.3s,baz=184,slow=7.7,SNR=12						
AAK				S	**Sn**	**12 41 25.0**	**-0.5**
	0.7nm,0.3s,baz=324,slow=23,SNR=5.7						
AAK	**Ala-Archa**	**6.31**	**21**	⇑P	**Pn**	**12 40 15.7**	**+0.9**
	2.7nm,0.5s						
AAK				⇑S	**Sn**	**12 41 23.9

NOA	**NORSAR Array B**	**44.36**	**323**	P		**P**	**12 46 44.0**	**+1.2**
	comp=Z,0.9nm,0.6s,baz=96,slow=7.9,SNR=4.7							
TORD	**Torodi Ar. Bea**	**66.06**	**269**	P		**P**	**12 49 17.2**	**-1.9**
	comp=Z,0.2nm,0.5s,baz=47,slow=5.2,SNR=3.3							

TRN ***13*** *12:47:36.0, 18°.81N×64°.48W, h57km*
ISCJB ***13*** *12:47:36.3±1.4, 18°.9N±0°.1×64°.5W±0°.1, h61km±16km,*
Error ellipse: s-maj=27.6km s-min=10.1km az=150.5
NEIC ***13*** *12:47:37.8, 18°.86N×64°.47W, h58km, MD3.6(RSPR),*
After RSPR.
RSPR ***13*** *12:47:37.8, 18°.86N×64°.47W, h58km±3km, MD3.6/11*
ISC 13 12:47:38.5±3.6, 18°.9N±0°.1×64°.5W±0°.2, h48km±37km, n36,
σ0°61/57, 25C-10D, Virgin Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ABVI	**Anegada Island**	**0.23**	**126**	⇓*eP*	**Pn**	**12 47 46.4**	**-0.5**
ABVI				*eS*	**Sn**	**12 47 53.3**	**+0.5**
ABV	**Anegada**	**0.23**	**126**	⇓*eP*	**Pn**	**12 47 46.4**	**-0.5**
ABV	**Anegada**	**0.23**	**126**	⇓*eP*	**Pn**	**12 47 46.4**	**-0.5**
ABV				*eS*	**Sn**	**12 47 53.3**	**+0.5**
STVI	**Saint Thomas**	**0.65**	**218**	⇓*eP*	**Pn**	**12 47 51.1**	**-0.5**
STVI	**Saint Thomas**	**0.65**	**218**	⇓*eP*	**Pn**	**12 47 51.2**	**-0.3**
STVI				*eS*	**Sn**	**12 48 01.4**	**+0.5**
STVI	**Saint Thomas**	**0.65**	**218**	⇓*eP*	**Pn**	**12 47 51.1**	**-0.5**
STVI				*eS*	**Sn**	**12 48 01.4**	**+0.5**
STVI	**Saint Thomas**	**0.65**	**218**	⇓*eP*	**Pn**	**12 47 51.2**	**-0.3**
MTP	**Monte Pirata**	**1.24**	**232**	⇑*eP*	**Pn**	**12 47 59.2**	**-0.2**
MTP	**Monte Pirata**	**1.24**	**232**	⇑*eP*	**Pn**	**12 47 59.2**	**-0.2**
MTP				*eS*	**Sn**	**12 48 15.4**	**+0.5**
MTP	**Monte Pirata**	**1.24**	**232**	⇑*eP*	**Pn**	**12 47 59.2**	**-0.2**
MTP				*eS*	**Sn**	**12 48 15.4**	**+0.5**
CBYP	**Canovanas**	**1.39**	**245**	⇑*eP*	**Pn**	**12 48 00.5**	**-1.0**
CBYP	**Canovanas**	**1.39**	**245**	⇑*eP*	**Pn**	**12 48 00.5**	**-1.0**
CBYP				*eS*	**Sn**	**12 48 18.7**	**-0.1**
CBYP	**Canovanas**	**1.39**	**245**	⇑*eP*	**Pn**	**12 48 00.5**	**-1.0**
CBYP				*eS*	**Sn**	**12 48 18.7**	**-0.1**
HUMP	**Col San Antoni**	**1.45**	**240**	⇑*eP*	**Pn**	**12 48 01.9**	**-0.3**
HUMP	**Col San Antoni**	**1.45**	**240**	⇑*eP*	**Pn**	**12 48 01.9**	**-0.3**
HUMP				*eS*	**Sn**	**12 48 19.6**	**-0.4**
HUMP	**Col San Antoni**	**1.45**	**240**	⇑*eP*	**Pn**	**12 48 01.9**	**-0.3**
HUMP				*eS*	**Sn**	**12 48 19.6**	**-0.4**
SJG	**San Juan**	**1.71**	**244**	⇑*eP*	**Pn**	**12 48 05.2**	**-0.7**
SJG				*eS*	**Sn**	**12 48 26.6**	**0.0**
SJG	**San Juan**	**1.71**	**244**	⇑*eP*	**Pn**	**12 48 05.2**	**-0.7**
SJG				*eS*	**Sn**	**12 48 26.6**	**0.0**
SJG	**San Juan**	**1.71**	**244**	⇑*eP*	**Pn**	**12 48 05.2**	**-0.7**
CELP	**Cerrillos**	**2.10**	**248**	⇑*eP*	**Pn**	**12 48 10.7**	**-0.5**
CELP				*eS*	**Sn**	**12 48 37.0**	**+0.8**
CELP	**Cerrillos**	**2.10**	**248**	⇑*eP*	**Pn**	**12 48 10.7**	**-0.5**
CELP				*eS*	**Sn**	**12 48 37.0**	**+0.8**
CELP	**Cerrillos**	**2.10**	**248**	⇑*eP*	**Pn**	**12 48 10.7**	**-0.5**
ICMP	**Isla Caja de M**	**2.13**	**243**	⇑*eP*	**Pn**	**12 48 11.9**	**+0.3**
ICMP	**Isla Caja de M**	**2.13**	**243**	⇑*eP*	**Pn**	**12 48 11.9**	**+0.3**
OBIP	**Obispado Ponce**	**2.14**	**248**	⇑*eP*	**Pn**	**12 48 11.1**	**-0.6**
OBIP	**Obispado Ponce**	**2.14**	**248**	⇑*eP*	**Pn**	**12 48 11.1**	**-0.6**
OBIP				*eS*	**Sn**	**12 48 37.3**	**+0.3**
OBIP	**Obispado Ponce**	**2.14**	**248**	⇑*eP*	**Pn**	**12 48 11.1**	**-0.6**
OBIP				*eS*	**Sn**	**12 48 37.3**	**+0.3**
AOPR	**Arecibo Observ**	**2.17**	**257**	⇑*eP*	**Pn**	**12 48 11.3**	**-1.0**
AOPR	**Arecibo Observ**	**2.17**	**257**	⇑*eP*	**Pn**	**12 48 11.3**	**-1.0**
AOPR				*eS*	**Sn**	**12 48 38.8**	**+0.8**
AOPR	**Arecibo Observ**	**2.17**	**257**	⇑*eP*	**Pn**	**12 48 11.3**	**-1.0**
AOPR				*eS*	**Sn**	**12 48 38.8**	**+0.8**
CRPR	**Cabo Rojo, PR**	**2.60**	**251**	⇓*eP*	**Pn**	**12 48 17.6**	**-0.4**
CRPR	**Cabo Rojo, PR**	**2.60**	**251**	⇓*eP*	**Pn**	**12 48 17.6**	**-0.4**
CRPR				*eS*	**Sn**	**12 48 48.6**	**+0.2**
CRPR	**Cabo Rojo, PR**	**2.60**	**251**	⇓*eP*	**Pn**	**12 48 17.6**	**-0.4**
CRPR				*eS*	**Sn**	**12 48 48.6**	**+0.2**
DR12	**Loma Pena Alta**	**4.60**	**270**	⇑*eP*	**Pn**	**12 48 45.2**	**-0.3**
DR12	**Loma Pena Alta**	**4.60**	**270**	⇑*eP*	**Pn**	**12 48 45.2**	**-0.3**
SDDR	**Presa de Saban**	**6.40**	**272**	*e*Pn	**Pn**	**12 49 10.1**	**-0.2**
	8.1nm,0.6s						
SDDR				*e*Sn	**Sn**	**12 50 23.9**	**+1.8**

ISCJB ***13*** *12:49:14.6±0.6, 30°.79N±0°.04×105°.35W±0°.03, h10km,*
Error ellipse: s-maj=6.2km s-min=3.8km az=168.2
NEIC ***13*** *12:49:16.3±1.2, 30°.76N×105°.45W, h10km, ML2.6, Error*
ellipse: s-maj=19.3km s-min=11.0km az=171.0
MEX ***13*** *12:49:18.5±0.5, 30°.83N×105°.30W, h14km±35km, MD3.9*
ISC 13 12:49:16.4±1.1, 30°.77N±0°.05×105°.43W±0°.03, h10km, n11,
σ1°38/28, Texas-Mexico border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CGIG		**2.24**	**260**	*e*P	**Pn**	**12 49 53.9**	**+0.3**
CGIG				*e*S	**Sn**	**12 50 21.2**	**-0.2**
CGIG		**2.24**	**260**	*e*P	**Pn**	**12 49 53.9**	**+0.3**
CGIG				*e*S	**Sn**	**12 50 21.2**	**-0.2**
121A	**Cookes Peak, D**	**2.67**	**312**	*e*P	**Pn**	**12 49 58.8**	**-0.8**
121A				*e*S	**Sn**	**12 50 31.0**	**-1.1**
121A	**Cookes Peak, D**	**2.67**	**312**	*e*Pn	**Pn**	**12 49 59.2**	**-0.4**
121A				*e*Sn	**Sb**	**12 50 34.6**	**-2.7**
319A	**Douglas**	**3.36**	**281**	*e*P	**Pn**	**12 50 09.9**	**+0.8**
319A				*e*S	**Sn**	**12 50 49.3**	**+0.2**
MSTX	**Muleshoe**	**3.90**	**34**	Pn	**Pn**	**12 50 17.9**	**+1.4**
MSTX				*e*Pg	**Pg**	**12 50 30.9**	**-0.3**
MSTX				*e*Sn	**Sn**	**12 51 02.1**	**-0.3**
ANMO	**Albuquerque**	**4.25**	**349**	Pn	**Pn**	**12 50 23.3**	**+1.9**
ANMO				*e*Pg	**Pg**	**12 50 39.0**	**+1.1**
ANMO				*e*Sn	**Sn**	**12 51 12.0**	**+0.8**
ANMO				*e*Sg	**Sg**	**12 51 35.1**	**+2.2**
TUC	**Tucson**	**4.82**	**290**	*e*Pn	**Pn**	**12 50 27.9**	**-1.3**
TUC				*e*Sn	**Sn**	**12 51 28.6**	**+3.5**
JCT	**Junction City**	**4.86**	**92**	*e*Pn	**Pn**	**12 50 29.4**	**-0.2**
JCT				*e*Pg	**Pg**	**12 50 49.4**	**-0.1**
JCT				*e*Sn	**Sn**	**12 51 24.6**	**-1.4**
AMTX	**Amarillo**	**5.17**	**37**	*e*Pn	**Pn**	**12 50 33.5**	**-0.4**
	19nm,0.4s						
AMTX				*e*Pg	**Pg**	**12 50 54.7**	**-0.8**
AMTX				*e*Sn	**Sn**	**12 51 33.8**	**0.0**
AMTX				*e*Sg	**Sg**	**12 52 04.3**	**+1.8**
SDCO	**Great Sand Dun**	**6.96**	**360**	*e*Pn	**Pn**	**12 50 56.8**	**-1.8**
	1.6nm,0.9s						
SDCO				*e*Pg	**Pg**	**12 51 28.1**	**-1.5**

ISCJB ***13*** *12:52:12.6±0.4, 39°.14N±0°.01×29°.07E±0°.02, h2km±3km,*
Error ellipse: s-maj=2.5km s-min=2.2km az=35.1
DDA ***13*** *12:52:12.8, 39°.11N×29°.06E, h7km, Ml3.7*
ISK ***13*** *12:52:12.6, 39°.14N×29°.06E, h6km, ML3.5*
THE ***13*** *12:52:12.9, 39°.10N×29°.11E, h2km±2km, Error ellipse:*
s-maj=2.4km s-min=1.0km az=273.0
CSEM ***13*** *12:52:12.9±0.1, 39°.14N×29°.06E, h2km, ML3.7, Error*
ellipse: s-maj=1.9km s-min=1.7km az=101.0
ISC 13 12:52:13.2±0.9, 39°.14N±0°.01×29°.07E±0°.01, h9km±8km,
n203, σ0°90/255, 4C-4D, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.29**	**251**	P	**Pg**	**12 52 19.2**	**+0.1**
DEMI				S	**Sg**	**12 52 23.2**	**+0.2**
DEMI	**Demirci**	**0.29**	**251**	*i* P	**Pg**	**12 52 19.2**	**+0.1**
DEMI				*i* S	**Sg**	**12 52 23.2**	**+0.2**
GDZ	**Gediz**	**0.32**	**99**	P	**Pg**	**12 52 19.8**	**+0.1**
GDZ				S	**Sg**	**12 52 24.3**	**+0.3**
GDZ	**Gediz**	**0.32**	**99**	*i* P	**Pg**	**12 52 19.8**	**+0.1**
GDZ				*i* S	**Sg**	**12 52 24.3**	**+0.3**
TVSB	**Tavsanli**	**0.43**	**44**	*e*PG	**Pg**	**12 52 21.5**	**-0.3**
TVSB				*e*SG	**Sg**	**12 52 27.3**	**-0.2**
TVSB	**Tavsanli**	**0.43**	**44**	*e*Pg	**Pg**	**12 52 21.5**	**-0.3**
TVSB				*e*Sg	**Sg**	**12 52 27.3**	**-0.2**
DURS	**Dursunbey**	**0.65**	**315**	P	**Pg**	**12 52 25.6**	**-0.3**
DURS	**Dursunbey**	**0.65**	**315**	*i* P	**Pg**	**12 52 25.6**	**-0.3**
DURS				*i* S	**Sb**	**12 52 37.7**	**+1.5**
KULA	**Kula-Manisa**	**0.70**	**207**	*e*PG	**Pg**	**12 52 26.4**	**-0.3**
KULA	**Kula-Manisa**	**0.70**	**207**	P	**Pg**	**12 52 26.3**	**-0.5**
KULA				S	**Sg**	**12 52 35.9**	**0.0**
KULA	**Kula-Manisa**	**0.70**	**207**	*e*Pg	**Pg**	**12 52 26.4**	**-0.3**
KULA				S	**Sg**	**12 52 35.9**	**0.0**
MANT	**Manisa**	**0.76**	**212**	P	**Pg**	**12 52 27.5**	**-0.4**
MANT				S	**Sg**	**12 52 36.8**	**-1.1**
MANT	**Manisa**	**0.76**	**212**	*i* P	**Pg**	**12 52 27.5**	**-0.4**
MANT				*i* S	**Sg**	**12 52 36.8**	**-1.1**
KHAL	**Karahalli**	**0.83**	**157**	P	**Pg**	**12 52 29.1**	**-0.2**
KHAL				S	**Sg**	**12 52 39.0**	**-1.2**
KHAL	**Karahalli**	**0.83**	**157**	*i* P	**Pg**	**12 52 29.1**	**-0.2**
KHAL				*i* S	**Sg**	**12 52 39.0**	**-1.2**
KHL	**Karahalli**	**0.89**	**156**	*e*PG	**Pg**	**12 52 30.4**	**+0.1**
KHL	**Karahalli**	**0.89**	**156**	*e*Pg	**Pg**	**12 52 30.4**	**+0.1**
ORLT	**Orhaneli**	**0.92**	**352**	*e*PG	**Pg**	**12 52 30.7**	**-0.2**
ORLT	**Orhaneli**	**0.92**	**352**	*e*Pg	**Pg**	**12 52 30.7**	**-0.2**
ULDT	**Uludag**	**1.00**	**3**	P	**Pg**	**12 52 32.0**	**-0.6**
ULDT				S	**Sg**	**12 52 45.2**	**-0.5**
ULDT	**Uludag**	**1.00**	**3**	*i* P	**Pg**	**12 52 32.0**	**-0.6**
ULDT				*i* S	**Sg**	**12 52 45.2**	**-0.5**
AKHS	**Akhisar**	**1.01**	**256**	P	**Pg**	**12 52 32.6**	**-0.1**
AKHS				S	**Sg**	**12 52 46.0**	**+0.2**
AKHS	**Akhisar**	**1.01**	**256**	*i* P	**Pg**	**12 52 32.6**	**-0.1**
AKHS				*i* S	**Sg**	**12 52 46.0**	**+0.2**
AKS	**Akhisar**	**1.01**	**256**	*e*PG	**Pg**	**12 52 32.6**	**-0.1**
AKS	**Akhisar**	**1.01**	**256**	*e*Pg	**Pg**	**12 52 32.6**	**-0.1**
BALB	**Balikesir**	**1.05**	**299**	*e*PG	**Pb**	**12 52 33.5**	**-0.1**
BALB	**Balikesir**	**1.05**	**299**	*e*Pg	**Pb**	**12 52 33.5**	**-0.1**
IGD	**Bursa**	**1.13**	**5**	*i* P	**Pg**	**12 52 33.3**	**-1.7**
IGD				*i* S	**Sb**	**12 52 49.7**	**0.0**
CAVI	**Cavuskoy**	**1.22**	**29**	*e*PN	**Pb**	**12 52 35.8**	**-0.7**
CAVI	**Cavuskoy**	**1.22**	**29**	*e*Pn	**Pb**	**12 52 35.8**	**-0.7**
IZI	**Iznik**	**1.24**	**14**	*e*PN	**Pb**	**12 52 36.9**	**+0.1**
IZI	**Iznik**	**1.24**	**14**	*e*Pn	**Pb**	**12 52 36.9**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.24**	**353**	*e*PN	**Pn**	**12 52 36.4**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.24**	**353**	*e*Pn	**Pn**	**12 52 36.4**	**-0.3**
KCTX	**Karacabey (Bur**	**1.25**	**334**	*e*PN	**Pn**	**12 52 36.9**	**-0.1**
KCTX	**Karacabey (Bur**	**1.25**	**334**	*e*Pn	**Pn**	**12 52 36.9**	**-0.1**
BALY	**Balya**	**1.27**	**299**	P	**Pn**	**12 52 37.1**	**-0.2**
BALY				S	**Sb**	**12 52 53.6**	**-0.4**
BALY	**Balya**	**1.27**	**299**	*i* P	**Pn**	**12 52 37.1**	**-0.2**
BALY				*i* S	**Sb**	**12 52 53.6**	**-0.4**
GEMT	**Gemlik**	**1.30**	**4**	*e*PN	**Pb**	**12 52 38.0**	**+0.1**
GEMT	**Gemlik**	**1.30**	**4**	*e*Pn	**Pb**	**12 52 38.0**	**+0.1**
BORA	**Eskisehir**	**1.30**	**55**	P	**Pn**	**12 52 37.5**	**-0.2**
BORA				S	**Sg**	**12 52 55.3**	**+0.2**
BORA	**Eskisehir**	**1.30**	**55**	*i* P	**Pn**	**12 52 37.5**	**-0.2**
BORA				*i* S	**Sg**	**12 52 55.3**	**+0.2**
DENT	**Denizli**	**1.38**	**181**	*e*PN	**Pg**	**12 52 39.9**	**+0.1**
DENT	**Denizli**	**1.38**	**181**	*e*Pn	**Pg**	**12 52 39.9**	**+0.1**
ADVT	**Abdulvahap**	**1.39**	**21**	*e*PN	**Pb**	**12 52 39.6**	**+0.2**
ADVT	**Abdulvahap**	**1.39**	**21**	*e*Pn	**Pb**	**12 52 39.6**	**+0.2**
GONE	**Gonen-Balikesi**	**1.40**	**311**	*e*PN	**Pn**	**12 52 39.0**	**0.0**
GONE	**Gonen-Balikesi**	**1.40**	**311**	*e*Pn	**Pn**	**12 52 39.0**	**0.0**
ESKT	**Eskisehir**	**1.43**	**74**	*i* P	**Pn**	**12 52 39.2**	**-0.3**
ESKT				*i* S	**Sb**	**12 52 56.8**	**-1.8**
SEYT	**Eskypehyr**	**1.43**	**74**	P	**Pn**	**12 52 39.2**	**-0.3**
SEYT				S	**Sb**	**12 52 56.8**	**-1.8**
ARMT	**Armutlu**	**1.44**	**354**	*e*PN	**Pn**	**12 52 39.9**	**+0.4**
ARMT	**Armutlu**	**1.44**	**354**	*e*Pn	**Pn**	**12 52 39.9**	**+0.4**
DNZL	**Cakiroluk**	**1.45**	**181**	P	**Pn**	**12 52 39.6**	**-0.2**
DNZL				S	**Sg**	**12 53 01.0**	**+1.2**
DNZL	**Cakiroluk**	**1.45**	**181**	*i* P	**Pn**	**12 52 39.6**	**-0.2**
DNZL				*i* S	**Sg**	**12 53 01.0**	**+1.2**
GPA	**Golpazari**	**1.50**	**39**	*e*PN	**Pn**	**12 52 40.8**	**+0.5**
GPA	**Golpazari**	**1.50**	**39**	*e*Pn	**Pn**	**12 52 40.8**	**+0.5**
AYDB	**Zeytinkoy-Aydi**	**1.51**	**218**	*e*PN	**Pn**	**12 52 39.8**	**-0.8**
AYDB	**Zeytinkoy-Aydi**	**1.51**	**218**	*e*Pn	**Pn**	**12 52 39.8**	**-0.8**
EDC	**Edincik**	**1.52**	**323**	*e*PN	**Pn**	**12 52 40.5**	**-0.2**
EDC	**Edincik**	**1.52**	**323**	*e*Pn	**Pn**	**12 52 40.5**	**-0.2**
BOLV	**Bolvadin**	**1.52**	**105**	P	**Pn**	**12 52 40.8**	**0.0**
BOLV				S	**Sg**	**12 53 02.9**	**+0.6**
BOLV	**Bolvadin**	**1.52**	**105**	*i* P	**Pn**	**12 52 40.8**	**0.0**
BOLV				*i* S	**Sg**	**12 53 02.9**	**+0.6**
IZM	**Izmir**	**1.59**	**243**	*e*PN	**Pb**	**12 52 42.9**	**0.0**
IZM	**Izmir**	**1.59**	**243**	*e*Pn	**Pb**	**12 52 42.9**	**0.0**
KNL	**Baf¨–kesir**	**1.64**	**314**	*i* P	**Pn**	**12 52 42.5**	**+0.2**
KNL				*i* S	**Sb**	**12 53 04.2**	**-0.4**
DKL	**Dikili**	**1.69**	**268**	*e*PN	**Pn**	**12 52 43.3**	**+0.4**
DKL	**Dikili**	**1.69**	**268**	*e*Pn	**Pn**	**12 52 43.3**	**+0.4**
GULT	**Gulveren**	**1.71**	**40**	*e*PN	**Pn**	**12 52 43.6**	**+0.3**
GULT	**Gulveren**	**1.71**	**40**	*e*Pn	**Pn**	**12 52 43.6**	**+0.3**
BUY	**Buyukada**	**1.71**	**1**	P	**Pb**	**12 52 44.8**	**-0.1**
BUY				S	**Sb**	**12 53 07.2**	**+0.7**
BUY	**Buyukada**	**1.71**	**1**	*i* P	**Pb**	**12 52 44.8**	**-0.1**
BUY				*i* S	**Sb**	**12 53 07.2**	**+0.7**
ISP	**Isparta**	**1.74**	**139**	*e*PN	**Pn**	**12 52 44.0**	**+0.3**
ISP	**Isparta**	**1.74**	**139**	P	**Pn**	**12 52 40.8**	**-2.9**
ISP				S	**Sn**	**12 53 04.5**	**-1.6**
ISP	**Isparta**	**1.74**	**139**	P	**Pn**	**12 52 40.8**	**-2.9**
ISP	**Isparta**	**1.74**	**139**	*e*Pn	**Pn**	**12 52 44.0**	**+0.3**
ISP				S	**Sn**	**12 53 04.5**	**-1.6**
HRT	**Hereke**	**1.74**	**15**	*e*PN	**Pn**	**12 52 44.4**	**+0.6**
HRT	**Hereke**	**1.74**	**15**	*e*Pn	**Pn**	**12 52 44.4**	**+0.6**
AYDN	**Tasoluk**	**1.75**	**213**	P	**Pb**	**12 52 44.8**	**-0.7**
AYDN				S	**Sg**	**12 53 09.2**	**-0.2**
AYDN	**Tasoluk**	**1.75**	**213**	*i* P	**Pb**	**12 52 44.8**	**-0.7**
AYDN				*i* S	**Sg**	**12 53 09.2**	**-0.2**
SPNC	**Sapanca-Adapaz**	**1.82**	**31**	*e*PN	**Pn**	**12 52 45.7**	**+1.0**
SPNC	**Sapanca-Adapaz**	**1.82**	**31**	*e*Pn	**Pn**	**12 52 45.7**	**+1.0**
MRMT	**Marmara Adasi**	**1.85**	**323**	*e*PN	**Pn**	**12 52 45.2**	**0.0**
MRMT	**Marmara Adasi**	**1.85**	**323**	*e*Pn	**Pn**	**12 52 45.2**	**0.0**
KRBG	**Karabiga-Canak**	**1.85**	**313**	*e*PN	**Pn**	**12 52 45.7**	**+0.5**
KRBG	**Karabiga-Canak**	**1.85**	**313**	*e*Pn	**Pn**	**12 52 45.7**	**+0.5**
AYVA	**Ayvalik**	**1.86**	**276**	*i* P	**Pg**	**12 52 48.9**	**0.0**
AYVA				*i* S	**Sg**	**12 53 13.7**	**+0.8**
ISK	**Istanbul-Kandi**	**1.93**	**360**	*e*PN	**Pn**	**12 52 47.0**	**+0.8**
ISK	**Istanbul-Kandi**	**1.93**	**360**	P	**Pn**	**12 52 45.2**	**-1.0**
ISK				S	**Sn**	**12 53 11.0**	**+0.5**
ISK	**Istanbul-Kandi**	**1.93**	**360**	P	**Pn**	**12 52 45.2**	**-1.0**
ISK	**Istanbul-Kandi**	**1.93**	**360**	*e*Pn	**Pn**	**12 52 47.0**	**+0.8**
ISK				S	**Sn**	**12 53 11.0**	**+0.5**
SVRH	**Sivrihisar-ESK**	**1.93**	**80**	*e*PN	**Pn**	**12 52 47.0**	**+0.7**
SVRH	**Sivrihisar-ESK**	**1.93**	**80**	*e*Pn	**Pn**	**12 52 47.0**	**+0.7**
GOLH	**Golhisar**	**1.94**	**168**	P	**Pn**	**12 52 46.9**	**+0.4**
GOLH	**Golhisar**	**1.94**	**168**	*i* P	**Pn**	**12 52 46.9**	**+0.4**
GOLH				*i* S	**Sg**	**12 53 20.1**	**+4.6**
GLHS	**Glhisar (BURDU**	**2.01**	**170**	*e*PN	**Pn**	**12 52 47.9**	**+0.5**
GLHS	**Glhisar (BURDU**	**2.01**	**170**	*e*Pn	**Pn**	**12 52 47.9**	**+0.5**
DGB	**¨zmir**	**2.03**	**238**	*i* P	**Pb**	**12 52 50.6**	**+0.3**
DGB				*i* S	**Sb**	**12 53 16.7**	**+1.1**
GCAM	**G?zelcaml?**	**2.04**	**226**	P	**Pb**	**12 52 49.9**	**-0.5**
GCAM	**G?zelcaml?**	**2.04**	**226**	*i* P	**Pb**	**12 52 49.9**	**-0.5**
BGKT	**Bogazkoy**	**2.05**	**354**	*e*PN	**Pn**	**12 52 48.6**	**+0.7**
BGKT	**Bogazkoy**	**2.05**	**354**	*e*Pn	**Pn**	**12 52 48.6**	**+0.7**
BCK	**Bucak**	**2.06**	**144**	*e*PN	**Pn**	**12 52 48.6**	**+0.5**
BCK	**Bucak**	**2.06**	**144**	*e*Pn	**Pn**	**12 52 48.6**	**+0.5**
SILT	**Sile**	**2.06**	**12**	*e*PN	**Pn**	**12 52 48.9**	**+0.9**
SILT	**Sile**	**2.06**	**12**	*e*Pn	**Pn**	**12 52 48.9**	**+0.9**
BTAS	**Taskesti**	**2.06**	**45**	*i* P	**Pb**	**12 52 51.2**	**+0.3**
BTAS				*i* S	**Sg**	**12 53 19.5**	**-0.1**
URLA	**Izmir**	**2.08**	**249**	P	**Pb**	**12 52 51.0**	**-0.3**
URLA	**Izmir**	**2.08**	**249**	*i* P	**Pb**	**12 52 51.0**	**-0.3**
URLA				*i* S	**Sg**	**12 53 19.2**	**-1.0**
YER	**Yerkesik**	**2.10**	**197**	*e*PN	**Pn**	**12 52 49.2**	**+0.6**
YER	**Yerkesik**	**2.10**	**197**	P	**Pn**	**12 52 48.0**	**-0.6**
YER	**Yerkesik**	**2.10**	**197**	P	**Pn**	**12 52 48.0**	**-0.6**
YER	**Yerkesik**	**2.10**	**197**	*e*Pn	**Pn**	**12 52 49.2**	**+0.6**
MDUB	**Mudurnu**	**2.11**	**50**	*e*PN	**Pn**	**12 52 49.7**	**+0.8**
MDUB	**Mudurnu**	**2.11**	**50**	*e*Pn	**Pn**	**12 52 49.7**	**+0.8**
KLYT	**Kilyos**	**2.11**	**359**	*e*PN	**Pn**	**12 52 50.2**	**+1.4**
KLYT	**Kilyos**	**2.11**	**359**	*e*Pn	**Pn**	**12 52 50.2**	**+1.4**
RKY	**Sarkoy-Tekirda**	**2.12**	**317**	*e*PN	**Pn**	**12 52 48.7**	**-0.3**
RKY	**Sarkoy-Tekirda**	**2.12**	**317**	*e*Pn	**Pn**	**12 52 48.7**	**-0.3**
SART	**Tekirdag**	**2.12**	**317**	*i* P	**Pb**	**12 52 52.7**	**+0.7**
SART				*i* S	**Sg**	**12 53 21.2**	**-0.3**
KAND	**Kocaeli-Kandir**	**2.13**	**23**	P	**Pn**	**12 52 49.0**	**-0.1**
KAND	**Kocaeli-Kandir**	**2.13**	**23**	*i* P	**Pn**	**12 52 49.0**	**-0.1**
CTKS	**Kestanelik-??a**	**2.14**	**349**	*e*PN	**Pn**	**12 52 49.0**	**-0.2**
CTKS	**Kestanelik-??a**	**2.14**	**349**	*e*Pn	**Pn**	**12 52 49.0**	**-0.2**
LPK	**Lapseki**	**2.17**	**305**	*e*PN	**Pn**	**12 52 49.7**	**+0.2**
LPK	**Lapseki**	**2.17**	**305**	*e*Pn	**Pn**	**12 52 49.7**	**+0.2**
PRK	**Paraskevi**	**2.18**	**274**	P	**Pn**	**12 52 49.5**	**-0.1**
PRK	**Paraskevi**	**2.18**	**274**	P	**Pn**	**12 52 49.5**	**-0.1**
SAHE	**Sakarya_HENDEK**	**2.19**	**38**	*i* P	**Pg**	**12 52 54.3**	**-1.0**
SAHE				*i* S	**Sg**	**12 53 23.1**	**-0.6**
TKR	**Tekirdag**	**2.19**	**328**	*e*PN	**Pn**	**12 52 51.2**	**+1.4**
TKR	**Tekirdag**	**2.19**	**328**	*e*Pn	**Pn**	**12 52 51.3**	**+1.4**
ZEY	**¨zmir**	**2.20**	**247**	*i* P	**Pb**	**12 52 53.4**	**+0.2**
ZEY				*i* S	**Sg**	**12 53 23.3**	**-0.6**
KIZT	**Kizilcal**	**2.20**	**96**	*e*PN	**Pn**	**12 52 51.5**	**+1.3**
KIZT	**Kizilcal**	**2.20**	**96**	*e*Pn	**Pn**	**12 52 51.5**	**+1.3**
EZN	**Ezine**	**2.23**	**289**	*e*PN	**Pn**	**12 52 51.2**	**+0.9**
EZN	**Ezine**	**2.23**	**289**	*e*Pn	**Pn**	**12 52 51.3**	**+0.9**
SUTC	**Sutluce-Ispart**	**2.25**	**137**	*e*PN	**Pn**	**12 52 51.1**	**+0.3**
SUTC	**Sutluce-Ispart**	**2.25**	**137**	*e*Pn	**Pn**	**12 52 51.1**	**+0.3**
SMG	**Samos**	**2.26**	**232**	P	**Pn**	**12 52 49.2**	**-1.6**
SMG	**Samos**	**2.26**	**232**	P	**Pn**	**12 52 49.2**	**-1.6**
DALY	**Dalyan (Mu¨la**	**2.34**	**188**	*e*PN	**Pn**	**12 52 52.0**	**+0.1**
DALY	**Dalyan (Mu¨la**	**2.34**	**188**	*e*Pn	**Pn**	**12 52 52.0**	**+0.1**
KORT	**Korkueli**	**2.36**	**154**	P	**Pn**	**12 52 53.2**	**+0.9**
KORT	**Korkueli**	**2.36**	**154**	*i* P	**Pn**	**12 52 53.2**	**+0.9**
KORT				*i* S	**Sg**	**12 53 31.5**	**+2.4**
GELI	**Tayfur-Gelibol**	**2.36**	**303**	*e*PN	**Pn**	**12 52 53.4**	**+1.2**
GELI	**Tayfur-Gelibol**	**2.36**	**303**	*e*Pn	**Pn**	**12 52 53.4**	**+1.2**
CTYL	**Yalikoy Yolu**	**2.41**	**346**	*e*PN	**Pn**	**12 52 53.8**	**+0.9**
CTYL	**Yalikoy Yolu**	**2.41**	**346**	*e*Pn	**Pn**	**12 52 53.8**	**+0.9**
BOZC	**Bozcaada**	**2.44**	**288**	*i* P	**Pn**	**12 52 52.8**	**-0.5**
BOZC				*i* S	**Sb**	**12 53 28.9**	**+1.5**
CHOS	**Chios island**	**2.47**	**253**	*e*PN	**Pn**	**12 52 54.3**	**+0.5**
CHOS	**Chios island**	**2.47**	**253**	P	**Pn**	**12 52 52.4**	**-1.4**
CHOS				S	**Sn**	**12 53 24.4**	**+0.2**
CHOS	**Chios island**	**2.47**	**253**	P	**Pn**	**12 52 52.4**	**-1.4**
CHOS	**Chios island**	**2.

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	2.39	272	P	Pn	13 17 22.7	+1.0
JIO				S	Sn	13 17 51.8	+1.0
JMK	Ichinoseki	2.54	283	P	Pn	13 17 25.1	+1.3
JMK				S	Sn	13 17 56.4	+1.9
JOM	Ohasama	2.63	294	P	Pn	13 17 26.4	+1.3
JOM				eS	Sn	13 17 59.0	+2.1
JMM	Marumori	2.89	260	P	Pn	13 17 29.5	+0.9
JMM				eS	Sn	13 18 03.8	+0.6
JOU	Okura	2.93	270	S	Sn	13 18 06.2	+2.0
JRG	Rokugo	3.09	290	P	Pn	13 17 33.5	+2.2
JRG				S	Sn	13 18 11.2	+3.1
JYK	Kaneyama	3.19	280	P	Pn	13 17 34.9	+2.1
JFT	Otama	3.33	256	P	Pn	13 17 36.5	+1.8
JFT				eS	Sn	13 18 15.7	+1.6

GUC 13 13:20:22.4±0.6, 22°.89S×68°.66W, h130km±8km, ML3.7, 3C-1D, Northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB06	IPOC Station P	0.86	282	⇑iP	Pn	13 20 44.4	+0.1
PB06				iS	Sn	13 21 01.8	+1.0
PB06				IAML		13 21 02.6	
	comp=N,3μm,0.3s						
PB09	IPOC Station P	1.22	333	⇑iP	Pn	13 20 48.4	+0.7
PB09				iS	Sn	13 21 08.1	+1.2
PB09				IAML		13 21 09.2	
	comp=N,2μm,0.6s						
PB07	IPOC Station P	1.63	315	⇓iP	Pn	13 20 53.3	+1.1
PB07				iS	Sn	13 21 16.1	+1.3
PB07				IAML		13 21 17.6	
	comp=N,840nm,0.2s						
PB01	IPOC Station P	2.00	337	⇑iP	Pn	13 20 57.2	+0.7
PB01				iS	Sn	13 21 23.5	+1.0
PB01				IAML		13 21 25.7	
	comp=E,405nm,0.4s						

*KRSC **13** 13:21:24.8±1.0, 53°.73N×160°.79E, h56km±19km, ML4.8*
*ISCJB **13** 13:21:26.7±0.4, 53°.74N±0°.02×160°.70E±0°.06, h65km±3km, mb3.9/22, Error ellipse: s-maj=6.6km s-min=2.2km az=31.9*
*MOS **13** 13:21:26.3±1.0, 53°.73N×160°.68E, h63km, mb4.1/15, Error ellipse: s-maj=8.7km s-min=4.9km az=77.8*
*IDC **13** 13:21:29.3±1.6, 53°.92N×160°.42E, h74km±15km, mb3.6/20, mb1 3.9/22, mb1mx3.8/36, mbtmp4.0/22, MS3.2/12, Ms1 3.2/12, ms1mx3.0/44, Error ellipse: s-maj=16.2km s-min=11.5km az=151.0*

ISC 13 13:21:26.2±0.7, 53°.73N±0°.03×160°.76E±0°.04, h48km±7km, n117, σ1§65/171, mb4.0/23, MS3.3/10, 3C, Near east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KII	Karymskiy	0.83	292	iP	Pn	13 21 41.8	+0.1
KII	Karymskiy	0.83	292	PN	Pn	13 21 41.8	+0.1
MKZ	Mys Kozlova	1.01	34	iP	Pn	13 21 43.9	0.0
MKZ				eS	Sn	13 21 56.5	-0.5
MKZ	Mys Kozlova	1.01	34	PN	Pn	13 21 43.9	0.0
MKZ				S	Sn	13 21 56.5	-0.5
NLC	Nalytchevo	1.01	237	eP	Pn	13 21 44.3	+0.3
NLC				eS	Sn	13 21 57.4	+0.2
NLC	Nalytchevo	1.01	237	PN	Pn	13 21 44.3	+0.3
NLC				S	Sn	13 21 57.4	+0.2
SDLR	Sedlovina	1.21	249	iP	Pn	13 21 47.6	+0.8
SDLR				eS	Sn	13 22 03.2	+1.1
SDLR	Sedlovina	1.21	249	PN	Pn	13 21 47.6	+0.8
SDLR				S	Sn	13 22 03.2	+1.1
SMAR	Somma	1.26	249	iP	Pn	13 21 48.2	+0.6
SMAR				eS	Sn	13 22 04.0	+0.5
SMAR	Somma	1.26	249	PN	Pn	13 21 48.2	+0.6
SMAR				S	Sn	13 22 04.0	+0.5
UGLR	Uglovaya	1.27	246	iP	Pn	13 21 48.5	+0.9
UGLR				eS	Sn	13 22 04.0	+0.4
KRER	Koryakskii	1.27	251	iP	Pn	13 21 48.8	+1.0
KRER				eS	Sn	13 22 04.8	+1.0
AVH	Avacha	1.29	250	iP	Pn	13 21 49.0	+1.1
AVH				eS	Sn	13 22 05.4	+1.3
AVH	Avacha	1.29	250	PN	Pn	13 21 49.0	+1.1
AVH				S	Sn	13 22 05.4	+1.3
KRX	Arik	1.31	254	iP	Pn	13 21 49.0	+0.8
KRX				eS	Sn	13 22 04.7	0.0
KOK	Koryaka	1.34	252	iP	Pn	13 21 49.6	+1.0
KOK				eS	Sn	13 22 06.3	+1.0
KOK	Koryaka	1.34	252	PN	Pn	13 21 49.6	+1.0
KOK				S	Sn	13 22 06.3	+1.0
DALK	Dalny	1.39	241	iP	Pn	13 21 49.8	+0.7
DALK				iS	Sn	13 22 07.1	+0.8
KZV	Kizimen	1.41	349	iP	Pn	13 21 50.2	+0.6
KZV				eS	Sn	13 22 07.1	0.0
PET	Petropavlovsk	1.45	242	αiPN	Pn	13 21 50.5	+0.6
PET				eS	Sn	13 22 08.2	+0.5
PET				pmax	pmax		
	comp=Z,1μm,0.5s						
PET				smax	smax		
	comp=N,900nm,0.9s						
PET				smax	smax		
	comp=N,9μm,1.1s						
PET				smax	smax		
	comp=N,11μm,0.5s						
PET				smax	smax		
	comp=E,7μm,0.7s						
TUMD	Tumrok D	1.49	352	iP	Pn	13 21 50.7	+0.1
TUMD				iS	Sn	13 22 08.3	-0.6
TUMR	Tumrok	1.60	347	eP	Pn	13 21 53.1	+1.0
TUMR				eS	Sn	13 22 12.2	+0.6
TUMR	Tumrok	1.60	347	PN	Pn	13 21 53.1	+1.0
TUMR				S	Sn	13 22 12.2	+0.6
GNL	Ganaly	1.68	270	eP	Pn	13 21 54.1	+0.9
GNL				S	Sn	13 22 14.1	+0.6
GNL	Ganaly	1.68	270	PN	Pn	13 21 54.1	+0.9
GNL				S	Sn	13 22 14.1	+0.6
KRMR	Karymshinskiy	1.82	241	iP	Pn	13 21 56.3	+1.3
KRMR				iS	Sn	13 22 18.3	+1.5
KRMR	Karymshinskiy	1.82	241	PN	Pn	13 21 56.3	+1.3
KRMR				S	Sn	13 22 18.3	+1.5
RUS	Russkaya	1.88	227	iP	Pn	13 21 56.1	+0.3
RUS				eS	Sn	13 22 17.7	-0.5
RUS	Russkaya	1.88	227	PN	Pn	13 21 56.1	+0.3
RUS				S	Sn	13 22 17.7	-0.5
PETK	Petropavlovsk-	1.93	252	P	Pn	13 21 57.7	+1.1
	comp=E,110nm,0.3s,baz=82,slow=19,SNR=182						
PETK				S	Sn	13 22 21.2	+1.4
	comp=E,343nm,0.3s,baz=82,slow=39,SNR=22						
PETK				LR	LR	13 22 57.0	
	comp=E,447nm,19.5s,baz=98,slow=48						
MTVR	Mutnovka	1.99	232	eP	Pn	13 21 58.7	+1.2
MTVR				eS	Sn	13 22 22.3	+1.0
GRL	Gorelyy	2.00	235	eP	Pn	13 21 59.7	+2.0
GRL				eS	Sn	13 22 23.6	+2.1
GRL	Gorelyy	2.00	235	PN	Pn	13 21 59.7	+2.0
GRL				S	Sn	13 22 23.6	+2.1
KMNR	Kamenistaya	2.05	352	eP	Pn	13 22 00.1	+1.8
KMNR	Kamenistaya	2.05	352	PN	Pn	13 22 00.1	+1.8
ASAK	Asacha	2.19	233	iP	Pn	13 22 02.1	+1.9
ASAK				eS	Sn	13 22 28.2	+2.1
BZMR	Bezymyannaya	2.21	356	iP	Pn	13 22 02.4	+1.8
BZMR				S	Sn	13 22 27.5	+0.7
KPT	Kopyto	2.26	352	eP	Pn	13 22 03.0	+1.8
KPT				S	Sn	13 22 29.7	+1.8
KPT	Kopyto	2.26	352	PN	Pn	13 22 03.0	+1.8
KPT				S	Sn	13 22 29.7	+1.8
ZLN	Zelenaya	2.29	1	eP	Pn	13 22 03.7	+2.1
ZLN				eS	Sn	13 22 31.4	+2.8
ZLN	Zelenaya	2.29	1	PN	Pn	13 22 03.7	+2.1
ZLN				S	Sn	13 22 31.4	+2.8
APC	Apacha	2.31	251	eP	Pn	13 22 03.6	+1.9
APC				eS	Sn	13 22 30.6	+1.8
APC	Apacha	2.31	251	PN	Pn	13 22 03.6	+1.9
APC				S	Sn	13 22 30.6	+1.8
LGNR	Loginova	2.36	359	iP	Pn	13 22 05.1	+2.4
LGNR				eS	Sn	13 22 33.7	+3.2
LGNR	Loginova	2.36	359	PN	Pn	13 22 05.1	+2.4
LGNR				S	Sn	13 22 33.7	+3.2
KOZ	Kozyrevsk	2.39	348	eP	Pn	13 22 04.1	+1.3
KOZ				eS	Sn	13 22 30.9	0.0
KOZ	Kozyrevsk	2.39	348	PN	Pn	13 22 04.1	+1.3
KOZ				S	Sn	13 22 30.9	0.0
CIRR	Tsirk	2.39	360	iP	Pn	13 22 05.1	+2.1
CIRR				eS	Sn	13 22 33.0	+1.9
CIRR	Tsirk	2.39	360	PN	Pn	13 22 05.1	+2.1
CIRR				S	Sn	13 22 33.0	+1.9
KRSR	Krestovskiy	2.50	358	eP	Pn	13 22 05.7	+1.3
KRSR				eS	Sn	13 22 34.6	+1.0
KRSR	Krestovskiy	2.50	358	PN	Pn	13 22 05.7	+1.3
KRSR				S	Sn	13 22 34.6	+1.0
ESO	Esso	2.50	332	iP	Pn	13 22 05.3	+0.9
ESO				eS	Sn	13 22 34.0	+0.3
ESO	Esso	2.50	332	PN	Pn	13 22 05.3	+0.9
ESO				S	Sn	13 22 34.0	+0.3
KLY	Klyuchi	2.59	359	iP	Pn	13 22 07.3	+1.7
KLY				eS	Sn	13 22 37.4	+1.6
KBG	Krutoberegovo	2.77	23	P	Pn	13 22 10.3	+2.3
KBG				S	Sn	13 22 42.8	+2.7
BDR	Baidarnaya	2.86	5	eP	Pn	13 22 11.5	+2.2
BDR				eS	Sn	13 22 44.9	+2.4
SMKR	Semkarok	2.89	8	iP	Pn	13 22 11.5	+1.8
SMKR				eS	Sn	13 22 44.3	+1.1
SMKR	Semkarok	2.89	8	PN	Pn	13 22 11.5	+1.8
SMKR				S	Sn	13 22 44.3	+1.1
SRKR	Sorokina	2.94	4	iP	Pn	13 22 12.2	+1.8
SRKR				eS	Sn	13 22 45.9	+1.4
SRKR	Sorokina	2.94	4	PN	Pn	13 22 12.2	+1.8
SRKR				S	Sn	13 22 45.9	+1.4
PAU	Pauzhetka	3.31	228	eP	Pn	13 22 17.9	+2.5
PAU				S	Sn	13 22 57.3	+3.9
PAU	Pauzhetka	3.31	228	PN	Pn	13 22 17.9	+2.5
PAU				S	Sn	13 22 57.3	+3.9
BKI	Bering	3.38	62	eP	Pn	13 22 17.0	+0.6
BKI				eS	Sn	13 22 52.9	-2.3
BKI	Bering	3.38	62	PN	Pn	13 22 17.0	+0.6
BKI				S	Sn	13 22 52.9	-2.3
SKR	Severo-Kuril's	4.18	225	P	Pn	13 22 30.3	+3.0
SKR				eS	Sn	13 23 15.3	+0.5
SKR	Severo-Kuril's	4.18	225	ePN	Pn	13 22 24.0	-3.3
SKR				pmax	pmax		
	comp=Z,170nm,0.7s						
SKR				pmax	pmax		
	comp=N,220nm,1.0s						
SKR				pmax	pmax		
	comp=E,80nm,0.5s						
OSSR	Ossora	5.68	12	eP	Pn	13 22 50.6	+2.7
TILK	Tilichiki	7.34	21	P	Pn	13 23 14.6	+3.9
MA2	Magadan	8.03	321	P	Pn	13 23 22.6	+2.4
	comp=E,1.6nm,0.3s,baz=141,slow=12,SNR=9.6						
MA2				LR	LR	13 26 51.4	
	comp=E,108nm,20.1s,baz=153,slow=42						
SEY	Seymchan	10.21	338	ePN	Pn	13 23 48.7	-1.2
NKL	Nikolayevsk	11.99	275	ePN	Pn	13 24 28.0	+14
BILL	Bilibino	14.60	8	eP	Pn	13 24 51.1	+1.6
BILL				pmax	pmax		
	comp=Z,2.0nm,0.9s						
ASAJ	Asahikawa	15.29	238	P	P	13 25 01.7	-1.0
	comp=Z,1.5nm,0.3s,baz=68,slow=12,SNR=8.9						
HABR	Khabarovsk	16.93	262	eP	Pn	13 25 17.9	-1.6
HABR				eS	Sn	13 28 25.2	-1.3
HABR				pmax	pmax		
	comp=N,153nm,2.5s						
HABR				pmax	pmax		
	comp=E,253nm,2.5s						
HABR				pmax	pmax		
	comp=Z,220nm,2.5s						
HABR				MLR	MLR		
	comp=Z,95nm,15.0s						
YAK	Yakutsk	18.33	309	P	P	13 25 34.8	-1.3
	comp=Z,0.0nm,0.3s,baz=231,slow=2.5,SNR=5.6						
YAK	Yakutsk	18.33	309	eP	P	13 25 34.6	-1.6
YAK				pmax	pmax		
	comp=Z,11nm,0.5s						
KLR	Kul'dur	18.55	268	P	Pn	13 25 40.4	+1.1
	comp=Z,0.2nm,0.3s,baz=70,slow=13,SNR=7.5						
KLR				LR	LR	13 33 26.2	
	comp=Z,59nm,19.6s,baz=177,slow=39						
USRK	Ussuriysk Ar.	21.02	255	P	P	13 26 06.3	+0.7
	comp=Z,1.5nm,0.6s,baz=48,slow=16,SNR=4.2						
VLA	Vladivostok	21.75	253	⇑eP	P	13 26 11.5	-1.9
VLA				e*SP	sP	13 26 29.9	-0.8
VLA				e		13 26 34.2	
VLA				iS	S	13 30 09.2	-2.1
VLA				pmax	pmax		
	comp=Z,13nm,1.5s						
TIXI	Tiksi	22.67	334	P	P	13 26 20.7	-2.4
	comp=Z,0.5nm,0.2s,baz=129,slow=13,SNR=4.8						
TIXI	Tiksi	22.67	334	eP	P	13 26 24.5	+1.5
TIXI				pmax	pmax		
	comp=Z,1.0nm,1.3s						
MAJO	Matsushiro	23.25	231	eP	P	13 26 29.5	+0.2
MJAR	Matsushiro Arr	23.25	231	P	P	13 26 29.2	-0.1
	comp=Z,5.6nm,0.8s,baz=20,slow=11,SNR=12						
MJAR	Matsushiro Arr	23.25	231	P	P	13 26 29.2	-0.1
MJAR				pmax	pmax		
	comp=Z,5.0nm,0.8s						
KDAK	Kodiak Island	26.15	62	iP	P	13 26 56.5	+1.0
BOD	Bodaibo	26.19	298	eP	P	13 26 51.1	-4.8
BOD				pmax	pmax		
	comp=Z,4.0nm,1.1s						
KSRS	Korea Array	27.83	248	P	P	13 27 10.1	-0.6
	comp=Z,1.5nm,0.9s,baz=40,slow=10.0,SNR=3.0						
KSRS				LR	LR	13 38 08.8	
	comp=Z,50nm,18.1s,baz=50,slow=36						
ILAR	Eielson Array	28.08	46	P	P	13 27 12.6	-0.2
	comp=Z,1.2nm,0.7s,baz=265,slow=8.3,SNR=16						
ILAR				LR	LR	13 38 52.8	
	comp=Z,25nm,19.2s,baz=73,slow=37						
SONM	Songino Array	34.15	283	P	P	13 28 05.8	-0.7
	comp=Z,0.6nm,0.7s,baz=70,slow=9.0,SNR=2.9						
SONM				LR	LR	13 42 21.1	
	comp=Z,49nm,20.4s,baz=84,slow=37						
H11N2	WAKE ISLAND Hy 34.27	170		T	T	14 04 39.6	
	baz=353,slow=76,SNR=300						
H11N3	WAKE ISLAND Hy 34.28	170		T	T	14 04 37.3	
	baz=353,slow=76,SNR=422						
H11N1	WAKE ISLAND Hy 34.28	170		T	T	14 04 38.2	
	baz=353,slow=76,SNR=491						
H11S1	WAKE ISLAND Hy 35.45	170		T	T	14 05 59.5	
	baz=352,slow=76,SNR=18						
H11S3	WAKE ISLAND Hy 35.47	170		T	T	14 06 02.9	
	baz=352,slow=76,SNR=36						
H11S2	WAKE ISLAND Hy 35.47	170		T	T	14 06 02.5	
	baz=352,slow=76,SNR=16						
NRIK	Noril'sk	35.62	324	LR	LR	13 44 26.5	
	comp=Z,71nm,19.0s,baz=102,slow=39						
YKA	Yellowknife Ar	42.42	43	P	P	13 29 16.3	+0.7
	comp=Z,1.1nm,0.5s,baz=298,slow=7.9,SNR=17						
ZALV	Zalesovo Beam	42.77	302	P	P	13 29 17.4	-1.2
	comp=Z,0.4nm,0.3s,baz=44,slow=5.0,SNR=2.3						
ZALV				LR	LR	13 48 13.3	
	comp=Z,42nm,19.7s,baz=74,slow=38						
MKAR	Makanchi Array	48.24	296	P	P	13 29 58.4	-3.6
	comp=Z,1.0nm,0.6s,baz=55,slow=7.7,SNR=10						
MKAR	Makanchi Array	48.24	296	iP	P	13 30 00.7	-1.2
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.6s						
ARCES	ARCESS Array B	52.80	342	P	P	13 30 35.9	-0.1
	comp=Z,3.3nm,1.0s,baz=48,slow=7.4,SNR=3.2						
NVAR	Mina Array Bea	55.15	71	P	P	13 30 55.7	+1.9
	comp=Z,3.2nm,0.7s,baz=299,slow=7.8,SNR=18						
NVAR				LR	LR	13 52 45.9	
	comp=Z,16nm,18.7s,baz=271,slow=34						
KLMR	Klimovskoe	56.60	330	eP	P	13 31 05.6	+2.1
KLMR				pmax	pmax		
	comp=Z,11nm,1.7s						
PDAR	Pinedale Array	56.87	62	P	P	13 31 07.4	+1.4
	comp=Z,2.0nm,0.7s,baz=300,slow=3.0,SNR=18						
PDAR				LR	LR	13 56 54.3	
	comp=Z,12nm,18.5s,baz=49,slow=37						
CMAR	Chiang Mai Arr	58.70	258	P	P	13 31 19.8	+0.9
	comp=Z,0.9nm,0.4s,baz=26,slow=6.3,SNR=5.1						
FINES	FINESS Array B	59.69	337	P	P	13 31 23.9	-1.2
	comp=Z,1.1nm,0.5s,baz=38,slow=7.0,SNR=8.8						
BORG	Borgarnes	61.84	1	iP	P	13 31 44.1	+4.4
NB2	NORSAR Subarra	63.04	344	P	P	13 31 46.6	-1.2
	comp=Z,0.7nm,0.4s,baz=22,slow=6.9						
NOA	NORSAR Array B	63.04	344	P	P	13 31 45.6	-2.2
	comp=Z,0.8nm,0.5s,baz=14,slow=5.8,SNR=6.4						
AKASG	Malin Array Be	68.27	329	P	P	13 32 19.0	-2.6
	comp=Z,0.8nm,0.4s,baz=30,slow=7.0,SNR=3.7						
TXAR	Lajitas Array	70.02	68	P	P	13 32 33.7	+0.8
	comp=Z,2.9nm,0.6s,baz=300,slow=4.6,SNR=52						
GERES	GERESS Array B	74.07	338	P	P	13 32 55.9	-0.9
	comp=Z,0.4nm,0.5s,baz=51,slow=7.7,SNR=3.8						
GERES				LR	LR	14 11 52.7	
	comp=Z,19nm,19.1s,baz=278,slow=41						
BRTR	Keskin Array B	76.38	321	LR	LR	14 09 55.4	
	comp=Z,18nm,18.6s,baz=314,slow=38						
WRA	Warramunga Arr	76.83	205	P	P	13 33 12.5	-0.2
	comp=Z,0.4nm,0.6s,baz=17,slow=5.9,SNR=6.8						
WRA	Warramunga Arr	76.83	205	iP	P	13 33 13.3	+0.6
WRA				pmax	pmax		
	comp=Z,1.0nm,0.7s						
ASAR	Alice Springs	80.50	205	P	P	13 33 33.6	+0.7
	comp=Z,0.5nm,0.8s,baz=21,slow=5.9,SNR=4.3						
PPT	Papeete	82.79	133	LR	LR	14 02 19.1	
	comp=Z,18nm,20.4s,baz=184,slow=30						

*SOME **13** 13:24:46.6, 44°.73N×82°.18E, h0km*
*NNC **13** 13:24:48.3±2.7, 44°.69N×81°.96E, h0km, mb2.7, mpv2.2, Error ellipse: s-maj=42.2km s-min=8.1km az=116.0*
*ISCJB **13** 13:24:50.7±1.6, 44°.59N±0°.07×82°.3E±0°.2, h33km, Error ellipse: s-maj=17.5km s-min=7.8km az=26.3*

ISC 13 13:24:53.4±2.0, 44°.67N±0°.08×82°.2E±0°.1, h35km, n5, σ1§86/9, 2C-4D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KTMS	Ketmen	1.83	228	eP	Pn	13 25 21.6	-0.8
	1.8nm,0.3s						
KTMS				eS	Sn	13 25 47.1	+2.8
	14nm,0.3s						
MK31	Makanchi Array	2.12	1	⇓Pn	Pn	13 25 26.0	-0.4
	0.7nm,0.3s,baz=180,slow=14,SNR=25						
MK31				⇑Sn	Sn	13 25 52.9	+1.4
	0.7nm,0.3s,baz=184,slow=27,SNR=15						
KAPS	Kapalarasan	2.13	288	eP	Pn	13 25 25.1	-1.4
	1.1nm,0.2s						
KAPS				eS	Sn	13 25 52.9	+1.2
	1.9nm,0.2s						
MAKZ	Makanchi	2.14	355	⇑Pn	Pn	13 25 25.2	-1.4
	0.8nm,0.6s						
MAKZ				⇓Sn	Sn	13 25 53.1	+1.2
	0.9nm,0.4s						
PDGK	Podgornoye	2.39	237	⇓Pg	Pn	13 25 28.1	-1.9
	2.3nm,0.9s						
PDGK				⇓Lg	Lg	13 26 01.9	
	3.1nm,0.6s						

*NIED **13** 13:34:00, 37°.80N×141°.90E, h41km, Mw3.8 Best double couple: M0:6.63000×10^14 NP1:φs329.00000°, δ36.00000°, λ-130.00000°. NP2:φs196.00000°, δ63.00000°, λ-65.00000°.*
*IDC **13** 13:34:54.1±0.8, 37°.70N×142°.12E, h0km, mb3.7/10, mb1 3.9/15, mb1mx3.8/45, mbtmp3.8/15, ML3.4/5, MS3.0/2, Ms1 3.0/2, ms1mx2.3/50, Error ellipse: s-maj=19.5km s-min=16.2km az=122.0*
*ISCJB **13** 13:34:56.1±0.6, 37°.78N±0°.04×142°.02E±0°.05, h24km, mb3.7/10, MS3.1/1, Error ellipse: s-maj=6.3km s-min=5.1km az=43.8*
*JMA **13** 13:34:57.4±0.1, 37°.76N×141°.94E, h31km±3km, M3.9*
JMA Felt I J1.

ISC 13 13:34:57.4±0.7, 37°.77N±0°.04×141°.94E±0°.06, h24km, n31, σ1§24/29, mb3.7/10, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.83	326	P	Pn	13 35 12.9	-0.7
JIO				S	Sb	13 35 23.2	-0.7
JMM	Marumori	0.92	277	P	Pb	13 35 14.2	-0.4
JMM				S	Sb	13 35 25.8	-0.5
JFK	Kawauchi	0.94	245	P	Pb	13 35 14.3	-0.7
JFK				S	Sb	13 35 26.1	-0.9
ONAJ	Iwakimizuishiy	1.13	234	P	Pb	13 35 16.9	-1.3
JOU	Okura	1.17	301	P	Pb	13 35 18.5	-0.5
JOU				S	Sn	13 35 33.3	-0.2
JFT	Otama	1.30	260	P	Pb	13 35 20.6	-0.5
JMK	Ichinoseki	1.31	335	P	Pn	13 35 19.5	-0.7
JYS	Shirataka	1.55	288	P	Pb	13 35 24.2	-1.2
MJAR	Matsushiro Arr	3.22	249	Pn	Pn	13 35 48.0	+1.5
	8.3nm,0.3s,baz=84,slow=16,SNR=66						
MJAR				Sn	Sb	13 36 29.6	-3.1
	4.5nm,0.3s,baz=110,slow=15,SNR=5.0						
MAT	Matsushiro	3.22	249	P	Pn	13 35 48.3	+1.8
MAT				S	Sn	13 36 26.3	+2.1
JHJ	Hachijo jima 2	4.96	201	Pn	Pn	13 36 11.2	+0.9
	24nm,0.3s,baz=93,slow=22,SNR=6.4						
JHJ				Sn	Sn	13 37 03.9	-3.0
	20nm,0.3s,baz=73,slow=19,SNR=4.5						
ASAJ	Asahikawa	6.36	4	Pn	Pn	13 36 30.4	+0.8
	0.9nm,0.3s,baz=188,slow=9.0,SNR=6.8						
ASAJ				Sn	Sn	13 37 40.9	-0.6
	0.4nm,0.3s,baz=252,slow=19,SNR=1.9						
USRK	Ussuriysk Ar.	9.89	314	Pn	Pn	13 37 21.2	+3.3
	0.4nm,0.3s,baz=121,slow=14,SNR=5.7						
USRK				LR	LR	13 41 14.8	
	comp=Z,74nm,18.9s,baz=98,slow=38						
KSRS	Korea Array	11.13	273	Pn	Pn	13 37 38.5	+3.6
	0.1nm,0.3s,baz=84,slow=12,SNR=4.5						
SONM	Songino Array	27.74	303	P	P	13 40 44.6	+0.5
	0.9nm,0.6s,baz=91,slow=8.6,SNR=7.2						
H11N2	WAKE ISLAND Hy 28.17	123		T	T	14 10 18.2	
	baz=315,slow=75						
H11N1	WAKE ISLAND Hy 28.18	123		T	T	14 10 16.1	
	baz=315						
H11N3	WAKE ISLAND Hy 28.19	123		T	T	14 10 20.7	
	baz=315,slow=75						
H11S1	WAKE ISLAND Hy 28.92	125		T	T	14 11 11.1	
	baz=317,slow=76,SNR=57						
H11S3	WAKE ISLAND Hy 28.92	125		T	T	14 11 19.4	
	baz=317,slow=76,SNR=83						
H11S2	WAKE ISLAND Hy 28.93	125		T	T	14 11 20.5	
	baz=317,slow=76,SNR=66						
ZALV	Zalesovo Beam	41.74	312	P	P	13 42 44.3	0.0
	0.8nm,0.4s,baz=93,slow=7.8,SNR=4.9						
MKAR	Makanchi Array	44.09	302	P	P	13 43 04.5	+1.0
	0.6nm,0.6s,baz=86,slow=8.3,SNR=5.9						
ILAR	Eielson Array	48.65	33	P	P	13 43 39.4	+0.4
	0.4nm,0.7s,baz=269,slow=5.7,SNR=6.1						
WRA	Warramunga Arr	57.84	188	P	P	13 44 46.7	-0.3
	1.5nm,0.5s,baz=5.8,slow=7.1,SNR=36						
ASAR	Alice Springs	61.57	188	P	P	13 45 12.5	-0.2
	0.5nm,0.7s,baz=9.9,slow=6.2,SNR=5.8			

MNBS *eS* **Sb** **13 48 47.0 -0.2**
6.8nm,0.4s

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*IDC **13** 13:50:26.3±1.4,0.′86S×9.′78W,h0km,mb4.1/13, mb1 4.2/14,mb1mx3.9/39,mbtmp4.1/14,ML4.3/1,MS3.4/8, Ms1 3.4/8,ms1mx3.0/33,Error ellipse: s-maj=37.6km s-min=30.4km az=73.0*

*ISCJB **13** 13:50:27.6±0.9,0.′6S±0.′1×9.′6W±0.′2,h10km,mb4.0/13, MS3.4/6,Error ellipse: s-maj=25.4km s-min=14.7km az=36.8*

ISC 13 13:50:29.1±0.9,0.′6S±0.′1×9.′6W±0.′2,h10km,n31,σ1§44/20, mb4.1/13,MS3.5/6,North of Ascension Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LIC	**Lamto**	**8.19**	**34**	*eP*	**Pn**	**13 52 29.4**	**+1.3**
	30nm,0.3s						
KIC	**Kosan Boka**	**8.46**	**35**	*eP*	**Pn**	**13 52 33.0**	**+1.1**
	20nm,0.2s						
TIC	**Toumodi**	**8.54**	**32**	*eP*	**Pn**	**13 52 34.4**	**+1.4**
DBIC	**Dimbokro**	**8.65**	**33**	Pn	**Pn**	**13 52 35.5**	**+1.1**
	3.1nm,0.3s,baz=193,slow=9.9,SNR=70						
DBIC				Sn	**Sn**	**13 54 09.1**	**-3.1**
	4.7nm,0.3s,baz=288,slow=20,SNR=6.1						
DBIC				LR	LR	13 55 33.0	
	comp=Z,206nm,21.4s,baz=178,slow=34						
H10N2	**ASCENSION HYDR**	**8.66**	**214**	T	T	14 00 46.4	
	baz=34,slow=74,SNR=6.2						
H10N1	**ASCENSION HYDR**	**8.67**	**214**	T	T	14 00 47.2	
	baz=34,slow=74,SNR=7.8						
H10N3	**ASCENSION HYDR**	**8.68**	**214**	T	T	14 00 47.6	
	baz=34,slow=74,SNR=5.5						
H10S1	**ASCENSION HYDR**	**9.67**	**211**	T	T	14 02 02.7	
	baz=32,slow=75,SNR=7.0						
H10S2	**ASCENSION HYDR**	**9.69**	**211**	T	T	14 01 59.5	
	baz=32,slow=75,SNR=4.4						
H10S3	**ASCENSION HYDR**	**9.69**	**211**	T	T	14 02 03.4	
	baz=32,slow=75,SNR=7.1						
TORD	**Torodi Ar. Bea**	**17.68**	**39**	P	**Pn**	**13 54 34.0**	**-1.7**
	1.7nm,0.3s,baz=222,slow=14,SNR=56						
TORD				S	Sn	13 57 40.5	-12
	0.8nm,0.3s,baz=221,slow=23,SNR=7.0						
TORD				LR	LR	14 00 58.5	
	comp=Z,82nm,20.2s,baz=180,slow=35						
RCBR	**Riachuelo**	**26.77**	**258**	LR	LR	14 04 54.0	
	comp=Z,32nm,18.8s,baz=76,slow=33						
LSZ	**Lusaka**	**40.03**	**113**	P	**P**	**13 58 04.3**	**-0.6**
	2.2nm,0.5s,baz=309,slow=5.1,SNR=5.5						
KEST	**Kesra**	**40.25**	**24**	LR	LR	14 15 52.0	
	comp=Z,72nm,18.4s,baz=304,slow=38						
VAE	**Valguarnera**	**43.94**	**28**	LR	LR	14 17 13.9	
	comp=Z,75nm,19.2s,baz=131,slow=36						
IDI	**Anoyia**	**48.08**	**38**	LR	LR	14 19 36.1	
	comp=Z,17nm,19.5s,baz=266,slow=36						
GERES	**GERESS Array B**	**53.23**	**19**	P	**P**	**13 59 49.2**	**+1.3**
	2.0nm,0.7s,baz=191,slow=6.1,SNR=12						
GERES				LR	LR	14 23 02.4	
	comp=Z,34nm,19.2s,baz=274,slow=36						
BRTR	**Keskin Array B**	**56.29**	**39**	P	**P**	**14 00 12.1**	**+1.8**
	1.0nm,0.8s,baz=207,slow=9.1,SNR=5.9						
AKASG	**Malin Array Be**	**60.85**	**27**	P	**P**	**14 00 41.7**	**0.0**
	1.1nm,0.6s,baz=222,slow=6.7,SNR=4.2						
KBZ	**Khabaz**	**64.28**	**40**	P	**P**	**14 01 06.2**	**+1.5**
	2.0nm,0.9s,baz=159,slow=1.5,SNR=4.5						
FINES	**FINESS Array B**	**67.62**	**18**	P	**P**	**14 01 26.3**	**+0.5**
	2.4nm,0.6s,baz=204,slow=4.2,SNR=6.6						
GEYT	**Alibeck**	**72.94**	**50**	P	**P**	**14 02 00.3**	**+1.3**
	1.4nm,0.4s,baz=271,slow=8.2,SNR=3.1						
ARCES	**ARCESS Array B**	**73.89**	**12**	P	**P**	**14 02 04.4**	**+0.4**
	1.5nm,0.7s,baz=212,slow=3.2,SNR=4.2						
ARCES				LR	LR	14 37 42.7	
	comp=Z,34nm,18.4s,baz=106,slow=38						
BVAR	**Borovoye Array**	**84.47**	**37**	P	**P**	**14 03 01.3**	**-0.8**
	0.3nm,0.5s,baz=218,slow=36,SNR=3.2						
KURBB	**Kurchatov Arra**	**89.28**	**40**	P	**P**	**14 03 26.3**	**+0.7**
	0.8nm,0.8s,baz=282,slow=4.5,SNR=4.1						
MKAR	**Makanchi Array**	**91.74**	**43**	P	**P**	**14 03 36.9**	**-0.3**
	0.5nm,0.7s,baz=346,slow=1.8,SNR=3.9						
TXAR	**Lajitas Array**	**93.87**	**299**	P	**P**	**14 03 46.4**	**-1.2**
	0.3nm,0.7s,baz=121,slow=6.4,SNR=2.6						
YKA	**Yellowknife Ar**	**97.47**	**333**	P	**P**	**14 04 02.2**	**-0.9**
	0.3nm,0.7s,baz=50,slow=4.1,SNR=4.1						
ASAR	**Alice Springs**	**137.10**	**127**	PKhKP	PKPpre	14 09 40.2	
	0.4nm,0.9s,baz=231,slow=2.7,SNR=3.3						
WRA	**Warramunga Arr**	**139.16**	**122**	PKhKP	PKPpre	14 09 46.4	
	0.4nm,0.8s,baz=249,slow=2.7,SNR=3.2						
CTA	**Charters Tower**	**148.62**	**132**	PKPbc	**PKPbc**	**14 10 15.5**	**-2.0**
	3.3nm,0.8s,baz=259,slow=4.7,SNR=5.4						

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*NIED **13** 13:51:00,35.′90N×141.′10E,h35km,Mw4.3 Best double couple: M₀2.89000×10¹⁵ NP1:φ₀s245.00000°,δ23.00000°, λ51.00000°. NP2:φ₀s106.00000°,δ73.00000°,λ105.00000°.*

*IDC **13** 13:51:07.3±0.6,35.′72N×140.′97E,h0km,mb4.0/24, mb1 4.1/27,mb1mx4.0/51,mbtmp4.0/27,ML3.9/3,MS3.2/16, Ms1 3.3/16,ms1mx3.1/40,Error ellipse: s-maj=15.4km s-min=12.6km az=96.0*

*ISCJB **13** 13:51:11.0±0.9,35.′77N±0.′03×141.′04E±0.′05,h33km±6km, mb4.0/28,MS3.3/11,Error ellipse: s-maj=6.6km s-min=5.7km az=173.4*

*JMA **13** 13:51:11.0±0.1,35.′81N×141.′00E,h28km±1km,M4.2*

JMA Felt II J1.

*NEIC **13** 13:51:12.5±0.4,35.′76N×140.′92E,h35km,mb4.4/5,Error ellipse: s-maj=9.9km s-min=8.4km az=162.0*

NEIC Recorded [2 JMA] in Chiba and Ibaraki.

ISC 13 13:51:11.0±1.0,35.′80N±0.′04×141.′03E±0.′06,h24km±6km, n59,σ1§07/52,mb4.0/28,MS3.2/11,3C-3D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.17**	**236**	⇑P	**Pb**	**13 51 16.3**	**+0.1**
CHOJ				S	**Sb**	**13 51 20.1**	**+0.4**
JCN	**Nagara**	**0.77**	**241**	⇑P	**Pn**	**13 51 26.3**	**-0.1**
JCN				*eS*	**Sn**	**13 51 38.4**	**+1.2**
JYT	**Yasato**	**0.80**	**303**	⇓P	**Pb**	**13 51 25.2**	**-1.1**
JYT				S	**Sb**	**13 51 35.4**	**-1.4**
JHO	**Hitachi**	**0.89**	**336**	⇓P	**Pn**	**13 51 26.8**	**-1.3**
JHO				*eS*	**Sb**	**13 51 38.5**	**-0.9**
BSO4	**Boso 4**	**0.98**	**215**	P	**Pb**	**13 51 28.7**	**-0.6**
BSO3	**Boso 3**	**1.08**	**203**	⇓P	**Pn**	**13 51 29.4**	**-1.0**
BSO1	**Boso 1**	**1.14**	**182**	⇑P	**Pn**	**13 51 29.8**	**-1.2**
MJAR	**Matsushiro Arr**	**2.40**	**289**	Pn	**Pn**	**13 51 48.8**	**0.0**
	8.3nm,0.3s,baz=92,slow=8.7,SNR=81						
MJAR				Sn	**Sn**	**13 52 16.6**	**-0.9**
	20nm,0.3s,baz=154,slow=17,SNR=6.7						
MJAR				LR	LR	13 52 58.9	
	comp=Z,160nm,19.1s,baz=115,slow=48						
MAJO	**Matsushiro**	**2.40**	**289**	*eP*n	**Pn**	**13 51 49.7**	**+0.9**
MAJO				*eS*g	**Sb**	**13 52 25.0**	**+2.2**
MAT	**Matsushiro**	**2.40**	**289**	P	**Pn**	**13 51 49.2**	**+0.4**
MAT				S	**Sn**	**13 52 17.9**	**+0.4**
JHJ	**Hachijo jima 2**	**2.86**	**201**	Pn	**Pn**	**13 51 54.6**	**-0.5**
	69nm,0.3s,baz=79,slow=18,SNR=13						
JHJ				Sn	**Sn**	**13 52 26.3**	**-2.5**
	67nm,0.3s,baz=66,slow=20,SNR=4.6						
ASAJ	**Asahikawa**	**8.40**	**8**	Pn	**Pn**	**13 53 10.0**	**-1.2**
	2.8nm,0.3s,baz=235,slow=7.5,SNR=19						
ASAJ				Sn	**Sn**	**13 54 44.0**	**-1.1**
	0.2nm,0.3s,baz=232,slow=19,SNR=3.2						
JNU	**Nakatsue**	**8.80**	**255**	LR	LR	13 57 14.5	
	comp=Z,287nm,19.6s,baz=114,slow=42						
KSRS	**Korea Array**	**10.66**	**283**	Pn	Pn	13 53 47.0	+4.7
	0.2nm,0.3s,baz=96,slow=15,SNR=6.2						
KSRS				LR	LR	13 57 47.5	
	comp=Z,63nm,21.9s,baz=95,slow=38						
KSAR	**Wonju Array Be**	**10.69**	**283**	Pn	Pn	13 53 47.0	+4.3
USRK	**Ussuriysk Ar.**	**10.88**	**323**	Pn	Pn	13 53 48.7	+3.6
	0.3nm,0.3s,baz=138,slow=14,SNR=5.6						
USRK				LR	LR	13 57 39.8	
	comp=Z,106nm,20.3s,baz=156,slow=36						
KLR	**Kul'dur**	**15.05**	**336**	LR	LR	14 00 11.2	
	comp=Z,102nm,20.5s,baz=142,slow=36						
PETK	**Petropavlovsk-**	**20.92**	**29**	P	**P**	**13 55 53.6**	**+1.9**
	5.6nm,0.9s,baz=187,slow=10,SNR=4.2						
PETK				LR	LR	14 05 09.5	
	comp=Z,35nm,18.3s,baz=224,slow=40						
MA2	**Magadan**	**24.63**	**12**	LR	LR	14 08 24.4	
	comp=Z,59nm,18.1s,baz=203,slow=42						
ENH	**Enshi**	**26.94**	**267**	*eP*	**P**	**13 56 49.4**	**-1.2**
	7.2nm,0.9s						
YAK	**Yakutsk**	**27.21**	**348**	LR	LR	14 07 48.9	
	comp=Z,69nm,19.3s,baz=42,slow=37						
H11N2	**WAKE ISLAND Hy**	**27.81**	**118**	T	T	14 25 57.7	
	baz=311,slow=75,SNR=326						
H11N1	**WAKE ISLAND Hy**	**27.82**	**118**	T	T	14 26 05.8	
	baz=311,slow=75,SNR=210						
H11N3	**WAKE ISLAND Hy**	**27.83**	**118**	T	T	14 25 59.1	
	baz=311,slow=75,SNR=339						
SEY	**Seymchan**	**28.06**	**11**	P	**P**	**13 57 01.8**	**+1.5**
	1.8nm,0.7s,baz=186,slow=9.2,SNR=3.6						
SONM	**Songino Array**	**28.24**	**306**	P	**P**	**13 57 03.0**	**+0.8**
	1.7nm,0.7s,baz=104,slow=10,SNR=7.9						
H11S1	**WAKE ISLAND Hy**	**28.48**	**120**	T	T	14 26 51.9	
	baz=312,slow=75,SNR=652						
H11S3	**WAKE ISLAND Hy**	**28.48**	**120**	T	T	14 26 51.9	
	baz=312,slow=75,SNR=538						
H11S2	**WAKE ISLAND Hy**	**28.49**	**120**	T	T	14 26 53.0	
	baz=312,slow=75,SNR=379						
DAV	**Davao City (W)**	**31.91**	**210**	LR	LR	14 10 08.8	
	comp=Z,26nm,20.8s,baz=54,slow=36						
TIXI	**Tiksi**	**36.48**	**354**	P	**P**	**13 58 13.6**	**-0.2**
	0.9nm,0.4s,baz=139,slow=6.5,SNR=6.7						
CMAR	**Chiang Mai Arr**	**40.89**	**256**	LR	LR	14 17 08.3	
	comp=Z,57nm,19.3s,baz=94,slow=38						
ZALV	**Zalesovo Beam**	**42.53**	**313**	P	**P**	**13 59 04.6**	**+0.2**
	1.2nm,0.4s,baz=98,slow=6.4,SNR=6.8						
ZALV				LR	LR	14 15 19.7	
	comp=Z,20nm,20.3s,baz=68,slow=34						
NRIK	**Noril'sk**	**44.26**	**336**	P	**P**	**13 59 18.7**	**+0.6**
	1.5nm,0.5s,baz=119,slow=9.4,SNR=3.8						
MKAR	**Makanchi Array**	**44.52**	**303**	P	**P**	**13 59 20.6**	**-0.1**
	4.9nm,0.7s,baz=89,slow=9.6,SNR=48						
MKAR				LR	LR	14 18 01.5	
	comp=Z,20nm,19.1s,baz=129,slow=36						
KURK	**Kurchatov**	**46.46**	**309**	*eP*	**P**	**13 59 35.1**	**-0.7**
	18nm,0.9s						
KURBB	**Kurchatov Arra**	**46.53**	**309**	P	**P**	**13 59 36.3**	**-0.1**
	1.5nm,0.3s,baz=85,slow=7,SNR=31						
TKM2	**Tokmak 2**	**49.95**	**299**	*eP*	**P**	**14 00 00.7**	**-2.5**
	2.9nm,0.6s						
ILAR	**Eielson Array**	**50.71**	**32**	P	**P**	**14 00 08.8**	**+0.4**
	1.5nm,0.9s,baz=268,slow=6.6,SNR=15						
BVAR	**Borovoye Array**	**51.18**	**313**	P	**P**	**14 00 12.6**	**+0.6**
	1.3nm,0.6s,baz=64,slow=6.6						
INK	**Inuvik**	**55.63**	**27**	P	**P**	**14 00 45.2**	**+0.8**
	0.7nm,0.6s,baz=294,slow=6.8,SNR=4.7						
WRA	**Warramunga Arr**	**55.79**	**188**	P	**P**	**14 00 45.0**	**-1.2**
	0.9nm,0.4s,baz=3.4,slow=7.3,SNR=24						
ARU	**Arti**	**57.09**	**319**	P	**P**	**14 00 54.6**	**-0.4**
	3.8nm,0.9s						
ABKAR	**Akbulak array**	**58.50**	**311**	*eP*	**P**	**14 01 03.8**	**-1.3**
	1.3nm,0.5s						
ASAR	**Alice Springs**	**59.52**	**188**	P	**P**	**14 01 11.6**	**-0.8**
	0.8nm,0.7s,baz=13,slow=9.6,SNR=9.2						
RES	**Resolute Bay**	**63.88**	**14**	P	**P**	**14 01 41.1**	**+0.1**
	1.0nm,0.5s,baz=330,slow=7.7,SNR=5.0						
YKA	**Yellowknife Ar**	**65.03**	**30**	P	**P**	**14 01 49.3**	**+0.5**
	0.4nm,0.7s,baz=296,slow=6.5,SNR=4.9						
ARCES	**ARCESS Array B**	**65.05**	**340**	P	**P**	**14 01 48.6**	**-0.2**
	1.9nm,0.8s,baz=45,slow=9.0,SNR=3.1						
STKA	**Stephens Creek**	**67.32**	**179**	P	**P**	**14 02 03.2**	**-0.5**
	2.7nm,0.8s,baz=333,slow=9.0,SNR=3.5						
FINES	**FINESS Array B**	**69.76**	**332**	P	**P**	**14 02 18.0**	**-0.8**
	0.8nm,0.7s,baz=59,slow=8.9,SNR=2.1						
FINES				LR	LR	14 37 27.2	
	comp=Z,41nm,18.0s,baz=208,slow=40						
AKASG	**Malin Array Be**	**75.08**	**322**	P	**P**	**14 02 49.3**	**-1.4**
	0.6nm,0.4s,baz=48,slow=5.2,SNR=6.0						
AKASG				LR	LR	14 38 28.3	
	comp=Z,33nm,19.4s,baz=355,slow=38						
NB2	**NORSAR Subarra**	**75.21**	**337**	P	**P**	**14 02 51.2**	**-0.1**
	comp=Z,1.2nm,0.9s,baz=48,slow=4.8						
NOA	**NORSAR Array B**	**75.21**	**337**	P	**P**	**14 02 51.2**	**-0.1**
	comp=Z,1.1nm,0.9s,baz=38,slow=5.9,SNR=3.0						
NOA				LR	LR	14 38 55.1	
	comp=Z,29nm,19.4s,baz=220,slow=38						
NVAR	**Mina Array Bea**	**75.98**	**53**	P	**P**	**14 02 57.5**	**+1.2**
	comp=Z,0.7nm,0.8s,baz=280,slow=5.8,SNR=4.2						
PDAR	**Pinedale Array**	**78.76**	**45**	P	**P**	**14 03 12.7**	**+0.8**
	comp=Z,0.3nm,0.5s,baz=270,slow=1.5,SNR=5.3						
BRTR	**Keskin Array B**	**79.44**	**312**	P	**P**	**14 03 16.6**	**+1.1**
	comp=Z,0.8nm,0.9s,baz=50,slow=2.3,SNR=4.4						
SCHQ	**Schefferville**	**86.61**	**16**	LR	LR	14 44 24.8	
	comp=Z,33nm,20.1s,baz=15,slow=37						
TXAR	**Lajitas Array**	**91.12**	**52**	P	**P**	**14 04 15.2**	**+1.0**
	comp=Z,0.1nm,0.5s,baz=335,slow=4.0,SNR=2.5						
LPAZ	**La Paz**	**147.58**	**61**	PKPbc	**PKPbc**	**14 10 55.3**	**+0.8**
	comp=Z,0.7nm,0.4s,baz=335,slow=1.8,SNR=4.6						

SCB 13 13:53:26.1±0.4,17.′55S×66.′14W,h26km±5km,Ml3.8/3,6D, Error ellipse: s-maj=8.9km s-min=3.9km az=120.0, Central Bolivia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BBOE	**La Paz, Chanca**	**1.91**	**292**	⇓*i*Pg	Pb	13 54 01.3	+0.7
BBOJ	**La Paz, Jacaqu**	**2.04**	**286**	⇓*i*Pg	Pb	13 54 03.7	+0.9
LPAZ	**La Paz**	**2.28**	**303**	⇓*i*Pg	Pb	13 54 07.7	+0.7
LPAZ				*e*Sg	Sb	13 54 37.8	+2.8
	236nm,0.4s						
BBOB	**La Paz, Bander**	**2.37**	**306**	⇓*i*Pg	Pb	13 54 09.1	+0.7
BBOB				⇓*i*Sg	Sb	13 54 40.5	+3.2
	228nm,0.3s						
BBOD	**La Paz, Gloria**	**2.52**	**291**	⇓*i*Pg	Pb	13 54 12.6	+1.6
MOCB	**Mochara**	**3.71**	**173**	*e*Pn	Pb	13 54 28.6	-2.7
MOCB				*e*Sn	Sb	13 55 14.6	-1.4
SIV	**San Ignacio**	**5.10**	**73**	*e*Pn	Pn	13 54 47.7	+6.8
SIV				*e*Sn	Sn	13 55 47.0	+8.1
	7.7nm,0.4s						

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*IDC **13** 13:54:35.3±0.8,35.′71N×141.′04E,h0km,mb3.7/11, mb1 3.8/14,mb1mx3.6/53,mbtmp3.7/14,ML3.7/3,Error ellipse: s-maj=22.5km s-min=15.9km az=94.0*

*ISCJB **13** 13:54:38.1±1.0,35.′78N±0.′04×141.′04E±0.′10,h30km±5km, mb3.7/11,Error ellipse: s-maj=13.3km s-min=7.1km az=174.5*

*JMA **13** 13:54:39.0±0.1,35.′80N×140.′99E,h27km±1km,M4.0*

JMA Felt II J1.

ISC 13 13:54:39.7±1.0,35.′81N±0.′06×140.′93E±0.′08,h25km±6km, n27,σ1§60/26,mb3.7/11,2C-1D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.12**	**209**	⇑P	**Pb**	**13 54 44.2**	**-0.3**
CHOJ				S	**Sb**	**13 54 47.9**	**+0.1**
JCN	**Nagara**	**0.71**	**237**	⇑P	**Pn**	**13 54 54.2**	**+0.1**
JCN				*eS*	**Sn**	**13 55 06.8**	**+2.6**
JYT	**Yasato**	**0.73**	**305**	⇓P	**Pb**	**13 54 53.2**	**-0.5**
JYT				S	**Sb**	**13 55 03.3**	**0.0**
BSO4	**Boso 4**	**0.95**	**211**	P	**Pn**	**13 54 56.4**	**-0.9**
BSO3	**Boso 3**	**1.06**	**199**	P	**Pn**	**13 54 57.3**	**-1.4**
BSO1	**Boso 1**	**1.15**	**178**	P	**Pn**	**13 54 57.7**	**-2.0**
MJAR	**Matsushiro Arr**	**2.32**	**289**	Pn	**Pn**	**13 55 15.7**	**-0.5**
	5.5nm,0.3s,baz=101,slow=16,SNR=7.0						
MJAR				Sn	**Sn**	**13 55 40.2**	**-3.7**
	9.6nm,0.3s,baz=196,slow=22,SNR=4.6						
JHJ	**Hachijo jima 2**	**2.84**	**200**	Pn	**Pn**	**13 55 22.7**	**-0.7**
	15nm,0.3s,baz=229,slow=19,SNR=8.8						
JHJ				Sn	**Sn**	**13 55 55.9**	**-1.0**
	24nm,0.3s,baz=90,slow=20,SNR=5.1						
ASAJ	**Asahikawa**	**8.40**	**8**	Pn	**Pn**	**13 56 37.8**	**-1.8**
	2.3nm,0.3s,baz=215,slow=13,SNR=9.5						
USRK	**Ussuriysk Ar.**	**10.82**	**323**	Pn	**Pn**	**13 57 16.7**	**+3.9**
	0.2nm,0.3s,baz=125,slow=15,SNR=2.9						
H11N2	**WAKE ISLAND Hy**	**27.89**	**118**	T	T	14 29 35.0	
	baz=311,slow=75,SNR=35						
H11N1	**WAKE ISLAND Hy**	**27.89**	**118**	T	T	14 29 30.4	
	baz=311,slow=75,SNR=41						
H11N3	**WAKE ISLAND Hy**	**27.90**	**118**	T	T	14 29 36.9	
	baz=311,slow=75,SNR=37						
SONM	**Songino Array**	**28.17**	**306**	P	**P**	**14 00 31.1**	**+1.1**
	0.6nm,0.6s,baz=112,slow=10,SNR=3.6						
H11S1	**WAKE ISLAND Hy**	**28.55**	**120**	T	T	14 30 14.3	
	baz=312,slow=75,SNR=50						
H11S3	**WAKE ISLAND Hy**	**28.55**	**120**	T	T	14 30 19.1	
	baz=312,slow=75,SNR=50						
H11S2	**WAKE ISLAND Hy**	**28.57**	**120**	T	T	14 30 17.5	
	baz=312,slow=75,SNR=61						
MKAR	**Makanchi Array**	**44.45**	**303**	P	**P**	**14 02 49.5**	**+1.0**
	1.9nm,0.7s,baz=91,slow=9.9,SNR=14						
KURBB	**Kurchatov Arra**	**46.46**	**309**	P	**P**	**14 03 04.0**	**-0.2**
	1.3nm,0.6s,baz=84,slow=7.9,SNR=8.3						
ILAR	**Eielson Array**	**50.74**	**32**	P	**P**	**14 03 37.1**	**+0.1**
	0.5nm,0.7s,baz=271,slow=6.5,SNR=4.4						
BVAR	**Borovoye Array**	**51.11**	**313**	P	**P**	**14 03 40.3**	**+0.3**
	0.4nm,0.4s,baz=60,slow=8.5,SNR=3.0						
INK	**Inuvik**	**55.65**	**27**	P	**P**	**14 04 13.5**	**+0.5**
	0.4nm,0.6s,baz=281,slow=5.3,SNR=3.0						
WRA	**Warramunga Arr**	**55.80**	**188**	P	**P**	**14 04 13.2**	**-1.4**
	0.7nm,0.8s,baz=6.3,slow=7.7,SNR=7.2						
ASAR	**Alice Springs**	**59.52**	**187**	P	**P**	**14 04 39.2**	**-1.6**
	0.3nm,0.8s,baz=5.5,slow=8.4,SNR=4.5						
FINES	**FINESS Array B**	**69.72**	**332**	P	**P**	**14 05 47.7**	**+0.8**
	1.1nm,0.8s,baz=174,slow=27,SNR=2.6						
AKASG	**Malin Array Be**	**75.03**	**322**	P	**P**	**14 06 18.4**	**-0.4**
	0.3nm,0.4s,baz=47,slow=5.0,SNR=4.3						
PDAR	**Pinedale Array**	**78.80**	**45**	P	**P**	**14 06 40.3**	**-0.3**
	0.2nm,0.5s,baz=280,slow=1.4,SNR=3.4						

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*IDC **13** 13:56:10.3±1.5,37.′16N×143.′95E,h0km,mb3.7/4, mb1 3.8/7,mb1mx3.5/52,mbtmp3.8/7,ML3.7/2,Error ellipse: s-maj=37.3km s-min=23.3km az=80.0*

*ISCJB **13** 13:56:12.7±0.9,37.′15N±0.′06×144.′05E±0.′09,h33km, mb3.8/4,Error ellipse: s-maj=10.8km s-min=6.7km az=149.8*

*JMA **13** 13:56:15.4±0.2,37.′50N×143.′82E,h0km,M4.0*

ISC 13 13:56:13.8±1.3,37.′13N±0.′06×144.′1E±0.′1,h35km,n15, σ2§20/22,mb3.8/4,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.58**	**302**	P	**Pn**	**13 56 53.6**	**+0.6**
JIO				*eS*	**Sn**	**13 57 21.5**	**-1.6**
OFUJ	**Ofunato**	**2.76**	**316**	P	**Pn**	**13 56 55.7**	**+0.2**
OFUJ				S	**Sn**	**13 57 25.5**	**-2.1**
JMK	**Ichinoseki**	**2.94**	**309**	P	**Pn**	**13 56 59.0**	**+1.0**
JMK				*eS*	**Sn**	**13 57 30.7**	**-1.3**
JOU	**Okura**	**3.02**	**295**	P	**Pn**	**13 57 01.0**	**+1.9**
JOU				*eS*	**Sn**	**13 57 34.2**	**+0.1**
JFT	**Otama**	**3.06**	**278**	P	**Pn**	**13 57 02.0**	**+2.3**
JOM	**Ohasama**	**3.24**	**317**	S	**Sn**	**13 57 37.9**	**-1.6**
JANG	**Nango**	**3.83**	**328**	*eS*	**Sn**	**13 57 50.9**	**-3.3**
MJAR	**Matsushiro Arr**	**4.80**	**265**	Pn	**Pn**	**13 57 20.7**	**-2.8**
	baz=80,slow=16,SNR=1.8						
MJAR				Sn	**Sn**	**13 58 17.6**	**-0.3**
	baz=255,slow=34,SNR=2.1						
MAT	**Matsushiro**	**4.80**	**265**	P	**Pn**	**13 57 21.4**	**-2.2**
MAT				S	Sn	13 57 47.3	-31
JHJ	**Hachijo jima 2**	**5.36**	**223**	Pn	**Pn**	**13 57 31.7**	**+0.4**
	5.8nm,0.3s,baz=36,slow=14,SNR=2.5						
JHJ				Sn	**Sn**	**13 58 27.9**	**-4.0**
	33nm,0.3s,baz=72,slow=20,SNR=5.3						
ASAJ	**Asahikawa**	**7.08**	**351**	Pn	**Pn**	**13 57 54.9**	**0.0**
	1.4nm,0.3s,baz=190,slow=12,SNR=5.8						
ASAJ				Sn	**Sn**	**13 59 09.2**	**-4.7**
	0.7nm,0.3s,baz=52,slow=19,SNR=2.1						
MKAR	**Makanchi Array**	**45.91**	**302**	P	**P**	**14 04 32.7**	**-0.2**
	0.5nm,0.8s,baz=72,slow=9.3,SNR=2.9						
WRA	**Warramunga Arr**	**57.51**	**191**	P	**P**	**14 06 01.1**	**+1.5**
	1.3nm,0.6s,baz=11,slow=7.0,SNR=9.2						
ASAR	**Alice Springs**	**61.23**	**191**	P	**P**	**14 06 26.8**	**+1.5**
	0.5nm,0.7s,baz=7.8,slow=6.4,SNR=7.3						
AKASG	**Malin Array Be**	**75.54**	**323**	P	**P**	**14 07 56.3**	**+1.9**
	0.4nm,0.4s,baz=46,slow=5.8,SNR=2.8						

IDC 13 14:05:57.2±2.1,6.′97S×154.′83E,h0km,mb3.7/4, mb1 3.9/4,mb1mx3.6/29,mbtmp3.6/4,Error ellipse: s-maj=96.3km s-min=30.2km az=128.0, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**23.70**	**235**	P	P	14 11 10.8	-0.3
	1.7nm,0.8s,baz=58,slow=10,SNR=7.6						
ASAR	**Alice Springs**	**26.07**	**228**	P	P	14 11 32.8	+0.1
	0.3nm,0.7s,baz=56,slow=10,SNR=6.6						
MKAR	**Makanchi Array**	**83.28**	**319**	P	P	14 18 27.1	+1.1
	0.3nm,0.6s,baz=100,slow=5.9,SNR=4.6						
YKA	**Yellowknife Ar**

H11N3	WAKE ISLAND Hy	28.15	122	T	T	14 57 45.4	
	baz=315,slow=75,SNR=43						
H11S1	WAKE ISLAND Hy	28.87	124	T	T	14 58 42.1	
	baz=317,slow=75,SNR=30						
H11S3	WAKE ISLAND Hy	28.87	124	T	T	14 58 44.1	
	baz=317,slow=75,SNR=29						
H11S2	WAKE ISLAND Hy	28.89	124	T	T	14 58 48.4	
	baz=317,slow=75,SNR=18						
ZALV	Zalesovo Beam	41.81	312	P	P	14 29 21.7	-0.4
	0.6nm,0.4s,baz=81,slow=9.3,SNR=3.8						
MKAR	Makanchi Array	44.13	302	P	P	14 29 40.2	-0.8
	0.7nm,0.6s,baz=92,slow=7.2,SNR=6.7						
KDAK	Kodiak Island	46.45	42	LR	LR	14 48 14.6	
	comp=Z,23nm,21.5s,baz=336,slow=34						
ILAR	Eielson Array	48.83	33	P	P	14 30 18.2	+0.7
	1.1nm,0.7s,baz=269,slow=6.4,SNR=17						
INK	Inuvik	53.73	27	P	P	14 30 55.8	+1.7
	1.2nm,0.5s,baz=320,slow=6.6,SNR=12						
WRA	Warramunga Arr	57.66	188	P	P	14 31 22.6	-0.2
	0.6nm,0.8s,baz=6.3,slow=7.1,SNR=4.6						
ASAR	Alice Springs	61.39	188	P	P	14 31 48.4	-0.1
	0.3nm,0.7s,baz=16,slow=7.2,SNR=4.2						
YKA	Yellowknife Ar	63.15	30	P	P	14 32 00.2	+0.4
	0.4nm,0.7s,baz=304,slow=6.5,SNR=7.1						
FINES	FINESS Array B	68.49	332	P	P	14 32 33.2	-1.1
	2.6nm,0.8s,baz=46,slow=8.0,SNR=4.9						
NB2	NORSAR Subarra	73.81	337	P	P	14 33 05.9	-0.6
	comp=Z,0.8nm,0.6s,baz=39,slow=6.2						
NOA	NORSAR Array B	73.81	337	P	P	14 33 05.7	-0.9
	comp=Z,1.3nm,0.7s,baz=40,slow=5.8,SNR=6.9						
AKASG	Malin Array Be	74.08	322	P	P	14 33 07.2	-1.0
	comp=Z,1.1nm,0.5s,baz=45,slow=6.3,SNR=4.8						
NVAR	Mina Array Bea	74.37	53	P	P	14 33 12.3	+1.8
	comp=Z,0.3nm,0.7s,baz=289,slow=6.5,SNR=2.6						
PDAR	Pinedale Array	77.02	46	P	P	14 33 25.7	+0.1
	comp=Z,0.3nm,0.7s,baz=264,slow=3.6,SNR=3.6						
GERES	GERESS Array B	82.43	328	P	P	14 33 54.1	-0.5
	comp=Z,0.4nm,0.6s,baz=293,slow=6.8,SNR=3.0						
TXAR	Lajitas Array	89.50	53	P	P	14 34 31.0	+1.2
	comp=Z,0.3nm,0.4s,baz=326,slow=4.7,SNR=2.6						
LPAZ	La Paz	146.10	59	PKPbc	PKPab	14 41 14.2	+0.1
	comp=Z,0.6nm,0.4s,baz=327,slow=1.9,SNR=4.6						

MAN 13 14:23:21.9±77.7N×124±71.E, h15km, mb4.1, ML2.9, MS2.7, 2C-2D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TBP	Tagbilaran	0.84	265⇑	eP	Pb	14 23 37.4	0.0
LLP	Lapu-Lapu	0.92	307⇓	eP	Pb	14 23 37.7	-1.0
LLP				eS	Sn	14 23 53.2	+0.9
OCLP	Ormoc	1.28	355	eP	Pn	14 23 43.8	-0.6
OCLP				eS	Sg	14 24 05.6	+3.2
PLP	Palo	1.41	11⇓	eP	Pn	14 23 46.5	+0.3
PLP				eS	Sb	14 24 05.3	+0.4
SNPH	Sibulan	1.52	254⇑	iP	Pb	14 23 49.2	+0.3
SNPH				i S	Sg	14 24 12.0	+2.1
BUKP	Musuan	1.91	170	eP	Pn	14 23 53.5	+0.4
BUKP				eS	Sg	14 24 22.1	-0.4
GUIM	Jordan	2.26	292	eP	Pn	14 23 58.4	+0.5
IPIL	Ipil	2.89	227	eP	Pn	14 24 07.7	+1.1

NIED ***13*** *14:31:00,36.50N×141.60E,h32km,Mw3.5 Best double couple: M0 1.77000×10^14 NP1:φs=312.00000°,δ39.00000°, λ-58.00000°. NP2:φs=93.00000°,δ58.00000°, λ-113.00000°.*

JMA 13 14:31:13.5±0.1, 36.46N×141.61E, h55km±4km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	Hitachi	0.85	280	P	Pn	14 31 29.2	-0.2
JHO				S	Sn	14 31 41.2	+0.1
ONAJ	Iwakimizuishiy	0.91	315	P	Pn	14 31 30.1	-0.2
ONAJ				eS	Sn	14 31 42.8	+0.2
CHOJ	Chosi	0.97	219	P	Pn	14 31 31.3	+0.3
JFK	Kawauchi	1.08	327	P	Pn	14 31 32.5	0.0
JFT	Otama	1.47	316	P	Pn	14 31 39.0	+1.3
JFT				S	Sn	14 31 57.6	+1.8
JMM	Marumori	1.55	335	P	Pn	14 31 39.1	+0.4
JAG	Ashikaga	1.74	269	P	Pn	14 31 42.2	+0.9
JAG				S	Sn	14 32 03.5	+1.1
JFY	Yanaizu	1.79	302	P	Pn	14 31 44.0	+1.9
JFY				S	Sn	14 32 07.2	+3.4
BSO1	Boso 1	1.88	196	P	Pn	14 31 43.1	+0.4
BSO1				S	Sn	14 32 04.3	-0.6
BSO3	Boso 3	1.88	209	P	Pn	14 31 44.1	+1.1
MAT	Matsushiro	2.74	273	P	Pn	14 31 57.5	+2.4
MAT				S	Sn	14 32 31.9	+4.9

IDC ***13*** *14:40:53.9±1.0,30.93N×78.07E,h0km,mb3.7/8, mb1 3.8/10,mb1mx3.5/46,mbtmp3.6/10,ML3.4/2,Error ellipse: s-maj=41.4km s-min=19.1km az=57.0*
ISCJB ***13*** *14:40:56.3±0.9,31.11N±0.03×78.24E±0.05,h22km±7km, mb3.6/8,Error ellipse: s-maj=6.5km s-min=5.1km az=173.9*
NDI ***13*** *14:40:57.2±6.2,31.01N×78.26E,h10km,ML3.2*

ISC 13 14:40:55.8±1.3, 31.09N±0.04×78.22E±0.04, h10km±9km, n26, σ0.70/35, mb3.6/8, Western Xizang-India border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DDI	Dehra Dun	0.78	191	eP	Pb	14 41 11.5	0.0
DDI				eS	Sg	14 41 21.5	+0.5
DDI				IAML		14 41 25.5	
	comp=E,2μm,0.6s						
DDI				IAML		14 41 26.8	
	comp=N,1μm,0.4s						
SMLA	Simla	0.91	273	eP	Pg	14 41 13.2	-0.1
SMLA				eS	Sg	14 41 24.4	-0.7
SMLA				IAML		14 41 25.5	
	comp=N,1μm,0.4s						
SMLA				IAML		14 41 26.0	
	comp=E,1μm,0.2s						
JOSI	Joshimath	1.27	114	eP	Pg	14 41 20.4	+0.3
JOSI				eS	Sb	14 41 35.8	-0.6
KKR	Kurukshetra	1.65	227	eP	Pg	14 41 27.5	0.0
KKR				eS	Sg	14 41 48.6	-0.3
JWA	Jwalamukhi	1.79	296	eP	Pb	14 41 28.0	-0.7
JWA				eS	Sb	14 41 52.0	+0.7
DHRM	DHARAMSHALA	2.01	306	eP	Pb	14 41 32.4	-0.2
DHRM				eS	Sb	14 41 58.5	+0.8
DHRM				IAML		14 42 00.8	
	comp=N,416nm,0.3s						
DHRM				IAML		14 42 01.1	
	comp=E,473nm,0.5s						
PONG	Pong	2.12	295	eP	Pb	14 41 34.0	-0.4
PONG				ex	x	14 42 04.0	
NDI	New Delhi	2.55	200	eP	Pn	14 41 38.5	+1.2
NDI				ex	x	14 42 04.0	
RTK	Rohtak	2.58	218	eP	Pn	14 41 38.3	+0.7
RTK				eS	Sn	14 42 10.1	+1.1
BHGR	Bahadurgarh	2.64	205	eS	Sn	14 42 11.3	+0.8
KUDL	Kundal	3.30	208	eP	Pn	14 41 46.6	-0.9
KUDL				eS	Sn	14 42 26.6	-0.2
KUDL				AML	AML	14 42 40.6	
	comp=N,65nm,0.3s						
KUDL				AML	AML	14 42 42.5	
	comp=E,69nm,0.5s						
KHET	Khetri	3.67	216	eP	Pn	14 41 52.5	-0.2
KHET				eS	Sn	14 42 35.5	-0.5
KHET				AML	AML	14 42 52.0	
	comp=N,19nm,0.3s						
KHET				AML	AML	14 42 52.1	
	comp=E,27nm,0.3s						
SARP	Sargodha	4.81	281	P	Pn	14 42 08.4	0.0
CHCP	Chirah Chowk	4.92	303	P	Pn	14 42 10.1	+0.3
THW	Thamme Wali	5.76	289	P	Pn	14 42 22.3	+0.8
CEP	Cherat	5.99	299	P	Pn	14 42 25.4	+0.7
MKAR	Makanchi Array	15.99	10	Pn	Pn	14 44 40.9	0.0
	comp=E,0.2nm,0.3s,baz=195,slow=10,SNR=4.2						
KURBB	Kurchatov Arra	19.52	1	P	P	14 45 23.0	-0.2
	comp=E,0.1nm,0.3s,baz=190,slow=9.7,SNR=8.1						
BVAR	Borovoye Array	22.65	348	P	P	14 45 58.5	+1.5
	comp=E,0.7nm,0.6s,baz=148,slow=8.4,SNR=5.0						
AKTO	Aktyubinsk	24.51	328	P	P	14 46 15.9	+0.6
	comp=E,1.3nm,0.4s,baz=107,slow=4.4,SNR=5.2						
FINES	FINESS Array B	45.29	328	P	P	14 49 14.3	+0.9
	comp=E,1.9nm,0.9s,baz=240,slow=34,SNR=3.7						
ARCES	ARCESS Array B	48.41	338	P	P	14 49 37.5	-0.3
	comp=E,2.4nm,0.9s,baz=108,slow=8.6,SNR=4.7						
NOA	NORSAR Array B	52.27	325	P	P	14 50 06.8	-0.3
	comp=E,0.3nm,0.5s,baz=90,slow=7.6,SNR=2.3						
TORD	Torodi Ar. Bea	71.89	275	P	P	14 52 18.2	-1.4
	comp=E,0.3nm,0.4s,baz=52,slow=5.1,SNR=4.3						
WRA	Warramunga Arr	73.99	126	P	P	14 52 31.6	-0.3
	comp=E,0.5nm,0.9s,baz=321,slow=6.0,SNR=6.5						
ASAR	Alice Springs	76.21	129	P	P	14 52 44.6	0.0
	comp=E,0.2nm,0.5s,baz=310,slow=6.0,SNR=6.6						

ISK ***13*** *14:45:05.6,37.24N×28.21E,h6km,MD2.7*
DDA ***13*** *14:45:06.2,37.24N×28.18E,h7km,Md2.8*
CSEM ***13*** *14:45:06.3±0.2,37.24N×28.20E,h5km,MD2.7,Error ellipse: s-maj=4.0km s-min=3.1km az=32.0*

ISC 13 14:45:06.3±1.0, 37.25N±0.03×28.21E±0.03, h4km±10km, n25, σ1.20/36, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	Yerkesik	0.13	151	ePG	Pg	14 45 08.5	-0.4
YER				eSG	Sg	14 45 10.6	0.0
YER	Yerkesik	0.13	151	ePg	Pg	14 45 08.5	-0.4
YER				eSg	Sg	14 45 10.6	0.0
AYDN	Tasoluk	0.49	328	P	Pg	14 45 15.6	-0.1
AYDN				S	Sg	14 45 23.1	+1.0
AYDN	Tasoluk	0.49	328	iP	Pg	14 45 15.6	-0.1
AYDN				i S	Sg	14 45 23.1	+1.0
TURN	Turunc	0.49	139	iP	Pg	14 45 14.7	-1.1
TURN				i S	Sg	14 45 22.1	0.0
DALY	Dalyan (Mu¨la	0.56	140	ePG	Pg	14 45 16.6	-0.4
DALY	Dalyan (Mu¨la	0.56	140	ePg	Pg	14 45 16.7	-0.4
BDRM	Kayabasi	0.64	254	P	Pg	14 45 18.7	+0.2
BDRM				S	Sg	14 45 27.3	+0.6
BDRM	Kayabasi	0.64	254	iP	Pg	14 45 18.7	+0.2
BDRM				i S	Sg	14 45 27.3	+0.6
BODT	Bodrum	0.74	256	ePG	Pg	14 45 20.4	-0.1
BODT	Bodrum	0.74	256	ePg	Pg	14 45 20.4	-0.1
AYDB	Zeytinkoy-Aydi	0.74	340	ePG	Pg	14 45 20.5	-0.1
AYDB	Zeytinkoy-Aydi	0.74	340	ePg	Pg	14 45 20.5	-0.1
DNZL	Cakiroluk	0.80	56	P	Pg	14 45 21.8	+0.1
DNZL				S	Sn	14 45 35.0	-2.1
DNZL	Cakiroluk	0.80	56	iP	Pg	14 45 21.8	+0.1
DNZL				i S	Sn	14 45 35.0	-2.1
FETY	Fethiye	0.93	131	ePG	Pg	14 45 24.1	-0.1
FETY	Fethiye	0.93	131	ePg	Pg	14 45 24.1	-0.1
GOLH	Golhisar	1.08	90	P	Pb	14 45 27.5	-0.2
GOLH	Golhisar	1.08	90	iP	Pb	14 45 27.5	-0.2
GOLH				i S	Sn	14 45 47.7	+3.9
KULA	Kula-Manisa	1.32	16	ePN	Pb	14 45 31.2	-0.4
KULA	Kula-Manisa	1.32	16	ePn	Pb	14 45 31.2	-0.4
ELL	Elmali	1.45	110	ePN	Pn	14 45 32.9	-0.5
ELL	Elmali	1.45	110	ePn	Pn	14 45 32.9	-0.5
AKAS	Kas	1.51	132	P	Pg	14 45 35.2	-0.1
AKAS	Kas	1.51	132	iP	Pg	14 45 35.2	-0.1
AKAS				i S	Sg	14 45 59.0	+4.1

ISCJB ***13*** *14:45:32.9±0.9,25.75S±0.03×70.7W±0.2,h35km,Error ellipse: s-maj=19.9km s-min=4.5km az=178.2*
NEIC ***13*** *14:45:33.0,25.54S×71.12W,h18km,ML4.0(GUC),After GUC.*
NEIC Felt [II] at Copiapo, Taltal and Tierra Amarilla.
GUC ***13*** *14:45:33.6±0.3,25.54S×71.12W,h18km±3km,ML4.0*
SJA ***13*** *14:45:35.9±0.8,26.03S×70.58W,h40km±42km,ML4.0, MW3.4*

ISC 13 14:45:35.2±1.3, 25.68S±0.04×70.8W±0.1, h35km, n15, σ2.24/21, 1C-2D, Near coast of northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB14	IPOC Station P	1.11	19⇓	iP	Pn	14 45 53.4	-1.2
PB14				i S	Sn	14 46 08.4	-0.4
PB14				IAML		14 46 11.4	
	comp=E,3μm,0.3s						
PB10	IPOC Station P	2.17	6⇑	iP	Pn	14 46 07.4	-1.5
PB10				i S	Sn	14 46 35.6	+1.0
PB10				IAML		14 46 46.0	
	comp=N,2μm,0.5s						
PB06	IPOC Station P	3.17	21⇓	iP	Pn	14 46 20.5	-2.3
PB06				i S	Sn	14 47 03.6	+4.2
PB06				IAML		14 47 16.0	
	comp=N,494nm,0.6s						
LCO	Las Campanas	3.32	178	eP	Pn	14 46 23.0	-1.8
LCO	Las Campanas	3.32	178	ePn	Pn	14 46 23.6	-1.3
LCO				eSn	Sn	14 47 06.0	+2.8
LVC	Limon Verde	3.51	30	ePn	Pn	14 46 25.8	-1.9
LVC				eSn	Sn	14 47 08.3	+0.1
VCA	Vinchina	3.82	143	eP	Pn	14 46 30.1	-1.6
VCA				eS	Sn	14 47 08.7	-6.7
PB09	IPOC Station P	4.12	21	eP	Pn	14 46 34.1	-1.8
PB09				i S	Sn	14 47 27.5	+4.5
AGUA	GUANDACOL	4.31	152	eP	Pn	14 46 38.0	-0.4
CYA	Choya	5.24	123	eP	Pn	14 46 49.7	-1.3
AVFE	Valle Fertil	5.77	150	eP	Pn	14 46 56.4	-2.0
AVFE				eS	Sn	14 47 57.0	-6.5
AVFE				IAML		14 48 10.3	
	comp=Z,84nm,0.6s						
RTLS	Leoncito	6.23	168	eP	Pn	14 47 03.8	-1.2
ACAN	Cantantal	7.29	155	eP	Pn	14 47 17.5	-1.8
TRQA	Tornquist	14.42	151	P	Pn	14 48 59.7	+2.9
SAML	Samuel	18.15	25	Pn	Pn	14 49 43.4	-1.2

ISK ***13*** *14:48:29.4,39.41N×37.21E,h3km,MD2.8*
ISCJB ***13*** *14:48:30.3±0.6,39.43N±0.04×37.24E±0.04,h3km±9km, Error ellipse: s-maj=6.4km s-min=5.6km az=6.3*
CSEM ***13*** *14:48:30.2±0.2,39.40N×37.19E,h5km,MD2.8,Error ellipse: s-maj=4.4km s-min=3.4km az=52.0*
DDA ***13*** *14:48:30.6,39.43N×37.20E,h7km,Md2.8*

ISC 13 14:48:29.7±1.4, 39.46N±0.03×37.12E±0.03, h4km±12km, n25, σ1.00/33, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CUKAN	kangal_SIVAS	0.30	118	iP	Pg	14 48 35.4	-0.2
CUKAN				i S	Sb	14 48 41.9	-1.2
CUALT	Altinyayla-SIV	0.34	237	P	Pb	14 48 37.4	-1.0
CUALT	Altinyayla-SIV	0.34	237	iP	Pb	14 48 37.4	-1.0
CUALT				i S	Sb	14 48 45.2	+1.1
SVSK	Karacayir	0.47	348	ePG	Pb	14 48 40.5	0.0
SVSK				eSG	Sb	14 48 48.7	+0.9
SVSK	Karacayir	0.47	348	ePg	Pb	14 48 40.5	0.0
SVSK				eSg	Sb	14 48 48.7	+0.9
CUZAR	Zara_SIVAS	0.66	49	P	Pb	14 48 43.4	-0.5
CUZAR	Zara_SIVAS	0.66	49	iP	Pb	14 48 43.4	-0.5
CUZAR				i S	Sn	14 48 56.5	-0.3
CUSAR	Sarkisla-SIVAS	0.68	267	P	Pb	14 48 44.1	-0.1
CUSAR	Sarkisla-SIVAS	0.68	267	iP	Pb	14 48 44.1	-0.1
CUSAR				i S	Sn	14 48 56.6	-0.7
DARE	Darende-Malaty	0.93	162	ePG	Pg	14 48 46.5	-1.0
DARE	Darende-Malaty	0.93	162	ePg	Pg	14 48 46.5	-1.0
RSDY	Resadiye-TOKAT	0.95	9	ePG	Pn	14 48 49.2	-0.6
RSDY	Resadiye-TOKAT	0.95	9	ePg	Pn	14 48 49.3	-0.6
TOKT	Tokat	0.97	333	ePG	Pn	14 48 50.2	+0.1
TOKT	Tokat	0.97	333	ePg	Pn	14 48 50.2	+0.1
ILIC	ilic-Erzincan	1.12	90	ePG	Pg	14 48 50.2	-1.0
ILIC	ilic-Erzincan	1.12	90	ePg	Pg	14 48 50.2	-1.0
AKCD	Akcadag	1.32	152	P	Pn	14 48 55.3	+0.3
AKCD	Akcadag	1.32	152	iP	Pn	14 48 55.3	+0.3
AKCD				i S	Sn	14 49 15.3	+2.3
ELZG	Elazig	1.74	123	P	Pn	14 49 00.2	-0.6
ELZG	Elazig	1.74	123	iP	Pn	14 49 00.2	-0.6
ELZG				i S	Sg	14 49 28.6	+3.0
PTK	Pertek	1.85	107	ePN	Pn	14 49 01.8	-0.6
PTK	Pertek	1.85	107	ePn	Pn	14 49 01.8	-0.6
CORM	Corum	2.05	291	ePN	Pb	14 49 07.0	-0.6
CORM	Corum	2.05	291	ePn	Pb	14 49 07.0	-0.6

ISCJB ***13*** *14:54:34.5±0.9,40.79N±0.07×40.22E±0.07,h13km,Error ellipse: s-maj=11.0km s-min=5.1km az=146.9*
ISK ***13*** *14:54:34.7,40.76N×40.18E,h5km,MD2.5*
CSEM ***13*** *14:54:34.7,40.76N×40.18E,h5km,MD2.5*

ISC 13 14:54:34.0±1.1, 40.83N±0.06×40.24E±0.05, h13km, n10, σ0.73/14, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BAYT	Ayd¨–ntepe-Bay	0.44	190	ePG	Pg	14 54 42.4	-0.4
BAYT				eSG	Sg	14 54 48.1	-0.7
BAYT	Ayd¨–ntepe-Bay	0.44	190	ePg	Pg	14 54 42.4	-0.4
BAYT				eSg	Sg	14 54 48.1	-0.7
GUMT	Gumushane	0.69	238	ePG	Pg	14 54 47.1	-0.3
GUMT	Gumushane	0.69	238	ePg	Pg	14 54 47.1	-0.3
DBAD	Bademkaya	1.12	80	iP	Pg	14 54 55.3	-0.2
DBAD				i S	Sn	14 55 10.3	-0.5
ESPY	Espiye-Giresun	1.15	275	ePN	Pn	14 54 56.3	+0.5
ESPY	Espiye-Giresun	1.15	275	ePn	Pn	14 54 56.3	+0.5
DAGI	Agillar	1.29	78	iP	Pb	14 54 58.0	-0.2
DAGI				i S	Sg	14 55 15.7	0.0
PTK	Pertek	2.04	199	ePN	Pn	14 55 09.6	+1.3
PTK	Pertek	2.04	199	ePn	Pn	14 55 09.6	+1.3

JMA 13 14:59:17.5±0.3, 38.35N×144.52E, h17km, M3.7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	2.35	289	P	Pn	14 59 56.4	+1.1
JIO	Ouri	2.49	273	P	Pn	14 59 58.4	+1.1
JIO				S	Sn	15 00 28.7	+1.4
JMK	Ichinoseki	2.65	284	P	Pn	15 00 00.9	+1.4
JOM	Ohasama	2.76	295	P	Pn	15 00 02.2	+1.3
JOM				S	Sn	15 00 36.0	+2.2
JMM	Marumori	2.98	262	P	Pn	15 00 04.1	+0.1
JMM				eS	Sn	15 00 40.9	+1.6
JOU	Okura	3.03	271	P	Pn	15 00 07.0	+2.3
JANG	Nango	3.08	312	P	Pn	15 00 07.2	+1.8
JANG				S	Sn	15 00 43.4	+1.5
JRG	Rokugo	3.21	290	P	Pn	15 00 09.3	+2.2
JYK	Kaneyama	3.31	281	P	Pn	15 00 10.7	+2.2
JYK				eS	Sn	15 00 50.1	+2.7
JFT	Otama	3.41	257	eS	Sn	15 00 51.9	+1.9

IDC ***13*** *15:05:31.4±2.0,6.30S×153.61E,h0km,mb3.4/6, mb1 3.7/7,mb1mx3.6/30,mbtmp3.6/7,ML2.4/1,Error ellipse: s-maj=69.9km s-min=23.4km az=122.0*
ISCJB ***13*** *15:05:36.0±1.4,6.2S±0.2×153.2E±0.2,h29km,mb3.3/6, Error ellipse: s-maj=44.8km s-min=11.6km az=136.9*

ISC 13 15:05:36.7±1.8, 6.2S±0.3×153.4E±0.3, h29km, n8, σ1.17/9, mb3.4/6, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	Port Moresby	6.93	243	Pn	Pn	15 07 17.7	+1.4
	4.1nm,0.3s,baz=59,slow=6.0,SNR=14						
PMG				Sn	Sn	15 08 32.9	-1.4
	1.0nm,0.3s,baz=144,slow=19,SNR=3.1						
WRA	Warramunga Arr	22.98	232	P	P	15 10 39.1	-0.1
	0.6nm,0.8s,baz=57,slow=11,SNR=3.1						
ASAR	Alice Springs	25.52	225	P	P	15 11 02.9	-0.1
	0.2nm,0.6s,baz=57,slow=9.5,SNR=6.7						
SONM	Songino Array	67.85	328	P	P	15 16 32.1	-0.4
	0.3nm,0.5s,baz=122,slow=5.2,SNR=2.7						
MKAR	Makanchi Array	81.79	319	P	P	15 17 52.5	-0.5
	0.1nm,0.4s,baz=101,slow=5.1,SNR=2.9						
ZALV	Zalesovo Beam	82.67	326	P	P	15 17 59.2	+1.8
	0.5nm,0.4s,baz=108,slow=4.7,SNR=2.7						
ILAR	Eielson Array	83.27	22	P	P	15 17 59.8	-0.5
	0.3nm,0.7s,baz=242,slow=5.2,SNR=5.2						
TORD	Torodi Ar. Bea	151.29	286	PKPbc	PKPbc	15 25 27.9	-0.7
	0.6nm,0.7s,baz=95,slow=2.4,SNR=5.1						

MEX 13 15:07:46.1±0.9, 16.97N×99.56W, h31km±8km, MD3.5, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ACP2	Acapulco	0.32	253	eP	Pb	15 07 52.3	-1.6
ACP2				eS	Sb	15 07 58.1	-1.2
CAIG	El Cayaco	0.68	276	eP	Pb	15 07 56.9	-2.5
CAIG				eS	Sb	15 08 06.3	-2.3
MEIG	Mezcala	0.95	357	eP	Pn	15 08 00.5	-2.9
MEIG				eS	Sn	15 08 13.0	-3.0
TLIG	Tlapa	1.12	58	eP	Pn	15 08 03.7	-2.1
TLIG				eS	Sn	15 08 18.0	-2.3
PNIG	Pinotepa	1.49	113	eP	Pn	15 08 09.6	-1.3
PNIG				eS	Sn	15 08 26.3	-3.0
ARIG	Puente Sto Nin	1.50	330	eP	Pn	15 08 09.4	-1.6
ARIG				eS	Sn	15 08 27.1	-2.5
YAIG	Yautepec	1.94	14	eP	Pn	15 08 15.7	-1.4
YAIG				i S	Sn	15 08 37.9	-2.6

GUC 13 15:11:04.5±0.6, 20.74S×69.21W, h86km±4km, ML3.8, 4C-2D, Northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB01	IPOC Station P	0.40	221⇑	iP	Pn	15 11 18.3	+0.2
PB01				i S	Sn	15 11 28.8	+0.5
PB01				IAML		15 11 29.4	
	comp=N,9μm,0.1s						
PB08	IPOC Station P	0.60	5⇑	iP	Pn	15 11 20.6	+0.5
PB08				i S	Sn	15 11 32.8	+1.1
PB08				IAML		15 11 34.5	
	comp=N,3μm,0.1s						
PB09	IPOC Station P	1.05	182⇓	iP	Pn	15 11 25.3	+0.6
PB09				i S	Sn	15 11 40.9	+1.1
PB09				IAML		15 11 42.0	
	comp=N,4μm,0.7s						
PB11	IPOC Station P	1.06	336⇑	iP	Pn	15 11 25.2	+0.4
PB11				i S	Sn	15 11 41.5	+1.5
PSGC	Pisagua	1.43	323⇑	iP	Pn	15 11 29.3	+0.1
PSGC				i S	Sn	15 11 49.0	+1.1
PSGC				IAML		15 11 50.6	
	comp=E,1μm,0.5s						
MNMC	Minye Minye	1.64	347⇓	iP	Pn	15 11 33.0	+0.8
MNMC				i S	Sn	15 11 54.1	+1.0
MNMC				IAML		15 12 01.1	
	comp=N,3μm,0.1s						

CASC ***13*** *15:18:19.3±27.0,6.23N×72.74W,h154km±239km*
ISCJB ***13*** *15:18:23.3±0.2,6.75N±0.02×72.99W±0.02,h166km±1km, mb4.9/259,Error ellipse: s-maj=3.2km s-min=2.7km az=33.9*
NEIC ***13*** *15:18:24.6±0.1,

CAPV Capacho 1.31 31⇓ eP Pn 15 18 54.3 +1.4
CAPV eS Sn 15 19 15.1 +0.1
OCAC Ocana 1.53 348 i P Pn 15 18 54.7 -0.3
OCAC eS Sn 15 19 17.1 -1.6
OCAC Ocana 1.53 348 i P Pn 15 18 54.7 -0.3
OCAC eS Sn 15 19 16.8 -1.9
OCAC i 15 19 21.9
comp=Z,32µm,0.3s
NORC Norcasia 2.20 238 i P Pn 15 19 01.9 -0.4
NORC eS Sn 15 19 30.0 -1.6
ROSC El Rosal 2.30 215 P Pn 15 19 05.8 +2.0
comp=Z,2µm,0.3s,baz=303,slow=4.6,SNR=734
ROSC S Sn 15 19 34.3 -0.1
comp=Z,956nm,0.3s,baz=150,slow=20,SNR=6.6
ROSC El Rosal 2.30 215 ePn Pn 15 19 05.7 +1.9
ROSC El Rosal 2.30 215 ePn Pn 15 19 06.0 +2.2
ROSC eSn Sn 15 19 32.8 -1.6
ROSC eSn Sn 15 19 32.8 -1.6
HELC Santa Helena 2.58 258 ePn Pn 15 19 08.1 +1.1
HELC eSn Sn 15 19 34.4 -5.7
HELC Santa Helena 2.58 258 eP Pn 15 19 06.8 -0.2
HELC i 15 19 44.5
comp=Z,5µm,0.6s
SOCV Socops 2.62 54⇓ eP Pn 15 19 08.5 +1.2
SOCV eS Sn 15 19 39.5 -1.2
VILC Villavicencio, 2.70 195 eP Pn 15 19 09.3 +0.9
VILC eS Sn 15 19 43.2 +0.6
VILC i 15 19 46.7
comp=Z,6µm,0.3s
GUYC Guyana, Colomb 2.82 238 eP Pn 15 19 09.9 -0.2
GUYC i 15 19 52.3
comp=Z,13µm,0.6s
TOLC Tolima 3.15 227 eP Pn 15 19 14.9 +0.7
SDV Santo Domingo 3.17 47 P Pn 15 19 15.6 +1.3
comp=Z,708nm,0.3s,baz=231,slow=9.6,SNR=486
SDV S Sn 15 19 52.3 -0.8
comp=Z,530nm,0.3s,baz=326,slow=18,SNR=33
SDV Santo Domingo 3.17 47 ePn Pn 15 19 15.6 +1.3
SDV e 15 19 45.4
SDV eSn Sn 15 19 49.5 -3.6
SDV Santo Domingo 3.17 47 i P Pn 15 19 15.6 +1.3
SDV i 15 19 59.2
comp=Z,3µm,0.5s
DBBC Dabeiba 3.20 275 i P Pn 15 19 14.2 -0.4
PRAC Prado 3.54 212 ePn Pn 15 19 19.0 0.0
PRAC eSn Sn 15 19 53.3 -8.2
PRAC Prado 3.54 212⇑ i P Pn 15 19 18.9 0.0
SJAC San Juan de Ar 3.57 196 i P Pn 15 19 19.9 +0.6
SJAC eS Sn 15 20 03.2 +1.0
SJAC i 15 20 09.6
comp=Z,8µm,0.3s
VIRV Villa del Rosa 3.79 9⇑ eP Pn 15 19 21.1 -0.9
VIRV eS Sn 15 20 02.3 -4.7
SANV Sanarito 4.39 51 eP Pn 15 19 30.2 +0.3
CURV Curarigua 4.43 42⇑ eP Pn 15 19 30.9 +0.5
CURV eS Sn 15 20 17.3 -4.7
DABV Dabajuro 4.77 29⇑ eP Pn 15 19 35.0 +0.3
DABV eS Sn 15 20 25.0 -4.9
TEPV Terepaima 4.94 49⇑ eP Pn 15 19 37.8 +0.7
SIQV Siquisique 5.00 39⇑ eP Pn 15 19 37.0 -0.9
BAUV El Baul 5.38 66⇓ eP Pn 15 19 42.0 -0.7
BAUV eS Sn 15 20 40.0 -4.3
MONV Montecano 5.98 30⇑ eP Pn 15 19 49.9 -0.9
MONV eS Sn 15 20 51.6 -7.1
TURV Turiamo 6.29 54 eP Pn 15 19 54.3 -0.6
ZANG Zanguenga, Cho 7.16 288 eP Pn 15 20 03.2 -3.1
ZANG eP Pn 15 20 03.8 -2.6
ZANG eS Sn 15 21 22.6 -4.1
BCIP Isla Barro Col 7.19 290⇑ P Pn 15 20 03.7 -3.1
BCIP eP Pn 15 20 03.8 -3.1
BCIP P Pn 15 20 03.8 -3.1
BCIP eS Sn 15 21 21.4 -6.2
BCIP Isla Barro Col 7.19 290 ePn Pn 15 20 03.8 -3.1
BCIP eSn Sn 15 21 23.4 -4.2
AZU Azuero 7.30 279⇓ i P Pn 15 20 06.5 -1.7
AZU eS Sn 15 21 22.4 -7.6
BIRV Birongo 7.62 60 eP Pn 15 20 11.8 -0.7
CUPV Cœpira 7.86 65 eP Pn 15 20 15.2 -0.6
OTAV Otavalo 8.44 220 eP Pn 15 20 23.4 -0.5
OTAV Otavalo 8.44 220 ePn Pn 15 20 23.3 -0.6
BRU Baru 9.70 283⇑ i P Pn 15 20 40.5 -0.1
HDC Heredia 11.47 287 ePn Pn 15 21 05.3 +1.8
YHJ Yallahs 11.60 343 eP Pn 15 21 07.3 +2.2
YHJ eS Sn 15 22 53.1 -21
PAPH Port-au-Prince 11.73 3 ePn Pn 15 21 09.4 +2.6
BANI BANI 11.87 12 ePn Pn 15 21 08.3 -0.3
STH Stony Hill 11.87 342 eP Pn 15 21 09.8 +1.2
STH eS Sn 15 22 58.5 -22
BNJ Bonny Gate 12.14 342 eP Pn 15 21 13.0 +0.9
MTDJ Mount Denham 12.25 339 eP Pn 15 21 11.4 -2.1
MTDJ Mount Denham 12.25 339 ePn Pn 15 21 14.1 +0.6
CVJ Coleyville 12.25 339 eP Pn 15 21 15.3 +1.8
CVJ eS Sn 15 23 06.7 -23
SDDR Presa de Saban 12.29 8 eP Pn 15 21 13.7 -0.2
SDDR Presa de Saban 12.29 8 ePn Pn 15 21 14.2 +0.3
BBJ Bamboo Saint A 12.30 341 eP Pn 15 21 15.7 +1.6
BBJ eS Sn 15 23 07.8 -23
JTS JuntasAbangare 12.34 287 ePn Pn 15 21 16.4 +1.7
GRGR Grenville 12.40 64 ePn P 15 21 18.7 -2.2
MPR Mayaguez 12.76 26 ePn Pn 15 21 18.1 -1.9
MPR eSn Sn 15 23 30.8 -10
CELP Cerrillos 12.89 28 ePn Pn 15 21 19.8 -1.9
AGP Aguadilla 12.93 26 ePn Pn 15 21 22.0 -0.1
LRS Lares 12.96 27 ePn Pn 15 21 20.9 -1.7
SJG San Juan 13.13 30 P Pn 15 21 23.6 -1.1
comp=Z,26nm,0.3s,baz=200,slow=13,SNR=29
SJG S Sn 15 23 37.1 -13
comp=Z,1.0nm,0.3s,baz=328,slow=19,SNR=6.1
SJG San Juan 13.13 30 ePn Pn 15 21 22.9 -1.8
SJG eSn Sn 15 23 37.1 -13
SVB Belmont 13.26 60 ePn Pn 15 21 26.1 -0.4
GTBY Guantanamo Bay 13.27 351 eP Pn 15 21 27.3 +0.8
GTBY Guantanamo Bay 13.27 351 ePn Pn 15 21 28.4 +1.8
HUMP Col San Antoni 13.31 31 ePn Pn 15 21 26.0 -1.0
CBYP Canovanas 13.41 31 ePn Pn 15 21 27.3 -1.1
MTP Monte Pirata 13.42 32 ePn Pn 15 21 27.0 -1.4
CDVI St. Croix 13.58 36 ePn Pn 15 21 30.5 0.0
STVI Saint Thomas 13.95 33 ePn Pn 15 21 33.7 -1.4
STVI eSn Sn 15 24 05.5 -4.6
FDF Fort de France 14.09 55 ePn Pn 15 21 34.1 -2.8
SABA Saba 14.41 40 ePn Pn 15 21 40.5 -0.4
SEUS St. Eustatius 14.49 42 ePn Pn 15 21 41.8 -0.1
GDHS Morne Mazeau, 14.51 48 ePn Pn 15 21 43.0 +0.7
ABVI Anegada Island 14.60 34 ePn Pn 15 21 43.4 +0.1
ATAH Atahualpa 14.79 201 P P 15 21 48.0 0.0
comp=Z,7.8nm,0.3s,baz=6.2,slow=7.1,SNR=17
ATAH S S 15 24 40.0 +3.5
comp=Z,0.4nm,0.3s,baz=209,slow=20,SNR=3.6
GRTK Grand Turk 14.80 7 ePn Pn 15 21 44.3 -1.3
SMRT St. Maarten 14.83 40 ePn Pn 15 21 46.1 -0.1
PTGA Pitinga 14.97 119 P Pn 15 21 48.5 +0.6
comp=Z,2.8nm,0.3s,baz=300,slow=13,SNR=34
PTGA S Sn 15 24 30.3 -4.3
comp=Z,2.4nm,0.3s,baz=329,slow=19,SNR=6.1
PTGA Pitinga 14.97 119 ePn Pn 15 21 48.5 +0.6
PTGA eP P 15 21 48.7 -0.8
PTGA eSn Sn 15 24 30.3 -4.3
ANWB Willy Bob 15.42 44 ePn Pn 15 21 53.5 +0.1
comp=Z,81nm,1.1s
TGUH Tegucigalpa,Un 15.81 299 ePn Pn 15 21 57.6 -0.6
comp=Z,117nm,0.9s
SAML Samuel 18.40 148 eP P 15 22 28.1 +0.9
comp=Z,46nm,0.9s
PAYG Puerto Ayora 18.76 248 eP Pn 15 22 33.0 -0.5
comp=Z,69nm,0.9s
NNA Nana 18.99 192 P P 15 22 34.5 +0.8
comp=Z,2.2nm,0.3s,baz=343,slow=11,SNR=13
NNA Nana 18.99 192 eP Pn 15 22 35.1 -1.1
TEIG Tepich 19.99 314 P P 15 22 45.1 +0.8
comp=Z,69nm,0.5s,baz=88,slow=23,SNR=50
TEIG Tepich 19.99 314 eP P 15 22 45.5 +1.1
comp=Z,87nm,0.6s
CCIG Comitan 21.00 299 eP P 15 22 54.4 -1.0
comp=Z,61nm,0.6s
DWPF Disney Wildern 22.71 340 eP P 15 23 13.3 +0.9
comp=Z,36nm,0.9s
LPAZ La Paz 23.38 168 P P 15 23 19.6 +0.2
comp=Z,13nm,0.8s,baz=344,slow=8.4,SNR=46
CMIG Matias Romero 23.73 298 P P 15 23 18.4 -3.4
comp=Z,7.4nm,0.6s,baz=119,slow=7.6,SNR=13
SIV San Ignacio 25.48 152 P P 15 23 37.8 0.0
comp=Z,4.9nm,0.7s,baz=329,slow=9.9,SNR=13

TIGA Tifton 26.50 339 eP P 15 23 46.3 -0.5
comp=Z,27nm,0.8s
PB11 IPOC Station P 26.54 173 eP P 15 23 46.7 -0.7
comp=Z,15nm,0.7s
CSU Charleston Sou 26.93 347 eP P 15 23 49.3 -1.2
TLIG Tlapa 27.18 296 eP P 15 23 52.8 -0.3
comp=Z,28nm,0.9s
448A Bay Minette 27.81 332 P P 15 24 00.4 +2.0
baz=147
PB01 IPOC Station P 27.82 173 eP P 15 23 57.2 -1.5
comp=Z,18nm,1.2s
447A Lucedale 28.08 330 P P 15 24 02.9 +2.0
baz=145
GOGA Godfrey 28.27 341 eP P 15 24 04.0 +1.6
comp=Z,16nm,0.9s
446A Poplarville 28.43 329 P P 15 24 06.0 +2.0
baz=144
JSC Jenkinsville 28.46 346 eP P 15 24 05.3 +1.2
comp=Z,17nm,0.8s
347A Saraland 28.52 331 P P 15 24 06.9 +2.1
baz=146,SNR=7.0
248A Dixon Mills 28.73 333 P P 15 24 08.4 +1.8
baz=148
445A Amite 28.89 328 P P 15 24 09.9 +1.9
baz=142
346A Big Creek Wild 28.96 330 P P 15 24 10.6 +1.9
baz=145
444A Pine Grove 29.09 327 P P 15 24 12.1 +2.3
baz=142
345A Thompson Farm, 29.18 329 P P 15 24 12.4 +1.8
baz=144
LRAL Lakeview Retre 29.22 335 eP P 15 24 12.3 +1.4
comp=Z,17nm,0.7s
KMSC Kings Mountain 29.29 346 P P 15 24 13.1 +1.5
baz=163
KMSC Kings Mountain 29.29 346 eP P 15 24 12.5 +1.0
comp=Z,8.7nm,0.6s
246A Jackson Lee, B 29.31 331 P P 15 24 13.2 +1.4
baz=146
LVC Limon Verde 29.44 172 P P 15 24 14.6 +1.3
comp=Z,13nm,0.5s,baz=7.5,slow=3.5,SNR=5.2
LVC Limon Verde 29.44 172 eP P 15 24 13.7 +0.3
comp=Z,5.2nm,0.8s
147A Livingston 29.46 333 P P 15 24 14.6 +1.5
baz=148
344A Westbrook Farm 29.66 328 P P 15 24 16.9 +2.1
baz=142,SNR=6.8
443A Delano Plantat 29.69 326 P P 15 24 17.1 +1.9
baz=140
245A Little AP, Sta 29.70 330 P P 15 24 16.7 +1.5
baz=144
Z48A Northport 29.75 335 P P 15 24 17.1 +1.5
baz=150,SNR=6.7
146A Union 29.79 332 P P 15 24 17.8 +1.8
baz=146
Z47A Carrollton 29.82 334 P P 15 24 17.7 +1.5
baz=149,SNR=9.6
541A Lake Charles 29.98 323 P P 15 24 19.4 +1.7
baz=137
343A Vidalia 30.00 327 P P 15 24 19.1 +1.3
baz=141
442A Mamou 30.02 325 P P 15 24 20.0 +2.0
baz=139
244A Avery, Jackson 30.11 329 P P 15 24 20.2 +1.5
baz=143
PB10 IPOC Station P 30.16 176 eP P 15 24 19.6 +0.3
comp=Z,15nm,1.1s
VBMS Vicksburg 30.16 329 P P 15 24 20.6 +1.4
baz=144
VBMS Vicksburg 30.16 329 eP P 15 24 20.1 +0.9
comp=Z,338nm,0.3s
145A Houston Renfro 30.18 331 P P 15 24 21.1 +1.7
baz=145
Z46A Louisville 30.20 333 P P 15 24 21.5 +1.9
baz=147
Y47A UCPARC, Winfie 30.33 335 P P 15 24 22.3 +1.6
baz=150,SNR=17
243A Waterproof 30.39 328 P P 15 24 22.5 +1.2
baz=142
144A Alexander Plac 30.44 330 P P 15 24 23.4 +1.7
baz=144
CPCT Cooper Cave 30.48 341 eP P 15 24 23.6 +1.6
comp=Z,12nm,0.8s
Z45A Winona 30.70 332 P P 15 24 25.6 +1.6
baz=146
SWET Sewanee 30.74 339 eP P 15 24 25.4 +1.1
comp=Z,3.4nm,0.8s
Y46A Houston 30.75 334 P P 15 24 25.9 +1.5
baz=148,SNR=17
341A Kurthwood 30.90 325 P P 15 24 26.7 +0.9
baz=138
936A North Padre Is 30.91 315 P P 15 24 26.9 +1.0
baz=127
539A Cross D Ranch, 30.95 321 P P 15 24 27.3 +1.1
baz=134
URVA University of 30.97 353 eP P 15 24 27.8 +1.5
143A Socs Landing, 31.00 329 P P 15 24 28.3 +1.7
baz=143
VWCC Virginia Weste 31.03 349 eP P 15 24 28.1 +1.2
Y45A Yeager Farm, C 31.04 333 P P 15 24 28.9 +2.0
baz=147,SNR=5.0
JSRW J. Sargeant Re 31.13 352 eP P 15 24 28.6 +0.9
142A Monroe 31.16 328 P P 15 24 29.0 +1.0
baz=142
035A Encino 31.20 313 P P 15 24 29.0 +0.6
baz=126,SNR=5.2
TZTN Tazewell 31.20 343 eP P 15 24 29.6 +1.2
comp=Z,16nm,1.2s
241A Mo Tay, Goldon 31.28 326 P P 15 24 29.8 +0.8
baz=139
Z43A Armstrong Fami 31.32 330 P P 15 24 30.4 +1.0
baz=143
PLAL Pickwick Lake 31.36 336 eP P 15 24 30.6 +0.9
comp=Z,37nm,0.8s
340A Bronson 31.38 324 P P 15 24 30.6 +0.6
baz=137
Y44A Strider, Charl 31.43 332 P P 15 24 31.8 +1.4
baz=146
439A Center Grove, 31.45 322 P P 15 24 31.8 +1.2
baz=135
637A Eagle Lake 31.52 319 P P 15 24 32.0 +0.7
baz=131
HKT Hockley 31.54 320 eP P 15 24 31.9 +0.6
comp=Z,13nm,0.9s
034A Hebbronville 31.70 313 P P 15 24 33.1 +0.3
baz=125,SNR=15
736A Circle Diamond 31.70 317 P P 15 24 33.5 +0.7
baz=130
339A Huntington 31.71 323 P P 15 24 33.4 +0.5
baz=136
141A Papa Simpson, 31.71 327 P P 15 24 33.4 +0.5
baz=140
Z42A Norrel Spur, H 31.73 329 P P 15 24 33.6 +0.6
baz=142
Y43A Makayla and Ka 31.73 331 P P 15 24 34.5 +1.5
baz=144,SNR=5.4
835A Beeville 31.81 315 P P 15 24 34.4 +0.6
baz=128
X44A Crenshaw 31.84 333 P P 15 24 34.6 +0.7
baz=146,SNR=5.6
438A Sam Houston St 31.86 321 P P 15 24 35.3 +1.1
baz=134,SNR=5.1
934A Benavides 31.89 314 P P 15 24 35.0 +0.5
baz=126
537A Green Hill Far 31.93 320 P P 15 24 35.5 +0.7
baz=132
636A Smothers Creek 32.03 318 P P 15 24 36.2 +0.6
baz=130
NATX Nacogdoches 32.08 324 P P 15 24 37.0 +0.9
baz=136
Y42A Garnett, Star 32.09 330 P P 15 24 37.3 +1.2
baz=143
140A Cam and Jess, 32.11 326 P P 15 24 37.2 +0.8
baz=139
735A Kenedy 32.14 316 P P 15 24 37.2 +0.5
baz=129
CCAR Cane Creek 32.15 330 eP P 15 24 37.7 +1.0
comp=Z,85nm,0.7s
239A Gary 32.16 324 P P 15 24 37.9 +1.1
baz=137
Z41A Richland Creek 32.16 328 P P 15 24 37.4 +0.6
baz=141
338A Crockett 32.18 322 P P 15 24 38.1 +1.1
baz=135,SNR=6.0
834A Tilden 32.22 314 P P 15 24 37.2 -0.2
baz=127
WVT Waverly 32.26 337 eP P 15 24 38.3 +0.7
comp=Z,59nm,1.0s

437A Phantom Ranch, 32.33 321 P P 15 24 39.2 +1.0
baz=133
536A Bastrop 32.42 319 P P 15 24 39.3 +0.2
baz=131
933A Laredo 32.44 313 P P 15 24 39.3 0.0
baz=125,SNR=24
Z40A Long Farm, Mag 32.48 327 P P 15 24 40.1 +0.5
baz=140
337A Centerville 32.50 322 P P 15 24 41.1 +1.3
baz=134
238A Jacksonville 32.53 323 P P 15 24 41.1 +1.1
baz=136
Y41A Eaglette Beard 32.55 329 P P 15 24 41.0 +0.9
baz=142
ZAIG Zacatecas 32.63 302 eP P 15 24 42.7 +1.3
comp=Z,15nm,1.0s
WLAR White Oak Lake 32.66 328 eP P 15 24 41.6 +0.5
comp=Z,119nm,1.5s
436A Wall Ranch, Ga 32.70 320 P P 15 24 42.3 +0.8
baz=132,SNR=15
SDMD Soldier's Deli 32.71 354 eP P 15 24 41.0 -0.5
comp=Z,12nm,1.4s
535A Dale 32.72 318 P P 15 24 41.7 0.0
baz=130
634A China Grove, S 32.84 316 P P 15 24 42.7 -0.1
baz=128
UTMT University of 32.85 336 eP P 15 24 43.2 +0.4
comp=Z,132nm,0.4s
Z39A Irene McRaven, 32.90 326 P P 15 24 44.0 +0.8
baz=139
833A Chaparral WMA, 32.93 314 P P 15 24 42.9 -0.7
baz=126,SNR=6.4
237A Washetta, Mont 32.94 323 P P 15 24 44.5 +0.9
baz=135
HBAR Harrisburg 32.95 333 eP P 15 24 44.3 +0.6
GLAT Glass 32.96 335 eP P 15 24 44.7 +1.0
X41A Kaden, Bauxite 32.98 330 P P 15 24 44.5 +0.6
baz=142
138A Matatall Enter 32.98 324 P P 15 24 44.8 +0.9
baz=137
Y40A Okolona 33.00 328 P P 15 24 44.8 +0.7
baz=141
GNAR Gosnell 33.01 334 eP P 15 24 44.9 +0.8
733A Divot King Ran 33.09 315 P P 15 24 44.6 -0.4
baz=126
UALR University of 33.12 330 eP P 15 24 44.9 -0.2
comp=Z,12nm,0.7s
X40A Basin Creek Fa 33.13 329 P P 15 24 45.5 +0.2
baz=142,SNR=18
336A Riesel 33.15 321 P P 15 24 46.0 +0.6
baz=133,SNR=10
435B Jarrell 33.22 319 P P 15 24 46.3 +0.2
baz=131,SNR=5.4
PVMO Portageville 33.26 335 eP P 15 24 47.2 +0.9
comp=Z,636nm,0.3s
BDFB Brasilia 33.27 132 eP P 15 24 45.8 -1.0
534A Blanco 33.33 317 P P 15 24 46.2 -0.9
baz=129,SNR=7.6
137A Heron Place, G 33.33 324 P P 15 24 47.9 +0.9
baz=136
832A Faith Ranch, C 33.33 313 P P 15 24 46.1 -0.9
baz=125,SNR=6.5
Z38A Mt. Pleasant 33.35 325 P P 15 24 47.8 +0.6
baz=138
Y39A Lockesburg 33.37 327 P P 15 24 47.7 +0.4
baz=140,SNR=6.4
236A Katherine and 33.37 322 P P 15 24 48.1 +0.7
baz=134
W41B Gary Mavity, V 33.39 331 P P 15 24 48.0 +0.6
baz=144,SNR=15
335A Moody 33.45 320 P P 15 24 48.5 +0.5
baz=132,SNR=9.1
633A Saathoff Ranch 33.45 316 P P 15 24 47.1 -1.0
baz=128
PARMO Parma 33.49 335 eP P 15 24 49.5 +1.2
WHAR Wooly Hollow 33.50 331 eP P 15 24 48.8 +0.3
comp=Z,39nm,0.8s
X301 Greenbrier Sit 33.51 330 eP P 15 24 48.7 +0.2
comp=Z,29nm,0.6s
MIAR Mount Ida 33.56 328 P P 15 24 48.8 -0.1
baz=141,SNR=10
MIAR Mount Ida 33.56 328 eP P 15 24 48.8 -0.1
comp=Z,17nm,0.7s
WCI Wyandotte Cave 33.59 341 eP P 15 24 50.1 +1.0
comp=Z,39nm,0.7s
Z37A Pogue Cattle C 33.68 324 P P 15 24 50.3 +0.3
baz=137
434A Burnet 33.69 319 P P 15 24 49.6 -0.5
baz=130,SNR=10
136A Ennis 33.70 323 P P 15 24 50.9 +0.7
baz=134
Y38A Idabel 33.71 326 P P 15 24 50.5 +0.2
baz=139
533A Kerrville 33.73 317 P P 15 24 49.9 -0.6
baz=128,SNR=6.9
O56A Blue Knob Stat 33.76 352 P P 15 24 51.5 +0.9
baz=170
LUPA Lehigh Univers 33.78 357 eP P 15 24 52.0 +1.2
comp=Z,25nm,0.9s
W40A Ferguson Farm, 33.81 330 P P 15 24 51.9 +0.8
baz=142,SNR=15
X39A Fountain Ranch 33.82 328 P P 15 24 51.1 -0.1
baz=140,SNR=9.8
USIN University of 33.82 339 eP P 15 24 52.0 +0.9
comp=Z,81nm,0.9s
BRNJ Basking Ridge 33.83 358 eP P 15 24 52.9 +1.8
comp=Z,16nm,0.8s
PBMO Poplar Bluff 33.88 334 eP P 15 24 52.4 +0.8
comp=Z,70nm,0.7s
WHTX Lake Whitney, 33.94 321 P P 15 24 52.7 +0.5
baz=133
WHTX Lake Whitney, 33.94 321 eP P 15 24 52.7 +0.5
comp=Z,31nm,0.8s
334A Lometa 34.00 319 P P 15 24 52.7 -0.1
baz=131,SNR=18
SSPA Standing Stone 34.04 353 eP P 15 24 54.3 +1.4
comp=Z,8.8nm,0.9s
N59A State Game Lan 34.12 356 P P 15 24 55.1 +1.4
baz=175
PAL Palisades 34.13 359 eP P 15 24 54.3 +0.6
comp=Z,17nm,0.8s
V40A Witts Springs 34.17 331 P P 15 24 54.6 +0.4
baz=143,SNR=48
W39A Magazine 34.17 329 P P 15 24 54.9 +0.6
baz=141,SNR=32
SIUC Southern Illin 34.18 337 eP P 15 24 55.0 +0.8
comp=Z,84nm,0.6s
433A Art 34.19 318 P P 15 24 54.5 0.0
baz=129,SNR=66
Z36A Blue Ridge 34.20 324 P P 15 24 54.8 +0.2
baz=136
Y37A Hugo 34.25 325 P P 15 24 55.3 +0.4
baz=137,SNR=6.9
135A Vickery Place, 34.30 322 P P 15 24 55.9 +0.6
baz=133
X38A Whitesboro 34.32 327 P P 15 24 55.8 +0.3
baz=139,SNR=14
234A Clairette 34.38 320 P P 15 24 56.2 +0.1
baz=132,SNR=7.1
W38A Poteau 34.46 328 P P 15 24 57.0 +0.3
baz=140,SNR=5.7
333A Richland Sprin 34.48 319 P P 15 24 56.9 -0.1
baz=130,SNR=11
JCT Junction City 34.51 317 P P 15 24 56.9 -0.3
baz=128,SNR=5.2
JCT Junction City 34.51 317 eP P 15 24 57.0 -0.3
comp=Z,10.0nm,0.6s
BLO Bloomington 34.52 341 eP P 15 24 58.4 +1.3
comp=Z,73nm,0.7s
ACSO Alum Creek Sta 34.53 346 eP P 15 24 59.2 +2.0
comp=Z,20nm,0.8s
X37A Clayton 34.56 326 P P 15 24 57.7 +0.2
baz=138,SNR=5.1
Y36A Durant 34.57 325 P P 15 24 57.8 +0.1
baz=136,SNR=5.8
V39A Pettigrew 34.61 330 P P 15 24 58.3 +0.3
baz=142,SNR=31
U40A Yellville 34.63 331 P P 15 24 58.9 +0.7
baz=144,SNR=92
N54A Moraine State 34.65 351 P P 15 24 59.7 +1.4
baz=168
OLIL Olney 34.66 339 eP P 15 24 58.8 +0.5
comp=Z,55nm,0.6s
Z35A Perchaven, San 34.73 323 P P 15 24 59.8 +0.7
baz=134,SNR=6.2
KSPA Keystone Colle 34.76 356 eP P 15 25 01.1 +1.9
comp=Z,22nm,0.6s
233A Rising Star 34.88 320 P P 15 25 00.6 +0.3

	baz=131,SNR=14					
Y35A	Marietta	35.01	324	P	P	15 25 02.1 +0.7
	baz=135,SNR=7.3					
V38A	Canehill	35.01	329	P	P	15 25 01.3 -0.2
	baz=141,SNR=45					
X36A	Centrahoma	35.09	325	P	P	15 25 02.1 0.0
	baz=137,SNR=11					
HHAR	Hobbs	35.10	330	eP	P	15 25 01.7 -0.5
	comp=Z,29nm,0.7s					
T40A	Mansfield	35.12	332	P	P	15 25 02.8 +0.5
	baz=145,SNR=39					
M54A	Oil Creek Stat	35.13	351	P	P	15 25 03.6 +1.2
	baz=168					
Z34A	Collier Ranch,	35.16	322	P	P	15 25 03.3 +0.6
	baz=134,SNR=5.9					
133A	Hamilton Ranch	35.27	320	P	P	15 25 04.2 +0.4
	baz=131,SNR=13					
X35A	Drake	35.32	324	P	P	15 25 03.8 -0.3
	baz=136,SNR=7.4					
ALLY	Alegheny Colle	35.34	351	eP	P	15 25 04.9 +0.7
	comp=Z,22nm,0.8s					
SLM	Saint Louis	35.38	336	eP	P	15 25 05.0 +0.5
	comp=Z,31nm,0.5s					
QUA2	Belchertown	35.40	1	eP	P	15 25 05.7 +1.1
	comp=Z,51nm,1.8s					
V37A	Hulbert	35.41	328	P	P	15 25 04.4 -0.5
	baz=140,SNR=8.4					
T39A	Clever	35.42	331	P	P	15 25 05.0 +0.1
	baz=143,SNR=15					
W36A	Wetumka	35.44	326	P	P	15 25 04.8 -0.3
	baz=138,SNR=9.0					
U38A	Gravette	35.45	330	P	P	15 25 04.7 -0.5
	baz=141,SNR=10					
Y34A	Reagan Ranch,	35.47	323	P	P	15 25 05.6 +0.2
	baz=134,SNR=21					
S40A	Lebanon	35.47	333	P	P	15 25 05.9 +0.5
	baz=145,SNR=96					
BCX	Boston College	35.49	2	eP	P	15 25 07.0 +1.6
	comp=Z,254nm,2.0s					
WES	Weston	35.53	2	eP	P	15 25 07.4 +1.6
	comp=Z,101nm,1.8s					
LCO	Las Campanas	35.61	177	eP	P	15 25 06.0 -0.9
	comp=Z,44nm,2.0s					
Z33A	Whitaker Ranch	35.63	321	P	P	15 25 07.2 +0.4
	baz=132,SNR=9.2					
ABTX	Abilene, Hawle	35.75	320	P	P	15 25 08.2 +0.4
	baz=130,SNR=13					
ABTX	Abilene, Hawle	35.75	320	eP	P	15 25 07.7 -0.1
	comp=Z,47nm,0.8s					
V36A	Jenks	35.76	327	P	P	15 25 07.6 -0.2
	baz=139,SNR=7.9					
TUL1	Leonard	35.77	327	P	P	15 25 07.7 -0.3
	baz=139,SNR=7.8					
TUL1	Leonard	35.77	327	eP	P	15 25 07.6 -0.3
	comp=Z,45nm,0.7s					
U37A	Salina	35.80	329	P	P	15 25 07.7 -0.4
	baz=140,SNR=12					
SFIN	Lafayette	35.80	341	P	P	15 25 09.0 +0.9
	baz=156,SNR=41					
SFIN	Lafayette	35.80	341	eP	P	15 25 08.8 +0.8
	comp=Z,93nm,0.6s					
W35A	Tecumseh	35.81	325	P	P	15 25 07.5 -0.8
	baz=137,SNR=7.1					
T38A	Diamond	35.87	330	P	P	15 25 08.3 -0.4
	baz=142,SNR=30					
S39A	Bolivar	35.93	332	P	P	15 25 09.2 0.0
	baz=144,SNR=40					
R40A	Maddies Statio	35.94	334	P	P	15 25 09.4 +0.1
	baz=146,SNR=34					
X34A	Smith Ranch, M	35.97	324	P	P	15 25 10.0 +0.4
	baz=135,SNR=9.4					
Y33A	Hilltop Ranch,	36.03	322	P	P	15 25 10.4 +0.3
	baz=133,SNR=14					
U36A	Oologah	36.11	328	P	P	15 25 10.4 -0.3
	baz=139,SNR=8.6					
MMNY	Mt. Morris Dam	36.11	354	eP	P	15 25 10.6 -0.1
S38A	Stockton	36.15	331	P	P	15 25 10.7 -0.4
	baz=143,SNR=19					
CPUP	Villa Florida	36.22	156	P	P	15 25 10.0 -1.8
	comp=Z,0.7nm,0.3s,baz=338,slow=6.4,SNR=4.6					
CPUP	Villa Florida	36.22	156	eP	P	15 25 09.6 -2.2
V35A	Meyer Ranch, C	36.23	326	P	P	15 25 11.4 -0.4
	baz=137					
T37A	Cheneyville 18	36.25	330	P	P	15 25 11.6 -0.4
	baz=141,SNR=32					
R39A	Chumby, Stover	36.30	333	P	P	15 25 12.4 0.0
	baz=145,SNR=47					
X33A	Lawton	36.32	323	P	P	15 25 12.1 -0.5
	baz=134,SNR=20					
W34A	Bridge Creek,	36.38	325	P	P	15 25 13.1 -0.1
	baz=136,SNR=14					
W34A	Bridge Creek,	36.38	325	eP	P	15 25 12.8 -0.4
	comp=Z,82nm,0.6s					
BUF	Buffalo	36.41	353	eP	P	15 25 13.6 +0.3
Q40A	Laux Farm, Aux	36.44	335	P	P	15 25 13.8 +0.3
	baz=147,SNR=52					
ACCN	Adirondack Com	36.51	359	eP	P	15 25 15.5 +1.5
	comp=Z,10nm,0.7s					
R38A	Fenwick Farm,	36.60	332	P	P	15 25 14.7 -0.2
	baz=144,SNR=34					
LTX	Lajitas	36.61	312	eP	P	15 25 15.4 +0.1
LTX				ePcP	PcP	15 27 36.5 +1.4
TX31	Lajitas Ar. Si	36.61	312	eP	P	15 25 15.2 0.0
TXAR	Lajitas Array	36.61	312	P	P	15 25 15.4 +0.1
	comp=Z,19nm,0.6s,baz=127,slow=9.2,SNR=194					
TXAR				PcP	PcP	15 27 36.5 +1.4
	comp=Z,5.8nm,0.7s,baz=134,slow=6.3,SNR=12					
WMOK	Wichita Mounta	36.62	323	eP	P	15 25 14.2 -1.0
	comp=Z,27nm,0.7s					
U35A	Pawnee	36.62	327	P	P	15 25 15.1 -0.1
	baz=138,SNR=14					
V34A	Guthrie	36.66	326	P	P	15 25 15.2 -0.3
	baz=136,SNR=6.2					
V34A	Guthrie	36.66	326	eP	P	15 25 13.8 -1.7
	comp=Z,38nm,0.8s					
T36A	Boggs Farm, Ca	36.69	329	P	P	15 25 15.2 -0.5
	baz=140,SNR=11					
HDIL	Hopedale	36.70	339	P	P	15 25 15.5 -0.2
	baz=152					
S37A	Fort Scott	36.70	330	P	P	15 25 15.4 -0.4
	baz=142,SNR=15					
X32A	Elmer	36.71	322	P	P	15 25 15.9 0.0
	baz=133,SNR=9.9					
W33A	Caddo, Fort Co	36.72	324	P	P	15 25 16.1 0.0
	baz=134					
Q39A	Willow Grove F	36.87	334	P	P	15 25 17.3 +0.1
	baz=146,SNR=46					
P40A	Paris	36.88	335	P	P	15 25 17.4 +0.1
	baz=147,SNR=31					
T35A	Sooner Cattle	36.91	328	P	P	15 25 17.3 -0.3
	baz=139,SNR=12					
HPIG		36.98	307	eP	P	15 25 18.3 -0.3
	comp=Z,23nm,0.6s					
S36A	Lake Cedric, C	37.05	330	P	P	15 25 18.0 -0.8
	baz=141,SNR=6.1					
V33A	Lossen Ranch,	37.09	325	P	P	15 25 18.9 -0.3
	baz=135,SNR=18					
Q38A	Cooks Store, C	37.09	333	P	P	15 25 19.4 +0.3
	baz=145,SNR=45					
NCB	Newcomb	37.10	359	epP	pP	15 25 58.0 +4.5
NCB				eScS	ScS	15 35 13.9 -2.2
U34A	Anderson Ranch	37.11	326	P	P	15 25 19.0 -0.3
	baz=137,SNR=8.6					
U34A	Anderson Ranch	37.11	326	eP	P	15 25 18.5 -0.8
	comp=Z,70nm,0.6s					
MDV	Middlebury	37.12	360	eP	P	15 25 20.0 +0.8
R37A	Teagarden Farm	37.14	331	P	P	15 25 18.9 -0.6
	baz=142,SNR=8.2					
W32A	Sentinel	37.16	323	P	P	15 25 19.5 -0.3
	baz=134,SNR=10					
O40A	La Belle	37.31	336	P	P	15 25 20.7 -0.2
	baz=148,SNR=14					
T34A	McClaskey Farm	37.35	327	P	P	15 25 21.2 -0.1
	baz=138,SNR=9.2					
S35A	Otter Creek Ra	37.39	329	P	P	15 25 21.0 -0.6
	baz=140,SNR=7.2					
Q37A	Longview Farm,	37.41	332	P	P	15 25 21.6 -0.1
	baz=143,SNR=12					
U33A	Lingo Farm, Me	37.43	326	P	P	15 25 21.6 -0.3
	baz=136					
V32A	Arapaho	37.45	324	P	P	15 25 21.9 -0.3
	baz=134					
R36A	Gordon, Harris	37.47	330	P	P	15 25 21.6 -0.7
	baz=141,SNR=5.2					
P38A	Dawn	37.59	334	P	P	15 25 23.4 +0.1
	baz=145,SNR=34					
O39A	Kirksville	37.69	335	P	P	15 25 24.3 +0.2
	baz=147,SNR=6.1					
WVL	Waterville	37.79	4	eP	P	15 25 26.4 +1.6
	comp=Z,77nm,1.6s					
S34A	Willow Spring	37.81	328	P	P	15 25 24.9 -0.3
	baz=139					
R35A	Emporia Munici	37.82	330	P	P	15 25 24.9 -0.3
	baz=140					
U32A	Winter Ranch,	37.89	325	P	P	15 25 25.8 -0.1
	baz=135					
P37A	Lathrop	37.93	333	P	P	15 25 25.8 -0.4
	baz=144,SNR=9.2					
Q36A	Arnold C. Orve	37.95	331	P	P	15 25 25.6 -0.7
	baz=142					
FRNY	Flat Rock	37.95	359	eP	P	15 25 27.7 +1.5
	comp=Z,7.1nm,0.7s					
T33A	Patterson Ranc	37.97	326	P	P	15 25 26.2 -0.3
	baz=137					
O38A	Galt	37.98	334	P	P	15 25 26.5 0.0
	baz=146,SNR=19					
EMMW	East Machias	38.13	6	eP	P	15 25 29.0 +1.4
	comp=Z,36nm,0.8s					
MSNY	Massena	38.15	358	eP	P	15 25 27.3 -0.5
Q35A	Mercer Eighty,	38.15	330	P	P	15 25 27.4 -0.6
	baz=141,SNR=15					
N39A	Derby Farms, D	38.20	336	P	P	15 25 28.2 -0.2
	baz=148					
S33A	Kaszmaul Farm,	38.21	327	P	P	15 25 28.2 -0.4
	baz=137,SNR=8.2					
SADO	Sadowa	38.26	353	eP	P	15 25 29.6 +0.8
	comp=Z,70nm,1.7s					
O37A	Wolven Farm, M	38.31	334	P	P	15 25 29.1 -0.2
	baz=145,SNR=14					
R34A	Isabella, Hill	38.34	329	P	P	15 25 29.3 -0.3
	baz=139,SNR=7.6					
P36A	Good Intent, A	38.35	332	P	P	15 25 29.3 -0.3
	baz=143,SNR=11					
T32A	Huddler Ranch,	38.42	326	P	P	15 25 30.2 0.0
	baz=136					
N38A	Joes South For	38.43	335	P	P	15 25 30.4 +0.1
	baz=146					
AMTX	Amarillo	38.50	321	P	P	15 25 31.5 +0.5
	baz=130					
AMTX	Amarillo	38.50	321	eP	P	15 25 31.1 0.0
	comp=Z,88nm,1.0s					
KSU1	Kansas State U	38.62	330	P	P	15 25 31.2 -0.7
	baz=140,SNR=8.7					
KSU1	Kansas State U	38.62	330	eP	P	15 25 30.3 -1.6
	comp=Z,61nm,0.7s					
MSTX	Muleshoe	38.63	319	P	P	15 25 32.2 0.0
	baz=128,SNR=22					
MSTX	Muleshoe	38.63	319	eP	P	15 25 31.9 -0.3
	comp=Z,90nm,1.4s					
O36A	Bolckow	38.65	333	P	P	15 25 31.6 -0.5
	baz=144,SNR=9.9					
Q34A	Chapman	38.65	330	P	P	15 25 31.7 -0.5
	baz=140,SNR=5.6					
P35A	Duane Minner,	38.66	331	P	P	15 25 31.4 -0.9
	baz=142,SNR=8.4					
R33A	Olander Ranch,	38.73	328	P	P	15 25 33.0 +0.1
	baz=138					
S32A	Newby Ranch, P	38.80	326	P	P	15 25 33.3 -0.2
	baz=136,SNR=5.3					
N37A	Lee Faris, Mou	38.82	334	P	P	15 25 33.4 -0.1
	baz=145,SNR=16					
M38A	Pleasantville	38.94	336	P	P	15 25 34.4 -0.1
	baz=147,SNR=11					
P34A	Walnut Farm, R	39.07	330	P	P	15 25 35.2 -0.5
	baz=140,SNR=9.7					
JFWS	Jewell Farm	39.12	340	eP	P	15 25 36.1 +0.1
	comp=Z,84nm,0.6s					
MNTX	Cornudas Mount	39.12	314	P	P	15 25 36.7 +0.5
	baz=123,SNR=87					
MNTX	Cornudas Mount	39.12	314	eP	P	15 25 36.6 +0.4
	comp=Z,46nm,0.8s					
SPB	Sao Paulo	39.14	141	eP	P	15 25 36.3 -0.1
	comp=Z,78nm,1.8s					
Q33A	Connelly Farm,	39.16	329	P	P	15 25 36.5 +0.1
	baz=139					
O35A	Humboldt	39.19	332	P	P	15 25 35.7 -1.0
	baz=142					
R32A	Long Quarter,	39.20	327	P	P	15 25 36.4 -0.3
	baz=137					
N36A	Muff Farm, Cla	39.20	333	P	P	15 25 36.3 -0.4
	baz=144,SNR=7.5					
SLBS	Sierra La Lagu	39.27	299	eP	P	15 25 39.4 +1.8
	comp=Z,38nm,1.0s					
M37A	Trindle Farm,	39.28	335	P	P	15 25 37.3 0.0
	baz=146					
SCIA	State Center	39.36	336	eP	P	15 25 36.4 -1.6
	comp=Z,72nm,0.6s					
TRQ	Mont Tremblant	39.36	358	eP	P	15 25 39.0 +0.9
P33A	Williams Farm,	39.42	329	P	P	15 25 38.4 -0.2
	baz=139					
L38A	Oak Wood Farm,	39.45	336	P	P	15 25 38.5 -0.3
	baz=148,SNR=8.5					
O34A	Beatrice	39.50	331	P	P	15 25 38.6 -0.6
	baz=141					
Q32A	Meitler Ranch,	39.53	328	P	P	15 25 39.2 -0.3
	baz=138					
ROC1	El Roble	39.54	177	eP	P	15 25 40.0 +0.2
	comp=Z,7.1nm,0.7s					
N35A	Tabor	39.54	333	P	P	15 25 39.3 -0.2
	baz=143					
LMN	Caledonia Moun	39.61	9	eP	P	15 25 40.8 +0.9
M36A	Felix, Anita	39.65	334	P	P	15 25 40.2 -0.2
	baz=145,SNR=9.0					
L37A	Phoenix Point,	39.76	336	P	P	15 25 40.8 -0.4
	baz=147,SNR=7.2					
K38A	Parkersburg	39.81	337	P	P	15 25 41.4 -0.2
	baz=148					
O33A	Hebron	39.85	330	P	P	15 25 41.6 -0.5
	baz=140,SNR=5.6					
N34A	Lincoln	39.92	332	P	P	15 25 41.8 -0.8
	baz=142					
P32A	Huiting Farm,	40.02	329	P	P	15 25 43.1 -0.4
	baz=138,SNR=6.2					
CBKS	Cedar Bluff	40.03	327	P	P	15 25 43.4 -0.3
	baz=136					
M35A	Neola	40.05	333	P	P	15 25 43.5 -0.2
	baz=144,SNR=24					
L36A	Harm Buss Farm	40.12	335	P	P	15 25 43.8 -0.5
	baz=145,SNR=6.0					
K37A	Belmond	40.25	336	P	P	15 25 44.9 -0.4
	baz=147					
J38A	Wedel Dairy, R	40.27	338	P	P	15 25 44.8 -0.6
	baz=149					
O32A	Brockman Farm,	40.34	330	P	P	15 25 45.6 -0.5
	baz=139,SNR=5.7					
K36A	Gilmore City	40.47	335	P	P	15 25 46.8 -0.3
	baz=146					
M34A	Aspy Farms, Fr	40.48	332	P	P	15 25 46.9 -0.4
	baz=142					
L35A	Bielow Farm, R	40.51	334	P	P	15 25 47.2 -0.3
	baz=144,SNR=6.2					
J37A	Redenius Farm,	40.67	337	P	P	15 25 49.2 +0.4
	baz=148,SNR=6.1					
N32A	Stulken Farm,	40.73	330	P	P	15 25 48.9 -0.4
	baz=140					
LMQ	La Malbaie	40.73	3	eP	P	15 25 50.6 +1.4
	comp=Z,13nm,0.7s					
L34A	Svendsen Farm,	40.76	333	P	P	15 25 48.9 -0.6
	baz=143,SNR=5.2					
O31A	Woolen Ranch,	40.79	329	P	P	15 25 49.4 -0.5
	baz=138					
M33A	Taylor Creek F	40.82	332	P	P	15 25 49.6 -0.5
	baz=142					
I38A	Scanlan Farm,	40.84	339	P	P	15 25 49.9 -0.2
	baz=150,SNR=5.9					
K35A	Storm Lake	40.87	335	P	P	15 25 50.1 -0.3
	baz=145,SNR=8.4					
J36A	Seneca 1, Swea	41.00	336	P	P	15 25 50.9 -0.5
	baz=147,SNR=5.7					
BGNE	Belgrade	41.15	331	P	P	15 25 52.3 -0.5
	baz=140					
BGNE	Belgrade	41.15	331	eP	P	15 25 51.7 -1.1
	comp=Z,56nm,0.9s					
K34A	Le Mars	41.21	334	P	P	15 25 53.1 -0.1
	baz=144,SNR=12					
I37A	Lemond, Waseca	41.21	338	P	P	15 25 52.9 -0.3
	baz=148					
121A	Cookes Peak, D	41.29	313	P	P	15 25 55.7 +1.5
	baz=121,SNR=18					
L33A	Hoskins	41.32	332	P	P	15 25 53.7 -0.4
	baz=142					
BNM	Barren Site	41.33	316	eP	P	15 25 55.1 +0.5
J35A	Milford	41.38	335	P	P	15 25 54.0 -0.6
	baz=146					
LPM	Los Pinos Moun	41.42	316	eP	P	15 25 55.6 +0.3
Y22D	IRIS PASSCAL I	41.49	316	eP	P	15 25 56.7 +0.9
	comp=Z,52nm,0.6s					
M31A	Lambtecht Ranc	41.50	330	P	P	15 25 55.3 -0.3
	baz=139					
H37A	Dierke Farm, C	41.52	338	P	P	15 25 55.6 -0.1
	baz=149,SNR=5.4					
L32A	Elgin	41.54	332	P	P	15 25 55.2 -0.7
	baz=141					
K33A	Hardington	41.55	333	P	P	15 25 55.8 -0.1
	baz=142,SNR=5.4					
COWI	Conover	41.62	343	eP	P	15 25 57.1 +0.5
	comp=Z,26nm,0.9s					
J34A	George	41.63	335	P	P	15 25 56.3 -0.3
	baz=144,SNR=11					
T25A	Trinidad	41.64	321	P	P	15 25 58.4 +1.4
	baz=129,SNR=18					
T25A	Trinidad	41.64	321	eP	P	15 25 57.8 +0.8
	comp=Z,20nm,0.6s					
ANMO	Albuquerque	41.66	317	P	P	15 25 58.1 +0.9
	baz=125					
ANMO	Albuquerque	41.66	317	eP	P	15 25 57.9 +0.7
	comp=Z,8.6nm,0.7s					
I35A	Creekview Farm	41.70	336	P	P	15 25 56.7 -0.4
	baz=146					
KSCO	Kaye Shedlock'	41.79	325	P	P	15 25 58.6 +0.4
	baz=133					
KSCO	Kaye Shedlock'	41.79	325	eP	P	15 25 58.4 +0.3
	comp=Z,29nm,0.6s					
LAZ	Ladron	41.82	316	eP	P	15 25 59.7 +1.1
319A	Douglas	41.83	311	eP	P	15 25 59.7 +1.1
	comp=Z,38nm,0.8s					
H36A	Jessenland, He	41.89	338	P	P	15 25 58.5 -0.2
	baz=148					
SPMN	Marine on St.	42.03	339	P	P	15 25 59.4 -0.4
	baz=150					
SPMN	Marine on St.	42.03	339	eP	P	15 25 59.6 -0.2
	comp=Z,14nm,0.8s					
K32A	Verdigre	42.03	332	P	P	15 25 59.1 -0.8
	baz=141,SNR=10					
L31A	Butterfield Fa	42.07	331	P	P	15 25 59.5 -0.7
	baz=140,SNR=5.3					
HSIG		42.09	307	eP	P	15 26 00.6 +0.1
	comp=Z,12nm,1.0s					
J33A	Davis	42.10	334	P	P	15 25 59.9 -0.5
	baz=143,SNR=9.3					
ECSD	EROS Data Cent	42.28	334	P	P	15 26 01.2 -0.6
	baz=144,SNR=27					
ECSD	EROS Data Cent	42.28	334	eP	P	15 26 01.2 -0.6
	comp=Z,30nm,1.0s					
H35A	Sunnyside Ranc	42.34	337	P	P	15 26 01.8 -0.5
	baz=147,SNR=11					
K31A	O'Neill	42.37	332	P	P	15 26 02.3 -0.4
	baz=140,SNR=10					
G36A	St. Michael	42.38	338	P	P	15 26 02.5 -0.2
	baz=149					
SRIG	Santa Rosalia	42.48	304	eP	P	15 26 04.6 +0.9
	comp=Z,17nm,0.7s					
J32A	Parkston	42.53	333	P	P	15 26 03.5 -0.4
	baz=142,SNR=20					
I33A	Coleman	42.61	335	P	P	15 26 03.9 -0.7
	baz=144					
G35A	Watkins	42.64	338	P	P	15 26 04.6 -0.1
	baz=148,SNR=14					
H34A	Spellman Lake,	42.69	336	P	P	15 26 04.5 -0.7
	baz=146,SNR=6.3					
SDCO	Great Sand Dun	42.69	321	P	P	15 26 06.9 +1.3
	baz=128,SNR=64					
SDCO	Great Sand Dun	42.69	321	eP	P	15 26 07.0 +1.3
	comp=Z,26nm,0.8s					
OGNE	Ogallala	42.79	327	P	P	15 26 05.8 -0.3
	baz=135					
K30A	Basset	42.82	331	P	P	15 26 06.2 -0.1
	baz=139,SNR=24					
F36A	Milaca	42.84	339	P	P	15 26 06.0 -0.3
	baz=149,SNR=8.7					
I32A	Karley and Nic	42.88	334	P	P	15 26 06.3 -0.4
	baz=143,SNR=5.3					
H33A	Prehn Over Nor	43.10	335	P	P	15 26 07.9 -0.6
	baz=144					
F35A	Swanville	43.22	338	P	P	15 26 09.2 -0.2
	baz=148,SNR=9.1					
Q24A	Divide	43.24	323	P	P	15 26 10.5 +0.4
	baz=130,SNR=7.3					
Q24A	Divide	43.24	323	eP	P	15 26 10.7 +0.7
	comp=Z,19nm,1.1s					
H32A	Carlson Farm,	43.25	334	P	P	15 26 09.2 -0.5
	baz=143					
J30A	Dallas	43.25	332	P	P	15 26 08.9 -0.9
	baz=140,SNR=6.6					
E36A	McGregor	43.31	340	P	P	15 26 10.2 +0.1
	baz=150,SNR=36					
I31A	Royce, Wessing	43.36	333	P	P	15 26 10.3 -0.2
	baz=142,SNR=8.1					
G33A	Ortonville	43.39	336	P	P	15 26 10.0 -0.8
	baz=145					
TUC	Tucson	43.40	311	P	P	15 26 11.8 +0.6
	baz=118					
TUC	Tucson	43.40	311	eP	P	15 26 11.8 +0.6
	comp=Z,22nm,0.8s					
F34A	Alexandria	43.42	337	P	P	15 26 10.6 -0.4
	baz=147,SNR=5.9					
C39A	Grand Marais	43.47	343	P	P	15 26 11.3 0.0
	baz=155,SNR=5.2					
S22A	4UR Ranch, Cre	43.53	320	P	P	15 26 13.7 +1.3
	baz=127,SNR=52					
S22A	4UR Ranch, Cre	43.53	320	eP	P	15 26 13.4 +1.0
	comp=Z,48nm,1.3s					
D37A	Cotton	43.59	341	P	P	15 26 12.7 +0.3
	baz=151,SNR=24					
I30A	Oacoma	43.67	332	P	P	15 26 12.5 -0.6
	baz=140,SNR=5.5					
H31A	Wolsey	43.68	334	P	P	15 26 12.9 -0.2
	baz=142,SNR=14					
C38A	Sawbill Land.	43.72	342	P	P	15 26 13.1 -0.3
	baz=153,SNR=16					
E35A	Pequot Lakes	43.75	339	P	P	15 26 14.0 +0.3
	baz=148,SNR=6.0					
D36A	Goodland	43.85	340	P	P	15 26 14.4 -0.1
	baz=150,SNR=17					
F33A	5 Mile Ranch,	43.86	336	P	P	15 26 13.8 -0.7
	baz=146					
X18A	Snowflake	43.86	314	eP	P	15 26 16.2 +1.2
	comp=Z,27nm,0.8s					
SUSD	Miller	43.87	333	P	P	15 26 14.3 -0.3
	baz=141,SNR=20					
EYMN	Ely	43.99	342	P	P	15 26 15.5 0.0
	baz=153,SNR=37					
EYMN	Ely	43.99	342	eP	P	15 26 15.7 +0.1
	comp=Z,62nm,0.6s					
E34A	Wadena	43.99	338	P	P	15 26 15.8 +0.2
	baz=147,SNR=11					
C37A	Embarrass	44.01	341	P	P	15 26 15.9 +0.2
	baz=152,SNR=11					
W18A	Petrified Fore	44.01	315	P	P	15 26 17.6 +1.5
	baz=121,SNR=14					
W18A	Petrified Fore	44.01	315	eP	P	15 26 17.6 +1.5
	comp=Z,63nm,0.9s					
ISCO	Idaho Springs	44.05	323	P	P	15 26 17.6 +1.1
	baz=130,SNR=34					
ISCO	Idaho Springs	44.05	323	eP	P	15 26 17.7 +1.1
	comp=Z,28nm,0.9s					
D35A	Remer	44.07	339	P	P	15 26 15.8 -0.4
	baz=149					
G31A	Conde	44.16	334	P	P	15 26 16.3 -0.6
	baz=143,SNR=13					
I29A	Vivian Onida	44.16	332	P	P	15 26 16.1 -1.0
	baz=139					
F32A	Veblen	44.22	336	P	P	15 26 16.7 -0.7
	baz=144					
C36A	Pine Crest Far	44.24	341	P	P	15 26 17.8 +0.2
	baz=151,SNR=23					
MVCO	Mesa Verde	44.30	318	P	P	15 26 19.2 +0.7
	baz=124,SNR=18					
MVCO	Mesa Verde	44.30	318	eP	P	15 26 18.9 +0.4
	comp=Z,65nm,1.4s					
D34A	Park Rapids	44.48	338	P	P	15 26 19.1 -0.4
	baz=148,SNR=7.7					
SMCO	Snowmass	44.48	322	eP	P	15 26 20.9 +0.8
	comp=Z,12nm,0.6s					
G30A	Faulkton	44.49	334	P	P	15 26 19.1 -0.5
	baz=141,SNR=8.4					
I28A	Midland	44.56	331	P	P	15 26 19.6 -0.6
	baz=138,SNR=8.5					
C35A	Jirik Farms, M	44.58	340	P	P	15 26 20.2 0.0
	baz=150,SNR=18					
H29A	Onida	44.58	332	P	P	15 26 19.7 -0.7
	baz=140,SNR

D33A	AnnSam, Waubun	44.77	338	P	P	15 26 22.0 +0.2
	baz=147,SNR=31					
214A	Organ Pipe Nat	44.78	309	P	P	15 26 23.1 +1.0
	baz=116,SNR=20					
E32A	Braaten, Kindr	44.79	336	P	P	15 26 21.6 -0.3
	baz=145					
C34A	RKJ Ranch, Bem	44.86	339	P	P	15 26 22.5 +0.1
	baz=148					
PV01	Paradox Valley	44.87	319	eP	P	15 26 24.0 +1.0
X16A	Lo Mia Camp, P	44.88	313	eP	P	15 26 24.0 +0.9
	comp=Z,19nm,0.8s					
G29A	Hoven	44.88	333	P	P	15 26 22.2 -0.5
	baz=140					
PHWY	Pilot Hill	44.93	325	eP	P	15 26 23.6 +0.2
	comp=Z,12nm,0.6s					
PV15	Paradox Valley	44.93	320	eP	P	15 26 25.9 +2.4
N23A	Red Feather La	44.94	324	P	P	15 26 24.6 +1.1
	baz=130,SNR=29					
N23A	Red Feather La	44.94	324	eP	P	15 26 24.2 +0.6
	comp=Z,28nm,0.8s					
F30A	Leola	44.99	334	P	P	15 26 23.3 -0.2
	baz=142					
J26A	Sides Ranch, S	45.01	329	P	P	15 26 23.9 +0.1
	baz=135,SNR=9.2					
B35A	Bob, Littlefor	45.06	341	P	P	15 26 23.9 -0.1
	baz=150,SNR=21					
E31A	Nome	45.09	336	P	P	15 26 23.9 -0.4
	baz=144					
PV05	Paradox Valley	45.18	319	eP	P	15 26 25.8 +0.4
D32A	Dogwood Acres,	45.21	337	P	P	15 26 25.0 -0.2
	baz=145					
C33A	Trail	45.26	338	P	P	15 26 25.4 -0.2
	baz=147,SNR=7.0					
PV10	Paradox Valley	45.31	319	eP	P	15 26 25.1 -1.4
F29A	Eureka	45.34	334	P	P	15 26 25.5 -0.8
	baz=141,SNR=6.3					
WUAZ	Wupatki	45.37	315	P	P	15 26 28.1 +1.2
	baz=120,SNR=57					
WUAZ	Wupatki	45.37	315	eP	P	15 26 27.6 +0.7
	comp=Z,76nm,0.9s					
D31A	Mcclaflin, Tow	45.42	336	P	P	15 26 26.5 -0.4
	baz=144					
PV09	Paradox Valley	45.44	320	eP	P	15 26 28.0 +0.4
E30A	Jud	45.47	335	P	P	15 26 26.9 -0.3
	baz=143					
H27A	Howes	45.47	331	P	P	15 26 26.8 -0.5
	baz=137					
B34A	Aery, Baudette	45.48	340	P	P	15 26 27.5 +0.1
	baz=149,SNR=41					
C32A	Crookston	45.60	338	P	P	15 26 28.4 +0.1
	baz=146					
B33A	Robert and Kas	45.63	339	P	P	15 26 28.5 +0.1
	baz=148					
TRQA	Tornquist	45.73	168	eP	P	15 26 27.4 -2.0
	comp=Z,34nm,1.9s					
H26A	Fairpoint	45.80	330	P	P	15 26 29.4 -0.6
	baz=137,SNR=6.5					
Y14A	Wickenburg	45.80	312	eP	P	15 26 30.9 +0.8
	comp=Z,171nm,0.7s					
E29A	Napoleon	45.83	334	P	P	15 26 29.7 -0.4
	baz=142					
O20A	White River Ci	45.84	322	P	P	15 26 31.5 +1.0
	baz=127,SNR=8.9					
O20A	White River Ci	45.84	322	eP	P	15 26 30.5 0.0
	comp=Z,18nm,0.8s					
I25A	Rochford	45.85	329	P	P	15 26 31.0 +0.5
	baz=135,SNR=29					
113A	Mohawk Valley,	45.85	310	eP	P	15 26 31.5 +1.0
	comp=Z,18nm,0.9s					
D30A	Buchanan	45.89	336	P	P	15 26 30.4 -0.2
	baz=143,SNR=5.7					
G27A	Dupree	45.95	332	P	P	15 26 30.9 -0.2
	baz=138,SNR=20					
C31A	Landman Farms,	46.03	337	P	P	15 26 31.5 -0.1
	baz=145,SNR=22					
B32A	Ashes, Strandq	46.07	338	P	P	15 26 32.1 +0.1
	baz=147,SNR=18					
RSSD	Black Hills	46.08	329	P	P	15 26 32.4 +0.1
	baz=135					
RSSD	Black Hills	46.08	329	eP	P	15 26 32.8 +0.4
	comp=Z,18nm,1.1s					
A33A	Warroad	46.12	340	P	P	15 26 32.5 +0.2
	baz=148,SNR=15					
D29A	Pettibone, Tap	46.20	335	P	P	15 26 32.9 -0.1
	baz=142					
G26A	Maurine	46.20	331	P	P	15 26 32.4 -0.7
	baz=137,SNR=8.9					
H25A	Fruitdale	46.21	330	P	P	15 26 32.5 -0.7
	baz=136					
C30A	Mose, Pekin	46.25	336	P	P	15 26 33.5 +0.1
	baz=144,SNR=8.4					
E28A	Huff	46.29	334	P	P	15 26 33.9 +0.2
	baz=140,SNR=6.9					
K22A	Casper	46.41	326	P	P	15 26 35.4 +0.5
	baz=131,SNR=8.9					
K22A	Casper	46.41	326	eP	P	15 26 35.1 +0.2
	comp=Z,20nm,1.0s					
U15A	North Rim	46.47	315	eP	P	15 26 36.7 +1.1
	comp=Z,47nm,1.0s					
A32A	Rocking H Ranc	46.50	339	P	P	15 26 35.2 0.0
	baz=147,SNR=9.5					
B31A	Greenbush Farm	46.51	337	P	P	15 26 35.1 -0.3
	baz=145,SNR=13					
G25A	Newell	46.53	330	P	P	15 26 35.2 -0.4
	baz=136,SNR=9.6					
E27A	Carson	46.57	333	P	P	15 26 36.7 +0.7
	baz=139,SNR=19					
F26A	Lodgepole	46.65	332	P	P	15 26 36.3 -0.3
	baz=138,SNR=6.9					
SRU	San Rafael Swe	46.69	319	eP	P	15 26 37.7 +0.6
	comp=Z,30nm,0.8s					
D28A	Regan	46.72	334	P	P	15 26 37.1 +0.1
	baz=141,SNR=5.1					
GLA	Glamis	46.78	310	P	P	15 26 38.8 +0.9
	baz=115,SNR=17					
GLA	Glamis	46.78	310	eP	P	15 26 38.6 +0.8
	comp=Z,39nm,0.8s					
B30A	Myrvik Farm, E	46.80	337	P	P	15 26 37.5 -0.1
	baz=144,SNR=8.3					
P18A	Preston Nutter	46.80	320	eP	P	15 26 38.7 +0.6
	comp=Z,52nm,1.5s					
PDMCI	Parker Dam,Lak	46.80	312	P	P	15 26 38.6 +0.7
	baz=116					
MDND	Maddock	46.82	336	P	P	15 26 38.0 +0.2
	baz=142,SNR=7.8					
MDND	Maddock	46.82	336	eP	P	15 26 37.6 -0.2
	comp=Z,98nm,0.8s					
Y12C	Blythe	46.85	311	P	P	15 26 39.0 +0.8
	baz=116					
Y12C	Blythe	46.85	311	eP	P	15 26 38.7 +0.5
	comp=Z,15nm,0.9s					
W13A	Hualapai Mount	46.97	313	eP	P	15 26 40.0 +0.5
	comp=Z,9.2nm,1.0s					
PKCU	Pink Cliffs	46.99	316	eP	P	15 26 40.6 +0.9
	comp=Z,18nm,1.1s					
Q16A	Castle Valley	47.00	319	eP	P	15 26 40.3 +0.7
	comp=Z,9.4nm,0.7s					
P17A	Butcher Ranch,	47.03	320	eP	P	15 26 40.5 +0.7
	comp=Z,38nm,0.9s					
C28A	Hausauer Farms	47.04	335	P	P	15 26 39.9 +0.3
	baz=141,SNR=5.8					
D27A	Center	47.07	334	P	P	15 26 40.3 +0.5
	baz=140,SNR=6.7					
F25A	Bowman	47.08	331	P	P	15 26 39.9 0.0
	baz=137					
KNB	Kanab	47.13	316	eP	P	15 26 41.8 +1.2
	comp=Z,53nm,0.9s					
A30A	Hoffart Farm,	47.19	337	P	P	15 26 40.3 -0.3
	baz=145,SNR=6.8					
MTPU	Mount Pierson	47.21	317	eP	P	15 26 42.0 +0.6
	comp=Z,24nm,1.0s					
B29A	Wagenman Farm,	47.21	336	P	P	15 26 41.2 +0.4
	baz=143,SNR=20					
TMUT	Trail Mountain	47.23	319	eP	P	15 26 42.1 +0.5
	comp=Z,17nm,0.9s					
PLCA	Paso Flores	47.29	177	P	P	15 26 40.6 -0.9
	comp=Z,2.5nm,0.6s,baz=19,slow=10,SNR=8.7					
PLCA				ScP	ScP	15 31 47.6 -1.5
	comp=Z,2.9nm,0.8s,baz=3.5,slow=6.2,SNR=7.3					
PLCA	Paso Flores	47.29	177	eP	P	15 26 40.7 -0.9
	comp=Z,16nm,1.5s					
PLCA				eScP	ScP	15 31 47.6 -1.5
ULM	Lac du Bonnet	47.41	340	P	P	15 26 41.9 -0.4
	comp=Z,44nm,0.6s,baz=145,slow=6.6,SNR=28					
ULM	Lac du Bonnet	47.41	340	eP	P	15 26 41.5 -0.8
	comp=Z,40nm,0.6s					
D26A	Manning	47.42	333	P	P	15 26 42.7 +0.2
	baz=138,SNR=12					
LCMT	Little Creek M	47.42	315	eP	P	15 26 43.8 +1.0
	comp=Z,44nm,0.9s					
MSU	Marysvale	47.45	318	eP	P	15 26 43.9 +0.8
E25A	Miller Ranch,	47.47	332	P	P	15 26 43.1 +0.2
	baz=137,SNR=11					
SWSC	Sam W. Stewart	47.48	309	P	P	15 26 44.1 +0.9
	baz=114,SNR=6.4					
IRM	Iron Mountain	47.49	311	P	P	15 26 44.0 +0.8
	baz=115,SNR=18					
BC3	Big Chuckawall	47.51	310	P	P	15 26 44.1 +0.6
	baz=115,SNR=12					
C27A	Sayler Ranch,	47.52	334	P	P	15 26 43.9 +0.6
	baz=140,SNR=6.8					
A29A	Manning Farm,	47.53	337	P	P	15 26 43.2 -0.1
	baz=144,SNR=13					
IKP	In-Ko-Pah, Jac	47.61	309	P	P	15 26 45.0 +0.7
	baz=113					
B28A	Dugan Ranch, T	47.61	336	P	P	15 26 44.2 +0.3
	baz=142,SNR=8.0					
LDFC	Landfair	47.86	312	eP	P	15 26 46.9 +0.7
	comp=Z,29nm,1.0s					
C26A	Wahner Farm, P	47.87	334	P	P	15 26 46.6 +0.7
	baz=139					
MPU	Maple Canyon	47.90	320	eP	P	15 26 47.2 +0.7
	comp=Z,31nm,0.8s					
D25A	Fairfield	47.91	332	P	P	15 26 46.9 +0.6
	baz=138,SNR=5.5					
A28A	Rude Farm, Bot	47.93	336	P	P	15 26 46.6 +0.2
	baz=142					
MONP2	Monument Peak	47.95	309	P	P	15 26 47.8 +0.8
	baz=113,SNR=7.5					
B27A	Peters Farms,	47.95	335	P	P	15 26 47.2 +0.7
	baz=141					
BAR	Barrett	48.06	308	eP	P	15 26 47.5 -0.1
	comp=Z,8.4nm,1.0s					
BELC	Belle Mtn. Jos	48.06	310	P	P	15 26 48.5 +0.7
	baz=114,SNR=14					
JLU	Jordanelle	48.11	320	eP	P	15 26 48.4 +0.2
	comp=Z,15nm,0.8s					
GMRC	Granite Mounta	48.14	312	P	P	15 26 49.1 +0.7
	baz=115,SNR=9.8					
NLU	North Lily Min	48.15	319	eP	P	15 26 49.1 +0.7
	comp=Z,20nm,0.9s					
SCHQ	Schefferville	48.21	5	P	P	15 26 49.1 +0.6
	comp=Z,25nm,0.7s,baz=198,slow=6.8,SNR=21					
SCHQ				ScP	ScP	15 31 53.2 +0.5
	comp=Z,7.4nm,0.8s,baz=195,slow=4.5,SNR=5.6					
SCHQ	Schefferville	48.21	5	eP	P	15 26 48.9 +0.4
	comp=Z,26nm,0.7s					
SCHQ				eScP	ScP	15 31 53.2 +0.5
BW06	Boulder Array	48.22	324	P	P	15 26 49.2 +0.2
	baz=128,SNR=34					
BW06	Boulder Array	48.22	324	eP	P	15 26 48.8 -0.1
	comp=Z,31nm,1.3s					
BW06				ePcP	PcP	15 28 13.6 0.0
PD31	Pinedale Array	48.22	324	eP	P	15 26 49.1 +0.1
PD31				ePcP	PcP	15 28 13.0 -0.7
PDAR	Pinedale Array	48.22	324	P	P	15 26 48.9 -0.1
	comp=Z,11nm,0.6s,baz=120,slow=8.5,SNR=103					
PDAR				PcP	PcP	15 28 13.4 -0.2
	comp=Z,2.1nm,0.6s,baz=127,slow=6.0,SNR=3.9					
TPFO	Pinon Flats	48.25	310	P	P	15 26 49.4 +0.1
	baz=114					
PFO	Pinyon Flats O	48.26	310	eP	P	15 26 49.7 +0.4
	comp=Z,5.0nm,0.8s					
PFO				ePcP	PcP	15 28 11.5 -2.3
C25A	Freed Ranch, W	48.30	333	P	P	15 26 49.9 +0.7
	baz=138					
B26A	Jensen Ranch,	48.34	334	P	P	15 26 50.3 +0.7
	baz=140					
TCUT	Toone Canyon	48.37	321	eP	P	15 26 50.7 +0.5
	comp=Z,111nm,0.6s					
109C	Camp Elliot, M	48.47	309	P	P	15 26 51.0 +0.2
	baz=113					
SHPR	Sheep Range	48.53	314	eP	P	15 26 51.7 +0.3
	comp=Z,23nm,1.2s					
PSUT	Pine Spring	48.59	317	eP	P	15 26 52.6 +0.8
	comp=Z,20nm,0.7s					
TUQ	Turquoise Moun	48.62	312	P	P	15 26 52.7 +0.7
	baz=116,SNR=36					
A26A	Wade Farm, Ken	48.66	335	P	P	15 26 52.6 +0.7
	baz=140					
HEC	Hector,Ludlow	48.66	311	P	P	15 26 53.1 +0.8
	baz=115,SNR=9.4					
B25A	Knox Farm, Ray	48.67	333	P	P	15 26 53.2 +1.1
	baz=138,SNR=7.1					
HWUT	Hardware Ranch	48.74	322	eP	P	15 26 52.7 -0.2
	comp=Z,21nm,0.6s					
DUG	Dugway, Tooele	48.76	319	P	P	15 26 53.9 +0.9
	baz=122,SNR=25					
DUG	Dugway, Tooele	48.76	319	eP	P	15 26 54.0 +1.0
	comp=Z,19nm,0.8s					
MURC	Murrieta	48.82	309	P	P	15 26 54.3 +0.9
	baz=113					
BBRC	Big Bear Solar	48.87	310	P	P	15 26 55.3 +1.2
	baz=114					
LAO	LASA Array	48.97	330	P	P	15 26 54.6 +0.2
	baz=134,SNR=16					
LAO	LASA Array	48.97	330	eP	P	15 26 54.1 -0.4
	comp=Z,29nm,1.1s					
SHOC	Shoshone, Teco	49.07	313	P	P	15 26 56.2 +0.9
	baz=116,SNR=15					
AHID	Auburn Hatcher	49.13	323	eP	P	15 26 55.7 -0.2
SPUT	South Promonto	49.13	321	eP	P	15 26 56.0 +0.2
	comp=Z,13nm,0.7s					
A25A	Svangstu Ranch	49.15	334	P	P	15 26 56.5 +0.8
	baz=139,SNR=12					
GSC	Goldstone, Bar	49.21	312	P	P	15 26 57.4 +0.9
	baz=115,SNR=22					
GSC	Goldstone, Bar	49.21	312	eP	P	15 26 57.2 +0.7
	comp=Z,28nm,0.8s					
DGMT	Dagmar	49.28	333	P	P	15 26 57.8 +1.1
	baz=137,SNR=21					
DGMT	Dagmar	49.28	333	eP	P	15 26 57.8 +1.1
	comp=Z,156nm,0.6s					
BGU	Big Grassy Mou	49.29	320	eP	P	15 26 57.5 +0.4
	comp=Z,46nm,0.7s					
REDW	Red Top Meadow	49.34	324	eP	P	15 26 57.5 0.0
	comp=Z,44nm,0.6s					
SNOW	Snow King Moun	49.34	324	eP	P	15 26 57.6 +0.1
	comp=Z,25nm,0.6s					
LOHW	Long Hollow	49.34	324	eP	P	15 26 57.8 +0.3
	comp=Z,24nm,0.6s					
BFSC	Mount Baldy Ra	49.42	310	P	P	15 26 58.3 +0.1
	baz=113					
MOOW	Moose Ponds	49.50	324	eP	P	15 26 58.8 0.0
	comp=Z,17nm,0.8s					
TPNV	Topopah Spring	49.52	314	P	P	15 27 00.1 +1.2
	baz=117,SNR=38					
TPNV	Topopah Spring	49.52	314	eP	P	15 26 59.8 +0.9
	comp=Z,27nm,0.9s					
RLMT	Red Lodge	49.52	327	P	P	15 26 59.1 +0.2
	baz=130,SNR=14					
RLMT	Red Lodge	49.52	327	eP	P	15 26 59.2 +0.4
	comp=Z,10nm,0.4s					
HVU	Hansel Valley	49.59	321	eP	P	15 26 59.6 +0.2
	comp=Z,14nm,0.7s					
FXWY	Fox Creek	49.60	324	eP	P	15 26 59.5 0.0
	comp=Z,12nm,0.8s					
SCI2	San Clemente I	49.63	308	P	P	15 27 00.8 +1.2
	baz=112					
FLWY	Flagg Ranch	49.68	325	eP	P	15 27 00.2 +0.2
	comp=Z,8.9nm,0.6s					
CIS	Catalina Islan	49.68	309	P	P	15 27 00.7 +0.7
	baz=112					
R11A	Troy Canyon, C	49.69	316	P	P	15 27 01.2 +1.0
	baz=118,SNR=47					
R11A	Troy Canyon, C	49.69	316	eP	P	15 27 00.6 +0.4
	comp=Z,16nm,0.8s					
R11A				ePcP	PcP	15 28 19.0 -0.1
IMW	Indian Meadow	49.70	324	eP	P	15 27 00.4 +0.1
	comp=Z,25nm,0.6s					
FMP	Fort Macarthur	49.71	309	P	P	15 27 01.1 +0.9
	baz=112					
MWC	Mount Wilson	49.72	310	eP	P	15 26 59.9 -0.6
	comp=Z,5.6nm,0.8s					
FURC	Furnace Creek,	49.75	313	P	P	15 27 01.6 +1.2
	baz=116					
H17A	Grant Village	49.80	325	P	P	15 27 02.3 +1.3
	baz=128,SNR=9.2					
H17A	Grant Village	49.80	325	eP	P	15 27 01.6 +0.6
	comp=Z,6.7nm,0.7s					
PASC	Pasadena Art C	49.80	310	eP	P	15 27 01.8 +1.0
	comp=Z,8.7nm,0.8s					
LKWY	Lake	49.80	325	eP	P	15 27 01.1 +0.1
	comp=Z,4.3nm,0.7s					
EDW2	Edwards Air Fo	49.93	311	P	P	15 27 02.4 +0.5
	baz=114,SNR=15					
LRMC	Laurel Mtn Rad	49.94	311	P	P	15 27 02.6 +0.5
	baz=114,SNR=13					
YFT	Old Faithful	49.98	325	eP	P	15 27 04.1 +1.7
	comp=Z,10nm,0.7s					
GCMT	Greycliff	50.16	327	eP	P	15 27 04.4 +0.8
YMR	Madison River	50.18	325	eP	P	15 27 05.1 +1.2
	comp=Z,20nm,0.6s					
DAC	Darwin (Calif)	50.20	312	eP	P	15 27 04.6 +0.5
	comp=Z,3.9nm,0.9s					
GRAC	Grapevine Rang	50.34	313	P	P	15 27 06.0 +1.1
	baz=116,SNR=14					
BLG	Laguna Peak, P	50.45	309	P	P	15 27 06.5 +0.8
	baz=112					
SNCC	San Nicolas Is	50.49	308	P	P	15 27 06.4 +0.3
	baz=111					
QLMT	Earthquake Lak	50.55	325	eP	P	15 27 07.8 +1.2
ISA	Isabella, Lake	50.60	311	P	P	15 27 07.5 +0.6
	baz=114					
ISA	Isabella, Lake	50.60	311	eP	P	15 27 07.6 +0.6
	comp=Z,6.3nm,0.8s					
ELK	Elko	50.62	319	eP	P	15 27 07.3 +0.1
	comp=Z,8.3nm,0.8s					
ARVC	Arvin	50.66	311	P	P	15 27 08.2 +0.9
	baz=113					
SCZ2	Santa Cruz Isl	50.84	309	P	P	15 27 09.4 +0.6
	baz=112,SNR=5.4					
TIN	Tinemaha, Big	50.99	313	P	P	15 27 11.1 +1.2
	baz=115					
SBC	Santa Barbara	51.07	309	P	P	15 27 11.3 +1.0
	baz=112					
VES	Vestal, Richgr	51.13	311	P	P	15 27 12.0 +1.2
	baz=113					
BOZ	Bozeman (W)	51.15	326	P	P	15 27 11.5 +0.5
	baz=127,SNR=34					
BOZ	Bozeman (W)	51.15	326	eP	P	15 27 11.5 +0.5
	comp=Z,17nm,0.7s					
PKM	Mcpherson Peak	51.31	310	P	P	15 27 13.2 +0.8
	baz=112					
MCMT	McKenzie Canyo	51.36	324	eP	P	15 27 13.6 +0.9
RCTC	Rector, Farmer	51.43	312	P	P	15 27 13.6 +0.6
	baz=114					
DLMT	Dillon	51.53	325	eP	P	15 27 14.6 +0.8
	comp=Z,20nm,1.1s					
NV11	Mina Array Sit	51.53	315	eP	P	15 27 14.5 +0.6
	comp=Z,9.1nm,0.8s					
NV11				ePcP	PcP	15 28 26.9 +1.1
HLID	Hailey	51.58	322	P	P	15 27 15.0 +0.7
	baz=123,SNR=25					
HLID	Hailey	51.58	322	eP	P	15 27 15.0 +0.7
	comp=Z,15nm,0.8s					
SMMC	Simmler	51.61	310	P	P	15 27 15.5 +1.1
	baz=112					
NV01	Mina Array Sit	51.63	315	eP	P	15 27 15.2 +0.4
NV01				ePcP	PcP	15 28 27.3 +1.0
NVAR	Mina Array Bea	51.63	315	P	P	15 27 15.4 +0.7
	comp=Z,12nm,0.7s,baz=123,slow=7.0,SNR=100					
NVAR				PcP	PcP	15 28 27.0 +0.7
	comp=Z,3.9nm,0.6s,baz=135,slow=4.6,SNR=9.4					
EGMT	Eagleton	51.65	329	P	P	15 27 14.9 +0.4
	baz=131,SNR=11					
EGMT	Eagleton	51.65	329	eP	P	15 27 15.2 +0.6
	comp=Z,44nm,1.4s					
MLAC	Mammoth, Mammo	51.67	313	P	P	15 27 16.3 +1.2
	baz=115					
LRM	Limekiln Ridge	51.72	326	eP	P	15 27 15.6 +0.3
HRY	Holter Researc	51.91	327	eP	P	15 27 17.3 +0.8
HRY				ePcP	PcP	15 28 25.4 -1.6
MFID	Camas Ranch	52.37	321	eP	P	15 27 20.2 +0.2
	comp=Z,28nm,0.6s					
WAKR	Walker	52.47	314	eP	P	15 27 22.3 +1.4
YERR	Yerington	52.53	315	eP	P	15 27 22.2 +0.8
CHMT	Chamberlain Mo	52.81	326	eP	P	15 27 23.7 +0.4
CMLA	Cha da Macela	52.91	47	ePcP	PcP	15 28 29.0 -1.8
PAHR	Pah Rah Range	52.94	316	eP	P	15 27 24.7 +0.4
	comp=Z,12nm,0.7s					
CMB	Columbia Colle	52.95	313	eP	P	15 27 24.8 +0.5
	comp=Z,5.4nm,0.8s					
MSO	Missoula	53.14	326	P	P	15 27 26.1 +0.5
	baz=126,SNR=7.8					
MSO	Missoula	53.14	326	eP	P	15 27 26.1 +0.5
	comp=Z,7.2nm,0.8s					
SWMT	Swartz Lake	53.57	326	eP	P	15 27 29.4 +0.6
WVOR	Wild Horse Val	53.67	319	eP	P	15 27 29.6 0.0
	comp=Z,41nm,1.1s					
AFDM	Forest Hills D	53.74	314	eP	P	15 27 30.5 +0.5
	comp=Z,9.1nm,0.8s					
CHRN	Cochrane	53.75	180	eP	P	15 27 31.0 +1.2
YBMT	Yellow Bay	53.79	327	eP	P	15 27 31.4 +1.0
JTMT	Jette	53.87	327	eP	P	15 27 31.1 +0.2
BMO	Blue Mountains	54.03	322	eP	P	15 27 31.8 -0.3
	comp=Z,6.0nm,0.6s					
BLMT	Blacktail Moun	54.07	327	eP	P	15 27 33.2 +0.8
BSMT	Bassoo Peak	54.21	326	eP	P	15 27 34.2 +0.8
ORV	Oroville	54.36	315	eP	P	15 27 35.0 +0.5
	comp=Z,15nm,0.8s					
WALA	Waterton Lakes	54.45	328	eP	P	15 27 34.8 -0.3
	comp=Z,7.6nm,0.9s					
MOD	Modoc Plateau	54.53	318	eP	P	15 27 35.7 -0.2
	comp=Z,10nm,0.6s					
F10A	Beach Ranch, E	54.56	323	eP	P	15 27 35.8 -0.2
	comp=Z,24nm,0.6s					
O03D	Paynes Creek	54.87	315	P	P	15 27 38.2 -0.1
	baz=114,SNR=6.1					
G08A	Pilot Rock	55.26	322	eP	P	15 27 41.4 +0.5
	comp=Z,39nm,0.7s					
K05A	Summer Lake	55.29	318	eP	P	15 27 42.0 +0.7
	comp=Z,51nm,1.8s					
E09A	Wood Farm, Sta	55.39	323	eP	P	15 27 42.0 +0.2
	comp=Z,18nm,0.8s					
WDC	Whiskeytown Da	55.51	315	eP	P	15 27 40.5 -2.1
	comp=Z,6.9nm,0.8s					
M04C	Macdoel	55.51	317	P	P	15 27 43.3 +0.5
	baz=115,SNR=14					
NEW	Newport	55.73	326	P	P	15 27 44.1 -0.1
	baz=123					
NEW	Newport	55.73	326	eP	P	15 27 44.5 +0.3
	comp=Z,8.9nm,0.7s					
J05D	Fort Rock, OR	55.76	319	P	P	15 27 45.3 +0.6
	baz=116,SNR=22					
N02D	Trinity Center	55.78	316	P	P	15 27 44.2 -0.4
	baz=114,SNR=5.1					
K04D	Chiloquin, OR	55.81	318	P	P	15 27 45.6 +0.6
	baz=116					
M02C	Callahan	56.05	316	P	P	15 27 46.1 -0.5
	baz=114					
YBH	Yreka Blue Hor	56.09	317	eP	P	15 27 46.0 -0.9
	comp=Z,13nm,0.6s					
D08A	Wollman Farm,	56.12	324	eP	P	15 27 47.0 +0.1
	comp=Z,12nm,0.8s					
C09A	Chrisman Ranch	56.14	325	eP	P	15 27 47.1 +0.1
	comp=Z,36nm,0.8s					
KMRM	Mail Ridge	56.19	314	eP	P	15 27 48.4 +0.8
	comp=Z,54nm,0.8s					
G06A	Carlson Farm,	56.27	321	eP	P	15 27 49.1 +1.1
	comp=Z,32nm,1.1s					
I05D	Terrebonne, OR	56.30	320	P	P	15 27 49.2 +0.9
	baz=117,SNR=6.1					
E07A	Sunnyside	56.43	323	eP	P	15 27 48.9 -0.2
	comp=Z,14nm,0.7s					
KHMM	Horse Mountain	56.45	315	eP	P	15 27 50.5 +0.9
	comp=Z,38nm,0.8s					
HUMO	Hull Mountain	56.61	317	eP	P	15 27 49.6 -1.0
	comp=Z,14nm,1.3s					
G05D	Wamic, OR	56.70	321	P	P	15 27 52.5 +1.4
	baz=118					
I04A	Tendick Farm,	56.75	319	P	P	15 27 51.4 -0.1

B06A	Marblemount	58.35	324	eP	P	15 28 02.3	-0.2
	comp=Z,11nm,0.7s						
F03A	Seaside	58.41	321	eP	P	15 28 04.4	+1.4
	comp=Z,74nm,0.9s						
B05A	Bryant	58.59	324	P	P	15 28 04.1	0.0
	baz=118						
E03A	Lebam	58.69	321	eP	P	15 28 05.4	+0.5
	comp=Z,40nm,0.8s						
NLWA	Neilton Lookou	59.25	322	eP	P	15 28 10.3	+1.5
	comp=Z,73nm,1.4s						
PGC	Sidney	59.56	324	eP	P	15 28 11.8	+1.0
	comp=Z,22nm,1.1s						
SFJD	Kangerlussuaq	62.09	10	eP	P	15 28 27.6	0.0
	comp=Z,30nm,1.6s						
YKA	Yellowknife Ar	63.38	340	P	P	15 28 36.3	+0.1
	comp=Z,30nm,0.6s,baz=132,slow=6.7,SNR=507						
YKB5	Yellowknife Ar	63.38	340	eP	P	15 28 36.0	-0.2
YKW3	Yellowknife Ar	63.44	340	eP	P	15 28 36.3	-0.2
	comp=Z,34nm,0.7s						
PTCN	Pitcairn Islan	63.89	238	eP	P	15 28 39.1	-1.1
	comp=Z,182nm,0.6s						
DLBC	Dease Lake	67.46	331	eP	P	15 29 03.5	+0.9
	comp=Z,11nm,0.6s						
TIC	Toumodi	67.46	86	eP	P	15 29 04.3	+0.9
LIC	Lamto	67.48	86	eP	P	15 29 03.3	-0.2
	comp=Z,55nm,1.6s						
DBIC	Dimbokro	67.62	86	P	P	15 29 04.1	-0.3
	comp=Z,5.6nm,0.6s,baz=241,slow=5.1,SNR=14						
DBIC	Dimbokro	67.62	86	eP	P	15 29 04.5	+0.2
	comp=Z,10.0nm,0.8s						
KIC	Kosan Boka	67.76	86	eP	P	15 29 05.2	0.0
	comp=Z,19nm,0.5s						
WRAK	Wrangell Islan	67.78	329	eP	P	15 29 04.5	0.0
	comp=Z,57nm,1.9s						
SUMG	Summit	69.05	11	i P	P	15 29 13.2	+0.6
	comp=Z,25nm,0.7s						
SUMG	Summit	69.05	11	eP	P	15 29 13.1	+0.4
	comp=Z,26nm,0.6s						
RES	Resolute Bay	69.07	354	eP	P	15 29 12.9	+0.7
	comp=Z,13nm,1.5s						
PAB	San Pablo	69.30	50	eP	P	15 29 14.7	+0.3
	comp=Z,17nm,1.6s						
SKAG	Skagway	70.39	331	eP	P	15 29 20.8	+0.2
	comp=Z,9.9nm,0.7s						
INK	Inuvik	73.15	340	eP	P	15 29 37.1	+0.2
	comp=Z,12nm,0.6s						
CWF	Charnwood Fore	73.61	37	eP	P	15 29 41.4	+1.6
	comp=Z,32nm,1.6s						
TOA1	Torodi Ar. Sit	73.63	78	eP	P	15 29 40.0	-0.8
	comp=Z,26nm,1.9s						
TOA0	Torodi Ar. Sit	73.63	78	eP	P	15 29 40.0	-0.8
TORD	Torodi Ar. Bea	73.63	78	P	P	15 29 40.0	-0.8
	comp=Z,0.9nm,0.3s,baz=285,slow=6.4,SNR=14						
DAWY	Dawson	73.77	335	eP	P	15 29 41.0	+0.3
	comp=Z,5.5nm,0.9s						
BALM	Baldy	74.20	332	eP	P	15 29 44.5	+1.1
	comp=Z,13nm,0.9s						
EGAK	Eagle	74.72	336	eP	P	15 29 46.6	+0.6
	comp=Z,24nm,1.4s						
BMRM	Bremner River	75.25	331	eP	P	15 29 50.2	+0.9
	comp=Z,54nm,1.3s						
MENT	Mentasta	75.31	333	eP	P	15 29 50.6	+1.0
	comp=Z,9.4nm,0.6s						
DOT	Dot Lake	75.64	334	eP	P	15 29 52.1	+0.7
	comp=Z,66nm,0.6s						
DAG	Danmarks Havn	75.72	11	⸗i P	P	15 29 51.3	-0.3
	comp=Z,6.4nm,0.7s						
DIV	Divide	75.84	331	eP	P	15 29 51.7	-0.9
	comp=Z,9.2nm,0.9s						
KLU	Klutina	75.99	332	eP	P	15 29 54.1	+0.7
	comp=Z,8.3nm,0.9s						
PAX	Paxson	76.10	333	eP	P	15 29 54.5	+0.4
	comp=Z,11nm,0.9s						
SCM	Sheep Creek Mo	76.71	332	eP	P	15 29 58.4	+0.8
	comp=Z,34nm,0.9s						
IL1	Eielson Array	77.09	335	eP	P	15 29 59.4	-0.1
ILAR	Eielson Array	77.09	335	P	P	15 29 59.6	+0.1
	comp=Z,5.0nm,0.8s,baz=112,slow=4.5,SNR=67						
ILAR				PP	PP	15 32 53.1	-2.0
	comp=Z,1.1nm,0.9s,baz=87,slow=8.3,SNR=7.3						
ILB	Eielson Array	77.09	335	eP	P	15 29 59.0	-0.5
SML	Sawmill	77.18	332	eP	P	15 30 01.1	+0.9
	comp=Z,25nm,1.0s						
SEW	Seward	77.44	330	eP	P	15 30 01.1	-0.4
	comp=Z,18nm,1.1s						
CCB	Clear Creek Bu	77.45	335	eP	P	15 30 01.5	0.0
	comp=Z,3.7nm,0.8s						
PMR	Palmer	77.52	332	eP	P	15 30 02.0	+0.1
	comp=Z,12nm,0.7s						
WRH	Wood River Hil	77.54	335	eP	P	15 30 01.9	-0.1
	comp=Z,28nm,1.9s						
RND	Reindeer	77.69	333	eP	P	15 30 04.0	+1.1
	comp=Z,35nm,0.7s						
RND				epP	pP	15 30 43.7	+1.5
MDM	Murphy Dome	77.69	335	eP	P	15 30 03.4	+0.5
	comp=Z,23nm,1.3s						
RC01	Rabbit Creek A	77.73	331	eP	P	15 30 03.5	+0.3
	comp=Z,13nm,0.5s						
MCK	McKinley	77.78	334	eP	P	15 30 03.6	+0.2
	comp=Z,8.8nm,1.0s						
BWN	Browne	78.08	334	eP	P	15 30 05.3	+0.3
	comp=Z,42nm,0.4s						
BRLK	Bradley Lake	78.11	330	eP	P	15 30 05.4	+0.1
	comp=Z,19nm,0.9s						
TRF	Thorofare Moun	78.33	333	eP	P	15 30 07.2	+0.6
	comp=Z,91nm,2.0s						
KTH	Kantishna Hill	78.63	333	eP	P	15 30 08.3	+0.1
	comp=Z,16nm,1.0s						
BPAW	Bear Paw Mtn.	78.73	334	eP	P	15 30 09.0	+0.3
	comp=Z,11nm,0.8s						
BPAW				epP	pP	15 30 49.3	+1.3
MLY	Manley	78.75	335	eP	P	15 30 08.8	+0.1
	comp=Z,7.7nm,0.8s						
MLY				epP	pP	15 30 49.6	+1.4
KDAK	Kodiak Island	78.78	328	eP	P	15 30 08.8	-0.1
	comp=Z,30nm,1.6s						
SPU	Mount Spurr	78.86	331	eP	P	15 30 09.4	0.0
SPU				epP	pP	15 30 50.5	+1.7
COLD	Coldfoot	78.88	337	eP	P	15 30 10.1	+0.8
	comp=Z,8.2nm,0.8s						
COLD				epP	pP	15 30 50.6	+1.9
PPLA	Purkeypile	79.11	333	eP	P	15 30 11.2	+0.3
	comp=Z,33nm,0.5s						
OHAK	Old Harbor	79.11	327	eP	P	15 30 10.7	-0.1
	comp=Z,15nm,0.7s						
RSO	Redoubt South	79.12	330	eP	P	15 30 11.1	+0.1
CAST	Castle Rocks	79.12	333	eP	P	15 30 10.6	-0.2
	comp=Z,17nm,0.7s						
TTA	Tatalina	80.86	333	eP	P	15 30 20.3	+0.1
	comp=Z,5.7nm,0.6s						
TT01	Tatalina	80.86	333	eP	P	15 30 19.8	-0.3
TT01				epP	pP	15 30 59.7	0.0
NB2	NORSAR Subarra	81.34	29	P	P	15 30 23.3	+0.6
	comp=Z,10nm,0.5s,baz=267,slow=5.6						
NB200	NORSAR Array S	81.34	29	eP	P	15 30 23.6	+0.9
NOA	NORSAR Array B	81.34	29	P	P	15 30 23.6	+0.9
	comp=Z,1.0nm,0.6s,baz=268,slow=5.3,SNR=7.5						
CHGN	Chignik	81.90	326	eP	P	15 30 24.9	-0.7
CLL	Collm	82.29	39	i P	P	15 30 27.8	0.0
GEA0	GERESS Array S	82.80	42	eP	P	15 30 29.8	-0.9
GERES	GERESS Array B	82.80	42	P	P	15 30 30.9	+0.2
	comp=Z,0.8nm,0.5s,baz=252,slow=2.7,SNR=9.2						
ARA0	ARCESS Array S	86.71	20	eP	P	15 30 49.9	+0.2
ARCES	ARCESS Array B	86.71	20	P	P	15 30 49.9	+0.2
	comp=Z,2.3nm,0.7s,baz=277,slow=3.9,SNR=16						
VNA3	Neumayer Olymp	88.05	163	P	P	15 30 55.6	-0.4
FIA0	FINESS Array S	88.46	28	eP	P	15 30 58.1	0.0
FINES	FINESS Array B	88.46	28	P	P	15 30 58.1	0.0
	comp=Z,1.3nm,0.6s,baz=302,slow=3.6,SNR=4.7						
VNA2	Neumayer--Watz	88.58	163	P	P	15 30 58.1	-0.3
	baz=306,slow=6.4						
ZAA1	Zalesovo Array	116.72	14	ePKPdf	PKPdf	15 36 49.5	+0.1
ZAA0	Zalesovo Array	116.72	14	ePKPdf	PKPdf	15 36 49.2	-0.2
ZAA0				ePKPdf	PKPdf	15 36 49.2	-0.2
ZAA0				epPKPdf	pPKPdf	15 37 29.8	-1.8
ZALV	Zalesovo Beam	116.72	14	PKP	PKPdf	15 36 49.5	+0.1
	comp=Z,3.6nm,0.6s,baz=293,slow=1.9,SNR=15						
KURK	Kurchatov	117.75	20	ePKPdf	PKPdf	15 36 51.7	+0.2
KURBB	Kurchatov Arra	117.79	20	PKP	PKPdf	15 36 51.7	+0.1
	comp=Z,2.3nm,0.2s,baz=320,slow=2.4,SNR=14						
MAKZ	Makanchi	122.24	20	ePKPdf	PKPdf	15 36 59.7	-0.6
MK31	Makanchi Array	122.36	20	ePKPdf	PKPdf	15 37 00.0	-0.5
MK32	Makanchi Array	122.36	20	ePKPdf	PKPdf	15 37 00.4	-0.2
MKAR	Makanchi Array	122.36	20	PKP	PKPdf	15 37 00.4	-0.2
	comp=Z,1.9nm,0.4s,baz=324,slow=2.1,SNR=24						
MKAR	Makanchi Array	122.36	20	ePKPdf	PKPdf	15 36 59.9	-0.7
MKAR				epPKPdf	pPKPdf	15 37 39.0	-3.7
MK01	Makanchi Array	122.38	20	ePKPdf	PKPdf	15 36 59.9	-0.7
AAK	Ala-Archa	122.65	28	PKP	PKPdf	15 37 02.7	+1.3
	comp=Z,0.9nm,0.5s,baz=155,slow=1.9,SNR=5.0						
SONA1	Songino Array	125.65	0	ePKPdf	PKPdf	15 37 07.6	+0.6
SONA0	Songino Array	125.66	1	ePKPdf	PKPdf	15 37 07.7	+0.7
SONM	Songino Array	125.66	1	PKP	PKPdf	15 37 07.7	+0.7
	comp=Z,1.6nm,0.5s,baz=343,slow=1.5,SNR=11						
KSH	Kashi	125.77	29	ePKP	PKPdf	15 37 09.6	+2.2
KSH				esPKP		15 38 08.8	
KSH				ePP	PP	15 39 10.4	+10
KSH				SKKS		15 45 44.5	
KSH				AMB	AMB		
	comp=Z,71nm,3.5s						
KSH				LR	LR		
	comp=N,71nm,7.7s						
KSH				LR	LR		
	comp=E,73nm,4.7s						
KSH				LR	LR		
	comp=Z,140nm,5.5s						
KSRS	Korea Array	131.89	338	PKP	PKPdf	15 37 19.5	+0.6
	comp=Z,0.9nm,0.6s,baz=40,slow=3.4,SNR=4.4						
KS15	Wonju Array Si	131.92	338	ePKPdf	PKPdf	15 37 17.8	-1.2
HHC	Hu-ho-hao-te	132.46	355	ePKP	PKPdf	15 37 20.3	+0.2
HHC				PP	PP	15 39 49.1	+5.3
HHC	Hu-ho-hao-te	132.46	355	SS	SS	15 57 13.1	+3.7
HHC				AMB	AMB		
	comp=Z,50nm,9.2s						
HHC				LR	LR		
	comp=N,150nm,19.7s						
HHC				LR	LR		
	comp=E,100nm,20.7s						
HHC				LR	LR		
	comp=Z,270nm,20.9s						
LZH	Lanzhou	137.30	4	ePKP	PKPdf	15 37 30.3	+0.9
LZH				pPKP	pPKPdf	15 38 12.3	+0.7
LZH				sPKP		15 38 32.0	
LZH				LR	LR		
	comp=N,97nm,18.3s						
LZH				LR	LR		
	comp=E,100nm,18.1s						
LZH				LR	LR		
	comp=Z,140nm,20.2s						
STKA	Stephens Creek	139.19	228	PKP	PKPdf	15 37 33.0	+0.3
	comp=Z,2.2nm,0.6s,baz=88,slow=5.7,SNR=4.9						
STKA	Stephens Creek	139.19	228	ePKPdf	PKPdf	15 37 32.6	0.0
CD2	Chengdu	142.44	5	PKP	PKPdf	15 37 36.9	-1.8
GYA	Guiyang	147.00	1	ePKPbc	PKPdf	15 37 46.0	-0.8
GYA				PKPab	PKiKP	15 37 51.3	-0.1
GYA				sPKP		15 38 47.8	
GYA				PP	PP	15 41 17.4	+4.5
GYA				AMB	AMB		
	comp=Z,120nm,8.2s						
AS01	Alice Springs	149.12	234	ePKPdf	PKPdf	15 37 50.4	+0.2
AS01				ePKPbc	PKPbc	15 37 54.3	-0.3
AS31	Alice Springs	149.16	234	ePKPdf	PKPdf	15 37 50.0	-0.2
AS31				ePKPbc	PKPbc	15 37 54.0	-0.6
ASAR	Alice Springs	149.16	234	PKP	PKPdf	15 37 50.2	-0.1
	comp=Z,14nm,0.6s,baz=119,slow=3.1,SNR=115						
ASAR				PKPbc	PKPbc	15 37 53.9	-0.7
	comp=Z,15nm,0.5s,baz=120,slow=3.2,SNR=178						
WB2	Warramunga Arr	150.39	241	ePKPdf	PKPdf	15 37 52.4	+0.2
WB2				ePKPbc	PKPbc	15 37 57.5	-0.2
WRAB	Tennant Creek	150.40	241	ePKPdf	PKPdf	15 37 52.8	+0.5
WRAB				ePKPbc	PKPbc	15 37 57.3	-0.3
WR1	Warramunga Arr	150.40	241	ePKPdf	PKPdf	15 37 52.8	+0.5
WR1				ePKPbc	PKPbc	15 37 57.5	-0.1
WRA	Warramunga Arr	150.41	241	PKP	PKPdf	15 37 52.7	+0.5
	comp=Z,16nm,0.4s,baz=107,slow=2.6,SNR=254						
WRA				PKPbc	PKPbc	15 37 57.5	-0.1
	comp=Z,16nm,0.4s,baz=109,slow=2.2,SNR=259						
CHTO	Chiang Mai	153.40	17	ePKPdf	PKPdf	15 37 57.4	+0.6
CHTO				ePKPbc	PKPbc	15 38 03.8	-0.7
CM31	Chiang Mai Arr	153.73	18	ePKPdf	PKPdf	15 37 56.9	-0.3
CM31				ePKPbc	PKiKP	15 38 05.7	+0.4
CMAR	Chiang Mai Arr	153.73	18	PKP	PKPdf	15 37 58.3	+1.1
	comp=Z,1.8nm,0.7s,baz=307,slow=2.1,SNR=12						
CMAR				PKPbc	PKiKP	15 38 05.7	+0.4
	comp=Z,5.7nm,0.5s,baz=324,slow=3.4,SNR=27						
CM01	Chiang Mai Arr	153.77	17	ePKPdf	PKPdf	15 37 58.4	+1.1
CM01				ePKPbc	PKiKP	15 38 05.9	+0.6
QIZ	Qiongzhong	154.25	354	PKIKP	PKPdf	15 37 57.9	-0.1
QIZ				PP	PP	15 41 56.3	+2.0

ISCJB ***13*** *15:31:02.9±0.6, 37°.16N±0°.04×37°.10E±0°.04, h4km±7km, Error ellipse: s-maj=6.2km s-min=5.3km az=17.9*
DDA ***13*** *15:31:02.5, 37°.16N×37°.10E, h7km, Md2.5*
CSEM ***13*** *15:31:02.5, 37°.16N×37°.10E, h7km, MD2.5*

ISC 13 15:31:02.5±1.0, 37°.20N±0°.04×37°.12E±0°.04, h6km±7km, n11, σ1§49/20, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GAZ	Gaziantep	0.08	108	ePG	Pg	15 31 03.8	-0.7
GAZ				eSG	Sg	15 31 07.2	+1.3
HCB	Kahramanmara¯	0.22	311	i P	Pg	15 31 06.8	-0.2
HCB				i S	Sg	15 31 10.9	+1.0
KAMA	Osmaniye	0.36	268	i P	Pg	15 31 09.5	0.0
KAMA				i S	Sg	15 31 15.9	+1.7
GZT	Gaziantep	0.39	66	i P	Pn	15 31 16.9	+2.0
KUZU	Kuzuini	0.42	184	P	Pg	15 31 10.5	-0.3
KUZU				S	Sg	15 31 16.4	+0.1
KUZU	Kuzuini	0.42	184	i P	Pg	15 31 10.5	-0.3
KUZU				i S	Sg	15 31 16.4	+0.1
TAHT	Tahtakopru-Hat	1.11	223	ePG	Pb	15 31 23.7	-0.4
SURC	SANLIURFA_SURC	1.24	104	P	Pn	15 31 26.0	-0.4
SURC				S	Sb	15 31 42.4	-0.2
SURC	SANLIURFA_SURC	1.24	104	i P	Pn	15 31 26.0	-0.4
SURC				i S	Sb	15 31 42.4	-0.2
AKCD	Akcadag	1.27	30	P	Pn	15 31 23.9	-3.1
AKCD				S	Sn	15 31 46.1	+1.7
AKCD	Akcadag	1.27	30	i P	Pn	15 31 23.9	-3.1
AKCD				i S	Sn	15 31 46.1	+1.7

IDC ***13*** *15:31:10.9±14.0, 38°.65N×142°.92E, h0km, mb3.6/2, mb1 3.8/3, mb1mx3.3/45, mbtmp3.5/3, ML3.4/1, MS3.0/3, Ms1 3.0/3, ms1mx2.5/54, Error ellipse: s-maj=299.4km s-min=59.5km az=2.0*
ISCJB ***13*** *15:31:15.4±1.2, 38°.38N±0°.05×142°.6E±0°.1, h24km, mb3.8/2, MS3.6/1, Error ellipse: s-maj=14.7km s-min=6.1km az=170.0*
JMA ***13*** *15:31:18.1±0.1, 38°.39N×142°.33E, h37km±2km, M3.4*

ISC 13 15:31:16.6±1.5, 38°.42N±0°.05×142°.5E±0°.1, h24km, n17, σ1§12/21, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.87	272	P	Pb	15 31 32.7	-0.3
OFUJ	Ofunato	0.90	317	P	Pn	15 31 34.0	+0.3
OFUJ				S	Sb	15 31 45.1	0.0
JMK	Ichinoseki	1.10	299	P	Pb	15 31 36.6	-0.3
MIYJ	Miyakonagasawa	1.25	337	P	Pb	15 31 39.6	0.0
MIYJ				S	Sn	15 31 54.7	0.0
JOM	Ohasama	1.39	320	P	Pb	15 31 41.5	-0.3
JOM				S	Sn	15 31 58.5	+0.5
JOU	Okura	1.41	268	P	Pn	15 31 41.0	+0.3
JMM	Marumori	1.42	248	P	Pn	15 31 40.0	-0.9
JFK	Kawauchi	1.64	230	P	Pn	15 31 42.6	-1.3
JYK	Kaneyama	1.71	287	P	Pn	15 31 45.5	+0.6
JRG	Rokugo	1.72	305	P	Pb	15 31 46.5	-1.0
JKZ	Kuzumaki	1.79	331	P	Pb	15 31 48.1	-0.6
JKZ				eS	Sb	15 32 10.0	-0.7
MJAR	Matsushiro Arr	3.86	242	Pn	Pn	15 32 17.4	+2.9
	2.2nm,0.3s,baz=58,slow=9.5,SNR=11						
MJAR				Sn	Sb	15 33 10.7	+0.3
	0.7nm,0.3s,baz=137,slow=13,SNR=3.3						
MJAR				LR	LR	15 33 55.5	
	comp=Z,90nm,19.3s,baz=80,slow=38						
MAT	Matsushiro	3.86	242	P	Pn	15 32 17.2	+2.7
MAT				S	Sb	15 33 09.1	-1.3
JNU	Nakatsue	10.79	244	LR	LR	15 38 26.3	
	comp=Z,56nm,18.7s,baz=129,slow=39						
WRA	Warramunga Arr	58.55	189	P	P	15 41 10.9	-0.3
	0.5nm,0.5s,baz=6.2,slow=7.4,SNR=4.0						
ASAR	Alice Springs	62.28	189	P	P	15 41 36.7	0.0
	0.4nm,0.6s,baz=0.8,slow=5.3,SNR=3.8						
JMIC	Jan Mayen	68.92	350	LR	LR	16 12 22.0	
	comp=Z,36nm,21.1s,baz=240,slow=36						

IDC ***13*** *15:35:36.0±0.8, 28°.24N×66°.37E, h0km, mb4.0/22, mb1 4.2/24, mb1mx4.0/53, mbtmp4.0/24, ML4.0/2, MS3.5/20, Ms1 3.5/20, ms1mx3.3/60, Error ellipse: s-maj=18.8km s-min=14.7km az=6.0*
ISCJB ***13*** *15:35:37.5±0.3, 28°.35N±0°.04×66°.39E±0°.03, h20km, mb4.3/62, MS3.4/17, Error ellipse: s-maj=5.9km s-min=3.9km az=8.4*
MOS ***13*** *15:35:39.7±1.2, 28°.40N×66°.41E, h33km, mb4.4/35, Error ellipse: s-maj=9.4km s-min=6.1km az=97.9*
NEIC ***13*** *15:35:41.2±0.2, 28°.29N×66°.34E, h35km, mb4.5/42, Error ellipse: s-maj=6.2km s-min=4.4km az=187.0*

ISC 13 15:35:38.9±0.4, 28°.32N±0°.06×66°.41E±0°.04, h20km, n155, σ1§62/155, mb4.3/62, MS3.5/17, Pakistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JASL	Jaisalmer	4.22	108	eP	Pn	15 36 43.4	+1.3
THW	Thamme Wali	6.40	45	P	Pn	15 37 12.7	+0.5
KBL	Kabul	6.60	19	eP	Pn	15 37 16.2	+1.2
KBL	Kabul	6.60	19	ePn	Pn	15 37 16.2	+1.2
CEP	Cherat	7.23	39	P	Pn	15 37 24.2	+0.5
CHCP	Chirah Chowk	7.93	46	P	Pn	15 37 33.4	+0.3
KHET	Khetri	8.29	89	eP	Pn	15 37 37.5	-0.6
KHET				eS	Sn	15 39 08.7	-2.5
WSAR	Wadi Sarin	8.65	236	Pn	Pn	15 37 41.5	-1.5
	3.2nm,0.3s,baz=104,slow=7.7,SNR=24						
WSAR				Sn	Sn	15 39 08.6	-11
	1.4nm,0.3s,baz=305,slow=16,SNR=2.8						
WSAR				LR	LR	15 42 17.1	
	comp=Z,211nm,18.4s,baz=98,slow=47						
KUDL	Kundal	8.89	89	eP	Pn	15 37 45.1	-1.1
KUDL				eS	Sn	15 39 22.8	-3.1
NDI	New Delhi	9.51	85	eP	Pn	15 37 48.0	-6.8
NDI				eS	Sn	15 39 32.0	-9.2
UOSS	Minazif	9.73	252	ePn	Pn	15 37 56.8	-1.0
SMLA	Simla	9.76	71	eP	Pn	15 37 58.4	+0.2
SMLA				eS	Sn	15 39 44.5	-2.7
SMLA				IAML		15 41 17.8	
	comp=E,57nm,1.8s						
SMLA				IAML		15 41 31.3	
	comp=N,59nm,1.2s						
JOSI	Joshimath	11.67	76	eP	Pn	15 38 27.4	+2.8
JOSI				eS	Sn	15 40 33.7	-0.8
JOSI				IAML		15 41 03.9	
	comp=E,342nm,0.7s						
JOSI				IAML		15 41 05.5	
	comp=N,400nm,0.9s						
GEYT	Alibeck	11.84	326	Pn	Pn	15 38 25.0	-1.7
	comp=N,0.5nm,0.3s,baz=108,slow=14,SNR=4.1						
GEYT				LR	LR	15 43 53.4	
	comp=N,155nm,19.2s,baz=150,slow=42						
PYUN	Piuthan	14.62	87	eP	Pn	15 39 05.6	+0.7
PYUN				eS	Sn	15 41 38.5	-8.0
KKAR	Karatay Array	15.12	12	P	Pn	15 39 09.5	-1.9
KKAR				pmax	pmax		
	comp=Z,7.0nm,0.6s						
KKAR	Karatay Array	15.12	12	Pn	Pn	15 39 09.5	-1.9
	comp=Z,6.7nm,0.6s						
KOLN	Koldanda	15.19	88	eP	Pn	15 39 14.2	+1.7
KOLN				eS	Sn	15 41 53.6	-6.7
EKS2	Erkin-Say	15.51	21	eP	Pn	15 39 12.9	-3.7
EKS2				pmax	pmax		
	comp=Z,5.0nm,0.6s						
EKS2	Erkin-Say	15.51	21	ePn	Pn	15 39 12.9	-3.7
	comp=Z,5.1nm,0.6s						
AAK	Ala-Archa	15.71	23	Pn	Pn	15 39 17.6	-1.7
	comp=Z,0.3nm,0.3s,baz=204,slow=8.1,SNR=6.0						
AAK				Sn	Sn	15 42 11.6	-1.3
	comp=Z,0.2nm,0.3s,baz=276,slow=19,SNR=3.4						
AAK				LR	LR	15 46 38.5	
	comp=Z,264nm,18.8s,baz=205,slow=42						
AAK	Ala-Archa	15.71	23	ePn	Pn	15 39 15.2	-4.1
	comp=Z,3.6nm,0.6s						
AAK				ePn	Pn	15 39 17.6	-1.7
AAK				Sn	Sn	15 42 11.6	-1.3
GKN	Gorkha	16.08	87	eP	Pn	15 39 24.1	+0.1
TKM2	Tokmak 2	16.36	25	eP	Pn	15 39 25.0	-2.5
TKM2				pmax	pmax		
	comp=Z,6.0nm,0.8s						
TKM2	Tokmak 2	16.36	25	ePn	Pn	15 39 25.0	-2.5
	comp=Z,6.0nm,0.8s						
KKN	Kakani	16.66	87	eP	Pn	15 39 32.0	+0.4
PKIN	Phulchoki	16.79	88	eP	Pn	15 39 34.2	+1.0
GNI	Garni	21.39	309	eP	P	15 40 23.5	-2.1
GNI				pmax	pmax		
	comp=Z,10.0nm,0.8s						
GNI	Garni	21.39	309	eP	P	15 40 23.4	-2.1
	comp=Z,10.0nm,0.8s						
ABKAR	Akbulak array	21.49	348	P	P	15 40 25.5	-0.8
	comp=Z,8.5nm,0.6s						
LSA	Lhasa	21.67	80	eP	P	15 40 28.0	-0.9
LSA				pmax	pmax		
	comp=Z,18nm,1.1s						
LSA	Lhasa	21.67	80	eP	P	15 40 28.0	-0.9
	comp=Z,18nm,1.1s						
MAKZ	Makanchi	22.13	29	eP	P	15 40 33.1	-0.1
MAKZ				pmax	pmax		
	comp=Z,8.0nm,0.6s						
MAKZ	Makanchi	22.13	29	eP	P	15 40 33.1	-0.1
	comp=Z,7.5nm,0.6s						
MK01	Makanchi Array	22.24	30	eP	P	15 40 34.1	-0.2
MK31	Makanchi Array	22.25	30	eP	P	15 40 33.9	-0.6
MK31	Makanchi Array	22.25	30	eP	P	15 40 33.9	-0.6
MK32	Makanchi Array	22.

comp=Z,67nm,20.6s,baz=82,slow=40
AKASG Malin Array Be 35.82 319 P **P 15 42 37.0 +0.1**
comp=Z,0.3nm,0.3s,baz=120,slow=7.2,SNR=4.1
AKBB Malin Array Si 35.82 319 *eP* **P 15 42 35.9 -1.0**
AKBB pmax pmax
comp=Z,6.0nm,0.6s
AKBB Malin Array Si 35.82 319 *eP* **P 15 42 35.9 -1.0**
comp=Z,6.1nm,0.6s
KIEV Kiev 35.83 319 *eP* **P 15 42 35.8 -1.2**
KIEV pmax pmax
comp=Z,20nm,1.8s
KIEV Kiev 35.83 319 *eP* **P 15 42 35.8 -1.2**
comp=Z,20nm,1.8s
AK11 Malin Array Si 35.85 319 *eP* **P 15 42 37.9 +0.7**
MLR Muntele Rosu 36.17 309 LR LR 16 01 02.0
comp=Z,11nm,19.2s,baz=148,slow=42
MLR Muntele Rosu 36.17 309 *eP* **P 15 42 42.5 +2.3**
MLR pmax pmax
comp=Z,11nm,1.3s
MLR Muntele Rosu 36.17 309 *eP* **P 15 42 42.5 +2.3**
comp=Z,11nm,1.3s
SONA0 Songino Array 36.50 47 *eP* **P 15 42 44.4 +1.4**
comp=Z,3.2nm,1.0s
SONM Songino Array 36.50 47 P **P 15 42 44.4 +1.5**
comp=Z,1.2nm,0.6s,baz=254,slow=8.3,SNR=11
SONM LR LR 16 00 26.8
comp=Z,121nm,20.2s,baz=236,slow=41
SONA1 Songino Array 36.51 47 *eP* **P 15 42 44.8 +1.7**
ULN Ulaanbaatar 36.93 47 *eP* **P 15 42 47.4 +0.8**
ULN pmax pmax
comp=Z,3.0nm,0.9s
ULN Ulaanbaatar 36.93 47 *eP* **P 15 42 47.4 +0.8**
comp=Z,2.5nm,0.9s
BUR08 Bucovina Ar. S 37.24 313 *eP* **P 15 42 49.5 +0.3**
ENH Enshi 37.45 76 *eP* **P 15 42 53.1 +1.9**
comp=Z,4.7nm,1.0s
PSI Prapat 40.05 123 *eP* **P 15 43 15.3 +2.2**
PSI pmax pmax
comp=Z,5.0nm,1.0s
PSI Prapat 40.05 123 *eP* **P 15 43 15.2 +2.2**
comp=Z,5.2nm,1.0s
GSI Gunungsitoli 40.10 127 *eP* **P 15 43 13.9 +0.4**
comp=Z,14nm,1.1s
IPM Ipoh 40.53 119 *eP* **P 15 43 17.4 +0.4**
comp=Z,17nm,1.5s
PSZ Piszkesteto 40.78 312 *eP* **P 15 43 19.0 +0.2**
PSZ pmax pmax
comp=Z,4.0nm,0.9s
PSZ Piszkesteto 40.78 312 *eP* **P 15 43 19.0 +0.2**
comp=Z,3.7nm,0.9s
FIA1 FINESS Array S 42.54 333 *eP* **P 15 43 33.4 +0.5**
FIA0 FINESS Array S 42.54 333 *eP* **P 15 43 33.7 +0.8**
FIA0 FINESS Array S 42.54 333 *eP* **P 15 43 33.6 +0.8**
FINES FINESS Array B 42.54 333 P **P 15 43 33.6 +0.8**
comp=Z,3.6nm,0.5s,baz=120,slow=8.6,SNR=21
FINES LR LR 16 04 51.5
comp=Z,112nm,18.7s,baz=190,slow=41
MORC Moravsky Berou 42.67 314 *eP* **P 15 43 33.5 -0.7**
MORC pmax pmax
comp=Z,7.0nm,0.8s
MORC Moravsky Berou 42.67 314 *eP* **P 15 43 33.5 -0.7**
comp=Z,6.8nm,0.8s
NRIK Noril'sk 42.86 11 P **P 15 43 36.8 +1.4**
comp=Z,1.1nm,0.4s,baz=213,slow=11,SNR=6.0
NRIK LR LR 16 04 14.1
comp=Z,121nm,18.2s,baz=224,slow=40
CUC Castrocucco 42.94 299 *eP* **P 15 43 37.2 +0.7**
comp=Z,4.2nm,0.6s
MYKOM Kota Tinggi 44.41 120 *eP* **P 15 43 50.3 +1.8**
comp=Z,8.7nm,1.2s
GEA0 GERESS Array S 45.00 312 *eP* **P 15 43 52.5 -0.5**
GEC2 GERESS Array S 45.00 312 *eP* **P 15 43 53.7 +0.7**
GEC2 pmax pmax
comp=Z,2.0nm,0.7s
GEC2 GERESS Array S 45.00 312 *eP* **P 15 43 53.7 +0.7**
comp=Z,1.8nm,0.7s
GERES GERESS Array B 45.00 312 P **P 15 43 52.3 -0.7**
comp=Z,0.6nm,0.5s,baz=88,slow=9.9,SNR=5.9
KHC Kasperske Hory 45.12 312 *eP* **P 15 43 55.1 +1.2**
KHC pmax pmax
comp=Z,1.0nm,0.9s
KHC Kasperske Hory 45.12 312 *eP* **P 15 43 55.1 +1.2**
comp=Z,0.7nm,0.9s
GRFO Grafenberg 46.71 313 *eP* **P 15 44 03.1 -3.3**
GRFO Grafenberg 46.71 313 *eP* **P 15 44 03.1 -3.3**
comp=Z,0.1nm,0.6s
ARA0 ARCESS Array S 47.46 342 *eP* **P 15 44 12.7 +0.8**
ARCES ARCESS Array B 47.46 342 P **P 15 44 12.7 +0.8**
comp=Z,1.6nm,0.6s,baz=122,slow=6.7,SNR=15
ARCES LR LR 16 06 02.3
comp=Z,86nm,19.1s,baz=90,slow=38
ARE0 ARCESS Array S 47.46 342 *eP* **P 15 44 13.6 +1.6**
comp=Z,39nm,1.5s
HFS Hagfors 47.48 327 LR LR 16 07 52.7
comp=Z,44nm,18.4s,slow=41
KEST Kesra 48.37 294 *eP* **P 15 44 20.9 +1.3**
comp=Z,4.7nm,1.0s
BFO Black Forest 48.51 311 *eP* **P 15 44 20.7 +0.3**
BFO pmax pmax
comp=Z,20nm,1.9s
BFO Black Forest 48.51 311 *eP* **P 15 44 20.7 +0.3**
comp=Z,20nm,1.9s
NC602 NORSAR Array S 48.68 328 *eP* **P 15 44 21.5 0.0**
NC405 NORSAR Array S 48.70 328 *eP* **P 15 44 21.4 -0.3**
SSLB Suanglung 48.87 82 *eP* **P 15 44 23.8 +0.3**
comp=Z,112nm,2.0s
NB201 NORSAR Array S 48.88 328 *eP* **P 15 44 23.3 +0.3**
NB2 NORSAR Subarra 48.92 328 P **P 15 44 23.1 -0.3**
comp=Z,2.6nm,0.7s,baz=108,slow=7.9
NB200 NORSAR Array S 48.92 328 *eP* **P 15 44 23.4 +0.1**
NOA NORSAR Array B 48.92 328 P **P 15 44 23.4 +0.1**
comp=Z,1.7nm,0.6s,baz=109,slow=7.5,SNR=9.5
NOA LR LR 16 09 45.0
comp=Z,25nm,18.2s,baz=245,slow=42
NAO01 NORSAR Array S 49.02 328 *eP* **P 15 44 24.0 -0.1**
NBO00 NORSAR Array S 49.12 328 *eP* **P 15 44 26.1 +1.2**
BNI Bardonecchia 49.62 307 *eP* **P 15 44 27.8 -1.3**
BNI pmax pmax
comp=Z,17nm,1.9s
BNI Bardonecchia 49.62 307 *eP* **P 15 44 27.8 -1.3**
comp=Z,17nm,1.9s
WLF Walferdange 49.99 313 *eP* **P 15 44 29.9 -1.8**
WLF pmax pmax
comp=Z,26nm,1.7s
WLF Walferdange 49.99 313 *eP* **P 15 44 29.9 -1.8**
comp=Z,26nm,1.7s
SSB Saint Sauveur 51.12 307 *eP* **P 15 44 40.9 +0.5**
SSB pmax pmax
comp=Z,23nm,2.0s
SSB Saint Sauveur 51.12 307 *eP* **P 15 44 40.9 +0.5**
comp=Z,22nm,2.0s
KS15 Wonju Array Si 51.62 63 *eP* **P 15 44 45.5 +1.3**
KSAR Wonju Array Be 51.62 63 P **P 15 44 44.9 +0.8**
KSAR Wonju Array Be 51.62 63 P **P 15 44 44.9 +0.8**
KS01 Wonju Array Si 51.62 63 *eP* **P 15 44 46.4 +2.2**
KSRS Korea Array 51.65 63 P **P 15 44 44.9 +0.6**
comp=Z,1.4nm,0.8s,baz=271,slow=7.8,SNR=4.6
KSRS Korea Array 51.65 63 P **P 15 44 44.9 +0.6**
KSRS pmax pmax
comp=Z,2.0nm,0.9s
YAK Yakutsk 52.90 32 LR LR 16 09 52.6
comp=Z,130nm,20.3s,baz=262,slow=39
YAK Yakutsk 52.90 32 *eP* **P 15 44 55.6 +2.4**
comp=Z,4.7nm,0.6s
KLR Kul'dur 53.31 48 P **P 15 44 57.0 +0.6**
comp=Z,1.2nm,0.7s,baz=246,slow=5.9,SNR=2.9
JOW Kunigami 54.31 76 *eP* **P 15 45 03.4 -0.7**
comp=Z,32nm,1.2s
MYLDM Lahad Datu 54.42 105 *eP* **P 15 45 05.2 +0.2**
comp=Z,5.9nm,0.9s
SPITS Spitsbergen Ar 54.65 349 LR LR 16 12 23.3
comp=Z,38nm,20.5s,baz=345,slow=40
TIXI Tiksi 54.78 20 *eP* **P 15 45 07.9 +1.1**
TIXI pmax pmax
comp=Z,2.0nm,0.8s
TIXI Tiksi 54.78 20 *eP* **P 15 45 07.9 +1.1**
comp=Z,2.2nm,0.8s
ES19 SONSECA Array 58.04 301 *eP* **P 15 45 30.9 +0.3**
ESDC Sonseca Array 58.09 301 P **P 15 45 31.2 +0.2**
comp=Z,0.2nm,0.3s,baz=76,slow=6.7,SNR=4.0
PAB San Pablo 58.41 301 *eP* **P 15 45 34.1 +0.8**
PAB pmax pmax
comp=Z,9.0nm,1.3s
PAB San Pablo 58.41 301 *eP* **P 15 45 34.1 +0.8**
comp=Z,9.2nm,1.3s
MATP Matopo 60.75 221 LR LR 16 13 50.2
comp=Z,56nm,18.1s,slow=38
TOA0 Torodi Ar. Sit 61.74 270 *eP* **P 15 45 55.9 -0.5**
TOA1 Torodi Ar. Sit 61.74 270 *eP* **P 15 45 56.0 -0.4**
comp=Z,21nm,1.8s
TORD Torodi Ar. Bea 61.74 270 P **P 15 45 56.0 -0.4**
comp=Z,1.4nm,0.8s,baz=60,slow=5.4,SNR=8.8
CMLA Cha da Macela 74.68 305 *eP* **P 15 47 15.3 -2.0**
CMLA Cha da Macela 74.68 305 *eP* **P 15 47 15.3 -2.0**
WR1 Warramunga Arr 81.27 118 *eP* **P 15 47 54.2 +0.2**
comp=Z,14nm,1.4s
WRA Warramunga Arr 81.27 118 P **P 15 47 54.2 +0.2**
comp=Z,0.6nm,0.7s,baz=319,slow=4.5,SNR=5.2
ASAR Alice Springs 83.04 121 P **P 15 48 03.8 +0.5**
comp=Z,1.1nm,0.6s,baz=306,slow=5.3,SNR=49
AS31 Alice Springs 83.04 121 *eP* **P 15 48 03.0 -0.3**
comp=Z,3.2nm,1.5s
ILAR Eielson Array 83.65 14 P **P 15 48 06.2 +0.4**
comp=Z,0.6nm,0.8s,baz=336,slow=5.3,SNR=6.3
ILB Eielson Array 83.65 14 *eP* **P 15 48 05.2 -0.6**
YKA Yellowknife Ar 89.50 0 P **P 15 48 35.5 +1.1**
comp=Z,0.8nm,0.8s,baz=350,slow=4.9,SNR=9.3
YKB5 Yellowknife Ar 89.50 0 *eP* **P 15 48 33.9 -0.5**

IDC 13 15:38:21.7±1.2, 26°.19N×141°.38E, h0km, mb3.4/3, mb1 3.6/4, mb1mx3.3/42, mbtmp3.4/4, ML3.5/1, Error ellipse: s-maj=37.9km s-min=20.6km az=104.0, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCJ	**Chichijima**	**1.16**	**39**	Pn	Pn	15 38 45.0	-0.2
JCJ				Sn	Sg	15 38 52.8	-6.0
MJAR	**Matsushiro Arr**	**10.67**	**346**	Pn	Pn	15 40 57.2	+1.4
0.4nm,0.3s,baz=165,slow=12,SNR=4.5							
WRA	**Warramunga Arr**	**46.37**	**189**	P	P	15 46 50.7	+0.9
0.5nm,0.8s,baz=10.0,slow=8.4,SNR=5.6							
ASAR	**Alice Springs**	**50.09**	**189**	P	P	15 47 17.8	-0.8
0.4nm,1.1s,baz=10,slow=5.7,SNR=2.8							
MKAR	**Makanchi Array**	**50.50**	**310**	P	P	15 47 21.0	-0.6
0.1nm,0.2s,baz=87,slow=5.9,SNR=2.4							

*ISCJB **13** 15:50:24.4±0.2, 5°.51S±0°.03×147°.43E±0°.05, h35km, mb4.9/45, Error ellipse: s-maj=6.7km s-min=4.9km az=5.3*
*NEIC **13** 15:50:27.3±0.7, 5°.52S×147°.44E, h46km±7km, mb5.1/35, Error ellipse: s-maj=5.9km s-min=4.8km az=102.0*
*IDC **13** 15:50:28.9±3.3, 5°.58S×147°.36E, h59km±31km, mb4.0/14, mb1 4.1/16, mb1mx3.8/41, mbtmp4.2/16, ML4.3/1, Error ellipse: s-maj=23.4km s-min=15.5km az=79.0*
ISC 13 15:50:26.2±0.4, 5°.53S±0°.05×147°.46E±0°.07, h35km, n77, σ1°.21/73, mb5.0/45, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MANU	**Manus Island**	**3.46**	**358**	*e*Pn	**Pn**	**15 51 19.7**	**+2.0**
PMG	**Port Moresby**	**3.87**	**184**	P	**Pn**	**15 51 24.7**	**+1.5**
6.1nm,0.3s,baz=61,slow=6.1,SNR=21							
PMG				S	**Sn**	**15 52 09.7**	**+2.3**
18nm,0.3s,baz=210,slow=20,SNR=3.0							
RABL	**Rabaul**	**4.87**	**74**	*e*Pn	**Pn**	**15 51 37.5**	**+0.4**
COEN	**Coen**	**9.38**	**206**	*e*Pn	**Pn**	**15 52 40.8**	**+1.8**
COEN				*e*Sn	**Sn**	**15 54 21.1**	**-2.3**
HNR	**Honiara**	**12.97**	**108**	*e*Pn	**Pn**	**15 53 27.5**	**-0.7**
CTA	**Charters Tower**	**14.52**	**185**	P	**P**	**15 53 56.4**	**+0.9**
0.3nm,0.3s,baz=3.4,slow=17,SNR=5.9							
MTN	**Manton Dam**	**17.67**	**245**	*e*Pn	**Pn**	**15 54 30.1**	**+0.4**
40nm,1.4s							
WRAB	**Tennant Creek**	**19.17**	**221**	*e*P	**P**	**15 54 42.7**	**-4.2**
59nm,1.8s							
WB2	**Warramunga Arr**	**19.18**	**220**	*e*P	**P**	**15 54 46.2**	**-0.8**
10nm,0.6s							
WR1	**Warramunga Arr**	**19.19**	**221**	*e*P	**P**	**15 54 46.4**	**-0.8**
10nm,0.6s							
WRA	**Warramunga Arr**	**19.19**	**221**	P	**P**	**15 54 46.4**	**-0.8**
0.9nm,0.3s,baz=45,slow=11,SNR=52							
EIDS	**Eidsvold**	**20.03**	**170**	*e*P	**P**	**15 54 57.2**	**+0.9**
8.0nm,0.6s							
AS01	**Alice Springs**	**22.24**	**214**	*e*P	**P**	**15 55 20.9**	**+0.8**
AS31	**Alice Springs**	**22.26**	**215**	*e*P	**P**	**15 55 20.1**	**-0.3**
3.0nm,0.5s							
ASAR	**Alice Springs**	**22.26**	**215**	P	**P**	**15 55 20.1**	**-0.3**
5.6nm,0.7s,baz=54,slow=8.6,SNR=90							
SOEI	**Soe**	**23.36**	**258**	*e*P	**P**	**15 55 32.7**	**+0.8**
26nm,0.8s							
KWAJ	**Kwajalein Atol**	**24.62**	**55**	*e*P	**P**	**15 55 44.0**	**+0.4**
166nm,1.0s							
DZM	**Mont Dzumac**	**24.65**	**134**	P	**P**	**15 55 44.3**	**+0.4**
14nm,1.0s,baz=342,slow=5.3,SNR=7.7							
FITZ	**Fitzroy Crossi**	**24.70**	**238**	P	**P**	**15 55 43.9**	**-0.4**
4.3nm,0.4s,baz=50,slow=6.2,SNR=24							
FITZ	**Fitzroy Crossi**	**24.70**	**238**	*e*P	**P**	**15 55 43.9**	**-0.4**
28nm,0.6s							
LUWI	**Luwuk**	**25.04**	**279**	*e*P	**P**	**15 55 45.7**	**-1.7**
24nm,1.0s							
ARMA	**Armidale**	**25.07**	**171**	*e*P	**P**	**15 55 48.5**	**+0.9**
39nm,1.4s							
STKA	**Stephens Creek**	**26.78**	**191**	P	**P**	**15 56 02.9**	**-0.1**
1.6nm,0.4s,baz=14,slow=10,SNR=6.8							
STKA	**Stephens Creek**	**26.78**	**191**	*e*P	**P**	**15 56 02.6**	**-0.4**
3.7nm,1.4s							
BBOO	**Buckleboo**	**29.15**	**200**	*e*P	**P**	**15 56 23.4**	**-0.8**
65nm,1.5s							
CAN	**Canberra**	**29.68**	**177**	*e*P	**P**	**15 56 29.4**	**+0.5**
63nm,1.6s							
H11S3	**WAKE ISLAND Hy**	**30.48**	**38**	T	T	16 28 46.0	
baz=219,slow=74,SNR=86							
H11S2	**WAKE ISLAND Hy**	**30.49**	**38**	T	T	16 28 46.5	
baz=219,slow=74,SNR=34							
H11S1	**WAKE ISLAND Hy**	**30.50**	**38**	T	T	16 28 47.3	
baz=219,slow=74,SNR=38							
MBWA	**Marble Bar**	**31.05**	**237**	*e*P	**P**	**15 56 40.2**	**-0.8**
96nm,1.6s							
H11N1	**WAKE ISLAND Hy**	**31.54**	**37**	T	T	16 29 48.1	
baz=218,slow=76,SNR=13							
H11N3	**WAKE ISLAND Hy**	**31.55**	**37**	T	T	16 29 49.3	
baz=218,slow=76,SNR=13							
H11N2	**WAKE ISLAND Hy**	**31.56**	**37**	T	T	16 29 49.4	
baz=218,slow=76,SNR=20							
MSVF	**Nonsavu**	**32.26**	**115**	*e*P	**P**	**15 56 52.4**	**+0.5**
11nm,1.0s							
CISI	**Cisompet, Garu**	**39.43**	**265**	*e*P	**P**	**15 57 52.4**	**-1.0**
77nm,1.4s							
THZ	**Tophouse**	**42.61**	**152**	*e*P	**P**	**15 58 20.0**	**+0.8**
229nm,1.9s							
FOZ	**Fox Glacier**	**42.68**	**156**	*e*P	**P**	**15 58 19.0**	**-0.6**
279nm,1.6s							
RPZ	**Rata Peaks**	**43.34**	**155**	P	**P**	**15 58 25.5**	**+0.5**
15nm,0.7s,baz=338,slow=4.7,SNR=9.1							
KHZ	**Kahutara**	**43.42**	**152**	*e*P	**P**	**15 58 25.3**	**-0.3**
236nm,1.8s							
OXZ	**Oxford**	**43.45**	**154**	*e*P	**P**	**15 58 25.4**	**-0.5**
104nm,1.8s							
WKZ	**Wanaka**	**43.45**	**158**	*e*P	**P**	**15 58 26.8**	**+1.0**
112nm,1.5s							
BFZ	**Birch Farm**	**43.48**	**148**	*e*P	**P**	**15 58 25.8**	**-0.4**
91nm,1.0s							
LBZ	**Lake Benmore**	**43.53**	**156**	*e*P	**P**	**15 58 27.0**	**+0.5**
125nm,1.6s							
MLZ	**Mavora Lakes**	**43.58**	**159**	*e*P	**P**	**15 58 28.2**	**+1.3**
161nm,2.0s							
CRLZ	**Canterbury Las**	**43.91**	**154**	*e*P	**P**	**15 58 30.6**	**+1.2**
446nm,1.9s							
MQZ	**McQueen's Vall**	**44.02**	**154**	*e*P	**P**	**15 58 31.1**	**+0.6**
168nm,1.7s							
ODZ	**Otahua Downs**	**44.26**	**156**	*e*P	**P**	**15 58 33.2**	**+0.9**
61nm,1.5s							
MCQ	**Macquarie Isla**	**49.71**	**171**	*e*P	**P**	**15 59 14.3**	**-0.3**
734nm,1.9s							
USRK	**Ussuriysk Ar.**	**51.42**	**346**	P	**P**	**15 59 28.1**	**+0.3**
1.1nm,0.6s,baz=134,slow=6.2,SNR=3.8							
XMAS	**Kiritimati**	**55.54**	**84**	*e*P	**P**	**15 59 58.4**	**-0.2**
198nm,1.4s							
PETK	**Petropavlovsk-**	**59.05**	**7**	P	**P**	**16 00 24.6**	**+1.9**
3.8nm,0.8s,baz=177,slow=4.5,SNR=4.9							
PEA1	**Petropavlovsk-**	**59.06**	**7**	*e*P	**P**	**16 00 24.6**	**+1.9**
PET	**Petropavlovsk**	**59.09**	**8**	*e*P	**P**	**16 00 23.0**	**+0.1**
82nm,2.0s							
POHA	**Pohakuloa**	**61.42**	**64**	*e*P	**P**	**16 00 37.6**	**-2.1**
402nm,1.8s							
SONA0	**Songino Array**	**64.22**	**331**	*e*P	**P**	**16 00 58.7**	**+1.0**
3.7nm,1.1s							
SONM	**Songino Array**	**64.22**	**331**	P	**P**	**16 00 58.7**	**+1.0**
1.1nm,0.6s,baz=148,slow=7.2,SNR=7.6							
SONA1	**Songino Array**	**64.22**	**331**	*e*P	**P**	**16 00 58.8**	**+1.1**
CASY	**Casey**	**65.83**	**195**	*e*P	**P**	**16 01 07.5**	**-0.2**
46nm,1.6s							
VNDA	**Vanda**	**72.36**	**177**	P	**P**	**16 01 48.2**	**+0.2**
0.8nm,0.5s,baz=337,slow=6.8,SNR=11							
VNDA	**Vanda**	**72.36**	**177**	*e*P	**P**	**16 01 48.0**	**-0.1**
1.8nm,0.6s							
MK01	**Makanchi Array**	**77.41**	**320**	*e*P	**P**	**16 02 17.6**	**-0.3**
MK32	**Makanchi Array**	**77.42**	**320**	*e*P	**P**	**16 02 17.5**	**-0.4**
MKAR	**Makanchi Array**	**77.42**	**320**	P	**P**	**16 02 17.5**	**-0.4**
0.3nm,0.4s,baz=104,slow=6.1,SNR=6.5							
TIXI	**Tiksi**	**77.99**	**354**	P	**P**	**16 02 20.7**	**+0.2**
1.6nm,0.4s,baz=116,slow=5.9,SNR=10.0							
ZAA0	**Zalesovo Array**	**78.86**	**328**	*e*P	**P**	**16 02 24.6**	**-1.1**
ZALV	**Zalesovo Beam**	**78.86**	**328**	P	**P**	**16 02 24.4**	**-1.2**
1.7nm,0.6s,baz=110,slow=6.6,SNR=6.9							
ZAA1	**Zalesovo Array**	**78.86**	**328**	*e*P	**P**	**16 02 24.4**	**-1.2**
SEW	**Seward**	**81.79**	**27**	*e*P	**P**	**16 02 42.1**	**+0.8**
12nm,0.7s							
MLY	**Manley**	**83.51**	**22**	*e*P	**P**	**16 02 51.4**	**+1.2**
2.8nm,1.0s							
RAGM	**Ragged Mountai**	**84.08**	**28**	*e*P	**P**	**16 02 51.1**	**-2.1**
80nm,0.6s							
QSPA	**South Pole Qui**	**84.44**	**180**	*e*P	**P**	**16 02 53.9**	**-1.2**
ILAR	**Eielson Array**	**84.87**	**23**	P	**P**	**16 02 56.2**	**-0.9**
0.6nm,0.8s,baz=249,slow=5.4,SNR=6.0							
ILB	**Eielson Array**	**84.87**	**23**	*e*P	**P**	**16 02 55.2**	**-1.9**
IL1	**Eielson Array**	**84.87**	**23**	*e*P	**P**	**16 02 55.4**	**-1.6**
NRIK	**Noril'sk**	**84.97**	**342**	P	**P**	**16 02 57.7**	**+0.2**
2.3nm,0.6s,baz=120,slow=8.8,SNR=5.4							
DOT	**Dot Lake**	**85.56**	**25**	*e*P	**P**	**16 03 03.6**	**+3.0**
10nm,1.0s							
TORD	**Torodi Ar. Bea**	**145.41**	**285**	PKPbc	**PKPbc**	**16 10 00.5**	**-1.1**
0.7nm,0.7s,baz=91,slow=4.0,SNR=4.8							

*CSEM **13** 15:53:42.3, 46°.24N×7°.75E, h3km, ML1.1/9*
ZUR 13 15:53:42.3, 46°.24N×7°.75E, h3km±1km, ML1.1/9, 20C, Switzerland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EMBD	**Embd, Matterta**	**0.06**	**114**	⇑*i*Pg	Pg	15 53 44.1	+0.4
233nm,0.2s							
EMBD				*e*Sg	Sg	15 53 45.0	+0.4
233nm,0.2s							
EMBD	**Embd, Matterta**	**0.06**	**114**	⇑*i*Pg	Pg	15 53 44.1	+0.4
233nm,0.2s							
EMBD				*e*Sg	Sg	15 53 45.0	+0.4
233nm,0.2s							
SVIO	**Visp Obere Sta**	**0.10**	**61**	*e*Pg	Pg	15 53 44.7	+0.3
SVIO				*e*Sg	Sg	15 53 46.1	+0.3
SVIO	**Visp Obere Sta**	**0.10**	**61**	*e*Pg	Pg	15 53 44.7	+0.3
SVIO				*e*Sg	Sg	15 53 46.1	+0.3
VANNI	**Vissoie, Val d**	**0.11**	**254**	⇑*i*Pg	Pg	15 53 44.9	+0.3
289nm,0.2s							
VANNI				*i* Sg	Sg	15 53 46.5	+0.4
289nm,0.2s							
VANNI	**Vissoie, Val d**	**0.11**	**254**	⇑*i*Pg	Pg	15 53 44.9	+0.3
289nm,0.2s							
VANNI				*i* Sg	Sg	15 53 46.5	+0.4
289nm,0.2s							
BIBA	**Brigerbad**	**0.14**	**64**	*e*Pg	Pg	15 53 45.3	+0.3
BIBA	**Brigerbad**	**0.14**	**64**	*e*Pg	Pg	15 53 45.3	+0.3
LKBD2	**Leukerbad 2**	**0.15**	**331**	⇑*i*Pg	Pg	15 53 45.7	+0.3
LKBD2				*e*Sg	Sg	15 53 47.8	+0.3
LKBD2	**Leukerbad 2**	**0.15**	**331**	⇑*i*Pg	Pg	15 53 45.7	+0.3
LKBD2				*e*Sg	Sg	15 53 47.8	+0.3
LKBD	**Leukerbad**	**0.17**	**329**	⇑*i*Pg	Pg	15 53 45.9	+0.2
13nm,0.4s							
LKBD				*i* Sg	Sg	15 53 48.2	+0.3
13nm,0.4s							
LKBD	**Leukerbad**	**0.17**	**329**	⇑*i*Pg	Pg	15 53 45.9	+0.2
13nm,0.4s							
LKBD				*i* Sg	Sg	15 53 48.2	+0.3
13nm,0.4s							
LAUCH	**Lauchernalp**	**0.17**	**4**	⇑*i*Pg	Pg	15 53 46.1	+0.3
61nm,0.1s							
LAUCH	**Lauchernalp**	**0.17**	**4**	⇑*i*Pg	Pg	15 53 46.1	+0.3
61nm,0.1s							
SIMPL	**Simplonpass**	**0.19**	**90**	⇑*i*Pg	Pg	15 53 46.3	+0.3
51nm,0.2s							
SIMPL	**Simplonpass**	**0.19**	**90**	⇑*i*Pg	Pg	15 53 46.3	+0.3
51nm,0.2s							
MMK	**Mattmark**	**0.24**	**142**	⇑*i*Pg	Pg	15 53 47.4	+0.4
49nm,0.2s							
MMK				*i* Sg	Sg	15 53 50.4	+0.3
49nm,0.2s							
MMK	**Mattmark**	**0.24**	**142**	⇑*i*Pg	Pg	15 53 47.4	+0.4
49nm,0.2s							
MMK				*i* Sg	Sg	15 53 50.4	+0.3
49nm,0.2s							
DIX	**Grande Dixence**	**0.29**	**236**	⇑*i*Pg	Pg	15 53 48.1	+0.2
62nm,0.1s							
DIX	**Grande Dixence**	**0.29**	**236**	⇑*i*Pg	Pg	15 53 48.1	+0.2
62nm,0.1s							
FIESA	**Fiescheralp**	**0.32**	**52**	⇑*i*Pg	Pg	15 53 48.7	+0.2
37nm,0.8s							
FIESA	**Fiescheralp**	**0.32**	**52**	⇑*i*Pg	Pg	15 53 48.7	+0.2
37nm,0.8s							
SATI	**Passo dei Sala**	**0.38**	**167**	⇑*i*Pg	Pg	15 53 49.8	+0.2
78nm,0.5s							
SATI	**Passo dei Sala**	**0.38**	**167**	⇑*i*Pg	Pg	15 53 49.8	+0.2
78nm,0.5s							

*IDC **13** 15:55:42.0±0.4, 11°.47S×165°.58E, h0km, mb4.9/24, mb1 5.0/27, mb1mx4.9/39, mbtmp4.9/27, ML2.8/1, MS4.5/28, Ms1 4.5/28, ms1mx4.4/37, Error ellipse: s-maj=14.6km s-min=12.3km az=91.0*
*ISCJB **13** 15:55:44.3±0.1, 11°.52S±0°.02×165°.51E±0°.02, h24km, mb5.2/194, MS4.5/48, Error ellipse: s-maj=3.7km s-min=3.3km az=148.6*
*MOS **13** 15:55:46.1±1.1, 11°.43S×165°.46E, h33km, mb5.3/44, Error ellipse: s-maj=8.3km s-min=8.0km az=36.5*
*GCMT **13** 15:55:46.7±0.1, 11°.55S×165°.38E, h12km, MW5.3/109, Moment Tensor Solution. s92,c146; s109,c219; Duration: 1s1 Moment tensor: Scale 10^{17}Nm; M_{rr}-1.03±.01; $M_{\theta\theta}$0.01±.01; $M_{\phi\phi}$1.02±.01; $M_{r\theta}$-0.19±.04; $M_{\theta\phi}$-0.27±.01; $M_{\phi r}$-0.01±.03; Best double couple: $M_0$1.07600×10^{17} NP1ϕ_s156.00000°, δ47.00000°, λ-104.00000°. NP2ϕ_s356.00000°, δ45.00000°, λ-75.00000°. Principal axes: T 1.0860, Plg1.0000°, Azm256.0000°; N -0.0230, Plg10.0000°, Azm166.0000°; P -1.0650, Plg80.0000°, Azm352.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **13** 15:55:46.7±1.6, 11°.49S×165°.54E, h30km±3km, mb5.2/138 Error ellipse: s-maj=12.4km s-min=3.5km az=205.0*
*BJI **13** 15:55:48.5, 11°.50S×165°.40E, h50km, mb5.0/60, mB5.4/45, Ms4.9/36, Ms7 4.6/34*
ISC 13 15:55:46.0±0.2, 11°.51S±0°.04×165°.49E±0°.04, h24km, n508, σ1°.28/531, mb5.2/194, MS4.5/48, 10C-6D, Santa Cruz Islands

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

PMG	**Port Moresby**	**18.15 275**	*e*P	**P**	**15 59 58.1 +1.3**
PMG			pmax	pmax	
comp=Z,243nm,1.2s					
PMG	**Port Moresby**	**18.15 275**	*e*Pn	**P**	**15 59 58.6 +1.8**
comp=Z,72nm,1.0s					
EIDS	**Eidsvold**	**19.38 223**	P	**Pn**	**16 00 12.3 +0.8**
baz=19,SNR=12					
EIDS	**Eidsvold**	**19.38 223**	*e*P	**Pn**	**16 00 11.8 +0.3**
comp=Z,91nm,1.3s					
PATS	**Pohnpei**	**19.58 338**	*e*P	**P**	**16 00 10.4 -2.1**
comp=Z,185nm,1.2s					
MANU	**Manus Island**	**20.29 296**	*e*P	**P**	**16 00 20.8 +0.5**
comp=Z,728nm,1.6s					
KWAJ	**Kwajalein Atol**	**20.29 6**	*e*P	**P**	**16 00 18.6 -1.6**
KWAJ			pmax	pmax	
comp=Z,170nm,1.1s					
KWAJ	**Kwajalein Atol**	**20.29 6**	*e*P	**P**	**16 00 18.6 -1.6**
comp=Z,170nm,1.1s					
CTA	**Charters Tower**	**20.36 243**	P	Pn	16 00 22.6 -0.5
comp=Z,22nm,0.8s,baz=74,slow=14,SNR=26					
CTA			LR	LR	16 07 19.7
comp=Z,3μm,18.8s,baz=68,slow=34					
CTAO	**Charters Tower**	**20.36 243**	*e*P	Pn	16 00 22.4 -0.8
CTAO			pmax	pmax	
comp=Z,480nm,1.2s					
CTAO	**Charters Tower**	**20.36 243**	*e*P	Pn	16 00 22.4 -0.8
comp=Z,480nm,1.2s					
MTSU	**Mount Surprise**	**21.49 250**	P	**P**	**16 00 34.1 +0.8**
baz=22,SNR=39					
RMQ	**Roma**	**21.69 224**	P	**P**	**16 00 36.0 +0.7**
baz=22,SNR=9.9					
COEN	**Coen**	**21.90 261**	*e*P	**P**	**16 00 38.7 +1.0**
comp=Z,102nm,1.4s					
AFI	**Afiamalu**	**22.30 99**	LR	LR	16 07 38.9
comp=Z,2μm,21.1s,baz=269,slow=32					
ARMA	**Armidale**	**22.79 212**	P	**P**	**16 00 47.6 +0.5**
baz=23,SNR=16					
ARMA	**Armidale**	**22.79 212**	*e*P	**P**	**16 00 47.5 +0.3**
comp=Z,203nm,1.3s					
OUZ	**Omahuta**	**24.72 164**	*e*P	**P**	**16 01 07.2 +1.7**
comp=Z,147nm,0.9s					
QLP	**Quilpie**	**25.01 230**	P	**P**	**16 01 08.8 +0.6**
baz=25,SNR=13					
MGCD	**Mangrove Creek**	**25.30 209**	P	**P**	**16 01 13.0 +2.2**
baz=25,SNR=9.6					
JAY	**Jayapura**	**26.15 288**	P	**P**	**16 01 17.9 -0.8**
comp=Z,1.2nm,0.8s,baz=98,slow=20,SNR=5.4					
JAY			LR	LR	16 12 22.8
comp=Z,39nm,20.0s,baz=5.0,slow=38					
QIS	**Mount Isa**	**26.42 247**	P	**P**	**16 01 21.0 -0.1**
baz=26,SNR=15					
CMSA	**Cobar Meteorol**	**27.05 220**	P	**P**	**16 01 26.5 -0.1**
baz=27,SNR=22					
HIZ	**Hauiti**	**28.16 164**	*e*P	**P**	**16 01 38.2 +1.7**
comp=Z,146nm,1.2s					
MXZ	**Matakaoa Point**	**28.37 158**	*e*P	**P**	**16 01 38.8 +0.4**
comp=Z,252nm,1.3s					
URZ	**Urewera**	**28.59 161**	P	**P**	**16 01 40.1 -0.2**
comp=Z,28nm,0.7s,baz=295,slow=3.3,SNR=11					
URZ			LR	LR	16 11 37.7
comp=Z,1μm,18.8s,baz=342,slow=33					
URZ	**Urewera**	**28.59 161**	*e*P	**P**	**16 01 40.1 -0.2**
URZ			*e*P	**P**	**16 01 40.9 +0.6**
BKZ	**Black Stump Fm**	**29.23 162**	*e*P	**P**	**16 01 46.1 +0.1**
comp=Z,56nm,0.6s					
H11S2	**WAKE ISLAND Hy**	**29.84 2**	T	T	16 32 29.3
baz=181,slow=76,SNR=40					
H11S3	**WAKE ISLAND Hy**	**29.84 2**	T	T	16 32 18.9
baz=181,slow=76,SNR=5.7					
H11S1	**WAKE ISLAND Hy**	**29.86 2**	T	T	16 32 24.8
baz=181,slow=76,SNR=4.3					
STKA	**Stephens Creek**	**29.93 224**	P	**P**	**16 01 52.9 +0.6**
comp=Z,22nm,0.9s,baz=25,slow=11,SNR=24					
STKA			LR	LR	16 13 04.0
comp=Z,2μm,19.3s,baz=55,slow=35					
STKA	**Stephens Creek**	**29.93 224**	P	**P**	**16 01 53.1 +0.8**
baz=30,SNR=14					
STKA	**Stephens Creek**	**29.93 224**	*e*P	**P**	**16 01 53.1 +0.8**
STKA			pmax	pmax	
comp=Z,7.0nm,0.9s					
STKA	**Stephens Creek**	**29.93 224**	*e*P	**P**	**16 01 53.1 +0.8**
comp=Z,6.6nm,0.9s					
BFZ	**Birch Farm**	**30.56 164**	*e*P	**P**	**16 01 57.1 -0.7**
comp=Z,92nm,0.8s					
SNZO	**South Karori**	**30.77 166**	*e*P	**P**	**16 01 59.9 +0.4**
comp=Z,227nm,1.5s					
THZ	**Tophouse**	**30.82 169**	*e*P	**P**	**16 02 01.2 +1.0**
comp=Z,412nm,1.9s					
H11N1	**WAKE ISLAND Hy**	**31.06 3**	T	T	16 34 01.0
baz=182,slow=76,SNR=32					
H11N3	**WAKE ISLAND Hy**	**31.07 3**	T	T	16 33 55.7
baz=182,slow=76,SNR=5.4					
WRAB	**Tennant Creek**	**31.08 250**	*ce*P	**P**	**16 02 02.8 +0.2**
WRAB			pmax	pmax	
comp=Z,237nm,1.4s					
WRAB	**Tennant Creek**	**31.08 250**	*e*P	**P**	**16 02 02.3 -0.3**
comp=Z,76nm,1.1s					
H11N2	**WAKE ISLAND Hy**	**31.08 3**	T	T	16 34 02.1
baz=182,slow=76,SNR=5.1					
WB2	**Warramunga Arr**	**31.08 250**	*e*P	**P**	**16 02 02.7 +0.1**
comp=Z,90nm,1.1s					
WR1	**Warramunga Arr**	**31.09 250**	*e*P	**P**	**16 02 02.4 -0.3**
comp=Z,107nm,1.1s					
WR1			*e*PcP	**PcP**	**16 04 57.3 -0.8**
WRA	**Warramunga Arr**	**31.09 250**	P	**P**	**16 02 02.4 -0.3**
comp=Z,42nm,0.9s,baz=79,slow=9.3,SNR=84					
WRA			PcP	**PcP**	**16 04 57.3 -0.8**
comp=Z,6.1nm,0.8s,baz=81,slow=2.9,SNR=10					
WRA			LR	LR	16 13 03.3
comp=Z,830nm,21.7s,baz=80,slow=33					
WRA	**Warramunga Arr**	**31.09 250**	*i* P	**P**	**16 02 02.4 -0.3**
WRA			pmax	pmax	
comp=Z,43nm,0.9s					
KHZ	**Kahutara**	**31.58 169**	*e*P	**P**	**16 02 06.3 -0.3**
comp=Z,331nm,2.0s					
LTZ	**Lake Taylor**	**31.71 170**	*e*P	**P**	**16 02 08.4 +0.5**
comp=Z,46nm,0.9s					
FOZ	**Fox Glacier**	**32.12 174**	*e*P	**P**	**16 02 12.1 +0.7**
comp=Z,370nm,1.7s					
OXZ	**Oxford**	**32.20 171**	*e*P	**P**	**16 02 12.4 +0.2**
comp=Z,41nm,0.7s					
GUMO	**Guam**	**32.26 320**	LR	LR	16 14 11.6
comp=Z,686nm,20.7s,baz=148,slow=34					
GUMO	**Guam**	**32.26 320**	*e*P	**P**	**16 02 12.7 -0.2**
GUMO			pmax	pmax	
comp=Z,151nm,1.1s					
GUMO	**Guam**	**32.26 320**	*e*P	**P**	**16 02 12.7 -0.2**
comp=Z,151nm,1.1s					
AS01	**Alice Springs**	**32.32 244**	*e*P	**P**	**16 02 12.8 -0.8**
AS31	**Alice Springs**	**32.36 244**	*e*P	**P**	**16 02 12.5 -1.4**
comp=Z,9.1nm,1.3s					
ASAR	**Alice Springs**	**32.36 244**	P	**P**	**16 02 12.4 -1.5**
comp=Z,20nm,1.0s,baz=75,slow=9.4,SNR=63					
ASAR			PcP	**PcP**	**16 05 00.8 -0.6**
comp=Z,5.2nm,0.8s,baz=80,slow=2.2,SNR=13					
ASAR			LR	LR	16 14 08.2
comp=Z,2μm,20.4s,baz=72,slow=34					
RPZ	**Rata Peaks**	**32.44 172**	P	**P**	**16 02 14.9 +0.7**
comp=Z,52nm,0.7s,baz=305,slow=2.2,SNR=23					
RPZ	**Rata Peaks**	**32.44 172**	*e*P	**P**	**16 02 14.9 +0.7**
RPZ			*e*P	**P**	**16 02 15.0 +0.7**
CRLZ	**Canterbury Las**	**32.54 170**	*e*P	**P**	**16 02 15.3 +0.2**
comp=Z,520nm,1.8s					
MQZ	**McQueen's Vall**	**32.67 170**	*e*P	**P**	**16 02 17.1 +0.9**
comp=Z,74nm,0.9s					
LBZ	**Lake Benmore**	**33.00 174**	*e*P	**P**	**16 02 17.4 -1.9**
comp=Z,84nm,1.5s					
WKZ	**Wanaka**	**33.33 175**	*e*P	**P**	**16 02 22.1 0.0**
comp=Z,166nm,1.7s					
MTN	**Manton Dam**	**33.60 264**	P	**P**	**16 02 24.5 -0.3**
baz=34,SNR=5.9					
MTN	**Manton Dam**	**33.60 264**	*e*P	**P**	**16 02 24.5 -0.3**
comp=Z,40nm,1.3s					
ODZ	**Otahua Downs**	**33.70 173**	*e*P	**P**	**16 02 25.2 -0.1**
comp=Z,144nm,2.0s					
MLZ	**Mavora Lakes**	**33.81 177**	*e*P	**P**	**16 02 26.0 -0.3**
comp=Z,191nm,1.9s					
DCZ	**Deep Cove**	**33.86 178**	*e*P	**P**	**16 02 24.4 -2.3**
comp=Z,193nm,1.8s					
WHZ	**Wether Hill Ro**	**34.33 177**	*e*P	**P**	**16 02 29.6 -1.1**
comp=Z,107nm,1.8s					
BBOO	**Buckleboo**	**34.33 227**	*e*P	**P**	**16 02 30.0 -1.0**
comp=Z,40nm,1.1s					
WRKA	**Warakurna**	**37.65 244**	P	**P**	**16 02 58.3 -1.2**
baz=38,SNR=10					
NLAI	**Namlea**	**38.91 279**	P	**P**	**16 03 14.3 +4.1**
comp=Z,52nm,1.4s,comp=Z,700nm					
FITZ	**Fitzroy Crossi**	**39.02 255**	PcP	**PcP**	**16 05 20.9 -0.3**
comp=Z,8.0nm,1.0s,baz=45,slow=4.3,SNR=3.6					
FITZ			LR	LR	16 18 24.5
comp=Z,1μm,18.4s,baz=84,slow=35					
FITZ	**Fitzroy Crossi**	**39.02 255**	P	**P**	**16 03 10.6 -0.5**
baz=39,SNR=19					
FITZ	**Fitzroy Crossi**	**39.02 255**	*e*P	**P**	**16 03 10.3 -0.7**
comp=Z,39nm,0.9s					
LBMI	**Labuha**	**39.23 283**	P	**P**	**16 03 14.9 +2.0**
comp=Z,43nm,1.7s,comp=Z,968nm					
LUWI	**Luwuk**	**43.65 281**	P	**P**	**16 03 52.2 +3.0**
comp=Z,53nm,1.4s					
LUWI	**Luwuk**	**43.65 281**	*e*P	**P**	**16 03 48.6 -0.6**
comp=Z,42nm,1.0s					
PPT	**Papeete**	**43.83 103**	LR	LR	16 19 06.4
comp=Z,447nm,19.2s,baz=276,slow=32					
PPT2	**Papeete2**	**43.83 103**	*e*S	**S**	**16 10 21.5 +0.9**
comp=Z,624nm,26.0s					
PPT2			*e*LQ	LQ	16 14 16.1
comp=Z,2μm,27.5s					
PPT2			*e*LR	LR	16 16 10.6
comp=Z,3μm,32.2s,baz=276					
CBIJ	**Chichi jima**	**44.55 330**	*e*P	**P**	**16 03 57.2 +1.1**
comp=Z,258nm,1.2s					
KMBL	**Kambalda**	**44.78 237**	P	**P**	**16 03 58.4 +0.4**
baz=45,SNR=7.1					
MBWA	**Marble Bar**	**44.81 252**	*e*P	**P**	**16 03 57.9 -0.5**
comp=Z,31nm,0.9s					
KAPI	**Kappang**	**45.68 274**	P	**P**	**16 04 05.2 -0.1**
comp=Z,12nm,0.6s,baz=109,slow=6.0,SNR=9.4					
KAPI	**Kappang**	**45.68 274**	*e*P	**P**	**16 04 05.8 +0.4**
comp=Z,20nm,0.8s					
PCI	**Palu**	**46.52 280**	P	**P**	**16 04 14.6 +2.6**
comp=Z,56nm,1.2s,comp=Z,839nm					
PCI	**Palu**	**46.52 280**	P	**P**	**16 04 14.6 +2.6**
PCI			pmax	pmax	
comp=Z,55nm,1.1s					
KLBR	**Kellerberrin**	**48.25 238**	P	**P**	**16 04 24.4 -0.8**
baz=48,SNR=12					
BLDU	**Ballidu**	**48.91 239**	P	**P**	**16 04 29.7 -0.6**
baz=49,SNR=6.2					
KKH	**Kailua Kona**	**48.95 51**	*e*P	**P**	**16 04 31.1 +0.4**
KKH	**Kailua Kona**	**48.95 51**	*e*P	**P**	**16 04 31.1 +0.4**
NWAO	**Narrogin (SRO)**	**49.00 236**	P	**P**	**16 04 30.6 -0.4**
baz=49,SNR=9.5					
NWAO	**Narrogin (SRO)**	**49.00 236**	*e*P	**P**	**16 04 30.8 -0.2**
NWAO			pmax	pmax	
comp=Z,290nm,1.0s					
NWAO	**Narrogin (SRO)**	**49.00 236**	*e*P	**P**	**16 04 30.8 -0.2**
comp=Z,290nm,1.0s					
MORW	**Morawa**	**49.18 242**	P	**P**	**16 04 32.1 -0.3**
baz=49,SNR=7.2					
MYLDM	**Lahad Datu**	**49.60 287**	*e*P	**P**	**16 04 37.6 +1.7**
comp=Z,72nm,1.6s					
JAGI	**Jajag, Banyuwa**	**50.60 268**	P	**P**	**16 04 44.7 +1.3**
comp=Z,71nm,1.6s					
JAGI	**Jajag, Banyuwa**	**50.60 268**	*e*P	**P**	**16 04 43.0 -0.5**
comp=Z,69nm,1.1s					
JHJ2	**Mitsune**	**50.69 332**	*e*P	**P**	**16 04 43.4 -0.3**
comp=Z,1μm,1.6s					
BBKI	**Banjar Baru**	**50.78 275**	P	**P**	**16 04 47.1 +2.3**
comp=Z,50nm,1.7s					
KKM	**Kota Kinabalu**	**52.03 287**	⇑P	**P**	**16 04 54.7 +0.4**
KKM	**Kota Kinabalu**	**52.03 287**	*e*P	**P**	**16 04 54.6 +0.4**
comp=Z,59nm,1.2s					
PWJI	**Pagerwojo**	**52.96 269**	P	**P**	**16 05 01.1 0.0**
comp=Z,60nm,1.9s					
NGJI	**Ngawi**	**53.40 269**	P	**P**	**16 05 07.3 +3.0**
comp=Z,103nm,1.4s					
TAOE	**Nuku Hiva Isla**	**53.51 93**	*e*S	**S**	**16 12 40.7 +3.5**
comp=Z,505nm,26.5s					
TAOE			*e*LR	LR	16 20 08.8
comp=Z,1μm,32.3s					
PCJI	**Pacitan**	**53.55 268**	P	**P**	**16 05 05.5 +0.1**
comp=Z,264nm,1.2s					
WOJI	**Wogiri, Jawa**	**53.85 269**	P	**P**	**16 05 09.2 +1.6**
comp=Z,116nm,1.0s,comp=Z,6μm					
UGM	**Wanagama**	**54.23 268**	*e*P	**P**	**16 05 10.6 +0.1**
comp=Z,285nm,1.4s					
MJAR	**Matsushiro Arr**	**54.27 333**	P	**P**	**16 05 09.2 -1.1**
comp=Z,4.3nm,0.7s,baz=170,slow=8.0,SNR=16					
MAJO	**Matsushiro**	**54.27 333**	⇓*i*P	**P**	**16 05 09.0 -1.3**
MAJO			pmax	pmax	
comp=Z,80nm,1.1s					
MAJO	**Matsushiro**	**54.27 333**	*e*P	**P**	**16 05 09.4 -0.8**
comp=Z,37nm,1.4s					
MAT	**Matsushiro**	**54.27 333**	P	**P**	**16 05 09.1 -1.2**
MJB9	**Matsu-Tunnel**	**54.28 333**	*e*P	**P**	**16 05 09.2 -1.1**
comp=Z,9.5nm,1.4s					
SBUM	**Sibu**	**54.75 281**	⇓P	**P**	**16 05 14.3 +0.2**
SBUM	**Sibu**	**54.75 281**	*e*P	**P**	**16 05 14.6 +0.5**
comp=Z,30nm,1.4s					
STKI	**Sintang**	**54.85 278**	P	**P**	**16 05 17.2 +2.3**
comp=Z,27nm,0.8s					
JNU	**Nakatsue**	**55.31 325**	*e*P	**P**	**16 05 17.3 -0.7**
comp=Z,33nm,0.8s					
YULB	**Yu-li**	**55.43 309**	*e*P	**P**	**16 05 19.3 +0.4**
comp=Z,21nm,0.9s					
TPUB	**Ta-pu**	**55.89 308**	*e*P	**P**	**16 05 22.0 -0.3**
comp=Z,84nm,1.2s					
SSLB	**Suanglung**	**55.91 309**	*e*P	**P**	**16 05 22.9 +0.5**
comp=Z,73nm,1.7s					
KSM	**Kuching**	**56.33 280**	⇑P	**P**	**16 05 25.8 +0.3**
KSM	**Kuching**	**56.33 280**	*e*P	**P**	**16 05 25.5 0.0**
comp=Z,48nm,1.4s					
CISI	**Cisompet, Garu**	**56.94 268**	*e*P	**P**	**16 05 29.1 -0.9**
comp=Z,150nm,1.4s					
LEM	**Lembang**	**57.25 269**	P	P	16 05 37.6 +5.4
comp=Z,73nm,0.8s,baz=90,slow=8.4,SNR=17					
LEM			LR	LR	16 32 36.3
comp=Z,253nm,18.5s,baz=130,slow=39					
RKT	**Rikitea**	**57.66 110**	*e*S	**S**	**16 13 34.7 +2.4**
comp=Z,348nm,29.0s					
RKT			*e*LQ	LQ	16 20 09.0
comp=Z,874nm,27.5s					
RKT			*e*LR	LR	16 22 35.8
comp=Z,2μm,31.0s,baz=280					
CBJI	**Citeko**	**58.07 270**	P	**P**	**16 05 38.2 +0.4**
comp=Z,163nm,0.9s					
QZH	**Quanzhou**	**58.34 309**	P	**P**	**16 05 37.1 -2.4**
QZH			S	**S**	**16 13 37.0 -4.0**
QZH			LR	LR	
comp=Z,720nm,15.6s					
ASAJ	**Asahikawa**	**59.15 341**	LR	LR	16 28 49.8
comp=Z,379nm,19.6s,baz=170,slow=34					
CGJI	**Cibinong**	**59.17 269**	P	**P**	**16 05 45.4 -0.1**
comp=Z,112nm,1.4s,comp=Z,1μm					
TJN	**Taejon**	**59.66 325**	*ce*P	**P**	**16 05 48.9 +0.5**
SSE	**Sheshan**	**60.01 316**	P	**P**	**16 05 52.3 +1.3**
SSE			S	**S**	**16 14 02.8 +0.4**
SSE			pmax	pmax	
comp=Z,34nm,0.7s					
SSE			LR	LR	
comp=Z,150nm,27.6s					
SSE			LR	LR	
comp=Z,130nm,27.6s					
SSE			LR	LR	
comp=Z,200nm,31.8s					
KSRS	**Korea Array**	**60.12 326**	P	**P**	**16 05 51.6 0.0**
comp=Z,4.5nm,0.7s,baz=145,slow=6.9,SNR=16					
KSRS			LR	LR	16 32 30.3
comp=Z,142nm,18.0s,baz=138,slow=37					
KS15	**Wonju Array Si**	**60.13 326**	*e*P	**P**	**16 05 51.7 +0.1**
KS01	**Wonju Array Si**	**60.15 326**	*e*P	**P**	**16 05 52.4 +0.6**
NJ2	**Nanjing**	**62.18 316**	*e*P	**P**	**16 06 06.9 +1.3**
NJ2			pmax	pmax	
comp=Z,52nm,0.8s					
MSHR	**Mys Shultsa**	**62.35 332**	*e*P	**P**	**16 06 07.2 +0.7**
MYKOM	**Kota Tinggi**	**62.66 278**	⇓P	**P**	**16 06 09.9 +0.6**
QIZ	**Qiongzhong**	**62.68 298**	P	**P**	**16 06 10.5 +1.2**
QIZ			S	**S**	**16 14 36.8 0.0**
QIZ			LR	LR	
comp=Z,87nm,23.5s					
QIZ			LR	LR	
comp=Z,160nm,18.9s					
KGM	**Kluang**	**63.23 278**	⇑P	**P**	**16 06 13.8 +0.7**
USRK	**Ussuriysk Ar.**	**63.25 334**	P	**P**	**16 06 12.7 +0.1**
comp=Z,9.5nm,0.7s,baz=139,slow=5.4,SNR=18					
USRK			LR	LR	16 32 25.1
comp=Z,172nm,20.2s,baz=140,slow=35					
KTGM	**Kuala Trenggan**	**64.25 282**	⇑P	**P**	**16 06 21.0 +1.2**
MDJ	**Mudanjiang**	**64.64 332**	P	**P**	**16 06 22.3 +0.6**
MDJ			pP	sP	16 06 33.0 +0.8
MDJ			sS	sS	16 15 18.8 +5.9
MDJ			pmax	pmax	
comp=Z,16nm,1.1s					
MDJ			pmax	pmax	
comp=Z,200nm,7.8s					
MDJ			LR	LR	
comp=Z,140nm,29.9s					
MDJ			LR	LR	
comp=Z,160nm,34.0s					
MDJ			LR	LR	
comp=Z,170nm,25.7s					
MDJ	**Mudanjiang**	**64.64 332**	*e*P	**P**	**16 06 22.1 +0.4**
comp=Z,16nm,0.9s					
DL2	**Dalian**	**64.70 323**	P	**P**	**16 06 23.4 +1.2**
DL2			S	**S**	**16 15 00.0 -1.2**
DL2			pmax	pmax	
comp=Z,40nm,1.0s					
DL2			LR	LR	
comp=Z,390nm,14.8s					
DL2			LR	LR	
comp=Z,290nm,14.3s					
DL2			LR	LR	
comp=Z,240nm,22.0s					
PETK	**Petropavlovsk-**	**64.71 355**	P	**P**	**16 06 21.2 -0.8**
comp=Z,2.2nm,0.7s,baz=148,slow=3.0,SNR=5.5					
PETK			LR	LR	16 29 22.8
comp=Z,257nm,21.9s,baz=181,slow=31					
PEA1	**Petropavlovsk-**	**64.71 355**	*e*P	**P**	**16 06 21.2 -0.8**
BKNI	**Bangkinang**	**65.06 276**	P	**P**	**16 06 27.8 +2.7**
comp=Z,136nm,1.1s,comp=Z,2μm					
FRIM	**Kepong**	**65.17 279**	⇓P	**P**	**16 06 25.8 0.0**
PPI	**Padang Panjang**	**65.52 275**	P	**P**	**16 06 29.9 +1.8**
comp=Z,45nm,1.0s,comp=Z,712nm					
CASY	**Casey**	**65.86 201**	*e*P	**P**	**16 06 28.6 -0.6**
comp=Z,40nm,1.1s					
CN2	**Changchun**	**66.01 329**	*e*P	**P**	**16 06 30.5 -0.1**
CN2			pmax	pmax	
comp=Z,10.0nm,0.7s					
VNDA	**Vanda**	**66.02 181**	P	**P**	**16 06 29.7 -0.5**
comp=Z,7.6nm,1.1s,baz=349,slow=6.9,SNR=11					
VNDA			LR	LR	16 32 26.0
comp=Z,483nm,18.2s,baz=354,slow=33					
IPM	**Ipoh**	**66.06 280**	⇓P	**P**	**16 06 32.3 +0.7**
IPM	**Ipoh**	**66.06 280**	*e*P	**P**	**16 06 31.8 +0.2**
comp=Z,65nm,0.9s					
SBA	**Scott Base**	**66.34 180**	*e*P	**P**	**16 06 33.4 +1.2**
SBA			pmax	pmax	
comp=Z,24nm,1.1s					
SBA	**Scott Base**	**66.34 180**	*e*P	**P**	**16 06 33.4 +1.2**
comp=Z,24nm,1.1s					
MNSI	**Mandailing Nat**	**66.59 276**	P	**P**	**16 06 34.9 -0.1**
comp=Z,64nm,1.0s					
KULM	**Kulim**	**66.62 281**	*e*P	**P**	**16 06 35.4 +0.2**
comp=Z,42nm,1.3s					
SKNT	**Sakolnakorn**	**67.05 294**	P	**P**	**16 06 38.2 +0.4**
comp=Z,47nm,1.9s					
SKLT	**Songkhla**	**67.14 283**	P	**P**	**16 06 41.0 +2.6**
comp=Z,21nm,1.3s,comp=Z,709nm					
CHBT	**CHBT**	**67.15 289**	P	**P**	**16 06 41.2 +2.7**
comp=Z,28nm,1.4s					
KLR	**Kul'dur**	**67.39 337**	LR	LR	16 33 19.6
comp=Z,168nm,19.7s,slow=34					
PSI	**Prapat**	**67.69 278**	*e*P	**P**	**16 06 41.0 -1.0**
PSI			pmax	pmax	
comp=Z,31nm,0.9s					
PSI	**Prapat**	**67.69 278**	*e*P	**P**	**16 06 41.0 -1.0**
comp=Z,31nm,0.9s					
NKL	**Nikolayevsk**	**67.82 344**	*e*P	**P**	**16 06 42.0 +0.2**
NKL			pmax	pmax	
comp=Z,22nm,1.1s					
KHON	**Khomkaen**	**67.87 293**	P	**P**	**16 06 45.7 +2.7**
comp=Z,11nm,1.2s					
ENH	**Enshi**	**68.00 309**	*e*P	**P**	**16 06 43.2 -0.4**
comp=Z,42nm,1.1s					
TRTT	**Trang**	**68.21 283**	P	**P**	**16 06 47.7 +2.5**
comp=Z,27nm,1.1s					
GYA	**Guiyang**	**68.47 304**	⇑*i*P	**P**	**16 06 47.3 +0.5**
GYA			pP	sP	16 07 03.3 +6.0
GYA			PcP	**PcP**	**16 07 14.0 +2.0**
GYA			PP	**PP**	**16 09 21.8 +3.6**
GYA			ScP		16 11 12.6
GYA			S	**S**	**16 15 46.3 -1.4**
GYA			SKS	**SKiKP**	**16 16 40.0 +0.6**
GYA			SS	**SS**	**16 20 11.8 -0.3**
GYA			pmax	pmax	
comp=Z,20nm,0.8s					
GYA			pmax	pmax	
comp=Z,120nm,5.6s					
GYA			LR	LR	
comp=Z,520nm,19.4s					
GYA			LR	LR	
comp=Z,480nm,18.6s					
GYA			LR	LR	
comp=Z,470nm,20.8s					
GSI	**Gunungsitoli**	**68.66 276**	P	**P**	**16 06 49.2 +1.2**
comp=Z,78nm,1.0s					
GSI	**Gunungsitoli**	**68.66 276**	*e*P	**P**	**16 06 48.2 +0.2**
comp=Z,84nm,1.1s					
BJI	**Beijing**	**68.69 321**	P	**P**	**16 06 48.8 +1.2**
BJI			S	**S**	**16 15 51.4 +2.0**
BJI			pmax	pmax	
comp=Z,22nm,1.3s					
BJI			pmax	pmax	
comp=Z,350nm,6.0s					
BJI			LR	LR	
comp=Z,240nm,18.3s					
BJI			LR	LR	
comp=Z,270nm,15.8s					
BJI			LR	LR	
comp=Z,250nm,27.9s					
SURT	**Suratani**	**69.36 284**	P	**P**	**16 06 55.1 +2.7**
comp=Z,16nm,1.0s					
PBKT	**Sadao Pong**	**69.63 293**	P	**P**	**16 06 55.1 +1.2**
comp=Z,26nm,1.2s					
XAN	**Xi'an**	**70.25 313**	P	**P**	**16 06 58.0 +0.5**
XAN			pP	sP	16 07 10.5 +2.4
XAN			PP	**PP**	**16 09 36.0 +2.6**
XAN			S	**S**	**16 16 03.9 -4.3**
XAN			ScS	**SKSac**	**16 16 54.3 -3.5**
XAN			SS	**SS**	**16 20 33.6 -5.5**
XAN			pmax	pmax	
comp=Z,20nm,1.2s					
XAN			pmax	pmax	
comp=Z,170nm,7.9s					
XAN			LR	LR	
comp=Z,190nm,19.9s					
XAN			LR	LR	
comp=Z,250nm,20.7s					
XAN			LR	LR	
comp=Z,310nm,20.3s					
UTTA	**Uttaradit**	**70.39 294**	P	**P**	**16 07 00.4 +1.8**
comp=Z,5.2nm,1.0s,comp=Z,46nm					
MLSI	**Meulaboh, Aceh**	**70.47 279**	P	**P**	**16 07 00.2 +1.0**
comp=Z,66nm,1.0s					
NANT	**Nan**	**70.61 295**	P	**P**	**16 07 00.6 +0.6**
comp=Z,7.9nm,1.0s,comp=Z,102nm					
SRDT	**SRDT**	**70.61 290**	P	**P**	**16 07 02.5 +2.5**
comp=Z,70nm,1.9s					
SUKH	**Sukhothai**	**71.13 293**	P	**P**	**16 07 05.0 +1.9**
comp=Z,6.0nm,1.0s,comp=Z,51nm					
KMI	**Kunming**	**71.15 302**	P	**P**	**16 07 04.9 +1.5**
KMI			pP	sP	16 07 17.3 +3.4
KMI			sP	PcP	16 07 24.0 +0.6
KMI			S	**S**	**16 16 22.8 +3.4**
KMI			sS	SKiKP	16 16 39.8 -3.7
K

comp=Z,300nm,17.3s
HHC LR LR
CM01 Chiang Mai Arr 72.04 294 *e*P **P 16 07 09.7 +1.0**
CM31 Chiang Mai Arr 72.07 294 *e*P **P 16 07 10.0 +1.2**
CMAR Chiang Mai Arr 72.07 294 P **P 16 07 09.8 +1.0**
comp=Z,12nm,0.9s,baz=122,slow=4.7,SNR=58
CHTO Chiang Mai 72.19 294 P **P 16 07 10.9 +1.4**
comp=Z,100nm,1.2s,comp=Z,2um
CHTO Chiang Mai 72.19 294 *e*P **P 16 07 10.0 +0.5**
CHTO pmax pmax
comp=Z,22nm,1.1s
CHTO Chiang Mai 72.19 294 *e*P **P 16 07 10.0 +0.5**
comp=Z,22nm,1.1s
CMAI Chiengmai2 72.46 295 P **P 16 07 12.8 +1.5**
comp=Z,16nm,1.1s,comp=Z,659nm
MIR Mirnyy 72.55 204 *i* P **P 16 07 11.0 +0.2**
MIR pmax pmax
comp=Z,8.0nm,1.2s
HIA Hailar 72.65 331 *e*P **P 16 07 12.3 +0.7**
HIA pmax pmax
comp=Z,24nm,1.0s
HIA Hailar 72.65 331 *e*P **P 16 07 12.3 +0.7**
comp=Z,24nm,1.0s
CD2 Chengdu 72.69 308 P **P 16 07 12.1 -0.2**
CD2 pP PcP 16 07 26.0 -3.6
CD2 PP **PP 16 09 54.3 -0.1**
CD2 S **S 16 16 34.6 -1.9**
CD2 sS sS 16 16 58.5 +9.3
CD2 SS **SS 16 21 16.0 -0.6**
CD2 pmax pmax
comp=Z,40nm,0.9s
CD2 pmax pmax
comp=Z,330nm,5.4s
CD2 LR LR
comp=Z,350nm,19.2s
CD2 LR LR
comp=Z,320nm,24.0s
CHGN Chignik 73.93 20 *e*P **P 16 07 17.9 -1.1**
LZH Lanzhou 74.89 312 *e*P **P 16 07 27.3 +2.1**
LZH pP PcP 16 07 41.6 +2.5
LZH sP sP 16 07 47.5 +12
LZH PP **PP 16 10 17.0 +3.9**
LZH *e*S **S 16 17 00.6 -0.8**
LZH sS sS 16 17 23.1 +9.0
LZH SS **SS 16 21 52.0 +1.8**
LZH pmax pmax
comp=Z,69nm,1.2s
LZH pmax pmax
comp=Z,320nm,6.8s
LZH LR LR
comp=Z,620nm,17.0s
LZH LR LR
comp=Z,430nm,16.7s
LZH LR LR
comp=Z,680nm,19.0s
SEY Seymchan 74.91 354 *e*P **P 16 07 25.1 +0.6**
CIT Chita 77.44 330 *e*P **P 16 07 40.2 +1.0**
CIT *e* 16 07 52.0
CIT pmax pmax
comp=Z,92nm,1.6s
YAK Yakutsk 78.47 344 P **P 16 07 44.3 -0.3**
comp=Z,12nm,0.5s,baz=322,slow=1.8,SNR=9.5
YAK LR LR 16 43 32.8
comp=Z,246nm,18.1s,baz=150,slow=37
YAK Yakutsk 78.47 344 *e*P **P 16 07 44.7 +0.1**
YAK pmax pmax
comp=Z,21nm,1.4s
YAK Yakutsk 78.47 344 *e*P **P 16 07 44.4 -0.3**
comp=Z,18nm,0.7s
QSPA South Pole Qui 78.49 180 *e*P **P 16 07 44.4 -0.7**
comp=Z,43nm,1.1s
ULN Ulaanbaatar 78.53 324 *e*P **P 16 07 46.1 +0.5**
ULN pmax pmax
comp=Z,22nm,0.9s
ULN Ulaanbaatar 78.53 324 *e*P **P 16 07 46.1 +0.5**
comp=Z,22nm,0.9s
SONA0 Songino Array 78.89 324 *e*P **P 16 07 48.5 +1.0**
comp=Z,24nm,1.3s
SONM Songino Array 78.89 324 P **P 16 07 48.5 +1.0**
comp=Z,8.3nm,1.0s,baz=123,slow=4.4,SNR=38
SONM LR LR 16 43 13.6
comp=Z,100nm,18.9s,baz=131,slow=36
SONA1 Songino Array 78.90 324 *e*P **P 16 07 48.1 +0.6**
RSO Reloubt South 79.05 20 *e*P **P 16 07 48.0 -0.1**
BRLK Bradley Lake 79.16 21 *e*P **P 16 07 48.4 -0.2**
comp=Z,13nm,0.8s
GTA Gaotai 79.20 314 *e*P **P 16 07 50.8 +1.4**
GTA pP sP 16 08 03.6 +3.6
GTA sP PcP 16 08 09.8 +12
GTA S **S 16 17 46.1 -2.1**
GTA sS ScS 16 18 08.6 -2.3
GTA SS **SS 16 22 58.0 +2.8**
GTA pmax pmax
comp=Z,23nm,1.1s
GTA pmax pmax
comp=Z,270nm,5.9s
GTA LR LR
comp=Z,190nm,18.1s
GTA LR LR
comp=Z,270nm,18.3s
GTA LR LR
comp=Z,360nm,17.6s
BILL Bilibino 79.35 0⇑ *e*P **P 16 07 49.2 -0.2**
BILL *i* 16 08 01.5
BILL *e* 16 10 50.4
BILL pmax pmax
comp=Z,26nm,1.2s
BILL Bilibino 79.35 0 *e*P **P 16 07 49.0 -0.3**
comp=Z,16nm,0.9s
TT01 Tatalina 79.92 17 *e*P **P 16 07 52.0 -0.6**
TTA Tatalina 79.94 17 *e*P **P 16 07 53.3 +0.5**
TTA pmax pmax
comp=Z,15nm,1.1s
TTA Tatalina 79.94 17 *e*P **P 16 07 53.3 +0.5**
comp=Z,15nm,1.1s
RC01 Rabbit Creek A 80.52 20 *e*P **P 16 07 54.6 -1.2**
comp=Z,26nm,1.3s
BOD Bodaibo 80.85 335 *e*P **P 16 07 56.7 -1.0**
BOD pmax pmax
comp=Z,9.0nm,1.3s
CAST Castle Rocks 81.47 18 *e*P **P 16 07 60.0 -0.9**
comp=Z,6.9nm,0.6s
SML Sawmill 81.50 20 *e*P **P 16 08 00.8 -0.3**
SML pmax pmax
comp=Z,25nm,1.3s
SML Sawmill 81.50 20 *e*P **P 16 08 00.8 -0.3**
comp=Z,25nm,1.3s
RAGM Ragged Mountai 81.84 23 *e*P **P 16 08 02.2 -0.8**
comp=Z,100nm,0.6s
SCM Sheep Creek Mo 81.86 21 *e*P **P 16 08 02.9 -0.2**
SCM pmax pmax
comp=Z,25nm,1.0s
SCM Sheep Creek Mo 81.86 21 *e*P **P 16 08 02.9 -0.2**
comp=Z,25nm,1.0s
KTH Kantishna Hill 81.92 18 *e*P **P 16 08 02.2 -1.1**
comp=Z,14nm,1.1s
DIV Divide 81.93 22 *e*P **P 16 08 03.0 -0.5**
comp=Z,22nm,1.0s
ZAK Zakamensk 81.94 325 *e*P **P 16 08 03.2 -0.6**
ZAK pmax pmax
comp=Z,13nm,1.2s
TRF Thorofare Moun 82.04 18 *e*P **P 16 08 03.2 -0.9**
comp=Z,30nm,1.6s
KLU Klutina 82.12 21 *e*P **P 16 08 03.8 -0.6**
comp=Z,14nm,1.1s
BMRM Bremner River 82.25 22 *e*P **P 16 08 05.0 -0.1**
comp=Z,14nm,0.9s
BPAW Bear Paw Mtn. 82.30 18 *e*P **P 16 08 05.0 -0.3**
comp=Z,8.4nm,1.2s
TLY Talaya 82.37 326 *e*P **P 16 08 06.1 +0.2**
TLY *e* 16 19 29.8
TLY pmax pmax
comp=Z,20nm,1.5s
TLY MLR MLR
comp=Z,117nm,20.0s
RND Reindeer 82.46 19 *e*P **P 16 08 05.6 -0.6**
RND pmax pmax
comp=Z,17nm,1.1s
RND Reindeer 82.46 19 *e*P **P 16 08 05.6 -0.6**
comp=Z,17nm,1.1s
MCK McKinley 82.67 19 *e*P **P 16 08 06.3 -0.9**
MCK pmax pmax
comp=Z,36nm,1.3s
MCK McKinley 82.67 19 *e*P **P 16 08 06.2 -0.9**
comp=Z,36nm,1.3s
BWN Browne 82.81 18 *e*P **P 16 08 07.6 -0.3**
comp=Z,44nm,1.1s
MLY Manley 83.06 17 *e*P **P 16 08 09.2 0.0**
comp=Z,16nm,1.4s
BALM Baldy 83.14 23 *e*P **P 16 08 09.1 -0.7**
BALM pmax pmax
comp=Z,16nm,1.0s
BALM Baldy 83.14 23 *e*P **P 16 08 09.1 -0.7**
comp=Z,16nm,1.0s
PAX Paxson 83.27 20 *e*P **P 16 08 09.5 -0.9**
PAX pmax pmax
comp=Z,5.0nm,1.0s
PAX Paxson 83.27 20 *e*P **P 16 08 09.5 -0.9**
comp=Z,4.8nm,1.0s
WRH Wood River Hil 83.45 18 *e*P **P 16 08 10.3 -0.9**
comp=Z,15nm,1.0s
CCB Clear Creek Bu 83.66 18 *e*P **P 16 08 11.7 -0.6**
comp=Z,13nm,1.3s
MDM Murphy Dome 83.75 18 *e*P **P 16 08 12.3 -0.5**
comp=Z,26nm,1.3s
COLA College 83.81 18 *e*P **P 16 08 11.5 -1.5**
COLA pmax pmax
comp=Z,19nm,0.8s
COLA College 83.81 18 *e*P **P 16 08 11.5 -1.5**
comp=Z,19nm,0.8s
MOY Mondy 83.82 326 *e*P **P 16 08 14.6 +1.1**
MOY pmax pmax
comp=Z,37nm,2.3s
MENT Mentasta 83.86 21 *e*P **P 16 08 12.8 -0.6**
comp=Z,14nm,1.1s
ILAR Eielson Array 84.03 19 P **P 16 08 13.9 -0.3**
comp=Z,4.1nm,0.6s,baz=239,slow=5.6,SNR=36
ILAR PKKPbc **PKKPbc 16 26 28.7 -3.3**
comp=Z,0.4nm,0.8s,baz=9.5,slow=2.7,SNR=4.7
ILAR LR LR 16 44 37.4
comp=Z,164nm,18.4s,baz=229,slow=35
ILB Eielson Array 84.03 19 *e*P **P 16 08 13.3 -0.9**
IL1 Eielson Array 84.03 19 *e*P **P 16 08 12.9 -1.3**
WDC Whiskeytown Da 84.11 47 *e*P **P 16 08 14.7 -0.4**
WDC pmax pmax
comp=Z,24nm,1.7s
WDC Whiskeytown Da 84.11 47 *e*P **P 16 08 14.7 -0.4**
comp=Z,24nm,1.7s
N02D Trinity Center 84.13 46 P **P 16 08 15.3 0.0**
baz=249
M02C Callahan 84.18 46 P **P 16 08 15.7 +0.1**
baz=249
MAW Mawson 84.20 202 LR LR 16 44 03.4
comp=Z,189nm,18.2s,baz=66,slow=34
DOT Dot Lake 84.20 20 *e*P **P 16 08 14.7 -0.4**
comp=Z,102nm,1.2s
YBH Yreka Blue Hor 84.40 46 *e*P **P 16 08 18.3 +1.6**
YBH pmax pmax
comp=Z,12nm,1.3s
YBH Yreka Blue Hor 84.40 46 *e*P **P 16 08 18.3 +1.6**
comp=Z,12nm,1.3s
HUMO Hull Mountain 84.54 45 *e*P **P 16 08 18.5 +1.2**
comp=Z,11nm,1.0s
O03D Paynes Creek 84.54 47 P **P 16 08 17.9 +0.5**
baz=250
AFDM Forest Hills D 84.70 49 *e*P **P 16 08 17.7 -0.5**
comp=Z,8.3nm,1.0s
COLD Coldfoot 84.81 16 *e*P **P 16 08 19.2 +1.2**
comp=Z,4.8nm,1.0s
SKAG Skagway 85.07 26 *e*P **P 16 08 20.3 +0.8**
comp=Z,33nm,1.8s
I04A Tendick Farm, 85.33 44 P **P 16 08 20.8 -0.4**
baz=249
WAKR Walker 85.69 49 *e*P **P 16 08 23.9 +0.5**
EDW2 Edwards Air Fo 85.70 53 P **P 16 08 23.9 +0.6**
baz=253
EGAK Eagle 85.90 20 *e*P **P 16 08 23.2 -0.3**
comp=Z,19nm,0.8s
DAWY Dawson 86.08 21 *e*P **P 16 08 24.3 -0.2**
PAHR Pah Rah Range 86.11 48 *e*P **P 16 08 25.6 +0.2**
LRMC Laurel Mtn Rad 86.12 53 P **P 16 08 25.6 +0.1**
baz=253
PALK Pallekele 86.37 278 P **P 16 08 28.8 +1.8**
comp=Z,21nm,0.9s,baz=116,slow=4.6,SNR=6.4
PALK Pallekele 86.37 278 *e*P **P 16 08 27.8 +0.7**
PALK pmax pmax
comp=Z,27nm,0.9s
PALK Pallekele 86.37 278 *e*P **P 16 08 27.8 +0.7**
comp=Z,27nm,0.9s
MONP2 Monument Peak 86.39 56 P **P 16 08 26.9 0.0**
baz=254
DAC Darwin (Calif) 86.42 52 *e*P **P 16 08 26.2 -0.8**
DAC pmax pmax
comp=Z,3.0nm,0.8s
DAC Darwin (Calif) 86.42 52 *e*P **P 16 08 26.2 -0.8**
comp=Z,3.4nm,0.8s
TIXI Tiksi 86.50 349 P **P 16 08 25.6 -0.8**
baz=135,slow=4.5
TIXI Tiksi 86.50 349 *e*P **P 16 08 26.2 -0.1**
TIXI pmax pmax
comp=Z,7.0nm,1.1s
TIXI Tiksi 86.50 349 *e*P **P 16 08 25.6 -0.8**
TIXI *e*P **P 16 08 25.6 -0.8**
NV01 Mina Array Sit 86.52 50 *e*P **P 16 08 26.3 -1.2**
NVAR Mina Array Bea 86.52 50 P **P 16 08 26.1 -1.4**
comp=Z,1.9nm,0.7s,baz=237,slow=8.0,SNR=15
NVAR LR LR 16 38 51.5
comp=Z,529nm,21.8s,baz=264,slow=30
TPFO Pinon Flats 86.56 55 P **P 16 08 27.8 +0.1**
baz=254
NV11 Mina Array Sit 86.63 50 *e*P **P 16 08 26.5 -1.5**
comp=Z,7.3nm,1.1s
PKIN Phulchoki 86.66 299 *e*P **P 16 08 28.7 +0.2**
comp=Z,49nm,1.6s
GRAC Grapevine Rang 86.80 51 P **P 16 08 28.8 0.0**
baz=253
KKN Kakani 86.81 299 *e*P **P 16 08 29.0 -0.2**
comp=Z,43nm,1.2s
A04D Lummi Island 86.90 39 P **P 16 08 29.8 +1.1**
baz=249
HEC Hector,Ludlow 86.99 54 P **P 16 08 28.6 -1.1**
baz=254
BELC Belle Mtn. Jos 87.03 55 P **P 16 08 29.2 -0.8**
baz=254
B05A Bryant 87.11 40 P **P 16 08 31.4 +1.5**
baz=249
BC3 Big Chuckawall 87.37 55 P **P 16 08 31.4 -0.2**
baz=254
GKN Gorkha 87.41 299 *e*P **P 16 08 31.4 -0.6**
comp=Z,53nm,1.1s
TUQ Turquoise Moun 87.48 53 P **P 16 08 31.7 -0.4**
baz=254
WVOR Wild Horse Val 87.49 46 *e*P **P 16 08 31.5 -0.6**
WVOR pmax pmax
comp=Z,6.0nm,1.1s
WVOR Wild Horse Val 87.49 46 *e*P **P 16 08 31.4 -0.6**
comp=Z,6.1nm,1.1s
GMRC Granite Mounta 87.51 54 P **P 16 08 32.2 -0.1**
baz=254
TPNV Topopah Spring 87.65 52 P **P 16 08 32.2 -0.7**
baz=254
IRM Iron Mountain 87.75 55 P **P 16 08 33.4 +0.1**
baz=254
LDFC Landfair 88.03 54 *e*P **P 16 08 33.9 -0.8**
comp=Z,20nm,1.3s
G08A Pilot Rock 88.16 43 *e*P **P 16 08 34.1 -1.0**
comp=Z,9.3nm,1.1s
KOLN Koldanda 88.25 299 *e*P **P 16 08 36.1 0.0**
comp=Z,18nm,0.9s
SHPR Sheep Range 88.37 52 *e*P **P 16 08 37.1 +0.7**
R11A Troy Canyon, C 88.54 51 P **P 16 08 37.3 +0.1**
baz=254
R11A Troy Canyon, C 88.54 51 *e*P **P 16 08 36.1 -1.0**
comp=Z,5.7nm,1.2s
PDMCI Parker Dam,Lak 88.60 55 P **P 16 08 37.4 +0.1**
baz=255
PYUN Piuthan 88.85 299 *e*P **P 16 08 38.5 -0.4**
comp=Z,38nm,0.8s
BMO Blue Mountains 89.14 44 *e*P **P 16 08 40.0 +0.2**
BMO pmax pmax
comp=Z,13nm,1.8s
BMO Blue Mountains 89.14 44 *e*P **P 16 08 40.0 +0.2**
comp=Z,13nm,1.8s
WMQ Urumqi 89.25 315 P **P 16 08 41.4 +1.2**
WMQ pP sP 16 08 54.4 +3.5
WMQ sP pP 16 08 59.6 +11
WMQ pmax pmax
comp=Z,9.0nm,0.6s
WMQ pmax pmax
comp=Z,110nm,4.8s
WMQ LR LR
comp=Z,45nm,20.0s
WMQ LR LR
comp=Z,44nm,24.6s
WMQ LR LR
comp=Z,57nm,22.2s
MFID Camas Ranch 89.75 46 *e*P **P 16 08 41.7 -1.0**
comp=Z,7.0nm,1.1s
PSUT Pine Spring 89.90 51 *e*P **P 16 08 42.8 -0.8**
comp=Z,4.7nm,0.9s
LCMT Little Creek M 89.98 52 *e*P **P 16 08 42.9 -1.0**
comp=Z,15nm,1.5s
CCUT Cedar City 90.03 52 *e*P **P 16 08 44.7 +0.5**
comp=Z,10nm,1.3s
KNB Kanab 90.31 52 *e*P **P 16 08 45.4 -0.1**
KNB pmax pmax
comp=Z,20nm,1.5s
KNB Kanab 90.31 52 *e*P **P 16 08 45.4 -0.1**
comp=Z,20nm,1.5s
INK Inuvik 90.42 19 *e*P **P 16 08 44.1 -0.9**
INK Inuvik 90.42 19 *e*P **P 16 08 44.1 -0.9**
U15A North Rim 90.58 53 *e*P **P 16 08 46.7 -0.3**
comp=Z,26nm,1.6s
HLID Hailey 90.78 46 P **P 16 08 48.4 +0.9**
baz=255
HLID Hailey 90.78 46 *e*P **P 16 08 48.3 +0.8**
comp=Z,17nm,1.8s
X16A Lo Mia Camp, P 90.79 55 *e*P **P 16 08 47.2 -0.6**
comp=Z,5.2nm,1.1s
TUC Tucson 90.85 57 P **P 16 08 48.4 +0.4**
baz=257
MTPU Mount Pierson 91.05 52 *e*P **P 16 08 49.1 -0.1**
comp=Z,20nm,1.6s
WUAZ Wupatki 91.10 54 P **P 16 08 48.4 -0.8**
baz=257
BGU Big Grassy Mou 91.11 49 *e*P **P 16 08 49.1 0.0**
comp=Z,4.7nm,1.0s
MSU Marysvale 91.17 51 *e*P **P 16 08 49.1 -0.4**
MSU Marysvale 91.17 51 *e*P **P 16 08 49.1 -0.4**
SYO Syowa Base 91.27 197⇓ *e*P **P 16 08 47.6 -1.5**
HVU Hansel Valley 91.50 48 *e*P **P 16 08 49.9 -1.0**
HVU pmax pmax
comp=Z,19nm,1.5s
HVU Hansel Valley 91.50 48 *e*P **P 16 08 49.9 -1.0**
comp=Z,18nm,1.5s
NLU North Lily Min 91.58 50 *e*P **P 16 08 50.6 -0.8**
comp=Z,9.7nm,1.5s
BSMT Bassoo Peak 91.65 42 *e*P **P 16 08 49.6 -1.9**
MCMT McKenzie Canyo 92.19 45 *e*P **P 16 08 52.6 -1.5**
CHMT Chamberlain Mo 92.42 43 *e*P **P 16 08 53.1 -2.1**
DLMT Dillon 92.49 44 *e*P **P 16 08 54.3 -1.1**
comp=Z,10nm,1.2s
WALA Waterton Lakes 92.52 41 *e*P **P 16 08 54.7 -0.7**
comp=Z,13nm,1.4s
LRM Limekiln Ridge 92.70 44 *e*P **P 16 08 55.5 -0.9**
BOZ Bozeman (W) 93.22 44 P **P 16 08 58.6 -0.2**
baz=257
BOZ Bozeman (W) 93.22 44 *e*P **P 16 08 59.2 +0.4**
BOZ pmax pmax
comp=Z,4.0nm,1.1s
BOZ Bozeman (W) 93.22 44 *e*P **P 16 08 59.2 +0.4**
comp=Z,4.1nm,1.1s
MK01 Makanchi Array 93.68 317 *e*P **P 16 09 00.5 -0.2**
MK31 Makanchi Array 93.69 317 *e*P **P 16 09 00.5 -0.2**
MK31 Makanchi Array 93.69 317 *e*P **P 16 09 00.5 -0.2**
MK32 Makanchi Array 93.69 317 *e*P **P 16 09 00.5 -0.2**
MK32 *e*PKKPdf **PKKPdf 16 26 04.7 -1.6**
MKAR Makanchi Array 93.69 317 P **P 16 09 00.5 -0.2**
comp=Z,11nm,0.6s,baz=96,slow=5.7,SNR=72
MKAR PKKP **PKKPdf 16 26 04.7 -1.6**
comp=Z,0.9nm,0.6s,baz=274,slow=3.4,SNR=10
MKAR Makanchi Array 93.69 317 *i* P **P 16 09 00.8 +0.1**
MKAR pmax pmax
comp=Z,11nm,0.6s
MKAR Makanchi Array 93.69 317 *e*P **P 16 09 00.4 -0.4**
ZAA0 Zalesovo Array 93.79 324 *e*P **P 16 09 00.0 -0.9**
ZAA0 *e*P **P 16 09 00.0 -0.9**
ZALV Zalesovo Beam 93.79 324 P **P 16 09 00.0 -0.9**
comp=Z,9.3nm,0.8s,baz=114,slow=4.5,SNR=36
ZALV LR LR 16 50 26.2
comp=Z,83nm,20.0s,baz=72,slow=35
ZALV Zalesovo Beam 93.79 324 *i* P **P 16 09 00.6 -0.3**
ZALV pmax pmax
comp=Z,9.0nm,0.8s
ZAA1 Zalesovo Array 93.79 324 *e*P **P 16 09 00.0 -0.9**
MAKZ Makanchi 93.90 317 *e*P **P 16 09 01.6 -0.1**
MAKZ pmax pmax
comp=Z,18nm,1.0s
MAKZ Makanchi 93.90 317 *e*P **P 16 09 01.6 -0.1**
comp=Z,18nm,1.0s
BW06 Boulder Array 94.05 47 P **P 16 09 01.6 -1.1**
baz=258
BW06 Boulder Array 94.05 47 *e*P **P 16 09 00.4 -2.3**
BW06 *e*P **P 16 09 01.0 -1.8**
PD31 Pinedale Array 94.05 47 *e*P **P 16 09 01.0 -1.8**
PDAR Pinedale Array 94.05 47 P **P 16 09 03.6 +0.9**
comp=Z,0.7nm,0.8s,baz=255,slow=4.5,SNR=6.9
PDAR LR LR 16 44 31.6
comp=Z,142nm,21.4s,baz=261,slow=31
NVS Novosibirsk 94.90 325 *e*P **P 16 09 06.2 +0.2**
NVS pmax pmax
comp=N,5.0nm,1.3s
NVS pmax pmax
comp=E,7.0nm,1.3s
NVS pmax pmax
comp=Z,15nm,1.3s
EGMT Eagleton 94.98 42 P **P 16 09 06.6 -0.1**
baz=258
YKA Yellowknife Ar 95.50 27 P **P 16 09 06.5 -2.1**
comp=Z,1.2nm,0.6s,baz=257,slow=4.7,SNR=12
YKB5 Yellowknife Ar 95.50 27 *e*P **P 16 09 06.2 -2.4**
LTX Lajitas 96.27 61 *e*P **P 16 09 12.3 -0.7**
LTX Lajitas 96.27 61 *e*P **P 16 09 12.3 -0.7**
TXAR Lajitas Array 96.27 61 P **P 16 09 12.3 -0.7**
comp=Z,0.5nm,0.6s,baz=238,slow=4.5,SNR=5.1
TXAR LR LR 16 44 54.0
comp=Z,381nm,20.9s,baz=0.0,slow=31
NRIK Noril'sk 96.47 340 P **P 16 09 12.2 -0.7**
comp=Z,6.0nm,0.9s,baz=101,slow=5.3,SNR=12
NRIK LR LR 16 49 58.2
comp=Z,178nm,21.8s,baz=120,slow=34
SNAA Sanae 96.64 184 P **P 16 09 11.1 -2.7**
SNAA Sanae 96.64 184 *e*P **P 16 09 12.7 -1.1**
SNAA pmax pmax
comp=Z,5.0nm,0.9s
SNAA Sanae 96.64 184 *e*P **P 16 09 12.7 -1.1**
comp=Z,5.0nm,0.9s
KURK Kurchatov 96.84 320 *e*sP sP 16 09 26.8 +1.1
KSH Kashi 96.85 309 *e*P **P 16 09 18.8 +3.3**
KSH *e*pP sP 16 09 32.9 +6.7
KSH *e*PP **PP 16 13 16.8 +5.8**
KSH SKS **SKSac 16 19 50.8 -0.5**
KSH S **S 16 20 33.9 -2.6**
KSH SS **SS 16 27 15.4 +2.8**
KSH pmax pmax
comp=Z,220nm,5.5s
KSH LR LR
comp=Z,85nm,6.3s
KSH LR LR
comp=Z,130nm,5.1s
KSH LR LR
comp=Z,120nm,7.5s
VNA3 Neumayer Olymp 97.37 182 P Pdif 16 09 20.5 +3.3
VNA2 Neumayer--Watz 97.61 182 P Pdif 16 09 18.7 +0.5
baz=151,slow=2.9
AAK Ala-Archa 98.42 312 *e*P **P 16 09 21.2 -1.3**
AAK pmax pmax
comp=Z,3.0nm,0.9s
ARA0 ARCESS Array S 116.72 345 *e*PKPdf **PKPdf 16 14 26.9 -0.8**
ARCES ARCESS Array B 116.72 345 PKP **PKPdf 16 14 26.9 -0.8**
comp=Z,2.7nm,0.6s,baz=47,slow=0.8,SNR=18
KLMR Klimovskoe 117.05 334 *e*PKIKP **PKPdf 16 14 26.6 -2.0**
KLMR pmax pmax
comp=Z,9.0nm,1.4s
LPAZ La Paz 120.20 117 PKP **PKPdf 16 14 36.2 -0.5**
comp=Z,3.2nm,0.9s,baz=231,slow=2.2,SNR=7.8
ZEI Tsey 120.81 313 *i* PKIKP **PKPdf 16 14 35.5 -1.2**
ZEI pmax pmax
comp=Z,7.0nm,0.4s
OBN Obninsk 121.07 329 *e*PKIKP **PKPdf 16 14 36.7 +0.2**
OBN *e* 16 16 07.4
OBN *e*SS SS 16 32 53.8 +17
OBN pmax pmax
comp=Z,5.0nm,0.9s
KIV Kislovodsk 121.38 315⇑ *e*PKIKP **PKPdf 16 14 36.0 -1.6**
KIV *e* 16 16 09.4
KIV *e*PPP PPP 16 18 47.3

KIV pmax pmax
comp=Z,4.0nm,0.6s
FIA0 FINESS Array S 122.11 338 *e*PKIKP **PKPdf 16 14 38.4 +0.1**
FIA0 FINESS Array S 122.11 338 *e*PKPdf **PKPdf 16 14 38.4 +0.1**
FINES FINESS Array B 122.11 338 PKP **PKPdf 16 14 38.4 +0.1**
comp=Z,3.7nm,0.9s,baz=10,slow=1.6,SNR=6.5
VSU Vasula 123.78 335*c i* PKIKP **PKPdf 16 14 40.4 -1.2**
VSU pmax pmax
comp=Z,74nm,2.5s
CPUP Villa Florida 123.90 133 PKP **PKPdf 16 14 42.9 0.0**
comp=Z,2.8nm,1.0s,baz=231,slow=4.6,SNR=4.2
CPUP Villa Florida 123.90 133 *e*PKIKP **PKPdf 16 14 42.7 -0.2**
CPUP Villa Florida 123.90 133 *e*PKPdf **PKPdf 16 14 42.7 -0.2**
BOSA Boshof 124.61 223 PKP **PKPdf 16 14 44.2 -0.1**
comp=Z,5.0nm,0.8s,baz=133,slow=3.0,SNR=9.3
BOSA Boshof 124.61 223 *e*PKIKP **PKPdf 16 14 43.9 -0.4**
BOSA Boshof 124.61 223 *e*PKPdf **PKPdf 16 14 43.9 -0.4**
BOSA *e*PKPdf **PKPdf 16 14 44.2 -0.1**
LBTB Lobatse 126.64 227 *e*PKIKP **PKPdf 16 14 48.8 +0.5**
LBTB Lobatse 126.64 227 *e*PKPdf **PKPdf 16 14 48.8 +0.5**
NB2 NORSAR Subarra127.08 345 PKPdf **PKPdf 16 14 47.6 -0.4**
comp=Z,8.6nm,1.2s,baz=31,slow=1.9
NB2 NORSAR Subarra127.08 345 PKPdf **PKPdf 16 14 47.6 -0.4**
baz=31,slow=1.9
NB200 NORSAR Array S 127.08 345 *e*PKPdf **PKPdf 16 14 47.8 -0.2**
NOA NORSAR Array B 127.08 345 PKP **PKPdf 16 14 47.8 -0.2**
comp=Z,3.2nm,0.8s,baz=38,slow=2.0,SNR=9.1
MATP Matopo 127.11 233 PKP **PKPdf 16 14 48.7 -0.7**
comp=Z,3.1nm,0.9s,baz=44,slow=2.4,SNR=6.9
AKASG Malin Array Be 127.11 327 PKP **PKPdf 16 14 47.2 -1.0**
comp=Z,0.2nm,0.2s,baz=57,slow=2.1,SNR=4.4
AKBB Malin Array Si 127.11 327 *e*PKIKP **PKPdf 16 14 47.9 -0.3**
AKBB Malin Array Si 127.11 327 *e*PKPdf **PKPdf 16 14 47.9 -0.3**
NBO02 NORSAR Array S 127.17 345 *e*PKPdf **PKPdf 16 14 48.6 +0.5**
SAML Samuel 127.50 111 *e*PKPdf **PKPdf 16 14 46.0 -4.1**
BR101 Keskin Array S 129.09 312 *e*PKPdf **PKPdf 16 14 53.5 +0.9**
BR131 Keskin Array S 129.09 312 *e*PKPdf **PKPdf 16 14 52.4 -0.2**
BRTR Keskin Array B 129.09 312 PKP **PKPdf 16 14 53.5 +0.9**
comp=Z,2.3nm,1.1s,baz=117,slow=1.4,SNR=9.0
BR231 Keskin MP Arra 129.68 313 *e*PKPdf **PKPdf 16 14 53.5 -0.2**
HUMP Col San Antoni 130.06 76 *e*PKPdf **PKPdf 16 14 54.1 -0.6**
PTGA Pitinga 133.23 102 *e*PKPdf **PKPdf 16 15 00.1 -0.8**
KRLC Kraliky 133.74 332 *e*PKPdf **PKPdf 16 15 03.4 +2.5**
KRLC Kraliky 133.74 332 *e*PKIKP **PKPdf 16 15 03.4 +2.5**
DPC Dobruska-Polom 133.75 333 AMS AMS 17 12 50.0
comp=Z,200nm,20.4s
UPC Upice 133.77 333 AMS AMS 17 12 10.0
comp=Z,200nm,24.0s
PVCC Panska Ves 134.38 334 AMS AMS 17 12 20.0
comp=Z,200nm,22.2s
BRG Berggiesshubel 134.38 335 *e*P **PKPdf 16 15 03.4 +1.4**
comp=Z,3.4nm,0.9s
BRG Berggiesshubel 134.38 335 *e*PKIKP **PKPdf 16 15 03.4 +1.4**
BRG pmax pmax
comp=Z,3.0nm,0.9s
CLL Collm 134.43 336 *e*PKPdf **PKPdf 16 15 03.0 +0.9**
CLL *e*SP SP 16 27 48.0 -2.7
CLL *e*SS SS 16 35 42.0 +20
CLL Collm 134.43 336 *e*PKIKP **PKPdf 16 15 03.0 +0.9**
GOPC GO Pecny, Ondr 134.74 334 AMS AMS 17 15 20.0
comp=Z,200nm,23.4s
PRU Pruhonice 134.79 334 AMS AMS 17 13 10.0
comp=Z,200nm,21.6s
TREC Trest 134.88 332 AMS AMS 17 14 20.0
comp=Z,200nm,23.7s
EKA Eskdalemuir Ar 135.38 351 PKP **PKPdf 16 15 05.2 +1.5**
comp=Z,1.1nm,0.6s,baz=28,slow=3.2,SNR=4.1
KHC Kasperske Hory 135.85 334 *e*PKPdf **PKPdf 16 15 05.9 +1.0**
KHC AMS AMS 17 13 30.0
comp=Z,300nm,21.3s
KHC Kasperske Hory 135.85 334 *e*PKIKP **PKPdf 16 15 05.9 +1.0**
KHC MLR MLR
comp=Z,300nm,21.3s
KHC Kasperske Hory 135.85 334 *e*PKPdf **PKPdf 16 15 05.4 +0.5**
GEC2 GERESS Array S 136.01 333 *e*PKIKP **PKPdf 16 15 05.4 +0.1**
GEC2 GERESS Array S 136.01 333 *e*PKPdf **PKPdf 16 15 05.4 +0.1**
GERES GERESS Array B 136.01 333 PKP **PKPdf 16 15 06.1 +0.9**
comp=Z,1.1nm,0.8s,baz=48,slow=1.5,SNR=7.7
GEA0 GERESS Array S 136.01 333 *e*PKPpre PKPpre 16 14 51.4
GEA0 *e*PKPdf **PKPdf 16 15 05.6 +0.3**
FUORN Ofenpass-Fuorn 139.21 334 *e*PKPpre PKPpre 16 15 02.5
TIP Timpagrande 140.89 320 *e*PKPdf **PKPdf 16 15 11.4 -3.1**
PLDF La Plantade 142.35 339 PKP **PKPdf 16 15 13.2 -3.7**
AGO Saint Agoulin 142.45 340 PKP **PKPdf 16 15 13.5 -3.5**
SSB Saint Sauveur 142.61 338 *e*PKIKP **PKPdf 16 15 13.7 -3.7**
SSB Saint Sauveur 142.61 338 *e*PKPpre **PKPdf 16 15 13.7 -3.7**
LBL Lubilhac 143.12 339 PKP PKPbc 16 15 16.4 +1.3
CLTB Caltabellotta 144.07 321 *e*PKPdf PKPbc 16 15 18.0 -0.2
VSL Villasalto 144.99 327 *e*PKPbc PKPbc 16 15 20.8 -0.1
LRDF Laroque-de-Fa 145.36 338 PKP **PKPdf 16 15 22.5 +0.3**
SJAF Saint Jean de 145.62 337 PKP **PKPab 16 15 23.1 -0.1**
FILF Fillols 145.68 337 PKP **PKPab 16 15 23.7 +0.3**
CARF Carcanieres 145.71 338 PKP **PKPab 16 15 23.7 +0.1**
SALF Salau 146.00 339 PKP **PKPab 16 15 24.8 +0.2**
VALF Valcebollere 146.02 338 PKP **PKPab 16 15 25.0 +0.2**
LABF Labassere 146.12 341 PKP **PKPab 16 15 25.5 +0.4**
REYF Montagne du Re 146.25 341 PKP **PKPab 16 15 25.1 -0.5**
VIEF Viey 146.29 341 PKP **PKPab 16 15 25.7 0.0**
ATE Arette 146.34 342 PKP **PKPab 16 15 25.6 -0.2**
LARF Larrau 146.47 342 PKP **PKPab 16 15 25.9 -0.5**
KEST Kesra 147.63 322 *e*PKPbc **PKPab 16 15 30.2 -1.0**
comp=Z,38nm,0.9s,baz=295,slow=1.3,SNR=38
KEST Kesra 147.63 322 *e*PKPbc **PKPbc 16 15 29.6 +0.5**
CMAH Djebel Manchou 148.13 325 P **PKPbc 16 15 30.7 +0.4**
ABSA Djebel Ababsia 148.35 325 P **PKPbc 16 15 32.0 +1.0**
CASM Ain Smara 148.91 326 P **PKPbc 16 15 33.0 +0.7**
DFRA Djebel Bou Aff 149.03 327 P **PKPbc 16 15 34.0 +1.3**
PBRG Braganca 149.07 349 *e*PKPdf **PKPdf 16 15 27.4 -1.1**
PBRG Braganca 149.07 349 *e*PKPbc **PKPbc 16 15 33.0 +0.4**
CTEI Djebel Teioual 149.10 326 P **PKPbc 16 15 33.0 +0.1**
PGAV Gavieira, Arco 149.18 351 *e*PKPbc **PKPbc 16 15 34.1 +1.2**
SET Setif 149.54 327 P **PKPbc 16 15 36.0 +2.0**
POLO Lamas de Olo 149.68 350 *e*PKPbc **PKPbc 16 15 34.3 +0.2**
MVO Moncorvo 149.74 349 *e*PKPbc **PKPbc 16 15 35.9 +1.6**
PVRL Vila Real 149.76 350 *e*PKPbc **PKPbc 16 15 34.9 +0.6**
ES19 SONSECA Array 150.39 343 *e*PKPdf **PKPdf 16 15 30.9 +0.3**
ES19 *e*PKPbc **PKiKP 16 15 36.3 -0.4**
ES19 *e*PKPab **PKPab 16 15 43.6 +1.4**
ESDC Sonseca Array 150.43 343 PKPbc **PKPbc 16 15 35.7 -0.3**
comp=Z,10.0nm,0.9s,baz=16,slow=2.3,SNR=31
ESLA Sonseca Array 150.43 343 *e*PKPbc **PKPbc 16 15 36.5 +0.5**
PAB San Pablo 150.66 344 *e*PKIKP **PKPbc 16 15 37.0 +0.4**
PAB San Pablo 150.66 344 *e*PKPbc **PKPbc 16 15 37.0 +0.4**
EMHD Djebel Mahouad 150.79 330 P **PKPbc 16 15 39.0 +2.0**
PCAS Casmilo, Conde 151.08 350 *e*PKPbc **PKPbc 16 15 36.6 -0.8**
PCBR Castelo Branco 151.11 349 *e*PKPbc **PKPbc 16 15 38.0 +0.5**
SHEL Horse Pasture 151.36 198 *i* PKIKP **PKPbc 16 15 41.0 +2.2**
SHEL Horse Pasture 151.36 198 *e*PKPbc **PKPbc 16 15 41.0 +2.2**
PMRV Marv??o 151.49 348 *e*PKPdf **PKPdf 16 15 31.3 -1.0**
PMRV Marv??o 151.49 348 *e*PKPbc **PKPbc 16 15 38.3 -0.1**
EANR 'Ain N'Sour 151.87 332 P **PKPbc 16 15 40.0 +0.6**
PMTG Montargil 151.99 350 *e*PKPbc **PKPbc 16 15 39.6 +0.1**
ETRT Tiaret 152.24 331 P **PKPbc 16 15 41.8 +1.4**
EVO Evora 152.48 349 *e*PKPdf **PKPdf 16 15 33.7 -0.1**
EVO Evora 152.48 349 *e*PKPbc **PKPbc 16 15 40.9 +0.3**
RCBR Riachuelo 152.62 128 PKPbc **PKPbc 16 15 41.5 -0.2**
comp=Z,17nm,0.9s,baz=232,slow=8.0,SNR=6.5
PBAR Barrancos 152.62 347 *e*PKPbc **PKPbc 16 15 41.8 +0.8**
PBEJ Beja 152.94 348 *e*PKPdf **PKPdf 16 15 33.4 -1.1**
PBEJ Beja 152.94 348 *e*PKPbc **PKPbc 16 15 41.9 +0.2**
PNCL Nicolau / Gran 152.98 350 *e*PKPdf **PKPdf 16 15 34.3 -0.2**
PNCL Nicolau / Gran 152.98 350 *e*PKPbc **PKPbc 16 15 43.1 +1.3**
PNCL Nicolau / Gran 152.98 350 *e*PKPbc **PKPbc 16 15 43.2 +1.4**
MDT Midelt 156.93 338 PKP **PKPdf 16 15 41.1 +0.8**
comp=Z,2.1nm,1.0s,baz=111,slow=3.8,SNR=4.0
TOA0 Torodi Ar. Sit 164.09 278 *e*PKPdf **PKPdf 16 15 47.8 -0.6**
TOA0 *e*PKPab **PKPab 16 16 42.2 +0.4**
TORD Torodi Ar. Bea 164.09 278 PKP **PKPdf 16 15 48.2 -0.2**
comp=Z,2.8nm,0.9s,baz=49,slow=1.4,SNR=14
TORD PKPab **PKPab 16 16 41.5 -0.3**
comp=Z,3.1nm,0.9s,baz=78,slow=4.3,SNR=7.5
TOA1 Torodi Ar. Sit 164.09 278 *e*PKPdf **PKPdf 16 15 48.2 -0.2**
TOA1 *e*PKPab **PKPab 16 16 41.5 -0.3**
KIC Kosan Boka 169.08 243 *e*P **PKPab 16 17 04.3 +0.5**
comp=Z,60nm,1.3s
LIC Lamto 169.26 242 *e*P **PKPab 16 17 03.9 -0.7**
DBIC Dimbokro 169.32 244 PKPab **PKPab 16 17 04.8 -0.1**
comp=Z,6.6nm,0.9s,baz=125,slow=3.6,SNR=4.1
DBIC Dimbokro 169.32 244 *e*PKIKP **PKPdf 16 15 52.7 +0.3**
DBIC Dimbokro 169.32 244 *e*PKPdf **PKPdf 16 15 52.7 +0.3**
TIC Toumodi 169.46 244 *e*P **PKPab 16 17 05.9 +0.4**

MEX 13 16:02:27.6±0.4, 16°.66N×98°.88W, h13km±5km, MD3.5, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PNIG	**Pinotepa**	**0.77**	**110**	*e*P	Pg	16 02 40.2	-2.3
PNIG				*e*S	Sg	16 02 50.3	-2.4
TLIG	**Tlapa**	**0.95**	**18**	*e*P	Pg	16 02 43.1	-2.9
TLIG				*e*S	Sg	16 02 54.7	-3.7
ACP2	**Acapulco**	**0.99**	**283**	*e*P	Pb	16 02 44.1	-2.5
ACP2				*e*S	Sg	16 02 55.6	-4.0
CAIG	**El Cayaco**	**1.38**	**286**	*e*P	Pn	16 02 48.9	-3.8
CAIG				*e*S	Sn	16 03 06.0	-4.9
VHO	**Vista Hermosa**	**2.10**	**78**	*i* P	Pn	16 02 58.9	-3.8
VHO				*i* S	Sn	16 03 25.2	-3.6

IDC 13 16:05:56.2±18.0, 3°.87N×124°.89E, h290km±203km, mb3.1/8, mb1 3.2/8, mb1mx3.0/34, mbtmp3.8/8, Error ellipse: s-maj=82.0km s-min=16.2km az=54.0, Celebes Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**21.84**	**178**	P	P	16 10 25.6	-0.1
	2.4nm,1.0s,baz=356,slow=11,SNR=11						
WRA	**Warramunga Arr**	**25.42**	**159**	P	P	16 10 57.5	-0.5
	0.9nm,0.4s,baz=337,slow=10,SNR=34						
ASAR	**Alice Springs**	**28.74**	**163**	P	P	16 11 27.4	-0.2
	0.2nm,0.3s,baz=341,slow=7.7,SNR=20						
CMAR	**Chiang Mai Arr**	**29.23**	**302**	P	P	16 11 32.1	+0.3
	0.8nm,0.7s,baz=123,slow=6.6,SNR=7.7						
STKA	**Stephens Creek**	**38.94**	**157**	P	P	16 12 55.6	+0.9
	2.7nm,1.0s,baz=350,slow=7.2,SNR=5.9						
SONM	**Songino Array**	**46.60**	**343**	P	P	16 13 56.1	+0.3
	0.4nm,0.7s,baz=161,slow=9.2,SNR=3.2						
MKAR	**Makanchi Array**	**56.41**	**326**	P	P	16 15 07.6	-0.3
	0.9nm,0.3s,baz=120,slow=7.7,SNR=27						
ZALV	**Zalesovo Beam**	**59.64**	**334**	P	P	16 15 29.9	-0.1
	0.7nm,0.5s,baz=130,slow=7.2,SNR=3.0						

MAN 13 16:23:51, 9°.28N×125°.50E, h3km, mb4.6, ML3.5, MS3.4, 3C-2D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CGP	**Cagayan de Oro**	**1.15**	**224**	⇑*iP*	Pg	16 24 13.0	0.0
CGP				*i* S	Sn	16 24 30.2	+0.1
BIPH	**Bislig**	**1.38**	**142**	⇓*eP*	Pn	16 24 14.2	-3.0
BIPH				*e*S	Sg	16 24 28.6	-6.8
BUKP	**Musuan**	**1.46**	**197**	*e*P	Pn	16 24 18.3	0.0
BUKP				*e*S	Sn	16 24 43.9	+6.0
TBP	**Tagbilaran**	**1.67**	**284**	⇑*eP**	Pn	16 24 21.2	0.0
LLP	**Lapu-Lapu**	**1.83**	**304**	*e*P	Pn	16 24 23.5	+0.1
LLP				*e*S	Sn	16 24 47.8	+0.7
PLP	**Palo**	**1.94**	**345**	⇓*eP*	Pn	16 24 25.6	+0.7
PLP				*e*S	Sg	16 24 52.9	-0.6
OCLP	**Ormoc**	**1.97**	**333**	*e*P	Pn	16 24 25.2	-0.1
OCLP				*e*S	Sg	16 24 56.6	+2.2
BESP	**Borongan**	**2.31**	**358**	*e*P	Pb	16 24 33.3	0.0
BESP				*e*S	Sb	16 25 02.2	-0.1
CTBH	**Cotabato--PC H**	**2.39**	**211**	⇓*iP*	Pn	16 24 31.2	+0.1
MATI	**Mati**	**2.44**	**162**	*e*P	Pn	16 24 32.6	+0.9
MATI				*e*S	Sb	16 25 04.8	-1.2
PAGZ	**Pagadian**	**2.54**	**236**	*e*P	Pn	16 24 33.2	+0.1
PAGZ				*e*S	Sb	16 25 07.6	-1.2
GUIM	**Jordan**	**3.17**	**295**	*e*P	Pn	16 24 42.0	+0.2
GUIM				*e*S	Sn	16 25 21.5	+1.3
PVCP	**Virac**	**4.49**	**343**	*e*P	Pn	16 24 49.0	-11

IDC ***13*** *16:24:29.3±0.9, 2°.08N×96°.66E, h0km, mb4.3/17, mb1 4.4/18, mb1mx4.2/43, mbtmp4.3/18, ML4.3/1, MS4.0/4, Ms1 4.0/4, ms1mx3.3/42, Error ellipse: s-maj=28.6km s-min=17.3km az=46.0*

ISCJB ***13*** *16:24:31.1±0.3, 2°.02N±0°.03×96°.61E±0°.03, h28km, mb4.6/44, MS4.0/4, Error ellipse: s-maj=5.3km s-min=3.7km az=137.6*

NEIC ***13*** *16:24:32.7±1.6, 2°.02N×96°.62E, h26km±11km, mb4.5/28, Error ellipse: s-maj=6.7km s-min=4.0km az=61.0*

DJA ***13*** *16:24:33.7±0.5, 2°N±2°×9°7E±°, h10km, M4.3/12, mb4.2/6, mB4.8/3, MLv4.3/12, Mw(mB)4.0/3*

ISC 13 16:24:33.0±0.4, 2°.03N±0°.04×96°.67E±0°.05, h28km, n121, σ1°35/119, mb4.5/47, MS4.0/4, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GSI	**Gunungsitoli**	**1.16**	**129**	P	**Pb**	**16 24 54.9**	**+0.4**
GSI	**Gunungsitoli**	**1.16**	**129**	*e*Pn	**Pb**	**16 24 54.6**	**+0.1**
GSI				*e*Sn	**Sn**	**16 25 04.8**	**-3.6**
KCSI	**Kotacane, Aceh**	**1.84**	**37**	P	**Pn**	**16 25 03.6**	**+0.8**
MLSI	**Meulaboh, Aceh**	**2.23**	**353**	P	**Pn**	**16 25 08.0**	**-0.2**
MLSI				S	**Sn**	**16 25 36.6**	**+1.8**
PSI	**Prapat**	**2.38**	**71**	*e*Pn	**Pn**	**16 25 10.9**	**+0.6**
TSI	**Tuntungan**	**2.39**	**52**	P	**Pn**	**16 25 12.5**	**+2.2**
TSI				S	**Sn**	**16 25 41.5**	**+2.8**
MNSI	**Mandailing Nat**	**3.16**	**113**	P	**Pn**	**16 25 22.7**	**+1.8**
LHMI	**Lhok Sumawe**	**3.19**	**5**	P	**Pn**	**16 25 22.6**	**+1.3**
LHMI	**Lhok Sumawe**	**3.19**	**5**	*e*Pn	**Pn**	**16 25 21.9**	**+0.6**
LHMI				*e*Sn	**Sn**	**16 25 57.6**	**-0.7**
PPI	**Padang Panjang**	**4.48**	**124**	P	**Pn**	**16 25 43.0**	**+4.0**
BKNI	**Bangkinang**	**4.69**	**111**	P	**Pn**	**16 25 44.8**	**+2.8**
BKNI	**Bangkinang**	**4.69**	**111**	*e*Pn	**Pn**	**16 25 42.5**	**+0.5**
PDSI	**Padang**	**4.79**	**128**	P	**Pb**	**16 25 55.6**	**-0.7**
IPM	**Ipoh**	**4.98**	**61**	*e*Pn	**Pn**	**16 25 46.9**	**+0.9**
IPM				*e*Sn	**Sn**	**16 26 41.0**	**-1.8**
KULM	**Kulim**	**5.12**	**51**	*e*Pn	**Pn**	**16 25 48.5**	**+0.6**
KULM				*e*Sn	**Sn**	**16 26 46.0**	**-0.2**
PPSI	**Pulau Pagai**	**5.82**	**145**	P	**Pn**	**16 26 01.5**	**+4.0**
RGRI	**Rengat**	**6.14**	**113**	P	**Pn**	**16 26 05.0**	**+3.1**
SKLT	**Songkhla**	**6.45**	**38**	P	Pn	16 26 11.8	+5.7
	33nm,1.0s,471nm						
TRTT	**Trang**	**6.50**	**27**	P	**Pn**	**16 26 06.8**	**-0.1**
	32nm,0.8s,0.2nm						
MYKOM	**Kota Tinggi**	**7.18**	**92**	*e*Pn	**Pn**	**16 26 17.5**	**+1.2**
TPRI	**Tanjung Pinang**	**7.94**	**98**	P	**Pn**	**16 26 27.7**	**+1.1**
MNAI	**Manna**	**8.94**	**135**	*e*Pn	**Pn**	**16 26 40.3**	**0.0**
LHSI	**Lahat**	**8.99**	**130**	P	**Pn**	**16 26 44.8**	**+3.7**
COCO	**West Island**	**14.13**	**179**	*e*Pn	**Pn**	**16 27 49.4**	**-2.1**
STKI	**Sintang**	**14.94**	**97**	P	**P**	**16 28 11.1**	**+3.4**
PBKT	**Sadao Pong**	**15.05**	**16**	P	**P**	**16 28 08.8**	**-0.1**
	14nm,0.9s						
SBUM	**Sibu**	**15.55**	**88**	*e*Pn	**Pn**	**16 28 11.6**	**+1.2**
	9.5nm,1.2s						
SUKH	**Sukhothai**	**15.62**	**11**	P	**P**	**16 28 15.0**	**-0.3**
	7.1nm,0.8s,61nm						
UTTA	**Uttaradit**	**16.07**	**13**	P	**P**	**16 28 20.5**	**+0.2**
	5.0nm,0.8s						
CM01	**Chiang Mai Arr**	**16.44**	**8**	*e*Pn	**Pn**	**16 28 22.9**	**+1.0**
CM31	**Chiang Mai Arr**	**16.47**	**8**	*e*Pn	**Pn**	**16 28 21.6**	**-0.7**
CMAR	**Chiang Mai Arr**	**16.47**	**8**	Pn	**Pn**	**16 28 21.4**	**-0.8**
	0.4nm,0.3s,baz=196,slow=10,SNR=67						
PALK	**Pallekele**	**16.74**	**289**	*e*Pn	**P**	**16 28 29.6**	**+1.9**
	35nm,1.5s						
CHTO	**Chiang Mai**	**16.82**	**7**	P	**P**	**16 28 28.2**	**-0.4**
	30nm,1.1s						
CHTO	**Chiang Mai**	**16.82**	**7**	*e*Pn	**Pn**	**16 28 25.3**	**-1.4**
	7.4nm,1.1s						
CMAI	**Chiengmai2**	**17.94**	**7**	P	**P**	**16 28 44.4**	**+3.3**
	8.2nm,1.0s						
CRAI	**Chiangrai**	**18.44**	**11**	P	**P**	**16 28 46.3**	**-0.2**
	287nm,1.0s						
KKM	**Kota Kinabalu**	**19.90**	**78**	*e*P	**P**	**16 29 03.1**	**+0.5**
	9.8nm,0.9s						
MYLDM	**Lahad Datu**	**22.01**	**81**	*e*P	**P**	**16 29 26.2**	**+0.8**
	18nm,0.9s						
SHL	**Shillong**	**23.85**	**349**	*e*P	**P**	**16 29 41.7**	**-2.5**
SHL				IAmb	IAmb	16 29 44.7	
	comp=Z,16nm,0.6s						
BOK	**Bokaro**	**24.02**	**335**	*e*P	**P**	**16 29 46.3**	**+0.6**
H08S2	**Diego Garcia H**	**25.96**	**248**	T	T	16 56 54.5	
	baz=69,slow=76,SNR=420						
H08S3	**Diego Garcia H**	**25.96**	**248**	T	T	16 56 51.8	
	baz=69,slow=76,SNR=337						
H08S1	**Diego Carcia H**	**25.98**	**248**	T	T	16 56 52.9	
	baz=69,slow=76,SNR=389						
GOA	**Goa**	**26.19**	**302**	*e*P	**P**	**16 30 04.8**	**-0.7**
LUWI	**Luwuk**	**26.28**	**96**	*e*P	**P**	**16 30 06.0**	**-0.4**
	comp=Z,12nm,0.8s						
PKIN	**Phulchoki**	**27.60**	**338**	*e*P	**P**	**16 30 18.2**	**-0.2**
POO	**Poona**	**27.73**	**308**	*e*P	**P**	**16 30 18.1**	**-1.3**
POO				IAmb	IAmb	16 30 27.8	
	comp=Z,6.9nm,1.0s						
KKN	**Kakani**	**27.83**	**338**	*e*P	**P**	**16 30 20.4**	**0.0**
	comp=Z,24nm,1.0s						
LSA	**Lhasa**	**28.01**	**350**	*e*P	**P**	**16 30 22.6**	**+0.4**
	comp=Z,9.7nm,1.0s						
GKN	**Gorkha**	**28.27**	**337**	*e*P	**P**	**16 30 25.0**	**+0.8**
	comp=Z,8.5nm,0.7s						
KOLN	**Koldanda**	**28.48**	**335**	*e*P	**P**	**16 30 27.5**	**+1.3**
	comp=Z,16nm,0.6s						
SOEI	**Soe**	**29.88**	**114**	*e*P	**P**	**16 30 38.5**	**-0.1**
	comp=Z,33nm,0.5s						
SMLA	**Simla**	**34.31**	**329**	*e*P	**P**	**16 31 17.0**	**-0.2**
SMLA				IAmb	IAmb	16 31 18.6	
FITZ	**Fitzroy Crossi**	**34.85**	**126**	LR	LR	16 47 05.6	
	comp=Z,156nm,18.0s,slow=39						
DHRM	**DHARAMSHALA**	**35.65**	**330**	*e*P	**P**	**16 31 29.8**	**+0.7**
DHRM				IAmb	IAmb	16 31 33.2	
	comp=Z,10.0nm,0.9s						
JOW	**Kunigami**	**39.07**	**48**	*e*P	**P**	**16 31 54.5**	**-3.4**
	comp=Z,34nm,1.1s						
H01W3	**Cape Leeuwin H**	**40.21**	**158**	T	T	17 15 02.3	
	baz=334,slow=76,SNR=12						
H01W2	**Cape Leeuwin H**	**40.23**	**158**	T	T	17 15 03.9	
	baz=334,slow=76,SNR=13						
H01W1	**Cape Leeuwin H**	**40.23**	**158**	T	T	17 14 57.7	
	baz=334,slow=76,SNR=8.5						
BJT	**Baijiatuau**	**41.75**	**23**	*e*P	**P**	**16 32 20.3**	**+0.5**
WR1	**Warramunga Arr**	**42.93**	**122**	*e*P	**P**	**16 32 30.2**	**+0.5**
	comp=Z,8.9nm,1.1s						
WRA	**Warramunga Arr**	**42.93**	**122**	P	**P**	**16 32 30.2**	**+0.5**
	comp=Z,2.9nm,0.6s,baz=300,slow=9.2,SNR=25						
WB2	**Warramunga Arr**	**42.94**	**122**	*e*P	**P**	**16 32 30.3**	**+0.5**
	comp=Z,9.3nm,1.1s						
AS31	**Alice Springs**	**44.32**	**127**	*e*P	**P**	**16 32 41.4**	**+0.5**
	comp=Z,1.2nm,1.0s						
ASAR	**Alice Springs**	**44.32**	**127**	P	**P**	**16 32 41.8**	**+0.9**
	comp=Z,1.9nm,0.8s,baz=301,slow=7.8,SNR=26						
AS01	**Alice Springs**	**44.36**	**127**	*e*P	**P**	**16 32 41.7**	**+0.5**
INCN	**Inchon**	**44.76**	**34**	*e*P	**P**	**16 32 43.6**	**-0.6**
	comp=Z,68nm,1.4s						
TKM2	**Tokmak 2**	**44.85**	**338**	*e*P	**P**	**16 32 45.8**	**+0.7**
	comp=Z,16nm,1.6s						
AAK	**Ala-Archa**	**45.03**	**337**	*e*P	**P**	**16 32 48.3**	**+1.8**
	comp=Z,2.9nm,0.8s						
EKS2	**Erkin-Say**	**45.34**	**336**	*e*P	**P**	**16 32 49.8**	**+0.9**
	comp=Z,3.3nm,0.7s						
KS15	**Wonju Array Si**	**45.44**	**35**	*e*P	**P**	**16 32 49.0**	**-0.6**
KSAR	**Wonju Array Be**	**45.44**	**35**	P	**P**	**16 32 49.4**	**-0.3**
KS01	**Wonju Array Si**	**45.47**	**35**	*e*P	**P**	**16 32 48.0**	**-1.8**
KSRS	**Korea Array**	**45.47**	**35**	P	**P**	**16 32 49.4**	**-0.5**
	comp=Z,3.0nm,0.8s,baz=228,slow=9.8,SNR=8.9						
KSRS				LR	LR	16 53 25.8	
	comp=Z,108nm,18.2s,baz=197,slow=38						
RER	**Riviere de l'E**	**46.20**	**238**	*e*P	**P**	**16 32 54.7**	**-1.3**
	comp=Z,210nm,1.6s						
MK01	**Makanchi Array**	**46.28**	**346**	*e*P	**P**	**16 32 56.0**	**-0.1**
MK31	**Makanchi Array**	**46.31**	**346**	*e*P	**P**	**16 32 56.0**	**-0.3**
MK32	**Makanchi Array**	**46.31**	**346**	*e*P	**P**	**16 32 56.8**	**+0.4**
MKAR	**Makanchi Array**	**46.31**	**346**	P	**P**	**16 32 56.8**	**+0.4**
	comp=Z,13nm,0.7s,baz=161,slow=7.9,SNR=136						
MKAR	**Makanchi Array**	**46.31**	**346**	*e*P	**P**	**16 32 55.8**	**-0.6**
SONA0	**Songino Array**	**46.39**	**9**	*e*P	**P**	**16 32 57.6**	**+0.5**
	comp=Z,6.2nm,0.9s						
SONM	**Songino Array**	**46.39**	**9**	P	**P**	**16 32 57.6**	**+0.5**
	comp=Z,5.5nm,0.8s,baz=189,slow=8.8,SNR=34						
MAKZ	**Makanchi**	**46.40**	**346**	*e*P	**P**	**16 32 57.1**	**+0.1**
	comp=Z,10nm,0.6s						
SONA1	**Songino Array**	**46.41**	**9**	*e*P	**P**	**16 32 57.1**	**-0.1**
ULN	**Ulaanbaatar**	**46.53**	**10**	*e*P	**P**	**16 32 58.3**	**+0.1**
	comp=Z,6.1nm,1.1s						
KKAR	**Karatay Array**	**47.08**	**334**	*e*P	**P**	**16 33 03.3**	**+0.9**
CBIJ	**Chichi jima**	**50.19**	**56**	*e*P	**P**	**16 33 27.2**	**+0.6**
	comp=Z,155nm,0.9s						
GEYT	**Alibeck**	**50.24**	**320**	P	**P**	**16 33 27.4**	**+0.6**
	comp=Z,2.4nm,0.7s,baz=128,slow=9.6,SNR=4.5						
MANU	**Manus Island**	**50.85**	**94**	*e*P	**

*IDC **13** 16:28:01.7±0.6,36.72N×140.50E,h0km,mb4.1/16, mb1 4.3/18,mb1mx4.1/40,mbtmp4.1/18,ML3.7/2,MS3.8/2, Ms1 3.8/2,ms1mx3.0/49,Error ellipse: s-maj=17.6km s-min=14.4km az=106.0*

*ISCJB **13** 16:28:02.5±0.5,36.76N±0.03×140.54E±0.04,h14km±3km, mb4.4/65,MS3.8/2,Error ellipse: s-maj=5.6km s-min=3.8km az=40.4*

*JMA **13** 16:28:03.3,36.74N×140.59E,h6km±1km,M4.3 Broadband fault plane solution: P waves. NP1: φs13.00000°,δ51.00000°,λ-80.00000°. NP2:φs177.00000°, δ40.00000°,λ-103.00000°. Principal axes: T Plg6.0000°, Azm96.0000°; N Plg8.0000°, Azm187.0000°; P Plg80.0000°, Azm330.0000°;*

JMA Felt III J1.

*NEIC **13** 16:28:07.3±0.2,36.81N×140.46E,h35km,mb4.5/50 Error ellipse: s-maj=5.0km s-min=3.5km az=147.0*

NEIC Recorded [3 JMA] in Ibaraki.

ISC 13 16:28:02.9±1.1,36.76N±0.04×140.46E±0.04,h6km±7km, n121,σ0.97/118,mb4.4/65,1C-1D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	Hitachi	0.17	150	⇓P	Pg	16 28 05.9	-0.6
JHO				S	Sg	16 28 08.1	-0.7
ONAJ	Iwakimizuishiy	0.43	39	⇑P	Pg	16 28 11.0	-0.4
ONAJ				S	Sg	16 28 16.7	-0.3
MJAR	Matsushiro Arr	1.82	264	Pn	Pb	16 28 36.4	-0.4
	63nm,0.3s,baz=82,slow=13,SNR=499						
MJAR				Sn	Sg	16 29 01.8	+0.2
	136nm,0.3s,baz=88,slow=28,SNR=19						
MJAR				LR	LR	16 29 37.0	
	comp=Z,507nm,19.8s,baz=130,slow=52						
MAJO	Matsushiro	1.83	264	ePn	Pb	16 28 37.1	+0.4
MAJO				eSn	Sn	16 28 56.8	-1.5
MAT	Matsushiro	1.83	264	P	Pb	16 28 36.7	0.0
MAT				S	Sg	16 29 01.7	+0.1
MJB9	Matsu-Tunnel	1.83	264	ePn	Pb	16 28 37.1	+0.3
MJB9				eSn	Sg	16 29 01.5	-0.1
INU	Inuyama	3.13	244	ePn	Pb	16 28 56.0	-2.9
JHJ	Hachijo jima 2	3.68	189	Pn	Pn	16 29 01.1	+0.8
	30nm,0.3s,baz=176,slow=2.8,SNR=9.1						
JHJ				Sn	Sn	16 29 42.5	-1.4
	30nm,0.3s,baz=199,slow=23,SNR=5.5						
JHJ2	Mitsune	3.68	188	ePn	Pn	16 29 00.7	+0.3
ERM	Erimo	5.64	21	ePn	Pn	16 29 29.6	+2.4
ERM				eSn	Sn	16 30 30.9	-1.4
ASAJ	Asahikawa	7.52	12	Pn	Pn	16 29 53.6	+0.5
	0.9nm,0.3s,baz=221,slow=14,SNR=11						
JNU	Nakatsue	8.66	248	ePn	Pn	16 30 09.0	+0.2
CBIJ	Chichi jima	9.75	171	ePn	Pn	16 30 27.5	+3.8
CBIJ				eSn	Sn	16 32 03.1	-10
USRK	Ussuriysk Ar.	9.84	322	Pn	Pn	16 30 31.0	+6.3
	0.2nm,0.3s,baz=129,slow=13,SNR=7.6						
KSRS	Korea Array	10.04	278	Pn	Pn	16 30 35.0	+7.4
	0.1nm,0.3s,baz=87,slow=14,SNR=12						
KS15	Wonju Array Si	10.07	278	ePn	Pn	16 30 28.5	+0.5
KSAR	Wonju Array Be	10.07	278	Pn	Pn	16 30 35.0	+6.9
INCN	Inchon	11.07	278	ePn	Pn	16 30 43.8	+2.1
MDJ	Mudanjiang	11.38	317	ePn	Pn	16 30 52.4	+6.6
JOW	Kunigami	14.32	230	ePn	P	16 31 33.0	-0.4
HIA	Hailar	19.56	316	eP	P	16 32 30.3	-1.0
	5.3nm,0.8s						
TATO	Taipei	20.04	239	eP	Pn	16 32 37.7	-0.7
	396nm,1.8s						
NACB	Ninganchiao	20.49	238	eP	Pn	16 32 44.9	+1.2
	18nm,0.8s						
MA2	Magadan	23.78	13	P	P	16 33 15.4	-0.6
	6.8nm,0.7s,baz=196,slow=8.5,SNR=5.7						
YAK	Yakutsk	26.17	348	eP	P	16 33 37.2	-0.5
	7.3nm,0.7s						
ENH	Enshi	26.55	265	eP	P	16 33 41.7	+0.1
	6.8nm,0.8s						
ULN	Ulaanbaatar	26.88	305	eP	P	16 33 44.9	+0.4
	4.9nm,1.1s						
SONA1	Songino Array	27.30	305	eP	P	16 33 49.0	+0.7
SONA0	Songino Array	27.31	305	eP	P	16 33 48.2	-0.1
	5.7nm,1.2s						
SONM	Songino Array	27.31	305	P	P	16 33 48.2	-0.1
	3.3nm,0.9s,baz=101,slow=9.5,SNR=9.1						
H11N2	WAKE ISLAND Hy	28.68	119	T	T	17 03 43.8	
	baz=312,slow=75,SNR=1166						
H11N1	WAKE ISLAND Hy	28.68	119	T	T	17 03 44.4	
	baz=312,slow=75,SNR=1053						
H11N3	WAKE ISLAND Hy	28.69	119	T	T	17 03 45.3	
	baz=312,slow=75,SNR=1016						
H11S1	WAKE ISLAND Hy	29.36	121	T	T	17 04 36.1	
	baz=314,slow=76,SNR=2463						
H11S3	WAKE ISLAND Hy	29.36	121	T	T	17 04 36.2	
	baz=314,slow=76,SNR=1462						
H11S2	WAKE ISLAND Hy	29.38	121	T	T	17 04 36.6	
	baz=314,slow=76,SNR=918						
BILL	Bilibino	34.50	17	eP	P	16 34 51.3	-0.1
	7.8nm,1.4s						
CMAR	Chiang Mai Arr	40.69	255	LR	LR	16 52 53.4	
	comp=Z,28nm,21.3s,baz=265,slow=37						
ZAA0	Zalesovo Array	41.53	313	eP	P	16 35 50.6	-0.3
ZAA0				ePcP	PcP	16 37 47.7	-0.5
ZAA1	Zalesovo Array	41.53	313	eP	P	16 35 50.9	+0.1
ZALV	Zalesovo Beam	41.53	313	P	P	16 35 50.9	+0.1
	3.3nm,0.5s,baz=94,slow=6.4,SNR=8.9						
MK01	Makanchi Array	43.61	302	eP	P	16 36 08.3	+0.4
MK31	Makanchi Array	43.62	302	eP	P	16 36 08.5	+0.6
MK32	Makanchi Array	43.62	302	eP	P	16 36 08.8	+0.8
MKAR	Makanchi Array	43.62	302	P	P	16 36 08.8	+0.8
	1.4nm,0.8s,baz=85,slow=8.3,SNR=8.0						
MAKZ	Makanchi	43.83	302	eP	P	16 36 10.2	+0.6
	1.5nm,0.8s						
KSM	Kuching	44.82	225	eP	P	16 36 18.4	+0.6
	10nm,1.2s						
KURK	Kurchatov	45.50	308	eP	P	16 36 21.2	-1.7
	15nm,0.8s						
KAPI	Kappang	45.85	209	eP	P	16 36 26.6	+0.7
	14nm,1.2s						
TT01	Tatalina	46.07	35	eP	P	16 36 27.0	-0.2
RSO	Redoubt South	47.59	38	eP	P	16 36 40.5	+1.1
KDAK	Kodiak Island	47.81	42	eP	P	16 36 40.8	-0.1
	13nm,1.1s						
PPLA	Purkeypile	47.83	35	eP	P	16 36 39.0	-2.2
	32nm,1.8s						
SPU	Mount Spurr	47.91	37	eP	P	16 36 40.5	-1.1
JOHN	Johnston Islan	48.32	101	eP	P	16 36 46.0	+0.7
	153nm,1.0s						
IPM	Ipoh	48.35	238	eP	P	16 36 47.2	+1.6
	11nm,1.2s						
BPAW	Bear Paw Mtn.	48.37	33	eP	P	16 36 44.7	-0.4
	9.1nm,1.7s						
MLY	Manley	48.48	32	eP	P	16 36 45.3	-0.7
	17nm,2.0s						
BRLK	Bradley Lake	48.55	39	eP	P	16 36 47.7	+1.1
	22nm,1.6s						
BWN	Browne	49.03	33	eP	P	16 36 49.6	-0.6
	22nm,0.7s						
TKM2	Tokmak 2	49.09	298	eP	P	16 36 50.9	-0.3
	7.9nm,1.5s						
MCK	McKinley	49.28	34	eP	P	16 36 51.3	-0.8
	23nm,1.9s						
RND	Reindeer	49.33	34	eP	P	16 36 52.5	-0.1
	13nm,1.7s						
MDM	Murphy Dome	49.55	32	eP	P	16 36 54.7	+0.5
	5.2nm,1.1s						
WRH	Wood River Hil	49.62	33	eP	P	16 36 53.8	-0.9
	3.3nm,0.6s						
VOSK	Vostochnaya	49.89	312	eP	P	16 36 56.9	-0.1
	1.4nm,0.8s						
AAK	Ala-Archa	49.95	298	eP	P	16 36 58.0	+0.2
	5.7nm,1.6s						
IL1	Eielson Array	50.13	32	eP	P	16 36 58.2	-0.4
IL1				ePcP	PcP	16 38 16.2	-1.8
ILAR	Eielson Array	50.13	32	P	P	16 36 58.5	-0.1
	1.2nm,0.8s,baz=268,slow=6.7,SNR=12						
ILB	Eielson Array	50.13	32	eP	P	16 36 57.9	-0.7
BRVK	Borovoye	50.25	312	eP	P	16 36 59.6	0.0
	3.6nm,0.8s						
PSI	Prapat	51.00	238	eP	P	16 37 07.5	+1.6
PSI				ePcP	PcP	16 38 22.6	+0.5
ZRNK	Zerenda	51.02	312	eP	P	16 37 05.3	-0.2
	4.7nm,0.8s						
MENT	Mentasta	51.69	34	eP	P	16 37 11.1	+0.7
	6.9nm,1.3s						
KKAR	Karatay Array	52.60	300	eP	P	16 37 17.4	-0.1
GSI	Gunungsitoli	53.01	238	eP	P	16 37 21.4	+0.7
	14nm,0.9s						
INK	Inuvik	54.97	27	eP	P	16 37 35.0	+0.6
	5.8nm,1.5s						
ARU	Arti	56.06	318	eP	P	16 37 42.0	-0.4
	3.8nm,0.9s						
WB2	Warramunga Arr	56.69	187	eP	P	16 37 48.2	+0.9
	22nm,1.6s						
WR1	Warramunga Arr	56.69	187	eP	P	16 37 45.9	-1.4
	26nm,1.8s						
WRA	Warramunga Arr	56.70	187	P	P	16 37 45.9	-1.4
	3.0nm,0.9s,baz=2.1,slow=7.5,SNR=19						
ABKAR	Akbulak array	57.53	310	eP	P	16 37 50.3	-2.7
	3.7nm,0.8s						
FUNA	Funafuti	57.87	133	eP	P	16 37 55.8	+0.1
	448nm,1.9s						
AS01	Alice Springs	60.42	187	eP	P	16 38 12.0	-1.1
AS31	Alice Springs	60.42	187	eP	P	16 38 12.3	-0.9
	1.3nm,1.1s						
ASAR	Alice Springs	60.42	187	P	P	16 38 12.2	-1.0
	1.3nm,0.7s,baz=6.8,slow=4.8,SNR=12						
YKA	Yellowknife Ar	64.42	30	P	P	16 38 39.3	-0.2
	0.6nm,0.7s,baz=304,slow=6.6,SNR=8.2						
YKB5	Yellowknife Ar	64.42	30	eP	P	16 38 38.6	-0.9
FIA0	FINESS Array S	68.69	332	eP	P	16 39 06.1	-0.8
FINES	FINESS Array B	68.69	332	P	P	16 39 06.1	-0.8
	1.7nm,0.8s,baz=61,slow=8.6,SNR=5.5						
BMO	Blue Mountains	72.67	47	eP	P	16 39 32.9	+1.3
	6.9nm,1.4s						
AKASG	Malin Array Be	74.04	322	P	P	16 39 38.5	-0.9
	1.6nm,0.7s,baz=47,slow=6.5,SNR=5.8						
NB2	NORSAR Subarra	74.14	337	P	P	16 39 39.4	-0.4
	comp=Z,7.1nm,1.7s,baz=40,slow=6.2						
NB200	NORSAR Array S	74.14	337	eP	P	16 39 39.6	-0.2
NOA	NORSAR Array B	74.14	337	P	P	16 39 39.6	-0.2
	comp=Z,1.1nm,0.8s,baz=40,slow=5.8,SNR=4.2						
LRM	Limekiln Ridge	74.87	44	eP	P	16 39 45.2	+0.6
BOZ	Bozeman (W)	75.43	44	eP	P	16 39 45.7	-2.1
	comp=Z,3.9nm,1.0s						
NV01	Mina Array Sit	75.76	53	eP	P	16 39 50.2	+0.4
NVAR	Mina Array Bea	75.76	53	P	P	16 39 50.8	+1.0
	comp=Z,1.5nm,0.8s,baz=290,slow=6.7,SNR=8.8						
H17A	Grant Village	76.80	44	eP	P	16 39 57.1	+1.4
	comp=Z,5.5nm,0.9s						
HVU	Hansel Valley	77.15	47	eP	P	16 39 58.0	+0.4
	comp=Z,2.5nm,0.8s						
TPNV	Topopah Spring	77.95	53	eP	P	16 40 03.0	+0.8
	comp=Z,4.1nm,1.0s						
HWUT	Hardware Ranch	77.97	47	eP	P	16 40 02.0	-0.3
	comp=Z,4.7nm,1.1s						
DUG	Dugway, Tooele	78.11	49	eP	P	16 40 04.1	+1.2
	comp=Z,3.5nm,0.9s						
BW06	Boulder Array	78.40	45	eP	P	16 40 04.5	-0.2
PD31	Pinedale Array	78.40	45	eP	P	16 40 03.7	-1.0
PDAR	Pinedale Array	78.40	45	P	P	16 40 04.8	+0.2
	comp=Z,1.1nm,0.7s,baz=248,slow=2.1,SNR=13						
BR101	Keskin Array S	78.46	311	eP	P	16 40 05.0	+0.1
BRTR	Keskin Array B	78.46	311	P	P	16 40 05.0	+0.1
	comp=Z,0.7nm,0.7s,baz=57,slow=4.6,SNR=4.8						
PSUT	Pine Spring	78.49	50	eP	P	16 40 04.6	-0.6
	comp=Z,4.1nm,1.1s						
LCMT	Little Creek M	79.81	51	eP	P	16 40 11.9	-0.5
	comp=Z,4.0nm,1.1s						
MTPU	Mount Pierson	79.83	50	eP	P	16 40 13.4	+0.7
	comp=Z,2.9nm,0.9s						
KNB	Kanab	80.08	51	eP	P	16 40 15.0	+1.2
	comp=Z,5.2nm,1.1s						
SRU	San Rafael Swe	80.16	48	eP	P	16 40 13.7	-0.6
	comp=Z,4.3nm,0.8s						
GERES	GERESS Array B	82.53	328	P	P	16 40 26.1	-0.4
	comp=Z,0.4nm,0.4s,baz=37,slow=7.5,SNR=4.8						
S22A	4UR Ranch, Cre	83.25	47	eP	P	16 40 31.1	+0.3
	comp=Z,5.2nm,1.4s						
T25A	Trinidad	85.08	47	eP	P	16 40 40.2	+0.3
	comp=Z,5.5nm,1.1s						
LTX	Lajitas	90.89	52	eP	P	16 41 07.3	-0.5
TXAR	Lajitas Array	90.89	52	P	P	16 41 07.3	-0.5
	comp=Z,0.9nm,0.7s,baz=300,slow=2.7,SNR=6.1						
KEST	Kesra	94.77	322	LR	LR	17 30 27.5	
	comp=Z,167nm,18.3s,baz=318,slow=40						
LPAZ	La Paz	147.49	59	PKPbc	PKPbc	16 47 49.0	0.0
	comp=Z,2.5nm,0.8s,baz=10.0,slow=2.1,SNR=8.8						

*CSEM **13** 16:37:37.0±3.0,39.29N×42.44E,h20km±1km,MD2.8, Error ellipse: s-maj=74.8km s-min=27.1km az=70.0*

*ISK **13** 16:37:39.8,39.16N×42.12E,h12km,MD2.8*

*DDA **13** 16:37:41.2,39.16N×42.03E,h6km,Md2.8*

ISC 13 16:37:37.9±1.5,39.10N±0.04×42.38E±0.07,h16km±9km, n16,σ1.21/25,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EKAR	Karacoban	0.29	302	P	Pg	16 37 44.2	-0.1
EKAR	Karacoban	0.29	302	i P	Pg	16 37 44.2	-0.1
EKAR				i S	Sb	16 37 50.6	+1.1
EATA	Eleskirt	0.77	6	i P	Pg	16 37 52.7	-0.2
EATA				i S	Sn	16 38 05.0	-0.6
BNGL	BINGOL	0.97	262	i P	Pb	16 37 55.6	-0.9
BNGL				i S	Sn	16 38 10.8	+0.3
HOMI	Horasan	1.01	339	i P	Pn	16 37 57.8	+0.2
HOMI				i S	Sn	16 38 14.8	+3.2
EZM	Erzurum	1.13	316	ePG	Pb	16 37 58.5	-0.6
EZM				eSG	Sb	16 38 12.1	-1.5
BNGB	Bing¨¶l	1.33	266	ePN	Pn	16 38 01.9	0.0
BNGB				eSN	Sb	16 38 18.1	-1.2
YEDI	Yedisu-Bingol	1.47	284	ePN	Pn	16 38 03.7	-0.1
YEDI	Yedisu-Bingol	1.47	284	ePn	Pn	16 38 03.7	-0.1
BTMN	Batman	1.49	216	P	Pn	16 38 04.2	+0.2
BTMN				S	Sg	16 38 27.3	+1.3
BTMN	Batman	1.49	216	i P	Pn	16 38 04.2	+0.2
BTMN				i S	Sb	16 38 24.9	+1.0
BTMN				i S	Sg	16 38 27.3	+1.3
BINT	Bingol	1.49	262	ePn	Pn	16 38 01.9	-2.2
MAZI	Mazidag	2.24	223	ePN	Pb	16 38 16.5	-1.4
MAZI	Mazidag	2.24	223	ePn	Pb	16 38 16.5	-1.4
PTK	Pertek	2.34	266	ePN	Pn	16 38 16.4	+0.6
PTK	Pertek	2.34	266	ePn	Pn	16 38 16.4	+0.6

GUC 13 16:38:38.1±0.7,23.36S×70.80W,h29km±3km,ML4.1, 2C-1D,Near coast of northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB10	IPOC Station P	0.27	124	⇓i P	Pb	16 38 45.0	-0.1
PB10				i S	Sb	16 38 49.3	-0.5
PB10				IAML		16 38 49.6	
	comp=N,101μm,0.3s						
ANCH	Antofagasta	0.48	132	i P	Pb	16 38 47.7	-0.4
ANCH				i S	Sb	16 38 54.5	-0.4
PB04	IPOC Station P	1.19	30	i P	Pn	16 38 59.0	+0.1
PB04				i S	Sn	16 39 14.0	-0.1
PB06	IPOC Station P	1.30	60	⇑i P	Pn	16 39 00.8	+0.3
PB06				i S	Sb	16 39 18.2	-0.3
PB06				IAML		16 39 18.6	
	comp=N,3μm,0.3s						
PB07	IPOC Station P	1.83	27	eP	Pn	16 39 08.3	+0.5
PB07				i S	Sb	16 39 33.7	0.0
PB07				IAML		16 39 38.6	
	comp=N,2μm,0.6s						
PB09	IPOC Station P	2.12	43	⇑i P	Pn	16 39 13.4	+1.7
PB09				i S	Sb	16 39 41.4	-0.5

IDC 13 16:41:07.9±1.4,2.65S×138.57E,h0km,mb3.3/2, mb1 3.7/3,mb1mx3.4/25,mbtmp3.5/3,ML3.1/2,Error ellipse: s-maj=29.2km s-min=25.8km az=165.0,Irian Jaya

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAY	Jayapura	2.14	86	Pn	Pn	16 41 45.3	+0.4
	1.0nm,0.3s,baz=254,slow=20,SNR=44						
JAY				Sn	Sn	16 42 12.3	0.0
	0.3nm,0.3s,baz=270,slow=23,SNR=4.1						
WRA	Warramunga Arr	17.68	193	P	Pn	16 45 15.2	-0.5
	0.2nm,0.3s,baz=13,slow=12,SNR=11						
ASAR	Alice Springs	21.37	192	P	P	16 45 57.4	+0.2
	0.5nm,0.4s,baz=18,slow=10.0,SNR=26						
MKAR	Makanchi Array	69.66	322	P	P	16 52 19.4	0.0
	0.1nm,0.3s,baz=120,slow=5.7,SNR=3.0						

*IDC **13** 16:46:40.9±2.4,21.77S×71.66W,h0km,mb3.8/2, mb1 3.9/3,mb1mx3.7/23,mbtmp3.7/3,ML3.6/1,Error ellipse: s-maj=73.7km s-min=61.9km az=152.0*

*ISCJB **13** 16:46:43.6±1.4,21.38S±0.07×71.34W±0.09,h10km, mb3.8/2,Error ellipse: s-maj=12.2km s-min=9.6km az=151.6*

*GUC **13** 16:46:47.0±0.5,21.39S×71.21W,h10km±53km,ML3.5*

ISC 13 16:46:44.8±1.4,21.49S±0.06×71.3W±0.1,h10km,n8, σ1.74/13,4C,Off coast of northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB04	IPOC Station P	1.35	129	⇑i P	Pn	16 47 10.5	+0.5
PB04				i S	Sb	16 47 28.4	+0.6
PB04				IAML		16 47 29.9	
	comp=E,2μm,0.4s						
PB01	IPOC Station P	1.74	76	⇑i P	Pn	16 47 15.0	-0.2
PB01				i S	Sn	16 47 36.3	-1.2
PB01				IAML		16 47 37.7	
	comp=E,616nm,0.2s						
PB09	IPOC Station P	1.93	99	⇑i P	Pn	16 47 19.4	+1.5
PB09				i S	Sn	16 47 43.7	+1.3
PB08	IPOC Station P	2.41	57	⇑i P	Pn	16 47 24.1	-0.6
PB08				i S	Sn	16 47 52.0	-2.4
PB08				IAML		16 47 54.0	
	comp=N,346nm,0.7s						
LPAZ	La Paz	5.98	31	Pn	Pn	16 48 17.2	+3.3
	comp=N,0.6nm,0.3s,baz=221,slow=17,SNR=8.7						
LPAZ				Sn	Sb	16 49 42.5	+1.1
	comp=N,0.2nm,0.3s,baz=289,slow=4.2,SNR=4.0						
TORD	Torodi Ar. Bea	79.45	71	P	P	16 58 51.5	-0.5
	comp=N,0.7nm,0.7s,baz=245,slow=5.3,SNR=4.3						
YKA	Yellowknife Ar	90.45	341	P	P	16 59 44.1	-2.1
	comp=N,0.4nm,0.7s,baz=142,slow=5.3,SNR=5.4						
MKAR	Makanchi Array	146.90	34	PKPbc	PKPdf	17 06 26.9	+1.3
	comp=N,0.4nm,0.7s,baz=329,slow=3.4,SNR=3.5						

*IDC **13** 16:50:30.3±1.0,11.54S×165.69E,h0km,mb4.0/11, mb1 4.2/13,mb1mx4.0/32,mbtmp4.1/13,ML4.3/2,MS3.7/1, Ms1 3.6/1,ms1mx2.7/34,Error ellipse: s-maj=32.1km s-min=20.6km az=140.0*

*NEIC **13** 16:50:31.3±4.7,11.54S×165.69E,h7km±29km,mb4.8/20, Error ellipse: s-maj=10.8km s-min=7.2km az=159.0*

*ISCJB **13** 16:50:32.3±0.4,11.60S±0.07×165.64E±0.06,h24km, mb4.5/28,MS3.6/1,Error ellipse: s-maj=11.4km s-min=8.0km az=151.1*

ISC 13 16:50:34.1±0.5,11.50S±0.09×165.59E±0.07,h24km,n53, σ1.12/53,mb4.5/28,Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	Honiara	5.92	290	Pn	Pn	16 52 00.7	+0.4
	7.5nm,0.3s,baz=175,slow=4.9,SNR=5.0						
HNR				Sn	Sn	16 53 06.7	-0.7
	3.6nm,0.3s,baz=96,slow=22,SNR=7.2						
HNR	Honiara	5.92	290	ePn	Pn	16 51 57.4	-2.9
HNR				eSn	Sn	16 53 04.9	-2.5
DZM	Mont Dzumac	10.55	176	Pn	Pn	16 53 03.9	0.0
	2.8nm,0.3s,baz=10,slow=12,SNR=10						
EIDS	Eidsvold	19.46	223	eP	P	16 54 56.4	-2.8
	8.0nm,1.1s						
KWAJ	Kwajalein Atol	20.27	6	eP	P	16 55 07.0	-1.0
	205nm,1.2s						
MANU	Manus Island	20.37	296	eP	P	16 55 10.0	+0.7
	48nm,1.1s						
CTA	Charters Tower	20.46	243	P	P	16 55 11.0	+0.9
	7.8nm,1.0s,baz=78,slow=7.6,SNR=4.9						
CTAO	Charters Tower	20.46	243	eP	Pn	16 55 11.6	-0.8
	74nm,1.1s						
STKA	Stephens Creek	30.01	224	LR	LR	17 07 37.1	
	comp=Z,130nm,18.2s,baz=39,slow=34						
WRAB	Tennant Creek	31.18	250	eP	P	16 56 51.9	+0.4
	1.0nm,0.7s						
WR1	Warramunga Arr	31.19	250	eP	P	16 56 51.5	-0.2
	25nm,1.6s						
WRA	Warramunga Arr	31.19	250	P	P	16 56 51.5	-0.2
	2.0nm,0.9s,baz=78,slow=9.1,SNR=8.3						
AS31	Alice Springs	32.46	244	eP	P	16 57 02.8	0.0
	1.5nm,1.1s						
ASAR	Alice Springs	32.46	244	P	P	16 57 02.5	-0.4
	1.3nm,0.9s,baz=75,slow=9.3,SNR=8.0						
JOHN	Johnston Islan	37.31	42	eP	P	16 57 43.3	-1.3
	116nm,1.0s						
FITZ	Fitzroy Crossi	39.12	255	eP	P	16 58 01.5	+1.5
	43nm,1.9s						
XMAS	Kiritimati	39.13	72	eP	P	16 57 59.6	-0.5
	233nm,1.5s						
SOEI	Soe	40.63	268	eP	P	16 58 12.8	+0.1
	26nm,1.0s						
MMRI	Maumere	42.75	270	eP	P	16 58 31.3	+1.3
	44nm,1.3s						
LUWI	Luwuk	43.75	281	eP	P	16 58 38.1	+0.1
	11nm,0.9s						
MAJO	Matsushiro	54.30	333	eP	P	16 59 59.7	+1.1
	64nm,1.9s						
KS01	Wonju Array Si	60.20	326	eP	P	17 00 41.7	+1.5
PTCN	Pitcairn Islan	62.05	112	eP	P	17 00 53.2	+0.2
	269nm,0.5s						
USRK	Ussuriysk Ar.	63.28	334	P	P	17 01 01.5	+0.7
	4.9nm,1.1s,baz=111,slow=8.4,SNR=4.3						
CM01	Chiang Mai Arr	72.13	294	eP	P	17 01 59.2	+2.0
CMAR	Chiang Mai Arr	72.16	294	P	P	17 01 59.0	+1.7
	0.8nm,0.8s,baz=112,slow=4.6,SNR=6.4						
ULN	Ulaanbaatar	78.58	324	eP	P	17 02 35.0	+1.1
	6.2nm,1.2s						
SONA0	Songino Array	78.94	324	eP	P	17 02 37.4	+1.6
	2.3nm,0.8s						
SONM	Songino Array	78.94	324	P	P	17 02 37.4	+1.6
	1.2nm,0.8s,baz=134,slow=6.2,SNR=7.1						
SONA1	Songino Array	78.94	324	eP	P	17 02 37.0	+1.1
CAST	Castle Rocks	81.42	18	eP	P	17 02 49.8	+1.0
	3.2nm,0.8s						
RND	Reindeer	82.41	19	eP	P	17 02 54.9	+0.9
	3.7nm,1.0s						
MDM	Murphy Dome	83.70	18	eP	P	17 03 00.9	+0.3
	3.8nm,1.0s						
ILAR	Eielson Array	83.99	19	P	P	17 03 02.2	+0.2
	1.0nm,0.8s,baz=235,slow=5.5,SNR=10						

DAG	Danmarks Havn	6.45	336	*i* P	Pn	16 55 07.2 +1.0
DAG				*e*S	Sn	16 56 18.1 -1.3

NIED ***13*** *17:04:00,38.°10N×143.°00E,h11km,Mw3.5 Best double couple: M₀2.35000×10¹⁴ NP1:φ₀=326.00000°, δ46.00000°, λ-137.00000°. NP2:φ₀=203.00000°, δ61.00000°, λ-53.00000°.*

JMA 13 17:04:52.8±0.2, 38.°12N×143.°04E, h12km±3km, M3.9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	1.37	285	P	Pn	17 05 17.5	-0.2
OFUJ	Ofunato	1.44	312	P	Pn	17 05 18.7	0.0
OFUJ				*e*S	Sn	17 05 37.1	-0.4
JMK	Ichinoseki	1.65	301	P	Pn	17 05 21.7	+0.1
JMM	Marumori	1.79	263	P	Pn	17 05 23.9	+0.4
JMM				S	Sn	17 05 46.2	0.0
JFK	Kawauchi	1.87	247	P	Pn	17 05 24.7	0.0
JOU	Okura	1.89	278	P	Pn	17 05 26.0	+1.1
JOU				S	Sb	17 05 50.0	-0.7
JOM	Ohasama	1.92	315	P	Pn	17 05 26.3	+1.0
JFT	Otama	2.22	255	P	Pn	17 05 31.2	+1.7
JYK	Kaneyama	2.25	292	P	Pn	17 05 31.4	+1.6

ISCJB ***13*** *17:05:04.7±0.1,21.°05S±0.°03×176.°77W±0.°05,h219km, mb4.6/138,Error ellipse: s-maj=7.6km s-min=3.4km az=26.8*

IDC ***13*** *17:05:04.9±2.1,20.°93S×176.°68W,h212km±19km, mb3.9/19,mb1 4.1/21,mb1mx4.0/37,mbtmp4.5/21,Error ellipse: s-maj=15.4km s-min=10.6km az=123.0*

MOS ***13*** *17:05:06.7±0.9,21.°02S×176.°75W,h238km,mb4.9/32, Error ellipse: s-maj=12.6km s-min=8.6km az=61.0*

NEIC ***13*** *17:05:09.2±1.0,21.°06S×176.°81W,h252km±10km, mb4.8/120,Error ellipse: s-maj=6.8km s-min=4.3km az=131.0*

ISC 13 17:05:05.3±0.3, 21.°10S±0.°05×176.°53W±0.°09, h219km, n350, σ1§18/361, mb4.7/138, 28C-9D, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSVF	Nonsavu	6.11	302	*e*P	Pn	17 06 40.8	+6.4
MSVF	Nonsavu	6.11	302	*e*Pn	Pn	17 06 40.8	+6.4
RAO	Raoul Island	8.21	188	*e*P	Pn	17 07 03.8	+2.6
RAO				*e*S	S	17 08 33.0	-1.1
RAO	Raoul Island	8.21	188	*e*Pn	Pn	17 07 03.8	+2.6
RAO				*e*S	S	17 08 33.0	-1.1
AFI	Afiamalu	8.47	33	P	Pn	17 07 02.1	-2.5
	12nm,0.3s,baz=184,slow=3.1,SNR=26						
AFI				S	S	17 08 28.6	-12
	21nm,0.3s,baz=66,slow=23,SNR=13						
AFI	Afiamalu	8.47	33	*e*Pn	Pn	17 07 02.2	-2.5
AFI				*e*		17 08 26.8	
OUZ	Omahuta	16.52	210	*e*P	Pn	17 08 46.9	+2.0
	78nm,1.7s						
MXZ	Matakaoa Point	17.00	194	*e*P	Pn	17 08 50.6	+0.1
	272nm,1.5s						
URZ	Urewera	17.96	196	P	P	17 08 59.6	+0.3
	7.1nm,0.3s,baz=275,slow=3.9,SNR=24						
URZ				S	S	17 12 09.1	-4.7
	6.2nm,0.3s,baz=242,slow=23,SNR=12						
KNTN	Kanton	18.81	15	*e*P	P	17 09 09.0	+0.2
	85nm,1.2s						
HIZ	Hauiti	18.87	201	*e*P	Pn	17 09 12.4	-0.1
	167nm,1.3s						
BKZ	Black Stump Fm	18.98	197	*e*P	P	17 09 09.8	-0.5
	68nm,1.4s						
BKZ				*e*S	S	17 12 28.0	-6.0
THZ	Tophouse	22.45	201	*e*P	P	17 09 47.7	+1.8
	211nm,1.8s						
KHZ	Kahutara	22.83	199	*e*P	P	17 09 50.1	+0.8
	132nm,1.5s						
LTZ	Lake Taylor	23.57	201	*e*P	P	17 09 56.6	+0.5
	44nm,0.6s						
OXZ	Oxford	24.13	201	*e*P	P	17 10 01.8	+0.6
	47nm,0.9s						
CRLZ	Canterbury Las	24.17	200	*e*P	P	17 10 02.0	+0.6
	266nm,1.8s						
MQZ	McQueen's Vall	24.27	199	*e*P	P	17 10 02.9	+0.5
	207nm,1.9s						
RPZ	Rata Peaks	24.81	202	P	P	17 10 08.5	+1.2
	22nm,0.5s,baz=4.7,slow=3.9,SNR=21						
RPZ	Rata Peaks	24.81	202	*e*P	P	17 10 05.9	-1.4
	191nm,1.9s						
FOZ	Fox Glacier	25.10	204	*e*P	P	17 10 10.6	+0.7
	249nm,1.6s						
LBZ	Lake Benmore	25.70	202	*e*P	P	17 10 15.8	+0.5
	189nm,2.0s						
ODZ	Otahua Downs	26.12	201	*e*P	P	17 10 18.1	-0.9
	26nm,1.1s						
WKZ	Wanaka	26.50	203	*e*P	P	17 10 21.8	-0.7
	165nm,1.6s						
MLZ	Mavora Lakes	27.30	204	*e*P	P	17 10 30.2	+0.7
	66nm,1.4s						
DCZ	Deep Cove	27.75	205	*e*P	P	17 10 36.0	+2.4
	41nm,1.2s						
WHZ	Wether Hill Ro	27.81	204	*e*P	P	17 10 34.1	0.0
	133nm,2.0s						
EIDS	Eidsvold	30.02	256	*e*P	P	17 10 54.3	+0.4
	10.0nm,1.3s						
KWAJ	Kwajalein Atol	33.55	331	*e*P	P	17 11 26.3	+1.6
KWAJ				pmax	pmax		
	comp=Z,185nm,1.2s						
KWAJ	Kwajalein Atol	33.55	331	*e*P	P	17 11 26.3	+1.6
	comp=Z,185nm,1.2s						
CTAO	Charters Tower	34.80	265	*e*P	P	17 11 35.8	+0.3
CTAO				pmax	pmax		
	comp=Z,13nm,1.1s						
CTAO	Charters Tower	34.80	265	*e*P	P	17 11 35.8	+0.3
	comp=Z,13nm,1.1s						
PMG	Port Moresby	36.81	283	P	P	17 11 51.2	-1.4
	comp=Z,19nm,0.9s,baz=85,slow=9.3,SNR=4.0						
PMG	Port Moresby	36.81	283	*e*P	P	17 11 53.8	+1.2
PMG				pmax	pmax		
	comp=Z,113nm,1.3s						
STKA	Stephens Creek	38.77	245	P	P	17 12 08.9	+0.1
	comp=Z,1.2nm,0.4s,baz=91,slow=12,SNR=7.8						
STKA	Stephens Creek	38.77	245	*e*P	P	17 12 09.1	+0.3
STKA				pmax	pmax		
	comp=Z,10.0nm,1.8s						
STKA	Stephens Creek	38.77	245	*e*P	P	17 12 09.1	+0.3
	comp=Z,9.5nm,1.8s						
JAY	Jayapura	45.53	288	P	P	17 13 02.7	-0.9
	comp=Z,1.3nm,0.7s,baz=277,slow=24,SNR=6.9						
AS01	Alice Springs	45.68	257	*e*P	P	17 13 03.8	-0.9
AS31	Alice Springs	45.72	257	*e*P	P	17 13 04.1	-0.9
	comp=Z,3.1nm,0.8s						
ASAR	Alice Springs	45.72	257	P	P	17 13 04.2	-0.7
	comp=Z,2.9nm,0.8s,baz=90,slow=7.8,SNR=32						
ASAR				ScP	ScP	17 18 09.5	-1.5
	comp=Z,0.4nm,0.7s,baz=114,slow=4.0,SNR=4.2						
WRAB	Tennant Creek	45.87	262	*e*P	P	17 13 05.4	-0.7
WRAB				pmax	pmax		
	comp=Z,14nm,1.2s						
WR1	Warramunga Arr	45.88	262	*e*P	P	17 13 05.0	-1.2
	comp=Z,18nm,1.4s						
WRA	Warramunga Arr	45.88	262	P	P	17 13 05.0	-1.2
	comp=Z,2.0nm,0.6s,baz=94,slow=5.1,SNR=22						
VNDA	Vanda	57.44	185	P	P	17 14 33.0	+2.3
	comp=Z,1.3nm,0.7s,baz=348,slow=6.8,SNR=7.3						
QSPA	South Pole Qui	68.97	180	*e*P	P	17 15 48.4	+1.7
MJAR	Matsushiro Arr	71.51	323	P	P	17 16 01.7	-0.6
	comp=Z,2.1nm,0.7s,baz=160,slow=5.9,SNR=9.9						
PETK	Petropavlovsk-	77.21	344	P	P	17 16 34.1	-0.6
	comp=Z,4.9nm,0.7s,baz=116,slow=10,SNR=4.5						
PEA1	Petropavlovsk-	77.21	344	*e*P	P	17 16 34.1	-0.6
MWC	Mount Wilson	78.22	46	*e*P	P	17 16 41.8	+0.8
MWC				pmax	pmax		
	comp=Z,18nm,1.1s						
MWC	Mount Wilson	78.22	46	*e*P	P	17 16 41.8	+0.8
	comp=Z,18nm,1.1s						
KMRM	Mail Ridge	78.36	39	*e*P	P	17 16 43.7	+2.3
	comp=Z,52nm,0.9s						
ISA	Isabella, Lake	78.78	45	*e*P	P	17 16 45.6	+1.7
ISA				pmax	pmax		
	comp=Z,24nm,1.0s						
ISA	Isabella, Lake	78.78	45	*e*P	P	17 16 45.6	+1.7
	comp=Z,24nm,1.0s						
PFO	Pinyon Flats O	78.96	47	*e*P	P	17 16 46.5	+1.5
PFO				pmax	pmax		
	comp=Z,12nm,1.2s						
PFO	Pinyon Flats O	78.96	47	*e*P	P	17 16 46.5	+1.5
	comp=Z,12nm,1.2s						
CMB	Columbia Colle	78.98	42	*e*P	P	17 16 45.9	+1.0
CMB				pmax	pmax		
	comp=Z,16nm,1.0s						
CMB	Columbia Colle	78.98	42	*e*P	P	17 16 45.9	+1.0
	comp=Z,16nm,1.0s						
AFDM	Forest Hills D	79.18	41	*e*P	P	17 16 47.3	+1.3
	comp=Z,16nm,1.0s						
WDC	Whiskeytown Da	79.27	39	*e*P	P	17 16 48.1	+1.8
WDC				pmax	pmax		
	comp=Z,23nm,1.1s						
WDC	Whiskeytown Da	79.27	39	*e*P	P	17 16 48.1	+1.8
	comp=Z,23nm,1.1s						
MSHR	Mys Shultsa	79.61	324	*e*P	P	17 16 49.7	+1.6
GSC	Goldstone, Bar	79.68	46	*e*P	P	17 16 49.4	+0.6
GSC				pmax	pmax		
	comp=Z,14nm,1.0s						
GSC	Goldstone, Bar	79.68	46	*e*P	P	17 16 49.4	+0.6
	comp=Z,14nm,1.0s						
DAC	Darwin (Calif)	79.72	45	*e*P	P	17 16 50.4	+1.3
DAC				pmax	pmax		
	comp=Z,7.0nm,1.0s						
DAC	Darwin (Calif)	79.72	45	*e*P	P	17 16 50.4	+1.3
	comp=Z,7.2nm,1.0s						
GLA	Glamis	79.78	49	*e*P	P	17 16 50.9	+1.6
GLA				pmax	pmax		
	comp=Z,26nm,1.4s						
GLA	Glamis	79.78	49	*e*P	P	17 16 50.9	+1.6
	comp=Z,26nm,1.4s						
WAKR	Walker	79.86	42	*e*P	P	17 16 51.6	+1.8
YBH	Yreka Blue Hor	79.91	38	*e*P	P	17 16 52.1	+2.2
YBH				pmax	pmax		
	comp=Z,15nm,0.9s						
YBH	Yreka Blue Hor	79.91	38	*e*P	P	17 16 52.0	+2.2
	comp=Z,15nm,0.9s						
USRK	Ussuriysk Ar.	80.23	325	P	P	17 16 51.4	0.0
	comp=Z,4.1nm,0.8s,baz=98,slow=3.9,SNR=5.1						
HUMO	Hull Mountain	80.33	37	*e*P	P	17 16 54.2	+2.1
	comp=Z,25nm,1.3s						
OHAK	Old Harbor	80.42	13	*e*P	P	17 16 52.5	+0.4
	comp=Z,20nm,1.0s						
NV01	Mina Array Sit	80.53	43	*e*P	P	17 16 54.1	+0.7
NVAR	Mina Array Bea	80.53	43	P	P	17 16 54.2	+0.8
	comp=Z,5.1nm,0.8s,baz=223,slow=8.8,SNR=22						
PAHR	Pah Rah Range	80.62	41	*e*P	P	17 16 55.2	+1.5
NV11	Mina Array Sit	80.62	43	*e*P	P	17 16 54.8	+0.9
	comp=Z,21nm,1.4s						
LDFC	Landfair	80.70	47	*e*P	P	17 16 56.2	+1.9
	comp=Z,34nm,1.0s						
TPNV	Topopah Spring	80.99	45	*e*P	P	17 16 56.7	+0.9
TPNV				pmax	pmax		
	comp=Z,12nm,1.0s						
TPNV	Topopah Spring	80.99	45	*e*P	P	17 16 56.7	+0.9
	comp=Z,12nm,1.0s						
MOD	Modoc Plateau	81.41	39	*e*P	P	17 16 59.1	+1.2
	comp=Z,20nm,1.0s						
MAW	Mawson	81.46	199	P	P	17 16 58.9	+1.3
	comp=Z,1.4nm,0.5s,baz=130,slow=9.9,SNR=4.7						
MAW	Mawson	81.46	199	*e*P	P	17 16 58.9	+1.3
MAW				pmax	pmax		
	comp=Z,2.0nm,1.1s						
MAW	Mawson	81.46	199	*e*P	P	17 16 58.9	+1.3
	comp=Z,2.2nm,1.1s						
SHPR	Sheep Range	81.46	46	*e*P	P	17 16 59.9	+1.6
Y14A	Wickenburg	81.54	49	*e*P	P	17 17 00.1	+1.5
	comp=Z,46nm,1.0s						
K05A	Summer Lake	81.58	38	*e*P	P	17 17 00.2	+1.4
	comp=Z,51nm,1.1s						
MDJ	Mudanjiang	81.80	324	P	P	17 16 59.3	-0.3
MDJ				pmax	pmax		
	comp=Z,7.0nm,1.5s						
MDJ				pmax	pmax		
	comp=Z,140nm,5.5s						
H04A	Detroit Lake	82.10	36	*e*P	P	17 17 01.9	+0.6
	comp=Z,21nm,1.0s						
R11A	Troy Canyon, C	82.22	44	*e*P	P	17 17 03.3	+1.0
	comp=Z,5.2nm,1.0s						
TUC	Tucson	82.28	51	*e*P	P	17 17 04.4	+1.8
TUC				pmax	pmax		
	comp=Z,38nm,1.8s						
TUC	Tucson	82.28	51	*e*P	P	17 17 04.4	+1.8
	comp=Z,38nm,1.8s						
BMN	Battle Mountai	82.38	41	*e*P	P	17 17 04.5	+1.5
BMN				pmax	pmax		
	comp=Z,20nm,1.0s						
BMN	Battle Mountai	82.38	41	*e*P	P	17 17 04.5	+1.5
	comp=Z,20nm,1.0s						
WVOR	Wild Horse Val	82.72	39	*e*P	P	17 17 05.6	+0.9
WVOR				pmax	pmax		
	comp=Z,22nm,1.0s						
WVOR	Wild Horse Val	82.72	39	*e*P	P	17 17 05.6	+0.9
	comp=Z,22nm,1.0s						
F04A	Amboy	82.78	35	*e*P	P	17 17 05.6	+0.9
	comp=Z,29nm,1.0s						
X16A	Lo Mia Camp, P	82.89	49	*e*P	P	17 17 07.7	+1.9
	comp=Z,18nm,1.0s						
319A	Douglas	82.91	53	*e*P	P	17 17 07.7	+1.8
	comp=Z,20nm,0.8s						
LCMT	Little Creek M	83.03	46	*e*P	P	17 17 08.3	+1.9
	comp=Z,12nm,1.0s						
BRLK	Bradley Lake	83.26	13	*e*P	P	17 17 07.0	+0.1
	comp=Z,15nm,0.9s						
G06A	Carlson Farm,	83.30	36	*e*P	P	17 17 08.6	+1.1
	comp=Z,19nm,1.0s						
KNB	Kanab	83.31	46	*e*P	P	17 17 10.0	+2.1
KNB				pmax	pmax		
	comp=Z,20nm,1.1s						
KNB	Kanab	83.31	46	*e*P	P	17 17 10.0	+2.1
	comp=Z,20nm,1.1s						
U15A	North Rim	83.36	47	*e*P	P	17 17 09.8	+1.5
	comp=Z,22nm,0.9s						
PSUT	Pine Spring	83.45	45	*e*P	P	17 17 09.6	+1.0
	comp=Z,6.4nm,0.9s						
WUAZ	Wupatki	83.51	48	*e*P	P	17 17 10.5	+1.5
	comp=Z,18nm,1.3s						
LON	Longmire	83.63	34	*e*P	P	17 17 09.9	+0.8
LON				pmax	pmax		
	comp=Z,6.0nm,1.0s						
LON	Longmire	83.63	34	*e*P	P	17 17 09.9	+0.8
	comp=Z,6.0nm,1.0s						
D05A	Enumclaw	83.82	34	*e*P	P	17 17 11.9	+2.0
	comp=Z,52nm,1.2s						
G08A	Pilot Rock	84.27	37	*e*P	P	17 17 13.6	+1.1
	comp=Z,27nm,1.0s						
MTPU	Mount Pierson	84.29	46	*e*P	P	17 17 15.2	+2.1
	comp=Z,17nm,1.0s						
SPU	Mount Spurr	84.34	12	*e*P	P	17 17 08.1	-4.2
HAWA	Hanford	84.63	36	*e*P	P	17 17 15.7	+1.6
RC01	Rabbit Creek A	84.71	13	*e*P	P	17 17 14.3	+0.2
	comp=Z,14nm,1.0s						
BMO	Blue Mountains	84.94	38	*e*P	P	17 17 17.0	+1.2
BMO				pmax	pmax		
	comp=Z,20nm,1.6s						
BMO	Blue Mountains	84.94	38	*e*P	P	17 17 17.0	+1.2
	comp=Z,20nm,1.6s						
MFID	Camas Ranch	84.96	40	*e*P	P	17 17 16.7	+0.7
	comp=Z,15nm,1.3s						
DUG	Dugway, Tooele	85.03	44	*e*P	P	17 17 17.5	+1.1
DUG				pmax	pmax		
	comp=Z,4.0nm,1.0s						
DUG	Dugway, Tooele	85.03	44	*e*P	P	17 17 17.5	+1.1
	comp=Z,4.0nm,1.0s						
TT01	Tatalina	85.28	9	*e*P	P	17 17 17.4	+0.5
PMR	Palmer	85.29	13	*e*P	P	17 17 16.9	0.0
PMR				pmax	pmax		
	comp=Z,24nm,1.5s						
PMR	Palmer	85.29	13	*e*P	P	17 17 16.9	0.0
	comp=Z,24nm,1.5s						
TTA	Tatalina	85.31	9	*e*P	P	17 17 17.0	-0.2
TTA	Tatalina	85.31	9	*e*P	P	17 17 16.9	-0.2
D08A	Wollman Farm,	85.37	35	*e*P	P	17 17 19.0	+1.3
	comp=Z,18nm,0.9s						
Q16A	Castle Valley	85.43	45	*e*P	P	17 17 20.4	+1.9
	comp=Z,19nm,1.5s						
E09A	Wood Farm, Sta	85.46	36	*e*P	P	17 17 19.4	+1.2
	comp=Z,28nm,1.3s						
TMUT	Trail Mountain	85.60	45	*e*P	P	17 17 20.9	+1.4
	comp=Z,12nm,1.0s						
DIV	Divide	85.61	14	*e*P	P	17 17 18.7	0.0
	comp=Z,17nm,0.8s						
F10A	Beach Ranch, E	85.65	37	*e*P	P	17 17 19.6	+0.4
	comp=Z,22nm,1.0s						
BMRM	Bremner River	85.75	15	*e*P	P	17 17 19.6	+0.3
	comp=Z,12nm,0.8s						
SCM	Sheep Creek Mo	85.89	13	*e*P	P	17 17 20.3	+0.2
SCM				pmax	pmax		
	comp=Z,18nm,0.8s						
SCM	Sheep Creek Mo	85.89	13	*e*P	P	17 17 20.3	+0.2
	comp=Z,18nm,0.8s						
HLID	Hailey	85.89	40	*e*P	P	17 17 21.9	+1.3
	comp=Z,4.1nm,0.9s						
KLU	Klutina	85.90	14	*e*P	P	17 17 20.7	+0.6
	comp=Z,5.9nm,1.0s						
HVU	Hansel Valley	85.92	42	*e*P	P	17 17 21.8	+1.0
HVU				pmax	pmax		
	comp=Z,5.0nm,1.0s						
HVU	Hansel Valley	85.92	42	*e*P	P	17 17 21.8	+1.0
	comp=Z,4.9nm,1.0s						
B08A	Colville Reser	85.95	34	*e*P	P	17 17 21.2	+0.6
	comp=Z,14nm,1.0s						
SRU	San Rafael Swe	85.96	45	*e*P	P	17 17 22.4	+1.3
SRU				pmax	pmax		
	comp=Z,10.0nm,0.9s						
SRU	San Rafael Swe	85.96	45	*e*P	P	17 17 22.4	+1.3
	comp=Z,10nm,0.9s						
C09A	Chrisman Ranch	86.17	35	*e*P	P	17 17 22.4	+0.8
	comp=Z,27nm,1.3s						
BNM	Barren Site	86.21	51	*e*P	P	17 17 24.1	+1.6
BALM	Baldy	86.37	16	*e*P	P	17 17 22.9	+0.5
BALM				pmax	pmax		
	comp=Z,11nm,0.9s						
BALM	Baldy	86.37	16	*e*P	P	17 17 22.9	+0.5
	comp=Z,11nm,0.9s						
CAST	Castle Rocks	86.40	11	*e*P	P	17 17 20.9	-1.6
	comp=Z,11nm,0.9s						
P18A	Preston Nutter	86.41	45	*e*P	P	17 17 24.6	+1.1
	comp=Z,7.1nm,1.2s						
TCUT	Toone Canyon	86.43	43	*e*P	P	17 17 24.6	+1.2
	comp=Z,15nm,1.1s						
PV09	Paradox Valley	86.58	47	*e*P	P	17 17 25.0	+0.7
ANMO	Albuquerque	86.72	51	*e*P	P	17 17 26.0	+1.1
ANMO				pmax	pmax		
	comp=Z,11nm,1.4s						
ANMO	Albuquerque	86.72	51	*e*P	P	17 17 26.0	+1.1
	comp=Z,11nm,1.4s						
KTH	Kantishna Hill	86.73	11	*e*P	P	17 17 23.1	-1.0
	comp=Z,11nm,1.0s						
TRF	Thorofare Moun	86.76	11	*e*P	P	17 17 23.9	-0.4
	comp=Z,17nm,0.8s						
RND	Reindeer	86.99	12	*e*P	P	17 17 25.5	+0.1
RND				pmax	pmax		
	comp=Z,27nm,1.0s						
RND	Reindeer	86.99	12	*e*P	P	17 17 25.5	+0.1
	comp=Z,27nm,1.0s						
MCK	McKinley	87.27	12	*e*P	P	17 17 26.4	-0.2
MCK				pmax	pmax		
	comp=Z,16nm,1.0s						
MCK	McKinley	87.27	12	*e*P	P	17 17 26.4	-0.2
	comp=Z,16nm,1.0s						
SEY	Seymchan	87.28	346	P	P	17 17 25.9	-0.7
	comp=Z,4.9nm,1.0s,baz=135,slow=4.4,SNR=7.9						
SEY	Seymchan	87.28	346	*ce*P	P	17 17 26.5	-0.1
PAX	Paxson	87.30	14	*e*P	P	17 17 26.6	-0.3
PAX				pmax	pmax		
	comp=Z,5.0nm,1.1s						
PAX	Paxson	87.30	14	*e*P	P	17 17 26.6	-0.3
	comp=Z,5.0nm,1.1s						
VNA3	Neumayer Olymp	87.45	176	P	P	17 17 23.5	-4.1
MCMT	McKenzie Canyo	87.53	40	*e*P	P	17 17 30.0	+1.4
MENT	Mentasta	87.67	14	*e*P	P	17 17 29.3	+0.7
	comp=Z,8.1nm,1.0s						
S22A	4UR Ranch, Cre	87.79	48	*e*P	P	17 17 31.3	+1.3
	comp=Z,5.7nm,1.1s						
VNA2	Neumayer--Watz	87.91	176	P	P	17 17 29.8	+0.1
	baz=193,slow=3.5						
REDW	Red Top Meadow	87.96	42	*e*P	P	17 17 31.9	+1.3
	comp=Z,9.7nm,1.4s						
DLMT	Dillon	87.97	39	*e*P	P	17 17 31.6	+1.1
	comp=Z,10nm,1.0s						
DLBC	Dease Lake	88.07	22	P	P	17 17 31.5	+0.9
	comp=Z,1.9nm,0.8s,baz=256,slow=9.0,SNR=5.8						
DLBC	Dease Lake	88.07	22	*e*P	P	17 17 31.0	+0.5
	comp=Z,26nm,1.8s						
WRH	Wood River Hil	88.10	12	*e*P	P	17 17 30.3	-0.1
	comp=Z,27nm,1.2s						
BSMT	Bassoo Peak	88.10	36	*e*P	P	17 17 31.6	+0.4
MLY	Manley	88.12	11	*e*P	P	17 17 30.0	-0.6
	comp=Z,10nm,1.3s						
GYA	Guiyang	88.14	299	*e*P	P	17 17 33.3	+1.6
GYA				pP	pP	17 18 26.4	+1.1
GYA				sP	sP	17 18 49.0	+0.8
GYA	Guiyang	88.14	299	SKS	SKSac	17 27 38.6	-1.1
GYA	Guiyang	88.14	299	S	S	17 27 56.3	-1.1
GYA	Guiyang	88.14	299	sS	sS	17 29 29.8	-1.3
GYA				pmax	pmax		
	comp=Z,20nm,1.0s						
GYA				pmax	pmax		
	comp=Z,110nm,6.3s						
DOT	Dot Lake	88.21	14	*e*P	P	17 17 31.3	+0.2
	comp=Z,24nm,0.9s						
MOOW	Moose Ponds	88.23	41	*e*P	P	17 17 32.8	+0.9
	comp=Z,4.3nm,1.4s						
LOHW	Long Hollow	88.25	42	*e*P	P	17 17 32.5	+0.5
	comp=Z,7.8nm,1.4s						
LRM	Limekiln Ridge	88.31	39	*e*P	P	17 17 33.1	+0.9
CCB	Clear Creek Bu	88.31	12	*e*P	P	17 17 30.5	-0.9
	comp=Z,34nm,1.6s						
SMCO	Snowmass	88.38	47	*e*P	P	17 17 33.8	+0.9
	comp=Z,4.8nm,1.1s						
QLMT	Earthquake Lak	88.38	40	*e*P	P	17 17 34.3	+1.7
FLWY	Flagg Ranch	88.43	41	*e*P	P	17 17 34.4	+1.6
	comp=Z,10nm,1.0s						
CHMT	Chamberlain Mo	88.44	38	*e*P	P	17 17 33.2	+0.4
BW06	Boulder Array	88.47	43	*e*P	P	17 17 33.2	+0.2
PD31	Pinedale Array	88.47	43	*e*P	P	17 17 33.4	+0.3
PDAR	Pinedale Array	88.47	43	P	P	17 17 33.6	+0.6
	comp=Z,2.2nm,0.9s,baz=222,slow=4.0,SNR=15						
COLA	College	88.50	12	*e*P	P	17 17 32.2	-0.1
COLA				pmax	pmax		
	comp=Z,13nm,0.6s						
COLA	College	88.50	12	*e*P	P	17 17 32.2	-0.1
	comp=Z,13nm,0.6s						
MDM	Murphy Dome	88.51	12	*e*P	P	17 17 31.6	-0.9
	comp=Z,16nm,1.2s						
ILAR	Eielson Array	88.60	12	P	P	17 17 32.3	-0.5
	comp=Z,2.2nm,0.7s,baz=228,slow=5.0,SNR=24						
ILB	Eielson Array	88.60	12	*e*P	P	17 17 32.4	-0.4
IL1	Eielson Array	88.60	12	*e*P	P	17 17 32.0	-0.8
H17A	Grant Village	88.67	41	*e*P	P	17 17 34.7	+0.7
	comp=Z,3.

comp=Z,10.0nm,0.6s
RSSD Black Hills 92.64 43 *e*P **P 17 17 52.6 +0.2**
RSSD pmax pmax
comp=Z,14nm,1.0s
RSSD Black Hills 92.64 43 *e*P **P 17 17 52.6 +0.2**
comp=Z,14nm,1.0s
LZH Lanzhou 94.22 307 ⇑P **P 17 18 00.6 +0.8**
LZH pP pP 17 18 53.8 +0.2
LZH sP sP 17 19 16.3 -0.1
LZH PP **PP 17 21 53.0 +3.0**
LZH pmax pmax
comp=Z,21nm,1.2s
LZH pmax pmax
comp=Z,97nm,9.3s
INK Inuvik 94.50 15 P **P 17 17 59.7 -0.3**
comp=Z,3.1nm,0.9s,baz=220,slow=6.9,SNR=14
INK Inuvik 94.50 15 *e*P **P 17 17 59.7 -0.3**
INK pmax pmax
comp=Z,4.0nm,0.9s
INK Inuvik 94.50 15 *e*P **P 17 17 59.7 -0.3**
comp=Z,3.7nm,0.9s
YKA Yellowknife Ar 96.49 24 P **P 17 18 08.0 -1.1**
comp=Z,1.1nm,0.8s,baz=243,slow=4.5,SNR=16
YKB5 Yellowknife Ar 96.49 24 *e*P **P 17 18 08.8 -0.3**
TIXI Tiksi 99.68 345 *e*P **Pdif 17 18 22.7 -0.6**
TIXI pmax pmax
comp=Z,1.0nm,0.9s
ZALV Zalesovo Beam 111.82 321 PKiKP **PKiKP 17 23 12.0 -1.7**
comp=Z,1.6nm,0.6s,baz=184,slow=0.7,SNR=11
ZALV Zalesovo Beam 111.82 321 PKiKP **PKiKP 17 23 12.0 -1.7**
ZAA1 Zalesovo Array 111.82 321 *e*PKiKP **PKiKP 17 23 12.0 -1.7**
MK32 Makanchi Array 112.61 313 *e*PKiKP **PKiKP 17 23 14.3 -1.2**
MKAR Makanchi Array 112.61 313 PKiKP **PKiKP 17 23 14.3 -1.2**
comp=Z,1.6nm,0.6s,baz=101,slow=0.3,SNR=24
AAK Ala-Archa 117.75 308 *e*PKIKP **PKPdf 17 23 23.8 -1.9**
BRVK Borovoye 120.48 320*c i*PKIKP **PKPdf 17 23 28.5 -1.9**
BRVK pmax pmax
comp=Z,7.0nm,1.0s
ARU Arti 126.47 325 *i*PKIKP **PKPdf 17 23 41.4 -0.4**
ARU 17 25 38.8
ARU 17 30 30.1
ARA0 ARCESS Array S 129.75 350 *e*PKPdf **PKPdf 17 23 46.8 -0.9**
ARCES ARCESS Array B 129.75 350 PKP **PKPdf 17 23 46.8 -0.9**
comp=Z,1.4nm,0.7s,baz=276,slow=0.9,SNR=6.4
GEYT Alibeck 130.26 302 PKP **PKPdf 17 23 48.8 -0.9**
comp=Z,1.9nm,0.6s,baz=242,slow=3.2,SNR=4.7
KLMR Klimovskoe 132.97 337 *e*PKIKP **PKPdf 17 23 51.6 -2.4**
KLMR pmax pmax
comp=Z,5.0nm,1.1s
FIA0 FINESS Array S 136.72 344 *e*PKIKP **PKPdf 17 24 01.1 +0.1**
FIA0 FINESS Array S 136.72 344 *e*PKPdf **PKPdf 17 24 01.1 +0.1**
FINES FINESS Array B 136.72 344 PKP **PKPdf 17 24 01.1 +0.1**
comp=Z,1.1nm,0.7s,baz=184,slow=5.2,SNR=5.1
VRH Novokhopyorsk 137.69 325 *e*PKIKP **PKPdf 17 24 02.4 -0.6**
VRH pmax pmax
comp=Z,10.0nm,0.7s
OBN Obninsk 137.93 332 *i*PKIKP **PKPdf 17 24 02.9 -0.4**
OBN pmax pmax
comp=Z,7.0nm,0.5s
LPSR Galich'ya Gora 138.38 328 *e*PKIKP **PKPdf 17 24 01.5 -2.8**
LPSR pmax pmax
comp=Z,10.0nm,0.9s
VSR Storozhevoye 139.04 326 *e*PKIKP **PKPdf 17 24 04.0 -1.5**
VSR pmax pmax
comp=Z,5.0nm,0.6s
NB2 NORSAR Subarra139.73 354 PKP PKPpre 17 23 58.2
comp=Z,1.3nm,0.9s,baz=17,slow=2.6
KIV Kislovodsk 140.35 314⇑*e*PKIKP **PKPdf 17 24 08.0 -0.3**
KIV *e* 17 27 04.1
KIV *e*PPP PPP 17 30 11.9
KIV pmax pmax
comp=Z,6.0nm,1.0s
AKASG Malin Array Be 144.19 332 PKP **PKPab 17 24 11.8 -1.3**
comp=Z,2.8nm,0.7s,baz=43,slow=4.3,SNR=23
AKBB Malin Array Si 144.19 332 *e*PKIKP **PKPab 17 24 12.1 -1.0**
AKBB Malin Array Si 144.19 332 *e*PKPdf **PKPab 17 24 12.1 -1.0**
KIEV Kiev 144.21 332 *e*PKIKP **PKPab 17 24 12.1 -1.1**
MUD Monsted U'grnd 144.44 355 *i*P **PKPab 17 24 13.8 0.0**
comp=Z,53nm,1.0s
MUD Monsted U'grnd 144.44 355 *i*PKIKP **PKPab 17 24 13.8 0.0**
MUD pmax pmax
comp=Z,53nm,1.0s
COP Copenhagen 144.82 351⇓*i*P PKPbc 17 24 14.8 -0.4
comp=Z,27nm,0.8s
COP Copenhagen 144.82 351⇓*i*PKIKP PKPbc 17 24 14.8 -0.4
COP pmax pmax
comp=Z,27nm,0.8s
BSD Bornholm Skovb 144.96 349⇓*i*P PKPbc 17 24 15.0 -0.7
comp=Z,45nm,0.8s
BSD Bornholm Skovb 144.96 349⇓*i*PKIKP PKPbc 17 24 15.0 -0.7
BSD pmax pmax
comp=Z,45nm,0.8s
SORM Soroca 146.43 329⇓*i*P **PKPdf 17 24 19.5 +0.9**
KIS Kishinev 146.98 327 LRM MLR 17 23 16.0
comp=Z,300nm,20.0s
LVV L'vov 147.03 335⇑*i*PKP2 **PKPbc 17 24 21.0 -1.0**
KWP Kalwaria Pacla 147.69 336 *e*PKP **PKPbc 17 24 23.8 0.0**
KWP Kalwaria Pacla 147.69 336 *e*PKP2 **PKPbc 17 24 23.8 0.0**
OJC Ojcow 148.20 340 *e*PKP **PKPbc 17 24 25.1 -0.1**
OJC Ojcow 148.20 340 *e*PKP2 **PKPbc 17 24 25.1 -0.1**
OJC Ojcow 148.20 340 *e*PKPbc **PKPbc 17 24 24.8 -0.4**
BURAR Bucovina Array 148.25 332⇑*i*P **PKPbc 17 24 26.0 +0.5**
BR101 Keskin Array S 148.25 313 *e*PKPbc **PKPbc 17 24 24.9 -0.9**
BRTR Keskin Array B 148.25 313 PKPbc **PKPbc 17 24 24.9 -0.9**
comp=Z,3.3nm,0.7s,baz=133,slow=3.8,SNR=17
BRTR Keskin Array B 148.25 313 PKP2 **PKPbc 17 24 25.0 -0.9**
TESR Tescani 148.39 329⇑*i*P **PKPbc 17 24 25.6 -0.2**
STHS Stebnicka Huta 148.40 338 *e*PKP2 **PKPbc 17 24 26.1 +0.4**
STHS Stebnicka Huta 148.40 338 *e*PKP **PKPbc 17 24 26.1 +0.4**
KOLS Kolonicke sedl 148.42 336 *e*PKIKP **PKPdf 17 24 22.4 +0.4**
KOLS *e* 17 24 26.2
KOLS Kolonicke sedl 148.42 336 *e*PKP **PKPdf 17 24 22.4 +0.4**
KOLS *e* 17 24 26.2
CFR Carcaliu 148.56 326⇑*i*P **PKPbc 17 24 26.1 -0.1**
KSP Ksiaz 148.65 344 *e*PKP **PKPbc 17 24 26.7 +0.4**
KSP Ksiaz 148.65 344 *e*PKP2 **PKPbc 17 24 26.7 +0.4**
UZH Uzhgorod 148.66 336⇓*i*PKP2 **PKPbc 17 24 26.5 +0.2**
NIE Niedzica 148.73 339 *e*PKP **PKPbc 17 24 27.1 +0.5**
NIE Niedzica 148.73 339 *e*PKP2 **PKPbc 17 24 27.1 +0.5**
CRVS Cervenica-Dubn 148.75 337 *e*PKP2 **PKPbc 17 24 26.7 +0.1**
CRVS Cervenica-Dubn 148.75 337 *e*PKP **PKPbc 17 24 26.7 +0.1**
VRI Vrincioaia 148.81 328⇑*i*P **PKPbc 17 24 26.8 -0.1**
PLOR Plostina 148.86 328⇑*i*P **PKPbc 17 24 26.8 -0.2**
CLL Collm 148.94 348 *e*PKPdf **PKPdf 17 24 22.0 -0.7**
CLL ⇓*i*PKPbc **PKPbc 17 24 27.0 0.0**
comp=Z,52nm,0.9s
CLL *e*PKiKP **PKPab 17 24 30.0 -1.7**
CLL Collm 148.94 348 *e*PKP2 **PKPbc 17 24 27.0 0.0**
CLL Collm 148.94 348 *e*PKPbc **PKPbc 17 24 27.0 0.0**
UPC Upice 149.03 344⇑*e*PKP **PKPbc 17 24 27.6 +0.4**
UPC Upice 149.03 344 *e*PKP2 **PKPbc 17 24 27.6 +0.4**
OKC Ostrava-Krasne 149.05 341⇑*e*PKP **PKPbc 17 24 27.8 +0.5**
OKC Ostrava-Krasne 149.05 341 *e*PKP2 **PKPbc 17 24 27.8 +0.5**
DPC Dobruska-Polom 149.09 344⇑*e*PKP **PKPbc 17 24 27.9 +0.4**
DPC *e*PKPAB **PKPab 17 24 32.4 0.0**
DPC Dobruska-Polom 149.09 344 *e*PKP2 **PKPbc 17 24 27.9 +0.4**
BRG Berggiesshubel 149.17 347 *e*PKP **PKPdf 17 24 23.4 +0.3**
comp=Z,3.1nm,0.9s
BRG *i* 17 24 27.8
comp=Z,28nm,1.0s
KRLC Kraliky 149.22 343⇑*e*PKP **PKPbc 17 24 28.0 +0.2**
KRLC Kraliky 149.22 343 *e*PKP2 **PKPbc 17 24 28.0 +0.2**
LANS Liptovska Anna 149.24 339 *e*PKP2 **PKPbc 17 24 28.8 +0.9**
LANS Liptovska Anna 149.24 339 *e*PKP **PKPbc 17 24 28.8 +0.9**
MORC Moravsky Berou 149.28 342⇑*i*P **PKPbc 17 24 28.4 +0.5**
MORC Moravsky Berou 149.28 342 *e*PKP2 **PKPbc 17 24 28.0 +0.1**
MORC Moravsky Berou 149.28 342 *e*PKPbc **PKPbc 17 24 28.0 +0.1**
PVCC Panska Ves 149.35 346⇑*e*PKP **PKPbc 17 24 28.5 +0.5**
PVCC Panska Ves 149.35 346 *e*PKP2 **PKPbc 17 24 28.5 +0.5**
DOPR Dopca 149.39 329⇑*i*P **PKPbc 17 24 29.0 +0.7**
KECS Kecovo 149.46 337 *e*PKP2 **PKPbc 17 24 28.9 +0.5**
KECS Kecovo 149.46 337 *e*PKP **PKPbc 17 24 28.9 +0.5**
MLR Muntele Rosu 149.46 328⇓*i*P **PKPbc 17 24 27.7 -0.9**
PRU Pruhonice 149.87 346⇑*e*PKP **PKPbc 17 24 29.5 +0.2**
PRU *e*PKPAB **PKPab 17 24 36.0 +0.5**
PRU Pruhonice 149.87 346 *e*PKP2 **PKPbc 17 24 29.5 +0.2**
GOPC GO Pecny, Ondr 149.88 345⇑*e*PKP **PKPbc 17 24 29.8 +0.4**
GOPC GO Pecny, Ondr 149.88 345 *e*PKP2 **PKPbc 17 24 29.8 +0.4**
VOIR 149.94 329⇑*i*P **PKPbc 17 24 30.0 +0.3**
VRAC Vranov 149.97 343⇑*i*P **PKPbc 17 24 29.2 -0.4**
VYHS Vyhne 150.01 339 *e*PKP2 **PKPbc 17 24 29.8 +0.1**
VYHS Vyhne 150.01 339 *e*PKP **PKPbc 17 24 29.8 +0.1**
NKC Novy Kostel 150.07 348⇑*e*PKP **PKPbc 17 24 30.4 +0.6**
NKC Novy Kostel 150.07 348 *e*PKP2 **PKPbc 17 24 30.4 +0.6**
PSZ Piszkesteto 150.15 338⇑*i*P **PKPbc 17 24 30.0 -0.2**
PSZ Piszkesteto 150.15 338 *e*PKPbc **PKPbc 17 24 29.9 -0.2**
ARR Arges 150.19 329⇑*i*P **PKPbc 17 24 31.3 +1.0**
TREC Trest 150.28 344⇑*e*PKP **PKPbc 17 24 30.4 +0.1**
TREC Trest 150.28 344 *e*PKIKP **PKPbc 17 24 30.4 +0.1**
MEM Membach 150.48 357 PKPbc **PKPbc 17 24 31.0 +0.3**
MEM PKPab **PKPab 17 24 38.3 +0.2**
BCLA Clavier 150.71 358 PKPab **PKPab 17 24 38.5 -0.5**
KHC Kasperske Hory 150.89 346⇑*e*PKP **PKPbc 17 24 32.0 +0.2**
KHC *e*PKPAB **PKPab 17 24 39.7 -0.1**
KHC Kasperske Hory 150.89 346 *e*PKIKP **PKPbc 17 24 32.0 +0.2**
KHC *e* 17 24 39.7
KHC Kasperske Hory 150.89 346 *e*PKPbc **PKPbc 17 24 31.8 0.0**
DOU Dourbes 151.05 358 PKPbc **PKPbc 17 24 32.5 +0.5**
DOU PKPab **PKPab 17 24 38.5 -1.9**
GERES GERESS Array B 151.13 346 PKPbc **PKPbc 17 24 32.5 +0.1**
comp=Z,8.4nm,0.9s,baz=48,slow=2.0,SNR=44
BZS Buzias 151.37 333⇑*i*P **PKPbc 17 24 32.6 -0.3**
WLF Walferdange 151.42 356 PKPbc **PKPbc 17 24 33.5 +0.5**
WLF PKPab **PKPab 17 24 40.8 -1.2**
WLF Walferdange 151.42 356 *e*PKIKP **PKPbc 17 24 33.4 +0.5**
WLF Walferdange 151.42 356 *e*PKPbc **PKPbc 17 24 33.4 +0.5**
CONA Conrad Observa 151.43 342 *i*PKiKP **PKPbc 17 24 33.3 +0.1**
comp=Z,22nm,1.2s,SNR=11
MOA Molln 151.93 344 *i*PKiKP **PKPbc 17 24 33.9 -0.3**
comp=Z,6.6nm,1.2s
MDVR Moldovita 151.98 332⇓*i*P **PKPbc 17 24 33.7 -0.8**
BFO Black Forest 152.55 353 *e*PKIKP **PKPbc 17 24 34.0 -1.6**
BFO *e* 17 24 44.4
BFO Black Forest 152.55 353 *e*PKPbc **PKPbc 17 24 34.0 -1.6**
BFO *e*PKPab **PKPab 17 24 44.4 -2.5**
SOKA Soboth 152.80 342 *i*PKPbc **PKPbc 17 24 35.4 -0.9**
comp=Z,9.2nm,1.1s,SNR=5.8
KBA Koelnbreinsper 152.87 345 *i*PKiKP **PKPbc 17 24 36.0 -0.5**
comp=Z,5.5nm,0.9s
RETA Reutte 153.02 349 *i*PKPbc **PKPbc 17 24 36.3 -0.4**
comp=Z,5.1nm,1.3s
OBKA Obir 153.09 343 *i*PKPbc **PKPbc 17 24 35.9 -1.0**
comp=Z,3.4nm,1.0s
MOTA Moosalm 153.10 348 *i*PKPbc **PKPbc 17 24 36.1 -0.9**
comp=Z,8.8nm,1.1s
DAVA Damuels 153.37 350 *e*PKiKP **PKiKP 17 24 38.2 +0.5**
comp=Z,7.5nm,1.2s
ABTA Abfaltersbach 153.38 346 *i*PKPbc **PKPbc 17 24 36.5 -1.0**
comp=Z,12nm,0.9s,SNR=5.0
VNDS Vrh nad Dolski 153.42 342 *i*PKPbc **PKPbc 17 24 37.4 -0.1**
LJU Ljubljana 153.52 343 *e*PKPdf **PKPdf 17 24 29.8 -0.1**
LJU *i*PKPbc **PKPbc 17 24 37.7 0.0**
FUORN Ofenpass-Fuorn 153.95 349 *e*PKPbc **PKPbc 17 24 38.8 -0.1**
ESDC Sonseca Array 160.43 17 PKP **PKPdf 17 24 39.0 +0.2**
comp=Z,0.1nm,0.3s,baz=351,slow=4.9,SNR=3.7
ESDC PKPab **PKPab 17 25 20.7 -0.3**
comp=Z,1.6nm,0.8s,baz=332,slow=4.2,SNR=7.9
TORD Torodi Ar. Bea 171.91 168 PKP **PKPdf 17 24 47.5 -1.0**
comp=Z,1.6nm,0.9s,baz=240,slow=1.1,SNR=9.0
TORD PKPab **PKPab 17 26 13.1 +1.0**
comp=Z,1.2nm,0.9s,baz=190,slow=6.6,SNR=4.3
TOA1 Torodi Ar. Sit 171.92 168 *e*PKPdf **PKPdf 17 24 47.5 -1.0**
TOA1 *e*PKPab **PKPab 17 26 13.1 +1.0**

DJA 13 17:06:56.6±0.5, 6°S±5°×10°6E±°, h114km±11km, M3.6/4, MLv3.6/4, Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BLSI	**Bandar Lampung**	**1.07**	**280**	P	Pn	17 07 19.6	+0.7
CGJI	**Cibinong**	**1.22**	**210**	P	Pn	17 07 20.0	-0.5
CGJI				S	Sn	17 07 39.3	+0.7
SKJI	**Sukabumi**	**1.47**	**170**	P	Pn	17 07 24.2	+0.9
KLI	**Kotabumi**	**1.60**	**295**	P	Pn	17 07 27.9	+3.1
KASI	**Kota Agung**	**1.81**	**271**	P	Pn	17 07 27.3	0.0
CNJI	**Cibinong**	**1.93**	**155**	P	Pn	17 07 28.8	-0.1
LWLI	**Liwa**	**2.30**	**283**	P	Pn	17 07 33.9	+0.2
CISI	**Cisompet, Garu**	**2.49**	**143**	P	Pn	17 07 36.8	+0.7
CMJI	**Cimerak**	**3.07**	**136**	P	Pn	17 07 42.4	-1.3
TPI	**Tanjungpandan**	**3.08**	**26**	P	Pn	17 07 43.0	-0.8
LHSI	**Lahat**	**3.26**	**302**	P	Pn	17 07 45.5	-0.7
MNAI	**Manna**	**3.54**	**289**	P	Pn	17 07 48.6	-1.4
UGM	**Wanagama**	**4.80**	**120**	P	Pn	17 08 06.7	-0.1
PCJI	**Pacitan**	**5.50**	**119**	P	Pn	17 08 15.5	-0.8
PWJI	**Pagerwojo**	**5.98**	**115**	P	Pn	17 08 21.8	-1.0
PPSI	**Pulau Pagai**	**6.87**	**294**	P	Pn	17 08 23.7	-11
GMJI	**Gumukmas**	**7.58**	**111**	P	Pn	17 08 43.3	-1.1
PPI	**Padang Panjang**	**7.77**	**310**	P	Pn	17 08 34.5	-13
JAGI	**Jajag, Banyuwa**	**8.31**	**111**	P	Pn	17 08 54.7	+0.4

*ISCJB **13** 17:14:31.5±0.3, 35°.27N±0°.02×92°.36W±0°.02, h6km±2km, Error ellipse: s-maj=2.9km s-min=2.5km az=8.2*
*NEIC **13** 17:14:32.1, 35°.26N×92°.36W, h4km, MN2.8(CERI), After CERI.*
NEIC Felt [II] at Greenbrier. Also felt at Benton and Quitman.
ISC 13 17:14:32.3±0.9, 35°.26N±0°.02×92°.37W±0°.02, h5km±5km, n55, σ1§35/82, Arkansas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
X301	**Greenbrier Sit**	**0.03**	**224**	*e*Pg	**Pg**	17 14 33.3	-0.2
X301				*e*Sg	**Sg**	17 14 34.2	0.0
WHAR	**Wooly Hollow**	**0.07**	**68**	*e*Pg	**Pg**	17 14 33.6	-0.5
WHAR				*e*Sg	**Sg**	17 14 34.8	-0.4
W41B	**Gary Mavity, V**	**0.14**	**131**	P	**Pg**	17 14 34.5	-0.6
W41B	baz=325			S	**Sg**	17 14 36.4	-0.5
	baz=325						
UALR	**University of**	**0.49**	**177**	*e*Pg	**Pg**	17 14 41.4	-0.3
UALR				*e*Sg	**Sg**	17 14 49.2	+1.1
V41A	**Mountainview**	**0.55**	**19**	P	**Pg**	17 14 41.9	-1.1
V41A	baz=198			S	**Sg**	17 14 49.5	-0.7
	baz=198						
W40A	**Ferguson Farm,**	**0.57**	**263**	P	**Pg**	17 14 43.1	-0.3
	baz=81,SNR=92						
V40A	**Witts Springs**	**0.65**	**326**	P	**Pg**	17 14 44.2	-0.7
V40A	baz=143			S	**Sg**	17 14 52.9	-0.5
	baz=143						
X41A	**Kaden, Bauxite**	**0.77**	**189**	P	**Pg**	17 14 46.4	-0.8
	baz=9.7,SNR=26						
X41A				S	**Sg**	17 14 57.3	+0.1
	baz=9.7						
X40A	**Basin Creek Fa**	**0.86**	**206**	P	**Pg**	17 14 48.0	-0.8
	baz=26,SNR=129						
X40A				S	**Sg**	17 14 60.0	-0.1
	baz=26						
W39A	**Magazine**	**1.16**	**267**	P	**Pg**	17 14 53.5	-1.0
	baz=85,SNR=122						
U40A	**Yellville**	**1.16**	**340**	P	**Pg**	17 14 53.3	-1.3
	baz=159						
V39A	**Pettigrew**	**1.19**	**299**	P	**Pg**	17 14 53.9	-1.2
	baz=117						
V39A				S	**Sg**	17 15 09.6	-0.9
	baz=117						
MIAR	**Mount Ida**	**1.22**	**234**	P	**Pg**	17 14 54.6	-1.1
	baz=53,SNR=39						
MIAR				S	**Sg**	17 15 11.0	-0.6
	baz=53						
MIAR	**Mount Ida**	**1.22**	**234**	*e*Pg	**Pg**	17 14 54.8	-1.0
MIAR				*e*Sg	**Sg**	17 15 08.5	-3.1
Y41A	**Eaglette Beard**	**1.39**	**188**	P	**Pn**	17 14 57.7	-0.6
	baz=8.7,SNR=52						
Y41A				S	**Sn**	17 15 17.2	+0.1
	baz=8.7						
CCAR	**Cane Creek**	**1.43**	**160**	*e*Pn	**Pn**	17 14 58.4	-0.5
HBAR	**Harrisburg**	**1.43**	**78**	*e*Pn	**Pn**	17 14 57.7	-1.2
HBAR				*e*Sn	**Sb**	17 15 15.0	-3.0
Y40A	**Okolona**	**1.45**	**211**	P	**Pn**	17 14 58.6	-0.6
Y40A	baz=31,SNR=33			S	**Sb**	17 15 18.0	-0.6
	baz=31						
Y42A	**Garnett, Star**	**1.50**	**161**	P	**Pn**	17 14 59.3	-0.5
	baz=342,SNR=14						
X39A	**Fountain Ranch**	**1.62**	**243**	Pb	**Pn**	17 15 01.5	+0.1
	baz=61,SNR=137						
X39A				S	**Sn**	17 15 22.8	+0.2
	baz=61						
HHAR	**Hobbs**	**1.63**	**309**	*e*Pn	**Pn**	17 15 01.4	-0.3
HHAR				*e*Sn	**Sn**	17 15 22.3	-0.7
WLAR	**White Oak Lake**	**1.69**	**201**	*e*Pn	**Pn**	17 15 01.9	-0.5
WLAR				*e*Sn	**Sn**	17 15 24.6	+0.3
V38A	**Canehill**	**1.76**	**290**	Pb	**Pn**	17 15 03.6	+0.1
	baz=108,SNR=101						
V38A				Sb	**Sb**	17 15 27.3	-0.3
	baz=108						
W38A	**Poteau**	**1.77**	**264**	Pb	**Pn**	17 15 04.1	+0.6
	baz=82,SNR=155						
W38A				Sb	**Sb**	17 15 28.4	+0.8
	baz=82						
Y43A	**Makayla and Ka**	**1.80**	**138**	P	**Pn**	17 15 03.5	-0.5
	baz=320,SNR=16						
Y43A				S	**Sb**	17 15 28.5	0.0
	baz=320						
T40A	**Mansfield**	**1.89**	**356**	P	**Pn**	17 15 05.2	0.0
	baz=176						
T40A				S	**Sn**	17 15 30.2	+0.8
	baz=176						
T39A	**Clever**	**1.94**	**335**	P	**Pn**	17 15 06.2	+0.3
	baz=154,SNR=38						
Y39A	**Lockesburg**	**1.94**	**228**	S	**Sn**	17 15 30.5	-0.1
	baz=46						
X44A	**Crenshaw**	**1.98**	**112**	P	**Pn**	17 15 06.1	-0.4
	baz=294,SNR=13						
U38A	**Gravette**	**2.01**	**306**	P	**Pn**	17 15 07.1	+0.1
	baz=124,SNR=25						
Z42A	**Norrel Spur, H**	**2.01**	**170**	P	**Pn**	17 15 06.3	-0.6
	baz=351						
Z41A	**Richland Creek**	**2.03**	**190**	P	**Pn**	17 15 06.5	-0.6
	baz=10,SNR=20						
Z41A				S	**Sn**	17 15 33.0	+0.1
	baz=10						
PBMO	**Poplar Bluff**	**2.18**	**46**	*e*Pn	**Pn**	17 15 09.8	+0.5
PBMO				*e*Sn	**Sn**	17 15 34.6	-2.1
Y44A	**Strider, Charl**	**2.21**	**125**	P	**Pn**	17 15 09.4	-0.1
	baz=308,SNR=7.1						
S40A	**Lebanon**	**2.33**	**357**	P	**Pn**	17 15 11.7	+0.4
	baz=177,SNR=34						
V37A	**Hulbert**	**2.34**	**286**	P	**Pn**	17 15 11.5	0.0
	baz=104						
S39A	**Bolivar**	**2.54**	**343**	P	**Pn**	17 15 14.4	+0.1
	baz=162,SNR=34						
PARMO	**Parma**	**2.54**	**56**	*e*Pn	**Pn**	17 15 13.9	-0.3
PARMO				*e*Sn	**Sn**	17 15 45.1	-0.5
OXF	**Oxford**	**2.55**	**106**	*e*Pn	**Pn**	17 15 13.4	-0.8
Z44A	**Pea Ridge, Bel**	**2.55**	**140**	P	**Pn**	17 15 14.1	-0.2
	baz=322						
GLAT	**Glass**	**2.70**	**67**	*e*Pn	**Pn**	17 15 15.0	-1.4
T37A	**Cheneyville 18**	**2.77**	**313**	P	**Pn**	17 15 17.9	+0.5
	baz=131,SNR=9.2						
TUL1	**Leonard**	**2.86**	**284**	*e*Pn	**Pn**	17 15 17.0	-1.5
V36A	**Jenks**	**2.96**	**281**	P	**Pn**	17 15 20.1	+0.2
	baz=99,SNR=8.4						
R39A	**Chumby, Stover**	**3.09**	**350**	P	**Pn**	17 15 22.5	+0.7
	baz=169,SNR=8.2						
T36A	**Boggs Farm, Ca**	**3.36**	**303**	P	**Pn**	17 15 25.4	0.0
	baz=121,SNR=6.1						
W35A	**Tecumseh**	**3.69**	**270**	P	**Pn**	17 15 29.6	-0.3
	baz=87,SNR=5.9						
WVT	**Waverly**	**3.80**	**76**	*e*Pn	**Pn**	17 15 30.4	-1.0
V34A	**Guthrie**	**4.23**	**279**	*e*Pn	**Pn**	17 15 36.6	-0.9
V34A				*e*Sg	**Sg**	17 16 45.5	-2.8
U34A	**Anderson Ranch**	**4.35**	**287**	*e*Pn	**Pn**	17 15 36.7	-2.4
W34A	**Bridge Creek,**	**4.42**	**271**	*e*Pn	**Pn**	17 15 37.5	-2.5
LRAL	**Lakeview Retre**	**4.98**	**115**	*e*Pn	**Pn**	17 15 44.3	-3.4
LRAL				*e*Sg	**Sb**	17 17 04.3	+4.2
KSU1	**Kansas State U**	**5.11**	**320**	*e*Sb	**Sb**	17 17 06.2	+2.4
WMOK	**Wichita Mounta**	**5.29**	**266**	*e*Pn	**Pn**	17 15 51.4	-0.6
WMOK				*e*Sg	**Sb**	17 17 13.7	+4.7
BLO	**Bloomington**	**6.08**	**48**	*e*Sb	**Sb**	17 17 35.4	+3.5

MEX 13 17:16:35.0±0.7, 30°.80N×105°.56W, h11km±23km, MD3.8, Texas-Mexico border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CGIG		**2.13**	**259**	*e*P	Pn	17 17 07.8	-2.9
CGIG				*e*S	Sn	17 17 32.6	-4.7
121A	**Cookes Peak, D**	**2.57**	**313**	*e*P	Pn	17 17 13.2	-3.6
121A				*e*S	Sn	17 17 44.8	-3.3
319A	**Douglas**	**3.25**	**281**	*e*P	Pn	17 17 25.0	-1.0
319A				*i*S	Sn	17 18 01.0	-3.7

*NIED **13** 17:30:00, 37°.10N×141°.90E, h32km, Mw3.8 Best double couple: M0=5.36000×10^14 NP1:φ=210.00000°, δ=6.00000°, λ=97.00000°. NP2:φ=23.00000°, δ=84.00000°, λ=89.00000°.*
*IDC **13** 17:30:01.4±0.8, 36°.97N×142°.05E, h0km, mb3.8/8, mb1 3.9/13, mb1mx3.6/59, mbtmp3.8/13, ML3.6/4, MS3.0/8, Ms1 3.0/8, ms1mx2.7/51, Error ellipse: s-maj=20.8km s-min=16.2km az=94.0*
*ISCJB **13** 17:30:03.0±1.0, 37°.02N±0°.03×142°.03E±0°.04, h23km±7km, mb4.5/25, MS3.2/3, Error ellipse: s-maj=5.9km s-min=4.9km az=174.4*
*JMA **13** 17:30:04.7±0.2, 37°.05N×141°.94E, h28km±4km, M4.1*
*NEIC **13** 17:30:05.4±1.5, 37°.03N×141°.99E, h23km±11km, mb4.6/16, Error ellipse: s-maj=7.6km s-min=6.2km az=121.0*
ISC 13 17:30:03.2±1.6, 37°.04N±0°.04×141°.97E±0°.05, h9km±9km, n73, σ1§15/73, mb4.3/25, MS3.1/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.93**	**291**	P	**Pg**	17 30 21.4	+0.4
JFK				*e*S	**Sg**	17 30 33.0	-0.1
ONAJ	**Iwakimizuishiy**	**0.94**	**274**	P	**Pg**	17 30 21.4	+0.2
JHO	**Hitachi**	**1.20**	**249**	P	**Pb**	17 30 24.9	-1.2
JHO				*e*S	**Sb**	17 30 39.7	-2.0
JMM	**Marumori**	**1.24**	**312**	P	**Pn**	17 30 26.2	-0.5
JFT	**Otama**	**1.38**	**291**	P	**Pn**	17 30 29.0	+0.3
JFT				*e*S	**Sb**	17 30 45.7	-1.3
JIO	**Ouri**	**1.49**	**341**	P	**Pn**	17 30 29.3	-0.8
JIO				S	**Sn**	17 30 46.8	-2.9
JOU	**Okura**	**1.68**	**322**	P	**Pn**	17 30 33.2	+0.5
JOU				S	**Sn**	17 30 54.0	-0.3
JFY	**Yanaizu**	**1.84**	**282**	P	**Pn**	17 30 36.0	+1.0
JFY				*e*S	**Sn**	17 30 58.5	+0.1
JYS	**Shiratake**	**1.91**	**309**	P	**Pn**	17 30 37.0	+1.1
JYS				*e*S	**Sn**	17 31 00.6	+0.4
MJAR	**Matsushiro Arr**	**3.06**	**262**	**Pn**	**Pn**	17 30 53.4	+1.7
	12nm,0.3s,baz=86,slow=15,SNR=80						
MJAR				LR	LR	17 32 23.1	
	comp=Z

SONA0	Songino Array	28.15	304	eP	P	17 35 56.1	+0.4
	6.5nm,1.5s						
SONM	Songino Array	28.15	304	P	P	17 35 56.1	+0.4
	1.0nm,0.7s,baz=108,slow=11,SNR=3.9						
SONM				LR	LR	17 46 38.5	
	comp=Z,49nm,18.5s,baz=56,slow=35						
H11S1	WAKE ISLAND Hy	28.50	124	T	T	18 05 54.5	
	baz=316,slow=76,SNR=36						
H11S3	WAKE ISLAND Hy	28.50	124	T	T	18 05 54.3	
	baz=316,slow=76,SNR=26						
H11S2	WAKE ISLAND Hy	28.51	124	T	T	18 05 58.8	
	baz=316,slow=76,SNR=15						
GSTR	Great Sitkin T	32.96	49	eP	P	17 36 40.7	+2.7
DAV	Davao City (W)	33.36	211	eScP	ScP	17 43 08.4	+0.3
ZAA1	Zalesovo Array	42.23	312	eP	P	17 37 56.5	+0.1
ZALV	Zalesovo Beam	42.23	312	P	P	17 37 56.5	+0.1
	0.5nm,0.3s,baz=101,slow=7.5,SNR=3.0						
MK01	Makanchi Array	44.49	302	eP	P	17 38 13.6	-1.1
MK31	Makanchi Array	44.49	302	eP	P	17 38 13.5	-1.2
MK32	Makanchi Array	44.49	302	eP	P	17 38 14.4	-0.3
MKAR	Makanchi Array	44.49	302	P	P	17 38 14.4	-0.3
	0.9nm,0.6s,baz=85,slow=8.4,SNR=12						
MKAR				LR	LR	17 56 56.3	
	comp=Z,22nm,19.9s,baz=316,slow=36						
MKAR	Makanchi Array	44.49	302	eP	P	17 38 13.7	-1.1
MAKZ	Makanchi	44.70	302	eP	P	17 38 16.8	+0.4
KURK	Kurchatov	46.27	308	eP	P	17 38 29.0	+0.2
KURBB	Kurchatov Arra	46.34	308	P	P	17 38 29.0	-0.4
	1.3nm,0.5s,baz=82,slow=7.9,SNR=15						
BPAW	Bear Paw Mtn.	47.48	33	eP	P	17 38 38.5	+0.5
	13nm,1.8s						
BWN	Browne	48.14	33	eP	P	17 38 45.1	+1.9
	21nm,0.8s						
MDM	Murphy Dome	48.67	32	eP	P	17 38 47.9	+0.6
	11nm,1.8s						
MMRI	Maumere	49.06	206	eP	P	17 38 51.1	+0.4
	27nm,1.0s						
KULM	Kulim	49.20	240	eP	P	17 38 49.9	-2.0
	19nm,1.6s						
ILAR	Eielson Array	49.25	32	P	P	17 38 51.5	-0.1
	0.8nm,0.7s,baz=272,slow=6.4,SNR=9.7						
ILB	Eielson Array	49.25	32	eP	P	17 38 51.2	-0.5
IL1	Eielson Array	49.25	32	eP	P	17 38 51.4	-0.3
EKS2	Erkin-Say	51.37	299	eP	P	17 39 08.0	-0.2
	1.9nm,1.1s						
ZRNK	Zerenda	51.73	313	eP	P	17 39 10.8	+0.2
	6.9nm,1.8s						
OPA	Opana	53.69	89	eP	P	17 39 26.7	+1.2
	203nm,1.6s						
HON	Honolulu	53.88	89	eP	P	17 39 28.8	+1.9
	237nm,1.2s						
INK	Inuvik	54.18	27	P	P	17 39 28.6	+0.2
	0.4nm,0.5s,baz=29,slow=2.2,SNR=5.5						
INK	Inuvik	54.18	27	eP	P	17 39 28.3	-0.1
	6.5nm,1.6s						
ARU	Arti	56.65	319	eP	P	17 39 45.8	-0.6
	9.5nm,1.7s						
WR1	Warramunga Arr	57.13	189	eP	P	17 39 49.0	-1.1
	18nm,1.4s						
WRA	Warramunga Arr	57.13	189	P	P	17 39 49.0	-1.1
	1.2nm,0.8s,baz=7.1,slow=7.5,SNR=11						
AS01	Alice Springs	60.85	188	eP	P	17 40 15.3	-0.6
AS31	Alice Springs	60.86	188	eP	P	17 40 14.9	-1.0
	2.2nm,1.4s						
ASAR	Alice Springs	60.86	188	P	P	17 40 15.2	-0.8
	0.4nm,0.7s,baz=10,slow=6.5,SNR=9.3						
ARA0	ARCESS Array S	64.14	340	eP	P	17 40 37.6	+0.2
B06A	Marblemount	67.21	46	eP	P	17 40 57.7	+0.2
	6.5nm,0.6s						
NOA	NORSAR Array B	74.35	337	LR	LR	18 18 56.5	
	comp=Z,18nm,18.7s,baz=20,slow=39						
LPAZ	La Paz	146.31	60	PKPbc	PKPdf	17 49 44.4	+0.1
	1.1nm,0.8s,baz=15,slow=4.7,SNR=3.8						

*ISCJB **13** 17:40:42.7±0.7, 15°.60N±0°.07×93°.76W±0°.05, h87km±6km, mb3.9/3, Error ellipse: s-maj=12.3km s-min=7.2km az=13.2*
*IDC **13** 17:40:44.5±5.2, 15°.72N×93°.59W, h83km±28km, mb3.7/3, mb1 3.9/5, mb1mx3.4/41, mbtmp4.0/5, Error ellipse: s-maj=54.9km s-min=16.7km az=2.0*
*MEX **13** 17:40:45.0±1.1, 15°.63N×93°.80W, h77km±12km, MD3.9*

ISC 13 17:40:43.6±1.0, 15°.62N±0°.07×93°.75W±0°.04, h84km±9km, n11, σ1°36/18, mb3.9/3, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		0.51	81	iP	Pn	17 40 57.8	0.0
PCIG				eS	Sn	17 41 08.0	-0.4
TGIG		1.30	27	iP	Pn	17 41 07.0	+0.4
TGIG				eS	Sn	17 41 22.4	-1.4
THIG		1.59	116	iP	Pn	17 41 10.6	+0.3
THIG				iS	Sn	17 41 30.7	+0.2
CCIG	Comitan	1.68	67	eP	Pn	17 41 12.6	+1.0
CCIG				eS	Sn	17 41 32.6	-0.2
CMIG	Matias Romero	1.83	323	P	Pn	17 41 14.2	+0.9
	16nm,0.3s,baz=140,slow=10,SNR=79						
CMIG				S	Sn	17 41 37.4	+1.5
	91nm,0.3s,baz=120,slow=16,SNR=20						
HUIG	Huatulco	2.28	274	eP	Pn	17 41 18.8	-0.6
HUIG				iS	Sn	17 41 44.1	-2.6
TEIG	Tepich	6.93	48	P	Pn	17 42 21.5	-1.1
	24nm,0.3s,baz=271,slow=23,SNR=113						
TEIG				S	Sn	17 43 36.8	-3.2
	7.9nm,0.3s,baz=0.0,slow=22,SNR=6.6						
TXAR	Lajitas Array	16.43	328	P	P	17 44 30.5	0.0
	0.0nm,0.3s,baz=137,slow=12,SNR=5.8						
YKA	Yellowknife Ar	49.08	347	P	P	17 49 22.9	+0.8
	0.7nm,0.6s,baz=141,slow=8.2,SNR=8.1						
INK	Inuvik	58.42	344	P	P	17 50 30.6	+0.4
	0.7nm,0.7s,baz=198,slow=2.2,SNR=5.0						
ARCES	ARCESS Array B	85.13	18	P	P	17 53 10.1	0.0
	2.6nm,0.9s,baz=306,slow=6.4,SNR=4.8						

IDC 13 17:47:21.1±2.2, 15°.57S×176°.30W, h311km±52km, mb3.6/2, mb1 3.8/3, mb1mx3.0/44, mbtmp4.3/3, Error ellipse: s-maj=270.3km s-min=38.5km az=155.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	Afiamalu	4.68	70	P	Pn	17 48 36.4	+0.9
	12nm,0.3s,baz=157,slow=3.1,SNR=12						
AFI				S	S	17 49 35.2	-0.1
	3.9nm,0.3s,baz=114,slow=19,SNR=3.6						
WRA	Warramunga Arr	47.08	257	P	P	17 55 22.7	-0.1
	1.1nm,0.6s,baz=92,slow=7.6,SNR=17						
ASAR	Alice Springs	47.40	252	P	P	17 55 25.0	-0.2
	5.0nm,0.5s,baz=87,slow=8.1,SNR=70						
BRTR	Keskin Array B	144.48	319	PKP	PKPbc	18 06 20.5	+0.1
	0.8nm,0.8s,baz=48,slow=1.8,SNR=5.1						

IDC 13 17:49:11.8±3.3, 6°.39S×148°.00E, h0km, mb3.6/3, mb1 3.8/5, mb1mx3.5/44, mbtmp3.6/5, ML3.7/1, MS2.3/1, Ms1 2.3/1, ms1mx2.2/29, Error ellipse: s-maj=86.2km s-min=27.7km az=100.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	Port Moresby	3.11	195	Pn	Pn	17 50 02.5	+0.3
	3.9nm,0.3s,baz=74,slow=6.1,SNR=16						
PMG				Sn	Sb	17 50 46.1	-0.5
	15nm,0.3s,baz=161,slow=23,SNR=9.6						
PMG				LR	LR	17 51 06.0	
	comp=Z,45nm,18.2s,baz=30,slow=37						
WRA	Warramunga Arr	18.91	223	P	P	17 53 34.4	+0.1
	0.2nm,0.3s,baz=47,slow=11,SNR=19						
ASAR	Alice Springs	21.88	217	P	P	17 54 06.2	-0.3
	0.5nm,0.4s,baz=52,slow=9.0,SNR=33						
FITZ	Fitzroy Crossi	24.72	240	P	P	17 54 35.1	0.0
	4.7nm,0.5s,baz=52,slow=8.2,SNR=37						
MKAR	Makanchi Array	78.42	320	P	P	18 01 14.7	+0.1
	0.1nm,0.4s,baz=106,slow=7.4,SNR=3.0						

*NIED **13** 17:59:00, 39°.10N×142°.40E, h35km, Mw3.9 Best double couple: M0:7.82000×10^14 NP1:φ=77.00000°, δ41.00000°, λ36.00000°. NP2:φ=318.00000°, δ68.00000°, λ125.00000°.*
*ISCJB **13** 17:59:51.4±1.3, 39°.00N±0°.05×142°.3E±0°.1, h45km±14km, mb3.5/3, MS3.3/1, Error ellipse: s-maj=17.0km s-min=7.2km az=11.2*
*JMA **13** 17:59:51.0±0.1, 39°.08N×142°.39E, h32km±2km, M3.9*
JMA Felt I J1.
*IDC **13** 17:59:53.5±2.2, 38°.96N×142°.42E, h49km±24km, mb3.2/3, mb1 3.6/6, mb1mx3.2/49, mbtmp3.7/6, ML3.3/3, MS2.8/3, Ms1 2.9/3, ms1mx2.4/18, Error ellipse: s-maj=42.2km s-min=14.7km az=105.0*

ISC 13 17:59:52.4±1.1, 38°.98N±0°.05×142°.3E±0°.1, h39km±8km, n14, σ0°94/17, mb3.6/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.48	282	P	Pn	18 00 02.4	-0.4
OFUJ				S	Sn	18 00 10.2	+0.1
JMK	Ichinoseki	0.82	268	P	Pn	18 00 07.8	+0.4
JMK				S	Sn	18 00 19.7	+1.4
JIO	Ouri	0.89	234	P	Pn	18 00 08.6	+0.2
JIO				S	Sn	18 00 20.9	+0.8
JOM	Ohasama	0.90	303	P	Pn	18 00 08.3	-0.3
JOM				S	Sn	18 00 20.6	+0.1
JKZ	Kuzumaki	1.24	324	P	Pn	18 00 12.7	-0.6
JKZ				S	Sn	18 00 28.0	-0.8
MJAR	Matsushiro Arr	4.03	234	P	Pn	18 00 55.1	+3.5
	2.0nm,0.3s,baz=40,slow=11,SNR=25						
MJAR				LR	LR	18 02 43.8	
	comp=Z,67nm,19.0s,baz=50,slow=42						
MAT	Matsushiro	4.03	234	P	Pn	18 00 55.4	+3.8
ASAJ	Asahikawa	5.14	3	P	Pn	18 01 07.0	+0.2
	0.6nm,0.3s,baz=199,slow=18,SNR=4.5						
ASAJ				S	Sn	18 02 07.2	+2.4
	0.4nm,0.3s,baz=180,slow=20,SNR=1.9						
JHJ	Hachijo jima 2	6.18	200	P	Pn	18 01 21.6	+0.4
	4.7nm,0.3s,baz=81,slow=19,SNR=2.1						
JHJ				S	Sn	18 02 29.4	-1.2
	3.2nm,0.3s,baz=73,slow=19,SNR=1.9						
KSRS	Korea Array	11.39	267	LR	LR	18 06 39.2	
	comp=Z,25nm,21.2s,baz=125,slow=35						
CMAR	Chiang Mai Arr	42.66	254	LR	LR	18 26 05.7	
	comp=Z,40nm,19.3s,baz=266,slow=37						
MKAR	Makanchi Array	43.69	301	P	P	18 07 53.7	+0.4
	0.4nm,0.8s,baz=71,slow=8.8,SNR=3.7						
ILAR	Eielson Array	47.50	33	P	P	18 08 23.1	0.0
	0.4nm,0.6s,baz=270,slow=6.8,SNR=5.2						
WRA	Warramunga Arr	59.08	189	P	P	18 09 48.5	-0.1
	0.4nm,0.5s,baz=7.1,slow=7.9,SNR=3.0						

JMA 13 18:11:31.8±0.1, 39°.02N×142°.40E, h32km±2km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.57	276	P	Pb	18 11 43.3	-0.2
OFUJ				S	Sb	18 11 51.1	-0.4
MIYJ	Miyakonagasawa	0.71	321	P	Pn	18 11 45.1	-0.6
MIYJ				S	Sb	18 11 54.3	-1.1
JMK	Ichinoseki	0.92	266	P	Pn	18 11 48.6	+0.1
JMK				S	Sn	18 12 00.2	-0.5
JOM	Ohasama	0.97	298	P	Pn	18 11 49.5	+0.3
JOM				S	Sn	18 12 02.1	+0.2
JIO	Ouri	1.00	236	P	Pn	18 11 49.1	-0.4
JIO				S	Sn	18 12 01.2	-1.3
JTH	Tanohata	1.01	336	P	Pn	18 11 49.6	-0.1
JTH				eS	Sn	18 12 02.5	-0.3
JRG	Rokugo	1.42	286	S	Sb	18 12 15.3	-0.2
JANG	Nango	1.51	333	P	Pn	18 11 57.1	+0.4
JANG				eS	Sn	18 12 16.5	+1.2

*ISK **13** 18:45:44.8, 39°.61N×26°.38E, h6km, MD2.9*
*DDA **13** 18:45:44.5, 39°.61N×26°.44E, h8km, Md2.9*
*ATH **13** 18:45:44.7, 39°.60N×26°.40E, h24km±2km, ML2.1/3, Error ellipse: s-maj=3.4km s-min=1.0km az=257.0*
*ISCJB **13** 18:45:45.1±0.4, 39°.61N±0°.02×26°.40E±0°.03, h6km±3km, Error ellipse: s-maj=3.5km s-min=2.6km az=173.3*
*THE **13** 18:45:45.7, 39°.61N×26°.36E, h7km±1km, ML2.2/5, Error ellipse: s-maj=1.6km s-min=0.6km az=275.0*
*CSEM **13** 18:45:45.1±0.1, 39°.61N×26°.39E, h5km, MD2.9, Error ellipse: s-maj=2.1km s-min=1.7km az=92.0*

ISC 13 18:45:44.8±1.0, 39°.58N±0°.02×26°.39E±0°.02, h7km±9km, n98, σ0°63/132, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EZN	Ezine	0.25	349	ePG	Pg	18 45 49.9	+0.1
EZN				eSG	Sg	18 45 53.4	+0.3
EZN	Ezine	0.25	349	P	Pg	18 45 49.8	0.0
EZN				S	Sg	18 45 53.3	+0.1
EZN	Ezine	0.25	349	ePg	Pg	18 45 49.9	+0.1
EZN				S	Sg	18 45 53.3	+0.1
PRK	Paraskevi	0.34	196	P	Pb	18 45 52.7	-0.5
PRK				S	Sb	18 45 59.2	+0.3
PRK	Paraskevi	0.34	196	P	Pb	18 45 52.5	-0.7
PRK				S	Sb	18 45 59.2	+0.3
PRK	Paraskevi	0.34	196	P	Pb	18 45 52.5	-0.7
AYVA	Ayvalik	0.36	139	P	Pb	18 45 52.7	-0.7
AYVA				S	Sb	18 45 58.0	-1.2
AYVA	Ayvalik	0.36	139	iP	Pb	18 45 52.7	-0.7
AYVA				iS	Sb	18 45 58.0	-1.2
BOZC	Bozcaada	0.37	315	iP	Pg	18 45 52.4	+0.4
BOZC				iS	Sg	18 45 57.5	+0.6
SIGR	SIGRI	0.55	229	ePG	Pb	18 45 56.4	-0.3
SIGR	SIGRI	0.55	229	P	Pb	18 45 56.3	-0.5
SIGR				S	Sb	18 46 04.7	-0.2
SIGR	SIGRI	0.55	229	P	Pb	18 45 56.3	-0.5
SIGR				S	Sb	18 46 04.6	-0.3
SIGR	SIGRI	0.55	229	P	Pb	18 45 56.3	-0.5
SIGR				S	Sb	18 46 04.5	-0.3
SIGR				AML	AML	18 46 07.9	
	comp=E,401μm,0.6s						
SIGR				AML	AML	18 46 08.0	
	comp=N,291μm,0.3s						
DKL	Dikili	0.65	142	ePG	Pb	18 45 58.3	0.0
DKL	Dikili	0.65	142	ePg	Pb	18 45 58.3	0.0
GELI	Tayfur-Gelibol	0.82	4	ePG	Pg	18 46 00.4	-0.2
GELI	Tayfur-Gelibol	0.82	4	ePg	Pg	18 46 00.4	-0.2
LPK	Lapseki	0.84	20	ePG	Pg	18 46 00.7	-0.3
LPK	Lapseki	0.84	20	ePg	Pg	18 46 00.7	-0.3
BALY	Balya	0.96	80	P	Pg	18 46 03.2	0.0
BALY				S	Sg	18 46 15.7	-0.1
BALY	Balya	0.96	80	iP	Pg	18 46 03.2	0.0
BALY				iS	Sg	18 46 15.7	-0.1
LIA	Limnos Island	0.98	289	P	Pb	18 46 03.9	-0.2
LIA				S	Sb	18 46 17.3	0.0
LIA	Limnos Island	0.98	289	P	Pb	18 46 03.9	-0.2
LIA				S	Sb	18 46 17.3	0.0
KRBG	Karabiga-Canak	1.07	40	ePG	Pg	18 46 05.5	+0.1
KRBG	Karabiga-Canak	1.07	40	ePg	Pg	18 46 05.5	+0.1
GONE	Gonen-Balikesi	1.10	64	ePN	Pb	18 46 06.2	0.0
GONE	Gonen-Balikesi	1.10	64	ePn	Pb	18 46 06.2	0.0
SMTH	Samothraki Isl	1.11	324	P	Pg	18 46 05.7	-0.4
SMTH				S	Sg	18 46 20.5	-0.1
SMTH	Samothraki Isl	1.11	324	P	Pg	18 46 05.9	-0.2
SMTH				S	Sg	18 46 20.4	-0.1
SMTH	Samothraki Isl	1.11	324	P	Pg	18 46 05.9	-0.2
SMTH				S	Sg	18 46 20.4	-0.1
SMTH				AML	AML	18 46 22.4	
	comp=E,258μm,0.3s						
SMTH				AML	AML	18 46 23.4	
	comp=N,281μm,0.2s						
KNL	Bal¨–kesir	1.11	51	iP	Pg	18 46 05.0	-1.1
KNL				iS	Sg	18 46 18.5	-2.1
BALB	Balikesir	1.15	86	ePN	Pn	18 46 07.4	+0.1
BALB	Balikesir	1.15	86	ePn	Pn	18 46 07.4	+0.1
ENEZ	Enez	1.17	351	ePN	Pg	18 46 07.0	-0.3
ENEZ	Enez	1.17	351	P	Pg	18 46 07.0	-0.3
ENEZ				S	Sg	18 46 22.5	0.0
ENEZ	Enez	1.17	351	P	Pg	18 46 07.0	-0.3
ENEZ				S	Sg	18 46 22.5	0.0
CHOS	Chios island	1.22	192	ePN	Pn	18 46 08.9	+0.6
CHOS	Chios island	1.22	192	P	Pg	18 46 07.8	-0.3
CHOS				S	Sn	18 46 25.1	+0.1
CHOS	Chios island	1.22	192	P	Pg	18 46 07.8	-0.3
CHOS	Chios island	1.22	192	ePn	Pn	18 46 08.9	+0.6
CHOS				S	Sn	18 46 25.1	+0.1
CHOS	Chios island	1.22	192	P	Pg	18 46 07.6	-0.5
URLA	Izmir	1.23	172	P	Pn	18 46 08.5	+0.1
URLA				S	Sn	18 46 25.1	-0.1
URLA	Izmir	1.23	172	iP	Pn	18 46 08.5	+0.1
URLA				iS	Sn	18 46 25.1	-0.1
RKY	Sarkoy-Tekirda	1.26	28	ePN	Pg	18 46 08.1	-0.9
RKY	Sarkoy-Tekirda	1.26	28	ePn	Pg	18 46 08.1	-0.9
SART	Tekirdag	1.26	28	P	Pg	18 46 07.9	-1.1
SART				S	Sg	18 46 25.2	-0.2
SART	Tekirdag	1.26	28	iP	Pg	18 46 07.9	-1.1
SART				iS	Sg	18 46 25.2	-0.2
KESN	Edirne-Kesan	1.27	10	P	Pg	18 46 08.9	-0.2
KESN	Edirne-Kesan	1.27	10	iP	Pg	18 46 08.9	-0.2
AKS	Akhisar	1.31	122	ePN	Pg	18 46 10.6	+0.8
AKS	Akhisar	1.31	122	ePn	Pg	18 46 10.6	+0.8
ZEY	¨zmir	1.34	176	iP	Pn	18 46 09.4	-0.5
ZEY				iS	Sn	18 46 29.1	+1.1
ALN	Alexandroupoli	1.34	349	ePN	Pg	18 46 10.5	-0.1
ALN	Alexandroupoli	1.34	349	P	Pn	18 46 09.0	-0.9
ALN				S	Sb	18 46 27.4	-0.3
ALN	Alexandroupoli	1.34	349	P	Pn	18 46 09.8	-0.2
ALN	Alexandroupoli	1.34	349	ePn	Pg	18 46 10.5	-0.1
ALN				S	Sb	18 46 27.4	-0.3
ALN	Alexandroupoli	1.34	349	P	Pn	18 46 09.8	-0.2
ALN				S	Sg	18 46 28.0	0.0
ALN				AML	AML	18 46 31.3	
	comp=N,115μm,0.3s						
ALN				AML	AML	18 46 31.9	
	comp=E,76μm,0.4s						
EDC	Edincik	1.37	55	ePN	Pg	18 46 11.0	0.0
EDC	Edincik	1.37	55	ePn	Pg	18 46 11.0	0.0
MRMT	Marmara Adasi	1.38	42	ePN	Pn	18 46 10.8	+0.4
MRMT	Marmara Adasi	1.38	42	ePn	Pn	18 46 10.9	+0.4
DGB	¨zmir	1.57	166	iP	Pb	18 46 14.2	0.0
DURS	Dursunbey	1.61	89	P	Pn	18 46 13.3	-0.4
DURS	Dursunbey	1.61	89	iP	Pn	18 46 13.3	-0.4
KCTX	Karacabey (Bur	1.66	65	ePN	Pn	18 46 15.0	+0.7
KCTX	Karacabey (Bur	1.66	65	ePn	Pn	18 46 15.0	+0.7
TKR	Tekirdag	1.66	31	ePN	Pn	18 46 15.0	+0.7
TKR	Tekirdag	1.66	31	ePn	Pn	18 46 15.0	+0.7
DEMI	Demirci	1.88	106	P	Pg	18 46 20.5	-0.4
DEMI	Demirci	1.88	106	iP	Pg	18 46 20.4	-0.4
AOS	Alonnisos	1.99	259	ePN	Pn	18 46 19.4	+0.6
AOS	Alonnisos	1.99	259	P	Pn	18 46 19.1	+0.3
AOS	Alonnisos	1.99	259	P	Pn	18 46 19.1	+0.3
AOS	Alonnisos	1.99	259	ePn	Pn	18 46 19.4	+0.6
AOS	Alonnisos	1.99	259	P	Pn	18 46 18.8	0.0
OUR	Ouranopolis	2.00	293	ePN	Pn	18 46 19.6	+0.6
OUR	Ouranopolis	2.00	293	ePn	Pn	18 46 19.6	+0.6
AYDB	Zeytinkoy-Aydi	2.01	144	ePN	Pn	18 46 20.1	+0.9
AYDB	Zeytinkoy-Aydi	2.01	144	ePn	Pn	18 46 20.1	+0.9
ARMT	Armutlu	2.14	62	ePN	Pn	18 46 22.0	+1.1
ARMT	Armutlu	2.14	62	ePn	Pn	18 46 22.0	+1.1
IGD	Bursa	2.27	72	iP	Pb	18 46 25.6	-0.4
EDRB	Edirne	2.28	7	ePN	Pn	18 46 23.4	+0.5
EDRB	Edirne	2.28	7	P	Pn	18 46 23.2	+0.3
EDRB				S	Sn	18 46 51.3	+0.1
EDRB	Edirne	2.28	7	P	Pn	18 46 23.2	+0.3
EDRB				S	Sn	18 46 51.3	+0.1
TVSB	Tavsanli	2.38	92	ePN	Pn	18 46 25.9	+1.6
TVSB	Tavsanli	2.38	92	ePn	Pn	18 46 25.9	+1.6
CTYL	Yalikoy Yolu	2.38	37	ePN	Pn	18 46 25.2	+1.0
CTYL	Yalikoy Yolu	2.38	37	ePn	Pn	18 46 25.2	+1.0
BUY	Buyukada	2.45	58	iP	Pg	18 46 31.6	-0.1
BUY				iS	Sb	18 46 59.5	+0.1
IZI	Iznik	2.49	71	ePN	Pn	18 46 27.1	+1.3
IZI	Iznik	2.49	71	ePn	Pn	18 46 27.1	+1.3
NVR	Nevrokopi	2.62	313	P	Pn	18 46 27.5	0.0
NVR	Nevrokopi	2.62	313	P	Pn	18 46 27.5	0.0
KLYT	Kilyos	2.63	50	ePN	Pn	18 46 28.9	+1.3
KLYT	Kilyos	2.63	50	ePn	Pn	18 46 28.9	+1.3
CAVI	Cavuskoy	2.73	76	ePN	Pn	18 46 30.5	+1.5
CAVI	Cavuskoy	2.73	76	ePn	Pn	18 46 30.5	+1.5

*ISCJB **13** 19:00:20.1±0.6, 15°.5S±0°.1×173°.36W±0°.09, h10km, mb4.6/18, MS3.6/8, Error ellipse: s-maj=21.5km s-min=10.0km az=153.6*
*IDC **13** 19:00:20.3±3.2, 15°.69S×173°.16W, h0km, mb4.0/5, mb1 4.3/5, mb1mx3.8/41, mbtmp4.0/5, MS3.6/8, Ms1 3.6/8, ms1mx3.2/38, Error ellipse: s-maj=179.4km s-min=25.1km az=146.0*
*NEIC **13** 19:00:22.0±0.5, 15°.48S×173°.36W, h10km, mb4.7/12, Error ellipse: s-maj=17.7km s-min=9.1km az=156.0*

ISC 13 19:00:22.1±0.9, 15°.7S±0°.2×173°.2W±0°.1, h10km, n46, σ0°89/20, mb4.7/18, MS3.6/8, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	Afiamalu	2.21	37	Pn	Pn	19 00 50.4	-8.5
	60nm,0.3s,baz=169,slow=1.9,SNR=25						
AFI				Sn	Sn	19 01 08.2	-18
	183nm,0.3s,baz=351,slow=23,SNR=25						
MSVF	Nonsavu	8.67	255	ePn	Pn	19 02 24.1	-3.7
FUNA	Funafuti	10.31	313	ePn	Pn	19 02 44.8	-5.4
DZM	Mont Dzumac	20.31	249	LR	LR	19 11 33.9	
	comp=Z,212nm,19.6s,baz=58,slow=33						
PPT	Papeete	22.67	98	LR	LR	19 11 49.9	
	comp=Z,91nm,21.2s,baz=262,slow=30						
PPT2	Papeete2	22.67	98	eLQ	LQ	19 09 53.8	
	504nm,28.2s						
PPT2				eLR	LR	19 10 57.6	
	231nm,24.5s						
TAOE	Nuku Hiva Isla	32.93	82	eLQ	LQ	19 13 03.4	
	2μm,28.1s						
TAOE				eLR	LR	19 15 29.7	
	208nm,26.7s						
RKT	Rikitea	36.69	108	eT	T	19 46 31.3	
	1.4nm,0.3s						
H11S2	WAKE ISLAND Hy	39.32	329	T	T	19 49 10.7	
	baz=148,slow=74						
H11S3	WAKE ISLAND Hy	39.33	329	T	T	19 49 31.4	
	baz=148,slow=74						
H11S1	WAKE ISLAND Hy	39.34	329	T	T	19

3.7nm,1.0s
YKA Yellowknife Ar 90.26 23 P **P 19 13 22.6 -0.1**
0.8nm,0.9s,baz=227,slow=3.8,SNR=4.9
YKB5 Yellowknife Ar 90.26 23 *e*P **P 19 13 22.6 -0.1**
GERES GERESS Array B 146.45 352 PKPbc **PKPdf 19 20 03.6 +1.3**
0.7nm,0.8s,baz=42,slow=4.2,SNR=6.7
GEA0 GERESS Array S 146.46 352 *e*PKPdf **PKPdf 19 20 02.5 +0.2**
BRTR Keskin Array B 146.52 321 PKPbc **PKPdf 19 20 04.5 +1.6**
3.1nm,0.8s,baz=148,slow=2.2,SNR=20
BR231 Keskin MP Arra 146.96 322 *e*PKPdf **PKPdf 19 20 04.5 +0.9**
BR231 *e*PKPbc **PKPbc 19 20 06.9 +1.4**

ISCJB ***13*** *19:06:28.5±1.0, 34°.71N±0°.05×25°.40E±0°.03, h4km±5km, mb3.8/6, Error ellipse: s-maj=7.8km s-min=3.8km az=4.6*
IDC ***13*** *19:06:28.3±1.2, 34°.79N×25°.45E, h0km, mb3.9/5, mb1 3.6/9, mb1mx3.5/47, mbtmp3.6/9, ML3.8/3, Error ellipse: s-maj=22.6km s-min=9.4km az=35.0*
CSEM ***13*** *19:06:30.4±0.4, 34°.80N×25°.37E, h0km±2km, ML3.5, Error ellipse: s-maj=8.1km s-min=3.3km az=175.0*
THE ***13*** *19:06:30.8, 34°.84N×25°.34E, h2km±2km, ML3.5/8, Error ellipse: s-maj=2.5km s-min=0.6km az=150.0*
ATH ***13*** *19:06:30.6, 34°.84N×25°.33E, h17km, ML3.5/4, Error ellipse: s-maj=1.9km s-min=0.9km az=353.0*
ISC 13 19:06:29.7±1.3, 34°.81N±0°.04×25°.41E±0°.03, h8km±9km, n141, σ1§37/159, mb3.8/6, Crete

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LAST	**Lasithi**	**0.35**	**9**	P	**Pb**	**19 06 38.0**	**-0.3**
LAST				S	**Sb**	**19 06 43.1**	**-1.0**
LAST	**Lasithi**	**0.35**	**9**	P	**Pb**	**19 06 38.0**	**-0.3**
LAST				S	**Sb**	**19 06 43.1**	**-1.0**
LAST	**Lasithi**	**0.35**	**9**	P	**Pb**	**19 06 38.2**	**-0.1**
NPS	**Neapolis**	**0.48**	**20**	P	**Pb**	**19 06 40.2**	**-0.2**
NPS				S	**Sb**	**19 06 47.2**	**-0.5**
NPS	**Neapolis**	**0.48**	**20**	P	**Pb**	**19 06 40.3**	**-0.2**
NPS				S	**Sb**	**19 06 47.2**	**-0.5**
NPS	**Neapolis**	**0.48**	**20**	P	**Pb**	**19 06 40.3**	**-0.2**
NPS				S	**Sb**	**19 06 47.7**	**0.0**
NPS				AML	AML	19 06 49.7	
	comp=E,11713μm,0.2s						
NPS				AML	AML	19 06 50.4	
	comp=N,5892μm,0.3s						
SIVA	**Sivas**	**0.53**	**293**	P	**Pg**	**19 06 40.1**	**+0.1**
SIVA				S	**Sg**	**19 06 47.1**	**+0.1**
SIVA	**Sivas**	**0.53**	**293**	P	**Pg**	**19 06 40.1**	**+0.1**
SIVA				S	**Sg**	**19 06 47.1**	**+0.1**
SIVA	**Sivas**	**0.53**	**293**	P	**Pg**	**19 06 40.1**	**+0.1**
SIVA				S	**Sg**	**19 06 47.6**	**+0.6**
SIVA				AML	AML	19 06 48.8	
	comp=E,26253μm,0.7s						
SIVA				AML	AML	19 06 50.2	
	comp=N,30469μm,0.5s						
IACM	**Heraklion**	**0.57**	**331**	P	**Pg**	**19 06 41.0**	**+0.3**
IACM				S	**Sb**	**19 06 49.5**	**-0.6**
IACM	**Heraklion**	**0.57**	**331**	P	**Pg**	**19 06 41.3**	**+0.6**
IACM				S	**Sb**	**19 06 49.5**	**-0.6**
IACM	**Heraklion**	**0.57**	**331**	P	**Pg**	**19 06 41.3**	**+0.6**
IACM				S	**Sg**	**19 06 47.1**	**-1.0**
IACM				AML	AML	19 06 55.2	
	comp=E,23226μm,0.4s						
IACM				AML	AML	19 06 57.9	
	comp=N,23222μm,0.5s						
IDI	**Anoyia**	**0.64**	**318**	Pg	**Pg**	**19 06 41.5**	**-0.5**
	comp=N,62nm,0.3s,baz=152,slow=14,SNR=486						
IDI				Lg	Lg	19 06 50.9	
	comp=N,195nm,0.3s,baz=280,slow=17,SNR=41						
IDI	**Anoyia**	**0.64**	**318**	P	**Pg**	**19 06 41.8**	**-0.3**
IDI				S	**Sg**	**19 06 50.6**	**+0.2**
IDI	**Anoyia**	**0.64**	**318**	P	**Pg**	**19 06 41.8**	**-0.3**
IDI	**Anoyia**	**0.64**	**318**	P	**Pg**	**19 06 41.8**	**-0.3**
IDI				S	**Sg**	**19 06 49.9**	**-0.6**
ZKR	**Zakros**	**0.73**	**65**	P	**Pb**	**19 06 45.1**	**+0.4**
ZKR				S	**Sn**	**19 06 57.5**	**-0.2**
ZKR	**Zakros**	**0.73**	**65**	P	**Pb**	**19 06 45.1**	**+0.4**
ZKR				S	**Sb**	**19 06 54.2**	**-0.6**
ZKR	**Zakros**	**0.73**	**65**	P	**Pb**	**19 06 45.0**	**+0.3**
ZKR				S	**Sb**	**19 06 54.2**	**-0.6**
ZKR				AML	AML	19 06 59.0	
	comp=N,11515μm,0.3s						
ZKR				AML	AML	19 07 00.8	
	comp=E,9105μm,0.5s						
GVD	**Gavdhos**	**1.09**	**272**	P	**Pg**	**19 06 49.8**	**-0.8**
GVD				S	**Sg**	**19 07 05.3**	**+0.6**
GVD	**Gavdhos**	**1.09**	**272**	P	**Pg**	**19 06 50.4**	**-0.2**
GVD				S	**Sg**	**19 07 05.3**	**+0.6**
GVD	**Gavdhos**	**1.09**	**272**	P	**Pg**	**19 06 50.4**	**-0.2**
VAM	**Vamos**	**1.16**	**301**	P	**Pg**	**19 06 50.8**	**-1.1**
VAM				S	**Sg**	**19 07 07.4**	**+0.5**
VAM	**Vamos**	**1.16**	**301**	P	**Pg**	**19 06 50.8**	**-1.1**
VAM				S	**Sg**	**19 07 07.4**	**+0.5**
IMMV	**Iera Moni Meta**	**1.34**	**299**	P	**Pg**	**19 06 53.9**	**-1.5**
IMMV				S	**Sg**	**19 07 11.4**	**-1.4**
IMMV	**Iera Moni Meta**	**1.34**	**299**	P	**Pg**	**19 06 53.9**	**-1.5**
IMMV				S	**Sg**	**19 07 11.4**	**-1.4**
IMMV	**Iera Moni Meta**	**1.34**	**299**	P	**Pg**	**19 06 53.7**	**-1.7**
THR6	**Thira Island,**	**1.54**	**360**	P	**Pb**	**19 06 58.9**	**+0.4**
THR6	**Thira Island,**	**1.54**	**360**	P	**Pb**	**19 06 58.9**	**+0.4**
SANT	**Santorini**	**1.56**	**1**	P	**Pb**	**19 06 59.0**	**+0.2**
SANT	**Santorini**	**1.56**	**1**	P	**Pn**	**19 06 58.8**	**+1.0**
SANT	**Santorini**	**1.56**	**1**	P	**Pn**	**19 06 58.8**	**+1.0**
THT1	**Athinios (Pele**	**1.57**	**1**	P	**Pn**	**19 06 58.9**	**+1.0**
THT1	**Athinios (Pele**	**1.57**	**1**	P	**Pn**	**19 06 58.9**	**+1.0**
THR3	**Thira Island,**	**1.59**	**360**	P	**Pb**	**19 06 59.6**	**+0.2**
THR3	**Thira Island,**	**1.59**	**360**	P	**Pb**	**19 06 59.6**	**+0.2**
THR5	**Thira Island,**	**1.60**	**358**	P	**Pn**	**19 06 59.3**	**+0.9**
THR5	**Thira Island,**	**1.60**	**358**	P	**Pn**	**19 06 59.3**	**+0.9**
KARP	**Karpathos**	**1.61**	**62**	P	**Pn**	**19 06 59.3**	**+0.8**
KARP	**Karpathos**	**1.61**	**62**	P	**Pn**	**19 06 59.3**	**+0.8**
KARP	**Karpathos**	**1.61**	**62**	P	**Pn**	**19 06 59.2**	**+0.8**
THR2	**Thira island,**	**1.63**	**1**	P	**Pn**	**19 06 59.7**	**+0.9**
THR2	**Thira island,**	**1.63**	**1**	P	**Pn**	**19 06 59.7**	**+0.9**
CMBO	**Columbo, Santo**	**1.66**	**360**	P	**Pn**	**19 07 00.1**	**+1.0**
CMBO	**Columbo, Santo**	**1.66**	**360**	P	**Pn**	**19 07 00.1**	**+1.0**
ANKY	**Antikythira Is**	**2.02**	**302**	P	**Pb**	**19 07 06.8**	**+0.1**
ANKY	**Antikythira Is**	**2.02**	**302**	P	**Pb**	**19 07 06.8**	**+0.1**
MHLO	**Agia Marina, M**	**2.05**	**337**	P	**Pn**	**19 07 05.2**	**+0.8**
MHLO	**Agia Marina, M**	**2.05**	**337**	P	**Pn**	**19 07 05.2**	**+0.8**
MHLO	**Agia Marina, M**	**2.05**	**337**	P	**Pn**	**19 07 04.9**	**+0.4**
APE	**Apeiranthos**	**2.26**	**2**	P	**Pn**	**19 07 08.9**	**+1.5**
APE	**Apeiranthos**	**2.26**	**2**	P	**Pn**	**19 07 08.9**	**+1.5**
APE	**Apeiranthos**	**2.26**	**2**	P	**Pn**	**19 07 08.3**	**+0.9**
KYTH	**Kithira**	**2.43**	**308**	P	**Pn**	**19 07 10.6**	**+0.9**
KYTH	**Kithira**	**2.43**	**308**	P	**Pn**	**19 07 10.9**	**+1.2**
KYTH	**Kithira**	**2.43**	**308**	P	**Pn**	**19 07 10.9**	**+1.2**
SERI	**Serifos**	**2.46**	**343**	P	**Pn**	**19 07 11.8**	**+1.6**
SERI	**Serifos**	**2.46**	**343**	P	**Pn**	**19 07 11.8**	**+1.6**
ARG	**Arkhangelos**	**2.62**	**57**	P	**Pb**	**19 07 15.7**	**-1.2**
ARG	**Arkhangelos**	**2.62**	**57**	P	**Pb**	**19 07 15.7**	**-1.2**
VLI	**Veliai**	**2.77**	**314**	P	**Pn**	**19 07 15.1**	**+0.7**
VLI	**Veliai**	**2.77**	**314**	P	**Pn**	**19 07 15.1**	**+0.7**
VLI	**Veliai**	**2.77**	**314**	P	**Pn**	**19 07 14.8**	**+0.4**
SMG	**Samos**	**3.11**	**21**	P	**Pn**	**19 07 20.2**	**+1.1**
SMG	**Samos**	**3.11**	**21**	P	**Pn**	**19 07 20.2**	**+1.1**
SMG	**Samos**	**3.11**	**21**	P	**Pn**	**19 07 20.0**	**+0.9**
KRND	**KRANIDI**	**3.15**	**325**	P	**Pn**	**19 07 21.7**	**+2.1**
KRND	**KRANIDI**	**3.15**	**325**	P	**Pn**	**19 07 21.7**	**+2.1**
KRND	**KRANIDI**	**3.15**	**325**	P	**Pn**	**19 07 22.3**	**+2.7**
DID	**Didima**	**3.21**	**327**	P	**Pn**	**19 07 21.9**	**+1.4**
DID	**Didima**	**3.21**	**327**	P	**Pn**	**19 07 21.9**	**+1.4**
DID	**Didima**	**3.21**	**327**	P	**Pn**	**19 07 21.6**	**+1.1**
YER	**Yerkesik**	**3.29**	**44**	P	Pn	19 07 24.9	+3.3
YER	**Yerkesik**	**3.29**	**44**	P	Pn	19 07 24.9	+3.3
VLY	**Voula,Athens**	**3.30**	**337**	P	**Pn**	**19 07 23.8**	**+2.1**
VLY	**Voula,Athens**	**3.30**	**337**	P	**Pn**	**19 07 23.8**	**+2.1**
VLY	**Voula,Athens**	**3.30**	**337**	P	**Pn**	**19 07 23.9**	**+2.1**
PTL	**Penteli**	**3.46**	**339**	P	**Pn**	**19 07 26.5**	**+2.5**
PTL	**Penteli**	**3.46**	**339**	P	**Pn**	**19 07 26.5**	**+2.5**
PTL	**Penteli**	**3.46**	**339**	P	**Pn**	**19 07 27.1**	**+3.1**
FETY	**Fethiye**	**3.50**	**58**	P	**Pn**	**19 07 27.1**	**+2.6**
FETY	**Fethiye**	**3.50**	**58**	P	**Pn**	**19 07 27.1**	**+2.6**
VLX	**Vlachokerasia**	**3.54**	**317**	P	**Pn**	**19 07 25.8**	**+0.7**
VLX	**Vlachokerasia**	**3.54**	**317**	P	**Pn**	**19 07 26.8**	**+1.7**
VLX	**Vlachokerasia**	**3.54**	**317**	P	**Pn**	**19 07 26.8**	**+1.7**
CHOS	**Chios island**	**3.61**	**8**	P	**Pn**	**19 07 26.7**	**+0.7**
CHOS	**Chios island**	**3.61**	**8**	P	**Pn**	**19 07 26.7**	**+0.7**
PYL	**PYLOS**	**3.63**	**306**	P	**Pn**	**19 07 26.7**	**+0.4**
PYL	**PYLOS**	**3.63**	**306**	P	**Pn**	**19 07 26.7**	**+0.4**
PYL	**PYLOS**	**3.63**	**306**	P	**Pn**	**19 07 25.5**	**-0.8**
KSL	**Kastellorizon**	**3.66**	**67**	P	**Pn**	**19 07 28.6**	**+2.0**
KSL	**Kastellorizon**	**3.66**	**67**	P	**Pn**	**19 07 28.2**	**+1.6**
ITM	**Ithomi**	**3.68**	**311**	P	**Pn**	**19 07 28.5**	**+1.5**
ITM	**Ithomi**	**3.68**	**311**	P	**Pn**	**19 07 28.3**	**+1.3**
ITM	**Ithomi**	**3.68**	**311**	P	**Pn**	**19 07 28.3**	**+1.3**
TRIP	**Tripoli**	**3.71**	**318**	P	**Pn**	**19 07 30.2**	**+2.7**
TRIP	**Tripoli**	**3.71**	**318**	P	**Pn**	**19 07 30.2**	**+2.7**
VILL	**Villia**	**3.75**	**334**	P	**Pn**	**19 07 29.6**	**+1.7**
VILL	**Villia**	**3.75**	**334**	P	**Pn**	**19 07 29.6**	**+1.7**
LTK	**Loutraki**	**3.76**	**329**	P	**Pn**	**19 07 29.9**	**+1.8**
LTK	**Loutraki**	**3.76**	**329**	P	**Pn**	**19 07 29.9**	**+1.8**
LTK	**Loutraki**	**3.76**	**329**	P	**Pn**	**19 07 29.9**	**+1.8**
EREA	**Eretria**	**3.79**	**342**	P	**Pn**	**19 07 31.4**	**+2.9**
EREA	**Eretria**	**3.79**	**342**	P	**Pn**	**19 07 31.4**	**+2.9**
EREA	**Eretria**	**3.79**	**342**	P	Pn	19 07 32.2	+3.7
VIL2	**Platees**	**3.81**	**334**	P	**Pn**	**19 07 30.1**	**+1.4**
GUR	**Goura**	**3.98**	**322**	P	**Pn**	**19 07 33.0**	**+1.8**
GUR	**Goura**	**3.98**	**322**	P	**Pn**	**19 07 32.8**	**+1.6**
GUR	**Goura**	**3.98**	**322**	P	**Pn**	**19 07 32.8**	**+1.6**
AMT	**Artemida-Makis**	**4.04**	**313**	P	**Pn**	**19 07 35.1**	**+3.2**
AMT	**Artemida-Makis**	**4.04**	**313**	P	**Pn**	**19 07 35.1**	**+3.2**
KLV	**Kalavryta, Ach**	**4.16**	**322**	P	**Pn**	**19 07 35.3**	**+1.7**
KLV	**Kalavryta, Ach**	**4.16**	**322**	P	**Pn**	**19 07 35.0**	**+1.4**
KLV	**Kalavryta, Ach**	**4.16**	**322**	P	**Pn**	**19 07 35.0**	**+1.4**
DSF	**Desfina**	**4.28**	**328**	P	**Pn**	**19 07 37.4**	**+2.2**
DSF	**Desfina**	**4.28**	**328**	P	**Pn**	**19 07 37.4**	**+2.2**
LAKA	**Lakka**	**4.40**	**322**	P	**Pn**	**19 07 38.8**	**+2.0**
LAKA	**Lakka**	**4.40**	**322**	P	**Pn**	**19 07 38.8**	**+2.0**
LAKA	**Lakka**	**4.40**	**322**	P	**Pn**	**19 07 39.2**	**+2.4**
KALE	**Kalithea**	**4.44**	**325**	P	**Pn**	**19 07 37.7**	**+0.3**
KALE	**Kalithea**	**4.44**	**325**	P	**Pn**	**19 07 39.5**	**+2.1**
KALE	**Kalithea**	**4.44**	**325**	P	**Pn**	**19 07 39.5**	**+2.1**
AOS	**Alonnisos**	**4.52**	**345**	P	**Pn**	**19 07 39.4**	**+1.0**
AOS	**Alonnisos**	**4.52**	**345**	P	**Pn**	**19 07 39.4**	**+1.0**
ANX	**Ano Chora**	**4.70**	**324**	P	**Pn**	**19 07 43.1**	**+2.1**
ANX	**Ano Chora**	**4.70**	**324**	P	**Pn**	**19 07 43.1**	**+2.1**
AGG	**Agios Georgios**	**4.87**	**330**	P	**Pn**	**19 07 43.5**	**+0.2**
AGG	**Agios Georgios**	**4.87**	**330**	P	**Pn**	**19 07 43.5**	**+0.2**
KEK	**Kerkira**	**6.63**	**319**	P	**Pn**	**19 08 08.5**	**+1.1**
KEK	**Kerkira**	**6.63**	**319**	P	**Pn**	**19 08 08.5**	**+1.1**
BRTR	**Keskin Array B**	**8.19**	**51**	Pn	**Pn**	**19 08 29.9**	**+0.9**
	comp=E,0.0nm,0.3s,baz=224,slow=15,SNR=3.7						
MMAI	**Mount Meron Ar**	**8.50**	**99**	Pn	**Pn**	**19 08 31.9**	**-1.3**
	comp=E,1.5nm,0.3s,baz=290,slow=12,SNR=11						
EIL	**Elat**	**9.57**	**120**	Pn	**Pn**	**19 08 47.8**	**+0.1**
	comp=E,0.3nm,0.3s,baz=337,slow=5.4,SNR=7.1						
AKASG	**Malin Array Be**	**16.12**	**9**	Pn	**Pn**	**19 10 16.0**	**-0.6**
	comp=E,0.7nm,0.3s,baz=201,slow=11,SNR=2.8						
KBZ	**Khabaz**	**16.18**	**51**	Pn	**P**	**19 10 22.6**	**+2.0**
	comp=E,0.1nm,0.3s,baz=277,slow=8.1,SNR=4.0						
AKTO	**Aktyubinsk**	**28.34**	**47**	P	**P**	**19 12 22.9**	**-1.0**
	comp=E,0.5nm,0.3s,baz=268,slow=7.4,SNR=3.8						
TORD	**Torodi Ar. Bea**	**30.43**	**231**	P	**P**	**19 12 42.4**	**-0.3**
	comp=E,0.3nm,0.4s,baz=36,slow=8.3,SNR=6.5						
ARCES	**ARCESS Array B**	**34.78**	**0**	P	P	19 13 17.9	-2.4
	comp=E,1.1nm,0.9s,baz=180,slow=9.3,SNR=4.1						
MKAR	**Makanchi Array**	**43.80**	**56**	P	**P**	**19 14 36.5**	**+0.5**
	comp=E,0.7nm,0.5s,baz=266,slow=8.5,SNR=6.2						
ZALV	**Zalesovo Beam**	**45.10**	**46**	P	**P**	**19 14 45.7**	**-0.4**
	comp=E,0.9nm,0.3s,baz=283,slow=9.7,SNR=4.6						
SONM	**Songino Array**	**59.55**	**51**	P	**P**	**19 16 33.4**	**-0.4**
	comp=E,0.6nm,0.5s,baz=285,slow=7.4,SNR=8.4						

IDC ***13*** *19:15:33.2±0.7, 11°.57S×165°.66E, h0km, mb4.2/14, mb1 4.3/15, mb1mx4.1/40, mbtmp4.2/15, ML4.4/1, MS3.4/2, Ms1 3.4/2, ms1mx2.7/41, Error ellipse: s-maj=23.4km s-min=20.4km az=123.0*
ISCJB ***13*** *19:15:35.4±0.3, 11°.53S±0°.06×165°.53E±0°.05, h24km, mb4.7/35, Error ellipse: s-maj=9.1km s-min=7.5km az=0.8*
NEIC ***13*** *19:15:38.7±0.2, 11°.51S×165°.61E, h35km, mb4.7/19, Error ellipse: s-maj=8.3km s-min=6.9km az=133.0*
ISC 13 19:15:36.8±0.5, 11°.53S±0°.10×165°.62E±0°.07, h24km, n60, σ1§06/61, mb4.5/35, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	**Honiara**	**5.95**	**290**	Pn	**Pn**	**19 17 03.2**	**-0.3**
	10nm,0.3s,baz=177,slow=18,SNR=3.3						
HNR				Sn	**Sn**	**19 18 09.1**	**-1.9**
	6.0nm,0.3s,baz=60,slow=20,SNR=3.9						
HNR				LR	LR	19 19 20.3	
	comp=Z,334nm,21.3s,baz=123,slow=38						
HNR	**Honiara**	**5.95**	**290**	*e*Pn	Pn	19 17 00.0	-3.5
HNR				*e*Sn	**Sn**	**19 18 09.1**	**-1.9**
PMG	**Port Moresby**	**18.27**	**275**	LR	LR	19 26 09.7	
	comp=Z,150nm,18.8s,baz=112,slow=35						
MANU	**Manus Island**	**20.41**	**296**	*e*P	**P**	**19 20 13.4**	**+1.0**
	42nm,1.1s						
CTA	**Charters Tower**	**20.47**	**243**	P	**P**	**19 20 13.3**	**+0.3**
	2.7nm,0.5s,baz=59,slow=12,SNR=3.6						
RAO	**Raoul Island**	**23.38**	**141**	*e*P	**P**	**19 20 40.2**	**-3.6**
	805nm,0.9s						
URZ	**Urewera**	**28.53**	**161**	P	**P**	**19 21 30.2**	**-0.5**
	4.4nm,0.4s,baz=21,slow=8.6,SNR=3.1						
BKZ	**Black Stump Fm**	**29.17**	**162**	*e*P	**P**	**19 21 37.1**	**+0.7**
	128nm,1.9s						
THZ	**Tophouse**	**30.79**	**169**	*e*P	**P**	**19 21 53.0**	**+2.4**
	63nm,1.3s						
WR1	**Warramunga Arr**	**31.20**	**251**	*e*P	**P**	**19 21 54.4**	**-0.2**
	11nm,1.0s						
WRA	**Warramunga Arr**	**31.20**	**251**	P	**P**	**19 21 54.4**	**-0.2**
	3.2nm,0.9s,baz=79,slow=9.1,SNR=9.1						
AS01	**Alice Springs**	**32.42**	**244**	*e*P	**P**	**19 22 05.3**	**0.0**
AS31	**Alice Springs**	**32.46**	**244**	*e*P	**P**	**19 22 04.9**	**-0.8**
	2.5nm,1.5s						
ASAR	**Alice Springs**	**32.47**	**244**	P	**P**	**19 22 05.4**	**-0.3**
	1.5nm,1.0s,baz=71,slow=10.0,SNR=6.7						
ASAR				PcP	**PcP**	**19 24 53.0**	**+0.4**
	0.5nm,0.7s,baz=90,slow=2.5,SNR=4.9						
FITZ	**Fitzroy Crossi**	**39.14**	**256**	*e*P	**P**	**19 23 03.5**	**+0.6**
	49nm,1.9s						
HON	**Honolulu**	**48.40**	**48**	*e*P	**P**	**19 24 17.1**	**-0.2**
	215nm,1.0s						
MJAR	**Matsushiro Arr**	**54.34**	**333**	P	**P**	**19 25 01.0**	**-0.6**
	1.6nm,0.8s,baz=168,slow=8.9,SNR=4.2						
TWG	**Pinlang**	**55.40**	**308**	*e*P	**P**	**19 25 08.0**	**-1.5**
	371nm,2.0s						
ERM	**Erimo**	**57.15**	**340**	*e*P	**P**	**19 25 20.4**	**-1.1**
	111nm,1.4s						
PTCN	**Pitcairn Islan**	**62.01**	**112**	*e*P	**P**	**19 25 54.3**	**-1.3**
	303nm,0.6s						
USRK	**Ussurijsk Ar.**	**63.32**	**334**	P	**P**	**19 26 05.7**	**+1.8**
	2.0nm,0.6s,baz=121,slow=9.0,SNR=5.4						
CM01	**Chiang Mai Arr**	**72.16**	**294**	*e*P	**P**	**19 27 01.5**	**+1.3**
CMAR	**Chiang Mai Arr**	**72.19**	**294**	P	**P**	**19 27 01.3**	**+1.0**
	1.0nm,0.4s,baz=127,slow=4.7,SNR=6.0						
QSPA	**South Pole Qui**	**78.48**	**180**	*e*P	**P**	**19 27 36.2**	**+0.4**
	21nm,1.8s						
ULN	**Ulaanbaatar**	**78.62**	**324**	*e*P	**P**	**19 27 38.1**	**+1.2**
	4.4nm,1.1s						
SONA0	**Songino Array**	**78.98**	**324**	*e*P	**P**	**19 27 39.6**	**+0.8**
	2.6nm,1.1s						
SONM	**Songino Array**	**78.98**	**324**	P	**P**	**19 27 39.6**	**+0.8**
	0.5nm,0.5s,baz=139,slow=5.9,SNR=8.3						
SONA1	**Songino Array**	**78.98**	**324**	*e*P	**P**	**19 27 37.7**	**-1.2**
BILL	**Bilibino**	**79.36**	**0**	*e*P	**P**	**19 27 40.5**	**+0.2**
	4.7nm,0.9s						
TT01	**Tatalina**	**79.90**	**17**	*e*P	**P**	**19 27 43.8**	**+0.4**
TTA	**Tatalina**	**79.92**	**17**	*e*P	**P**	**19 27 44.3**	**+0.7**
	4.9nm,1.1s						
WRH	**Wood River Hil**	**83.43**	**18**	*e*P	**P**	**19 28 00.9**	**-1.0**
	3.8nm,0.8s						
CCB	**Clear Creek Bu**	**83.64**	**18**	*e*P	**P**	**19 28 02.8**	**-0.2**
	4.7nm,1.1s						
MDM	**Murphy Dome**	**83.73**	**18**	*e*P	**P**	**19 28 03.1**	**-0.4**
	3.6nm,0.7s						
ILAR	**Eielson Array**	**84.01**	**19**	P	**P**	**19 28 05.2**	**+0.3**
	1.6nm,0.6s,baz=246,slow=4.9,SNR=17						
ILB	**Eielson Array**	**84.01**	**19**	*e*P	**P**	**19 28 04.5**	**-0.4**
IL1	**Eielson Array**	**84.01**	**19**	*e*P	**P**	**19 28 04.7**	**-0.2**
DOT	**Dot Lake**	**84.17**	**20**	*e*P	**P**	**19 28 05.8**	**0.0**
	14nm,0.9s						
COLD	**Coldfoot**	**84.80**	**16**	*e*P	**P**	**19 28 10.1**	**+1.3**
	2.7nm,1.1s						
EGAK	**Eagle**	**85.87**	**20**	*e*P	**P**	**19 28 14.8**	**+0.6**
	7.1nm,0.8s						
NV01	**Mina Array Sit**	**86.43**	**50**	*e*P	**P**	**19 28 18.6**	**+0.7**
NVAR	**Mina Array Bea**	**86.43**	**50**	P	**P**	**19 28 18.2**	**+0.3**
	0.6nm,0.6s,baz=249,slow=7.8,SNR=4.5						
HVU	**Hansel Valley**	**91.42**	**48**	*e*P	**P**	**19 28 41.8**	**+0.4**
	7.3nm,1.4s						
MK01	**Makanchi Array**	**93.78**	**317**	*e*P	**P**	**19 28 52.2**	**+0.3**
MK31	**Makanchi Array**	**93.79**	**317**	*e*P	**P**	**19 28 52.1**	**+0.1**
MK32	**Makanchi Array**	**93.79**	**317**	*e*P	**P**	**19 28 53.0**	**+0.9**
MKAR	**Makanchi Array**	**93.79**	**317**	P	**P**	**19 28 53.0**	**+0.9**
	1.6nm,0.7s,baz=96,slow=6.3,SNR=19						
MKAR	**Makanchi Array**	**93.79**	**317**	*e*P	**P**	**19 28 52.5**	**+0.5**
ZAA1	**Zalesovo Array**	**93.87**	**324**	*e*P	**P**	**19 28 51.9**	**-0.3**
ZALV	**Zalesovo Beam**	**93.87**	**324**	P	**P**	**19 28 51.9**	**-0.3**
	0.6nm,0.4s,baz=105,slow=3.5,SNR=4.6						
YKA	**Yellowknife Ar**	**95.46**	**27**	P	**P**	**19 28 58.3**	**-0.9**
	0.3nm,0.4s,baz=249,slow=4.1,SNR=4.4						
KURK	**Kurchatov**	**96.93**	**320**	*e*P	**P**	**19 29 05.3**	**-0.9**
KURBB	**Kurchatov Arra**	**96.97**	**320**	P	**P**	**19 29 05.3**	**-1.1**
	0.2nm,0.8s,baz=95,slow=4.4,SNR=2.9						
ARA0	**ARCESS Array S**	**116.77**	**345**	*e*PKPdf	**PKPdf**	**19 34 19.1**	**+0.4**
ARCES	**ARCESS Array B**	**116.77**	**345**	PKP	**PKPdf**	**19 34 19.1**	**+0.4**
	0.9nm,0.6s,baz=70,slow=2.1,SNR=11						
BOSA	**Boshof**	**124.68**	**223**	PKP	**PKPdf**	**19 34 34.9**	**-0.5**
	2.3nm,0.3s,baz=59,slow=1.3,SNR=15						
KEST	**Kesra**	**147.72**	**322**	PKPbc	**PKPab**	**19 35 21.6**	**-0.8**
	5.0nm,0.7s,baz=301,slow=6.4,SNR=6.9						
ESDC	**Sonseca Array**	**150.49**	**344**	PKPbc	**PKPbc**	**19 35 27.0**	**+0.1**
	1.0nm,0.8s,baz=0.0,slow=1.8,SNR=4.9						
TORD	**Torodi Ar. Bea**	**164.21**	**278**	PKP	**PKPdf**	**19 35 41.4**	**+2.1**
	0.3nm,0.6s,baz=62,slow=1.6,SNR=2.5						
TOA1	**Torodi Ar. Sit**	**164.21**	**278**	*e*PKPdf	**PKPdf**	**19 35 41.4**	**+2.1**

ISCJB ***13*** *19:32:50.1±0.3, 6°.90S±0°.05×154°.83E±0°.04, h41km, mb4.5/51, MS3.9/20, Error ellipse: s-maj=7.4km s-min=5.6km az=141.1*
NEIC ***13*** *19:32:54.4±0.8, 6°.89S×154°.78E, h67km±7km, mb4.6/31, Error ellipse: s-maj=6.7km s-min=5.8km az=129.0*
IDC ***13*** *19:32:55.4±2.2, 6°.93S×154°.70E, h71km±20km, mb3.9/15, mb1 4.1/19, mb1mx4.0/43, mbtmp4.3/19, MS3.9/19, Ms1 3.9/19, ms1mx3.6/45, Error ellipse: s-maj=15.9km s-min=12.2km az=173.0*
ISC 13 19:32:52.4±0.4, 6°.81S±0°.06×154°.75E±0°.05, h41km, n106, σ1§50/105, mb4.6/52, MS3.9/21, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RABL	**Rabaul**	**3.66**	**315**	*e*Pn	**Pn**	**19 33 48.3**	**+1.7**
HNR	**Honiara**	**5.77**	**117**	P	Pn	19 34 19.1	+3.5
	4.6nm,0.3s,baz=265,slow=3.4,SNR=9.3						
HNR				S	**Sn**	**19 35 24.0**

LZH			pP	sP	19 43 40.3	+1.3
LZH			sP	PcP	19 43 47.3	-10
LZH			*e*PP	**PP**	**19 45 47.5**	**+4.0**
LZH			pmax	pmax		
	comp=Z,20nm,1.3s					
LZH			pmax	pmax		
	comp=Z,63nm,7.2s					
LZH			LR	LR		
	comp=N,330nm,15.2s					
LZH			LR	LR		
	comp=E,350nm,15.7s					
LZH			LR	LR		
	comp=Z,400nm,18.5s					
GTA	**Gaotai**	**68.44 317**	*e*P	**P**	**19 43 52.0**	**+1.5**
GTA			pP	pP	19 43 56.3	-6.4
GTA			sP	sP	19 43 59.3	-8.1
GTA			pmax	pmax		
	comp=Z,4.0nm,1.2s					
ULN	**Ulaanbaatar**	**68.72 328**	*e*P	**P**	**19 43 52.2**	**+0.1**
	comp=Z,8.0nm,1.4s					
SONA0	**Songino Array**	**69.05 327**	*e*P	**P**	**19 43 54.4**	**+0.2**
	comp=Z,3.4nm,1.1s					
SONM	**Songino Array**	**69.05 327**	P	**P**	**19 43 54.4**	**+0.2**
	comp=Z,1.6nm,0.9s,baz=130,slow=5.7,SNR=10					
SONM			LR	LR	20 15 15.3	
	comp=Z,39nm,18.3s,baz=120,slow=37					
SONA1	**Songino Array**	**69.05 327**	*e*P	**P**	**19 43 53.6**	**-0.5**
VNDA	**Vanda**	**70.77 178**	P	**P**	**19 44 03.7**	**-0.4**
	comp=Z,1.0nm,0.8s,baz=312,slow=5.8,SNR=5.5					
LSA	**Lhasa**	**70.97 304**	*e*P	**P**	**19 44 06.0**	**-0.7**
	comp=Z,7.9nm,1.0s					
BILL	**Bilibino**	**75.12 4**	*e*P	**P**	**19 44 29.4**	**-0.4**
	comp=Z,14nm,1.5s					
PKIN	**Phulchoki**	**75.13 301**	*e*P	**P**	**19 44 31.8**	**+0.6**
	comp=Z,23nm,1.3s					
KKN	**Kakani**	**75.29 301**	*e*P	**P**	**19 44 32.7**	**+0.7**
	comp=Z,18nm,0.9s					
GKN	**Gorkha**	**75.89 301**	*e*P	**P**	**19 44 35.5**	**+0.1**
	comp=Z,46nm,1.2s					
KOLN	**Koldanda**	**76.72 301**	*e*P	**P**	**19 44 40.5**	**+0.4**
	comp=Z,12nm,0.9s					
PYUN	**Piuthan**	**77.33 301**	*e*P	**P**	**19 44 43.4**	**-0.1**
WMQ	**Urumqi**	**78.53 317**	*e*P	**P**	**19 44 50.6**	**+0.9**
WMQ			pmax	pmax		
	comp=Z,3.0nm,0.6s					
WMQ			pmax	pmax		
	comp=Z,38nm,5.0s					
WMQ			LR	LR		
	comp=N,19nm,24.0s					
WMQ			LR	LR		
	comp=E,13nm,16.0s					
WMQ			LR	LR		
	comp=Z,14nm,18.6s					
TTA	**Tatalina**	**78.94 21**	*e*P	**P**	**19 44 50.8**	**-0.8**
	comp=Z,7.3nm,1.4s					
CAST	**Castle Rocks**	**80.65 21**	*e*P	**P**	**19 44 59.5**	**-1.3**
	comp=Z,18nm,1.8s					
SML	**Sawmill**	**81.16 24**	*e*P	**P**	**19 45 03.2**	**-0.3**
	comp=Z,14nm,1.0s					
DIV	**Divide**	**81.85 25**	*e*P	**P**	**19 45 04.7**	**-2.5**
	comp=Z,18nm,0.8s					
KLU	**Klutina**	**81.98 25**	*e*P	**P**	**19 45 07.3**	**-0.6**
	comp=Z,8.3nm,0.8s					
MCK	**McKinley**	**81.98 22**	*e*P	**P**	**19 45 06.1**	**-1.7**
	comp=Z,22nm,1.5s					
MLY	**Manley**	**82.07 20**	*e*P	**P**	**19 45 07.5**	**-0.8**
	comp=Z,5.4nm,1.3s					
WRH	**Wood River Hil**	**82.70 22**	*e*P	**P**	**19 45 10.2**	**-1.2**
	comp=Z,21nm,1.9s					
CCB	**Clear Creek Bu**	**82.90 21**	*e*P	**P**	**19 45 10.6**	**-1.9**
	comp=Z,7.7nm,1.4s					
MK01	**Makanchi Array**	**83.09 319**	*e*P	**P**	**19 45 13.4**	**-0.6**
MK31	**Makanchi Array**	**83.11 319**	*e*P	**P**	**19 45 13.0**	**-1.0**
MK32	**Makanchi Array**	**83.11 319**	*e*P	**P**	**19 45 14.3**	**+0.3**
MKAR	**Makanchi Array**	**83.11 319**	P	**P**	**19 45 14.3**	**+0.3**
	comp=Z,1.3nm,0.7s,baz=97,slow=6.2,SNR=9.9					
MKAR	**Makanchi Array**	**83.11 319**	*e*P	**P**	**19 45 13.6**	**-0.5**
QSPA	**South Pole Qui**	**83.16 180**	*e*P	**P**	**19 45 12.8**	**-1.3**
IL1	**Eielson Array**	**83.30 22**	*e*P	**P**	**19 45 12.5**	**-2.1**
ILAR	**Eielson Array**	**83.30 22**	P	**P**	**19 45 12.9**	**-1.6**
	comp=Z,1.5nm,1.0s,baz=269,slow=5.1,SNR=12					
ILAR			LR	LR	20 19 39.9	
	comp=Z,90nm,19.8s,baz=266,slow=34					
ILB	**Eielson Array**	**83.30 22**	*e*P	**P**	**19 45 12.9**	**-1.6**
COLD	**Coldfoot**	**83.52 19**	*e*P	**P**	**19 45 15.0**	**-0.6**
	comp=Z,3.9nm,1.1s					
DOT	**Dot Lake**	**83.80 23**	*e*P	**P**	**19 45 16.3**	**-0.9**
	comp=Z,11nm,1.0s					
ZALV	**Zalesovo Beam**	**83.89 326**	P	**P**	**19 45 16.8**	**-1.1**
	comp=Z,0.5nm,0.5s,baz=122,slow=7.3,SNR=3.4					
ZALV			LR	LR	20 26 10.7	
	comp=Z,26nm,18.4s,baz=66,slow=38					
ZAA1	**Zalesovo Array**	**83.89 326**	*e*P	**P**	**19 45 16.8**	**-1.1**
MAW	**Mawson**	**84.47 203**	P	**P**	**19 45 19.6**	**-0.9**
	comp=Z,1.3nm,0.5s,baz=46,slow=9.5,SNR=3.6					
MAW	**Mawson**	**84.47 203**	*e*P	**P**	**19 45 19.6**	**-0.9**
	comp=Z,2.3nm,1.3s					
EGAK	**Eagle**	**85.45 23**	*e*P	**P**	**19 45 25.0**	**-0.5**
	comp=Z,6.1nm,1.1s					
KSH	**Kashi**	**85.71 310**	P	**P**	**19 45 29.9**	**+2.4**
KSH			*ep*P	sP	19 45 46.8	+2.2
KSH	**Kashi**	**85.71 310**	SKS	**SKSac**	**19 55 47.9**	**-2.2**
KSH	**Kashi**	**85.71 310**	S	**S**	**19 55 58.3**	**+0.9**
KSH			pmax	pmax		
	comp=Z,8.0nm,1.2s					
KSH			pmax	pmax		
	comp=Z,37nm,3.2s					
DAWY	**Dawson**	**85.83 24**	*e*P	**P**	**19 45 28.0**	**+0.5**
DLBC	**Dease Lake**	**88.11 31**	*e*P	**P**	**19 45 38.5**	**-0.3**
	comp=Z,9.0nm,1.1s					
YBH	**Yreka Blue Hor**	**88.95 48**	LR	LR	20 18 39.0	
	comp=Z,125nm,21.0s,baz=216,slow=31					
INK	**Inuvik**	**89.64 21**	LR	LR	20 27 53.5	
	comp=Z,72nm,18.0s,baz=250,slow=37					
INK	**Inuvik**	**89.64 21**	*e*P	**P**	**19 45 43.8**	**-1.7**
NV01	**Mina Array Sit**	**91.80 52**	*e*P	**P**	**19 45 55.6**	**-1.0**
NVAR	**Mina Array Bea**	**91.80 52**	P	**P**	**19 45 56.5**	**-0.1**
	comp=Z,2.2nm,0.9s,baz=254,slow=4.7,SNR=9.1					
NVAR			LR	LR	20 19 15.5	
	comp=Z,52nm,21.9s,baz=260,slow=30					
DAC	**Darwin (Calif)**	**92.10 54**	*e*P	**P**	**19 45 57.4**	**-0.6**
	comp=Z,5.8nm,1.2s					
TPNV	**Topopah Spring**	**93.25 53**	*e*P	**P**	**19 46 02.7**	**-0.6**
	comp=Z,9.5nm,1.4s					
NEW	**Newport**	**93.79 42**	LR	LR	20 29 42.2	
	comp=Z,54nm,18.1s,baz=204,slow=36					
YKW3	**Yellowknife Ar**	**96.29 28**	*e*P	**P**	**19 46 15.4**	**-1.0**
	comp=Z,6.0nm,1.2s					
YKA	**Yellowknife Ar**	**96.29 28**	P	**P**	**19 46 15.8**	**-0.5**
	comp=Z,2.5nm,0.9s,baz=268,slow=4.7,SNR=18					
YKB5	**Yellowknife Ar**	**96.29 28**	*e*P	**P**	**19 46 15.5**	**-0.9**
PDAR	**Pinedale Array**	**98.76 48**	LR	LR	20 32 49.0	
	comp=Z,62nm,18.1s,baz=284,slow=36					
BR101	**Keskin Array S**	**118.08 312**	*e*PKPdf	**PKPdf**	**19 51 34.6**	**-0.9**
BRTR	**Keskin Array B**	**118.08 312**	PKP	**PKPdf**	**19 51 34.6**	**-0.9**
	comp=Z,0.5nm,0.8s,baz=134,slow=3.6,SNR=3.5					
GERES	**GERESS Array B**	**126.77 329**	PKP	**PKPdf**	**19 51 51.3**	**-0.6**
	comp=Z,0.9nm,0.8s,baz=36,slow=2.5,SNR=7.0					
MDT	**Midelt**	**147.79 326**	PKPbc	**PKPbc**	**19 52 33.1**	**-0.5**
	comp=Z,2.0nm,0.9s,baz=53,slow=6.4,SNR=4.7					
TORD	**Torodi Ar. Bea**	**152.74 285**	PKPbc	**PKPbc**	**19 52 45.1**	**-0.9**
	comp=Z,2.5nm,0.8s,baz=66,slow=2.0,SNR=15					
TOA1	**Torodi Ar. Sit**	**152.74 285**	*e*PKPbc	**PKPbc**	**19 52 45.1**	**-0.9**

*IDC **13** 19:42:26.4±1.1, 4°.33S×122°.89E, h0km, mb3.2/3, mb1 3.4/5, mb1mx3.3/51, mbtmp3.3/5, ML3.2/2, Error ellipse: s-maj=32.9km s-min=21.7km az=54.0*
*DJA **13** 19:42:27.5±0.4, 4°.S±.3°×12°.3E±°.3, h10km, M3.7/9, MLv3.7/9*
*ISCJB **13** 19:42:28.0±0.6, 4°.35S±0°.04×122°.81E±0°.07, h33km, mb3.3/3, Error ellipse: s-maj=9.6km s-min=6.3km az=168.0*

ISC 13 19:42:30.1±0.9, 4°.30S±0°.06×122°.83E±0°.07, h33km, n16, σ2°02/19, mb3.2/3, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KDI	**Kendari**	**0.40**	**328**	P	**Pb**	**19 42 35.6**	**-3.7**
KDI				S	**Sb**	**19 42 42.6**	**-2.9**
BSSI	**Bau Bau, Buton**	**2.96**	**232**	P	**Pn**	**19 43 13.6**	**-1.2**
SPSI	**Sidrap Palu**	**3.07**	**276**	P	**Pn**	**19 43 15.6**	**-0.8**
KAPI	**Kappang**	**3.15**	**257**	Pn	**Pn**	**19 43 17.5**	**+0.1**
	10nm,0.3s,baz=136,slow=4.0,SNR=14						
KAPI				Sn	**Sn**	**19 43 58.0**	**+4.1**
	5.7nm,0.3s,baz=180,slow=20,SNR=3.4						
LUWI	**Luwuk**	**3.24**	**359**	P	**Pn**	**19 43 19.1**	**+0.4**
TTSI	**Tana Toraja**	**3.25**	**292**	P	**Pn**	**19 43 18.4**	**-0.5**
SANI	**Sanana**	**3.87**	**55**	P	**Pn**	**19 43 27.7**	**+0.4**
MMRI	**Maumere**	**4.34**	**188**	P	**Pn**	**19 43 30.6**	**-3.3**
PCI	**Palu**	**4.51**	**318**	P	**Pn**	**19 43 35.8**	**-0.4**
MRSI	**Marisa**	**4.83**	**349**	P	**Pn**	**19 43 40.9**	**+0.3**
SOEI	**Soe**	**5.60**	**165**	P	**Pn**	**19 43 49.6**	**-1.7**
WSI	**Waingapu**	**5.89**	**205**	P	**Pn**	**19 43 53.9**	**-1.3**
WRA	**Warramunga Arr**	**19.17**	**145**	P	**P**	**19 46 50.5**	**-0.5**
	0.1nm,0.3s,baz=322,slow=12,SNR=3.8						
ASAR	**Alice Springs**	**22.02**	**152**	P	**P**	**19 47 22.7**	**+0.8**
	0.6nm,0.6s,baz=343,slow=15,SNR=8.9						
ASAR				PcP	**PcP**	**19 51 21.1**	**+1.5**
	0.3nm,0.6s,baz=347,slow=1.3,SNR=5.3						
SONM	**Songino Array**	**53.89**	**346**	P	**P**	**19 51 51.8**	**+1.5**
	0.3nm,0.6s,baz=155,slow=8.8,SNR=3.4						
MKAR	**Makanchi Array**	**62.19**	**330**	P	**P**	**19 52 50.1**	**+1.7**
	0.1nm,0.5s,baz=143,slow=8.1,SNR=2.5						

*ISCJB **13** 19:47:24.5±0.9, 51°.54N±0°.04×16°.02E±0°.04, h0km, Error ellipse: s-maj=6.3km s-min=3.1km az=22.4*
*CSEM **13** 19:47:25.8±0.4, 51°.56N×16°.01E, h2km, ML3.0/7, Error ellipse: s-maj=6.4km s-min=3.2km az=18.0*

ISC 13 19:47:25.4±1.3, 51°.59N±0°.06×16°.02E±0°.03, h0km, n32, σ0°67/56, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.76**	**167**	*e*Pg	**Pg**	**19 47 40.6**	**+0.6**
KSP				*e*Sg	**Sg**	**19 47 50.9**	**+1.0**
KSP	**Ksiaz**	**0.76**	**167**	*e*Pg	**Pg**	**19 47 40.6**	**+0.6**
KSP				*e*Sg	**Sg**	**19 47 50.9**	**+1.0**
UPC	**Upice**	**1.08**	**180**	*e*PG	**Pg**	**19 47 46.3**	**+0.2**
UPC				*e*SG	**Sg**	**19 47 59.8**	**-0.3**
	comp=Z,19nm,0.2s						
UPC	**Upice**	**1.08**	**180**	Pg	**Pg**	**19 47 46.3**	**+0.2**
UPC				Sg	**Sg**	**19 47 59.8**	**-0.3**
	19nm,0.2s						
DPC	**Dobruska-Polom**	**1.25**	**171**	*e*PG	**Pg**	**19 47 49.6**	**+0.2**
DPC				*e*SG	**Sg**	**19 48 05.5**	**-0.1**
	comp=Z,12nm,0.3s						
DPC	**Dobruska-Polom**	**1.25**	**171**	Pg	**Pg**	**19 47 49.6**	**+0.2**
DPC				Sg	**Sg**	**19 48 05.5**	**-0.1**
	12nm,0.3s						
PVCC	**Panska Ves**	**1.40**	**221**	*e*PG	**Pb**	**19 47 52.6**	**+0.2**
PVCC				*e*SG	**Sg**	**19 48 10.3**	**0.0**
	comp=Z,40nm,0.2s						
PVCC	**Panska Ves**	**1.40**	**221**	Pg	**Pb**	**19 47 52.6**	**+0.2**
PVCC				Sg	**Sg**	**19 48 10.3**	**0.0**
	40nm,0.2s						
BRG	**Berggiesshubel**	**1.49**	**242**	PG	**Pg**	**19 47 54.0**	**+0.1**
BRG				SG	**Sn**	**19 48 13.9**	**+0.4**
	24nm,0.4s						
KRLC	**Kraliky**	**1.59**	**162**	*e*PG	**Pn**	**19 47 54.6**	**-0.3**
KRLC				*e*SG	**Sn**	**19 48 15.9**	**-0.2**
KRLC	**Kraliky**	**1.59**	**162**	Pg	**Pn**	**19 47 54.6**	**-0.3**
KRLC				Sg	**Sn**	**19 48 15.9**	**-0.2**
GOPC	**GO Pecny, Ondr**	**1.85**	**206**	*e*PG	**Pb**	**19 48 00.4**	**+0.3**
GOPC	**GO Pecny, Ondr**	**1.85**	**206**	Pg	**Pb**	**19 48 00.4**	**+0.3**
PRU	**Pruhonice**	**1.85**	**211**	*e*PN	**Pn**	**19 47 58.1**	**-0.4**
PRU				*e*PG	**Pb**	**19 47 59.9**	**-0.3**
PRU				*e*SG	**Sg**	**19 48 24.3**	**-0.7**
	comp=Z,8.0nm,0.3s						
PRU	**Pruhonice**	**1.85**	**211**	Pn	**Pn**	**19 47 58.1**	**-0.4**
CLL	**Collm**	**1.91**	**263**	*i* Pn	**Pn**	**19 47 58.3**	**-0.9**
	comp=Z,3.0nm,0.7s						
CLL				*i* Pg	**Pb**	**19 48 01.0**	**-0.1**
CLL				*i*		19 48 05.2	
CLL				*i* Sg	**Sg**	**19 48 27.6**	**+0.9**
	comp=Z,7.0nm,0.8s						
MORC	**Moravsky Berou**	**2.06**	**151**	*e*Pn	**Pn**	**19 48 00.9**	**-0.4**
MORC				*e*Sg	**Sg**	**19 48 30.8**	**-0.6**
OKC	**Ostrava-Krasne**	**2.21**	**141**	*e*SG	**Sg**	**19 48 36.4**	**-0.1**
	comp=Z,15nm,0.5s						
OKC	**Ostrava-Krasne**	**2.21**	**141**	Sg	**Sg**	**19 48 36.4**	**-0.1**
	comp=Z,15nm,0.5s						
VRAC	**Vranov**	**2.31**	**171**	*e*Pn	**Pn**	**19 48 05.1**	**+0.4**
VRAC				*e*Sg	**Sg**	**19 48 39.9**	**+0.3**
TREC	**Trest**	**2.32**	**189**	*e*PN	**Pn**	**19 48 05.1**	**+0.2**
TREC	**Trest**	**2.32**	**189**	Pn	**Pn**	**19 48 05.1**	**+0.2**
NKC	**Novy Kostel**	**2.63**	**240**	*e*PN	**Pn**	**19 48 09.5**	**+0.3**
NKC				*e*PG	**Pg**	**19 48 15.5**	**-0.4**
NKC				*e*SG	**Sg**	**19 48 50.7**	**+0.7**
	comp=Z,12nm,0.4s						
NKC	**Novy Kostel**	**2.63**	**240**	Pn	**Pn**	**19 48 09.5**	**+0.3**
KHC	**Kasperske Hory**	**2.91**	**213**	*e*PN	**Pn**	**19 48 13.2**	**+0.1**
KHC				*e*PG	**Pb**	**19 48 18.9**	**+0.7**
KHC				*e*SN	**Sn**	**19 48 48.4**	**-0.4**
KHC				*e*SG	**Sg**	**19 48 58.1**	**-0.8**
	comp=Z,3.7nm,0.3s						
KHC	**Kasperske Hory**	**2.91**	**213**	Pn	**Pn**	**19 48 13.2**	**+0.1**
KHC				Sn	**Sn**	**19 48 48.4**	**-0.4**
KHC				Sg	**Sg**	**19 48 58.1**	**-0.8**
	comp=Z,3.7nm,0.3s						
LANS	**Liptovska Anna**	**3.29**	**136**	*e*Sg	**Sg**	**19 49 08.6**	**-2.5**
LANS	**Liptovska Anna**	**3.29**	**136**	*e*SG	**Sg**	**19 49 08.6**	**-2.5**
VYHS	**Vyhne**	**3.59**	**148**	*e*Sg	**Sg**	**19 49 20.6**	**-0.1**
VYHS	**Vyhne**	**3.59**	**148**	*e*SG	**Sg**	**19 49 20.6**	**-0.1**
STHS	**Stebnicka Huta**	**3.98**	**121**	*e*Sg	**Sg**	**19 49 34.3**	**+1.1**
STHS	**Stebnicka Huta**	**3.98**	**121**	*e*SG	**Sg**	**19 49 34.3**	**+1.1**
STHS				*e*LG	Lg	19 49 47.0	

*ISCJB **13** 19:47:35.9±0.6, 36°.1S±0°.1×98°.1W±0°.1, h10km, mb4.4/14, MS4.0/15, Error ellipse: s-maj=17.0km s-min=14.1km az=158.9*
*IDC **13** 19:47:36.3±1.2, 36°.09S×98°.08W, h0km, mb4.0/6, mb1 4.3/6, mb1mx4.1/30, mbtmp4.0/6, MS4.0/15, Ms1 4.0/15, ms1mx3.9/25, Error ellipse: s-maj=34.8km s-min=27.4km az=61.0*
*NEIC **13** 19:47:38.3±0.8, 36°.03S×97°.99W, h10km, mb4.4/9, Error ellipse: s-maj=20.9km s-min=14.5km az=224.0*
*GCMT **13** 19:47:38.3±0.2, 36°.37S×98°.17W, h24km±1km, MW5.0/86, Moment Tensor Solution. s39,c52; s86,c122; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-0.04±.13; $M_{\theta\theta}$-0.69±.12; $M_{\phi\phi}$0.72±.13; $M_{r\theta}$0.58±.16; $M_{\theta\phi}$-3.88±.12; $M_{r\phi}$0.07±.16; Best double couple: $M_0$3.98600×10^{16} NP1:ϕ_s275.00000°, δ88.00000°, λ-172.00000°. NP2: ϕ_s185.00000°, δ82.00000°, λ-2.00000°. Principal axes: T 3.9880, Plg5.0000°, Azm50.0000°; N -0.0040, Plg82.0000°, Azm287.0000°; P -3.9840, Plg7.0000°, Azm140.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 13 19:47:37.8±0.8, 36°.1S±0°.1×98°.0W±0°.2, h10km, n41, σ0°99/24, mb4.3/14, MS4.0/15, Southeast of Easter Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLCA	**Paso Flores**	**21.99**	**111**	P	**P**	**19 52 32.7**	**+0.6**
	3.8nm,0.9s,baz=322,slow=10,SNR=6.7						
PLCA				LR	LR	19 58 59.7	
	comp=Z,530nm,20.1s,baz=304,slow=31						
PLCA	**Paso Flores**	**21.99**	**111**	*e*P	**P**	**19 52 34.1**	**+2.0**
	19nm,1.5s						
LCO	**Las Campanas**	**24.04**	**81**	*e*P	**P**	**19 52 52.0**	**-1.3**
	11nm,1.1s						
LPAZ	**La Paz**	**33.08**	**61**	P	**P**	**19 54 14.4**	**-0.1**
	3.1nm,0.8s,baz=195,slow=4.1,SNR=7.7						
LPAZ				LR	LR	20 05 05.2	
	comp=Z,128nm,21.8s,baz=264,slow=32						
LPAZ	**La Paz**	**33.08**	**61**	*e*P	**P**	**19 54 14.7**	**+0.2**
	4.6nm,0.9s						
RKT	**Rikitea**	**34.41**	**282**	*e*LQ	LQ	20 02 03.3	
	705nm,26.2s						
RKT				*e*LR	LR	20 03 31.2	
	430nm,25.8s						
CPUP	**Villa Florida**	**35.92**	**86**	LR	LR	20 07 23.3	
	comp=Z,213nm,18.8s,baz=252,slow=33						
PAYG	**Puerto Ayora**	**35.94**	**13**	*e*P	P	19 54 43.2	+4.6
	42nm,1.0s						
SIV	**San Ignacio**	**38.45**	**68**	LR	LR	20 08 59.8	
	comp=Z,252nm,20.6s,baz=206,slow=33						
OTAV	**Otavalo**	**40.45**	**31**	*e*P	**P**	**19 55 18.3**	**+1.2**
	6.5nm,1.1s						
SAML	**Samuel**	**41.62**	**58**	*e*P	**P**	**19 55 25.7**	**-0.6**
	6.9nm,1.3s						
PRAC	**Prado**	**45.11**	**34**	*e*P	**P**	**19 55 52.8**	**-1.7**
	15nm,1.4s						
ROSC	**El Rosal**	**46.36**	**34**	LR	LR	20 12 38.9	
	comp=Z,154nm,20.3s,baz=217,slow=32						
TAOE	**Nuku Hiva Isla**	**46.88**	**295**	*e*S	S	20 02 45.4	-14
	157nm,27.2s						
TAOE				*e*LR	LR	20 09 19.3	
	180nm,26.8s						
PPT2	**Papeete2**	**48.96**	**278**	*e*LR	LR	20 10 15.3	
	263nm,23.2s,baz=102						
PPT	**Papeete**	**48.97**	**278**	LR	LR	20 11 44.2	
	comp=Z,161nm,18.2s,baz=162,slow=30						
PTGA	**Pitinga**	**49.81**	**54**	LR	LR	20 15 26.3	
	comp=Z,196nm,19.2s,baz=226,slow=34						
QSPA	**South Pole Qui**	**54.15**	**180**	*e*P	**P**	**19 57 02.4**	**-0.5**
VNDA	**Vanda**	**57.24**	**195**	P	**P**	**19 57 24.4**	**-0.4**
	1.7nm,1.1s,baz=72,slow=4.4,SNR=3.6						
VNDA				LR	LR	20 15 31.3	
	comp=Z,94nm,21.8s,baz=105,slow=29						
ABVI	**Anegada Island**	**63.14**	**36**	*e*P	**P**	**19 58 05.1**	**-0.8**
	108nm,1.2s						
LTX	**Lajitas**	**65.27**	**355**	*e*P	**P**	**19 58 20.6**	**+0.8**
TX31	**Lajitas Ar. Si**	**65.27**	**355**	*e*P	**P**	**19 58 18.6**	**-1.1**
TXAR	**Lajitas Array**	**65.27**	**355**	P	**P**	**19 58 20.6**	**+0.8**
	0.6nm,0.9s,baz=170,slow=7.6,SNR=5.4						
AFI	**Afiamalu**	**68.89**	**268**	LR	LR	20 20 51.2	
	comp=Z,162nm,18.1s,baz=153,slow=29						
TUC	**Tucson**	**69.06**	**348**	*e*P	**P**	**19 58 44.2**	**+0.5**
	5.8nm,1.6s						
LRAL	**Lakeview Retre**	**69.51**	**10**	*e*P	**P**	**19 58 46.7**	**+0.3**
AMTX	**Amarillo**	**70.67**	**357**	*e*P	**P**	**19 58 52.7**	**-0.9**
CPCT	**Cooper Cave**	**72.25**	**12**	*e*P	**P**	**19 59 03.8**	**+0.8**
	4.9nm,1.2s						
MAW	**Mawson**	**75.64**	**173**	LR	LR	20 29 39.3	
	comp=Z,79nm,21.9s,baz=213,slow=33						
NVAR	**Mina Array Bea**	**76.46**	**344**	P	**P**	**19 59 27.8**	**0.0**
	1.0nm,0.6s,baz=188,slow=7.9,SNR=4.8						
BW06	**Boulder Array**	**79.16**	**351**	*e*P	**P**	**19 59 42.5**	**-0.2**
PD31	**Pinedale Array**	**79.16**	**351**	*e*P	**P**	**19 59 42.3**	**-0.5**
PDAR	**Pinedale Array**	**79.16**	**351**	P	**P**	**19 59 42.9**	**+0.1**
	1.6nm,0.7s,baz=163,slow=6.2,SNR=11						
ECSD	**EROS Data Cent**	**79.13**	**1**	*e*P	P	19 59 46.8	+2.8
HLID	**Hailey**	**80.64**	**348**	*e*P	**P**	**19 59 51.8**	**+1.1**
STKA	**Stephens Creek**	**92.33**	**227**	LR	LR	20 37 59.0	
	comp=Z,57nm,18.4s,baz=198,slow=33						
HNR	**Honiara**	**94.08**	**255**	LR	LR	20 34 39.3	
	comp=Z,40nm,19.7s,baz=170,slow=30						
SCHQ	**Schefferville**	**94.42**	**17**	LR	LR	20 40 15.7	
	comp=Z,88nm,19.8s,baz=310,slow=33						
BOSA	**Boshof**	**96.41**	**132**	LR	LR	20 38 59.4	
	comp=Z,71nm,19.0s,baz=200,slow=32						
DBIC	**Dimbokro**	**96.44**	**86**	LR	LR	20 38 47.7	
	comp=Z,97nm,19.3s,baz=204,slow=32						
BRTR	**Keskin Array B**	**142.04**	**70**	PKP	**PKPdf**	**20 07 11.9**	**+1.8**
	0.6nm,0.9s,baz=219,slow=3.7,SNR=3.2						

*NIED **13** 19:51:00.37°.00N×141°.40E, h8km, Mw3.9 Best double couple: $M_0$8.27000×10^{14} NP1:ϕ_s19.00000°, δ37.00000°, λ-90.00000°. NP2:ϕ_s199.00000°, δ53.00000°, λ-90.00000°.*
*ISCJB **13** 19:51:46.0±1.3, 37°.04N±0°.04×141°.43E±0°.09, h24km±7km, mb3.6/8, MS3.0/3, Error ellipse: s-maj=11.7km s-min=6.6km az=10.8*
*JMA **13** 19:51:47.0±0.1, 37°.05N×141°.36E, h31km±1km, M4.0*
JMA Felt II J1.
*IDC **13** 19:51:51.6±2.0, 37°.00N×141°.15E, h49km±19km, mb3.5/8, mb1 3.6/12, mb1mx3.4/47, mbtmp3.7/12, ML3.4/4, MS3.1/3, Ms1 3.1/3, ms1mx2.7/38, Error ellipse: s-maj=25.2km s-min=12.9km az=85.0*

ISC 13 19:51:45.8±1.9, 37°.06N±0°.05×141°.40E±0°.07, h9km±11km, n27, σ0°60/25, mb3.7/8, MS3.0/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.48**	**275**	P	**Pb**	**19 51 56.5**	**+0.1**
ONAJ				S	**Sb**	**19 52 03.3**	**-0.3**
JFK	**Kawauchi**	**0.52**	**306**	P	**Pb**	**19 51 57.1**	**0.0**
JFK				S	**Sb**	**19 52 04.2**	**-0.5**
JHO	**Hitachi**	**0.80**	**236**	P	**Pg**	**19 52 01.2**	**0.0**
JHO				S	**Sb**	**19 52 12.2**	**-0.6**
JMM	**Marumori**	**0.94**	**329**	P	**Pb**	**19 52 04.0**	**-0.2**
JMM				*e*S	**Sg**	**19 52 15.8**	**-0.2**
JFT	**Otama**	**0.96**	**299**	P	**Pb**	**19 52 04.8**	**+0.2**
JFT				S	**Sb**	**19 52 17.0**	**-0.5**
MJAR	**Matsushiro Arr**	**2.61**	**260**	P	**Pn**	**19 52 28.9**	**+0.7**
	7.6nm,0.3s,baz=88,slow=15,SNR=66						
MAT	**Matsushiro**	**2.61**	**260**	P	**Pn**	**19 52 29.2**	**+1.0**
MAT				S	**Sn**	**19 53 00.7**	**+0.7**
JHJ	**Hachijo jima 2**	**4.15**	**199**	P	**Pn**	**19 52 50.0**	**+0.7**
	12nm,0.3s,baz=88,slow=23,SNR=5.5						
JHJ				S	**Sn**	**19

SSLN	Shishaldin Nor	1.49	286	P	Pn	20 10 03.6 +1.0
SSLW	Shishaldin Wes	1.55	284	P	Pn	20 10 04.5 +1.1
WESN	West Dahl Nort	1.79	276	*e*Pn	Pn	20 10 07.6 +0.9
WECS	Westdahl Cape	1.90	275	P	Pn	20 10 09.5 +1.3
VNWF	Veniaminof 8	2.07	32	P	Pn	20 10 11.8 +1.2
VNHG	Veniaminof 1	2.26	36	P	Pn	20 10 13.4 +0.3
VNNF	Veniaminof 3	2.26	33	P	Pn	20 10 13.4 +0.3
AKUT	Akutan	2.50	265	*e*Pn	Pn	20 10 11.4 -5.0
AHB	Akutan Harbor	2.53	265	P	Pn	20 10 17.4 +0.6
CHGN	Chignik	2.59	42	*e*Pn	Pn	20 10 18.7 +1.1
CHGN				*e*Sn	Sn	20 10 48.8 +0.9
UNV	Unalaska Valle	2.98	261	*e*Pn	Pn	20 10 22.5 -0.5
MTBL	Makushin Table	3.06	264	*e*Pn	Pn	20 10 24.6 +0.5
ANPK	Aniakchak Peak	3.10	37	P	Pn	20 10 25.0 +0.3
ANNE	Aniakchak Nort	3.18	37	P	Pn	20 10 26.5 +0.7
MGOD	Makushin Gods	3.21	261	*e*Pn	Pn	20 10 26.6 +0.5
MSOM	Makushin Julie	3.25	262	*e*Pn	Pn	20 10 27.3 +0.7
OKTU	Okmok Mt. Tuli	3.99	258	P	Pn	20 10 38.0 +1.2
PLK1	Peulik 1	4.37	37	P	Pn	20 10 43.1 +1.1
KABR	Katmai Barrier	5.22	42	P	Pn	20 10 54.2 +0.6
KVTA	Katmai Vly 10	5.27	39	P	Pn	20 10 54.9 +0.6
OHAK	Old Harbor	5.43	55	*e*Pn	Pn	20 10 55.7 -0.8
OHAK				*e*Sn	Sn	20 12 16.2 +19
KAHC	Katmai Hardscr	5.57	38	P	Pn	20 10 59.1 +0.5
KDAK	Kodiak Island	6.03	52	Pn	Pn	20 11 19.0 +14
	1.7nm,0.3s,baz=174,slow=5.2,SNR=35					
KDAK				Sn	Sn	20 12 23.9 +11
	1.1nm,0.3s,baz=150,slow=20,SNR=2.5					
KDAK	Kodiak Island	6.03	52	*e*Pn	Pn	20 11 03.7 -1.1
KDAK				*e*Sn	Sn	20 12 23.9 +11
FOPK	Fourpeaked Vol	6.22	42	P	Pn	20 11 07.4 0.0
CDD	Cape Douglas	6.27	41	P	Pn	20 11 08.3 +0.3
SVW2	Sparrevohn	7.41	23	*e*Pn	Pn	20 11 26.1 +2.4
SVW2				*e*Sn	Sn	20 12 45.7 -0.6
RSO	Redoubt South	7.69	34	*e*Pn	Pn	20 11 29.4 +1.8
BRLK	Bradley Lake	7.89	43	*e*Pn	Pn	20 11 29.3 -0.9
SPU	Mount Spurr	8.45	33	*e*Pn	Pn	20 11 40.7 +2.8
SEW	Seward	8.67	44	*e*Pn	Pn	20 11 40.9 0.0
TT01	Tatalina	8.98	16	*e*Pn	Pn	20 11 44.3 -0.8
TT01				*e*Sn	Sn	20 13 26.1 +1.3
TTA	Tatalina	9.01	16	*e*Pn	Pn	20 11 45.9 +0.4
TTA				*e*Sn	Sn	20 13 22.6 -2.8
RC01	Rabbit Creek A	9.18	38	*e*Pn	Pn	20 11 49.3 +1.5
RC01				*e*Sn	Sn	20 13 27.8 -1.8
PPLA	Purkeypile	9.79	26	*e*Pn	Pn	20 11 59.0 +2.7
PPLA				*e*Sn	Sn	20 13 37.2 -7.5
CAST	Castle Rocks	10.25	25	*e*Pn	Pn	20 12 03.5 +1.0
SCM	Sheep Creek Mo	10.54	39	*e*Pn	Pn	20 12 06.0 -0.5
KTH	Kantishna Hill	10.65	26	*e*Pn	Pn	20 12 10.6 +2.5
TRF	Thorofare Moun	10.74	28	*e*Pn	Pn	20 12 09.2 -0.1
DIV	Divide	10.75	45	*e*Pn	Pn	20 12 07.8 -1.6
RAGM	Ragged Mountai	10.86	50	*e*Pn	Pn	20 12 10.5 -0.4
KLU	Klutina	10.89	43	*e*Pn	Pn	20 12 10.2 -1.1
BPAW	Bear Paw Mtn.	11.09	25	*e*Pn	Pn	20 12 14.5 +0.6
RND	Reindeer	11.12	31	*e*Pn	Pn	20 12 13.6 -0.8
BMRM	Bremner River	11.16	47	*e*Pn	Pn	20 12 14.3 -0.7
TNA	Tin City	11.62	347	*e*Pn	Pn	20 12 24.2 +3.0
MLY	Manley	11.93	23	*e*Pn	Pn	20 12 28.8 +3.3
PAX	Paxson	11.93	38	*e*Pn	Pn	20 12 25.1 -0.5
WRH	Wood River Hil	12.15	29	*e*Pn	Pn	20 12 26.0 -2.4
BALM	Baldy	12.18	49	*e*Pn	Pn	20 12 28.8 -0.1
CCB	Clear Creek Bu	12.36	28	*e*Pn	Pn	20 12 31.2 -0.1
MENT	Mentasta	12.56	40	*e*Pn	Pn	20 12 32.2 -1.8
ILAR	Eielson Array	12.72	29	Pn	Pn	20 12 32.8 -3.3
	0.1nm,0.3s,baz=226,slow=13,SNR=3.1					
ILB	Eielson Array	12.72	29	*e*Pn	Pn	20 12 32.6 -3.5
DOT	Dot Lake	12.85	37	*e*Pn	Pn	20 12 34.0 -4.0
COLD	Coldfoot	13.95	18	*e*Pn	Pn	20 12 53.2 +0.3
EGAK	Eagle	14.55	36	*e*Pn	Pn	20 12 57.9 -3.1
SKAG	Skagway	15.11	60	*e*Pn	Pn	20 13 08.6 +0.4
DLBC	Dease Lake	17.78	64	P	P	20 13 45.5 +3.0
	0.1nm,0.3s,baz=250,slow=15,SNR=2.4					
DLBC	Dease Lake	17.78	64	*e*Pn	P	20 13 45.7 +3.3
INK	Inuvik	19.07	32	P	P	20 13 56.7 +0.4
	0.2nm,0.3s,baz=237,slow=9.8,SNR=6.8					
INK	Inuvik	19.07	32	*e*P	P	20 13 55.0 -1.3
PEA1	Petropavlovsk-	23.90	284	*e*P	P	20 14 47.0 -0.3
PEA0	Petropavlovsk-	23.91	284	*e*P	P	20 14 46.4 -1.0
PETK	Petropavlovsk-	23.91	284	P	P	20 14 47.0 -0.3
	11nm,0.6s,baz=80,slow=13,SNR=34					
YKA	Yellowknife Ar	25.31	52	P	P	20 15 02.7 +2.7
	0.1nm,0.3s,baz=272,slow=11,SNR=3.9					
YKB5	Yellowknife Ar	25.31	52	*e*P	P	20 15 02.8 +2.7
YBH	Yreka Blue Hor	28.48	100	*e*PcP	PcP	20 18 39.0 -0.6
WASM	Alta Sierra Ca	34.94	104	*e*P	P	20 16 19.9 -5.8
K22A	Casper	37.34	85	*e*P	P	20 16 42.6 -3.5
KLR	Kul'dur	40.17	291	P	P	20 17 07.0 -2.5
	1.5nm,0.6s,baz=70,slow=7.6,SNR=6.7					
H11N2	WAKE ISLAND Hy	42.15	227	T	T	21 02 13.4
	baz=27,slow=76,SNR=11					
H11N3	WAKE ISLAND Hy	42.16	227	T	T	21 02 10.1
	baz=27,slow=76,SNR=11					
H11N1	WAKE ISLAND Hy	42.17	227	T	T	21 02 12.7
	baz=27,slow=76,SNR=9.1					
H11S1	WAKE ISLAND Hy	43.32	227	T	T	21 03 37.3
	baz=26,slow=76,SNR=11					
H11S2	WAKE ISLAND Hy	43.33	227	T	T	21 03 38.0
	baz=26,slow=76,SNR=6.2					
H11S3	WAKE ISLAND Hy	43.34	227	T	T	21 03 45.4
	baz=26,slow=76,SNR=6.6					
KSRS	Korea Array	49.74	280	P	P	20 18 25.5 -0.1
	2.7nm,0.7s,baz=46,slow=7.7,SNR=9.6					
KS15	Wonju Array Si	49.77	281	*e*P	P	20 18 24.7 -1.1
KSAR	Wonju Array Be	49.77	281	P	P	20 18 25.5 -0.3
SONA1	Songino Array	54.16	304	*e*P	P	20 18 58.6 +0.1
SONA1				*e*PcP	PcP	20 20 02.9 +0.3
SONA0	Songino Array	54.17	304	*e*P	P	20 18 58.6 -0.1
SONA0				*e*PcP	PcP	20 20 03.7 +1.0
SONM	Songino Array	54.17	304	P	P	20 18 58.6 -0.1
	2.0nm,0.8s,baz=40,slow=7.2,SNR=17					
SONM				PcP	PcP	20 20 03.7 +1.0
	0.6nm,0.6s,baz=77,slow=1.7,SNR=5.2					
ARA0	ARCESS Array S	56.25	357	*e*P	P	20 19 12.8 -0.3
ARCES	ARCESS Array B	56.25	357	P	P	20 19 12.8 -0.3
	1.5nm,0.8s,baz=35,slow=8.2,SNR=2.2					
HHC	Hu-ho-hao-te	56.45	295	*e*P	P	20 19 14.5 -0.6
HHC				pmax	pmax	
	comp=Z,15nm,1.1s					
HHC				pmax	pmax	
	comp=Z,110nm,6.9s					
FIA0	FINESS Array S	64.33	356	*e*P	P	20 20 08.0 -0.3
FINES	FINESS Array B	64.33	356	P	P	20 20 08.0 -0.3
	comp=Z,3.3nm,0.9s,baz=28,slow=8.6,SNR=10.0					
NB200	NORSAR Array S	64.75	4	*e*P	P	20 20 11.6 +0.4
NOA	NORSAR Array B	64.75	4	P	P	20 20 11.6 +0.4
	comp=Z,0.8nm,0.8s,baz=356,slow=6.6,SNR=3.0					
ZRNK	Zerenda	65.09	329	*e*P	P	20 20 13.9 +0.4
MK32	Makanchi Array	65.65	317	*e*P	P	20 20 16.7 -0.5
MKAR	Makanchi Array	65.65	317	P	P	20 20 16.7 -0.5
	comp=Z,0.3nm,0.5s,baz=47,slow=6.9,SNR=5.2					
WMQ	Urumqi	65.81	312	*e*P	P	20 20 19.5 +1.1
WMQ				pmax	pmax	
	comp=Z,3.0nm,0.6s					
WMQ				pmax	pmax	
	comp=Z,20nm,3.6s					
CD2	Chengdu	68.07	293	P	P	20 20 30.0 -2.9
CD2				pmax	pmax	
	comp=Z,1.0nm,0.5s					
ABKAR	Akbulak array	70.97	333	*e*P	P	20 20 50.7 +0.3
AKASG	Malin Array Be	74.87	353	P	P	20 21 13.3 -0.1
	comp=Z,1.0nm,0.5s,baz=15,slow=6.5,SNR=4.2					
GERES	GERESS Array B	77.03	3	P	P	20 21 26.4 +0.4
	comp=Z,0.4nm,0.6s,baz=12,slow=6.8,SNR=4.7					
BUR08	Bucovina Ar. S	78.16	355	*e*P	P	20 21 32.4 +0.2
KBZ	Khabaz	80.03	342	P	P	20 21 44.1 +1.8
	comp=Z,2.9nm,0.9s,baz=259,slow=2.8,SNR=5.6					
KKN	Kakani	80.07	304	*e*P	P	20 21 43.6 +0.4
	comp=Z,4.7nm,0.5s					
PKIN	Phulchoki	80.19	304	*e*P	P	20 21 44.6 +0.7
	comp=Z,2.3nm,0.4s					
GKN	Gorkha	80.20	305	*e*P	P	20 21 43.8 0.0
	comp=Z,4.1nm,0.5s					
CM31	Chiang Mai Arr	80.59	288	*e*P	P	20 21 45.9 +0.1
CMAR	Chiang Mai Arr	80.59	288	P	P	20 21 46.3 +0.5
	comp=Z,2.0nm,0.9s,baz=17,slow=5.6,SNR=11					
CM01	Chiang Mai Arr	80.61	288	*e*P	P	20 21 45.9 -0.1
KOLN	Koldanda	80.90	305	*e*P	P	20 21 47.7 +0.1
	comp=Z,4.2nm,0.5s					
PYUN	Piuthan	80.91	306	*e*P	P	20 21 48.3 +0.7
GEYT	Alibeck	81.91	329	P	P	20 21 54.0 +1.5
	comp=Z,1.7nm,0.7s,baz=306,slow=3.5,SNR=5.5					
ESDC	Sonseca Array	84.32	17	P	P	20 22 06.9 +1.9
	comp=Z,0.2nm,0.5s,baz=344,slow=4.1,SNR=3.4					
BR231	Keskin MP Arra	85.31	349	*e*P	P	20 22 11.4 +1.3
BR101	Keskin Array S	85.33	348	*e*P	P	20 22 11.2 +1.0
BRTR	Keskin Array B	85.33	348	P	P	20 22 11.2 +1.0
	comp=Z,1.3nm,0.8s,baz=39,slow=4.7,SNR=7.8					

MEX 13 20:12:26.6±0.7, 17°.23N×92°.10W, h5km±6km, MD3.6, Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CCIG	Comitan	0.94	182	*e*P	Pg	20 12 42.5	-2.3
CCIG				*e*S	Sg	20 12 55.2	-1.7
TGIG		1.08	246	*e*P	Pg	20 12 44.0	-3.3
TGIG				*e*S	Sg	20 12 58.6	-2.7
PCIG		1.86	215	*e*P	Pn	20 12 56.1	-2.9
PCIG				*e*S	Sn	20 13 18.3	-4.6
SCIG	Sabancuy	1.94	27	*e*P	Pn	20 12 56.5	-3.6
SCIG				*e*S	Sn	20 13 20.3	-4.5

*IDC **13** 20:16:35.1±2.2, 35°.71N×143°.16E, h0km, mb3.5/5, mb1 3.6/7, mb1mx3.4/45, mbtmp3.5/7, ML3.3/2, Error ellipse: s-maj=57.0km s-min=22.6km az=66.0*
*JMA **13** 20:16:37.9±0.4, 35°.76N×143°.02E, h53km, M3.3*
*ISCJB **13** 20:16:41.1±1.0, 35°.63N±0°.06×142°.78E±0°.08, h59km, mb3.4/5, Error ellipse: s-maj=10.2km s-min=8.3km az=145.9*

ISC 13 20:16:43.6±1.4, 35°.67N±0°.07×142°.7E±0°.1, h59km, n14, σ1ˢ56/19, mb3.4/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	1.52	272	P	Pn	20 17 06.4	-2.1
CHOJ				*e*S	Sn	20 17 28.7	+1.4
BSO1	Boso 1	1.75	235	P	Pn	20 17 09.9	-1.3
JHO	Hitachi	1.98	299	P	Pn	20 17 12.7	-2.1
JHO				S	Sn	20 17 37.5	-1.1
JFT	Otama	2.67	315	P	Pn	20 17 21.9	-2.3
JAG	Ashikaga	2.76	287	P	Pn	20 17 23.1	-2.3
JAG				*e*S	Sn	20 17 57.4	-0.1
JOD2	Odawara 2	2.99	263	P	Pn	20 17 27.7	-1.0
JOD2				*e*S	Sn	20 18 04.6	+1.2
JRY	Ryogami san	3.12	278	P	Pn	20 17 28.9	-1.6
JHJ	Hachijo jima 2	3.52	225	Pn	Pn	20 17 34.3	-1.5
	7.8nm,0.3s,baz=323,slow=23,SNR=6.4						
JHJ				Sn	Sn	20 18 14.5	-1.6
	16nm,0.3s,baz=15,slow=20,SNR=4.7						
MJAR	Matsushiro Arr	3.76	285	Pn	Pn	20 17 39.0	-0.1
	1.6nm,0.3s,baz=99,slow=7.5,SNR=17						
SONM	Songino Array	29.43	306	P	P	20 22 43.8	+2.1
	0.3nm,0.8s,baz=112,slow=6.4,SNR=3.3						
ZALV	Zalesovo Beam	43.62	313	P	P	20 24 42.8	+0.9
	0.8nm,0.5s,baz=93,slow=7.4,SNR=3.7						
MKAR	Makanchi Array	45.75	303	P	P	20 24 59.0	0.0
	0.2nm,0.8s,baz=81,slow=9.2,SNR=2.2						
WRA	Warramunga Arr	55.87	190	P	P	20 26 15.3	0.0
	0.6nm,0.6s,baz=7.5,slow=7.4,SNR=8.7						
ASAR	Alice Springs	59.60	189	P	P	20 26 41.5	0.0
	0.2nm,0.6s,baz=2.7,slow=5.7,SNR=4.2						

*NIED **13** 20:17:00, 37°.70N×141°.80E, h53km, Mw4.2 Best double couple: M0 1.94000×10^15 NP1:φ=177.00000°, δ30.00000°, λ66.00000°. NP2:φ=24.00000°, δ63.00000°, λ103.00000°.*
*ISCJB **13** 20:17:35.7±0.6, 37°.66N±0°.03×141°.82E±0°.05, h58km±4km, mb4.3/49, MS3.3/4, Error ellipse: s-maj=7.4km s-min=4.5km az=21.6*
*JMA **13** 20:17:36.7, 37°.66N×141°.77E, h45km±2km, M4.3*
JMA Felt I J1.
*NEIC **13** 20:17:37.9±0.6, 37°.71N×141°.79E, h60km±5km, mb4.4/20, Error ellipse: s-maj=6.5km s-min=4.8km az=121.0*
NEIC Recorded [1 JMA] in Fukushima, Iwate and Miyagi.
*IDC **13** 20:17:38.9±2.0, 37°.66N×141°.69E, h69km±18km, mb3.9/24, mb1 4.0/30, mb1mx3.9/48, mbtmp4.1/30, MS3.3/2, Ms1 3.3/2, ms1mx2.6/41, Error ellipse: s-maj=15.4km s-min=11.5km az=96.0*

ISC 13 20:17:36.8±1.3, 37°.66N±0°.04×141°.79E±0°.08, h51km±10km, n118, σ1ˢ05/128, mb4.2/49, MS3.6/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	0.78	248	P	Pn	20 17 51.3	-0.4
JFK				S	Sn	20 18 01.7	-0.8
JMM	Marumori	0.82	285	P	Pn	20 17 51.8	-0.3
JMM				S	Sn	20 18 02.6	-0.6
JIO	Ouri	0.87	336	P	Pn	20 17 52.5	-0.3
JIO				S	Sn	20 18 03.6	-0.8
ONAJ	Iwakimizuishiy	0.96	235	P	Pn	20 17 53.7	-0.4
ONAJ				S	Sn	20 18 05.9	-1.0
JOU	Okura	1.14	309	P	Pn	20 17 56.3	-0.1
JOU				*e*S	Sn	20 18 10.9	0.0
JFT	Otama	1.16	264	P	Pn	20 17 57.3	+0.6
JFT				S	Sn	20 18 12.1	+0.6
JMK	Ichinoseki	1.37	341	P	Pn	20 17 59.8	+0.3
JMK				S	Sn	20 18 16.3	-0.2
JYS	Shiratake	1.48	293	P	Pn	20 18 01.2	+0.2
JYS				S	Sn	20 18 21.0	+1.9
JFY	Yanaizu	1.68	262	P	Pn	20 18 04.1	+0.4
JFY				S	Sn	20 18 25.4	+1.3
JYK	Kaneyama	1.69	319	P	Pn	20 18 04.2	+0.3
JYK				S	Sn	20 18 24.6	+0.3
MJAR	Matsushiro Arr	3.07	250	P	Pn	20 18 24.3	+1.5
	14nm,0.3s,baz=78,slow=17,SNR=35						
MAJO	Matsushiro	3.07	250	*e*Pn	Pn	20 18 24.4	+1.6
MAT	Matsushiro	3.07	250	P	Pn	20 18 24.4	+1.5
MAT				S	Sn	20 18 59.5	+1.1
MJB9	Matsu-Tunnel	3.07	250	*e*Pn	Pn	20 18 24.4	+1.5
ERM	Erimo	4.48	13	*e*Pn	Pn	20 18 41.0	-1.1
ERM				*e*Sn	Sn	20 19 29.2	-3.6
INU	Inuyama	4.48	240	*e*Pn	Pn	20 18 44.2	+2.0
JHJ2	Mitsune	4.81	200	*e*Pn	Pn	20 18 45.8	-0.9
JHJ2				*e*Sn	Sn	20 19 36.7	-4.4
JHJ	Hachijo jima 2	4.82	200	P	Pn	20 18 46.7	0.0
	22nm,0.3s,baz=242,slow=18,SNR=2.8						
JHJ				S	Sn	20 19 39.0	-2.2
	44nm,0.3s,baz=246,slow=24,SNR=6.8						
ASAJ	Asahikawa	6.48	5	P	Pn	20 19 08.6	-1.0
	6.3nm,0.3s,baz=199,slow=18,SNR=17						
ASAJ				S	Sn	20 20 21.9	-0.2
	0.6nm,0.3s,baz=75,slow=20,SNR=4.1						
ASAJ	Asahikawa	6.48	5	*e*Pn	Pn	20 19 08.5	-1.0
ASAJ				*e*Sn	Sn	20 20 19.0	-3.1
USRK	Ussuriysk Ar.	9.88	314	P	Pn	20 19 57.3	+1.2
	0.9nm,0.3s,baz=123,slow=14,SNR=13						
JNU	Nakatsue	9.99	246	P	Pn	20 19 58.9	+1.2
	0.3nm,0.3s,baz=56,slow=7.3,SNR=2.5						
JNU				LR	LR	20 24 20.1	
	comp=Z,116nm,19.2s,baz=119,slow=40						
JNU	Nakatsue	9.99	246	*e*Pn	Pn	20 19 59.2	+1.6
KSRS	Korea Array	11.01	273	P	Pn	20 20 13.8	+2.2
	0.3nm,0.3s,baz=83,slow=15,SNR=6.9						
KS15	Wonju Array Si	11.04	273	*e*Pn	Pn	20 20 13.9	+1.9
KSAR	Wonju Array Be	11.04	273	P	Pn	20 20 13.8	+1.8
MDJ	Mudanjiang	11.52	311	P	Pn	20 20 13.8	-4.7
MDJ				pmax	pmax		
	comp=Z,3.0nm,0.6s						
MDJ				pmax	pmax		
	comp=Z,160nm,4.0s						
KLR	Kul'dur	13.66	331	P	Pn	20 20 49.2	+1.6
	comp=Z,0.2nm,0.3s,baz=136,slow=14,SNR=4.7						
JOW	Kunigami	15.71	230	*e*Pn	P	20 21 18.5	+0.6
	comp=Z,30nm,1.1s						
HHC	Hu-ho-hao-te	23.57	287	*e*P	P	20 22 41.8	-1.0
HHC				pmax	pmax		
	comp=Z,21nm,0.8s						
HHC				pmax	pmax		
	comp=Z,130nm,4.2s						
YAK	Yakutsk	25.53	347	P	P	20 22 59.6	-0.6
	comp=Z,9.8nm,0.3s,baz=345,slow=1.4,SNR=11						
YAK	Yakutsk	25.53	347	*e*P	P	20 22 59.8	-0.5
	comp=Z,21nm,0.7s						
SEY	Seymchan	26.12	11	P	P	20 23 06.4	+0.8
	comp=Z,2.2nm,0.6s,baz=164,slow=12,SNR=6.6						
ULN	Ulaanbaatar	27.26	303	*e*P	P	20 23 15.8	-0.5
	comp=Z,3.0nm,1.0s						
SONA1	Songino Array	27.69	303	*e*P	P	20 23 20.2	+0.1
ENH	Enshi	27.69	264	*e*P	P	20 23 19.3	-0.9
	comp=Z,8.0nm,0.6s						
SONA0	Songino Array	27.69	303	*e*P	P	20 23 20.2	0.0
	comp=Z,2.9nm,0.7s						
SONM	Songino Array	27.69	303	P	P	20 23 20.2	0.0
	comp=Z,2.9nm,0.7s,baz=99,slow=8.6,SNR=20						
H11N2	WAKE ISLAND Hy	28.22	122	T	T	20 53 58.4	
	baz=316,slow=75,SNR=469						
H11N1	WAKE ISLAND Hy	28.23	122	T	T	20 53 55.6	
	baz=316,slow=75,SNR=485						
H11N3	WAKE ISLAND Hy	28.24	122	T	T	20 53 45.1	
	baz=316,slow=75,SNR=596						
H11S1	WAKE ISLAND Hy	28.95	124	T	T	20 54 47.7	
	baz=317,slow=76,SNR=356						
H11S3	WAKE ISLAND Hy	28.96	124	T	T	20 54 47.8	
	baz=317,slow=76,SNR=344						
H11S2	WAKE ISLAND Hy	28.97	124	T	T	20 54 45.0	
	baz=317,slow=76,SNR=331						
LZH	Lanzhou	30.26	279	*e*P	P	20 23 42.6	-0.5
LZH				sP	pP	20 23 48.5	-7.7
LZH				pP	sP	20 23 53.3	-8.9
LZH				*e*PP	PnPn	20 24 40.3	-2.1
LZH				pmax	pmax		
	comp=Z,20nm,1.0s						
LZH				pmax	pmax		
	comp=Z,51nm,5.3s						
LZH				LR	LR		
	comp=N,200nm,13.0s						
LZH				LR	LR		
	comp=E,190nm,13.2s						
LZH				LR	LR		
	comp=Z,250nm,16.3s						
CD2	Chengdu	31.98	269	P	P	20 23 56.5	-1.6
CD2				pmax	pmax		
	comp=Z,2.0nm,0.5s						
GTA	Gaotai	32.67	286	*e*P	P	20 23 57.0	-7.2
GTA				pP	pP	20 24 03.1	-14
GTA				sP	sP	20 24 06.6	-17
GTA				pmax	pmax		
	comp=Z,4.0nm,0.8s						
TIXI	Tiksi	34.71	353	P	P	20 24 20.5	-0.9
	comp=Z,1.3nm,0.4s,baz=140,slow=6.1,SNR=9.4						
KMI	Kunming	35.35	261	P	P	20 24 28.0	+0.3
KMI				pmax	pmax		
	comp=Z,4.0nm,1.3s						
KMI				LR	LR		
	comp=Z,33nm,27.4s						
MYLDM	Lahad Datu	38.68	219	*e*P	P	20 25 02.2	+6.4
	comp=Z,8.2nm,1.1s						
FALS	False Pass	40.45	47	*e*P	P	20 25 14.8	+4.7
	comp=Z,356nm,1.2s						
WMQ	Urumqi	40.83	296	*e*P	P	20 25 12.6	-0.8
WMQ				pmax	pmax		
	comp=Z,2.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,33nm,3.6s						
WMQ				LR	LR		
	comp=Z,18nm,31.8s						
ZAA0	Zalesovo Array	41.72	312	*e*P	P	20 25 19.8	-0.7
ZAA0				*e*PcP	PcP	20 27 15.3	-0.8
ZAA1	Zalesovo Array	41.72	312	*e*P	P	20 25 20.5	0.0
ZAA1				*e*PcP	PcP	20 27 15.0	-1.1
ZALV	Zalesovo Beam	41.72	312	P	P	20 25 20.5	0.0
	comp=Z,2.7nm,0.6s,baz=97,slow=7.4,SNR=10						
ZALV				PcP	PcP	20 27 15.0	-1.1
	comp=Z,0.6nm,0.4s,baz=116,slow=3.4,SNR=3.5						
CMAR	Chiang Mai Arr	41.95	255	P	P	20 25 23.2	+0.5
	comp=Z,0.5nm,0.6s,baz=41,slow=5.7,SNR=4.3						
LSA	Lhasa	42.45	275	*e*P	P	20 25 28.1	+0.7
	comp=Z,2.2nm,0.6s						
MK01	Makanchi Array	44.04	302	*e*P	P	20 25 38.5	-0.9
MK31	Makanchi Array	44.04	302	*e*P	P	20 25 38.5	-0.9
MK32	Makanchi Array	44.04	302	*e*P	P	20 25 39.3	-0.1
MKAR	Makanchi Array	44.04	302	P	P	20 25 39.3	-0.1
	comp=Z,2.6nm,0.6s,baz=85,slow=9.8,SNR=27						
MKAR	Makanchi Array	44.04	302	*e*P	P	20 25 38.8	-0.7
MAKZ	Makanchi	44.25	302	*e*P	P	20 25 40.5	-0.6
	comp=Z,2.5nm,0.6s						
KURK	Kurchatov	45.79	308	*e*P	P	20 25 52.5	-0.7
	comp=Z,8.6nm,0.7s						
KKN	Kakani	47.92	275	*e*P	P	20 26 10.2	-0.3
	comp=Z,9.8nm,0.5s						
PKIN	Phulchoki	47.93	275	*e*P	P	20 26 09.7	-0.9
	comp=Z,3.9nm,0.5s						
GKN	Gorkha	48.33	276	*e*P	P	20 26 13.1	-0.5
	comp=Z,25nm,0.7s						
IL1	Eielson Array	48.81	33	*e*P	P	20 26 16.6	+0.1
ILAR	Eielson Array	48.81	33	P	P	20 26 16.5	0.0
	comp=Z,1.1nm,0.7s,baz=269,slow=6.1,SNR=10.0						
ILB	Eielson Array	48.81	33	*e*P	P	20 26 15.9	-0.6
KOLN	Koldanda	49.26	276	*e*P	P	20 26 20.8	+0.1

TORD Torodi Ar. Bea 117.10 315 PKP **PKPdf 20 36 14.3 -2.4**
comp=Z,0.1nm,0.5s,baz=44,slow=1.8,SNR=2.9
LPAZ La Paz 146.12 59 PKPbc **PKPbc 20 37 12.6 +0.1**
comp=Z,1.7nm,0.5s,baz=0.9,slow=5.1,SNR=8.0

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*ISCJB **13** 20:20:26.0±0.9, 21°.48N±0°.10×143°.4E±0°.3, h300km, mb3.2/7, Error ellipse: s-maj=39.4km s-min=12.1km az=172.4*
*IDC **13** 20:20:28.5±1.9, 21°.50N×143°.36E, h309km±19km, mb3.0/8, mb1 3.2/10, mb1mx3.0/53, mbtmp3.8/10, Error ellipse: s-maj=34.0km s-min=12.3km az=82.0*
ISC 13 20:20:27.5±1.0, 21°.45N±0°.09×143°.4E±0°.3, h300km, n10, σ1§03/11, mb3.5/7, Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
JCJ	**Chichijima**	**5.72**	**349**	P		**Pn**	20 21 52.5	**-1.0**
	8.2nm,0.3s,baz=287,slow=20,SNR=2.4							
JCJ				S		**S**	20 23 04.6	**+2.0**
	2.6nm,0.3s,baz=270,slow=20,SNR=2.2							
MJAR	**Matsushiro Arr**	**15.69**	**344**	P		**P**	20 23 52.4	**+0.3**
	0.4nm,0.3s,baz=162,slow=9.9,SNR=4.7							
KSRS	**Korea Array**	**20.81**	**323**	P		**P**	20 24 46.4	**-0.1**
	1.4nm,0.6s,baz=151,slow=8.6,SNR=6.1							
SONM	**Songino Array**	**39.63**	**321**	P		**P**	20 27 31.4	**+0.5**
	0.1nm,0.4s,baz=109,slow=8.1,SNR=3.2							
WRA	**Warramunga Arr**	**42.08**	**193**	P		**P**	20 27 51.4	**+0.6**
	1.2nm,0.3s,baz=16,slow=9.6,SNR=18							
ASAR	**Alice Springs**	**45.78**	**192**	P		**P**	20 28 20.4	**+0.4**
	0.3nm,0.5s,baz=10.0,slow=6.9,SNR=3.1							
STKA	**Stephens Creek**	**53.05**	**182**	P		**P**	20 29 14.9	**+0.4**
	1.4nm,0.5s,baz=18,slow=6.6,SNR=6.2							
MKAR	**Makanchi Array**	**54.98**	**313**	P		**P**	20 29 27.9	**-0.4**
	0.2nm,0.5s,baz=86,slow=8.3,SNR=3.2							
YKA	**Yellowknife Ar**	**76.59**	**28**	P		**P**	20 31 45.2	**+0.2**
	0.6nm,0.5s,baz=291,slow=5.8,SNR=6.5							
FINES	**FINESS Array B**	**83.47**	**335**	P		**P**	20 32 20.0	**-1.6**
	1.0nm,0.8s,baz=46,slow=4.0,SNR=3.1							

KRSC 13 20:26:58.8±0.7, 55°.43N×162°.75E, h28km±9km, ML3.8, Near east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
KBG	**Krutoberegovo**	**0.83**	**358**	*e*P		Pn	20 27 14.4	-0.1
KBG				*e*S		Sn	20 27 26.1	+0.4
MKZ	**Mys Kozlova**	**1.06**	**214**	*e*P		Pb	20 27 18.8	+0.4
MKZ				S		Sb	20 27 33.0	+1.2
ZLN	**Zelenaya**	**1.25**	**299**	*e*P		Pb	20 27 21.1	-0.6
ZLN				*e*S		Sb	20 27 37.1	-0.3
CIRR	**Tsirk**	**1.32**	**302**	*e*P		Pb	20 27 22.4	-0.6
CIRR				S		Sb	20 27 39.7	+0.1
LGNR	**Loginova**	**1.34**	**300**	P		Pb	20 27 23.0	-0.3
LGNR				S		Sb	20 27 40.3	+0.2
SMKR	**Semkarok**	**1.36**	**329**	*e*P		Pn	20 27 22.5	+0.6
SMKR				S		Sb	20 27 39.9	-0.7
BZMR	**Bezymyannaya**	**1.38**	**292**	*e*P		Pb	20 27 23.5	-0.4
BZMR				S		Sb	20 27 41.4	+0.3
BDR	**Baidarnaya**	**1.43**	**323**	*e*P		Pb	20 27 24.0	-0.8
BDR				S		Sb	20 27 42.4	-0.3
KMNR	**Kamenistaya**	**1.46**	**284**	*e*P		Pb	20 27 25.1	-0.3
KMNR				*e*S		Sb	20 27 44.0	+0.4
KRSR	**Krestovskiy**	**1.46**	**303**	*i* P		Pn	20 27 24.0	+0.7
KRSR				*i* S		Sn	20 27 41.4	-0.2
KLY	**Klyuchi**	**1.48**	**308**	*e*P		Pn	20 27 23.0	-0.4
KLY				*e*S		Sn	20 27 40.6	-1.1
TUMR	**Tumrok**	**1.50**	**265**	*e*P		Pb	20 27 25.8	-0.1
TUMR				*e*S		Sb	20 27 44.8	+0.3
SRKR	**Sorokina**	**1.51**	**325**	*e*P		Pn	20 27 25.1	+1.1
KPT	**Kopyto**	**1.53**	**292**	*e*P		Pb	20 27 25.8	-0.7
KPT				*e*S		Sb	20 27 45.8	+0.4
KOZ	**Kozyrevsk**	**1.74**	**292**	*e*P		Pb	20 27 29.5	-0.6
KOZ				*e*S		Sb	20 27 51.1	-0.5
BKI	**Bering**	**1.85**	**96**	*e*P		Pb	20 27 31.1	-0.8
BKI				*e*S		Sb	20 27 54.5	-0.2
ESO	**Esso**	**2.35**	**284**	*e*P		Pb	20 27 38.5	-1.8
NLC	**Nalytchevo**	**3.02**	**223**	S		Sn	20 28 23.0	+3.3
SDLR	**Sedlovina**	**3.13**	**228**	*e*P		Pn	20 27 49.1	+2.9
SDLR				S		Sn	20 28 25.5	+2.9
KRER	**Koryakskii**	**3.17**	**229**	P		Pn	20 27 49.9	+3.1
KRX	**Arik**	**3.17**	**231**	P		Pn	20 27 50.0	+3.2
SMAR	**Somma**	**3.17**	**228**	P		Pn	20 27 49.4	+2.5
AVH	**Avacha**	**3.20**	**229**	P		Pn	20 27 50.6	+3.5
UGLR	**Uglovaya**	**3.20**	**228**	P		Pn	20 27 50.1	+2.9
GNL	**Ganaly**	**3.30**	**240**	*e*P		Pn	20 27 51.4	+2.9
DALK	**Dalny**	**3.36**	**226**	P		Pn	20 27 52.7	+3.5
KRMR	**Karymshinskiy**	**3.77**	**228**	P		Pn	20 27 59.6	+4.8
RUS	**Russkaya**	**3.91**	**222**	P		Pn	20 28 00.4	+3.6

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*NIED **13** 20:29:00, 34°.90N×142°.80E, h8km, Mw3.6 Best double couple: M0:3.24000×10^14 NP1:φ=20.00000°, δ=37.00000°, λ=-85.00000°. NP2:φ=195.00000°, δ=53.00000°, λ=-93.00000°.*
*IDC **13** 20:29:11.2±2.0, 34°.79N×142°.88E, h0km, mb3.6/6, mb1 3.8/8, mb1mx3.5/60, mbtmp3.6/8, ML3.6/2, MS2.7/4, Ms1 2.7/4, ms1mx2.4/39, Error ellipse: s-maj=50.4km s-min=21.0km az=65.0*
*JMA **13** 20:29:13.5±0.3, 34°.86N×142°.81E, h32km, M3.7*
ISC 13 20:29:12.4±3.5, 34°.83N±0°.06×142°.74E±0°.08, h6km±22km, n24, σ1§32/33, mb3.7/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**1.46**	**263**	P		**Pb**	20 29 39.1	**-0.5**
BSO1				*e*S		**Sb**	20 29 58.7	**+0.5**
CHOJ	**Chosi**	**1.76**	**300**	P		**Pn**	20 29 43.7	**+0.3**
CHOJ				*e*S		**Sn**	20 30 05.2	**-1.0**
BSO3	**Boso 3**	**1.83**	**270**	P		**Pb**	20 29 45.0	**-1.1**
BSO3				S		**Sb**	20 30 09.2	**0.0**
BSO4	**Boso 4**	**1.98**	**275**	P		**Pb**	20 29 47.9	**-0.8**
BSO4				*e*S		**Sb**	20 30 13.4	**-0.1**
KTR	**Katsuura**	**2.01**	**280**	*e*S		**Sn**	20 30 12.8	**+0.5**
JHJ2	**Mitsune**	**2.97**	**236**	P		**Pn**	20 30 00.3	**+0.3**
JHJ2				S		**Sn**	20 30 34.6	**-1.4**
JHJ	**Hachijo jima 2**	**2.99**	**236**	Pn		**Pn**	20 30 00.2	**0.0**
	47nm,0.3s,baz=69,slow=22,SNR=26							
JHJ				Sn		**Sn**	20 30 33.2	**-3.2**
	29nm,0.3s,baz=87,slow=21,SNR=9.6							
JOD2	**Odawara 2**	**3.02**	**279**	P		**Pn**	20 30 00.7	**-0.1**
JOD2				S		**Sn**	20 30 35.4	**-1.9**
JAG	**Ashikaga**	**3.11**	**302**	P		**Pn**	20 30 02.0	**0.0**
JAG				S		**Sn**	20 30 37.1	**-2.3**
JFT	**Otama**	**3.31**	**325**	P		**Pn**	20 30 04.0	**-0.7**
JFT				*e*S		**Sn**	20 30 40.3	**-4.0**
JRY	**Ryogami san**	**3.35**	**292**	P		**Pn**	20 30 06.1	**+0.9**
JYN	**Shimob**	**3.50**	**282**	P		**Pn**	20 30 07.6	**+0.3**
JYN				*e*S		**Sn**	20 30 48.8	**-0.3**
MJAR	**Matsushiro Arr**	**4.06**	**296**	Pn		**Pn**	20 30 15.5	**+0.5**
	1.7nm,0.3s,baz=108,slow=8.8,SNR=18							
MJAR				LR		LR	20 31 39.6	
	comp=Z,31nm,19.6s,baz=95,slow=36							
MAT	**Matsushiro**	**4.06**	**296**	P		**Pn**	20 30 15.5	**+0.4**
MAT				*e*S		**Sn**	20 31 03.1	**+0.2**
MAT	**Matsushiro**	**4.06**	**296**	P		**Pn**	20 30 15.9	**+0.8**
MAT				*e*S		**Sn**	20 31 03.6	**+0.7**
JNU	**Nakatsue**	**9.99**	**264**	LR		LR	20 35 19.0	
	comp=Z,25nm,21.4s,baz=115,slow=36							
KSRS	**Korea Array**	**12.26**	**287**	LR		LR	20 36 42.2	
	comp=Z,34nm,21.3s,baz=104,slow=36							
SONM	**Songino Array**	**29.93**	**307**	P		**P**	20 35 23.4	**+2.2**
	0.3nm,0.6s,baz=102,slow=9.0,SNR=3.1							
CMAR	**Chiang Mai Arr**	**42.05**	**259**	P		**P**	20 37 05.9	**+0.9**
	0.3nm,0.6s,baz=54,slow=7.6,SNR=3.6							
MKAR	**Makanchi Array**	**46.22**	**304**	P		**P**	20 37 38.6	**+0.5**
	0.5nm,0.7s,baz=96,slow=7.4,SNR=6.5							
KURBB	**Kurchatov Arra**	**48.22**	**310**	P		**P**	20 37 53.3	**-0.3**
	0.4nm,0.5s,baz=84,slow=7.7,SNR=9.4							
WRA	**Warramunga Arr**	**55.05**	**190**	P		**P**	20 38 44.5	**-0.6**
	1.9nm,0.8s,baz=8.6,slow=7.7,SNR=11							
ASAR	**Alice Springs**	**58.78**	**189**	P		**P**	20 39 11.2	**-0.2**
	0.6nm,0.7s,baz=17,slow=14,SNR=11							
PALK	**Pallekele**	**62.98**	**260**	LR		LR	21 06 12.5	
	comp=Z,47nm,20.6s,baz=116,slow=35							

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*ISCJB **13** 20:30:41.1±0.1, 60°.10N±0°.02×152°.63W±0°.04, h112km±1km, mb4.4/66, Error ellipse: s-maj=3.5km s-min=2.5km az=143.9*

*IDC **13** 20:30:43.9±1.9, 60°.27N×152°.73W, h112km±17km, mb4.1/34, mb1 4.1/39, mb1mx4.0/58, mbtmp4.4/39, MS3.0/4, Ms1 3.0/4, ms1mx2.7/45, Error ellipse: s-maj=15.7km s-min=10.0km az=11.0*
*NEIC **13** 20:30:43.4, 60°.05N×152°.61W, h101km, mb4.5/27, After AEIC.*
NEIC Felt [III] at Homer. Also felt at Anchorage, Clam Gulch, Girdwood, Kasilof, Kenai, Ninilchik, Pedro Bay and Soldotna. Felt widely on the Kenai Peninsula.
ISC 13 20:30:42.4±0.6, 60°.10N±0°.03×152°.63W±0°.03, h108km±5km, n218, σ1§28/244, mb4.5/66, Southern Alaska

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
IVE	**Iliamna Volcan**	**0.21**	**247**	P		**Pn**	20 30 57.4	**-0.3**
ILW	**Iliamna West**	**0.26**	**261**	*e*Pn		**Pn**	20 30 57.6	**-0.4**
ILS	**Iliamna Low So**	**0.26**	**237**	P		**Pn**	20 30 57.4	**-0.5**
RSO	**Redoubt South**	**0.37**	**350**	*e*Pn		**Pn**	20 30 58.4	**-0.1**
RDWB	**Redoubt West**	**0.40**	**345**	P		**Pn**	20 30 58.4	**-0.2**
RDWB				S		**Sn**	20 31 10.8	**0.0**
NCT	**North Crescent**	**0.49**	**342**	*e*Pn		**Pn**	20 30 59.1	**0.0**
RDJH	**Redoubt Jeurge**	**0.50**	**350**	P		**Pn**	20 30 59.1	**-0.1**
HOM	**Homer**	**0.67**	**131**	*e*Pn		**Pn**	20 31 00.4	**+0.1**
HOM				*e*Sn		**Sn**	20 31 14.0	**+0.3**
AUL	**Augustine Lava**	**0.83**	**210**	P		**Pn**	20 31 01.3	**-0.4**
AUL				S		**Sn**	20 31 16.0	**-0.2**
AUE	**Augustine Isla**	**0.83**	**207**	*e*Pn		**Pn**	20 31 01.1	**-0.6**
AUSE	**Augustine SEas**	**0.85**	**207**	P		**Pn**	20 31 01.4	**-0.6**
AUI	**Augustine Isla**	**0.87**	**208**	P		**Pn**	20 31 01.5	**-0.6**
BRLK	**Bradley Lake**	**0.94**	**110**	P		**Pn**	20 31 02.7	**-0.2**
BRLK				S		**Sn**	20 31 18.1	**-0.1**
CKL	**Chakachamna La**	**1.11**	**7**	P		**Pn**	20 31 05.3	**+0.6**
SPU	**Mount Spurr**	**1.12**	**14**	*e*Pn		**Pn**	20 31 05.3	**+0.5**
SPU				*e*Sn		**Sn**	20 31 21.6	**-0.1**
SPCR	**Spurr Chakacha**	**1.12**	**10**	P		**Pn**	20 31 05.3	**+0.5**
SPCR				S		**Sn**	20 31 22.2	**+0.4**
SPWE	**Spurr West**	**1.18**	**2**	P		**Pn**	20 31 06.4	**+0.9**
MCNL	**McNeil River**	**1.26**	**224**	P		**Pn**	20 31 05.6	**-0.7**
SLKM	**Skilak Lake**	**1.27**	**70**	*e*Pn		**Pn**	20 31 06.0	**-0.3**
CDD	**Cape Douglas**	**1.28**	**204**	P		**Pn**	20 31 05.6	**-1.0**
FOPK	**Fourpeaked Vol**	**1.41**	**198**	P		**Pn**	20 31 06.8	**-1.2**
STLK	**Strandline Lak**	**1.46**	**15**	P		**Pn**	20 31 09.3	**+0.7**
SEW	**Seward**	**1.59**	**88**	*e*Pn		**Pn**	20 31 09.5	**-0.7**
SEW				*e*Sn		**Sn**	20 31 29.9	**-1.3**
RC01	**Rabbit Creek A**	**1.74**	**54**	*e*Pn		**Pn**	20 31 12.2	**+0.2**
RC01				*e*Sn		**Sn**	20 31 34.4	**-0.1**
SVW2	**Sparrevohn**	**1.77**	**306**	*e*Pn		**Pn**	20 31 11.9	**-0.5**
SVW2				*e*Sn		**Sn**	20 31 32.6	**-2.6**
KAHC	**Katmai Hardscr**	**1.90**	**221**	P		**Pn**	20 31 13.5	**-0.6**
KAWH	**Katmai**	**2.05**	**214**	P		**Pn**	20 31 15.5	**-0.5**
KAKN	**Katmai Knife C**	**2.20**	**216**	P		**Pn**	20 31 17.4	**-0.5**
KVTA	**Katmai Vly 10**	**2.20**	**220**	P		**Pn**	20 31 17.5	**-0.4**
PMR	**Palmer**	**2.27**	**47**	*e*Pn		**Pn**	20 31 18.2	**-0.5**
PMR				*e*Sn		**Sn**	20 31 43.5	**-3.1**
KABU	**Katmai Buttres**	**2.29**	**218**	P		**Pn**	20 31 19.0	**-0.1**
KABU				S		**Sn**	20 31 45.9	**-1.2**
KELA	**Mount Kelaz**	**2.31**	**225**	P		**Pn**	20 31 18.7	**-0.6**
KABR	**Katmai Barrier**	**2.31**	**212**	P		**Pn**	20 31 18.8	**-0.6**
KDAK	**Kodiak Island**	**2.32**	**179**	P		Pn	20 31 32.5	+13
	103nm,0.3s,baz=46,slow=8.9,SNR=2870							
KDAK				S		Sn	20 31 59.9	+12
	247nm,0.3s,baz=192,slow=22,SNR=24							
KDAK	**Kodiak Island**	**2.32**	**179**	*e*Pn		**Pn**	20 31 17.4	**-2.0**
KDAK				*e*Sn		**Sn**	20 31 43.8	**-3.9**
KDAK				S		Sn	20 31 59.9	+12
CUT	**Chulitna**	**2.58**	**25**	*e*Pn		**Pn**	20 31 23.4	**+0.7**
SML	**Sawmill**	**2.71**	**49**	*e*Pn		**Pn**	20 31 24.0	**-0.4**
SML				*e*Sn		**Sn**	20 31 51.5	**-5.3**
PPLA	**Purkeypile**	**2.82**	**4**	*e*Pn		**Pn**	20 31 27.2	**+1.2**
PPLA				*e*Sn		**Sn**	20 31 55.5	**-4.0**
OHAK	**Old Harbor**	**2.91**	**187**	*e*Pn		**Pn**	20 31 24.7	**-2.3**
OHAK				*e*Sn		**Sn**	20 31 54.6	**-6.8**
PLK3	**Peulik 3**	**3.07**	**220**	P		**Pn**	20 31 29.3	**+0.1**
PLK1	**Peulik 1**	**3.09**	**224**	P		**Pn**	20 31 29.5	**0.0**
SCM	**Sheep Creek Mo**	**3.12**	**54**	*e*Pn		**Pn**	20 31 29.4	**-0.5**
SCM				*e*Sn		**Sn**	20 32 00.6	**-5.9**
HUR	**Hurricane**	**3.22**	**25**	*e*Pn		**Pn**	20 31 32.7	**+1.5**
VMT	**TAPS TI Valdez**	**3.24**	**70**	*e*Pn		**Pn**	20 31 30.8	**-0.7**
MID	**Middleton Isla**	**3.25**	**99**	*e*Pn		**Pn**	20 31 31.0	**-0.6**
TT01	**Tatalina**	**3.25**	**331**	*e*Pn		**Pn**	20 31 31.4	**-0.3**
TTA	**Tatalina**	**3.27**	**332**	*e*Pn		**Pn**	20 31 31.9	**-0.1**
CAST	**Castle Rocks**	**3.34**	**4**	*e*Pn		**Pn**	20 31 33.2	**+0.3**
EYAK	**Cordova Ski Ar**	**3.45**	**80**	*e*Pn		**Pn**	20 31 32.7	**-1.6**
DIV	**Divide**	**3.53**	**70**	*e*Pn		**Pn**	20 31 34.2	**-1.2**
TRF	**Thorofare Moun**	**3.54**	**17**	*e*Pn		**Pn**	20 31 35.6	**-0.1**
KTH	**Kantishna Hill**	**3.56**	**12**	*e*Pn		**Pn**	20 31 35.9	**+0.1**
KTH				*e*Sn		**Sn**	20 32 12.2	**-4.9**
KLU	**Klutina**	**3.57**	**64**	*e*Pn		**Pn**	20 31 35.1	**-0.9**
KLU				*e*Sn		**Sn**	20 32 17.4	**0.0**
RND	**Reindeer**	**3.77**	**27**	*e*Pn		**Pn**	20 31 39.1	**+0.4**
RAGM	**Ragged Mountai**	**3.98**	**82**	*e*Pn		**Pn**	20 31 40.8	**-0.6**
MCK	**McKinley**	**4.04**	**24**	*e*Pn		**Pn**	20 31 42.9	**+0.7**
BMRM	**Bremner River**	**4.06**	**74**	*e*Pn		**Pn**	20 31 41.0	**-1.5**
BPAW	**Bear Paw Mtn.**	**4.09**	**10**	*e*Pn		**Pn**	20 31 42.3	**-0.6**
NICHA	**Nichawak Mount**	**4.33**	**84**	P		**Pn**	20 31 46.2	**+0.1**
BWN	**Browne**	**4.35**	**19**	*e*Pn		**Pn**	20 31 47.2	**+0.9**
SUCK	**Suckling Hills**	**4.43**	**87**	P		**Pn**	20 31 47.0	**-0.5**
PAX	**Paxson**	**4.48**	**47**	*e*Pn		**Pn**	20 31 48.1	**0.0**
GRIN	**Grindle Hills**	**4.65**	**84**	P		**Pn**	20 31 49.9	**-0.5**
VRDI	**Verde Repeater**	**4.65**	**72**	P		**Pn**	20 31 49.5	**-1.1**
PS10	**TAPS Pump St10**	**4.66**	**41**	*e*Pn		**Pn**	20 31 51.0	**+0.5**
KHIT	**Khitrov Hills**	**4.68**	**82**	P		**Pn**	20 31 50.6	**-0.3**
WRH	**Wood River Hil**	**4.87**	**24**	*e*Pn		**Pn**	20 31 52.9	**-0.4**
CHGN	**Chignik**	**4.88**	**221**	*e*Pn		**Pn**	20 31 52.2	**-1.3**
MCARA	**McCarthy VSAT**	**4.89**	**71**	P		**Pn**	20 31 52.9	**-0.7**
KULT	**Kultieth River**	**4.95**	**84**	P		**Pn**	20 31 54.4	**-0.1**
MLY	**Manley**	**5.03**	**9**	*e*Pn		**Pn**	20 31 55.2	**-0.3**
CCB	**Clear Creek Bu**	**5.08**	**24**	*e*Pn		**Pn**	20 31 55.9	**-0.3**
PTPK	**Patty Peak**	**5.12**	**73**	P		**Pn**	20 31 56.1	**-0.8**
MENT	**Mentasta**	**5.13**	**52**	*e*Pn		**Pn**	20 31 56.0	**-0.9**
ISLE	**Juniper Island**	**5.13**	**80**	P		**Pn**	20 31 56.9	**-0.2**
KIAG	**Kiagna River**	**5.14**	**76**	P		**Pn**	20 31 56.5	**-0.7**
BALM	**Baldy**	**5.16**	**75**	*e*Pn		**Pn**	20 31 56.2	**-1.2**
VNHG	**Veniaminof 1**	**5.20**	**225**	P		**Pn**	20 31 58.8	**+0.9**
PS08	**TAPS Pump Stn8**	**5.22**	**29**	*e*Pn		**Pn**	20 31 58.2	**+0.2**
BAGL	**Bagley Icefiel**	**5.26**	**81**	*e*Pn		**Pn**	20 31 58.9	**+0.3**
COLA	**College**	**5.28**	**23**	*e*Pn		**Pn**	20 31 58.6	**-0.2**
COLA				*e*Sn		**Sn**	20 32 56.0	**-2.3**
MDM	**Murphy Dome**	**5.29**	**21**	*e*Pn		**Pn**	20 31 59.0	**0.0**
ILAR	**Eielson Array**	**5.39**	**27**	P		**Pn**	20 32 00.6	**+0.2**
	20nm,0.3s,baz=214,slow=14,SNR=608							
ILAR				S		**Sn**	20 32 57.0	**-4.2**
	52nm,0.3s,baz=217,slow=24,SNR=13							
ILAR				LR		LR	20 33 42.1	
	comp=Z,99nm,18.8s,baz=357,slow=34							
ILB	**Eielson Array**	**5.39**	**27**	*e*Pn		**Pn**	20 32 00.0	**-0.4**
ILB				*e*Sn		**Sn**	20 32 57.1	**-4.0**
DOT	**Dot Lake**	**5.39**	**45**	*e*Pn		**Pn**	20 31 60.0	**-0.5**
IL1	**Eielson Array**	**5.39**	**27**	*e*Pn		**Pn**	20 31 59.5	**-0.9**
BARN	**Barnard Glacie**	**5.49**	**75**	*e*Pn		**Pn**	20 32 01.5	**-0.5**
PS06	**TAPS Pump Stn6**	**5.93**	**12**	*e*Pn		**Pn**	20 32 08.5	**+0.9**
IM3	**Indian Mountai**	**5.93**	**356**	P		**Pn**	20 32 07.9	**+0.3**
SDPT	**Sand Point**	**6.35**	**225**	*e*Pn		**Pn**	20 32 11.6	**-1.7**
YKU2	**Yakutat**	**6.56**	**90**	*e*Pn		**Pn**	20 32 16.9	**+0.7**
PS05	**TAPS Pump Stn5**	**6.80**	**7**	*e*Pn		**Pn**	20 32 20.1	**+0.7**
PS4A	**Pavlof South-4**	**6.86**	**230**	P		**Pn**	20 32 19.5	**-0.8**
EGAK	**Eagle**	**7.09**	**44**	*e*Pn		**Pn**	20 32 22.8	**-0.6**
DTNA	**Dutton South F**	**7.16**	**230**	*e*Pn		**Pn**	20 32 23.6	**-0.8**
DT1	**Dutton Round H**	**7.20**	**230**	*e*Pn		**Pn**	20 32 24.0	**-1.0**
COLD	**Coldfoot**	**7.24**	**8**	*e*Pn		**Pn**	20 32 25.2	**-0.1**
FYU	**Fort Yukon**	**7.29**	**24**	*e*Pn		**Pn**	20 32 25.9	**-0.1**
DAWY	**Dawson**	**7.37**	**52**	*e*Pn		**Pn**	20 32 27.1	**-0.1**
BM3	**Burnt Mountain**	**8.15**	**22**	*e*Pn		**Pn**	20 32 36.6	**-1.2**
SKAG	**Skagway**	**8.75**	**87**	*e*Pn		**Pn**	20 32 46.7	**+0.8**
TNA	**Tin City**	**8.87**	**315**	*e*Pn		**Pn**	20 32 48.3	**+0.9**
AKUT	**Akutan**	**9.31**	**236**	*e*Pn		**Pn**	20 32 52.0	**-1.5**
GAMB	**Gambell**	**9.70**	**300**	*e*Pn		**Pn**	20 32 56.0	**-2.7**
UNV	**Unalaska Valle**	**9.82**	**236**	*e*Pn		**Pn**	20 32 58.7	**-1.7**
WRAK	**Wrangell Islan**	**11.29**	**100**	*e*Pn		**Pn**	20 33 20.1	**-0.1**
WRAK				*e*Sn		**Sn**	20 35 25.3	**+1.1**
CRAG	**Craig**	**11.38**	**105**	*e*Pn		**Pn**	20 33 20.6	**-0.8**
INK	**Inuvik**	**11.65**	**37**	P		**Pn**	20 33 24.1	**-0.8**
	0.5nm,0.3s,baz=236,slow=16,SNR=35							
INK				S		**Sn**	20 35 29.9	**-2.9**
	0.5nm,0.3s,baz=221,slow=30,SNR=3.1							
INK				LR		LR	20 37 44.0	
	comp=Z,72nm,18.5s,baz=180,slow=36							
DLBC	**Dease Lake**	**11.67**	**88**	P		**Pn**	20 33 27.0	**+1.6**
	2.9nm,0.3s,baz=284,slow=14,SNR=40							
DLBC				S		**Sn**	20 35 31.8	**-1.8**
	2.6nm,0.3s,baz=174,slow=25,SNR=8.0							
DLBC				LR		LR	20 38 19.4	
	comp=Z,53nm,21.1s,baz=142,slow=39							
DLBC	**Dease Lake**	**11.67**	**88**	*e*Pn		**Pn**	20 33 26.3	**+1.0**
DLBC				*e*Sn		**Sn**	20 35 31.8	**-1.8**
BBB	**Bella Bella**	**15.72**	**109**	P		**P**	20 34 20.9	**+1.7**
	0.4nm,0.3s,baz=309,slow=6.4,SNR=4.8							
YKW3	**Yellowknife Ar**	**18.23**	**66**	*e*P		**Pn**	20 34 47.7	**-0.3**
	13nm,0.9s							
YKA	**Yellowknife Ar**	**18.24**	**66**	P		**Pn**	20 34 47.9	**-0.3**
	0.9nm,0.3s,baz=276,slow=9.9,SNR=76							
YKA				ScP		**ScP**	20 42 39.2	**-0.1**
	0.1nm,0.3s,baz=287,slow=2.2,SNR=16							
YKB5	**Yellowknife Ar**	**18.24**	**66**	*e*P		**P**	20 34 46.8	**-0.1**
YKB5				*e*ScP		**ScP**	20 42 39.1	**-0.2**
BILL	**Bilibino**	**19.28**	**312**	*e*P		**P**	20 34 58.7	**+0.4**
	9.3nm,0.9s							
RES	**Resolute Bay**	**25.12**	**32**	P		**P**	20 35 56.9	**+0.2**
	2.5nm,0.5s,baz=262,slow=7.8,SNR=11							
RES	**Resolute Bay**	**25.12**	**32**	*e*P		**P**	20 35 56.5	**-0.2**
	11nm,1.1s							
SEY	**Seymchan**	**25.70**	**300**	P		**P**	20 36 02.4	**+0.3**
	1.3nm,0.5s,baz=55,slow=6.4,SNR=6.7							
PEA1	**Petropavlovsk-**	**27.63**	**278**	*e*P		**P**	20 36 19.7	**+0.2**
PETK	**Petropavlovsk-**	**27.63**	**278**	P		**P**	20 36 19.7	**+0.2**
	6.5nm,0.7s,baz=70,slow=15,SNR=11							
IMW	**Indian Meadow**	**29.72**	**104**	*e*P		**P**	20 36 41.3	**+2.8**
	4.1nm,0.7s							
FXWY	**Fox Creek**	**29.87**	**105**	*e*P		**P**	20 36 42.3	**+2.6**
	1.9nm,0.6s							
NVAR	**Mina Array Bea**	**30.61**	**120**	P		**P**	20 36 49.0	**+2.8**
	0.7nm,0.6s,baz=315,slow=8.9,SNR=2.8							
SPUT	**South Promonto**	**30.96**	**109**	*e*P		P	20 36 43.4	-5.9
	6.4nm,0.7s

CD2	Chengdu	70.06	297	P	P	20 41 42.0	-0.6
CD2				pmax	pmax		
comp=Z,1.10nm,0.5s							
KHC	Kasperske Hory	70.55	10	eP	P	20 41 45.0	-0.3
KHC	Kasperske Hory	70.55	10	eP	P	20 41 45.8	+0.5
comp=Z,1.1nm,0.9s							
AAK	Ala-Archa	70.58	325	eP	P	20 41 46.1	+0.4
comp=Z,2.9nm,0.7s							
VRAC	Vranov	70.60	7	P	P	20 41 45.6	+0.1
comp=Z,1.6nm,0.5s,baz=331,slow=8.1,SNR=3.6							
STHS	Stebnicka Huta	70.73	4	eP	P	20 41 46.9	+0.6
EKS2	Erkin-Say	70.76	326	eP	P	20 41 47.1	+0.3
comp=Z,5.8nm,0.6s							
GERES	GERESS Array B	70.84	10	P	P	20 41 47.2	+0.1
comp=Z,1.1nm,0.7s,baz=353,slow=4.8,SNR=12							
GEA0	GERESS Array S	70.85	10	eP	P	20 41 46.7	-0.5
LANS	Liptovska Anna	70.92	5	eP	P	20 41 48.2	+0.7
KKAR	Karatay Array	71.25	328	eP	P	20 41 49.3	-0.2
VYHS	Vyhne	71.54	6	eP	P	20 41 50.5	-0.7
CONA	Conrad Observa	71.92	8	i P	P	20 41 53.7	+0.1
comp=Z,2.4nm,0.8s							
DAVOX	Davos/Dischmat	72.53	13	P	P	20 41 57.9	+0.6
comp=Z,1.1nm,0.5s,baz=220,slow=5.9,SNR=7.0							
KBA	Koelnbreinsper	72.57	10	i P	P	20 41 58.0	+0.4
comp=Z,5.4nm,0.5s							
FUORN	Ofenpass-Fuorn	72.72	12	eP	P	20 41 59.2	+0.6
comp=Z,3.4nm,0.6s							
SOKA	Soboth	73.11	9	i P	P	20 42 01.0	+0.4
comp=Z,1.0nm,0.4s							
OBKA	Obir	73.23	9	i P	P	20 42 01.4	0.0
comp=Z,7.7nm,0.5s							
KVAR	Kislovodsk Arr	75.54	349	P	P	20 42 15.9	+1.1
comp=Z,1.5nm,0.4s,baz=122,slow=9.8,SNR=3.8							
LSA	Lhasa	76.47	307	eP	P	20 42 21.9	+1.1
comp=Z,3.1nm,0.7s							
ES19	SONSECA Array	77.28	24	eP	P	20 42 25.3	+0.7
ESDC	Sonseca Array	77.29	24	P	P	20 42 25.2	+0.5
comp=Z,0.2nm,0.5s,baz=344,slow=5.6,SNR=5.4							
GEYT	Alibeck	79.09	336	P	P	20 42 35.5	+0.8
comp=Z,1.3nm,0.5s,baz=22,slow=4.8,SNR=4.8							
BR231	Keskin MP Arra	80.31	356	eP	P	20 42 41.3	0.0
BR101	Keskin Array S	80.40	355	eP	P	20 42 41.4	-0.4
BRTR	Keskin Array B	80.40	355	P	P	20 42 41.4	-0.4
comp=Z,0.8nm,0.6s,baz=20,slow=4.1,SNR=5.5							
CM31	Chiang Mai Arr	82.99	295	eP	P	20 42 55.0	-0.6
CMAR	Chiang Mai Arr	82.99	295	P	P	20 42 54.7	-0.8
comp=Z,0.8nm,0.6s,baz=13,slow=5.2,SNR=8.3							
KEST	Kesra	83.36	15	P	P	20 42 57.8	+0.5
comp=Z,1.8nm,0.5s,baz=256,slow=2.6,SNR=8.8							
KEST	Kesra	83.36	15	eP	P	20 42 57.3	0.0
comp=Z,23nm,1.8s							
BOSA	Boshof	148.49	4	PKPbc	PKPbc	20 50 15.5	-0.6
comp=Z,3.2nm,0.5s,baz=353,slow=2.6,SNR=20							

PRU **13** *20:45:59.1, 43.35N×10.07E, h66km*
GEN **13** *20:46:00.8, 43.42N×11.21E, h6km, ML3.2*
CSEM **13** *20:46:01.8±0.1, 43.50N×11.18E, h10km, ML3.7/18, Error ellipse: s-maj=2.4km s-min=1.8km az=24.0*
LDG **13** *20:46:02.1±0.1, 43.54N×11.23E, h2km, Ml3.3/17, Error ellipse: s-maj=4.2km s-min=2.5km az=36.0*
ROM **13** *20:46:02.2±0.1, 43.52N×11.19E, h11km, Ml3.1/42, Error ellipse: s-maj=1.2km s-min=0.8km az=6.0*
STR **13** *20:46:10.3±0.6, 43.94N×10.56E, h5km, Ml3.6, Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*
ISC 13 20:46:01.1±0.6, 43.51N±0.01×11.12E±0.02, h8km±6km, n207, σ1$36/272, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FIR	Firenze	0.28	20	Pg	Pg	20 46 07.2	+0.5
FIR				Sg	Sg	20 46 11.4	+0.9
FIR	Firenze	0.28	20	Pg	Pg	20 46 07.2	+0.5
FIR				Sg	Sg	20 46 11.4	+0.9
SASS	Sassa´´´´´	0.40	232	Pg	Pb	20 46 11.0	+0.6
SASS				Sg	Sb	20 46 18.3	+1.5
2µm,0.4s							
SASS	Sassa´´´´´	0.40	232	Pg	Pb	20 46 11.0	+0.6
SASS				Sg	Sb	20 46 18.3	+1.5
2µm,0.4s							
TRIF	Trifonti	0.42	202	Pg	Pb	20 46 11.0	+0.2
TRIF				Sg	Sb	20 46 17.9	+0.5
3µm,0.2s							
TRIF	Trifonti	0.42	202	Pg	Pb	20 46 11.0	+0.2
TRIF				Sg	Sb	20 46 17.9	+0.5
3µm,0.2s							
VMG	Vicchio	0.55	34	Pg	Pg	20 46 12.0	+0.3
275nm,0.2s							
VMG	Vicchio	0.55	34	Pg	Pg	20 46 12.0	+0.3
275nm,0.2s							
ASQU	Asqua	0.56	59	Pg	Pg	20 46 11.6	-0.4
ASQU				Sg	Sg	20 46 19.3	-0.1
2µm,0.4s							
ASQU	Asqua	0.56	59	Pg	Pg	20 46 11.6	-0.4
ASQU				Sg	Sg	20 46 19.3	-0.1
2µm,0.4s							
SEI	Scarperia	0.57	17	Pg	Pg	20 46 12.5	+0.3
SEI				Sg	Sb	20 46 21.2	-0.5
SEI	Scarperia	0.57	17	Pg	Pg	20 46 12.5	+0.3
SEI				Sg	Sb	20 46 21.2	-0.5
POPM	Popiglio	0.60	334	P	Pb	20 46 14.0	+0.1
POPM				S	Sb	20 46 23.0	+0.5
CRE	Caprese Michel	0.61	79	Pg	Pg	20 46 12.9	0.0
CRE				Sg	Sg	20 46 20.8	-0.1
2µm,0.4s							
CRE	Caprese Michel	0.61	79	Pg	Pg	20 46 12.9	0.0
CRE				Sg	Sg	20 46 20.8	-0.1
2µm,0.4s							
MAIM	Mastiano	0.61	312	Pg	Pb	20 46 14.3	+0.2
MAIM				Sg	Sb	20 46 23.2	+0.4
656nm,0.7s							
MAIM	Mastiano	0.61	312	Pg	Pb	20 46 14.3	+0.2
MAIM				S	Sb	20 46 23.3	+0.4
CAFI	Castiglion Fio	0.64	106	Pg	Pg	20 46 13.2	-0.2
1µm,0.8s							
CAFI	Castiglion Fio	0.64	106	Pg	Pg	20 46 13.2	-0.2
1µm,0.8s							
SFI	Santa Sofia	0.66	53	Pg	Pg	20 46 13.4	-0.4
SFI				Sg	Sg	20 46 22.3	-0.1
2µm,0.9s							
SFI	Santa Sofia	0.66	53	Pg	Pg	20 46 13.4	-0.4
SFI				Sg	Sg	20 46 22.3	-0.1
2µm,0.9s							
FNVD	Fontana Vidola	0.66	360	Pg	Pb	20 46 14.7	-0.2
FNVD				Sg	Sb	20 46 24.9	+0.6
2µm,0.8s							
FNVD	Fontana Vidola	0.66	360	Pg	Pb	20 46 14.7	-0.2
FNVD				Sg	Sb	20 46 24.9	+0.6
2µm,0.8s							
BDI	Bagni Di Lucca	0.67	326	Pg	Pb	20 46 15.5	+0.4
3µm,1.1s							
BDI	Bagni Di Lucca	0.67	326	Pg	Pb	20 46 15.5	+0.4
3µm,1.1s							
ARCI	Arcidosso	0.70	158	Pg	Pg	20 46 15.5	+0.9
ARCI				Sg	Sb	20 46 25.3	-0.2
1µm,0.7s							
ARCI	Arcidosso	0.70	158	Pg	Pg	20 46 15.5	+0.9
ARCI				Sg	Sb	20 46 25.3	-0.2
1µm,0.7s							
CASP	Castiglione de	0.74	195	Pg	Pb	20 46 17.1	+0.9
CASP				Sg	Sb	20 46 27.6	+1.1
571nm,0.6s							
CASP	Castiglione de	0.74	195	Pg	Pb	20 46 17.1	+0.9
CASP				Sg	Sb	20 46 27.6	+1.1
571nm,0.6s							
BADI	Badiali	0.81	89	Pg	Pg	20 46 16.8	+0.1
BADI				Sg	Sg	20 46 27.6	+0.3
2µm,0.6s							
BADI	Badiali	0.81	89	Pg	Pg	20 46 16.8	+0.1
BADI				Sg	Sg	20 46 27.6	+0.3
2µm,0.6s							
PARC	Parchiule	0.82	80	Pg	Pg	20 46 17.0	+0.1
PARC				Sg	Sg	20 46 27.1	-0.5
1µm,0.6s							
PARC	Parchiule	0.82	80	Pg	Pg	20 46 17.0	+0.1
PARC				Sg	Sg	20 46 27.1	-0.5
1µm,0.6s							
MCIV	Monte Civitell	0.83	151	Pg	Pg	20 46 17.6	+0.5
MCIV				Sg	Sg	20 46 28.2	+0.3
552nm,0.9s							
MCIV	Monte Civitell	0.83	151	Pg	Pg	20 46 17.6	+0.5
MCIV				Sg	Sg	20 46 28.2	+0.3
552nm,0.9s							
VLC	Villacollemand	0.84	321	Pg	Pb	20 46 18.6	+0.6
405nm,0.7s							
VLC	Villacollemand	0.84	321	Pg	Pb	20 46 18.6	+0.6
405nm,0.7s							
ZCCA	Zocca	0.85	353	Pg	Pn	20 46 19.5	+0.1
1µm,0.8s							
ZCCA	Zocca	0.85	353	Pg	Pn	20 46 19.5	+0.1
1µm,0.8s							
SARO	Sassorosso	0.86	323	P	Pg	20 46 17.8	+0.3
SARO				S	Sb	20 46 30.1	+0.2
SACS	San Casciano d	0.87	139	Pg	Pg	20 46 18.0	+0.2
376nm,0.7s							
GROG	Isola di Gorgo	0.90	265	Pg	Pn	20 46 20.4	+0.4
308nm,0.4s							
GROG	Isola di Gorgo	0.90	265	Pg	Pn	20 46 20.4	+0.4
308nm,0.4s							
MTRZ	Monterenzio	0.90	16	Pg	Pb	20 46 19.0	0.0
2µm,0.7s							
MTRZ	Monterenzio	0.90	16	Pg	Pb	20 46 19.0	0.0
2µm,0.7s							
MGAB	Montegabbione	0.94	129	Pg	Pb	20 46 20.0	+0.5
577nm,0.9s							
MGAB	Montegabbione	0.94	129	Pg	Pb	20 46 20.0	+0.5
577nm,0.9s							
ATVO	AVT- Monte Val	0.94	97	Pg	Pg	20 46 18.9	-0.3
2µm,0.5s							
ATVO	AVT- Monte Val	0.94	97	Pg	Pg	20 46 18.9	-0.3
2µm,0.5s							
ATTE	AVT- Monte Tez	0.95	109	Pg	Pg	20 46 18.8	-0.5
792nm,0.5s							
ATTE	AVT- Monte Tez	0.95	109	Pg	Pg	20 46 18.8	-0.5
792nm,0.5s							
IMOL	Imola, Italy	0.96	27	Pg	Pn	20 46 21.5	+0.6
263nm,1.0s							
IMOL	Imola, Italy	0.96	27	Pg	Pn	20 46 21.5	+0.6
263nm,1.0s							
ATPC	Poggio Castell	0.97	91	Pg	Pg	20 46 19.5	-0.2
2µm,0.5s							
ATPC	Poggio Castell	0.97	91	Pg	Pg	20 46 19.5	-0.2
2µm,0.5s							
LATE	Laterza	1.02	151	Pg	Pn	20 46 22.2	+0.5
235nm,0.5s							
LATE	Laterza	1.02	151	Pg	Pn	20 46 22.2	+0.5
235nm,0.5s							
PIEI	Pieia	1.03	88	Pg	Pg	20 46 20.3	-0.5
623nm,0.8s							
PIEI	Pieia	1.03	88	Pg	Pg	20 46 20.3	-0.5
623nm,0.8s							
ERBM	Eremo	1.05	331	Pg	Pn	20 46 23.1	+1.0
1µm,1.2s							
ERBM	Eremo	1.05	331	Pg	Pn	20 46 23.1	+1.0
1µm,1.2s							
MURB	Monte Urbino	1.05	103	Pg	Pg	20 46 21.3	+0.1
3µm,0.9s							
MURB	Monte Urbino	1.05	103	Pg	Pg	20 46 21.3	+0.1
3µm,0.9s							
MAON	Monte Argentar	1.08	180	Pg	Pb	20 46 22.9	+1.0
534nm,1.0s							
MAON	Monte Argentar	1.08	180	Pg	Pb	20 46 22.9	+1.0
534nm,1.0s							
SSFR	Montelago di S	1.21	93	Pg	Pg	20 46 23.5	-0.8
411nm,0.4s							
SSFR	Montelago di S	1.21	93	Pg	Pg	20 46 23.5	-0.8
411nm,0.4s							
FSSB	Fossombrone	1.22	81	Pg	Pg	20 46 24.4	0.0
963nm,0.7s							
FSSB	Fossombrone	1.22	81	Pg	Pg	20 46 24.4	0.0
963nm,0.7s							
GRAM	Graiana	1.25	323	P	Pn	20 46 25.8	+0.9
GRAM				S	Sn	20 46 42.1	+0.2
CODM	Codolo	1.28	314	P	Pg	20 46 25.3	-0.3
CODM				S	Sg	20 46 41.6	-0.5
ARVD	Arcevia	1.32	90	Pg	Pn	20 46 25.6	-0.3
299nm,0.8s							
ARVD	Arcevia	1.32	90	Pg	Pn	20 46 25.6	-0.3
299nm,0.8s							
SNTG	Esanatoglia	1.35	100	Pg	Pn	20 46 26.5	+0.3
400nm,0.8s							
SNTG	Esanatoglia	1.35	100	Pg	Pn	20 46 26.5	+0.3
400nm,0.8s							
CESX	Cesi	1.39	130	Pg	Pn	20 46 27.1	+0.3
343nm,1.0s							
CESX	Cesi	1.39	130	Pg	Pn	20 46 27.1	+0.3
343nm,1.0s							
CESI	CESI - Serrava	1.39	110	Pg	Pn	20 46 27.3	+0.4
100nm,1.0s							
CESI	CESI - Serrava	1.39	110	Pg	Pn	20 46 27.3	+0.4
100nm,1.0s							
MSSA	Maissana	1.42	305	Pg	Pn	20 46 27.8	+0.6
193nm,0.9s							
MSSA	Maissana	1.42	305	Pg	Pn	20 46 27.8	+0.6
193nm,0.9s							
SC2M	Scurtabo	1.46	309	Pg	Pn	20 46 28.5	+0.8
321nm,0.5s							
SC2M	Scurtabo	1.46	309	Pg	Pn	20 46 28.5	+0.8
321nm,0.5s							
FDMO	Fiordimonte	1.51	107	Pg	Pn	20 46 28.9	+0.5
148nm,0.7s							
FDMO	Fiordimonte	1.51	107	Pg	Pn	20 46 28.9	+0.5
148nm,0.7s							
CING	Cingoli	1.52	94	Pg	Pg	20 46 30.2	+0.1
283nm,0.8s							
CING	Cingoli	1.52	94	Pg	Pg	20 46 30.2	+0.1
283nm,0.8s							
TOLF	Tolfa	1.58	156	Pg	Pn	20 46 30.1	+0.7
61nm,0.9s							
TOLF	Tolfa	1.58	156	Pg	Pn	20 46 30.1	+0.7
61nm,0.9s							
NRCA	Norcia	1.60	114	Pg	Pb	20 46 30.9	-0.1
128nm,0.6s							
NRCA	Norcia	1.60	114	Pg	Pb	20 46 30.9	-0.1
128nm,0.6s							
LNSS	Leonessa	1.67	122	Pg	Pn	20 46 30.9	+0.2
211nm,0.6s							
LNSS	Leonessa	1.67	122	Pg	Pn	20 46 30.9	+0.2
211nm,0.6s							
PGF	Pioggiola	1.83	239	ePn	Pn	20 46 33.4	+0.5
PGF				eSn	Sn	20 46 56.5	+0.2
47nm,0.3s							
PGF	Pioggiola	1.83	239	ePn	Pn	20 46 33.4	+0.5
PGF				eSn	Sn	20 46 56.5	+0.2
24nm,0.3s							
SBF	Sospel	2.70	279	ePn	Pn	20 46 45.7	+0.9
SBF	Sospel	2.70	279	ePn	Pn	20 46 45.7	+0.9
NVLJ	Novalja	2.90	67	ePn	Pn	20 46 48.3	+0.7
NVLJ				Sn	Sn	20 47 20.3	-2.2
NVLJ	Novalja	2.90	67	ePn	Pn	20 46 48.2	+0.7
NVLJ				Sn	Sn	20 47 20.3	-2.2
SKDS	Skadanscina	2.90	44	i Pn	Pn	20 46 48.3	+0.7
SKDS				i Sn	Sn	20 47 23.2	+0.5
SKDS	Skadanscina	2.90	44	i Pn	Pn	20 46 48.3	+0.7
SKDS				i Sn	Sn	20 47 23.2	+0.5
MVIF	Mont Vial	2.91	279	P	Pn	20 46 50.7	+2.9
MVIF	Mont Vial	2.91	279	P	Pn	20 46 50.7	+2.9
JAVS	Javornik	3.18	40	ePn	Pn	20 46 52.2	+0.8
JAVS				eSn	Sn	20 47 29.9	+0.3
JAVS	Javornik	3.18	40	ePn	Pn	20 46 52.2	+0.8
JAVS				eSn	Sn	20 47 29.9	+0.3
FRF	La Foret Royal	3.26	272	ePn	Pn	20 46 53.0	+0.6
FRF				eSn	Sn	20 47 29.5	-1.9
16nm,0.4s							
FRF	La Foret Royal	3.26	272	ePn	Pn	20 46 53.0	+0.6
FRF				eSn	Sn	20 47 29.5	-1.9
7.8nm,0.4s							
CADS	Cadrg	3.29	33	ePn	Pn	20 46 52.9	-0.1
CADS				eSn	Sn	20 47 32.0	-0.4
CADS	Cadrg	3.29	33	ePn	Pn	20 46 52.9	-0.1
CADS				eSn	Sn	20 47 32.0	-0.4
MBDF	Montbardon	3.36	293	ePn	Pn	20 46 55.6	+1.6
MBDF	Montbardon	3.36	293	ePn	Pn	20 46 55.6	+1.6
LMR	La Mourre	3.37	269	ePn	Pn	20 46 54.3	+0.4
LMR				eSn	Sn	20 47 32.4	-1.7
7.1nm,0.4s							
LMR	La Mourre	3.37	269	ePn	Pn	20 46 54.3	+0.4
LMR				eSn	Sn	20 47 32.4	-1.7
3.5nm,0.4s							
ABTA	Abfaltersbach	3.39	16	i Pn	Pn	20 46 55.6	+1.3
5.3nm,0.4s,SNR=8.7							
ABTA				eSn	Sn	20 47 36.0	+1.3
31nm,0.7s							
ABTA	Abfaltersbach	3.39	16	Pn	Pn	20 46 55.6	+1.3
5.3nm,0.4s,SNR=8.7							
ABTA				Sn	Sn	20 47 36.0	+1.3
31nm,0.7s							
UDBI	Udbina	3.50	71	ePn	Pn	20 46 57.8	+1.9
UDBI				Sn	Sn	20 47 35.6	-1.9
UDBI	Udbina	3.50	71	ePn	Pn	20 46 57.7	+1.9
UDBI				Sn	Sn	20 47 35.5	-1.9
FETA	Feichten	3.53	356	i Pn	Pb	20 47 00.5	-3.3
4.3nm,0.4s,SNR=11							
FETA				i Sn	Sn	20 47 40.7	+2.5
13nm,0.5s							
FETA	Feichten	3.53	356	Pn	Pb	20 47 00.5	-3.3
4.3nm,0.4s,SNR=11							
FETA				Sn	Sn	20 47 40.7	+2.5
13nm,0.5s							
MYKA	Terra Mystica	3.60	29	ePn	Pn	20 46 58.4	+1.2
1.3nm,0.2s							
MYKA	Terra Mystica	3.60	29	Pn	Pn	20 46 58.4	+1.2
1.3nm,0.2s							
LPG	La Plagne	3.71	304	ePn	Pn	20 46 59.1	+0.2
LPG	La Plagne	3.71	304	ePn	Pn	20 46 59.1	+0.2
LPL	La Plagne	3.73	304	ePn	Pn	20 46 59.1	0.0
LPL	La Plagne	3.73	304	ePn	Pn	20 46 59.1	0.0
WTTA	Wattenberg	3.77	5	i Pn	Pn	20 47 03.7	+4.0
6.1nm,0.3s							
WTTA				eSn	Sn	20 47 45.6	+1.2
12nm,0.5s							
WTTA	Wattenberg	3.77	5	Pn	Pn	20 47 03.7	+4.0
6.1nm,0.3s							
WTTA				Sn	Sn	20 47 45.6	+1.2
12nm,0.5s							
MOTA	Moosalm	3.84	360	i Pn	Pn	20 47 03.9	+3.3
12nm,0.4s,SNR=11							
MOTA	Moosalm	3.84	360	Pn	Pn	20 47 03.9	+3.3
12nm,0.4s,SNR=11							
OBKA	Obir	3.86	38	ePn	Pn	20 47 04.1	+3.2
18nm,0.6s							
OBKA	Obir	3.86	38	Pn	Pn	20 47 04.1	+3.2
18nm,0.6s							
DAVA	Damuels	3.88	347	i Pn	Pn	20 47 05.2	+4.0
15nm,0.5s,SNR=12							
DAVA				eSn	Sn	20 47 49.5	+2.5
18nm,0.3s							
DAVA	Damuels	3.88	347	Pn	Pn	20 47 05.2	+4.0
15nm,0.5s,SNR=12							
DAVA				Sn	Sn	20 47 49.5	+2.5
18nm,0.3s							
KBA	Koelnbreinsper	3.90	23	i Pn	Pn	20 47 03.0	+1.6
2.4nm,0.2s							
KBA	Koelnbreinsper	3.90	23	Pn	Pn	20 47 03.0	+1.6
2.4nm,0.2s							
RETA	Reutte	3.99	356	i Pn	Pn	20 47 06.3	+3.7
15nm,0.3s,SNR=21							
RETA				i Sn	Sn	20 47 52.4	+2.8
20nm,0.6s							
RETA	Reutte	3.99	356	Pn	Pn	20 47 06.3	+3.7
15nm,0.3s,SNR=21							
RETA				Sn	Sn	20 47 52.4	+2.8
20nm,0.6s							
ORIF	Oris-en-Rattie	4.03	292	ePn	Pn	20 47 05.9	+2.8
ORIF				eSn	Sn	20 47 48.7	-1.8
19nm,0.5s							
ORIF	Oris-en-Rattie	4.03	292	ePn	Pn	20 47 05.9	+2.8
ORIF				eSn	Sn	20 47 48.7	-1.8
9.6nm,0.5s							
SMRF	Simiane la Rot	4.05	279	ePn	Pn	20 47 05.8	+2.5
SMRF	Simiane la Rot	4.05	279	ePn	Pn	20 47 05.8	+2.5
SOKA	Soboth	4.21	40	i Pn	Pn	20 47 08.3	+2.7
3.2nm,0.3s,SNR=7.4							
SOKA	Soboth	4.21	40	Pn	Pn	20 47 08.3	+2.7
3.2nm,0.3s,SNR=7.4							
BBS	Basel-Blauen	4.70	329	P	Pn	20 47 13.7	+1.4
CABF	La Chapelle	4.73	313	ePn	Pn	20 47 14.4	+1.7
CABF	La Chapelle	4.73	313	ePn	Pn	20 47 14.4	+1.7
VIVF	Saint-Julien-l	4.83	288	ePn	Pn	20 47 15.8	+1.7
VIVF	Saint-Julien-l	4.83	288	ePn	Pn	20 47 15.8	+1.7
ARSA	Arzberg	4.86	38	ePn	Pn	20 47 15.8	+1.3
5.7nm,0.5s,SNR=8.5							
ARSA	Arzberg	4.86	38	Pn	Pn	20 47 15.8	+1.3
5.7nm,0.5s,SNR=8.5							
MOA	Molln	4.87	26	i Pn	Pn	20 47 16.1	+1.5
0.7nm,0.2s							
MOA	Molln	4.87	26	Pn	Pn	20 47 16.1	+1.5
0.7nm,0.2s							
FELD	Feldberg im Sc	4.89	335	P	Pn	20 47 17.3	+2.4
FELD				S	Sn	20 48 10.8	-0.9
LOMF	Lomont	4.89	323	P	Pn	20 47 16.7	+1.7
LOMF				S	Sn	20 48 10.8	-1.0
LOMF	Lomont	4.89	323	P	Pn	20 47 16.7	+1.7
LOMF				S	Sn	20 48 10.8	-1.0
HINF	Hinteralfeld	5.25	327	ePn	Pn	20 47 19.5	-0.3
HINF				eSn	Sn	20 48 17.1	-3.4
18nm,0.4s							
HINF	Hinteralfeld	5.25	327	ePn	Pn	20 47 19.5	-0.3
HINF				eSn	Sn	20 48 17.1	-3.4
8.9nm,0.4s							
LASF	Ste Croix	5.29	279	ePn	Pn	20 47 20.8	+0.4
LASF	Ste Croix	5.29	279	ePn	Pn	20 47 20.8	+0.4
ECH	Echery	5.46	331	P	Pn	20 47 23.6	+0.8
ECH	Echery	5.46	331	P	Pn	20 47 23.6	+0.8
CONA	Conrad Observa	5.53	35	ePn	Pn	20 47 25.5	+1.8
1.7nm,0.3s							
CONA				eSn	Sn	20 48 27.1	-0.4
8.8nm,0.6s							
CONA	Conrad Observa	5.53	35	Pn	Pn	20 47 25.5	+1.8
1.7nm,0.3s							
CONA				Sn	Sn	20 48 27.1	-0.4
8.8nm,0.6s							
WLS	Welschbruch	5.57	333	P	Pn	20 47 25.4	+1.2
WLS	Welschbruch	5.57	333	P	Pn	20 47 25.4	+1.2
CDF	Champ du Feu	5.59	333	ePn	Pn	20 47 25.4	+0.8
CDF				eSn	Sn	20 48 25.2	-3.8
14nm,0.5s							
CDF	Champ du Feu	5.59	333	ePn	Pn	20 47 25.4	+0.8
HAU	Haudompre	5.60	325	ePn	Pn	20 47 25.0	+0.3
HAU				eSn	Sn	20 48 25.7	-3.5
40nm,0.4s							
HAU	Haudompre	5.60	325	ePn	Pn	20 47 25.0	+0.3
KHC	Kasperske Hory	5.88	16	ePN	Pn	20 47 28.6	+0.1
KHC				ex	x	20 47 39.0	
KHC				eSN	Sn	20 48 32.3	-3.7
KHC				eSB	Sb	20 49 00.0	+5.7
KHC	Kasperske Hory	5.88	16	Pn	Pn	20 47 28.6	+0.1
PLDF	La Plantade	5.88	297	P	Pn	20 47 30.4	+1.8
PLD

MFF Saint Martin d 8.56 295 *e*Pn **Pn 20 48 05.0 -0.2**

*ISCJB **13** 20:47:58.7±1.4, 13°.08N±0°.06×125°.8E±0°.1, h28km, mb3.4/5, Error ellipse: s-maj=17.3km s-min=7.5km az=166.5*
*MAN **13** 20:47:59, 13°.06N×125°.76E, h32km, mb4.4, ML3.3, MS3.1*
*IDC **13** 20:47:59.2±1.8, 13°.40N×125°.57E, h0km, mb3.4/5, mb1 3.6/5, mb1mx3.2/47, mbtmp3.4/5, Error ellipse: s-maj=77.7km s-min=21.5km az=60.0*
ISC 13 20:48:00.5±1.9, 13°.04N±0°.09×125°.7E±0°.2, h28km, n8, σ0°68/9, mb3.4/5, 1D, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BESP	**Borongan**	**1.45**	**191**	*e*P	**Pn**	**20 48 24.3**	**-0.7**
BESP				*e*S	**Sn**	**20 48 42.5**	**-0.6**
PVCP	**Virac**	**1.63**	**290**	*e*P	**Pn**	**20 48 27.2**	**-0.1**
PVCP				*e*S	**Sn**	**20 48 46.7**	**-0.7**
PLP	**Palo**	**2.00**	**201**	⇓*e*P	**Pn**	**20 48 32.5**	**0.0**
PLP				*e*S	**Sn**	**20 48 57.3**	**+0.8**
CMAR	**Chiang Mai Arr**	**26.32**	**285**	P	**P**	**20 53 34.8**	**+0.6**
	0.9nm,0.9s,baz=90,slow=8.2,SNR=6.6						
WRA	**Warramunga Arr**	**33.85**	**165**	P	P	20 54 46.8	+6.0
	0.2nm,0.7s,baz=347,slow=8.4,SNR=2.9						
ASAR	**Alice Springs**	**37.34**	**168**	P	P	20 55 16.9	+6.1
	0.4nm,0.8s,baz=342,slow=7.1,SNR=4.2						
MKAR	**Makanchi Array**	**49.53**	**322**	P	**P**	**20 56 49.4**	**+0.6**
	0.5nm,0.7s,baz=109,slow=9.3,SNR=6.3						
KURBB	**Kurchatov Arra**	**53.52**	**324**	P	**P**	**20 57 18.1**	**-0.4**
	0.3nm,0.5s,baz=124,slow=8.1,SNR=4.6						

*IDC **13** 21:01:32.6±1.1, 35°.30N×141°.69E, h0km, mb3.5/6, mb1 3.6/8, mb1mx3.4/44, mbtmp3.5/8, ML3.3/2, MS3.1/2, Ms1 3.1/2, ms1mx2.5/54, Error ellipse: s-maj=28.7km s-min=19.0km az=86.0*
*ISCJB **13** 21:01:34.8±1.2, 35°.31N±0°.04×141°.69E±0°.07, h28km±7km, mb3.6/6, MS2.8/1, Error ellipse: s-maj=9.3km s-min=6.9km az=175.1*
*JMA **13** 21:01:35.8±0.5, 35°.34N×141°.65E, h30km, M3.3*
ISC 13 21:01:34.6±1.9, 35°.30N±0°.05×141°.66E±0°.08, h13km±10km, n28, σ0°96/26, mb3.6/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.77**	**302**	P	**Pn**	**21 01 50.4**	**-0.7**
CHOJ				*e*S	**Sg**	**21 01 58.9**	**-0.7**
BSO1	**Boso 1**	**0.85**	**221**	P	**Pg**	**21 01 51.3**	**+0.3**
BSO1				X		21 02 04.0	
BSO3	**Boso 3**	**1.07**	**243**	P	**Pg**	**21 01 55.3**	**+0.2**
BSO4	**Boso 4**	**1.13**	**254**	P	**Pg**	**21 01 56.7**	**+0.4**
JIM2	**Oshima 3**	**1.92**	**253**	P	**Pn**	**21 02 06.3**	**-0.7**
JOD2	**Odawara 2**	**2.10**	**270**	P	**Pn**	**21 02 09.5**	**0.0**
JOD2				*e*S	**Sn**	**21 02 34.2**	**-1.3**
JAG	**Ashikaga**	**2.12**	**303**	P	**Pn**	**21 02 09.5**	**-0.1**
JIZS	**Izushimoda**	**2.36**	**257**	*e*S	**Sn**	**21 02 40.7**	**-1.0**
JRY	**Ryogami san**	**2.36**	**288**	P	**Pn**	**21 02 11.6**	**-1.4**
JRY				*e*S	**Sn**	**21 02 40.9**	**-0.9**
JKT	**Katashina**	**2.44**	**308**	P	**Pn**	**21 02 14.1**	**-0.1**
JFT	**Otama**	**2.46**	**335**	P	**Pn**	**21 02 13.6**	**-0.7**
JFT				*e*S	**Sn**	**21 02 43.0**	**-1.2**
JHJ	**Hachijo jima 2**	**2.67**	**216**	Pn	**Pn**	**21 02 16.8**	**-0.6**
	14nm,0.3s,baz=89,slow=21,SNR=6.5						
JHJ				Sn	**Sn**	**21 02 49.4**	**-0.2**
	29nm,0.3s,baz=250,slow=23,SNR=7.0						
MJAR	**Matsushiro Arr**	**3.06**	**295**	Pn	**Pn**	**21 02 23.3**	**+0.6**
	3.7nm,0.3s,baz=98,slow=13,SNR=21						
MAT	**Matsushiro**	**3.06**	**295**	P	**Pn**	**21 02 24.0**	**+1.3**
MAT				*e*S	**Sn**	**21 03 01.8**	**+2.6**
ASAJ	**Asahikawa**	**8.83**	**4**	Pn	Pn	21 03 38.1	-3.8
	1.1nm,0.3s,baz=196,slow=15,SNR=11						
ASAJ				LR	LR	21 07 52.6	
	comp=Z,191nm,18.0s,baz=346,slow=43						
H11N2	**WAKE ISLAND Hy 27.12**	**118**		T	T	21 35 42.6	
	baz=311,slow=75,SNR=9.4						
H11N1	**WAKE ISLAND Hy 27.13**	**118**		T	T	21 35 41.3	
	baz=311,slow=75,SNR=7.9						
H11N3	**WAKE ISLAND Hy 27.14**	**118**		T	T	21 35 41.8	
	baz=311,slow=75,SNR=7.2						
H11S1	**WAKE ISLAND Hy 27.78**	**120**		T	T	21 36 39.4	
	baz=312,slow=76,SNR=13						
H11S3	**WAKE ISLAND Hy 27.78**	**121**		T	T	21 36 33.3	
	baz=312,slow=76,SNR=13						
H11S2	**WAKE ISLAND Hy 27.80**	**121**		T	T	21 36 36.9	
	baz=312,slow=76,SNR=11						
YAK	**Yakutsk**	**27.80**	**348**	LR	LR	21 20 15.0	
	comp=Z,23nm,19.2s,baz=65,slow=40						
SONM	**Songino Array**	**28.95**	**307**	P	**P**	**21 07 34.7**	**+1.1**
	0.5nm,0.6s,baz=104,slow=8.2,SNR=4.4						
MKAR	**Makanchi Array**	**45.23**	**304**	P	**P**	**21 09 51.2**	**-0.2**
	0.2nm,0.4s,baz=80,slow=10.0,SNR=3.7						
KURBB	**Kurchatov Arra**	**47.24**	**309**	P	**P**	**21 10 06.4**	**-0.7**
	0.4nm,0.4s,baz=80,slow=7.4,SNR=10						
ILAR	**Eielson Array**	**50.86**	**32**	P	**P**	**21 10 34.5**	**-0.1**
	0.6nm,0.8s,baz=260,slow=6.1,SNR=6.6						
WRA	**Warramunga Arr**	**55.38**	**188**	P	**P**	**21 11 08.7**	**+0.4**
	0.6nm,0.5s,baz=3.2,slow=7.6,SNR=12						
ASAR	**Alice Springs**	**59.10**	**188**	P	**P**	**21 11 35.1**	**+0.4**
	0.2nm,0.4s,baz=356,slow=6.5,SNR=2.9						

*ISCJB **13** 21:03:58.4±0.4, 39°.48N±0°.04×143°.42E±0°.04, h11km, mb4.1/30, MS4.8/1, Error ellipse: s-maj=5.9km s-min=3.7km az=150.5*
*NIED **13** 21:04:00, 39°.50N×143°.40E, h14km, Mw4.0 Best double couple: M0 1.27000×10^15 NP1:φs0.00000°, δ43.00000°, λ90.00000°. NP2:φs181.00000°, δ47.00000°, λ90.00000°.*
*JMA **13** 21:04:00.8±0.2, 39°.50N×143°.38E, h29km±4km, M4.4*
*IDC **13** 21:04:03.2±4.5, 39°.51N×143°.29E, h32km±34km, mb3.9/23, mb1 4.1/27, mb1mx3.9/45, mbtmp4.1/27, ML3.7/4, MS2.9/4, Ms1 2.9/4, ms1mx2.6/61, Error ellipse: s-maj=16.1km s-min=13.1km az=121.0*
*NEIC **13** 21:04:04.4±0.8, 39°.57N×143°.27E, h40km±6km, mb4.4/9, Error ellipse: s-maj=8.1km s-min=5.2km az=130.0*
ISC 13 21:03:60.0±0.6, 39°.45N±0°.05×143°.36E±0°.05, h11km, n72, σ1°32/74, mb4.2/30, 1C-2D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**1.20**	**277**	P	**Pb**	**21 04 22.1**	**-0.6**
MIYJ				*e*S	**Sb**	**21 04 37.4**	**-0.9**
JTH	**Tanohata**	**1.25**	**293**	P	**Pn**	**21 04 22.7**	**-0.8**
JTH				*e*S	**Sb**	**21 04 38.6**	**-1.3**
OFUJ	**Ofunato**	**1.37**	**255**	P	**Pn**	**21 04 24.9**	**-0.1**
OFUJ				S	**Sb**	**21 04 41.9**	**-1.1**
JOM	**Ohasama**	**1.60**	**271**	P	**Pn**	**21 04 28.4**	**+0.1**
JOM				S	**Sn**	**21 04 48.7**	**-0.2**
JANG	**Nango**	**1.69**	**304**	P	**Pn**	**21 04 29.3**	**-0.2**
JMK	**Ichinoseki**	**1.74**	**254**	P	**Pn**	**21 04 30.4**	**+0.3**
JMK				S	**Sn**	**21 04 52.2**	**0.0**
JIO	**Ouri**	**1.86**	**238**	P	**Pn**	**21 04 31.8**	**0.0**
JIO				*e*S	**Sn**	**21 04 53.5**	**-1.7**
JRG	**Rokugo**	**2.11**	**269**	P	**Pn**	**21 04 36.0**	**+0.7**
JTM	**Tenmabayashi**	**2.21**	**308**	P	**Pn**	**21 04 35.9**	**-0.7**
JTM				*e*S	**Sn**	**21 05 02.4**	**-1.5**
JAH	**Hinai**	**2.23**	**290**	P	**Pn**	**21 04 36.8**	**0.0**
JOU	**Okura**	**2.37**	**244**	P	**Pn**	**21 04 39.7**	**+0.9**
JOU				*e*S	**Sn**	**21 05 08.6**	**+0.8**
JYK	**Kaneyama**	**2.39**	**258**	P	**Pn**	**21 04 39.7**	**+0.6**
JMM	**Marumori**	**2.56**	**233**	P	**Pn**	**21 04 41.5**	**+0.1**
JMM				S	**Sn**	**21 05 11.7**	**-0.8**
JOT	**Ohata**	**2.62**	**318**	P	**Pn**	**21 04 43.4**	**+1.2**
ASAJ	**Asahikawa**	**4.70**	**353**	Pn	**Pn**	**21 05 10.3**	**-0.5**
	2.3nm,0.3s,baz=198,slow=10,SNR=12						
MJAR	**Matsushiro Arr**	**5.00**	**236**	Pn	**Pn**	**21 05 17.1**	**+2.1**
	4.4nm,0.3s,baz=37,slow=12,SNR=26						
MJAR				LR	LR	21 07 14.9	
	comp=Z,80nm,18.6s,baz=50,slow=38						
MAJO	**Matsushiro**	**5.00**	**236**	*e*Pn	**Pn**	**21 05 17.2**	**+2.2**
	104nm,0.8s						
MAT	**Matsushiro**	**5.00**	**236**	P	**Pn**	**21 05 17.2**	**+2.2**
JHJ	**Hachijo jima 2**	**6.95**	**206**	Pn	**Pn**	**21 05 41.8**	**+0.1**
	19nm,0.3s,baz=331,slow=20,SNR=10.0						
JHJ				Sn	**Sn**	**21 06 55.5**	**-5.2**
	24nm,0.3s,baz=63,slow=22,SNR=8.6						
USRK	**Ussuriysk Ar.**	**9.72**	**303**	Pn	**Pn**	**21 06 23.5**	**+3.7**
	0.3nm,0.3s,baz=94,slow=13,SNR=8.2						
JNU	**Nakatsue**	**11.88**	**242**	LR	LR	21 11 40.5	
	comp=Z,119nm,18.9s,baz=118,slow=38						
KSRS	**Korea Array**	**12.27**	**266**	Pn	**Pn**	**21 06 56.8**	**+2.2**
	0.1nm,0.3s,baz=92,slow=13,SNR=3.6						
KSRS				LR	LR	21 11 16.9	
	comp=Z,63nm,19.8s,baz=110,slow=35						
KSAR	**Wonju Array Be**	**12.30**	**266**	Pn	**Pn**	**21 06 56.8**	**+1.8**
JCJ	**Chichijima**	**12.36**	**185**	LR	LR	21 11 41.6	
	comp=Z,39nm,21.4s,baz=316,slow=37						
MA2	**Magadan**	**20.69**	**11**	P	**P**	**21 08 39.7**	**-0.1**
	10nm,0.7s,baz=224,slow=10,SNR=6.4						
YAK	**Yakutsk**	**24.11**	**344**	*e*P	**P**	**21 09 13.4**	**-2.0**
	7.6nm,0.5s						
SEY	**Seymchan**	**24.14**	**10**	P	**P**	**21 09 15.3**	**-0.4**
	5.7nm,0.7s,baz=178,slow=9.0,SNR=13						
SONM	**Songino Array**	**27.82**	**300**	P	**P**	**21 09 48.9**	**-0.4**
	1.6nm,0.7s,baz=85,slow=7.5,SNR=13						
H11N2	**WAKE ISLAND Hy 28.23**	**127**		T	T	21 40 44.6	
	baz=318,slow=74,SNR=78						
H11N1	**WAKE ISLAND Hy 28.24**	**127**		T	T	21 40 45.3	
	baz=318,slow=74,SNR=64						
H11N3	**WAKE ISLAND Hy 28.24**	**127**		T	T	21 40 45.8	
	baz=318,slow=74,SNR=68						
H11S1	**WAKE ISLAND Hy 29.04**	**129**		T	T	21 41 44.3	
	baz=319,slow=76,SNR=11						
H11S3	**WAKE ISLAND Hy 29.04**	**129**		T	T	21 41 41.6	
	baz=319,slow=76,SNR=13						
H11S2	**WAKE ISLAND Hy 29.06**	**129**		T	T	21 41 42.0	
	baz=319,slow=76,SNR=11						
ENH	**Enshi**	**29.13**	**262**	*e*P	**P**	**21 10 00.8**	**-0.2**
	9.4nm,0.8s						
ZALV	**Zalesovo Beam**	**41.47**	**310**	P	**P**	**21 11 46.0**	**-0.7**
	2.0nm,0.6s,baz=85,slow=9.2,SNR=9.3						
ZALV				PcP	**PcP**	**21 13 44.1**	**-0.1**
	1.2nm,0.7s,baz=114,slow=3.7,SNR=4.4						
CMAR	**Chiang Mai Arr**	**43.61**	**254**	P	**P**	**21 12 04.8**	**+0.3**
	0.7nm,0.7s,baz=39,slow=6.2,SNR=5.3						
MKAR	**Makanchi Array**	**44.18**	**300**	P	**P**	**21 12 08.1**	**-0.7**
	1.8nm,0.6s,baz=82,slow=9.7,SNR=20						
TRF	**Thorofare Moun**	**45.18**	**35**	*e*P	**P**	**21 12 17.0**	**+0.3**
	1.2nm,0.8s						
KURK	**Kurchatov**	**45.69**	**307**	*e*P	**P**	**21 12 19.6**	**-1.1**
	12nm,0.6s						
KURBB	**Kurchatov Arra**	**45.77**	**306**	P	**P**	**21 12 20.2**	**-1.1**
	4.4nm,0.6s,baz=80,slow=8.7,SNR=30						
ILAR	**Eielson Array**	**46.63**	**34**	P	**P**	**21 12 27.5**	**-0.4**
	1.2nm,0.7s,baz=267,slow=6.6,SNR=15						
KKN	**Kakani**	**48.99**	**275**	*e*P	**P**	**21 12 48.8**	**+1.8**
	12nm,0.6s						
PKIN	**Phulchoki**	**49.01**	**274**	*e*P	**P**	**21 12 48.7**	**+1.6**
	3.6nm,0.5s						
GKN	**Gorkha**	**49.38**	**275**	*e*P	**P**	**21 12 51.1**	**+1.2**
	5.5nm,0.4s						
TKM2	**Tokmak 2**	**49.86**	**297**	*e*P	**P**	**21 12 53.5**	**+0.1**
	5.3nm,0.6s						
TKM2				*e*		21 13 02.8	
BVAR	**Borovoye Array**	**50.11**	**311**	P	**P**	**21 12 54.4**	**-0.5**
	1.7nm,0.5s,baz=64,slow=8.4,SNR=12						
KOLN	**Koldanda**	**50.30**	**276**	*e*P	**P**	**21 12 59.9**	**+3.0**
	4.1nm,0.5s						
PYUN	**Piuthan**	**50.60**	**276**	*e*P	**P**	**21 13 02.6**	**+3.4**
AAK	**Ala-Archa**	**50.72**	**297**	*e*P	**P**	**21 12 59.2**	**-0.7**
	1.0nm,0.6s						
EKS2	**Erkin-Say**	**51.21**	**298**	*e*P	**P**	**21 13 02.8**	**-0.7**
	0.9nm,0.5s						
INK	**Inuvik**	**51.54**	**28**	P	**P**	**21 13 05.5**	**+0.2**
	1.0nm,0.7s,baz=316,slow=7.3,SNR=6.2						
ARU	**Arti**	**55.59**	**318**	P	**P**	**21 13 34.9**	**-0.3**
	2.3nm,0.6s,baz=112,slow=0.8,SNR=4.9						
ARU	**Arti**	**55.59**	**318**	*e*P	**P**	**21 13 34.5**	**-0.8**
	1.6nm,0.5s						
ABKAR	**Akbulak array**	**57.57**	**310**	*e*P	**P**	**21 13 48.8**	**-0.7**
	3.3nm,0.5s						
ABKAR				*e*		21 13 58.3	
AKTO	**Aktyubinsk**	**58.22**	**311**	P	**P**	**21 13 53.3**	**-0.7**
	1.6nm,0.7s,baz=66,slow=14,SNR=5.3						
WRA	**Warramunga Arr**	**59.68**	**190**	P	**P**	**21 14 03.9**	**-0.5**
	2.3nm,0.8s,baz=4.9,slow=6.8,SNR=12						
YKA	**Yellowknife Ar**	**60.95**	**31**	P	**P**	**21 14 12.2**	**-0.4**
	0.7nm,0.6s,baz=300,slow=6.2,SNR=10.0						
ASAR	**Alice Springs**	**63.41**	**190**	P	**P**	**21 14 29.9**	**+0.3**
	1.0nm,0.8s,baz=7.4,slow=7.4,SNR=8.9						
FINES	**FINESS Array B**	**67.39**	**332**	P	**P**	**21 14 54.2**	**-0.7**
	2.0nm,0.6s,baz=56,slow=8.1,SNR=14						
KBZ	**Khabaz**	**70.49**	**311**	P	**P**	**21 15 14.7**	**+0.2**
	1.8nm,0.7s,baz=73,slow=14,SNR=4.4						
NVAR	**Mina Array Bea**	**72.33**	**55**	P	**P**	**21 15 27.1**	**+1.0**
	1.6nm,0.7s,baz=284,slow=6.4,SNR=7.0						
NB2	**NORSAR Subarra**	**72.54**	**338**	P	**P**	**21 15 25.9**	**-0.8**
	comp=Z,2.9nm,0.7s,baz=39,slow=6.2						
NOA	**NORSAR Array B**	**72.54**	**338**	P	**P**	**21 15 25.9**	**-0.8**
	comp=Z,2.9nm,0.7s,baz=39,slow=6.0,SNR=14						
ELK	**Elko**	**72.83**	**51**	LR	LR	21 45 26.0	
	comp=Z,491nm,19.2s,baz=315,slow=34						
AKASG	**Malin Array Be**	**73.32**	**323**	P	**P**	**21 15 30.7**	**-0.7**
	comp=Z,1.1nm,0.4s,baz=43,slow=6.2,SNR=5.6						
PDAR	**Pinedale Array**	**74.89**	**47**	P	**P**	**21 15 41.1**	**0.0**
	comp=Z,0.6nm,0.6s,baz=274,slow=2.3,SNR=5.8						
KWP	**Kalwaria Pacla**	**77.05**	**325**	⇑*i*P	**P**	**21 15 53.1**	**+0.2**
BURAR	**Bucovina Array**	**77.36**	**322**	⇓*i*P	**P**	**21 15 55.0**	**+0.2**
ARR	**Arges**	**79.25**	**321**	⇓*i*P	**P**	**21 16 08.8**	**+1.5**
GERES	**GERESS Array B**	**81.45**	**329**	P	**P**	**21 16 16.6**	**-0.5**
	comp=Z,0.2nm,0.4s,baz=56,slow=5.5,SNR=5.5						
TXAR	**Lajitas Array**	**87.44**	**54**	P	**P**	**21 16 48.8**	**+1.0**
	comp=Z,0.2nm,0.5s,baz=306,slow=4.8,SNR=3.5						

*IDC **13** 21:26:00.7±5.7, 20°.22S×167°.59E, h0km, mb3.8/4, mb1 4.0/5, mb1mx3.7/33, mbtmp3.8/5, ML3.2/1, MS2.3/1, Ms1 2.3/1, ms1mx2.2/32, Error ellipse: s-maj=114.3km s-min=31.6km az=100.0*
*ISCJB **13** 21:26:05.1±0.8, 20°.1S±0°.1×167°.4E±0°.2, h33km, mb4.2/9, Error ellipse: s-maj=24.9km s-min=9.8km az=27.4*
*NEIC **13** 21:26:06.2±0.6, 20°.39S×167°.56E, h35km, mb4.4/5, Error ellipse: s-maj=26.1km s-min=11.8km az=136.0*
ISC 13 21:26:06.4±1.0, 20°.3S±0°.1×167°.5E±0°.2, h35km, n11, σ1°29/11, mb4.2/8, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.06**	**209**	Pn	**Pn**	**21 26 36.3**	**-2.3**
	8.0nm,0.3s,baz=72,slow=10,SNR=69						
DZM				Sn	**Sn**	**21 27 05.4**	**+2.2**
	26nm,0.3s,baz=126,slow=22,SNR=16						
DZM				LR	LR	21 27 10.6	
	comp=Z,74nm,19.6s,baz=152,slow=33						
STKA	**Stephens Creek**	**25.94**	**238**	P	**P**	**21 31 37.0**	**+1.4**
	2.6nm,1.0s,baz=85,slow=11,SNR=5.0						
WRA	**Warramunga Arr**	**31.14**	**265**	P	**P**	**21 32 21.5**	**-0.6**
	0.4nm,0.4s,baz=91,slow=8.5,SNR=8.4						
ASAR	**Alice Springs**	**31.33**	**258**	P	**P**	**21 32 23.4**	**-0.4**
	1.7nm,0.6s,baz=88,slow=8.9,SNR=27						
ENH	**Enshi**	**75.10**	**311**	*e*P	**P**	**21 37 45.2**	**+0.1**
	1.6nm,0.4s						
CMAR	**Chiang Mai Arr**	**77.47**	**295**	P	**P**	**21 37 58.8**	**+0.1**
	0.5nm,0.8s,baz=125,slow=2.6,SNR=4.5						
CMB	**Columbia Colle**	**89.04**	**49**	*e*P	**P**	**21 38 58.6**	**+0.6**
	2.3nm,0.4s						
MCK	**McKinley**	**90.32**	**18**	*e*P	**P**	**21 39 03.5**	**+0.2**
	1.3nm,0.6s						
NEW	**Newport**	**95.60**	**41**	*e*P	**P**	**21 39 27.9**	**-0.2**
	1.2nm,0.6s						
WALA	**Waterton Lakes**	**97.87**	**41**	*e*P	Pdif	21 39 38.5	0.0
	0.5nm,0.4s						
GNI	**Garni**	**127.66**	**306**	*e*PKPdf	**PKPdf**	**21 45 08.3**	**-0.1**

*NIED **13** 21:32:00, 38°.50N×142°.40E, h47km, Mw3.7 Best double couple: M0 3.83000×10^14 NP1:φs288.00000°, δ43.00000°, λ49.00000°. NP2:φs157.00000°, δ59.00000°, λ121.00000°.*
*ISCJB **13** 21:32:23.7±0.8, 38°.40N±0°.04×142°.42E±0°.07, h24km, mb3.7/4, Error ellipse: s-maj=7.9km s-min=6.1km az=161.5*
*JMA **13** 21:32:25.5±0.1, 38°.47N×142°.36E, h34km±2km, M3.8*
*IDC **13** 21:32:28.0±2.9, 38°.38N×142°.42E, h46km±24km, mb3.4/4, mb1 3.6/7, mb1mx3.2/57, mbtmp3.7/7, ML3.3/3, MS2.5/1, Ms1 2.5/1, ms1mx2.1/38, Error ellipse: s-maj=44.4km s-min=19.5km az=80.0*
ISC 13 21:32:25.1±1.3, 38°.43N±0°.05×142°.33E±0°.09, h24km, n21, σ1°41/22, mb3.7/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.77**	**272**	P	**Pn**	**21 32 40.3**	**-0.1**
JIO				S	**Sb**	**21 32 50.5**	**+0.7**
OFUJ	**Ofunato**	**0.83**	**322**	P	**Pn**	**21 32 40.8**	**-0.5**
OFUJ				S	**Sn**	**21 32 51.2**	**-1.6**
JMK	**Ichinoseki**	**1.01**	**302**	P	**Pb**	**21 32 43.8**	**-0.1**
JMK				S	**Sn**	**21 32 56.7**	**-0.5**
JOU	**Okura**	**1.31**	**268**	P	**Pb**	**21 32 48.8**	**-0.2**
JOU				S	**Sb**	**21 33 05.5**	**+0.2**
JOM	**Ohasama**	**1.32**	**323**	P	**Pb**	**21 32 48.2**	**-1.0**
JOM				S	**Sb**	**21 33 04.7**	**-1.0**
JMM	**Marumori**	**1.33**	**246**	P	**Pn**	**21 32 48.5**	**+0.3**
JMM				S	**Sn**	**21 33 04.8**	**-0.3**
JFK	**Kawauchi**	**1.56**	**228**	P	**Pn**	**21 32 51.1**	**-0.3**
JYK	**Kaneyama**	**1.62**	**288**	P	**Pb**	**21 32 53.0**	**-1.2**
MJAR	**Matsushiro Arr**	**3.78**	**241**	P	**Pn**	**21 33 25.3**	**+3.5**
	2.2nm,0.3s,baz=64,slow=12,SNR=16						
MJAR				LR	LR	21 35 16.4	
	comp=Z,63nm,19.0s,baz=90,slow=44						
JHJ	**Hachijo jima 2**	**5.69**	**202**	P	**Pn**	**21 33 47.6**	**-0.4**
	7.6nm,0.3s,baz=338,slow=23,SNR=4.5						
JHJ				S	**Sn**	**21 34 49.5**	**-3.0**
	4.7nm,0.3s,baz=135,slow=23,SNR=2.5						
ASAJ	**Asahikawa**	**5.69**	**2**	P	**Pn**	**21 33 50.9**	**+2.8**
	0.4nm,0.3s,baz=210,slow=19,SNR=4.3						
H11N2	**WAKE ISLAND Hy 28.29**	**124**		T	T	22 08 05.8	
	baz=322,slow=75,SNR=38						
H11N1	**WAKE ISLAND Hy 28.29**	**124**		T	T	22 08 41.8	
	SNR=34						
H11N3	**WAKE ISLAND Hy 28.30**	**124**		T	T	22 08 07.2	
	baz=312,slow=75,SNR=38						
H11S1	**WAKE ISLAND Hy 29.05**	**126**		T	T	22 09 38.6	
	baz=318,slow=76,SNR=13						
H11S3	**WAKE ISLAND Hy 29.05**	**126**		T	T	22 09 35.9	
	baz=318,slow=76,SNR=16						
H11S2	**WAKE ISLAND Hy 29.07**	**126**		T	T	22 09 24.1	
	baz=318,slow=76,SNR=14						
MKAR	**Makanchi Array**	**44.01**	**301**	P	**P**	**21 40 31.4**	**+0.9**
	0.2nm,0.3s,baz=87,slow=10,SNR=2.7						
KURBB	**Kurchatov Arra**	**45.73**	**307**	P	**P**	**21 40 44.5**	**+0.4**
	1.3nm,0.6s,baz=83,slow=8.1,SNR=16						
WRA	**Warramunga Arr**	**58.54**	**189**	P	**P**	**21 42 19.3**	**-0.3**
	0.6nm,0.7s,baz=5.6,slow=7.0,SNR=8.4						
ASAR	**Alice Springs**	**62.27**	**189**	P	**P**	**21 42 45.4**	**+0.4**
	0.3nm,0.7s,baz=15,slow=7.3,SNR=4.0						

*ISCJB **13** 21:39:28.1±0.2, 36°.58N±0°.02×71°.00E±0°.02, h229km±2km, mb4.7/204, Error ellipse: s-maj=3.0km s-min=2.3km az=26.0*
*MOS **13** 21:39:28.8±0.8, 36°.62N×71°.06E, h236km, mb4.9/77, Error ellipse: s-maj=5.3km s-min=3.6km az=112.3*
*GCMT **13** 21:39:29.8±0.4, 36°.78N×70°.92E, h235km±3km, MW5.0/65, Moment Tensor Solution. s15,c16; s65,c91; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr2.32±.16; Mθθ0.22±.19; Mφφ-2.54±.18; Mrθ0.56±.15; Mrφ1.02±.16; Mθφ2.88±.16; Best double couple: M0 3.94800×10^16 NP1:φs4.00000°, δ71.00000°, λ108.00000°. NP2: φs139.00000°, δ27.00000°, λ48.00000°. Principal axes: T 3.9030, Plg60.0000°, Azm300.0000°; N 0.0940, Plg17.0000°, Azm177.0000°; P -3.9930, Plg23.0000°, Azm80.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **13** 21:39:29.8±0.4, 36°.59N×71°.01E, h232km±4km, mb4.9/98 Error ellipse: s-maj=3.5km s-min=2.9km az=167.0*
NEIC Felt at Kabul, Charikar and Nuristan. Also felt at Rawalpindi, Pakistan and at Dushanbe, Tajikistan.
*IDC **13** 21:39:30.6±0.6, 36°.57N×71°.04E, h243km±5km, mb4.3/45, mb1 4.4/51, mb1mx4.3/67, mbtmp5.0/51, Error ellipse: s-maj=7.4km s-min=6.0km az=165.0*
*NNC **13** 21:39:34.4±1.4, 36°.99N×71°.05E, h204km±35km, mb4.5, mpv5.6, Error ellipse: s-maj=35.5km s-min=9.4km az=119.0*
ISC 13 21:39:30.0±0.3, 36°.55N±0°.03×71°.02E±0°.03, h237km±2km, h236km; pP-P, n607, σ1°29/688, mb4.8/212, 43C-13D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KBL	**Kabul**	**2.58**	**219**	*e*PN	**Pn**	**21 40 17.0**	**-0.4**
KBL	**Kabul**	**2.58**	**219**	*e*Pn	**Pn**	**21 40 17.0**	**-0.4**
CEP	**Cherat**	**2.82**	**165**	⇑P	**Pn**	**21 40 20.5**	**+0.6**
CEP				S	**S**	**21 40 58.0**	**-1.1**
DZET	**Dzherino**	**2.84**	**323**	⇑P	**Pn**	**21 40 18.7**	**-1.4**
	2μm,0.4s						
DZET				⇓S	**S**	**21 40 54.2**	**-5.3**
	15μm,0.5s						
DZET	**

PYUN	**Piuthan**	13.16	126	*e*P		**Pn**	21 42 27.3 -1.3
	comp=Z,316nm,0.3s						
MK01	**Makanchi Array**	13.22	36	*e*Pn		**Pn**	21 42 26.7 -2.3
MK31	**Makanchi Array**	13.24	36	*e*P		**Pn**	21 42 27.4 -1.7
MK31	**Makanchi Array**	13.24	36	*e*Pn		**Pn**	21 42 27.4 -1.7
MKAR	**Makanchi Array**	13.24	36	P		**Pn**	21 42 27.3 -1.8
	comp=Z,9.3nm,0.3s,baz=219,slow=13,SNR=264						
MKAR	**Makanchi Array**	13.24	36	*e*Pn		**Pn**	21 42 27.4 -1.7
BHJ	**Bhuj**	13.31	185	*e*P		**Pn**	21 42 28.8 -1.4
KOLN	**Koldanda**	13.78	126	*e*P		**Pn**	21 42 35.3 -0.9
	comp=Z,108nm,0.3s						
GKN	**Gorkha**	14.32	123	*e*P		**Pn**	21 42 41.7 -1.0
	comp=Z,268nm,0.4s						
BHPL	**Bhopal**	14.37	156	*e*P		**Pn**	21 42 43.4 +0.1
BHPL				IAmb		IAmb	21 42 46.7
	comp=Z,94nm,0.7s						
WMQ	**Urumqi**	14.65	55⇑	*i*P		**Pn**	21 42 46.6 +0.1
WMQ				sP		sP	21 43 45.9
WMQ				S		**S**	21 45 26.6 -1.9
WMQ				PcP		**PcP**	21 47 48.5 +7.0
WMQ				pmax		pmax	
	comp=Z,230nm,1.0s						
WMQ				pmax		pmax	
	comp=Z,200nm,3.6s						
WMQ				LR		LR	
	comp=N,42nm,17.0s						
WMQ				LR		LR	
	comp=E,57nm,21.2s						
WMQ				LR		LR	
	comp=Z,50nm,17.0s						
KKN	**Kakani**	14.89	122	*e*P		**Pn**	21 42 48.8 -0.9
	comp=Z,449nm,0.5s						
ABKAR	**Akbulak array**	15.05	331	*e*P		**P**	21 42 48.9 -2.0
KURBB	**Kurchatov Arra**	15.07	19	P		**P**	21 42 49.1 -2.0
	comp=Z,5.6nm,0.3s,baz=205,slow=11,SNR=231						
PKIN	**Phulchoki**	15.10	122	*e*P		**P**	21 42 51.6 -0.5
	comp=Z,168nm,0.3s						
KURK	**Kurchatov**	15.17	19	*e*P		**P**	21 42 50.4 -1.9
KURK				pmax		pmax	
	comp=Z,201nm,1.2s						
KURK	**Kurchatov**	15.17	19	*e*P		**P**	21 42 50.4 -1.9
	comp=Z,201nm,1.2s						
GUN	**Gumba**	15.23	120	*e*P		**Pn**	21 42 53.8 -0.1
	comp=Z,175nm,0.3s						
BANOM	**Banah**	16.44	234	*i* P		**P**	21 43 06.5 0.0
	SNR=16						
BANOM	**Banah**	16.44	234	P		**Pn**	21 43 07.7 -0.3
	SNR=16						
ZRNK	**Zerenda**	16.46	356	*e*P		**P**	21 43 06.6 +0.1
ZRNK				pmax		pmax	
	comp=Z,44nm,0.8s						
ZRNK	**Zerenda**	16.46	356	*e*P		**P**	21 43 06.6 +0.1
	comp=Z,44nm,0.8s						
BVAR	**Borovoye Array**	16.48	359	P		**P**	21 43 06.2 -0.4
	comp=Z,24nm,0.3s,baz=157,slow=13,SNR=94						
BRVK	**Borovoye**	16.51	358	*ce*P		**P**	21 43 07.0 0.0
BRVK				pmax		pmax	
	comp=Z,48nm,0.8s						
BRVK	**Borovoye**	16.51	358	*e*P		**P**	21 43 06.7 -0.3
	comp=Z,60nm,1.0s						
AKTO	**Aktyubinsk**	16.74	330	P		**P**	21 43 10.0 +0.4
	comp=Z,25nm,0.3s,baz=139,slow=9.3,SNR=392						
AKTO	**Aktyubinsk**	16.74	330	P		**P**	21 43 10.0 +0.4
AKTO				pmax		pmax	
	comp=Z,25nm,0.3s						
WSAR	**Wadi Sarin**	17.05	222	P		**Pn**	21 43 14.5 -0.7
	comp=Z,7.4nm,0.3s,baz=63,slow=5.0,SNR=115						
BIDO	**Bidbid**	17.10	224	P		**Pn**	21 43 16.1 +0.3
	SNR=7.7						
UOSS	**Minazif**	17.18	232	*e*P		**P**	21 43 13.2 -1.5
	comp=Z,7.6nm,0.6s						
HATD	**Hatta, Dubai**	17.32	232	*i* P		**P**	21 43 16.2 +0.1
	SNR=77						
ASHO	**Ashiyiah**	17.46	232	*i* P		**P**	21 43 18.2 +0.4
	SNR=78						
ASHO	**Ashiyiah**	17.46	232	P		**P**	21 43 18.7 +0.9
	SNR=78						
NAZ	**Nazwa, Dubai**	17.50	233	*i* P		**P**	21 43 18.3 +0.2
	SNR=27						
SMDO	**Samad**	17.51	223	P		**Pn**	21 43 20.2 -0.4
	SNR=7.3						
SMDO	**Samad**	17.51	223	P		**Pn**	21 43 20.2 -0.4
	SNR=7.3						
FAQ	**Al Faqa, Dubai**	17.71	233	*i* P		**P**	21 43 20.3 -0.1
	SNR=43						
BOK	**Bokaro**	18.05	131	*e*P		**P**	21 43 25.1 +1.0
POO	**Poona**	18.13	171	*e*P		**P**	21 43 25.6 +0.6
POO				IAmb		IAmb	21 43 31.7
	comp=Z,24nm,0.4s						
LSA	**Lhasa**	18.17	106	P		**Pn**	21 43 28.5 -0.3
LSA				pP		pP	21 43 35.4 -28
LSA				PP		PP	21 44 16.4
LSA				S		**S**	21 46 39.8 -1.9
LSA				pmax		pmax	
	comp=Z,130nm,1.1s						
LSA				pmax		pmax	
	comp=Z,200nm,7.0s						
LSA				LR		LR	
	comp=N,260nm,33.2s						
LSA				LR		LR	
	comp=E,960nm,29.1s						
LSA				LR		LR	
	comp=Z,300nm,29.1s						
LSA	**Lhasa**	18.17	106	*e*P		**Pn**	21 43 27.9 -0.9
LSA				pmax		pmax	
	comp=Z,63nm,0.4s						
LSA	**Lhasa**	18.17	106	*e*P		**Pn**	21 43 27.9 -0.9
	comp=Z,63nm,0.4s						
ZAA0	**Zalesovo Array**	19.86	25	*e*P		**P**	21 43 42.4 -0.7
ZALV	**Zalesovo Beam**	19.86	25	P		**P**	21 43 42.4 -0.8
	comp=Z,50nm,0.3s,baz=215,slow=11,SNR=269						
NVS	**Novosibirsk**	20.12	21⇑	*i*P		**P**	21 43 45.6 -0.4
NVS				*e*			21 44 55.2
NVS				*e*S		**S**	21 47 17.3 -1.1
NVS				pmax		pmax	
	comp=Z,64nm,0.6s						
NVS				pmax		pmax	
	comp=N,56nm,0.7s						
NVS				pmax		pmax	
	comp=E,16nm,0.5s						
NVS				smax		smax	
	comp=E,162nm,1.1s						
NVS				smax		smax	
	comp=N,81nm,1.3s						
HYB	**Hyderabad**	20.19	159	*i* P		**P**	21 43 49.5 +2.4
HYB				*e*S		**S**	21 47 22.0 +1.6
HYB	**Hyderabad**	20.19	159	*e*P		**P**	21 43 47.0 -0.1
HYB				IAmb		IAmb	21 43 50.7
	comp=Z,18nm,0.7s						
DGRG	**David-gareji**	20.49	292	P		**P**	21 43 51.0 +0.8
DGRG	**David-gareji**	20.49	292	P		**P**	21 43 50.9 +0.8
GNI	**Garni**	20.89	288	P		**P**	21 43 55.9 +1.4
	comp=Z,29nm,0.8s,baz=156,slow=4.6,SNR=18						
GNI	**Garni**	20.89	288	*e*P		**P**	21 43 55.6 +1.1
GNI				pmax		pmax	
	comp=Z,482nm,1.1s						
GNI	**Garni**	20.89	288	*e*P		**P**	21 43 55.6 +1.1
	comp=Z,482nm,1.1s						
SHL	**Shillong**	20.91	116	*e*P		**P**	21 43 54.9 0.0
SHL				*ex*		x	21 47 40.0
TBLG	**Delisi**	21.00	292	*e*P		**P**	21 43 56.9 +1.5
TBLG	**Delisi**	21.00	292	P		**P**	21 43 56.8 +1.5
TBLG	**Delisi**	21.00	292	P		**P**	21 43 56.8 +1.4
DUS	**Dusheti**	21.06	293	P		P	21 44 05.5 +9.4
DUS	**Dusheti**	21.06	293	P		P	21 44 05.5 +9.4
GUDG	**Gudauri**	21.27	294	P		**P**	21 44 01.3 +2.9
SVE	**Sverdlovsk**	21.45	344	*d*P		**P**	21 43 59.5 -0.1
SVE				*e*S		**S**	21 47 42.5 +1.4
SVE				pmax		pmax	
	comp=Z,83nm,1.2s						
ARU	**Arti**	21.59	341	P		**P**	21 44 00.7 -0.3
	comp=Z,68nm,0.6s,baz=142,slow=5.7,SNR=103						
ARU	**Arti**	21.59	341	*d*P		**P**	21 44 00.5 -0.5
ARU				S		**S**	21 47 44.6 +1.2
ARU				pmax		pmax	
	comp=Z,247nm,1.7s						
ARU	**Arti**	21.59	341	*e*P		**P**	21 44 00.9 -0.1
	comp=Z,123nm,0.9s						
ZEI	**Tsey**	21.73	295	*e*P		**P**	21 44 02.3 -0.5
ZEI				pmax		pmax	
	comp=Z,39nm,0.6s						
BGD	**Bogdanovka**	21.81	291	P		**P**	21 44 05.9 +2.4
CUKT	**Cukurca**	21.91	280	*e*P		**P**	21 44 05.4 +1.0
ONI	**Oni**	22.04	294	P		**P**	21 44 07.7 +2.2
ONI	**Oni**	22.04	294	P		**P**	21 44 07.6 +2.2
KBZ	**Khabaz**	22.59	297	P		**P**	21 44 10.4 0.0
	comp=Z,9.0nm,0.7s,baz=135,slow=8.2,SNR=28						
SENK	**Senkaya-Erzuru**	22.73	289	*e*P		**P**	21 44 13.6 +1.6
GOF	**Gofitskoye**	22.73	301⇑	*e*P		**P**	21 44 12.7 +1.0
GOF				pmax		pmax	
	comp=Z,191nm,1.3s						
KVAR	**Kislovodsk Arr**	22.77	298	P		**P**	21 44 12.1 -0.1
	comp=Z,14nm,0.8s,baz=257,slow=3.5,SNR=19						
KIV	**Kislovodsk**	22.78	298	*e*P		**P**	21 44 13.3 +1.1
KIV	**Kislovodsk**	22.78	298	*i* P		**P**	21 44 12.5 +0.2
	SNR=5.9						
KIV	**Kislovodsk**	22.78	298	*c i*P		**P**	21 44 12.0 -0.2
KIV				*e**PP		**pP**	21 44 54.5 +1.1
KIV				*i* S		**S**	21 48 04.0 +0.9
KIV				pmax		pmax	
	comp=Z,24nm,1.0s						
KIV	**Kislovodsk**	22.78	298	*e*P		**P**	21 44 12.2 0.0
	comp=Z,32nm,0.7s						
GTA	**Gaotai**	22.83	74	P		**P**	21 44 14.1 +1.3
GTA				pP		pP	21 44 55.8 +1.7
GTA				sP		sP	21 45 22.0 -2.0
GTA				S		**S**	21 48 02.8 -1.3
GTA				SS		SS	21 49 11.8 -37
GTA				ScP		**ScP**	21 51 13.5 +2.5
GTA				PcS		**PcS**	21 51 38.3 +3.1
GTA				pmax		pmax	
	comp=Z,43nm,1.0s						
GTA				pmax		pmax	
	comp=Z,320nm,4.8s						
GTA				LR		LR	
	comp=N,230nm,8.8s						
GTA				LR		LR	
	comp=E,170nm,6.2s						
GTA				LR		LR	
	comp=Z,140nm,9.7s						
EZM	**Erzurum**	23.49	287	*e*P		**P**	21 44 21.1 +2.1
YEDI	**Yedisu-Bingol**	24.14	286	*e*P		**P**	21 44 24.6 -0.1
MAZI	**Mazidag**	24.39	281	*e*P		**P**	21 44 27.5 +0.6
KRAR	**Krasnoyarsk**	24.44	30	*e*P		**P**	21 44 27.4 +0.4
KRAR				pmax		pmax	
	comp=Z,78nm,0.9s						
MZRK	**Al-Mazaregh**	24.48	277	*e*P		**P**	21 44 29.0 +1.4
SFNV	**Sufian**	24.80	279	*e*P		**P**	21 44 30.8 +0.1
SOC	**Sochi**	24.86	296	*e*P		**P**	21 44 34.6 +3.6
SOC				*e**PP		**pP**	21 45 16.2 +0.4
SOC				*i* *SP		**sP**	21 45 44.4 -0.4
SOC				*e*S		**S**	21 48 39.8 +3.8
SOC				pmax		pmax	
	comp=Z,9.0nm,0.6s						
GUMT	**Gumushane**	24.92	289	*e*P		**P**	21 44 32.6 +0.9
PTK	**Pertek**	25.07	285	*e*P		**P**	21 44 32.9 -0.2
SVRC	**Sivrice-ELAZID**	25.18	284	*e*P		**P**	21 44 34.0 -0.2
VRH	**Novokhopyorsk**	25.49	314	*e*P		**P**	21 44 35.7 -0.8
VRH				pmax		pmax	
	comp=Z,30nm,1.1s						
ILIC	**ilic-Erzincan**	25.66	286	*e*P		**P**	21 44 39.9 +1.5
MOY	**Mondy**	26.05	45	*e*P		**P**	21 44 42.8 +1.1
MOY				pmax		pmax	
	comp=Z,36nm,3.2s						
JHLN	**Al Jahlan**	26.27	278	*e*P		**P**	21 44 41.5 -2.3
LZH	**Lanzhou**	26.38	81	*e*P		**P**	21 44 45.8 +0.9
LZH				pP		pP	21 45 32.3 +0.8
LZH				PP		**PnPn**	21 45 41.0 +0.9
LZH				sP		sP	21 46 00.3 +1.4
LZH				PcP		**PcP**	21 48 02.4 -1.5
LZH				*e*S		**S**	21 49 00.5 0.0
LZH				sS		sS	21 50 22.4 -2.1
LZH				SS		**ScP**	21 51 21.0 0.0
LZH				pmax		pmax	
	comp=Z,32nm,1.3s						
LZH				pmax		pmax	
	comp=Z,160nm,4.0s						
LZH				LR		LR	
	comp=N,380nm,10.0s						
LZH				LR		LR	
	comp=E,250nm,10.9s						
LZH				LR		LR	
	comp=Z,520nm,12.0s						
DARE	**Darende-Malaty**	26.58	285	*e*P		**P**	21 44 47.1 +0.5
ANN	**Anapa**	26.63	298	*c i*P		**P**	21 44 46.0 -0.7
ANN				*e**PP		**pP**	21 45 33.1 -0.3
ANN				*e*S		**S**	21 49 04.1 +0.4
ANN				pmax		pmax	
	comp=Z,36nm,0.9s						
ZAK	**Zakamensk**	26.94	49	*e*P		**P**	21 44 48.7 -0.9
ZAK				pmax		pmax	
	comp=Z,12nm,1.2s						
ZAK				pmax		pmax	
	comp=Z,15nm,1.4s						
VSR	**Storozhevoye**	26.98	313	*e*P		**P**	21 44 49.1 -0.7
VSR				pmax		pmax	
	comp=Z,40nm,1.0s						
DRWC	**Darouich**	27.50	281	*e*P		**P**	21 44 55.6 +0.8
ROOS	**tl_alroos**	27.54	275	*e*P		**P**	21 44 50.9 -4.2
RABH	**Abou Rabah**	27.54	276	*e*P		**P**	21 44 55.5 +0.4
TLY	**Talaya**	27.59	46	P		**P**	21 44 56.1 +0.8
	comp=Z,4.6nm,0.5s,baz=237,slow=11,SNR=7.4						
TLY	**Talaya**	27.59	46	*e*P		**P**	21 44 57.0 +1.7
TLY				*e*S		**S**	21 49 22.1 +3.3
TLY				*e*			21 50 49.3
TLY				pmax		pmax	
	comp=Z,12nm,1.1s						
TLY	**Talaya**	27.59	46	*e*P		**P**	21 44 57.1 +1.7
	comp=Z,56nm,1.9s						
LPSR	**Galich'ya Gora**	27.63	316	*e*P		**P**	21 44 55.1 -0.5
LPSR				pmax		pmax	
	comp=Z,50nm,1.0s						
CD2	**Chengdu**	27.71	92	P		**P**	21 44 57.8 +1.1
CD2				pP		pP	21 45 44.9 +1.5
CD2				PP		**PP**	21 46 05.6 +1.3
CD2				sP		sP	21 46 12.9 +2.0
CD2				S		**S**	21 49 23.3 +2.0
CD2				sS		sS	21 50 48.8 +3.1
CD2				SS		**SS**	21 51 30.4 +0.3
CD2				pmax		pmax	
	comp=Z,30nm,1.1s						
CD2				pmax		pmax	
	comp=Z,70nm,4.2s						
BTCH	**Batrach**	27.78	279	*e*P		**P**	21 44 55.8 -1.4
ZALF	**Zalf**	27.84	273	*e*P		**P**	21 44 57.3 -0.4
WRDH	**Warideh**	27.92	278	*e*P		**P**	21 44 58.0 -0.5
TAHT	**Tahtakopru-Hat**	27.93	280	*e*P		**P**	21 44 59.5 +1.0
DIKM	**Dikmen**	28.09	291	*e*P		**P**	21 44 59.8 0.0
BIDA	**Albida**	28.11	277	*e*P		**P**	21 44 57.4 -2.8
SNOP	**Sinop**	28.12	292	*e*P		P	21 45 10.5 +10
IRK	**Irkutsk**	28.15	46	*e*P		**P**	21 45 00.0 -0.2
IRK				*e*			21 45 51.3
IRK				pmax		pmax	
	comp=Z,35nm,1.2s						
HAWK	**Haweek**	28.16	276	*e*P		**P**	21 44 58.9 -1.7
ARNB	**Al Arnab**	28.20	279	*e*P		**P**	21 45 00.4 -0.5
SONM	**Songino Array**	28.29	55	P		**P**	21 45 02.6 +0.9
	comp=Z,9.2nm,0.8s,baz=264,slow=9.0,SNR=79						
SONA1	**Songino Array**	28.30	55	*e*P		**P**	21 45 02.2 +0.4
SALA	**Sala**	28.39	272	*e*P		**P**	21 45 01.4 -1.4
ASF	**Jabal al Asfar**	28.42	271	P		**P**	21 45 04.2 +1.3
	comp=Z,4.5nm,1.1s,baz=344,slow=6.1,SNR=4.6						
TOTH	**TOTAH**	28.44	274	*e*P		**P**	21 45 04.5 +1.4
CORM	**Corum**	28.64	288	*e*P		**P**	21 45 04.6 -0.2
KARA	**Karaisali**	28.67	282	*e*P		**P**	21 45 03.3 -1.7
ULN	**Ulaanbaatar**	28.73	55	*e*P		**P**	21 45 06.5 +0.9
ULN				pmax		pmax	
	comp=Z,11nm,0.9s						
ULN	**Ulaanbaatar**	28.73	55	P		**P**	21 45 06.8 +1.2
	SNR=7.4						
ULN	**Ulaanbaatar**	28.73	55	P		**P**	21 45 06.8 +1.2
	SNR=7.4						
ULN	**Ulaanbaatar**	28.73	55	*e*P		**P**	21 45 06.5 +0.9
	comp=Z,11nm,0.9s						
BRBR	**Barbar**	28.81	274	*e*P		**P**	21 45 04.2 -2.3
TCHB	**Talchebab**	29.01	273	*e*P		**P**	21 45 05.7 -2.4
MMAI	**Mount Meron Ar**	29.36	274	P		**P**	21 45 12.4 +1.1
	comp=Z,5.6nm,0.8s,baz=55,slow=7.2,SNR=9.9						
MMAI				PcP		**PcP**	21 48 11.8 +0.6
	comp=Z,4.7nm,0.6s,baz=70,slow=7.2,SNR=6.7						
KMI	**Kunming**	29.39	104	P		**P**	21 45 09.4 -2.4
KMI				pP		pP	21 45 59.9 +1.1
KMI				sP		sP	21 46 29.3 +3.1
KMI				S		**S**	21 49 48.3 +0.3
KMI				sS		sS	21 51 16.4 +3.8
BR131	**Keskin Array S**	29.44	288	*e*P		**P**	21 45 12.6 +0.7
BRTR	**Keskin Array B**	29.44	288	P		**P**	21 45 12.1 +0.2
	comp=Z,9.3nm,0.7s,baz=103,slow=9.1,SNR=65						
BRTR				pP		**pP**	21 46 00.8 +1.8
	comp=Z,4.0nm,0.6s,baz=101,slow=8.6,SNR=4.0						
BRTR	**Keskin Array B**	29.44	288	*ce*P		**P**	21 45 12.3 +0.4
BRTR				pmax		pmax	
	comp=Z,10.0nm,0.7s						
CMAI	**Chiengmai2**	29.57	116	P		**P**	21 45 15.4 +2.1
	comp=Z,30nm,1.0s,comp=Z,6μm						
MOS	**Moscow**	29.63	321	*e*P		**P**	21 45 12.9 -0.3
MOS				*e**PP		**pP**	21 45 59.0 -1.3
MOS				*e*			21 46 24.8
MOS				*e*			21 48 08.1
MOS				pmax		pmax	
	comp=Z,98nm,0.9s						
OBN	**Obninsk**	29.91	319	P		**P**	21 45 15.8 +0.1
	comp=Z,23nm,0.4s,baz=110,slow=21,SNR=12						
OBN	**Obninsk**	29.91	319	*c i*P		**P**	21 45 15.6 -0.1
OBN				*e*			21 48 12.5
OBN				pmax		pmax	
	comp=Z,66nm,1.0s						
OBN	**Obninsk**	29.91	319	*e*P		**P**	21 45 15.6 -0.1
	comp=Z,116nm,1.3s						
ANTO	**Ankara**	30.07	288	*e*P		**P**	21 45 18.5 +1.1
ANTO				pmax		pmax	
	comp=Z,11nm,0.8s						
ANTO	**Ankara**	30.07	288	*e*P		**P**	21 45 18.5 +1.1
	comp=Z,11nm,0.8s						
BR231	**Keskin MP Arra**	30.09	288	*e*P		P	21 45 12.5 -5.1
CHTO	**Chiang Mai**	30.23	118	P		**P**	21 45 21.3 +2.4
	comp=Z,40nm,0.8s						
CHTO	**Chiang Mai**	30.23	118	*e*P		**P**	21 45 20.1 +1.2
CHTO				pmax		pmax	
	comp=Z,21nm,1.5s						
CHTO	**Chiang Mai**	30.23	118	*e*P		**P**	21 45 20.1 +1.2
	comp=Z,21nm,1.5s						
CRAI	**Chiangrai**	30.35	114	P		**P**	21 45 20.7 +0.7
	comp=Z,285nm,0.8s,comp=Z,78μm						
PALK	**Pallekele**	30.45	161	P		**P**	21 45 22.2 +1.3
	comp=Z,12nm,0.7s,baz=296,slow=6.0,SNR=11						
PALK	**Pallekele**	30.45	161	P		**P**	21 45 22.0 +1.1
DGPR	**DIGLIPUR**	30.46	134	*e*P		**P**	21 45 22.9 +2.0
CM31	**Chiang Mai Arr**	30.46	119	*e*P		**P**	21 45 22.1 +1.1
CMAR	**Chiang Mai Arr**	30.46	119	P		**P**	21 45 21.4 +0.4
	comp=Z,4.4nm,0.8s,baz=296,slow=8.6,SNR=28						
CMAR				PcP		**PcP**	21 48 13.4 -0.7
	comp=Z,2.7nm,0.8s,baz=309,slow=4.3,SNR=4.3						
CM01	**Chiang Mai Arr**	30.50	119	*e*P		**P**	21 45 21.5 +0.2
KONT	**Konya--Tatoy**	30.66	284	*e*P		**P**	21 45 21.1 -1.5
LEF	**Lefka**	30.82	279	*e*P		**P**	21 45 22.9 -1.0
XAN	**Xi'an**	30.90	83	P		**P**	21 45 25.1 +0.3
XAN				sP		sP	21 46 33.4 -5.9
XAN				pmax		pmax	
	comp=Z,17nm,1.0s						
XAN				pmax		pmax	
	comp=Z,53nm,5.5s						
KLMR	**Klimovskoe**	31.44	331	*e*P		**P**	21 45 26.0 -3.0
KLMR				*e*			21 46 40.7
KLMR				pmax		pmax	
	comp=Z,103nm,1.3s						
NANT	**Nan**	31.50	116	P		**P**	21 45 29.4 -0.6
	comp=Z,3.7nm,0.9s						
SUKH	**Sukhothai**	31.60	119	P		**P**	21 45 31.9 +1.0
	comp=Z,11nm,0.6s,comp=Z,122nm						
HHC	**Hu-ho-hao-te**	31.73	70	*e*P		**P**	21 45 35.8 +3.9
HHC				pmax		pmax	
	comp=Z,30nm,1.0s						
HHC				LR		LR	
	comp=Z,120nm,5.1s						
HHC	**Hu-ho-hao-te**	31.73	70	PcS		PcS	21 52 04.8 +2.5
HHC				ScS		ScS	21 55 35.0 -1.6
GYA	**Guiyang**	31.85	98	P		**P**	21 45 34.8 +1.6
GYA				pP		pP	21 46 22.5 +1.9
GYA				sP		PP	21 46 50.0 -0.3
GYA				PP		**PnPn**	21 46 51.3 +2.7
GYA				PcP		**PcP**	21 48 19.8 +1.8
GYA				sS		sS	21 51 52.0 +0.9
GYA	**Guiyang**	31.85	98	ScS		ScS	21 55 36.3 -1.4
GYA				pmax		pmax	
	comp=Z,20nm,0.8s						
GYA				pmax		pmax	
	comp=Z,120nm,5.2s						
UTTA	**Uttaradit**	32.08	118	P		**P**	21 45 35.7 +0.6
	comp=Z,12nm,0.6s,comp=Z,127nm						
DAMY	**Dhamar**	32.31	234	*e*P		**P**	21 45 38.5 +1.1
	comp=Z,8.9nm,0.4s						
ENH	**Enshi**	32.55	90	*e*P		**P**	21 45 39.9 +0.7
	comp=Z,7.0nm,0.6s						
KIS	**Kishinev**	32.80	302	*e*P		**P**	21 45 41.0 0.0
KIS	**Kishinev**	32.80	302	*e*P		**P**	21 45 41.0 0.0
KIS				*e*			21 46 30.0
KIS				*e*			21 46 58.0
AKASG	**Malin Array Be**	32.93	309	P		**P**	21 45 41.4 -0.7
	comp=Z,7.3nm,0.6s,baz=85,slow=7.2,SNR=51						
AKASG				PcP		**PcP**	21 48 19.0 -1.4
	comp=Z,2.8nm,0.6s,baz=73,slow=3.5,SNR=5.2						
AKASG				ScP		**ScP**	21 51 39.3 -2.3
	comp=Z,0.6nm,0.5s,baz=76,slow=3.6,SNR=4.5						
AKASG	**Malin Array Be**	32.93	309	*ce*P		**P**	21 45 41.7 -0.4
AKASG				pmax		pmax	
	comp=Z,6.0nm,0.5s						
AKBB	**Malin Array Si**	32.93	309	*e*P		**P**	21 45 42.1 0.0
AKBB				pmax		pmax	
	comp=Z,115nm,1.8s						
AKBB	**Malin Array Si**	32.93	309	*e*P		**P**	21 45 42.1 0.0
	comp=Z,115nm,1.8s						
KIEV	**Kiev**	32.94	309	*c i*P		**P**	21 45 41.3 -0.8
KIEV				pmax		pmax	
	comp=Z,17nm,1.0s						
KIEV	**Kiev**	32.94	309	*e*P		**P**	21 45 41.6 -0.5
	comp=Z,123nm,1.9s						
AK11	**Malin Array Si**	32.96	309	*e*P		**P**	21 45 42.0 -0.4
PBKT	**Sadao Pong**	33.16	119	P		**P**	21 45 45.5 +1.1
	comp=Z,41nm,0.5s						
SORM	**Soroca**	33.19	304‖	*i*P		**P**	21 45 44.2 -0.2
CFR	**Carcaliu**	33.23	299⇑	*i*P		**P**	21 45 44.8 0.0
SRDT	**SRDT**	33.44	124	P		**P**	21 45 48.9 +2.0
	comp=Z,97nm,1.1s,comp=Z,2μm						
TMCR	**Tamitsa**	34.01	335	*e*P		**P**	21 45 50.5 -0.7
TMCR				pmax		pm

RZN Rozhen 35.95 293 *i* P P 21 46 08.7 +0.4
LVV L'vov 36.15 307⇓ *i*P P 21 46 09.7 +0.1
VSU Vasula 36.16 322 *ce*P P 21 46 09.3 -0.2
VSU pmax pmax
comp=Z,141nm,1.0s
PGB Panagyurishte 36.25 294 *i* P P 21 46 11.9 +1.2
WHN Wuhan 36.37 87 *e*P P 21 46 13.8 +2.0
MPEP Malo Peshtene 36.48 296 *i* P P 21 46 13.4 +0.8
NVR Nevrokopi 36.63 292 P P 21 46 14.3 +0.4
LAST Lasithi 36.68 282⇑ *i*P P 21 46 14.4 0.0
LAST Lasithi 36.68 282 *e*P P 21 46 15.2 +0.8
comp=Z,101nm,1.2s
MMB Musomiste 36.70 293 *i* P P 21 46 14.6 +0.1
CHBT CHBT 36.75 122 P P 21 46 17.6 +2.5
DRGR 36.98 301⇑ *i*P P 21 46 16.8 0.0
KWP Kalwaria Pacla 36.99 306 *e*P P 21 46 16.1 -0.7
KWP Kalwaria Pacla 36.99 306⇑ *i*P P 21 46 17.2 +0.4
KWP Kalwaria Pacla 36.99 306 *e*P P 21 46 16.1 -0.7
SOH Sokhos 37.09 292 P P 21 46 19.3 +1.5
SOH pmax pmax
comp=Z,4.0nm,1.7s
SUW Suwalki 37.09 313 *e*P P 21 46 17.3 -0.2
SUW Suwalki 37.09 313 *e*P P 21 46 17.3 -0.2
PLG Polygyros 37.10 291 P P 21 46 18.2 +0.4
IDI Anoyia 37.11 282⇑ *i*P P 21 46 18.0 0.0
KKB Krupnik 37.14 293 *i* P P 21 46 18.2 +0.1
PTL Penteli 37.23 287 P P 21 46 19.1 +0.1
UZH Uzhgorod 37.24 305 *e*P P 21 46 17.2 -1.7
UZH *e* 21 47 34.4
KOLS Kolonicke sedl 37.26 305 *e*P P 21 46 19.4 +0.3
KOLS *e* 21 47 06.3
KOLS *e* 21 48 33.4
KOLS pmax pmax
comp=Z,14nm,1.5s
KOLS Kolonicke sedl 37.26 305 *e*P P 21 46 19.4 +0.3
KOLS *e* 21 47 06.3
KOLS *e* 21 48 33.4
KNT Kendrikon 37.38 292 P P 21 46 20.1 -0.1
LVZ Lovozero 37.42 338 *ce*P P 21 46 20.1 -0.1
LVZ pmax pmax
comp=Z,36nm,0.8s
LVZ Lovozero 37.42 338 *e*P P 21 46 20.1 -0.1
comp=Z,48nm,0.8s
FIA1 FINESS Array S 37.45 326 *e*P P 21 46 20.4 0.0
FINES FINESS Array B 37.45 326 P P 21 46 20.4 0.0
comp=Z,35nm,0.8s,baz=122,slow=10,SNR=83
FINES FINESS Array B 37.45 326 *ce*P P 21 46 20.3 -0.1
FINES pmax pmax
comp=Z,35nm,0.8s
NEO Neokhori 37.46 289 P P 21 46 20.5 -0.4
APA Apatity 37.59 337⇑ *i*P P 21 46 22.0 +0.4
APA *i* *PP pP 21 47 10.0 0.0
APA MLR MLR
comp=Z,300nm,17.0s
GRG Griva 37.78 292 P P 21 46 25.2 +1.6
GRG pmax pmax
comp=Z,4.0nm,1.3s
CRVS Cervenica-Dubn 37.80 305 *e*P P 21 46 24.5 +1.0
CRVS Cervenica-Dubn 37.80 305 *e*P P 21 46 24.5 +1.0
CRVS *e* 21 48 48.6
MDVR Moldovita 37.80 298⇓ *i*P P 21 46 24.2 +0.5
BZS Buzias 37.80 300⇑ *i*P P 21 46 24.1 +0.5
STHS Stebnicka Huta 37.94 306 *e*P P 21 46 25.0 +0.2
STHS *e* 21 48 35.6
STHS pmax pmax
comp=Z,3.0nm,0.8s
STHS Stebnicka Huta 37.94 306 *e*P P 21 46 25.0 +0.2
STHS *e* 21 48 35.6
AGG Agios Georgios 38.20 289 P P 21 46 26.6 -0.5
AGG Agios Georgios 38.20 289 *e*P P 21 46 27.0 -0.1
AGG pmax pmax
comp=Z,109nm,1.6s
AGG Agios Georgios 38.20 289 *e*P P 21 46 27.0 -0.1
comp=Z,109nm,1.6s
QIZ Qiongzhong 38.22 107 P P 21 46 28.5 +1.1
QIZ S S 21 52 06.0 +2.9
BEL Belsk 38.32 310 *e*P P 21 46 28.6 +0.8
BEL Belsk 38.32 310 *e*P P 21 46 28.6 +0.8
THL Klokotos Trika 38.33 290 P P 21 46 27.7 -0.4
NIE Niedzica 38.56 306 *e*P P 21 46 31.1 +1.2
NIE Niedzica 38.56 306 *e*P P 21 46 31.1 +1.2
FNA Florina 38.58 292 P P 21 46 30.7 +0.5
ANX Ano Chora 38.60 288 P P 21 46 29.7 -0.8
EVR Evrytania 38.62 289 P P 21 46 30.1 -0.5
PSZ Piszkesteto 38.86 303⇑ *e*P P 21 46 33.0 +0.5
PSZ Piszkesteto 38.86 303 *e*P P 21 46 33.6 +1.2
PSZ *e* 21 48 14.0
PSZ pmax pmax
comp=Z,31nm,1.6s
PSZ Piszkesteto 38.86 303 *e*P P 21 46 33.6 +1.2
comp=Z,31nm,1.6s
PSZ *e*PP PnPn 21 48 14.0 +2.2
PENT Pentalofos 38.87 291 P P 21 46 32.3 -0.4
OJC Ojcow 38.89 307 *e*P P 21 46 32.6 +0.1
OJC Ojcow 38.89 307 *e*P P 21 46 32.4 -0.2
OJC pmax pmax
comp=Z,36nm,1.3s
OJC Ojcow 38.89 307 *e*P P 21 46 32.4 -0.2
comp=Z,36nm,1.3s
PVO Paravola 38.90 288 P P 21 46 32.4 -0.4
DIVS Divibare 39.10 297 P P 21 46 34.6 +0.1
LANS Liptovska Anna 39.11 305 *e*P P 21 46 36.1 +1.6
LANS Liptovska Anna 39.11 305 *e*P P 21 46 36.1 +1.6
DSL Palaion Diasel 39.11 289 P P 21 46 34.1 -0.5
PDO Prodromos 39.16 289 P P 21 46 34.2 -0.8
LHMI Lhok Sumawe 39.20 136 P P 21 46 35.6 +0.1
VAF Ylistaro 39.49 328 P P 21 46 37.7 +0.4
VAF pmax pmax
comp=Z,58nm,1.3s
LKD2 Lefkada island 39.52 289 P P 21 46 37.1 -0.9
VYHS Vyhne 39.54 304 *e*P P 21 46 38.6 +0.6
VYHS *e* 21 47 28.6
VYHS pmax pmax
comp=Z,10.0nm,1.4s
VYHS Vyhne 39.54 304 *e*P P 21 46 38.6 +0.6
VYHS *e* 21 47 28.6
MLSI Meulaboh, Aceh 39.71 138 P P 21 46 39.5 -0.2
OKC Ostrava-Krasne 39.95 306 *e*P P 21 46 42.3 +1.0
OKC Ostrava-Krasne 39.95 306 *e*P P 21 46 42.3 +1.0
MORC Moravsky Berou 40.35 306⇑ *i*P P 21 46 45.3 +0.7
MORC Moravsky Berou 40.35 306 *e*P P 21 46 45.5 +0.9
MORC pmax pmax
comp=Z,157nm,1.5s
MORC Moravsky Berou 40.35 306 *e*P P 21 46 45.5 +0.9
comp=Z,157nm,1.5s
KEV Kevo 40.76 338 *e*P P 21 46 48.1 +0.5
KEV pmax pmax
comp=Z,31nm,0.8s
KEV Kevo 40.76 338 *e*P P 21 46 48.1 +0.5
comp=Z,31nm,0.8s
KRLC Kraliky 40.83 307 *e*P P 21 46 48.9 +0.3
KRLC Kraliky 40.83 307 *e*P P 21 46 48.9 +0.3
VRAC Vranov 40.98 306⇑ *i*P P 21 46 50.8 +1.0
KCSI Kotacane, Aceh 41.07 137 P P 21 46 46.9 -4.0
ARA0 ARCESS Array S 41.10 338 *e*P P 21 46 50.8 +0.3
ARCES ARCESS Array B 41.10 338 P P 21 46 50.8 +0.3
comp=Z,34nm,0.6s,baz=113,slow=8.2,SNR=204
ARCES pP pP 21 47 41.2 +1.5
comp=Z,6.0nm,0.7s,baz=110,slow=8.1,SNR=2.0
ARE0 ARCESS Array S 41.10 338 *e*P P 21 46 50.8 +0.4
ARE0 IAmb IAmb 21 46 51.7
comp=Z,58nm,0.8s
ARE0 ARCESS Array S 41.10 338 *e*P P 21 46 50.9 +0.4
comp=Z,57nm,0.8s
DPC Dobruska-Polom 41.12 307 *e*P P 21 46 51.5 +0.6
DPC *e*PP PnPn 21 48 35.5 -2.4
DPC *ex* x 21 49 40.6
DPC Dobruska-Polom 41.12 307 *e*P P 21 46 51.5 +0.6
DPC *e* 21 48 35.5
KSP Ksiaz 41.12 308 *e*P P 21 46 51.2 +0.3
KSP Ksiaz 41.12 308 *e*P P 21 46 51.2 +0.3
SOP Sopron 41.12 303⇑ *e*P P 21 46 51.3 +0.4
SOP Sopron 41.12 303 P P 21 46 51.9 +1.0
SOP pmax pmax
comp=Z,18nm,1.3s
HEF Hetta 41.17 336 *e*P P 21 46 51.0 0.0
KULM Kulim 41.30 132 *e*P P 21 46 53.2 +0.5
comp=Z,150nm,1.9s
UPC Upice 41.31 308 *e*P P 21 46 53.3 +0.9
UPC Upice 41.31 308 *e*P P 21 46 53.3 +0.9
TSI Tuntungan 41.53 136 P P 21 46 52.7 -1.9
CONA Conrad Observa 41.56 304 *i* P P 21 46 54.9 +0.3
comp=Z,28nm,1.2s,SNR=23
KTK1 Kautokeino 41.58 336 *e*P P 21 46 54.2 -0.1
KTK1 IAmb IAmb 21 46 55.0
comp=Z,40nm,0.6s
TREC Trest 41.71 306 *e*P P 21 46 56.6 +0.9
TREC *ex* x 21 49 52.8
TREC Trest 41.71 306 *e*P P 21 46 56.6 +0.9
TREC *e* 21 48 17.7
TREC MLR MLR
comp=Z,9µm,18.1s
ARSA Arzberg 41.86 303 *i* P P 21 46 57.1 +0.1
comp=Z,9.2nm,1.3s,SNR=6.2
BSD Bornholm Skovb 41.99 315 *i* P P 21 46 57.5 -0.3
BSD Bornholm Skovb 41.99 315 *i* P P 21 46 57.5 -0.3
UDBI Udbina 42.05 299 *i* P P 21 46 58.4 -0.1
GOPC GO Pecny, Ondr 42.12 307 *e*P P 21 46 59.9 +0.9
GOPC GO Pecny, Ondr 42.12 307 *e*P P 21 46 59.9 +0.9
IPM Ipoh 42.16 132 *e*P P 21 46 59.9 +0.2
comp=Z,47nm,0.8s
HAMF Hammerfest 42.18 339 *e*P P 21 46 59.8 +0.7
HAMF IAmb IAmb 21 47 01.0
comp=Z,89nm,0.7s
PERS Pernice 42.20 302 *i* P P 21 47 00.1 +0.3
PVCC Panska Ves 42.23 308 *e*P P 21 47 00.6 +0.8
PVCC Panska Ves 42.23 308 *e*P P 21 47 00.6 +0.8
SOKA Soboth 42.26 302 *i* P P 21 47 00.7 +0.4
comp=Z,18nm,0.9s,SNR=24
BOJS Bojanci 42.26 300 *e*P P 21 47 00.1 -0.1
PRU Pruhonice 42.28 307 *e*P P 21 47 01.1 +0.9
PRU *ex* x 21 49 56.1
PRU Pruhonice 42.28 307 *e*P P 21 47 01.1 +0.9
TIP Timpagrande 42.39 291⇑ *i*P P 21 47 00.6 -0.8
TIP Timpagrande 42.39 291 *e*P P 21 47 00.5 -0.8
comp=Z,34nm,1.3s
BRG Berggiesshubel 42.61 308 *e*P P 21 47 03.4 +0.6
comp=Z,39nm,1.4s
BRG *e*pP pP 21 47 53.7 +1.3
comp=Z,3.3nm,0.6s
BRG *e*sP sP 21 48 20.5 +1.3
comp=Z,35nm,1.7s
BRG PP PP 21 48 46.7 0.0
comp=Z,6.8nm,0.9s
BRG Berggiesshubel 42.61 308 *e*P P 21 47 03.4 +0.6
BRG *e*PP pP 21 47 53.7 +1.3
BRG *e*SP sP 21 48 20.5 +1.3
BRG 21 48 46.7
BRG pmax pmax
comp=Z,39nm,1.4s
OBKA Obir 42.61 302 *i* P P 21 47 03.2 +0.2
comp=Z,17nm,1.4s,SNR=7.6
MOA Molln 42.64 304 *i* P P 21 47 03.2 0.0
comp=Z,18nm,1.1s,SNR=11
NVLJ Novalja 42.67 299 *i* P P 21 47 02.5 -0.9
LJU Ljubljana 42.69 301 *e*P P 21 47 04.0 +0.4
LJU *e*pP pP 21 47 53.9 +0.7
LJU *e*sP sP 21 48 21.9 +2.0
LJU *i* PP PcP 21 48 50.4 -0.3
GSI Gunungsitoli 42.82 139 P P 21 47 02.4 -2.6
CUC Castrocucco 42.90 292 *e*P P 21 47 05.8 +0.4
comp=Z,34nm,1.2s
GEA0 GERESS Array S 42.91 305 *e*P P 21 47 05.3 -0.1
GEC2 GERESS Array S 42.91 305 *e*P P 21 47 06.1 +0.6
GEC2 pmax pmax
comp=Z,10.0nm,1.3s
GEC2 GERESS Array S 42.91 305 *e*P P 21 47 06.1 +0.6
comp=Z,10nm,1.3s
GERES GERESS Array B 42.91 305 P P 21 47 05.7 +0.2
comp=Z,1.5nm,0.7s,baz=90,slow=6.9,SNR=20
GERES PcP PcP 21 48 51.0 -0.6
comp=Z,4.3nm,0.9s,baz=93,slow=5.3,SNR=9.2
GERES ScP ScP 21 52 18.1 -1.7
comp=Z,1.1nm,0.7s,baz=101,slow=4.2,SNR=6.2
KHC Kasperske Hory 42.97 306 *e*P P 21 47 06.3 +0.5
KHC Kasperske Hory 42.97 306 *e*P P 21 47 05.9 0.0
KHC pmax pmax
comp=Z,8.0nm,1.4s
KHC Kasperske Hory 42.97 306 *e*P P 21 47 05.9 0.0
comp=Z,7.7nm,1.4s
CLL Collm 43.17 309 *i* P P 21 47 07.1 -0.3
comp=Z,20nm,1.4s
CLL *i* sP sP 21 48 24.9 +1.1
comp=Z,23nm,1.8s
CLL *i* PP PcP 21 48 51.4 -0.8
comp=Z,11nm,1.1s
CLL *e*SS SS 21 56 42.0 +4.3
CLL Collm 43.17 309 *i* P P 21 47 07.1 -0.3
CLL *i* *SP sP 21 48 24.9 +1.1
CLL pmax pmax
comp=Z,20nm,1.4s
CLL Collm 43.17 309 *e*P P 21 47 07.2 -0.2
comp=Z,15nm,1.2s
CADS Cadrg 43.20 301 *i* P P 21 47 07.6 -0.2
TRO Tromso 43.23 336 *e*P P 21 47 07.8 +0.3
TRO IAmb IAmb 21 47 09.1
comp=Z,64nm,1.3s
TRI Trieste 43.26 301 *e*P P 21 47 07.5 -0.7
TRI pmax pmax
comp=Z,9.0nm,0.8s
TRI Trieste 43.26 301 *e*P P 21 47 07.5 -0.7
comp=Z,8.6nm,0.8s
KBA Koelnbreinsper 43.35 303 *i* P P 21 47 08.9 -0.2
comp=Z,11nm,1.3s,SNR=6.7
KBA Koelnbreinsper 43.35 303 P P 21 47 09.9 +0.8
KBA pmax pmax
comp=Z,8.0nm,2.1s
NKC Novy Kostel 43.60 307 *e*P P 21 47 11.9 +1.0
NKC Novy Kostel 43.60 307 *e*P P 21 47 11.9 +1.0
YAK Yakutsk 43.91 35 P P 21 47 12.6 -0.4
comp=Z,44nm,0.5s,baz=229,slow=0.4,SNR=13
YAK Yakutsk 43.91 35 *e*P P 21 47 12.6 -0.4
YAK pmax pmax
comp=Z,24nm,0.8s
YAK pmax pmax
comp=E,12nm,1.6s
YAK Yakutsk 43.91 35 *e*P P 21 47 12.7 -0.4
comp=E,47nm,0.7s
STEI Steigen 43.94 333 *e*P P 21 47 13.6 +0.4
STEI IAmb IAmb 21 47 14.0
comp=Z,32nm,0.9s
MOX Moxa 44.10 308 P P 21 47 15.6 +0.8
MOX pmax pmax
comp=Z,15nm,1.4s
NC405 NORSAR Array S 44.11 323 *e*P P 21 47 14.5 -0.3
AQU L'Aquila 44.14 296 *e*P P 21 47 15.4 +0.1
AQU pmax pmax
comp=Z,10.0nm,1.1s
AQU L'Aquila 44.14 296 *e*P P 21 47 15.4 +0.1
comp=Z,9.7nm,1.1s
NC602 NORSAR Array S 44.16 323 *e*P P 21 47 14.9 -0.2
NC303 NORSAR Array S 44.29 323 *e*P P 21 47 15.8 -0.4
NB201 NORSAR Array S 44.31 323 *e*P P 21 47 15.8 -0.5
MNSI Mandailing Nat 44.33 137 P P 21 47 16.7 -0.2
NB2 NORSAR Subarra 44.35 323 P P 21 47 15.9 -0.7
comp=Z,62nm,1.1s,baz=96,slow=8.6
NB2 NORSAR Subarra 44.35 323 P P 21 47 15.9 -0.7
baz=96,slow=8.6
NB2 NORSAR Subarra 44.35 323 P P 21 47 15.8 -0.8
NB2 pmax pmax
comp=Z,51nm,1.1s
NOA NORSAR Array B 44.35 323 P P 21 47 15.9 -0.7
comp=Z,32nm,0.9s,baz=96,slow=7.8,SNR=100
NOA pP pP 21 48 07.1 +0.6
comp=Z,6.8nm,0.6s,baz=97,slow=8.1,SNR=4.2
NOA sP sP 21 48 32.8 -0.5
comp=Z,7.3nm,0.6s,baz=97,slow=8.1,SNR=3.2
MDJ Mudanjiang 44.36 61 P P 21 47 17.5 +0.6
MDJ pP pP 21 48 07.6 +0.7
MDJ sP sP 21 48 31.1 -2.4
MDJ S S 21 53 33.6 +0.7
MDJ pmax pmax
comp=Z,13nm,2.3s
MDJ pmax pmax
comp=Z,130nm,4.7s
NSS Namsos 44.46 328 *e*P P 21 47 16.8 -0.6
WTTA Wattenberg 44.48 303 *i* P P 21 47 17.3 -0.7
comp=Z,20nm,1.2s,SNR=5.2
NAO01 NORSAR Array S 44.49 323 *e*P P 21 47 17.3 -0.4
TPUB Ta-pu 44.52 93 *e*P P 21 47 20.4 +1.9
comp=Z,72nm,1.5s
NBO02 NORSAR Array S 44.52 323 *e*P P 21 47 17.3 -0.7
NBO00 NORSAR Array S 44.56 323 *e*P P 21 47 17.9 -0.4
NC204 NORSAR Array S 44.59 323 *e*P P 21 47 17.9 -0.6
KSAR Wonju Array Be 44.82 71 P P 21 47 20.3 -0.3
KSAR 21 48 57.4
KSAR Wonju Array Be 44.82 71 P P 21 47 20.3 -0.3
KSAR PcP PcP 21 48 57.4 -0.7
MOTA Moosalm 44.83 303 *i* P P 21 47 20.1 -0.7
comp=Z,8.5nm,0.8s,SNR=11
KSRS Korea Array 44.84 71 P P 21 47 20.3 -0.4
comp=Z,2.3nm,0.4s,baz=269,slow=6.9,SNR=9.8
KSRS PcP PcP 21 48 57.4 -0.8
comp=Z,1.1nm,0.5s,baz=289,slow=3.8,SNR=6.8
HOPEN Hopen 44.95 346 *e*P P 21 47 22.9 +1.8
HOPEN IAmb IAmb 21 47 23.1
comp=Z,103nm,1.4s
WDD Wied Dalam 45.02 287 *e*P P 21 47 21.3 -0.9
comp=Z,49nm,1.0s
TBLU Trondheim 45.03 326 *e*P P 21 47 20.8 -1.1
TBLU IAmb IAmb 21 47 22.0
comp=Z,21nm,1.0s
RETA Reutte 45.04 304 *i* P P 21 47 21.6 -0.7
comp=Z,9.6nm,1.1s,SNR=5.4
KONO Kongsberg 45.06 321 *e*P P 21 47 22.0 -0.1
KONO pmax pmax
comp=Z,23nm,1.1s
KONO Kongsberg 45.06 321 *e*P P 21 47 22.0 -0.1
comp=Z,23nm,1.1s
KLR Kul'dur 45.10 54 *i* P P 21 47 22.8 +0.2
TWG Pinlang 45.11 93 *e*P P 21 47 25.3 +2.2
comp=Z,237nm,1.3s
FETA Feichten 45.13 303 *i* P P 21 47 22.2 -0.9
comp=Z,18nm,1.1s,SNR=7.4
BJO Bjornoya 45.18 343 *e*P P 21 47 23.6 +0.7
BJO IAmb IAmb 21 47 24.8
comp=Z,68nm,0.9s
CLTB Caltabellotta 45.50 289 *e*P P 21 47 25.7 -0.3
comp=Z,56nm,1.5s
FUORN Ofenpass-Fuorn 45.52 303 *e*P P 21 47 25.9 -0.3
comp=Z,16nm,1.2s
DAVA Damuels 45.66 304 *i* P P 21 47 26.6 -0.7
comp=Z,28nm,0.6s,SNR=21
TIXI Tiksi 45.72 22 P P 21 47 27.1 -0.1
comp=Z,46nm,0.6s,baz=268,slow=4.4,SNR=328
TIXI Tiksi 45.72 22 *ce*P P 21 47 27.0 -0.1
TIXI *e*PP pP 21 48 21.8 +4.4
TIXI pmax pmax
comp=Z,31nm,0.8s
TIXI Tiksi 45.72 22 *e*P P 21 47 27.1 -0.1
comp=Z,48nm,0.7s
PPI Padang Panjang 45.81 137 P P 21 47 29.2 +0.6
USRK Ussuriysk Ar. 46.13 61 P P 21 47 31.2 +0.4
comp=Z,1.6nm,0.5s,baz=265,slow=8.1,SNR=6.0
PDSI Padang 46.23 137 P P 21 47 31.7 -0.2
comp=Z,92nm,1.0s
SNART Snartemo 46.27 319 *e*P P 21 47 32.8 +1.2
AKN Aaknes 46.44 324 *e*P P 21 47 32.4 -0.5
BFO Black Forest 46.52 305 *e*P P 21 47 33.8 0.0
BFO pmax pmax
comp=Z,7.0nm,0.9s
BFO Black Forest 46.52 305 *e*P P 21 47 33.8 0.0
comp=Z,6.9nm,0.9s
BLS5 Blasjo 46.65 321 *e*P P 21 47 35.0 +0.3
LANF Langenberg 46.75 306 *e*P P 21 47 35.9 +0.3
HSPB Hornsund (broa 47.09 345 *e*P P 21 47 38.8 +1.1
WLS Welschbruch 47.15 305 *e*P P 21 47 39.4 +0.8
BER Bergen 47.21 322 *e*P P 21 47 38.4 -0.5
ECH Echery 47.31 305 *e*P P 21 47 41.1 +1.2
MOF Molkenrain 47.39 305 *e*P P 21 47 40.4 -0.2
SPA0 Spitsbergen Ar 47.45 347 *e*P P 21 47 41.2 +0.7
SPA0 IAmb IAmb 21 47 42.3
comp=Z,45nm,1.1s
SPA0 Spitsbergen Ar 47.45 347 *e*P P 21 47 41.9 +1.4
SENIN Lac Senin/Sane 47.57 303 *e*P P 21 47 42.0 -0.2
comp=Z,18nm,1.0s
HINF Hinteralfeld 47.58 305 *e*P P 21 47 41.2 -0.8
HINF pmax pmax
comp=Z,11nm,0.9s
MEM Membach 47.65 309 P P 21 47 42.6 +0.2
LOMF Lomont 47.69 304 *e*P P 21 47 42.6 -0.3
WLF Walferdange 47.71 307 P P 21 47 43.9 +1.1
comp=Z,23nm,1.4s
WLF Walferdange 47.71 307 *e*P P 21 47 43.3 +0.4
WLF pmax pmax
comp=Z,35nm,1.1s
WLF Walferdange 47.71 307 *e*P P 21 47 43.3 +0.4
comp=Z,35nm,1.1s
LUCF Luceram 48.10 299 *e*P P 21 47 46.4 +0.3
REVF Revere 48.12 299 *e*P P 21 47 45.9 -0.3
LPG La Plagne 48.14 302 *e*P P 21 47 46.2 -0.4
LPG pmax pmax
comp=Z,21nm,0.9s
LPL La Plagne 48.14 302 *e*P P 21 47 46.3 -0.3
LPL pmax pmax
comp=Z,72nm,1.4s
RSL Roselend 48.18 302 *e*P P 21 47 46.6 -0.1
MVIF Mont Vial 48.24 300 *e*P P 21 47 46.8 -0.4
CALN Calern 48.46 299 *e*P P 21 47 48.3 -0.6
KBS Kingsbay 48.56 347 *e*P P 21 47 49.3 +0.4
KBS IAmb IAmb 21 47 50.6
comp=Z,52nm,0.9s
KBS Kingsbay 48.56 347 *e*P P 21 47 50.2 +1.2
KBS pmax pmax
comp=Z,51nm,0.9s
KBS Kingsbay 48.56 347 *e*P P 21 47 50.2 +1.2
comp=Z,52nm,0.9s
DOU Dourbes 48.62 308 P P 21 47 50.1 +0.3
comp=Z,11nm,1.3s
SNF Seneffe 48.75 309 P P 21 47 51.9 +1.2
KMBO Kilima Mbogo 48.88 228 *e*P P 21 47 53.7 +1.2
KMBO pmax pmax
comp=Z,59nm,1.9s
KMBO Kilima Mbogo 48.88 228 *e*P P 21 47 53.7 +1.2
comp=Z,59nm,1.9s
KEST Kesra 49.04 288 P P 21 47 53.6 +0.3
comp=Z,29nm,1.1s,baz=47,slow=1.6,SNR=54
KEST Kesra 49.04 288 *e*P P 21 47 54.1 +0.8
comp=Z,47nm,1.2s
SSB Saint Sauveur 49.70 302 *e*P P 21 47 57.9 -0.2
SSB Saint Sauveur 49.70 302 *e*P P 21 47 57.9 -0.2
SSB pmax pmax
comp=Z,10.0nm,0.7s
SSB Saint Sauveur 49.70 302 *e*P P 21 47 57.9 -0.2
comp=Z,9.9nm,0.7s
NKL Nikolayevsk 50.06 47 *e*P P 21 48 00.5 -0.1
NKL pmax pmax
comp=E,10.0nm,0.6s
NKL pmax pmax
comp=Z,36nm,0.6s
PLDF La Plantade 50.15 303 *e*P P 21 48 01.5 0.0
AGO Saint Agoulin 50.46 303 *e*P P 21 48 04.1 +0.3
LBL Lubilhac 50.60 302 *e*P P 21 48 05.4 +0.5
PYM Petit Puy Mans 50.62 303 *e*P P 21 48 05.2 +0.1
CAF Calviac 51.48 302 *e*P P 21 48 11.2 -0.2
CAF pmax pmax
comp=Z,19nm,1.1s
FLN La Foliniere 52.15 307 *e*P P 21 48 15.1 -1.1
FLN pmax pmax
comp=Z,4.0nm,0.4s
ESK Eskdalemuir 52.29 316 *ce*P P 21 48 17.9 +0.8
JAP San Jose, Anti 52.51 106⇑ *e*P P 21 48 14.4 -4.8
MJAR Matsushiro Arr 52.92 69 P P 21 48 21.9 -0.1
comp=Z,1.6nm,0.8s,baz=292,slow=8.9,SNR=4.1
EPF Esparros 53.24 300 *e*P P 21 48 22.6 -1.7
EPF pmax pmax
comp=Z,4.0nm,0.7s
SEY Seymchan 54.36 34 P P 21 48 31.8 -0.2
comp=Z,7.5nm,0.6s,baz=288,slow=8.8,SNR=19
DAG Danmarks Havn 54.68 344⇑ *i*P P 21 48 34.3 +0.2
comp=Z,43nm,0.9s
DAG Danmarks Havn 54.68 344⇑ *i*P P 21 48 34.3 +0.2
DAG pmax pmax
comp=Z,36nm,0.9s
ES19 SONSECA Array 57.39 298 *e*P P 21 48 53.5 -0.4
ESDC Sonseca Array 57.45 298 P P 21 48 53.8 -0.5
comp=Z,9.8nm,0.8s,baz=59,slow=7.4,SNR=46
ESLA Sonseca Array 57.45 298 *e*P P 21 48 54.3 -0.1
comp=Z,15nm,1.0s
TAM Tamanrasset 57.55 276 *e*P P 21 48 54.7 -0.7
TAM pmax pmax
comp=Z,12nm,1.1s
TAM Tamanrasset 57.55 276 *e*P P 21 48 54.7 -0.7
comp=Z,12nm,1.1s
PAB San Pablo 57.77 298 *e*P P 21 48 56.6 0.0
PAB pmax pmax
comp=Z,28nm,1.4s
PAB San Pablo 57.77 298 *e*P P 21 48 56.6 0.0
comp=Z,28nm,1.4s
BILL Bilibino 58.55 26 *c* *i*P P 21 49 01.9 +0.5
BILL *e*PP pP 21 49 57.4 +3.2
BILL pmax pmax

comp=Z,16nm,0.9s
BILL Bilibino 58.55 26 *e*P **P 21 49 02.2 +0.8**
comp=Z,21nm,0.6s
RER Riviere de l'E 59.19 197 *e*P **P 21 49 06.8 +0.4**
comp=Z,80nm,1.0s
OPO Ambohidratompo 59.27 206 P **P 21 49 08.1 +0.9**
comp=Z,7.3nm,0.9s,baz=0.2,slow=4.5,SNR=5.3
PGAV Gavieira, Arco 59.56 302 *e*P **P 21 49 09.2 +0.3**
comp=Z,54nm,1.6s
PETK Petropavlovsk- 59.92 44 P **P 21 49 10.4 -0.6**
comp=Z,3.6nm,0.6s,baz=305,slow=5.3,SNR=8.7
PBAR Barrancos 60.25 297 *e*P **P 21 49 13.4 -0.1**
comp=Z,86nm,1.4s
PESTR Estremoz 60.35 298 *e*P **P 21 49 14.1 -0.1**
comp=Z,22nm,1.3s
PCAS Casmilo, Conde 60.50 300 *e*P **P 21 49 15.3 +0.1**
comp=Z,65nm,1.8s
PTOM Tomar 60.62 299 *e*P **P 21 49 16.3 +0.3**
comp=Z,53nm,1.2s
EVO Evora 60.79 298 *e*P **P 21 49 16.6 -0.6**
comp=Z,36nm,1.6s
PBEJ Beja 60.90 298 *e*P **P 21 49 17.9 0.0**
SUMG Summit 61.02 341⇑*i*P **P 21 49 19.5 +0.9**
comp=Z,42nm,0.9s
SUMG Summit 61.02 341⇑*i*P **P 21 49 19.5 +0.9**
SUMG pmax pmax
comp=Z,42nm,0.9s
SUMG Summit 61.02 341 *e*P **P 21 49 18.7 +0.1**
comp=Z,39nm,0.8s
SUMG *ep*P **pP 21 50 11.4 -0.4**
PVAQ Vaqueiros 61.06 297 *e*P **P 21 49 18.9 -0.1**
comp=Z,58nm,1.5s
MESJ Messejana 61.23 297 *e*P **P 21 49 20.3 +0.2**
PBDV Barranco-do-Ve 61.28 297 *e*P **P 21 49 20.7 +0.2**
comp=Z,49nm,1.2s
PNCL Nicolau / Gran 61.34 298 *e*P **P 21 49 21.3 +0.5**
comp=Z,40nm,1.6s
PTEO Sao Teotonio 61.72 297 *e*P **P 21 49 23.0 -0.4**
LSZ Lusaka 65.51 226 *e*P **P 21 49 48.4 0.0**
LSZ pmax pmax
comp=Z,22nm,0.9s
LSZ Lusaka 65.51 226 *e*P **P 21 49 48.4 0.0**
comp=Z,22nm,0.9s
TOA0 Torodi Ar. Sit 65.74 269 *e*P **P 21 49 48.0 -1.9**
TORD Torodi Ar. Bea 65.74 269 P **P 21 49 48.0 -1.8**
comp=Z,13nm,0.4s,baz=50,slow=5.9,SNR=224
TORD pP **pP 21 50 43.9 0.0**
comp=Z,4.7nm,0.7s,baz=59,slow=5.4,SNR=2.2
ILULI Ilulissat 66.36 341⇑*i*P **P 21 49 53.3 +0.4**
comp=Z,28nm,0.8s
ILULI Ilulissat 66.36 341⇑*i*P **P 21 49 53.3 +0.4**
ILULI pmax pmax
comp=Z,28nm,0.8s
COLD Coldfoot 71.91 16 *e*P **P 21 50 27.5 +0.5**
comp=Z,34nm,1.0s
FYU Fort Yukon 73.51 14 *e*P **P 21 50 37.8 +1.4**
comp=Z,26nm,0.6s
MLY Manley 73.62 17 *e*P **P 21 50 37.4 +0.3**
comp=Z,13nm,0.7s
INK Inuvik 73.85 9 P **P 21 50 39.0 +0.7**
comp=Z,39nm,0.5s,baz=349,slow=6.3,SNR=328
INK pP **pP 21 51 35.2 +1.5**
comp=Z,7.4nm,0.9s,baz=356,slow=8.3,SNR=2.4
INK Inuvik 73.85 9 *e*P **P 21 50 39.0 +0.7**
comp=Z,41nm,0.6s
INK pP **pP 21 51 35.2 +1.5**
TTA Tatalina 73.97 20 *e*P **P 21 50 39.8 +0.6**
TTA pmax pmax
comp=Z,10.0nm,0.6s
TTA Tatalina 73.97 20 *e*P **P 21 50 39.8 +0.6**
comp=Z,10nm,0.6s
TT01 Tatalina 73.98 20 *e*P **P 21 50 39.4 +0.2**
TT01 *ep*P **pP 21 51 37.5 +3.0**
MDM Murphy Dome 74.26 16 *e*P **P 21 50 41.2 +0.3**
comp=Z,22nm,0.7s
BPAW Bear Paw Mtn. 74.34 18 *e*P **P 21 50 41.2 -0.1**
comp=Z,16nm,0.6s
COLA College 74.42 16 *e*P **P 21 50 41.2 -0.5**
COLA pmax pmax
comp=Z,48nm,0.8s
COLA College 74.42 16 *e*P **P 21 50 41.2 -0.5**
comp=Z,48nm,0.8s
CCB Clear Creek Bu 74.62 16 *e*P **P 21 50 42.5 -0.4**
comp=Z,7.3nm,0.8s
CAST Castle Rocks 74.63 19 *e*P **P 21 50 43.1 +0.2**
comp=Z,57nm,1.0s
BWN Browne 74.64 17 *e*P **P 21 50 44.1 +1.1**
comp=Z,36nm,0.8s
WRH Wood River Hil 74.71 16 *e*P **P 21 50 43.0 -0.4**
comp=Z,11nm,0.8s
DBIC Dimbokro 74.72 267 P **P 21 50 42.6 -1.6**
comp=Z,4.2nm,0.4s,baz=35,slow=6.3,SNR=13
IL1 Eielson Array 74.72 16 *e*P **P 21 50 42.5 -0.9**
IL1 *ep*P **pP 21 51 39.4 +0.5**
ILAR Eielson Array 74.72 16 P **P 21 50 42.9 -0.5**
comp=Z,8.8nm,0.7s,baz=322,slow=4.5,SNR=83
ILAR pP **pP 21 51 39.4 +0.5**
comp=Z,2.2nm,0.9s,baz=310,slow=5.0,SNR=2.8
ILAR Eielson Array 74.72 16 P **P 21 50 42.9 -0.5**
ILAR *PP **pP 21 51 39.4 +0.5**
ILAR pmax pmax
comp=Z,8.0nm,0.8s
ILAR pmax pmax
comp=Z,2.0nm,0.9s
LBTB Lobatse 74.73 222 *e*P **P 21 50 44.4 +0.3**
LBTB pmax pmax
comp=Z,24nm,0.6s
LBTB Lobatse 74.73 222 *e*P **P 21 50 44.4 +0.3**
comp=Z,24nm,0.6s
KIC Kosan Boka 74.81 267 *e*P **P 21 50 43.2 -1.6**
comp=Z,56nm,1.0s
KTH Kantishna Hill 74.81 18 *e*P **P 21 50 44.0 0.0**
comp=Z,32nm,0.8s
TIC Toumodi 74.87 267 *e*P **P 21 50 43.4 -1.7**
TSUM Tsumeb 74.97 232 *e*P **P 21 50 45.5 -0.1**
comp=Z,20nm,1.1s
FRB Frobisher Bay 75.02 343 P **P 21 50 45.1 0.0**
comp=Z,2.6nm,0.4s,baz=31,slow=7.1,SNR=7.2
PPLA Purkeypile 75.03 19 *e*P **P 21 50 45.4 0.0**
comp=Z,20nm,0.5s
TRF Thorofare Moun 75.05 18 *e*P **P 21 50 44.9 -0.6**
comp=Z,7.7nm,0.6s
LIC Lamto 75.12 267 *e*P **P 21 50 44.8 -1.7**
comp=Z,54nm,1.4s
MCK McKinley 75.14 17 *e*P **P 21 50 45.2 -0.7**
MCK pmax pmax
comp=Z,21nm,0.5s
MCK McKinley 75.14 17 *e*P **P 21 50 45.1 -0.7**
comp=Z,21nm,0.5s
RND Reindeer 75.44 17 *e*P **P 21 50 47.1 -0.5**
RND pmax pmax
comp=Z,22nm,0.6s
RND Reindeer 75.44 17 *e*P **P 21 50 47.1 -0.5**
comp=Z,22nm,0.6s
EGAK Eagle 75.89 14 *e*P **P 21 50 50.1 0.0**
comp=Z,10nm,0.8s
DOT Dot Lake 76.31 15 *e*P **P 21 50 52.5 -0.1**
PAX Paxson 76.60 16 *e*P **P 21 50 54.2 0.0**
PAX pmax pmax
comp=Z,30nm,0.6s
PAX Paxson 76.60 16 *e*P **P 21 50 54.2 0.0**
comp=Z,30nm,0.6s
DAWY Dawson 76.87 13 *e*P **P 21 50 55.5 -0.2**
comp=Z,18nm,0.6s
RSO Redoubt South 76.88 21 *e*P **P 21 50 56.6 +0.6**
PMR Palmer 76.91 18 *e*P **P 21 50 55.6 -0.2**
PMR pmax pmax
comp=Z,15nm,0.9s
PMR Palmer 76.91 18 *e*P **P 21 50 55.6 -0.2**
comp=Z,15nm,0.9s
SML Sawmill 76.93 18 *e*P **P 21 50 56.1 +0.1**
SML pmax pmax
comp=Z,44nm,0.6s
SML Sawmill 76.93 18 *e*P **P 21 50 56.1 +0.1**
comp=Z,44nm,0.6s
MENT Mentasta 77.02 16 *e*P **P 21 50 56.6 +0.1**
comp=Z,8.2nm,0.6s
SCM Sheep Creek Mo 77.15 18 *e*P **P 21 50 57.4 +0.1**
SCM pmax pmax
comp=Z,41nm,0.6s
SCM Sheep Creek Mo 77.15 18 *e*P **P 21 50 57.4 +0.1**
comp=Z,41nm,0.6s
RC01 Rabbit Creek A 77.18 19 *e*P **P 21 50 57.1 -0.2**
comp=Z,17nm,0.6s
KLU Klutina 77.79 17 *e*P **P 21 51 01.3 +0.5**
comp=Z,20nm,1.0s
BOSA Boshof 77.80 220 P **P 21 51 00.8 -0.4**
comp=Z,18nm,0.9s,baz=28,slow=5.9,SNR=19
BOSA Boshof 77.80 220 *e*P **P 21 51 01.0 -0.3**
BOSA pmax pmax
comp=Z,21nm,0.9s
BOSA Boshof 77.80 220 *e*P **P 21 51 01.0 -0.3**
comp=Z,21nm,0.9s
BRLK Bradley Lake 77.98 20 *e*P **P 21 51 01.2 -0.7**
comp=Z,20nm,0.6s
DIV Divide 78.14 17 *e*P **P 21 51 03.1 +0.4**
comp=Z,21nm,0.7s
BMRM Bremner River 78.56 17 *e*P **P 21 51 05.7 +0.7**
comp=Z,53nm,1.3s
EYAK Cordova Ski Ar 78.65 18 *e*P **P 21 51 06.5 +1.1**
comp=Z,37nm,0.7s
BALM Baldy 79.01 16 *e*P **P 21 51 08.3 +0.8**
BALM pmax pmax
comp=Z,27nm,0.5s
BALM Baldy 79.01 16 *e*P **P 21 51 08.3 +0.8**
comp=Z,27nm,0.5s
KDAK Kodiak Island 79.14 22 *i*P **P 21 51 07.9 -0.2**
KDAK Kodiak Island 79.14 22 *e*P **P 21 51 08.2 +0.1**
comp=Z,36nm,0.8s
KDAK *ep*P **pP 21 52 04.1 -0.1**
OHAK Old Harbor 79.39 23 *e*P **P 21 51 09.8 +0.3**
comp=Z,25nm,0.6s
YKW3 Yellowknife Ar 81.12 3 *e*P **P 21 51 18.5 -0.1**
comp=Z,14nm,0.6s
YKW3 *ep*P **pP 21 52 16.3 +1.3**
YKA Yellowknife Ar 81.19 3 P **P 21 51 18.9 -0.1**
comp=Z,16nm,0.5s,baz=351,slow=5.4,SNR=454
YKA pP **pP 21 52 16.8 +1.4**
comp=Z,4.8nm,0.7s,baz=347,slow=5.3,SNR=5.3
YKA PP **PP 21 54 26.6 -0.2**
comp=Z,2.7nm,0.9s,baz=353,slow=7.6,SNR=5.2
YKA PKKPbc **PKKPbc 22 09 50.4 -2.5**
comp=Z,0.2nm,0.6s,baz=182,slow=2.0,SNR=5.4
YKA Yellowknife Ar 81.19 3 P **P 21 51 18.9 -0.1**
YKA *PP **pP 21 52 16.8 +1.4**
YKA 21 54 26.6
YKA 22 09 50.4
YKA pmax pmax
comp=Z,15nm,0.5s
YKA pmax pmax
comp=Z,5.0nm,0.7s
YKA pmax pmax
comp=Z,3.0nm,0.9s
YKB5 Yellowknife Ar 81.19 3 *e*P **P 21 51 18.3 -0.7**
NWAO Narrogin (SRO) 81.50 142 P **P 21 51 19.8 -1.1**
comp=Z,11nm,0.6s,baz=164,slow=3.5,SNR=6.8
SKAG Skagway 81.87 13 *e*P **P 21 51 23.6 +1.0**
comp=Z,15nm,1.0s
WRA Warramunga Arr 82.00 122 P **P 21 51 22.6 -1.3**
comp=Z,7.9nm,0.4s,baz=324,slow=5.0,SNR=22
WRA PKKPbc **PKKPbc 22 09 51.6 +0.3**
comp=Z,1.5nm,0.9s,baz=132,slow=2.2,SNR=5.0
WRA Warramunga Arr 82.00 122 P **P 21 51 22.6 -1.3**
WRA pmax pmax
comp=Z,7.0nm,0.4s
SCHQ Schefferville 82.06 337 P **P 21 51 23.7 +0.1**
comp=Z,6.2nm,0.7s,baz=54,slow=5.4,SNR=5.0
SCHQ Schefferville 82.06 337 *e*P **P 21 51 23.9 +0.3**
comp=Z,9.4nm,0.9s
DLBC Dease Lake 83.74 11 P **P 21 51 33.2 +0.9**
comp=Z,4.3nm,0.4s,baz=324,slow=5.5,SNR=12
DLBC Dease Lake 83.74 11 *e*P **P 21 51 33.4 +1.1**
comp=Z,8.7nm,0.6s
ASAR Alice Springs 84.27 125 P **P 21 51 34.4 -1.0**
comp=Z,8.8nm,0.5s,baz=312,slow=4.8,SNR=27
CTA Charters Tower 90.55 115 P **P 21 52 04.7 -0.8**
comp=Z,5.9nm,0.6s,baz=327,slow=4.6,SNR=6.9
ULM Lac du Bonnet 92.80 352 P **P 21 52 15.2 -0.2**
comp=Z,9.2nm,0.8s,baz=351,slow=4.6,SNR=6.4
ULM Lac du Bonnet 92.80 352 *e*P **P 21 52 15.2 -0.2**
ULM pmax pmax
comp=Z,10.0nm,0.8s
ULM Lac du Bonnet 92.80 352 *e*P **P 21 52 15.2 -0.2**
comp=Z,10nm,0.8s
EYMN Ely 94.44 348 *e*P **P 21 52 23.2 +0.1**
comp=Z,13nm,0.9s
WALA Waterton Lakes 94.65 3 *e*P **P 21 52 23.7 -0.5**
comp=Z,8.8nm,0.9s
SADO Sadowa 94.67 339 P **P 21 52 24.1 0.0**
comp=Z,1.0nm,0.3s,baz=49,slow=6.7,SNR=3.3
NEW Newport 95.25 5 P **P 21 52 27.0 +0.2**
comp=Z,1.7nm,0.7s,baz=315,slow=11,SNR=4.1
NEW Newport 95.25 5 P **P 21 52 27.0 +0.2**
NEW pmax pmax
comp=Z,4.0nm,0.9s
BSMT Bassoo Peak 95.81 4 *e*P **P 21 52 30.6 +1.0**
CHMT Chamberlain Mo 96.82 3 *e*P **P 21 52 34.6 +0.4**
NVAR Mina Array Bea 104.89 8 PKiKP **PKiKP 21 57 24.4 +0.4**
comp=Z,0.7nm,0.6s,baz=77,slow=6.4,SNR=4.3
TXAR Lajitas Array 114.27 355 PKiKP **PKiKP 21 57 41.6 -0.1**
comp=Z,0.3nm,0.6s,baz=87,slow=1.2,SNR=4.7
QSPA South Pole Qui 126.35 180 *e*PKPdf **PKPdf 21 58 02.5 -1.1**
ROSC El Rosal 127.61 314 PKiKP **PKiKP 21 58 08.6 0.0**
comp=Z,13nm,0.6s,baz=147,slow=6.6,SNR=5.6
CPUP Villa Florida 135.23 268 PKP **PKPdf 21 58 20.6 -1.0**
comp=Z,4.7nm,0.8s,baz=83,slow=1.6,SNR=13
CPUP SKPbc **SKPbc 22 01 29.1 -0.8**
comp=Z,1.3nm,0.8s,baz=69,slow=5.9,SNR=3.2
LPAZ La Paz 138.61 288 PKP **PKPdf 21 58 28.4 -0.5**
comp=Z,3.3nm,1.0s,baz=44,slow=5.4,SNR=9.2
TRQA Tornquist 142.90 253 *e*PKPdf **PKPdf 21 58 32.5 -2.7**
PB10 IPOC Station P 144.52 281 *e*PKPbc **PKPab 21 58 37.2 -0.4**
LCO Las Campanas 147.12 272 *e*PKPdf **PKPdf 21 58 42.6 -0.5**
ROC1 El Roble 148.75 265 *e*PKPbc **PKPbc 21 58 49.1 -0.7**
PLCA Paso Flores 149.86 250 PKP **PKPdf 21 58 47.3 +0.3**
comp=Z,22nm,1.1s,baz=118,slow=5.5,SNR=2.9
PLCA PKPbc **PKPbc 21 58 52.2 +0.2**
comp=Z,20nm,1.1s,baz=141,slow=2.1,SNR=21
PLCA PP **PP 22 02 30.8 +2.1**
comp=Z,5.9nm,1.1s,baz=152,slow=4.4,SNR=3.1
CHRN Cochrane 151.13 237 *e*PKPbc **PKPbc 21 58 54.9 +0.2**

BJI ***13*** *21:43:13.1,10°.77S×107°.84E,h10km,mb5.0/62,mB5.3/50, Ms4.9/61,Ms7 4.7/57*

ISCJB ***13*** *21:43:17.5±0.8,9°.97S±0°.02×107°.63E±0°.02,h2km±5km, mb5.1/120,MS5.0/156,Error ellipse: s-maj=4.0km s-min=3.1km az=29.2*

IDC ***13*** *21:43:19.1±0.3,9°.90S×107°.70E,h0km,mb4.8/39, mb1 4.9/41,mb1mx4.8/58,mbtmp4.8/41,ML4.8/2,MS4.3/32, Ms1 4.3/32,ms1mx4.2/42,Error ellipse: s-maj=14.5km s-min=9.4km az=51.0*

GCMT ***13*** *21:43:20.5±0.2,10°.09S×107°.70E,h17km,MW5.2/83, Moment Tensor Solution. s78,c122; s83,c162; Duration: 1s0 Moment tensor: Scale 10^17^Nm; Mrr-0.67±.02; Mθθ0.77±.01; Mφφ-0.09±.02; Mrθ0.35±.03; Mθφ-0.31±.01; Mφr-0.17±.04; Best double couple: M0 0.86600×10^17^ NP1:φs293.00000°,δ59.00000°, λ-84.00000°. NP2:φs101.00000°,δ32.00000°, λ-100.00000°. Principal axes: T 0.9620, Plg13.0000°, Azm18.0000°; N -0.1930, Plg5.0000°, Azm110.0000°; P -0.7690, Plg76.0000°, Azm220.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

NEIC ***13*** *21:43:20.5±0.1,9°.98S×107°.65E,h10km,mb5.3/53, MS5.2/97 Error ellipse: s-maj=3.9km s-min=3.0km az=209.0*

DJA ***13*** *21:43:21.7±0.2,10°S±2°×10°8E±°,h10km,M5.2/71, mB5.6/47,mb5.2/71,MLv5.7/28,Mw(mB)5.1/47*

MOS ***13*** *21:43:21.9±0.7,9°.94S×107°.65E,h33km,mb5.3/57, MS4.4/29,Error ellipse: s-maj=10.5km s-min=7.1km az=113.0*

KLM ***13*** *21:43:22.1,9°.87S×107°.76E,h10km,mb5.2,ML5.0,MS6.4*

ISC 13 21:43:22.6±0.4,10°.04S±0°.03×107°.63E±0°.04,h24km±2km, h24km:pP-P,n718,σ1°49/669,mb5.1/119,MS4.7/156, 21C-18D,South of Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
XMIS	**Christmas Isla**	**2.00**	**257**	*e*Pn	**Pn**	**21 43 53.0**	**-1.9**
CMJI	**Cimerak**	**2.38**	**20**	P	**Pn**	**21 43 57.8**	**-2.4**
CISI	**Cisompet, Garu**	**2.48**	**4**	P	**Pn**	**21 43 59.1**	**-2.5**
CISI	**Cisompet, Garu**	**2.48**	**4**	⇑*i*Pn	**Pn**	**21 43 59.3**	**-2.3**
CISI				*e*Sn	**Sn**	**21 44 30.6**	**-0.5**
CNJI	**Cibinong**	**2.76**	**350**	P	**Pn**	**21 44 03.2**	**-2.2**
LEM	**Lembang**	**3.19**	**360**	Pn	**Pb**	**21 44 16.1**	**-2.6**
	729nm,0.3s,baz=257,slow=1.3,SNR=328						
LEM				Sn	**Sb**	**21 44 56.9**	**-0.5**
	731nm,0.3s,baz=333,slow=20,SNR=20						
LEM				LR	LR	21 45 52.8	
	comp=Z,10μm,18.4s,baz=18,slow=50						
LEM	**Lembang**	**3.19**	**360**	P	**Pn**	**21 44 12.0**	**+0.5**
SKJI	**Sukabumi**	**3.20**	**341**	P	**Pn**	**21 44 09.4**	**-2.0**
UGM	**Wanagama**	**3.55**	**54**	P	**Pn**	**21 44 14.6**	**-1.8**
UGM	**Wanagama**	**3.55**	**54**	*e*Pn	**Pn**	**21 44 14.6**	**-1.8**
CGJI	**Cibinong**	**3.91**	**330**	P	**Pn**	**21 44 19.3**	**-1.9**
WOJI	**Wonogiri, Jawa**	**3.92**	**56**	P	**Pn**	**21 44 22.2**	**+0.8**
PCJI	**Pacitan**	**3.95**	**63**	P	**Pn**	**21 44 20.8**	**-1.0**
SBJI	**Serang**	**4.17**	**339**	P	**Pn**	**21 44 24.3**	**-0.5**
PWJI	**Pagerwojo**	**4.58**	**64**	P	**Pn**	**21 44 29.7**	**-0.8**
NGJI	**Ngawi**	**4.62**	**55**	P	**Pn**	**21 44 32.0**	**+0.9**
UWJI	**Ujung Watu**	**4.87**	**43**	P	**Pn**	**21 44 35.0**	**+0.5**
BLSI	**Bandar Lampung**	**5.21**	**333**	P	**Pn**	**21 44 38.3**	**-0.8**
	237nm,0.8s,6μm1.9nm						
TBJI	**Tambak Boyo**	**5.26**	**53**	P	**Pn**	**21 44 39.5**	**-0.3**
	409nm,0.8s,12μm3.4nm						
KASI	**Kota Agung**	**5.46**	**325**	P	**Pn**	**21 44 41.1**	**-1.4**
	226nm,0.6s,13μm4.9nm						
GMJI	**Gumukmas**	**6.00**	**73**	P	**Pn**	**21 44 49.2**	**-0.8**
	584nm,0.8s,8μm2.9nm						
LWLI	**Liwa**	**6.12**	**324**	P	**Pn**	**21 44 50.4**	**-1.3**
	464nm,0.7s,16μm5.2nm						
JAGI	**Jajag, Banyuwa**	**6.62**	**77**	P	**Pn**	**21 44 57.2**	**-1.4**
	785nm,0.8s,19μm7.1nm						
JAGI	**Jajag, Banyuwa**	**6.62**	**77**	*e*Pn	**Pn**	**21 44 57.2**	**-1.4**
ABJI	**Asem Bagus**	**6.89**	**72**	P	**Pn**	**21 45 03.2**	**+0.9**
	637nm,0.6s,8μm3.2nm						
TPI	**Tanjungpandan**	**7.24**	**0**	P	**Pn**	**21 45 07.5**	**+0.5**
	5.3nm,0.8s,966nm0.2nm						
MNAI	**Manna**	**7.30**	**320**	P	**Pn**	**21 45 06.5**	**-1.4**
MNAI	**Manna**	**7.30**	**320**	*e*Pn	**Pn**	**21 45 06.1**	**-1.8**
LHSI	**Lahat**	**7.40**	**326**	P	**Pn**	**21 45 08.5**	**-0.7**
DNP	**Denpasar**	**7.60**	**80**	P	**Pn**	**21 45 11.6**	**-0.4**
	1μm,0.7s,35μm13nm						
SRBI	**Singaraja**	**7.74**	**76**	P	**Pn**	**21 45 13.5**	**-0.3**
	386nm,0.7s,6μm3.6nm						
PPBI	**Pangkal Pinang**	**7.97**	**349**	P	**Pn**	**21 45 16.2**	**-0.8**
	93nm,1.4s,1μm1.0nm						
PBKI	**Pangkalan Bun**	**8.32**	**29**	P	**Pn**	**21 45 23.2**	**+1.3**
	606nm,1.4s,10μm2.1nm						
MASI	**Maura Aman, Be**	**8.70**	**322**	P	**Pn**	**21 45 25.6**	**-1.5**
	233nm,0.9s,6μm						
TWSI	**Taliwang, Sumb**	**9.22**	**83**	P	**Pn**	**21 45 33.0**	**-1.2**
	352nm,0.7s,4μm						
BBKI	**Banjar Baru**	**9.69**	**48**	P	**Pn**	**21 45 40.0**	**-0.7**
PLAI	**Plampang**	**10.08**	**84**	P	**Pn**	**21 45 43.8**	**-2.3**
PPSI	**Pulau Pagai**	**10.47**	**313**	P	**Pn**	**21 45 50.5**	**-0.8**
STKI	**Sintang**	**10.74**	**21**	P	**Pn**	**21 45 54.5**	**-0.6**
	101nm,1.3s,2μm						
COCO	**West Island**	**10.81**	**258**	*i*P	**Pn**	**21 45 57.9**	**+1.9**
COCO	**West Island**	**10.81**	**258**	*e*Pn	**Pn**	**21 45 56.1**	**+0.1**
COCO				*e*Sn	**Sn**	**21 47 51.0**	**-5.2**
TPRI	**Tanjung Pinang**	**11.32**	**344**	P	**Pn**	**21 46 01.9**	**-1.1**
	32nm,0.7s						
MTKI	**Muara Teweh, K**	**11.57**	**39**	P	**Pn**	**21 46 05.9**	**-0.6**
	120nm,1.6s,3μm						
KSM	**Kuching**	**11.74**	**13**	*e*Pn	**Pn**	**21 46 07.5**	**-1.3**
PPI	**Padang Panjang**	**11.93**	**322**	P	**Pn**	**21 46 09.9**	**-1.5**
	36nm,0.8s,1μm						
BKNI	**Bangkinang**	**12.21**	**327**	P	**Pn**	**21 46 14.5**	**-0.7**
BKNI	**Bangkinang**	**12.21**	**327**	*e*Pn	**Pn**	**21 46 14.8**	**-0.4**
MYKOM	**Kota Tinggi**	**12.34**	**342**	*e*Pn	**Pn**	**21 46 14.6**	**-2.4**
WSI	**Waingapu**	**12.49**	**89**	P	**Pn**	**21 46 18.9**	**-0.1**
KGM	**Kluang**	**12.72**	**340**	⇑P	**Pn**	**21 46 20.2**	**-2.0**
KAPI	**Kappang**	**13.01**	**68**	Pn	**Pn**	**21 46 25.0**	**-1.1**
	3.4nm,0.3s,baz=250,slow=9.3,SNR=19						
KAPI				LR	LR	21 52 08.8	
	comp=Z,1μm,20.7s,baz=265,slow=41						
KAPI	**Kappang**	**13.01**	**68**	*e*Pn	**Pn**	**21 46 26.2**	**+0.1**
SBUM	**Sibu**	**13.22**	**20**	*e*Pn	**Pn**	**21 46 28.5**	**-0.6**
BSSI	**Bau Bau, Buton**	**13.31**	**74**	P	**Pn**	**21 46 29.8**	**-0.4**
	174nm,0.8s,2μm						
MNSI	**Mandailing Nat**	**13.42**	**323**	P	**Pn**	**21 46 29.7**	**-2.0**
	80nm,0.8s,2μm						
SPSI	**Sidrap Palu**	**13.47**	**64**	P	**Pn**	**21 46 31.7**	**-0.7**
	47nm,1.0s,1μm						
TTSI	**Tana Toraja**	**13.96**	**61**	P	**Pn**	**21 46 39.3**	**+0.3**
	192nm,1.8s,3μm						
BTM	**Bintulu**	**14.23**	**23**	⇓P	**Pn**	**21 46 42.3**	**-0.5**
FRIM	**Kepong**	**14.48**	**335**	⇑P	**Pn**	**21 46 42.6**	**-3.6**
MMRI	**Maumere**	**14.48**	**86**	P	**Pn**	**21 46 44.3**	**-2.0**
	145nm,0.7s,3μm						
MMRI	**Maumere**	**14.48**	**86**	Pn	**Pn**	**21 46 45.7**	**-0.6**
GSI	**Gunungsitoli**	**15.07**	**318**	P	**Pn**	**21 46 52.2**	**-2.0**
	179nm,0.6s						
GSI	**Gunungsitoli**	**15.07**	**318**	*e*Pn	**Pn**	**21 46 49.8**	**-4.4**
	129nm,0.6s						
PCI	**Palu**	**15.15**	**54**	P	**Pn**	**21 46 54.7**	**-0.6**
	292nm,1.6s						
IPM	**Ipoh**	**15.85**	**335**	⇑P	**Pn**	**21 47 00.6**	**-3.9**
KTGM	**Kuala Trenggan**	**15.91**	**343**	⇓P	**Pn**	**21 47 02.5**	**-2.6**
KDI	**Kendari**	**16.05**	**69**	P	**Pn**	**21 47 07.5**	**+0.5**
	43nm,1.2s,810nm						
MBWA	**Marble Bar**	**16.05**	**135**	*e*Pn	**Pn**	**21 47 03.3**	**-3.6**
	265nm,0.6s						
TSI	**Tuntungan**	**16.20**	**326**	P	**Pn**	**21 47 08.4**	**-0.5**
	87nm,1.1s						
SOEI	**Soe**	**16.39**	**90**	P	**Pn**	**21 47 09.6**	**-1.9**
	263nm,1.0s,2μm						
SOEI	**Soe**	**16.39**	**90**	*e*Pn	**Pn**	**21 47 09.8**	**-1.7**
	204nm,0.9s						
KULM	**Kulim**	**16.74**	**335**	⇑P	**Pn**	**21 47 11.7**	**-4.0**
LUWI	**Luwuk**	**17.51**	**60**	P	**Pn**	**21 47 25.6**	**+0.2**
	161nm,1.3s,2μm						
LUWI	**Luwuk**	**17.51**	**60**	*e*Pn	**Pn**	**21 47 24.9**	**-0.5**
	98nm,0.8s						
TSM	**Tawau**	**17.52**	**36**	⇓P	**Pn**	**21 47 24.7**	**-0.8**
MRSI	**Marisa**	**17.66**	**55**	P	**Pn**	**21 47 26.1**	**-1.1**
	176nm,0.8s,3μm						
MLSI	**Meulaboh, Aceh**	**18.08**	**321**	P	**Pn**	**21 47 32.5**	**+0.1**
	231nm,1.2s,3μm						
KKM	**Kota Kinabalu**	**18.12**	**29**	⇑P	**Pn**	**21 47 30.5**	**-2.5**
KKM	**Kota Kinabalu**	**18.12**	**29**	*e*Pn	**Pn**	**21 47 29.9**	**-3.1**
	104nm,1.3s						
SDKM	**Sandakan**	**18.26**	**32**	⇓P	**Pn**	**21 47 33.0**	**-1.7**
SKLT	**Songkhla**	**18.47**	**338**	P	**Pn**	**21 47 37.8**	**+0.7**
	37nm,0.9s,435nm						
LHMI	**Lhok Sumawe**	**18.53**	**324**	P	**P**	**21 47 36.4**	**-1.2**
LHMI	**Lhok Sumawe**	**18.53**	**324**	*e*P	**P**	**21 47 36.5**	**-1.1**
	174nm,0.9s						
MYLDM	**Lahad Datu**	**18.60**	**36**	⇑P	**Pn**	**21 47 39.6**	**+0.9**
MYLDM	**Lahad Datu**	**18.60**	**36**	*e*P	**Pn**	**21 47 38.8**	**+0.1**
	897nm,1.9s						
KDM	**Kudat**	**19.18**	**29**	⇓P	**P**	**21 47 43.9**	**-0.8**
FITZ	**Fitzroy Crossi**	**19.21**	**117**	Pn	**P**	**21 47 44.7**	**-0.3**
	2.5nm,0.3s,baz=294,slow=8.3,SNR=45						
FITZ				LR	LR	21 54 36.2	
	comp=Z,1μm,19.1s,baz=300,slow=35						
FITZ	**Fitzroy Crossi**	**19.21**	**117**	P	**Pn**	**21 47 46.2**	**+0.1**
	baz=19,SNR=45						
FITZ	**Fitzroy Crossi**	**19.21**	**117**	*e*P	**Pn**	**21 47 45.8**	**-0.2**
	36nm,0.8s						
TRTT	**Trang**	**19.44**	**336**	P	**P**	**21 47 47.7**	**+0.1**
	58nm,1.1s,727nm						
SANI	**Sanana**	**19.89**	**68**	P	**Pn**	**21 47 53.5**	**-0.8**
	79nm,0.8s,857nm						
PKDT	**Phuket**	**20.07**	**332**	P	Pn	21 47 58.8	+2.4
	127nm,0.8s,1μm						
NLAI	**Namlea**	**20.47**	**72**	P	**P**	**21 47 59.5**	**+0.6**
	232nm,0.7s,2μm						
MORW	**Morawa**	**20.51**	**159**	P	Pn	21 48 00.8	-0.6
	baz=21,SNR=6.8						
SURT	**Suratani**	**20.82**	**335**	P	**P**	**21 48 03.0**	**+0.4**
	52nm,1.0s,411nm						
BLDU	**Ballidu**	**22.15**	**159**	P	**P**	**21 48 19.3**	**+2.5**
	baz=22,SNR=5.4						
IPIL	**Ipil**	**23.13**	**41**	*e*P	**P**	**21 48 24.5**	**-2.7**
MTN	**Manton Dam**	**23.20**	**99**	P	**P**	**21 48 26.5**	**

baz=25,SNR=6.6
NWAO Narrogin (SRO) 24.44 160 P P 21 48 40.0 +0.4
NWAO pmax pmax
comp=Z,12nm,0.7s
NWAO MLR MLR
comp=Z,1μm,18.8s
NWAO Narrogin (SRO) 24.44 160 *e*P **P 21 48 40.0 +0.4**
comp=Z,52nm,0.6s
KDU Kakadu 24.49 99 P **P 21 48 40.1 -0.2**
baz=24,SNR=5.1
CUYO Cuyo Island 24.66 33 *e*P **P 21 48 40.3 -1.4**
WRKA Warakurna 24.66 130 P **P 21 48 41.6 -0.1**
baz=25,SNR=16
DAV Davao City (W) 24.67 47 LR LR 21 58 56.8
comp=Z,716nm,21.0s,baz=209,slow=38
BUKP Musuan 24.86 45 *e*P **P 21 48 42.7 -1.0**
MATI Mati 25.08 48 *e*P **P 21 48 44.0 -1.5**
SWI Sorong 25.20 70 P **P 21 48 46.2 -0.5**
comp=Z,61nm,0.9s,comp=Z,876nm
BUSP Coron 25.21 30 *e*P **P 21 48 45.1 -1.6**
GUIM Jordan 25.35 36 *e*P **P 21 48 47.1 -1.0**
H01W3 Cape Leeuwin H 25.43 167 T T 22 16 04.3
baz=341,slow=76,SNR=5.6
H01W1 Cape Leeuwin H 25.45 167 T T 22 16 05.2
baz=341,slow=76,SNR=5.9
FAKI Fak Fak 25.45 76 P **P 21 48 47.0 -2.0**
FAKI Fak Fak 25.45 76 *e*P **P 21 48 47.6 -1.4**
comp=Z,239nm,1.6s
H01W2 Cape Leeuwin H 25.45 167 T T 22 16 03.5
baz=341,slow=76,SNR=6.7
SRDT SRDT 25.66 341 P **P 21 48 53.6 +2.8**
comp=Z,131nm,1.2s,comp=Z,3μm
SJMP San Jose 26.06 31 *e*P **P 21 48 54.4 -0.1**
OTRP Odiongan 26.45 33 *e*P **P 21 48 56.2 -1.8**
KHON Khomkaen 26.64 350 P **P 21 49 00.8 +1.2**
comp=Z,16nm,0.7s
OCLP Ormoc 26.91 39 *e*P **P 21 48 57.6 -4.5**
PBKT Sadao Pong 27.25 346 P **P 21 49 07.2 +2.1**
comp=Z,45nm,0.8s,comp=Z,846nm
WRA Warramunga Arr 27.57 114 P **P 21 49 07.5 -0.7**
comp=Z,20nm,0.6s,baz=285,slow=11,SNR=74
WRAB Tennant Creek 27.58 114*c i*P **P 21 49 08.2 0.0**
WRAB pmax pmax
comp=Z,87nm,1.1s
WRAB Tennant Creek 27.58 114 *e*P **P 21 49 08.2 0.0**
comp=Z,40nm,0.9s
WRAB LR LR
comp=Z,1μm,20.0s
WB2 Warramunga Arr 27.59 114 *e*P **P 21 49 07.8 -0.5**
comp=Z,49nm,1.3s
BESP Borongan 27.85 40 *e*P **P 21 49 10.5 0.0**
SUKH Sukhothai 28.46 344 P **P 21 49 18.0 +2.0**
comp=Z,8.7nm,0.8s,comp=Z,71nm
ASAR Alice Springs 28.49 122 P **P 21 49 15.8 -0.6**
comp=Z,19nm,0.7s,baz=299,slow=8.0,SNR=35
ASAR PcP **PcP 21 52 28.4 +0.4**
comp=Z,6.0nm,0.8s,baz=288,slow=1.4,SNR=6.6
ASAR LR LR 22 01 08.5
comp=Z,1μm,19.6s,baz=290,slow=38
ASAR Alice Springs 28.49 122 P **P 21 49 15.8 -0.6**
ASAR 21 52 28.4
ASAR pmax pmax
comp=Z,3.0nm,0.6s
ASAR MLR MLR
comp=Z,1μm,19.6s
AS31 Alice Springs 28.50 122 *e*P **P 21 49 16.6 +0.2**
comp=Z,9.3nm,0.6s
AS01 Alice Springs 28.53 122 *e*P **P 21 49 15.5 -1.2**
QIZ Qiongzhong 28.97 4 P **P 21 49 21.8 +1.3**
QIZ S **S 21 54 14.1 +3.9**
QIZ LR LR
comp=Z,770nm,14.7s
QIZ LR LR
comp=Z,270nm,16.2s
QIZ Qiongzhong 28.97 4 SS **S 21 54 14.6 +4.4**
BALP Baler 29.10 29 *e*P **P 21 49 19.1 -2.6**
LAMP Lampang 29.46 344 P **P 21 49 28.8 +4.0**
comp=Z,15nm,0.8s
CM01 Chiang Mai Arr 29.55 343 *e*P **P 21 49 25.8 +0.2**
CM31 Chiang Mai Arr 29.59 343 *e*P **P 21 49 25.9 -0.1**
CMAR Chiang Mai Arr 29.59 343 P **P 21 49 25.2 -0.7**
comp=Z,5.3nm,0.9s,baz=177,slow=7.9,SNR=12
CMAR PcP **PcP 21 52 31.8 +1.0**
comp=Z,4.6nm,1.0s,baz=205,slow=3.9,SNR=4.9
CMAR LR LR 22 03 56.4
comp=Z,894nm,18.1s,baz=162,slow=42
CHTO Chiang Mai 29.92 343 P **P 21 49 32.3 +3.3**
comp=Z,63nm,1.1s,comp=Z,1μm
CHTO Chiang Mai 29.92 343 *e*P **P 21 49 28.9 -0.1**
CHTO *e* 21 52 33.2
CHTO pmax pmax
comp=Z,18nm,0.9s
CHTO MLR MLR
comp=Z,905nm,20.0s
CHTO Chiang Mai 29.92 343 *e*P **P 21 49 28.9 -0.1**
comp=Z,18nm,0.9s
CHTO *e*PcP **PcP 21 52 33.2 +1.6**
CHTO LR LR
comp=Z,905nm,20.0s
ABRA Dolores 30.40 25 *e*P **P 21 49 30.4 -2.7**
APYP Conner 30.81 26 *e*P **P 21 49 33.2 -3.6**
PALK Pallekele 31.86 302 P **P 21 49 46.9 +0.7**
comp=Z,7.2nm,0.9s,baz=115,slow=7.7,SNR=4.7
PALK Pallekele 31.86 302 *e*P **P 21 49 46.4 +0.2**
PALK pmax pmax
comp=Z,47nm,1.4s
PALK Pallekele 31.86 302 *e*P **P 21 49 46.4 +0.2**
comp=Z,47nm,1.4s
QIS Mount Isa 32.50 113 P **P 21 49 52.8 +1.0**
baz=32,SNR=5.1
JAY Jayapura 33.69 79 P **P 21 50 01.4 -0.9**
comp=Z,14nm,1.1s
H08S2 Diego Garcia H 34.79 271 T T 22 27 37.4
baz=94,slow=73,SNR=9.8
H08S3 Diego Garcia H 34.80 271 T T 22 27 31.7
baz=94,slow=73,SNR=10
H08S1 Diego Carcia H 34.81 271 T T 22 27 32.1
baz=94,slow=73,SNR=12
DGAR Diego Garcia 34.86 271 *e*P **P 21 50 11.7 -0.6**
DGAR pmax pmax
comp=Z,470nm,1.6s
DGAR Diego Garcia 34.86 271 *e*P **P 21 50 11.7 -0.6**
comp=Z,470nm,1.6s
COEN Coen 34.96 100 P **P 21 50 13.7 +0.5**
baz=35,SNR=9.9
COEN Coen 34.96 100 *e*P **P 21 50 13.5 +0.2**
comp=Z,74nm,1.2s
TWG Pinlang 35.21 22 *e*P **P 21 50 14.8 -0.4**
comp=Z,100nm,0.8s
KMI Kunming 35.27 352 P **P 21 50 17.3 +1.3**
KMI pP sP 21 50 26.8 +0.6
KMI sP pP 21 50 30.1 +6.9
KMI PP **PP 21 51 39.4 +3.1**
KMI S **S 21 55 50.0 +1.2**
KMI pmax pmax
comp=Z,42nm,1.5s
KMI pmax pmax
comp=Z,230nm,4.9s
KMI LR LR
comp=Z,800nm,20.0s
KMI LR LR
comp=Z,2μm,19.0s
KMI LR LR
comp=Z,1μm,14.1s
TPUB Ta-pu 35.49 21 *e*P **P 21 50 16.8 -0.9**
comp=Z,117nm,1.6s
YULB Yu-li 35.82 22 *e*P **P 21 50 19.8 -0.6**
comp=Z,22nm,0.7s
SSLB Suanglung 36.05 21 *e*P **P 21 50 22.1 -0.4**
comp=Z,42nm,0.8s
GYA Guiyang 36.29 359 P **P 21 50 27.0 +2.4**
GYA S **S 21 56 08.0 +3.9**
GYA ScP **ScP 21 56 37.3 +2.8**
GYA SS **SnSn 21 58 33.3 +1.2**
GYA ScS **ScS 22 00 42.6 +1.9**
GYA pmax pmax
comp=Z,40nm,1.0s
GYA pmax pmax
comp=Z,140nm,6.2s
GYA LR LR
comp=Z,730nm,17.8s
GYA LR LR
comp=Z,680nm,17.6s
GYA LR LR
comp=Z,660nm,18.0s
GYA Guiyang 36.29 359 S **P 21 50 27.4 +2.8**

QZH Quanzhou 36.38 17 P **P 21 50 25.8 +0.7**
QZH LR LR
comp=Z,2μm,17.4s
QZH LR LR
comp=Z,1μm,17.8s
QZH LR LR
comp=Z,1μm,18.5s
MTSU Mount Surprise 36.42 107 P **P 21 50 27.2 +1.4**
baz=36,SNR=8.1
NACB Ninganchiao 36.64 22 *e*P **P 21 50 27.6 +0.1**
comp=Z,31nm,1.0s
HTT Hallett 36.99 134 P **P 21 50 31.0 +0.5**
baz=37,SNR=5.3
YHNB Yeheng 37.01 21 *e*P **P 21 50 30.4 -0.4**
comp=Z,43nm,1.0s
YHNB LR LR
comp=Z,584nm,22.0s
TATO Taipei 37.33 21 *e*P **P 21 50 32.7 -0.6**
comp=Z,381nm,1.8s
TATO LR LR
comp=Z,488nm,21.0s
YOJ Yonaguni jima 37.43 23 *e*P **P 21 50 33.8 -0.4**
YOJ pmax pmax
comp=Z,96nm,0.9s
YOJ Yonaguni jima 37.43 23 *e*P **P 21 50 33.8 -0.4**
comp=Z,96nm,0.9s
STKA Stephens Creek 38.19 130 P **P 21 50 41.0 +0.4**
comp=Z,32nm,0.6s,baz=300,slow=8.2,SNR=93
STKA LR LR 22 07 45.4
comp=Z,1μm,18.8s,baz=290,slow=38
STKA Stephens Creek 38.19 130 P **P 21 50 41.0 +0.4**
baz=38,SNR=51
STKA Stephens Creek 38.19 130 *e*P **P 21 50 41.0 +0.4**
comp=Z,14nm,0.8s
QLP Quilpie 38.27 120 P **P 21 50 42.3 +1.0**
baz=38,SNR=8.9
CTA Charters Tower 38.52 110 P **P 21 50 44.5 +0.9**
comp=Z,8.0nm,0.7s,baz=275,slow=11,SNR=9.0
CTAO Charters Tower 38.52 110 *e*P **P 21 50 43.4 -0.2**
CTAO MLR MLR
comp=Z,2μm,20.0s
CTAO Charters Tower 38.52 110 *e*P **P 21 50 43.4 -0.2**
CTAO *e*pP **pP 21 50 44.8 -6.1**
CTAO LR LR
comp=Z,2μm,20.0s
SHL Shillong 38.57 337 *e*P P 21 50 50.0 +6.0
SHL *e*S **S 21 56 40.0 +1.0**
PMG Port Moresby 38.95 93 P **P 21 50 48.2 +1.0**
comp=Z,25nm,0.8s,baz=107,slow=20,SNR=4.2
PMG Port Moresby 38.95 93 *e*P **P 21 50 47.2 0.0**
PMG pmax pmax
comp=Z,112nm,1.4s
PMG MLR MLR
comp=Z,542nm,22.0s
PMG Port Moresby 38.95 93 *e*P **P 21 50 47.2 0.0**
comp=Z,112nm,1.4s
PMG LR LR
comp=Z,542nm,22.0s
ENH Enshi 40.12 2 *e*P **P 21 50 56.4 -0.3**
comp=Z,8.3nm,0.5s
ENH LR LR
comp=Z,400nm,21.0s
MANU Manus Island 40.27 81 *e*P **P 21 50 58.2 0.0**
comp=Z,33nm,1.1s
WHN Wuhan 40.86 9 P **P 21 51 03.8 +1.1**
WHN sP **sP 21 51 15.8 +2.8**
WHN S **S 21 57 15.1 +2.3**
WHN LR LR
comp=Z,2μm,14.2s
CD2 Chengdu 40.88 355 P **P 21 51 03.3 +0.3**
CD2 sP pP 21 51 08.8 -1.5
CD2 PP **PP 21 52 38.0 +0.4**
CD2 S **S 21 57 11.5 -1.7**
CD2 SS **SnSn 22 00 20.1 -2.7**
CD2 pmax pmax
comp=Z,60nm,1.3s
CD2 pmax pmax
comp=Z,370nm,10.3s
CD2 LR LR
comp=Z,1μm,14.4s
CD2 LR LR
comp=Z,1μm,15.6s
CMSA Cobar Meteorol 41.21 127 P **P 21 51 06.0 +0.3**
baz=41,SNR=10
JOW Kunigami 41.77 28 *e*P **P 21 51 10.1 -0.2**
comp=Z,59nm,1.1s
LSA Lhasa 42.58 339 *e*P **P 21 51 17.6 +0.2**
LSA pmax pmax
comp=Z,74nm,0.7s
LSA MLR MLR
comp=Z,354nm,20.0s
LSA Lhasa 42.58 339 *e*P **P 21 51 17.6 +0.2**
comp=Z,74nm,0.7s
LSA LR LR
comp=Z,354nm,20.0s
NJ2 Nanjing 43.21 14 *e*P **P 21 51 22.3 +0.4**
NJ2 S **S 21 57 45.9 -1.5**
NJ2 pmax pmax
comp=Z,42nm,1.1s
NJ2 pmax pmax
comp=Z,200nm,4.1s
NJ2 LR LR
comp=Z,440nm,15.7s
NJ2 LR LR
comp=Z,490nm,13.0s
NJ2 LR LR
comp=Z,490nm,12.5s
XAN Xi'an 43.85 2 P **P 21 51 26.5 -0.6**
XAN sP pP 21 51 32.8 -1.7
XAN PP **PP 21 53 08.5 -1.1**
XAN pmax pmax
comp=Z,38nm,0.8s
XAN pmax pmax
comp=Z,220nm,7.3s
XAN LR LR
comp=Z,940nm,22.7s
XAN LR LR
comp=Z,1μm,18.0s
CAN Canberra 45.24 130 PFAKE 21 51 50.0 +12
CAN LR LR
comp=Z,1μm,19.0s
LZH Lanzhou 46.02 356 ||P **P 21 51 45.3 +0.8**
LZH PP **PP 21 53 34.0 +1.3**
LZH S **S 21 58 28.0 -0.5**
LZH pmax pmax
comp=Z,54nm,1.0s
LZH pmax pmax
comp=Z,210nm,5.6s
LZH LR LR
comp=Z,800nm,13.5s
LZH LR LR
comp=Z,830nm,14.0s
LZH LR LR
comp=Z,980nm,17.2s
GTA Gaotai 49.73 352 *e*P **P 21 52 16.4 +3.2**
GTA pP pP 21 52 20.9 +0.3
GTA sP sP 21 52 23.8 +0.3
GTA S **S 21 59 27.0 +6.0**
GTA sS sS 21 59 34.1 +0.9
GTA SS **SS 22 02 58.3 +4.4**
GTA pmax pmax
comp=Z,24nm,1.5s
GTA pmax pmax
comp=Z,250nm,5.2s
GTA LR LR
comp=Z,590nm,18.8s
GTA LR LR
comp=Z,2μm,20.9s
GTA LR LR
comp=Z,700nm,19.2s
CBIJ Chichi jima 49.86 41 *e*P **P 21 52 13.8 -0.5**
comp=Z,200nm,0.7s
BJT Baijiatuau 50.43 9 *e*P **P 21 52 17.8 -0.5**
BJT pmax pmax
comp=Z,27nm,0.8s
BJT MLR MLR
comp=Z,437nm,21.0s
BJT Baijiatuau 50.43 9 *e*P **P 21 52 17.8 -0.5**
comp=Z,27nm,0.8s
BJT LR LR
comp=Z,437nm,21.0s
BJI Beijing 50.45 9 P **P 21 52 19.4 +1.0**
BJI S **S 21 59 35.0 +4.3**
BJI SS **SS 22 03 10.8 +5.7**
BJI pmax pmax
comp=Z,33nm,0.8s
BJI pmax pmax
comp=Z,230nm,4.3s
BJI LR LR
comp=Z,290nm,23.8s
BJI LR LR
comp=Z,400nm,20.2s
BJI LR LR
comp=Z,540nm,35.2s
INCN Inchon 50.52 20 PFAKE 21 52 30.0 +11
INCN LR LR
comp=Z,187nm,20.0s
HHC Hu-ho-hao-te 50.76 4 *e*P **P 21 52 22.8 +1.9**
HHC PP **PP 21 54 19.0 +1.6**
HHC S **S 21 59 38.3 +3.0**
HHC sS sS 21 59 45.8 -1.8
HHC SS **SS 22 03 12.3 +2.0**
HHC pmax pmax
comp=Z,33nm,1.2s
HHC pmax pmax
comp=Z,250nm,6.7s
HHC LR LR
comp=Z,400nm,16.9s
HHC LR LR
comp=Z,280nm,16.4s
HHC LR LR
comp=Z,430nm,16.9s
KSRS Korea Array 50.93 21 LR LR 22 14 55.7
comp=Z,132nm,21.7s,baz=225,slow=37
KS01 Wonju Array Si 50.94 21 *e*P **P 21 52 22.0 -0.2**
MAJO Matsushiro 54.54 30 PFAKE 21 53 00.0 +11
MAJO LR LR
comp=Z,249nm,21.0s
MJAR Matsushiro Arr 54.54 30 LR LR 22 16 14.6
comp=Z,117nm,21.1s,baz=215,slow=36
CN2 Changchun 55.98 16 *e*P **P 21 52 57.3 -1.8**
CN2 pmax pmax
comp=Z,20nm,1.3s
CN2 pmax pmax
comp=Z,200nm,3.0s
CN2 LR LR
comp=Z,300nm,15.0s
CN2 LR LR
comp=Z,300nm,15.0s
CN2 LR LR
comp=Z,300nm,17.0s
CASY Casey 56.20 179 PFAKE 21 53 10.0 +10
CASY LR LR
comp=Z,128nm,19.0s
WMQ Urumqi 56.59 343 P **P 21 53 03.8 +0.3**
WMQ pP pP 21 53 07.0 -4.1
WMQ sP sP 21 53 14.3 +0.4
WMQ PcP **PcP 21 54 00.4 +0.6**
WMQ S **S 22 00 53.3 -0.8**
WMQ SS **SS 22 04 47.3 +5.2**
WMQ pmax pmax
comp=Z,17nm,1.2s
WMQ pmax pmax
comp=Z,120nm,5.4s
WMQ LR LR
comp=Z,230nm,19.2s
WMQ LR LR
comp=Z,180nm,14.4s
WMQ LR LR
comp=Z,130nm,24.0s
MSHR Mys Shultsa 56.62 21 *e*P **P 21 53 03.6 0.0**
VLA Vladivostok 57.35 21 *e*P **P 21 53 08.8 0.0**
VLA pmax pmax
comp=Z,13nm,1.0s
KSH Kashi 57.40 331 P **P 21 53 07.8 -1.7**
KSH *e*pP pP 21 53 12.4 -4.6
KSH *e*sP sP 21 53 14.4 -5.5
KSH *e*PP **PP 21 55 14.8 -2.4**
KSH PcS **PcS 21 58 02.0 -2.4**
KSH S **S 22 00 58.1 -7.0**
KSH ScS **ScS 22 02 53.6 -4.1**
KSH pmax pmax
comp=Z,9.0nm,0.8s
KSH pmax pmax
comp=Z,110nm,4.8s
KSH LR LR
comp=Z,380nm,16.0s
KSH LR LR
comp=Z,110nm,5.8s
KSH LR LR
comp=Z,230nm,11.6s
KBL Kabul 57.47 322 *e*P **P 21 53 09.0 -1.1**
KBL pmax pmax
comp=Z,36nm,1.4s
KBL Kabul 57.47 322 *e*P **P 21 53 09.0 -1.1**
comp=Z,36nm,1.4s
SONM Songino Array 57.63 359 P **P 21 53 10.8 -0.1**
comp=Z,9.7nm,0.5s,baz=174,slow=7.9,SNR=61
SONM LR LR 22 19 52.6
comp=Z,371nm,19.2s,baz=171,slow=38
SONA1 Songino Array 57.64 359 *e*P **P 21 53 10.8 -0.2**
ULN Ulaanbaatar 57.65 360 *e*P **P 21 53 10.9 -0.2**
ULN pmax pmax
comp=Z,26nm,0.8s
ULN MLR MLR
comp=Z,540nm,22.0s
ULN Ulaanbaatar 57.65 360 *e*P **P 21 53 10.9 -0.2**
comp=Z,26nm,0.8s
ULN LR LR
comp=Z,540nm,22.0s
MDJ Mudanjiang 57.92 18 P **P 21 53 14.1 +1.3**
MDJ pP pP 21 53 17.3 -3.1
MDJ ScP **ScP 21 58 05.8 +2.1**
MDJ PcS **PcS 21 58 07.3 +1.2**
MDJ S **S 22 01 15.8 +4.4**
MDJ pmax pmax
comp=Z,12nm,1.6s
MDJ pmax pmax
comp=Z,160nm,4.6s
MDJ LR LR
comp=Z,86nm,24.9s
MDJ LR LR
comp=Z,100nm,25.2s
MDJ LR LR
comp=Z,120nm,26.5s
MDJ Mudanjiang 57.92 18 PFAKE 21 53 20.0 +7.2
MDJ LR LR
comp=Z,242nm,21.0s
WSAR Wadi Sarin 58.24 305 P **P 21 53 15.8 +0.3**
comp=Z,7.1nm,0.6s,baz=142,slow=6.8,SNR=10
USRK Ussuriysk Ar. 58.33 20 P **P 21 53 14.2 -1.5**
comp=Z,3.2nm,0.4s,baz=178,slow=6.6,SNR=6.3
USRK LR LR 22 20 56.0
comp=Z,184nm,18.2s,baz=213,slow=39
OPO Ambohidratompo 58.96 254 P **P 21 53 22.6 +1.8**
comp=Z,13nm,1.0s,baz=90,slow=7.3,SNR=6.2
HIA Hailar 60.00 9 PFAKE 21 53 40.0 +13
HIA LR LR
comp=Z,341nm,19.0s
TKM2 Tokmak 2 60.28 333 *e*P **P 21 53 28.6 -0.9**
TKM2 pmax pmax
comp=Z,21nm,0.7s
TKM2 MLR MLR
comp=Z,504nm,20.0s
TKM2 Tokmak 2 60.28 333 *e*P **P 21 53 28.6 -0.9**
comp=Z,21nm,0.7s
TKM2 LR LR
comp=Z,504nm,20.0s
ZAK Zakamensk 60.29 357 *e*P **P 21 53 28.0 -1.2**
ZAK *e* 21 55 37.2
ZAK pmax pmax
comp=Z,17nm,1.4s
ZAK pmax pmax
comp=Z,6.0nm,1.5s
AAK Ala-Archa 60.55 332 P **P 21 53 31.2 -0.1**
comp=Z,2.5nm,0.8s,baz=70,slow=5.4,SNR=4.1
AAK PcP **PcP 21 54 16.8 +1.2**
comp=Z,5.8nm,0.6s,baz=109,slow=3.4,SNR=6.7
AAK Ala-Archa 60.55 332 *e*P **P 21 53 30.2 -1.1**
AAK pmax pmax
comp=Z,15nm,1.2s
AAK Ala-Archa 60.55 332 *e*P **P 21 53 32.0 +0.7**
comp=Z,8.7nm,0.8s
AAK PcP **PcP 21 54 16.8 +1.2**
AAK LR LR
comp=Z,497nm,20.0s
FRU Bishkek 60.65 333 *e*P **P 21 53 35.5 +3.7**
EKS2 Erkin-Say 60.90 332 *e*P **P 21 53 33.7 +0.1**
EKS2 pmax pmax
comp=Z,10.0nm,0.7s
EKS2 MLR MLR
comp=Z,260nm,19.0s

EKS2	**Erkin-Say**	60.90	332	*e*P		**P**	**21 53 33.7 +0.1**
	comp=Z,10nm,0.7s						
EKS2				LR		LR	
	comp=Z,260nm,19.0s						
MK01	**Makanchi Array**	60.91	340	*e*P		**P**	**21 53 32.9 -0.7**
MK31	**Makanchi Array**	60.94	340	*e*P		**P**	**21 53 33.1 -0.6**
MK31	**Makanchi Array**	60.94	340	*e*P		**P**	**21 53 33.1 -0.6**
MKAR	**Makanchi Array**	60.94	340	P		**P**	**21 53 33.1 -0.6**
	comp=Z,15nm,0.4s,baz=145,slow=8.7,SNR=33						
MKAR				LR		LR	22 24 15.0
	comp=Z,366nm,18.8s,baz=145,slow=40						
ASHO	**Ashiyiah**	60.99	305	*i* P		**P**	**21 53 34.4 -0.1**
	SNR=9.1						
UOSS	**Minazif**	61.00	306	*e*P		**P**	**21 53 33.4 -1.1**
	comp=Z,2.2nm,1.3s						
HATD	**Hatta, Dubai**	61.00	306	*i* P		**P**	**21 53 34.5 0.0**
	SNR=9.5						
MAKZ	**Makanchi**	61.06	340	*e*P		**P**	**21 53 34.9 +0.4**
MAKZ				pmax		pmax	
	comp=Z,12nm,0.9s						
MAKZ	**Makanchi**	61.06	340	*e*P		**P**	**21 53 34.9 +0.4**
	comp=Z,12nm,0.9s						
ERM	**Erimo**	61.20	30	PFAKE			21 53 50.0 +15
ERM				LR		LR	
	comp=Z,620nm,21.0s						
BANOM	**Banah**	61.39	307	P		**P**	**21 53 36.0 -1.2**
FAQ	**Al Faqa, Dubai**	61.40	305	*i* P		**P**	**21 53 36.9 -0.3**
	SNR=12						
NAZ	**Nazwa, Dubai**	61.45	306	*i* P		**P**	**21 53 37.3 -0.3**
	SNR=5.1						
TLY	**Talaya**	61.56	357	LR		LR	22 22 55.0
	comp=Z,223nm,18.3s,baz=162,slow=39						
TLY	**Talaya**	61.56	357	*e*P		**P**	**21 53 38.1 +0.3**
TLY				pmax		pmax	
	comp=Z,29nm,1.5s						
TLY	**Talaya**	61.56	357	*e*P		**P**	**21 53 38.1 +0.3**
	comp=Z,29nm,1.5s						
MOY	**Mondy**	61.72	355	*e*P		P	21 53 52.0 +13
IRK	**Irkutsk**	62.10	358	*e*P		P	21 53 46.2 +4.8
IRK				*e*			21 55 57.3
IRK				pmax		pmax	
	comp=Z,50nm,1.4s						
KLR	**Kul'dur**	62.71	18	P		**P**	**21 53 44.2 -1.3**
	comp=Z,11nm,0.7s,baz=233,slow=5.2,SNR=9.1						
HABR	**Khabarovsk**	63.10	20	*e*P		**P**	**21 53 45.8 -2.3**
HABR				*e**PP		**pP**	**21 53 55.9 +0.2**
HABR				*e**SP		**sP**	**21 54 00.0 +1.5**
HABR				*e*			21 56 04.5
HABR				*e*S		**S**	**22 02 14.5 -3.0**
HABR				*e**SS		**sS**	**22 02 31.6 +1.5**
HABR				*e*			22 03 35.4
HABR				*e*SS		**SS**	**22 06 21.4 -2.5**
HABR				pmax		pmax	
	comp=Z,95nm,2.3s						
HABR				MLR		MLR	
	comp=Z,125nm,20.0s						
MAW	**Mawson**	64.66	197	P		**P**	**21 53 59.0 +0.9**
	comp=Z,5.4nm,0.7s,baz=70,slow=7.2,SNR=13						
MAW				LR		LR	22 20 20.7
	comp=Z,189nm,18.0s,baz=60,slow=34						
MAW	**Mawson**	64.66	197	P		**P**	**21 53 59.5 +1.3**
	baz=65,SNR=6.9						
MAW	**Mawson**	64.66	197	*e*P		**P**	**21 53 59.5 +1.3**
	comp=Z,7.2nm,1.4s						
YSS	**Yuzh-Sakhalins**	64.81	26	*e*P		**P**	**21 54 00.0 +0.6**
KURBB	**Kurchatov Arra**	65.50	340	P		**P**	**21 54 03.5 -0.3**
	comp=Z,3.0nm,0.5s,baz=152,slow=5.8,SNR=24						
KURK	**Kurchatov**	65.55	340	*e*P		**P**	**21 54 03.8 -0.3**
KURK				pmax		pmax	
	comp=Z,20nm,0.9s						
KURK				MLR		MLR	
	comp=Z,825nm,19.0s						
KURK	**Kurchatov**	65.55	340	*e*P		**P**	**21 54 03.8 -0.3**
	comp=Z,20nm,0.9s						
KURK				LR		LR	
	comp=Z,825nm,19.0s						
GEYT	**Alibeck**	66.44	319	P		**P**	**21 54 10.0 -0.2**
	comp=Z,8.5nm,0.9s,baz=145,slow=5.4,SNR=23						
GEYT				LR		LR	22 25 20.4
	comp=Z,308nm,19.5s,baz=105,slow=38						
ZALV	**Zalesovo Beam**	66.61	346	P		**P**	**21 54 09.5 -1.3**
	comp=Z,2.7nm,0.4s,baz=164,slow=4.9,SNR=10						
ZALV				LR		LR	22 26 18.2
	comp=Z,281nm,18.8s,baz=70,slow=39						
ZALV	**Zalesovo Beam**	66.61	346	*i* P		**P**	**21 54 12.3 +1.4**
ZALV				pmax		pmax	
	comp=Z,3.0nm,0.4s						
DAMY	**Dhamar**	67.29	290	*e*P		**P**	**21 54 18.1 +1.7**
	comp=Z,70nm,1.1s						
BKZ	**Black Stump Fm**	67.35	128	*e*P		**P**	**21 54 16.8 +0.7**
	comp=Z,95nm,1.4s						
BOD	**Bodaibo**	67.82	4	*e*P		**P**	**21 54 17.2 -1.3**
BOD				pmax		pmax	
	comp=Z,32nm,1.5s						
CLNS	**Chul'man**	68.15	10	*e*P		**P**	**21 54 20.3 -0.3**
CLNS				pmax		pmax	
	comp=Z,29nm,1.0s						
CLNS				pmax		pmax	
	comp=E,17nm,1.2s						
CLNS				pmax		pmax	
	comp=N,18nm,1.0s						
MSVF	**Nonsavu**	68.47	105	*e*P		**P**	**21 54 22.5 -1.0**
MSVF				pmax		pmax	
	comp=Z,154nm,1.9s						
MSVF	**Nonsavu**	68.47	105	*e*P		**P**	**21 54 22.5 -1.0**
	comp=Z,154nm,1.9s						
BVAR	**Borovoye Array**	70.39	337	P		**P**	**21 54 34.2 -0.3**
	comp=Z,10nm,0.6s,baz=144,slow=9.1,SNR=41						
BVAR	**Borovoye Array**	70.39	337	P		**P**	**21 54 34.2 -0.3**
BVAR				pmax		pmax	
	comp=Z,11nm,0.6s						
BRVK	**Borovoye**	70.46	337	*d i* P		**P**	**21 54 34.6 -0.3**
BRVK				pmax		pmax	
	comp=Z,44nm,1.7s						
BRVK	**Borovoye**	70.46	337	*e*ScS		**P**	**21 54 34.8 -0.2**
BRVK				LR		LR	
	comp=Z,369nm,21.0s						
KMBO	**Kilima Mbogo**	70.48	272	*e*P		**P**	**21 54 36.5 +0.2**
KMBO				pmax		pmax	
	comp=Z,44nm,1.8s						
KMBO				MLR		MLR	
	comp=Z,370nm,21.0s						
KMBO	**Kilima Mbogo**	70.48	272	*e*P		**P**	**21 54 36.5 +0.2**
	comp=Z,44nm,1.8s						
KMBO				LR		LR	
	comp=Z,370nm,21.0s						
ZRNK	**Zerenda**	70.87	336	*e*P		**P**	**21 54 37.3 -0.2**
ZRNK				pmax		pmax	
	comp=Z,120nm,1.8s						
ZRNK	**Zerenda**	70.87	336	*e*P		**P**	**21 54 37.3 -0.2**
	comp=Z,120nm,1.8s						
ABKAR	**Akbulak array**	72.33	329	*e*P		**P**	**21 54 46.1 -0.2**
VNDA	**Vanda**	72.88	169	P		**P**	**21 54 49.5 +0.2**
	comp=Z,4.3nm,1.0s,baz=306,slow=6.1,SNR=16						
VNDA				LR		LR	22 25 56.3
	comp=Z,128nm,18.3s,baz=310,slow=35						
VNDA	**Vanda**	72.88	169	*e*P		**P**	**21 54 49.6 +0.4**
	comp=Z,12nm,1.2s						
SYO	**Syowa Base**	72.89	200	⇓*i* P		**P**	**21 54 49.0 -0.3**
SYO	**Syowa Base**	72.89	200	⇑*i* pP		**P**	**21 54 52.4 +3.1**
YAK	**Yakutsk**	73.88	11	P		**P**	**21 54 53.9 -1.2**
	comp=Z,16nm,0.4s,baz=294,slow=0.6,SNR=4.7						
YAK	**Yakutsk**	73.88	11	*e*P		**P**	**21 54 54.0 -1.2**
YAK				pmax		pmax	
	comp=Z,14nm,0.6s						
SBA	**Scott Base**	73.96	169	*e*P		**P**	**21 54 56.1 +0.6**
	comp=Z,64nm,2.0s						
SBA				LR		LR	
	comp=Z,301nm,19.0s						
AKTO	**Aktyubinsk**	74.04	330	P		**P**	**21 54 56.0 -0.4**
	comp=Z,7.1nm,0.6s,baz=138,slow=6.2,SNR=16						
AKTO				LR		LR	22 32 43.2
	comp=Z,164nm,18.5s,slow=40						
AKTO	**Aktyubinsk**	74.04	330	P		**P**	**21 54 56.0 -0.4**
AKTO				pmax		pmax	
	comp=Z,7.0nm,0.6s						
AKTO				MLR		MLR	
	comp=Z,164nm,18.5s						
PETK	**Petropavlovsk-**	75.94	28	P		**P**	**21 55 06.8 -0.5**
	comp=Z,4.7nm,0.6s,baz=168,slow=2.2,SNR=5.6						
PETK				LR		LR	22 29 36.3
	comp=Z,86nm,22.0s,baz=232,slow=37						
CUKT	**Cukurca**	76.12	312	*e*P		**P**	**21 55 07.3 -1.6**
GNI	**Garni**	76.54	315	P		**P**	**21 55 11.1 -0.2**
	comp=Z,5.1nm,0.9s,baz=182,slow=7.0,SNR=4.4						
GNI				LR		LR	22 30 18.4
	comp=Z,103nm,21.9s,baz=124,slow=37						
SVE	**Sverdlovsk**	77.02	336	*c i* P		**P**	**21 55 13.7 +0.3**
SVE				*e*S		**S**	**22 04 58.2 -2.1**
SVE				pmax		pmax	
	comp=Z,74nm,1.5s						
TBLG	**Delisi**	77.23	317	*e*P		**P**	**21 55 14.8 -0.1**
LSZ	**Lusaka**	77.32	257	*e*P		**P**	**21 55 16.7 +0.6**
LSZ				MLR		MLR	
	comp=Z,416nm,20.0s						
LSZ	**Lusaka**	77.32	257	*e*P		**P**	**21 55 16.7 +0.6**
LSZ				LR		LR	
	comp=Z,416nm,20.0s						
MA2	**Magadan**	77.49	21	PFAKE			21 55 30.0 +14
MA2				LR		LR	
	comp=Z,218nm,19.0s						
ARU	**Arti**	77.62	335	P		**P**	**21 55 16.6 -0.2**
	comp=Z,15nm,0.6s,baz=121,slow=3.3,SNR=18						
ARU				LR		LR	22 32 01.5
	comp=Z,210nm,21.3s,baz=124,slow=38						
ARU	**Arti**	77.62	335	*d i* P		**P**	**21 55 16.5 -0.2**
ARU				S		**S**	**22 05 05.4 -1.4**
ARU				SS		**SS**	**22 10 01.0 -5.9**
ARU				pmax		pmax	
	comp=Z,92nm,1.7s						
ARU	**Arti**	77.62	335	*e*P		**P**	**21 55 16.5 -0.2**
	comp=Z,86nm,1.3s						
MZRK	**Al-Mazaregh**	77.75	310	*e*P		**P**	**21 55 15.8 -2.2**
ZEI	**Tsey**	78.25	318	*e*P		**P**	**21 55 20.0 -0.8**
ZEI				pmax		pmax	
	comp=Z,51nm,1.5s						
SENK	**Senkaya-Erzuru**	78.37	315	*e*P		**P**	**21 55 22.2 +0.7**
SFNV	**Sufian**	78.38	310	*e*P		**P**	**21 55 21.3 -0.2**
BOSA	**Boshof**	78.61	243	P		**P**	**21 55 24.2 +1.1**
	comp=Z,16nm,1.1s,baz=110,slow=7.9,SNR=9.6						
BOSA				LR		LR	22 25 52.3
	comp=Z,532nm,18.0s,baz=92,slow=32						
BOSA	**Boshof**	78.61	243	*e*P		**P**	**21 55 23.4 +0.3**
LBTB	**Lobatse**	78.66	246	*e*P		**P**	**21 55 23.8 +0.4**
LBTB	**Lobatse**	78.66	246	*e*P		**P**	**21 55 23.8 +0.4**
DYBB	**Diyarbakir**	78.93	312	*e*P		**P**	**21 55 23.8 -0.7**
BNGB	**Bing¶ll**	78.93	313	*e*P		**P**	**21 55 23.4 -1.2**
YEDI	**Yedisu-Bingol**	79.20	313	*e*P		**P**	**21 55 25.3 -0.8**
ZALF	**Zalf**	79.30	306	*e*P		**P**	**21 55 27.5 +0.8**
KBZ	**Khabaz**	79.31	318	P		**P**	**21 55 26.8 +0.5**
	comp=Z,11nm,0.9s,baz=123,slow=3.9,SNR=16						
KBZ				LR		LR	22 35 18.6
	comp=Z,121nm,19.4s,baz=139,slow=39						
ASF	**Jabal al Asfar**	79.41	305	P		**P**	**21 55 28.1 +0.8**
	comp=Z,12nm,0.9s,baz=108,slow=1.8,SNR=15						
KVAR	**Kislovodsk Arr**	79.54	318	P		**P**	**21 55 27.4 -0.4**
	comp=Z,14nm,1.1s,baz=112,slow=9.8,SNR=8.4						
KVAR				LR		LR	22 34 59.3
	comp=Z,95nm,19.5s,slow=39						
KIV	**Kislovodsk**	79.55	318	*d i* P		**P**	**21 55 27.0 -0.8**
KIV				*e*			21 58 32.4
KIV				*e*S		**S**	**22 05 21.4 -6.8**
KIV				*e*SS		**SS**	**22 10 31.1 -5.6**
KIV				pmax		pmax	
	comp=Z,20nm,1.1s						
KIV				MLR		MLR	
	comp=Z,88nm,19.0s						
KIV	**Kislovodsk**	79.55	318	*e*P		**P**	**21 55 27.9 +0.1**
	comp=Z,19nm,1.1s						
KIV				LR		LR	
	comp=Z,139nm,20.0s						
SVRC	**Sivrice-ELAZID**	79.70	312	*e*P		**P**	**21 55 29.1 +0.3**
SALA	**Sala**	79.71	306	*e*P		**P**	**21 55 28.8 -0.2**
ROOS	**tl_alroos**	79.75	307	*e*P		**P**	**21 55 24.6 -4.6**
PTK	**Pertek**	79.83	313	*e*P		**P**	**21 55 28.5 -1.1**
BAYT	**Ayd¨–ntepe-Bay**	79.85	314	*e*P		**P**	**21 55 29.5 -0.1**
TOTH	**TOTAH**	80.17	306	*e*P		**P**	**21 55 31.7 +0.4**
EIL	**Elat**	80.22	303	P		**P**	**21 55 32.0 +0.4**
	comp=Z,16nm,1.0s,baz=134,slow=8.1,SNR=8.9						
TCHB	**Talchebab**	80.31	306	*e*P		**P**	**21 55 31.8 -0.3**
NRIK	**Noril'sk**	80.42	353	P		**P**	**21 55 31.1 -0.7**
	comp=Z,9.1nm,0.7s,baz=171,slow=4.9,SNR=15						
NRIK				LR		LR	22 35 26.4
	comp=Z,138nm,18.3s,baz=149,slow=39						
HAWK	**Haweek**	80.56	308	*e*P		**P**	**21 55 32.3 -1.2**
ILIC	**ilic-Erzincan**	80.63	313	*e*P		**P**	**21 55 34.2 +0.4**
MMAI	**Mount Meron Ar**	80.87	306	P		**P**	**21 55 35.9 +0.7**
	comp=Z,9.4nm,0.8s,baz=114,slow=10,SNR=8.7						
MMAI				LR		LR	22 33 30.2
	comp=Z,282nm,18.7s,baz=110,slow=37						
BTCH	**Batrach**	81.01	309	*e*P		**P**	**21 55 33.2 -2.6**
DRWC	**Darouich**	81.05	310	*e*P		**P**	**21 55 36.0 0.0**
RSDY	**Resadiye-TOKAT**	81.85	313	*e*P		P	21 55 31.2 -8.9
SVSK	**Karacayir**	81.92	313	*e*P		**P**	**21 55 38.4 -2.1**
SUR	**Sutherland**	82.04	239	LR		LR	22 24 07.1
	comp=Z,21nm,20.6s,baz=100,slow=30						
SUR	**Sutherland**	82.04	239	*e*P		**P**	**21 55 43.6 +2.0**
NVL	**N'lazarevskaya**	82.50	199	*e*P		**P**	**21 55 45.6 +2.6**
TIXI	**Tiksi**	82.73	7	P		**P**	**21 55 43.1 -0.9**
	comp=Z,18nm,0.7s,baz=162,slow=3.1,SNR=39						
TIXI	**Tiksi**	82.73	7	*d i* P		**P**	**21 55 42.6 -1.4**
TIXI				pmax		pmax	
	comp=Z,58nm,1.8s						
TIXI	**Tiksi**	82.73	7	*e*P		**P**	**21 55 43.0 -1.0**
TIXI				LR		LR	
	comp=Z,250nm,19.0s						
MERS	**Mersin**	82.76	309	*e*P		P	21 55 57.8 +13
CSS	**Mathiatis**	83.10	307	*e*P		**P**	**21 55 46.1 -0.6**
CSS				LR		LR	
	comp=Z,89nm,21.0s						
VRH	**Novokhopyorsk**	83.21	325	*e*P		**P**	**21 55 46.2 -0.7**
VRH				*e**SP		**sP**	**21 55 59.0 +1.5**
VRH				pmax		pmax	
	comp=Z,140nm,1.8s						
ANN	**Anapa**	83.34	318	*d i* P		**P**	**21 55 46.6 -1.1**
ANN				*e*			21 58 58.3
ANN				*e*S		**S**	**22 06 03.4 -3.9**
ANN				*e*			22 06 09.0
ANN				pmax		pmax	
	comp=Z,26nm,1.4s						
ANN				MLR		MLR	
	comp=Z,234nm,20.0s						
GULA	**Gulagac**	83.44	311	*e*P		**P**	**21 55 49.8 +1.3**
CORM	**Corum**	83.72	313	*e*P		**P**	**21 55 48.9 -1.1**
BR131	**Keskin Array S**	84.31	312	*e*P		**P**	**21 55 52.6 -0.4**
BRTR	**Keskin Array B**	84.31	312	P		**P**	**21 55 52.5 -0.5**
	comp=Z,5.7nm,0.7s,baz=133,slow=5.4,SNR=42						
BRTR				LR		LR	22 35 15.4
	comp=Z,162nm,19.9s,baz=118,slow=37						
VSR	**Storozhevoye**	84.68	324	*e*P		**P**	**21 55 53.5 -0.9**
VSR				*e**SP		**sP**	**21 56 06.9 +1.8**
VSR				pmax		pmax	
	comp=Z,70nm,1.6s						
ANTO	**Ankara**	84.97	312	*e*P		**P**	**21 55 56.3 +0.1**
ANTO	**Ankara**	84.97	312	*e*P		**P**	**21 55 56.3 +0.1**
ANTO				LR		LR	
	comp=Z,9.0nm,21.0s						
BR231	**Keskin MP Arra**	84.97	312	*e*P		**P**	**21 55 52.9 -3.4**
LPSR	**Galich'ya Gora**	85.36	325	*e*P		**P**	**21 55 56.8 -0.9**
LPSR				*e**SP		**sP**	**21 56 11.1 +2.7**
LPSR				pmax		pmax	
	comp=Z,20nm,1.0s						
SIM	**Simferopol'**	85.61	317	*e*P		**P**	**21 55 58.6 -0.6**
SIM				*e*S		**S**	**22 06 33.0 +3.0**
SIM				pmax		pmax	
	comp=Z,19nm,0.9s						
ISP	**Isparta**	86.09	309	PFAKE			21 56 10.0 +8.1
ISP				LR		LR	
	comp=Z,228nm,19.0s						
TSUM	**Tsumeb**	86.80	251	*e*P		**P**	**21 56 06.9 +1.0**
TSUM				LR		LR	
	comp=Z,267nm,19.0s						
SNAA	**Sanae**	86.83	197	P		**P**	**21 56 06.4 +1.6**
SNAA	**Sanae**	86.83	197	*e*P		**P**	**21 56 06.0 +1.1**
SNAA	**Sanae**	86.83	197	*e*P		**P**	**21 56 06.0 +1.1**
MOS	**Moscow**	87.27	328	*e*P		**P**	**21 56 06.2 -0.9**
MOS				pmax		pmax	
	comp=Z,34nm,0.9s						
OBN	**Obninsk**	87.60	327	P		**P**	**21 56 08.6 0.0**
	comp=Z,52nm,0.4s,baz=73,slow=3.9,SNR=8.4						
OBN				LR		LR	22 42 13.9
	comp=Z,89nm,18.9s,baz=96,slow=40						
OBN	**Obninsk**	87.60	327	*d i* P		**P**	**21 56 07.4 -1.3**
OBN				*i*			21 56 22.8
OBN				*e*			21 59 33.5
OBN				*i* S		**S**	**22 06 52.1 +3.4**
OBN				*i* SS		**SS**	**22 12 41.0 +5.9**
OBN				pmax		pmax	
	comp=Z,26nm,1.0s						
OBN				MLR		MLR	
	comp=Z,176nm,21.0s						
BILL	**Bilibino**	88.15	19	⇓*i* P		**P**	**21 56 10.2 -0.8**
BILL				*e*S		**SKSac**	**22 06 33.7 -4.1**
BILL				*e*SS		**SS**	**22 12 42.8 +0.2**
BILL				pmax		pmax	
	comp=Z,11nm,0.8s						
BILL	**Bilibino**	88.15	19	*e*P		**P**	**21 56 10.2 -0.8**
BILL				LR		LR	
	comp=Z,196nm,22.0s						
KLMR	**Klimovskoe**	88.35	333	*e*P		**P**	**21 56 09.0 -3.2**
KLMR				pmax		pmax	
	comp=Z,79nm,1.5s						
VNA2	**Neumayer--Watz**	88.48	197	P		**P**	**21 56 14.2 +1.5**
	baz=86,slow=3.8						
VNA1	**Neumayer--Stat**	88.86	197	P		**P**	**21 56 16.5 +2.1**
VNA3	**Neumayer Olymp**	88.98	197	P		**P**	**21 56 16.3 +1.2**
TIRR	**Tirgusor**	89.37	315	⇑*i* P		**P**	**21 56 17.8 +0.5**
TIRR	**Tirgusor**	89.37	315	*e*P		**P**	**21 56 16.5 -0.8**
TIRR	**Tirgusor**	89.37	315	*e*P		**P**	**21 56 16.5 -0.8**
CFR	**Carcaliu**	89.74	316	⇑*i* P		**P**	**21 56 19.5 +0.5**
SORM	**Soroca**	90.34	319	⇑*i* P		**P**	**21 56 21.5 -0.2**
AKASG	**Malin Array Be**	90.45	321	P		**P**	**21 56 20.9 -1.3**
	comp=Z,2.3nm,0.7s,baz=82,slow=5.0,SNR=16						
AKASG				PP		**PP**	**21 59 55.6 -1.4**
	comp=Z,0.4nm,0.4s,baz=94,slow=5.6,SNR=4.0						
KIEV	**Kiev**	90.45	321	*e*P		**P**	**21 56 21.0 -1.2**
KIEV				pmax		pmax	
	comp=Z,5.0nm,1.1s						
KIEV	**Kiev**	90.45	321	PFAKE			21 56 30.0 +7.8
KIEV				LR		LR	
	comp=Z,250nm,19.0s						
PETR	**Petresti**	90.49	316	⇑*i* P		**P**	**21 56 20.9 -1.6**
VRI	**Vrincioaia**	90.86	316	⇑*i* P		**P**	**21 56 25.4 +1.1**
PLOR	**Plostina**	90.91	316	⇑*i* P		**P**	**21 56 25.4 +0.8**
TESR	**Tescani**	91.07	317	⇑*i* P		**P**	**21 56 21.8 -3.4**
MLR	**Muntele Rosu**	91.31	316	P		**P**	**21 56 26.8 +0.3**
	comp=Z,1.2nm,0.6s,baz=84,slow=2.5,SNR=17						
MLR	**Muntele Rosu**	91.31	316	⇓*i* P		**P**	**21 56 26.6 0.0**
PRAR	**RASCA**	91.54	318	⇑*i* P		**P**	**21 56 26.9 -0.5**
DOPR	**Dopca**	91.80	316	⇑*i* P		**P**	**21 56 28.4 -0.3**
ARR	**Arges**	92.19	316	⇓*i* P		**P**	**21 56 30.6 +0.1**
BURAR	**Bucovina Array**	92.27	318	⇓*i* P		**P**	**21 56 31.3 +0.4**
BUR08	**Bucovina Ar. S**	92.28	318	*e*P		**P**	**21 56 31.8 +0.8**
AGG	**Agios Georgios**	92.62	309	*e*P		**P**	**21 56 32.2 -0.4**
AGG	**Agios Georgios**	92.62	309	*e*P		**P**	**21 56 32.2 -0.4**
LVZ	**Lovozero**	92.94	339	PFAKE			21 56 40.0 +6.6
LVZ				LR		LR	
	comp=Z,309nm,19.0s						
MDVR	**Moldovita**	94.11	315	⇑*i* P		**P**	**21 56 39.3 -0.1**
BZS	**Buzias**	94.32	315	⇓*i* P		**P**	**21 56 40.0 -0.3**
KOLS	**Kolonicke sedl**	94.45	319	*e*P		**P**	**21 56 41.4 +0.6**
KOLS				pmax		pmax	
	comp=Z,11nm,1.5s						
KOLS	**Kolonicke sedl**	94.45	319	*e*P		**P**	**21 56 41.4 +0.6**
FINES	**FINESS Array B**	94.72	332	P		**P**	**21 56 41.4 -0.3**
	comp=Z,2.5nm,0.9s,baz=74,slow=6.8,SNR=5.5						
FINES				LR		LR	22 46 03.7
	comp=Z,84nm,18.0s,baz=58,slow=40						
FINES	**FINESS Array B**	94.72	332	*i* P		**P**	**21 56 43.0 +1.3**
FINES				pmax		pmax	
	comp=Z,3.0nm,0.9s						
TIR	**Tirane**	94.88	311	PFAKE			21 56 50.0 +7.1
TIR				LR		LR	
	comp=Z,217nm,19.0s						
STHS	**Stebnicka Huta**	95.20	319	*e*P		**P**	**21 56 44.2 0.0**
STHS				pmax		pmax	
	comp=Z,2.0nm,0.9s						
STHS	**Stebnicka Huta**	95.20	319	*e*P		**P**	**21 56 44.2 0.0**
XMAS	**Kiritimati**	95.20	89	PFAKE			21 57 00.0 +15
XMAS				LR		LR	
	comp=Z,7.0nm,21.0s						
PSZ	**Piszkesteto**	95.85	317	PFAKE			21 57 00.0 +13
PSZ				LR		LR	
	comp=Z,147nm,19.0s						
KEV	**Kevo**	96.11	340	PFAKE			21 57 00.0 +12
KEV				LR		LR	
	comp=Z,283nm,20.0s						
ARCES	**ARCESS Array B**	96.58	339	P		**P**	**21 56 49.2 -0.9**
	comp=Z,1.9nm,0.6s,baz=94,slow=7.3,SNR=10						
ARCES				LR		LR	22 47 09.3
	comp=Z,143nm,18.1s,baz=89,slow=40						
TIP	**Timpagrande**	96.93	308	PFAKE			21 57 00.0 +7.6
TIP				LR		LR	
	comp=Z,118nm,20.0s						
CEL	**Celeste**	97.49	307	PFAKE			21 57 10.0 +15
CEL				LR		LR	
	comp=Z,172nm,21.0s						
WDD	**Wied Dalam**	98.30	305	PFAKE			21 57 10.0 +11
WDD				LR		LR	
	comp=Z,155nm,19.0s						
PPT2	**Papeete2**	98.97	110	*e*LR		LR	22 29 07.9
	comp=Z,289nm,22.8s						
CLTB	**Caltabellotta**	99.52	307	PFAKE			21 57 20.0 +16
CLTB				LR		LR	
	comp=Z,67nm,19.0s						
AQU	**L'Aquila**	99.79	311	PFAKE			21 57 20.0 +15
AQU				LR		LR	
	comp=Z,214nm,21.0s						
GEA0	**GERESS Array S**	100.06	318	*e*Pdif		**Pdif**	**21 57 05.7 -0.6**
GERES	**G

	baz=293							
NEW	Newport	126.60	36	P	PKPdf	22 02 24.8	+0.7	
	baz=300							
NEW	Newport	126.60	36	PFAKE		22 02 40.0	+16	
NEW				LR	LR			
	comp=Z,2μm,20.0s							
O03D	Paynes Creek	126.98	47	P	PKPdf	22 02 25.9	+0.8	
	baz=291							
BMO	Blue Mountains	128.14	40	PFAKE		22 02 40.0	+13	
BMO				LR	LR			
	comp=Z,2μm,20.0s							
WVOR	Wild Horse Val	128.35	43	PFAKE		22 02 40.0	+12	
WVOR				LR	LR			
	comp=Z,2μm,20.0s							
MSO	Missoula	129.19	36	P	PKPdf	22 02 29.8	+0.6	
	baz=303							
CMLA	Cha da Macela	129.75	311	PFAKE		22 02 40.0	+10	
CMLA				LR	LR			
	comp=Z,2μm,20.0s							
NVAR	Mina Array Bea	130.18	48	PKiKP	PKiKP	22 02 33.2	+0.9	
	comp=Z,1.5nm,0.7s,baz=262,slow=3.0,SNR=4.6							
NVAR				SKPbc	SKPbc	22 05 54.6	+1.5	
	comp=Z,0.5nm,0.7s,baz=276,slow=4.5,SNR=4.1							
HLID	Hailey	130.59	40	P	PKPdf	22 02 33.6	+1.6	
	baz=300							
HLID	Hailey	130.59	40	PFAKE		22 02 40.0	+8.0	
HLID				LR	LR			
	comp=Z,2μm,21.0s							
EGMT	Eagleton	130.82	33	PFAKE		22 02 40.0	+7.8	
EGMT				LR	LR			
	comp=Z,2μm,21.0s							
BOZ	Bozeman (W)	131.18	36	P	PKPdf	22 02 34.8	+1.7	
	baz=304							
BOZ	Bozeman (W)	131.18	36	ePKIKP	PKPdf	22 02 33.9	+0.9	
BOZ				MLR	MLR			
	comp=Z,2μm,19.0s							
BOZ	Bozeman (W)	131.18	36	ePKPdf	PKPdf	22 02 33.9	+0.9	
BOZ				LR	LR			
	comp=Z,2μm,19.0s							
TRQA	Tornquist	131.18	191	PFAKE		22 02 40.0	+6.8	
TRQA				LR	LR			
	comp=Z,2μm,22.0s							
EDW2	Edwards Air Fo	131.67	52	P	PKPdf	22 02 35.4	+1.3	
	baz=290							
R11A	Troy Canyon, C	132.17	47	P	PKPdf	22 02 36.2	+1.1	
	baz=295							
R11A	Troy Canyon, C	132.17	47	ePKPdf	PKPdf	22 02 36.3	+1.1	
LKWY	Lake	132.50	37	PFAKE		22 02 50.0	+14	
LKWY				LR	LR			
	comp=Z,4μm,22.0s							
RLMT	Red Lodge	132.84	35	PFAKE		22 02 50.0	+14	
RLMT				LR	LR			
	comp=Z,3μm,20.0s							
TUQ	Turquoise Moun	133.06	50	P	PKPdf	22 02 38.0	+1.2	
	baz=292							
AHID	Auburn Hatcher	133.07	39	PFAKE		22 02 50.0	+13	
AHID				LR	LR			
	comp=Z,3μm,21.0s							
DUG	Dugway, Tooele	133.27	43	PFAKE		22 02 50.0	+13	
DUG				LR	LR			
	comp=Z,3μm,19.0s							
PFO	Pinyon Flats O	133.29	53	PFAKE		22 02 50.0	+13	
PFO				LR	LR			
	comp=Z,2μm,20.0s							
TPFO	Pinon Flats	133.30	53	P	PKPdf	22 02 38.7	+1.3	
	baz=290							
DGMT	Dagmar	133.33	29	PFAKE		22 02 50.0	+13	
DGMT				LR	LR			
	comp=Z,2μm,21.0s							
HWUT	Hardware Ranch	133.39	41	PFAKE		22 02 50.0	+13	
HWUT				LR	LR			
	comp=Z,2μm,20.0s							
GMRC	Granite Mounta	133.50	51	P	PKPdf	22 02 39.2	+1.5	
	baz=292							
BELC	Belle Mtn. Jos	133.52	52	P	PKPdf	22 02 39.5	+1.7	
	baz=291							
LAO	LASA Array	133.53	32	PFAKE		22 02 50.0	+13	
LAO				LR	LR			
	comp=Z,2μm,19.0s							
MONP2	Monument Peak	133.56	54	P	PKPdf	22 02 39.4	+1.4	
	baz=289							
IKP	In-Ko-Pah, Jac	133.89	54	P	PKPdf	22 02 39.8	+1.4	
	baz=289							
BW06	Boulder Array	134.02	38	PFAKE		22 02 50.0	+11	
BW06				LR	LR			
	comp=Z,2μm,21.0s							
O20A	White River Ci	136.31	41	P	PKPdf	22 02 43.7	+0.8	
	baz=304							
RSSD	Black Hills	136.38	33	P	PKPdf	22 02 44.0	+1.0	
	baz=312							
WUAZ	Wupatki	136.43	48	PFAKE		22 03 00.0	+17	
WUAZ				LR	LR			
	comp=Z,2μm,20.0s							
A33A	Warroad	136.71	22	P	PKPdf	22 02 40.4	-2.7	
	baz=326							
MVCO	Mesa Verde	137.68	44	PFAKE		22 03 00.0	+14	
MVCO				LR	LR			
	comp=Z,3μm,22.0s							
W18A	Petrified Fore	137.81	48	ePKPdf	PKPdf	22 02 47.7	+1.8	
ISCO	Idaho Springs	138.16	39	PFAKE		22 03 00.0	+14	
ISCO				LR	LR			
	comp=Z,3μm,22.0s							
TUC	Tucson	138.21	52	PFAKE		22 03 00.0	+14	
TUC				LR	LR			
	comp=Z,4μm,20.0s							
SPB	Sao Paulo	138.62	216	PFAKE		22 03 00.0	+13	
SPB				LR	LR			
	comp=Z,3μm,20.0s							
EYMN	Ely	138.92	20	PFAKE		22 03 00.0	+13	
EYMN				LR	LR			
	comp=Z,2μm,19.0s							
SDCO	Great Sand Dun	139.41	42	PFAKE		22 03 00.0	+11	
SDCO				LR	LR			
	comp=Z,3μm,22.0s							
OGNE	Ogallala	139.58	35	PFAKE		22 03 00.0	+11	
OGNE				LR	LR			
	comp=Z,2μm,21.0s							
ANMO	Albuquerque	140.25	46	PFAKE		22 03 00.0	+10	
ANMO				LR	LR			
	comp=Z,2μm,20.0s							
ECSD	EROS Data Cent	140.38	28	PFAKE		22 03 00.0	+10	
ECSD				LR	LR			
	comp=Z,2μm,20.0s							
RCBR	Riachuelo	140.40	248	PFAKE		22 03 00.0	+9.1	
RCBR				LR	LR			
	comp=Z,5μm,22.0s							
CPUP	Villa Florida	141.00	202	PKP	PKPdf	22 02 51.9	+0.2	
	comp=Z,4.3nm,0.9s,baz=125,slow=1.1,SNR=6.2							
LCO	Las Campanas	141.15	182	PFAKE		22 03 00.0	+7.8	
LCO				LR	LR			
	comp=Z,2μm,22.0s							
COWI	Conover	141.31	19	PFAKE		22 03 00.0	+8.4	
COWI				LR	LR			
	comp=Z,3μm,19.0s							
CBKS	Cedar Bluff	142.32	36	PFAKE		22 03 10.0	+16	
CBKS				LR	LR			
	comp=Z,3μm,22.0s							
MNTX	Cornudas Mount	142.61	50	P	PKPdf	22 02 51.9	-2.5	
	baz=298							
O33A	Hebron	142.63	33	P	PKPdf	22 02 51.7	-2.5	
	baz=316							
R32A	Long Quarter,	143.18	36	P	PKPbc	22 02 52.6	+0.5	
	baz=313							
L38A	Oak Wood Farm,	143.27	26	P	PKPbc	22 02 52.6	+0.4	
	baz=325							
SCIA	State Center	143.35	26	PFAKE		22 03 10.0	+15	
SCIA				LR	LR			
	comp=Z,3μm,19.0s							
M37A	Trindle Farm,	143.38	28	P	PKPbc	22 02 52.6	+0.1	
	baz=322							
N36A	Muff Farm, Cla	143.41	29	P	PKPbc	22 02 52.6	-0.1	
	baz=321							
P34A	Walnut Farm, R	143.42	32	P	PKPbc	22 02 53.5	+0.7	
	baz=317							
R33A	Olander Ranch,	143.67	35	P	PKPbc	22 02 53.5	0.0	
	baz=314							
JFWS	Jewell Farm	143.72	22	PFAKE		22 03 10.0	+14	
JFWS				LR	LR			
	comp=Z,2μm,20.0s							
M38A	Pleasantville	143.75	27	P	PKPbc	22 02 53.3	-0.3	
	baz=324							
O36A	Bolckow	143.93	30	P	PKPab	22 02 53.9	+0.2	
	baz=320							
R34A	Isabella, Hill	144.09	34	P	PKPab	22 02 54.4	+0.1	
	baz=315							
S33A	Kaszmaul Farm,	144.15	36	P	PKPab	22 02 54.8	+0.2	
	baz=314							
P36A	Good Intent, A	144.20	31	P	PKPab	22 02 54.6	-0.1	
	baz=319							
N38A	Joes South For	144.24	28	P	PKPab	22 02 54.6	-0.1	
	baz=323							
O37A	Wolven Farm, M	144.31	29	P	PKPab	22 02 55.1	+0.1	
	baz=321							
Q35A	Mercer Eighty,	144.34	33	P	PKPab	22 02 54.9	-0.3	
	baz=317							
T33A	Patterson Ranc	144.36	37	P	PKPbc	22 02 55.5	-0.1	
	baz=313							
U32A	Winter Ranch,	144.37	38	P	PKPbc	22 02 55.8	0.0	
	baz=311							
N39A	Derby Farms, D	144.50	27	P	PKPbc	22 02 56.0	0.0	
	baz=324,SNR=6.1							
Q36A	Arnold C. Orve	144.57	32	P	PKPab	22 02 55.7	-0.3	
	baz=318,SNR=5.2							
S34A	Willow Spring	144.58	35	P	PKPab	22 02 55.9	-0.3	
	baz=315,SNR=7.5							
R35A	Emporia Munici	144.64	33	P	PKPbc	22 02 56.6	+0.1	
	baz=317							
P37A	Lathrop	144.65	30	P	PKPab	22 02 56.2	-0.1	
	baz=321							
O38A	Galt	144.66	29	P	PKPab	22 02 56.0	-0.4	
	baz=322,SNR=5.5							
V32A	Arapaho	144.77	39	P	PKPbc	22 02 57.3	+0.3	
	baz=310,SNR=10							
PKME	Peaks-Kenny Pk	144.80	356	ePKPdf	PKPbc	22 02 57.1	+0.4	
PKME				LR	LR			
	comp=Z,2μm,21.0s							
U33A	Lingo Farm, Me	144.87	37	P	PKPbc	22 02 57.4	+0.1	
	baz=312							
SADO	Sadowa	144.91	8	PKP	PKPab	22 02 56.9	-0.2	
	comp=Z,10nm,0.7s,baz=360,slow=3.9,SNR=15							
O39A	Kirksville	144.98	27	P	PKPab	22 02 57.2	-0.3	
	baz=324,SNR=8.8							
TXAR	Lajitas Array	145.01	52	PKP	PKPdf	22 02 59.0	+0.2	
	comp=Z,12nm,0.8s,baz=270,slow=2.4,SNR=41							
TXAR	Lajitas Array	145.01	52	PKIKP	PKPdf	22 02 59.0	+0.2	
TXAR				pmax	pmax			
	comp=Z,12nm,0.8s							
T34A	McClaskey Farm	145.01	36	P	PKPab	22 02 57.8	0.0	
	baz=314,SNR=7.2							
R36A	Gordon, Harris	145.02	33	P	PKPbc	22 02 57.5	-0.2	
	baz=318,SNR=15							
W32A	Sentinel	145.02	40	P	PKPdf	22 02 58.3	-0.2	
	baz=309,SNR=9.2							
P38A	Dawn	145.02	29	P	PKPab	22 02 57.7	+0.1	
	baz=322,SNR=40							
S35A	Otter Creek Ra	145.04	34	P	PKPbc	22 02 57.7	-0.1	
	baz=316,SNR=15							
Q37A	Longview Farm,	145.15	31	P	PKPbc	22 02 57.0	-1.1	
	baz=320							
V33A	Lossen Ranch,	145.17	38	P	PKPbc	22 02 58.2	-0.1	
	baz=311							
U34A	Anderson Ranch	145.21	37	P	PKPbc	22 02 58.3	-0.1	
	baz=313,SNR=6.5							
U34A	Anderson Ranch	145.21	37	ePKPbc	PKPdf	22 02 59.0	+0.3	
R37A	Teagarden Farm	145.38	32	P	PKPbc	22 02 58.4	-0.4	
	baz=319,SNR=28							
O40A	La Belle	145.39	27	P	PKPbc	22 02 58.4	-0.4	
	baz=325,SNR=14							
S36A	Lake Cedric, C	145.41	33	P	PKPbc	22 02 58.7	-0.3	
	baz=317,SNR=19							
X32A	Elmer	145.43	41	P	PKPbc	22 02 59.2	0.0	
	baz=308,SNR=16							
T35A	Sooner Cattle	145.47	35	P	PKPbc	22 02 59.1	-0.1	
	baz=315,SNR=19							
W33A	Caddo, Fort Co	145.49	40	P	PKPab	22 02 59.8	+0.3	
	baz=310,SNR=11							
LONY	Lake Ozonia	145.49	3	ePKPbc	PKPbc	22 02 59.1	0.0	
LONY				LR	LR			
	comp=Z,5μm,20.0s							
Q38A	Cooks Store, C	145.50	30	P	PKPdf	22 02 58.7	-0.5	
	baz=321,SNR=18							
WVL	Waterville	145.52	357	ePKPbc	PKPdf	22 02 58.9	-0.1	
WMOK	Wichita Mounta	145.56	40	P	PKPbc	22 02 59.6	0.0	
	baz=309,SNR=26							
WMOK	Wichita Mounta	145.56	40	ePKIKP	PKPab	22 03 00.0	+0.1	
WMOK	Wichita Mounta	145.56	40	ePKPdf	PKPab	22 02 60.0	+0.1	
WMOK				LR	LR			
	comp=Z,3μm,21.0s							
V34A	Guthrie	145.63	38	P	PKPbc	22 02 59.8	0.0	
	baz=312,SNR=10							
V34A	Guthrie	145.63	38	ePKPdf	PKPab	22 03 00.2	+0.2	
U35A	Pawnee	145.73	36	P	PKPdf	22 02 59.8	+0.2	
	baz=314,SNR=12							
T36A	Boggs Farm, Ca	145.73	35	P	PKPdf	22 02 59.8	+0.2	
	baz=316,SNR=15							
Q39A	Willow Grove F	145.74	29	P	PKPdf	22 02 59.6	0.0	
	baz=322,SNR=23							
P40A	Paris	145.79	28	P	PKPdf	22 02 59.5	-0.1	
	baz=324,SNR=17							
S37A	Fort Scott	145.79	33	P	PKPdf	22 02 59.6	-0.2	
	baz=318,SNR=17							
X33A	Lawton	145.86	40	P	PKPdf	22 02 60.0	0.0	
	baz=310,SNR=6.6							
W34A	Bridge Creek,	145.87	39	P	PKPab	22 03 00.9	-0.1	
	baz=311							
W34A	Bridge Creek,	145.87	39	ePKPdf	PKPab	22 03 01.2	+0.3	
R38A	Fenwick Farm,	145.95	31	P	PKPdf	22 02 59.7	-0.3	
	baz=320,SNR=12							
V35A	Meyer Ranch, C	146.08	37	P	PKPbc	22 03 00.9	-0.2	
	baz=313,SNR=5.6							
HDIL	Hopedale	146.11	23	P	PKPdf	22 03 00.4	+0.2	
	baz=329							
HDIL	Hopedale	146.11	23	PFAKE		22 03 10.0	+8.4	
HDIL				LR	LR			
	comp=Z,1μm,20.0s							
Y33A	Hilltop Ranch,	146.11	41	P	PKPbc	22 03 00.9	-0.4	
	baz=309,SNR=6.4							
Q40A	Laux Farm, Aux	146.21	28	P	PKPdf	22 03 00.6	+0.2	
	baz=324,SNR=26							
T37A	Cheneyville 18	146.21	33	P	PKPdf	22 03 00.6	+0.2	
	baz=317,SNR=6.0							
X34A	Smith Ranch, M	146.25	40	P	PKPdf	22 03 01.1	+0.5	
	baz=310							
ABTX	Abilene, Hawle	146.27	44	P	PKPbc	22 03 01.5	-0.3	
	baz=306,SNR=7.1							
ABTX	Abilene, Hawle	146.27	44	ePKPbc	PKPbc	22 03 02.0	+0.2	
R39A	Chumby, Stover	146.29	30	P	PKPdf	22 03 00.3	-0.3	
	baz=321,SNR=18							
U36A	Ocologah	146.29	35	P	PKPdf	22 03 01.0	+0.4	
	baz=315							
S38A	Stockton	146.37	32	P	PKPdf	22 03 00.8	+0.1	
	baz=319,SNR=6.7							
AAM	Ann Arbor	146.37	15	ePKP2	PKPbc	22 03 01.8	0.0	
AAM	Ann Arbor	146.37	15	ePKPbc	PKPbc	22 03 01.8	0.0	
AAM				LR	LR			
	comp=Z,4μm,20.0s							
HNH	Hanover	146.46	360	ePKPbc	PKPbc	22 03 02.0	0.0	
Z33A	Whitaker Ranch	146.47	42	P	PKPbc	22 03 01.9	-0.5	
	baz=308,SNR=5.5							
W35A	Tecumseh	146.47	38	P	PKPdf	22 03 01.5	+0.5	
	baz=312,SNR=5.8							
TUL1	Leonard	146.59	36	P	PKPbc	22 03 02.0	-0.6	
	baz=315,SNR=6.1							
TUL1	Leonard	146.59	36	ePKPbc	PKPbc	22 03 02.3	-0.4	
V36A	Jenks	146.59	36	P	PKPdf	22 03 01.8	+0.6	
	baz=314,SNR=5.7							
T38A	Diamond	146.61	33	P	PKPdf	22 03 01.5	+0.4	
	baz=318,SNR=14							
S39A	Bolivar	146.62	31	P	PKPdf	22 03 01.8	+0.6	
	baz=320,SNR=15							
U37A	Salina	146.62	35	P	PKPdf	22 03 01.7	+0.5	
	baz=316,SNR=12							
R40A	Maddies Statio	146.68	29	P	PKPbc	22 03 02.5	-0.3	
	baz=322,SNR=41							
Y34A	Reagan Ranch,	146.71	40	P	PKPbc	22 03 03.5	+0.4	
	baz=310,SNR=17							
133A	Hamilton Ranch	146.77	44	P	PKPbc	22 03 03.6	+0.3	
	baz=307,SNR=12							
W36A	Wcumka	146.87	37	P	PKPbc	22 03 03.4	-0.1	
	baz=313,SNR=6.7							
X35A	Drake	146.91	39	P	PKPbc	22 03 03.6	-0.1	
	baz=312,SNR=14							
Z34A	Collier Ranch,	146.97	41	P	PKPbc	22 03 03.8	-0.1	
	baz=309,SNR=9.2							
V37A	Hulbert	146.99	35	P	PKPbc	22 03 03.2	-0.6	
	baz=316,SNR=17							
U38A	Gravette	147.00	34	P	PKPbc	22 03 03.1	-0.8	
	baz=318,SNR=11							
SFIN	Lafayette	147.08	21	P	PKPbc	22 03 03.6	-0.3	
	baz=333							
SFIN	Lafayette	147.08	21	ePKPbc	PKPbc	22 03 04.4	+0.6	
T39A	Clever	147.11	32	P	PKPbc	22 03 03.3	-0.8	
	baz=320,SNR=17							
S40A	Lebanon	147.11	30	P	PKPbc	22 03 03.4	-0.7	
	baz=322,SNR=16							
233A	Rising Star	147.13	44	P	PKPbc	22 03 04.4	+0.1	
	baz=306,SNR=8.9							
X36A	Centrahoma	147.18	38	P	PKPbc	22 03 04.4	0.0	
	baz=313,SNR=6.0							
Y35A	Marietta	147.20	40	P	PKPbc	22 03 04.2	-0.2	
	baz=311							
W37B	Quinton	147.34	37	P	PKPbc	22 03 04.6	-0.2	
	baz=314							
JCT	Junction City	147.36	48	P	PKPbc	22 03 04.9	-0.1	
	baz=303							
JCT	Junction City	147.36	48	ePKP2	PKPdf	22 03 03.8	+1.1	
JCT				MLR	MLR			
	comp=Z,2μm,19.0s							
JCT	Junction City	147.36	48	ePKPdf	PKPdf	22 03 03.8	+1.1	
JCT				ePKPbc	PKPbc	22 03 06.0	+0.9	
JCT				LR	LR			
	comp=Z,2μm,19.0s							
LVC	Limon Verde	147.38	186	PFAKE		22 03 10.0	+2.5	
LVC				LR	LR			
	comp=Z,2μm,20.0s							
V38A	Canehill	147.41	34	P	PKPbc	22 03 04.3	-0.7	
	baz=317,SNR=16							
Z35A	Perchaven, San	147.43	41	P	PKPbc	22 03 05.1	0.0	
	baz=310							
T40A	Mansfield	147.45	31	P	PKPbc	22 03 04.7	-0.4	
	baz=321,SNR=13							
333A	Richland Sprin	147.47	45	P	PKPbc	22 03 05.6	+0.3	
	baz=305							
HRV	Adam Dziewonsk	147.65	359	ePKP2	PKPbc	22 03 05.4	0.0	
HRV	Adam Dziewonsk	147.65	359	ePKPbc	PKPbc	22 03 05.3	0.0	
234A	Clairette	147.66	44	P	PKPbc	22 03 05.8	0.0	
	baz=307							
Y36A	Durant	147.67	39	P	PKPbc	22 03 05.4	-0.3	
	baz=312,SNR=6.6							
433A	Art	147.72	46	P	PKPbc	22 03 06.2	+0.2	
	baz=304							
X37A	Clayton	147.76	37	P	PKPbc	22 03 06.0	+0.1	
	baz=314							
135A	Vickery Place,	147.81	42	P	PKPbc	22 03 06.4	+0.3	
	baz=309,SNR=5.4							
V39A	Pettigrew	147.85	34	P	PKPbc	22 03 05.4	-0.8	
	baz=318							
U40A	Yellville	147.89	32	P	PKPbc	22 03 05.9	-0.4	
	baz=320							
W38A	Poteau	147.92	36	P	PKPbc	22 03 06.7	+0.3	
	baz=316,SNR=5.3							
334A	Lometa	147.99	45	P	PKPbc	22 03 06.8	+0.1	
	baz=306							
Z36A	Blue Ridge	147.99	40	P	PKPbc	22 03 06.5	-0.1	
	baz=311							
M54A	Oil Creek Stat	148.00	10	P	PKPbc	22 03 06.0	-0.4	
	baz=346							
Y37A	Hugo	148.03	38	P	PKPbc	22 03 06.6	-0.1	
	baz=313							
WHTX	Lake Whitney,	148.13	43	P	PKPbc	22 03 07.4	+0.4	
	baz=308							
533A	Kerrville	148.13	47	P	PKPbc	22 03 07.2	+0.1	
	baz=303							
W39A	Magazine	148.25	35	P	PKPbc	22 03 07.1	-0.1	
	baz=317							
434A	Burnet	148.27	46	P	PKPbc	22 03 07.2	-0.3	
	baz=305							
V40A	Witts Springs	148.32	33	P	PKPbc	22 03 07.0	-0.5	
	baz=319							
832A	Faith Ranch, C	148.36	51	P	PKPbc	22 03 08.1	+0.3	
	baz=300							
136A	Ennis	148.44	41	P	PKPbc	22 03 08.2	+0.4	
	baz=310							
N54A	Moraine State	148.47	11	P	PKPbc	22 03 07.4	-0.3	
	baz=346							
ACSO	Alum Creek Sta	148.49	16	ePKPbc	PKPbc	22 03 07.6	-0.1	
ACSO				LR	LR			
	comp=Z,4μm,20.0s							
Z37A	Pogue Cattle C	148.55	39	P	PKPbc	22 03 08.5	+0.4	
	baz=312							
X39A	Fountain Ranch	148.55	36	P	PKPbc	22 03 08.3	+0.3	
	baz=316							
534A	Blanco	148.56	47	P	PKPbc	22 03 08.5	+0.3	
	baz=304							
335A	Moody	148.58	44	P	PKPbc	22 03 08.5	+0.3	
	baz=307							
Y38A	Idabel	148.60	37	P	PKPbc	22 03 08.4	+0.2	
	baz=314							
W40A	Ferguson Farm,	148.65	34	P	PKPbc	22 03 08.3	+0.1	
	baz=318							
733A	Divot King Ran	148.66	50	P	PKPbc	22 03 09.7	+1.1	
	baz=301							
833A	Chaparral WMA,	148.78	51	P	PKPbc	22 03 09.8	+0.9	
	baz=300							
MIAR	Mount Ida	148.84	35	P	PKPbc	22 03 09.3	+0.5	
	baz=317							
MIAR	Mount Ida	148.84	35	ePKP2	PKPbc	22 03 09.5	+0.7	
MIAR				MLR	MLR			
	comp=Z,3μm,19.0s							
MIAR	Mount Ida	148.84	35	ePKPbc	PKPbc	22 03 09.5	+0.7	
MIAR				ePKPab	PKPab	22 03 13.7	+1.0	
MIAR				LR	LR			
	comp=Z,3μm,19.0s							
137A	Heron Place, G	148.86	40	P	PKPbc	22 03 09.8	+0.9	
	baz=311							
336A	Riesel	148.91	43	P	PKPbc	22 03 09.7	+0.6	
	baz=308							
Y39A	Lockesburg	148.97	37	P	PKPbc	22 03 09.6	+0.5	
	baz=315							
N59A	State Game Lan	149.10	5	P	PKPbc	22 03 09.6	+0.3	
	baz=354							
W41B	Gary Mavity, V	149.10	33	P	PKPbc	22 03 09.3	-0.1	
	baz=320							
SSPA	Standing Stone	149.14	8	ePKPbc	PKPbc	22 03 09.0	-0.3	
734A	La Parita Cree	149.14	49	P	PKPbc	22 03 10.9	+1.2	
	baz=302							
237A	Washetta, Mont	149.21	41	P	PKPbc	22 03 10.7	+0.9	
	baz=310							
933A	Laredo	149.23	52	P	PKPbc	22 03 11.1	+1.1	
	baz=300							
138A	Matatall Enter	149.24	40	P	PKPbc	22 03 11.1	+1.2	
	baz=312							
WCI	Wyandotte Cave	149.27	22	ePKPdf	PKPdf	22 03 05.6	+0.1	
WCI				ePKPbc	PKPbc	22 03 10.1	+0.3	
WCI				ePKPab	PKPab	22 03 14.5	+0.3	
X40A	Basin Creek Fa	149.29	34	P	PKPbc	22 03 10.4	+0.5	
	baz=318							
Y40A	Okolona	149.39	36	P	PKPbc	22 03 10.4	+0.2	
	baz=316							
O56A	Blue Knob Stat	149.40	9	P	PKPbc	22 03 09.9	-0.2	
	baz=348							
Z39A	Irene McRaven,	149.40	38	P	PKPbc	22 03 11.1	+0.8	
	baz=314							
635A	Leesville	149.43	47	P	PKPbc	22 03 11.8	+1.4	
	baz=304							
X41A	Kaden, Bauxite	149.47	34	P	PKPbc	22 03 10.5	+0.2	
	baz=318							
834A	Tilden	149.52	50	P	PKPbc	22 03 12.4	+1.7	
	baz=301							
337A	Centerville	149.60	42	P	PKPbc	22 03 12.1	+1.4	
	baz=309							
238

035A	**Encino**	**150.47**	**52**	P	**PKPbc**	**22 03 14.8**	**+1.8**
	baz=300						
HKT	**Hockley**	**150.47**	**45**	*e*PKIKP	**PKPdf**	**22 03 08.8**	**+1.3**
HKT				*e*		22 03 14.2	
HKT	**Hockley**	**150.47**	**45**	*e*PKPdf	**PKPdf**	**22 03 08.8**	**+1.3**
HKT				*e*PKPbc	**PKiKP**	**22 03 14.2**	**+0.6**
141A	**Papa Simpson,**	**150.62**	**37**	P	**PKPbc**	**22 03 13.7**	**+0.5**
	baz=315						
Z42A	**Norrel Spur, H**	**150.69**	**35**	P	**PKPbc**	**22 03 14.1**	**+0.7**
	baz=318						
X44A	**Crenshaw**	**150.72**	**31**	P	**PKPbc**	**22 03 13.5**	**+0.1**
	baz=322						
035Z	**Hargill**	**150.73**	**53**	P	**PKPbc**	**22 03 15.5**	**+1.9**
	baz=299						
Y43A	**Makayla and Ka**	**150.77**	**33**	P	**PKPbc**	**22 03 14.2**	**+0.7**
	baz=320						
OXF	**Oxford**	**151.08**	**30**	*e*PKIKP	**PKPbc**	**22 03 14.5**	**+0.3**
OXF	**Oxford**	**151.08**	**30**	*e*PKPbc	**PKPbc**	**22 03 14.5**	**+0.3**
440A	**Kirbyville**	**151.23**	**41**	P	**PKPbc**	**22 03 16.0**	**+1.4**
	baz=311						
341A	**Kurthwood**	**151.34**	**39**	P	**PKPbc**	**22 03 16.2**	**+1.3**
	baz=313						
Y45A	**Yeager Farm, C**	**151.53**	**31**	P	**PKPbc**	**22 03 15.7**	**+0.4**
	baz=323						
CBN	**Corbin Frederi**	**151.60**	**8**	PFAKE		22 03 20.0	-3.7
CBN				LR	LR		
	comp=Z,5μm,22.0s						
TZTN	**Tazewell**	**151.74**	**19**	*e*PKPdf	**PKPdf**	**22 03 09.8**	**+0.5**
TZTN				*e*PKPbc	**PKiKP**	**22 03 16.0**	**-0.1**
Z45A	**Winona**	**151.84**	**32**	P	**PKPbc**	**22 03 16.3**	**+0.3**
	baz=322						
Y46A	**Houston**	**151.85**	**30**	P	**PKPbc**	**22 03 16.1**	**0.0**
	baz=324						
145A	**Houston Renfro**	**152.31**	**33**	P	**PKPbc**	**22 03 17.5**	**+0.4**
	baz=320						
244A	**Avery, Jackson**	**152.31**	**35**	P	**PKPbc**	**22 03 17.7**	**+0.5**
	baz=318						
Y47A	**UCPARC, Winfie**	**152.32**	**29**	P	**PKPbc**	**22 03 17.2**	**+0.1**
	baz=326						
Z46A	**Louisville**	**152.36**	**31**	P	**PKPbc**	**22 03 17.7**	**+0.5**
	baz=323						
TKL	**Tuckaleechee C**	**152.47**	**20**	PKP	**PKPdf**	**22 03 10.6**	**+0.1**
	comp=Z,1.7nm,0.4s,baz=164,slow=3.8,SNR=3.6						
TKL				PKPbc	**PKiKP**	**22 03 17.9**	**+0.3**
	comp=Z,18nm,0.8s,baz=118,slow=3.2,SNR=8.8						
TKL	**Tuckaleechee C**	**152.47**	**20**	PKIKP	**PKPdf**	**22 03 10.6**	**+0.1**
TKL						22 03 17.9	
TKL				pmax	pmax		
	comp=Z,22nm,0.9s						
146A	**Union**	**152.74**	**32**	P	**PKPbc**	**22 03 18.0**	**0.0**
	baz=322						
Z47A	**Carrollton**	**152.79**	**30**	P	**PKPbc**	**22 03 17.7**	**-0.4**
	baz=324						
Z48A	**Northport**	**152.90**	**29**	P	**PKPbc**	**22 03 18.0**	**-0.4**
	baz=326						
LRAL	**Lakeview Retre**	**153.44**	**28**	*e*PKPdf	**PKPdf**	**22 03 12.6**	**+0.7**
LRAL				*e*PKPbc	**PKiKP**	**22 03 19.9**	**+0.2**
LRAL				*e*PKPab	**PKPab**	**22 03 31.5**	**-0.2**
LPAZ	**La Paz**	**153.51**	**189**	PKP	**PKPdf**	**22 03 13.6**	**+0.3**
	comp=Z,2.1nm,1.0s,baz=249,slow=0.9,SNR=6.8						
LPAZ				PKPbc	**PKiKP**	**22 03 21.7**	**+0.6**
	comp=Z,3.5nm,0.8s,baz=92,slow=4.1,SNR=3.8						
LPAZ				PKPab	**PKPab**	**22 03 34.3**	**+1.3**
	comp=Z,7.4nm,1.0s,baz=144,slow=3.6,SNR=8.1						
KMSC	**Kings Mountain**	**153.71**	**17**	*e*PKPab	**PKPab**	**22 03 32.4**	**-0.4**
BRAL	**Brewton**	**154.94**	**31**	PFAKE		22 03 30.0	+7.2
BRAL				LR	LR		
	comp=Z,4μm,20.0s						
NHSC	**New Hope**	**155.94**	**16**	PFAKE		22 03 30.0	-12
NHSC				LR	LR		
	comp=Z,5μm,22.0s						
BBSR	**BB Station**	**156.67**	**343**	PFAKE		22 03 30.0	+14
BBSR				LR	LR		
	comp=Z,3μm,22.0s						
CMIG	**Matias Romero**	**157.03**	**70**	PKP	**PKPdf**	**22 03 17.7**	**+0.4**
	comp=Z,2.6nm,0.9s,baz=127,slow=4.4,SNR=3.6						
CMIG				PKPbc	PKPbc	22 03 28.7	
	comp=Z,2.9nm,0.9s,baz=11,slow=7.8,SNR=3.7						
CMIG				PKPab	**PKPab**	**22 03 47.8**	**+0.2**
	comp=Z,3.5nm,0.8s,baz=231,slow=3.3,SNR=4.1						
NNA	**Nana**	**157.67**	**168**	PFAKE		22 03 30.0	+12
NNA				LR	LR		
	comp=Z,3μm,21.0s						
SAML	**Samuel**	**159.04**	**206**	PFAKE		22 03 30.0	+10
SAML				LR	LR		
	comp=Z,6μm,20.0s						
TEIG	**Tepich**	**161.62**	**55**	PFAKE		22 03 30.0	+7.5
TEIG				LR	LR		
	comp=Z,1μm,22.0s						
PTGA	**Pitinga**	**163.66**	**230**	PFAKE		22 03 40.0	+15
PTGA				LR	LR		
	comp=Z,37μm,22.0s						
BBGH	**Gun Hill**	**167.08**	**285**	PFAKE		22 03 40.0	+12
BBGH				LR	LR		
	comp=Z,7μm,19.0s						
ANWB	**Willy Bob**	**167.23**	**308**	PFAKE		22 03 40.0	+12
ANWB				LR	LR		
	comp=Z,2μm,22.0s						
JTS	**JuntasAbangare**	**167.61**	**88**	PFAKE		22 03 40.0	+12
JTS				LR	LR		
	comp=Z,2μm,19.0s						
FDF	**Fort de France**	**168.09**	**294**	PFAKE		22 03 40.0	+12
FDF				LR	LR		
	comp=Z,2μm,21.0s						
OTAV	**Otavalo**	**168.54**	**148**	PFAKE		22 03 40.0	+11
OTAV				LR	LR		
	comp=Z,1μm,19.0s						
GRGR	**Grenville**	**169.28**	**282**	PFAKE		22 03 40.0	+11
GRGR				LR	LR		
	comp=Z,4μm,21.0s						
GTBY	**Guantanamo Bay**	**169.82**	**15**	PFAKE		22 03 40.0	+11
GTBY				LR	LR		
	comp=Z,237nm,19.0s						
SJG	**San Juan**	**169.96**	**324**	PFAKE		22 03 40.0	+11
SJG				LR	LR		
	comp=Z,2μm,21.0s						
MTDJ	**Mount Denham**	**170.44**	**31**	PFAKE		22 03 40.0	+10
MTDJ				LR	LR		
	comp=Z,531nm,20.0s						
SDDR	**Presa de Saban**	**171.05**	**353**	PFAKE		22 03 40.0	+10
SDDR				LR	LR		
	comp=Z,934nm,19.0s						
BCIP	**Isla Barro Col**	**172.59**	**96**	PFAKE		22 03 40.0	+9.2
BCIP				LR	LR		
	comp=Z,884nm,19.0s						
SDV	**Santo Domingo**	**177.94**	**236**	PFAKE		22 03 40.0	+7.5
SDV				LR	LR		
	comp=Z,599nm,20.0s						

NIED ***13*** *21:49:00,36˚.00N×141˚.20E,h14km,Mw4.5 Best double couple: M₀6.71000×10¹⁵ NP1:φ=294.00000°,δ35.00000°, λ18.00000°. NP2:φ=190.00000°,δ80.00000°,λ124.00000°.*
IDC ***13*** *21:49:23.1±0.4,35˚.96N×141˚.06E,h0km,mb4.7/44, mb1 4.7/49,mb1mx4.6/77,mbtmp4.7/49,ML4.2/4,MS3.9/9, Ms1 3.9/9,ms1mx3.5/49,Error ellipse: s-maj=11.9km s-min=9.9km az=106.0*
ISCJB ***13*** *21:49:24.8±0.7,35˚.93N±0˚.02×141˚.01E±0˚.03,h21km±5km, mb4.7/134,MS4.4/18,Error ellipse: s-maj=4.3km s-min=4.0km az=6.4*
NEIC ***13*** *21:49:24.4±1.6,35˚.93N×140˚.99E,h7km±10km,mb4.8/70, Error ellipse: s-maj=4.1km s-min=3.2km az=125.0*
NEIC Recorded [3 JMA] in Chiba and Ibaraki.
JMA ***13*** *21:49:25.2±0.1,35˚.96N×141˚.10E,h29km±2km,M4.7*
JMA Felt III J1.
MOS ***13*** *21:49:25.5±1.3,36˚.04N×141˚.13E,h33km,mb5.0/72,Error ellipse: s-maj=8.1km s-min=5.7km az=104.8*
ISC 13 21:49:25.2±0.7,35˚.96N±0˚.03×141˚.10E±0˚.04,h14km±3km, n341,σ1§40/363,mb4.8/134,MS4.4/19,19C-5D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.32**	**218**	P	**Pg**	**21 49 32.8**	**+1.1**
CHOJ				S	**Sg**	**21 49 38.2**	**+2.0**
JHO	**Hitachi**	**0.78**	**327**	P	**Pg**	**21 49 39.5**	**-0.9**
JHO				S	**Sb**	**21 49 50.9**	**-0.1**
JYT	**Yasato**	**0.78**	**291**	P	**Pb**	**21 49 39.6**	**-0.9**
JYT				S	**Sn**	**21 49 50.7**	**-2.6**
BSO3	**Boso 3**	**1.25**	**203**	P	**Pn**	**21 49 47.6**	**-0.4**
BSO1	**Boso 1**	**1.30**	**184**	P	**Pn**	**21 49 48.0**	**-0.5**
MJAR	**Matsushiro Arr**	**2.41**	**285**	Pn	**Pn**	**21 50 03.2**	**-1.0**
	186nm,0.3s,baz=100,slow=8.5,SNR=1595						
MJAR				LR	LR	21 51 01.2	
	comp=Z,1μm,18.6s,baz=125,slow=42						
MAJO	**Matsushiro**	**2.41**	**285**	*de*P	**Pn**	**21 50 03.9**	**-0.3**
MAJO				pmax	pmax		
	comp=Z,878nm,0.7s						
MAJO	**Matsushiro**	**2.41**	**285**	*e*Pn	**Pn**	**21 50 03.9**	**-0.3**
MAT	**Matsushiro**	**2.41**	**285**	P	**Pn**	**21 50 03.5**	**-0.7**
MAT				S	**Sn**	**21 50 32.5**	**-1.0**
MJB9	**Matsu-Tunnel**	**2.41**	**285**	*e*Pn	**Pn**	**21 50 04.2**	**-0.1**
JHJ2	**Mitsune**	**3.03**	**201**	*e*Pn	**Pn**	**21 50 13.7**	**+1.0**
JHJ	**Hachijo jima 2**	**3.03**	**201**	Pn	**Pn**	**21 50 13.5**	**+0.8**
	comp=Z,85nm,0.3s,baz=308,slow=23,SNR=20						
JHJ				Sn	**Sb**	**21 50 51.6**	**-4.2**
	comp=Z,194nm,0.3s,baz=62,slow=22,SNR=7.0						
INU	**Inuyama**	**3.38**	**261**	*e*Pn	**Pn**	**21 50 17.9**	**+0.4**
ERM	**Erimo**	**6.26**	**14**	*e*P	**Pn**	**21 50 56.3**	**-0.8**
ERM	**Erimo**	**6.26**	**14**	*e*Pn	**Pn**	**21 50 58.3**	**+1.2**
ERM				*e*Sn	**Sn**	**21 52 09.7**	**+1.3**
ASAJ	**Asahikawa**	**8.23**	**8**	Pn	**Pn**	**21 51 22.0**	**-2.2**
	comp=Z,3.4nm,0.3s,baz=223,slow=9.8,SNR=17						
ASAJ				LR	LR	21 55 15.5	
	comp=Z,561nm,20.0s,baz=241,slow=43						
ASAJ	**Asahikawa**	**8.23**	**8**	P	**Pn**	**21 51 22.0**	**-2.2**
ASAJ				pmax	pmax		
	comp=Z,3.0nm,0.3s						
ASAJ				MLR	MLR		
	comp=Z,561nm,20.0s						
ASAJ	**Asahikawa**	**8.23**	**8**	*e*Pn	**Pn**	**21 51 23.7**	**-0.5**
YUK	**Yuzh-Kuril'sk**	**8.86**	**23**	*i* P	**Pn**	**21 51 29.9**	**-2.8**
YUK				*e*S	**Sn**	**21 53 07.4**	**-4.8**
YUK				pmax	pmax		
	comp=Z,172nm,0.4s						
YUK				pmax	pmax		
	comp=N,46nm,0.2s						
YUK				pmax	pmax		
	comp=E,69nm,0.2s						
YUK				MLR	MLR		
	comp=Z,906nm,10.0s						
CBIJ	**Chichi jima**	**8.88**	**174**	*e*Pn	**Pn**	**21 51 31.1**	**-2.0**
JCJ	**Chichijima**	**8.88**	**174**	Pn	**Pn**	**21 51 31.1**	**-2.1**
	comp=Z,70nm,0.3s,baz=330,slow=6.3,SNR=16						
JNU	**Nakatsue**	**8.89**	**254**	Pn	**Pn**	**21 51 36.6**	**+3.3**
	comp=Z,0.7nm,0.3s,baz=84,slow=6.1,SNR=7.3						
JNU				LR	LR	21 55 19.7	
	comp=Z,2μm,18.6s,baz=109,slow=40						
JNU	**Nakatsue**	**8.89**	**254**	*e*Pn	**Pn**	**21 51 32.5**	**-0.8**
SHO	**Shikotan**	**9.04**	**27**	*i* P	**Pn**	**21 51 33.0**	**-2.3**
VLA	**Vladivostok**	**10.09**	**318**	*e*P	**Pn**	**21 51 50.5**	**+1.0**
VLA				pmax	pmax		
	comp=Z,34nm,1.4s						
KSRS	**Korea Array**	**10.68**	**282**	Pn	**Pn**	**21 51 57.1**	**-0.7**
	comp=Z,0.1nm,0.3s,baz=54,slow=15,SNR=2.8						
KSRS				LR	LR	21 55 57.1	
	comp=Z,588nm,21.3s,baz=104,slow=37						
KS15	**Wonju Array Si**	**10.71**	**282**	*e*Pn	**Pn**	**21 51 57.8**	**-0.4**
KSAR	**Wonju Array Be**	**10.71**	**282**	P	**Pn**	**21 51 57.1**	**-1.1**
KSAR	**Wonju Array Be**	**10.71**	**282**	Pn	**Pn**	**21 51 57.1**	**-1.1**
USRK	**Ussuriysk Ar.**	**10.79**	**323**	Pn	**Pn**	**21 52 01.3**	**+2.1**
	comp=Z,1.8nm,0.3s,baz=136,slow=12,SNR=26						
USRK				LR	LR	21 55 53.2	
	comp=Z,635nm,18.4s,baz=126,slow=36						
MDJ	**Mudanjiang**	**12.32**	**318**	P	**Pn**	**21 52 20.1**	**0.0**
MDJ				S	**Sn**	**21 54 38.4**	**+1.3**
MDJ				pmax	pmax		
	comp=Z,3.0nm,0.8s						
MDJ				pmax	pmax		
	comp=Z,150nm,5.2s						
MDJ				LR	LR		
	comp=N,710nm,16.4s						
MDJ				LR	LR		
	comp=E,700nm,13.5s						
MDJ				LR	LR		
	comp=Z,820nm,15.2s						
MDJ	**Mudanjiang**	**12.32**	**318**	*e*Pn	**Pn**	**21 52 20.4**	**+0.3**
	comp=Z,37nm,1.2s						
HABR	**Khabarovsk**	**13.28**	**342**	*e*P	Pn	21 52 28.0	-5.2
HABR				*e*SS	**Sn**	**21 55 01.9**	**+1.3**
HABR				pmax	pmax		
	comp=Z,23nm,1.4s						
HABR				MLR	MLR		
	comp=Z,339nm,15.0s						
JOW	**Kunigami**	**14.22**	**234**	*e*Pn	**Pn**	**21 52 44.9**	**-1.3**
CN2	**Changchun**	**14.33**	**308**	*e*P	**Pn**	**21 52 49.3**	**+1.7**
CN2				*e*PP	**PnPn**	**21 53 00.8**	**+5.3**
CN2				*e*S	**Sn**	**21 55 28.8**	**+2.5**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.9s						
CN2				pmax	pmax		
	comp=Z,200nm,3.0s						
CN2				LR	LR		
	comp=N,500nm,14.0s						
CN2				LR	LR		
	comp=E,600nm,14.0s						
CN2				LR	LR		
	comp=Z,500nm,15.0s						
KLR	**Kul'dur**	**14.93**	**336**	Pn	**Pn**	**21 52 53.2**	**-2.5**
	comp=Z,0.3nm,0.3s,baz=157,slow=10,SNR=8.9						
KLR				LR	LR	21 58 33.0	
	comp=Z,239nm,18.1s,baz=143,slow=37						
TYV	**Tymovskoe**	**14.94**	**4**	*e*P	**Pn**	**21 52 54.0**	**-1.9**
TYV				pmax	pmax		
	comp=Z,44nm,0.8s						
TYV				MLR	MLR		
	comp=Z,800nm,15.0s						
TYV				MLR	MLR		
	comp=N,800nm,15.0s						
DL2	**Dalian**	**15.74**	**287**	P	**Pn**	**21 53 06.8**	**+0.3**
DL2				*e*S	**Sn**	**21 56 03.0**	**+2.3**
DL2				pmax	pmax		
	comp=Z,39nm,1.3s						
DL2				pmax	pmax		
	comp=Z,190nm,5.0s						
DL2				LR	LR		
	comp=N,440nm,15.3s						
DL2				LR	LR		
	comp=E,520nm,19.6s						
DL2				LR	LR		
	comp=Z,620nm,16.5s						
NKL	**Nikolayevsk**	**17.20**	**359**	*e*P	**Pn**	**21 53 22.0**	**-2.8**
NKL				pmax	pmax		
	comp=Z,20nm,0.9s						
NKL				MLR	MLR		
	comp=Z,600nm,11.0s						
NKL				MLR	MLR		
	comp=N,500nm,11.0s						
NJ2	**Nanjing**	**18.84**	**264**	*e*P	**Pn**	**21 53 48.9**	**+3.7**
NJ2				pmax	pmax		
	comp=Z,42nm,1.2s						
YOJ	**Yonaguni jima**	**19.34**	**239**	*e*P	**P**	**21 53 49.0**	**-1.2**
YOJ				pmax	pmax		
	comp=Z,105nm,1.0s						
YOJ	**Yonaguni jima**	**19.34**	**239**	*e*P	**P**	**21 53 49.0**	**-1.2**
	comp=Z,105nm,1.0s						
NACB	**Ninganchiao**	**20.52**	**240**	*e*P	**P**	**21 54 01.5**	**-1.6**
	comp=Z,21nm,0.9s						
PEA0	**Petropavlovsk-**	**20.75**	**29**	*e*P	**P**	**21 54 05.2**	**-0.2**
PEA0				*e*sP	**sP**	**21 54 13.8**	**+2.7**
PETK	**Petropavlovsk-**	**20.75**	**29**	P	**P**	**21 54 05.6**	**+0.3**
	comp=Z,6.7nm,0.8s,baz=194,slow=13,SNR=5.3						
PETK	**Petropavlovsk-**	**20.75**	**29**	P	**P**	**21 54 05.6**	**+0.3**
PETK				pmax	pmax		
	comp=Z,8.0nm,0.8s						
PET	**Petropavlovsk**	**21.07**	**30**	*e*P	**P**	**21 54 07.1**	**-1.6**
PET				pmax	pmax		
	comp=Z,41nm,1.1s						
PET	**Petropavlovsk**	**21.07**	**30**	*e*P	**P**	**21 54 07.1**	**-1.6**
	comp=Z,42nm,1.1s						
TWG	**Pinlang**	**21.76**	**238**	*e*P	**P**	**21 54 15.0**	**-1.4**
	comp=Z,64nm,0.8s						
WHN	**Wuhan**	**22.98**	**264**	P	**P**	**21 54 28.4**	**-0.9**
HHC	**Hu-ho-hao-te**	**23.60**	**291**	*e*P	**P**	**21 54 35.5**	**-0.2**
HHC				sP	sP	21 54 47.4	+5.8
HHC				S	**S**	**21 58 51.6**	**+2.0**
HHC				SS	**SnSn**	**21 59 31.8**	**+5.4**
HHC				pmax	pmax		
	comp=Z,38nm,0.9s						
HHC				pmax	pmax		
	comp=Z,490nm,4.1s						
HHC				LR	LR		
	comp=N,1μm,11.5s						
HHC				LR	LR		
	comp=E,1μm,11.5s						
HHC				LR	LR		
	comp=Z,1μm,11.5s						
MA2	**Magadan**	**24.46**	**12**	P	**P**	**21 54 44.0**	**+0.6**
	comp=Z,25nm,0.8s,baz=221,slow=9.5,SNR=12						
MA2	**Magadan**	**24.46**	**12**	*e*P	**P**	**21 54 43.6**	**+0.2**
MA2				pmax	pmax		
	comp=Z,88nm,0.8s						
MA2	**Magadan**	**24.46**	**12**	*e*P	**P**	**21 54 43.6**	**+0.2**
	comp=Z,88nm,0.8s						
XAN	**Xi'an**	**26.37**	**275**	P	**P**	**21 54 59.9**	**-1.1**
XAN				sP	sP	21 55 06.8	-0.2
XAN				pmax	pmax		
	comp=Z,20nm,0.6s						
XAN				pmax	pmax		
	comp=Z,82nm,5.6s						
ENH	**Enshi**	**27.00**	**267**	*e*P	**P**	**21 55 05.4**	**-1.4**
HKC	**Hong Kong Obse**	**27.06**	**247**	P	**P**	**21 55 11.0**	**+3.7**
YAK	**Yakutsk**	**27.07**	**348**	P	**P**	**21 55 07.8**	**+0.9**
	comp=Z,43nm,0.6s,baz=250,slow=3.4,SNR=8.3						
YAK	**Yakutsk**	**27.07**	**348**	*e*P	**P**	**21 55 07.0**	**+0.1**
YAK				pmax	pmax		
	comp=Z,117nm,1.5s						
YAK				pmax	pmax		
	comp=N,55nm,1.5s						
YAK				pmax	pmax		
	comp=E,48nm,1.6s						
YAK	**Yakutsk**	**27.07**	**348**	*e*P	**P**	**21 55 08.2**	**+1.2**
	comp=E,59nm,0.9s						
ULN	**Ulaanbaatar**	**27.77**	**306**	*e*P	**P**	**21 55 14.3**	**+0.7**
ULN				pmax	pmax		
	comp=Z,9.0nm,0.7s						
ULN	**Ulaanbaatar**	**27.77**	**306**	*e*P	**P**	**21 55 14.3**	**+0.7**
	comp=Z,9.2nm,0.7s						
H11N2	**WAKE ISLAND Hy**	**27.84**	**119**	T	T	22 24 18.1	
	baz=311,slow=75,SNR=478						
H11N1	**WAKE ISLAND Hy**	**27.84**	**119**	T	T	22 24 14.3	
	baz=311,slow=75,SNR=727						
H11N3	**WAKE ISLAND Hy**	**27.85**	**119**	T	T	22 24 21.3	
	baz=311,slow=75,SNR=653						
SEY	**Seymchan**	**27.89**	**11**	P	**P**	**21 55 14.9**	**+0.6**
	comp=Z,5.9nm,0.7s,baz=188,slow=6.0,SNR=7.9						
SEY	**Seymchan**	**27.89**	**11**	P	**P**	**21 55 15.0**	**+0.6**
SEY				pmax	pmax		
	comp=Z,6.0nm,0.7s						
SONA1	**Songino Array**	**28.19**	**306**	*e*P	**P**	**21 55 17.6**	**+0.2**
SONM	**Songino Array**	**28.19**	**306**	P	**P**	**21 55 16.6**	**-0.8**
	comp=Z,6.5nm,0.6s,baz=106,slow=8.8,SNR=11						
SONM	**Songino Array**	**28.19**	**306**	P	**P**	**21 55 16.6**	**-0.8**
SONM				pmax	pmax		
	comp=Z,6.0nm,0.6s						
BOD	**Bodaibo**	**28.31**	**329**	*e*P	**P**	**21 55 17.1**	**-1.1**
BOD				pmax	pmax		
	comp=Z,18nm,0.8s						
H11S1	**WAKE ISLAND Hy**	**28.51**	**121**	T	T	22 25 09.6	
	baz=313,slow=76,SNR=1375						
H11S3	**WAKE ISLAND Hy**	**28.51**	**121**	T	T	22 25 09.7	
	baz=313,slow=76,SNR=950						
H11S2	**WAKE ISLAND Hy**	**28.52**	**121**	T	T	22 25 10.9	
	baz=313,slow=76,SNR=1237						
LZH	**Lanzhou**	**30.01**	**281**	*e*P	**P**	**21 55 32.3**	**-1.4**
LZH				pP	sP	21 55 38.3	-1.4
LZH				sP	pP	21 55 39.8	+1.8
LZH				PP	**PnPn**	**21 56 30.5**	**+0.2**
LZH				pmax	pmax		
	comp=Z,32nm,1.3s						
LZH				pmax	pmax		
	comp=Z,97nm,6.0s						
LZH				LR	LR		
	comp=N,390nm,13.2s						
LZH				LR	LR		
	comp=E,400nm,13.5s						
LZH				LR	LR		
	comp=Z,500nm,16.7s						
GYA	**Guiyang**	**30.80**	**262**	*e*P	**P**	**21 55 41.0**	**+0.3**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
TLY	**Talaya**	**30.86**	**312**	P	**P**	**21 55 41.1**	**+0.2**
	comp=Z,8.9nm,0.7s,baz=87,slow=3.3,SNR=3.8						
TLY	**Talaya**	**30.86**	**312**	*e*P	**P**	**21 55 41.0**	**+0.2**
TLY				pmax	pmax		
	comp=Z,8.0nm,0.7s						
TLY				MLR	MLR		
	comp=Z,355nm,17.0s						
TLY	**Talaya**	**30.86**	**312**	*e*P	**P**	**21 55 40.4**	**-0.4**
	comp=Z,8.8nm,0.7s						
CD2	**Chengdu**	**31.44**	**272**	P	**P**	**21 55 44.5**	**-1.7**
CD2				pmax	pmax		
	comp=Z,21nm,0.7s						
GTA	**Gaotai**	**32.65**	**289**	*e*P	**P**	**21 55 56.6**	**-0.3**
GTA				pP	sP	21 56 00.9	-2.0
GTA				sP	pP	21 56 03.9	+2.8
GTA				S	**S**	**22 01 11.8**	**-0.8**
GTA				sS	sS	22 01 20.0	+0.4
GTA				SS	**SnSn**	**22 03 10.3**	**+3.0**
GTA				pmax	pmax		
	comp=Z,10.0nm,1.1s						
GTA				pmax	pmax		
	comp=Z,110nm,5.7s						
GTA				LR	LR		
	comp=N,590nm,16.2s						
GTA				LR	LR		
	comp=E,2μm,20.2s						
GTA				LR	LR		
	comp=Z,290nm,15.7s						
KMI	**Kunming**	**34.56**	**263**	P	**P**	**21 56 13.3**	**-0.4**
KMI				pP	sP	21 56 19.3	-0.4
KMI				sP	pP	21 56 21.8	+3.8
KMI				pmax	pmax		
	comp=Z,12nm,1.0s						
KMI				pmax	pmax		
	comp=Z,150nm,5.9s						
TIXI	**Tiksi**	**36.33**	**353**	*i* P	**P**	**21 56 28.8**	**+0.7**
TIXI				pmax	pmax		
	comp=Z,7.0nm,1.1s						
MYLDM	**Lahad Datu**	**37.02**	**219**	*e*P	**P**	**21 56 34.3**	**-0.3**
	comp=Z,12nm,1.0s						
KKM	**Kota Kinabalu**	**37.52**	**223**	*e*P	**P**	**21 56 38.9**	**-0.1**
	comp=Z,12nm,1.1s						
CHTO	**Chiang Mai**	**40.79**	**257**	*e*P	**P**	**21 57 04.7**	**-1.5**
CHTO				pmax	pmax		
	comp=Z,5.0nm,1.0s						
CHTO	**Chiang Mai**	**40.79**	**257**	*e*P	**P**	**21 57 04.7**	**-1.5**
	comp=Z,5.2nm,1.0s						
CMAR	**Chiang Mai Arr**	**40.99**	**256**	P	**P**	**21 57 08.2**	**+0.4**
	comp=Z,0.8nm,0.5s,baz=49,slow=7.2,SNR=8.8						
CMAR				LR	LR	22 14 19.4	
	comp=Z,143nm,18.4s,baz=170,slow=36						
WMQ	**Urumqi**	**41.11**	**298**	P	**P**	**21 57 09.4**	**+0.7**
WMQ				pP	sP	21 57 14.4	-0.3
WMQ				sP	pP	21 57 17.9	+4.9
WMQ				SS	SS	22 06 12.6	-11
WMQ	**Urumqi**	**41.11**	**298**	ScS	ScS	22 07 16.5	+3.6
WMQ				pmax	pmax		
	comp=Z,13nm,0.8s						
WMQ				pmax	pmax		
	comp=Z,76nm,3.6s						
WMQ				LR	LR		
	comp=N,150nm,14.2s						
WMQ				LR	LR		
	comp=E,170nm,15.8s						
WMQ				LR	LR		
	comp=Z,110nm,23.8s						
LSA	**Lhasa**	**42.06**	**276**	*e*

comp=E,6.4nm,0.9s
MAKZ Makanchi 44.69 303 *e*P P 21 57 37.6 0.0
MAKZ Makanchi 44.69 303 *e*P P 21 57 37.6 0.0
MAKZ *es*P **pP 21 57 37.9 -4.1**
KAPI Kappang 45.41 211 P **P 21 57 43.4 -0.1**
comp=E,4.8nm,0.6s,baz=38,slow=5.6,SNR=4.3
KURK Kurchatov 46.40 309 *e*P **P 21 57 50.4 -0.6**
KURK pmax pmax
comp=Z,39nm,0.8s
KURK Kurchatov 46.40 309 *e*P **P 21 57 50.4 -0.6**
comp=Z,39nm,0.8s
KURBB Kurchatov Arra 46.47 309 P **P 21 57 51.0 -0.5**
comp=Z,19nm,0.5s,baz=85,slow=7.6,SNR=76
PKIN Phulchoki 47.54 276 *e*P **P 21 58 01.1 +0.5**
comp=Z,13nm,0.7s
KKN Kakani 47.55 277 *e*P **P 21 58 00.3 -0.3**
comp=Z,28nm,0.7s
JOHN Johnston Islan 47.66 100 *e*P **P 21 58 00.6 -0.7**
comp=Z,104nm,0.8s
MMRI Maumere 47.78 206 *e*P **P 21 58 01.2 -0.9**
comp=Z,35nm,0.9s
RSO Redoubt South 47.91 38 *e*P **P 21 58 05.8 +2.9**
GKN Gorkha 47.98 277 *e*P **P 21 58 03.6 -0.3**
comp=Z,102nm,0.9s
KDAK Kodiak Island 48.07 41 *i*P **P 21 58 04.2 +0.3**
SOEI Soe 48.16 203 *e*P **P 21 58 04.9 -0.3**
comp=Z,52nm,0.8s
MLY Manley 48.90 32 *e*P **P 21 58 12.2 +1.9**
comp=Z,13nm,1.4s
KOLN Koldanda 48.91 277 *e*P **P 21 58 10.8 -0.3**
comp=Z,17nm,0.6s
PYUN Piuthan 49.26 278 *e*P **P 21 58 13.9 +0.1**
comp=Z,135nm,1.0s
MTN Manton Dam 49.44 193 *e*P **P 21 58 15.0 +0.2**
comp=Z,52nm,1.4s
TKM2 Tokmak 2 49.92 299 *e*P **P 21 58 19.5 +0.8**
TKM2 pmax pmax
comp=Z,82nm,1.5s
TKM2 Tokmak 2 49.92 299 *e*P **P 21 58 19.5 +0.8**
comp=Z,82nm,1.5s
MDM Murphy Dome 49.96 32 *e*P **P 21 58 20.2 +1.8**
comp=Z,10nm,1.0s
WRH Wood River Hil 50.03 32 *e*P **P 21 58 20.3 +1.4**
comp=Z,4.9nm,0.8s
IL1 Eielson Array 50.54 32 *e*P **P 21 58 22.7 -0.1**
ILAR Eielson Array 50.54 32 P **P 21 58 22.9 +0.1**
comp=Z,2.9nm,0.7s,baz=266,slow=6.1,SNR=21
ILB Eielson Array 50.54 32 *e*P **P 21 58 23.3 +0.6**
KSH Kashi 50.62 295 P **P 21 58 27.8 +3.9**
KSH *es*P sP 21 58 34.5 +4.5
KSH *e*PcP **PcP 21 59 45.3 +3.9**
KSH *e*ScP **ScP 22 03 39.1 +2.1**
KSH PcS **PcS 22 03 40.9 +2.1**
KSH S **S 22 05 42.0 +3.7**
KSH ScS **ScS 22 08 14.8 +0.2**
KSH pmax pmax
comp=Z,7.0nm,0.6s
KSH pmax pmax
comp=Z,66nm,4.2s
KSH LR LR
comp=N,90nm,5.8s
KSH LR LR
comp=E,140nm,11.0s
KSH LR LR
comp=Z,220nm,13.1s
AAK Ala-Archa 50.78 299 P **P 21 58 25.4 +0.2**
comp=Z,6.3nm,0.6s,baz=115,slow=5.3,SNR=14
AAK Ala-Archa 50.78 299*ce*P **P 21 58 25.5 +0.4**
AAK pmax pmax
comp=Z,26nm,0.8s
AAK Ala-Archa 50.78 299 *e*P **P 21 58 25.2 +0.1**
comp=Z,12nm,1.0s
BVAR Borovoye Array 51.11 313 P **P 21 58 27.0 -0.2**
comp=Z,7.6nm,0.6s,baz=69,slow=8.1,SNR=14
BRVK Borovoye 51.17 313*ce*P **P 21 58 28.2 +0.5**
BRVK pmax pmax
comp=Z,14nm,0.8s
BRVK Borovoye 51.17 313 *e*P **P 21 58 27.4 -0.3**
comp=Z,15nm,0.9s
EKS2 Erkin-Say 51.28 299 *e*P **P 21 58 28.4 -0.4**
EKS2 pmax pmax
comp=Z,8.0nm,0.7s
EKS2 Erkin-Say 51.28 299 *e*P **P 21 58 28.4 -0.4**
comp=Z,8.0nm,0.7s
DOT Dot Lake 51.84 33 *e*P **P 21 58 30.8 -1.8**
comp=Z,8.9nm,0.7s
ZRNK Zerenda 51.95 313 *e*P **P 21 58 33.3 -0.2**
ZRNK pmax pmax
comp=Z,21nm,0.8s
ZRNK Zerenda 51.95 313 *e*P **P 21 58 33.3 -0.2**
comp=Z,21nm,0.8s
MENT Mentasta 52.07 34 *e*P **P 21 58 36.2 +1.9**
comp=Z,5.8nm,1.0s
GSI Gunungsitoli 53.03 240 *e*P **P 21 58 41.4 -0.6**
comp=Z,17nm,0.6s
KKAR Karatay Array 53.45 301 *e*P **P 21 58 44.8 0.0**
KKAR Karatay Array 53.45 301 *e*P **P 21 58 44.8 0.0**
INK Inuvik 55.46 27 P **P 21 58 59.9 +1.0**
comp=Z,2.2nm,0.6s,baz=309,slow=7.0,SNR=14
INK Inuvik 55.46 27 *e*P **P 21 59 00.0 +1.1**
INK pmax pmax
comp=Z,4.0nm,0.7s
INK Inuvik 55.46 27 *e*P **P 21 59 00.0 +1.1**
comp=Z,3.7nm,0.7s
FITZ Fitzroy Crossi 55.72 198 P **P 21 59 02.0 +0.7**
comp=Z,8.2nm,0.6s,baz=16,slow=6.9,SNR=18
FITZ Fitzroy Crossi 55.72 198 *e*P **P 21 59 02.3 +1.0**
comp=Z,40nm,1.6s
SVE Sverdlovsk 55.79 319⇓ *i*P **P 21 59 01.9 +0.4**
SVE pmax pmax
comp=Z,44nm,0.8s
SVE MLR MLR
comp=Z,296nm,16.0s
WRAB Tennant Creek 55.95 188 *e*P **P 21 59 02.5 -0.5**
WRAB pmax pmax
comp=Z,20nm,0.9s
WRAB Tennant Creek 55.95 188 *e*P **P 21 59 02.5 -0.5**
comp=Z,20nm,0.9s
WB2 Warramunga Arr 55.96 188 *e*P **P 21 59 02.8 -0.3**
comp=Z,34nm,1.2s
WRA Warramunga Arr 55.96 188 P **P 21 59 02.4 -0.7**
comp=Z,9.8nm,0.6s,baz=4.6,slow=7.2,SNR=44
ARU Arti 57.00 319 P **P 21 59 09.6 -0.6**
comp=Z,45nm,0.6s,baz=84,slow=5.3,SNR=42
ARU Arti 57.00 319*c i*P **P 21 59 09.5 -0.6**
ARU 22 00 06.9
ARU 22 01 14.6
ARU S **S 22 06 59.2 -4.7**
ARU SS **SS 22 10 42.6 -9.3**
ARU pmax pmax
comp=Z,59nm,0.8s
ARU Arti 57.00 319 *e*P **P 21 59 09.8 -0.3**
comp=Z,49nm,0.7s
KBL Kabul 57.57 291 *e*P **P 21 59 14.4 -0.4**
KBL pmax pmax
comp=Z,7.0nm,0.9s
KBL Kabul 57.57 291 *e*P **P 21 59 14.4 -0.4**
comp=Z,6.9nm,0.9s
HYB Hyderabad 57.92 269 *i*P **P 21 59 17.0 -0.2**
ABKAR Akbulak array 58.44 311 *e*P **P 21 59 20.1 -0.2**
AKTO Aktyubinsk 59.21 312 P **P 21 59 25.1 -0.6**
comp=Z,7.7nm,0.7s,baz=77,slow=7.4,SNR=14
AS01 Alice Springs 59.68 188 *e*P **P 21 59 28.4 -0.7**
AS31 Alice Springs 59.69 188 *e*P **P 21 59 29.1 -0.2**
ASAR Alice Springs 59.69 188 P **P 21 59 28.9 -0.4**
comp=Z,5.6nm,0.7s,baz=12,slow=7.1,SNR=27
MBWA Marble Bar 60.30 203 *e*P **P 21 59 34.2 +0.8**
comp=Z,47nm,0.7s
POO Poona 61.16 273 *e*P **P 21 59 37.0 -2.6**
PALK Pallekele 61.89 258 P **P 21 59 45.0 +0.4**
comp=Z,6.1nm,0.6s,baz=118,slow=3.6,SNR=5.7
TMCR Tamitsa 63.57 332 *e*P **P 21 59 55.0 +0.1**
TMCR pmax pmax
comp=Z,19nm,1.0s
RES Resolute Bay 63.71 14 *e*P **P 21 59 54.8 -0.9**
RES pmax pmax
comp=Z,11nm,0.9s
RES Resolute Bay 63.71 14 *e*P **P 21 59 54.8 -0.9**
comp=Z,11nm,0.9s
GEYT Alibeck 64.14 299 P **P 21 59 59.4 +0.2**
comp=Z,4.6nm,0.8s,baz=46,slow=4.3,SNR=10
KLMR Klimovskoe 64.53 328 *e*P **P 21 59 58.8 -2.5**
KLMR pmax pmax
comp=Z,9.0nm,0.7s
YKW3 Yellowknife Ar 64.83 30 *e*P **P 22 00 03.7 +0.5**
YKA Yellowknife Ar 64.87 30 P **P 22 00 03.6 +0.2**
comp=Z,2.4nm,0.7s,baz=302,slow=6.7,SNR=29
YKB5 Yellowknife Ar 64.87 30 *e*P **P 22 00 03.1 -0.4**
ARCES ARCESS Array B 64.92 339 P **P 22 00 04.2 +0.4**
comp=Z,3.7nm,0.7s,baz=56,slow=7.9,SNR=11
MSF Maaselka 65.92 335 P **P 22 00 11.6 +1.3**
MSF pmax pmax
comp=Z,13nm,0.7s
DAG Danmarks Havn 66.82 355 *i*P **P 22 00 15.2 -0.7**
comp=Z,4.3nm,1.0s
DAG Danmarks Havn 66.82 355 *i*P **P 22 00 15.2 -0.7**
DAG pmax pmax
comp=Z,4.0nm,1.0s
OUL Oulu 67.47 335 P **P 22 00 21.1 +1.0**
OUL pmax pmax
comp=Z,22nm,1.9s
STKA Stephens Creek 67.48 180 P **P 22 00 20.1 -0.4**
comp=Z,3.1nm,0.8s,baz=16,slow=2.9,SNR=2.9
VRH Novokhopyorsk 68.21 318 *e*P **P 22 00 23.8 -1.2**
VRH pmax pmax
comp=Z,10.0nm,0.6s
OBN Obninsk 68.81 323 P **P 22 00 28.6 -0.1**
comp=Z,15nm,0.6s,baz=102,slow=15,SNR=4.9
OBN Obninsk 68.81 323*ce*P **P 22 00 27.4 -1.3**
OBN pmax pmax
comp=Z,10.0nm,0.6s
OBN MLR MLR
comp=Z,138nm,15.0s
LPSR Galich'ya Gora 68.97 320 *e*P **P 22 00 28.9 -0.8**
LPSR pmax pmax
comp=Z,20nm,0.7s
VSR Storozhevoye 69.58 319 *e*P **P 22 00 32.8 -0.7**
VSR pmax pmax
comp=Z,20nm,0.7s
FIA1 FINESS Array S 69.65 332 *e*P **P 22 00 33.5 -0.3**
FINES FINESS Array B 69.65 332 P **P 22 00 33.7 -0.1**
comp=Z,9.2nm,0.7s,baz=69,slow=6.3,SNR=20
GOF Gofitskoye 70.62 312⇑ *e*P **P 22 00 40.1 0.0**
YBH Yreka Blue Hor 71.21 52 P **P 22 00 45.2 +1.3**
comp=Z,2.7nm,0.6s,baz=300,slow=4.6,SNR=4.7
ZEI Tsey 71.29 310 *e*P **P 22 00 43.0 -1.4**
ZEI pmax pmax
comp=Z,17nm,0.8s
KBZ Khabaz 71.41 311 P **P 22 00 45.4 +0.6**
comp=Z,9.8nm,0.8s,baz=56,slow=2.5,SNR=21
KVAR Kislovodsk Arr 71.42 311 P **P 22 00 45.4 +0.3**
comp=Z,13nm,0.7s,baz=198,slow=9.5,SNR=18
KIV Kislovodsk 71.42 311 *i*P **P 22 00 46.5 +1.4**
SNR=14
KIV Kislovodsk 71.42 311*de*P **P 22 00 44.8 -0.3**
KIV *e* 22 03 23.8
KIV *e*PPP PPP 22 05 07.8
KIV *e*S **SKiKP 22 10 26.8 +2.3**
KIV pmax pmax
comp=Z,31nm,0.8s
KIV Kislovodsk 71.42 311 *e*P **P 22 00 45.0 -0.1**
comp=Z,27nm,0.8s
SUMG Summit 71.76 360 *i*P **P 22 00 47.4 +0.4**
comp=Z,9.5nm,0.9s
SUMG Summit 71.76 360 *i*P **P 22 00 47.4 +0.4**
SUMG pmax pmax
comp=Z,10.0nm,0.9s
SUMG Summit 71.76 360 *e*P **P 22 00 48.1 +1.1**
comp=Z,12nm,0.9s
UOSS Minazif 71.90 288 *e*P **P 22 00 48.5 +0.3**
comp=Z,0.4nm,0.8s
HATD Hatta, Dubai 72.02 288 *i*P **P 22 00 48.8 0.0**
SNR=7.0
ASHO Ashiyiah 72.15 288 P **P 22 00 49.5 -0.1**
GNI Garni 72.15 307 P **P 22 00 50.1 +0.5**
comp=Z,7.6nm,0.6s,baz=227,slow=4.5,SNR=6.8
WALA Waterton Lakes 72.41 42 *e*P **P 22 00 54.1 +3.1**
comp=Z,8.4nm,1.4s
JTMT Jette 72.95 43 *e*P **P 22 00 57.0 +2.8**
ANN Anapa 74.09 314 *e*P **P 22 01 00.0 -0.8**
ANN pmax pmax
comp=Z,20nm,1.2s
ANN MLR MLR
comp=Z,216nm,19.0s
PAHR Pah Rah Range 74.43 52 *e*P **P 22 01 04.6 +1.5**
comp=Z,6.4nm,1.0s
NC405 NORSAR Array S 74.87 337 *e*P **P 22 01 05.3 +0.3**
HFS Hagfors 74.96 336 P **P 22 01 05.3 -0.2**
comp=Z,3.0nm,0.6s,baz=64,slow=6.8,SNR=12
AKASG Malin Array Be 74.99 322 P **P 22 01 05.4 -0.5**
comp=Z,7.6nm,0.6s,baz=47,slow=6.0,SNR=36
AKBB Malin Array Si 74.99 322 *e*P **P 22 01 05.7 -0.2**
AKBB pmax pmax
comp=Z,15nm,0.8s
AKBB Malin Array Si 74.99 322 *e*P **P 22 01 05.7 -0.2**
comp=Z,15nm,0.8s
KIEV Kiev 75.00 322*ce*P **P 22 01 05.9 -0.1**
KIEV pmax pmax
comp=Z,20nm,1.7s
KIEV Kiev 75.00 322 *e*P **P 22 01 04.9 -1.1**
comp=Z,14nm,0.8s
AK11 Malin Array Si 75.04 322 *e*P **P 22 01 05.8 -0.4**
NC204 NORSAR Array S 75.04 338 *e*P **P 22 01 06.5 +0.4**
NB201 NORSAR Array S 75.05 337 *e*P **P 22 01 06.3 +0.2**
NB2 NORSAR Subarra 75.08 337 P **P 22 01 06.1 -0.3**
comp=Z,8.2nm,0.7s,baz=41,slow=6.2
NB2 NORSAR Subarra 75.08 337 P **P 22 01 06.0 -0.3**
NB2 pmax pmax
comp=Z,7.0nm,0.7s
NOA NORSAR Array B 75.08 337 P **P 22 01 05.7 -0.6**
comp=Z,7.2nm,0.7s,baz=39,slow=5.7,SNR=43
NOA NORSAR Array B 75.08 337 P **P 22 01 05.7 -0.6**
NOA pmax pmax
comp=Z,8.0nm,0.7s
LRM Limekiln Ridge 75.10 44 *e*P **P 22 01 08.0 +1.0**
NBO02 NORSAR Array S 75.19 337 *e*P **P 22 01 06.7 -0.2**
NBO00 NORSAR Array S 75.22 337 *e*P **P 22 01 07.3 +0.2**
BOZ Bozeman (W) 75.66 44 *e*P **P 22 01 10.8 +0.7**
BOZ pmax pmax
comp=Z,32nm,1.8s
BOZ Bozeman (W) 75.66 44 *e*P **P 22 01 10.8 +0.7**
comp=Z,32nm,1.8s
NV01 Mina Array Sit 75.84 53 *e*P **P 22 01 12.0 +0.7**
NVAR Mina Array Bea 75.84 53 P **P 22 01 11.7 +0.4**
comp=Z,2.6nm,0.8s,baz=299,slow=4.9,SNR=10
SIM Simferopol' 75.92 316 *e*P **P 22 01 10.6 -0.7**
SIM pmax pmax
comp=Z,15nm,0.8s
H17A Grant Village 77.02 44 *e*P **P 22 01 20.9 +2.9**
comp=Z,6.9nm,0.8s
SORM Soroca 77.06 321⇑ *i*P **P 22 01 17.4 -0.3**
IMW Indian Meadow 77.11 45 *e*P **P 22 01 20.0 +1.4**
comp=Z,3.6nm,0.8s
HVU Hansel Valley 77.32 47 *e*P **P 22 01 21.3 +1.7**
HVU pmax pmax
comp=Z,4.0nm,0.8s
HVU Hansel Valley 77.32 47 *e*P **P 22 01 21.3 +1.7**
comp=Z,4.1nm,0.8s
R11A Troy Canyon, C 77.63 52 *e*P **P 22 01 22.1 +0.7**
comp=Z,15nm,1.5s
FRB Frobisher Bay 77.88 13 P **P 22 01 22.2 +0.2**
comp=Z,3.5nm,0.6s,baz=319,slow=5.2,SNR=9.5
TPNV Topopah Spring 78.02 53 *e*P **P 22 01 24.5 +0.9**
TPNV *e* 22 01 36.5
TPNV pmax pmax
comp=Z,4.0nm,0.8s
TPNV Topopah Spring 78.02 53 *e*P **P 22 01 24.4 +0.9**
comp=Z,4.2nm,0.8s
TPNV *e*PcP **PcP 22 01 36.5 +3.2**
HWUT Hardware Ranch 78.15 47 *e*P **P 22 01 25.5 +1.3**
comp=Z,13nm,1.5s
BW06 Boulder Array 78.60 45 *e*P **P 22 01 27.2 +0.4**
PD31 Pinedale Array 78.60 45 *e*P **P 22 01 27.3 +0.5**
PDAR Pinedale Array 78.60 45 P **P 22 01 26.5 -0.3**
comp=Z,1.7nm,0.6s,baz=258,slow=1.8,SNR=17
NLU North Lily Min 78.85 49 *e*P P 22 01 33.8 +5.6
comp=Z,3.2nm,0.9s
KWP Kalwaria Pacla 78.86 324 *e*P **P 22 01 28.7 +1.0**
KWP Kalwaria Pacla 78.86 324⇓ *i*P **P 22 01 28.6 +0.9**
KWP Kalwaria Pacla 78.86 324 *e*P **P 22 01 28.7 +1.0**
BUR08 Bucovina Ar. S 78.99 322 *e*P **P 22 01 29.1 +0.5**
BURAR Bucovina Array 79.00 322⇑ *i*P **P 22 01 29.0 +0.3**
TESR Tescani 79.00 320⇓ *i*P **P 22 01 29.0 +0.4**
CFR Carcaliu 79.08 316⇑ *i*P **P 22 01 29.1 +0.1**
BR131 Keskin Array S 79.37 312 *e*P **P 22 01 31.6 +0.7**
BRTR Keskin Array B 79.38 312 P **P 22 01 30.8 -0.1**
comp=Z,4.9nm,0.8s,baz=108,slow=3.9,SNR=23
BRTR Keskin Array B 79.38 312 *i*P **P 22 01 31.1 +0.2**
BRTR pmax pmax
comp=Z,5.0nm,0.9s
VRI Vrincioaia 79.38 320⇑ *i*P **P 22 01 32.6 +1.9**
TIRR Tirgusor 79.40 318 *e*P **P 22 01 29.8 -1.0**
TIRR pmax pmax
comp=Z,3.0nm,0.9s
TIRR Tirgusor 79.40 318 *e*P **P 22 01 29.8 -1.0**
comp=Z,3.4nm,0.9s
KOLS Kolonicke sedl 79.54 324 *e*P **P 22 01 31.7 +0.2**
KOLS pmax pmax
comp=Z,5.0nm,1.0s
KOLS Kolonicke sedl 79.54 324 *e*P **P 22 01 31.7 +0.2**
STHS Stebnicka Huta 79.69 325 *e*P **P 22 01 33.3 +1.0**
STHS pmax pmax
comp=Z,4.0nm,0.8s
STHS Stebnicka Huta 79.69 325 *e*P **P 22 01 33.3 +1.0**
OJC Ojcow 79.79 326 *e*P **P 22 01 33.3 +0.5**
OJC Ojcow 79.79 326 *e*P **P 22 01 33.1 +0.3**
OJC pmax pmax
comp=Z,13nm,1.1s
OJC Ojcow 79.79 326 *e*P **P 22 01 33.1 +0.3**
comp=Z,12nm,1.1s
BR231 Keskin MP Arra 79.82 312 *e*P **P 22 01 31.8 -1.5**
LCMT Little Creek M 79.92 52 *e*P **P 22 01 35.7 +1.8**
comp=Z,4.4nm,1.1s
CRVS Cervenica-Dubn 79.95 324 *e*P **P 22 01 34.0 +0.3**
CRVS Cervenica-Dubn 79.95 324 *e*P **P 22 01 34.0 +0.3**
MTPU Mount Pierson 79.95 50 *e*P **P 22 01 36.1 +1.7**
comp=Z,6.2nm,1.2s
P17A Butcher Ranch, 79.96 48 *e*P **P 22 01 36.7 +2.5**
comp=Z,4.7nm,0.7s
DOPR Dopca 80.01 320⇑ *i*P **P 22 01 35.4 +1.3**
NIE Niedzica 80.13 325 *e*P **P 22 01 35.3 +0.6**
NIE Niedzica 80.13 325 *e*P **P 22 01 35.3 +0.6**
P18A Preston Nutter 80.16 48 *e*P **P 22 01 36.9 +1.4**
comp=Z,3.9nm,0.8s
SRU San Rafael Swe 80.31 49 *e*P **P 22 01 37.0 +0.9**
SRU pmax pmax
comp=Z,6.0nm,0.8s
SRU San Rafael Swe 80.31 49 *e*P **P 22 01 37.0 +0.9**
comp=Z,5.5nm,0.8s
LANS Liptovska Anna 80.70 325 *e*P **P 22 01 39.8 +2.0**
LANS Liptovska Anna 80.70 325 *e*P **P 22 01 39.8 +2.0**
OKC Ostrava-Krasne 80.81 327 *e*P **P 22 01 38.9 +0.6**
OKC AMS AMS 22 41 10.0
comp=Z,200nm,19.8s
OKC Ostrava-Krasne 80.81 327 *e*P **P 22 01 38.9 +0.6**
OKC MLR MLR
comp=Z,200nm,19.8s
ARR Arges 80.81 320⇑ *i*P **P 22 01 39.9 +1.4**
KSP Ksiaz 80.88 328 *e*P **P 22 01 39.5 +0.8**
KSP Ksiaz 80.88 328 *e*P **P 22 01 39.5 +0.8**
MORC Moravsky Berou 81.12 327⇑ *i*P **P 22 01 40.6 +0.6**
MORC Moravsky Berou 81.12 327 *e*P **P 22 01 40.6 +0.6**
MORC pmax pmax
comp=Z,18nm,1.0s
MORC Moravsky Berou 81.12 327 *e*P **P 22 01 40.6 +0.6**
comp=Z,18nm,1.0s
LOT Lotru 81.20 321⇑ *i*P **P 22 01 40.8 +0.2**
DPC Dobruska-Polom 81.23 328 *e*P **P 22 01 41.4 +0.8**
DPC *ep*P **PcP 22 01 45.6 -1.2**
DPC AMS AMS 22 42 10.0
comp=Z,200nm,13.1s
DPC Dobruska-Polom 81.23 328 *e*P **P 22 01 41.4 +0.8**
DPC MLR MLR
comp=Z,200nm,13.1s
KRLC Kraliky 81.24 327 *e*P **P 22 01 41.0 +0.4**
KRLC Kraliky 81.24 327 *e*P **P 22 01 41.0 +0.4**
PSZ Piszkesteto 81.38 324⇑ *i*P **P 22 01 41.7 +0.2**
PSZ Piszkesteto 81.38 324 *e*P **P 22 01 42.7 +1.2**
PSZ pmax pmax
comp=Z,7.0nm,0.9s
PSZ Piszkesteto 81.38 324 *e*P **P 22 01 42.7 +1.2**
comp=Z,7.4nm,0.9s
VYHS Vyhne 81.47 325 *e*P **P 22 01 41.1 -0.7**
VYHS pmax pmax
comp=Z,2.0nm,1.0s
VYHS Vyhne 81.47 325 *e*P **P 22 01 41.1 -0.7**
BRG Berggiesshubel 81.85 329 *e*(P) **P 22 01 43.7 -0.1**
comp=Z,4.1nm,0.9s
BRG Berggiesshubel 81.85 329 *e*P **P 22 01 43.7 -0.1**
BRG pmax pmax
comp=Z,4.0nm,0.9s
PVCC Panska Ves 81.85 329 *e*P **P 22 01 44.4 +0.6**
PVCC *ex* x 22 01 52.6
PVCC Panska Ves 81.85 329 *e*P **P 22 01 44.4 +0.6**
PVCC *e* 22 01 52.6
VRAC Vranov 81.89 327 P **P 22 01 44.4 +0.4**
comp=Z,3.2nm,0.8s,baz=81,slow=7.0,SNR=4.8
VRAC LR LR 22 41 04.9
comp=Z,78nm,19.1s,baz=120,slow=38
VRAC Vranov 81.89 327⇑ *i*P **P 22 01 45.0 +1.0**
ASF Jabal al Asfar 81.90 304 P **P 22 01 45.0 +0.5**
comp=Z,2.1nm,0.7s,baz=250,slow=2.4,SNR=4.2
ASF Jabal al Asfar 81.90 304 P **P 22 01 45.0 +0.5**
ASF pmax pmax
comp=Z,2.0nm,0.7s
CLL Collm 81.90 330 *i*P **P 22 01 43.9 -0.2**
comp=Z,5.0nm,0.8s
CLL *e*PcP **PcP 22 01 50.0 +0.3**
CLL L L 22 41 00.0
comp=Z,100nm,21.4s
CLL Collm 81.90 330 *e*P **P 22 01 43.5 -0.6**
CLL pmax pmax
comp=Z,8.0nm,1.0s
CLL Collm 81.90 330 *e*P **P 22 01 43.5 -0.6**
comp=Z,8.3nm,1.0s
GOPC GO Pecny, Ondr 82.22 328 AMS AMS 22 49 00.0
comp=Z,200nm,15.1s
PRU Pruhonice 82.27 328 *e*P **P 22 01 46.8 +0.8**
PRU *ex* x 22 01 53.2
PRU AMS AMS 22 49 00.0
comp=Z,200nm,18.2s
PRU Pruhonice 82.27 328 *e*P **P 22 01 46.8 +0.8**
PRU *e* 22 01 53.2
PRU MLR MLR
comp=Z,200nm,18.2s
MMAI Mount Meron Ar 82.38 305 P **P 22 01 47.8 +0.8**
comp=Z,2.5nm,0.8s,baz=62,slow=11,SNR=3.7
TREC Trest 82.38 328 AMS AMS 22 46 50.0
comp=Z,200nm,16.6s
SMCO Snowmass 82.40 47 *e*P **P 22 01 47.9 +0.5**
comp=Z,0.8nm,0.6s
SMCO *e* 22 01 54.9
MDVR Moldovita 82.71 321⇑ *i*P **P 22 01 48.6 +0.1**
ISCO Idaho Springs 82.79 46 *e*P **P 22 01 48.9 -0.5**
ISCO pmax pmax
comp=Z,1.0nm,0.5s
ISCO Idaho Springs 82.79 46 *e*P **P 22 01 48.9 -0.5**
comp=Z,1.3nm,0.5s
NKC Novy Kostel 82.95 330 AMS AMS 22 42 00.0
comp=Z,300nm,18.3s
KHC Kasperske Hory 83.33 328 *e*P **P 22 01 51.8 +0.2**
KHC *ep*P **PcP 22 01 56.5 +0.5**
KHC AMS AMS 22 42 40.0
KHC Kasperske Hory 83.33 328 *e*P **P 22 01 51.6 0.0**
KHC pmax pmax
comp=Z,4.0nm,1.2s
KHC Kasperske Hory 83.33 328 *e*P **P 22 01 51.5 0.0**
comp=Z,3.6nm,1.2s
S22A 4UR Ranch, Cre 83.42 48 *e*P **P 22 01 55.7 +3.1**
comp=Z,7.1nm,1.4s
GERES GERESS Array B 83.49 328 P **P 22 01 52.4 -0.1**
comp=Z,0.9nm,0.6s,baz=45,slow=4.2,SNR=6.6
GEA0 GERESS Array S 83.50 328 *e*P **P 22 01 52.4 -0.1**
SDCO Great Sand Dun 84.21 47 *e*P **P 22 01 57.9 +1.2**
comp=Z,2.6nm,1.1s
EIL Elat 84.75 303 P **P 22 01 59.4 +0.2**
comp=Z,3.2nm,0.7s,baz=347,slow=8.1,SNR=3.6
ANMO Albuquerque 85.48 50 *e*P **P 22 02 05.5 +2.5**
ANMO pmax pmax
comp=Z,3.0nm,0.9s
ANMO Albuquerque 85.48 50 *e*P **P 22 02 05.5 +2.5**
comp=Z,3.0nm,0.9s
PDG Podgorica 85.64 321⇑ *i*P **P 22 02 03.6 +0.3**
BFO Black Forest 86.12 331 *e*P **P 22 02 05.7 0.0**
BFO Black Forest 86.12 331 *e*P **P 22 02 05.7 0.0**
FUORN Ofenpass-Fuorn 86.68 329 *e*P **P 22 02 10.1 +1.3**
comp=Z,13nm,1.4s
AQU L'Aquila 88.59 324 *e*P **P 22 02 18.4 +0.7**
AQU pmax pmax
comp=Z,8.0nm,0.8s
AQU L'Aquila 88.59 324 *e*P **P 22 02 18.4 +0.7**
comp=Z,7.8nm,0.8s
ATD Arta Tunnel 89.89 284 LR LR 22 46 03.3
comp=Z,45nm,18.6s,slow=38
TX31 Lajitas Ar. Si 90.98 52 *e*P **P 22 02 29.9 +0.6**
TXAR Lajitas Array 90.98 52 P **P 22 02 29.6 +0.4**
comp=Z,1.5nm,0.8s,baz=303,slow=2.1,SNR=19

TORD	Torodi Ar. Bea	117.90	314	PKP	PKPdf	22 08 11.2	-0.7
	comp=Z,0.4nm,0.4s,baz=36,slow=2.0,SNR=7.0						
VNA2	Neumayer--Watz	141.21	196	PKP	PKPdf	22 08 51.8	-2.4
	baz=97,slow=2.0						
LPAZ	La Paz	147.45	61	PKPbc	PKPbc	22 09 10.1	+0.1
	comp=Z,7.3nm,0.7s,baz=1.5,slow=5.3,SNR=28						
LVC	Limon Verde	150.77	71	*e*PKPdf	PKPdf	22 09 13.3	+0.9
LVC				*e*PKPbc	PKPbc	22 09 18.8	+0.9
LVC				*e*PKPab	PKPab	22 09 25.9	+0.9
LCO	Las Campanas	152.38	85	*e*PKPdf	PKPdf	22 09 14.9	+0.4
LCO				*e*PKPbc	PKPbc	22 09 21.8	+0.5

IDC 13 22:11:21.5±10.0, **6°.20S**×**129°.27E, h322**km±111km, **mb2.9**/3, **mb1 3.3**/5, **mb1mx2.9**/34, **mbtmp3.9**/5, **Error ellipse: s-maj=100.4km s-min=35.7km az=62.0, Banda Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	14.52	161	P	P	22 14 32.0	-0.3
	1.6nm,0.3s,baz=340,slow=11,SNR=58						
WRA				S	S	22 17 08.5	-2.1
	0.1nm,0.3s,baz=340,slow=21,SNR=4.1						
ASAR	Alice Springs	17.93	166	P	P	22 15 09.3	0.0
	2.1nm,0.3s,baz=345,slow=12,SNR=163						
STKA	Stephens Creek	28.02	157	P	P	22 16 44.4	+0.5
	0.8nm,0.5s,baz=337,slow=8.2,SNR=2.9						
MKAR	Makanchi Array	67.16	327	P	P	22 21 41.5	+0.1
	0.2nm,0.5s,baz=113,slow=8.0,SNR=4.0						
KURBB	Kurchatov Arra	71.45	329	P	P	22 22 07.0	-0.3
	0.2nm,0.6s,baz=129,slow=4.8,SNR=3.1						

*ISK **13** 22:13:37.7, 40°.77N×31°.52E, h2km, MD3.1*
*DDA **13** 22:13:38.4, 40°.83N×31°.51E, h8km, Md3.0*
*CSEM **13** 22:13:38.8±0.1, 40°.79N×31°.52E, h2km, MD3.1, Error ellipse: s-maj=2.5km s-min=1.7km az=173.0*
ISC 13 22:13:38.7±1.1, **40.79N**±0.02×**31.51E**±0.01, **h2**km±10km, **n97**, σ0°70/127, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MDUB	Mudurnu	0.40	217	*e*PG	Pg	22 13 46.7	+0.2
MDUB				*e*SG	Sg	22 13 52.6	+0.9
MDUB	Mudurnu	0.40	217	*e*Pg	Pg	22 13 46.7	+0.2
MDUB				*e*Sg	Sg	22 13 52.6	+0.9
BCAM	Yenicaga	0.42	87	P	Pg	22 13 46.6	-0.2
BCAM				S	Sg	22 13 52.6	+0.3
BCAM	Yenicaga	0.42	87	*i* P	Pg	22 13 46.6	-0.2
BCAM				*i* S	Sg	22 13 52.6	+0.3
BTAS	Taskesti	0.45	240	P	Pg	22 13 47.2	-0.1
BTAS				S	Sg	22 13 53.7	+0.6
BTAS	Taskesti	0.45	240	*i* P	Pg	22 13 47.2	-0.1
BTAS				*i* S	Sg	22 13 53.7	+0.6
SAHE	Sakarya_HENDEK	0.50	277	P	Pg	22 13 48.7	+0.3
SAHE				S	Sb	22 13 56.5	-1.6
SAHE	Sakarya_HENDEK	0.50	277	*i* P	Pg	22 13 48.7	+0.3
SAHE				*i* S	Sb	22 13 56.5	-1.6
KDZE	Karadeniz Ereo	0.52	354	*e*PG	Pg	22 13 49.1	+0.3
KDZE	Karadeniz Ereo	0.52	354	*e*Pg	Pg	22 13 49.1	+0.3
GULT	Gulveren	0.84	245	*e*PG	Pg	22 13 54.7	-0.1
GULT	Gulveren	0.84	245	*e*Pg	Pg	22 13 54.7	-0.1
SPNC	Sapanca-Adapaz	0.92	264	*e*PG	Pg	22 13 56.4	0.0
SPNC	Sapanca-Adapaz	0.92	264	*e*Pg	Pg	22 13 56.4	0.0
AUMIH	MIHALICIK	0.93	181	P	Pg	22 13 56.4	-0.1
AUMIH				S	Sb	22 14 09.4	-0.9
AUMIH	MIHALICIK	0.93	181	*i* P	Pg	22 13 56.4	-0.1
AUMIH				*i* S	Sb	22 14 09.4	-0.9
SAFT	Safranbolu	1.00	63	*e*PG	Pg	22 13 57.7	-0.1
SAFT	Safranbolu	1.00	63	*e*Pg	Pg	22 13 57.7	-0.1
BTIN	Bart¨–n	1.01	33	P	Pg	22 13 57.7	-0.4
BTIN				S	Sb	22 14 12.1	-0.6
BTIN	Bart¨–n	1.01	33	*i* P	Pg	22 13 57.7	-0.4
BTIN				*i* S	Sb	22 14 12.2	-0.6
KAND	Kocaeli-Kandir	1.04	287	P	Pg	22 13 58.3	-0.5
KAND				S	Sg	22 14 12.7	+0.4
KAND	Kocaeli-Kandir	1.04	287	*i* P	Pg	22 13 58.3	-0.5
KAND				*i* S	Sg	22 14 12.7	+0.4
GPA	Golpazari	1.04	242	*e*PG	Pg	22 13 58.0	-0.7
GPA	Golpazari	1.04	242	*e*Pg	Pg	22 13 58.1	-0.7
BORA	Eskisehir	1.22	222	P	Pg	22 14 01.8	-0.3
BORA				S	Sn	22 14 20.3	+0.4
BORA	Eskisehir	1.22	222	*i* P	Pg	22 14 01.8	-0.3
BORA				*i* S	Sn	22 14 20.3	+0.4
LOD	Lodumlu	1.32	133	*e*PN	Pg	22 14 03.3	-0.7
LOD	Lodumlu	1.32	133	*e*Pn	Pg	22 14 03.3	-0.7
SVRH	Sivrihisar-ESK	1.34	180	*e*PN	Pg	22 14 03.9	-0.6
SVRH	Sivrihisar-ESK	1.34	180	*e*Pn	Pg	22 14 03.9	-0.6
ESKT	Eskisehir	1.37	202	*i* P	Pg	22 14 04.4	-0.6
ESKT				*i* S	Sn	22 14 23.6	-0.1
SEYT	Eskypehyr	1.37	202	P	Pg	22 14 04.4	-0.6
SEYT				S	Sn	22 14 23.6	-0.1
ADVT	Abdulvahap	1.40	256	*e*PN	Pn	22 14 04.6	-0.6
ADVT	Abdulvahap	1.40	256	*e*Pn	Pn	22 14 04.6	-0.6
HRT	Hereke	1.40	272	*e*PN	Pn	22 14 05.1	-0.2
HRT	Hereke	1.40	272	*e*Pn	Pn	22 14 05.1	-0.2
CAVI	Cavuskoy	1.40	246	*e*PN	Pb	22 14 05.3	-0.4
CAVI	Cavuskoy	1.40	246	*e*Pn	Pb	22 14 05.3	-0.4
AUBOZ	BOZOYUK	1.43	233	P	Pb	22 14 06.3	+0.1
AUBOZ				S	Sn	22 14 28.1	+2.9
AUBOZ	BOZOYUK	1.43	233	*i* P	Pb	22 14 06.3	+0.1
AUBOZ				*i* S	Sn	22 14 28.1	+2.9
SILT	Sile	1.46	285	*e*PN	Pb	22 14 06.3	-0.3
SILT	Sile	1.46	285	*e*Pn	Pb	22 14 06.3	-0.3
ELDT	Eldivan	1.49	101	P	Pg	22 14 07.0	-0.3
ELDT				S	Sn	22 14 27.5	+0.7
ELDT	Eldivan	1.49	101	*i* P	Pg	22 14 07.0	-0.3
ELDT				*i* S	Sn	22 14 27.4	+0.7
CANT	Cankiri	1.61	96	*e*PN	Pb	22 14 08.3	-1.0
IZI	Iznik	1.62	254	*e*PN	Pn	22 14 07.9	-0.4
IZI	Iznik	1.62	254	*e*Pn	Pn	22 14 07.9	-0.4
AUKIR	K¨–rka- Seyitg	1.69	207	*i* P	Pg	22 14 10.9	-0.3
AUKIR				*i* S	Sg	22 14 35.3	+2.2
BBAL	Bala	1.76	135	P	Pb	22 14 11.5	-0.2
BBAL				S	Sg	22 14 37.3	+2.1
BBAL	Bala	1.76	135	*i* P	Pb	22 14 11.5	-0.2
BBAL				*i* S	Sg	22 14 37.3	+2.1
AFSR	Af¨ar-Bala (A	1.80	138	*e*PN	Pn	22 14 10.6	-0.3
AFSR	Af¨ar-Bala (A	1.80	138	*e*Pn	Pn	22 14 10.6	-0.3
GEMT	Gemlik	1.80	259	*e*PN	Pn	22 14 10.9	+0.1
GEMT	Gemlik	1.80	259	*e*Pn	Pn	22 14 10.9	+0.1
BUY	Buyukada	1.82	273	P	Pb	22 14 11.8	-0.9
BUY				S	Sg	22 14 36.5	-0.6
BUY	Buyukada	1.82	273	*i* P	Pb	22 14 11.8	-0.9
BUY				*i* S	Sg	22 14 36.5	-0.6
IGD	Bursa	1.84	254	*i* P	Pn	22 14 11.0	-0.3
IGD				*i* S	Sg	22 14 37.1	-0.7
ISK	Istanbul-Kandi	1.88	279	*e*PN	Pn	22 14 11.9	+0.1
ISK	Istanbul-Kandi	1.88	279	*e*Pn	Pn	22 14 11.9	+0.1
TOS	Tosya	1.92	82	*e*PN	Pn	22 14 12.6	+0.1
TOS	Tosya	1.92	82	*e*Pn	Pn	22 14 12.6	+0.1
KLYT	Kilyos	1.92	285	*e*PN	Pn	22 14 12.6	+0.2
KLYT	Kilyos	1.92	285	*e*Pn	Pn	22 14 12.6	+0.2
ULDT	Uludag	1.93	251	P	Pb	22 14 14.5	-0.1
ULDT				S	Sb	22 14 38.5	-0.7
ULDT	Uludag	1.93	251	*i* P	Pb	22 14 14.5	-0.1
ULDT				*i* S	Sb	22 14 38.5	-0.7
KIZT	Kizilcal	1.93	171	*e*PN	Pn	22 14 11.9	-0.8
KIZT	Kizilcal	1.93	171	*e*Pn	Pn	22 14 11.9	-0.8
ARMT	Armutlu	2.03	264	*e*PN	Pn	22 14 14.1	+0.2
ARMT	Armutlu	2.03	264	*e*Pn	Pn	22 14 14.1	+0.2
MDNY	Mudanya-Bursa	2.04	259	*e*PN	Pn	22 14 14.1	0.0
MDNY	Mudanya-Bursa	2.04	259	*e*Pn	Pn	22 14 14.1	0.0
TVSB	Tavsanli	2.07	230	*e*PN	Pn	22 14 14.4	-0.1
TVSB	Tavsanli	2.07	230	*e*Pn	Pn	22 14 14.4	-0.1
BGKT	Bogazkoy	2.11	281	*e*PN	Pn	22 14 15.3	+0.3
BGKT	Bogazkoy	2.11	281	*e*Pn	Pn	22 14 15.3	+0.3
ORLT	Orhaneli	2.13	250	*e*PN	Pn	22 14 15.5	+0.1
ORLT	Orhaneli	2.13	250	*e*Pn	Pn	22 14 15.5	+0.1
BZK	Bozkurt	2.21	57	*e*PN	Pn	22 14 16.6	+0.2
BZK	Bozkurt	2.21	57	*e*Pn	Pn	22 14 16.6	+0.2
KAMT	Kaman	2.21	129	*e*PN	Pn	22 14 16.2	-0.3
KAMT	Kaman	2.21	129	*e*Pn	Pn	22 14 16.2	-0.3
CTKS	Kestanelik-??a	2.32	282	*e*PN	Pn	22 14 18.3	+0.5
CTKS	Kestanelik-??a	2.32	282	*e*Pn	Pn	22 14 18.3	+0.5
CORM	Corum	2.46	103	*e*PN	Pn	22 14 20.2	+0.3
CORM	Corum	2.46	103	*e*Pn	Pn	22 14 20.3	+0.3
KCTX	Karacabey (Bur	2.46	259	*e*PN	Pn	22 14 20.6	+0.7
KCTX	Karacabey (Bur	2.46	259	*e*Pn	Pn	22 14 20.6	+0.7
CTYL	Yalikoy Yolu	2.53	287	*e*PN	Pn	22 14 20.9	+0.2
CTYL	Yalikoy Yolu	2.53	287	*e*Pn	Pn	22 14 21.0	+0.2
LADK	Ladik-KONYA	2.67	165	*e*PN	Pn	22 14 22.0	-0.9
LADK	Ladik-KONYA	2.67	165	*e*Pn	Pn	22 14 22.0	-0.9
EDC	Edincik	2.81	262	*e*PN	Pn	22 14 25.0	+0.3
EDC	Edincik	2.81	262	*e*Pn	Pn	22 14 25.0	+0.3
KONT	Konya--Tatoy	2.92	167	*e*PN	Pn	22 14 26.2	0.0
KONT	Konya--Tatoy	2.92	167	*e*Pn	Pn	22 14 26.2	0.0
BALB	Balikesir	3.01	249	*e*PN	Pn	22 14 28.2	+0.8
BALB	Balikesir	3.01	249	*e*Pn	Pn	22 14 28.2	+0.8

*IDC **13** 22:17:57.3±0.5, 59°.15S×25°.75W, h0km, mb4.4/11, mb1 4.5/11, mb1mx4.4/17, mbtmp4.4/11, MS3.7/3, Ms1 3.7/3, ms1mx3.5/24, Error ellipse: s-maj=22.9km s-min=16.9km az=15.0*
*ISCJB **13** 22:18:02.0±0.3, 59°.04S±0°.06×25°.5W±0°.1, h35km, mb4.7/28, MS3.7/2, Error ellipse: s-maj=10.0km s-min=6.4km az=139.9*
*NEIC **13** 22:18:08.1±1.2, 59°.08S×25°.55W, h79km±11km, mb4.7/19, Error ellipse: s-maj=9.0km s-min=6.3km az=220.0*
ISC 13 22:18:03.2±0.4, **59°.12S**±0°.07×**25°.52W**±0°.09, **h35**km, **n78**, σ1°50/73, **mb4.7**/28, **South Sandwich Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HOPE	Hope Point	7.74	304	*e*Pn	Pn	22 19 57.2	+4.1
VNA1	Neumayer--Stat	13.62	155	P	Pn	22 21 15.2	+1.8
VNA3	Neumayer Olymp	13.80	158	P	Pn	22 21 16.7	+0.7
VNA2	Neumayer--Watz	14.02	155	P	Pn	22 21 20.1	+1.2
	baz=318,slow=15						
SNAA	Sanae	15.58	153	P	Pn	22 21 41.1	+1.3
SNAA	Sanae	15.58	153	*e*Pn	Pn	22 21 40.6	+0.8
	14nm,0.6s						
SNAA				*e*Sn	Sn	22 24 22.8	-8.3
PMSA	Palmer Station	18.75	236	LR	LR	22 28 01.4	
	comp=Z,233nm,20.6s,baz=56,slow=32						
EFI	East Falkland	19.76	278	*e*P	Pn	22 22 32.1	+0.6
	81nm,1.4s						
USHA	Ushuaia	23.46	262	P	P	22 23 08.7	-0.4
	33nm,0.6s,baz=101,slow=11,SNR=8.4						
QSPA	South Pole Qui	31.13	180	*e*P	P	22 24 19.8	+1.6
	52nm,0.6s						
TRQA	Tornquist	31.42	296	*e*P	P	22 24 21.0	+0.3
	12nm,0.8s						
PLCA	Paso Flores	33.50	283	P	P	22 24 37.6	-1.4
	2.2nm,0.4s,baz=188,slow=9.2,SNR=5.4						
PLCA	Paso Flores	33.50	283	*e*P	P	22 24 39.8	+0.7
	14nm,1.4s						
MAW	Mawson	37.17	141	P	P	22 25 10.8	+0.7
	2.6nm,0.6s,baz=231,slow=5.8,SNR=6.8						
MAW				LR	LR	22 38 32.6	
	comp=Z,149nm,19.5s,baz=239,slow=33						
MAW	Mawson	37.17	141	*e*P	P	22 25 12.5	+2.4
	6.2nm,1.9s						
CPUP	Villa Florida	39.53	312	P	P	22 25 30.5	+0.1
	1.1nm,0.7s,baz=176,slow=14,SNR=2.2						
CPUP	Villa Florida	39.53	312	*e*P	P	22 25 31.1	+0.7
ROC1	El Roble	39.82	291	*e*P	P	22 25 35.1	+1.9
	19nm,0.6s						
SUR	Sutherland	40.71	70	P	P	22 25 42.1	+1.7
	0.3nm,1.0s,baz=242,slow=15,SNR=3.6						
LCO	Las Campanas	42.96	294	*e*P	P	22 25 58.2	-0.7
	9.0nm,0.7s						
SBA	Scott Base	43.08	184	*e*P	P	22 26 01.5	+2.6
	8.2nm,0.9s						
VNDA	Vanda	43.54	182	P	P	22 26 05.2	+2.5
	6.7nm,0.6s,baz=185,slow=7.0,SNR=73						
VNDA				LR	LR	22 41 56.7	
	comp=Z,94nm,21.3s,baz=262,slow=33						
VNDA	Vanda	43.54	182	*e*P	P	22 26 05.3	+2.6
	8.0nm,0.7s						
SHEL	Horse Pasture	45.49	27	*e*P	P	22 26 19.0	+0.1
	81nm,1.0s						
BOSA	Boshof	45.98	71	P	P	22 26 23.0	+0.2
	1.5nm,0.7s,baz=225,slow=6.4,SNR=4.0						
LVC	Limon Verde	47.63	301	*e*P	P	22 26 36.0	-0.1
	3.6nm,0.8s						
PB04	IPOC Station P	48.43	300	*e*P	P	22 26 41.6	-0.4
	18nm,1.1s						
PB01	IPOC Station P	49.26	301	*e*P	P	22 26 48.3	0.0
	29nm,1.8s						
PB11	IPOC Station P	50.46	302	*e*P	P	22 26 57.4	-0.1
	13nm,1.3s						
TSUM	Tsumeb	50.50	57	*e*P	P	22 26 58.1	+0.3
	12nm,1.5s						
H10S2	ASCENSION HYDR	50.73	14	T	T	23 21 28.7	
	baz=188,slow=75,SNR=11						
H10S3	ASCENSION HYDR	50.73	14	T	T	23 21 29.2	
	baz=188,slow=75,SNR=20						
H10S1	ASCENSION HYDR	50.74	14	T	T	23 21 30.7	
	baz=188,slow=75,SNR=12						
ASCN	Ascension	51.77	14	*e*P	P	22 27 06.6	-0.5
	108nm,0.9s						
H10N1	ASCENSION HYDR	51.84	14	T	T	23 22 53.1	
	baz=181,slow=71,SNR=4.6						
H10N3	ASCENSION HYDR	51.84	14	T	T	23 22 53.7	
	baz=181,slow=71,SNR=10						
H10N2	ASCENSION HYDR	51.86	14	T	T	23 22 54.1	
	baz=181,slow=71,SNR=9.6						
PAF	Port-aux-Franc	52.09	124	*e*P	P	22 27 10.9	+1.7
	523nm,1.7s						
LPAZ	La Paz	52.89	305	P	P	22 27 14.1	-2.1
	0.8nm,0.4s,baz=112,slow=7.1,SNR=6.9						
LPAZ	La Paz	52.89	305	*e*P	P	22 27 15.1	-1.1
	13nm,1.9s						
SAML	Samuel	57.60	314	*e*P	P	22 27 50.6	+1.2
	6.5nm,1.0s						
DBIC	Dimbokro	67.63	22	P	P	22 28 56.2	0.0
	3.9nm,0.7s,baz=173,slow=9.1,SNR=5.3						
TOA0	Torodi Ar. Sit	75.33	27	*e*P	P	22 29 42.7	+0.2
	8.7nm,0.6s						
TORD	Torodi Ar. Bea	75.33	27	P	P	22 29 43.2	+0.7
	8.5nm,0.6s,baz=199,slow=6.4,SNR=69						
STKA	Stephens Creek	88.72	169	P	P	22 30 52.2	-0.6
	2.3nm,0.6s,baz=166,slow=5.5,SNR=4.5						
MDT	Midelt	93.23	18	P	P	22 31 14.9	+1.4
	1.3nm,0.8s,baz=193,slow=2.8,SNR=4.0						
ASAR	Alice Springs	95.79	161	P	P	22 31 25.4	-0.2
	2.5nm,0.7s,baz=183,slow=4.3,SNR=28						
ASAR				PKKP	PKKPbc	22 48 13.1	+1.2
	0.5nm,0.4s,baz=21,slow=2.5,SNR=7.6						
AS01	Alice Springs	95.80	161	*e*P	P	22 31 25.0	-0.7
AKASG	Malin Array Be	118.15	36	PKP	PKPdf	22 36 44.1	-1.0
	0.1nm,0.3s,baz=213,slow=0.2,SNR=2.8						
SCHQ	Schefferville	118.33	334	PKP	PKPdf	22 36 44.0	-1.3
	1.0nm,0.4s,baz=225,slow=4.4,SNR=5.0						
PDAR	Pinedale Array	122.69	300	PKP	PKPdf	22 36 52.1	-2.3
	0.2nm,0.4s,baz=113,slow=1.4,SNR=3.1						
HFS	Hagfors	122.79	22	PKP	PKPdf	22 36 52.0	-1.7
	2.9nm,1.1s,baz=238,slow=25,SNR=3.4						
CMAR	Chiang Mai Arr	123.14	111	PKP	PKPdf	22 36 55.0	-0.7
	1.5nm,0.3s,baz=235,slow=3.4,SNR=9.7						
NB2	NORSAR Subarra	123.17	20	PKPdf	PKPdf	22 36 53.8	-0.7
	comp=Z,3.2nm,1.2s,baz=202,slow=1.9						
NOA	NORSAR Array B	123.17	20	PKP	PKPdf	22 36 53.7	-0.8
	comp=Z,1.5nm,0.9s,baz=190,slow=1.8,SNR=4.1						
FINES	FINESS Array B	126.68	28	PKP	PKPdf	22 37 00.5	-0.6
	comp=Z,2.3nm,0.8s,baz=133,slow=1.5,SNR=13						
ABKAR	Akbulak array	128.35	56	*e*PKPdf	PKPdf	22 37 04.7	0.0
AKTO	Aktyubinsk	128.42	54	PKP	PKPdf	22 37 04.5	-0.3
	comp=Z,3.9nm,0.9s,baz=95,slow=1.2,SNR=7.9						
ARCES	ARCESS Array B	133.46	22	PKP	PKPdf	22 37 13.2	-0.7
	comp=Z,2.4nm,0.7s,baz=222,slow=2.6,SNR=9.1						
BRVK	Borovoye	135.60	59	*e*PKPdf	PKPdf	22 37 17.9	-0.4
BVAR	Borovoye Array	135.63	59	PKP	PKPdf	22 37 18.0	-0.3
	comp=Z,1.8nm,0.6s,baz=216,slow=1.1,SNR=11						
MK01	Makanchi Array	136.95	73	*e*PKPdf	PKPdf	22 37 20.4	-0.7
MKAR	Makanchi Array	136.96	73	PKhKP	PKPpre	22 37 12.1	
	comp=Z,0.2nm,0.4s,baz=224,slow=5.1,SNR=3.6						
MKAR				PKP	PKPdf	22 37 20.0	-1.1
	comp=Z,0.3nm,0.3s,baz=245,slow=2.6,SNR=5.8						
YKA	Yellowknife Ar	139.02	315	PKP	PKPdf	22 37 23.8	-0.4
	comp=Z,5.1nm,0.7s,baz=127,slow=2.4,SNR=72						
YKA				SKPbc	SKPbc	22 40 54.9	-1.3
	comp=Z,0.3nm,0.7s,baz=133,slow=2.6,SNR=4.4						
YKB5	Yellowknife Ar	139.02	315	*e*PKPdf	PKPdf	22 37 23.0	-1.2
YKW3	Yellowknife Ar	139.06	315	*e*PKPdf	PKPdf	22 37 23.7	-0.6
ZAA0	Zalesovo Array	142.84	67	*e*PKPdf	PKPdf	22 37 30.3	-1.2
ZALV	Zalesovo Beam	142.84	67	PKhKP	PKPpre	22 37 27.9	
	comp=Z,1.0nm,0.6s,baz=230,slow=2.1,SNR=5.3						
INK	Inuvik	148.71	317	*e*PKPbc	PKPbc	22 37 44.1	-0.8
DAWY	Dawson	149.45	308	*e*PKPbc	PKPbc	22 37 46.0	-0.9
SONM	Songino Array	149.91	90	PKPbc	PKPbc	22 37 47.9	-0.8
	comp=Z,5.4nm,0.8s,baz=218,slow=3.5,SNR=25						
SONA1	Songino Array	149.92	90	*e*PKPdf	PKPdf	22 37 43.4	-0.4
SONA1				*e*PKPbc	PKPbc	22 37 48.6	-0.1
NRIK	Noril'sk	150.77	42	PKPbc	PKPbc	22 37 49.1	-0.8
	comp=Z,3.7nm,0.8s,baz=100,slow=3.4,SNR=5.9						
DOT	Dot Lake	151.24	305	*e*PKPbc	PKPbc	22 37 51.3	+0.1
KSRS	Korea Array	152.37	130	PKPbc	PKPbc	22 37 54.3	-0.2
	comp=Z,1.2nm,0.6s,baz=225,slow=2.9,SNR=4.5						
IL1	Eielson Array	152.76	307	*e*PKPbc	PKPbc	22 37 53.2	-1.3
ILAR	Eielson Array	152.76	307	PKPbc	PKPbc	22 37 53.6	-0.9
	comp=Z,3.1nm,0.9s,baz=138,slow=1.0,SNR=22						
BPAW	Bear Paw Mtn.	154.30	304	*e*PKPbc	PKPbc	22 37 56.8	-1.2

*NNC **13** 22:20:54.2±9.4, 42°.12N×81°.83E, h0km, mb3.2, mpv2.8, Error ellipse: s-maj=74.4km s-min=36.0km az=165.0*
*SOME **13** 22:20:54.3, 41°.77N×81°.48E, h10km*
ISC 13 22:20:51.9±3.4, **42°.0N**±0°.1×**81°.94E**±0°.09, **h3**km±18km, **n18**, σ1°38/33, **8C-2D, Southern Xinjiang**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KTMS	Ketmen	1.89	322	*e*P	Pg	22 21 28.6	+0.5
	40nm,0.3s						
KTMS				*e*S	Sg	22 21 53.2	+0.6
	36nm,0.3s						
SHLS	Shalkode	1.93	309	*e*P	Pg	22 21 29.1	+0.2
	27nm,0.1s						
SHLS				*e*S	Sg	22 21 54.0	0.0
	57nm,0.3s						
PDGK	Podgornoye	2.27	308	⇑Pg	Pb	22 21 32.9	-0.6
	9.4nm,0.6s						
PDGK				⇑Lg	Lg	22 22 03.1	
	22nm,0.4s						
UZB	Uzynbulak	2.46	300	*e*P	Pb	22 21 37.1	+0.3
	14nm,0.6s						
UZB				⇑*i*S	Sb	22 22 07.6	0.0
	41nm,0.2s						
KPKS	Kokpek	2.83	303	*e*P	Pb	22 21 42.7	-0.4
	37nm,0.2s						
KPKS				*e*S	Sb	22 22 18.1	-0.2
	59nm,1.0s						
SATY	Saty	2.83	294	*e*P	Pb	22 21 42.8	-0.4
	18nm,0.3s						
SATY				⇑*i*S	Sb	22 22 17.5	-0.9
	46nm,0.3s						
DJR	Jarkent	2.85	327	*e*P	Pg	22 21 46.0	-0.4
	7.5nm,0.3s						
DJR				*e*S	Sg	22 22 23.3	0.0
	34nm,0.7s						
ZHN	Zhinishke	2.85	296	*e*P	Pb	22 21 42.2	-1.4
	12nm,0.3s						
ZHN				⇑*i*S	Sb	22 22 16.8	-2.2
	71nm,0.2s						
KURS	Kuram	3.17	300	*e*P	Pb	22 21 49.2	+0.3
	5.7nm,0.9s						
KURS				⇓*e*S	Sb	22 22 29.5	+1.5
	9.5nm,0.8s						
MNBS	Baschi	3.35	310	*e*P	Pb	22 21 49.9	-2.1
	1.1nm,0.3s						
MNBS				*e*S	Sb	22 22 30.2	-3.0
	25nm,0.6s						
ARXS	Arharly	3.76	308	*e*P	Pb	22 21 59.2	+0.3
	2.4nm,0.3s						
ARXS				*e*S	Sb	22 22 46.0	+1.0
	7.5nm,0.4s						
KOTS	Kotyrbulak	3.78	291	*e*P	Pb	22 22 00.4	+1.0
KOTS				*e*S	Sb	22 22 48.1	+2.4
MDOK	Medeo	3.81	290	*e*P	Pb	22 21 59.7	-0.1
	3.5nm,0.4s						
MDOK				*e*S	Sb	22 22 47.2	+0.9
	7.3nm,0.8s						
KAPS	Kapalarasan	3.82	331	*e*P	Pg	22 22 04.6	-0.4
	3.5nm,0.3s						
KAPS				*e*S	Sg	22 22

CAVI	Cavuskoy	1.40 246	ePN	Pg	22 28 56.6	-0.3
CAVI	Cavuskoy	1.40 246	ePn	Pg	22 28 56.6	-0.3
AUKUT	KUTAHYA	1.41 234	*i* P	Pg	22 29 03.4	+6.3
AUKUT			*i* S	Sn	22 29 32.5	+16
AUBOZ	BOZOYUK	1.43 233	P	Pg	22 28 58.2	+0.7
AUBOZ			S	Sg	22 29 19.0	+3.0
AUBOZ	BOZOYUK	1.43 233	*i* P	Pg	22 28 58.2	+0.7
AUBOZ			*i* S	Sg	22 29 19.0	+3.0
SILT	Sile	1.46 285	ePN	Pg	22 28 57.8	-0.2
SILT	Sile	1.46 285	ePn	Pg	22 28 57.8	-0.2
ELDT	Eldivan	1.49 101	P	Pg	22 28 58.1	-0.5
ELDT			S	Sg	22 29 18.1	+0.2
ELDT	Eldivan	1.49 101	*i* P	Pg	22 28 58.1	-0.5
ELDT			*i* S	Sg	22 29 18.1	+0.2
CANT	Cankiri	1.61 96	ePN	Pg	22 28 59.9	-1.1
IZI	Iznik	1.62 254	ePN	Pg	22 29 00.2	-0.9
IZI	Iznik	1.62 254	ePn	Pg	22 29 00.2	-0.9
AUKIR	K¨–rka- Seyitg	1.69 207	*i* P	Pb	22 29 00.9	-1.1
AUKIR			*i* S	Sg	22 29 27.0	+2.8
ILGA	Ilgaz	1.69 80	P	Pg	22 29 01.9	-0.5
ILGA			S	Sg	22 29 26.0	+1.6
ILGA	Ilgaz	1.69 80	*i* P	Pg	22 29 01.9	-0.5
ILGA			*i* S	Sg	22 29 26.1	+1.6
BBAL	Bala	1.75 135	P	Pb	22 29 01.6	-1.6
BBAL	Bala	1.75 135	*i* P	Pb	22 29 01.6	-1.6
BBAL			*i* S	Sg	22 29 30.0	+3.6
AFSR	Af¨ar-Bala (A	1.80 138	ePN	Pb	22 29 02.3	-1.6
AFSR	Af¨ar-Bala (A	1.80 138	ePn	Pb	22 29 02.3	-1.6
GEMT	Gemlik	1.80 259	ePN	Pb	22 29 02.9	-1.0
GEMT	Gemlik	1.80 259	ePn	Pb	22 29 02.9	-1.0
BUY	Buyukada	1.82 273	P	Pb	22 29 03.2	-0.9
BUY			S	Sg	22 29 28.4	0.0
BUY	Buyukada	1.82 273	*i* P	Pb	22 29 03.2	-0.9
BUY			*i* S	Sg	22 29 28.4	0.0
IGD	Bursa	1.84 254	*i* P	Pb	22 29 02.0	-0.7
IGD			*i* S	Sg	22 29 29.7	+0.6
ISK	Istanbul-Kandi	1.88 279	ePN	Pb	22 29 03.9	-1.2
ISK	Istanbul-Kandi	1.88 279	P	Pb	22 29 03.5	-1.7
ISK			S	Sn	22 29 26.4	-1.3
ISK	Istanbul-Kandi	1.88 279	P	Pb	22 29 03.5	-1.7
ISK	Istanbul-Kandi	1.88 279	ePn	Pb	22 29 03.9	-1.2
ISK			S	Sn	22 29 26.4	-1.3
TOS	Tosya	1.92 82	ePN	Pb	22 29 04.2	-1.7
TOS	Tosya	1.92 82	ePn	Pb	22 29 04.2	-1.7
ULDT	Uludag	1.92 251	P	Pb	22 29 04.3	-1.8
ULDT	Uludag	1.92 251	*i* P	Pb	22 29 04.3	-1.8
ULDT			*i* S	Sg	22 29 35.5	+3.7
KLYT	Kilyos	1.93 285	ePN	Pb	22 29 04.6	-1.4
KLYT	Kilyos	1.93 285	ePn	Pb	22 29 04.6	-1.4
KIZT	Kizilcal	1.93 171	ePN	Pb	22 29 04.2	-1.9
KIZT	Kizilcal	1.93 171	ePn	Pb	22 29 04.2	-1.9
BRTR	Keskin Array B	1.94 122	Pg	Pb	22 29 04.0	-2.5
	7.6nm,0.3s,baz=291,slow=12,SNR=138					
BRTR			Lg	Lg	22 29 33.1	
	58nm,0.3s,baz=231,slow=31,SNR=22					
KKUL	Konya-Kulu	1.94 146	*i* P	Pg	22 29 07.2	-0.1
KKUL			*i* S	Sg	22 29 34.0	+1.5
KAST	KASTAMONU	1.96 68	P	Pb	22 29 05.3	-1.2
KAST			S	Sg	22 29 33.5	+0.6
KAST	KASTAMONU	1.96 68	*i* P	Pb	22 29 05.3	-1.2
KAST			*i* S	Sg	22 29 33.5	+0.6
ARMT	Armutlu	2.03 264	ePN	Pb	22 29 05.1	-0.3
ARMT	Armutlu	2.03 264	ePn	Pn	22 29 05.1	-0.3
MDNY	Mudanya-Bursa	2.04 259	ePN	Pb	22 29 06.5	-1.5
MDNY	Mudanya-Bursa	2.04 259	ePn	Pb	22 29 06.5	-1.5
TVSB	Tavsanli	2.06 230	ePN	Pb	22 29 06.3	-2.1
TVSB	Tavsanli	2.06 230	ePn	Pb	22 29 06.3	-2.1
BGKT	Bogazkoy	2.11 282	ePN	Pb	22 29 07.3	-1.8
BGKT	Bogazkoy	2.11 282	ePn	Pb	22 29 07.3	-1.8
BOLV	Bolvadin	2.12 192	P	Pg	22 29 10.7	+0.1
BOLV	Bolvadin	2.12 192	*i* P	Pg	22 29 10.7	+0.1
BOLV			*i* S	Sg	22 29 39.6	+1.7
ORLT	Orhaneli	2.13 250	ePN	Pb	22 29 07.6	-1.9
ORLT	Orhaneli	2.13 250	ePn	Pb	22 29 07.6	-1.9
KAMT	Kaman	2.21 129	ePN	Pb	22 29 08.4	-2.4
KAMT	Kaman	2.21 129	ePn	Pb	22 29 08.4	-2.4
BZK	Bozkurt	2.21 57	ePN	Pb	22 29 08.5	-2.3
BZK	Bozkurt	2.21 57	ePn	Pb	22 29 08.5	-2.3
GDZ	Gediz	2.31 223	P	Pb	22 29 10.1	-2.5
GDZ	Gediz	2.31 223	*i* P	Pb	22 29 10.1	-2.5
GDZ			*i* S	Sg	22 29 45.4	+1.2
KDHN	Kadinhani	2.31 168	P	Pn	22 29 09.0	-0.4
KDHN	Kadinhani	2.31 168	*i* P	Pn	22 29 09.0	-0.4
CTKS	Kestanelik-??a	2.32 282	ePN	Pb	22 29 10.0	-2.6
CTKS	Kestanelik-??a	2.32 282	ePn	Pb	22 29 10.0	-2.6
SERE	Sereflikochisa	2.43 139	ePN	Pb	22 29 11.3	-3.3
SERE	Sereflikochisa	2.43 139	ePn	Pb	22 29 11.3	-3.3
CHBY	Cihanbeyli	2.45 154	ePN	Pn	22 29 11.5	+0.2
CHBY	Cihanbeyli	2.45 154	ePn	Pn	22 29 11.5	+0.2
CORM	Corum	2.46 103	ePN	Pn	22 29 11.6	+0.2
CORM	Corum	2.46 103	ePn	Pn	22 29 11.6	+0.2
KCTX	Karacabey (Bur	2.46 259	ePN	Pn	22 29 11.6	+0.2
KCTX	Karacabey (Bur	2.46 259	ePn	Pn	22 29 11.6	+0.2
CDAG	Cicekdag	2.48 117	*i* P	Pg	22 29 17.0	-0.6
CDAG			*i* S	Sg	22 29 49.5	-0.3
CTYL	Yalikoy Yolu	2.53 287	ePN	Pb	22 29 13.3	-2.9
CTYL	Yalikoy Yolu	2.53 287	ePn	Pb	22 29 13.3	-2.9
DURS	Dursunbey	2.61 244	P	Pn	22 29 13.2	-0.3
DURS	Dursunbey	2.61 244	*i* P	Pn	22 29 13.2	-0.3
LADK	Ladik-KONYA	2.67 165	ePN	Pn	22 29 14.1	-0.3
LADK	Ladik-KONYA	2.67 165	ePn	Pn	22 29 14.1	-0.3
DEMI	Demirci	2.77 232	P	Pn	22 29 15.6	-0.1
DEMI	Demirci	2.77 232	*i* P	Pn	22 29 15.6	-0.1
EDC	Edincik	2.81 262	ePN	Pn	22 29 17.1	+0.9
EDC	Edincik	2.81 262	ePn	Pn	22 29 17.1	+0.9
BAGO	Egridir - ISPA	2.85 192	*i* P	Pn	22 29 17.5	+0.7
KHL	Karahalli	2.90 213	ePN	Pn	22 29 18.2	+0.7
KHL	Karahalli	2.90 213	ePn	Pn	22 29 18.3	+0.7
KONT	Konya--Tatoy	2.92 167	ePN	Pn	22 29 18.2	+0.5
KONT	Konya--Tatoy	2.92 167	ePn	Pn	22 29 18.2	+0.5
BALB	Balikesir	3.01 249	ePN	Pn	22 29 20.0	+1.1
BALB	Balikesir	3.01 249	ePn	Pn	22 29 20.0	+1.1
BALY	Balya	3.16 252	P	Pn	22 29 21.1	+0.1
BALY	Balya	3.16 252	*i* P	Pn	22 29 21.1	+0.1
KULA	Kula-Manisa	3.16 225	P	Pn	22 29 22.0	+0.9
KULA	Kula-Manisa	3.16 225	P	Pn	22 29 22.0	+0.9
AVNS	Nevsehir-Avano	3.25 127	P	Pn	22 29 23.5	+1.2
AVNS	Nevsehir-Avano	3.25 127	*i* P	Pn	22 29 23.5	+1.2
KESN	Edirne-Kesan	3.67 272	P	Pn	22 29 28.3	0.0
KESN	Edirne-Kesan	3.67 272	*i* P	Pn	22 29 28.3	0.0
MANR	Mangalia	3.72 325	⇑*i* P	Pn	22 29 30.1	+1.4
MANR	Mangalia	3.72 325	⇑*i* P	Pn	22 29 30.1	+1.4
EDRB	Edirne	3.74 288	P	Pn	22 29 29.5	+0.5
EDRB			S	Sn	22 30 13.0	-0.7
EDRB	Edirne	3.74 288	P	Pn	22 29 29.5	+0.5
EDRB			S	Sn	22 30 13.0	-0.7
CUSAR	Sarkisla-SIVAS	3.88 109	P	Pn	22 29 32.5	+1.5
CUSAR	Sarkisla-SIVAS	3.88 109	*i* P	Pn	22 29 32.5	+1.5
KORT	Korkueli	3.89 194	P	Pn	22 29 32.4	+1.3
KORT	Korkueli	3.89 194	*i* P	Pn	22 29 32.4	+1.3
AYVA	Ayvalik	3.98 250	*i* S	Pg	22 29 45.3	-1.1
ERBA	Erbaa	3.98 90	P	Pn	22 29 33.5	+1.1
ERBA	Erbaa	3.98 90	*i* P	Pn	22 29 33.5	+1.1
ENEZ	Enez	4.07 271	P	Pn	22 29 33.4	-0.1
ENEZ			S	Sn	22 30 21.5	-0.3
ENEZ	Enez	4.07 271	P	Pn	22 29 33.4	-0.1
ENEZ			S	Sn	22 30 21.5	-0.3
EZN	Ezine	4.08 258	P	Pn	22 29 33.9	+0.3
EZN	Ezine	4.08 258	P	Pn	22 29 33.9	+0.3
ALN	Alexandroupoli	4.15 273	P	Pn	22 29 34.5	0.0
ALN	Alexandroupoli	4.15 273	P	Pn	22 29 34.5	0.0
BOZC	Bozcaada	4.28 259	*i* P	Pn	22 29 37.1	+0.7
CUALT	Altinyayla-SIV	4.30 109	*i* S	Pg	22 29 54.5	+1.9
PRK	Paraskevi	4.31 251	P	Pn	22 29 37.4	+0.7
PRK	Paraskevi	4.31 251	P	Pn	22 29 37.4	+0.7
TIRR	Tirgusor	4.32 329	⇑*i* P	Pn	22 29 38.2	+1.3
TIRR	Tirgusor	4.32 329	⇑*i* P	Pn	22 29 38.2	+1.3
SMTH	Samothraki Isl	4.56 268	P	Pn	22 29 39.8	-0.5
SMTH	Samothraki Isl	4.56 268	P	Pn	22 29 39.8	-0.5
FETY	Fethiye	4.56 205	P	Pn	22 29 40.7	+0.4
FETY	Fethiye	4.56 205	P	Pn	22 29 40.7	+0.4
SIGR	SIGRI	4.62 252	P	Pn	22 29 41.2	+0.2
SIGR	SIGRI	4.62 252	P	Pn	22 29 41.2	+0.2
HARR	Harsova	4.71 327	⇑*i* P	Pn	22 29 43.8	+1.6
HARR	Harsova	4.71 327	⇑*i* P	Pn	22 29 43.8	+1.6
AKAS	Kas	4.79 199	P	Pn	22 29 45.2	+1.7
AKAS	Kas	4.79 199	*i* P	Pn	22 29 45.2	+1.7
TLCR		4.82 337	⇑*i* P	Pn	22 29 45.2	+1.5
TLCR		4.82 337	⇑*i* P	Pn	22 29 45.2	+1.5
CHOS	Chios island	4.85 242	P	Pn	22 29 44.1	-0.2
CHOS			S	Sn	22 30 40.9	-0.3
CHOS	Chios island	4.85 242	P	Pn	22 29 44.1	-0.2
CHOS			S	Sn	22 30 40.9	-0.3
KSL	Kastellorizon	4.87 199	P	Pn	22 29 46.1	+1.6
LIA	Limnos Island	4.92 262	P	Pn	22 29 45.3	+0.2
LIA	Limnos Island	4.92 262	P	Pn	22 29 45.3	+0.2
CFR	Carcaliu	5.04 332	⇓*i* P	Pn	22 29 48.7	+2.0
CFR	Carcaliu	5.04 332	⇓*i* P	Pn	22 29 48.7	+2.0
KAVA	Kavala	5.31 275	P	Pn	22 29 50.9	+0.4
KAVA	Kavala	5.31 275	P	Pn	22 29 50.9	+0.4
ISR	Istrita	5.66 322	⇑*i* P	Pn	22 29 56.8	+1.5
ISR	Istrita	5.66 322	⇑*i* P	Pn	22 29 56.8	+1.5
OUR	Ouranopolis	5.75 268	P	Pn	22 29 56.1	-0.5
OUR	Ouranopolis	5.75 268	P	Pn	22 29 56.1	-0.5
NVR	Nevrokopi	5.81 278	P	Pn	22 29 57.8	+0.4
NVR	Nevrokopi	5.81 278	P	Pn	22 29 57.8	+0.4
SRS	Serrai	6.00 276	P	Pn	22 30 00.0	-0.1
SRS	Serrai	6.00 276	P	Pn	22 30 00.0	-0.1
AOS	Alonnisos	6.08 257	P	Pn	22 30 01.2	+0.1
AOS	Alonnisos	6.08 257	P	Pn	22 30 01.2	+0.1
HUMR	Humele	6.09 310	⇑*i* P	Pn	22 30 02.1	+0.8
HUMR	Humele	6.09 310	⇑*i* P	Pn	22 30 02.1	+0.8
PLOR	Plostina	6.18 327	⇑*i* P	Pn	22 30 04.4	+1.9
PLOR	Plostina	6.18 327	⇑*i* P	Pn	22 30 04.4	+1.9
SOH	Sokhos	6.19 273	P	Pn	22 30 02.8	+0.1
SOH	Sokhos	6.19 273	P	Pn	22 30 02.8	+0.1
MLR	Muntele Rosu	6.21 321	Pn	Pn	22 30 04.8	+1.7
	0.1nm,0.3s,baz=187,slow=7.2,SNR=10.0					
MLR			Sn	Sn	22 31 18.6	+3.8
	0.2nm,0.3s,baz=36,slow=19,SNR=3.1					
MLR	Muntele Rosu	6.21 321	⇑*i* P	Pn	22 30 03.8	+0.7
MLR	Muntele Rosu	6.21 321	⇑*i* P	Pn	22 30 03.8	+0.7
EREA	Eretria	6.31 250	P	Pn	22 30 04.2	-0.1
EREA	Eretria	6.31 250	P	Pn	22 30 04.2	-0.1
PTL	Penteli	6.52 248	P	Pn	22 30 07.5	+0.3
PTL	Penteli	6.52 248	P	Pn	22 30 07.5	+0.3
KNT	Kendrikon	6.53 276	P	Pn	22 30 08.1	+0.8
KNT	Kendrikon	6.53 276	P	Pn	22 30 08.1	+0.8
NEO	Neokhori	6.53 260	P	Pn	22 30 07.0	-0.3
NEO	Neokhori	6.53 260	P	Pn	22 30 07.0	-0.3
XOR	Xorichti	6.54 260	P	Pn	22 30 06.9	-0.5
XOR	Xorichti	6.54 260	P	Pn	22 30 06.9	-0.5
VOIR		6.63 317	⇓*i* P	Pn	22 30 10.8	+2.1
VOIR		6.63 317	⇓*i* P	Pn	22 30 10.8	+2.1
FYTO	Fytoko, Volos	6.71 261	P	Pn	22 30 09.8	0.0
FYTO	Fytoko, Volos	6.71 261	P	Pn	22 30 09.8	0.0
TESR	Tescani	6.72 330	⇓*i* P	Pn	22 30 11.2	+1.4
TESR	Tescani	6.72 330	⇓*i* P	Pn	22 30 11.2	+1.4
ARR	Arges	6.80 315	⇑*i* P	Pn	22 30 12.3	+1.2
ARR	Arges	6.80 315	⇑*i* P	Pn	22 30 12.3	+1.2
DOPR	Dopca	6.83 321	⇑*i* P	Pn	22 30 12.0	+0.6
DOPR	Dopca	6.83 321	⇑*i* P	Pn	22 30 12.0	+0.6
AGG	Agios Georgios	7.28 259	P	Pn	22 30 17.9	+0.3
AGG	Agios Georgios	7.28 259	P	Pn	22 30 17.9	+0.3
KALE	Kalithea	7.62 255	P	Pn	22 30 22.6	+0.2
KALE	Kalithea	7.62 255	P	Pn	22 30 22.6	+0.2
GUR	Goura	7.65 251	P	Pn	22 30 23.3	+0.5
GUR	Goura	7.65 251	P	Pn	22 30 23.3	+0.5
SERG	Sergoula	7.68 255	P	Pn	22 30 23.6	+0.6
SERG	Sergoula	7.68 255	P	Pn	22 30 23.6	+0.6
SORM	Soroca	7.68 344	⇑*i* P	Pn	22 30 22.1	-0.9
SORM	Soroca	7.68 344	⇑*i* P	Pn	22 30 22.1	-0.9
ANX	Ano Chora	7.71 257	P	Pn	22 30 24.7	+1.1
ANX	Ano Chora	7.71 257	P	Pn	22 30 24.7	+1.1
KLV	Kalavryta, Ach	7.75 252	P	Pn	22 30 24.4	+0.3
KLV	Kalavryta, Ach	7.75 252	P	Pn	22 30 24.4	+0.3
LAKA	Lakka	7.80 254	P	Pn	22 30 25.5	+0.8
LAKA	Lakka	7.80 254	P	Pn	22 30 25.5	+0.8
DRO	Drossia	8.10 253	P	Pn	22 30 30.3	+1.4
DRO	Drossia	8.10 253	P	Pn	22 30 30.3	+1.4
BURAR	Bucovina Array	8.18 329	⇑*i* P	Pn	22 30 33.0	+3.0
BURAR	Bucovina Array	8.18 329	⇑*i* P	Pn	22 30 33.0	+3.0
MDVR	Moldovita	8.23 302	⇑*i* P	Pn	22 30 28.3	-2.4
PDO	Prodromos	8.26 258	P	Pn	22 30 32.2	+1.2
PDO	Prodromos	8.26 258	P	Pn	22 30 32.2	+1.2
MMAI	Mount Meron Ar	8.36 157	Pn	Pn	22 30 28.1	-4.4
	0.1nm,0.3s,baz=8.7,slow=13,SNR=2.9					
DRGR		8.74 316	⇑*i* P	Pn	22 30 39.0	+1.3
DRGR		8.74 316	⇑*i* P	Pn	22 30 39.0	+1.3
KVAR	Kislovodsk Arr	8.86 65	Pn	Pn	22 30 42.6	+3.2
	baz=227,slow=11,SNR=3.4					
AKASG	Malin Array Be	10.04 352	Pn	Pn	22 30 51.2	-4.1
	3.2nm,0.3s,baz=161,slow=15,SNR=9.6					
AKASG			Sn	Sn	22 32 42.0	-6.6
	1.4nm,0.3s,baz=173,slow=23,SNR=4.4					
GERES	GERESS Array B	14.96 308	Pn	P	22 32 04.7	-3.8
	0.1nm,0.3s,baz=115,slow=12,SNR=2.3					
GEYT	Alibeck	20.74 89	P	Pn	22 33 11.8	-2.7
	1.4nm,0.8s,baz=286,slow=10,SNR=2.9					
AKTO	Aktyubinsk	20.80 53	P	Pn	22 33 13.8	-1.2
	1.3nm,0.7s,baz=250,slow=9.3,SNR=5.1					
FINES	FINESS Array B	20.95 353	P	Pn	22 33 17.1	+0.5
	2.3nm,0.8s,baz=157,slow=10,SNR=5.4					
HFS	Hagfors	22.30 336	P	P	22 33 27.7	-1.0
	3.2nm,1.0s,baz=176,slow=9.5,SNR=3.2					
NOA	NORSAR Array B	23.78 335	P	P	22 33 44.9	+0.9
	0.6nm,0.8s,baz=135,slow=9.3,SNR=3.0					
MKAR	Makanchi Array	36.61 63	P	P	22 35 39.0	+1.3
	0.2nm,0.6s,baz=283,slow=6.0,SNR=4.3					
ZALV	Zalesovo Beam	37.52 51	P	P	22 35 46.3	+0.9
	0.3nm,0.3s,baz=263,slow=11,SNR=2.9					
TORD	Torodi Ar. Bea	37.93 232	P	P	22 35 48.2	-1.0
	0.9nm,0.8s,baz=36,slow=8.2,SNR=7.8					
SONM	Songino Array	52.10 56	P	P	22 37 43.6	+1.8
	1.0nm,0.7s,baz=292,slow=7.6,SNR=6.6					
YKA	Yellowknife Ar	73.52 344	P	P	22 40 06.0	+1.9
	0.3nm,0.7s,baz=24,slow=5.5,SNR=4.8					
ILAR	Eielson Array	74.77 359	P	P	22 40 13.6	+2.2
	0.2nm,0.5s,baz=353,slow=5.4,SNR=3.6					

NSSC ***13*** *22:28:50.2±1.4, 36°.79N×36°.49E, h71km±18km, MD0.6, ML2.3*
CSEM ***13*** *22:28:59.2, 36°.65N×36°.51E, h7km, MD2.6*
DDA ***13*** *22:28:59.2, 36°.65N×36°.51E, h7km, Md2.6*
ISC 13 22:28:56.5±1.1, 36°.42N±0°.03×36°.59E±0°.04, h11km±9km, n22, σ2°.31/36, Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DRWC	Darouich	0.21	18	*e*P	Pg	22 29 01.7	+0.7
DRWC				*e*P	Pb	22 29 04.5	+2.0
DRWC				AML	AML	22 29 04.9	
	comp=E,369nm,0.2s						
DRWC				AML	AML	22 29 08.0	
	comp=N,317nm,0.4s						
DRWC	Darouich	0.21	18	*e*P	Pg	22 29 01.7	+0.7
DRWC	Darouich	0.21	18	*e*P	Pb	22 29 04.5	+2.0
BTCH	Batrach	0.40	195	*e*P	Pg	22 29 04.9	+0.4
BTCH				AML	AML	22 29 14.9	
	comp=E,102nm,0.2s						
BTCH				AML	AML	22 29 16.3	
	comp=N,54nm,0.2s						
BTCH	Batrach	0.40	195	*e*P	Pg	22 29 04.9	+0.4
KUZU	Kuzuini	0.53	48	P	Pb	22 29 08.8	+0.9
KUZU	Kuzuini	0.53	48	*i* P	Pb	22 29 08.8	+0.9
YAYL	Yayladag	0.55	225	P	Pn	22 29 12.2	+1.7
YAYL				S	Sn	22 29 22.6	+2.9
YAYL	Yayladag	0.55	225	*i* P	Pn	22 29 12.2	+1.7
YAYL				*i* S	Sn	22 29 22.6	+2.9
KAMA	Osmaniye	0.76	5	*i* P	Pg	22 29 09.8	-1.6
KAMA				*i* S	Sg	22 29 17.4	-3.9
WRDH	Warideh	0.93	189	*e*P	Pg	22 29 13.3	-1.1
WRDH				*e*S	Sb	22 29 28.4	+1.4
WRDH				AML	AML	22 29 34.0	
	comp=E,44nm,0.5s						
WRDH	Warideh	0.93	189	*e*P	Pg	22 29 13.3	-1.1
WRDH				*e*S	Sb	22 29 28.4	+1.4
	comp=E,44nm,0.5s						
HCB	Kahramanmara¨	0.95	16	*i* P	Pg	22 29 14.0	-1.0
HCB				*i* S	Sg	22 29 24.2	-3.2
SLMH	Al Salmeh	1.10	101	*e*P	Pb	22 29 12.2	-5.5
SLMH				*e*S	Sb	22 29 28.9	-3.2
SLMH				AML	AML	22 29 30.8	
	comp=N,56nm,0.3s						
SLMH				AML	AML	22 29 30.8	
	comp=E,75nm,0.3s						
SLMH	Al Salmeh	1.10	101	*e*P	Pb	22 29 12.2	-5.5
SLMH				*e*S	Sb	22 29 28.9	-3.2
	comp=E,75nm,0.3s						
GZT	Gaziantep	1.22	40	*i* P	Pg	22 29 21.6	+1.6
GZT				*i* S	Sn	22 29 37.2	+0.9
KFRA	Kufra	1.22	172	*e*P	Pn	22 29 17.2	-2.5
KFRA				*e*S	Sb	22 29 35.9	+0.4
KFRA				AML	AML	22 29 37.4	
	comp=N,65nm,0.5s						
KFRA				AML	AML	22 29 38.9	
	comp=E,39nm,0.4s						
KFRA	Kufra	1.22	172	*e*P	Pn	22 29 17.2	-2.5
KFRA				*e*S	Sb	22 29 35.9	+0.4
	comp=E,39nm,0.4s						
BIDA	Albida	1.42	189	*e*P	Pn	22 29 18.5	-4.0
BIDA				*e*S	Sn	22 29 39.4	-1.9
BIDA				AML	AML	22 29 47.1	
	comp=E,28nm,0.5s						
BIDA				AML	AML	22 29 47.8	
	comp=N,28nm,0.7s						
BIDA	Albida	1.42	189	*e*P	Pn	22 29 18.5	-4.0
BIDA				*e*S	Sn	22 29 39.4	-1.9
	comp=N,28nm,0.7s						
SURC	SANLIURFA_SURC	1.69	74	P	Pg	22 29 31.2	+2.2
SURC				S	Sg	22 29 53.9	+2.9
SURC	SANLIURFA_SURC	1.69	74	*i* P	Pg	22 29 31.2	+2.2
SURC				*i* S	Sg	22 29 53.9	+2.9

NSSP ***13*** *22:38:38.6, 40°.25N×43°.32E, h5km, Ms3.3*
TIF ***13*** *22:38:39.1, 40°.35N×43°.23E, h19km*
DDA ***13*** *22:38:39.7, 40°.41N×43°.33E, h6km, Md3.5*
AZER ***13*** *22:38:40.7±0.0, 40°.46N×43°.42E, h20km, Error ellipse: s-maj=8.4km s-min=3.7km az=352.0*
ISK ***13*** *22:38:40.5, 40°.43N×43°.30E, h6km, MD3.5*
CSEM ***13*** *22:38:40.7±0.2, 40°.42N×43°.35E, h2km, MD3.5, Error ellipse: s-maj=4.0km s-min=3.3km az=179.0*
ISC 13 22:38:41.7±1.0, 40°.43N±0°.02×43°.30E±0°.01, h8km±9km, n110, σ1°.72/163, 21C-14D, Turkey-Georgia-Armenia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KARS	Kars	0.26	321	*e*PG	Pg	22 38 46.1	-0.8
KARS	Kars	0.26	321	P	Pg	22 38 46.2	-0.8
KARS				S	Sg	22 38 51.1	+0.6
EAK	Akyaka	0.35	42	P	Pg	22 38 48.6	0.0
EAK				S	Sb	22 38 55.6	-0.6
EAK	Akyaka	0.35	42	*i* P	Pg	22 38 48.6	0.0
EAK				*i* S	Sb	22 38 55.6	-0.6
GYMZ	Gyumri	0.56	46	⇑*i* P	Pn	22 38 57.1	+1.0
GYMZ				⇑*i* S	Sn	22 39 07.9	+2.1
HARI	Harich	0.56	71	⇑*i* P	Pn	22 38 56.3	0.0
HARI				⇓*i* S	Sn	22 39 06.2	+0.2
HNAZ	Hnaberd	0.68	72	⇑*i* P	Pn	22 38 58.6	+0.7
HNAZ				⇓*i* S	Sn	22 39 10.2	+1.4
SENK	Senkaya-Erzuru	0.73	281	*e*PG	Pb	22 38 54.5	-2.4
SENK				*e*SG	Sg	22 39 05.9	+0.4
SENK	Senkaya-Erzuru	0.73	281	*e*Pg	Pb	22 38 54.5	-2.4
SENK				*e*Sg	Sg	22 39 05.9	+0.4
EATA	Eleskirt	0.83	228	P	Pb	22 38 55.3	-3.4
EATA				S	Sb	22 39 09.8	-0.4
EATA	Eleskirt	0.83	228	*i* P	Pb	22 38 55.3	-3.4
EATA				*i* S	Sb	22 39 09.8	-0.4
BGD	Bogdanovka	0.87	15	P	Pb	22 38 57.4	-1.9
BGD				S	Sb	22 39 10.4	-0.7
BGD	Bogdanovka	0.87	15	P	Pb	22 38 57.3	-1.9
BGD				S	Sb	22 39 10.0	-1.1
DYDN	Diyadin	0.93	161	P	Pb	22 38 57.1	-3.1
DYDN				S	Sb	22 39 12.9	+0.1
DYDN	Diyadin	0.93	161	*i* P	Pb	22 38 57.1	-3.1
DYDN				*i* S	Sb	22 39 12.9	+0.1
AKH	Akhalkalaki	0.99	8	P	Pb	22 38 59.5	-1.8
AKH	

BNGB	Bing^¶‖	2.48	236	ePN	Pn	22 39 22.6	+0.1
MACK	Trabzon	2.73	282	P	Pb	22 39 30.4	-0.5
MACK	Trabzon	2.73	282	i P	Pb	22 39 30.4	-0.5
MACK				i S	Sb	22 40 07.6	+3.1
KTUT	Trabzon	2.74	283	ePN	Pn	22 39 26.6	+0.5
KTUT	Trabzon	2.74	283	ePn	Pn	22 39 26.6	+0.5
ZKTA	Zakatala	2.79	63	⇑Pg	Pn	22 39 28.9	+2.1
	SNR=7.3						
ZKTA				⇑Sg	Sb	22 40 07.2	+1.0
ZKT	Zaqatala	2.83	63	Sg	Sb	22 40 07.2	-0.1
MNGR	Mingechevir, A	2.90	82	⇓Pg	Pn	22 39 29.4	+1.2
MNGR				⇓Sg	Sg	22 40 13.4	-1.6
GUMT	Gumushane	2.91	272	ePN	Pn	22 39 29.2	+0.7
GUMT	Gumushane	2.91	272	ePn	Pn	22 39 29.2	+0.7
BRDA	Brd	2.97	92	⇑Pg	Pb	22 39 32.9	-2.0
	SNR=8.6						
BRDA	Brd	2.97	92	Pg	Pb	22 39 32.9	-2.0
	SNR=8.6						
SIRT	Sirnak	3.00	193	ePN	Pn	22 39 30.0	+0.4
SIRT	Sirnak	3.00	193	ePn	Pn	22 39 30.0	+0.4
SEKA	Sheki	3.06	74	⇓Pg	Pn	22 39 31.5	+1.0
	SNR=5.3						
SEKA				⇓Sg	Sb	22 40 16.0	+2.0
KELT	Kelkit	3.10	266	i P	Pb	22 39 37.1	-0.2
TNCL	Tunceli-Merkez	3.18	247	i P	Pb	22 39 38.3	-0.1
PTK	Pertek	3.38	244	ePN	Pn	22 39 35.8	+0.8
PTK	Pertek	3.38	244	ePn	Pn	22 39 35.8	+0.8
QBL	Gabala	3.49	80	⇓Pg	Pb	22 39 41.9	-1.9
QBL				⇑Sg	Sb	22 40 29.6	+3.2
ESPY	Espiye-Giresun	3.51	280	ePN	Pn	22 39 37.0	+0.4
ESPY	Espiye-Giresun	3.51	280	ePn	Pn	22 39 37.0	+0.4
KIV	Kislovodsk	3.56	353	ePN	Pn	22 39 37.7	+0.4
KIV	Kislovodsk	3.56	353	ePn	Pn	22 39 37.7	+0.4
MAZI	Mazidag	3.70	218	ePN	Pn	22 39 40.2	+0.8
MAZI	Mazidag	3.70	218	ePn	Pn	22 39 40.2	+0.8
SVRC	Sivrice-ELAZID	3.71	238	ePN	Pn	22 39 40.4	+1.0
SVRC	Sivrice-ELAZID	3.71	238	ePn	Pn	22 39 40.4	+1.0
XNQ	Khinaliq	3.75	77	⇓Pg	Pb	22 39 45.4	-2.9
XNQ				⇑Sg	Sb	22 40 35.6	+1.6
ILIC	ilic-Erzincan	3.76	257	ePN	Pn	22 39 41.2	+1.0
ILIC	ilic-Erzincan	3.76	257	ePn	Pn	22 39 41.2	+1.0
PQL	Pirkuli	4.05	83	⇓Pg	Pb	22 39 50.2	-3.1
PQL				⇓Sg	Sb	22 40 46.0	+3.6
GLBA	Ciilabad	4.10	105	⇓Sg	Sb	22 40 48.9	+5.2
GLBA	Ciilabad	4.10	105	Sg	Sb	22 40 48.9	+5.2
LRK	Lerik	4.29	113	⇑Pg	Pb	22 39 56.8	-0.6
	SNR=3.3						
LRK				⇑Sg	Sg	22 40 56.1	-3.2
ATGJ	Altiaghaj	4.31	82	⇑Pg	Pb	22 39 54.0	-3.8
ATGJ				⇓Sg	Sb	22 40 53.7	+3.6
RSDY	Resadiye-TOKAT	4.56	272	ePN	Pn	22 39 52.6	+1.6
RSDY	Resadiye-TOKAT	4.56	272	ePn	Pn	22 39 52.6	+1.6

IDC ***13*** *22:47:52.5±1.2, 10°.30N×84°.12W, h52km±9km, mb5.1/30, mb1 5.3/33, mb1mx5.2/38, mbtmp5.4/33, MS4.9/17, Ms1 4.9/17, ms1mx4.7/28, Error ellipse: s-maj=10.8km s-min=8.5km az=57.0*

MOS ***13*** *22:47:52.0±1.2, 10°.18N×84°.21W, h55km, mb5.6/76, MS5.1/18, Error ellipse: s-maj=6.5km s-min=4.2km az=101.0*

CASC ***13*** *22:47:53.9±7.4, 10°.02N×84°.19W, h74km±15km, MD4.6, ML5.3*

NEIC ***13*** *22:47:54.0, 9°.95N×84°.31W, h73km, mb5.6/266, ME5.4, MW5.9, MW5.9, MW5.9, MW5.8(UCR) Best double couple: NP1:φs125.00000°, δ65.00000°, λ.10.00000°. NP2:φs31.00000°, δ81.00000°, λ.155.00000°. Principal axes: T 1.0200, Plg24.0000°, Azm345.0000°; N 0.0000, Plg63.0000°, Azm192.0000°; P -1.0200, Plg11.0000°, Azm80.0000°; Moment Tensor Solution. s57 Moment tensor: Scale 10^17 Nm; Mrr2.03; Mθθ5.94; Mφφ-7.96; Mrθ4.76; Mθφ2.40; Mφr2.64; Best double couple: Ms9.30000×10^17 NP1:φs131.00000°, δ58.00000°, λ.18.00000°. NP2:φs31.00000°, δ75.00000°, λ.146.00000°. Principal axes: T 9.8000, Plg34.0000°, Azm347.0000°; N -1.0700, Plg54.0000°, Azm190.0000°; P -8.7300, Plg11.0000°, Azm84.0000°; Broadband fault plane solution: P waves. NP1:φs130.00000°, δ71.00000°, λ.16.00000°. NP2:φs35.00000°, δ75.00000°, λ.160.00000°. Principal axes: T Plg25.0000°, Azm352.0000°; N Plg0.0000°, Azm0.0000°; P Plg3.0000°, Azm83.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from BB mechanism. After UCR.*

NEIC Felt [VI] at Santiago and Turrucares and [V] throughout the Valle Central. Felt in most of Costa Rica. Felt [III] at David, Panama. Felt widely in western Panama and at Bluefields and San Juan del Sur, Nicaragua.

ISCJB ***13*** *22:47:54.9±0.2, 10°.16N±0°.02×84°.28W±0°.01, h88km±1km, mb5.4/349 Error ellipse: s-maj=3.5km s-min=1.6km az=33.5*

GCMT ***13*** *22:47:54.0±0.1, 10°.01N×84°.31W, h85km, MW6.0/131, Moment Tensor Solution. s124,c280; s131,c385; Duration: 2≅4 Moment tensor: Scale 10^18Nm; Mrr0.20±.01; Mθθ0.76±.01; Mφφ-0.96±.01; Mrθ0.54±.01; Mθφ0.27±.01; Mφr0.36±.01; Best double couple: Mo1.12500×10^18 NP1:φs33.00000°, δ78.00000°, λ.146.00000°. NP2:φs131.00000°, δ57.00000°, λ.14.00000°. Principal axes: T 1.1740, Plg32.0000°, Azm347.0000°; N -0.0990, Plg54.0000°, Azm196.0000°; P -1.0750, Plg14.0000°, Azm86.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*

NEIC ***13*** *22:47:55.0±0.0, 10°.10N×84°.26W, h70km, Moment Tensor Solution. s54 Moment tensor: Scale 10^17Nm; Mrr1.27; Mθθ5.84; Mφφ-7.11; Mrθ5.29; Mθφ1.45; Mφr2.34; Best double couple: Mo8.90000×10^17 NP1:φs36.00000°, δ77.00000°, λ.144.00000°. NP2:φs135.00000°, δ55.00000°, λ.15.00000°. Principal axes: T 9.6900, Plg33.0000°, Azm349.0000°; N -1.9700, Plg52.0000°, Azm199.0000°; P -7.7100, Plg14.0000°, Azm89.0000°;*

BJI ***13*** *22:47:56.5, 10°.10N×84°.30W, h96km, mB5.5/30*

ISC 13 22:47:55.3±0.4, 10°.11N±0°.03×84°.19W±0°.03, h77km±2km, h77km:pP-P, n1471, σ1965/1650, mb5.5/352, 62C-28D, Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HDC	Heredia	0.13	146	⇑iP	Pn	22 48 05.6	-1.1
HDC				⇑iP	Pn	22 48 05.6	-1.1
HDC				eS	Sn	22 48 14.1	-1.0
HDC				eS	Sn	22 48 14.2	-0.9
HDC	Heredia	0.13	146	ePn	Pn	22 48 05.7	-1.1
CGA2	Cerro Gallo 2	0.29	251	⇑iP	Pn	22 48 05.5	-1.9
LCR2	La Lucha 2	0.41	153	⇑iP	Pn	22 48 06.5	-1.8
LCR2				eS	Sn	22 48 15.9	-1.9
LCR2				i S	Sn	22 48 15.9	-1.9
URSC	Urasca	0.49	124	⇑iP	Pn	22 48 08.2	-0.7
ARE1	Arenal 1	0.63	304	⇓iP	Pn	22 48 09.5	-0.6
ARE1				eS	Sn	22 48 20.9	-0.1
QCR	Quepos	0.68	178	⇑iP	Pn	22 48 08.1	-2.5
BUS	Buena Vista	0.70	142	⇑iP	Pn	22 48 09.6	-1.7
JTS	JuntasAbangare	0.77	283	eP	Pn	22 48 09.9	-1.7
JTS	JuntasAbangare	0.77	283	i P	Pn	22 48 10.0	-1.7
JTS				i P	Pn	22 48 10.1	-1.5
JTS				⇓iP	Pn	22 48 10.1	-1.5
JTS				eS	Sn	22 48 21.4	-2.3
JTS				eS	Sn	22 48 21.4	-2.3
JTS				eS	Sn	22 48 21.8	-1.8
JTS	JuntasAbangare	0.77	283	ePn	Pn	22 48 09.9	-1.7
AMAS	Alto Masis	0.93	302	⇓eP	Pn	22 48 12.4	-1.2
AMAS				eS	Sn	22 48 26.7	-0.4
JCR	Jicaral	0.95	254	⇓iP	Pn	22 48 10.9	-2.7
PTEN	Parque Tenorio	0.99	307	⇓eP	Pn	22 48 13.5	-0.6
PTEN				eS	Sn	22 48 27.7	-0.4
CUI	Cuipilapa	1.10	300	⇓eP	Pn	22 48 14.7	-0.8
CUI				eS	Sn	22 48 29.4	-1.2
COLC	Colonia	1.14	299	⇓eP	Pn	22 48 15.1	-0.9
COLC				eS	Sn	22 48 30.8	-0.7
A494	Palo Verde	1.17	282	⇓iP	Pn	22 48 15.1	-1.2
A494				eS	Sn	22 48 31.2	-0.8
MESS	Mesas	1.17	302	⇓eP	Pn	22 48 15.7	-0.7
MESS				eS	Sn	22 48 31.9	-0.2
GUAB	Guayabo de Bag	1.18	300	⇓eP	Pn	22 48 15.6	-0.9
GUAB				eS	Sn	22 48 31.4	-1.0
LIM1	Limonal	1.20	299	⇓eP	Pn	22 48 15.8	-1.0
LIM1				eS	Sn	22 48 31.7	-1.0
GPS2	Hotel Rinc^‡n	1.31	299	⇓eP	Pn	22 48 17.2	-1.0
GPS2				eS	Sn	22 48 35.1	-0.2
APPA	Casa M^¡quinas	1.32	299	eP	Pn	22 48 17.6	-0.7
APPA				eS	Sn	22 48 36.1	+0.6
GPS1	Guardaparques	1.32	300	⇓eP	Pn	22 48 17.3	-1.0
GPS1				eS	Sn	22 48 35.4	-0.1
BUEV	Buena Vista	1.38	300	⇓eP	Pn	22 48 18.1	-1.0
BUEV				eS	Sn	22 48 36.1	-0.8
GB1A	Borinquen Arri	1.38	301	eP	Pn	22 48 18.5	-0.6
GB1A				eS	Sn	22 48 36.1	-0.9
ACR	Cerro Adams	1.77	145	eP	Pn	22 48 22.0	-2.1
BRU2	Volcan	1.97	131	i P	Pn	22 48 26.4	-0.5
BRU2				eS	Sn	22 48 47.5	-3.5
BRU2				eS	Sn	22 48 52.2	+1.1
TBS2		2.00	131	eP	Pn	22 48 27.0	-0.3
TBS2				eS	Sn	22 48 52.2	+0.5
BRU	Baru	2.06	129	⇑iP	Pn	22 48 28.2	-0.2
BRU				eP	Pn	22 48 28.2	-0.2
ESPN	Las Esperanzas	2.07	357	eP	Pn	22 48 29.2	+1.1
ESPN				eS	Sn	22 48 56.6	+3.4
MASN	Masaya	2.68	314	eP	Pn	22 48 35.5	-0.9
MASN				eS	Sn	22 49 08.8	+0.9
BOAB	BOACO BROADBAN	2.74	328	⇑iP	Pn	22 48 37.2	+0.1
BOAB				eS	Sn	22 49 12.8	+3.6
MGAN	Managua	2.86	315	eP	Pn	22 48 38.3	-0.5
TISN	Laguna Tiscapa	2.87	315	i P	Pn	22 48 38.0	-0.9
TISN				eP	Pn	22 48 38.7	-0.2
TISN				eS	Sn	22 49 14.3	+1.9
XAVN	Gruta Xavier	2.92	314	i P	Pn	22 48 38.0	-1.5
XAVN				eP	Pn	22 48 38.8	-0.8
APYN	Apoyeque	2.99	315	eP	Pn	22 48 40.1	-0.4
COPN	Copaltepe	3.13	311	eP	Pn	22 48 41.8	-0.6
MOMN	Momotombo	3.25	315	eP	Pn	22 48 43.1	-0.9
CNGN	Cerro Negro	3.42	314	eP	Pn	22 48 46.2	-0.1
CNGN				⇑eP	Pn	22 48 46.4	-0.1
CNGN				eS	Sn	22 49 27.2	+1.4
TEL3	Telica 3	3.57	313	eP	Pn	22 48 48.8	+0.3
TELN	Telica	3.58	314	eP	Pn	22 48 48.9	+0.2
ESTN	Estel	3.66	325	eP	Pn	22 48 49.9	+0.2
ESTN				eS	Sn	22 49 34.6	+2.8
CRIN	San Cristobal	3.81	313	eP	Pn	22 48 51.8	+0.1
CRIN				eS	Sn	22 49 37.1	+1.7
PNME	Penonome	4.14	113	⇓iP	Pn	22 48 56.4	+0.2
PNME				eS	Sn	22 49 42.7	-0.7
BCIP	Isla Barro Col	4.39	102	eP	Pn	22 48 59.8	+0.2
BCIP	Isla Barro Col	4.39	102	e	Sn	22 49 52.1	+2.5
BCIP	Isla Barro Col	4.39	102	eP	Pn	22 48 59.8	+0.2
BCIP				i P	Pn	22 48 59.9	+0.3
BCIP				⇓iP	Pn	22 48 60.0	+0.3
BCIP				eS	Sn	22 49 48.7	-0.9
BCIP				eS	Sn	22 49 49.7	+0.1
BCIP				eS	Sn	22 49 50.1	+0.6
BCIP	Isla Barro Col	4.39	102	ePn	Pn	22 48 59.9	+0.3
BCIP	Isla Barro Col	4.39	102	eP	Pn	22 49 00.7	+1.1
ZANG	Zanguenga, Cho	4.42	105	eP	Pn	22 48 59.3	-0.6
ZANG				i P	Pn	22 49 00.3	+0.4
ZANG				⇓iP	Pn	22 49 00.3	+0.4
AZU	Azuero	4.50	120	⇓iP	Pn	22 49 00.9	-0.2
AZU				⇓iP	Pn	22 49 00.9	-0.2
AZU				eS	Sn	22 49 48.9	-3.4
AZU				eS	Sn	22 49 55.1	+2.8
CNCH	Conchagua	4.76	312	eP	Pn	22 49 05.6	+0.8
TGUH	Tegucigalpa,Un	4.95	323	eP	Pn	22 49 08.3	+1.1
TGUH				eP	Pn	22 49 08.3	+1.1
TGUH	Tegucigalpa,Un	4.95	323	ePn	Pn	22 49 08.2	+1.1
VSM	San Miguel	5.18	310	eP	Pn	22 49 11.7	+1.0
LCY	Lacayo	5.20	310	eP	Pn	22 49 12.6	+1.9
PACA	Pacayal	5.25	310	eP	Pn	22 49 12.5	+1.1
CAHU	Cacacuatique	5.36	313	eP	Pn	22 49 14.2	+1.1
TECA	Tecapa	5.40	309	eP	Pn	22 49 14.5	+1.0
SNVI	San Vicente	5.73	308	eP	Pn	22 49 19.5	+1.5
LFRS	El Faro	5.91	307	eP	Pn	22 49 21.7	+1.3
SNET	Serv Nac Est T	6.08	306	eP	Pn	22 49 24.5	+1.7
SNET				AML	AML	22 49 27.2	
	comp=Z,6μm,0.3s						
SNET				eS	Sn	22 50 29.3	-1.7
COLS	Colinas	6.12	306	eP	Pn	22 49 24.8	+1.5
BOQS	Boqueron	6.15	306	eP	Pn	22 49 25.7	+1.9
UPD2	Meteti	6.29	104	⇓iP	Pn	22 49 26.9	+1.4
SBLS	San Blas	6.48	305	eP	Pn	22 49 30.0	+1.6
RTR	El Retiro	6.53	306	eP	Pn	22 49 30.9	+1.9
CAPC	Capurgana	6.91	102	eP	Pn	22 49 33.6	-0.4
IXG	Ixpaco	7.34	304	eP	Pn	22 49 40.9	+0.9
SOLC	Bahia Solano	7.74	119	eP	Pn	22 49 46.4	+1.0
DBBC	Dabeiba	8.47	111	eP	Pn	22 49 59.7	+4.3
MOTC	Monteria, Cord	8.51	98	eP	Pn	22 49 58.6	+2.7
MOTC				eP	Pn	22 49 59.9	+3.9
SJCC	San Jacinto, C	8.88	91	eP	Pn	22 50 02.7	+1.8
HELC	Santa Helena	9.41	114	eP	Pn	22 50 09.7	+1.1
CCIG	Comitan	9.87	309	ePn	Pn	22 50 16.3	+1.6
GUYC	Guyana, Colomb	9.98	118	eP	Pn	22 50 20.8	+4.4
PCJ	Portland Cotta	10.20	41	i P	Pn	22 50 22.4	+3.5
NORC	Norcasia	10.28	115	eP	Pn	22 50 22.9	+2.8
CVJ	Coleyville	10.33	38	i P	Pn	22 50 24.4	+3.6
MTDJ	Mount Denham	10.33	38	ePn	Pn	22 50 24.1	+3.3
POPC	Popayan, Colom	10.60	135	eP	Pn	22 50 28.2	+3.6
BBJ	Bamboo Saint A	10.61	38	i P	Pn	22 50 28.8	+4.2
STH	Stony Hill	10.67	41	i P	Pn	22 50 28.6	+3.1
YHJ	Yallahs	10.75	43	eP	Pn	22 50 21.9	-4.6
BNJ	Bonny Gate	10.76	40	i P	Pn	22 50 30.6	+3.9
BRRC	Barranca, Sant	10.78	105	eP	Pn	22 50 29.4	+2.5
TEIG	Tepich	10.80	339	P	Pn	22 50 27.8	+0.7
	comp=Z,3.3nm,0.3s,baz=90,slow=24,SNR=54						
TEIG				LR	LR	22 54 42.1	
	comp=Z,7μm,19.9s,baz=184,slow=38						
TEIG	Tepich	10.80	339	ePn	Pn	22 50 29.6	+2.4
OCAC	Ocana	10.89	99	eP	Pn	22 50 31.8	+3.2
ROSC	El Rosal	11.10	117	P	Pn	22 50 34.7	+3.1
	comp=Z,1.1nm,0.3s,baz=315,slow=9.2,SNR=34						
ROSC				LR	LR	22 56 06.0	
	comp=Z,5μm,19.0s,baz=310,slow=44						
ROSC	El Rosal	11.10	117	eP	Pn	22 50 36.0	+4.5
CRUC	La Cruz	11.13	139	eP	Pn	22 50 35.2	+3.2
PRAC	Prado	11.21	124	eP	Pn	22 50 36.0	+3.3
BTLC	Betulia, Santa	11.26	106	eP	Pn	22 50 36.9	+3.3
GIRC	Giron, Santand	11.28	105	eP	Pn	22 50 36.9	+3.0
OTAV	Otavalo	11.35	149	ePn	Pn	22 50 35.8	+0.7
OTAV	Otavalo	11.35	149	eP	Pn	22 50 39.3	+4.3
BETC	Betania	11.40	130	eP	Pn	22 50 38.9	+3.5
BARC	Barichara	11.44	107	eP	Pn	22 50 36.9	+0.8
GRMC	Gramalote, San	11.50	101	eP	Pn	22 50 39.1	+2.3
CBRI	Barrientos, No	11.50	101	eP	Pn	22 50 36.9	0.0
PAMC	Pamplona, Colo	11.69	103	eP	Pn	22 50 41.4	+1.7
RUSC	La Rusia	11.77	110	eP	Pn	22 50 41.8	+1.0
FLOC	Florencia	11.99	134	eP	Pn	22 50 46.7	+3.3
SJAC	San Juan de Ar	12.22	123	eP	Pn	22 50 48.4	+1.7
PAYG	Puerto Ayora	12.31	210	ePn	Pn	22 50 49.4	+1.6
CMIG	Matias Romero	12.49	305	P	Pn	22 50 48.4	-1.8
	comp=Z,88nm,0.3s,baz=117,slow=10,SNR=483						
CMIG				S	Sn	22 53 05.9	-1.8
	comp=Z,13nm,0.3s,baz=314,slow=21,SNR=8.2						
GTBY	Guantanamo Bay	13.11	41	ePn	P	22 51 02.9	-2.9
SDV	Santo Domingo	13.43	94	P	Pn	22 51 03.2	+0.3
	comp=Z,13nm,0.3s,baz=277,slow=11,SNR=104						
SDV				S	Sn	22 53 28.5	-2.1
	comp=Z,5.0nm,0.3s,baz=46,slow=19,SNR=2.6						
SDV	Santo Domingo	13.43	94	eP	Pn	22 51 05.2	+2.3
PAPH	Port-au-Prince	14.23	53	ePn	P	22 51 16.4	-1.8
SDDR	Presa de Saban	15.28	53	eP	P	22 51 29.5	-0.5
SDDR	Presa de Saban	15.28	53	eP	P	22 51 30.8	+0.8
	comp=Z,849nm,1.3s						
BANI	BANI	15.72	57	eP	P	22 51 36.0	+1.0
TLIG	Tlapa	15.80	300	ePn	Pn	22 51 34.0	+0.5
	comp=Z,514nm,0.7s						
SDD	Santo Domingo	16.12	57	eP	P	22 51 41.0	+1.7
	comp=Z,2μm,1.4s						
GRTK	Grand Turk	16.91	46	ePn	P	22 51 49.7	+1.8
	comp=Z,816nm,1.5s						
UNM	Universidad Na	17.14	304	eP	P	22 51 51.1	+0.2
UNM				pmax	pmax		
	comp=Z,1μm,1.1s						
UNM	Universidad Na	17.14	304	ePn	P	22 51 51.1	+0.2
	comp=Z,1μm,1.1s						
ATAH	Atahualpa	18.08	161	P	Pn	22 52 03.3	+1.4
	comp=Z,0.9nm,0.3s,baz=336,slow=7.6,SNR=42						
ATAH				S	S	22 55 27.9	+4.0
	comp=Z,0.5nm,0.3s,baz=306,slow=19,SNR=2.1						
ATAH				PcP	PcP	22 56 33.9	+1.2
	comp=Z,0.9nm,0.3s,baz=254,slow=0.1,SNR=8.1						
DWPF	Disney Wildern	18.09	8	eP	Pn	22 52 03.8	+2.2
	comp=Z,914nm,1.2s						
MPR	Mayaguez	18.38	62	eP	Pn	22 52 06.4	+1.4
	comp=Z,448nm,1.7s						
AGP	Aguadilla	18.45	62	eP	Pn	22 52 09.0	+3.0
	comp=Z,1μm,1.2s						
LRS	Lares	18.66	62	eP	Pn	22 52 09.7	+1.1
CELP	Cerrillos	18.81	63	eP	Pn	22 52 11.2	+0.9
MOIG	Morelia	18.97	302	eP	Pn	22 52 12.8	+0.4
	comp=Z,475nm,0.9s						
SJG	San Juan	19.20	64	P	P	22 52 12.7	-0.6
	comp=Z,9.6nm,0.3s,baz=260,slow=6.8,SNR=60						
SJG				S	S	22 55 45.0	-2.0
	comp=Z,0.6nm,0.3s,baz=40,slow=18,SNR=3.7						
SJG				PcP	PcP	22 56 34.5	+0.5
	comp=Z,0.5nm,0.3s,baz=28,slow=7.6,SNR=4.4						
SJG	San Juan	19.20	64	eP	Pn	22 52 14.5	-0.5
SJG				pmax	pmax		
	comp=Z,610nm,1.3s						
SJG	San Juan	19.20	64	eP	Pn	22 52 14.5	-0.5
	comp=Z,606nm,1.4s						
SJG				S	S	22 55 45.0	-2.0
SJG				PcP	PcP	22 56 34.5	+0.5
SJG	San Juan	19.20	64	eP	P	22 52 13.0	-0.2
HUMP	Col San Antoni	19.48	64	eP	Pn	22 52 17.8	-0.4
	comp=Z,503nm,1.0s						
HUMP				ePcP	PcP	22 56 35.2	+0.7
CBYP	Canovanas	19.52	63	eP	Pn	22 52 18.0	-0.8
	comp=Z,931nm,1.6s						
MTP	Mount Pirata	19.73	64	eP	Pn	22 52 20.8	-0.3
	comp=Z,683nm,1.1s						
646A	Port Sulphur	20.08	346	P	Pn	22 52 25.7	+0.6
	baz=164						
645A	Chauvin	20.16	344	P	Pn	22 52 26.4	+0.4
	baz=162						
CDVI	St. Croix	20.31	66	eP	P	22 52 26.3	+1.0
	comp=Z,478nm,1.0s						
STVI	Saint Thomas	20.35	64	eP	P	22 52 26.6	+0.9
	comp=Z,629nm,1.4s						
546A	Slidell	20.67	346	P	Pn	22 52 31.5	-0.5
	baz=165						
545A	Edgard	20.69	344	P	Pn	22 52 31.4	-0.9
	baz=163						
035Z	Hargill	20.90	323	P	P	22 52 31.1	-0.5
	baz=139,SNR=9.5						
544A	White Castle	20.93	343	P	Pn	22 52 34.3	-0.9
	baz=161						
447A	Lucedale	21.00	349	P	Pn	22 52 35.2	-0.7
	baz=168,SNR=20						
448A	Bay Minette	21.00	351	P	Pn	22 52 35.0	-0.9
	baz=170,SNR=7.2						
ABVI	Anegada Island	21.04	64	eP	P	22 52 34.0	+0.9
	comp=Z,800nm,1.1s						
BRAL	Brewton	21.12	353	eP	P	22 52 34.2	+0.3
	comp=Z,3μm,1.8s						
543A	St. Martinvill	21.12	341	P	P	22 52 35.5	+1.6
	baz=159						
446A	Poplarville	21.13	348	P	P	22 52 36.4	+2.4
	baz=166,SNR=14						
936A	North Padre Is	21.20	326	P	P	22 52 33.4	-1.3
	baz=142						
TIGA	Tifton	21.23	1	P	P	22 52 36.9	+1.9
	baz=182,SNR=54						
TIGA	Tifton	21.23	1	eP	P	22 52 36.9	+1.9
	comp=Z,1μm,1.5s						
035A	Encino	21.28	324	P	P	22 52 34.6	-0.9
	baz=140,SNR=17						
445A	Amite	21.30	345	P	P	22 52 37.9	+2.1
	baz=164,SNR=9.1						
542A	Morse	21.39	340	P	P	22 52 38.5	+1.8
	baz=157						
444A	Pine Grove	21.39	344	P	P	22 52 38.7	+2.0
	baz=163,SNR=8.2						
348A	Jackson	21.48	351	P	P	22 52 39.8	+2.1
	baz=170,SNR=43						
738A	Farr-Stevens R	21.51	332	P	P	22 52 38.6	+0.6
	baz=148						
541A	Lake Charles	21.55	338	P	P	22 52 39.4	+0.9
	baz=156						
347A	Saraland	21.57	350	P	P	22 52 40.7	+2.1
	baz=169,SNR=31						
ZAIG	Zacatecas	21.63	308	eP	P	22 52 40.8	+1.1
	comp=Z,258nm,1.0s						
SABA	Saba	21.65	68	eP	P	22 52 40.3	+0.7
SABA	Saba	21.65	68	eP	P	22 52 41.9	+2.2
	comp=Z,1μm,1.8s						
034A	Hebbronville	21.71	323	P	P	22 52 39.4	-0.8
	baz=139,SNR=50						
346A	Big Creek Wild	21.73	348	P	P	22 52 42.0	+1.7
	baz=166,SNR=13						
443A	Delano Plantat	21.73	342	P	P	22 52 41.5	+1.2
	baz=160						
345A	Thompson Farm,	21.78	346	P	P	22 52 43.0	+2.1
	baz=165						
737A	Port Lavaca	21.82	330	P	P	22 52 42.3	+0.9
	baz=146						
SEUS	St. Eustatius	21.85	68	eP	P	22 52 42.0	+0.2
SEUS	St. Eustatius	21.85	68	eP	P	22 52 42.3	+0.5
	comp=Z,1μm,1.8s						
442A	Mamou	21.89	341	P	P	22 52 43.2	+1.1
	baz=158,SNR=14						
638

636A Smothers Creek 22.72 330 P P 22 52 50.6 -0.4
baz=146,SNR=28
BPA Boggy Peak 22.76 70 eP P 22 52 51.3 -0.3
VBMS Vicksburg 22.77 346 P P 22 52 52.6 +1.2
baz=164,SNR=20
VBMS Vicksburg 22.77 346 eP P 22 52 52.5 +1.0
comp=Z,2µm,1.4s
147A Livingston 22.77 351 P P 22 52 53.2 +1.8
baz=170,SNR=52
BBL Barber's Block 22.79 74 eP P 22 52 53.7 +1.8
439A Center Grove, 22.81 336 P P 22 52 51.7 -0.2
baz=153,SNR=5.4
146A Union 22.86 349 P P 22 52 53.7 +1.3
baz=168,SNR=19
537A Green Hill Far 22.86 332 P P 22 52 52.1 -0.3
baz=148,SNR=32
PCM Pelee Case Pet 22.91 76 eP P 22 52 57.4 +4.3
DWS Wesley 22.95 74 eP P 22 52 52.3 -1.1
CXM Morne La Croix 22.95 76 eP P 22 52 53.9 +0.2
FDF Fort de France 22.96 76 eP P 22 52 53.5 -0.2
FDF Fort de France 22.96 76 eP P 22 52 53.8 +0.2
FDF Fort de France 22.96 76 eP P 22 52 56.7 +3.1
FDF pmax pmax
comp=Z,1µm,2.0s
FDF Fort de France 22.96 76 eP P 22 52 56.7 +3.1
comp=Z,1µm,2.0s
LRAL Lakeview Retre 22.96 354 eP P 22 52 54.7 +1.3
comp=Z,2µm,1.7s
DLPL La Plaine 22.96 75 eP P 22 52 47.6 -6.0
DLPL La Plaine 22.96 75 eP P 22 52 55.1 +1.5
BAMF Morne Balai 22.97 76 eP P 22 52 49.4 -4.3
RGRS Roger Stewart 22.98 9 eP P 22 52 55.9 +2.2
comp=Z,4µm,0.7s
ANWB Willy Bob 22.99 68 eP P 22 52 53.6 -0.3
ANWB Willy Bob 22.99 68 eP P 22 52 53.6 -0.3
comp=Z,304nm,1.1s
734A La Parita Cree 23.00 326 P P 22 52 51.7 -2.1
baz=142,SNR=16
BIM Bigot 23.00 77 eP P 22 52 54.8 +0.8
145A Houston Renfro 23.00 348 P P 22 52 54.8 +1.0
baz=166,SNR=23
635A Leesville 23.01 328 P P 22 52 52.0 -1.9
baz=144,SNR=6.1
MGG Marie-Galante 23.01 73 eP P 22 52 54.1 0.0
MCLT Moule a Chique 23.02 79 eP P 22 52 54.8 +0.6
MCLT Moule a Chique 23.02 79 eP P 22 52 54.9 +0.7
340A Bronson 23.03 338 P P 22 52 53.9 -0.2
baz=155,SNR=10
ZAM Aeronautique 23.05 77 eP P 22 52 56.3 +1.8
242A Grayson 23.05 343 P P 22 52 54.6 +0.3
baz=160,SNR=8.1
438A Sam Houston St 23.07 335 P P 22 52 54.0 -0.4
baz=151,SNR=6.8
833A Chaparral WMA, 23.07 324 P P 22 52 53.1 -1.4
baz=139,SNR=36
CSU Charleston Sou 23.08 9 eP P 22 52 56.4 +1.8
BOT Bacolet 23.09 85 eP P 22 52 57.9 +3.0
NNA Nana 23.14 161 P P 22 52 56.1 +0.8
comp=Z,15nm,0.7s,baz=326,slow=12,SNR=15
NNA PcP PcP 22 56 42.3 +0.6
comp=Z,16nm,0.6s,baz=294,slow=3.8,SNR=5.8
NNA Nana 23.14 161 eP P 22 52 56.4 +1.1
NNA e 22 56 43.8
NNA pmax pmax
comp=Z,610nm,1.4s
NNA Nana 23.14 161 eP P 22 52 56.4 +1.1
comp=Z,605nm,1.4s
NNA ePcP PcP 22 56 43.8 +2.1
144A Alexander Plac 23.14 347 P P 22 52 55.9 +0.8
baz=165
MVM Montagne Vaucl 23.17 77 eP P 22 52 58.2 +2.5
NHSC New Hope 23.18 9 eP P 22 52 57.4 +1.9
comp=Z,1µm,0.9s
GOGA Godfrey 23.20 2 eP P 22 52 57.0 +1.3
GOGA pmax pmax
comp=Z,670nm,1.0s
GOGA Godfrey 23.20 2 eP P 22 52 57.0 +1.3
comp=Z,674nm,0.9s
339A Huntington 23.21 337 P P 22 52 55.2 -0.6
baz=154,SNR=6.9
536A Bastrop 23.21 331 P P 22 52 54.6 -1.2
baz=147,SNR=19
241A Mo Tay, Goldon 23.25 341 P P 22 52 56.0 -0.2
baz=158,SNR=6.6
Z47A Carrollton 23.25 352 P P 22 52 57.0 +0.8
baz=171,SNR=45
TOSP Speyside 23.27 85 eP P 22 52 54.8 -1.8
634A China Grove, S 23.30 327 P P 22 52 55.0 -1.7
baz=143
733A Divot King Ran 23.31 325 P P 22 52 55.0 -1.8
baz=140,SNR=32
Z48A Northport 23.36 353 P P 22 52 58.2 +1.0
baz=172,SNR=268
832A Faith Ranch, C 23.38 323 P P 22 52 55.2 -2.3
baz=138,SNR=50
Z46A Louisville 23.39 350 P P 22 52 58.5 +1.1
baz=169,SNR=82
437A Phantom Ranch, 23.42 333 P P 22 52 56.7 -1.0
baz=150
535A Dale 23.42 330 P P 22 52 55.7 -2.2
baz=146,SNR=27
143A Socs Landing, 23.45 345 P P 22 52 57.4 -0.6
baz=162
142A Monroe 23.45 343 P P 22 52 57.4 -0.6
baz=161
338A Crockett 23.53 336 P P 22 52 58.5 -0.2
baz=152,SNR=18
240A Hunter Patters 23.55 339 P P 22 52 57.9 -1.0
baz=156
NATX Nacogdoches 23.63 337 P P 22 52 59.2 -0.4
baz=154,SNR=15
NATX Nacogdoches 23.63 337 eP P 22 53 00.2 +0.6
comp=Z,332nm,1.1s
436A Wall Ranch, Ga 23.67 332 P P 22 52 59.1 -0.9
baz=148,SNR=8.3
Z45A Winona 23.70 348 P P 22 53 00.6 +0.4
baz=167,SNR=9.4
337A Centerville 23.73 334 P P 22 53 00.2 -0.4
baz=151,SNR=11
Z44A Pea Ridge, Bel 23.76 347 P P 22 53 01.2 +0.4
baz=165,SNR=12
239A Gary 23.79 338 P P 22 53 00.6 -0.5
baz=155,SNR=12
141A Papa Simpson, 23.79 342 P P 22 53 00.9 -0.1
baz=159,SNR=16
633A Saathoff Ranch 23.81 326 P P 22 52 59.6 -1.7
baz=142,SNR=87
534A Blanco 23.88 328 P P 22 52 59.8 -2.2
baz=144,SNR=106
Y47A UCPARC, Winfie 23.92 352 P P 22 53 03.2 +1.0
baz=172,SNR=152
238A Jacksonville 24.02 337 P P 22 53 02.7 -0.5
baz=153,SNR=17
140A Cam and Jess, 24.04 340 P P 22 53 03.2 -0.1
baz=157,SNR=10
Y46A Houston 24.05 350 P P 22 53 04.2 +0.9
baz=169,SNR=83
435B Jarrell 24.05 331 P P 22 53 02.4 -1.0
baz=146,SNR=50
Z42A Norrel Spur, H 24.13 344 P P 22 53 03.8 -0.4
baz=162,SNR=21
Y45A Yeager Farm, C 24.15 349 P P 22 53 05.1 +0.9
baz=167,SNR=29
JSC Jenkinsville 24.21 6 eP P 22 53 06.3 +1.5
JSC pmax pmax
comp=Z,450nm,0.7s
JSC Jenkinsville 24.21 6 eP P 22 53 06.3 +1.5
comp=Z,450nm,0.7s
336A Riesel 24.21 333 P P 22 53 03.7 -1.2
baz=149,SNR=24
533A Kerrville 24.21 327 P P 22 53 03.1 -1.9
baz=143,SNR=35
237A Washetta, Mont 24.29 335 P P 22 53 04.9 -0.7
baz=152,SNR=5.9
BBGH Gun Hill 24.31 80 e P 22 53 09.2 +3.2
BBGH Gun Hill 24.31 80 eP P 22 53 09.3 +3.4
BBGH Gun Hill 24.31 80 eP P 22 53 07.6 +1.7
comp=Z,869nm,1.1s
Z41A Richland Creek 24.36 342 P P 22 53 06.1 -0.1
baz=160,SNR=71
Y44A Strider, Charl 24.37 348 P P 22 53 06.5 +0.2
baz=166,SNR=11
335A Moody 24.39 332 P P 22 53 05.4 -1.1
baz=148,SNR=40
434A Burnet 24.41 330 P P 22 53 05.0 -1.7
baz=145,SNR=45
Y43A Makayla and Ka 24.48 346 P P 22 53 07.2 -0.1
baz=164,SNR=5.6
Z40A Long Farm, Mag 24.55 341 P P 22 53 07.6 -0.3
baz=158,SNR=16
138A Matatall Enter 24.59 337 P P 22 53 08.3 0.0
baz=154,SNR=28
236A Katherine and 24.60 334 P P 22 53 07.1 -1.3
baz=150,SNR=5.4
Y42A Garnett, Star 24.62 345 P P 22 53 08.7 +0.2
baz=162,SNR=9.7
CCAR Cane Creek 24.70 345 eP P 22 53 10.0 +0.8
comp=Z,591nm,1.0s
OXF Oxford 24.75 350 eP P 22 53 10.4 +0.6
OXF pmax pmax
comp=Z,302nm,0.9s
OXF Oxford 24.75 350 eP P 22 53 10.4 +0.6
comp=Z,302nm,0.9s
433A Art 24.78 328 P P 22 53 08.1 -2.0
baz=143,SNR=70
Z39A Irene McRaven, 24.79 340 P P 22 53 09.4 -0.7
baz=156
137A Heron Place, G 24.80 336 P P 22 53 09.2 -1.0
baz=152,SNR=15
334A Lometa 24.82 330 P P 22 53 08.5 -1.9
baz=146,SNR=32
WLAR White Oak Lake 24.86 342 eP P 22 53 11.4 +0.7
comp=Z,276nm,0.7s
X44A Crenshaw 24.88 348 P P 22 53 10.6 -0.3
baz=166
Y41A Eaglette Beard 24.89 343 P P 22 53 10.9 -0.1
baz=160,SNR=27
JCT Junction City 24.94 327 P P 22 53 09.7 -2.0
baz=142,SNR=42
JCT Junction City 24.94 327 eP P 22 53 09.6 -2.0
JCT pmax pmax
comp=Z,120nm,1.0s
JCT Junction City 24.94 327 eP P 22 53 09.6 -2.1
comp=Z,120nm,1.0s
WHTX Lake Whitney, 25.00 333 P P 22 53 11.0 -1.1
baz=148
WHTX Lake Whitney, 25.00 333 eP P 22 53 11.7 -0.4
WHTX ePP pP 22 53 33.2 +3.3
136A Ennis 25.00 335 P P 22 53 11.2 -0.9
baz=151,SNR=16
SWET Sewanee 25.04 357 eP P 22 53 13.0 +0.5
comp=Z,211nm,1.0s
KMSC Kings Mountain 25.05 6 P P 22 53 13.8 +1.3
baz=187,SNR=154
KMSC Kings Mountain 25.05 6 eP P 22 53 13.9 +1.4
comp=Z,391nm,0.8s
Z38A Mt. Pleasant 25.08 338 P P 22 53 12.3 -0.4
baz=155,SNR=12
333A Richland Sprin 25.18 329 P P 22 53 11.9 -1.8
baz=144,SNR=88
Y40A Okolona 25.21 342 P P 22 53 13.6 -0.3
baz=159,SNR=22
CPCT Cooper Cave 25.23 359 eP P 22 53 15.5 +1.4
comp=Z,1µm,1.9s
Z37A Pogue Cattle C 25.27 337 P P 22 53 14.1 -0.4
baz=153,SNR=9.2
234A Clairette 25.32 331 P P 22 53 13.0 -2.0
baz=147,SNR=24
Y39A Lockesburg 25.40 341 P P 22 53 14.7 -1.0
baz=157,SNR=24
TKL Tuckaleechee C 25.43 1 P P 22 53 16.4 +0.4
comp=Z,139nm,0.8s,baz=175,slow=9.9,SNR=138
TKL Tuckaleechee C 25.43 1 eP P 22 53 17.0 +1.0
TKL pmax pmax
comp=Z,250nm,1.0s
TKL Tuckaleechee C 25.43 1 eP P 22 53 17.0 +1.0
comp=Z,248nm,0.9s
MET Memphis--Engin 25.44 349 eP P 22 53 16.8 +0.8
comp=Z,292nm,1.1s
135A Vickery Place, 25.46 333 P P 22 53 14.7 -1.6
baz=149
X40A Basin Creek Fa 25.52 343 P P 22 53 15.7 -1.0
baz=160,SNR=40
Y38A Idabel 25.60 339 P P 22 53 16.1 -1.4
baz=156,SNR=29
UALR University of 25.66 344 eP P 22 53 17.4 -0.5
comp=Z,290nm,1.0s
Z36A Blue Ridge 25.66 336 P P 22 53 16.7 -1.3
baz=152,SNR=11
233A Rising Star 25.70 330 P P 22 53 16.7 -1.8
baz=145,SNR=35
MIAR Mount Ida 25.79 342 P P 22 53 18.1 -1.2
baz=159,SNR=122
MIAR Mount Ida 25.79 342 eP P 22 53 18.5 -0.7
MIAR Mount Ida 25.79 342 eP P 22 53 18.5 -0.7
X39A Fountain Ranch 25.93 341 P P 22 53 19.4 -1.1
baz=158,SNR=75
Y37A Hugo 25.97 338 P P 22 53 19.7 -1.1
baz=154,SNR=33
HBAR Harrisburg 26.00 348 eP P 22 53 22.1 +1.0
W41B Gary Mavity, V 26.01 345 P P 22 53 20.6 -0.6
baz=162,SNR=116
Z35A Perchaven, San 26.05 334 P P 22 53 20.1 -1.5
baz=150,SNR=12
HALT Halls 26.11 350 eP P 22 53 22.9 +0.9
X301 Greenbrier Sit 26.11 345 eP P 22 53 21.4 -0.7
comp=Z,211nm,1.1s
WVT Waverly 26.11 353 eP P 22 53 21.7 -0.4
WVT pmax pmax
comp=Z,900nm,1.9s
WVT Waverly 26.11 353 eP P 22 53 21.7 -0.4
comp=Z,899nm,1.9s
WHAR Wooly Hollow 26.13 345 eP P 22 53 21.6 -0.6
comp=Z,303nm,1.0s
Y36A Durant 26.15 337 P P 22 53 21.4 -1.1
baz=153
X201 Greenbrier Sit 26.15 345 eP P 22 53 21.8 -0.6
comp=Z,280nm,1.0s
133A Hamilton Ranch 26.19 331 P P 22 53 21.4 -1.5
baz=146,SNR=29
W40A Ferguson Farm, 26.25 343 P P 22 53 22.6 -0.7
baz=160,SNR=34
GNAR Gosnell 26.28 349 eP P 22 53 24.2 +0.6
HPIG 26.28 312 eP P 22 53 23.6 -0.4
comp=Z,102nm,1.1s
X38A Whitesboro 26.31 340 P P 22 53 23.4 -0.5
baz=156
TZTN Tazewell 26.32 1 eP P 22 53 24.9 +0.9
comp=Z,217nm,1.0s
Z34A Collier Ranch, 26.37 333 P P 22 53 23.1 -1.4
baz=149,SNR=9.1
PTGA Pitinga 26.40 113 P P 22 53 25.5 +0.6
comp=Z,96nm,1.1s,baz=301,slow=11,SNR=72
PTGA Pitinga 26.40 113 eP P 22 53 26.4 +1.5
comp=Z,268nm,1.3s
TXAR Lajitas Array 26.41 319 P P 22 53 24.3 -0.8
comp=Z,22nm,0.5s,baz=146,slow=9.5,SNR=40
TXAR PcP PcP 22 56 49.7 +0.9
comp=Z,7.2nm,0.8s,baz=140,slow=4.9,SNR=4.0
TXAR ScP ScP 23 00 24.6 +2.4
comp=Z,7.4nm,1.0s,baz=146,slow=4.9,SNR=7.6
TXAR LR LR 23 04 34.3
comp=Z,3µm,19.8s,baz=0.0,slow=38
TXAR P3KPbc 23 26 10.1
comp=Z,1.3nm,0.8s,baz=274,slow=3.4,SNR=8.2
TX31 Lajitas Ar. Si 26.41 319 eP P 22 53 24.9 -0.1
X37A Clayton 26.43 339 P P 22 53 23.8 -1.1
baz=155,SNR=22
GLAT Glass 26.45 351 eP P 22 53 25.8 +0.6
UTMT University of 26.46 352 eP P 22 53 25.9 +0.7
comp=Z,582nm,1.1s
Y35A Marietta 26.46 335 P P 22 53 23.9 -1.3
baz=151,SNR=30
W39A Magazine 26.46 342 P P 22 53 24.1 -1.1
baz=159,SNR=66
ABTX Abilene, Hawle 26.56 330 P P 22 53 24.4 -1.8
baz=145
ABTX Abilene, Hawle 26.56 330 eP P 22 53 25.6 -0.7
comp=Z,206nm,1.4s
W38A Poteau 26.57 341 P P 22 53 25.0 -1.3
baz=157,SNR=44
PVMO Portageville 26.66 350 eP P 22 53 27.4 +0.5
comp=Z,252nm,0.8s
Z33A Whitaker Ranch 26.68 332 P P 22 53 25.6 -1.7
baz=147,SNR=16
V40A Witts Springs 26.76 344 P P 22 53 26.7 -1.3
baz=161,SNR=58
X36A Centrahoma 26.77 337 P P 22 53 26.6 -1.4
baz=153,SNR=37
Y34A Reagan Ranch, 26.80 334 P P 22 53 26.6 -1.7
baz=150,SNR=21
X35A Drake 26.86 336 P P 22 53 27.4 -1.5
baz=152,SNR=22
PARMO Parma 26.91 350 eP P 22 53 30.0 +0.7
W37B Quinton 26.94 339 P P 22 53 28.6 -1.0
baz=155,SNR=15
V39A Pettigrew 27.02 343 P P 22 53 29.2 -1.1
baz=160,SNR=49
PBMO Poplar Bluff 27.14 349 eP P 22 53 30.9 -0.5
comp=Z,186nm,1.1s
BLA Blacksburg 27.20 7 eP P 22 53 33.3 +1.4
BLA pmax pmax
comp=Z,400nm,1.3s
BLA Blacksburg 27.20 7 eP P 22 53 33.3 +1.4
comp=Z,396nm,1.4s
Y33A Hilltop Ranch, 27.22 333 P P 22 53 30.3 -1.8
baz=148,SNR=19
W36A Wetumka 27.23 338 P P 22 53 30.1 -2.0
baz=154,SNR=23
V38A Canehill 27.27 342 P P 22 53 31.1 -1.4
baz=158,SNR=32
U40A Yellville 27.28 345 P P 22 53 32.0 -0.6
baz=162,SNR=76
X34A Smith Ranch, M 27.39 335 P P 22 53 32.2 -1.4
baz=150,SNR=30
W35A Tecumseh 27.48 337 P P 22 53 32.4 -2.0
baz=152,SNR=19
HHAR Hobbs 27.52 343 eP P 22 53 34.2 -0.5
comp=Z,48nm,0.9s
V37A Hulbert 27.52 340 P P 22 53 33.2 -1.6
baz=157,SNR=19
X33A Lawton 27.62 334 P P 22 53 33.6 -2.0
baz=149,SNR=18
V36A Jenks 27.70 339 P P 22 53 34.6 -1.8
baz=155,SNR=24
TUL1 Leonard 27.76 339 P P 22 53 35.0 -2.0
baz=155,SNR=30
TUL1 Leonard 27.76 339 eP P 22 53 35.9 -1.0
comp=Z,102nm,0.8s
U38A Gravette 27.79 342 P P 22 53 35.4 -1.8
baz=158,SNR=27
SIUC Southern Illin 27.86 351 eP P 22 53 37.7 0.0
comp=Z,212nm,0.9s
X32A Elmer 27.86 333 P P 22 53 35.8 -2.1
baz=147,SNR=12
WMOK Wichita Mounta 27.91 334 P P 22 53 36.0 -2.3
baz=148,SNR=16
WMOK Wichita Mounta 27.91 334 eP P 22 53 37.8 -0.5
WMOK pmax pmax
comp=Z,61nm,1.0s
WMOK Wichita Mounta 27.91 334 eP P 22 53 37.8 -0.5
comp=Z,60nm,1.0s
USIN University of 27.91 354 eP P 22 53 38.8 +0.6
comp=Z,302nm,0.9s
W34A Bridge Creek, 27.91 336 P P 22 53 36.3 -2.0
baz=151,SNR=14
W34A Bridge Creek, 27.91 336 eP P 22 53 37.5 -0.7
comp=Z,381nm,1.5s
T40A Mansfield 27.95 346 P P 22 53 37.7 -0.9
baz=163,SNR=104
U37A Salina 27.99 341 P P 22 53 37.4 -1.5
baz=157,SNR=15
V35A Meyer Ranch, C 28.01 338 P P 22 53 36.9 -2.3
baz=153,SNR=13
SLBS Sierra La Lagu 28.03 302 eP P 22 53 39.7 +0.1
comp=Z,164nm,1.0s
T39A Clever 28.05 344 P P 22 53 38.3 -1.2
baz=161,SNR=35
WCI Wyandotte Cave 28.06 356 eP P 22 53 39.6 0.0
WCI pmax pmax
comp=Z,310nm,1.1s
WCI Wyandotte Cave 28.06 356 eP P 22 53 39.6 0.0
comp=Z,311nm,1.1s
W33A Caddo, Fort Co 28.12 335 P P 22 53 38.6 -1.6
baz=150,SNR=10
U36A Oologah 28.18 340 P P 22 53 38.9 -1.7
baz=156,SNR=13
SAML Samuel 28.21 131 eP P 22 53 40.4 -0.7
comp=Z,99nm,1.0s
T38A Diamond 28.32 343 P P 22 53 40.5 -1.4
baz=159,SNR=30
V34A Guthrie 28.33 337 P P 22 53 39.5 -2.5
baz=152,SNR=16
V34A Guthrie 28.33 337 eP P 22 53 40.5 -1.5
comp=Z,140nm,1.3s
S40A Lebanon 28.38 346 P P 22 53 41.6 -0.8
baz=163,SNR=188
W32A Sentinel 28.44 333 P P 22 53 40.8 -2.2
baz=148,SNR=28
LPIG La Paz 28.51 303 P P 22 53 44.6 +1.0
comp=Z,32nm,0.4s,baz=132,slow=5.7,SNR=14
U35A Pawnee 28.51 338 P P 22 53 41.8 -1.7
baz=154,SNR=9.1
BBSR BB Station 28.55 36 eP P 22 53 46.9 +3.0
comp=Z,103nm,1.0s
CLNB Carlsbad 28.59 323 eP P 22 53 44.7 +0.3
T37A Cheneyville 18 28.59 342 P P 22 53 43.1 -1.1
baz=158,SNR=64
V33A Lossen Ranch, 28.62 336 P P 22 53 42.7 -2.0
baz=150,SNR=7.2
CBN Corbin Frederi 28.64 11 eP P 22 53 46.4 +1.8
comp=Z,279nm,0.9s
S39A Bolivar 28.67 345 P P 22 53 43.8 -1.2
baz=161,SNR=96
OLIL Olney 28.72 354 eP P 22 53 45.5 +0.2
comp=Z,309nm,0.8s
S38A Stockton 28.77 344 P P 22 53 44.5 -1.3
baz=160,SNR=18
T36A Boggs Farm, Ca 28.84 340 P P 22 53 45.0 -1.4
baz=156,SNR=49
V32A Arapaho 28.85 334 P P 22 53 45.2 -1.5
baz=149,SNR=18
U34A Anderson Ranch 28.87 337 P P 22 53 44.7 -2.0
baz=152,SNR=11
U34A Anderson Ranch 28.87 337 eP P 22 53 45.3 -1.5
comp=Z,85nm,1.2s
SLM Saint Louis 28.92 350 eP P 22 53 46.9 -0.2
SLM pmax pmax
comp=Z,170nm,0.8s
SLM Saint Louis 28.92 350 eP P 22 53 46.9 -0.2
comp=Z,174nm,0.8s
T35A Sooner Cattle 28.92 339 P P 22 53 45.6 -1.6
baz=155,SNR=25
R40A Maddies Statio 28.98 347 P P 22 53 46.2 -1.5
baz=164,SNR=60
BLO Bloomington 29.01 356 eP P 22 53 47.9 -0.1
BLO pmax pmax
comp=Z,180nm,0.8s
BLO Bloomington 29.01 356 eP P 22 53 47.9 -0.1
comp=Z,182nm,0.8s
U33A Lingo Farm, Me 29.09 336 P P 22 53 45.7 -3.0
baz=151
MNTX Cornudas Mount 29.10 321 P P 22 53 46.8 -2.1
baz=134,SNR=48
MNTX Cornudas Mount 29.10 321 eP P 22 53 47.0 -1.9
comp=Z,23nm,1.0s
S37A Fort Scott 29.15 343 P P 22 53 48.1 -1.1
baz=158,SNR=31
R39A Chumby, Stover 29.18 346 P P 22 53 48.6 -0.9
baz=162,SNR=155
MSTX Muleshoe 29.23 327 P P 22 53 47.8 -2.3
baz=140,SNR=9.2
MSTX Muleshoe 29.23 327 eP P 22 53 49.8 -0.4
comp=Z,203nm,1.6s
T34A McClaskey Farm 29.25 338 P P 22 53 48.2 -2.0
baz=154,SNR=12
R38A Fenwick Farm, 29.29 344 P P 22 53 48.7 -1.7
baz=160,SNR=50
S36A Lake Cedric, C 29.35 341 P P 22 53 49.1 -1.9
baz=157,SNR=38
AMTX Amarillo 29.38 330 P P 22 53 49.3 -2.1
baz=143
AMTX Amarillo 29.38 330 eP P 22 53 53.6 +2.2
comp=Z,68nm,1.0s
U32A Winter Ranch, 29.40 335 P P 22 53 49.5 -2.0
baz=150,SNR=10
S35A Otter Creek Ra 29.55 340 P P 22 53 51.3 -1.4
baz=156,SNR=38
Q40A Laux Farm, Aux 29.61 348 P P 22 53 52.0 -1.4
baz=164,SNR=59
R37A Teagarden Farm 29.66 343 P P 22 53 52.4 -1.3
baz=159,SNR=31
MCWV Mont Chateau 29.68 7 eP P 22 53 54.6 +0.7
T33A Patterson Ranc 29.70 337 P P 22 53 51.5 -2.6
baz=152
S34A Willow Spring 29.83 339 P P 22 53 53.5 -1.8
baz=154,SNR=16
Q39A Willow Grove F 29.86 346 P P 22 53 54.0 -1.5
baz=163,SNR=44
R36A Gordon, Harris 29.87 342 P P 22 53 54.2 -1.4
baz=158,SNR=25
SDMD Soldier's Deli 29.91 11 eP P 22 53 57.6 +1.8

comp=Z,158nm,1.5s
Q38A **Cooks Store, C** 29.94 345 P P 22 53 55.6 -0.7
baz=162,SNR=102
ACSO **Alum Creek Sta** 30.02 2 eP P 22 53 57.5 +0.6
comp=Z,412nm,0.8s
T32A **Huddler Ranch,** 30.06 336 P P 22 53 55.4 -2.0
baz=150,SNR=6.7
S33A **Kaszmaul Farm,** 30.06 338 P P 22 53 54.9 -2.4
baz=152,SNR=7.0
Q37A **Longview Farm,** 30.08 344 P P 22 53 56.0 -1.4
baz=160,SNR=22
R35A **Emporia Munici** 30.09 341 P P 22 53 55.8 -1.8
baz=156,SNR=7.9
P40A **Paris** 30.12 348 P P 22 53 56.4 -1.5
baz=165,SNR=79
SFIN **Lafayette** 30.25 356 P P 22 53 58.3 -0.7
baz=175,SNR=63
SFIN **Lafayette** 30.25 356 eP P 22 53 58.2 -0.7
comp=Z,276nm,0.8s
SFIN eS S 22 58 53.0 -0.1
R34A **Isabella, Hill** 30.42 339 P P 22 53 58.8 -1.7
baz=154,SNR=56
O56A **Blue Knob Stat** 30.45 9 P P 22 54 01.7 +1.0
baz=191,SNR=38
Q36A **Arnold C. Orve** 30.45 342 P P 22 53 58.8 -1.8
baz=158,SNR=11
S32A **Newby Ranch, P** 30.51 337 P P 22 53 59.0 -2.3
baz=151
Q35A **Mercer Eighty,** 30.53 342 P P 22 54 00.1 -1.3
baz=157,SNR=25
P38A **Dawn** 30.55 346 P P 22 54 00.3 -1.3
baz=162,SNR=81
MVL **Millersville** 30.57 12 eP P 22 54 03.6 +1.8
comp=Z,190nm,1.2s
HDIL **Hopedale** 30.66 352 P P 22 54 01.9 -0.6
baz=170,SNR=32
HDIL **Hopedale** 30.66 352 eP P 22 54 02.5 -0.1
comp=Z,467nm,0.8s
O40A **La Belle** 30.66 348 P P 22 54 01.4 -1.1
baz=165,SNR=46
LPAZ **La Paz** 30.67 149 P P 22 54 04.0 +0.5
comp=Z,31nm,1.1s,baz=340,slow=10,SNR=64
LPAZ LR LR 23 08 43.7
comp=Z,2µm,19.4s,baz=318,slow=41
LPAZ **La Paz** 30.67 149 eP P 22 54 04.3 +0.8
comp=Z,36nm,1.0s
R33A **Olander Ranch,** 30.69 338 P P 22 54 01.3 -1.5
baz=153,SNR=42
P37A **Lathrop** 30.72 345 P P 22 54 01.3 -1.8
baz=160,SNR=84
Q34A **Chapman** 30.87 340 P P 22 54 02.8 -1.7
baz=155,SNR=24
SSPA **Standing Stone** 30.91 9 eP P 22 54 05.9 +1.2
comp=Z,212nm,0.9s
O39A **Kirksville** 30.92 348 P P 22 54 03.6 -1.2
baz=164,SNR=54
KSU1 **Kansas State U** 30.93 341 P P 22 54 02.9 -2.0
baz=156,SNR=29
KSU1 **Kansas State U** 30.93 341 eP P 22 54 04.0 -0.9
comp=Z,137nm,0.8s
N54A **Moraine State** 30.95 6 P P 22 54 05.7 +0.6
baz=188,SNR=24
P36A **Good Intent, A** 30.98 343 P P 22 54 04.1 -1.3
baz=159,SNR=92
O38A **Galt** 31.00 346 P P 22 54 04.3 -1.3
baz=162,SNR=26
R32A **Long Quarter,** 31.05 338 P P 22 54 04.2 -1.9
baz=152,SNR=14
P35A **Duane Minner,** 31.14 342 P P 22 54 05.4 -1.4
baz=157,SNR=43
121A **Cookes Peak, D** 31.18 319 P P 22 54 07.3 -0.1
baz=131,SNR=13
121A **Cookes Peak, D** 31.18 319 eP P 22 54 07.5 0.0
O37A **Wolven Farm, M** 31.21 345 P P 22 54 06.0 -1.4
baz=161,SNR=42
Q33A **Connelly Farm,** 31.25 339 P P 22 54 06.3 -1.5
baz=154,SNR=49
HSIG 31.33 311 eP P 22 54 08.6 0.0
comp=Z,65nm,1.8s
LUPA **Lehigh Univers** 31.35 13 eP P 22 54 09.7 +1.1
comp=Z,209nm,1.2s
O36A **Bolckow** 31.39 344 P P 22 54 07.1 -1.9
baz=160,SNR=40
P34A **Walnut Farm, R** 31.40 341 P P 22 54 07.9 -1.3
baz=156,SNR=53
319A **Douglas** 31.45 316 eP P 22 54 10.7 +0.9
comp=Z,98nm,0.8s
SRIG **Santa Rosalia** 31.48 307 eP P 22 54 11.3 +1.3
comp=Z,334nm,1.2s
Q32A **Meitler Ranch,** 31.50 338 P P 22 54 08.4 -1.6
baz=152,SNR=22
N39A **Derby Farms, D** 31.51 348 P P 22 54 09.2 -0.8
baz=164,SNR=142
M54A **Oil Creek Stat** 31.52 7 P P 22 54 10.8 +0.6
baz=189,SNR=40
BNM **Barren Site** 31.54 323 eP P 22 54 10.8 +0.1
N59A **State Game Lan** 31.57 12 P P 22 54 11.9 +1.2
baz=196,SNR=82
N38A **Joes South For** 31.59 347 P P 22 54 09.7 -1.0
baz=163,SNR=90
P33A **Williams Farm,** 31.59 340 P P 22 54 09.5 -1.3
baz=154
ALLY **Alegheny Colle** 31.61 6 eP P 22 54 11.9 +1.0
comp=Z,211nm,1.3s
BRNJ **Basking Ridge** 31.62 14 eP P 22 54 13.2 +2.2
comp=Z,142nm,0.9s
LPM **Los Pinos Moun** 31.66 323 eP P 22 54 11.7 0.0
Y22D **IRIS PASSCAL I** 31.67 322 P P 22 54 10.9 -0.8
baz=134
Y22D **IRIS PASSCAL I** 31.67 322 eP P 22 54 12.2 +0.5
comp=Z,58nm,0.8s
LENM **Lemitar** 31.76 322 eP P 22 54 12.8 +0.3
O35A **Humboldt** 31.78 343 P P 22 54 10.4 -2.1
baz=158,SNR=26
N37A **Lee Faris, Mou** 31.79 345 P P 22 54 11.1 -1.4
baz=161,SNR=52
CBKS **Cedar Bluff** 31.79 337 P P 22 54 10.9 -1.7
baz=150,SNR=5.6
CBKS **Cedar Bluff** 31.79 337 eP P 22 54 14.2 +1.6
CBKS pmax pmax
comp=Z,94nm,1.1s
CBKS **Cedar Bluff** 31.79 337 eP P 22 54 14.2 +1.6
comp=Z,94nm,1.1s
CPNY **Central Park** 31.87 15 eP P 22 54 15.0 +1.8
comp=Z,171nm,1.0s
O34A **Beatrice** 31.94 342 P P 22 54 12.0 -1.9
baz=157,SNR=74
ODNJ **Ogdensburg** 31.99 14 eP P 22 54 15.8 +1.6
comp=Z,160nm,1.4s
ANMO **Albuquerque** 32.00 324 P P 22 54 13.4 -1.3
baz=136
ANMO **Albuquerque** 32.00 324 eP P 22 54 13.7 -1.0
ANMO pmax pmax
comp=Z,16nm,0.9s
ANMO **Albuquerque** 32.00 324 eP P 22 54 13.7 -1.0
comp=Z,16nm,0.8s
LAZ **Ladron** 32.02 323 eP P 22 54 14.9 0.0
N36A **Muff Farm, Cla** 32.03 344 P P 22 54 12.7 -1.9
baz=160,SNR=22
AAM **Ann Arbor** 32.07 1 eP P 22 54 15.5 +0.6
AAM pmax pmax
comp=Z,236nm,1.3s
AAM **Ann Arbor** 32.07 1 eP P 22 54 15.4 +0.6
comp=Z,236nm,1.3s
P32A **Huiting Farm,** 32.07 339 P P 22 54 13.6 -1.4
baz=153,SNR=36
PAL **Palisades** 32.09 15 eP P 22 54 16.0 +1.0
PAL pmax pmax
comp=Z,310nm,1.1s
PAL **Palisades** 32.09 15 eP P 22 54 16.0 +1.0
comp=Z,313nm,1.1s
ERPA **Erie** 32.09 6 eP P 22 54 16.0 +0.9
comp=Z,167nm,0.9s
O33A **Hebron** 32.13 340 P P 22 54 13.8 -1.7
baz=155,SNR=26
M38A **Pleasantville** 32.18 347 P P 22 54 14.5 -1.4
baz=164,SNR=67
KSPA **Keystone Colle** 32.19 12 eP P 22 54 19.0 +3.0
comp=Z,261nm,0.9s
N35A **Tabor** 32.26 344 P P 22 54 15.3 -1.3
baz=159,SNR=39
M37A **Trindle Farm,** 32.36 346 P P 22 54 16.3 -1.1
baz=162,SNR=86
N34A **Lincoln** 32.48 342 P P 22 54 17.2 -1.4
baz=157,SNR=19
T25A **Trinidad** 32.52 329 P P 22 54 17.9 -1.3
baz=141
T25A **Trinidad** 32.52 329 eP P 22 54 20.6 +1.5
comp=Z,19nm,0.8s
O32A **Brockman Farm,** 32.53 340 P P 22 54 17.2 -1.9
baz=154,SNR=20
M36A **Felix, Anita** 32.59 345 P P 22 54 18.2 -1.3
baz=161,SNR=62
YLE **Yale** 32.63 16 eP P 22 54 21.1 +1.3
comp=Z,295nm,1.0s
SCIA **State Center** 32.65 347 eP P 22 54 19.2 -0.8
comp=Z,340nm,0.8s
N33A **J Bar K, Exete** 32.69 341 P P 22 54 18.9 -1.4
baz=156,SNR=9.8
O31A **Woolen Ranch,** 32.80 338 P P 22 54 19.9 -1.5
baz=152,SNR=9.1
L38A **Oak Wood Farm,** 32.82 348 P P 22 54 20.5 -1.0
baz=164,SNR=75
M35A **Neola** 32.84 344 P P 22 54 20.1 -1.6
baz=159,SNR=40
PB11 **IPOC Station P** 32.95 154 eP P 22 54 24.0 +0.9
comp=Z,158nm,1.1s
MMNY **Mt. Morris Dam** 32.96 9 eP P 22 54 23.4 +0.7
L37A **Phoenix Point,** 32.98 347 P P 22 54 21.5 -1.4
baz=163,SNR=82
N32A **Stulken Farm,** 32.98 340 P P 22 54 21.3 -1.7
baz=154,SNR=7.8
BUF **Buffalo** 33.02 7 eP P 22 54 24.2 +1.0
TUC **Tucson** 33.03 316 P P 22 54 23.1 -0.5
baz=126
TUC **Tucson** 33.03 316 eP P 22 54 23.9 +0.3
TUC pmax pmax
comp=Z,27nm,0.9s
TUC **Tucson** 33.03 316 eP P 22 54 23.9 +0.3
comp=Z,27nm,0.9s
JFWS **Jewell Farm** 33.10 352 eP P 22 54 22.9 -1.1
JFWS pmax pmax
comp=Z,260nm,0.8s
JFWS **Jewell Farm** 33.10 352 eP P 22 54 22.9 -1.1
comp=Z,261nm,0.8s
M34A **Aspy Farms, Fr** 33.12 343 P P 22 54 22.6 -1.5
baz=158,SNR=31
KSCO **Kaye Shedlock'** 33.16 333 P P 22 54 23.6 -1.1
baz=146
KSCO **Kaye Shedlock'** 33.16 333 eP P 22 54 25.1 +0.4
comp=Z,224nm,1.6s
L36A **Harm Buss Farm** 33.17 346 P P 22 54 23.5 -1.0
baz=161,SNR=46
N31A **Bailey Ranch,** 33.26 339 P P 22 54 23.8 -1.6
baz=153,SNR=6.7
K38A **Parkersburg** 33.27 348 P P 22 54 24.2 -1.2
baz=165,SNR=69
M33A **Taylor Creek F** 33.37 342 P P 22 54 25.0 -1.3
baz=157,SNR=44
L35A **Bielow Farm, R** 33.40 345 P P 22 54 24.6 -2.0
baz=160,SNR=16
L34A **Svendsen Farm,** 33.49 343 P P 22 54 24.7 -2.6
baz=158,SNR=9.2
BGNE **Belgrade** 33.52 341 P P 22 54 26.0 -1.6
baz=155,SNR=14
BGNE **Belgrade** 33.52 341 eP P 22 54 26.8 -0.9
comp=Z,250nm,0.9s
SDCO **Great Sand Dun** 33.54 329 P P 22 54 27.6 -0.5
baz=140,SNR=33
SDCO **Great Sand Dun** 33.54 329 eP P 22 54 26.9 -1.3
comp=Z,26nm,1.0s
K37A **Belmond** 33.56 347 P P 22 54 26.7 -1.3
baz=163,SNR=139
BRYW **Bryant College** 33.58 17 eP P 22 54 30.9 +2.7
comp=Z,145nm,1.0s
K36A **Gilmore City** 33.62 346 P P 22 54 27.2 -1.3
baz=162,SNR=52
QUA2 **Belchertown** 33.68 16 eP P 22 54 32.1 +3.1
comp=Z,120nm,1.2s
M31A **Lambtecht Ranc** 33.73 340 P P 22 54 27.9 -1.6
baz=154,SNR=8.8
TRY **Troy** 33.77 14 eP P 22 54 31.4 +1.7
comp=Z,351nm,1.0s
X18A **Snowflake** 33.84 320 eP P 22 54 31.2 +0.4
comp=Z,43nm,0.9s
J38A **Wedel Dairy, R** 33.86 349 P P 22 54 28.5 -2.1
baz=166,SNR=16
K35A **Storm Lake** 33.89 345 P P 22 54 29.3 -1.6
baz=161,SNR=35
L33A **Hoskins** 33.93 342 P P 22 54 29.2 -2.0
baz=157,SNR=13
L32A **Elgin** 34.01 341 P P 22 54 30.3 -1.6
baz=156,SNR=12
J37A **Redenius Farm,** 34.07 348 P P 22 54 30.7 -1.6
baz=164,SNR=24
BCX **Boston College** 34.07 17 eP P 22 54 35.1 +2.8
comp=Z,391nm,1.1s
WES **Weston** 34.07 17 eP P 22 54 35.0 +2.7
WES pmax pmax
comp=Z,190nm,1.2s
WES **Weston** 34.07 17 eP P 22 54 35.0 +2.7
comp=Z,192nm,1.2s
K34A **Le Mars** 34.08 344 P P 22 54 30.4 -2.1
baz=159,SNR=21
W18A **Petrified Fore** 34.09 321 P P 22 54 32.6 -0.2
baz=131,SNR=14
W18A **Petrified Fore** 34.09 321 eP P 22 54 33.5 +0.6
comp=Z,89nm,0.9s
HRV **Adam Dziewonsk** 34.11 17 eP P 22 54 36.1 +3.4
HRV pmax pmax
comp=Z,97nm,1.2s
HRV **Adam Dziewonsk** 34.11 17 eP P 22 54 36.1 +3.4
comp=Z,96nm,1.2s
PB01 **IPOC Station P** 34.17 155 eP P 22 54 35.2 +1.7
comp=Z,191nm,1.6s
S22A **4UR Ranch, Cre** 34.23 327 P P 22 54 33.0 -1.2
baz=138,SNR=13
S22A **4UR Ranch, Cre** 34.23 327 eP P 22 54 34.0 -0.3
comp=Z,107nm,1.9s
214A **Organ Pipe Nat** 34.25 314 P P 22 54 33.8 -0.3
baz=124,SNR=24
214A **Organ Pipe Nat** 34.25 314 eP P 22 54 34.5 +0.4
comp=Z,126nm,0.8s
J36A **Seneca 1, Swea** 34.25 347 P P 22 54 32.8 -1.2
baz=162,SNR=138
K33A **Hardington** 34.26 343 P P 22 54 32.5 -1.5
baz=158,SNR=9.8
Q24A **Divide** 34.30 330 P P 22 54 33.8 -1.0
baz=142,SNR=11
Q24A **Divide** 34.30 330 eP P 22 54 35.5 +0.7
comp=Z,84nm,1.7s
ACCN **Adirondack Com** 34.39 14 eP P 22 54 36.7 +1.6
comp=Z,179nm,1.4s
L31A **Butterfield Fa** 34.43 341 P P 22 54 33.9 -1.6
baz=154,SNR=18
J35A **Milford** 34.49 346 P P 22 54 33.7 -2.3
baz=161,SNR=20
OGNE **Ogallala** 34.52 336 P P 22 54 35.0 -1.4
baz=148,SNR=15
OGNE **Ogallala** 34.52 336 eP P 22 54 36.8 +0.3
comp=Z,1µm,1.8s
I38A **Scanlan Farm,** 34.53 350 P P 22 54 34.5 -1.8
baz=166,SNR=21
K32A **Verdigre** 34.59 342 P P 22 54 35.2 -1.7
baz=156,SNR=28
J34A **George** 34.60 345 P P 22 54 35.0 -2.0
baz=160,SNR=14
I37A **Lemond, Waseca** 34.71 348 P P 22 54 36.0 -1.9
baz=164,SNR=15
X16A **Lo Mia Camp, P** 34.73 318 eP P 22 54 38.6 +0.2
comp=Z,51nm,0.8s
MVCO **Mesa Verde** 34.77 325 P P 22 54 37.4 -1.4
baz=135,SNR=20
MVCO **Mesa Verde** 34.77 325 eP P 22 54 38.3 -0.5
comp=Z,45nm,1.0s
K31A **O'Neill** 34.80 341 P P 22 54 37.5 -1.2
baz=155,SNR=47
SADO **Sadowa** 34.81 6 eP P 22 54 38.5 -0.2
comp=Z,239nm,0.8s
NCB **Newcomb** 34.83 13 eP P 22 54 40.7 +1.8
comp=Z,1.4nm,1.8s
I36A **Fitzsimmons Fa** 34.84 348 P P 22 54 37.1 -1.9
baz=163,SNR=14
I35A **Creekview Farm** 34.90 346 P P 22 54 38.4 -1.2
baz=162,SNR=96
J33A **Davis** 34.91 344 P P 22 54 37.5 -2.1
baz=158,SNR=19
FFD **Franklin Falls** 34.98 16 eP P 22 54 41.8 +1.6
comp=Z,384nm,1.5s
HNH **Hanover** 35.03 15 eP P 22 54 43.2 +2.6
comp=Z,166nm,0.9s
PB04 **IPOC Station P** 35.06 157 eP P 22 54 43.1 +1.8
comp=Z,257nm,1.6s
MDV **Middlebury** 35.09 14 eP P 22 54 42.5 +1.4
K30A **Basset** 35.13 340 P P 22 54 40.6 -1.0
baz=153,SNR=46
H37A **Dierke Farm, C** 35.16 349 P P 22 54 40.0 -1.7
baz=165,SNR=14
ISCO **Idaho Springs** 35.18 331 P P 22 54 41.3 -1.0
baz=142,SNR=25
ISCO **Idaho Springs** 35.18 331 eP P 22 54 41.3 -1.0
ISCO pmax pmax
comp=Z,61nm,1.5s
ISCO **Idaho Springs** 35.18 331 eP P 22 54 41.2 -1.0
comp=Z,61nm,1.5s
ECSD **EROS Data Cent** 35.19 344 P P 22 54 40.3 -1.7
baz=159,SNR=178
ECSD **EROS Data Cent** 35.19 344 eP P 22 54 40.1 -2.0
comp=Z,265nm,1.1s
J32A **Parkston** 35.21 343 P P 22 54 39.9 -2.3
baz=157,SNR=10
H36A **Jessenland, He** 35.36 348 P P 22 54 41.8 -1.6
baz=164,SNR=71
113A **Mohawk Valley,** 35.37 314 eP P 22 54 45.6 +1.9
comp=Z,30nm,0.9s
LONY **Lake Ozonia** 35.37 12 eP P 22 54 44.0 +0.4
comp=Z,214nm,1.1s
WUAZ **Wupatki** 35.37 320 P P 22 54 43.3 -0.6
baz=130,SNR=31
WUAZ **Wupatki** 35.37 320 eP P 22 54 44.2 +0.3
comp=Z,35nm,0.9s
SMCO **Snowmass** 35.38 329 eP P 22 54 43.0 -1.2
comp=Z,28nm,0.9s
J31A **Geddes** 35.40 342 P P 22 54 41.4 -2.4
baz=155,SNR=5.4
PV01 **Paradox Valley** 35.46 326 eP P 22 54 45.1 +0.4
Y14A **Wickenburg** 35.49 316 eP P 22 54 44.5 -0.4
comp=Z,104nm,0.7s
I33A **Coleman** 35.53 344 P P 22 54 42.9 -2.1
baz=159,SNR=12
LBNH **Lisbon** 35.62 15 eP P 22 54 47.8 +2.1
LBNH pmax pmax
comp=Z,240nm,1.3s
LBNH **Lisbon** 35.62 15 eP P 22 54 47.8 +2.1
comp=Z,242nm,1.4s
H35A **Sunnyside Ranc** 35.67 347 P P 22 54 44.3 -1.8
baz=162,SNR=88
J30A **Dallas** 35.67 341 P P 22 54 44.3 -1.9
baz=154,SNR=83
I32A **Karley and Nic** 35.70 344 P P 22 54 44.1 -2.3
baz=158,SNR=20
PV05 **Paradox Valley** 35.72 325 eP P 22 54 46.4 -0.5
SPMN **Marine on St.** 35.76 350 P P 22 54 44.9 -2.0
baz=166,SNR=34
SPMN **Marine on St.** 35.76 350 eP P 22 54 45.2 -1.7
comp=Z,394nm,0.9s
FRNY **Flat Rock** 35.79 13 eP P 22 54 47.6 +0.6
comp=Z,345nm,1.8s
LVC **Limon Verde** 35.80 155 P P 22 54 50.0 +2.1
comp=Z,271nm,1.1s,baz=321,slow=5.6,SNR=34
LVC **Limon Verde** 35.80 155 eP P 22 54 49.1 +1.2
comp=Z,243nm,1.4s
PV04 **Paradox Valley** 35.83 326 eP P 22 54 46.7 -1.1
H34A **Spellman Lake,** 35.85 346 P P 22 54 46.0 -1.7
baz=161,SNR=46
PV10 **Paradox Valley** 35.89 326 eP P 22 54 47.7 -0.8
G36A **St. Michael** 35.95 348 P P 22 54 46.4 -2.1
baz=164,SNR=22
PB10 **IPOC Station P** 35.98 158 eP P 22 54 48.7 -0.3
PB10 epP pP 22 55 05.9 -1.4
I31A **Royce, Wessing** 36.01 342 P P 22 54 46.8 -2.3
baz=156
PV09 **Paradox Valley** 36.03 326 eP P 22 54 50.0 +0.3
G35A **Watkins** 36.09 348 P P 22 54 47.4 -2.3
baz=163,SNR=22
H33A **Prehn Over Nor** 36.11 345 P P 22 54 48.0 -1.9
baz=159,SNR=138
COWI **Conover** 36.11 354 eP P 22 54 49.3 -0.6
comp=Z,160nm,0.8s
H32A **Carlson Farm,** 36.13 344 P P 22 54 47.9 -2.1
baz=158,SNR=46
I30A **Oacoma** 36.18 341 P P 22 54 48.6 -2.0
baz=154,SNR=31
N23A **Red Feather La** 36.19 332 P P 22 54 50.3 -0.7
baz=142,SNR=13
N23A **Red Feather La** 36.19 332 eP P 22 54 51.3 +0.3
comp=Z,27nm,1.0s
GLA **Glamis** 36.27 314 P P 22 54 51.8 +0.3
baz=122,SNR=13
GLA **Glamis** 36.27 314 eP P 22 54 52.4 +0.9
GLA pmax pmax
comp=Z,110nm,1.3s
GLA **Glamis** 36.27 314 eP P 22 54 52.4 +0.9
comp=Z,109nm,1.4s
PHWY **Pilot Hill** 36.29 332 eP P 22 54 51.2 -0.6
comp=Z,21nm,0.8s
G34A **Benson** 36.36 346 P P 22 54 49.5 -2.5
baz=161,SNR=26
H31A **Wolsey** 36.40 343 P P 22 54 50.1 -2.3
baz=156,SNR=20
Y12C **Blythe** 36.43 315 P P 22 54 52.4 -0.3
baz=124,SNR=10
Y12C **Blythe** 36.43 315 eP P 22 54 53.6 +0.8
comp=Z,29nm,0.9s
PDMCI **Parker Dam,Lak** 36.48 316 P P 22 54 52.7 -0.4
baz=125,SNR=34
F36A **Milaca** 36.51 349 P P 22 54 51.0 -2.2
baz=165,SNR=249
G33A **Ortonville** 36.51 345 P P 22 54 51.0 -2.3
baz=160,SNR=28
SUSD **Miller** 36.51 342 P P 22 54 50.9 -2.4
baz=155,SNR=29
U15A **North Rim** 36.52 320 eP P 22 54 54.4 +0.6
WVL **Waterville** 36.55 18 eP P 22 54 56.2 +2.6
comp=Z,375nm,1.1s
I29A **Vivian Onida** 36.56 340 P P 22 54 51.6 -2.1
baz=153,SNR=36
F35A **Swanville** 36.72 348 P P 22 54 52.9 -2.1
baz=163,SNR=9.9
O20A **White River Ci** 36.74 329 P P 22 54 54.7 -0.9
baz=138,SNR=17
O20A **White River Ci** 36.74 329 eP P 22 54 55.6 0.0
comp=Z,46nm,1.0s
W13A **Hualapai Mount** 36.76 317 eP P 22 54 56.6 +0.8
comp=Z,27nm,0.8s
F34A **Alexandria** 36.80 347 P P 22 54 53.6 -2.2
baz=162,SNR=41
I28A **Midland** 36.83 339 P P 22 54 54.6 -1.5
baz=152,SNR=42
G32A **Webster** 36.84 344 P P 22 54 54.4 -1.8
baz=158,SNR=40
SWSC **Sam W. Stewart** 36.91 313 P P 22 54 56.8 -0.1
baz=121,SNR=19
TRQ **Mont Tremblant** 36.91 11 eP P 22 54 56.9 +0.1
J26A **Sides Ranch, S** 36.94 337 P P 22 54 56.1 -0.9
baz=148,SNR=32
IKP **In-Ko-Pah, Jac** 36.99 312 P P 22 54 58.0 +0.3
baz=120,SNR=22
E37A **Wrenshall** 37.00 351 P P 22 54 55.4 -1.9
baz=167,SNR=14
G31A **Conde** 37.01 343 P P 22 54 54.9 -2.6
baz=157,SNR=27
BC3 **Big Chuckawall** 37.04 314 P P 22 54 57.7 -0.4
baz=122,SNR=14
H29A **Onida** 37.07 341 P P 22 54 55.2 -2.8
baz=154,SNR=16
F33A **5 Mile Ranch,** 37.08 346 P P 22 54 55.9 -2.2
baz=160,SNR=109
IRM **Iron Mountain** 37.09 315 P P 22 54 58.5 +0.1
baz=123,SNR=12
E36A **McGregor** 37.09 350 P P 22 54 56.1 -2.1
baz=165,SNR=78
PKCU **Pink Cliffs** 37.17 322 eP P 22 55 00.2 +0.8
comp=Z,37nm,1.0s
G30A **Faulkton** 37.19 342 P P 22 54 56.9 -2.2
baz=156,SNR=41
KNB **Kanab** 37.22 321 eP P 22 55 00.1 +0.5
KNB pmax pmax
comp=Z,27nm,0.8s
KNB **Kanab** 37.22 321 eP P 22 55 00.1 +0.5
comp=Z,27nm,0.8s
SRU **San Rafael Swe** 37.24 325 eP P 22 54 59.2 -0.6
SRU pmax pmax
comp=Z,24nm,0.8s
SRU **San Rafael Swe** 37.24 325 eP P 22 54 59.2 -0.6
comp=Z,24nm,0.8s
PKME **Peaks-Kenny Pk** 37.30 17 eP P 22 55 01.5 +1.6
comp=Z,254nm,1.1s
F32A **Veblen** 37.32 345 P P 22 54 57.7 -2.5
baz=159,SNR=8.4
MONP2 **Monument Peak** 37.34 312 P P 22 55 00.9 +0.1
baz=120,SNR=22
E35A **Pequot Lakes** 37.35 348 P P 22 54 58.4 -2.0
baz=164,SNR=29

EMMW	East Machias	37.38	20	eP	P	22 55 04.0	+3.5
	comp=Z,166nm,1.4s						
BAR	Barrett	37.42	312	eP	P	22 55 02.5	+1.3
	comp=Z,114nm,1.7s						
P18A	Preston Nutter	37.44	326	eP	P	22 55 01.7	0.0
	comp=Z,18nm,1.0s						
E34A	Wadena	37.47	348	P	P	22 54 59.5	-1.9
	baz=162,SNR=15						
Q16A	Castle Valley	37.47	324	eP	P	22 55 02.8	+1.0
	comp=Z,93nm,1.9s						
LCMT	Little Creek M	37.48	320	eP	P	22 55 02.3	+0.5
	comp=Z,12nm,0.9s						
MTPU	Mount Pierson	37.48	322	eP	P	22 55 02.1	+0.1
	comp=Z,12nm,0.7s						
G29A	Hoven	37.48	342	P	P	22 54 59.1	-2.5
	baz=154,SNR=8.3						
LDFC	Landfair	37.57	316	eP	P	22 55 04.4	+1.9
	comp=Z,41nm,0.9s						
D37A	Cotton	37.58	351	P	P	22 55 00.7	-1.6
	baz=167,SNR=136						
BELC	Belle Mtn. Jos	37.60	314	P	P	22 55 02.7	-0.2
	baz=122,SNR=20						
F31A	Hecla	37.60	344	P	P	22 54 59.8	-2.7
	baz=157,SNR=25						
P17A	Butcher Ranch,	37.61	325	eP	P	22 55 03.3	+0.5
	comp=Z,33nm,1.1s						
E33A	Westby DABS, E	37.64	347	P	P	22 55 00.4	-2.4
	baz=161,SNR=9.6						
H27A	Howes	37.70	339	P	P	22 55 02.4	-1.1
	baz=151,SNR=87						
D36A	Goodland	37.72	350	P	P	22 55 01.6	-1.9
	baz=166,SNR=150						
TPFO	Pinon Flats	37.72	313	P	P	22 55 04.1	+0.2
	baz=121,SNR=26						
PFO	Pinyon Flats O	37.73	313	P	P	22 55 04.1	+0.2
	baz=121,SNR=18						
PFO	Pinyon Flats O	37.73	313	eP	P	22 55 04.7	+0.7
PFO				pmax	pmax		
	comp=Z,57nm,1.0s						
PFO	Pinyon Flats O	37.73	313	eP	P	22 55 04.7	+0.7
	comp=Z,57nm,1.0s						
TMUT	Trail Mountain	37.75	325	eP	P	22 55 05.1	+0.8
	comp=Z,15nm,1.0s						
D35A	Remer	37.78	349	P	P	22 55 01.7	-2.4
	baz=164,SNR=64						
GMRC	Granite Mounta	37.78	315	P	P	22 55 04.3	-0.1
	baz=123,SNR=20						
MSU	Marysvale	37.79	323	eP	P	22 55 04.1	-0.4
MSU	Marysvale	37.79	323	eP	P	22 55 04.1	-0.4
I25A	Rochford	37.79	337	P	P	22 55 03.8	-0.6
	baz=148,SNR=47						
F30A	Leola	37.80	343	P	P	22 55 02.3	-1.9
	baz=156,SNR=13						
109C	Camp Elliot, M	37.84	312	P	P	22 55 04.1	-0.6
	baz=120,SNR=6.2						
K22A	Casper	37.84	333	P	P	22 55 03.5	-1.3
	baz=143,SNR=15						
K22A	Casper	37.84	333	eP	P	22 55 04.9	0.0
	comp=Z,41nm,0.9s						
C39A	Grand Marais	37.91	353	P	P	22 55 02.8	-2.3
	baz=171,SNR=35						
H26A	Fairpoint	37.94	338	P	P	22 55 04.1	-1.4
	baz=150,SNR=41						
C38A	Sawbill Land.	37.96	352	P	P	22 55 02.7	-2.8
	baz=169,SNR=45						
E32A	Braaten, Kindr	37.98	346	P	P	22 55 03.0	-2.7
	baz=159,SNR=14						
RSSD	Black Hills	38.00	337	P	P	22 55 05.4	-0.7
	baz=148						
RSSD	Black Hills	38.00	337	eP	P	22 55 06.6	+0.4
RSSD				pmax	pmax		
	comp=Z,93nm,1.2s						
RSSD	Black Hills	38.00	337	eP	P	22 55 06.5	+0.4
	comp=Z,93nm,1.3s						
D34A	Park Rapids	38.02	348	P	P	22 55 03.8	-2.2
	baz=162,SNR=39						
F29A	Eureka	38.03	342	P	P	22 55 03.7	-2.4
	baz=155,SNR=28						
C37A	Embarrass	38.10	351	P	P	22 55 04.5	-2.2
	baz=167,SNR=90						
E31A	Nome	38.15	345	P	P	22 55 04.9	-2.2
	baz=158,SNR=43						
D33A	AnnSam, Waubun	38.21	347	P	P	22 55 05.7	-1.9
	baz=162,SNR=58						
EYMN	Ely	38.21	352	P	P	22 55 05.2	-2.4
	baz=169,SNR=36						
EYMN	Ely	38.21	352	eP	P	22 55 05.5	-2.1
	comp=Z,174nm,1.3s						
C36A	Pine Crest Far	38.23	351	P	P	22 55 06.0	-1.7
	baz=166,SNR=67						
H25A	Fruitdale	38.25	337	P	P	22 55 07.1	-1.0
	baz=148,SNR=20						
MURC	Murrieta	38.25	313	P	P	22 55 08.1	-0.1
	baz=120,SNR=19						
HEC	Hector,Ludlow	38.28	315	P	P	22 55 08.1	-0.3
	baz=123						
G27A	Dupree	38.30	340	P	P	22 55 06.7	-1.8
	baz=151,SNR=31						
TUQ	Turquoise Moun	38.32	316	P	P	22 55 07.9	-1.0
	baz=124,SNR=12						
C35A	Jirik Farms, M	38.37	349	P	P	22 55 06.7	-2.2
	baz=165,SNR=96						
E30A	Jud	38.38	344	P	P	22 55 06.8	-2.3
	baz=157,SNR=57						
BBRC	Big Bear Solar	38.39	314	P	P	22 55 09.4	-0.2
	baz=121						
SHPR	Sheep Range	38.41	318	eP	P	22 55 10.2	+0.5
	comp=Z,12nm,1.0s						
G26A	Maurine	38.46	339	P	P	22 55 07.9	-2.0
	baz=150,SNR=32						
D32A	Dogwood Acres,	38.47	346	P	P	22 55 07.4	-2.4
	baz=160,SNR=14						
C34A	RKJ Ranch, Bem	38.50	348	P	P	22 55 07.9	-2.1
	baz=163,SNR=31						
D31A	Mcclaflin, Tow	38.56	345	P	P	22 55 08.5	-2.1
	baz=159,SNR=73						
E29A	Napoleon	38.64	343	P	P	22 55 08.9	-2.4
	baz=156,SNR=16						
G25A	Newell	38.67	338	P	P	22 55 10.2	-1.4
	baz=149,SNR=31						
NLU	North Lily Min	38.69	325	eP	P	22 55 13.0	+1.0
	comp=Z,10nm,1.0s						
RRX	Edison Barstow	38.76	315	P	P	22 55 12.9	+0.5
	baz=122						
C33A	Trail	38.78	348	P	P	22 55 09.6	-2.8
	baz=162,SNR=20						
JLU	Jordanelle	38.78	326	eP	P	22 55 12.8	-0.1
	comp=Z,10nm,0.8s						
PSUT	Pine Spring	38.81	322	eP	P	22 55 13.2	+0.2
	comp=Z,38nm,0.9s						
SHOC	Shoshone, Teco	38.81	317	P	P	22 55 12.9	0.0
	baz=124,SNR=5.8						
GSC	Goldstone, Bar	38.85	315	P	P	22 55 13.6	+0.3
	baz=123,SNR=36						
GSC	Goldstone, Bar	38.85	315	eP	P	22 55 14.0	+0.7
GSC				pmax	pmax		
	comp=Z,46nm,0.9s						
GSC	Goldstone, Bar	38.85	315	eP	P	22 55 14.0	+0.7
	comp=Z,46nm,0.9s						
D30A	Buchanan	38.89	344	P	P	22 55 11.1	-2.3
	baz=157,SNR=56						
BFSC	Mount Baldy Ra	38.91	313	P	P	22 55 14.2	+0.4
	baz=121						
SCI2	San Clemente I	38.95	311	P	P	22 55 13.4	-0.6
	baz=118,SNR=7.3						
B35A	Bob, Littlefor	38.96	350	P	P	22 55 11.4	-2.5
	baz=165,SNR=50						
E28A	Huff	38.96	342	P	P	22 55 11.9	-2.1
	baz=154,SNR=18						
F26A	Lodgepole	38.97	339	P	P	22 55 12.3	-1.8
	baz=151,SNR=6.7						
C32A	Crookston	39.01	347	P	P	22 55 12.0	-2.3
	baz=161,SNR=6.7						
CIS	Catalina Islan	39.05	312	P	P	22 55 14.8	0.0
	baz=119,SNR=22						
D29A	Pettibone, Tap	39.08	343	P	P	22 55 12.9	-2.0
	baz=156,SNR=10						
FMP	Fort Macarthur	39.11	312	P	P	22 55 15.2	-0.1
	baz=119						
E27A	Carson	39.11	341	P	P	22 55 14.1	-1.1
	baz=153,SNR=39						
LMQ	La Malbaie	39.11	15	eP	P	22 55 15.7	+0.6
	comp=Z,148nm,0.9s						
TCUT	Toone Canyon	39.12	327	eP	P	22 55 16.8	+1.2
	comp=Z,64nm,1.1s						
MWC	Mount Wilson	39.19	313	eP	P	22 55 17.5	+1.3
MWC				pmax	pmax		
	comp=Z,210nm,1.8s						
MWC	Mount Wilson	39.19	313	eP	P	22 55 17.5	+1.3
	comp=Z,209nm,1.8s						
B33A	Robert and Kas	39.23	348	P	P	22 55 13.6	-2.5
	baz=162,SNR=19						
B34A	Aery, Baudette	39.25	349	P	P	22 55 14.3	-2.0
	baz=164,SNR=157						
PASC	Pasadena Art C	39.25	313	eP	P	22 55 17.9	+1.4
	comp=Z,275nm,1.8s						
C31A	Landman Farms,	39.26	346	P	P	22 55 14.6	-1.8
	baz=159,SNR=93						
DUG	Dugway, Tooele	39.27	325	P	P	22 55 15.8	-0.9
	baz=132						
DUG	Dugway, Tooele	39.27	325	eP	P	22 55 16.6	-0.2
DUG				pmax	pmax		
	comp=Z,36nm,1.5s						
DUG	Dugway, Tooele	39.27	325	eP	P	22 55 16.6	-0.2
	comp=Z,36nm,1.5s						
LMN	Caledonia Moun	39.29	21	eP	P	22 55 17.7	+1.0
	comp=Z,257nm,1.1s						
F25A	Bowman	39.31	339	P	P	22 55 15.5	-1.5
	baz=150,SNR=7.6						
BW06	Boulder Array	39.36	330	P	P	22 55 15.8	-1.9
	baz=139,SNR=20						
BW06	Boulder Array	39.36	330	eP	P	22 55 16.9	-0.8
	comp=Z,1.2nm,1.0s						
PD31	Pinedale Array	39.36	330	eP	P	22 55 16.7	-0.9
PDAR	Pinedale Array	39.36	330	P	P	22 55 16.1	-1.5
	comp=Z,4.5nm,0.5s,baz=124,slow=9.4,SNR=29						
PDAR				PcP	PcP	22 57 24.0	-0.7
	comp=Z,3.1nm,0.8s,baz=102,slow=4.9,SNR=5.7						
PDAR				ScP	ScP	23 01 08.3	+1.6
	comp=Z,5.1nm,0.8s,baz=142,slow=5.0,SNR=9.3						
PDAR				LR	LR	23 13 44.3	
	comp=Z,2μm,21.9s,baz=147,slow=40						
C30A	Mose, Pekin	39.36	345	P	P	22 55 15.5	-1.7
	baz=158,SNR=22						
TPNV	Topopah Spring	39.38	318	P	P	22 55 18.1	+0.3
	baz=125,SNR=29						
TPNV	Topopah Spring	39.38	318	eP	P	22 55 17.8	0.0
TPNV				pmax	pmax		
	comp=Z,29nm,1.0s						
TPNV	Topopah Spring	39.38	318	eP	P	22 55 17.8	0.0
	comp=Z,29nm,0.9s						
DECC	Green Verdugo	39.40	313	P	P	22 55 18.1	+0.2
	baz=120						
EDW2	Edwards Air Fo	39.47	314	P	P	22 55 18.1	-0.4
	baz=121,SNR=33						
D28A	Regan	39.48	342	P	P	22 55 16.7	-1.6
	baz=154,SNR=42						
FURC	Furnace Creek,	39.52	317	P	P	22 55 19.0	+0.2
	baz=124,SNR=24						
B32A	Ashes, Strandq	39.55	347	P	P	22 55 17.5	-1.3
	baz=161,SNR=182						
HWUT	Hardware Ranch	39.55	327	eP	P	22 55 18.1	-1.0
	comp=Z,39nm,0.8s						
LRMC	Laurel Mtn Rad	39.56	315	P	P	22 55 19.3	+0.1
	baz=122,SNR=24						
D27A	Center	39.70	341	P	P	22 55 18.6	-1.5
	baz=153,SNR=11						
R11A	Troy Canyon, C	39.77	320	P	P	22 55 19.7	-1.3
	baz=127,SNR=26						
R11A	Troy Canyon, C	39.77	320	eP	P	22 55 20.6	-0.4
	comp=Z,21nm,1.1s						
RCWM	Renegade Canyo	39.78	316	ePP	PP	22 56 54.2	+0.4
E25A	Miller Ranch,	39.79	339	P	P	22 55 19.5	-1.3
	baz=150,SNR=22						
SNCC	San Nicolas Is	39.80	311	P	P	22 55 21.7	+0.6
	baz=118						
SNCC	San Nicolas Is	39.80	311	eP	P	22 55 21.2	+0.1
	comp=Z,182nm,1.1s						
MDND	Maddock	39.80	344	P	P	22 55 19.4	-1.5
	baz=156,SNR=38						
MDND	Maddock	39.80	344	eP	P	22 55 19.9	-1.0
	comp=Z,750nm,0.9s						
SPUT	South Promonto	39.82	326	eP	P	22 55 20.8	-0.6
	comp=Z,27nm,1.1s						
A33A	Warroad	39.82	348	P	P	22 55 19.5	-1.5
	baz=163,SNR=206						
B31A	Greenbush Farm	39.83	346	P	P	22 55 19.0	-2.1
	baz=159,SNR=43						
OSI	Osito Audit: C	39.86	313	P	P	22 55 21.6	0.0
	baz=120						
OSI	Osito Audit: C	39.86	313	eP	P	22 55 21.4	-0.3
	comp=Z,51nm,1.0s						
BLG	Laguna Peak, P	39.86	312	P	P	22 55 21.9	+0.2
	baz=119						
BGU	Big Grassy Mou	39.88	325	eP	P	22 55 21.3	-0.6
	comp=Z,34nm,1.3s						
C28A	Hausauer Farms	39.90	343	P	P	22 55 19.9	-1.8
	baz=155,SNR=14						
DAC	Darwin (Calif)	39.92	316	eP	P	22 55 23.3	+1.0
DAC				pmax	pmax		
	comp=Z,25nm,1.0s						
DAC	Darwin (Calif)	39.92	316	eP	P	22 55 23.2	+1.0
	comp=Z,25nm,0.9s						
D26A	Manning	39.92	341	P	P	22 55 20.1	-1.9
	baz=152,SNR=20						
B30A	Myrvik Farm, E	40.02	345	P	P	22 55 21.2	-1.5
	baz=158,SNR=69						
A32A	Rocking H Ranc	40.03	347	P	P	22 55 20.9	-1.9
	baz=161,SNR=79						
AHID	Auburn Hatcher	40.13	329	eP	P	22 55 23.6	-0.3
	comp=Z,60nm,1.4s						
GRAC	Grgevine Rang	40.15	317	P	P	22 55 24.4	+0.4
	baz=124,SNR=11						
ARVC	Arvin	40.19	314	P	P	22 55 24.5	+0.2
	baz=120,SNR=9.0						
A31A	Linda, St. Vin	40.20	347	P	P	22 55 21.7	-2.4
	baz=160						
ISA	Isabella, Lake	40.20	315	P	P	22 55 24.8	+0.3
	baz=121,SNR=7.8						
ISA	Isabella, Lake	40.20	315	eP	P	22 55 25.0	+0.5
ISA				pmax	pmax		
	comp=Z,36nm,1.0s						
ISA	Isabella, Lake	40.20	315	eP	P	22 55 25.0	+0.5
	comp=Z,36nm,0.9s						
SCZ2	Santa Cruz Isl	40.22	312	P	P	22 55 23.7	-0.9
	baz=118						
C27A	Sayler Ranch,	40.23	342	P	P	22 55 22.8	-1.7
	baz=153						
B29A	Wagenman Farm,	40.30	344	P	P	22 55 23.5	-1.5
	baz=157,SNR=69						
HVU	Hansel Valley	40.32	326	eP	P	22 55 25.3	-0.2
HVU				pmax	pmax		
	comp=Z,13nm,0.8s						
HVU	Hansel Valley	40.32	326	eP	P	22 55 25.3	-0.2
	comp=Z,13nm,0.8s						
D25A	Fairfield	40.32	340	P	P	22 55 24.0	-1.3
	baz=150,SNR=12						
CWC	Cottonwood Cre	40.34	316	P	P	22 55 25.2	-0.6
	baz=122						
REDW	Red Top Meadow	40.44	330	eP	P	22 55 25.6	-0.9
	comp=Z,66nm,1.0s						
SNOW	Snow King Moun	40.46	330	eP	P	22 55 26.1	-0.7
	comp=Z,81nm,1.2s						
A30A	Hoffart Farm,	40.47	346	P	P	22 55 24.5	-1.9
	baz=159,SNR=87						
SBC	Santa Barbara	40.49	312	P	P	22 55 26.6	-0.2
	baz=119						
LOHW	Long Hollow	40.50	330	eP	P	22 55 26.1	-1.0
	comp=Z,15nm,0.8s						
C26A	Wahner Farm, P	40.51	341	P	P	22 55 25.5	-1.4
	baz=153,SNR=6.7						
B28A	Dugan Ranch, T	40.56	343	P	P	22 55 25.5	-1.7
	baz=155,SNR=20						
MOOW	Moose Ponds	40.67	330	eP	P	22 55 27.3	-1.1
	comp=Z,17nm,0.8s						
A29A	Manning Farm,	40.68	345	P	P	22 55 26.3	-1.9
	baz=157,SNR=77						
VES	Vestal, Richgr	40.72	315	P	P	22 55 28.7	0.0
	baz=121,SNR=9.5						
FXWY	Fox Creek	40.73	330	eP	P	22 55 28.4	-0.5
	comp=Z,11nm,0.8s						
TIN	Tinemaha, Big	40.76	317	P	P	22 55 29.4	+0.3
	baz=123						
B27A	Peters Farms,	40.77	343	P	P	22 55 27.4	-1.6
	baz=154,SNR=5.2						
PKM	Mcpherson Peak	40.77	313	P	P	22 55 30.0	+0.7
	baz=119,SNR=16						
C25A	Freed Ranch, W	40.79	340	P	P	22 55 27.4	-1.7
	baz=151						
IMW	Indian Meadow	40.87	330	eP	P	22 55 29.0	-1.2
	comp=Z,18nm,1.0s						
FLWY	Flagg Ranch	40.89	331	eP	P	22 55 29.7	-0.5
	comp=Z,112nm,1.6s						
A28A	Rude Farm, Bot	40.95	344	P	P	22 55 28.2	-2.2
	baz=156,SNR=6.1						
LAO	LASA Array	40.99	337	P	P	22 55 29.0	-1.8
	baz=146,SNR=8.6						
LAO	LASA Array	40.99	337	eP	P	22 55 31.0	+0.2
	comp=Z,61nm,0.9s						
RLMT	Red Lodge	41.01	333	P	P	22 55 29.7	-1.5
	baz=141,SNR=36						
RLMT	Red Lodge	41.01	333	eP	P	22 55 29.7	-1.5
	comp=Z,89nm,1.4s						
LCO	Las Campanas	41.02	162	eP	P	22 55 32.4	+1.0
	comp=Z,106nm,1.2s						
ELK	Elko	41.03	323	eP	P	22 55 31.1	-0.4
ELK				pmax	pmax		
	comp=Z,42nm,1.4s						
ELK	Elko	41.03	323	eP	P	22 55 31.1	-0.4
	comp=Z,42nm,1.4s						
B26A	Jensen Ranch,	41.04	342	P	P	22 55 29.7	-1.5
	baz=153						
H17A	Grant Village	41.07	331	P	P	22 55 30.7	-1.0
	baz=139,SNR=18						
H17A	Grant Village	41.07	331	eP	P	22 55 33.2	+1.4
	comp=Z,95nm,1.6s						
RCTC	Rector, Farmer	41.07	315	P	P	22 55 31.5	0.0
	baz=121,SNR=6.7						
SMMC	Simmler	41.11	313	P	P	22 55 31.2	-0.8
	baz=119,SNR=8.3						
LKWY	Lake	41.11	331	eP	P	22 55 33.4	+1.3
LKWY				pmax	pmax		
	comp=Z,94nm,1.9s						
LKWY	Lake	41.11	331	eP	P	22 55 33.4	+1.3
	comp=Z,94nm,1.9s						
ULM	Lac du Bonnet	41.17	349	P	P	22 55 29.8	-2.4
	comp=Z,364nm,0.9s,baz=164,slow=7.9,SNR=115						
ULM				LR	LR	23 13 31.6	
	comp=Z,2μm,20.9s,baz=168,slow=38						
ULM	Lac du Bonnet	41.17	349	eP	P	22 55 29.7	-2.4
	comp=Z,426nm,0.9s						
YFT	Old Faithful	41.23	331	eP	P	22 55 33.0	-0.1
	comp=Z,96nm,1.4s						
B25A	Knox Farm, Ray	41.24	341	P	P	22 55 32.1	-0.8
	baz=151,SNR=8.0						
A27A	Ledoux Ranch,	41.26	343	P	P	22 55 31.6	-1.3
	baz=154						
A26A	Wade Farm, Ken	41.45	342	P	P	22 55 33.0	-1.5
	baz=153						
NV11	Mina Array Sit	41.47	318	eP	P	22 55 34.9	-0.1
	comp=Z,164nm,1.9s						
MLAC	Mammoth, Mammo	41.48	317	P	P	22 55 34.6	-0.6
	baz=123						
NV01	Mina Array Sit	41.56	318	eP	P	22 55 35.7	-0.2
NVAR	Mina Array Bea	41.56	318	P	P	22 55 34.5	-1.3
	comp=Z,9.6nm,0.6s,baz=218,slow=26,SNR=4.5						
NVAR				PcP	PcP	22 57 33.7	+1.8
	comp=Z,5.7nm,0.7s,baz=130,slow=4.1,SNR=3.7						
NVAR				ScP	ScP	23 01 17.9	+2.5
	comp=Z,7.0nm,1.0s,baz=102,slow=6.2,SNR=7.1						
NVAR				LR	LR	23 16 37.0	
	comp=Z,2μm,18.6s,baz=134,slow=42						
GCMT	Greycliff	41.71	333	eP	P	22 55 35.7	-1.1
DGMT	Dagmar	41.76	340	P	P	22 55 35.5	-1.5
	baz=150,SNR=11						
DGMT	Dagmar	41.76	340	eP	P	22 55 37.1	0.0
	comp=Z,149nm,0.9s						
QLMT	Earthquake Lak	41.80	331	eP	P	22 55 38.5	+0.9
A25A	Svangstu Ranch	41.81	341	P	P	22 55 36.4	-1.1
	baz=152,SNR=5.8						
BMN	Battle Mountai	42.03	322	eP	P	22 55 38.7	-0.8
BMN				pmax	pmax		
	comp=Z,45nm,1.0s						
BMN	Battle Mountai	42.03	322	eP	P	22 55 38.7	-0.8
	comp=Z,45nm,0.9s						
WAKR	Walker	42.35	318	eP	P	22 55 42.8	+0.6
HLID	Hailey	42.42	327	P	P	22 55 41.1	-1.5
	baz=133,SNR=26						
HLID	Hailey	42.42	327	eP	P	22 55 41.9	-0.8
	comp=Z,26nm,1.0s						
MCMT	McKenzie Canyo	42.49	330	eP	P	22 55 42.8	-0.5
BOZ	Bozeman (W)	42.50	331	P	P	22 55 41.4	-1.9
	baz=138,SNR=26						
CMB	Columbia Colle	42.74	317	eP	P	22 55 46.4	+1.2
CMB				pmax	pmax		
	comp=Z,14nm,1.0s						
CMB	Columbia Colle	42.74	317	eP	P	22 55 46.4	+1.2
	comp=Z,14nm,1.0s						
DLMT	Dillon	42.75	330	eP	P	22 55 44.9	-0.4
	comp=Z,112nm,1.7s						
SAO	San Andreas Ge	42.84	314	eP	P	22 55 46.7	+0.7
SAO				pmax	pmax		
	comp=Z,23nm,0.9s						
SAO	San Andreas Ge	42.84	314	eP	P	22 55 46.7	+0.7
	comp=Z,23nm,0.8s						
PAHR	Pah Rah Range	42.97	319	eP	P	22 55 48.0	+0.9
	comp=Z,14nm,0.9s						
LRM	Limekiln Ridge	43.02	331	eP	P	22 55 46.8	-0.8
MFID	Camas Ranch	43.09	326	eP	P	22 55 48.4	+0.3
	comp=Z,28nm,0.9s						
HRY	Holter Researc	43.38	332	eP	P	22 55 50.9	+0.5
EGMT	Eagleton	43.48	335	P	P	22 55 49.4	-1.7
	baz=142,SNR=7.4						
EGMT	Eagleton	43.48	335	eP	P	22 55 51.5	+0.5
	comp=Z,49nm,0.9s						
AFDM	Forest Hills D	43.60	317	eP	P	22 55 52.9	+0.8
	comp=Z,9.3nm,1.0s						
WVOR	Wild Horse Val	44.08	323	eP	P	22 55 54.5	-1.5
WVOR				pmax	pmax		
	comp=Z,71nm,0.9s						
WVOR	Wild Horse Val	44.08	323	eP	P	22 55 54.5	-1.5
	comp=Z,71nm,0.9s						
CHMT	Chamberlain Mo	44.19	331	eP	P	22 55 56.2	-0.7
ORV	Oroville	44.27	318	eP	P	22 55 58.9	+1.5
ORV				e*PP	pP	22 56 09.4	-6.8
ORV				pmax	pmax		
	comp=Z,33nm,0.9s						
ORV	Oroville	44.27	318	eP	P	22 55 58.9	+1.5
	comp=Z,33nm,0.8s						
ORV				ePP	pP	22 56 09.4	-6.8
MSO	Missoula	44.46	331	P	P	22 55 57.2	-1.7
	baz=136,SNR=20						
MSO	Missoula	44.46	331	eP	P	22 55 57.6	-1.3
	comp=Z,24nm,0.9s						
ROC1	El Roble	44.65	164	eP	P	22 56 01.4	+0.7
	comp=Z,52nm,0.8s						
CPUP	Villa Florida	44.65	145	P	P	22 55 59.9	-0.7
	comp=Z,24nm,1.0s,baz=333,slow=8.5,SNR=30						
CPUP				ScP	ScP	23 01 29.9	+2.2
	comp=Z,5.6nm,1.1s,baz=295,slow=3.4,SNR=5.5						
CPUP				LR	LR	23 17 16.2	
	comp=Z,2μm,18.5s,baz=317,slow=39						
MOD	Modoc Plateau	44.77	321	eP	P	22 56 01.8	+0.1
	comp=Z,15nm,1.0s						
BMO	Blue Mountains	44.83	327	eP	P	22 55 59.8	-2.1
	comp=Z,19nm,0.8s						
O03D	Paynes Creek	44.85	319	P	P	22 56 00.4	-1.8
	baz=122,SNR=10						
DRLN	Deer Lake	44.91	25	eP	P	22 56 03.6	+1.3
	comp=Z,101nm,1.0s						
SWMT	Swartz Lake	44.97	332	eP	P	22 56 02.1	-0.9
YBMT	Yellow Bay	45.23	332	eP	P	22 56 04.8	-0.4
JTMT	Jette	45.28	332	eP	P	22 56 04.9	-0.6
BLMT	Blacktail Moun	45.51	332	eP	P	22 56 06.8	-0.5
F10A	Beach Ranch, E	45.52	328	eP	P	22 56 05.9	-1.5
BSMT	Bassoo Peak	45.59	331	P	P	22 56 06.9	-1.1

SCHQ Schefferville 46.68 14 P P 22 56 15.7 -0.6
comp=Z,133nm,0.8s,baz=222,slow=6.7,SNR=103
SCHQ LR LR 23 15 58.2
comp=Z,4µm,19.8s,baz=203,slow=36
SCHQ Schefferville 46.68 14 *eP* **P 22 56 15.2 -1.0**
comp=Z,183nm,0.9s
I05D Terrebonne, OR 46.79 324 P **P 22 56 15.9 -1.4**
baz=126,SNR=9.2
HUMO Hull Mountain 46.81 321 *eP* **P 22 56 17.2 -0.3**
comp=Z,9.5nm,0.8s
G06A Carlson Farm, 46.91 325 *eP* **P 22 56 19.2 +1.0**
comp=Z,118nm,1.6s
L02D Cave Junction, 46.98 320 P **P 22 56 17.6 -1.2**
baz=122
NEW Newport 47.00 330 P **P 22 56 17.0 -1.9**
baz=133,SNR=11
NEW Newport 47.00 330 *eP* **P 22 56 18.7 -0.2**
NEW pmax pmax
comp=Z,14nm,0.9s
NEW Newport 47.00 330 *eP* **P 22 56 18.7 -0.2**
comp=Z,14nm,0.8s
HAWA Hanford 47.02 327 *eP* **P 22 56 17.4 -1.5**
comp=Z,30nm,0.9s
HBO Huckleberry Mo 47.09 322 P **P 22 56 18.9 -0.9**
D08A Wollman Farm, 47.11 328 *eP* **P 22 56 20.0 +0.3**
comp=Z,148nm,1.9s
I04A Tendick Farm, 47.12 322 P **P 22 56 18.0 -1.8**
baz=124,SNR=23
C09A Chrisman Ranch 47.26 329 *eP* **P 22 56 19.6 -1.3**
comp=Z,27nm,0.8s
G05D Wamic, OR 47.31 325 P **P 22 56 20.7 -0.6**
baz=126,SNR=15
TRW Toppenish Ridg 47.50 326 P **P 22 56 21.9 -0.9**
I03D Drain, OR 47.63 322 P **P 22 56 23.0 -0.8**
baz=123
RNO Roman Nose 47.99 322 P **P 22 56 25.9 -0.8**
B08A Colville Reser 48.17 329 *eP* **P 22 56 26.3 -1.6**
comp=Z,17nm,0.8s
F04A Amboy 48.34 325 *eP* **P 22 56 29.6 +0.4**
comp=Z,21nm,0.9s
G03D McMinnville, O 48.42 323 P **P 22 56 29.8 0.0**
baz=124,SNR=5.8
C06D Leavenworth 48.70 328 P **P 22 56 30.6 -1.4**
baz=129
F04D Rainier, OR 48.76 325 P **P 22 56 31.4 -1.1**
baz=125
D05A Emumclaw 48.84 326 *eP* **P 22 56 33.0 0.0**
comp=Z,48nm,0.9s
SPB Sao Paulo 49.13 133 *eP* **P 22 56 34.8 -0.7**
comp=Z,157nm,1.6s
SPB *e*pP **pP 22 56 52.0 -2.6**
B05A Bryant 49.54 327 P **P 22 56 36.3 -2.1**
baz=128
NLWA Neilton Lookou 49.99 326 *eP* **P 22 56 41.2 -0.6**
comp=Z,55nm,1.0s
A04D Lummi Island 50.14 328 P **P 22 56 41.2 -1.7**
baz=127
PGC Sidney 50.50 327 *eP* **P 22 56 48.0 +2.5**
comp=Z,53nm,1.4s
RCBR Riachuelo 50.63 106 *eP* **P 22 56 48.0 +0.8**
comp=Z,93nm,1.1s
LPA La Plata 51.22 152 *deP* **P 22 56 54.0 +2.9**
LPA pP **pP 22 57 12.0 +1.7**
LPA PP **PP 22 58 56.0 +7.2**
LPA PKIKP **PKiKP 23 04 48.0 -0.2**
PLCA Paso Flores 52.13 167 P **P 22 56 58.2 +0.3**
comp=Z,57nm,1.0s,baz=8.5,slow=8.2,SNR=74
PLCA LR LR 23 15 04.7
comp=Z,887nm,20.9s,baz=28,slow=31
PLCA Paso Flores 52.13 167 *eP* **P 22 56 58.3 +0.3**
PLCA pmax pmax
comp=Z,110nm,1.2s
PLCA Paso Flores 52.13 167 *eP* **P 22 56 58.3 +0.3**
comp=Z,111nm,1.2s
TRQA Tornquist 52.23 158 *eP* **P 22 56 58.9 +0.3**
comp=Z,86nm,1.4s
YKA Yellowknife Ar 56.72 344 P **P 22 57 28.7 -2.1**
comp=Z,58nm,0.7s,baz=140,slow=6.9,SNR=292
YKA ScP **ScP 23 02 20.0 +1.1**
comp=Z,3.5nm,0.8s,baz=140,slow=4.4,SNR=5.3
YKA PKPPKP P'P'df 23 27 14.0 -10
comp=Z,0.3nm,0.8s,baz=348,slow=2.8,SNR=6.6
CHRN Cochrane 58.03 171 *eP* **P 22 57 41.2 +1.0**
TAOE Nuku Hiva Isla 58.80 253 *e*LQ LQ 23 12 44.9
comp=Z,5µm,33.8s
TAOE *e*LR LR 23 14 53.2
comp=Z,3µm,27.0s,baz=70
DLBC Dease Lake 59.39 334 P **P 22 57 49.0 -0.7**
comp=Z,29nm,0.7s,baz=138,slow=5.1,SNR=40
RKT Rikitea 59.67 236 *eP* **P 22 57 53.0 +1.0**
comp=Z,49nm,1.1s
RKT *e*S **S 23 06 02.6 +5.5**
comp=Z,2µm,26.8s
RKT *e*LQ LQ 23 13 08.4
comp=Z,5µm,33.0s
RKT *e*LR LR 23 15 39.0
comp=Z,2µm,31.5s,baz=56
RKT Rikitea 59.67 236 *e*T T 00 01 09.5
comp=Z,9.1nm,0.3s
SFJD Kangerlussuaq 61.13 14⇑*iP* **P 22 57 58.9 -2.4**
SFJD Kangerlussuaq 61.13 14 *eP* **P 22 57 59.4 -1.9**
SFJD Kangerlussuaq 61.13 14 *eP* **P 22 57 59.4 -1.9**
SKAG Skagway 62.26 333 *eP* **P 22 58 08.7 -0.3**
ILULI Ilulissat 62.78 13⇑*iP* **P 22 58 10.3 -2.0**
comp=Z,118nm,1.2s
ILULI Ilulissat 62.78 13 *iP* **P 22 58 10.3 -2.0**
ILULI pmax pmax
comp=Z,120nm,1.2s
RES Resolute Bay 64.83 357 P **P 22 58 23.9 -1.8**
comp=Z,62nm,0.7s,baz=182,slow=9.5,SNR=73
RES Resolute Bay 64.83 357 *eP* **P 22 58 24.3 -1.4**
RES Resolute Bay 64.83 357 *eP* **P 22 58 24.3 -1.4**
EFI East Falkland 65.54 162 *eP* **P 22 58 31.9 +1.4**
EFI East Falkland 65.54 162 *eP* **P 22 58 31.9 +1.4**
USHA Ushuaia 66.05 170 P **P 22 58 34.4 +0.7**
comp=Z,73nm,1.0s,baz=344,slow=7.4,SNR=6.1
BALM Baldy 66.09 333 *eP* **P 22 58 33.6 -0.6**
BALM Baldy 66.09 333 *eP* **P 22 58 33.6 -0.6**
DAWY Dawson 66.19 337 *eP* **P 22 58 32.8 -2.0**
KULLO Kullorsuaq 66.24 8 *iP* **P 22 58 33.0 -1.8**
comp=Z,153nm,1.1s
KULLO Kullorsuaq 66.24 8 *iP* **P 22 58 33.0 -1.8**
KULLO pmax pmax
comp=Z,150nm,1.1s
INK Inuvik 66.39 342 P **P 22 58 34.6 -1.2**
comp=Z,84nm,0.9s,baz=112,slow=7.0,SNR=110
RAGM Ragged Mountai 66.90 332 *eP* **P 22 58 40.7 +1.4**
BMRM Bremner River 67.08 333 *eP* **P 22 58 39.5 -0.9**
EGAK Eagle 67.20 337 *eP* **P 22 58 39.3 -1.7**
MENT Mentasta 67.45 335 *eP* **P 22 58 41.5 -1.3**
EYAK Cordova Ski Ar 67.46 332 *eP* **P 22 58 42.9 +0.2**
DIV Divide 67.67 333 *eP* **P 22 58 44.5 +0.3**
VAH Vaihoa 67.70 249 *eP* **P 22 58 45.4 +0.4**
comp=Z,95nm,1.0s
DOT Dot Lake 67.87 335 *eP* **P 22 58 44.5 -0.9**
PMOR Pomariorio Ree 67.87 249 *eP* **P 22 58 46.8 +0.7**
comp=Z,99nm,1.1s
PMOR Pomariorio Ree 67.87 249 *e*T T 00 11 27.5
comp=Z,3.6nm,0.2s
SUMG Summit 68.08 13⇑*iP* **P 22 58 45.5 -1.4**
comp=Z,193nm,0.9s
SUMG Summit 68.08 13⇑*iP* **P 22 58 45.5 -1.4**
SUMG pmax pmax
comp=Z,190nm,0.9s
SUMG Summit 68.08 13 *eP* **P 22 58 45.3 -1.7**
PAX Paxson 68.20 334 *eP* **P 22 58 46.7 -0.8**
PAX pmax pmax
comp=Z,39nm,1.0s
PAX Paxson 68.20 334 *eP* **P 22 58 46.7 -0.8**
comp=Z,39nm,1.0s
SCM Sheep Creek Mo 68.61 333 *eP* **P 22 58 50.7 +0.6**
SCM Sheep Creek Mo 68.61 333 *eP* **P 22 58 50.7 +0.6**
MEH Mehetia 68.92 246 *eP* **P 22 58 53.2 +0.5**
comp=Z,30nm,1.1s
SML Sawmill 69.06 333 *eP* **P 22 58 52.5 -0.3**
SML Sawmill 69.06 333 *eP* **P 22 58 52.5 -0.3**
SEW Seward 69.06 331 *eP* **P 22 58 52.6 -0.1**
POHA Pohakuloa 69.19 287 *eP* **P 22 58 55.0 +0.4**
comp=Z,824nm,1.1s
PMR Palmer 69.35 332 *eP* **P 22 58 54.0 -0.6**
PMR Palmer 69.35 332 *eP* **P 22 58 54.0 -0.6**
IL1 Eielson Array 69.44 336 *eP* **P 22 58 52.5 -2.5**
ILAR Eielson Array 69.44 336 P **P 22 58 53.4 -1.7**
comp=Z,22nm,0.7s,baz=124,slow=4.2,SNR=101
ILAR PKP2bc 23 27 01.9
comp=Z,0.4nm,0.8s,baz=275,slow=3.0,SNR=4.8
ILAR LR LR 23 34 01.5
comp=Z,809nm,18.2s,baz=121,slow=40
FYU Fort Yukon 69.48 338 *eP* **P 22 58 55.8 +0.6**
RC01 Rabbit Creek A 69.48 332 *eP* **P 22 58 54.3 -1.1**
BORG Borgarnes 69.50 24 *ceP* **P 22 58 57.3 +1.9**
BORG Borgarnes 69.50 24 *eP* **P 22 58 56.7 +1.3**
RND Reindeer 69.79 334 *eP* **P 22 58 56.3 -1.1**
RND Reindeer 69.79 334 *eP* **P 22 58 56.3 -1.1**
COLA College 69.86 336 *eP* **P 22 58 59.5 +1.9**
COLA College 69.86 336 *eP* **P 22 58 59.5 +1.9**
MCK McKinley 69.93 335 *eP* **P 22 58 56.8 -1.4**
MCK McKinley 69.93 335 *eP* **P 22 58 56.8 -1.4**
TVO Taravao 69.96 247 *eP* **P 22 58 59.5 +0.3**
comp=Z,17nm,1.0s
TIAR Tiarei 69.98 247 *eP* **P 22 58 59.7 +0.5**
comp=Z,36nm,1.0s
KDAK Kodiak Island 70.03 328 P P 22 59 13.3 +15
comp=Z,19nm,0.8s,baz=118,slow=3.3,SNR=16
KDAK Kodiak Island 70.03 328 *eP* **P 22 58 57.7 -1.1**
KDAK Kodiak Island 70.03 328 *eP* **P 22 58 57.7 -1.1**
PPT Papeete 70.19 247 P **P 22 59 01.8 +1.3**
comp=Z,12nm,0.5s,baz=233,slow=20,SNR=2.3
PPT LR LR 23 21 48.5
comp=Z,694nm,19.4s,baz=45,slow=29
PPT2 Papeete2 70.20 247 *eS* **S 23 08 12.0 +5.3**
comp=Z,2µm,24.0s
PPT2 Papeete2 70.20 247 *e*LR LR 23 20 31.5
comp=Z,3µm,26.2s,baz=64
PAE Paea 70.22 247 *eP* **P 22 59 01.2 +0.5**
comp=Z,17nm,1.0s
OHAK Old Harbor 70.28 327 *eP* **P 22 58 59.0 -1.3**
BWN Browne 70.29 335 *eP* **P 22 58 59.1 -1.2**
TRF Thorofare Moun 70.42 334 *eP* **P 22 58 59.5 -1.9**
SPU Mount Spurr 70.59 332 *eP* **P 22 59 00.4 -1.8**
KTH Kantishna Hill 70.72 334 *eP* **P 22 59 01.3 -1.8**
comp=Z,32nm,0.9s
BPAW Bear Paw Mtn. 70.91 335 *eP* **P 22 59 02.3 -1.8**
MLY Manley 71.08 336 *eP* **P 22 59 03.5 -1.6**
PPLA Purkeypile 71.09 333 *eP* **P 22 59 03.5 -1.8**
CAST Castle Rocks 71.19 334 *eP* **P 22 59 02.0 -3.8**
HON Honolulu 71.40 289 *eP* **P 22 59 11.6 +3.8**
HON Honolulu 71.40 289 *eP* **P 22 59 11.6 +3.8**
KIP Kipapa 71.40 289 *deP* **P 22 59 09.9 +2.1**
KIP pmax pmax
comp=Z,490nm,1.0s
SCO Scoresbysund 71.43 18⇑*iP* **P 22 59 05.8 -1.3**
comp=Z,80nm,1.2s
SCO Scoresbysund 71.43 18⇑*iP* **P 22 59 05.8 -1.3**
SCO pmax pmax
comp=Z,80nm,1.2s
COLD Coldfoot 71.55 338 *eP* **P 22 59 07.5 -0.4**
VAL Valentia 72.21 39⇓*iP* **P 22 59 12.2 +0.2**
VAL Valentia 72.21 39⇓*iS* **S 23 08 27.3 -1.4**
SVW2 Sparrevohn 72.24 331 *eP* **P 22 59 11.1 -1.0**
PTEO Sao Teotonio 72.41 54 *eP* **P 22 59 14.3 +0.7**
comp=Z,70nm,1.6s
MORF Marmelete 72.46 54 *eP* **P 22 59 13.7 -0.3**
MORF AMb AMB 22 59 23.4
comp=Z,84nm,1.4s
MORF *e*S **S 23 08 32.1 -0.2**
MORF Marmelete 72.46 54 *eP* **P 22 59 14.7 +0.7**
comp=Z,86nm,1.3s
MORF Marmelete 72.46 54 *eP* **P 22 59 13.7 -0.3**
MORF *e*S **S 23 08 32.1 -0.2**
MORF pmax pmax
comp=Z,84nm,1.4s
PNCL Nicolau / Gran 72.57 53 *eP* **P 22 59 16.0 +1.5**
comp=Z,37nm,1.9s
PTO Porto 72.58 50 *eP* **P 22 59 16.9 +2.4**
PCAS Casmilo, Conde 72.63 51 *eP* **P 22 59 15.3 +0.4**
comp=Z,66nm,0.8s
PTOM Tomar 72.68 52 *eP* **P 22 59 15.3 +0.1**
comp=Z,35nm,0.9s
TT01 Tatalina 72.80 333 *eP* **P 22 59 13.0 -2.4**
TTA Tatalina 72.81 333 *eP* **P 22 59 13.2 -2.4**
TTA Tatalina 72.81 333 *eP* **P 22 59 13.2 -2.4**
MESJ Messejana 72.81 54 *eP* **P 22 59 15.8 -0.2**
MESJ AMb AMB 22 59 24.4
comp=Z,38nm,1.4s
MESJ *e*S **S 23 08 36.0 -0.1**
MESJ Messejana 72.81 54 *eP* **P 22 59 16.5 +0.6**
comp=Z,39nm,1.3s
MESJ Messejana 72.81 54 *eP* **P 22 59 15.7 -0.2**
MESJ *e*S **S 23 08 36.0 -0.1**
MESJ pmax pmax
comp=Z,38nm,1.4s
PMTG Montargil 72.82 52 *eP* **P 22 59 16.2 +0.2**
comp=Z,30nm,1.5s
CHGN Chignik 72.90 326 *eP* **P 22 59 14.5 -1.5**
KEKH Kekaha 72.94 290 *eP* **P 22 59 19.9 +2.9**
PCVE Castro Verde 72.95 54 *eP* **P 22 59 17.9 +1.1**
comp=Z,40nm,2.1s
EVO Evora 72.98 53 *eP* **P 22 59 17.1 +0.1**
comp=Z,26nm,1.5s
PBDV Barranco-do-Ve 73.03 54 *eP* **P 22 59 18.3 +0.9**
comp=Z,80nm,1.7s
PBEJ Beja 73.09 53 *eP* **P 22 59 18.2 +0.6**
comp=Z,31nm,1.8s
POLO Lamas de Olo 73.19 50 *eP* **P 22 59 18.2 -0.1**
comp=Z,17nm,1.0s
PVAQ Vaqueiros 73.21 54 *eP* **P 22 59 19.8 +1.5**
PVRL Vila Real 73.25 50 *eP* **P 22 59 18.9 +0.3**
PESTR Estremoz 73.31 52 *eP* **P 22 59 19.1 +0.2**
comp=Z,33nm,1.0s
PCBR Castelo Branco 73.41 51 *eP* **P 22 59 19.7 +0.3**
comp=Z,42nm,0.7s
PMRV Marv??o 73.47 52 *eP* **P 22 59 19.8 -0.1**
PBAR Barrancos 73.74 53 *eP* **P 22 59 21.8 +0.3**
MVO Moncorvo 73.77 50 *eP* **P 22 59 21.8 +0.2**
comp=Z,48nm,0.8s
SDPT Sand Point 73.95 325 *eP* **P 22 59 23.2 +1.0**
PBRG Braganca 73.99 49 *eP* **P 22 59 24.3 +1.4**
DAG Danmarks Havn 74.71 13⇑*iP* **P 22 59 24.1 -2.2**
comp=Z,88nm,0.9s
DAG Danmarks Havn 74.71 13⇑*iP* **P 22 59 24.1 -2.2**
DAG pmax pmax
comp=Z,74nm,0.9s
GMM Mts of Mourne 74.99 37 *eP* **P 22 59 28.2 -0.1**
GMK Mull of Kintyr 75.26 35 *eP* **P 22 59 28.5 -1.4**
KPL Plockton 75.36 33 *eP* **P 22 59 29.3 -1.1**
KPL AMB AMB 22 59 31.3
comp=Z,87nm,1.5s
KSB Sheil Bridge 75.48 33 *eP* **P 22 59 30.2 -0.9**
KAC Achnashellach 75.57 33 *eP* **P 22 59 30.7 -0.9**
HOPE Hope Point 75.68 153 *eP* **P 22 59 32.7 +0.5**
WIM Isle of Man 75.73 37 *eP* **P 22 59 32.6 0.0**
GAL1 Galloway 75.74 36 *eP* **P 22 59 31.7 -1.0**
GAL1 AMB AMB 22 59 32.5
comp=Z,36nm,2.6s
PAB San Pablo 75.82 52 *eP* **P 22 59 33.7 +0.1**
PAB San Pablo 75.82 52 *eP* **P 22 59 33.7 +0.1**
EAB Aberfoyle 76.02 35 *eP* **P 22 59 34.7 +0.5**
ESDC Sonseca Array 76.12 52 P **P 22 59 35.3 +0.1**
comp=Z,32nm,0.7s,baz=280,slow=5.6,SNR=142
ESDC LR LR 23 28 48.1
comp=Z,197nm,20.0s,baz=245,slow=32
ESLA Sonseca Array 76.12 52 *eP* **P 22 59 35.8 +0.5**
ES19 SONSECA Array 76.17 52 *eP* **P 22 59 35.2 -0.3**
MVH1 Achvaich 76.19 33 *eP* **P 22 59 34.2 -0.9**
PMSA Palmer Station 76.20 171 LR LR 23 27 53.1
comp=Z,504nm,19.5s,baz=342,slow=31
FOEL Foel Wylfa 76.57 38 *eP* **P 22 59 35.8 -1.6**
BHH Howats Hill 76.61 36 *eP* **P 22 59 37.0 -0.5**
ESK Eskdalemuir 76.62 35 *eP* **P 22 59 36.4 -1.2**
ESK Eskdalemuir 76.62 35 *ceP* **P 22 59 38.9 +1.3**
ESK Eskdalemuir 76.62 35 *eP* **P 22 59 37.0 -0.6**
ECK Cauldkaine Hil 76.67 36 *eP* **P 22 59 36.0 -1.9**
MCD Coleburn Disti 76.67 33 *eP* **P 22 59 36.6 -1.3**
MCH1 Michaelchurch 76.68 39 *eP* **P 22 59 37.7 -0.3**
HLM1 Long Mynd 76.76 38 *eP* **P 22 59 37.8 -0.8**
HLM1 AMB AMB 22 59 40.0
comp=Z,82nm,1.5s
EDU Dundee 76.77 34 *eP* **P 22 59 38.1 -0.3**
MONM Monmouth 76.80 39 *eP* **P 22 59 38.3 -0.4**
MONM AMB AMB 22 59 40.1
comp=Z,86nm,1.7s
ESY Stoneypath 76.97 35 *eP* **P 22 59 39.2 -0.4**
DRUM Mains of Drumt 77.07 34 *eP* **P 22 59 38.8 -1.3**
DRUM AMB AMB 22 59 41.1
comp=Z,95nm,1.3s
STRD Stroud 77.20 39 *eP* **P 22 59 40.9 0.0**
STRD AMB AMB 22 59 42.6
comp=Z,110nm,1.3s
JSA Saint Aubin 77.21 42 *eP* **P 22 59 41.3 +0.2**
JSA AMB AMB 22 59 43.0
comp=Z,65nm,1.7s
UNV Unalaska Valle 77.38 323 *eP* **P 22 59 41.8 -0.1**
comp=Z,47nm,0.8s
LHO Holmfirth 77.39 37 *eP* **P 22 59 41.8 -0.2**
SSW Stow on the Wo 77.39 39 *eP* **P 22 59 41.9 -0.1**
SWN1 Swindon 77.43 39 *eP* **P 22 59 43.0 +0.8**
CWF Charnwood Fore 77.72 38 *eP* **P 22 59 42.9 -0.9**
CWF AMB AMB 22 59 44.2
comp=Z,57nm,2.2s
LARF Larrau 78.22 48⇑*eP* **P 22 59 47.4 +0.5**
TIC Toumodi 78.24 85 *e*PKP2 **P 22 59 47.6 +0.1**
TNA Tin City 78.27 335 *eP* **P 22 59 47.1 +0.5**
comp=Z,27nm,1.1s
LIC Lamto 78.30 86 *e*PKP2 **P 22 59 48.1 +0.3**
comp=Z,164nm,1.0s
LMK Market Rasen 78.30 37 *eP* **P 22 59 46.4 -0.6**
LMK AMB AMB 22 59 48.4
comp=Z,257nm,1.6s
DBIC Dimbokro 78.39 85 P **P 22 59 48.5 +0.2**
comp=Z,42nm,0.8s,baz=275,slow=5.1,SNR=44
DBIC PKPPKP **P'P'df 23 26 49.0 -1.2**
comp=Z,5.2nm,1.1s,baz=209,slow=3.5,SNR=3.1
DBIC LR LR 23 36 43.3
comp=Z,179nm,18.1s,baz=252,slow=37
KIC Kosan Boka 78.56 86 *e*PKP2 **P 22 59 49.1 -0.1**
comp=Z,514nm,1.5s
VIEF Viey 78.97 48⇑*eP* **P 22 59 51.1 0.0**
EPF Esparros 79.20 48 *eP* **P 22 59 52.4 +0.1**
EPF pmax pmax
comp=Z,28nm,0.8s
LFF La Frestale 79.36 46 *eP* **P 22 59 52.7 -0.3**
LFF pmax pmax
comp=Z,35nm,1.0s
MELF Melles 79.51 48⇑*eP* **P 22 59 55.6 +1.6**
SALF Salau 79.84 48⇑*eP* **P 22 59 55.9 +0.1**
CAF Calviac 80.30 46 *eP* **P 22 59 57.7 -0.5**
CAF pmax pmax
comp=Z,28nm,1.0s
RAR Rarotonga 80.44 246 P **P 23 00 00.4 +1.2**
comp=Z,14nm,0.7s,baz=158,slow=1.6,SNR=3.6
VALF Valcebollere 80.48 49⇑*eP* **P 22 59 59.2 -0.1**
CARF Carcanieres 80.52 48⇑*eP* **P 22 59 58.5 -1.0**
VERF Verneugheol 80.53 45 *eP* **P 22 59 59.9 +0.5**
FILF Fillols 80.86 48⇑*eP* **P 23 00 00.4 -0.9**
PYM Petit Puy Mans 80.89 45 *eP* **P 23 00 01.9 +0.5**
AGO Saint Agoulin 80.95 45 *eP* **P 23 00 03.1 +1.5**
ASK Askoy 80.98 30 *eP* **P 23 00 01.9 +0.5**
AVF Avril sur Loir 81.04 44 *eP* **P 23 00 00.9 -1.1**
AVF pmax pmax
comp=Z,17nm,0.8s
BER Bergen 81.06 30 *eP* **P 23 00 01.6 -0.2**
BER *e*S **S 23 10 02.9 -2.0**
SJAF Saint Jean de 81.11 48⇑*eP* **P 23 00 01.9 -0.6**
KMY Karmoy 81.11 31 *eP* **P 23 00 02.5 +0.4**
KMY *e* 23 10 01.6
LBL Lubilhac 81.11 46 *eP* **P 23 00 03.6 +1.1**
PLDF La Plantade 81.30 45 *eP* **P 23 00 03.9 +0.4**
BAIF Baives 81.31 41 *eP* **P 23 00 03.7 +0.3**
BAIF pmax pmax
comp=Z,44nm,1.4s
SNF Seneffe 81.31 40 P **P 23 00 04.8 +1.4**
KBS Kingsbay 81.33 11 *eP* **P 23 00 04.1 +1.2**
KBS *e* 23 03 07.1
KBS Kingsbay 81.33 11 *eP* **P 23 00 03.5 +0.5**
KBS pmax pmax
comp=Z,100nm,1.0s
KBS Kingsbay 81.33 11 *eP* **P 23 00 03.5 +0.5**
comp=Z,100nm,1.0s
UCC Uccle 81.34 40 P **P 23 00 02.9 -0.6**
STAV Stavanger 81.37 32 *eP* **P 23 00 02.7 -0.8**
STAV *e*S **S 23 10 04.5 -3.6**
HYA Hoyanger 81.41 29 *eP* **P 23 00 05.8 +2.2**
DOU Dourbes 81.55 41 P **P 23 00 04.8 +0.1**
comp=Z,18nm,1.6s
AKN Aaknes 81.69 28 *eP* **P 23 00 04.1 -1.1**
AKN IAmb IAmb 23 00 06.3
comp=Z,69nm,1.2s
AKN *e*S **S 23 10 11.9 +0.4**
BLS5 Blasjo 81.71 31 *eP* **P 23 00 04.1 -1.2**
ODD1 Odda 81.74 31 *eP* **P 23 00 06.1 +0.6**
ODD1 IAmb IAmb 23 00 07.0
comp=Z,79nm,1.2s
BCLA Clavier 81.97 40 P **P 23 00 07.0 +0.1**
SSB Saint Sauveur 82.01 45 *eP* **P 23 00 08.0 +0.7**
SSB Saint Sauveur 82.01 45 *eP* **P 23 00 06.5 -0.8**
SSB pmax pmax
comp=Z,14nm,0.8s
SSB Saint Sauveur 82.01 45 *eP* **P 23 00 06.5 -0.8**
comp=Z,14nm,0.8s
VIVF Saint-Julien-l 82.15 46 *eP* **P 23 00 08.1 +0.1**
VIVF pmax pmax
comp=Z,38nm,0.9s
BEBN Eben Emael 82.17 40 P **P 23 00 07.2 -0.6**
SNART Snartemo 82.21 32 *eP* **P 23 00 09.9 +2.0**
SPA0 Spitsbergen Ar 82.33 12 *eP* **P 23 00 07.5 -0.8**
HGN Heimansgroeve 82.33 40 *eP* **P 23 00 07.4 -1.3**
comp=Z,95nm,1.4s
HGN Heimansgroeve 82.33 40 *eS* **S 23 10 17.3 -1.2**
MEM Membach 82.40 40 P **P 23 00 09.6 +0.6**
comp=Z,27nm,1.4s
HSPB Hornsund (broa 82.40 13 *eP* **P 23 00 08.5 -0.1**
HSPB *e* 23 03 18.3
HSPB *e*S **S 23 10 17.6 -0.7**
WLF Walferdange 82.60 41 P **P 23 00 11.0 +0.8**
comp=Z,31nm,1.0s
WLF Walferdange 82.60 41 *eP* **P 23 00 10.3 +0.1**
WLF pmax pmax
comp=Z,47nm,0.9s
WLF Walferdange 82.60 41 *eP* **P 23 00 10.3 +0.1**
comp=Z,47nm,0.9s
WTSB Winterswijk 82.73 39 *eP* **P 23 00 09.4 -1.4**
comp=Z,349nm,1.7s
CABF La Chapelle 82.93 44 *eP* **P 23 00 13.0 +0.9**
CABF pmax pmax
comp=Z,23nm,1.0s
KONO Kongsberg 83.27 31 *eP* **P 23 00 13.3 -0.1**
LOMF Lomont 83.34 43⇑*eP* **P 23 00 12.9 -1.2**
ECH Echery 83.44 42⇑*eP* **P 23 00 13.6 -1.0**
MOF Molkenrain 83.48 43⇑*eP* **P 23 00 13.6 -1.3**
MUD Monsted U'grnd 83.51 34⇑*iP* **P 23 00 14.3 -0.4**
MUD Monsted U'grnd 83.51 34⇑*iP* **P 23 00 14.3 -0.4**
LPL La Plagne 83.52 45 *eP* **P 23 00 15.9 +0.6**
LPL pmax pmax
comp=Z,11nm,0.9s
LPG La Plagne 83.53 45 *eP* **P 23 00 16.1 +0.6**
LPG pmax pmax
comp=Z,9.0nm,0.9s
WLS Welschbruch 83.55 42⇑*eP* **P 23 00 15.2 +0.1**
NSS Namsos 83.59 26 *eP* **P 23 00 15.2 +0.3**
LANF Langenberg 83.76 41⇑*eP* **P 23 00 15.8 -0.4**
SET Setif 83.78 54 P **P 23 00 19.0 +2.3**
TORD Torodi Ar. Bea 83.78 78 P **P 23 00 16.3 -0.7**
comp=Z,20nm,0.7s,baz=279,slow=4.1,SNR=98
TORD PKKPbc **PKKPbc 23 18 33.9 +1.3**
comp=Z,1.6nm,0.9s,baz=83,slow=1.6,SNR=3.9
TORD PKPPKP **P'P'df 23 26 41.0 +0.5**
comp=Z,1.4nm,0.8s,baz=58,slow=2.1,SNR=8.4
TORD LR LR 23 35 49.6
comp=Z,586nm,20.8s,baz=285,slow=34
NB2 NORSAR Subarra 83.84 29 P **P 23 00 15.7 -0.7**
comp=Z,131nm,1.2s,baz=280,slow=5.1
NB2 NORSAR Subarra 83.84 29 P **P 23 00 15.7 -0.7**
baz=280,slow=5.1
NB2 NORSAR Subarra 83.84 29 P **P 23 00 15.2 -1.2**
NB2 pmax pmax
comp=Z,121nm,1.4s
NOA NORSAR Array B 83.84 29 P **P 23 00 15.8 -0.7**
comp=Z,28nm,0.9s,baz=278,slow=5.0,SNR=82
NOA PKKPbc **PKKPbc 23 18 33.8 -0.4**
comp=Z,0.5nm,0.7s,baz=246,slow=3.0,SNR=3.4
NOA LR LR 23 33 43.8
comp=Z,535nm,22.0s,baz=305,slow=33
BJO Bjornoya 83.87 15 *eP* **P 23 00 15.8 -0.4**
CALN Calern 83.87 47⇑*eP* **P 23 00 16.3 -0.7**
MVIF Mont Vial 84.04 47⇑*eP* **P 23 00 17.4 -0.5**
NC602 NORSAR Array S 84.05 29 *eP* **P 23 00 17.3 -0.1**
DFRA Djebel Bou Aff 84.12 54 P **P 23 00 19.5 +1.1**
LUCF Luceram 84.18 47 *eP* **P 23 00 19.4 +0.9**
BFO Black Forest 84.20 42 *ceP* **P 23 00 19.0 +0.5**
BFO Black Forest 84.20 42 *eP* **P 23 00 18.9 +0.4**
comp=Z,22nm,0.9s
REVF Revere 84.22 47⇑*eP* **P 23 00 19.1 +0.4**
CTEI Djebel Teioual 84.61 54 P P 23 00 26.6 +5.7

HOPEN	**Hopen**	84.63	13	*e*P		**P**	23 00 20.0	-0.1
CASM	**Ain Smara**	84.65	54	P		P	23 00 26.0	+5.0
STU	**Stuttgart**	84.70	42	*e*P		**P**	23 00 22.0	+1.0
STU				pmax	pmax			
	comp=Z,27nm,0.8s							
STU	**Stuttgart**	84.70	42	*e*P		**P**	23 00 22.0	+1.0
	comp=Z,27nm,0.8s							
CKFL	**Kef-Lekhel**	84.81	54	P		**P**	23 00 22.1	+0.2
TRO	**Tromso**	85.11	20	*e*P		**P**	23 00 22.4	-0.1
TRO				*e*S		**S**	23 10 39.0	-6.7
TUE	**Stuetta**	85.18	44	*e*P		**P**	23 00 24.2	+0.6
	comp=Z,26nm,0.8s							
CMAH	**Djebel Manchou**	85.33	54	P		**P**	23 00 24.0	-0.5
COP	**Copenhagen**	85.44	34	*i* P		**P**	23 00 25.2	+0.8
	comp=Z,23nm,0.8s							
COP	**Copenhagen**	85.44	34	*i* P		**P**	23 00 25.2	+0.8
COP				pmax	pmax			
	comp=Z,23nm,0.8s							
GRF	**Grafenberg Arr**	85.85	40	P		**P**	23 00 28.4	+1.7
TAM	**Tamanrasset**	85.89	68	*e*P		**P**	23 00 28.4	+0.9
TAM				pmax	pmax			
	comp=Z,37nm,1.3s							
TAM	**Tamanrasset**	85.89	68	*e*P		**P**	23 00 28.4	+0.9
	comp=Z,38nm,1.3s							
RGN	**Rugen**	86.17	35	*e*P		**P**	23 00 28.5	+0.4
	comp=Z,141nm,0.9s							
VSL	**Villasalto**	86.38	51	*e*P		**P**	23 00 29.9	+0.4
	comp=Z,58nm,0.8s							
NKC	**Novy Kostel**	86.53	40	*e*P		**P**	23 00 30.2	+0.2
NKC				*e*S		**S**	23 11 01.3	+0.9
NKC				AMS	AMS		23 33 40.0	
	comp=Z,1µm,21.0s							
NKC	**Novy Kostel**	86.53	40	*e*P		**P**	23 00 30.2	+0.2
NKC				*e*			23 11 01.3	
NKC				MLR	MLR			
	comp=Z,1µm,21.0s							
CLL	**Collm**	86.65	39	*e*P		**P**	23 00 31.0	+0.5
	comp=Z,97nm,1.5s							
CLL				*e*			23 00 51.0	
CLL				*e*PP		**PP**	23 03 58.0	+4.7
CLL				*e*SKSac		**SKSac**	23 10 46.0	-4.5
CLL				*e*S		**SKSac**	23 11 00.0	+1.1
CLL				*e*S		**SKSac**	23 11 00.0	+1.1
CLL				*e*SS		**SS**	23 16 44.0	+0.4
CLL				L		L	23 34 00.0	
	comp=Z,900nm,21.3s							
CLL	**Collm**	86.65	39	*e*P		**P**	23 00 31.0	+0.5
CLL				*e*S		**SKKSac**	23 11 00.0	+1.1
CLL				pmax	pmax			
	comp=Z,97nm,1.5s							
CLL				MLR	MLR			
	comp=Z,900nm,21.3s							
KTK1	**Kautokeino**	86.76	20	*e*P		**P**	23 00 29.1	-1.7
BSD	**Bornholm Skovb**	86.95	35⇑	*i*P		**P**	23 00 30.7	-1.2
	comp=Z,178nm,0.8s							
BSD	**Bornholm Skovb**	86.95	35⇑	*i*P		**P**	23 00 30.7	-1.2
BSD				pmax	pmax			
	comp=Z,180nm,0.8s							
KEST	**Kesra**	87.02	54	P		**P**	23 00 32.5	-0.3
	comp=Z,43nm,0.8s,baz=266,slow=2.6,SNR=31							
WET	**Wettzell**	87.02	41	P		**P**	23 00 32.7	+0.3
BRG	**Berggiesshubel**	87.32	39	*e*P		**P**	23 00 34.4	+0.6
	comp=Z,107nm,1.6s							
BRG				PP		**PP**	23 04 01.0	+2.3
BRG				SKS		**SKSac**	23 10 55.0	+0.3
BRG				S		**S**	23 11 10.0	+2.0
BRG				SS		**SS**	23 16 51.0	-2.5
	comp=N,736nm,19.9s							
	comp=E,272nm,22.2s							
	comp=Z,865nm,18.9s							
BRG	**Berggiesshubel**	87.32	39	*e*P		**P**	23 00 34.4	+0.6
BRG							23 04 01.0	
BRG							23 10 55.0	
BRG				S		**S**	23 11 10.0	+2.0
BRG				SS		**SS**	23 16 51.0	-2.5
BRG				pmax	pmax			
	comp=Z,107nm,1.7s							
BRG				MLR	MLR			
	comp=N,736nm,19.9s							
BRG				MLR	MLR			
	comp=E,272nm,22.2s							
BRG				MLR	MLR			
	comp=Z,865nm,18.9s							
ARCES	**ARCESS Array B**	87.33	19	P		**P**	23 00 31.8	-1.7
	comp=Z,20nm,0.7s,baz=287,slow=3.1,SNR=35							
ARCES				PP		**PP**	23 03 58.0	-0.2
	comp=Z,6.4nm,0.8s,baz=307,slow=8.6,SNR=6.3							
ARCES				PKKPbc		**PKKPbc**	23 18 24.4	-1.7
	comp=Z,1.7nm,0.7s,baz=118,slow=1.8,SNR=8.3							
ARE0	**ARCESS Array S**	87.33	19	*e*P		**P**	23 00 32.4	-1.1
ARE0				IAmb	IAmb		23 00 33.7	
	comp=Z,107nm,1.5s							
KHC	**Kasperske Hory**	87.47	41	*e*P		**P**	23 00 34.6	0.0
KHC				*e*x		x	23 00 40.0	
KHC				*e*SKS		**SKSac**	23 10 53.4	-2.4
KHC				*e*S		**S**	23 11 10.3	+0.7
KHC				AMS	AMS		23 31 50.0	
	comp=Z,1µm,22.5s							
KHC	**Kasperske Hory**	87.47	41	*e*P		**P**	23 00 34.6	0.0
KHC				*e*			23 10 53.4	
KHC				*e*S		**S**	23 11 10.3	+0.7
KHC				MLR	MLR			
	comp=Z,1µm,22.5s							
KHC	**Kasperske Hory**	87.47	41	*e*P		**P**	23 00 34.7	+0.1
	comp=Z,55nm,1.9s							
GERES	**GERESS Array B**	87.61	41	P		**P**	23 00 34.9	-0.5
	comp=Z,5.9nm,0.7s,baz=270,slow=2.5,SNR=42							
GERES				PKKPbc		**PKKPbc**	23 18 22.8	-2.0
	comp=Z,0.7nm,0.7s,baz=111,slow=3.4,SNR=7.1							
GERES				PKPPKP		**P'P'df**	23 26 30.4	-1.8
	comp=Z,0.4nm,0.7s,baz=0.0,slow=0.4,SNR=4.0							
KEV	**Kevo**	87.73	19	*e*P		**P**	23 00 34.3	-1.0
KEV				pmax	pmax			
	comp=Z,53nm,1.4s							
KEV	**Kevo**	87.73	19	*e*P		**P**	23 00 34.3	-1.0
	comp=Z,53nm,1.4s							
KBA	**Koelnbreinsper**	87.76	43	P		**P**	23 00 37.6	+1.4
PVCC	**Panska Ves**	87.79	39	*e*P		**P**	23 00 37.6	+1.6
PVCC				*e*SKS		**SKSac**	23 10 55.7	-1.8
PVCC				*e*S		**S**	23 11 13.0	+0.6
PVCC				AMS	AMS		23 34 40.0	
	comp=Z,800nm,20.4s							
PVCC	**Panska Ves**	87.79	39	*e*P		**P**	23 00 37.6	+1.6
PVCC				*e*			23 10 55.7	
PVCC				*e*S		**S**	23 11 13.0	+0.6
PVCC				MLR	MLR			
	comp=Z,800nm,20.4s							
BILL	**Biilibino**	87.84	339⇓	*i*P		**P**	23 00 35.8	-0.1
BILL				*e*			23 03 57.5	
BILL				*i* S		**SKSac**	23 10 54.0	-3.1
BILL				pmax	pmax			
	comp=Z,41nm,1.4s							
BILL				MLR	MLR			
	comp=Z,2µm,20.0s							
BILL	**Bilibino**	87.84	339	*e*P		**P**	23 00 35.8	-0.1
	comp=Z,29nm,1.0s							
PRU	**Pruhonice**	87.89	40	*e*P		**P**	23 00 36.6	0.0
PRU				*e*SKS		**SKSac**	23 10 58.5	+0.3
PRU				*e*S		**S**	23 11 14.7	+1.2
PRU				*e*SS		**SS**	23 17 05.0	+3.2
PRU				AMS	AMS		23 34 30.0	
	comp=Z,1µm,21.2s							
PRU	**Pruhonice**	87.89	40	*e*P		**P**	23 00 36.6	0.0
PRU				*e*			23 10 58.5	
PRU				*e*S		**S**	23 11 14.7	+1.2
PRU				*e*SS		**SS**	23 17 05.0	+3.2
PRU				MLR	MLR			
	comp=Z,1µm,21.2s							
GOPC	**GO Pecny, Ondr**	88.06	40	*e*P		**P**	23 00 38.4	+1.0
GOPC				*e*SKS		**SKSac**	23 10 58.3	-1.0
GOPC				*e*S		**S**	23 11 16.3	+1.1
GOPC				*e*SS		**SS**	23 17 04.4	0.0
GOPC				AMS	AMS		23 34 40.0	
	comp=Z,1µm,19.5s							
GOPC	**GO Pecny, Ondr**	88.06	40	*e*P		**P**	23 00 38.4	+1.0
GOPC				*e*			23 10 58.3	
GOPC				*e*S		**S**	23 11 16.3	+1.1
GOPC				*e*SS		**SS**	23 17 04.4	0.0
GOPC				MLR	MLR			
	comp=Z,1µm,19.5s							
CADS	**Cadrg**	88.21	43	*e*P		**P**	23 00 37.4	-0.8
TRI	**Trieste**	88.34	44	*e*P		**P**	23 00 39.9	+1.1
TRI				pmax	pmax			
	comp=Z,23nm,0.9s							
TRI	**Trieste**	88.34	44	*e*P		**P**	23 00 39.9	+1.1
	comp=Z,23nm,0.9s							
TREC	**Trest**	88.65	40	AMS	AMS		23 32 30.0	
	comp=Z,1µm,21.2s							
UPC	**Upice**	88.69	39	*e*P		**P**	23 00 40.4	+0.1
UPC				*e*SKS		**SKSac**	23 11 00.8	-2.1
UPC				*e*S		**S**	23 11 21.2	+0.2
UPC				*e*SS		**SS**	23 17 08.0	-5.4
UPC				AMS	AMS		23 35 20.0	
	comp=Z,1µm,22.2s							
UPC	**Upice**	88.69	39	*e*P		**P**	23 00 40.4	+0.1
UPC				*e*			23 11 00.8	
UPC				*e*S		**S**	23 11 21.2	+0.2
UPC				MLR	MLR			
	comp=Z,1µm,22.2s							
KSP	**Ksiaz**	88.78	39	*e*P		**P**	23 00 41.1	+0.4
KSP	**Ksiaz**	88.78	39	*e*P		**P**	23 00 41.1	+0.4
LJU	**Ljubljana**	88.78	44	*e*P		**P**	23 00 40.6	-0.3
	comp=Z,256nm,2.1s							
LJU				*e*S		**S**	23 11 20.4	-1.7
AQU	**L'Aquila**	88.82	47	*e*P		**P**	23 00 42.1	+1.0
AQU				pmax	pmax			
	comp=Z,11nm,0.8s							
AQU	**L'Aquila**	88.82	47	*e*P		**P**	23 00 42.1	+1.0
	comp=Z,11nm,0.8s							
DPC	**Dobruska-Polom**	88.92	39	*e*P		**P**	23 00 41.4	-0.1
DPC				*e*x		x	23 00 55.0	
DPC				*e*SKS		**SKSac**	23 11 04.4	0.0
DPC				*e*S		**S**	23 11 23.7	+0.4
DPC				*e*x		x	23 17 02.9	
DPC				AMS	AMS		23 35 20.0	
	comp=Z,1µm,21.3s							
DPC	**Dobruska-Polom**	88.92	39	*e*P		**P**	23 00 41.4	-0.1
DPC				*e*			23 00 55.0	
DPC				*e*			23 11 04.4	
DPC				*e*S		**S**	23 11 23.7	+0.4
DPC				MLR	MLR			
	comp=Z,1µm,21.3s							
PERS	**Pernice**	89.04	43	*e*P		**P**	23 00 40.8	-1.3
KRLC	**Kraliky**	89.28	39	*e*P		**P**	23 00 44.1	+1.0
KRLC	**Kraliky**	89.28	39	*e*P		**P**	23 00 44.1	+1.0
VRAC	**Vranov**	89.35	40⇑	*i*P		**P**	23 00 42.8	-0.7
BOJS	**Bojanci**	89.40	44	*e*P		**P**	23 00 43.2	-0.6
SOP	**Sopron**	89.74	42⇑	*e*P		**P**	23 00 44.8	-0.5
SOP	**Sopron**	89.74	42	P		**P**	23 00 47.8	+2.5
MORC	**Moravsky Berou**	89.83	39⇑	*i*P		**P**	23 00 46.2	+0.5
KOGS	**Kog**	89.85	43	*e*P		**P**	23 00 44.9	-0.9
KOGS				*e*SKSac		**SKSac**	23 11 08.2	-1.7
KOGS				*e*S		**S**	23 11 28.7	-3.2
AFI	**Afiamalu**	90.08	256	P		**P**	23 00 49.3	+1.7
	comp=Z,35nm,0.8s,baz=18,slow=4.5,SNR=5.4							
RAC	**Raciborz**	90.15	39	*e*P		**P**	23 00 47.4	+0.3
RAC				MLR	MLR			
	comp=Z,900nm,20.5s							
OKC	**Ostrava-Krasne**	90.19	39	*e*P		**P**	23 00 49.1	+1.8
OKC				*e*SKS		**SKSac**	23 11 10.3	-1.4
OKC				*e*S		**S**	23 11 35.8	+0.9
OKC				AMS	AMS		23 36 50.0	
	comp=Z,1µm,20.5s							
OKC	**Ostrava-Krasne**	90.19	39	*e*P		**P**	23 00 49.1	+1.8
OKC				*e*			23 11 10.3	
OKC				*e*S		**S**	23 11 35.8	+0.9
OKC				MLR	MLR			
	comp=Z,1µm,20.5s							
FINES	**FINESS Array B**	90.63	27	P		**P**	23 00 47.5	-1.6
	comp=Z,20nm,0.9s,baz=270,slow=2.1,SNR=31							
FINES	**FINESS Array B**	90.63	27	P		**P**	23 00 47.5	-1.6
FINES				pmax	pmax			
	comp=Z,13nm,0.7s							
APA	**Apatity**	90.80	20⇑	*i*P		**P**	23 00 49.0	-0.8
APA				*i*			23 04 25.0	
APA				*i* S		**S**	23 11 37.0	-2.8
BLY	**Banja Luka**	90.92	44⇑	*i*P		**P**	23 00 51.5	+0.7
CSKK	**Cs'‡kako**	90.94	42⇑	*e*P		**P**	23 00 51.0	+0.1
VYHS	**Vyhne**	91.00	40	*e*P		**P**	23 00 51.9	+0.7
VYHS				*e*			23 11 15.4	
VYHS				*e*S		**S**	23 11 41.7	-0.8
VYHS				pmax	pmax			
	comp=Z,36nm,1.9s							
VYHS	**Vyhne**	91.00	40	*e*P		**P**	23 00 51.9	+0.7
VYHS				*e*			23 11 15.4	
VYHS				*e*S		**S**	23 11 41.7	-0.8
LVZ	**Lovozero**	91.05	19	*e*P		**P**	23 00 51.7	+0.7
LVZ				pmax	pmax			
	comp=Z,54nm,1.3s							
OJC	**Ojcow**	91.10	39	*e*P		**P**	23 00 51.9	+0.3
OJC	**Ojcow**	91.10	39	*e*P		**P**	23 00 51.9	+0.3
CUC	**Castrocucco**	91.13	49	*e*P		**P**	23 00 52.5	+0.5
	comp=Z,5.9nm,1.0s							
LANS	**Liptovska Anna**	91.21	40	*e*		**P**	23 00 47.6	-4.6
LANS	**Liptovska Anna**	91.21	40	*e*P		**P**	23 00 53.7	+1.5
BEL	**Belsk**	91.21	37	*e*P		**P**	23 00 53.7	+1.7
BEL	**Belsk**	91.21	37	*e*P		**P**	23 00 53.7	+1.7
MATE	**Matera**	91.63	48⇑	*i*P		**P**	23 00 55.0	+0.8
NIE	**Niedzica**	91.65	39	*e*P		**P**	23 00 55.4	+1.2
NIE	**Niedzica**	91.65	39	*e*P		**P**	23 00 55.4	+1.2
PSZ	**Piszkesteto**	91.84	41⇓	*i*P		**P**	23 00 58.1	+2.9
PSZ	**Piszkesteto**	91.84	41⇑	*e*P		**P**	23 00 55.4	+0.2
PSZ	**Piszkesteto**	91.84	41	*e*P		**P**	23 00 56.2	+1.0
PSZ				pmax	pmax			
	comp=Z,70nm,1.5s							
PSZ	**Piszkesteto**	91.84	41	*e*P		**P**	23 00 56.1	+1.0
	comp=Z,70nm,1.5s							
SUW	**Suwalki**	91.87	34	*e*P		**P**	23 00 55.5	+0.4
SUW	**Suwalki**	91.87	34	*e*P		**P**	23 00 55.5	+0.4
TIP	**Timpagrande**	92.04	50⇑	*i*P		**P**	23 00 55.5	-0.8
TIP	**Timpagrande**	92.04	50	*e*P		**P**	23 00 56.2	-0.1
	comp=Z,5.4nm,0.8s							
KECS	**Kecovo**	92.05	40	*e*P		**P**	23 00 56.1	+0.1
KECS				pmax	pmax			
	comp=Z,6.0nm,1.2s							
KECS	**Kecovo**	92.05	40	*e*P		**P**	23 00 56.1	+0.1
VSU	**Vasula**	92.09	29	*e*P		**P**	23 00 55.9	0.0
VSU				pmax	pmax			
	comp=Z,116nm,1.4s							
STHS	**Stebnicka Huta**	92.24	39	*e*P		**P**	23 00 59.4	+2.5
STHS				pmax	pmax			
	comp=Z,6.0nm,1.3s							
STHS	**Stebnicka Huta**	92.24	39	*e*P		**P**	23 00 59.3	+2.4
CRVS	**Cervenica-Dubn**	92.53	39	*e*P		**P**	23 01 00.3	+2.0
CRVS				*e*S		**S**	23 11 54.2	-2.1
CRVS	**Cervenica-Dubn**	92.53	39	*e*P		**P**	23 01 00.3	+2.0
PDG	**Podgorica**	93.00	46⇑	*i*P		**P**	23 01 01.2	+0.7
KOLS	**Kolonicke sedl**	93.03	39	*e*P		**P**	23 01 02.5	+1.9
KOLS				pmax	pmax			
	comp=Z,34nm,1.7s							
KOLS	**Kolonicke sedl**	93.03	39	*e*P		**P**	23 01 02.5	+1.9
KOLS	**Kolonicke sedl**	93.03	39	*e*S		**S**	23 11 59.2	-1.5
KWP	**Kalwaria Pacla**	93.07	39	*e*P		**P**	23 01 02.8	+2.0
KWP	**Kalwaria Pacla**	93.07	39⇑	*i*P		**P**	23 01 02.7	+2.0
KWP	**Kalwaria Pacla**	93.07	39	*e*P		**P**	23 01 02.8	+2.0
UZH	**Uzhgorod**	93.14	40⇑	*i*P		**P**	23 01 01.8	+0.8
UZH				*e**PP		**pP**	23 01 14.8	-7.2
UZH				*e*			23 01 22.9	
UZH				*e*S		**S**	23 12 00.3	-1.3
UZH				*e*PS		**PS**	23 13 23.2	-0.6
UZH				*e*SS		**SS**	23 18 14.2	-3.4
PUL	**Pulkovo**	93.22	27	*e*P		**P**	23 01 02.2	+1.1
PUL				pmax	pmax			
	comp=Z,73nm,0.8s							
BZS	**Buzias**	93.67	43⇑	*i*P		**P**	23 01 04.0	+0.5
LVV	**L'vov**	93.81	38	*e*P		**P**	23 01 04.9	+0.8
MDVR	**Moldovita**	94.00	43⇑	*i*P		**P**	23 01 06.7	+1.6
DRGR		94.01	41⇑	*i*P		**P**	23 01 04.7	-0.5
TMCR	**Tamitsa**	94.20	22	*e*P		**P**	23 01 05.0	-0.5
TMCR				pmax	pmax			
	comp=Z,17nm,1.1s							
VNA3	**Neumayer Olymp**	94.59	162	P		**P**	23 01 07.2	0.0
VNA1	**Neumayer--Stat**	94.86	161	P		**P**	23 01 07.9	-0.4
VNA2	**Neumayer--Watz**	95.21	161	P		**P**	23 01 10.0	0.0
	baz=320,slow=4.5							
BURAR	**Bucovina Array**	95.33	40⇑	*i*P		**P**	23 01 12.9	+1.6
SEY	**Seymchan**	95.34	337	P		**P**	23 01 08.9	-1.9
	comp=Z,3.3nm,0.7s,baz=98,slow=3.0,SNR=6.3							
SEY				PKKPbc		**PKKPdf**	23 18 04.0	-0.8
	comp=Z,2.2nm,0.7s,baz=197,slow=14,SNR=4.5							
SEY	**Seymchan**	95.34	337	*e*P		**P**	23 01 11.1	+0.3
TIXI	**Tiksi**	95.51	350	*d*P		**P**	23 01 10.8	-0.6
TIXI				pmax	pmax			
	comp=Z,7.0nm,0.8s							
TIXI	**Tiksi**	95.51	350	*e*P		**P**	23 01 10.7	-0.6
	comp=Z,6.8nm,0.8s							
ARR	**Arges**	95.75	42⇑	*i*P		**P**	23 01 12.3	-0.9
MPEP	**Malo Peshtene**	95.84	44	*i* P		**P**	23 01 12.9	-0.6
KKB	**Krupnik**	95.88	46	*i* P		**P**	23 01 13.9	+0.1
PGB	**Panagyurishte**	96.41	45	*i* P		**P**	23 01 14.1	-2.1
MMB	**Musomiste**	96.42	46	*i* P		**P**	23 01 16.1	-0.2
KIEV	**Kiev**	96.55	36	*e*P		**P**	23 01 15.5	-1.1
KIEV				pmax	pmax			
	comp=Z,2.0nm,0.8s							
AKASG	**Malin Array Be**	96.56	36	P		**P**	23 01 14.1	-2.5
	comp=Z,0.8nm,0.6s,baz=298,slow=2.9,SNR=8.4							
AKASG				PKKP		**PKKPbc**	23 18 00.2	-1.7
	comp=Z,1.2nm,0.6s,baz=86,slow=2.4,SNR=4.7							
MLR	**Muntele Rosu**	96.57	42⇑	*i*P		**P**	23 01 17.1	+0.1
KLMR	**Klimovskoe**	96.63	24	*e*P		**P**	23 01 14.9	-1.8
KLMR				*e*			23 05 10.5	
KLMR				pmax	pmax			
	comp=Z,72nm,1.5s							
SNAA	**Sanae**	96.81	162	P		**P**	23 01 17.1	-0.2
RZN	**Rozhen**	97.09	46	*i* P		**P**	23 01 19.0	-0.5
SZH	**Strazhica**	97.37	44	*i* P		**P**	23 01 19.5	-1.0
KDZ	**Kurdzhali**	97.59	45	*i* P		**P**	23 01 20.7	-0.8
KIS	**Kishinev**	97.83	39	*e*P		Pdif	23 01 23.0	+0.5
KIS				LRM	MLR		23 38 42.0	
	comp=Z,1µm,22.0s							
KIS	**Kishinev**	97.83	39	*e*P		Pdif	23 01 23.0	+0.5
KIS				*e*			23 11 50.0	
JMB	**Yambol**	98.11	44	*i* P		**P**	23 01 22.6	-1.2
CFR	**Carcaliu**	98.12	41⇓	*i*P		**P**	23 01 23.0	-0.7
OBN	**Obninsk**	98.43	30	*c*eP		**P**	23 01 24.1	-0.8
OBN				*i*			23 05 26.5	
OBN				*i* S		**SKSac**	23 11 52.1	-3.8
OBN				*i* PS		**PS**	23 14 24.0	+2.9
OBN				*i* SS		**SS**	23 19 39.5	+7.7
OBN				pmax	pmax			
	comp=Z,10.0nm,1.1s							
SIM	**Simferopol'**	102.05	40	P		**Pdif**	23 01 44.9	+3.6
SIM				*e*S		**Sdif**	23 13 10.0	-7.7
SIM				*e*SS		**SS**	23 20 22.0	-0.8
BRTR	**Keskin Array B**	104.09	45	Pdiff		**Pdif**	23 01 49.9	-0.8
	comp=Z,0.6nm,0.9s,baz=286,slow=5.8,SNR=4.4							
BRTR				PKiKP		**PKiKP**	23 06 07.3	-0.3
	comp=Z,0.6nm,0.6s,baz=17,slow=1.3,SNR=3.9							
BRTR				PKKPbc		**PKKPbc**	23 17 39.3	-1.0
	comp=Z,2.1nm,0.7s,baz=147,slow=4.8,SNR=12							
KBZ	**Khabaz**	108.08	37	PKiKP		**PKiKP**	23 06 14.9	+0.3
	comp=Z,1.9nm,0.7s,baz=189,slow=4.7,SNR=4.5							
BOD	**Bodaibo**	110.69	350	*e*PKIKP		**PKiKP**	23 06 11.6	-7.5
BOD				pmax	pmax			
	comp=Z,25nm,1.3s							
SYO	**Syowa Base**	111.10	161⇑	*e*PKiKP		**PKiKP**	23 06 21.0	+1.5
BOSA	**Boshof**	111.80	117	PKKPbc	PKKPbc		23 17 17.6	+1.8
	comp=Z,2.6nm,0.8s,baz=76,slow=4.0,SNR=5.6							
LBTB	**Lobatse**	112.07	113	PKKPbc	PKKPbc		23 17 16.1	+1.3
	comp=Z,3.5nm,0.8s,baz=131,slow=4.3,SNR=4.5							
ABKAR	**Akbulak array**	113.02	25	*e*PKP		**PKiKP**	23 06 23.6	-0.2
BVAR	**Borovoye Array**	113.47	16	PKiKP		**PKiKP**	23 06 23.6	-0.9
	comp=Z,1.6nm,0.6s,baz=289,slow=0.7,SNR=9.1							
BVAR				PP	PP		23 07 07.9	-7.9
	comp=Z,2.2nm,0.8s,baz=320,slow=4.4,SNR=4.7							
BVAR				PKKPab		**PKKPab**	23 17 18.2	-0.3
	comp=Z,0.6nm,0.6s,baz=79,slow=3.2,SNR=3.7							
LSZ	**Lusaka**	114.05	102	PKKPbc	PKKPbc		23 17 10.0	+2.1
	comp=Z,3.0nm,0.7s,baz=174,slow=5.6,SNR=4.0							
LSZ	**Lusaka**	114.05	102	*e*PKIKP	PKPdf		23 06 27.1	+0.3
LSZ	**Lusaka**	114.05	102	*e*PKP	PKPdf		23 06 27.1	+0.3
LSZ				PKKPbc		**PKKPbc**	23 17 10.0	+2.1
ZALV	**Zalesovo Beam**	115.51	7	PKP		**PKPdf**	23 06 27.0	-1.4
	comp=Z,1.3nm,0.5s,baz=257,slow=2.4,SNR=10							
ZALV				PP	PP		23 07 21.6	-8.5
	comp=Z,7.6nm,0.9s,baz=339,slow=7.0,SNR=6.3							
ZALV				PKKPbc		**PKKPbc**	23 17 01.4	-2.6
	comp=Z,0.8nm,0.7s,baz=180,slow=2.8,SNR=3.8							
ZALV	**Zalesovo Beam**	115.51	7	PKIKP		**PKPdf**	23 06 27.0	-1.4
ZALV							23 17 01.4	
ZALV				pmax	pmax			
	comp=Z,3.0nm,0.8s							
USRK	**Ussuriysk Ar.**	116.78	332	PKP		**PKPdf**	23 06 31.8	+0.6
	comp=Z,2.1nm,0.7s,baz=40,slow=1.4,SNR=5.0							
MDJ	**Mudanjiang**	117.54	333	Pdif		**Pdif**	23 02 48.9	-1.3
MDJ				PKP		**PKPdf**	23 06 31.9	-0.8
MDJ				PP		**PP**	23 07 48.4	+3.7
MDJ				LR	LR			
	comp=Z,2µm,16.9s							
MDJ				LR	LR			
	comp=Z,2µm,21.8s							

comp=Z,170nm,4.7s
KSH LR LR
comp=Z,960nm,10.9s
KSH LR LR
comp=Z,840nm,12.1s
KSH LR LR
comp=Z,2μm,15.1s
BANOM Banah 127.46 46 PKPdf **PKPdf 23 06 49.9 -2.4**
ASHO Ashiyiah 128.04 48 PKPdf **PKPdf 23 06 52.2 -1.2**
SNR=6.1
BIDO Bidbid 130.25 47 PKPdf **PKPdf 23 06 55.4 -2.2**
CTA Charters Tower 130.46 252 PKP **PKPdf 23 06 58.6 +0.6**
comp=Z,18nm,1.0s,baz=139,slow=2.1,SNR=9.7
CTA Charters Tower 130.46 252 PKIKP **PKPdf 23 07 00.8 +2.7**
CTA pmax pmax
comp=Z,10.0nm,0.8s
SMDO Samad 130.47 48 PKPdf **PKPdf 23 06 55.7 -2.5**
SNR=8.6
GTA Gaotai 130.59 356 *e*PKP **PKPdf 23 06 59.0 +1.0**
GTA sPKP 23 07 36.8
GTA PP **PP 23 09 17.4 +5.4**
GTA SKS **SKSdf 23 14 01.3 -1.8**
GTA SKKS **SKKSac 23 15 59.8 -3.4**
GTA SS **SS 23 26 34.8 +1.0**
GTA AMB AMB
comp=Z,380nm,9.3s
GTA LR LR
comp=Z,4μm,15.0s
GTA LR LR
comp=Z,3μm,15.9s
GTA LR LR
comp=Z,3μm,16.4s
WSAR Wadi Sarin 130.78 47 PKP **PKPdf 23 06 58.1 -0.6**
comp=Z,18nm,1.2s,baz=260,slow=11,SNR=8.8
WSAR SKPbc **SKPab 23 10 16.4 +0.1**
comp=Z,38nm,1.1s,baz=278,slow=2.2,SNR=9.4
STKA Stephens Creek 132.52 236 PKhKP PKPpre 23 06 52.1
comp=Z,3.2nm,0.7s,baz=132,slow=2.9,SNR=6.0
STKA PKP **PKPdf 23 07 00.8 -0.8**
comp=Z,10nm,0.8s,baz=323,slow=3.3,SNR=9.4
STKA SKPbc **SKPab 23 10 25.2 +1.8**
comp=Z,5.4nm,1.0s,baz=87,slow=11,SNR=3.8
NJ2 Nanjing 132.63 333 *e*PKP **PKPdf 23 07 02.9 +1.0**
NJ2 PP **PP 23 09 24.8 -0.6**
NJ2 LR LR
comp=Z,2μm,23.6s
NJ2 LR LR
comp=Z,1μm,18.1s
NJ2 LR LR
comp=Z,2μm,20.8s
LZH Lanzhou 133.43 351 *e*PKP **PKPdf 23 07 03.0 -0.5**
LZH PP **PP 23 09 35.3 +5.0**
LZH PKS **PKSdf 23 10 34.0 -6.1**
LZH SKS **SKSdf 23 14 05.0 -3.4**
LZH SKKS **SKKSac 23 16 16.5 -4.3**
LZH SS **SS 23 27 09.8 +1.3**
LZH AMB AMB
comp=Z,670nm,7.0s
LZH LR LR
comp=Z,3μm,17.5s
LZH LR LR
comp=Z,4μm,18.0s
LZH LR LR
comp=Z,5μm,20.3s
XAN Xi'an 134.36 345 PKP **PKPdf 23 07 04.8 -0.4**
JAY Jayapura 134.79 277 PKP **PKPdf 23 07 07.3 +0.8**
CD2 Chengdu 138.51 350 PKP **PKPdf 23 07 11.6 -1.3**
CD2 PP **PP 23 10 01.8 -0.3**
CD2 SKKS 23 16 48.4
CD2 SS **SS 23 28 10.0 +1.0**
CD2 AMB AMB
comp=Z,720nm,9.0s
CD2 LR LR
comp=Z,6μm,11.4s
CD2 LR LR
comp=Z,4μm,15.6s
QZH Quanzhou 138.68 328 PKP PKPpre 23 07 06.3
PYUN Piuthan 140.04 18 *e*P PKPpre 23 07 09.0
LSA Lhasa 140.17 6 *e*PKIKP **PKPdf 23 07 16.4 -0.2**
LSA Lhasa 140.17 6 *e*PKPdf **PKPdf 23 07 16.4 -0.2**
KOLN Koldanda 140.53 17 *e*P PKPpre 23 07 09.0
comp=Z,42nm,0.8s
GKN Gorkha 140.60 16 *e*P PKPpre 23 07 10.7
comp=Z,81nm,0.7s
KKN Kakani 140.97 15 *e*P PKPpre 23 07 11.0
comp=Z,45nm,0.7s
PKIN Phulchoki 141.20 15 *e*P PKPpre 23 07 11.3
comp=Z,16nm,0.5s
ASAR Alice Springs 141.28 245 PKhKP PKPpre 23 07 11.7
comp=Z,30nm,0.8s,baz=106,slow=3.2,SNR=35
ASAR SKPbc **SKPbc 23 10 49.1 +0.7**
comp=Z,5.8nm,0.9s,baz=102,slow=2.8,SNR=4.1
WRA Warramunga Arr 141.61 251 PKhKP PKPpre 23 07 12.8
comp=Z,11nm,0.6s,baz=97,slow=2.9,SNR=26
GYA Guiyang 142.15 344 PKP **PKPdf 23 07 18.3 -1.4**
GYA PP **PP 23 10 28.4 +3.8**
GYA PKS **PKSdf 23 10 52.6 -3.2**
GYA SKKS 23 17 10.0
GYA SS **SS 23 28 52.8 +0.9**
GYA AMB AMB
comp=Z,190nm,8.9s
GYA LR LR
comp=Z,530nm,22.8s
GYA LR LR
comp=Z,480nm,23.6s
GYA LR LR
comp=Z,460nm,22.0s
FAKI Fak Fak 143.13 279 PKP **PKPdf 23 07 23.8 +2.2**
SWI Sorong 143.58 282 PKP PKPbc 23 07 20.7 +0.7
SWI PKP **PKiKP 23 07 26.7 +0.9**
KMI Kunming 144.33 349 PKP **PKPab 23 07 19.4 -2.4**
KMI SKKS 23 17 18.9
KMI AMB AMB
comp=Z,250nm,7.2s
KMI LR LR
comp=Z,990nm,21.7s
KMI LR LR
comp=Z,660nm,25.6s
KMI LR LR
comp=Z,1μm,21.7s
SAUI Saumlaki 144.90 270 PKP **PKPdf 23 07 29.7 +5.0**
BNDI Bandanaira 145.75 277 PKP **PKPab 23 07 31.7 +4.5**
KLRI Killari 146.18 34 *e*PKPbc **PKPdf 23 07 25.8 -1.1**
SRSP Sriramsagar 146.39 31 *e*PKPbc **PKPdf 23 07 26.3 -0.8**
MSAI Masohi 146.45 279 PKP **PKPab 23 07 32.7 +2.8**
RPR Rampur 146.92 30 *e*PKPbc **PKPdf 23 07 28.0 0.0**
LBMI Labuha 147.11 285 PKP **PKPdf 23 07 29.3 +0.8**
HYBB Hyderabad (bro 147.76 32 *e*PKPdf **PKPdf 23 07 28.1 -1.4**
HYBB *e*PKPbc **PKPbc 23 07 30.3 -2.1**
HYB Hyderabad 147.77 32 *i* PKP **PKPdf 23 07 30.0 +0.5**
QIZ Qiongzhong 147.91 334 PKPbc **PKPdf 23 07 28.3 -1.4**
QIZ PP **PP 23 10 58.9 -0.1**
QIZ SS SS 23 29 59.0 +1.0
QIZ LR LR
comp=Z,4μm,25.0s
QIZ LR LR
comp=Z,4μm,22.9s
NLAI Namlea 148.20 280 PKP **PKPbc 23 07 33.1 -0.6**
NJS Nagarjunasagar 148.88 32 *e*PKPdf **PKPdf 23 07 30.0 -1.3**
NJS *e*PKPbc **PKPbc 23 07 33.5 -1.7**
SANI Sanana 148.97 283 PKP **PKPbc 23 07 37.4 +1.8**
SRLM Srisailam 149.04 33 *e*PKPdf **PKPdf 23 07 30.2 -1.4**
SRLM *e*PKPbc **PKPbc 23 07 33.8 -2.0**
CHLP Challavanipeta 149.29 22 *e*PKPbc **PKPbc 23 07 34.1 -2.1**
PVM Polavaram 149.41 27 *e*PKPdf **PKPdf 23 07 31.7 -0.4**
PVM *e*PKPbc **PKPbc 23 07 34.8 -1.7**
CRAI Chiangrai 149.52 352 P **PKPdf 23 07 33.3 +1.0**
RCLA Racherla 149.60 34 *e*PKPdf **PKPdf 23 07 31.6 -0.9**
RCLA *e*PKPbc **PKPbc 23 07 35.6 -1.5**
ADKI Addanki 149.81 32 *e*PKPdf **PKPdf 23 07 31.2 -1.6**
NWAO Narrogin (SRO) 149.91 218 PKP **PKPdf 23 07 32.2 -0.3**
comp=Z,20nm,0.9s,baz=23,slow=5.8,SNR=5.0
NWAO PKPbc **PKPbc 23 07 37.5 +0.1**
comp=Z,78nm,0.9s,baz=16,slow=3.8,SNR=13
CMAI Chiengmai2 149.98 354 P **PKPdf 23 07 33.8 +0.6**
comp=Z,37nm,1.6s
FITZ Fitzroy Crossi 150.04 251 PKP **PKPdf 23 07 32.7 -0.4**
comp=Z,12nm,0.9s,baz=148,slow=7.9,SNR=8.2
FITZ PKPbc **PKPbc 23 07 37.9 -0.2**
comp=Z,71nm,0.8s,baz=145,slow=2.2,SNR=19
CHTO Chiang Mai 151.09 354 P **PKPdf 23 07 36.2 +1.4**
comp=Z,135nm,1.6s,comp=Z,3μm
CHTO Chiang Mai 151.09 354 PKiKP **PKiKP 23 07 41.2 +0.1**
SNR=10
CMMT Chiang Mai 151.09 354 P **PKPdf 23 07 36.2 +1.4**
comp=Z,30nm,1.6s,comp=Z,610nm
LAMP Lampang 151.30 352 P **PKPbc 23 07 41.6 +0.5**
comp=Z,8.7nm,0.9s
SKHT Srikalahasti 151.42 34 *e*PKPdf **PKPdf 23 07 33.4 -1.9**
SKHT *e*PKiKP **PKPbc 23 07 40.4 -1.1**
CMAR Chiang Mai Arr 151.44 354 PKP **PKPdf 23 07 33.8 -1.5**
comp=Z,4.0nm,0.7s,baz=316,slow=2.4,SNR=16
CMAR PKPbc **PKPbc 23 07 40.5 -0.9**
comp=Z,17nm,0.9s,baz=316,slow=3.6,SNR=29
LUWI Luwuk 151.72 287 PKP **PKPbc 23 07 41.2 -1.0**
SKNT Sakolnakorn 151.90 343 P **PKPdf 23 07 37.7 +1.7**
comp=Z,58nm,0.8s
UTTA Uttaradit 151.93 350 P **PKPbc 23 07 41.9 -0.6**
comp=Z,10nm,1.0s,comp=Z,91nm
SOEI Soe 151.97 268 PKP **PKPbc 23 07 45.3 +2.4**
SOEI PKP **PKiKP 23 07 46.2 +3.0**
SUKH Sukhothai 152.32 352 P **PKPdf 23 07 39.5 +2.9**
comp=Z,13nm,0.8s,comp=Z,96nm
KHON Khomkaen 152.82 345 P **PKPbc 23 07 45.1 +0.6**
comp=Z,26nm,0.9s,comp=Z,323nm
MMRI Maumere 153.89 271 PKP **PKPdf 23 07 42.8 +3.8**
MMRI PKP **PKiKP 23 07 48.1 +1.1**
KAPI Kappang 155.74 280 PKPab **PKPab 23 08 06.0 -2.2**
comp=Z,59nm,1.0s,baz=140,slow=4.8,SNR=9.4
KULM Kulim 163.96 342 *e*PKPdf **PKPdf 23 07 50.9 +0.1**
IPM Ipoh 164.60 340 *e*PKPdf **PKPdf 23 07 52.0 +0.6**

KRSC 13 22:54:46.4±2.1, 48°.23N×156°.73E, h30km±13km, ML4.0, East of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**2.49**	**351**	*i* P	Pn	22 55 26.3	+1.5
SKR				S	Sn	22 55 55.1	+0.9
PAU	**Pauzhetka**	**3.25**	**1**	S	Sn	22 56 17.2	+4.4
ASAK	**Asacha**	**4.23**	**10**	P	Pn	22 55 53.8	+5.0
RUS	**Russkaya**	**4.37**	**15**	P	Pn	22 55 55.3	+4.7
RUS				S	Sn	22 56 47.2	+6.8
SDLR	**Sedlovina**	**5.24**	**14**	P	Pn	22 56 08.4	+5.7
GNL	**Ganaly**	**5.53**	**8**	P	Pn	22 56 11.8	+5.1
MKZ	**Mys Kozlova**	**7.07**	**24**	P	Pn	22 56 32.5	+4.8

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*IDC **13** 22:57:29.9±0.9, 6°.49S×147°.99E, h0km, mb4.1/9, mb1 4.3/12, mb1mx4.0/45, mbtmp4.1/12, ML4.1/2, MS4.0/7, Ms1 3.9/7, ms1mx3.6/43, Error ellipse: s-maj=27.9km s-min=17.0km az=91.0*
*ISCJB **13** 22:57:35.5±0.7, 6°.59S±0°.07×147°.9E±0°.1, h51km, mb4.1/11, MS3.9/6, Error ellipse: s-maj=16.3km s-min=10.2km az=2.2*
*NEIC **13** 22:57:36.9±2.0, 6°.61S×147°.98E, h50km±17km, mb4.4/3, Error ellipse: s-maj=15.6km s-min=12.5km az=221.0*
ISC 13 22:57:36.8±0.9, 6°.55S±0°.08×148°.0E±0°.2, h51km, n22, σ1§08/20, mb4.0/11, MS3.9/6, 1C, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.96**	**197**	Pn	Pn	**22 58 20.1**	**-1.3**
	41nm,0.3s,baz=62,slow=6.4,SNR=38						
PMG				Sn	**Sn**	**22 58 58.3**	**+2.5**
	33nm,0.3s,baz=355,slow=16,SNR=13						
PMG				LR	LR	22 59 28.3	
	comp=Z,1μm,19.5s,baz=24,slow=39						
PMG	**Port Moresby**	**2.96**	**197**	*e*Pn	**Pn**	**22 58 20.5**	**-0.9**
PMG				*e*Sn	**Sn**	**22 58 56.6**	**+0.8**
CTA	**Charters Tower**	**13.56**	**187**	Pn	**Pn**	**23 00 46.4**	**-0.3**
	0.3nm,0.3s,baz=28,slow=14,SNR=4.4						
WRAB	**Tennant Creek**	**18.80**	**224**	*e*P	**P**	**23 01 52.0**	**-0.2**
	5.3nm,0.6s						
WRA	**Warramunga Arr**	**18.81**	**224**	P	**P**	**23 01 50.8**	**-1.6**
	0.8nm,0.3s,baz=51,slow=11,SNR=7.4						
GUMO	**Guam**	**20.25**	**351**	LR	LR	23 09 36.8	
	comp=Z,322nm,18.4s,baz=132,slow=36						
ASAR	**Alice Springs**	**21.77**	**217**	P	**P**	**23 02 23.0**	**-1.4**
	3.3nm,0.7s,baz=57,slow=9.2,SNR=26						
ASAR				LR	LR	23 11 32.5	
	comp=Z,545nm,22.0s,baz=51,slow=39						
DZM	**Mont Dzumac**	**23.54**	**133**	P	**P**	**23 02 43.1**	**+0.2**
	6.0nm,1.0s,baz=234,slow=19,SNR=3.0						
DZM				LR	LR	23 11 15.3	
	comp=Z,315nm,18.6s,baz=304,slow=35						
FITZ	**Fitzroy Crossi**	**24.66**	**240**	P	**P**	**23 02 52.0**	**-1.0**
	12nm,0.5s,baz=53,slow=8.1,SNR=62						
FITZ	**Fitzroy Crossi**	**24.66**	**240**	*e*P	**P**	**23 02 52.2**	**-0.8**
LUWI	**Luwuk**	**25.78**	**281**	*e*P	**P**	**23 03 04.4**	**+1.2**
	5.2nm,0.5s						
STKA	**Stephens Creek**	**25.90**	**193**	P	**P**	**23 03 03.4**	**-0.8**
	3.7nm,0.7s,baz=358,slow=7.5,SNR=10						
STKA				LR	LR	23 14 07.6	
	comp=Z,360nm,19.4s,baz=9.7,slow=38						
KAPI	**Kappang**	**28.17**	**272**	LR	LR	23 16 48.8	
	comp=Z,325nm,20.0s,baz=139,slow=41						
RPZ	**Rata Peaks**	**42.17**	**155**	LR	LR	23 21 12.2	
	comp=Z,205nm,20.4s,baz=281,slow=34						
CMAR	**Chiang Mai Arr**	**54.41**	**298**	P	**P**	**23 06 59.8**	**+0.5**
	0.5nm,0.3s,baz=124,slow=5.9,SNR=3.3						
VNDA	**Vanda**	**71.31**	**177**	P	**P**	**23 08 51.6**	**+1.0**
	2.0nm,0.8s,baz=334,slow=6.9,SNR=11						
MKAR	**Makanchi Array**	**78.57**	**320**	P	**P**	**23 09 33.2**	**+0.1**
	0.4nm,0.6s,baz=106,slow=5.9,SNR=3.1						
ZALV	**Zalesovo Beam**	**80.02**	**328**	P	**P**	**23 09 41.0**	**+0.3**
	0.9nm,0.5s,baz=106,slow=4.8,SNR=3.2						
QSPA	**South Pole Qui**	**83.42**	**180**	*e*P	**P**	**23 09 59.1**	**+0.5**
	22nm,0.6s						
ILAR	**Eielson Array**	**85.59**	**23**	P	**P**	**23 10 08.9**	**-0.5**
	0.4nm,0.7s,baz=258,slow=5.1,SNR=4.6						
SYO	**Syowa Base**	**90.43**	**200**	*e*X	P	23 10 38.4	+5.9
TORD	**Torodi Ar. Bea**	**146.22**	**284**	PKPbc	**PKPbc**	**23 17 12.8**	**+0.1**
	0.8nm,0.4s,baz=65,slow=3.2,SNR=16						

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*IDC **13** 22:58:59.8±1.4, 35°.86N×142°.96E, h0km, mb3.7/3, mb1 3.9/5, mb1mx3.5/57, mbtmp3.7/5, ML3.3/2, Error ellipse: s-maj=47.2km s-min=24.2km az=171.0*
*ISCJB **13** 22:59:02.7±0.8, 36°.02N±0°.04×142°.88E±0°.06, h33km, mb3.5/3, Error ellipse: s-maj=7.6km s-min=5.7km az=12.7*
*JMA **13** 22:59:02.6±0.3, 35°.99N×142°.86E, h76km, M3.4*
ISC 13 22:59:04.4±1.0, 35°.97N±0°.05×142°.89E±0°.08, h35km, n18, σ1§76/27, mb3.6/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.67**	**261**	*e*S	**Sn**	**22 59 51.4**	**0.0**
JHO	**Hitachi**	**1.98**	**289**	P	**Pn**	**22 59 34.0**	**-1.4**
JHO				S	**Sn**	**22 59 56.8**	**-2.2**
ONAJ	**Iwakimizuishiy**	**2.03**	**304**	P	**Pn**	**22 59 34.9**	**-1.2**
ONAJ				S	**Sn**	**22 59 59.2**	**-1.0**
BSO1	**Boso 1**	**2.04**	**230**	P	**Pn**	**22 59 34.8**	**-1.0**
BSO1				S	**Sn**	**23 00 01.0**	**+1.2**
JFT	**Otama**	**2.57**	**308**	P	**Pn**	**22 59 42.8**	**-0.7**
JFT				S	**Sn**	**23 00 12.5**	**-1.0**
JAG	**Ashikaga**	**2.82**	**280**	P	**Pn**	**22 59 46.2**	**-0.7**
JOD2	**Odawara 2**	**3.18**	**258**	P	**Pn**	**22 59 51.9**	**0.0**
JOD2				S	**Sn**	**23 00 28.8**	**+0.2**
JRY	**Ryogami san**	**3.23**	**272**	P	**Pn**	**22 59 49.0**	**-3.7**
JMK	**Ichinoseki**	**3.26**	**336**	P	**Pn**	**22 59 51.5**	**-1.4**
JMK				S	**Sn**	**23 00 28.4**	**-2.0**
JYN	**Shimob**	**3.57**	**264**	P	**Pn**	**22 59 57.5**	**+0.2**
JOM	**Ohasama**	**3.72**	**341**	S	**Sn**	**23 00 39.5**	**-2.3**
JHJ2	**Mitsune**	**3.82**	**223**	P	**Pn**	**22 59 59.6**	**-1.1**
JHJ2				S	**Sn**	**23 00 41.4**	**-2.9**
MJAR	**Matsushiro Arr**	**3.83**	**280**	Pn	**Pn**	**23 00 01.0**	**+0.2**
	1.1nm,0.3s,baz=95,slow=9.3,SNR=7.9						
MJAR				Sn	**Sn**	**23 00 46.4**	**+1.8**
	1.6nm,0.3s,baz=258,slow=20,SNR=5.8						
JHJ	**Hachijo jima 2**	**3.83**	**223**	Pn	**Pn**	**22 59 59.1**	**-1.8**
	14nm,0.3s,baz=85,slow=23,SNR=10						
JHJ				Sn	**Sn**	**23 00 40.9**	**-3.8**
	32nm,0.3s,baz=106,slow=22,SNR=8.1						
SONM	**Songino Array**	**29.36**	**305**	P	**P**	**23 05 05.8**	**+1.7**
	0.3nm,0.5s,baz=97,slow=8.0,SNR=2.9						
PDAR	**Pinedale Array**	**77.55**	**46**	P	**P**	**23 10 58.1**	**+1.1**
	0.4nm,0.6s,baz=270,slow=1.5,SNR=5.3						
TXAR	**Lajitas Array**	**89.81**	**53**	P	**P**	**23 12 00.6**	**+0.9**
	0.3nm,0.6s,baz=304,slow=3.3,SNR=5.5						
LPAZ	**La Paz**	**146.16**	**63**	PKPbc	**PKPab**	**23 18 42.5**	**-0.3**
	1.0nm,0.7s,baz=0.0,slow=2.0,SNR=4.7						

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*CRAAG **13** 23:02:37.1, 36°.58N×4°.72E, Ml3.3*
*ISCJB **13** 23:02:39.3±0.5, 36°.83N±0°.04×4°.61E±0°.05, h13km, Error ellipse: s-maj=6.7km s-min=4.1km az=41.2*

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*CSEM **13** 23:02:39.1±0.3, 36°.68N×4°.61E, h2km, ML3.3, Error ellipse: s-maj=8.8km s-min=5.8km az=22.0*
*MDD **13** 23:02:39.8±0.5, 36°.67N×4°.64E, h0km, mb3.8/2, Error ellipse: s-maj=7.4km s-min=4.8km az=24.0, PRXIMO*
ISC 13 23:02:38.8±0.9, 36°.67N±0°.05×4°.65E±0°.03, h13km, n52, σ1§40/61, Northern Algeria

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SET	**Setif**	**0.76**	**128**	P	**Pg**	**23 02 54.0**	**+0.4**
SET	**Setif**	**0.76**	**128**	P	**Pg**	**23 02 54.0**	**+0.4**
SET	**Setif**	**0.76**	**128**	P	**Pg**	**23 02 54.0**	**+0.4**
ATAF	**Djebel Tarf**	**0.85**	**201**	P	**Pg**	**23 02 54.4**	**-0.8**
ATAF	**Djebel Tarf**	**0.85**	**201**	P	**Pg**	**23 02 54.4**	**-0.8**
ATAF	**Djebel Tarf**	**0.85**	**201**	P	**Pg**	**23 02 54.4**	**-0.8**
CKHR	**Kef el Ahmar**	**0.95**	**133**	P	**Pg**	**23 02 57.0**	**-0.2**
CKHR	**Kef el Ahmar**	**0.95**	**133**	P	**Pg**	**23 02 57.0**	**-0.2**
CKHR	**Kef el Ahmar**	**0.95**	**133**	P	**Pg**	**23 02 57.0**	**-0.2**
DFRA	**Djebel Bou Aff**	**0.99**	**97**	P	**Pb**	**23 02 57.2**	**-0.7**
DFRA	**Djebel Bou Aff**	**0.99**	**97**	P	**Pb**	**23 02 57.2**	**-0.7**
DFRA	**Djebel Bou Aff**	**0.99**	**97**	P	**Pb**	**23 02 57.2**	**-0.7**
ADJB	**Djebel Djouab**	**1.10**	**243**	P	**Pb**	**23 03 00.4**	**+0.6**
ADJB	**Djebel Djouab**	**1.10**	**243**	P	**Pb**	**23 03 00.4**	**+0.6**
ADJB	**Djebel Djouab**	**1.10**	**243**	P	**Pb**	**23 03 00.4**	**+0.6**
ABA	**Alger-Bouzarea**	**1.31**	**276**	P	**Pn**	**23 03 03.0**	**+0.2**
ABA	**Alger-Bouzarea**	**1.31**	**276**	P	**Pn**	**23 03 03.0**	**+0.2**
ABA	**Alger-Bouzarea**	**1.31**	**276**	P	**Pn**	**23 03 03.0**	**+0.2**
EMHD	**Djebel Mahouad**	**1.45**	**252**	P	**Pg**	**23 03 07.6**	**+0.9**
EMHD	**Djebel Mahouad**	**1.45**	**252**	P	**Pg**	**23 03 07.6**	**+0.9**
EMHD	**Djebel Mahouad**	**1.45**	**252**	P	**Pg**	**23 03 07.6**	**+0.9**
CASM	**Ain Smara**	**1.54**	**105**	P	**Pb**	**23 03 08.0**	**+0.8**
CASM	**Ain Smara**	**1.54**	**105**	P	**Pb**	**23 03 08.0**	**+0.8**
CASM	**Ain Smara**	**1.54**	**105**	P	**Pb**	**23 03 08.0**	**+0.8**
CKFL	**Kef-Lekhel**	**1.69**	**98**	P	**Pb**	**23 03 11.0**	**+1.2**
CKFL	**Kef-Lekhel**	**1.69**	**98**	P	**Pb**	**23 03 11.0**	**+1.2**
CKFL	**Kef-Lekhel**	**1.69**	**98**	P	**Pb**	**23 03 11.0**	**+1.2**
CAEH	**'Ain El Ouahch**	**1.77**	**86**	P	**Pb**	**23 03 13.0**	**+1.9**
CAEH	**'Ain El Ouahch**	**1.77**	**86**	P	**Pb**	**23 03 13.0**	**+1.9**
CAEH	**'Ain El Ouahch**	**1.77**	**86**	P	**Pb**	**23 03 13.0**	**+1.9**
CMAH	**Djebel Manchou**	**2.23**	**90**	P	**Pb**	**23 03 20.0**	**+1.1**
CMAH	**Djebel Manchou**	**2.23**	**90**	P	**Pb**	**23 03 20.0**	**+1.1**
CMAH	**Djebel Manchou**	**2.23**	**90**	P	**Pb**	**23 03 20.0**	**+1.1**
OKGL	**Djebel Kef Gue**	**3.30**	**260**	P	**Pn**	**23 03 30.8**	**+0.6**
	1.7nm,0.1s,SNR=4.0						
OKGL	**Djebel Kef Gue**	**3.30**	**260**	P	**Pn**	**23 03 30.8**	**+0.6**
	1.7nm,0.1s,SNR=4.0						
ETOS	**Mallorca**	**3.42**	**335**	P	**Pn**	**23 03 32.4**	**+0.6**
	2.7nm,0.3s,SNR=15						
ETOS				S	**Sn**	**23 04 10.1**	**-2.1**
	2.8nm,0.2s,SNR=5.7						
ETOS	**Mallorca**	**3.42**	**335**	P	**Pn**	**23 03 32.4**	**+0.6**
	2.7nm,0.3s,SNR=15						
ETOS				S	**Sn**	**23 04 10.1**	**-2.1**
	2.8nm,0.2s,SNR=5.7						
EIBI	**Ibiza**	**3.52**	**313**	P	**Pn**	**23 03 34.5**	**+1.3**
	0.8nm,0.2s,SNR=7.9						
EIBI				S	**Sn**	**23 04 12.5**	**-2.3**
	1.7nm,0.2s,SNR=7.9						
EIBI	**Ibiza**	**3.52**	**313**	P	**Pn**	**23 03 34.5**	**+1.3**
	0.8nm,0.2s,SNR=7.9						
EIBI				S	**Sn**	**23 04 12.5**	**-2.3**
	1.7nm,0.2s,SNR=7.9						
ETOB	**Tobarra**	**5.30**	**294**	P	**Pn**	**23 03 59.6**	**+1.8**
	0.8nm,0.3s,SNR=6.3						
ETOB				S	**Sn**	**23 04 58.5**	**-0.2**
	1.4nm,0.3s,SNR=7.9						
ETOB	**Tobarra**	**5.30**	**294**	P	**Pn**	**23 03 59.6**	**+1.8**
	0.8nm,0.3s,SNR=6.3						
ETOB				S	**Sn**	**23 04 58.5**	**-0.2**
	1.4nm,0.3s,SNR=7.9						
CFON	**Fontmartina**	**5.37**	**342**	P	**Pn**	**23 03 58.6**	**-0.1**
	1.3nm,0.2s,SNR=8.1						
CFON				S	**Sn**	**23 04 57.1**	**-3.3**
	2.5nm,0.2s,SNR=6.1						
CFON	**Fontmartina**	**5.37**	**342**	P	**Pn**	**23 03 58.6**	**-0.1**
	1.3nm,0.2s,SNR=8.1						
EPOB	**Poblet**	**5.44**	**330**	P	**Pn**	**23 04 00.8**	**+1.1**
	0.4nm,0.3s,SNR=7.9						
EPOB				S	**Sn**	**23 04 58.0**	**-4.2**
	1.2nm,0.3s,SNR=7.9						
EPOB	**Poblet**	**5.44**	**330**	P	**Pn**	**23 04 00.8**	**+1.1**
	0.4nm,0.3s,SNR=7.9						
EMOS	**Mosqueruela**	**5.46**	**314**	P	**Pn**	**23 04 00.9**	**+0.9**
	0.3nm,0.2s,SNR=7.9						
EMOS				S	**Sn**	**23 05 00.9**	**-1.8**
	0.6nm,0.3s,SNR=7.9						
EMOS	**Mosqueruela**	**5.46**	**314**	P	**Pn**	**23 04 00.9**	**+0.9**
	0.3nm,0.2s,SNR=7.9						
SJAF	**Saint Jean de**	**5.97**	**347**	P	**Pn**	**23 04 08.0**	**+1.1**
	0.1nm,0.1s,SNR=7.9						
SJAF				S	Sn	23 05 09.5	-5.6
	0.5nm,0.3s,SNR=4.0						
SJAF	**Saint Jean de**	**5.97**	**347**	P	**Pn**	**23 04 08.0**	**+1.1**
	0.1nm,0.1s,SNR=7.9						
CLLI	**Llivia**	**6.16**	**341**	P	**Pn**	**23 04 11.7**	**+2.0**
	0.8nm,0.3s,SNR=6.9						
CLLI				S	**Sn**	**23 05 17.4**	**-2.7**
	0.6nm,0.2s,SNR=7.9						
CLLI	**Llivia**	**6.16**	**341**	P	**Pn**	**23 04 11.6**	**+2.0**
	0.8nm,0.3s,SNR=6.9						
EQES	**Quesada**	**6.27**	**283**	P	Pn	23 04 14.4	+3.3
	0.2nm,0.3s,SNR=4.0						

IDC 13 23:08:58.5±26.0, 7°.93S×147°.73E, h260km±217km, mb3.4/2, mb1 3.4/3, mb1mx2.9/47, mbtmp3.8/3, MS3.7/1, Ms1 3.7/1, ms1mx3.1/15, Error ellipse: s-maj=156.9km s-min=81.8km az=34.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**17.63**	**226**	P	P	23 12 47.0	+0.3
	0.2nm,0.3s,baz=51,slow=11,SNR=2.9						
ASAR	**Alice Springs**	**20.51**	**219**	P	P	23 13 17.3	-0.2
	0.8nm,0.5s,baz=54,slow=8.9,SNR=18						
GUMO	**Guam**	**21.56**	**352**	LR	LR	23 22 04.8	
	comp=Z,173nm,18.8s,baz=238,slow=36						
FITZ	**Fitzroy Crossi**	**23.75**	**243**	P	P	23 13 47.7	-0.1
	4.6nm,0.4s,baz=61,slow=11,SNR=13						
TORD	**Torodi Ar. Bea**	**146.23**	**282**	PKPbc	PKPbc	23 28 08.8	-0.7
	0.3nm,0.6s,baz=65,slow=3.4,SNR=6.3						

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*IDC **13** 23:12:05.3±1.1, 29°.51S×176°.63W, h0km, mb4.3/4, mb1 4.4/6, mb1mx4.0/33, mbtmp4.3/6, ML3.7/2, MS3.9/2, Ms1 3.9/2, ms1mx3.6/22, Error ellipse: s-maj=31.1km s-min=22.2km az=7.0*
*ISCJB **13** 23:12:06.3±1.0, 29°.66S±0°.06×176°.6W±0°.1, h21km, mb4.4/9, MS4.5/1, Error ellipse: s-maj=14.2km s-min=9.1km az=174.1*
*NEIC **13** 23:12:10.6±0.6, 29°.57S×176°.70W, h35km, mb4.6/5, Error ellipse: s-maj=15.0km s-min=10.5km az=95.0*
**ISC 13 23:12:09.2±0.8, 29°.54S±0°.09×176°.68W±0°.08, h21km, n23, σ1§19/24, mb4.4/9, 1C, Kermadec

WRA	**Warramunga Arr**	**45.22**	**271**	P	**P**	**23 20 23.6**	**-1.5**
	3.8nm,0.9s,baz=110,slow=7.8,SNR=8.4						
CASY	**Casey**	**56.43**	**208**	*e*P	**P**	**23 21 48.5**	**-0.3**
	0.8nm,0.6s						
MAW	**Mawson**	**73.50**	**200**	LR	LR	23 52 04.0	
	comp=Z,251nm,20.4s,baz=240,slow=33						
SYO	**Syowa Base**	**78.20**	**193⇑**	*e*X	**P**	**23 24 10.8**	**+4.2**
USRK	**Ussuriysk Ar.**	**87.09**	**326**	P	**P**	**23 24 53.1**	**0.0**
	1.4nm,0.6s,baz=89,slow=7.5,SNR=4.3						
MKAR	**Makanchi Array**	**118.10**	**310**	PKP	**PKPdf**	**23 30 54.0**	**-0.3**
	0.2nm,0.2s,baz=90,slow=2.9,SNR=3.1						
FINES	**FINESS Array B**	**144.72**	**341**	PKP	**PKPab**	**23 31 41.5**	**-0.9**
	1.2nm,0.6s,baz=98,slow=5.8,SNR=5.8						
KBZ	**Khabaz**	**145.57**	**305**	PKPbc	**PKPdf**	**23 31 43.8**	**-1.9**
	0.7nm,0.5s,baz=303,slow=8.0,SNR=6.0						
NB2	**NORSAR Subarra**	**148.06**	**353**	PKP	**PKPab**	**23 31 55.5**	**+0.1**
	comp=Z,4.1nm,1.1s,baz=18,slow=2.6						
AKASG	**Malin Array Be**	**151.29**	**325**	PKPbc	**PKPbc**	**23 32 00.5**	**-0.2**
	comp=Z,3.0nm,0.7s,baz=47,slow=2.5,SNR=6.1						
BRTR	**Keskin Array B**	**153.18**	**300**	PKPbc	**PKPbc**	**23 32 06.2**	**+0.5**
	comp=Z,0.8nm,0.9s,baz=151,slow=2.8,SNR=4.6						
TORD	**Torodi Ar. Bea**	**163.61**	**174**	PKPab	**PKPab**	**23 33 02.3**	**-0.3**
	comp=Z,0.5nm,1.1s,baz=213,slow=4.3,SNR=2.3						

JMA ***13*** *23:12:52.7±0.2, 39°.54N×143°.40E, h25km±4km, M3.6*
IDC ***13*** *23:12:52.6±11.0, 39°.77N×143°.17E, h0km, mb3.6/4, mb1 3.6/5, mb1mx3.3/46, mbtmp3.6/5, ML3.1/1, Error ellipse: s-maj=204.8km s-min=47.0km az=108.0*

ISC 13 23:12:52.9±3.5, 39°.57N±0°.08×143°.3E±0°.1, h11km±18km, n17, σ0°69/22, mb3.6/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**1.15**	**271**	P	**Pb**	**23 13 14.4**	**-0.4**
MIYJ				*e*S	**Sg**	**23 13 30.0**	**0.0**
JTH	**Tanohata**	**1.17**	**289**	P	**Pn**	**23 13 15.2**	**0.0**
JTH				*e*S	**Sn**	**23 13 31.1**	**-0.1**
OFUJ	**Ofunato**	**1.36**	**249**	P	**Pn**	**23 13 17.4**	**-0.4**
JOM	**Ohasama**	**1.56**	**267**	P	**Pn**	**23 13 20.9**	**+0.3**
JOM				*e*S	**Sb**	**23 13 41.5**	**-0.1**
JANG	**Nango**	**1.59**	**301**	P	**Pn**	**23 13 20.7**	**-0.3**
JMK	**Ichinoseki**	**1.74**	**250**	P	**Pn**	**23 13 22.9**	**0.0**
JMK				*e*S	**Sn**	**23 13 44.5**	**-0.5**
JIO	**Ouri**	**1.89**	**234**	P	**Pn**	**23 13 24.6**	**-0.5**
JRG	**Rokugo**	**2.08**	**266**	P	**Pn**	**23 13 28.4**	**+0.8**
JTM	**Tenmabayashi**	**2.10**	**306**	P	**Pn**	**23 13 28.4**	**+0.4**
JTM				*e*S	**Sn**	**23 13 54.7**	**+0.6**
JAH	**Hinai**	**2.15**	**288**	P	**Pn**	**23 13 29.5**	**+0.9**
JYK	**Kaneyama**	**2.38**	**255**	P	**Pn**	**23 13 32.6**	**+0.8**
MJAR	**Matsushiro Arr**	**5.04**	**235**	Pn	**Pn**	**23 14 09.7**	**+1.4**
	0.8nm,0.3s,baz=44,slow=12,SNR=14						
MAT	**Matsushiro**	**5.04**	**235**	P	**Pn**	**23 14 09.7**	**+1.4**
SONM	**Songino Array**	**27.72**	**300**	P	**P**	**23 18 41.8**	**+0.5**
	0.4nm,0.7s,baz=90,slow=8.6,SNR=3.1						
MKAR	**Makanchi Array**	**44.08**	**300**	P	**P**	**23 20 60.0**	**-0.8**
	0.6nm,0.8s,baz=87,slow=7.3,SNR=5.4						
KURBB	**Kurchatov Arra**	**45.66**	**306**	P	**P**	**23 21 12.8**	**-0.5**
	0.8nm,0.5s,baz=79,slow=8.0,SNR=4.8						
BVAR	**Borovoye Array**	**50.00**	**311**	P	**P**	**23 21 46.9**	**0.0**
	0.4nm,0.5s,baz=60,slow=9.0,SNR=2.6						

ISCJB ***13*** *23:15:43.5±0.5, 6°.78N±0°.04×73°.03W±0°.05, h161km±5km, Error ellipse: s-maj=9.3km s-min=4.3km az=41.7*
FUNV ***13*** *23:15:45.2, 6°.87N×73°.12W, h168km, MW3.4*
RSNC ***13*** *23:15:46.1±0.6, 6°.77N×73°.07W, h146km±3km, ML3.4*

ISC 13 23:15:43.2±1.4, 6°.81N±0°.04×73°.06W±0°.05, h165km±8km, n29, σ1°19/44, 1C-3D, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BTLC	**Betulia, Santa**	**0.23**	**298**	*i*P	**Pn**	**23 16 05.9**	**+0.2**
BARC	**Barichara**	**0.25**	**210**	*i*P	**Pn**	**23 16 05.8**	**0.0**
BARC				*e*S	**Sn**	**23 16 20.9**	**-2.0**
BARC				*i*		23 16 23.6	
	comp=Z,460nm,0.3s						
GIRC	**Giron, Santand**	**0.30**	**333**	*i*P	**Pn**	**23 16 05.8**	**+0.1**
GIRC				*e*S	**Sn**	**23 16 21.8**	**-1.2**
PAMC	**Pamplona, Colo**	**0.64**	**34**	*i*P	**Pn**	**23 16 08.5**	**+1.0**
PAMC				*e*S	**Sn**	**23 16 25.5**	**-0.7**
BRRC	**Barranca, Sant**	**0.71**	**295⇓**	*i*P	**Pn**	**23 16 07.6**	**+0.2**
BRRC				*e*S	**Sn**	**23 16 25.1**	**-0.8**
BRRC				*i*		23 16 28.0	
	comp=Z,390nm,0.1s						
RUSC	**La Rusia**	**0.91**	**182**	*e*P	**Pn**	**23 16 09.7**	**+0.3**
RUSC				*e*S	**Sn**	**23 16 27.6**	**-1.8**
RUSC				*i*		23 16 30.2	
	comp=Z,259nm,0.3s						
CBRI	**Barrientos, No**	**0.94**	**16**	*i*P	**Pn**	**23 16 10.2**	**+1.1**
CBRI				*e*S	**Sn**	**23 16 28.5**	**-0.7**
CBRI				*i*		23 16 34.5	
	comp=Z,330nm,0.6s						
GRMC	**Gramalote, San**	**0.94**	**16**	*i*P	**Pn**	**23 16 11.5**	**+2.3**
GRMC				*e*S	**Sn**	**23 16 30.7**	**+1.6**
GRMC				*i*		23 16 32.2	
	comp=Z,481nm,0.5s						
CAPV	**Capacho**	**1.28**	**35⇓**	*i*P	**Pn**	**23 16 13.5**	**+1.4**
CAPV				*e*S	**Sn**	**23 16 34.6**	**+0.3**
OCAC	**Ocana**	**1.45**	**350**	*e*P	**Pn**	**23 16 14.7**	**+1.1**
OCAC				*e*S	**Sn**	**23 16 37.3**	**+0.2**
OCAC				*i*		23 16 42.1	
	comp=Z,440nm,0.3s						
NORC	**Norcasia**	**2.19**	**236**	*e*P	**Pn**	**23 16 21.9**	**+0.4**
NORC				*e*S	**Sn**	**23 16 50.1**	**-0.9**
HELC	**Santa Helena**	**2.53**	**256**	*e*P	**Pn**	**23 16 27.6**	**+1.7**
HELC				*e*S	**Sn**	**23 16 59.9**	**+1.2**
HELC				*i*		23 17 04.3	
	comp=Z,126nm,0.2s						
SOCV	**Socops**	**2.63**	**56⇓**	*e*P	**Pn**	**23 16 27.8**	**+1.2**
SOCV				*e*S	**Sn**	**23 16 59.5**	**-0.8**
VILC	**Villavicencio,**	**2.75**	**193**	*e*P	**Pn**	**23 16 29.5**	**+1.2**
VILC				*e*S	**Sn**	**23 17 03.2**	**-0.1**
GUYC	**Guyana, Colomb**	**2.80**	**236**	*e*P	**Pn**	**23 16 30.4**	**+1.1**
GUYC				*i*		23 17 16.6	
	comp=Z,274nm,0.6s						
DBBC	**Dabeiba**	**3.14**	**274**	*e*P	**Pn**	**23 16 33.8**	**+0.8**
ELOV	**Elorza**	**3.55**	**87**	*e*P	**Pn**	**23 16 39.7**	**+1.5**
PRAC	**Prado**	**3.57**	**211**	*e*P	**Pn**	**23 16 39.7**	**+1.2**
PRAC				*e*S	**Sn**	**23 17 20.8**	**-0.7**
VIRV	**Villa del Rosa**	**3.73**	**10⇑**	*i*P	**Pn**	**23 16 40.2**	**-0.2**
VIRV				*e*S	**Sn**	**23 17 21.3**	**-3.7**
SANV	**Sanarito**	**4.39**	**52**	*e*P	**Pn**	**23 16 49.9**	**+0.7**
CURV	**Curaripa**	**4.42**	**44**	*e*P	**Pn**	**23 16 50.1**	**+0.7**
DABV	**Dabajuro**	**4.74**	**30**	*e*P	**Pn**	**23 16 54.3**	**+0.8**
TEPV	**Terepaima**	**4.95**	**50**	*e*P	**Pn**	**23 16 56.8**	**+0.5**
SIQV	**Siquisique**	**4.99**	**40**	*e*P	**Pn**	**23 16 56.3**	**-0.5**
BAUV	**El Baul**	**5.40**	**67**	*e*P	**Pn**	**23 17 02.0**	**-0.2**
MAPV	**Macapo**	**5.45**	**56**	*e*P	**Pn**	**23 17 03.5**	**+0.6**
MONV	**Montecano**	**5.95**	**31**	*e*P	**Pn**	**23 17 09.4**	**-0.1**
TURV	**Turiamo**	**6.30**	**55**	*e*P	**Pn**	**23 17 14.9**	**+0.9**
CUPV	**Cœpira**	**7.88**	**65**	*e*P	**Pn**	**23 17 35.6**	**+0.5**

JMA 13 23:17:10.5±0.2, 35°.22N×140°.22E, h27km±2km, M2.7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KTR	**Katsuura**	**0.11**	**133**	P	Pb	23 17 15.2	-0.2
KTR				S	Sb	23 17 19.0	+0.2
JCN	**Nagara**	**0.20**	**356**	P	Pb	23 17 16.9	+0.5
JCN				S	Sb	23 17 22.5	+2.2
BSO4	**Boso 4**	**0.25**	**157**	P	Pb	23 17 17.3	+0.4
BSO4				X		23 17 23.5	
TATJ	**Tateyama 2**	**0.33**	**235**	P	Pb	23 17 18.4	+0.3
BSO3	**Boso 3**	**0.48**	**150**	P	Pb	23 17 20.1	-0.2
MAT	**Matsushiro**	**2.10**	**310**	P	Pn	23 17 44.5	+0.6
MAT				S	Sn	23 18 10.3	+1.1

CSEM ***13*** *23:31:25.6±0.1, 45°.58N×6°.91E, h12km, ML1.4/8, Error ellipse: s-maj=2.3km s-min=1.9km az=154.0*
GEN ***13*** *23:31:26.2, 45°.61N×6°.92E, h4km, ML0.8*

LDG 13 23:31:26.5±0.1, 45°.56N×6°.92E, h2km, Md1.8/3, Ml1.6/6, Error ellipse: s-maj=1.5km s-min=1.1km az=78.0, France

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LPG	**La Plagne**	**0.13**	**242**	*e*Pg	Pg	23 31 29.6	+0.4
LPG				*e*Sg	Sg	23 31 31.1	+0.1
	18nm,0.2s						
LPG	**La Plagne**	**0.13**	**242**	*e*Pg	Pg	23 31 29.6	+0.4
LPG				*e*Sg	Sg	23 31 31.1	+0.1
	8.8nm,0.2s						
LPL	**La Plagne**	**0.14**	**252**	*e*Pg	Pg	23 31 29.6	+0.3
LPL				*e*Sg	Sg	23 31 30.9	-0.2
	17nm,0.3s						
LPL	**La Plagne**	**0.14**	**252**	*e*Pg	Pg	23 31 29.6	+0.3
LPL				*e*Sg	Sg	23 31 30.9	-0.2
	8.6nm,0.3s						
RSP	**Reno Superiore**	**0.48**	**149**	S	Sg	23 31 43.2	+1.3
TRAV	**Traversella**	**0.58**	**94**	P	Pg	23 31 37.6	-0.1
TRAV				S	Sg	23 31 45.2	0.0
RRL	**Rocca Remolon**	**0.65**	**188**	S	Sg	23 31 48.6	+1.4
SATI	**Passo dei Sala**	**0.73**	**64**	P	Pg	23 31 39.9	-0.7
SATI				S	Sg	23 31 49.5	-0.7
BHB	**Bricherasio**	**0.76**	**161**	S	Sg	23 31 52.0	+1.2
MBDF	**Montbardon**	**0.84**	**187**	*e*Pg	Pg	23 31 42.4	-0.2
MBDF				*e*Sg	Sg	23 31 53.3	-0.1
	2.8nm,0.2s						
MBDF	**Montbardon**	**0.84**	**187**	*e*Pg	Pg	23 31 42.4	-0.2
MBDF				*e*Sg	Sg	23 31 53.3	-0.1
	1.4nm,0.2s						
ORIF	**Oris-en-Rattie**	**0.98**	**229**	*e*Pg	Pg	23 31 44.9	-0.3
ORIF				*e*Sg	Sg	23 31 57.6	-0.2
	1.7nm,0.2s						
ORIF	**Oris-en-Rattie**	**0.98**	**229**	*e*Pg	Pg	23 31 44.9	-0.3
ORIF				*e*Sg	Sg	23 31 57.6	-0.2
	0.9nm,0.2s						
CABF	**La Chapelle**	**1.20**	**331**	*e*Pg	Pg	23 31 48.9	-0.6
CABF				*e*Sg	Sg	23 32 04.7	-0.4
	0.6nm,0.2s						
CABF	**La Chapelle**	**1.20**	**331**	*e*Pg	Pg	23 31 48.9	-0.6
CABF				*e*Sg	Sg	23 32 04.7	-0.4
	0.3nm,0.2s						
SBF	**Sospel**	**1.74**	**168**	*e*Pn	Pn	23 31 55.9	-1.8
SBF				*e*Sn	Sn	23 32 17.3	-3.2
	1.4nm,0.4s						
SBF	**Sospel**	**1.74**	**168**	*e*Pn	Pn	23 31 55.9	-1.8
SBF				*e*Sn	Sn	23 32 17.3	-3.2
	0.7nm,0.4s						
VIVF	**Saint-Julien-l**	**1.74**	**247**	*e*Pg	Pb	23 31 58.9	-0.2
VIVF				*e*Sg	Sb	23 32 21.1	-0.3
	0.8nm,0.3s						
VIVF	**Saint-Julien-l**	**1.74**	**247**	*e*Pg	Pb	23 31 58.9	-0.2
VIVF				*e*Sg	Sb	23 32 21.1	-0.3
	0.4nm,0.3s						
SMRF	**Simiane la Rot**	**1.85**	**212**	*e*Pn	Pn	23 31 57.7	-1.6
SMRF				*e*Sn	Sn	23 32 20.1	-3.2
	0.3nm,0.2s						
SMRF	**Simiane la Rot**	**1.85**	**212**	*e*Pn	Pn	23 31 57.7	-1.6
SMRF				*e*Sn	Sn	23 32 20.1	-3.2
	0.2nm,0.2s						

NIED ***13*** *23:35:00, 37°.30N×141°.60E, h41km, Mw6.0 Best double couple: M0=1.28000×10^18 NP1:φs=200.00000°, δ22.00000°, λ91.00000°. NP2:φs=18.00000°, δ68.00000°, λ89.00000°.*
BJI ***13*** *23:35:47.8, 37°.31N×141°.73E, h35km, mb5.9/73, mB5.8/70, Ms6.0/95, Ms7 5.9/88*
MOS ***13*** *23:35:50.1±1.1, 37°.37N×141°.49E, h33km, mb5.8/154, MS5.9/61, Error ellipse: s-maj=6.3km s-min=4.1km az=97.3*
JMA ***13*** *23:35:50.9±0.1, 37°.33N×141°.63E, h41km±2km, M5.9*
JMA Felt IV J1.
ISCJB ***13*** *23:35:51.9±0.3, 37°.40N±0°.01×141°.42E±0°.01, h40km±2km, mb5.6/438, MS5.8/222, Error ellipse: s-maj=2.6km s-min=1.8km az=154.0*
GCMT ***13*** *23:35:52.9±0.1, 37°.31N×141°.67E, h41km, MW6.1/138, Moment Tensor Solution. s127,c302; s138,c464; Duration: 2s 7 Moment tensor: Scale 10^18Nm; Mrr1.23±.01; Mθθ-0.14±.01; Mφφ-1.09±.01; Mrθ0.40±.01; Mθφ-0.40±.01; Mφr1.06±.01; Best double couple: M0=1.67500×10^18 NP1:φs=20.00000°, δ66.00000°, λ90.00000°. NP2:φs=200.00000°, δ24.00000°, λ89.00000°. Principal axes: T 1.6710, Plg69.0000°, Azm291.0000°; N 0.0070, Plg0.0000°, Azm200.0000°; P -1.6790, Plg21.0000°, Azm110.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*
NEIC ***13*** *23:35:52.9±0.1, 37°.40N×141°.34E, h35km, mb5.6/273, ME5.5, MS5.7/125, MW5.9, MW6.0, MW6.1 Error ellipse: s-maj=3.6km s-min=2.3km az=141.0, Moment Tensor Solution. s57 Moment tensor: Scale 10^17Nm; Mrr7.30; Mθθ-1.07; Mφφ-6.23; Mrθ3.67; Mθφ-0.86; Mφr5.53; Best double couple: M0=9.60000×10^17 NP1:φs=180.00000°, δ25.00000°, λ67.00000°. NP2:φs=25.00000°, δ67.00000°, λ100.00000°. Principal axes: T 10.2000, Plg66.0000°, Azm313.0000°; N -1.4000, Plg9.0000°, Azm201.0000°; P -8.8000, Plg22.0000°, Azm107.0000°; Broadband fault plane solution: P waves. NP1:φs=171.00000°, δ18.00000°, λ57.00000°. NP2:φs=25.00000°, δ75.00000°, λ100.00000°. Principal axes: T Plg59.0000°, Azm309.0000°; N Plg0.0000°, Azm0.0000°; P Plg29.0000°, Azm107.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from BB mechanism.*
NEIC Felt [III] at Tokyo. Also felt at Atsugi, Hachioji, Ichinoseki, Kishiwada, Motegi, Narita, Nikko, Sakado, Yokohama and Yokosuka. Recorded [4 JMA] in Fukushima.
IDC ***13*** *23:35:53.6±1.7, 37°.38N×141°.52E, h51km±15km, mb4.9/33, mb1 5.1/39, mb1mx5.0/50, mbtmp5.2/39, ML4.7/5, MS5.7/33, Ms1 5.7/33, ms1mx5.7/33 Error ellipse: s-maj=12.7km s-min=8.3km az=104.0*
NEIC ***13*** *23:35:53.0±0.0, 37°.18N×141°.80E, h37km, Moment Tensor Solution. s43 Moment tensor: Scale 10^18Nm; Mrr0.95; Mθθ-0.33; Mφφ-0.62; Mrθ0.65; Mθφ-0.31; Mφr1.37; Best double couple: M0=1.80000×10^18 NP1:φs=26.00000°, δ75.00000°, λ87.00000°. NP2:φs=216.00000°, δ15.00000°, λ99.00000°. Principal axes: T 1.8200, Plg60.0000°, Azm292.0000°; N -0.1400, Plg2.0000°, Azm27.0000°; P -1.6800, Plg29.0000°, Azm118.0000°;*
NEIC ***13*** *23:36:10.1±0.0, 37°.58N×141°.54E, h39km, Moment Tensor Solution. s25 Moment tensor: Scale 10^18Nm; Mrr1.08; Mθθ-0.31; Mφφ-0.77; Mrθ0.45; Mθφ-0.41; Mφr0.78; Best double couple: M0=1.40000×10^18 NP1:φs=211.00000°, δ25.00000°, λ90.00000°. NP2:φs=30.00000°, δ65.00000°, λ90.00000°. Principal axes: T 1.4200, Plg70.0000°, Azm300.0000°; N -0.0700, Plg0.0000°, Azm30.0000°; P -1.3400, Plg20.0000°, Azm120.0000°;*

ISC 13 23:35:52.9±0.2, 37°.40N±0°.03×141°.46E±0°.03, h39km±1km, h38km:pP-P, n1820, σ1°52/1979, mb5.6/459, MS5.8/226, 132C-42D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.47**	**266**	⇓P	**Pn**	**23 36 03.1**	**0.0**
JFK				*e*S	**Sn**	**23 36 11.2**	**+0.9**
ONAJ	**Iwakimizuishiy**	**0.60**	**241**	⇓P	**Pn**	**23 36 04.5**	**-0.7**
ONAJ				S	**Sn**	**23 36 13.4**	**-0.3**
JMM	**Marumori**	**0.70**	**312**	⇓P	**Pn**	**23 36 06.5**	**+0.1**
JMM				*e*S	**Sn**	**23 36 18.1**	**+2.1**
JFT	**Otama**	**0.90**	**278**	⇓P	**Pn**	**23 36 10.0**	**+0.9**
JFT				*e*S	**Sn**	**23 36 23.2**	**+2.3**
JIO	**Ouri**	**1.05**	**355**	⇓P	**Pn**	**23 36 10.7**	**-0.5**
JIO				S	**Sn**	**23 36 24.4**	**-0.3**
JHO	**Hitachi**	**1.06**	**222**	⇓P	**Pn**	**23 36 09.9**	**-1.4**
JHO				*e*S	**Sn**	**23 36 24.4**	**-0.4**
JOU	**Okura**	**1.15**	**327**	⇓P	**Pn**	**23 36 13.0**	**+0.5**
JOU				*e*S	**Sn**	**23 36 29.5**	**+2.5**
JYS	**Shirataka**	**1.37**	**307**	⇓P	**Pn**	**23 36 16.7**	**+1.1**
JFY	**Yanaizu**	**1.40**	**271**	⇓P	**Pn**	**23 36 16.7**	**+0.8**
JMK	**Ichinoseki**	**1.56**	**353**	⇓P	**Pn**	**23 36 18.2**	**+0.1**
JMK				*e*S	**Sn**	**23 36 38.6**	**+1.5**
I30JP	**ISUMI INFRASON**	**2.28**	**204**	P	**Pn**	**23 36 29.4**	**+1.4**
	baz=41,slow=20,SNR=1.5						
MJAR	**Matsushiro Arr**	**2.74**	**253**	P	**Pn**	**23 36 35.5**	**+1.2**
	98nm,0.3s,baz=79,slow=16,SNR=183						
MJAR				S	Sn	23 37 14.8	+8.6
	360nm,0.3s,baz=110,slow=11,SNR=8.3						
MJAR				LR	LR	23 38 00.9	
	comp=Z,278μm,20.1s,baz=75,slow=46						
MAJO	**Matsushiro**	**2.74**	**253**	*d*iP	**Pn**	**23 36 36.0**	**+1.6**
MAJO	**Matsushiro**	**2.74**	**253**	*e*Pn	**Pn**	**23 36 35.5**	**+1.1**
MAT	**Matsushiro**	**2.74**	**253**	P	**Pn**	**23 36 35.7**	**+1.3**
MAT				*e*S	**Sn**	**23 37 11.9**	**+5.7**
MJB9	**Matsu-Tunnel**	**2.74**	**253**	*e*Pn	**Pn**	**23 36 35.9**	**+1.5**
INU	**Inuyama**	**4.13**	**242**	*e*Pn	**Pn**	**23 36 55.4**	**+2.0**
JHJ2	**Mitsune**	**4.49**	**198**	*e*Pn	**Pn**	**23 36 58.6**	**+0.3**
JHJ	**Hachijo jima 2**	**4.49**	**198**	P	**Pn**	**23 36 57.8**	**-0.6**
	614nm,0.3s,baz=80,slow=4.8,SNR=30						
JHJ				S	**Sn**	**23 37 47.4**	**-1.8**
	521nm,0.3s,baz=48,slow=23,SNR=4.6						
JHJ				LR	LR	23 39 09.3	
	comp=Z,74μm,19.4s,baz=21,slow=44						
ERM	**Erimo**	**4.79**	**15**	*ce*P	**Pn**	**23 37 02.9**	**+0.4**
ERM				pmax	pmax		
	comp=Z,222nm,1.0s						
ERM	**Erimo**	**4.79**	**15**	*e*Pn	**Pn**	**23 37 03.1**	**+0.6**
ASAJ	**Asahikawa**	**6.76**	**7**	P	**Pn**	**23 37 30.5**	**+0.9**
	comp=Z,18nm,0.3s,baz=214,slow=12,SNR=27						
ASAJ				S	**Sn**	**23 38 46.6**	**+1.3**
	comp=Z,31nm,0.3s,baz=242,slow=32,SNR=5.6						
ASAJ	**Asahikawa**	**6.76**	**7**	*e*Pn	**Pn**	**23 37 29.9**	**+0.3**
ASAJ				S	**Sn**	**23 38 46.6**	**+1.3**
YUK	**Yuzh-Kuril'sk**	**7.42**	**25**	*i*P	**Pn**	**23 37 40.8**	**+2.2**
YUK				*i*S	**Sn**	**23 38 59.6**	**-1.9**
YUK				pmax	pmax		
	comp=Z,840nm,0.5s						
YUK				pmax	pmax		
	comp=N,578nm,0.4s						
YUK				pmax	pmax		
	comp=E,232nm,0.6s						
YUK				MLR	MLR		
	comp=E,19μm,8.0s						
YUK				MLR	MLR		
	comp=N,17μm,9.0s						
SHO	**Shikotan**	**7.64**	**31**	*i*P	**Pn**	**23 37 39.3**	**-2.3**
SHO				pmax	pmax		
	comp=E,260nm,0.3s						
SHO				pmax	pmax		
	comp=Z,372nm,0.3s						
SHO				pmax	pmax		
	comp=N,153nm,0.4s						
KUR	**Kuril'sk**	**9.19**	**30**	*e*P	**Pn**	**23 38 03.3**	**+0.5**
KUR				*e*S	**Sn**	**23 39 38.5**	**-6.3**
KUR				pmax	pmax		
	comp=E,127nm,0.7s						
KUR				pmax	pmax		
	comp=Z,217nm,0.7s						
KUR				smax	smax		
	comp=E,447nm,0.5s						
KUR				smax	smax		
	comp=N,280nm,0.8s						
KUR				smax	smax		
	comp=N,3μm,2.6s						
KUR				smax	smax		
	comp=E,2μm,3.5s						
VLA	**Vladivostok**	**9.28**	**311**	*e*P	**Pn**	**23 38 05.8**	**+1.7**
MSHR	**Mys Shultsa**	**9.44**	**306**	*e*P	**Pn**	**23 38 09.0**	**+2.7**
YSS	**Yuzh-Sakhalins**	**9.60**	**5⇓**	*e*P	**Pn**	**23 38 09.5**	**+1.1**
YSS				*e*S	**Sn**	**23 39 52.0**	**-2.8**
YSS				pmax	pmax		
	comp=Z,80nm,1.0s						
YSS				MLR	MLR		
	comp=N,14μm,15.0s						
YSS				MLR	MLR		
	comp=Z,14μm,15.0s						
YSS				MLR	MLR		
	comp=E,10μm,14.0s						
JNU	**Nakatsue**	**9.64**	**247**	P	**Pn**	**23 38 11.9**	**+2.7**
	comp=E,4.8nm,0.3s,baz=64,slow=8.9,SNR=44						
JNU				LR	LR	23 42 12.5	
	comp=E,61μm,21.6s,baz=65,slow=39						
JNU	**Nakatsue**	**9.64**	**247**	*e*Pn	**Pn**	**23 38 08.7**	**-0.5**
USRK	**Ussuriysk Ar.**	**9.88**	**316**	P	Pn	23 38 17.4	+5.1
	comp=E,4.6nm,0.3s,baz=119,slow=16,SNR=35						
USRK				LR	LR	23 41 45.2	
	comp=E,82μm,21.7s,baz=123,slow=35						
CBIJ	**Chichi jima**	**10.29**	**176**	*e*Pn	**Pn**	**23 38 15.4**	**-2.6**
CBIJ				S	Sn	23 40 01.1	-11
JCJ	**Chichijima**	**10.29**	**176**	P	**Pn**	**23 38 13.9**	**-4.1**
	comp=E,45nm,0.3s,baz=271,slow=18,SNR=30						
JCJ				S	Sn	23 40 01.1	-11
	comp=E,170nm,0.3s,baz=79,slow=20,SNR=9.1						
KSRS	**Korea Array**	**10.77**	**274**	P	Pn	23 38 29.8	+5.4
	comp=E,3.5nm,0.3s,baz=89,slow=13,SNR=124						
KSRS				LR	LR	23 42 24.6	
	comp=E,76μm,19.4s,baz=88,slow=36						
TJN	**Taejon**	**11.33**	**269**	*ce*P	**Pn**	**23 38 35.4**	**+3.2**
MDJ	**Mudanjiang**	**11.49**	**313**	P	**Pn**	**23 38 33.3**	**-1.1**
MDJ				S	Sn	23 40 52.0	+11
MDJ				PcS	**PcS**	**23 47 59.4**	**+1.1**
MDJ				pmax	pmax		
	comp=E,270nm,4.2s						
MDJ				LR	LR		
	comp=E,27μm,21.2s						
MDJ				LR	LR		
	comp=E,32μm,21.0s						
MDJ				LR	LR		
	comp=E,62μm,20.3s						
MDJ	**Mudanjiang**	**11.49**	**313**	*e*Pn	**Pn**	**23 38 33.7**	**-0.7**
	comp=E,573nm,1.3s						
UGL	**Uglegorsk**	**11.68**	**2**	*e*P	Pn	23 38 28.0	-8.9
UGL				S	**Sn**	**23 40 47.0**	**+1.1**
UGL				smax	smax		
	comp=N,3μm,12.0s						
UGL				smax	smax		
	comp=E,3μm,12.0s						
UGL				MLR	MLR		
	comp=Z,13μm,18.0s						
UGL				MLR	MLR		
	comp=N,17μm,24.0s						
UGL				MLR	MLR		
	comp=E,20μm,18.0s						
INCN	**Inchon**	**11.79**	**275**	P	Pn	23 38 45.9	+7.4
	SNR=16						
INCN	**Inchon**	**11.79**	**275**	PnPn	Pn	23 38 45.9	+7.4
	SNR=16						
HABR	**Khabarovsk**	**12.01**	**339**	*ce*P	**Pn**	**23 38 38.7**	**-2

comp=N,900nm,9.0s
NKL pmax pmax
comp=Z,900nm,8.0s
NKL smax smax
comp=E,3μm,16.0s
NKL MLR MLR
comp=N,12μm,15.0s
NKL MLR MLR
comp=E,7μm,17.0s
NKL MLR MLR
comp=Z,16μm,17.0s
OKH Okha 16.18 3 *e*P **P 23 39 39.4 -0.6**
OKH *e*S **Sn 23 42 34.0 -1.5**
OKH pmax pmax
comp=Z,2μm,12.0s
OKH smax smax
comp=E,5μm,16.0s
OKH smax smax
comp=Z,21μm,22.0s
SKR Severo-Kuril's 16.91 34 *e*P **Pn 23 39 40.9 -5.5**
SKR *e*S **Sn 23 42 46.0 -7.1**
SKR pmax pmax
comp=N,220nm,1.0s
SKR pmax pmax
comp=E,220nm,1.0s
SKR pmax pmax
comp=Z,220nm,1.0s
SKR MLR MLR
comp=Z,22μm,20.0s
SKR MLR MLR
comp=N,15μm,18.0s
SKR MLR MLR
comp=E,10μm,14.0s
SSE Sheshan 17.89 255 P **P 23 39 58.8 -0.2**
SSE sP **sP 23 40 14.3 +0.7**
SSE S **Sn 23 43 16.3 -0.7**
SSE pmax pmax
comp=E,82nm,1.0s
SSE pmax pmax
comp=E,4μm,8.7s
SSE LR LR
comp=E,26μm,22.0s
SSE LR LR
comp=E,24μm,22.0s
SSE LR LR
comp=E,44μm,21.9s
NJ2 Nanjing 19.31 261 *e*P **P 23 40 14.3 -0.4**
NJ2 pP **pP 23 40 20.6 -3.8**
NJ2 S **Sn 23 43 51.3 -0.2**
NJ2 pmax pmax
comp=E,6μm,11.2s
NJ2 LR LR
comp=E,28μm,26.0s
NJ2 LR LR
comp=E,26μm,26.0s
NJ2 LR LR
comp=E,31μm,19.5s
PEA0 Petropavlovsk- 19.35 31 *e*P **P 23 40 14.7 -0.3**
PEA0B Petropavlovsk- 19.35 31 *e*P **P 23 40 15.8 +0.9**
comp=E,433nm,1.3s
PETK Petropavlovsk- 19.35 31 P **P 23 40 14.9 -0.1**
comp=E,0.7nm,0.3s,baz=220,slow=6.5,SNR=15
PETK LR LR 23 47 35.8
comp=E,12μm,21.5s,baz=220,slow=36
TIA Tai'an 19.51 274 ⇑P **P 23 40 15.8 -1.0**
TIA sP **sP 23 40 31.9 +0.4**
TIA pmax pmax
comp=E,190nm,1.1s
TIA pmax pmax
comp=E,11μm,12.0s
TIA LR LR
comp=E,21μm,17.2s
TIA LR LR
comp=E,23μm,14.9s
TIA LR LR
comp=E,38μm,16.1s
HIA Hailar 19.67 314 *e*P **P 23 40 18.3 -0.3**
HIA pmax pmax
comp=Z,150nm,1.1s
HIA Hailar 19.67 314 *e*P **P 23 40 18.2 -0.3**
comp=Z,150nm,1.1s
PET Petropavlovsk 19.69 32 *ce*P **P 23 40 18.6 0.0**
PET *e*S **S 23 43 53.3 -5.0**
PET pmax pmax
comp=Z,1μm,9.4s
PET pmax pmax
comp=Z,1μm,8.6s
PET pmax pmax
comp=Z,186nm,1.3s
PET smax smax
comp=N,3μm,11.3s
PET smax smax
comp=E,5μm,9.5s
PET smax smax
comp=E,8μm,12.9s
PET MLR MLR
comp=Z,19μm,21.0s
PET MLR MLR
comp=Z,24μm,21.0s
PET Petropavlovsk 19.69 32 *e*P **P 23 40 19.1 +0.6**
comp=Z,330nm,1.4s
BJI Beijing 19.88 285 P **P 23 40 20.0 -0.8**
BJI pmax pmax
comp=Z,110nm,1.3s
BJI pmax pmax
comp=Z,3μm,11.1s
BJI LR LR
comp=Z,15μm,15.2s
BJI LR LR
comp=Z,13μm,23.4s
BJI LR LR
comp=Z,17μm,20.5s
BJT Baijiatuau 19.89 285 *e*P **P 23 40 20.0 -0.9**
BJT pmax pmax
comp=Z,147nm,0.8s
BJT Baijiatuau 19.89 285 *e*P **P 23 40 20.0 -0.9**
comp=Z,147nm,0.8s
YOJ Yonaguni jima 20.37 236 *e*P **P 23 40 24.3 -1.9**
YOJ pmax pmax
comp=Z,120nm,0.9s
YOJ MLR MLR
comp=Z,5μm,18.0s
YOJ Yonaguni jima 20.37 236 *e*P **P 23 40 24.3 -1.9**
comp=Z,118nm,0.9s
YOJ LR LR
comp=Z,5μm,18.0s
TATO Taipei 21.05 240 *e*P **P 23 40 34.5 +0.9**
comp=Z,473nm,1.3s
TATO LR LR
comp=Z,14μm,18.0s
YHNB Yeheng 21.33 239 *e*P **P 23 40 34.1 -2.5**
comp=Z,130nm,1.0s
YHNB LR LR
comp=Z,12μm,22.0s
NACB Ninganchiao 21.51 238 *e*P **P 23 40 35.8 -2.7**
comp=Z,59nm,0.8s
NACB LR LR
comp=Z,11μm,22.0s
SSLB Suanglung 22.20 238 *e*P **P 23 40 42.8 -3.2**
comp=Z,83nm,1.0s
SSLB *e*S **S 23 44 42.0 -6.2**
SSLB LR LR
comp=Z,10μm,20.0s
YULB Yu-li 22.24 237 *e*P **P 23 40 42.9 -3.5**
comp=Z,106nm,1.3s
YULB LR LR
comp=Z,7μm,22.0s
CLNS Chul'man 22.36 336 *e*P **P 23 40 45.4 -2.1**
CLNS *e**PP **pP 23 40 55.6 -1.8**
CLNS *e* 23 44 38.8
CLNS *e*S **S 23 44 46.7 -4.0**
CLNS *e*SS **SnSn 23 45 29.0 +8.7**
CLNS pmax pmax
comp=Z,85nm,1.0s
CLNS pmax pmax
comp=N,96nm,1.1s
CLNS pmax pmax
comp=E,54nm,1.1s
CLNS smax smax
comp=E,4μm,11.9s
CLNS smax smax
comp=N,5μm,11.6s
CLNS MLR MLR
comp=Z,9μm,15.0s
CLNS MLR MLR
comp=E,23μm,18.0s
CLNS MLR MLR
comp=N,15μm,15.0s
TPUB Ta-pu 22.75 238 *e*P **P 23 40 47.6 -4.2**
comp=N,141nm,0.8s
TPUB *e*Sn **S 23 45 04.9 +7.0**
TPUB LR LR
comp=Z,11μm,22.0s
TWG Pinlang 22.78 236 *e*P **P 23 40 49.7 -2.4**
comp=Z,1μm,1.1s
TWG *e*Sn Sn 23 45 07.9 -7.0
TWG LR LR
comp=Z,35μm,20.0s
TIY Taiyuan 22.98 280 *e*P **P 23 40 51.3 -2.8**
TIY S **S 23 44 52.4 -9.4**
TIY SS **SnSn 23 45 45.4 +10**
TIY pmax pmax
comp=Z,89nm,1.0s
TIY pmax pmax
comp=Z,2μm,8.3s
TIY LR LR
comp=Z,5μm,12.5s
TIY LR LR
comp=Z,25μm,14.2s
TIY LR LR
comp=Z,39μm,16.5s
MA2 Magadan 22.99 12 P **P 23 40 54.3 +0.4**
comp=Z,100nm,0.8s,baz=217,slow=9.0,SNR=17
MA2 LR LR 23 49 47.7
comp=Z,6μm,21.0s,baz=224,slow=36
MA2 Magadan 22.99 12 *e*P **P 23 40 54.4 +0.4**
comp=Z,428nm,0.8s
QZH Quanzhou 23.10 244 ⇑*i*P P 23 40 48.0 -7.4
QZH sP sP 23 41 11.6 +1.3
QZH S S 23 44 50.8 -13
QZH sS sS 23 45 17.9 -3.7
QZH pmax pmax
comp=Z,480nm,0.9s
QZH pmax pmax
comp=Z,3μm,8.6s
QZH LR LR
comp=N,18μm,13.7s
QZH LR LR
comp=E,18μm,14.2s
QZH LR LR
comp=Z,48μm,21.8s
HHC Hu-ho-hao-te 23.39 288 *e*P **P 23 40 57.3 -1.0**
HHC pP pP 23 41 07.3 -1.2
HHC sP sP 23 41 14.3 +1.0
HHC PP **PnPn 23 41 30.4 +5.1**
HHC S **S 23 45 07.3 -1.4**
HHC sS sS 23 45 20.9 -5.5
HHC pmax pmax
comp=Z,39nm,0.8s
HHC pmax pmax
comp=Z,4μm,4.4s
HHC LR LR
comp=Z,14μm,11.9s
HHC LR LR
comp=Z,18μm,11.9s
HHC LR LR
comp=Z,18μm,12.2s
WHN Wuhan 23.45 261 ⇑*i*P **P 23 40 58.3 -0.5**
WHN pP **pP 23 41 07.1 -1.9**
WHN S **S 23 45 09.3 -0.2**
WHN pmax pmax
comp=Z,5μm,9.8s
WHN LR LR
comp=Z,42μm,15.1s
WHN LR LR
comp=Z,36μm,14.3s
WHN LR LR
comp=Z,82μm,21.8s
GUMO Guam 23.91 172 LR LR 23 51 07.2
comp=Z,6μm,20.0s,baz=26,slow=38
CIT Chita 24.44 316 *e*P **P 23 41 09.6 +1.7**
CIT *e* 23 41 22.8
CIT *e* 23 41 43.2
CIT *e* 23 41 53.0
CIT pmax pmax
comp=Z,604nm,1.3s
BTO Baotou 24.57 287 *e*P **P 23 41 08.9 -0.4**
YAK Yakutsk 25.72 347 P **P 23 41 18.4 -0.9**
comp=Z,147nm,0.6s,baz=194,slow=1.3,SNR=30
YAK Yakutsk 25.72 347 *c i*P **P 23 41 19.2 -0.1**
YAK *e* 23 44 48.8
YAK *e*S **S 23 45 44.2 -1.0**
YAK *e*SS **SnSn 23 46 43.2 +1.0**
YAK pmax pmax
comp=Z,302nm,1.0s
YAK pmax pmax
comp=N,180nm,1.3s
YAK pmax pmax
comp=E,73nm,1.3s
YAK smax smax
comp=N,1μm,1.9s
YAK smax smax
comp=E,612nm,2.2s
YAK MLR MLR
comp=Z,22μm,16.0s
YAK MLR MLR
comp=E,6μm,18.0s
YAK MLR MLR
comp=N,19μm,16.0s
YAK Yakutsk 25.72 347 *e*P **P 23 41 17.7 -1.6**
comp=N,304nm,0.8s
APYP Conner 26.35 228 *e*P **P 23 41 22.2 -3.1**
SEY Seymchan 26.43 11 P **P 23 41 25.5 -0.2**
comp=N,39nm,0.8s,baz=199,slow=8.4,SNR=30
SEY Seymchan 26.43 11 *ce*P **P 23 41 26.7 +1.0**
XAN Xi'an 26.55 273 P **P 23 41 26.0 -1.2**
XAN sP pP 23 41 39.5 +1.6
XAN PP **PnPn 23 42 08.3 -0.3**
XAN S **S 23 45 53.5 -5.6**
XAN pmax pmax
comp=N,210nm,1.0s
XAN pmax pmax
comp=N,3μm,12.5s
XAN LR LR
comp=N,20μm,16.6s
XAN LR LR
comp=N,5μm,18.8s
XAN LR LR
comp=N,16μm,17.9s
CAUP Cauayan 26.73 226 *e*P **P 23 41 29.2 +0.4**
ABRA Dolores 26.83 228 *e*P **P 23 41 28.6 -1.1**
ULN Ulaanbaatar 27.18 304 *e*P **P 23 41 32.1 -0.7**
ULN pmax pmax
comp=Z,190nm,1.2s
ULN Ulaanbaatar 27.18 304 *e*P **P 23 41 32.1 -0.7**
comp=Z,193nm,1.2s
BOD Bodaibo 27.24 327 *e*P **P 23 41 32.1 -1.0**
BOD pmax pmax
comp=Z,107nm,1.2s
ENH Enshi 27.40 264 *e*P **P 23 41 33.9 -1.0**
comp=Z,746nm,1.1s
ENH LR LR
comp=Z,22μm,22.0s
SONA1 Songino Array 27.61 303 *e*P **P 23 41 36.1 -0.6**
SONM Songino Array 27.61 303 P **P 23 41 36.6 0.0**
comp=Z,57nm,0.6s,baz=104,slow=9.5,SNR=87
SONM PcP **PcP 23 44 53.9 +0.5**
comp=Z,8.0nm,0.8s,baz=103,slow=2.7,SNR=5.5
BALP Baler 27.84 225 *e*P **P 23 41 36.6 -2.2**
HKC Hong Kong Obse 27.91 245 P **P 23 41 43.0 +3.6**
GZH Guangzhou 28.04 247 P **P 23 41 33.9 -6.6**
GZH PP **PP 23 42 39.3 -4.9**
GZH S S 23 46 10.3 -12
GZH pmax pmax
comp=Z,5μm,7.1s
H11N2 WAKE ISLAND Hy 28.31 121 T T 00 11 04.9
baz=314,slow=75,SNR=1884
H11N1 WAKE ISLAND Hy 28.32 121 T T 00 11 12.9
baz=314,slow=75,SNR=2573
H11N3 WAKE ISLAND Hy 28.32 121 T T 00 11 18.3
baz=314,slow=75,SNR=2238
SCZP Santa Cruz 28.77 227 *e*P **P 23 41 45.0 -2.0**
H11S1 WAKE ISLAND Hy 29.03 123 T T 00 12 11.2
baz=315,slow=74,SNR=1918
H11S3 WAKE ISLAND Hy 29.03 124 T T 00 12 03.9
baz=315,slow=74,SNR=500
H11S2 WAKE ISLAND Hy 29.05 124 T T 00 11 57.4
baz=315,slow=74,SNR=338
AUQP San Andres 29.26 220 *e*P **P 23 41 53.4 +2.0**
BESP Borongan 29.44 213 *e*P **P 23 41 53.0 0.0**
BOAC Boac 29.57 221 *e*P **P 23 41 54.5 +0.2**
IRK Irkutsk 29.88 312 *e*P **P 23 41 56.8 +0.2**
IRK pmax pmax
comp=Z,107nm,1.3s
PLP Palo 30.03 214 ⇓*e*P **P 23 41 58.1 -0.2**
LZH Lanzhou 30.04 279 ⇑P **P 23 41 57.5 -0.9**
LZH pP pP 23 42 08.3 -0.9
LZH sP sP 23 42 12.8 -1.1
LZH PP **PnPn 23 42 55.5 -0.6**
LZH S **S 23 46 50.3 -3.9**
LZH sS sS 23 47 10.0 -2.1
LZH pmax pmax
comp=Z,550nm,1.4s
LZH pmax pmax
comp=Z,2μm,7.3s
LZH LR LR
comp=Z,13μm,16.0s
LZH LR LR
comp=Z,35μm,16.9s
LZH LR LR
comp=Z,43μm,17.4s
ZAK Zakamensk 30.07 308 *e*P **P 23 41 57.7 -0.8**
ZAK pmax pmax
comp=Z,80nm,1.2s
TLY Talaya 30.12 310 *d i*P **P 23 41 58.8 0.0**
TLY *e* 23 43 00.4
TLY *e*PPP PPP 23 43 12.3
TLY *e* 23 44 58.5
TLY *e*S **S 23 46 54.1 -0.7**
TLY *e*SSS SSS 23 48 51.6
TLY pmax pmax
comp=Z,141nm,1.1s
TLY MLR MLR
comp=Z,25μm,20.0s
TLY Talaya 30.12 310 *e*P **P 23 41 58.8 0.0**
comp=Z,166nm,1.2s
TLY LR LR
comp=Z,26μm,19.0s
OCLP Ormoc 30.30 214 *e*P **P 23 41 58.4 -2.2**
OTRP Odiongan 30.41 220 *e*P **P 23 42 00.7 -0.9**
SJMP San Jose 30.79 222 *e*P **P 23 42 05.2 +0.2**
GYA Guiyang 31.32 260 ⇑*i*P **P 23 42 07.9 -1.8**
GYA pP pP 23 42 21.3 +0.8
GYA sP sP 23 42 27.8 +2.6
GYA PP **PnPn 23 43 14.0 +1.2**
GYA S **S 23 47 09.8 -4.4**
GYA sS sS 23 47 31.3 -0.9
GYA ScP **ScP 23 48 43.6 +0.5**
GYA SS **SnSn 23 49 01.0 +1.5**
GYA ScS **ScS 23 52 39.8 -1.1**
GYA pmax pmax
comp=Z,400nm,1.0s
GYA pmax pmax
comp=Z,1μm,9.6s
GYA LR LR
comp=Z,13μm,19.2s
GYA LR LR
comp=Z,18μm,24.5s
GYA LR LR
comp=Z,29μm,24.8s
BUSP Coron 31.66 223 *e*P **P 23 42 10.4 -2.2**
CD2 Chengdu 31.71 270 P **P 23 42 12.3 -0.8**
CD2 sP sP 23 42 27.5 -1.0
CD2 PP **PP 23 43 24.0 -1.0**
CD2 S **S 23 47 19.4 -0.8**
CD2 sS sS 23 47 37.4 -0.7
CD2 pmax pmax
comp=Z,270nm,0.9s
CD2 pmax pmax
comp=Z,2μm,10.8s
CD2 LR LR
comp=Z,23μm,18.0s
CD2 LR LR
comp=Z,27μm,18.0s
MOY Mondy 31.73 310 *e*P **P 23 42 13.0 -0.1**
MOY pmax pmax
comp=Z,88nm,1.4s
CUYO Cuyo Island 32.20 220 *e*P **P 23 42 14.2 -3.2**
GTA Gaotai 32.49 287 *e*P **P 23 42 18.8 -1.1**
GTA pP pP 23 42 27.8 -2.9
GTA sP sP 23 42 32.3 -3.1
GTA PcP **PcP 23 45 07.1 +0.9**
GTA S **S 23 47 29.0 -3.3**
GTA ScS **ScS 23 52 46.6 +0.2**
GTA pmax pmax
comp=Z,2μm,8.1s
GTA LR LR
comp=Z,13μm,18.5s
GTA LR LR
comp=Z,14μm,21.6s
GTA LR LR
comp=Z,20μm,22.3s
ENPP El Nido 32.74 223 *e*P **P 23 42 20.1 -2.0**
BUKP Musuan 32.94 211 *e*P **P 23 42 22.3 -1.6**
QIZ Qiongzhong 33.11 245 P **P 23 42 25.8 +0.4**
QIZ pP **pP 23 42 34.1 -2.1**
QIZ S **S 23 47 43.6 +1.6**
QIZ LR LR
comp=Z,5μm,17.2s
QIZ LR LR
comp=Z,4μm,17.2s
MATI Mati 33.32 208 *e*P **P 23 42 26.1 -1.1**
DAV Davao City (W) 33.47 209 ⇑*i*P **P 23 42 26.3 -2.1**
BILL Bilibino 33.67 17 ⇑*e*P **P 23 42 29.2 -0.5**
BILL *e* 23 43 46.0
BILL *e*S **S 23 47 53.0 +3.3**
BILL *e*SS **SnSn 23 49 58.1 +2.8**
BILL pmax pmax
comp=Z,66nm,1.7s
BILL MLR MLR
comp=Z,6μm,16.0s
BILL Bilibino 33.67 17 *e*P **P 23 42 29.1 -0.5**
comp=Z,42nm,1.1s
BILL LR LR
comp=Z,7μm,22.0s
CTBH Cotabato--PC H 33.87 212 ⇑*i*P **P 23 42 33.6 +1.6**
PATS Pohnpei 34.07 149 *e*P **P 23 42 33.9 +0.1**
comp=Z,338nm,1.5s
IPIL Ipil 34.10 215 *e*P **P 23 42 32.6 -1.3**
TIXI Tiksi 34.93 353 P **P 23 42 39.8 -0.7**
comp=Z,12nm,0.6s,baz=145,slow=9.2,SNR=39
TIXI Tiksi 34.93 353 *ce*P **P 23 42 40.1 -0.4**
TIXI pmax pmax
comp=Z,66nm,1.7s
TIXI Tiksi 34.93 353 *e*P **P 23 42 39.7 -0.8**
comp=Z,35nm,0.9s
KMI Kunming 35.05 261 P **P 23 42 42.3 -0.1**
KMI pP pP 23 42 54.3 +1.0
KMI sP sP 23 42 58.1 +0.2
KMI PP **PP 23 44 02.0 -0.3**
KMI S **S 23 48 07.0 -5.4**
KMI SS **SnSn 23 50 26.5 -3.8**
KMI pmax pmax
comp=Z,370nm,1.1s
KMI pmax pmax
comp=Z,2μm,8.7s
KMI LR LR
comp=Z,13μm,16.3s
KMI LR LR
comp=Z,22μm,18.5s
KMI LR LR
comp=Z,30μm,21.3s
BATP Bataraza 35.62 223 *e*P **P 23 42 47.1 0.0**
SGSI Sangihe 36.60 207 P **P 23 42 58.6 +3.2**
comp=Z,1μm,1.1s,comp=Z,20μm
KWAJ Kwajalein Atol 37.02 134 *e*P **P 23 42 59.5 +0.5**
KWAJ pmax pmax
comp=Z,120nm,1.0s
KWAJ Kwajalein Atol 37.02 134 *e*P **P 23 42 59.5 +0.5**
comp=Z,122nm,1.0s
KRAR Krasnoyarsk 37.22 316 *e*P **P 23 42 58.3 -2.0**
KRAR pmax pmax
comp=Z,87nm,1.4s
KDM Kudat 37.71 223 ⇓P **P 23 43 07.3 +2.4**
KDM Kudat 37.71 223 ⇓P **P 23 43 07.3 +2.4**
MYLDM Lahad Datu 38.32 219 ⇑P **P 23 43 12.8 +2.8**
MYLDM Lahad Datu 38.32 219 ⇑P **P 23 43 12.8 +2.8**
MYLDM Lahad Datu 38.32 219 *e*P **P 23 43 11.7 +1.7**
comp=Z,206nm,1.0s
GAMB Gambell 38.39 31 *e*P **P 23 43 11.1 +1.1**
comp=Z,77nm,1.5s
SDKM Sandakan 38.59 221 ⇓P **P 23 43 13.7 +1.3**
SDKM Sandakan 38.59 221 ⇓P **P 23 43 13.7 +1.3**
SKNT Sakolnakorn 38.71 249 P **P 23 43 13.2 -0.1**
comp=Z,175nm,1.4s,comp=Z,4μm
KKM Kota Kinabalu 38.77 223 ⇓P **P 23 43 18.0 +4.1**
KKM Kota Kinabalu 38.77 223 ⇓P **P 23 43 18.0 +4.1**

KKM	Kota Kinabalu	38.77 223	eP	P	23 43 15.0	+1.0
	comp=Z,133nm,1.3s					
KKM			LR	LR		
	comp=Z,6μm,22.0s					
UNV	Unalaska Valle	38.97 48	eP	P	23 43 15.6	+0.5
	comp=Z,100nm,1.4s					
SWI	Sorong	39.23 196	P	P	23 43 21.9	+4.3
TSM	Tawau	39.39 219	⇓P	P	23 43 20.3	+1.2
TSM	Tawau	39.39 219	⇓P	P	23 43 20.3	+1.2
CRAI	Chiangrai	39.50 256	P	P	23 43 19.6	-0.4
	comp=Z,769nm,1.0s,comp=Z,101μm					
MANU	Manus Island	39.63 171	eP	P	23 43 20.4	-0.5
	comp=Z,26nm,0.9s					
JAY	Jayapura	39.72 181	P	P	23 43 21.4	-0.3
	comp=Z,1.1nm,0.9s,baz=270,slow=20,SNR=3.0					
JAY	Jayapura	39.72 181	P	P	23 43 30.6	+8.9
GENI	Genyem	39.81 182	P	P	23 43 23.8	+1.4
	comp=Z,148nm,1.2s,comp=Z,4μm					
KHON	Khomkaen	39.97 249	P	P	23 43 24.9	+1.1
	comp=Z,51nm,0.9s,comp=Z,980nm					
TNA	Tin City	40.52 30	eP	P	23 43 29.8	+2.0
	comp=Z,107nm,1.3s					
CMAI	Chiengmai2	40.70 257	P	P	23 43 30.1	0.0
	comp=Z,79nm,1.0s,comp=Z,2μm					
WMQ	Urumqi	40.71 296	P	P	23 43 30.9	+1.1
WMQ			pP	pP	23 43 39.6	-1.2
WMQ			sP	sP	23 43 47.4	+2.0
WMQ			S	S	23 49 38.4	+1.0
WMQ			pmax	pmax		
	comp=Z,110nm,1.2s					
WMQ			pmax	pmax		
	comp=Z,2μm,7.2s					
WMQ			LR	LR		
	comp=Z,4μm,15.4s					
WMQ			LR	LR		
	comp=Z,7μm,19.4s					
WMQ			LR	LR		
	comp=Z,8μm,29.0s					
UTTA	Uttaradit	40.81 253	P	P	23 43 31.1	+0.3
	comp=Z,26nm,1.0s,comp=Z,213nm					
FALS	False Pass	40.82 47	eP	P	23 43 31.9	+1.5
	comp=Z,270nm,1.6s					
MRSI	Marisa	40.92 211	P	P	23 43 31.8	+0.1
	comp=Z,225nm,1.2s,comp=Z,4μm					
FAKI	Fak Fak	41.02 194	P	P	23 43 35.6	+3.2
	comp=Z,141nm,1.0s,comp=Z,3μm					
FAKI	Fak Fak	41.02 194	eP	P	23 43 34.1	+1.7
	comp=Z,100nm,0.9s					
LAMP	Lampang	41.06 254	P	P	23 43 34.5	+1.7
	comp=Z,39nm,1.1s,comp=Z,335nm					
PBKT	Sadao Pong	41.21 251	P	P	23 43 34.7	+0.6
	comp=Z,90nm,1.0s,comp=Z,2μm					
CMMT	Chiang Mai	41.41 255	P	P	23 43 36.3	+0.5
	comp=Z,97nm,1.3s,comp=Z,2μm					
CHTO	Chiang Mai	41.42 255	P	P	23 43 36.4	+0.6
	comp=Z,284nm,1.1s,comp=Z,7μm					
CHTO	Chiang Mai	41.42 255	eP	P	23 43 36.7	+0.9
CHTO			pmax	pmax		
	comp=Z,56nm,1.1s					
CHTO	Chiang Mai	41.42 255	eP	P	23 43 36.7	+0.9
	comp=Z,56nm,1.1s					
CHTO			LR	LR		
	comp=Z,14μm,20.0s					
CM31	Chiang Mai Arr	41.62 255	eP	P	23 43 38.5	+1.0
CMAR	Chiang Mai Arr	41.62 255	P	P	23 43 38.5	+1.0
	comp=Z,22nm,0.8s,baz=48,slow=5.9,SNR=58					
CMAR			LR	LR	00 02 56.6	
	comp=Z,12μm,18.2s,baz=66,slow=39					
CMAR	Chiang Mai Arr	41.62 255	P	P	23 43 38.5	+1.0
CMAR			pmax	pmax		
	comp=Z,28nm,0.9s					
CMAR			MLR	MLR		
	comp=Z,12μm,18.2s					
CM01	Chiang Mai Arr	41.63 255	eP	P	23 43 38.3	+0.7
SUKH	Sukhothai	41.67 253	P	P	23 43 37.9	+0.1
	comp=Z,37nm,1.0s,comp=Z,259nm					
ZALV	Zalesovo Beam	41.69 312	P	P	23 43 37.1	-0.5
	comp=Z,82nm,0.6s,baz=90,slow=6.1,SNR=174					
ZALV			PcP	PcP	23 45 35.1	+1.5
	comp=Z,9.2nm,0.5s,baz=84,slow=2.4,SNR=4.5					
ZALV			LR	LR	00 01 54.7	
	comp=Z,19μm,18.8s,baz=86,slow=37					
SANI	Sanana	41.79 204	P	P	23 43 42.5	+3.7
LUWI	Luwuk	41.98 209	P	P	23 43 40.5	+0.2
	comp=Z,288nm,0.8s,comp=Z,7μm					
LUWI	Luwuk	41.98 209	eP	P	23 43 39.5	-0.8
	comp=Z,208nm,0.8s					
LSA	Lhasa	42.21 275	P	P	23 43 44.8	+2.1
LSA			pP	sP	23 43 56.8	-1.6
LSA			S	S	23 50 04.9	+4.1
LSA			pmax	pmax		
	comp=Z,49nm,1.1s					
LSA			pmax	pmax		
	comp=Z,2μm,9.6s					
LSA			LR	LR		
	comp=Z,3μm,20.6s					
LSA			LR	LR		
	comp=Z,6μm,26.1s					
LSA			LR	LR		
	comp=Z,12μm,27.4s					
LSA	Lhasa	42.21 275	eP	P	23 43 43.5	+0.8
LSA			pmax	pmax		
	comp=Z,205nm,1.1s					
LSA			MLR	MLR		
	comp=Z,10μm,21.0s					
LSA	Lhasa	42.21 275	eP	P	23 43 43.5	+0.8
	comp=Z,205nm,1.1s					
LSA			LR	LR		
	comp=Z,10μm,21.0s					
ZSN	Zaisan	42.43 302	i P	P	23 43 40.1	-3.7
	comp=Z,2μm,1.4s					
ZSN			eS	S	23 50 00.1	-2.6
NLAI	Namlea	42.58 201	P	P	23 43 49.6	+4.4
NVS	Novosibirsk	42.61 313	eP	P	23 43 44.9	-0.2
NVS			e		23 43 59.2	
NVS			eS	S	23 50 10.8	+5.7
NVS			pmax	pmax		
	comp=N,31nm,1.2s					
NVS			pmax	pmax		
	comp=E,173nm,1.2s					
NVS			smax	smax		
	comp=N,30nm,1.7s					
NVS			smax	smax		
	comp=E,36nm,2.7s					
CHBT	CHBT	42.66 245	P	P	23 43 47.4	+1.5
	comp=E,129nm,1.0s,comp=E,4μm					
NRIK	Noril'sk	42.95 335	P	P	23 43 47.2	-0.4
	comp=E,70nm,1.1s,baz=121,slow=6.7,SNR=58					
NRIK			LR	LR	00 02 55.0	
	comp=E,16μm,18.9s,baz=106,slow=38					
PCI	Palu	43.05 213	P	P	23 43 49.6	+0.6
	comp=E,238nm,1.3s					
PCI	Palu	43.05 213	P	P	23 43 47.7	-1.3
PCI			pmax	pmax		
	comp=Z,283nm,1.2s					
SHL	Shillong	43.45 269	eP	P	23 43 52.5	+0.1
SHL			ex	x	23 50 24.0	
PATY	Pattaya	43.61 247	P	P	23 43 55.9	+2.3
	comp=Z,18nm,1.0s					
SBUM	Sibu	43.95 225	⇑P	P	23 43 57.7	+1.4
SBUM	Sibu	43.95 225	⇑P	P	23 43 57.7	+1.4
SBUM	Sibu	43.95 225	eP	P	23 43 57.2	+0.9
	comp=Z,56nm,0.9s					
MK01	Makanchi Array	43.95 302	eP	P	23 43 55.4	-0.7
MK31	Makanchi Array	43.95 302	eP	P	23 43 55.7	-0.4
MK31	Makanchi Array	43.95 302	eP	P	23 43 55.7	-0.4
MKAR	Makanchi Array	43.95 302	P	P	23 43 55.6	-0.5
	comp=Z,85nm,0.7s,baz=86,slow=10.0,SNR=240					
MKAR			LR	LR	00 03 37.2	
	comp=Z,10μm,18.0s,baz=82,slow=38					
MKAR	Makanchi Array	43.95 302	P	P	23 43 55.6	-0.5
MKAR			pmax	pmax		
	comp=Z,85nm,0.7s					
MKAR			MLR	MLR		
	comp=Z,10μm,18.0s					
MKAR	Makanchi Array	43.95 302	eP	P	23 43 55.7	-0.4
SRDT	SRDT	43.99 250	P	P	23 43 58.4	+1.8
	comp=Z,240nm,1.1s,comp=Z,5μm					
MAKZ	Makanchi	44.16 302	eP	P	23 43 57.3	-0.5
MAKZ			pmax	pmax		
	comp=Z,298nm,1.3s					
MAKZ	Makanchi	44.16 302	eP	P	23 43 57.3	-0.5
	comp=Z,298nm,1.3s					
KDI	Kendari	44.73 207	P	P	23 44 04.4	+1.9
	comp=Z,61nm,1.3s,comp=Z,2μm					
SEM	Semipalatinsk	44.75 307	i P	P	23 44 02.6	+0.3
	comp=Z,531nm,1.5s					
SEM			i S	S	23 50 38.6	+2.2
SEM			LR	LR	00 02 38.7	
	comp=Z,9μm,19.7s					
TTSI	Tana Toraja	44.98 211	P	P	23 44 06.3	+1.8
	comp=Z,58nm,1.1s,comp=Z,2μm					
TT01	Tatalina	45.10 35	eP	P	23 44 05.5	+0.6
TTA	Tatalina	45.10 35	eP	P	23 44 05.5	+0.4
TTA			pmax	pmax		
	comp=Z,38nm,1.2s					
TTA	Tatalina	45.10 35	eP	P	23 44 05.5	+0.4
	comp=Z,38nm,1.3s					
SVW2	Sparrevohn	45.21 38	eP	P	23 44 07.7	+1.8
	comp=Z,45nm,1.3s					
MTKI	Muara Teweh, K	45.38 219	P	P	23 44 09.9	+2.2
	comp=Z,251nm,0.8s,comp=Z,9μm					
KURK	Kurchatov	45.73 308	eP	P	23 44 09.3	-0.8
KURK			pmax	pmax		
	comp=Z,740nm,1.2s					
KURK	Kurchatov	45.73 308	eP	P	23 44 09.3	-0.8
	comp=Z,744nm,1.2s					
KURK			LR	LR		
	comp=Z,37μm,20.0s					
KSM	Kuching	45.83 226	⇑P	P	23 44 13.0	+1.7
KSM	Kuching	45.83 226	⇑P	P	23 44 13.0	+1.7
KSM	Kuching	45.83 226	eP	P	23 44 12.8	+1.6
	comp=Z,94nm,1.0s					
KSM			LR	LR		
	comp=Z,3μm,21.0s					
SPSI	Sidrap Palu	45.84 211	P	P	23 44 11.1	-0.2
	comp=Z,104nm,1.2s,comp=Z,2μm					
STKI	Sintang	46.33 224	P	P	23 44 16.7	+1.5
	comp=Z,96nm,0.9s					
SHLS	Shalkode	46.40 297	i P	P	23 44 14.5	-1.3
	comp=Z,687nm,1.0s					
SHLS			eS	S	23 51 01.4	+0.5
SHLS			LR	LR	00 03 53.9	
	comp=Z,3μm,15.1s					
OHAK	Old Harbor	46.46 43	eP	P	23 44 16.5	+0.8
	comp=Z,59nm,1.1s					
RSO	Redoubt South	46.59 38	eP	P	23 44 18.0	+0.9
PDGK	Podgornoye	46.64 298	P	P	23 44 17.3	0.0
PDGK			pmax	pmax		
	comp=Z,204nm,1.2s					
KAPI	Kappang	46.80 210	eP	P	23 44 19.1	+0.3
	comp=Z,165nm,1.0s					
KAPI			LR	LR		
	comp=Z,4μm,21.0s					
KDAK	Kodiak Island	46.80 42	P	P	23 44 33.7	+15
	comp=Z,37nm,0.6s,baz=342,slow=3.6,SNR=28					
KDAK	Kodiak Island	46.80 42	eP	P	23 44 17.8	-0.6
KDAK			pmax	pmax		
	comp=Z,60nm,0.8s					
KDAK	Kodiak Island	46.80 42	eP	P	23 44 17.8	-0.6
	comp=Z,60nm,0.8s					
KDAK			LR	LR		
	comp=Z,13μm,21.0s					
PPLA	Purkeypile	46.85 35	eP	P	23 44 19.6	+0.7
	comp=Z,134nm,1.3s					
PMG	Port Moresby	46.87 172	eP	P	23 44 22.2	+2.9
PMG			pmax	pmax		
	comp=Z,127nm,1.0s					
CAST	Castle Rocks	46.90 34	eP	P	23 44 19.6	+0.4
	comp=Z,125nm,1.8s					
SPU	Mount Spurr	46.92 37	eP	P	23 44 19.2	-0.2
UZB	Uzynbulak	47.01 298	i P	P	23 44 19.1	-1.4
	comp=Z,688nm,1.1s					
UZB			eS	S	23 51 08.6	-0.9
UZB			LR	LR	00 04 10.4	
	comp=Z,7μm,18.3s					
KPKS	Kokpek	47.17 298	i P	P	23 44 20.2	-1.5
	comp=Z,1μm,1.2s					
KPKS			eS	S	23 51 11.0	-0.6
KPKS			LR	LR	00 04 36.4	
	comp=Z,18μm,18.6s					
KTGM	Kuala Trenggan	47.32 237	⇑P	P	23 44 24.8	+1.8
KTGM	Kuala Trenggan	47.32 237	⇑P	P	23 44 24.8	+1.8
BPAW	Bear Paw Mtn.	47.40 33	eP	P	23 44 24.3	+1.3
	comp=Z,77nm,1.6s					
ZHN	Zhinishke	47.42 298	i P	P	23 44 22.4	-1.2
	comp=Z,517nm,1.1s					
ZHN			eS	S	23 51 15.6	+0.3
ZHN			LR	LR	00 04 26.3	
	comp=Z,9μm,17.4s					
KTH	Kantishna Hill	47.42 34	eP	P	23 44 23.9	+0.6
	comp=Z,64nm,1.2s					
SATY	Saty	47.47 298	i P	P	23 44 23.2	-0.8
	comp=Z,758nm,1.1s					
SATY			eS	S	23 51 16.6	+0.6
SATY			LR	LR	00 04 39.3	
	comp=Z,10μm,17.3s					
MLY	Manley	47.52 32	eP	P	23 44 24.5	+0.4
	comp=Z,143nm,1.8s					
BSSI	Bau Bau, Buton	47.53 209	P	P	23 44 27.4	+2.8
	comp=Z,98nm,1.0s,comp=Z,3μm					
BRLK	Bradley Lake	47.56 39	eP	P	23 44 25.3	+0.9
	comp=Z,29nm,0.9s					
BBKI	Banjar Baru	47.59 217	P	P	23 44 25.4	+0.4
	comp=Z,227nm,0.9s,comp=Z,5μm					
JOHN	Johnston Islan	47.66 102	eP	P	23 44 25.7	+0.1
	comp=Z,307nm,1.1s					
JOHN			epP	sP	23 44 42.1	+0.8
JOHN			LR	LR		
	comp=Z,1μm,21.0s					
KKN	Kakani	47.68 276	eP	P	23 44 25.9	-0.1
	comp=Z,413nm,0.7s					
PKIN	Phulchoki	47.69 275	eP	P	23 44 26.5	+0.4
	comp=Z,140nm,0.7s					
TRF	Thorofare Moun	47.71 34	eP	P	23 44 26.3	+0.7
	comp=Z,34nm,1.1s					
SKLT	Songkhla	47.71 241	P	P	23 44 27.8	+1.8
	comp=Z,96nm,1.1s,comp=Z,2μm					
SURT	Suratani	47.77 245	P	P	23 44 28.3	+1.8
	comp=Z,42nm,1.3s,comp=Z,698nm					
COLD	Coldfoot	47.82 29	eP	P	23 44 27.7	+1.5
	comp=Z,57nm,1.4s					
TRTT	Trang	47.90 243	P	P	23 44 29.1	+1.6
	comp=Z,88nm,1.1s,comp=Z,2μm					
RC01	Rabbit Creek A	48.05 38	eP	P	23 44 28.4	+0.3
	comp=Z,107nm,1.3s					
BWN	Browne	48.07 33	eP	P	23 44 30.9	+2.7
	comp=Z,400nm,1.6s					
GKN	Gorkha	48.10 276	eP	P	23 44 29.0	-0.1
	comp=Z,1μm,1.0s					
SEW	Seward	48.26 39	eP	P	23 44 30.2	+0.6
	comp=Z,136nm,1.4s					
MCK	McKinley	48.31 34	eP	P	23 44 30.7	+0.6
MCK			pmax	pmax		
	comp=Z,39nm,1.1s					
MCK	McKinley	48.31 34	eP	P	23 44 30.7	+0.6
	comp=Z,39nm,1.2s					
PMR	Palmer	48.31 37	eP	P	23 44 30.1	0.0
PMR			pmax	pmax		
	comp=Z,31nm,0.9s					
PMR	Palmer	48.31 37	eP	P	23 44 30.1	0.0
	comp=Z,31nm,0.9s					
RND	Reindeer	48.36 34	eP	P	23 44 30.2	-0.3
RND			pmax	pmax		
	comp=Z,43nm,0.9s					
RND	Reindeer	48.36 34	eP	P	23 44 30.2	-0.3
	comp=Z,43nm,0.9s					
MDOK	Medeo	48.40 298	i P	P	23 44 31.0	-0.3
	comp=Z,977nm,1.2s					
MDOK			i S	S	23 51 30.7	+1.5
MDOK			LR	LR	00 05 00.2	
	comp=Z,15μm,19.7s					
AAA	Alma-Ata	48.44 298	i P	P	23 44 33.3	+1.9
AAA			i S	S	23 51 27.1	-2.5
AAA			pmax	pmax		
	comp=Z,3μm,9.7s					
AAA			smax	smax		
	comp=E,5μm,14.3s					
AAA			MLR	MLR		
	comp=Z,40μm,18.0s					
MDM	Murphy Dome	48.59 32	eP	P	23 44 32.5	+0.3
	comp=Z,228nm,1.7s					
WRH	Wood River Hil	48.66 33	eP	P	23 44 33.6	+0.8
	comp=Z,34nm,1.0s					
SML	Sawmill	48.68 37	eP	P	23 44 33.8	+0.8
SML			pmax	pmax		
	comp=Z,77nm,0.9s					
SML	Sawmill	48.68 37	eP	P	23 44 33.8	+0.8
	comp=Z,77nm,0.9s					
KUU	Kurty	48.69 299	i P	P	23 44 30.9	-2.4
	comp=Z,1μm,1.3s					
KUU			i S	S	23 51 31.2	-1.8
KUU			LR	LR	00 05 31.0	
	comp=Z,8μm,15.7s					
COLA	College	48.75 32	eP	P	23 44 34.1	+0.7
COLA			pmax	pmax		
	comp=Z,34nm,0.9s					
COLA	College	48.75 32	eP	P	23 44 34.1	+0.7
	comp=Z,34nm,0.9s					
COLA			LR	LR		
	comp=Z,4μm,20.0s					
CCB	Clear Creek Bu	48.78 33	eP	P	23 44 34.3	+0.7
	comp=Z,50nm,1.4s					
PKDT	Phuket	48.83 244	P	P	23 44 36.5	+1.9
	comp=Z,423nm,1.0s,comp=Z,3μm					
KOLN	Koldanda	49.02 276	eP	P	23 44 36.1	-0.2
	comp=Z,315nm,0.8s					
KULM	Kulim	49.03 240	⇑P	P	23 44 37.6	+1.4
KULM	Kulim	49.03 240	⇑P	P	23 44 37.6	+1.4
KULM	Kulim	49.03 240	eP	P	23 44 37.1	+1.0
	comp=Z,89nm,1.3s					
KULM			LR	LR		
	comp=Z,4μm,20.0s					
BOK	Bokaro	49.07 270	eP	P	23 44 35.5	-1.0
BOK			IAmb	IAmb	23 44 39.6	
	comp=Z,58nm,0.7s					
SCM	Sheep Creek Mo	49.15 36	eP	P	23 44 37.6	+1.0
SCM			pmax	pmax		
	comp=Z,52nm,0.8s					
SCM	Sheep Creek Mo	49.15 36	eP	P	23 44 37.6	+1.0
	comp=Z,52nm,0.8s					
IL1	Eielson Array	49.17 33	eP	P	23 44 35.8	-0.8
ILAR	Eielson Array	49.17 33	P	P	23 44 35.9	-0.8
	comp=Z,26nm,0.8s,baz=267,slow=5.8,SNR=74					
ILAR			LR	LR	00 06 26.1	
	comp=Z,4μm,21.4s,baz=268,slow=37					
ILB	Eielson Array	49.17 33	eP	P	23 44 35.9	-0.8
MMRI	Maumere	49.20 205	P	P	23 44 40.7	+3.3
	comp=Z,171nm,1.4s,comp=Z,6μm					
MMRI	Maumere	49.20 205	eP	P	23 44 41.4	+3.9
	comp=Z,294nm,1.4s					
PYUN	Piuthan	49.36 277	eP	P	23 44 38.9	0.0
	comp=Z,2μm,1.1s					
IPM	Ipoh	49.36 238	⇓P	P	23 44 39.8	+1.0
IPM	Ipoh	49.36 238	⇓P	P	23 44 39.8	+1.0
IPM	Ipoh	49.36 238	eP	P	23 44 37.9	-0.8
	comp=Z,74nm,1.0s					
DGPR	DIGLIPUR	49.41 254	eP	P	23 44 37.0	-2.0
TKM2	Tokmak 2	49.49 298	eP	P	23 44 39.7	0.0
TKM2			pmax	pmax		
	comp=Z,170nm,1.0s					
TKM2	Tokmak 2	49.49 298	eP	P	23 44 39.7	0.0
	comp=Z,170nm,0.9s					
TKM2			LR	LR		
	comp=Z,35μm,20.0s					
MYKOM	Kota Tinggi	49.51 233	eP	P	23 44 41.0	+1.2
	comp=Z,74nm,1.2s					
SOEI	Soe	49.60 202	P	P	23 44 44.0	+3.4
SOEI	Soe	49.60 202	eP	P	23 44 41.1	+0.6
	comp=Z,354nm,1.0s					
BRZS	Berezniki	49.61 308	i P	P	23 44 38.9	-1.4
	comp=Z,310nm,1.0s					
BRZS			eS	S	23 51 45.4	-0.4
BRZS			LR	LR	00 06 21.5	
HNR	Honiara	49.70 156	PFAKE		23 44 50.0	+8.8
HNR			LR	LR		
	comp=Z,11μm,20.0s					
TPRI	Tanjung Pinang	49.75 232	P	P	23 44 43.0	+1.4
	comp=Z,102nm,0.9s,comp=Z,21μm					
KLU	Klutina	49.85 37	eP	P	23 44 42.4	+0.4
	comp=Z,50nm,1.0s					
MID	Middleton Isla	49.89 40	eP	P	23 44 43.3	+1.1
MID			pmax	pmax		
	comp=Z,550nm,1.6s					
MID	Middleton Isla	49.89 40	eP	P	23 44 43.3	+1.1
	comp=Z,550nm,1.7s					
PAX	Paxson	49.91 35	eP	P	23 44 43.3	+0.8
PAX			pmax	pmax		
	comp=Z,26nm,0.9s					
PAX	Paxson	49.91 35	eP	P	23 44 43.2	+0.8
	comp=Z,26nm,0.9s					
BTLS	Baital	49.95 301	i P	P	23 44 41.9	-1.0
	comp=Z,489nm,1.0s					
BTLS			eS	S	23 51 50.7	+0.1
BTLS			LR	LR	00 05 53.3	
	comp=Z,4μm,17.3s					
DIV	Divide	49.96 37	eP	P	23 44 44.1	+1.3
	comp=Z,97nm,1.1s					
EYAK	Cordova Ski Ar	50.04 38	eP	P	23 44 45.4	+2.0
	comp=Z,64nm,1.1s					
FRU	Bishkek	50.20 298	⇑i P	P	23 44 45.5	+0.6
FRU			i		23 44 56.0	
FRU			eS	S	23 51 55.0	+0.8
FRU			pmax	pmax		
	comp=Z,130nm,1.4s					
FRU			smax	smax		
	comp=E,2μm,14.0s					
OTUK	Ortayu	50.24 306	P	P	23 44 44.3	-0.8
OTUK			pmax	pmax		
	comp=Z,176nm,1.1s					
KSH	Kashi	50.29 294	P	P	23 44 49.4	+3.7
KSH			epP	sP	23 44 59.4	-2.1
KSH			PcS	PcS	23 49 59.8	-1.6
KSH			S	S	23 51 58.8	+3.1
KSH			SS	SS	23 55 31.0	+1.8
KSH			pmax	pmax		
	comp=Z,60nm,1.0s					
KSH			pmax	pmax		
	comp=Z,2μm,6.9s					
KSH			LR	LR		
	comp=Z,21μm,16.3s					
KSH			LR	LR		
	comp=Z,14μm,16.2s					
KSH			LR	LR		
	comp=Z,27μm,16.3s					
AAK	Ala-Archa	50.35 298	c i P	P	23 44 46.6	+0.5
AAK			pmax	pmax		
	comp=Z,103nm,1.0s					
AAK	Ala-Archa	50.35 298	eP	P	23 44 45.7	-0.5
	comp=Z,41nm,0.8s					
AAK			LR	LR		
	comp=Z,31μm,20.0s					
BRVK	Borovoye	50.41 312	c eP	P	23 44 45.7	-0.5
BRVK			pmax	pmax		
	comp=Z,121nm,1.2s					
BRVK	Borovoye	50.41 312	eP	P	23 44 45.6	-0.5
	comp=Z,92nm,1.0s					
BRVK			LR	LR		
	comp=Z,21μm,20.0s					
DOT	Dot Lake	50.48 34	eP	P	23 44 46.2	-0.5
	comp=Z,49nm,0.8s					
PBA	Port Blair	50.49 253	eP	P	23 44 47.3	0.0
BMRM	Bremner River	50.55 37	eP	P	23 44 48.6	+1.4
	comp=Z,98nm,1.2s					
MENT	Mentasta	50.71 35	eP	P	23 44 49.1	+0.7
	comp=Z,41nm,0.8s					
EKS2	Erkin-Say	50.84 298	eP	P	23 44 49.3	-0.5
EKS2			pmax	pmax		
	comp=Z,58nm,1.0s					
EKS2	Erkin-Say	50.84 298	eP	P	23 44 49.3	-0.5
	comp=Z,58nm,1.0s					
EKS2			LR	LR		
	comp=Z,20μm,20.0s					
MTN	Manton Dam	50.91 193	eP	P	23 44 50.5	+0.2
	comp=Z,262nm,1.6s					
BWNR	Bhubaneshwar	50.92 267	eP	P	23 44 48.3	-2.3
PLAI	Plampang	51.05 211	P	P	23 44 50.2	-1.2
COEN	Coen	51.11 178	eP	P	23 44 52.6	+0.8
COEN			epP	pP	23 45 02.3	-0.8
ZRNK	Zerenda	51.19 312	eP	P	23 44 51.6	-0.5
ZRNK			pmax	pmax		
	comp=Z,210nm,1.2s					
ZRNK	Zerenda	51.19 312	eP	P	23 44 51.6	-0.5
	comp=Z,214nm,1.3s					
PPBI	Pangkal Pinang	51.20 228	P	P	23 44 54.1	+1.5
	comp=Z,88nm,1.0s					
TWSI	Taliwang, Sumb	51.34 212	P	P	23 44 53.2	-0.4
	comp=Z,118nm,1.3s,comp=Z,1μm					
SRBI	Singaraja	51.48 214	P	P	23 44 55.8	+1.2
	comp=Z,187nm,0.8s,comp=Z,4μm					
EGAK	Eagle	51.61 32	eP	P	23 44 55.7	+0.6
	comp=Z,92nm,1.6s					
EGAK			LR	LR		
	comp=Z,3μm,21.0s					
BALM	Baldy	51.62 37	eP	P	23 44 56.4	+1.0
BALM			pmax	pmax		
	comp=Z,53nm,1.2s					
BALM	Baldy	51.62 37	eP	P	23 44 56.4	+1.0
	comp=Z,53nm,1.2s					
LHMI	Lhok Sumawe	51.66 243	eP	P	23 44 56.2	+0.2

comp=Z,223nm,1.0s
ABJI Asem Bagus 51.67 215 P **P** **23 44 56.8 +0.8**
comp=Z,155nm,1.1s,comp=Z,4µm
DNP Denpasar 52.01 214 P P 23 45 03.5 +4.9
PSI Prapat 52.01 239 *e*P **P** **23 44 58.1 -0.8**
PSI pmax pmax
comp=Z,48nm,1.0s
PSI Prapat 52.01 239 *e*P **P** **23 44 58.1 -0.8**
comp=Z,48nm,1.0s
DDI Dehra Dun 52.26 282 *e*P **P** **23 44 58.3 -2.2**
JAGI Jajag, Banyuwa 52.30 215 P **P** **23 45 01.6 +0.8**
comp=Z,113nm,1.1s,comp=Z,2µm
JAGI Jajag, Banyuwa 52.30 215 *e*P **P** **23 45 00.5 -0.3**
comp=Z,87nm,0.9s
BKNI Bangkinang 52.43 235 P **P** **23 45 03.8 +2.0**
comp=Z,299nm,1.0s,comp=Z,3µm
BKNI Bangkinang 52.43 235 *e*P **P** **23 45 01.9 +0.1**
comp=Z,342nm,1.0s
GMJI Gumukmas 52.45 216 P **P** **23 45 02.4 +0.5**
comp=Z,92nm,1.0s
DAWY Dawson 52.48 33 *e*P **P** **23 45 02.3 +0.7**
comp=Z,69nm,1.7s
SMLA Simla 52.60 283 *e*P **P** **23 45 02.1 -0.8**
CMBY CAMPBELL BAY 52.62 247 *e*P **P** **23 45 02.0 -1.2**
NGJI Ngawi 52.62 219 P **P** **23 45 05.8 +2.6**
comp=Z,114nm,1.1s
MLSI Meulaboh, Aceh 52.72 243 P **P** **23 45 04.8 +0.9**
comp=Z,127nm,1.0s,comp=Z,3µm
DHRM DHARAMSHALA 52.79 285 *e*P **P** **23 45 04.0 -0.7**
KKAR Karatay Array 52.97 300 *e*P **P** **23 45 04.8 -0.8**
KKAR Karatay Array 52.97 300 *e*P **P** **23 45 04.8 -0.8**
MNSI Mandailing Nat 53.04 237 P **P** **23 45 07.6 +1.3**
comp=Z,60nm,0.9s,comp=Z,2µm
SDSI Sungai Dareh 53.13 233 P **P** **23 45 08.3 +1.3**
comp=Z,124nm,1.0s,comp=Z,15µm
CHLP Challavanipeta 53.28 266 *e*P **P** **23 45 08.3 +0.3**
CHLP IAmb IAmb 23 45 12.3
comp=Z,131nm,1.2s
CHLP *es*P **pP** **23 45 21.3 +2.0**
CHLP *e*S **S** **23 52 34.0 -2.8**
CHLP IVMs_BB IVMs_BB 00 07 10.4
comp=Z,3µm,27.9s
PPI Padang Panjang 53.44 235 P P 23 45 14.4 +5.2
JCJI Jatiwangi 53.53 223 P **P** **23 45 13.4 +3.5**
comp=Z,238nm,1.2s,comp=Z,14µm
UGM Wanagama 53.56 219 P **P** **23 45 11.3 +1.2**
comp=Z,493nm,1.2s,comp=Z,6µm
UGM Wanagama 53.56 219 *e*P **P** **23 45 10.2 +0.1**
comp=Z,612nm,1.2s
IUG Iuzhnay 53.63 299 *i* P **P** **23 45 09.3 -1.2**
comp=Z,1µm,1.1s
IUG *e*S **S** **23 52 41.5 0.0**
IUG LR LR 00 08 24.7
comp=Z,7µm,17.1s
BRLS Borolday 53.65 300 *e*P **P** **23 45 09.7 -0.9**
BRLS *e*S **S** **23 52 42.2 +0.7**
BRLS LR LR 00 08 27.7
comp=Z,322nm,14.5s
GSI Gunungsitoli 54.02 239 P **P** **23 45 13.9 +0.4**
comp=Z,316nm,1.1s,comp=Z,4µm
GSI Gunungsitoli 54.02 239 *e*P **P** **23 45 13.1 -0.4**
comp=Z,428nm,1.2s
INK Inuvik 54.05 27 P **P** **23 45 13.1 +0.1**
comp=Z,19nm,0.8s,baz=286,slow=7.9,SNR=36
INK Inuvik 54.05 27 *e*P **P** **23 45 12.7 -0.3**
comp=Z,48nm,1.1s
LHSI Lahat 54.08 229 P **P** **23 45 15.0 +1.1**
comp=Z,195nm,1.0s,comp=Z,3µm
OPA Opana 54.09 89 *e*P **P** **23 45 15.2 +1.2**
OPA pmax pmax
comp=Z,190nm,1.2s
OPA Opana 54.09 89 *e*P **P** **23 45 15.2 +1.2**
comp=Z,190nm,1.2s
LEM Lembang 54.17 223 P P 23 45 20.9 +6.2
KIP Kipapa 54.22 89 *e*P **P** **23 45 15.6 +0.7**
KIP pmax pmax
comp=Z,260nm,1.8s
KIP Kipapa 54.22 89 *e*P **P** **23 45 15.6 +0.7**
comp=Z,264nm,1.8s
KIP LR LR
comp=Z,6µm,22.0s
CBJI Citeko 54.25 224 P **P** **23 45 17.3 +2.2**
comp=Z,514nm,0.3s,comp=Z,64µm
VIS Vishakhapatnam 54.28 266 *e*P **P** **23 45 13.8 -1.6**
BLSI Bandar Lampung 54.30 226 P **P** **23 45 19.2 +3.7**
MASI Maura Aman, Be 54.33 231 P **P** **23 45 17.5 +1.7**
comp=Z,300nm,1.1s,comp=Z,9µm
LWLI Liwa 54.71 228 P **P** **23 45 20.8 +2.2**
comp=Z,111nm,0.7s,comp=Z,10µm
KASI Kota Agung 54.86 227 P **P** **23 45 19.4 -0.1**
comp=Z,89nm,1.0s,comp=Z,1µm
SVE Sverdlovsk 54.90 318 *de*P **P** **23 45 19.6 +0.3**
SVE *e*S **S** **23 52 51.2 -6.6**
SVE pmax pmax
comp=Z,328nm,1.4s
SVE MLR MLR
comp=Z,20µm,18.0s
SVE MLR MLR
comp=E,18µm,18.0s
SKJI Sukabumi 54.90 224 P **P** **23 45 22.9 +3.1**
CGJI Cibinong 55.06 225 P **P** **23 45 19.7 -1.3**
SKAG Skagway 55.39 38 *e*P **P** **23 45 25.1 +2.2**
comp=E,59nm,1.3s
PPSI Pulau Pagai 55.44 233 P **P** **23 45 26.7 +3.0**
NGP Nagpur 55.86 272 *e*P **P** **23 45 25.9 -0.9**
PVM Polavaram 55.90 266 *e*P **P** **23 45 26.7 -0.4**
PVM IAmb IAmb 23 45 29.6
comp=Z,49nm,1.0s
PVM *ep*P **pP** **23 45 36.5 -2.0**
PVM *es*P **sP** **23 45 41.2 -1.7**
PVM *e*S **S** **23 53 09.5 -2.6**
PVM IVMs_BB IVMs_BB 00 08 54.7
comp=Z,3µm,24.2s
HLK Haleakala 55.97 89 *e*P **P** **23 45 28.1 +0.2**
comp=Z,346nm,1.4s
BHPL Bhopal 56.08 275 ||*e*P **P** **23 45 28.2 -0.2**
BHPL IAmb IAmb 23 45 29.4
comp=Z,85nm,1.1s
ARU Arti 56.11 318 *c i*P **P** **23 45 27.2 -0.8**
ARU 23 46 23.7
ARU 23 47 30.8
ARU S **S** **23 53 14.4 +0.4**
ARU 23 55 13.4
ARU SS **SS** **23 57 06.8 +6.7**
ARU SSS SSS 23 59 09.9
ARU pmax pmax
comp=Z,370nm,1.3s
ARU MLR MLR
comp=Z,18µm,19.0s
ARU Arti 56.11 318 *e*P **P** **23 45 27.3 -0.8**
comp=Z,407nm,1.3s
ARU LR LR
comp=Z,17µm,19.0s
HPAH Hawaii Prepara 56.79 89 *e*P **P** **23 45 33.9 +0.4**
comp=Z,131nm,1.3s
RPR Rampur 56.88 269 *e*P **P** **23 45 33.3 -0.7**
RPR IAmb IAmb 23 45 36.8
comp=Z,260nm,1.4s
RPR *ep*P **pP** **23 45 42.7 -2.7**
RPR *es*P **sP** **23 45 47.5 -2.5**
RPR *e*S **S** **23 53 25.1 -0.1**
RPR IVMs_BB IVMs_BB 00 12 35.4
comp=Z,3µm,19.4s
POHA Pohakuloa 57.07 89 *e*P **P** **23 45 35.7 0.0**
comp=Z,427nm,1.8s
FITZ Fitzroy Crossi 57.18 198 P **P** **23 45 35.5 -0.5**
comp=Z,19nm,1.0s,baz=17,slow=14
FITZ Fitzroy Crossi 57.18 198 *e*P **P** **23 45 36.7 +0.7**
comp=Z,56nm,1.0s
KBL Kabul 57.32 291 *e*P **P** **23 45 36.5 -0.8**
KBL Kabul 57.32 291 *e*P **P** **23 45 36.5 -0.8**
CTA Charters Tower 57.36 175 P **P** **23 45 37.5 +0.3**
comp=Z,5.1nm,1.0s,baz=330,slow=13,SNR=3.6
CTA Charters Tower 57.36 175 P **P** **23 45 37.5 +0.3**
CTA pmax pmax
comp=Z,3.0nm,0.5s
CTAO Charters Tower 57.36 175 *e*P **P** **23 45 38.3 +1.0**
CTAO *e**PP **sP** **23 45 55.0 +1.8**
CTAO Charters Tower 57.36 175 *e*P **P** **23 45 38.3 +1.0**
CTAO *ep*P **sP** **23 45 55.0 +1.8**
CTAO LR LR
comp=Z,4µm,22.0s
WRAB Tennant Creek 57.42 188 *e*P **P** **23 45 35.8 -1.9**
WRAB pmax pmax
comp=Z,148nm,1.4s
WRAB MLR MLR
comp=Z,5µm,22.0s
WRAB Tennant Creek 57.42 188 *e*P **P** **23 45 35.8 -1.9**
comp=Z,148nm,1.4s
WRAB LR LR
comp=Z,5µm,22.0s
WB2 Warramunga Arr 57.43 188 *e*P **P** **23 45 36.6 -1.1**
WRA Warramunga Arr 57.43 188 P **P** **23 45 35.8 -2.0**
comp=Z,23nm,0.5s,baz=5.4,slow=7.4,SNR=32
WRA LR LR 00 10 14.1
comp=Z,3µm,19.1s,baz=5.0,slow=36
SRSP Sriramsagar 57.59 270 *e*P **P** **23 45 38.0 -1.1**
SRSP IAmb IAmb 23 45 41.7
comp=Z,289nm,1.1s
SRSP *ep*P **pP** **23 45 48.2 -2.4**
SRSP *es*P **sP** **23 45 52.9 -2.2**
SRSP *e*S **S** **23 53 33.7 -0.9**
SRSP IVMs_BB IVMs_BB 00 13 41.6
comp=Z,3µm,17.9s
ABKAR Akbulak array 57.73 310 *e*P **P** **23 45 38.7 -0.9**
FUNA Funafuti 57.74 134 PFAKE 23 45 50.0 +10
FUNA LR LR
comp=Z,11µm,21.0s
WRAK Wrangell Islan 57.85 41 *e*P **P** **23 45 42.6 +2.3**
comp=Z,39nm,1.1s
ADKI Addanki 57.99 266 *e*P **P** **23 45 41.9 0.0**
ADKI IAmb IAmb 23 45 44.7
comp=Z,27nm,0.9s
ADKI *ep*P **pP** **23 45 52.0 -1.3**
ADKI *es*P **sP** **23 45 58.5 +0.7**
ADKI *e*S **S** **23 53 37.3 -2.6**
ADKI IVMs_BB IVMs_BB 00 10 08.3
comp=Z,2µm,28.0s
NJS Nagarjunasagar 58.13 267 *e*P **P** **23 45 41.9 -1.0**
NJS IAmb IAmb 23 45 45.5
comp=Z,74nm,1.2s
NJS *ep*P **pP** **23 45 52.7 -1.6**
NJS *es*P **sP** **23 45 57.0 -1.7**
NJS *e*S **S** **23 53 41.3 -0.3**
NJS IVMs_BB IVMs_BB 00 12 18.1
comp=Z,2µm,21.4s
HYB Hyderabad 58.25 268 *i* P **P** **23 45 43.5 -0.3**
HYB *e*S **S** **23 53 44.0 +0.7**
HYB Hyderabad 58.25 268 *e*P **P** **23 45 43.4 -0.4**
HYBB Hyderabad (bro 58.25 268 *e*P **P** **23 45 43.3 -0.5**
HYBB IAmb IAmb 23 45 46.2
comp=Z,143nm,1.0s
HYBB *ep*P **pP** **23 45 53.5 -1.7**
HYBB *es*P **sP** **23 45 57.7 -2.0**
HYBB *e*S **S** **23 53 39.5 -3.8**
HYBB IVMs_BB IVMs_BB 00 13 04.2
comp=Z,2µm,18.3s
DLBC Dease Lake 58.32 38 *e*P **P** **23 45 45.4 +1.6**
comp=Z,145nm,1.8s
SRLM Srisailam 58.71 267 *e*P **P** **23 45 46.2 -0.7**
SRLM IAmb IAmb 23 45 49.3
comp=Z,81nm,1.1s
SRLM *ep*P **pP** **23 45 57.1 -1.3**
SRLM *es*P **sP** **23 46 01.1 -1.8**
SRLM *e*S **S** **23 53 49.5 +0.2**
SRLM IVMs_BB IVMs_BB 00 09 46.1
comp=Z,2µm,28.0s
RCLA Racherla 59.02 266 *e*P **P** **23 45 48.4 -0.7**
RCLA IAmb IAmb 23 45 51.8
comp=Z,63nm,0.9s
RCLA *ep*P **pP** **23 45 59.0 -1.5**
RCLA *es*P **sP** **23 46 03.6 -1.4**
RCLA *e*S **S** **23 53 52.1 -1.1**
RCLA IVMs_BB IVMs_BB 00 11 02.6
comp=Z,3µm,23.6s
MDRS Chennai 59.36 263 *e*P **P** **23 45 50.6 -0.9**
MDRS IAmb IAmb 23 45 54.9
SKHT Srikalahasti 59.40 264 *e*P **P** **23 45 51.6 -0.1**
SKHT IAmb IAmb 23 45 55.0
comp=Z,81nm,0.9s
SKHT *ep*P **pP** **23 46 01.0 -2.1**
SKHT *es*P **sP** **23 46 06.2 -1.4**
SKHT IVMs_BB IVMs_BB 00 11 46.3
comp=Z,2µm,26.7s
KLRI Killari 59.45 270 *e*P **P** **23 45 50.7 -1.4**
KLRI IAmb IAmb 23 45 54.2
comp=Z,326nm,1.2s
KLRI *es*P **pP** **23 46 05.8 +2.2**
KLRI *e*S **S** **23 53 57.6 -1.3**
KLRI IVMs_BB IVMs_BB 00 14 55.5
comp=Z,4µm,18.9s
HOPEN Hopen 59.69 346 *e*P **P** **23 45 52.8 0.0**
HOPEN IAmb IAmb 23 45 55.0
comp=Z,154nm,1.2s
HOPEN *e*S **S** **23 54 03.6 +3.3**
SPA0 Spitsbergen Ar 60.17 349 *e*P **P** **23 45 55.5 -0.7**
SPA0 IAmb IAmb 23 45 57.8
comp=Z,40nm,1.2s
SPA0 *e*S **S** **23 54 09.1 +2.5**
SPA0 Spitsbergen Ar 60.17 349 *e*P **P** **23 45 56.6 +0.4**
KBS Kingsbay 60.30 350 *e*P **P** **23 45 58.2 +1.2**
KBS IAmb IAmb 23 45 59.1
comp=Z,85nm,1.2s
KBS *e*S **S** **23 54 09.4 +1.3**
KBS Kingsbay 60.30 350 *e*P **P** **23 45 58.2 +1.2**
KBS pmax pmax
comp=Z,160nm,1.5s
KBS Kingsbay 60.30 350 *e*P **P** **23 45 58.2 +1.2**
comp=Z,159nm,1.5s
KBS LR LR
comp=Z,3µm,20.0s
HSPB Hornsund (broa 61.10 348 *e*P **P** **23 46 02.7 +0.2**
HSPB IAmb IAmb 23 46 04.5
comp=Z,159nm,1.2s
HSPB *e*S **S** **23 54 20.7 +2.4**
HSPB Hornsund (broa 61.10 348 *e*P **P** **23 46 03.3 +0.9**
HSPB *e*S **S** **23 54 18.4 +0.1**
HSPB MLR MLR
comp=Z,8µm,21.8s
AS01 Alice Springs 61.15 188 *e*P **P** **23 46 00.8 -2.6**
AS31 Alice Springs 61.15 188 *e*P **P** **23 46 01.9 -1.6**
ASAR Alice Springs 61.16 188 P **P** **23 46 01.6 -1.8**
comp=Z,11nm,0.9s,baz=11,slow=6.8,SNR=34
ASAR LR LR 00 12 11.8
comp=Z,3µm,20.3s,baz=358,slow=36
ASAR PKP2bc 00 15 28.3
comp=Z,3.5nm,1.1s,baz=167,slow=2.9,SNR=7.9
POO Poona 61.39 272 *e*P **P** **23 46 04.1 -1.2**
MBWA Marble Bar 61.74 203 *e*P **P** **23 46 07.7 +0.3**
comp=Z,183nm,0.9s
MBWA LR LR
comp=Z,2µm,20.0s
LVZ Lovozero 61.79 336 *e*P **P** **23 46 08.5 +1.2**
LVZ pmax pmax
comp=Z,64nm,1.2s
LVZ Lovozero 61.79 336 *e*P **P** **23 46 07.2 -0.1**
comp=Z,84nm,1.3s
LVZ LR LR
comp=Z,12µm,19.0s
BJO Bjornoya 62.08 345 *e*P **P** **23 46 12.2 +3.1**
BJO *e*S **S** **23 54 31.8 +1.0**
BJO IVMs_BB IVMs_BB 00 16 50.4
comp=Z,5µm,16.2s
BHJ Bhuj 62.21 279 *e*P **P** **23 46 09.7 -1.1**
BHJ IAmb IAmb 23 46 13.3
comp=Z,45nm,0.7s
RES Resolute Bay 62.24 14 P **P** **23 46 09.0 -1.1**
comp=Z,13nm,0.6s,baz=305,slow=9.4,SNR=13
RES Resolute Bay 62.24 14 *e*P **P** **23 46 10.7 +0.6**
RES pmax pmax
comp=Z,100nm,1.3s
RES Resolute Bay 62.24 14 *e*P **P** **23 46 10.7 +0.6**
comp=Z,100nm,1.4s
APA Apatity 62.37 336 ||*i*P **P** **23 46 10.4 -0.7**
APA *i* 23 46 46.8
APA pmax pmax
comp=Z,9.0nm,1.2s
APA MLR MLR
comp=Z,13µm,18.0s
TMCR Tamitsa 62.44 331 *e*P **P** **23 46 12.8 +1.2**
TMCR *e*S **S** **23 54 37.8 +2.2**
TMCR pmax pmax
comp=Z,165nm,1.4s
PALK Pallekele 62.48 257 *e*P **P** **23 46 14.9 +2.2**
PALK pmax pmax
comp=Z,28nm,1.0s
PALK Pallekele 62.48 257 *e*P **P** **23 46 14.9 +2.2**
comp=Z,28nm,0.9s
GOA Goa 63.08 269 *e*P **P** **23 46 16.0 -0.6**
EIDS Eidsvold 63.09 170 *e*P **P** **23 46 17.5 +1.1**
comp=Z,29nm,1.1s
KEV Kevo 63.11 339 *e*P **P** **23 46 16.2 +0.2**
KEV pmax pmax
comp=Z,75nm,1.2s
KEV Kevo 63.11 339 *e*P **P** **23 46 16.2 +0.2**
comp=Z,75nm,1.2s
KEV LR LR
comp=Z,8µm,22.0s
KLMR Klimovskoe 63.47 328 *c i*P **P** **23 46 18.5 0.0**
KLMR *e* 23 48 38.6
KLMR pmax pmax
comp=Z,171nm,1.4s
YKA Yellowknife Ar 63.47 30 P **P** **23 46 17.3 -1.2**
comp=Z,5.9nm,0.7s,baz=299,slow=6.6,SNR=59
YKA PKP2bc 00 15 17.0
comp=Z,1.7nm,1.2s,baz=109,slow=2.8,SNR=6.3
HAMF Hammerfest 63.48 341 *e*P **P** **23 46 16.5 -2.0**
HAMF *e*S **S** **23 54 51.2 +2.7**
HAMF *e*SS **SS** **23 58 58.1 +3.1**
ARA0 ARCESS Array S 63.67 339 *e*P **P** **23 46 19.2 -0.5**
ARCES ARCESS Array B 63.67 339 P **P** **23 46 19.0 -0.7**
comp=Z,11nm,0.6s,baz=41,slow=5.6,SNR=24
ARCES LR LR 00 18 12.5
comp=Z,6µm,18.1s,baz=47,slow=40
ARE0 ARCESS Array S 63.67 339 *e*P **P** **23 46 20.2 +0.5**
ARE0 ARCESS Array S 63.67 339 *e*P **P** **23 46 20.7 +0.9**
GEYT Alibeck 63.69 299 P **P** **23 46 19.9 -0.6**
comp=Z,37nm,0.8s,baz=34,slow=3.7,SNR=71
GEYT LR LR 00 17 09.6
comp=Z,4µm,19.0s,baz=40,slow=39
KTK1 Kautokeino 64.63 339 *e*P **P** **23 46 24.9 -1.2**
TRD Trivandrum 64.66 261 *e*P **P** **23 46 26.6 -0.4**
COCO West Island 64.70 229 PFAKE 23 46 40.0 +13
COCO LR LR
comp=Z,3µm,22.0s
TRO Tromso 65.38 341 *e*P **P** **23 46 28.9 -1.9**
TRO IVMs_BB IVMs_BB 00 15 41.4
comp=Z,2µm,22.5s
DAG Danmarks Havn 65.41 355 *i* P **P** **23 46 30.2 -0.8**
comp=Z,53nm,1.1s
DAG Danmarks Havn 65.41 355 *i* P **P** **23 46 30.2 -0.8**
DAG pmax pmax
comp=Z,67nm,1.1s
JOF Joensuu 65.66 332 P **P** **23 46 32.7 -0.1**
JOF pmax pmax
comp=Z,64nm,1.4s
NLWA Neilton Lookou 66.44 48 *e*P **P** **23 46 40.6 +2.5**
comp=Z,104nm,1.3s
NLWA LR LR
comp=Z,4µm,21.0s
A04D Lummi Island 66.45 46 P **P** **23 46 37.7 -0.4**
baz=300
MOS Moscow 66.98 323 *e*P **P** **23 46 41.2 -0.1**
MOS *i* 23 46 54.1
MOS *e* 23 47 09.4
MOS *e* 23 49 07.8
MOS *e*PPP PPP 23 50 44.8
MOS *e*S **S** **23 55 32.0 +0.3**
MOS *e* 23 55 56.4
MOS *e*SS **SS** **23 59 46.2 -3.6**
MOS pmax pmax
comp=Z,400nm,1.5s
MOS pmax pmax
comp=Z,212nm,1.4s
MOS pmax pmax
comp=N,80nm,1.0s
MOS MLR MLR
comp=Z,6µm,18.0s
B05A Bryant 67.03 46 P **P** **23 46 42.0 +0.2**
baz=301
B05A S **S** **23 55 33.3 +0.7**
baz=301
E03A Lebam 67.05 48 *ep*P pP 23 46 54.5 +0.9
JCW Jim Creek 67.16 46 P **P** **23 46 44.2 +1.4**
B06A Marblemount 67.25 46 *e*P **P** **23 46 44.7 +1.5**
comp=Z,76nm,1.5s
VRH Novokhopyorsk 67.33 318 *e*P **P** **23 46 42.9 -0.8**
VRH *e**SP **pP** **23 46 55.9 +0.6**
VRH *e* 23 49 08.9
VRH *e*S **S** **23 55 31.4 -4.7**
VRH *e*SS **SS** **23 59 53.0 -2.5**
VRH pmax pmax
comp=Z,80nm,1.2s
VRH MLR MLR
comp=Z,15µm,17.0s
AFI Afiamalu 67.34 130 PFAKE 23 47 00.0 +16
AFI LR LR
comp=Z,5µm,20.0s
STEI Steigen 67.53 341 *e*P **P** **23 46 43.6 -1.1**
KULLO Kullorsuaq 67.61 5 *i* P **P** **23 46 44.5 -0.6**
comp=Z,64nm,1.4s
KULLO Kullorsuaq 67.61 5 *i* P **P** **23 46 44.5 -0.6**
KULLO pmax pmax
comp=Z,64nm,1.4s
F04D Rainier, OR 67.62 49 P **P** **23 46 46.0 +0.4**
baz=301
D05A Enumclaw 67.65 47 *e*P **P** **23 46 47.8 +2.0**
comp=Z,79nm,1.1s
SUF Sumiainen 67.67 333 P **P** **23 46 44.4 -1.2**
SUF pmax pmax
comp=Z,80nm,0.9s
OBN Obninsk 67.82 323 *c i*P **P** **23 46 46.6 -0.1**
OBN *i* 23 46 59.4
OBN *e* 23 49 19.9
OBN *i* S **S** **23 55 38.5 -3.3**
OBN *i* SS **SS** **00 00 10.5 +7.6**
OBN pmax pmax
comp=Z,146nm,1.2s
OBN MLR MLR
comp=Z,7µm,18.0s
OBN Obninsk 67.82 323 *e*P **P** **23 46 45.6 -1.1**
comp=Z,239nm,1.2s
OBN LR LR
comp=Z,8µm,19.0s
LOF Lofoten 67.83 341 *e*P **P** **23 46 48.9 +2.4**
LOF *e*S **S** **23 55 42.7 +1.2**
PUL Pulkovo 67.89 329 *e*P **P** **23 46 48.8 +1.7**
PUL pmax pmax
comp=Z,206nm,1.2s
C06D Leavenworth 67.90 46 P **P** **23 46 48.0 +0.6**
baz=302
G03D McMinnville, O 67.91 49 P **P** **23 46 48.1 +0.6**
baz=301
TDL Tradedollar La 67.95 48 P **P** **23 46 49.8 +1.9**
LPSR Galich'ya Gora 68.04 320 *e*P **P** **23 46 48.2 +0.1**
LPSR *e**SP **pP** **23 47 00.8 +1.0**
LPSR *e*S **S** **23 55 41.9 -2.7**
LPSR *e*SS **SS** **00 00 11.1 +4.6**
LPSR pmax pmax
comp=Z,110nm,1.2s
LPSR smax smax
comp=N,280nm,6.1s
LPSR MLR MLR
comp=Z,16µm,19.0s
F04A Amboy 68.05 48 *e*P **P** **23 46 50.1 +1.9**
comp=Z,64nm,1.0s
ARMA Armidale 68.14 171 *e*P **P** **23 46 51.6 +2.6**
comp=Z,41nm,1.1s
FINES FINESS Array B 68.51 332 P **P** **23 46 50.0 -0.9**
comp=Z,24nm,0.6s,baz=45,slow=8.4,SNR=50
FINES LR LR 00 19 14.0
comp=Z,12µm,18.4s,baz=48,slow=38
B08A Colville Reser 68.55 45 *e*P **P** **23 46 52.5 +1.0**
comp=Z,54nm,1.3s
I03D Drain, OR 68.65 51 P **P** **23 46 52.9 +0.8**
baz=302
VSR Storozhevoye 68.68 319 *e*P **P** **23 46 51.6 -0.6**
VSR *e**SP **pP** **23 47 04.6 +0.8**
VSR *e* 23 49 20.4
VSR *e*S **S** **23 55 52.3 +0.1**
VSR *e*SS **SS** **00 00 14.9 -1.5**
VSR pmax pmax
comp=Z,120nm,1.2s
VSR smax smax
comp=N,940nm,10.7s
VSR MLR MLR
comp=Z,14µm,17.0s
STKA Stephens Creek 68.92 180 P **P** **23 46 53.1 -0.6**
comp=Z,18nm,1.0s,baz=346,slow=8.4,SNR=11
STKA LR LR 00 16 02.8
comp=Z,4µm,21.2s,baz=357,slow=35
G05D Wamic, OR 69.07 49 P **P** **23 46 55.2 +0.5**
baz=302
I04A Tendick Farm, 69.18 50 P **P** **23 46 55.8 +0.3**
baz=302
L02D Cave Junction, 69.30 52 P **P** **23 46 56.6 +0.4**

baz=302
C09A Chrisman Ranch 69.45 45 *e*pP pP 23 47 11.4 +2.7
G06A Carlson Farm, 69.48 48 *e*P **P 23 46 59.1 +1.8**
comp=Z,97nm,1.4s
D08A Wollman Farm, 69.49 46 *e*P **P 23 46 58.5 +1.1**
comp=Z,60nm,1.4s
HAWA Hanford 69.50 47 *e*P **P 23 46 58.8 +1.4**
HAWA *e* 23 47 10.3
HAWA LR LR
comp=Z,2μm,21.0s
I05D Terrebonne, OR 69.54 49 P **P 23 46 56.7 -1.0**
baz=303
VTHM Trough 69.55 48 P **P 23 46 59.2 +1.5**
NEW Newport 69.84 44 P **P 23 46 59.7 +0.2**
baz=304
NEW Newport 69.84 44 *e*P **P 23 47 00.1 +0.6**
NEW pmax pmax
comp=Z,44nm,1.1s
NEW Newport 69.84 44 *e*P **P 23 47 00.1 +0.6**
comp=Z,44nm,1.1s
NEW LR LR
comp=Z,3μm,20.0s
GOF Gofitskoye 69.88 312⇑ *i*P **P 23 47 00.1 +0.4**
GOF pmax pmax
comp=Z,155nm,1.1s
KHMM Horse Mountain 69.90 54 *e*pP pP 23 47 12.2 +0.4
BBOO Buckleboo 70.03 185 *e*P **P 23 47 01.7 +1.2**
comp=Z,87nm,1.3s
YBH Yreka Blue Hor 70.09 52 *e*P **P 23 47 03.4 +2.2**
YBH pmax pmax
comp=Z,66nm,1.3s
YBH Yreka Blue Hor 70.09 52 *e*P **P 23 47 03.4 +2.2**
comp=Z,66nm,1.4s
VSU Vasula 70.16 329*ce*P **P 23 47 01.4 +0.3**
VSU pmax pmax
comp=Z,286nm,1.2s
J05D Fort Rock, OR 70.17 50 P **P 23 47 01.5 -0.2**
baz=303
M02C Callahan 70.19 53 P **P 23 47 02.2 +0.4**
baz=303
K04D Chiloquin, OR 70.21 51 P **P 23 47 02.5 +0.6**
baz=303
SUMG Summit 70.32 360⇑ *i*P **P 23 47 02.8 +0.4**
comp=Z,91nm,1.3s
SUMG Summit 70.32 360⇑ *i*P **P 23 47 02.8 +0.4**
SUMG pmax pmax
comp=Z,91nm,1.3s
SUMG Summit 70.32 360 *e*P **P 23 47 02.6 +0.2**
comp=Z,79nm,1.0s
GUDG Gudauri 70.41 309 P **P 23 47 03.9 +0.6**
G08A Pilot Rock 70.44 48 *e*P **P 23 47 04.9 +1.6**
comp=Z,28nm,1.2s
N02D Trinity Center 70.50 53 P **P 23 47 04.0 +0.3**
baz=303
ZEI Tsey 70.59 309 *e*P **P 23 47 03.9 -0.5**
ZEI *e* 23 47 26.5
ZEI *e* 23 49 40.6
ZEI *e*PPP PPP 23 51 21.8
ZEI *e*S **S 23 56 11.2 -4.3**
ZEI *e*SS **SS 00 00 41.4 -5.3**
ZEI pmax pmax
comp=Z,375nm,11.4s
ZEI pmax pmax
comp=Z,309nm,1.5s
ZEI pmax pmax
comp=N,216nm,1.1s
ZEI pmax pmax
comp=E,248nm,1.1s
ZEI MLR MLR
comp=Z,14μm,16.0s
ZEI MLR MLR
comp=E,6μm,15.0s
ZEI MLR MLR
comp=N,9μm,18.0s
M04C Macdoel 70.61 52 P **P 23 47 04.3 -0.2**
baz=303
TBLG Delisi 70.65 308 *e*P **P 23 47 05.6 +1.0**
TBLG Delisi 70.65 308 P **P 23 47 04.6 0.0**
TBLG Delisi 70.65 308 P **P 23 47 04.5 0.0**
K05A Summer Lake 70.69 51 *e*P **P 23 47 06.0 +1.0**
comp=N,139nm,1.1s
KBZ Khabaz 70.69 311 P **P 23 47 05.5 +0.9**
comp=N,54nm,1.0s,baz=56,slow=5.7,SNR=62
KBZ LR LR 00 23 00.7
comp=N,10μm,18.5s,baz=52,slow=40
KIV Kislovodsk 70.69 311 *e*P **P 23 47 05.8 +0.9**
KIV Kislovodsk 70.69 311 *i*P **P 23 47 04.8 0.0**
SNR=85
KIV Kislovodsk 70.69 311*c i*P **P 23 47 05.3 +0.5**
KIV *e* 23 49 41.5
KIV *i*S **S 23 56 12.5 -3.9**
KIV pmax pmax
comp=Z,182nm,1.1s
KIV MLR MLR
comp=Z,5μm,17.0s
KIV Kislovodsk 70.69 311 *e*P **P 23 47 03.2 -1.6**
comp=Z,575nm,1.2s
KIV LR LR
comp=Z,6μm,21.0s
WDC Whiskeytown Da 70.82 53 *e*P **P 23 47 07.3 +1.8**
WDC pmax pmax
comp=Z,40nm,1.2s
WDC Whiskeytown Da 70.82 53 *e*P **P 23 47 07.3 +1.8**
comp=Z,40nm,1.2s
NSS Namsos 70.95 339 *e*P **P 23 47 06.0 +0.1**
NSS *e*S **S 23 56 20.4 +2.0**
NSS IVMs_BB IVMs_BB 00 19 10.0
comp=Z,2μm,27.2s
BIDO Bidbid 71.04 285 P **P 23 47 09.0 +1.8**
SNR=11
BIDO P **P 23 47 09.0 +1.8**
SNR=11
BIDO Bidbid 71.04 285 P **P 23 47 09.0 +1.8**
SNR=11
F10A Beach Ranch, E 71.07 46 *e*P **P 23 47 08.6 +1.5**
comp=Z,36nm,1.3s
BANOM Banah 71.12 289 *i*P **P 23 47 07.1 -0.6**
SNR=28
BANOM Banah 71.12 289 P **P 23 47 09.7 +2.0**
BANOM SNR=13 P **P 23 47 09.7 +2.0**
SNR=13
BANOM Banah 71.12 289 P **P 23 47 09.7 +2.0**
SNR=13
WALA Waterton Lakes 71.14 42 *e*P **P 23 47 07.5 0.0**
comp=Z,50nm,1.0s
SMDO Samad 71.35 285 P **P 23 47 09.7 +0.5**
SNR=21
SMDO Samad 71.35 285 P **P 23 47 09.7 +0.5**
SNR=21
BSMT Bassoo Peak 71.37 44 *e*P **P 23 47 10.3 +1.3**
O03D Paynes Creek 71.45 53 P **P 23 47 08.5 -1.0**
baz=304,SNR=7.9
MOD Modoc Plateau 71.50 51 *e*P **P 23 47 11.2 +1.4**
comp=Z,49nm,1.3s
BLMT Blacktail Moun 71.51 43 *e*P **P 23 47 10.6 +0.8**
GNI Garni 71.52 307 *e*P **P 23 47 10.8 +0.8**
GNI MLR MLR
comp=Z,9μm,20.0s
GNI Garni 71.52 307 *e*P **P 23 47 10.8 +0.8**
comp=Z,2μm,1.4s
GNI LR LR
comp=Z,9μm,20.0s
AKH Akhalkalaki 71.61 308⇑ *i*P **P 23 47 11.2 +0.7**
AKH Akhalkalaki 71.61 308 P **P 23 47 11.3 +0.7**
AKH Akhalkalaki 71.61 308 P **P 23 47 11.3 +0.7**
BGD Bogdanovka 71.62 308 P **P 23 47 11.0 +0.3**
BMO Blue Mountains 71.66 47 *e*P **P 23 47 11.6 +1.0**
comp=Z,86nm,1.4s
BMO LR LR
comp=Z,2μm,22.0s
JTMT Jette 71.70 44 *e*P **P 23 47 12.1 +1.2**
UOSS Minazif 71.73 288 *e*P **P 23 47 10.5 -0.8**
comp=Z,12nm,1.3s
CHVG Ch'k'valeri 71.75 310 *e*P **P 23 47 11.9 +0.8**
CHVG Ch'k'valeri 71.75 310⇓ *i*P **P 23 47 11.5 +0.4**
CHVG Ch'k'valeri 71.75 310 P **P 23 47 11.4 +0.2**
SCO Scoresbysund 71.75 354 *i*P **P 23 47 10.8 +0.2**
comp=Z,59nm,1.3s
SCO Scoresbysund 71.75 354 *i*P **P 23 47 10.8 +0.2**
SCO pmax pmax
comp=Z,59nm,1.3s
YBMT Yellow Bay 71.78 43 *e*P **P 23 47 12.5 +1.0**
HATD Hatta, Dubai 71.85 288 *i*P **P 23 47 11.5 -0.5**
SNR=61
ASHO Ashiyiah 71.98 288 *i*P **P 23 47 12.2 -0.7**
SNR=52
ASHO Ashiyiah 71.98 288 P **P 23 47 13.7 +0.8**
SNR=35
ASHO P **P 23 47 13.7 +0.8**
SNR=35
ASHO Ashiyiah 71.98 288 P **P 23 47 13.7 +0.8**
SNR=35
SWMT Swartz Lake 72.00 44 *e*P **P 23 47 13.1 +0.4**
ORV Oroville 72.05 54 *e*P **P 23 47 14.1 +1.1**
ORV pmax pmax
comp=Z,75nm,1.3s
ORV Oroville 72.05 54 *e*P **P 23 47 14.1 +1.1**
comp=Z,75nm,1.4s
NAZ Nazwa, Dubai 72.12 288 *i*P **P 23 47 13.8 +0.2**
SNR=14
IDID Didziasalis 72.19 327 *e*P **P 23 47 13.4 0.0**
IDID IAmb IAmb 23 47 29.6
comp=Z,72nm,1.4s
MICGM Minsk 72.21 326⇓ *e*P **P 23 47 14.0 +0.4**
MICGM PM 23 47 15.0
comp=Z,0.2nm,1.0s
MICGM *e*PcP **pP 23 47 26.0 +0.7**
MICGM *e*PP PP 23 50 08.0 +14
MICGM *e*PPP PPP 23 51 44.0
MICGM *e*S **S 23 56 32.0 -1.3**
MICGM *e*PS **PnS 23 57 00.0 -6.8**
MICGM *e*ScS **SKSac 23 57 14.0 -0.8**
MICGM *e*SS SS 00 01 28.0 +18
MICGM *e*SSS SSS 00 05 04.0
MICGM *e*LQ LQ 00 12 26.0
MICGM LQM 00 15 08.0
comp=E,7.0nm,20.0s
MICGM LQM 00 15 34.0
comp=N,2.7nm,14.0s
MICGM *e*LR LR 00 16 40.0
MICGM LRM MLR 00 22 08.0
comp=Z,10nm,14.0s
MICGM LRM MLR 00 22 28.0
comp=E,6.7nm,14.0s
MNK Minsk 72.21 326⇓ *e*P **P 23 47 14.0 +0.4**
MNK *e* 23 47 26.0
MNK *e*PPP PPP 23 51 44.0
MNK *e*S **S 23 56 32.0 -1.3**
MNK *e*PS **PnS 23 57 00.0 -6.8**
MNK *e* 23 57 14.0
MNK pmax pmax
comp=Z,230nm,1.0s
MNK MLR MLR
comp=Z,10μm,14.0s
MNK MLR MLR
comp=E,7μm,14.0s
WVOR Wild Horse Val 72.23 50 *e*P **P 23 47 14.6 +0.4**
WVOR pmax pmax
comp=Z,83nm,1.3s
WVOR Wild Horse Val 72.23 50 *e*P **P 23 47 14.6 +0.4**
comp=Z,83nm,1.4s
ISAL Salakas 72.29 327 *e*P **P 23 47 14.1 0.0**
ISAL IAmb IAmb 23 47 30.2
comp=Z,125nm,1.2s
FAQ Al Faqa, Dubai 72.30 288 *i*P **P 23 47 13.5 -1.2**
SNR=42
KARS Kars 72.30 308 *e*P **P 23 47 14.0 -0.7**
TBLU Trondheim 72.42 339 *e*P **P 23 47 14.0 -0.8**
TBLU *e*S **S 23 56 34.5 -0.9**
MSO Missoula 72.43 44 P **P 23 47 15.1 -0.2**
baz=306
MSO Missoula 72.43 44 *e*P **P 23 47 16.0 +0.7**
comp=Z,56nm,1.3s
NACGM Naroch 72.44 327 *e*P **P 23 47 15.0 0.0**
NACGM *e*S **S 23 56 35.0 -0.9**
NACGM *e*PS **PnS 23 57 19.0 +9.2**
NACGM *e*SS SS 00 01 36.0 +22
NACGM *e*LQ LQ 00 10 50.0
NACGM *e*LR LR 00 20 57.0
NACGM LRM MLR 00 23 32.0
comp=Z,12nm,19.0s
SOC Sochi 72.68 312*c i*P **P 23 47 16.6 0.0**
SOC *e**PP **pP 23 47 26.4 -1.9**
SOC *e**SP **sP 23 47 29.8 -3.0**
SOC *e* 23 49 58.0
SOC *e*PPP PPP 23 51 42.6
SOC *e*S **S 23 56 38.1 -0.9**
SOC *e* 23 57 22.8
SOC pmax pmax
comp=Z,62nm,1.0s
SOC MLR MLR
comp=Z,8μm,18.0s
AFDM Forest Hills D 72.73 54 *e*P **P 23 47 18.5 +1.4**
comp=Z,41nm,1.3s
CHMT Chamberlain Mo 72.76 44 *e*P **P 23 47 18.0 +0.6**
SENK Senkaya-Erzuru 72.80 308 *e*P **P 23 47 16.7 -1.0**
VANB Van 73.25 306 *e*P **P 23 47 20.7 +0.4**
ILULI Ilulissat 73.29 5⇑ *i*P **P 23 47 19.9 +0.1**
ILULI Ilulissat 73.29 5⇑ *i*P **P 23 47 19.9 +0.1**
ANN Anapa 73.30 314*c i*P **P 23 47 18.7 -1.6**
ANN *i**PP **pP 23 47 33.1 +1.1**
ANN *e* 23 50 02.0
ANN *e*PPP PPP 23 51 50.3
ANN *i*S **S 23 56 44.7 -1.3**
ANN *i* 23 57 21.8
ANN *e*SS **SS 00 01 27.3 -0.2**
ANN pmax pmax
comp=Z,104nm,1.2s
ANN MLR MLR
comp=Z,6μm,20.0s
PAHR Pah Rah Range 73.32 53 *e*P **P 23 47 20.6 -0.1**
comp=Z,78nm,1.3s
MFID Camas Ranch 73.35 48 *e*P **P 23 47 22.0 +1.1**
comp=Z,78nm,1.3s
CMB Columbia Colle 73.63 55 *e*P **P 23 47 23.2 +0.8**
CMB pmax pmax
comp=Z,75nm,1.2s
CMB Columbia Colle 73.63 55 *e*P **P 23 47 23.2 +0.8**
comp=Z,76nm,1.2s
MOL Molde 73.72 340 *e*P **P 23 47 22.9 +0.5**
EZM Erzurum 73.79 308 *e*P **P 23 47 25.6 +1.9**
LRM Limekiln Ridge 73.86 44 *e*P **P 23 47 23.8 -0.2**
NB2 NORSAR Subarra 73.86 337 P **P 23 47 22.5 -0.9**
comp=Z,102nm,1.1s,baz=40,slow=6.2
NB2 NORSAR Subarra 73.86 337 P **P 23 47 22.5 -0.9**
baz=40,slow=6.2
NB2 NORSAR Subarra 73.86 337 P **P 23 47 24.0 +0.6**
NB2 pmax pmax
comp=Z,77nm,1.2s
NOA NORSAR Array B 73.86 337 P **P 23 47 22.4 -0.9**
comp=Z,63nm,1.2s,baz=40,slow=5.9,SNR=33
NOA LR LR 00 22 18.2
comp=Z,11μm,21.9s,baz=40,slow=38
NOA NORSAR Array B 73.86 337 P **P 23 47 22.4 -0.9**
NOA pmax pmax
comp=Z,65nm,1.2s
NOA MLR MLR
comp=Z,11μm,21.9s
CUKT Cukurca 73.88 305 *e*P **P 23 47 25.4 +1.4**
WAKR Walker 73.97 54 *e*P **P 23 47 26.2 +1.6**
EGMT Eagleton 73.97 41 P **P 23 47 24.3 -0.1**
baz=308
EGMT Eagleton 73.97 41 *e*P **P 23 47 25.8 +1.4**
comp=Z,76nm,1.0s
EGMT LR LR
comp=Z,3μm,21.0s
NC602 NORSAR Array S 74.00 337 *e*P **P 23 47 23.0 -1.1**
AKASG Malin Array Be 74.03 322 P **P 23 47 23.2 -1.2**
comp=Z,20nm,0.5s,baz=45,slow=6.5,SNR=84
AKASG LR LR 00 22 57.5
comp=Z,9μm,19.0s,baz=55,slow=38
KIEV Kiev 74.04 322 *e*P **P 23 47 23.4 -1.1**
KIEV pmax pmax
comp=Z,240nm,1.3s
KIEV Kiev 74.04 322 *e*P **P 23 47 23.4 -1.1**
comp=Z,243nm,1.3s
KIEV LR LR
comp=Z,10μm,19.0s
DLMT Dillon 74.06 45 *e*P **P 23 47 25.2 +0.3**
comp=Z,87nm,1.2s
HLID Hailey 74.10 47 P **P 23 47 25.3 +0.1**
baz=307
HLID Hailey 74.10 47 *e*P **P 23 47 25.8 +0.5**
comp=Z,49nm,1.3s
HLID LR LR
comp=Z,3μm,22.0s
KTUT Trabzon 74.16 310 *e*P **P 23 47 24.2 -1.2**
AKN Aaknes 74.19 340 *e*P **P 23 47 26.0 +0.8**
AKN *e*S **S 23 56 57.3 +1.7**
MCMT McKenzie Canyo 74.24 45 *e*P **P 23 47 26.8 +0.6**
BMN Battle Mountai 74.25 51 *e*P **P 23 47 27.9 +1.7**
BMN pmax pmax
comp=Z,90nm,1.3s
BMN Battle Mountai 74.25 51 *e*P **P 23 47 27.9 +1.7**
comp=Z,90nm,1.3s
BAYT Ayd¯-ntepe-Bay 74.27 309 *e*P **P 23 47 25.7 -0.7**
BOZ Bozeman (W) 74.42 44 P **P 23 47 26.8 -0.3**
baz=308
BOZ Bozeman (W) 74.42 44 *e*P **P 23 47 27.0 -0.1**
BOZ pmax pmax
comp=Z,59nm,1.1s
BOZ Bozeman (W) 74.42 44 *e*P **P 23 47 27.0 -0.1**
comp=Z,59nm,1.1s
BOZ LR LR
comp=Z,2μm,22.0s
SIRT Sirnak 74.49 305 *e*P **P 23 47 28.2 +0.7**
SUW Suwalki 74.60 327 *e*P **P 23 47 27.3 -0.4**
SUW *e*S **S 23 56 59.5 -0.8**
SUW LMZ LR 00 23 21.3
comp=Z,11μm,19.4s
SUW Suwalki 74.60 327⇑ *e*P **P 23 47 27.3 -0.4**
SUW *e*S **S 23 56 59.5 -0.8**
SUW MLR MLR
comp=Z,11μm,19.4s
GUMT Gumushane 74.64 309 *e*P **P 23 47 30.2 +1.8**
NVAR Mina Array Bea 74.74 53 P **P 23 47 29.1 0.0**
comp=Z,5.0nm,0.7s,baz=293,slow=5.2,SNR=28
NVAR LR LR 00 15 39.4
comp=Z,2μm,21.5s,baz=292,slow=32
BNGB Bing¶‖ 74.75 307 *e*P **P 23 47 29.4 +0.3**
ESPY Espiye-Giresun 74.83 310 *e*P **P 23 47 29.5 +0.1**
MLAC Mammoth, Mammo 74.86 54 P **P 23 47 29.6 -0.3**
baz=306
OSL Oslo 74.88 337 *e*P **P 23 47 30.7 +1.6**
OSL *e*S **S 23 57 04.4 +1.3**
QLMT Earthquake Lak 75.04 45 *e*P **P 23 47 32.0 +1.3**
SIM Simferopol' 75.09 315 *e*P **P 23 47 29.5 -1.2**
SIM *e* 23 50 25.0
SIM *e*S **S 23 57 09.0 +2.9**
SIM pmax pmax
comp=Z,109nm,1.5s
SIM MLR MLR
comp=Z,3μm,17.0s
FOO Floro 75.20 340 *e*P **P 23 47 29.2 -1.8**
FOO *e*S **S 23 57 08.6 +1.8**
HYA Hoyanger 75.24 339 *e*P **P 23 47 30.7 -0.6**
ELK Elko 75.29 50 *e*P **P 23 47 33.8 +1.5**
ELK pmax pmax
comp=Z,40nm,1.4s
ELK Elko 75.29 50 *e*P **P 23 47 33.8 +1.5**
comp=Z,40nm,1.4s
RCTC Rector, Farmer 75.37 55 P **P 23 47 32.4 -0.1**
baz=306
GCMT Greycliff 75.41 43 *e*P **P 23 47 32.8 0.0**
SMMC Simmler 75.45 57 P **P 23 47 33.6 +0.6**
baz=306
KONO Kongsberg 75.45 337 *e*P **P 23 47 32.6 +0.1**
KONO *e*S **S 23 57 12.4 +2.8**
KONO Kongsberg 75.45 337 *e*P **P 23 47 34.1 +1.6**
KONO *e**PP **pP 23 47 42.0 -2.3**
KONO Kongsberg 75.45 337 *e*P **P 23 47 34.1 +1.6**
KONO *e*pP **pP 23 47 42.0 -2.3**
KONO LR LR
comp=Z,7μm,20.0s
SFJD Kangerlussuaq 75.52 5 *i*P **P 23 47 33.0 +0.2**
comp=Z,32nm,1.2s
SFJD Kangerlussuaq 75.52 5 *e*P **P 23 47 33.4 +0.7**
SFJD pmax pmax
comp=Z,43nm,1.0s
SFJD Kangerlussuaq 75.52 5 *e*P **P 23 47 33.4 +0.7**
comp=Z,43nm,1.0s
TIN Tinemaha, Big 75.59 54 P **P 23 47 34.4 +0.5**
baz=306
YFT Old Faithful 75.60 45 *e*P **P 23 47 37.0 +2.9**
comp=Z,38nm,1.0s
PTK Pertek 75.62 308 *e*P **P 23 47 35.7 +1.5**
DYBB Diyarbakir 75.71 307 *e*P **P 23 47 35.6 +1.1**
SUE Sulen 75.73 340 *e*P **P 23 47 35.6 +1.5**
VES Vestal, Richgr 75.75 56 P **P 23 47 34.6 -0.1**
baz=306
LKWY Lake 75.78 44 *e*P **P 23 47 37.1 +2.1**
LKWY pmax pmax
comp=Z,66nm,1.2s
LKWY Lake 75.78 44 *e*P **P 23 47 37.1 +2.1**
comp=Z,66nm,1.2s
LKWY LR LR
comp=Z,2μm,20.0s
H17A Grant Village 75.78 45 P **P 23 47 35.9 +0.8**
baz=309
H17A Grant Village 75.78 45 *e*P **P 23 47 36.8 +1.7**
comp=Z,110nm,1.1s
ILIC ilic-Erzincan 75.80 309 *e*P **P 23 47 35.1 0.0**
PKM Mcpherson Peak 75.82 57 P **P 23 47 35.0 -0.3**
baz=306,SNR=6.7
IMW Indian Meadow 75.89 45 *e*P **P 23 47 36.4 +0.7**
comp=Z,92nm,1.3s
FLWY Flagg Ranch 75.91 45 *e*P **P 23 47 37.7 +1.9**
comp=Z,111nm,1.3s
SVRC Sivrice-ELAZID 75.98 308 *e*P **P 23 47 37.8 +1.6**
RSDY Resadiye-TOKAT 76.00 310 *e*P **P 23 47 37.3 +1.2**
FXWY Fox Creek 76.00 46 *e*P **P 23 47 36.8 +0.5**
comp=Z,66nm,1.2s
RLMT Red Lodge 76.05 44 P **P 23 47 36.9 +0.4**
baz=309
RLMT Red Lodge 76.05 44 *e*P **P 23 47 36.6 0.0**
comp=Z,80nm,1.4s
RLMT LR LR
comp=Z,2μm,20.0s
ASK Askoy 76.08 339 *e*P **P 23 47 39.2 +3.2**
MOOW Moose Ponds 76.09 45 *e*P **P 23 47 37.1 +0.3**
comp=Z,73nm,1.3s
BER Bergen 76.12 339 *e*P **P 23 47 36.9 +0.6**
BER *e*S **S 23 57 17.7 +0.7**
SORM Soroca 76.13 321⇑ *i*P **P 23 47 35.8 -0.8**
HVU Hansel Valley 76.14 48 *e*P **P 23 47 38.5 +1.5**
HVU pmax pmax
comp=Z,72nm,1.2s
HVU Hansel Valley 76.14 48 *e*P **P 23 47 38.5 +1.5**
comp=Z,72nm,1.3s
ODD1 Odda 76.14 338 *e*P **P 23 47 38.5 +2.0**
SBC Santa Barbara 76.14 57 P **P 23 47 36.6 -0.3**
baz=306
ERBA Erbaa 76.17 311 *i*P **P 23 47 38.9 +1.8**
GRAC Grapevine Rang 76.18 54 P **P 23 47 37.3 +0.1**
baz=307
ISA Isabella, Lake 76.25 56 P **P 23 47 37.6 -0.1**
baz=306
LOHW Long Hollow 76.26 45 *e*P **P 23 47 39.1 +1.3**
comp=Z,38nm,1.3s
SNOW Snow Kimg Moun 76.27 46 *e*P **P 23 47 40.1 +2.3**
comp=Z,56nm,1.1s
REDW Red Top Meadow 76.27 46 *e*P **P 23 47 39.4 +1.5**
comp=Z,88nm,1.2s
SNOP Sinop 76.27 313 *e*P **P 23 47 37.6 0.0**
ARVC Arvin 76.33 56 P **P 23 47 38.1 0.0**
baz=306
KVT Kavak 76.35 311 *e*P **P 23 47 39.0 +0.9**
SCZ2 Santa Cruz Isl 76.46 58 P **P 23 47 39.4 +0.6**
baz=306
DAC Darwin (Calif) 76.46 55 *e*P **P 23 47 39.9 +0.9**
DAC pmax pmax
comp=Z,68nm,1.3s
DAC Darwin (Calif) 76.46 55 *e*P **P 23 47 39.9 +0.9**
comp=Z,68nm,1.4s
DIKM Dikmen 76.47 312 *e*P **P 23 47 39.9 +1.2**
SVSK Karacayir 76.49 310 *e*P **P 23 47 39.3 +0.5**
R11A Troy Canyon, C 76.51 52 P **P 23 47 39.3 +0.1**
baz=307,SNR=24
R11A Troy Canyon, C 76.51 52 *e*P **P 23 47 39.0 -0.2**
comp=Z,86nm,1.3s
BGU Big Grassy Mou 76.51 49 *e*P **P 23 47 40.5 +1.4**
comp=Z,54nm,1.5s
TOKT Tokat 76.52 311 *e*P **P 23 47 38.7 -0.4**
DGMT Dagmar 76.53 39 P **P 23 47 38.6 -0.4**
baz=312
DGMT Dagmar 76.53 39 *e*P **P 23 47 39.9 +0.9**
comp=Z,138nm,1.3s
DGMT *e*PcP **PcP 23 47 50.8 +0.4**
DGMT LR LR
comp=Z,3μm,21.0s
CUKAN kangal_SIVAS 76.57 309 *i*P **P 23 47 40.3 +0.8**
BLS5 Blasjo 76.59 338 *e*P **P 23 47 39.8 +0.7**
BLS5 *e*S **S 23 57 23.6 +1.4**
SPUT South Promonto 76.62 48 *e*P **P 23 47 41.0 +1.2**
comp=Z,89nm,1.5s

MZRK	**Al-Mazaregh**	76.64	305	*e*P		**P**	23 47 38.7	-1.1
SFNV	**Sufian**	76.64	306	*e*P		**P**	23 47 39.9	+0.1
KIS	**Kishinev**	76.64	320	⇑*i*P		**P**	23 47 40.0	+0.5
	comp=Z,200nm,1.4s							
KIS	**Kishinev**	76.64	320	*e*S		**S**	23 57 23.0	-0.1
KIS	**Kishinev**	76.64	320	*e*PS		PnS	23 58 25.0	+21
KIS				LRM		MLR	00 24 00.0	
	comp=Z,16μm,20.0s							
KIS	**Kishinev**	76.64	320	α*i*P		**P**	23 47 40.0	+0.5
KIS				*e*S		**S**	23 57 23.0	-0.1
KIS				*e*			23 57 45.0	
KIS				*e*PS		PnS	23 58 25.0	+21
KIS				pmax		pmax		
	comp=Z,200nm,1.4s							
KIS				pmax		pmax		
	comp=Z,1μm,10.0s							
KIS				MLR		MLR		
	comp=N,10μm,18.0s							
KIS				MLR		MLR		
	comp=Z,16μm,18.0s							
KIS				MLR		MLR		
	comp=E,7μm,17.0s							
KIS				MLR		MLR		
	comp=Z,16μm,20.0s							
LAO	**LASA Array**	76.67	41	P		**P**	23 47 40.0	+0.2
	baz=311							
LAO	**LASA Array**	76.67	41	*e*P		**P**	23 47 41.7	+1.9
	comp=Z,113nm,1.1s							
LAO				LR		LR		
	comp=Z,3μm,22.0s							
OSI	**Osito Audit: C**	76.70	57	P		**P**	23 47 40.3	+0.1
	baz=306							
A25A	**Svangstu Ranch**	76.75	38	P		**P**	23 47 40.8	+0.6
	baz=312							
BLG	**Laguna Peak, P**	76.77	57	P		**P**	23 47 41.1	+0.5
	baz=306							
BOYT	**Boyabat**	76.82	312	*i* P		**P**	23 47 41.6	+0.9
FURC	**Furnace Creek,**	76.82	54	P		**P**	23 47 41.2	+0.4
	baz=307							
URFA	**Urfa**	76.85	307	*e*P		**P**	23 47 42.7	+1.6
BYBT	**Boyabat**	76.87	312	*e*P		**P**	23 47 41.8	+0.9
LRMC	**Laurel Mtn Rad**	76.88	55	P		**P**	23 47 40.9	-0.4
	baz=307,SNR=5.6							
HOMB	**Homborsund**	76.90	337	*e*P		**P**	23 47 37.9	-2.9
HOMB				*e*S		**S**	23 57 27.1	+1.6
TPNV	**Topopah Spring**	76.93	53	P		**P**	23 47 41.6	0.0
	baz=307							
TPNV	**Topopah Spring**	76.93	53	*e*P		**P**	23 47 41.3	-0.3
TPNV				pmax		pmax		
	comp=Z,94nm,1.2s							
TPNV	**Topopah Spring**	76.93	53	*e*P		**P**	23 47 41.2	-0.3
	comp=Z,94nm,1.2s							
HWUT	**Hardware Ranch**	76.96	47	*e*P		**P**	23 47 41.8	+0.2
	comp=Z,133nm,1.3s							
HWUT				LR		LR		
	comp=Z,2μm,22.0s							
SNCC	**San Nicolas Is**	76.97	58	P		**P**	23 47 41.4	-0.3
	baz=306							
DARE	**Darende-Malaty**	77.01	309	*e*P		**P**	23 47 43.7	+1.8
BZK	**Bozkurt**	77.01	313	*e*P		**P**	23 47 40.6	-1.1
EDW2	**Edwards Air Fo**	77.03	56	P		**P**	23 47 41.9	-0.2
	baz=307							
DUG	**Dugway, Tooele**	77.09	49	P		**P**	23 47 41.9	-0.5
	baz=308,SNR=19							
DUG	**Dugway, Tooele**	77.09	49	*e*P		**P**	23 47 42.2	-0.2
DUG				pmax		pmax		
	comp=Z,110nm,1.3s							
DUG	**Dugway, Tooele**	77.09	49	*e*P		**P**	23 47 42.2	-0.2
	comp=Z,107nm,1.4s							
DUG				LR		LR		
	comp=Z,2μm,21.0s							
LVV	**L'vov**	77.10	324	*e*P		**P**	23 47 42.5	+0.4
LVV				*e*			23 47 54.9	
LVV				*e*			23 50 38.1	
LVV				*e*S		**S**	23 57 25.7	-2.4
LVV				pmax		pmax		
	comp=Z,300nm,1.2s							
LVV				MLR		MLR		
	comp=Z,10μm,18.0s							
LVV				MLR		MLR		
	comp=N,6μm,17.0s							
LVV				MLR		MLR		
	comp=E,6μm,17.0s							
BSD	**Bornholm Skovb**	77.14	332	⇑*i*P		**P**	23 47 42.1	-0.1
	comp=E,140nm,1.2s							
BSD				*i*			23 47 54.9	
BSD	**Bornholm Skovb**	77.14	332	⇑*i*P		**P**	23 47 42.1	-0.1
BSD				*i*			23 47 54.9	
BSD				pmax		pmax		
	comp=Z,140nm,1.2s							
IAS	**Iasi**	77.15	320	⇑*i*P		**P**	23 47 42.3	-0.1
BEL	**Belsk**	77.16	327	*e*P		**P**	23 47 43.5	+1.1
BEL				LMZ		LR	00 24 46.3	
	comp=Z,8μm,17.3s							
BEL	**Belsk**	77.16	327	⇑*e*P		**P**	23 47 43.5	+1.1
BEL				MLR		MLR		
	comp=Z,8μm,17.3s							
B25A	**Knox Farm, Ray**	77.18	38	P		**P**	23 47 42.4	-0.2
	baz=313							
DECC	**Green Verdugo**	77.18	57	P		**P**	23 47 43.1	+0.2
	baz=307							
STAV	**Stavanger**	77.21	338	*e*P		**P**	23 47 44.5	+2.1
STAV				*e*S		**S**	23 57 29.8	+0.8
SNART	**Snartemo**	77.25	337	*e*P		**P**	23 47 43.1	+0.4
CUSAR	**Sarkisla-SIVAS**	77.25	310	*i* P		**P**	23 47 45.2	+1.9
LEOM	**Leova**	77.28	319	⇑*i*P		**P**	23 47 43.0	-0.1
BORG	**Borgarnes**	77.29	353	*e*P		**P**	23 47 46.1	+3.3
BORG				pmax		pmax		
	comp=Z,64nm,1.1s							
BORG	**Borgarnes**	77.29	353	*e*P		**P**	23 47 46.1	+3.3
	comp=Z,64nm,1.1s							
BORG				LR		LR		
	comp=Z,2μm,20.0s							
A26A	**Wade Farm, Ken**	77.30	37	P		**P**	23 47 43.2	0.0
	baz=313							
PASC	**Pasadena Art C**	77.33	57	*e*pP		pP	23 47 55.5	+0.1
TCUT	**Toone Canyon**	77.35	48	*e*P		**P**	23 47 45.9	+1.9
	comp=Z,229nm,1.4s							
MWC	**Mount Wilson**	77.38	57	*e*pP		pP	23 47 56.8	+0.8
BW06	**Boulder Array**	77.39	46	P		**P**	23 47 44.4	+0.2
	baz=310							
BW06	**Boulder Array**	77.39	46	*e*P		**P**	23 47 43.3	-0.8
	comp=Z,54nm,1.4s							
BW06				LR		LR		
	comp=Z,3μm,21.0s							
PDAR	**Pinedale Array**	77.39	46	P		**P**	23 47 43.0	-1.1
	comp=Z,3.3nm,0.6s,baz=242,slow=0.8,SNR=37							
PDAR				LR		LR	00 17 58.8	
	comp=Z,3μm,21.7s,baz=328,slow=33							
PSUT	**Pine Spring**	77.47	51	*e*P		**P**	23 47 45.8	+1.1
	comp=Z,86nm,1.3s							
COAL	**Corum-Alaca**	77.50	311	*i* P		**P**	23 47 45.2	+0.6
C25A	**Freed Ranch, W**	77.51	39	P		**P**	23 47 44.7	+0.2
	baz=313							
FMP	**Fort Macarthur**	77.53	57	P		**P**	23 47 44.9	+0.2
	baz=307							
SHOC	**Shoshone, Teco**	77.54	54	P		**P**	23 47 45.1	+0.2
	baz=307							
B26A	**Jensen Ranch,**	77.56	38	P		**P**	23 47 44.9	+0.2
	baz=313							
GSC	**Goldstone, Bar**	77.56	55	P		**P**	23 47 45.1	0.0
	baz=307,SNR=6.3							
GSC	**Goldstone, Bar**	77.56	55	*e*P		**P**	23 47 45.5	+0.4
GSC				pmax		pmax		
	comp=Z,56nm,1.2s							
GSC	**Goldstone, Bar**	77.56	55	*e*P		**P**	23 47 45.5	+0.4
	comp=Z,56nm,1.3s							
TOS	**Tosya**	77.58	312	*e*P		**P**	23 47 45.0	0.0
COP	**Copenhagen**	77.61	333	⇑*i*P		**P**	23 47 45.3	+0.5
	comp=Z,70nm,1.2s							
COP	**Copenhagen**	77.61	333	⇑*i*P		**P**	23 47 45.3	+0.5
COP				pmax		pmax		
	comp=Z,70nm,1.2s							
CIS	**Catalina Islan**	77.63	57	P		**P**	23 47 45.9	+0.5
	baz=307							
BFSC	**Mount Baldy Ra**	77.64	56	P		**P**	23 47 45.9	+0.4
	baz=307							
JLU	**Jordanelle**	77.65	48	*e*P		**P**	23 47 47.0	+1.3
	comp=Z,75nm,1.3s							
NLU	**North Lily Min**	77.68	49	*e*P		**P**	23 47 47.1	+1.3
	comp=Z,34nm,1.1s							
RRX	**Edison Barstow**	77.69	56	P		**P**	23 47 45.9	+0.2
	baz=307							
PRAR	**RASCA**	77.71	321	⇓*i*P		**P**	23 47 47.2	+1.6
ILGA	**Ilgaz**	77.75	313	*i* P		**P**	23 47 48.2	+2.0
CORM	**Corum**	77.76	311	*e*P		**P**	23 47 46.8	+0.7
SCI2	**San Clemente I**	77.79	58	P		**P**	23 47 46.4	+0.2
	baz=307							
TLCR		77.83	318	⇑*i*P		**P**	23 47 47.2	+1.0
BNN	**Bunyan**	77.85	310	*e*P		**P**	23 47 47.3	+0.6
KWP	**Kalwaria Pacla**	77.85	324	*e*P		**P**	23 47 47.2	+0.9
KWP				*e*S		**S**	23 57 39.4	+3.2
KWP				LMZ		LR	00 25 31.7	
	comp=Z,7μm,17.9s							
KWP	**Kalwaria Pacla**	77.85	324	⇑*i*P		**P**	23 47 47.1	+0.8
KWP	**Kalwaria Pacla**	77.85	324	⇑*e*P		**P**	23 47 47.2	+0.9
KWP				*e*S		**S**	23 57 39.4	+3.2
KWP				MLR		MLR		
	comp=Z,7μm,17.9s							
D25A	**Fairfield**	77.85	39	P		**P**	23 47 46.2	-0.2
	baz=313							
SHPR	**Sheep Range**	77.89	53	*e*P		**P**	23 47 48.1	+1.1
	comp=Z,77nm,1.2s							
C26A	**Wahner Farm, P**	78.00	38	P		**P**	23 47 47.6	+0.3
	baz=313							
B27A	**Peters Farms,**	78.01	37	P		**P**	23 47 47.3	+0.1
	baz=314							
GAZ	**Gaziantep**	78.03	308	*e*P		**P**	23 47 49.2	+1.6
BURAR	**Bucovina Array**	78.05	322	⇑*i*P		**P**	23 47 47.6	+0.1
TUQ	**Turquoise Moun**	78.05	55	P		**P**	23 47 47.7	-0.2
	baz=308							
LRW	**Lerwick**	78.06	342	AMS		AMS	00 24 49.0	
	comp=Z,3μm,20.2s							
TESR	**Tescani**	78.08	320	⇑*i*P		**P**	23 47 47.4	-0.2
CANT	**Cankiri**	78.09	312	*e*P		**P**	23 47 48.0	+0.1
BBRC	**Big Bear Solar**	78.11	56	P		**P**	23 47 48.3	0.0
	baz=307							
A28A	**Rude Farm, Bot**	78.14	36	P		**P**	23 47 48.1	+0.2
	baz=314							
MUD	**Monsted U'grnd**	78.14	335	*i* P		**P**	23 47 48.6	+0.9
	comp=Z,55nm,1.2s							
MUD	**Monsted U'grnd**	78.14	335	*i* P		**P**	23 47 48.6	+0.9
MUD				pmax		pmax		
	comp=Z,55nm,1.2s							
DGAR	**Diego Garcia**	78.14	251	PFAKE			23 48 00.0	+12
DGAR				LR		LR		
	comp=Z,3μm,22.0s							
HEC	**Hector,Ludlow**	78.15	55	P		**P**	23 47 48.7	+0.4
	baz=306							
JHLN	**Al Jahlan**	78.17	306	*e*P		**P**	23 47 52.8	+4.5
SLMH	**Al Salmeh**	78.17	307	*e*P		**P**	23 47 44.1	-4.2
RGN	**Rugen**	78.17	332	*e*P		**P**	23 47 49.4	+1.5
RGN				*e*pP		**pP**	23 48 01.4	+1.7
CFR	**Carcaliu**	78.19	318	⇑*i*P		**P**	23 47 47.8	-0.4
SAFT	**Safranbolu**	78.23	313	*e*P		**P**	23 47 50.2	+1.7
E25A	**Miller Ranch,**	78.25	40	P		**P**	23 47 49.0	+0.3
	baz=313							
CDAG	**Cicekdag**	78.26	311	*i* P		**P**	23 47 48.7	-0.2
PETR	**Petresti**	78.31	319	⇑*i*P		**P**	23 47 51.3	+2.5
MURC	**Murrieta**	78.33	57	P		**P**	23 47 49.6	+0.4
	baz=307							
ODBI	**Odobesti**	78.37	319	⇓*i*P		**P**	23 47 52.6	+3.4
C27A	**Sayler Ranch,**	78.37	38	P		**P**	23 47 49.8	+0.6
	baz=314							
D26A	**Manning**	78.38	39	P		**P**	23 47 49.8	+0.5
	baz=313							
B28A	**Dugan Ranch, T**	78.41	37	P		**P**	23 47 49.7	+0.2
	baz=314							
VRI	**Vrincioaia**	78.47	320	⇑*i*P		**P**	23 47 50.2	+0.4
VRI	**Vrincioaia**	78.47	320	P		**P**	23 47 50.4	+0.6
PLOR	**Plostina**	78.52	320	⇑*i*P		**P**	23 47 51.8	+1.7
MSU	**Marysvale**	78.52	50	*e*P		**P**	23 47 52.1	+1.6
MSU	**Marysvale**	78.52	50	*e*P		**P**	23 47 52.1	+1.6
TIRR	**Tirgusor**	78.53	318	⇑*i*P		**P**	23 47 49.8	-0.3
TIRR	**Tirgusor**	78.53	318	*e*P		**P**	23 47 49.2	-0.9
TIRR				pmax		pmax		
	comp=Z,120nm,1.3s							
TIRR	**Tirgusor**	78.53	318	*e*P		**P**	23 47 49.2	-0.9
	comp=Z,125nm,1.3s							
KOLS	**Kolonicke sedl**	78.55	324	*e*P		**P**	23 47 50.3	+0.1
KOLS				pmax		pmax		
	comp=Z,82nm,1.3s							
A29A	**Manning Farm,**	78.61	36	P		**P**	23 47 50.4	-0.2
	baz=315,SNR=16							
F25A	**Bowman**	78.61	40	P		**P**	23 47 50.6	-0.1
	baz=313							
TMUT	**Trail Mountain**	78.62	49	*e*P		**P**	23 47 52.4	+1.2
	comp=Z,60nm,1.3s							
GMRC	**Granite Mounta**	78.62	55	P		**P**	23 47 51.3	+0.3
	baz=308							
HARR	**Harsova**	78.63	318	⇑*i*P		**P**	23 47 50.0	-0.7
BRTR	**Keskin Array B**	78.63	312	P		**P**	23 47 51.5	+0.6
	comp=Z,21nm,0.9s,baz=80,slow=2.9,SNR=88							
BRTR				LR		LR	00 27 23.4	
	comp=Z,3μm,18.9s,baz=50,slow=39							
GRER		78.67	319	⇑*i*P		**P**	23 47 52.2	+1.3
STHS	**Stebnicka Huta**	78.68	325	*e*P		**P**	23 47 52.1	+1.1
STHS				pmax		pmax		
	comp=Z,66nm,1.2s							
STHS	**Stebnicka Huta**	78.68	325	*e*P		**P**	23 47 52.0	+1.1
DRWC	**Darouich**	78.72	308	*e*P		**P**	23 47 50.5	-0.9
UZH	**Uzhgorod**	78.75	324	*e*P		**P**	23 47 50.8	-0.4
UZH				*e*			23 47 59.2	
UZH				*i*			23 48 04.6	
UZH				*e*			23 50 50.8	
UZH				*e*PPP		PPP	23 52 41.2	
UZH				*e*S		**S**	23 57 41.8	-4.0
UZH				*e*PS		**PnS**	23 58 25.6	-5.6
UZH				MLR		MLR		
	comp=N,17μm,17.0s							
UZH				MLR		MLR		
	comp=E,17μm,17.0s							
UZH				MLR		MLR		
	comp=Z,16μm,17.0s							
OJC	**Ojcow**	78.75	326	*e*P		**P**	23 47 52.0	+0.8
OJC				*e*S		**S**	23 57 45.3	-0.6
OJC				LMZ		LR	00 26 37.6	
	comp=Z,7μm,20.6s							
OJC	**Ojcow**	78.75	326	*e*P		**P**	23 47 51.1	-0.2
OJC				pmax		pmax		
	comp=Z,220nm,1.2s							
OJC	**Ojcow**	78.75	326	*e*P		**P**	23 47 51.1	-0.2
	comp=Z,216nm,1.2s							
D27A	**Center**	78.78	38	P		**P**	23 47 52.2	+0.7
	baz=314							
P17A	**Butcher Ranch,**	78.79	49	*e*P		**P**	23 47 53.1	+1.3
	comp=Z,170nm,1.3s							
LCMT	**Little Creek M**	78.80	52	*e*P		**P**	23 47 52.0	+0.1
	comp=Z,98nm,1.2s							
PFO	**Pinyon Flats O**	78.81	56	P		**P**	23 47 52.3	+0.2
	baz=308							
PFO	**Pinyon Flats O**	78.81	56	*e*P		**P**	23 47 53.1	+1.1
PFO				pmax		pmax		
	comp=Z,55nm,1.2s							
PFO	**Pinyon Flats O**	78.81	56	*e*P		**P**	23 47 53.1	+1.1
	comp=Z,55nm,1.3s							
PFO				LR		LR		
	comp=Z,9μm,22.0s							
MTPU	**Mount Pierson**	78.81	51	*e*P		**P**	23 47 53.1	+0.8
	comp=Z,73nm,1.3s							
TPFO	**Pinon Flats**	78.81	56	P		**P**	23 47 51.7	-0.4
	baz=308,SNR=5.6							
109C	**Camp Elliot, M**	78.81	57	P		**P**	23 47 52.2	+0.3
	baz=308							
KAMT	**Kaman**	78.82	311	*e*P		**P**	23 47 52.2	+0.2
ARCR	**ARCALIA**	78.83	322	⇑*i*P		**P**	23 47 53.0	+1.2
BMR	**Baia Mare**	78.85	323	⇑*i*P		**P**	23 47 53.2	+1.4
BCAM	**Yenicaga**	78.86	313	*i* P		**P**	23 47 53.9	+1.7
BELC	**Belle Mtn. Jos**	78.88	56	P		**P**	23 47 52.6	+0.2
	baz=308							
Q16A	**Castle Valley**	78.88	49	*e*P		**P**	23 47 54.5	+2.1
	comp=Z,106nm,1.3s							
B29A	**Wagenman Farm,**	78.88	36	P		**P**	23 47 52.2	+0.2
	baz=315							
C28A	**Hausauer Farms**	78.91	37	P		**P**	23 47 52.7	+0.5
	baz=314							
CRVS	**Cervenica-Dubn**	78.94	324	*e*P		**P**	23 47 53.0	+0.6
CRVS				*e*S		**S**	23 57 48.7	+0.7
P18A	**Preston Nutter**	78.98	48	*e*P		**P**	23 47 54.5	+1.4
	comp=Z,86nm,1.2s							
PGOR	**Pogoanele**	78.98	319	⇑*i*P		**P**	23 47 55.9	+3.3
A30A	**Hoffart Farm,**	79.03	35	P		**P**	23 47 52.2	-0.7
	baz=316,SNR=8.2							
ANTO	**Ankara**	79.05	312	*e*P		**P**	23 47 53.7	+0.6
ANTO				pmax		pmax		
	comp=Z,95nm,1.0s							
ANTO	**Ankara**	79.05	312	*e*P		**P**	23 47 53.7	+0.6
	comp=Z,95nm,0.9s							
ANTO				LR		LR		
	comp=Z,11nm,19.0s							
LOD	**Lodumlu**	79.05	312	*e*P		**P**	23 47 54.3	+1.1
CEYT	**Ceyhan**	79.05	308	*e*P		**P**	23 47 52.7	-0.4
KNB	**Kanab**	79.06	52	*e*P		**P**	23 47 54.9	+1.5
KNB				pmax		pmax		
	comp=Z,150nm,1.3s							
KNB	**Kanab**	79.06	52	*e*P		**P**	23 47 54.9	+1.5
	comp=Z,148nm,1.3s							
BBAL	**Bala**	79.06	312	*i* P		**P**	23 47 53.3	0.0
F26A	**Lodgepole**	79.07	40	P		**P**	23 47 53.6	+0.4
	baz=313							
ISR	**Istrita**	79.07	319	⇓*i*P		**P**	23 47 55.0	+1.8
DOPR	**Dopca**	79.09	320	⇑*i*P		**P**	23 47 54.1	+0.9
NIE	**Niedzica**	79.11	325	*e*P		**P**	23 47 54.4	+1.1
NIE				*e*S		**S**	23 57 51.2	+1.5
NIE				LMZ		LR	00 26 39.1	
	comp=Z,7μm,17.3s							
NIE	**Niedzica**	79.11	325	⇑*e*P		**P**	23 47 54.4	+1.1
NIE				*e*S		**S**	23 57 51.2	+1.5
NIE				MLR		MLR		
	comp=Z,7μm,17.3s							
MLR	**Muntele Rosu**	79.13	320	*e*P		**P**	23 47 53.1	-0.5
MLR				pmax		pmax		
	comp=Z,180nm,1.3s							
MLR	**Muntele Rosu**	79.13	320	*e*P		**P**	23 47 53.1	-0.5
	comp=Z,176nm,1.3s							
G25A	**Newell**	79.13	41	P		**P**	23 47 53.4	-0.1
	baz=313							
SRU	**San Rafael Swe**	79.14	49	*e*P		**P**	23 47 55.0	+1.1
SRU				pmax		pmax		
	comp=Z,83nm,1.1s							
SRU	**San Rafael Swe**	79.14	49	*e*P		**P**	23 47 55.0	+1.1
	comp=Z,83nm,1.1s							
GULA	**Gulagac**	79.15	310	*e*P		**P**	23 47 53.9	+0.1
AFSR	**Af'ar-Bala (A**	79.15	312	*e*P		**P**	23 47 54.2	+0.4
K22A	**Casper**	79.16	44	P		**P**	23 47 53.3	-0.6
	baz=311,SNR=7.1							
K22A	**Casper**	79.16	44	*e*P		**P**	23 47 54.7	+0.8
	comp=Z,129nm,1.4s							
PSN	**Preselentsi**	79.17	317	*i* P		**P**	23 47 54.3	+0.7
TAHT	**Tahtakopru-Hat**	79.17	308	*e*P		**P**	23 47 52.5	-1.3
SERE	**Sereflikochisa**	79.17	311	*e*P		**P**	23 47 53.9	0.0
ULM	**Lac du Bonnet**	79.18	33	P		**P**	23 47 53.8	+0.2
	comp=Z,15nm,1.0s,baz=311,slow=6.8,SNR=14							
ULM				LR		LR	00 23 53.5	
	comp=Z,2μm,21.1s,baz=327,slow=36							
D28A	**Regan**	79.19	38	P		**P**	23 47 54.0	+0.2
	baz=314							
MDND	**Maddock**	79.20	37	P		**P**	23 47 54.2	+0.5
	baz=315							
BTCH	**Batrach**	79.21	307	*e*P		**P**	23 47 53.1	-1.0
E27A	**Carson**	79.23	39	P		**P**	23 47 54.4	+0.4
	baz=314							
BAR	**Barrett**	79.23	57	*e*P		**P**	23 47 55.4	+1.2
	comp=Z,53nm,1.2s							
MONP2	**Monument Peak**	79.27	57	P		**P**	23 47 54.9	+0.3
	baz=308							
KARA	**Karaisali**	79.33	309	*e*P		**P**	23 47 56.0	+1.3
IRM	**Iron Mountain**	79.34	55	P		**P**	23 47 55.4	+0.6
	baz=308							
B30A	**Myrvik Farm, E**	79.37	36	P		**P**	23 47 54.2	-0.5
	baz=316,SNR=13							
KKUL	**Konya-Kulu**	79.42	311	*i* P		**P**	23 47 55.2	0.0
H25A	**Fruitdale**	79.42	41	P		**P**	23 47 55.3	+0.2
	baz=313							
BC3	**Big Chuckawall**	79.44	56	P		**P**	23 47 56.0	+0.5
	baz=308							
CJR	**Cluj-Napoca**	79.47	322	⇑*i*P		**P**	23 47 55.6	+0.3
G26A	**Maurine**	79.48	40	P		**P**	23 47 55.2	-0.2
	baz=313,SNR=11							
KFRA	**Kufra**	79.50	306	*e*P		**P**	23 47 56.6	+0.9
SULR		79.52	319	⇑*i*P		**P**	23 47 55.6	+0.1
RSSD	**Black Hills**	79.53	42	P		**P**	23 47 55.9	0.0
	baz=313							
RSSD	**Black Hills**	79.53	42	*e*P		**P**	23 47 56.4	+0.5
RSSD				pmax		pmax		
	comp=Z,88nm,1.4s							
RSSD	**Black Hills**	79.53	42	*e*P		**P**	23 47 56.4	+0.5
	comp=Z,88nm,1.4s							
SAHE	**Sakarya_HENDEK**	79.54	314	*i* P		**P**	23 47 56.1	+0.3
A31A	**Linda, St. Vin**	79.55	35	P		**P**	23 47 55.0	-0.6
	baz=316							
E28A	**Huff**	79.56	38	P		**P**	23 47 56.0	+0.2
	baz=314							
KRTS	**Karatas**	79.56	308	*e*P		**P**	23 47 52.2	-3.7
RAC	**Raciborz**	79.56	327	*e*P		**P**	23 47 56.5	+0.8
RAC				*e*S		**S**	23 57 54.0	-0.4
RAC				MLR		MLR		
	comp=Z,11μm,18.2s							
WRDH	**Warideh**	79.57	307	*e*P		P	23 47 47.6	-8.4
MDUB	**Mudurnu**	79.59	313	*e*P		**P**	23 47 57.0	+0.9
VOIR		79.62	320	⇑*i*P		**P**	23 47 57.2	+1.0
IKP	**In-Ko-Pah, Jac**	79.62	57	P		**P**	23 47 56.9	+0.4
	baz=308							
ARNB	**Al Arnab**	79.63	307	*e*P		**P**	23 47 54.4	-2.1
SWSC	**Sam W. Stewart**	79.65	56	P		**P**	23 47 57.0	+0.5
	baz=308							
LANS	**Liptovska Anna**	79.68	326	*e*P		**P**	23 47 58.1	+1.7
LANS	**Liptovska Anna**	79.68	326	*e*P		**P**	23 47 58.1	+1.7
KECS	**Kecovo**	79.70	325	*e*P		**P**	23 47 57.6	+1.2
KECS				*e*			23 48 05.8	
KECS				*e*			23 50 58.4	
KECS				pmax		pmax		
	comp=Z,23nm,1.2s							
KECS	**Kecovo**	79.70	325	*e*P		**P**	23 47 57.6	+1.2
KECS				*e*			23 48 05.8	
KECS				*e*PP		**PP**

MORC Moravsky Berou 80.07 327 *e*P **P 23 47 58.4 -0.1**
MORC pmax pmax
comp=Z,360nm,1.1s
MORC Moravsky Berou 80.07 327 *e*P **P 23 47 58.4 -0.1**
comp=Z,363nm,1.1s
E29A Napoleon 80.08 38 P **P 23 47 58.4 -0.2**
baz=315
TAU Tasmania Unive 80.11 176 PFAKE 23 48 10.0 +12
TAU LR LR
comp=Z,4μm,20.0s
C31A Landman Farms, 80.12 36 P **P 23 47 58.0 -0.8**
baz=316,SNR=6.8
D30A Buchanan 80.12 37 P **P 23 47 58.6 -0.2**
baz=316
DPC Dobruska-Polom 80.17 328 *e*P **P 23 47 58.5 -0.5**
DPC *ep*P **pP 23 48 12.0 +1.1**
DPC *ex* x 23 51 16.5
DPC *e*S **S 23 58 03.3 +2.4**
DPC *ex* x 23 58 29.3
DPC AMS AMS 00 26 50.0
comp=Z,8μm,17.6s
DPC Dobruska-Polom 80.17 328 *e*P **P 23 47 58.5 -0.5**
DPC *e* 23 48 12.0
DPC *e*S **S 23 58 03.3 +2.4**
DPC MLR MLR
comp=Z,8μm,17.6s
KRLC Kraliky 80.18 327 *e*P **P 23 47 58.4 -0.7**
KRLC *ep*P **pP 23 48 10.3 -0.6**
KRLC Kraliky 80.18 327 *e*P **P 23 47 58.4 -0.7**
KRLC *e* 23 48 10.3
BIGH Upper Bighouse 80.18 342 AMS AMS 00 26 23.9
comp=Z,6μm,21.4s
UPC Upice 80.18 328⇓*e*P **P 23 48 00.2 +1.2**
UPC *e*S **S 23 58 02.3 +1.3**
UPC AMS AMS 00 27 10.0
comp=Z,10μm,18.6s
UPC Upice 80.18 328 *e*P **P 23 48 00.2 +1.2**
UPC *e*S **S 23 58 02.3 +1.3**
UPC MLR MLR
comp=Z,10μm,18.6s
HAWK Haweek 80.19 306 *e*P **P 23 47 59.5 0.0**
H27A Howes 80.21 40 P **P 23 47 58.8 -0.6**
baz=314,SNR=9.1
KIZT Kizilcal 80.22 312 *e*P **P 23 47 59.4 -0.2**
GLA Glamis 80.23 56 P **P 23 47 60.0 +0.3**
baz=308
GLA Glamis 80.23 56 *e*P **P 23 48 00.9 +1.2**
GLA pmax pmax
comp=Z,110nm,1.4s
GLA Glamis 80.23 56 *e*P **P 23 48 00.9 +1.2**
comp=Z,110nm,1.4s
B32A Ashes, Strandq 80.24 35 P **P 23 47 58.5 -0.9**
baz=317,SNR=12
HRT Hereke 80.24 314 *e*P **P 23 48 00.4 +0.8**
HUMR Humele 80.29 319⇑*i*P **P 23 48 00.6 +0.9**
KLYT Kilyos 80.31 315 *e*P **P 23 47 59.7 -0.2**
KDHN Kadinhani 80.31 311 *i*P **P 23 47 59.7 -0.5**
A33A Warroad 80.36 34 P **P 23 47 59.2 -0.8**
baz=318,SNR=16
PV09 Paradox Valley 80.37 49 *e*P **P 23 48 01.9 +1.2**
LADK Ladik-KONYA 80.37 311 *e*P **P 23 48 00.9 +0.5**
PSZ Piszkesteto 80.38 324⇑*i*P **P 23 48 03.1 +2.9**
PSZ Piszkesteto 80.38 324⇑*e*P **P 23 48 01.1 +0.9**
PSZ Piszkesteto 80.38 324 *e*P **P 23 48 00.2 0.0**
PSZ pmax pmax
comp=Z,150nm,1.1s
PSZ Piszkesteto 80.38 324 *e*P **P 23 48 00.2 0.0**
comp=Z,150nm,1.1s
PSZ LR LR
comp=Z,5μm,19.0s
ESKT Eskisehir 80.41 313 *i*P **P 23 48 00.7 +0.1**
ISK Istanbul-Kandi 80.42 315 *e*P **P 23 47 59.7 -0.8**
ISK Istanbul-Kandi 80.42 315 P **P 23 47 59.8 -0.7**
VYHS Vyhne 80.44 325 *e*P **P 23 48 01.5 +1.0**
VYHS pmax pmax
comp=Z,46nm,1.2s
ADVT Abdulvahap 80.46 314 *e*P **P 23 48 01.3 +0.7**
E30A Jud 80.48 38 P **P 23 48 00.8 +0.1**
baz=316
PV10 Paradox Valley 80.51 49 *e*P **P 23 48 01.9 +0.5**
F29A Eureka 80.51 38 P **P 23 48 01.2 +0.3**
baz=315
BGKT Bogazkoy 80.51 315 *e*P **P 23 48 01.2 +0.2**
BUY Buyukada 80.53 315 *i*P **P 23 48 02.0 +0.9**
KONT Konya--Tatoy 80.54 311 *e*P **P 23 48 01.9 +0.7**
CAVI Cavuskoy 80.55 314 *e*P **P 23 48 02.2 +1.0**
PV04 Paradox Valley 80.58 49 *e*P **P 23 48 02.2 +0.6**
PV04 *e* 23 48 14.8
ZALF Zalf 80.58 304 *e*P **P 23 48 00.5 -1.1**
CTYL Yalikoy Yolu 80.58 316 *e*P **P 23 48 02.2 +0.9**
J26A Sides Ranch, S 80.59 42 P **P 23 48 00.9 -0.6**
baz=313,SNR=5.5
CTKS Kestanelik-??a 80.62 315 *e*P **P 23 48 02.1 +0.6**
N23A Red Feather La 80.65 45 P **P 23 48 02.3 +0.2**
baz=312,SNR=14
N23A Red Feather La 80.65 45 *e*P **P 23 48 02.6 +0.5**
comp=Z,125nm,1.3s
SZH Strazhica 80.65 318 *i*P **P 23 48 01.7 0.0**
PHWY Pilot Hill 80.65 45 *e*P **P 23 48 02.9 +0.7**
comp=Z,72nm,1.4s
C32A Crookston 80.66 35 P **P 23 48 01.5 -0.1**
baz=317
D31A Mcclaflin, Tow 80.66 37 P **P 23 48 01.3 -0.4**
baz=316
PV05 Paradox Valley 80.66 49 *e*P **P 23 48 02.3 +0.2**
IZI Iznik 80.67 314 *e*P **P 23 48 02.4 +0.4**
ZIMR 80.69 319⇑*i*P **P 23 48 02.8 +1.0**
BRG Berggiesshubel 80.75 329 *e*P **P 23 48 02.8 +0.7**
comp=Z,69nm,1.3s
BRG *i* 23 48 15.1
comp=Z,63nm,1.1s
BRG PP **PP 23 51 02.0 -3.7**
BRG S **S 23 58 11.0 +4.0**
BRG SS SS 00 03 31.0 +12
comp=N,7μm,19.8s
comp=E,5μm,20.0s
comp=Z,11μm,19.4s
BRG Berggiesshubel 80.75 329 *e*P **P 23 48 02.8 +0.7**
BRG *i* 23 48 15.1
BRG 23 51 02.0
BRG S **S 23 58 11.0 +4.0**
BRG pmax pmax
comp=Z,69nm,1.3s
BRG MLR MLR
comp=N,7μm,19.8s
BRG MLR MLR
comp=E,5μm,20.0s
BRG MLR MLR
comp=Z,11μm,19.4s
B33A Robert and Kas 80.76 35 P **P 23 48 01.8 -0.4**
baz=318
PVCC Panska Ves 80.76 329⇓*e*P **P 23 48 01.9 -0.2**
PVCC AMS AMS 00 27 00.0
comp=Z,7μm,16.1s
PVCC Panska Ves 80.76 329 *e*P **P 23 48 01.9 -0.2**
PVCC MLR MLR
comp=Z,7μm,16.1s
GEMT Gemlik 80.77 314 *e*P **P 23 48 01.4 -0.9**
CLL Collm 80.80 330 *i*P **P 23 48 01.1 -1.2**
comp=Z,125nm,1.2s
CLL *e*Pmax 23 48 02.0
CLL *e*Plp 23 48 03.0
comp=Z,1μm,11.1s
CLL *i* 23 48 14.9
comp=Z,101nm,1.2s
CLL *i* 23 48 18.5
comp=Z,112nm,1.2s
CLL *e*PP **PP 23 51 07.0 +1.0**
comp=Z,700nm,11.2s
CLL *e*PPP PPP 23 52 59.0
CLL *e*S **S 23 58 10.0 +2.6**
comp=N,800nm,14.2s
CLL *e*S **S 23 58 10.0 +2.6**
comp=E,2μm,19.5s
CLL *e*SS SS 00 03 00.0 -20
CLL *e*SSS SSS 00 06 54.0
CLL Lmax 00 26 00.0
CLL LmV 00 26 00.0
comp=Z,7μm,18.8s
CLL Collm 80.80 330 *i*P **P 23 48 01.1 -1.2**
CLL *e*S **S 23 58 10.0 +2.6**
CLL pmax pmax
comp=Z,125nm,1.2s
CLL MLR MLR
comp=Z,7μm,18.8s

CLL Collm 80.80 330 *e*P **P 23 48 01.5 -0.8**
comp=Z,120nm,1.2s
VRAC Vranov 80.83 327⇑*i*P **P 23 48 03.0 +0.4**
JMB Yambol 80.85 317 *i*P **P 23 48 03.0 +0.2**
Y14A Wickenburg 80.87 54 *e*P **P 23 48 04.1 +1.0**
comp=Z,300nm,1.3s
ARMT Armutlu 80.87 315 *e*P **P 23 48 03.4 +0.4**
IGD Bursa 80.88 314 *i*P **P 23 48 03.2 +0.3**
QASN Qassioun 80.89 305 *e*P **P 23 48 00.5 -2.8**
TOTH TOTAH 80.90 305 *e*P **P 23 48 05.6 +2.3**
F30A Leola 80.90 38 P **P 23 48 03.0 -0.1**
baz=316
PHSR Pinarhisar 80.90 316 *e*P **P 23 48 03.2 +0.1**
WUAZ Wupatki 80.91 52 P **P 23 48 03.8 +0.4**
baz=310
WUAZ Wupatki 80.91 52 *e*P **P 23 48 04.8 +1.3**
comp=Z,133nm,1.3s
G29A Hoven 80.91 39 P **P 23 48 03.0 -0.1**
baz=315
D32A Dogwood Acres, 80.93 36 P **P 23 48 02.6 -0.5**
baz=317
E31A Nome 80.94 37 P **P 23 48 03.1 0.0**
baz=316
PV01 Paradox Valley 80.94 49 *e*P **P 23 48 04.0 +0.3**
MDNY Mudanya-Bursa 80.99 314 *e*P **P 23 48 03.2 -0.4**
ULDT Uludag 80.99 314 *i*P **P 23 48 05.4 +1.6**
B34A Aery, Baudette 81.02 34 P **P 23 48 03.1 -0.4**
baz=318,SNR=8.9
C33A Trail 81.05 35 P **P 23 48 03.0 -0.8**
baz=318,SNR=5.3
SMOL Smolenice 81.06 326 *e*P **P 23 48 05.2 +1.4**
SMOL Smolenice 81.06 326 *e*P **P 23 48 05.2 +1.4**
BUD Budapest 81.10 325⇑*e*P **P 23 48 04.5 +0.5**
SRE Strehaia 81.10 320⇑*i*P **P 23 48 04.9 +0.8**
113A Mohawk Valley, 81.10 56 *e*P **P 23 48 05.1 +0.8**
SALA Sala 81.10 304 *e*P **P 23 48 04.3 -0.2**
I28A Midland 81.12 40 P **P 23 48 03.7 -0.6**
baz=314,SNR=12
CRLT Corlu 81.12 316 *e*P **P 23 48 04.7 +0.4**
GOPC GO Pecny, Ondr 81.14 328 *e*P **P 23 48 04.1 -0.1**
GOPC *ep*P **pP 23 48 16.8 +0.7**
GOPC *e*S **S 23 58 12.8 +1.7**
GOPC *ex* x 23 58 36.2
GOPC AMS AMS 00 27 00.0
comp=Z,9μm,18.2s
GOPC GO Pecny, Ondr 81.14 328 *e*P **P 23 48 04.1 -0.1**
GOPC *e* 23 48 16.8
GOPC *e*S **S 23 58 12.8 +1.7**
GOPC MLR MLR
comp=Z,9μm,18.2s
H29A Onida 81.17 40 P **P 23 48 04.7 +0.2**
baz=315
BRBR Barbar 81.18 305 *e*P **P 23 48 05.6 +0.7**
EDRB Edirne 81.19 317 *e*P **P 23 48 05.7 +1.2**
EDRB Edirne 81.19 317 P **P 23 48 04.7 +0.1**
PRU Pruhonice 81.19 329⇓*e*P **P 23 48 04.3 -0.1**
PRU *ep*P **pP 23 48 15.7 -0.6**
PRU *e*PP **PP 23 51 11.5 +2.2**
PRU *e*S **S 23 58 14.3 +2.8**
PRU *ex* x 23 58 37.3
PRU AMS AMS 00 27 00.0
comp=Z,8μm,17.1s
PRU Pruhonice 81.19 329 *e*P **P 23 48 04.3 -0.1**
PRU *e* 23 48 15.7
PRU *e* 23 51 11.5
PRU *e*S **S 23 58 14.3 +2.8**
PRU MLR MLR
comp=Z,8μm,17.1s
RRR Rubha Reidh 81.20 343⇑*e*P **P 23 48 05.0 +0.7**
SMCO Snowmass 81.20 47 *e*P **P 23 48 06.2 +1.0**
comp=Z,94nm,1.5s
BZS Buzias 81.22 322⇑*i*P **P 23 48 04.3 -0.3**
DRUM Mains of Drumt 81.22 341 AMS AMS 00 27 06.5
comp=Z,5μm,21.0s
MDO Dochfour 81.23 342⇑*e*P **P 23 48 05.6 +1.1**
F31A Hecla 81.26 38 P **P 23 48 04.9 0.0**
baz=316
TVSB Tavsanli 81.27 313 *e*P **P 23 48 06.0 +0.8**
E32A Braaten, Kindr 81.30 37 P **P 23 48 05.1 0.0**
baz=317
TREC Trest 81.32 328⇓*ep*P **pP 23 48 17.7 +0.7**
TREC *e*S **S 23 58 15.2 +2.2**
TREC AMS AMS 00 27 30.0
comp=Z,9μm,18.1s
G30A Faulkton 81.35 39 P **P 23 48 04.7 -0.7**
baz=316,SNR=7.1
KCTX Karacabey (Bur 81.36 315 *e*P **P 23 48 06.2 +0.7**
KAC Achnashellach 81.40 343⇑*e*P **P 23 48 06.3 +0.9**
D33A AnnSam, Waubun 81.47 36 P **P 23 48 05.6 -0.4**
baz=318
GDZ Gediz 81.50 313 *i*P **P 23 48 07.5 +1.0**
B35A Bob, Littlefor 81.52 34 P **P 23 48 05.8 -0.4**
baz=319,SNR=12
C34A RKJ Ranch, Bem 81.52 35 P **P 23 48 05.6 -0.7**
baz=318
CSKK Cs´´ťkako 81.54 325 *e*P **P 23 48 09.2 +2.9**
I29A Vivian Onida 81.55 40 P **P 23 48 06.7 +0.2**
baz=315
MRMT Marmara Adasi 81.56 315 *e*P **P 23 48 05.9 -0.8**
X16A Lo Mia Camp, P 81.56 53 *e*P **P 23 48 08.1 +1.2**
ISCO Idaho Springs 81.57 46 P **P 23 48 07.5 +0.5**
baz=312
ISCO Idaho Springs 81.57 46 *e*P **P 23 48 07.7 +0.7**
ISCO *e* 23 48 20.2
ISCO pmax pmax
comp=Z,91nm,1.6s
ISCO MLR MLR
comp=Z,3μm,22.0s
ISCO Idaho Springs 81.57 46 *e*P **P 23 48 07.7 +0.7**
comp=Z,91nm,1.6s
ISCO *e* 23 48 20.2
ISCO LR LR
comp=Z,3μm,22.0s
EDC Edincik 81.58 315 *e*P **P 23 48 06.6 -0.1**
MVCO Mesa Verde 81.59 49 P **P 23 48 07.6 +0.5**
baz=311
MVCO Mesa Verde 81.59 49 *e*P **P 23 48 08.0 +0.8**
comp=Z,84nm,1.2s
MVCO *e* 23 48 20.2
MVCO LR LR
comp=Z,2μm,21.0s
BANR Banloc 81.62 322⇑*i*P **P 23 48 08.4 +1.6**
KPL Plockton 81.63 343 AMS AMS 00 25 57.6
comp=Z,2μm,17.0s
TCHB Talchebab 81.63 305 *e*P **P 23 48 09.8 +2.6**
SUTC Sutluce-Ispart 81.66 311 *e*P **P 23 48 05.9 -1.5**
KSB Sheil Bridge 81.69 343⇑*e*P **P 23 48 07.5 +0.6**
ISP Isparta 81.72 312 *e*P **P 23 48 03.4 -4.2**
ISP Isparta 81.72 312 P **P 23 48 07.0 -0.6**
ISP Isparta 81.72 312 *e*P **P 23 48 05.5 -2.1**
ISP pmax pmax
comp=Z,66nm,1.1s
ISP MLR MLR
comp=Z,3μm,19.0s
ISP Isparta 81.72 312 *e*P **P 23 48 05.5 -2.1**
comp=Z,66nm,1.1s
ISP LR LR
comp=Z,3μm,19.0s
RKY Sarkoy-Tekirda 81.73 316 *e*P **P 23 48 06.9 -0.7**
G31A Conde 81.74 38 P **P 23 48 07.5 +0.1**
baz=316
MPEP Malo Peshtene 81.75 319 *i*P **P 23 48 08.3 +0.8**
MDVR Moldovita 81.77 321⇑*i*P **P 23 48 06.4 -1.3**
F32A Veblen 81.80 37 P **P 23 48 07.4 -0.3**
baz=317
D34A Park Rapids 81.81 35 P **P 23 48 07.2 -0.6**
baz=318,SNR=6.9
NKC Novy Kostel 81.85 330 *e*P **P 23 48 08.7 +0.7**
NKC *e*S **S 23 58 20.8 +2.3**
NKC *ex* x 23 58 45.3
NKC AMS AMS 00 28 10.0
comp=Z,8μm,16.0s
NKC Novy Kostel 81.85 330 *e*P **P 23 48 08.7 +0.7**
NKC *e*S **S 23 58 20.8 +2.3**
NKC MLR MLR
comp=Z,8μm,16.0s
CSS Mathiatis 81.86 308 P **P 23 48 07.1 -1.2**
CSS Mathiatis 81.86 308 *e*P **P 23 48 06.5 -1.8**
comp=Z,11nm,0.7s
CSS LR LR
comp=Z,1μm,21.0s
E33A Westby DABS, E 81.87 36 P **P 23 48 07.9 -0.2**
baz=318
KRBG Karabiga-Canak 81.87 315 *e*P **P 23 48 08.6 +0.5**

C35A Jirik Farms, M 81.91 34 P **P 23 48 07.2 -1.1**
baz=319,SNR=13
SUSD Miller 81.93 39 P **P 23 48 07.7 -0.8**
baz=316
KHAL Karahalli 81.97 313 *i*P **P 23 48 09.5 +0.6**
LEF Lefka 82.04 308 *e*P **P 23 48 07.6 -1.5**
KDZ Kurdzhali 82.04 317 *i*P **P 23 48 09.6 +0.5**
BALB Balikesir 82.05 314 *e*P **P 23 48 09.9 +0.8**
G32A Webster 82.06 38 P **P 23 48 08.2 -0.9**
baz=317
SOP Sopron 82.07 326⇑*e*P **P 23 48 10.3 +1.2**
SOP Sopron 82.07 326 P **P 23 48 10.3 +1.2**
SOP pmax pmax
comp=Z,83nm,1.3s
I30A Oacoma 82.07 40 P **P 23 48 09.0 -0.2**
baz=316
PGB Panagyurishte 82.09 318 *i*P **P 23 48 09.8 +0.4**
ESY Stoneypath 82.14 341⇑*e*P **P 23 48 09.6 +0.3**
H31A Wolsey 82.14 39 P **P 23 48 09.4 -0.2**
baz=316
LPK Lapseki 82.18 316 *e*P **P 23 48 10.7 +0.9**
W18A Petrified Fore 82.19 52 P **P 23 48 10.3 +0.1**
baz=311
CONA Conrad Observa 82.19 326 *i*P **P 23 48 10.8 +0.9**
comp=Z,83nm,1.3s,SNR=62
ALN Alexandroupoli 82.22 316 *e*P **P 23 48 09.7 -0.3**
ALN Alexandroupoli 82.22 316 P **P 23 48 10.3 +0.3**
F33A 5 Mile Ranch, 82.22 37 P **P 23 48 09.2 -0.8**
baz=317,SNR=14
S22A 4UR Ranch, Cre 82.23 48 P **P 23 48 11.2 +0.7**
baz=312
S22A 4UR Ranch, Cre 82.23 48 *e*P **P 23 48 11.2 +0.7**
comp=Z,76nm,1.3s
214A Organ Pipe Nat 82.24 56 P **P 23 48 10.3 -0.1**
baz=310
214A Organ Pipe Nat 82.24 56 *e*P **P 23 48 11.4 +1.0**
comp=Z,588nm,1.9s
E34A Wadena 82.25 36 P **P 23 48 09.4 -0.7**
baz=318
KHC Kasperske Hory 82.25 328 *e*P **P 23 48 09.5 -0.6**
KHC *ep*P **pP 23 48 23.5 +1.5**
KHC *e*S **S 23 58 24.8 +2.2**
KHC *ex* x 23 58 49.8
KHC AMS AMS 00 27 50.0
comp=Z,8μm,17.7s
KHC Kasperske Hory 82.25 328 *e*P **P 23 48 09.5 -0.6**
KHC *e* 23 48 23.5
KHC *e*S **S 23 58 24.8 +2.2**
KHC MLR MLR
comp=Z,8μm,17.7s
KHC Kasperske Hory 82.25 328 *e*P **P 23 48 09.7 -0.4**
comp=Z,42nm,1.2s
ENEZ Enez 82.27 316 *e*P **P 23 48 09.9 -0.4**
ENEZ Enez 82.27 316 P **P 23 48 10.7 +0.4**
GELI Tayfur-Gelibol 82.32 316 *e*P **P 23 48 11.3 +0.7**
D35A Remer 82.34 35 P **P 23 48 09.5 -1.1**
baz=319,SNR=5.9
KULA Kula-Manisa 82.36 313 *e*P **P 23 48 09.9 -1.0**
KULA Kula-Manisa 82.36 313 P **P 23 48 11.0 +0.1**
C36A Pine Crest Far 82.37 34 P **P 23 48 10.0 -0.7**
baz=319,SNR=19
RZN Rozhen 82.39 318 *i*P **P 23 48 12.0 +0.8**
Q24A Divide 82.40 46 P **P 23 48 11.4 0.0**
baz=313
Q24A Divide 82.40 46 *e*P **P 23 48 12.4 +1.0**
comp=Z,26nm,1.1s
GERES GERESS Array B 82.42 328 P **P 23 48 10.0 -1.0**
comp=Z,18nm,0.8s,baz=45,slow=4.0,SNR=75
GERES LR LR 00 28 14.4
comp=Z,7μm,18.3s,baz=30,slow=38
I31A Royce, Wessing 82.44 39 P **P 23 48 11.1 -0.1**
baz=316
X18A Snowflake 82.44 52 *e*P **P 23 48 12.7 +1.2**
J30A Dallas 82.46 40 P **P 23 48 10.8 -0.4**
baz=316
WET Wettzell 82.53 329 P **P 23 48 11.4 -0.1**
WET pmax pmax
comp=Z,69nm,1.2s
E35A Pequot Lakes 82.57 35 P **P 23 48 11.3 -0.4**
baz=318
WTSB Winterswijk 82.60 334 *e*P **P 23 48 11.6 -0.1**
comp=Z,53nm,1.1s
WTSB *ep*P **pP 23 48 24.5 +0.9**
G33A Ortonville 82.62 37 P **P 23 48 12.0 0.0**
baz=317
H32A Carlson Farm, 82.64 38 P **P 23 48 12.0 -0.2**
baz=317
D36A Goodland 82.67 34 P **P 23 48 11.3 -1.0**
baz=319,SNR=5.7
C37A Embarrass 82.68 33 P **P 23 48 11.4 -1.0**
baz=320,SNR=15
GOLH Golhisar 82.68 312 *i*P **P 23 48 12.0 -0.6**
F34A Alexandria 82.74 36 P **P 23 48 12.6 -0.1**
baz=318
GRF Grafenberg Arr 82.77 330 P **P 23 48 13.6 +0.8**
GRF pmax pmax
comp=Z,185nm,1.5s
OGNE Ogallala 82.79 43 P **P 23 48 13.1 0.0**
baz=314
OGNE Ogallala 82.79 43 *ep*P **pP 23 48 27.5 +2.5**
OGNE LR LR
comp=Z,2μm,21.0s
SMTH Samothraki Isl 82.80 316 P **P 23 48 12.7 -0.4**
ELL Elmali 82.80 311 *e*P **P 23 48 12.3 -1.0**
EYMN Ely 82.81 33 P **P 23 48 12.8 -0.2**
baz=320
EYMN Ely 82.81 33 *e*P **P 23 48 12.0 -1.0**
comp=Z,146nm,1.4s
EYMN LR LR
comp=Z,3μm,21.0s
ESK Eskdalemuir 82.83 341 *e*P **P 23 48 13.5 +0.6**
ESK AMS AMS 00 28 06.7
comp=Z,5μm,19.0s
ESK Eskdalemuir 82.83 341 *e*P **P 23 48 13.7 +0.8**
ESK pmax pmax
comp=Z,17nm,1.0s
ESK MLR MLR
comp=Z,7μm,20.0s
ESK Eskdalemuir 82.83 341 *e*P **P 23 48 13.7 +0.8**
comp=Z,17nm,1.0s
ESK LR LR
comp=Z,7μm,20.0s
H33A Prehn Over Nor 82.85 38 P **P 23 48 13.1 -0.2**
baz=317
ARSA Arzberg 82.86 326 *i*P **P 23 48 14.1 +0.8**
comp=Z,45nm,1.3s,SNR=46
K30A Basset 82.86 41 P **P 23 48 13.3 -0.1**
baz=316
J31A Geddes 82.86 40 P **P 23 48 13.1 -0.3**
baz=316
MOA Molln 82.95 327 *i*P **P 23 48 14.4 +0.7**
comp=Z,72nm,1.4s,SNR=36
MOA *i*PP **PP 23 51 26.5 +2.6**
comp=Z,22nm,1.2s
G34A Benson 82.97 37 P **P 23 48 13.6 -0.3**
baz=318
I32A Karley and Nic 82.97 38 P **P 23 48 13.7 -0.2**
baz=317
KAVA Kavala 82.99 317 P **P 23 48 14.4 +0.4**
MMB Musomiste 82.99 318 *i*P **P 23 48 14.5 +0.4**
D37A Cotton 83.01 34 P **P 23 48 13.8 -0.2**
baz=320
F35A Swanville 83.01 36 P **P 23 48 13.8 -0.3**
baz=318
SDCO Great Sand Dun 83.02 47 P **P 23 48 14.3 -0.4**
baz=313
SDCO Great Sand Dun 83.02 47 *e*P **P 23 48 15.7 +1.1**
comp=Z,54nm,1.4s
SDCO *e* 23 48 29.1
SDCO LR LR
comp=Z,2μm,21.0s
C38A Sawbill Land. 83.08 33 P **P 23 48 13.9 -0.5**
baz=320
NVR Nevrokopi 83.09 318 P **P 23 48 14.8 +0.2**
DIVS Divibare 83.11 322 P **P 23 48 14.8 +0.1**
E36A McGregor 83.12 35 P **P 23 48 14.3 -0.3**
baz=319
KKB Krupnik 83.14 319 *i*P **P 23 48 15.7 +0.9**
AYDB Zeytinkoy-Aydi 83.19 313 *e*P **P 23 48 16.3 +1.0**
J32A Parkston 83.26 39 P **P 23 48 15.1 -0.3**
baz=317
I33A Coleman 83.29 38 P **P 23 48 15.3 -0.2**
baz=317
H34A Spellman Lake, 83.33 37 P **P 23 48 15.8 +0.1**
baz=318
K31A O'Neill 83.34 40 P **P 23 48 15.6 -0.2**

baz=316
TUC Tucson 83.34 54 P P 23 48 16.3 +0.2
baz=310
TUC Tucson 83.34 54 eP P 23 48 17.0 +0.9
TUC pmax pmax
comp=Z,61nm,1.4s
TUC Tucson 83.34 54 eP P 23 48 17.0 +0.9
comp=Z,61nm,1.4s
FETY Fethiye 83.37 312 eP P 23 48 15.8 -0.3
FETY Fethiye 83.37 312 P P 23 48 16.2 +0.1
LIA Limnos Island 83.38 316 P P 23 48 15.9 -0.2
AYDN Tasoluk 83.39 313 iP P 23 48 17.9 +1.7
SRS Serrai 83.40 318 P P 23 48 15.9 -0.3
E37A Wrenshall 83.47 34 P P 23 48 16.1 -0.3
baz=320
SIGR SIGRI 83.48 315 eP P 23 48 16.6 0.0
SIGR SIGRI 83.48 315 P P 23 48 16.4 -0.2
C39A Grand Marais 83.49 32 P P 23 48 15.9 -0.6
baz=321
F36A Milaca 83.50 35 P P 23 48 16.2 -0.3
baz=319
DALY Dalyan (Mu¨la 83.50 312 eP P 23 48 17.5 +0.8
PERS Pernice 83.50 326 eP P 23 48 15.7 -1.0
PERS ePP PP 23 51 31.2 +2.7
PERS eS S 23 58 34.2 -1.3
YER Yerkesik 83.50 312 eP P 23 48 14.8 -2.0
YER Yerkesik 83.50 312 P P 23 48 17.7 +0.8
SOKA Soboth 83.51 326 iP P 23 48 16.8 +0.1
comp=Z,172nm,1.5s,SNR=141
G35A Watkins 83.53 36 P P 23 48 16.7 -0.1
baz=319
HPK Haverah Park 83.59 339 eP P 23 48 17.3 +0.4
HPK AMB AMB 23 48 18.2
comp=Z,50nm,1.6s
HPK AMS AMS 00 28 44.3
comp=Z,6μm,19.7s
ECSD EROS Data Cent 83.61 38 P P 23 48 17.1 -0.1
baz=317
ECSD EROS Data Cent 83.61 38 eP P 23 48 16.1 -1.1
comp=Z,72nm,1.3s
ECSD LR LR
comp=Z,2μm,21.0s
L31A Butterfield Fa 83.61 41 P P 23 48 17.6 +0.3
baz=316
K32A Verdigre 83.71 40 P P 23 48 17.7 -0.1
baz=317
SOH Sokhos 83.73 318 P P 23 48 17.8 -0.1
KNT Kendrikon 83.74 318 eP P 23 48 17.6 -0.3
KNT Kendrikon 83.74 318 P P 23 48 18.1 +0.2
J33A Davis 83.74 39 P P 23 48 17.8 -0.1
baz=317
OUR Ouranopolis 83.74 317 eP P 23 48 17.6 -0.3
OUR Ouranopolis 83.74 317 P P 23 48 18.0 +0.1
H35A Sunnyside Ranc 83.76 37 P P 23 48 18.4 +0.4
baz=318
VAY Valandovo 83.80 318 P P 23 48 18.2 0.0
VAY Valandovo 83.80 318 iP P 23 48 18.6 +0.4
KSCO Kaye Shedlock' 83.80 45 P P 23 48 18.5 +0.1
baz=314
KSCO Kaye Shedlock' 83.80 45 eP P 23 48 19.6 +1.1
comp=Z,155nm,1.4s
OBKA Obir 83.85 326 iP P 23 48 18.4 -0.2
comp=Z,28nm,0.9s,SNR=18
OBKA ePP PP 23 51 32.0 +0.7
comp=Z,15nm,0.9s
G36A St. Michael 83.86 36 P P 23 48 18.5 +0.1
baz=319
HGN Heimansgroeve 83.90 333 eP P 23 48 18.4 -0.1
comp=Z,77nm,1.3s
HGN epP pP 23 48 31.8 +1.4
HGN eS S 23 58 30.6 -8.5
SKO Skopje 83.92 320 P P 23 48 19.7 +0.9
SKO Skopje 83.92 320 iP P 23 48 19.9 +1.1
KBA Koelnbreinsper 83.94 327 iP P 23 48 19.0 0.0
comp=Z,44nm,0.9s,SNR=38
KBA ePP PP 23 51 32.9 +0.7
comp=Z,26nm,1.5s
KBA Koelnbreinsper 83.94 327 P P 23 48 18.9 -0.1
KBA pmax pmax
comp=Z,70nm,1.2s
CHOS Chios island 83.94 314 P P 23 48 18.8 -0.3
BEBN Eben Emael 83.96 334 P P 23 48 18.6 -0.2
PLE Pljevlja 83.97 322⇑iP P 23 48 18.6 -0.6
BLY Banja Luka 83.98 324⇑iP P 23 48 18.9 -0.2
MEM Membach 84.00 333 P P 23 48 19.2 +0.2
comp=Z,28nm,1.4s
PLG Polygyros 84.00 317 P P 23 48 18.1 -1.2
LHO Holmfirth 84.02 339⇑eP P 23 48 19.4 +0.3
HORT Hortiatis 84.03 318 eP P 23 48 19.3 -0.2
HORT Hortiatis 84.03 318 P P 23 48 19.1 -0.4
IVA Berane 84.06 321⇑iP P 23 48 19.1 -0.5
T25A Trinidad 84.06 47 P P 23 48 20.8 +0.8
baz=313
T25A Trinidad 84.06 47 eP P 23 48 19.7 -0.2
comp=Z,107nm,1.3s
THE Thessaloniki 84.08 318 P P 23 48 19.2 -0.4
M31A Lambtecht Ranc 84.14 41 P P 23 48 19.3 -0.7
baz=316
GRG Griva 84.15 318 eP P 23 48 21.3 +1.2
GRG Griva 84.15 318 P P 23 48 19.9 -0.1
MYKA Terra Mystica 84.16 327 iP P 23 48 19.5 -0.5
comp=Z,42nm,1.3s,SNR=28
L32A Elgin 84.17 40 P P 23 48 20.1 0.0
baz=317
PAIG Paliouri 84.19 317 P P 23 48 20.1 -0.1
LJU Ljubljana 84.22 326 eP P 23 48 20.0 -0.3
PVY Plav 84.23 321⇑iP P 23 48 19.6 -0.9
K33A Hardington 84.24 39 P P 23 48 20.5 0.0
baz=317
J34A George 84.26 38 P P 23 48 20.6 0.0
baz=318
LAZ Ladron 84.27 51 eP P 23 48 22.4 +1.4
H36A Jessenland, He 84.28 36 P P 23 48 20.7 +0.2
baz=319
PMOR Pomariorio Ree 84.29 114 eT T 01 20 35.0
comp=Z,66nm,0.2s
STU Stuttgart 84.31 331 eP P 23 48 20.5 -0.1
STU pmax pmax
comp=Z,120nm,1.1s
STU Stuttgart 84.31 331 eP P 23 48 20.5 -0.1
comp=Z,123nm,1.1s
UPM Unac-Piva 84.31 322 eP P 23 48 20.1 -0.9
BOJS Bojanci 84.31 325 eP P 23 48 19.4 -1.3
SPMN Marine on St. 84.31 35 P P 23 48 20.4 -0.3
baz=320
SPMN Marine on St. 84.31 35 eP P 23 48 21.0 +0.3
comp=Z,68nm,1.3s
I35A Creekview Farm 84.31 37 P P 23 48 20.8 0.0
baz=318
ANMO Albuquerque 84.33 50 P P 23 48 22.2 +0.9
baz=312
ANMO Albuquerque 84.33 50 eP P 23 48 21.8 +0.5
ANMO pmax pmax
comp=Z,90nm,1.2s
ANMO Albuquerque 84.33 50 eP P 23 48 21.8 +0.5
comp=Z,90nm,1.3s
ANMO LR LR
comp=Z,2μm,21.0s
UCC Uccle 84.42 334 P P 23 48 20.8 -0.3
L33A Hoskins 84.42 40 P P 23 48 21.3 -0.1
baz=317
GMM Mts of Mourne 84.50 341⇑eP P 23 48 21.8 +0.3
WTTA Wattenberg 84.52 328 iP P 23 48 22.0 0.0
comp=Z,29nm,1.2s,SNR=8.2
WTTA ePP PP 23 51 35.5 -1.4
comp=Z,27nm,1.4s
BGNE Belgrade 84.52 41 P P 23 48 21.8 -0.1
baz=316
BGNE Belgrade 84.52 41 epP pP 23 48 35.9 +2.1
N31A Bailey Ranch, 84.52 42 P P 23 48 21.9 -0.1
baz=316
NKY Niksic 84.55 321⇑iP P 23 48 21.5 -0.6
ABTA Abfaltersbach 84.56 328 iP P 23 48 21.3 -0.8
comp=Z,40nm,1.2s,SNR=20
CWF Charnwood Fore 84.57 338 eP P 23 48 21.4 -0.4
CWF AMB AMB 23 48 23.6
comp=Z,64nm,1.4s
CWF AMS AMS 00 28 17.0
comp=Z,8μm,22.9s
CWF Charnwood Fore 84.57 338 eP P 23 48 22.4 +0.6
comp=Z,164nm,1.5s
J35A Milford 84.57 38 P P 23 48 21.9 -0.2
baz=318
NKME Niksic 84.60 321⇑iP P 23 48 21.3 -1.0
AOS Alonnisos 84.61 316 eP P 23 48 22.6 +0.2

AOS Alonnisos 84.61 316 P P 23 48 22.2 -0.2
Y22D IRIS PASSCAL I 84.62 51 P P 23 48 21.9 -0.8
baz=312
K34A Le Mars 84.63 39 P P 23 48 21.2 -1.2
baz=318
LPM Los Pinos Moun 84.64 50 eP P 23 48 24.0 +1.2
I36A Fitzsimmons Fa 84.66 37 P P 23 48 22.3 -0.2
baz=319
BIA Bitola 84.67 319 eP P 23 48 22.0 -0.7
LANF Langenberg 84.67 331⇑eP P 23 48 22.9 +0.4
LANF Langenberg 84.67 331 P P 23 48 23.5 +1.0
MOTA Moosalm 84.68 329 iP P 23 48 22.6 -0.1
comp=Z,52nm,1.1s,SNR=17
SNF Seneffe 84.69 334 P P 23 48 23.1 +0.6
PDG Podgorica 84.70 321⇓iP P 23 48 23.5 +0.8
PDG Podgorica 84.70 321 P P 23 48 21.8 -0.9
TTG Podgorica 84.70 321⇑iP P 23 48 22.4 -0.3
RETA Reutte 84.70 329 iPcP P 23 48 23.1 +0.3
comp=Z,115nm,1.1s,SNR=68
BRY Bratogost 84.71 322⇑iP P 23 48 21.3 -1.7
LIT Litokhoron 84.71 318 P P 23 48 21.4 -1.5
WLF Walferdange 84.73 333 P P 23 48 23.7 +0.9
comp=Z,62nm,1.7s
WLF Walferdange 84.73 333 eP P 23 48 23.6 +0.9
WLF pmax pmax
comp=Z,180nm,1.7s
WLF Walferdange 84.73 333 eP P 23 48 23.6 +0.9
comp=Z,183nm,1.7s
WLF LR LR
comp=Z,6μm,20.0s
H37A Dierke Farm, C 84.75 36 P P 23 48 22.2 -0.7
baz=320
BNM Barren Site 84.75 51 eP P 23 48 23.4 -0.1
PPT Papeete 84.77 117 LR LR 00 21 04.4
comp=Z,5μm,19.7s,baz=292,slow=32
PPT2 Papeete2 84.78 117 eS S 23 58 46.0 -2.9
comp=Z,3μm,27.5s
PPT2 eSS SS 00 04 26.1 +4.1
comp=Z,2μm,25.2s
PPT2 Papeete2 84.78 117 eLR LR 00 14 59.2
comp=Z,22μm,30.0s,baz=315
CEME Cevo 84.78 321⇑iP P 23 48 22.4 -0.9
O31A Woolen Ranch, 84.81 42 P P 23 48 23.1 -0.3
baz=316
FNA Florina 84.81 319 eP P 23 48 22.9 -0.5
FNA Florina 84.81 319 P P 23 48 22.6 -0.8
FNA Florina 84.81 319 P P 23 48 23.3 -0.1
FNA pmax pmax
comp=Z,54nm,1.2s
UDBI Udbina 84.82 324 P P 23 48 22.4 -0.9
TRI Trieste 84.82 326 eP P 23 48 22.4 -0.9
TRI e 23 51 43.0
TRI pmax pmax
comp=Z,66nm,1.2s
TRI Trieste 84.82 326 eP P 23 48 22.4 -0.9
comp=Z,66nm,1.2s
TRI ePP PP 23 51 43.0 +3.9
WME Myndd Eilian 84.83 340 eP P 23 48 23.4 +0.2
WPM1 Penmaenmawr 84.85 340⇑eP P 23 48 23.8 +0.5
XOR Xorichti 84.85 317 P P 23 48 22.8 -0.8
OHR Ohrid 84.88 319 iP P 23 48 23.6 -0.2
NEO Neokhori 84.88 317 P P 23 48 22.6 -1.1
M33A Taylor Creek F 84.90 40 P P 23 48 23.2 -0.6
baz=317
N32A Stulken Farm, 84.91 41 P P 23 48 22.9 -1.0
baz=316
319A Douglas 84.92 54 eP P 23 48 25.4 +1.2
comp=Z,127nm,1.3s
DRME Dracevica, Mon 84.92 321⇑iP P 23 48 23.0 -0.8
TIAR Tiarei 84.92 116 eT T 01 21 34.8
comp=Z,9.0nm,0.3s
DOU Dourbes 84.93 334 P P 23 48 23.9 +0.1
comp=Z,31nm,1.5s
KZN Kozani 84.95 318 P P 23 48 23.6 -0.5
I37A Lemond, Waseca 84.95 36 P P 23 48 23.8 -0.2
baz=319
WLF1 Llynfaes 84.95 340 eP P 23 48 24.2 +0.4
WLF1 AMB AMB 23 48 25.1
comp=Z,74nm,1.3s
FYTO Fytoko, Volos 84.96 317 P P 23 48 23.5 -0.6
SCHQ Schefferville 84.97 16 P P 23 48 23.1 -0.9
comp=Z,12nm,0.6s,baz=353,slow=5.3,SNR=15
SCHQ LR LR 00 28 25.3
comp=Z,3μm,21.1s,baz=340,slow=37
BUM Brajici-Budva 84.98 321⇑iP P 23 48 23.4 -0.8
FOEL Foel Wylfa 84.98 339 eP P 23 48 24.4 +0.5
FOEL AMB AMB 23 48 26.8
comp=Z,118nm,1.2s
FOEL AMS AMS 00 29 16.6
comp=Z,5μm,22.1s
BFO Black Forest 85.00 331 eP P 23 48 23.1 -1.1
BFO Black Forest 85.00 331 eP P 23 48 23.1 -1.1
BFO LR LR
comp=Z,6μm,19.0s
J36A Seneca 1, Swea 85.02 37 P P 23 48 23.5 -0.8
baz=319
YLL Llanberis 85.02 340⇑eP P 23 48 24.3 +0.2
L34A Svendsen Farm, 85.02 39 P P 23 48 24.0 -0.5
baz=318
K35A Storm Lake 85.03 38 P P 23 48 23.9 -0.6
baz=318
ULC Ulcinj 85.05 321⇑iP P 23 48 23.2 -1.4
HCY Herceg Novi 85.07 321⇑iP P 23 48 24.0 -0.6
FETA Feichten 85.09 329 iPcP P 23 48 25.0 +0.2
comp=Z,49nm,1.1s,SNR=27
BAIF Baives 85.09 334 eP P 23 48 25.0 +0.4
BAIF pmax pmax
comp=Z,45nm,1.2s
121A Cookes Peak, D 85.11 52 P P 23 48 24.7 -0.5
baz=312
121A Cookes Peak, D 85.11 52 eP P 23 48 26.3 +1.0
comp=Z,110nm,1.3s
121A e 23 48 38.6
TVO Taravao 85.14 117 eT T 01 21 42.0
comp=Z,0.9nm,0.3s
TIR Tirane 85.19 320⇑iP P 23 48 25.6 +0.4
TIR Tirane 85.19 320 eP P 23 48 25.0 -0.2
TIR pmax pmax
comp=Z,96nm,1.1s
TIR Tirane 85.19 320 eP P 23 48 25.0 -0.2
TIR LR LR
comp=Z,19μm,19.0s
SMIA Simia 85.19 316 P P 23 48 24.4 -0.9
HLM1 Long Mynd 85.22 339 eP P 23 48 25.5 +0.3
HLM1 AMS AMS 00 29 12.2
comp=Z,5μm,21.5s
DAVA Damuels 85.23 329 iP P 23 48 25.4 -0.1
comp=Z,113nm,1.1s,SNR=47
KARP Karpathos 85.25 312 eP P 23 48 25.9 +0.3
comp=Z,48nm,0.9s
NEST Nestorio 85.25 319 P P 23 48 25.3 -0.4
M34A Aspy Farms, Fr 85.26 40 P P 23 48 25.3 -0.3
baz=318
COWI Conover 85.26 33 eP P 23 48 25.6 +0.1
comp=Z,90nm,1.4s
COWI LR LR
comp=Z,3μm,22.0s
O32A Brockman Farm, 85.29 42 P P 23 48 24.6 -1.2
baz=316
WLS Welschbruch 85.31 331 eP P 23 48 25.6 -0.2
L35A Bielow Farm, R 85.33 39 P P 23 48 25.2 -0.7
baz=318
THL Klokotos Trika 85.35 318 P P 23 48 24.7 -1.3
HSIG 85.35 57 eP P 23 48 26.6 +0.3
HSIG epP pP 23 48 39.9 +1.7
PENT Pentalofos 85.36 318 P P 23 48 25.6 -0.6
N33A J Bar K, Exete 85.37 41 P P 23 48 25.2 -1.0
baz=317
J37A Redenius Farm, 85.41 37 P P 23 48 26.0 -0.3
baz=319
I38A Scanlan Farm, 85.43 36 P P 23 48 25.9 -0.5
baz=320
LKR Lokris 85.47 316 P P 23 48 24.9 -1.7
K36A Gilmore City 85.48 38 P P 23 48 26.3 -0.3
baz=319
CBKS Cedar Bluff 85.54 43 P P 23 48 26.3 -0.8
baz=316
ECH Echery 85.55 331⇑eP P 23 48 27.0 +0.1
AGG Agios Georgios 85.57 317 eP P 23 48 26.8 -0.4
AGG Agios Georgios 85.57 317 P P 23 48 25.5 -1.7
AGG Agios Georgios 85.57 317 eP P 23 48 25.3 -1.9
AGG e 23 51 42.6
AGG pmax pmax
comp=Z,150nm,1.1s

AGG Agios Georgios 85.57 317 eP P 23 48 25.3 -1.9
comp=Z,155nm,1.2s
AGG ePP PP 23 51 42.6 -2.9
P32A Huiting Farm, 85.58 42 P P 23 48 26.4 -0.8
baz=316
VLY Voula,Athens 85.59 315 P P 23 48 26.0 -1.3
FUORN Ofenpass-Fuorn 85.60 329 eP P 23 48 26.6 -0.9
comp=Z,101nm,1.0s
STRD Stroud 85.67 338⇑eP P 23 48 27.3 0.0
STRD AMB AMB 23 48 29.3
comp=Z,187nm,1.3s
STRD AMS AMS 00 28 13.9
comp=Z,8μm,23.7s
SANT Santorini 85.68 313 PFAKE 23 48 40.0 +12
SANT LR LR
comp=Z,3μm,21.0s
HMNX Herstmonceux 85.70 336 eP P 23 48 27.7 +0.1
HMNX AMB AMB 23 48 29.8
comp=Z,206nm,1.3s
HMNX AMS AMS 00 26 35.3
comp=Z,7μm,23.9s
MCH1 Michaelchurch 85.71 339⇑eP P 23 48 27.3 -0.3
MCH1 AMB AMB 23 48 28.8
comp=Z,76nm,1.4s
MCH1 AMS AMS 00 26 19.1
comp=Z,6μm,26.1s
M35A Neola 85.74 39 P P 23 48 27.6 -0.3
baz=318
L36A Harm Buss Farm 85.78 38 P P 23 48 27.8 -0.3
baz=319
K37A Belmond 85.78 37 P P 23 48 27.7 -0.5
baz=319
O33A Hebron 85.78 41 P P 23 48 26.8 -1.5
baz=317
N34A Lincoln 85.79 40 P P 23 48 27.6 -0.7
baz=318
SWN1 Swindon 85.79 338 eP P 23 48 28.3 +0.3
SWN1 AMB AMB 23 48 30.1
comp=Z,152nm,1.3s
SWN1 AMS AMS 00 28 17.9
comp=Z,9μm,24.6s
WOL Wolverton 85.79 338⇑eP P 23 48 28.1 0.0
WOL AMB AMB 23 48 30.2
comp=Z,107nm,1.1s
WOL AMS AMS 00 28 42.7
comp=Z,8μm,23.9s
MONM Monmouth 85.80 339⇑eP P 23 48 27.6 -0.4
MONM AMB AMB 23 48 30.5
comp=Z,94nm,1.3s
MONM AMS AMS 00 26 20.8
comp=Z,6μm,25.4s
MOF Molkenrain 85.86 331⇑eP P 23 48 28.6 +0.1
OLDB Oldbury-Upon-S 85.88 338 AMS AMS 00 28 20.6
comp=Z,7μm,24.3s
JAN Janina 85.90 318 P P 23 48 28.8 -0.1
J38A Wedel Dairy, R 85.91 36 P P 23 48 28.3 -0.5
baz=320
LPW Lampeter 85.91 340⇑eP P 23 48 28.4 -0.2
LPW AMB AMB 23 48 31.1
comp=Z,80nm,1.1s
LPW AMS AMS 00 30 06.4
comp=Z,5μm,20.9s
HINF Hinteralfeld 85.99 331 eP P 23 48 29.2 0.0
HINF pmax pmax
comp=Z,45nm,1.3s
BATH Bath 86.01 338 eP P 23 48 30.2 +1.1
BATH AMS AMS 00 28 24.7
comp=Z,9μm,23.5s
MEH Mehetia 86.05 116 eT T 01 23 06.0
comp=Z,44nm,0.3s
Q32A Meitler Ranch, 86.05 43 P P 23 48 29.3 -0.3
baz=316
TUE Stuetta 86.10 329 eP P 23 48 30.3 +0.3
comp=Z,88nm,1.3s
TUE ePP PP 23 51 42.3 -7.4
TUE LR LR
comp=Z,11μm,20.0s
DSL Palaion Diasel 86.15 318 P P 23 48 29.5 -0.6
O34A Beatrice 86.17 41 P P 23 48 29.5 -0.7
baz=318
P33A Williams Farm, 86.19 42 P P 23 48 29.8 -0.5
baz=317
M36A Felix, Anita 86.19 39 P P 23 48 30.1 -0.1
baz=319
L37A Phoenix Point, 86.21 38 P P 23 48 29.8 -0.5
baz=319
N35A Tabor 86.21 40 P P 23 48 30.0 -0.3
baz=318
TAOE Nuku Hiva Isla 86.23 104 eS S 23 58 59.6 -3.8
comp=Z,4μm,25.0s
TAOE Nuku Hiva Isla 86.23 104 eLR LR 00 15 32.3
comp=Z,18μm,23.6s,baz=317
SGD Sagiada 86.26 319 P P 23 48 30.1 -0.5
IGT Igoumenitsa 86.27 318 P P 23 48 29.9 -0.7
K38A Parkersburg 86.28 37 P P 23 48 30.3 -0.3
baz=320
PVO Paravola 86.29 317 P P 23 48 29.9 -0.9
LAKA Lakka 86.32 317 P P 23 48 29.9 -1.0
GUR Goura 86.34 316 P P 23 48 29.7 -1.4
R32A Long Quarter, 86.38 43 P P 23 48 30.5 -0.7
baz=316
LOMF Lomont 86.39 331⇑eP P 23 48 31.3 +0.1
KEK Kerkira 86.42 319 P P 23 48 30.7 -0.7
Q33A Connelly Farm, 86.44 42 P P 23 48 30.7 -0.8
baz=317
PDO Prodromos 86.49 317 P P 23 48 30.4 -1.3
LAST Lasithi 86.51 312⇑iP P 23 48 33.4 +1.4
LAST Lasithi 86.51 312 eP P 23 48 33.4 +1.4
comp=Z,433nm,1.7s
O35A Humboldt 86.52 40 P P 23 48 31.6 -0.2
baz=318
P34A Walnut Farm, R 86.57 41 P P 23 48 31.7 -0.5
baz=317
L38A Oak Wood Farm, 86.58 37 P P 23 48 32.3 +0.2
baz=320
N36A Muff Farm, Cla 86.59 39 P P 23 48 32.4 +0.2
baz=318
M37A Trindle Farm, 86.60 38 P P 23 48 32.3 0.0
baz=319
SCIA State Center 86.63 38 eP P 23 48 33.1 +0.7
comp=Z,50nm,0.9s
SCIA e 23 48 45.9
LKD2 Lefkada island 86.64 318 P P 23 48 31.7 -0.8
DRO Drossia 86.67 317 P P 23 48 32.0 -0.7
RLS Riolos of Patr 86.73 317 P P 23 48 32.5 -0.4
IDI Anoyia 86.76 313⇑iP P 23 48 34.5 +1.3
IDI Anoyia 86.76 313 eP P 23 48 34.0 +0.8
comp=Z,341nm,1.7s
DAMY Dhamar 86.77 286 eP P 23 48 35.2 +1.4
comp=Z,203nm,1.7s
S32A Newby Ranch, P 86.78 44 P P 23 48 33.1 -0.1
baz=316
R33A Olander Ranch, 86.86 43 P P 23 48 32.9 -0.7
baz=317
Q34A Chapman 86.97 42 P P 23 48 34.0 -0.1
baz=317
SIVA Sivas 87.00 313⇑iP P 23 48 35.3 +1.0
P35A Duane Minner, 87.00 41 P P 23 48 33.9 -0.3
baz=318
KSU1 Kansas State U 87.01 41 P P 23 48 33.7 -0.6
baz=318
KSU1 Kansas State U 87.01 41 eP P 23 48 34.7 +0.4
comp=Z,23nm,0.6s
KSU1 LR LR
comp=Z,2μm,21.0s
N37A Lee Faris, Mou 87.01 39 P P 23 48 34.4 +0.2
baz=319
SENIN Lac Senin/Sane 87.01 330 eP P 23 48 34.7 +0.3
comp=Z,39nm,1.3s
M38A Pleasantville 87.02 38 P P 23 48 34.3 0.0
baz=320
HTL Hartland 87.03 339 AMS AMS 00 29 55.5
comp=Z,2μm,20.8s
O36A Bolckow 87.10 40 P P 23 48 34.9 +0.2
baz=319
ITM Ithomi 87.11 316 P P 23 48 32.7 -2.1
T32A Huddler Ranch, 87.16 44 P P 23 48 35.0 -0.1
baz=316
MNTX Cornudas Mount 87.18 52 P P 23 48 35.2 0.0
baz=313
MNTX Cornudas Mount 87.18 52 eP P 23 48 35.1 0.0
comp=Z,46nm,1.4s
MSTX Muleshoe 87.21 49 P P 23 48 35.6 +0.1
baz=314
MSTX Muleshoe 87.21 49 eP P 23 48 36.5 +1.0
comp=Z,57nm,1.4s
AMTX Amarillo 87.22 47 P P 23 48 35.7 +0.2

baz=315
AMTX Amarillo 87.22 47 eP P 23 48 36.8 +1.3
comp=Z,84nm,1.1s
R34A Isabella, Hill 87.26 42 P P 23 48 35.4 -0.1
baz=317
JFWS Jewell Farm 87.26 35 eP P 23 48 35.4 0.0
JFWS e*PP pP 23 48 48.3 +1.0
JFWS Jewell Farm 87.26 35 eP P 23 48 35.4 0.0
JFWS epP pP 23 48 48.3 +1.0
JFWS LR LR
comp=Z,4μm,21.0s
MATE Matera 87.30 321⇑ iP P 23 48 34.6 -1.0
P36A Good Intent, A 87.36 40 P P 23 48 35.6 -0.3
baz=318
S33A Kaszmaul Farm, 87.37 43 P P 23 48 35.7 -0.3
baz=317
DYA Yadsworthy 87.37 339 eP P 23 48 36.6 +0.8
DYA AMS AMS 00 27 06.8
comp=Z,6μm,25.6s
N38A Joes South For 87.47 38 P P 23 48 36.1 -0.3
baz=320
O37A Wolven Farm, M 87.49 39 P P 23 48 36.3 -0.2
baz=319
Q35A Mercer Eighty, 87.49 41 P P 23 48 36.4 -0.2
baz=318
VLC Villacollemand 87.52 327 PFAKE 23 48 50.0 +13
VLC LR LR
comp=Z,3μm,20.0s
AQU L'Aquila 87.59 324 eP P 23 48 36.5 -0.6
AQU e 23 52 02.3
AQU pmax pmax
comp=Z,120nm,1.4s
AQU L'Aquila 87.59 324 eP P 23 48 36.5 -0.6
comp=Z,123nm,1.4s
AQU ePP PP 23 52 02.3 +0.7
AQU LR LR
comp=Z,6μm,20.0s
T33A Patterson Ranc 87.60 44 P P 23 48 37.0 -0.2
baz=317
VAL Valentia 87.66 343⇓ iS S 23 59 18.1 +2.2
VAL eSS SS 00 05 08.1 +7.3
U32A Winter Ranch, 87.69 45 P P 23 48 37.7 0.0
baz=316
Q36A Arnold C. Orve 87.72 41 P P 23 48 37.1 -0.6
baz=318
N39A Derby Farms, D 87.77 38 P P 23 48 37.5 -0.3
baz=320
S34A Willow Spring 87.77 43 P P 23 48 37.4 -0.6
baz=317
R35A Emporia Munici 87.80 42 P P 23 48 38.4 +0.3
baz=318
P37A Lathrop 87.82 40 P P 23 48 38.1 -0.1
baz=319
O38A Galt 87.86 39 P P 23 48 38.4 0.0
baz=320
LPL La Plagne 87.93 330 eP P 23 48 37.8 -1.1
LPL pmax pmax
comp=Z,16nm,0.8s
LPG La Plagne 87.94 330 eP P 23 48 37.4 -1.6
LPG pmax pmax
comp=Z,23nm,0.8s
CCA1 Carnmenellis 87.97 339 AMS AMS 00 33 15.6
comp=Z,5μm,16.7s
V32A Arapaho 88.14 45 P P 23 48 39.8 0.0
baz=316
U33A Lingo Farm, Me 88.15 44 P P 23 48 39.7 -0.1
baz=317
AVF Avril sur Loir 88.16 333 eP P 23 48 39.1 -0.5
AVF pmax pmax
comp=Z,99nm,1.2s
R36A Gordon, Harris 88.17 41 P P 23 48 39.8 -0.1
baz=318
P38A Dawn 88.21 39 P P 23 48 40.3 +0.3
baz=319
S35A Otter Creek Ra 88.21 42 P P 23 48 40.0 -0.1
baz=318
O39A Kirksville 88.22 38 P P 23 48 39.7 -0.3
baz=320
T34A McClaskey Farm 88.23 43 P P 23 48 40.1 -0.1
baz=317
CUC Castrocucco 88.24 321 eP P 23 48 37.8 -2.4
comp=Z,42nm,1.5s
CUC LR LR
comp=Z,6μm,19.0s
Q37A Longview Farm, 88.30 40 P P 23 48 41.1 +0.7
baz=319
TIP Timpagrande 88.39 320⇑ iP P 23 48 40.6 -0.3
TIP Timpagrande 88.39 320 P P 23 48 39.8 -1.1
TIP Timpagrande 88.39 320 eP P 23 48 40.0 -0.9
comp=Z,165nm,1.7s
TIP LR LR
comp=Z,12μm,21.0s
W32A Sentinel 88.45 46 P P 23 48 41.2 -0.1
baz=316
U34A Anderson Ranch 88.46 44 P P 23 48 41.2 -0.1
baz=317
U34A Anderson Ranch 88.46 44 eP P 23 48 42.5 +1.2
comp=Z,172nm,1.4s
V33A Lossen Ranch, 88.49 45 P P 23 48 41.6 +0.2
baz=317
R37A Teagarden Farm 88.53 41 P P 23 48 41.4 -0.1
baz=319
S36A Lake Cedric, C 88.57 42 P P 23 48 41.4 -0.3
baz=318
O40A La Belle 88.65 38 P P 23 48 42.1 0.0
baz=320
Q38A Cooks Store, C 88.67 40 P P 23 48 42.2 0.0
baz=319
T35A Sooner Cattle 88.67 43 P P 23 48 42.4 +0.2
baz=318
PLDF La Plantade 88.75 332 eP P 23 48 43.1 +0.6
ORIF Oris-en-Rattie 88.77 330 eP P 23 48 41.6 -1.1
ORIF pmax pmax
comp=Z,16nm,1.1s
AGO Saint Agoulin 88.87 332 eP P 23 48 43.5 +0.5
W33A Caddo, Fort Co 88.88 45 P P 23 48 43.5 +0.3
baz=317
T36A Boggs Farm, Ca 88.91 42 P P 23 48 43.6 +0.3
baz=318
V34A Guthrie 88.91 44 P P 23 48 42.8 -0.6
baz=317
Q39A Willow Grove F 88.93 39 P P 23 48 43.0 -0.3
baz=320
X32A Elmer 88.94 46 P P 23 48 43.9 +0.3
baz=316
S37A Fort Scott 88.94 41 P P 23 48 43.0 -0.5
baz=319
U35A Pawnee 88.95 43 P P 23 48 43.7 +0.2
baz=318
SSB Saint Sauveur 88.99 331 eP P 23 48 43.9 +0.3
SSB Saint Sauveur 88.99 331 eP P 23 48 44.2 +0.6
SSB pmax pmax
comp=Z,21nm,1.2s
SSB Saint Sauveur 88.99 331 eP P 23 48 44.2 +0.6
comp=Z,21nm,1.2s
SSB LR LR
comp=Z,6μm,19.0s
WMOK Wichita Mounta 89.00 46 P P 23 48 44.0 +0.2
baz=316
WMOK Wichita Mounta 89.00 46 eP P 23 48 44.4 +0.6
WMOK e 23 48 56.5
WMOK pmax pmax
comp=Z,83nm,1.4s
WMOK Wichita Mounta 89.00 46 eP P 23 48 44.4 +0.6
comp=Z,83nm,1.4s
WMOK e 23 48 56.5
LUCF Luceram 89.02 329 eP P 23 48 43.5 -0.4
P40A Paris 89.02 38 P P 23 48 43.3 -0.5
baz=320
MVIF Mont Vial 89.10 329⇑ eP P 23 48 43.1 -1.2
R38A Fenwick Farm, 89.10 40 P P 23 48 43.4 -0.8
baz=319
REVF Revere 89.14 329 eP P 23 48 43.5 -0.8
PYM Petit Puy Mans 89.17 332 eP P 23 48 45.2 +0.7
W34A Bridge Creek, 89.21 45 P P 23 48 44.2 -0.6
baz=317
W34A Bridge Creek, 89.21 45 eP P 23 48 45.9 +1.1
comp=Z,124nm,1.3s
VIVF Saint-Julien-I 89.29 331 eP P 23 48 44.3 -0.7
VIVF pmax pmax
comp=Z,18nm,1.0s
X33A Lawton 89.30 46 P P 23 48 44.6 -0.7
baz=317
CALN Calern 89.32 329 eP P 23 48 44.7 -0.6
V35A Meyer Ranch, C 89.34 44 P P 23 48 45.3 -0.1
baz=318
T37A Cheneyville 18 89.37 42 P P 23 48 45.1 -0.5
baz=319
Q40A Laux Farm, Aux 89.42 39 P P 23 48 45.5 -0.2
baz=320
R39A Chumby, Stover 89.45 40 P P 23 48 45.3 -0.6
baz=320
U36A Oologah 89.48 43 P P 23 48 46.0 -0.1
baz=318
LBL Lubilhac 89.52 332 eP P 23 48 46.7 +0.5
S38A Stockton 89.52 41 P P 23 48 46.5 +0.3
baz=319
CEL Celeste 89.52 320 eP P 23 48 45.1 -1.1
comp=Z,96nm,1.1s
CEL LR LR
comp=Z,8μm,19.0s
HDIL Hopedale 89.55 36 eP P 23 48 47.0 +0.7
comp=Z,20nm,0.7s
HDIL e 23 48 59.4
HDIL LR LR
comp=Z,3μm,21.0s
Y33A Hilltop Ranch, 89.61 46 P P 23 48 46.5 -0.2
baz=316
X34A Smith Ranch, M 89.63 45 P P 23 48 46.4 -0.4
baz=317
T38A Diamond 89.77 41 P P 23 48 47.0 -0.4
baz=319
W35A Tecumseh 89.77 44 P P 23 48 47.3 -0.1
baz=318
S39A Bolivar 89.78 40 P P 23 48 47.2 -0.2
baz=320
U37A Salina 89.80 42 P P 23 48 47.3 -0.2
baz=318
TUL1 Leonard 89.80 43 P P 23 48 47.5 -0.1
baz=318
TUL1 Leonard 89.80 43 eP P 23 48 48.6 +1.0
comp=Z,119nm,1.4s
V36A Jenks 89.81 43 P P 23 48 47.9 +0.3
baz=318
R40A Maddies Statio 89.86 39 P P 23 48 47.2 -0.6
baz=320
TXAR Lajitas Array 89.87 52 P P 23 48 47.3 -0.8
comp=Z,6.7nm,0.7s,baz=285,slow=2.4,SNR=22
TXAR LR LR 00 22 50.2
comp=Z,4μm,21.9s,baz=0.0,slow=31
ABTX Abilene, Hawle 90.02 48 P P 23 48 48.6 -0.1
baz=316
ABTX Abilene, Hawle 90.02 48 eP P 23 48 49.5 +0.8
Z33A Whitaker Ranch 90.05 47 P P 23 48 48.6 -0.2
baz=316
W36A Wetumka 90.14 44 P P 23 48 49.1 -0.1
baz=318
Y34A Reagan Ranch, 90.14 46 P P 23 48 49.1 -0.1
baz=317
U38A Gravette 90.17 42 P P 23 48 49.0 -0.2
baz=319
V37A Hulbert 90.18 43 P P 23 48 49.2 -0.1
baz=318
CAF Calviac 90.22 332 eP P 23 48 50.4 +1.0
CAF pmax pmax
comp=Z,46nm,1.3s
HPIG 90.22 55 eP P 23 48 51.2 +1.3
comp=Z,39nm,1.4s
T39A Clever 90.25 41 P P 23 48 48.9 -0.7
baz=320
X35A Drake 90.27 45 P P 23 48 49.4 -0.3
baz=318
S40A Lebanon 90.27 40 P P 23 48 49.0 -0.7
baz=320
SADO Sadowa 90.36 28 eP P 23 48 50.1 +0.2
comp=Z,23nm,1.1s
133A Hamilton Ranch 90.45 47 P P 23 48 50.7 0.0
baz=316
Z34A Collier Ranch, 90.48 46 P P 23 48 50.5 -0.3
baz=317
X36A Centrahoma 90.49 44 P P 23 48 50.7 -0.1
baz=318
HHAR Hobbs 90.52 42 eP P 23 48 49.8 -1.1
comp=Z,33nm,1.2s
W37B Quinton 90.57 43 P P 23 48 51.2 0.0
baz=318
V38A Canehill 90.59 42 P P 23 48 50.9 -0.4
baz=319
Y35A Marietta 90.59 45 P P 23 48 51.2 -0.1
baz=317
T40A Mansfield 90.60 40 P P 23 48 50.8 -0.5
baz=320
AAM Ann Arbor 90.65 32 eP P 23 48 52.1 +0.7
AAM pmax pmax
comp=Z,8.0nm,0.5s
AAM MLR MLR
comp=Z,2μm,20.0s
AAM Ann Arbor 90.65 32 eP P 23 48 52.1 +0.7
comp=Z,8.4nm,0.5s
AAM LR LR
comp=Z,2μm,20.0s
TRQ Mont Tremblant 90.69 24 eP P 23 48 51.9 +0.3
SFIN Lafayette 90.71 35 P P 23 48 51.8 +0.1
baz=324
SFIN Lafayette 90.71 35 eP P 23 48 52.8 +1.2
comp=Z,68nm,0.6s
LMQ La Malbaie 90.78 21 eP P 23 48 53.7 +1.8
comp=Z,118nm,1.4s
233A Rising Star 90.89 48 P P 23 48 52.5 -0.2
baz=316
Z35A Perchaven, San 90.89 46 P P 23 48 52.6 -0.1
baz=317
V39A Pettigrew 91.01 42 P P 23 48 53.1 -0.2
baz=319
X37A Clayton 91.02 44 P P 23 48 53.3 0.0
baz=318
U40A Yellville 91.04 41 P P 23 48 52.7 -0.6
baz=320
W38A Poteau 91.12 43 P P 23 48 52.7 -1.0
baz=319
X38A Whitesboro 91.25 43 P P 23 48 53.6 -0.7
baz=319
Y37A Hugo 91.33 44 P P 23 48 53.7 -0.9
baz=318
333A Richland Sprin 91.34 48 P P 23 48 54.5 -0.3
baz=316
234A Clairette 91.34 47 P P 23 48 54.1 -0.7
baz=317
135A Vickery Place, 91.36 46 P P 23 48 54.7 -0.2
baz=317
CLTB Caltabellotta 91.39 321 PFAKE 23 49 10.0 +15
CLTB LR LR
comp=Z,6μm,20.0s
Z36A Blue Ridge 91.40 45 P P 23 48 54.6 -0.4
baz=318
W39A Magazine 91.42 42 P P 23 48 54.7 -0.3
baz=319
JCT Junction City 91.45 49 P P 23 48 54.9 -0.5
baz=316
JCT Junction City 91.45 49 eP P 23 48 57.6 +2.2
JCT e*PP pP 23 49 09.0 +1.6
JCT Junction City 91.45 49 eP P 23 48 57.6 +2.2
JCT epP pP 23 49 09.0 +1.6
JCT LR LR
comp=Z,2μm,22.0s
V40A Witts Springs 91.47 41 P P 23 48 54.6 -0.8
baz=320
OLIL Olney 91.56 37 eP P 23 48 56.9 +1.3
OLIL epP pP 23 49 08.6 +0.9
433A Art 91.68 49 P P 23 48 56.1 -0.3
baz=316
VSL Villasalto 91.71 325 PFAKE 23 49 10.0 +14
VSL LR LR
comp=Z,4μm,19.0s
WHTX Lake Whitney, 91.75 47 eP P 23 48 57.9 +1.2
comp=Z,21nm,0.8s
WHTX e 23 49 10.9
X39A Fountain Ranch 91.76 43 P P 23 48 56.9 +0.2
baz=319
334A Lometa 91.77 48 P P 23 48 56.4 -0.5
baz=317
W40A Ferguson Farm, 91.81 42 P P 23 48 57.1 +0.3
baz=320
SIUC Southern Illin 91.82 38 eP P 23 48 57.9 +1.0
comp=Z,69nm,1.3s
Y38A Idabel 91.86 44 P P 23 48 57.4 +0.3
baz=319
Z37A Pogue Cattle C 91.91 45 P P 23 48 57.0 -0.3
baz=318
136A Ennis 91.93 46 P P 23 48 57.7 +0.2
baz=318
PBMO Poplar Bluff 91.95 39 eP P 23 48 58.0 +0.5
comp=Z,71nm,1.4s
SJAF Saint Jean de 91.99 331⇑ eP P 23 48 57.5 -0.1
MIAR Mount Ida 92.03 43 P P 23 48 58.3 +0.4
baz=319
MIAR Mount Ida 92.03 43 eP P 23 48 58.6 +0.7
MIAR pmax pmax
comp=Z,120nm,1.3s
MIAR Mount Ida 92.03 43 eP P 23 48 58.6 +0.7
comp=Z,125nm,1.4s
MIAR LR LR
comp=Z,2μm,21.0s
FILF Fillols 92.05 331⇑ eP P 23 48 57.7 -0.3
WDD Wied Dalam 92.06 319 eP P 23 48 58.6 +0.6
WDD epP sP 23 49 13.7 -0.7
WDD LR LR
comp=Z,6μm,21.0s
CARF Carcanieres 92.09 331⇑ eP P 23 48 57.6 -0.6
LONY Lake Ozonia 92.09 25 PFAKE 23 49 10.0 +12
LONY LR LR
comp=Z,2μm,20.0s
X201 Greenbrier Sit 92.10 41 eP P 23 48 58.5 +0.2
comp=Z,76nm,1.2s
X301 Greenbrier Sit 92.12 41 eP P 23 48 58.1 -0.3
comp=Z,46nm,1.1s
434A Burnet 92.13 48 P P 23 48 58.3 -0.2
baz=317
WHAR Wooly Hollow 92.14 41 eP P 23 48 58.0 -0.4
comp=Z,100nm,1.3s
Y39A Lockesburg 92.20 43 P P 23 48 58.6 -0.1
baz=319
533A Kerrville 92.21 49 P P 23 48 59.0 +0.1
baz=316
Z38A Mt. Pleasant 92.23 44 P P 23 48 59.1 +0.3
baz=319
W41B Gary Mavity, V 92.25 41 P P 23 48 59.2 +0.3
baz=320
236A Katherine and 92.28 46 P P 23 48 59.3 +0.2
baz=318
137A Heron Place, G 92.28 45 P P 23 48 59.5 +0.4
baz=318
335A Moody 92.28 47 P P 23 48 60.0 +0.8
baz=317
VALF Valcebollere 92.39 331⇑ eP P 23 49 00.0 +0.3
X40A Basin Creek Fa 92.47 42 P P 23 48 59.9 0.0
baz=320
336A Riesel 92.55 47 P P 23 49 00.5 +0.2
baz=318
435B Jarrell 92.55 48 P P 23 49 00.6 +0.2
baz=317
633A Saathoff Ranch 92.56 50 P P 23 49 00.2 -0.3
baz=316
534A Blanco 92.57 49 P P 23 49 00.3 -0.2
baz=317
Y40A Okolona 92.59 43 P P 23 49 00.3 -0.2
baz=320
138A Matatall Enter 92.61 45 P P 23 49 01.3 +0.7
baz=318
X41A Kaden, Bauxite 92.63 42 P P 23 49 00.6 -0.1
baz=320
ACSO Alum Creek Sta 92.65 32 eP P 23 49 01.3 +0.6
ACSO e 23 49 14.5
ACSO LR LR
comp=Z,2μm,22.0s
Z39A Irene McRaven, 92.68 44 P P 23 49 01.2 +0.3
baz=319
237A Washetta, Mont 92.69 46 P P 23 49 02.0 +1.0
baz=318
VIEF Viey 92.73 333⇑ eP P 23 49 01.9 +0.8
WCI Wyandotte Cave 92.81 36 eP P 23 49 03.1 +1.6
WCI e*PP pP 23 49 14.6 +1.1
WCI Wyandotte Cave 92.81 36 eP P 23 49 02.0 +0.6
WCI e 23 49 14.8
832A Faith Ranch, C 92.91 51 P P 23 49 02.4 +0.3
baz=316
M54A Oil Creek Stat 92.94 30 P P 23 49 02.2 +0.2
baz=328
733A Divot King Ran 93.02 50 P P 23 49 02.8 +0.2
baz=316
436A Wall Ranch, Ga 93.03 47 P P 23 49 02.4 -0.2
baz=318
Y41A Eaglette Beard 93.05 42 P P 23 49 01.5 -1.1
baz=320
238A Jacksonville 93.08 45 P P 23 49 03.8 +1.0
baz=318
Z40A Long Farm, Mag 93.09 43 P P 23 49 03.0 +0.2
baz=320
535A Dale 93.11 48 P P 23 49 03.6 +0.6
baz=317
634A China Grove, S 93.11 49 P P 23 49 02.8 -0.2
baz=317
337A Centerville 93.15 46 P P 23 49 03.3 +0.2
baz=318
PKME Peaks-Kenny Pk 93.16 21 eP P 23 49 04.6 +1.7
PKME epP pP 23 49 15.7 +0.8
833A Chaparral WMA, 93.24 50 P P 23 49 05.1 +1.5
baz=316
N54A Moraine State 93.27 30 P P 23 49 04.8 +1.2
baz=328
437A Phantom Ranch, 93.36 47 P P 23 49 05.1 +1.0
baz=318
734A La Parita Cree 93.38 50 P P 23 49 04.8 +0.6
baz=316
536A Bastrop 93.38 48 P P 23 49 04.8 +0.6
baz=317
Z41A Richland Creek 93.42 43 P P 23 49 05.3 +1.0
baz=320
239A Gary 93.43 45 P P 23 49 05.4 +1.0
baz=319
338A Crockett 93.45 46 P P 23 49 06.8 +2.2
baz=318
635A Leesville 93.46 49 P P 23 49 05.2 +0.6
baz=317
140A Cam and Jess, 93.47 44 P P 23 49 05.1 +0.6
baz=319
ACCN Adirondack Com 93.49 25 eP P 23 49 05.2 +0.7
comp=Z,107nm,1.8s
NATX Nacogdoches 93.52 45 P P 23 49 06.2 +1.4
baz=319
NATX Nacogdoches 93.52 45 PFAKE 23 49 20.0 +15
NATX LR LR
comp=Z,4μm,21.0s
Y42A Garnett, Star 93.52 42 P P 23 49 04.5 -0.3
baz=320
WVL Waterville 93.69 22 eP P 23 49 06.7 +1.3
comp=Z,135nm,1.6s
WVT Waverly 93.75 38 eP P 23 49 06.9 +1.0
WVT e*PP pP 23 49 18.4 +0.6
WVT Waverly 93.75 38 eP P 23 49 06.9 +1.0
WVT epP pP 23 49 18.4 +0.6
438A Sam Houston St 93.81 46 P P 23 49 05.9 -0.2
baz=316
537A Green Hill Far 93.81 47 P P 23 49 06.8 +0.6
baz=318
240A Hunter Patters 93.81 44 P P 23 49 07.6 +1.4
baz=319
636A Smothers Creek 93.81 48 P P 23 49 07.7 +1.4
baz=317
LMN Caledonia Moun 93.82 18 eP P 23 49 06.8 +0.9
LMN epP pP 23 49 19.8 +1.9
735A Kenedy 93.82 49 P P 23 49 07.3 +1.0
baz=317
933A Laredo 93.82 51 P P 23 49 07.8 +1.4
baz=316
141A Papa Simpson, 93.86 43 P P 23 49 06.1 -0.3
baz=320
Z42A Norrel Spur, H 93.87 42 P P 23 49 07.8 +1.4
baz=320
X44A Crenshaw 93.87 40 P P 23 49 06.1 -0.3
baz=322
339A Huntington 93.90 45 P P 23 49 07.1 +0.6
baz=319
834A Tilden 93.90 50 P P 23 49 08.1 +1.4
baz=316
Y43A Makayla and Ka 93.92 41 P P 23 49 08.0 +1.4
baz=321
439A Center Grove, 94.18 46 P P 23 49 08.9 +1.0
baz=319
538A Harpers Horsep 94.19 47 P P 23 49 08.5 +0.6
baz=318
HKT Hockley 94.19 47 eP P 23 49 08.6 +0.7
HKT e 23 49 21.5
HKT pmax pmax
comp=Z,2.0nm,0.7s
HKT Hockley 94.19 47 eP P 23 49 08.6 +0.7
comp=Z,2.2nm,0.7s
HKT e 23 49 21.5
736A Circle Diamond 94.19 49 P P 23 49 09.0 +1.0
baz=317
340A Bronson 94.21 45 P P 23 49 06.5 -1.5
baz=319

835A	Beeville	94.22	49	P	P	23 49 10.4	+2.3
	baz=317						
OXF	Oxford	94.24	40	eP	P	23 49 09.2	+1.1
OXF				e		23 49 21.8	
OXF				pmax	pmax		
	comp=Z,9.0nm,0.7s						
OXF	Oxford	94.24	40	eP	P	23 49 09.2	+1.1
	comp=Z,9.3nm,0.7s						
OXF				e		23 49 21.8	
Y44A	Strider, Charl	94.26	41	P	P	23 49 10.3	+2.2
	baz=321						
637A	Eagle Lake	94.27	48	P	P	23 49 08.5	+0.2
	baz=318						
241A	Mo Tay, Goldon	94.29	44	P	P	23 49 07.3	-1.1
	baz=320						
Z43A	Armstrong Fami	94.29	42	P	P	23 49 07.6	-0.7
	baz=321						
934A	Benavides	94.30	50	P	P	23 49 07.0	-1.4
	baz=316						
142A	Monroe	94.42	43	P	P	23 49 09.9	+1.0
	baz=320						
034A	Hebbronville	94.58	51	P	P	23 49 10.4	+0.6
	baz=316						
FURI	Furi	94.65	285	eP	P	23 49 13.4	+2.7
	comp=Z,64nm,1.1s						
Z44A	Pea Ridge, Bel	94.67	41	P	P	23 49 09.8	-0.3
	baz=321						
440A	Kirbyville	94.68	45	P	P	23 49 12.8	+2.6
	baz=319						
341A	Kurthwood	94.68	44	P	P	23 49 11.9	+1.8
	baz=320						
Y45A	Yeager Farm, C	94.68	40	P	P	23 49 09.0	-1.2
	baz=322						
242A	Grayson	94.69	43	P	P	23 49 11.9	+1.8
	baz=320						
737A	Port Lavaca	94.71	48	P	P	23 49 12.2	+1.8
	baz=318						
539A	Cross D Ranch,	94.72	46	P	P	23 49 12.1	+1.8
	baz=319						
KEST	Kesra	94.75	323	P	P	23 49 09.9	-0.6
	comp=Z,24nm,1.1s,baz=298,slow=1.5,SNR=11						
KEST				LR	LR	00 37 37.7	
	comp=Z,6μm,18.8s,baz=346,slow=39						
638A	Rosharon	94.81	47	P	P	23 49 12.6	+1.8
	baz=318						
N59A	State Game Lan	94.93	27	P	P	23 49 11.9	+0.7
	baz=331						
CMAH	Djebel Manchou	94.94	325	P	P	23 49 10.9	-0.5
Z45A	Winona	94.99	41	P	P	23 49 12.4	+0.9
	baz=322						
Y46A	Houston	95.02	40	P	P	23 49 12.1	+0.5
	baz=322						
035A	Encino	95.03	51	P	P	23 49 12.9	+1.0
	baz=317						
441A	DeRidder	95.11	45	P	P	23 49 10.6	-1.5
	baz=320						
738A	Farr-Stevens R	95.12	48	P	P	23 49 12.4	+0.2
	baz=318						
144A	Alexander Plac	95.18	42	P	P	23 49 13.3	+0.9
	baz=321						
243A	Waterproof	95.19	43	P	P	23 49 13.4	+0.9
	baz=321						
SWET	Sewanee	95.41	37	eP	P	23 49 13.8	+0.3
	comp=Z,10.0nm,1.3s						
CKFL	Kef-Lekhel	95.44	325	P	P	23 49 12.8	-0.9
VBMS	Vicksburg	95.45	42	P	P	23 49 14.1	+0.5
	baz=321						
145A	Houston Renfro	95.46	41	P	P	23 49 15.0	+1.3
	baz=322						
244A	Avery, Jackson	95.49	42	P	P	23 49 13.9	0.0
	baz=321						
Y47A	UCPARC, Winfie	95.51	39	P	P	23 49 13.6	-0.3
	baz=323						
Z46A	Louisville	95.52	40	P	P	23 49 15.2	+1.3
	baz=322						
442A	Mamou	95.56	44	P	P	23 49 15.5	+1.4
	baz=320						
343A	Vidalia	95.57	43	P	P	23 49 15.6	+1.3
	baz=320						
541A	Lake Charles	95.63	45	P	P	23 49 15.0	+0.5
	baz=320						
CASM	Ain Smara	95.67	325	P	P	23 49 14.6	-0.1
DFRA	Djebel Bou Aff	95.71	325	P	P	23 49 15.6	+0.7
443A	Delano Plantat	95.88	44	P	P	23 49 14.9	-0.7
	baz=320						
146A	Union	95.89	41	P	P	23 49 16.1	+0.5
	baz=322						
245A	Little AP, Sta	95.92	42	P	P	23 49 16.3	+0.5
	baz=322						
344A	Westbrook Farm	95.92	43	P	P	23 49 16.2	+0.3
	baz=321						
Z47A	Carrollton	95.96	40	P	P	23 49 15.3	-0.6
	baz=323						
PBRG	Braganca	95.99	337	eP	P	23 49 16.5	+0.5
PBRG	Braganca	95.99	337	ePP	PP	23 53 10.7	+3.0
Z48A	Northport	96.08	39	P	P	23 49 16.5	0.0
	baz=323						
SET	Setif	96.21	326	P	P	23 49 18.0	+0.8
BLA	Blacksburg	96.27	32	PFAKE		23 49 30.0	+13
BLA				LR	LR		
	comp=Z,2μm,21.0s						
147A	Livingston	96.27	40	P	P	23 49 16.6	-0.8
	baz=322						
CKHR	Kef el Ahmar	96.31	325	P	P	23 49 18.2	+0.5
PGAV	Gavieira, Arco	96.31	338	eP	P	23 49 17.5	-0.1
PGAV	Gavieira, Arco	96.31	338	ePP	PP	23 53 12.8	+2.6
PGAV	Gavieira, Arco	96.31	338	eLQ	LQ	00 18 10.7	
PGAV				eLR	LR	00 23 28.3	
	comp=Z,5μm,22.0s						
246A	Jackson Lee, B	96.34	41	P	P	23 49 16.5	-1.2
	baz=322						
543A	St. Martinvill	96.36	44	P	P	23 49 17.1	-0.7
	baz=320						
346A	Big Creek Wild	96.65	42	P	P	23 49 20.4	+1.3
	baz=322						
MVO	Moncorvo	96.66	337	eP	P	23 49 23.8	+4.7
MVO	Moncorvo	96.66	337	ePP	PP	23 53 16.6	+3.7
MVO	Moncorvo	96.66	337	eLQ	LQ	00 17 29.5	
MVO				eLR	LR	00 23 54.7	
	comp=Z,7μm,22.0s						
CBN	Corbin Frederi	96.67	30	PFAKE		23 49 30.0	+11
CBN				LR	LR		
	comp=Z,3μm,21.0s						
POLO	Lamas de Olo	96.71	337	eP	P	23 49 22.2	+2.8
POLO	Lamas de Olo	96.71	337	ePP	PP	23 53 14.1	+0.8
ESDC	Sonseca Array	96.98	334	P	P	23 49 19.7	-0.9
	comp=Z,3.5nm,0.9s,baz=26,slow=3.5,SNR=17						
ESDC				PP	PP	23 53 14.3	-1.1
	comp=Z,0.7nm,0.5s,baz=22,slow=6.3,SNR=5.8						
ESDC				LR	LR	00 37 45.5	
	comp=Z,9μm,20.8s,baz=30,slow=38						
347A	Saraland	97.13	41	P	Pdif	23 49 21.7	+0.3
	baz=322						
PAB	San Pablo	97.22	334	eP	Pdif	23 49 21.8	0.0
PAB				pmax	pmax		
	comp=Z,15nm,1.3s						
PAB	San Pablo	97.22	334	eP	P	23 49 21.8	+0.1
	comp=Z,15nm,1.3s						
PAB				LR	LR		
	comp=Z,10μm,20.0s						
546A	Slidell	97.42	43	P	Pdif	23 49 23.2	+0.5
	baz=322						
348A	Jackson	97.46	41	P	Pdif	23 49 23.3	+0.5
	baz=323						
645A	Chauvin	97.54	44	P	Pdif	23 49 23.5	+0.2
	baz=321						
KMSC	Kings Mountain	97.61	34	P	P	23 49 23.6	+0.1
	baz=327						
448A	Bay Minette	97.86	41	P	P	23 49 22.5	-2.1
	baz=323						
646A	Port Sulphur	97.86	43	P	P	23 49 23.8	-0.8
	baz=321						
GOGA	Godfrey	98.06	37	PFAKE		23 49 40.0	+15
GOGA				LR	LR		
	comp=Z,2μm,20.0s						
BRAL	Brewton	98.09	40	PFAKE		23 49 40.0	+14
BRAL				LR	LR		
	comp=Z,2μm,20.0s						
PCAS	Casmilo, Conde	98.13	337	eP	Pdif	23 49 31.7	+6.0
PCAS	Casmilo, Conde	98.13	337	ePP	PP	23 53 27.6	+3.5
PMRV	Marv??o	98.35	336	ePdif	Pdif	23 49 31.6	+4.9
PMRV	Marv??o	98.35	336	ePP	PP	23 53 31.3	+5.5
PMRV	Marv??o	98.35	336	eLQ	LQ	00 17 18.7	
PMRV				eLR	LR	00 23 06.8	
	comp=Z,6μm,22.0s						
RKT	Rikitea	98.86	112	eSKSac	SKSac	00 00 03.5	-0.7
	comp=Z,2μm,28.5s						
RKT				eSP	SP	00 02 20.4	-1.9
	comp=Z,2μm,30.5s						
RKT				eSS	SS	00 07 44.6	+0.2
	comp=Z,2μm,30.0s						
RKT	Rikitea	98.86	112	eLR	LR	00 21 38.6	
	comp=Z,13μm,26.2s,baz=307						
PESTR	Estremoz	98.93	336	ePdif	Pdif	23 49 32.0	+2.7
PESTR	Estremoz	98.93	336	ePP	PP	23 53 34.8	+4.6
PMTG	Montargil	98.95	337	ePdif	Pdif	23 49 32.9	+3.6
PMTG	Montargil	98.95	337	ePP	PP	23 53 37.1	+6.8
PBAR	Barrancos	99.37	335	ePP	PP	23 53 37.2	+3.6
PMAFR	Mafra	99.38	337	ePdif	Pdif	23 49 30.8	-0.5
PMAFR	Mafra	99.38	337	ePP	PP	23 53 36.9	+3.2
LIS	Lisbon	99.56	337	eP	Pdif	23 49 31.3	-0.7
LIS				AMS	AMS	00 37 28.5	
	comp=Z,6μm,22.6s						
LIS	Lisbon	99.56	337	eP	Pdif	23 49 31.3	-0.7
TIGA	Tifton	99.61	38	Pdiff	Pdif	23 49 32.3	-0.2
	baz=325						
NHSC	New Hope	99.83	34	PFAKE		23 49 50.0	+17
NHSC				LR	LR		
	comp=Z,4μm,22.0s						
PNCL	Nicolau / Gran	99.92	336	ePdif	Pdif	23 49 34.3	+0.6
PNCL	Nicolau / Gran	99.92	336	ePP	PP	23 53 43.9	+6.2
MESJ	Messejana	100.06	336	eP	Pdif	23 49 33.6	-0.7
MESJ				AMS	AMS	00 37 25.1	
	comp=Z,7μm,21.2s						
MESJ	Messejana	100.06	336	eP	Pdif	23 49 33.6	-0.7
PVAQ	Vaqueiros	100.30	335	ePdif	Pdif	23 49 41.3	+5.9
PVAQ	Vaqueiros	100.30	335	ePP	PP	23 53 45.6	+4.9
PVAQ	Vaqueiros	100.30	335	eLQ	LQ	00 19 54.0	
PVAQ				eLR	LR	00 25 39.0	
	comp=Z,8μm,22.0s						
PBDV	Barranco-do-Ve	100.52	336	ePP	PP	23 53 46.9	+4.6
MORF	Marmelete	100.69	336	eP	Pdif	23 49 35.9	-1.3
MORF				AMS	AMS	00 36 17.2	
	comp=Z,5μm,24.6s						
MORF	Marmelete	100.69	336	ePdif	Pdif	23 49 42.9	+5.7
MORF	Marmelete	100.69	336	ePP	PP	23 53 47.6	+3.9
MORF	Marmelete	100.69	336	eP	Pdif	23 49 35.9	-1.3
PFVI	Vila Bisbo	100.91	336	ePdif	Pdif	23 49 43.6	+5.5
PFVI	Vila Bisbo	100.91	336	ePP	PP	23 53 48.1	+2.9
KMBO	Kilima Mbogo	101.96	278	PFAKE		23 49 50.0	+6.6
KMBO				LR	LR		
	comp=Z,3μm,22.0s						
CMLA	Cha da Macela	104.25	349	PFAKE		23 50 00.0	+7.0
CMLA				LR	LR		
	comp=Z,2μm,20.0s						
CASY	Casey	106.06	192	PFAKE		23 54 20.0	
CASY				LR	LR		
	comp=Z,438nm,20.0s						
BBSR	BB Station	106.42	23	PFAKE		23 54 30.0	
BBSR				LR	LR		
	comp=Z,1μm,20.0s						
PAF	Port-aux-Franc	106.86	220	PFAKE		23 54 30.0	
PAF				LR	LR		
	comp=Z,2μm,19.0s						
GTBY	Guantanamo Bay	113.38	38	PFAKE		23 54 40.0	
GTBY				LR	LR		
	comp=Z,1μm,20.0s						
MTDJ	Mount Denham	113.60	41	PFAKE		23 54 40.0	
MTDJ				LR	LR		
	comp=Z,1μm,20.0s						
GRTK	Grand Turk	113.85	33	PFAKE		23 54 40.0	
GRTK				LR	LR		
	comp=Z,3μm,20.0s						
VNDA	Vanda	115.34	175	PKP	PKPdf	23 54 28.3	-0.7
	comp=Z,0.8nm,0.8s,baz=285,slow=3.1,SNR=3.5						
JTS	JuntasAbangare	115.66	52	PFAKE		23 54 40.0	+8.4
JTS				LR	LR		
	comp=Z,1μm,22.0s						
TORD	Torodi Ar. Bea	117.10	315	PKP	PKPdf	23 54 32.4	-1.9
	comp=Z,4.8nm,1.1s,baz=21,slow=0.9,SNR=22						
TORD				PKKPab	PKKPab	00 05 05.7	+0.9
	comp=Z,1.4nm,1.0s,baz=213,slow=1.8,SNR=4.1						
LSZ	Lusaka	117.52	271	ePKIKP	PKPdf	23 54 35.1	0.0
LSZ				MLR	MLR		
	comp=Z,2μm,20.0s						
LSZ	Lusaka	117.52	271	eP	PKPdf	23 54 35.1	0.0
LSZ				LR	LR		
	comp=Z,2μm,20.0s						
BCIP	Isla Barro Col	119.67	49	PFAKE		23 54 50.0	+11
BCIP				LR	LR		
	comp=Z,2μm,22.0s						
MAW	Mawson	119.88	206	PKP	PKPdf	23 54 37.0	-0.9
	comp=Z,1.6nm,0.7s,baz=36,slow=8.7,SNR=3.5						
PAYG	Puerto Ayora	120.01	65	PFAKE		23 54 50.0	+10
PAYG				LR	LR		
	comp=Z,4μm,22.0s						
RPN	Rapa Nui	120.52	102	PFAKE		23 54 50.0	+10
RPN				LR	LR		
	comp=Z,2μm,21.0s						
ANWB	Willy Bob	121.01	26	PFAKE		23 54 50.0	+8.3
ANWB				LR	LR		
	comp=Z,2μm,22.0s						
FDF	Fort de France	123.95	27	PFAKE		23 55 00.0	+12
FDF				LR	LR		
	comp=Z,2μm,22.0s						
SDV	Santo Domingo	125.02	40	ePKPdf	PKPdf	23 54 50.1	+0.3
SDV				epPKPdf	pPKPdf	23 55 02.7	+0.5
SDV	Santo Domingo	125.02	40	eP	PKPdf	23 54 44.1	-5.7
GUYC	Guyana, Colomb	125.45	47	eP	PKPdf	23 54 52.4	+1.4
BBGH	Gun Hill	125.98	26	PFAKE		23 55 00.0	+8.6
BBGH				LR	LR		
	comp=Z,3μm,21.0s						
DBIC	Dimbokro	126.05	317	PKP	PKPdf	23 54 49.6	-1.9
	comp=Z,13nm,1.0s,baz=355,slow=2.6,SNR=12						
DBIC				PP	PP	23 56 44.3	-0.2
	comp=Z,9.0nm,0.9s,baz=340,slow=4.1,SNR=4.1						
TIC	Toumodi	126.16	317	ePKIKP	PKPdf	23 54 51.4	-0.4
GRGR	Grenville	126.16	28	PFAKE		23 55 00.0	+8.3
GRGR				LR	LR		
	comp=Z,2μm,21.0s						
RUSC	La Rusia	126.22	44	eP	PKPdf	23 54 46.5	-6.0
KIC	Kosan Boka	126.24	317	ePKIKP	PKPdf	23 54 51.7	-0.2
	comp=Z,59nm,1.2s						
ROSC	El Rosal	126.38	46	PKP	PKPdf	23 54 51.8	-0.8
	comp=Z,3.5nm,0.4s,baz=208,slow=22,SNR=5.3						
LIC	Lamto	126.51	317	ePKIKP	PKPdf	23 54 51.4	-1.0
BOSA	Boshof	126.68	260	PKP	PKPdf	23 54 51.4	-1.0
	comp=Z,15nm,1.0s,baz=5.2,slow=1.6,SNR=12						
QSPA	South Pole Qui	127.14	180	ePKPdf	PKPdf	23 54 52.0	0.0
QSPA				epPKPdf	pPKPdf	23 55 05.8	+1.4
OTAV	Otavalo	127.47	54	ePKPdf	PKPdf	23 54 56.3	+1.5
OTAV				epPKPdf	pPKPdf	23 55 08.6	+1.4
OTAV				LR	LR		
	comp=Z,2μm,21.0s						
TSUM	Tsumeb	128.11	274	ePKPdf	PKPdf	23 54 56.0	+0.6
TSUM				epPKPdf	pPKPdf	23 55 08.7	+1.0
SUR	Sutherland	131.74	257	PFAKE		23 55 10.0	+8.0
SUR				LR	LR		
	comp=Z,3μm,21.0s						
NVL	N'lazarevskaya	137.64	202	ePKIKP	PKPdf	23 55 15.0	+3.4
SNAA	Sanae	141.11	197	PKP	PKPdf	23 55 13.2	-4.9
VNA2	Neumayer--Watz	142.68	196	PKP	PKPdf	23 55 17.5	-3.3
	baz=93,slow=2.5						
VNA3	Neumayer Olymp	142.93	195	PKP	PKPdf	23 55 16.8	-4.4
VNA1	Neumayer--Stat	143.08	196	PKP	PKPbc	23 55 18.9	+0.5
ASCN	Ascension	143.37	317	PFAKE		23 55 40.0	+16
ASCN				LR	LR		
	comp=Z,2μm,21.0s						
SHEL	Horse Pasture	144.02	298	PFAKE		23 55 40.0	+15
SHEL				LR	LR		
	comp=Z,1μm,21.0s						
LPAZ	La Paz	146.48	59	PKPbc	PKPdf	23 55 29.2	-0.6
	comp=Z,12nm,0.7s,baz=357,slow=4.7,SNR=36						
RCBR	Riachuelo	148.48	355	ePKPbc	PKPbc	23 55 35.2	-0.8
LVC	Limon Verde	150.01	69	PFAKE		23 55 50.0	+4.1
LVC				LR	LR		
	comp=Z,4μm,22.0s						
LCO	Las Campanas	151.93	82	ePKPdf	PKPdf	23 55 38.6	+0.9
LCO				ePKPbc	PKiKP	23 55 45.2	+0.7
LCO				LR	LR		
	comp=Z,3μm,21.0s						
EFI	East Falkland	160.16	142	PFAKE		23 56 00.0	+13
EFI				LR	LR		
	comp=Z,3μm,22.0s						
HOPE	Hope Point	163.06	184	PFAKE		23 56 00.0	+10
HOPE				LR	LR		
	comp=Z,2μm,22.0s						
LPA	La Plata	164.14	87	cePKIKP	PKPdf	23 55 52.0	0.0
LPA				pPP		00 00 46.0	
SPB	Sao Paulo	164.26	32	PFAKE		23 56 00.0	+7.5
SPB				LR	LR		
	comp=Z,2μm,22.0s						

JMA ***13*** *23:40:38.9±0.1, 37°.30N×141°.62E, h44km±2km, M4.4*
JMA Felt II J1.
NEIC ***13*** *23:40:39.4±1.6, 37°.32N×141°.69E, h45km±14km, mb4.6/4, Error ellipse: s-maj=14.8km s-min=10.9km az=120.0*
NEIC Recorded [2 JMA] in Fukushima.
IDC ***13*** *23:40:40.6±2.4, 37°.18N×141°.55E, h58km±23km, mb4.0/21, mb1 4.2/23, mb1mx4.0/46, mbtmp4.3/23, ML4.2/2, Error ellipse: s-maj=18.3km s-min=13.7km az=94.0*
ISC 13 23:40:36.0±1.1, 37°.29N±0°.04×141°.74E±0°.05, h19km±4km, n51, σ1§15/51, mb4.4/26, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	0.69	277	P	Pn	23 40 51.1	+0.3
JFK				S	Sb	23 40 59.4	+0.8
ONAJ	Iwakimizuishiy	0.77	256	P	Pn	23 40 52.3	+0.4
ONAJ				S	Sg	23 41 01.3	-0.2
JMM	Marumori	0.95	308	P	Pn	23 40 54.7	+0.5
JMM				eS	Sg	23 41 06.8	-0.2
JFT	Otama	1.14	282	P	Pg	23 40 58.1	0.0
JFT				S	Sb	23 41 11.7	+0.2
JHO	Hitachi	1.16	235	P	Pg	23 40 57.5	-0.9
JHO				S	Sb	23 41 10.7	-1.2
JIO	Ouri	1.20	345	P	Pg	23 40 58.8	-0.5
JIO				eS	Sb	23 41 12.7	-0.6
JOU	Okura	1.37	322	P	Pb	23 41 01.4	+0.4
JOU				eS	Sn	23 41 18.2	+0.5
JYS	Shiratake	1.62	306	P	Pb	23 41 05.1	-0.2
JFY	Yanaizu	1.63	275	P	Pb	23 41 04.9	-0.5
MJAR	Matsushiro Arr	2.93	256	P	Pn	23 41 23.5	+2.0
	28nm,0.3s,baz=84,slow=15,SNR=19						
MJAR				S	Sn	23 41 58.8	+2.7
	21nm,0.3s,baz=342,slow=26,SNR=5.4						
JHJ	Hachijo jima 2	4.46	202	P	Pn	23 41 42.3	-0.2
	46nm,0.3s,baz=8.0,slow=18,SNR=2.6						
JHJ				S	Sn	23 42 32.3	-1.6
	131nm,0.3s,baz=62,slow=23,SNR=7.5						
ASAJ	Asahikawa	6.85	5	P	Pn	23 42 12.7	-2.7
	3.2nm,0.3s,baz=330,slow=20,SNR=8.0						
ASAJ				S	Sn	23 43 29.9	-2.8
	baz=11,slow=19,SNR=3.3						
USRK	Ussuriysk Ar.	10.11	316	P	Pn	23 43 06.2	+6.1
	0.5nm,0.3s,baz=125,slow=14,SNR=4.7						
JCJ	Chichijima	10.17	178	S	Sn	23 44 48.2	-6.3
KSRS	Korea Array	11.00	275	P	Pn	23 43 17.4	+5.2
	0.9nm,0.3s,baz=85,slow=14,SNR=6.5						
KSAR	Wonju Array Be	11.03	275	P	Pn	23 43 17.4	+4.7
MA2	Magadan	23.05	12	P	P	23 45 42.1	+2.2
	10.0nm,0.7s,baz=206,slow=14,SNR=4.0						
GUMO	Guam	23.77	172	eP	P	23 45 48.1	+0.9
	11nm,0.3s						
YAK	Yakutsk	25.88	347	P	P	23 46 07.8	+1.7
	21nm,0.4s,baz=64,slow=2.8,SNR=3.2						
YAK	Yakutsk	25.88	347	eP	P	23 46 06.4	+0.2
	4.8nm,0.3s						
ENH	Enshi	27.61	265	eP	P	23 46 21.7	-0.5
	3.5nm,0.4s						
SONM	Songino Array	27.86	303	P	P	23 46 24.3	-0.1
	4.2nm,0.6s,baz=104,slow=9.1,SNR=6.3						
H11N2	WAKE ISLAND Hy	28.06	122	T	T	00 15 59.6	
	baz=314,slow=75,SNR=12						
H11N1	WAKE ISLAND Hy	28.07	122	T	T	00 16 00.6	
	baz=314,slow=75,SNR=9.7						
H11N3	WAKE ISLAND Hy	28.07	122	T	T	00 16 00.8	
	baz=314,slow=75,SNR=11						
H11S1	WAKE ISLAND Hy	28.78	124	T	T	00 16 55.3	
	baz=318						
H11S3	WAKE ISLAND Hy	28.78	124	T	T	00 16 56.5	
	baz=319						
H11S2	WAKE ISLAND Hy	28.80	124	T	T	00 17 00.3	
	baz=318						
CMAR	Chiang Mai Arr	41.81	255	P	P	23 48 22.6	-1.9
	1.0nm,0.4s,baz=38,slow=6.0,SNR=2.9						
ZALV	Zalesovo Beam	41.94	312	P	P	23 48 25.1	-0.1
	2.8nm,0.4s,baz=88,slow=7.4,SNR=4.1						
MKAR	Makanchi Array	44.20	302	P	P	23 48 42.9	-0.8
	7.0nm,0.6s,baz=89,slow=8.9,SNR=4.4						
KURK	Kurchatov	45.98	308	eP	P	23 48 57.0	-0.6
	5.1nm,0.5s						
ILAR	Eielson Array	49.14	32	P	P	23 49 23.5	+1.4
	2.4nm,0.8s,baz=262,slow=5.7,SNR=6.9						
INK	Inuvik	54.04	27	P	P	23 50 00.2	+1.6
	1.6nm,0.7s,baz=336,slow=1.3,SNR=2.5						
WRA	Warramunga Arr	57.35	188	P	P	23 50 22.5	-0.4
	3.4nm,0.5s,baz=6.4,slow=7.4,SNR=7.0						
ASAR	Alice Springs	61.08	188	P	P	23 50 48.4	-0.2
	1.4nm,0.7s,baz=17,slow=8.1,SNR=3.5						
RES	Resolute Bay	62.29	15	P	P	23 50 56.6	+0.4
	2.2nm,0.6s,baz=278,slow=4.1,SNR=2.5						
YKA	Yellowknife Ar	63.46	30	P	P	23 51 04.5	+0.4
	0.6nm,0.7s,baz=304,slow=6.8,SNR=3.1						
ARCES	ARCESS Array B	63.85	339	P	P	23 51 06.5	-0.2
	2.8nm,0.8s,baz=55,slow=14,SNR=3.0						
GEYT	Alibeck	63.94	299	P	P	23 51 07.7	-0.1
	2.1nm,0.6s,baz=35,slow=5.3,SNR=3.6						
FINES	FINESS Array B	68.71	332	P	P	23 51 37.8	-0.1
	1.9nm,0.6s,baz=50,slow=6.7,SNR=2.9						
NOA	NORSAR Array B	74.05	337	P	P	23 52 10.0	-0.2
	5.7nm,1.1s,baz=40,slow=5.9,SNR=3.9						
AKASG	Malin Array Be	74.25	322	P	P	23 52 10.9	-0.6
	2.6nm,0.5s,baz=45,slow=6.3,SNR=6.5						
NVAR	Mina Array Bea	74.63	53	P	P	23 52 16.0	+1.7
	1.6nm,0.8s,baz=284,slow=7.3,SNR=2.9						
RAO	Raoul Island	76.23	144	eP	P	23 52 23.3	+0.3
	206nm,0.6s						
PDAR	Pinedale Array	77.30	46	P	P	23 52 29.1	-0.3
	0.5nm,0.6s,baz=322,slow=2.8,SNR=3.5						
BRTR	Keskin Array B	78.88	312	P	P	23 52 38.2	+0.1
	2.0nm,0.9s,baz=66,slow=5.1,SNR=3.7						
GERES	GERESS Array B	82.63	328	P	P	23 52 57.4	-0.6
	0.8nm,0.5s,baz=34,slow=7.1,SNR=4.2						
TXAR	Lajitas Array	89.76	53	P	P	23 53 34.5	+1.0
	0.5nm,0.5s,baz=287,slow=3.4,SNR=3.9						
TORD	Torodi Ar. Bea	117.33	315	PKP	PKPdf	23 59 18.6	-2.1
	0.3nm,0.4s,baz=101,slow=2.9,SNR=4.2						
LPAZ	La Paz	146.34	60	PKPbc	PKPbc	00 00 16.2	-0.4
	0.9nm,0.4s,baz=351,slow=5.0,SNR=6.5						

IDC ***13*** *23:43:30.1±0.7, 17°.72S×167°.14E, h0km, mb4.3/11, mb1 4.5/14, mb1mx4.3/29, mbtmp4.3/14, ML

SONM Songino Array 84.83 324 P **P 23 56 05.1 -1.3**
1.5nm,0.9s,baz=134,slow=6.4,SNR=4.8
BILL Bilibino 85.63 360 *e*P **P 23 56 09.9 +0.2**
2.5nm,0.7s
TRF Thorofare Moun 87.57 18 *e*P **P 23 56 18.2 -1.3**
3.5nm,0.8s
NVAR Mina Array Bea 89.49 49 P **P 23 56 28.8 -0.5**
1.2nm,0.7s,baz=225,slow=6.6,SNR=5.0
ILAR Eielson Array 89.55 18 P **P 23 56 26.8 -1.9**
2.3nm,0.7s,baz=235,slow=5.3,SNR=23
MKAR Makanchi Array 99.25 316 P **Pdif 23 57 13.7 +0.1**
0.2nm,0.4s,baz=91,slow=4.2,SNR=2.5
YKA Yellowknife Ar 100.42 28 P **Pdif 23 57 17.6 -0.7**
0.7nm,0.8s,baz=252,slow=4.3,SNR=6.8
TZTN Tazewell 115.86 58 *e*Pdif **Pdif 23 58 29.5 +1.8**
ARCES ARCESS Array B 123.17 345 PKP **PKPdf 00 02 27.4 -0.4**
1.5nm,0.8s,baz=48,slow=1.8,SNR=5.2
WVL Waterville 125.97 48 *e*Pdif **Pdif 23 59 12.9 +0.5**
FINES FINESS Array B 128.48 337 PKP **PKPdf 00 02 38.5 +0.4**
3.0nm,1.0s,baz=134,slow=9.9,SNR=2.9
BRTR Keskin Array B 134.27 308 PKP **PKPdf 00 02 51.9 +1.9**
0.7nm,0.9s,baz=154,slow=4.0,SNR=4.2
STHS Stebnicka Huta 138.14 327 *e*P PKPdf 00 02 44.7 -12
CRVS Cervenica-Dubn 138.32 326 *e*P PKPdf 00 02 45.8 -11
KECS Kecovo 139.09 326 *e*P PKPdf 00 02 50.2 -8.2
LANS Liptovska Anna 139.22 327 *e*P PKPdf 00 02 50.5 -8.2
VYHS Vyhne 139.96 327 *e*P **PKPdf 00 02 54.1 -5.9**
SMOL Smolenice 140.67 328 *e*P **PKPdf 00 02 57.7 -3.6**
ABTA Abfaltersbach 144.31 329 *i* PKPdf PKPbc 00 03 06.7 +0.4
4.6nm,0.8s
MOTA Moosalm 144.53 331 *i* PKPdf PKPbc 00 03 07.4 +0.4
5.8nm,0.9s
RETA Reutte 144.58 332 *i* PKPdf **PKPdf 00 03 07.8 -0.5**
5.2nm,1.3s
FETA Feichten 144.94 331 *i* PKPdf **PKPdf 00 03 09.3 +0.2**
14nm,1.0s,SNR=7.0
DAVA Damuels 145.13 332 *i* PKPdf **PKPdf 00 03 10.0 +0.5**
17nm,1.1s,SNR=6.1
ESDC Sonseca Array 156.87 342 PKPab **PKPab 00 03 58.0 +0.9**
0.5nm,0.7s,baz=29,slow=4.1,SNR=4.5
TORD Torodi Ar. Bea 165.08 254 PKP **PKPdf 00 03 35.5 -1.3**
1.3nm,0.9s,baz=324,slow=1.3,SNR=5.6

JMA 14 00:19:32.5±0.2, 37°.59N×141°.82E, h22km±3km, M2.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.79**	**254**	P	Pb	00 19 47.4	-0.1
JFK				*e*S	Sb	00 19 57.4	-0.3
JMM	**Marumori**	**0.86**	**289**	P	Pb	00 19 48.5	-0.2
JMM				S	Sb	00 19 59.2	-0.6
JIO	**Ouri**	**0.94**	**337**	P	Pb	00 19 49.6	-0.5
JIO				S	Sb	00 20 00.9	-1.2
JFT	**Otama**	**1.18**	**267**	P	Pb	00 19 54.2	0.0
JOU	**Okura**	**1.20**	**311**	P	Pb	00 19 54.7	+0.2
JOU				S	Sn	00 20 09.5	0.0
JHO	**Hitachi**	**1.40**	**226**	P	Pn	00 19 56.1	-0.6

IDC 14 00:19:42.8±3.0, 37°.56N×142°.37E, h0km, mb3.6/2, mb1 3.7/3, mb1mx3.3/35, mbtmp3.4/3, ML3.2/1, MS4.0/1, Ms1 4.0/1, ms1mx3.1/52, Error ellipse: s-maj=69.5km s-min=36.9km az=56.0
ISCJB 14 00:19:49.7±2.0, 37°.31N±0°.05×141°.7E±0°.1, h26km±8km, mb3.5/2, MS4.0/1, Error ellipse: s-maj=16.5km s-min=7.9km az=12.8
JMA 14 00:19:52.2±0.1, 37°.30N×141°.55E, h45km±2km, M3.4
ISC 14 00:19:49.9±2.4, 37°.31N±0°.05×141°.7E±0°.1, h29km±13km, n14, σ2s07/19, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.68**	**275**	P	**Pb**	**00 20 03.7**	**+0.5**
JFK				S	**Sb**	**00 20 11.8**	**-0.5**
ONAJ	**Iwakimizuishiy**	**0.76**	**255**	P	**Pb**	**00 20 04.9**	**+0.2**
ONAJ				S	**Sb**	**00 20 13.6**	**-1.2**
JMM	**Marumori**	**0.92**	**307**	P	**Pn**	**00 20 07.2**	**+0.3**
JMM				*e*S	**Sb**	**00 20 17.9**	**-1.3**
JFT	**Otama**	**1.12**	**281**	P	**Pn**	**00 20 10.7**	**+1.0**
JHO	**Hitachi**	**1.16**	**233**	P	**Pn**	**00 20 09.9**	**-0.2**
JHO				S	**Sn**	**00 20 23.0**	**-2.0**
JIO	**Ouri**	**1.18**	**346**	S	**Sn**	**00 20 25.1**	**-0.5**
JOU	**Okura**	**1.34**	**322**	P	**Pb**	**00 20 14.7**	**+0.2**
JOU				S	**Sn**	**00 20 30.6**	**+0.9**
JYS	**Shiratake**	**1.60**	**305**	P	**Pn**	**00 20 17.5**	**+1.3**
JFY	**Yanaizu**	**1.61**	**274**	S	**Sn**	**00 20 31.7**	**-4.5**
MJAR	**Matsushiro Arr**	**2.92**	**256**	Pn	**Pn**	**00 20 37.9**	**+3.5**
2.5nm,0.3s,baz=67,slow=12,SNR=13
MAT Matsushiro 2.92 256 P **Pn 00 20 37.3 +2.9**
MAT S **Sn 00 21 11.8 +3.3**
MKAR Makanchi Array 44.18 302 P **P 00 27 55.6 -0.5**
0.2nm,0.4s,baz=86,slow=9.3,SNR=4.7
PMG Port Moresby 46.75 173 LR LR 00 49 24.9
comp=Z,155nm,19.5s,baz=209,slow=38
WRA Warramunga Arr 57.37 188 P **P 00 29 35.0 -0.6**
0.5nm,0.4s,baz=5.6,slow=7.4,SNR=7.1

ISCJB 14 00:25:10.3±1.0, 37°.24N±0°.03×141°.75E±0°.04, h33km±6km, mb4.2/39, Error ellipse: s-maj=5.9km s-min=4.7km az=24.7
MOS 14 00:25:11.1±1.0, 37°.33N×141°.71E, h38km, mb4.4/27, Error ellipse: s-maj=9.2km s-min=6.9km az=107.1
JMA 14 00:25:12.8±0.1, 37°.30N×141°.61E, h45km±2km, M4.3
JMA Felt II J1.
NEIC 14 00:25:13.0±0.9, 37°.26N×141°.70E, h40km±8km, mb4.5/6, Error ellipse: s-maj=8.6km s-min=7.7km az=106.0
NEIC Recorded [2 JMA] in Fukushima.
IDC 14 00:25:15.0±2.1, 37°.23N×141°.52E, h56km±19km, mb3.8/21, mb1 4.1/26, mb1mx4.0/42, mbtmp4.1/26, ML3.8/4, Error ellipse: s-maj=15.0km s-min=11.2km az=75.0
ISC 14 00:25:10.4±1.9, 37°.24N±0°.04×141°.79E±0°.05, h23km±13km, n107, σ1s60/117, mb4.3/39, 16C-6D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.74**	**281**	P	**Pn**	**00 25 24.9**	**-0.5**
JFK				S	**Sb**	**00 25 33.1**	**-1.2**
ONAJ	**Iwakimizuishiy**	**0.80**	**261**	P	**Pn**	**00 25 26.1**	**-0.1**
ONAJ				S	**Sn**	**00 25 35.3**	**-2.2**
JMM	**Marumori**	**1.01**	**309**	P	**Pn**	**00 25 28.5**	**-0.6**
JMM				S	**Sn**	**00 25 39.8**	**-2.7**
JHO	**Hitachi**	**1.16**	**238**	P	**Pn**	**00 25 31.1**	**0.0**
JHO				S	**Sn**	**00 25 44.2**	**-2.0**
JFT	**Otama**	**1.19**	**284**	P	**Pn**	**00 25 31.9**	**+0.3**
JFT				S	**Sn**	**00 25 45.2**	**-1.8**
JIO	**Ouri**	**1.27**	**344**	P	**Pn**	**00 25 32.6**	**0.0**
JIO				*e*S	**Sn**	**00 25 46.6**	**-2.3**
JOU	**Okura**	**1.44**	**322**	P	**Pn**	**00 25 35.3**	**+0.3**
JOU				*e*S	**Sn**	**00 25 52.0**	**-1.1**
JYS	**Shiratake**	**1.68**	**306**	P	**Pn**	**00 25 38.8**	**+0.5**
MJAR	**Matsushiro Arr**	**2.95**	**258**	P	**Pn**	**00 25 56.0**	**+0.2**
19nm,0.3s,baz=42,slow=9.8,SNR=40
MJAR S **Sn 00 26 27.9 -2.6**
23nm,0.3s,baz=83,slow=17,SNR=5.6
MAJO Matsushiro 2.95 258 *d* iP **Pn 00 25 57.4 +1.6**
MAJO Matsushiro 2.95 258 *e*Pn **Pn 00 25 57.5 +1.6**
MAT Matsushiro 2.95 258 P **Pn 00 25 57.3 +1.5**
MAT S **Sn 00 26 34.3 +3.8**
JHJ Hachijo jima 2 4.42 202 P **Pn 00 26 18.3 +2.3**
87nm,0.3s,baz=50,slow=16,SNR=3.9
JHJ S **Sn 00 27 07.7 +0.9**
139nm,0.3s,baz=259,slow=24,SNR=5.8
ERM Erimo 4.89 12 *e*P **Pn 00 26 23.2 +0.8**
ASAJ Asahikawa 6.90 5 P **Pn 00 26 49.7 -0.4**
1.5nm,0.3s,baz=203,slow=13,SNR=4.3
YUK Yuzh-Kuril'sk 7.46 23 P **Pn 00 26 59.2 +1.5**
YUK *e*S **Sn 00 28 19.2 -2.4**
YUK pmax pmax
comp=Z,163nm,0.4s
YUK pmax pmax
comp=N,89nm,0.2s
YUK pmax pmax
comp=E,99nm,0.1s
SHO Shikotan 7.66 29 ⇑ *i*P **Pn 00 26 59.8 -0.6**
SHO *i* S **Sn 00 28 19.7 -6.7**
SHO pmax pmax
comp=Z,62nm,0.7s
SHO pmax pmax
comp=N,56nm,0.6s
MSHR Mys Shultsa 9.75 306 *ce*P **Pn 00 27 32.4 +3.3**
JNU Nakatsue 9.82 249 P **Pn 00 27 32.0 +1.9**
comp=N,0.4nm,0.3s,baz=110,slow=11,SNR=3.8
CBIJ Chichi jima 10.12 178 P **Pn 00 27 34.3 +0.2**
CBIJ S **Sn 00 29 21.3 -5.6**
JCJ Chichijima 10.12 178 P **Pn 00 27 34.3 +0.2**
comp=N,9.8nm,0.3s,baz=281,slow=22,SNR=5.9
JCJ S **Sn 00 29 21.3 -5.6**
comp=N,23nm,0.3s,baz=257,slow=22,SNR=5.9
USRK Ussuriysk Ar. 10.18 316 P **Pn 00 27 37.4 +2.4**
comp=N,0.5nm,0.3s,baz=130,slow=13,SNR=18
KSRS Korea Array 11.04 275 P **Pn 00 27 49.4 +2.7**
comp=N,0.3nm,0.3s,baz=91,slow=13,SNR=18
KSAR Wonju Array Be 11.07 275 P **Pn 00 27 49.4 +2.2**
KSAR Wonju Array Be 11.07 275 P **Pn 00 27 49.4 +2.2**
KLR Kul'dur 14.03 332 P **P 00 28 32.5 -2.7**
comp=N,0.2nm,0.3s,baz=125,slow=9.8,SNR=8.1
KLR Kul'dur 14.03 332 *e*P **P 00 28 35.0 -0.2**
YAK Yakutsk 25.94 347 ⇑ *e*P **P 00 30 41.3 +0.7**
YAK pmax pmax
comp=Z,9.0nm,0.5s
BOD Bodaibo 27.52 327 *e*P **P 00 30 53.8 -1.1**
BOD pmax pmax
comp=Z,4.0nm,0.9s
ENH Enshi 27.65 265 *e*P **P 00 30 55.5 -0.8**
comp=Z,3.6nm,0.3s
SONM Songino Array 27.92 304 P **P 00 30 58.7 -0.1**
comp=Z,3.0nm,0.7s,baz=100,slow=8.7,SNR=22
H11N2 WAKE ISLAND Hy 28.00 122 T T 01 00 36.7
baz=314,slow=75,SNR=145
H11N1 WAKE ISLAND Hy 28.00 122 T T 01 00 27.1
baz=314,slow=75,SNR=227
H11N3 WAKE ISLAND Hy 28.02 122 T T 01 00 27.7
baz=314,slow=75,SNR=157
H11S1 WAKE ISLAND Hy 28.72 124 T T 01 01 28.0
baz=316,slow=76,SNR=23
H11S3 WAKE ISLAND Hy 28.72 124 T T 01 01 31.0
baz=316,slow=76,SNR=12
H11S2 WAKE ISLAND Hy 28.74 124 T T 01 01 17.9
baz=316,slow=76,SNR=11
ZAK Zakamensk 30.38 308 *e*P **P 00 31 18.2 -2.3**
ZAK pmax pmax
comp=Z,2.0nm,1.4s
CMAR Chiang Mai Arr 41.84 255 P **P 00 32 58.5 -0.1**
comp=Z,0.9nm,0.4s,baz=41,slow=6.5,SNR=6.0
ZALV Zalesovo Beam 42.00 312 P **P 00 32 59.2 -0.2**
comp=Z,2.2nm,0.4s,baz=87,slow=7.6,SNR=14
ZALV PcP **PcP 00 34 54.3 +0.1**
comp=Z,0.7nm,0.4s,baz=100,slow=3.2,SNR=3.1
NVS Novosibirsk 42.92 314 *e*P **P 00 33 06.6 -0.3**
NVS pmax pmax
comp=Z,6.0nm,1.0s
NVS pmax pmax
comp=E,5.0nm,1.0s
MKAR Makanchi Array 44.26 302 P **P 00 33 17.6 -0.4**
comp=E,4.2nm,0.6s,baz=88,slow=9.7,SNR=46
KURK Kurchatov 46.04 308 *ce*P **P 00 33 31.5 -0.5**
KURK pmax pmax
comp=Z,13nm,1.0s
KURK Kurchatov 46.04 308 *e*P **P 00 33 31.2 -0.8**
comp=Z,24nm,0.8s
KDAK Kodiak Island 46.75 42 *i* P **P 00 33 39.4 +2.0**
KKN Kakani 47.96 276 *e*P **P 00 33 47.6 +0.1**
comp=Z,14nm,0.6s
PKIN Phulchoki 47.96 276 *e*P **P 00 33 47.2 -0.4**
GKN Gorkha 48.38 276 *e*P **P 00 33 50.4 -0.3**
comp=Z,43nm,1.0s
ILAR Eielson Array 49.17 32 P **P 00 33 57.5 +1.4**
comp=Z,1.1nm,0.7s,baz=266,slow=6.2,SNR=15
KOLN Koldanda 49.30 277 *e*P **P 00 33 57.8 0.0**
comp=Z,8.3nm,0.6s
PYUN Piuthan 49.64 277 *e*P **P 00 34 00.7 +0.3**
TKM2 Tokmak 2 49.80 298 *e*P **P 00 34 01.5 +0.1**
TKM2 pmax pmax
comp=Z,5.0nm,0.7s
TKM2 Tokmak 2 49.80 298 *e*P **P 00 34 01.5 +0.1**
comp=Z,4.5nm,0.7s
AAK Ala-Archa 50.66 298 *e*P **P 00 34 06.7 -1.2**
AAK pmax pmax
comp=Z,3.0nm,0.9s
BVAR Borovoye Array 50.66 312 P **P 00 34 07.3 -0.2**
comp=Z,1.6nm,0.5s,baz=69,slow=8.1,SNR=11
BRVK Borovoye 50.71 312 *ce*P **P 00 34 07.8 -0.1**
BRVK pmax pmax
comp=Z,3.0nm,1.2s
KKAR Karatay Array 53.28 300 *e*P **P 00 34 26.8 -0.5**
KKAR pmax pmax
comp=Z,4.0nm,0.9s
KKAR Karatay Array 53.28 300 *e*P **P 00 34 26.8 -0.5**
comp=Z,4.1nm,0.9s
INK Inuvik 54.07 27 P **P 00 34 33.9 +1.3**
comp=Z,1.6nm,0.9s,baz=295,slow=7.1,SNR=8.2
INK Inuvik 54.07 27 P **P 00 34 33.9 +1.3**
INK pmax pmax
comp=Z,1.0nm,0.6s
SVE Sverdlovsk 55.19 319 *e*P **P 00 34 41.3 +0.4**
SVE pmax pmax
comp=Z,11nm,0.9s
ARU Arti 56.41 319 *c i*P **P 00 34 49.1 -0.5**
ARU 00 36 52.8
ARU S **S 00 42 39.1 +0.3**
ARU SS **SS 00 46 25.1 -0.3**
ARU pmax pmax
comp=Z,14nm,1.7s
ARU Arti 56.41 319 *e*P **P 00 34 49.2 -0.5**
comp=Z,0.7nm,0.5s
ARU *e* 00 35 01.0
WRA Warramunga Arr 57.30 188 P **P 00 34 56.8 +0.5**
comp=Z,5.9nm,0.5s,baz=6.2,slow=7.5,SNR=24
ABKAR Akbulak array 58.04 310 *e*P **P 00 35 00.6 -0.7**
comp=Z,1.9nm,0.5s
ABKAR *e* 00 35 12.9
ASAR Alice Springs 61.03 188 P **P 00 35 22.8 +0.7**
comp=Z,2.2nm,0.8s,baz=13,slow=6.9,SNR=19
YKA Yellowknife Ar 63.48 30 P **P 00 35 39.0 +0.9**
comp=Z,0.5nm,0.7s,baz=301,slow=6.5,SNR=7.1
YKA Yellowknife Ar 63.48 30 P **P 00 35 39.0 +0.9**
YKA pmax pmax
comp=Z,1.0nm,0.7s
YKA Yellowknife Ar 63.48 30 P **P 00 35 39.0 +0.9**
ARCES ARCESS Array B 63.91 339 P **P 00 35 40.2 -0.6**
comp=Z,1.0nm,0.6s,baz=46,slow=8.7,SNR=5.8
STKA Stephens Creek 68.75 180 P **P 00 36 12.9 +0.8**
comp=Z,1.9nm,0.7s,baz=353,slow=7.5,SNR=3.4
FINES FINESS Array B 68.78 332 P **P 00 36 11.8 -0.2**
comp=Z,2.6nm,0.9s,baz=38,slow=9.6,SNR=5.8
FINES FINESS Array B 68.78 332 *i* P **P 00 36 12.1 0.0**
FINES pmax pmax
comp=Z,3.0nm,0.9s
KBZ Khabaz 71.00 311 P **P 00 36 26.1 +0.1**
comp=Z,2.2nm,0.8s,baz=33,slow=3.2,SNR=6.3
KIV Kislovodsk 71.00 311 *i* P **P 00 36 26.9 +0.7**
KIV *i* 00 36 35.5
KIV *i* 00 36 45.4
KIV pmax pmax
comp=Z,7.0nm,1.0s
NB2 NORSAR Subarra 74.12 337 P **P 00 36 44.2 -0.2**
comp=Z,1.9nm,0.7s,baz=41,slow=5.9
NOA NORSAR Array B 74.12 337 P **P 00 36 44.4 0.0**
comp=Z,1.0nm,0.7s,baz=41,slow=5.9,SNR=3.8
AKASG Malin Array Be 74.32 322 P **P 00 36 45.1 -0.6**
comp=Z,1.5nm,0.5s,baz=47,slow=6.4,SNR=7.0
AKASG Malin Array Be 74.32 322 *ce*P **P 00 36 45.0 -0.6**
AKASG pmax pmax
comp=Z,1.0nm,0.4s
KIEV Kiev 74.33 322 *e*P **P 00 36 45.6 -0.1**
KIEV pmax pmax
comp=Z,3.0nm,0.9s
NVAR Mina Array Bea 74.63 53 P **P 00 36 50.9 +2.9**
comp=Z,0.8nm,0.3s,baz=263,slow=6.0,SNR=5.5
SORM Soroca 76.42 321 ⇑ *i*P **P 00 36 57.3 -0.5**
PDAR Pinedale Array 77.31 46 P **P 00 37 04.5 +1.3**
comp=Z,0.4nm,0.6s,baz=318,slow=2.0,SNR=4.4
KWP Kalwaria Pacla 78.14 325 ⇓ *i*P **P 00 37 08.2 +0.8**
BURAR Bucovina Array 78.34 322 ⇓ *i*P **P 00 37 09.1 +0.4**
TESR Tescani 78.37 320 ⇑ *i*P **P 00 37 08.3 -0.5**
VRI Vrincioaia 78.77 320 ⇑ *i*P **P 00 37 12.4 +1.4**
BRTR Keskin Array B 78.94 312 P **P 00 37 11.9 -0.2**
comp=Z,0.4nm,0.6s,baz=83,slow=4.0,SNR=4.4
BRTR Keskin Array B 78.94 312 P **P 00 37 12.0 -0.2**
DOPR Dopca 79.38 321 ⇑ *i*P **P 00 37 16.1 +1.7**
MLR Muntele Rosu 79.42 320 ⇓ *i*P **P 00 37 13.6 -1.1**
VOIR 79.92 320 ⇑ *i*P P 00 37 29.1 +12
ARR Arges 80.18 320 ⇑ *i*P **P 00 37 20.3 +1.5**
MORC Moravsky Berou 80.35 327 ⇑ *i*P **P 00 37 20.5 +0.9**
VYHS Vyhne 80.73 326 *e*P **P 00 37 21.1 -0.5**
VYHS pmax pmax
comp=Z,1.0nm,1.1s
VYHS Vyhne 80.73 326 *e*P **P 00 37 21.1 -0.5**
BRG Berggiesshubel 81.03 330 *e*P **P 00 37 23.4 +0.3**
comp=Z,4.4nm,1.2s
BRG Berggiesshubel 81.03 330 *e*P **P 00 37 23.4 +0.3**
BRG pmax pmax
comp=Z,4.0nm,1.2s
CLL Collm 81.07 330 ⇓ *i*P **P 00 37 23.5 +0.2**
comp=Z,4.0nm,0.9s
CLL Collm 81.07 330 ⇓ *i*P **P 00 37 23.5 +0.2**
CLL pmax pmax
comp=Z,7.0nm,0.9s
MDVR Moldovita 82.06 322 ⇑ *i*P **P 00 37 25.1 -3.6**
GERES GERESS Array B 82.70 328 P **P 00 37 32.0 -0.1**
comp=Z,1.0nm,0.7s,baz=46,slow=5.8,SNR=10.0
PDG Podgorica 84.99 321 ⇑ *i*P **P 00 37 42.8 -1.0**
BFO Black Forest 85.27 331 *i* P **P 00 37 45.7 +0.6**
TXAR Lajitas Array 89.76 53 P **P 00 38 08.7 +1.5**
comp=Z,0.4nm,0.6s,baz=312,slow=4.1,SNR=6.5
TORD Torodi Ar. Bea 117.40 315 PKP **PKPdf 00 43 53.5 -1.0**
comp=Z,0.1nm,0.4s,baz=22,slow=2.1,SNR=6.7
LPAZ La Paz 146.34 60 PKPbc **PKPdf 00 44 49.8 +0.7**
comp=Z,0.8nm,0.5s,baz=342,slow=2.8,SNR=6.6

UPA 14 00:35:16.0, 7°.09N×81°.57W, h43km, MW3.1
INET 14 00:35:17.3, 6°.98N×78°.44W, h32km, MD3.9
CASC 14 00:35:13.0±9.5, 7°.13N×81°.50W, h92km±134km, MD3.7, Panama

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AZU	**Azuero**	**1.38**	**61**	*e*P	Pn	00 35 38.9	+1.5
AZU				*e*P	Pn	00 35 39.0	+1.6
AZU				*e*S	Sn	00 35 55.2	-0.7
AZU				*e*S	Sn	00 35 55.2	-0.6
TBS2		**2.01**	**325**	*e*P	Pn	00 35 45.9	+0.3
TBS2				*e*S	Sn	00 36 10.3	-0.2
BRU2	**Volcan**	**2.03**	**325**	*e*P	Pn	00 35 47.3	+1.5
BRU2				*e*P	Pn	00 35 47.6	+1.7
BRU2				*e*S	Sn	00 36 10.6	-0.3
BRU2				*e*S	Sn	00 36 11.0	+0.1
ZANG	**Zanguenga, Cho**	**2.43**	**42**	*e*P	Pn	00 35 53.8	+2.8
ZANG				*e*P	Pn	00 35 53.8	+2.8
ZANG				*e*S	Sn	00 36 18.8	-1.3
ZANG				*e*S	Sn	00 36 22.3	+2.2
ZANG				*e*S	Sn	00 36 22.4	+2.2
BCIP	**Isla Barro Col**	**2.61**	**39**	*e*P	Pn	00 35 56.0	+2.6
BCIP				*e*P	Pn	00 35 56.2	+2.8
BCIP				*e*S	Sn	00 36 26.4	+2.0

ISCJB 14 00:36:39.0±0.4, 60°.26N±0°.03×153°.70W±0°.08, h198km±3km, mb3.4/3, Error ellipse: s-maj=7.3km s-min=5.0km az=27.7
NEIC 14 00:36:39.8, 60°.22N×153°.67W, h204km, MG3.0(AEIC), After AEIC.
IDC 14 00:36:42.6±7.9, 60°.61N×154°.07W, h190km±63km, mb3.2/3, mb1 3.2/5, mb1mx2.9/49, mbtmp3.7/5, Error ellipse: s-maj=74.0km s-min=29.7km az=27.0
ISC 14 00:36:39.9±0.9, 60°.24N±0°.05×153°.67W±0°.05, h195km±6km, n70, σ0s66/77, mb3.6/3, Southern Alaska

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ILW	**Iliamna West**	**0.32**	**124**	P	**Pn**	**00 37 06.4**	**+0.2**
ILW				S	**Sn**	**00 37 26.6**	**+0.3**
IVE	**Iliamna Volcan**	**0.40**	**125**	P	**Pn**	**00 37 06.2**	**-0.1**
RDWB	**Redoubt West**	**0.48**	**59**	P	**Pn**	**00 37 06.6**	**+0.1**
RDWB				S	**Sn**	**00 37 26.4**	**-0.8**
NCT	**North Crescent**	**0.49**	**49**	P	**Pn**	**00 37 06.7**	**+0.2**
RDJH	**Redoubt Jeurge**	**0.55**	**50**	P	**Pn**	**00 37 07.2**	**+0.4**
RDJH				S	**Sn**	**00 37 27.2**	**-0.5**
OPT	**Oil Point**	**0.63**	**159**	P	**Pn**	**00 37 07.3**	**+0.2**
AUL	**Augustine Lava**	**0.87**	**172**	P	**Pn**	**00 37 08.6**	**+0.2**
AUL				S	**Sn**	**00 37 29.8**	**-0.4**
AUE	**Augustine Isla**	**0.90**	**170**	P	**Pn**	**00 37 08.6**	**+0.1**
AUSE	**Augustine SEas**	**0.92**	**171**	P	**Pn**	**00 37 08.6**	**0.0**
AUI	**Augustine Isla**	**0.92**	**172**	P	**Pn**	**00 37 08.7**	**+0.1**
MCNL	**McNeil River**	**1.11**	**198**	P	**Pn**	**00 37 09.8**	**-0.2**
CKL	**Chakachamna La**	**1.16**	**34**	P	**Pn**	**00 37 10.9**	**+0.5**
SPWE	**Spurr West**	**1.17**	**27**	P	**Pn**	**00 37 11.1**	**+0.7**
HOM	**Homer**	**1.18**	**119**	P	**Pn**	**00 37 10.8**	**+0.4**
SPCR	**Spurr Chakacha**	**1.20**	**36**	P	**Pn**	**00 37 10.9**	**+0.2**
SVW2	**Sparrevohn**	**1.27**	**313**	P	**Pn**	**00 37 11.1**	**-0.1**
SVW2				S	**Sn**	**00 37 34.3**	**-1.3**
CDD	**Cape Douglas**	**1.32**	**179**	P	**Pn**	**00 37 11.4**	**-0.3**
FOSS	**Fourpeaked Sta**	**1.45**	**181**	P	**Pn**	**00 37 12.4**	**-0.4**
BRLK	**Bradley Lake**	**1.48**	**108**	P	**Pn**	**00 37 13.6**	**+0.6**
FOPK	**Fourpeaked Vol**	**1.49**	**176**	P	**Pn**	**00 37 12.4**	**-0.8**
STLK	**Strandline Lak**	**1.55**	**35**	P	**Pn**	**00 37 13.7**	**+0.1**
SLKM	**Skilak Lake**	**1.73**	**80**	P	**Pn**	**00 37 15.1**	**-0.3**
FIB	**Fire Island**	**1.95**	**60**	P	**Pn**	**00 37 17.8**	**+0.3**
FIB				S	**Sn**	**00 37 47.7**	**+1.0**
KAKN	**Katmai Knife C**	**2.08**	**201**	P	**Pn**	**00 37 18.2**	**-0.8**
RC01	**Rabbit Creek A**	**2.11**	**65**	P	**Pn**	**00 37 18.7**	**-0.5**
RC01				S	**Sn**	**00 37 48.5**	**-1.3**
SEW	**Seward**	**2.11**	**92**	P	**Pn**	**00 37 19.6**	**+0.5**
KABR	**Katmai Barrier**	**2.22**	**198**	P	**Pn**	**00 37 19.5**	**-1.0**
CNTC	**Contact Creek**	**2.29**	**211**	P	**Pn**	**00 37 20.7**	**-0.6**
KDAK	**Kodiak Island**	**2.53**	**167**	P	Pn	00 37 37.2	+13
2.5nm,0.3s,baz=50,slow=8.2,SNR=18
KDAK S Sn 00 38 09.7 +12
16nm,0.3s,baz=96,slow=22,SNR=31
KDAK Kodiak Island 2.53 167 P **Pn 00 37 22.1 -1.7**
PMR Palmer 2.60 57 P **Pn 00 37 23.2 -1.3**
CUT Chulitna 2.72 36 P **Pn 00 37 25.4 -0.5**
PPLA Purkeypile 2.76 14 P **Pn 00 37 27.2 +0.7**
TT01 Tatalina 2.90 338 P **Pn 00 37 28.0 0.0**
TTA Tatalina 2.92 338 P **Pn 00 37 28.2 -0.1**
SML Sawmill 3.03 57 P **Pn 00 37 28.5 -1.1**
OHAK Old Harbor 3.04 176 P **Pn 00 37 27.9 -1.8**
CAST Castle Rocks 3.27 13 P **Pn 00 37 32.5 0.0**
HUR Hurricane 3.35 33 P **Pn 00 37 32.9 -0.5**
SCM Sheep Creek Mo 3.47 60 P **Pn 00 37 34.5 -0.4**
KTH Kantishna Hill 3.57 20 P **Pn 00 37 35.5 -0.6**
TRF Thorofare Moun 3.60 25 P **Pn 00 37 35.9 -0.6**
CHUM Lake Minchumin 3.71 9 P **Pn 00 37 37.8 +0.1**
VLZ Valdez 3.72 73 P **Pn 00 37 37.9 +0.1**
RND Reindeer 3.91 34 P **Pn 00 37 39.5 -0.8**
EYAK Cordova Ski Ar 3.94 82 P **Pn 00 37 40.9 +0.2**
DIV Divide 3.98 74 P **Pn 00 37 41.5 +0.2**
KLU Klutina 3.99 68 P **Pn 00 37 41.2 -0.2**
BPAW Bear Paw Mtn. 4.07 17 P **Pn 00 37 41.5 -0.8**
MCK McKinley 4.15 30 P **Pn 00 37 42.8 -0.5**
BWN Browne 4.41 25 P **Pn 00 37 46.6 +0.1**
BMRM Bremner River 4.53 77 P **Pn 00 37 48.4 +0.3**
PAX Paxson 4.78 52 P **Pn 00 37 51.6 +0.3**
WRH Wood River Hil 4.97 29 P **Pn 00 37 52.7 -1.0**
MLY Manley 4.99 14 P **Pn 00 37 53.2 -0.8**
CCB Clear Creek Bu 5.19 29 P **Pn 00 37 55.5 -0.9**
MDM Murphy Dome 5.36 26 P **Pn 00 37 57.8 -0.8**
MENT Mentasta 5.46 56 P **Pn 00 38 00.3 +0.3**
IL1 Eielson Array 5.52 32 P **Pn 00 38 00.0 -0.7**
ILAR Eielson Array 5.52 32 P **Pn 00 38 00.0 -0.7**
3.5nm,0.3s,baz=225,slow=12,SNR=150
ILAR S **Sn 00 39 04.2 -0.4**
0.7nm,0.3s,baz=217,slow=22,SNR=11
KIAG Kiagna River 5.62 78 P **Pn 00 38 02.4 +0.2**
DOT Dot Lake 5.67 49 P **Pn 00 38 02.9 +0.2**
IM3 Indian Mountai 5.76 360 P **Pn 00 38 04.2 +0.4**
EGAK Eagle 7.36 46 *e*Pn **Pn 00 38 24.4 -0.1**
BM3 Burnt Mountain 8.23 25 P **Pn 00 38 34.5 -1.4**
INK Inuvik 11.85 39 P **Pn 00 39 23.0 +3.0**
baz=234,slow=13
YKA Yellowknife Ar 18.66 66 P **Pn 00 40 44.9 -0.5**
0.0nm,0.3s,baz=284,slow=12,SNR=6.3
ZALV Zalesovo Beam 56.98 323 P **P 00 46 05.3 +0.9**
1.2nm,0.9s,baz=22,slow=4.7,SNR=4.0
BVAR Borovoye Array 61.70 332 P **P 00 46 37.6 +0.8**
0.6nm,0.5s,baz=21,slow=5.6,SNR=5.0
MKAR Makanchi Array 64.03 321 P **P 00 46 52.8 +0.4**
0.2nm,0.4s,baz=46,slow=6.9,SNR=3.1

BYKL 14 01:01:05.1±0.3, 53°.09N×108°.10E
*MOS 14 01:01:05.7±

ISC 14 01:01:04.5±0.7, 53.12N±0.02×108.15E±0.02, h10km, n25, σ2§27/63, 3C-1D, Lake Baykal region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OGRR	**Ongureny**	**0.62**	**328**	⇑*i*Pg	**Pb**	**01 01 17.2**	**-0.3**
OGRR				*e*Sg	**Sb**	**01 01 25.6**	**-0.7**
OGRR				*e*Sb	**Sn**	**01 01 31.8**	**+2.3**
OGRR				Pmax			
	65nm,0.2s						
OGRR				max			
	553nm,0.2s						
ZRHB	**Zarechye**	**0.83**	**227**	*e*Pg	**Pb**	**01 01 19.9**	**-1.0**
ZRHB				*e*Sg	**Sg**	**01 01 30.5**	**-0.7**
ZRHB				Pmax			
	116nm,0.1s						
ZRHB				Smax			
	1μm,0.3s						
SYVR	**Suvo**	**1.23**	**63**	*e*Pg	**Pg**	**01 01 28.2**	**0.0**
SYVR				⇑*i*Pb	**Pb**	**01 01 29.7**	**+1.8**
SYVR				*e*Sg	**Sn**	**01 01 45.2**	**+0.7**
SYVR				*e*Sb	**Sg**	**01 01 48.5**	**+4.3**
SYVR				max			
	157nm,0.2s						
SYVR				max			
	468nm,0.3s						
SYVR	**Suvo**	**1.23**	**63**	*e*PG	**Pg**	**01 01 28.1**	**-0.1**
SYVR				*e*		01 01 45.1	
SYVR				pmax	pmax		
	comp=Z,157nm,0.3s						
SYVR				smax	smax		
	comp=E,469nm,0.5s						
UUDB	**Ulan-Yde**	**1.29**	**194**	*e*Pg	**Pn**	**01 01 27.7**	**-0.8**
UUDB				*e*Pb	**Pg**	**01 01 29.8**	**+0.6**
UUDB				*e*Sg	**Sb**	**01 01 44.4**	**-1.0**
UUDB				*e*		01 01 48.5	
UUDB				max			
	comp=E,273nm,0.2s						
UUDB				max			
	comp=E,784nm,0.2s						
KAB	**Kabansk**	**1.41**	**221**	*e*Pg	**Pg**	**01 01 30.8**	**-0.6**
KAB				*e*Sg	**Sg**	**01 01 49.0**	**-0.7**
KAB				*e*Sb	**Sb**	**01 01 51.8**	**+3.0**
KAB				Pmax			
	comp=E,196nm,0.2s						
KAB				max			
	comp=E,1μm,0.3s						
KAB	**Kabansk**	**1.41**	**221**	*e*PG	**Pg**	**01 01 31.4**	**0.0**
KAB				*e*S	**Sg**	**01 01 49.6**	**-0.1**
KAB				smax	smax		
	comp=N,1μm,0.4s						
HRMR	**Khuramsha**	**1.66**	**207**	*e*Pg	**Pb**	**01 01 34.3**	**-0.9**
HRMR				*e*Sn	**Sb**	**01 01 56.0**	**-0.1**
HRMR				*e*Sg	**Sb**	**01 01 56.1**	**-0.1**
HRMR				Pmax			
	comp=N,417nm,0.2s						
HRMR				Smax			
	comp=N,3μm,0.2s						
LSTR	**Listvyanka**	**2.38**	**240**	*e*Pn	**Pn**	**01 01 44.0**	**+0.4**
LSTR				*e*Pg	**Pb**	**01 01 46.8**	**-0.7**
LSTR				*e*Sn	**Sb**	**01 02 13.8**	**-3.1**
LSTR				*e*Sg	**Sg**	**01 02 17.2**	**-3.8**
LSTR				Pmax			
	comp=N,14nm,0.1s						
LSTR				Smax			
	comp=N,101nm,0.3s						
YLYR	**Ulyunkhan**	**2.50**	**44**	⇓*i*Pn	**Pb**	**01 01 47.1**	**-2.5**
YLYR				*e*Pg	**Pg**	**01 01 50.2**	**-2.2**
YLYR				*e*Sg	**Sg**	**01 02 24.7**	**-0.2**
YLYR				Pmax			
	comp=N,27nm,0.4s						
YLYR				Smax			
	comp=N,97nm,0.4s						
YLYR	**Ulyunkhan**	**2.50**	**44**	*e*PN	**Pb**	**01 01 47.0**	**-2.5**
YLYR				*e*		01 01 50.2	
YLYR				*e*		01 02 24.7	
YLYR				pmax	pmax		
	comp=Z,32nm,0.5s						
YLYR				smax	smax		
	comp=N,156nm,1.3s						
IRK	**Irkutsk**	**2.52**	**251**	*e*PN	**Pb**	**01 01 50.1**	**+0.3**
IRK				*e*		01 02 21.4	
IRK				pmax	pmax		
	comp=Z,310nm,0.1s						
IRK				smax	smax		
	comp=N,617nm,0.5s						
TLY	**Talaya**	**3.11**	**244**	*e*Pn	**Pn**	**01 01 54.1**	**+0.5**
TLY				*e*Pg	**Pb**	**01 02 00.2**	**+0.3**
TLY				*e*Sn	**Sn**	**01 02 30.5**	**-0.4**
TLY				*e*Sg	**Sb**	**01 02 39.7**	**+1.8**
TLY				Pmax			
	comp=N,10.0nm,0.2s						
TLY				Smax			
	comp=N,89nm,0.3s						
TLY	**Talaya**	**3.11**	**244**	*c i*PN	**Pb**	**01 02 00.7**	**+0.8**
TLY				*e*		01 02 39.6	
TLY				pmax	pmax		
	comp=Z,10.0nm,0.3s						
KMO	**Kumora**	**3.30**	**31**	*e*Pn	**Pn**	**01 01 58.2**	**+2.0**
KMO				*e*Pg	**Pb**	**01 02 04.4**	**+1.4**
KMO				*e*Sg	**Sg**	**01 02 48.9**	**-1.4**
KMO				Pmax			
	comp=Z,17nm,0.3s						
KMO				Smax			
	comp=Z,77nm,0.8s						
ARS	**Arshan**	**3.70**	**253**	*e*Pn	**Pn**	**01 02 02.6**	**+0.9**
ARS				*e*Pg	**Pb**	**01 02 11.2**	**+1.3**
ARS				*e*Sg	**Sb**	**01 02 56.7**	**+1.9**
ARS				Pmax			
	comp=Z,41nm,0.3s						
ARS				Smax			
	comp=Z,280nm,0.5s						
ARS	**Arshan**	**3.70**	**253**	*e*PN	**Pn**	**01 02 02.7**	**+1.0**
ARS				*e*		01 02 11.3	
ARS				*e*		01 02 56.5	
ARS				pmax	pmax		
	comp=Z,40nm,0.4s						
ARS				smax	smax		
	comp=E,279nm,0.5s						
UKT	**Uakit**	**3.99**	**51**	*e*Pn	**Pn**	**01 02 08.4**	**+2.6**
UKT				*e*		01 02 16.1	
UKT				*e*Pg	**Pg**	**01 02 18.4**	**-2.5**
UKT				*e*Sg	**Sg**	**01 03 10.4**	**-2.2**
UKT				Pmax			
	comp=E,13nm,0.8s						
UKT				Smax			
	comp=E,34nm,0.5s						
ZAK	**Zakamensk**	**4.08**	**230**	*e*Pn	**Pn**	**01 02 07.8**	**+0.8**
ZAK				*e*Pg	**Pb**	**01 02 18.2**	**+1.8**
ZAK				*e*Sn	**Sn**	**01 02 54.2**	**-0.6**
ZAK				*e*Sg	**Sg**	**01 03 10.9**	**-4.5**
ZAK				Pmax			
	comp=E,5.0nm,0.2s						
ZAK				Smax			
	comp=E,28nm,0.3s						
KPC	**Khapcheranga**	**4.32**	**141**	*e*Pn	**Pn**	**01 02 10.5**	**+0.2**
KPC				*e*Pg	**Pb**	**01 02 21.5**	**+1.0**
KPC				*e*Sn	**Sn**	**01 03 00.1**	**-0.7**
KPC				*e*Sg	**Sb**	**01 03 17.7**	**+5.0**
KPC				Pmax			
	comp=E,8.0nm,0.3s						
KPC				Smax			
	comp=E,74nm,0.7s						
MOY	**Mondy**	**4.62**	**255**	*e*Pn	**Pn**	**01 02 16.5**	**+2.1**
MOY				*e*Pg	**Pb**	**01 02 25.9**	**+0.3**
MOY				*e*		01 03 12.2	
MOY				*e*Sg	**Sb**	**01 03 24.6**	**+3.3**
MOY				Pmax			
	comp=E,15nm,0.9s						
MOY				Smax			
	comp=E,67nm,1.0s						
ORL	**Orlik**	**5.09**	**267**	*e*Pn	**Pn**	**01 02 23.0**	**+2.1**
ORL				*e*Pg	**Pb**	**01 02 35.8**	**+2.1**
ORL				*e*		01 03 22.5	
ORL				*e*Sg	**Sg**	**01 03 42.2**	**-5.6**
ORL				Pmax			
	comp=E,8.0nm,0.6s						
ORL				Smax			
	comp=E,40nm,0.7s						
ORL	**Orlik**	**5.09**	**267**	*e*PN	**Pn**	**01 02 23.2**	**+2.3**
ORL				*e*		01 02 37.5	
ORL				*e*		01 03 42.2	
ORL				pmax	pmax		
	comp=Z,7.0nm,0.4s						
ORL				smax	smax		
	comp=N,40nm,0.8s						
BOD	**Bodaibo**	**5.77**	**33**	*e*Pg	Pb	01 02 49.4	+4.3
BOD				*e*Sg	**Sg**	**01 04 05.1**	**-4.4**
BOD				Pmax			
	comp=N,2.0nm,0.2s						
BOD				Smax			
	comp=N,23nm,1.5s						
TUP	**Tupik**	**7.12**	**75**	*e*Pn	**Pn**	**01 02 48.9**	**+0.3**
TUP				*e*Sg	**Sg**	**01 04 45.3**	**-7.5**
TUP				Smax			
	comp=N,26nm,0.4s						

*DJA **14** 01:13:15.3±0.3, 0.7N±3.3×12.6E±.7, h85km±18km, M4.8/10, mb5.0/9, mB5.1/8, MLv5.0/10, Mw(mB)4.5/8*
*ISCJB **14** 01:13:19.6±0.2, 0.18S±0.03×125.22E±0.03, h53km, mb4.8/88, MS4.4/2, Error ellipse: s-maj=5.0km s-min=4.0km az=18.8*
*IDC **14** 01:13:20.7±2.3, 0.15S×125.10E, h48km±22km, mb4.4/29, mb1 4.4/31, mb1mx4.3/42, mbtmp4.6/31, ML4.4/2, Error ellipse: s-maj=15.5km s-min=10.4km az=88.0*
*MOS **14** 01:13:21.6±1.0, 0.17S×125.25E, h74km, mb5.1/34, Error ellipse: s-maj=11.4km s-min=6.1km az=118.6*
*NEIC **14** 01:13:24.3±0.8, 0.25S×125.13E, h84km±7km, mb4.8/34, Error ellipse: s-maj=7.3km s-min=4.7km az=68.0*

ISC 14 01:13:21.4±0.3, 0.14S±0.05×125.23E±0.05, h53km, n202, σ1§40/205, mb4.8/88, 12C-4D, Southern Moluccа Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KMSI	**Cibinong**	**1.44**	**300**	P	**Pn**	**01 13 42.9**	**-2.3**
SANI	**Sanana**	**2.04**	**158**	P	**Pn**	**01 13 51.8**	**-1.5**
SANI				S	**Sn**	**01 14 20.3**	**+2.7**
LBMI	**Labuha**	**2.32**	**102**	P	Pn	01 13 48.4	-8.8
LUWI	**Luwuk**	**2.62**	**250**	P	**Pn**	**01 14 04.3**	**+3.1**
LUWI	**Luwuk**	**2.62**	**250**	*e*Pn	**Pn**	**01 14 03.4**	**+2.2**
LUWI				*e*Sn	**Sn**	**01 14 32.2**	**+0.4**
MRSI	**Marisa**	**3.35**	**281**	P	**Pn**	**01 14 08.4**	**-2.9**
NLAI	**Namlea**	**3.60**	**149**	P	**Pn**	**01 14 11.3**	**-3.4**
KDI	**Kendari**	**4.60**	**215**	P	**Pn**	**01 14 27.7**	**-0.8**
	54nm,1.0s,1μm0.2nm						
MSAI	**Masohi**	**4.88**	**131**	P	Pn	01 14 26.2	-6.1
PCI	**Palu**	**5.45**	**262**	P	**Pn**	**01 14 39.1**	**-1.0**
	536nm,0.9s,5μm2.6nm						
PCI	**Palu**	**5.45**	**262**	P	**Pn**	**01 14 43.9**	**+3.8**
PCI				pmax	pmax		
	comp=Z,536nm,0.9s						
SWI	**Sorong**	**6.07**	**97**	P	Pn	01 14 38.2	-10
	comp=Z,30nm,1.2s,comp=Z,1μmcomp=Z,0.1nm						
SWI	**Sorong**	**6.07**	**97**	P	**Pn**	**01 14 50.4**	**+1.8**
SWI				pmax	pmax		
	comp=Z,31nm,0.8s						
TTSI	**Tana Toraja**	**6.13**	**242**	P	**Pn**	**01 14 49.5**	**+0.1**
	comp=Z,221nm,0.6s,comp=Z,4μm						
SPSI	**Sidrap Palu**	**6.65**	**235**	P	**Pn**	**01 14 57.0**	**+0.4**
	comp=Z,278nm,0.6s,comp=Z,4μmcomp=Z,1.3nm						
KAPI	**Kappang**	**7.30**	**228**	P	**Pn**	**01 15 05.2**	**-0.3**
	comp=Z,16nm,0.3s,baz=50,slow=4.0,SNR=13						
KAPI				S	**Sn**	**01 16 25.1**	**-2.1**
	comp=Z,13nm,0.3s,baz=58,slow=21,SNR=6.0						
KAPI	**Kappang**	**7.30**	**228**	*e*Pn	**Pn**	**01 15 05.6**	**0.0**
KAPI				*e*Sn	**Sn**	**01 16 25.6**	**-1.6**
FAKI	**Fak Fak**	**7.54**	**112**	P	Pn	01 14 58.1	-11
	comp=Z,74nm,1.6s						
BSSI	**Bau Bau, Buton**	**7.61**	**218**	P	**Pn**	**01 15 10.6**	**+0.8**
MYLDM	**Lahad Datu**	**8.55**	**308**	*e*Pn	**Pn**	**01 15 25.6**	**+2.9**
SOEI	**Soe**	**9.60**	**186**	*e*Pn	**Pn**	**01 15 38.4**	**+1.3**
BBKI	**Banjar Baru**	**10.89**	**252**	P	Pn	01 16 06.1	+11
KKM	**Kota Kinabalu**	**10.90**	**304**	*e*Pn	**Pn**	**01 15 58.5**	**+3.6**
	comp=Z,13nm,0.6s						
JAGI	**Jajag, Banyuwa**	**13.79**	**233**	*e*Pn	**Pn**	**01 16 34.1**	**-0.2**
KSM	**Kuching**	**15.01**	**276**	*e*P	**P**	**01 16 54.9**	**+0.1**
NGJI	**Ngawi**	**15.49**	**242**	P	**P**	**01 17 04.3**	**+4.1**
SMRI	**Semarang**	**16.27**	**245**	*e*Pn	**P**	**01 17 10.7**	**+1.9**
	comp=Z,58nm,0.6s						
FITZ	**Fitzroy Crossi**	**17.85**	**179**	P	**P**	**01 17 26.6**	**+0.3**
	comp=Z,0.4nm,0.3s,baz=16,slow=10,SNR=7.2						
FITZ	**Fitzroy Crossi**	**17.85**	**179**	*e*P	**Pn**	**01 17 24.8**	**-1.3**
	comp=Z,7.9nm,0.8s						
LEM	**Lembang**	**18.78**	**249**	P	Pn	01 17 48.6	+11
CBJI	**Citeko**	**19.37**	**251**	P	**Pn**	**01 17 46.1**	**+1.6**
CGJI	**Cibinong**	**20.53**	**251**	P	Pn	01 17 58.4	+0.2
MBWA	**Marble Bar**	**21.57**	**194**	*e*P	**P**	**01 18 05.9**	**-0.8**
	comp=Z,154nm,1.3s						
WRAB	**Tennant Creek**	**21.60**	**156**	*c e*P	**P**	**01 18 05.6**	**-1.5**
WRAB				pmax	pmax		
	comp=Z,34nm,0.6s						
WRAB	**Tennant Creek**	**21.60**	**156**	*e*P	**P**	**01 18 05.0**	**-2.1**
	comp=Z,17nm,0.8s						
WRA	**Warramunga Arr**	**21.60**	**156**	P	**P**	**01 18 05.3**	**-1.8**
	comp=Z,14nm,0.7s,baz=338,slow=12,SNR=20						
COEN	**Coen**	**22.45**	**128**	*e*P	**P**	**01 18 16.6**	**+0.4**
	comp=Z,38nm,1.0s						
MNAI	**Manna**	**22.64**	**259**	*e*P	**P**	**01 18 17.9**	**-0.4**
TPUB	**Ta-pu**	**23.73**	**349**	*e*P	**P**	**01 18 29.0**	**+0.1**
	comp=Z,31nm,0.7s						
SSLB	**Suanglung**	**24.15**	**350**	*e*P	**P**	**01 18 34.1**	**+1.4**
	comp=Z,66nm,1.6s						
IPM	**Ipoh**	**24.61**	**281**	*e*P	**P**	**01 18 35.6**	**-1.5**
	comp=Z,12nm,0.6s						
ASAR	**Alice Springs**	**24.85**	**161**	P	**P**	**01 18 38.5**	**-0.6**
	comp=Z,6.9nm,0.9s,baz=324,slow=6.5,SNR=27						
ASAR				PcP	**PcP**	**01 22 13.8**	**-0.5**
	comp=Z,1.0nm,0.4s,baz=354,slow=2.2,SNR=8.4						
KULM	**Kulim**	**25.13**	**283**	*e*P	**P**	**01 18 40.9**	**-0.9**
	comp=Z,10nm,0.8s						
JOW	**Kunigami**	**26.98**	**6**	*e*P	**P**	**01 18 59.5**	**+1.2**
	comp=Z,35nm,0.6s						
CTA	**Charters Tower**	**28.57**	**135**	P	**P**	**01 19 13.1**	**+0.4**
	comp=Z,2.4nm,0.7s,baz=267,slow=11,SNR=3.1						
CTAO	**Charters Tower**	**28.57**	**135**	*e*P	**P**	**01 19 12.8**	**+0.1**
CTAO				pmax	pmax		
	comp=Z,134nm,1.5s						
CTAO	**Charters Tower**	**28.57**	**135**	*e*P	**P**	**01 19 12.8**	**+0.1**
	comp=Z,134nm,1.5s						
CBIJ	**Chichi jima**	**31.61**	**30**	P	**P**	**01 19 39.1**	**-0.4**
JCJ	**Chichijima**	**31.61**	**30**	P	**P**	**01 19 39.1**	**-0.4**
	comp=Z,78nm,0.7s,baz=278,slow=19,SNR=4.4						
CMAR	**Chiang Mai Arr**	**31.76**	**307**	P	**P**	**01 19 39.5**	**-1.4**
	comp=Z,1.2nm,0.4s,baz=136,slow=6.9,SNR=8.2						
CMAR				PcP	**PcP**	**01 22 31.8**	**+0.3**
	comp=Z,1.0nm,0.3s,baz=179,slow=2.3,SNR=6.2						
GYA	**Guiyang**	**31.93**	**327**	P	**P**	**01 19 44.3**	**+1.9**
GYA				pP	sP	01 20 03.6	+1.4
GYA				sP	pP	01 20 15.0	+19
GYA				PP	**PP**	**01 20 53.4**	**-2.0**
GYA				PcP	PcP	01 22 22.9	-9.0
GYA				S	**S**	**01 24 49.5**	**-0.6**
GYA				sS	sS	01 25 23.0	+10
GYA				ScP	**ScP**	**01 26 08.3**	**-2.8**
GYA	**Guiyang**	**31.93**	**327**	ScS	ScS	01 30 04.5	-5.4
GYA				pmax	pmax		
	comp=Z,20nm,0.8s						
GYA				pmax	pmax		
	comp=Z,120nm,5.0s						
GYA				LR	LR		
	comp=N,530nm,17.0s						
GYA				LR	LR		
	comp=E,480nm,17.6s						
GYA				LR	LR		
	comp=Z,460nm,17.4s						
CMMT	**Chiang Mai**	**31.95**	**308**	P	**P**	**01 19 42.5**	**-0.1**
	comp=Z,9.8nm,0.9s						
CHTO	**Chiang Mai**	**31.95**	**308**	P	**P**	**01 19 42.6**	**0.0**
	comp=Z,43nm,1.0s						
CHTO	**Chiang Mai**	**31.95**	**308**	*e*P	**P**	**01 19 42.5**	**0.0**
CHTO				pmax	pmax		
	comp=Z,7.0nm,0.7s						
CHTO	**Chiang Mai**	**31.95**	**308**	*e*P	**P**	**01 19 42.5**	**0.0**
	comp=Z,6.8nm,0.7s						
WHN	**Wuhan**	**32.23**	**342**	⇑P	**P**	**01 19 47.5**	**+2.8**
CMAI	**Chiengmai2**	**32.50**	**309**	P	**P**	**01 19 47.2**	**-0.3**
	comp=Z,9.2nm,0.9s						
KMI	**Kunming**	**33.23**	**321**	P	**P**	**01 19 57.1**	**+3.2**
KMI				pmax	pmax		
	comp=Z,6.0nm,0.5s						
KMI				pmax	pmax		
	comp=Z,150nm,11.2s						
JNU	**Nakatsue**	**33.51**	**9**	P	**P**	**01 19 59.1**	**+3.1**
	comp=Z,5.7nm,0.8s,baz=300,slow=5.0,SNR=4.3						
ENH	**Enshi**	**33.76**	**335**	*e*P	**P**	**01 19 58.2**	**0.0**
	comp=Z,7.9nm,0.4s						
STKA	**Stephens Creek**	**35.15**	**155**	P	**P**	**01 20 10.4**	**+0.2**
	comp=Z,6.5nm,0.7s,baz=326,slow=10.0,SNR=12						
CD2	**Chengdu**	**37.01**	**328**	P	**P**	**01 20 26.1**	**-0.1**
CD2				pmax	pmax		
	comp=Z,12nm,0.6s						
XAN	**Xi'an**	**37.29**	**337**	P	**P**	**01 20 29.0**	**+0.5**
XAN				pmax	pmax		
	comp=Z,12nm,0.8s						
KSAR	**Wonju Array Be**	**37.48**	**3**	P	**P**	**01 20 29.9**	**-0.1**
KSAR	**Wonju Array Be**	**37.48**	**3**	P	**P**	**01 20 29.9**	**-0.1**
KSRS	**Korea Array**	**37.49**	**4**	P	**P**	**01 20 29.9**	**-0.2**
	comp=Z,3.1nm,0.6s,baz=181,slow=9.9,SNR=12						
MAJO	**Matsushiro**	**38.44**	**17**	*e*P	**P**	**01 20 38.3**	**+0.2**
MAJO				pmax	pmax		
	comp=Z,21nm,0.8s						
MAJO	**Matsushiro**	**38.44**	**17**	*e*P	**P**	**01 20 38.3**	**+0.2**
	comp=Z,21nm,0.8s						
MAT	**Matsushiro**	**38.44**	**17**	P	**P**	**01 20 37.8**	**-0.3**
MJAR	**Matsushiro Arr**	**38.44**	**17**	P	**P**	**01 20 37.8**	**-0.3**
	comp=Z,6.0nm,0.6s,baz=187,slow=8.5,SNR=19						
LZH	**Lanzhou**	**41.17**	**333**	*e*P	**P**	**01 21 02.5**	**+1.5**
LZH				pP	sP	01 21 22.5	+1.4
LZH				sP	pP	01 21 32.6	+18
LZH				PP	**PnPn**	**01 22 42.8**	**+1.1**
LZH				pmax	pmax		
	comp=Z,25nm,1.1s						
LZH				pmax	pmax		
	comp=Z,97nm,6.5s						
LZH				LR	LR		
	comp=N,400nm,14.2s						
LZH				LR	LR		
	comp=E,370nm,14.5s						
LZH				LR	LR		
	comp=Z,420nm,18.2s						
HHC	**Hu-ho-hao-te**	**42.65**	**345**	*e*P	**P**	**01 21 15.9**	**+3.0**
HHC				pmax	pmax		
	comp=Z,31nm,1.0s						
HHC				pmax	pmax		
	comp=Z,160nm,5.4s						
CN2	**Changchun**	**43.75**	**0**	*e*P	**P**	**01 21 26.1**	**+4.5**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
USRK	**Ussuriysk Ar.**	**44.56**	**7**	P	**P**	**01 21 28.9**	**+0.8**
	comp=Z,8.7nm,0.7s,baz=180,slow=6.2,SNR=22						
MDJ	**Mudanjiang**	**44.74**	**4**	P	**P**	**01 21 30.8**	**+1.3**
MDJ				pmax	pmax		
	comp=Z,13nm,0.6s						
MDJ				pmax	pmax		
	comp=Z,250nm,11.3s						
GTA	**Gaotai**	**45.72**	**332**	*e*P	**P**	**01 21 37.9**	**+0.3**
GTA				pP	sP	01 21 56.3	-1.5
GTA				sP	pP	01 22 04.9	+13
GTA				pmax	pmax		
	comp=Z,12nm,0.7s						
ASAJ	**Asahikawa**	**46.71**	**17**	P	**P**	**01 21 46.0**	**+0.9**
	comp=Z,4.6nm,0.6s,baz=227,slow=10,SNR=5.2						
PKIN	**Phulchoki**	**47.12**	**309**	*e*P	**P**	**01 21 48.6**	**-0.3**
	comp=Z,10.0nm,0.5s						
KKN	**Kakani**	**47.31**	**309**	*e*P	**P**	**01 21 50.5**	**+0.1**
	comp=Z,16nm,0.3s						
GKN	**Gorkha**	**47.91**	**309**	*e*P	**P**	**01 21 54.6**	**-0.3**
	comp=Z,17nm,0.5s						
KOLN	**Koldanda**	**48.61**	**308**	*e*P	**P**	**01 21 59.5**	**-0.9**
	comp=Z,55nm,0.6s						
PYUN	**Piuthan**	**49.24**	**308**	*e*P	**P**	**01 22 04.1**	**-1.1**
	comp=Z,63nm,0.5s						
KLR	**Kul'dur**	**49.50**	**6**	P	**P**	**01 22 06.9**	**+0.3**
	comp=Z,8.3nm,0.7s,baz=196,slow=6.4,SNR=25						
KLR	**Kul'dur**	**49.50**	**6**	*e*P	**P**	**01 22 07.2**	**+0.6**
ULN	**Ulaanbaatar**	**50.37**	**344**	*e*P	**P**	**01 22 14.8**	**+1.5**
ULN				pmax	pmax		
	comp=Z,5.0nm,0.8s						
ULN	**Ulaanbaatar**	**50.37**	**344**	*e*P	**P**	**01 22 14.8**	**+1.5**
	comp=Z,5.5nm,0.8s						
SONM	**Songino Array**	**50.52**	**344**	P	**P**	**01 22 13.9**	**-0.6**
	comp=Z,5.5nm,0.7s,baz=156,slow=8.8,SNR=18						
ZAK	**Zakamensk**	**53.71**	**343**	*e*P	**P**	**01 22 38.0**	**-0.1**
ZAK				pmax	pmax		
	comp=Z,2.0nm,0.9s						
NKL	**Nikolayevsk**	**54.65**	**11**	*e*P	**P**	**01 22 45.4**	**+0.7**
TLY	**Talaya**	**54.76**	**344**	*e*P	**P**	**01 22 48.2**	**+2.6**
TLY				pmax	pmax		
	comp=Z,6.0nm,0.9s						
WMQ	**Urumqi**	**55.09**	**327**	P	**P**	**01 22 49.0**	**+0.8**
WMQ				pmax	pmax		
	comp=Z,6.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,65nm,6.4s						
MOY	**Mondy**	**55.53**	**342**	*e*P	**P**	**01 22 51.3**	**0.0**
BOD	**Bodaibo**	**58.48**	**353**	*e*P	**P**	**01 23 11.8**	**-0.1**
BOD				pmax	pmax		
	comp=Z,17nm,0.8s						
PETK	**Petropavlovsk-**	**59.56**	**22**	P	**P**	**01 23 21.1**	**+1.6**
	comp=Z,16nm,0.7s,baz=189,slow=5.0,SNR=15						
KSH	**Kashi**	**59.78**	**317**	P	**P**	**01 23 22.6**	**+1.2**
KSH				*e*sP	sP	01 23 50.6	+8.6
KSH				*e*PcP	**PcP**	**01 24 09.3**	**+1.6**
KSH				S	**S**	**01 31 23.5**	**-5.6**
KSH				pmax	pmax		
	comp=Z,8.0nm,0.9s						
KSH				pmax	pmax		
	comp=Z,82nm,6.0s						
KSH				LR	LR		
	comp=N,100nm,5.4s						
KSH				LR	LR		
	comp=E,110nm,5.2s						
KSH				LR	LR		
	comp=Z,150nm,6.7s						
MKAR	**Makanchi Array**	**59.92**	**327**	P	**P**	**01 23 20.9**	**-1.3**
	comp=Z,6.8nm,0.3s,baz=122,slow=9.0,SNR=63						
MKAR	**Makanchi Array**	**59.92**	**327**	*e*P	**P**	**01 23 21.1**	**-1.0**
MAKZ	**Makanchi**	**60.10**	**327**	*e*P	**P**	**01 23 22.5**	**-0.8**
MAKZ				pmax	pmax		
	comp=Z,10.0nm,0.5s						
MAKZ	**Makanchi**	**60.10**	**327**	*e*P	**P**	**01 23 22.5**	**-0.8**
	comp=Z,10nm,0.5s						
TKM2	**Tokmak 2**	**61.70**	**321**	*e*P	**P**	**01 23 35.5**	**+1.0**
TKM2				pmax	pmax		
	comp=Z,14nm,0.6s						
TKM2	**Tokmak 2**	**61.70**	**321**	*e*P	**P**	**01 23 35.5**	**+1.0**
	comp=Z,14nm,0.6s						
YAK	**Yakutsk**	**62.11**	**2**	P	**P**	**01 23 36.4**	**-0.1**
	comp=Z,32nm,0.5s,baz=224,slow=1.2,SNR=6.3						
YAK	**Yakutsk**	**62.11**	**2**	*e*P	**P**	**01 23 36.7**	**+0.2**
YAK				pmax	pmax		
	comp=Z,23nm,0.9s						
YAK				pmax	pmax		
	comp=E,2.0nm,0.8s						
YAK				pmax	pmax		
	comp=N,8.0nm,1.1s						
YAK	**Yakutsk**	**62.11**	**2**	*e*P	**P**	**01 23 37.1**	**+0.6**
	comp=N,34nm,0.6s						
AAK	**Ala-Archa**	**62.27**	**320**	*e*P	**P**	**01 23 38.0**	**-0.3**
AAK				pmax	pmax		
	comp=Z,12nm,0.8s						
AAK	**Ala-Archa**	**62.27**	**320**	*e*P	**P**	**01 23 38.2**	**0.0**
	comp=Z,5.4nm,0.7s						
EKS2	**Erkin-Say**	**62.74**	**320**	*e*P	**P**	**01 23 41.0**	**-0.4**

BRVK pmax pmax
comp=Z,13nm,1.2s
BRVK Borovoye 69.84 328 *e*P **P 01 24 25.1 -1.3**
comp=Z,7.8nm,0.6s
ZRNK Zerenda 70.47 328 *e*P **P 01 24 29.2 -1.1**
ZRNK pmax pmax
comp=Z,16nm,0.6s
ZRNK Zerenda 70.47 328 *e*P **P 01 24 29.2 -1.1**
comp=Z,16nm,0.6s
TIXI Tiksi 71.72 1 *e*P **P 01 24 37.5 +0.1**
TIXI pmax pmax
comp=Z,5.0nm,0.8s
TIXI Tiksi 71.72 1 *e*P **P 01 24 36.6 -0.8**
comp=Z,8.0nm,0.8s
GEYT Alibeck 72.18 310 P **P 01 24 40.6 -0.4**
comp=Z,2.9nm,0.7s,baz=145,slow=5.4,SNR=6.7
NRIK Noril'sk 73.83 347 P **P 01 24 50.3 +0.3**
comp=Z,23nm,0.7s,baz=129,slow=6.0,SNR=36
ABKAR Akbulak array 74.22 322 *e*P **P 01 24 51.6 -1.1**
comp=Z,5.9nm,0.6s
SVE Sverdlovsk 76.48 329 *e*P **P 01 25 04.6 -0.9**
SVE pmax pmax
comp=Z,15nm,0.7s
ARU Arti 77.41 328*c i*P **P 01 25 11.0 +0.2**
ARU *PP **sP 01 25 31.4 -0.4**
ARU 01 28 10.8
ARU S **S 01 34 56.5 -0.8**
ARU pmax pmax
comp=Z,8.0nm,0.6s
ARU Arti 77.41 328 *e*P **P 01 25 09.2 -1.6**
comp=Z,9.9nm,0.8s
OPO Ambohidratompo 78.62 251 P **P 01 25 18.2 -0.3**
comp=Z,4.1nm,0.7s,baz=113,slow=6.2,SNR=6.2
VNDA Vanda 79.80 172 P **P 01 25 23.9 +0.3**
comp=Z,0.4nm,0.6s,baz=308,slow=7.5,SNR=4.5
GNI Garni 82.82 310 *e*P **P 01 25 38.7 -1.9**
GNI pmax pmax
comp=Z,46nm,0.8s
GNI Garni 82.82 310 *e*P **P 01 25 38.7 -1.9**
comp=Z,46nm,0.8s
ZEI Tsey 83.73 313 *e*P **P 01 25 44.5 -0.7**
ZEI pmax pmax
comp=Z,19nm,0.7s
AKH Akhalkalaki 83.89 312⇑*i*P **P 01 25 46.6 +0.6**
KBZ Khabaz 84.55 314 P **P 01 25 48.5 -0.5**
comp=Z,4.1nm,0.9s,baz=178,slow=4.1,SNR=8.4
KIV Kislovodsk 84.72 314 *i*P **P 01 25 51.2 +1.1**
KIV pmax pmax
comp=Z,4.0nm,0.8s
TTA Tatalina 85.01 27 *e*P **P 01 25 52.8 +1.7**
TTA pmax pmax
comp=Z,3.0nm,0.6s
TTA Tatalina 85.01 27 *e*P **P 01 25 52.8 +1.7**
comp=Z,3.3nm,0.6s
CHVG Ch'k'valeri 85.05 313⇑*i*P **P 01 25 53.3 +1.6**
MZRK Al-Mazaregh 85.68 306 *e*P **P 01 25 55.2 +0.2**
KBSD Kabsdagh 85.84 307 *e*P **P 01 25 55.2 -0.5**
KDAK Kodiak Island 85.94 32 *i*P **P 01 25 57.4 +1.7**
VRH Novokhopyorsk 86.03 321 *e*P **P 01 25 55.7 -0.6**
VRH pmax pmax
comp=Z,20nm,0.7s
SFNV Sufian 86.15 306 *e*P **P 01 25 56.8 -0.5**
BPAW Bear Paw Mtn. 87.40 26 *e*P **P 01 26 03.0 +0.2**
MLY Manley 87.60 25 *e*P **P 01 26 04.8 +1.0**
VSR Storozhevoye 87.64 321 *e*P **P 01 26 02.8 -1.3**
VSR pmax pmax
comp=Z,10.0nm,1.4s
LPSR Galich'ya Gora 87.86 322 *e*P **P 01 26 04.5 -0.6**
LPSR pmax pmax
comp=Z,10.0nm,0.8s
SLMH Al Salmeh 87.90 306 *e*P **P 01 26 02.2 -3.6**
KMBO Kilima Mbogo 87.98 269 *e*P **P 01 26 05.7 -1.2**
KMBO pmax pmax
comp=Z,4.0nm,1.1s
KMBO Kilima Mbogo 87.98 269 *e*P **P 01 26 05.7 -1.2**
comp=Z,4.5nm,1.1s
KLMR Klimovskoe 88.03 331 *e*P **P 01 26 03.7 -2.1**
KLMR *e* 01 29 30.1
KLMR pmax pmax
comp=Z,9.0nm,0.8s
MCK McKinley 88.28 26 *e*P **P 01 26 06.8 -0.1**
MCK pmax pmax
comp=Z,2.0nm,0.7s
MCK McKinley 88.28 26 *e*P **P 01 26 06.8 -0.1**
comp=Z,2.3nm,0.7s
RND Reindeer 88.29 27 *e*P **P 01 26 07.0 -0.1**
RND Reindeer 88.29 27 *e*P **P 01 26 07.0 -0.1**
ZALF Zalf 88.31 303 *e*P **P 01 26 07.9 +0.1**
ANN Anapa 88.53 315 *e*P **P 01 26 07.4 -1.1**
ANN pmax pmax
comp=Z,31nm,0.7s
SALA Sala 88.81 303 *e*P **P 01 26 10.8 +0.4**
DRWC Darouich 88.93 306 *e*P **P 01 26 09.5 -1.2**
HAWK Haweek 89.11 304 *e*P **P 01 26 10.8 -0.8**
WRDH Warideh 89.12 305 *e*P **P 01 26 10.4 -1.2**
ILAR Eielson Array 89.22 25 P **P 01 26 10.6 -0.8**
comp=Z,0.8nm,0.6s,baz=244,slow=5.0,SNR=17
OBN Obninsk 89.35 325 *i*P **P 01 26 09.3 -2.8**
OBN pmax pmax
comp=Z,14nm,0.8s
DOT Dot Lake 90.44 27 *e*P **P 01 26 17.8 +0.7**
comp=Z,9.6nm,0.8s
MENT Mentasta 90.61 27 *e*P **P 01 26 18.2 +0.3**
SIM Simferopol' 90.89 315 *e*P **P 01 26 19.1 -0.5**
SIM pmax pmax
comp=Z,8.0nm,0.9s
SIM pmax pmax
comp=N,300nm,22.0s
BRTR Keskin Array B 91.32 310 P **P 01 26 20.8 -1.1**
comp=N,1.5nm,0.8s,baz=136,slow=4.3,SNR=12
CSS Mathiatis 91.64 305 *e*P **P 01 26 21.8 -1.5**
comp=N,3.2nm,0.8s
ARCES ARCESS Array B 93.54 340 P **P 01 26 30.8 -0.5**
comp=N,1.8nm,0.6s,baz=85,slow=4.0,SNR=13
AKASG Malin Array Be 93.93 321 P **P 01 26 31.9 -1.5**
comp=N,0.6nm,0.5s,baz=71,slow=5.0,SNR=5.5
AKASG Malin Array Be 93.93 321 *i*P **P 01 26 31.8 -1.6**
AKASG pmax pmax
comp=Z,1.0nm,0.6s
INK Inuvik 94.29 21 P **P 01 26 35.0 +0.3**
comp=Z,1.9nm,0.6s,baz=303,slow=4.7,SNR=12
INK Inuvik 94.29 21 *e*P **P 01 26 34.6 -0.1**
INK pmax pmax
comp=Z,2.0nm,0.7s
INK Inuvik 94.29 21 *e*P **P 01 26 34.6 -0.1**
comp=Z,2.1nm,0.7s
FINES FINESS Array B 94.51 332 P **P 01 26 34.5 -1.4**
comp=Z,1.6nm,0.8s,baz=61,slow=3.9,SNR=7.5
FINES FINESS Array B 94.51 332 *i*P **P 01 26 37.7 +1.8**
FINES pmax pmax
comp=Z,4.0nm,1.0s
SORM Soroca 94.71 318⇑*i*P **P 01 26 35.8 -1.3**
CFR Carcaliu 95.11 315⇓*i*P **P 01 26 38.0 -1.0**
TESR Tescani 96.02 317⇓*i*P **P 01 26 42.9 -0.2**
VRI Vrincioaia 96.03 316⇑*i*P **P 01 26 43.4 +0.2**
MLR Muntele Rosu 96.62 316⇑*i*P **P 01 26 45.3 -0.8**
MLR Muntele Rosu 96.62 316 *e*P **P 01 26 45.5 -0.5**
MLR Muntele Rosu 96.62 316 *e*P **P 01 26 45.5 -0.5**
LSZ Lusaka 96.76 255 P **P 01 26 46.7 -0.5**
comp=Z,1.9nm,0.7s,baz=84,slow=4.1,SNR=5.5
BURAR Bucovina Array 96.86 318⇑*i*P **P 01 26 44.5 -2.6**
KWP Kalwaria Pacla 98.22 320⇓*i*P Pdif 01 26 52.9 -0.1
KOLS Kolonicke sedl 98.61 319 *e*P Pdif 01 26 55.0 +0.2
KOLS pmax pmax
comp=Z,3.0nm,1.1s
KOLS Kolonicke sedl 98.61 319 *e*P Pdif 01 26 55.0 +0.2
CRVS Cervenica-Dubn 99.14 320 *e*P **Pdif 01 26 57.4 +0.2**
CRVS Cervenica-Dubn 99.14 320 *e*P **Pdif 01 26 57.4 +0.2**
STHS Stebnicka Huta 99.19 320 *e*P **Pdif 01 26 57.6 +0.2**
STHS pmax pmax
comp=Z,2.0nm,0.7s
STHS Stebnicka Huta 99.19 320 *e*P **Pdif 01 26 57.6 +0.2**
MDVR Moldovita 99.69 315⇓*i*P **Pdif 01 26 59.3 -0.4**
PDG Podgorica 101.86 313⇑*i*P **Pdif 01 27 08.5 -0.8**
YKA Yellowknife Ar 103.62 24 Pdiff **Pdif 01 27 17.4 +0.7**
comp=Z,0.4nm,0.9s,baz=311,slow=4.1,SNR=5.1
TORD Torodi Ar. Bea 122.60 285 PKP **PKPdf 01 32 12.1 -0.2**
comp=Z,1.5nm,0.6s,baz=82,slow=1.8,SNR=26
SCHQ Schefferville 124.60 8 PKP **PKPdf 01 32 15.8 +0.9**
comp=Z,2.0nm,0.5s,baz=18,slow=3.2,SNR=4.0
TXAR Lajitas Array 125.12 54 PKP **PKPdf 01 32 17.6 +0.8**
comp=Z,0.3nm,0.8s,baz=229,slow=1.3,SNR=4.5

ISCJB ***14*** *01:19:32.8±0.4, 0.°08S±0.°03×124.°97E±0.°02, h66km±4km, mb4.8/104, Error ellipse: s-maj=4.9km s-min=3.9km az=27.1*
MOS ***14*** *01:19:33.8±1.5, 0.°02N×124.°92E, h72km, mb5.3/40, Error ellipse: s-maj=10.2km s-min=6.2km az=115.3*
KLM ***14*** *01:19:34.0, 0.°16S×125.°18E, h81km, mb4.8, MS5.7*
IDC ***14*** *01:19:33.9±1.4, 0.°10S×124.°85E, h60km±12km, mb4.5/29, mb1 4.5/32, mb1mx4.5/43, mbtmp4.8/32, MS3.8/4, Ms1 3.8/4, ms1mx3.3/39, Error ellipse: s-maj=11.8km s-min=7.3km az=77.0*
DJA ***14*** *01:19:34.1±0.2, 0.°N±2.°×12.°5E±.°, h42km±4km, M5.0/36, mb5.0/36, mB5.4/15, MLv5.2/15, Mw(mB)4.9/15*
NEIC ***14*** *01:19:35.9±0.8, 0.°12S×124.°86E, h80km±7km, mb4.9/43, Error ellipse: s-maj=6.7km s-min=4.4km az=65.0*
ISC 14 01:19:34.7±0.5, 0.°06S±0.°04×124.°92E±0.°04, h68km±4km**, n260,** σ1°**55**/281**, mb4.9**/104**, 21C-7D, Southern Molucca Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KMSI	**Cibinong**	**1.13**	**304**	P	**Pn**	**01 19 52.4**	**-2.3**
KMSI				S	**Sn**	**01 20 11.2**	**+1.5**
SANI	**Sanana**	**2.25**	**152**	P	**Pn**	**01 20 08.1**	**-1.6**
SANI				S	**Sn**	**01 20 37.3**	**+0.9**
LUWI	**Luwuk**	**2.35**	**246**	P	**Pn**	**01 20 11.3**	**+0.2**
LUWI	**Luwuk**	**2.35**	**246**	*e*Pn	**Pn**	**01 20 11.9**	**+0.8**
LUWI				*e*Sn	**Sn**	**01 20 37.9**	**-1.1**
LBMI	**Labuha**	**2.65**	**103**	P	**Pn**	**01 20 12.4**	**-2.7**
MRSI	**Marisa**	**3.02**	**280**	P	**Pn**	**01 20 18.2**	**-2.0**
SGSI	**Sangihe**	**3.77**	**9**	P	**Pn**	**01 20 27.5**	**-2.9**
NLAI	**Namlea**	**3.84**	**145**	P	Pn	01 20 28.0	-3.3
KDI	**Kendari**	**4.50**	**211**	P	**Pn**	**01 20 38.7**	**-1.7**
PCI	**Palu**	**5.15**	**261**	P	**Pn**	**01 20 48.9**	**-0.4**
	1μm,1.0s,9μm5.3nm						
PCI	**Palu**	**5.15**	**261**	P	Pn	01 20 54.1	+4.8
PCI				pmax	pmax		
	comp=Z,1μm,1.0s						
MSAI	**Masohi**	**5.17**	**129**	P	**Pn**	**01 20 48.2**	**-1.4**
	comp=Z,218nm,0.7s,comp=Z,2μmcomp=Z,0.7nm						
TTSI	**Tana Toraja**	**5.89**	**240**	P	**Pn**	**01 21 00.4**	**+0.9**
	comp=Z,501nm,0.7s,comp=Z,5μmcomp=Z,2.1nm						
SWI	**Sorong**	**6.39**	**97**	P	**Pn**	**01 21 05.1**	**-1.2**
	comp=Z,82nm,1.2s,comp=Z,1μmcomp=Z,0.4nm						
SWI	**Sorong**	**6.39**	**97**	P	**Pn**	**01 21 06.0**	**-0.3**
SWI				pmax	pmax		
	comp=Z,57nm,1.0s						
SIJI	**Sorong**	**6.40**	**97**	P	**Pn**	**01 21 06.5**	**+0.1**
	comp=Z,23nm,0.3s,baz=119,slow=5.6,SNR=2.8						
SIJI				S	**Sn**	**01 22 20.3**	**+2.1**
	comp=Z,26nm,0.3s,baz=196,slow=15,SNR=1.9						
SPSI	**Sidrap Palu**	**6.44**	**233**	P	**Pn**	**01 21 08.2**	**+1.3**
	comp=Z,240nm,0.9s,comp=Z,3μmcomp=Z,0.8nm						
BNDI	**Bandanaira**	**6.67**	**132**	P	**Pn**	**01 21 07.2**	**-2.9**
	comp=Z,687nm,1.1s,comp=Z,2.9nm						
KAPI	**Kappang**	**7.13**	**226**	P	**Pn**	**01 21 16.3**	**0.0**
	comp=Z,8.9nm,0.3s,baz=142,slow=2.3,SNR=10						
KAPI				S	**Sn**	**01 22 34.1**	**-1.9**
	comp=Z,4.8nm,0.3s,baz=29,slow=23,SNR=2.8						
KAPI	**Kappang**	**7.13**	**226**	*e*Pn	**Pn**	**01 21 17.1**	**+0.8**
KAPI				*e*Sn	**Sn**	**01 22 33.0**	**-2.9**
BSSI	**Bau Bau, Buton**	**7.48**	**216**	P	**Pn**	**01 21 21.3**	**+0.1**
	comp=Z,104nm,0.9s,comp=Z,1μmcomp=Z,0.5nm						
FAKI	**Fak Fak**	**7.86**	**111**	P	**Pn**	**01 21 23.4**	**-3.0**
MYLDM	**Lahad Datu**	**8.26**	**309**	⇑P	**Pn**	**01 21 34.4**	**+2.5**
MYLDM	**Lahad Datu**	**8.26**	**309**	*e*Pn	**Pn**	**01 21 34.3**	**+2.5**
TSM	**Tawau**	**8.26**	**302**	⇑P	**Pn**	**01 21 32.0**	**+0.1**
MMRI	**Maumere**	**8.93**	**197**	P	**Pn**	**01 21 40.4**	**-0.6**
SDKM	**Sandakan**	**9.57**	**306**	⇓P	**Pn**	**01 21 52.4**	**+2.7**
SOEI	**Soe**	**9.65**	**184**	P	**Pn**	**01 21 50.4**	**-0.6**
SOEI	**Soe**	**9.65**	**184**	*e*Pn	Pn	01 21 55.4	+4.4
MTKI	**Muara Teweh, K**	**10.06**	**265**	P	**Pn**	**01 21 56.9**	**+0.5**
KKM	**Kota Kinabalu**	**10.59**	**305**	⇑P	Pn	01 22 08.8	+4.9
KKM	**Kota Kinabalu**	**10.59**	**305**	*e*Pn	**Pn**	**01 22 05.7**	**+1.9**
BBKI	**Banjar Baru**	**10.62**	**251**	P	**Pn**	**01 22 04.8**	**+0.7**
KDM	**Kudat**	**10.63**	**311**	⇓P	Pn	01 22 10.1	+5.8
SBUM	**Sibu**	**12.94**	**281**	⇓P	**Pn**	**01 22 37.8**	**+2.1**
SBUM	**Sibu**	**12.94**	**281**	*e*Pn	**Pn**	**01 22 36.5**	**+0.8**
STKI	**Sintang**	**13.44**	**271**	P	**Pn**	**01 22 45.0**	**+2.5**
	comp=Z,45nm,0.8s,comp=Z,31μm						
JAGI	**Jajag, Banyuwa**	**13.59**	**232**	P	**Pn**	**01 22 45.7**	**+1.2**
JAGI	**Jajag, Banyuwa**	**13.59**	**232**	*e*Pn	**Pn**	**01 22 43.9**	**-0.6**
GMJI	**Gumukmas**	**14.04**	**234**	P	**Pn**	**01 22 53.1**	**+2.6**
MTN	**Manton Dam**	**14.12**	**154**	*e*Pn	**Pn**	**01 22 50.3**	**-1.1**
TBJI	**Tambak Boyo**	**14.66**	**242**	P	P	01 23 07.2	+4.1
KSM	**Kuching**	**14.69**	**276**	⇑P	**P**	**01 23 01.6**	**-1.7**
KSM	**Kuching**	**14.69**	**276**	*e*Pn	**Pn**	**01 22 58.9**	**+0.1**
NGJI	**Ngawi**	**15.26**	**241**	P	**P**	**01 23 13.9**	**+4.2**
PWJI	**Pagerwojo**	**15.28**	**239**	P	**P**	**01 23 12.2**	**+2.3**
PCJI	**Pacitan**	**15.90**	**239**	P	**P**	**01 23 16.6**	**-0.2**
SMRI	**Semarang**	**16.02**	**244**	*e*Pn	**P**	**01 23 20.6**	**+2.4**
	comp=Z,49nm,0.8s						
FITZ	**Fitzroy Crossi**	**17.94**	**178**	P	**P**	**01 23 38.1**	**-1.2**
	comp=Z,0.7nm,0.3s,baz=5.9,slow=7.6,SNR=12						
FITZ				LR	LR	01 31 06.1	
	comp=Z,129nm,21.0s,baz=11,slow=39						
LEM	**Lembang**	**18.52**	**248**	LR	LR	01 31 18.5	
	comp=Z,617nm,20.9s,baz=40,slow=38						
LEM	**Lembang**	**18.52**	**248**	P	Pn	01 23 54.5	+7.7
PPBI	**Pangkal Pinang**	**18.89**	**264**	P	**Pn**	**01 23 53.4**	**+2.3**
	comp=Z,19nm,0.9s						
CBJI	**Cileko**	**19.10**	**250**	P	Pn	01 24 03.9	+10
CNJI	**Cibinong**	**19.14**	**248**	P	**Pn**	**01 23 53.6**	**-0.5**
CGJI	**Cibinong**	**20.25**	**251**	P	Pn	01 24 08.0	+0.8
	comp=Z,121nm,0.7s						
KASI	**Kota Agung**	**21.10**	**255**	P	**P**	**01 24 17.8**	**+4.0**
	comp=Z,52nm,1.0s						
MYKOM	**Kota Tinggi**	**21.14**	**275**	⇓P	**P**	**01 24 16.4**	**+2.1**
MYKOM	**Kota Tinggi**	**21.14**	**275**	*e*P	**P**	**01 24 16.0**	**+1.7**
	comp=Z,27nm,0.8s						
MBWA	**Marble Bar**	**21.57**	**193**	*e*P	**P**	**01 24 18.5**	**-0.3**
	comp=Z,52nm,0.6s						
KGM	**Kluang**	**21.69**	**276**	⇓P	**P**	**01 24 23.2**	**+3.0**
WRAB	**Tennant Creek**	**21.80**	**155**	*ce*P	**P**	**01 24 17.8**	**-3.5**
WRAB				pmax	pmax		
	comp=Z,60nm,1.4s						
WRAB	**Tennant Creek**	**21.80**	**155**	*e*P	**P**	**01 24 19.3**	**-2.0**
	comp=Z,19nm,0.8s						
WRA	**Warramunga Arr**	**21.81**	**156**	P	**P**	**01 24 19.6**	**-1.7**
	comp=Z,6.9nm,0.4s,baz=336,slow=10.0,SNR=16						
WRA				S	**S**	**01 28 18.8**	**-0.1**
	comp=Z,6.2nm,1.0s,baz=336,slow=16,SNR=7.0						
WRA	**Warramunga Arr**	**21.81**	**156**	*i*P	**P**	**01 24 19.8**	**-1.5**
WRA				pmax	pmax		
	comp=Z,7.0nm,0.4s						
KTGM	**Kuala Trenggan**	**22.40**	**284**	⇑P	**P**	**01 24 28.3**	**+0.5**
COEN	**Coen**	**22.75**	**128**	*e*P	**P**	**01 24 31.3**	**-0.1**
	comp=Z,32nm,0.8s						
FRIM	**Kepong**	**23.51**	**278**	⇑P	**P**	**01 24 38.9**	**0.0**
TPUB	**Ta-pu**	**23.59**	**350**	*e*P	**P**	**01 24 38.0**	**-1.5**
	comp=Z,32nm,0.6s						
IPM	**Ipoh**	**24.29**	**281**	⇑P	**P**	**01 24 46.1**	**+0.2**
IPM	**Ipoh**	**24.29**	**281**	*e*P	**P**	**01 24 45.8**	**-0.1**
	comp=Z,40nm,0.7s						
PDSI	**Padang**	**24.47**	**268**	P	**P**	**01 24 48.5**	**+0.9**
	comp=Z,16nm,0.9s,comp=Z,19μm						
PPI	**Padang Panjang**	**24.52**	**269**	P	**P**	**01 24 49.7**	**+1.7**
	comp=Z,34nm,0.8s						
KULM	**Kulim**	**24.81**	**283**	⇑P	**P**	**01 24 50.5**	**-0.1**
KULM	**Kulim**	**24.81**	**283**	*e*P	**P**	**01 24 49.7**	**-0.9**
	comp=Z,16nm,0.8s						
ASAR	**Alice Springs**	**25.04**	**160**	P	**P**	**01 24 52.5**	**-0.2**
	comp=Z,6.1nm,0.4s,baz=344,slow=11,SNR=68						
ASAR				PcP	**PcP**	**01 28 27.3**	**+1.2**
	comp=Z,2.7nm,0.6s,baz=352,slow=2.1,SNR=11						
ASAR				S	**S**	**01 29 11.6**	**-0.5**
	comp=Z,1.9nm,1.0s,baz=352,slow=23,SNR=5.4						
ASAR				ScP	**ScP**	**01 32 01.4**	**+2.0**
	comp=Z,1.5nm,1.0s,baz=5.5,slow=3.0,SNR=6.9						
SKLT	**Songkhla**	**25.27**	**287**	P	**P**	**01 24 57.0**	**+2.1**
	comp=Z,36nm,1.0s,comp=Z,727nm						
PSI	**Prapat**	**26.14**	**276**	*e*P	**P**	**01 25 01.6**	**-1.3**
PSI				pmax	pmax		
	comp=Z,27nm,1.3s						
PSI	**Prapat**	**26.14**	**276**	*e*P	**P**	**01 25 01.6**	**-1.3**
	comp=Z,27nm,1.3s						
TRTT	**Trang**	**26.34**	**288**	P	**P**	**01 25 04.8**	**+0.2**
	comp=Z,25nm,0.8s						
SKNT	**Sakolnakorn**	**26.68**	**310**	P	**P**	**01 25 09.9**	**+2.3**
	comp=Z,16nm,1.0s						
JOW	**Kunigami**	**26.93**	**7**	*e*P	**P**	**01 25 10.8**	**+1.1**
	comp=Z,37nm,0.8s						
KHON	**Khomkaen**	**27.21**	**308**	P	**P**	**01 25 14.9**	**+2.6**
	comp=Z,13nm,0.8s						
GSI	**Gunungsitoli**	**27.37**	**273**	P	**P**	**01 25 14.2**	**+0.4**
GSI	**Gunungsitoli**	**27.37**	**273**	*e*P	**P**	**01 25 11.9**	**-1.9**
	comp=Z,17nm,0.8s						
PBKT	**Sadao Pong**	**28.82**	**306**	P	P	01 25 31.6	+5.0
	comp=Z,9.8nm,1.3s						
CTAO	**Charters Tower**	**28.86**	**135**	*e*P	**P**	**01 25 28.1**	**+1.1**
CTAO				pmax	pmax		
	comp=Z,12nm,0.5s						
CTAO	**Charters Tower**	**28.86**	**135**	*e*P	**P**	**01 25 28.1**	**+1.1**
	comp=Z,12nm,0.5s						
UTTA	**Uttaradit**	**29.79**	**308**	P	**P**	**01 25 37.7**	**+2.4**
	comp=Z,3.5nm,0.8s						
NANT	**Nan**	**30.28**	**310**	P	**P**	**01 25 41.1**	**+1.5**
	comp=Z,11nm,0.7s,comp=Z,1μm						
CMAR	**Chiang Mai Arr**	**31.46**	**307**	P	**P**	**01 25 51.2**	**+1.2**
	comp=Z,3.2nm,0.6s,baz=139,slow=7.9,SNR=15						
CMAR				PcP	**PcP**	**01 28 43.2**	**+1.2**
	comp=Z,8.1nm,0.8s,baz=172,slow=1.9,SNR=26						
CMAR				ScP	**ScP**	**01 32 21.4**	**+2.0**
	comp=Z,0.6nm,0.3s,baz=144,slow=1.8,SNR=4.3						
CMAR				LR	LR	01 39 29.0	
	comp=Z,74nm,19.7s,baz=115,slow=38						
CMMT	**Chiang Mai**	**31.65**	**308**	P	**P**	**01 25 52.6**	**+0.9**
	comp=Z,18nm,1.3s,comp=Z,445nm						
CHTO	**Chiang Mai**	**31.66**	**308**	P	**P**	**01 25 52.7**	**+1.0**
	comp=Z,78nm,1.3s						
CHTO	**Chiang Mai**	**31.66**	**308**	*e*P	**P**	**01 25 52.1**	**+0.4**
CHTO				pmax	pmax		
	comp=Z,11nm,0.6s						
CHTO	**Chiang Mai**	**31.66**	**308**	*e*P	**P**	**01 25 52.1**	**+0.4**
	comp=Z,12nm,0.6s						
GYA	**Guiyang**	**31.69**	**328**	P	**P**	**01 25 52.8**	**+0.7**
GYA				pP	sP	01 26 14.0	-2.6
GYA				sP	pP	01 26 24.5	+16
GYA				PP	**PP**	**01 27 02.3**	**-2.6**
GYA				PcP	**PcP**	**01 28 44.3**	**+1.7**
GYA				S	**S**	**01 30 56.8**	**-0.2**
GYA				sS	sS	01 31 32.0	+6.8
GYA				ScP	**ScP**	**01 32 18.8**	**-1.4**
GYA	**Guiyang**	**31.69**	**328**	ScS	ScS	01 36 15.5	-3.1
GYA				pmax	pmax		
	comp=Z,20nm,0.8s						
GYA				pmax	pmax		
	comp=Z,120nm,5.0s						
GYA				LR	LR		
	comp=N,530nm,17.2s						
GYA				LR	LR		
	comp=E,480nm,17.8s						
GYA				LR	LR		
	comp=Z,460nm,17.4s						
CMAI	**Chiengmai2**	**32.20**	**310**	P	**P**	**01 25 57.3**	**+0.6**
	comp=Z,11nm,1.2s						
KMI	**Kunming**	**32.97**	**321**	P	**P**	**01 26 06.3**	**+2.9**
KMI				pP	sP	01 26 26.3	-1.6
KMI				sP	pP	01 26 37.3	+17
KMI				pmax	pmax		
	comp=Z,6.0nm,0.7s						
KMI				pmax	pmax		
	comp=Z,130nm,3.6s						
KMI				LR	LR		
	comp=N,110nm,3.8s						
KMI				LR	LR		
	comp=E,160nm,12.3s						
KMI				LR	LR		
	comp=Z,92nm,8.2s						
JNU	**Nakatsue**	**33.48**	**9**	P	**P**	**01 26 07.5**	**0.0**
	comp=Z,17nm,0.9s,baz=197,slow=2.9,SNR=6.0						
JNU	**Nakatsue**	**33.48**	**9**	*e*P	**P**	**01 26 09.2**	**+1.7**
	comp=Z,19nm,0.9s						
NWAO	**Narrogin (SRO)**	**33.48**	**192**	P	**P**	**01 26 07.3**	**-0.2**
	comp=Z,11nm,1.0s,baz=133,slow=4.1,SNR=3.7						
ENH	**Enshi**	**33.55**	**335**	*e*P	**P**	**01 26 08.5**	**+0.3**
	comp=Z,18nm,0.9s						
STKA	**Stephens Creek**	**35.36**	**155**	P	**P**	**01 26 24.4**	**+0.6**
	comp=Z,13nm,0.5s,baz=336,slow=8.5,SNR=53						
CD2	**Chengdu**	**36.77**	**329**	P	**P**	**01 26 36.5**	**+0.6**
CD2				pmax	pmax		
	comp=Z,20nm,0.8s						
KSAR	**Wonju Array Be**	**37.42**	**4**	P	**P**	**01 26 42.9**	**+1.7**
KSAR	**Wonju Array Be**	**37.42**	**4**	P	**P**	**01 26 42.9**	**+1.7**
KSRS	**Korea Array**	**37.43**	**4**	P	**P**	**01 26 42.9**	**+1.6**
	comp=Z,8.4nm,0.8s,baz=177,slow=10,SNR=25						
MJAR	**Matsushiro Arr**	**38.45**	**17**	P	**P**	**01 26 49.5**	**-0.4**
	comp=Z,6.1nm,0.7s,baz=192,slow=8.7,SNR=6.8						
MAJO	**Matsushiro**	**38.45**	**17**	*e*P	**P**	**01 26 50.0**	**0.0**
MAJO				pmax	pmax		
	comp=Z,11nm,0.8s						
MAJO	**Matsushiro**	**38.45**	**17**	*e*P	**P**	**01 26 50.0**	**0.0**
	comp=Z,11nm,0.8s						
MAT	**Matsushiro**	**38.45**	**17**	P	**P**	**01 26 49.6**	**-0.4**
BJI	**Beijing**	**40.70**	**350**	P	**P**	**01 27 10.5**	**+1.9**
BJI				pmax	pmax		
	comp=Z,10.0nm,0.7s						
LZH	**Lanzhou**	**40.96**	**334**	*e*P	**P**	**01 27 12.5**	**+1.5**
LZH				pP	sP	01 27 33.5	-2.3
LZH				sP	pP	01 27 43.9	+16
LZH				PP	**PnPn**	**01 28 51.3**	**-0.1**
LZH				*e*S	**S**	**01 33 18.0**	**-0.2**
LZH				sS	sS	01 33 54.0	+7.0
LZH				*e*SS	**SS**	**01 36 18.6**	**-3.9**
LZH				pmax	pmax		
	comp=Z,82nm,1.3s						
LZH				pmax	pmax		
	comp=Z,190nm,4.2s						
LZH				LR	LR		
	comp=N,310nm,13.4s						
LZH				LR	LR		
	comp=E,320nm,14.0s						
LZH				LR	LR		
	comp=Z,490nm,17.3s						
CAN	**Canberra**	**41.65**	**150**	*e*P	**P**	**01 27 17.9**	**+1.3**
CAN				pmax	pmax		
	comp=Z,18nm,1.0s						
CAN	**Canberra**	**41.65**	**150**	*e*P	**P**	**01 27 17.9**	**+1.3**
	comp=Z,18nm,1.0s						
HHC	**Hu-ho-hao-te**	**42.49**	**345**	*e*P	**P**	**01 27 25.0**	**+1.7**
HHC				pmax	pmax		
	comp=Z,38nm,1.0s						
HHC				pmax	pmax		
	comp=Z,190nm,5.7s						
CN2	**Changchun**	**43.67**	**1**	*e*P	P	01 27 38.5	+5.8
CN2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
LSA	**Lhasa**	**43.72**	**316**	*e*P	**P**	**01 27 34.5**	**+0.6**
LSA				pmax	pmax		
	comp=Z,12nm,0.4s						
LSA	**Lhasa**	**43.72**

ULN pmax pmax
comp=Z,13nm,0.9s
ULN Ulaanbaatar 50.20 344 *e*P **P 01 28 23.4 -0.3**
comp=Z,13nm,0.9s
SONM Songino Array 50.35 344 P **P 01 28 24.9 +0.1**
comp=Z,12nm,0.8s,baz=155,slow=8.1,SNR=35
SONM PcP **PcP 01 29 42.6 0.0**
comp=Z,4.1nm,0.8s,baz=166,slow=4.7,SNR=6.8
ZAK Zakamensk 53.54 343 *e*P **P 01 28 47.3 -1.2**
ZAK *e* 01 29 54.9
ZAK pmax pmax
comp=Z,6.0nm,1.0s
TLY Talaya 54.59 344 *e*P **P 01 28 56.8 +0.8**
TLY pmax pmax
comp=Z,13nm,0.9s
TLY Talaya 54.59 344 *e*P **P 01 28 56.0 0.0**
comp=Z,12nm,0.8s
WMQ Urumqi 54.85 328 P **P 01 28 59.8 +1.7**
WMQ pmax pmax
comp=Z,11nm,1.0s
WMQ pmax pmax
comp=Z,70nm,11.6s
MOY Mondy 55.36 342 *e*P **P 01 29 03.7 +2.0**
MOY pmax pmax
comp=Z,18nm,1.5s
BOD Bodaibo 58.36 353 *e*P **P 01 29 22.4 -0.2**
BOD pmax pmax
comp=Z,18nm,1.1s
KSH Kashi 59.51 317 P **P 01 29 32.9 +1.7**
KSH *ep*P *s*P 01 29 57.1 +0.4
KSH *es*P PcP 01 30 07.9 -10
KSH *e*PcP pP 01 30 19.0 +30
KSH PcS **PcS 01 34 19.1 -1.2**
KSH S **S 01 37 33.3 -2.6**
KSH pmax pmax
comp=Z,18nm,0.9s
KSH pmax pmax
comp=Z,100nm,6.6s
KSH LR LR
comp=N,94nm,4.7s
KSH LR LR
comp=E,63nm,5.7s
KSH LR LR
comp=Z,220nm,6.0s
PETK Petropavlovsk- 59.60 22 P **P 01 29 33.2 +1.9**
comp=Z,4.7nm,0.7s,baz=194,slow=5.4,SNR=3.7
MKAR Makanchi Array 59.68 327 P **P 01 29 31.3 -0.8**
comp=Z,21nm,0.6s,baz=121,slow=8.6,SNR=113
MKAR PcP **PcP 01 30 19.2 +0.8**
comp=Z,5.8nm,0.8s,baz=133,slow=5.1,SNR=6.0
MKAR ScP **ScP 01 34 14.1 +0.5**
comp=Z,0.8nm,0.8s,baz=130,slow=3.8,SNR=3.6
MKAR Makanchi Array 59.68 327 *i* P **P 01 29 31.2 -0.8**
MKAR pmax pmax
comp=Z,22nm,0.6s
MAKZ Makanchi 59.86 327 *e*P **P 01 29 32.7 -0.6**
MAKZ pmax pmax
comp=Z,18nm,0.6s
MAKZ Makanchi 59.86 327 *e*P **P 01 29 32.6 -0.6**
comp=Z,18nm,0.6s
TKM2 Tokmak 2 61.44 321 *e*P **P 01 29 43.5 -0.8**
TKM2 pmax pmax
comp=Z,22nm,0.6s
TKM2 Tokmak 2 61.44 321 *e*P **P 01 29 43.5 -0.8**
comp=Z,22nm,0.6s
AAK Ala-Archa 62.00 320 *e*P **P 01 29 46.4 -1.7**
AAK pmax pmax
comp=Z,27nm,0.9s
AAK Ala-Archa 62.00 320 *e*P **P 01 29 48.4 +0.3**
comp=Z,19nm,1.0s
FRU Bishkek 62.02 320 *e*P **P 01 29 48.5 +0.5**
YAK Yakutsk 62.04 3 P **P 01 29 47.8 +0.2**
comp=Z,51nm,0.6s,baz=193,slow=1.8,SNR=7.3
YAK Yakutsk 62.04 3 *e*P **P 01 29 48.1 +0.4**
YAK *e**PP **sP 01 30 13.1 -0.2**
YAK *e* 01 30 27.2
YAK *e*S **S 01 38 03.5 -3.5**
YAK *e* 01 39 28.8
YAK *e*SS **SS 01 42 09.4 -1.3**
YAK pmax pmax
comp=Z,38nm,1.0s
YAK pmax pmax
comp=E,4.0nm,1.0s
YAK pmax pmax
comp=N,19nm,1.2s
YAK smax smax
comp=N,123nm,3.5s
YAK smax smax
comp=E,146nm,3.8s
YAK Yakutsk 62.04 3 *e*P **P 01 29 48.2 +0.5**
comp=E,55nm,0.7s
EKS2 Erkin-Say 62.48 320 *e*P **P 01 29 51.3 +0.1**
EKS2 pmax pmax
comp=Z,22nm,0.8s
EKS2 Erkin-Say 62.48 320 *e*P **P 01 29 51.3 +0.1**
comp=Z,22nm,0.8s
MA2 Magadan 62.80 14 P **P 01 29 52.8 0.0**
comp=Z,16nm,0.8s,baz=205,slow=5.6,SNR=9.5
MA2 Magadan 62.80 14 *e*P **P 01 29 52.7 -0.2**
comp=Z,65nm,0.8s
ZALV Zalesovo Beam 63.17 335 P **P 01 29 53.6 -1.8**
comp=Z,14nm,0.8s,baz=125,slow=5.4,SNR=49
KURK Kurchatov 64.00 329 *c*e**P P 01 29 59.8 -1.1**
KURK pmax pmax
comp=Z,36nm,0.8s
KURK Kurchatov 64.00 329 *e*P **P 01 29 59.9 -1.0**
comp=Z,62nm,0.6s
NVS Novosibirsk 64.46 335 *e*P **P 01 30 02.8 -1.0**
NVS pmax pmax
comp=N,13nm,0.7s
NVS pmax pmax
comp=Z,23nm,0.7s
NVS pmax pmax
comp=E,12nm,0.6s
KKAR Karatay Array 64.81 319 *e*P **P 01 30 06.0 -0.4**
KKAR pmax pmax
comp=Z,9.0nm,0.7s
KKAR Karatay Array 64.81 319 *e*P **P 01 30 06.0 -0.4**
comp=Z,9.4nm,0.7s
SEY Seymchan 66.11 13 P **P 01 30 14.9 +0.6**
comp=Z,3.1nm,0.8s,baz=208,slow=6.7,SNR=9.2
SEY Seymchan 66.11 13 *c*e**P P 01 30 16.9 +2.5**
BRVK Borovoye 69.60 328 *e*P **P 01 30 35.6 -1.0**
BRVK pmax pmax
comp=Z,28nm,1.0s
BRVK Borovoye 69.60 328 *e*P **P 01 30 35.6 -1.0**
comp=Z,28nm,1.0s
ZRNK Zerenda 70.23 328 *e*P **P 01 30 39.4 -1.0**
ZRNK pmax pmax
comp=Z,35nm,0.7s
ZRNK Zerenda 70.23 328 *e*P **P 01 30 39.4 -1.0**
comp=Z,35nm,0.7s
UOSS Minazif 70.78 296 *e*P **P 01 30 42.4 -1.9**
comp=Z,0.3nm,0.6s
TIXI Tiksi 71.64 1 *e*P **P 01 30 47.4 -1.1**
TIXI pmax pmax
comp=Z,7.0nm,1.0s
TIXI Tiksi 71.64 1 *e*P **P 01 30 48.0 -0.5**
comp=Z,9.6nm,0.9s
GEYT Alibeck 71.89 310 P **P 01 30 50.2 -0.6**
comp=Z,7.2nm,0.9s,baz=153,slow=4.3,SNR=11
GEYT LR LR 02 08 00.8
comp=Z,179nm,21.7s,baz=185,slow=40
BILL Bilibino 73.66 15 *i* P **P 01 30 59.7 -0.9**
BILL *i* 01 33 46.4
BILL pmax pmax
comp=Z,2.0nm,1.1s
BILL Bilibino 73.66 15 *e*P **P 01 31 01.0 +0.4**
comp=Z,1.6nm,0.5s
NRIK Noril'sk 73.67 347 P **P 01 31 01.1 +0.4**
comp=Z,24nm,0.6s,baz=133,slow=6.0,SNR=35
ABKAR Akbulak array 73.96 322 *e*P **P 01 31 01.7 -1.0**
comp=Z,10nm,0.6s
SVE Sverdlovsk 76.25 329⇑*i*P **P 01 31 15.4 -0.4**
SVE pmax pmax
comp=Z,30nm,0.7s
ARU Arti 77.18 329 *c i*P **P 01 31 20.4 -0.6**
ARU *PP **pP 01 31 39.7 +0.2**
ARU 01 34 14.0
ARU S **S 01 41 07.4 +2.5**
ARU SS **SS 01 46 01.2 -2.7**
ARU pmax pmax
comp=Z,25nm,1.0s
ARU Arti 77.18 329 *e*P **P 01 31 20.1 -0.9**
comp=Z,19nm,0.7s
OPO Ambohidratompo 78.35 251 P **P 01 31 28.5 0.0**
comp=Z,7.5nm,0.8s,baz=54,slow=2.5,SNR=8.1
MAW Mawson 79.59 200 P **P 01 31 34.3 +0.2**
comp=Z,2.1nm,0.7s,baz=28,slow=8.4,SNR=4.5
ZEI Tsey 83.44 313 *e*P **P 01 31 54.4 -0.8**
ZEI pmax pmax
comp=Z,41nm,0.9s
AKH Akhalkalaki 83.60 312⇑*i*P **P 01 31 57.1 +1.1**
KBZ Khabaz 84.27 314 P **P 01 31 59.0 0.0**
comp=Z,8.7nm,0.9s,baz=130,slow=1.9,SNR=15
KIV Kislovodsk 84.44 314 *i* P **P 01 31 58.7 -1.4**
KIV pmax pmax
comp=Z,4.0nm,0.9s
KIV Kislovodsk 84.44 314 *e*P **P 01 31 59.7 -0.4**
comp=Z,5.7nm,0.7s
TTA Tatalina 85.08 27 *e*P **P 01 32 04.9 +2.0**
TTA pmax pmax
comp=Z,4.0nm,0.6s
TTA Tatalina 85.08 27 *e*P **P 01 32 04.9 +2.0**
comp=Z,4.3nm,0.6s
VRH Novokhopyorsk 85.77 321 *e*P **P 01 32 05.7 -0.8**
VRH pmax pmax
comp=Z,10.0nm,0.6s
BRLK Bradley Lake 87.12 30 *e*P **P 01 32 13.7 +0.8**
VSR Storozhevoye 87.38 321 *e*P **P 01 32 13.6 -0.7**
VSR pmax pmax
comp=Z,9.0nm,0.8s
MLY Manley 87.66 25 *e*P **P 01 32 16.6 +1.1**
KMBO Kilima Mbogo 87.66 269 *e*P **P 01 32 18.3 +1.4**
KMBO pmax pmax
comp=Z,21nm,0.9s
KMBO Kilima Mbogo 87.66 269 *e*P **P 01 32 18.3 +1.4**
comp=Z,21nm,0.9s
KLMR Klimovskoe 87.80 331 *e*P **P 01 32 13.4 -2.7**
KLMR *e* 01 35 40.3
KLMR pmax pmax
comp=Z,16nm,0.7s
COLD Coldfoot 88.07 23 *e*P **P 01 32 19.3 +2.0**
comp=Z,6.4nm,0.8s
ANN Anapa 88.25 315 *e*P **P 01 32 17.7 -0.9**
ANN pmax pmax
comp=Z,70nm,0.9s
SYO Syowa Base 88.26 201⇑*e*P **P 01 32 17.8 -0.3**
MCK McKinley 88.34 26 *e*P **P 01 32 18.0 -0.7**
MCK pmax pmax
comp=Z,6.0nm,1.0s
MCK McKinley 88.34 26 *e*P **P 01 32 18.0 -0.7**
comp=Z,5.5nm,1.0s
RND Reindeer 88.36 27 *e*P **P 01 32 19.1 +0.2**
RND Reindeer 88.36 27 *e*P **P 01 32 19.1 +0.2**
TMCR Tamitsa 88.69 334 *e*P **P 01 32 19.5 -0.8**
TMCR pmax pmax
comp=Z,12nm,0.8s
MDM Murphy Dome 88.72 25 *e*P **P 01 32 21.1 +0.6**
WRH Wood River Hil 88.75 26 *e*P **P 01 32 20.9 +0.3**
CCB Clear Creek Bu 88.88 25 *e*P **P 01 32 21.1 -0.1**
OBN Obninsk 89.10 325 *i* P **P 01 32 20.2 -2.2**
OBN pmax pmax
comp=Z,10.0nm,0.8s
OBN Obninsk 89.10 325 *e*P **P 01 32 22.0 -0.3**
ILAR Eielson Array 89.28 25 P **P 01 32 22.4 -0.7**
comp=Z,0.9nm,0.7s,baz=249,slow=4.9,SNR=9.8
PAX Paxson 89.88 27 *e*P **P 01 32 27.1 +1.0**
PAX Paxson 89.88 27 *e*P **P 01 32 27.1 +1.0**
DOT Dot Lake 90.51 27 *e*P **P 01 32 28.7 -0.2**
comp=Z,7.9nm,0.8s
SIM Simferopol' 90.61 315 *e*P **P 01 32 29.2 -0.5**
SIM pmax pmax
comp=Z,12nm,0.8s
MENT Mentasta 90.68 27 *e*P **P 01 32 30.5 +0.8**
BRTR Keskin Array B 91.02 310 P **P 01 32 31.4 -0.5**
comp=Z,1.6nm,0.8s,baz=123,slow=5.8,SNR=12
CSS Mathiatis 91.34 305 *e*P **P 01 32 32.5 -0.8**
comp=Z,1.7nm,0.8s
ARCES ARCESS Array B 93.35 340 P **P 01 32 40.6 -1.3**
comp=Z,1.7nm,0.6s,baz=79,slow=6.3,SNR=8.8
AKASG Malin Array Be 93.66 321 P **P 01 32 42.3 -1.4**
comp=Z,3.2nm,0.8s,baz=71,slow=4.5,SNR=7.6
FINES FINESS Array B 94.29 332 P **P 01 32 45.0 -1.3**
comp=Z,3.1nm,0.6s,baz=59,slow=3.9,SNR=11
FINES FINESS Array B 94.29 332 *i* P **P 01 32 48.7 +2.4**
FINES pmax pmax
comp=Z,3.0nm,0.7s
INK Inuvik 94.33 21 *e*P **P 01 32 47.2 +0.8**
INK pmax pmax
comp=Z,5.0nm,1.0s
INK Inuvik 94.33 21 *e*P **P 01 32 47.2 +0.8**
comp=Z,5.0nm,1.0s
SORM Soroca 94.44 318⇑*i*P **P 01 32 45.0 -2.3**
CFR Carcaliu 94.83 315⇑*i*P **P 01 32 49.5 +0.3**
TESR Tescani 95.74 317⇓*i*P **P 01 32 52.9 -0.4**
VRI Vrinciaia 95.75 316⇑*i*P **P 01 32 53.2 -0.2**
MATP Matopo 96.00 250 P **P 01 32 54.6 -0.6**
comp=Z,3.8nm,0.9s,baz=190,slow=16,SNR=4.2
MLR Muntele Rosu 96.34 316⇑*i*P **P 01 32 56.3 0.0**
MLR Muntele Rosu 96.34 316 *e*P **P 01 32 56.2 0.0**
MLR Muntele Rosu 96.34 316 *e*P **P 01 32 56.2 0.0**
LSZ Lusaka 96.48 255 P **P 01 32 57.7 +0.2**
comp=Z,5.3nm,0.8s,baz=91,slow=4.8,SNR=14
BURAR Bucovina Array 96.59 318⇓*i*P **P 01 32 57.7 +0.4**
KWP Kalwaria Pacla 97.95 320⇑*i*P Pdif 01 33 06.0 +2.7
DRGR 98.40 317⇑*i*P Pdif 01 33 06.4 +1.0
NB2 NORSAR Subarra101.34 333 P **Pdif 01 33 09.3 -8.8**
comp=Z,2.2nm,1.0s,baz=71,slow=5.1
NB2 NORSAR Subarra101.34 333 P **Pdif 01 33 09.3 -8.8**
baz=71,slow=5.1
NOA NORSAR Array B 101.34 333 P **Pdif 01 33 16.5 -1.6**
comp=Z,1.3nm,0.9s,baz=70,slow=4.5,SNR=4.1
YKA Yellowknife Ar 103.68 24 Pdiff **Pdif 01 33 27.1 -1.4**
comp=Z,0.1nm,0.7s,baz=297,slow=5.5,SNR=3.0
YKA PKiKP **PKiKP 01 37 46.4 +0.1**
comp=Z,0.2nm,0.6s,baz=307,slow=2.2,SNR=5.3
HWUT Hardware Ranch 114.51 43 *e*PKP PKPdf 01 38 08.4 +0.8
PDAR Pinedale Array 115.38 42 PKP **PKPdf 01 38 10.5 +1.2**
comp=Z,0.3nm,0.7s,baz=35,slow=2.2,SNR=2.7
PDAR PKKPbc **PKKPab 01 48 48.8 -0.8**
comp=Z,0.6nm,0.9s,baz=129,slow=4.7,SNR=4.3
O20A White River Ci 117.41 44 *e*PKPdf **PKPdf 01 38 14.2 +1.0**
RSSD Black Hills 118.27 38 *e*PKiKP **PKPdf 01 38 14.9 +0.1**
RSSD Black Hills 118.27 38 *e*PKPdf **PKPdf 01 38 14.9 +0.1**
ESDC Sonseca Array 119.02 317 PKP **PKPdf 01 38 16.6 +0.5**
comp=Z,0.3nm,0.6s,baz=34,slow=1.9,SNR=3.1
ANMO Albuquerque 120.89 48 *e*PKiKP **PKPdf 01 38 21.4 +1.4**
ANMO Albuquerque 120.89 48 *e*PKPdf **PKPdf 01 38 21.4 +1.4**
TORD Torodi Ar. Bea 122.27 285 PKP **PKPdf 01 38 23.4 +0.4**
comp=Z,4.3nm,0.7s,baz=69,slow=1.9,SNR=37
ECSD EROS Data Cent 122.91 35 *e*PKPdf **PKPdf 01 38 23.6 +0.1**
SCHQ Schefferville 124.56 8 PKP **PKPdf 01 38 27.2 +1.0**
comp=Z,4.5nm,0.8s,baz=253,slow=4.2,SNR=3.9
TXAR Lajitas Array 125.32 53 PKP **PKPdf 01 38 29.6 +1.1**
comp=Z,0.6nm,0.8s,baz=194,slow=1.5,SNR=6.0
JCT Junction City 127.88 50 *e*PKiKP **PKPdf 01 38 34.2 +0.8**
JCT Junction City 127.88 50 *e*PKPdf **PKPdf 01 38 34.2 +0.8**
DBIC Dimbokro 129.46 279 PKP **PKPdf 01 38 37.6 +0.9**
comp=Z,4.0nm,0.8s,baz=242,slow=5.4,SNR=3.7
PLCA Paso Flores 137.03 163 PKP **PKPdf 01 38 51.2 +0.9**
comp=Z,0.7nm,0.8s,baz=314,slow=7.2,SNR=4.1
LCO Las Campanas 147.46 154 *e*PKPbc **PKPbc 01 39 11.2 -0.8**
LCO *e*PKPab **PKPab 01 39 13.4 -0.6**
JTS JuntasAbangare 148.60 70 *e*PKP2 **PKPbc 01 39 14.5 -0.6**
JTS JuntasAbangare 148.60 70 *e*PKPbc **PKPbc 01 39 14.5 -0.6**
CPUP Villa Florida 153.67 175 PKP **PKPdf 01 39 18.5 -0.3**
comp=Z,1.7nm,1.0s,baz=47,slow=8.0,SNR=2.9
CPUP PKPbc **PKiKP 01 39 27.4 +0.7**
comp=Z,1.9nm,0.8s,baz=194,slow=5.0,SNR=4.6
CPUP PKPab **PKPab 01 39 38.5 -0.7**
comp=Z,0.8nm,0.6s,baz=222,slow=3.2,SNR=2.8
LPAZ La Paz 159.27 142 PKPab **PKPab 01 40 05.5 +1.1**
comp=Z,1.6nm,1.1s,baz=270,slow=3.0,SNR=2.7

JMA 14 01:22:32.5±0.1, 37.75N×141.95E, h16km±3km, M3.8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.85**	**326**	P	Pb	01 22 48.3	-0.6
JIO				S	Sb	01 22 59.0	-1.0
JMM	**Marumori**	**0.92**	**278**	P	Pb	01 22 49.7	-0.4
JMM				S	Sb	01 23 01.6	-0.6
JFK	**Kawauchi**	**0.94**	**246**	P	Pb	01 22 50.0	-0.4
JFK				S	Sb	01 23 02.5	-0.1
ONAJ	**Iwakimizuishiy**	**1.12**	**235**	P	Pb	01 22 52.8	-0.8
ONAJ				S	Sb	01 23 07.1	-0.8
JOU	**Okura**	**1.19**	**302**	P	Pn	01 22 54.4	-0.1
JOU				S	Sb	01 23 09.6	-0.2
JFT	**Otama**	**1.30**	**260**	P	Pb	01 22 56.8	+0.2
JFT				S	Sg	01 23 14.0	-0.6
JHO	**Hitachi**	**1.58**	**225**	P	Pn	01 22 59.5	-0.4
MAT	**Matsushiro**	**3.22**	**249**	P	Pb	01 23 26.0	-3.4
MAT				S	Sb	01 24 05.0	-3.4

WEL 14 01:30:30.3±0.3, 45.10S×167.43E, h110km±2km, ML3.5/12, 1C-8D, Error ellipse: s-maj=2.4km s-min=1.5km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DCZ	**Deep Cove**	**0.42**	**208**	PN	Pn	01 30 46.1	-0.5
DCZ				AML	AML	01 30 58.5	
DCZ				AML	AML	01 30 58.5	
DCZ				SN	Sn	01 30 58.6	-0.4
DCZ				AML	AML	01 30 58.6	
MSZ	**Milford Sound**	**0.55**	**40**	PN	Pn	01 30 47.7	+0.2
MSZ				SN	Sn	01 31 00.5	+0.1
MSZ				AML	AML	01 31 00.9	
MSZ				AML	AML	01 31 00.9	
MSZ				AML	AML	01 31 01.1	
MLZ	**Mavora Lakes**	**0.56**	**119**	PN	Pn	01 30 47.4	-0.1
MLZ				SN	Sn	01 31 00.5	-0.1
MLZ				AML	AML	01 31 01.3	
WHZ	**Wether Hill Ro**	**0.88**	**156**	⇑PN	Pn	01 30 50.2	0.0
WHZ				SN	Sn	01 31 05.0	-0.4
WHZ				AML	AML	01 31 05.4	
WKZ	**Wanaka**	**1.16**	**77**	PN	Pn	01 30 53.4	+0.2
WKZ				SN	Sn	01 31 10.0	-0.5
WKZ				AML	AML	01 31 11.7	
WKZ				AML	AML	01 31 12.7	
WKZ				AML	AML	01 31 13.4	
PYZ	**Puysegur Point**	**1.19**	**206**	PN	Pn	01 30 53.5	0.0
PYZ				SN	Sn	01 31 10.5	-0.6
EAZ	**Earnscleugh**	**1.33**	**96**	⇓PN	Pn	01 30 55.1	0.0
EAZ				SN	Sn	01 31 12.7	-1.3
EAZ				AML	AML	01 31 13.6	
EAZ				AML	AML	01 31 14.4	
EAZ				AML	AML	01 31 14.5	
JCZ	**Jackson Bay**	**1.41**	**44**	⇓PN	Pn	01 30 55.4	-0.7
JCZ				SN	Sn	01 31 13.9	-1.7
JCZ				AML	AML	01 31 16.8	
TUZ	**Tuapeka**	**1.77**	**120**	⇓PN	Pn	01 31 00.3	0.0
TUZ				SN	Sn	01 31 20.9	-2.4
TUZ				AML	AML	01 31 21.6	
TUZ				AML	AML	01 31 24.6	
TUZ				AML	AML	01 31 24.6	
APZ	**The Paps**	**1.78**	**168**	⇓PN	Pn	01 31 00.4	-0.1
APZ				AML	AML	01 31 25.1	
APZ				AML	AML	01 31 25.9	
SYZ	**Scrubby Hill**	**1.87**	**141**	⇓PN	Pn	01 31 01.7	+0.1
SYZ				AML	AML	01 31 24.7	
SYZ				AML	AML	01 31 24.9	
SYZ				AML	AML	01 31 25.1	
SYZ				AML	AML	01 31 25.1	
LBZ	**Lake Benmore**	**2.09**	**71**	⇓PN	Pn	01 31 02.9	-1.4
ODZ	**Otahua Downs**	**2.28**	**90**	⇓PN	Pn	01 31 05.8	-1.0
ODZ				AML	AML	01 31 38.2	
ODZ				AML	AML	01 31 38.2	
FOZ	**Fox Glacier**	**2.32**	**48**	PN	Pn	01 31 05.8	-1.5
FOZ				AML	AML	01 33 37.0	
HHSZ	**Highcliff Hill**	**2.36**	**111**	⇓PN	Pn	01 31 07.6	-0.3

*IPEC **14** 01:31:38.4±0.2, 50.22N×19.16E, h0km, ML1.7/3, Error ellipse: s-maj=2.8km s-min=1.1km az=169.0*
*PRU **14** 01:31:38.1, 50.17N×19.10E, h0km*
CSEM 14 01:31:37.4±0.7, 50.18N×19.09E, h1km, ML1.7, 4C, Error ellipse: s-maj=20.0km s-min=8.5km az=5.0, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OJC	**Ojcow**	**0.45**	**85**	*e*Pg	Pg	01 31 46.0	-0.1
OJC				*e*Sg	Sg	01 31 51.8	-0.1
OJC	**Ojcow**	**0.45**	**85**	*e*Pg	Pg	01 31 46.0	-0.1
OKC	**Ostrava-Krasne**	**0.70**	**241**	*e*PG	Pb	01 31 52.9	+0.5
OKC				*e*SG	Sb	01 32 01.4	-1.2
comp=Z,6.0nm,0.5s							
LANS	**Liptovska Anna**	**1.06**	**167**	*e*Pg	Pg	01 31 57.4	-0.3
LANS	**Liptovska Anna**	**1.06**	**167**	*e*PG	Pg	01 31 57.4	-0.3
LANS				*e*SG	Sg	01 32 10.9	-0.6
MORC	**Moravsky Berou**	**1.08**	**248**⇑*i*P		Pb	01 31 59.0	+0.1
MORC	**Moravsky Berou**	**1.08**	**248**⇑*i*P		Pb	01 31 59.0	+0.1
MORC	**Moravsky Berou**	**1.08**	**248**	*e*Pg	Pn	01 31 59.8	+0.1
NIE	**Niedzica**	**1.09**	**134**	*e*Pg	Pg	01 31 57.9	-0.5
NIE				*e*Sg	Sb	01 32 13.7	-0.2
KRLC	**Kraliky**	**1.49**	**267**	*e*PG	Pn	01 32 04.8	-0.6
KRLC				*e*SG	Sn	01 32 26.9	+0.5
KRLC	**Kraliky**	**1.49**	**267**	Pg	Pn	01 32 04.8	-0.6
STHS	**Stebnicka Huta**	**1.59**	**118**	*e*PN	Pb	01 32 07.6	0.0
STHS				*e*LG	Lg	01 32 34.5	
VYHS	**Vyhne**	**1.70**	**186**	*e*Pn	Pn	01 32 07.5	-0.7
VYHS	**Vyhne**	**1.70**	**186**	*e*PN	Pn	01 32 07.5	-0.7
VYHS				*e*SN	Sn	01 32 28.8	-1.8
VYHS				*e*LG	Lg	01 32 30.3	
DPC	**Dobruska-Polom**	**1.79**	**276**	*e*PG	Pb	01 32 11.1	+0.1
DPC				*e*SG	Sg	01 32 36.6	+1.8
comp=Z,6.0nm,0.5s							
VRAC	**Vranov**	**1.84**	**243**⇑*i*P		Pg	01 32 13.5	+0.8
VRAC	**Vranov**	**1.84**	**243**	*e*Pn	Pb	01 32 12.1	+0.2
VRAC	**Vranov**	**1.84**	**243**⇑*i*P		Pg	01 32 13.5	+0.8
KRUC	**Moravsky**	**2.08**	**238**	*e*Pg	Pg	01 32 16.9	-0.4
PRU	**Pruhonice**	**2.94**	**268**	*e*SG	Sg	01 33 10.8	-1.0
PRU	**Pruhonice**	**2.94**	**268**	Sg	Sg	01 33 10.8	-1.0
KHC	**Kasperske Hory**	**3.73**	**256**	*e*SG	Sg	01 33 35.2	-2.1
KHC	**Kasperske Hory**	**3.73**	**256**	Sg	Sg	01 33 35.2	-2.1

IDC 14 01:36:37.5±2.5, 0.96S×132.16E, h294km±26km, mb3.4/7, mb1 3.6/9, mb1mx3.3/29, mbtmp4.1/9, Error ellipse: s-maj=26.2km s-min=9.3km az=84.0, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**18.20**	**200**	P	P	01 40 28.3	-1.5
0.2nm,0.3s,baz=12,slow=9.3,SNR=4.2							
FITZ				S	S	01 43 43.5	+0.9
0.1nm,0.3s,baz=264,slow=19,SNR=1.9							
WRA	**Warramunga Arr**	**18.99**	**174**	P	P	01 40 36.6	-1.6
1.1nm,0.3s,baz=354,slow=12,SNR=20							
WRA				S	S	01 43 59.3	+1.3
0.1nm,0.3s,baz=349,slow=21,SNR=3.1							
ASAR	**Alice Springs**	**22.64**	**176**	P	P	01 41 15.6	+1.6
8.4nm,0.6s,baz=353,slow=10,SNR=99							
ASAR				S	S	01 44 59.9	+0.2
0.5nm,0.8s,baz=327,slow=12,SNR=2.8							
CTA	**Charters Tower**	**23.49**	**145**	P	P	01 41 21.8	+0.1
5.6nm,0.8s,baz=327,slow=12,SNR=8.0							
STKA	**Stephens Creek**	**32.02**	**165**	P	P	01 42 38.2	+1.1
2.9nm,0.7s,baz=344,slow=7.9,SNR=4.1							
SONM	**Songino Array**	**53.52**	**339**	P	P	01 45 27.3	-1.2
0.4nm,0.6s,baz=148,slow=8.5,SNR=3.3							
MKAR	**Makanchi Array**	**64.48**	**324**	P	P	01 46 44.8	+1.5
0.8nm,0.6s,baz=118,slow=8.0,SNR=7.8							
VNDA	**Vanda**	**78.17**	**174**	P	P	01 48 03.3	-0.8
0.9nm,0.3s,baz=329,slow=6.3,SNR=28							
ILAR	**Eielson Array**	**87.00**	**25**	P	P	01 48 49.4	-0.2
0.4nm,0.7s,baz=246,slow=6.5,SNR=4.2							

*IDC **14** 01:42:09.7±0.4, 8.10S×123.52E, h0km, mb4.8/20, mb1 4.9/22, mb1mx4.9/26, mbtmp4.8/22, ML4.2/3, MS4.0/10, Ms1 4.0/10, ms1mx3.5/40, Error ellipse: s-maj=17.9km s-min=10.5km az=70.0*
*ISCJB **14** 01:42:11.9±0.8, 8.12S±0.02×123.67E±0.03, h23km±6km, mb5.0/86, MS4.3/14, Error ellipse: s-maj=4.7km s-min=3.6km az=135.5*
*MOS **14** 01:42:13.6±1.1, 8.03S×123.57E, h33km, mb5.3/32, Error ellipse: s-maj=11.2km s-min=6.4km az=117.9*
*DJA **14** 01:42:13.7±0.1, 8°S±2°×12°4E±°, h10km, M5.0/44, mb5.1/44, mB5.5/12, MLv5.3/13, Mw(mB)4.9/12*
*BJI **14** 01:42:14.1, 8.20S×123.70E, h45km, mb5.1/53, mB5.1/33, Ms4.8/31, Ms7 4.5/26*
*GCMT **14** 01:42:16.0±0.4, 8.11S×123.81E, h22km±1km, MW5.0/59, Moment Tensor Solution. s19,c27; s59,c78; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr3.17±.39; Mθθ-3.38±.25; Mφφ0.20±.25; Mrθ-0.58±.34; Mrφ-1.37±.14; Mθφ1.32±.45; Best double couple: M0 3.83500×10^16*

NP1:ϕ_0=274.00000°, δ51.00000°, λ122.00000°. NP2: ϕ_0=49.00000°, δ49.00000°, λ57.00000°. Principal axes: T 3.8250, Plg66.0000°, Azm249.0000°; N 0.0170, Plg24.0000°, Azm72.0000°; P -3.8460, Plg1.0000°, Azm342.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.

NEIC **14** *01:42:16.1±0.6, 8.13S×123.67E, h45km±6km, mb5.1/35*

Error ellipse: s-maj=7.4km s-min=5.0km az=222.0

ISC 14 01:42:16.1±0.7,**8.20S**±0.04×**123.61E**±0.05,**h45**km±6km, **n320**,σ1$**48**/344,**mb5.1**/85,**MS4.2**/15,**16C-4D,Flores region**

Code	Station Name	Δ°	AZ°	Phase Op	ID ISC	Time h m s	Res ISC
MMRI	**Maumere**	**1.43**	**252**	P	**Pn**	**01 42 37.7**	**-1.9**
MMRI	**Maumere**	**1.43**	**252**	*e*Pn	**Pn**	**01 42 38.4**	**-1.2**
SOEI	**Soe**	**1.68**	**157**	P	**Pn**	**01 42 44.1**	**+1.0**
SOEI	**Soe**	**1.68**	**157**	*e*Pn	**Pn**	**01 42 43.0**	**-0.2**
WSI	**Waingapu**	**3.59**	**246**	P	**Pn**	**01 43 09.3**	**+0.1**
BASI	**Baing, Sumba**	**3.61**	**236**	P	**Pn**	**01 43 09.6**	**+0.1**
BSSI	**Bau Bau, Buton**	**3.71**	**303**	P	**Pn**	**01 43 08.7**	**-2.2**
KDI	**Kendari**	**4.33**	**347**	P	**Pn**	**01 43 16.5**	**-2.9**
KAPI	**Kappang**	**4.97**	**309**	Pn	**Pn**	**01 43 27.2**	**-1.0**
	4.5nm,0.3s,baz=146,slow=12,SNR=24						
KAPI				Sn	**Sn**	**01 44 22.0**	**-2.5**
	3.9nm,0.3s,baz=224,slow=22,SNR=6.9						
KAPI				LR	LR	01 45 28.0	
	comp=Z,1μm,19.8s,baz=91,slow=41						
SPSI	**Sidrap Palu**	**5.68**	**318**	P	**Pn**	**01 43 36.8**	**-1.2**
	230nm,0.7s,2μm0.8nm						
PLAI	**Plampang**	**5.81**	**263**	P	**Pn**	**01 43 38.5**	**-1.2**
	415nm,0.9s,4μm1.5nm						
NLAI	**Namlea**	**6.02**	**35**	P	**Pn**	**01 43 40.7**	**-2.0**
TTSI	**Tana Toraja**	**6.36**	**323**	P	**Pn**	**01 43 47.7**	**+0.4**
	272nm,0.8s,2μm1.0nm						
SANI	**Sanana**	**6.55**	**21**	P	**Pn**	**01 43 49.0**	**-0.9**
TWSI	**Taliwang, Sumb**	**6.68**	**265**	P	**Pn**	**01 43 53.1**	**+1.4**
MSAI	**Masohi**	**7.15**	**48**	P	**Pn**	**01 43 54.6**	**-3.6**
LUWI	**Luwuk**	**7.16**	**353**	P	**Pn**	**01 43 57.0**	**-1.3**
	638nm,0.9s,5μm4.2nm						
LUWI	**Luwuk**	**7.16**	**353**	*e*Pn	**Pn**	**01 43 56.5**	**-1.7**
SAUI	**Saumlaki**	**7.61**	**89**	P	**Pn**	**01 44 04.1**	**-0.4**
PCI	**Palu**	**8.16**	**332**	P	**Pn**	**01 44 12.5**	**+0.4**
	439nm,0.9s,3μm1.4nm						
PCI	**Palu**	**8.16**	**332**	P	**Pn**	**01 44 12.5**	**+0.4**
PCI				pmax	pmax		
	comp=Z,437nm,0.8s						
SRBI	**Singaraja**	**8.32**	**270**	P	**Pn**	**01 44 13.5**	**-0.7**
LBMI	**Labuha**	**8.45**	**27**	P	**Pn**	**01 44 16.3**	**+0.3**
MTN	**Manton Dam**	**8.71**	**123**	P	**Pn**	**01 44 18.7**	**-0.9**
	baz=8.8,SNR=59						
MTN	**Manton Dam**	**8.71**	**123**	*e*Pn	**Pn**	**01 44 18.8**	**-0.9**
MRSI	**Marisa**	**8.78**	**349**	P	**Pn**	**01 44 18.2**	**-2.3**
	comp=Z,157nm,1.1s						
JAGI	**Jajag, Banyuwa**	**9.37**	**268**	P	**Pn**	**01 44 30.3**	**+1.7**
JAGI	**Jajag, Banyuwa**	**9.37**	**268**	*e*Pn	**Pn**	**01 44 31.5**	**+2.9**
KDU	**Kakadu**	**9.79**	**118**	P	**Pn**	**01 44 32.9**	**-1.4**
	baz=9.8,SNR=17						
BBKI	**Banjar Baru**	**9.91**	**298**	P	**Pn**	**01 44 35.8**	**-0.3**
FITZ	**Fitzroy Crossi**	**10.04**	**169**	Pn	**Pn**	**01 44 35.9**	**-1.9**
	comp=Z,4.5nm,0.3s,baz=357,slow=9.4,SNR=116						
FITZ				Sn	**Sn**	**01 46 24.3**	**-4.8**
	comp=Z,7.8nm,0.3s,baz=196,slow=3.0,SNR=21						
FITZ				LR	LR	01 48 52.4	
	comp=Z,513nm,21.4s,baz=346,slow=40						
FITZ	**Fitzroy Crossi**	**10.04**	**169**	P	**Pn**	**01 44 36.1**	**-1.7**
	baz=10.0,SNR=31						
FITZ	**Fitzroy Crossi**	**10.04**	**169**	*e*Pn	**Pn**	**01 44 36.2**	**-1.6**
FITZ				Sn	**Sn**	**01 46 24.3**	**-4.8**
FAKI	**Fak Fak**	**10.06**	**59**	P	**Pn**	**01 44 35.8**	**-2.4**
FAKI	**Fak Fak**	**10.06**	**59**	*e*Pn	**Pn**	**01 44 38.5**	**+0.3**
GMJI	**Gumukmas**	**10.07**	**269**	P	**Pn**	**01 44 39.3**	**+1.1**
SWI	**Sorong**	**10.54**	**47**	P	**Pn**	**01 44 48.3**	**+3.6**
PWJI	**Pagerwojo**	**11.69**	**270**	P	Pn	01 45 06.1	+5.7
NGJI	**Ngawi**	**12.07**	**273**	P	**Pn**	**01 45 06.5**	**+0.9**
PCJI	**Pacitan**	**12.31**	**269**	P	**Pn**	**01 45 09.0**	**+0.1**
	comp=Z,116nm,0.9s						
SMRI	**Semarang**	**13.11**	**274**	P	**Pn**	**01 45 22.1**	**+2.3**
SMRI	**Semarang**	**13.11**	**274**	*e*Pn	**Pn**	**01 45 21.2**	**+1.4**
MBWA	**Marble Bar**	**13.42**	**196**	*e*Pn	**Pn**	**01 45 23.5**	**-0.5**
	comp=Z,736nm,1.5s						
STKI	**Sintang**	**14.62**	**304**	P	**P**	**01 45 47.8**	**+2.1**
SBUM	**Sibu**	**15.52**	**312**	*e*Pn	**P**	**01 45 54.8**	**-1.0**
	comp=Z,22nm,0.9s						
WRA	**Warramunga Arr**	**15.63**	**139**	Pn	**Pn**	**01 45 49.0**	**-4.4**
	comp=Z,3.6nm,0.3s,baz=317,slow=13,SNR=36						
WRA				Sn	Sn	01 48 32.4	-13
	comp=Z,1.8nm,0.3s,baz=313,slow=24,SNR=11						
WRA				LR	LR	01 52 04.4	
	comp=Z,740nm,22.0s,baz=325,slow=38						
WRA	**Warramunga Arr**	**15.63**	**139**	P	**Pn**	**01 45 49.0**	**-4.4**
WRAB	**Tennant Creek**	**15.63**	**139**	*e*P	**Pn**	**01 45 50.6**	**-2.8**
WRAB				pmax	pmax		
	comp=Z,81nm,0.8s						
WRAB	**Tennant Creek**	**15.63**	**139**	*e*Pn	**Pn**	**01 45 50.6**	**-2.8**
	comp=Z,81nm,0.8s						
WRAB				*e*Sn	Sn	01 48 34.3	-11
LEM	**Lembang**	**15.92**	**274**	Pn	**P**	**01 46 00.8**	**+0.5**
	comp=Z,4.5nm,0.3s,baz=49,slow=11,SNR=6.8						
LEM				LR	LR	01 54 24.4	
	comp=Z,631nm,19.2s,baz=86,slow=46						
LEM	**Lembang**	**15.92**	**274**	P	**P**	**01 46 02.8**	**+2.5**
KKM	**Kota Kinabalu**	**15.96**	**332**	*e*Pn	**P**	**01 46 05.0**	**+4.4**
	comp=Z,34nm,1.1s						
KSM	**Kuching**	**16.38**	**305**	*e*Pn	**P**	**01 46 06.2**	**+1.0**
	comp=Z,33nm,1.0s						
CBJI	**Citeko**	**16.72**	**275**	P	**P**	**01 46 09.2**	**+0.1**
CGJI	**Cibinong**	**17.84**	**274**	P	**Pn**	**01 46 20.1**	**-1.1**
	comp=Z,72nm,0.9s,comp=Z,1μm						
XMIS	**Christmas Isla**	**17.87**	**261**	*e*Pn	**P**	**01 46 22.9**	**+1.1**
	comp=Z,120nm,0.8s						
JAY	**Jayapura**	**17.92**	**73**	P	**Pn**	**01 46 21.6**	**-0.7**
	comp=Z,0.1nm,0.3s,baz=93,slow=23,SNR=5.5						
JAY	**Jayapura**	**17.92**	**73**	P	**Pn**	**01 46 21.7**	**-0.5**
ASAR	**Alice Springs**	**18.27**	**149**	P	**P**	**01 46 24.6**	**-1.6**
	comp=Z,1.3nm,0.3s,baz=324,slow=12,SNR=57						
ASAR				S	Sn	01 49 35.1	-15
	comp=Z,0.6nm,0.3s,baz=319,slow=20,SNR=9.6						
ASAR				LR	LR	01 54 24.6	
	comp=Z,316nm,21.2s,baz=323,slow=40						
KASI	**Kota Agung**	**19.16**	**277**	P	**Pn**	**01 46 36.9**	**-0.3**
	comp=Z,46nm,0.9s						
QIS	**Mount Isa**	**19.75**	**130**	P	**Pn**	**01 46 43.6**	**-0.6**
	baz=20,SNR=12						
COEN	**Coen**	**20.02**	**108**	P	**P**	**01 46 45.8**	**+0.4**
	baz=20,SNR=14						
COEN	**Coen**	**20.02**	**108**	*e*P	**P**	**01 46 46.1**	**+0.7**
	comp=Z,63nm,0.9s						
LHSI	**Lahat**	**20.44**	**281**	P	Pn	01 46 51.8	-0.6
MORW	**Morawa**	**21.95**	**198**	P	**P**	**01 47 06.0**	**0.0**
	baz=22,SNR=24						
MYKOM	**Kota Tinggi**	**22.06**	**296**	*e*P	**P**	**01 47 08.3**	**+0.9**
	comp=Z,41nm,1.1s						
MTSU	**Mount Surprise**	**22.42**	**118**	P	**P**	**01 47 12.1**	**+0.8**
	baz=22,SNR=18						
KMBL	**Kambalda**	**23.11**	**184**	P	**P**	**01 47 17.7**	**-0.5**
	baz=23,SNR=20						
BLDU	**Ballidu**	**23.22**	**195**	P	**P**	**01 47 19.1**	**-0.3**
	baz=23,SNR=52						
PMG	**Port Moresby**	**23.30**	**95**	P	**P**	**01 47 20.2**	**-0.1**
	comp=Z,42nm,0.8s,baz=264,slow=2.5,SNR=8.1						
PMG				LR	LR	01 58 50.3	
	comp=Z,430nm,18.0s,baz=244,slow=43						
PMG	**Port Moresby**	**23.30**	**95**	*d i*P	**P**	**01 47 20.9**	**+0.6**
PMG				pmax	pmax		
	comp=Z,221nm,0.9s						
PMG	**Port Moresby**	**23.30**	**95**	*e*P	**P**	**01 47 21.7**	**+1.5**
	comp=Z,82nm,1.1s						
KLBR	**Kellerberrin**	**23.91**	**192**	P	**P**	**01 47 26.2**	**+0.3**
	baz=24,SNR=54						
PPI	**Padang Panjang**	**24.38**	**287**	P	P	01 47 40.9	+11
MANU	**Manus Island**	**24.42**	**77**	*e*P	**P**	**01 47 31.1**	**+0.3**
	comp=Z,69nm,1.6s						
CTA	**Charters Tower**	**24.89**	**121**	P	**P**	**01 47 36.5**	**+1.5**
	comp=Z,39nm,0.9s,baz=288,slow=12,SNR=27						
CTAO	**Charters Tower**	**24.89**	**121**	*e*P	**P**	**01 47 37.0**	**+2.0**
CTAO				pmax	pmax		
	comp=Z,52nm,0.9s						
CTAO	**Charters Tower**	**24.89**	**121**	*e*P	**P**	**01 47 37.0**	**+2.0**
	comp=Z,52nm,0.9s						
NWAO	**Narrogin (SRO)**	**25.31**	**193**	P	**P**	**01 47 38.2**	**-0.3**
	comp=Z,70nm,0.7s,baz=242,slow=8.7,SNR=34						
NWAO				LR	LR	01 59 51.9	
	comp=Z,302nm,18.4s,baz=70,slow=42						
NWAO	**Narrogin (SRO)**	**25.31**	**193**	P	**P**	**01 47 38.7**	**+0.2**
	baz=25,SNR=34						
NWAO	**Narrogin (SRO)**	**25.31**	**193**	*e*P	**P**	**01 47 38.8**	**+0.2**
NWAO				pmax	pmax		
	comp=Z,116nm,1.0s						
NWAO	**Narrogin (SRO)**	**25.31**	**193**	*e*P	**P**	**01 47 38.8**	**+0.2**
	comp=Z,116nm,1.0s						
MNSI	**Mandailing Nat**	**25.57**	**289**	P	**P**	**01 47 44.9**	**+3.7**
	comp=Z,39nm,1.4s,comp=Z,4μm						
IPM	**Ipoh**	**25.81**	**298**	*e*P	**P**	**01 47 46.2**	**+2.9**
	comp=Z,33nm,1.2s						
QLP	**Quilpie**	**26.78**	**136**	P	**P**	**01 47 53.8**	**+1.8**
	baz=27,SNR=14						
PSI	**Prapat**	**26.94**	**293**	*e*P	**P**	**01 47 53.9**	**+0.2**
PSI				pmax	pmax		
	comp=Z,37nm,1.1s						
PSI	**Prapat**	**26.94**	**293**	*e*P	**P**	**01 47 53.9**	**+0.2**
	comp=Z,36nm,1.1s						
RKGY	**Rocky Gully**	**26.99**	**192**	P	**P**	**01 47 55.6**	**+1.8**
	baz=27,SNR=24						
BBOO	**Buckleboo**	**27.07**	**156**	P	**P**	**01 47 55.0**	**+0.4**
	baz=27,SNR=13						
BBOO	**Buckleboo**	**27.07**	**156**	*e*P	**P**	**01 47 55.4**	**+0.8**
	comp=Z,47nm,0.9s						
SKLT	**Songkhla**	**27.54**	**303**	P	**P**	**01 48 01.5**	**+2.6**
	comp=Z,30nm,1.6s,comp=Z,751nm						
TRTT	**Trang**	**28.68**	**303**	P	**P**	**01 48 11.2**	**+2.2**
	comp=Z,24nm,1.3s						
HTT	**Hallett**	**28.82**	**153**	P	**P**	**01 48 11.4**	**+1.2**
	baz=29,SNR=11						
STKA	**Stephens Creek**	**28.90**	**147**	P	**P**	**01 48 11.4**	**+0.5**
	comp=Z,6.9nm,0.8s,baz=332,slow=7.7,SNR=9.8						
STKA				PcP	**PcP**	**01 51 18.6**	**-0.7**
	comp=Z,5.1nm,0.6s,baz=294,slow=2.9,SNR=3.3						
STKA				LR	LR	02 00 54.0	
	comp=Z,266nm,18.2s,baz=237,slow=39						
STKA	**Stephens Creek**	**28.90**	**147**	P	**P**	**01 48 11.8**	**+0.9**
	baz=29,SNR=8.1						
RMQ	**Roma**	**30.01**	**130**	P	**P**	**01 48 22.3**	**+1.5**
	baz=30,SNR=4.6						
QIZ	**Qiongzhong**	**30.27**	**333**	P	**P**	**01 48 24.5**	**+1.4**
QIZ				S	**S**	**01 53 22.3**	**+2.3**
CMSA	**Cobar Meteorol**	**31.02**	**141**	P	**P**	**01 48 31.0**	**+1.4**
	baz=31,SNR=11						
PHET	**Kaeng Krachan**	**31.74**	**311**	P	**P**	**01 48 37.6**	**+1.5**
	comp=Z,9.8nm,0.9s						
ARPS	**Mount Arapiles**	**32.92**	**152**	P	**P**	**01 48 48.2**	**+1.9**
	baz=33,SNR=8.8						
SRDT	**SRDT**	**33.05**	**313**	P	**P**	**01 48 49.5**	**+1.9**
	comp=Z,90nm,1.0s						
PBKT	**Sadao Pong**	**33.28**	**318**	P	**P**	**01 48 50.8**	**+1.2**
	comp=Z,9.1nm,1.2s						
TOO	**Toolangi**	**35.32**	**149**	P	**P**	**01 49 09.5**	**+2.3**
	baz=35,SNR=4.0						
LAMP	**Lampang**	**35.56**	**318**	P	**P**	**01 49 12.3**	**+2.9**
	comp=Z,5.5nm,1.0s						
CMAR	**Chiang Mai Arr**	**35.97**	**318**	P	**P**	**01 49 11.0**	**-1.8**
	comp=Z,7.2nm,0.7s,baz=140,slow=7.1,SNR=28						
CMAR				LR	LR	02 08 02.9	
	comp=Z,125nm,18.2s,baz=165,slow=43						
CMMT	**Chiang Mai**	**36.22**	**318**	P	**P**	**01 49 16.0**	**+1.0**
	comp=Z,14nm,1.0s						
CHTO	**Chiang Mai**	**36.23**	**318**	P	**P**	**01 49 16.1**	**+1.1**
	comp=Z,61nm,1.0s						
CHTO	**Chiang Mai**	**36.23**	**318**	*e*P	**P**	**01 49 15.4**	**+0.4**
CHTO				pmax	pmax		
	comp=Z,10.0nm,0.8s						
CHTO	**Chiang Mai**	**36.23**	**318**	*e*P	**P**	**01 49 15.4**	**+0.4**
	comp=Z,9.7nm,0.8s						
CRAI	**Chiangrai**	**36.34**	**321**	P	**P**	**01 49 17.2**	**+1.2**
	comp=Z,84nm,0.9s						
GYA	**Guiyang**	**38.18**	**335**	⇑*i*P	**P**	**01 49 31.6**	**0.0**
GYA				pP	pP	01 49 42.3	-1.5
GYA				PP	**PnPn**	**01 51 05.0**	**+3.5**
GYA				PcP	**PcP**	**01 51 47.6**	**+1.9**
GYA				S	**S**	**01 55 24.3**	**+2.1**
GYA				ScP	**ScP**	**01 55 32.4**	**+2.4**
GYA				ScS	**ScS**	**01 59 40.9**	**+1.0**
GYA				pmax	pmax		
	comp=Z,30nm,0.8s						
GYA				pmax	pmax		
	comp=Z,120nm,5.0s						
GYA				LR	LR		
	comp=Z,580nm,17.2s						
GYA				LR	LR		
	comp=Z,520nm,17.8s						
GYA				LR	LR		
	comp=Z,510nm,17.4s						
KMI	**Kunming**	**38.86**	**329**	P	**P**	**01 49 38.8**	**+1.3**
KMI				pP	pP	01 49 47.6	-2.1
KMI				sP	sP	01 49 52.9	-2.1
KMI				S	**S**	**01 55 32.8**	**0.0**
KMI				pmax	pmax		
	comp=Z,25nm,1.0s						
KMI				pmax	pmax		
	comp=Z,170nm,4.2s						
KMI				LR	LR		
	comp=Z,73nm,3.8s						
KMI				LR	LR		
	comp=Z,130nm,4.0s						
KMI				LR	LR		
	comp=Z,110nm,7.9s						
WHN	**Wuhan**	**39.53**	**347**	⇓P	**P**	**01 49 44.1**	**+1.4**
ENH	**Enshi**	**40.59**	**341**	*e*P	**P**	**01 49 51.3**	**-0.2**
	comp=Z,34nm,0.8s						
CD2	**Chengdu**	**43.29**	**335**	P	**P**	**01 50 14.3**	**+0.6**
CD2				sP	pP	01 50 28.4	+2.4
CD2				PP	**PP**	**01 51 55.8**	**+0.8**
CD2				S	**S**	**01 56 40.9**	**+2.8**
CD2				sS	sS	01 56 57.8	-0.9
CD2				pmax	pmax		
	comp=Z,60nm,1.1s						
CD2				pmax	pmax		
	comp=Z,140nm,3.0s						
CD2				LR	LR		
	comp=Z,150nm,4.8s						
CD2				LR	LR		
	comp=Z,230nm,16.8s						
DZM	**Mont Dzumac**	**43.42**	**113**	P	**P**	**01 50 14.9**	**0.0**
	comp=Z,7.2nm,0.9s,baz=99,slow=15,SNR=3.1						
XAN	**Xi'an**	**44.26**	**342**	P	**P**	**01 50 20.8**	**-0.6**
XAN				pmax	pmax		
	comp=Z,25nm,0.8s						
KSAR	**Wonju Array Be**	**45.58**	**5**	P	**P**	**01 50 31.3**	**-0.4**
KSAR						01 52 09.9	
KSAR	**Wonju Array Be**	**45.58**	**5**	P	**P**	**01 50 31.3**	**-0.4**
KSAR				PcP	**PcP**	**01 52 09.9**	**+0.2**
KSRS	**Korea Array**	**45.59**	**5**	P	**P**	**01 50 31.3**	**-0.5**
	comp=Z,1.3nm,0.6s,baz=185,slow=9.7,SNR=4.6						
KSRS				PcP	**PcP**	**01 52 09.9**	**+0.2**
	comp=Z,2.1nm,0.7s,baz=195,slow=3.9,SNR=4.8						
MJAR	**Matsushiro Arr**	**46.57**	**16**	P	**P**	**01 50 37.9**	**-1.6**
	comp=Z,2.2nm,0.6s,baz=189,slow=9.5,SNR=6.2						
LZH	**Lanzhou**	**47.82**	**338**	⇓P	**P**	**01 50 50.3**	**+0.8**
LZH				pP	pP	01 51 00.5	-1.5
LZH				sP	sP	01 51 04.3	-2.9
LZH				PP	**PP**	**01 52 41.6**	**-0.2**
LZH				*e*S	**S**	**01 57 45.3**	**+1.9**
LZH				sS	sS	01 58 02.0	-2.2
LZH				SS	**SS**	**02 01 08.8**	**-3.8**
LZH				pmax	pmax		
	comp=Z,71nm,1.3s						
LZH				pmax	pmax		
	comp=Z,210nm,6.0s						
LZH				LR	LR		
	comp=Z,880nm,11.6s						
LZH				LR	LR		
	comp=Z,560nm,11.0s						
LZH				LR	LR		
	comp=Z,1μm,15.2s						
BJI	**Beijing**	**48.48**	**352**	P	**P**	**01 50 54.0**	**-0.3**
BJI				S	**S**	**01 57 56.5**	**+4.2**
BJI				pmax	pmax		
	comp=Z,17nm,0.6s						
BJI				LR	LR		
	comp=Z,620nm,13.8s						
BJI				LR	LR		
	comp=Z,180nm,13.8s						
LSA	**Lhasa**	**48.94**	**322**	*e*P	**P**	**01 50 59.0**	**+0.4**
LSA				pmax	pmax		
	comp=Z,29nm,0.9s						
LSA	**Lhasa**	**48.94**	**322**	*e*P	**P**	**01 50 59.0**	**+0.4**
	comp=Z,29nm,0.9s						
HHC	**Hu-ho-hao-te**	**50.05**	**348**	*e*P	**P**	**01 51 09.3**	**+2.8**
HHC				pmax	pmax		
	comp=Z,28nm,1.0s						
HHC				pmax	pmax		
	comp=Z,200nm,6.6s						
HYB	**Hyderabad**	**51.29**	**300**	*i*P	**P**	**01 51 15.0**	**-1.1**
PKIN	**Phulchoki**	**51.31**	**315**	*e*P	**P**	**01 51 15.8**	**-0.6**
	comp=Z,11nm,0.5s						
KKN	**Kakani**	**51.52**	**315**	*e*P	**P**	**01 51 17.8**	**-0.1**
	comp=Z,64nm,1.0s						
CN2	**Changchun**	**51.78**	**2**	*e*P	**P**	**01 51 20.0**	**+0.7**
CN2				*e*sP	sP	01 51 35.0	-2.0
CN2				*e*S	**S**	**01 58 38.0**	**-0.1**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
CN2				pmax	pmax		
	comp=Z,200nm,3.0s						
CN2				LR	LR		
	comp=Z,500nm,15.0s						
CN2				LR	LR		
	comp=Z,300nm,15.0s						
CN2				LR	LR		
	comp=Z,300nm,16.0s						
GKN	**Gorkha**	**52.10**	**315**	*e*P	**P**	**01 51 21.5**	**-0.7**
	comp=Z,89nm,0.9s						
GTA	**Gaotai**	**52.26**	**337**	*e*P	**P**	**01 51 23.4**	**+0.3**
GTA				pP	pP	01 51 34.0	-1.7
GTA				S	**S**	**01 58 45.9**	**+0.8**
GTA				SS	**SS**	**02 02 22.8**	**-0.6**
GTA				pmax	pmax		
	comp=Z,22nm,0.9s						
GTA				pmax	pmax		
	comp=Z,89nm,5.7s						
GTA				LR	LR		
	comp=Z,470nm,13.3s						
GTA				LR	LR		
	comp=Z,330nm,12.1s						
GTA				LR	LR		
	comp=Z,380nm,10.9s						
KOLN	**Koldanda**	**52.69**	**314**	*e*P	**P**	**01 51 25.6**	**-1.0**
	comp=Z,68nm,0.7s						
USRK	**Ussuriysk Ar.**	**52.70**	**8**	P	**P**	**01 51 25.6**	**-0.4**
	comp=Z,4.6nm,0.6s,baz=200,slow=7.3,SNR=13						
MDJ	**Mudanjiang**	**52.84**	**5**	P	**P**	**01 51 27.8**	**+0.7**
MDJ				pmax	pmax		
	comp=Z,12nm,0.8s						
MDJ				pmax	pmax		
	comp=Z,130nm,3.9s						
PYUN	**Piuthan**	**53.32**	**314**	*e*P	**P**	**01 51 30.4**	**-0.8**
	comp=Z,194nm,1.0s						
MSVF	**Nonsavu**	**53.73**	**106**	*e*P	**P**	**01 51 36.3**	**+2.0**
MSVF				pmax	pmax		
	comp=Z,27nm,1.0s						
MSVF	**Nonsavu**	**53.73**	**106**	*e*P	**P**	**01 51 36.1**	**+1.8**
	comp=Z,24nm,1.0s						
RPZ	**Rata Peaks**	**54.34**	**139**	*e*P	**P**	**01 51 39.9**	**+1.6**
	comp=Z,76nm,1.1s						
BKZ	**Black Stump Fm**	**56.39**	**132**	*e*P	**P**	**01 51 54.6**	**+1.5**
	comp=Z,32nm,1.0s						
ULN	**Ulaanbaatar**	**57.71**	**347**	*e*P	**P**	**01 52 01.1**	**-1.2**
ULN				pmax	pmax		
	comp=Z,14nm,0.9s						
ULN	**Ulaanbaatar**	**57.71**	**347**	*e*P	**P**	**01 52 01.1**	**-1.2**
	comp=Z,14nm,0.9s						
SONM	**Songino Array**	**57.83**	**346**	P	**P**	**01 52 02.7**	**-0.4**
	comp=Z,8.5nm,0.7s,baz=164,slow=8.4,SNR=56						
CASY	**Casey**	**58.69**	**186**	*e*P	**P**	**01 52 09.9**	**+1.1**
	comp=Z,44nm,1.8s						
ZAK	**Zakamensk**	**60.96**	**345**	*e*P	**P**	**01 52 23.4**	**-1.3**
ZAK				pmax	pmax		
	comp=Z,6.0nm,1.4s						
WMQ	**Urumqi**	**61.15**	**331**	P	**P**	**01 52 26.3**	**+0.2**
WMQ				pP	pP	01 52 38.5	-0.4
WMQ				sP	sP	01 52 44.3	+0.2
WMQ				pmax	pmax		
	comp=Z,12nm,0.8s						
WMQ				pmax	pmax		
	comp=Z,73nm,6.4s						
WMQ				LR	LR		
	comp=Z,120nm,29.8s						
WMQ				LR	LR		
	comp=Z,110nm,26.8s						
TLY	**Talaya**	**62.07**	**346**	*e*P	**P**	**01 52 32.3**	**+0.3**
TLY				pmax	pmax		
	comp=Z,11nm,0.9s						
MOY	**Mondy**	**62.72**	**344**	*e*P	**P**	**01 52 36.2**	**-0.3**
MOY				pmax	pmax		
	comp=Z,29nm,1.8s						
NKL	**Nikolayevsk**	**62.81**	**11**	*e*P	**P**	**01 52 38.5**	**+1.6**
NKL				pmax	pmax		
	comp=Z,23nm,1.0s						
KSH	**Kashi**	**64.78**	**321**	P	**P**	**01 52 50.4**	**+0.1**
KSH				*e*ScP		01 57 23.1	
KSH				PcS		01 57 27.5	
KSH				S	**S**	**02 01 24.9**	**-3.2**
KSH				ScS	**SKSac**	**02 02 38.8**	**-2.7**
KSH				SS	**SS**	**02 05 37.4**	**-2.8**
KSH				pmax	pmax		
	comp=Z,62nm,0.8s						
KSH				pmax	pmax		
	comp=Z,120nm,2.7s						
KSH				LR	LR		
	comp=Z,190nm,6.6s						
KSH				LR	LR		
	comp=Z,170nm,6.8s						
KSH				LR	LR		
	comp=Z,350nm,13.0s						
MKAR	**Makanchi Array**	**65.93**	**330**	P	**P**	**01 52 57.1**	**-0.4**
	comp=Z,20nm,0.8s,baz=133,slow=7.9,SNR=141						
MKAR				PKP2bc		02 21 38.4	
	comp=Z,0.3nm,0.7s,baz=338,slow=2.6,SNR=4.3						
MKAR	**Makanchi Array**	**65.93**	**330**	*c e*P	**P**	**01 52 57.0**	**-0.5**
MKAR				pmax	pmax		
	comp=Z,20nm,0.8s						
MAKZ	**Makanchi**	**66.09**	**330**	*e*P	**P**	**01 52 58.0**	**-0.6**
MAKZ				pmax	pmax		
	comp=Z,20nm,1.0s						
MAKZ	**Makanchi**	**66.09**	**330**	*e*P	**P**	**01 52 58.0**	**-0.6**
	comp=Z,20nm,1.0s						
BOD	**Bodaibo**	**66.25**	**354**	*e*P	**P**	**01

comp=Z,179nm,26.0s
YAK MLR MLR
comp=N,86nm,29.0s
YAK MLR MLR
comp=E,150nm,26.0s
YAK Yakutsk 70.17 3 *e*P **P 01 53 23.2 -0.5**
comp=E,148nm,0.8s
KKAR Karatay Array 70.19 321 *e*P **P 01 53 23.9 -0.5**
KKAR Karatay Array 70.19 321 *e*P **P 01 53 23.9 -0.5**
KURBB Kurchatov Arra 70.36 331 PKP2bc **P'P'df 02 21 27.5 +2.6**
comp=E,0.1nm,0.4s,baz=316,slow=2.6,SNR=4.5
KURK Kurchatov 70.39 332 *ce*P **P 01 53 24.7 -0.6**
KURK pmax pmax
comp=Z,49nm,1.2s
KURK Kurchatov 70.39 332 *e*P **P 01 53 24.5 -0.8**
comp=Z,34nm,1.0s
KURK ⇑*e* 02 21 27.5
MA2 Magadan 70.95 14 *e*P **P 01 53 29.0 +0.4**
MA2 pmax pmax
comp=Z,68nm,1.0s
MA2 Magadan 70.95 14 *e*P **P 01 53 29.0 +0.4**
comp=Z,68nm,1.0s
NVS Novosibirsk 71.30 337 *e*P **P 01 53 29.4 -1.4**
NVS pmax pmax
comp=Z,26nm,1.2s
NVS pmax pmax
comp=N,16nm,1.5s
NVS pmax pmax
comp=E,11nm,1.1s
MAW Mawson 71.56 201 P **P 01 53 33.7 +1.5**
comp=E,13nm,0.9s,baz=69,slow=7.0,SNR=16
MAW Mawson 71.56 201 P **P 01 53 33.7 +1.5**
baz=72,SNR=9.5
VNDA Vanda 72.10 172 P **P 01 53 36.7 +1.4**
comp=E,4.8nm,0.9s,baz=316,slow=6.9,SNR=16
VNDA LR LR 02 25 44.7
comp=E,134nm,18.2s,baz=331,slow=36
SBA Scott Base 73.06 171 *e*P **P 01 53 42.9 +1.9**
SBA pmax pmax
comp=Z,20nm,1.4s
SBA Scott Base 73.06 171 *e*P **P 01 53 42.9 +1.9**
comp=Z,20nm,1.4s
SEY Seymchan 74.28 13 *ce*P **P 01 53 49.0 +0.7**
BRVK Borovoye 75.88 330 *ce*P **P 01 53 57.2 -0.6**
BRVK pmax pmax
comp=Z,16nm,1.2s
BRVK Borovoye 75.88 330 *e*P **P 01 53 57.3 -0.4**
comp=Z,14nm,1.1s
GEYT Alibeck 76.23 312 P **P 01 53 60.0 -0.2**
comp=Z,5.7nm,0.7s,baz=131,slow=4.1,SNR=15
ZRNK Zerenda 76.46 330 *e*P **P 01 54 00.2 -0.9**
ZRNK pmax pmax
comp=Z,9.0nm,0.8s
ZRNK Zerenda 76.46 330 *e*P **P 01 54 00.2 -0.9**
comp=Z,9.2nm,0.8s
ABKAR Akbulak array 79.59 323 *e*P **P 01 54 17.7 -0.8**
TIXI Tiksi 79.75 2 *ce*P **P 01 54 18.0 -0.9**
TIXI pmax pmax
comp=Z,35nm,1.0s
TIXI Tiksi 79.75 2 *e*P **P 01 54 15.9 -3.0**
comp=Z,24nm,0.8s
SYO Syowa Base 80.25 201 ⇓*e*P **P 01 54 21.0 -0.7**
SYO Syowa Base 80.25 201 ⇑*e*PcP **PcP 01 54 28.4 -0.4**
NRIK Noril'sk 81.28 348 P **P 01 54 27.2 +0.1**
comp=Z,13nm,1.0s,baz=142,slow=6.2,SNR=22
QSPA South Pole Qui 81.79 180 *e*P **P 01 54 30.7 +0.5**
comp=Z,48nm,0.8s
BILL Bilibino 81.80 15 *i*P **P 01 54 30.3 +0.4**
BILL *i* 01 57 37.7
BILL pmax pmax
comp=Z,2.0nm,1.0s
BILL Bilibino 81.80 15 *e*P **P 01 54 30.1 +0.2**
SVE Sverdlovsk 82.59 330 ⇑*i*P **P 01 54 33.6 -0.7**
SVE pmax pmax
comp=Z,31nm,1.1s
ARU Arti 83.44 330 *c i*P **P 01 54 37.3 -1.4**
ARU 01 57 52.8
ARU S **S 02 04 55.5 -1.1**
ARU pmax pmax
comp=Z,11nm,0.8s
ARU Arti 83.44 330 *e*P **P 01 54 36.9 -1.8**
KMBO Kilima Mbogo 86.24 269 *e*P **P 01 54 53.6 -0.4**
KMBO Kilima Mbogo 86.24 269 *e*P **P 01 54 53.6 -0.4**
DGRG David-gareji 86.66 313 P **P 01 54 56.5 +1.2**
DGRG David-gareji 86.66 313 P **P 01 54 56.5 +1.2**
GNI Garni 86.82 311 *e*P **P 01 54 56.5 +0.3**
GNI pmax pmax
comp=Z,76nm,1.0s
GNI Garni 86.82 311 *e*P **P 01 54 56.5 +0.3**
comp=Z,76nm,1.0s
TBLG Delisi 87.19 313 P **P 01 54 58.1 +0.3**
TBLG Delisi 87.19 313 P **P 01 54 58.1 +0.3**
GUDG Gudauri 87.55 313 P **P 01 55 01.5 +1.7**
BGD Bogdanovka 87.92 312 P **P 01 55 02.6 +1.0**
ZEI Tsey 88.04 314 *e*P **P 01 55 01.4 -0.7**
ZEI pmax pmax
comp=Z,31nm,0.9s
KBZ Khabaz 88.96 314 P **P 01 55 06.2 +0.2**
comp=Z,6.4nm,0.9s,baz=107,slow=3.9,SNR=12
KIV Kislovodsk 89.15 314 ⇑*i*P **P 01 55 07.2 0.0**
KIV *i* 01 55 13.6
KIV pmax pmax
comp=Z,8.0nm,1.2s
KIV Kislovodsk 89.15 314 *e*P **P 01 55 09.6 +2.4**
SNAA Sanae 92.97 195 P **P 01 55 25.5 +1.2**
SNAA Sanae 92.97 195 *e*P **P 01 55 25.3 +1.0**
SNAA Sanae 92.97 195 *e*P **P 01 55 25.3 +1.0**
ANN Anapa 93.01 315 *e*P **P 01 55 23.7 -1.2**
ANN pmax pmax
comp=Z,13nm,1.4s
BOSA Boshof 93.38 241 P **P 01 55 26.9 -0.3**
comp=Z,1.7nm,0.7s,baz=23,slow=3.8,SNR=5.5
BOSA Boshof 93.38 241 P **P 01 55 27.0 -0.3**
KLMR Klimovskoe 94.22 331 *e*P **P 01 55 31.5 +1.4**
KLMR pmax pmax
comp=Z,4.0nm,0.9s
VNA2 Neumayer--Watz 94.58 194 P **P 01 55 32.8 +1.2**
baz=135,slow=4.2
VNA3 Neumayer Olymp 94.91 194 P **P 01 55 32.4 -0.9**
OBN Obninsk 94.97 325 ⇑*i*P **P 01 55 32.5 -1.1**
OBN *i* 01 59 27.3
OBN pmax pmax
comp=Z,9.0nm,0.8s
BRTR Keskin Array B 95.15 309 P **P 01 55 33.8 -1.4**
comp=Z,1.2nm,0.8s,baz=134,slow=5.3,SNR=11
ILAR Eielson Array 97.14 26 P **P 01 55 40.7 -2.7**
comp=Z,0.3nm,0.6s,baz=188,slow=14,SNR=4.9
ILAR PKKPbc **PKKPbc 02 12 23.1 -2.8**
comp=Z,0.2nm,0.8s,baz=63,slow=1.9,SNR=4.3
AKASG Malin Array Be 99.06 320 P **Pdif 01 55 49.5 -2.8**
comp=Z,0.3nm,0.3s,baz=76,slow=5.4,SNR=7.5
AKASG Malin Array Be 99.06 320 *ce*P **Pdif 01 55 50.7 -1.6**
KIEV Kiev 99.07 320 *e*P **Pdif 01 55 51.1 -1.2**
KIEV pmax pmax
comp=Z,3.0nm,1.0s
KOLS Kolonicke sedl 103.58 318 *e*P **Pdif 01 56 13.9 +1.4**
KOLS Kolonicke sedl 103.58 318 *e*PDIFF **Pdif 01 56 13.9 +1.4**
STHS Stebnicka Huta 104.23 319 *e*P **Pdif 01 56 17.2 +1.8**
STHS Stebnicka Huta 104.23 319 *e*PDIFF **Pdif 01 56 17.2 +1.8**
DPC Dobruska-Polom 107.29 320 AMS AMS 01 57 00.0
comp=Z,600nm,23.1s
UPC Upice 107.47 320 AMS AMS 01 56 20.0
comp=Z,600nm,22.9s
TREC Trest 107.98 319 AMS AMS 02 00 50.0
comp=Z,500nm,19.8s
GOPC GO Pecny, Ondr 108.34 320 AMS AMS 01 56 40.0
comp=Z,700nm,23.4s
PRU Pruhonice 108.48 320 AMS AMS 01 56 30.0
comp=Z,600nm,20.6s
CLL Collm 109.21 322 Lm MLR 02 02 00.0
comp=Z,400nm,20.9s
GERES GERESS Array B 109.21 319 PP PP 02 01 08.3 -2.2
comp=Z,0.1nm,0.3s,baz=68,slow=8.7,SNR=4.3
KHC Kasperske Hory 109.24 319 AMS AMS 01 56 10.0
comp=Z,600nm,21.1s
YKA Yellowknife Ar 111.56 25 PKiKP **PKiKP 02 00 44.0 -1.3**
comp=Z,0.9nm,0.8s,baz=311,slow=1.9,SNR=11
YKA PKKPbc **PKKPbc 02 11 40.0 -2.1**
comp=Z,0.8nm,0.8s,baz=107,slow=3.3,SNR=12
YKA Yellowknife Ar 111.56 25 *c i*PKiKP **PKiKP 02 00 44.0 -1.3**
YKA pmax pmax
comp=Z,1.0nm,0.8s
YKA Yellowknife Ar 111.56 25 PKiKP **PKiKP 02 00 44.0 -1.3**
YKA PKKPbc **PKKPbc 02 11 40.0 -2.1**
ESK Eskdalemuir 117.09 329 *e*PKIKP **PKPdf 02 00 56.4 +0.3**
ESK Eskdalemuir 117.09 329 *e*PKPdf **PKPdf 02 00 56.4 +0.3**
HLID Hailey 118.58 45 P **PKPdf 02 00 59.4 -0.2**
baz=287
HLID Hailey 118.58 45 *e*PKPdf **PKPdf 02 00 59.2 -0.3**
TAM Tamanrasset 118.99 291 *e*PKIKP **PKPdf 02 01 01.4 +0.5**
TAM Tamanrasset 118.99 291 *e*PKPdf **PKPdf 02 01 01.4 +0.5**
DUG Dugway, Tooele 120.69 48 *e*PKIKP **PKPdf 02 01 03.4 -0.3**
DUG Dugway, Tooele 120.69 48 *e*PKPdf **PKPdf 02 01 03.4 -0.3**
MOOW Moose Ponds 121.04 43 *e*PKPdf **PKPdf 02 01 03.7 -0.7**
SNOW Snow King Moun 121.13 44 *e*PKPdf **PKPdf 02 01 04.4 -0.2**
HWUT Hardware Ranch 121.17 46 *e*PKPdf **PKPdf 02 01 03.4 -1.3**
LOHW Long Hollow 121.18 44 *e*PKPdf **PKPdf 02 01 04.5 -0.1**
RLMT Red Lodge 121.53 41 P **PKPdf 02 01 05.3 0.0**
baz=292
BW06 Boulder Array 122.19 44 P **PKPdf 02 01 05.1 -1.5**
baz=291
PDAR Pinedale Array 122.19 44 PKP **PKPdf 02 01 05.6 -1.0**
comp=Z,0.9nm,0.8s,baz=169,slow=1.5,SNR=8.2
PDAR PKKPbc **PKKPab 02 11 01.9 -1.2**
comp=Z,1.0nm,0.7s,baz=102,slow=5.0,SNR=8.4
214A Organ Pipe Nat 122.68 57 P **PKPdf 02 01 07.3 -0.3**
baz=282
TORD Torodi Ar. Bea 122.81 280 PKP **PKPdf 02 01 06.9 -1.3**
comp=Z,1.7nm,0.7s,baz=82,slow=1.7,SNR=18
WUAZ Wupatki 123.04 53 P **PKPdf 02 01 08.1 -0.3**
baz=285
ESDC Sonseca Array 123.78 313 PKP **PKPdf 02 01 08.6 -1.0**
comp=Z,0.4nm,0.7s,baz=343,slow=4.6,SNR=4.5
O20A White River Ci 124.03 47 P **PKPdf 02 01 10.2 0.0**
baz=290
O20A White River Ci 124.03 47 *e*PKPdf **PKPdf 02 01 09.8 -0.4**
TUC Tucson 124.29 56 *e*PKIKP **PKPdf 02 01 10.0 -0.7**
TUC Tucson 124.29 56 *e*PKPdf **PKPdf 02 01 10.0 -0.7**
W18A Petrified Fore 124.44 53 P **PKPdf 02 01 11.5 +0.4**
baz=286
MVCO Mesa Verde 124.80 50 P **PKPdf 02 01 12.2 +0.4**
baz=288
RSSD Black Hills 125.35 41 P **PKPdf 02 01 11.2 -1.4**
baz=296
RSSD Black Hills 125.35 41 *e*PKIKP **PKPdf 02 01 11.3 -1.4**
RSSD Black Hills 125.35 41 *e*PKPdf **PKPdf 02 01 11.2 -1.4**
I25A Rochford 125.59 41 P **PKPdf 02 01 11.5 -1.5**
baz=296
A29A Manning Farm, 125.82 34 P **PKPdf 02 01 11.9 -1.1**
baz=304
S22A 4UR Ranch, Cre 125.88 49 P **PKPdf 02 01 14.4 +0.5**
baz=290
G27A Dupree 126.09 39 P **PKPdf 02 01 12.8 -1.0**
baz=299
ULM Lac du Bonnet 126.80 31 PKP **PKPdf 02 01 13.1 -1.8**
comp=Z,3.1nm,0.7s,baz=343,slow=4.1,SNR=3.5
SDCO Great Sand Dun 126.87 49 P **PKPdf 02 01 15.7 -0.1**
baz=291
SDCO Great Sand Dun 126.87 49 *e*PKPdf **PKPdf 02 01 16.0 +0.1**
ANMO Albuquerque 127.06 52 P **PKPdf 02 01 16.2 0.0**
baz=288
ANMO Albuquerque 127.06 52 *e*PKIKP **PKPdf 02 01 15.6 -0.6**
ANMO Albuquerque 127.06 52 *e*PKPdf **PKPdf 02 01 15.6 -0.6**
F29A Eureka 127.14 37 P **PKPdf 02 01 14.9 -0.9**
baz=301
I28A Midland 127.24 40 P **PKPdf 02 01 15.5 -0.5**
baz=299
C31A Landman Farms, 127.28 34 P **PKPdf 02 01 15.3 -0.6**
baz=305
B32A Ashes, Strandq 127.58 33 P **PKPdf 02 01 15.4 -1.1**
baz=306
G30A Faulkton 127.92 38 P **PKPdf 02 01 16.8 -0.4**
baz=302
MNTX Cornudas Mount 128.88 56 P **PKPdf 02 01 20.0 +0.5**
baz=286
PLCA Paso Flores 129.59 166 PKP **PKPdf 02 01 22.2 +1.5**
comp=Z,2.9nm,1.1s,baz=218,slow=5.8,SNR=3.7
ECSD EROS Data Cent 130.20 38 P **PKPdf 02 01 21.6 0.0**
baz=303
TXAR Lajitas Array 130.95 58 PKP **PKPdf 02 01 23.2 -0.4**
comp=Z,0.9nm,1.0s,baz=90,slow=1.3,SNR=5.4
TRQA Tornquist 133.69 174 *e*PKPdf **PKPdf 02 01 28.8 +0.3**
JCT Junction City 133.81 55 *e*PKIKP **PKPdf 02 01 27.8 -1.1**
JCT Junction City 133.81 55 *e*PKPdf **PKPdf 02 01 27.8 -1.1**
433A Art 134.29 55 P **PKPdf 02 01 29.1 -0.7**
baz=290
P38A Dawn 134.38 41 P **PKPdf 02 01 29.3 -0.3**
baz=303
S37A Fort Scott 134.50 44 P **PKPdf 02 01 29.7 -0.2**
baz=300
X36A Centrahoma 134.92 48 P **PKPdf 02 01 29.4 -1.4**
baz=296
V37A Hulbert 135.20 46 P **PKPdf 02 01 31.2 -0.1**
baz=299
T38A Diamond 135.23 44 P **PKPdf 02 01 30.1 -1.2**
baz=300
S39A Bolivar 135.56 43 P **PKPdf 02 01 30.4 -1.5**
baz=302
034A Hebbronville 135.81 59 P **PKPdf 02 01 33.6 +0.9**
baz=287
T39A Clever 135.87 44 P **PKPdf 02 01 32.5 0.0**
baz=301
R40A Maddies Statio 135.93 42 P **PKPdf 02 01 32.3 -0.2**
baz=304
S40A Lebanon 136.16 43 P **PKPdf 02 01 32.5 -0.5**
baz=303
T40A Mansfield 136.38 43 P **PKPdf 02 01 32.8 -0.7**
baz=302
U40A Yellville 136.57 44 P **PKPdf 02 01 33.9 +0.1**
baz=301
V40A Witts Springs 136.88 45 P **PKPdf 02 01 34.3 -0.2**
baz=301
MIAR Mount Ida 136.96 47 P **PKPdf 02 01 36.1 +1.5**
baz=299
CMLA Cha da Macela 139.45 321 *i*PKIKP **PKPdf 02 01 39.1 0.0**
GOGA Godfrey 144.57 41 *e*PKIKP **PKPab 02 01 45.5 -1.3**
GOGA Godfrey 144.57 41 *e*PKPdf **PKPab 02 01 45.5 -1.3**
CPUP Villa Florida 145.67 178 PKPbc **PKPab 02 01 51.5 +0.6**
comp=Z,33nm,0.9s,baz=175,slow=2.8,SNR=62
TIGA Tifton 145.70 44 *e*PKPbc **PKPdf 02 01 49.4 -0.9**
LVC Limon Verde 147.02 158 PKPbc **PKPab 02 01 56.6 -0.2**
comp=Z,88nm,0.9s,baz=241,slow=2.5,SNR=22
NNA Nana 151.44 134 PKPbc **PKPbc 02 02 06.1 -0.1**
comp=Z,9.3nm,0.7s,baz=256,slow=5.3,SNR=8.4
NNA PKPab **PKPab 02 02 13.6 -0.9**
comp=Z,3.3nm,0.3s,baz=327,slow=6.2,SNR=4.5
NNA Nana 151.44 134 *i*PKIKP **PKPbc 02 02 07.3 +1.0**
JTS JuntasAbangare 151.73 84 *e*PKIKP **PKPbc 02 02 06.3 -0.6**
JTS JuntasAbangare 151.73 84 *e*PKPbc **PKPbc 02 02 06.3 -0.6**
LPAZ La Paz 153.04 154 PKP **PKPdf 02 02 05.0 +1.9**
comp=Z,1.2nm,0.9s,baz=87,slow=2.1,SNR=3.6
LPAZ PKPbc **PKiKP 02 02 11.5 +0.8**
comp=Z,7.3nm,1.0s,baz=336,slow=2.1,SNR=16
LPAZ PKPab **PKPab 02 02 22.9 +1.2**
comp=Z,5.5nm,0.7s,baz=154,slow=4.9,SNR=10
ATAH Atahualpa 153.29 124 PKPbc **PKPbc 02 02 13.1 +2.2**
comp=Z,1.2nm,0.7s,baz=116,slow=4.4,SNR=6.4
SIV San Ignacio 155.52 169 PKPab **PKPab 02 02 32.2 +0.6**
comp=Z,3.3nm,0.7s,baz=189,slow=3.8,SNR=6.2

CASC 14 01:45:02.0±0.8, 9°98N×84°29W, h71km±4km, MD3.6, 1C-2D, Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CGA2	**Cerro Gallo 2**	**0.18**	**283**	⇓*i*P	Pn	01 45 12.8	0.0
CGA2				*e*S	Sn	01 45 21.1	+0.4
URSC	**Urasca**	**0.52**	**106**	⇑*i*P	Pn	01 45 15.7	+0.3
URSC				*e*S	Sn	01 45 26.2	+1.1
QCR	**Quepos**	**0.56**	**167**	*e*P	Pn	01 45 15.3	-0.3
QCR				*e*S	Sn	01 45 26.2	+0.8
JTS	**JuntasAbangare**	**0.72**	**296**	*i*P	Pn	01 45 17.6	+0.3
JTS				*e*S	Sn	01 45 28.9	+0.4
JCR	**Jicaral**	**0.82**	**261**	⇓*i*P	Pn	01 45 18.4	0.0
JCR				*e*S	Sn	01 45 31.4	+0.8
TBS2		**2.00**	**126**	*e*S	Sn	01 45 59.1	+1.2

*ISCJB **14** 01:55:35.9±1.0, 35°.14N±0°.06×141°.38E±0°.08, h27km, mb3.8/4, Error ellipse: s-maj=9.4km s-min=8.3km az=165.8*
*JMA **14** 01:55:35.5±0.2, 35°.14N×141°.45E, h25km±4km, M3.0*
*IDC **14** 01:55:43.3±2.0, 34°.24N×138°.48E, h0km, mb3.6/4, mb1 3.8/4, mb1mx3.4/47, mbtmp3.6/4, ML2.4/1, Error ellipse: s-maj=77.4km s-min=22.1km az=75.0*
ISC 14 01:55:37.7±1.4, 35°.16N±0°.06×141°.30E±0°.09, h27km, n14, σ1§25/15, mb3.9/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**0.57**	**208**	P	**Pb**	**01 55 47.3**	**-1.6**
BSO1				*e*X		01 55 54.6	
CHOJ	**Chosi**	**0.65**	**326**	P	**Pb**	**01 55 49.3**	**-1.1**
CHOJ				S	**Sb**	**01 55 59.6**	**+0.5**
BSO3	**Boso 3**	**0.74**	**241**	P	**Pb**	**01 55 51.7**	**-0.2**
BSO3				*e*X		01 56 01.5	
BSO4	**Boso 4**	**0.81**	**258**	P	**Pb**	**01 55 52.9**	**-0.2**
BSO4				S	**Sb**	**01 56 03.6**	**0.0**
TATJ	**Tateyama 2**	**1.17**	**264**	P	**Pn**	**01 55 58.7**	**+0.5**
TATJ				S	**Sn**	**01 56 12.4**	**-0.8**
JYO	**Yokosk**	**1.34**	**273**	P	**Pn**	**01 56 01.3**	**+0.7**
JYO				*e*S	**Sn**	**01 56 17.0**	**-0.6**
MJAR	**Matsushiro Arr**	**2.87**	**300**	Pn	**Pn**	**01 56 22.4**	**+0.8**
	1.1nm,0.3s,baz=144,slow=16,SNR=6.6						
H11S1	**WAKE ISLAND Hy**	**27.96**	**120**	T	T	02 30 41.8	
	baz=312,slow=76,SNR=20						
H11S3	**WAKE ISLAND Hy**	**27.96**	**120**	T	T	02 30 50.0	
	baz=312,slow=76,SNR=15						
H11S2	**WAKE ISLAND Hy**	**27.98**	**120**	T	T	02 30 48.6	
	baz=312,slow=76,SNR=12						
MKAR	**Makanchi Array**	**45.06**	**304**	P	**P**	**02 03 50.6**	**-0.5**
	0.4nm,0.7s,baz=98,slow=7.6,SNR=4.8						
KURBB	**Kurchatov Arra**	**47.10**	**309**	P	**P**	**02 04 06.1**	**-1.0**
	0.5nm,0.5s,baz=84,slow=8.2,SNR=6.9						
WRA	**Warramunga Arr**	**55.20**	**188**	P	**P**	**02 05 07.3**	**-0.8**
	1.7nm,0.9s,baz=5.9,slow=7.6,SNR=5.2						
ASAR	**Alice Springs**	**58.93**	**188**	P	**P**	**02 05 37.8**	**+3.2**
	0.8nm,0.6s,baz=10,slow=13,SNR=6.9						

NNC 14 02:01:45.7±3.0, 38°.77N×70°.46E, h0km, mb3.8, mpv3.6, 4C-4D, Error ellipse: s-maj=31.4km s-min=7.4km az=152.0, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**1.28**	**272**	⇑P	Pg	02 02 08.6	-1.5
	88nm,0.4s						
DZET				⇑S	Sb	02 02 27.9	+0.2
	147nm,0.3s						
MNAS	**Manas**	**4.02**	**22**	⇓Pn	Pn	02 02 49.9	+1.3
	5.4nm,0.6s						
MNAS				⇓Sn	Sn	02 03 39.9	+3.4
	15nm,0.7s						
KK31	**Karatay Array**	**4.33**	**0**	Pn	Pn	02 02 51.6	-1.1
	1.8nm,0.3s,baz=184,slow=12,SNR=91						
KK31				⇓Sn	Sn	02 03 43.0	-0.9
	0.4nm,0.2s,baz=167,slow=26,SNR=3.5						
KK31				Lg	Lg	02 03 59.8	
	6.8nm,0.5s,baz=175,slow=27,SNR=7.5						
AAK	**Ala-Archa**	**4.93**	**37**	⇑Pn	Pn	02 03 02.0	+0.9
	3.0nm,0.3s						
AAK				⇓Sn	Sn	02 04 00.9	+2.0
	4.6nm,0.5s						
AB31	**Akbulak array**	**12.91**	**328**	Pn	Pn	02 04 46.3	-4.0
	0.6nm,0.3s,baz=143,slow=14,SNR=50						
AB31				⇑Sn	Sn	02 07 10.2	-4.5
	1.8nm,0.7s,baz=149,slow=22,SNR=6.5						

*ISCJB **14** 02:07:14.9±0.5, 32°.60N±0°.04×90°.76E±0°.08, h10km, mb3.8/14, Error ellipse: s-maj=9.6km s-min=5.6km az=3.2*
*BJI **14** 02:07:17.0, 32°.75N×90°.69E, h10km, mb4.1/6, ML3.8/3, Ms3.7/1, Ms7 3.4/1*
*IDC **14** 02:07:20.1±6.2, 32°.48N×90°.71E, h38km±53km, mb3.6/15, mb1 3.8/18, mb1mx3.6/56, mbtmp3.8/18, ML3.3/3, Error ellipse: s-maj=24.5km s-min=17.4km az=29.0*
ISC 14 02:07:17.2±0.6, 32°.70N±0°.06×90°.63E±0°.09, h10km, n26, σ1§77/27, mb3.9/14, Xizang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LSA	**Lhasa**	**3.02**	**171**	Pg	**Pb**	**02 08 10.4**	**-1.0**
LSA				Sg	**Sb**	**02 08 52.4**	**+3.8**
LSA				smax	smax		
	comp=E,390nm,0.6s						
KKN	**Kakani**	**6.73**	**225**	*e*P	**Pn**	**02 08 57.8**	**+1.5**
	60nm,0.6s						
PKIN	**Phulchoki**	**6.82**	**223**	*e*P	**Pn**	**02 08 59.5**	**+1.9**
	45nm,0.6s						
GKN	**Gorkha**	**6.98**	**229**	*e*P	**Pn**	**02 09 01.3**	**+1.6**
	49nm,0.4s						
KOLN	**Koldanda**	**7.81**	**233**	*e*P	**Pn**	**02 09 12.3**	**+1.1**
	12nm,0.4s						
PYUN	**Piuthan**	**8.03**	**237**	*e*P	**Pn**	**02 09 14.3**	**+0.1**
	23nm,0.4s						
GTA	**Gaotai**	**10.01**	**45**	*e*P	**Pn**	**02 09 43.8**	**+2.7**
GTA				pP		02 09 47.9	
GTA				sP		02 09 51.4	
GTA				pmax	pmax		
	comp=Z,7.0nm,1.0s						
MKAR	**Makanchi Array**	**15.45**	**338**	Pn	**Pn**	**02 10 53.2**	**-2.0**
	0.1nm,0.3s,baz=151,slow=13,SNR=3.0						
CMAR	**Chiang Mai Arr**	**16.03**	**150**	Pn	**P**	**02 11 05.7**	**-0.7**
	baz=328,slow=12,SNR=11						
AAK	**Ala-Archa**	**16.14**	**312**	Pn	**Pn**	**02 11 04.3**	**-0.1**
	0.1nm,0.3s,baz=176,slow=14,SNR=1.9						
SONM	**Songino Array**	**19.26**	**34**	P	**Pn**	**02 11 43.4**	**+0.4**
	0.2nm,0.3s,baz=226,slow=12,SNR=19						
KURBB	**Kurchatov Arra**	**20.01**	**337**	P	**Pn**	**02 11 51.0**	**-0.7**
	0.8nm,0.4s,baz=148,slow=12,SNR=5.5						
ZALV	**Zalesovo Beam**	**21.64**	**351**	P	**P**	**02 12 09.8**	**+2.3**
	3.7nm,0.6s,baz=170,slow=11,SNR=14						
BVAR	**Borovoye Array**	**24.99**	**330**	P	**P**	**02 12 42.9**	**+1.9**
	1.3nm,0.7s,baz=136,slow=14,SNR=4.0						
GEYT	**Alibeck**	**26.95**	**290**	P	**P**	**02 12 59.7**	**+0.8**
	1.2nm,0.4s,baz=104,slow=12,SNR=2.7						
BRTR	**Keskin Array B**	**45.85**	**296**	P	**P**	**02 15 40.5**	**+0.7**
	0.9nm,0.8s,baz=108,slow=7.9,SNR=7.3						
FINES	**FINESS Array B**	**49.79**	**325**	P	**P**	**02 16 10.7**	**+1.0**
	3.7nm,1.0s,baz=115,slow=9.0,SNR=3.3						
MLR	**Muntele Rosu**	**50.52**	**305**	P	**P**	**02 16 16.3**	**+0.6**
	0.5nm,0.8s,baz=120,slow=7.9,SNR=8.4						
NOA	**NORSAR Array B**	**56.97**	**325**	P	**P**	**02 17 04.0**	**+1.4**
	0.4nm,0.6s,baz=96,slow=7.6,SNR=3.0						
GERES	**GERESS Array B**	**58.02**	**311**	P	**P**	**02 17 10.2**	**-0.1**
	0.4nm,0.5s,baz=72,slow=5.7,SNR=6.2						
WRA	**Warramunga Arr**	**66.98**	**135**	P	**P**	**02 18 07.3**	**-3.1**
	0.6nm,0.7s,baz=329,slow=6.2,SNR=3.6						
ASAR	**Alice Springs**	**69.62**	**138**	P	**P**	**02 18 25.7**	**-1.2**
	1.2nm,0.8s,baz=331,slow=6.5,SNR=10						
ILAR	**Eielson Array**	**73.04**	**22**	P	**P**	**02 18 46.4**	**-0.7**
	1.1nm,0.8s,baz=293,slow=4.8,SNR=13						
TORD	**Torodi Ar. Bea**	**82.14**	**281**	P	**P**	**02 19 36.9**	**-1.7**
	0.6nm,0.6s,baz=53,slow=2.9,SNR=16						
YKA	**Yellowknife Ar**	**82.99**	**12**	P	**P**	**02 19 40.9**	**-1.4**
	0.4nm,0.7s,baz=330,slow=5.2,SNR=9.5						
BOSA	**Boshof**	**86.97**	**233**	P	**P**	**02 20 00.0**	**-2.9**
	1.8nm,0.8s,baz=41,slow=5.2,SNR=3.6						

GUC 14 02:12:32.6±0.6, 35°.22S×73°.92W, h20km, ML3.7, 3C, Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHPI	**Pichilemu**	**1.78**	**63**	⇑*i*P	Pn	02 13 01.5	-0.7
CHPI				*i*S	Sn	02 13 20.1	-4.1
TALC	**Talca**	**1.88**	**96**	*e*P	Pn	02 12 56.0	-7.6
TALC				*i*S	Sn	02 13 06.4	-20
RCDM	**Rinconada Maip**	**3.10**	**57**	*e*P	Pn	02 13 22.0	+1.6
RCDM				*i*S	Sn	02 13 56.3	-0.6
ANTU	**Antumapu**	**3.18**	**60**	*e*P	Pb	02 13 25.2	-3.1
ANTU				*i*S	Sn	02 13 45.2	-14
ROCH	**El Roble**	**3.29**	**48**	⇑*i*P	Pn	02 13 25.3	+2.0
ROCH				*e*S	Sn	02 14 05.7	+3.8
ROCH				AML	AML	02 14 15.0	
	comp=N,101nm,0.3s						
CLCH	**Cerro Calan**	**3.34**	**58**	*e*P	Pn	02 13 26.1	+2.3
CLCH				*i*S	Sn	02 14 05.7	+2.9
CLCH				AML	AML	02 14 14.7	
	comp=N,192nm,0.6s						
PEL	**Peldehue**	**3.39**	**53**	⇑*i*P	Pn	02 13 26.2	+1.8
PEL				*i*S	Sn	02 14 07.3	+3.3

JMA 14 02:17:56.5±0.2, 38°.87N×142°.91E, h12km±3km, M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.99**	**283**	P	Pg	02 18 15.2	-0.4
OFUJ				*e*S	Sb	02 18 28.7	+0.1
MIYJ	**Miyakonagasawa**	**1.10**	**310**	P	Pb	02 18 16.6	-0.9

MIYJ			eS	Sb	02 18 31.0	-0.8
JIO	**Ouri**	**1.29 252**	P	Pn	02 18 20.2	-0.1
JIO			eS	Sb	02 18 36.8	-0.4
JMK	**Ichinoseki**	**1.32 274**	P	Pn	02 18 20.4	-0.3
JMK			eS	Sb	02 18 37.8	-0.3
JOM	**Ohasama**	**1.39 296**	P	Pn	02 18 21.7	-0.1
JOM			S	Sb	02 18 40.2	0.0
JKZ	**Kuzumaki**	**1.65 313**	P	Pn	02 18 25.6	+0.2
JKZ			eS	Sn	02 18 46.7	+0.1
JOU	**Okura**	**1.83 255**	P	Pb	02 18 29.4	-0.5
JRG	**Rokugo**	**1.85 287**	P	Pb	02 18 30.1	-0.1
JRG			eS	Sn	02 18 52.1	+0.8
JANG	**Nango**	**1.85 325**	P	Pb	02 18 28.5	+0.5
JANG			eS	Sn	02 18 51.8	+0.5
JMM	**Marumori**	**1.94 240**	P	Pn	02 18 29.3	0.0
JYK	**Kaneyama**	**1.99 272**	P	Pb	02 18 31.6	-1.1

*WEL **14** 02:19:14.3±0.4, 35°.29S×178°.81E, h232km±10km, ML4.4/6, Error ellipse: s-maj=10.1km s-min=9.4km az=90.0*
*IDC **14** 02:19:14.7±7.1, 35°.27S×179°.05E, h198km±76km, mb3.7/2, mb1 3.9/3, mb1mx3.3/32, mbtmp4.2/3, Error ellipse: s-maj=103.5km s-min=44.1km az=180.0*
*NEIC **14** 02:19:15.1, 35°.28S×178°.78E, h218km, MG4.4(WEL), After WEL.*

ISC 14 02:19:18.5±1.7, 35°.7S±0°.2×178°.9E±0°.2, h241km±13km, n76, σ1°.9±01/85, 4C-1D, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MXZ	**Matakaoa Point**	**1.94**	**193**	PN	**Pn**	**02 19 58.0**	**-1.6**
MXZ				SN	**S**	**02 20 31.9**	**0.0**
MXZ				AML	AML	02 20 33.5	
MXZ	**Matakaoa Point**	**1.94**	**193**	Pn	**Pn**	**02 19 58.0**	**-1.6**
WMGZ	**Waiomatatini S**	**2.18**	**189**	⇑PN	**Pn**	**02 20 00.9**	**-0.8**
WMGZ				SN	**S**	**02 20 36.5**	**+0.6**
WMGZ	**Waiomatatini S**	**2.18**	**189**	Pn	**Pn**	**02 20 00.9**	**-0.8**
HAZ	**Te Kaha**	**2.26**	**202**	⇓PN	**Pn**	**02 20 01.2**	**-1.3**
HAZ				SN	**S**	**02 20 37.6**	**+0.3**
PKGZ	**Pakihiroa**	**2.30**	**196**	PN	**Pn**	**02 20 01.9**	**-1.1**
PKGZ				SN	**S**	**02 20 38.0**	**-0.3**
PUZ	**Puketiti**	**2.45**	**191**	⇑PN	**Pn**	**02 20 03.5**	**-1.0**
PUZ				SN	**S**	**02 20 41.0**	**+0.2**
PUZ				AML	AML	02 20 44.2	
PUZ	**Puketiti**	**2.45**	**191**	Pn	**Pn**	**02 20 03.5**	**-1.0**
PUZ				Sn	**S**	**02 20 41.0**	**+0.2**
TWGZ	**Tauwhareparae**	**2.60**	**195**	⇑PN	**Pn**	**02 20 05.9**	**-0.2**
TWGZ				SN	**S**	**02 20 45.5**	**+1.8**
TWGZ	**Tauwhareparae**	**2.60**	**195**	Pn	**Pn**	**02 20 05.9**	**-0.2**
CNGZ	**Carnagh Statio**	**2.86**	**190**	PN	**Pn**	**02 20 09.0**	**+0.3**
MWZ	**Matawai**	**2.87**	**201**	PN	**Pn**	**02 20 08.6**	**-0.3**
MWZ				SN	**S**	**02 20 50.1**	**+1.4**
MWZ				AML	AML	02 20 53.0	
MWZ				AML	AML	02 21 07.1	
MWZ	**Matawai**	**2.87**	**201**	Pn	**Pn**	**02 20 08.6**	**-0.3**
TKGZ	**Te Karaka**	**2.88**	**196**	PN	**Pn**	**02 20 08.4**	**-0.6**
TKGZ	**Te Karaka**	**2.88**	**196**	Pn	**Pn**	**02 20 08.4**	**-0.6**
URZ	**Urewera**	**2.94**	**208**	P	**Pn**	**02 20 08.7**	**-0.9**
	5.6nm,0.3s,baz=276,slow=4.3,SNR=50						
URZ				S	**S**	**02 20 51.1**	**+1.0**
	24nm,0.3s,baz=137,slow=21,SNR=20						
URZ	**Urewera**	**2.94**	**208**	PN	**Pn**	**02 20 08.8**	**-0.9**
URZ				AML	AML	02 20 53.7	
URZ				AML	AML	02 20 54.2	
RAGZ	**Rawiri**	**3.05**	**202**	PN	**Pn**	**02 20 10.8**	**-0.2**
RAGZ	**Rawiri**	**3.05**	**202**	Pn	**Pn**	**02 20 10.8**	**-0.2**
RIGZ	**Rimuhau**	**3.16**	**196**	PN	**Pn**	**02 20 11.7**	**-0.4**
MUGZ	**Murupara**	**3.26**	**210**	PN	**Pn**	**02 20 12.8**	**-0.5**
RTZ	**Ruatahuna**	**3.30**	**206**	PN	**Pn**	**02 20 12.8**	**-1.0**
SNGZ	**Shannon Statio**	**3.33**	**201**	PN	**Pn**	**02 20 13.1**	**-1.0**
SNGZ	**Shannon Statio**	**3.33**	**201**	Pn	**Pn**	**02 20 13.1**	**-1.0**
PRGZ	**Paritu Road**	**3.34**	**193**	PN	**Pn**	**02 20 12.8**	**-1.4**
PRGZ	**Paritu Road**	**3.34**	**193**	Pn	**Pn**	**02 20 12.8**	**-1.4**
KNZ	**Kokohu**	**3.48**	**195**	⇑PN	**Pn**	**02 20 14.9**	**-0.8**
KNZ	**Kokohu**	**3.48**	**195**	Pn	**Pn**	**02 20 14.9**	**-0.8**
RAHZ	**Arahi**	**3.54**	**203**	PN	**Pn**	**02 20 16.3**	**-0.1**
RAHZ	**Arahi**	**3.54**	**203**	Pn	**Pn**	**02 20 16.3**	**-0.1**
MHGZ	**Mahia Peninsul**	**3.56**	**192**	PN	**Pn**	**02 20 16.5**	**-0.1**
MHGZ	**Mahia Peninsul**	**3.56**	**192**	Pn	**Pn**	**02 20 16.5**	**-0.1**
WHHZ	**Waihua**	**3.64**	**200**	PN	**Pn**	**02 20 17.5**	**-0.1**
MRHZ	**Matea Rd**	**3.71**	**211**	PN	**Pn**	**02 20 18.1**	**-0.4**
ARHZ	**Aropaoanui**	**3.88**	**202**	PN	**Pn**	**02 20 20.3**	**0.0**
ARHZ	**Aropaoanui**	**3.88**	**202**	Pn	**Pn**	**02 20 20.3**	**0.0**
BKZ	**Black Stump Fm**	**3.97**	**208**	PN	**Pn**	**02 20 21.0**	**-0.4**
BKZ	**Black Stump Fm**	**3.97**	**208**	Pn	**Pn**	**02 20 21.0**	**-0.4**
MCHZ	**McNeill Hill**	**4.14**	**204**	PN	**Pn**	**02 20 23.1**	**-0.4**
MCHZ	**McNeill Hill**	**4.14**	**204**	Pn	**Pn**	**02 20 23.1**	**-0.4**
KWHZ	**Kaweka Forest**	**4.22**	**207**	PN	**Pn**	**02 20 23.7**	**-0.7**
CKHZ	**Cape Kidnapper**	**4.23**	**199**	PN	**Pn**	**02 20 24.2**	**-0.3**
CKHZ	**Cape Kidnapper**	**4.23**	**199**	Pn	**Pn**	**02 20 24.2**	**-0.3**
KAHZ	**Kahuranaki**	**4.41**	**200**	PN	**Pn**	**02 20 26.6**	**-0.1**
KAHZ	**Kahuranaki**	**4.41**	**200**	Pn	**Pn**	**02 20 26.6**	**-0.1**
KRHZ	**Kereru**	**4.43**	**206**	PN	**Pn**	**02 20 26.0**	**-1.0**
MOVZ	**Moawhango**	**4.47**	**213**	PN	**Pn**	**02 20 27.0**	**-0.5**
MOVZ	**Moawhango**	**4.47**	**213**	Pn	**Pn**	**02 20 26.5**	**-1.0**
PXZ	**Pawanui**	**4.63**	**199**	PN	**Pn**	**02 20 28.1**	**-1.3**
PXZ				AML	AML	02 21 29.0	
PXZ				AML	AML	02 21 31.2	
PXZ				AML	AML	02 21 39.8	
PXZ				AML	AML	02 21 39.8	
PXZ	**Pawanui**	**4.63**	**199**	Pn	**Pn**	**02 20 28.1**	**-1.3**
PNHZ	**Pukenui**	**4.73**	**206**	PN	**Pn**	**02 20 29.6**	**-1.0**
PNHZ	**Pukenui**	**4.73**	**206**	Pn	**Pn**	**02 20 29.6**	**-1.0**
TSZ	**Takapari Road**	**4.95**	**207**	PN	**Pn**	**02 20 32.8**	**-0.4**
TSZ	**Takapari Road**	**4.95**	**207**	Pn	**Pn**	**02 20 32.8**	**-0.4**
MRZ	**Mangatainoka R**	**5.61**	**206**	PN	**Pn**	**02 20 40.1**	**-1.4**
MRZ	**Mangatainoka R**	**5.61**	**206**	Pn	**Pn**	**02 20 40.1**	**-1.4**
HOWZ	**Holdsworth Sta**	**5.84**	**206**	PN	**Pn**	**02 20 42.7**	**-1.7**
HOWZ	**Holdsworth Sta**	**5.84**	**206**	Pn	**Pn**	**02 20 42.7**	**-1.7**
OGWZ	**Otaki Gorge**	**5.90**	**208**	PN	**Pn**	**02 20 43.9**	**-1.2**
OGWZ	**Otaki Gorge**	**5.90**	**208**	Pn	**Pn**	**02 20 43.9**	**-1.2**
KIW	**Kapiti Island**	**6.04**	**210**	PN	**Pn**	**02 20 45.6**	**-1.3**
KIW				AML	AML	02 21 59.0	
KIW	**Kapiti Island**	**6.04**	**210**	Pn	**Pn**	**02 20 45.6**	**-1.3**
MTW	**Mount Morrison**	**6.08**	**205**	PN	**Pn**	**02 20 45.9**	**-1.5**
MTW	**Mount Morrison**	**6.08**	**205**	Pn	**Pn**	**02 20 45.9**	**-1.5**
CAW	**Cannon Point**	**6.19**	**208**	PN	**Pn**	**02 20 47.3**	**-1.4**
CAW	**Cannon Point**	**6.19**	**208**	Pn	**Pn**	**02 20 47.3**	**-1.4**
TUWZ	**Tuamarina**	**6.92**	**212**	PN	**Pn**	**02 20 55.8**	**-2.1**
TUWZ	**Tuamarina**	**6.92**	**212**	Pn	**Pn**	**02 20 55.8**	**-2.1**
NNZ	**Nelson**	**7.01**	**216**	PN	**Pn**	**02 20 57.5**	**-1.6**
NNZ	**Nelson**	**7.01**	**216**	Pn	**Pn**	**02 20 57.5**	**-1.6**
BSWZ	**Blackbirch Sta**	**7.18**	**211**	Pn	**Pn**	**02 21 00.2**	**-1.1**
THZ	**Tophouse**	**7.66**	**216**	Pn	**Pn**	**02 21 06.1**	**-1.3**
KHZ	**Kahutara**	**7.91**	**210**	Pn	**Pn**	**02 21 09.1**	**-1.3**
ASAR	**Alice Springs**	**40.53**	**275**	P	**P**	**02 26 35.8**	**+1.2**
	1.8nm,0.6s,baz=116,slow=7.9,SNR=22						
WRA	**Warramunga Arr**	**42.01**	**280**	P	**P**	**02 26 47.1**	**+0.6**
	2.5nm,0.6s,baz=119,slow=7.6,SNR=9.5						
FINES	**FINESS Array B**	**148.98**	**335**	PKPbc	**PKPbc**	**02 38 36.9**	**-0.1**
	2.4nm,0.9s,baz=48,slow=4.1,SNR=7.5						

MEX 14 02:26:23.1±0.6, 18°.84N×96°.59W, h18km±36km, MD3.7, Veracruz

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TPIG	**Tehuac#an**	**0.84**	**240**	eP	Pb	02 26 36.7	-2.6
TPIG				eS	Sb	02 26 46.6	-3.7
LVIG	**Laguna Verde**	**0.90**	**11**	i P	Pb	02 26 37.2	-2.9
LVIG				eS	Sb	02 26 47.7	-4.0
VHO	**Vista Hermosa**	**1.76**	**184**	eP	Pn	02 26 50.2	-2.7
VHO				eS	Sn	02 27 10.3	-4.6
PPM	**Popocatepetl**	**1.94**	**277**	i P	Pn	02 26 53.4	-2.2
PPM				i S	Sn	02 27 16.1	-3.7
TLIG	**Tlapa**	**2.27**	**236**	eP	Pn	02 26 56.5	-3.2
TLIG				i S	Sn	02 27 22.8	-4.5
YAIG	**Yautepec**	**2.34**	**271**	i P	Pn	02 26 58.9	-2.0
YAIG				i S	Sn	02 27 25.3	-3.9
PNIG	**Pinotepa**	**2.84**	**211**	eP	Pn	02 27 02.8	-4.8
PNIG				i S	Sn	02 27 38.0	-3.2
HUIG	**Huatulco**	**3.09**	**171**	eP	Pn	02 27 08.2	-2.7
HUIG				eS	Sn	02 27 43.3	-4.1

*DDA **14** 02:32:21.6, 39°.54N×28°.04E, h7km, Md2.5*
*CSEM **14** 02:32:22.0±0.1, 39°.55N×28°.10E, h10km, MD2.5, Error ellipse: s-maj=2.9km s-min=2.5km az=62.0*

ISC 14 02:32:21.7±1.1, 39°.56N±0°.02×28°.06E±0°.02, h18km±9km, n39, σ0°.30/48, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BALB	**Balikesir**	**0.16**	**301**	ePg	**Pb**	**02 32 26.1**	**0.0**
BALB	**Balikesir**	**0.16**	**301**	ePg	**Pb**	**02 32 26.1**	**0.0**
DURS	**Dursunbey**	**0.32**	**82**	P	**Pg**	**02 32 28.6**	**0.0**
DURS				S	**Sb**	**02 32 33.7**	**-0.3**
DURS	**Dursunbey**	**0.32**	**82**	i P	**Pg**	**02 32 28.6**	**0.0**
DURS				i S	**Sb**	**02 32 33.7**	**-0.3**
GONE	**Gonen-Balikesi**	**0.57**	**330**	ePG	**Pg**	**02 32 33.0**	**0.0**
GONE	**Gonen-Balikesi**	**0.57**	**330**	ePg	**Pg**	**02 32 33.0**	**0.0**
DEMI	**Demirci**	**0.72**	**135**	P	**Pb**	**02 32 35.6**	**-0.2**
DEMI				S	**Sb**	**02 32 45.1**	**-0.4**
DEMI	**Demirci**	**0.72**	**135**	i P	**Pb**	**02 32 35.6**	**-0.2**
DEMI				i S	**Sb**	**02 32 45.1**	**-0.4**
KCTX	**Karacabey (Bur**	**0.74**	**18**	ePG	**Pb**	**02 32 35.9**	**-0.3**
KCTX	**Karacabey (Bur**	**0.74**	**18**	ePg	**Pb**	**02 32 35.9**	**-0.3**
EDC	**Edincik**	**0.80**	**349**	ePG	**Pb**	**02 32 37.2**	**+0.1**
EDC	**Edincik**	**0.80**	**349**	ePg	**Pb**	**02 32 37.2**	**+0.1**
ULDT	**Uludag**	**1.01**	**55**	P	**Pg**	**02 32 41.4**	**0.0**
ULDT				S	**Sn**	**02 32 55.7**	**+0.5**
ULDT	**Uludag**	**1.01**	**55**	i P	**Pg**	**02 32 41.4**	**0.0**
ULDT				i S	**Sn**	**02 32 55.7**	**+0.5**
DKL	**Dikili**	**1.02**	**242**	ePG	**Pg**	**02 32 41.9**	**+0.5**
DKL	**Dikili**	**1.02**	**242**	ePg	**Pg**	**02 32 41.9**	**+0.5**
MDNY	**Mudanya-Bursa**	**1.03**	**38**	ePG	**Pg**	**02 32 41.5**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.03**	**38**	ePg	**Pg**	**02 32 41.5**	**-0.1**
TVSB	**Tavsanli**	**1.09**	**95**	ePG	**Pb**	**02 32 42.0**	**-0.1**
TVSB	**Tavsanli**	**1.09**	**95**	ePg	**Pb**	**02 32 42.0**	**-0.1**
MRMT	**Marmara Adasi**	**1.10**	**341**	ePN	**Pg**	**02 32 43.1**	**0.0**
MRMT	**Marmara Adasi**	**1.10**	**341**	ePn	**Pg**	**02 32 43.1**	**0.0**
IGD	**Bursa**	**1.13**	**51**	i P	**Pg**	**02 32 43.7**	**+0.2**
IGD				i S	**Sg**	**02 32 58.4**	**+0.2**
MANT	**Manisa**	**1.13**	**160**	P	**Pn**	**02 32 43.0**	**+0.1**
MANT				S	**Sb**	**02 32 56.9**	**-0.5**
MANT	**Manisa**	**1.13**	**160**	i P	**Pn**	**02 32 43.0**	**+0.1**
MANT				i S	**Sb**	**02 32 56.9**	**-0.5**
KULA	**Kula-Manisa**	**1.14**	**156**	ePN	**Pg**	**02 32 43.6**	**-0.2**
KULA	**Kula-Manisa**	**1.14**	**156**	ePn	**Pg**	**02 32 43.6**	**-0.2**
ARMT	**Armutlu**	**1.18**	**31**	ePN	**Pg**	**02 32 44.7**	**+0.2**
ARMT	**Armutlu**	**1.18**	**31**	ePn	**Pg**	**02 32 44.7**	**+0.2**
RKY	**Sarkoy-Tekirda**	**1.31**	**329**	ePN	**Pg**	**02 32 47.1**	**0.0**
RKY	**Sarkoy-Tekirda**	**1.31**	**329**	ePn	**Pg**	**02 32 47.1**	**0.0**
GELI	**Tayfur-Gelibol**	**1.48**	**305**	ePN	**Pg**	**02 32 49.5**	**-0.7**
GELI	**Tayfur-Gelibol**	**1.48**	**305**	ePn	**Pg**	**02 32 49.5**	**-0.7**
AYDB	**Zeytinkoy-Aydi**	**1.61**	**185**	ePN	**Pb**	**02 32 51.4**	**+0.4**
AYDB	**Zeytinkoy-Aydi**	**1.61**	**185**	ePn	**Pb**	**02 32 51.4**	**+0.4**
CTKS	**Kestanelik-??a**	**1.71**	**11**	ePN	**Pb**	**02 32 52.7**	**+0.1**
CTKS	**Kestanelik-??a**	**1.71**	**11**	ePn	**Pb**	**02 32 52.7**	**+0.1**
SIGR	**SIGRI**	**1.74**	**259**	ePN	**Pb**	**02 32 52.9**	**-0.2**
SIGR	**SIGRI**	**1.74**	**259**	ePn	**Pb**	**02 32 52.9**	**-0.2**

JMA 14 02:37:20.0±0.1, 35°.45N×140°.90E, h24km±1km, M3.7, 1C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.25**	**352**	⇓P	Pb	02 37 26.2	-0.1
CHOJ				S	Sb	02 37 30.8	+0.2
KTR	**Katsuura**	**0.56**	**238**	⇑P	Pb	02 37 31.0	-0.3
KTR				S	Sb	02 37 39.9	+1.0
BSO4	**Boso 4**	**0.65**	**225**	P	Pn	02 37 33.2	-0.4
BSO3	**Boso 3**	**0.72**	**206**	P	Pn	02 37 34.1	-0.3
BSO1	**Boso 1**	**0.80**	**175**	P	Pb	02 37 34.1	-0.8
JYT	**Yasato**	**0.96**	**324**	P	Pn	02 37 37.5	-0.5
JYT				S	Sb	02 37 50.1	-0.3
JHO	**Hitachi**	**1.19**	**347**	P	Pb	02 37 42.3	+0.4
JHO				S	Sb	02 37 57.8	+1.0
MAT	**Matsushiro**	**2.44**	**297**	P	Pb	02 38 02.6	-0.6
MAT				eS	Sb	02 38 36.0	+3.1

*ISCJB **14** 02:39:23.4±0.5, 57°.94S±0°.07×25°.5W±0°.1, h49km, mb4.4/15, MS3.9/2, Error ellipse: s-maj=12.3km s-min=8.5km az=147.7*
*IDC **14** 02:39:26.2±4.9, 57°.88S×25°.65W, h60km±44km, mb4.1/12, mb1 4.2/13, mb1mx4.0/23, mbtmp4.4/13, ML5.1/1, MS4.0/2, Ms1 3.9/2, ms1mx3.3/23, Error ellipse: s-maj=17.7km s-min=16.1km az=27.0*
*NEIC **14** 02:39:28.7±1.0, 57°.98S×25°.63W, h85km±9km, mb4.7/3, Error ellipse: s-maj=8.7km s-min=6.3km az=224.0*

ISC 14 02:39:24.7±0.4, 57°.94S±0°.09×25°.66W±0°.10, h49km, n64, σ0°.66/58, mb4.4/15, 1C, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HOPE	**Hope Point**	**7.07**	**297**	ePn	Pn	02 41 10.9	+5.4
	170nm,0.8s						
VNA1	**Neumayer--Stat**	**14.73**	**157**	P	**Pn**	**02 42 48.0**	**-1.7**
VNA3	**Neumayer Olymp**	**14.93**	**160**	P	**Pn**	**02 42 51.8**	**-0.5**
VNA2	**Neumayer--Watz**	**15.13**	**157**	P	**Pn**	**02 42 54.1**	**-0.8**
	baz=318,slow=14						
SNAA	**Sanae**	**16.68**	**155**	P	**Pn**	**02 43 15.4**	**+0.7**
SNAA	**Sanae**	**16.68**	**155**	ePn	**Pn**	**02 43 15.0**	**+0.4**
	463nm,0.6s						
PMSA	**Palmer Station**	**19.37**	**233**	P	**Pn**	**02 43 47.5**	**+0.2**
	0.6nm,0.3s,baz=60,slow=12,SNR=5.0						
PMSA	**Palmer Station**	**19.37**	**233**	eP	**Pn**	**02 43 47.1**	**-0.2**
	32nm,0.9s						
USHA	**Ushuaia**	**23.59**	**259**	P	**P**	**02 44 31.4**	**+0.8**
	33nm,0.9s,baz=356,slow=4.4,SNR=5.3						
USHA				LR	LR	02 51 43.4	
	comp=Z,1μm,20.8s,baz=83,slow=31						
SYO	**Syowa Base**	**29.60**	**139**	⇑epP	pP	02 45 38.6	+1.4
QSPA	**Sofia Pole Qui**	**32.31**	**180**	eP	**P**	**02 45 49.1**	**+0.4**
	78nm,1.4s						
PLCA	**Paso Flores**	**33.17**	**281**	P	**P**	**02 45 56.8**	**+0.4**
	3.0nm,0.8s,baz=172,slow=9.4,SNR=9.4						
MAW	**Mawson**	**38.14**	**142**	P	**P**	**02 46 38.6**	**+0.1**
	2.0nm,0.7s,baz=250,slow=6.3,SNR=4.9						
MAW				LR	LR	03 00 24.1	
	comp=Z,70nm,20.3s,baz=244,slow=33						
CPUP	**Villa Florida**	**38.69**	**311**	P	**P**	**02 46 42.2**	**-1.3**
	2.9nm,1.0s,baz=184,slow=6.3,SNR=5.2						
CPUP				PcP	**PcP**	**02 48 54.2**	**-0.3**
	1.4nm,0.7s,baz=135,slow=2.6,SNR=3.6						
VNDA	**Vanda**	**44.72**	**182**	P	**P**	**02 47 33.9**	**+1.6**
	4.8nm,0.8s,baz=188,slow=6.8,SNR=26						
BOSA	**Boshof**	**45.68**	**73**	P	**P**	**02 47 40.4**	**-0.2**
	2.6nm,0.8s,baz=240,slow=3.3,SNR=4.3						
H10S2	**ASCENSION HYDR**	**49.60**	**14**	T	T	03 42 45.3	
	baz=188,slow=75,SNR=43						
H10S3	**ASCENSION HYDR**	**49.60**	**14**	T	T	03 42 47.0	
	baz=188,slow=75,SNR=21						
H10S1	**ASCENSION HYDR**	**49.61**	**14**	T	T	03 42 46.1	
	baz=188,slow=75,SNR=29						
H10N1	**ASCENSION HYDR**	**50.71**	**14**	T	T	03 44 08.2	
	baz=187,slow=75,SNR=15						
H10N3	**ASCENSION HYDR**	**50.72**	**14**	T	T	03 44 08.3	
	baz=187,slow=75,SNR=33						
H10N2	**ASCENSION HYDR**	**50.73**	**14**	T	T	03 44 10.6	
	baz=187,slow=75,SNR=27						
LPAZ	**La Paz**	**52.15**	**305**	P	**P**	**02 48 30.9**	**+0.1**
	1.7nm,0.5s,baz=156,slow=6.4,SNR=9.2						
LSZ	**Lusaka**	**58.32**	**66**	P	**P**	**02 49 14.9**	**+0.3**
	3.1nm,0.7s,baz=211,slow=7.6,SNR=8.6						
DBIC	**Dimbokro**	**66.56**	**23**	P	**P**	**02 50 09.4**	**0.0**
	3.6nm,0.6s,baz=155,slow=6.5,SNR=10						
OTAV	**Otavalo**	**71.39**	**303**	eP	**P**	**02 50 40.6**	**+0.6**
	2.6nm,0.9s						
TORD	**Torodi Ar. Bea**	**74.31**	**28**	P	**P**	**02 50 57.3**	**+0.6**
	5.1nm,0.8s,baz=198,slow=6.4,SNR=90						
TAM	**Tamanrasset**	**84.53**	**29**	eP	**P**	**02 51 53.9**	**+1.6**
	4.4nm,1.4s						
STKA	**Stephens Creek**	**89.89**	**169**	P	**P**	**02 52 18.2**	**0.0**
	1.3nm,0.6s,baz=356,slow=18,SNR=3.1						
ASAR	**Alice Springs**	**96.93**	**161**	P	**P**	**02 52 50.0**	**-0.8**
	1.6nm,0.8s,baz=184,slow=3.8,SNR=13						
WRA	**Warramunga Arr**	**100.65**	**161**	P	**Pdif**	**02 53 06.3**	**-1.0**
	0.5nm,0.8s,baz=190,slow=4.3,SNR=2.9						
RSSD	**Black Hills**	**120.62**	**305**	ePKPdf	**PKPdf**	**02 58 09.5**	**-0.8**
DUG	**Dugway, Tooele**	**121.56**	**296**	ePKPdf	**PKPdf**	**02 58 12.0**	**0.0**
BW06	**Boulder Array**	**122.04**	**300**	ePKPdf	**PKPdf**	**02 58 12.5**	**-0.6**
PDAR	**Pinedale Array**	**122.04**	**300**	PKP	**PKPdf**	**02 58 12.0**	**-1.0**
	0.5nm,0.5s,baz=135,slow=5.2,SNR=6.5						
HWUT	**Hardware Ranch**	**122.07**	**298**	ePKPdf	**PKPdf**	**02 58 12.8**	**-0.3**
NVAR	**Mina Array Bea**	**122.88**	**291**	PKP	**PKPdf**	**02 58 15.4**	**+0.7**
	1.2nm,0.7s,baz=134,slow=2.6,SNR=4.6						
MOOW	**Moose Ponds**	**123.35**	**300**	ePKPdf	**PKPdf**	**02 58 15.2**	**-0.3**
IMW	**Indian Meadow**	**123.55**	**300**	ePKPdf	**PKPdf**	**02 58 16.0**	**0.0**
HLID	**Hailey**	**124.92**	**298**	ePKPdf	**PKPdf**	**02 58 18.1**	**-0.4**
FINES	**FINESS Array B**	**125.67**	**28**	PKP	**PKPdf**	**02 58 18.5**	**-0.5**
	1.7nm,0.6s,baz=192,slow=3.7,SNR=9.9						
ABKAR	**Akbulak array**	**127.75**	**56**	ePKPdf	**PKPdf**	**02 58 23.0**	**-0.4**
EKS2	**Erkin-Say**	**129.47**	**70**	ePKPdf	**PKPdf**	**02 58 26.7**	**-0.4**
MKAR	**Makanchi Array**	**136.68**	**72**	PKP	**PKPdf**	**02 58 41.6**	**+1.2**
	0.4nm,0.8s,baz=32,slow=3.2,SNR=4.0						
YKA	**Yellowknife Ar**	**138.12**	**316**	PKhKP	PKPpre	02 58 32.8	
	0.2nm,0.5s,baz=120,slow=3.1,SNR=5.6						
YKA				PKP	**PKPdf**	**02 58 42.1**	**-0.3**
	2.0nm,0.7s,baz=124,slow=2.0,SNR=3.7						
DLBC	**Dease Lake**	**142.09**	**304**	PKhKP	PKPpre	02 58 45.0	
	0.7nm,0.6s,baz=115,slow=5.8,SNR=3.1						
INK	**Inuvik**	**147.78**	**318**	PKPbc	**PKPbc**	**02 59 02.2**	**-0.1**
	12nm,0.7s,baz=97,slow=2.5,SNR=62						
INK	**Inuvik**	**147.78**	**318**	ePKPbc	**PKPbc**	**02 59 01.9**	**-0.4**
DAWY	**Dawson**	**148.66**	**309**	ePKPbc	**PKPbc**	**02 59 04.1**	**-0.7**
EGAK	**Eagle**	**149.62**	**310**	ePKPbc	**PKPbc**	**02 59 06.3**	**-0.8**
BMRM	**Bremner River**	**149.80**	**302**	ePKPbc	**PKPbc**	**02 59 07.9**	**+0.2**
SONM	**Songino Array**	**149.97**	**89**	PKPbc	**PKPbc**	**02 59 08.3**	**-0.3**
	4.0nm,0.6s,baz=220,slow=3.4,SNR=18						
ULN	**Ulaanbaatar**	**150.34**	**89**	ePKPbc	**PKPbc**	**02 59 08.9**	**-0.7**
DOT	**Dot Lake**	**150.48**	**307**	ePKPbc	**PKPbc**	**02 59 09.2**	**0.0**
PAX	**Paxson**	**150.87**	**305**	ePKPbc	**PKPbc**	**02 59 09.8**	**-0.5**
ILAR	**Eielson Array**	**151.97**	**309**	PKPbc	**PKPbc**	**02 59 12.6**	**-0.1**
	15nm,0.9s,baz=144,slow=2.5,SNR=107						
PMR	**Palmer**	**152.07**	**302**	ePKPbc	**PKPbc**	**02 59 12.7**	**-0.2**
RC01	**Rabbit Creek A**	**152.19**	**300**	ePKPbc	**PKPbc**	**02 59 12.5**	**-0.8**
COLA	**College**	**152.40**	**309**	ePKPbc	**PKPbc**	**02 59 13.1**	**-0.5**
COLA				ePKPab	**PKPab**	**02 59 23.4**	**-0.6**
MCK	**McKinley**	**152.59**	**306**	ePKPbc	**PKPbc**	**02 59 14.3**	**+0.2**
TRF	**Thorofare Moun**	**153.10**	**305**	ePKPbc	**PKPbc**	**02 59 15.2**	**-0.3**
KTH	**Kantishna Hill**	**153.41**	**305**	ePKPbc	**PKPbc**	**02 59 15.9**	**0.0**
BPAW	**Bear Paw Mtn.**	**153.55**	**306**	ePKPbc	**PKPbc**	**02 59 15.8**	**-0.4**
BPAW				ePKPab	**PKPab**	**02 59 28.3**	**-0.7**
COLD	**Coldfoot**	**153.75**	**314**	ePKPbc	**PKPbc**	**02 59 16.6**	**+0.1**

*ISCJB **14** 02:49:48.2±0.7, 11°.29N±0°.03×62°.11W±0°.04, h129km±6km, Error ellipse: s-maj=7.6km s-min=4.5km az=27.3*
*FUNV **14** 02:49:49.8, 11°.27N×61°.96W, h119km, MW2.9*
*TRN **14** 02:49:50.2, 11°

0.3nm,0.5s,baz=342,slow=13,SNR=5.9
STKA Stephens Creek 36.40 153 P **P 03 28 20.8 +2.2**
5.6nm,1.0s,baz=325,slow=12,SNR=4.0
MKAR Makanchi Array 58.47 328 LR LR 03 58 19.2
comp=Z,23nm,19.6s,baz=212,slow=38
TORD Torodi Ar. Bea 120.31 285 PKP **PKPdf 03 40 03.9 +2.3**
0.2nm,0.5s,baz=77,slow=1.9,SNR=6.5

*ISCJB **14** 03:22:43.6±0.5, 55°.75S±0°.07×27°.6W±0°.1, h35km, mb4.4/11, MS3.4/5, Error ellipse: s-maj=12.9km s-min=9.4km az=144.3*
*NEIC **14** 03:22:46.5±1.3, 55°.82S×27°.58W, h51km±11km, mb4.6/2, Error ellipse: s-maj=10.9km s-min=7.8km az=46.0*
*IDC **14** 03:22:48.2±2.7, 55°.84S×27°.58W, h64km±23km, mb4.2/8, mb1 4.2/9, mb1mx4.0/22, mbtmp4.4/9, MS3.5/5, Ms1 3.5/5, ms1mx3.2/19, Error ellipse: s-maj=18.1km s-min=17.1km az=51.0*
ISC 14 03:22:45.1±0.5, **55°.76S**±0°.10×**27°.73W**±0°.08, **h35**km, **n48**, σ1§**56**/42, **mb4.5**/10, **MS3.4**/5, **1D, South Sandwich Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HOPE	**Hope Point**	**5.25**	**283**	*e*Pn	**Pn**	**03 24 02.6**	**+1.7**
	385nm,0.4s						
HOPE				*e*Sn	**Sn**	**03 24 55.7**	**-4.5**
VNA1	**Neumayer--Stat**	**17.18**	**158**	P	**P**	**03 26 44.6**	**+1.4**
VNA3	**Neumayer Olymp**	**17.37**	**160**	P	**Pn**	**03 26 45.1**	**+0.8**
VNA2	**Neumayer--Watz**	**17.58**	**158**	P	**P**	**03 26 47.9**	**+0.3**
	baz=313,slow=14						
SNAA	**Sanae**	**19.13**	**156**	P	**P**	**03 27 04.5**	**-0.3**
SNAA	**Sanae**	**19.13**	**156**	*e*P	**P**	**03 27 04.0**	**-0.9**
	190nm,0.5s						
PMSA	**Palmer Station**	**19.86**	**228**	P	**P**	**03 27 13.6**	**+1.0**
	0.4nm,0.3s,baz=281,slow=9.9,SNR=7.3						
PLCA	**Paso Flores**	**31.65**	**280**	LR	LR	03 40 11.5	
	comp=Z,64nm,20.8s,baz=186,slow=33						
SYO	**Syowa Base**	**32.00**	**141**	‖*e*sP	sP	03 29 23.0	+1.3
QSPA	**South Pole Qui**	**34.49**	**180**	*e*P	**P**	**03 29 29.4**	**0.0**
	4.7nm,0.4s						
CPUP	**Villa Florida**	**36.39**	**312**	P	**P**	**03 29 46.0**	**+0.2**
	2.9nm,0.9s,baz=129,slow=7.8,SNR=7.4						
CPUP				LR	LR	03 44 07.0	
	comp=Z,65nm,19.5s,baz=169,slow=35						
MAW	**Mawson**	**40.57**	**144**	P	**P**	**03 30 19.6**	**-0.9**
	7.3nm,0.6s,baz=239,slow=6.7,SNR=20						
MAW				LR	LR	03 45 40.0	
	comp=Z,69nm,19.4s,baz=235,slow=34						
SUR	**Sutherland**	**40.86**	**76**	P	**P**	**03 30 23.3**	**-0.3**
	0.4nm,0.9s,baz=113,slow=8.2,SNR=8.9						
SUR	**Sutherland**	**40.86**	**76**	P	**P**	**03 30 23.7**	**+0.2**
	4.6nm,0.7s						
LVC	**Limon Verde**	**44.89**	**300**	P	**P**	**03 30 59.7**	**+3.3**
	10.0nm,0.5s,baz=111,slow=11,SNR=3.7						
BOSA	**Boshof**	**46.20**	**77**	P	**P**	**03 31 05.2**	**-1.3**
	3.1nm,0.9s,baz=201,slow=4.6,SNR=5.4						
VNDA	**Vanda**	**46.85**	**183**	P	**P**	**03 31 10.9**	**0.0**
	5.5nm,0.9s,baz=180,slow=7.0,SNR=14						
VNDA				LR	LR	03 49 47.3	
	comp=Z,88nm,18.3s,baz=243,slow=35						
H10S2	**ASCENSION HYDR**	**47.81**	**18**	T	T	04 23 17.5	
	baz=190,slow=74,SNR=110						
H10S3	**ASCENSION HYDR**	**47.81**	**18**	T	T	04 23 17.6	
	baz=190,slow=74,SNR=116						
H10S1	**ASCENSION HYDR**	**47.83**	**18**	T	T	04 23 18.7	
	baz=190,slow=74,SNR=112						
H10N1	**ASCENSION HYDR**	**48.93**	**18**	T	T	04 24 41.4	
	baz=189,slow=75,SNR=36						
H10N3	**ASCENSION HYDR**	**48.93**	**18**	T	T	04 24 41.4	
	baz=189,slow=75,SNR=43						
H10N2	**ASCENSION HYDR**	**48.95**	**18**	T	T	04 24 42.5	
	baz=189,slow=75,SNR=43						
LPAZ	**La Paz**	**49.96**	**306**	P	**P**	**03 31 37.7**	**+1.5**
	1.3nm,0.3s,baz=138,slow=4.2,SNR=20						
LPAZ				LR	LR	03 55 05.1	
	comp=Z,21nm,18.8s,baz=150,slow=39						
DBIC	**Dimbokro**	**65.03**	**25**	P	**P**	**03 33 21.9**	**+0.3**
	3.0nm,1.0s,baz=180,slow=10,SNR=3.0						
TORD	**Torodi Ar. Bea**	**72.95**	**30**	P	**P**	**03 34 11.3**	**+0.6**
	5.6nm,0.5s,baz=199,slow=6.6,SNR=234						
ASAR	**Alice Springs**	**99.36**	**163**	P	**Pdif**	**03 36 22.2**	**-1.4**
	1.2nm,0.8s,baz=184,slow=3.9,SNR=9.0						
WRA	**Warramunga Arr**	**103.08**	**163**	P	**Pdif**	**03 36 37.6**	**-2.6**
	0.6nm,0.7s,baz=190,slow=4.1,SNR=3.0						
NVAR	**Mina Array Bea**	**121.00**	**294**	PKP	**PKPdf**	**03 41 32.7**	**-0.6**
	0.3nm,0.6s,baz=144,slow=1.7,SNR=2.6						
FINES	**FINESS Array B**	**124.27**	**28**	PKP	**PKPdf**	**03 41 37.3**	**-1.2**
	4.3nm,1.0s,baz=107,slow=2.0,SNR=7.7						
ARCES	**ARCESS Array B**	**130.79**	**22**	PKP	**PKPdf**	**03 41 49.9**	**-0.9**
	0.9nm,0.8s,baz=184,slow=1.4,SNR=9.0						
YKA	**Yellowknife Ar**	**135.75**	**318**	PKhKP	PKPpre	03 41 40.1	
	0.3nm,0.6s,baz=108,slow=7.5,SNR=5.3						
YKA				PKP	**PKPdf**	**03 41 59.7**	**-0.5**
	0.4nm,0.5s,baz=130,slow=2.3,SNR=11						
YKA				SKPbc	**SKPbc**	**03 45 24.5**	**-4.1**
	0.3nm,0.9s,baz=120,slow=1.8,SNR=4.2						
MKAR	**Makanchi Array**	**137.09**	**71**	PKP	**PKPdf**	**03 42 03.3**	**0.0**
	0.1nm,0.5s,baz=246,slow=1.6,SNR=3.0						
INK	**Inuvik**	**145.38**	**321**	*e*PKPbc	**PKPdf**	**03 42 17.2**	**-0.2**
DAWY	**Dawson**	**146.37**	**312**	*e*PKPbc	**PKPdf**	**03 42 19.6**	**+0.3**
DOT	**Dot Lake**	**148.22**	**311**	*e*PKPbc	**PKPdf**	**03 42 25.7**	**+3.2**
PAX	**Paxson**	**148.65**	**309**	*e*PKPbc	**PKPdf**	**03 42 26.1**	**+2.9**
SML	**Sawmill**	**149.61**	**306**	*e*PKPbc	**PKPbc**	**03 42 29.1**	**-0.3**
ILAR	**Eielson Array**	**149.69**	**312**	PKPbc	**PKPbc**	**03 42 28.9**	**-0.5**
	4.6nm,1.0s,baz=120,slow=1.3,SNR=30						
PMR	**Palmer**	**149.92**	**305**	*e*PKPbc	**PKPbc**	**03 42 29.6**	**-0.4**
COLA	**College**	**150.12**	**312**	*e*PKPbc	**PKPbc**	**03 42 30.2**	**-0.2**
MCK	**McKinley**	**150.35**	**310**	*e*PKPbc	**PKPbc**	**03 42 30.5**	**-0.6**
TRF	**Thorofare Moun**	**150.88**	**309**	*e*PKPbc	**PKPbc**	**03 42 32.2**	**-0.3**
SONM	**Songino Array**	**151.01**	**86**	PKPbc	**PKPbc**	**03 42 32.2**	**-1.1**
	1.8nm,0.5s,baz=221,slow=4.3,SNR=10						
KTH	**Kantishna Hill**	**151.18**	**309**	*e*PKPbc	**PKPbc**	**03 42 32.4**	**-0.7**
BPAW	**Bear Paw Mtn.**	**151.31**	**310**	*e*PKPbc	**PKPbc**	**03 42 32.9**	**-0.5**
COLD	**Coldfoot**	**151.40**	**317**	*e*PKPbc	**PKPbc**	**03 42 33.4**	**0.0**
PPLA	**Purkeypile**	**151.62**	**307**	*e*PKPbc	**PKPbc**	**03 42 33.7**	**-0.5**

*IDC **14** 03:24:05.5±2.8, 20°.69S×168°.33E, h0km, mb3.9/5, mb1 4.1/6, mb1mx3.8/32, mbtmp3.9/6, ML3.7/1, MS2.9/1, Ms1 2.9/1, ms1mx2.5/26, Error ellipse: s-maj=100.4km s-min=23.1km az=135.0*
*ISCJB **14** 03:24:07.6±2.2, 20°.6S±0°.3×168°.3E±0°.4, h26km, mb3.9/5, Error ellipse: s-maj=74.1km s-min=12.3km az=41.1*
ISC 14 03:24:08.7±2.6, **20°.8S**±0°.5×**168°.4E**±0°.5, **h26**km, **n8**, σ0§**95**/9, **mb4.0**/5, **Loyalty Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.25**	**235**	Pn	**Pn**	**03 24 43.7**	**-0.6**
	24nm,0.3s,baz=102,slow=12,SNR=86						
DZM				Sn	**Sn**	**03 25 11.6**	**+0.3**
	84nm,0.3s,baz=129,slow=22,SNR=9.6						
DZM				LR	LR	03 25 23.2	
	comp=Z,225nm,18.5s,baz=76,slow=35						
STKA	**Stephens Creek**	**26.39**	**240**	P	**P**	**03 29 44.0**	**+0.9**
	6.3nm,1.2s,baz=98,slow=12,SNR=2.9						
WRA	**Warramunga Arr**	**31.93**	**265**	P	**P**	**03 30 31.3**	**-1.3**
	1.3nm,1.1s,baz=95,slow=8.2,SNR=4.0						
ASAR	**Alice Springs**	**32.04**	**258**	P	**P**	**03 30 33.9**	**+0.3**
	1.7nm,0.8s,baz=82,slow=9.3,SNR=13						
SONM	**Songino Array**	**87.99**	**323**	P	**P**	**03 36 57.4**	**+0.8**
	1.2nm,0.9s,baz=134,slow=4.8,SNR=6.5						
ILAR	**Eielson Array**	**91.92**	**18**	P	**P**	**03 37 13.3**	**-1.1**
	0.2nm,0.8s,baz=232,slow=4.4,SNR=4.3						
KHC	**Kasperske Hory**	**145.32**	**331**	*e*P	**PKPbc**	**03 43 44.5**	**+0.5**
KHC				*ex*	x	03 43 56.5	
GERES	**GERESS Array B**	**145.46**	**330**	PKPbc	**PKPab**	**03 43 45.4**	**+0.6**
	2.2nm,0.8s,baz=46,slow=3.9,SNR=22						

*TRN **14** 03:31:00.7, 10°.13N×60°.15W, h94km, MD3.8*
*ISCJB **14** 03:31:01.2±1.1, 10°.20N±0°.06×60°.24W±0°.08, h99km±9km, Error ellipse: s-maj=14.6km s-min=8.0km az=23.3*
*FUNV **14** 03:31:06.8, 9°.92N×60°.37W, h60km, MW3.1*
ISC 14 03:31:00.4±2.0, **10°.14N**±0°.06×**60°.18W**±0°.09, **h98**km±14km, **n17**, σ1§**93**/27, **Trinidad**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TBH	**Brigand Hill**	**0.94**	**291**	*e*P	**Pn**	**03 31 19.6**	**-0.5**
TBH				*e*S	**Sn**	**03 31 35.2**	**+0.3**
TOSP	**Speyside**	**1.20**	**343**	*e*P	**Pn**	**03 31 22.5**	**-0.5**
TOSP				*e*S	**Sn**	**03 31 40.5**	**+0.5**
TPP	**Pointe-a-Pierr**	**1.27**	**278**	*e*P	**Pn**	**03 31 25.2**	**+1.5**
TPP				*e*S	**Sn**	**03 31 40.9**	**-0.5**
TRN	**Trinidad (W)**	**1.31**	**293**	*e*P	**Pn**	**03 31 24.8**	**+0.5**
TRN				*e*S	**Sn**	**03 31 42.5**	**+0.3**
GRGR	**Grenville**	**2.45**	**324**	*e*P	**Pn**	**03 31 40.2**	**+1.3**
GRW	**Mount Saint Ca**	**2.48**	**324**	*e*P	**Pn**	**03 31 40.2**	**+0.9**
GRW				*e*S	**Sn**	**03 32 08.1**	**-1.0**
GUNV	**Guanoco**	**2.73**	**271**	*e*P	**Pn**	**03 31 44.8**	**+2.4**
GUNV				*e*S	**Sn**	**03 32 13.9**	**-0.9**
CRUV	**Carupano**	**3.06**	**280**	*e*P	**Pn**	**03 31 49.3**	**+2.4**
CRUV				*e*S	**Sn**	**03 32 19.7**	**-3.1**
SVB	**Belmont**	**3.29**	**341**	*e*P	**Pn**	**03 31 50.4**	**+0.4**
SVB				*e*S	**Sn**	**03 32 27.2**	**-1.0**
ORIV	**Oritupano**	**3.36**	**252**	*e*P	**Pn**	**03 31 53.5**	**+2.5**
ORIV				*e*S	**Sn**	**03 32 26.2**	**-3.9**
GURV	**El Guri**	**3.72**	**231**	*e*P	**Pn**	**03 31 57.4**	**+1.5**
LUEV	**Luepa**	**4.46**	**197**	*e*P	**Pn**	**03 32 06.6**	**+0.6**
CUPV	**Cepira**	**5.53**	**270**	*e*P	**Pn**	**03 32 22.0**	**+1.6**
CUPV				*e*S	**Sn**	**03 33 18.4**	**-4.3**
MERV	**Las Mercedes**	**6.10**	**262**	*e*P	**Pn**	**03 32 28.9**	**+0.8**
TURV	**Turiamo**	**7.55**	**273**	*e*P	**Pn**	**03 32 50.4**	**+2.6**
BAUV	**El Baul**	**7.85**	**262**	*e*P	**Pn**	**03 32 52.8**	**+0.9**
MAPV	**Macapo**	**8.16**	**269**	*e*P	**Pn**	**03 32 57.8**	**+1.6**

*NIED **14** 03:39:00, 37°.50N×141°.80E, h5km, Mw3.7 Best double couple: M0:3.95000×10^14 NP1:φs198.00000°, δ44.00000°, λ-146.00000°. NP2:φs82.00000°, δ67.00000°, λ-51.00000°.*
*ISCJB **14** 03:39:25.5±1.3, 37°.37N±0°.04×141°.97E±0°.07, h15km±9km, mb3.7/12, MS3.2/1, Error ellipse: s-maj=10.1km s-min=5.5km az=24.6*
*IDC **14** 03:39:25.9±0.8, 37°.44N×141°.83E, h0km, mb3.7/12, mb1 4.0/14, mb1mx3.8/48, mbtmp3.8/14, ML3.6/3, MS2.9/3, Ms1 2.9/3, ms1mx2.5/46, Error ellipse: s-maj=20.9km s-min=17.9km az=153.0*
*JMA **14** 03:39:28.0±0.2, 37°.44N×141°.84E, h22km±3km, M4.0*
JMA Felt I J1.
ISC 14 03:39:27.2±1.9, **37°.41N**±0°.04×**141°.75E**±0°.06, **h11**km±11km, **n34**, σ1§**15**/34, **mb3.7**/12, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.70**	**266**	P	**Pn**	**03 39 42.3**	**-0.8**
JFK				*e*S	**Sb**	**03 39 52.5**	**+1.5**
ONAJ	**Iwakimizuishiy**	**0.82**	**248**	P	**Pn**	**03 39 44.4**	**-0.3**
ONAJ				S	**Sn**	**03 39 55.9**	**-1.0**
JMM	**Marumori**	**0.88**	**301**	P	**Pn**	**03 39 44.9**	**-0.7**
JMM				S	**Sn**	**03 39 57.8**	**-0.5**
JIO	**Ouri**	**1.08**	**343**	P	**Pn**	**03 39 47.6**	**-0.7**
JIO				S	**Sb**	**03 40 01.4**	**-0.8**
JFT	**Otama**	**1.13**	**276**	P	**Pg**	**03 39 49.8**	**+0.9**
JFT				S	**Sn**	**03 40 06.1**	**+1.7**
JHO	**Hitachi**	**1.24**	**230**	P	**Pb**	**03 39 49.9**	**-0.7**
JHO				*e*S	**Sb**	**03 40 05.0**	**-1.6**
JOU	**Okura**	**1.28**	**318**	P	**Pg**	**03 39 51.8**	**0.0**
JOU				S	**Sg**	**03 40 09.4**	**+0.9**
MJAR	**Matsushiro Arr**	**2.96**	**254**	Pn	**Pn**	**03 40 16.5**	**+2.3**
	4.5nm,0.3s,baz=80,slow=15,SNR=18						
MJAR				Sn	**Sb**	**03 40 56.0**	**-0.3**
	6.8nm,0.3s,baz=60,slow=21,SNR=4.9						
MAT	**Matsushiro**	**2.97**	**254**	P	**Pb**	**03 40 17.1**	**-3.0**
MAT				S	**Sb**	**03 40 54.5**	**-1.8**
JHJ	**Hachijo jima 2**	**4.58**	**201**	Pn	**Pn**	**03 40 37.5**	**+1.2**
	14nm,0.3s,baz=110,slow=22,SNR=6.2						
JHJ				Sn	**Sn**	**03 41 28.8**	**-0.7**
	20nm,0.3s,baz=73,slow=19,SNR=4.3						
ASAJ	**Asahikawa**	**6.73**	**5**	Pn	**Pn**	**03 41 06.5**	**+0.6**
	1.1nm,0.3s,baz=221,slow=11,SNR=5.2						
JNU	**Nakatsue**	**9.86**	**247**	LR	LR	03 46 35.2	
	comp=Z,44nm,18.6s,baz=114,slow=43						
USRK	**Ussuriysk Ar.**	**10.03**	**316**	Pn	Pn	03 41 55.9	+4.7
	0.3nm,0.3s,baz=103,slow=17,SNR=3.4						
KLR	**Kul'dur**	**13.86**	**332**	LR	LR	03 47 12.3	
	comp=Z,27nm,20.7s,baz=118,slow=34						
SONM	**Songino Array**	**27.80**	**303**	P	**P**	**03 45 17.3**	**+0.9**
	0.6nm,0.7s,baz=101,slow=8.9,SNR=3.9						
H11N2	**WAKE ISLAND Hy**	**28.12**	**122**	T	T	04 14 39.5	
	baz=315,slow=75,SNR=74						
H11N1	**WAKE ISLAND Hy**	**28.12**	**122**	T	T	04 14 40.2	
	baz=315,slow=75,SNR=76						
H11N3	**WAKE ISLAND Hy**	**28.14**	**122**	T	T	04 14 42.4	
	baz=315,slow=75,SNR=68						
H11S1	**WAKE ISLAND Hy**	**28.85**	**124**	T	T	04 15 35.6	
	baz=316,slow=76,SNR=37						
H11S3	**WAKE ISLAND Hy**	**28.85**	**124**	T	T	04 15 35.2	
	baz=316,slow=76,SNR=34						
H11S2	**WAKE ISLAND Hy**	**28.86**	**124**	T	T	04 15 36.3	
	baz=316,slow=76,SNR=30						
TGY	**Tagaytay City**	**29.70**	**224**	LR	LR	03 55 06.7	
	comp=Z,64nm,21.4s,baz=3.0,slow=32						
ZALV	**Zalesovo Beam**	**41.86**	**312**	P	**P**	**03 47 16.5**	**-0.5**
	0.6nm,0.4s,baz=109,slow=8.1,SNR=3.4						
MKAR	**Makanchi Array**	**44.14**	**302**	P	**P**	**03 47 36.4**	**+0.7**
	0.4nm,0.6s,baz=88,slow=10,SNR=4.6						
KURBB	**Kurchatov Arra**	**45.98**	**308**	P	**P**	**03 47 51.0**	**+0.8**
	1.0nm,0.4s,baz=84,slow=8.3,SNR=14						
ILAR	**Eielson Array**	**49.03**	**33**	P	**P**	**03 48 14.3**	**+0.6**
	0.7nm,0.8s,baz=266,slow=6.5,SNR=6.6						
WRA	**Warramunga Arr**	**57.47**	**188**	P	**P**	**03 49 16.0**	**-0.3**
	0.2nm,0.3s,baz=7.3,slow=7.1,SNR=4.2						
YKA	**Yellowknife Ar**	**63.34**	**30**	P	**P**	**03 49 54.5**	**-1.4**
	0.3nm,0.6s,baz=304,slow=6.5,SNR=7.0						
FINES	**FINESS Array B**	**68.60**	**332**	P	**P**	**03 50 30.1**	**+0.4**
	5.6nm,1.0s,baz=32,slow=8.2,SNR=4.9						
NOA	**NORSAR Array B**	**73.94**	**337**	P	**P**	**03 51 02.4**	**+0.2**
	0.7nm,0.8s,baz=41,slow=6.0,SNR=3.9						
NVAR	**Mina Array Bea**	**74.55**	**53**	P	**P**	**03 51 07.2**	**+0.9**
	0.4nm,0.7s,baz=300,slow=7.2,SNR=3.1						
PDAR	**Pinedale Array**	**77.21**	**46**	P	**P**	**03 51 21.1**	**-0.4**
	0.5nm,0.6s,baz=274,slow=2.2,SNR=6.1						
TXAR	**Lajitas Array**	**89.68**	**53**	P	**P**	**03 52 26.7**	**+1.0**
	0.1nm,0.4s,baz=324,slow=3.2,SNR=4.1						
LPAZ	**La Paz**	**146.27**	**59**	PKPbc	**PKPab**	**03 59 09.6**	**-0.2**
	0.6nm,0.6s,baz=337,slow=3.5,SNR=4.1						

*ISCJB **14** 03:48:49.6±0.5, 29°.67S±0°.06×176°.83W±0°.09, h31km, mb4.6/18, MS3.8/7, Error ellipse: s-maj=11.7km s-min=7.9km az=20.8*
*NEIC **14** 03:48:53.9±1.6, 29°.32S×176°.94W, h52km±12km, mb4.5/5, Error ellipse: s-maj=13.5km s-min=11.6km az=132.0*
*IDC **14** 03:48:54.9±2.2, 29°.20S×176°.90W, h55km±16km, mb4.0/11, mb1 4.2/11, mb1mx4.1/32, mbtmp4.3/11, MS3.8/9, Ms1 3.8/9, ms1mx3.6/24, Error ellipse: s-maj=23.5km s-min=20.2km az=95.0*
ISC 14 03:48:51.4±0.5, **29°.58S**±0°.07×**176°.84W**±0°.08, **h31**km, **n81**, σ1§**80**/74, **mb4.5**/18, **MS3.6**/7, **1D, Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**0.99**	**289**	P	**Pn**	**03 49 09.6**	**+0.4**
	821nm,0.3s,baz=113,slow=11,SNR=14						
RAO				S	**Sb**	**03 49 24.7**	**+2.0**
	2μm,0.3s,baz=90,slow=20,SNR=16						
URZ	**Urewera**	**10.01**	**208**	P	**Pn**	**03 51 11.7**	**-1.3**
	0.8nm,0.3s,baz=254,slow=14,SNR=4.4						
URZ				S	**Sn**	**03 53 04.8**	**+0.6**
	6.4nm,0.3s,baz=214,slow=18,SNR=12						
KHZ	**Kahutara**	**14.98**	**209**	*e*Pn	**Pn**	**03 52 20.4**	**-0.4**
	124nm,0.7s						
KHZ				*e*Sn	**Sn**	**03 54 56.0**	**-10**
DZM	**Mont Dzumac**	**16.79**	**293**	P	**P**	**03 52 48.9**	**+2.6**
	0.6nm,0.3s,baz=99,slow=15,SNR=6.0						
DZM				LR	LR	03 58 17.1	
	comp=Z,1μm,18.2s,baz=118,slow=34						
RPZ	**Rata Peaks**	**17.10**	**211**	P	**Pn**	**03 52 46.7**	**-1.3**
	1.5nm,0.3s,baz=14,slow=4.2,SNR=5.1						
RPZ	**Rata Peaks**	**17.10**	**211**	*e*Pn	**Pn**	**03 52 47.3**	**-0.8**
RAR	**Rarotonga**	**17.51**	**66**	LR	LR	03 59 45.6	
	comp=Z,172nm,18.2s,baz=253,slow=37						
PAE	**Paea**	**27.58**	**71**	*e*T	T	04 22 40.9	
	3.1nm,0.3s						
PPT2	**Papeete2**	**27.62**	**71**	*e*LR	LR	04 01 21.8	
	365nm,27.2s						
PPT2	**Papeete2**	**27.62**	**71**	*e*T	T	04 22 44.9	
	2.3nm,0.4s						
PPT	**Papeete**	**27.63**	**70**	LR	LR	04 04 00.6	
	comp=Z,100nm,18.1s,baz=273,slow=33						
HNR	**Honiara**	**29.55**	**308**	LR	LR	04 05 35.5	
	comp=Z,127nm,18.1s,baz=144,slow=34						
VAH	**Vaihoa**	**30.44**	**68**	*e*T	T	04 26 16.4	
	6.1nm,0.3s						
CTAO	**Charters Tower**	**34.67**	**277**	*e*P	**P**	**03 55 38.8**	**+0.4**
	69nm,0.8s						
STKA	**Stephens Creek**	**35.65**	**256**	P	**P**	**03 55 47.6**	**+0.9**
	6.5nm,0.6s,baz=102,slow=11,SNR=14						
STKA				LR	LR	04 09 07.8	
	comp=Z,374nm,18.1s,baz=64,slow=34						
TAOE	**Nuku Hiva Isla**	**40.06**	**67**	*e*LR	LR	04 07 04.6	
	197nm,28.6s						
ASAR	**Alice Springs**	**44.16**	**266**	P	**P**	**03 56 57.3**	**-0.2**
	6.2nm,0.6s,baz=101,slow=6.9,SNR=75						
WRAB	**Tennant Creek**	**45.07**	**271**	*e*P	**P**	**03 57 03.9**	**-0.9**
	14nm,0.8s						
WRA	**Warramunga Arr**	**45.08**	**271**	P	**P**	**03 57 04.2**	**-0.7**
	6.5nm,0.6s,baz=109,slow=7.8,SNR=23						
WRA				LR	LR	04 15 01.5	
	comp=Z,204nm,19.2s,baz=110,slow=35						
VNDA	**Vanda**	**49.02**	**186**	P	**P**	**03 57 39.4**	**+4.6**
	1.0nm,0.6s,baz=8.2,slow=6.0,SNR=11						
VNDA				LR	LR	04 16 42.6	
	comp=Z,61nm,19.4s,baz=324,slow=34						
CASY	**Casey**	**56.33**	**208**	*e*P	**P**	**03 58 30.6**	**+1.7**
	2.2nm,0.6s						
MBWA	**Marble Bar**	**57.32**	**263**	*e*P	**P**	**03 58 35.6**	**-1.1**
	48nm,0.8s						
SOEI	**Soe**	**58.24**	**277**	*e*P	**P**	**03 58 42.8**	**-0.6**
QSPA	**South Pole Qui**	**60.53**	**180**	*e*P	**P**	**03 58 59.4**	**+0.9**
	27nm,0.7s						
MAW	**Mawson**	**73.43**	**200**	P	**P**	**04 00 23.2**	**+3.0**
	2.8nm,0.7s,baz=128,slow=6.3,SNR=5.4						
SYO	**Syowa Base**	**78.14**	**193**	‖*e*sP	sP	04 01 06.4	+6.0
MJAR	**Matsushiro Arr**	**78.15**	**324**	P	**P**	**04 00 45.4**	**-2.1**
	3.6nm,0.8s,baz=164,slow=5.8,SNR=7.2						
SNAA	**Sanae**	**78.95**	**178**	P	P	04 01 07.6	+16
VNA3	**Neumayer Olymp**	**79.05**	**176**	P	P	04 01 00.5	+8.4
VNA2	**Neumayer--Watz**	**79.50**	**176**	P	P	04 01 07.4	+13
	baz=196,slow=4.8						
VNA1	**Neumayer--Stat**	**79.72**	**176**	P	P	04 01 10.9	+15
KSRS	**Korea Array**	**84.38**	**319**	P	**P**	**04 01 20.7**	**+0.2**
	0.5nm,0.4s,baz=126,slow=6.2,SNR=4.8						
KSAR	**Wonju Array Be**	**84.39**	**319**	P	**P**	**04 01 20.7**	**+0.1**
NVAR	**Mina Array Bea**	**86.96**	**42**	P	**P**	**04 01 33.4**	**-0.3**
	0.6nm,0.6s,baz=217,slow=7.1,SNR=4.6						
USRK	**Ussuriysk Ar.**	**87.04**	**326**	P	**P**	**04 01 34.0**	**+0.4**
	4.0nm,0.8s,baz=143,slow=3.9,SNR=9.2						
TUC	**Tucson**	**87.81**	**51**	*e*P	**P**	**04 01 37.9**	**+0.2**
	2.2nm,0.9s						
KLR	**Kul'dur**	**90.84**	**329**	P	**P**	**04 01 50.5**	**-0.9**
	1.2nm,0.6s,baz=111,slow=3.5,SNR=4.5						
TXAR	**Lajitas Array**	**91.10**	**57**	P	**P**	**04 01 53.2**	**-0.1**
	0.4nm,0.9s,baz=204,slow=6.5,SNR=3.4						
TXAR				LR	LR	04 36 14.2	
	comp=Z,20nm,19.1s,baz=0.0,slow=31						
HLID	**Hailey**	**92.53**	**40**	*e*P	**P**	**04 01 59.7**	**+0.1**
	1.5nm,0.8s						
LPAZ	**La Paz**	**97.56**	**113**	LR	LR	04 39 59.3	
	comp=Z,38nm,18.2s,baz=176,slow=31						
MKAR	**Makanchi Array**	**118.01**	**310**	PKP	**PKPdf**	**04 07 34.1**	**-0.7**
	0.6nm,0.6s,baz=72,slow=4.0,SNR=6.1						
KURK	**Kurchatov**	**121.20**	**314**	PKP	**PKPdf**	**04 07 39.7**	**-1.1**
KURBB	**Kurchatov Arra**	**121.24**	**314**	PKP	**PKPdf**	**04 07 39.7**	**-1.2**
	1.5nm,0.6s,baz=115,slow=2.1,SNR=12						
AAK	**Ala-Archa**	**122.49**	**304**	*e*PKPdf	**PKPdf**	**04 07 42.9**	**-0.8**
EKS2	**Erkin-Say**	**123.01**	**304**	*e*PKPdf	**PKPdf**	**04 07 43.5**	**-1.2**
KKAR	**Karatay Array**	**125.45**	**304**	*e*PKPdf	**PKPdf**	**04 07 48.9**	**-0.3**
BVAR	**Borovoye Array**	**126.51**	**316**	PKP	**PKPdf**	**04 07 50.9**	**0.0**
	2.1

KU6	Riekki	2.32 231	PG	Pg	Pg	03 55 52.0	-0.5
KU6			MSG			03 56 18.8	
	comp=Z,5.8nm,0.2s						
KU6			SG	Sg	Sg	03 56 22.3	-0.3
KU6	Riekki	2.32 231	Pg	Pg	Pg	03 55 52.0	-0.5
KU6			Sg	Sg	Sg	03 56 22.3	-0.3
MSF	Maaselka	2.66 234	PG	Pg	Pg	03 55 57.7	-1.2
MSF			SG	Sg	Sg	03 56 31.7	-1.7
MSF	Maaselka	2.66 234	Pg	Pg	Pg	03 55 57.7	-1.2
MSF			Sg	Sg	Sg	03 56 31.7	-1.7
SGF	Sodankyl	3.00 272	PB	Pb	Pb	03 56 01.1	-1.1
SGF			SG	Sb	Sb	03 56 40.2	+0.9
SGF	Sodankyl	3.00 272	Pb	Pb	Pb	03 56 01.1	-1.1
SGF			Sg	Sb	Sb	03 56 40.2	+0.9
RNF	Rovaniemi	3.38 258	PN	Pn	Pn	03 56 04.8	+2.8
RNF			SN	Sn	Sn	03 56 44.9	+2.2
RNF	Rovaniemi	3.38 258	Pn	Pn	Pn	03 56 04.7	+2.8
RNF			Sn	Sn	Sn	03 56 44.9	+2.2
KEV	Kevo	3.47 313	PN	Pn	Pn	03 56 05.6	+2.4
KEV			SN	Sn	Sn	03 56 44.6	-0.3
KEV	Kevo	3.47 313	Pn	Pn	Pn	03 56 05.6	+2.4
KEV			Sn	Sn	Sn	03 56 44.6	-0.3
ARA0	ARCESS Array S	3.80 306	Pn	Pn	Pn	03 56 09.8	+2.1
	baz=123,slow=16						
ARA0			Sn	Sn	Sn	03 56 51.2	-1.9
	baz=127,slow=28						
ARA0			Lg	Lg	Lg	03 57 02.7	
	baz=116,slow=37						
ARA0	ARCESS Array S	3.80 306	Pn	Pn	Pn	03 56 09.8	+2.1
	baz=123,slow=16						
ARA0			Sn	Sn	Sn	03 56 51.2	-1.9
	baz=127,slow=28						
ARA0			Lg	Lg	Lg	03 57 02.7	
	baz=116,slow=37						
ARA0	ARCESS Array S	3.80 306	Pn	Pn	Pn	03 56 09.9	+2.1
	SNR=50						
ARA0			Sn	Sn	Sn	03 56 51.2	-1.9
	SNR=50						
ARA0			Lg	Lg	Lg	03 57 02.7	
	SNR=29						
ARE0	ARCESS Array S	3.80 306	PN	Pn	Pn	03 56 09.3	+1.5
	baz=122						
ARE0			SN	Sn	Sn	03 56 52.7	-0.4
ARE0	ARCESS Array S	3.80 306	Pn	Pn	Pn	03 56 09.3	+1.5
ARE0			Sn	Sn	Sn	03 56 52.7	-0.4
HEF	Hetta	4.10 287	PN	Pn	Pn	03 56 12.4	+0.4
HEF			SN	Sn	Sn	03 56 59.4	-1.2
HEF	Hetta	4.10 287	Pn	Pn	Pn	03 56 12.3	+0.4
HEF			Sn	Sn	Sn	03 56 59.4	-1.2
TOF	Tornio	4.21 254	PN	Pb	Pb	03 56 18.1	-4.8
	baz=68						
TOF	Tornio	4.21 254	Pn	Pb	Pb	03 56 18.1	-4.8
LANU	Lannavaara	4.70 282	PN	Pn	Pn	03 56 21.0	+0.8
	baz=87						
LANU			SG	Sb	Sb	03 57 30.8	+2.5
LANU	Lannavaara	4.70 282	Pn	Pn	Pn	03 56 21.0	+0.8
FIA0	FINESS Array S	7.08 214	Sn	Sn	Sn	03 58 12.8	-0.9
	baz=38,slow=28						
FIA0			Lg	Lg	Lg	03 58 47.4	
	baz=14,slow=37						
FIA0	FINESS Array S	7.08 214	Sn	Sn	Sn	03 58 12.8	-0.9
	baz=38,slow=28						
FIA0			Lg	Lg	Lg	03 58 47.4	
	baz=14,slow=37						
FIA0	FINESS Array S	7.08 214	Sn	Sn	Sn	03 58 12.8	-0.9
	SNR=50						
FIA0			Lg	Lg	Lg	03 58 47.4	
	SNR=30						
SPA0	Spitsbergen Ar	11.82 342	Pn	Pn	Pn	03 57 57.6	0.0
	baz=152,slow=16						
SPA0	Spitsbergen Ar	11.82 342	Pn	Pn	Pn	03 57 57.6	0.0
	baz=152,slow=16						
SPA0	Spitsbergen Ar	11.82 342	Pn	Pn	Pn	03 57 57.6	0.0
	SNR=50						

IDC 14 03:57:54.6±4.5, 7°.02N×124°.52E, h625km±71km, mb3.1/4, mb1 3.2/4, mb1mx2.7/43, mbtmp4.2/4, Error ellipse: s-maj=205.9km s-min=19.2km az=66.0, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	28.48	160	P	P	04 03 01.9	-0.3
	1.9nm,0.4s,baz=340,slow=9.4,SNR=7.0						
ASAR	Alice Springs	31.84	164	P	P	04 03 31.1	+0.3
	1.2nm,0.3s,baz=338,slow=7.6,SNR=28						
MKAR	Makanchi Array	53.62	325	P	P	04 06 19.2	0.0
	1.7nm,0.5s,baz=123,slow=8.1,SNR=21						
KURBB	Kurchatov Arra	57.80	327	P	P	04 06 48.0	+0.1
	1.5nm,0.6s,baz=128,slow=6.2,SNR=10						
TORD	Torodi Ar. Bea	119.78	289	PKP	PKPdf	04 15 36.0	-0.2
	0.6nm,1.1s,baz=55,slow=2.5,SNR=4.1						

*ISCJB **14** 04:12:06.3±0.6, 50°.23N±0°.04×19°.20E±0°.03, h0km, Error ellipse: s-maj=5.9km s-min=2.4km az=17.6*
*CSEM **14** 04:12:07.3±0.4, 50°.22N×19°.22E, h2km, ML2.5/5, Error ellipse: s-maj=8.9km s-min=3.9km az=15.0*
*PRU **14** 04:12:08.1, 50°.22N×19°.22E, h0km*
ISC 14 04:12:07.6±0.8, 50°.15N±0°.04×19°.25E±0°.02, h0km, n32, σ0s87/49, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OJC	Ojcow	0.36	78	ePg	Pg	04 12 14.0	-0.4
OJC				eSg	Sg	04 12 18.5	-0.6
OJC	Ojcow	0.36	78	ePg	Pg	04 12 14.0	-0.4
OJC				eSg	Sg	04 12 18.5	-0.6
OKC	Ostrava-Krasne	0.78	247	eSG	Sb	04 12 34.3	-0.7
	comp=Z,8.2nm,0.3s						
OKC	Ostrava-Krasne	0.78	247	Sg	Sb	04 12 34.3	-0.7
	8.2nm,0.3s						
NIE	Niedzica	1.00	137	ePg	Pn	04 12 28.3	-0.5
NIE				eSg	Sb	04 12 42.6	+1.2
NIE	Niedzica	1.00	137	ePg	Pn	04 12 28.3	-0.5
NIE				eSg	Sb	04 12 42.6	+1.2
LANS	Liptovska Anna	1.01	172	ePg	Pb	04 12 27.9	0.0
LANS				eSg	Sb	04 12 42.2	+0.5
LANS	Liptovska Anna	1.01	172	ePG	Pb	04 12 27.9	0.0
LANS				eSG	Sb	04 12 42.2	+0.5
MORC	Moravsky Berou	1.16	252	ePg	Pb	04 12 30.4	-0.2
MORC				eSg	Sb	04 12 46.0	-0.2
STHS	Stebnicka Huta	1.48	119	ePn	Pg	04 12 35.9	-0.1
STHS				eSn	Sn	04 12 56.4	+0.8
STHS	Stebnicka Huta	1.48	119	ePN	Pg	04 12 35.9	-0.1
STHS				eSN	Sn	04 12 56.4	+0.8
STHS				eLG	Lg	04 12 59.4	
KRLC	Kraliky	1.59	268	ePG	Pn	04 12 36.1	-0.9
KRLC				eSG	Sg	04 12 58.1	-0.5
KRLC	Kraliky	1.59	268	Pg	Pn	04 12 36.1	-0.9
KRLC				Sg	Sg	04 12 58.1	-0.5
VYHS	Vyhne	1.68	189	ePn	Pn	04 12 37.9	-0.2
VYHS				eSn	Sn	04 13 00.5	+0.2
VYHS	Vyhne	1.68	189	ePN	Pn	04 12 37.9	-0.2
VYHS				eSN	Sn	04 13 00.5	+0.2
VYHS				eLG	Lg	04 13 03.1	
KECS	Kecovo	1.85	154	eSn	Sb	04 13 06.5	+0.6
KECS	Kecovo	1.85	154	eSN	Sb	04 13 06.5	+0.6
KECS				eLG	Lg	04 13 10.6	
DPC	Dobruska-Polom	1.89	277	ePG	Pn	04 12 40.9	-0.2
DPC				eSG	Sb	04 13 06.4	-0.7
	comp=Z,12nm,0.6s						
DPC	Dobruska-Polom	1.89	277	Pg	Pn	04 12 40.9	-0.2
DPC				Sg	Sb	04 13 06.4	-0.7
	12nm,0.6s						
CRVS	Cervenica-Dubn	1.90	130	eSn	Sb	04 13 07.7	+0.2
CRVS	Cervenica-Dubn	1.90	130	eSN	Sb	04 13 07.7	+0.2
KSP	Ksiaz	2.01	291	ePg	Pg	04 12 47.6	+1.5
KSP				eSg	Sg	04 13 12.7	+0.5
KSP	Ksiaz	2.01	291	ePg	Pg	04 12 47.6	+1.5
KSP				eSg	Sg	04 13 12.7	+0.5
UPC	Upice	2.11	281	eSG	Sg	04 13 14.1	-1.1
	comp=Z,6.4nm,0.5s						
UPC	Upice	2.11	281	Sg	Sg	04 13 14.1	-1.1
	6.4nm,0.5s						
GOPC	GO Pecny, Ondr	2.89	267	eSG	Sg	04 13 40.1	-0.2
GOPC	GO Pecny, Ondr	2.89	267	Sg	Sg	04 13 40.1	-0.2
PRU	Pruhonice	3.04	269	eSG	Sg	04 13 44.6	-0.5
	comp=Z,3.8nm,0.7s						
PRU	Pruhonice	3.04	269	Sg	Sg	04 13 44.6	-0.5
	3.8nm,0.7s						
BRG	Berggiesshubel	3.47	284	SG	Sg	04 14 01.9	+3.1
	2.6nm,0.5s						
KHC	Kasperske Hory	3.82	257	eSG	Sg	04 14 08.7	-1.6
	comp=Z,3.1nm,0.6s						
KHC	Kasperske Hory	3.82	257	Sg	Sg	04 14 08.7	-1.6
	3.1nm,0.6s						

*ISCJB **14** 04:14:43.8±1.5, 36°.66N±0°.09×70°.8E±0°.1, h150km, mb2.9/2, Error ellipse: s-maj=13.3km s-min=11.5km az=160.3*
*IDC **14** 04:14:44.4±7.4, 36°.81N×70°.45E, h148km±49km, mb2.7/2, mb1 2.8/4, mb1mx2.7/31, mbtmp3.2/4, Error ellipse: s-maj=141.4km s-min=37.2km az=137.0*
*NNC **14** 04:14:47.0±2.3, 36°.85N×70°.72E, h175km±24km, mb2.8, mpv3.6, Error ellipse: s-maj=23.8km s-min=14.1km az=139.0*
ISC 14 04:14:44.4±1.6, 36°.7N±0°.1×70°.78E±0°.10, h150km, n9, σ1s91/15, 5C-5D, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	Dzherino	2.62	324	⇓P	Pn	04 15 29.2	+2.2
	28nm,0.3s						
DZET				⇑S	Sn	04 16 02.1	+2.1
	225nm,0.4s						
MNAS	Manas	5.94	12	⇓P	Pn	04 16 11.2	+0.7
	0.2nm,0.2s						
MNAS				⇓S	Sn	04 17 18.5	+0.9
	8.1nm,0.5s						
KK31	Karatay Array	6.41	358	⇑P	Pn	04 16 17.8	+1.3
	6.5nm,0.3s,baz=187,slow=12,SNR=50						
KK31				⇓S	Sn	04 17 29.4	+0.7
	9.0nm,0.6s,baz=191,slow=24,SNR=5.0						
AAK	Ala-Archa	6.59	25	P	Pn	04 16 20.0	+0.9
	0.7nm,0.3s,baz=73,slow=8.0,SNR=4.5						
AAK				S	Sn	04 17 33.6	+0.3
	0.7nm,0.3s,baz=323,slow=20,SNR=5.6						
AAK	Ala-Archa	6.59	25	⇑P	Pn	04 16 18.9	-0.2
	1.5nm,0.6s						
AAK				⇓S	Sn	04 17 33.7	+0.5
	7.9nm,0.9s						
MKAR	Makanchi Array	13.24	37	P	Pn	04 17 46.9	+0.2
	0.1nm,0.3s,baz=224,slow=10,SNR=4.7						
AB31	Akbulak array	14.83	331	⇑P	Pn	04 18 08.1	+1.5
	0.6nm,0.4s,baz=151,slow=12,SNR=23						
AB31				⇑S	Sn	04 20 46.1	-5.0
	1.0nm,0.6s,baz=155,slow=23,SNR=3.7						
TORD	Torodi Ar. Bea	65.54	268	P	P	04 25 10.6	-1.6
	0.1nm,0.5s,baz=48,slow=5.8,SNR=4.0						
YKA	Yellowknife Ar	81.06	3	P	P	04 26 42.2	-0.1
	0.1nm,0.4s,baz=351,slow=5.3,SNR=4.1						

*IDC **14** 04:27:25.4±0.7, 23°.37S×179°.96W, h541km±6km, mb3.6/16, mb1 3.8/17, mb1mx3.7/26, mbtmp4.5/17, Error ellipse: s-maj=13.1km s-min=12.1km az=146.0*
*ISCJB **14** 04:27:26.0±0.9, 23°.51S±0°.06×179°.91E±0°.07, h556km±10km, mb4.3/56, Error ellipse: s-maj=10.9km s-min=7.8km az=138.9*
*NEIC **14** 04:27:26.1±0.7, 23°.52S×179°.97E, h547km±8km, mb4.3/35, Error ellipse: s-maj=10.7km s-min=7.0km az=136.0*
ISC 14 04:27:26.4±0.6, 23°.53S±0°.08×179°.96E±0°.08, h550km±5km, h551km; pP-P, n98, σ1s65/111, mb4.3/56, 7C, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSVF	Nonsavu	6.04	342	eP	P	04 29 04.2	-1.4
AFI	Afiamalu	12.36	41	P	P	04 30 10.4	+1.6
	4.1nm,0.3s,baz=60,slow=13,SNR=5.6						
AFI	Afiamalu	12.36	41	eP	P	04 30 09.7	+0.9
DZM	Mont Dzumac	12.55	274	P	P	04 30 11.2	+0.4
	0.4nm,0.3s,baz=87,slow=19,SNR=3.7						
URZ	Urewera	14.89	189	P	P	04 30 32.5	-2.0
	5.6nm,0.3s,baz=96,slow=9.5,SNR=7.1						
LTZ	Lake Taylor	20.23	197	eP	P	04 31 25.2	+0.8
	104nm,1.7s						
RPZ	Rata Peaks	21.43	198	P	P	04 31 37.2	+2.0
	4.2nm,0.4s,baz=354,slow=1.6,SNR=3.3						
CTA	Charters Tower	31.44	270	P	P	04 33 04.0	+0.6
	29nm,0.5s,baz=94,slow=11,SNR=42						
CTAO	Charters Tower	31.44	270	eP	P	04 33 04.0	+0.6
	33nm,0.7s						
PMG	Port Moresby	34.34	289	P	P	04 33 27.9	0.0
	60nm,0.9s,baz=141,slow=5.7,SNR=8.0						
PMG	Port Moresby	34.34	289	eP	P	04 33 27.7	-0.2
	61nm,0.9s						
STKA	Stephens Creek	34.83	248	P	P	04 33 32.6	+0.8
	2.5nm,0.4s,baz=105,slow=11,SNR=11						
ASAR	Alice Springs	42.06	260	P	P	04 34 30.4	-0.2
	8.0nm,0.5s,baz=93,slow=7.5,SNR=73						
ASAR				ScP	ScP	04 39 13.9	+3.1
	3.2nm,0.9s,baz=106,slow=4.4,SNR=12						
ASAR				S	S	04 40 08.5	-2.0
	1.3nm,0.8s,baz=99,slow=14,SNR=7.8						
WRAB	Tennant Creek	42.39	266	eP	P	04 34 32.3	-0.8
	25nm,1.1s						
WRA	Warramunga Arr	42.40	266	P	P	04 34 32.6	-0.6
	18nm,0.7s,baz=90,slow=5.9,SNR=154						
WRA				ScP	ScP	04 39 15.2	+2.9
	3.1nm,1.0s,baz=93,slow=4.6,SNR=6.8						
WRA				S	S	04 40 10.5	-4.9
	4.8nm,1.2s,baz=103,slow=15,SNR=4.0						
JAY	Jayapura	43.34	293	P	P	04 34 39.8	-0.9
	2.0nm,0.8s,baz=271,slow=24,SNR=7.6						
SBA	Scott Base	54.74	183	eP	P	04 36 06.0	+2.2
	29nm,1.0s						
VNDA	Vanda	54.74	185	P	P	04 36 04.8	+0.9
	2.1nm,0.7s,baz=356,slow=7.9,SNR=14						
VNDA				ScP	ScP	04 40 04.0	+0.3
	1.0nm,0.9s,baz=34,slow=5.6,SNR=3.6						
SOEI	Soe	54.78	275	eP	P	04 36 06.1	+0.9
	47nm,1.0s						
QSPA	South Pole Qui	66.55	180	eP	P	04 37 22.1	+0.2
	104nm,0.9s						
KKM	Kota Kinabalu	68.76	287	eP	P	04 37 35.7	-0.5
SBUM	Sibu	70.70	282	eP	P	04 37 50.2	+2.5
	14nm,0.5s						
MJAR	Matsushiro Arr	71.57	326	P	P	04 37 52.1	-0.2
	2.4nm,0.7s,baz=123,slow=4.5,SNR=4.3						
MAJO	Matsushiro	71.57	326	eP	P	04 37 51.8	-0.5
	6.5nm,0.6s						
KSRS	Korea Array	77.94	320	P	P	04 38 28.0	+0.1
	0.9nm,0.7s,baz=134,slow=6.9,SNR=2.9						
MAW	Mawson	78.08	200	P	P	04 38 28.6	+0.3
	9.1nm,1.0s,baz=119,slow=8.0,SNR=8.3						
CMB	Columbia Colle	82.96	43	eP	P	04 38 53.2	-0.9
	5.5nm,0.8s						
AFDM	Forest Hills D	83.14	42	eP	P	04 38 54.7	-0.3
	5.2nm,1.0s						
WDC	Whiskeytown Da	83.20	40	eP	P	04 38 55.1	0.0
	6.3nm,1.0s						
GSC	Goldstone, Bar	83.70	47	eP	P	04 38 57.2	-0.7
	7.2nm,1.1s						
113A	Mohawk Valley,	84.42	51	eP	P	04 39 01.4	0.0
	6.6nm,1.1s						
NVAR	Mina Array Bea	84.51	44	P	P	04 39 01.5	-0.5
	1.4nm,0.7s,baz=224,slow=8.3,SNR=11						
TPNV	Topopah Spring	85.00	46	eP	P	04 39 03.8	-0.5
	5.9nm,1.2s						
SNAA	Sanae	85.04	179	P	P	04 39 02.0	-1.8
SNAA	Sanae	85.04	179	eP	P	04 39 02.3	-1.6
	132nm,0.8s						
VNA3	Neumayer Olymp	85.25	177	P	P	04 39 03.9	-0.9
MOD	Modoc Plateau	85.34	40	eP	P	04 39 05.5	-0.3
	7.7nm,1.3s						
Y14A	Wickenburg	85.58	50	eP	P	04 39 07.0	0.0
	16nm,1.0s						
W13A	Hualapai Mount	85.58	49	eP	P	04 39 07.2	0.0
	1.9nm,0.7s						
VNA2	Neumayer--Watz	85.66	178	P	P	04 39 05.8	-1.0
	baz=186,slow=3.3						
VNA1	Neumayer--Stat	85.90	177	P	P	04 39 07.6	-0.3
TUC	Tucson	86.32	53	eP	P	04 39 11.3	+0.6
	6.1nm,0.9s						
WVOR	Wild Horse Val	86.65	41	eP	P	04 39 12.1	0.0
	6.0nm,1.1s						
X16A	Lo Mia Camp, P	86.93	50	eP	P	04 39 13.8	+0.1
	3.9nm,0.9s						
319A	Douglas	86.96	54	eP	P	04 39 14.6	+0.9
	15nm,1.1s						
LCMT	Little Creek M	87.05	47	eP	P	04 39 14.1	+0.1
	3.9nm,1.0s						
KNB	Kanab	87.33	48	eP	P	04 39 15.7	+0.3
	3.3nm,0.9s						
HPIG		87.60	59	eP	P	04 39 16.7	-0.2
	4.9nm,0.9s						
MTPU	Mount Pierson	88.31	47	eP	P	04 39 20.9	+0.8
	3.3nm,0.7s						
PLCA	Paso Flores	88.55	134	P	P	04 39 21.4	+0.4
	2.6nm,0.9s,baz=259,slow=4.5,SNR=5.7						
MFID	Camas Ranch	88.91	41	eP	P	04 39 22.4	-0.1
	12nm,1.3s						
Q16A	Castle Valley	89.44	47	eP	P	04 39 25.5	+0.3
	5.0nm,0.9s						
TMUT	Trail Mountain	89.61	46	eP	P	04 39 26.6	+0.5
	9.3nm,0.7s						
HLID	Hailey	89.84	41	eP	P	04 39 27.1	+0.1
	2.3nm,0.8s						
SPUT	South Promonto	89.85	44	eP	P	04 39 26.9	-0.1
	4.9nm,1.1s						
HVU	Hansel Valley	89.90	44	eP	P	04 39 27.0	-0.2
	4.3nm,0.7s						
SRU	San Rafael Swe	89.97	47	eP	P	04 39 27.9	+0.3
	7.8nm,0.8s						
MNTX	Cornudas Mount	90.03	55	eP	P	04 39 27.7	-0.2
	4.6nm,0.9s						
HHC	Hu-ho-hao-te	90.13	315	eP	P	04 39 30.0	+1.8
HHC				pmax	pmax		
	comp=Z,12nm,1.3s						
HHC				pmax	pmax		
	comp=Z,97nm,7.4s						
TXAR	Lajitas Array	90.27	58	P	P	04 39 29.3	+0.2
	comp=Z,2.7nm,0.7s,baz=214,slow=6.8,SNR=32						
TCUT	Toone Canyon	90.42	45	eP	P	04 39 29.8	+0.1
	comp=Z,12nm,0.9s						
HWUT	Hardware Ranch	90.58	44	eP	P	04 39 29.8	-0.6
	comp=Z,2.9nm,0.6s						
ANMO	Albuquerque	90.76	52	eP	P	04 39 30.0	-1.4
	comp=Z,3.4nm,1.1s						
PV01	Paradox Valley	90.81	48	eP	P	04 39 30.2	-1.4
CD2	Chengdu	90.84	303	P	P	04 39 31.9	+0.2
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
ILAR	Eielson Array	91.68	14	P	P	04 39 32.8	-1.9
	comp=Z,0.2nm,0.5s,baz=213,slow=6.5,SNR=4.1						
ILAR				pP	pP	04 41 33.5	-2.0
	comp=Z,0.3nm,0.7s,baz=220,slow=6.9,SNR=2.6						
S22A	4UR Ranch, Cre	91.82	49	eP	P	04 39 36.2	-0.2
	comp=Z,3.4nm,1.0s						
SMCO	Snowmass	92.41	48	eP	P	04 39 38.5	-0.6
	comp=Z,1.7nm,0.8s						
PDAR	Pinedale Array	92.45	44	P	P	04 39 38.0	-1.1
	comp=Z,1.1nm,0.6s,baz=209,slow=4.3,SNR=12						
LZH	Lanzhou	93.12	308	eP	P	04 39 44.0	+1.8
LZH				pP	pP	04 41 45.8	+2.6
LZH				sP	sP	04 42 40.1	+1.8
LZH				PP	PP	04 43 41.3	+5.8
LZH				pmax	pmax		
	comp=Z,18nm,1.5s						
LZH				pmax	pmax		
	comp=Z,52nm,9.6s						
MKAR	Makanchi Array	111.87	313	PKiKP	PKiKP	04 44 57.9	-1.2
	comp=Z,0.4nm,0.5s,baz=139,slow=1.2,SNR=4.2						
KURBB	Kurchatov Arra	114.95	316	PKP	PKPdf	04 45 02.4	-2.4
	comp=Z,0.4nm,0.4s,baz=51,slow=2.9,SNR=5.5						
BVAR	Borovoye Array	120.14	319	PKP	PKPdf	04 45 13.4	-1.3
	comp=Z,0.7nm,0.4s,baz=186,slow=1.5,SNR=5.7						
SUR	Sutherland	120.94	201	ePKPdf	PKPdf	04 45 16.7	-0.6
ARU	Arti	126.56	324	ePKPdf	PKPdf	04 45 26.3	-0.5
ABKAR	Abkulak array	126.92	315	ePKPdf	PKPdf	04 45 27.0	-0.8
ARCES	ARCESS Array B	131.52	348	PKP	PKPdf	04 45 34.6	-1.4
	comp=Z,2.6nm,0.8s,baz=14,slow=1.5,SNR=8.4						
LSZ	Lusaka	132.57	218	ePKPdf	PKPdf	04 45 40.3	+0.5
TSUM	Tsumeb	134.18	204	ePKPdf	PKPdf	04 45 42.9	+0.2
KMBO	Kilima Mbogo	136.24	241	ePKPdf	PKPdf	04 45 46.3	-0.5
FINES	FINESS Array B	138.08	342	PKP	PKPdf	04 45 47.4	-1.0
	comp=Z,1.8nm,0.8s,baz=95,slow=2.1,SNR=4.0						
FINES				SKPbc	SKPbc	04 48 30.5	-0.4
	comp=Z,2.1nm,0.7s,baz=54,slow=3.3,SNR=11						
NB2	NORSAR Subarra	141.71	351	PKP	PKPpre	04 45 49.2	
	comp=Z,0.3nm,0.5s,baz=16,slow=3.2						
NOA	NORSAR Array B	141.71	351	PKhKP	PKPpre	04 45 49.7	
	comp=Z,0.8nm,0.7s,baz=16,slow=5.0,SNR=4.8						
NOA				SKPbc	SKPbc	04 48 39.8	-0.9
	comp=Z,1.2nm,0.9s,baz=16,slow=4.3,SNR=3.6						
HFS	Hagfors	142.18	349	PKhKP	PKPpre	04 45 50.6	
	comp=Z,3.4nm,0.4s,baz=64,slow=3.4,SNR=56						
AKASG	Malin Array Be	144.64	328	PKP	PKPdf	04 45 58.5	-1.9
	comp=Z,1.5nm,0.4s,baz=45,slow=4.0,SNR=8.5						
AKASG				pPKP	pPKPdf	04 48 07.0	-2.3
	comp=Z,0.5nm,0.3s,baz=45,slow=3.3,SNR=2.8						
AKASG				SKPbc	SKPbc	04 48 47.8	-0.1
	comp=Z,2.0nm,0.7s,baz=49,slow=3.2,SNR=7.7						
KIEV	Kiev	144.65	328	ePKPdf	PKPdf	04 45 59.2	-1.2
BRTR	Keskin Array B	147.32	308	PKPbc	PKPbc	04 46 07.8	-1.0
	comp=Z,0.6nm,0.6s,baz=135,slow=5.1,SNR=4.3						
BRTR				pPKPbc	pPKPbc	04 48 11.9	-3.8
	comp=Z,0.7nm,0.8s,baz=95,slow=6.8,SNR=3.9						
MMAI	Mount Meron Ar	147.51	295	PKPbc	PKPbc	04 46 09.8	+0.4
	comp=Z,2.8nm,0.5s,baz=76,slow=7.0,SNR=9.8						
UPC	Upice	150.31	339⇑	ePKP	PKPbc	04 46 15.0	-0.5
DPC	Dobruska-Polom	150.34	339⇑	ePKP	PKPbc	04 46 15.6	-0.1
KRLC	Kraliky	150.42	338⇑	ePKP	PKPbc	04 46 15.4	-0.5
CLL	Collm	150.49	343⇑	iPKP	PKPbc	04 46 15.2	-0.7
	comp=Z,11nm,0.9s						
CLL				i pPKP	pPKPdf	04 48 26.0	+6.9
	comp=Z,10.0nm,1.2s						
CLL	Collm	150.49	343	ePKPbc	PKPbc	04 46 14.9	-1.0
PVCC	Panska Ves	150.74	341⇑	ePKP	PKPbc	04 46 16.3	-0.2
PRU	Pruhonice	151.23	340⇑	ePKP	PKPbc	04 46 16.9	-0.7
KHC	Kasperske Hory	152.28	341	ePKPDF	PKPdf	04 46 15.3	+2.5
KHC			⇑	ePKP	PKPbc	04 46 19.5	-0.

ARVD	**Arcevia**	**0.42 356**	Pg	Pg	04 44 16.8	0.0
ARVD			Sg	Sb	04 44 23.8	-0.6
ARVD	**Arcevia**	**0.42 356**	Pg	Pg	04 44 16.8	0.0
ARVD			Sg	Sb	04 44 23.8	-0.6
PIEI	**Pieia**	**0.56 324**	Pg	Pg	04 44 19.3	-0.1
PIEI			Sg	Sb	04 44 28.1	-0.4
PIEI	**Pieia**	**0.56 324**	Pg	Pg	04 44 19.3	-0.1
PIEI			Sg	Sb	04 44 28.1	-0.4

*ISCJB **14** 04:51:20.2±0.7, 39°.47N±0°.05×143°.59E±0°.08, h11km, mb3.6/8, Error ellipse: s-maj=9.5km s-min=5.0km az=33.3*
*JMA **14** 04:51:20.1±0.2, 39°.37N×143°.61E, h13km±3km, M4.0*
*IDC **14** 04:51:21.2±1.1, 39°.58N×143°.30E, h0km, mb3.6/8, mb1 3.7/11, mb1mx3.6/46, mbtmp3.6/11, ML3.3/2, Error ellipse: s-maj=24.9km s-min=21.5km az=125.0*

ISC 14 04:51:22.2±1.0, 39°.50N±0°.07×143°.44E±0°.08, h11km, n29, σ0s89/30, mb3.7/8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**1.26 274**		P	**Pb**	**04 51 45.3**	**-0.6**
MIYJ				*e*S	**Sn**	**04 52 03.9**	**+1.3**
JTH	**Tanohata**	**1.29 291**		P	**Pn**	**04 51 46.3**	**+0.1**
OFUJ	**Ofunato**	**1.44 254**		P	**Pn**	**04 51 47.5**	**-0.7**
JOM	**Ohasama**	**1.66 270**		P	**Pn**	**04 51 51.4**	**+0.1**
JMK	**Ichinoseki**	**1.81 253**		P	**Pn**	**04 51 53.0**	**-0.3**
JRG	**Rokugo**	**2.18 268**		P	**Pn**	**04 51 58.6**	**+0.3**
JTM	**Tenmabayashi**	**2.23 306**		P	**Pn**	**04 52 00.4**	**+1.3**
JAH	**Hinai**	**2.27 289**		P	**Pn**	**04 52 00.3**	**+0.7**
JOU	**Okura**	**2.44 243**		P	**Pn**	**04 52 01.7**	**-0.3**
JYK	**Kaneyama**	**2.46 257**		P	**Pn**	**04 52 02.6**	**+0.3**
JNBK	**Urakawa-nobuka**	**2.83 350**		P	**Pn**	**04 52 08.8**	**+1.5**
JNBK				*e*S	**Sn**	**04 52 42.8**	**+1.4**
JCH	**Churui**	**3.12 359**		P	**Pn**	**04 52 11.4**	**+0.1**
JCH				S	**Sn**	**04 52 47.2**	**-1.3**
JAR	**Ashorobuto**	**3.81**	**4**	P	**Pn**	**04 52 20.4**	**-0.4**
JAR				S	**Sn**	**04 53 03.9**	**-1.6**
JTKR	**Abashiri--Toko**	**4.49**	**4**	P	**Pn**	**04 52 30.1**	**0.0**
ASAJ	**Asahikawa**	**4.66 352**		Pn	**Pn**	**04 52 33.2**	**+0.7**
	0.8nm,0.3s,baz=197,slow=20,SNR=4.6						
MJAR	**Matsushiro Arr**	**5.08 236**		Pn	**Pn**	**04 52 38.8**	**+0.6**
	2.2nm,0.3s,baz=42,slow=11,SNR=28						
MAT	**Matsushiro**	**5.08 236**		P	**Pn**	**04 52 39.0**	**+0.8**
USRK	**Ussuriysk Ar.**	**9.75 303**		Pn	**Pn**	**04 53 41.5**	**-0.8**
	0.0nm,0.3s,baz=93,slow=13,SNR=2.8						
SONM	**Songino Array**	**27.85 300**		P	**P**	**04 57 10.4**	**-1.3**
	0.8nm,0.5s,baz=109,slow=8.2,SNR=4.9						
H11S1	**WAKE ISLAND Hy 29.02 129**			T	T	05 27 46.7	
	baz=322,slow=76,SNR=4.8						
H11S3	**WAKE ISLAND Hy 29.02 129**			T	T	05 27 42.8	
	baz=322,slow=76,SNR=5.8						
H11S2	**WAKE ISLAND Hy 29.04 129**			T	T	05 27 44.5	
	baz=322,slow=76,SNR=4.9						
ZALV	**Zalesovo Beam**	**41.49 310**		P	**P**	**04 59 07.9**	**-1.1**
	1.2nm,0.5s,baz=130,slow=6.5,SNR=3.9						
MKAR	**Makanchi Array**	**44.21 300**		P	**P**	**04 59 30.6**	**-0.7**
	0.9nm,0.7s,baz=78,slow=11,SNR=7.6						
KURBB	**Kurchatov Arra**	**45.79 306**		P	**P**	**04 59 43.6**	**0.0**
	2.5nm,0.6s,baz=80,slow=8.4,SNR=18						
ILAR	**Eielson Array**	**46.56**	**34**	P	**P**	**04 59 50.1**	**+0.5**
	0.2nm,0.6s,baz=260,slow=5.4,SNR=2.7						
WRA	**Warramunga Arr**	**59.74 190**		P	**P**	**05 01 28.2**	**+1.2**
	0.4nm,0.8s,baz=7.3,slow=7.1,SNR=2.9						
YKA	**Yellowknife Ar**	**60.88**	**31**	P	**P**	**05 01 35.1**	**+0.7**
	0.1nm,0.6s,baz=286,slow=8.9,SNR=3.4						
NOA	**NORSAR Array B**	**72.53 338**		P	**P**	**05 02 48.4**	**-0.4**
	0.7nm,0.7s,baz=27,slow=7.9,SNR=2.7						

MAN 14 04:58:49, 13°.77N×121°.68E, h32km, mb3.7, ML2.4, MS2.0, 1C, Mindoro

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BOAC	**Boac**	**0.35 152**		*e*P	Pn	04 58 59.1	+1.2
BOAC				*e*S	Sn	04 59 05.5	+1.8
LQP	**Lukban**	**0.37 339**		⇑*e*P	Pn	04 59 07.2	+8.9
LUBP	**Lubang**	**1.39 269**		*e*P	Pn	04 59 12.8	+0.7
LUBP				*e*S	Sn	04 59 29.7	+0.2
SJMP	**San Jose**	**1.41 203**		*e*P	Pn	04 59 13.5	+1.0
OTRP	**Odiongan**	**1.44 166**		*e*P	Pb	04 59 14.3	-0.9

CASC 14 04:59:53.6±43.0, 13°.91N×89°.94W, h0km±78km, MD3.5, ML3.3, 1C-5D, El Salvador

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RTR	**El Retiro**	**0.29**	**93**	*e*P	Pn	05 00 14.6	+9.4
MONT	**Ecomontaæa**	**0.29 100**		*e*P	Pn	05 00 14.1	+8.7
SBLS	**San Blas**	**0.32 103**		*e*P	Pn	05 00 13.7	+8.0
SBLS				*e*P	Pb	05 00 13.8	+11
SBLS				*e*S	Sb	05 00 24.0	+16
SBLS				*e*S	Sb	05 00 24.5	+16
RBDL	**Robledal**	**0.32**	**51**	*e*P	Pn	05 00 17.8	+12
SNJE	**San Jose**	**0.33**	**97**	*e*P	Pn	05 00 14.2	+8.4
BOQS	**Boqueron**	**0.67 105**		*i*P	Pn	05 00 13.6	+3.0
BOQS				⇑*i*P	Pb	05 00 13.6	+5.3
BOQS				*e*S	Sn	05 00 23.5	+1.7
BOQS				*e*S	Sb	05 00 24.8	+6.7
COLS	**Colinas**	**0.67 111**		⇓*i*P	Pn	05 00 12.5	+2.0
COLS				*e*S	Sn	05 00 21.3	-0.5
SNET	**Serv Nac Est T**	**0.72 108**		⇓*e*P	Pn	05 00 13.0	+1.8
SNET				*e*P	Pb	05 00 14.6	+5.5
SNET				AML	AML	05 00 16.2	
	comp=Z,1μm,0.3s						
SNET				*e*S	Sn	05 00 23.0	-0.1
SNET				*e*S	Sn	05 00 23.0	-0.1
LFU	**La Fuente**	**0.82 101**		⇓*i*P	Pn	05 00 15.0	+2.5
LBRS	**Las Brisas**	**0.89 101**		⇓*e*P	Pn	05 00 15.6	+2.1
LFRS	**El Faro**	**0.90 108**		⇓*i*P	Pn	05 00 14.9	+0.4
SNVI	**San Vicente**	**1.11 105**		*e*P	Pn	05 00 16.3	-0.3
SNVI				*e*P	Pb	05 00 16.4	+0.6
SNVI				*e*S	Sg	05 00 28.6	-0.7
MRL	**Marmol**	**1.17**	**12**	*e*P	Pn	05 00 31.2	+14
TECA	**Tecapa**	**1.46 106**		*e*P	Pn	05 00 19.8	-1.6
PACA	**Pacayal**	**1.63 105**		*e*P	Pn	05 00 22.4	-1.3
VSM	**San Miguel**	**1.69 106**		*e*P	Pn	05 00 23.0	-1.7
VSM				*e*P	Pb	05 00 23.2	-2.6
VSM				*e*S	Sn	05 00 41.0	-6.1
TGUH	**Tegucigalpa,Un**	**2.59**	**86**	*e*P	Pn	05 00 37.6	+0.8

*NIED **14** 05:05:00, 39°.00N×142°.50E, h20km, Mw3.6 Best double couple: M0 3.17000×10^14 NP1:φs=129.00000°, δ62.00000°, λ-8.00000°. NP2:φs=223.00000°, δ83.00000°, λ-152.00000°.*

JMA 14 05:05:10.1±0.1, 39°.02N×142°.52E, h28km±2km, M3.9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.67 275**		P	Pb	05 05 23.1	-0.1
OFUJ				S	Sb	05 05 32.2	+0.1
MIYJ	**Miyakonagasawa**	**0.78 316**		P	Pb	05 05 24.5	-0.6
MIYJ				S	Sb	05 05 34.5	-0.8
JMK	**Ichinoseki**	**1.02 267**		P	Pn	05 05 28.6	+0.1
JMK				S	Sn	05 05 41.7	-0.1
JOM	**Ohasama**	**1.05 296**		P	Pn	05 05 29.3	+0.3
JOM				S	Sn	05 05 42.9	+0.1
JIO	**Ouri**	**1.08 239**		P	Pn	05 05 29.0	-0.3
JIO				S	Sn	05 05 42.0	-1.3
JKZ	**Kuzumaki**	**1.33 317**		P	Pb	05 05 33.9	-0.6
JKZ				S	Sn	05 05 50.3	+0.6
JRG	**Rokugo**	**1.51 285**		*e*S	Sb	05 05 55.9	-0.4
JANG	**Nango**	**1.56 330**		S	Sb	05 05 56.8	-0.8
JOU	**Okura**	**1.59 246**		P	Pb	05 05 37.8	-1.1
JOU				S	Sb	05 05 57.9	-0.7
JMM	**Marumori**	**1.78 230**		P	Pn	05 05 39.8	+0.8
JMM				S	Sn	05 06 01.5	+0.9
JYS	**Shirataka**	**2.08 248**		*e*S	Sn	05 06 10.3	+2.2
MAT	**Matsushiro**	**4.22 235**		P	Pn	05 06 16.9	+4.4
MAT				*e*S	Sb	05 07 08.0	-6.0

JMA 14 05:16:52.5±0.1, 38°.57N×142°.02E, h40km±2km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.54 258**		P	Pn	05 17 03.2	-0.5
JIO				S	Sn	05 17 11.4	-0.3
OFUJ	**Ofunato**	**0.58 332**		P	Pn	05 17 04.3	0.0
OFUJ				S	Sn	05 17 12.5	-0.2
JMK	**Ichinoseki**	**0.73 302**		P	Pn	05 17 06.6	+0.2
JMK				S	Sn	05 17 16.4	0.0
JOM	**Ohasama**	**1.06 328**		P	Pn	05 17 11.5	+0.5
JOM				S	Sn	05 17 25.4	+0.8
JOU	**Okura**	**1.08 260**		P	Pn	05 17 11.6	+0.4
JOU				S	Sn	05 17 25.4	+0.4
JMM	**Marumori**	**1.20 234**		P	Pn	05 17 12.5	-0.2
JYK	**Kaneyama**	**1.34 285**		P	Pn	05 17 15.5	+0.7
JYK				S	Sn	05 17 32.3	+0.9
JRG	**Rokugo**	**1.36 308**		P	Pn	05 17 16.2	+1.2
JFK	**Kawauchi**	**1.50 217**		P	Pn	05 17 16.8	-0.2
MAT	**Matsushiro**	**3.64 237**		P	Pn	05 17 48.6	+2.2
MAT				S	Sn	05 18 30.4	+2.3

*NNC **14** 05:18:37.7±2.5, 53°.98N×86°.18E, h0km, mb3.5, mpv3.1, Error ellipse: s-maj=20.4km s-min=16.4km az=177.0*

IDC 14 05:18:34.2±2.4, 54°.10N×86°.44E, h0km, mb1 3.2/2, mb1mx3.0/47, mbtmp3.2/2, ML3.0/2, 5C-4D, Error ellipse: s-maj=19.3km s-min=11.7km az=58.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**0.97 261**		*i*		05 25 20.0	
	baz=80,slow=325,SNR=3.8						
ZALV	**Zalesovo Beam**	**0.97 261**		Pg	Pg	05 18 51.2	-1.4
	2.5nm,0.3s,baz=81,slow=16,SNR=14						
ZALV				Lg	Lg	05 19 06.2	
	3.9nm,0.3s,baz=79,slow=26,SNR=20						
ZALV				Rg	Rg	05 19 12.7	
	5.1nm,0.3s,baz=78,slow=34,SNR=20						
KURK	**Kurchatov**	**5.86 238**		⇑Pn	Pn	05 20 03.7	+1.5
	3.9nm,1.0s						
KURK				⇓Sn	Sn	05 21 10.5	+0.4
	1.8nm,0.8s						
KURK				⇓Lg	Lg	05 21 40.0	
	7.1nm,1.1s						
KURBB	**Kurchatov Arra**	**5.96 237**		Pn	Pn	05 20 04.8	+1.2
	0.3nm,0.3s,baz=54,slow=13,SNR=14						
KURBB				Lg	Lg	05 21 45.7	
	0.0nm,0.3s,baz=55,slow=30,SNR=6.4						
KURBB	**Kurchatov Arra**	**5.96 237**		⇑Pn	Pn	05 20 03.9	+0.2
	2.0nm,0.7s						
KURBB				⇑Sn	Sn	05 21 11.4	-1.2
	2.3nm,0.6s						
KURBB				⇑Lg	Lg	05 21 42.0	
	4.7nm,0.8s						
MK31	**Makanchi Array**	**7.78 202**		⇑Pn	Pn	05 20 30.1	+1.5
	0.1nm,0.2s,baz=26,slow=13,SNR=28						
MK31				⇓Sn	Sn	05 21 58.1	+0.8
	0.8nm,0.7s						
MK31				⇓Lg	Lg	05 22 38.2	
	1.9nm,0.9s,baz=28,slow=34,SNR=4.4						
MKAR	**Makanchi Array**	**7.78 202**		Pn	Pn	05 20 29.7	+1.1
	0.4nm,0.3s,baz=26,slow=14,SNR=18						
MKAR				Sn	Sn	05 21 56.0	-1.4
	0.1nm,0.3s,baz=25,slow=21,SNR=5.5						
MKAR				Lg	Lg	05 22 41.9	
	0.1nm,0.3s,baz=23,slow=27,SNR=6.6						

*IDC **14** 05:30:04.9±0.7, 35°.09N×141°.33E, h0km, mb3.8/10, mb1 4.0/13, mb1mx3.8/54, mbtmp3.8/13, ML3.9/3, MS2.7/1, Ms1 2.7/1, ms1mx2.2/43, Error ellipse: s-maj=23.1km s-min=15.3km az=106.0*
*ISCJB **14** 05:30:06.7±0.5, 35°.06N±0°.04×141°.48E±0°.06, h27km, mb3.9/13, Error ellipse: s-maj=6.9km s-min=5.0km az=155.0*
*JMA **14** 05:30:06.9±0.2, 35°.16N×141°.46E, h22km±3km, M3.2*
*NEIC **14** 05:30:08.9±3.5, 35°.08N×141°.33E, h24km±26km, mb4.5/3, Error ellipse: s-maj=15.1km s-min=8.0km az=78.0*

ISC 14 05:30:08.9±0.7, 35°.10N±0°.04×141°.29E±0°.07, h27km, n35, σ1s30/32, mb3.9/13, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**0.52 210**		P	**Pb**	**05 30 19.2**	**0.0**
BSO1				*e*X		05 30 26.2	
CHOJ	**Chosi**	**0.69 329**		P	**Pb**	**05 30 21.1**	**-1.4**
CHOJ				*e*S	**Sb**	**05 30 29.9**	**-1.8**
BSO3	**Boso 3**	**0.71 245**		P	**Pb**	**05 30 22.5**	**0.0**
BSO3				X		05 30 33.8	
BSO4	**Boso 4**	**0.79 262**		P	**Pn**	**05 30 25.1**	**+0.9**
BSO4				X		05 30 35.7	
JCN	**Nagara**	**0.95 290**		*e*S	**Sn**	**05 30 41.8**	**+2.7**
JYT	**Yasato**	**1.44 322**		P	**Pn**	**05 30 32.9**	**-0.2**
JYT				S	**Sb**	**05 30 53.3**	**+0.5**
JIM2	**Oshima 3**	**1.58 256**		P	**Pn**	**05 30 36.2**	**+1.1**
JHO	**Hitachi**	**1.61 339**		P	**Pn**	**05 30 34.4**	**-1.2**
JHJ2	**Mitsune**	**2.33 212**		*e*Pn	**Pn**	**05 30 47.2**	**+1.7**
JHJ	**Hachijo jima 2**	**2.34 213**		Pn	**Pn**	**05 30 45.4**	**-0.3**
	39nm,0.3s,baz=61,slow=23,SNR=5.0						
JHJ				Sn	**Sn**	**05 31 11.0**	**-2.5**
	25nm,0.3s,baz=143,slow=20,SNR=2.8						
MJAR	**Matsushiro Arr**	**2.89 301**		Pn	**Pn**	**05 30 53.1**	**-0.1**
	3.9nm,0.3s,baz=294,slow=23,SNR=16						
MAJO	**Matsushiro**	**2.89 301**		*e*Pn	**Pn**	**05 30 54.5**	**+1.3**
MAT	**Matsushiro**	**2.89 301**		P	**Pn**	**05 30 54.7**	**+1.5**
MAT				S	**Sb**	**05 31 31.4**	**-3.3**
CBIJ	**Chichi jima**	**8.02 174**		Pn	**Pn**	**05 32 02.2**	**-1.5**
JCJ	**Chichijima**	**8.02 174**		Pn	**Pn**	**05 32 02.2**	**-1.5**
	13nm,0.3s,baz=282,slow=20,SNR=4.9						
JCJ				LR	LR	05 34 24.3	
	comp=Z,56nm,19.6s,baz=71,slow=32						
H11N2	**WAKE ISLAND Hy 27.30 117**			T	T	06 04 25.5	
	baz=304						
H11N1	**WAKE ISLAND Hy 27.30 117**			T	T	06 04 24.7	
	baz=304,slow=74						
H11N3	**WAKE ISLAND Hy 27.31 117**			T	T	06 04 24.4	
	baz=304,slow=74						
H11S3	**WAKE ISLAND Hy 27.94 120**			T	T	06 05 16.7	
	baz=312,slow=76,SNR=22						
H11S1	**WAKE ISLAND Hy 27.94 120**			T	T	06 05 27.6	
	baz=312,slow=76,SNR=27						
H11S2	**WAKE ISLAND Hy 27.96 120**			T	T	06 05 18.7	
	baz=312,slow=76,SNR=19						
SEY	**Seymchan**	**28.70**	**11**	P	**P**	**05 36 04.0**	**+0.6**
	4.5nm,0.8s,baz=191,slow=8.3,SNR=7.2						
MKAR	**Makanchi Array**	**45.08 304**		P	**P**	**05 38 22.7**	**+0.1**
	0.7nm,0.7s,baz=88,slow=11,SNR=6.1						
KURK	**Kurchatov**	**47.06 310**		*e*P	**P**	**05 38 38.2**	**+0.1**
	4.3nm,0.8s						
KURBB	**Kurchatov Arra**	**47.13 309**		P	**P**	**05 38 38.3**	**-0.2**
	1.0nm,0.6s,baz=85,slow=7.8,SNR=11						
ILAR	**Eielson Array**	**51.18**	**32**	P	**P**	**05 39 09.6**	**+0.2**
	0.5nm,0.6s,baz=272,slow=6.1,SNR=7.0						
WRAB	**Tennant Creek**	**55.13 188**		*e*P	**P**	**05 39 38.9**	**0.0**
	11nm,1.2s						
WRA	**Warramunga Arr**	**55.14 188**		P	**P**	**05 39 39.0**	**0.0**
	3.1nm,0.8s,baz=4.2,slow=7.5,SNR=22						
INK	**Inuvik**	**56.15**	**26**	P	**P**	**05 39 44.4**	**-1.3**
	0.9nm,0.9s,baz=294,slow=5.9,SNR=4.6						
INK	**Inuvik**	**56.15**	**26**	*e*P	**P**	**05 39 46.5**	**+0.8**
	2.2nm,1.3s						
ASAR	**Alice Springs**	**58.87 188**		P	**P**	**05 40 05.2**	**-0.1**
	0.6nm,0.6s,baz=16,slow=12,SNR=12						
YKA	**Yellowknife Ar**	**65.53**	**30**	P	**P**	**05 40 49.8**	**+0.3**
	0.2nm,0.7s,baz=302,slow=7.0,SNR=3.7						
NB2	**NORSAR Subarra**	**75.93 337**		P	P	05 42 00.7	+7.8
	comp=Z,1.3nm,0.8s,baz=40,slow=5.9						
NVAR	**Mina Array Bea**	**76.23**	**53**	P	**P**	**05 41 56.6**	**+1.3**
	comp=Z,0.5nm,0.8s,baz=282,slow=6.7,SNR=3.9						
PDAR	**Pinedale Array**	**79.09**	**45**	P	**P**	**05 42 11.4**	**+0.2**
	comp=Z,0.2nm,0.6s,baz=276,slow=2.6,SNR=3.4						

*ISCJB **14** 05:30:50.7±1.1, 40°.1N±0°.1×143°.6E±0°.3, h6km, mb4.0/10, MS3.2/5, Error ellipse: s-maj=28.9km s-min=14.9km az=163.6*
*IDC **14** 05:30:52.4±1.6, 40°.17N×143°.47E, h0km, mb3.9/8, mb1 4.0/9, mb1mx3.7/49, mbtmp3.9/9, ML2.4/1, MS3.3/7, Ms1 3.4/7, ms1mx2.9/47, Error ellipse: s-maj=57.3km s-min=19.7km az=73.0*
*NEIC **14** 05:30:58.3±1.1, 40°.11N×143°.20E, h35km, mb4.4/2, Error ellipse: s-maj=32.2km s-min=14.3km az=90.0*

ISC 14 05:30:52.4±1.4, 40°.1N±0°.1×143°.8E±0°.2, h6km, n18, σ1s41/13, mb4.0/10, MS3.3/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ERM	**Erimo**	**1.97 346**		*e*Pn	**Pb**	**05 31 30.5**	**+1.8**
ASAJ	**Asahikawa**	**4.11 348**		Pn	**Pn**	**05 31 55.3**	**-0.4**
	0.2nm,0.3s,baz=202,slow=19,SNR=1.5						
JHJ	**Hachijo jima 2**	**7.68 206**		LR	LR	05 35 48.1	
	comp=Z,1μm,18.8s,baz=335,slow=39						
USRK	**Ussuriysk Ar.**	**9.68 299**		Pn	**Pn**	**05 33 13.2**	**+1.0**
	0.2nm,0.3s,baz=96,slow=11,SNR=6.3						
KSRS	**Korea Array**	**12.68 263**		LR	LR	05 37 32.9	
	comp=Z,84nm,18.5s,baz=109,slow=32						
GUMO	**Guam**	**26.43 178**		LR	LR	05 48 25.0	
	comp=Z,24nm,18.2s,baz=101,slow=40						
SONM	**Songino Array**	**27.80 299**		P	**P**	**05 36 40.7**	**-1.6**
	1.3nm,0.7s,baz=89,slow=8.6,SNR=6.3						
MKAR	**Makanchi Array**	**44.15 300**		P	**P**	**05 39 00.2**	**-1.5**
	2.1nm,0.9s,baz=83,slow=9.9,SNR=7.9						
MKAR				LR	LR	05 58 10.5	
	comp=Z,28nm,19.0s,baz=62,slow=37						
KURK	**Kurchatov**	**45.58 306**		*e*P	**P**	**05 39 11.1**	**-1.8**
	5.2nm,0.8s						
KURBB	**Kurchatov Arra**	**45.66 306**		P	**P**	**05 39 12.5**	**-1.1**
	2.5nm,0.8s,baz=81,slow=8.3,SNR=8.1						
TKM2	**Tokmak 2**	**49.87 297**		*e*P	**P**	**05 39 45.1**	**-1.5**
	2.9nm,0.8s						
BVAR	**Borovoye Array**	**49.94 311**		P	**P**	**05 39 46.4**	**-0.4**
	0.9nm,0.6s,baz=69,slow=8.1,SNR=4.9						
HNR	**Honiara**	**51.50 159**		LR	LR	05 59 25.4	
	comp=Z,45nm,19.6s,baz=112,slow=33						
WRA	**Warramunga Arr**	**60.38 190**		P	**P**	**05 41 02.9**	**+0.5**
	0.7nm,0.8s,baz=355,slow=7.0,SNR=2.8						
ASAR	**Alice Springs**	**64.11 190**		P	**P**	**05 41 29.1**	**+1.7**
	0.5nm,0.9s,baz=7.9,slow=6.7,SNR=3.1						
FINES	**FINESS Array B**	**66.97 332**		P	**P**	**05 41 45.9**	**+0.4**
	4.6nm,1.0s,baz=67,slow=3.6,SNR=3.6						
NOA	**NORSAR Array B**	**72.07 338**		P	**P**	**05 42 16.4**	**-0.7**
	1.4nm,0.9s,baz=39,slow=5.9,SNR=4.4						
NOA				LR	LR	06 18 16.1	
	comp=Z,21nm,18.7s,baz=20,slow=40						
BRTR	**Keskin Array B**	**78.20 312**		LR	LR	06 21 02.1	
	comp=Z,13nm,18.4s,baz=296,slow=39						

*CSEM **14** 05:42:23.7, 47°.00N×9°.05E, h9km, ML1.3/2*

ZUR 14 05:42:23.7, 47°.00N×9°.05E, h9km±4km, ML1.3/2, 4C, Switzerland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LLS	**Linth-Limmern**	**0.15 191**		*e*Sg	Sg	05 42 28.7	-0.8
	272nm,0.1s						
PLONS	**Plons/SG**	**0.23**	**77**	*e*Sg	Sg	05 42 29.6	-2.0
	80nm,0.2s						
PLONS	**Plons/SG**	**0.23**	**77**	⇑*i*Pg	Pg	05 42 32.2	+3.8
	80nm,0.2s						
PLONS	**Plons/SG**	**0.23**	**77**	*e*Sg	Sg	05 42 29.6	-2.0
	80nm,0.2s						
PLONS	**Plons/SG**	**0.23**	**77**	⇑*i*Pg	Pg	05 42 32.2	+3.8
	80nm,0.2s						
MUO	**Muotathal**	**0.28 264**		*e*Sg	Sg	05 42 29.9	-3.4
	94nm,0.3s						
MUO	**Muotathal**	**0.28 264**		⇑*i*Pg	Sg	05 42 34.2	+0.9
	94nm,0.3s						
MUO	**Muotathal**	**0.28 264**		*e*Sg	Sg	05 42 29.9	-3.4
	94nm,0.3s						
MUO	**Muotathal**	**0.28 264**		⇑*i*Pg	Sg	05 42 34.2	+0.9
	94nm,0.3s						
CURA	**Stauanlage Cun**	**0.43 213**		*e*Sg	Sg	05 42 36.2	-1.7
	35nm,0.2s						
CURA	**Stauanlage Cun**	**0.43 213**		*e*Sg	Sg	05 42 36.2	-1.7
	35nm,0.2s						

*NIED **14** 05:44:00, 36°.90N×141°.10E, h77km, Mw4.0 Best double couple: M0 1.21000×10^15 NP1:φs=228.00000°, δ34.00000°, λ-125.00000°. NP2:φs=88.00000°, δ63.00000°, λ-69.00000°.*
*ISCJB **14** 05:44:19.8±0.7, 36°.89N±0°.04×141°.17E±0°.07, h54km±5km, mb3.7/11, Error ellipse: s-maj=10.1km s-min=5.4km az=32.1*
*JMA **14** 05:44:21.3±0.1, 36°.92N×141°.07E, h50km±1km, M3.8*
JMA Felt I J1.
*IDC **14** 05:44:22.1±2.6, 36°.89N×141°.06E, h57km±23km, mb3.4/11, mb1 3.6/13, mb1mx3.4/45, mbtmp3.7/13, ML3.6/2, MS2.6/2, Ms1 2.6/2, ms1mx2.2/31, Error ellipse: s-maj=20.3km s-min=14.9km az=124.0*

ISC 14 05:44:20.6±1.3, 36°.88N±0°.06×141°.19E±0°.08, h43km±11km, n32, σ1s05/37, mb3.7/11, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.38 305**		P	**Pn**	**05 44 30.2**	**+0.1**
ONAJ				S	**Sn**	**05 44 36.4**	**-0.3**
JFK	**Kawauchi**	**0.55 333**		P	**Pn**	**05 44 32.0**	**-0.1**
JFK				S	**Sn**	**05 44 39.5**	**-0.8**
JHO	**Hitachi**	**0.57 242**		P	**Pn**	**05 44 32.4**	**+0.1**
JHO				S	**Sn**	**05 44 40.1**	**-0.5**
JFT	**Otama**	**0.93 313**		P	**Pn**	**05 44 37.5**	**+0.2**
JFT				S	**Sn**	**05 44 48.9**	**-0.6**
JMM	**Marumori**	**1.03 342**		P	**Pn**	**05 44 38.5**	**-0.1**
JMM				S	**Sn**	**05 44 50.6**	**-1.3**
JFY	**Yanaizu**	**1.30 294**		P	**Pn**	**05 44 42.3**	**0.0**
JFY				S	**Sn**	**05 44 57.1**	**-1.3**
**JA

IDC 14 05:45:21.5±2.6, 54°20N×86°41E, h0km, mb1 3.0/2, mb1mx2.9/47, mbtmp3.0/2, ML2.7/2, 1C-3D, Error ellipse: s-maj=20.4km s-min=12.6km az=59.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**0.97**	**255**	*i*		05 52 11.3	
	baz=74,slow=322,SNR=5.8						
ZALV	**Zalesovo Beam**	**0.97**	**255**	Pg	Pg	05 45 38.5	-1.6
	1.7nm,0.3s,baz=73,slow=16,SNR=10						
ZALV				Lg	Lg	05 45 54.1	
	3.9nm,0.3s,baz=77,slow=30,SNR=18						
ZALV				Rg	Rg	05 46 00.9	
	23nm,1.0s,baz=75,slow=34,SNR=19						
KURK	**Kurchatov**	**5.90**	**237**	⇑Pn	Pn	05 46 50.8	+0.7
	1.8nm,0.8s						
KURK				⇓Lg	Lg	05 48 32.5	
	2.2nm,0.6s						
KURBB	**Kurchatov Arra**	**6.01**	**237**	Pn	Pn	05 46 52.0	+0.4
	0.1nm,0.3s,baz=54,slow=13,SNR=7.7						
KURBB				Lg	Lg	05 48 33.6	
	baz=49,slow=30,SNR=3.9						
KURBB	**Kurchatov Arra**	**6.01**	**237**	⇓Pn	Pn	05 46 52.9	+1.3
	2.1nm,1.0s,baz=55,slow=12						
KURBB				⇓Lg	Lg	05 48 35.4	
	2.8nm,0.6s,baz=57,slow=29						
MKAR	**Makanchi Array**	**7.87**	**201**	Pn	Pn	05 47 18.8	+1.6
	0.2nm,0.3s,baz=24,slow=14,SNR=5.7						
MKAR				Lg	Lg	05 49 33.1	
	0.0nm,0.3s,baz=24,slow=27,SNR=5.7						

KRNET 14 05:53:47.5±0.1, 40°42N×71°97E, h20km, mb3.3
ISCJB 14 05:53:48.5±0.6, 40°31N±0°04×72°07E±0°04, h10km, Error ellipse: s-maj=6.5km s-min=3.5km az=161.6
NNC 14 05:53:48.8±1.3, 40°42N×72°03E, h0km, mb3.5, mpv3.2, Error ellipse: s-maj=15.0km s-min=9.0km az=128.0
SOME 14 05:53:48.5, 40°47N×71°98E, h5km
ISC 14 05:53:47.0±0.9, 40°40N±0°04×71°92E±0°03, h10km, n27, σ1§92/53, 26C-14D, Tajikistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OHH	**Osh**	**0.67**	**79**	⇑*iP*	**Pg**	**05 54 00.3**	**+0.4**
	baz=79						
OHH				⇑*iS*	**Sg**	**05 54 09.0**	**+0.3**
	baz=79						
BTK	**Batken**	**0.91**	**248**	⇑*iP*	**Pn**	**05 54 06.0**	**0.0**
	baz=248						
BTK				⇑*iS*	**Sn**	**05 54 19.4**	**+0.2**
	baz=248						
ARSB	**Arslanbob**	**1.22**	**41**	⇓*iP*	**Pb**	**05 54 10.0**	**-0.3**
	baz=39						
ARSB				⇓*iS*	**Sn**	**05 54 26.7**	**-0.2**
	baz=39						
ARK	**Arkit**	**1.40**	**1**	⇓*iP*	**Pg**	**05 54 13.6**	**-0.2**
	baz=0.0						
ARK				⇓*iS*	**Sg**	**05 54 31.9**	**0.0**
	baz=0.0						
TOKL	**Toktogul**	**1.69**	**25**	⇓*iP*	**Pb**	**05 54 17.9**	**-0.4**
	baz=24						
TOKL				⇓*iS*	**Sg**	**05 54 40.4**	**-1.1**
	baz=24						
MNAS	**Manas**	**2.13**	**12**	⇑*iP*	**Pb**	**05 54 25.4**	**-0.3**
	baz=11						
MNAS				⇑*iS*	**Sb**	**05 54 52.7**	**+0.4**
	baz=11						
MNAS	**Manas**	**2.13**	**12**	⇑Pn	**Pb**	**05 54 26.2**	**+0.5**
	23nm,0.3s						
MNAS				⇑Sn	**Sg**	**05 54 54.1**	**-1.3**
	34nm,0.4s						
AML	**Almayashu**	**2.18**	**37**	⇑*iP*	**Pn**	**05 54 24.9**	**+1.2**
	baz=36						
AML				⇑*iS*	**Sb**	**05 54 54.4**	**+0.3**
	baz=36						
IUG	**Iuzhnay**	**2.25**	**321**	*eP*	**Pg**	**05 54 29.9**	**-0.3**
	161nm,0.5s						
IUG				*eS*	**Sg**	**05 54 59.5**	**+0.1**
	288nm,0.4s						
ARLS	**Aral**	**2.33**	**50**	⇑*iP*	**Pn**	**05 54 26.5**	**+1.0**
	baz=50						
ARLS				⇑*iS*	**Sb**	**05 54 56.0**	**-1.9**
	baz=50						
MRKS	**Merke**	**2.54**	**22**	*eP*	**Pb**	**05 54 32.9**	**+0.2**
	57nm,0.4s						
MRKS				*eS*	**Sb**	**05 55 04.6**	**+0.7**
	57nm,0.2s						
CHM	**Chimkent**	**2.59**	**318**	*eP*	**Pg**	**05 54 35.5**	**-1.2**
	148nm,0.3s						
CHM				*eS*	**Sg**	**05 55 09.0**	**-1.3**
	1μm,0.3s						
UCH	**Uchtor**	**2.67**	**46**	⇓*iP*	**Pn**	**05 54 31.8**	**+1.3**
	baz=46						
UCH				⇓*iS*	**Sb**	**05 55 05.4**	**-2.7**
	baz=46						
DZET	**Dzherino**	**2.87**	**237**	⇑Pn	**Pb**	**05 54 38.4**	**0.0**
DZET				⇓Lg	Lg	05 55 22.7	
	71nm,0.4s						
KK31	**Karatay Array**	**2.90**	**339**	Pn	**Pn**	**05 54 35.2**	**+2.0**
	0.6nm,0.2s,baz=153,slow=12,SNR=135						
KK31				⇑Pg	**Pg**	**05 54 40.2**	**-2.3**
	3.6nm,0.2s,baz=140,slow=11,SNR=64						
KK31				Lg	Lg	05 55 19.0	
	14nm,0.2s,baz=157,slow=31,SNR=10						
AAK	**Ala-Archa**	**2.95**	**40**	⇑*iP*	**Pn**	**05 54 35.8**	**+1.8**
	baz=40						
AAK				⇑*iS*	**Sn**	**05 55 12.3**	**+2.7**
	baz=40						
AAK	**Ala-Archa**	**2.95**	**40**	⇑Pn	**Pn**	**05 54 35.1**	**+1.1**
	1.9nm,0.6s						
AAK				⇓Pg	**Pb**	**05 54 40.9**	**+1.2**
	8.8nm,0.4s						
AAK				⇑Lg	Lg	05 55 19.2	
	58nm,0.6s						
KZA	**Kyzart**	**3.02**	**55**	⇑*iP*	**Pn**	**05 54 37.0**	**+1.8**
	baz=55						
KZA				⇑*iS*	**Sn**	**05 55 13.8**	**+2.2**
	baz=55						
KBK	**Karagaybulak**	**3.20**	**44**	⇑*iP*	**Pn**	**05 54 39.8**	**+2.3**
	baz=44						
KBK				⇑*iS*	**Sn**	**05 55 18.7**	**+3.0**
	baz=44						
NRN	**Naryn**	**3.26**	**70**	⇑*eP*	**Pn**	**05 54 40.2**	**+1.8**
	baz=70						
NRN				⇑*iS*	**Sn**	**05 55 19.0**	**+1.6**
	baz=70						
USP	**Ospenovka**	**3.45**	**33**	⇑*iP*	**Pn**	**05 54 42.0**	**+1.2**
	baz=33						
USP				⇑*iS*	**Sn**	**05 55 22.8**	**+1.1**
	baz=33						
BOOM	**Boomskoye usch**	**3.67**	**54**	⇓*eP*	**Pn**	**05 54 46.2**	**+2.3**
	baz=54						
BOOM				⇓*iS*	**Sn**	**05 55 29.3**	**+1.9**
	baz=54						
TKM2	**Tokmak 2**	**3.73**	**46**	⇓Pn	**Pn**	**05 54 46.4**	**+1.6**
TKM2				⇓Pg	**Pg**	**05 54 55.6**	**-2.8**
KST	**Kastek**	**4.01**	**48**	*eP*	**Pg**	**05 55 00.8**	**-3.0**
	3.3nm,0.4s						
KST				*eS*	**Sg**	**05 55 52.4**	**-3.4**
	34nm,0.3s						
DGS	**Degeres**	**4.04**	**44**	*eP*	**Pb**	**05 55 01.1**	**+2.8**
	12nm,0.6s						
DGS				*eS*	**Sg**	**05 55 52.9**	**-3.8**
	52nm,0.5s						
IZV	**Izvestkoviy**	**4.39**	**52**	*eP*	**Pb**	**05 55 07.5**	**+3.3**
	7.3nm,0.4s						
IZV				*eS*	**Sg**	**05 56 04.6**	**-3.2**
	44nm,0.8s						
TNSS	**Tian-Shan**	**4.59**	**53**	*eP*	**Pg**	**05 55 11.4**	**-3.5**
	5.3nm,0.3s						
TNSS				*eS*	**Sg**	**05 56 10.8**	**-3.5**
	25nm,0.5s						

ISCJB 14 05:56:21.5±0.9, 37°28N±0°07×79°1E±0°1, h28km, mb3.3/7, Error ellipse: s-maj=11.9km s-min=10.5km az=11.0
BJI 14 05:56:22.7, 37°42N×79°07E, h6km, ML3.5/7
IDC 14 05:56:24.6±8.2, 37°25N×78°90E, h33km±62km, mb3.3/7, mb1 3.5/9, mb1mx3.3/45, mbtmp3.5/9, ML3.9/2, Error ellipse: s-maj=31.4km s-min=22.6km az=14.0
NNC 14 05:56:36.5±8.4, 38°05N×81°08E, h0km, mb3.9, mpv3.6, Error ellipse: s-maj=64.4km s-min=48.6km az=166.0
ISC 14 05:56:23.6±1.0, 37°27N±0°08×79°07E±0°08, h28km, n15, σ2§21/19, mb3.5/7, 6C-2D, Southern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSH	**Kashi**	**3.31**	**314**	Pg	**Pb**	**05 57 19.0**	**-2.6**
KSH				Sn	**Sn**	**05 57 52.9**	**+0.9**
KSH				smax	smax		
	comp=N,93nm,0.5s						
KSH				smax	smax		
	comp=E,120nm,0.8s						
PDGK	**Podgornoye**	**6.06**	**3**	⇑Pn	Pn	05 57 59.0	+7.7
	3.1nm,0.4s						
PDGK				⇓Sn	**Sn**	**05 59 00.9**	**+1.3**
	8.8nm,0.4s						
TKM2	**Tokmak 2**	**6.24**	**336**	⇑Pn	**Pb**	**05 58 12.0**	**+0.4**
	2.8nm,0.6s						
TKM2				⇑Sn	**Sb**	**05 59 29.0**	**+3.2**
	9.2nm,0.7s						
AAK	**Ala-Archa**	**6.40**	**328**	Pn	Pb	05 58 18.0	+3.7
	2.4nm,0.5s						
AAK				Sn	Sb	05 59 39.7	+9.2
	20nm,0.8s						
MAKZ	**Makanchi**	**9.77**	**12**	⇑Pn	**Pn**	**05 58 42.7**	**+0.5**
	2.0nm,0.4s						
MAKZ				⇑Sn	**Sn**	**06 00 26.4**	**-4.5**
	1.8nm,0.6s						
MK31	**Makanchi Array**	**9.81**	**13**	⇓Pn	**Pn**	**05 58 42.8**	**0.0**
	0.2nm,0.2s,baz=192,slow=14,SNR=9.2						
MK31				⇑Sn	**Sn**	**06 00 27.7**	**-4.2**
	0.8nm,0.3s,baz=196,slow=25,SNR=5.2						
MKAR	**Makanchi Array**	**9.81**	**13**	Pn	**Pn**	**05 58 43.7**	**+1.0**
	0.5nm,0.3s,baz=188,slow=9.9,SNR=14						
MKAR				Sn	**Sn**	**06 00 29.6**	**-2.4**
	1.1nm,0.3s,baz=198,slow=27,SNR=9.5						
GEYT	**Alibeck**	**16.62**	**279**	Pn	**Pn**	**06 00 14.2**	**-0.3**
	0.8nm,0.3s,baz=90,slow=10,SNR=2.8						
SONM	**Songino Array**	**22.62**	**54**	P	**P**	**06 01 25.3**	**+3.1**
	0.2nm,0.4s,baz=258,slow=7.1,SNR=3.7						
AKASG	**Malin Array Be**	**37.58**	**307**	P	**P**	**06 03 34.8**	**-0.6**
	0.2nm,0.3s,baz=76,slow=8.2,SNR=4.8						
FINES	**FINESS Array B**	**40.57**	**324**	P	**P**	**06 04 00.7**	**+0.4**
	1.1nm,0.7s,baz=110,slow=10,SNR=9.6						
ARCES	**ARCESS Array B**	**43.02**	**335**	P	**P**	**06 04 20.4**	**+0.2**
	0.9nm,0.9s,baz=106,slow=8.8,SNR=7.3						
TORD	**Torodi Ar. Bea**	**72.17**	**273**	P	**P**	**06 07 44.8**	**-1.3**
	0.3nm,0.4s,baz=43,slow=5.2,SNR=5.4						
WRA	**Warramunga Arr**	**77.11**	**128**	P	**P**	**06 08 15.2**	**+0.6**
	0.4nm,0.9s,baz=316,slow=7.2,SNR=3.3						
YKA	**Yellowknife Ar**	**79.97**	**6**	P	**P**	**06 08 29.8**	**+0.1**
	0.1nm,0.5s,baz=342,slow=5.8,SNR=4.4						

ISCJB 14 06:00:31.9±0.5, 24°58N±0°03×122°42E±0°02, h5km±4km, Error ellipse: s-maj=5.5km s-min=2.5km az=179.8
TAP 14 06:00:31.7, 24°57N×122°36E, h4km±1km, ML3.1, D
JMA 14 06:00:32.7±0.2, 24°51N×122°37E, h45km±5km, M2.4
ISC 14 06:00:32.0±1.1, 24°55N±0°03×122°39E±0°02, h10km±9km, n37, σ0§85/67, 1D, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWC	**Suao**	**0.49**	**277**	P	**Pg**	**06 00 41.1**	**-0.5**
	baz=275						
TWC				S	**Sg**	**06 00 48.6**	**+0.5**
	baz=275						
EGS	**Eguchi**	**0.51**	**306**	P	**Pg**	**06 00 41.8**	**-0.1**
	baz=306						
EGS				S	**Sb**	**06 00 50.6**	**+0.1**
	baz=306						
JYNG	**Yonagunijimaku**	**0.52**	**101**	P	**Pb**	**06 00 44.0**	**+0.9**
JYNG				S	**Sn**	**06 00 53.2**	**-1.0**
YOJ	**Yonaguni jima**	**0.57**	**98**	P	**Pb**	**06 00 44.4**	**+0.3**
YOJ				*eS*	**Sb**	**06 00 53.9**	**+1.6**
TWB1	**Santiao Chiao**	**0.59**	**322**	⇓*iP*	**Pg**	**06 00 43.5**	**+0.1**
	baz=324						
TWB1				*eS*	**Sb**	**06 00 53.1**	**+0.4**
	baz=324						
ENA	**Nanau**	**0.60**	**259**	P	**Pg**	**06 00 43.1**	**-0.5**
	baz=270						
ENA				*eS*	**Sb**	**06 00 52.3**	**-0.8**
	baz=270						
ILA	**Ilan**	**0.62**	**291**	*eP*	**Pb**	**06 00 44.6**	**-0.3**
	baz=290						
ILA				*eS*	**Sb**	**06 00 53.4**	**-0.4**
	baz=290						
TWE	**Neicheng**	**0.68**	**285**	P	**Pg**	**06 00 44.8**	**-0.4**
	baz=284						
TWE				S	**Sg**	**06 00 53.8**	**-0.3**
	baz=284						
ENTT	**Nioudou**	**0.76**	**277**	P	**Pb**	**06 00 46.9**	**-0.3**
	baz=276						
ENTT				*eS*	**Sg**	**06 00 56.0**	**-0.4**
	baz=276						
NWF	**Wu-fen Shan**	**0.76**	**314**	P	**Pb**	**06 00 47.5**	**+0.2**
	baz=303						
NWF				S	**Sb**	**06 00 58.0**	**+0.2**
	baz=303						
TWA	**Mucha**	**0.85**	**301**	*eP*	**Pg**	**06 00 48.1**	**-0.3**
	baz=289						
TWA				*eS*	**Sg**	**06 00 59.3**	**-0.2**
	baz=289						
TWD	**Chiawan**	**0.86**	**237**	*eP*	**Pg**	**06 00 48.2**	**-0.4**
	baz=246						
TWD				*eS*	**Sn**	**06 01 03.4**	**+0.7**
	baz=246						
NNS	**Nan Shan**	**0.93**	**264**	*eP*	**Pb**	**06 00 50.1**	**-0.2**
	baz=262						
NNS				*eS*	**Sb**	**06 01 02.5**	**-0.3**
	baz=262						
NSK	**Sanguang**	**0.95**	**278**	*eP*	**Pb**	**06 00 50.3**	**-0.2**
	baz=277						
NSK				*eS*	**Sb**	**06 01 02.8**	**-0.4**
	baz=277						
WHF	**Hehuan Shan**	**1.10**	**249**	*eP*	**Pg**	**06 00 52.7**	**-0.5**
	baz=260						
WHF				*eS*	**Sb**	**06 01 07.3**	**-0.6**
	baz=260						
PCYT	**Pengchaiyu**	**1.12**	**345**	P	**Pb**	**06 00 52.4**	**-1.0**
	baz=348						
TWT	**Tachien**	**1.14**	**255**	*eP*	**Pn**	**06 00 55.3**	**+1.1**
	baz=254						
TWT				*eS*	**Sn**	**06 01 09.7**	**-0.3**
	baz=254						
IRIF	**Iriomote-Funau**	**1.24**	**100**	P	**Pn**	**06 00 54.7**	**-0.7**
IRIF				S	**Sb**	**06 01 11.2**	**-0.3**
NSTT	**Nanjuang**	**1.27**	**274**	*eP*	**Pg**	**06 00 57.9**	**+1.6**
	baz=264						
NSTT				S	**Sg**	**06 01 13.5**	**+0.8**
	baz=264						
TWQ1	**Liyutan**	**1.49**	**263**	P	**Pg**	**06 01 01.9**	**+1.3**
	baz=261						
TWQ1				*eS*	**Sg**	**06 01 23.1**	**+3.3**
	baz=261						
JKRS	**Kuro-shima**	**1.51**	**101**	P	**Pn**	**06 00 59.1**	**0.0**
JKRS				S	**Sn**	**06 01 18.3**	**-0.5**
SMLT	**Sun Moon Lake**	**1.51**	**244**	*eP*	**Pb**	**06 00 59.7**	**-0.5**
	baz=252						
TYC	**Yuchr**	**1.54**	**246**	*eP*	**Pg**	**06 01 02.2**	**+0.7**
	baz=254						
TWF1	**Yuli**	**1.55**	**220**	*eP*	**Pn**	**06 00 59.1**	**-0.6**
	baz=201						
TWF1				*eS*	**Sn**	**06 01 19.3**	**-0.6**
	baz=201						
JIJ	**Ishigaki jima**	**1.61**	**96**	P	**Pn**	**06 00 59.8**	**-0.6**
JIJ				S	**Sn**	**06 01 19.9**	**-1.3**
YUS	**Yu-Shan**	**1.68**	**232**	P	**Pb**	**06 01 03.0**	**-0.3**
	baz=210						
YUS				*eS*	**Sb**	**06 01 24.1**	**-0.6**
	baz=210						
CHKT	**Chengkung**	**1.72**	**213**	*eP*	**Pb**	**06 01 03.5**	**-0.2**
	baz=195						
CHKT				*eS*	**Sn**	**06 01 21.9**	**-2.0**
	baz=195						
JISG	**Ishigakijimahi**	**1.75**	**88**	P	**Pn**	**06 01 02.1**	**-0.3**
JISG				*eS*	**Sn**	**06 01 24.7**	**0.0**
ALS	**Alishan**	**1.78**	**235**	*eP*	**Pb**	**06 01 05.0**	**+0.2**
	baz=215						
ALS				*eS*	**Sg**	**06 01 28.7**	**-0.6**
	baz=215						
CHN5	**Tsauling**	**1.83**	**239**	*eP*	**Pb**	**06 01 05.8**	**+0.2**
	baz=218						
CHN5				S	**Sg**	**06 01 30.4**	**-0.4**
	baz=218						
ELDTW	**Lidau**	**1.84**	**223**	*eP*	**Pn**	**06 01 04.1**	**+0.3**
	baz=222						
CHN4	**Tsaushan**	**2.03**	**234**	*eP*	**Pb**	**06 01 08.5**	**-0.5**
	baz=214						
CHN4				S	**Sg**	**06 01 36.3**	**-0.9**
	baz=214						

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WTP	**Ta-pu**	**2.08**	**232**	*eP*	**Pb**	**06 01 09.4**	**-0.4**
	baz=212						
WTP				*eS*	**Sg**	**06 01 37.9**	**-0.9**
	baz=212						
JTJ	**Tarama**	**2.11**	**87**	P	**Pn**	**06 01 08.0**	**+0.7**
CHN1	**Nanshi**	**2.18**	**232**	*eS*	**Sb**	**06 01 39.2**	**+0.6**
	baz=229						
SGST	**Jiashian**	**2.21**	**229**	*eP*	**Pb**	**06 01 11.3**	**-0.7**
	baz=215						
EAST	**Anshuo**	**2.58**	**214**	*eP*	**Pn**	**06 01 15.4**	**+1.6**
	baz=199						
EAST				*eS*	**Sn**	**06 01 47.0**	**+1.8**
	baz=199						

NIED 14 06:05:00, 38°10N×143°10E, h11km, Mw3.8 Best double couple: M0:5.66000×10^14 NP1:φs:21.00000°, δ:37.00000°, λ:-123.00000°. NP2:φs:240.00000°, δ:60.00000°, λ:-68.00000°.
IDC 14 06:05:17.3±0.8, 38°00N×143°27E, h0km, mb3.6/8, mb1 3.8/12, mb1mx3.7/43, mbtmp3.7/12, ML3.8/3, MS2.8/1, Ms1 2.8/1, ms1mx2.1/45, Error ellipse: s-maj=22.3km s-min=17.1km az=108.0
ISCJB 14 06:05:18.2±0.6, 38°02N±0°06×143°18E±0°06, h18km, mb3.6/8, MS2.6/1, Error ellipse: s-maj=8.3km s-min=6.0km az=160.4
JMA 14 06:05:18.8±0.3, 38°10N×143°08E, h13km±4km, M4.2
ISC 14 06:05:20.5±0.9, 38°09N±0°08×143°08E±0°08, h18km, n31, σ1§29/28, mb3.6/8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.41**	**286**	P	**Pn**	**06 05 44.0**	**-1.2**
JIO				*eS*	**Sn**	**06 06 02.7**	**-0.6**
OFUJ	**Ofunato**	**1.48**	**312**	P	**Pn**	**06 05 45.0**	**-1.3**
JMK	**Ichinoseki**	**1.69**	**301**	P	**Pn**	**06 05 48.2**	**-0.9**
JMM	**Marumori**	**1.82**	**264**	P	**Pn**	**06 05 50.0**	**-0.8**
JMM				S	**Sn**	**06 06 12.2**	**-1.2**
JOU	**Okura**	**1.92**	**279**	P	**Pn**	**06 05 52.4**	**+0.1**
JOU				S	**Sn**	**06 06 16.0**	**0.0**
JOM	**Ohasama**	**1.96**	**315**	P	**Pn**	**06 05 52.4**	**-0.5**
JFT	**Otama**	**2.24**	**256**	P	**Pn**	**06 05 57.1**	**+0.4**
JFT				*eS*	**Sn**	**06 06 24.0**	**+0.1**
JYK	**Kaneyama**	**2.29**	**292**	P	**Pn**	**06 05 57.4**	**+0.1**
JRG	**Rokugo**	**2.31**	**305**	P	**Pn**	**06 05 58.0**	**+0.3**
JANG	**Nango**	**2.59**	**333**	P	**Pn**	**06 06 03.7**	**+2.2**
MJAR	**Matsushiro Arr**	**4.17**	**250**	Pn	**Pn**	**06 06 24.4**	**+1.1**
	2.9nm,0.3s,baz=65,slow=13,SNR=18						
MAT	**Matsushiro**	**4.17**	**250**	P	**Pn**	**06 06 25.1**	**+1.8**
MAT				*eS*	**Sn**	**06 07 14.4**	**+2.8**
JHJ	**Hachijo jima 2**	**5.63**	**209**	Pn	**Pn**	**06 06 41.9**	**-1.5**
	32nm,0.3s,baz=353,slow=20,SNR=9.9						
ASAJ	**Asahikawa**	**6.04**	**357**	Pn	**Pn**	**06 06 49.3**	**+0.4**
	1.6nm,0.3s,baz=217,slow=18,SNR=6.1						
USRK	**Ussuriysk Ar.**	**10.35**	**310**	Pn	**Pn**	**06 07 50.9**	**+2.9**
	0.3nm,0.3s,baz=119,slow=11,SNR=4.8						
KLR	**Kul'dur**	**13.81**	**327**	Pn	P	06 08 41.9	-1.7
	0.2nm,0.3s,baz=122,slow=13,SNR=4.8						
MA2	**Magadan**	**22.07**	**10**	LR	LR	06 18 41.4	
	comp=Z,25nm,20.5s,baz=325,slow=36						
H11N2	**WAKE ISLAND Hy 27.61**	**125**		T	T	06 39 54.2	
	baz=317,slow=76,SNR=11						
H11N1	**WAKE ISLAND Hy 27.61**	**125**		T	T	06 39 58.6	
	baz=317,slow=76,SNR=146						
H11N3	**WAKE ISLAND Hy 27.62**	**125**		T	T	06 39 59.2	
	baz=317,slow=76,SNR=181						
H11S1	**WAKE ISLAND Hy 28.38**	**127**		T	T	06 40 56.4	
	baz=319,slow=76,SNR=48						
H11S3	**WAKE ISLAND Hy 28.38**	**127**		T	T	06 40 56.5	
	baz=319,slow=76,SNR=44						
H11S2	**WAKE ISLAND Hy 28.39**	**127**		T	T	06 40 59.6	
	baz=319,slow=76,SNR=44						
MKAR	**Makanchi Array**	**44.69**	**301**	P	**P**	**06 13 32.8**	**+0.5**
	0.4nm,0.6s,baz=79,slow=9.1,SNR=2.9						
KURBB	**Kurchatov Arra**	**46.40**	**307**	P	**P**	**06 13 45.9**	**+0.2**
	1.6nm,0.6s,baz=82,slow=8.3,SNR=12						
ILAR	**Eielson Array**	**47.90**	**33**	P	**P**	**06 13 55.3**	**-1.9**
	0.2nm,0.5s,baz=264,slow=6.3,SNR=3.1						
BVAR	**Borovoye Array**	**50.85**	**312**	P	**P**	**06 14 21.0**	**+1.2**
	0.5nm,0.5s,baz=87,slow=8.8,SNR=2.5						
WRA	**Warramunga Arr**	**58.30**	**190**	P	**P**	**06 15 13.4**	**-0.9**
	2.9nm,0.8s,baz=9.5,slow=7.4,SNR=14						
ASAR	**Alice Springs**	**62.02**	**190**	P	**P**	**06 15 38.9**	**-0.9**
	0.7nm,0.7s,baz=17,slow=5.1,SNR=7.3						
YKA	**Yellowknife Ar**	**62.23**	**31**	P	**P**	**06 15 40.8**	**+0.1**
	0.1nm,0.6s,baz=307,slow=6.9,SNR=4.1						
PDAR	**Pinedale Array**	**75.99**	**46**	P	**P**	**06 17 07.0**	**+0.3**
	0.1nm,0.6s,baz=294,slow=2.9,SNR=2.4						

ISCJB 14 06:05:31.5±0.4, 49°84N±0°03×18°45E±0°03, h0km, Error ellipse: s-maj=4.8km s-min=2.4km az=11.4
IPEC 14 06:05:32.4±0.2, 49°79N×18°53E, h0km, ML1.6/4, Error ellipse: s-maj=2.1km s-min=1.1km az=161.0
CSEM 14 06:05:32.4±0.2, 49°84N×18°45E, h1km, ML2.5/8, Error ellipse: s-maj=6.8km s-min=3.3km az=10.0
ISC 14 06:05:32.4±0.8, 49°81N±0°04×18°47E±0°02, h0km, n28, σ0§63/50, 3D, Czech and Slovak Republics

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OKC	**Ostrava-Krasne**	**0.21**	**278**	⇓*iPG*	**Pg**	**06 05 37.6**	**+1.1**
OKC				*eSG*	**Sg**	**06 05 39.7**	**+0.5**
	comp=Z,16nm,0.2s						
OKC	**Ostrava-Krasne**	**0.21**	**278**	Pg	**Pg**	**06 05 37.6**	**+1.1**
OKC				Sg	**Sg**	**06 05 39.7**	**+0.5**
	16nm,0.2s						
MORC	**Moravsky Berou**	**0.60**	**267**	*ePg*	**Pg**	**06 05 44.8**	**+0.8**
MORC				*eSg*	**Sg**	**06 05 52.8**	**+1.0**
	15nm,0.3s						
LANS	**Liptovska Anna**	**0.93**	**135**	*ePg*	**Pb**	**06 05 51.1**	**-0.2**
LANS				*eSg*	**Sb**	**06 06 04.7**	**+0.6**
LANS	**Liptovska Anna**	**0.93**	**135**	*ePG*	**Pb**	**06 05 51.1**	**-0.2**
LANS				*eSG*	**Sb**	**06 06 04.7**	**+0.6**
OJC	**Ojcow**	**0.95**	**64**	*ePg*	**Pg**	**06 05 50.0**	**-0.5**
OJC				*eSg*	**Sg**	**06 06 02.8**	**0.0**
OJC	**Ojcow**	**0.95**	**64**	*ePg*	**Pg**	**06 05 50.0**	**-0.5**
OJC				*eSg*	**Sg**	**06 06 02.8**	**0.0**
JAVC	**Velka Javorina**	**1.09**	**209**	*eSg*	**Sn**	**06 06 10.3**	**-0.4**
	9.0nm,0.3s						
KRLC	**Kraliky**	**1.12**	**284**	*ePG*	**Pg**	**06 05 53.0**	**-0.9**
KRLC				*eSG*	**Sg**	**06 06 08.9**	**+0.4**
KRLC	**Kraliky**	**1.12**	**284**	Pg	**Pg**	**06 05 53.0**	**-0.9**
KRLC	

PRU	**Pruhonice**	**2.55 276**	Sg		**Sg**	**06 06 54.8**	**+0.6**
	3.2nm,0.4s						
KHC	**Kasperske Hory**	**3.27 260**	*e*SG		**Sg**	**06 07 17.0**	**-0.2**
	comp=Z,2.0nm,0.5s						
KHC	**Kasperske Hory**	**3.27 260**	Sg		**Sg**	**06 07 17.0**	**-0.2**
	2.0nm,0.5s						

ISCJB ***14*** *06:08:57.4±0.9, 6°.71N±0°.04×72°.66W±0°.04, h8km±7km, Error ellipse: s-maj=7.5km s-min=4.9km az=137.5*
RSNC ***14*** *06:08:58.7±1.9, 6°.72N×72°.70W, h4km±20km, ML2.5*
FUNV ***14*** *06:09:03.4, 6°.88N×72°.50W, h7km, MW2.6*

ISC 14 06:08:57.8±1.4, 6.75N±0°.04×72.69W±0°.05, h8km±13km, n20, σ1§15/26, 1C-2D, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BARC	**Barichara**	**0.51**	**252**	*i* P	**Pg**	**06 09 07.7**	**-0.1**
BARC				*i*		06 09 08.0	
	comp=Z,261nm,0.1s						
BARC				*e*S	**Sg**	**06 09 14.7**	**+0.2**
PAMC	**Pamplona, Colo**	**0.58**	**359**	*i* P	**Pg**	**06 09 09.3**	**+0.1**
GIRC	**Giron, Santand**	**0.59**	**303**	*e*P	**Pg**	**06 09 09.1**	**-0.2**
RUSC	**La Rusia**	**0.94**	**204**	⇑*i*P	**Pg**	**06 09 15.6**	**-0.4**
RUSC				*e*S	**Sg**	**06 09 27.2**	**-1.0**
RUSC				*i*		06 09 29.9	
	comp=Z,115nm,0.2s						
CBRI	**Barrientos, No**	**0.96**	**354**	*i* P	**Pg**	**06 09 16.2**	**-0.2**
GRMC	**Gramalote, San**	**0.97**	**354**	*i* P	**Pn**	**06 09 19.0**	**+1.2**
GRMC				*i*		06 09 42.8	
	comp=Z,106nm,0.2s						
BRRC	**Barranca, Sant**	**1.07**	**289**	⇓*i*P	**Pg**	**06 09 18.4**	**0.0**
BRRC				*e*S	**Sg**	**06 09 31.4**	**-0.9**
BRRC				*i*		06 09 34.2	
	comp=Z,96nm,0.2s						
CAPV	**Capacho**	**1.17**	**19**	*e*P	**Pn**	**06 09 20.9**	**+0.3**
CAPV				*e*S	**Sb**	**06 09 35.9**	**+0.1**
OCAC	**Ocana**	**1.60**	**337**	*e*P	**Pb**	**06 09 27.8**	**0.0**
OCAC				*i*		06 09 53.2	
	comp=Z,98nm,0.6s						
SOCV	**Socops**	**2.37**	**50**	*e*P	**Pn**	**06 09 39.0**	**+1.9**
SOCV				*e*S	**Sn**	**06 10 05.5**	**-1.0**
HELC	**Santa Helena**	**2.87**	**259**	*e*P	**Pn**	**06 09 46.1**	**+1.9**
HELC				*i*		06 10 27.9	
	comp=Z,10nm,0.2s						
ELOV	**Elorza**	**3.20**	**85**	*e*P	**Pn**	**06 09 50.3**	**+1.9**
ELOV				*e*S	**Sn**	**06 10 24.8**	**-1.9**
VIRV	**Villa del Rosa**	**3.74**	**4**	*e*P	Pn	06 09 59.2	+3.3
VIRV				*e*S	**Sn**	**06 10 38.6**	**-1.5**
SANV	**Sanarito**	**4.15**	**49**	*e*P	**Pn**	**06 10 02.9**	**+1.2**
CURV	**Curarigua**	**4.22**	**40**	*e*P	**Pn**	**06 10 03.8**	**+1.3**
SIQV	**Siquisique**	**4.81**	**36**	*e*P	**Pn**	**06 10 12.0**	**+1.4**
BAUV	**El Baul**	**5.10**	**64**	⇓*e*P	**Pn**	**06 10 15.3**	**+0.7**
MAPV	**Macapo**	**5.19**	**54**	*e*P	**Pn**	**06 10 16.8**	**+1.0**
MONV	**Montecano**	**5.83**	**27**	*e*P	**Pn**	**06 10 25.9**	**+1.3**
CUPV	**Cœpira**	**7.58**	**64**	*e*P	**Pn**	**06 10 49.0**	**+0.3**

IDC 14 06:11:02.8±3.6, 53°.70N×88°.10E, h0km, mb1 3.1/2, mb1mx2.9/37, mbtmp3.1/2, ML2.8/2, 4C-2D, Error ellipse: s-maj=35.8km s-min=20.4km az=82.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**1.96**	**279**	*i*		06 23 55.3	
	baz=93,slow=324,SNR=14						
ZALV	**Zalesovo Beam**	**1.96**	**279**	Pn	Pn	06 11 37.2	0.0
	2.7nm,0.3s,baz=94,slow=12,SNR=45						
ZALV				Sn	Sn	06 12 03.3	+0.8
	8.8nm,0.3s,baz=102,slow=26,SNR=20						
KURK	**Kurchatov**	**6.55**	**247**	⇓Pn	Pn	06 12 41.1	+0.9
	4.1nm,0.9s						
KURK				⇑Sn	Sn	06 13 52.5	-3.0
	1.9nm,0.8s						
KURK				⇑Lg	Lg	06 14 25.3	
	9.9nm,1.2s						
KURBB	**Kurchatov Arra**	**6.64**	**246**	Pn	Pn	06 12 42.1	+0.6
	0.2nm,0.3s,baz=62,slow=14,SNR=7.6						
KURBB				Lg	Lg	06 14 32.5	
	0.1nm,0.3s,baz=63,slow=33,SNR=8.0						
KURBB	**Kurchatov Arra**	**6.64**	**246**	⇓Pn	Pn	06 12 42.0	+0.5
	1.6nm,0.4s,baz=62,slow=14						
KURBB				⇑Sn	Sn	06 13 56.0	-1.9
	3.1nm,0.6s						
KURBB				⇑Lg	Lg	06 14 29.7	
	8.4nm,1.0s,baz=61,slow=30						
MKAR	**Makanchi Array**	**7.85**	**211**	Pn	Pn	06 12 59.4	+1.2
	0.1nm,0.3s,baz=32,slow=16,SNR=4.4						
MKAR				Sn	Sn	06 14 27.3	-0.4
	0.1nm,0.3s,baz=26,slow=26,SNR=2.6						
MKAR				Lg	Lg	06 15 10.6	
	0.1nm,0.3s,baz=28,slow=35,SNR=3.5						

IDC 14 06:24:01.4±1.8, 20°.05S×168°.11E, h0km, mb3.5/3, mb1 3.8/4, mb1mx3.6/24, mbtmp3.5/4, MS3.2/1, Ms1 3.1/1, ms1mx2.7/20, Error ellipse: s-maj=69.9km s-min=29.3km az=147.0, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.55**	**217**	Pn	Pn	06 24 43.7	-0.4
	baz=61,slow=19						
DZM				Sn	Sn	06 25 13.5	-2.4
	8.4nm,0.3s,baz=131,slow=20,SNR=3.0						
STKA	**Stephens Creek**	**26.52**	**238**	LR	LR	06 39 27.1	
	comp=Z,48nm,18.6s,baz=192,slow=35						
WRA	**Warramunga Arr**	**31.71**	**264**	P	P	06 30 26.8	-0.3
	0.3nm,0.8s,baz=92,slow=8.3,SNR=2.8						
ASAR	**Alice Springs**	**31.91**	**257**	P	P	06 30 29.2	+0.3
	0.7nm,0.8s,baz=87,slow=9.0,SNR=6.8						
NVAR	**Mina Array Bea**	**90.13**	**49**	P	P	06 37 03.8	0.0
	0.3nm,0.6s,baz=217,slow=4.4,SNR=2.6						

KRNET ***14*** *06:34:29.9±0.1, 42°.02N×79°.77E, h24km, mb2.5*
SOME ***14*** *06:34:32.0, 42°.03N×79°.82E, h15km*

ISC 14 06:34:29.8±2.1, 41°.94N±0°.07×79°.73E±0°.06, h1km±12km, n21, σ1§14/42, 15C-7D, Kyrgyzstan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PRZ	**Przheval'sk**	**1.13**	**299**	⇑*i*P	**Pg**	**06 34 51.8**	**+0.4**
	baz=294						
PRZ				⇑*i*S	**Sn**	**06 35 07.7**	**-1.4**
	baz=294						
SHLS	**Shalkode**	**1.22**	**5**	*e*P	**Pb**	**06 34 53.0**	**-0.8**
	50nm,0.1s						
SHLS				*e*S	**Sg**	**06 35 08.1**	**-0.8**
	92nm,0.2s						
UZB	**Uzynbulak**	**1.31**	**337**	*e*P	**Pb**	**06 34 55.0**	**-0.3**
	10nm,0.1s						
UZB				*e*S	**Sb**	**06 35 11.5**	**-1.2**
	18nm,0.1s						
PDGK	**Podgornoye**	**1.40**	**353**	⇑*i*P	**Pn**	**06 34 55.7**	**-0.7**
	baz=351						
PDGK				⇑*i*S	**Sg**	**06 35 14.4**	**-0.2**
	baz=351						
SATY	**Saty**	**1.48**	**319**	*e*P	**Pb**	**06 34 58.2**	**-0.1**
	3.5nm,0.1s						
SATY				*e*S	**Sg**	**06 35 17.3**	**-0.2**
	32nm,0.1s						
ZHN	**Zhinishke**	**1.55**	**322**	*e*P	**Pb**	**06 34 59.4**	**-0.1**
	13nm,0.1s						
ZHN				*e*S	**Sg**	**06 35 19.4**	**-0.3**
	73nm,0.2s						
KPKS	**Kokpek**	**1.71**	**333**	*e*P	**Pb**	**06 35 01.8**	**-0.2**
	30nm,0.1s						
KPKS				*e*S	**Sg**	**06 35 23.6**	**-1.0**
	62nm,0.3s						
ANVS	**Anan'yevo**	**1.74**	**299**	⇑*e*P	**Pb**	**06 35 03.1**	**+0.4**
	baz=297						
ANVS				⇑*i*S	**Sg**	**06 35 27.2**	**+1.4**
	baz=297						
KDJ	**Kajisay**	**1.91**	**276**	⇓*i*P	**Pb**	**06 35 05.7**	**+0.2**
	baz=274						
KDJ				⇓*i*S	**Sg**	**06 35 31.6**	**+0.5**
	baz=274						
KURS	**Kuram**	**1.93**	**324**	*e*P	**Pb**	**06 35 05.9**	**+0.1**
	7.5nm,0.3s						
KURS				*e*S	**Sb**	**06 35 29.9**	**-0.4**
	21nm,0.3s						
MDOK	**Medeo**	**2.33**	**303**	*e*P	**Pb**	**06 35 12.3**	**-0.3**
	4.7nm,0.4s						
MDOK				*e*S	**Sb**	**06 35 41.1**	**-0.8**
	9.3nm,0.4s						
TNSS	**Tian-Shan**	**2.33**	**299**	*e*P	**Pg**	**06 35 14.8**	**+0.2**
	6.1nm,0.4s						
TNSS				*e*S	**Sg**	**06 35 45.3**	**+0.5**
	3.6nm,0.3s						
DJR	**Jarkent**	**2.39**	**1**	*e*P	**Pb**	**06 35 13.6**	**-0.1**
	3.3nm,0.1s						
DJR				*e*S	**Sb**	**06 35 43.7**	**+0.1**
	19nm,0.4s						
ULHL	**Ulahol**	**2.61**	**278**	⇑*i*P	**Pb**	**06 35 18.1**	**+0.5**
	baz=276						
ULHL				⇑*i*S	**Sg**	**06 35 52.9**	**-0.8**
	baz=276						
NRN	**Naryn**	**2.84**	**261**	⇓*e*P	**Pb**	**06 35 19.9**	**-1.6**
	baz=259						
NRN				⇓*e*S	**Sb**	**06 35 56.7**	**-0.2**
	baz=259						
BOOM	**Boomskoye usch**	**2.87**	**282**	⇓*e*P	**Pb**	**06 35 19.6**	**-2.3**
	baz=281						
BOOM				⇓*e*S	**Sb**	**06 35 56.2**	**-1.3**
	baz=281						
KUU	**Kurty**	**3.16**	**309**	*e*P	**Pb**	**06 35 27.8**	**+1.0**
	3.0nm,0.1s						
KUU				*e*S	**Sb**	**06 36 08.2**	**+2.3**
	11nm,0.3s						
TKM2	**Tokmak 2**	**3.21**	**289**	⇑*i*P	**Pn**	**06 35 22.9**	**+1.3**
	baz=288						
TKM2				⇑*i*S	**Sb**	**06 36 03.5**	**-4.0**
	baz=288						
KZA	**Kyzart**	**3.34**	**274**	⇑*i*P	**Pb**	**06 35 30.8**	**+0.7**
	baz=272						
KZA				⇑*i*S	**Sb**	**06 36 12.4**	**+1.0**
	baz=272						
MAKZ	**Makanchi**	**5.12**	**18**	⇑Pn	**Pn**	**06 35 47.6**	**-0.1**
	0.2nm,0.3s						
MAKZ				⇑Sn	**Sn**	**06 36 48.7**	**+1.2**
	1.0nm,0.8s						
MK31	**Makanchi Array**	**5.18**	**20**	⇑Pn	**Pn**	**06 35 49.3**	**+0.7**
	0.1nm,0.2s,baz=192,slow=9.4,SNR=12						
MK31				⇓Sn	**Sn**	**06 36 50.1**	**+1.1**
	0.3nm,0.3s,baz=205,slow=26,SNR=4.4						

IDC 14 06:36:20.1±3.4, 54°.40N×86°.97E, h0km, mb1 2.9/2, mb1mx2.8/46, mbtmp2.9/2, ML2.3/1, Error ellipse: s-maj=30.4km s-min=20.3km az=54.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**1.34**	**251**	*i*		06 45 07.9	
	baz=70,slow=319,SNR=3.7						
ZALV	**Zalesovo Beam**	**1.34**	**251**	Pg	Pg	06 36 43.8	-2.0
	1.3nm,0.3s,baz=69,slow=17,SNR=6.8						
ZALV				Lg	Lg	06 37 03.0	
	1.6nm,0.3s,baz=66,slow=23,SNR=5.2						
KURBB	**Kurchatov Arra**	**6.39**	**237**	Pn	Pn	06 37 56.8	+1.4
	0.1nm,0.3s,baz=54,slow=14,SNR=6.9						
MKAR	**Makanchi Array**	**8.17**	**203**	Pn	Pn	06 38 20.8	+0.9
	baz=21,slow=12,SNR=2.2						
MKAR				Lg	Lg	06 40 37.2	
	0.0nm,0.3s,baz=23,slow=32,SNR=2.7						

NIED ***14*** *07:02:00, 36°.90N×142°.80E, h8km, Mw4.6 Best double couple: M0:8.19000×10^15 NP1:φ=28.00000°, δ=84.00000°, λ=180.00000°. NP2:φ=118.00000°, δ=90.00000°, λ=6.00000°.*
IDC ***14*** *07:02:03.4±0.6, 36°.81N×142°.76E, h0km, mb4.2/21, mb1 4.3/27, mb1mx4.2/55, mbtmp4.2/27, ML3.9/6, MS3.9/22, Ms1 3.9/22, ms1mx3.7/49, Error ellipse: s-maj=15.6km s-min=13.4km az=127.0*
JMA ***14*** *07:02:05.8±0.3, 36°.87N×142°.75E, h53km, M4.6*
ISCJB ***14*** *07:02:05.6±1.0, 36°.94N±0°.03×142°.66E±0°.03, h16km±6km, mb4.4/62, MS4.1/32, Error ellipse: s-maj=5.7km s-min=3.9km az=159.2*
NEIC ***14*** *07:02:05.7±3.1, 37°.07N×142°.70E, h2km±18km, mb4.7/30, Error ellipse: s-maj=11.3km s-min=5.6km az=154.0*
MOS ***14*** *07:02:09.3±0.9, 37°.21N×142°.61E, h33km, mb4.5/29, Error ellipse: s-maj=9.1km s-min=6.2km az=97.3*

ISC 14 07:02:07.7±1.8, 37°.08N±0°.04×142°.67E±0°.04, h17km±10km, n166, σ2§04/163, mb4.5/62, MS4.1/32, 6C-7D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.47**	**282**	P	**Pn**	**07 02 31.9**	**-1.5**
JFK				S	**Sn**	**07 02 51.5**	**-0.7**
ONAJ	**Iwakimizuishiy**	**1.50**	**272**	P	**Pn**	**07 02 31.8**	**-2.1**
ONAJ				S	**Sn**	**07 02 51.2**	**-1.9**
JMM	**Marumori**	**1.69**	**298**	P	**Pn**	**07 02 35.9**	**-0.6**
JMM				*e*S	**Sn**	**07 02 57.7**	**0.0**
JIO	**Ouri**	**1.73**	**323**	P	**Pn**	**07 02 37.0**	**0.0**
JHO	**Hitachi**	**1.75**	**255**	P	**Pn**	**07 02 34.4**	**-2.9**
JHO				*e*S	**Sn**	**07 02 55.6**	**-3.6**
JFT	**Otama**	**1.92**	**284**	P	**Pn**	**07 02 39.3**	**-0.3**
JFT				S	**Sb**	**07 03 04.6**	**-1.2**
JMK	**Ichinoseki**	**2.20**	**329**	P	**Pn**	**07 02 44.1**	**+0.7**
JMK				S	**Sb**	**07 03 12.3**	**-1.6**
JYK	**Kaneyama**	**2.59**	**316**	P	**Pn**	**07 02 49.4**	**+0.5**
JYK				S	**Sn**	**07 03 20.6**	**+0.6**
JOM	**Ohasama**	**2.63**	**336**	P	**Pn**	**07 02 48.6**	**-0.8**
JOM				S	**Sb**	**07 03 23.7**	**-2.7**
JAG	**Ashikaga**	**2.67**	**257**	P	**Pn**	**07 02 48.1**	**-1.8**
JAG				S	**Sn**	**07 03 19.2**	**-2.6**
BSO1	**Boso 1**	**2.78**	**210**	P	**Pn**	**07 02 46.9**	**-4.0**
JAW	**Awa shima**	**3.04**	**298**	P	**Pn**	**07 02 50.8**	**-4.3**
JRY	**Ryogami san**	**3.22**	**252**	P	**Pn**	**07 02 55.1**	**-2.4**
JRY				S	**Sn**	**07 03 31.8**	**-3.6**
JOD2	**Odawara 2**	**3.42**	**239**	P	**Pn**	**07 02 57.5**	**-2.7**
JOD2				S	**Sn**	**07 03 35.8**	**-4.6**
MJAR	**Matsushiro Arr**	**3.62**	**263**	Pn	**Pn**	**07 03 02.2**	**-0.8**
	27nm,0.3s,baz=87,slow=15,SNR=144						
MAJO	**Matsushiro**	**3.62**	**263**	*d*iP	**Pn**	**07 03 02.9**	**-0.2**
MAJO	**Matsushiro**	**3.62**	**263**	*e*Pn	**Pn**	**07 03 03.1**	**0.0**
MAJO				*e*Sn	**Sb**	**07 03 57.6**	**+2.6**
MAT	**Matsushiro**	**3.62**	**263**	P	**Pn**	**07 03 02.7**	**-0.4**
MAT				S	**Sn**	**07 03 49.4**	**+3.9**
MAT	**Matsushiro**	**3.62**	**263**	P	**Pn**	**07 03 03.5**	**+0.4**
MAT				S	**Sn**	**07 03 48.4**	**+2.9**
JHJ	**Hachijo jima 2**	**4.60**	**212**	Pn	Pn	07 03 10.4	-6.1
	113nm,0.3s,baz=90,slow=20,SNR=3.1						
JHJ				Sn	Sn	07 03 60.0	-10
	61nm,0.3s,baz=105,slow=20,SNR=3.2						
INU	**Inuyama**	**4.89**	**251**	*e*Pn	**Pn**	**07 03 20.2**	**-0.2**
ERM	**Erimo**	**4.95**	**4**	*d*iP	**Pn**	**07 03 20.2**	**-1.0**
ERM				pmax	pmax		
	comp=Z,140nm,1.2s						
ERM	**Erimo**	**4.95**	**4**	*e*Pn	**Pn**	**07 03 19.8**	**-1.4**
ERM				*e*Sn	**Sn**	**07 04 20.2**	**+2.2**
ASAJ	**Asahikawa**	**7.04**	**360**	Pn	**Pn**	**07 03 49.7**	**-0.2**
	comp=Z,3.0nm,0.3s,baz=222,slow=17,SNR=8.3						
ASAJ				Sn	**Sn**	**07 05 09.0**	**-0.4**
	comp=Z,1.3nm,0.3s,baz=270,slow=20,SNR=2.1						
ASAJ				LR	LR	07 06 59.3	
	comp=Z,641nm,20.5s,baz=194,slow=40						
YUK	**Yuzh-Kuril'sk**	**7.36**	**18**	*e*P	Pn	07 04 01.4	+7.0
YUK				*e*S	**Sn**	**07 05 13.7**	**-3.8**
YUK				pmax	pmax		
	comp=Z,113nm,0.3s						
YUK				pmax	pmax		
	comp=E,87nm,0.4s						
YUK				pmax	pmax		
	comp=N,42nm,0.2s						
YUK				MLR	MLR		
	comp=Z,1μm,15.0s						
SHO	**Shikotan**	**7.49**	**24**	*e*P	Pn	07 04 02.6	+6.5
SHO				*e*S	**Sn**	**07 05 15.3**	**-5.3**
SHO				pmax	pmax		
	comp=N,48nm,0.6s						
SHO				pmax	pmax		
	comp=Z,87nm,0.6s						
SHO				pmax	pmax		
	comp=E,25nm,0.4s						
CBIJ	**Chichi jima**	**9.96**	**183**	Pn	Pn	07 04 21.4	-8.7
CBIJ				Sn	Sn	07 06 03.8	-18
JCJ	**Chichijima**	**9.96**	**183**	Pn	Pn	07 04 21.4	-8.7
	comp=E,16nm,0.3s,baz=282,slow=23,SNR=6.0						
JCJ				Sn	Sn	07 06 03.8	-18
	comp=E,17nm,0.3s,baz=76,slow=24,SNR=4.5						
JNU	**Nakatsue**	**10.44**	**251**	Pn	**Pn**	**07 04 36.1**	**-0.5**
	comp=E,0.6nm,0.3s,baz=47,slow=9.7,SNR=3.4						
JNU	**Nakatsue**	**10.44**	**251**	*e*Pn	Pn	07 04 42.7	+6.1
USRK	**Ussuriysk Ar.**	**10.79**	**315**	Pn	Pn	07 04 46.1	+4.8
	comp=E,0.1nm,0.3s,baz=120,slow=14,SNR=3.6						
USRK				LR	LR	07 08 13.6	
	comp=E,208nm,21.2s,baz=125,slow=34						
KSRS	**Korea Array**	**11.76**	**276**	Pn	**Pn**	**07 04 57.2**	**+2.5**
	comp=E,0.5nm,0.3s,baz=87,slow=13,SNR=11						
KSRS				LR	LR	07 09 23.0	
	comp=E,301nm,18.7s,baz=84,slow=37						
KSAR	**Wonju Array Be**	**11.79**	**276**	P	**Pn**	**07 04 57.2**	**+2.1**
KSAR	**Wonju Array Be**	**11.79**	**276**	Pn	**Pn**	**07 04 57.2**	**+2.1**
HABR	**Khabarovsk**	**12.69**	**336**	*e*P	**P**	**07 05 16.2**	**-2.2**
HABR				*e*S	**Sn**	**07 07 20.7**	**-7.3**
HABR				pmax	pmax		
	comp=Z,36nm,1.3s						
HABR				pmax	pmax		
	comp=N,14nm,1.3s						
HABR				pmax	pmax		
	comp=E,38nm,1.3s						
HABR				MLR	MLR		
	comp=Z,234nm,13.0s						
TYV	**Tymovskoe**	**13.79**	**360**	*e*P	**Pn**	**07 05 21.2**	**-1.0**
TYV				pmax	pmax		
	comp=Z,35nm,1.0s						
KLR	**Kul'dur**	**14.51**	**330**	Pn	**Pn**	**07 05 32.5**	**+0.4**
	comp=Z,0.2nm,0.3s,baz=139,slow=15,SNR=2.6						
KLR				LR	LR	07 11 12.1	
	comp=Z,392nm,19.2s,baz=134,slow=37						
CN2	**Changchun**	**14.73**	**302**	*e*P	**P**	**07 05 38.0**	**-3.1**
CN2				*e*sP	sP	07 05 57.0	
CN2				*e*S	**Sn**	**07 08 16.6**	**-1.2**
CN2				pmax	pmax		
	comp=Z,20nm,0.6s						
CN2				pmax	pmax		
	comp=Z,200nm,4.0s						
CN2				LR	LR		
	comp=N,700nm,11.0s						
CN2				LR	LR		
	comp=E,300nm,11.0s						
CN2				LR	LR		
	comp=Z,700nm,12.0s						
NKL	**Nikolayevsk**	**16.14**	**356**	*e*P	**Pn**	**07 05 53.2**	**-0.3**
NKL				pmax	pmax		
	comp=N,10.0nm,1.2s						
NKL				pmax	pmax		
	comp=Z,30nm,1.2s						
NKL				MLR	MLR		
	comp=N,500nm,17.0s						
NKL				MLR	MLR		
	comp=E,400nm,17.0s						
NKL				MLR	MLR		
	comp=Z,500nm,17.0s						
SKR	**Severo-Kuril's**	**16.66**	**31**	⇑*e*P	**P**	**07 06 02.3**	**-0.3**
PETK	**Petropavlovsk-**	**19.16**	**28**	P	**P**	**07 06 28.5**	**-1.6**
	comp=Z,0.3nm,0.3s,baz=239,slow=11,SNR=4.1						
PETK				LR	LR	07 13 21.2	
	comp=Z,171nm,21.9s,baz=216,slow=35						
PET	**Petropavlovsk**	**19.47**	**30**	⇑*e*P	**Pn**	**07 06 35.2**	**+0.5**
NJ2	**Nanjing**	**20.23**	**263**	*e*P	Pn	07 06 50.3	+6.4
NJ2				S	Sn	07 10 41.4	+10
NJ2				pmax	pmax		
	comp=Z,47nm,0.5s						
NJ2				pmax	pmax		
	comp=Z,200nm,11.5s						
NJ2				LR	LR		
	comp=N,430nm,16.3s						
NJ2				LR	LR		
	comp=E,840nm,14.1s						
NJ2				LR	LR		
	comp=Z,700nm,15.2s						
TIA	**Tai'an**	**20.51**	**275**	*e*P	Pn	07 06 46.9	-0.2
TIA				pmax	pmax		
	comp=Z,10.0nm,1.3s						
BJI	**Beijing**	**20.91**	**286**	P	**P**	**07 06 49.9**	**+0.7**
BJI				S	**S**	**07 10 38.4**	**-3.2**
BJI				pmax	pmax		
	comp=Z,5.0nm,1.0s						
BJI				LR	LR		
	comp=N,650nm,12.7s						
BJI				LR	LR		
	comp=E,190nm,11.6s						
BJI				LR	LR		
	comp=Z,100nm,29.2s						
MA2	**Magadan**	**23.12**	**11**	P	**P**	**07 07 12.8**	**+0.2**
	comp=Z,5.5nm,0.6s,baz=184,slow=12,SNR=4.2						
MA2				LR	LR	07 17 09.0	
	comp=Z,179nm,20.0s,baz=212,slow=39						
WHN	**Wuhan**	**24.36**	**263**	⇑P	P	07 07 32.1	+7.2
WHN				S	**S**	**07 11 49.1**	**+5.5**
WHN				LR	LR		
	comp=N,1μm,14.2s						
WHN				LR	LR		
	comp=E,2μm,16.9s						
WHN				LR	LR		
	comp=Z,1μm,11.7s						
HHC	**Hu-ho-hao-te**	**24.41**	**289**	*e*P	**P**	**07 07 27.0**	**+1.6**
HHC				S	S	07 11 33.5	-11
HHC				pmax	pmax		
	comp=Z,25nm,0.9s						
HHC				pmax	pmax		
	comp=Z,170nm,4.3s						
HHC				LR	LR		
	comp=N,440nm,11.8s						
HHC				LR	LR		
	comp=E,660nm,11.6s						
HHC				LR	LR		
	comp=Z,660nm,11.5s						
YAK	**Yakutsk**	**26.26**	**346**	P	**P**	**07 07 42.2**	**+0.4**
	comp=Z,14nm,0.5s,baz=139,slow=2.3,SNR=3.7						
YAK	**Yakutsk**	**26.26**	**346**	*e*P	**P**	**07 07 42.1**	**+0.4**
YAK				*e*		07 11 12.9	
YAK				*e*S	**S**	**07 12 07.2**	**-6.0**
YAK				*e*		07 18 40.2	
YAK				pmax	pmax		
	comp=Z,19nm,0.9s						
YAK				pmax	pmax		
	comp=N,8.0nm,1.4s						
YAK				pmax	pmax		
	comp=E,4.0nm,1.1s						
YAK				smax	smax		
	comp=E,79nm,3.8s						
YAK				smax	smax		
	comp=N,51nm,3.3s						
YAK				MLR	MLR		
	comp=Z,445nm,17.0s						
YAK				MLR	MLR		
	comp=N,388nm,20.0s						
YAK				MLR	MLR		
	comp=E,176nm,19.0s						
SEY	**Seymchan**	**26.57**	**10**	⇑*e*P	**P**	**07 07 45.6**	**+1.1**
H11N2	**WAKE ISLAND Hy**	**27.31**	**123**	T	T	07 36 27.9	
	baz=314,slow=75,SNR=55						
H11N1	**WAKE ISLAND Hy**	**27.32**	**123**	T	T	07 36 26.2	
	baz=314,slow=75,SNR=19						
H11N3	**WAKE ISLAND Hy**	**27.33**	**123**	T	T	07 36 26.2	
	baz=314,slow=75,SNR=17						
XAN	**Xi'an**	**27.54**	**274**	P	P	07 08 02.3	+8.6
XAN				S	**S**	**07 12 40.8**	**+6.7**
XAN				pmax	pmax		
	comp=Z,5.0nm,0.4s						
XAN				LR	LR		
	comp=N,630nm,15.4s						
XAN				LR	LR		
	comp=E,320nm,16.9s						
XAN				LR	LR		
	comp=Z,260nm,15.6s						
BOD	**Boda

LZH pP sP 07 08 43.4 +11
LZH sP pP 07 08 51.0 +21
LZH PP **PP** **07 09 31.3 -3.7**
LZH *e*S **S** **07 13 27.3 -2.2**
LZH sS sS 07 13 52.3 +14
LZH *e*SS **SnSn** **07 15 12.6 +2.1**
LZH pmax pmax
comp=Z,25nm,1.2s
LZH pmax pmax
comp=Z,110nm,4.5s
LZH LR LR
comp=N,520nm,13.2s
LZH LR LR
comp=E,450nm,13.8s
LZH LR LR
comp=Z,780nm,16.1s
TLY Talaya 31.07 311 P **P** **07 08 24.2 -0.5**
comp=Z,9.6nm,0.6s,baz=52,slow=13,SNR=13
TLY Talaya 31.07 311 *e*P **P** **07 08 24.0 -0.7**
TLY pmax pmax
comp=Z,8.0nm,0.6s
TLY MLR MLR
comp=Z,266nm,16.0s
TLY Talaya 31.07 311 *e*P **P** **07 08 24.7 0.0**
comp=Z,9.9nm,0.6s
GYA Guiyang 32.22 261 *e*P **P** **07 08 39.8 +4.6**
GYA pmax pmax
comp=Z,10.0nm,0.8s
CD2 Chengdu 32.68 271 P **P** **07 08 40.9 +1.7**
CD2 pmax pmax
comp=Z,10.0nm,0.7s
MOY Mondy 32.68 310 *e*P P 07 08 48.3 +9.3
GTA Gaotai 33.51 287 *e*P **P** **07 08 44.8 -1.6**
GTA pP sP 07 09 01.0 +7.2
GTA sP pP 07 09 08.3 +17
GTA pmax pmax
comp=Z,4.0nm,0.8s
BILL Bilibino 33.71 16 *i* P **P** **07 08 46.8 -0.8**
BILL *i* 07 08 55.5
BILL pmax pmax
comp=Z,3.0nm,1.1s
BILL MLR MLR
comp=Z,129nm,19.0s
QIZ Qiongzhong 33.87 247 P **P** **07 08 53.3 +3.8**
QIZ S **S** **07 14 15.8 +2.6**
QIZ LR LR
comp=N,150nm,16.6s
QIZ LR LR
comp=E,140nm,18.0s
TIXI Tiksi 35.38 352 P **P** **07 09 01.9 -0.1**
comp=E,1.8nm,0.3s,baz=142,slow=19,SNR=5.4
TIXI Tiksi 35.38 352‖ *e*P **P** **07 09 02.0 0.0**
TIXI pmax pmax
comp=Z,2.0nm,0.5s
TIXI Tiksi 35.38 352 *e*P **P** **07 09 01.5 -0.4**
comp=Z,7.2nm,0.4s
WMQ Urumqi 41.72 297 P **P** **07 09 57.3 +1.6**
WMQ S **S** **07 16 11.3 -0.7**
WMQ pmax pmax
comp=Z,5.0nm,0.8s
WMQ pmax pmax
comp=Z,44nm,4.0s
WMQ LR LR
comp=N,510nm,18.6s
WMQ LR LR
comp=E,100nm,14.2s
WMQ LR LR
comp=Z,76nm,18.6s
CMAR Chiang Mai Arr 42.48 256 LR LR 07 28 39.4
comp=Z,66nm,20.8s,baz=342,slow=38
ZALV Zalesovo Beam 42.63 312 P **P** **07 10 03.5 +0.6**
comp=Z,1.7nm,0.7s,baz=75,slow=6.8,SNR=3.7
ZALV Zalesovo Beam 42.63 312 P **P** **07 10 03.5 +0.6**
ZALV pmax pmax
comp=Z,1.0nm,0.6s
NRIK Noril'sk 43.65 335 P **P** **07 10 11.0 0.0**
comp=Z,1.1nm,0.4s,baz=106,slow=12,SNR=4.7
NRIK LR LR 07 30 27.8
comp=Z,286nm,18.8s,baz=116,slow=39
MKAR Makanchi Array 44.95 302 P **P** **07 10 21.5 -0.2**
comp=Z,1.6nm,0.7s,baz=90,slow=9.3,SNR=16
MKAR Makanchi Array 44.95 302 *e*P **P** **07 10 21.8 +0.1**
MAKZ Makanchi 45.16 302 *e*P **P** **07 10 24.2 +0.8**
MAKZ pmax pmax
comp=Z,6.0nm,0.9s
MAKZ Makanchi 45.16 302 *e*P **P** **07 10 24.2 +0.8**
comp=Z,6.1nm,0.9s
KDAK Kodiak Island 46.39 42 *i* P **P** **07 10 32.9 0.0**
CAST Castle Rocks 46.62 34 *e*P **P** **07 10 35.8 +1.1**
comp=Z,5.7nm,1.2s
KURK Kurchatov 46.70 308 *d i*P **P** **07 10 35.4 0.0**
KURK pmax pmax
comp=Z,4.0nm,0.9s
KURK Kurchatov 46.70 308 *e*P **P** **07 10 35.6 +0.2**
comp=Z,14nm,1.1s
KAPI Kappang 47.02 212 *e*P P 07 10 46.4 +8.2
comp=Z,22nm,1.1s
KTH Kantishna Hill 47.15 34 *e*P **P** **07 10 40.3 +1.5**
comp=Z,9.5nm,1.1s
MLY Manley 47.28 32 *e*P **P** **07 10 41.0 +1.2**
comp=Z,8.8nm,1.2s
RND Reindeer 48.08 34 *e*P **P** **07 10 46.6 +0.5**
RND pmax pmax
comp=Z,10.0nm,1.3s
RND Reindeer 48.08 34 *e*P **P** **07 10 46.6 +0.5**
comp=Z,10nm,1.3s
MDM Murphy Dome 48.34 32 *e*P **P** **07 10 49.0 +1.0**
comp=Z,6.3nm,0.8s
SML Sawmill 48.36 36 *e*P **P** **07 10 48.0 -0.2**
SML pmax pmax
comp=Z,7.0nm,0.9s
SML Sawmill 48.36 36 *e*P **P** **07 10 48.0 -0.2**
comp=Z,7.2nm,0.9s
WRH Wood River Hil 48.41 33 *e*P **P** **07 10 49.1 +0.7**
comp=Z,3.8nm,0.5s
SCM Sheep Creek Mo 48.84 36 *e*P **P** **07 10 52.6 +0.7**
SCM pmax pmax
comp=Z,49nm,2.0s
SCM Sheep Creek Mo 48.84 36 *e*P **P** **07 10 52.6 +0.7**
comp=Z,49nm,2.0s
ILAR Eielson Array 48.92 32 P **P** **07 10 52.0 -0.4**
comp=Z,2.9nm,0.7s,baz=264,slow=6.4,SNR=35
HNR Honiara 49.02 157 LR LR 07 30 28.5
comp=Z,182nm,19.5s,baz=1.0,slow=35
FYU Fort Yukon 49.57 30 *e*P **P** **07 10 58.3 +1.0**
comp=Z,37nm,1.4s
DOT Dot Lake 50.21 34 *e*P **P** **07 11 02.2 -0.1**
comp=Z,27nm,1.5s
TKM2 Tokmak 2 50.50 299 *e*P **P** **07 11 05.9 +0.9**
TKM2 pmax pmax
comp=Z,5.0nm,0.8s
TKM2 Tokmak 2 50.50 299 *e*P **P** **07 11 05.9 +0.9**
comp=Z,5.3nm,0.8s
BVAR Borovoye Array 51.29 312 P **P** **07 11 11.0 +0.4**
comp=Z,0.5nm,0.5s,baz=88,slow=6.5,SNR=2.9
BVAR Borovoye Array 51.29 312 P **P** **07 11 11.0 +0.4**
BVAR pmax pmax
comp=Z,1.0nm,0.5s
BRVK Borovoye 51.34 313‖ *e*P **P** **07 11 13.0 +2.0**
BRVK pmax pmax
comp=Z,1.0nm,0.8s
BRVK Borovoye 51.34 313 *e*P **P** **07 11 11.8 +0.8**
comp=Z,4.0nm,1.0s
AAK Ala-Archa 51.36 299‖ *e*P **P** **07 11 12.8 +1.4**
AAK pmax pmax
comp=Z,2.0nm,0.9s
EGAK Eagle 51.37 32 *e*P **P** **07 11 11.0 0.0**
comp=Z,13nm,1.8s
DAWY Dawson 52.22 33 *e*P **P** **07 11 18.1 +0.7**
comp=Z,8.1nm,1.6s
INK Inuvik 53.89 27 P **P** **07 11 29.9 +0.3**
comp=Z,1.1nm,0.6s,baz=301,slow=6.8,SNR=12
INK Inuvik 53.89 27 *e*P **P** **07 11 29.8 +0.3**
INK pmax pmax
comp=Z,12nm,1.8s
INK Inuvik 53.89 27 *e*P **P** **07 11 29.8 +0.3**
comp=Z,12nm,1.8s
ARU Arti 57.00 319 LR LR 07 39 12.7
comp=Z,130nm,19.1s,baz=97,slow=39
ARU Arti 57.00 319 *d i*P **P** **07 11 53.1 +1.0**
ARU 07 13 56.5
ARU S **S** **07 19 44.5 -1.0**
ARU pmax pmax
comp=Z,7.0nm,1.7s
WRAB Tennant Creek 57.24 189 *de*P **P** **07 11 50.5 -3.7**
WRAB pmax pmax
comp=Z,33nm,1.7s
WRAB Tennant Creek 57.24 189 *e*P P 07 12 01.8 +7.6
comp=Z,13nm,0.8s
WRA Warramunga Arr 57.25 189 P **P** **07 11 50.2 -4.1**
comp=Z,4.7nm,0.9s,baz=10,slow=7.2,SNR=19
DLBC Dease Lake 57.97 38 P **P** **07 12 00.2 +1.2**
comp=Z,1.7nm,0.8s,baz=312,slow=1.7,SNR=5.7
DLBC Dease Lake 57.97 38 *e*P **P** **07 12 00.9 +1.8**
comp=Z,9.7nm,1.4s
ABKAR Akbulak array 58.68 310 *e*P **P** **07 12 04.0 -0.1**
AKTO Aktyubinsk 59.40 312 LR LR 07 38 57.9
comp=Z,114nm,19.2s,baz=71,slow=37
ASAR Alice Springs 60.98 189 P **P** **07 12 16.5 -3.6**
comp=Z,2.1nm,0.8s,baz=14,slow=6.1,SNR=13
YKA Yellowknife Ar 63.26 30 P **P** **07 12 34.3 -0.7**
comp=Z,0.5nm,0.7s,baz=303,slow=6.7,SNR=8.8
ARCES ARCESS Array B 64.31 340 LR LR 07 45 49.9
comp=Z,110nm,18.0s,baz=36,slow=41
GEYT Alibeck 64.70 299 LR LR 07 41 39.6
comp=Z,61nm,18.6s,baz=40,slow=37
FINES FINESS Array B 69.25 333 P **P** **07 13 13.3 +0.1**
comp=Z,3.6nm,1.0s,baz=32,slow=6.1,SNR=3.6
FINES LR LR 07 47 16.6
comp=Z,209nm,19.1s,baz=15,slow=39
JMIC Jan Mayen 70.28 350 LR LR 07 49 59.9
comp=Z,23nm,18.1s,baz=75,slow=41
KBZ Khabaz 71.64 311 P **P** **07 13 29.0 +0.8**
comp=Z,1.9nm,0.8s,baz=51,slow=8.1,SNR=4.0
KBZ LR LR 07 46 03.6
comp=Z,123nm,18.5s,baz=38,slow=37
KBZ Khabaz 71.64 311 P **P** **07 13 29.0 +0.8**
KBZ pmax pmax
comp=Z,2.0nm,0.8s
KBZ MLR MLR
comp=Z,123nm,18.5s
KIV Kislovodsk 71.64 311 *i* P **P** **07 13 28.9 +0.5**
KIV *i* 07 13 36.2
KIV *i* 07 13 49.4
KIV *i* S **S** **07 22 48.1 +0.9**
KIV pmax pmax
comp=Z,6.0nm,1.0s
KIV MLR MLR
comp=Z,180nm,17.0s
GNI Garni 72.49 307 LR LR 07 47 04.2
comp=Z,56nm,18.2s,baz=96,slow=37
LRM Limekiln Ridge 73.41 45 *e*P **P** **07 13 39.3 +0.2**
BOZ Bozeman (W) 73.98 45 *e*P **P** **07 13 42.5 +0.2**
BOZ pmax pmax
comp=Z,11nm,1.6s
BOZ Bozeman (W) 73.98 45 *e*P **P** **07 13 42.5 +0.2**
comp=Z,10nm,1.6s
NVAR Mina Array Bea 74.15 54 P **P** **07 13 43.5 -0.1**
comp=Z,1.0nm,0.7s,baz=287,slow=6.4,SNR=10
HFS Hagfors 74.46 336 LR LR 07 49 27.0
comp=Z,222nm,19.0s,baz=28,slow=38
NB2 NORSAR Subarra 74.53 338 P P 07 13 40.1 -5.0
comp=Z,1.1nm,0.6s,baz=39,slow=6.2
NOA NORSAR Array B 74.53 338 LR LR 07 50 19.5
comp=Z,82nm,19.2s,baz=40,slow=39
AKASG Malin Array Be 74.88 323 P **P** **07 13 46.7 -0.5**
comp=Z,0.5nm,0.4s,baz=46,slow=6.6,SNR=4.1
AKASG LR LR 07 51 11.0
comp=Z,117nm,18.2s,baz=35,slow=39
AKASG Malin Array Be 74.88 323 *i* P **P** **07 13 48.5 +1.3**
AKASG pmax pmax
comp=Z,1.0nm,0.4s
KIEV Kiev 74.89 323‖ *e*P **P** **07 13 47.9 +0.6**
KIEV pmax pmax
comp=Z,1.0nm,1.1s
H17A Grant Village 75.33 45 *e*P **P** **07 13 52.5 +2.2**
comp=Z,19nm,1.9s
RLMT Red Lodge 75.62 44 *e*P **P** **07 13 52.5 +0.6**
HWUT Hardware Ranch 76.46 48 *e*P **P** **07 13 58.2 +1.5**
comp=Z,17nm,1.7s
BW06 Boulder Array 76.92 46 *e*P **P** **07 13 59.2 -0.1**
comp=Z,4.1nm,1.4s
PDAR Pinedale Array 76.92 46 P **P** **07 13 58.8 -0.6**
comp=Z,0.7nm,0.6s,baz=263,slow=2.1,SNR=10
MSU Marysvale 77.98 51 *e*P **P** **07 14 07.0 +1.6**
MSU Marysvale 77.98 51 *e*P **P** **07 14 07.0 +1.6**
P17A Butcher Ranch, 78.27 49 *e*P **P** **07 14 07.1 +0.2**
comp=Z,19nm,1.8s
PV10 Paradox Valley 79.99 49 *e*P **P** **07 14 16.9 +0.5**
PV05 Paradox Valley 80.14 50 *e*P **P** **07 14 17.5 +0.2**
PV01 Paradox Valley 80.42 49 *e*P **P** **07 14 19.1 +0.4**
UPC Upice 80.97 329 AMS AMS 07 55 20.0
comp=Z,200nm,14.9s
S22A 4UR Ranch, Cre 81.72 49 *e*P **P** **07 14 26.8 +1.0**
comp=Z,6.4nm,1.4s
PRU Pruhonice 81.97 329 AMS AMS 07 55 50.0
comp=Z,100nm,14.3s
KHC Kasperske Hory 83.03 329 *e*P **P** **07 14 36.7 +4.6**
KHC AMS AMS 07 56 30.0
comp=Z,200nm,15.6s
KHC Kasperske Hory 83.03 329 *e*P **P** **07 14 36.7 +4.6**
KHC MLR MLR
comp=Z,200nm,15.6s
GERES GERESS Array B 83.20 329 LR LR 07 54 05.5
comp=Z,94nm,18.3s,baz=4.0,slow=37
ANMO Albuquerque 83.79 51 *e*P **P** **07 14 36.7 +0.3**
ANMO pmax pmax
comp=Z,7.0nm,1.5s
ANMO Albuquerque 83.79 51 *e*P **P** **07 14 36.7 +0.3**
comp=Z,7.1nm,1.5s
TXAR Lajitas Array 89.29 53 P **P** **07 15 02.5 -0.8**
comp=Z,0.4nm,0.6s,baz=299,slow=5.2,SNR=4.8
LPAZ La Paz 145.80 61 PKPbc **PKPdf** **07 21 45.2 -1.4**
comp=Z,0.4nm,0.4s,baz=330,slow=1.1,SNR=5.9

IDC ***14*** *07:04:27.1±0.8,20°.30S×168°.41E,h0km,mb4.2/9, mb1 4.4/10,mb1mx4.1/30,mbtmp4.2/10,ML3.5/1,Error ellipse: s-maj=31.3km s-min=18.8km az=138.0*
NEIC ***14*** *07:04:29.0±0.5,20°.32S×168°.36E,h10km,mb4.4/3,Error ellipse: s-maj=20.0km s-min=10.6km az=153.0*
ISCJB ***14*** *07:04:29.7±0.6,20°.3S±0°.1×168°.35E±0°.09,h26km, mb4.2/12,Error ellipse: s-maj=18.3km s-min=8.0km az=143.2*

ISC 14 07:04:31.3±0.7,20°.3S±0°.1×168°.3E±0°.1,h26km,n19, σ0.96/19,mb4.2/12,Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.45**	**225**	Pn	**Pn**	**07 05 08.9**	**-0.9**
	10.0nm,0.3s,baz=40,slow=19,SNR=13						
DZM				Sn	**Sn**	**07 05 39.0**	**+0.1**
	41nm,0.3s,baz=134,slow=23,SNR=10						
MSVF	**Nonsavu**	**9.56**	**76**	*e*Pn	**Pn**	**07 06 48.4**	**+0.9**
	87nm,1.6s						
CTA	**Charters Tower**	**20.70**	**267**	P	Pn	07 09 12.8	+0.6
	2.3nm,0.6s,baz=76,slow=13,SNR=3.7						
RPZ	**Rata Peaks**	**23.42**	**175**	P	**P**	**07 09 38.4**	**+0.1**
	3.8nm,0.3s,baz=3.7,slow=19,SNR=3.9						
STKA	**Stephens Creek**	**26.53**	**239**	P	**P**	**07 10 08.5**	**+1.5**
	2.8nm,0.8s,baz=60,slow=11,SNR=3.2						
BBOO	**Buckleboo**	**31.28**	**240**	*e*P	**P**	**07 10 50.4**	**+1.1**
	6.7nm,1.1s						
WRAB	**Tennant Creek**	**31.86**	**265**	*e*P	**P**	**07 10 54.5**	**0.0**
	2.0nm,1.1s						
WRA	**Warramunga Arr**	**31.87**	**265**	P	**P**	**07 10 53.4**	**-1.2**
	1.3nm,0.8s,baz=90,slow=7.4,SNR=12						
ASAR	**Alice Springs**	**32.03**	**258**	P	**P**	**07 10 55.9**	**-0.1**
	5.8nm,0.6s,baz=88,slow=8.0,SNR=69						
CMAR	**Chiang Mai Arr**	**78.17**	**295**	P	**P**	**07 16 29.6**	**+0.8**
	0.9nm,0.4s,baz=125,slow=4.5,SNR=4.3						
SONM	**Songino Array**	**87.58**	**323**	P	**P**	**07 17 18.7**	**+1.5**
	0.4nm,0.4s,baz=132,slow=7.9,SNR=3.1						
YBH	**Yreka Blue Hor**	**88.69**	**44**	P	**P**	**07 17 22.1**	**-0.4**
	3.2nm,1.1s,baz=236,slow=0.9,SNR=6.1						
NVAR	**Mina Array Bea**	**90.18**	**49**	P	**P**	**07 17 28.2**	**-1.6**
	1.0nm,0.8s,baz=226,slow=7.4,SNR=7.0						
ILAR	**Eielson Array**	**91.53**	**18**	P	**P**	**07 17 33.9**	**-1.3**
	0.5nm,0.6s,baz=244,slow=5.4,SNR=3.4						
WVOR	**Wild Horse Val**	**91.70**	**45**	*e*P	**P**	**07 17 36.2**	**-0.4**
	4.8nm,1.2s						
YKA	**Yellowknife Ar**	**102.04**	**28**	P	**Pdif**	**07 18 22.1**	**-0.6**
	0.1nm,0.5s,baz=257,slow=4.6,SNR=4.1						
ARCES	**ARCESS Array B**	**125.90**	**345**	PKP	**PKPdf**	**07 23 29.8**	**-0.5**
	1.0nm,0.6s,baz=35,slow=2.2,SNR=7.6						
GERES	**GERESS Array B**	**145.03**	**330**	PKPbc	**PKPdf**	**07 24 05.9**	**-0.5**
	0.4nm,0.7s,baz=15,slow=4.1,SNR=3.2						
DAVOX	**Davos/Dischmat**	**148.29**	**331**	PKPbc	**PKPbc**	**07 24 15.4**	**-0.1**
	2.6nm,0.6s,baz=50,slow=5.1,SNR=6.3						

IDC ***14*** *07:05:57.3±0.5,20°.15S×168°.36E,h0km,mb4.5/19, mb1 4.7/21,mb1mx4.6/29,mbtmp4.5/21,ML4.1/2,MS4.6/7, Ms1 4.5/7,ms1mx4.3/13,Error ellipse: s-maj=16.8km s-min=14.7km az=122.0*
GCMT ***14*** *07:05:59.5±0.2,20°.15S×168°.18E,h12km,MW5.1/114, Moment Tensor Solution. s41,c46; s114,c175; Duration: 0 Moment tensor: Scale 10¹⁶Nm; Mrr-5.24±.09; Mθθ0.60±.10; Mφφ4.65±.09; Mrθ-0.16±.30; Mθφ-1.25±.08; Mφr1.54±.30; Best double couple: M0=5.35100×10¹⁶ NP1:φs167.00000°,δ53.00000°,λ-87.00000°. NP2: φs342.00000°,δ37.00000°,λ-94.00000°. Principal axes: T 5.2270, Plg8.0000°, Azm255.0000°; N 0.2570, Plg3.0000°, Azm345.0000°; P -5.4740, Plg81.0000°, Azm92.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
NEIC ***14*** *07:05:59.5±0.2,20°.08S×168°.27E,h10km,mb5.3/56 Error ellipse: s-maj=6.9km s-min=5.0km az=113.0*
ISCJB ***14*** *07:06:00.7±0.2,20°.14S±0°.04×168°.37E±0°.04,h25km, mb5.0/88,MS4.7/10,Error ellipse: s-maj=6.1km s-min=5.1km az=138.9*
MOS ***14*** *07:06:01.4±1.1,20°.24S×168°.29E,h33km,mb5.5/22,Error ellipse: s-maj=10.8km s-min=9.0km az=156.3*
BJI ***14*** *07:06:06.2,20°.20S×168°.40E,h66km,mb4.9/24,mB5.3/17, Ms5.1/10,Ms7 5.0/5*

ISC 14 07:06:02.3±0.3,20°.23S±0°.06×168°.36E±0°.05,h25km,n295, σ1.9/286,mb5.1/88,MS4.7/11,3C-7D,Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.56**	**224**	Pn	**Pn**	**07 06 39.6**	**-2.7**
	35nm,0.3s,baz=122,slow=14,SNR=10.0						
DZM				Sn	**Sn**	**07 07 07.9**	**-4.9**
	112nm,0.3s,baz=77,slow=22,SNR=6.2						
DZM				LR	LR	07 07 39.9	
	comp=Z,16μm,18.9s,baz=4.5,slow=39						
MSVF	**Nonsavu**	**9.50**	**76**	*d i*P	**Pn**	**07 08 20.7**	**+3.1**
MSVF	**Nonsavu**	**9.50**	**76**	*e*Pn	Pn	07 08 21.9	+4.3
HNR	**Honiara**	**13.46**	**322**	LR	LR	07 12 54.9	
	comp=Z,840nm,21.6s,baz=155,slow=31						
HNR	**Honiara**	**13.46**	**322**	P	**P**	**07 09 21.0**	**+0.2**
OUZ	**Omahuta**	**15.63**	**164**	*e*Pn	**Pn**	**07 09 43.3**	**+2.3**
	46nm,1.0s						
EIDS	**Eidsvold**	**16.73**	**249**	*e*Pn	**P**	**07 09 58.9**	**+1.7**
	56nm,1.5s						
ARMA	**Armidale**	**18.19**	**233**	P	**Pn**	**07 10 17.5**	**+4.2**
	baz=18,SNR=11						
ARMA	**Armidale**	**18.19**	**233**	*e*P	**Pn**	**07 10 17.4**	**+4.1**
	153nm,1.9s						
RMQ	**Roma**	**19.04**	**247**	P	**Pn**	**07 10 26.3**	**+2.8**
	baz=19,SNR=4.4						
URZ	**Urewera**	**19.51**	**159**	P	**P**	**07 10 28.1**	**+0.5**
	0.5nm,0.3s,baz=359,slow=6.6,SNR=11						
URZ	**Urewera**	**19.51**	**159**	*e*P	**Pn**	**07 10 30.5**	**+1.5**
	703nm,1.9s						
AFI	**Afiamalu**	**19.99**	**75**	LR	LR	07 17 34.2	
	comp=Z,3μm,18.0s,baz=222,slow=35						
BKZ	**Black Stump Fm**	**20.14**	**161**	*e*P	**P**	**07 10 36.2**	**+1.6**
	165nm,1.5s						
CTA	**Charters Tower**	**20.75**	**267**	P	**P**	**07 10 41.5**	**+0.1**
	14nm,0.9s,baz=80,slow=13,SNR=7.2						
CTA				LR	LR	07 17 41.9	
	comp=Z,796nm,19.9s,baz=90,slow=34						
CTA	**Charters Tower**	**20.75**	**267**	P	**P**	**07 10 42.5**	**+1.1**
	baz=21						
CTAO	**Charters Tower**	**20.75**	**267**	*e*P	**P**	**07 10 42.0**	**+0.6**
CTAO				pmax	pmax		
	comp=Z,73nm,1.3s						
CTAO	**Charters Tower**	**20.75**	**267**	*e*P	**P**	**07 10 42.0**	**+0.6**
	comp=Z,73nm,1.3s						
THZ	**Tophouse**	**21.81**	**171**	*e*P	**P**	**07 10 56.0**	**+3.4**
	comp=Z,316nm,2.0s						
CNB	**Canberra Magne**	**22.49**	**224**	P	**P**	**07 11 03.6**	**+3.6**
	baz=23,SNR=5.1						
KHZ	**Kahutara**	**22.55**	**170**	*e*P	**P**	**07 11 00.2**	**-0.3**
	comp=Z,201nm,1.7s						
LTZ	**Lake Taylor**	**22.73**	**173**	*e*P	**P**	**07 11 03.7**	**+1.3**
	comp=Z,231nm,1.6s						
QLP	**Quilpie**	**23.01**	**249**	P	**P**	**07 11 07.8**	**+2.4**
	baz=23,SNR=7.3						
PMG	**Port Moresby**	**23.12**	**295**	LR	LR	07 18 45.6	
	comp=Z,829nm,21.3s,baz=102,slow=33						
PMG	**Port Moresby**	**23.12**	**295**	*d i*P	**P**	**07 11 07.0**	**+0.4**
PMG				pmax	pmax		
	comp=Z,102nm,1.1s						
OXZ	**Oxford**	**23.24**	**173**	*e*P	**P**	**07 11 09.5**	**+1.9**
	comp=Z,130nm,1.3s						
CMSA	**Cobar Meteorol**	**23.25**	**236**	P	**P**	**07 11 10.6**	**+2.7**
	baz=23,SNR=5.3						
RPZ	**Rata Peaks**	**23.53**	**175**	P	**P**	**07 11 11.3**	**+0.9**
	comp=Z,16nm,0.8s,baz=311,slow=7.6,SNR=3.2						
RPZ				LR	LR	07 20 19.3	
	comp=Z,2μm,18.4s,baz=344,slow=36						
STKA	**Stephens Creek**	**26.62**	**239**	P	**P**	**07 11 39.3**	**+0.3**
	comp=Z,5.8nm,0.7s,baz=74,slow=10.0,SNR=9.5						
STKA				LR	LR	07 22 28.1	
	comp=Z,2μm,19.1s,baz=70,slow=37						
STKA	**Stephens Creek**	**26.62**	**239**	P	**P**	**07 11 40.0**	**+1.1**
	baz=27,SNR=7.1						
HTT	**Hallett**	**29.27**	**237**	P	**P**	**07 12 03.5**	**+0.9**
	baz=29,SNR=3.3						
WRAB	**Tennant Creek**	**31.91**	**265**	*de*P	**P**	**07 12 26.6**	**+0.5**
WRAB				pmax	pmax		
	comp=Z,21nm,1.3s						
WRA	**Warramunga Arr**	**31.92**	**265**	P	**P**	**07 12 23.5**	**-2.7**
	comp=Z,1.1nm,0.5s,baz=94,slow=8.4,SNR=8.9						
ASAR	**Alice Springs**	**32.10**	**257**	P	**P**	**07 12 26.0**	**-1.7**
	comp=Z,8.2nm,0.9s,baz=86,slow=9.0,SNR=7.1						
JAY	**Jayapura**	**32.22**	**300**	P	P	07 12 38.1	+9.3
	comp=Z,21nm,1.1s,comp=Z,359nm						
PPT2	**Papeete2**	**39.81**	**93**	*e*S	**S**	**07 19 38.6**	**+1.6**
	comp=Z,269nm,26.2s						
PPT2				*e*LQ	LQ	07 22 55.7	
	comp=Z,1μm,28.8s						
PPT2				*e*LR	LR	07 24 37.5	
	comp=Z,2μm,29.8s						
PPT	**Papeete**	**39.81**	**93**	P	**P**	**07 13 32.2**	**-1.6**
	comp=Z,36nm,1.0s,baz=209,slow=19,SNR=4.7						
TIAR	**Tiarei**	**40.03**	**93**	*e*P	**P**	**07 13 35.1**	**-0.5**
	comp=Z,18nm,0.9s						
PMOR	**Pomariorio Ree**	**41.93**	**90**	*e*P	**P**	**07 13 49.8**	**-1.4**
	comp=Z,104nm,1.1s						
TTSI	**Tana Toraja**	**50.28**	**283**	P	P	07 15 03.2	+6.1
	comp=Z,16nm,1.7s,comp=Z,1μm						
TAOE	**Nuku Hiva Isla**	**50.92**	**85**	*e*S	**S**	**07 22 17.9**	**+0.3**
	comp=Z,302nm,26.5s						
TAOE				*e*LR	LR	07 29 50.7	
	comp=Z,815nm,28.4s						
TWSI	**Taliwang, Sumb**	**50.95**	**275**	P	**P**	**07 15 05.5**	**+3.4**
	comp=Z,32nm,2.3s						
RKT	**Rikitea**	**52.46**	**104**	*e*S	**S**	**07 22 38.6**	**+0.1**
	comp=Z,278nm,25.2s						
RKT				*e*LR	LR	07 30 29.0	
	comp=Z,519nm,31.5s						
VNDA	**Vanda**	**57.42**	**182**	P	**P**	**07 15 47.4**	**-1.0**
	comp=Z,1.7nm,0.9s,baz=351,slow=8.3,SNR=8.0						
SBA	**Scott Base**	**57.67**	**180**	*e*P	**P**	**07 15 50.8**	**+0.7**
SBA				pmax	pmax		
	comp=Z,57nm,1.5s						
SBA	**Scott Base**	**57.67**	**180**	*e*P	**P**	**07 15 50.8**	**+0.7**
	comp=Z,57nm,1.5s						
CASY	**Casey**	**58.90**	**204**	*e*P	**P**	**07 15 57.8**	**-1.0**
	comp=Z,23nm,1.3s						
CISI	**Cisompet, Garu**	**59.82**	**273**	P	P	07 16 14.2	+8.1
	comp=Z,49nm,1.4s						
CGJI	**Cibinong**	**62.12**	**273**	P	**P**	**07 16 21.4**	**-0.3**
	comp=Z,52nm,1.2s						
MJAR	**Matsushiro Arr**	**63.24**	**333**	P	**P**	**07 16 26.8**	**-1.9**
	comp=Z,4.7nm,0.9s,baz=166,slow=7.9,SNR=8.5						
MAJO	**Matsushiro**	**63.24**	**333**‖	*e*P	**P**	**07 16 26.1**	**-2.6**
MAJO				pmax	pmax		
	comp=Z,44nm,1.0s						
KSRS	**Korea Array**	**68.86**	**326**	P	**P**	**07 17 04.0**	**-0.7**
	comp=Z,0.9nm,0.6s,baz=123,slow=4.5,SNR=3.5						
KSAR	**Wonju Array Be**	**68.87**	**326**	P	**P**	**07 17 04.0**	**-0.8**
KSAR	**Wonju Array Be**	**68.87**	**326**	P	**P**	**07 17 04.0**	**-0.8**
MSHR	**Mys Shultsa**	**71.29**	**332**‖	*e*P	**P**	**07 17 18.5**	**-1.0**
PSI	**Prapat**	**71.77**	**280**	*e*P	**P**	**07 17 27.4**	**+4.1**
PSI				pmax	pmax		
	comp=Z,28nm,1.3s						
PSI	**Prapat**	**71.77**	**280**	*e*P	**P**	**07 17 27.4**	**+4.1**
	comp=Z,28nm,1.3s						
USRK	**Ussuriysk Ar.**	**72.24**	**333**	P	**P**	**07 17 24.5**	**-0.7**
	comp=Z,7.5nm,0.8s,baz=141,slow=4.8,SNR=10						
MDJ	**Mudanjiang**	**73.60**	**332**	P	**P**	**07 17 33.8**	**+0.5**
MDJ				pmax	pmax		

comp=Z,13nm,1.3s
MDJ pmax pmax
comp=Z,210nm,4.3s
PETK Petropavlovsk- 73.61 353 P **P 07 17 33.0 -0.2**
comp=Z,4.6nm,0.6s,baz=122,slow=8.7,SNR=4.9
PETK Petropavlovsk- 73.61 353 P **P 07 17 33.0 -0.2**
CN2 Changchun 74.87 329 *e*P **P 07 17 44.0 +3.3**
CN2 pmax pmax
comp=Z,10.0nm,0.7s
KLR Kul'dur 76.43 336⇑ *i*P **P 07 17 49.3 -0.2**
NKL Nikolayevsk 76.91 343 *e*P **P 07 17 52.0 -0.1**
MAW Mawson 77.21 202 P **P 07 17 53.0 -0.8**
comp=Z,2.4nm,0.9s,baz=98,slow=11,SNR=4.6
MAW Mawson 77.21 202 P **P 07 17 53.6 -0.2**
baz=77
KMI Kunming 78.10 302 P **P 07 18 03.3 +3.6**
KMI pmax pmax
comp=Z,19nm,0.6s
CMAR Chiang Mai Arr 78.16 295 P **P 07 17 59.1 -0.8**
comp=Z,1.9nm,0.3s,baz=132,slow=4.6,SNR=13
CHTO Chiang Mai 78.31 295 *e*P **P 07 18 01.1 +0.3**
CHTO pmax pmax
comp=Z,15nm,1.0s
CHTO Chiang Mai 78.31 295 *e*P **P 07 18 01.1 +0.3**
comp=Z,15nm,1.0s
CD2 Chengdu 80.18 308 P **P 07 18 11.3 +0.5**
CD2 pP sP 07 18 29.3 +7.5
CD2 sP pP 07 18 36.8 +18
CD2 PP **PP 07 21 14.5 +0.9**
CD2 S **S 07 28 12.3 -2.2**
CD2 sS ScS 07 28 43.6 +8.8
CD2 SS **SS 07 33 25.9 -0.1**
CD2 pmax pmax
comp=Z,10.0nm,0.6s
CD2 pmax pmax
comp=Z,90nm,6.0s
CD2 LR LR
comp=Z,250nm,6.0s
HHC Hu-ho-hao-te 80.43 320 *e*P **P 07 18 14.6 +2.6**
HHC pmax pmax
comp=Z,22nm,1.3s
HHC pmax pmax
comp=Z,150nm,7.4s
MA2 Magadan 80.81 351 *e*P **P 07 18 13.2 -0.2**
LZH Lanzhou 82.78 313 *e*P **P 07 18 26.5 +1.9**
LZH pP sP 07 18 45.0 +9.4
LZH sP pP 07 18 52.3 +20
LZH PP **PP 07 21 40.1 +5.0**
LZH *e*S **S 07 28 40.3 -1.1**
LZH sS ScS 07 29 10.0 +14
LZH *e*SS **SS 07 34 07.6 +2.8**
LZH pmax pmax
comp=Z,21nm,1.2s
LZH pmax pmax
comp=Z,140nm,9.3s
LZH LR LR
comp=Z,280nm,17.0s
LZH LR LR
comp=Z,330nm,16.0s
LZH LR LR
comp=Z,610nm,19.3s
OHAK Old Harbor 83.56 20 *e*P **P 07 18 25.9 -1.9**
comp=Z,51nm,1.3s
SYO Syowa Base 83.76 196⇓ *e*pP **P 07 18 31.0 +2.1**
SEY Seymchan 83.83 353⇓ *e*P **P 07 18 29.6 +0.5**
KDAK Kodiak Island 84.23 20 P P 07 18 44.5 +13
comp=Z,21nm,0.9s,baz=191,slow=3.6,SNR=6.3
KDAK Kodiak Island 84.23 20 *i* P **P 07 18 30.7 -0.6**
BRLK Bradley Lake 86.35 19 *e*P **P 07 18 39.7 -2.2**
comp=Z,82nm,2.0s
SHL Shillong 87.09 298 *e*P **P 07 18 46.0 -0.5**
KMRM Mail Ridge 87.19 45 *e*P **P 07 18 45.8 -0.7**
comp=Z,52nm,1.2s
GTA Gaotai 87.20 314 *e*P **P 07 18 48.1 +1.4**
GTA pP sP 07 19 05.6 +7.8
GTA sP pP 07 19 11.5 +17
GTA pmax pmax
comp=Z,6.0nm,0.5s
PKM Mcpherson Peak 87.42 51 P **P 07 18 47.2 -0.7**
baz=243
KHMM Horse Mountain 87.49 45 *e*P **P 07 18 47.9 -0.2**
comp=Z,27nm,0.9s
SONM Songino Array 87.51 323 P **P 07 18 47.0 -1.0**
comp=Z,1.4nm,0.9s,baz=131,slow=4.2,SNR=5.4
SONM Songino Array 87.51 323 P **P 07 18 47.0 -1.0**
YAK Yakutsk 87.56 343⇓ *e*P **P 07 18 47.0 -0.6**
YAK pmax pmax
comp=Z,10.0nm,0.8s
BILL Bilibino 88.02 359 *e*P **P 07 18 48.4 -1.3**
BILL *i* 07 18 57.0
BILL pmax pmax
comp=Z,8.0nm,1.2s
BILL MLR MLR
comp=Z,196nm,18.0s
BILL Bilibino 88.02 359 *e*P **P 07 18 48.8 -1.0**
comp=Z,16nm,1.1s
WDC Whiskeytown Da 88.14 45 *e*P **P 07 18 50.6 -0.4**
WDC pmax pmax
comp=Z,33nm,1.5s
WDC Whiskeytown Da 88.14 45 *e*P **P 07 18 50.6 -0.4**
comp=Z,33nm,1.5s
SNAA Sanae 88.14 183 P **P 07 18 49.0 -1.6**
SNAA Sanae 88.14 183 *e*P **P 07 18 49.0 -1.6**
comp=Z,24nm,1.4s
N02D Trinity Center 88.22 45 P **P 07 18 51.6 +0.2**
baz=241
ARVC Arvin 88.24 52 P **P 07 18 51.0 -0.6**
baz=244
M02C Callahan 88.32 45 P **P 07 18 52.0 +0.1**
baz=241
CMB Columbia Colle 88.43 48 *e*P **P 07 18 51.8 -0.7**
CMB pmax pmax
comp=Z,44nm,1.8s
CMB Columbia Colle 88.43 48 *e*P **P 07 18 51.8 -0.7**
comp=Z,44nm,1.8s
AFDM Forest Hills D 88.44 47 *e*P **P 07 18 51.8 -0.7**
comp=Z,23nm,1.2s
O03D Paynes Creek 88.50 46 P **P 07 18 52.6 -0.2**
baz=242
YBH Yreka Blue Hor 88.58 44 P **P 07 18 52.5 -0.6**
comp=Z,9.6nm,0.8s,baz=180,slow=0.3,SNR=19
YBH Yreka Blue Hor 88.58 44 *e*P **P 07 18 52.8 -0.3**
YBH pmax pmax
comp=Z,49nm,1.8s
YBH Yreka Blue Hor 88.58 44 *e*P **P 07 18 52.8 -0.3**
comp=Z,49nm,1.8s
BFSC Mount Baldy Ra 88.73 53 P **P 07 18 53.2 -0.9**
baz=245
ISA Isabella, Lake 88.74 51 P **P 07 18 53.2 -0.8**
baz=244
ISA Isabella, Lake 88.74 51 *e*P **P 07 18 53.1 -0.9**
ISA pmax pmax
comp=Z,28nm,1.3s
ISA Isabella, Lake 88.74 51 *e*P **P 07 18 53.1 -0.9**
comp=Z,28nm,1.3s
EDW2 Edwards Air Fo 88.75 52 P **P 07 18 52.7 -1.4**
baz=244
VNA3 Neumayer Olymp 88.76 181 P **P 07 18 52.0 -1.6**
HUMO Hull Mountain 88.84 43 *e*P **P 07 18 54.4 +0.1**
comp=Z,14nm,0.9s
VNA2 Neumayer--Watz 89.05 181 P **P 07 18 53.7 -1.1**
baz=180,slow=4.5
MONP2 Monument Peak 89.09 54 P **P 07 18 55.1 -0.8**
baz=245
M04C Macdoel 89.18 45 P **P 07 18 55.4 -0.6**
baz=242
LRMC Laurel Mtn Rad 89.24 52 P **P 07 18 55.8 -0.7**
baz=245
WAKR Wakefield 89.31 48 *e*P **P 07 18 56.5 -0.3**
VNA1 Neumayer--Stat 89.34 181 P **P 07 18 55.6 -0.6**
MLAC Mammoth, Mammo 89.34 49 P **P 07 18 57.7 +0.6**
baz=244
PFO Pinyon Flats O 89.36 54 *e*P **P 07 18 57.3 +0.2**
PFO pmax pmax
comp=Z,16nm,0.8s
PFO Pinyon Flats O 89.36 54 *e*P **P 07 18 57.3 +0.2**
comp=Z,16nm,0.8s
CWC Cottonwood Cre 89.37 51 P **P 07 18 56.6 -0.4**
baz=244
TPFO Pinon Flats 89.37 54 P **P 07 18 56.2 -0.9**
baz=245
TRF Thorofare Moun 89.44 17 *e*P **P 07 18 56.3 -0.5**
comp=Z,4.5nm,0.8s
SWSC Sam W. Stewart 89.59 55 P **P 07 18 57.2 -0.8**
baz=246
DAC Darwin (Calif) 89.65 51 *e*P **P 07 18 58.3 -0.1**
DAC pmax pmax
comp=Z,40nm,1.8s
DAC Darwin (Calif) 89.65 51 *e*P **P 07 18 58.3 -0.1**
comp=Z,40nm,1.8s
I04A Tendick Farm, 89.76 43 P **P 07 18 57.7 -0.9**
baz=242
RND Reindeer 89.81 18 *e*P **P 07 18 58.8 +0.4**
RND Reindeer 89.81 18 *e*P **P 07 18 58.8 +0.4**
GSC Goldstone, Bar 89.81 52 *e*P **P 07 19 00.4 +1.3**
GSC pmax pmax
comp=Z,26nm,1.6s
GSC Goldstone, Bar 89.81 52 *e*P **P 07 19 00.4 +1.3**
comp=Z,26nm,1.6s
BOD Bodaibo 89.85 334 *e*P **P 07 18 56.2 -2.4**
BOD pmax pmax
comp=Z,14nm,1.6s
BELC Belle Mtn. Jos 89.88 54 P **P 07 18 58.2 -1.3**
baz=246
PAHR Pah Rah Range 89.88 47 *e*P **P 07 18 58.8 -0.6**
comp=Z,32nm,1.4s
G03D McMinnville, O 89.91 41 P **P 07 18 59.2 0.0**
baz=241
NVAR Mina Array Bea 90.07 49 P **P 07 18 59.5 -0.8**
comp=Z,9.4nm,0.9s,baz=228,slow=7.9,SNR=27
GRAC Grapevine Rang 90.12 50 P **P 07 19 00.0 -0.4**
baz=245
BC3 Big Chuckawall 90.15 54 P **P 07 19 00.1 -0.6**
baz=246
K05A Summer Lake 90.24 44 *e*P **P 07 19 00.7 -0.4**
MOD Modoc Plateau 90.25 45 *e*P **P 07 19 00.5 -0.5**
comp=Z,19nm,1.1s
FURC Furnace Creek, 90.26 51 P **P 07 19 00.6 -0.4**
baz=245
J05D Fort Rock, OR 90.28 43 P **P 07 19 00.6 -0.5**
baz=242
H04A Detroit Lake 90.33 42 *e*P **P 07 19 00.4 -0.8**
comp=Z,28nm,1.3s
GLA Glamis 90.38 55 *e*P **P 07 19 01.8 +0.1**
GLA pmax pmax
comp=Z,36nm,1.4s
GLA Glamis 90.38 55 *e*P **P 07 19 01.8 +0.1**
comp=Z,36nm,1.4s
E03A Lebam 90.38 40 *e*P **P 07 19 01.2 -0.1**
comp=Z,59nm,1.1s
GMRC Granite Mounta 90.45 53 P **P 07 19 01.4 -0.7**
baz=246
SHOC Shoshone, Teco 90.46 52 P **P 07 19 01.6 -0.4**
baz=245
TUQ Turquoise Moun 90.53 52 P **P 07 19 01.9 -0.6**
baz=246
IRM Iron Mountain 90.58 54 P **P 07 19 02.2 -0.5**
baz=246
ZAK Zakamensk 90.61 325 *e*P **P 07 19 01.1 -1.4**
ZAK pmax pmax
comp=Z,4.0nm,1.7s
I05D Terrebonne, OR 90.70 43 P **P 07 19 02.2 -0.8**
baz=242
F04A Amboy 90.78 41 *e*P **P 07 19 02.6 -0.6**
comp=Z,24nm,1.0s
WRH Wood River Hil 90.85 17 *e*P **P 07 19 05.8 +2.7**
comp=Z,5.8nm,0.9s
LVP Lakeview Peak 90.85 41 P **P 07 19 02.7 -1.0**
VBEM Beaver Butte 90.88 42 P **P 07 19 03.1 -0.8**
Y12C Blythe 90.89 54 P **P 07 19 04.0 0.0**
baz=246
Y12C Blythe 90.89 54 *e*P **P 07 19 04.3 +0.3**
comp=Z,11nm,1.0s
TPNV Topopah Spring 90.91 51 P **P 07 19 03.2 -1.0**
baz=245
TPNV Topopah Spring 90.91 51 *e*P **P 07 19 03.3 -1.0**
TPNV pmax pmax
comp=Z,12nm,0.9s
TPNV Topopah Spring 90.91 51 *e*P **P 07 19 03.3 -1.0**
comp=Z,12nm,0.9s
CCB Clear Creek Bu 91.06 17 *e*P **P 07 19 04.4 +0.3**
comp=Z,5.5nm,1.3s
113A Mohawk Valley, 91.08 55 *e*P **P 07 19 04.5 -0.4**
WRAK Wrangell Islan 91.10 29 *e*P **P 07 19 03.5 -1.0**
comp=Z,14nm,1.0s
TDL Tradedollar La 91.10 40 P **P 07 19 04.7 -0.2**
PDMCI Parker Dam,Lak 91.41 54 P **P 07 19 06.3 -0.1**
baz=247
ILAR Eielson Array 91.42 18 P **P 07 19 02.7 -3.0**
comp=Z,3.1nm,0.7s,baz=235,slow=5.7,SNR=11
DOT Dot Lake 91.42 19 *e*P **P 07 19 05.5 -0.3**
214A Organ Pipe Nat 91.51 57 *e*P **P 07 19 06.3 -0.7**
comp=Z,82nm,1.4s
SHPR Sheep Range 91.53 52 *e*P **P 07 19 06.8 -0.4**
comp=Z,18nm,1.5s
GLK Glacier Lake 91.57 40 P **P 07 19 06.5 -0.6**
WVOR Wild Horse Val 91.59 45 *e*P **P 07 19 06.6 -0.7**
WVOR pmax pmax
comp=Z,32nm,1.4s
WVOR Wild Horse Val 91.59 45 *e*P **P 07 19 06.6 -0.7**
comp=Z,32nm,1.4s
D05A Enumclaw 91.64 40 *e*P **P 07 19 07.5 +0.3**
comp=Z,28nm,1.0s
BMN Battle Mountai 91.69 47 *e*P **P 07 19 07.3 -0.5**
BMN Battle Mountai 91.69 47 *e*P **P 07 19 07.3 -0.5**
SKAG Skagway 91.69 25 *e*P **P 07 19 06.3 -0.7**
comp=Z,14nm,1.3s
R11A Troy Canyon, C 91.97 50 P **P 07 19 08.0 -1.2**
baz=246
R11A Troy Canyon, C 91.97 50 *e*P **P 07 19 07.8 -1.4**
B05A Bryant 92.08 39 P **P 07 19 08.6 -0.6**
baz=242
Y14A Wickenburg 92.13 55 *e*P **P 07 19 09.2 -0.6**
COLD Coldfoot 92.44 15 *e*P **P 07 19 10.4 0.0**
EGAK Eagle 93.12 19 *e*P **P 07 19 11.4 -2.2**
comp=Z,6.1nm,1.2s
LCMT Little Creek M 93.14 52 *e*P **P 07 19 14.1 -0.5**
comp=Z,5.2nm,0.9s
DAWY Dawson 93.20 20 *e*P **P 07 19 13.8 -0.3**
TUC Tucson 93.23 57 P **P 07 19 14.6 -0.4**
baz=248
TUC Tucson 93.23 57 *e*P **P 07 19 14.7 -0.4**
TUC pmax pmax
comp=Z,9.0nm,1.1s
TUC Tucson 93.23 57 *e*P **P 07 19 14.7 -0.4**
comp=Z,8.8nm,1.1s
PSUT Pine Spring 93.29 50 *e*P **P 07 19 14.5 -0.8**
comp=Z,4.4nm,0.8s
DLBC Dease Lake 93.29 28 *e*P **P 07 19 13.6 -1.1**
KNB Kanab 93.45 52 *e*P **P 07 19 15.8 -0.3**
KNB pmax pmax
comp=Z,30nm,1.8s
KNB Kanab 93.45 52 *e*P **P 07 19 15.8 -0.3**
comp=Z,30nm,1.8s
MFID Camas Ranch 93.88 45 *e*P **P 07 19 16.8 -1.0**
comp=Z,4.8nm,0.9s
WUAZ Wupatki 93.97 54 P **P 07 19 18.2 -0.3**
baz=248
WUAZ Wupatki 93.97 54 *e*P **P 07 19 18.5 0.0**
comp=Z,3.8nm,0.8s
MTPU Mount Pierson 94.31 51 *e*P **P 07 19 20.3 0.0**
comp=Z,3.6nm,0.8s
MSU Marysvale 94.50 51 *e*P **P 07 19 20.6 -0.3**
MSU Marysvale 94.50 51 *e*P **P 07 19 20.6 -0.3**
HLID Hailey 94.88 45 P **P 07 19 21.8 -0.6**
baz=247
HLID Hailey 94.88 45 *e*P **P 07 19 22.0 -0.5**
comp=Z,4.1nm,1.1s
HVU Hansel Valley 95.31 47 *e*P **P 07 19 23.8 -0.6**
HVU Hansel Valley 95.31 47 *e*P **P 07 19 23.8 -0.6**
Q16A Castle Valley 95.38 51 *e*P **P 07 19 24.6 -0.3**
comp=Z,11nm,1.5s
TMUT Trail Mountain 95.49 50 *e*P **P 07 19 26.0 +0.5**
TIXI Tiksi 95.53 348⇓ *e*P **P 07 19 23.4 -1.1**
TIXI *i* *PP **sP 07 19 41.7 +6.1**
TIXI pmax pmax
comp=Z,3.0nm,1.4s
TCUT Toone Canyon 96.01 48 *e*P **P 07 19 26.9 -0.9**
WMQ Urumqi 97.29 314 *e*P Pdif 07 19 34.3 +0.9
WMQ LR LR
comp=Z,39nm,19.0s
WMQ LR LR
comp=Z,48nm,25.6s
PDAR Pinedale Array 97.89 47 P **P 07 19 34.3 -1.9**
comp=Z,0.3nm,0.5s,baz=215,slow=4.3,SNR=4.5
TXAR Lajitas Array 97.96 62 P **P 07 19 35.6 -1.1**
comp=Z,0.8nm,0.9s,baz=246,slow=5.3,SNR=5.0
MKAR Makanchi Array 101.86 316 PP PP 07 24 10.5 +5.5
comp=Z,1.0nm,1.0s,baz=105,slow=9.2,SNR=5.0
MKAR PKKPbc **PKKPbc 07 35 56.4 -3.8**
comp=Z,0.3nm,0.6s,baz=274,slow=3.9,SNR=3.6
YKA Yellowknife Ar 101.92 28 P **Pdif 07 19 52.0 -1.4**
comp=Z,0.5nm,0.5s,baz=257,slow=4.6,SNR=15
YKA PP **PP 07 24 08.6 +3.7**
comp=Z,0.1nm,0.7s,baz=260,slow=5.6,SNR=3.0
ARU Arti 117.55 324 *i* PKIKP **PKPdf 07 24 44.6 -1.0**
ARU 07 25 57.2
ARU 07 31 51.2
ARU SS SS 07 42 01.1 -6.9
ARCES ARCESS Array B 125.80 345 PKP **PKPdf 07 24 59.4 -1.7**
comp=Z,2.4nm,0.6s,baz=88,slow=0.9,SNR=19
KLMR Klimovskoe 126.02 332 *e*PKIKP **PKPdf 07 24 59.6 -2.2**
KLMR pmax pmax
comp=Z,2.0nm,0.6s
KIV Kislovodsk 129.29 311 *i* PKIKP **PKPdf 07 25 08.2 -0.5**
KIV pmax pmax
comp=Z,4.0nm,0.9s
OBN Obninsk 129.85 326 *e*PKIKP **PKPdf 07 25 05.8 -3.4**
OBN pmax pmax
comp=Z,5.0nm,0.7s
FINES FINESS Array B 131.17 337 PKP **PKPdf 07 25 10.8 -0.8**
comp=Z,12nm,1.2s,baz=117,slow=0.9,SNR=8.1
AKASG Malin Array Be 135.80 323 PKP **PKPdf 07 25 19.5 -1.0**
comp=Z,1.0nm,0.4s,baz=65,slow=2.5,SNR=6.5
NOA NORSAR Array B 136.17 344 PKP **PKPdf 07 25 18.4 -2.7**
comp=Z,0.8nm,0.8s,baz=57,slow=2.5,SNR=3.2
HFS Hagfors 136.25 342 PKP **PKPdf 07 25 19.7 -1.5**
comp=Z,1.0nm,0.7s,baz=108,slow=1.8,SNR=3.8
BRTR Keskin Array B 136.75 307 PKP **PKPdf 07 25 24.1 +1.2**
comp=Z,0.3nm,0.4s,baz=72,slow=4.7,SNR=3.2
VYHS Vyhne 142.65 326 *e*PKIKP **PKPdf 07 25 29.0 -4.2**
VYHS Vyhne 142.65 326 *e*PKP **PKPdf 07 25 29.0 -4.2**
DPC Dobruska-Polom 142.68 330 *e*PKP **PKPdf 07 25 33.4 +0.1**
DPC Dobruska-Polom 142.68 330 *e*PKIKP **PKPdf 07 25 33.4 +0.1**
PVCC Panska Ves 143.35 332 AMS AMS 08 35 00.0
comp=Z,200nm,21.6s
BRG Berggiesshubel 143.38 333 *e*PKP **PKPdf 07 25 34.5 +0.1**
comp=Z,12nm,1.5s
BRG *e* 07 26 58.6
comp=Z,11nm,1.4s
BRG Berggiesshubel 143.38 333 *e*PKIKP **PKPdf 07 25 34.5 +0.1**
BRG pmax pmax
comp=Z,12nm,1.5s
CLL Collm 143.45 334 *e*(PKP) **PKPdf 07 25 37.0 +2.5**
CLL LmV 07 52 00.0
comp=Z,100nm,20.4s
CLL LmV 08 36 00.0
comp=Z,200nm,19.2s
CLL Collm 143.45 334 *e*PKIKP **PKPdf 07 25 37.0 +2.5**
CLL MLR MLR
comp=Z,200nm,19.2s
SRS Serrai 143.58 313 P PKPab 07 25 31.0 -0.6
PRU Pruhonice 143.75 331 AMS AMS 08 35 50.0
comp=Z,200nm,16.6s
EKA Eskdalemuir Ar 144.37 352 PKP PKPbc 07 25 34.0 -0.4
comp=Z,1.9nm,0.7s,baz=14,slow=3.2,SNR=4.3
EKA Eskdalemuir Ar 144.37 352 PKIKP PKPbc 07 25 34.0 -0.4
EKA Eskdalemuir Ar 144.37 352 PKP PKPbc 07 25 34.0 -0.4
CONA Conrad Observa 144.54 328 *i* PKPdf PKPbc 07 25 35.2 -0.2
comp=Z,12nm,1.4s
IDI Anoyia 144.59 303 PKP **PKPab 07 25 35.3 -0.4**
comp=Z,8.8nm,0.9s,baz=61,slow=13,SNR=2.3
KHC Kasperske Hory 144.80 331 *e*PKP PKPbc 07 25 35.9 -0.1
KHC *ex* x 07 26 46.5
KHC AMS AMS 08 36 30.0
comp=Z,200nm,18.0s
KHC Kasperske Hory 144.80 331 *e*PKIKP PKPbc 07 25 35.9 -0.1
KHC MLR MLR
comp=Z,200nm,18.0s
GERES GERESS Array B 144.95 331 PKP **PKPab 07 25 35.9 -0.7**
comp=Z,2.3nm,0.9s,baz=29,slow=3.0,SNR=9.8
LKR Lokris 144.96 309 P PKPdf 07 25 45.9 +8.4
ARSA Arzberg 145.16 327 *e*PKPdf **PKPbc 07 25 36.8 -0.4**
comp=Z,12nm,1.4s
MOA Molln 145.38 329 *i* PKPdf **PKPbc 07 25 37.7 -0.2**
comp=Z,22nm,1.3s
DSF Desfina 145.39 309 P **PKPbc 07 25 37.3 -1.0**
DSF Desfina 145.39 309 P **PKPbc 07 25 37.3 -1.0**
ANKY Antikythira Is 145.66 304 P PKPab 07 25 50.0 +11
EVR Evrytania 145.72 310 P **PKPdf 07 25 38.8 -0.2**
EVR Evrytania 145.72 310 P **PKPdf 07 25 38.8 -0.2**
ANX Ano Chora 145.76 310 P **PKPdf 07 25 38.0 -1.1**
PERS Pernice 145.78 327 *e*PKPdf **PKPdf 07 25 38.3 -0.5**
PERS *i* 07 26 54.5
PERS *i* 07 27 06.1
PERS *i* 07 27 16.2
SOKA Soboth 145.79 327 *e*PKPab **PKPdf 07 25 38.6 -0.2**
comp=Z,9.5nm,1.1s
KLV Kalavryta, Ach 145.80 309 P **PKPdf 07 25 37.8 -1.3**
KLV Kalavryta, Ach 145.80 309 P **PKPdf 07 25 37.8 -1.3**
LAKA Lakka 145.86 309 P **PKPdf 07 25 38.7 -0.5**
LAKA Lakka 145.86 309 P **PKPdf 07 25 38.7 -0.5**
PVO Paravola 146.04 310 P **PKPbc 07 25 40.0 -0.2**
DSL Palaion Diasel 146.14 311 P **PKPdf 07 25 40.0 +0.4**
DSL Palaion Diasel 146.14 311 P **PKPdf 07 25 40.0 +0.4**
OBKA Obir 146.16 327 *i* pPKPbc **PKPab 07 25 41.8 +0.6**
comp=Z,5.9nm,1.1s
DRO Drossia 146.16 309 P **PKPab 07 25 41.1 -0.2**
PDKS Podkum 146.22 326 *e*PKPdf **PKPbc 07 25 40.7 +0.1**
PDO Prodromos 146.29 310 P **PKPdf 07 25 39.4 -0.4**
KBA Koelnbreinsper 146.37 329 *e*PKPab **PKPdf 07 25 40.0 0.0**
comp=Z,6.7nm,1.1s
BOJS Bojanci 146.44 325 *i* PKPdf **PKPdf 07 25 39.4 -0.5**
BOJS *e* 07 26 56.4
BOJS *i* 07 27 08.9
BOJS *e* 07 27 17.8
VISS Visnje 146.47 326 *i* PKPdf **PKPbc 07 25 41.5 +0.2**
VISS *i* 07 26 56.1
VISS *i* 07 27 09.5
VISS *e* 07 27 17.9
LJU Ljubljana 146.48 326 *e*PKPdf **PKPdf 07 25 40.0 +0.1**
PYL PYLOS 146.52 307 P **PKPbc 07 25 41.0 -0.7**
PYL PYLOS 146.52 307 P **PKPbc 07 25 41.0 -0.7**
SGD Sagiada 146.54 312 P **PKPbc 07 25 41.7 0.0**
BEBN Eben Emael 146.57 340 PKP **PKPab 07 25 41.7 -0.7**
LKD2 Lefkada island 146.59 311 P **PKPbc 07 25 42.1 +0.2**
LKD2 Lefkada island 146.59 311 P **PKPbc 07 25 42.1 +0.2**
MEM Membach 146.62 339 PKPbc **PKPdf 07 25 39.8 -0.2**
JAVS Javornik 146.82 326 *i* PKPdf **PKPdf 07 25 39.4 -1.3**
JAVS *i* 07 26 56.4
JAVS *i* 07 27 10.3
JAVS *e* 07 27 18.5
ABTA Abfaltersbach 147.01 329 *i* PKPbc **PKPdf 07 25 40.3 -0.6**
comp=Z,4.3nm,1.1s
BCLA Clavier 147.02 340 PKPbc **PKPbc 07 25 42.1 -0.6**
MOTA Moosalm 147.24 331 *e*pPKPdf **PKPbc 07 25 42.8 -0.9**
comp=Z,9.0nm,1.0s
RETA Reutte 147.29 331 *i* pPKPdf **PKPbc 07 25 43.0 -0.7**
comp=Z,5.0nm,0.8s
LANF Langenberg 147.35 336 PKP **PKPbc 07 25 42.6 -1.1**
WLF Walferdange 147.38 338 *e*PKP2 **PKPbc 07 25 43.8 +0.1**
WLF Walferdange 147.38 338 *e*PKPbc **PKPbc 07 25 43.8 +0.1**
BFO Black Forest 147.67 335 *e*PKP2 **PKPbc 07 25 43.6 -1.0**
BFO Black Forest 147.67 335 *e*PKPbc **PKPbc 07 25 43.6 -1.0**
WLS Welschbruch 147.98 336 PKP **PKPbc 07 25 44.4 -1.1**
DAVOX Davos/Dischmat 148.22 331 PKPbc **PKPbc 07 25 44.6 -1.8**
comp=Z,8.4nm,0.8s,baz=53,slow=4.6,SNR=11
ECH Echery 148.22 336 PKP **PKPdf 07 25 43.6 +0.8**
MOF Molkenrain 148.53 335 PKP **PKPbc 07 25 46.0 -1.0**
TUE Stuetta 148.69 332 *e*PKPdf **PKPdf 07 25 43.3 -0.5**
TUE *e*PKPbc **PKPbc 07 25 46.9 -0.7**
LOMF Lomont 149.06 335 PKP **PKPbc 07 25 48.1 -0.3**
TIP Timpagrande 149.13 314 *e*PKPdf **PKPdf 07 25 44.9 +0.3**
AGO Saint Agoulin 151.52 338 PKP **PKPdf 07 25 50.5 +2.4**
VAE Valguarnera 151.57 313 PKPbc **PKPbc 07 25 52.4 -2.3**
comp=Z,9.7nm,0.4s,baz=8.1,slow=13,SNR=3.0
VAE PKPab **PKPab 07 26 01.0 -2.2**
comp=Z,17nm,0.4s,baz=347,slow=5.8,SNR=5.9
PYM Petit Puy Mans 151.83 338 PKP **PKPbc 07 25 53.3 -1.7**
ESDC Sonseca Array 159.52 343 PKPab **PKPab 07 26 35.8 -1.2**
comp=Z,0.1nm,0.3s,baz=26,slow=3.8,SNR=4.3
TORD Torodi Ar. Bea 165.42 243 PKP **PKPdf 07 26 04.5 -1.0**
comp=Z,1.5nm,0.9s,baz=53,slow=1.6,SNR=6.0

IDC ***14*** *07:07:13.2±0.8,20.°31S×168.°38E,h0km,mb4.6/15, mb1 4.7/16,mb1mx4.6/28,mbtmp4.6/16,MS4.1/4, Ms1 4.2/4,ms1mx4.0/13,Error ellipse: s-maj=30.1km s-min=17.0km az=147.0*

GCMT ***14*** *07:07:14.9±0.2,20.°28S×168.°20E,h12km,MW5.1/96, Moment Tensor Solution. s31,c33; s96,c148; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}~5.12±.12; $M_{\theta\theta}$0.70±.13; $M_{\phi\phi}$4.42±.11; $M_{r\theta}$-3.16±.44; $M_{r\phi}$-1.32±.09; $M_{\theta f}$1.01±.41; Best double couple: $M_0$5.88800×10^{16} NP1:ϕ_s139.00000°,δ60.00000°,λ-113.00000°. NP2:*

ϕ=359.00000°, δ37.00000°, λ-56.00000°. Principal axes: T 5.2560, Plg12.0000°, Azm246.0000°; N 1.2670, Plg20.0000°, Azm151.0000°; P -6.5200, Plg67.0000°, Azm5.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.
NEIC 14 07:07:14.9±0.4, 20.25S×168.36E, h10km, mb5.2/13 Error ellipse: s-maj=13.8km s-min=8.6km az=152.0
ISCJB 14 07:07:16.4±0.3, 20.28S±0.07×168.19E±0.06, h26km, mb4.7/27, MS3.9/3, Error ellipse: s-maj=12.0km s-min=6.1km az=146.6
ISC 14 07:07:17.5±0.6, 20.3S±0.1×168.3E±0.1, h26km, n74, σ1§16/69, mb4.7/25, MS3.9/3, 1C, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.46**	**225**	Pn	**Pn**	**07 07 55.1**	**-0.9**
	baz=331,slow=19,SNR=1.8						
DZM				Sn	**Sn**	**07 08 23.1**	**-2.2**
	53nm,0.3s,baz=348,slow=19,SNR=3.3						
RAO	**Raoul Island**	**15.33**	**128**	LR	LR	07 15 12.6	
	comp=Z,3μm,18.8s,baz=320,slow=31						
ARMA	**Armidale**	**18.10**	**233**	*e*Pn	**P**	**07 11 32.4**	**+4.9**
CTA	**Charters Tower**	**20.70**	**267**	P	Pn	07 11 57.3	-1.0
	26nm,0.9s,baz=81,slow=13,SNR=3.3						
CTAO	**Charters Tower**	**20.70**	**267**	*e*P	Pn	07 11 57.4	-1.0
	410nm,1.3s						
PMG	**Port Moresby**	**23.12**	**295**	P	**P**	**07 12 22.2**	**+0.5**
	20nm,0.8s,baz=134,slow=12,SNR=3.2						
COEN	**Coen**	**24.82**	**281**	*e*P	**P**	**07 12 38.3**	**+0.5**
	18nm,0.8s						
STKA	**Stephens Creek**	**26.54**	**239**	P	**P**	**07 12 55.0**	**+1.8**
	6.7nm,0.5s,baz=69,slow=11,SNR=5.2						
RAR	**Rarotonga**	**29.83**	**97**	LR	LR	07 23 10.7	
	comp=Z,280nm,20.0s,baz=256,slow=32						
WRAB	**Tennant Creek**	**31.86**	**265**	*e*P	**P**	**07 13 39.9**	**-0.8**
	6.3nm,0.9s						
WRA	**Warramunga Arr**	**31.87**	**265**	P	**P**	**07 13 39.6**	**-1.2**
	4.1nm,0.8s,baz=91,slow=8.5,SNR=5.3						
WRA				PcP	**PcP**	**07 16 31.4**	**+0.2**
	2.2nm,1.0s,baz=93,slow=2.8,SNR=3.4						
ASAR	**Alice Springs**	**32.03**	**258**	P	**P**	**07 13 41.5**	**-0.6**
	10nm,0.7s,baz=84,slow=8.5,SNR=6.9						
MBWA	**Marble Bar**	**45.30**	**260**	*e*P	**P**	**07 15 33.7**	**+0.3**
KAPI	**Kappang**	**49.55**	**281**	*e*P	**P**	**07 16 07.6**	**+1.0**
	40nm,1.2s						
SBA	**Scott Base**	**57.58**	**180**	*e*P	**P**	**07 17 06.2**	**+1.8**
	158nm,2.2s						
MJAR	**Matsushiro Arr**	**63.31**	**333**	P	**P**	**07 17 43.0**	**-1.2**
	5.0nm,0.7s,baz=169,slow=7.1,SNR=6.8						
JNU	**Nakatsue**	**64.05**	**325**	*e*P	**P**	**07 17 48.3**	**-0.8**
	30nm,1.6s						
KSRS	**Korea Array**	**68.91**	**326**	P	**P**	**07 18 20.1**	**+0.1**
	2.3nm,0.9s,baz=138,slow=7.3,SNR=4.7						
KSRS				LR	LR	07 45 48.4	
	comp=Z,67nm,21.1s,baz=130,slow=34						
KSAR	**Wonju Array Be**	**68.92**	**326**	P	**P**	**07 18 20.1**	**0.0**
QSPA	**South Pole Qui**	**69.74**	**180**	*e*P	**P**	**07 18 26.4**	**+1.3**
	28nm,1.0s						
USRK	**Ussuriysk Ar.**	**72.30**	**333**	P	**P**	**07 18 41.0**	**+0.4**
	11nm,0.8s,baz=126,slow=4.7,SNR=8.7						
PETK	**Petropavlovsk-**	**73.70**	**353**	P	**P**	**07 18 49.1**	**+0.4**
	4.1nm,0.6s,baz=141,slow=7.4,SNR=3.6						
CMAR	**Chiang Mai Arr**	**78.16**	**295**	P	**P**	**07 19 16.3**	**+1.4**
	4.8nm,0.5s,baz=135,slow=4.3,SNR=7.9						
CMAR				LR	LR	07 56 58.9	
	comp=Z,77nm,18.1s,baz=177,slow=38						
CHTO	**Chiang Mai**	**78.31**	**295**	*e*P	**P**	**07 19 16.8**	**+1.0**
	3.6nm,0.8s						
SYO	**Syowa Base**	**83.65**	**196**	*e*X	**P**	**07 19 40.0**	**-3.4**
OHAK	**Old Harbor**	**83.66**	**20**	*e*P	**P**	**07 19 43.0**	**-0.4**
	50nm,1.3s						
ULN	**Ulaanbaatar**	**87.21**	**324**	*e*P	**P**	**07 20 01.7**	**+0.1**
	9.3nm,1.0s						
SONM	**Songino Array**	**87.56**	**323**	P	**P**	**07 20 02.9**	**-0.4**
	2.9nm,0.9s,baz=134,slow=4.7,SNR=5.0						
SMMC	**Simmler**	**87.57**	**51**	P	**P**	**07 20 04.9**	**+1.4**
	baz=243						
SCI2	**San Clemente I**	**87.61**	**54**	P	**P**	**07 20 05.4**	**+1.8**
	baz=244						
BILL	**Bilibino**	**88.12**	**359**	*e*P	**P**	**07 20 04.7**	**-0.5**
	25nm,1.4s						
N02D	**Trinity Center**	**88.32**	**45**	P	**P**	**07 20 07.8**	**+0.9**
	baz=241						
M02C	**Callahan**	**88.42**	**45**	P	**P**	**07 20 08.7**	**+1.2**
	baz=241						
O03D	**Paynes Creek**	**88.60**	**46**	P	**P**	**07 20 08.9**	**+0.6**
	baz=242						
YBH	**Yreka Blue Hor**	**88.68**	**44**	P	**P**	**07 20 08.9**	**+0.3**
	3.4nm,0.7s,baz=199,slow=2.3,SNR=3.5						
ISA	**Isabella, Lake**	**88.84**	**51**	P	**P**	**07 20 10.0**	**+0.5**
	baz=244						
MONP2	**Monument Peak**	**89.19**	**54**	P	**P**	**07 20 11.7**	**+0.3**
	baz=245						
LRMC	**Laurel Mtn Rad**	**89.34**	**52**	P	**P**	**07 20 12.4**	**+0.5**
	baz=244						
CWC	**Cottonwood Cre**	**89.46**	**51**	P	**P**	**07 20 13.4**	**+0.9**
	baz=244						
BELC	**Belle Mtn. Jos**	**89.97**	**54**	P	**P**	**07 20 15.4**	**+0.5**
	baz=245						
NVAR	**Mina Array Bea**	**90.17**	**49**	P	**P**	**07 20 15.8**	**-0.1**
	3.5nm,0.9s,baz=225,slow=6.5,SNR=4.6						
GRAC	**Grapevine Rang**	**90.22**	**50**	P	**P**	**07 20 16.8**	**+0.8**
	baz=245						
BC3	**Big Chuckawall**	**90.24**	**54**	P	**P**	**07 20 16.6**	**+0.4**
	baz=246						
FURC	**Furnace Creek,**	**90.36**	**51**	P	**P**	**07 20 17.2**	**+0.7**
	baz=245						
J05D	**Fort Rock, OR**	**90.38**	**43**	P	**P**	**07 20 17.4**	**+0.7**
	baz=242						
GMRC	**Granite Mounta**	**90.55**	**53**	P	**P**	**07 20 18.7**	**+1.1**
	baz=246						
SHOC	**Shoshone, Teco**	**90.55**	**52**	P	**P**	**07 20 18.2**	**+0.7**
	baz=245						
TUQ	**Turquoise Moun**	**90.62**	**52**	P	**P**	**07 20 18.5**	**+0.5**
	baz=245						
IRM	**Iron Mountain**	**90.68**	**54**	P	**P**	**07 20 19.2**	**+1.0**
	baz=246						
TPNV	**Topopah Spring**	**91.01**	**51**	P	**P**	**07 20 20.2**	**+0.4**
	baz=245						
PDMCI	**Parker Dam,Lak**	**91.50**	**54**	P	**P**	**07 20 22.6**	**+0.8**
	baz=246						
ILAR	**Eielson Array**	**91.52**	**18**	P	**P**	**07 20 19.9**	**-1.4**
	1.0nm,0.7s,baz=238,slow=5.6,SNR=3.2						
214A	**Organ Pipe Nat**	**91.60**	**57**	P	**P**	**07 20 22.7**	**+0.3**
	baz=247						
WVOR	**Wild Horse Val**	**91.69**	**45**	*e*P	**P**	**07 20 21.9**	**-0.9**
	22nm,1.3s						
R11A	**Troy Canyon, C**	**92.07**	**50**	P	**P**	**07 20 24.4**	**-0.2**
	baz=246						
TUC	**Tucson**	**93.33**	**57**	*e*P	**P**	**07 20 30.8**	**+0.3**
	2.4nm,0.8s						
HLID	**Hailey**	**94.98**	**45**	P	**P**	**07 20 37.9**	**0.0**
	baz=247						
PDAR	**Pinedale Array**	**97.99**	**47**	P	Pdif	07 20 53.8	+2.1
	0.2nm,0.4s,baz=212,slow=5.0,SNR=2.5						
TXAR	**Lajitas Array**	**98.05**	**62**	P	Pdif	07 20 52.6	+0.4
	0.2nm,0.8s,baz=226,slow=4.8,SNR=1.9						
MKAR	**Makanchi Array**	**101.90**	**316**	PKKP	**PKKPdf**	**07 37 23.5**	**+1.2**
	0.4nm,0.7s,baz=314,slow=1.3,SNR=3.7						
YKA	**Yellowknife Ar**	**102.03**	**28**	P	**Pdif**	**07 21 09.2**	**+0.4**
	0.4nm,0.6s,baz=256,slow=4.7,SNR=4.6						
ARCES	**ARCESS Array B**	**125.88**	**345**	PKP	**PKPdf**	**07 26 15.8**	**-0.6**
	2.7nm,0.6s,baz=59,slow=1.5,SNR=9.6						
FINES	**FINESS Array B**	**131.25**	**337**	PKP	**PKPdf**	**07 26 26.2**	**-0.5**
	2.1nm,0.9s,baz=45,slow=4.5,SNR=3.1						
NB2	**NORSAR Subarra**	**136.25**	**344**	PKPdf	**PKPdf**	**07 26 35.7**	**-0.5**
	comp=Z,1.3nm,0.8s,baz=31,slow=1.9						
NOA	**NORSAR Array B**	**136.25**	**344**	PKP	**PKPdf**	**07 26 35.5**	**-0.8**
	comp=Z,0.8nm,0.6s,baz=31,slow=2.0,SNR=4.2						
HFS	**Hagfors**	**136.33**	**342**	PKP	**PKPdf**	**07 26 36.5**	**+0.2**
	comp=Z,1.5nm,0.9s,baz=63,slow=6.8,SNR=2.4						
EKA	**Eskdalemuir Ar**	**144.46**	**352**	PKP	**PKPab**	**07 26 48.6**	**-0.8**
	comp=Z,0.8nm,0.5s,baz=27,slow=1.7,SNR=3.7						
GERES	**GERESS Array B**	**145.01**	**330**	PKPbc	PKPbc	07 26 52.1	+0.3
	comp=Z,4.9nm,1.1s,baz=70,slow=2.0,SNR=5.2						
WLF	**Walferdange**	**147.45**	**338**	*e*PKPbc	**PKPbc**	**07 26 59.9**	**+0.9**
BFO	**Black Forest**	**147.74**	**335**	*e*PKPbc	**PKPbc**	**07 26 59.0**	**-0.9**
DAVOX	**Davos/Dischmat**	**148.28**	**331**	PKPbc	**PKPbc**	**07 27 01.7**	**+0.2**
	comp=Z,5.1nm,0.6s,baz=0.0,slow=1.0,SNR=4.2						
TUE	**Stuetta**	**148.75**	**331**	*e*PKPbc	**PKPbc**	**07 27 02.5**	**-0.3**
TORD	**Torodi Ar. Bea**	**165.34**	**243**	PKPab	**PKPab**	**07 28 17.7**	**-0.6**
	comp=Z,1.2nm,1.0s,baz=124,slow=4.7,SNR=3.6						
MDT	**Midelt**	**166.05**	**335**	PKP	**PKPdf**	**07 27 18.2**	**-2.5**
	comp=Z,0.8nm,0.6s,baz=62,slow=5.9,SNR=3.7						

DDA 14 07:11:50.8, 39.36N×33.17E, h7km, Md2.7
ISCJB 14 07:11:51.2±0.5, 39.36N±0.02×33.13E±0.03, h0km±6km, Error ellipse: s-maj=4.3km s-min=3.6km az=167.7
ISK 14 07:11:51.0, 39.38N×33.11E, h5km, MD2.7
CSEM 14 07:11:51.3±0.1, 39.36N×33.13E, h2km, MD2.7, Error ellipse: s-maj=2.7km s-min=2.4km az=70.0
ISC 14 07:11:51.2±0.9, 39.36N±0.02×33.14E±0.02, h8km±7km, n32, σ0§54/59, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFSR	**Afşar-Bala (A**	**0.10**	**329**	*e*PG	**Pg**	**07 11 53.1**	**-0.5**
AFSR	**Afşar-Bala (A**	**0.10**	**329**	*e*Pg	**Pg**	**07 11 53.1**	**-0.5**
BBAL	**Bala**	**0.18**	**356**	P	**Pg**	**07 11 54.9**	**-0.1**
BBAL				S	**Sg**	**07 11 57.4**	**-0.3**
BBAL	**Bala**	**0.18**	**356**	*i* P	**Pg**	**07 11 54.8**	**-0.2**
BBAL				*i* S	**Sg**	**07 11 57.9**	**+0.3**
BBAL	**Bala**	**0.18**	**356**	*i* P	**Pg**	**07 11 54.9**	**-0.2**
BBAL				*i* S	**Sg**	**07 11 57.4**	**-0.3**
KKUL	**Konya-Kulu**	**0.25**	**223**	P	**Pg**	**07 11 56.5**	**+0.3**
KKUL				S	**Sg**	**07 12 00.7**	**+1.0**
KKUL	**Konya-Kulu**	**0.25**	**223**	*i* P	**Pg**	**07 11 56.5**	**+0.3**
KKUL				*i* S	**Sg**	**07 12 01.0**	**+1.3**
KKUL	**Konya-Kulu**	**0.25**	**223**	*i* P	**Pg**	**07 11 56.5**	**+0.3**
KKUL				*i* S	**Sg**	**07 12 00.7**	**+1.0**
KAMT	**Kaman**	**0.45**	**88**	*e*PG	**Pg**	**07 11 59.9**	**0.0**
KAMT	**Kaman**	**0.45**	**88**	*e*Pg	**Pg**	**07 11 59.9**	**0.0**
SERE	**Sereflikochisa**	**0.53**	**141**	*e*PG	**Pb**	**07 12 02.6**	**-0.2**
SERE				*e*SG	**Sb**	**07 12 10.9**	**+0.3**
SERE	**Sereflikochisa**	**0.53**	**141**	*e*Pg	**Pb**	**07 12 02.6**	**-0.2**
SERE				*e*Sg	**Sb**	**07 12 10.9**	**+0.3**
LOD	**Lodumlu**	**0.60**	**332**	*e*PG	**Pg**	**07 12 02.6**	**-0.2**
LOD				*e*SG	**Sg**	**07 12 11.3**	**+0.5**
LOD	**Lodumlu**	**0.60**	**332**	*e*Pg	**Pg**	**07 12 02.7**	**-0.2**
LOD				*e*Sg	**Sg**	**07 12 11.3**	**+0.5**
AKSY	**AKSARAY - Alti**	**0.86**	**145**	P	**Pg**	**07 12 06.9**	**-0.8**
AKSY				S	**Sg**	**07 12 18.1**	**-0.7**
AKSY	**AKSARAY - Alti**	**0.86**	**145**	*i* P	**Pg**	**07 12 07.2**	**-0.4**
AKSY	**AKSARAY - Alti**	**0.86**	**145**	*i* P	**Pg**	**07 12 06.9**	**-0.8**
AKSY				*i* S	**Sg**	**07 12 18.1**	**-0.7**
KIZT	**Kizilcal**	**1.09**	**244**	*e*PG	**Pb**	**07 12 12.2**	**-0.1**
KIZT				*e*SG	**Sn**	**07 12 27.6**	**-0.6**
KIZT	**Kizilcal**	**1.09**	**244**	*e*Pg	**Pb**	**07 12 12.2**	**-0.1**
KIZT				*e*Sg	**Sn**	**07 12 27.6**	**-0.6**
ELDT	**Eldivan**	**1.15**	**11**	P	**Pn**	**07 12 13.6**	**-0.2**
ELDT				S	**Sb**	**07 12 29.1**	**+0.4**
ELDT	**Eldivan**	**1.15**	**11**	*i* P	**Pn**	**07 12 13.6**	**-0.2**
ELDT				*i* S	**Sb**	**07 12 29.1**	**+0.4**
KDHN	**Kadinhani**	**1.16**	**224**	P	**Pg**	**07 12 13.2**	**-0.2**
KDHN				S	**Sb**	**07 12 28.5**	**-0.1**
KDHN	**Kadinhani**	**1.16**	**224**	*i* P	**Pg**	**07 12 13.1**	**-0.2**
KDHN				*i* S	**Sb**	**07 12 29.1**	**+0.4**
KDHN	**Kadinhani**	**1.16**	**224**	*i* P	**Pg**	**07 12 13.2**	**-0.2**
KDHN				*i* S	**Sb**	**07 12 28.6**	**-0.1**
CORM	**Corum**	**1.41**	**54**	*e*PN	**Pb**	**07 12 17.9**	**+0.1**
CORM				*e*SN	**Sg**	**07 12 38.0**	**+1.4**
CORM	**Corum**	**1.41**	**54**	*e*Pn	**Pb**	**07 12 18.0**	**+0.1**
CORM				*e*Sn	**Sg**	**07 12 38.0**	**+1.4**
AVNS	**Nevsehir-Avano**	**1.44**	**112**	P	**Pb**	**07 12 18.3**	**0.0**
AVNS				S	**Sg**	**07 12 38.4**	**+0.9**
AVNS	**Nevsehir-Avano**	**1.44**	**112**	*i* P	**Pb**	**07 12 18.3**	**0.0**
AVNS				*i* S	**Sg**	**07 12 38.4**	**+0.9**
BCAM	**Yenicaga**	**1.67**	**331**	P	**Pb**	**07 12 22.3**	**0.0**
BCAM				S	**Sb**	**07 12 43.7**	**+0.1**
BCAM	**Yenicaga**	**1.67**	**331**	*i* P	**Pb**	**07 12 22.3**	**0.0**
BCAM				*i* S	**Sb**	**07 12 43.7**	**+0.1**
COAL	**Corum-Alaca**	**1.68**	**57**	P	**Pb**	**07 12 22.1**	**-0.4**
COAL				S	**Sb**	**07 12 44.2**	**+0.4**
COAL	**Corum-Alaca**	**1.68**	**57**	*i* P	**Pb**	**07 12 22.1**	**-0.4**
COAL				*i* S	**Sb**	**07 12 44.2**	**+0.4**

IDC 14 07:13:48.4±0.8, 20.27S×168.10E, h0km, mb4.2/13, mb1 4.4/14, mb1mx4.3/24, mbtmp4.2/14, ML3.4/1, Error ellipse: s-maj=26.5km s-min=17.0km az=124.0
ISCJB 14 07:13:51.0±0.4, 20.21S±0.07×168.06E±0.08, h27km, mb4.4/20, Error ellipse: s-maj=12.3km s-min=7.4km az=40.9
NEIC 14 07:13:52.1±3.2, 20.18S×168.03E, h23km±23km, mb4.7/8, Error ellipse: s-maj=12.5km s-min=9.0km az=160.0
ISC 14 07:13:52.7±0.5, 20.23S±0.09×168.04E±0.10, h27km, n32, σ0§97/32, mb4.4/20, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.36**	**219**	Pn	**Pn**	**07 14 28.6**	**-1.2**
	9.0nm,0.3s,baz=102,slow=11,SNR=18						
DZM				Sn	**Sn**	**07 14 58.5**	**+0.6**
	64nm,0.3s,baz=322,slow=23,SNR=13						
MSVF	**Nonsavu**	**9.79**	**77**	*e*Pn	**Pn**	**07 16 11.3**	**-0.6**
	116nm,1.6s						
URZ	**Urewera**	**19.61**	**158**	P	**Pn**	**07 18 21.7**	**+1.3**
	0.3nm,0.3s,baz=356,slow=5.9,SNR=5.5						
CTA	**Charters Tower**	**20.45**	**267**	P	Pn	07 18 28.7	-1.8
	1.2nm,0.4s,baz=75,slow=12,SNR=1.8						
CTAO	**Charters Tower**	**20.45**	**267**	*e*P	Pn	07 18 30.3	-0.2
STKA	**Stephens Creek**	**26.37**	**239**	P	**P**	**07 19 26.0**	**-0.8**
	4.4nm,0.7s,baz=72,slow=7.3,SNR=6.0						
WRAB	**Tennant Creek**	**31.61**	**265**	*e*P	**P**	**07 20 11.5**	**-2.1**
	19nm,1.7s						
WRA	**Warramunga Arr**	**31.62**	**265**	P	**P**	**07 20 13.6**	**-0.1**
	1.6nm,0.9s,baz=91,slow=8.5,SNR=5.6						
ASAR	**Alice Springs**	**31.80**	**258**	P	**P**	**07 20 14.0**	**-1.2**
	4.9nm,0.8s,baz=87,slow=8.9,SNR=23						
VNDA	**Vanda**	**57.41**	**182**	P	**P**	**07 23 38.5**	**+0.1**
	1.2nm,0.9s,baz=349,slow=8.0,SNR=5.0						
SBA	**Scott Base**	**57.67**	**180**	*e*P	**P**	**07 23 41.5**	**+1.3**
	6.1nm,0.9s						
MJAR	**Matsushiro Arr**	**63.11**	**333**	P	**P**	**07 24 17.7**	**-0.2**
	2.0nm,0.9s,baz=170,slow=7.0,SNR=3.3						
QSPA	**South Pole Qui**	**69.83**	**180**	*e*P	**P**	**07 25 00.6**	**-0.1**
	13nm,0.9s						
USRK	**Ussuriysk Ar.**	**72.10**	**334**	P	**P**	**07 25 16.3**	**+1.8**
	2.9nm,0.7s,baz=138,slow=1.9,SNR=5.3						
PETK	**Petropavlovsk-**	**73.58**	**354**	P	**P**	**07 25 23.7**	**+0.6**
	2.7nm,0.8s,baz=127,slow=8.0,SNR=2.6						
MAW	**Mawson**	**77.10**	**202**	P	**P**	**07 25 44.1**	**+0.8**
	3.1nm,0.8s,baz=49,slow=21,SNR=4.7						
CMAR	**Chiang Mai Arr**	**77.89**	**295**	P	**P**	**07 25 50.0**	**+1.5**
	1.6nm,0.4s,baz=135,slow=4.5,SNR=9.4						
OHAK	**Old Harbor**	**83.66**	**20**	*e*P	**P**	**07 26 18.1**	**-0.4**
	32nm,1.4s						
ULN	**Ulaanbaatar**	**86.99**	**324**	*e*P	**P**	**07 26 36.7**	**+1.1**
	1.6nm,0.5s						
SONM	**Songino Array**	**87.33**	**324**	P	**P**	**07 26 37.5**	**+0.3**
	0.6nm,0.7s,baz=113,slow=7.1,SNR=4.6						
NVAR	**Mina Array Bea**	**90.30**	**49**	P	**P**	**07 26 50.8**	**-0.8**
	3.4nm,0.8s,baz=229,slow=8.1,SNR=20						
MOD	**Modoc Plateau**	**90.46**	**45**	*e*P	**P**	**07 26 51.6**	**-0.5**
	2.5nm,0.7s						
ILAR	**Eielson Array**	**91.51**	**18**	P	**P**	**07 26 56.5**	**+0.2**
	0.7nm,0.7s,baz=238,slow=5.3,SNR=7.1						
WVOR	**Wild Horse Val**	**91.81**	**45**	*e*P	**P**	**07 26 57.8**	**-0.5**
	4.5nm,1.0s						
TUC	**Tucson**	**93.49**	**57**	*e*P	**P**	**07 27 05.3**	**-0.9**
	2.7nm,1.0s						
YKA	**Yellowknife Ar**	**102.06**	**28**	P	**Pdif**	**07 27 44.0**	**-0.1**
	0.1nm,0.5s,baz=252,slow=4.4,SNR=3.6						
ARCES	**ARCESS Array B**	**125.72**	**345**	PKP	**PKPdf**	**07 32 50.7**	**-0.4**
	3.7nm,0.9s,baz=102,slow=2.1,SNR=6.1						
GERES	**GERESS Array B**	**144.81**	**330**	PKP	**PKPdf**	**07 33 27.4**	**+0.2**
	1.1nm,0.8s,baz=141,slow=0.9,SNR=8.3						
BFO	**Black Forest**	**147.54**	**334**	*e*PKPbc	**PKPab**	**07 33 34.8**	**-1.6**
DAVOX	**Davos/Dischmat**	**148.07**	**331**	PKPbc	**PKPbc**	**07 33 34.9**	**-1.1**
	5.4nm,0.8s,baz=12,slow=2.1,SNR=6.6						
TUE	**Stuetta**	**148.55**	**331**	*e*PKPbc	**PKPbc**	**07 33 37.7**	**+0.4**
TORD	**Torodi Ar. Bea**	**165.15**	**244**	PKP	**PKPdf**	**07 33 54.4**	**-1.0**
	1.0nm,1.0s,baz=163,slow=2.0,SNR=4.1						
TORD				PKPab	**PKPab**	**07 34 52.7**	**+0.2**
	0.5nm,0.7s,baz=99,slow=3.5,SNR=3.0						

IDC 14 07:14:23.2±7.1, 6.50S×146.46E, h143km±72km, mb2.8/2, mb1 2.9/4, mb1mx2.8/29, mbtmp3.2/4, Error ellipse: s-maj=91.3km s-min=30.6km az=136.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.97**	**167**	P	Pn	07 15 10.2	+0.3
	2.2nm,0.3s,baz=346,slow=12,SNR=4.0						
PMG				S	Sn	07 15 46.5	+0.5
	16nm,0.3s,baz=118,slow=23,SNR=24						
WRA	**Warramunga Arr**	**17.81**	**220**	P	P	07 18 19.7	-1.3
	0.1nm,0.3s,baz=47,slow=12,SNR=3.2						
ASAR	**Alice Springs**	**20.91**	**214**	P	P	07 18 54.9	+0.4
	0.4nm,0.8s,baz=48,slow=9.0,SNR=3.6						
ILAR	**Eielson Array**	**86.15**	**23**	P	P	07 26 47.6	-0.3
	0.3nm,0.7s,baz=252,slow=4.6,SNR=3.7						
TORD	**Torodi Ar. Bea**	**144.69**	**284**	PKP	PKPdf	07 33 44.4	+0.3
	0.3nm,0.7s,baz=58,slow=3.6,SNR=2.4						

IDC 14 07:35:03.1±455.0, 54.06N×42.37E, h0km, Error ellipse: s-maj=170.1km s-min=83.2km az=132.0, Baltic States-Belarus-Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I43RU	**DUBNA INFRASON**	**3.97**	**314**	*i*		08 00 00.0	
	baz=129,slow=316,SNR=0.8						
I31KZ	**AKTYUBINSK INF**	**10.28**	**104**	*i*		08 40 50.0	
	baz=295,slow=323,SNR=0.9						
I26DE	**FREYUNG INFRAS**	**18.53**	**265**	*i*		09 29 10.0	
	baz=63,slow=330,SNR=0.5						

IDC 14 07:35:10.7±1.0, 20.67S×168.38E, h0km, mb4.3/9, mb1 4.4/10, mb1mx4.2/28, mbtmp4.3/10, ML4.1/1, MS3.7/8, Ms1 3.7/8, ms1mx3.4/27, Error ellipse: s-maj=36.8km s-min=19.7km az=135.0
NEIC 14 07:35:12.3±0.5, 20.68S×168.46E, h10km, mb4.9/8, Error ellipse: s-maj=15.9km s-min=10.0km az=149.0
ISCJB 14 07:35:13.3±0.5, 20.69S±0.09×168.36E±0.09, h26km, mb4.5/15, MS3.7/7, Error ellipse: s-maj=16.4km s-min=8.0km az=140.2
ISC 14 07:35:15.1±0.6, 20.7S±0.1×168.4E±0.1, h26km, n37, σ1§17/33, mb4.5/15, MS3.6/7, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.31**	**233**	Pn	Pn	07 35 49.0	-2.5
	56nm,0.3s,baz=73,slow=8.2,SNR=387						
DZM				Sn	**Sn**	**07 36 16.8**	**-2.3**
	218nm,0.3s,baz=122,slow=23,SNR=12						
DZM				LR	LR	07 36 36.7	
	comp=Z,1μm,20.6s,baz=354,slow=38						
EIDS	**Eidsvold**	**16.63**	**250**	*e*P	**Pn**	**07 39 07.2**	**+0.8**
	9.2nm,1.3s						
ARMA	**Armidale**	**17.97**	**234**	*e*P	**P**	**07 39 27.2**	**+3.6**
	18nm,1.2s						
AFI	**Afiamalu**	**20.06**	**74**	LR	LR	07 45 49.2	
	comp=Z,249nm,18.4s,baz=266,slow=32						
CTA	**Charters Tower**	**20.79**	**268**	P	**P**	**07 39 56.0**	**+1.6**
	10nm,0.9s,baz=86,slow=13,SNR=6.9						
CTAO	**Charters Tower**	**20.79**	**268**	*e*P	**P**	**07 39 55.9**	**+1.5**
	162nm,1.0s						
THZ	**Tophouse**	**21.36**	**171**	*e*P	**P**	**07 40 01.3**	**+0.9**
PMG	**Port Moresby**	**23.36**	**296**	LR	LR	07 46 55.0	
	comp=Z,142nm,18.4s,baz=174,slow=30						
STKA	**Stephens Creek**	**26.44**	**240**	P	**P**	**07 40 50.3**	**+0.3**
	2.5nm,0.9s,baz=79,slow=13,SNR=3.8						
STKA				LR	LR	07 50 34.9	
	comp=Z,283nm,18.6s,baz=25,slow=35						
RAR	**Rarotonga**	**29.68**	**97**	LR	LR	07 50 58.0	
	comp=Z,85nm,20.2s,baz=247,slow=32						
WRAB	**Tennant Creek**	**31.93**	**265**	*e*P	**P**	**07 41 37.4**	**-1.5**
	11nm,1.1s						
WRA	**Warramunga Arr**	**31.94**	**265**	P	**P**	**07 41 36.9**	**-2.1**
	1.2nm,0.9s,baz=93,slow=8.5,SNR=9.3						
WRA				LR	LR	07 54 19.8	
	comp=Z,290nm,18.0s,baz=110,slow=36						
ASAR	**Alice Springs**	**32.06**	**258**	P	**P**	**07 41 39.1**	**-0.9**
	2.9nm,0.7s,baz=88,slow=9.0,SNR=34						
PPT	**Papeete**	**39.73**	**93**	LR	LR	07 55 00.4	
	comp=Z,101nm,21.2s,baz=240,slow=30						
**QS

TORD Torodi Ar. Bea 145.95 284 PKPbc PKPdf 08 00 52.4 +0.3
0.6nm,1.0s,baz=79,slow=2.5,SNR=4.0

IDC 14 07:50:11.4±16.0, 0°.60S×124°.41E, h0km, mb3.9/3, mb1 4.2/3, mb1mx3.4/42, mbtmp4.0/3, Error ellipse: s-maj=256.4km s-min=173.2km az=163.0, Southern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**21.54 154**		P	P	07 55 02.3	-0.2
	1.8nm,0.3s,baz=332,slow=10,SNR=62						
ASAR	**Alice Springs**	**24.71 159**		P	P	07 55 34.2	-0.3
	1.7nm,0.5s,baz=336,slow=7.4,SNR=41						
STKA	**Stephens Creek**	**35.09 154**		P	P	07 57 07.0	+0.5
	0.9nm,0.4s,baz=336,slow=10.0,SNR=2.9						

IDC 14 07:53:15.6±1.5, 20°.22S×168°.32E, h0km, mb4.1/6, mb1 4.3/7, mb1mx4.0/28, mbtmp4.0/7, ML3.4/1, MS3.3/3, Ms1 3.3/3, ms1mx2.9/32, Error ellipse: s-maj=65.2km s-min=22.8km az=143.0
ISCJB 14 07:53:18.2±1.2, 20°.2S±0°.2×168°.2E±0°.2, h25km, mb3.9/6, MS3.4/2, Error ellipse: s-maj=41.1km s-min=11.0km az=37.1
ISC 14 07:53:19.3±1.3, 20°.3S±0°.3×168°.3E±0°.3, h25km, n9, σ0s88/10, mb3.9/6, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.48 225**		Pn	**Pn**	**07 53 57.7**	**-0.5**
	7.4nm,0.3s,baz=108,slow=14,SNR=10.0						
DZM				LR	LR	07 54 27.1	
	comp=Z,283nm,19.2s,baz=338,slow=28						
DZM				Sn	**Sn**	**07 54 27.9**	**+0.1**
	30nm,0.3s,baz=99,slow=19,SNR=9.6						
STKA	**Stephens Creek**	**26.55 239**		P	**P**	**07 58 56.2**	**+0.8**
	3.5nm,0.8s,baz=79,slow=8.9,SNR=6.4						
STKA				LR	LR	08 10 30.5	
	comp=Z,94nm,18.4s,baz=49,slow=39						
WRA	**Warramunga Arr**	**31.88 265**		P	**P**	**07 59 41.9**	**-1.0**
	0.9nm,0.8s,baz=95,slow=8.7,SNR=4.8						
ASAR	**Alice Springs**	**32.05 258**		P	**P**	**07 59 44.2**	**-0.1**
	3.4nm,0.8s,baz=84,slow=8.9,SNR=25						
ASAR				LR	LR	08 10 56.8	
	comp=Z,88nm,19.9s,baz=108,slow=33						
CMAR	**Chiang Mai Arr**	**78.17 295**		P	**P**	**08 05 18.2**	**+1.2**
	1.6nm,0.4s,baz=137,slow=4.5,SNR=6.0						
NVAR	**Mina Array Bea**	**90.15 49**		P	**P**	**08 06 18.4**	**+0.6**
	0.2nm,0.3s,baz=212,slow=8.2,SNR=3.8						
ILAR	**Eielson Array**	**91.51 18**		P	**P**	**08 06 21.9**	**-1.3**
	0.2nm,0.6s,baz=239,slow=6.1,SNR=3.0						
ARCES	**ARCESS Array B 125.88 345**			PKP	**PKPdf**	**08 12 18.6**	**+0.2**
	1.8nm,0.9s,baz=46,slow=3.9,SNR=3.6						
GERES	**GERESS Array B 145.01 330**			PKP	**PKPdf**	**08 12 54.4**	**-0.1**
	0.2nm,0.5s,baz=20,slow=3.1,SNR=2.2						

ISK 14 07:54:19.6, 37°.36N×41°.44E, h5km, MD2.9
DDA 14 07:54:20.5, 37°.42N×41°.46E, h17km, Md2.7
CSEM 14 07:54:21.1±0.9, 37°.40N×41°.46E, h2km, MD2.7, Error ellipse: s-maj=16.4km s-min=9.5km az=123.0
ISC 14 07:54:20.3±2.5, 37°.38N±0°.07×41°.51E±0°.10, h7km±13km, n16, σ1s35/29, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BTMN	**Batman**	**0.54 340**		P	**Pg**	**07 54 30.3**	**-0.4**
BTMN				S	**Sg**	**07 54 38.0**	**+0.2**
BTMN	**Batman**	**0.54 340**		*i* P	**Pg**	**07 54 30.3**	**-0.4**
BTMN				*i* S	**Sg**	**07 54 38.0**	**+0.2**
MARD	**Mardin**	**0.58 263**		*i* P	**Pg**	**07 54 31.6**	**+0.1**
MARD				*i* S	**Sb**	**07 54 39.7**	**-1.8**
MAZI	**Mazidag**	**0.85 275**		*e*PG	**Pg**	**07 54 35.8**	**-0.8**
MAZI				*e*SG	**Sb**	**07 54 48.0**	**-1.1**
MAZI	**Mazidag**	**0.85 275**		*e*Pg	**Pg**	**07 54 35.8**	**-0.8**
MAZI				*e*Sg	**Sb**	**07 54 48.0**	**-1.1**
DIY	**Diyarbakir**	**1.14 297**		*e*Pn	**Pn**	**07 54 43.3**	**+0.6**
DIYA	**Diyarbakir**	**1.23 296**		P	**Pg**	**07 54 42.8**	**-1.0**
DIYA				S	**Sb**	**07 54 58.8**	**-1.1**
DIYA	**Diyarbakir**	**1.23 296**		*i* P	**Pg**	**07 54 42.8**	**-1.0**
DIYA				*i* S	**Sb**	**07 54 58.8**	**-1.1**
DYBB	**Diyarbakir**	**1.23 298**		*e*PN	**Pg**	**07 54 43.3**	**-0.4**
BINT	**Bingol**	**1.69 332**		*e*Pn	**Pb**	**07 54 52.1**	**+0.3**
BINT				*e*Sn	**Sg**	**07 55 15.6**	**+0.9**
BNGB	**Bing^¶l**	**1.73 338**		*e*PN	**Pn**	**07 54 52.1**	**+1.2**
BNGB				*e*SN	**Sg**	**07 55 15.6**	**-0.4**
SVRC	**Sivrice-ELAZID**	**2.00 300**		*e*PN	**Pb**	**07 54 56.0**	**-1.2**
SVRC				*e*SN	**Sb**	**07 55 21.7**	**-0.7**
SVRC	**Sivrice-ELAZID**	**2.00 300**		*e*Pn	**Pb**	**07 54 56.0**	**-1.2**
SVRC				*e*Sn	**Sb**	**07 55 21.7**	**-0.7**
SURC	**SANLIURFA_SURC**	**2.37 259**		P	**Pn**	**07 55 00.8**	**+1.2**
SURC				S	**Sb**	**07 55 31.9**	**-0.8**
SURC	**SANLIURFA_SURC**	**2.37 259**		*i* P	**Pn**	**07 55 00.8**	**+1.2**
SURC				*i* S	**Sb**	**07 55 31.9**	**-0.8**
BCAM	**Yenicaga**	**8.10 298**		*i* S	**Sg**	**07 58 45.1**	**+4.8**

CSEM 14 08:16:07.8, 41°.76N×13°.73E, h12km, MD1.8/4
ROM 14 08:16:07.8±0.1, 41°.76N×13°.73E, h12km±1km, Md1.8/4, Ml1.0/1, Error ellipse: s-maj=0.9km s-min=0.8km az=40.0, Southern Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
POFI	**Posta Fibreno**	**0.04 201**		Pg	Pg	08 16 10.5	+0.3
POFI				Sg	Sg	08 16 12.2	+0.4
	93nm,0.2s						
POFI	**Posta Fibreno**	**0.04 201**		Pg	Pg	08 16 10.5	+0.3
POFI				Sg	Sg	08 16 12.2	+0.4
	93nm,0.2s						
VVLD	**Villa Vallelon**	**0.14 325**		Pg	Pg	08 16 11.8	+0.5
VVLD				Sg	Sg	08 16 14.5	+0.6
	32nm,0.1s						
VVLD	**Villa Vallelon**	**0.14 325**		Pg	Pg	08 16 11.8	+0.5
VVLD				Sg	Sg	08 16 14.5	+0.6
	32nm,0.1s						
CERA	**Filignano**	**0.27 126**		Pg	Pb	08 16 14.0	-0.6
CERA				Sg	Sb	08 16 18.2	-0.9
CERA	**Filignano**	**0.27 126**		Pg	Pb	08 16 14.0	-0.6
CERA				Sg	Sb	08 16 18.2	-0.9
INTR	**Introdacqua**	**0.29 27**		Pg	Pg	08 16 14.1	+0.3
INTR				Sg	Sb	08 16 19.0	-0.8
INTR	**Introdacqua**	**0.29 27**		Pg	Pg	08 16 14.1	+0.3
INTR				Sg	Sb	08 16 19.0	-0.8

ISCJB 14 08:18:09.4±0.4, 49°.83N±0°.03×18°.46E±0°.03, h0km, Error ellipse: s-maj=4.9km s-min=2.3km az=12.4
CSEM 14 08:18:10.2±0.2, 49°.82N×18°.48E, h2km, ML2.8/9, Error ellipse: s-maj=7.1km s-min=3.3km az=10.0
IPEC 14 08:18:10.3±0.2, 49°.81N×18°.58E, h0km, ML2.1/3, Error ellipse: s-maj=2.1km s-min=1.1km az=161.0
PRU 14 08:18:11.2, 49°.83N×18°.47E, h0km
VIE 14 08:18:11.5±1.3, 49°.83N×18°.44E, h0km, mb2.0/3, ml2.7/3, Error ellipse: s-maj=10.3km s-min=7.1km az=24.0, Suspected Mining induced.
ISC 14 08:18:10.3±0.8, 49°.79N±0°.03×18°.52E±0°.02, h0km, n32, σ0s72/59, 3D, Czech and Slovak Republics

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OKC	**Ostrava-Krasne**	**0.25 281**		*i*PG	**Pg**	**08 18 16.2**	**+1.1**
OKC				*e*SG	**Sg**	**08 18 18.4**	**+0.1**
	comp=Z,104nm,0.7s						
OKC	**Ostrava-Krasne**	**0.25 281**		Pg	**Pg**	**08 18 16.2**	**+1.1**
OKC				Sg	**Sg**	**08 18 18.4**	**+0.1**
	104nm,0.7s						
MORC	**Moravsky Berou**	**0.64 269**		*e*Pg	**Pg**	**08 18 23.4**	**+0.9**
MORC				*e*Sg	**Sg**	**08 18 31.2**	**+0.5**
	46nm,0.4s						
LANS	**Liptovska Anna**	**0.89 136**		*e*Pg	**Pg**	**08 18 27.2**	**-0.2**
LANS				*e*Sg	**Sb**	**08 18 40.8**	**-0.3**
LANS	**Liptovska Anna**	**0.89 136**		*e*PG	**Pg**	**08 18 27.2**	**-0.2**
LANS				*e*SG	**Sb**	**08 18 40.8**	**-0.3**
OJC	**Ojcow**	**0.93 62**		*e*Pg	**Pg**	**08 18 27.4**	**-0.7**
OJC				*e*Sg	**Sg**	**08 18 39.9**	**-0.2**
OJC	**Ojcow**	**0.93 62**		*e*Pg	**Pg**	**08 18 27.4**	**-0.7**
OJC				*e*Sg	**Sg**	**08 18 39.9**	**-0.2**
KRLC	**Kraliky**	**1.16 285**		*e*PG	**Pg**	**08 18 31.8**	**-0.8**
KRLC				*e*SG	**Sg**	**08 18 47.4**	**-0.2**
KRLC	**Kraliky**	**1.16 285**		Pg	**Pg**	**08 18 31.8**	**-0.8**
KRLC				Sg	**Sg**	**08 18 47.4**	**-0.2**
NIE	**Niedzica**	**1.22 107**		*e*Pg	**Pn**	**08 18 34.6**	**0.0**
NIE				*e*Sg	**Sn**	**08 18 52.3**	**+0.5**
NIE	**Niedzica**	**1.22 107**		*e*Pg	**Pn**	**08 18 34.6**	**0.0**
NIE				*e*Sg	**Sn**	**08 18 52.3**	**+0.5**
VYHS	**Vyhne**	**1.31 171**		*e*Pn	**Pg**	**08 18 35.5**	**0.0**
VYHS				*e*Sn	**Sn**	**08 18 53.9**	**-0.3**
VYHS	**Vyhne**	**1.31 171**		*e*PN	**Pg**	**08 18 35.5**	**0.0**
VYHS				*e*SN	**Sn**	**08 18 53.9**	**-0.3**
VYHS				*e*LG	Lg	08 18 56.4	
VRAC	**Vranov**	**1.35 250**		*e*Pg	**Pg**	**08 18 35.9**	**-0.2**
VRAC				*e*Sg	**Sg**	**08 18 53.9**	**+0.3**
	24nm,0.4s						
DPC	**Dobruska-Polom**	**1.52 292**		*e*PG	**Pn**	**08 18 38.3**	**-0.6**
DPC				*e*SG	**Sg**	**08 18 58.7**	**-0.6**
	comp=Z,9.7nm,0.3s						
DPC	**Dobruska-Polom**	**1.52 292**		Pg	**Pn**	**08 18 38.3**	**-0.6**
DPC				Sg	**Sg**	**08 18 58.7**	**-0.6**
	9.7nm,0.3s						
KRUC	**Moravsky**	**1.57 243**		*e*Pg	**Pn**	**08 18 39.6**	**+0.2**
KRUC				*e*Sg	**Sb**	**08 19 00.6**	**0.0**
	16nm,0.3s						
UPC	**Upice**	**1.77 295**		*e*PG	**Pn**	**08 18 42.7**	**+0.5**
UPC				*e*SG	**Sb**	**08 19 06.4**	**+0.1**
	comp=Z,11nm,0.4s						
UPC	**Upice**	**1.77 295**		Pg	**Pn**	**08 18 42.7**	**+0.5**
UPC				Sg	**Sb**	**08 19 06.4**	**+0.1**
	11nm,0.4s						
STHS	**Stebnicka Huta**	**1.81 101**		*e*Pn	**Pb**	**08 18 44.6**	**+0.3**
STHS				*e*Sn	**Sg**	**08 19 09.9**	**+1.5**
STHS	**Stebnicka Huta**	**1.81 101**		*e*PN	**Pb**	**08 18 44.6**	**+0.3**
STHS				*e*SN	**Sg**	**08 19 09.8**	**+1.4**
STHS				*e*LG	Lg	08 19 14.6	
KECS	**Kecovo**	**1.84 135**		*e*Pn	**Pn**	**08 18 43.0**	**-0.1**
KECS				*e*Sn	**Sb**	**08 19 08.1**	**-0.2**
KECS	**Kecovo**	**1.84 135**		*e*PN	**Pn**	**08 18 43.0**	**-0.1**
KECS				*e*SN	**Sb**	**08 19 08.1**	**-0.2**
KECS				*e*LG	Lg	08 19 12.3	
GOPC	**GO Pecny, Ondr**	**2.42 274**		*e*SG	**Sb**	**08 19 25.9**	**+0.8**
	comp=Z,6.1nm,0.4s						
GOPC	**GO Pecny, Ondr**	**2.42 274**		Sg	**Sb**	**08 19 25.9**	**+0.8**
	6.1nm,0.4s						
CONA	**Conrad Observa**	**2.56 224**		*i* Pn	**Pn**	**08 18 53.3**	**+0.1**
	0.3nm,0.1s						
CONA				*e*Sn	**Sn**	**08 19 23.9**	**-1.2**
	2.0nm,0.2s						
CONA	**Conrad Observa**	**2.56 224**		Pn	**Pn**	**08 18 53.3**	**+0.1**
	0.3nm,0.1s						
CONA				Sn	**Sn**	**08 19 23.9**	**-1.2**
	2.0nm,0.2s						
PRU	**Pruhonice**	**2.58 276**		*e*SG	**Sb**	**08 19 29.9**	**+0.1**
	comp=Z,5.5nm,0.6s						
PRU	**Pruhonice**	**2.58 276**		Sg	**Sb**	**08 19 29.9**	**+0.1**
	5.5nm,0.6s						
BRG	**Berggiesshubel**	**3.13 292**		SG	**Sg**	**08 19 49.5**	**-1.3**
	4.7nm,0.6s						
KHC	**Kasperske Hory**	**3.29 260**		*e*PG	**Pb**	**08 19 10.5**	**+0.9**
KHC				*e*SG	**Sg**	**08 19 54.0**	**-2.1**
	comp=Z,4.9nm,0.4s						
KHC	**Kasperske Hory**	**3.29 260**		Pg	**Pb**	**08 19 10.5**	**+0.9**
KHC				Sg	**Sg**	**08 19 54.0**	**-2.1**
	4.9nm,0.4s						

IDC 14 08:40:42.4±2.2, 6°.47S×148°.02E, h0km, mb3.8/3, mb1 3.9/5, mb1mx3.6/45, mbtmp3.8/5, ML3.6/1, MS3.2/5, Ms1 3.2/5, ms1mx2.9/33, Error ellipse: s-maj=58.7km s-min=37.9km az=103.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**3.04 196**		Pn	Pn	08 41 34.1	+2.2
	5.3nm,0.3s,baz=355,slow=7.1,SNR=26						
PMG				Sn	Sn	08 42 11.8	+2.8
	11nm,0.3s,baz=23,slow=18,SNR=6.5						
PMG				LR	LR	08 42 41.3	
	comp=Z,176nm,18.6s,baz=22,slow=39						
WRA	**Warramunga Arr**	**18.86 223**		P	P	08 45 03.2	-1.2
	0.2nm,0.3s,baz=48,slow=11,SNR=12						
GUMO	**Guam**	**20.17 351**		LR	LR	08 53 06.9	
	comp=Z,37nm,19.9s,baz=138,slow=37						
ASAR	**Alice Springs**	**21.83 217**		P	P	08 45 35.8	-0.8
	0.9nm,0.4s,baz=52,slow=8.8,SNR=13						
ASAR				LR	LR	08 54 45.4	
	comp=Z,113nm,18.2s,baz=58,slow=39						
STKA	**Stephens Creek**	**25.98 193**		P	P	08 46 16.1	-0.9
	3.6nm,0.9s,baz=22,slow=11,SNR=3.6						
KSRS	**Korea Array**	**47.55 338**		LR	LR	09 07 00.2	
	comp=Z,21nm,20.3s,baz=144,slow=33						
SONM	**Songino Array**	**65.30 330**		LR	LR	09 19 51.1	
	comp=Z,25nm,19.8s,baz=262,slow=36						
VNDA	**Vanda**	**71.39 177**		P	P	08 52 04.0	+0.1
	1.1nm,1.0s,baz=329,slow=7.7,SNR=4.6						
TORD	**Torodi Ar. Bea**	**146.18 284**		PKPbc	PKPbc	09 00 25.8	0.0
	1.7nm,1.1s,baz=72,slow=3.6,SNR=7.9						

MEX 14 08:40:46.7±0.8, 16°.81N×99°.25W, h16km±25km, MD3.5, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CAIG	**El Cayaco**	**1.00 284**		*e*P	Pb	08 41 02.1	-3.5
CAIG				*e*S	Sb	08 41 14.5	-4.1
MEIG	**Mezcala**	**1.16 342**		*e*P	Pn	08 41 04.3	-4.1
MEIG				*e*S	Sb	08 41 18.4	-5.0
ARIG	**Puente Sto Nin**	**1.80 325**		*e*P	Pn	08 41 14.4	-2.7
ARIG				*e*S	Sn	08 41 35.3	-4.3
YAIG	**Yautepec**	**2.05 5**		*e*P	Pn	08 41 17.8	-2.9
YAIG				*e*S	Sn	08 41 41.6	-4.3

CSEM 14 08:45:08.5±0.1, 45°.64N×14°.24E, h15km, ML2.0/7, Error ellipse: s-maj=2.2km s-min=1.5km az=53.0
LJU 14 08:45:08.3, 45°.64N×14°.25E, h15km, ML1.4, 3C-4D, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KNDS	**Knezji Dol**	**0.15 141**		⇑*i*Pg	Pg	08 45 12.3	0.0
KNDS				*i* Sg	Sg	08 45 15.1	+0.2
	comp=Z,34nm,0.1s						
KNDS	**Knezji Dol**	**0.15 141**		⇑*i*Pg	Pg	08 45 12.3	+0.1
KNDS				*i* Sg	Sg	08 45 15.1	+0.3
	comp=Z,34nm,0.1s						
CEY	**Cerknica**	**0.16 53**		*i* Pg	Pg	08 45 12.4	0.0
CEY				*i* Sg	Sg	08 45 15.2	+0.2
	comp=Z,29nm,0.1s						
CEY	**Cerknica**	**0.16 53**		*i* Pg	Pg	08 45 12.4	+0.1
CEY				*i* Sg	Sg	08 45 15.2	+0.2
	comp=Z,29nm,0.1s						
SKDS	**Skadanscina**	**0.19 240**		*i* Pg	Pg	08 45 12.8	0.0
SKDS				*i* Sg	Sg	08 45 16.3	+0.5
	comp=Z,27nm,0.0s						
SKDS	**Skadanscina**	**0.19 240**		*i* Pg	Pg	08 45 12.8	0.0
SKDS				*i* Sg	Sg	08 45 16.3	+0.5
	comp=Z,27nm,0.0s						
JAVS	**Javornik**	**0.28 333**		⇓*i*Pg	Pg	08 45 14.4	0.0
JAVS				*i* Sg	Sg	08 45 19.0	+0.6
	comp=Z,18nm,0.1s						
JAVS	**Javornik**	**0.28 333**		⇓*i*Pg	Pg	08 45 14.4	+0.1
JAVS				*i* Sg	Sg	08 45 19.0	+0.5
	comp=Z,18nm,0.1s						
GBAS	**Gorenja Brezov**	**0.32 25**		*i* Pg	Pg	08 45 15.0	0.0
GBAS				*i* Sg	Sg	08 45 20.0	+0.4
	comp=Z,8.0nm,0.1s						
GBAS	**Gorenja Brezov**	**0.32 25**		*i* Pg	Pg	08 45 15.0	0.0
GBAS				*i* Sg	Sg	08 45 20.0	+0.4
TRI	**Trieste**	**0.35 281**		*e*Pg	Pg	08 45 15.3	0.0
TRI				*e*Sg	Sg	08 45 20.8	+0.6
GBRS	**Gornja Briga**	**0.41 106**		*i* Pg	Pg	08 45 16.8	+0.2
GBRS				*i* Sg	Sb	08 45 23.3	-0.1
	comp=Z,10.0nm,0.1s						
CRNS	**Crni Vrh**	**0.44 1**		*i* Pg	Pg	08 45 17.0	-0.1
CRNS				*i* Sg	Sb	08 45 24.4	+0.1
CRNS	**Crni Vrh**	**0.44 1**		*i* Pg	Pg	08 45 17.0	-0.1
CRNS				*i* Sg	Sb	08 45 24.4	+0.2
VISS	**Visnje**	**0.44 69**		*i* Pg	Pb	08 45 17.5	-0.3
VISS				*i* Sg	Sg	08 45 23.6	+0.4
	comp=Z,3.0nm,0.1s						
VISS	**Visnje**	**0.44 69**		*i* Pg	Pg	08 45 17.5	+0.3
VISS				*i* Sg	Sg	08 45 23.6	+0.4
	comp=Z,3.0nm,0.1s						
VOJS	**Vojsko**	**0.47 327**		*i* Pg	Pg	08 45 17.5	-0.1
VOJS				*i* Sg	Sb	08 45 25.1	+0.1
VOJS	**Vojsko**	**0.47 327**		*i* Pg	Pg	08 45 17.5	-0.1
VOJS				*i* Sg	Sb	08 45 25.1	+0.1
VNDS	**Vrh nad Dolski**	**0.56 34**		*i* Pg	Pg	08 45 19.5	+0.2
VNDS				*i* Sg	Sg	08 45 26.9	+0.2
VNDS	**Vrh nad Dolski**	**0.56 34**		*i* Pg	Pg	08 45 19.5	+0.2
VNDS				*i* Sg	Sg	08 45 26.9	+0.1
SABO	**M.te Sabotino**	**0.56 307**		⇑*e*Pg	Pg	08 45 19.0	-0.5
SABO				*e*Sg	Sb	08 45 27.7	-0.1
DRE	**Drenchia**	**0.68 322**		*e*Pg	Pg	08 45 21.6	0.0
DRE				*e*Sg	Sb	08 45 31.6	+0.5
CADS	**Cadrg**	**0.69 329**		*i* Pg	Pg	08 45 21.4	-0.3
CADS				*i* Sg	Sb	08 45 32.1	+0.8
	comp=Z,3.0nm,0.1s						
CADS	**Cadrg**	**0.69 329**		*i* Pg	Pg	08 45 21.4	-0.3
CADS				*i* Sg	Sb	08 45 32.1	+0.8
	comp=Z,3.0nm,0.1s						
GORS	**Gorjuse**	**0.70 345**		*i* Pg	Pb	08 45 22.6	+0.3
GORS				*i* Sg	Sn	08 45 33.1	-1.3
GORS	**Gorjuse**	**0.70 345**		*i* Pg	Pb	08 45 22.6	+0.4
GORS				*i* Sg	Sn	08 45 33.1	-1.3
BOJS	**Bojanci**	**0.72 101**		*i* Sg	Sb	08 45 32.3	+0.1
BOJS	**Bojanci**	**0.72 101**		*i* Sg	Sb	08 45 32.3	+0.1
ROBS	**Robic**	**0.79 320**		*i* Sg	Sb	08 45 35.0	+0.7
ROBS	**Robic**	**0.79 320**		*i* Sg	Sb	08 45 35.0	+0.7
LEGS	**Legarje**	**0.81 67**		*i* Pg	Pn	08 45 24.6	-0.6
LEGS	**Legarje**	**0.81 67**		*i* Pg	Pb	08 45 24.6	+0.5
GOLS	**Golise**	**1.03 69**		⇓*i*Pg	Pn	08 45 28.6	+0.3
GOLS				*i* Sg	Sn	08 45 43.2	+0.7
GOLS	**Golise**	**1.03 69**		⇓*i*Pg	Pn	08 45 28.6	+0.3
NVLJ	**Novalja**	**1.17 158**		*e*Pg	Pg	08 45 31.1	+0.4
NVLJ				Sg	Sg	08 45 47.8	+1.8
NVLJ	**Novalja**	**1.17 158**		*e*Pg	Pg	08 45 31.1	+0.3
NVLJ				Sg	Sg	08 45 47.7	+1.7
UDBI	**Udbina**	**1.55 136**		*e*Pn	Pn	08 45 35.9	+0.5
UDBI				Sn	Sg	08 45 59.5	+1.4
UDBI	**Udbina**	**1.55 136**		*e*Pn	Pb	08 45 35.8	+0.4

IDC 14 08:45:50.1±0.8, 41°.68N×20°.84E, h0km, mb3.8/13, mb1 3.9/20, mb1mx3.8/51, mbtmp3.8/20, ML3.7/7, MS3.2/7, Ms1 3.2/7, ms1mx2.8/41, Error ellipse: s-maj=15.4km s-min=11.2km az=27.0
ATH 14 08:45:50.7, 41°.75N×20°.95E, h14km±1km, ML3.8/20, Error ellipse: s-maj=1.9km s-min=0.9km az=176.0
MOS 14 08:45:50.1±1.1, 41°.65N×20°.75E, h14km, mb4.4/13, Error ellipse: s-maj=5.7km s-min=3.6km az=109.2
ISCJB 14 08:45:51.1±0.3, 41°.734N±0°.008×20°.89E±0°.01, h10km±2km, mb4.2/24, MS3.7/5, Error ellipse: s-maj=1.8km s-min=1.3km az=156.7
PDG 14 08:45:51.4±0.7, 41°.72N×20°.94E, h6km±1km, MD4.1/13, ML4.1/13, Error ellipse: s-maj=0.5km s-min=0.6km az=0.0
SKO 14 08:45:51.0, 41°.66N×20°.87E, h18km, M3.8, ML4.2
THE 14 08:45:51.5, 41°.71N×20°.90E, h2km, ML3.9/16, Error ellipse: s-maj=0.7km s-min=0.4km az=307.0
TIR 14 08:45:51.8, 41°.85N×20°.96E, h14km
LDG 14 08:45:52.3±0.1, 41°.74N×20°.98E, h10km, Ml4.1/17, Error ellipse: s-maj=4.1km s-min=2.3km az=1.0
NEIC 14 08:45:52.8±0.4, 41°.74N×20°.81E, h10km, mb4.5/6, MW4.1, ML4.2(SKO), Error ellipse: s-maj=5.9km s-min=4.7km az=180.0, Moment Tensor Solution. s15 Moment tensor: Scale 10^{15}Nm; M_{rr}=0.61; $M_{\theta\theta}$ 1.61; $M_{\phi\phi}$-1.00; $M_{r\theta}$-0.33; $M_{\theta\phi}$0.15; $M_{\phi r}$0.80; Best double couple: $M_0$1.70000×10^{15} NP1:ϕ_s228.00000°, δ57.00000°, λ-156.00000°. NP2: ϕ_s125.00000°, δ70.00000°, λ-35.00000°. Principal axes: T 1.6600, Plg8.0000°, Azm179.0000°; N 0.0000, Plg50.0000°, Azm279.0000°; P -1.6600, Plg39.0000°, Azm83.0000°;
NEIC Felt [IV] at Gostivar, [III] at Tetovo and [II] at Skopje. Also felt at Bogovinje, Kicevo, Kondovo, Negotino and Saraj. Felt at Pristina and Urosevac, Kosovo.
CSEM 14 08:45:52.4±0.1, 41°.70N×20°.91E, h10km, mb4.3/15, Mw4.1 Error ellipse: s-maj=2.3km s-min=1.7km az=60.0
BEO 14 08:45:52.4±0.3, 41°.68N×20°.92E, h14km±2km, M4.0/1
PRU 14 08:45:54.7, 41°.70N×20°.68E, h4km, M4.5
ISC 14 08:45:52.3±0.9, 41°.69N±0°.01×20°.91E±0°.01, h14km±6km, n592, σ1s64/739, mb4.2/24, MS3.5/5, 52C-45D, Albania

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKO	**Skopje**	**0.49 54**		P	**Pg**	**08 46 01.5**	**-0.4**
SKO				S	**Sb**	**08 46 09.4**	**-0.4**
SKO	**Skopje**	**0.49 54**		⇑*i*Pg	**Pg**	**08 46 01.7**	**-0.4**
SKO				*i* Sg	**Sb**	**08 46 08.8**	**-1.0**
SKO	**Skopje**	**0.49 54**		⇑*i*Pg	**Pg**	**08 46 01.6**	**-0.4**
SKO				*e*Sg	**Sb**	**08 46 08.7**	**-1.1**
SKO	**Skopje**	**0.49 54**		⇑*i*Pg	**Pg**	**08 46 01.6**	**-0.4**
SKO				*e*Sg	**Sb**	**08 46 08.7**	**-1.1**
SKO				S	**Sb**	**08 46 09.4**	**-0.4**
OHR	**Ohrid**	**0.58 188**		⇑*i*Pg	**Pg**	**08 46 02.7**	**-1.1**
OHR				*i* Sg	**Sg**	**08 46 12.0**	**+0.5**
OHR				*e*Lg	Lg	08 46 12.4	
	comp=N,11μm,0.7s						
OHR				*e*Lg	Lg	08 46 12.6	
	comp=E,26μm,0.8s						
BIA	**Bitola**	**0.74 155**

comp=N,3μm,0.5s
VAY Valandovo 1.30 106 ⇓iPg Pn 08 46 16.2 +0.1
VAY eSg Sg 08 46 34.0 -0.3
VAY Valandovo 1.30 106 ⇓iPg Pn 08 46 16.2 +0.1
VAY eSg Sg 08 46 34.0 -0.3
VAY eLg Lg 08 46 34.3
comp=N,2μm,0.4s
BARS Barje 1.31 31 ⇑iPg Pn 08 46 16.1 -0.2
BARS eSg Sg 08 46 35.4 +0.7
BARS Barje 1.31 31 ⇑iPg Pn 08 46 16.1 -0.2
BARS eSg Sg 08 46 35.4 +0.7
GRG Griva 1.34 123 P Pb 08 46 17.0 -0.3
GRG S Sg 08 46 35.5 -0.1
GRG Griva 1.34 123 i P Pb 08 46 17.0 -0.3
GRG i S Sg 08 46 34.9 -0.7
GRG Griva 1.34 123 P Pb 08 46 17.0 -0.3
GRG i S Sg 08 46 34.9 -0.7
GRG Griva 1.34 123 P Pn 08 46 16.3 -0.4
GRG S Sg 08 46 35.2 -0.4
GRG AML AML 08 46 38.9
comp=N,12446μm,0.6s
GRG AML AML 08 46 40.3
comp=E,10344μm,0.6s
DRME Dracevica, Mon 1.38 292 ⇑iPg Pn 08 46 16.9 -0.3
DRME eSg Sg 08 46 38.6 +1.8
DRME Dracevica, Mon 1.38 292 ⇓iPn Pn 08 46 16.3 -0.9
DRME Dracevica, Mon 1.38 292 ⇑iPg Pn 08 46 16.9 -0.3
DRME eSg Sg 08 46 38.6 +1.8
BEY Berane 1.40 328 ⇑iPg Pn 08 46 17.1 -0.5
BEY eSg Sg 08 46 38.2 +0.7
IVA Berane 1.40 328 ⇑iPg Pn 08 46 17.1 -0.5
IVA eSg Sg 08 46 38.2 +0.7
PDG Podgorica 1.44 302 ⇑iP Pn 08 46 18.1 +0.1
PDG Podgorica 1.44 302 S Sg 08 46 38.2 -0.4
PDG Podgorica 1.44 302 P Pn 08 46 17.2 -0.8
PDG S Sg 08 46 37.6 -1.0
PDG Podgorica 1.44 302 ePg Pn 08 46 18.3 +0.3
PDG Podgorica 1.44 302 ePn Pn 08 46 17.2 -0.8
PDG Podgorica 1.44 302 ePg Pn 08 46 18.3 +0.3
PDG S Sg 08 46 37.6 -1.0
PDG eSg Sg 08 46 39.5 +0.9
TTG Podgorica 1.44 302 ⇑iPg Pn 08 46 18.0 +0.1
TTG eSg Sg 08 46 39.5 +0.9
PENT Pentalofos 1.50 173 P Pn 08 46 19.2 +0.2
PENT S Sb 08 46 39.9 +0.9
PENT Pentalofos 1.50 173 P Pn 08 46 19.2 +0.2
PENT S Sb 08 46 39.9 +0.9
PENT Pentalofos 1.50 173 P Pg 08 46 20.8 -0.4
PENT S Sg 08 46 41.3 +0.6
PENT AML AML 08 46 52.2
comp=E,6626μm,1.2s
PENT AML AML 08 46 54.8
comp=N,4109μm,0.7s
KZN Kozani 1.53 154 P Pn 08 46 19.6 +0.3
KZN S Sg 08 46 40.7 -0.8
KZN Kozani 1.53 154 P Pn 08 46 19.6 +0.3
KZN S Sg 08 46 40.7 -0.8
SELS Selova 1.54 6 ⇑iPn Pn 08 46 18.9 -0.5
SELS eSg Sg 08 46 40.5 -1.4
KNT Kendrikon 1.59 109 P Pn 08 46 20.4 +0.3
KNT S Sb 08 46 41.9 +0.5
KNT Kendrikon 1.59 109 P Pn 08 46 20.4 +0.3
KNT S Sb 08 46 41.9 +0.5
KNT Kendrikon 1.59 109 P Pn 08 46 20.4 +0.3
KNT S Sb 08 46 42.2 +0.8
KNT AML AML 08 46 43.8
comp=E,2444μm,0.7s
KNT AML AML 08 46 45.7
comp=N,3972μm,0.4s
BUM Brajici-Budva 1.62 293 ⇑iPn Pb 08 46 21.9 -0.2
BUM eSn Sg 08 46 45.9 +1.4
BUM Brajici-Budva 1.62 293 ⇑iPn Pb 08 46 21.9 -0.2
BUM eSn Sg 08 46 45.9 +1.4
CEME Cevo 1.71 301 ⇓iPn Pn 08 46 22.4 +0.6
CEME eSn Sg 08 46 47.9 +0.5
CEME Cevo 1.71 301 ⇓iPn Pn 08 46 22.4 +0.6
CEME eSn Sg 08 46 47.9 +0.5
KPRO Kipourio 1.77 169 P Pn 08 46 22.7 +0.1
KPRO S Sb 08 46 46.5 -0.1
KPRO Kipourio 1.77 169 P Pn 08 46 23.5 +0.9
KPRO S Sb 08 46 46.5 -0.1
KPRO Kipourio 1.77 169 P Pn 08 46 23.5 +0.9
KPRO AML AML 08 47 00.7
comp=E,3894μm,1.1s
KPRO AML AML 08 47 05.9
comp=N,4686μm,1.6s
NKME Niksic 1.81 307 ⇑iPn Pb 08 46 24.3 -1.0
NKME eSn Sg 08 46 49.9 -0.6
NKME Niksic 1.81 307 ⇑iPn Pb 08 46 24.3 -1.0
NKME eSn Sg 08 46 49.9 -0.6
NKY Niksic 1.81 309 ⇓iPn Pb 08 46 24.6 -0.8
NKY eSn Sg 08 46 50.1 -0.5
NKY Niksic 1.81 309 ⇓iPn Pb 08 46 24.6 -0.8
NKY eSn Sg 08 46 50.1 -0.5
THE Thessaloniki 1.88 124 P Pn 08 46 24.5 +0.5
THE S Sb 08 46 50.0 +0.3
THE Thessaloniki 1.88 124 P Pn 08 46 24.5 +0.5
THE S Sb 08 46 50.0 +0.3
THE Thessaloniki 1.88 124 P Pb 08 46 25.9 -0.6
THE AML AML 08 46 56.2
comp=N,1616μm,0.6s
THE AML AML 08 46 58.2
comp=E,1105μm,0.6s
HCY Herceg Novi 1.95 294 ⇓iPn Pb 08 46 26.6 -1.1
HCY eSn Sg 08 46 53.6 -1.4
HCY Herceg Novi 1.95 294 ⇓iPn Pb 08 46 26.6 -1.1
HCY eSn Sg 08 46 53.6 -1.4
IVAS Ivanjica 1.97 344 ePn Pn 08 46 25.0 -0.4
IVAS eSg Sg 08 46 55.1 -0.5
IVAS Ivanjica 1.97 344 ePn Pn 08 46 25.0 -0.4
IVAS eSg Sg 08 46 55.1 -0.5
HORT Hortiatis 1.98 123 P Pn 08 46 25.9 +0.3
HORT S Sb 08 46 52.7 -0.2
HORT Hortiatis 1.98 123 P Pn 08 46 25.9 +0.3
HORT S Sb 08 46 52.7 -0.2
HORT Hortiatis 1.98 123 P Pn 08 46 26.6 +1.1
HORT AML AML 08 47 03.8
comp=E,1972μm,1.3s
HORT AML AML 08 47 08.7
comp=N,1617μm,0.6s
PLE Pljevlja 1.99 326 ⇓iPn Pn 08 46 26.5 +0.8
PLE eSn Sb 08 46 53.5 +0.4
PLE Pljevlja 1.99 326 ⇓iPn Pn 08 46 26.5 +0.8
PLE eSn Sb 08 46 53.5 +0.4
LIT Litokhoron 1.99 142 P Pn 08 46 25.6 0.0
LIT S Sb 08 46 52.0 -1.0
LIT Litokhoron 1.99 142 P Pn 08 46 25.6 0.0
LIT S Sb 08 46 52.0 -1.0
LIT Litokhoron 1.99 142 P Pn 08 46 26.0 +0.4
LIT AML AML 08 47 00.3
comp=E,2600μm,0.7s
LIT AML AML 08 47 04.8
comp=N,2421μm,0.6s
JAN Janina 2.03 181 P Pn 08 46 26.3 +0.1
JAN S Sb 08 46 53.7 -0.5
JAN Janina 2.03 181 P Pn 08 46 26.3 +0.1
JAN S Sb 08 46 53.7 -0.5
JAN Janina 2.03 181 AML AML 08 47 01.9
comp=E,3746μm,0.6s
BOVS Bovan 2.03 17 ePn Pn 08 46 26.4 +0.2
BOVS eSg Sg 08 46 56.4 -1.3
BOVS Bovan 2.03 17 ePn Pn 08 46 26.4 +0.2
BOVS eSg Sg 08 46 56.4 -1.3
ZAPS Zavoj 2.04 38 ⇓iPn Pn 08 46 27.1 +0.8
ZAPS eSg Sg 08 46 57.9 +0.1
SOH Sokhos 2.04 114 P Pn 08 46 26.7 +0.4
SOH S Sn 08 46 53.0 +1.4
SOH Sokhos 2.04 114 P Pn 08 46 26.7 +0.4
SOH S Sn 08 46 53.0 +1.4
SOH Sokhos 2.04 114 P Pn 08 46 26.7 +0.4
SOH S Sn 08 46 53.0 +1.4
SOH Sokhos 2.04 114 P Pb 08 46 27.8 -1.4
SOH AML AML 08 46 59.8
comp=E,2981μm,0.5s
SOH AML AML 08 47 01.6
comp=N,2153μm,0.6s
SRS Serrai 2.10 105 P Pn 08 46 27.3 +0.2
SRS Serrai 2.10 105 P Pn 08 46 27.3 +0.2
SRS Serrai 2.10 105 P Pn 08 46 27.6 +0.5
SRS AML AML 08 47 04.4
comp=E,1086μm,0.5s
SRS AML AML 08 47 08.8
comp=N,1332μm,1.0s
UPM Unac-Piva 2.12 316 ⇑iPn Pb 08 46 29.1 -1.5
UPM eSn Sb 08 46 57.0 +0.1
UPM Unac-Piva 2.12 316 ⇑iPn Pb 08 46 29.1 -1.5
BRY Bratogost 2.13 305 ⇓iPn Pn 08 46 28.8 +1.1
BRY eSn Sb 08 46 57.9 +0.6
BRY Bratogost 2.13 305 ⇓iPn Pn 08 46 28.8 +1.1
SGD Sagiada 2.14 194 P Pn 08 46 27.9 +0.3
SGD Sagiada 2.14 194 P Pn 08 46 27.9 +0.3
SGD Sagiada 2.14 194 P Pb 08 46 30.3 -0.5
SGD AML AML 08 47 11.0
comp=N,2479μm,1.0s
SGD AML AML 08 47 13.6
comp=Z,4541μm,0.7s
KEK Kerkira 2.15 203 P Pn 08 46 28.0 +0.3
KEK Kerkira 2.15 203 P Pn 08 46 28.6 +0.9
TREB Trebinje 2.16 299 ePn Pb 08 46 30.2 -1.0
IGT Igoumenitsa 2.20 192 P Pn 08 46 29.3 +0.8
IGT S Sb 08 46 57.7 -1.3
IGT Igoumenitsa 2.20 192 P Pn 08 46 29.3 +0.8
IGT S Sb 08 46 57.7 -1.3
IGT Igoumenitsa 2.20 192 P Pb 08 46 31.2 -0.7
IGT AML AML 08 47 07.0
comp=E,3340μm,1.0s
IGT AML AML 08 47 07.7
comp=N,3199μm,0.8s
GRUS Gruza 2.20 356 ePn Pn 08 46 28.6 +0.1
GRUS eSg Sg 08 47 04.6 +1.4
GRUS Gruza 2.20 356 ePn Pn 08 46 28.6 +0.1
GRUS eSg Sg 08 47 04.6 +1.4
NVR Nevrokopi 2.24 98 P Pn 08 46 29.7 +0.6
NVR S Sb 08 46 59.3 -1.1
NVR Nevrokopi 2.24 98 P Pn 08 46 29.7 +0.6
NVR S Sb 08 46 59.3 -1.1
BOLS Boljevac 2.27 19 ePn Pn 08 46 29.2 -0.3
BOLS eSg Sg 08 47 04.1 -1.3
BOLS Boljevac 2.27 19 ePn Pn 08 46 29.2 -0.3
BOLS eSg Sg 08 47 04.1 -1.3
THL Klokotos Trika 2.28 158 P Pn 08 46 29.9 +0.3
THL Klokotos Trika 2.28 158 P Pn 08 46 29.9 +0.3
PLG Polygyros 2.33 124 P Pn 08 46 30.8 +0.5
PLG S Sb 08 47 01.2 -1.5
PLG Polygyros 2.33 124 P Pn 08 46 30.8 +0.5
PLG S Sb 08 47 01.2 -1.5
PLG Polygyros 2.33 124 P Pb 08 46 32.3 -1.8
PLG AML AML 08 47 13.4
comp=N,885μm,0.8s
PLG AML AML 08 47 13.4
comp=E,1003μm,0.6s
BBLS Lazići 2.44 334 ⇑iPn Pn 08 46 32.0 +0.1
BBLS eSn Sn 08 47 03.1 +1.5
BBLS Lazići 2.44 334 ⇑iPn Pn 08 46 32.0 +0.1
BBLS eSn Sn 08 47 03.1 +1.5
DIVS Divibare 2.50 345 P Pn 08 46 32.2 -0.5
DIVS Divibare 2.50 345 ⇑iPn Pn 08 46 32.5 -0.2
DIVS eSg Sg 08 47 13.0 +0.3
DIVS Divibare 2.50 345 P Pn 08 46 32.2 -0.5
DIVS Divibare 2.50 345 ⇑iPn Pn 08 46 32.5 -0.2
DIVS eSg Sg 08 47 13.0 +0.3
DSL Palaion Diasel 2.56 177 P Pb 08 46 35.9 -2.1
DSL Palaion Diasel 2.56 177 P Pb 08 46 35.9 -2.1
TRUS Trudelj 2.56 352 ⇓iPn Pn 08 46 33.5 0.0
TRUS eSg Sg 08 47 14.0 -0.6
TRUS Trudelj 2.56 352 ⇓iPn Pn 08 46 33.5 0.0
TRUS eSg Sg 08 47 14.0 -0.6
SVIS Svilajnac 2.59 5 ePn Pn 08 46 34.3 +0.5
OUR Ouranopolis 2.69 119 P Pn 08 46 35.9 +0.7
OUR Ouranopolis 2.69 119 P Pn 08 46 35.9 +0.7
OUR Ouranopolis 2.69 119 P Pn 08 46 36.2 +1.0
OUR AML AML 08 47 25.2
comp=N,2086μm,1.2s
OUR AML AML 08 47 25.6
comp=E,1821μm,0.8s
PAIG Paliouri 2.74 129 P Pn 08 46 36.1 +0.2
PAIG Paliouri 2.74 129 P Pn 08 46 36.1 +0.2
PAIG Paliouri 2.74 129 P Pn 08 46 35.9 0.0
FYTO Fytoko, Volos 2.75 145 P Pn 08 46 36.3 +0.2
FYTO Fytoko, Volos 2.75 145 P Pn 08 46 36.3 +0.2
FYTO Fytoko, Volos 2.75 145 P Pn 08 46 37.6 +1.5
KUBS Kucevo 2.78 11 ePn Pn 08 46 35.1 -1.4
KUBS eSg Sg 08 47 19.5 -2.1
KUBS Kucevo 2.78 11 ePn Pn 08 46 35.1 -1.4
KUBS eSg Sg 08 47 19.5 -2.1
HAPS Han Pijesak,BI 2.79 330 ePn Pn 08 46 35.9 -0.9
KAVA Kavala 2.80 103 P Pn 08 46 37.3 +0.5
KAVA Kavala 2.80 103 P Pn 08 46 37.3 +0.5
KAVA Kavala 2.80 103 P Pn 08 46 37.2 +0.5
EVR Evrytania 2.85 166 P Pn 08 46 38.1 +0.5
EVR Evrytania 2.85 166 P Pn 08 46 38.1 +0.5
EVR Evrytania 2.85 166 P Pn 08 46 39.9 +2.3
EVR AML AML 08 47 41.2
comp=N,1262μm,1.8s
AGG Agios Georgios 2.88 157 P Pn 08 46 38.4 +0.6
AGG Agios Georgios 2.88 157 eP Pn 08 46 38.8 +1.0
AGG e 08 47 13.2
AGG Agios Georgios 2.88 157 P Pn 08 46 38.4 +0.6
AGG Agios Georgios 2.88 157 ePn Pn 08 46 38.8 +1.0
AGG eS Sn 08 47 13.2 +0.9
AGG Agios Georgios 2.88 157 P Pn 08 46 37.9 +0.1
AGG Agios Georgios 2.88 157 ePn Pn 08 46 38.8 +1.0
AGG eSn Sn 08 47 13.2 +0.9
XOR Xorichti 2.90 142 P Pn 08 46 38.4 +0.2
XOR Xorichti 2.90 142 P Pn 08 46 38.4 +0.2
XOR Xorichti 2.90 142 P Pn 08 46 38.0 -0.1
LKD2 Lefkada island 2.90 184 P Pn 08 46 38.2 0.0
LKD2 S Sn 08 47 15.2 +2.3
LKD2 Lefkada island 2.90 184 P Pn 08 46 39.3 +1.1
LKD2 S Sn 08 47 15.2 +2.3
LKD2 Lefkada island 2.90 184 P Pn 08 46 39.3 +1.1
TAR1 Taranto 2.97 248 i Pn Pn 08 46 40.8 +1.7
TEKS Tekeris 3.03 341 ePn Pn 08 46 40.0 0.0
TEKS eSg Sg 08 47 28.3 -1.4
TEKS Tekeris 3.03 341 ePn Pn 08 46 40.0 0.0
TEKS eSg Sg 08 47 28.3 -1.4
NOCI Noci 3.03 254 P Pn 08 46 41.5 +1.5
NOCI Noci 3.03 254 P Pn 08 46 41.5 +1.5
BAI Bari 3.08 260 ePn Pn 08 46 42.1 +1.5
PDO Prodromos 3.09 176 P Pn 08 46 41.3 +0.5
PDO Prodromos 3.09 176 P Pn 08 46 41.3 +0.5
PDO Prodromos 3.09 176 P Pn 08 46 42.8 +2.0
PVO Paravola 3.10 171 P Pn 08 46 41.7 +0.8
PVO Paravola 3.10 171 P Pn 08 46 41.7 +0.8
PVO Paravola 3.10 171 P Pn 08 46 43.6 +2.6
MDVR Moldovita 3.15 11 ⇓iP Pn 08 46 41.6 0.0
MDVR Moldovita 3.15 11 ⇓iP Pn 08 46 41.6 0.0
MDVR S Sn 08 47 20.9 +1.9
ANX Ano Chora 3.19 166 P Pn 08 46 42.7 +0.5
ANX Ano Chora 3.19 166 P Pn 08 46 42.7 +0.5
SKIA Skiathos 3.19 141 P Pn 08 46 42.2 +0.1
SKIA Skiathos 3.19 141 P Pn 08 46 42.2 +0.1
SKIA Skiathos 3.19 141 P Pn 08 46 42.1 0.0
SG1 Sgolgore (BA) 3.30 257 ePn Pn 08 46 45.0 +1.4
MATE Matera 3.34 253 ⇑iP Pn 08 46 43.9 -0.2
MATE Matera 3.34 253 S Sn 08 47 23.6 +0.1
MATE Matera 3.34 253 ⇑iP Pn 08 46 43.9 -0.2
EFP Efpalio 3.35 166 P Pn 08 46 45.1 +0.9
EFP Efpalio 3.35 166 P Pn 08 46 45.1 +0.9
EFP Efpalio 3.35 166 P Pn 08 46 47.5 +3.2
AOS Alonnisos 3.39 137 P Pn 08 46 44.9 +0.1
AOS Alonnisos 3.39 137 P Pn 08 46 44.9 +0.1
AOS Alonnisos 3.39 137 P Pn 08 46 44.6 -0.2
SRE Strehaia 3.42 29 ⇓iP Pn 08 46 45.6 +0.4
SRE Strehaia 3.42 29 ⇓iP Pn 08 46 45.6 +0.4
KALE Kalithea 3.43 164 P Pn 08 46 46.1 +0.7
KALE Kalithea 3.43 164 P Pn 08 46 46.1 +0.7
KALE Kalithea 3.43 164 P Pn 08 46 46.0 +0.5
KALE AML AML 08 47 29.7
comp=E,870μm,0.5s
KALE AML AML 08 47 39.6
comp=N,752μm,0.5s
LKR Lokris 3.43 151 P Pn 08 46 46.3 +0.9
LKR Lokris 3.43 151 P Pn 08 46 46.3 +0.9
LKR Lokris 3.43 151 P Pn 08 46 46.3 +0.9
TRIZ Trizonia 3.44 165 P Pn 08 46 46.6 +1.1
DSF Desfina 3.50 159 P Pn 08 46 46.7 +0.3
DSF Desfina 3.50 159 P Pn 08 46 46.7 +0.3
DSF Desfina 3.50 159 P Pn 08 46 46.4 0.0
AXS Araxos 3.51 174 P Pn 08 46 47.1 +0.7
AXS Araxos 3.51 174 P Pn 08 46 47.1 +0.7
AXS Araxos 3.51 174 P Pn 08 46 48.3 +1.9
VLS Valsamata 3.52 184 P Pn 08 46 47.0 +0.4
VLS Valsamata 3.52 184 P Pn 08 46 47.5 +0.9
CDT Castel del Mon 3.54 262 ePn Pn 08 46 47.9 +1.0
LAKA Lakka 3.54 166 P Pn 08 46 47.5 +0.5
LAKA Lakka 3.54 166 P Pn 08 46 47.5 +0.5
LAKA Lakka 3.54 166 P Pn 08 46 50.3 +3.3
FGSL Fruska Gora 3.56 347 ⇑iPn Pn 08 46 47.1 -0.1
FGSL eSn Sn 08 47 27.7 -1.4
FRGS Fruska Gora 3.56 347 ⇑iPn Pn 08 46 47.1 -0.1
FRGS eSn Sn 08 47 27.7 -1.4
KFL Anninata 3.58 182 P Pn 08 46 48.0 +0.6
KFL Anninata 3.58 182 P Pn 08 46 48.0 +0.6
KFL Anninata 3.58 182 P Pn 08 46 48.0 +0.6
DOB Doboj 3.67 327 ePn Pn 08 46 49.3 +0.6
SMTH Samothraki Isl 3.70 108 P Pn 08 46 49.3 +0.2
SMTH Samothraki Isl 3.70 108 P Pn 08 46 49.3 +0.2
SMTH Samothraki Isl 3.70 108 P Pn 08 46 48.5 -0.6
LIA Limnos Island 3.71 117 P Pn 08 46 49.8 +0.6
LIA Limnos Island 3.71 117 P Pn 08 46 49.8 +0.6
MS1 Monte Sant'Ang 3.72 272 ePn Pn 08 46 50.1 +0.7
PROD Prodromos 3.75 155 P Pn 08 46 50.0 +0.1
PROD Prodromos 3.75 155 P Pn 08 46 50.0 +0.1
KLV Kalavryta, Ach 3.76 165 P Pn 08 46 50.5 +0.4
KLV Kalavryta, Ach 3.76 165 P Pn 08 46 50.5 +0.4
KLV Kalavryta, Ach 3.76 165 P Pn 08 46 50.9 +0.8
DRO Drossia 3.78 170 P Pn 08 46 50.7 +0.4
DRO Drossia 3.78 170 P Pn 08 46 50.7 +0.4
DRO Drossia 3.78 170 P Pn 08 46 51.9 +1.6
GUR Goura 3.91 163 P Pn 08 46 52.5 +0.4
GUR Goura 3.91 163 P Pn 08 46 52.5 +0.4
VIL2 Platees 3.92 152 P Pn 08 46 53.1 +1.0
ALN Alexandroupoli 3.95 100 P Pn 08 46 53.2 +0.7
ALN Alexandroupoli 3.95 100 P Pn 08 46 53.2 +0.7
ALN Alexandroupoli 3.95 100 P Pn 08 46 52.7 +0.1
BZS Buzias 3.96 7 ⇓iP Pn 08 46 52.2 -0.5
BZS Buzias 3.96 7 ⇑iPn Pn 08 46 51.9 -0.8
BZS Buzias 3.96 7 ⇑iPn Pn 08 46 51.9 -0.8
BZS Buzias 3.96 7 ⇓iP Pn 08 46 52.2 -0.5
BZS S Sn 08 47 40.2 +1.3
VILL Villia 3.98 152 P Pn 08 46 53.9 +0.9
VILL Villia 3.98 152 P Pn 08 46 53.9 +0.9
ZKS Zakynthos 3.99 181 P Pn 08 46 54.0 +0.9
ZKS Zakynthos 3.99 181 P Pn 08 46 54.0 +0.9
LTK Loutraki 3.99 156 P Pn 08 46 53.8 +0.7
LTK Loutraki 3.99 156 P Pn 08 46 53.8 +0.7
LTK Loutraki 3.99 156 P Pn 08 46 53.5 +0.4
EREA Eretria 4.00 144 P Pn 08 46 54.3 +1.0
EREA Eretria 4.00 144 P Pn 08 46 54.3 +1.0
EREA Eretria 4.00 144 P Pn 08 46 55.0 +1.7
EREA AML AML 08 48 31.5
comp=E,316μm,1.3s
EREA AML AML 08 48 35.5
comp=N,307μm,1.3s
TIP Timpagrande 4.04 233 ⇓iP Pn 08 46 54.1 +0.2
TIP Timpagrande 4.04 233 P Pn 08 46 54.0 +0.2
TIP Timpagrande 4.04 233 P Pn 08 46 54.0 +0.2
TIP eSn Sn 08 47 41.8 +0.8
TIP Timpagrande 4.04 233 P Pn 08 46 52.6 -1.3
TIP Timpagrande 4.04 233 ePn Pn 08 46 53.8 -0.1
TIP eSn Sn 08 47 41.8 +0.8
BLY Banja Luka 4.09 320 ⇓iP Pn 08 46 56.0 +1.5
BLY Banja Luka 4.09 320 S Sg 08 48 05.9 +2.2
BLY Banja Luka 4.09 320 ⇓iP Pn 08 46 56.0 +1.5
BLY Banja Luka 4.09 320 ⇑iPn Pn 08 46 56.4 +1.9
AMT Artemida-Makis 4.20 171 P Pn 08 46 57.1 +1.1
AMT Artemida-Makis 4.20 171 P Pn 08 46 57.1 +1.1
AMT Artemida-Makis 4.20 171 P Pn 08 46 58.6 +2.7
CUC Castrocucco 4.22 248 ePn Pn 08 46 58.0 +1.7
CUC eSn Sn 08 47 44.3 -1.0
CUC Castrocucco 4.22 248 ePn Pn 08 46 58.0 +1.7
CUC eSn Sn 08 47 44.4 -1.0
LOT Lotru 4.29 28 ⇑iP Pn 08 46 57.8 +0.4
LOT Lotru 4.29 28 ⇑iP Pn 08 46 57.8 +0.4
ATHU Athens Univers 4.33 148 P Pn 08 46 56.0 -1.8
EDRB Edirne 4.37 86 P Pn 08 46 58.8 +0.5
EDRB Edirne 4.37 86 P Pn 08 46 58.8 +0.5
VLY Voula,Athens 4.43 149 P Pn 08 47 00.1 +0.9
VLY Voula,Athens 4.43 149 P Pn 08 46 59.7 +0.5
VLY Voula,Athens 4.43 149 P Pn 08 46 59.7 +0.5
DEV Deva 4.43 18 ⇑iP Pn 08 47 01.1 +1.9
DEV Deva 4.43 18 ⇑iP Pn 08 47 01.1 +1.9
DID Didima 4.55 156 P Pn 08 47 01.5 +0.7
DID Didima 4.55 156 P Pn 08 47 01.5 +0.7
DID Didima 4.55 156 P Pn 08 47 01.8 +1.0
ARR Arges 4.57 35 ⇓iP Pn 08 47 01.9 +0.8
ARR Arges 4.57 35 ⇓iP Pn 08 47 01.9 +0.8
ARR S Sn 08 47 54.7 +0.7
ITM Ithomi 4.57 170 P Pn 08 47 02.0 +0.9
ITM Ithomi 4.57 170 P Pn 08 47 02.0 +0.9
UDBI Udbina 4.71 309 i Pn Pn 08 47 05.5 +2.4
UDBI Sn Sn 08 47 59.6 +2.0
UDBI Udbina 4.71 309 i Pn Pn 08 47 05.5 +2.4
UDBI Sn Sn 08 47 59.6 +2.0
VOIR 4.81 37 ⇓iP Pn 08 47 06.0 +1.6
VOIR 4.81 37 ⇓iP Pn 08 47 06.0 +1.6
CEL Celeste 5.15 230 ePn Pn 08 47 12.6 +3.5
CEL eSn Sn 08 48 08.6 +0.2
CEL Celeste 5.15 230 ePn Pn 08 47 12.7 +3.5
CEL eSn Sn 08 48 08.6 +0.2
DRGR 5.26 14 ⇑iP Pn 08 47 11.3 +0.6
DRGR 5.26 14 ⇑iP Pn 08 47 11.3 +0.6
NVLJ Novalja 5.27 305 i Pn Pn 08 47 11.4 +0.8
NVLJ Sn Sn 08 48 12.1 +1.0
NVLJ Novalja 5.27 305 i Pn Pn 08 47 11.4 +0.8
NVLJ Sn Sn 08 48 12.1 +1.0
MLR Muntele Rosu 5.28 42 Pn Pn 08 47 12.4 +1.6
comp=N,1.4nm,0.3s,baz=235,slow=1.1,SNR=32
MLR Sn Sn 08 48 09.8 -1.7
comp=N,0.5nm,0.3s,baz=276,slow=19,SNR=3.6
MLR Lg Lg 08 48 37.2
baz=254,slow=20,SNR=4.5
MLR Muntele Rosu 5.28 42 ⇑iP Pn 08 47 12.4 +1.6
ISR Istrita 5.35 48 ⇑iP Pn 08 47 13.4 +1.6
DOPR Dopca 5.37 36 ⇑iP Pn 08 47 02.6 -9.4
CJR Cluj-Napoca 5.38 20 ⇑iP Pg 08 47 34.0 -1.4
BOJS Bojanci 5.60 315 i Pn Pn 08 47 17.8 +2.5
BOJS i Sn Sn 08 48 20.9 +1.5
BOJS Bojanci 5.60 315 i Pn Pn 08 47 17.8 +2.6
BOJS i Sn Sn 08 48 20.9 +1.5
AQU L'Aquila 5.63 279 eP Pn 08 47 17.7 +2.0
AQU L'Aquila 5.63 279 eP Pn 08 47 17.7 +2.0
AQU L'Aquila 5.63 279 ePn Pn 08 47 17.7 +2.0
KYTH Kithira 5.67 162 P Pn 08 47 18.6 +2.4
KYTH Kithira 5.67 162 P Pn 08 47 18.6 +2.4
CRES Cresnjev 5.72 318 ePn Pn 08 47 18.0 +1.2
APE Apeiranthos 5.84 141 eP Pn 08 47 18.3 -0.3
APE Apeiranthos 5.84 141 eP Pn 08 47 18.3 -0.3
PLOR Plostina 5.88 43 ⇑iP Pn 08 47 20.8 +1.7
VRI Vrincioaia 5.93 43 ⇓iP Pn 08 47 21.6 +1.8
VRI Vrincioaia 5.93 43 P Pn 08 47 21.8 +2.0
VRI Vrincioaia 5.93 43 P Pn 08 47 21.8 +2.0
BUD Budapest 5.95 348 ⇓ePn Pn 08 47 20.3 +0.3
BUD eSn Sn 08 48 29.1 +1.2
BUD Budapest 5.95 348 P Pn 08 47 20.4 +0.4
BUD Budapest 5.95 348 P Pn 08 47 20.4 +0.4
BUD eSn Sn 08 48 29.1 +1.2
CSKK Cs˘‡kako 5.98 342 epPn Pn 08 47 23.1 +2.7
CSKK eSn Sn 08 48 25.1 -3.6
CSKK Cs˘‡kako 5.98 342 ePn Pn 08 47 23.1 +2.7
ANKY Antikythira Is 6.11 161 P Pn 08 47 23.1 +0.9
ANKY Antikythira Is 6.11 161 P Pn 08 47 23.1 +0.9
TIRR Tirgusor 6.15 61 ⇓iP Pn 08 47 23.4 +0.6
CEY Cerknica 6.20 313 ePn Pn 08 47 24.1 +0.6
PSZ Piszkesteto 6.27 354 ⇓iP Pn 08 47 24.9 +0.4
PSZ Piszkesteto 6.27 354 ⇓iP Pn 08 47 24.3 -0.2
PSZ eSn Sn 08 48 35.5 -0.5
PSZ Piszkesteto 6.27 354 eP Pn 08 47 24.8 +0.3
PSZ Piszkesteto 6.27 354 eP Pn 08 47 24.8 +0.3
PSZ eSn Sn 08 48 35.5 -0.5
PSZ Piszkesteto 6.27 354 ePn Pn 08 47 24.8 +0.3
VNDS Vrh nad Dolski 6.29 317 ⇓iPn Pn 08 47 26.3 +1.6
VNDS Vrh nad Dolski 6.29 317 ⇓iPn Pn 08 47 26.3 +1.6
LJU Ljubljana 6.34 316 ePn Pn 08 47 27.0 +1.6
LJU Ljubljana 6.34 316 ePn Pn 08 47 26.5 +1.1
PERS Pernice 6.46 322 i Pn Pn 08 47 27.1 0.0
PERS i Sn Sn 08 48 37.8 -2.9
PERS Pernice 6.46 322 i Pn Pn 08 47 27.1 0.0
PERS i Sn Sn 08 48 37.8 -2.9
JAVS Javornik 6.49 313 i Pn Pn 08 47 28.7 +1.1

JAVS *i* Sn **Sn** **08 48 40.7 -0.8**
JAVS Javornik 6.49 313 *i* Pn **Pn** **08 47 28.7 +1.1**
JAVS *i* Sn **Sn** **08 48 40.7 -0.8**
SOKA Soboth 6.53 322 *i* Pn **Pn** **08 47 28.5 +0.4**
comp=N,13nm,0.6s,SNR=18
VAE Valguarnera 6.54 232 Sn **Sn** **08 48 43.5 +0.8**
comp=N,1.7nm,0.3s,baz=342,slow=20,SNR=2.0
TRI Trieste 6.55 310 *e*P **Pn** **08 47 28.4 +0.1**
TRI Trieste 6.55 310 *e*P **Pn** **08 47 28.4 +0.1**
TRI Trieste 6.55 310 *e*Pn **Pn** **08 47 28.4 +0.1**
OBKA Obir 6.64 319 *i* Pn **Pn** **08 47 31.7 +2.1**
comp=N,3.1nm,0.3s,SNR=6.6
BURAR Bucovina Array 6.67 26⇑ *i*P **Pn** **08 47 31.5 +1.5**
BURAR Bucovina Array 6.67 26 P **Pn** **08 47 31.5 +1.5**
VOJS Vojsko 6.68 313 *i* Pn **Pn** **08 47 31.4 +1.4**
VOJS Vojsko 6.68 313 *i* Pn **Pn** **08 47 31.5 +1.4**
SOP Sopron 6.75 334 *e*Pn **Pn** **08 47 26.3 -4.6**
ARSA Arzberg 6.76 327 *e*Pn **Pn** **08 47 31.4 +0.2**
comp=N,10nm,0.4s,SNR=15
ARSA *i* Sn **Sn** **08 48 44.9 -3.1**
comp=N,18nm,0.6s
KECS Kecovo 6.80 358 *e*P **Pn** **08 47 33.3 +1.6**
KECS Kecovo 6.80 358 *e*P **Pn** **08 47 33.3 +1.6**
KECS *e*Sn **Sn** **08 48 49.7 +0.8**
KECS Kecovo 6.80 358 *e*PN **Pn** **08 47 33.2 +1.6**
KECS *e*SN **Sn** **08 48 49.6 +0.7**
KECS *e*LG Lg 08 48 55.1
VYHS Vyhne 6.96 349 *e*P **Pn** **08 47 34.5 +0.6**
VYHS *e* 08 48 49.1
VYHS Vyhne 6.96 349 *e*P **Pn** **08 47 34.5 +0.6**
VYHS Vyhne 6.96 349 *e*PN **Pn** **08 47 34.5 +0.6**
VYHS *e*SN **Sn** **08 48 49.1 -3.8**
VYHS *e*LG Lg 08 49 01.0
UZH Uzhgorod 7.01 8 *e*P **Pn** **08 47 37.0 +2.5**
UZH *e*S **Sn** **08 48 56.4 +2.4**
UZH Uzhgorod 7.01 8 *e*P **Pn** **08 47 37.0 +2.5**
UZH *e*S **Sn** **08 48 56.4 +2.4**
SFI Santa Sofia 7.02 291 P **Pn** **08 47 37.4 +2.6**
SFI Santa Sofia 7.02 291 P **Pn** **08 47 37.4 +2.6**
IDI Anoyia 7.11 153 Pn **Pn** **08 47 35.5 -0.5**
comp=N,1.0nm,0.3s,baz=317,slow=14,SNR=6.5
IDI Sn **Sn** **08 48 53.8 -2.9**
comp=N,1.9nm,0.3s,baz=308,slow=19,SNR=3.2
IDI LR LR 08 51 15.7
comp=N,72nm,18.8s,baz=284,slow=46
IDI Anoyia 7.11 153⇑ *i*P **Pn** **08 47 35.8 -0.3**
IDI Anoyia 7.11 153 S **Sn** **08 48 54.7 -2.0**
IDI Anoyia 7.11 153⇑ *i*P **Pn** **08 47 35.8 -0.3**
IDI Anoyia 7.11 153 *e*Pn **Pn** **08 47 37.3 +1.2**
IDI Anoyia 7.11 153 *e*Pn **Pn** **08 47 37.3 +1.2**
IDI Sn **Sn** **08 48 53.8 -2.9**
MYKA Terra Mystica 7.19 316 *i* Pn **Pn** **08 47 39.1 +2.0**
comp=N,5.7nm,0.4s
MYKA Terra Mystica 7.19 316 Pn **Pn** **08 47 39.1 +2.0**
comp=N,5.7nm,0.4s
CONA Conrad Observa 7.20 332 *i* Pn **Pn** **08 47 37.3 +0.1**
comp=N,1.7nm,0.3s
CONA Conrad Observa 7.20 332 Pn **Pn** **08 47 37.3 +0.1**
comp=N,1.7nm,0.3s
CLTB Caltabellotta 7.21 238 *e*Pn **Pn** **08 47 38.5 +1.0**
CLTB Caltabellotta 7.21 238 *e*Pn **Pn** **08 47 38.5 +1.0**
CRVS Cervenica-Dubn 7.22 3 *e*P **Pn** **08 47 37.7 +0.2**
CRVS Cervenica-Dubn 7.22 3 *e*P **Pn** **08 47 37.7 +0.2**
CRVS Cervenica-Dubn 7.22 3 *e*PN **Pn** **08 47 37.7 +0.2**
KOLS Kolonicke sedl 7.31 7 *e*P **Pn** **08 47 39.6 +0.9**
KOLS MLR MLR
comp=Z,100nm,2.0s
KOLS Kolonicke sedl 7.31 7 *e*P **Pn** **08 47 39.6 +0.9**
comp=Z,100nm,2.0s
KOLS Kolonicke sedl 7.31 7 *e*PN **Pn** **08 47 39.6 +0.9**
KOLS Kolonicke sedl 7.31 7 *e*SG **Sg** **08 49 51.3 +4.6**
KOLS *e*LG Lg 08 50 00.9
LAST Lasithi 7.44 150 *e*Pn **Pn** **08 47 41.1 +0.5**
LAST Lasithi 7.44 150 *e*Pn **Pn** **08 47 41.1 +0.5**
LANS Liptovska Anna 7.53 353 *e*P **Pn** **08 47 43.9 +2.2**
LANS Liptovska Anna 7.53 353 *e*P **Pn** **08 47 43.9 +2.2**
LANS Liptovska Anna 7.53 353 *e*PN **Pn** **08 47 43.9 +2.2**
KBA Koelnbreinsper 7.64 317 *i* Pn **Pn** **08 47 45.0 +1.7**
comp=Z,7.6nm,0.5s,SNR=12
KBA Koelnbreinsper 7.64 317 P **Pn** **08 47 45.4 +2.1**
KBA pmax pmax
comp=Z,25nm,1.2s
KBA Koelnbreinsper 7.64 317 Pn **Pn** **08 47 45.0 +1.7**
comp=Z,7.6nm,0.5s,SNR=12
KBA Koelnbreinsper 7.64 317 P **Pn** **08 47 45.4 +2.1**
comp=Z,25nm,1.2s
STHS Stebnicka Huta 7.73 2 *e*P **Pn** **08 47 45.7 +1.2**
STHS Stebnicka Huta 7.73 2 *e*P **Pn** **08 47 45.7 +1.2**
STHS Stebnicka Huta 7.73 2 *e*PN **Pn** **08 47 45.7 +1.2**
STHS *e*LG Lg 08 50 36.6
NIE Niedzica 7.74 357 *e*Pn **Pn** **08 47 46.8 +2.2**
NIE Niedzica 7.74 357 *e*P **Pn** **08 47 46.8 +2.2**
NIE Niedzica 7.74 357 *e*P **Pn** **08 47 46.8 +2.2**
MOA Molln 7.76 325 *i* Pn **Pn** **08 47 47.0 +2.1**
comp=Z,1.8nm,0.3s
MOA *e*Sn **Sn** **08 49 10.9 -1.7**
comp=Z,7.2nm,0.4s
MOA Molln 7.76 325 Pn **Pn** **08 47 47.0 +2.1**
comp=Z,1.8nm,0.3s
KARP Karpathos 7.84 139 *e*Pn **Pn** **08 47 48.9 +2.8**
KARP Karpathos 7.84 139 *e*Pn **Pn** **08 47 48.9 +2.8**
ABTA Abfaltersbach 7.87 313 *i* Pn **Pn** **08 47 47.4 +1.0**
comp=Z,13nm,0.4s,SNR=20
ABTA Abfaltersbach 7.87 313 Pn **Pn** **08 47 47.4 +1.0**
comp=Z,13nm,0.4s,SNR=20
VLC Villacollemand 8.11 291 *e*Pn **Pn** **08 47 51.5 +1.8**
VLC Villacollemand 8.11 291 *e*Pn **Pn** **08 47 51.5 +1.8**
VRAC Vranov 8.20 340 Pn **Pn** **08 47 51.8 +0.9**
comp=Z,0.4nm,0.3s,baz=169,slow=12,SNR=12
VRAC Sn **Sn** **08 49 19.1 -4.1**
comp=Z,0.3nm,0.3s,baz=131,slow=20,SNR=2.0
VRAC LR LR 08 51 42.6
comp=Z,72nm,18.3s,baz=155,slow=43
VRAC Vranov 8.20 340⇑ *i*P **Pn** **08 47 52.0 +1.1**
ISP Isparta 8.35 114 *de*P **Pn** **08 47 53.0 -0.1**
OKC Ostrava-Krasne 8.38 348 AMS AMS 08 51 30.0
comp=Z,400nm,8.1s
MORC Moravsky Berou 8.42 345 *e*P **Pn** **08 47 56.0 +2.0**
MORC Moravsky Berou 8.42 345 *e*Pn **Pn** **08 47 55.2 +1.2**
MORC Moravsky Berou 8.42 345 *e*P **Pn** **08 47 56.0 +2.0**
MORC Moravsky Berou 8.42 345 *e*Pn **Pn** **08 47 56.0 +2.0**
OJC Ojcow 8.57 355 *e*Pn **Pn** **08 47 57.6 +1.7**
OJC Ojcow 8.57 355 *e*P **Pn** **08 47 58.0 +2.1**
OJC *e* 08 49 43.0
OJC Ojcow 8.57 355 *e*Pn **Pn** **08 47 57.6 +1.7**
OJC Ojcow 8.57 355 *e*P **Pn** **08 47 58.0 +2.1**
OJC Ojcow 8.57 355 *e*Pn **Pn** **08 47 58.0 +2.1**
OJC *e*Sn Sn 08 49 43.0 +11
WTTA Wattenberg 8.66 313 *i* Pn **Pn** **08 48 00.2 +2.9**
comp=Z,10nm,0.4s
WTTA *i* Sn **Sn** **08 49 33.8 -1.0**
comp=Z,23nm,0.6s
WTTA Wattenberg 8.66 313 Pn **Pn** **08 48 00.2 +2.9**
comp=Z,10nm,0.4s
WTTA Sn **Sn** **08 49 33.8 -1.0**
comp=Z,23nm,0.6s
GERES GERESS Array B 8.77 327 Pn **Pn** **08 47 59.9 +1.1**
comp=Z,0.2nm,0.3s,baz=145,slow=14,SNR=14
GERES Sn **Sn** **08 49 31.5 -6.0**
comp=Z,0.1nm,0.3s,baz=143,slow=25,SNR=2.4
GERES Lg Lg 08 50 29.7
baz=158,slow=26,SNR=2.4
KRLC Kraliky 8.87 342 *e*PN **Pn** **08 48 02.0 +2.0**
KRLC Kraliky 8.87 342 *e*P **Pn** **08 48 02.0 +2.0**
KRLC Kraliky 8.87 342 Pn **Pn** **08 48 02.0 +2.0**
PGF Pioggiola 8.89 280 *e*Pn **Pn** **08 48 01.4 +0.9**
PGF Pioggiola 8.89 280 *e*P **Pn** **08 48 01.4 +0.9**
PGF Pioggiola 8.89 280 *e*Pn **Pn** **08 48 01.4 +0.9**
PGF Pioggiola 8.89 280 *e*Pn **Pn** **08 48 01.4 +0.9**
MOTA Moosalm 9.00 312 *i* Pn **Pn** **08 48 04.1 +2.1**
comp=Z,23nm,0.7s,SNR=16
MOTA *i* Sn **Sn** **08 49 43.0 -0.2**
comp=Z,20nm,0.7s
MOTA Moosalm 9.00 312 Pn **Pn** **08 48 04.1 +2.1**
comp=Z,23nm,0.7s,SNR=16
MOTA Sn **Sn** **08 49 43.0 -0.2**
comp=Z,20nm,0.7s
FETA Feichten 9.03 310 *i* Pn **Pn** **08 48 05.0 +2.6**
FETA Feichten 9.03 310 Pn **Pn** **08 48 05.0 +2.6**
VSL Villasalto 9.04 260 *e*Pn **Pn** **08 48 04.4 +1.9**
VSL Villasalto 9.04 260 *e*Pn **Pn** **08 48 04.4 +1.9**
KHC Kasperske Hory 9.05 328 *e*PN **Pn** **08 48 04.1 +1.5**
KHC *ex* x 08 48 25.3

KHC *e*SN **Sn** **08 49 40.7 -3.5**
KHC AMS AMS 08 51 40.0
comp=Z,400nm,11.0s
KHC Kasperske Hory 9.05 328 *e*P **Pn** **08 48 04.1 +1.5**
KHC *e* 08 49 40.7
KHC MLR MLR
comp=Z,400nm,11.0s
KHC Kasperske Hory 9.05 328 Pn **Pn** **08 48 04.1 +1.5**
KHC Kasperske Hory 9.05 328 *e*Pn **Pn** **08 48 04.0 +1.5**
FUORN Ofenpass-Fuorn 9.10 306 *e*Pn **Pn** **08 48 05.2 +1.8**
FUORN Ofenpass-Fuorn 9.10 306 *e*Pn **Pn** **08 48 05.2 +1.8**
DPC Dobruska-Polom 9.23 341 *e*PN **Pn** **08 48 05.7 +0.7**
DPC AMS AMS 08 52 00.0
comp=Z,300nm,10.2s
DPC Dobruska-Polom 9.23 341 *e*P **Pn** **08 48 05.7 +0.7**
DPC MLR MLR
comp=Z,300nm,10.2s
DPC Dobruska-Polom 9.23 341 Pn **Pn** **08 48 05.7 +0.7**
GOPC GO Pecny, Ondr 9.27 335 AMS AMS 08 52 00.0
comp=Z,400nm,9.3s
DAVOX Davos/Dischmat 9.41 306 Pn **Pn** **08 48 08.9 +1.3**
comp=Z,0.8nm,0.3s,baz=144,slow=19,SNR=6.1
DAVOX Sn **Sn** **08 49 50.2 -3.1**
comp=Z,0.5nm,0.3s,baz=196,slow=20,SNR=2.2
DAVOX Lg Lg 08 50 46.5
comp=Z,0.0nm,0.3s,baz=184,slow=18,SNR=3.0
DAVOX LR LR 08 52 55.1
comp=Z,81nm,20.0s,baz=120,slow=45
PRU Pruhonice 9.41 334 AMS AMS 08 52 00.0
comp=Z,500nm,9.4s
UPC Upice 9.45 341 AMS AMS 08 52 10.0
comp=Z,300nm,9.6s
TUE Stuetta 9.59 304 *e*Pn **Pn** **08 48 12.7 +2.5**
TUE Stuetta 9.59 304 *e*Pn **Pn** **08 48 12.7 +2.5**
BRTR Keskin Array B 9.87 97 Pn **Pn** **08 48 16.4 +2.5**
comp=Z,0.1nm,0.3s,baz=276,slow=12,SNR=3.5
PVCC Panska Ves 9.87 336 AMS AMS 08 52 20.0
comp=Z,300nm,8.6s
SBF Sospel 10.14 287 *e*Pn **Pn** **08 48 17.0 -0.6**
SBF *e*Sn **Sn** **08 50 02.9 -8.2**
comp=Z,25nm,0.8s
SBF Sospel 10.14 287 *e*P **Pn** **08 48 17.0 -0.6**
SBF *e* 08 50 02.9
SBF Sospel 10.14 287 *e*Pn **Pn** **08 48 17.0 -0.6**
SBF Sospel 10.14 287 *e*Pn **Pn** **08 48 17.0 -0.6**
SBF *e*Sn **Sn** **08 50 02.9 -8.2**
BRG Berggiesshubel 10.37 335 SG Sn 08 50 35.5 +19
comp=Z,7.3nm,1.2s
NKC Novy Kostel 10.37 328 AMS AMS 08 52 40.0
comp=Z,500nm,8.4s
FRF La Foret Royal 10.68 285 *e*Pn **Pn** **08 48 22.9 -1.9**
FRF *e*Sn **Sn** **08 50 15.5 -8.6**
comp=Z,9.4nm,0.8s
FRF La Foret Royal 10.68 285 *e*P **Pn** **08 48 22.9 -1.9**
FRF *e* 08 50 15.5
FRF La Foret Royal 10.68 285 *e*Pn **Pn** **08 48 22.9 -1.9**
FRF *e*Sn **Sn** **08 50 15.5 -8.6**
KIEV Kiev 10.68 30⇑ *e*P **Pn** **08 48 25.5 +0.7**
KIEV Kiev 10.68 30 *e*P **Pn** **08 48 25.5 +0.7**
AKASG Malin Array Be 10.69 30 Pn **Pn** **08 48 27.5 +2.5**
comp=Z,1.0nm,0.3s,baz=215,slow=12,SNR=4.3
AKASG Malin Array Be 10.69 30 *i* P **Pn** **08 48 28.7 +3.7**
MBDF Montbardon 10.76 291 *e*Pn **Pn** **08 48 24.3 -1.8**
MBDF Montbardon 10.76 291 *e*P **Pn** **08 48 24.3 -1.8**
MBDF Montbardon 10.76 291 *e*Pn **Pn** **08 48 24.3 -1.8**
MBDF Montbardon 10.76 291 *e*Pn **Pn** **08 48 24.3 -1.8**
LMR La Mourre 10.76 284 *e*Pn **Pn** **08 48 24.2 -1.7**
LMR *e*Sn **Sn** **08 50 17.5 -8.6**
comp=Z,4.5nm,0.5s
LMR La Mourre 10.76 284 *e*P **Pn** **08 48 24.2 -1.7**
LMR *e* 08 50 17.5
LMR La Mourre 10.76 284 *e*Pn **Pn** **08 48 24.2 -1.7**
LMR La Mourre 10.76 284 *e*Pn **Pn** **08 48 24.2 -1.7**
LMR *e*Sn **Sn** **08 50 17.5 -8.6**
KEST Kesra 10.81 240 Pn **Pn** **08 48 31.0 +4.2**
comp=Z,0.1nm,0.3s,baz=20,slow=15,SNR=2.4
SENIN Lac Senin/Sane 10.85 300 *e*Pn **Pn** **08 48 28.5 +1.1**
SENIN Lac Senin/Sane 10.85 300 *e*Pn **Pn** **08 48 28.5 +1.1**
LPG La Plagne 10.95 295 *e*Pn **Pn** **08 48 27.0 -1.8**
LPG *e*Sn Sn 08 50 22.2 -9.0
comp=Z,26nm,0.8s
LPG La Plagne 10.95 295 *e*P **Pn** **08 48 27.0 -1.8**
LPG *e* 08 50 22.2
LPG La Plagne 10.95 295 *e*Pn **Pn** **08 48 27.0 -1.8**
LPG *e*Sn Sn 08 50 22.2 -9.0
LPL La Plagne 10.97 295 *e*Pn **Pn** **08 48 27.2 -1.8**
LPL *e*Sn Sn 08 50 22.4 -9.2
comp=Z,45nm,0.9s
LPL La Plagne 10.97 295 *e*P **Pn** **08 48 27.2 -1.8**
LPL *e* 08 50 22.4
LPL La Plagne 10.97 295 *e*Pn **Pn** **08 48 27.2 -1.8**
LPL La Plagne 10.97 295 *e*Pn **Pn** **08 48 27.2 -1.8**
LPL *e*Sn Sn 08 50 22.4 -9.2
CLL Collm 11.05 333 *e*Sn Sn 08 50 17.0 -16
CLL *e*Sb 08 50 59.0
CLL *e*Sg 08 51 51.0
CLL Lmax 08 53 00.0
BFO Black Forest 11.10 311 *i* P Pn 08 48 35.7 +5.1
BFO Black Forest 11.10 311 *e*Pn **Pn** **08 48 32.8 +2.2**
BFO Black Forest 11.10 311 *e*Pn **Pn** **08 48 32.8 +2.2**
ORIF Oris-en-Rattie 11.42 291 *e*Pn **Pn** **08 48 33.2 -1.8**
ORIF *e*Sn **Sn** **08 50 34.0 -8.4**
comp=Z,12nm,0.7s
ORIF Oris-en-Rattie 11.42 291 *e*P **Pn** **08 48 33.2 -1.8**
ORIF *e* 08 50 34.0
ORIF Oris-en-Rattie 11.42 291 *e*Pn **Pn** **08 48 33.2 -1.8**
ORIF Oris-en-Rattie 11.42 291 *e*Pn **Pn** **08 48 33.2 -1.8**
ORIF *e*Sn **Sn** **08 50 34.0 -8.4**
SMRF Simiane la Rot 11.49 287 *e*Pn **Pn** **08 48 34.2 -1.8**
SMRF *e*Sn Sn 08 50 34.7 -9.4
comp=Z,1.2nm,0.1s
SMRF Simiane la Rot 11.49 287 *e*Pn **Pn** **08 48 34.2 -1.8**
SMRF Simiane la Rot 11.49 287 *e*Pn **Pn** **08 48 34.2 -1.8**
SMRF *e*Sn Sn 08 50 34.7 -9.4
HINF Hinteralfeld 11.71 306 *e*Pn **Pn** **08 48 37.6 -1.4**
HINF *e*Sn Sn 08 50 39.5 -10
comp=Z,9.1nm,0.6s
HINF Hinteralfeld 11.71 306 *e*P **Pn** **08 48 37.6 -1.4**
HINF Hinteralfeld 11.71 306 *e*Pn **Pn** **08 48 37.6 -1.4**
HINF Hinteralfeld 11.71 306 *e*Pn **Pn** **08 48 37.6 -1.4**
HINF *e*Sn Sn 08 50 39.5 -10
CABF La Chapelle 11.72 300 *e*Pn **Pn** **08 48 37.7 -1.5**
CABF *e*Sn Sn 08 50 40.3 -10
comp=Z,16nm,1.0s
CABF La Chapelle 11.72 300 *e*P **Pn** **08 48 37.7 -1.5**
CABF *e* 08 50 40.3
CABF La Chapelle 11.72 300 *e*Pn **Pn** **08 48 37.7 -1.5**
CABF La Chapelle 11.72 300 *e*Pn **Pn** **08 48 37.7 -1.5**
CABF *e*Sn Sn 08 50 40.3 -10
CDF Champ du Feu 11.74 310 *e*Pn **Pn** **08 48 37.6 -1.9**
CDF *e*Sn Sn 08 50 41.3 -9.1
comp=Z,2.3nm,0.5s
CDF Champ du Feu 11.74 310 *e*P **Pn** **08 48 37.6 -1.9**
CDF *e* 08 50 41.3
CDF Champ du Feu 11.74 310 *e*Pn **Pn** **08 48 37.6 -1.9**
CDF Champ du Feu 11.74 310 *e*Pn **Pn** **08 48 37.6 -1.9**
CDF *e*Sn Sn 08 50 41.3 -9.1
VIVF Saint-Julien-l 12.25 290 *e*Pn **Pn** **08 48 44.4 -2.0**
VIVF *e*Sn Sn 08 50 52.8 -10
comp=Z,1.6nm,0.3s
VIVF Saint-Julien-l 12.25 290 *e*P **Pn** **08 48 44.4 -2.0**
VIVF *e* 08 50 52.8
VIVF Saint-Julien-l 12.25 290 *e*Pn **Pn** **08 48 44.4 -2.0**
VIVF *e*Sn Sn 08 50 52.8 -10
SSB Saint Sauveur 12.42 292 *e*P **Pn** **08 48 48.8 +0.1**
SSB Saint Sauveur 12.42 292 *e*Pn **Pn** **08 48 48.8 +0.1**
SSB Saint Sauveur 12.42 292 *e*Pn **Pn** **08 48 48.8 +0.1**
ANN Anapa 12.45 70 *e*P Pn 08 48 36.6 -12
ANN pmax pmax
comp=Z,7.0nm,0.7s
LASF Ste Croix 12.73 287 *e*Pn **Pn** **08 48 51.0 -2.0**
LASF Ste Croix 12.73 287 *e*Pn **Pn** **08 48 51.0 -2.0**
SMF Signal de Mont 13.21 298 *e*Pn **Pn** **08 48 58.0 -1.4**
SMF *e*Sn Sn 08 51 15.7 -10
comp=Z,21nm,1.0s
SMF Signal de Mont 13.21 298 *e*P **Pn** **08 48 58.0 -1.4**
SMF Signal de Mont 13.21 298 *e*Pn **Pn** **08 48 58.0 -1.4**
SMF Signal de Mont 13.21 298 *e*Pn **Pn** **08 48 58.0 -1.4**
SMF *e*Sn Sn 08 51 15.7 -10
LOR Lormes 13.38 300 *e*Pn **Pn** **08 49 00.3 -1.5**
LOR *e*Sn Sn 08 51 19.9 -10
comp=Z,8.2nm,0.7s
LOR Lormes 13.38 300 *e*P **Pn** **08 49 00.3 -1.5**

LOR Lormes 13.38 300 *e*Pn **Pn** **08 49 00.3 -1.5**
LOR Lormes 13.38 300 *e*Pn **Pn** **08 49 00.3 -1.5**
LOR *e*Sn Sn 08 51 19.9 -10
SSF Saint Saulge 13.55 299 *e*Pn **Pn** **08 49 02.3 -1.7**
SSF *e*Sn Sn 08 51 23.5 -11
comp=Z,11nm,0.9s
SSF Saint Saulge 13.55 299 *e*P **Pn** **08 49 02.3 -1.7**
SSF Saint Saulge 13.55 299 *e*Pn **Pn** **08 49 02.3 -1.7**
SSF Saint Saulge 13.55 299 *e*Pn **Pn** **08 49 02.3 -1.7**
SSF *e*Sn Sn 08 51 23.5 -11
AVF Avril sur Loir 13.57 298 *e*Pn **Pn** **08 49 02.7 -1.7**
AVF Avril sur Loir 13.57 298 *e*P **Pn** **08 49 02.7 -1.7**
AVF Avril sur Loir 13.57 298 *e*Pn **Pn** **08 49 02.7 -1.7**
AVF Avril sur Loir 13.57 298 *e*Pn **Pn** **08 49 02.7 -1.7**
TCF Toulx Ste Croi 14.22 295 *e*Pn **Pn** **08 49 11.4 -1.8**
TCF Toulx Ste Croi 14.22 295 *e*P **Pn** **08 49 11.4 -1.8**
TCF Toulx Ste Croi 14.22 295 *e*Pn **Pn** **08 49 11.4 -1.8**
TCF Toulx Ste Croi 14.22 295 *e*Pn **Pn** **08 49 11.4 -1.8**
KIV Kislovodsk 16.14 75 *i* P **Pn** **08 49 36.6 -2.2**
KIV pmax pmax
comp=Z,3.0nm,0.8s
OBN Obninsk 16.93 32 *i* P **P** **08 49 50.6 0.0**
OBN pmax pmax
comp=Z,8.0nm,1.1s
OBN Obninsk 16.93 32 *i* P **P** **08 49 50.6 0.0**
comp=Z,8.0nm,1.1s
ZEI Tsey 17.06 79 *e*P **P** **08 49 55.7 +3.4**
ZEI pmax pmax
comp=Z,4.0nm,0.4s
VSU Vasula 17.19 10⇓ *e*P **Pn** **08 49 51.5 -0.4**
VSU pmax pmax
comp=Z,20nm,0.9s
VSU Vasula 17.19 10 *e*P **Pn** **08 49 51.5 -0.4**
comp=Z,20nm,0.9s
GNI Garni 18.07 87 Pn **P** **08 50 07.3 +3.8**
comp=Z,0.2nm,0.3s,baz=149,slow=4.9,SNR=4.7
ESDC Sonseca Array 18.95 272 P **Pn** **08 50 14.1 +0.3**
comp=Z,0.4nm,0.3s,baz=86,slow=11,SNR=3.2
HFS Hagfors 19.00 349 P **P** **08 50 12.5 -0.8**
comp=Z,0.2nm,0.3s,baz=159,slow=9.5,SNR=6.0
FINES FINESS Array B 20.03 7 P **P** **08 50 24.1 -0.4**
comp=Z,2.8nm,0.8s,baz=182,slow=10,SNR=4.8
NB2 NORSAR Subarra 20.26 346 P **P** **08 50 26.2 -0.9**
comp=Z,3.1nm,0.7s,baz=163,slow=11
NB2 NORSAR Subarra 20.26 346 P **P** **08 50 26.2 -0.9**
comp=Z,3.1nm,0.7s,SNR=1.6
NOA NORSAR Array B 20.26 346 P **P** **08 50 26.6 -0.6**
comp=Z,0.5nm,0.5s,baz=153,slow=9.9,SNR=5.7
EKA Eskdalemuir Ar 20.85 319 P **P** **08 50 32.9 -0.5**
comp=Z,1.6nm,0.5s,baz=107,slow=10.0,SNR=6.6
EKA Eskdalemuir Ar 20.85 319 P **P** **08 50 33.0 -0.5**
EKA Eskdalemuir Ar 20.85 319 P **P** **08 50 33.0 -0.5**
MDT Midelt 22.10 255 P **P** **08 50 50.3 +3.0**
comp=Z,2.7nm,0.9s,baz=62,slow=7.6,SNR=8.2
KLMR Klimovskoe 22.30 24 *e*P **P** **08 50 47.0 -2.0**
KLMR pmax pmax
comp=Z,10.0nm,1.0s
ARCES ARCESS Array B 28.02 3 P **P** **08 51 41.2 -1.4**
comp=Z,0.9nm,0.7s,baz=180,slow=8.0,SNR=5.9
ARCES LR LR 09 04 55.2
comp=Z,37nm,18.1s,baz=292,slow=41
ABKAR Akbulak array 28.15 61 *e*P **P** **08 51 45.0 +1.0**
ABKAR Akbulak array 28.15 61 *e*P **P** **08 51 45.0 +1.0**
TORD Torodi Ar. Bea 32.99 216 P **P** **08 52 27.5 +0.5**
comp=Z,1.4nm,0.8s,baz=46,slow=8.1,SNR=6.6
ZRNK Zerenda 33.88 54 *e*P **P** **08 52 35.9 +1.5**
ZRNK pmax pmax
comp=Z,5.0nm,1.4s
ZRNK Zerenda 33.88 54 *e*P **P** **08 52 35.9 +1.5**
comp=Z,4.9nm,1.4s
ZRNK Zerenda 33.88 54 *e*P **P** **08 52 35.9 +1.5**
comp=Z,4.9nm,1.4s
BRVK Borovoye 34.65 54⇑ *e*P **P** **08 52 41.6 +0.5**
BRVK pmax pmax
comp=Z,7.0nm,0.6s
BRVK Borovoye 34.65 54 *e*P **P** **08 52 41.6 +0.5**
comp=Z,7.0nm,0.6s
BRVK Borovoye 34.65 54 *e*P **P** **08 52 42.5 +1.4**
comp=Z,8.2nm,0.6s
BVAR Borovoye Array 34.72 54 P **P** **08 52 41.7 +0.1**
comp=Z,4.5nm,0.9s,baz=270,slow=5.8,SNR=10
EKS2 Erkin-Say 38.66 70 *e*P **P** **08 53 17.9 +2.4**
EKS2 pmax pmax
comp=Z,6.0nm,1.1s
EKS2 Erkin-Say 38.66 70 *e*P **P** **08 53 17.9 +2.4**
comp=Z,5.5nm,1.1s
EKS2 Erkin-Say 38.66 70 *e*P **P** **08 53 17.9 +2.4**
comp=Z,5.5nm,1.1s
AAK Ala-Archa 39.17 70⇓ *e*P **P** **08 53 19.5 -0.4**
AAK pmax pmax
comp=Z,4.0nm,0.8s
AAK Ala-Archa 39.17 70 *e*P **P** **08 53 19.5 -0.4**
comp=Z,4.0nm,0.8s
KURBB Kurchatov Arra 39.98 57 P **P** **08 53 26.8 +0.5**
comp=Z,0.6nm,0.4s,baz=280,slow=9.0,SNR=9.5
KURK Kurchatov 40.02 57 *de*P **P** **08 53 26.5 -0.1**
KURK pmax pmax
comp=Z,8.0nm,1.8s
KURK Kurchatov 40.02 57 *e*P **P** **08 53 27.3 +0.7**
comp=Z,16nm,1.9s
KURK Kurchatov 40.02 57 *e*P **P** **08 53 27.3 +0.7**
comp=Z,16nm,1.9s
ZALV Zalesovo Beam 43.19 51 P **P** **08 53 53.1 +0.6**
comp=Z,5.2nm,0.8s,baz=280,slow=8.7,SNR=11
ZALV Zalesovo Beam 43.19 51 P **P** **08 53 53.1 +0.6**
ZALV pmax pmax
comp=Z,4.0nm,0.7s
ZALV Zalesovo Beam 43.19 51 P **P** **08 53 53.1 +0.6**
comp=Z,4.0nm,0.7s
MKAR Makanchi Array 43.29 62 P **P** **08 53 54.1 +0.7**
comp=Z,1.1nm,0.3s,baz=285,slow=7.6,SNR=16
MKAR Makanchi Array 43.29 62 *e*P **P** **08 53 54.4 +0.9**
WMQ Urumqi 47.87 64 *e*P **P** **08 54 30.4 +0.6**
WMQ pmax pmax
comp=Z,4.0nm,0.6s
WMQ pmax pmax
comp=Z,31nm,4.6s
TLY Talaya 54.73 49⇑ *e*P **P** **08 55 20.0 -1.1**
TLY pmax pmax
comp=Z,5.0nm,0.8s
TLY Talaya 54.73 49 *e*P **P** **08 55 20.0 -1.1**
comp=Z,5.0nm,0.8s
SONM Songino Array 58.04 52 P **P** **08 55 45.2 +0.3**
comp=Z,1.2nm,0.9s,baz=285,slow=6.9,SNR=5.6
YAK Yakutsk 61.92 30 LR LR 09 24 08.1
comp=Z,31nm,19.1s,baz=294,slow=37
LZH Lanzhou 62.41 65 *e*P **P** **08 56 18.8 +3.8**
LZH pP sP 08 56 23.5 +2.4
LZH sP pP 08 56 25.6 +6.2
LZH *e*PP **PP** **08 58 37.8 +5.8**
LZH pmax pmax
comp=Z,21nm,1.2s
LZH pmax pmax
comp=Z,73nm,7.8s
LZH LR LR
comp=N,320nm,15.9s
LZH LR LR
comp=E,340nm,16.2s
LZH LR LR
comp=Z,380nm,18.5s
HHC Hu-ho-hao-te 64.84 57 *e*P **P** **08 56 32.8 +1.9**
HHC pmax pmax
comp=Z,21nm,1.1s
HHC pmax pmax
comp=Z,110nm,6.9s
CD2 Chengdu 65.24 70 P **P** **08 56 33.3 -0.3**
CD2 pmax pmax
comp=Z,14nm,0.8s
YKA Yellowknife Ar 70.20 340 P **P** **08 57 03.2 -1.0**
comp=Z,0.6nm,0.7s,baz=35,slow=5.5,SNR=16
YKA Yellowknife Ar 70.20 340 *i* P **P** **08 57 03.4 -0.9**
YKA pmax pmax
comp=Z,1.0nm,0.7s
YKA Yellowknife Ar 70.20 340 *i* P **P** **08 57 03.4 -0.9**
comp=Z,1.0nm,0.7s
EYMN Ely 72.63 319 *e*P **P** **08 57 21.3 +2.1**
EYMN Ely 72.63 319 *e*P **P** **08 57 21.3 +2.1**
DAWY Dawson 73.44 351 *e*P **P** **08 57 23.9 +0.1**
comp=Z,13nm,1.8s
DAWY Dawson 73.44 351 *e*P **P** **08 57 23.9 +0.1**
comp=Z,13nm,1.8s
ILAR Eielson Array 73.45 355 P **P** **08 57 23.1 -0.6**
comp=Z,0.2nm,0.7s,baz=5.3,slow=6.4,SNR=4.2
ILAR LR LR 09 33 27.4
comp=Z,32nm,18.2s,baz=166,slow=39
DOT Dot Lake 74.33 353 *e*P **P** **08 57 29.3 +0.3**

	comp=Z,14nm,1.4s						
DOT	**Dot Lake**	**74.33**	**353**	*e*P	**P**	**08 57 29.3**	**+0.3**
	comp=Z,14nm,1.4s						
KSRS	**Korea Array**	**76.89**	**51**	LR	LR	09 34 27.7	
	comp=Z,23nm,18.3s,baz=335,slow=38						
PDAR	**Pinedale Array**	**84.82**	**326**	P	**P**	**08 58 25.4**	**-1.3**
	comp=Z,0.3nm,0.5s,baz=30,slow=7.3,SNR=4.3						
ASAR	**Alice Springs**	**122.19**	**94**	PKP	**PKPdf**	**09 04 44.7**	**-2.3**
	comp=Z,0.7nm,1.1s,baz=313,slow=1.6,SNR=4.9						

*SKO **14** 09:11:40.8,41°.66N×20°.91E,h17km,M2.0,ML2.7*
*CSEM **14** 09:11:41.7±0.2,41°.69N×20°.99E,h2km,ML2.3,Error ellipse: s-maj=4.5km s-min=4.1km az=25.0*
*BEO **14** 09:11:42.6±0.4,41°.73N×20°.96E,h4km±3km,M2.3/9*
*PDG **14** 09:11:42.0±0.2,41°.70N×20°.92E,h4km,ML2.6/12,Error ellipse: s-maj=0.3km s-min=0.3km az=0.0*

ISC 14 09:11:41.5±1.0,41°.69N±0°.02×20°.98E±0°.02,h14km±11km, n57,σ0°91/100,18C-9D,Albania

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKO	**Skopje**	**0.44**	**50**	⇓*i*Pg	**Pb**	**09 11 51.0**	**0.0**
SKO				*i* Sg	**Sb**	**09 11 58.3**	**+0.8**
SKO				*e*Lg	Lg	09 11 58.4	
	comp=N,80nm,0.3s						
SKO				*e*Lg	Lg	09 11 58.5	
	comp=E,55nm,0.6s						
SKO	**Skopje**	**0.44**	**50**	*i* Pg	**Pb**	**09 11 50.7**	**-0.4**
SKO				*e*Sg	**Sb**	**09 11 57.8**	**+0.3**
SKO	**Skopje**	**0.44**	**50**	*i* Pg	**Pb**	**09 11 50.7**	**-0.4**
SKO				*e*Sg	**Sb**	**09 11 57.8**	**+0.3**
SKO				*e*Lg	Lg	09 11 58.4	
	comp=E,55nm,0.6s						
OHR	**Ohrid**	**0.60**	**194**	⇑*i*Pg	**Pg**	**09 11 52.1**	**-1.0**
OHR				*i* Sg	**Sb**	**09 12 01.9**	**-0.1**
OHR				*e*Lg	Lg	09 12 02.1	
	comp=E,767nm,0.7s						
OHR				*e*Lg	Lg	09 12 02.1	
	comp=N,267nm,0.2s						
OHR	**Ohrid**	**0.60**	**194**	⇑*i*Pg	**Pg**	**09 11 52.1**	**-1.0**
OHR				*i* Sg	**Sb**	**09 12 01.9**	**-0.1**
OHR				*e*Lg	Lg	09 12 02.1	
	comp=N,267nm,0.2s						
BIA	**Bitola**	**0.72**	**159**	⇓*i*Pg	**Pg**	**09 11 55.3**	**-0.2**
BIA				*i* Sg	**Sb**	**09 12 06.1**	**+0.6**
BIA				*e*Lg	Lg	09 12 07.9	
	comp=E,99nm,0.3s						
BIA				*e*Lg	Lg	09 12 08.0	
	comp=N,87nm,0.3s						
BIA	**Bitola**	**0.72**	**159**	⇓*i*Pg	**Pg**	**09 11 55.2**	**-0.2**
BIA				*i* Sg	**Sb**	**09 12 06.1**	**+0.6**
BIA				*e*Lg	Lg	09 12 07.9	
	comp=N,99nm,0.3s						
TIR	**Tirane**	**0.91**	**248**	*e*Sg	**Sb**	**09 12 10.8**	**-0.1**
TIR	**Tirane**	**0.91**	**248**	*e*Sg	**Sb**	**09 12 10.8**	**-0.1**
PVY	**Plav**	**1.18**	**320**	⇑*i*Pg	**Pn**	**09 12 03.0**	**-0.7**
PVY				*e*Sg	**Sg**	**09 12 20.9**	**+1.2**
VAY	**Valandovo**	**1.25**	**107**	*i* Pg	**Pg**	**09 12 05.8**	**+0.3**
VAY				*i* Sg	**Sg**	**09 12 23.2**	**+1.5**
VAY				*e*Lg	Lg	09 12 23.8	
	comp=E,54nm,0.5s						
VAY				*e*Lg	Lg	09 12 23.8	
	comp=N,51nm,0.6s						
VAY	**Valandovo**	**1.25**	**107**	*e*Pg	**Pg**	**09 12 05.9**	**+0.4**
VAY				*e*Sg	**Sg**	**09 12 22.2**	**+0.5**
VAY	**Valandovo**	**1.25**	**107**	*e*Pg	**Pg**	**09 12 05.9**	**+0.4**
VAY				*e*Sg	**Sg**	**09 12 22.2**	**+0.5**
VAY				*e*Lg	Lg	09 12 23.7	
	comp=N,54nm,0.5s						
BARS	**Barje**	**1.28**	**28**	*e*Pg	**Pg**	**09 12 06.1**	**-0.1**
BARS				*e*Sg	**Sg**	**09 12 22.6**	**-0.3**
BARS	**Barje**	**1.28**	**28**	*e*Pg	**Pg**	**09 12 06.1**	**-0.1**
BARS				*e*Sg	**Sg**	**09 12 22.6**	**-0.3**
ULC	**Ulcinj**	**1.33**	**282**	⇑*i*Pg	**Pn**	**09 12 05.0**	**-0.6**
ULC				*e*Sg	**Sg**	**09 12 25.3**	**+1.0**
ULC	**Ulcinj**	**1.33**	**282**	⇑*i*Pg	**Pn**	**09 12 05.0**	**-0.6**
ULC				*e*Sg	**Sg**	**09 12 25.3**	**+1.0**
BEY	**Berane**	**1.43**	**326**	⇑*i*Pg	**Pb**	**09 12 07.6**	**-0.4**
BEY				*e*Sg	**Sg**	**09 12 30.0**	**+2.4**
DRME	**Dracevica, Mon**	**1.43**	**291**	⇑*i*Pg	**Pb**	**09 12 07.6**	**-0.3**
DRME				*e*Sg	**Sg**	**09 12 28.9**	**+1.3**
DRME	**Dracevica, Mon**	**1.43**	**291**	⇑*i*Pg	**Pb**	**09 12 07.6**	**-0.3**
DRME				*e*Sg	**Sg**	**09 12 28.9**	**+1.3**
IVA	**Berane**	**1.43**	**326**	⇑*i*Pg	**Pb**	**09 12 07.6**	**-0.4**
IVA				*e*Sg	**Sg**	**09 12 30.0**	**+2.4**
PDG	**Podgorica**	**1.48**	**300**	*e*Pn	**Pb**	**09 12 08.7**	**-0.1**
PDG				*e*Sg	**Sg**	**09 12 29.2**	**-0.1**
PDG	**Podgorica**	**1.48**	**300**	*e*Pn	**Pb**	**09 12 08.7**	**-0.1**
PDG				*e*Sg	**Sg**	**09 12 31.0**	**+1.7**
TTG	**Podgorica**	**1.48**	**300**	⇑*i*Pg	**Pb**	**09 12 08.5**	**-0.3**
TTG				*e*Sg	**Sg**	**09 12 31.0**	**+1.7**
SELS	**Selova**	**1.53**	**4**	*e*Sg	**Sb**	**09 12 28.8**	**-0.1**
BUM	**Brajici-Budva**	**1.67**	**292**	⇓*i*Pn	**Pb**	**09 12 12.1**	**0.0**
BUM				*e*Sn	**Sg**	**09 12 36.6**	**+1.3**
BUM	**Brajici-Budva**	**1.67**	**292**	⇓*i*Pn	**Pb**	**09 12 12.1**	**0.0**
BUM				*e*Sn	**Sg**	**09 12 36.6**	**+1.3**
CEME	**Cevo**	**1.76**	**300**	⇑*i*Pn	**Pb**	**09 12 13.8**	**+0.3**
CEME				*e*Sn	**Sg**	**09 12 38.3**	**+0.2**
CEME	**Cevo**	**1.76**	**300**	⇑*i*Pn	**Pb**	**09 12 13.8**	**+0.3**
CEME				*e*Sn	**Sg**	**09 12 38.3**	**+0.2**
NKME	**Niksic**	**1.85**	**306**	⇓*i*Pn	**Pb**	**09 12 15.0**	**-0.1**
NKME				*e*Sn	**Sg**	**09 12 40.9**	**-0.2**
NKME	**Niksic**	**1.85**	**306**	⇓*i*Pn	**Pb**	**09 12 15.0**	**-0.1**
NKME				*e*Sn	**Sg**	**09 12 40.9**	**-0.2**
NKY	**Niksic**	**1.85**	**308**	⇑*i*Pn	**Pb**	**09 12 14.6**	**-0.6**
NKY				*e*Sn	**Sg**	**09 12 41.1**	**-0.1**
NKY	**Niksic**	**1.85**	**308**	⇑*i*Pn	**Pb**	**09 12 14.6**	**-0.6**
NKY				*e*Sn	**Sg**	**09 12 41.1**	**-0.1**
IVAS	**Ivanjica**	**1.98**	**342**	*e*Pn	**Pn**	**09 12 15.2**	**+0.6**
IVAS				*e*Sg	**Sg**	**09 12 43.8**	**-1.4**
IVAS	**Ivanjica**	**1.98**	**342**	*e*Pn	**Pn**	**09 12 15.2**	**+0.6**
IVAS				*e*Sg	**Sg**	**09 12 43.8**	**-1.4**
ZAPS	**Zavoj**	**2.00**	**37**	*e*Pn	**Pb**	**09 12 16.8**	**-0.8**
ZAPS				*e*Sg	**Sg**	**09 12 44.3**	**-1.4**
HCY	**Herceg Novi**	**2.00**	**293**	⇑*i*Pn	**Pb**	**09 12 17.4**	**-0.3**
HCY				*e*Sn	**Sg**	**09 12 44.1**	**-1.8**
HCY	**Herceg Novi**	**2.00**	**293**	⇑*i*Pn	**Pb**	**09 12 17.4**	**-0.3**
HCY				*e*Sn	**Sg**	**09 12 44.1**	**-1.8**
BOVS	**Bovan**	**2.01**	**15**	*e*Pn	**Pn**	**09 12 15.9**	**+0.9**
BOVS				*e*Sg	**Sg**	**09 12 45.3**	**-0.9**
BOVS	**Bovan**	**2.01**	**15**	*e*Pn	**Pn**	**09 12 15.9**	**+0.9**
BOVS				*e*Sg	**Sg**	**09 12 45.3**	**-0.9**
PLE	**Pljevlja**	**2.02**	**325**	⇓*i*Pn	**Pb**	**09 12 17.6**	**-0.4**
PLE				*e*Sn	**Sg**	**09 12 45.3**	**-1.1**
PLE	**Pljevlja**	**2.02**	**325**	⇓*i*Pn	**Pb**	**09 12 17.6**	**-0.4**
PLE				*e*Sn	**Sg**	**09 12 45.3**	**-1.1**
UPM	**Unac-Piva**	**2.16**	**315**	*e*Pn	**Pb**	**09 12 19.5**	**-0.9**
UPM				*e*Sn	**Sb**	**09 12 48.5**	**+1.4**
UPM	**Unac-Piva**	**2.16**	**315**	*e*Pn	**Pb**	**09 12 19.5**	**-0.9**
UPM				*e*Sn	**Sb**	**09 12 48.5**	**+1.4**
BRY	**Bratogost**	**2.18**	**305**	⇑*i*Pn	**Pb**	**09 12 19.9**	**-0.9**
BRY				*e*Sn	**Sb**	**09 12 48.8**	**+1.1**
BRY	**Bratogost**	**2.18**	**305**	⇑*i*Pn	**Pb**	**09 12 19.9**	**-0.9**
BRY				*e*Sn	**Sb**	**09 12 48.8**	**+1.1**
GRUS	**Gruza**	**2.21**	**355**	*e*Pn	**Pb**	**09 12 20.7**	**-0.4**
GRUS	**Gruza**	**2.21**	**355**	*e*Pn	**Pb**	**09 12 20.7**	**-0.4**
BBLS	**Lazići**	**2.46**	**332**	*e*Pn	**Pn**	**09 12 22.8**	**+1.5**
BBLS	**Lazići**	**2.46**	**332**	*e*Pn	**Pn**	**09 12 22.8**	**+1.5**
DIVS	**Divibare**	**2.51**	**343**	*e*Pn	**Pb**	**09 12 24.6**	**-1.8**
DIVS	**Divibare**	**2.51**	**343**	*e*Pn	**Pb**	**09 12 24.6**	**-1.8**
TRUS	**Trudelj**	**2.57**	**351**	*e*Pn	**Pb**	**09 12 26.8**	**-0.5**
TRUS	**Trudelj**	**2.57**	**351**	*e*Pn	**Pb**	**09 12 26.8**	**-0.5**
KUBS	**Kucevo**	**2.77**	**10**	*e*Sg	**Sg**	**09 13 09.7**	**-0.6**
KUBS	**Kucevo**	**2.77**	**10**	*e*Sg	**Sg**	**09 13 09.7**	**-0.6**
NVLJ	**Novalja**	**5.32**	**305**	*e*Pn	**Pn**	**09 12 59.6**	**-0.7**

MEX 14 09:20:21.1±0.6,15°.61N×95°.19W,h40km±22km,MD3.8, Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HUIG	**Huatulco**	**0.90**	**280**	*e*P	Pn	09 20 35.8	-1.5
HUIG				*e*S	Sn	09 20 46.9	-2.3
PCIG		**1.90**	**87**	*e*P	Pn	09 20 49.7	-1.3
PCIG				*i* S	Sn	09 21 11.3	-2.4
VHO	**Vista Hermosa**	**2.08**	**315**	*e*P	Pn	09 20 51.9	-1.8
VHO				*e*S	Sn	09 21 16.8	-1.7
PNIG	**Pinotepa**	**2.93**	**286**	*i* P	Pn	09 21 04.4	-0.9
PNIG				*i* S	Sn	09 21 36.7	-2.6
TPIG	**Tehuac#an**	**3.48**	**324**	*i* P	Pn	09 21 12.7	-0.3
TPIG				*i* S	Sn	09 21 51.7	-1.4
YAIG	**Yautepec**	**4.92**	**312**	*e*P	Pn	09 21 32.0	-0.7
YAIG				*i* S	Sn	09 22 26.5	-2.0
PLIG	**Platanillo**	**4.97**	**304**	*e*P	Pn	09 21 33.4	0.0
PLIG				*e*S	Sn	09 22 28.2	-1.4

*JMA **14** 09:33:42.5±0.1,23°.79N×121°.54E,h14km±3km,M2.7*
*ISCJB **14** 09:33:43.6±0.2,23°.81N±0°.01×121°.51E±0°.02,h21km±2km, Error ellipse: s-maj=3.0km s-min=1.8km az=39.5*
*TAP **14** 09:33:43.4,23°.84N×121°.43E,h20km,ML3.6,B*

ISC 14 09:33:43.7±0.9,23°.82N±0°.02×121°.46E±0°.02,h20km±1km, n64,σ0°83/112,6C-6D,Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ESL	**Shilin**	**0.03**	**259**	⇑*i*P	**Pb**	**09 33 47.1**	**-0.2**
	baz=153						
ESL				*i* S	**Sb**	**09 33 49.2**	**-0.5**
	baz=153						
ESF	**Shoufeng Towns**	**0.07**	**39**	*e*P	**Pb**	**09 33 47.8**	**+0.3**
	baz=68						
TEGC	**Jichi Village**	**0.13**	**147**	*e*P	**Pb**	**09 33 49.1**	**-0.2**
	baz=146						
HWA	**Hwalien**	**0.20**	**40**	P	**Pb**	**09 33 49.0**	**-0.4**
	baz=48						
HWA				S	**Sb**	**09 33 53.1**	**-0.2**
	baz=48						
TWD	**Chiawan**	**0.29**	**25**	⇓*i*P	**Pb**	**09 33 49.8**	**-0.4**
	baz=35						
TWD				S	**Sb**	**09 33 54.2**	**-0.5**
	baz=35						
WDT	**Danda**	**0.31**	**258**	⇓*i*P	**Pb**	**09 33 50.3**	**-0.5**
	baz=246						
WDT				*i* S	**Sb**	**09 33 54.7**	**-0.9**
	baz=246						
WHF	**Hehuan Shan**	**0.37**	**331**	⇑*i*P	**Pb**	**09 33 51.1**	**-0.7**
	baz=331						
WHF				S	**Sb**	**09 33 56.1**	**-1.2**
	baz=331						
TWF1	**Yuli**	**0.49**	**198**	⇑*e*P	**Pb**	**09 33 52.1**	**-1.5**
	baz=192						
TWF1				*e*S	**Sb**	**09 34 00.5**	**+0.2**
	baz=192						
TWT	**Tachien**	**0.51**	**329**	⇑*i*P	**Pb**	**09 33 53.8**	**-0.2**
	baz=330						
TWT				*i* S	**Sb**	**09 33 59.8**	**-1.3**
	baz=330						
SMLT	**Sun Moon Lake**	**0.52**	**277**	⇓*i*P	**Pb**	**09 33 53.6**	**-0.6**
	baz=274						
SMLT				*i* S	**Sb**	**09 34 00.3**	**-1.0**
	baz=274						
EHP	**Heping Village**	**0.55**	**28**	*e*P	**Pb**	**09 33 53.8**	**-1.0**
	baz=32						
TYC	**Yuchr**	**0.56**	**279**	⇓*i*P	**Pb**	**09 33 54.1**	**-0.7**
	baz=282						
TYC				*i* S	**Sb**	**09 34 01.1**	**-1.4**
	baz=282						
NNS	**Nan Shan**	**0.62**	**353**	*i* P	**Pb**	**09 33 55.6**	**-0.5**
	baz=4.0						
NNS				S	**Sb**	**09 34 03.8**	**-0.7**
	baz=4.0						
ENA	**Nanau**	**0.66**	**23**	⇓P	**Pb**	**09 33 55.4**	**-1.2**
	baz=27						
ALS	**Alishan**	**0.68**	**243**	⇓*i*P	**Pb**	**09 33 56.7**	**-0.3**
	baz=232						
ALS				S	**Sb**	**09 34 05.6**	**-0.5**
	baz=232						
WNT	**Mingjian**	**0.71**	**275**	*e*P	**Pn**	**09 33 57.8**	**-0.8**
	baz=273						
WNT				*e*S	**Sn**	**09 34 08.0**	**-1.0**
	baz=273						
CHKT	**Chengkung**	**0.72**	**187**	*e*P	**Pb**	**09 33 56.5**	**-1.1**
	baz=172						
CHKT				*e*S	**Sb**	**09 34 07.5**	**+0.4**
	baz=172						
ELDTW	**Lidau**	**0.75**	**213**	*e*P	**Pb**	**09 33 57.2**	**-0.9**
	baz=201						
CHN5	**Tsauling**	**0.75**	**253**	P	**Pn**	**09 33 58.3**	**-0.9**
	baz=244						
CHN5				S	**Sn**	**09 34 08.8**	**-1.3**
	baz=244						
TCU	**Taichung**	**0.79**	**295**	⇑*i*P	**Pn**	**09 33 59.4**	**-0.3**
	baz=294						
TCU				*e*S	**Sn**	**09 34 10.4**	**-0.4**
	baz=294						
TWQ1	**Liyutan**	**0.82**	**310**	P	**Pn**	**09 33 59.6**	**-0.5**
	baz=310						
TWQ1				*e*S	**Sn**	**09 34 10.3**	**-1.4**
	baz=310						
ENTT	**Nioudou**	**0.82**	**7**	*e*P	**Pb**	**09 33 58.6**	**-0.7**
	baz=18						
ENTT				*e*S	**Sb**	**09 34 10.1**	**+0.1**
	baz=18						
WGK	**Gukeng**	**0.83**	**261**	*e*P	**Pn**	**09 34 00.2**	**-0.1**
	baz=258						
WGK				*e*S	**Sn**	**09 34 11.9**	**-0.1**
	baz=258						
NSK	**Sanguang**	**0.86**	**354**	⇑*i*P	**Pb**	**09 33 59.6**	**-0.4**
	baz=357						
NSK				*e*S	**Sb**	**09 34 10.5**	**-0.5**
	baz=357						
TWC	**Suao**	**0.86**	**24**	*e*P	**Pb**	**09 33 58.6**	**-1.3**
	baz=28						
TWC				*e*S	**Sb**	**09 34 11.2**	**+0.1**
	baz=28						
NSY	**Sanyi**	**0.87**	**313**	P	**Pn**	**09 34 01.0**	**+0.2**
	baz=313						
NSY				*e*S	**Sn**	**09 34 13.6**	**+0.6**
	baz=313						
NSTT	**Nanjuang**	**0.91**	**333**	P	**Pn**	**09 34 00.8**	**-0.5**
	baz=335						
NSTT				*e*S	**Sn**	**09 34 12.6**	**-1.3**
	baz=335						
TWE	**Neicheng**	**0.92**	**12**	*e*P	**Pb**	**09 33 59.8**	**-1.2**
	baz=16						
TWE				*e*S	**Sn**	**09 34 12.9**	**-1.1**
	baz=16						
STYT	**Tauyuan**	**0.92**	**225**	P	**Pb**	**09 34 00.8**	**-0.2**
	baz=215						
STYT				*e*S	**Sn**	**09 34 13.0**	**-1.2**
	baz=215						
CHN4	**Tsaushan**	**0.92**	**240**	P	**Pn**	**09 34 01.4**	**-0.1**
	baz=227						
CHN4				*e*S	**Sn**	**09 34 14.7**	**+0.6**
	baz=227						
CHN2	**Minshiung**	**0.95**	**253**	*e*P	**Pn**	**09 34 02.3**	**+0.5**
	baz=250						
WTP	**Ta-pu**	**0.96**	**234**	*e*P	**Pn**	**09 34 01.9**	**-0.3**
	baz=230						
WTP				*e*S	**Sn**	**09 34 15.8**	**+0.5**
	baz=230						
CHY	**Chiayi**	**1.00**	**252**	*e*P	**Pn**	**09 34 02.6**	**0.0**
	baz=248						
CHY				*e*S	**Sn**	**09 34 17.1**	**+1.0**
	baz=248						
TWK	**Hsinying**	**1.05**	**239**	*e*P	**Pn**	**09 34 03.5**	**+0.2**
	baz=235						
TWK				*e*S	**Sn**	**09 34 18.0**	**+0.6**
	baz=235						
TWG	**Pinlang**	**1.06**	**200**	*e*P	**Pb**	**09 34 02.1**	**-1.2**
	baz=184						
TWG				*e*S	**Sn**	**09 34 17.5**	**+0.1**
	baz=184						
CHN1	**Nanshi**	**1.06**	**234**	P	**Pn**	**09 34 03.8**	**+0.4**
	baz=230						
CHN1				*e*S	**Sn**	**09 34 19.0**	**+1.4**
	baz=230						
HSN	**Hsinchu**	**1.08**	**335**	*e*P	**Pn**	**09 34 04.1**	**+0.5**
	baz=340						
HSN				*e*S	**Sn**	**09 34 19.2**	**+1.2**
	baz=340						
WTCT	**Ta-ch'eng**	**1.08**	**273**	*e*P	**Pn**	**09 34 03.4**	**-0.3**
	baz=270						
WTCT				*e*S	**Sn**	**09 34 18.7**	**+0.7**
	baz=270						
SGST	**Jiashian**	**1.09**	**228**	*e*P	**Pb**	**09 34 04.2**	**+0.3**
	baz=224						
SGST				*e*S	**Sn**	**09 34 19.6**	**+1.3**
	baz=224						
EGS		**1.11**	**23**	*e*P	**Pb**	**09 34 04.6**	**+0.4**
	baz=26						
WSF	**Szhu**	**1.15**	**261**	*e*P	**Pb**	**09 34 04.6**	**-0.2**
	baz=258						
WSF				*e*S	**Sn**	**09 34 20.1**	**+0.4**
	baz=258						
TWA	**Mucha**	**1.16**	**5**	*e*P	**Pb**	**09 34 05.3**	**+0.2**
	baz=9.0						
TWA				*e*S	**Sn**	**09 34 20.9**	**+0.8**
	baz=9.0						
NCU	**National Centr**	**1.17**	**348**	*e*P	**Pb**	**09 34 05.8**	**+0.5**
	baz=351						
NCU				*e*S	**Sn**	**09 34 22.6**	**+2.2**
	baz=351						
TAP1	**Taipei**	**1.22**	**3**	*e*P	**Pb**	**09 34 06.1**	**+0.1**
	baz=18						
TAP1				*e*S	**Sn**	**09 34 22.9**	**+1.5**
	baz=18						
CHN8	**Yiju**	**1.24**	**248**	*e*P	**Pb**	**09 34 06.3**	**-0.1**
	baz=245						
CHN8				*e*S	**Sn**	**09 34 22.2**	**+0.3**
	baz=245						
TWS1	**Kuangyinshan**	**1.28**	**358**	*e*P	**Pb**	**09 34 06.7**	**-0.3**
	baz=12						
TWS1				*e*S	**Sb**	**09 34 25.4**	**+2.4**
	baz=12						
TWB1	**Santiao Chiao**	**1.28**	**22**	*e*P	**Pb**	**09 34 07.1**	**+0.1**
	baz=25						
NWF	**Wu-fen Shan**	**1.28**	**13**	*e*P	**Pb**	**09 34 06.6**	**-0.6**
	baz=23						
NWF				*e*S	**Sb**	**09 34 24.1**	**+0.9**
	baz=23						
SSD	**Sandimen**	**1.31**	**216**	*e*P	**Pb**	**09 34 07.8**	**+0.2**
	baz=224						
SSD				*e*S	**Sb**	**09 34 26.3**	**+2.2**
	baz=224						
TWY	**Chenhua**	**1.46**	**5**	*e*P	**Pb**	**09 34 09.8**	**-0.3**
	baz=25						
JYNG	**Yonaguni jima**	**1.50**	**65**	P	**Pn**	**09 34 08.9**	**-0.5**
JYNG				S	**Sn**	**09 34 28.5**	**+0.2**
EAST	**Anshuo**	**1.54**	**202**	*e*P	**Pb**	**09 34 11.3**	**-0.2**
	baz=186						
YOJ	**Yonaguni jima**	**1.55**	**65**	P	**Pn**	**09 34 09.7**	**-0.5**
YOJ	**Yonaguni jima**	**1.55**	**65**	*e*P	**Pn**	**09 34 09.5**	**-0.7**
	baz=66						
SCZT	**Fangliau**	**1.64**	**208**	*e*P	**Pb**	**09 34 12.4**	**-0.7**
	baz=198						
WDGT	**Dungji**	**1.74**	**252**	*e*P	**Pb**	**09 34 13.7**	**-1.3**
	baz=235						
WDGT				*e*S	**Sb**	**09 34 35.9**	**-0.6**
	baz=235						
PNG	**Penghu**	**1.77**	**262**	*e*P	**Pn**	**09 34 13.4**	**+0.3**
	baz=259						
PNG				*e*S	**Sb**	**09 34 35.4**	**-1.7**
	baz=259						
TWK1	**Hengchun**	**1.96**	**198**	*e*P	**Pb**	**09 34 18.9**	**+0.2**
	baz=185						
IRIF	**Iriomote-Funau**	**2.14**	**76**	P	**Pn**	**09 34 18.0**	**-0.2**
IRIF				*e*S	**Sn**	**09 34 43.2**	**-0.9**
HATJ	**Hateruma jima**	**2.16**	**83**	*e*S	**Sn**	**09 34 44.5**	**-0.1**
JKRS	**Kuro-shima**	**2.37**	**79**	P	**Pn**	**09 34 21.8**	**+0.5**
JKRS				*e*S	**Sn**	**09 34 50.4**	**+0.6**
JIJ	**Ishigaki jima**	**2.51**	**77**	P	**Pn**	**09 34 22.8**	**-0.5**
JIJ				*e*S	**Sn**	**09 34 52.3**	**-1.0**
JISG	**Ishigakijimahi**	**2.71**	**73**	P	**Pn**	**09 34 25.2**	**-0.9**
JISG				*e*S	**Sn**	**09 34 57.0**	**-1.3**
JTJ	**Tarama**	**3.07**	**74**	*e*S	**Sn**	**09 35 07.5**	**+0.4**

*CSEM **14** 09:43:38.8±0.3,32°.55N×48°.60E,h2km,ML3.0,Error ellipse: s-maj=8.5km s-min=6.4km az=8.0*
*ISCJB **14** 09:43:40.1±0.5,32°.51N±0°.05×48°.56E±0°.04,h17km,Error ellipse: s-maj=7.1km s-min=4.6km az=0.7*
*TEH **14** 09:43:40.9,32°.58N×48°.62E,h12km,ML3.1*
*ISN **14** 09:43:40.9±1.2,32°.50N×48°.55E,h0km±17km,ML3.1*

ISC 14 09:43:40.5±0.9,32°.54N±0°.06×48°.60E±0°.04,h17km,n21, σ1°23/26,Western Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHGR	**Shooshtar-Gavs**	**0.46**	**159**	*e*Pg	**Pg**	**09 43 48.7**	**-1.2**
IKMR	**Kamar-syah**	**0.99**	**349**	*e*Pg	**Pb**	**09 43 58.1**	**-1.2**
IKMR				*e*AMB	AMB	09 44 14.2	
	comp=Z,99nm,0.1s						
IKMR	**Kamar-syah**	**0.99**	**349**	*e*Pg	**Pb**	**09 43 58.1**	**-1.2**
IKFM	**Kafar-mosalman**	**1.17**	**327**	*e*Pg	**Pn**	**09 44 01.8**	**-0.3**
IKFM				*e*AMB	AMB	09 44 27.0	
	comp=Z,99nm,0.2s						
IKFM	**Kafar-mosalman**	**1.17**	**327**	*e*Pg	**Pn**	**09 44 01.8**	**-0.3**
KHMZ	**Khomeyn**	**1.65**	**43**	*e*Pg	**Pn**	**09 44 09.7**	**+0.7**
IPIR	**Pirpir**	**1.94**	**85**	*e*Pn	**Pn**	**09 44 13.6**	**+0.6**
IPIR				*e*Sg	**Sb**	**09 44 40.9**	**+1.3**
IPIR				*e*AMB	AMB	09 44 49.2	
	comp=Z,1μm,0.3s						
IPIR	**Pirpir**	**1.94**	**85**	*e*Pn	**Pn**	**09 44 13.6**	**+0.6**
IPIR				*e*Sg	**Sb**	**09 44 40.9**	**+1.3**
ASAO	**Ashtian**	**2.33**	**30**	*e*Pn	**Pn**	**09 44 19.9**	**+1.6**
NSR	**Nassriya**	**2.59**	**235**	*e*Pn	**Pn**	**09 44 22.0**	**+0.3**
	SNR=3.0						
NSR				*i* Sn	**Sn**	**09 44 52.0**	**-0.8**
	SNR=3.0						
IKLH	**Kolahrood**	**2.62**	**72**	*e*Pn	**Pn**	**09 44 21.6**	**-0.7**
IKLH				*e*AMB	AMB	09 45 16.1	
	comp=Z,644nm,0.2s						
IKLH	**Kolahrood**	**2.62**	**72**	*e*Pn	**Pn**	**09 44 21.6**	**-0.7**
QAM	**Ghamsar**	**2.67**	**62**	*e*Pn	**Pn**	**09 44 24.1**	**+1.1**
QAM				*e*AMB	AMB	09 45 03.8	
	comp=Z,843nm,0.1s						
IGAR	**Gharneh**	**2.91**	**92**	*e*Pn	**Pn**	**09 44 26.9**	**+0.6**
IGAR				*e*AMB	AMB	09 45 04.3	
	comp=Z,422nm,0.1s						
GHVR	**GHOM**	**2.97**	**49**

KDZE	**Karadeniz Ereo**	**0.52 353**	*e*Pg	**Pg**	**10 05 00.8**	**0.0**
GULT	**Gulveren**	**0.85 245**	*e*PG	**Pg**	**10 05 07.2**	**+0.2**
GULT			*e*SG	**Sn**	**10 05 19.9**	**-0.2**
GULT	**Gulveren**	**0.85 245**	*e*Pg	**Pg**	**10 05 07.2**	**+0.2**
GULT			*e*Sg	**Sn**	**10 05 19.9**	**-0.2**
AUMIH	**MIHALICIK**	**0.93 182**	P	**Pb**	**10 05 07.9**	**-0.5**
AUMIH			S	**Sn**	**10 05 21.3**	**-0.9**
AUMIH	**MIHALICIK**	**0.93 182**	*i* P	**Pb**	**10 05 07.9**	**-0.5**
AUMIH			*i* S	**Sn**	**10 05 21.3**	**-0.9**
SPNC	**Sapanca-Adapaz**	**0.93 263**	*e*PG	**Pn**	**10 05 09.2**	**+0.2**
SPNC	**Sapanca-Adapaz**	**0.93 263**	*e*Pg	**Pn**	**10 05 09.2**	**+0.2**
SAFT	**Safranbolu**	**0.98 63**	*e*PG	**Pn**	**10 05 09.4**	**-0.3**
SAFT	**Safranbolu**	**0.98 63**	*e*Pg	**Pn**	**10 05 09.4**	**-0.3**
BTIN	**Bart¯–n**	**1.00 33**	P	**Pb**	**10 05 09.2**	**-0.3**
BTIN			S	**Sn**	**10 05 23.7**	**0.0**
BTIN	**Bart¯–n**	**1.00 33**	*i* P	**Pb**	**10 05 09.2**	**-0.3**
BTIN			*i* S	**Sn**	**10 05 23.7**	**0.0**
KAND	**Kocaeli-Kandir**	**1.05 287**	P	**Pb**	**10 05 09.0**	**-1.3**
KAND			S	**Sg**	**10 05 24.8**	**+0.2**
KAND	**Kocaeli-Kandir**	**1.05 287**	*i* P	**Pb**	**10 05 09.0**	**-1.3**
KAND			*i* S	**Sg**	**10 05 24.8**	**+0.2**
BORA	**Eskisehir**	**1.23 222**	P	**Pb**	**10 05 13.7**	**+0.3**
BORA			S	**Sg**	**10 05 30.0**	**-0.3**
BORA	**Eskisehir**	**1.23 222**	*i* P	**Pb**	**10 05 13.7**	**+0.3**
BORA			*i* S	**Sg**	**10 05 30.0**	**-0.3**
SVRH	**Sivrihisar-ESK**	**1.35 180**	*e*PN	**Pg**	**10 05 16.5**	**0.0**
SVRH	**Sivrihisar-ESK**	**1.35 180**	*e*Pn	**Pg**	**10 05 16.5**	**0.0**
ESKT	**Eskisehir**	**1.38 202**	*i* P	**Pb**	**10 05 16.2**	**+0.2**
ESKT			*i* S	**Sg**	**10 05 35.1**	**+0.1**
SEYT	**Eskypehyr**	**1.38 202**	P	**Pb**	**10 05 16.2**	**+0.2**
SEYT			S	**Sg**	**10 05 35.1**	**+0.1**
ADVT	**Abdulvahap**	**1.41 256**	*e*PN	**Pg**	**10 05 17.1**	**-0.5**
ADVT	**Abdulvahap**	**1.41 256**	*e*Pn	**Pg**	**10 05 17.1**	**-0.5**
HRT	**Hereke**	**1.41 272**	*e*PN	**Pg**	**10 05 17.7**	**+0.1**
HRT			*e*SN	**Sg**	**10 05 37.5**	**+1.5**
HRT	**Hereke**	**1.41 272**	*e*Pn	**Sg**	**10 05 17.7**	**+0.1**
HRT			*e*Sn	**Sg**	**10 05 37.5**	**+1.5**
CAVI	**Cavuskoy**	**1.42 246**	*e*PN	**Pg**	**10 05 18.1**	**+0.4**
CAVI			*e*SN	**Sg**	**10 05 38.4**	**+2.3**
CAVI	**Cavuskoy**	**1.42 246**	*e*Pn	**Pg**	**10 05 18.1**	**+0.4**
CAVI			*e*Sn	**Sg**	**10 05 38.4**	**+2.3**
SILT	**Sile**	**1.47 285**	*e*PN	**Pg**	**10 05 18.7**	**0.0**
SILT			*e*SN	**Sg**	**10 05 39.0**	**+1.3**
SILT	**Sile**	**1.47 285**	*e*Pn	**Pg**	**10 05 18.7**	**0.0**
SILT			*e*Sn	**Sg**	**10 05 39.1**	**+1.3**
IZI	**Iznik**	**1.63 254**	*e*PN	**Pg**	**10 05 21.4**	**-0.3**
IZI	**Iznik**	**1.63 254**	*e*Pn	**Pg**	**10 05 21.5**	**-0.3**
AFSR	**Af¯ar-Bala (A**	**1.80 138**	*e*PN	**Pb**	**10 05 23.8**	**+0.7**
AFSR	**Af¯ar-Bala (A**	**1.80 138**	*e*Pn	**Pb**	**10 05 23.8**	**+0.7**
IGD	**Bursa**	**1.85 254**	*i* P	**Pb**	**10 05 23.0**	**-1.0**
IGD			*i* S	**Sb**	**10 05 47.1**	**+0.3**
ISK	**Istanbul-Kandi**	**1.89 279**	*e*PN	**Pb**	**10 05 24.5**	**0.0**
ISK	**Istanbul-Kandi**	**1.89 279**	*e*Pn	**Pb**	**10 05 24.5**	**0.0**
ARMT	**Armutlu**	**2.04 264**	*e*PN	**Pb**	**10 05 27.2**	**0.0**
ARMT	**Armutlu**	**2.04 264**	*e*Pn	**Pb**	**10 05 27.2**	**0.0**
TVSB	**Tavsanli**	**2.08 230**	*e*PN	**Pb**	**10 05 27.2**	**-0.7**
TVSB	**Tavsanli**	**2.08 230**	*e*Pn	**Pb**	**10 05 27.2**	**-0.7**
CTKS	**Kestanelik-??a**	**2.33 282**	*e*PN	**Pb**	**10 05 31.0**	**-1.0**
CTKS	**Kestanelik-??a**	**2.33 282**	*e*Pn	**Pb**	**10 05 31.0**	**-1.0**

NIED ***14*** *10:05:00, 38°.40N×144°.60E, h5km, Mw3.6 Best double couple: M0 3.27000×10^14 NP1:φs 49.00000°, δ 28.00000°, λ -65.00000°. NP2:φs 201.00000°, δ 65.00000°, λ -103.00000°.*
IDC ***14*** *10:05:21.5±1.5, 38°.31N×144°.99E, h0km, mb3.5/2, mb1 3.8/5, mb1mx3.4/37, mbtmp3.6/5, ML2.7/2, MS3.8/4, Ms1 3.8/4, ms1mx2.7/54, Error ellipse: s-maj=36.6km s-min=26.6km az=104.0*
ISCJB ***14*** *10:05:25.4±0.9, 38°.44N±0°.07×144°.69E±0°.07, h35km, mb3.5/2, MS3.8/4, Error ellipse: s-maj=10.1km s-min=6.7km az=153.8*
JMA ***14*** *10:05:25.9±0.2, 38°.41N×144°.57E, h32km, M3.7*
ISC 14 10:05:26.6±1.3, 38°.53N±0°.07×144°.74E±0°.08, h35km, n21, σ 1s 55/25, MS3.9/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.46**	**284**	P	**Pn**	**10 06 03.9**	**-0.3**
OFUJ				*e*S	**Sn**	**10 06 31.9**	**-1.1**
JIO	**Ouri**	**2.66**	**269**	P	**Pn**	**10 06 06.3**	**-0.6**
JIO				*e*S	**Sn**	**10 06 35.6**	**-2.3**
JMK	**Ichinoseki**	**2.78**	**280**	P	**Pn**	**10 06 08.6**	**0.0**
JMK				S	**Sn**	**10 06 40.4**	**-0.5**
JOM	**Ohasama**	**2.84**	**290**	P	**Pn**	**10 06 09.6**	**+0.1**
JOM				*e*S	**Sn**	**10 06 41.7**	**-0.8**
JANG	**Nango**	**3.10**	**307**	P	**Pn**	**10 06 14.4**	**+1.4**
JYK	**Kaneyama**	**3.44**	**278**	P	**Pn**	**10 06 18.2**	**+0.4**
JYK				S	**Sn**	**10 06 58.2**	**+0.9**
JFT	**Otama**	**3.62**	**255**	P	**Pn**	**10 06 20.1**	**0.0**
JFT				S	**Sn**	**10 07 00.6**	**-1.0**
JOT	**Ohata**	**4.02**	**316**	P	**Pn**	**10 06 27.9**	**+2.3**
JCH	**Churui**	**4.21**	**346**	P	**Pn**	**10 06 28.8**	**+0.5**
JCH				*e*S	**Sn**	**10 07 13.5**	**-2.7**
JKB	**Kayabe**	**4.39**	**321**	P	**Pn**	**10 06 32.6**	**+1.9**
MJAR	**Matsushiro Arr**	**5.55**	**251**	Pn	**Pn**	**10 06 47.3**	**+0.6**
	1.0nm,0.3s,baz=85,slow=14,SNR=10.0						
MAT	**Matsushiro**	**5.55**	**251**	P	**Pn**	**10 06 47.6**	**+0.8**
MAT				S	**Sn**	**10 07 50.5**	**+1.1**
ASAJ	**Asahikawa**	**5.81**	**345**	Pn	**Pn**	**10 06 52.1**	**+1.9**
	baz=159,slow=8.6						
ASAJ				Sn	**Sn**	**10 07 52.7**	**-2.9**
	0.5nm,0.3s,baz=20,slow=15,SNR=2.5						
USRK	**Ussuriysk Ar.**	**11.12**	**305**	Pn	**Pn**	**10 08 05.9**	**+2.9**
	0.1nm,0.3s,baz=99,slow=9.2,SNR=3.6						
KLR	**Kul'dur**	**14.20**	**323**	LR	LR	10 13 49.2	
	comp=Z,23nm,20.9s,baz=136,slow=35						
ZALV	**Zalesovo Beam**	**42.88**	**311**	LR	LR	10 32 51.8	
	comp=Z,100nm,18.7s,baz=250,slow=38						
ILAR	**Eielson Array**	**46.82**	**33**	P	**P**	**10 13 53.3**	**+0.8**
	0.3nm,0.8s,baz=269,slow=7.2,SNR=4.6						
WRA	**Warramunga Arr**	**58.97**	**191**	P	**P**	**10 15 21.4**	**-1.2**
	1.0nm,0.9s,baz=12,slow=7.1,SNR=4.1						
ARCES	**ARCESS Array B**	**63.51**	**340**	LR	LR	10 47 23.2	
	comp=Z,105nm,19.5s,baz=99,slow=40						
HFS	**Hagfors**	**73.78**	**337**	LR	LR	10 51 56.9	
	comp=Z,26nm,20.0s,baz=114,slow=38						
RAO	**Raoul Island**	**75.92**	**147**	LR	LR	10 44 05.4	
	comp=Z,92nm,20.6s,baz=295,slow=31						

DDA ***14*** *10:11:28.4, 38°.24N×25°.88E, h10km, Md3.1*
CSEM ***14*** *10:11:29.9±0.2, 38°.21N×25°.92E, h2km, ML2.8, Error ellipse: s-maj=3.9km s-min=3.6km az=80.0*
ATH ***14*** *10:11:29.8, 38°.23N×25°.97E, h24km±1km, ML2.7/5, Error ellipse: s-maj=2.4km s-min=0.9km az=83.0*
THE ***14*** *10:11:30.8, 38°.23N×26°.02E, h10km±1km, ML2.8/6, Error ellipse: s-maj=1.6km s-min=0.5km az=68.0*
ISCJB ***14*** *10:11:30.1±0.6, 38°.23N±0°.02×25°.93E±0°.03, h7km±4km, Error ellipse: s-maj=3.6km s-min=3.3km az=138.4*
ISK ***14*** *10:11:31.1, 38°.23N×25°.95E, h5km, MD2.9*
ISC 14 10:11:30.3±0.8, 38°.22N±0°.02×25°.96E±0°.02, h14km±6km, n71, σ 0s 75/111, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOS	**Chios island**	**0.18**	**25**	*e*PG	**Pg**	**10 11 34.8**	**+0.1**
CHOS				*e*SG	**Sg**	**10 11 38.5**	**+0.9**
CHOS	**Chios island**	**0.18**	**25**	P	**Pg**	**10 11 34.8**	**+0.1**
CHOS				S	**Sg**	**10 11 36.9**	**-0.7**
CHOS	**Chios island**	**0.18**	**25**	P	**Pg**	**10 11 34.7**	**+0.1**
CHOS				S	**Sg**	**10 11 36.9**	**-0.7**
CHOS				*e*Sg	Sg	10 11 38.5	+0.9
CHOS	**Chios island**	**0.18**	**25**	P	**Pg**	**10 11 34.7**	**+0.1**
CHOS				S	**Sg**	**10 11 37.8**	**+0.2**
CHOS				AML	AML	10 11 40.1	
	comp=N,4988μm,0.2s						
CHOS				AML	AML	10 11 40.2	
	comp=E,9774μm,0.5s						
ZEY	**¯zmir**	**0.43**	**88**	*i* P	**Pg**	**10 11 38.7**	**-0.2**
ZEY				*i* S	**Sg**	**10 11 45.1**	**+0.4**
URLA	**Izmir**	**0.52**	**75**	P	**Pg**	**10 11 40.6**	**0.0**
URLA				S	**Sg**	**10 11 47.9**	**+0.3**
URLA	**Izmir**	**0.52**	**75**	*i* P	**Pg**	**10 11 40.6**	**0.0**
URLA				*i* S	**Sg**	**10 11 47.9**	**+0.3**
DGB	**¯zmir**	**0.75**	**103**	*i* P	**Pg**	**10 11 44.4**	**-0.5**
DGB				*i* S	**Sg**	**10 11 54.0**	**-0.7**
SMG	**Samos**	**0.86**	**126**	P	**Pg**	**10 11 46.6**	**-0.5**
SMG				S	**Sg**	**10 11 58.4**	**0.0**
SMG	**Samos**	**0.86**	**126**	P	**Pg**	**10 11 46.8**	**-0.3**
SMG				S	**Sg**	**10 11 58.4**	**0.0**
SMG	**Samos**	**0.86**	**126**	P	**Pg**	**10 11 46.8**	**-0.3**
SMG				S	**Sg**	**10 11 58.4**	**0.0**
SMG				AML	AML	10 11 59.7	
	comp=E,1740μm,0.4s						
SMG				AML	AML	10 12 00.2	
	comp=N,901μm,0.5s						
SIGR	**SIGRI**	**0.99**	**355**	*e*PG	**Pn**	**10 11 51.1**	**+1.3**
SIGR				*e*SG	**Sn**	**10 12 04.1**	**+0.5**
SIGR	**SIGRI**	**0.99**	**355**	P	**Pb**	**10 11 49.3**	**0.0**
SIGR				S	**Sb**	**10 12 02.8**	**+0.7**
SIGR	**SIGRI**	**0.99**	**355**	P	**Pb**	**10 11 49.3**	**0.0**
SIGR	**SIGRI**	**0.99**	**355**	*e*Pg	**Pn**	**10 11 51.1**	**+1.3**
SIGR				S	**Sb**	**10 12 02.6**	**+0.4**
SIGR				*e*Sg	**Sn**	**10 12 04.1**	**+0.5**
SIGR	**SIGRI**	**0.99**	**355**	P	**Pn**	**10 11 49.9**	**+0.1**
SIGR				S	**Sb**	**10 12 02.6**	**+0.4**
SIGR				AML	AML	10 12 08.5	
	comp=N,634μm,0.4s						
SIGR				AML	AML	10 12 09.0	
	comp=E,615μm,0.3s						
PRK	**Paraskevi**	**1.05**	**13**	P	**Pg**	**10 11 50.1**	**-0.5**
PRK				S	**Sb**	**10 12 04.4**	**+0.5**
PRK	**Paraskevi**	**1.05**	**13**	P	**Pn**	**10 11 50.8**	**+0.2**
PRK				S	**Sb**	**10 12 04.4**	**+0.5**
PRK	**Paraskevi**	**1.05**	**13**	P	**Pn**	**10 11 50.9**	**+0.2**
PRK				S	**Sg**	**10 12 03.6**	**-0.7**
PRK				AML	AML	10 12 09.9	
	comp=N,1112μm,0.6s						
PRK				AML	AML	10 12 10.6	
	comp=E,890μm,0.5s						
DKL	**Dikili**	**1.13**	**41**	*e*PN	**Pn**	**10 11 52.8**	**+1.1**
DKL				*e*SN	**Sn**	**10 12 08.6**	**+1.7**
DKL	**Dikili**	**1.13**	**41**	*e*Pn	**Pn**	**10 11 52.8**	**+1.1**
DKL				*e*Sn	**Sn**	**10 12 08.6**	**+1.7**
GCAM	**G?zelcaml?**	**1.14**	**117**	P	**Pb**	**10 11 49.9**	**-1.8**
GCAM				S	**Sg**	**10 12 06.9**	**-0.1**
GCAM	**G?zelcaml?**	**1.14**	**117**	*i* P	**Pb**	**10 11 49.9**	**-1.8**
GCAM				*i* S	**Sg**	**10 12 06.9**	**-0.1**
APE	**Apeiranthos**	**1.20**	**196**	*e*PN	**Pg**	**10 11 54.2**	**+0.8**
APE	**Apeiranthos**	**1.20**	**196**	P	**Pb**	**10 11 52.6**	**-0.3**
APE				S	**Sn**	**10 12 09.0**	**+0.1**
APE	**Apeiranthos**	**1.20**	**196**	P	**Pb**	**10 11 52.6**	**-0.3**
APE	**Apeiranthos**	**1.20**	**196**	*e*Pn	**Pg**	**10 11 54.3**	**+0.8**
APE				S	**Sb**	**10 12 08.3**	**0.0**
APE	**Apeiranthos**	**1.20**	**196**	P	**Pb**	**10 11 52.8**	**-0.1**
APE				S	**Sb**	**10 12 08.3**	**0.0**
APE				AML	AML	10 12 10.2	
	comp=E,404μm,0.4s						
APE				AML	AML	10 12 13.8	
	comp=N,262μm,0.2s						
AYVA	**Ayvalik**	**1.23**	**28**	P	**Pn**	**10 11 52.4**	**-0.6**
AYVA				S	**Sg**	**10 12 09.4**	**-0.5**
AYVA	**Ayvalik**	**1.23**	**28**	*i* P	**Pn**	**10 11 52.4**	**-0.6**
AYVA				*i* S	**Sg**	**10 12 09.4**	**-0.5**
AYDB	**Zeytinkoy-Aydi**	**1.55**	**100**	*e*PN	**Pg**	**10 11 59.9**	**-0.2**
AYDB				*e*SN	**Sg**	**10 12 21.0**	**+0.7**
AYDB	**Zeytinkoy-Aydi**	**1.55**	**100**	*e*Pn	**Pg**	**10 11 59.9**	**-0.2**
AYDB				*e*Sn	**Sg**	**10 12 21.0**	**+0.7**
BODT	**Bodrum**	**1.58**	**137**	*e*PN	**Pg**	**10 12 00.8**	**+0.2**
BODT				*e*SN	**Sg**	**10 12 22.4**	**+1.2**
BODT	**Bodrum**	**1.58**	**137**	P	**Pn**	**10 11 57.6**	**-0.3**
BODT	**Bodrum**	**1.58**	**137**	P	**Pn**	**10 11 57.6**	**-0.3**
BODT	**Bodrum**	**1.58**	**137**	*e*Pn	**Pg**	**10 12 00.9**	**+0.2**
BODT				*e*Sn	**Sg**	**10 12 22.4**	**+1.2**
EREA	**Eretria**	**1.60**	**278**	P	**Pb**	**10 11 58.9**	**-0.9**
EREA	**Eretria**	**1.60**	**278**	P	**Pb**	**10 11 58.9**	**-0.9**
BOZC	**Bozcaada**	**1.62**	**3**	*i* P	**Pn**	**10 11 58.2**	**-0.3**
BOZC				*i* S	**Sn**	**10 12 17.8**	**-1.3**
AYDN	**Tasoluk**	**1.62**	**110**	P	**Pn**	**10 11 58.7**	**+0.2**
AYDN				S	**Sg**	**10 12 21.9**	**-0.6**
AYDN	**Tasoluk**	**1.62**	**110**	*i* P	**Pn**	**10 11 58.7**	**+0.2**
AYDN				*i* S	**Sg**	**10 12 21.9**	**-0.6**
PTL	**Penteli**	**1.66**	**265**	P	**Pb**	**10 12 00.0**	**-0.7**
PTL	**Penteli**	**1.66**	**265**	P	**Pb**	**10 12 00.0**	**-0.7**
VLY	**Voula,Athens**	**1.75**	**258**	P	**Pn**	**10 12 00.8**	**+0.6**
VLY	**Voula,Athens**	**1.75**	**258**	P	**Pn**	**10 12 00.8**	**+0.6**
VLY	**Voula,Athens**	**1.75**	**258**	P	**Pb**	**10 12 01.7**	**-0.5**
LIA	**Limnos Island**	**1.78**	**340**	P	**Pn**	**10 12 01.0**	**+0.4**
LIA	**Limnos Island**	**1.78**	**340**	P	**Pn**	**10 12 01.0**	**+0.4**
AOS	**Alonnisos**	**1.88**	**301**	P	**Pb**	**10 12 03.1**	**-1.3**
AOS	**Alonnisos**	**1.88**	**301**	P	**Pb**	**10 12 03.1**	**-1.3**
MHLO	**Agia Marina, M**	**1.97**	**219**	P	**Pn**	**10 12 03.2**	**0.0**
MHLO				S	**Sb**	**10 12 29.6**	**-0.7**
MHLO	**Agia Marina, M**	**1.97**	**219**	P	**Pn**	**10 12 03.7**	**+0.4**
MHLO				S	**Sb**	**10 12 29.6**	**-0.7**
MHLO	**Agia Marina, M**	**1.97**	**219**	P	**Pn**	**10 12 03.7**	**+0.4**
BALY	**Balya**	**1.99**	**40**	P	**Pn**	**10 12 03.7**	**+0.1**
BALY	**Balya**	**1.99**	**40**	*i* P	**Pn**	**10 12 03.7**	**+0.1**
BALY				*i* S	**Sn**	**10 12 25.3**	**-3.2**
MANT	**Manisa**	**2.06**	**82**	P	**Pg**	**10 12 09.3**	**-0.6**
MANT				S	**Sb**	**10 12 34.8**	**+1.6**
MANT	**Manisa**	**2.06**	**82**	*i* P	**Pg**	**10 12 09.3**	**-0.6**
MANT				*i* S	**Sb**	**10 12 34.9**	**+1.6**
KULA	**Kula-Manisa**	**2.15**	**81**	*e*PN	**Pb**	**10 12 09.5**	**+0.5**
KULA	**Kula-Manisa**	**2.15**	**81**	*e*Pn	**Pb**	**10 12 09.5**	**+0.5**
SKIA	**Skiathos**	**2.17**	**297**	P	**Pn**	**10 12 06.7**	**+0.7**
SKIA	**Skiathos**	**2.17**	**297**	P	**Pn**	**10 12 06.7**	**+0.7**
DID	**Didima**	**2.27**	**252**	P	**Pn**	**10 12 07.7**	**+0.3**
DID	**Didima**	**2.27**	**252**	P	**Pn**	**10 12 07.7**	**+0.3**
SMTH	**Samothraki Isl**	**2.27**	**352**	P	**Pn**	**10 12 07.6**	**+0.2**
SMTH	**Samothraki Isl**	**2.27**	**352**	P	**Pn**	**10 12 07.6**	**+0.2**
SMTH	**Samothraki Isl**	**2.27**	**352**	P	**Pn**	**10 12 07.2**	**-0.2**
PAIG	**Paliouri**	**2.46**	**315**	P	**Pn**	**10 12 10.4**	**+0.4**
PAIG	**Paliouri**	**2.46**	**315**	P	**Pn**	**10 12 10.4**	**+0.4**
ALN	**Alexandroupoli**	**2.67**	**1**	P	**Pn**	**10 12 13.1**	**+0.2**
ALN	**Alexandroupoli**	**2.67**	**1**	P	**Pn**	**10 12 13.5**	**+0.6**
ALN	**Alexandroupoli**	**2.67**	**1**	P	**Pn**	**10 12 13.5**	**+0.6**

NIED ***14*** *10:11:00, 38°.60N×142°.10E, h44km, Mw3.8 Best double couple: M0 6.26000×10^14 NP1:φs 337.00000°, δ 59.00000°, λ 144.00000°. NP2:φs 88.00000°, δ 59.00000°, λ 37.00000°.*
JMA ***14*** *10:11:35.1±0.1, 38°.60N×142°.16E, h35km±1km, M4.1*
JMA Felt II J1.
IDC ***14*** *10:11:36.9±2.5, 38°.52N×142°.10E, h52km±22km, mb3.6/9, mb1 3.8/13, mb1mx3.4/52, mbtmp3.9/13, ML3.3/4, MS2.9/4, Ms1 2.9/4, ms1mx2.5/58, Error ellipse: s-maj=27.4km s-min=19.5km az=84.0*
ISC 14 10:11:33.0±1.9, 38°.51N±0°.05×142°.24E±0°.08, h24km±12km, n31, σ 1s 37/29, mb3.8/9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.70**	**266**	P	**Pb**	**10 11 47.6**	**+1.0**
JIO				S	**Sn**	**10 11 56.2**	**-1.3**
OFUJ	**Ofunato**	**0.72**	**322**	P	**Pb**	**10 11 47.5**	**+0.5**
OFUJ				S	**Sb**	**10 11 55.9**	**-0.6**
JMK	**Ichinoseki**	**0.91**	**299**	P	**Pb**	**10 11 50.3**	**+0.1**
JMK				S	**Sb**	**10 12 00.9**	**-1.0**
JOM	**Ohasama**	**1.21**	**323**	P	**Pn**	**10 11 54.6**	**+0.1**
JOM				S	**Sn**	**10 12 08.7**	**-1.4**
JOU	**Okura**	**1.25**	**264**	P	**Pb**	**10 11 56.2**	**+0.3**
JOU				S	**Sb**	**10 12 11.1**	**-0.4**
JYK	**Kaneyama**	**1.53**	**286**	P	**Pn**	**10 11 59.5**	**+0.7**
JRG	**Rokugo**	**1.53**	**306**	P	**Pn**	**10 11 59.4**	**+0.5**
MJAR	**Matsushiro Arr**	**3.76**	**240**	P	**Pn**	**10 12 32.0**	**+2.5**
	3.4nm,0.3s,baz=48,slow=9.5,SNR=23						
MAT	**Matsushiro**	**3.76**	**240**	P	Pn	10 12 32.6	+3.1
MAT				S	**Sb**	**10 13 20.5**	**-3.3**
ASAJ	**Asahikawa**	**5.61**	**3**	P	**Pn**	**10 12 56.7**	**+1.8**
	1.1nm,0.3s,baz=209,slow=14,SNR=7.4						
ASAJ				S	**Sn**	**10 13 56.0**	**-2.5**
	0.7nm,0.3s,baz=184,slow=16,SNR=1.9						
JHJ	**Hachijo jima 2**	**5.74**	**201**	P	**Pn**	**10 12 57.9**	**+1.2**
	7.4nm,0.3s,baz=53,slow=15,SNR=5.7						
JHJ				S	**Sn**	**10 14 00.9**	**-0.8**
	1.8nm,0.3s,baz=72,slow=20,SNR=2.9						
USRK	**Ussuriysk Ar.**	**9.57**	**310**	P	**Pn**	**10 13 51.7**	**+2.5**
	0.4nm,0.3s,baz=111,slow=13,SNR=13						
JNU	**Nakatsue**	**10.67**	**243**	LR	LR	10 18 31.7	
	comp=Z,55nm,21.6s,baz=123,slow=39						
KSRS	**Korea Array**	**11.35**	**269**	LR	LR	10 18 13.9	
	comp=Z,16nm,20.4s,baz=220,slow=35						
MA2	**Magadan**	**21.78**	**12**	LR	LR	10 25 37.2	
	comp=Z,27nm,18.0s,baz=60,slow=39						
H11N2	**WAKE ISLAND Hy 28.39**	**124**		T	T	10 47 55.8	
	baz=318,slow=75,SNR=17						
H11N1	**WAKE ISLAND Hy 28.40**	**124**		T	T	10 47 56.5	
	baz=318,slow=75,SNR=40						
H11N3	**WAKE ISLAND Hy 28.41**	**124**		T	T	10 47 57.2	
	baz=318,slow=75,SNR=22						
H11S1	**WAKE ISLAND Hy 29.16**	**126**		T	T	10 48 56.2	
	baz=319,slow=76,SNR=6.0						
H11S3	**WAKE ISLAND Hy 29.16**	**126**		T	T	10 48 56.1	
	baz=319,slow=76,SNR=5.7						
H11S2	**WAKE ISLAND Hy 29.17**	**126**		T	T	10 48 50.8	
	baz=319,slow=76,SNR=8.4						
ZALV	**Zalesovo Beam**	**41.42**	**311**	P	**P**	**10 19 17.3**	**0.0**
	1.1nm,0.5s,baz=90,slow=7.4,SNR=5.2						
MKAR	**Makanchi Array**	**43.91**	**301**	P	**P**	**10 19 37.6**	**-0.1**
	1.1nm,0.7s,baz=90,slow=9.8,SNR=4.8						
KURBB	**Kurchatov Arra**	**45.62**	**307**	P	**P**	**10 19 50.7**	**-0.5**
	4.5nm,0.8s,baz=80,slow=7.8,SNR=12						
BVAR	**Borovoye Array**	**50.07**	**312**	P	**P**	**10 20 24.8**	**-0.9**
	0.4nm,0.5s,baz=69,slow=8.4,SNR=2.9						
BVAR				PcP	**PcP**	**10 21 44.3**	**-0.8**
	0.4nm,0.5s,baz=45,slow=4.9,SNR=3.0						
WRA	**Warramunga Arr**	**58.61**	**189**	P	**P**	**10 21 28.3**	**+0.3**
	0.4nm,0.6s,baz=6.0,slow=7.1,SNR=5.0						
DZM	**Mont Dzumac**	**64.40**	**155**	LR	LR	10 52 25.0	
	comp=Z,39nm,18.0s,baz=53,slow=38						
FINES	**FINESS Array B**	**67.81**	**332**	P	**P**	**10 22 28.6**	**0.0**
	2.3nm,0.9s,baz=68,slow=5.9,SNR=3.4						
KBZ	**Khabaz**	**70.44**	**311**	P	**P**	**10 22 45.9**	**+0.7**
	2.0nm,0.8s,baz=27,slow=3.7,SNR=4.1						
AKASG	**Malin Array Be**	**73.53**	**322**	P	**P**	**10 23 03.2**	**-0.3**
	0.4nm,0.4s,baz=45,slow=5.5,SNR=3.5						
PDAR	**Pinedale Array**	**76.17**	**46**	P	**P**	**10 23 20.7**	**+1.4**
	0.2nm,0.5s,baz=261,slow=4.1,SNR=2.8						

SOME ***14*** *10:17:34.4, 44°.37N×82°.97E, h10km*
NNC ***14*** *10:17:36.8±1.3, 44°.26N×83°.12E, h0km, mb2.7, mpv2.3, Error ellipse: s-maj=13.0km s-min=4.4km az=120.0*
ISC 14 10:17:35.9±2.6, 44°.20N±0°.09×83°.2E±0°.1, h10km, n8, σ 2s 39/16, 2C-4D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KTMS	**Ketmen**	**2.17**	**251**	*e*P	**Pn**	**10 18 13.1**	**+0.9**
	5.4nm,0.2s						
KTMS				*e*S	**Sn**	**10 18 40.9**	**+1.6**
	32nm,0.3s						
DJR	**Jarkent**	**2.43**	**274**	*e*P	**Pn**	**10 18 16.7**	**+1.0**
	8.8nm,0.1s						
DJR				*e*S	**Sn**	**10 18 47.1**	**+1.6**
	11nm,0.4s						
MK31	**Makanchi Array**	**2.66**	**347**	⇓Pn	**Pn**	**10 18 19.7**	**+0.8**
	0.5nm,0.4s,baz=169,slow=17,SNR=21						
MK31				⇑Sn	**Sn**	**10 18 53.0**	**+1.8**
	2.3nm,0.4s,baz=167,slow=27,SNR=12						
MAKZ	**Makanchi**	**2.74**	**343**	⇓Pn	**Pn**	**10 18 21.3**	**+1.4**
	1.0nm,0.5s						
MAKZ				⇑Sn	**Sb**	**10 18 55.6**	**-2.9**
	1.0nm,0.4s						
PDGK	**Podgornoye**	**2.81**	**253**	⇓Pn	**Pn**	**10 18 22.8**	**+2.0**
	0.6nm,0.3s						
PDGK				⇓Sn	**Sb**	**10 18 58.4**	**-2.0**
	1.7nm,0.4s						
KAPS	**Kapalarasan**	**2.92**	**293**	*e*P	**Pn**	**10 18 24.5**	**+2.1**
	0.8nm,0.2s						

FRU	**Bishkek**	6.79	23	⇓*i*PN		**Pn**	**10 23 12.0 -0.6**
FRU				*i* S		**S**	**10 24 27.0 -3.8**
FRU				pmax	pmax		
	comp=Z,220nm,1.4s						
FRU				smax	smax		
	comp=E,2μm,1.8s						
TKM2	**Tokmak 2**	7.21	28	⇑P		**Pn**	**10 23 17.2 -0.9**
	comp=E,115nm,0.5s						
TKM2				⇓S		**S**	**10 24 36.6 -4.1**
	comp=E,1μm,0.9s						
TKM2	**Tokmak 2**	7.21	28	*e*PN		**Pn**	**10 23 17.6 -0.5**
TKM2	**Tokmak 2**	7.21	28	*e*Pn		**Pn**	**10 23 17.6 -0.5**
SMLA	**Simla**	7.52	135	*e*P		**Pn**	**10 23 21.3 -0.8**
SMLA				*e*S		**S**	**10 24 41.8 -6.2**
SMLA				IAML			10 24 46.9
	comp=N,2μm,0.7s						
SMLA				IAML			10 24 48.4
	comp=E,3μm,0.0s						
KNDC	**Almaty**	8.01	33	⇑P		**Pn**	**10 23 27.9 -0.3**
KNDC				⇓S		**S**	**10 24 57.8 -1.6**
AAA	**Alma-Ata**	8.05	33	*e*PN		**Pn**	**10 23 28.1 -0.6**
AAA				pmax	pmax		
	comp=Z,379nm,1.1s						
KKR	**Kurukshetra**	8.26	142	*e*P		**Pn**	**10 23 30.9 -0.6**
DDI	**Dehra Dun**	8.63	135	*e*P		**Pn**	**10 23 35.5 -0.8**
RTK	**Rohtak**	8.85	147	*e*P		**Pn**	**10 23 37.1 -1.9**
PDGK	**Podgornoye**	9.33	42	⇓P		**Pn**	**10 23 43.1 -1.8**
	comp=Z,111nm,1.1s						
PDGK				⇑S		**S**	**10 25 27.3 -2.7**
	comp=Z,331nm,1.2s						
PDGK	**Podgornoye**	9.33	42	P		**Pn**	**10 23 43.5 -1.4**
PDGK				pmax	pmax		
	comp=Z,90nm,0.9s						
JOSI	**Joshimath**	9.37	128	*e*P		**Pn**	**10 23 45.2 -0.6**
JOSI				*e*S		**S**	**10 25 24.9 -6.8**
KHET	**Khetri**	9.46	153	*e*P		**Pn**	**10 23 44.7 -2.1**
KHET				*e*S		S	10 25 24.5 -9.0
KHET				IAML			10 25 29.4
	comp=N,272nm,0.5s						
KHET				IAML			10 25 29.5
	comp=E,351nm,0.5s						
KUDL	**Kundal**	9.66	150	*e*P		**Pn**	**10 23 47.3 -2.1**
KUDL				*e*S		S	10 25 28.8 -9.3
KUDL				IAML			10 25 30.3
	comp=E,407nm,0.6s						
KUDL				IAML			10 25 32.5
	comp=N,157nm,0.5s						
GEYT	**Alibeck**	10.34	281	P		**Pn**	**10 23 55.6 -2.2**
	comp=N,17nm,0.3s,baz=106,slow=11,SNR=98						
GEYT				S		**S**	**10 25 50.5 -3.3**
	baz=80,slow=22,SNR=2.5						
OTUK	**Ortayu**	11.64	4	⇑P		**Pn**	**10 24 12.9 -1.3**
	comp=N,120nm,1.2s						
OTUK				⇓S		**S**	**10 26 20.0 -3.2**
	comp=N,123nm,0.9s						
OTUK	**Ortayu**	11.64	4	P		**Pn**	**10 24 13.0 -1.1**
MAKZ	**Makanchi**	13.05	35	⇓P		**Pn**	**10 24 30.5 -1.2**
	comp=N,206nm,0.6s						
MAKZ	**Makanchi**	13.05	35	*e*P		**Pn**	**10 24 30.8 -0.8**
MAKZ	**Makanchi**	13.05	35	*e*Pn		**Pn**	**10 24 30.8 -0.8**
MK31	**Makanchi Array**	13.18	36	⇑P		**Pn**	**10 24 31.9 -1.4**
	comp=N,19nm,0.4s,baz=223,slow=11,SNR=543						
MKAR	**Makanchi Array**	13.18	36	P		**Pn**	**10 24 31.8 -1.5**
	comp=N,12nm,0.3s,baz=220,slow=15,SNR=237						
MKAR	**Makanchi Array**	13.18	36	*i* P		**Pn**	**10 24 32.0 -1.3**
MKAR				pmax	pmax		
	comp=Z,31nm,0.5s						
PYUN	**Piuthan**	13.24	127	*e*P		**Pn**	**10 24 32.5 -1.8**
	comp=Z,458nm,0.4s						
BHJ	**Bhuj**	13.39	185	*e*P		**Pn**	**10 24 35.4 -0.7**
KOLN	**Koldanda**	13.86	126	*e*P		**Pn**	**10 24 40.6 -1.3**
	comp=Z,139nm,0.2s						
GKN	**Gorkha**	14.39	123	*e*P		**Pn**	**10 24 47.0 -1.4**
	comp=Z,216nm,0.2s						
BHPL	**Bhopal**	14.47	156	*e*P		**Pn**	**10 24 48.5 -0.8**
BHPL				*ex*		x	10 27 21.0
WMQ	**Urumqi**	14.63	56	⇓*i*P		**Pn**	**10 24 50.8 -0.2**
WMQ				sP		sP	10 25 44.0
WMQ				S		**S**	**10 27 30.5 -2.3**
AB31	**Akbulak array**	14.96	331	P		**P**	**10 24 53.6 -1.1**
	comp=Z,16nm,0.5s,baz=146,slow=12,SNR=550						
AB31				⇑S		**S**	**10 27 39.4 -0.6**
	comp=Z,74nm,1.2s,baz=152,slow=22,SNR=5.3						
ABKAR	**Akbulak array**	14.96	331	*e*Pn		**P**	**10 24 53.5 -1.3**
DMN	**Daman**	14.96	123	*e*P		**P**	**10 24 54.1 -1.2**
	comp=Z,404nm,0.6s						
KKN	**Kakani**	14.96	122	*e*P		**P**	**10 24 53.9 -1.4**
	comp=Z,624nm,0.6s						
KURBB	**Kurchatov Arra**	14.99	19	P		**P**	**10 24 53.5 -1.7**
	comp=Z,2.9nm,0.3s,baz=208,slow=11,SNR=74						
KURBB				S		**S**	**10 27 43.0 +2.3**
	comp=Z,0.1nm,0.3s,baz=204,slow=22,SNR=3.6						
KURBB	**Kurchatov Arra**	14.99	19	⇓S		**S**	**10 27 39.8 -1.0**
	comp=Z,27nm,0.9s						
KURK	**Kurchatov**	15.10	19	⇓P		**P**	**10 24 54.8 -1.6**
	comp=Z,289nm,1.2s						
KURK	**Kurchatov**	15.10	19	*d i*P		**P**	**10 24 55.0 -1.4**
KURK				pmax	pmax		
	comp=Z,165nm,1.2s						
KURK	**Kurchatov**	15.10	19	*e*Pn		**P**	**10 24 55.1 -1.2**
	comp=Z,135nm,1.1s						
KURK				S		**S**	**10 27 43.0 -0.1**
PKIN	**Phulchoki**	15.18	122	*e*P		**P**	**10 24 56.8 -0.9**
	comp=Z,198nm,0.3s						
GUN	**Gumba**	15.30	120	*e*P		**P**	**10 24 58.3 -0.9**
	comp=Z,428nm,0.4s						
ZRNK	**Zerenda**	16.37	356	⇑P		**Pn**	**10 25 11.2 -0.5**
	comp=Z,53nm,1.2s						
ZRNK	**Zerenda**	16.37	356	*e*P		**Pn**	**10 25 11.3 -0.3**
ZRNK				pmax	pmax		
	comp=Z,29nm,0.6s						
ZRNK	**Zerenda**	16.37	356	*e*P		**Pn**	**10 25 11.3 -0.3**
	comp=Z,29nm,0.6s						
BVA0	**Borovoye Array**	16.39	359	⇓P		**Pn**	**10 25 11.3 -0.6**
	comp=Z,34nm,0.8s,baz=158,slow=9.2,SNR=127						
BVA0				⇑S		**S**	**10 28 10.4 +0.6**
	comp=Z,31nm,1.0s,baz=175,slow=30,SNR=5.2						
BVAR	**Borovoye Array**	16.39	359	P		**Pn**	**10 25 11.4 -0.5**
	comp=Z,8.9nm,0.3s,baz=162,slow=10,SNR=70						
BRVK	**Borovoye**	16.42	358	⇑P		**Pn**	**10 25 11.7 -0.6**
	comp=Z,54nm,0.8s						
BRVK				⇑S		**S**	**10 28 11.3 +0.8**
	comp=Z,198nm,1.5s						
BRVK	**Borovoye**	16.42	358	*d i*P		**Pn**	**10 25 11.7 -0.6**
BRVK				pmax	pmax		
	comp=Z,82nm,1.7s						
BRVK	**Borovoye**	16.42	358	*e*P		**Pn**	**10 25 12.0 -0.3**
	comp=Z,33nm,0.9s						
BANOM	**Banah**	16.46	234	*i* P		**P**	**10 25 12.1 +0.5**
	SNR=20						
BANOM	**Banah**	16.46	234	P		**Pn**	**10 25 15.7 +2.6**
	SNR=5.9						
BANOM	**Banah**	16.46	234	P		**Pn**	**10 25 15.7 +2.6**
	SNR=5.9						
AKTO	**Aktyubinsk**	16.65	330	P		**Pn**	**10 25 14.3 -0.7**
	comp=Z,21nm,0.3s,baz=148,slow=9.6,SNR=244						
AKTO				S		**S**	**10 28 12.8 -2.3**
	baz=177,slow=18,SNR=4.1						
AKTO	**Aktyubinsk**	16.65	330	⇑P		**P**	**10 25 14.0 +0.6**
	comp=Z,113nm,0.7s						
AKTO				⇑S		**S**	**10 28 12.9 -2.2**
	comp=Z,128nm,1.9s						
CHKZ	**Chkalovo**	17.04	359	⇑P		**P**	**10 25 17.9 +0.3**
	comp=Z,27nm,0.8s						
WSAR	**Wadi Sarin**	17.09	222	P		**P**	**10 25 19.7 +1.1**
	comp=Z,3.1nm,0.3s,baz=70,slow=4.2,SNR=16						
UOSS	**Minazif**	17.21	232	*e*P		**P**	**10 25 18.8 -1.0**
	comp=Z,3.0nm,1.0s						
HATD	**Hatta, Dubai**	17.34	231	*i* P		**P**	**10 25 22.5 +1.2**
	SNR=13						
HATD	**Hatta, Dubai**	17.34	231	P		**P**	**10 25 23.0 +1.7**
	SNR=13						
HATD				P		**P**	**10 25 23.0 +1.7**
	SNR=7.7						
HATD	**Hatta, Dubai**	17.34	231	Pn		**P**	**10 25 23.0 +1.7**
	SNR=13						
HATD				Pn		**P**	**10 25 23.0 +1.7**
	SNR=7.7						
ASHO	**Ashiyiah**	17.49	231	*i* P		**P**	**10 25 23.6 +0.7**
	SNR=37						
ASHO	**Ashiyiah**	17.49	231	P		**P**	**10 25 23.7 +0.8**
	SNR=37						
ASHO				P		**P**	**10 25 23.7 +0.8**
	SNR=20						
NAZ	**Nazwa, Dubai**	17.53	233	P		**P**	**10 25 23.2 0.0**
JMDO	**Jabal Madar**	18.08	222	P		**P**	**10 25 31.0 +1.7**
	SNR=12						
JMDO				P		**Pn**	**10 25 31.1 -1.0**
	SNR=7.2						
JMDO	**Jabal Madar**	18.08	222	Pn		**P**	**10 25 31.0 +1.7**
	SNR=12						
JMDO				Pn		**Pn**	**10 25 31.1 -1.0**
	SNR=7.2						
BOK	**Bokaro**	18.13	131	*e*P		**P**	**10 25 30.5 +0.8**
POO	**Poona**	18.22	171	*e*P		**P**	**10 25 30.3 -0.5**
POO				IAmb		IAmb	10 25 37.3
	comp=Z,62nm,1.1s						
LSA	**Lhasa**	18.23	106	P		**Pn**	**10 25 33.4 -0.8**
LSA	**Lhasa**	18.23	106	*e*P		**Pn**	**10 25 33.0 -1.3**
LSA				pmax	pmax		
	comp=Z,130nm,0.9s						
LSA	**Lhasa**	18.23	106	*e*P		**Pn**	**10 25 33.0 -1.3**
	comp=Z,130nm,0.9s						
ZALV	**Zalesovo Beam**	19.79	25	P		**P**	**10 25 47.1 -0.1**
	comp=Z,14nm,0.3s,baz=220,slow=11,SNR=107						
NVS	**Novosibirsk**	20.05	21	⇓*i*P		**P**	**10 25 51.0 +1.0**
NVS				*i*			10 29 22.3
NVS				pmax	pmax		
	comp=N,152nm,1.9s						
NVS				pmax	pmax		
	comp=Z,155nm,1.9s						
NVS				pmax	pmax		
	comp=E,47nm,1.5s						
NVS				smax	smax		
	comp=N,101nm,1.3s						
NVS				smax	smax		
	comp=E,192nm,1.3s						
HYB	**Hyderabad**	20.29	159	*i* P		**P**	**10 25 54.0 +1.0**
HYB				*e*S		**S**	**10 29 27.0 +0.1**
HYB	**Hyderabad**	20.29	159	*e*P		**P**	**10 25 53.0 +0.1**
GNI	**Garni**	20.84	288	P		**P**	**10 25 59.3 +0.5**
	comp=E,30nm,0.9s,baz=108,slow=7.2,SNR=13						
TBLG	**Delisi**	20.93	292	P		**P**	**10 26 01.9 +2.3**
TBLG	**Delisi**	20.93	292	P		**P**	**10 26 01.9 +2.3**
SHL	**Shillong**	20.98	116	⇑*i*P		**P**	**10 26 00.0 -0.4**
SHL				*ex*		x	10 29 40.0
GUDG	**Gudauri**	21.21	294	P		**P**	**10 26 06.2 +3.7**
SVE	**Sverdlovsk**	21.36	344	⇑*e*P		**P**	**10 26 04.2 +0.6**
SVE				*e*S		**S**	**10 29 45.9 +1.4**
SVE				pmax	pmax		
	comp=Z,61nm,1.4s						
ARU	**Arti**	21.50	341	P		**P**	**10 26 05.6 +0.6**
	comp=Z,20nm,0.4s,baz=141,slow=6.6,SNR=42						
ARU	**Arti**	21.50	341	*c i*P		**P**	**10 26 05.3 +0.4**
ARU				S		**S**	**10 29 49.5 +2.7**
ARU				pmax	pmax		
	comp=Z,93nm,1.7s						
ARU	**Arti**	21.50	341	*e*P		**P**	**10 26 05.3 +0.4**
	comp=Z,63nm,1.1s						
ZEI	**Tsey**	21.67	295	*e*P		**P**	**10 26 05.5 -1.5**
ZEI				pmax	pmax		
	comp=Z,58nm,0.9s						
VIS	**Vishakhapatnam**	21.77	147	*e*P		**P**	**10 26 08.6 +0.7**
AKH	**Akhalkalaki**	21.84	291	⇓*i*P		**P**	**10 26 11.6 +3.0**
AKH	**Akhalkalaki**	21.84	291	P		**P**	**10 26 11.0 +2.3**
AKH	**Akhalkalaki**	21.84	291	P		**P**	**10 26 10.9 +2.3**
ONI	**Oni**	21.97	294	P		**P**	**10 26 12.0 +2.2**
ONI	**Oni**	21.97	294	P		**P**	**10 26 11.9 +2.2**
KBZ	**Khabaz**	22.53	297	P		**P**	**10 26 15.2 +0.6**
	comp=Z,9.6nm,0.8s,baz=137,slow=8.2,SNR=19						
GOF	**Gofitskoye**	22.66	300	⇑*e*P		**P**	**10 26 18.6 +2.7**
GOF				pmax	pmax		
	comp=Z,228nm,1.0s						
KVAR	**Kislovodsk Arr**	22.71	298	P		**P**	**10 26 16.6 +0.2**
	comp=Z,13nm,0.7s,baz=75,slow=18,SNR=13						
KIV	**Kislovodsk**	22.71	298	*i* P		**P**	**10 26 17.3 +0.9**
	SNR=6.7						
KIV	**Kislovodsk**	22.71	298	*c i*P		**P**	**10 26 17.0 +0.5**
KIV				pmax	pmax		
	comp=Z,35nm,1.1s						
KIV	**Kislovodsk**	22.71	298	*e*P		**P**	**10 26 17.7 +1.2**
KIV				*ep*P		**pP**	**10 26 54.3 -3.1**
GTA	**Gaotai**	22.84	74	P		**P**	**10 26 19.3 +1.6**
GTA				pP		pP	10 26 56.8 -2.1
GTA				sP		PP	10 27 21.4 +6.5
GTA				S		**S**	**10 30 12.6 +3.6**
GTA				SS		SS	10 31 14.6 -39
CHVG	**Ch'k'valeri**	22.99	294	⇑*i*P		**P**	**10 26 23.2 +4.3**
CHVG	**Ch'k'valeri**	22.99	294	P		**P**	**10 26 21.4 +2.5**
KRAR	**Krasnoyarsk**	24.38	30	⇓*e*P		**P**	**10 26 33.1 +1.8**
KRAR				pmax	pmax		
	comp=Z,40nm,1.2s						
ABTO	**Aybut**	24.77	224	P		**P**	**10 26 38.0 +2.7**
	SNR=12						
ABTO	**Aybut**	24.77	224	P		**P**	**10 26 38.0 +2.7**
	SNR=12						
VRH	**Novokhopyorsk**	25.40	314	*e*P		**P**	**10 26 40.3 -0.3**
VRH				pmax	pmax		
	comp=Z,30nm,1.0s						
LZH	**Lanzhou**	26.40	81	*e*P		**P**	**10 26 51.0 +1.1**
LZH				pP		pP	10 27 33.3 -3.2
LZH				PP		**PnPn**	**10 27 44.3 -0.8**
LZH				sP		PP	10 27 58.1 +3.6
LZH				S		**S**	**10 31 07.0 +1.4**
LZH				sS		sS	10 32 21.5 -8.0
LZH				SS		SS	10 32 39.3 -27
ANN	**Anapa**	26.56	298	*e*P		**P**	**10 26 50.7 -0.3**
ANN				*e**PP		**pP**	**10 27 37.1 -0.5**
ANN				*e*S		**S**	**10 31 10.9 +3.4**
ANN				*e**SS		**sS**	**10 32 34.2 +2.7**
ANN				pmax	pmax		
	comp=Z,24nm,0.9s						
VSR	**Storozhevoye**	26.90	313	*e*P		**P**	**10 26 53.9 0.0**
VSR				pmax	pmax		
	comp=Z,40nm,1.1s						
ZAK	**Zakamensk**	26.91	49	*e*P		**P**	**10 26 54.6 +0.4**
ZAK				*e*			10 27 43.3
ZAK				pmax	pmax		
	comp=Z,8.0nm,1.1s						
ZAK				pmax	pmax		
	comp=Z,11nm,1.2s						
LPSR	**Galich'ya Gora**	27.54	316	*e*P		**P**	**10 27 00.0 +0.4**
LPSR				pmax	pmax		
	comp=Z,50nm,1.2s						
TLY	**Talaya**	27.55	47	⇓*e*P		**P**	**10 27 00.2 +0.4**
TLY				pmax	pmax		
	comp=Z,6.0nm,0.7s						
CD2	**Chengdu**	27.75	92	P		**P**	**10 27 01.5 -0.3**
CD2				pP		pP	10 27 44.0 -4.5
CD2				PP		**PP**	**10 28 08.5 -1.0**
CD2				sP		sP	10 28 08.9 -7.1
CD2				S		**S**	**10 31 28.6 +1.9**
CD2				sS		sS	10 32 45.6 -5.4
CD2				SS		**SS**	**10 33 40.5 +4.9**
SONM	**Songino Array**	28.27	56	P		**P**	**10 27 07.5 +1.2**
	comp=Z,8.6nm,0.8s,baz=259,slow=9.6,SNR=26						
SONM				pP		**pP**	**10 27 55.2 +2.1**
	comp=Z,5.3nm,0.8s,baz=256,slow=9.2,SNR=4.5						
ASF	**Jabal al Asfar**	28.39	271	P		**P**	**10 27 09.1 +1.7**
	comp=Z,2.8nm,0.5s,baz=3.8,slow=1.2,SNR=4.8						
ULN	**Ulaanbaatar**	28.71	56	*e*P		**P**	**10 27 11.3 +1.1**
ULN				pmax	pmax		
	comp=Z,54nm,1.9s						
ULN	**Ulaanbaatar**	28.71	56	*e*P		**P**	**10 27 11.3 +1.1**
	comp=Z,54nm,1.9s						
MMAI	**Mount Meron Ar**	29.33	274	P		**P**	**10 27 17.4 +1.7**
	comp=Z,0.9nm,0.3s,baz=90,slow=10.0,SNR=6.1						
MMAI				PcP		**PcP**	**10 30 16.4 +0.4**
	comp=Z,7.3nm,0.7s,baz=50,slow=5.5,SNR=6.9						
BRTR	**Keskin Array B**	29.38	288	P		**P**	**10 27 16.9 +0.6**
	comp=Z,13nm,0.7s,baz=100,slow=8.3,SNR=68						
BRTR				pP		**pP**	**10 28 05.5 +2.3**
	comp=Z,3.3nm,0.7s,baz=99,slow=8.8,SNR=3.0						
BRTR				PcP		**PcP**	**10 30 15.5 -0.6**
	comp=Z,1.9nm,0.4s,baz=149,slow=3.8,SNR=9.5						
BRTR	**Keskin Array B**	29.38	288	*ce*P		**P**	**10 27 17.2 +0.9**
BRTR				pmax	pmax		
	comp=Z,13nm,0.7s						
KMI	**Kunming**	29.44	104	P		**P**	**10 27 18.3 +1.3**
KMI				S		**S**	**10 31 53.4 -0.3**
KMI				sS		sS	10 33 15.9 -2.2
MOS	**Moscow**	29.54	321	*e*P		**P**	**10 27 17.5 +0.2**
MOS				*e*			10 28 08.1
MOS				*e*S		**S**	**10 31 50.1 -4.0**
MOS				pmax	pmax		
	comp=Z,100nm,1.2s						
MOS				pmax	pmax		
	comp=Z,77nm,1.0s						
CMAI	**Chiengmai2**	29.64	117	P		**P**	**10 27 19.4 +0.7**
	comp=Z,5.9nm,1.3s,comp=Z,736nm						
OBN	**Obninsk**	29.82	319	P		**P**	**10 27 20.2 +0.5**
	comp=Z,95nm,0.3s,baz=131,slow=3.9,SNR=18						
OBN	**Obninsk**	29.82	319	*c i*P		**P**	**10 27 20.4 +0.7**
OBN				*i* *PP		**pP**	**10 28 06.4 -0.4**
OBN				pmax	pmax		
	comp=Z,65nm,1.1s						
OBN	**Obninsk**	29.82	319	*e*P		**P**	**10 27 20.3 +0.5**
	comp=Z,89nm,0.3s						
CHTO	**Chiang Mai**	30.30	118	P		**P**	**10 27 27.8 +3.5**
	comp=Z,28nm,1.2s						
CHTO	**Chiang Mai**	30.30	118	*e*P		**P**	**10 27 26.0 +1.7**
CHTO				pmax	pmax		
	comp=Z,9.0nm,0.9s						
CHTO	**Chiang Mai**	30.30	118	*e*P		**P**	**10 27 26.0 +1.7**
	comp=Z,8.6nm,0.9s						
CMMT	**Chiang Mai**	30.30	118	P		**P**	**10 27 27.8 +3.4**
	comp=Z,6.2nm,1.4s						
CRAI	**Chiangrai**	30.42	114	P		**P**	**10 27 26.4 +1.0**
	comp=Z,70nm,0.9s,comp=Z,6μm						
CMAR	**Chiang Mai Arr**	30.53	119	P		**P**	**10 27 27.5 +1.1**
	comp=Z,5.6nm,0.8s,baz=304,slow=8.3,SNR=36						
CMAR				pP		**pP**	**10 28 15.7 +2.1**
	comp=Z,7.2nm,0.8s,baz=302,slow=9.6,SNR=4.2						
CMAR				PcP		**PcP**	**10 30 18.3 -0.9**
	comp=Z,3.4nm,0.8s,baz=299,slow=6.4,SNR=4.3						
CMAR				ScP		**ScP**	**10 33 36.4 -2.5**
	comp=Z,1.6nm,0.6s,baz=295,slow=4.1,SNR=7.0						
PALK	**Pallekele**	30.55	161	P		**P**	**10 27 27.4 +0.9**
	comp=Z,21nm,0.7s,baz=295,slow=6.7,SNR=12						
PALK	**Pallekele**	30.55	161	*i* P		**P**	**10 27 28.2 +1.6**
PALK	**Pallekele**	30.55	161	*e*P		**P**	**10 27 27.2 +0.6**
	comp=Z,19nm,0.6s						
XAN	**Xi'an**	30.92	83	P		**P**	**10 27 30.5 +0.7**
XAN				S		S	10 31 15.0 -61
KLMR	**Klimovskoe**	31.35	331	*e*P		**P**	**10 27 31.2 -1.9**
KLMR				*e**PP		**pP**	**10 28 20.6 +0.3**
KLMR				*e*			10 30 19.1
KLMR				pmax	pmax		
	comp=Z,82nm,1.1s						
NANT	**Nan**	31.56	116	P		**P**	**10 27 35.2 -0.2**
	comp=Z,3.5nm,1.0s						
HHC	**Hu-ho-hao-te**	31.73	70	*e*P		**P**	**10 27 38.9 +2.1**
GYA	**Guiyang**	31.89	98	*e*P		**P**	**10 27 39.8 +1.4**
GYA				pP		pP	10 28 23.4 -2.4
GYA				sP		sP	10 28 48.0 -5.0
GYA				PP		**PnPn**	**10 28 53.4 -0.5**
GYA				PcP		**PcP**	**10 30 25.5 +2.6**
GYA				S		S	10 32 47.3 +16
GYA				ScP		**ScP**	**10 33 47.0 +3.4**
UTTA	**Uttaradit**	32.15	118	P		**P**	**10 27 41.6 +1.1**
	comp=Z,6.2nm,0.8s,comp=Z,61nm						
DAMY	**Dhamar**	32.34	234	*e*P		**P**	**10 27 43.4 +0.8**
	comp=Z,25nm,0.9s						
AKASG	**Malin Array Be**	32.85	309	P		**P**	**10 27 46.1 -0.1**
	comp=Z,4.2nm,0.4s,baz=85,slow=7.3,SNR=49						
AKASG				PcP		**PcP**	**10 30 24.1 -0.8**
	comp=Z,0.8nm,0.2s,baz=75,slow=3.3,SNR=5.5						
KIEV	**Kiev**	32.86	309	*c i*P		**P**	**10 27 46.4 +0.1**
KIEV				pmax	pmax		
	comp=Z,18nm,1.1s						
KIEV	**Kiev**	32.86	309	*e*P		**P**	**10 27 46.5 +0.1**
	comp=Z,50nm,1.5s						
SORM	**Soroca**	33.12	304	⇓*i*P		**P**	**10 27 48.9 +0.3**
SORM	**Soroca**	33.12	304	⇓P		**P**	**10 27 48.9 +0.3**
CFR	**Carcaliu**	33.16	298	⇑*i*P		**P**	**10 27 49.8 +0.8**
CFR	**Carcaliu**	33.16	298	⇑P		**P**	**10 27 49.8 +0.8**
PBKT	**Sadao Pong**	33.23	119	P		**P**	**10 27 52.2 +2.4**
	comp=Z,15nm,1.3s						
TMCR	**Tamitsa**	33.91	335	*e*P		**P**	**10 27 54.4 -0.8**
TMCR				pmax	pmax		
	comp=Z,117nm,1.3s						
NRIK	**Noril'sk**	33.99	10	P		**P**	**10 27 56.9 +1.0**
	comp=Z,23nm,0.7s,baz=204,slow=6.4,SNR=23						
VRI	**Vrincioaia**	34.15	300	⇓*i*P		**P**	**10 27 59.6 +2.1**
VRI	**Vrincioaia**	34.15	300	⇓P		**P**	**10 27 59.6 +2.1**
PLOR	**Plostina**	34.20	300	⇑*i*P		**P**	**10 28 00.1 +2.1**
PLOR	**Plostina**	34.20	300	⇑P		**P**	**10 28 00.1 +2.1**
TESR	**Tescani**	34.20	301	⇓*i*P		**P**	**10 27 59.4 +1.4**
KHON	**Khomkaen**	34.70	117	P		**P**	**10 28 06.0 +3.5**
	comp=Z,13nm,0.9s						
MLR	**Muntele Rosu**	34.70	299	⇑*i*P		**P**	**10 28 04.7 +2.3**
MLR	**Muntele Rosu**	34.70	299	*e*P		**P**	**10 28 04.4 +2.0**
MLR				pmax	pmax		
	comp=Z,36nm,1.0s						
MLR	**Muntele Rosu**	34.70	299	*e*P		**P**	**10 28 04.4 +2.0**
	comp=Z,36nm,1.0s						
DOPR	**Dopca**	35.08	300	⇓*i*P		**P**	**10 28 07.3 +1.8**
NACGM	**Naroch**	35.11	316	*e*		**P**	**10 28 05.0 -0.5**
SKNT	**Sakolnakorn**	35.12	115	P		**P**	**10 28 07.4 +1.3**
	comp=Z,22nm,1.0s						
BURAR	**Bucovina Array**	35.20	303	⇓*i*P		**P**	**10 28 08.1 +1.5**
BURAR	**Bucovina Array**	35.20	303	⇓P		**P**	**10 28 08.1 +1.5**
KARP	**Karpathos**	35.20	282	*e*P		**P**	**10

OJC Ojcow 38.81 307 *eP* **P 10 28 37.2 +0.4**
comp=Z,25nm,1.1s
VAF Ylistaro 39.40 328 P **P 10 28 42.3 +0.9**
VAF pmax pmax
comp=Z,49nm,1.1s
VYHS Vyhne 39.47 304 *eP* **P 10 28 43.5 +1.3**
VYHS pmax pmax
comp=Z,9.0nm,1.4s
VYHS Vyhne 39.47 304 *eP* **P 10 28 43.5 +1.3**
PDG Podgorica 39.80 295⇑ *iP* **P 10 28 45.6 +0.6**
OKC Ostrava-Krasne 39.88 306 *ePP* PP 10 30 23.3 +0.9
MORC Moravsky Berou 40.27 306⇑ *iP* **P 10 28 50.3 +1.4**
MORC Moravsky Berou 40.27 306 *eP* **P 10 28 49.8 +1.0**
MORC pmax pmax
comp=Z,67nm,1.1s
MORC Moravsky Berou 40.27 306 *eP* **P 10 28 49.8 +1.0**
comp=Z,67nm,1.1s
KEV Kevo 40.67 338 *eP* **P 10 28 52.6 +0.9**
KEV pmax pmax
comp=Z,46nm,1.1s
KEV Kevo 40.67 338 *eP* **P 10 28 52.6 +0.9**
comp=Z,46nm,1.1s
KEV *ep*P **pP 10 29 34.2 -6.6**
KRLC Kraliky 40.75 307 *eP* **P 10 28 53.7 +0.9**
KRLC *es*P **sP 10 30 10.4 +1.6**
KRLC Kraliky 40.75 307 *eP* **P 10 28 53.7 +0.9**
KRLC *e* 10 30 10.4
CLNS Chul'man 40.81 43 *eP* P 10 28 47.4 -5.8
CLNS *e* 10 29 41.8
CLNS pmax pmax
comp=Z,4.0nm,0.2s
CLNS pmax pmax
comp=E,8.0nm,0.3s
CLNS pmax pmax
comp=N,3.0nm,0.3s
VRAC Vranov 40.91 306⇓ *iP* **P 10 28 55.9 +1.9**
VRAC Vranov 40.91 306⇓ P **P 10 28 55.9 +1.9**
ARCES ARCESS Array B 41.01 338 P **P 10 28 55.4 +0.9**
comp=N,32nm,0.4s,baz=115,slow=8.0,SNR=692
ARE0 ARCESS Array S 41.01 338 *eP* **P 10 28 55.6 +1.1**
ARE0 IAmb IAmb 10 28 56.1
comp=Z,41nm,0.5s
DPC Dobruska-Polom 41.04 307 *eP* **P 10 28 56.7 +1.6**
DPC *ex* x 10 29 53.6
DPC *es*P **sP 10 30 12.6 +1.5**
DPC Dobruska-Polom 41.04 307 *eP* **P 10 28 56.7 +1.6**
DPC *e* 10 30 12.6
KSP Ksiaz 41.04 308 *eP* **P 10 28 55.8 +0.7**
KSP Ksiaz 41.04 308 *eP* **P 10 28 55.8 +0.7**
SOP Sopron 41.05 303 P **P 10 28 57.7 +2.6**
SOP pmax pmax
comp=Z,16nm,1.5s
UPC Upice 41.23 308 *eP* **P 10 28 58.2 +1.6**
UPC *es*SS SS 10 38 14.6 +10
UPC Upice 41.23 308 *eP* **P 10 28 58.2 +1.6**
KTK1 Kautokeino 41.48 336 *eP* **P 10 28 59.1 +0.8**
KTK1 IAmb IAmb 10 28 59.5
comp=Z,66nm,0.4s
CONA Conrad Observa 41.49 304 *iP* **P 10 28 59.9 +1.0**
comp=Z,32nm,1.5s,SNR=17
CN2 Changchun 41.55 63⇓ P **P 10 29 00.0 +0.7**
CN2 *es*P sP 10 30 10.0 -5.4
CN2 *e*S **S 10 34 59.0 +2.0**
TREC Trest 41.63 306 *eP* **P 10 29 01.6 +1.7**
TREC Trest 41.63 306 *eP* **P 10 29 01.6 +1.7**
ARSA Arzberg 41.79 303 *iP* **P 10 29 01.7 +0.5**
comp=Z,5.9nm,1.1s
BSD Bornholm Skovb 41.90 314 *iP* **P 10 29 02.0 +0.1**
comp=Z,15nm,0.9s
BSD Bornholm Skovb 41.90 314 *iP* **P 10 29 02.0 +0.1**
BSD pmax pmax
comp=Z,15nm,0.9s
MATE Matera 42.02 293⇓ *iP* **P 10 29 03.7 +0.6**
GOPC GO Pecny, Ondr 42.05 307 *eP* **P 10 29 04.7 +1.5**
GOPC GO Pecny, Ondr 42.05 307 *eP* **P 10 29 04.7 +1.5**
LEGS Legarje 42.08 301 *iP* **P 10 29 04.5 +0.9**
LEGS *i*PP **PcP 10 30 53.5 0.0**
HAMF Hammerfest 42.09 339 *eP* **P 10 29 04.6 +1.4**
HAMF IAmb IAmb 10 29 05.1
comp=Z,90nm,0.5s
SOKA Soboth 42.19 302 *iP* **P 10 29 05.4 +0.9**
comp=Z,10nm,0.8s,SNR=16
PRU Pruhonice 42.20 307 *eP* **P 10 29 05.8 +1.4**
PRU *es*P **sP 10 30 21.9 +1.2**
PRU *e*XS 10 36 35.1
PRU *e*SS **ScS 10 38 36.6 -3.4**
PRU Pruhonice 42.20 307 *eP* **P 10 29 05.8 +1.4**
PRU *e* 10 30 21.9
PRU *e* 10 38 36.6
PDKS Podkum 42.29 301⇑ *iP* **P 10 29 06.3 +1.0**
PDKS *e* 10 30 23.5
PDKS *i*PP **PcP 10 30 54.3 0.0**
TIP Timpagrande 42.33 291⇓ *iP* **P 10 29 06.6 +0.9**
TIP Timpagrande 42.33 291 *eP* **P 10 29 06.0 +0.3**
comp=Z,30nm,1.3s
PSI Prapat 42.39 136 *eP* **P 10 29 06.1 -0.4**
PSI pmax pmax
comp=Z,17nm,0.9s
PSI Prapat 42.39 136 *eP* **P 10 29 06.1 -0.4**
comp=Z,17nm,0.9s
BRG Berggiesshubel 42.53 308 *eP* **P 10 29 07.8 +0.8**
comp=Z,20nm,1.0s
BRG *es*P **sP 10 30 24.6 +1.2**
comp=Z,17nm,1.1s
BRG *e*PP **PP 10 30 46.2 -4.5**
comp=Z,8.1nm,0.9s
BRG Berggiesshubel 42.53 308 *eP* **P 10 29 07.8 +0.7**
BRG *e**SP **sP 10 30 24.5 +1.2**
BRG *e* 10 30 46.2
BRG pmax pmax
comp=Z,20nm,1.0s
OBKA Obir 42.54 302 *iP* **P 10 29 08.1 +0.7**
comp=Z,13nm,1.2s,SNR=5.8
MOA Molln 42.57 304 *iP* **P 10 29 08.1 +0.7**
comp=Z,21nm,1.3s,SNR=9.8
LJU Ljubljana 42.62 301 *eP* **P 10 29 09.5 +1.6**
CUC Castrocucco 42.84 292 *eP* **P 10 29 10.8 +1.0**
comp=Z,42nm,1.3s
GERES GERESS Array B 42.84 305 P **P 10 29 10.6 +0.8**
comp=Z,0.8nm,0.4s,baz=77,slow=5.9,SNR=13
GERES PcP **PcP 10 30 55.7 -0.5**
comp=Z,3.6nm,0.8s,baz=84,slow=4.2,SNR=10
KHC Kasperske Hory 42.89 306 *eP* **P 10 29 10.8 +0.7**
KHC *ep*P **pP 10 30 02.7 +3.0**
KHC *es*P **sP 10 30 28.6 +2.2**
KHC *e*PP **PP 10 30 52.5 -2.2**
KHC Kasperske Hory 42.89 306 *eP* **P 10 29 10.8 +0.7**
KHC *e**PP **pP 10 30 02.7 +3.0**
KHC *e* 10 30 28.6
KHC *e* 10 30 52.5
KHC Kasperske Hory 42.89 306 *eP* **P 10 29 10.9 +0.8**
comp=Z,3.7nm,1.2s
GSI Gunungsitoli 42.90 139 *eP* **P 10 29 11.5 +1.0**
comp=Z,67nm,0.5s
CLL Collm 43.09 309⇑ *iP* **P 10 29 12.0 +0.4**
comp=Z,20nm,1.3s
CLL *ep*P **pP 10 30 01.0 -0.2**
CLL *es*P **sP 10 30 27.0 -1.0**
comp=Z,23nm,1.5s
CLL *e*PP **PP 10 30 55.0 -1.7**
CLL *e*PPP PPP 10 31 42.0
CLL *es*PP 10 32 08.0
CLL *e*SS SS 10 38 42.0 +0.9
CLL *es*SS 10 39 48.0
CLL Collm 43.09 309 *eP* **P 10 29 12.4 +0.8**
CLL pmax pmax
comp=Z,16nm,1.2s
CLL Collm 43.09 309 *eP* **P 10 29 12.4 +0.8**
comp=Z,16nm,1.2s
TRO Tromso 43.13 336 *eP* **P 10 29 12.4 +0.8**
MYKA Terra Mystica 43.14 302 *eP* **P 10 29 13.0 +0.9**
comp=Z,15nm,1.7s
KBA Koelnbreinsper 43.28 303 *iP* **P 10 29 13.7 +0.3**
comp=Z,4.6nm,0.5s,SNR=6.4
KBA Koelnbreinsper 43.28 303 P **P 10 29 15.1 +1.7**
KBA pmax pmax
comp=Z,9.0nm,1.7s
NKC Novy Kostel 43.52 307 *eP* **P 10 29 16.4 +1.3**
NKC Novy Kostel 43.52 307 *eP* **P 10 29 16.4 +1.3**
STEI Steigen 43.84 333 *eP* **P 10 29 18.0 +0.8**
NC602 NORSAR Array S 44.07 323 *eP* **P 10 29 19.0 -0.2**
NC602 IAmb IAmb 10 29 19.9
comp=Z,30nm,1.1s
NB2 NORSAR Subarra 44.26 323 P **P 10 29 20.5 -0.3**
comp=Z,25nm,0.7s,baz=96,slow=7.9
NB2 NORSAR Subarra 44.26 323 P **P 10 29 20.5 -0.3**
baz=96,slow=7.9
NOA NORSAR Array B 44.26 323 P **P 10 29 20.6 -0.3**
comp=Z,18nm,0.6s,baz=102,slow=7.8,SNR=134
STOK Stokkvaagen 44.29 331 *eP* **P 10 29 23.1 +2.3**
GRF Grafenberg Arr 44.37 307 P **P 10 29 24.1 +2.4**
GRF pmax pmax
comp=Z,22nm,1.6s
NSS Namsos 44.37 328 *eP* **P 10 29 22.1 +0.6**
LOF Lofoten 44.51 333 *eP* **P 10 29 22.1 -0.5**
MOTA Moosalm 44.76 303 *iP* **P 10 29 24.6 -0.4**
comp=Z,5.0nm,0.7s
KSAR Wonju Array Be 44.82 71 P **P 10 29 26.4 +0.9**
KSAR *PP **pP 10 30 17.6 +2.1**
KSAR Wonju Array Be 44.82 71 P **P 10 29 26.4 +0.9**
KSAR pP **pP 10 30 17.6 +2.1**
KSRS Korea Array 44.84 71 P **P 10 29 26.4 +0.8**
comp=Z,0.9nm,0.4s,baz=282,slow=8.0,SNR=6.9
KSRS pP **pP 10 30 17.6 +1.9**
comp=Z,3.7nm,1.0s,baz=284,slow=6.9,SNR=3.8
KSRS Korea Array 44.84 71 P **P 10 29 26.4 +0.8**
KSRS *PP **pP 10 30 17.6 +1.9**
KSRS pmax pmax
comp=Z,2.0nm,0.7s
KSRS pmax pmax
comp=Z,4.0nm,1.0s
HOPEN Hopen 44.86 346 *eP* **P 10 29 27.4 +2.2**
RETA Reutte 44.96 304 *iP* **P 10 29 26.4 -0.1**
comp=Z,2.5nm,0.4s
KONO Kongsberg 44.97 321 *eP* **P 10 29 26.3 0.0**
KONO IAmb IAmb 10 29 27.1
comp=Z,24nm,1.1s
KONO Kongsberg 44.97 321 *eP* **P 10 29 26.1 -0.2**
KONO pmax pmax
comp=Z,22nm,1.0s
KONO Kongsberg 44.97 321 *eP* **P 10 29 26.1 -0.2**
comp=Z,22nm,1.0s
FETA Feichten 45.06 303 *iP* **P 10 29 27.1 -0.3**
comp=Z,9.3nm,0.9s,SNR=6.1
KLR Kul'dur 45.07 54 P **P 10 29 27.9 +0.7**
comp=Z,1.5nm,0.3s,baz=274,slow=8.1,SNR=11
KLR Kul'dur 45.07 54 P **P 10 29 28.0 +0.7**
KLR pmax pmax
comp=Z,2.0nm,0.4s
BJO Bjornoya 45.09 343 *eP* **P 10 29 27.4 +0.4**
FUORN Ofenpass-Fuorn 45.44 302 *eP* **P 10 29 30.7 +0.2**
comp=Z,15nm,0.9s
HOMB Homborsund 45.51 319 *eP* **P 10 29 31.1 +0.7**
DAVA Damuels 45.59 303 *iP* **P 10 29 31.9 +0.4**
comp=Z,26nm,0.9s,SNR=14
TIXI Tiksi 45.65 22 P **P 10 29 31.8 +0.4**
comp=Z,25nm,0.3s,baz=300,slow=4.8,SNR=110
TIXI Tiksi 45.65 22 *c iP* **P 10 29 31.9 +0.5**
TIXI pmax pmax
comp=Z,6.0nm,0.3s
TIXI Tiksi 45.65 22 *eP* **P 10 29 31.8 +0.4**
comp=Z,35nm,0.3s
TUE Stuetta 46.09 302 *eP* **P 10 29 35.8 +0.2**
comp=Z,5.8nm,0.7s
SNART Snartemo 46.19 319 *eP* **P 10 29 36.7 +0.9**
AKN Aaknes 46.35 324 *eP* **P 10 29 37.9 +0.8**
ODD1 Odda 46.48 321 *eP* **P 10 29 39.3 +1.2**
BLS5 Blasjo 46.57 321 *eP* **P 10 29 40.6 +1.8**
LANF Langenberg 46.68 306 *eP* **P 10 29 40.9 +1.1**
HYA Hoyanger 46.71 323 *eP* **P 10 29 41.1 +1.3**
STAV Stavanger 46.96 320 *eP* **P 10 29 42.6 +0.8**
HSPB Hornsund (broa 47.00 345 *eP* **P 10 29 43.5 +1.6**
BER Bergen 47.12 322 *eP* **P 10 29 43.8 +0.8**
ASK Askoy 47.19 322 *eP* **P 10 29 43.4 -0.1**
ECH Echery 47.23 305 *eP* **P 10 29 44.3 +0.2**
MOF Molkenrain 47.32 305 *eP* **P 10 29 45.4 +0.5**
SPA0 Spitsbergen Ar 47.35 347 *eP* **P 10 29 46.3 +1.7**
SPITS Spitsbergen Ar 47.35 347 P **P 10 29 46.1 +1.5**
comp=Z,7.9nm,0.3s,baz=133,slow=10,SNR=300
SUE Sulen 47.40 323 *eP* **P 10 29 46.3 +1.2**
SENIN Lac Senin/Sane 47.50 303 *eP* **P 10 29 46.8 +0.4**
comp=Z,18nm,1.1s
MEM Membach 47.57 309 P **P 10 29 47.9 +1.3**
comp=Z,10nm,1.3s
WLF Walferdange 47.63 307 P **P 10 29 48.6 +1.5**
comp=Z,20nm,1.4s
WLF Walferdange 47.63 307 *eP* **P 10 29 47.6 +0.5**
WLF pmax pmax
comp=Z,32nm,1.1s
WLF Walferdange 47.63 307 *eP* **P 10 29 47.5 +0.5**
comp=Z,32nm,1.1s
BEBN Eben Emael 47.74 309 P **P 10 29 48.7 +0.7**
AUTN L'Aution 47.95 300 *eP* **P 10 29 50.8 +0.9**
LUCF Luceram 48.03 299 *eP* **P 10 29 51.4 +1.0**
REVF Revere 48.05 299 *eP* **P 10 29 51.2 +0.7**
MVIF Mont Vial 48.17 299 *eP* **P 10 29 51.9 +0.4**
CALN Calern 48.39 299 *eP* **P 10 29 53.5 +0.3**
KBS Kingsbay 48.47 347 *eP* **P 10 29 54.6 +1.4**
KBS IAmb IAmb 10 29 55.2
comp=Z,41nm,1.1s
KBS Kingsbay 48.47 347 *eP* **P 10 29 54.5 +1.4**
KBS pmax pmax
comp=Z,40nm,1.0s
KBS Kingsbay 48.47 347 *eP* **P 10 29 54.5 +1.4**
comp=Z,40nm,1.0s
DOU Dourbes 48.55 308 P **P 10 29 55.6 +1.5**
JNU Nakatsue 48.57 76 P **P 10 29 54.4 -0.2**
comp=Z,6.4nm,0.9s,baz=270,slow=6.1,SNR=2.2
KMBO Kilima Mbogo 48.92 227 *eP* **P 10 29 57.9 +0.3**
KMBO pmax pmax
comp=Z,91nm,1.9s
KMBO Kilima Mbogo 48.92 227 P **P 10 29 59.2 +1.6**
SNR=6.2
KMBO Kilima Mbogo 48.92 227 P **P 10 29 59.2 +1.6**
SNR=6.2
KMBO Kilima Mbogo 48.92 227 *eP* **P 10 29 57.9 +0.3**
comp=Z,91nm,1.9s
KEST Kesra 48.98 288 P **P 10 29 58.6 +0.9**
comp=Z,9.4nm,0.4s,baz=30,slow=2.0,SNR=32
LEPF PUYLOUBIER 49.28 299 *eP* **P 10 30 00.5 +0.7**
SSB Saint Sauveur 49.63 302 *eP* **P 10 30 03.0 +0.6**
SSB Saint Sauveur 49.63 302 *eP* **P 10 30 03.0 +0.6**
SSB pmax pmax
comp=Z,12nm,1.0s
SSB Saint Sauveur 49.63 302 *eP* **P 10 30 03.0 +0.6**
comp=Z,12nm,1.0s
NKL Nikolayevsk 50.02 47 *eP* **P 10 30 04.0 -1.1**
NKL *e* 10 30 59.5
NKL pmax pmax
comp=Z,10.0nm,0.6s
PLDF La Plantade 50.08 303 *eP* **P 10 30 06.5 +0.7**
AGO Saint Agoulin 50.39 303 *eP* **P 10 30 08.9 +0.8**
LBL Lubilhac 50.52 302 *eP* **P 10 30 08.6 -0.6**
PYM Petit Puy Mans 50.55 303 *eP* **P 10 30 09.5 +0.1**
MAJO Matsushiro 52.91 69 *deP* **P 10 30 27.4 +0.6**
MAJO pmax pmax
comp=Z,23nm,0.9s
MJAR Matsushiro Arr 52.91 69 P **P 10 30 28.6 +1.7**
comp=Z,2.0nm,0.8s,baz=291,slow=8.3,SNR=3.8
MJAR pP **pP 10 31 21.6 +3.0**
comp=Z,5.1nm,0.8s,baz=287,slow=10,SNR=8.0
SEY Seymchan 54.31 34⇓ *eP* **P 10 30 37.7 +1.2**
DAG Danmarks Havn 54.59 344⇑ *iP* **P 10 30 39.1 +0.8**
comp=Z,34nm,1.0s
DAG *i* 10 31 32.5
DAG Danmarks Havn 54.59 344⇑ *iP* **P 10 30 39.1 +0.8**
DAG *i* 10 31 32.5
DAG pmax pmax
comp=Z,34nm,1.0s
ESDC Sonseca Array 57.38 298 P **P 10 30 58.6 -0.1**
comp=Z,6.6nm,0.7s,baz=58,slow=7.5,SNR=30
ESDC PcP **PcP 10 31 49.3 -0.5**
comp=Z,0.9nm,0.5s,baz=37,slow=4.5,SNR=5.3
TAM Tamanrasset 57.51 276 *eP* **P 10 30 59.7 -0.3**
TAM Tamanrasset 57.51 276 *eP* **P 10 30 59.7 -0.3**
PAB San Pablo 57.71 298 *eP* **P 10 31 01.4 +0.4**
PAB San Pablo 57.71 298 *eP* **P 10 31 01.4 +0.4**
BILL Bilibino 58.49 26 *c iP* **P 10 31 06.9 +1.1**
BILL *i* *PP **pP 10 32 00.0 +1.4**
BILL *i* 10 33 20.4
BILL pmax pmax
comp=Z,12nm,1.0s
BILL Bilibino 58.49 26 *eP* **P 10 31 05.9 +0.1**
MVO Moncorvo 58.95 300 *eP* **P 10 31 10.2 +0.6**
RER Riviere de l'E 59.26 197 *eP* **P 10 31 12.8 +1.0**
OPO Ambohidratompo 59.34 206 P **P 10 31 13.4 +1.0**
comp=Z,18nm,0.9s,baz=38,slow=6.9,SNR=13
PCBR Castelo Branco 59.80 299 *eP* **P 10 31 16.3 +1.0**
PETK Petropavlovsk- 59.88 44 P **P 10 31 14.8 -0.7**
comp=Z,2.4nm,0.8s,baz=317,slow=2.9,SNR=3.6
PMRV Marv??o 59.91 299 *eP* **P 10 31 15.9 -0.1**
PBAR Barrancos 60.18 297 *eP* **P 10 31 18.3 +0.4**
PTOM Tomar 60.55 299 *eP* **P 10 31 21.1 +0.8**
EVO Evora 60.72 298 *eP* **P 10 31 22.1 +0.6**
PBEJ Beja 60.84 297 *eP* **P 10 31 22.9 +0.6**
SUMG Summit 60.92 341⇑ *iP* **P 10 31 24.0 +1.2**
comp=Z,38nm,1.0s
SUMG *i* 10 32 20.4
SUMG Summit 60.92 341⇑ *iP* **P 10 31 24.0 +1.2**
SUMG *i* 10 32 20.4
SUMG pmax pmax
comp=Z,38nm,1.0s
SUMG Summit 60.92 341 *eP* **P 10 31 24.1 +1.2**
PVAQ Vaqueiros 61.00 297 *eP* **P 10 31 23.7 +0.3**
MESJ Messejana 61.17 297 *eP* **P 10 31 24.9 +0.4**
PBDV Barranco-do-Ve 61.22 297 *eP* **P 10 31 25.6 +0.7**
PNCL Nicolau / Gran 61.27 298 *eP* **P 10 31 26.2 +1.0**
LSZ Lusaka 65.54 226 P **P 10 31 53.1 -0.3**
comp=Z,30nm,0.8s,baz=35,slow=6.2,SNR=44
TORD Torodi Ar. Bea 65.71 269 P **P 10 31 52.9 -1.6**
comp=Z,24nm,0.3s,baz=51,slow=5.8,SNR=521
SFJD Kangerlussuaq 67.62 339 P **P 10 32 05.3 -0.4**
comp=Z,7.7nm,0.7s,baz=61,slow=7.4,SNR=6.5
SFJD Kangerlussuaq 67.62 339 *eP* **P 10 32 06.6 +0.9**
RES Resolute Bay 68.56 356 P **P 10 32 12.2 +0.8**
comp=Z,5.3nm,1.0s,baz=33,slow=6.2,SNR=6.2
RES Resolute Bay 68.56 356 P **P 10 32 12.2 +0.8**
RES pmax pmax
comp=Z,4.0nm,0.8s
RES Resolute Bay 68.56 356 *eP* **P 10 32 11.7 +0.3**
comp=Z,5.1nm,0.9s
MATP Matopo 69.50 223 P **P 10 32 17.8 -0.4**
comp=Z,28nm,0.4s,baz=23,slow=5.1,SNR=102
COLD Coldfoot 71.84 16 *eP* **P 10 32 32.2 +0.8**
comp=Z,24nm,0.8s
COLD *ep*P **pP 10 33 28.1 +1.7**
INK Inuvik 73.77 9 P **P 10 32 43.5 +0.9**
comp=Z,19nm,0.5s,baz=348,slow=6.1,SNR=238
INK pP **pP 10 33 40.1 +2.1**
comp=Z,17nm,0.9s,baz=337,slow=7.2,SNR=6.7
INK Inuvik 73.77 9 *eP* **P 10 32 43.4 +0.7**
comp=Z,44nm,0.9s
INK *ep*P **pP 10 33 39.9 +1.9**
INK *es*P **sP 10 33 59.6 -3.6**
BPAW Bear Paw Mtn. 74.26 18 *eP* **P 10 32 45.7 0.0**
comp=Z,3.6nm,0.9s
BPAW *ep*P **pP 10 33 42.2 +1.1**
COLA College 74.34 16 *eP* **P 10 32 46.6 +0.5**
COLA *e**PP **pP 10 33 43.6 +2.2**
COLA pmax pmax
comp=Z,37nm,0.9s
COLA College 74.34 16 *eP* **P 10 32 46.5 +0.5**
comp=Z,38nm,0.9s
COLA *ep*P **pP 10 33 43.6 +2.2**
ILAR Eielson Array 74.65 16 P **P 10 32 47.5 -0.3**
comp=Z,13nm,1.0s,baz=318,slow=4.5,SNR=82
ILAR Eielson Array 74.65 16 P **P 10 32 47.6 -0.3**
ILAR pmax pmax
comp=Z,6.0nm,0.5s
DBIC Dimbokro 74.69 267 P **P 10 32 47.6 -1.3**
comp=Z,17nm,0.8s,baz=32,slow=6.4,SNR=20
KTH Kantishna Hill 74.73 18 *eP* **P 10 32 48.5 +0.1**
comp=Z,24nm,0.7s
LBTB Lobatse 74.78 222 P **P 10 32 49.2 +0.1**
comp=Z,14nm,0.4s,baz=43,slow=5.0,SNR=29
KIC Kosan Boka 74.78 267 *eP* **P 10 32 48.2 -1.3**
comp=Z,141nm,1.2s
TIC Toumodi 74.84 267 *eP* **P 10 32 48.4 -1.4**
FRB Frobisher Bay 74.92 343 P **P 10 32 49.3 -0.1**
comp=Z,9.1nm,0.9s,baz=16,slow=5.7,SNR=31
PPLA Purkeypile 74.96 19 *eP* **P 10 32 50.1 +0.2**
comp=Z,7.1nm,0.5s
TRF Thorofare Moun 74.98 18 *eP* **P 10 32 50.2 +0.2**
comp=Z,3.1nm,0.5s
TSUM Tsumeb 75.00 232 P **P 10 32 50.5 -0.2**
comp=Z,8.4nm,0.5s,baz=11,slow=6.9,SNR=18
TSUM Tsumeb 75.00 232 *eP* **P 10 32 50.4 -0.2**
comp=Z,36nm,1.4s
MCK McKinley 75.07 17 *eP* **P 10 32 49.8 -0.5**
MCK *e* 10 33 03.2
MCK *e**PP **pP 10 33 47.4 +1.6**
MCK pmax pmax
comp=Z,9.0nm,0.4s
MCK McKinley 75.07 17 *eP* **P 10 32 49.8 -0.5**
comp=Z,9.1nm,0.4s
MCK *e*PcP **PcP 10 33 03.2 +0.4**
MCK *ep*P **pP 10 33 47.4 +1.6**
LIC Lamto 75.09 267 *eP* **P 10 32 49.8 -1.4**
comp=Z,28nm,0.7s
EGAK Eagle 75.81 14 *eP* **P 10 32 54.5 0.0**
comp=Z,10nm,0.9s
EGAK *ep*P **pP 10 33 52.4 +2.3**
DOT Dot Lake 76.24 15 *eP* **P 10 32 57.0 +0.1**
comp=Z,21nm,0.7s
DOT *ep*P **pP 10 33 54.3 +1.7**
PAX Paxson 76.53 16 *eP* **P 10 32 58.8 +0.1**
PAX *e**PP **pP 10 33 55.8 +1.5**
PAX pmax pmax
comp=Z,10.0nm,0.7s
PAX Paxson 76.53 16 *eP* **P 10 32 58.8 +0.1**
comp=Z,9.9nm,0.7s
PAX *ep*P **pP 10 33 55.8 +1.5**
DAWY Dawson 76.79 13 *eP* **P 10 33 00.5 +0.4**
comp=Z,27nm,1.1s
DAWY *ep*P **pP 10 33 57.7 +1.9**
PMR Palmer 76.84 18 *eP* **P 10 33 00.4 +0.2**
PMR pmax pmax
comp=Z,15nm,1.0s
PMR Palmer 76.84 18 *eP* **P 10 33 00.4 +0.2**
comp=Z,15nm,1.0s
SML Sawmill 76.85 18 *eP* **P 10 33 00.4 0.0**
SML pmax pmax
comp=Z,15nm,1.3s
SML Sawmill 76.85 18 *eP* **P 10 33 00.4 0.0**
comp=Z,15nm,1.3s
BOSA Boshof 77.85 220 P **P 10 33 05.9 -0.5**
comp=Z,22nm,0.7s,baz=43,slow=6.4,SNR=25
BMRM Bremner River 78.48 17 *eP* **P 10 33 10.4 +1.0**
comp=Z,34nm,1.1s
KDAK Kodiak Island 79.07 22 P P 10 33 28.1 +16
comp=Z,21nm,0.7s,baz=340,slow=6.5,SNR=10.0
KDAK Kodiak Island 79.07 22 *iP* **P 10 33 12.8 +0.2**
KDAK Kodiak Island 79.07 22 *eP* **P 10 33 12.4 -0.2**
comp=Z,47nm,1.3s
OHAK Old Harbor 79.32 23 *eP* **P 10 33 14.3 +0.4**
comp=Z,20nm,1.0s
YKA Yellowknife Ar 81.11 3 P **P 10 33 23.5 +0.2**
comp=Z,9.6nm,0.4s,baz=351,slow=5.4,SNR=520
YKA pP **pP 10 34 21.2 +1.5**
comp=Z,8.6nm,0.8s,baz=348,slow=5.3,SNR=7.1
YKA PKKPbc **PKKPbc 10 51 55.0 -2.9**
comp=Z,0.2nm,0.5s,baz=172,slow=2.3,SNR=6.4
NWAO Narrogin (SRO) 81.59 142 P **P 10 33 24.6 -1.6**
comp=Z,13nm,0.6s,baz=225,slow=11,SNR=15
SKAG Skagway 81.80 13 *eP* **P 10 33 28.0 +1.0**
comp=Z,14nm,1.0s
SCHQ Schefferville 81.96 337 P **P 10 33 28.9 +0.9**
comp=Z,3.7nm,0.7s,baz=38,slow=6.4,SNR=8.8
WRA Warramunga Arr 82.07 122 P **P 10 33 27.3 -1.7**
comp=Z,12nm,0.7s,baz=325,slow=4.9,SNR=100
WRA PKKPbc **PKKPbc 10 51 56.8 +0.8**
comp=Z,1.9nm,1.1s,baz=117,slow=2.6,SNR=12
WRA Warramunga Arr 82.07 122 P **P 10 33 27.3 -1.7**
WRA pmax pmax
comp=Z,15nm,0.8s
WRAB Tennant Creek 82.08 122 *d iP* **P 10 33 28.1 -1.0**
WRAB *i* *PP **pP 10 34 27.3 +1.7**
WRAB pmax pmax
comp=Z,45nm,0.8s
WRAB Tennant Creek 82.08 122 *eP* **P 10 33 27.8 -1.3**
comp=Z,21nm,0.8s
WRAB *ep*P **pP 10 34 26.5 +0.9**
SUR Sutherland 83.16 221 *eP* **P 10 33 34.8 +0.2**
DLBC Dease Lake 83.66 11 P **P 10 33 37.6 +0.8**
comp=Z,3.5nm,0.6s,baz=33,slow=3.4,SNR=15
DLBC Dease Lake 83.66 11 *eP* **P 10 33 37.5 +0.7**
comp=Z,6.3nm,0.9s
ASAR Alice Springs 84.34 125 P **P 10 33 39.1 -1.4**
comp=Z,12nm,0.8s,baz=309,slow=5.0,SNR=95
ASAR PKPPKP **P'P'df 10 59 55.5 -0.1**
comp=Z,0.5nm,0.9s,baz=122,slow=2.4,SNR=4.0
ASAR Alice Springs 84.34 125 P **P 10 33 39.2 -1.4**
ASAR pmax pmax
comp=Z,11nm,0.8s
ULM Lac du Bonnet 92.71 352 P **P 10 34 18.3 -1.5**

comp=Z,8.3nm,0.9s,baz=357,slow=3.4,SNR=4.9
A33A Warroad 93.94 351 P **P 10 34 25.9 +0.3**
baz=11
A32A Rocking H Ranc 94.09 352 P **P 10 34 26.8 +0.5**
baz=10.0
A30A Hoffart Farm, 94.26 353 P **P 10 34 27.2 +0.1**
baz=8.6
B34A Aery, Baudette 94.29 350 P **P 10 34 27.2 +0.1**
baz=12
EYMN Ely 94.35 348 P **P 10 34 27.8 +0.4**
baz=14
A29A Manning Farm, 94.37 354 P **P 10 34 27.8 +0.3**
baz=7.8
A25A Svangstu Ranch 94.63 356 P **P 10 34 28.8 0.0**
baz=4.7
B31A Greenbush Farm 94.71 352 P **P 10 34 29.5 +0.4**
baz=9.1
C36A Pine Crest Far 94.74 349 P **P 10 34 29.6 +0.3**
baz=13
B30A Myrvik Farm, E 94.75 353 P **P 10 34 29.9 +0.6**
baz=8.6
STKA Stephens Creek 94.88 126 P **P 10 34 27.9 -2.1**
comp=Z,0.8nm,0.3s,baz=327,slow=3.5,SNR=3.6
DGMT Dagmar 95.16 357 P **P 10 34 33.2 +2.0**
baz=3.8
DGMT Dagmar 95.16 357 *e*P **P 10 34 31.7 +0.5**
comp=Z,8.6nm,0.3s
NEW Newport 95.16 5 P **P 10 34 32.3 +1.1**
baz=353
C31A Landman Farms, 95.34 352 P **P 10 34 32.3 +0.3**
baz=9.0
E36A McGregor 96.01 349 P **P 10 34 35.7 +0.6**
baz=13
LAO LASA Array 97.01 358 P **P 10 34 41.0 +1.4**
baz=2.2
LAO LASA Array 97.01 358 *e*P **P 10 34 40.9 +1.2**
comp=Z,4.4nm,0.8s
RLMT Red Lodge 98.61 0 P **P 10 34 48.1 +1.0**
baz=360
ECSD EROS Data Cent 99.21 351 P **Pdif 10 34 50.1 +0.6**
baz=10.0
PDAR Pinedale Array 100.97 0 P **Pdif 10 34 58.5 +0.9**
comp=Z,0.3nm,0.6s,baz=337,slow=4.4,SNR=2.7
PDAR PP **PP 10 39 06.0 -1.6**
comp=Z,0.3nm,0.7s,baz=334,slow=6.0,SNR=2.5
NVAR Mina Array Bea 104.81 8 PKiKP **PKiKP 10 39 29.2 +0.5**
comp=Z,0.6nm,0.7s,baz=14,slow=1.8,SNR=5.3
TXAR Lajitas Array 114.18 355 PKKPab PKKPab 10 50 33.7 -4.3
comp=Z,0.5nm,0.8s,baz=187,slow=6.3,SNR=4.0
SNAA Sanae 119.52 200 P **PKPdf 10 39 53.9 -1.3**
VNA2 Neumayer--Watz 120.53 202 P **PKPdf 10 39 56.4 -0.7**
baz=31,slow=3.6
VNA3 Neumayer Olymp 121.33 202 P **PKPdf 10 39 57.8 -0.8**
PTGA Pitinga 122.32 297 PKP **PKPdf 10 40 01.7 -0.6**
comp=Z,1.9nm,0.3s,baz=349,slow=16,SNR=6.4
VNDA Vanda 125.64 164 PKP **PKPdf 10 40 04.9 -1.8**
comp=Z,1.5nm,0.9s,baz=242,slow=6.1,SNR=7.2
QSPA South Pole Qui 126.44 180 *e*PKPdf **PKPdf 10 40 06.7 -1.9**
ROSC El Rosal 127.53 314 PKP **PKPdf 10 40 12.8 0.0**
comp=Z,13nm,0.8s,baz=114,slow=4.0,SNR=6.5
SIV San Ignacio 132.91 283 PKP **PKPdf 10 40 21.5 -0.9**
comp=Z,0.9nm,0.5s,baz=110,slow=4.2,SNR=3.4
SIV PP **PP 10 42 50.1 -0.7**
comp=Z,1.2nm,0.6s,baz=85,slow=4.2,SNR=3.6
CPUP Villa Florida 135.21 268 PKP **PKPdf 10 40 25.1 -1.2**
comp=Z,5.1nm,0.7s,baz=112,slow=1.9,SNR=10
CPUP PP **PP 10 43 03.2 -2.2**
comp=Z,3.1nm,0.9s,baz=55,slow=6.1,SNR=3.0
LPAZ La Paz 138.56 288 PKP **PKPdf 10 40 32.5 -1.0**
comp=Z,2.5nm,0.8s,baz=80,slow=4.2,SNR=9.8
LVC Limon Verde 142.71 281 PKhKP PKPpre 10 40 36.4
comp=Z,40nm,0.7s,baz=45,slow=3.4,SNR=11
TRQA Tornquist 142.89 253 *e*PKPdf **PKPdf 10 40 36.7 -3.3**
TRQA *ep*PKPdf ***p*PKPdf 10 41 41.4 +0.9**
LCO Las Campanas 147.09 272 *e*PKPdf **PKPdf 10 40 48.1 +0.3**
LCO *e*PKPbc **PKPbc 10 40 50.6 +0.2**
PLCA Paso Flores 149.86 250 PKP **PKPdf 10 40 51.5 -0.2**
comp=Z,14nm,1.3s,baz=105,slow=4.0,SNR=7.8
PLCA PKPbc **PKPbc 10 40 55.9 -1.0**
comp=Z,39nm,1.0s,baz=134,slow=2.9,SNR=54

ISCJB ***14*** *10:25:09.4±0.2,43.°20N±0.°01×0.°19W±0.°01,h8km±1km, Error ellipse: s-maj=2.0km s-min=1.5km az=160.1*
CSEM ***14*** *10:25:10.7±0.1,43.°14N×0.°16W,h5km, ML3.5/48, Error ellipse: s-maj=1.5km s-min=1.2km az=152.0*
STR ***14*** *10:25:11.3±0.1,43.°04N×0.°20W,h5km, Ml3.5, Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*
LDG ***14*** *10:25:11.4±0.1,43.°04N×0.°23W,h2km, Md3.4/3, Ml3.6/40, Error ellipse: s-maj=0.9km s-min=0.7km az=22.0*
MDD ***14*** *10:25:12.1±0.2,43.°08N×0.°18W,h4km±3km, mbLg3.3/30, Error ellipse: s-maj=2.4km s-min=1.6km az=171.0, PRXIMO*
MRB ***14*** *10:25:12.0,43.°09N×0.°20W,h10km±1km, ML2.9/7, Error ellipse: s-maj=2.5km s-min=0.4km az=295.0*
INMG ***14*** *10:25:12.6±1.0,43.°04N×0.°18W,h0km±2km, ML2.8, Error ellipse: s-maj=2.9km s-min=1.4km az=17.0*

ISC 14 10:25:10.9±0.6,43.°10N±0.°02×0.°19W±0.°01,h16km±4km, n321,σ1°34/498,3C,Pyrenees

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
PYLO	**Lourdes**	**0.11**	**91**	P			**Pb**	**10 25 14.8**	**+0.2**
PYLO				S			**Sg**	**10 25 16.9**	**+0.1**
REYF	**Montagne du Re**	**0.15**	**258**	Pg			**Pg**	**10 25 15.3**	**+0.2**
REYF				Sg			**Sg**	**10 25 17.0**	**-0.8**
REYF	**Montagne du Re**	**0.15**	**258**	Pg			**Pg**	**10 25 15.3**	**+0.2**
REYF				Sg			**Sg**	**10 25 17.0**	**-0.8**
LABF	**Labassere**	**0.20**	**105**	Pg			**Pg**	**10 25 16.0**	**+0.2**
LABF				Sg			**Sg**	**10 25 19.6**	**+0.6**
LABF	**Labassere**	**0.20**	**105**	Pg			**Pg**	**10 25 16.0**	**+0.2**
LABF				Sg			**Sg**	**10 25 19.6**	**+0.6**
VIEF	**Viey**	**0.27**	**144**	Pg			**Pg**	**10 25 16.4**	**-0.4**
VIEF				Sg			**Sg**	**10 25 18.9**	**-2.0**
VIEF	**Viey**	**0.27**	**144**	Pg			**Pg**	**10 25 16.4**	**-0.4**
VIEF				Sg			**Sg**	**10 25 18.9**	**-2.0**
ETSF	**Etsaut**	**0.34**	**233**	Pg			**Pg**	**10 25 17.9**	**-0.1**
ETSF				Lg			Lg	10 25 21.7	
	2μm,0.3s								
ETSF	**Etsaut**	**0.34**	**233**	*e*Pg			**Pg**	**10 25 17.9**	**-0.1**
ETSF				*e*Sg			**Sg**	**10 25 21.7**	**-1.1**
	4μm,0.3s								
ETSF	**Etsaut**	**0.34**	**233**	Pg			**Pg**	**10 25 17.9**	**-0.1**
ETSF				*e*Sg			**Sg**	**10 25 21.7**	**-1.1**
	2μm,0.3s								
ATE	**Arette**	**0.37**	**268**	Pg			**Pg**	**10 25 19.0**	**+0.4**
ATE				Sg			**Sg**	**10 25 23.4**	**-0.4**
ATE	**Arette**	**0.37**	**268**	⇑Pg			**Pg**	**10 25 19.0**	**+0.4**
	117nm,0.1s,SNR=18								
ATE				Lg			Lg	10 25 24.6	
	1μm,0.1s,SNR=7.9								
ATE	**Arette**	**0.37**	**268**	Pg			**Pg**	**10 25 19.0**	**+0.4**
	117nm,0.1s,SNR=18								
ATE				Sg			**Sg**	**10 25 23.4**	**-0.4**
ATE				Lg			Lg	10 25 24.6	
	1μm,0.1s,SNR=7.9								
EPF	**Esparros**	**0.40**	**100**	Pg			**Pb**	**10 25 19.6**	**0.0**
EPF				Lg			Lg	10 25 24.9	
	761nm,0.3s								
EPF	**Esparros**	**0.40**	**100**	*e*Pg			**Pb**	**10 25 19.6**	**0.0**
EPF				*e*Sg			**Sg**	**10 25 24.9**	**+0.3**
	2μm,0.3s								
EPF	**Esparros**	**0.40**	**100**	Pg			**Pb**	**10 25 19.6**	**0.0**
EPF				*e*Sg			**Sg**	**10 25 24.9**	**+0.3**
	761nm,0.3s								
FMON	**Montousse˜¹**	**0.45**	**95**	P			**Pb**	**10 25 20.6**	**+0.1**
FMON				S			**Sb**	**10 25 27.4**	**+0.5**
ECHI	**Chisagues Biel**	**0.52**	**147**	⇑Pg			**Pg**	**10 25 21.1**	**-0.3**
	34nm,0.1s,SNR=18								
ECHI				Lg			Lg	10 25 27.1	
	2μm,0.1s,SNR=11								
ECHI	**Chisagues Biel**	**0.52**	**147**	Pg			**Pg**	**10 25 21.0**	**-0.3**
	34nm,0.1s,SNR=18								
ECHI				Lg			Lg	10 25 27.1	
	2μm,0.1s,SNR=11								
LARF	**Larrau**	**0.59**	**264**	Pg			**Pg**	**10 25 22.9**	**+0.4**
LARF				Sg			**Sg**	**10 25 30.0**	**-0.4**
LARF	**Larrau**	**0.59**	**264**	Pg			**Pg**	**10 25 22.9**	**+0.4**
LARF				Sg			**Sg**	**10 25 30.0**	**-0.4**
MELF	**Melles**	**0.73**	**108**	Pg			**Pg**	**10 25 24.9**	**-0.4**
MELF				Sg			**Sg**	**10 25 34.8**	**-0.2**
MELF	**Melles**	**0.73**	**108**	Pg			**Pg**	**10 25 24.9**	**-0.4**
MELF				Sg			**Sg**	**10 25 34.8**	**-0.2**
YBER	**Berdun**	**0.74**	**226**	Pg			**Pg**	**10 25 25.7**	**+0.2**
	81nm,0.1s,SNR=7.9								
YBER				Lg			Lg	10 25 35.5	
	446nm,0.2s,SNR=7.9								
YBER	**Berdun**	**0.74**	**226**	Pg			**Pg**	**10 25 25.7**	**+0.2**
	81nm,0.1s,SNR=7.9								
YBER				Lg			Lg	10 25 35.5	
	446nm,0.2s,SNR=7.9								
YSIG	**Sigues**	**0.75**	**232**	Pg			**Pg**	**10 25 25.8**	**+0.2**
	101nm,0.2s,SNR=7.9								
YSIG				Lg			Lg	10 25 35.7	
	167nm,0.2s,SNR=7.9								
YSIG	**Sigues**	**0.75**	**232**	Pg			**Pg**	**10 25 25.8**	**+0.2**
	101nm,0.2s,SNR=7.9								
YSIG				Lg			Lg	10 25 35.7	
	167nm,0.2s,SNR=7.9								
SJPF	**Ste Jean**	**0.76**	**271**	Pg			**Pg**	**10 25 25.8**	**+0.1**
SJPF				Lg			Lg	10 25 35.4	
	192nm,0.3s								
SJPF	**Ste Jean**	**0.76**	**271**	*e*Pg			**Pg**	**10 25 25.8**	**+0.1**
SJPF				*e*Sg			**Sg**	**10 25 35.4**	**-0.3**
	384nm,0.3s								
SJPF	**Ste Jean**	**0.76**	**271**	Pg			**Pg**	**10 25 25.8**	**+0.1**
SJPF				*e*Sg			**Sg**	**10 25 35.4**	**-0.3**
	192nm,0.3s								
OSSF	**Osses**	**0.80**	**282**	Pg			**Pg**	**10 25 26.0**	**-0.5**
OSSF				Sg			**Sb**	**10 25 37.8**	**+0.8**
OSSF	**Osses**	**0.80**	**282**	Pg			**Pg**	**10 25 26.0**	**-0.5**
OSSF				Sg			**Sb**	**10 25 37.8**	**+0.8**
YMUS	**Pe˜a Musera**	**0.80**	**230**	Pg			**Pg**	**10 25 26.7**	**+0.2**
	76nm,0.2s,SNR=7.9								
YMUS				Lg			Lg	10 25 36.5	
	380nm,0.2s,SNR=7.9								
YMUS	**Pe˜a Musera**	**0.80**	**230**	Pg			**Pg**	**10 25 26.7**	**+0.2**
	76nm,0.2s,SNR=7.9								
YMUS				Lg			Lg	10 25 36.5	
	380nm,0.2s,SNR=7.9								
YASP	**Aspurt**	**0.80**	**243**	Pg			**Pg**	**10 25 26.7**	**+0.1**
	60nm,0.2s,SNR=7.9								
YASP				Lg			Lg	10 25 37.4	
	606nm,0.4s,SNR=7.9								
YASP	**Aspurt**	**0.80**	**243**	Pg			**Pg**	**10 25 26.7**	**+0.1**
	60nm,0.2s,SNR=7.9								
YASP				Lg			Lg	10 25 37.3	
	606nm,0.4s,SNR=7.9								
IELO	**Elcoad**	**0.81**	**252**	⇑Pg			**Pg**	**10 25 26.7**	**0.0**
	11nm,0.1s,SNR=18								
IELO				Lg			Lg	10 25 37.4	
	346nm,0.2s,SNR=7.9								
IELO	**Elcoad**	**0.81**	**252**	Pg			**Pg**	**10 25 26.7**	**0.0**
	11nm,0.1s,SNR=18								
IELO				Lg			Lg	10 25 37.4	
	346nm,0.2s,SNR=7.9								
IEPA	**Eparoz**	**0.85**	**248**	Pg			**Pg**	**10 25 27.7**	**+0.2**
	73nm,0.2s,SNR=7.9								
IEPA				Lg			Lg	10 25 39.5	
	614nm,0.2s,SNR=7.9								
IEPA	**Eparoz**	**0.85**	**248**	Pg			**Pg**	**10 25 27.7**	**+0.2**
	73nm,0.2s,SNR=7.9								
IEPA				Lg			Lg	10 25 39.5	
	614nm,0.2s,SNR=7.9								
YARA	**Arangoiti**	**0.86**	**239**	Pg			**Pb**	**10 25 28.0**	**+0.4**
	36nm,0.2s,SNR=7.9								
YARA				Lg			Lg	10 25 39.5	
	323nm,0.3s,SNR=7.9								
YARA	**Arangoiti**	**0.86**	**239**	Pg			**Pb**	**10 25 28.0**	**+0.4**
	36nm,0.2s,SNR=7.9								
YARA				Lg			Lg	10 25 39.5	
	323nm,0.3s,SNR=7.9								
YUND	**Undues**	**0.87**	**233**	Pg			**Pb**	**10 25 28.1**	**+0.4**
	60nm,0.1s,SNR=7.9								
YUND				Lg			Lg	10 25 39.3	
	459nm,0.3s,SNR=7.9								
YUND	**Undues**	**0.87**	**233**	Pg			**Pb**	**10 25 28.1**	**+0.4**
	60nm,0.1s,SNR=7.9								
YUND				Lg			Lg	10 25 39.3	
	459nm,0.3s,SNR=7.9								
IPRE	**Itoiz**	**0.90**	**251**	Pg			**Pg**	**10 25 29.0**	**+0.5**
	39nm,0.3s,SNR=14								
IPRE				Lg			Lg	10 25 40.8	
	162nm,0.2s,SNR=8.4								
IPRE	**Itoiz**	**0.90**	**251**	Pg			**Pg**	**10 25 29.0**	**+0.5**
	39nm,0.3s,SNR=14								
IPRE				Lg			Lg	10 25 40.8	
	162nm,0.2s,SNR=8.4								
MLS	**Moulis**	**0.95**	**98**	P			**Pb**	**10 25 29.4**	**+0.3**
MLS				S			**Sg**	**10 25 42.6**	**+0.6**
EALK	**Alkurruntz**	**0.97**	**278**	Pg			**Pg**	**10 25 29.9**	**+0.1**
	14nm,0.3s,SNR=56								
EALK				Lg			Lg	10 25 43.9	
	408nm,0.4s,SNR=23								
EALK	**Alkurruntz**	**0.97**	**278**	Pg			**Pg**	**10 25 29.9**	**+0.1**
	14nm,0.3s,SNR=56								
EALK				Lg			Lg	10 25 43.9	
	408nm,0.4s,SNR=23								
IUSE	**Utxeti**	**1.01**	**262**	Pg			**Pn**	**10 25 31.2**	**+0.7**
	39nm,0.1s,SNR=7.9								
IUSE				Lg			Lg	10 25 44.7	
	238nm,0.2s,SNR=7.9								
IUSE	**Utxeti**	**1.01**	**262**	Pg			**Pn**	**10 25 31.2**	**+0.7**
	39nm,0.1s,SNR=7.9								
IUSE				Lg			Lg	10 25 44.7	
	238nm,0.2s,SNR=7.9								
CTRE	**Tremp**	**1.05**	**137**	Pg			**Pb**	**10 25 31.2**	**+0.3**
CTRE				Lg			Lg	10 25 45.7	
	246nm,0.3s								
CTRE	**Tremp**	**1.05**	**137**	P			**Pb**	**10 25 31.2**	**+0.3**
CTRE				S			**Sg**	**10 25 45.7**	**+0.6**
	246nm,0.3s								
EARA	**Aranguren**	**1.07**	**253**	Pg			**Pg**	**10 25 32.5**	**+0.8**
	30nm,0.3s,SNR=13								
EARA				Lg			Lg	10 25 47.9	
	377nm,0.3s,SNR=11								
EARA	**Aranguren**	**1.07**	**253**	Pg			**Pg**	**10 25 32.5**	**+0.8**
	30nm,0.3s,SNR=13								
EARA				Lg			Lg	10 25 47.9	
	377nm,0.3s,SNR=11								
SALF	**Salau**	**1.07**	**108**	Pg			**Pg**	**10 25 32.0**	**+0.4**
SALF				Sg			**Sb**	**10 25 45.2**	**+0.3**
SALF	**Salau**	**1.07**	**108**	Pg			**Pg**	**10 25 32.0**	**+0.4**
SALF				Sg			**Sb**	**10 25 45.2**	**+0.3**
CEST	**Esterri de Car**	**1.18**	**115**	Pg			**Pb**	**10 25 33.4**	**+0.5**
CEST				Lg			Lg	10 25 49.5	
	150nm,0.3s								
CEST	**Esterri de Car**	**1.18**	**115**	P			**Pb**	**10 25 33.4**	**+0.5**
CEST				S			**Sg**	**10 25 49.5**	**+0.5**
	150nm,0.3s								
ESAC	**San Caprasio**	**1.39**	**189**	Pg			**Pg**	**10 25 37.7**	**-0.1**
	506nm,0.3s,SNR=284								
ESAC				Lg			Lg	10 25 55.7	
	2μm,0.4s,SNR=18								
ESAC	**San Caprasio**	**1.39**	**189**	Pg			**Pg**	**10 25 37.7**	**-0.1**
	506nm,0.3s,SNR=284								
ESAC				Lg			Lg	10 25 55.7	
	2μm,0.4s,SNR=18								
CAVN	**Les Avellanes**	**1.40**	**150**	Pg			**Pb**	**10 25 37.2**	**+0.5**
CAVN				Lg			Lg	10 25 55.8	
	316nm,0.2s								
CAVN	**Les Avellanes**	**1.40**	**150**	P			**Pb**	**10 25 37.3**	**+0.5**
CAVN				S			**Sg**	**10 25 55.9**	**-0.3**
	632nm,0.2s								
CORG	**Organya**	**1.41**	**127**	Pn			**Pb**	**10 25 37.8**	**+0.9**
CORG				Sn			**Sg**	**10 25 56.8**	**+0.2**
	40nm,0.3s								
CORG	**Organya**	**1.41**	**127**	P			**Pb**	**10 25 37.8**	**+0.9**
CORG				S			**Sg**	**10 25 56.8**	**+0.2**
	80nm,0.3s								
ARBS	**La Rabassa**	**1.44**	**116**	P			**Pb**	**10 25 37.9**	**+0.4**
ARBS				S			**Sg**	**10 25 57.2**	**-0.2**
	362nm,0.3s								
CLLI	**Llivia**	**1.71**	**111**	Pg			**Pg**	**10 25 43.5**	**-0.4**
	20nm,0.4s,SNR=96								
CLLI				Lg			Lg	10 26 06.0	
	72nm,0.2s,SNR=21								
CLLI	**Llivia**	**1.71**	**111**	P			**Pb**	**10 25 41.9**	**-0.2**
CLLI	**Llivia**	**1.71**	**111**	Pg			**Pg**	**10 25 43.5**	**-0.4**
	20nm,0.4s,SNR=96								
CLLI				S			**Sb**	**10 26 04.2**	**+0.8**
	99nm,0.3s								
CLLI				Lg			Lg	10 26 05.9	
	72nm,0.2s,SNR=21								
CARF	**Carcanieres**	**1.73**	**102**	Pg			**Pg**	**10 25 43.9**	**-0.3**
CARF				Sg			**Sg**	**10 26 07.6**	**+0.9**
CARF	**Carcanieres**	**1.73**	**102**	Pg			**Pg**	**10 25 43.9**	**-0.3**
CARF				Sg			**Sg**	**10 26 07.6**	**+0.9**
VALF	**Valcebollere**	**1.77**	**112**	Pg			**Pg**	**10 25 44.3**	**-0.7**
VALF				Sg			**Sg**	**10 26 09.4**	**+1.4**
VALF	**Valcebollere**	**1.77**	**112**	Pg			**Pg**	**10 25 44.3**	**-0.7**
VALF				Sg			**Sg**	**10 26 09.4**	**+1.4**
MTLF	**Montolieu**	**1.78**	**81**	Pn			**Pn**	**10 25 42.0**	**+1.0**
MTLF				Pg			**Pg**	**10 25 45.0**	**-0.1**
MTLF				Lg			Lg	10 26 08.2	
	42nm,0.2s								
MTLF	**Montolieu**	**1.78**	**81**	*e*Pn			**Pn**	**10 25 42.0**	**+1.0**
MTLF	**Montolieu**	**1.78**	**81**	*e*Pg			**Pg**	**10 25 45.0**	**-0.1**
MTLF				*e*Sg			**Sg**	**10 26 08.2**	**0.0**
	85nm,0.2s								
MTLF	**Montolieu**	**1.78**	**81**	Pn			**Pn**	**10 25 42.0**	**+1.0**
MTLF	**Montolieu**	**1.78**	**81**	Pg			**Pg**	**10 25 45.0**	**-0.1**
MTLF				*e*Sg			**Sg**	**10 26 08.2**	**0.0**
	42nm,0.2s								
CBRU	**Bruguera**	**1.93**	**114**	Pn			**Pn**	**10 25 44.8**	**+1.6**
CBRU				S			**Sb**	**10 26 09.4**	**-0.3**
	92nm,0.3s								
CBRU	**Bruguera**	**1.93**	**114**	Pn			**Pn**	**10 25 44.8**	**+1.6**
CBRU				S			**Sb**	**10 26 09.4**	**-0.3**
	92nm,0.3s								
LFF	**La Frestale**	**1.96**	**20**	Pn			**Pn**	**10 25 44.6**	**+1.1**
LFF				Pg			**Pg**	**10 25 49.0**	**+0.5**
LFF				Lg			Lg	10 26 15.3	
	205nm,0.4s								
LFF	**La Frestale**	**1.96**	**20**	*e*Pn			**Pn**	**10 25 44.6**	**+1.1**
LFF	**La Frestale**	**1.96**	**20**	*e*Pg			**Pg**	**10 25 49.0**	**+0.5**
LFF				*e*Sg			**Sg**	**10 26 15.3**	**+1.4**
	410nm,0.4s								
LFF	**La Frestale**	**1.96**	**20**	Pn			**Pn**	**10 25 44.6**	**+1.1**
LFF	**La Frestale**	**1.96**	**20**	Pg			**Pg**	**10 25 49.0**	**+0.5**
LFF				*e*Sg			**Sg**	**10 26 15.3**	**+1.4**
	205nm,0.4s								
EPOB	**Poblet**	**1.98**	**151**	Pn			**Pn**	**10 25 45.6**	**+1.7**
	0.0nm,0.1s,SNR=7.9								
EPOB				Pg			**Pb**	**10 25 47.9**	**+1.2**
	2.6nm,0.1s,SNR=81								
EPOB				Lg			Lg	10 26 12.7	
	107nm,0.2s,SNR=17								
EPOB	**Poblet**	**1.98**	**151**	P			**Pn**	**10 25 45.6**	**+1.7**
EPOB	**Poblet**	**1.98**	**151**	Pg			**Pb**	**10 25 47.9**	**+1.2**
	2.6nm,0.1s,SNR=81								
EPOB				S			**Sn**	**10 26 10.1**	**+1.6**
EPOB				Lg			Lg	10 26 12.7	
	107nm,0.2s,SNR=17								
LRDF	**Laroque-de-Fa**	**2.01**	**94**	Pn			**Pn**	**10 25 45.4**	**+1.2**
LRDF	**Laroque-de-Fa**	**2.01**	**94**	Pg			**Pg**	**10 25 49.3**	**-0.2**
LRDF				Sg			**Sg**	**10 26 17.0**	**+1.4**
LRDF	**Laroque-de-Fa**	**2.01**	**94**	Pn			**Pn**	**10 25 45.4**	**+1.2**
LRDF	**Laroque-de-Fa**	**2.01**	**94**	Pg			**Pg**	**10 25 49.3**	**-0.2**
LRDF				Sg			**Sg**	**10 26 17.0**	**+1.4**
FILF	**Fillols**	**2.10**	**104**	Pg			**Pb**	**10 25 48.8**	**+0.2**
FILF				Sg			**Sg**	**10 26 16.9**	**-1.5**
FILF	**Fillols**	**2.10**	**104**	Pg			**Pb**	**10 25 48.8**	**+0.2**
FILF				Sg			**Sg**	**10 26 16.9**	**-1.5**
ERTA	**Horta de San J**	**2.18**	**169**	Pg			**Pb**	**10 25 51.3**	**+1.3**
	18nm,0.4s,SNR=41								
ERTA				Lg			Lg	10 26 19.4	
	81nm,0.2s,SNR=14								
ERTA	**Horta de San J**	**2.18**	**169**	Pg			**Pb**	**10 25 51.3**	**+1.3**
	18nm,0.4s,SNR=41								
ERTA				Lg			Lg	10 26 19.4	
	81nm,0.2s,SNR=14								
EBR	**Ebro Roquetas**	**2.33**	**167**	Pg			**Pb**	**10 25 53.9**	**+1.3**
	35nm,0.3s,SNR=7.9								
EBR				Lg			Lg	10 26 26.1	
	726nm,0.6s,SNR=7.9								
EBR	**Ebro Roquetas**	**2.33**	**167**	Pg			**Pb**	**10 25 53.9**	**+1.3**
	35nm,0.3s,SNR=7.9								
EBR				Lg			Lg	10 26 26.1	
	726nm,0.6s,SNR=7.9								
SJAF	**Saint Jean de**	**2.34**	**104**	Pg			**Pg**	**10 25 55.4**	**-0.5**
SJAF				Sg			**Sg**	**10 26 26.9**	**+0.6**
SJAF	**Saint Jean de**	**2.34**	**104**	Pg			**Pg**	**10 25 54.8**	**-1.1**
	3.4nm,0.2s,SNR=7.9								
SJAF				Lg			Lg	10 26 26.4	
	88nm,0.4s,SNR=7.9								
SJAF	**Saint Jean de**	**2.34**	**104**	Pg			**Pg**	**10 25 55.4**	**-0.5**
SJAF				Lg			Lg	10 26 26.4	
	88nm,0.4s,SNR=7.9								
SJAF				Sg			**Sg**	**10 26 26.9**	**+0.6**
EJON	**La Jonquera**	**2.36**	**105**	Pg			**Pb**	**10 25 53.4**	**+0.3**
	9.3nm,0.3s,SNR=33								
EJON				Lg			Lg	10 26 26.6	
	41nm,0.2s,SNR=12								
EJON	**La Jonquera**	**2.36**	**105**	Pg			**Pb**	**10 25 53.4**	**+0.3**
	9.3nm,0.3s,SNR=33								
EJON				Lg			Lg	10 26 26.6	
	41nm,0.2s,SNR=12								
CFON	**Fontmartina**	**2.36**	**124**	Pn			**Pb**	**10 25 52.2**	**-0.9**
	21nm,0.3s,SNR=53								
CFON				Pg			**Pg**	**10 25 55.4**	**-0.8**
	20nm,0.1s,SNR=7.9								
CFON				Lg			Lg	10 26 25.3	
	487nm,0.3s,SNR=17								
CFON	**Fontmartina**	**2.36**	**124**	Pn			**Pb**	**10 25 52.2**	**-0.9**
	21nm,0.3s,SNR=53								
ELAN	**Lanestosa**	**2.38**	**274**	Pn			**Pb**	**10 25 53.3**	**0.0**
	11nm,0.9s,SNR=16								
ELAN				Sn			**Sb**	**10 26 22.1**	**-0.3**
	26nm,0.3s,SNR=6.6								
ELAN	**Lanestosa**	**2.38**	**274**	Pn			**Pb**	**10 25 53.3**	**0.0**
	11nm,0.9s,SNR=16								
ELAN				Sn			**Sb**

PYM Petit Puy Mans 3.50 40 Pn **Pn 10 26 04.7 -0.1**
PYM Petit Puy Mans 3.50 40 Pg **Pg 10 26 17.3 -0.8**
PYM Petit Puy Mans 3.50 40 Pn **Pn 10 26 04.7 -0.1**
PYM Petit Puy Mans 3.50 40 Pg **Pg 10 26 17.3 -0.8**
TCF Toulx Ste Croi 3.62 27 Pn **Pn 10 26 07.4 +1.1**
TCF Pg **Pg 10 26 19.7 -0.5**
TCF Lg Lg 10 27 07.0
18nm,0.3s
TCF Toulx Ste Croi 3.62 27 *e*Pn **Pn 10 26 07.4 +1.1**
TCF Toulx Ste Croi 3.62 27 *e*Pg **Pg 10 26 19.7 -0.5**
TCF *e*Sg **Sg 10 27 07.0 -0.1**
37nm,0.3s
TCF Toulx Ste Croi 3.62 27 Pn **Pn 10 26 07.4 +1.1**
TCF Toulx Ste Croi 3.62 27 Pg **Pg 10 26 19.7 -0.5**
TCF *e*Sg **Sg 10 27 07.0 -0.1**
18nm,0.3s
EARI Arriondas 3.67 275 Pn **Pn 10 26 09.5 +2.4**
21nm,1.2s,SNR=15
EARI Sn **Sn 10 26 52.0 +1.9**
5.1nm,0.3s,SNR=8.7
EARI Arriondas 3.67 275 Pn **Pn 10 26 09.5 +2.4**
21nm,1.2s,SNR=15
EARI Sn **Sn 10 26 52.0 +1.9**
5.1nm,0.3s,SNR=8.7
AGO Saint Agoulin 3.79 38 Pn **Pn 10 26 09.1 +0.5**
AGO Saint Agoulin 3.79 38 Pg **Pg 10 26 23.7 +0.2**
AGO Saint Agoulin 3.79 38 Pn **Pn 10 26 09.1 +0.5**
AGO Saint Agoulin 3.79 38 Pg **Pg 10 26 23.7 +0.2**
GUD Guadarrama 3.84 232 Pn **Pn 10 26 12.1 +2.5**
8.0nm,0.3s,SNR=6.5
GUD Sn **Sn 10 26 54.5 0.0**
9.6nm,0.3s,SNR=5.0
GUD Lg Lg 10 27 10.6
16nm,0.4s,SNR=7.9
GUD Guadarrama 3.84 232 Pn **Pn 10 26 12.1 +2.5**
8.0nm,0.3s,SNR=6.5
GUD Sn **Sn 10 26 54.5 0.0**
9.6nm,0.3s,SNR=5.0
GUD Lg Lg 10 27 10.6
16nm,0.4s,SNR=7.9
VIVF Saint-Julien-l 3.92 62 Pn **Pn 10 26 11.0 +0.5**
VIVF Pg **Pg 10 26 25.1 -1.0**
VIVF Lg Lg 10 27 16.2
18nm,0.3s
VIVF Saint-Julien-l 3.92 62 *e*Pn **Pn 10 26 11.0 +0.5**
VIVF Saint-Julien-l 3.92 62 *e*Pg **Pg 10 26 25.1 -1.0**
VIVF *e*Sg **Sg 10 27 16.2 -0.8**
36nm,0.3s
VIVF Saint-Julien-l 3.92 62 Pn **Pn 10 26 11.0 +0.5**
VIVF Saint-Julien-l 3.92 62 Pg **Pg 10 26 25.1 -1.0**
VIVF *e*Sg **Sg 10 27 16.2 -0.8**
18nm,0.3s
PLDF La Plantade 3.96 42 Pn **Pn 10 26 11.9 +0.9**
PLDF La Plantade 3.96 42 Pg **Pg 10 26 26.7 0.0**
PLDF La Plantade 3.96 42 Pn **Pn 10 26 11.9 +0.9**
PLDF La Plantade 3.96 42 Pg **Pg 10 26 26.7 0.0**
ETOS Mallorca 4.02 145 Pn **Pn 10 26 14.0 +2.1**
0.9nm,0.3s,SNR=11
ETOS Sn **Sn 10 26 58.9 +0.2**
2.0nm,0.3s,SNR=5.4
ETOS Mallorca 4.02 145 Pn **Pn 10 26 14.0 +2.1**
0.9nm,0.3s,SNR=11
ETOS Sn **Sn 10 26 58.9 +0.2**
2.0nm,0.3s,SNR=5.4
SSB Saint Sauveur 4.04 56 Pn **Pn 10 26 12.8 +0.6**
SSB Saint Sauveur 4.04 56 Pn **Pn 10 26 12.8 +0.6**
BGF Bois d'Agland 4.08 31 Pn **Pn 10 26 13.6 +1.0**
BGF Pg **Pg 10 26 28.1 -0.9**
BGF Lg Lg 10 27 21.6
62nm,0.3s
BGF Bois d'Agland 4.08 31 *e*Pn **Pn 10 26 13.6 +1.0**
BGF Bois d'Agland 4.08 31 *e*Pg **Pg 10 26 28.1 -0.9**
BGF *e*Sg **Sg 10 27 21.6 -0.2**
198nm,0.4s
BGF Bois d'Agland 4.08 31 Pn **Pn 10 26 13.6 +1.0**
BGF Bois d'Agland 4.08 31 Pg **Pg 10 26 28.1 -0.9**
BGF *e*Sg **Sg 10 27 21.6 -0.2**
99nm,0.4s
EIBI Ibiza 4.23 164 Pn **Pn 10 26 16.1 +1.4**
0.2nm,0.1s,SNR=7.9
EIBI Sn **Sn 10 27 01.5 -2.3**
4.8nm,0.3s,SNR=5.6
EIBI Ibiza 4.23 164 Pn **Pn 10 26 16.1 +1.4**
0.2nm,0.1s,SNR=7.9
SMRF Simiane la Rot 4.28 76 Pn **Pn 10 26 15.7 +0.2**
SMRF Pg **Pg 10 26 31.1 -1.9**
SMRF Lg Lg 10 27 26.7
21nm,0.7s
SMRF Simiane la Rot 4.28 76 *e*Pn **Pn 10 26 15.7 +0.2**
SMRF Simiane la Rot 4.28 76 *e*Pg **Pg 10 26 31.1 -1.9**
SMRF *e*Sg **Sg 10 27 26.7 -1.7**
21nm,0.7s
SMRF Simiane la Rot 4.28 76 Pn **Pn 10 26 15.7 +0.2**
SMRF Simiane la Rot 4.28 76 Pg **Pg 10 26 31.1 -1.9**
SMRF *e*Sg **Sg 10 27 26.7 -1.7**
11nm,0.7s
ESDC Sonseca Array 4.45 221 Pn **Pn 10 26 18.9 +1.2**
1.3nm,0.2s,baz=42,slow=14,SNR=19
ESDC Sn **Sn 10 27 06.9 -2.2**
6.1nm,0.3s,baz=42,slow=24,SNR=18
ESDC Sonseca Array 4.45 221 Pn **Pn 10 26 18.9 +1.2**
1.3nm,0.2s,SNR=19
AVF Avril sur Loir 4.47 33 Pn **Pn 10 26 18.7 +0.8**
AVF Pg **Pg 10 26 35.2 -1.2**
AVF Lg Lg 10 27 33.5
17nm,0.3s
AVF Avril sur Loir 4.47 33 *e*Pn **Pn 10 26 18.7 +0.8**
AVF Avril sur Loir 4.47 33 *e*Pg **Pg 10 26 35.2 -1.2**
AVF *e*Sg **Sg 10 27 33.5 -0.8**
33nm,0.3s
AVF Avril sur Loir 4.47 33 Pn **Pn 10 26 18.7 +0.8**
AVF Avril sur Loir 4.47 33 Pg **Pg 10 26 35.2 -1.2**
AVF *e*Sg **Sg 10 27 33.5 -0.8**
17nm,0.3s
SMF Signal de Mont 4.56 38 Pn **Pn 10 26 20.0 +0.8**
SMF Pg **Pg 10 26 37.0 -1.2**
SMF Lg Lg 10 27 36.3
7.4nm,0.3s
SMF Signal de Mont 4.56 38 *e*Pn **Pn 10 26 20.0 +0.8**
SMF Signal de Mont 4.56 38 *e*Pg **Pg 10 26 37.0 -1.2**
SMF *e*Sg **Sg 10 27 36.3 -0.9**
15nm,0.3s
SMF Signal de Mont 4.56 38 Pn **Pn 10 26 20.0 +0.8**
SMF Signal de Mont 4.56 38 Pg **Pg 10 26 37.0 -1.2**
SMF *e*Sg **Sg 10 27 36.3 -0.9**
7.4nm,0.3s
ETOB Tobarra 4.57 193 Pn **Pn 10 26 21.6 +2.2**
1.9nm,0.5s,SNR=7.9
ETOB Sn **Sn 10 27 08.4 -3.8**
1.0nm,0.5s,SNR=7.9
ETOB Lg Lg 10 27 34.4
8.5nm,0.4s,SNR=7.9
ETOB Tobarra 4.57 193 Pn **Pn 10 26 21.6 +2.2**
1.9nm,0.5s,SNR=7.9
ETOB Lg Lg 10 27 34.4
8.5nm,0.4s,SNR=7.9
HYF Humbligny 4.62 25 Pn **Pn 10 26 21.0 +0.9**
HYF Pg **Pg 10 26 38.2 -1.2**
HYF Lg Lg 10 27 38.7
HYF Humbligny 4.62 25 *e*Pn **Pn 10 26 21.0 +0.9**
HYF Humbligny 4.62 25 *e*Pg **Pg 10 26 38.2 -1.2**
HYF *e*Sg **Sg 10 27 38.7 -0.6**
HYF Humbligny 4.62 25 Pn **Pn 10 26 21.0 +0.9**
HYF Humbligny 4.62 25 Pg **Pg 10 26 38.2 -1.2**
HYF *e*Sg **Sg 10 27 38.7 -0.6**
ORIF Oris-en-Rattie 4.74 65 Pn **Pn 10 26 22.4 +0.6**
ORIF Lg Lg 10 27 41.7
3.8nm,0.6s
ORIF Oris-en-Rattie 4.74 65 *e*Pn **Pn 10 26 22.4 +0.6**
ORIF *e*Sg **Sg 10 27 41.7 -1.4**
7.7nm,0.6s
ORIF Oris-en-Rattie 4.74 65 Pn **Pn 10 26 22.4 +0.6**
ORIF *e*Sg **Sg 10 27 41.7 -1.4**
3.8nm,0.6s
SSF Saint Saulge 4.75 32 Pn **Pn 10 26 22.7 +0.9**
SSF Pg **Pg 10 26 40.3 -1.5**
SSF Lg Lg 10 27 42.4
12nm,0.4s
SSF Saint Saulge 4.75 32 *e*Pn **Pn 10 26 22.7 +0.9**
SSF Saint Saulge 4.75 32 *e*Pg **Pg 10 26 40.3 -1.5**
SSF *e*Sg **Sg 10 27 42.4 -0.9**
24nm,0.4s
SSF Saint Saulge 4.75 32 Pn **Pn 10 26 22.7 +0.9**
SSF Saint Saulge 4.75 32 Pg **Pg 10 26 40.3 -1.5**
SSF *e*Sg **Sg 10 27 42.4 -0.9**
12nm,0.4s
EVIA Vianos 4.79 202 Pn **Pn 10 26 24.3 +1.8**
1.5nm,0.1s,SNR=7.9
EVIA Sn **Sn 10 27 16.2 -1.5**
1.6nm,0.1s,SNR=7.9
EVIA Lg Lg 10 27 41.3
21nm,0.7s,SNR=7.9
EVIA Vianos 4.79 202 Pn **Pn 10 26 24.3 +1.8**
1.5nm,0.1s,SNR=7.9
EVIA Sn **Sn 10 27 16.2 -1.5**
1.6nm,0.1s,SNR=7.9
EVIA Lg Lg 10 27 41.3
21nm,0.7s,SNR=7.9
LMR La Mourre 4.90 85 Pn **Pn 10 26 24.3 +0.4**
LMR Pg **Pg 10 26 42.8 -2.0**
LMR Lg Lg 10 27 45.9
2.3nm,0.3s
LMR La Mourre 4.90 85 *e*Pn **Pn 10 26 24.3 +0.4**
LMR La Mourre 4.90 85 *e*Pg **Pg 10 26 42.8 -2.0**
LMR *e*Sg **Sg 10 27 45.9 -2.4**
4.7nm,0.3s
LMR La Mourre 4.90 85 Pn **Pn 10 26 24.3 +0.4**
LMR La Mourre 4.90 85 Pg **Pg 10 26 42.8 -2.0**
LMR *e*Sg **Sg 10 27 45.9 -2.4**
2.3nm,0.3s
ECAL Calabor 4.97 259 Pn **Pn 10 26 27.8 +2.8**
5.9nm,0.3s,SNR=12
ECAL Sn **Sn 10 27 22.5 +0.3**
4.2nm,0.4s,SNR=6.9
ECAL Calabor 4.97 259 Pn **Pn 10 26 27.8 +2.8**
5.9nm,0.3s,SNR=12
ECAL Sn **Sn 10 27 22.5 +0.3**
4.2nm,0.4s,SNR=6.9
FRF La Foret Royal 5.01 82 Pn **Pn 10 26 25.6 +0.2**
FRF Pg **Pg 10 26 44.5 -2.4**
FRF Lg Lg 10 27 49.1
1.8nm,0.3s
FRF La Foret Royal 5.01 82 *e*Pn **Pn 10 26 25.6 +0.2**
FRF La Foret Royal 5.01 82 *e*Pg **Pg 10 26 44.5 -2.4**
FRF *e*Sg **Sg 10 27 49.1 -2.6**
3.6nm,0.3s
FRF La Foret Royal 5.01 82 Pn **Pn 10 26 25.6 +0.2**
FRF La Foret Royal 5.01 82 Pg **Pg 10 26 44.5 -2.4**
FRF *e*Sg **Sg 10 27 49.1 -2.6**
1.8nm,0.3s
PBRG Braganca 5.01 257 *e*Pn **Pn 10 26 28.0 +2.5**
PBRG *e*Sn **Sn 10 27 23.4 +0.2**
PBRG A A 10 27 25.5
10.0nm,0.2s
PBRG *e*Sg **Sg 10 27 53.5 +1.6**
PBRG Braganca 5.01 257 Pn **Pn 10 26 28.0 +2.5**
PBRG Sn **Sn 10 27 23.4 +0.2**
5.0nm,0.2s
PBRG Lg Lg 10 27 53.5
PBRG Braganca 5.01 257 *e*Pn **Pn 10 26 28.0 +2.5**
PBRG Sn **Sn 10 27 23.4 +0.2**
5.0nm,0.2s
PBRG *e*Sg **Sg 10 27 53.5 +1.6**
LOR Lormes 5.06 33 Pn **Pn 10 26 26.9 +0.8**
LOR Pg **Pg 10 26 46.3 -1.4**
LOR Lg Lg 10 27 51.9
10nm,0.3s
LOR Lormes 5.06 33 *e*Pn **Pn 10 26 26.9 +0.8**
LOR Lormes 5.06 33 *e*Pg **Pg 10 26 46.3 -1.4**
LOR *e*Sg **Sg 10 27 51.9 -1.3**
21nm,0.3s
LOR Lormes 5.06 33 Pn **Pn 10 26 26.9 +0.8**
LOR Lormes 5.06 33 Pg **Pg 10 26 46.3 -1.4**
LOR *e*Sg **Sg 10 27 51.9 -1.3**
10nm,0.3s
EPON Pontenova 5.09 275 Pn **Pn 10 26 30.2 +3.7**
14nm,1.0s,SNR=11
EPON Sn **Sn 10 27 26.7 +1.7**
13nm,0.4s,SNR=10
EPON Pontenova 5.09 275 Pn **Pn 10 26 30.2 +3.7**
14nm,1.0s,SNR=11
EPON Sn **Sn 10 27 26.7 +1.7**
13nm,0.4s,SNR=10
QUIF Quistinic 5.25 338 Pn **Pn 10 26 29.2 +0.5**
QUIF Pg **Pg 10 26 49.1 -2.3**
QUIF Lg Lg 10 27 57.4
7.8nm,0.3s
QUIF Quistinic 5.25 338 *e*Pn **Pn 10 26 29.2 +0.5**
QUIF Quistinic 5.25 338 *e*Pg **Pg 10 26 49.1 -2.3**
QUIF *e*Sg **Sg 10 27 57.4 -2.0**
16nm,0.3s
QUIF Quistinic 5.25 338 Pn **Pn 10 26 29.2 +0.5**
QUIF Quistinic 5.25 338 Pg **Pg 10 26 49.1 -2.3**
QUIF *e*Sg **Sg 10 27 57.4 -2.0**
7.8nm,0.3s
MBDF Montbardon 5.29 70 Pn **Pn 10 26 29.9 +0.5**
MBDF Lg Lg 10 27 58.5
1.2nm,0.4s
MBDF Montbardon 5.29 70 *e*Pn **Pn 10 26 29.9 +0.5**
MBDF *e*Sg **Sg 10 27 58.5 -2.1**
2.5nm,0.4s
MBDF Montbardon 5.29 70 Pn **Pn 10 26 29.9 +0.5**
MBDF *e*Sg **Sg 10 27 58.5 -2.1**
1.2nm,0.4s
GRR Gorron 5.31 355 Pn **Pn 10 26 29.5 0.0**
GRR Lg Lg 10 27 59.6
11nm,0.4s
GRR Gorron 5.31 355 *e*Pn **Pn 10 26 29.5 0.0**
GRR *e*Sg **Sg 10 27 59.6 -1.7**
22nm,0.4s
GRR Gorron 5.31 355 Pn **Pn 10 26 29.5 0.0**
GRR *e*Sg **Sg 10 27 59.6 -1.7**
11nm,0.4s
EPLA Plasencia 5.36 237 Pn **Pn 10 26 32.5 +2.3**
4.9nm,1.0s,SNR=8.0
EPLA Sn **Sn 10 27 30.5 -1.1**
0.4nm,0.1s,SNR=6.7
EPLA Lg Lg 10 27 58.7
8.7nm,0.6s,SNR=7.9
EPLA Plasencia 5.36 237 Pn **Pn 10 26 32.5 +2.3**
4.9nm,1.0s,SNR=8.0
EPLA Sn **Sn 10 27 30.5 -1.1**
0.4nm,0.1s,SNR=6.7
EPLA Lg Lg 10 27 58.7
8.7nm,0.6s,SNR=7.9
SGMF Saint Gilles 5.41 343 Pn **Pn 10 26 31.2 +0.3**
SGMF Pg **Pg 10 26 52.0 -2.5**
SGMF Lg Lg 10 28 02.7
14nm,0.6s
SGMF Saint Gilles 5.41 343 *e*Pn **Pn 10 26 31.2 +0.3**
SGMF Saint Gilles 5.41 343 *e*Pg **Pg 10 26 52.0 -2.5**
SGMF *e*Sg **Sg 10 28 02.7 -1.9**
27nm,0.6s
SGMF Saint Gilles 5.41 343 Pn **Pn 10 26 31.2 +0.3**
SGMF Saint Gilles 5.41 343 Pg **Pg 10 26 52.0 -2.5**
SGMF *e*Sg **Sg 10 28 02.7 -1.9**
14nm,0.6s
MVO Moncorvo 5.44 251 *e*Pn **Pn 10 26 34.0 +2.6**
MVO *e*Sn **Sn 10 27 34.8 +1.2**
MVO A A 10 28 05.0
12nm,0.3s
MVO Moncorvo 5.44 251 Pn **Pn 10 26 34.8 +3.4**
3.1nm,0.3s,SNR=5.7
MVO Sn **Sn 10 27 32.9 -0.8**
4.3nm,0.3s,SNR=5.0
MVO Lg Lg 10 27 59.5
12nm,0.3s,SNR=7.9
MVO Moncorvo 5.44 251 *e*Pn **Pn 10 26 34.0 +2.6**
MVO *e*Sn **Sn 10 27 34.8 +1.2**
12nm,0.3s
MVO Lg Lg 10 27 59.5
12nm,0.3s,SNR=7.9
LDF La Druitiere 5.49 0 *e*Pn **Pn 10 26 32.4 +0.3**
LDF *e*Sg **Sg 10 28 05.5 -1.7**
30nm,0.5s
LDF La Druitiere 5.49 0 *e*Pn **Pn 10 26 32.4 +0.3**
LDF *e*Sg **Sg 10 28 05.5 -1.7**
15nm,0.5s
LPL La Plagne 5.52 62 Pn **Pn 10 26 33.3 +0.6**
LPL Lg Lg 10 28 06.2
2.5nm,0.5s
LPL La Plagne 5.52 62 *e*Pn **Pn 10 26 33.3 +0.6**
LPL *e*Sg **Sg 10 28 06.2 -2.0**
4.9nm,0.5s
LPL La Plagne 5.52 62 Pn **Pn 10 26 33.3 +0.6**
LPL *e*Sg **Sg 10 28 06.2 -2.0**
2.5nm,0.5s
LPG La Plagne 5.53 62 Pn **Pn 10 26 33.4 +0.6**
LPG Lg Lg 10 28 06.5
4.8nm,0.6s
LPG La Plagne 5.53 62 *e*Pn **Pn 10 26 33.4 +0.6**
LPG *e*Sg **Sg 10 28 06.5 -1.9**
9.5nm,0.6s
LPG La Plagne 5.53 62 Pn **Pn 10 26 33.4 +0.6**
LPG *e*Sg **Sg 10 28 06.5 -1.9**
4.8nm,0.6s
ROSF Rostrenen 5.66 339 Pn **Pn 10 26 34.8 +0.4**
ROSF Lg Lg 10 28 10.2
4.7nm,0.4s
ROSF Rostrenen 5.66 339 *e*Pn **Pn 10 26 34.8 +0.4**
ROSF *e*Sg **Sg 10 28 10.2 -2.4**
9.3nm,0.4s
ROSF Rostrenen 5.66 339 Pn **Pn 10 26 34.8 +0.4**
ROSF *e*Sg **Sg 10 28 10.2 -2.4**
4.7nm,0.4s
FLN La Foliniere 5.67 358 Pn **Pn 10 26 34.5 +0.1**
FLN Lg Lg 10 28 10.9
8.0nm,0.5s
FLN La Foliniere 5.67 358 *e*Pn **Pn 10 26 34.5 +0.1**
FLN *e*Sg **Sg 10 28 10.9 -1.8**
16nm,0.5s
FLN La Foliniere 5.67 358 Pn **Pn 10 26 34.5 +0.1**
FLN *e*Sg **Sg 10 28 10.9 -1.8**
8.0nm,0.5s
CABF La Chapelle 5.68 50 Pn **Pn 10 26 35.4 +0.7**
CABF Pg **Pg 10 26 57.9 -1.7**
CABF Lg Lg 10 28 11.3
17nm,0.9s
CABF La Chapelle 5.68 50 *e*Pn **Pn 10 26 35.4 +0.7**
CABF La Chapelle 5.68 50 *e*Pg **Pg 10 26 57.9 -1.7**
CABF *e*Sg **Sg 10 28 11.3 -1.8**
35nm,0.9s
CABF La Chapelle 5.68 50 Pn **Pn 10 26 35.4 +0.7**
CABF La Chapelle 5.68 50 Pg **Pg 10 26 57.9 -1.7**
CABF *e*Sg **Sg 10 28 11.3 -1.8**
17nm,0.9s
EQES Quesada 5.73 203 Pn **Pn 10 26 36.6 +1.2**
9.0nm,0.9s,SNR=5.2
EQES Sn **Sn 10 27 38.1 -2.8**
1.0nm,0.2s,SNR=7.9
EQES Lg Lg 10 28 12.4
7.6nm,0.5s,SNR=7.9
EQES Quesada 5.73 203 Pn **Pn 10 26 36.6 +1.2**
9.0nm,0.9s,SNR=5.2
EQES Lg Lg 10 28 12.4
7.6nm,0.5s,SNR=7.9
EAGO Agolada(Pontev 5.80 270 Sn **Sn 10 27 43.4 +0.8**
2.9nm,0.2s,SNR=7.9
EAGO Agolada(Pontev 5.80 270 Sn **Sn 10 27 43.4 +0.8**
2.9nm,0.2s,SNR=7.9
POLO Lamas de Olo 5.90 256 *e*Pn **Pn 10 26 40.2 +2.5**
POLO *e*Sn **Sn 10 27 45.8 +0.7**
POLO A A 10 28 18.1
4.1nm,0.4s
POLO Lamas de Olo 5.90 256 *e*Pn **Pn 10 26 40.2 +2.5**
POLO *e*Sn **Sn 10 27 45.8 +0.7**
4.1nm,0.4s
ELOB Lobios 5.95 261 Pn **Pn 10 26 40.5 +2.1**
0.8nm,0.2s,SNR=7.9
ELOB Sn **Sn 10 27 46.0 -0.2**
3.2nm,0.4s,SNR=7.9
ELOB Lg Lg 10 28 15.3
8.7nm,0.4s,SNR=7.9
ELOB Lobios 5.95 261 Pn **Pn 10 26 40.5 +2.1**
0.8nm,0.2s,SNR=7.9
ELOB Sn **Sn 10 27 46.0 -0.2**
3.2nm,0.4s,SNR=7.9
ELOB Lg Lg 10 28 15.3
8.7nm,0.4s,SNR=7.9
EADA Adamuz 5.95 216 Pn **Pn 10 26 40.1 +1.7**
0.0nm,0.2s,SNR=7.9
EADA Sn **Sn 10 27 42.0 -4.2**
1.0nm,0.2s,SNR=7.9
EADA Lg Lg 10 28 18.3
3.7nm,0.3s,SNR=7.9
EADA Adamuz 5.95 216 Pn **Pn 10 26 40.1 +1.7**
SNR=7.9
EADA Lg Lg 10 28 18.3
3.7nm,0.3s,SNR=7.9
PGAV Gavieira, Arco 6.08 262 *e*Pn **Pn 10 26 43.0 +2.9**
PGAV *e*Sn **Sn 10 27 50.8 +1.4**
PGAV A A 10 28 36.6
6.7nm,0.6s
PGAV Gavieira, Arco 6.08 262 *e*Pn **Pn 10 26 43.0 +2.9**
PGAV *e*Sn **Sn 10 27 50.8 +1.4**
6.7nm,0.6s
SFTF Sexfontaines 6.28 34 Pn **Pn 10 26 43.3 +0.4**
SFTF Lg Lg 10 28 30.4
12nm,0.4s
SFTF Sexfontaines 6.28 34 *e*Pn **Pn 10 26 43.3 +0.4**
SFTF *e*Sg **Sg 10 28 30.4 -2.1**
12nm,0.4s
SFTF Sexfontaines 6.28 34 Pn **Pn 10 26 43.3 +0.4**
SFTF *e*Sg **Sg 10 28 30.4 -2.1**
5.8nm,0.4s
ECAB El Cabril 6.40 220 Pn **Pn 10 26 46.1 +1.5**
0.1nm,0.1s,SNR=7.0
ECAB Sn **Sn 10 27 53.6 -3.8**
0.1nm,0.1s,SNR=7.9
ECAB Lg Lg 10 28 35.7
4.4nm,0.4s,SNR=7.9
ECAB El Cabril 6.40 220 Pn **Pn 10 26 46.1 +1.5**
0.1nm,0.1s,SNR=7.0
ECAB Lg Lg 10 28 35.7
4.4nm,0.4s,SNR=7.9
MEZF Maizieres J'vi 6.53 32 Pn **Pn 10 26 46.8 +0.6**
MEZF Lg Lg 10 28 37.8
20nm,0.4s
MEZF Maizieres J'vi 6.53 32 *e*Pn **Pn 10 26 46.8 +0.6**
MEZF *e*Sg **Sg 10 28 37.8 -2.5**
20nm,0.4s
MEZF Maizieres J'vi 6.53 32 Pn **Pn 10 26 46.8 +0.6**
MEZF *e*Sg **Sg 10 28 37.8 -2.5**
9.9nm,0.4s
PMRV Marv??o 6.55 238 *e*Pn **Pn 10 26 48.1 +1.5**
PMRV *e*Sn **Sn 10 27 58.9 -2.0**
PMRV Marv??o 6.55 238 Pn **Pn 10 26 48.1 +1.5**
PMRV Sn **Sn 10 27 58.9 -2.0**
PMRV Marv??o 6.55 238 *e*Pn **Pn 10 26 48.1 +1.5**
EGOR Sierra Gorda, 6.69 208 Pn **Pn 10 26 50.7 +2.0**
0.2nm,0.1s,SNR=7.9
EGOR Sn **Sn 10 28 02.9 -1.8**
0.3nm,0.2s,SNR=7.9
EGOR Sierra Gorda, 6.69 208 Pn **Pn 10 26 50.7 +2.0**
0.2nm,0.1s,SNR=7.9
HAU Haudompre 6.72 41 Pn **Pn 10 26 49.6 +0.7**
HAU Haudompre 6.72 41 *e*Pn **Pn 10 26 49.6 +0.7**
HAU Haudompre 6.72 41 Pn **Pn 10 26 49.6 +0.7**
EBAD Badajoz 6.75 232 Pn **Pn 10 26 51.1 +1.8**
0.0nm,0.1s,SNR=7.9
EBAD Sn **Sn 10 28 03.5 -2.2**
2.0nm,0.4s,SNR=7.9
EBAD Badajoz 6.75 232 Pn **Pn 10 26 51.1 +1.8**
SNR=7.9
HINF Hinteralfeld 6.84 44 Pn **Pn 10 26 51.1 +0.5**
HINF Lg Lg 10 28 47.6
2.6nm,0.4s
HINF Hinteralfeld 6.84 44 *e*Pn **Pn 10 26 51.1 +0.5**
HINF *e*Sg **Sg 10 28 47.6 -2.7**
5.2nm,0.4s
HINF Hinteralfeld 6.84 44 Pn **Pn 10 26 51.1 +0.5**
HINF *e*Sg **Sg 10 28 47.6 -2.7**
2.6nm,0.4s
PAGF Fort de Pagny 6.84 35 *e*Pn **Pn 10 26 51.1 +0.5**
PAGF *e*Sg **Sg 10 28 47.7 -2.7**
9.1nm,0.9s
PAGF Fort de Pagny 6.84 35 *e*Pn **Pn 10 26 51.1 +0.5**
PAGF *e*Sg **Sg 10 28 47.7 -2.7**
4.6nm,0.9s
PESTR Estremoz 7.01 235 *e*Pn **Pn 10 26 54.2 +1.2**
PESTR *e*Sn **Sn 10 28 10.8 -1.6**
PESTR Estremoz 7.01 235 *e*Pn **Pn 10 26 54.2 +1.2**
PBAR Barrancos 7.16 229 *e*Pn **Pn 10 26 57.2 +2.2**
PBAR *e*Sn **Sn 10 28 13.3 -2.7**
PBAR A A 10 28 27.9
7.2nm,0.4s
PBAR Barrancos 7.16 229 Pn **Pn 10 26 57.2 +2.2**
PBAR Sn **Sn 10 28 13.3 -2.7**
7.2nm,0.4s
PBAR Barrancos 7.16 229 *e*Pn **Pn 10 26 57.2 +2.2**
CDF Champ du Feu 7.45 42 Pn **Pn 10 26 59.6 +0.7**
CDF Lg Lg 10 29 06.8
8.1nm,0.9s
CDF Champ du Feu 7.45 42 *e*Pn **Pn 10 26 59.6 +0.7**
CDF *e*Sg **Sg 10 29 06.8 -3.0**

16nm,0.9s
CDF Champ du Feu 7.45 42 Pn **Pn 10 26 59.6 +0.7**
CDF eSg **Sg 10 29 06.8 -3.0**
8.1nm,0.9s
BAIF Baives 7.59 22 Pn **Pn 10 27 01.6 +0.8**
BAIF Lg Lg 10 29 11.1
4.9nm,0.6s
BAIF Baives 7.59 22 ePn **Pn 10 27 01.6 +0.8**
BAIF eSg 10 29 11.1
9.8nm,0.6s
BAIF Baives 7.59 22 Pn **Pn 10 27 01.6 +0.8**
BAIF eSg 10 29 11.1
4.9nm,0.6s
GIVF Givet 7.81 24 Pn **Pn 10 27 04.2 +0.4**
GIVF Lg Lg 10 29 17.7
6.9nm,0.7s
GIVF Givet 7.81 24 ePn **Pn 10 27 04.2 +0.4**
GIVF eSg 10 29 17.7
14nm,0.7s
GIVF Givet 7.81 24 Pn **Pn 10 27 04.2 +0.4**
GIVF eSg 10 29 17.7
6.9nm,0.7s
EGRO El Granado 7.87 227 Pn **Pn 10 27 05.5 +0.8**
0.5nm,0.2s,SNR=7.9
EGRO Sn **Sn 10 28 29.4 -3.9**
0.3nm,0.1s,SNR=7.9
EGRO El Granado 7.87 227 Pn **Pn 10 27 05.5 +0.8**
0.5nm,0.2s,SNR=7.9
PVAQ Vaqueiros 8.09 228 eSn **Sn 10 28 34.4 -4.4**
PVAQ A A 10 28 50.4
1.6nm,0.6s
PVAQ Vaqueiros 8.09 228 Sn **Sn 10 28 34.4 -4.4**
1.6nm,0.6s

DDA 14 10:25:34.8,38°23N×25°98E,h7km,Md2.7,Aegean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZEY	**¯zmir**	**0.41**	**89**	*i* P	Pg	10 25 43.0	+0.1
ZEY				*i* S	Sb	10 25 49.8	-1.2
URLA	**Izmir**	**0.50**	**75**	*i* P	Pg	10 25 45.0	+0.4
URLA				*i* S	Sg	10 25 52.1	+1.0
DGB	**¯zmir**	**0.74**	**104**	*i* P	Pg	10 25 49.2	+0.2
DGB				*i* S	Sb	10 25 59.8	-0.4

*IDC **14** 10:32:30.5±1.5,9°48N×125°99E,h0km,mb3.7/7, mb1 3.8/7,mb1mx3.6/63,mbtmp3.7/7,Error ellipse: s-maj=176.6km s-min=18.7km az=69.0*
*ISCJB **14** 10:32:33.4±0.8,9°69N±0°06×126°85E±0°08,h43km, mb3.7/7,Error ellipse: s-maj=10.7km s-min=8.3km az=11.7*
*MAN **14** 10:32:34,9°60N×126°11E,h178km,mb4.5,ML3.4,MS3.3*
ISC 14 10:32:35.6±1.1,9°67N±0°07×126°8E±0°1,h43km,n10, σ1§47/13,mb3.8/7,1C-1D,Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLP	**Palo**	**2.30**	**310**	⇓*e*P	**Pn**	**10 33 11.1**	**-0.1**
PLP				*e*S	**Sn**	**10 33 39.1**	**+0.8**
CGP	**Cagayan de Oro**	**2.37**	**240**	⇑*e*P	**Pn**	**10 33 10.3**	**-1.7**
CGP				*e*S	**Sn**	**10 33 40.5**	**+0.5**
BUKP	**Musuan**	**2.45**	**224**	*e*P	**Pn**	**10 33 11.6**	**-1.6**
BUKP				*e*S	**Sn**	**10 33 44.9**	**+3.0**
WRA	**Warramunga Arr**	**30.35**	**166**	P	**P**	**10 38 44.6**	**+1.0**
0.3nm,0.8s,baz=346,slow=10,SNR=2.8							
ASAR	**Alice Springs**	**33.85**	**168**	P	**P**	**10 39 14.7**	**+0.4**
0.3nm,0.5s,baz=352,slow=7.5,SNR=2.9							
SONM	**Songino Array**	**41.75**	**339**	P	**P**	**10 40 21.7**	**+0.9**
0.7nm,0.6s,baz=140,slow=7.0,SNR=2.2							
MKAR	**Makanchi Array**	**52.80**	**323**	P	**P**	**10 41 45.8**	**-0.9**
0.8nm,0.7s,baz=105,slow=9.1,SNR=4.5							
ZALV	**Zalesovo Beam**	**55.39**	**331**	P	**P**	**10 42 04.2**	**-1.2**
0.5nm,0.4s,baz=111,slow=7.4,SNR=2.9							
KURBB	**Kurchatov Arra**	**56.84**	**325**	P	**P**	**10 42 14.6**	**-1.3**
0.7nm,0.5s,baz=128,slow=6.8,SNR=7.0							
ARCES	**ARCESS Array B**	**84.93**	**340**	P	**P**	**10 45 05.8**	**-0.1**
2.3nm,0.8s,baz=71,slow=6.8,SNR=4.0							

*ISCJB **14** 10:38:22.2±1.2,36°4N±0°1×71°1E±0°1,h200km,mb3.5/5, Error ellipse: s-maj=16.0km s-min=12.0km az=139.5*
*IDC **14** 10:38:23.7±4.7,36°24N×71°18E,h216km±38km,mb3.3/6, mb1 3.2/11,mb1mx2.9/65,mbtmp3.8/11,Error ellipse: s-maj=45.5km s-min=27.9km az=151.0*
ISC 14 10:38:24.3±1.5,36°5N±0°1×71°1E±0°1,h200km,n13, σ1§78/16,mb3.7/5,1C-3D,Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**2.95**	**323**	⇓Pn	**Pn**	**10 39 16.2**	**+2.7**
18nm,0.3s							
DZET				⇑Sn	**Sn**	**10 39 51.8**	**-0.2**
50nm,0.4s							
KK31	**Karatay Array**	**6.64**	**356**	⇓Pn	**Pn**	**10 40 00.6**	**+0.9**
2.5nm,0.7s,baz=159,slow=11,SNR=10.0							
KK31				⇓Sn	**Sn**	**10 41 12.1**	**-3.4**
1.8nm,0.3s,baz=171,slow=22,SNR=11							
AAK	**Ala-Archa**	**6.68**	**22**	P	**Pn**	**10 40 03.1**	**+2.7**
2.6nm,0.3s,baz=184,slow=6.1,SNR=6.0							
AAK				S	**Sn**	**10 41 15.1**	**-1.6**
0.9nm,0.3s,baz=127,slow=20,SNR=9.1							
MKAR	**Makanchi Array**	**13.26**	**35**	P	**Pn**	**10 41 26.1**	**+1.2**
0.3nm,0.3s,baz=220,slow=13,SNR=10							
KURBB	**Kurchatov Arra**	**15.12**	**18**	P	**Pn**	**10 41 47.1**	**-0.6**
0.1nm,0.3s,baz=205,slow=11,SNR=6.3							
BVAR	**Borovoye Array**	**16.56**	**358**	P	**Pn**	**10 42 07.0**	**+2.0**
0.2nm,0.3s,baz=156,slow=8.5,SNR=3.3							
AKTO	**Aktyubinsk**	**16.85**	**330**	P	**P**	**10 42 07.9**	**+0.6**
0.4nm,0.3s,baz=140,slow=14,SNR=4.5							
ZALV	**Zalesovo Beam**	**19.90**	**24**	P	**P**	**10 42 40.4**	**+0.1**
1.3nm,0.4s,baz=218,slow=9.4,SNR=6.1							
FINES	**FINESS Array B**	**37.56**	**326**	P	**P**	**10 45 18.4**	**-0.4**
1.7nm,0.6s,baz=118,slow=9.3,SNR=6.9							
ARCES	**ARCESS Array B**	**41.20**	**338**	P	**P**	**10 45 48.6**	**-0.3**
1.5nm,0.8s,baz=112,slow=9.3,SNR=6.3							
HFS	**Hagfors**	**43.15**	**322**	P	**P**	**10 46 04.1**	**-0.6**
1.4nm,0.6s,baz=104,slow=11,SNR=4.4							
TORD	**Torodi Ar. Bea**	**65.81**	**269**	P	**P**	**10 48 46.3**	**-2.1**
0.8nm,0.6s,baz=52,slow=6.0,SNR=7.9							
YKA	**Yellowknife Ar**	**81.27**	**3**	P	**P**	**10 50 16.9**	**-0.7**
0.2nm,0.5s,baz=351,slow=5.5,SNR=4.9							

*NIED **14** 10:38:00,38°40N×141°70E,h32km,Mw3.7 Best double couple: M₀3.97000×10¹⁴ NP1:φ₀215.00000°,δ70.00000°, λ3.00000°. NP2:φ₀124.00000°,δ87.00000°,λ160.00000°.*
*ISCJB **14** 10:38:35.6±0.8,38°34N±0°04×141°70E±0°09,h60km±6km, mb3.4/3,Error ellipse: s-maj=12.1km s-min=5.1km az=23.8*
*JMA **14** 10:38:36.0,38°35N×141°66E,h60km±1km,M3.5*
*IDC **14** 10:38:37.4±9.0,38°21N×141°87E,h82km±56km,mb3.2/3, mb1 3.2/5,mb1mx2.9/68,mbtmp3.4/5,ML2.5/2,Error ellipse: s-maj=117.4km s-min=26.0km az=72.0*
ISC 14 10:38:35.5±1.2,38°34N±0°05×141°75E±0°09,h57km±9km, n26,σ0§90/29,mb3.4/3,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.34**	**290**	P	**Pn**	**10 38 46.0**	**+0.4**
JIO				S	**Sn**	**10 38 52.9**	**0.0**
JMK	**Ichinoseki**	**0.74**	**326**	P	**Pn**	**10 38 50.5**	**+0.4**
JMK				S	**Sn**	**10 39 00.8**	**+0.1**
OFUJ	**Ofunato**	**0.74**	**355**	P	**Pn**	**10 38 50.6**	**+0.5**
OFUJ				S	**Sn**	**10 39 01.1**	**+0.3**
JOU	**Okura**	**0.85**	**272**	P	**Pn**	**10 38 51.4**	**-0.1**
JOU				S	**Sn**	**10 39 03.1**	**-0.2**
JMM	**Marumori**	**0.89**	**238**	P	**Pn**	**10 38 51.8**	**-0.2**
JMM				S	**Sn**	**10 39 03.2**	**-0.9**
JOM	**Ohasama**	**1.19**	**343**	P	**Pn**	**10 38 56.4**	**+0.5**
JFK	**Kawauchi**	**1.19**	**216**	P	**Pn**	**10 38 56.3**	**+0.3**
JFK				S	**Sn**	**10 39 11.2**	**-0.1**
JYK	**Kaneyama**	**1.23**	**298**	P	**Pn**	**10 38 56.5**	**0.0**
JYK				*e*S	**Sn**	**10 39 11.8**	**-0.4**
MIYJ	**Miyakonagasawa**	**1.24**	**2**	P	**Pn**	**10 38 56.9**	**+0.3**
JYS	**Shirataka**	**1.33**	**265**	P	**Pn**	**10 38 57.9**	**+0.1**
JYS				S	**Sn**	**10 39 14.4**	**-0.2**
JRG	**Rokugo**	**1.37**	**321**	P	**Pn**	**10 38 58.8**	**+0.5**
JFT	**Otama**	**1.39**	**234**	P	**Pn**	**10 38 59.1**	**+0.5**
JFT				S	**Sn**	**10 39 15.7**	**-0.2**
JKZ	**Kuzumaki**	**1.68**	**349**	P	**Pn**	**10 39 03.0**	**+0.4**
JANG	**Nango**	**2.04**	**355**	P	**Pn**	**10 39 07.6**	**+0.1**
JANG				S	**Sn**	**10 39 32.6**	**+0.8**
MJAR	**Matsushiro Arr**	**3.34**	**239**	P	**Pn**	**10 39 27.0**	**+1.8**
1.1nm,0.3s,baz=40,slow=12,SNR=20							
MAT	**Matsushiro**	**3.34**	**239**	P	**Pn**	**10 39 28.4**	**+3.2**
USRK	**Ussuriysk Ar.**	**9.39**	**312**	P	Pn	10 40 52.7	+4.7
0.2nm,0.3s,baz=109,slow=16,SNR=3.4							
H11N2	**WAKE ISLAND Hy 28.61**	**123**		T	T	11 14 42.2	
baz=316,slow=75,SNR=7.4							
H11N1	**WAKE ISLAND Hy 28.62**	**123**		T	T	11 14 45.8	
baz=316,slow=75,SNR=12							
H11N3	**WAKE ISLAND Hy 28.63**	**123**		T	T	11 14 46.3	
baz=316,slow=75,SNR=8.2							
H11S1	**WAKE ISLAND Hy 29.37**	**125**		T	T	11 15 42.0	
baz=318,slow=76,SNR=8.3							
H11S3	**WAKE ISLAND Hy 29.37**	**125**		T	T	11 15 42.5	
baz=318,slow=76,SNR=8.5							
H11S2	**WAKE ISLAND Hy 29.38**	**125**		T	T	11 15 40.6	
baz=318,slow=76,SNR=6.9							
MKAR	**Makanchi Array**	**43.66**	**301**	P	**P**	**10 46 35.6**	**+1.1**
0.2nm,0.3s,baz=78,slow=9.3,SNR=2.3							
KURBB	**Kurchatov Arra**	**45.42**	**307**	P	**P**	**10 46 47.6**	**-0.7**
0.3nm,0.3s,baz=83,slow=8.3,SNR=4.7							
WRA	**Warramunga Arr**	**58.39**	**188**	P	**P**	**10 48 23.6**	**-1.4**
0.2nm,0.6s,baz=5.8,slow=7.9,SNR=5.6							

*IDC **14** 10:42:20.8±1.2,20°20S×168°32E,h0km,mb4.1/7, mb1 4.3/8,mb1mx4.0/37,mbtmp4.1/8,ML3.3/1,MS3.3/4, Ms1 3.3/4,ms1mx2.8/33,Error ellipse: s-maj=59.6km s-min=19.3km az=147.0*
*ISCJB **14** 10:42:22.4±0.5,20°3S±0°1×168°38E±0°08,h26km, mb4.3/10,MS3.2/3,Error ellipse: s-maj=18.5km s-min=6.5km az=152.7*
*NEIC **14** 10:42:22.4±0.6,20°22S×168°24E,h10km,mb4.9/3,Error ellipse: s-maj=23.1km s-min=9.2km az=156.0*
ISC 14 10:42:24.4±0.7,20°3S±0°2×168°31E±0°09,h26km,n18, σ1§13/18,mb4.3/10,MS3.2/3,Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.48**	**224**	Pn	**Pn**	**10 43 02.4**	**-0.8**
6.7nm,0.3s,baz=63,slow=8.0,SNR=72							
DZM				Sn	**Sn**	**10 43 32.9**	**+0.2**
25nm,0.3s,baz=54,slow=19,SNR=10							
DZM				LR	LR	10 44 03.8	
comp=Z,581nm,20.5s,baz=56,slow=40							
MSVF	**Nonsavu**	**9.56**	**76**	*e*Pn	**Pn**	**10 44 41.1**	**+0.6**
56nm,1.5s							
MSVF				*e*Sn	**Sn**	**10 46 25.9**	**-1.3**
EIDS	**Eidsvold**	**16.66**	**249**	*e*Pn	**Pn**	**10 46 14.4**	**-1.8**
4.9nm,1.0s							
PMG	**Port Moresby**	**23.11**	**295**	LR	LR	10 54 46.0	
comp=Z,81nm,19.2s,baz=162,slow=32							
PMG	**Port Moresby**	**23.11**	**295**	*e*P	**P**	**10 47 27.7**	**-0.8**
68nm,1.6s							
STKA	**Stephens Creek**	**26.55**	**239**	P	**P**	**10 48 02.2**	**+2.0**
1.5nm,0.6s,baz=82,slow=11,SNR=4.5							
WRAB	**Tennant Creek**	**31.86**	**265**	*e*P	**P**	**10 48 47.7**	**0.0**
14nm,1.5s							
WRA	**Warramunga Arr**	**31.87**	**265**	P	**P**	**10 48 46.9**	**-0.8**
0.3nm,0.5s,baz=91,slow=8.5,SNR=13							
ASAR	**Alice Springs**	**32.03**	**258**	P	**P**	**10 48 49.2**	**0.0**
1.7nm,0.9s,baz=86,slow=8.9,SNR=16							
ASAR				LR	LR	11 01 29.7	
comp=Z,83nm,18.8s,baz=109,slow=36							
KAPI	**Kappang**	**49.55**	**281**	LR	LR	11 12 57.9	
comp=Z,14nm,19.9s,baz=13,slow=37							
CMAR	**Chiang Mai Arr**	**78.15**	**295**	P	**P**	**10 54 23.3**	**+1.4**
0.7nm,0.3s,baz=122,slow=3.4,SNR=3.8							
YBH	**Yreka Blue Hor**	**88.67**	**44**	P	**P**	**10 55 15.9**	**+0.3**
2.8nm,0.8s,baz=217,slow=1.2,SNR=7.5							
NVAR	**Mina Array Bea**	**90.16**	**49**	P	**P**	**10 55 22.9**	**+0.1**
2.4nm,0.8s,baz=229,slow=8.2,SNR=14							
ILAR	**Eielson Array**	**91.50**	**18**	P	**P**	**10 55 26.8**	**-1.3**
0.8nm,0.7s,baz=238,slow=5.8,SNR=6.7							
WVOR	**Wild Horse Val**	**91.68**	**45**	*e*P	**P**	**10 55 29.8**	**+0.1**
6.7nm,1.1s							
YKA	**Yellowknife Ar**	**102.01**	**28**	P	**Pdif**	**10 56 15.9**	**+0.1**
0.2nm,0.5s,baz=252,slow=4.4,SNR=6.4							
ARCES	**ARCESS Array B**	**125.86**	**345**	PKP	**PKPdf**	**11 01 23.1**	**-0.2**
2.6nm,0.9s,baz=31,slow=5.7,SNR=5.9							
GERES	**GERESS Array B**	**145.00**	**330**	PKP	**PKPdf**	**11 02 01.4**	**+2.0**
0.5nm,0.6s,baz=22,slow=4.3,SNR=5.4							

MAN 14 10:49:24,9°35N×125°54E,h131km,mb4.5,ML3.3,MS3.2, 1C-1D,Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CGP	**Cagayan de Oro**	**1.22**	**223**	⇑*e*P	Pn	10 49 50.4	+1.2
CGP				*e*S	Sn	10 50 09.3	+1.0
BUKP	**Musuan**	**1.54**	**198**	*e*P	Pn	10 49 54.0	+1.3
BUKP				*e*S	Sn	10 50 16.3	+1.8
PLP	**Palo**	**1.89**	**343**	⇓*e*P	Pn	10 49 57.8	+1.1
PLP				*e*S	Sn	10 50 23.2	+1.5

*ISK **14** 10:51:14.0,40°43N×34°48E,h5km,MD3.0*
*DDA **14** 10:51:14.4,40°40N×34°45E,h7km,Md3.0*
*CSEM **14** 10:51:15.0±0.1,40°42N×34°45E,h2km,MD3.0,Error ellipse: s-maj=3.4km s-min=2.5km az=61.0*
ISC 14 10:51:14.6±1.0,40°40N±0°02×34°46E±0°02,h18km±4km, n27,σ0§60/47,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CORM	**Corum**	**0.26**	**149**	*e*PG	**Pg**	**10 51 20.4**	**-0.1**
CORM				*e*SG	**Sb**	**10 51 25.2**	**+0.5**
CORM	**Corum**	**0.26**	**149**	*e*Pg	**Pg**	**10 51 20.4**	**-0.1**
CORM				*e*Sg	**Sb**	**10 51 25.2**	**+0.5**
COAL	**Corum-Alaca**	**0.43**	**109**	P	**Pg**	**10 51 23.1**	**-0.4**
COAL				S	**Sg**	**10 51 29.8**	**+0.3**
COAL	**Corum-Alaca**	**0.43**	**109**	*i* P	**Pg**	**10 51 23.1**	**-0.4**
COAL				*i* S	**Sg**	**10 51 29.8**	**+0.3**
CANT	**Cankiri**	**0.67**	**288**	*e*PG	**Pb**	**10 51 28.1**	**+0.3**
TOS	**Tosya**	**0.71**	**333**	*e*PG	**Pb**	**10 51 28.4**	**-0.2**
TOS	**Tosya**	**0.71**	**333**	*e*Pg	**Pb**	**10 51 28.4**	**-0.2**
CDAG	**Cicekdag**	**0.78**	**185**	P	**Pb**	**10 51 29.4**	**-0.3**
CDAG				S	**Sg**	**10 51 40.9**	**+0.7**
CDAG	**Cicekdag**	**0.78**	**185**	*i* P	**Pb**	**10 51 29.4**	**-0.3**
CDAG				*i* S	**Sg**	**10 51 40.9**	**+0.7**
ELDT	**Eldivan**	**0.79**	**277**	P	**Pb**	**10 51 29.8**	**-0.1**
ELDT				S	**Sg**	**10 51 40.7**	**+0.1**
ELDT	**Eldivan**	**0.79**	**277**	*i* P	**Pb**	**10 51 29.8**	**-0.1**
ELDT				*i* S	**Sg**	**10 51 40.7**	**+0.1**
ILGA	**Ilgaz**	**0.86**	**320**	P	**Pb**	**10 51 30.9**	**-0.3**
ILGA				S	**Sg**	**10 51 43.5**	**+0.6**
ILGA	**Ilgaz**	**0.86**	**320**	*i* P	**Pb**	**10 51 30.9**	**-0.3**
ILGA				*i* S	**Sg**	**10 51 43.5**	**+0.6**
BOYT	**Boyabat**	**1.07**	**18**	P	**Pb**	**10 51 34.6**	**-0.1**
BOYT				S	**Sg**	**10 51 50.5**	**+0.9**
BOYT	**Boyabat**	**1.07**	**18**	*i* P	**Pb**	**10 51 34.6**	**-0.1**
BOYT				*i* S	**Sg**	**10 51 50.5**	**+0.9**
DIKM	**Dikmen**	**1.39**	**26**	*e*PN	**Pg**	**10 51 41.5**	**+0.1**
DIKM				*e*SN	**Sg**	**10 52 00.5**	**+1.0**
DIKM	**Dikmen**	**1.39**	**26**	*e*Pn	**Pg**	**10 51 41.5**	**+0.1**
DIKM				*e*Sn	**Sg**	**10 52 00.5**	**+1.0**
SERE	**Sereflikochisa**	**1.61**	**206**	*e*PN	**Pg**	**10 51 45.3**	**-0.2**
SERE				*e*SN	**Sg**	**10 52 07.8**	**+1.4**
SERE	**Sereflikochisa**	**1.61**	**206**	*e*Pn	**Pg**	**10 51 45.3**	**-0.2**
SERE				*e*Sn	**Sg**	**10 52 07.8**	**+1.4**
AVNS	**Nevsehir-Avano**	**1.62**	**169**	P	**Pb**	**10 51 44.8**	**+0.8**
AVNS				S	**Sg**	**10 52 06.3**	**-0.6**
AVNS	**Nevsehir-Avano**	**1.62**	**169**	*i* P	**Pb**	**10 51 44.8**	**+0.8**
AVNS				*i* S	**Sg**	**10 52 06.3**	**-0.6**
BCAM	**Yenicaga**	**1.87**	**284**	P	**Pn**	**10 51 44.8**	**-0.9**
BCAM				S	**Sb**	**10 52 11.7**	**+0.4**
BCAM	**Yenicaga**	**1.87**	**284**	*i* P	**Pn**	**10 51 44.9**	**-0.9**
BCAM				*i* S	**Sb**	**10 52 11.7**	**+0.4**
SVSK	**Karacayir**	**2.01**	**103**	*e*PN	**Pb**	**10 51 50.3**	**-0.2**
SVSK	**Karacayir**	**2.01**	**103**	*e*Pn	**Pb**	**10 51 50.3**	**-0.2**
GULA	**Gulagac**	**2.06**	**185**	*e*PN	**Pb**	**10 51 51.9**	**+0.4**
GULA	**Gulagac**	**2.06**	**185**	*e*Pn	**Pb**	**10 51 51.9**	**+0.4**

*NIED **14** 10:52:00,35°60N×141°00E,h26km,Mw3.7 Best double couple: M₀3.77000×10¹⁴ NP1:φ₀191.00000°,δ34.00000°, λ-56.00000°. NP2:φ₀332.00000°,δ62.00000°, λ-111.00000°.*

*IDC **14** 10:52:53.2±4.0,35°51N×141°16E,h0km,mb3.4/2, mb1 3.5/3,mb1mx3.2/36,mbtmp3.3/3,ML3.0/1,MS2.7/3, Ms1 2.7/3,ms1mx2.4/31,Error ellipse: s-maj=119.1km s-min=31.0km az=57.0*
*ISCJB **14** 10:52:56.1±1.2,35°64N±0°07×141°1E±0°1,h33km, mb3.5/2,MS2.7/1,Error ellipse: s-maj=15.9km s-min=7.2km az=155.0*
*JMA **14** 10:52:57.0±0.2,35°64N×141°01E,h22km±1km,M3.6*
JMA Felt I J1.
ISC 14 10:52:57.7±1.3,35°62N±0°06×141°02E±0°08,h33km,n20, σ0§96/15,4C-1D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.16**	**301**	⇑P	**Pn**	**10 53 01.5**	**-1.5**
CHOJ				S	**Sn**	**10 53 04.6**	**-0.1**
JCN	**Nagara**	**0.70**	**253**	P	**Pn**	**10 53 11.0**	**-0.3**
KTR	**Katsuura**	**0.75**	**231**	P	**Pn**	**10 53 11.5**	**-0.5**
BSO4	**Boso 4**	**0.84**	**222**	⇑P	**Pb**	**10 53 13.2**	**-0.7**
JYT	**Yasato**	**0.91**	**312**	⇑P	**Pn**	**10 53 13.1**	**-1.0**
JYT				S	**Sn**	**10 53 25.7**	**-0.3**
BSO3	**Boso 3**	**0.92**	**207**	⇓P	**Pn**	**10 53 13.6**	**-0.5**
BSO1	**Boso 1**	**0.97**	**182**	P	**Pn**	**10 53 13.6**	**-0.9**
JHO	**Hitachi**	**1.05**	**340**	⇑P	**Pn**	**10 53 15.4**	**-0.8**
MJAR	**Matsushiro Arr**	**2.46**	**293**	Pn	**Pn**	**10 53 36.0**	**+0.5**
2.8nm,0.3s,baz=110,slow=10,SNR=30							
MJAR				LR	LR	10 54 38.8	
comp=Z,73nm,18.8s,baz=195,slow=41							
MAT	**Matsushiro**	**2.46**	**293**	P	**Pn**	**10 53 36.6**	**+1.0**
MAT				S	**Sn**	**10 54 05.6**	**+1.1**
JNU	**Nakatsue**	**8.75**	**256**	LR	LR	10 58 44.8	
comp=Z,63nm,20.7s,baz=108,slow=40							
PETK	**Petropavlovsk-**	**21.07**	**29**	LR	LR	11 05 24.0	
comp=Z,36nm,20.7s,baz=94,slow=36							
H11N2	**WAKE ISLAND Hy 27.73**	**118**		T	T	11 27 33.4	
baz=311,slow=75,SNR=148							
H11N1	**WAKE ISLAND Hy 27.74**	**118**		T	T	11 27 43.7	
baz=311,slow=75,SNR=134							
H11N3	**WAKE ISLAND Hy 27.75**	**118**		T	T	11 27 42.7	
baz=311,slow=75,SNR=174							
H11S1	**WAKE ISLAND Hy 28.39**	**120**		T	T	11 28 34.3	
baz=312,slow=75,SNR=175							
H11S3	**WAKE ISLAND Hy 28.39**	**120**		T	T	11 28 28.3	
baz=312,slow=75,SNR=168							
H11S2	**WAKE ISLAND Hy 28.41**	**120**		T	T	11 28 29.8	
baz=312,slow=75,SNR=121							
MKAR	**Makanchi Array**	**44.61**	**303**	P	**P**	**11 01 08.4**	**+1.6**
0.2nm,0.4s,baz=92,slow=7.9,SNR=1.6							
WRA	**Warramunga Arr**	**55.62**	**188**	P	**P**	**11 02 30.1**	**-0.4**
0.5nm,0.7s,baz=5.7,slow=8.0,SNR=5.7							

IDC 14 10:55:35.0±1.2,19°87N×121°52E,h0km,mb3.4/4, mb1 3.6/4,mb1mx3.4/33,mbtmp3.4/4,MS2.5/1,Ms1 2.7/1, ms1mx2.2/32,Error ellipse: s-maj=76.8km s-min=24.2km az=68.0,Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**21.37**	**270**	LR	LR	11 08 48.4	
comp=Z,12nm,18.2s,baz=215,slow=37							
WRA	**Warramunga Arr**	**41.51**	**162**	P	P	11 03 23.2	-1.0
0.5nm,0.6s,baz=343,slow=8.8,SNR=7.8							
MKAR	**Makanchi Array**	**41.72**	**319**	P	P	11 03 25.4	-0.3
0.1nm,0.4s,baz=110,slow=8.0,SNR=2.5							
ASAR	**Alice Springs**	**44.93**	**164**	P	P	11 03 52.5	+0.7
0.3nm,0.3s,baz=347,slow=7.0,SNR=8.7							
YKA	**Yellowknife Ar**	**86.81**	**23**	P	P	11 08 21.2	+0.2
0.1nm,0.4s,baz=307,slow=4.6,SNR=4.6							

IDC 14 11:20:25.4±368.0,47°22N×48°44E,h0km,Error ellipse: s-maj=178.2km s-min=121.5km az=18.0,Western Kazakhstan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I31KZ	**AKTYUBINSK INF**	**7.09**	**60**	*i*		12 07 40.0	
baz=248,slow=323,SNR=2.5							
I26DE	**FREYUNG INFRAS**	**23.16**	**287**	*i*		13 42 10.0	
baz=82,slow=322,SNR=0.8							
I46RU	**ZALESOVO INFRA**	**23.86**	**60**	*i*		13 44 50.0	
baz=266,slow=322,SNR=2.9							

DJA 14 11:22:04.4±1.1,8°S±11°×10°8E±°,h38km±5km,M3.7/8, MLv3.7/8,Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMJI	**Cimerak**	**0.35**	**41**	P	Pn	11 22 14.1	+1.2
CMJI				S	Sn	11 22 21.8	+2.2
CISI	**Cisompet, Garu**	**0.63**	**321**	P	Pn	11 22 17.8	+0.7
CISI				S	Sn	11 22 28.2	+2.3
CNJI	**Cibinong**	**1.31**	**304**	P	Pn	11 22 26.2	+0.1
CNJI				S	Sn	11 22 41.7	-0.6
SMRI	**Semarang**	**2.42**	**66**	P	Pn	11 22 42.1	+0.7
CGJI	**Cibinong**	**2.88**	**299**	P	Pn	11 22 47.9	+0.1

*FUNV **14** 11:26:13.5,9°10N×70°95W,h8km,MW3.0*
ISC 14 11:26:12.0±1.5,9°14N±0°04×70°93W±0°03,h4km±13km, n23,σ0§99/34,1D,Venezuela

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SOCV	**Socops**	**0.85**	**175**	⇓*i* P	**Pg**	**11 26 28.4**	**0.0**
SOCV				*e*S	**Sg**	**11 26 38.9**	**-0.6**
CURV	**Curarigua**	**1.29**	**48**	*e*P	**Pn**	**11 26 37.2**	**+0.3**
CURV				*e*S	**Sn**	**11 26 55.7**	**+1.0**
SANV	**Sanarito**	**1.42**	**75**	*e*P	**Pg**	**11 26 40.1**	**+0.8**
SANV				*e*S	**Sn**	**11 26 58.6**	**+0.6**
DABV	**Dabajuro**	**1.79**	**9**	*e*P	**Pb**	**11 26 44.9**	**-0.5

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
YSS	**Yuzh-Sakhalins**	**0.85**	**349**	⇑*iP*		**Pn**	**11 27 31.8**	**+1.0**
YSS	300nm,0.2s				AMB	AMB	11 27 32.2	
YSS				*i* S		**S**	**11 28 06.2**	**-0.4**
YSS	5μm,3.0s				A	A	11 28 06.8	
YSS	2μm,3.0s				A	A	11 28 06.8	
YSS	2μm,0.6s				A	A	11 28 07.0	
YSS	880nm,0.6s				A	A	11 28 07.0	
JWK2	**Keihoku**	**1.12**	**224**	P		**Pn**	**11 27 33.0**	**+1.0**
JWK2				*e*S		**S**	**11 28 08.8**	**+0.1**
JSE	**Soyaes**	**1.20**	**194**	P		**Pn**	**11 27 32.8**	**+0.4**
JRR	**Rishiri**	**1.54**	**231**	P		**Pn**	**11 27 35.0**	**+0.9**
JSS	**Shosan**	**1.91**	**206**	P		**Pn**	**11 27 37.2**	**+0.7**
ASAJ	**Asahikawa**	**2.03**	**188**	P		**Pn**	**11 27 38.0**	**+0.6**
ASAJ	52nm,0.3s,baz=22,slow=9.2,SNR=434			S		**S**	**11 28 18.0**	**-0.4**
ASAJ	**Asahikawa**	**2.03**	**188**	P		**Pn**	**11 27 37.9**	**+0.6**
JYG	**Yagishiri**	**2.03**	**214**	P		**Pn**	**11 27 37.9**	**+0.6**
JMP	**Maruseppu**	**2.13**	**173**	P		**Pn**	**11 27 38.2**	**0.0**
JTKR	**Abashiri--Toko**	**2.25**	**163**	P		**Pn**	**11 27 39.1**	**+0.1**
JTKR	baz=336,slow=20,SNR=2.6			*e*S		**S**	**11 28 21.0**	**-0.3**
JKK2	**Kamakawa 2**	**2.26**	**185**	P		**Pn**	**11 27 39.5**	**+0.4**
JHR	**Hokuryu**	**2.55**	**201**	P		**Pn**	**11 27 41.8**	**+0.4**
JRA	**Rausu**	**2.65**	**145**	P		**Pn**	**11 27 42.5**	**+0.3**
JAR	**Ashorobuto**	**2.88**	**169**	P		**Pn**	**11 27 44.4**	**+0.2**
YUK	**Yuzh-Kuril'sk**	**2.91**	**135**	*e*PN		**Pn**	**11 27 45.6**	**+1.2**
YUK				*e*S		**S**	**11 28 33.6**	**+2.4**
YUK	comp=Z,61nm,0.4s				pmax	pmax		
YUK	comp=E,42nm,0.5s				pmax	pmax		
YUK	comp=N,51nm,0.3s				pmax	pmax		
YUK	**Yuzh-Kuril'sk**	**2.91**	**135**	*e*P		**Pn**	**11 27 45.6**	**+1.2**
JFR	**Furan**	**2.98**	**186**	P		**Pn**	**11 27 45.1**	**0.0**
UGL	**Uglegorsk**	**3.02**	**348**	⇓*i*PN		**Pn**	**11 27 46.1**	**+0.9**
UGL				*i* S		**S**	**11 28 33.2**	**+0.4**
UGL	comp=Z,2μm,0.9s				pmax	pmax		
UGL	comp=N,270nm,0.7s				pmax	pmax		
UGL	comp=E,420nm,0.7s				pmax	pmax		
UGL	comp=Z,2μm,1.0s				smax	smax		
UGL	comp=E,170nm,0.6s				smax	smax		
UGL	comp=N,420nm,1.0s				smax	smax		
UGL	**Uglegorsk**	**3.02**	**348**	⇓*i*P		**Pn**	**11 27 46.4**	**+1.2**
UGL				*e*P		**Pn**	**11 27 46.4**	**+1.2**
UGL	comp=N,270nm,0.7s				AMB	AMB	11 27 47.0	
UGL	comp=N,420nm,0.7s				AMB	AMB	11 27 47.0	
UGL	comp=N,2μm,0.7s				AMB	AMB	11 27 47.0	
UGL	comp=N,2μm,1.0s				AMB	AMB	11 27 47.0	
UGL				*i* S		**S**	**11 28 32.7**	**-0.1**
UGL	comp=N,420nm,0.6s				A	A	11 28 34.0	
UGL	comp=N,170nm,0.6s				A	A	11 28 34.0	
JAK	**Akkeshi**	**3.35**	**158**	P		**Pn**	**11 27 47.1**	**-1.4**
JAK				*e*S		**S**	**11 28 34.7**	**-4.0**
NEM2	**Nemuro 2**	**3.38**	**144**	*e*S		S	11 28 33.0	-6.2
JEW	**Eniwo**	**3.47**	**199**	P		**Pn**	**11 27 50.3**	**+0.7**
JEW				*e*S		**S**	**11 28 38.7**	**-2.0**
JCH	**Churui**	**3.52**	**176**	P		**Pn**	**11 27 48.6**	**-1.6**
JCH				*e*S		S	11 28 35.7	-6.0
KUR	**Kuril'sk**	**3.52**	**103**	⇓*i*P		**Pn**	**11 27 50.0**	**-0.1**
KUR	comp=N,19nm,0.9s				AMB	AMB	11 27 52.0	
KUR				*e*S		**S**	**11 28 40.6**	**-1.0**
KUR	comp=N,22nm,1.2s				A	A	11 28 52.4	
KUR	comp=N,9.0nm,1.2s				A	A	11 28 52.4	
SHO	**Shikotan**	**3.53**	**128**	⇑*i*PN		**Pn**	**11 27 47.8**	**-2.4**
SHO				*i* S		**S**	**11 28 36.7**	**-5.1**
SHO	comp=Z,59nm,0.5s				pmax	pmax		
SHO	comp=N,57nm,0.8s				pmax	pmax		
SHO	comp=E,11nm,0.3s				pmax	pmax		
SHO	**Shikotan**	**3.53**	**128**	*e*P		**Pn**	**11 27 49.3**	**-0.9**
SHO	comp=E,59nm,0.5s				AMB	AMB	11 27 50.9	
SHO				*e*S		**S**	**11 28 36.9**	**-4.9**
JNBK	**Urakawa-nobuka**	**3.85**	**183**	P		**Pn**	**11 27 52.2**	**-1.2**
ERM	**Erimo**	**4.11**	**178**	*de*PN		**Pn**	**11 27 55.3**	**-0.8**
ERM	comp=Z,496nm,0.7s				pmax	pmax		
ERM	**Erimo**	**4.11**	**178**	*e*Pn		**Pn**	**11 27 55.8**	**-0.3**
ERM				*e*S		**S**	**11 28 51.4**	**-1.0**
JKB	**Kayabe**	**4.47**	**199**	P		**Pn**	**11 27 58.9**	**-0.9**
JKB				*e*S		S	11 28 53.2	-6.1
TEY	**Ternei**	**4.62**	**259**	*e*P		**Pn**	**11 28 03.5**	**+2.1**
TEY	comp=Z,39nm,0.8s				AMB	AMB	11 28 04.2	
TEY				*e*S		**S**	**11 29 02.5**	**+0.3**
TYV	**Tymovskoe**	**4.75**	**357**	*e*PN		**Pn**	**11 28 04.0**	**+1.4**
TYV	comp=Z,132nm,0.8s				pmax	pmax		
TYV	**Tymovskoe**	**4.75**	**357**	*e*P		**Pn**	**11 28 03.3**	**+0.7**
TYV	comp=Z,132nm,0.8s				AMB	AMB	11 28 05.0	
TYV				*e*S		**S**	**11 29 04.2**	**-0.3**
TYV	comp=Z,104nm,0.9s				A	A	11 29 07.4	
JOSM	**Okushiri--Mats**	**4.77**	**213**	P		**Pn**	**11 28 02.8**	**-0.3**
JOT	**Ohata**	**4.95**	**197**	P		**Pn**	**11 28 03.5**	**-1.5**
JOT				*e*S		S	11 29 02.4	-6.4
HABR	**Khabarovsk**	**5.89**	**296**	*e*PN		**Pn**	**11 28 14.9**	**-0.6**
HABR				*e*S		**S**	**11 29 28.1**	**+0.2**
HABR	comp=N,41nm,0.9s				pmax	pmax		
HABR	comp=Z,191nm,0.9s				pmax	pmax		
HABR	comp=E,139nm,0.9s				pmax	pmax		
GRNR	**Gornyy**	**6.38**	**319**	⇓*i*P		**Pn**	**11 28 21.8**	**+0.7**
GRNR	comp=E,110nm,0.5s				AMB	AMB	11 28 22.2	
GRNR	comp=E,130nm,0.5s				AMB	AMB	11 28 22.2	
GRNR	comp=E,210nm,0.5s				AMB	AMB	11 28 22.2	
NKL	**Nikolayevsk**	**7.19**	**349**	*i* PN		**Pn**	**11 28 30.8**	**+0.4**
NKL	comp=N,20nm,0.9s				pmax	pmax		
NKL	comp=Z,50nm,0.9s				pmax	pmax		
NKL	**Nikolayevsk**	**7.19**	**349**	*e*P		**Pn**	**11 28 30.8**	**+0.4**
NKL	comp=Z,50nm,0.9s				AMB	AMB	11 28 31.1	
OKH	**Okha**	**7.43**	**360**	*e*PN		**Pn**	**11 28 34.9**	**+1.6**
OKH				*e*S		**S**	**11 30 03.8**	**+3.3**
OKH	comp=N,900nm,6.0s				smax	smax		
OKH	**Okha**	**7.43**	**360**	*e*P		**Pn**	**11 28 34.9**	**+1.6**
OKH	comp=N,100nm,0.8s				AMB	AMB	11 28 35.0	
OKH				*e*S		**S**	**11 30 03.8**	**+3.3**
OKH	comp=N,900nm,6.0s				A	A	11 30 07.4	
USRK	**Ussuriysk Ar.**	**8.02**	**260**	P		**Pn**	**11 28 41.5**	**+1.1**
USRK	comp=N,3.0nm,0.3s,baz=67,slow=13,SNR=37			S		**S**	**11 30 12.2**	**-1.3**
KLR	comp=N,0.1nm,0.3s,baz=56,slow=21,SNR=4.8 **Kul'dur**	**8.20**	**296**	P		**Pn**	**11 28 43.4**	**+0.9**
VLA	comp=N,1.7nm,0.3s,baz=105,slow=12,SNR=40 **Vladivostok**	**8.48**	**253**	⇑*e*PN		**Pn**	**11 28 45.1**	**-0.7**
MSHR	**Mys Shultsa**	**9.20**	**252**	⇑*e*PN		**Pn**	**11 28 55.2**	**+0.8**
EKMR	**Ekimchan**	**9.53**	**320**	*e*P		**P**	**11 28 59.5**	**-0.8**
EKMR					AMB	AMB	11 29 05.0	
	comp=N,31nm,0.6s							
MDJ	**Mudanjiang**		**9.56**	**266**	P	**P**	**11 28 59.8**	**-1.0**
MDJ					S	**S**	**11 30 47.3**	**0.0**
MDJ	comp=Z,97nm,1.0s				pmax	pmax		
MDJ	comp=Z,110nm,4.0s				pmax	pmax		
MDJ	**Mudanjiang**		**9.56**	**266**	*e*P	**P**	**11 29 00.2**	**-0.5**
SKR	comp=Z,96nm,0.9s **Severo-Kuril's**		**9.84**	**58**	*e*PN	Pn	11 28 55.5	-6.5
SKR					*e*		11 30 45.6	
MAJO	**Matsushiro**		**10.23**	**202**	*c i*PN	**Pn**	**11 29 07.3**	**+0.4**
MAJO	**Matsushiro**		**10.23**	**202**	*e*Pn	**Pn**	**11 29 07.1**	**+0.2**
MAT	**Matsushiro**		**10.23**	**202**	P	**Pn**	**11 29 07.2**	**+0.3**
MAT					S	**S**	**11 31 01.9**	**-0.4**
MJAR	**Matsushiro Arr**		**10.23**	**202**	P	**Pn**	**11 29 07.5**	**+0.6**
	comp=Z,3.4nm,0.3s,baz=18,slow=11,SNR=40							
INU	**Inuyama**		**11.68**	**205**	*e*Pn	**Pn**	**11 29 24.2**	**+0.1**
PETK	**Petropavlovsk-**		**11.81**	**48**	P	**Pn**	**11 29 25.8**	**+0.4**
	comp=Z,0.7nm,0.3s,baz=221,slow=8.1,SNR=15							
YASR	**Yasnyy**		**12.07**	**312**	*e*P	Pn	11 29 23.3	-5.2
YASR					AMB	AMB	11 29 24.5	
YASR	comp=Z,11nm,0.7s				AMB	AMB	11 29 24.5	
YASR	comp=Z,18nm,0.7s				AMB	AMB	11 29 24.5	
PET	**Petropavlovsk**		**12.27**	**50**	⇓*e*PN	**P**	**11 29 31.5**	**+0.9**
BMKR	**Bomnak**		**12.45**	**319**	*e*P	**Pn**	**11 29 33.5**	**+0.5**
BMKR					AMB	AMB	11 29 35.1	
BMKR	comp=Z,25nm,0.7s							
CN2	**Changchun**		**12.65**	**266**	⇓P	**Pn**	**11 29 37.0**	**+1.5**
CN2					*e*sP		11 30 55.0	
CN2					*e*S	**S**	**11 31 52.0**	**-2.8**
CN2	comp=Z,20nm,0.6s				pmax	pmax		
CN2	comp=Z,200nm,3.0s				pmax	pmax		
KROS	**Kirovskiy**		**13.18**	**315**	*e*P	**Pn**	**11 29 41.8**	**+0.2**
KROS					AMB	AMB	11 29 44.0	
KROS	comp=Z,6.0nm,0.5s							
JHJ	**Hachijo jima 2**		**13.22**	**192**	P	**Pn**	**11 29 44.6**	**+2.2**
	comp=Z,8.5nm,0.3s,baz=68,slow=19,SNR=3.5							
KSRS	**Korea Array**		**14.18**	**238**	P	**Pn**	**11 29 55.0**	**+1.5**
	comp=Z,0.3nm,0.3s,baz=53,slow=11,SNR=7.8							
KSAR	**Wonju Array Be**		**14.21**	**238**	P	**Pn**	**11 29 55.0**	**+1.1**
KSAR	**Wonju Array Be**		**14.21**	**238**	P	**Pn**	**11 29 55.0**	**+1.1**
MA2	**Magadan**		**14.25**	**16**	P	**P**	**11 29 52.9**	**+0.5**
	comp=Z,2.1nm,0.3s,baz=220,slow=9.1,SNR=20							
MA2	**Magadan**		**14.25**	**16**	*e*P	**P**	**11 29 52.6**	**+0.2**
	comp=Z,94nm,0.6s							
TJN	**Taejon**		**15.24**	**236**	*de*P	**P**	**11 30 01.4**	**-2.1**
SEY	**Seymchan**		**17.67**	**14**	P	**P**	**11 30 29.7**	**+0.4**
	comp=Z,7.8nm,0.3s,baz=194,slow=9.0,SNR=148							
YAK	**Yakutsk**		**17.69**	**339**	P	**P**	**11 30 28.2**	**-1.3**
	comp=Z,0.0nm,0.3s,baz=117,slow=2.3,SNR=22							
YAK					S	**S**	**11 33 30.1**	**-4.7**
	baz=150,slow=20,SNR=5.3							
YAK	**Yakutsk**		**17.69**	**339**	*e*P	**P**	**11 30 27.8**	**-1.7**
YAK					*e*S	**S**	**11 33 31.9**	**-2.8**
YAK	comp=Z,23nm,0.9s				pmax	pmax		
YAK	comp=N,6.0nm,1.0s				pmax	pmax		
YAK	comp=E,11nm,1.2s				pmax	pmax		
YAK	comp=N,138nm,1.4s				smax	smax		
YAK	comp=E,121nm,1.5s				smax	smax		
YAK	**Yakutsk**		**17.69**	**339**	*e*P	**P**	**11 30 28.1**	**-1.5**
YAK	comp=E,29nm,0.8s				S	**S**	**11 33 30.1**	**-4.7**
YAK					*e*S	S	11 33 36.7	+2.0
BOD	**Bodaibo**		**21.17**	**314**	*e*P	**P**	**11 31 03.0**	**-1.7**
BOD					*e*		11 34 32.1	
BOD	comp=Z,7.0nm,0.9s				pmax	pmax		
HHC	**Hu-ho-hao-te**		**23.32**	**268**	*e*P	**P**	**11 31 26.4**	**+1.8**
HHC	comp=Z,36nm,0.8s				pmax	pmax		
HHC	comp=Z,160nm,3.8s				pmax	pmax		
ULN	**Ulaanbaatar**		**24.45**	**287**	*e*P	**P**	**11 31 35.0**	**+0.3**
ULN	comp=Z,3.0nm,0.7s				pmax	pmax		
ULN	**Ulaanbaatar**		**24.45**	**287**	*e*P	**P**	**11 31 35.0**	**+0.3**
	comp=Z,3.4nm,0.7s							
SONM	**Songino Array**		**24.89**	**287**	P	**P**	**11 31 39.2**	**+0.5**
	comp=Z,3.0nm,0.8s,baz=82,slow=9.7,SNR=8.0							
SONM					pP	PP	11 32 41.2	-2.0
	comp=Z,0.7nm,0.5s,baz=60,slow=9.0,SNR=2.3							
BILL	**Bilibino**		**25.03**	**21**	*i* P	**P**	**11 31 36.5**	**-3.0**
BILL	comp=Z,2.0nm,0.8s				pmax	pmax		
BILL	**Bilibino**		**25.03**	**21**	*e*P	**P**	**11 31 38.6**	**-0.9**
	comp=Z,5.2nm,1.2s							
TLY	**Talaya**		**26.22**	**297**	⇓*e*P	**P**	**11 31 49.3**	**-1.1**
TLY	comp=Z,1.0nm,0.9s				pmax	pmax		
TIXI	**Tiksi**		**26.47**	**350**	P	**P**	**11 31 50.7**	**-1.5**
	comp=Z,0.8nm,0.3s,baz=134,slow=3.8,SNR=4.3							
TIXI	**Tiksi**		**26.47**	**350**	⇓*e*P	**P**	**11 31 50.4**	**-1.8**
TIXI	comp=Z,5.0nm,2.5s				pmax	pmax		
LZH	**Lanzhou**		**30.89**	**265**	*e*P	**P**	**11 32 34.5**	**+2.8**
LZH					pP	pP	11 33 36.9	+0.1
LZH					PP	**PnPn**	**11 33 52.6**	**+2.2**
LZH					sP	sP	11 34 16.8	-0.1
LZH	comp=Z,17nm,1.0s				pmax	pmax		
LZH	comp=Z,49nm,4.8s				pmax	pmax		
GTA	**Gaotai**		**32.09**	**274**	*e*P	**P**	**11 32 43.9**	**+1.8**
GTA					pP	pP	11 32 51.8	-56
GTA					sP	sP	11 32 54.9	-93
GTA	comp=Z,13nm,0.6s				pmax	pmax		
CD2	**Chengdu**		**33.88**	**257**	P	**P**	**11 32 57.8**	**+0.3**
CD2	comp=Z,2.0nm,0.6s				pmax	pmax		
ZALV	**Zalesovo Beam**		**37.22**	**304**	P	**P**	**11 33 24.5**	**-0.8**
	comp=Z,0.8nm,0.3s,baz=63,slow=10,SNR=3.9							
ZALV					PcP	**PcP**	**11 35 37.2**	**+0.6**
	comp=Z,3.2nm,0.6s,baz=98,slow=2.4,SNR=11							
WMQ	**Urumqi**		**38.53**	**287**	*e*P	**P**	**11 33 35.3**	**-1.0**
WMQ	comp=Z,4.0nm,0.6s				pmax	pmax		
WMQ	comp=Z,56nm,4.8s				pmax	pmax		
CAST	**Castle Rocks**		**39.25**	**40**	*e*P	**P**	**11 33 42.0**	**0.0**
	comp=Z,9.1nm,0.8s							
BPAW	**Bear Paw Mtn.**		**39.67**	**39**	*e*P	**P**	**11 33 44.9**	**-0.4**
	comp=Z,15nm,1.8s							
MLY	**Manley**		**39.70**	**37**	*e*P	**P**	**11 33 45.6**	**0.0**
	comp=Z,6.3nm,1.0s							
MLY					*e*PcP	**PcP**	**11 35 45.7**	**+1.4**
KTH	**Kantishna Hill**		**39.76**	**40**	*e*P	**P**	**11 33 46.0**	**-0.1**
	comp=Z,15nm,1.1s							
COLD	**Coldfoot**		**39.78**	**34**	*e*P	**P**	**11 33 45.6**	**-0.5**
	comp=Z,7.3nm,0.9s							
KDAK	**Kodiak Island**		**39.86**	**49**	P	P	11 34 01.6	+15
	comp=Z,5.6nm,0.5s,baz=286,slow=2.1,SNR=8.9							
KDAK	**Kodiak Island**		**39.86**	**49**	*i* P	**P**	**11 33 46.7**	**-0.2**
TRF	**Thorofare Moun**		**40.05**	**40**	*e*P	**P**	**11 33 48.4**	**-0.2**
	comp=Z,32nm,1.8s							
BWN	**Browne**		**40.33**	**39**	*e*P	**P**	**11 33 51.1**	**+0.5**
	comp=Z,43nm,1.4s							
MCK	**McKinley**		**40.62**	**39**	*e*P	**P**	**11 33 52.9**	**-0.1**
MCK	comp=Z,12nm,1.3s				pmax	pmax		
MCK	**McKinley**		**40.62**	**39**	*e*P	**P**	**11 33 52.9**	**-0.1**
	comp=Z,12nm,1.3s							
RND	**Reindeer**		**40.70**	**40**	*e*P	**P**	**11 33 51.8**	**-1.9**
RND	comp=Z,10.0nm,1.2s				pmax	pmax		
RND	**Reindeer**		**40.70**	**40**	*e*P	**P**	**11 33 51.8**	**-1.9**
	comp=Z,9.9nm,1.2s							
MDM	**Murphy Dome**		**40.77**	**37**	*e*P	**P**	**11 33 53.8**	**-0.4**
	comp=Z,8.8nm,0.9s							
PMR	**Palmer**		**40.86**	**43**	*e*P	**P**	**11 33 55.0**	**+0.1**
PMR	comp=Z,7.0nm,1.2s				pmax	pmax		
PMR	**Palmer**		**40.86**	**43**	*e*P	**P**	**11 33 55.0**	**+0.1**
	comp=Z,7.0nm,1.2s							
WRH	**Wood River Hil**		**40.89**	**38**	*e*P	**P**	**11 33 55.5**	**+0.3**
	comp=Z,12nm,1.1s							
MKAR	**Makanchi Array**		**40.90**	**294**	P	**P**	**11 33 55.6**	**0.0**
	comp=Z,1.8nm,0.5s,baz=80,slow=8.7,SNR=23							
MKAR					PcP	**PcP**	**11 35 48.9**	**+0.4**
	comp=Z,0.9nm,0.5s,baz=53,slow=2.9,SNR=6.2							
MKAR	**Makanchi Array**		**40.90**	**294**	*ce*P	**P**	**11 33 55.7**	**+0.1**
MKAR	comp=Z,2.0nm,0.5s				pmax	pmax		
COLA	**College**		**40.94**	**38**	*e*P	**P**	**11 33 55.3**	**-0.2**
COLA	comp=Z,18nm,0.8s				pmax	pmax		
COLA	**College**		**40.94**	**38**	*e*P	**P**	**11 33 55.3**	**-0.2**
	comp=Z,18nm,0.8s							
CCB	**Clear Creek Bu**		**40.99**	**38**	*e*P	**P**	**11 33 55.3**	**-0.6**
	comp=Z,21nm,1.8s							
MAKZ	**Makanchi**		**41.09**	**294**	*e*P	**P**	**11 33 57.4**	**+0.3**
MAKZ	comp=Z,2.0nm,0.8s				pmax	pmax		
MAKZ	**Makanchi**		**41.09**	**294**	*e*P	**P**	**11 33 57.4**	**+0.3**
	comp=Z,2.3nm,0.8s							
SML	**Sawmill**		**41.19**	**42**	*e*P	**P**	**11 33 57.3**	**-0.4**
SML	comp=Z,14nm,1.2s				pmax	pmax		
SML	**Sawmill**		**41.19**	**42**	*e*P	**P**	**11 33 57.3**	**-0.4**
	comp=Z,14nm,1.2s							
ILAR	**Eielson Array**		**41.36**	**38**	P	**P**	**11 33 58.1**	**-0.9**
	comp=Z,7.1nm,0.8s,baz=276,slow=7.0,SNR=67							
ILAR					PcP	**PcP**	**11 35 49.0**	**-0.7**
	comp=Z,1.3nm,0.8s,baz=280,slow=4.3,SNR=6.1							
SCM	**Sheep Creek Mo**		**41.66**	**42**	*e*P	**P**	**11 34 01.2**	**-0.3**
SCM	comp=Z,23nm,1.6s				pmax	pmax		
SCM	**Sheep Creek Mo**		**41.66**	**42**	*e*P	**P**	**11 34 01.2**	**-0.3**
	comp=Z,23nm,1.6s							
KURK	**Kurchatov**		**41.77**	**301**	*c i*P	**P**	**11 34 02.1**	**-0.4**
KURK					*i* *PP	**pP**	**11 35 11.8**	**+1.0**
KURK	comp=Z,2.0nm,0.6s				pmax	pmax		
KURK	**Kurchatov**		**41.77**	**301**	*e*P	**P**	**11 34 02.3**	**-0.2**
	comp=Z,4.4nm,0.5s							
KURK					PcP	**PcP**	**11 35 51.9**	**+0.6**
FYU	**Fort Yukon**		**41.79**	**35**	*e*P	**P**	**11 34 02.2**	**-0.2**
	comp=Z,11nm,0.7s							
KURBB	**Kurchatov Arra**		**41.86**	**301**	P	**P**	**11 34 02.9**	**-0.2**
	comp=Z,3.4nm,0.4s,baz=74,slow=8.3,SNR=23							
KURBB					PcP	**PcP**	**11 35 51.9**	**+0.4**
	comp=Z,2.9nm,0.7s,baz=76,slow=3.3,SNR=18							
KLU	**Klutina**		**42.38**	**42**	*e*P	**P**	**11 34 07.4**	**+0.1**
	comp=Z,7.9nm,1.0s							
DOT	**Dot Lake**		**42.77**	**39**	*e*P	**P**	**11 34 08.9**	**-1.4**
	comp=Z,31nm,1.6s							
MENT	**Mentasta**		**43.07**	**40**	*e*P	**P**	**11 34 12.8**	**+0.1**
	comp=Z,25nm,1.9s							
EGAK	**Eagle**		**43.77**	**37**	*e*P	**P**	**11 34 17.3**	**-0.8**
	comp=Z,18nm,1.0s							
CMAR	**Chiang Mai Arr**		**45.53**	**248**	P	**P**	**11 34 33.8**	**+1.3**
	comp=Z,0.3nm,0.3s,baz=25,slow=11,SNR=3.3							
CMAR					PcP	**PcP**	**11 36 04.8**	**+0.2**
	comp=Z,0.2nm,0.4s,baz=21,slow=4.6,SNR=4.4							
BVAR	**Borovoye Array**		**45.72**	**306**	P	**P**	**11 34 33.4**	**-0.2**
	comp=Z,2.0nm,0.5s,baz=82,slow=9.5,SNR=13							
BVAR					PcP	**PcP**	**11 36 05.5**	**+0.7**
	comp=Z,1.8nm,0.6s,baz=50,slow=2.3,SNR=6.3							
BRVK	**Borovoye**		**45.77**	**306**	⇓*e*P	**P**	**11 34 34.2**	**+0.3**
BRVK					*i* *PP	**pP**	**11 35 43.0**	**-0.7**
BRVK	comp=Z,5.0nm,1.2s				pmax	pmax		
INK	**Inuvik**		**45.86**	**31**	P	**P**	**11 34 33.8**	**-0.6**
	comp=Z,8.2nm,0.5s,baz=288,slow=6.3,SNR=145							
INK	**Inuvik**		**45.86**	**31**	*e*P	**P**	**11 34 33.8**	**-0.6**
	comp=Z,10nm,0.6s							
OTUK	**Ortayu**		**46.50**	**300**	P	**P**	**11 34 40.2**	**+0.5**
OTUK	comp=Z,4.0nm,1.4s				pmax	pmax		
ZRNK	**Zerenda**		**46.52**	**307**	*e*P	**P**	**11 34 39.4**	**-0.4**
ZRNK	comp=Z,6.0nm,1.0s				pmax	pmax		
ZRNK	**Zerenda**		**46.52**	**307**	*e*P	**P**	**11 34 39.4**	**-0.4**
	comp=Z,6.1nm,1.0s							
TKM2	**Tokmak 2**		**46.86**	**292**	*e*P	**P**	**11 34 43.7**	**+1.0**
TKM2	comp=Z,2.0nm,0.7s				pmax	pmax		
TKM2	**Tokmak 2**		**46.86**	**292**	*e*P	**P**	**11 34 43.7**	**+1.0**
	comp=Z,2.3nm,0.7s							
AAK	**Ala-Archa**		**47.71**	**292**	P	**P**	**11 34 49.8**	**+0.6**
	comp=Z,1.0nm,0.4s,baz=108,slow=5.2,SNR=2.9							
MNAS	**Manas**		**49.06**	**293**	P	**P**	**11 35 00.7**	**+1.3**
MNAS	comp=Z,4.0nm,1.0s				pmax	pmax		
KKAR	**Karatay Array**		**50.02**	**294**	*e*P	**P**	**11 35 06.6**	**+0.2**
KKAR	comp=Z,1.0nm,0.3s				pmax	pmax		
KKAR	**Karatay Array**		**50.02**	**294**	*e*P	**P**	**11 35 06.6**	**+0.2**
	comp=Z,1.1nm,0.3s							
ARU	**Arti**		**50.59**	**314**	P	**P**	**11 35 09.8**	**-0.6**
	comp=Z,4.2nm,0.6s,baz=96,slow=3.0,SNR=6.8							
ARU	**Arti**		**50.59**	**314**	*c i*P	**P**	**11 35 09.0**	**-1.3**
ARU							11 36 16.5	
ARU							11 37 04.1	
ARU					S	**S**	**11 41 56.9**	**-0.4**
ARU					SS	**SS**	**11 45 30.3**	**-5.5**
ARU	comp=Z,6.0nm,1.0s				pmax	pmax		
ARU	**Arti**		**50.59**	**314**	*e*P	**P**	**11 35 09.3**	**-1.1**
	comp=Z,6.5nm,0.4s							
DLBC	**Dease Lake**		**50.92**	**43**	P	**P**	**11 35 14.2**	**+1.4**
	comp=Z,3.7nm,0.8s,baz=289,slow=9.1,SNR=14							
DLBC	**Dease Lake**		**50.92**	**43**	*e*P	**P**	**11 35 13.9**	**+1.1**
	comp=Z,21nm,1.8s							
SPITS	**Spitsbergen Ar**		**51.87**	**348**	P	**P**	**11 35 18.3**	**-1.1**
	comp=Z,2.2nm,0.5s,baz=79,slow=10,SNR=23							
ABKAR	**Akbulak array**		**53.28**	**306**	*e*P	**P**	**11 35 29.8**	**-0.4**
RES	**Resolute Bay**		**53.53**	**16**	*e*P	**P**	**11 35 30.7**	**-0.8**
RES	comp=Z,17nm,0.8s				pmax	pmax		
RES	**Resolute Bay**		**53.53**	**16**	*e*P	**P**	**11 35 30.6**	**-0.8**
	comp=Z,17nm,0.8s							
AKTO	**Aktyubinsk**		**53.75**	**308**	P	**P**	**11 35 33.1**	**-0.3**
	comp=Z,1.2nm,0.4s,baz=71,slow=13,SNR=6.5							
AKTO					PcP	**PcP**	**11 36 34.6**	**+0.2**
	comp=Z,1.3nm,0.3s,baz=79,slow=5.2,SNR=5.8							
LVZ	**Lovozero**		**54.39**	**334**	⇑*e*P	**P**	**11 35 38.1**	**+0.3**
LVZ	comp=Z,23nm,1.8s				pmax	pmax		
PMG	**Port Moresby**		**55.40**	**175**	⇓*e*P	**P**	**11 35 44.5**	**-1.1**
YKA	**Yellowknife Ar**		**55.45**	**33**	P	**P**	**11 35 45.3**	**0.0**
	comp=Z,10nm,0.5s,baz=307,slow=7.0,SNR=328							
YKA	**Yell

AKT	Akhty	64.78	304	⇓*i*P		P	11 36 42.3 -6.3
MOD	Modoc Plateau	65.32	55	*e*P		P	11 36 53.1 +1.1
	comp=Z,3.7nm,0.6s						
MSO	Missoula	65.51	47	*e*P		P	11 36 54.0 +0.8
	comp=Z,5.7nm,0.9s						
WVOR	Wild Horse Val	65.91	53	*e*P		P	11 36 56.9 +1.1
WVOR				pmax	pmax		
	comp=Z,5.0nm,1.0s						
WVOR	Wild Horse Val	65.91	53	*e*P		P	11 36 56.9 +1.1
	comp=Z,4.8nm,1.0s						
KVAR	Kislovodsk Arr	65.98	309	P		P	11 36 57.5 +1.3
	comp=Z,6.2nm,0.6s,baz=107,slow=2.6,SNR=4.8						
KIV	Kislovodsk	65.98	309	*i* P		P	11 36 56.4 +0.3
KIV				pmax	pmax		
	comp=Z,11nm,0.8s						
KIV	Kislovodsk	65.98	309	*e*P		P	11 36 57.7 +1.6
	comp=Z,9.5nm,0.8s						
KBZ	Khabaz	66.02	309	P		P	11 36 57.3 +1.1
	comp=Z,3.4nm,0.7s,baz=22,slow=7.5,SNR=5.2						
ZEI	Tsey	66.09	307	*e*P		P	11 36 55.8 -1.2
ZEI				pmax	pmax		
	comp=Z,6.0nm,0.6s						
WRA	Warramunga Arr	66.22	189	P		P	11 36 58.3 +0.6
	comp=Z,1.1nm,0.8s,baz=6.2,slow=6.7,SNR=12						
NB2	NORSAR Subarra	66.29	337	P		P	11 36 57.3 -0.4
	comp=Z,2.1nm,0.4s,baz=32,slow=6.9						
NB2	NORSAR Subarra	66.29	337	P		P	11 36 56.8 -0.9
NB2				pmax	pmax		
	comp=Z,2.0nm,0.4s						
NOA	NORSAR Array B	66.29	337	P		P	11 36 56.9 -0.8
	comp=Z,3.3nm,0.7s,baz=36,slow=6.2,SNR=21						
HFS	Hagfors	66.33	335	P		P	11 36 57.1 -0.8
	comp=Z,7.1nm,0.5s,baz=47,slow=6.5,SNR=36						
EGMT	Eagleton	66.79	44	*e*P		P	11 37 01.9 +0.8
	comp=Z,9.7nm,0.8s						
MFID	Camas Ranch	66.80	51	*e*P		P	11 37 02.9 +1.5
	comp=Z,3.7nm,0.7s						
LRM	Limekiln Ridge	66.95	47	*e*P		P	11 37 03.6 +1.1
PAHR	Pah Rah Range	67.29	56	*e*P		P	11 37 05.8 +1.4
	comp=Z,7.3nm,0.8s						
MCMT	McKenzie Canyo	67.43	48	*e*P		P	11 37 06.1 +0.7
BOZ	Bozeman (W)	67.49	47	*e*P		P	11 37 07.1 +1.4
BOZ				pmax	pmax		
	comp=Z,7.0nm,0.7s						
BOZ	Bozeman (W)	67.49	47	*e*P		P	11 37 07.1 +1.4
	comp=Z,6.6nm,0.7s						
CMB	Columbia Colle	67.81	58	*e*P		P	11 37 09.1 +1.4
CMB				pmax	pmax		
	comp=Z,4.0nm,0.8s						
CMB	Columbia Colle	67.81	58	*e*P		P	11 37 09.1 +1.4
	comp=Z,4.3nm,0.8s						
AKASG	Malin Array Be	67.90	321	P		P	11 37 07.1 -0.8
	comp=Z,3.4nm,0.5s,baz=38,slow=6.3,SNR=10.0						
AKASG	Malin Array Be	67.90	321	*i* P		P	11 37 05.3 -2.6
AKASG				pmax	pmax		
	comp=Z,3.0nm,0.5s						
KIEV	Kiev	67.91	321	⇑*e*P		P	11 37 07.1 -0.8
KIEV				pmax	pmax		
	comp=Z,6.0nm,1.1s						
KIEV	Kiev	67.91	321	*e*P		P	11 37 07.3 -0.6
	comp=Z,6.5nm,1.1s						
BMN	Battle Mountai	68.04	54	*e*P		P	11 37 10.8 +1.7
BMN				pmax	pmax		
	comp=Z,11nm,1.4s						
BMN	Battle Mountai	68.04	54	*e*P		P	11 37 10.8 +1.7
	comp=Z,11nm,1.4s						
GCMT	Greycliff	68.38	46	*e*P		P	11 37 12.8 +1.7
YFT	Old Faithful	68.73	48	*e*P		P	11 37 16.4 +3.0
	comp=Z,5.8nm,0.9s						
NVAR	Mina Array Bea	68.77	56	P		P	11 37 15.2 +1.5
	comp=Z,5.4nm,0.7s,baz=298,slow=5.8,SNR=58						
LKWY	Lake	68.87	47	*e*P		P	11 37 17.1 +2.8
LKWY				pmax	pmax		
	comp=Z,5.0nm,0.8s						
LKWY	Lake	68.87	47	*e*P		P	11 37 17.1 +2.8
	comp=Z,4.5nm,0.8s						
H17A	Grant Village	68.90	47	*e*P		P	11 37 16.5 +2.0
	comp=Z,7.0nm,0.9s						
RLMT	Red Lodge	69.06	46	*e*P		P	11 37 16.3 +1.0
	comp=Z,3.7nm,0.7s						
HVU	Hansel Valley	69.57	51	*e*P		P	11 37 20.2 +1.7
HVU				pmax	pmax		
	comp=Z,5.0nm,1.2s						
HVU	Hansel Valley	69.57	51	*e*P		P	11 37 20.2 +1.7
	comp=Z,4.7nm,1.2s						
ASAR	Alice Springs	69.95	189	P		P	11 37 21.6 +0.9
	comp=Z,0.7nm,0.5s,baz=4.3,slow=5.7,SNR=13						
BGU	Big Grassy Mou	70.02	51	*e*P		P	11 37 22.4 +1.2
	comp=Z,12nm,1.9s						
HWUT	Hardware Ranch	70.34	50	*e*P		P	11 37 24.1 +0.9
	comp=Z,5.6nm,0.9s						
R11A	Troy Canyon, C	70.38	55	*e*P		P	11 37 24.6 +1.2
	comp=Z,2.3nm,0.6s						
BW06	Boulder Array	70.57	48	*e*P		P	11 37 25.3 +0.7
	comp=Z,5.9nm,0.8s						
PDAR	Pinedale Array	70.57	48	P		P	11 37 25.3 +0.7
	comp=Z,4.9nm,0.7s,baz=289,slow=1.3,SNR=46						
DAC	Darwin (Calif)	70.64	58	*e*P		P	11 37 26.2 +1.1
DAC				pmax	pmax		
	comp=Z,3.0nm,0.7s						
DAC	Darwin (Calif)	70.64	58	*e*P		P	11 37 26.2 +1.1
	comp=Z,3.0nm,0.7s						
DUG	Dugway, Tooele	70.65	52	*e*P		P	11 37 26.4 +1.4
DUG				pmax	pmax		
	comp=Z,4.0nm,0.8s						
DUG	Dugway, Tooele	70.65	52	*e*P		P	11 37 26.4 +1.4
	comp=Z,4.0nm,0.8s						
TPNV	Topopah Spring	70.97	56	*e*P		P	11 37 28.3 +1.4
TPNV				pmax	pmax		
	comp=Z,10.0nm,0.7s						
TPNV	Topopah Spring	70.97	56	*e*P		P	11 37 28.3 +1.4
	comp=Z,9.7nm,0.7s						
NLU	North Lily Min	71.22	52	*e*P		P	11 37 29.8 +1.3
	comp=Z,4.5nm,0.8s						
ULM	Lac du Bonnet	71.33	35	P		P	11 37 28.7 0.0
	comp=Z,15nm,0.6s,baz=321,slow=7.0,SNR=10						
SHPR	Sheep Range	71.90	56	*e*P		P	11 37 33.9 +1.4
	comp=Z,6.5nm,0.9s						
TMUT	Trail Mountain	72.16	52	*e*P		P	11 37 35.4 +1.2
	comp=Z,4.6nm,0.7s						
MSU	Marysvale	72.18	53	*e*P		P	11 37 35.9 +1.7
MSU	Marysvale	72.18	53	*e*P		P	11 37 35.9 +1.7
STHS	Stebnicka Huta	72.24	324	*e*P		P	11 37 34.9 +0.8
STHS				pmax	pmax		
	comp=Z,3.0nm,0.5s						
STHS	Stebnicka Huta	72.24	324	*e*P		P	11 37 34.9 +0.8
RSSD	Black Hills	72.36	44	*e*P		P	11 37 35.7 +0.6
RSSD				pmax	pmax		
	comp=Z,14nm,1.4s						
RSSD	Black Hills	72.36	44	*e*P		P	11 37 35.7 +0.6
	comp=Z,14nm,1.4s						
MTPU	Mount Pierson	72.51	53	*e*P		P	11 37 37.8 +1.5
	comp=Z,9.5nm,1.5s						
LCMT	Little Creek M	72.64	55	*e*P		P	11 37 37.7 +0.9
	comp=Z,13nm,2.0s						
SRU	San Rafael Swe	72.67	51	*e*P		P	11 37 38.0 +1.0
SRU				pmax	pmax		
	comp=Z,8.0nm,0.9s						
SRU	San Rafael Swe	72.67	51	*e*P		P	11 37 38.0 +1.0
	comp=Z,8.2nm,0.9s						
O20A	White River Ci	73.15	49	*e*P		P	11 37 40.3 +0.5
	comp=Z,4.6nm,0.7s						
LANS	Liptovska Anna	73.16	325	*e*P		P	11 37 39.6 +0.1
LANS	Liptovska Anna	73.16	325	*e*P		P	11 37 39.6 +0.1
DPC	Dobruska-Polom	73.41	328	*e*P		P	11 37 41.8 +0.9
DPC	Dobruska-Polom	73.41	328	*e*P		P	11 37 41.8 +0.9
MORC	Moravsky Berou	73.41	327	*e*P		P	11 37 41.7 +0.8
MORC				pmax	pmax		
	comp=Z,17nm,0.7s						
MORC	Moravsky Berou	73.41	327	*e*P		P	11 37 41.7 +0.8
	comp=Z,16nm,0.7s						
KRLC	Kraliky	73.46	327	*e*P		P	11 37 41.8 +0.6
KRLC	Kraliky	73.46	327	*e*P		P	11 37 41.8 +0.6
W13A	Hualapai Mount	73.63	56	*e*P		P	11 37 43.8 +1.2
	comp=Z,3.2nm,0.8s						
BRTR	Keskin Array B	73.77	311	P		P	11 37 43.8 +0.5
	comp=Z,3.4nm,0.8s,baz=83,slow=3.7,SNR=20						
BRTR	Keskin Array B	73.77	311	*ce*P		P	11 37 44.0 +0.7
BRTR				pmax	pmax		
	comp=Z,3.0nm,0.8s						
CLL	Collm	73.82	330	⇑*i*P		P	11 37 43.1 0.0
	comp=Z,10.0nm,0.9s						
CLL				*e*			11 37 58.0
CLL				*ep*P		pP	11 39 00.0 -0.8
CLL	Collm	73.82	330	⇑*i*P		P	11 37 43.1 0.0
CLL				*e**PP		pP	11 39 00.0 -0.8
CLL				pmax	pmax		
	comp=Z,20nm,0.9s						
CLL	Collm	73.82	330	*e*P		P	11 37 43.2 +0.1
	comp=Z,9.4nm,0.9s						
BRG	Berggiesshubel	73.84	329	*e*P		P	11 37 43.3 0.0
	comp=Z,2.3nm,1.0s						
BRG	Berggiesshubel	73.84	329	*e*P		P	11 37 43.3 0.0
	comp=Z,2.3nm,1.0s						
BRG	Berggiesshubel	73.84	329	*e*P		P	11 37 43.3 0.0
BRG				pmax	pmax		
	comp=Z,2.0nm,1.0s						
PV09	Paradox Valley	73.86	51	*e*P		P	11 37 45.2 +1.1
VYHS	Vyhne	73.94	325	*e*P		P	11 37 44.8 +0.9
VYHS				pmax	pmax		
	comp=Z,4.0nm,1.7s						
VYHS	Vyhne	73.94	325	*e*P		P	11 37 44.8 +0.9
PV10	Paradox Valley	74.00	51	*e*P		P	11 37 46.5 +1.7
PV04	Paradox Valley	74.06	51	*e*P		P	11 37 46.0 +1.0
VRAC	Vranov	74.15	327	P		P	11 37 46.0 +0.9
	comp=Z,3.9nm,0.8s,baz=37,slow=7.3,SNR=6.0						
VRAC	Vranov	74.15	327	P		P	11 37 46.0 +0.9
VRAC				pmax	pmax		
	comp=Z,1.0nm,0.4s						
PV05	Paradox Valley	74.18	51	*e*P		P	11 37 47.2 +1.4
Y12C	Blythe	74.21	58	*e*P		P	11 37 47.4 +1.7
	comp=Z,7.1nm,0.9s						
GOPC	GO Pecny, Ondr	74.33	328	*e*P		P	11 37 46.8 +0.6
GOPC	GO Pecny, Ondr	74.33	328	*e*P		P	11 37 46.8 +0.6
PRU	Pruhonice	74.36	328	*e*P		P	11 37 46.9 +0.6
PRU	Pruhonice	74.36	328	*e*P		P	11 37 46.9 +0.6
PV01	Paradox Valley	74.43	51	*e*P		P	11 37 48.5 +1.3
WUAZ	Wupatki	74.77	55	*e*P		P	11 37 50.6 +1.5
	comp=Z,3.6nm,0.9s						
ISCO	Idaho Springs	74.77	48	*e*P		P	11 37 50.3 +1.1
ISCO				pmax	pmax		
	comp=Z,13nm,2.0s						
ISCO	Idaho Springs	74.77	48	*e*P		P	11 37 50.3 +1.1
	comp=Z,13nm,2.0s						
EYMN	Ely	74.91	35	*e*P		P	11 37 49.5 +0.1
	comp=Z,16nm,0.8s						
Y14A	Wickenburg	74.96	57	*e*P		P	11 37 51.1 +1.0
	comp=Z,18nm,0.8s						
MVCO	Mesa Verde	75.14	52	*e*P		P	11 37 51.8 +0.5
	comp=Z,5.3nm,0.8s						
KHC	Kasperske Hory	75.42	328	*e*P		P	11 37 53.1 +0.7
KHC	Kasperske Hory	75.42	328	*e*P		P	11 37 53.2 +0.8
KHC				pmax	pmax		
	comp=Z,5.0nm,1.4s						
KHC	Kasperske Hory	75.42	328	*e*P		P	11 37 53.2 +0.8
	comp=Z,5.4nm,1.4s						
X16A	Lo Mia Camp, P	75.52	55	*e*P		P	11 37 55.0 +1.6
	comp=Z,4.7nm,0.8s						
CONA	Conrad Observa	75.56	326	*i* P		P	11 37 54.4 +1.2
	comp=Z,2.1nm,0.6s						
GERES	GERESS Array B	75.62	328	P		P	11 37 53.9 +0.3
	comp=Z,0.9nm,0.5s,baz=30,slow=5.4,SNR=12						
S22A	4UR Ranch, Cre	75.65	50	*e*P		P	11 37 55.6 +1.4
	comp=Z,2.6nm,0.9s						
WET	Wettzell	75.67	329	P		P	11 37 55.0 +1.2
WET				pmax	pmax		
	comp=Z,10.0nm,1.1s						
ECSD	EROS Data Cent	76.12	40	*e*P		P	11 37 56.6 +0.2
	comp=Z,6.3nm,0.6s						
SCHQ	Schefferville	76.29	17	P		P	11 37 57.1 0.0
	comp=Z,7.3nm,0.6s,baz=350,slow=6.6,SNR=5.6						
SDCO	Great Sand Dun	76.35	49	*e*P		P	11 37 59.0 +0.9
	comp=Z,2.0nm,0.8s						
ISP	Isparta	76.81	311	⇑*e*P		P	11 37 59.9 -0.5
ISP				pmax	pmax		
	comp=Z,15nm,0.7s						
KBA	Koelnbreinsper	77.22	327	*i* P		P	11 38 03.8 +1.1
	comp=Z,5.1nm,0.5s						
T25A	Trinidad	77.38	49	*e*P		P	11 38 04.6 +0.8
	comp=Z,4.6nm,0.6s						
ASF	Jabal al Asfar	77.46	303	P		P	11 38 05.2 +1.1
	comp=Z,2.3nm,0.5s,baz=358,slow=5.6,SNR=3.7						
WTTA	Wattenberg	77.70	328	*i* P		P	11 38 05.5 +0.2
	comp=Z,4.4nm,0.5s						
MMAI	Mount Meron Ar	77.70	305	P		P	11 38 06.6 +1.2
	comp=Z,4.6nm,0.6s,baz=40,slow=6.6,SNR=8.5						
MOTA	Moosalm	77.82	329	*e*P		P	11 38 06.6 +0.7
	comp=Z,16nm,1.1s						
RETA	Reutte	77.82	329	*i* P		P	11 38 07.4 +1.6
	comp=Z,8.9nm,1.2s						
ANMO	Albuquerque	77.92	52	*e*P		P	11 38 08.2 +1.5
ANMO				pmax	pmax		
	comp=Z,3.0nm,0.9s						
ANMO	Albuquerque	77.92	52	*e*P		P	11 38 08.2 +1.5
	comp=Z,3.2nm,0.9s						
BFO	Black Forest	77.95	331	*i* P		P	11 38 07.4 +1.0
CDF	Champ du Feu	78.23	332	P		P	11 38 07.8 -0.2
CDF				pmax	pmax		
	comp=Z,7.0nm,0.9s						
FETA	Feichten	78.23	329	*i* P		P	11 38 09.7 +1.6
	comp=Z,5.9nm,0.8s						
DAVA	Damuels	78.31	330	*i* P		P	11 38 09.1 +0.5
	comp=Z,5.8nm,0.8s						
DAVOX	Davos/Dischmat	78.74	329	P		P	11 38 11.8 +0.8
	comp=Z,3.8nm,0.7s,baz=348,slow=9.3,SNR=4.0						
FUORN	Ofenpass-Fuorn	78.74	329	*e*P		P	11 38 11.8 +0.8
	comp=Z,11nm,0.9s						
APE	Apeiranthos	79.94	314	⇓*e*P		P	11 38 16.4 -1.0
APE				pmax	pmax		
	comp=Z,99nm,2.4s						
SENIN	Lac Senin/Sane	80.00	331	*e*P		P	11 38 18.2 +0.5
	comp=Z,4.3nm,0.8s						
FLN	La Foliniere	80.28	336	*e*P		P	11 38 18.7 -0.1
FLN				pmax	pmax		
	comp=Z,48nm,1.8s						
EIL	Elat	80.43	303	P		P	11 38 21.1 +1.2
	comp=Z,4.5nm,0.7s,baz=51,slow=6.5,SNR=3.5						
AMTX	Amarillo	80.53	49	*e*P		P	11 38 21.9 +1.3
	comp=Z,7.4nm,0.7s						
MNTX	Cornudas Mount	80.95	53	*e*P		P	11 38 23.9 +1.2
	comp=Z,6.2nm,1.4s						
U34A	Anderson Ranch	81.43	45	*e*P		P	11 38 24.9 -0.3
	comp=Z,12nm,0.8s						
IDI	Anoyia	81.66	313	P		P	11 38 25.7 -0.7
	comp=Z,4.3nm,0.4s,baz=53,slow=5.1,SNR=9.0						
CUC	Castrocucco	82.12	322	*e*P		P	11 38 27.7 -1.0
	comp=Z,9.6nm,1.4s						
VIVF	Saint-Julien-l	82.21	331	*e*P		P	11 38 29.2 +0.2
VIVF				pmax	pmax		
	comp=Z,5.0nm,0.6s						
TRQ	Mont Tremblant	82.28	25	*e*P		P	11 38 29.6 +0.2
TIP	Timpagrande	82.39	321	*e*P		P	11 38 30.6 +0.5
	comp=Z,8.1nm,1.0s						
TUL1	Leonard	82.70	44	*e*P		P	11 38 32.7 +1.0
	comp=Z,9.6nm,0.7s						
CAF	Calviac	82.99	333	*e*P		P	11 38 33.7 +0.7
CAF				pmax	pmax		
	comp=Z,9.0nm,0.8s						
TXAR	Lajitas Array	83.70	54	P		P	11 38 38.1 +1.1
	comp=Z,1.7nm,0.6s,baz=289,slow=3.8,SNR=17						
SIUC	Southern Illin	84.27	39	*e*P		P	11 38 40.1 +0.6
	comp=Z,16nm,0.8s						
PBMO	Poplar Bluff	84.51	40	*e*P		P	11 38 40.8 0.0
	comp=Z,7.1nm,0.6s						
ETSF	Etsaut	85.63	334	*e*P		P	11 38 47.3 +1.0
ETSF				pmax	pmax		
	comp=Z,10.0nm,0.9s						
KEST	Kesra	88.45	324	P		P	11 38 59.6 -0.2
	comp=Z,2.3nm,0.6s,baz=351,slow=9.4,SNR=3.8						
ESDC	Sonseca Array	89.61	335	P		P	11 39 05.3 +0.2
	comp=Z,1.0nm,0.4s,baz=12,slow=4.3,SNR=13						
LPAZ	La Paz	140.54	51	PKP		PKPdf	11 45 37.1 +1.6
	comp=Z,0.8nm,0.7s,baz=336,slow=1.0,SNR=4.4						
VNA2	Neumayer--Watz	151.33	200	PKP		PKPbc	11 45 58.3 +0.7
	baz=91,slow=1.4						
VNA3	Neumayer Olymp	151.61	198	PKP		PKPbc	11 45 58.6 +0.3

ISCJB ***14*** *11:39:27.0±0.5, 29°.67N±0°.04×57°.41E±0°.06, h10km, Error ellipse: s-maj=7.0km s-min=5.0km az=8.5*
CSEM ***14*** *11:39:26.6±0.2, 29°.69N×57°.45E, h2km, ML3.8, Error ellipse: s-maj=4.9km s-min=3.4km az=92.0*
TEH ***14*** *11:39:27.5, 29°.67N×57°.48E, h7km, ML3.8*
THR ***14*** *11:39:27.5±0.5, 29°.56N×57°.34E, h11km±6km, ML3.7*
DSN ***14*** *11:39:32.0±1.3, 29°.49N×56°.80E, h15km, ML3.8, Error ellipse: s-maj=100.3km s-min=11.1km az=100.0*

ISC 14 11:39:26.7±1.0, 29°.60N±0°.03×57°.47E±0°.04, h10km, n48, σ1s82/46, Southern Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHMN	Cheshme madani	0.27	14	*e*Pg	Pg	11 39 30.7	-1.7
CHMN	Cheshme madani	0.27	14	*e*Pg	Pg	11 39 30.7	-1.7
NGRK	Negar Kerman	0.64	274	*e*Pg	Pb	11 39 39.0	-1.3
NGRK	Negar Kerman	0.64	274	*e*Pg	Pb	11 39 39.0	-1.3
KRBR	Kerman	0.72	302	*e*Pg	Pg	11 39 40.5	-0.3
KRBR				AML	AML	11 39 52.7	
	comp=E,4μm,0.2s						
KRBR				AML	AML	11 39 53.9	
	comp=N,3μm,0.2s						
KRBR	Kerman	0.72	302	*e*Pg	Pg	11 39 40.5	-0.3
TVBK	TV Kerman	0.72	302	*e*Pg	Pg	11 39 40.2	-0.6
TVBK	TV Kerman	0.72	302	*e*Pg	Pg	11 39 40.2	-0.6
KHGB	Koh Gabri	1.15	312	*e*Pg	Pg	11 39 47.4	-1.6
KHGB	Koh Gabri	1.15	312	*e*Pg	Pg	11 39 47.4	-1.6
NIAN	Nian	2.11	195	*e*Pn	Pb	11 40 03.9	-1.1
NIAN	Nian	2.11	195	*e*Pn	Pb	11 40 03.9	-1.1
IBND	Bandar-abas	2.29	201	*e*AMB	AMB	11 40 44.8	
	comp=E,24μm,0.1s						
IBND				*e*Pn	Pb	11 40 07.8	-0.4
GENO	Geno	2.47	208	*e*Pn	Pn	11 40 08.4	+1.2
GENO	Geno	2.47	208	*e*Pn	Pn	11 40 08.4	+1.2
BNDS	Bandar-Abbas	2.47	208	*e*Pn	Pn	11 40 08.4	+1.2
BNDS				AML	AML	11 40 47.5	
	comp=N,399nm,0.6s						
BNDS				AML	AML	11 40 48.8	
	comp=E,310nm,0.6s						
BNDS	Bandar-Abbas	2.47	208	*e*Pn	Pn	11 40 08.4	+1.2
IBAF	Bafgh	2.57	321	*e*AMB	AMB	11 40 13.8	
	comp=Z,6μm,0.2s						
IBAF				*e*Sg	Sb	11 40 46.1	+1.3
KHSK	Kohestak	2.86	187	*e*Pn	Pb	11 40 15.1	-2.7
KHSK	Kohestak	2.86	187	*e*Pn	Pb	11 40 15.1	-2.7
ZHSF	Zahedan	2.88	89	*e*Pn	Pn	11 40 17.1	+4.2
ZHSF	Zahedan	2.88	89	*e*Pn	Pn	11 40 17.1	+4.2
IMEH	Mehriz	3.04	307	*e*Pn	Pn	11 40 15.4	+0.3
IMEH				*e*AMB	AMB	11 41 08.6	
	comp=Z,2μm,0.2s						
IMEH	Mehriz	3.04	307	*e*Pn	Pn	11 40 15.4	+0.3
IKOO	Kooshah	3.11	25	*e*Pn	Pn	11 40 15.8	-0.3
IKOO				*e*AMB	AMB	11 41 08.4	
	comp=Z,5μm,0.1s						
IKOO	Kooshah	3.11	25	*e*Pn	Pn	11 40 15.8	-0.3
ITEG	Tejag	3.46	18	*e*Pn	Pn	11 40 20.9	0.0
ITEG				*e*AMB	AMB	11 41 20.7	
	comp=Z,4μm,0.2s						
ITEG	Tejag	3.46	18	*e*Pn	Pn	11 40 20.9	0.0
ICHK	Chekchek	3.72	316	*e*Pn	Pb	11 40 32.7	0.0
ICHK				*e*AMB	AMB	11 41 35.5	
	comp=Z,2μm,0.2s						
IDAH	Dahanechah	3.75	33	*e*Pn	Pn	11 40 25.1	+0.2
IDAH				*e*AMB	AMB	11 40 40.5	
	comp=Z,920nm,0.1s						
IDAH	Dahanechah	3.75	33	*e*Pn	Pn	11 40 25.1	+0.2
BANOM	Banah	3.81	196	*i* P	Pn	11 40 26.2	+0.7
	SNR=13						
BANOM	Banah	3.81	196	P	Pn	11 40 26.2	+0.7
	SNR=13						
ISAD	Sadrabad	3.99	306	*e*Pn	Pn	11 40 32.3	+4.1
ISAD				*e*AMB	AMB	11 41 43.0	
	comp=Z,938nm,0.2s						
IMON	Monand	4.05	27	*e*AMB	AMB	11 41 44.2	
	comp=E,6μm,0.2s						
TABS	Tabas	4.05	356	*e*Pn	Pn	11 40 31.9	+3.0
TABS				AML	AML	11 41 41.1	
	comp=N,131nm,1.4s						
TABS	Tabas	4.05	356	*e*Pn	Pn	11 40 31.9	+3.0
GHIR	Ghir-Karzin	4.14	253	*e*Pn	Pn	11 40 31.3	+1.2
GHIR	Ghir-Karzin	4.14	253	*e*Pn	Pn	11 40 31.3	+1.2
NAZ	Nazwa, Dubai	4.87	200	P	Pn	11 40 41.4	+1.4
NAZ	Nazwa, Dubai	4.87	200	P	Pn	11 40 41.4	+1.4
IKAZ	Kazeroun	4.90	273	*e*Pn	Pn	11 40 42.1	+1.3
IKAZ				*e*AMB	AMB	11 42 28.2	
	comp=Z,543nm,0.4s						
IKAZ	Kazeroun	4.90	273	*e*Pn	Pn	11 40 42.1	+1.3
HATD	Hatta, Dubai	4.90	194	P	Pn	11 40 43.0	+2.5
HATD	Hatta, Dubai	4.90	194	P	Pn	11 40 43.0	+2.5
ASHO	Ashiyiah	5.05	195	P	Pn	11 40 44.8	+2.1
ASHO	Ashiyiah	5.05	195	P	Pn	11 40 44.8	+2.1
IZEF	Zefreh	5.49	308	*e*AMB	AMB	11 42 23.4	
	comp=N,218nm,0.2s						

WEL 14 11:57:29.3±0.2, 45°.06S×167°.52E, h84km±1km, ML3.8/15, 5C-6D, Error ellipse: s-maj=1.6km s-min=1.0km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DCZ	Deep Cove	0.48	212	PN	Pn	11 57 42.5	-0.7
DCZ				SN	Sn	11 57 53.0	-0.5
DCZ				AML	AML	11 57 53.4	
DCZ				AML	AML	11 57 53.4	
DCZ				AML	AML	11 57 53.8	
MSZ	Milford Sound	0.48	37	⇑PN	Pn	11 57 43.2	0.0
MSZ				SN	Sn	11 57 53.9	+0.4
MSZ				AML	AML	11 57 54.8	
MSZ				AML	AML	11 57 54.8	
MSZ				AML	AML	11 57 56.1	
MLZ	Mavora Lakes	0.53	126	⇓PN	Pn	11 57 43.3	-0.3
MLZ				SN	Sn	11 57 54.2	-0.1
MLZ				AML	AML	11 57 54.6	
WHZ	Wether Hill

ellipse: s-maj=52.1km s-min=26.9km az=110.0
*ISCJB **14** 12:00:59.7±0.7,36°.63N±0°.07×137°.76E±0°.08,*
h214km±5km,mb3.3/2,Error ellipse: s-maj=11.7km
s-min=10.2km az=146.8
*JMA **14** 12:01:00.3±0.1,36°.67N×137°.75E,h210km±1km,M3.1*
ISC 14 12:01:00.6±1.2,36°.64N±0°.08×137°.76E±0°.07,h209km±8km,
n17,σ0s36/24,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTT	Ttatey	0.35	264	P	Pn	12 01 28.3	+0.1
MAT	Matsushiro	0.37	106	P	Pn	12 01 28.2	-0.1
MAT				S	Sn	12 01 49.3	-0.5
MAT	Matsushiro	0.37	106	P	Pn	12 01 28.2	-0.1
MAT				S	Sn	12 01 49.4	-0.4
MJAR	Matsushiro Arr	0.37	106	Pn	Pn	12 01 28.4	+0.1
	17nm,0.3s,baz=292,slow=4.7,SNR=155						
MJAR				Sn	Sn	12 01 50.0	+0.3
	2.8nm,0.3s,baz=285,slow=9.1,SNR=15						
JRY	Ryogami san	1.11	124	P	Pn	12 01 32.1	0.0
JKG	Kaga	1.21	253	P	Pn	12 01 32.8	+0.1
JGM	Miyama	1.27	222	P	Pn	12 01 33.6	+0.4
JGM				S	Sn	12 01 58.5	0.0
JYN	Shimob	1.31	151	P	Pn	12 01 33.5	-0.1
JYN				eS	Sn	12 01 59.7	+0.5
JAG	Ashikaga	1.38	99	P	Pn	12 01 34.0	0.0
JSD	Sado	1.45	16	P	Pn	12 01 34.3	-0.2
JNS	Sasagawa	1.71	46	P	Pn	12 01 36.8	0.0
JOD2	Odawara 2	1.75	142	P	Pn	12 01 37.8	+0.5
JOD2				eS	Sn	12 02 05.8	-0.1
JWT	Wachi	2.35	235	P	Pn	12 01 43.5	+0.1
JWT				S	Sn	12 02 16.1	-0.6
JIE	Ise	2.41	201	P	Pn	12 01 43.9	-0.1
USRK	Ussuriysk Ar.	8.73	332	Pn	Pn	12 03 04.1	+0.9
	0.3nm,0.3s,baz=163,slow=15,SNR=4.4						
WRA	Warramunga Arr	56.37	184	P	P	12 10 19.7	-0.5
	0.5nm,0.3s,baz=0.2,slow=7.6,SNR=24						
ASAR	Alice Springs	60.10	184	P	P	12 10 46.1	+0.2
	0.2nm,0.4s,baz=360,slow=6.3,SNR=4.4						

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*MOS **14** 12:38:22.8±1.3,41°.17N×43°.77E,h4km,mb4.1/3,Error*
ellipse: s-maj=9.7km s-min=5.3km az=85.3
*DDA **14** 12:38:24.9,41°.39N×43°.85E,h7km,Md3.2*
*NSSP **14** 12:38:24.5,41°.37N×43°.92E,h10km,Ms3.4*
*TIF **14** 12:38:24.8,41°.40N×43°.88E,h14km*
*AZER **14** 12:38:25.3±0.1,41°.13N×44°.15E,h2km,Error ellipse:*
s-maj=4.5km s-min=1.3km az=28.0
*ISK **14** 12:38:25.3,41°.15N×44°.10E,h5km,MD3.3*
*CSEM **14** 12:38:25.7±0.1,41°.37N×43°.85E,h2km,ML3.5,Error*
ellipse: s-maj=3.6km s-min=2.9km az=4.0
ISC 14 12:38:25.7±0.9,41°.37N±0°.01×43°.85E±0°.01,h8km±7km,
n129,σ1s04/194,mb3.5/3,22C-22D,
Turkey-Georgia-Armenia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BGD	Bogdanovka	0.22	241	P	Pg	12 38 30.4	+0.2
BGD				S	Sg	12 38 33.9	+0.7
BGD	Bogdanovka	0.22	241	P	Pg	12 38 30.4	+0.2
BGD				S	Sg	12 38 33.9	+0.7
AKH	Akhalkalaki	0.27	278	P	Pg	12 38 31.1	0.0
AKH				S	Sg	12 38 35.2	+0.3
AKH	Akhalkalaki	0.27	278	PG	Pg	12 38 31.1	0.0
AKH				S	Sg	12 38 35.2	+0.3
AKH	Akhalkalaki	0.27	278	P	Pg	12 38 31.2	0.0
AKH				S	Sg	12 38 35.2	+0.3
KZR	Kazreti	0.42	89	P	Pg	12 38 33.5	-0.4
KZR				S	Sg	12 38 39.4	-0.1
KZR	Kazreti	0.42	89	P	Pg	12 38 33.5	-0.4
KZR				S	Sg	12 38 39.4	-0.1
STE	Stepanavan	0.54	134	⇑P	Pg	12 38 36.0	-0.1
STE				S	Sg	12 38 43.4	+0.2
STEZ	Stepenevan	0.56	132	⇓iP	Pg	12 38 35.3	-1.1
STEZ				⇓iS	Sg	12 38 43.1	-0.6
STEZ	Stepenevan	0.56	132	⇑iP	Pg	12 38 36.0	-0.4
STEZ				⇑S	Sg	12 38 43.4	-0.3
GMRZ	Gyumri	0.56	182	eP	Pb	12 38 38.0	+0.1
GMRZ				eS	Sb	12 38 47.0	+0.9
SPIZ	Spitak	0.63	150	⇑iP	Pg	12 38 37.0	-0.9
SPIZ				⇑iS	Sb	12 38 47.2	-0.9
SPIZ	Spitak	0.63	150	⇑P	Pg	12 38 37.0	-0.9
SPIZ				S	Sb	12 38 47.2	-0.9
EAK	Akyaka	0.71	195	P	Pg	12 38 38.7	-0.7
EAK				S	Sg	12 38 49.2	+0.6
EAK	Akyaka	0.71	195	iP	Pg	12 38 38.7	-0.7
EAK				iS	Sg	12 38 49.2	+0.6
CKLZ	Chkalov	0.74	126	⇓iP	Pg	12 38 38.4	-1.6
CKLZ				⇓iS	Sg	12 38 47.3	-2.4
CKLZ	Chkalov	0.74	126	⇓P	Pg	12 38 38.4	-1.6
TBLG	Delisi	0.75	61	ePG	Pg	12 38 40.4	+0.2
TBLG				eSG	Sb	12 38 51.5	-0.1
TBLG	Delisi	0.75	61	P	Pg	12 38 39.7	-0.5
TBLG				S	Sg	12 38 50.1	+0.1
TBLG	Delisi	0.75	61	PG	Pg	12 38 39.7	-0.5
TBLG				S	Sg	12 38 50.1	+0.1
TBLG	Delisi	0.75	61	P	Pg	12 38 39.7	-0.5
TBLG	Delisi	0.75	61	ePg	Pg	12 38 40.4	+0.2
TBLG				S	Sg	12 38 50.0	0.0
TBLG				eSg	Sb	12 38 51.5	-0.1
SEAG	Tbilisi Sea	0.81	61	P	Pn	12 38 51.7	+8.2
EPOS	Posof	0.86	279	P	Pg	12 38 41.9	-0.3
EPOS				S	Sg	12 38 53.1	-0.2
EPOS	Posof	0.86	279	iP	Pg	12 38 41.9	-0.3
EPOS				iS	Sg	12 38 53.1	-0.2
KARS	Kars	0.95	218	ePG	Pg	12 38 43.7	-0.2
KARS	Kars	0.95	218	ePg	Pg	12 38 43.7	-0.2
DUS	Dusheti	0.96	41	P	Pb	12 38 44.8	+0.2
DUS				S	Sn	12 38 58.9	-0.5
DUS	Dusheti	0.96	41	PG	Pb	12 38 44.8	+0.2
DUS				S	Sn	12 38 58.9	-0.5
DUS	Dusheti	0.96	41	P	Pb	12 38 44.8	+0.2
DGRG	David-gareji	1.15	86	P	Pg	12 38 46.9	-0.7
DGRG				S	Sn	12 39 04.2	+0.2
DGRG	David-gareji	1.15	86	PG	Pg	12 38 46.9	-0.7
DGRG				S	Sn	12 39 04.2	+0.2
DGRG	David-gareji	1.15	86	P	Pg	12 38 47.0	-0.7
DGRG				S	Sn	12 39 04.2	+0.2
GUDG	Gudauri	1.19	23	P	Pg	12 38 48.3	-0.1
GUDG				S	Sb	12 39 04.6	+0.4
GUDG	Gudauri	1.19	23	P	Pg	12 38 48.3	-0.1
GUDG				S	Sb	12 39 04.6	+0.4
QZX	Qazax, Azerbai	1.19	105	⇑P	Pg	12 38 46.9	-1.6
	SNR=416						
QZX				⇑S	Sg	12 39 03.0	-0.8
QZX	Qazax, Azerbai	1.19	105	P	Pg	12 38 46.9	-1.6
	SNR=416						
ONI	Oni	1.25	346	P	Pn	12 38 48.4	-1.2
ONI				S	Sg	12 39 05.6	-0.4
ONI	Oni	1.25	346	PG	Pn	12 38 48.4	-1.2
ONI	Oni	1.25	346	P	Pn	12 38 48.4	-1.2
ONI				S	Sg	12 39 05.6	-0.4
GNI	Garni	1.40	151	⇑iP	Pn	12 38 51.7	+0.1
GNI				⇓iS	Sg	12 39 11.7	+1.1
GNI	Garni	1.40	151	⇑P	Pn	12 38 51.7	+0.1
GNI				S	Sg	12 39 11.7	+1.1
SENK	Senkaya-Erzuru	1.40	235	ePN	Pn	12 38 52.0	+0.3
SENK	Senkaya-Erzuru	1.40	235	ePn	Pn	12 38 52.0	+0.3
ZEI	Tsey	1.42	1	⇓iPN	Pn	12 38 52.0	+0.1
ARTV	Artvin	1.46	263	P	Pn	12 38 52.6	0.0
ARTV				S	Sn	12 39 11.3	-0.8
ARTV	Artvin	1.46	263	iP	Pn	12 38 52.6	0.0
ARTV				iS	Sn	12 39 11.3	-0.8
LACR	Lac	1.49	13	⇓iPN	Pn	12 38 53.0	+0.1
LACR	Lac	1.49	13	iPn	Pn	12 38 53.0	+0.1
DAGI	Agillar	1.49	259	iP	Pb	12 38 53.5	-0.3
DAGI				iS	Sn	12 39 10.3	-2.3
DIGR	Digorskoe uzhe	1.54	353	ePN	Pb	12 38 54.4	-0.2
DIGR	Digorskoe uzhe	1.54	353	ePn	Pb	12 38 54.4	-0.2
GDB	GEDABAY	1.58	114	⇑P	Pn	12 38 53.3	-0.9
	SNR=32						
GDB				⇓S	Sn	12 39 13.6	-1.2
GDB	GEDABAY	1.58	114	P	Pn	12 38 53.3	-0.9
	SNR=32						
GDB				S	Sn	12 39 13.6	-1.2
DBOC	Borcka	1.65	270	P	Pn	12 38 55.3	+0.3
DBOC				S	Sn	12 39 16.7	+0.4
DBOC	Borcka	1.65	270	iP	Pn	12 38 55.3	+0.3
DBOC				iS	Sn	12 39 16.7	+0.4
DDEM	Demirkent	1.66	254	P	Pb	12 38 56.3	-0.3
DDEM				S	Sn	12 39 17.3	+0.5
DDEM	Demirkent	1.66	254	iP	Pb	12 38 56.3	-0.3
DDEM				iS	Sn	12 39 17.3	+0.5
DBAD	Bademkaya	1.67	258	P	Pb	12 38 56.5	-0.2
DBAD				S	Sn	12 39 17.5	+0.6
DBAD	Bademkaya	1.67	258	iP	Pb	12 38 56.5	-0.2
DBAD				iS	Sn	12 39 17.5	+0.6
KORR	Kora	1.72	5	⇑iPN	Pb	12 38 58.1	+0.5
KORR	Kora	1.72	5	iPn	Pb	12 38 58.1	+0.5
VLKR	Vladikavkaz	1.78	20	ePN	Pb	12 38 58.7	+0.1
VLKR	Vladikavkaz	1.78	20	ePn	Pb	12 38 58.7	+0.1
EATA	Eleskirt	1.83	215	P	Pb	12 38 59.2	-0.4
EATA				S	Sg	12 39 25.3	+0.8
EATA	Eleskirt	1.83	215	iP	Pb	12 38 59.2	-0.4
EATA				iS	Sg	12 39 25.3	+0.8
DYDN	Diyadin	1.83	184	P	Pg	12 39 00.4	-0.4
DYDN				S	Sg	12 39 25.8	+1.2
DYDN	Diyadin	1.83	184	iP	Pg	12 39 00.5	-0.4
DYDN				iS	Sg	12 39 25.8	+1.2
ARNR	Ardon	1.83	10	ePN	Pb	12 39 00.0	+0.5
ARNR	Ardon	1.83	10	ePn	Pb	12 39 00.0	+0.5
CHVG	Ch'k'valeri	1.88	316	ePN	Pb	12 39 00.4	+0.1
CHVG				eSN	Sg	12 39 26.0	-0.2
CHVG	Ch'k'valeri	1.88	316	P	Pb	12 38 59.5	-0.8
CHVG				S	Sg	12 39 25.6	-0.5
CHVG	Ch'k'valeri	1.88	316	P	Pb	12 38 59.5	-0.8
CHVG	Ch'k'valeri	1.88	316	ePn	Pb	12 39 00.4	+0.1
CHVG				eSn	Sg	12 39 26.0	-0.2
HOMI	Horasan	1.99	229	iP	Pb	12 39 01.4	-0.9
HOMI				iS	Sg	12 39 29.6	+0.1
STDR	Stavd-Durt	2.00	4	⇓iPN	Pg	12 39 04.5	+0.5
STDR				eS	Sg	12 39 30.5	+0.5
STDR	Stavd-Durt	2.00	4	iPn	Pg	12 39 04.5	+0.5
STDR				eSn	Sg	12 39 30.5	+0.5
GANJ	Ganja	2.00	110	⇓P	Pn	12 39 00.5	+0.6
	SNR=32						
GANJ				⇓S	Sn	12 39 26.3	+1.2
GANJ	Ganja	2.00	110	P	Pn	12 39 00.5	+0.6
	SNR=32						
GANJ				S	Sn	12 39 26.3	+1.2
ZKTA	Zakatala	2.10	82	⇑P	Pn	12 39 02.4	+1.2
ZKTA				⇓S	Sb	12 39 30.2	0.0
GROC	Groznyy	2.33	38	ePN	Pb	12 39 06.7	-1.2
GROC				eS	Sb	12 39 36.9	+0.1
GROC	Groznyy	2.33	38	ePn	Pb	12 39 06.7	-1.2
EZM	Erzurum	2.40	235	ePN	Pn	12 39 06.5	+1.1
EKAR	Karacoban	2.52	213	P	Pn	12 39 09.1	+2.0
EKAR	Karacoban	2.52	213	iP	Pn	12 39 09.1	+2.0
SEKA	Sheki	2.53	93	⇑P	Pn	12 39 08.3	+1.2
	SNR=14						
SEKA				⇑S	Sb	12 39 41.9	-0.7
SEKA	Sheki	2.53	93	P	Pn	12 39 08.3	+1.2
	SNR=14						
SEKA				S	Sb	12 39 41.9	-0.7
GNBR	Gunib	2.54	65	ePN	Pn	12 39 08.2	+1.0
GNBR				eS	Sn	12 39 40.6	+2.3
GRS	Goris	2.66	134	eP	Pn	12 39 11.0	+2.0
STKZ		2.70	124	⇓iP	Pg	12 39 18.5	+1.0
STKZ				⇑iS	Sg	12 39 54.5	+2.1
KIV	Kislovodsk	2.72	342	ePN	Pb	12 39 14.8	+0.1
KIV	Kislovodsk	2.72	342	iPN	Pn	12 39 11.4	+1.6
KIV				iS	Sg	12 39 51.8	-1.3
KIV				pmax	pmax		
	comp=Z,8.0nm,1.1s						
KIV				smax	smax		
	comp=Z,48nm,0.5s						
KIV	Kislovodsk	2.72	342	iPn	Pn	12 39 11.4	+1.6
	comp=Z,8.0nm,1.1s						
KIV				iSb	Sg	12 39 51.8	-1.3
	comp=Z,48nm,0.5s						
BRDA	Brd	2.76	113	⇓P	Pb	12 39 13.0	-2.2
BRDA	Brd	2.76	113	P	Pb	12 39 13.0	-2.2
AKT	Akhty	2.92	87	ePN	Pn	12 39 14.7	+2.2
AKT				eS	Sb	12 39 52.1	-1.8
AKT	Akhty	2.92	87	ePn	Pn	12 39 14.7	+2.2
AKT				eSn	Sb	12 39 52.1	-1.8
BAYT	Ayd¨-ntepe-Bay	2.98	252	ePN	Pb	12 39 16.6	-2.5
BAYT	Ayd¨-ntepe-Bay	2.98	252	ePn	Pb	12 39 16.6	-2.5
QBL	Gabala	3.04	97	⇑S	Sn	12 39 52.1	+1.4
QBL	Gabala	3.04	97	S	Sn	12 39 52.1	+1.4
ZRD	Zardab	3.10	109	⇓P	Pn	12 39 17.5	+2.5
ZRD	Zardab	3.10	109	P	Pn	12 39 17.5	+2.5
XNQ	Khinaliq	3.24	92	⇓P	Pn	12 39 18.8	+1.8
	SNR=3.5						
XNQ	Khinaliq	3.24	92	P	Pn	12 39 18.8	+1.8
	SNR=3.5						
QSAR	Qusar	3.32	86	⇓P	Pn	12 39 19.7	+1.8
QSAR				⇑S	Sn	12 39 59.6	+2.0
IML	Ismayilli	3.32	99	⇑P	Pn	12 39 19.2	+1.2
	SNR=3.3						
IML	Ismayilli	3.32	99	P	Pn	12 39 19.2	+1.2
	SNR=3.3						
SOC	Sochi	3.77	307	ePN	Pn	12 39 22.9	-1.2
SOC				e		12 39 36.9	
SOC				pmax	pmax		
	comp=Z,5.0nm,0.5s						
SOC				pmax	pmax		
	comp=Z,35nm,0.9s						
SOC	Sochi	3.77	307	ePn	Pn	12 39 22.9	-1.2
	comp=Z,5.0nm,0.5s						
SOC	Sochi	3.77	307	ePg	Pg	12 39 36.9	-1.0
	comp=Z,35nm,0.9s						
SIZA	Siyzn	3.82	93	⇑P	Pn	12 39 25.5	+0.7
SIZA	Siyzn	3.82	93	P	Pn	12 39 25.5	+0.7
ANN	Anapa	5.82	308	eP	Pn	12 39 57.8	+5.6
ANN				pmax	pmax		
	comp=Z,17nm,0.9s						
KIEV	Kiev	13.78	318	⇑eP	Pn	12 41 41.0	-0.1
KIEV				pmax	pmax		
	comp=Z,1.0nm,0.9s						
KIEV	Kiev	13.78	318	eP	Pn	12 41 41.0	-0.1
	comp=Z,1.0nm,0.9s						
OBN	Obninsk	14.57	343	iP	Pn	12 41 53.5	+1.6
OBN				pmax	pmax		
	comp=Z,3.0nm,0.8s						
PUL	Pulkovo	20.25	340	⇓eP	Pn	12 43 02.3	-0.8
PUL	Pulkovo	20.25	340	eP	Pn	12 43 02.3	-0.8
BRVK	Borovoye	21.29	48	⇑eP	P	12 43 15.2	+2.7
BRVK	Borovoye	21.29	48	eP	P	12 43 15.2	+2.7
AAK	Ala-Archa	22.75	77	⇓eP	P	12 43 27.2	-1.2
AAK				pmax	pmax		
	comp=Z,2.0nm,1.1s						
AAK	Ala-Archa	22.75	77	eP	P	12 43 27.2	-1.2
	comp=Z,2.0nm,1.1s						
KURK	Kurchatov	25.67	57	⇓eP	P	12 43 55.8	0.0
KURK				pmax	pmax		
	comp=Z,1.0nm,1.0s						
KURK	Kurchatov	25.67	57	eP	P	12 43 55.8	0.0
	comp=Z,1.0nm,1.0s						
BFO	Black Forest	25.95	298	iP	P	12 43 57.6	-0.9
BFO	Black Forest	25.95	298	iP	P	12 43 57.6	-0.9
TLY	Talaya	41.32	55	⇓eP	P	12 46 10.8	-0.8
TLY				pmax	pmax		
	comp=Z,4.0nm,0.7s						
TLY	Talaya	41.32	55	eP	P	12 46 10.8	-0.8
	comp=Z,4.0nm,0.7s						

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*NIED **14** 12:57:00,37°.90N×143°.40E,h5km,Mw3.5 Best double*
couple: M0:2.13000×10^14 NP1:φs=2.00000°,δ40.00000°,
λ-87.00000°. NP2:φs=179.00000°,δ50.00000°,
λ-92.00000°.
*IDC **14** 12:57:32.3±1.5,37°.78N×143°.68E,h0km,mb3.4/3,*
mb1 3.7/6,mb1mx3.4/60,mbtmp3.6/6,ML3.7/3,MS2.9/3,
Ms1 2.9/3,ms1mx2.4/27,Error ellipse: s-maj=38.7km
s-min=23.7km az=112.0
*ISCJB **14** 12:57:33.7±0.8,37°.87N±0°.05×143°.57E±0°.07,h19km,*
mb3.5/3,MS3.4/2,Error ellipse: s-maj=8.1km s-min=7.2km
az=161.1
*JMA **14** 12:57:35.7±0.1,37°.92N×143°.45E,h22km,M3.5*
ISC 14 12:57:35.1±1.1,37°.84N±0°.06×143°.52E±0°.09,h19km,n18,
σ0s85/24,mb3.6/3,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	1.82	290	P	Pn	12 58 05.2	-0.2
JIO				S	Sn	12 58 27.2	-0.8
OFUJ	Ofunato	1.91	311	P	Pn	12 58 06.5	-0.2
OFUJ				S	Sn	12 58 29.1	-1.2
JMK	Ichinoseki	2.13	302	P	Pn	12 58 09.9	+0.3
JMK				S	Sn	12 58 34.7	-0.8
JMM	Marumori	2.16	272	P	Pn	12 58 10.0	-0.1
JOU	Okura	2.32	284	P	Pn	12 58 12.8	+0.5
JOM	Ohasama	2.39	314	P	Pn	12 58 13.5	+0.2
JOM				S	Sn	12 58 41.6	-0.5
JTH	Tanohata	2.47	329	P	Pn	12 58 14.9	+0.6
JFT	Otama	2.55	264	P	Pn	12 58 16.1	+0.7
JFT				S	Sn	12 58 46.1	+0.1
JYK	Kaneyama	2.71	294	P	Pn	12 58 18.5	+0.8
JRG	Rokugo	2.75	305	P	Pn	12 58 19.0	+0.8
JRG				eS	Sn	12 58 50.4	-0.4
MJAR	Matsushiro Arr	4.44	255	Pn	Pn	12 58 43.4	+2.0
	1.9nm,0.3s,baz=68,slow=9.7,SNR=20						
MJAR				LR	LR	13 00 18.3	
	comp=Z,14nm,18.1s,baz=115,slow=37						
JHJ	Hachijo jima 2	5.61	214	Pn	Pn	12 58 57.3	-0.2
	6.0nm,0.3s,baz=78,slow=20,SNR=2.7						
JHJ				Sn	Sn	12 59 59.5	-1.9
	4.7nm,0.3s,baz=235,slow=18,SNR=2.2						
ASAJ	Asahikawa	6.31	354	Pn	Pn	12 59 07.7	+0.6
	2.5nm,0.3s,baz=205,slow=14,SNR=31						
ASAJ				Sn	Sn	13 00 17.7	-1.0
	0.5nm,0.3s,baz=102,slow=20,SNR=2.3						
TLY	Talaya	31.10	309	LR	LR	13 16 12.9	
	comp=Z,94nm,18.2s,baz=219,slow=36						
KURBB	Kurchatov Arra	46.84	308	P	P	13 06 03.9	+0.3
	0.5nm,0.6s,baz=81,slow=7.7,SNR=4.8						
ILAR	Eielson Array	47.91	33	P	P	13 06 12.1	+0.3
	0.2nm,0.6s,baz=261,slow=5.9,SNR=5.0						
WRA	Warramunga Arr	58.12	190	P	P	13 07 27.1	-0.3
	0.3nm,0.5s,baz=8.0,slow=7.0,SNR=4.3						
GEYT	Alibeck	64.91	300	LR	LR	13 38 40.4	
	comp=Z,19nm,18.9s,baz=265,slow=38						

IDC 14 13:00:07.4±3.0,6°.47S×147°.75E,h0km,mb2.8/1,
mb1 3.3/3,mb1mx3.1/53,mbtmp3.1/3,ML3.0/1,MS1.9/1,
Ms1 1.9/1,ms1mx1.9/8,Error ellipse: s-maj=83.7km
s-min=33.0km az=99.0,Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	Port Moresby	2.97	191	Pn	Pn	13 00 57.8	+1.9
	1.7nm,0.3s,baz=13,slow=11,SNR=5.7						
PMG				Sn	Sn	13 01 32.6	+0.3
	0.5nm,0.3s,baz=18,slow=19,SNR=1.9						
JAY	Jayapura	8.04	299	LR	LR	13 05 23.2	
	comp=Z,8.5nm,20.6s,baz=181,slow=39						
WRA	Warramunga Arr	18.68	223	P	P	13 04 26.6	-0.7
	0.1nm,0.3s,baz=50,slow=11,SNR=3.3						
ASAR	Alice Springs	21.67	216	P	P	13 04 59.2	-0.6
	0.2nm,0.4s,baz=52,slow=8.6,SNR=5.2						
TORD	Torodi Ar. Bea	145.92	284	PKPbc	PKPdf	13 19 49.3	-0.2
	0.2nm,0.5s,baz=286,slow=1.0,SNR=3.1						

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*NEIC **14** 13:01:40.6,43°.67S×172°.37E,h12km,mb4.1/2,*
ML4.0(WEL),After WEL.
NEIC Felt in Canterbury.
WEL 14 13:01:40.8±0.1,43°.66S×172°.36E,h9km,ML3.9/24,5C-4D,
Error ellipse: s-maj=0.7km s-min=0.5km az=0.0,South
Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRLZ	Canterbury Las	0.21	68	⇓PG	Pg	13 01 45.3	+0.2
CRLZ				SG	Sg	13 01 48.3	+0.3
CRLZ				AML	AML	13 01 48.8	
CRLZ				AML	AML	13 01 49.0	
MQZ	McQueen's Vall	0.22	104	PG	Pg	13 01 45.3	0.0
MQZ				SG	Sg	13 01 48.6	+0.2
MQZ				AML	AML	13 01 49.2	
MQZ				AML	AML	13 01 49.5	
OXZ	Oxford	0.40	325	⇓PG	Pg	13 01 48.6	-0.2
OXZ				SG	Sg	13 01 53.9	-0.1
LTZ	Lake Taylor	0.88	356	⇑P*	Pg	13 01 57.3	-0.3
LTZ				AML	AML	13 02 10.1	
LTZ				AML	AML	13 02 12.9	
RPZ	Rata Peaks	0.95	266	⇑P*	Pg	13 01 58.4	-0.6
RPZ				AML	AML	13 02 14.2	
RPZ				AML	AML	13 02 17.1	
INZ	Inchbonnie	1.15	324	⇑P*	Pb	13 02 01.2	-1.5
WVZ	Waitaha Valley	1.32	296	⇑PN	Pn	13 02 04.3	-1.1
WVZ				AML	AML	13 02 27.7	
WVZ				AML	AML	13 02 29.2	
KHZ	Kahutara	1.51	35	PN	Pn	13 02 05.9	-2.1
LBZ	Lake Benmore	1.73	244	PN	Pn	13 02 10.0	-1.1
LBZ				AML	AML	13 02 38.0	
LBZ				AML	AML	13 02 38.1	
LBZ				AML	AML	13 02 40.5	
LBZ				AML	AML	13 02 40.5	
FOZ	Fox Glacier	1.85	273	PN	Pn	13 02 12.5	-0.1
FOZ				AML	AML	13 02 48.2	
FOZ				AML	AML	13 02 51.9	
FOZ				AML	AML	13 02 51.9	
ODZ	Otahua Downs	1.85	221	PN	Pn	13 02 11.3	-1.5
ODZ				AML	AML	13 02 40.9	
ODZ				AML	AML	13 02 46.3	
ODZ				AML	AML	13 02 46.3	
ODZ				AML	AML	13 02 47.5	
ODZ	Otahua Downs	1.85	221	ePn	Pn	13 02 11.4	-1.4
ODZ				eSn	Sn	13 02 35.1	-1.3
THZ	Tophouse	1.93	12	⇑PN	Pn	13 02 12.1	-1.8
THZ				AML	AML	13 02 39.3	
THZ				AML	AML	13 02 54.2	
DSZ	Denniston Nort	1.95	348	PN	Pn	13 02 13.2	-1.0
DSZ				AML	AML	13 02 48.7	
DSZ				AML	AML	13 02 48.7	
DSZ				AML	AML	13 02 51.4	
DSZ				AML	AML	13 02 51.4	
BSWZ	Blackbirch Sta	2.24	31	PN	Pn	13 02 16.5	-1.6
BSWZ				AML	AML	13 02 44.9	
BSWZ				AML	AML	13 02 48.0	
TUWZ	Tuamarina	2.51	28	PN	Pn	13 02 19.8	-2.0

mb1 3.8/13, mb1mx3.6/60, mbtmp3.6/13, ML3.0/3, MS3.2/11, Ms1 3.2/11, ms1mx3.0/35, Error ellipse: s-maj=32.4km s-min=17.7km az=64.0

*ISCJB **14** 13:01:55.3±0.8, 34°.1N±0°.1×83°.3E±0°.2, h33km, mb3.6/9, MS3.1/9, Error ellipse: s-maj=24.0km s-min=11.9km az=156.4*

ISC 14 13:01:57.4±1.0, 34°.1N±0°.1×83°.3E±0°.2, h35km, n21, σ1§08/14, mb3.6/9, MS3.1/9, Xizang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MKAR	**Makanchi Array**	**12.72**	**357**	Pn	**Pn**	**13 04 54.2**	**-1.6**
	0.2nm, 0.3s, baz=180, slow=14, SNR=7.8						
MKAR				LR	LR	13 10 42.3	
	comp=Z, 107nm, 19.8s, baz=179, slow=41						
KURBB	**Kurchatov Arra**	**16.90**	**349**	Pn	**Pn**	**13 05 49.7**	**-1.4**
	0.0nm, 0.3s, baz=170, slow=10, SNR=21						
ZALV	**Zalesovo Beam**	**19.89**	**3**	P	**P**	**13 06 25.3**	**-0.3**
	0.1nm, 0.3s, baz=186, slow=12, SNR=8.3						
ZALV				LR	LR	13 15 41.9	
	comp=Z, 29nm, 20.1s, baz=250, slow=42						
GEYT	**Alibeck**	**20.74**	**288**	LR	LR	13 16 09.3	
	comp=Z, 169nm, 20.0s, baz=90, slow=41						
CMAR	**Chiang Mai Arr**	**20.89**	**134**	P	**P**	**13 06 35.4**	**-1.3**
	1.0nm, 0.6s, baz=303, slow=11, SNR=9.9						
CMAR				LR	LR	13 14 56.7	
	comp=Z, 23nm, 18.8s, baz=300, slow=38						
BVAR	**Borovoye Array**	**21.07**	**338**	P	**P**	**13 06 38.7**	**+0.3**
	0.6nm, 0.6s, baz=150, slow=12, SNR=4.2						
SONM	**Songino Array**	**22.07**	**45**	P	**P**	**13 06 50.3**	**+1.0**
	1.6nm, 0.9s, baz=232, slow=7.3, SNR=8.9						
WSAR	**Wadi Sarin**	**24.16**	**250**	LR	LR	13 17 21.5	
	comp=Z, 63nm, 19.6s, baz=92, slow=39						
AKTO	**Aktyubinsk**	**24.69**	**319**	LR	LR	13 17 30.7	
	comp=Z, 47nm, 20.7s, baz=134, slow=38						
ARU	**Arti**	**28.06**	**330**	LR	LR	13 19 12.7	
	comp=Z, 37nm, 18.2s, baz=274, slow=37						
NRIK	**Noril'sk**	**35.39**	**3**	P	**P**	**13 08 50.2**	**+0.8**
	1.1nm, 0.3s, baz=187, slow=6.3, SNR=4.0						
AKASG	**Malin Array Be**	**42.28**	**310**	LR	LR	13 28 43.9	
	comp=Z, 37nm, 21.5s, baz=225, slow=38						
MJAR	**Matsushiro Arr**	**44.33**	**70**	LR	LR	13 29 56.0	
	comp=Z, 17nm, 21.4s, baz=85, slow=38						
ARCES	**ARCESS Array B**	**47.34**	**336**	LR	LR	13 32 04.1	
	comp=Z, 42nm, 19.3s, baz=137, slow=38						
NB2	**NORSAR Subarra**	**52.32**	**324**	P	**P**	**13 11 07.0**	**+1.6**
	comp=Z, 2.3nm, 1.0s, baz=85, slow=7.4						
NOA	**NORSAR Array B**	**52.32**	**324**	P	**P**	**13 11 06.2**	**+0.8**
	comp=Z, 1.1nm, 0.8s, baz=86, slow=7.3, SNR=5.3						
NOA				LR	LR	13 33 36.0	
	comp=Z, 23nm, 20.6s, baz=85, slow=36						
WRA	**Warramunga Arr**	**72.41**	**130**	P	**P**	**13 13 20.2**	**0.0**
	comp=Z, 0.5nm, 0.5s, baz=328, slow=6.0, SNR=4.1						
ILAR	**Eielson Array**	**73.95**	**20**	P	**P**	**13 13 29.0**	**+0.2**
	comp=Z, 0.4nm, 0.9s, baz=296, slow=4.0, SNR=5.4						
ASAR	**Alice Springs**	**74.89**	**133**	P	**P**	**13 13 35.7**	**+0.9**
	comp=Z, 0.4nm, 0.6s, baz=310, slow=5.0, SNR=4.1						
TORD	**Torodi Ar. Bea**	**75.90**	**276**	P	**P**	**13 13 40.0**	**-0.8**
	comp=Z, 0.2nm, 0.5s, baz=245, slow=6.2, SNR=2.4						
YKA	**Yellowknife Ar**	**82.68**	**8**	P	**P**	**13 14 16.7**	**-0.3**
	comp=Z, 0.4nm, 0.7s, baz=344, slow=4.7, SNR=6.8						

IDC 14 13:08:22.9±2.0, 6°.33S×129°.02E, h0km, mb3.9/1, mb1 3.9/3, mb1mx3.5/29, mbtmp3.7/3, ML3.8/2, Error ellipse: s-maj=117.8km s-min=32.0km az=67.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**14.48**	**160**	Pn	Pn	13 11 48.2	-1.2
	0.4nm, 0.3s, baz=338, slow=12, SNR=17						
WRA				Sn	Sn	13 14 18.3	-13
	0.7nm, 0.3s, baz=331, slow=22, SNR=10.0						
ASAR	**Alice Springs**	**17.86**	**165**	Pn	P	13 12 34.0	+0.2
	0.4nm, 0.3s, baz=348, slow=9.9, SNR=28						
ASAR				Sn	Sn	13 15 44.0	-9.0
	0.1nm, 0.3s, baz=354, slow=27, SNR=4.5						
MKAR	**Makanchi Array**	**67.14**	**327**	P	P	13 19 18.6	0.0
	0.7nm, 0.5s, baz=130, slow=7.3, SNR=9.7						

*IDC **14** 13:42:56.2±1.5, 20°.41S×168°.27E, h0km, mb4.0/7, mb1 4.2/8, mb1mx3.8/40, mbtmp4.0/8, ML3.0/1, MS3.3/5, Ms1 3.3/5, ms1mx2.8/29, Error ellipse: s-maj=47.9km s-min=21.4km az=140.0*

*NEIC **14** 13:42:57.7±1.1, 20°.43S×168°.28E, h10km, mb4.0/1, Error ellipse: s-maj=29.9km s-min=16.2km az=141.0*

ISC 14 13:43:00.2±1.3, 20°.5S±0°.2×168°.3E±0°.2, h26km, n11, σ1§11/10, mb4.0/7, MS3.3/3, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.30**	**227**	Pn	**Pn**	**13 43 37.3**	**+0.8**
	3.5nm, 0.3s, baz=90, slow=12, SNR=54						
DZM				LR	LR	13 43 46.4	
	comp=Z, 97nm, 21.4s, baz=39, slow=21						
DZM				Sn	**Sb**	**13 44 08.4**	**-0.7**
	17nm, 0.3s, baz=302, slow=23, SNR=13						
RAO	**Raoul Island**	**15.27**	**128**	LR	LR	13 50 21.2	
	comp=Z, 843nm, 21.8s, baz=5.0, slow=29						
AFI	**Afiamalu**	**20.16**	**74**	LR	LR	13 54 40.1	
	comp=Z, 70nm, 18.2s, baz=59, slow=35						
CTAO	**Charters Tower**	**20.64**	**267**	P	**P**	**13 47 37.8**	**-0.1**
	4.6nm, 0.7s						
PMG	**Port Moresby**	**23.14**	**295**	P	**P**	**13 48 04.9**	**+0.3**
	18nm, 0.9s, baz=108, slow=6.4, SNR=3.7						
STKA	**Stephens Creek**	**26.40**	**239**	P	**P**	**13 48 35.6**	**+0.9**
	3.8nm, 1.0s, baz=56, slow=9.0, SNR=4.1						
STKA				LR	LR	13 58 03.2	
	comp=Z, 72nm, 18.1s, baz=27, slow=34						
WRA	**Warramunga Arr**	**31.80**	**265**	P	**P**	**13 49 21.6**	**-1.2**
	0.5nm, 0.8s, baz=90, slow=8.6, SNR=6.2						
ASAR	**Alice Springs**	**31.94**	**258**	P	**P**	**13 49 23.8**	**-0.3**
	1.8nm, 0.8s, baz=89, slow=8.9, SNR=14						
ASAR				LR	LR	14 01 02.5	
	comp=Z, 67nm, 20.3s, baz=116, slow=34						
CMAR	**Chiang Mai Arr**	**78.18**	**295**	P	**P**	**13 54 57.7**	**-0.1**
	0.3nm, 0.5s, baz=155, slow=3.1, SNR=5.5						
NVAR	**Mina Array Bea**	**90.33**	**49**	P	**P**	**13 55 57.7**	**-1.6**
	0.9nm, 1.0s, baz=234, slow=7.3, SNR=4.8						
ILAR	**Eielson Array**	**91.71**	**18**	P	**P**	**13 56 06.3**	**+1.5**
	0.4nm, 0.9s, baz=212, slow=4.9, SNR=3.7						

*NIED **14** 13:46:00, 36°.70N×140°.60E, h5km, Mw3.4 Best double couple: M0 1.35000×10^14 NP1:φs 31.00000°, δ35.00000°, λ-57.00000°. NP2:φs 172.00000°, δ61.00000°, λ-111.00000°.*

*IDC **14** 13:46:49.0±1.0, 36°.69N×140°.64E, h0km, mb3.6/9, mb1 3.7/11, mb1mx3.5/54, mbtmp3.7/11, ML3.2/2, Error ellipse: s-maj=22.2km s-min=17.5km az=88.0*

*ISCJB **14** 13:46:49.2±0.8, 36°.66N±0°.03×140°.71E±0°.06, h11km±4km, mb3.5/9, Error ellipse: s-maj=8.6km s-min=4.3km az=25.8*

*JMA **14** 13:46:50.4, 36°.69N×140°.61E, h5km, M3.8*

JMA Felt II J1.

ISC 14 13:46:49.7±1.2, 36°.72N±0°.05×140°.63E±0°.05, h4km±9km, n26, σ0§47/28, mb3.5/9, 5C-2D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.12**	**203**	⇓P	**Pg**	**13 46 52.4**	**+0.2**
JHO				S	**Sg**	**13 46 53.8**	**0.0**
ONAJ	**Iwakimizuishiy**	**0.40**	**20**	⇑P	**Pb**	**13 46 59.1**	**-0.3**
ONAJ				S	**Sb**	**13 47 05.1**	**-0.8**
JYT	**Yasato**	**0.60**	**215**	⇓P	**Pg**	**13 47 01.4**	**+0.1**
JYT				S	**Sg**	**13 47 09.2**	**0.0**
JSB	**Shiboa**	**0.62**	**294**	⇑P	**Pb**	**13 47 02.9**	**-0.2**
JFK	**Kawauchi**	**0.67**	**17**	⇑P	**Pb**	**13 47 03.8**	**-0.2**
JFK				S	**Sb**	**13 47 13.5**	**-0.2**
JFT	**Otama**	**0.83**	**344**	⇑P	**Pb**	**13 47 06.7**	**0.0**
JFT				*i* S	**Sb**	**13 47 18.3**	**+0.1**
JAG	**Ashikaga**	**0.99**	**253**	⇑P	**Pg**	**13 47 08.1**	**-0.6**
MJAR	**Matsushiro Arr**	**1.95**	**265**	Pn	**Pn**	**13 47 24.0**	**+0.3**
	13nm, 0.3s, baz=80, slow=16, SNR=68						
MJAR				Sn	**Sn**	**13 47 49.1**	**+0.5**
	24nm, 0.3s, baz=86, slow=29, SNR=19						
MAT	**Matsushiro**	**1.96**	**265**	P	**Pn**	**13 47 24.2**	**+0.5**
MAT				S	**Sb**	**13 47 50.5**	**-0.1**
JHJ	**Hachijo jima 2**	**3.66**	**191**	Pn	**Pn**	**13 47 46.8**	**-0.3**
	6.8nm, 0.3s, baz=72, slow=20, SNR=4.5						
JHJ				Sn	**Sn**	**13 48 30.9**	**+0.2**
	3.3nm, 0.3s, baz=75, slow=20, SNR=2.5						
ASAJ	**Asahikawa**	**7.54**	**11**	Pn	**Pn**	**13 48 41.4**	**+1.1**
	0.3nm, 0.3s, baz=228, slow=14, SNR=3.7						
MA2	**Magadan**	**23.79**	**13**	P	**P**	**13 52 02.7**	**-0.5**
	5.8nm, 0.9s, baz=185, slow=11, SNR=3.0						
SONM	**Songino Array**	**27.44**	**305**	P	**P**	**13 52 36.5**	**-0.1**
	0.4nm, 0.7s, baz=99, slow=9.3, SNR=3.5						
H11N2	**WAKE ISLAND Hy**	**28.54**	**119**	T	T	14 22 30.7	
	baz=312, slow=75, SNR=56						
H11N1	**WAKE ISLAND Hy**	**28.55**	**119**	T	T	14 22 31.3	
	baz=312, slow=75, SNR=93						
H11N3	**WAKE ISLAND Hy**	**28.55**	**119**	T	T	14 22 32.1	
	baz=312, slow=75, SNR=93						
H11S1	**WAKE ISLAND Hy**	**29.23**	**121**	T	T	14 23 23.0	
	baz=314, slow=75, SNR=580						
H11S3	**WAKE ISLAND Hy**	**29.23**	**121**	T	T	14 23 21.0	
	baz=314, slow=75, SNR=412						
H11S2	**WAKE ISLAND Hy**	**29.24**	**121**	T	T	14 23 23.8	
	baz=314, slow=75, SNR=289						
ZALV	**Zalesovo Beam**	**41.66**	**313**	P	**P**	**13 54 39.0**	**0.0**
	1.0nm, 0.6s, baz=101, slow=6.2, SNR=4.2						
MKAR	**Makanchi Array**	**43.75**	**302**	P	**P**	**13 54 56.4**	**+0.3**
	0.1nm, 0.5s, baz=69, slow=7.9, SNR=2.8						
KURBB	**Kurchatov Arra**	**45.70**	**308**	P	**P**	**13 55 11.1**	**-0.4**
	1.2nm, 0.7s, baz=83, slow=8.0, SNR=15						
BVAR	**Borovoye Array**	**50.32**	**312**	P	**P**	**13 55 47.3**	**0.0**
	0.4nm, 0.6s, baz=80, slow=7.9, SNR=2.6						
WRA	**Warramunga Arr**	**56.67**	**187**	P	**P**	**13 56 33.4**	**-0.8**
	0.3nm, 0.7s, baz=4.7, slow=7.4, SNR=5.9						
ASAR	**Alice Springs**	**60.40**	**187**	P	**P**	**13 56 59.8**	**-0.3**
	0.3nm, 0.9s, baz=2.1, slow=7.4, SNR=3.1						
NVAR	**Mina Array Bea**	**75.68**	**53**	P	**P**	**13 58 37.3**	**+0.8**
	0.2nm, 0.4s, baz=294, slow=6.8, SNR=2.6						

*ISCJB **14** 13:50:14.7±1.0, 36°.33N±0°.04×142°.41E±0°.10, h15km, mb3.6/4, Error ellipse: s-maj=11.6km s-min=5.6km az=15.4*

*IDC **14** 13:50:14.1±4.2, 36°.25N×142°.37E, h0km, mb3.7/4, mb1 3.6/7, mb1mx3.4/53, mbtmp3.7/7, ML3.3/3, MS2.5/1, Ms1 2.5/1, ms1mx2.0/45, Error ellipse: s-maj=76.9km s-min=31.5km az=110.0*

*JMA **14** 13:50:18.0±0.2, 36°.35N×142°.23E, h55km, M3.1*

ISC 14 13:50:16.1±1.4, 36°.33N±0°.04×142°.18E±0°.09, h15km, n16, σ1§28/20, mb3.7/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.24**	**240**	P	**Pg**	**13 50 40.2**	**+0.3**
CHOJ				*e*S	**Sg**	**13 50 56.4**	**+0.3**
JHO	**Hitachi**	**1.33**	**283**	P	**Pg**	**13 50 41.0**	**-0.6**
ONAJ	**Iwakimizuishiy**	**1.35**	**305**	P	**Pg**	**13 50 41.2**	**-0.9**
JMM	**Marumori**	**1.89**	**325**	P	**Pb**	**13 50 48.6**	**-1.7**
JMM				*e*S	**Sn**	**13 51 12.3**	**+0.8**
JFT	**Otama**	**1.90**	**309**	P	**Pb**	**13 50 50.0**	**-0.4**
BSO1	**Boso 1**	**1.94**	**211**	P	**Pb**	**13 50 49.5**	**-1.2**
BSO1				*e*S	**Sb**	**13 51 14.3**	**-0.2**
BSO3	**Boso 3**	**2.04**	**222**	P	**Pb**	**13 50 51.3**	**-1.4**
BSO3				*e*S	**Sb**	**13 51 17.7**	**-0.1**
JAG	**Ashikaga**	**2.20**	**273**	P	**Pb**	**13 50 53.4**	**-2.2**
MJAR	**Matsushiro Arr**	**3.21**	**275**	Pn	**Pn**	**13 51 08.2**	**+2.3**
	2.5nm, 0.3s, baz=96, slow=8.5, SNR=10.0						
MAT	**Matsushiro**	**3.21**	**275**	P	Pb	13 51 08.7	-4.1
MAT				*e*S	**Sb**	**13 51 51.1**	**-0.6**
JHJ	**Hachijo jima 2**	**3.76**	**212**	Pn	**Pn**	**13 51 13.8**	**+0.3**
	9.5nm, 0.3s, baz=0.0, slow=20, SNR=16						
JHJ				Sn	**Sn**	**13 51 56.4**	**-1.1**
	20nm, 0.3s, baz=132, slow=23, SNR=7.6						
ASAJ	**Asahikawa**	**7.79**	**2**	Pn	Pn	13 52 10.8	+1.9
	0.3nm, 0.3s, baz=220, slow=12, SNR=4.3						
ASAJ				Sn	**Sn**	**13 53 35.3**	**-1.4**
	0.1nm, 0.3s, baz=342, slow=20, SNR=1.7						
ASAJ				LR	LR	13 55 44.6	
	comp=Z, 29nm, 19.0s, baz=235, slow=42						
SONM	**Songino Array**	**28.69**	**305**	P	P	13 56 14.5	+2.0
	0.9nm, 0.7s, baz=111, slow=8.2, SNR=4.6						
ZALV	**Zalesovo Beam**	**42.84**	**313**	P	**P**	**13 58 14.2**	**+0.9**
	0.4nm, 0.3s, baz=103, slow=6.2, SNR=2.4						
MKAR	**Makanchi Array**	**45.02**	**303**	P	**P**	**13 58 32.5**	**+1.6**
	0.6nm, 0.6s, baz=90, slow=8.6, SNR=8.3						
KURBB	**Kurchatov Arra**	**46.92**	**309**	P	**P**	**13 58 47.4**	**+1.5**
	0.3nm, 0.4s, baz=84, slow=8.6, SNR=5.3						

*ISCJB **14** 13:51:21.3±1.8, 36°.29N±0°.07×21°.25E±0°.06, h15km±12km, Error ellipse: s-maj=13.3km s-min=5.5km az=32.9*

*CSEM **14** 13:51:23.2, 36°.37N×21°.36E, h12km, ML2.7/6*

*THE **14** 13:51:23.2, 36°.37N×21°.36E, h12km, ML2.7/6, Error ellipse: s-maj=1.1km s-min=0.6km az=28.0*

ISC 14 13:51:22.8±1.9, 36°.37N±0°.06×21°.32E±0°.05, h15km±10km, n30, σ0§95/43, 2C, Southern Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PYL	**PYLOS**	**0.63**	**32**	P	**Pg**	**13 51 35.0**	**-0.1**
PYL				S	**Sg**	**13 51 43.7**	**+0.3**
PYL	**PYLOS**	**0.63**	**32**	P	**Pg**	**13 51 35.0**	**-0.1**
PYL				S	**Sg**	**13 51 43.7**	**+0.3**
ITM	**Ithomi**	**0.95**	**31**	P	**Pg**	**13 51 40.4**	**-0.7**
ITM				S	**Sb**	**13 51 54.2**	**+1.0**
ITM	**Ithomi**	**0.95**	**31**	P	**Pg**	**13 51 40.4**	**-0.7**
ITM				S	**Sb**	**13 51 54.2**	**+1.0**
AMT	**Artemida-Makis**	**1.21**	**15**	P	**Pn**	**13 51 44.9**	**-0.2**
AMT	**Artemida-Makis**	**1.21**	**15**	P	**Pn**	**13 51 44.9**	**-0.2**
VLX	**Vlachokerasia**	**1.31**	**40**	P	**Pn**	**13 51 46.3**	**-0.3**
VLX				S	**Sb**	**13 52 04.2**	**+0.4**
VLX	**Vlachokerasia**	**1.31**	**40**	P	**Pn**	**13 51 46.3**	**-0.3**
VLX				S	**Sb**	**13 52 04.2**	**+0.4**
VLI	**Veliai**	**1.35**	**74**	P	**Pn**	**13 51 46.9**	**-0.1**
VLI				S	**Sb**	**13 52 04.6**	**-0.1**
VLI	**Veliai**	**1.35**	**74**	P	**Pn**	**13 51 46.9**	**-0.1**
VLI				S	**Sb**	**13 52 04.6**	**-0.1**
KYTH	**Kithira**	**1.39**	**93**	P	**Pn**	**13 51 47.3**	**-0.2**
KYTH				S	**Sn**	**13 52 06.4**	**+0.8**
KYTH	**Kithira**	**1.39**	**93**	P	**Pn**	**13 51 47.3**	**-0.2**
KYTH				S	**Sn**	**13 52 06.4**	**+0.8**
ZKS	**Zakynthos**	**1.40**	**342**	P	**Pn**	**13 51 47.8**	**+0.1**
ZKS				S	**Sn**	**13 52 06.8**	**+0.9**
ZKS	**Zakynthos**	**1.40**	**342**	P	**Pn**	**13 51 47.8**	**+0.1**
ZKS				S	**Sn**	**13 52 06.8**	**+0.9**
DRO	**Drossia**	**1.61**	**11**	P	**Pn**	**13 51 50.2**	**-0.5**
DRO	**Drossia**	**1.61**	**11**	P	**Pn**	**13 51 50.2**	**-0.5**
ANKY	**Antikythira Is**	**1.68**	**107**	P	**Pn**	**13 51 51.5**	**0.0**
ANKY				S	**Sn**	**13 52 13.2**	**+0.5**
ANKY	**Antikythira Is**	**1.68**	**107**	P	**Pn**	**13 51 51.5**	**0.0**
ANKY				S	**Sn**	**13 52 13.2**	**+0.5**
RLS	**Riolos of Patr**	**1.69**	**4**	P	**Pn**	**13 51 51.5**	**-0.2**
RLS	**Riolos of Patr**	**1.69**	**4**	P	**Pn**	**13 51 51.5**	**-0.2**
KFL	**Anninata**	**1.79**	**346**	P	**Pn**	**13 51 53.5**	**+0.4**
KFL	**Anninata**	**1.79**	**346**	P	**Pn**	**13 51 53.5**	**+0.4**
IMMV	**Iera Moni Meta**	**2.34**	**112**	P	**Pn**	**13 52 00.1**	**-0.5**
IMMV	**Iera Moni Meta**	**2.34**	**112**	P	**Pn**	**13 52 00.1**	**-0.5**
THR5	**Thira Island,**	**3.25**	**88**	*e*PN	**Pn**	**13 52 12.3**	**-0.8**
APE	**Apeiranthos**	**3.45**	**77**	S	Sn	13 52 48.8	-7.8
TIP	**Timpagrande**	**4.58**	**309**	⇑*i*P	**Pn**	**13 52 33.6**	**+2.1**
TIP	**Timpagrande**	**4.58**	**309**	S	**Sn**	**13 53 22.8**	**-1.6**
MATE	**Matera**	**5.60**	**321**	⇑*i*P	**Pn**	**13 52 46.3**	**+0.8**
MATE	**Matera**	**5.60**	**321**	S	**Sn**	**13 53 45.3**	**-4.2**

IDC 14 13:52:07.5±1.6, 40°.90S×71°.82W, h0km, mb4.2/3, mb1 4.2/3, mb1mx3.8/22, mbtmp4.2/3, Error ellipse: s-maj=30.6km s-min=15.6km az=164.0, Southern Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLCA	**Paso Flores**	**0.98**	**81**	Pg	Pg	13 52 24.9	-1.3
	0.2nm, 0.3s, baz=293, slow=12, SNR=8.9						
PLCA				Lg	Lg	13 52 41.1	
	0.2nm, 0.3s, baz=56, slow=19, SNR=3.3						
PMSA	**Palmer Station**	**24.34**	**172**	P	P	13 57 26.6	0.0
	24nm, 0.4s, baz=327, slow=14, SNR=26						
LPAZ	**La Paz**	**24.73**	**8**	P	P	13 57 31.2	0.0
	1.0nm, 0.5s, baz=188, slow=9.0, SNR=3.6						
TORD	**Torodi Ar. Bea**	**85.44**	**69**	P	P	14 04 52.5	+0.4
	0.4nm, 0.8s, baz=241, slow=4.9, SNR=6.9						

*SJA **14** 13:53:18.8±0.6, 24°.28S×67°.12W, h186km±26km, ML2.6, MW3.4*

*IDC **14** 13:53:21.6±1.7, 23°.98S×66°.97W, h150km±21km, mb3.9/1, mb1 3.5/5, mb1mx3.2/25, mbtmp3.9/5, Error ellipse: s-maj=27.5km s-min=22.2km az=66.0*

ISC 14 13:53:22.0±1.2, 24°.05S±0°.10×67°.06W±0°.10, h181km, n11, σ2§12/9, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SLA	**San Lorenzo**	**1.56**	**115**	*e*P	Pn	13 53 52.9	-1.9
SLA				*e*S	**Sn**	**13 54 17.2**	**-3.0**
SLA				IAML		13 54 20.2	
	comp=Z, 36nm, 0.7s						
HJA	**Humahuaca**	**1.73**	**61**	*e*P	**Pn**	**13 53 56.7**	**0.0**
AZAP	**Zapla**	**1.83**	**96**	*e*P	Pn	13 53 56.0	-1.5
AZAP				*e*S	**Sn**	**13 54 23.6**	**-1.4**
AZAP				IAML		13 54 27.2	
	comp=Z, 27nm, 0.6s						
LVC	**Limon Verde**	**2.23**	**310**	P	Pn	13 53 60.0	-2.1
	comp=Z, 413nm, 0.3s, baz=141, slow=6.0, SNR=111						
LVC				S	**Sn**	**13 54 29.9**	**-3.2**
	comp=Z, 1μm, 0.3s, baz=312, slow=23, SNR=69						
FSA	**Cafayete**	**2.27**	**155**	*e*P	Pn	13 53 58.0	-4.3
YJA	**Yavi**	**2.35**	**38**	*e*P	**Pn**	**13 54 04.2**	**+0.7**
LPAZ	**La Paz**	**7.79**	**352**	P	**Pn**	**13 55 13.4**	**+0.2**
	comp=Z, 0.5nm, 0.3s, baz=157, slow=5.0, SNR=9.5						
LPAZ				S	**Sn**	**13 56 40.6**	**-0.5**
	comp=Z, 0.1nm, 0.3s, baz=225, slow=14, SNR=2.6						
CPUP	**Villa Florida**	**9.10**	**106**	P	Pn	13 55 28.1	-1.6
	comp=Z, 0.1nm, 0.3s, baz=281, slow=10, SNR=2.9						
PLCA	**Paso Flores**	**16.89**	**189**	P	**Pn**	**13 57 09.1**	**+1.2**
	comp=Z, 0.2nm, 0.3s, baz=24, slow=11, SNR=7.2						
MAW	**Mawson**	**81.40**	**163**	P	P	14 05 23.1	+5.0
	comp=Z, 1.5nm, 0.5s, baz=243, slow=6.8, SNR=3.9						
MKAR	**Makanchi Array**	**146.60**	**40**	PKPbc	**PKPdf**	**14 12 42.1**	**+1.8**
	comp=Z, 0.2nm, 0.6s, baz=308, slow=3.8, SNR=2.9						

IDC 14 13:54:31.9±1.1, 7°.44S×129°.64E, h0km, mb4.0/9, mb1 4.1/11, mb1mx3.8/42, mbtmp4.0/11, ML3.8/2, Error ellipse: s-maj=53.4km s-min=26.6km az=69.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**13.23**	**160**	Pn	Pn	13 57 40.9	-0.3
	0.7nm, 0.3s, baz=335, slow=13, SNR=27						
WRA				Sn	Sn	14 00 01.0	-8.3
	2.7nm, 0.3s, baz=330, slow=22, SNR=11						
ASAR	**Alice Springs**	**16.64**	**166**	Pn	Pn	13 58 27.5	+0.7
	0.3nm, 0.3s, baz=331, slow=9.2, SNR=24						
ASAR				Sn	Sn	14 01 22.8	-10
	0.6nm, 0.3s, baz=345, slow=26, SNR=5.5						
CMAR	**Chiang Mai Arr**	**39.75**	**311**	P	P	14 02 07.2	+0.6
	1.0nm, 0.6s, baz=138, slow=7.6, SNR=7.4						
SONM	**Songino Array**	**58.75**	**342**	P	P	14 04 32.5	+0.7
	0.3nm, 0.5s, baz=146, slow=5.2, SNR=2.4						
MKAR	**Makanchi Array**	**68.40**	**327**	P	P	14 05 35.6	+0.1
	1.7nm, 0.5s, baz=114, slow=9.1, SNR=27						
ZALV	**Zalesovo Beam**	**71.82**	**334**	P	P	14 05 55.1	-1.2
	0.8nm, 0.6s, baz=72, slow=4.7, SNR=2.9						
SEY	**Seymchan**	**72.30**	**11**	P	P	14 05 59.8	+0.8
	2.2nm, 0.7s, baz=242, slow=22, SNR=5.3						
KURBB	**Kurchatov Arra**	**72.70**	**329**	P	P	14 06 01.4	-0.3
	1.4nm, 0.5s, baz=131, slow=5.0, SNR=18						
BVAR	**Borovoye Array**	**78.25**	**328**	P	P	14 06 33.6	+0.1
	0.4nm, 0.5s, baz=122, slow=7.0, SNR=3.3						
TIXI	**Tiksi**	**78.93**	**360**	P	P	14 06 36.3	-0.6
	0.5nm, 0.3s, baz=141, slow=4.3, SNR=2.9						
NRIK	**Noril'sk**	**81.90**	**346**	P	P	14 06 53.1	+0.2
	1.8nm, 0.5s, baz=146, slow=3.6, SNR=3.0						
TORD	**Torodi Ar. Bea**	**128.54**	**281**	PKP	PKPdf	14 13 41.7	-0.3
	0.1nm, 0.4s, baz=109, slow=2.4, SNR=3.3						

MEX 14 13:57:17.2±0.5, 14°.42N×93°.15W, h17km±67km, MD3.5, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		**1.28**	**357**	*i* P	Pn	13 57 36.8	-3.4
PCIG				*e*S	Sb	13 57 51.7	-5.2
CCIG	**Comitan**	**2.09**	**28**	*e*P	Pn	13 57 49.2	-2.4
CCIG				*i* S	Sn	13 58 13.5	-3.9

**IDC 14 14:02:47.1±6.5, 6°.83S×147°.70E, h74km±48km, mb3.5/2, mb1 3.5/4, mb1mx3.2/32, mbtmp3.6/4, ML3.2

0.8nm,0.7s,baz=6.1,slow=7.3,SNR=8.9
ASAR Alice Springs 60.73 188 P P 14 13 19.0 +0.5
0.3nm,0.9s,baz=1.2,slow=7.5,SNR=3.0

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*CSEM **14** 14:08:00.9±0.2,33°.58N×35°.71E,h8km,ML2.7,Error ellipse: s-maj=5.0km s-min=2.6km az=62.0*
*GRAL **14** 14:08:00.4±0.3,33°.57N×35°.80E,h18km±2km,MD2.7*
*ISCJB **14** 14:08:01.4±0.5,33°.60N±0°.03×35°.74E±0°.04,h10km±3km,Error ellipse: s-maj=7.0km s-min=3.3km az=149.2*
*NSSC **14** 14:08:01.6±1.4,33°.59N×35°.74E,h10km±5km,MD1.1,ML2.1*

ISC 14 14:08:00.4±0.9,33°.58N±0°.03×35°.72E±0°.04,h13km±6km,n27,σ0s52/51,Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RCY	**Rachaya**	**0.13**	**132**	*eP*	**Pg**	**14 08 03.8**	**-0.1**
RCY				*eS*	**Sg**	**14 08 06.3**	**-0.1**
RCY	**Rachaya**	**0.13**	**132**	*eP*	**Pg**	**14 08 03.8**	**-0.1**
RCY				*eS*	**Sg**	**14 08 06.3**	**-0.1**
DQRL	**Deir Qamar**	**0.17**	**315**	*eP*	**Pb**	**14 08 05.5**	**-0.1**
DQRL				*eS*	**Sb**	**14 08 09.3**	**+0.3**
DQRL	**Deir Qamar**	**0.17**	**315**	*eP*	**Pb**	**14 08 05.5**	**-0.1**
DQRL				*eS*	**Sb**	**14 08 09.3**	**+0.3**
BRBR	**Barbar**	**0.26**	**131**	*eP*	**Pb**	**14 08 06.5**	**-0.6**
BRBR				*eS*	**Sb**	**14 08 11.4**	**-0.2**
BRBR				AML	AML	14 08 12.6	
	comp=N,551nm,0.5s						
BRBR	**Barbar**	**0.26**	**131**	*eP*	**Pb**	**14 08 06.5**	**-0.6**
BRBR				*eS*	**Sb**	**14 08 11.4**	**-0.2**
BHL	**Bhannes**	**0.32**	**351**	*eP*	**Pg**	**14 08 07.3**	**+0.2**
BHL				*eS*	**Sg**	**14 08 12.3**	**+0.7**
BHL	**Bhannes**	**0.32**	**351**	*eP*	**Pg**	**14 08 07.3**	**+0.2**
BHL				*eS*	**Sg**	**14 08 12.3**	**+0.7**
BEYL	**Beirut**	**0.34**	**327**	*eP*	**Pg**	**14 08 07.8**	**+0.4**
BEYL	**Beirut**	**0.34**	**327**	*eP*	**Pg**	**14 08 07.8**	**+0.4**
QASN	**Qassioun**	**0.47**	**96**	*eP*	**Pb**	**14 08 10.6**	**0.0**
QASN				*eS*	**Sg**	**14 08 16.5**	**+0.5**
QASN				AML	AML	14 08 19.6	
	comp=N,849nm,0.4s						
QASN	**Qassioun**	**0.47**	**96**	*eP*	**Pb**	**14 08 10.6**	**0.0**
QASN				*eS*	**Sg**	**14 08 16.5**	**+0.5**
TOTH	**TOTAH**	**0.63**	**110**	*eP*	**Pb**	**14 08 13.6**	**+0.2**
TOTH				*eS*	**Sb**	**14 08 23.2**	**+1.0**
TOTH				AML	AML	14 08 28.3	
	comp=E,89nm,0.5s						
TOTH				AML	AML	14 08 29.8	
	comp=N,93nm,0.4s						
TOTH	**TOTAH**	**0.63**	**110**	*eP*	**Pb**	**14 08 13.6**	**+0.2**
TOTH				*eS*	**Sb**	**14 08 23.2**	**+1.0**
HWQ	**Hawqa**	**0.72**	**15**	*eP*	**Pg**	**14 08 13.1**	**-1.3**
TCHB	**Talchebab**	**0.94**	**167**	*eP*	**Pn**	**14 08 18.8**	**-0.5**
TCHB				*eS*	**Sn**	**14 08 32.7**	**+0.1**
TCHB				AML	AML	14 08 44.3	
	comp=N,66nm,0.7s						
TCHB				AML	AML	14 08 45.7	
	comp=E,39nm,0.5s						
TCHB	**Talchebab**	**0.94**	**167**	*eP*	**Pn**	**14 08 18.8**	**-0.5**
TCHB				*eS*	**Sn**	**14 08 32.7**	**+0.1**
HAWK	**Haweek**	**1.09**	**31**	*eP*	**Pb**	**14 08 21.2**	**-0.1**
HAWK				*eS*	**Sn**	**14 08 36.9**	**+0.3**
HAWK				AML	AML	14 08 44.6	
	comp=N,48nm,0.4s						
HAWK	**Haweek**	**1.09**	**31**	*eP*	**Pb**	**14 08 21.2**	**-0.1**
HAWK				*eS*	**Sn**	**14 08 36.9**	**+0.3**
SALA	**Sala**	**1.22**	**135**	*eP*	**Pg**	**14 08 24.2**	**+0.3**
SALA				*eS*	**Sn**	**14 08 39.6**	**-0.1**
SALA				AML	AML	14 08 43.6	
	comp=N,49nm,0.5s						
SALA				AML	AML	14 08 44.1	
	comp=E,7.9nm,0.5s						
SALA	**Sala**	**1.22**	**135**	*eP*	**Pg**	**14 08 24.2**	**+0.3**
SALA				*eS*	**Sn**	**14 08 39.6**	**-0.1**
ZALF	**Zalf**	**1.51**	**116**	*eP*	**Pb**	**14 08 28.6**	**+0.4**
ZALF				*eS*	**Sb**	**14 08 47.2**	**-0.1**
ZALF				AML	AML	14 08 50.0	
	comp=N,22nm,0.6s						
ZALF				AML	AML	14 08 53.5	
	comp=E,19nm,0.4s						
ZALF	**Zalf**	**1.51**	**116**	*eP*	**Pb**	**14 08 28.6**	**+0.4**
ZALF				*eS*	**Sb**	**14 08 47.2**	**-0.1**
BIDA	**Albida**	**1.51**	**19**	*eP*	**Pb**	**14 08 28.6**	**+0.2**
BIDA				*eS*	**Sg**	**14 08 49.0**	**-0.1**
BIDA				AML	AML	14 08 55.0	
	comp=N,125nm,0.4s						
BIDA	**Albida**	**1.51**	**19**	*eP*	**Pb**	**14 08 28.6**	**+0.2**
BIDA				*eS*	**Sg**	**14 08 49.0**	**-0.1**
ARNB	**Al Arnab**	**2.28**	**5**	*eP*	**Pb**	**14 08 40.1**	**-1.4**
ARNB				*eS*	**Sn**	**14 09 06.5**	**+0.6**
ARNB				AML	AML	14 09 17.3	
	comp=N,21nm,0.5s						
ARNB	**Al Arnab**	**2.28**	**5**	*eP*	**Pb**	**14 08 40.1**	**-1.4**
ARNB				*eS*	**Sn**	**14 09 06.4**	**+0.6**

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*NEIC **14** 14:10:41.4,32°.88S×22°.12E,h5km,mb3.8/2,ML4.1(PRE),After PRE.*
NEIC Felt [III] at George, Knysna and Plettenberg Bay; [II] at Mossel Bay. Also felt at Port Elizabeth and Somerset West.
*PRE **14** 14:10:41.7±1.6,32°.78S×22°.14E,h5km,ML4.8*

ISC 14 14:10:43.1±1.5,32°.78S±0°.04×22°.08E±0°.04,h25km±13km,n32,σ2s04/59,3C-3D,South Africa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SUR	**Sutherland**	**1.14**	**290**	*ePg*	**Pb**	**14 11 04.6**	**+0.3**
SUR				*eSg*	**Sn**	**14 11 19.6**	**+1.0**
CVNA	**Calvinia**	**2.35**	**303**	*eP*	**Pn**	**14 11 22.2**	**+1.9**
CVNA				*eS*	**Sb**	**14 11 52.3**	**-1.2**
CVNA				AML	AML	14 11 59.2	
	comp=Z,2μm,0.7s						
CVNA	**Calvinia**	**2.35**	**303**	⇓*iP*	**Pb**	**14 11 23.8**	**-1.1**
CVNA				*eS*	**Sb**	**14 11 53.8**	**+0.3**
ELIM	**Elim**	**2.66**	**226**	*eP*	**Pn**	**14 11 25.7**	**+1.3**
ELIM				*eS*	**Sn**	**14 11 58.7**	**+3.0**
ELIM				AML	AML	14 12 09.8	
	comp=Z,3μm,0.6s						
ELIM	**Elim**	**2.66**	**226**	⇓*iP*	**Pn**	**14 11 25.4**	**+1.0**
ELIM				*eS*	**Sn**	**14 11 55.8**	**+0.1**
GRM	**Grahamstown**	**3.76**	**99**	*eP*	**Pn**	**14 11 41.5**	**+1.9**
GRM				*eS*	**Sn**	**14 12 24.2**	**+1.1**
GRM				AML	AML	14 12 39.5	
	comp=Z,1μm,0.4s						
GRM	**Grahamstown**	**3.76**	**99**	⇑*iP*	**Pn**	**14 11 41.4**	**+1.9**
GRM				*eS*	**Sn**	**14 12 24.7**	**+1.6**
KEIM	**Keimoes**	**4.18**	**347**	*eP*	**Pn**	**14 11 47.5**	**+2.2**
KEIM				*eS*	**Sn**	**14 12 35.9**	**+2.5**
KEIM				AML	AML	14 13 02.1	
	comp=Z,386nm,0.6s						
UPI	**Upington**	**4.46**	**351**	*eP*	**Pn**	**14 11 50.8**	**+1.5**
UPI				*eS*	**Sn**	**14 12 42.0**	**+1.6**
UPI				AML	AML	14 13 07.9	
	comp=Z,419nm,0.3s						
UPI	**Upington**	**4.46**	**351**	⇑*iP*	**Pn**	**14 11 51.0**	**+1.7**
UPI				*eS*	**Sn**	**14 12 44.2**	**+3.8**
KOMG	**Komaggas**	**4.93**	**306**	*eP*	**Pn**	**14 11 57.7**	**+2.1**
KOMG				*eS*	**Sn**	**14 12 52.8**	**+0.9**
KOMG				AML	AML	14 13 14.9	
	comp=Z,804nm,0.4s						
KOMG	**Komaggas**	**4.93**	**306**	*eP*	**Pn**	**14 11 58.4**	**+2.8**
KOMG				*eS*	**Sn**	**14 12 55.7**	**+3.8**
BOSA	**Boshof**	**4.98**	**34**	*iP*	Pn	14 12 02.7	+6.3
BOSA				*iS*	**Sb**	**14 13 09.2**	**+0.2**
SWZ	**Schweizer**	**6.25**	**28**	*eP*	**Pn**	**14 12 14.2**	**+0.2**
SWZ				*eS*	**Sn**	**14 13 23.1**	**-1.7**
SWZ				AML	AML	14 14 00.3	
	comp=Z,519nm,0.6s						
SWZ	**Schweizer**	**6.25**	**28**	*eP*	**Pn**	**14 12 15.7**	**+1.7**
SWZ				*eS*	**Sn**	**14 13 25.6**	**+0.8**
KSD	**Kokstad**	**6.64**	**72**	*eP*	**Pn**	**14 12 21.0**	**+1.7**
KSD				*eS*	**Sn**	**14 13 33.1**	**-1.3**
KSD				AML	AML	14 14 21.2	
	comp=Z,166nm,0.4s						
KSD	**Kokstad**	**6.64**	**72**	⇓*iP*	**Pn**	**14 12 21.7**	**+2.4**
KSD				*eS*	**Sn**	**14 13 34.4**	**+0.1**
PRYS	**Parys**	**7.42**	**40**	*eP*	**Pn**	**14 12 30.7**	**+0.7**
PRYS				*eS*	**Sn**	**14 13 50.8**	**-2.8**
PRYS				AML	AML	14 14 34.8	
	comp=Z,270nm,0.8s						
PRYS	**Parys**	**7.42**	**40**	*eP*	**Pn**	**14 12 31.6**	**+1.6**
PRYS				*eS*	**Sn**	**14 13 53.9**	**+0.3**
WDLM	**Western Deep L**	**7.86**	**38**	*eP*	**Pn**	**14 12 38.9**	**+2.9**
WDLM				*eS*	**Sn**	**14 14 01.2**	**-3.1**
WDLM				AML	AML	14 14 08.1	
	comp=Z,102nm,0.4s						
KLOF	**Kloof**	**8.02**	**38**	*eP*	**Pn**	**14 12 39.4**	**+1.2**
KLOF				*eS*	**Sn**	**14 14 07.6**	**-0.7**
ERPM	**east rand prop**	**8.37**	**41**	*eP*	**Pn**	**14 12 44.5**	**+1.6**
ERPM				*eS*	**Sn**	**14 14 15.3**	**-1.4**
ERPM				AML	AML	14 15 05.1	
	comp=Z,178nm,0.8s						
ERPM	**east rand prop**	**8.37**	**41**	*eP*	**Pn**	**14 12 44.8**	**+1.8**
ERPM				*eS*	**Sn**	**14 14 17.0**	**+0.2**
SLR	**Silverton**	**8.87**	**39**	*eP*	**Pn**	**14 12 51.5**	**+1.7**
SLR				*eS*	**Sn**	**14 14 29.6**	**+0.5**
POGA	**Pongola**	**9.86**	**59**	*eP*	**Pn**	**14 13 06.3**	**+2.9**
POGA				*eS*	**Sn**	**14 14 51.1**	**-2.2**
POGA				AML	AML	14 16 18.1	
	comp=Z,109nm,0.6s						
POGA	**Pongola**	**9.86**	**59**	⇑*iP*	Pn	14 13 07.9	+4.6
POGA				*eS*	**Sn**	**14 14 53.7**	**+0.4**
MSNA	**Messina**	**12.55**	**36**	*eP*	**Pn**	**14 13 41.9**	**+1.7**
MSNA				*eS*	**Sn**	**14 15 54.6**	**-4.7**
MATP	**Matopo**	**13.58**	**27**	*iP*	Pn	14 13 49.3	-5.0
MATP				*iS*	**Sn**	**14 16 22.4**	**-2.0**
BLWY	**Bulawayo**	**13.88**	**26**	*iP*	**Pn**	**14 13 53.9**	**-4.5**
BLWY				*iS*	**Sn**	**14 16 30.1**	**-1.8**
TSUM	**Tsumeb**	**14.11**	**342**	Pn	**Pn**	**14 14 01.5**	**-0.1**
TSUM				*eSn*	S	14 16 49.0	-9.3
TSUM				*eLg*	Lg	14 17 53.3	
LSZ	**Lusaka**	**18.29**	**19**	Pn	**Pn**	**14 14 52.4**	**-3.0**
	comp=Z,3.3nm,0.7s						
LSZ				*eSn*	**S**	**14 18 24.9**	**+1.5**
LSZ				*eLg*	Lg	14 20 08.1	
QSPA	**South Pole Qui**	**57.43**	**180**	P	**P**	**14 20 28.5**	**-1.0**
	comp=Z,0.5nm,0.4s						

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*NEIC **14** 14:25:03.6,43°.55S×172°.83E,h9km,ML4.1(WEL),After WEL.*
NEIC Felt at Christchurch.

WEL 14 14:25:03.5±0.1,43°.56S×172°.85E,h9km,ML4.2/31,3C-2D,Error ellipse: s-maj=1.4km s-min=0.6km az=90.0,South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRLZ	**Canterbury Las**	**0.17**	**263**	PG	Pg	14 25 07.2	+0.2
CRLZ				SG	Sg	14 25 10.1	+0.7
CRLZ				AML	AML	14 25 10.1	
CRLZ				AML	AML	14 25 10.2	
CRLZ				AML	AML	14 25 10.2	
CRLZ	**Canterbury Las**	**0.17**	**263**	Pg	Pg	14 25 07.2	+0.2
MQZ	**McQueen's Vall**	**0.21**	**223**	⇑*e*PG	Pg	14 25 08.0	+0.2
MQZ				SG	Sg	14 25 11.3	+0.6
MQZ				AML	AML	14 25 11.4	
MQZ	**McQueen's Vall**	**0.21**	**223**	*e*Pg	Pg	14 25 08.0	+0.2
MQZ				Sg	Sg	14 25 11.3	+0.6
OXZ	**Oxford**	**0.63**	**291**	P*	Pg	14 25 15.7	-0.1
OXZ	**Oxford**	**0.63**	**291**	P*	Pg	14 25 15.7	-0.1
LTZ	**Lake Taylor**	**0.88**	**331**	⇓P*	Pg	14 25 20.2	-0.2
LTZ				AML	AML	14 25 33.0	
LTZ				AML	AML	14 25 33.3	
LTZ	**Lake Taylor**	**0.88**	**331**	P*	Pg	14 25 20.0	-0.5
KHZ	**Kahutara**	**1.25**	**24**	P*	Pn	14 25 24.9	-2.2
KHZ	**Kahutara**	**1.25**	**24**	P*	Pn	14 25 24.9	-2.2
RPZ	**Rata Peaks**	**1.31**	**262**	PN	Pn	14 25 26.7	-1.4
RPZ				AML	AML	14 25 48.9	
RPZ				AML	AML	14 25 57.6	
RPZ	**Rata Peaks**	**1.31**	**262**	Pn	Pn	14 25 26.7	-1.4
WVZ	**Waitaha Valley**	**1.61**	**287**	⇑PN	Pn	14 25 31.2	-1.0
WVZ				AML	AML	14 26 01.2	
WVZ				AML	AML	14 26 04.0	
WVZ	**Waitaha Valley**	**1.61**	**287**	Pn	Pn	14 25 31.2	-1.0
THZ	**Tophouse**	**1.79**	**1**	⇑PN	Pn	14 25 32.9	-1.8
THZ				AML	AML	14 26 04.8	
THZ				AML	AML	14 26 09.4	
THZ	**Tophouse**	**1.79**	**1**	Pn	Pn	14 25 32.9	-1.8
DSZ	**Denniston Nort**	**1.97**	**337**	AML	AML	14 26 03.6	
DSZ				AML	AML	14 26 03.9	
DSZ				AML	AML	14 26 04.0	
DSZ				AML	AML	14 26 04.6	
DSZ	**Denniston Nort**	**1.97**	**337**	Pn	Pn	14 25 37.0	-0.1
BSWZ	**Blackbirch Sta**	**1.99**	**23**	PN	Pn	14 25 35.8	-1.6
BSWZ				AML	AML	14 26 02.3	
BSWZ				AML	AML	14 26 30.4	
BSWZ	**Blackbirch Sta**	**1.99**	**23**	Pn	Pn	14 25 35.8	-1.6
LBZ	**Lake Benmore**	**2.10**	**246**	PN	Pn	14 25 38.2	-0.6
LBZ				AML	AML	14 26 16.8	
LBZ				AML	AML	14 26 16.8	
LBZ				AML	AML	14 26 17.4	
LBZ				AML	AML	14 26 17.4	
LBZ	**Lake Benmore**	**2.10**	**246**	Pn	Pn	14 25 38.2	-0.6
ODZ	**Otahua Downs**	**2.17**	**226**	PN	Pn	14 25 38.5	-1.4
ODZ				AML	AML	14 26 16.7	
ODZ				AML	AML	14 26 16.7	
ODZ				AML	AML	14 26 19.0	
ODZ				AML	AML	14 26 19.0	
ODZ	**Otahua Downs**	**2.17**	**226**	Pn	Pn	14 25 38.5	-1.4
FOZ	**Fox Glacier**	**2.21**	**270**	PN	Pn	14 25 40.6	+0.3
FOZ				AML	AML	14 26 22.0	
FOZ				AML	AML	14 26 22.1	
FOZ				AML	AML	14 26 25.8	
FOZ				AML	AML	14 26 25.8	
FOZ	**Fox Glacier**	**2.21**	**270**	Pn	Pn	14 25 40.6	+0.3
TUWZ	**Tuamarina**	**2.27**	**21**	PN	Pn	14 25 39.2	-2.0
TUWZ				AML	AML	14 26 12.2	
TUWZ				AML	AML	14 26 31.3	
TUWZ	**Tuamarina**	**2.27**	**21**	Pn	Pn	14 25 39.2	-2.0
NNZ	**Nelson**	**2.37**	**10**	⇓PN	Pn	14 25 41.6	-1.0
NNZ				AML	AML	14 26 11.1	
NNZ				AML	AML	14 26 25.2	
NNZ	**Nelson**	**2.37**	**10**	Pn	Pn	14 25 41.6	-1.0
TCW	**Tory Channel**	**2.57**	**25**	AML	AML	14 26 16.3	
TCW				AML	AML	14 26 19.1	
TCW	**Tory Channel**	**2.57**	**25**	Pn	Pn	14 25 43.6	-1.7
BHW	**Baring Head**	**2.62**	**36**	PN	Pn	14 25 43.5	-2.4
BHW	**Baring Head**	**2.62**	**36**	Pn	Pn	14 25 43.5	-2.4
PLWZ	**Palliser**	**2.66**	**43**	Pn	Pn	14 25 44.2	-2.5
QRZ	**Quartz Range**	**2.74**	**355**	AML	AML	14 26 33.8	
QRZ				AML	AML	14 26 33.9	
QRZ				AML	AML	14 26 36.7	
QRZ				AML	AML	14 26 36.7	
QRZ	**Quartz Range**	**2.74**	**355**	Pn	Pn	14 25 47.3	-0.4
HHSZ	**Highcliff Hill**	**2.83**	**214**	PN	Pn	14 25 47.8	-1.1
HHSZ	**Highcliff Hill**	**2.83**	**214**	Pn	Pn	14 25 47.8	-1.1
CAW	**Cannon Point**	**2.95**	**35**	PN	Pn	14 25 48.0	-2.5
CAW				AML	AML	14 26 23.2	
CAW				AML	AML	14 26 26.2	
CAW	**Cannon Point**	**2.95**	**35**	Pn	Pn	14 25 48.0	-2.5
JCZ	**Jackson Bay**	**2.99**	**259**	PN	Pn	14 25 51.0	-0.2
JCZ				AML	AML	14 26 44.5	
JCZ				AML	AML	14 26 47.2	
JCZ	**Jackson Bay**	**2.99**	**259**	Pn	Pn	14 25 51.0	-0.2
TRWZ	**Traveller**	**3.01**	**45**	AML	AML	14 26 06.6	
TRWZ	**Traveller**	**3.01**	**45**	Pn	Pn	14 25 48.5	-2.9
WKZ	**Wanaka**	**3.04**	**244**	PN	Pn	14 25 50.5	-1.3
WKZ				AML	AML	14 26 46.7	
WKZ				AML	AML	14 26 46.7	
WKZ				AML	AML	14 26 47.3	
WKZ				AML	AML	14 26 47.3	
WKZ	**Wanaka**	**3.04**	**244**	Pn	Pn	14 25 50.5	-1.3
EAZ	**Earnscleugh**	**3.04**	**235**	PN	Pn	14 25 50.7	-1.1
EAZ				AML	AML	14 26 44.8	
EAZ				AML	AML	14 26 44.8	
EAZ				AML	AML	14 26 47.2	
EAZ				AML	AML	14 26 47.2	
EAZ	**Earnscleugh**	**3.04**	**235**	Pn	Pn	14 25 50.8	-1.1
KIW	**Kapiti Island**	**3.10**	**30**	AML	AML	14 26 25.9	
MTW	**Mount Morrison**	**3.10**	**40**	PN	Pn	14 25 49.6	-3.0
MTW				AML	AML	14 26 26.4	
MTW				AML	AML	14 26 33.9	
MTW	**Mount Morrison**	**3.10**	**40**	Pn	Pn	14 25 49.6	-3.0
OGWZ	**Otaki Gorge**	**3.23**	**33**	PN	Pn	14 25 51.9	-2.6
OGWZ	**Otaki Gorge**	**3.23**	**33**	Pn	Pn	14 25 51.9	-2.6
TUZ	**Tuapeka**	**3.32**	**223**	PN	Pn	14 25 54.6	-0.9
TUZ				AML	AML	14 26 56.6	
TUZ				AML	AML	14 26 56.6	
TUZ				AML	AML	14 27 05.9	
TUZ				AML	AML	14 27 06.0	
TUZ	**Tuapeka**	**3.32**	**223**	Pn	Pn	14 25 54.6	-0.9
MRZ	**Mangatainoka R**	**3.53**	**36**	PN	Pn	14 25 55.6	-3.0
MRZ	**Mangatainoka R**	**3.53**	**36**	Pn	Pn	14 25 55.6	-3.0
MSZ	**Milford Sound**	**3.72**	**251**	AML	AML	14 27 04.6	
MSZ				AML	AML	14 27 04.6	
MSZ	**Milford Sound**	**3.72**	**251**	Pn	Pn	14 26 01.3	+0.2
PRWZ	**Pori Road**	**3.79**	**39**	Pn	Pn	14 25 59.3	-2.9
BFZ	**Birch Farm**	**3.82**	**43**	Pn	Pn	14 25 59.4	-3.2
MLZ	**Mavora Lakes**	**3.84**	**240**	AML	AML	14 27 10.1	
MLZ				AML	AML	14 27 10.7	
MLZ	**Mavora Lakes**	**3.84**	**240**	Pn	Pn	14 26 01.5	-1.4
SYZ	**Scrubby Hill**	**3.98**	**220**	PN	Pn	14 26 03.9	-0.7
SYZ				AML	AML	14 27 26.4	
SYZ				AML	AML	14 27 30.9	
SYZ	**Scrubby Hill**	**3.98**	**220**	Pn	Pn	14 26 03.9	-0.7
ANWZ	**Angora Road**	**4.11**	**42**	PN	Pn	14 26 03.4	-3.0
WAZ	**Wanganui**	**4.12**	**24**	AML	AML	14 27 12.0	
TSZ	**Takapari Road**	**4.20**	**35**	Pn	Pn	14 26 04.4	-3.4
WHZ	**Wether Hill Ro**	**4.20**	**235**	PN	Pn	14 26 05.8	-2.0
WHZ				AML	AML	14 27 31.9	
WHZ				AML	AML	14 27 32.0	
WHZ	**Wether Hill Ro**	**4.20**	**235**	Pn	Pn	14 26 05.8	-2.0
PNHZ	**Pukenui**	**4.42**	**36**	PN	Pn	14 26 07.3	-3.5
PNHZ	**Pukenui**	**4.42**	**36**	Pn	Pn	14 26 07.3	-3.5
VRZ	**Vera Road**	**4.65**	**19**	AML	AML	14 27 10.5	
VRZ				AML	AML	14 27 53.1	
VRZ	**Vera Road**	**4.65**	**19**	Pn	Pn	14 26 13.3	-0.6
APZ	**The Paps**	**4.75**	**225**	PN	Pn	14 26 14.9	-0.4
APZ				AML	AML	14 28 46.0	
APZ	**The Paps**	**4.75**	**225**	Pn	Pn	14 26 14.9	-0.4
HIZ	**Hauiti**	**5.26**	**17**	PN	Pn	14 26 21.3	-1.1
HIZ				AML	AML	14 27 25.4	
HIZ				AML	AML	14 28 13.8	
HIZ	**Hauiti**	**5.26**	**17**	Pn	Pn	14 26 21.3	-1.1
ARHZ	**Aropaoanui**	**5.30**	**37**	Pn	Pn	14 26 20.8	-2.0
TOZ	**Tahuroa Road**	**6.16**	**20**	Pn	Pn	14 26 32.2	-2.4
MWZ	**Matawai**	**6.30**	**36**	Pn	Pn	14 26 31.2	-5.5

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*DDA **14** 14:28:34.7,40°.07N×40°.42E,h30km,Md2.6*
*ISK **14** 14:28:37.9,39°.92N×40°.45E,h6km,MD2.8*
*CSEM **14** 14:28:37.9±0.2,39°.87N×40°.36E,h2km,MD2.6,Error ellipse: s-maj=6.6km s-min=4.8km az=23.0*

ISC 14 14:28:37.5±0.9,39°.89N±0°.03×40°.41E±0°.02,h10km±7km,n28,σ0s68/38,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KOPT	**Kop Dagi**	**0.14**	**28**	P	**Pg**	**14 28 40.8**	**-0.2**
KOPT				S	**Sg**	**14 28 43.7**	**+0.2**
KOPT	**Kop Dagi**	**0.14**	**28**	*iP*	**Pg**	**14 28 40.8**	**-0.2**
KOPT				*iS*	**Sg**	**14 28 43.7**	**+0.2**
YEDI	**Yedisu-Bingol**	**0.46**	**167**	*e*PG	**Pb**	**14 28 47.8**	**0.0**
YEDI	**Yedisu-Bingol**	**0.46**	**167**	*e*Pg	**Pb**	**14 28 47.8**	**0.0**
ECAT	**Cat-ERZURUM**	**0.52**	**123**	P	**Pg**	**14 28 48.1**	**+0.4**
ECAT				S	**Sb**	**14 28 56.6**	**+0.2**
ECAT	**Cat-ERZURUM**	**0.52**	**123**	*iP*	**Pg**	**14 28 48.1**	**+0.4**
ECAT				*iS*	**Sb**	**14 28 56.6**	**+0.2**
BAYT	**Ayd¯–ntepe-Bay**	**0.54**	**338**	*e*PG	**Pg**	**14 28 48.6**	**+0.5**
BAYT				*e*SG	**Sb**	**14 28 56.9**	**-0.2**
BAYT	**Ayd¯–ntepe-Bay**	**0.54**	**338**	*e*Pg	**Pg**	**14 28 48.6**	**+0.5**
BAYT				*e*Sg	**Sb**	**14 28 56.9**	**-0.2**
EUZM	**Uzumlu**	**0.58**	**252**	P	**Pg**	**14 28 48.7**	**0.0**
EUZM				S	**Sb**	**14 28 57.8**	**-0.2**
EUZM	**Uzumlu**	**0.58**	**252**	*iP*	**Pg**	**14 28 48.7**	**0.0**
EUZM				*iS*	**Sb**	**14 28 57.8**	**-0.2**
ERZN	**Erzincan**	**0.61**	**240**	*e*PG	**Pb**	**14 28 50.9**	**+0.6**
EZM	**Erzurum**	**0.73**	**88**	*e*PG	**Pg**	**14 28 51.8**	**0.0**
ERZM	**Erzurum**	**0.74**	**88**	P	**Pb**	**14 28 52.8**	**+0.3**
ERZM				S	**Sn**	**14 29 04.5**	**-1.0**
ERZM	**Erzurum**	**0.74**	**88**	*iP*	**Pb**	**14 28 52.8**	**+0.3**
ERZM				*iS*	**Sn**	**14 29 04.5**	**-1.0**
EZC	**Erzincan**	**0.82**	**261**	*e*Pg	**Pg**	**14 28 50.9**	**-2.5**
GUMT	**Gumushane**	**0.91**	**309**	*e*PG	**Pb**	**14 28 55.6**	**+0.2**
GUMT	**Gumushane**	**0.91**	**309**	*e*Pg	**Pb**	**14 28 55.6**	**+0.2**
BNGB	**Bing¯¶l**	**0.92**	**167**	*e*PG	**Pn**	**14 28 56.4**	**-0.2**
KELT	**Kelkit**	**0.92**	**287**	P	**Pn**	**14 28 56.5**	**-0.2**
KELT	**Kelkit**	**0.92**	**287**	*iP*	**Pn**	**14 28 56.5**	**-0.2**
KELT				*iS*	**Sn**	**14 29 10.7**	**+0.7**
BINT	**Bingol**	**1.01**	**176**	*e*Pg	**Pg**	**14 28 56.4**	**-0.6**
KTUT	**Trabzon**	**1.20**	**336**	*e*PN	**Pg**	**14 29 01.1**	**+0.5**
KTUT	**Trabzon**	**1.20**	**336**	*e*Pn	**Pg**	**14 29 01.1**	**+0.5**
PTK	**Pertek**	**1.27**	**219**	*e*PN	**Pg**	**14 29 03.3**	**+1.4**
PTK	**Pertek**	**1.27**	**219**	*e*Pn	**Pg**	**14 29 03.3**	**+1.4**
DBAD	**Bademkaya**	**1.50**	**41**	*iP*	Pn	14 28 59.0	-5.4
DBAD				*iS*	Sn	14 29 09.6	-14
ESPY	**Espiye-Giresun**	**1.64**

10C-8D, Error ellipse: s-maj=2.8km s-min=1.9km az=0.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HAZ	**Te Kaha**	**0.63**	**128**	⇑PN	Pn	14 38 00.5	-0.1
HAZ				SN	Sn	14 38 16.4	+0.8
OPRZ	**Ohinepanea**	**0.68**	**225**	⇑PN	Pn	14 38 00.7	-0.2
OPRZ				SN	Sn	14 38 16.8	+0.6
URZ	**Urewera**	**0.89**	**182**	⇓PN	Pn	14 38 02.3	-0.4
URZ				AML	AML	14 38 19.7	
URZ				AML	AML	14 38 24.8	
MXZ	**Matakaoa Point**	**0.94**	**102**	⇑PN	Pn	14 38 03.5	+0.5
MXZ				AML	AML	14 38 18.9	
MXZ				AML	AML	14 38 22.3	
MXZ				AML	AML	14 38 26.8	
MWZ	**Matawai**	**1.01**	**163**	PN	Pn	14 38 03.6	-0.1
MWZ				AML	AML	14 38 25.1	
MWZ				AML	AML	14 38 25.1	
RRRZ	**Republican Roa**	**1.10**	**207**	PN	Pn	14 38 03.9	-0.6
PUZ	**Puketiti**	**1.12**	**129**	⇑PN	Pn	14 38 04.5	-0.3
PUZ				AML	AML	14 38 31.0	
PUZ				AML	AML	14 38 34.6	
RAGZ	**Rawiri**	**1.15**	**170**	PN	Pn	14 38 06.2	+1.1
MUGZ	**Murupara**	**1.15**	**195**	⇓PN	Pn	14 38 04.7	-0.4
MUGZ				SN	Sn	14 38 23.3	-0.4
TKGZ	**Te Karaka**	**1.20**	**153**	PN	Pn	14 38 05.8	+0.2
RTZ	**Ruatahuna**	**1.25**	**186**	PN	Pn	14 38 06.7	+0.5
PRRZ	**Plateau Road**	**1.28**	**208**	⇓PN	Pn	14 38 06.3	-0.2
ALRZ	**Allen Road**	**1.36**	**208**	PN	Pn	14 38 07.0	-0.2
TOZ	**Tahuroa Road**	**1.37**	**254**	⇓PN	Pn	14 38 07.6	+0.3
TOZ				SN	Sn	14 38 28.3	+0.8
RIGZ	**Rimuhau**	**1.42**	**161**	PN	Pn	14 38 08.1	+0.2
SNGZ	**Shannon Statio**	**1.42**	**174**	PN	Pn	14 38 08.2	+0.3
RAHZ	**Arahi**	**1.55**	**182**	PN	Pn	14 38 09.3	-0.1
MRHZ	**Matea Rd**	**1.58**	**202**	PN	Pn	14 38 09.1	-0.6
MKAZ	**Moumakai**	**1.61**	**279**	⇑PN	Pn	14 38 10.5	+0.4
KNZ	**Kokohu**	**1.70**	**166**	PN	Pn	14 38 10.3	-0.7
KNZ				AML	AML	14 38 33.7	
WHHZ	**Waihua**	**1.71**	**178**	PN	Pn	14 38 11.1	-0.1
BKZ	**Black Stump Fm**	**1.87**	**196**	AML	AML	14 38 38.2	
BKZ				AML	AML	14 38 38.3	
MHGZ	**Mahia Peninsul**	**1.88**	**162**	PN	Pn	14 38 12.8	-0.3
ARHZ	**Aropaoanui**	**1.90**	**184**	PN	Pn	14 38 13.1	-0.3
KRVZ	**Karewarewa**	**2.10**	**214**	PN	Pn	14 38 15.6	-0.4
MCHZ	**McNeill Hill**	**2.10**	**190**	PN	Pn	14 38 15.5	-0.5
KWHZ	**Kaweka Forest**	**2.13**	**195**	PN	Pn	14 38 15.3	-1.1
WTVZ	**West Tongariro**	**2.14**	**215**	PN	Pn	14 38 15.9	-0.5
FWVZ	**Far West T-bar**	**2.27**	**213**	⇓PN	Pn	14 38 17.4	-0.8
WHVZ	**Whangaehu Hut**	**2.28**	**212**	PN	Pn	14 38 17.4	-0.9
BHHZ	**Black Hill Sta**	**2.29**	**202**	⇓PN	Pn	14 38 16.9	-1.4
CKHZ	**Cape Kidnapper**	**2.29**	**182**	PN	Pn	14 38 17.1	-1.2
KAHZ	**Kahuranaki**	**2.43**	**185**	PN	Pn	14 38 18.8	-1.3
VRZ	**Vera Road**	**2.58**	**226**	PN	Pn	14 38 21.8	-0.1
PNHZ	**Pukenui**	**2.65**	**196**	⇑PN	Pn	14 38 20.8	-2.0
PXZ	**Pawanui**	**2.67**	**185**	⇓PN	Pn	14 38 20.8	-2.2
PXZ				AML	AML	14 38 53.0	
PXZ				AML	AML	14 38 53.1	
PXZ				AML	AML	14 38 55.5	
WPHZ	**Waipukurau**	**2.75**	**192**	⇑PN	Pn	14 38 21.9	-2.2
TSZ	**Takapari Road**	**2.85**	**199**	⇓PN	Pn	14 38 22.9	-2.5
TSZ				AML	AML	14 38 58.7	
PRHZ	**Porangahau**	**2.92**	**188**	⇑PN	Pn	14 38 23.9	-2.4
DVHZ	**Dannevirke**	**3.03**	**195**	PN	Pn	14 38 24.7	-3.0
ANWZ	**Angora Road**	**3.13**	**190**	PN	Pn	14 38 26.3	-2.7
POWZ	**Post Office Ro**	**3.21**	**199**	PN	Pn	14 38 27.2	-2.8
PRWZ	**Pori Road**	**3.31**	**196**	PN	Pn	14 38 28.5	-2.9
BFZ	**Birch Farm**	**3.38**	**192**	PN	Pn	14 38 29.0	-3.3
MRZ	**Mangatainoka R**	**3.51**	**200**	PN	Pn	14 38 30.5	-3.4
TIWZ	**Tintock**	**3.54**	**196**	PN	Pn	14 38 31.1	-3.3
TIWZ				AML	AML	14 39 12.4	
TIWZ				AML	AML	14 39 12.6	
CPWZ	**Castlepoint**	**3.62**	**192**	⇑PN	Pn	14 38 32.5	-2.8
OGWZ	**Otaki Gorge**	**3.78**	**204**	PN	Pn	14 38 33.8	-3.7
TMWZ	**Te Maipa**	**3.86**	**194**	PN	Pn	14 38 34.7	-3.9
KIW	**Kapiti Island**	**3.90**	**206**	PN	Pn	14 38 35.3	-3.8
KIW				AML	AML	14 39 19.8	
MTW	**Mount Morrison**	**4.00**	**198**	⇑PN	Pn	14 38 36.0	-4.4
CAW	**Cannon Point**	**4.07**	**203**	PN	Pn	14 38 37.1	-4.3
TRWZ	**Traveller**	**4.18**	**195**	PN	Pn	14 38 38.4	-4.5
PAWZ	**Paruwai Farm**	**4.23**	**198**	PN	Pn	14 38 38.8	-4.7
DUWZ	**D'Urville Isla**	**4.25**	**215**	PN	Pn	14 38 39.7	-4.1
MSWZ	**Moikau Station**	**4.30**	**199**	PN	Pn	14 38 39.7	-4.8
WEL	**Wellington**	**4.33**	**205**	PN	Pn	14 38 39.9	-4.8
BHW	**Baring Head**	**4.41**	**203**	PN	Pn	14 38 41.0	-4.8
PLWZ	**Palliser**	**4.45**	**199**	PN	Pn	14 38 41.4	-5.0
TUWZ	**Tuamarina**	**4.76**	**211**	PN	Pn	14 38 45.6	-4.9
BSWZ	**Blackbirch Sta**	**5.03**	**209**	PN	Pn	14 38 49.2	-4.9
THZ	**Tophouse**	**5.48**	**215**	PN	Pn	14 38 54.9	-5.3
KHZ	**Kahutara**	**5.76**	**208**	PN	Pn	14 38 58.4	-5.5
KHZ	**Kahutara**	**5.76**	**208**	P*	Pn	14 38 58.4	-5.5
LTZ	**Lake Taylor**	**6.58**	**213**	PN	Pn	14 39 08.2	-6.7
CRLZ	**Canterbury Las**	**7.10**	**208**	PN	Pn	14 39 14.7	-7.2
OXZ	**Oxford**	**7.12**	**212**	PN	Pn	14 39 14.6	-7.6
MQZ	**McQueen's Vall**	**7.20**	**207**	PN	Pn	14 39 15.4	-7.8
ODZ	**Otahua Downs**	**9.10**	**211**	*e*PN	Pn	14 39 41.3	-7.5

*NEIC **14** 14:40:31.8, 43°.55S×172°.90E, h9km, ML4.0(WEL), After WEL.*

WEL 14 14:40:32.4±0.2, 43°.56S×172°.86E, h9km, ML3.6/13, 2C, Error ellipse: s-maj=1.7km s-min=0.6km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRLZ	**Canterbury Las**	**0.17**	**265**	PG	Pg	14 40 36.1	+0.2
CRLZ				SG	Sg	14 40 38.8	+0.4
CRLZ				AML	AML	14 40 39.1	
CRLZ				AML	AML	14 40 39.1	
CRLZ	**Canterbury Las**	**0.17**	**265**	Pg	Pg	14 40 36.1	+0.2
MQZ	**McQueen's Vall**	**0.21**	**225**	⇑PG	Pg	14 40 36.9	+0.3
MQZ				SG	Sg	14 40 40.0	+0.5
MQZ				SG		14 40 40.2	
MQZ				AML	AML	14 40 40.6	
MQZ	**McQueen's Vall**	**0.21**	**225**	Pg	Pg	14 40 36.9	+0.3
MQZ				Sg	Sg	14 40 40.2	+0.7
OXZ	**Oxford**	**0.64**	**291**	P*	Pg	14 40 44.6	-0.2
OXZ				S*	Sb	14 40 54.2	-0.6
OXZ	**Oxford**	**0.64**	**291**	P*	Pg	14 40 44.6	-0.1
OXZ				S*	Sb	14 40 54.2	-0.6
LTZ	**Lake Taylor**	**0.89**	**331**	⇑P*	Pg	14 40 49.1	-0.3
LTZ				S*	Sg	14 41 01.0	0.0
LTZ				AML	AML	14 41 02.2	
KHZ	**Kahutara**	**1.25**	**24**	P*	Pn	14 40 53.6	-2.4
KHZ	**Kahutara**	**1.25**	**24**	*e*Pn	Pn	14 40 54.0	-2.0
KHZ				*e*Sn	Sb	14 41 10.8	-1.5
RPZ	**Rata Peaks**	**1.32**	**263**	PN	Pn	14 40 55.5	-1.5
RPZ				AML	AML	14 41 24.6	
RPZ				AML	AML	14 41 29.3	
RPZ	**Rata Peaks**	**1.32**	**263**	*e*Pn	Pn	14 40 55.7	-1.3
RPZ				*e*Sn	Sn	14 41 14.6	-0.1
INZ	**Inchbonnie**	**1.33**	**308**	PN	Pn	14 40 55.7	-1.4
WVZ	**Waitaha Valley**	**1.62**	**287**	PN	Pn	14 41 00.5	-0.6
WVZ				AML	AML	14 41 28.2	
WVZ				AML	AML	14 41 30.3	
THZ	**Tophouse**	**1.80**	**1**	PN	Pn	14 41 01.8	-1.8
THZ				AML	AML	14 41 36.8	
THZ				AML	AML	14 41 38.3	
DSZ	**Denniston Nort**	**1.97**	**337**	*e*PN	Pn	14 41 05.4	-0.6
DSZ				AML	AML	14 41 32.8	
DSZ				AML	AML	14 41 32.8	
DSZ				AML	AML	14 41 33.6	
DSZ				AML	AML	14 41 33.6	
BSWZ	**Blackbirch Sta**	**1.99**	**23**	PN	Pn	14 41 04.7	-1.5
LBZ	**Lake Benmore**	**2.10**	**246**	PN	Pn	14 41 07.0	-0.8
LBZ				AML	AML	14 41 45.9	
LBZ				AML	AML	14 41 47.1	
ODZ	**Otahua Downs**	**2.17**	**226**	PN	Pn	14 41 07.7	-1.0
ODZ				AML	AML	14 41 47.8	
ODZ				AML	AML	14 41 47.8	
ODZ				AML	AML	14 41 53.1	
ODZ				AML	AML	14 41 53.1	
ODZ	**Otahua Downs**	**2.17**	**226**	*e*PN	Pn	14 41 08.8	0.0
ODZ				*e*Sn	Sn	14 41 35.5	-0.2
FOZ	**Fox Glacier**	**2.21**	**270**	*e*PN	Pn	14 41 08.3	-0.9
FOZ				AML	AML	14 41 17.0	
FOZ				AML	AML	14 41 47.8	
NNZ	**Nelson**	**2.37**	**10**	PN	Pn	14 41 10.3	-1.1
WKZ	**Wanaka**	**3.04**	**244**	PN	Pn	14 41 20.0	-0.6
WKZ				AML	AML	14 42 13.6	
WKZ				AML	AML	14 42 19.3	
EAZ	**Earnscleugh**	**3.04**	**235**	PN	Pn	14 41 19.6	-1.1
EAZ				AML	AML	14 42 21.2	
TUZ	**Tuapeka**	**3.32**	**223**	PN	Pn	14 41 23.3	-1.1
TUZ				AML	AML	14 42 25.2	
TUZ				AML	AML	14 42 34.8	
WHZ	**Wether Hill Ro**	**4.20**	**235**	PN	Pn	14 41 34.8	-1.9

*ISCJB **14** 14:47:59.7±0.6, 6°.61S±0°.07×148°.04E±0°.10, h51km, mb3.9/9, MS3.6/7, Error ellipse: s-maj=13.7km s-min=10.0km az=171.5*

*IDC **14** 14:48:02.0±2.2, 6°.60S×147°.94E, h49km±21km, mb3.7/9, mb1 3.9/14, mb1mx3.7/43, mbtmp4.0/14, ML3.7/3, MS3.7/9, Ms1 3.8/9, ms1mx3.3/36, Error ellipse: s-maj=25.6km s-min=16.1km az=83.0*

ISC 14 14:48:02.0±0.7, 6°.56S±0°.07×148°.1E±0°.1, h51km, n21, σ1§70/17, mb3.9/9, MS3.7/7, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.97**	**198**	P	Pn	14 48 46.9	+0.2
	20nm,0.3s,baz=61,slow=3.4,SNR=31						
PMG				S	Sn	14 49 25.4	+4.3
	22nm,0.3s,baz=24,slow=19,SNR=3.3						
JAY	**Jayapura**	**8.37**	**298**	P	Pn	14 50 01.3	+0.5
	0.1nm,0.3s,baz=90,slow=22,SNR=4.8						
HNR	**Honiara**	**12.10**	**104**	P	Pn	14 50 51.9	+0.1
	3.9nm,0.3s,baz=294,slow=20,SNR=2.5						
CTA	**Charters Tower**	**13.57**	**187**	P	Pn	14 51 09.4	-2.4
	0.2nm,0.3s,baz=29,slow=18,SNR=2.2						
CTA				LR	LR	14 56 46.3	
	comp=Z,606nm,18.2s,baz=50,slow=39						
WRA	**Warramunga Arr**	**18.84**	**224**	P	P	14 52 15.7	-2.1
	0.8nm,0.3s,baz=50,slow=11,SNR=33						
WRA				LR	LR	15 00 25.4	
	comp=Z,718nm,19.9s,baz=45,slow=40						
GUMO	**Guam**	**20.27**	**351**	LR	LR	15 00 17.0	
	comp=Z,68nm,18.0s,baz=146,slow=36						
ASAR	**Alice Springs**	**21.79**	**217**	P	P	14 52 48.5	-1.4
	2.5nm,0.4s,baz=52,slow=9.2,SNR=187						
ASAR				LR	LR	15 01 45.6	
	comp=Z,403nm,18.0s,baz=48,slow=38						
DZM	**Mont Dzumac**	**23.51**	**133**	LR	LR	15 01 04.4	
	comp=Z,275nm,20.4s,baz=317,slow=33						
STKA	**Stephens Creek**	**25.91**	**193**	P	P	14 53 27.9	-1.4
	4.1nm,0.8s,baz=30,slow=6.8,SNR=9.5						
STKA				LR	LR	15 04 40.7	
	comp=Z,322nm,18.8s,baz=20,slow=39						
DAV	**Davao City (W)**	**26.20**	**301**	LR	LR	15 05 32.0	
	comp=Z,50nm,18.1s,baz=90,slow=40						
CMAR	**Chiang Mai Arr**	**54.45**	**298**	P	P	14 57 25.3	+0.7
	0.4nm,0.5s,baz=122,slow=5.6,SNR=5.0						
KLR	**Kul'dur**	**57.36**	**347**	P	P	14 57 45.5	+0.6
	1.0nm,0.6s,baz=203,slow=3.7,SNR=3.5						
PETK	**Petropavlovsk-**	**59.99**	**7**	P	P	14 58 04.2	+1.0
	1.0nm,0.5s,baz=149,slow=4.9,SNR=7.7						
SONM	**Songino Array**	**65.41**	**330**	P	P	14 58 38.7	-0.8
	0.4nm,0.3s,baz=119,slow=6.6,SNR=4.4						
VNDA	**Vanda**	**71.30**	**177**	P	P	14 59 16.7	+1.0
	0.7nm,0.6s,baz=338,slow=7.0,SNR=7.7						
MKAR	**Makanchi Array**	**78.60**	**320**	P	P	14 59 58.3	-0.1
	1.3nm,0.5s,baz=93,slow=7.4,SNR=7.8						
ZALV	**Zalesovo Beam**	**80.05**	**328**	P	P	15 00 04.5	-1.6
	0.8nm,0.5s,baz=120,slow=6.2,SNR=2.0						
ILAR	**Eielson Array**	**85.57**	**23**	LR	LR	15 34 33.6	
	comp=Z,17nm,19.4s,baz=244,slow=33						
NVAR	**Mina Array Bea**	**96.87**	**52**	LR	LR	15 38 57.6	
	comp=Z,37nm,20.6s,baz=260,slow=32						
TORD	**Torodi Ar. Bea**	**146.26**	**284**	PKPbc	**PKPbc**	15 07 37.7	-0.3
	1.5nm,0.6s,baz=74,slow=4.0,SNR=14						
PTGA	**Pitinga**	**151.10**	**103**	PKPbc	**PKPbc**	15 07 52.0	+1.4
	2.8nm,0.6s,baz=261,slow=6.2,SNR=6.3						

*NIED **14** 14:49:00, 37°.20N×141°.40E, h44km, Mw3.8 Best double couple: M0 6.13000×10^14 NP1:φs=35.00000°, δ47.00000°, λ42.00000°. NP2:φs=273.00000°, δ61.00000°, λ128.00000°.*

*ISCJB **14** 14:49:07.4±0.9, 37°.10N±0°.04×141°.46E±0°.08, h44km±8km, mb3.4/10, MS3.0/1, Error ellipse: s-maj=11.0km s-min=6.3km az=16.9*

*JMA **14** 14:49:08.6±0.1, 37°.15N×141°.36E, h48km±1km, M3.9*

JMA Felt II J1.

*IDC **14** 14:49:09.4±0.5, 37°.07N×141°.29E, h44km±5km, mb3.3/10, mb1 3.6/14, mb1mx3.4/46, mbtmp3.6/14, ML3.7/3, MS3.2/1, Ms1 3.2/1, ms1mx2.3/23, Error ellipse: s-maj=15.8km s-min=9.5km az=111.0*

ISC 14 14:49:09.3±0.6, 37°.12N±0°.05×141°.42E±0°.06, h42km±5km, n34, σ1§44/39, mb3.4/10, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.50**	**268**	P	Pn	14 49 19.2	-0.9
ONAJ				S	Sn	14 49 26.4	-1.3
JFK	**Kawauchi**	**0.50**	**300**	P	Pn	14 49 18.9	-1.2
JFK				S	Sn	14 49 26.1	-1.7
JHO	**Hitachi**	**0.85**	**234**	P	Pn	14 49 23.5	-1.3
JMM	**Marumori**	**0.90**	**326**	P	Pn	14 49 24.2	-1.2
JMM				S	Sn	14 49 35.2	-2.0
JFT	**Otama**	**0.95**	**295**	P	Pn	14 49 25.7	-0.5
JFT				S	Sn	14 49 37.7	-0.9
JIO	**Ouri**	**1.33**	**358**	P	Pn	14 49 30.2	-1.2
JFY	**Yanaizu**	**1.40**	**282**	P	Pn	14 49 31.8	-0.5
MJAR	**Matsushiro Arr**	**2.64**	**258**	P	Pn	14 49 49.6	+0.2
	13nm,0.3s,baz=85,slow=15,SNR=66						
MJAR				S	Sn	14 50 24.5	+4.3
	12nm,0.3s,baz=79,slow=14,SNR=5.7						
MAT	**Matsushiro**	**2.64**	**258**	P	Pn	14 49 50.1	+0.7
MAT				S	Sn	14 50 22.1	+1.9
JHJ	**Hachijo jima 2**	**4.21**	**199**	P	Pn	14 50 10.9	-0.1
	19nm,0.3s,baz=354,slow=20,SNR=16						
JHJ				S	Sn	14 50 57.1	-1.8
	48nm,0.3s,baz=256,slow=22,SNR=9.0						
ASAJ	**Asahikawa**	**7.05**	**7**	P	Pn	14 50 49.9	0.0
	1.2nm,0.3s,baz=216,slow=12,SNR=17						
ASAJ				S	Sn	14 52 10.6	+2.1
	0.7nm,0.3s,baz=105,slow=20,SNR=3.3						
USRK	**Ussuriysk Ar.**	**10.06**	**318**	P	Pn	14 51 32.3	+1.2
	0.3nm,0.3s,baz=130,slow=11,SNR=7.9						
KSRS	**Korea Array**	**10.76**	**276**	P	Pn	14 51 43.2	+2.5
	0.1nm,0.3s,baz=94,slow=15,SNR=7.2						
KLR	**Kul'dur**	**13.99**	**333**	P	Pn	14 52 27.2	+2.5
	0.1nm,0.3s,baz=128,slow=14,SNR=7.6						
YAK	**Yakutsk**	**25.99**	**347**	LR	LR	15 05 10.4	
	comp=Z,46nm,19.4s,baz=164,slow=37						
SONM	**Songino Array**	**27.74**	**304**	P	P	14 54 53.1	-0.8
	1.0nm,0.6s,baz=104,slow=9.1,SNR=8.7						
H11N2	**WAKE ISLAND Hy**	**28.19**	**121**	T	T	15 25 13.4	
	baz=314,slow=75,SNR=24						
H11N1	**WAKE ISLAND Hy**	**28.20**	**121**	T	T	15 25 13.7	
	baz=314,slow=75,SNR=52						
H11N3	**WAKE ISLAND Hy**	**28.21**	**121**	T	T	15 25 14.5	
	baz=314,slow=75,SNR=32						
H11S1	**WAKE ISLAND Hy**	**28.90**	**123**	T	T	15 26 12.6	
	baz=316,slow=76,SNR=38						
H11S3	**WAKE ISLAND Hy**	**28.90**	**123**	T	T	15 26 12.3	
	baz=316,slow=76,SNR=45						
H11S2	**WAKE ISLAND Hy**	**28.92**	**123**	T	T	15 26 13.5	
	baz=316,slow=76,SNR=32						
CMAR	**Chiang Mai Arr**	**41.52**	**255**	P	P	14 56 51.8	-0.8
	0.5nm,0.7s,baz=47,slow=7.3,SNR=4.1						
ZALV	**Zalesovo Beam**	**41.86**	**312**	P	P	14 56 53.7	-1.3
	1.4nm,0.6s,baz=76,slow=6.3,SNR=5.7						
MKAR	**Makanchi Array**	**44.08**	**302**	P	P	14 57 12.0	-1.1
	0.3nm,0.4s,baz=86,slow=10,SNR=5.3						
MKAR				pP	pP	14 57 25.1	+0.3
	0.5nm,0.7s,baz=88,slow=8.3,SNR=4.4						
ILAR	**Eielson Array**	**49.42**	**32**	P	P	14 57 54.7	+0.1
	0.3nm,0.7s,baz=266,slow=6.4,SNR=4.1						
ILAR				pP	pP	14 58 07.5	+1.1
	0.9nm,0.7s,baz=268,slow=6.8,SNR=9.0						
INK	**Inuvik**	**54.31**	**27**	pP	pP	14 58 43.2	+0.4
	0.7nm,0.5s,baz=319,slow=5.8,SNR=2.2						
WRA	**Warramunga Arr**	**57.15**	**188**	P	P	14 58 50.8	-1.0
	0.4nm,0.5s,baz=7.2,slow=7.3,SNR=4.1						
WRA				pP	pP	14 59 02.6	-1.2
	0.7nm,0.5s,baz=5.6,slow=7.5,SNR=3.3						
YKA	**Yellowknife Ar**	**63.73**	**30**	P	P	14 59 37.1	+0.9
	0.2nm,0.9s,baz=300,slow=7.7,SNR=3.1						
YKA				pP	pP	14 59 48.0	-0.4
	0.4nm,0.7s,baz=304,slow=6.6,SNR=6.2						
AKASG	**Malin Array Be**	**74.23**	**322**	P	P	15 00 40.2	-1.4
	0.4nm,0.3s,baz=50,slow=6.4,SNR=4.1						
AKASG				pP	pP	15 00 54.2	+0.1
	0.2nm,0.2s,baz=334,slow=8.0,SNR=1.7						
NVAR	**Mina Array Bea**	**74.93**	**53**	P	P	15 00 48.1	+1.8
	0.1nm,0.4s,baz=292,slow=4.8,SNR=1.9						
NVAR				pP	PcP	15 01 01.0	+1.1
	0.4nm,0.6s,baz=283,slow=9.0,SNR=3.1						
PDAR	**Pinedale Array**	**77.60**	**45**	P	P	15 01 01.0	-0.3
	0.1nm,0.4s,baz=270,slow=1.6,SNR=2.1						
PDAR				pP	pP	15 01 15.5	+1.6
	0.3nm,0.6s,baz=207,slow=1.7,SNR=3.1						
TXAR	**Lajitas Array**	**90.06**	**52**	pP	pP	15 02 19.1	+1.3
	0.2nm,0.5s,baz=316,slow=2.5,SNR=2.2						
LPAZ	**La Paz**	**146.65**	**59**	PKPbc	**PKPbc**	15 08 47.3	-0.3
	0.6nm,0.6s,baz=1.0,slow=3.9,SNR=2.5						
LPAZ				pPKPbc	pPKPbc	15 09 00.6	0.0
	0.6nm,0.5s,baz=8.7,slow=5.2,SNR=2.3						

*NIED **14** 15:01:00, 39°.80N×143°.60E, h23km, Mw4.0 Best double couple: M0 1.22000×10^15 NP1:φs=194.00000°, δ31.00000°, λ77.00000°. NP2:φs=29.00000°, δ60.00000°, λ98.00000°.*

*JMA **14** 14:51:32.7±0.1, 39°.76N×143°.60E, h27km±3km, M3.9*

*ISCJB **14** 14:51:33.8±1.8, 39°.74N±0°.04×143°.53E±0°.05, h24km±13km, mb3.6/18, MS2.9/1, Error ellipse: s-maj=6.8km s-min=5.4km az=34.2*

*IDC **14** 14:51:38.4±2.2, 39°.72N×143°.39E, h46km±19km, mb3.5/18, mb1 3.7/23, mb1mx3.6/47, mbtmp3.7/23, ML3.0/4, MS3.1/7, Ms1 3.1/7, ms1mx2.8/39, Error ellipse: s-maj=20.3km s-min=12.9km az=119.0*

ISC 14 14:51:37.4±0.8, 39°.73N±0°.07×143°.46E±0°.09, h36km±2km, n45, σ1§21/47, mb3.6/18, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.25**	**280**	P	Pn	14 51 56.2	-2.0
JTH				*e*S	Sn	14 52 13.3	-0.4
MIYJ	**Miyakonagasawa**	**1.27**	**264**	P	Pn	14 51 56.8	-1.8
MIYJ				*e*S	Sn	14 52 14.1	-0.3
OFUJ	**Ofunato**	**1.53**	**246**	P	Pn	14 52 00.4	-1.7
JANG	**Nango**	**1.62**	**294**	P	Pn	14 52 01.5	-1.9
JKZ	**Kuzumaki**	**1.66**	**280**	P	Pn	14 52 02.5	-1.4
JOM	**Ohasama**	**1.69**	**262**	P	Pn	14 52 03.4	-0.9
JOM				*e*S	Sn	14 52 25.3	+0.5
JMK	**Ichinoseki**	**1.90**	**247**	P	Pn	14 52 05.9	-1.3
JIO	**Ouri**	**2.08**	**233**	P	Pn	14 52 07.6	-2.0
JTM	**Tenmabayashi**	**2.11**	**301**	*e*S	Sn	14 52 34.8	-0.3
JRG	**Rokugo**	**2.21**	**262**	P	Pn	14 52 10.5	-0.9
JAH	**Hinai**	**2.22**	**283**	P	Pn	14 52 10.8	-0.8
JAH				*e*S	Sn	14 52 38.3	+0.6
JEM	**Erimo**	**2.30**	**354**	*e*S	Sn	14 52 37.6	-2.0
JOT	**Ohata**	**2.47**	**313**	*e*S	Sn	14 52 44.2	+0.3
JYK	**Kaneyama**	**2.54**	**252**	P	Pn	14 52 15.2	-0.8
JYK				*e*S	Sn	14 52 47.1	+1.5
JNBK	**Urakawa-nobuka**	**2.60**	**348**	*e*S	Sn	14 52 45.2	-2.0
JCH	**Churui**	**2.88**	**359**	S	Sn	14 52 51.6	-2.5
ASAJ	**Asahikawa**	**4.43**	**352**	P	Pn	14 52 43.4	+1.4
	1.7nm,0.3s,baz=95,slow=31,SNR=4.5						
ASAJ				S	Sn	14 53 33.5	+1.2
	3.2nm,0.3s,baz=241,slow=30,SNR=3.8						
MJAR	**Matsushiro Arr**	**5.22**	**234**	P	Pn	14 52 52.9	0.0
	baz=43,slow=12,SNR=5.2						
MJAR				LR	LR	14 55 05.6	
	comp=Z,153nm,19.6s,baz=45,slow=40						
MAT	**Matsushiro**	**5.22**	**234**	P	Pn	14 52 52.5	-0.4
JHJ	**Hachijo jima 2**	**7.23**	**205**	S	Sn	14 54 33.9	-7.3
	5.8nm,0.3s,baz=71,slow=22,SNR=2.5						
USRK	**Ussuriysk Ar.**	**9.64**	**301**	P	Pn	14 53 54.0	+0.6
	0.2nm,0.3s,baz=109,slow=11,SNR=5.2						
USRK				LR	LR	14 57 35.7	
	comp=Z,106nm,19.6s,baz=156,slow=37						
JNU	**Nakatsue**	**12.08**	**241**	LR	LR	14 59 13.8	
	comp=Z,133nm,18.2s,baz=312,slow=38						
KSRS	**Korea Array**	**12.37**	**264**	P	Pn	14 54 32.4	+1.6
	0.1nm,0

JIO S **Sg** **15 02 15.1 -0.5**
JOU Okura 1.11 332 P **Pn** **15 02 03.2 +0.5**
JOU S **Sn** **15 02 17.9 -0.2**
MJAR Matsushiro Arr 2.63 252 Pn **Pb** **15 02 25.8 -2.5**
19nm,0.3s,baz=78,slow=16,SNR=134
MJAR Sn **Sb** **15 03 00.2 -0.3**
56nm,0.3s,baz=80,slow=29,SNR=8.2
MAJO Matsushiro 2.63 252*c iP* **Pb** **15 02 26.2 -2.0**
MAJO Matsushiro 2.63 252 *e*Pn **Pb** **15 02 26.3 -1.9**
MAJO *e*Sn **Sn** **15 02 53.6 -1.9**
MAT Matsushiro 2.63 252 P **Pb** **15 02 26.3 -1.9**
MAT S **Sb** **15 03 00.2 -0.4**
INU Inuyama 4.02 241 *e*Pn **Pn** **15 02 45.8 +3.1**
JHJ2 Mitsune 4.43 197 *e*Pn **Pn** **15 02 49.6 +1.3**
JHJ2 *e*Sn **Sn** **15 03 39.6 -0.4**
JHJ Hachijo jima 2 4.43 197 Pn **Pn** **15 02 49.8 +1.4**
102nm,0.3s,baz=331,slow=18,SNR=42
JHJ Sn **Sn** **15 03 38.9 -1.2**
104nm,0.3s,baz=73,slow=14,SNR=4.0
ERM Erimo 4.84 16⇑ *e*P **Pn** **15 02 55.0 +1.1**
ERM Erimo 4.84 16 *e*Pn **Pn** **15 02 55.0 +1.1**
ASAJ Asahikawa 6.80 8 Pn **Pn** **15 03 21.1 +0.3**
5.4nm,0.3s,baz=222,slow=11,SNR=33
ASAJ LR LR 15 06 33.9
comp=Z,190nm,19.9s,baz=158,slow=43
ASAJ Asahikawa 6.80 8 *e*Pn **Pn** **15 03 20.6 -0.2**
ASAJ *e*Sn **Sn** **15 04 38.0 -0.3**
YUK Yuzh-Kuril'sk 7.49 26 *e*P **Pn** **15 03 31.4 +1.1**
YUK *e*S **Sn** **15 04 52.3 -2.9**
YUK pmax pmax
comp=Z,80nm,0.5s
YUK pmax pmax
comp=E,61nm,0.6s
YUK pmax pmax
comp=N,33nm,0.4s
SHO Shikotan 7.72 31 *e*P **Pn** **15 03 31.6 -1.8**
SHO *e*S Sn 15 04 52.3 -8.6
SHO pmax pmax
comp=Z,49nm,0.9s
SHO pmax pmax
comp=N,39nm,0.8s
SHO pmax pmax
comp=E,27nm,0.4s
VLA Vladivostok 9.21 311⇓ *iP* Pn 15 03 59.1 +5.2
VLA pmax pmax
comp=Z,60nm,1.3s
KUR Kuril'sk 9.26 30 *i* P **Pn** **15 03 54.0 -0.6**
KUR *i* S **Sn** **15 05 31.2 -7.6**
KUR pmax pmax
comp=N,11nm,0.7s
KUR pmax pmax
comp=Z,33nm,0.7s
KUR pmax pmax
comp=E,16nm,0.5s
MSHR Mys Shultsa 9.37 307⇓ *e*P **Pn** **15 03 57.9 +1.9**
JNU Nakatsue 9.53 247 Pn **Pn** **15 03 58.0 -0.4**
comp=E,0.1nm,0.3s,baz=25,slow=12,SNR=2.3
JNU LR LR 15 08 08.0
comp=E,366nm,18.1s,baz=96,slow=41
USRK Ussuriysk Ar. 9.81 317 Pn **Pn** **15 04 04.5 +2.3**
comp=E,0.6nm,0.3s,baz=135,slow=13,SNR=36
USRK LR LR 15 07 38.4
comp=E,606nm,18.7s,baz=128,slow=37
CBIJ Chichi jima 10.28 176 *e*Pn **Pn** **15 04 09.2 +0.5**
CBIJ Sn Sn 15 05 53.6 -10
JCJ Chichijima 10.28 176 Pn **Pn** **15 04 06.0 -2.6**
comp=E,5.9nm,0.3s,baz=274,slow=3.2,SNR=3.5
JCJ Sn Sn 15 05 53.6 -10
comp=E,17nm,0.3s,baz=247,slow=20,SNR=4.1
KSRS Korea Array 10.65 274 Pn Pn 15 04 18.8 +5.1
comp=E,0.3nm,0.3s,baz=89,slow=14,SNR=22
KSRS LR LR 15 08 07.7
comp=E,332nm,19.4s,baz=97,slow=37
KSAR Wonju Array Be 10.69 274 P Pn 15 04 18.8 +4.6
KSAR Wonju Array Be 10.69 274 Pn Pn 15 04 18.8 +4.6
MDJ Mudanjiang 11.43 313 P **Pn** **15 04 28.3 +4.0**
MDJ S **Sn** **15 06 34.0 +2.1**
MDJ pmax pmax
comp=Z,24nm,0.8s
MDJ pmax pmax
comp=Z,80nm,5.1s
MDJ LR LR
comp=N,140nm,22.2s
MDJ LR LR
comp=E,180nm,21.3s
MDJ LR LR
comp=Z,310nm,23.1s
MDJ Mudanjiang 11.43 313 Pn **Pn** **15 04 22.9 -1.4**
comp=Z,17nm,0.7s
HABR Khabarovsk 11.99 340 *e*P **Pn** **15 04 31.3 -0.7**
HABR *e*S **Sn** **15 06 44.5 -1.2**
HABR pmax pmax
comp=N,21nm,1.8s
HABR pmax pmax
comp=Z,20nm,1.9s
HABR pmax pmax
comp=E,35nm,1.8s
HABR MLR MLR
comp=Z,210nm,11.0s
TYV Tymovskoe 13.51 4 *e*P **Pn** **15 04 53.5 +0.8**
TYV pmax pmax
comp=Z,15nm,0.8s
TYV MLR MLR
comp=Z,500nm,14.0s
CN2 Changchun 13.65 303 *e*P **Pn** **15 04 55.8 +1.2**
CN2 pmax pmax
comp=Z,10.0nm,0.6s
KLR Kul'dur 13.72 333 Pn **Pn** **15 04 57.0 +1.4**
comp=Z,0.1nm,0.3s,baz=162,slow=19,SNR=2.8
KLR LR LR 15 10 12.7
comp=Z,369nm,18.0s,baz=150,slow=38
NKL Nikolayevsk 15.78 359 *e*P **P** **15 05 25.8 -1.3**
NKL MLR MLR
comp=N,500nm,15.0s
NKL MLR MLR
comp=Z,600nm,15.0s
TIA Tai'an 19.40 274 *e*P **P** **15 06 06.5 -0.8**
TIA pmax pmax
comp=Z,10.0nm,1.0s
PETK Petropavlovsk- 19.43 31 P **Pn** **15 06 09.0 +0.4**
comp=Z,0.1nm,0.3s,baz=235,slow=5.2,SNR=4.7
MA2 Magadan 23.03 12 P **P** **15 06 46.6 +0.5**
comp=Z,18nm,0.9s,baz=208,slow=9.7,SNR=11
MA2 LR LR 15 17 18.2
comp=Z,63nm,19.0s,baz=192,slow=41
MA2 Magadan 23.03 12 *e*P **P** **15 06 45.9 -0.2**
comp=Z,94nm,0.8s
HHC Hu-ho-hao-te 23.29 288 *e*P **P** **15 06 48.8 -0.3**
HHC S S 15 10 48.1 -13
HHC pmax pmax
comp=Z,12nm,0.8s
HHC pmax pmax
comp=Z,130nm,4.8s
HHC LR LR
comp=N,700nm,11.3s
HHC LR LR
comp=E,780nm,12.8s
HHC LR LR
comp=Z,850nm,11.6s
GUMO Guam 23.91 171 LR LR 15 16 33.6
comp=Z,34nm,20.6s,baz=25,slow=37
YAK Yakutsk 25.71 347 P **P** **15 07 09.8 -1.4**
comp=Z,8.0nm,0.3s,baz=217,slow=2.2,SNR=6.5
YAK LR LR 15 17 34.2
comp=Z,205nm,19.1s,baz=165,slow=37
YAK Yakutsk 25.71 347 *e*P **P** **15 07 10.4 -0.8**
YAK *e* 15 07 47.9
YAK *e* 15 10 41.8
YAK *e*S **S** **15 11 36.6 -3.1**
YAK *e* 15 18 05.9
YAK pmax pmax
comp=Z,19nm,1.0s
YAK pmax pmax
comp=E,4.0nm,1.3s
YAK pmax pmax
comp=N,13nm,1.4s
YAK pmax pmax
comp=Z,63nm,3.2s
YAK pmax pmax
comp=N,55nm,2.8s
YAK pmax pmax
comp=E,37nm,2.5s
YAK smax smax
comp=N,35nm,1.9s
YAK smax smax
comp=E,39nm,2.2s

YAK MLR MLR
comp=Z,298nm,15.0s
YAK MLR MLR
comp=E,93nm,16.0s
YAK MLR MLR
comp=N,229nm,15.0s
YAK Yakutsk 25.71 347 *e*P **P** **15 07 09.6 -1.6**
comp=N,22nm,0.6s
XAN Xi'an 26.45 273 P **P** **15 07 18.3 +0.1**
XAN Xi'an 26.45 273 S **S** **15 11 53.8 +1.9**
XAN pmax pmax
comp=Z,6.0nm,0.5s
XAN pmax pmax
comp=Z,5.0nm,0.6s
XAN pmax pmax
comp=Z,70nm,5.3s
XAN LR LR
comp=N,86nm,15.2s
XAN LR LR
comp=E,180nm,15.2s
XAN LR LR
comp=Z,170nm,15.1s
SEY Seymchan 26.47 11 P **P** **15 07 19.4 +1.4**
comp=Z,18nm,1.1s,baz=187,slow=6.9,SNR=14
ULN Ulaanbaatar 27.10 304 *e*P **P** **15 07 22.9 -1.2**
ULN pmax pmax
comp=Z,3.0nm,0.6s
ULN Ulaanbaatar 27.10 304 *e*P **P** **15 07 22.9 -1.2**
comp=Z,3.3nm,0.6s
BOD Bodaibo 27.20 328 *e*P **P** **15 07 23.0 -1.6**
BOD pmax pmax
comp=Z,7.0nm,0.6s
ENH Enshi 27.29 264 *e*P **P** **15 07 25.5 -0.3**
comp=Z,11nm,0.8s
SONM Songino Array 27.53 303 P **P** **15 07 27.3 -0.6**
comp=Z,6.5nm,0.8s,baz=98,slow=7.3,SNR=40
SONM LR LR 15 18 39.9
comp=Z,102nm,19.5s,baz=150,slow=37
SONM Songino Array 27.53 303 P **P** **15 07 27.3 -0.6**
SONM pmax pmax
comp=Z,6.0nm,0.8s
SONM MLR MLR
comp=Z,102nm,19.5s
H11N2 WAKE ISLAND Hy 28.39 121 T T 15 37 02.7
baz=314,slow=75,SNR=209
H11N1 WAKE ISLAND Hy 28.40 121 T T 15 37 13.7
baz=314,slow=75,SNR=232
H11N3 WAKE ISLAND Hy 28.41 121 T T 15 37 16.2
baz=314,slow=75,SNR=181
H11S1 WAKE ISLAND Hy 29.11 123 T T 15 37 57.5
baz=316,slow=76,SNR=659
H11S3 WAKE ISLAND Hy 29.11 123 T T 15 38 03.1
baz=316,slow=76,SNR=178
H11S2 WAKE ISLAND Hy 29.13 123 T T 15 37 58.7
baz=316,slow=76,SNR=376
LZH Lanzhou 29.93 279 *e*P **P** **15 07 53.0 +3.5**
LZH pP sP 15 07 59.3 +5.5
LZH sP pP 15 08 02.5 +10
LZH *e*PP **PnPn** **15 08 50.3 +4.7**
LZH pmax pmax
comp=Z,22nm,1.1s
LZH pmax pmax
comp=Z,63nm,5.4s
LZH LR LR
comp=N,330nm,12.9s
LZH LR LR
comp=E,330nm,13.2s
LZH LR LR
comp=Z,390nm,16.3s
ZAK Zakamensk 29.99 308 *e*P **P** **15 07 47.0 -2.8**
ZAK pmax pmax
comp=Z,3.0nm,1.3s
TLY Talaya 30.05 311 LR LR 15 20 30.2
comp=Z,212nm,18.1s,baz=118,slow=38
TLY Talaya 30.05 311 *e*P **P** **15 07 49.1 -1.0**
TLY pmax pmax
comp=Z,2.0nm,0.9s
TLY MLR MLR
comp=Z,182nm,15.0s
CD2 Chengdu 31.60 269 P **P** **15 08 03.0 -1.1**
CD2 pmax pmax
comp=Z,6.0nm,0.6s
GTA Gaotai 32.39 287 *e*P **P** **15 08 10.3 -0.7**
GTA pP sP 15 08 17.6 +2.2
GTA sP pP 15 08 20.8 +6.7
GTA S **S** **15 13 19.3 -6.0**
GTA sS sS 15 13 32.1 +1.7
GTA SS **SnSn** **15 15 11.4 -6.1**
GTA pmax pmax
comp=Z,2.0nm,0.9s
GTA pmax pmax
comp=Z,63nm,4.5s
GTA LR LR
comp=N,87nm,15.2s
GTA LR LR
comp=E,130nm,15.2s
GTA LR LR
comp=Z,120nm,15.2s
BILL Bilibino 33.72 17 *i* P **P** **15 08 18.9 -3.2**
BILL *i* 15 08 29.3
BILL *i* 15 10 55.9
BILL pmax pmax
comp=Z,7.0nm,1.8s
BILL MLR MLR
comp=Z,41nm,15.0s
TIXI Tiksi 34.94 353⇓ *e*P **P** **15 08 32.4 -0.2**
TIXI pmax pmax
comp=Z,4.0nm,1.0s
TIXI Tiksi 34.94 353 *e*P **P** **15 08 32.3 -0.3**
comp=Z,3.3nm,0.4s
KMI Kunming 34.94 261 P **P** **15 08 34.0 +0.5**
KMI pmax pmax
comp=Z,9.0nm,0.5s
KMI pmax pmax
comp=Z,110nm,4.9s
WMQ Urumqi 40.62 296 *e*P **P** **15 09 22.6 +1.5**
WMQ pmax pmax
comp=Z,4.0nm,0.6s
WMQ pmax pmax
comp=Z,37nm,5.2s
WMQ LR LR
comp=N,77nm,9.6s
WMQ LR LR
comp=E,62nm,18.4s
WMQ LR LR
comp=Z,37nm,22.8s
CMAR Chiang Mai Arr 41.51 255 P **P** **15 09 26.9 -1.8**
comp=Z,0.2nm,0.3s,baz=61,slow=5.6,SNR=3.4
CMAR LR LR 15 29 14.1
comp=Z,33nm,18.9s,baz=120,slow=40
ZALV Zalesovo Beam 41.62 312 P **P** **15 09 29.3 +0.2**
comp=Z,13nm,0.7s,baz=89,slow=6.8,SNR=49
ZALV PcP **PcP** **15 11 27.2 +1.3**
comp=Z,1.2nm,0.6s,baz=93,slow=3.2,SNR=3.1
ZALV LR LR 15 27 19.7
comp=Z,98nm,21.1s,baz=70,slow=37
NVS Novosibirsk 42.55 313⇓ *iP* **P** **15 09 37.0 +0.4**
NVS pmax pmax
comp=E,9.0nm,1.0s
NVS pmax pmax
comp=Z,15nm,1.0s
NVS pmax pmax
comp=N,3.0nm,0.8s
NRIK Noril'sk 42.92 335 P **P** **15 09 39.6 +0.2**
comp=N,1.5nm,0.5s,baz=122,slow=10,SNR=4.5
NRIK LR LR 15 29 12.9
comp=N,69nm,18.1s,baz=126,slow=39
MKAR Makanchi Array 43.87 302 P **P** **15 09 47.6 +0.1**
comp=N,9.4nm,0.7s,baz=89,slow=9.7,SNR=102
MKAR LR LR 15 28 05.7
comp=N,53nm,19.8s,baz=82,slow=36
MAKZ Makanchi 44.08 302 *e*P **P** **15 09 49.1 -0.1**
MAKZ pmax pmax
comp=Z,12nm,0.8s
MAKZ Makanchi 44.08 302 *e*P **P** **15 09 49.1 -0.1**
comp=Z,12nm,0.8s
KURK Kurchatov 45.66 308*ce*P **P** **15 10 01.5 -0.2**
KURK pmax pmax
comp=Z,39nm,0.7s
KURK Kurchatov 45.66 308 *e*P **P** **15 10 01.4 -0.2**
comp=Z,45nm,0.9s
PDGK Podgornoye 46.55 298 P **P** **15 10 09.2 +0.4**
PDGK pmax pmax
comp=Z,14nm,1.1s
KAPI Kappang 46.72 210 P **P** **15 10 11.8 +1.4**
comp=Z,6.0nm,0.5s,baz=294,slow=6.2,SNR=3.6
PMG Port Moresby 46.86 172*de*P **P** **15 10 11.6 +0.2**

CAST Castle Rocks 46.98 34 *e*P **P** **15 10 12.9 +1.0**
comp=Z,3.9nm,0.8s
BPAW Bear Paw Mtn. 47.48 33 *e*P **P** **15 10 17.1 +1.3**
comp=Z,0.6nm,0.8s
KKN Kakani 47.57 275 *e*P **P** **15 10 17.3 0.0**
comp=Z,25nm,0.8s
PKIN Phulchoki 47.58 275 *e*P **P** **15 10 16.5 -0.9**
comp=Z,7.0nm,0.6s
MLY Manley 47.60 32 *e*P **P** **15 10 18.7 +2.0**
comp=Z,5.8nm,1.0s
COLD Coldfoot 47.89 29 *e*P **P** **15 10 18.8 -0.1**
comp=Z,2.6nm,1.0s
GKN Gorkha 47.99 276 *e*P **P** **15 10 20.6 +0.2**
comp=Z,16nm,0.6s
KOLN Koldanda 48.91 276 *e*P **P** **15 10 25.9 -1.7**
comp=Z,10nm,0.6s
ILAR Eielson Array 49.24 33 P **P** **15 10 30.3 +0.9**
comp=Z,1.4nm,0.7s,baz=256,slow=5.4,SNR=21
PYUN Piuthan 49.25 277 *e*P **P** **15 10 30.4 +0.2**
TKM2 Tokmak 2 49.40 298 *e*P **P** **15 10 30.7 -0.4**
TKM2 pmax pmax
comp=Z,20nm,1.4s
TKM2 Tokmak 2 49.40 298 *e*P **P** **15 10 30.7 -0.4**
comp=Z,20nm,1.4s
HNR Honiara 49.73 156 *e*P **P** **15 10 36.9 +3.3**
HNR pmax pmax
comp=Z,39nm,0.7s
HNR Honiara 49.73 156 *e*P **P** **15 10 36.9 +3.3**
comp=Z,39nm,0.7s
FRU Bishkek 50.11 298 *e*P **P** **15 10 37.5 +1.1**
OTUK Ortayu 50.16 306 P **P** **15 10 37.6 +1.0**
OTUK pmax pmax
comp=Z,10.0nm,1.0s
KSH Kashi 50.19 294 *e*P **P** **15 10 41.6 +4.4**
KSH *e*pP sP 15 10 50.8 +9.2
KSH S **S** **15 17 53.1 +3.9**
KSH ScS **ScS** **15 20 29.6 +0.9**
KSH Kashi 50.19 294 SS **SS** **15 21 25.3 +3.1**
KSH pmax pmax
comp=Z,66nm,3.9s
KSH LR LR
comp=N,95nm,5.4s
KSH LR LR
comp=E,100nm,5.7s
KSH LR LR
comp=Z,300nm,14.5s
AAK Ala-Archa 50.26 298*de*P **P** **15 10 38.4 +0.8**
AAK pmax pmax
comp=Z,6.0nm,0.8s
AAK Ala-Archa 50.26 298 *e*P **P** **15 10 38.4 +0.8**
comp=Z,3.2nm,0.6s
BRVK Borovoye 50.34 312*de*P **P** **15 10 38.4 +0.5**
BRVK pmax pmax
comp=Z,3.0nm,0.8s
BRVK Borovoye 50.34 312 *e*P **P** **15 10 36.7 -1.2**
comp=Z,9.8nm,1.2s
DOT Dot Lake 50.56 34 *e*P **P** **15 10 40.6 +1.2**
comp=Z,9.3nm,0.8s
EKS2 Erkin-Say 50.75 298 *e*P **P** **15 10 40.4 -0.9**
EKS2 pmax pmax
comp=Z,3.0nm,0.8s
EKS2 Erkin-Say 50.75 298 *e*P **P** **15 10 40.4 -0.9**
comp=Z,3.2nm,0.8s
MENT Mentasta 50.79 35 *e*P **P** **15 10 42.8 +1.5**
comp=Z,6.4nm,1.0s
ZRNK Zerenda 51.12 312 *e*P **P** **15 10 43.8 +0.1**
ZRNK pmax pmax
comp=Z,10.0nm,0.9s
ZRNK Zerenda 51.12 312 *e*P **P** **15 10 43.8 +0.1**
comp=Z,9.7nm,0.9s
MNAS Manas 51.70 298 P **P** **15 10 49.9 +1.4**
MNAS pmax pmax
comp=Z,10.0nm,0.9s
PSI Prapat 51.91 239 *e*P **P** **15 10 49.6 -0.6**
PSI pmax pmax
comp=Z,19nm,0.5s
PSI Prapat 51.91 239 *e*P **P** **15 10 49.6 -0.6**
comp=Z,19nm,0.5s
KKAR Karatay Array 52.88 300 *e*P **P** **15 10 57.9 +0.8**
KKAR Karatay Array 52.88 300 *e*P **P** **15 10 57.9 +0.8**
GSI Gunungsitoli 53.91 239 P **P** **15 11 03.1 -1.8**
comp=Z,16nm,0.7s
INK Inuvik 54.11 27 *e*P **P** **15 11 07.3 +1.6**
INK pmax pmax
comp=Z,6.0nm,1.0s
INK Inuvik 54.11 27 *e*P **P** **15 11 07.3 +1.6**
comp=Z,5.6nm,1.0s
SVE Sverdlovsk 54.84 318 *e*P **P** **15 11 12.1 +1.0**
SVE pmax pmax
comp=Z,17nm,0.8s
ARU Arti 56.05 318*c iP* **P** **15 11 19.7 -0.1**
ARU S **S** **15 19 07.6 -0.6**
ARU pmax pmax
comp=Z,13nm,1.2s
ARU MLR MLR
comp=Z,152nm,17.0s
ARU Arti 56.05 318 *e*P **P** **15 11 18.7 -1.1**
comp=Z,12nm,0.5s
WRAB Tennant Creek 57.38 188*de*P **P** **15 11 29.4 -0.3**
WRAB pmax pmax
comp=Z,14nm,0.9s
WRA Warramunga Arr 57.39 188 P **P** **15 11 29.8 0.0**
comp=Z,5.0nm,0.6s,baz=7.0,slow=7.4,SNR=74
ABKAR Akbulak array 57.66 310 *e*P **P** **15 11 31.1 -0.3**
ASAR Alice Springs 61.12 188 P **P** **15 11 56.0 +0.5**
comp=Z,3.3nm,0.8s,baz=12,slow=8.6,SNR=31
ASAR Alice Springs 61.12 188 P **P** **15 11 56.0 +0.5**
ASAR pmax pmax
comp=Z,3.0nm,0.8s
KLMR Klimovskoe 63.42 328 *e*P **P** **15 12 07.3 -3.2**
KLMR pmax pmax
comp=Z,5.0nm,0.6s
YKA Yellowknife Ar 63.55 30 P **P** **15 12 11.8 +0.5**
comp=Z,0.7nm,0.7s,baz=303,slow=6.6,SNR=11
GEYT Alibeck 63.60 299 P **P** **15 12 12.6 +0.4**
comp=Z,2.3nm,0.7s,baz=340,slow=2.2,SNR=6.1
ARCES ARCESS Array B 63.65 339 P **P** **15 12 12.4 +0.5**
comp=Z,2.5nm,0.7s,baz=65,slow=9.5,SNR=11
ARCES LR LR 15 42 45.7
comp=Z,25nm,20.8s,baz=62,slow=39
ARCES ARCESS Array B 63.65 339 P **P** **15 12 12.4 +0.5**
ARCES pmax pmax
comp=Z,2.0nm,0.6s
ARCES MLR MLR
comp=Z,25nm,20.8s
VRH Novokhopyorsk 67.27 318 *e*P **P** **15 12 34.3 -1.3**
VRH pmax pmax
comp=Z,7.0nm,1.0s
OBN Obninsk 67.77 323 *i* P **P** **15 12 38.1 -0.6**
OBN *i* 15 13 11.3
OBN pmax pmax
comp=Z,7.0nm,0.9s
OBN MLR MLR
comp=Z,60nm,16.0s
LPSR Galich'ya Gora 67.99 320 *e*P **P** **15 12 39.4 -0.7**
LPSR pmax pmax
comp=Z,8.0nm,0.8s
FINES FINESS Array B 68.47 332 P **P** **15 12 43.2 +0.2**
comp=Z,4.4nm,0.6s,baz=30,slow=8.3,SNR=17
FINES LR LR 15 44 49.4
comp=Z,65nm,19.4s,baz=9.0,slow=38
VSR Storozhevoye 68.62 319 *e*P **P** **15 12 42.8 -1.3**
VSR pmax pmax
comp=Z,10.0nm,1.1s
STKA Stephens Creek 68.90 180 P **P** **15 12 47.0 +1.1**
comp=Z,5.3nm,0.7s,baz=353,slow=7.0,SNR=15
ZEI Tsey 70.52 309 *e*P **P** **15 12 54.4 -1.9**
ZEI pmax pmax
comp=Z,15nm,1.2s
KBZ Khabaz 70.62 311 P **P** **15 12 57.6 +1.1**
comp=Z,4.0nm,0.9s,baz=23,slow=8.8,SNR=7.6
KBZ LR LR 15 48 52.3
comp=Z,64nm,18.0s,baz=123,slow=40
KIV Kislovodsk 70.62 311*d iP* **P** **15 12 57.7 +1.0**
KIV *i* 15 13 05.2
KIV *i* 15 13 18.9
KIV pmax pmax
comp=Z,19nm,1.1s
KIV MLR MLR
comp=Z,57nm,16.0s
KIV Kislovodsk 70.62 311 *e*P **P** **15 12 57.1 +0.3**
comp=Z,18nm,0.9s
NB2 NORSAR Subarra 73.84 337 P **P** **15 13 15.6 0.0**
comp=Z,2.5nm,0.6s,baz=39,slow=6.2
NB2 NORSAR Subarra 73.84 337 P **P** **15 13 15.3 -0.3**
NB2 pmax pmax

comp=Z,2.0nm,0.6s
NOA NORSAR Array B 73.84 337 P P 15 13 16.0 +0.4
comp=Z,2.9nm,0.7s,baz=39,slow=5.9,SNR=19
NOA LR LR 15 49 03.7
comp=Z,69nm,18.7s,baz=35,slow=38
LRM Limekiln Ridge 73.95 44 *eP* **P 15 13 17.2 +0.4**
AKASG Malin Array Be 73.98 322 P **P 15 13 16.3 -0.2**
comp=Z,2.8nm,0.5s,baz=45,slow=6.2,SNR=11
AKASG LR LR 15 46 23.6
comp=Z,57nm,20.3s,baz=35,slow=36
KIEV Kiev 73.99 322⇑*eP* **P 15 13 16.5 -0.1**
KIEV pmax pmax
comp=Z,5.0nm,0.7s
KIEV Kiev 73.99 322 *eP* **P 15 13 16.4 -0.2**
comp=Z,9.7nm,1.2s
NVAR Mina Array Bea 74.84 53 P **P 15 13 23.8 +1.7**
comp=Z,2.1nm,0.7s,baz=267,slow=6.2,SNR=17
SORM Soroca 76.07 321⇑*iP* **P 15 13 27.1 -1.6**
SORM Soroca 76.07 321⇑P **P 15 13 27.1 -1.6**
MOOW Moose Ponds 76.19 45 *eP* **P 15 13 32.0 +2.3**
comp=Z,6.0nm,1.4s
R11A Troy Canyon, C 76.61 52 *eP* **P 15 13 33.7 +1.5**
comp=Z,2.6nm,0.9s
TPNV Topopah Spring 77.03 53 *eP* **P 15 13 35.7 +1.1**
TPNV pmax pmax
comp=Z,7.0nm,1.1s
TPNV Topopah Spring 77.03 53 *eP* **P 15 13 35.7 +1.1**
comp=Z,6.7nm,1.1s
HWUT Hardware Ranch 77.05 47 *eP* **P 15 13 36.5 +1.9**
comp=Z,3.6nm,0.9s
BW06 Boulder Array 77.48 45 *eP* **P 15 13 38.0 +0.9**
comp=Z,6.9nm,1.7s
PDAR Pinedale Array 77.48 45 P **P 15 13 37.9 +0.9**
comp=Z,1.1nm,0.6s,baz=271,slow=1.7,SNR=14
PDAR LR LR 15 50 00.9
comp=Z,21nm,18.0s,baz=264,slow=37
PSUT Pine Spring 77.57 51 *eP* **P 15 13 39.1 +1.5**
comp=Z,5.0nm,1.2s
BURAR Bucovina Array 77.99 322⇓*iP* **P 15 13 40.3 +0.7**
BURAR Bucovina Array 77.99 322⇓P **P 15 13 40.3 +0.7**
KOLS Kolonicke sedl 78.50 324 *eP* **P 15 13 42.2 -0.1**
KOLS pmax pmax
comp=Z,17nm,2.2s
KOLS Kolonicke sedl 78.50 324 *eP* **P 15 13 42.2 -0.1**
BRTR Keskin Array B 78.56 311 P **P 15 13 43.4 +0.3**
comp=Z,0.6nm,0.7s,baz=73,slow=1.7,SNR=6.5
BRTR LR LR 15 52 28.7
comp=Z,17nm,19.5s,baz=48,slow=39
STHS Stebnicka Huta 78.63 325 *eP* **P 15 13 43.1 +0.1**
STHS pmax pmax
comp=Z,3.0nm,1.0s
STHS Stebnicka Huta 78.63 325 *eP* **P 15 13 43.1 +0.1**
MTPU Mount Pierson 78.91 50 *eP* **P 15 13 46.5 +1.3**
comp=Z,2.2nm,0.7s
MLR Muntele Rosu 79.07 320⇑*iP* P 15 13 51.8 +6.1
MLR Muntele Rosu 79.07 320⇑P P 15 13 51.9 +6.2
SRU San Rafael Swe 79.24 49 *eP* **P 15 13 47.1 +0.3**
SRU pmax pmax
comp=Z,5.0nm,0.6s
SRU San Rafael Swe 79.24 49 *eP* **P 15 13 47.1 +0.3**
comp=Z,5.2nm,0.6s
ARR Arges 79.83 320⇑*iP* **P 15 13 51.8 +2.1**
MORC Moravsky Berou 80.03 327⇑*iP* **P 15 13 51.6 +0.9**
MORC Moravsky Berou 80.03 327 *eP* **P 15 13 51.3 +0.6**
MORC pmax pmax
comp=Z,17nm,1.0s
MORC Moravsky Berou 80.03 327 *eP* **P 15 13 51.3 +0.6**
comp=Z,17nm,1.0s
DPC Dobruska-Polom 80.12 328 *eP* **P 15 13 52.1 +0.9**
DPC *ep*P **PcP 15 13 59.4 +0.9**
DPC Dobruska-Polom 80.12 328 *eP* **P 15 13 52.1 +0.9**
DPC *e* 15 13 59.4
VYHS Vyhne 80.40 325 *eP* **P 15 13 53.5 +0.9**
VYHS Vyhne 80.40 325 *eP* **P 15 13 53.5 +0.9**
PV10 Paradox Valley 80.60 49 *eP* **P 15 13 55.7 +1.4**
BRG Berggiesshubel 80.71 329 *eP* **P 15 13 55.6 +1.3**
comp=Z,2.8nm,1.0s
BRG Berggiesshubel 80.71 329 *eP* **P 15 13 55.6 +1.3**
BRG pmax pmax
comp=Z,3.0nm,1.0s
N23A Red Feather La 80.75 45 *eP* **P 15 13 56.9 +1.9**
comp=Z,5.8nm,1.0s
CLL Collm 80.76 330 *eP* **P 15 13 55.0 +0.5**
CLL *i* 15 14 01.6
comp=Z,5.0nm,1.0s
CLL Collm 80.76 330 *eP* **P 15 13 55.0 +0.5**
CLL *i* 15 14 01.6
WUAZ Wupatki 81.01 52 *eP* **P 15 13 58.2 +1.9**
comp=Z,5.0nm,0.9s
PV01 Paradox Valley 81.04 49 *eP* **P 15 13 58.1 +1.5**
PRU Pruhonice 81.15 328 *eP* **P 15 13 57.5 +0.9**
PRU AMS AMS 15 52 50.0
comp=Z,100nm,20.7s
PRU Pruhonice 81.15 328 *eP* **P 15 13 57.5 +0.9**
PRU MLR MLR
comp=Z,100nm,20.7s
X16A Lo Mia Camp, P 81.67 53 *eP* **P 15 14 02.0 +2.1**
KHC Kasperske Hory 82.21 328 *eP* **P 15 14 02.9 +0.6**
KHC *ep*P **PcP 15 14 10.1 +2.5**
KHC AMS AMS 15 53 30.0
comp=Z,100nm,15.1s
KHC Kasperske Hory 82.21 328 *eP* **P 15 14 02.3 0.0**
KHC pmax pmax
comp=Z,1.0nm,0.6s
KHC Kasperske Hory 82.21 328 *eP* **P 15 14 02.3 0.0**
comp=Z,1.2nm,0.6s
S22A 4UR Ranch, Cre 82.33 48 *eP* **P 15 14 05.6 +2.1**
comp=Z,2.1nm,0.8s
GERES GERESS Array B 82.38 328 P **P 15 14 03.5 +0.2**
comp=Z,0.7nm,0.5s,baz=33,slow=5.2,SNR=6.7
GERES LR LR 15 53 50.1
comp=Z,51nm,18.6s,baz=42,slow=38
T25A Trinidad 84.16 47 *eP* **P 15 14 12.7 -0.1**
comp=Z,5.3nm,0.9s
BFO Black Forest 84.96 331 *i* P **P 15 14 17.4 +1.0**
SCHQ Schefferville 85.02 16 LR LR 15 57 59.1
comp=Z,25nm,18.3s,baz=54,slow=40
TXAR Lajitas Array 89.97 52 P **P 15 14 42.2 +1.2**
comp=Z,2.1nm,0.6s,baz=305,slow=3.3,SNR=31
TORD Torodi Ar. Bea 117.03 315 PP PP 15 21 32.9 -2.5
comp=Z,0.8nm,1.1s,baz=48,slow=6.6,SNR=4.2
VNA2 Neumayer--Watz 142.63 196 PKP **PKPdf 15 21 10.0 -3.3**
baz=109,slow=2.3
VNA3 Neumayer Olymp 142.88 195 PKP **PKPdf 15 21 10.2 -3.5**
LPAZ La Paz 146.58 59 PKPbc **PKPbc 15 21 24.7 +0.7**
comp=Z,2.9nm,0.5s,baz=276,slow=2.9,SNR=15

*IDC **14** 15:11:59.3±1.8, 10°.23N×125°.60E, h0km, mb3.5/6, mb1 3.6/6, mb1mx3.3/54, mbtmp3.5/6, Error ellipse: s-maj=194.1km s-min=19.7km az=68.0*
*ISCJB **14** 15:12:02.5±0.9, 10°.5N±0°.1×126°.5E±0°.1, h44km, mb3.5/6, Error ellipse: s-maj=19.2km s-min=10.0km az=136.9*
ISC 14 15:12:04.6±1.2, 10°.4N±0°.1×126°.4E±0°.2, h44km, n9, σ1§32/10, mb3.6/6, 1C, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
PLP	**Palo**	**1.58**	**299**⇑	*eP*		**Pn**		**15 12 30.5**	**+0.3**
PLP				*eS*		**Sn**		**15 12 48.8**	**-0.5**
OCLP	**Ormoc**	**1.86**	**291**	*eP*		**Pn**		**15 12 35.5**	**+1.4**
BUKP	**Musuan**	**2.83**	**208**	*eP*		**Pn**		**15 12 47.1**	**-0.2**
WRA	**Warramunga Arr**	**31.15**	**165**	P		**P**		**15 18 20.6**	**+1.2**
0.3nm,0.9s,baz=348,slow=7.8,SNR=2.7									
ASAR	**Alice Springs**	**34.65**	**168**	P		**P**		**15 18 50.4**	**+0.4**
0.2nm,0.7s,baz=342,slow=7.6,SNR=3.8									
MKAR	**Makanchi Array**	**51.99**	**323**	P		**P**		**15 21 06.9**	**-2.6**
0.3nm,0.6s,baz=130,slow=7.9,SNR=2.6									
ZALV	**Zalesovo Beam**	**54.57**	**331**	P		**P**		**15 21 27.3**	**-0.9**
0.4nm,0.3s,baz=112,slow=6.4,SNR=4.2									
KURBB	**Kurchatov Arra**	**56.03**	**325**	P		**P**		**15 21 39.0**	**+0.1**
0.5nm,0.6s,baz=129,slow=6.7,SNR=6.6									
ARCES	**ARCESS Array B**	**84.11**	**340**	P		**P**		**15 24 30.9**	**+0.3**
0.5nm,0.6s,baz=71,slow=6.1,SNR=4.3									

*IDC **14** 15:23:56.7±4.4, 36°.27N×70°.91E, h181km±39km, mb3.1/7, mb1 3.1/11, mb1mx3.0/47, mbtmp3.6/11, Error ellipse: s-maj=31.9km s-min=24.8km az=16.0*
*ISCJB **14** 15:23:59.5±0.6, 36°.66N±0°.04×71°.01E±0°.07, h188km, mb3.4/6, Error ellipse: s-maj=9.0km s-min=4.8km az=150.7*
*NNC **14** 15:24:04.8±1.6, 36°.97N×70°.92E, h196km±16km, mb2.9, mpv3.9, Error ellipse: s-maj=18.8km s-min=8.8km az=142.0*
ISC 14 15:24:00.9±0.9, 36°.70N±0°.08×71°.01E±0°.08, h188km, n24, σ1§08/28, mb3.3/6, 6C-6D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**2.72**	**321**	⇓P		**Pn**		**15 24 48.0**	**+1.3**
27nm,0.2s									
DZET				⇑S		**Sn**		**15 25 22.7**	**+0.1**
309nm,0.4s									
MNAS	**Manas**	**5.89**	**11**	⇓P		**Pn**		**15 25 27.6**	**+1.0**
5.1nm,0.4s									
MNAS				⇓S		**Sn**		**15 26 34.2**	**-0.2**
20nm,0.5s									
KK31	**Karatay Array**	**6.41**	**357**	⇓P		**Pn**		**15 25 33.9**	**+0.7**
2.9nm,0.4s,baz=185,slow=15,SNR=39									
KK31				⇓S		**Sn**		**15 26 43.7**	**-2.6**
1.9nm,0.3s,baz=186,slow=22,SNR=6.7									
AAK	**Ala-Archa**	**6.50**	**23**	P		**Pn**		**15 25 36.4**	**+1.8**
3.0nm,0.3s,baz=186,slow=6.6,SNR=30									
AAK				S		**Sn**		**15 26 49.6**	**+0.9**
0.6nm,0.3s,baz=309,slow=23,SNR=16									
AAK	**Ala-Archa**	**6.50**	**23**	⇑P		**Pn**		**15 25 36.1**	**+1.5**
8.5nm,0.7s									
AAK				⇑S		**Sn**		**15 26 49.2**	**+0.4**
10nm,0.7s									
TKM2	**Tokmak 2**	**7.14**	**28**	⇑P		**Pn**		**15 25 44.1**	**+1.1**
12nm,1.0s									
TKM2				⇑S		**Sn**		**15 27 02.8**	**-1.1**
6.5nm,0.9s									
MKAR	**Makanchi Array**	**13.12**	**36**	P		**Pn**		**15 27 00.3**	**+0.1**
0.1nm,0.3s,baz=218,slow=16,SNR=2.9									
PYUN	**Piuthan**	**13.26**	**127**	*eP*		**Pn**		**15 27 01.0**	**-1.2**
PYUN				*eS*		Sn		15 29 21.2	-8.8
KOLN	**Koldanda**	**13.87**	**126**	*eP*		**Pn**		**15 27 09.2**	**-0.7**
2.6nm,0.3s									
GKN	**Gorkha**	**14.40**	**123**	*eP*		**Pn**		**15 27 16.7**	**+0.2**
7.3nm,0.4s									
GKN				*eS*		Sn		15 29 49.0	-8.3
AB31	**Akbulak array**	**14.91**	**331**	⇓P		**P**		**15 27 23.4**	**0.0**
1.2nm,0.5s,baz=148,slow=12,SNR=25									
KURBB	**Kurchatov Arra**	**14.93**	**19**	P		**Pn**		**15 27 21.4**	**-1.2**
0.0nm,0.3s,baz=216,slow=8.1,SNR=3.8									
KKN	**Kakani**	**14.98**	**122**	*eP*		**Pn**		**15 27 24.3**	**+0.7**
6.0nm,0.4s									
PKIN	**Phulchoki**	**15.19**	**123**	*eP*		**P**		**15 27 27.8**	**+0.8**
6.4nm,0.3s									
BVAR	**Borovoye Array**	**16.33**	**359**	P		**P**		**15 27 39.7**	**+0.7**
0.2nm,0.3s,baz=164,slow=14,SNR=4.3									
AKTO	**Aktyubinsk**	**16.61**	**330**	P		**Pn**		**15 27 43.9**	**+1.0**
0.2nm,0.3s,baz=125,slow=9.6,SNR=6.0									
AKTO	**Aktyubinsk**	**16.61**	**330**	⇑P		**P**		**15 27 43.0**	**+0.9**
2.2nm,0.9s									
ZALV	**Zalesovo Beam**	**19.73**	**25**	P		**P**		**15 28 16.2**	**+0.3**
0.4nm,0.3s,baz=216,slow=12,SNR=3.3									
FINES	**FINESS Array B**	**37.32**	**326**	P		**P**		**15 30 53.8**	**-0.8**
0.9nm,0.6s,baz=116,slow=8.7,SNR=4.2									
ARCES	**ARCESS Array B**	**40.96**	**338**	P		**P**		**15 31 24.4**	**-0.3**
1.4nm,1.0s,baz=113,slow=8.0,SNR=3.9									
NOA	**NORSAR Array B**	**44.23**	**323**	P		**P**		**15 31 49.9**	**-1.2**
0.5nm,0.6s,baz=97,slow=7.7,SNR=3.2									
TORD	**Torodi Ar. Bea**	**65.73**	**269**	P		P		15 34 21.3	-4.4
0.3nm,0.4s,baz=47,slow=6.0,SNR=8.8									
YKA	**Yellowknife Ar**	**81.05**	**3**	P		**P**		**15 35 53.2**	**-1.2**
0.2nm,0.4s,baz=350,slow=5.6,SNR=7.6									
ASAR	**Alice Springs**	**84.36**	**125**	P		P		15 36 08.5	-3.6
0.3nm,0.7s,baz=308,slow=3.8,SNR=4.4									

IDC 14 15:37:29.2±4.0, 12°.31N×142°.04E, h150km±57km, mb3.3/5, mb1 3.5/6, mb1mx3.2/36, mbtmp3.7/6, Error ellipse: s-maj=55.6km s-min=17.6km az=81.0, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
GUMO	**Guam**	**3.04**	**65**	P		Pn		15 38 18.0	+0.9
11nm,0.3s,baz=350,slow=23,SNR=31									
GUMO				S		Sn		15 38 54.3	+0.2
30nm,0.3s,baz=115,slow=22,SNR=11									
WRA	**Warramunga Arr**	**32.93**	**193**	P		P		15 43 49.4	-0.2
0.7nm,0.6s,baz=15,slow=8.9,SNR=4.8									
ASAR	**Alice Springs**	**36.62**	**193**	P		P		15 44 21.4	+0.1
0.3nm,0.4s,baz=21,slow=11,SNR=30									
CMAR	**Chiang Mai Arr**	**41.92**	**284**	P		P		15 45 05.0	-0.5
1.1nm,0.8s,baz=88,slow=6.2,SNR=9.1									
SONM	**Songino Array**	**46.24**	**327**	P		P		15 45 40.4	+0.8
0.4nm,0.5s,baz=118,slow=6.2,SNR=2.9									
MKAR	**Makanchi Array**	**60.52**	**317**	P		P		15 47 23.0	-0.6
0.5nm,0.6s,baz=92,slow=8.7,SNR=7.4									

*IDC **14** 15:37:29.6±1.6, 34°.58S×71°.67W, h0km, mb3.4/2, mb1 3.9/4, mb1mx3.7/16, mbtmp3.6/4, ML4.1/2, MS3.2/1, Ms1 3.2/1, ms1mx2.8/9, Error ellipse: s-maj=57.8km s-min=31.5km az=76.0*
*GUC **14** 15:37:29.7±0.7, 34°.77S×72°.01W, h20km±9km, ML3.9*
ISC 14 15:37:29.1±1.2, 34°.76S±0°.03×71°.77W±0°.07, h4km±11km, n15, σ1§69/22, 1C-2D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
CHPI	**Pichilemu**	**0.41**	**332**	*eP*		**Pg**		**15 37 37.0**	**0.0**
CHPI				*i* S		**Sg**		**15 37 42.4**	**-0.1**
TALC	**Talca**	**0.65**	**170**⇑	*iP*		**Pg**		**15 37 42.4**	**+0.8**
TALC				*i* S		**Sg**		**15 37 51.2**	**+1.2**
CLCH	**Cerro Calan**	**1.70**	**37**⇓	*iP*		**Pb**		**15 38 00.4**	**-0.6**
CLCH				*i* S		**Sg**		**15 38 23.9**	**+0.1**
CLCH				IAML				15 38 34.1	
comp=E,3μm,0.7s									
PEL	**Peldehue**	**1.85**	**30**⇓	*iP*		**Pb**		**15 38 02.4**	**-1.1**
PEL				*i* S		**Sb**		**15 38 26.5**	**-0.5**
PEL				IAML				15 38 34.5	
comp=E,1μm,0.5s									
ROC1	**El Roble**	**1.89**	**20**	*eP*		**Pb**		**15 38 04.0**	**-0.3**
ROC1				*e*S		**Sg**		**15 38 29.1**	**-0.6**
ROCH	**El Roble**	**1.89**	**20**	*eP*		**Pb**		**15 38 03.9**	**-0.5**
ROCH				*i* S		**Sb**		**15 38 27.5**	**-0.9**
ROCH				IAML				15 38 33.0	
comp=E,1μm,0.7s									
ARCO	**CERRO ARCO**	**3.04**	**52**	*eP*		**Pb**		**15 38 23.6**	**-0.3**
ARCO				IAML				15 39 13.6	
comp=Z,89nm,0.7s									
CANA	**Caviahue**	**3.17**	**170**	*eP*		**Pb**		**15 38 23.6**	**-2.7**
AUSP	**Uspallata**	**3.22**	**39**	*eP*		**Pb**		**15 38 25.3**	**-1.8**
AUSP				*e*S		**Sb**		**15 39 05.0**	**-1.7**
ASAL	**Salagasta**	**3.27**	**49**	*eP*		**Pb**		**15 38 26.4**	**-1.3**
PLCA	**Paso Flores**	**6.04**	**171**	Pn		**Pn**		**15 39 03.1**	**+3.7**
comp=Z,1.4nm,0.3s,baz=354,slow=9.8,SNR=28									
PLCA				Sn		**Sb**		**15 40 23.7**	**-4.1**
baz=3.4,slow=19,SNR=1.9									
CPUP	**Villa Florida**	**15.00**	**60**	LR		LR		15 47 17.6	
comp=Z,88nm,20.9s,baz=226,slow=40									
LPAZ	**La Paz**	**18.68**	**11**	P		**Pn**		**15 41 48.7**	**-0.6**
comp=Z,0.2nm,0.3s,baz=181,slow=8.3,SNR=5.6									
TXAR	**Lajitas Array**	**70.50**	**331**	P		**P**		**15 48 45.4**	**+0.3**
comp=Z,0.1nm,0.4s,baz=154,slow=9.0,SNR=3.8									
TORD	**Torodi Ar. Bea**	**84.26**	**70**	P		**P**		**15 50 02.5**	**+0.1**
comp=Z,0.3nm,0.7s,baz=213,slow=5.0,SNR=2.0									

*IDC **14** 15:39:57.4±1.0, 26°.75N×144°.42E, h0km, mb3.8/9, mb1 4.0/11, mb1mx3.8/32, mbtmp3.8/11, ML3.3/3, MS2.4/1, Ms1 2.4/1, ms1mx1.9/45, Error ellipse: s-maj=25.4km s-min=19.9km az=77.0*
*NEIC **14** 15:39:58.5±0.8, 26°.81N×144°.37E, h10km, mb4.1/2, Error ellipse: s-maj=19.3km s-min=12.1km az=72.0*
*ISCJB **14** 15:40:01.4±0.6, 26°.64N±0°.09×144°.14E±0°.07, h33km, mb3.9/14, MS2.3/1, Error ellipse: s-maj=13.0km s-min=8.1km az=20.5*
ISC 14 15:40:03.1±0.9, 26°.8N±0°.1×144°.15E±0°.09, h35km, n22, σ1§51/23, mb4.0/14, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**1.79**	**280**	*eP*		**Pn**		**15 40 31.0**	**-0.4**
CBIJ				*e*Sn		**Sn**		**15 40 53.4**	**+0.4**
JCJ	**Chichijima**	**1.79**	**280**	Pn		Pn		**15 40 30.6**	**-0.9**
9.1nm,0.3s,baz=254,slow=23,SNR=9.4									
JCJ				Sn		**Sn**		**15 40 52.5**	**-0.5**
53nm,0.3s,baz=123,slow=23,SNR=11									
MJAR	**Matsushiro Arr**	**10.96**	**334**	Pn		**Pn**		**15 42 35.0**	**-2.5**
0.6nm,0.3s,baz=77,slow=19,SNR=6.9									
MAJO	**Matsushiro**	**10.96**	**334**	*e*Pn		**Pn**		**15 42 36.6**	**-0.9**
KSRS	**Korea Array**	**17.36**	**312**	Pn		**P**		**15 44 04.0**	**+0.3**
0.1nm,0.3s,baz=113,slow=12,SNR=6.0									
KSAR	**Wonju Array Be**	**17.38**	**312**	Pn		**P**		**15 44 04.0**	**+0.1**
USRK	**Ussuriysk Ar.**	**19.96**	**334**	P		**Pn**		**15 44 34.6**	**+0.6**
2.9nm,0.9s,baz=169,slow=11,SNR=4.1									
KLR	**Kul'dur**	**24.38**	**340**	P		**P**		**15 45 20.4**	**+2.5**
1.2nm,0.7s,baz=137,slow=10,SNR=4.6									
MA2	**Magadan**	**33.10**	**6**	LR		LR		15 57 56.2	
comp=Z,6.8nm,21.1s,baz=36,slow=33									
ULN	**Ulaanbaatar**	**35.76**	**316**	*eP*		**P**		**15 46 57.1**	**-1.8**
2.8nm,0.8s									
SONM	**Songino Array**	**36.16**	**316**	P		**P**		**15 47 04.0**	**+1.8**
3.1nm,0.8s,baz=116,slow=8.3,SNR=16									
CMAR	**Chiang Mai Arr**	**42.37**	**268**	P		**P**		**15 47 54.0**	**-0.2**
0.4nm,0.9s,baz=62,slow=8.3,SNR=4.0									
WRAB	**Tennant Creek**	**47.40**	**193**	*eP*		**P**		**15 48 33.3**	**-0.9**
1.0nm,0.7s									
WRA	**Warramunga Arr**	**47.41**	**193**	P		**P**		**15 48 34.0**	**-0.3**
1.8nm,0.9s,baz=13,slow=8.3,SNR=6.5									
ASAR	**Alice Springs**	**51.12**	**192**	P		**P**		**15 49 02.5**	**-0.1**
0.2nm,0.7s,baz=13,slow=9.4,SNR=3.9									
MKAR	**Makanchi Array**	**52.03**	**310**	P		**P**		**15 49 11.3**	**+2.1**
2.1nm,0.9s,baz=98,slow=9.2,SNR=13									
NRIK	**Noril'sk**	**53.58**	**338**	P		**P**		**15 49 21.8**	**+1.5**
0.5nm,0.3s,baz=141,slow=4.9,SNR=4.2									
KURK	**Kurchatov**	**54.45**	**315**	P		**P**		**15 49 25.8**	**-1.1**
6.4nm,1.1s									
INK	**Inuvik**	**62.58**	**25**	P		**P**		**15 50 20.5**	**-2.7**
2.4nm,1.2s,baz=321,slow=6.5,SNR=3.1									
NVAR	**Mina Array Bea**	**79.32**	**52**	P		**P**		**15 52 07.9**	**+2.2**
0.8nm,0.8s,baz=284,slow=4.1,SNR=5.1									
KBZ	**Khabaz**	**79.50**	**314**	P		**P**		**15 52 07.3**	**+1.1**
1.3nm,0.5s,baz=22,slow=11,SNR=3.1									
PDAR	**Pinedale Array**	**83.19**	**45**	P		**P**		**15 52 24.9**	**-1.2**
0.2nm,0.7s,baz=38,slow=6.0,SNR=3.0									

*NIED **14** 15:47:00, 37°.00N×141°.20E, h8km, Mw3.5 Best double couple: M0 1.85000×10^14 NP1:φs=202.00000°, δ42.00000°, λ-88.00000°. NP2:φs=19.00000°, δ48.00000°, λ-92.00000°.*
JMA 14 15:47:08.0±0.1, 37°.05N×141°.20E, h28km±1km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.33**	**279**	P			Pb	15 47 15.5	-0.2
ONAJ				S			Sb	15 47 20.5	-0.4
JFK	**Kawauchi**	**0.41**	**321**	P			Pb	15 47 16.6	-0.3
JFK				S			Sb	15 47 22.4	-0.6
JHO	**Hitachi**	**0.67**	**229**	P			Pb	15 47 20.3	-0.8
JHO				*e*S			Sb	15 47 29.5	-0.6
JFT	**Otama**	**0.83**	**304**	P			Pb	15 47 24.0	+0.1
JFT				S			Sn	15 47 35.0	-0.2
JMM	**Marumori**	**0.88**	**338**	P			Pn	15 47 23.9	-0.6
JMM				S			Sb	15 47 34.9	-1.1
JSB	**Shiboa**	**1.03**	**266**	P			Pb	15 47 27.5	+0.3
JSB				S			Sb	15 47 41.3	+1.0
JFY	**Yanaizu**	**1.25**	**287**	P			Pb	15 47 31.0	+0.1
JFY				S			Sb	15 47 46.9	+0.4
JOU	**Okura**	**1.38**	**342**	P			Pb	15 47 32.5	-0.7
JOU				S			Sb	15 47 49.9	-0.5
MAT	**Matsushiro**	**2.46**	**259**	P			Pn	15 47 48.3	+2.1

*NIED **14** 15:50:00, 37°.30N×141°.60E, h50km, Mw3.8 Best double couple: M0 4.90000×10^14 NP1:φs=186.00000°, δ10.00000°, λ68.00000°. NP2:φs=28.00000°, δ81.00000°, λ94.00000°.*
*IDC **14** 15:50:31.4±1.1, 37°.31N×141°.88E, h0km, mb3.7/5, mb1 3.9/9, mb1mx3.6/52, mbtmp3.8/9, ML3.4/4, MS2.8/6, Ms1 2.8/6, ms1mx2.5/47, Error ellipse: s-maj=25.6km s-min=20.9km az=118.0*
*ISCJB **14** 15:50:33.7±1.2, 37°.28N±0°.04×141°.79E±0°.07, h23km±7km, mb3.7/6, MS2.8/1, Error ellipse: s-maj=9.2km s-min=6.0km az=14.8*
*JMA **14** 15:50:37.3±0.1, 37°.30N×141°.58E, h44km±2km, M4.0*
JMA Felt I J1.
ISC 14 15:50:34.8±2.1, 37°.28N±0°.04×141°.76E±0°.08, h24km±14km, n30, σ1§36/29, mb3.6/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.71**	**277**	P		**Pb**		**15 50 49.1**	**+0.5**
JFK				S		**Sb**		**15 50 57.1**	**-1.0**
ONAJ	**Iwakimizuishiy**	**0.79**	**258**	P		**Pb**		**15 50 50.3**	**+0.4**
ONAJ				S		**Sb**		**15 50 59.2**	**-1.1**
JMM	**Marumori**	**0.97**	**308**	P		**Pn**		**15 50 52.7**	**-0.3**
JMM				S		**Sb**		**15 51 03.7**	**-1.6**
JFT	**Otama**	**1.16**	**282**	P		**Pn**		**15 50 56.1**	**+0.5**
JFT				S		**Sn**		**15 51 08.5**	**-2.3**
JHO	**Hitachi**	**1.17**	**236**	P		**Pn**		**15 50 55.3**	**-0.4**
JHO				S		**Sn**		**15 51 08.4**	**-2.4**
JIO	**Ouri**	**1.22**	**345**	P		**Pn**		**15 50 56.9**	**+0.5**
JIO				S		**Sn**		**15 51 11.1**	**-1.1**
JOU	**Okura**	**1.39**	**322**	P		**Pn**		**15 50 59.5**	**+0.7**
JOU				S		**Sn**		**15 51 16.1**	**-0.4**
JYS	**Shiratake**	**1.64**	**306**	P		**Pn**		**15 51 03.2**	**+0.9**
JYS				*e*S		**Sn**		**15 51 21.6**	**-1.1**
JFY	**Yanaizu**	**1.65**	**275**	P		**Pn**		**15 51 02.8**	**+0.5**
MJAR	**Matsushiro Arr**	**2.94**	**257**	Pn		**Pn**		**15 51 22.4**	**+2.3**
6.7nm,0.3s,baz=81,slow=15,SNR=38									
MJAR				LR		LR		15 52 46.7	
comp=Z,121nm,19.0s,baz=75,slow=45									
MAT	**Matsushiro**	**2.94**	**257**	P		**Pn**		**15 51 21.8**	**+1.7**
MAT				S		**Sn**		**15 51 56.9**	**+2.1**
JHJ	**Hachijo jima 2**	**4.45**	**202**	Pn		**Pn**		**15 51 41.9**	**+0.9**
15nm,0.3s,baz=79,slow=19,SNR=7.0									
JHJ				Sn		**Sn**		**15 52 30.4**	**-1.5**
40nm,0.3s,baz=25,slow=23,SNR=6.6									
ASAJ	**Asahikawa**	**

47nm,0.3s,baz=136,slow=22,SNR=9.2
DZM LR LR 15 55 32.0
comp=Z,397nm,19.4s,baz=330,slow=37
STKA Stephens Creek 26.44 239 P **P 15 59 42.5 +1.6**
1.5nm,0.5s,baz=56,slow=9.9,SNR=7.8
WRA Warramunga Arr 31.89 265 P **P 16 00 27.9 -1.7**
0.4nm,0.5s,baz=92,slow=8.6,SNR=12
ASAR Alice Springs 32.02 258 P **P 16 00 30.0 -0.7**
3.0nm,0.7s,baz=87,slow=9.2,SNR=51
CMAR Chiang Mai Arr 78.32 295 P **P 16 06 05.0 +0.6**
0.9nm,0.8s,baz=136,slow=5.1,SNR=7.0
CMAR pP **sP 16 06 17.0 +1.2**
0.9nm,0.9s,baz=130,slow=3.5,SNR=4.2
VNA3 Neumayer Olymp 88.39 181 P **P 16 06 55.0 -0.4**
VNA2 Neumayer--Watz 88.67 181 P **P 16 06 57.3 +0.6**
baz=173,slow=2.7
NVAR Mina Array Bea 90.31 49 P **P 16 07 04.8 -0.4**
0.7nm,0.7s,baz=221,slow=7.8,SNR=6.4
NVAR pP **sP 16 07 15.8 -0.9**
0.5nm,0.6s,baz=228,slow=8.2,SNR=3.7
GERES GERESS Array B 145.28 330 PKPbc **PKPbc 16 13 40.9 -0.4**
0.4nm,0.7s,baz=60,slow=6.0,SNR=3.0
GERES pPKP **pPKPdf 16 13 51.8 +1.5**

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*IDC **14** 16:02:51.6±1.1,28°.92S×176°.76W,h0km,mb4.1/6,*
mb1 4.3/6,mb1mx4.0/21,mbtmp4.1/6,MS3.1/2,Ms1 3.1/2,
ms1mx2.8/31,Error ellipse: s-maj=34.6km s-min=24.9km
az=153.0
*ISCJB **14** 16:02:54.0±1.0,29°.0S±0°.1×176°.7W±0°.1,h36km,mb4.1/9,*
MS3.1/2,Error ellipse: s-maj=17.2km s-min=12.7km
az=148.3
*NEIC **14** 16:02:56.9±0.8,29°.03S×176°.86W,h35km,mb4.0/4,Error*
ellipse: s-maj=17.1km s-min=14.5km az=110.0
ISC 14 16:02:57.6±0.9,29°.0S±0°.1×176°.9W±0°.1,h36km,n21,
σ1§14/21,mb4.0/9,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**0.94**	**256**	Pn	**Pn**	**16 03 14.9**	**+0.6**
	450nm,0.3s,baz=57,slow=9.9,SNR=9.7						
RAO				Sn	**Sn**	**16 03 27.4**	**+0.8**
	740nm,0.3s,baz=296,slow=23,SNR=12						
RAO				LR	LR	16 03 41.1	
	comp=Z,1μm,20.1s,baz=90,slow=46						
RAO	**Raoul Island**	**0.94**	**256**	*e*Pn	**Pn**	**16 03 13.7**	**-0.6**
RAO				*e*Sn	**Sn**	**16 03 27.9**	**+1.4**
MSVF	**Nonsavu**	**12.16**	**336**	P	**Pn**	**16 05 47.5**	**-1.0**
ARMA	**Armidale**	**27.35**	**259**	*e*P	**P**	**16 08 38.2**	**-1.2**
	2.3nm,0.6s						
CTA	**Charters Tower**	**34.59**	**276**	P	**P**	**16 09 43.5**	**+0.4**
	2.3nm,0.7s,baz=93,slow=9.9,SNR=5.3						
CTAO	**Charters Tower**	**34.59**	**276**	*e*P	**P**	**16 09 43.2**	**0.0**
	6.9nm,0.6s						
STKA	**Stephens Creek**	**35.77**	**255**	P	**P**	**16 09 52.9**	**-0.4**
	3.8nm,0.9s,baz=96,slow=9.4,SNR=8.5						
STKA				LR	LR	16 22 54.4	
	comp=Z,100nm,18.9s,baz=49,slow=34						
ASAR	**Alice Springs**	**44.19**	**265**	P	**P**	**16 11 02.3**	**-1.0**
	2.3nm,0.6s,baz=101,slow=6.9,SNR=31						
WRAB	**Tennant Creek**	**45.05**	**270**	*e*P	**P**	**16 11 09.6**	**-0.6**
	1.4nm,0.7s						
WRA	**Warramunga Arr**	**45.05**	**270**	P	**P**	**16 11 09.7**	**-0.5**
	1.2nm,0.4s,baz=110,slow=7.8,SNR=11						
JAY	**Jayapura**	**48.17**	**295**	LR	LR	16 30 23.3	
	comp=Z,6.0nm,20.3s,slow=34						
VNDA	**Vanda**	**49.56**	**186**	P	**P**	**16 11 44.5**	**+0.1**
	1.2nm,1.1s,baz=28,slow=7.0,SNR=3.4						
CASY	**Casey**	**56.81**	**207**	*e*P	**P**	**16 12 36.0**	**-1.9**
	0.7nm,0.6s						
MJAR	**Matsushiro Arr**	**77.69**	**324**	P	**P**	**16 14 50.4**	**-0.1**
	1.4nm,0.8s,baz=157,slow=6.6,SNR=4.3						
FINES	**FINESS Array B**	**144.18**	**341**	PKP	PKPbc	16 22 27.4	+0.3
	2.3nm,0.7s,baz=86,slow=5.9,SNR=6.0						
KBZ	**Khabaz**	**145.13**	**306**	PKPbc	**PKPdf**	**16 22 34.0**	**+2.9**
	1.7nm,0.7s,baz=339,slow=2.1,SNR=2.7						
NB2	**NORSAR Subarra**	**147.53**	**353**	PKP	**PKPbc**	**16 22 37.9**	**+0.6**
	comp=Z,3.8nm,1.7s,baz=17,slow=2.6						
NOA	**NORSAR Array B**	**147.53**	**353**	PKPbc	**PKPdf**	**16 22 34.8**	**+0.2**
	comp=Z,1.0nm,0.9s,baz=16,slow=4.2,SNR=2.8						
AKASG	**Malin Array Be**	**150.77**	**325**	PKPbc	**PKPbc**	**16 22 45.8**	**+0.1**
	comp=Z,1.0nm,0.3s,baz=46,slow=3.0,SNR=5.8						
EIL	**Elat**	**152.30**	**279**	PKPbc	**PKPbc**	**16 22 51.7**	**+1.8**
	comp=Z,3.8nm,0.7s,baz=32,slow=23,SNR=3.7						
BRTR	**Keskin Array B**	**152.77**	**301**	PKPbc	**PKPbc**	**16 22 51.1**	**+0.2**
	comp=Z,0.7nm,0.8s,baz=46,slow=3.6,SNR=4.6						

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*SOME **14** 16:03:17.6,41°.93N×79°.85E,h20km*
*KRNET **14** 16:03:18.2±0.1,42°.08N×79°.73E,h21km,mb2.4*
*NNC **14** 16:03:18.5±2.0,42°.04N×79°.73E,h0km,mb2.7,mpv2.5,*
Error ellipse: s-maj=14.4km s-min=11.5km az=108.0
ISC 14 16:03:16.9±3.3,41°.93N±0°.07×79°.78E±0°.06,h2km±24km,
n26,σ1§33/51,16C-10D,Kyrgyzstan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PRZ	**Przheval'sk**	**1.17**	**299**	⇑*i*P	**Pb**	**16 03 39.2**	**-0.8**
	baz=292						
PRZ				⇑*i*S	**Sb**	**16 03 54.5**	**-1.2**
	baz=292						
SHLS	**Shalkode**	**1.23**	**3**	*e*P	**Pn**	**16 03 39.8**	**-1.6**
	18nm,0.1s						
SHLS				*e*S	**Sb**	**16 03 56.4**	**-1.2**
	52nm,0.3s						
UZB	**Uzynbulak**	**1.34**	**336**	*e*P	**Pn**	**16 03 41.8**	**-1.1**
	1.1nm,0.1s						
UZB				*e*S	**Sb**	**16 03 59.2**	**-1.5**
	12nm,0.2s						
PDGK	**Podgornoye**	**1.42**	**351**	⇓*i*P	**Pn**	**16 03 42.7**	**-1.0**
	baz=352						
PDGK				⇓*i*S	**Sn**	**16 04 00.9**	**-2.1**
	baz=352						
PDGK	**Podgornoye**	**1.42**	**351**	⇓P	**Pn**	**16 03 42.4**	**-1.4**
	2.4nm,0.4s						
PDGK				⇑S	**Sn**	**16 04 00.9**	**-2.1**
	12nm,0.8s						
SATY	**Saty**	**1.52**	**318**	*e*P	**Pn**	**16 03 44.6**	**-0.8**
	3.6nm,0.1s						
SATY				*e*S	**Sn**	**16 04 04.3**	**-1.6**
	17nm,0.1s						
KPKS	**Kokpek**	**1.74**	**333**	*e*P	**Pn**	**16 03 48.4**	**+0.1**
	13nm,0.2s						
KPKS				*e*S	**Sn**	**16 04 11.1**	**-0.1**
	33nm,0.3s						
ANVS	**Anan'yevo**	**1.79**	**299**	⇑*i*P	**Pb**	**16 03 50.1**	**-0.4**
	baz=295						
ANVS				⇑*i*S	**Sb**	**16 04 13.1**	**-0.4**
	baz=295						
KURS	**Kuram**	**1.96**	**323**	*e*P	**Pb**	**16 03 52.8**	**-0.6**
	1.5nm,0.2s						
KURS				*e*S	**Sb**	**16 04 18.3**	**-0.1**
	3.0nm,0.3s						
MDOK	**Medeo**	**2.37**	**302**	*e*P	**Pb**	**16 03 59.7**	**-0.7**
	3.8nm,0.3s						
MDOK				*e*S	**Sb**	**16 04 30.1**	**-0.1**
	7.4nm,0.7s						
TNSS	**Tian-Shan**	**2.38**	**299**	*e*P	**Pb**	**16 04 00.7**	**0.0**
	2.8nm,0.3s						
TNSS				*e*S	**Sb**	**16 04 32.4**	**+1.7**
	6.0nm,0.2s						
MNBS	**Baschi**	**2.38**	**335**	*e*P	**Pn**	**16 03 57.9**	**+0.8**
	1.4nm,0.2s						
MNBS				*e*S	**Sn**	**16 04 27.9**	**+0.9**
	32nm,0.2s						
ULHL	**Ulahol**	**2.66**	**278**	⇑*i*P	**Pb**	**16 04 04.4**	**-0.9**
	baz=274						
ULHL				⇑*i*S	**Sb**	**16 04 40.3**	**+1.8**
	baz=274						
ARXS	**Arharly**	**2.70**	**329**	*e*P	**Pb**	**16 04 05.8**	**-0.2**
	2.6nm,0.4s						
ARXS				*e*S	**Sb**	**16 04 40.8**	**+1.2**
	5.5nm,0.2s						
MTBS	**Maitube**	**2.76**	**297**	*e*P	**Pb**	**16 04 06.8**	**-0.2**
	4.6nm,0.2s						
MTBS				*e*S	**Sb**	**16 04 42.3**	**+1.0**
	7.1nm,0.4s						
CHKK	**Chushkaly**	**2.82**	**314**	*e*P	**Pb**	**16 04 07.7**	**-0.3**
	2.4nm,0.1s						
CHKK				*e*S	**Sb**	**16 04 44.7**	**+1.6**
	9.9nm,0.1s						
NRN	**Naryn**	**2.88**	**261**	⇑*e*P	**Pb**	**16 04 07.8**	**-1.4**
	baz=258						
NRN				⇑*e*S	**Sb**	**16 04 43.6**	**-1.4**
	baz=258						
BOOM	**Boomskoye usch**	**2.91**	**282**	⇓*e*P	**Pn**	**16 04 07.1**	**+2.6**
	baz=280						
BOOM				⇓*e*S	**Sb**	**16 04 42.6**	**-3.2**
	baz=280						
KST	**Kastek**	**3.04**	**293**	*e*P	**Pb**	**16 04 12.2**	**+0.4**
	1.5nm,0.1s						
KST				⇑*i*S	**Sb**	**16 04 51.5**	**+2.0**
	6.2nm,0.4s						
KUU	**Kurty**	**3.21**	**309**	*e*P	**Pb**	**16 04 14.6**	**0.0**
	1.6nm,0.2s						
KUU				⇓*i*S	**Sb**	**16 04 55.5**	**+1.4**
	3.1nm,0.3s						
DGS	**Degeres**	**3.24**	**295**	*e*P	**Pb**	**16 04 14.5**	**-0.7**
	2.5nm,0.2s						
DGS				*e*S	**Sb**	**16 04 56.1**	**+0.9**
	2.5nm,0.2s						
TKM2	**Tokmak 2**	**3.26**	**289**	⇓Pg	**Pb**	**16 04 17.3**	**+1.8**
	0.6nm,0.5s						
TKM2				⇓Lg	Lg	16 04 58.2	
	3.0nm,0.5s						
KAPS	**Kapalarasan**	**3.37**	**355**	*e*P	**Pb**	**16 04 17.6**	**+0.1**
	0.5nm,0.2s						
KAPS				*e*S	**Sb**	**16 05 00.9**	**+1.9**
	3.1nm,0.2s						
KZA	**Kyzart**	**3.38**	**274**	⇑*i*P	**Pb**	**16 04 17.0**	**-0.8**
	baz=271						
KZA				⇑*i*S	**Sb**	**16 05 00.3**	**+0.7**
	baz=271						
MAKZ	**Makanchi**	**5.13**	**17**	⇑Pn	**Pn**	**16 04 35.7**	**+0.9**
	0.7nm,0.7s						
MAKZ				⇑Sn	**Sn**	**16 05 36.1**	**+1.5**
	0.6nm,0.7s						
MAKZ				⇑Lg	Lg	16 05 55.8	
	0.4nm,0.5s						
MK31	**Makanchi Array**	**5.19**	**19**	⇓Pn	**Pn**	**16 04 37.3**	**+1.7**
	0.2nm,0.4s,baz=205,slow=14,SNR=5.8						
MK31				⇓Sn	**Sn**	**16 05 36.6**	**+0.6**
	0.2nm,0.3s,baz=198,slow=25						
MK31				⇑Lg	Lg	16 05 57.6	
	0.3nm,0.4s						

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*IDC **14** 16:23:08.3±1.1,36°.62N×142°.34E,h0km,mb3.5/7,*
mb1 3.6/10,mb1mx3.5/59,mbtmp3.6/10,ML3.5/3,MS2.5/1,
Ms1 2.5/1,ms1mx2.0/35,Error ellipse: s-maj=26.3km
s-min=19.2km az=92.0
*JMA **14** 16:23:11.0±0.2,36°.73N×142°.17E,h30km±4km,M3.4*
ISC 14 16:23:09.0±2.2,36°.68N±0°.05×142°.16E±0°.07,h4km±12km,
n24,σ1§49/31,mb3.5/7,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**1.17**	**291**	P	**Pg**	**16 23 31.2**	**-0.3**
ONAJ				*e*S	**Sb**	**16 23 47.0**	**-0.3**
JFK	**Kawauchi**	**1.24**	**304**	P	**Pg**	**16 23 31.9**	**-0.8**
JHO	**Hitachi**	**1.28**	**267**	P	**Pg**	**16 23 33.6**	**0.0**
JHO				S	**Sg**	**16 23 50.2**	**-0.1**
JMM	**Marumori**	**1.61**	**318**	P	**Pn**	**16 23 37.4**	**-0.7**
JMM				S	**Sn**	**16 23 57.3**	**-2.0**
JFT	**Otama**	**1.68**	**300**	P	**Pn**	**16 23 39.4**	**+0.3**
JIO	**Ouri**	**1.88**	**340**	P	**Pn**	**16 23 41.6**	**-0.3**
JIO				*e*S	**Sn**	**16 24 04.0**	**-2.0**
JOU	**Okura**	**2.06**	**325**	P	**Pn**	**16 23 44.8**	**+0.5**
JFY	**Yanaizu**	**2.10**	**291**	P	**Pn**	**16 23 46.0**	**+1.2**
JAG	**Ashikaga**	**2.20**	**264**	P	**Pn**	**16 23 47.0**	**+0.8**
JAG				S	**Sn**	**16 24 13.8**	**0.0**
JMK	**Ichinoseki**	**2.38**	**342**	P	**Pn**	**16 23 49.5**	**+0.7**
JYK	**Kaneyama**	**2.65**	**328**	P	**Pn**	**16 23 53.1**	**+0.7**
JRY	**Ryogami san**	**2.71**	**257**	P	**Pn**	**16 23 53.6**	**+0.2**
JRY				S	**Sn**	**16 24 26.0**	**-0.6**
MJAR	**Matsushiro Arr**	**3.18**	**269**	Pn	**Pn**	**16 24 02.0**	**+2.2**
	6.5nm,0.3s,baz=102,slow=9.3,SNR=63						
MAT	**Matsushiro**	**3.19**	**269**	P	**Pn**	**16 24 01.8**	**+2.0**
MAT				S	**Sb**	**16 24 42.8**	**-2.5**
JHJ	**Hachijo jima 2**	**4.06**	**210**	Pn	**Pn**	**16 24 12.2**	**+0.5**
	9.2nm,0.3s,baz=116,slow=23,SNR=6.5						
JHJ				Sn	**Sn**	**16 24 54.9**	**-4.8**
	13nm,0.3s,baz=37,slow=20,SNR=2.8						
ASAJ	**Asahikawa**	**7.43**	**2**	Pn	**Pn**	**16 24 58.2**	**0.0**
	0.5nm,0.3s,baz=189,slow=17,SNR=5.1						
KSRS	**Korea Array**	**11.40**	**278**	LR	LR	16 29 55.6	
	comp=Z,24nm,19.4s,baz=148,slow=35						
SONM	**Songino Array**	**28.48**	**304**	P	**P**	**16 29 05.6**	**+0.4**
	1.4nm,0.7s,baz=108,slow=8.9,SNR=9.5						
CMAR	**Chiang Mai Arr**	**41.99**	**256**	P	**P**	**16 31 02.2**	**+0.8**
	0.5nm,0.7s,baz=43,slow=8.8,SNR=3.6						
ZALV	**Zalesovo Beam**	**42.59**	**313**	P	**P**	**16 31 08.6**	**+2.7**
	0.7nm,0.6s,baz=93,slow=10,SNR=3.6						
MKAR	**Makanchi Array**	**44.81**	**303**	P	**P**	**16 31 24.4**	**+0.6**
	0.3nm,0.7s,baz=90,slow=9.9,SNR=3.6						
WRA	**Warramunga Arr**	**56.80**	**189**	P	**P**	**16 32 54.1**	**-0.3**
	0.3nm,0.6s,baz=6.1,slow=7.3,SNR=4.4						
ASAR	**Alice Springs**	**60.53**	**189**	P	**P**	**16 33 19.8**	**-0.5**
	0.4nm,0.9s,baz=15,slow=12,SNR=3.6						
YKA	**Yellowknife Ar**	**63.81**	**30**	P	**P**	**16 33 42.0**	**+0.1**
	0.1nm,0.3s,baz=294,slow=9.9,SNR=2.4						

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*ISCJB **14** 16:26:12.8±0.6,28°.82S±0°.05×20°.56E±0°.05,h10km,Error*
ellipse: s-maj=8.6km s-min=4.2km az=141.8
*PRE **14** 16:26:12.7±1.8,28°.76S×20°.49E,h5km,ML4.3*
ISC 14 16:26:13.6±1.1,28°.79S±0°.06×20°.55E±0°.05,h10km,n14,
σ1§74/26,South Africa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KEIM	**Keimoes**	**0.38**	**77**	*e*P	**Pg**	**16 26 21.5**	**+0.3**
KEIM				*e*S	**Sb**	**16 26 28.0**	**-0.5**
KEIM				AML	AML	16 26 33.0	
	comp=Z,2μm,0.4s						
UPI	**Upington**	**0.75**	**55**	*e*P	**Pg**	**16 26 27.4**	**-0.8**
UPI				*e*S	**Sg**	**16 26 38.0**	**0.0**
UPI				AML	AML	16 26 41.8	
	comp=Z,2μm,0.6s						
CVNA	**Calvinia**	**2.77**	**194**	*e*P	**Pn**	**16 27 00.0**	**+1.9**
CVNA				*e*S	**Sn**	**16 27 31.1**	**-0.5**
CVNA				AML	AML	16 27 46.0	
	comp=Z,1μm,0.5s						
KOMG	**Komaggas**	**2.86**	**249**	*e*P	**Pn**	**16 27 00.5**	**+1.2**
KOMG				*e*S	**Sn**	**16 27 32.9**	**-0.9**
KOMG				AML	AML	16 27 40.5	
	comp=Z,577nm,0.4s						
BOSA	**Boshof**	**4.14**	**89**	*i* P	**Pg**	**16 27 34.0**	**+1.0**
BOSA				*i* S	**Sg**	**16 28 27.0**	**+0.4**
SWZ	**Schweizer**	**4.52**	**70**	*e*P	**Pn**	**16 27 23.4**	**+1.1**
SWZ				*e*S	**Sn**	**16 28 14.3**	**-0.7**
SWZ				AML	AML	16 28 40.7	
	comp=Z,617nm,0.7s						
ELIM	**Elim**	**5.83**	**187**	*e*P	**Pn**	**16 27 40.7**	**+0.6**
ELIM				*e*S	**Sn**	**16 28 44.5**	**-2.5**
ELIM				AML	AML	16 29 20.7	
	comp=Z,264nm,0.9s						
PRYS	**Parys**	**6.31**	**74**	*e*P	**Pn**	**16 27 47.9**	**+1.0**
PRYS				*e*S	**Sn**	**16 28 57.0**	**-2.2**
PRYS				AML	AML	16 29 42.6	
	comp=Z,188nm,0.4s						
GRM	**Grahamstown**	**6.81**	**133**	*e*P	**Pn**	**16 27 55.5**	**+1.8**
GRM				*e*S	**Sn**	**16 29 11.1**	**-0.3**
GRM				AML	AML	16 30 02.2	
	comp=Z,95nm,0.7s						
ERPM	**east rand prop**	**7.25**	**72**	*e*P	**Pn**	**16 28 02.2**	**+2.3**
ERPM				*e*S	**Sn**	**16 29 20.1**	**-2.2**
ERPM				AML	AML	16 30 05.7	
	comp=Z,58nm,0.5s						
KSD	**Kokstad**	**7.91**	**105**	*e*P	**Pn**	**16 28 10.4**	**+1.6**
KSD				*e*S	**Sn**	**16 29 35.2**	**-3.3**
KSD				AML	AML	16 30 26.4	
	comp=Z,19nm,0.4s						
POGA	**Pongola**	**9.87**	**84**	*e*P	**Pn**	**16 28 38.7**	**+3.1**
POGA				*e*S	**Sn**	**16 30 24.0**	**-2.6**
POGA				AML	AML	16 30 31.0	
	comp=Z,64nm,0.6s						
MATP	**Matopo**	**11.03**	**43**	*i* P	**Pn**	**16 28 53.4**	**+1.8**
MATP				*i* S	Sn	16 30 45.9	-9.2
BLWY	**Bulawayo**	**11.31**	**42**	*i* P	**Pn**	**16 28 56.4**	**+0.9**
BLWY				*i* S	Sn	16 30 52.8	-9.4

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*ISCJB **14** 16:27:02.8±0.5,56°.03N±0°.05×156°.24W±0°.07,h48km,*
mb3.7/14,Error ellipse: s-maj=8.6km s-min=3.4km
az=148.3
*NEIC **14** 16:27:04.3,56°.05N×156°.20W,h22km,ML3.3(AEIC),After*
AEIC.
*IDC **14** 16:27:05.1±4.5,56°.36N×156°.56W,h45km±44km,mb3.5/14,*
mb1 3.7/16,mb1mx3.5/65,mbtmp3.8/16,ML3.8/2,MS2.9/1,
Ms1 2.9/1,ms1mx2.2/38,Error ellipse: s-maj=32.5km
s-min=17.0km az=9.0
ISC 14 16:27:04.5±0.6,56°.11N±0°.06×156°.34W±0°.04,h48km,n56,
σ1§06/60,mb3.7/14,Alaska Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHGN	**Chignik**	**1.18**	**280**	P	**Pn**	**16 27 24.0**	**-0.4**
ANNE	**Aniakchak Nort**	**1.25**	**311**	P	**Pn**	**16 27 25.5**	**0.0**
ANPB	**Aniakchak Plen**	**1.28**	**303**	P	**Pn**	**16 27 26.0**	**0.0**
ANNW	**Aniakchak Nort**	**1.35**	**310**	P	**Pn**	**16 27 27.5**	**+0.6**
PLK4	**Peulik 4**	**1.52**	**360**	P	**Pn**	**16 27 30.4**	**+1.1**
PLK3	**Peulik 3**	**1.58**	**1**	P	**Pn**	**16 27 31.1**	**+1.1**
PLK3				S	**Sn**	**16 27 51.9**	**+2.6**
VNHG	**Veniaminof 1**	**1.59**	**275**	P	**Pn**	**16 27 31.2**	**+1.1**
PLK2	**Peulik 2**	**1.66**	**0**	P	**Pn**	**16 27 32.3**	**+1.2**
VNNF	**Veniaminof 3**	**1.67**	**277**	P	**Pn**	**16 27 32.9**	**+1.5**
PLK1	**Peulik 1**	**1.70**	**355**	P	**Pn**	**16 27 32.7**	**+1.1**
VNSS	**Veniaminof 8**	**1.75**	**275**	P	**Pn**	**16 27 33.9**	**+1.4**
VNSW	**Veniaminof 7**	**1.81**	**270**	P	**Pn**	**16 27 34.3**	**+1.1**
PLK5	**Peulik 5**	**1.91**	**351**	P	**Pn**	**16 27 35.4**	**+0.9**
OHAK	**Old Harbor**	**2.02**	**55**	P	**Pn**	**16 27 35.6**	**-0.4**
OHAK				S	**Sn**	**16 27 59.0**	**-0.9**
ANCK	**Angle Creek**	**2.14**	**12**	P	**Pn**	**16 27 38.3**	**+0.5**
KABR	**Katmai Barrier**	**2.16**	**20**	P	**Pn**	**16 27 38.4**	**+0.4**
CNTC	**Contact Creek**	**2.17**	**6**	P	**Pn**	**16 27 38.4**	**+0.2**
KAKN	**Katmai Knife C**	**2.30**	**17**	P	**Pn**	**16 27 40.4**	**+0.5**
KELA	**Mount Kelaz**	**2.36**	**8**	P	**Pn**	**16 27 40.9**	**+0.2**
KAWH	**Katmai**	**2.43**	**20**	P	**Pn**	**16 27 41.6**	**0.0**
SDPT	**Sand Point**	**2.46**	**254**	P	**Pn**	**16 27 42.2**	**+0.1**
SDPT				S	**Sn**	**16 28 11.8**	**+0.9**
KAHC	**Katmai Hardscr**	**2.64**	**15**	P	**Pn**	**16 27 44.8**	**+0.2**
KDAK	**Kodiak Island**	**2.65**	**49**	P	Pn	16 27 59.3	+15
	14nm,0.3s,baz=208,slow=4.8,SNR=305						
KDAK				S	Sn	16 28 29.1	+14
	22nm,0.3s,baz=43,slow=22,SNR=15						
KDAK	**Kodiak Island**	**2.65**	**49**	P	**Pn**	**16 27 44.2**	**-0.4**
KDAK				S	**Sn**	**16 28 14.8**	**-0.7**
KDAK				S	Sn	16 28 29.1	+14
FOSS	**Fourpeaked Sta**	**3.05**	**27**	P	**Pn**	**16 27 50.4**	**+0.2**
FOPK	**Fourpeaked Vol**	**3.07**	**29**	P	**Pn**	**16 27 50.9**	**+0.5**
CDD	**Cape Douglas**	**3.18**	**26**	P	**Pn**	**16 27 52.2**	**+0.3**
PS4A	**Pavlof South-4**	**3.21**	**258**	P	**Pn**	**16 27 52.3**	**-0.1**
MCNL	**McNeil River**	**3.26**	**18**	P	**Pn**	**16 27 53.4**	**+0.3**
DT1	**Dutton Round H**	**3.52**	**256**	P	**Pn**	**16 27 56.6**	**+0.1**
AUW	**Augustine West**	**3.61**	**24**	P	**Pn**	**16 27 58.5**	**+0.7**
OPT	**Oil Point**	**3.92**	**24**	P	**Pn**	**16 28 02.7**	**+0.6**
FALS	**False Pass**	**4.22**	**256**	P	**Pn**	**16 28 06.3**	**+0.1**
FALS				S	**Sn**	**16 28 55.3**	**+1.2**
ILS	**Iliamna Low So**	**4.23**	**23**	P	**Pn**	**16 28 06.9**	**+0.5**
IVE	**Iliamna Volcan**	**4.29**	**23**	P	**Pn**	**16 28 07.9**	**+0.6**
ILW	**Iliamna West**	**4.31**	**22**	P	**Pn**	**16 28 08.9**	**+1.4**
ISLZ	**Isanotski Laza**	**4.43**	**255**	P	**Pn**	**16 28 09.1**	**+0.1**
BRLK	**Bradley Lake**	**4.67**	**36**	P	**Pn**	**16 28 11.7**	**-0.7**
RDWB	**Redoubt West**	**4.76**	**21**	P	**Pn**	**16 28 14.2**	**+0.5**
NCT	**North Crescent**	**4.81**	**20**	P	**Pn**	**16 28 14.8**	**+0.5**
DLBC	**Dease Lake**	**14.38**	**70**	P	**Pn**	**16 30 27.6**	**+2.6**
	0.2nm,0.3s,baz=260,slow=12,SNR=3.0						
DLBC				LR	LR	16 35 59.4	
	comp=Z,41nm,18.7s,baz=344,slow=37						
INK	**Inuvik**	**16.06**	**31**	P	**Pn**	**16 30 45.6**	**-1.0**
	0.5nm,0.3s,baz=222,slow=12,SNR=11						
YKA	**Yellowknife Ar**	**21.91**	**56**	P	**P**	**16 31 53.4**	**+0.3**
	1.3nm,0.6s,baz=275,slow=9.8,SNR=31						
SEY	**Seymchan**	**26.25**	**306**	P	**P**	**16 32 33.1**	**-1.5**
	0.7nm,0.4s,baz=107,slow=15,SNR=7.3						
PETK	**Petropavlovsk-**	**26.41**	**283**	P	**P**	**16 32 34.5**	**-1.7**
	1.4nm,0.6s,baz=72,slow=13,SNR=7.0						
PDAR	**Pinedale Array**	**32.55**	**94**	P	**P**	**16 33 33.1**	**+2.2**
	0.2nm,0.5s,baz=327,slow=6.5,SNR=2.7						
TXAR	**Lajitas Array**	**45.54**	**103**	P	**P**	**16 35 21.0**	**+1.6**
	0.3nm,0.6s,baz=308,slow=4.6,SNR=3.9						
NRIK	**Noril'sk**	**46.61**	**334**	P	**P**	**16 35 24.6**	**-2.5**
	1.6nm,0.3s,baz=141,slow=2.3,SNR=4.3						
ARCES	**ARCESS Array B**	**54.65**	**359**	P	**P**	**16 36 27.1**	**-0.6**
	1.4nm,0.8s,baz=6.1,slow=7.3,SNR=5.7						
SONM	**Songino Array**	**55.64**	**306**	P	**P**	**16 36 35.8**	**+0.5**
	1.7nm,0.7s,baz=37,slow=6.3,SNR=12						
FINES	**FINESS Array B**	**62.77**	**359**	P	**P**	**16 37 22.9**	**-1.2**
	0.9nm,0.7s,baz=46,slow=6.0,SNR=3.0						
NOA	**NORSAR Array B**	**62.78**	**7**	P	**P**	**16 37 22.0**	**-2.2**
	0.5nm,0.6s,baz=352,slow=6.7,SNR=3.4						
MKAR	**Makanchi Array**	**66.33**	**320**	P	**P**	**16 37 46.5**	**-1.1**
	0.4nm,0.5s,baz=31,slow=6.1,SNR=6.2						
AKASG	**Malin Array Be**	**73.45**	**356**	P	**P**	**16 38 31.1**	**-0.2**
	0.3nm,0.3s,baz=8.0,slow=5.8,SNR=4.0						
GERES	**GERESS Array B**	**75.08**	**7**	P	**P**	**16 38 41.3**	**+0.5**
	0.

ASAR	**Alice Springs**	**24.19 213**	P	P	16 38 06.6	+0.1
	1.5nm,0.8s,baz=44,slow=7.2,SNR=8.9					
RAR	**Rarotonga**	**53.70 114**	LR	LR	17 04 07.8	
	comp=Z,80nm,18.6s,baz=214,slow=35					
YKA	**Yellowknife Ar**	**96.55 28**	P	P	16 46 19.2	-0.2
	0.3nm,0.8s,baz=279,slow=4.9,SNR=3.8					

NIED ***14*** *16:44:00,36°.90N×141°.90E,h8km,Mw3.7 Best double couple: M₀4.08000×10¹⁴ NP1:φ₀=324.00000°,δ49.00000°, λ178.00000°. NP2:φ₀=56.00000°,δ89.00000°,λ41.00000°.*
IDC ***14*** *16:44:03.3±2.0,36°.87N×142°.28E,h0km,mb3.8/4, mb1 3.8/7,mb1mx3.5/41,mbtmp3.8/7,ML3.4/3,Error ellipse: s-maj=44.7km s-min=23.1km az=81.0*
ISCJB ***14*** *16:44:05.3±0.8,36°.88N±0°.05×142°.06E±0°.08,h19km, mb3.7/4,Error ellipse: s-maj=9.4km s-min=7.5km az=179.8*
JMA ***14*** *16:44:07.2±0.3,36°.88N×141°.90E,h32km±4km,M3.5*
ISC 14 16:44:06.7±1.2,**36°.93N**±0°.05×**141°.86E**±0°.08,**h19**km,**n21,** σ1§**44**/23,**mb3.7**/4,**Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.86**	**282**	P	**Pg**	**16 44 24.0**	**+0.4**
JFK	**Kawauchi**	**0.90**	**299**	P	**Pg**	**16 44 24.3**	**0.0**
JFK				*e*S	**Sn**	**16 44 36.7**	**-0.2**
JHO	**Hitachi**	**1.08**	**253**	P	**Pb**	**16 44 26.8**	**0.0**
JMM	**Marumori**	**1.26**	**318**	P	**Pb**	**16 44 29.6**	**-0.3**
JFT	**Otama**	**1.35**	**296**	P	**Pg**	**16 44 31.9**	**-0.9**
JIO	**Ouri**	**1.58**	**345**	P	**Pb**	**16 44 34.0**	**-1.3**
JOU	**Okura**	**1.72**	**327**	P	**Pb**	**16 44 37.4**	**-0.3**
JFY	**Yanaizu**	**1.78**	**286**	P	**Pb**	**16 44 38.5**	**-0.3**
JAG	**Ashikaga**	**2.00**	**256**	P	**Pn**	**16 44 40.3**	**+0.8**
JMK	**Ichinoseki**	**2.08**	**346**	P	**Pb**	**16 44 43.2**	**-0.7**
JNS	**Sasagawa**	**2.21**	**294**	P	**Pb**	**16 44 44.8**	**-1.3**
JYK	**Kaneyama**	**2.31**	**330**	P	**Pb**	**16 44 45.6**	**-2.2**
BSO1	**Boso 1**	**2.38**	**198**	P	**Pn**	**16 44 45.4**	**+1.2**
MJAR	**Matsushiro Arr**	**2.96**	**264**	Pn	**Pn**	**16 44 54.8**	**+2.1**
	4.0nm,0.3s,baz=91,slow=15,SNR=34						
MAT	**Matsushiro**	**2.96**	**264**	P	**Pn**	**16 44 55.3**	**+2.6**
MAT				S	**Sb**	**16 45 33.0**	**-1.6**
JHJ	**Hachijo jima 2**	**4.16**	**205**	Pn	**Pn**	**16 45 08.8**	**-0.5**
	12nm,0.3s,baz=107,slow=19,SNR=4.4						
JHJ				Sn	**Sn**	**16 45 54.2**	**-3.2**
	16nm,0.3s,baz=238,slow=23,SNR=5.7						
ASAJ	**Asahikawa**	**7.20**	**4**	Pn	**Pn**	**16 45 50.8**	**-0.2**
	0.6nm,0.3s,baz=205,slow=13,SNR=8.8						
SONM	**Songino Array**	**28.14**	**304**	P	P	16 50 00.4	+2.7
	1.7nm,0.8s,baz=98,slow=8.0,SNR=11						
ZALV	**Zalesovo Beam**	**42.25**	**312**	P	**P**	**16 52 00.0**	**+1.5**
	0.8nm,0.5s,baz=76,slow=6.3,SNR=4.4						
MKAR	**Makanchi Array**	**44.48**	**302**	P	**P**	**16 52 18.4**	**+1.7**
	0.9nm,0.7s,baz=88,slow=9.3,SNR=9.4						
WRA	**Warramunga Arr**	**57.01**	**188**	P	**P**	**16 53 51.1**	**-0.1**
	0.7nm,0.9s,baz=21,slow=7.4,SNR=4.3						

NIED ***14*** *16:45:00,38°.90N×142°.10E,h53km,Mw3.9 Best double couple: M₀9.31000×10¹⁴ NP1:φ₀=203.00000°,δ24.00000°, λ81.00000°. NP2:φ₀=33.00000°,δ66.00000°,λ94.00000°.*
ISCJB ***14*** *16:45:09.9±0.9,38°.84N±0°.05×142°.12E±0°.10,h52km±6km, mb3.9/16,MS3.5/1,Error ellipse: s-maj=13.4km s-min=7.1km az=16.3*
JMA ***14*** *16:45:11.0±0.1,38°.86N×142°.08E,h42km±2km,M3.9*
JMA Felt II J1.
IDC ***14*** *16:45:13.6±2.0,38°.82N×142°.05E,h72km±18km,mb3.7/16, mb1 3.8/21,mb1mx3.6/45,mbtmp4.0/21,MS2.9/3, Ms1 2.9/3,ms1mx2.5/39,Error ellipse: s-maj=19.3km s-min=13.5km az=96.0*
ISC 14 16:45:10.5±1.4,**38°.82N**±0°.05×**142°.1E**±0°.1,**h44**km±12km, **n39,** σ1§**00**/35,**mb4.0**/16,**Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.42**	**308**	P	**Pn**	**16 45 20.4**	**-0.1**
OFUJ				S	**Sn**	**16 45 27.3**	**-0.2**
JIO	**Ouri**	**0.69**	**238**	P	**Pn**	**16 45 24.2**	**+0.3**
JIO				S	**Sn**	**16 45 33.1**	**-0.5**
JMK	**Ichinoseki**	**0.70**	**281**	P	**Pn**	**16 45 24.2**	**+0.2**
JMK				S	**Sn**	**16 45 33.4**	**-0.4**
JOM	**Ohasama**	**0.91**	**316**	P	**Pn**	**16 45 26.9**	**+0.1**
JOM				S	**Sn**	**16 45 38.2**	**-0.6**
JOU	**Okura**	**1.21**	**248**	P	**Pn**	**16 45 31.6**	**+0.5**
JOU				S	**Sn**	**16 45 46.9**	**+0.6**
JRG	**Rokugo**	**1.28**	**297**	P	**Pn**	**16 45 32.3**	**+0.4**
JYK	**Kaneyama**	**1.36**	**275**	P	**Pn**	**16 45 33.4**	**+0.3**
JMM	**Marumori**	**1.40**	**228**	P	**Pn**	**16 45 34.0**	**+0.4**
JANG	**Nango**	**1.62**	**344**	P	**Pn**	**16 45 36.9**	**+0.3**
MJAR	**Matsushiro Arr**	**3.83**	**235**	P	**Pn**	**16 46 09.6**	**+2.6**
	5.8nm,0.3s,baz=34,slow=13,SNR=10.0						
MJAR				LR	LR	16 47 47.9	
	comp=Z,79nm,18.7s,baz=70,slow=41						
MAT	**Matsushiro**	**3.84**	**235**	P	Pn	16 46 11.0	+3.9
MAT				*e*S	Sn	16 46 58.9	+8.0
ASAJ	**Asahikawa**	**5.30**	**4**	P	**Pn**	**16 46 28.7**	**+1.5**
	2.8nm,0.3s,baz=196,slow=16,SNR=32						
ASAJ				LR	LR	16 48 32.8	
	comp=Z,88nm,21.8s,baz=177,slow=38						
JHJ	**Hachijo jima 2**	**5.99**	**199**	P	**Pn**	**16 46 38.0**	**+1.4**
	5.9nm,0.3s,baz=131,slow=19,SNR=3.4						
JHJ				S	**Sn**	**16 47 40.7**	**-3.3**
	13nm,0.3s,baz=72,slow=19,SNR=3.7						
USRK	**Ussuriysk Ar.**	**9.29**	**309**	P	Pn	16 47 26.0	+4.2
	0.5nm,0.3s,baz=128,slow=14,SNR=12						
KSRS	**Korea Array**	**11.25**	**267**	P	Pn	16 47 53.1	+4.5
	0.3nm,0.3s,baz=77,slow=14,SNR=7.4						
SEY	**Seymchan**	**24.93**	**11**	P	**P**	**16 50 30.4**	**+1.1**
	1.0nm,0.5s,baz=216,slow=5.2,SNR=5.1						
SONM	**Songino Array**	**27.29**	**301**	P	**P**	**16 50 51.2**	**+0.3**
	0.4nm,0.5s,baz=95,slow=7.7,SNR=3.6						
H11N2	**WAKE ISLAND Hy**	**28.65**	**125**	T	T	17 21 28.8	
	baz=317,slow=75,SNR=73						
H11N1	**WAKE ISLAND Hy**	**28.66**	**125**	T	T	17 21 30.0	
	baz=317,slow=75,SNR=95						
H11N3	**WAKE ISLAND Hy**	**28.67**	**125**	T	T	17 21 30.2	
	baz=317,slow=75,SNR=98						
H11S1	**WAKE ISLAND Hy**	**29.43**	**126**	T	T	17 22 26.8	
	baz=319,slow=76,SNR=178						
H11S3	**WAKE ISLAND Hy**	**29.43**	**127**	T	T	17 22 27.1	
	baz=319,slow=76,SNR=27						
H11S2	**WAKE ISLAND Hy**	**29.44**	**127**	T	T	17 22 27.2	
	baz=319,slow=76,SNR=191						
ZALV	**Zalesovo Beam**	**41.14**	**311**	P	**P**	**16 52 50.2**	**+0.1**
	1.9nm,0.4s,baz=90,slow=8.0,SNR=8.9						
MKAR	**Makanchi Array**	**43.65**	**301**	P	**P**	**16 53 10.7**	**-0.1**
	3.0nm,0.6s,baz=80,slow=9.8,SNR=29						
ILAR	**Eielson Array**	**47.70**	**33**	P	**P**	**16 53 43.2**	**+0.8**
	0.7nm,0.7s,baz=259,slow=6.0,SNR=6.2						
BVAR	**Borovoye Array**	**49.79**	**311**	P	**P**	**16 53 58.5**	**-0.1**
	2.8nm,0.4s,baz=72,slow=7.3,SNR=16						
INK	**Inuvik**	**52.55**	**28**	P	**P**	**16 54 20.4**	**+1.3**
	0.5nm,0.5s,baz=296,slow=6.6,SNR=4.6						
AKTO	**Aktyubinsk**	**57.90**	**311**	P	**P**	**16 54 56.3**	**-1.5**
	1.9nm,0.6s,baz=66,slow=13,SNR=3.3						
WRA	**Warramunga Arr**	**58.90**	**189**	P	**P**	**16 55 05.0**	**-0.1**
	1.2nm,0.6s,baz=6.5,slow=7.0,SNR=14						
YKA	**Yellowknife Ar**	**61.99**	**31**	P	**P**	**16 55 25.0**	**-0.7**
	0.2nm,0.8s,baz=304,slow=6.4,SNR=4.8						
ARCES	**ARCESS Array B**	**62.52**	**339**	P	**P**	**16 55 28.9**	**-0.2**
	1.3nm,0.7s,baz=57,slow=9.4,SNR=5.2						
ASAR	**Alice Springs**	**62.63**	**188**	P	**P**	**16 55 30.8**	**+0.4**
	0.5nm,0.7s,baz=358,slow=4.4,SNR=8.1						
FINES	**FINESS Array B**	**67.49**	**332**	P	**P**	**16 56 01.4**	**-0.1**
	1.6nm,0.6s,baz=36,slow=10,SNR=10						
KBZ	**Khabaz**	**70.16**	**310**	LR	LR	17 29 29.4	
	comp=Z,29nm,20.9s,baz=183,slow=38						
NB2	**NORSAR Subarra**	**72.75**	**337**	P	**P**	**16 56 33.1**	**-0.7**
	comp=Z,0.5nm,0.6s,baz=37,slow=6.2						
NOA	**NORSAR Array B**	**72.75**	**337**	P	**P**	**16 56 33.4**	**-0.4**
	comp=Z,0.8nm,0.7s,baz=38,slow=5.7,SNR=4.2						
AKASG	**Malin Array Be**	**73.22**	**322**	P	**P**	**16 56 36.5**	**-0.2**
	comp=Z,1.0nm,0.4s,baz=45,slow=6.4,SNR=7.2						
BRTR	**Keskin Array B**	**78.08**	**312**	P	**P**	**16 57 05.0**	**+0.1**
	comp=Z,0.5nm,0.4s,baz=99,slow=3.4,SNR=7.8						

DDA ***14*** *17:09:11.2,36°.34N×37°.06E,h7km,Md2.8*
NSSC ***14*** *17:09:11.3±1.2,36°.36N×36°.93E,h1km±5km,ML1.7*
CSEM ***14*** *17:09:11.0±0.1,36°.34N×36°.98E,h8km,ML1.7,Error ellipse: s-maj=4.2km s-min=2.5km az=132.0*
ISC 14 17:09:10.6±1.1,**36°.34N**±0°.03×**36°.99E**±0°.03,**h12**km±9km,
n17, σ0§**29**/32,**Jordan-Syria region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DRWC	**Darouich**	**0.38**	**318**	*e*P	**Pg**	**17 09 18.4**	**+0.1**
DRWC				*e*S	**Sg**	**17 09 23.6**	**0.0**
DRWC				AML	AML	17 09 34.1	
	comp=N,89nm,0.5s						
DRWC	**Darouich**	**0.38**	**318**	*e*P	**Pg**	**17 09 18.4**	**+0.1**
DRWC				*e*S	**Sg**	**17 09 23.5**	**0.0**
KUZU	**Kuzuini**	**0.44**	**9**	P	**Pb**	**17 09 19.9**	**-0.5**
KUZU	**Kuzuini**	**0.44**	**9**	*i* P	**Pb**	**17 09 19.9**	**-0.5**
BTCH	**Batrach**	**0.52**	**235**	*e*P	**Pb**	**17 09 21.6**	**-0.1**
BTCH				*e*S	**Sg**	**17 09 27.7**	**0.0**
BTCH				AML	AML	17 09 37.1	
	comp=N,43nm,0.3s						
BTCH	**Batrach**	**0.52**	**235**	*e*P	**Pb**	**17 09 21.5**	**-0.1**
BTCH				*e*S	**Sg**	**17 09 27.7**	**0.0**
YAYL	**Yayladag**	**0.77**	**247**	P	**Pb**	**17 09 26.0**	**0.0**
YAYL				S	**Sn**	**17 09 39.2**	**+0.2**
YAYL	**Yayladag**	**0.77**	**247**	*i* P	**Pb**	**17 09 26.0**	**0.0**
YAYL				*i* S	**Sn**	**17 09 39.2**	**+0.2**
KAMA	**Osmaniye**	**0.89**	**343**	*i* P	**Pn**	**17 09 28.8**	**-0.2**
KAMA				*i* S	**Sb**	**17 09 40.1**	**+0.3**
ARNB	**Al Arnab**	**0.95**	**240**	*e*P	**Pb**	**17 09 29.0**	**0.0**
ARNB				*e*S	**Sn**	**17 09 42.7**	**-0.6**
ARNB				AML	AML	17 09 50.2	
	comp=E,19nm,0.7s						
ARNB	**Al Arnab**	**0.95**	**240**	*e*P	**Pb**	**17 09 29.0**	**0.0**
ARNB				*e*S	**Sn**	**17 09 42.7**	**-0.6**
HCB	**Kahramanmara¯**	**1.01**	**357**	*i* P	**Pn**	**17 09 30.5**	**-0.1**
HCB				*i* S	**Sn**	**17 09 45.1**	**+0.4**
GZT	**Gaziantep**	**1.12**	**24**	*i* P	**Pn**	**17 09 32.2**	**0.0**
GZT				*i* S	**Sn**	**17 09 48.2**	**+0.6**
SURC	**SANLIURFA_SURC**	**1.42**	**67**	P	**Pb**	**17 09 36.8**	**-0.2**
SURC				S	**Sg**	**17 09 56.4**	**+0.1**
SURC	**SANLIURFA_SURC**	**1.42**	**67**	*i* P	**Pb**	**17 09 36.8**	**-0.2**
SURC				*i* S	**Sg**	**17 09 56.4**	**+0.1**
BIDA	**Albida**	**1.43**	**202**	*e*P	**Pb**	**17 09 36.9**	**-0.2**
BIDA				*e*S	**Sg**	**17 09 56.7**	**+0.2**
BIDA				AML	AML	17 10 06.9	
	comp=N,32nm,0.8s						
BIDA	**Albida**	**1.43**	**202**	*e*P	**Pb**	**17 09 36.9**	**-0.2**
BIDA				*e*S	**Sg**	**17 09 56.7**	**+0.2**
	comp=N,32nm,0.8s						

SCB ***14*** *17:22:24.4±0.5,12°.63S×72°.30W,h65km,Ml4.2/2,Error ellipse: s-maj=15.1km s-min=9.9km az=73.0*
IDC ***14*** *17:22:38.8±1.4,13°.29S×71°.19W,h0km,mb4.3/2, mb1 4.4/6,mb1mx3.9/41,mbtmp4.3/6,ML4.2/4,MS2.4/4, Ms1 2.5/4,ms1mx2.4/28,Error ellipse: s-maj=41.7km s-min=18.8km az=50.0*
ISCJB ***14*** *17:22:39.5±0.8,13°.22S±0°.05×71°.40W±0°.08,h33km, mb4.2/2,Error ellipse: s-maj=11.1km s-min=6.9km az=179.3*
NEIC ***14*** *17:22:40.1±0.9,13°.31S×71°.62W,h35km,mb4.2/3,Error ellipse: s-maj=17.7km s-min=9.8km az=92.0*
ISC 14 17:22:40.8±0.9,**13°.23S**±0°.08×**71°.46W**±0°.10,**h35**km,**n26,** σ1§**81**/24,**Central Peru**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ARE	**Arequipa**	**3.22**	**180**	*e*P	**Pn**	**17 23 29.0**	**-0.2**
BBOB	**La Paz, Bander**	**4.33**	**132**	*e*Pn	**Pn**	**17 23 45.0**	**+0.3**
BBOB				*e*Sn	Sn	17 24 44.6	+10
	167nm,0.5s						
BBOD	**La Paz, Gloria**	**4.38**	**141**	*e*Pn	**Pn**	**17 23 46.0**	**+0.6**
BBOD				*e*Sn	Sn	17 24 46.0	+11
	52nm,0.5s						
LPAZ	**La Paz**	**4.43**	**134**	Pn	**Pn**	**17 23 46.4**	**+0.2**
	1.3nm,0.3s,baz=316,slow=7.8,SNR=35						
LPAZ				Lg	Lg	17 24 51.0	
	5.3nm,0.3s,baz=96,slow=17,SNR=3.7						
LPAZ				LR	LR	17 25 02.8	
	comp=Z,24nm,21.2s,baz=328,slow=34						
BBOJ	**La Paz, Jacaqu**	**4.89**	**140**	*e*Pn	**Pn**	**17 23 53.4**	**+1.1**
BBOE	**La Paz, Chanca**	**4.90**	**137**	*e*Pn	**Pn**	**17 23 53.8**	**+1.2**
NNA	**Nana**	**5.39**	**283**	LR	LR	17 26 24.0	
	comp=Z,37nm,19.2s,baz=132,slow=40						
PB11	**IPOC Station P**	**6.73**	**165**	*e*Pn	**Pn**	**17 24 16.1**	**-1.2**
SAML	**Samuel**	**9.17**	**63**	*e*Pn	**Pn**	**17 24 53.1**	**+2.4**
LVC	**Limon Verde**	**9.64**	**166**	Pn	**Pn**	**17 24 57.1**	**-0.4**
	16nm,0.3s,baz=329,slow=9.3,SNR=4.2						
LVC	**Limon Verde**	**9.64**	**166**	*e*Pn	Pn	17 24 52.1	-5.4
MOCB	**Mochara**	**9.73**	**146**	*e*P	**Pn**	**17 24 58.3**	**-0.4**
SIV	**San Ignacio**	**10.43**	**107**	Pn	**Pn**	**17 25 07.1**	**-0.9**
	1.5nm,0.3s,baz=297,slow=12,SNR=12						
SIV				Sn	**Sn**	**17 27 03.9**	**+0.2**
	1.1nm,0.3s,baz=40,slow=22,SNR=3.1						
SIV	**San Ignacio**	**10.43**	**107**	*e*P	**Pn**	**17 25 06.6**	**-1.4**
PTGA	**Pitinga**	**16.85**	**43**	Pn	**P**	**17 26 35.2**	**-0.7**
	1.6nm,0.3s,baz=224,slow=13,SNR=24						
PTGA				Sn	**Sn**	**17 29 37.7**	**-2.7**
	0.3nm,0.3s,baz=330,slow=20,SNR=3.6						
PTGA				LR	LR	17 32 09.0	
	comp=Z,12nm,21.6s,baz=198,slow=34						
PTGA	**Pitinga**	**16.85**	**43**	*e*Pn	**P**	**17 26 35.8**	**-0.1**
	16nm,0.8s						
PTGA				*e*Sn	**Sn**	**17 29 37.7**	**-2.7**
ROSC	**El Rosal**	**18.17**	**351**	LR	LR	17 34 50.2	
	comp=Z,42nm,19.4s,baz=7.5,slow=40						
ROC1	**El Roble**	**19.66**	**179**	*e*P	**P**	**17 27 03.9**	**-3.2**
	17nm,1.4s						
HELC	**Santa Helena**	**19.71**	**348**	*e*P	**Pn**	**17 27 07.7**	**-1.7**
	8.1nm,0.6s						
LRS	**Lares**	**31.65**	**8**	*e*P	**P**	**17 29 00.2**	**-0.8**
TOA1	**Torodi Ar. Sit**	**77.09**	**73**	*e*P	**P**	**17 34 32.4**	**+1.2**
TORD	**Torodi Ar. Bea**	**77.09**	**73**	P	**P**	**17 34 32.4**	**+1.2**
	4.1nm,0.9s,baz=261,slow=5.4,SNR=17						
YKA	**Yellowknife Ar**	**82.61**	**341**	P	P	17 35 04.3	+4.2
	1.1nm,0.7s,baz=136,slow=5.4,SNR=22						
YKB5	**Yellowknife Ar**	**82.61**	**341**	*e*P	P	17 35 04.3	+4.3
ZALV	**Zalesovo Beam**	**135.26**	**20**	PKP	**PKPdf**	**17 42 00.2**	**+3.5**
	0.3nm,0.3s,baz=358,slow=4.9,SNR=2.9						
SONM	**Songino Array**	**145.45**	**3**	PKPbc	**PKPab**	**17 42 19.1**	**+3.4**
	0.9nm,0.8s,baz=352,slow=2.1,SNR=6.8						

ISCJB ***14*** *17:35:49.0±0.2,37°.01N±0°.02×31°.14E±0°.02,h128km±3km, mb3.6/8,Error ellipse: s-maj=3.6km s-min=2.4km az=135.6*
ISK ***14*** *17:35:49.6,37°.09N×31°.15E,h121km,ML3.4*
ATH ***14*** *17:35:50.9,37°.28N×30°.74E,h17km±4km,ML3.3/1,Error ellipse: s-maj=11.9km s-min=1.9km az=117.0*
IDC ***14*** *17:35:50.4±1.4,37°.09N×31°.12E,h124km±13km,mb3.5/8, mb1 3.4/12,mb1mx3.2/45,mbtmp3.8/12,Error ellipse: s-maj=17.8km s-min=12.6km az=140.0*
CSEM ***14*** *17:35:50.0±0.1,37°.06N×31°.15E,h119km±2km,ML3.4, Error ellipse: s-maj=2.5km s-min=1.7km az=39.0*
DDA ***14*** *17:35:51.6,37°.13N×31°.09E,h42km,Ml3.8*
NSSC ***14*** *17:35:52.8±1.3,36°.85N×31°.71E,h0km±36km,ML2.8*
GII ***14*** *17:35:53.3±0.2,36°.76N×31°.07E,h32km,MD2.6/4*
NIC ***14*** *17:35:54.0±0.3,37°.00N×31°.49E,h36km,mb4.1,ML3.7*
HLW ***14*** *17:35:57.4,36°.43N×30°.54E,h30km±20km,Md3.8,Ml3.8*
ISC 14 17:35:49.8±0.7,**37°.06N**±0°.03×**31°.19E**±0°.03,**h125**km±6km, **n212,** σ1§**59**/257,**mb3.7**/8,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SUTC	**Sutluce-Ispart**	**0.44**	**340**	*e*PG	**Pn**	**17 36 07.4**	**-0.8**
SUTC				*e*SG	**Sn**	**17 36 20.7**	**-1.4**
SUTC	**Sutluce-Ispart**	**0.44**	**340**	*e*Pg	**Pn**	**17 36 07.4**	**-0.8**
SUTC				*e*Sg	**Sn**	**17 36 20.7**	**-1.4**
ANTB	**Antalya**	**0.46**	**249**	*e*PG	**Pn**	**17 36 07.4**	**-0.6**
ANTB	**Antalya**	**0.46**	**249**	*e*Pg	**Pn**	**17 36 07.4**	**-0.6**
BCK	**Bucak**	**0.62**	**310**	*e*PG	**Pn**	**17 36 08.6**	**-0.6**
BCK	**Bucak**	**0.62**	**310**	*e*Pg	**Pn**	**17 36 08.6**	**-0.6**
KORT	**Korkueli**	**0.67**	**265**	P	**Pn**	**17 36 10.0**	**+0.4**
KORT	**Korkueli**	**0.67**	**265**	*i* P	**Pn**	**17 36 10.0**	**+0.4**
ISP	**Isparta**	**0.92**	**325**	*e*PG	**Pn**	**17 36 11.4**	**-0.3**
ISP	**Isparta**	**0.92**	**325**	Pg	**Pn**	**17 36 10.9**	**-0.8**
ISP	**Isparta**	**0.92**	**325**	*e*Pg	**Pn**	**17 36 11.4**	**-0.3**
BAGO	**Egridir - ISPA**	**0.98**	**341**	*i* P	**Pn**	**17 36 11.8**	**-0.3**
ELL	**Elmali**	**1.07**	**253**	*e*PG	**Pn**	**17 36 12.8**	**-0.3**
ELL	**Elmali**	**1.07**	**253**	*e*Pg	**Pn**	**17 36 12.8**	**-0.3**
KMER	**Konya-Meram**	**1.18**	**53**	P	**Pn**	**17 36 14.5**	**+0.4**
KMER	**Konya-Meram**	**1.18**	**53**	*i* P	**Pn**	**17 36 14.5**	**+0.4**
GAZI	**Gazipasa**	**1.23**	**132**	P	**Pn**	**17 36 16.1**	**+1.5**
GAZI				S	**Sn**	**17 36 34.7**	**+1.3**
GAZI	**Gazipasa**	**1.23**	**132**	*i* P	**Pn**	**17 36 16.1**	**+1.5**
GAZI				*i* S	**Sn**	**17 36 34.7**	**+1.3**
KONT	**Konya--Tatoy**	**1.28**	**46**	*e*PN	**Pn**	**17 36 15.7**	**+0.5**
KONT	**Konya--Tatoy**	**1.28**	**46**	*e*Pn	**Pn**	**17 36 15.7**	**+0.5**
GOLH	**Golhisar**	**1.31**	**278**	P	**Pn**	**17 36 16.6**	**+1.1**
GOLH	**Golhisar**	**1.31**	**278**	*i* P	**Pn**	**17 36 16.6**	**+1.1**
GLHS	**Glhisar (BURDU**	**1.35**	**274**	*e*PN	**Pn**	**17 36 16.0**	**0.0**
GLHS	**Glhisar (BURDU**	**1.35**	**274**	*e*Pn	**Pn**	**17 36 16.0**	**0.0**
ERMK	**Ermenek**	**1.45**	**106**	P	**Pn**	**17 36 18.7**	**+1.5**
ERMK				S	**Sn**	**17 36 39.3**	**+1.3**
ERMK	**Ermenek**	**1.45**	**106**	*i* P	**Pn**	**17 36 18.7**	**+1.5**
ERMK				*i* S	**Sn**	**17 36 39.3**	**+1.3**
LADK	**Ladik-KONYA**	**1.47**	**39**	*e*PN	**Pn**	**17 36 17.4**	**+0.1**
LADK	**Ladik-KONYA**	**1.47**	**39**	*e*Pn	**Pn**	**17 36 17.4**	**+0.1**
AKAS	**Kas**	**1.52**	**237**	P	**Pn**	**17 36 18.0**	**+0.1**
AKAS				S	**Sn**	**17 36 38.1**	**-1.2**
AKAS	**Kas**	**1.52**	**237**	*i* P	**Pn**	**17 36 18.0**	**+0.1**
AKAS				*i* S	**Sn**	**17 36 38.1**	**-1.2**
KSL	**Kastellorizon**	**1.58**	**235**	P	**Pn**	**17 36 18.6**	**+0.1**
KSL				S	**Sn**	**17 36 38.2**	**-2.1**
KSL				AML	AML	17 36 41.5	
	comp=E,1704μm,0.4s						
KSL				AML	AML	17 36 42.5	
	comp=N,894μm,0.3s						
KDHN	**Kadinhani**	**1.63**	**27**	P	**Pn**	**17 36 18.9**	**-0.3**
KDHN	**Kadinhani**	**1.63**	**27**	*i* P	**Pn**	**17 36 18.9**	**-0.3**
BOLV	**Bolvadin**	**1.66**	**354**	P	**Pn**	**17 36 20.0**	**+0.4**
BOLV	**Bolvadin**	**1.66**	**354**	*i* P	**Pn**	**17 36 20.0**	**+0.4**
FETY	**Fethiye**	**1.74**	**256**	*e*PN	**Pn**	**17 36 20.6**	**+0.2**
FETY	**Fethiye**	**1.74**	**256**	*e*Pn	**Pn**	**17 36 20.6**	**+0.2**
DNZL	**Cakiroluk**	**1.82**	**291**	P	**Pn**	**17 36 21.2**	**-0.2**
DNZL				S	**Sn**	**17 36 43.8**	**-1.8**
DNZL	**Cakiroluk**	**1.82**	**291**	*i* P	**Pn**	**17 36 21.2**	**-0.2**
DNZL				*i* S	**Sn**	**17 36 43.8**	**-1.8**
KHL	**Karahalli**	**1.82**	**314**	*e*PN	**Pn**	**17 36 21.2**	**-0.2**
KHL	**Karahalli**	**1.82**	**314**	*e*Pn	**Pn**	**17 36 21.2**	**-0.2**
DENT	**Denizli**	**1.85**	**293**	*e*PN	**Pn**	**17 36 21.6**	**-0.1**
DENT	**Denizli**	**1.85**	**293**	*e*Pn	**Pn**	**17 36 21.6**	**-0.1**
KHAL	**Karahalli**	**1.87**	**315**	P	**Pn**	**17 36 22.2**	**+0.2**
KHAL				S	**Sn**	**17 36 44.9**	**-1.8**
KHAL	**Karahalli**	**1.87**	**315**	*i* P	**Pn**	**17 36 22.2**	**+0.2**
KHAL				*i* S	**Sn**	**17 36 44.9**	**-1.8**
KIZT	**Kizilcal**	**1.90**	**17**	*e*PN	**Pn**	**17 36 22.2**	**-0.1**
KIZT	**Kizilcal**	**1.90**	**17**	*e*Pn	**Pn**	**17 36 22.2**	**-0.1**
CHBY	**Cihanbeyli**	**2.03**	**41**	*e*PN	**Pn**	**17 36 24.1**	**+0.2**
CHBY	**Cihanbeyli**	**2.03**	**41**	*e*Pn	**Pn**	**17 36 24.1**	**+0.2**
DALY	**Dalyan (Mu¯la**	**2.04**	**264**	*e*PN	**Pn**	**17 36 23.9**	**-0.1**
DALY	**Dalyan (Mu¯la**	**2.04**	**264**	*e*Pn	**Pn**	**17 36 23.9**	**-0.1**
TURN	**Turunc**	**2.08**	**266**	*i* P	**Pn**	**17 36 28.3**	**+3.9**
ALFC	**Alefka**	**2.22**	**149**	P	**Pn**	**17 36 26.2**	**-0.1**
	baz=334						
ALFC				S	**Sn**	**17 36 50.7**	**-3.5**
ALFC	**Alefka**	**2.22**	**149**	P	**Pn**	**17 36 26.2**	**-0.1**
ALFC				S	**Sn**	**17 36 50.7**	**-3.5**
AKMC	**Akamas**	**2.23**	**155**	P	**Pn**	**17 36 26.8**	**+0.3**
	baz=341						
AKMC	**Akamas**	**2.23**	**155**	P	**Pn**	**17 36 26.8**	**+0.3**
AKDN	**Akdeniz

DRWC AML AML 17 37 48.6
comp=E,28nm,0.3s
DRWC AML AML 17 37 50.0
comp=N,24nm,0.6s
DRWC Darouich 4.42 94 *eP* **Pn 17 36 55.0 -0.1**
WRDH Warideh 4.50 109 *eP* **Pn 17 36 55.9 -0.3**
WRDH *eS* **Sn 17 37 41.9 -5.7**
WRDH AML AML 17 37 47.7
comp=E,52nm,0.4s
WRDH Warideh 4.50 109 *eP* **Pn 17 36 55.8 -0.3**
APE Apeiranthos 4.52 272 P **Pn 17 36 55.5 -0.9**
APE Apeiranthos 4.52 272 P **Pn 17 36 55.5 -0.9**
BIDA Albida 4.64 115 *eP* **Pn 17 36 57.5 -0.5**
BIDA *eS* **Sn 17 37 44.1 -6.9**
BIDA AML AML 17 37 53.8
comp=E,62nm,0.3s
BIDA AML AML 17 37 55.5
comp=N,86nm,0.5s
BIDA Albida 4.64 115 *eP* **Pn 17 36 57.5 -0.5**
RKY Sarkoy-Tekirda 4.78 320 *e*PN **Pn 17 36 59.7 -0.2**
RKY Sarkoy-Tekirda 4.78 320 *e*Pn **Pn 17 36 59.7 -0.2**
HAWK Haweek 4.94 119 *eP* **Pn 17 37 01.8 -0.3**
HAWK *eS* **Sn 17 37 53.2 -5.2**
HAWK AML AML 17 37 58.7
comp=E,45nm,0.7s
HAWK AML AML 17 38 00.5
comp=N,36nm,0.3s
HAWK Haweek 4.94 119 *eP* **Pn 17 37 01.8 -0.3**
HNTI Hanita 5.14 139 Pn **Pn 17 37 05.3 +0.6**
HNTI Sn **Sn 17 38 01.3 -1.8**
HNTI Hanita 5.14 139 Pn **Pn 17 37 05.3 +0.6**
HNTI Sn **Sn 17 38 01.3 -1.8**
MMC7 Mount Meron ar 5.31 138 Pn **Pn 17 37 07.5 +0.5**
MMC7 Sn **Sn 17 38 05.8 -1.3**
MMC7 Mount Meron ar 5.31 138 Pn **Pn 17 37 07.5 +0.5**
MMC7 Sn **Sn 17 38 05.8 -1.3**
MMA0B Mount Meron ar 5.32 138 Pn **Pn 17 37 07.3 +0.2**
MMA0B Sn **Sn 17 38 05.2 -2.2**
MMA0B Mount Meron ar 5.32 138 Pn **Pn 17 37 07.3 +0.2**
MMA0B Sn **Sn 17 38 05.2 -2.2**
MMAI Mount Meron Ar 5.32 138 P **Pn 17 37 07.9 +0.8**
comp=N,3.3nm,0.3s,baz=320,slow=12,SNR=18
MMAI S **Sn 17 38 03.7 -3.6**
comp=N,12nm,0.3s,baz=318,slow=14,SNR=14
KSDI Kefar Szold 5.32 135 Pn **Pn 17 37 07.4 +0.3**
KSDI Sn **Sn 17 38 05.3 -2.1**
KSDI Kefar Szold 5.32 135 Pn **Pn 17 37 07.4 +0.3**
KSDI Sn **Sn 17 38 05.3 -2.1**
IDI Anoyia 5.39 253 P **Pn 17 37 07.1 -1.0**
comp=N,1.0nm,0.3s,baz=294,slow=18,SNR=7.3
OFRI 'Ofer 5.42 144 Pn **Pn 17 37 08.2 -0.3**
OFRI Sn **Sn 17 38 06.5 -3.3**
OFRI 'Ofer 5.42 144 Pn **Pn 17 37 08.2 -0.3**
BLGI Bet Lehem HaGe 5.43 142 Pn **Pn 17 37 09.0 +0.4**
BLGI Bet Lehem HaGe 5.43 142 Pn **Pn 17 37 09.0 +0.4**
RABH Abou Rabah 5.55 116 *eP* **Pn 17 37 11.2 +0.9**
RABH *eS* **Sn 17 38 06.7 -6.3**
RABH AML AML 17 38 15.9
comp=N,15nm,0.4s
RABH AML AML 17 38 19.0
comp=E,6.9nm,0.3s
RABH Abou Rabah 5.55 116 *eP* **Pn 17 37 11.2 +0.9**
KSHT Keshet 5.56 136 Pn **Pn 17 37 11.7 +1.2**
KSHT Keshet 5.56 136 Pn **Pn 17 37 11.7 +1.2**
TOTH TOTAH 5.66 129 *eP* **Pn 17 37 13.7 +1.9**
TOTH *eS* **Sn 17 38 09.6 -6.0**
TOTH AML AML 17 38 17.7
comp=N,20nm,0.7s
TOTH AML AML 17 38 20.2
comp=E,12nm,0.8s
TOTH TOTAH 5.66 129 *eP* **Pn 17 37 13.7 +1.9**
ROOS tl_alroos 5.75 118 *eP* **Pn 17 37 13.9 +1.0**
ROOS *eS* **Sn 17 38 11.9 -5.9**
ROOS AML AML 17 38 20.1
comp=N,39nm,0.3s
ROOS AML AML 17 38 22.0
comp=E,20nm,0.6s
ROOS tl_alroos 5.75 118 *eP* **Pn 17 37 13.9 +1.0**
SLTI Sal'it 5.76 145 Pn **Pn 17 37 13.2 +0.1**
SLTI Sal'it 5.76 145 Pn **Pn 17 37 13.2 +0.1**
MMLI Mount Malkishu 5.78 142 Pn **Pn 17 37 13.7 +0.3**
MMLI Sn **Sn 17 38 16.8 -1.7**
MMLI Mount Malkishu 5.78 142 Pn **Pn 17 37 13.7 +0.3**
TCHB Talchebab 5.89 137 *eP* **Pn 17 37 16.2 +1.4**
TCHB *eS* **Sn 17 38 15.9 -5.1**
TCHB AML AML 17 38 24.2
comp=N,36nm,0.2s
TCHB AML AML 17 38 27.4
comp=E,21nm,0.3s
TCHB Talchebab 5.89 137 *eP* **Pn 17 37 16.2 +1.4**
HMDT Nahal Hemdat 5.98 142 Pn **Pn 17 37 16.8 +0.8**
HMDT Nahal Hemdat 5.98 142 Pn **Pn 17 37 16.8 +0.8**
AMAZ Amatzia 6.32 150 Pn **Pn 17 37 20.9 +0.3**
AMAZ Amatzia 6.32 150 Pn **Pn 17 37 20.9 +0.3**
DSI Dead Sea 6.49 146 Pn **Pn 17 37 23.7 +0.9**
DSI Dead Sea 6.49 146 Pn **Pn 17 37 23.7 +0.9**
ASF Jabal al Asfar 6.78 134 S **Sn 17 38 48.6 +5.9**
comp=E,0.6nm,0.3s,baz=122,slow=21,SNR=6.2
HMAT Matruh 6.85 211 P **Pn 17 37 25.4 -2.4**
baz=210
HMAT AMP 17 38 00.0
comp=E,50μm,0.2s,logA/T=5.4,baz=210
HMAT Matruh 6.85 211 P **Pn 17 37 25.4 -2.4**
HHAG Hagoal 7.13 174 P **Pn 17 37 32.6 +1.0**
baz=168
HHAG Hagoal 7.13 174 P **Pn 17 37 32.6 +1.0**
KOT Kottamia 7.14 176 P **Pn 17 37 32.5 +0.8**
baz=170
KOT Kottamia 7.14 176 P **Pn 17 37 32.5 +0.8**
PRNI Paran 7.41 153 Pn **Pn 17 37 35.8 +0.5**
PRNI Sn **Sn 17 38 55.5 -2.4**
PRNI Paran 7.41 153 Pn **Pn 17 37 35.8 +0.5**
HNAT Natroun 7.43 184 P **Pn 17 37 35.3 -0.2**
baz=179
HNAT Natroun 7.43 184 P **Pn 17 37 35.3 -0.2**
HSAF As Saff 7.43 178 P **Pn 17 37 35.9 +0.3**
baz=172
HSAF As Saff 7.43 178 P **Pn 17 37 35.9 +0.3**
SLUM Salum 7.44 223 P **Pn 17 37 32.9 -2.8**
baz=224
SLUM AMP 17 38 00.0
comp=N,80μm,0.2s,logA/T=5.5,baz=224
SLUM S Sn 17 38 45.8 -13
baz=224
HRFI Mount Harif 7.71 154 Pn **Pn 17 37 39.3 -0.1**
HRFI Mount Harif 7.71 154 Pn **Pn 17 37 39.3 -0.1**
MBRI Mt Berech 7.89 156 Pn **Pn 17 37 42.6 +0.8**
MBRI Sn **Sn 17 39 08.3 -1.3**
MBRI Mt Berech 7.89 156 Pn **Pn 17 37 42.6 +0.8**
MBRI Sn **Sn 17 39 08.3 -1.3**
EIL Elat 8.02 156 S **Sn 17 39 08.7 -3.9**
comp=N,0.8nm,0.3s,baz=75,slow=20,SNR=5.9
AKASG Malin Array Be 13.71 355 P **P 17 39 01.8 -1.3**
comp=N,0.6nm,0.3s,baz=177,slow=9.5,SNR=9.5
DAVOX Davos/Dischmat 18.54 308 P **Pn 17 39 57.6 -0.8**
comp=N,0.2nm,0.3s,baz=71,slow=5.8,SNR=5.2
GEYT Alibeck 21.36 79 P **P 17 40 30.1 +3.0**
comp=N,1.5nm,0.5s,baz=294,slow=7.4,SNR=3.6
FINES FINESS Array B 24.61 354 P **P 17 40 58.0 -0.1**
comp=N,0.8nm,0.4s,baz=155,slow=13,SNR=16
ARCES ARCESS Array B 32.68 356 P **P 17 42 09.8 +0.2**
comp=N,0.7nm,0.4s,baz=168,slow=9.0,SNR=12
TORD Torodi Ar. Bea 35.52 236 P **P 17 42 36.1 +1.4**
comp=N,1.0nm,0.8s,baz=29,slow=9.0,SNR=7.0
MKAR Makanchi Array 38.63 59 P **P 17 43 01.9 +1.1**
comp=N,2.5nm,0.6s,baz=281,slow=7.2,SNR=38
ZALV Zalesovo Beam 40.14 48 P **P 17 43 13.8 +0.7**
comp=N,0.5nm,0.2s,baz=262,slow=8.8,SNR=4.4
SONM Songino Array 54.48 53 P **P 17 45 05.2 +0.9**
comp=N,0.4nm,0.4s,baz=284,slow=7.4,SNR=6.2
CMAR Chiang Mai Arr 61.56 88 P **P 17 45 53.9 -0.1**
comp=N,0.2nm,0.3s,baz=295,slow=8.2,SNR=5.5

IDC 14 17:36:05.7±3.7,**6°27S**×**130°39E**,**h101**km±49km,**mb3.7**/2,
mb1 3.9/5,**mb1mx3.4**/27,**mbtmp4.2**/5,**Error ellipse:**
s-maj=80.7km s-min=23.7km az=77.0,Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SIJI	**Sorong**	**5.44**	**9**	P	Pn	17 37 24.6	+0.2
	32nm,0.3s,baz=0.0,slow=20,SNR=2.8						
SIJI				S	Sn	17 38 21.5	-4.3
	43nm,0.3s,baz=90,slow=24,SNR=17						
WRA	**Warramunga Arr**	**14.12**	**165**	P	Pn	17 39 20.0	-1.3
	0.8nm,0.3s,baz=348,slow=13,SNR=16						
WRA				S	Sn	17 41 47.2	-10
	1.4nm,0.3s,baz=334,slow=23,SNR=6.1						
ASAR	**Alice Springs**	**17.62**	**169**	P	Pn	17 40 05.5	+0.5
	0.7nm,0.3s,baz=349,slow=11,SNR=58						
ASAR				S	Sn	17 43 10.6	-11
	0.3nm,0.3s,baz=352,slow=25,SNR=5.2						
CMAR	**Chiang Mai Arr**	**39.57**	**309**	P	P	17 43 27.1	-0.2
	0.8nm,0.7s,baz=137,slow=7.1,SNR=8.5						
MKAR	**Makanchi Array**	**67.83**	**326**	P	P	17 46 53.1	0.0
	1.8nm,0.5s,baz=118,slow=8.2,SNR=26						

ISK ***14*** *17:37:24.1,35°.62N×26°.35E,h17*km*,MD3.1*
ATH ***14*** *17:37:24.9,35°.56N×26°.40E,h39*km±*6*km*,ML3.0/2,Error ellipse: s-maj=8.0km s-min=1.1km az=166.0*
ISCJB ***14*** *17:37:25.6±0.5,35°.63N±0°.03×26°.39E±0°.03,h28*km±*6*km*, Error ellipse: s-maj=5.9km s-min=3.9km az=159.7*
THE ***14*** *17:37:25.4,35°.63N×26°.37E,h11*km±*2*km*,ML3.3/9,Error ellipse: s-maj=2.9km s-min=0.9km az=131.0*
CSEM ***14*** *17:37:25.5±0.1,35°.62N×26°.38E,h20*km*,ML3.0,Error ellipse: s-maj=3.1km s-min=2.1km az=157.0*

ISC 14 17:37:24.4±1.4,**35°.63N**±0°.03×**26°.36E**±0°.02,**h10**km±12km,
n57,σ**0°46**/**77**,**Crete**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZKR	**Zakros**	**0.53**	**193**	P	**Pb**	**17 37 35.3**	**-0.5**
ZKR				S	**Sb**	**17 37 44.2**	**+0.7**
ZKR	**Zakros**	**0.53**	**193**	P	**Pb**	**17 37 35.3**	**-0.5**
ZKR				S	**Sb**	**17 37 44.0**	**+0.5**
ZKR	**Zakros**	**0.53**	**193**	S	**Sb**	**17 37 44.2**	**+0.7**
ZKR	**Zakros**	**0.53**	**193**	P	**Pg**	**17 37 34.8**	**+0.1**
ZKR				S	**Sb**	**17 37 44.0**	**+0.5**
ZKR				AML	AML	17 37 45.3	
	comp=N,3736μm,0.3s						
ZKR				AML	AML	17 37 45.5	
	comp=E,7791μm,0.3s						
KARP	**Karpathos**	**0.66**	**97**	*e*PG	**Pb**	**17 37 38.1**	**+0.1**
KARP				*e*SG	**Sb**	**17 37 47.4**	**+0.2**
KARP	**Karpathos**	**0.66**	**97**	P	**Pb**	**17 37 38.2**	**+0.2**
KARP				S	**Sb**	**17 37 47.2**	**+0.1**
KARP	**Karpathos**	**0.66**	**97**	P	**Pb**	**17 37 38.2**	**+0.2**
KARP				S	**Sb**	**17 37 47.0**	**-0.2**
KARP	**Karpathos**	**0.66**	**97**	P	**Pb**	**17 37 38.6**	**+0.6**
KARP				S	**Sb**	**17 37 47.0**	**-0.2**
KARP				AML	AML	17 37 49.0	
	comp=N,3700μm,0.2s						
KARP				AML	AML	17 37 49.9	
	comp=E,3382μm,0.2s						
NPS	**Neapolis**	**0.72**	**239**	P	**Pb**	**17 37 39.3**	**+0.3**
NPS				S	**Sb**	**17 37 49.5**	**+0.6**
NPS	**Neapolis**	**0.72**	**239**	P	**Pb**	**17 37 39.3**	**+0.3**
NPS				S	**Sb**	**17 37 49.4**	**+0.6**
NPS	**Neapolis**	**0.72**	**239**	P	**Pb**	**17 37 39.4**	**+0.3**
NPS				S	**Sb**	**17 37 49.4**	**+0.6**
LAST	**Lasithi**	**0.86**	**237**	P	**Pb**	**17 37 41.8**	**+0.3**
LAST				S	**Sb**	**17 37 53.7**	**+0.5**
LAST	**Lasithi**	**0.86**	**237**	P	**Pb**	**17 37 41.8**	**+0.3**
LAST				S	**Sb**	**17 37 53.7**	**+0.5**
LAST	**Lasithi**	**0.86**	**237**	P	**Pn**	**17 37 42.3**	**-0.4**
SANT	**Santorini**	**1.04**	**315**	P	**Pb**	**17 37 44.6**	**0.0**
SANT				S	**Sn**	**17 38 00.3**	**+0.6**
THR6	**Thira Island,**	**1.07**	**313**	P	**Pg**	**17 37 44.8**	**-0.2**
THR7	**Fira-Santorini**	**1.09**	**316**	P	**Pg**	**17 37 45.2**	**-0.3**
THR3	**Thira Island,**	**1.10**	**315**	P	**Pg**	**17 37 45.5**	**-0.1**
THR2	**Thira island,**	**1.11**	**317**	P	**Pg**	**17 37 45.5**	**-0.3**
THR5	**Thira Island,**	**1.14**	**314**	*e*PN	**Pb**	**17 37 45.8**	**-0.4**
THR5	**Thira Island,**	**1.14**	**314**	P	**Pb**	**17 37 46.2**	**0.0**
THR5	**Thira Island,**	**1.14**	**314**	P	**Pb**	**17 37 46.2**	**0.0**
CMBO	**Columbo, Santo**	**1.14**	**317**	P	**Pb**	**17 37 46.1**	**-0.2**
CMBO				S	**Sb**	**17 38 01.4**	**+0.3**
NIS1	**Nisyros Isl.**	**1.17**	**34**	*e*PN	**Pb**	**17 37 46.5**	**-0.2**
NIS1	**Nisyros Isl.**	**1.17**	**34**	*e*Pn	**Pb**	**17 37 46.6**	**-0.2**
IDI	**Anoyia**	**1.25**	**255**	P	**Pn**	**17 37 47.6**	**-0.4**
IDI				S	**Sn**	**17 38 04.9**	**0.0**
IDI	**Anoyia**	**1.25**	**255**	P	**Pn**	**17 37 47.6**	**-0.4**
IDI				S	**Sn**	**17 38 04.9**	**0.0**
SIVA	**Sivas**	**1.41**	**245**	P	**Pb**	**17 37 51.0**	**+0.2**
SIVA				S	**Sb**	**17 38 09.3**	**+0.4**
SIVA	**Sivas**	**1.41**	**245**	P	**Pb**	**17 37 51.0**	**+0.2**
SIVA				S	**Sb**	**17 38 09.3**	**+0.4**
ARG	**Arkhangelos**	**1.54**	**67**	P	**Pn**	**17 37 51.5**	**-0.5**
APE	**Apeiranthos**	**1.58**	**335**	*e*PN	**Pn**	**17 37 52.0**	**-0.6**
APE	**Apeiranthos**	**1.58**	**335**	P	**Pn**	**17 37 51.8**	**-0.8**
APE	**Apeiranthos**	**1.58**	**335**	*e*Pn	**Pn**	**17 37 52.0**	**-0.6**
BODT	**Bodrum**	**1.62**	**28**	*e*PN	**Pn**	**17 37 53.0**	**-0.1**
BODT	**Bodrum**	**1.62**	**28**	*e*Pn	**Pn**	**17 37 53.0**	**-0.1**
MHLO	**Agia Marina, M**	**1.91**	**304**	P	**Pn**	**17 37 56.2**	**-0.8**
MHLO	**Agia Marina, M**	**1.91**	**304**	P	**Pn**	**17 37 56.2**	**-0.8**
IMMV	**Iera Moni Meta**	**1.95**	**266**	P	**Pn**	**17 37 57.2**	**-0.4**
IMMV				S	**Sn**	**17 38 21.1**	**-1.0**
IMMV	**Iera Moni Meta**	**1.95**	**266**	P	**Pn**	**17 37 57.2**	**-0.4**
IMMV				S	**Sn**	**17 38 21.1**	**-1.0**
DALY	**Dalyan (Mu¨la**	**2.20**	**57**	*e*PN	**Pn**	**17 38 00.8**	**-0.1**
DALY	**Dalyan (Mu¨la**	**2.20**	**57**	*e*Pn	**Pn**	**17 38 00.8**	**-0.1**
FETY	**Fethiye**	**2.42**	**65**	*e*PN	**Pn**	**17 38 04.1**	**+0.1**
FETY	**Fethiye**	**2.42**	**65**	*e*Pn	**Pn**	**17 38 04.1**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**2.62**	**27**	*e*PN	**Pn**	**17 38 07.1**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**2.62**	**27**	*e*Pn	**Pn**	**17 38 07.1**	**+0.2**
KSL	**Kastellorizon**	**2.66**	**78**	P	**Pn**	**17 38 07.0**	**-0.4**
KSL	**Kastellorizon**	**2.66**	**78**	P	**Pn**	**17 38 07.0**	**-0.4**
CHOS	**Chios island**	**2.76**	**355**	*e*PN	**Pn**	**17 38 09.2**	**+0.4**
CHOS	**Chios island**	**2.76**	**355**	*e*Pn	**Pn**	**17 38 09.2**	**+0.4**
VLI	**Veliai**	**2.98**	**292**	P	**Pn**	**17 38 11.2**	**-0.5**
VLI	**Veliai**	**2.98**	**292**	P	**Pn**	**17 38 11.2**	**-0.5**
DID	**Didima**	**3.14**	**308**	P	**Pn**	**17 38 14.2**	**+0.3**
DID	**Didima**	**3.14**	**308**	P	**Pn**	**17 38 14.2**	**+0.3**
SIGR	**SIGRI**	**3.60**	**354**	*e*PN	**Pn**	**17 38 21.1**	**+0.9**
SIGR	**SIGRI**	**3.60**	**354**	*e*Pn	**Pn**	**17 38 21.1**	**+0.9**
AOS	**Alonnisos**	**4.05**	**331**	*e*PN	**Pn**	**17 38 27.0**	**+0.6**
AOS	**Alonnisos**	**4.05**	**331**	*e*Pn	**Pn**	**17 38 27.0**	**+0.6**

ISCJB ***14*** *18:04:27.9±0.6,24°.70N±0°.03×122°.59E±0°.02,*
*h114*km±*5*km*,Error ellipse: s-maj=5.2km s-min=2.7km*
az=171.3
TAP ***14*** *18:04:27.7,24°.74N×122°.62E,h112*km±*1*km*,ML3.6,D*
JMA ***14*** *18:04:27.2±0.2,24°.75N×122°.53E,h118*km±*3*km*,M2.4*

ISC 14 18:04:28.3±1.5,**24°.70N**±0°.05×**122°.58E**±0°.03,**h114**km±9km,
n51,σ**0°79**/**97**,**2D**,**Taiwan region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JYNG	**Yonagunijimaku**	**0.41**	**127**	P	**Pn**	**18 04 45.0**	**0.0**
JYNG				*e*S	**Sn**	**18 04 58.3**	**+0.7**
YOJ	**Yonaguni jima**	**0.46**	**121**	P	**Pn**	**18 04 45.3**	**0.0**
YOJ				*e*S	**Sn**	**18 04 58.8**	**+0.7**
TWB1	**Santiao Chiao**	**0.62**	**300**	*e*P	**Pn**	**18 04 46.2**	**-0.1**
	baz=295						
TWB1				*e*S	**Sn**	**18 04 59.7**	**-0.4**
	baz=295						
TWC	**Suao**	**0.67**	**263**	*e*P	**Pn**	**18 04 46.3**	**-0.5**
	baz=259						
TWC				*e*S	**Sn**	**18 05 00.4**	**-0.3**
	baz=259						
ENA	**Nanau**	**0.81**	**251**	*e*P	**Pn**	**18 04 48.0**	**0.0**
	baz=248						
ENA				*e*S	**Sn**	**18 05 04.0**	**+1.1**
	baz=248						
NWF	**Wu-fen Shan**	**0.82**	**297**	*e*P	**Pn**	**18 04 47.9**	**-0.2**
	baz=293						
NWF				*e*S	**Sn**	**18 05 02.7**	**-0.4**
	baz=293						
TWE	**Neicheng**	**0.83**	**272**	*e*P	**Pn**	**18 04 48.0**	**-0.1**
	baz=268						
TWE				*e*S	**Sn**	**18 05 02.8**	**-0.3**
	baz=268						
ENTT	**Nioudou**	**0.93**	**267**	P	**Pn**	**18 04 49.2**	**+0.2**
	baz=264						
ENTT				*e*S	**Sn**	**18 05 04.6**	**-0.2**
	baz=264						
TWA	**Mucha**	**0.95**	**287**	*e*P	**Pn**	**18 04 50.6**	**+1.3**
	baz=284						
TWA				*e*S	**Sn**	**18 05 04.3**	**-0.9**
	baz=284						
TWY	**Chenhua**	**1.06**	**303**	*e*P	**Pn**	**18 04 49.9**	**-0.4**
	baz=300						
TWY				*e*S	**Sn**	**18 05 07.8**	**+0.6**
	baz=300						
TWD	**Chiawan**	**1.09**	**236**	*e*P	**Pn**	**18 04 50.4**	**-0.3**
	baz=234						
TWD				S	**Sn**	**18 05 07.6**	**-0.1**
	baz=234						
IRIF	**Iriomote-Funau**	**1.11**	**109**	P	**Pn**	**18 04 50.7**	**-0.2**
IRIF				S	**Sn**	**18 05 08.2**	**+0.2**
NSK	**Sanguang**	**1.11**	**269**	⇓*i*P	**Pn**	**18 04 51.0**	**-0.1**
	baz=266						
NSK				*i* S	**Sn**	**18 05 07.8**	**-0.5**
	baz=266						
NNS	**Nan Shan**	**1.13**	**257**	*i* P	**Pn**	**18 04 51.3**	**+0.1**
	baz=255						
NNS				*i* S	**Sn**	**18 05 08.7**	**0.0**
	baz=255						
TWS1	**Kuangyinshan**	**1.13**	**291**	*e*P	**Pn**	**18 04 50.9**	**-0.3**
	baz=288						
TWS1				*e*S	**Sn**	**18 05 07.8**	**-0.6**
	baz=288						
HWA	**Hwalien**	**1.14**	**231**	*e*P	**Pn**	**18 04 51.2**	**-0.1**
	baz=230						
HWA				S	**Sn**	**18 05 09.2**	**+0.5**
	baz=230						
HATJ	**Hateruma jima**	**1.28**	**120**	P	**Pn**	**18 04 54.1**	**+1.3**
HATJ				*e*S	**Sn**	**18 05 13.2**	**+1.8**
NCU	**National Centr**	**1.30**	**282**	*e*S	**Sn**	**18 05 11.7**	**0.0**
	baz=279						
WHF	**Hehuan Shan**	**1.32**	**246**	⇓*i*P	**Pn**	**18 04 53.6**	**-0.1**
	baz=244						
TWT	**Tachien**	**1.36**	**251**	P	**Pn**	**18 04 54.5**	**+0.6**
	baz=249						
TWT				S	**Sn**	**18 05 13.4**	**+0.2**
	baz=249						
ESL	**Shilin**	**1.37**	**230**	*e*P	**Pn**	**18 04 53.1**	**-0.7**
	baz=229						
ESL				*e*S	**Sn**	**18 05 11.8**	**-1.4**
	baz=229						
JKRS	**Kuro-shima**	**1.38**	**109**	P	**Pn**	**18 04 54.3**	**+0.4**
JKRS				S	**Sn**	**18 05 13.7**	**+0.4**
NSTT	**Nanjuang**	**1.44**	**268**	*e*P	**Pn**	**18 04 54.2**	**-0.4**
	baz=265						
NSTT				*e*S	**Sn**	**18 05 13.8**	**-0.8**
	baz=265						
JIJ	**Ishigaki jima**	**1.46**	**103**	P	**Pn**	**18 04 54.7**	**-0.1**
JIJ				S	**Sn**	**18 05 14.2**	**-0.8**
HSN	**Hsinchu**	**1.47**	**274**	*e*S	**Sn**	**18 05 13.8**	**-1.4**
	baz=273						
JISG	**Ishigakijimahi**	**1.58**	**94**	P	**Pn**	**18 04 56.0**	**-0.2**
JISG				S	**Sn**	**18 05 16.8**	**-0.7**
NSY	**Sanyi**	**1.68**	**261**	*e*P	**Pn**	**18 04 57.7**	**+0.2**
	baz=259						
NSY				*e*S	**Sn**	**18 05 19.6**	**-0.2**
	baz=259						
TWQ1	**Liyutan**	**1.68**	**258**	*e*P	**Pn**	**18 04 57.9**	**+0.4**
	baz=256						
TWQ1				*e*S	**Sn**	**18 05 19.5**	**-0.3**
	baz=256						
SMLT	**Sun Moon Lake**	**1.74**	**242**	*e*P	**Pn**	**18 04 59.1**	**+0.8**
	baz=241						
SMLT				*e*S	**Sn**	**18 05 21.8**	**+0.7**
	baz=241						
TYC	**Yuchr**	**1.76**	**244**	*e*P	**Pn**	**18 04 59.2**	**+0.8**
	baz=242						
TYC				*e*S	**Sn**	**18 05 22.6**	**+1.1**
	baz=242						
TWF1	**Yuli**	**1.78**	**222**	*e*P	**Pn**	**18 04 58.0**	**-0.8**
	baz=221						
TWF1				*e*S	**Sn**	**18 05 21.0**	**-1.0**
	baz=221						
TCU	**Taichung**	**1.82**	**253**	*e*P	**Pn**	**18 04 59.7**	**+0.5**
	baz=251						
TCU				*e*S	**Sn**	**18 05 22.9**	**0.0**
	baz=251						
YUS	**Yu-Shan**	**1.92**	**231**	P	**Pn**	**18 05 01.4**	**+0.6**
	baz=230						
YUS				S	**Sn**	**18 05 25.6**	**0.0**
	baz=230						
JTJ	**Tarama**	**1.93**	**91**	P	**Pn**	**18 05 00.7**	**+0.2**
JTJ				S	**Sn**	**18 05 24.5**	**-0.7**
CHKT	**Chengkung**	**1.94**	**215**	*e*P	**Pn**	**18 04 60.0**	**-0.7**
	baz=215						
CHKT				*e*S	**Sn**	**18 05 24.1**	**-1.4**
	baz=215						
ALS	**Alishan**	**2.01**	**234**	*i* P	**Pn**	**18 05 02.4**	**+0.5**
	baz=233						
ALS				S	**Sn**	**18 05 28.7**	**+1.3**
	baz=233						
CHN5	**Tsauling**	**2.06**	**238**	*e*P	**Pn**	**18 05 02.9**	**+0.6**
	baz=237						
CHN5				*e*S	**Sn**	**18 05 29.2**	**+1.1**
	baz=237						
ELDTW	**Lidau**	**2.08**	**224**	*e*P	**Pn**	**18 05 01.7**	**-0.8**
	baz=223						
ELDTW				*e*S	**Sn**	**18 05 27.6**	**-1.1**
	baz=223						
WGK	**Gukeng**	**2.10**	**242**	*e*S	**Sn**	**18 05 30.3**	**+1.2**
	baz=240						
CHN4	**Tsaushan**	**2.26**	**234**	*e*P	**Pn**	**18 05 04.5**	**-0.3**
	baz=233						
CHN4				*e*S	**Sn**	**18 05 33.6**	**+0.9**
	baz=233						
STYT	**Tauyuan**	**2.26**	**228**	*e*P	**Pn**	**18 05 05.8**	**+0.9**
	baz=227						
STYT				*e*S	**Sn**	**18 05 34.0**	**+1.1**
	baz=227						
WTP	**Ta-pu**	**2.31**	**232**	*e*P	**Pn**	**18 05 05.1**	**-0.3**
	baz=230						
WTP				*e*S	**Sn**	**18 05 34.7**	**+0.8**
	baz=230						
TWG	**Pinlang**	**2.33**	**217**	*e*P	**Pn**	**18 05 04.8**	**-0.8**
	baz=216						
TWG				*e*S	**Sn**	**18 05 32.4**	**-1.8**
	baz=216						
JIRB	**Irabujima**	**2.36**	**86**	P	**Pn**	**18 05 05.9**	**-0.1**
JIRB				S	**Sn**	**18 05 34.7**	**-0.2**
WSF	**Szhu**	**2.40**	**244**	*e*S	**Sn**	**18 05 36.1**	**+0.2**
	baz=243						
CHN1	**Nanshi**	**2.41**	**232**	*e*P	**Pn**	**18 05 07.2**	**+0.5**
	baz=231						
CHN1				*e*S	**Sn**	**18 05 36.6**	**+0.5**
	baz=231						
SGST	**Jiashian**	**2.44**	**229**	*e*P	**Pn**	**18 05 07.0**	**0.0**
	baz=228						
SGST				*e*S	**Sn**	**18 05 37.9**	**+1.1**
	baz=228						
ECL	**Taimali**	**2.57**	**216**	*e*P	**Pn**	**18 05 09.5**	**+0.8**
	baz=215						
ECL				*e*S	**Sn**	**18 05 37.8**	**-2.0**
	baz=215						
SSD	**Sandimen**	**2.64**	**223**	*e*P	**Pn**	**18 05 10.3**	**+0.7**
	baz=222						
SSD				*e*S	**Sn**	**18 05 42.3**	**+0.8**
	baz=222						
EAST	**Anshuo**	**2.80**	**215**	*e*P	**Pn**	**18 05 13.3**	**+1.5**
	baz=214						
EAST				*e*S	**Sn**	**18 05 46.1**	**+0.8**
	baz=214						
LAY	**Lan-yu**	**2.81**	**200**	*e*P	**Pn**	**18 05 10.5**	**-1.4**
	baz=200						
LAY				*e*S	**Sn**	**18 05 43.7**	**-1.9**
	baz=200						

MAN ***14*** *18:06:45,14°.23N×120°.15E,h81*km*,m

SJMP eS **Sn** **18 07 42.9 +0.2**
BALP Baler 2.02 41 eP **Pn** **18 07 18.6 -0.9**
BALP eS **Sn** **18 07 43.9 -0.5**
BOLP Bolinao 2.18 353 eP **Pn** **18 07 20.6 -0.9**
BOLP eS **Sn** **18 07 46.5 -1.6**
BUSP Coron 2.19 180 eP **Pn** **18 07 22.2 +0.5**
BUSP eS **Sn** **18 07 48.1 -0.2**
BCPH Baguio City Da 2.19 10⇑iP **Pn** **18 07 24.4 +2.5**
BCPH i S **Sn** **18 07 49.9 +1.2**
GQP Guinayangan 2.20 98⇑eP **Pn** **18 07 22.2 +0.4**
ENPP El Nido 3.08 194 eP **Pn** **18 07 34.5 +1.0**
ENPP eS **Sn** **18 08 09.1 -0.3**
CUYO Cuyo Island 3.43 166 eP **Pn** **18 07 38.2 -0.1**
CUYO eS **Sn** **18 08 16.7 -1.3**
CMAR Chiang Mai Arr 20.83 285 P Pn 18 11 23.8 -0.7
0.5nm,0.7s,baz=99,slow=8.8,SNR=5.7
JCJ Chichijima 24.19 55 LR LR 18 18 59.7
comp=Z,224nm,21.4s,baz=83,slow=31
SONM Songino Array 35.44 344 P **P** **18 13 34.5 +0.3**
0.4nm,0.6s,baz=165,slow=8.8,SNR=3.3
ASAR Alice Springs 39.95 160 P **P** **18 14 11.8 -0.6**
0.2nm,0.5s,baz=331,slow=6.7,SNR=7.4
MKAR Makanchi Array 45.34 324 P **P** **18 14 56.3 +0.6**
0.3nm,0.6s,baz=119,slow=9.9,SNR=4.9
FINES FINESS Array B 79.61 331 P **P** **18 18 43.8 +0.1**
3.8nm,1.1s,baz=59,slow=7.8,SNR=5.4
NOA NORSAR Array B 86.59 333 P **P** **18 19 19.0 -0.7**
0.3nm,0.5s,baz=42,slow=6.0,SNR=2.3

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*IDC **14** 18:12:17.6±1.6,28°.63S×176°.77W,h0km,mb3.8/4, mb1 4.0/4,mb1mx3.7/21,mbtmp3.8/4,MS3.1/1,Ms1 3.1/1, ms1mx2.6/35, Error ellipse: s-maj=39.3km s-min=26.6km az=147.0*
*ISCJB **14** 18:12:21.7±1.5,28°.6S±0°.2×176°.7W±0°.2,h48km,mb3.8/4, Error ellipse: s-maj=35.5km s-min=16.2km az=149.8*
ISC 14 18:12:24.4±1.4,28°.7S±0°.2×176°.8W±0°.2,h48km,n8, σ0°94/8,mb3.9/4,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.10 240**		Pn	**Pn**	**18 12 41.9**	**-1.5**
	278nm,0.3s,baz=73,slow=18,SNR=6.6						
RAO				Sn	**Sn**	**18 12 58.8**	**+1.3**
	382nm,0.3s,baz=222,slow=23,SNR=6.6						
DZM	**Mont Dzumac**	**16.48 290**		LR	LR	18 21 11.9	
	comp=Z,63nm,19.3s,baz=58,slow=32						
STKA	**Stephens Creek**	**35.88 254**		P	**P**	**18 19 20.2**	**+0.3**
	2.0nm,0.8s,baz=100,slow=8.5,SNR=4.5						
ASAR	**Alice Springs**	**44.25 265**		P	**P**	**18 20 29.1**	**-0.3**
	1.4nm,0.8s,baz=103,slow=6.9,SNR=29						
WRA	**Warramunga Arr**	**45.09 270**		P	**P**	**18 20 36.3**	**+0.2**
	1.3nm,0.7s,baz=110,slow=7.9,SNR=12						
VNDA	**Vanda**	**49.88 186**		P	**P**	**18 21 12.7**	**+0.2**
	0.4nm,0.6s,baz=21,slow=6.2,SNR=2.8						
FINES	**FINESS Array B**	**143.88 341**		PKP	**PKPdf**	**18 31 54.0**	**+0.4**
	1.4nm,0.7s,baz=66,slow=4.6,SNR=5.3						
AKASG	**Malin Array Be**	**150.53 325**		PKPbc	**PKPbc**	**18 32 10.5**	**+0.1**
	0.4nm,0.4s,baz=138,slow=2.4,SNR=3.8						

WEL 14 18:32:30.2±1.7,35°.32S×177°.92E,h33km,ML4.2/2,Error ellipse: s-maj=23.7km s-min=12.1km az=90.0,Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HAZ	**Te Kaha**	**2.43 182**		P*	Pn	18 33 06.6	-1.0
PKGZ	**Pakihiroa**	**2.56 177**		PN	Pn	18 33 07.8	-1.7
PUZ	**Puketiti**	**2.76 174**		ePN	Pn	18 33 11.7	-0.4
PUZ				SN	Sn	18 33 42.6	-1.7
PUZ				AML	AML	18 33 56.7	
TWGZ	**Tauwhareparae**	**2.85 179**		PN	Pn	18 33 14.2	+0.9
URZ	**Urewera**	**3.00 192**		eP*	Pn	18 33 16.0	+0.6
URZ				AML	AML	18 33 49.4	

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*NIED **14** 18:41:00,36°.00N×141°.30E,h11km,Mw3.5 Best double couple: M0 2.10000×10^14 NP1:φs199.00000°,δ19.00000°, λ-15.00000°. NP2:φs303.00000°,δ85.00000°, λ-108.00000°.*
*IDC **14** 18:41:53.0±1.2,35°.89N×141°.30E,h0km,mb3.4/4, mb1 3.6/5,mb1mx3.3/46,mbtmp3.3/5,ML2.9/1,MS2.1/1, Ms1 2.1/1,ms1mx1.8/30,Error ellipse: s-maj=31.7km s-min=24.0km az=52.0*
*JMA **14** 18:41:55.1±0.2,35°.97N×141°.28E,h32km±2km,M3.6*
JMA Felt I J1.
ISC 14 18:41:54.2±2.1,35°.97N±0°.06×141°.28E±0°.08,h8km±12km, n16,σ0°56/15,mb3.5/4,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.43 232**		P	**Pb**	**18 42 04.5**	**+0.5**
CHOJ				S	**Sb**	**18 42 11.2**	**+0.6**
JHO	**Hitachi**	**0.86 319**		P	**Pg**	**18 42 10.7**	**-0.1**
JHO				S	**Sb**	**18 42 23.2**	**+0.1**
JYT	**Yasato**	**0.92 287**		P	**Pg**	**18 42 11.4**	**-0.4**
JYT				S	**Sb**	**18 42 24.8**	**+0.1**
BSO3	**Boso 3**	**1.32 209**		P	**Pn**	**18 42 18.5**	**-0.2**
MJAR	**Matsushiro Arr**	**2.54 284**		Pn	**Pn**	**18 42 35.7**	**-0.2**
	2.6nm,0.3s,baz=116,slow=7.7,SNR=40						
MJAR				Sn	**Sn**	**18 43 06.7**	**-0.3**
	2.9nm,0.3s,baz=161,slow=36,SNR=5.1						
MJAR				LR	LR	18 43 43.6	
	comp=Z,40nm,20.4s,baz=140,slow=43						
MAT	**Matsushiro**	**2.55 284**		P	**Pn**	**18 42 36.2**	**+0.3**
MAT				S	**Sn**	**18 43 06.1**	**-1.0**
H11N2	**WAKE ISLAND Hy 27.71**	**119**		T	T	19 16 41.1	
	baz=311,slow=75,SNR=13						
H11N1	**WAKE ISLAND Hy 27.72**	**119**		T	T	19 16 41.7	
	baz=311,slow=75,SNR=15						
H11N3	**WAKE ISLAND Hy 27.73**	**119**		T	T	19 16 43.1	
	baz=311,slow=75,SNR=12						
H11S1	**WAKE ISLAND Hy 28.39**	**121**		T	T	19 17 33.8	
	baz=313,slow=76,SNR=27						
H11S3	**WAKE ISLAND Hy 28.39**	**121**		T	T	19 17 35.9	
	baz=313,slow=76,SNR=31						
H11S2	**WAKE ISLAND Hy 28.40**	**121**		T	T	19 17 45.9	
	baz=313,slow=76,SNR=19						
MKAR	**Makanchi Array**	**44.60 303**		P	**P**	**18 50 07.8**	**+0.9**
	0.1nm,0.6s,baz=69,slow=4.8,SNR=2.4						
WRA	**Warramunga Arr**	**55.99 188**		P	**P**	**18 51 32.7**	**-0.5**
	0.5nm,0.7s,baz=2.5,slow=7.3,SNR=8.5						
ASAR	**Alice Springs**	**59.72 188**		P	**P**	**18 51 58.8**	**-0.6**
	0.2nm,0.6s,baz=17,slow=12,SNR=6.3						
YKA	**Yellowknife Ar**	**64.79 30**		P	**P**	**18 52 33.0**	**0.0**
	0.3nm,0.7s,baz=299,slow=6.5,SNR=4.0						

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*ISCJB **14** 18:45:32.1±0.6,27°.39N±0°.04×57°.80E±0°.05,h10km,Error ellipse: s-maj=7.1km s-min=5.8km az=24.2*
*OMAN **14** 18:45:33.2,27°.43N×57°.73E,h24km*
*TEH **14** 18:45:33.2,27°.43N×57°.73E,h24km,ML3.3*
*DSN **14** 18:45:35.0±1.4,27°.66N×57°.03E,h15km,ML3.0,Error ellipse: s-maj=47.5km s-min=9.4km az=123.0*
*CSEM **14** 18:45:34.1±0.4,27°.39N×57°.78E,h20km,ML3.3,Error ellipse: s-maj=10.5km s-min=6.7km az=104.0*
ISC 14 18:45:33.2±1.3,27°.38N±0°.04×57°.75E±0°.05,h10km,n41, σ1°07/43,Southern Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NIAN	**Nian**	**0.83 283**		ePg	**Pn**	**18 45 51.1**	**+0.1**
NIAN	**Nian**	**0.83 283**		ePg	**Pn**	**18 45 51.1**	**+0.1**
KHSK	**Kohestak**	**0.88 225**		ePg	**Pn**	**18 45 51.6**	**0.0**
KHSK	**Kohestak**	**0.88 225**		ePg	**Pn**	**18 45 51.6**	**0.0**
IBND	**Bandar-abas**	**1.08 274**		ePg	**Pb**	**18 45 54.2**	**+0.2**
IBND				eAMB	AMB	18 45 55.3	
	comp=Z,12μm,0.0s						
IBND				eSg	**Sn**	**18 46 10.0**	**+0.6**
IBND	**Bandar-abas**	**1.08 274**		ePg	**Pb**	**18 45 54.2**	**+0.2**
IBND				eSg	**Sn**	**18 46 10.0**	**+0.6**
GENO	**Geno**	**1.41 271**		ePn	**Pn**	**18 45 58.5**	**-0.5**
GENO	**Geno**	**1.41 271**		ePn	**Pn**	**18 45 58.5**	**-0.5**
BNDS	**Bandar-Abbas**	**1.41 271**		ePg	**Pn**	**18 45 58.3**	**-0.7**
BANOM	**Banah**	**1.95 222**		eP	**Pn**	**18 46 05.2**	**-1.2**
	SNR=25						
BANOM	**Banah**	**1.95 222**		P	**Pn**	**18 46 05.2**	**-1.2**
	SNR=25						
BANOM	**Banah**	**1.95 222**		Pn	**Pn**	**18 46 05.0**	**-1.3**
	SNR=137						
BANOM	**Banah**	**1.95 222**		P	**Pn**	**18 46 05.0**	**-1.3**
	SNR=137						
NGRK	**Negar Kerman**	**2.43 338**		ePn	**Pn**	**18 46 13.4**	**+0.1**
NGRK	**Negar Kerman**	**2.43 338**		ePn	**Pn**	**18 46 13.4**	**+0.1**
CHMN	**Cheshme madani**	**2.48 356**		ePn	**Pn**	**18 46 15.1**	**+1.1**
CHMN	**Cheshme madani**	**2.48 356**		ePn	**Pn**	**18 46 15.1**	**+1.1**
KRBR	**Kerman**	**2.73 342**		ePg	**Pn**	**18 46 16.4**	**-1.0**
TVBK	**TV Kerman**	**2.74 342**		ePn	**Pn**	**18 46 18.8**	**+1.3**
TVBK	**TV Kerman**	**2.74 342**		ePn	**Pn**	**18 46 18.8**	**+1.3**
HATD	**Hatta, Dubai**	**2.93 210**		P	**Pn**	**18 46 21.8**	**+1.9**
HATD	**Hatta, Dubai**	**2.93 210**		P	**Pn**	**18 46 21.8**	**+1.9**
CHBR	**Chabahar**	**3.02 125**		ePn	**Pn**	**18 46 20.3**	**-0.8**
NAZ	**Nazwa, Dubai**	**3.03 219**		P	**Pn**	**18 46 21.3**	**0.0**
NAZ	**Nazwa, Dubai**	**3.03 219**		P	**Pn**	**18 46 21.3**	**0.0**
ASHO	**Ashiyiah**	**3.09 210**		iPn	**Pn**	**18 46 22.7**	**+0.7**
	SNR=6.8						
ASHO	**Ashiyiah**	**3.09 210**		P	**Pn**	**18 46 22.7**	**+0.7**
	SNR=6.8						
KHGB	**Koh Gabri**	**3.19 340**		ePn	**Pn**	**18 46 24.5**	**+0.9**
KHGB	**Koh Gabri**	**3.19 340**		ePn	**Pn**	**18 46 24.5**	**+0.9**
FAQ	**Al Faqa, Dubai**	**3.27 217**		iPn	**Pn**	**18 46 24.2**	**-0.2**
	SNR=11						
FAQ	**Al Faqa, Dubai**	**3.27 217**		P	**Pn**	**18 46 24.2**	**-0.2**
	SNR=11						
IMEH	**Mehriz**	**4.84 326**		ePn	**Pn**	**18 46 45.2**	**-1.2**
IMEH				eAMB	AMB	18 47 02.8	
	comp=Z,121nm,0.2s						
IMEH	**Mehriz**	**4.84 326**		ePn	**Pn**	**18 46 45.2**	**-1.2**
IKOO	**Kooshah**	**5.14 12**		ePn	**Pn**	**18 46 51.1**	**+0.6**
IKOO				eAMB	AMB	18 48 15.1	
	comp=Z,254nm,0.3s						
IKOO	**Kooshah**	**5.14 12**		ePn	**Pn**	**18 46 51.1**	**+0.6**
IDAH	**Dahanechah**	**5.65 18**		ePn	**Pn**	**18 46 55.1**	**-2.3**
IDAH	**Dahanechah**	**5.65 18**		ePn	**Pn**	**18 46 55.1**	**-2.3**
IKAZ	**Kazeroun**	**5.72 296**		ePn	**Pn**	**18 46 56.9**	**-1.6**
IKAZ				eAMB	AMB	18 48 02.5	
	comp=Z,477nm,0.2s						
IKAZ	**Kazeroun**	**5.72 296**		ePn	**Pn**	**18 46 56.9**	**-1.6**
ISAD	**Sadrabad**	**5.74 323**		ePn	**Pn**	**18 46 58.4**	**-0.3**
ISAD				eAMB	AMB	18 46 58.7	
	comp=Z,109nm,0.2s						
ISAD	**Sadrabad**	**5.74 323**		ePn	**Pn**	**18 46 58.4**	**-0.3**

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*IDC **14** 18:49:44.0±2.5,24°.27S×179°.84E,h497km±23km,mb3.2/6, mb1 3.4/7,mb1mx3.2/27,mbtmp4.1/7,Error ellipse: s-maj=26.4km s-min=20.3km az=23.0*
*ISCJB **14** 18:49:45.3±1.0,24°.4S±0°.1×179°.8E±0°.2,h517km,mb3.7/6, Error ellipse: s-maj=21.7km s-min=15.1km az=175.4*
ISC 14 18:49:46.5±0.9,24°.6S±0°.1×179°.8E±0°.2,h517km,n12, σ1°33/15,mb3.7/6,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**13.86 189**		P	**P**	**18 52 44.0**	**-0.3**
	1.1nm,0.3s,baz=356,slow=17,SNR=5.4						
URZ				S	**S**	**18 55 10.0**	**-0.9**
	0.4nm,0.3s,baz=180,slow=23,SNR=5.7						
STKA	**Stephens Creek**	**34.34 249**		P	**P**	**18 55 50.4**	**+0.6**
	1.8nm,0.6s,baz=90,slow=11,SNR=9.1						
ASAR	**Alice Springs**	**41.78 261**		P	**P**	**18 56 50.0**	**-0.7**
	1.7nm,0.8s,baz=90,slow=6.8,SNR=69						
ASAR				ScP	**ScP**	**19 01 36.5**	**+0.6**
	1.2nm,1.1s,baz=108,slow=4.4,SNR=7.1						
WRA	**Warramunga Arr**	**42.21 267**		P	**P**	**18 56 52.9**	**-1.1**
	3.7nm,0.4s,baz=99,slow=8.3,SNR=90						
WRA				ScP	**ScP**	**19 01 40.5**	**+2.8**
	1.6nm,0.8s,baz=96,slow=3.8,SNR=8.3						
VNDA	**Vanda**	**53.72 185**		P	**P**	**18 58 20.7**	**+1.5**
	0.3nm,0.4s,baz=0.3,slow=6.3,SNR=3.3						
MAW	**Mawson**	**77.08 201**		P	**P**	**19 00 46.6**	**+0.8**
	1.2nm,0.5s,baz=135,slow=2.9,SNR=4.0						
VNA3	**Neumayer Olymp**	**84.23 177**		P	**P**	**19 01 22.4**	**-0.5**
VNA2	**Neumayer--Watz**	**84.65 178**		P	**P**	**19 01 24.6**	**-0.4**
	baz=192,slow=4.5						
TXAR	**Lajitas Array**	**90.91 58**		P	**P**	**19 01 55.2**	**0.0**
	0.7nm,0.7s,baz=217,slow=6.6,SNR=9.5						
ARCES	**ARCESS Array B**	**132.49 348**		PKP	**PKPdf**	**19 07 59.0**	**-2.2**
	1.2nm,0.9s,baz=54,slow=4.6,SNR=4.3						
BRTR	**Keskin Array B**	**147.84 306**		PKPbc	**PKPdf**	**19 08 30.6**	**+0.9**
	0.2nm,0.4s,baz=117,slow=3.1,SNR=2.8						
TORD	**Torodi Ar. Bea**	**168.52 189**		PKPab	**PKPab**	**19 10 06.4**	**-1.0**
	0.5nm,0.8s,baz=172,slow=4.1,SNR=2.9						

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*IDC **14** 18:50:57.8±1.0,31°.43N×133°.28E,h0km,mb3.6/7, mb1 3.7/9,mb1mx3.5/41,mbtmp3.6/9,ML3.4/2,MS2.6/5, Ms1 2.6/5,ms1mx2.4/45,Error ellipse: s-maj=43.5km s-min=18.2km az=59.0*
*NIED **14** 18:51:00,31°.60N×133°.20E,h5km,Mw3.7 Best double couple: M0 4.16000×10^14 NP1:φs42.00000°,δ30.00000°, λ-85.00000°. NP2:φs216.00000°,δ60.00000°, λ-93.00000°.*
*ISCJB **14** 18:51:01.2±0.7,31°.56N±0°.04×133°.29E±0°.07,h35km, mb3.5/8,MS2.7/3,Error ellipse: s-maj=8.1km s-min=5.8km az=12.1*
*JMA **14** 18:51:01.2±0.2,31°.55N×133°.22E,h38km,M3.7*
ISC 14 18:51:03.0±0.9,31°.53N±0°.07×133°.27E±0°.07,h35km,n21, σ1°85/28,mb3.6/8,MS2.9/3,5C,Southeast of Shikoku

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTO	**Tosashimizu**	**1.38 344**		⇑P	**Pn**	**18 51 24.4**	**-1.5**
JTO				S	**Sn**	**18 51 40.5**	**-2.4**
JTSN	**Tsuno**	**1.66 296**		P	**Pn**	**18 51 27.8**	**-1.8**
UWA2	**Uwa jima 2**	**1.76 342**		⇑P	**Pn**	**18 51 30.1**	**-1.0**
UWA2				S	**Sn**	**18 51 50.2**	**-2.2**
JKU	**Kubokawa**	**1.78 355**		⇑P	**Pn**	**18 51 30.4**	**-1.0**
JKU				S	**Sn**	**18 51 50.5**	**-2.3**
JTZ	**Takazaki**	**1.89 282**		⇑P	**Pn**	**18 51 31.2**	**-1.6**
JTZ				eS	**Sn**	**18 51 55.4**	**-0.1**
JNA	**Nagahama**	**2.13 342**		⇑P	**Pn**	**18 51 35.5**	**-0.6**
JNA				S	**Sn**	**18 51 59.4**	**-1.9**
JET	**Tanbara**	**2.25 355**		P	**Pn**	**18 51 37.0**	**-0.8**
JET				S	**Sn**	**18 52 02.3**	**-2.1**
JMN	**Monobe**	**2.25 13**		P	**Pn**	**18 51 36.6**	**-1.3**
JMN				S	**Sn**	**18 52 01.8**	**-2.7**
JNU	**Nakatsue**	**2.57 309**		Pn	**Pn**	**18 51 41.9**	**-0.4**
	22nm,0.3s,baz=66,slow=3.4,SNR=175						
JNU				Sn	**Sn**	**18 52 14.0**	**+1.7**
	34nm,0.3s,baz=283,slow=9.9,SNR=15						
JNU				LR	LR	18 52 33.9	
	comp=Z,50nm,18.5s,baz=138,slow=36						
JSJ	**Shimokoshiki**	**3.03 274**		P	**Pn**	**18 51 45.8**	**-2.7**
JSJ				eS	**Sn**	**18 52 20.3**	**-3.3**
KSRS	**Korea Array**	**7.37 325**		Pn	**Pn**	**18 52 47.5**	**-0.6**
	0.2nm,0.3s,baz=141,slow=14,SNR=3.8						
KSRS				LR	LR	18 55 37.1	
	comp=Z,26nm,20.1s,baz=135,slow=37						
DAV	**Davao City (W)**	**25.37 198**		LR	LR	19 07 19.8	
	comp=Z,9.1nm,18.6s,baz=284,slow=39						
SONM	**Songino Array**	**26.13 316**		P	**P**	**18 56 37.2**	**+3.3**
	0.1nm,0.3s,baz=110,slow=7.8,SNR=2.2						
SONM				LR	LR	19 07 56.5	
	comp=Z,32nm,19.0s,baz=167,slow=39						
ZALV	**Zalesovo Beam**	**41.01 318**		LR	LR	19 16 23.9	
	comp=Z,23nm,20.4s,baz=68,slow=37						
MKAR	**Makanchi Array**	**41.62 307**		P	**P**	**18 58 48.7**	**+1.0**
	0.4nm,0.6s,baz=95,slow=8.2,SNR=5.0						
ASAR	**Alice Springs**	**54.89 179**		P	**P**	**19 00 29.6**	**-0.5**
	0.2nm,0.6s,baz=10,slow=13,SNR=6.6						
STKA	**Stephens Creek**	**63.55 172**		P	**P**	**19 01 29.0**	**-0.9**
	1.8nm,0.9s,baz=321,slow=6.5,SNR=2.7						
FINES	**FINESS Array B**	**70.42 331**		P	**P**	**19 02 12.4**	**-0.9**
	1.8nm,0.9s,baz=134,slow=4.0,SNR=3.8						
AKASG	**Malin Array Be**	**74.34 320**		P	**P**	**19 02 39.0**	**+2.1**
	0.4nm,0.5s,baz=49,slow=6.3,SNR=4.6						
BRTR	**Keskin Array B**	**77.22 309**		P	**P**	**19 02 54.5**	**+0.8**
	0.4nm,0.8s,baz=156,slow=6.2,SNR=3.8						
PDAR	**Pinedale Array**	**86.28 41**		P	**P**	**19 03 42.5**	**+0.9**
	0.3nm,0.6s,baz=282,slow=1.8,SNR=2.8						

IDC 14 18:57:32.0±3.1,1°.17N×130°.08E,h0km,mb3.0/2, mb1 3.4/2,mb1mx3.1/24,mbtmp3.1/2,Error ellipse: s-maj=361.4km s-min=32.3km az=75.0,Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**21.39 169**		P	P	19 02 19.5	-2.0
	0.2nm,0.6s,baz=348,slow=11,SNR=4.0						
ASAR	**Alice Springs**	**24.96 172**		P	P	19 02 58.6	+1.2
	0.3nm,0.5s,baz=350,slow=11,SNR=15						
FINES	**FINESS Array B**	**95.66 332**		P	P	19 10 59.1	-0.3
	4.5nm,1.1s,baz=57,slow=5.1,SNR=7.0						

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*RSNC **14** 18:58:07.6±0.4,11°.44N×72°.66W,h124km±8km,ML2.7*
*ISCJB **14** 18:58:10.7±1.1,10°.89N±0°.04×72°.57W±0°.04,h13km±6km, Error ellipse: s-maj=7.9km s-min=5.2km az=35.9*
*FUNV **14** 18:58:12.9,10°.83N×72°.47W,h2km,MW2.8*
ISC 14 18:58:09.9±1.6,10°.93N±0°.04×72°.55W±0°.05,h5km±11km, n16,σ1°28/24,Venezuela

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VIRV	**Villa del Rosa**	**0.45 161**		eP	**Pg**	**18 58 18.7**	**+0.1**
VIRV				eS	**Sg**	**18 58 24.0**	**-0.3**
URIC	**Uribia, Colomb**	**0.94 35**		eP	**Pg**	**18 58 27.1**	**-0.9**
URIC				i		18 58 28.1	
	comp=Z,75nm,0.1s						
URIC				eS	**Sb**	**18 58 41.9**	**+0.4**
DABV	**Dabajuro**	**1.88 90**		eP	**Pb**	**18 58 44.5**	**-0.2**
DABV				eS	**Sb**	**18 59 07.7**	**-0.9**
VIGV	**El Vigia**	**2.38 151**		eP	**Pn**	**18 58 51.3**	**+1.6**
VIGV				eS	**Sn**	**18 59 18.1**	**-1.1**
CURV	**Curarigua**	**2.70 109**		eP	**Pn**	**18 58 55.6**	**+1.4**
MONV	**Montecano**	**2.73 68**		eP	**Pn**	**18 58 55.9**	**+1.6**
MONV				eS	**Sn**	**18 59 28.4**	**+0.6**
OCAC	**Ocana**	**2.78 196**		eP	**Pn**	**18 58 57.0**	**+1.8**
OCAC				eS	**Sb**	**18 59 35.3**	**+0.8**
OCAC				i		18 59 42.1	
	comp=Z,32nm,0.6s						
SJCC	**San Jacinto, C**	**2.78 249**		eP	Pn	18 58 52.2	-3.0
SJCC				i		18 58 53.1	
	comp=Z,8.8nm,0.5s						
SJCC				eS	**Sn**	**18 59 27.6**	**-1.5**
CAPV	**Capacho**	**3.05 176**		eP	**Pn**	**18 59 00.6**	**+1.5**
CAPV				eS	**Sn**	**18 59 33.9**	**-2.2**
SOCV	**Socops**	**3.11 147**		eP	**Pn**	**18 59 00.5**	**+0.8**
SOCV				eS	**Sn**	**18 59 36.2**	**-1.1**
GRMC	**Gramalote, San**	**3.20 185**		eP	**Pn**	**18 59 01.0**	**0.0**
GRMC				i		18 59 47.5	
	comp=Z,16nm,0.4s						
CBRI	**Barrientos, No**	**3.20 184**		eP	**Pn**	**18 59 03.1**	**+2.0**
CBRI				i		19 00 07.1	
	comp=Z,21nm,0.4s						
SANV	**Sanarito**	**3.29 115**		eP	**Pn**	**18 59 02.9**	**+0.7**
BRRC	**Barranca, Sant**	**3.97 197**		eP	**Pn**	**18 59 12.1**	**+0.6**
BRRC				i		18 59 18.3	
	comp=Z,11nm,0.6s						
BAUV	**El Baul**	**4.86 114**		eP	**Pn**	**18 59 24.5**	**+0.8**
RUSC	**La Rusia**	**5.03 186**		eP	**Pn**	**18 59 27.7**	**+1.2**
RUSC				i		19 01 02.7	
	comp=Z,3.4nm,0.8s						

IDC 14 18:59:31.3±7.0,6°.72S×148°.09E,h82km±60km,mb3.0/1, mb1 3.4/3,mb1mx3.0/29,mbtmp3.5/3,ML3.7/1,MS1.8/1, Ms1 1.8/1,ms1mx1.7/12,Error ellipse: s-maj=110.5km s-min=53.5km az=115.0,New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.83 199**		P	Pn	19 00 13.7	-0.7
	16nm,0.3s,baz=10.0,slow=5.4,SNR=46						
PMG				S	Sn	19 00 48.5	+1.1
	7.8nm,0.3s,baz=221,slow=19,SNR=4.0						
PMG				LR	LR	19 01 30.0	
	comp=Z,18nm,21.6s,baz=91,slow=42						
WRA	**Warramunga Arr**	**18.74 224**		P	P	19 03 42.6	-1.1
	0.2nm,0.3s,baz=50,slow=10,SNR=11						
ASAR	**Alice Springs**	**21.68 217**		P	P	19 04 15.3	-0.1
	0.6nm,0.5s,baz=53,slow=8.9,SNR=21						
TORD	**Torodi Ar. Bea**	**146.32 284**		PKPbc	PKPbc	19 19 03.2	-0.4
	0.3nm,0.4s,baz=65,slow=3.2,SNR=9.0						

IDC 14 19:08:19.6±1.6,1°.61S×138°.67E,h0km,mb3.5/2, mb1 3.8/4,mb1mx3.5/33,mbtmp3.5/4,ML3.6/2,Error ellipse: s-maj=38.0km s-min=27.2km az=67.0,Near north coast of Irian Jaya

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAY	**Jayapura**	**2.22 114**		Pn	Pn	19 08 57.9	+0.1
	2.4nm,0.3s,baz=96,slow=22,SNR=144						
JAY				Sn	Sn	19 09 22.7	-3.3
	0.8nm,0.3s,baz=272,slow=24,SNR=9.8						
WRA	**Warramunga Arr**	**18.71 193**		P	P	19 12 39.5	-0.3
	0.5nm,0.3s,baz=17,slow=12,SNR=27						
WRA				S	Sn	19 15 56.9	-13
	0.1nm,0.3s,baz=180,slow=25,SNR=3.0						
ASAR	**Alice Springs**	**22.41 192**		P	P	19 13 20.4	+0.3
	1.4nm,0.4s,baz=17,slow=11,SNR=50						
H11S3	**WAKE ISLAND Hy 34.03**	**53**		T	T	19 51 03.1	
	baz=236,slow=76,SNR=16						
H11S2	**WAKE ISLAND Hy 34.05**	**53**		T	T	19 51 02.2	
	baz=236,slow=76,SNR=23						
H11S1	**WAKE ISLAND Hy 34.05**	**53**		T	T	19 51 01.8	
	baz=236,slow=76,SNR=12						
MKAR	**Makanchi Array**	**68.90 322**		P	P	19 19 26.3	-0.2
	0.1nm,0.4s,baz=98,slow=7.9,SNR=5.0						

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*ISCJB **14** 19:20:55.7±0.6,37°.16N±0°.03×140°.82E±0°.06,h10km±4km, mb3.3/2,Error ellipse: s-maj=8.5km s-min=4.6km az=17.2*
*IDC **14** 19:20:55.0±1.9,37°.11N×140°.90E,h0km,mb3.3/2, mb1 3.5/4,mb1mx3.2/45,mbtmp3.4/4,ML3.1/2,MS2.1/1, Ms1 2.1/1,ms1mx1.9/25,Error ellipse: s-maj=34.7km s-min=29.7km az=116.0*
*JMA **14** 19

σ1§01/143, **7D, Czech and Slovak Republics**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OKC	**Ostrava-Krasne**	**0.17**	**261**	⇓*i*PG	**Pg**	**19 22 12.3**	**+2.0**
OKC				*e*SG	**Sg**	**19 22 14.6**	**+2.2**
	comp=Z,1μm,0.8s						
OKC	**Ostrava-Krasne**	**0.17**	**261**	Pg	**Pg**	**19 22 12.3**	**+2.0**
OKC				Sg	**Sg**	**19 22 14.6**	**+2.2**
	1μm,0.8s						
OKC	**Ostrava-Krasne**	**0.17**	**261**	*e*Pg	**Pg**	**19 22 12.3**	**+2.0**
OKC				*e*Sg	**Sg**	**19 22 15.7**	**+3.2**
RAC	**Raciborz**	**0.26**	**329**	*e*Pg	**Pb**	**19 22 14.0**	**-0.7**
RAC				*e*Sg	**Sb**	**19 22 19.0**	**-0.7**
MORC	**Moravsky Berou**	**0.56**	**262**	*e*Pg	**Pb**	**19 22 18.9**	**-1.0**
MORC				Sg	**Sb**	**19 22 26.8**	**-1.7**
MORC	**Moravsky Berou**	**0.56**	**262**	*e*Pg	**Pb**	**19 22 19.0**	**-1.0**
MORC				*e*Sg	**Sb**	**19 22 26.8**	**-1.7**
OJC	**Ojcow**	**0.97**	**68**	*e*Pg	**Pg**	**19 22 24.6**	**-1.1**
OJC				*e*Sg	**Sg**	**19 22 37.5**	**-0.7**
OJC	**Ojcow**	**0.97**	**68**	*e*Pg	**Pg**	**19 22 24.6**	**-1.1**
OJC				*e*Sg	**Sg**	**19 22 37.5**	**-0.7**
LANS	**Liptovska Anna**	**0.99**	**135**	*e*Pg	**Pg**	**19 22 25.9**	**-0.3**
LANS				*e*Sg	**Sb**	**19 22 40.6**	**-0.3**
LANS	**Liptovska Anna**	**0.99**	**135**	*e*PG	**Pg**	**19 22 25.9**	**-0.3**
LANS				*e*SG	**Sb**	**19 22 40.6**	**-0.3**
KRLC	**Kraliky**	**1.07**	**282**	⇓*i*PG	**Pg**	**19 22 27.6**	**0.0**
KRLC				*e*SG	**Sg**	**19 22 41.8**	**+0.4**
KRLC	**Kraliky**	**1.07**	**282**	Pg	**Pg**	**19 22 27.6**	**0.0**
KRLC				Sg	**Sg**	**19 22 41.8**	**+0.4**
JAVC	**Velka Javorina**	**1.11**	**206**	Pg	**Pn**	**19 22 29.6**	**-0.4**
JAVC				*e*Sg	**Sn**	**19 22 46.5**	**+0.5**
	69nm,0.3s						
JAVC	**Velka Javorina**	**1.11**	**206**	*e*Pg	**Pn**	**19 22 29.6**	**-0.4**
VRAC	**Vranov**	**1.30**	**245**	Pg	**Pn**	**19 22 32.6**	**+0.1**
VRAC				Sg	**Sb**	**19 22 49.7**	**0.0**
VRAC	**Vranov**	**1.30**	**245**	*e*Pg	**Pn**	**19 22 32.6**	**+0.1**
VRAC				*e*Sg	**Sb**	**19 22 49.7**	**0.0**
NIE	**Niedzica**	**1.31**	**109**	*e*Pg	**Pg**	**19 22 31.5**	**-0.7**
NIE				*e*Sg	**Sb**	**19 22 49.9**	**-0.1**
NIE	**Niedzica**	**1.31**	**109**	*e*Pg	**Pg**	**19 22 31.5**	**-0.7**
NIE				*e*Sg	**Sb**	**19 22 49.9**	**-0.1**
VYHS	**Vyhne**	**1.40**	**168**	*e*Pn	**Pg**	**19 22 33.3**	**-0.6**
VYHS				*e*Sn	**Sg**	**19 22 51.7**	**-0.3**
VYHS	**Vyhne**	**1.40**	**168**	*e*PN	**Pg**	**19 22 33.3**	**-0.6**
VYHS				*e*SN	**Sg**	**19 22 51.7**	**-0.3**
VYHS				eLG	Lg	19 22 53.3	
DPC	**Dobruska-Polom**	**1.43**	**291**	*e*PG	**Pn**	**19 22 34.2**	**-0.1**
DPC				*e*SG	**Sn**	**19 22 53.8**	**0.0**
DPC	**Dobruska-Polom**	**1.43**	**291**	Pg	**Pn**	**19 22 34.2**	**-0.1**
DPC				Sg	**Sn**	**19 22 53.8**	**0.0**
DPC	**Dobruska-Polom**	**1.43**	**291**	*e*Pg	**Pn**	**19 22 34.2**	**-0.1**
DPC				*e*Sg	**Sn**	**19 22 54.1**	**+0.3**
SMOL	**Smolenice**	**1.49**	**206**	*e*Pn	**Pn**	**19 22 34.9**	**-0.3**
SMOL				*e*Sn	**Sn**	**19 22 56.0**	**+0.6**
SMOL	**Smolenice**	**1.49**	**206**	*e*PN	**Pn**	**19 22 34.8**	**-0.4**
SMOL				*e*SN	**Sn**	**19 22 56.0**	**+0.6**
KRUC	**Moravsky**	**1.54**	**239**	Pg	**Pb**	**19 22 36.1**	**-0.3**
KRUC				*e*Sg	**Sn**	**19 22 57.1**	**+0.7**
	64nm,0.3s						
KRUC	**Moravsky**	**1.54**	**239**	*e*Pg	**Pb**	**19 22 36.1**	**-0.3**
KRUC				*e*Sg	**Sn**	**19 22 56.9**	**+0.5**
UPC	**Upice**	**1.67**	**294**	⇓*e*PG	**Pg**	**19 22 38.9**	**-0.1**
UPC				*e*SG	**Sg**	**19 23 01.3**	**+0.7**
	comp=Z,68nm,0.5s						
UPC	**Upice**	**1.67**	**294**	Pg	**Pg**	**19 22 38.9**	**-0.1**
UPC				Sg	**Sg**	**19 23 01.3**	**+0.7**
	68nm,0.5s						
KSP	**Ksiaz**	**1.67**	**307**	*e*Pn	**Pn**	**19 22 37.4**	**-0.2**
KSP				*e*Pg	**Pg**	**19 22 40.1**	**+1.0**
KSP				*e*Sg	**Sg**	**19 23 01.7**	**+1.0**
KSP	**Ksiaz**	**1.67**	**307**	*e*Pn	**Pn**	**19 22 37.4**	**-0.2**
STHS	**Stebnicka Huta**	**1.90**	**102**	*e*Pn	**Pg**	**19 22 43.0**	**-0.5**
STHS	**Stebnicka Huta**	**1.90**	**102**	*e*PN	**Pg**	**19 22 43.0**	**-0.5**
STHS				*e*SN	**Sg**	**19 23 09.1**	**+1.0**
STHS				eLG	Lg	19 23 16.0	
KECS	**Kecovo**	**1.94**	**134**	*e*Pn	**Pn**	**19 22 40.5**	**-0.9**
KECS				*e*Sn	**Sn**	**19 23 06.3**	**-0.1**
KECS	**Kecovo**	**1.94**	**134**	*e*PN	**Pn**	**19 22 40.5**	**-0.9**
KECS				*e*SN	**Sn**	**19 23 06.3**	**-0.1**
KECS				eLG	Lg	19 23 08.4	
TREC	**Trest**	**1.98**	**254**	⇓*e*SG	**Sg**	**19 23 10.5**	**-0.2**
	comp=Z,41nm,0.5s						
TREC	**Trest**	**1.98**	**254**	Sg	**Sg**	**19 23 10.5**	**-0.2**
	41nm,0.5s						
PSZ	**Piszkesteto**	**2.18**	**153**	*e*Sn	**Sb**	**19 23 15.3**	**+0.3**
CRVS	**Cervenica-Dubn**	**2.22**	**115**	*e*Pn	**Pb**	**19 22 48.2**	**+0.1**
CRVS				*e*Sn	**Sb**	**19 23 16.0**	**-0.1**
CRVS	**Cervenica-Dubn**	**2.22**	**115**	*e*PN	**Pb**	**19 22 48.2**	**+0.1**
CRVS				*e*SN	**Sb**	**19 23 16.0**	**-0.1**
PRU	**Pruhonice**	**2.50**	**274**	⇓*e*PN	**Pn**	**19 22 49.1**	**+0.1**
PRU				*e*PG	**Pb**	**19 22 52.4**	**-0.4**
PRU				*e*SG	**Sb**	**19 23 25.4**	**+1.3**
	comp=Z,27nm,0.7s						
PRU	**Pruhonice**	**2.50**	**274**	Pn	**Pn**	**19 22 49.1**	**+0.1**
PRU				Sg	**Sg**	**19 23 25.6**	**-1.7**
SOP	**Sopron**	**2.50**	**210**	*e*Pn	**Pn**	**19 22 48.4**	**-0.6**
SOP				*e*Sn	**Sn**	**19 23 19.9**	**-0.2**
PVCC	**Panska Ves**	**2.55**	**287**	⇓*e*PN	**Pn**	**19 22 49.0**	**-0.7**
PVCC				*e*PG	**Pb**	**19 22 54.0**	**+0.3**
PVCC	**Panska Ves**	**2.55**	**287**	Pn	**Pn**	**19 22 49.0**	**-0.7**
PVCC	**Panska Ves**	**2.55**	**287**	Pg	**Pb**	**19 22 54.0**	**+0.3**
PVCC				Sg	**Sg**	**19 23 30.2**	**+1.1**
CONA	**Conrad Observa**	**2.56**	**222**	*e*Pn	**Pn**	**19 22 49.4**	**-0.5**
	0.9nm,0.2s						
CONA				Sn	**Sn**	**19 23 21.5**	**-0.3**
	10nm,0.4s						
CONA	**Conrad Observa**	**2.56**	**222**	Pn	**Pn**	**19 22 49.4**	**-0.5**
	0.9nm,0.2s						
CONA				Sn	**Sn**	**19 23 21.5**	**-0.3**
	10nm,0.4s						
UZH	**Uzhgorod**	**2.83**	**114**	*e*Pn	**Pn**	**19 22 53.6**	**+0.1**
UZH				Pmn		19 23 01.4	
UZH				*e*Sn	**Sn**	**19 23 30.6**	**+2.3**
UZH				Smn		19 23 46.2	
ONO	**Onokovtsy**	**2.84**	**113**	*e*Pn	**Pn**	**19 22 53.3**	**-0.4**
ONO				*e*Sn	**Sn**	**19 23 29.5**	**+0.9**
BRG	**Berggiesshubel**	**3.03**	**291**	PG	**Pb**	**19 23 03.2**	**+1.3**
BRG				SG	**Sg**	**19 23 43.7**	**-0.6**
	25nm,0.6s						
BRG	**Berggiesshubel**	**3.03**	**291**	Pg	**Pg**	**19 23 03.5**	**-1.6**
BRG				Sg	**Sg**	**19 23 43.6**	**-0.8**
BRG	**Berggiesshubel**	**3.03**	**291**	*e*Pg	**Pg**	**19 23 03.5**	**-1.6**
BRG				*e*Sg	**Sg**	**19 23 43.6**	**-0.8**
MUKU	**Mukachevo**	**3.15**	**115**	*i* Pn	**Pn**	**19 22 57.9**	**0.0**
MUKU				Pmn		19 23 12.5	
MUKU				*e*Sn	**Sn**	**19 23 36.9**	**+0.8**
MUKU				Smn		19 23 51.3	
KHC	**Kasperske Hory**	**3.23**	**259**	*e*PN	**Pn**	**19 22 58.8**	**-0.3**
KHC				*e*PG	**Pb**	**19 23 06.0**	**+0.7**
KHC				*e*SG	**Sg**	**19 23 49.3**	**-1.5**
	comp=Z,24nm,0.5s						
KHC	**Kasperske Hory**	**3.23**	**259**	Pn	**Pn**	**19 22 58.8**	**-0.3**
KHC				Sg	**Sg**	**19 23 49.1**	**-1.7**
BERU	**Beregovo**	**3.23**	**119**	*e*Pn	**Pn**	**19 23 01.2**	**+2.1**
BERU				*e*Sn	**Sn**	**19 23 40.8**	**+2.6**
GEC2	**GERESS Array S**	**3.24**	**253**	Pg	**Pg**	**19 23 08.0**	**-1.1**
GEC2	**GERESS Array S**	**3.24**	**253**	*e*Pg	**Pg**	**19 23 08.0**	**-1.1**
ARSA	**Arzberg**	**3.24**	**217**	*i* Pn	**Pn**	**19 23 00.0**	**+0.8**
	0.7nm,0.2s						
ARSA	**Arzberg**	**3.24**	**217**	Pn	**Pn**	**19 23 00.0**	**+0.8**
	0.7nm,0.2s						
SHIU	**Shidnytsya**	**3.29**	**99**	*e*Pn	**Pn**	**19 23 00.9**	**+1.0**
SHIU				*e*Sn	**Sn**	**19 23 41.5**	**+1.7**
MOA	**Molln**	**3.39**	**235**	*i* Pn	**Pn**	**19 23 01.7**	**+0.4**
	0.6nm,0.2s						
MOA				*e*Sn	**Sn**	**19 23 42.9**	**+0.6**
	2.9nm,0.3s						
MOA	**Molln**	**3.39**	**235**	Pn	**Pn**	**19 23 01.7**	**+0.4**
	0.6nm,0.2s						
MOA				Sn	**Sn**	**19 23 42.9**	**+0.6**
	2.9nm,0.3s						
FBE	**Freiberg**	**3.40**	**290**	Sg	**Sg**	**19 23 56.3**	**0.0**
FBE	**Freiberg**	**3.40**	**290**	*e*Sg	**Sg**	**19 23 56.3**	**0.0**
KORU	**Korolevo**	**3.55**	**117**	*e*Pn	**Pn**	**19 23 04.1**	**+0.7**
KORU				Pmn		19 23 19.1	
KORU				*e*Sn	**Sn**	**19 23 48.1**	**+2.0**
KORU				Smn		19 23 55.7	
MEZ	**Mezhgor'ye**	**3.61**	**110**	*e*Pn	**Pn**	**19 23 06.2**	**+1.9**
LVV	**L'vov**	**3.64**	**89**	*e*Pn	**Pn**	**19 23 04.3**	**-0.4**
LVV				Pmn		19 23 05.1	
LVV				*e*Sn	**Sn**	**19 23 50.0**	**+1.6**
LVV				Smn		19 23 52.7	
MORU	**Morshyn**	**3.64**	**100**	*e*Sn	**Sn**	**19 23 50.2**	**+1.8**
WET	**Wettzell**	**3.67**	**261**	Pn	**Pn**	**19 23 04.8**	**-0.3**
WET				Sg	**Sg**	**19 24 03.6**	**-1.4**
WET	**Wettzell**	**3.67**	**261**	*e*Pn	**Pn**	**19 23 04.8**	**-0.3**
WET				*e*Sg	**Sg**	**19 24 03.6**	**-1.4**
CLL	**Collm**	**3.73**	**295**	*e*Pn	**Pn**	**19 23 06.0**	**+0.1**
CLL				*e*Pg	**Pg**	**19 23 18.0**	**-0.7**
CLL				*i* Sg	**Sg**	**19 24 06.0**	**-0.9**
	comp=Z,19nm,0.7s						
CLL	**Collm**	**3.73**	**295**	Pg	**Pg**	**19 23 17.9**	**-0.7**
CLL				Sg	**Sg**	**19 24 06.1**	**-0.9**
CLL	**Collm**	**3.73**	**295**	*e*Pg	**Pg**	**19 23 17.9**	**-0.7**
CLL				*e*Sg	**Sg**	**19 24 06.1**	**-0.9**
NKC	**Novy Kostel**	**3.86**	**278**	⇓*e*PG	**Pb**	**19 23 17.6**	**+1.6**
NKC				*e*SG	**Sg**	**19 24 09.9**	**-1.0**
	comp=Z,18nm,0.5s						
WERD	**Werda**	**3.96**	**281**	Pg	**Pg**	**19 23 20.4**	**-2.6**
WERD	**Werda**	**3.96**	**281**	*e*Pg	**Pg**	**19 23 20.4**	**-2.6**
NSLU	**Nyzhne Selyshc**	**4.32**	**110**	*e*Pn	Pn	19 23 06.1	-7.9
NSLU				Pmn		19 23 21.1	
NSLU				*e*Sn	Sn	19 23 52.5	-13
NSLU				Smn		19 24 15.9	

*IDC **14** 19:25:31.7±2.7, 31°.57S×179°.31W, h0km, mb3.7/2, mb1 4.0/3, mb1mx3.6/27, mbtmp3.7/3, ML3.4/1, Error ellipse: s-maj=63.2km s-min=43.7km az=113.0*

ISC 14 19:25:39.0±2.3, 31°.9S±0°.1×179.7W±0°.4, h35km, n10, σ2§19/13, **Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WMGZ	**Waiomatatini S**	**6.10**	**194**	*e*PN	**Pn**	**19 27 08.1**	**+1.5**
HAZ	**Te Kaha**	**6.19**	**199**	PN	**Pn**	**19 27 09.8**	**+1.9**
HAZ				SN	**Sn**	**19 28 18.7**	**+1.3**
PKGZ	**Pakihiroa**	**6.24**	**197**	*e*PN	**Pn**	**19 27 10.0**	**+1.4**
PUZ	**Puketiti**	**6.37**	**195**	*e*PN	**Pn**	**19 27 13.4**	**+3.0**
PUZ				SN	**Sn**	**19 28 18.2**	**-3.8**
URZ	**Urewera**	**6.85**	**202**	Pn	**Pn**	**19 27 18.5**	**+1.4**
	0.6nm,0.3s,baz=268,slow=4.6,SNR=10						
URZ				Sn	**Sn**	**19 28 31.6**	**-2.2**
	1.1nm,0.3s,baz=109,slow=18,SNR=3.2						
URZ	**Urewera**	**6.85**	**202**	PN	**Pn**	**19 27 17.9**	**+0.9**
KNZ	**Kokohu**	**7.41**	**196**	*e*PN	**Pn**	**19 27 26.2**	**+1.5**
ASAR	**Alice Springs**	**41.61**	**269**	P	**P**	**19 33 24.0**	**0.0**
	0.6nm,0.9s,baz=101,slow=7.3,SNR=4.4						
WRA	**Warramunga Arr**	**42.74**	**275**	P	**P**	**19 33 33.6**	**+0.4**
	0.8nm,0.3s,baz=112,slow=7.9,SNR=18						
FINES	**FINESS Array B**	**146.03**	**338**	PKPbc	**PKPdf**	**19 45 11.3**	**-2.2**
	0.5nm,0.4s,baz=35,slow=5.1,SNR=14						

*IDC **14** 19:30:03.9±1.7, 35°.92N×141°.15E, h0km, mb3.7/5, mb1 3.8/8, mb1mx3.5/40, mbtmp3.7/8, ML3.4/3, MS2.4/1, Ms1 2.4/1, ms1mx2.0/43, Error ellipse: s-maj=46.1km s-min=20.1km az=67.0*

*ISCJB **14** 19:30:14.9±0.6, 35°.61N±0°.04×140°.06E±0°.07, h79km±4km, mb3.6/5, Error ellipse: s-maj=9.8km s-min=5.4km az=157.1*

*JMA **14** 19:30:15.6±0.2, 35°.69N×140°.08E, h68km±2km, M3.3 Broadband fault plane solution: P waves. NP1: ϕ_s=359.00000°, δ63.00000°, λ93.00000°. NP2: ϕ_s=172.00000°, δ27.00000°, λ84.00000°. Principal axes: T Plg72.0000°, Azm277.0000°; N Plg3.0000°, Azm178.0000°; P Plg18.0000°, Azm87.0000°;*

JMA Felt I J1.

ISC 14 19:30:15.9±0.9, 35°.62N±0°.04×140°.05E±0°.06, h74km±7km, n21, σ0§85/28, **mb3.7/5, 2C-5D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCN	**Nagara**	**0.24**	**148**	⇑P	**Pn**	**19 30 27.2**	**0.0**
JCN				S	**Sn**	**19 30 36.3**	**+0.9**
TOK	**Tokyo**	**0.24**	**285**	P	**Pn**	**19 30 27.5**	**+0.4**
JOD2	**Odawara 2**	**0.86**	**246**	⇓P	**Pn**	**19 30 32.7**	**-0.3**
JOD2				S	**Sn**	**19 30 44.9**	**-0.8**
BSO3	**Boso 3**	**0.90**	**155**	⇑P	**Pn**	**19 30 32.8**	**-0.4**
BSO3				S	**Sn**	**19 30 46.9**	**+0.9**
JAG	**Ashikaga**	**0.94**	**329**	⇓P	**Pn**	**19 30 33.0**	**-0.8**
JAG				S	**Sn**	**19 30 45.4**	**-1.8**
JRY	**Ryogami san**	**1.01**	**293**	⇓P	**Pn**	**19 30 35.0**	**+0.2**
JIM2	**Oshima 3**	**1.03**	**209**	P	**Pn**	**19 30 34.4**	**-0.7**
JIM2				S	**Sn**	**19 30 48.0**	**-1.4**
BSO1	**Boso 1**	**1.23**	**142**	P	**Pn**	**19 30 36.4**	**-0.6**
JYN	**Shimob**	**1.23**	**265**	⇓P	**Pn**	**19 30 37.6**	**0.0**
JKT	**Katashina**	**1.31**	**331**	P	**Pn**	**19 30 38.1**	**-0.5**
JKT				S	**Sn**	**19 30 54.8**	**-0.9**
JIZS	**Izushimoda**	**1.32**	**227**	⇓P	**Pn**	**19 30 38.5**	**-0.1**
JIZS				S	**Sn**	**19 30 55.3**	**-0.4**
MJAR	**Matsushiro Arr**	**1.75**	**302**	Pn	**Pn**	**19 30 44.1**	**-0.2**
	17nm,0.3s,baz=130,slow=10.0,SNR=158						
MAT	**Matsushiro**	**1.75**	**302**	P	**Pn**	**19 30 44.7**	**+0.4**
MAT				*e*S	**Sn**	**19 31 07.6**	**+1.7**
JHJ	**Hachijo jima 2**	**2.51**	**185**	Pn	**Pn**	**19 30 54.9**	**+0.4**
	16nm,0.3s,baz=131,slow=17,SNR=5.6						
JHJ				Sn	**Sn**	**19 31 22.9**	**-1.1**
	36nm,0.3s,baz=270,slow=20,SNR=3.8						
JNU	**Nakatsue**	**7.98**	**254**	LR	LR	19 36 11.4	
	comp=Z,25nm,18.6s,baz=132,slow=41						
KSRS	**Korea Array**	**9.93**	**284**	Pn	Pn	19 32 39.7	+4.0
	0.1nm,0.3s,baz=103,slow=15,SNR=3.4						
ZALV	**Zalesovo Beam**	**42.07**	**314**	P	**P**	**19 38 01.4**	**+1.2**
	0.7nm,0.5s,baz=116,slow=3.4,SNR=4.1						
MKAR	**Makanchi Array**	**43.95**	**303**	P	**P**	**19 38 16.4**	**+0.9**
	0.5nm,0.5s,baz=85,slow=9.8,SNR=7.7						
WRA	**Warramunga Arr**	**55.52**	**187**	P	**P**	**19 39 43.2**	**-0.2**
	0.6nm,0.5s,baz=0.4,slow=7.4,SNR=23						
ASAR	**Alice Springs**	**59.25**	**187**	P	**P**	**19 40 09.7**	**0.0**
	0.3nm,0.8s,baz=4.7,slow=6.4,SNR=5.7						
FINES	**FINESS Array B**	**69.54**	**332**	P	**P**	**19 41 15.8**	**-0.6**
	1.7nm,1.0s,baz=32,slow=11,SNR=3.8						

*NIED **14** 19:47:00, 39°.60N×143°.70E, h23km, Mw3.5 Best double couple: M0:34000×10^14 NP1:ϕ_s=175.00000°, δ33.00000°, λ80.00000°. NP2:ϕ_s=8.00000°, δ57.00000°, λ97.00000°.*

JMA 14 19:47:18.2±0.2, 39°.63N×143°.67E, h28km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.43**	**283**	P	Pn	19 47 42.8	+0.6
JTH				*e*S	Sb	19 48 01.0	-0.9
MIYJ	**Miyakonagasawa**	**1.43**	**268**	P	Pn	19 47 43.0	+0.7
MIYJ				*e*S	Sb	19 48 01.4	-0.6
OFUJ	**Ofunato**	**1.65**	**251**	P	Pn	19 47 46.0	+0.8
JANG	**Nango**	**1.81**	**295**	P	Pn	19 47 47.9	+0.3
JOM	**Ohasama**	**1.84**	**266**	P	Pn	19 47 49.3	+1.3
JOM				*e*S	Sn	19 48 11.2	+0.8
JMK	**Ichinoseki**	**2.02**	**251**	P	Pn	19 47 51.7	+1.4
JMK				S	Sn	19 48 15.8	+1.2
JTM	**Tenmabayashi**	**2.30**	**301**	P	Pn	19 47 56.1	+1.8
JTM				*e*S	Sn	19 48 22.6	+0.9
JRG	**Rokugo**	**2.36**	**265**	P	Pb	19 47 57.8	-2.2
JAH	**Hinai**	**2.40**	**284**	P	Pn	19 47 57.2	+1.6
JOU	**Okura**	**2.66**	**243**	P	Pn	19 48 01.0	+1.8
JYK	**Kaneyama**	**2.67**	**256**	P	Pn	19 48 01.3	+2.0

*NEIC **14** 19:47:25.7±0.8, 2°.53N×96°.95E, h58km±7km, mb4.3/8, Error ellipse: s-maj=11.2km s-min=5.5km az=60.0*

*DJA **14** 19:47:26.6±0.4, 3°N±2°×9°7E±°, h10km, M4.2/11, mb4.6/1, MLv4.1/11*

*IDC **14** 19:47:29.3±7.6, 2°.67N×97°.08E, h85km±68km, mb3.7/12, mb1 3.8/13, mb1mx3.5/57, mbtmp4.0/13, ML4.1/1, MS3.2/4, Ms1 3.3/4, ms1mx2.8/37, Error ellipse: s-maj=38.2km s-min=15.6km az=52.0*

ISC 14 19:47:23.8±0.5, 2°.63N±0°.04×96°.96E±0°.05, h33km, n55, σ1§40/53, **mb4.3/23, MS3.6/3, Northern Sumatera**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KCSI	**Kotacane, Aceh**	**1.21**	**42**	P	**Pb**	**19 47 45.8**	**-0.4**
KCSI				S	**Sb**	**19 48 03.6**	**+2.1**
GSI	**Gunungsitoli**	**1.45**	**155**	P	**Pb**	**19 47 51.5**	**+1.2**
GSI				S	**Sb**	**19 48 13.4**	**+5.0**
GSI	**Gunungsitoli**	**1.45**	**155**	*e*Pn	**Pn**	**19 47 47.9**	**+0.1**
MLSI	**Meulaboh, Aceh**	**1.72**	**341**	P	**Pb**	**19 47 53.6**	**-1.3**
MLSI				S	**Sb**	**19 48 19.0**	**+2.8**
TSI	**Tuntungan**	**1.82**	**61**	P	**Pb**	**19 47 56.1**	**-0.5**
TSI				S	**Sb**	**19 48 21.0**	**+1.9**
PSI	**Prapat**	**1.97**	**85**	*e*Pn	**Pb**	**19 47 57.3**	**-1.8**
LHMI	**Lhok Sumawe**	**2.59**	**360**	P	**Pb**	**19 48 09.3**	**-0.3**
LHMI	**Lhok Sumawe**	**2.59**	**360**	*e*Pn	**Pn**	**19 48 06.0**	**+2.5**
MNSI	**Mandailing Nat**	**3.19**	**125**	P	**Pb**	**19 48 17.7**	**-2.1**
MNSI				S	Sb	19 49 07.6	+9.3
KULM	**Kulim**	**4.54**	**54**	*e*Pn	**Pn**	**19 48 32.1**	**+1.9**
PPI	**Padang Panjang**	**4.60**	**132**	P	Pb	19 48 37.0	-6.9
MYKOM	**Kota Tinggi**	**6.94**	**97**	*e*Pn	**Pn**	**19 49 04.4**	**+1.1**
CM31	**Chiang Mai Arr**	**15.85**	**7**	*e*Pn	**P**	**19 51 08.3**	**+0.2**
CMAR	**Chiang Mai Arr**	**15.85**	**7**	P	**P**	**19 51 08.3**	**+0.2**
	0.3nm,0.3s,baz=197,slow=11,SNR=36						
CMAR				LR	LR	19 56 55.9	
	comp=Z,71nm,19.7s,baz=160,slow=36						
CHTO	**Chiang Mai**	**16.21**	**7**	*e*Pn	**P**	**19 51 11.0**	**-1.0**
	7.5nm,1.4s						
PALK	**Pallekele**	**16.84**	**287**	LR	LR	19 57 23.8	
	comp=Z,45nm,20.3s,baz=115,slow=35						
MYLDM	**Lahad Datu**	**21.64**	**83**	*e*P	**P**	**19 52 11.5**	**-0.1**
	11nm,0.9s						
H08S2	**Diego Garcia H**	**26.46**	**247**	T	T	20 19 50.6	
	baz=69,slow=76,SNR=43						
H08S3	**Diego Garcia H**	**26.46**	**247**	T	T	20 19 55.6	
	baz=69,slow=76,SNR=32						
H08S1	**Diego Carcia H**	**26.47**	**247**	T	T	20 20 01.6	
	baz=69,slow=76,SNR=33						
CD2	**Chengdu**	**28.86**	**12**	P	**P**	**19 53 21.0**	**+1.5**
CD2				pmax	pmax		
	comp=Z,15nm,0.8s						
LZH	**Lanzhou**	**33.90**	**10**	*e*P	P	19 54 08.3	+4.3
LZH				pP	sP	19 54 19.3	+1.7
LZH				sP	pP	19 54 23.8	+10
LZH				*e*PP	**PP**	**19 55 24.0**	**+2.9**
LZH				pmax	pmax		
	comp=Z,18nm,1.0s						
LZH				pmax	pmax		
	comp=Z,43nm,5.3s						
LZH				LR	LR		
	comp=N,170nm,12.8s						
LZH				LR	LR		
	comp=E,180nm,13.2s						
LZH				LR	LR		
	comp=Z,200nm,16.5s						
HHC	**Hu-ho-hao-te**	**40.27**	**17**	*e*P	**P**	**19 55 00.1**	**+2.1**
HHC				pmax	pmax		
	comp=Z,34nm,0.9s						
HHC				pmax	pmax		
	comp=Z,100nm,5.6s						
WMQ	**Urumqi**	**41.84**	**350**	*e*P	**P**	**19 55 12.1**	**+1.4**
WMQ				pmax	pmax		
	comp=Z,3.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,68nm,4.8s						
WR1	**Warramunga Arr**	**43.00**	**123**	*e*P	**P**	**19 55 19.7**	**-0.8**
WRA	**Warramunga Arr**	**43.00**	**123**	P	**P**	**19 55 19.7**	**-0.8**
	comp=Z,3.0nm,0.8s,baz=301,slow=9.1,SNR=15						
TKM2	**Tokmak 2**	**44.42**	**338**	*e*P	**P**	**19 55 31.4**	**-0.3**
	comp=Z,10nm,1.5s						
AS31	**Alice Springs**	**44.45**	**128**	*e*P	**P**	**19 55 31.6**	**-0.6**
ASAR	**Alice Springs**	**44.45**	**128**	P	**P**	**19 55 31.6**	**-0.5**
	comp=Z,0.9nm,0.8s,baz=300,slow=7.9,SNR=12						
AAK	**Ala-Archa**	**44.60**	**336**	*e*P	**P**	**19 55 34.4**	**+1.1**
	comp=Z,4.3nm,1.3s						
KSRS	**Korea Array**	**44.83**	**36**	LR	LR	20 16 09.4	
	comp=Z,39nm,18.4s,baz=176,slow=38						
EKS2	**Erkin-Say**	**44.92**	**336**	*e*P	**P**	**19 55 36.0**	**+0.3**
	comp=Z,2.7nm,0.7s						
SONA0	**Songino Array**	**45.77**	**9**	*e*P	**P**	**19 55 41.7**	**-0.6**
SONA0				*e*PcP	**PcP**	**19 57 19.7**	**0.0**
SONM	**Songino Array**	**45.77**	**9**	P	**P**	**19 55 41.7**	**-0.6**
	comp=Z,0.6nm,0.5s,baz=189,slow=10.0,SNR=7.9						
SONM				PcP	**PcP**	**19 57 19.7**	**0.0**
	comp=Z,0.4nm,

WRA	Warramunga Arr	45.93	168	P		P	20 25 20.9 +0.9
	1.2nm,0.5s,baz=349,slow=8.9,SNR=6.6						
BVAR	Borovoye Array	49.21	319	P		P	20 25 45.1 -0.1
	0.3nm,0.3s,baz=114,slow=9.9,SNR=3.6						
ASAR	Alice Springs	49.49	170	P		P	20 25 49.0 +1.3
	0.8nm,0.4s,baz=354,slow=7.7,SNR=7.2						
ILAR	Eielson Array	66.31	28	P		P	20 27 45.1 +0.3
	0.2nm,0.5s,baz=274,slow=5.1,SNR=2.9						
FINES	FINESS Array B	72.31	330	P		P	20 28 21.5 -0.3
	1.7nm,0.9s,baz=56,slow=3.4,SNR=2.5						
YKA	Yellowknife Ar	80.29	24	P		P	20 29 08.0 +1.1
	0.4nm,0.5s,baz=307,slow=5.3,SNR=7.3						

LJU ***14*** *20:38:57.0, 46.°39N×15.°07E, h0km, ML0.6 Rockburst*
CSEM 14 20:38:57.0, 46.°39N×15.°07E, h0km, Mining explosion., Northwestern Balkan Peninsula

JMA ***14*** *20:43:40.4±0.5, 36.°33N×142.°17E, h71km, M2.8*
IDC ***14*** *20:43:42.3±2.9, 36.°56N×141.°84E, h0km, mb3.4/3, mb1 3.5/4, mb1mx3.2/40, mbtmp3.3/4, ML2.9/1, Error ellipse: s-maj=76.2km s-min=30.3km az=57.0*
ISC 14 20:43:46.9±1.4, 36.°24N±0.°05×141.°4E±0.°1, h26km, n13, σ1§80/13, mb3.4/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	0.70	220	P	Pn	20 44 02.3	+1.2
JHO	Hitachi	0.77	299	P	Pn	20 44 03.1	+1.0
ONAJ	Iwakimizuishiy	0.99	330	P	Pb	20 44 03.6	-1.8
JAG	Ashikaga	1.59	277	P	Pb	20 44 15.9	+0.3
BSO3	Boso 3	1.61	207	P	Pb	20 44 13.3	-2.5
BSO1	Boso 1	1.62	193	eS	Sb	20 44 36.4	+0.7
JRY	Ryogami san	2.04	264	P	Pb	20 44 22.0	-1.3
JYN	Shimob	2.44	253	P	Pb	20 44 28.5	-1.6
MJAR	Matsushiro Arr	2.60	278	Pn	Pb	20 44 29.9	-2.9
	1.8nm,0.3s,baz=113,slow=8.5,SNR=20						
JHJ	Hachijo jima 2	3.39	204	Pn	Pn	20 44 36.5	-1.6
	14nm,0.3s,baz=332,slow=23,SNR=8.3						
JHJ				Sn	Sn	20 45 18.4	+0.8
	12nm,0.3s,baz=51,slow=23,SNR=4.1						
SONM	Songino Array	28.23	305	P	P	20 49 37.1	-0.6
	0.5nm,0.7s,baz=108,slow=8.9,SNR=4.5						
MKAR	Makanchi Array	44.54	303	P	P	20 51 57.2	+0.8
	0.3nm,0.6s,baz=86,slow=10,SNR=5.7						
WRA	Warramunga Arr	56.28	188	P	P	20 53 27.1	+1.9
	0.5nm,1.0s,baz=2.9,slow=6.9,SNR=2.8						

NEIC ***14*** *20:44:05.8±0.6, 28.°50S×68.°68W, h81km±6km, mb4.7/7, Error ellipse: s-maj=13.7km s-min=5.9km az=88.0*
IDC ***14*** *20:44:06.5±2.6, 28.°49S×68.°92W, h83km±21km, mb3.8/6, mb1 3.9/10, mb1mx3.7/28, mbtmp4.0/10, Error ellipse: s-maj=27.0km s-min=18.2km az=65.0*
ISCJB ***14*** *20:44:07.3±0.3, 28.°37S±0.°03×69.°03W±0.°08, h108km, mb4.5/13, Error ellipse: s-maj=9.6km s-min=3.3km az=170.6*
SJA ***14*** *20:44:08.0±0.8, 28.°45S×68.°96W, h120km±9km, ML4.1, MW3.9*
ISC 14 20:44:08.0±0.5, 28.°38S±0.°04×69.°08W±0.°07, h108km, n42, σ1§92/51, mb4.3/12, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VCA	Vinchina	0.84	115	eP	Pn	20 44 28.7	+1.1
VCA				eS	Sn	20 44 43.1	+0.7
VCA				IAML		20 44 44.4	
	comp=Z,4μm,0.5s						
LCO	Las Campanas	1.56	246	ePn	Pn	20 44 37.6	+1.9
AMOG	MOGNA	2.60	169	eP	Pn	20 44 49.0	+0.4
AMOG				eS	Sn	20 45 19.4	-0.5
AVFE	Valle Fertil	2.67	148	eP	Pn	20 44 49.7	+0.1
AVFE				eS	Sn	20 45 20.6	-1.1
AVFE				IAML		20 45 21.8	
	comp=Z,745nm,0.4s						
RTLL	Cerro Villicun	2.98	170	eP	Pn	20 44 54.3	+0.5
RTLL				eS	Sn	20 45 29.2	+0.2
RTLS	Leoncito	3.41	183	eP	Pn	20 45 00.6	+1.0
RTLS				eS	Sn	20 45 39.9	+0.4
RTCV	Cerro Valdivia	3.50	173	eP	Pn	20 45 01.2	+0.6
RTCV				eS	Sn	20 45 40.1	-1.2
AUSP	Uspallata	3.84	184	eP	Pn	20 45 06.2	+0.9
ROC1	El Roble	4.87	200	ePn	Pn	20 45 16.6	-2.7
ROC1				eSn	Sn	20 46 10.4	-4.2
PB10	IPOC Station P	5.03	344	ePn	Pn	20 45 21.6	+0.4
PB10				eSn	Sn	20 46 17.1	-1.1
LVC	Limon Verde	5.75	2	P	Pn	20 45 32.3	+1.0
	comp=Z,225nm,0.3s,baz=137,slow=14,SNR=54						
LVC				S	Sn	20 46 35.9	-0.3
	comp=Z,167nm,0.3s,baz=246,slow=9.5,SNR=3.9						
LVC	Limon Verde	5.75	2	ePn	Pn	20 45 31.9	+0.6
LVC				eSn	Sn	20 46 34.5	-1.8
PB04	IPOC Station P	6.10	351	ePn	Pn	20 45 36.0	+0.1
PB01	IPOC Station P	7.32	357	ePn	Pn	20 45 51.3	-1.1
PB01				eSn	Sn	20 47 09.6	-4.4
PB11	IPOC Station P	8.60	356	ePn	Pn	20 46 07.0	-2.8
PB11				eSn	Sn	20 47 39.5	-5.8
CPUP	Villa Florida	10.64	82	P	Pn	20 46 34.4	-3.0
	comp=Z,0.2nm,0.3s,baz=246,slow=10,SNR=4.3						
TRQA	Tornquist	11.32	150	ePn	Pn	20 46 39.6	-6.8
LPAZ	La Paz	12.07	4	P	Pn	20 46 57.0	0.0
	comp=Z,0.2nm,0.3s,baz=182,slow=6.6,SNR=3.7						
PLCA	Paso Flores	12.38	185	P	Pn	20 46 58.7	-1.8
	comp=Z,0.1nm,0.3s,baz=15,slow=9.1,SNR=3.1						
NNA	Nana	17.86	334	eP	P	20 48 06.8	-2.1
	comp=Z,12nm,1.1s						
OTAV	Otavalo	29.84	341	eP	P	20 50 04.1	-1.6
	comp=Z,6.9nm,1.4s						
HELC	Santa Helena	34.93	349	eP	P	20 50 51.8	+1.8
	comp=Z,12nm,0.7s						
PMSA	Palmer Station	36.54	176	eP	P	20 51 01.5	-1.3
	comp=Z,124nm,1.3s						
BCIP	Isla Barro Col	38.75	343	eP	P	20 51 24.9	+3.0
	comp=Z,8.1nm,0.6s						
SEUS	St. Eustatius	45.99	8	eP	P	20 52 21.3	+0.8
	comp=Z,165nm,0.9s						
STVI	Saint Thomas	46.63	5	eP	P	20 52 26.4	+0.9
	comp=Z,56nm,1.4s						
ABVI	Anegada Island	47.06	6	eP	P	20 52 29.9	+1.0
LTX	Lajitas	66.24	327	eP	P	20 54 47.5	+2.9
TXAR	Lajitas Array	66.24	327	P	P	20 54 47.5	+2.9
	comp=Z,0.6nm,0.7s,baz=154,slow=8.6,SNR=7.0						
MSTX	Muleshoe	69.75	331	eP	P	20 55 08.7	+2.2
	comp=Z,4.8nm,0.8s						
DBIC	Dimbokro	70.97	71	P	P	20 55 15.2	+1.0
	comp=Z,2.2nm,0.6s,baz=228,slow=7.2,SNR=6.4						
TORD	Torodi Ar. Bea	79.87	69	P	P	20 56 06.0	+0.9
	comp=Z,2.5nm,0.6s,baz=268,slow=5.2,SNR=29						
TOA1	Torodi Ar. Sit	79.88	69	eP	P	20 56 06.0	+0.9
PD31	Pinedale Array	80.00	331	eP	P	20 56 07.9	+2.4
PDAR	Pinedale Array	80.00	331	P	P	20 56 07.9	+2.4
	comp=Z,1.2nm,0.8s,baz=124,slow=5.5,SNR=8.4						
BOSA	Boshof	80.40	117	P	P	20 56 08.3	+0.3
	comp=Z,1.5nm,0.7s,baz=264,slow=3.4,SNR=3.6						
YKA	Yellowknife Ar	97.60	340	P	Pdif	20 57 30.7	+1.1
	comp=Z,0.2nm,0.7s,baz=133,slow=4.8,SNR=4.1						
YKB5	Yellowknife Ar	97.60	340	eP	Pdif	20 57 30.7	+1.1
ASAR	Alice Springs	123.71	205	PKP	PKPdf	21 02 53.9	+0.2
	comp=Z,0.2nm,0.7s,baz=136,slow=1.8,SNR=5.2						
WRA	Warramunga Arr	126.89	208	PKP	PKPdf	21 03 00.4	+0.6
	comp=Z,0.5nm,0.6s,baz=155,slow=1.3,SNR=6.3						
ZALV	Zalesovo Beam	148.12	30	PKPbc	PKPbc	21 03 42.1	+1.5
	comp=Z,3.4nm,0.7s,baz=305,slow=4.0,SNR=14						
MKAR	Makanchi Array	151.04	43	PKPbc	PKPbc	21 03 49.3	+1.2
	comp=Z,2.6nm,0.7s,baz=306,slow=2.0,SNR=35						

IDC 14 20:44:26.6±8.0, 31.°93S×179.°57E, h491km±107km, mb2.5/2, mb1 2.9/3, mb1mx2.7/30, mbtmp3.7/3, Error ellipse: s-maj=126.0km s-min=52.2km az=5.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	Urewera	6.63	197	P	P	20 46 09.7	+1.1
	6.0nm,0.3s,baz=320,slow=2.5,SNR=6.5						
URZ				S	S	20 47 31.3	-0.9
	0.6nm,0.3s,baz=21,slow=22,SNR=1.6						
ASAR	Alice Springs	40.98	270	P	P	20 51 26.3	+0.1
	0.3nm,0.9s,baz=109,slow=7.3,SNR=1.5						
WRA	Warramunga Arr	42.12	275	P	P	20 51 34.9	-0.3
	0.4nm,0.3s,baz=111,slow=8.1,SNR=3.3						
FINES	FINESS Array B	145.81	338	PKPbc	PKPdf	21 03 08.6	+0.6
	1.7nm,0.9s,baz=66,slow=3.5,SNR=3.0						

IDC 14 20:46:53.8±7.2, 6.°93S×148.°36E, h101km±56km, mb2.6/1, mb1 2.9/3, mb1mx2.7/32, mbtmp3.1/3, Error ellipse: s-maj=121.5km s-min=60.6km az=118.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	Port Moresby	2.74	206	P	Pn	20 47 34.6	-1.5
	3.6nm,0.3s,baz=331,slow=6.4,SNR=3.7						
PMG				S	Sn	20 48 10.4	+1.8
	1.7nm,0.3s,baz=165,slow=14,SNR=2.3						
WRA	Warramunga Arr	18.78	225	P	P	20 51 03.8	-1.5
	0.1nm,0.3s,baz=51,slow=11,SNR=2.3						
ASAR	Alice Springs	21.68	218	P	P	20 51 35.0	-1.6
	0.2nm,0.4s,baz=53,slow=9.0,SNR=2.6						
TORD	Torodi Ar. Bea	146.62	283	PKPbc	PKPab	21 06 25.6	-0.4
	0.1nm,0.4s,baz=72,slow=4.1,SNR=1.3						

MEX 14 20:48:43.2±0.5, 16.°25N×95.°73W, h24km±16km, MD3.5, Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HUIG	Huatulco	0.61	217	eP	Pb	20 48 52.9	-2.3
HUIG				eS	Sb	20 49 01.2	-2.1
VHO	Vista Hermosa	1.26	310	eP	Pn	20 49 02.6	-3.0
VHO				i S	Sn	20 49 18.3	-3.6
PNIG	Pinotepa	2.31	274	eP	Pn	20 49 18.0	-1.8
PNIG				eS	Sn	20 49 44.1	-3.4
PCIG		2.47	102	i P	Pn	20 49 19.6	-2.5
PCIG				i S	Sn	20 49 49.0	-2.6

MOS ***14*** *21:07:17.9±0.9, 36.°34N×70.°74E, h180km, mb6.0/100, MS5.1/6, Error ellipse: s-maj=4.9km s-min=3.4km az=113.0*
MOS Felt (III) at Dushanbe, Tashkent; (II) at Shymkent.
ISCJB ***14*** *21:07:19.9±0.2, 36.°45N±0.°01×70.°74E±0.°01, h198km±2km, mb5.6/358, Error ellipse: s-maj=2.1km s-min=1.4km az=22.7*
BJI ***14*** *21:07:20.9, 36.°55N×70.°65E, h208km, mb5.8/82, mB6.1/62*
IDC ***14*** *21:07:21.9±0.3, 36.°33N×70.°76E, h208km±2km, mb5.3/43, mb1 5.4/47, mb1mx5.3/53, mbtmp5.9/47, Error ellipse: s-maj=7.2km s-min=5.3km az=2.0*
GCMT ***14*** *21:07:22.2±0.1, 36.°45N×70.°62E, h210km, MW6.0/130, Moment Tensor Solution. s119,c253; s130,c440; Duration: ≥4 Moment tensor: Scale 10^18Nm; Mrr0.78±.01; Mθθ-0.66±.01; Mφφ-0.12±.01; Mrθ0.74±.01; Mθφ0.23±.01; Mφr-0.52±.01; Best double couple: M0=1.18200×10^18 NP1:φs=121.00000°, δ70.00000°, λ97.00000°. NP2:φs=281.00000°, δ21.00000°, λ72.00000°. Principal axes: T 1.2130, Plg64.0000°, Azm42.0000°; N -0.0630, Plg6.0000°, Azm299.0000°; P -1.1500, Plg25.0000°, Azm206.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*
NEIC ***14*** *21:07:22.0±0.0, 36.°44N×70.°74E, h207km, Moment Tensor Solution. s34 Moment tensor: Scale 10^17Nm; Mrr6.40; Mθθ-5.30; Mφφ-1.10; Mrθ6.58; Mθφ1.72; Mφr-3.94; Best double couple: M0=9.80000×10^17 NP1:φs=118.00000°, δ71.00000°, λ95.00000°. NP2:φs=283.00000°, δ20.00000°, λ76.00000°. Principal axes: T 10.1000, Plg63.0000°, Azm36.0000°; N -0.6000, Plg4.0000°, Azm296.0000°; P -9.5000, Plg25.0000°, Azm204.0000°;*
NEIC ***14*** *21:07:22.2±0.1, 36.°41N×70.°75E, mb5.8/182, ME5.6, MW6.0, MW5.9 Error ellipse: s-maj=3.1km s-min=2.5km az=204.0 Best double couple: NP1:φs=119.00000°, δ68.00000°, λ97.00000°. NP2:φs=282.00000°, δ23.00000°, λ74.00000°. Principal axes: T 1.0600, Plg66.0000°, Azm41.0000°; N -0.0100, Plg6.0000°, Azm297.0000°; P -1.0500, Plg23.0000°, Azm204.0000°; Depth from broadband displacement seismograms. Energy computed from CMT mechanism.*
NEIC Felt [III] at Bagrami, Charikar, Faizabad, Kabul and Qunduz; [II] at Jabal-os-Saraj, Jalalabad and Mazar-e Sharif. Also felt at Baghlan, Baghran and Basawul. Felt [IV] at Islamabad and [III] at Peshawar, Pakistan. Also felt at Abbottabad, Mingaora and Rawalpindi. Felt [III] at Dushanbe, Tajikistan. Also felt at Garm. Felt [III] at Tashkent, Uzbekistan. Felt [II] at Shymkent, Kazakhstan. Also felt at Taraz. Felt at Baramula, Chandigarh and Noida, India.
NNC ***14*** *21:07:25.6±1.5, 36.°96N×70.°53E, h214km±8km, mb5.7, mpv7.0 Error ellipse: s-maj=14.5km s-min=7.9km az=157.0*
ISC 14 21:07:21.8±0.2, 36.°43N±0.°02×70.°72E±0.°02, h208km±1km, h207km:pP-P, n1518, σ1§64/2062, mb5.7/389, 278C-48D, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	Dzherino	2.81	328	⇑P	Pn	21 08 08.6	-1.2
	42μm,0.4s						
DZET				⇑S	S	21 08 41.5	-5.4
DZET	Dzherino	2.81	328	PN	Pn	21 08 08.6	-1.2
DZET				S	S	21 08 42.0	-4.9
DZET				pmax	pmax		
	comp=Z,42μm,0.4s						
CHCP	Chirah Chowk	3.46	142	P	Pn	21 08 17.8	+0.4
THW	Thamme Wali	3.72	167	P	Pn	21 08 20.5	0.0
SARP	Sargodha	4.77	160	P	Pn	21 08 32.9	-0.7
KSH	Kashi	5.17	52	⇓iP	Pn	21 08 33.6	-5.0
KSH				esP		21 09 11.8	
KSH				S	S	21 09 26.3	-13
KSH				pmax	pmax		
	comp=Z,14μm,0.7s						
KSH				smax	smax		
	comp=Z,18μm,0.8s						
MNAS	Manas	6.21	12	⇑P	Pn	21 08 50.7	-1.2
	comp=Z,11μm,0.9s						
MNAS				⇑S	S	21 09 58.6	-4.6
	comp=Z,18μm,0.6s						
MNAS	Manas	6.21	12	PN	Pn	21 08 50.7	-1.2
MNAS				pmax	pmax		
	comp=Z,11μm,0.9s						
DHRM	DHARAMSHALA	6.21	130	eP	Pn	21 08 52.0	-0.2
DHRM				eS	S	21 10 01.5	-2.0
DHRM				IAML		21 10 04.9	
	comp=E,35μm,0.9s						
DHRM				IAML		21 10 05.6	
	comp=N,40μm,0.7s						
JWA	Jwalamukhi	6.50	133	eP	Pn	21 08 53.0	-2.7
JWA				eS	S	21 10 03.0	-7.0
EKS2	Erkin-Say	6.66	20	⇓iPN	Pn	21 08 57.0	-0.7
EKS2				e		21 10 09.8	
EKS2	Erkin-Say	6.66	20	⇓iPn	Pn	21 08 57.0	-0.7
EKS2				eSn	S	21 10 09.8	-4.0
KK31	Karatay Array	6.67	359	⇓P	Pn	21 08 56.4	-1.4
	comp=N,5μm,0.7s,baz=190,slow=16						
KK31				⇑S	S	21 10 03.0	-11
	comp=N,12μm,0.6s,baz=174,slow=15,SNR=18						
KKAR	Karatay Array	6.67	359	ePN	Pn	21 08 56.7	-1.0
KKAR	Karatay Array	6.67	359	ePn	Pn	21 08 56.7	-1.0
KKAR				eSn	S	21 10 03.9	-10
AAK	Ala-Archa	6.85	24	P	Pn	21 08 59.6	-0.6
	comp=N,916nm,0.3s,baz=192,slow=7.4						
AAK				S	S	21 10 15.0	-3.3
	comp=N,736nm,0.3s,baz=317,slow=22,SNR=26						
AAK	Ala-Archa	6.85	24	⇓P	Pn	21 08 59.4	-0.8
	comp=N,7μm,0.9s						
AAK				⇑S	S	21 10 14.9	-3.3
	comp=N,19μm,0.8s						
AAK	Ala-Archa	6.85	24	ePn	Pn	21 08 59.7	-0.5
AAK				eSn	S	21 10 15.6	-2.7
FRU	Bishkek	7.07	24	⇓iPN	Pn	21 09 01.5	-1.4
FRU				pmax	pmax		
	comp=E,17μm,5.0s						
TKM2	Tokmak 2	7.50	29	⇑P	Pn	21 09 07.5	-1.1
	comp=E,32μm,1.1s						
TKM2				⇓S	S	21 10 26.3	-7.3
	comp=E,5μm,1.4s						
TKM2	Tokmak 2	7.50	29	ePN	Pn	21 09 08.0	-0.6
TKM2						21 10 31.7	
TKM2	Tokmak 2	7.50	29	ePn	Pn	21 09 08.0	-0.6
TKM2				Sn	S	21 10 31.7	-1.9
SMLA	Simla	7.53	133	eP	Pn	21 09 08.1	-0.8
SMLA				eS	S	21 10 29.9	-4.3
SMLA				IAML		21 11 20.3	
	comp=E,6μm,0.9s						
SMLA				IAML		21 11 20.8	
	comp=N,8μm,0.9s						
KNDC	Almaty	8.31	33	⇑P	Pn	21 09 18.8	-0.3
	comp=N,32μm,1.4s						
KNDC				⇑S	S	21 10 49.4	-3.3
	comp=N,10μm,1.1s						
AAA	Alma-Ata	8.34	33	ePN	Pn	21 09 18.5	-1.0
AAA				pmax	pmax		
	comp=Z,14μm,1.1s						
DDI	Dehra Dun	8.64	133	eP	Pn	21 09 21.5	-1.9
DDI				eP	Pn	21 09 22.7	-0.7
PDGK	Podgornoye	9.63	42	⇑P	Pn	21 09 34.2	-1.8
	comp=Z,2μm,1.0s						
PDGK				⇑S	S	21 11 20.4	-3.5
	comp=Z,4μm,1.2s						
PDGK	Podgornoye	9.63	42	P	Pn	21 09 34.3	-1.8
PDGK				S	S	21 11 20.4	-3.5
PDGK				pmax	pmax		
	comp=Z,2μm,1.0s						
PDGK				smax	smax		
	comp=N,4μm,1.2s						
ASHT	Ashkhabad	9.96	282	⇓P	Pn	21 09 37.3	-3.1
	comp=N,1μm,1.0s						
ASHT				⇑S	S	21 11 28.7	-3.3
	comp=N,12μm,1.4s						
ASHT	Ashkhabad	9.96	282	P	Pn	21 09 37.3	-3.1
ASHT				S	S	21 11 28.7	-3.3
ASHT				pmax	pmax		
	comp=Z,1μm,1.0s						
ASHT				smax	smax		
	comp=N,12μm,1.4s						
GEYT	Alibeck	10.17	282	P	Pn	21 09 40.5	-2.6
	comp=N,53nm,0.3s,baz=106,slow=11,SNR=659						
GEYT				S	S	21 11 34.0	-3.3
	comp=N,257nm,0.3s,baz=148,slow=8.6,SNR=8.1						
OTUK	Ortayu	11.87	5	⇓P	Pn	21 10 01.4	-3.3
	comp=N,1μm,1.0s						
OTUK				⇓S	S	21 12 08.4	-7.8
	comp=N,3μm,1.1s						
OTUK	Ortayu	11.87	5	P	Pn	21 10 01.4	-3.3
OTUK				S	S	21 12 08.4	-7.8
OTUK				pmax	pmax		
	comp=Z,1μm,1.0s						
OTUK				smax	smax		
	comp=Z,3μm,1.1s						
BHJ	Bhuj	13.16	184	eP	P	21 10 22.7	-1.2
PYUN	Piuthan	13.28	125	eP	Pn	21 10 21.0	-1.8
	comp=Z,1μm,0.6s						
PYUN	Piuthan	13.28	125	eP	Pn	21 10 21.1	-1.8
MAKZ	Makanchi	13.34	36	⇓P	Pn	21 10 20.7	-2.5
	comp=Z,4μm,1.1s						
MAKZ				⇓S	S	21 12 49.1	-2.1
	comp=Z,700nm,1.3s						
MAKZ	Makanchi	13.34	36	eP	Pn	21 10 21.8	-1.4
MAKZ	Makanchi	13.34	36	ePn	Pn	21 10 21.8	-1.4
MK31	Makanchi Array	13.48	36	P	Pn	21 10 22.8	-2.2
	comp=Z,1μm,1.0s,baz=210,slow=11,SNR=9381						
MK31				⇑S	S	21 12 51.2	-3.2
MKAR	Makanchi Array	13.48	36	P	Pn	21 10 23.1	-1.8
	comp=Z,20nm,0.3s,baz=229,slow=5.6,SNR=365						
MKAR				P3KPbc		21 46 17.4	
	comp=Z,0.0nm,0.3s,baz=36,slow=4.9,SNR=4.2						
MKAR	Makanchi Array	13.48	36	ePn	Pn	21 10 23.4	-1.6
KOLN	Koldanda	13.90	125	eP	Pn	21 10 28.7	-1.8
KOLN	Koldanda	13.90	125	eP	Pn	21 10 29.3	-1.2
	comp=Z,1μm,0.6s						
BHPL	Bhopal	14.36	154	eP	Pn	21 10 35.7	-0.3
BHPL				ex	x	21 13 06.0	
GKN	Gorkha	14.45	122	eP	Pn	21 10 35.5	-1.7
GKN	Gorkha	14.45	122	eP	Pn	21 10 35.9	-1.3
	comp=Z,4μm,0.6s						
WMQ	Urumqi	14.92	55	⇑iP	Pn	21 10 42.6	-0.1
WMQ				sP	sP	21 11 35.6	
WMQ				S	S	21 13 25.8	-2.2
WMQ				PcP	PcP	21 15 39.3	+2.2
WMQ				pmax	pmax		
	comp=Z,390nm,0.8s						
WMQ				pmax	pmax		
	comp=Z,4μm,3.6s						
WMQ				LR	LR		
	comp=Z,4μm,8.8s						
WMQ				LR	LR		
	comp=Z,4μm,6.8s						
WMQ				LR	LR		
	comp=Z,1μm,36.4s						
DMN	Daman	15.02	122	eP	Pn	21 10 43.7	-0.6
KKN	Kakani	15.03	121	eP	Pn	21 10 43.4	-0.9
AB31	Akbulak array	15.04	332	⇑P	Pn	21 10 42.0	-2.0
	comp=Z,539nm,0.7s,baz=142,slow=11						
AB31				⇑S	S	21 13 21.1	-9.5
	comp=Z,863nm,0.6s						
ABKAR	Akbulak array	15.04	332	ePn	Pn	21 10 42.6	-1.4
	comp=Z,436nm,0.4s						
PKIN	Phulchoki	15.24	121	eP	Pn	21 10 46.2	-0.8
KURBB	Kurchatov Arra	15.27	19	P	Pn	21 10 44.5	-2.2
	comp=Z,8.5nm,0.3s,baz=208,slow=11,SNR=676						
KURBB				S	S	21 13 30.5	-5.2
	baz=12,slow=27,SNR=3.0						
KURBB	Kurchatov Arra	15.27	19	⇓P	Pn	21 10 44.0	-2.7
	comp=Z,1μm,1.1s						
KURBB				⇑S	S	21 13 31.4	-4.3
	comp=Z,1μm,1.1s						
KURK	Kurchatov	15.37	19	⇑P	Pn	21 10 45.1	-2.9
	comp=Z,3μm,1.4s						
KURK				⇓S	S	21 13 30.5	-7.7
	comp=Z,4μm,1.3s						
KURK	Kurchatov	15.37	19	d iP	Pn	21 10 45.7	-2.3
KURK				pmax	pmax		
	comp=Z,2μm,1.7s						
KURK	Kurchatov	15.37	19	ePn	Pn	21 10 45.9	-2.1
	comp=Z,3μm,1.6s						
KURK				S	S	21 13 30.5	-7.7
KURK				eS	S	21 13 38.6	+0.4
GUN	Gumba	15.37	119	eP	Pn	21 10 47.8	-0.8
BANOM	Banah	16.17	234	i P	P	21 10 56.7	-0.4
	SNR=393						
BANOM	Banah	16.17	234	P	P	21 10 56.7	-0.4
	SNR=393						
BANOM	Banah	16.17	234	P	P	21 10 56.7	-0.4
	SNR=393						
ZRNK	Zerenda	16.57	356	⇑P	Pn	21 11 01.8	-0.6
	comp=Z,1μm,1.1s						
ZRNK				⇑S	S	21 13 57.4	-6.4
	comp=Z,3μm,1.4s						
ZRNK	Zerenda	16.57	356	eP	Pn	21 11 01.7	-0.6
ZRNK				pmax	pmax		
	comp=Z,1μm,1.0s						
ZRNK	Zerenda	16.57	356	eP	Pn	21 11 01.7	-0.6
	comp=Z,1μm,1.0s						
BVA0	Borovoye Array	16.60	359	⇓P	P	21 11 00.2	-1.4
	comp=Z,2μm,1.2s,baz=174,slow=14,SNR=3476						
BVA0				⇑S	S	21 13 57.2	-7.2
	comp=Z,37nm,0.7s,baz=170,slow=22,SNR=8.6						
BVAR	Borovoye Array	16.60	359	P	P	21 11 02.0	+0.4
	comp=Z,85nm,0.3s,

comp=Z,36nm,0.3s,baz=64,slow=8.4,SNR=248
BIDO Bidbid 16.84 224 P **P 21 11 05.0 +0.5**
SNR=55
BIDO Bidbid 16.84 224 P **P 21 11 05.0 +0.5**
SNR=55
NGP Nagpur 16.87 152 *e*P **Pn 21 11 06.3 +0.1**
UOSS Minazif 16.91 231 *e*P **P 21 11 03.9 -1.4**
comp=Z,149nm,0.8s
HATD Hatta, Dubai 17.05 231 *i* P **P 21 11 07.0 +0.2**
SNR=560
ASHO Ashiyiah 17.19 231 *i* P **Pn 21 11 09.4 -0.7**
SNR=345
ASHO Ashiyiah 17.19 231 Pn **Pn 21 11 09.7 -0.4**
SNR=2175
ASHO Ashiyiah 17.19 231 P **Pn 21 11 09.7 -0.4**
SNR=2175
NAZ Nazwa, Dubai 17.23 233 *i* P **P 21 11 09.2 +0.4**
SNR=630
CHKZ Chkalovo 17.25 360 ⇑P **P 21 11 07.3 -1.4**
comp=Z,687nm,0.9s
CHKZ ⇑S **S 21 14 10.5 -6.7**
comp=Z,3μm,1.4s
CHKZ Chkalovo 17.25 360 P **P 21 11 07.3 -1.4**
CHKZ S **S 21 14 10.5 -6.7**
CHKZ pmax pmax
comp=Z,687nm,1.0s
CHKZ smax smax
comp=N,3μm,1.4s
SMDO Samad 17.25 223 Pn **Pn 21 11 10.5 -0.4**
SNR=123
SMDO Pn **Pn 21 11 10.5 -0.4**
SNR=190
SMDO Samad 17.25 223 P **Pn 21 11 10.5 -0.4**
SNR=123
SMDO P **Pn 21 11 10.5 -0.4**
SNR=190
FAQ Al Faqa, Dubai 17.45 232 *i* P **P 21 11 11.3 +0.2**
SNR=583
POO Poona 18.04 170 *e*P **Pn 21 11 19.7 -0.3**
BOK Bokaro 18.15 130 *e*P **P 21 11 19.3 +0.5**
LSA Lhasa 18.37 106 P **Pn 21 11 24.8 +0.5**
LSA sP **sP 21 12 23.6 +1.8**
LSA S **S 21 14 35.3 -5.6**
LSA pmax pmax
comp=N,990nm,1.1s
LSA pmax pmax
comp=N,3μm,14.8s
LSA Lhasa 18.37 106 *e*P **Pn 21 11 24.5 +0.2**
LSA pmax pmax
comp=Z,2μm,1.1s
LSA Lhasa 18.37 106 *e*Pn **Pn 21 11 24.5 +0.2**
comp=Z,2μm,1.1s
SRSP Sriramsagar 18.68 157 *e*P **P 21 11 24.2 -0.4**
SRSP IAmb IAmb 21 11 29.6
comp=Z,2μm,1.1s
SRSP *es*P **sP 21 12 24.3 -0.4**
SRSP *e*S **S 21 14 45.7 -0.6**
SRSP IVMs_BB IVMs_BB 21 17 56.6
comp=Z,12μm,4.4s
KLRI Killari 19.01 163 *e*P **P 21 11 28.4 +0.2**
KLRI IAmb IAmb 21 11 36.0
comp=Z,1μm,1.4s
KLRI *es*P **sP 21 12 28.5 +0.1**
KLRI *e*S **S 21 14 52.7 -0.2**
KLRI IVMs_BB IVMs_BB 21 17 31.6
comp=Z,15μm,4.8s
RPR Rampur 19.06 154 *e*P **P 21 11 29.0 +0.3**
RPR IAmb IAmb 21 11 34.7
comp=Z,1μm,1.0s
RPR *es*P **sP 21 12 29.1 +0.2**
RPR *e*S **S 21 14 55.0 +1.2**
RPR IVMs_BB IVMs_BB 21 19 06.9
comp=Z,5μm,7.5s
ZALV Zalesovo Beam 20.07 25 P **P 21 11 39.3 +0.1**
comp=Z,2μm,0.7s,baz=223,slow=11,SNR=3741
ZALV P3KPbc 21 45 50.3
comp=Z,1.0nm,0.7s,baz=20,slow=4.7,SNR=4.3
I46RU ZALESOVO INFRA20.08 25 P **P 21 11 38.7 -0.5**
baz=214,slow=12,SNR=0.8
HYBB Hyderabad (bro 20.16 158 *e*P **P 21 11 41.0 +0.5**
HYBB IAmb IAmb 21 11 44.4
comp=Z,485nm,0.8s
HYBB *es*P **sP 21 12 41.1 0.0**
HYBB *e*S **S 21 15 14.7 -0.7**
HYBB IVMs_BB IVMs_BB 21 20 16.9
comp=Z,8μm,4.2s
HYB Hyderabad 20.16 158 *i* P **P 21 11 42.5 +2.0**
comp=Z,340nm,1.0s
HYB *e*S **S 21 15 16.0 +0.6**
HYB Hyderabad 20.16 158 *e*P **P 21 11 41.8 +1.2**
NVS Novosibirsk 20.33 21⇑*i*P **P 21 11 42.0 +0.1**
NVS *i* 21 15 17.0
NVS pmax pmax
comp=N,6μm,1.8s
NVS pmax pmax
comp=E,2μm,1.8s
NVS pmax pmax
comp=Z,7μm,1.8s
NVS smax smax
comp=N,7μm,2.6s
NVS smax smax
comp=E,8μm,2.2s
GNI Garni 20.70 288 P **P 21 11 48.6 +2.3**
comp=E,399nm,0.9s,baz=67,slow=1.3,SNR=162
GNI Garni 20.70 288 *e*P **P 21 11 48.2 +1.9**
GNI pmax pmax
comp=Z,6μm,1.0s
GNI Garni 20.70 288 *e*P **P 21 11 48.1 +1.9**
comp=Z,6μm,1.0s
BWNR Bhubaneshwar 20.80 137 *e*P **P 21 11 49.0 +1.8**
TBLG Delisi 20.82 293 P **P 21 11 48.3 +1.0**
TBLG Delisi 20.82 293 P **P 21 11 48.3 +1.0**
DUS Dusheti 20.89 294 P Pn 21 11 57.2 +2.9
DUS Dusheti 20.89 294 P Pn 21 11 57.2 +2.9
GOA Goa 21.03 172 *e*P **P 21 11 51.2 +1.5**
GOA IAmb IAmb 21 11 53.5
comp=Z,475nm,1.1s
SHL Shillong 21.08 115 *e*P **P 21 11 50.6 +0.3**
SHL *ex* x 21 15 34.0
GUDG Gudauri 21.10 295 P **P 21 11 52.8 +2.3**
NJS Nagarjunasagar 21.21 157 *e*P **P 21 11 51.3 -0.2**
NJS IAmb IAmb 21 11 54.5
comp=Z,1μm,1.5s
NJS *es*P **sP 21 12 51.5 -1.0**
NJS *e*S **S 21 15 33.7 -0.7**
NJS IVMs_BB IVMs_BB 21 19 21.8
comp=Z,11μm,3.9s
CLDR Caldiran 21.33 285 *e*P **P 21 11 58.9 +6.0**
CHLP Challavanipeta 21.37 143 *e*P **P 21 11 53.5 +0.3**
CHLP IAmb IAmb 21 11 55.6
comp=Z,365nm,1.1s
CHLP *es*P **sP 21 12 54.4 +0.1**
CHLP *e*S **S 21 15 36.0 -1.0**
CHLP IVMs_BB IVMs_BB 21 20 58.6
comp=Z,4μm,6.3s
PVM Polavaram 21.40 150 *e*P **P 21 11 54.1 +0.6**
PVM IAmb IAmb 21 11 57.2
comp=Z,412nm,1.0s
PVM *es*P **sP 21 12 54.9 +0.3**
PVM *e*S **S 21 15 37.8 +0.2**
PVM IVMs_BB IVMs_BB 21 21 13.5
comp=Z,7μm,7.6s
DYDN Diyadin 21.50 287 *i* P **P 21 11 56.8 +2.1**
SVE Sverdlovsk 21.51 345*d*i P **P 21 11 54.6 +0.4**
SVE *e*S **S 21 15 41.4 +2.8**
SVE pmax pmax
comp=Z,1μm,1.4s
SVE pmax pmax
comp=Z,2μm,9.2s
SRLM Srisailam 21.51 158 *e*P **P 21 11 54.5 -0.2**
SRLM IAmb IAmb 21 11 56.8
comp=Z,402nm,0.9s
SRLM *es*P **sP 21 12 55.0 -0.8**
SRLM *e*S **S 21 15 38.7 -0.7**
SRLM IVMs_BB IVMs_BB 21 19 25.6
comp=Z,10μm,3.7s
ZEI Tsey 21.57 295 *e*P **P 21 11 53.5 -1.7**
ZEI *e*S **S 21 15 40.0 -0.3**
ZEI pmax pmax
comp=Z,527nm,0.9s
ZEI pmax pmax
comp=E,1μm,0.9s
ZEI pmax pmax
comp=N,377nm,0.7s
EAK Akyaka 21.59 290 *i* P **P 21 11 57.5 +2.0**

VMUR Van-Muradiye 21.61 285 *i* P **P 21 11 58.1 +2.4**
ARU Arti 21.63 341 P **P 21 11 55.7 +0.3**
comp=N,892nm,1.0s,baz=143,slow=4.7,SNR=440
ARU Arti 21.63 341*c i*P **P 21 11 55.5 +0.1**
ARU 21 12 28.3
ARU S **S 21 15 42.7 +2.1**
ARU pmax pmax
comp=Z,2μm,1.2s
ARU Arti 21.63 341 *e*P **P 21 11 55.8 +0.3**
comp=Z,6μm,1.7s
BGD Bogdanovka 21.63 291 P **P 21 11 58.0 +2.1**
CUKT Cukurca 21.70 280 *e*P **P 21 11 58.2 +1.7**
VIS Vishakhapatnam 21.71 146 *e*P **P 21 11 57.0 +0.4**
TVAN Van 21.75 284 *i* P **P 21 11 59.3 +2.2**
VANB Van 21.76 284 *e*P **P 21 11 59.0 +1.9**
KARS Kars 21.99 289 *e*P **P 21 12 02.2 +2.9**
GEVA Gevas 22.04 283 *i* P **P 21 12 01.6 +1.7**
ADKI Addanki 22.09 156 *e*P **P 21 12 00.5 +0.2**
ADKI IAmb IAmb 21 12 02.1
comp=Z,274nm,0.8s
ADKI *es*P **sP 21 13 02.0 0.0**
ADKI *e*S **S 21 15 48.8 +0.3**
ADKI IVMs_BB IVMs_BB 21 19 07.5
comp=Z,10μm,3.8s
RCLA Racherla 22.14 159 *e*P **P 21 12 00.6 -0.2**
RCLA IAmb IAmb 21 12 02.7
comp=Z,564nm,0.7s
RCLA *es*P **sP 21 13 02.5 0.0**
RCLA *e*S **S 21 15 48.6 -0.7**
RCLA IVMs_BB IVMs_BB 21 20 35.8
comp=Z,9μm,3.8s
EPOS Posof 22.30 292 *i* P **P 21 12 05.0 +2.8**
EATA Eleskirt 22.43 287 *i* P **P 21 12 05.5 +1.9**
KBZ Khabaz 22.44 298 P **P 21 12 03.6 +0.3**
comp=Z,116nm,0.9s,baz=89,slow=10,SNR=79
SENK Senkaya-Erzuru 22.54 289 *e*P **P 21 12 07.4 +2.9**
GOF Gofitskoye 22.59 301⇑*i*P **P 21 12 06.5 +1.8**
GOF *e*S **S 21 16 00.1 +3.9**
GOF pmax pmax
comp=Z,1μm,1.4s
GOF pmax pmax
comp=E,755nm,1.3s
SIRT Sirnak 22.59 281 *e*P **P 21 12 07.3 +2.4**
SIRN S¨–rnak 22.62 281 *i* P **P 21 12 06.8 +1.7**
KIV Kislovodsk 22.62 298 *e*P **P 21 12 06.0 +0.9**
KIV Kislovodsk 22.62 298 *i* P **P 21 12 05.8 +0.7**
SNR=53
KIV Kislovodsk 22.62 298 *i* P **P 21 12 05.8 +0.7**
KIV pmax pmax
comp=Z,447nm,2.0s
KIV Kislovodsk 22.62 298 *e*P **P 21 12 05.8 +0.7**
comp=Z,693nm,0.8s
SHAO Shalim 22.67 220 P **P 21 12 07.7 +2.1**
SNR=17
SHAO Shalim 22.67 220 P **P 21 12 07.7 +2.1**
SNR=17
SHAO P **P 21 12 07.7 +2.1**
SNR=17
EKAR Karacoban 22.77 286 *i* P **P 21 12 09.8 +3.2**
HOMI Horasan 22.88 288 *i* P **P 21 12 09.9 +2.3**
ARTV Artvin 22.88 291 *i* P **P 21 12 09.7 +2.1**
DAGI Agillar 22.89 291 *i* P **P 21 12 08.7 +1.1**
DDEM Demirkent 23.01 290 *i* P **P 21 12 10.7 +2.1**
DBAD Bademkaya 23.05 290 *i* P **P 21 12 08.8 -0.2**
DBOC Borcka 23.09 291 *i* P **P 21 12 10.0 +0.8**
GTA Gaotai 23.10 74 P **P 21 12 11.3 +1.8**
GTA pP pP 21 12 49.6 +2.7
GTA sP sP 21 13 15.0 +2.0
GTA S **S 21 16 04.1 -0.8**
GTA pmax pmax
comp=Z,500nm,1.0s
GTA pmax pmax
comp=Z,8μm,8.6s
GTA LR LR
comp=Z,3μm,10.0s
GTA LR LR
comp=Z,3μm,9.7s
GTA LR LR
comp=Z,3μm,13.5s
ERZM Erzurum 23.29 288 *i* P **P 21 12 13.6 +2.3**
EZM Erzurum 23.30 288 *e*P **P 21 12 14.2 +2.8**
BTMN Batman 23.48 282 *i* P **P 21 12 14.7 +1.9**
BNGL BINGOL 23.49 285 *i* P **P 21 12 15.0 +1.9**
ECAT Cat-ERZURUM 23.60 287 *i* P **P 21 12 16.1 +2.0**
BNGB Bing¨§ll 23.86 285 *e*P **P 21 12 18.6 +2.3**
BGOL Bingol 23.86 285 *i* P **P 21 12 18.2 +1.8**
MARD Mardin 23.93 281 *i* P **P 21 12 18.4 +1.4**
YEDI Yedisu-Bingol 23.94 286 *e*P **P 21 12 19.7 +2.5**
KOPT Kop Dagi 23.96 288 *i* P **P 21 12 19.6 +2.2**
SKHT Srikalahasti 23.98 158 *e*P **P 21 12 17.6 +0.1**
SKHT IAmb IAmb 21 12 19.7
comp=Z,303nm,0.7s
SKHT *es*P **sP 21 13 22.4 +0.2**
SKHT *e*S **S 21 16 18.4 -0.6**
SKHT IVMs_BB IVMs_BB 21 21 55.2
comp=Z,6μm,6.7s
KBSD Kabsdagh 24.16 280 *e*P **P 21 12 20.9 +1.9**
MAZI Mazidag 24.18 282 *e*P **P 21 12 21.2 +1.9**
BAYT Ayd¨–ntepe-Bay 24.23 289 *e*P **P 21 12 22.0 +2.3**
MZRK Al-Mazaregh 24.25 278 *e*P **P 21 12 22.6 +2.8**
DYBB Diyarbakir 24.36 283 *e*P **P 21 12 21.8 +0.9**
DIYA Diyarbakir 24.38 283 *i* P **P 21 12 23.4 +2.3**
MACK Trabzon 24.51 290 *i* P **P 21 12 24.0 +1.8**
KTUT Trabzon 24.51 290 *e*P **P 21 12 23.8 +1.7**
EUZM Uzumlu 24.58 287 *i* P **P 21 12 24.3 +1.4**
SFNV Sufian 24.59 279 *e*P **P 21 12 25.4 +2.5**
KRAR Krasnoyarsk 24.68 30*c i*P **P 21 12 24.5 +1.1**
KRAR pmax pmax
comp=Z,1μm,1.0s
SOC Sochi 24.70 296*c i*P **P 21 12 24.5 +0.7**
SOC *e**PP **pP 21 13 01.1 -2.9**
SOC *e* 21 15 57.9
SOC *e*S **S 21 16 30.0 0.0**
SOC pmax pmax
comp=Z,263nm,1.2s
GUMT Gumushane 24.73 289 *e*P **P 21 12 27.4 +3.1**
TNCL Tunceli-Merkez 24.73 286 *i* P **P 21 12 26.1 +1.8**
MDRS Chennai 24.78 157 *e*P **P 21 12 26.4 +1.6**
PTK Pertek 24.87 285 *e*P **P 21 12 28.0 +2.4**
KELT Kelkit 24.91 288 *i* P **P 21 12 28.0 +2.1**
SVRC Sivrice-ELAZID 24.98 284 *e*P **P 21 12 28.6 +2.1**
ELZG Elazig 25.22 284 *i* P **P 21 12 28.5 -0.2**
ESPY Espiye-Giresun 25.30 290 *e*P **P 21 12 31.5 +2.2**
VRH Novokhopyorsk 25.40 315 *e*P **P 21 12 30.5 +0.5**
VRH *e**PP **pP 21 13 13.7 +2.6**
VRH *e*S **S 21 16 40.3 -0.5**
VRH pmax pmax
comp=Z,530nm,1.3s
VRH smax smax
comp=E,590nm,5.6s
URFA Urfa 25.46 282 *e*P **P 21 12 32.1 +1.3**
ILIC ilic-Erzincan 25.47 287 *e*P **P 21 12 33.5 +2.6**
KEMA Kemaliye 25.54 286 *i* P **P 21 12 34.7 +3.2**
GRSN GIRESUNGRSN 25.65 290 *i* P **P 21 12 34.0 +1.6**
SURC SANLIURFA_SURC25.70 281 *i* P **P 21 12 34.0 +1.1**
SUSE Susehri 25.71 288 *i* P **P 21 12 35.8 +2.6**
ORDU Ordu-Boztepe 25.96 290 *i* P **P 21 12 36.0 +0.8**
CUZAR Zara_SIVAS 26.06 288 *i* P **P 21 12 37.8 +1.6**
AKCD Akcadag 26.07 284 *i* P **P 21 12 38.5 +2.2**
MOY Mondy 26.32 45 *e*P **P 21 12 40.2 +1.8**
MOY *e* 21 13 25.0
MOY pmax pmax
comp=Z,647nm,3.3s
CUKAN kangal_SIVAS 26.33 286 *i* P **P 21 12 40.6 +1.9**
RSDY Resadiye-TOKAT 26.38 289 *e*P **P 21 12 41.2 +2.3**
DARE Darende-Malaty 26.38 285 *e*P **P 21 12 41.7 +2.6**
GZT Gaziantep 26.46 282 *i* P **P 21 12 41.6 +1.7**
ANN Anapa 26.47 299 *i* P **P 21 12 40.0 +0.3**
ANN *i* 21 13 34.4
ANN *i* S **S 21 17 01.0 +3.1**
ANN pmax pmax
comp=N,31nm,0.7s
ANN pmax pmax
comp=Z,108nm,0.6s
ANN pmax pmax
comp=E,39nm,0.6s
LZH Lanzhou 26.64 81 ⇑P **P 21 12 43.5 +2.0**
LZH pP pP 21 13 26.0 +2.9
LZH PP **PnPn 21 13 38.0 +2.4**
LZH sP sP 21 13 49.0 +1.8
LZH PcP **PcP 21 16 01.0 +1.3**
LZH S **S 21 17 00.5 -0.6**
LZH SS SS 21 18 34.3 -28

LZH ScP **ScP 21 19 20.0 +0.1**
LZH ScS **ScS 21 23 10.0 -0.9**
LZH pmax pmax
comp=E,510nm,1.3s
LZH pmax pmax
comp=E,3μm,5.0s
LZH LR LR
comp=E,3μm,10.5s
LZH LR LR
comp=E,4μm,10.1s
LZH LR LR
comp=E,5μm,11.0s
SVSK Karacayir 26.65 288 *e*P pP 21 13 20.8 -2.1
GAZ Gaziantep 26.77 282 *e*P **P 21 12 44.9 +2.4**
ERBA Erbaa 26.80 290 *i* P **P 21 12 43.4 +0.7**
CUALT Altinyayla-SIV 26.88 286 *i* P **P 21 12 46.4 +2.8**
VSR Storozhevoye 26.89 313 *e*P **P 21 12 43.4 +0.1**
VSR *e*S **S 21 17 01.6 -2.7**
VSR pmax pmax
comp=Z,330nm,1.1s
VSR smax smax
comp=N,350nm,3.9s
KUZU Kuzuini 26.94 281 *i* P **P 21 12 45.0 +1.0**
TOKT Tokat 26.98 289 *e*P **P 21 12 42.4 -1.9**
TOKA Tokat 27.03 289 *i* P **P 21 12 45.6 +0.9**
VORR Voronezh 27.03 314⇑*i*P **P 21 12 45.0 +0.4**
VORR pmax pmax
comp=Z,1μm,1.4s
ZAK Zakamensk 27.21 49 *e*P **P 21 12 47.0 +0.7**
ZAK pmax pmax
comp=Z,186nm,1.2s
SAMS Samsun-Alacam 27.21 291 *i* P **P 21 12 44.8 -1.6**
CUSAR Sarkisla-SIVAS 27.27 287 *i* P **P 21 12 48.8 +1.8**
DRWC Darouich 27.29 281 *e*P **P 21 12 43.5 -3.6**
ROOS tl_alroos 27.31 275 *e*P **P 21 12 44.7 -2.6**
KVT Kavak 27.33 290 *e*P **P 21 12 49.2 +1.8**
LPSR Galich'ya Gora 27.55 316 *e*P **P 21 12 49.7 +0.5**
LPSR *e*S **S 21 17 13.8 -0.8**
LPSR pmax pmax
comp=Z,600nm,1.1s
LPSR smax smax
comp=N,650nm,4.4s
BTCH Batrach 27.56 280 *e*P **P 21 12 44.2 -5.3**
HAVZ Havza 27.57 290 *i* P **P 21 12 50.6 +1.0**
ZALF Zalf 27.60 273 *e*P **P 21 12 47.0 -2.9**
BNN Bunyan 27.63 286 *e*P **P 21 12 52.3 +2.1**
WRDH Warideh 27.70 278 *e*P **P 21 12 47.9 -3.0**
TAHT Tahtakopru-Hat 27.71 280 *e*P pP 21 13 28.9 -3.7
TLY Talaya 27.85 46 P **P 21 12 54.0 +2.1**
comp=N,72nm,0.7s,baz=240,slow=9.0,SNR=78
TLY pP **pP 21 13 35.9 +2.2**
comp=N,74nm,0.8s,baz=250,slow=9.1,SNR=5.5
TLY Talaya 27.85 46*c i*P **P 21 12 54.0 +2.1**
TLY *e*S **S 21 17 21.6 +2.1**
TLY *e*SS SS 21 18 54.4 -32
TLY pmax pmax
comp=Z,388nm,1.8s
TLY Talaya 27.85 46 *e*P **P 21 12 53.5 +1.5**
comp=Z,235nm,1.1s
TLY *e*pP **pP 21 13 35.1 +1.4**
DIKM Dikmen 27.91 292 *e*P **P 21 12 54.1 +1.6**
HAWK Haweek 27.93 276 *e*P **P 21 12 50.1 -2.8**
SNOP Sinop 27.94 292 *e*P **P 21 12 53.9 +1.2**
CEYT Ceyhan 27.95 282 *e*P **P 21 12 55.6 +2.7**
CD2 Chengdu 27.95 92 P **P 21 12 55.0 +1.9**
CD2 pP pP 21 13 36.8 +1.9
CD2 sP PP 21 14 00.1 -0.4
CD2 S **S 21 17 23.8 +2.2**
CD2 sS sS 21 18 39.3 +2.8
CD2 pmax pmax
comp=Z,940nm,1.0s
CD2 pmax pmax
comp=Z,2μm,5.4s
ARNB Al Arnab 27.98 279 *e*P **P 21 12 47.7 -5.6**
SALA Sala 28.15 272 *e*P **P 21 12 50.7 -4.3**
COAL Corum-Alaca 28.17 289 *i* P **P 21 12 54.2 -0.8**
BOYT Boyabat 28.18 291 *i* P **P 21 12 57.0 +2.0**
ASF Jabal al Asfar 28.18 271 P **P 21 12 56.5 +1.4**
comp=Z,5.5nm,0.8s,baz=32,slow=12,SNR=8.2
TOTH TOTAH 28.21 274 *e*P P 21 12 50.4 -4.9
TRD Trivandrum 28.36 167 *e*P **P 21 12 58.3 +1.6**
TRD Trivandrum 28.36 167⇑*i*P P 21 13 11.6 +15
TRD *i* S S 21 17 41.6 +14
IRK Irkutsk 28.41 46 *e*P **P 21 12 56.9 0.0**
IRK pmax pmax
comp=Z,557nm,1.8s
SONM Songino Array 28.56 55 P **P 21 12 59.8 +1.4**
comp=Z,153nm,0.9s,baz=258,slow=9.3,SNR=708
SONM pP **pP 21 13 42.7 +2.5**
comp=Z,89nm,1.0s,baz=260,slow=8.4,SNR=3.9
SONM P3KPbc 21 45 12.7
comp=Z,3.0nm,0.7s,baz=98,slow=3.7,SNR=19
BRBR Barbar 28.58 274 *e*P P 21 12 51.6 -7.2
NIG Nigde 28.68 284 *e*P pP 21 13 40.1 -1.5
TCHB Talchebab 28.78 273 *e*P **P 21 12 56.6 -3.7**
SIM Simferopol' 28.84 299*c i*P **P 21 13 01.3 +0.6**
SIM *e**PP **pP 21 13 39.0 -3.6**
SIM *e*S **S 21 17 35.0 0.0**
SIM pmax pmax
comp=Z,345nm,2.5s
ULN Ulaanbaatar 29.00 55 *e*P **P 21 13 03.5 +1.2**
ULN pmax pmax
comp=Z,300nm,1.3s
ULN Ulaanbaatar 29.00 55 P **P 21 13 03.8 +1.5**
SNR=122
ULN Ulaanbaatar 29.00 55 P **P 21 13 03.8 +1.5**
SNR=122
ULN P **P 21 13 03.8 +1.5**
SNR=122
ULN Ulaanbaatar 29.00 55 *e*P **P 21 13 03.5 +1.2**
comp=Z,303nm,1.3s
ULN *e*pP **pP 21 13 44.9 +0.6**
MMAI Mount Meron Ar 29.13 274 P **P 21 13 05.3 +1.8**
comp=Z,1.8nm,0.3s,baz=80,slow=11,SNR=27
MMAI PcP **PcP 21 16 06.6 +0.9**
comp=Z,25nm,0.7s,baz=75,slow=6.4,SNR=11
BRTR Keskin Array B 29.24 288 P **P 21 13 05.5 +1.0**
comp=Z,17nm,0.6s,baz=104,slow=8.8,SNR=186
BRTR pP **pP 21 13 43.4 -3.2**
comp=Z,50nm,0.9s,baz=92,slow=8.2,SNR=4.5
BRTR P3KPbc 21 45 09.2
comp=Z,2.7nm,1.0s,baz=251,slow=3.8,SNR=13
MOS Moscow 29.58 321α*i*P **P 21 13 08.3 +1.3**
MOS *e**PP **pP 21 13 48.1 -1.0**
MOS *i* 21 14 13.8
MOS *e* 21 16 07.9
MOS *i* S **S 21 17 45.9 -0.4**
MOS *e**SS **sS 21 18 55.6 -5.8**
MOS *e* 21 23 19.8
MOS pmax pmax
comp=Z,4μm,1.8s
MOS pmax pmax
comp=E,800nm,1.2s
MOS pmax pmax
comp=Z,2μm,1.5s
MOS pmax pmax
comp=N,223nm,0.9s
MOS pmax pmax
comp=E,628nm,1.1s
KMI Kunming 29.60 103 P **P 21 13 08.9 +1.0**
KMI pP pP 21 13 51.9 +2.0
KMI sP sP 21 14 13.6 -0.3
KMI PP **PP 21 14 18.8 -0.2**
KMI S **S 21 17 47.6 -0.2**
KMI sS sS 21 19 02.3 -0.5
KMI ScP **ScP 21 19 27.3 -2.0**
KMI pmax pmax
comp=E,140nm,0.9s
KMI pmax pmax
comp=E,2μm,3.5s
KMI LR LR
comp=E,2μm,10.4s
KMI LR LR
comp=E,3μm,14.0s
KMI LR LR
comp=E,2μm,14.0s
PHNC Paralimni 29.71 278 P pP 21 13 56.0 +5.4
CMAI Chiengmai2 29.74 116 P **P 21 13 08.8 -0.3**
comp=E,127nm,1.4s,comp=E,3μm
OBN Obninsk 29.85 320*c i*P **P 21 13 10.2 +0.8**
OBN *i* *PP **pP 21 13 51.5 0.0**
OBN *e*S **S 21 17 46.3 -4.3**
OBN *i* SS SS 21 19 48.3 -17
OBN pmax pmax

comp=Z,2μm,1.8s
OBN Obninsk 29.85 320 *e*P **P 21 13 10.2 +0.8**
comp=Z,419nm,0.6s
OBN *e*pP **pP 21 13 52.4 +0.9**
ANTO Ankara 29.88 288 *e*P **P 21 13 11.0 +1.0**
ANTO pmax pmax
comp=Z,300nm,1.2s
ANTO Ankara 29.88 288 *e*P **P 21 13 11.0 +1.0**
comp=Z,296nm,1.2s
CSS Mathiatis 30.28 278 *e*P **P 21 13 14.1 +0.6**
comp=Z,13nm,0.9s
CSS *e*pP **pP 21 13 56.5 +0.8**
MAMC Mammari 30.32 279 P pP 21 13 56.9 +0.8
CHTO Chiang Mai 30.38 118 P **P 21 13 14.6 0.0**
comp=Z,835nm,1.3s,comp=Z,13μm
CHTO Chiang Mai 30.38 118 *e*P **P 21 13 14.9 +0.3**
CHTO pmax pmax
comp=Z,230nm,1.2s
CHTO Chiang Mai 30.38 118 P **P 21 13 15.2 +0.6**
SNR=60
CHTO Chiang Mai 30.38 118 P **P 21 13 15.2 +0.6**
SNR=60
CHTO Chiang Mai 30.38 118 *e*P **P 21 13 14.9 +0.3**
comp=Z,79nm,0.7s
CHTO *e*pP **pP 21 13 57.1 +0.4**
CMMT Chiang Mai 30.39 118 P **P 21 13 14.6 0.0**
comp=Z,182nm,1.9s,comp=Z,3μm
PALK Pallekele 30.42 160 *i* P **P 21 13 16.6 +1.7**
SNR=7.1
PALK Pallekele 30.42 160 *i* P **P 21 13 16.8 +1.9**
PALK Pallekele 30.42 160 *e*P **P 21 13 15.6 +0.7**
comp=Z,83nm,0.8s
PALK *e* 21 13 55.3
KONT Konya--Tatoy 30.46 285 *e*P **P 21 13 17.2 +2.1**
CRAI Chiangrai 30.52 114 P **P 21 13 16.5 +0.7**
comp=Z,2μm,1.4s
DGPR DIGLIPUR 30.55 134 *e*P **P 21 13 16.2 +0.2**
LEF Lefka 30.60 279 *e*P **P 21 13 17.9 +1.6**
CMAR Chiang Mai Arr 30.62 118 P **P 21 13 17.5 +0.9**
comp=Z,171nm,0.9s,baz=298,slow=8.0,SNR=404
CMAR PcP **PcP 21 16 08.1 -1.7**
comp=Z,51nm,1.0s,baz=301,slow=4.5,SNR=5.9
CMAR ScP **ScP 21 19 31.3 -1.1**
comp=Z,17nm,0.9s,baz=294,slow=4.7,SNR=5.2
CMAR PKiKP **PKiKP 21 23 39.4 -1.1**
comp=Z,1.8nm,0.7s,baz=279,slow=1.5,SNR=4.4
CMAR P3KPbc 21 45 06.1
comp=Z,0.5nm,0.8s,baz=134,slow=3.1,SNR=4.6
CMAR Chiang Mai Arr 30.62 118 P **P 21 13 17.5 +0.9**
CMAR 21 16 08.1
CMAR pmax pmax
comp=Z,174nm,0.9s
SZAC Souni 30.69 278 P pP 21 14 01.1 +1.7
KIZT Kizilcal 30.70 286 *e*P **P 21 13 18.4 +1.1**
KDZE Karadeniz Ereo 30.78 291 *e*P **P 21 13 17.9 0.0**
GAZI Gazipasa 30.81 281 *i* P pP 21 14 00.6 +0.2
ALFC Alefka 30.82 279 P pP 21 13 57.8 -2.7
BTO Baotou 30.85 70 *e*P **P 21 13 19.8 +1.2**
AUMIH MIHALICIK 30.88 288 *i* P **P 21 13 20.4 +1.5**
AUSIV SIVRIHISAR 30.89 288 *i* P **P 21 13 19.9 +1.0**
SVRH Sivrihisar-ESK 30.90 288 *e*P **P 21 13 20.6 +1.5**
MDUB Mudurnu 31.04 290 *e*P **P 21 13 21.3 +1.1**
LAMP Lampang 31.07 117 P **P 21 13 21.2 +0.6**
comp=Z,76nm,1.0s,comp=Z,594nm
AKMC Akamas 31.07 279 P pP 21 14 00.3 -2.4
XAN Xi'an 31.16 83 P **P 21 13 22.1 +0.8**
XAN sP sP 21 14 25.1 -2.4
XAN S **S 21 18 12.5 +0.8**
XAN sS sS 21 19 27.8 +0.9
XAN ScP **ScP 21 19 33.3 -0.8**
XAN pmax pmax
comp=Z,410nm,1.1s
XAN pmax pmax
comp=Z,1μm,5.3s
XAN LR LR
comp=Z,2μm,12.9s
XAN LR LR
comp=Z,3μm,13.6s
XAN LR LR
comp=Z,3μm,14.3s
BTAS Taskesti 31.18 290 *i* P **P 21 13 22.4 +1.0**
SAHE Sakarya_HENDEK 31.26 290 *i* P **P 21 13 23.1 +1.0**
ESKT Eskisehir 31.41 288 *i* P **P 21 13 23.8 +0.3**
KLMR Klimovskoe 31.44 331*c i*P **P 21 13 23.4 +0.1**
KLMR *e*S **S 21 18 14.2 -1.0**
KLMR pmax pmax
comp=Z,818nm,1.1s
GULT Gulveren 31.56 290 *e*P **P 21 13 26.3 +1.5**
SUTC Sutluce-Ispart 31.60 284 *e*P **P 21 13 26.0 +0.7**
PBA Port Blair 31.66 136 *e*P P 21 13 27.5 +1.7
BORA Eskisehir 31.67 289 *i* P **P 21 13 26.3 +0.6**
BAGO Egridir - ISPA 31.68 285 *i* P pP 21 14 09.0 +0.8
SPNC Sapanca-Adapaz 31.69 290 *e*P **P 21 13 26.4 +0.6**
KAND Kocaeli-Kandir 31.74 291 *i* P **P 21 13 23.7 -2.5**
HAJJ Hajjah 31.75 237 *e*P **P 21 13 27.8 +1.0**
ISP Isparta 31.91 285 P **P 21 13 28.4 +0.5**
BCK Bucak 31.93 284 *e*P **P 21 13 26.9 -1.1**
HHC Hu-ho-hao-te 32.00 69 *e*P **P 21 13 30.3 +1.7**
HHC pP pP 21 14 16.3 +5.3
HHC S **S 21 18 25.9 +1.2**
HHC sS sS 21 19 43.6 +3.5
HHC pmax pmax
comp=Z,150nm,1.3s
HHC pmax pmax
comp=Z,2μm,4.9s
HHC LR LR
comp=Z,5μm,13.5s
HHC LR LR
comp=Z,7μm,13.9s
HHC LR LR
comp=Z,6μm,13.8s
DAMY Dhamar 32.04 234 *e*P **P 21 13 30.3 +0.9**
comp=Z,90nm,0.9s
GYA Guiyang 32.08 98⇑*i*P **P 21 13 30.3 +0.8**
GYA pP pP 21 14 13.0 +1.2
GYA sP sP 21 14 37.4 +1.7
GYA PP **PP 21 14 46.8 +0.5**
GYA PcP **PcP 21 16 15.3 +1.6**
GYA S **S 21 18 27.0 +0.8**
GYA ScS **ScS 21 23 35.5 -1.4**
GYA pmax pmax
comp=Z,440nm,1.0s
GYA pmax pmax
comp=Z,1μm,9.3s
GYA LR LR
comp=Z,2μm,16.5s
GYA LR LR
comp=Z,2μm,14.0s
GYA LR LR
comp=Z,1μm,14.3s
CAVI Cavuskoy 32.10 289 *e*P **P 21 13 30.7 +1.3**
ADVT Abdulvahap 32.15 290 *e*P **P 21 13 31.1 +1.3**
SILT Sile 32.15 291 *e*P **P 21 13 29.4 -0.4**
HRT Hereke 32.16 291 *e*P **P 21 13 30.9 +0.9**
KORT Korkueli 32.20 283 *i* P **P 21 13 31.3 +0.8**
UTTA Uttaradit 32.23 117 P **P 21 13 31.5 +0.7**
comp=Z,124nm,1.0s,comp=Z,1μm
IZI Iznik 32.36 290 *e*P **P 21 13 31.6 -0.2**
TVSB Tavsanli 32.48 288 *e*P **P 21 13 34.2 +1.3**
GEMT Gemlik 32.57 290 *e*P **P 21 13 33.5 +0.1**
BUY Buyukada 32.58 291 *i* P **P 21 13 33.7 +0.2**
IGD Bursa 32.58 290 *i* P **P 21 13 32.6 -0.9**
KLYT Kilyos 32.59 291 *e*P **P 21 13 34.3 +0.7**
ISK Istanbul-Kandi 32.60 291 *e*P **P 21 13 35.0 +1.3**
ISK Istanbul-Kandi 32.60 291 P **P 21 13 34.7 +1.0**
TLCR 32.60 299⇓*i*P **P 21 13 34.7 +1.1**
ELL Elmali 32.60 283 *e*P **P 21 13 34.8 +0.8**
KHL Karahalli 32.61 286 *e*P **P 21 13 34.3 +0.3**
KHAL Karahalli 32.62 286 *i* P **P 21 13 35.2 +1.1**
KIS Kishinev 32.66 302⇑*i*P **P 21 13 35.0 +0.8**
comp=Z,600nm,2.0s
KIS *i* pP **pP 21 14 18.0 +1.4**
KIS Kishinev 32.66 302 *e*PP PP 21 14 54.0 +1.6
KIS Kishinev 32.66 302 *i* PcP **PcP 21 16 08.0 -6.8**
KIS ⇓*i*S **S 21 18 36.0 +1.4**
comp=Z,4μm,12.0s
KIS *i* sS **sS 21 19 51.0 +1.0**
KIS *i* SS SS 21 20 38.0 -21
KIS *i* LQ LQ 21 23 40.0
KIS LRM MLR 21 29 16.0
comp=Z,2μm,12.0s
KIS Kishinev 32.66 302⇓*i*P **P 21 13 35.3 +1.1**
KIS Kishinev 32.66 302*α i*P **P 21 13 35.0 +0.8**
KIS *e* 21 14 54.0
KIS *i* S **S 21 18 36.0 +1.4**
KIS 21 23 40.0
KIS pmax pmax
comp=E,1μm,4.0s
KIS pmax pmax
comp=Z,1μm,4.0s
KIS smax smax
comp=N,4μm,12.0s
KIS smax smax
comp=E,4μm,10.0s
KIS MLR MLR
comp=Z,2μm,11.0s
KIS MLR MLR
comp=Z,2μm,12.0s
EFOR EFORIE 32.73 297⇓*i*P **P 21 13 36.8 +2.0**
MANR Mangalia 32.77 296⇑*i*P **P 21 13 36.6 +1.4**
GOLH Golhisar 32.77 284 *i* P **P 21 13 35.8 +0.4**
ARMT Armutlu 32.80 290 *e*P **P 21 13 36.2 +0.7**
ENH Enshi 32.80 89 *e*P **P 21 13 36.9 +1.3**
comp=Z,860nm,1.1s
BGKT Bogazkoy 32.80 291 *e*P **P 21 13 36.9 +1.5**
AKASG Malin Array Be 32.82 309 P **P 21 13 35.2 -0.3**
comp=Z,93nm,0.7s,baz=84,slow=7.4,SNR=85
AKASG pP **pP 21 14 17.1 -0.8**
comp=Z,230nm,0.8s,baz=83,slow=7.3,SNR=9.8
AKASG ScP **ScP 21 19 37.9 -1.4**
comp=Z,27nm,0.8s,baz=76,slow=3.9,SNR=7.4
KIEV Kiev 32.83 309*c i*P **P 21 13 35.4 -0.2**
KIEV pmax pmax
comp=Z,93nm,0.9s
KIEV Kiev 32.83 309 *e*P **P 21 13 35.8 +0.2**
comp=Z,190nm,0.8s
KIEV *e*pP **pP 21 14 18.7 +0.7**
GLHS Glhisar (BURDU 32.84 284 *e*P **P 21 13 35.5 -0.5**
TIRR Tirgusor 32.88 297 *e*P **P 21 13 36.8 +0.6**
TIRR pmax pmax
comp=Z,530nm,1.9s
TIRR Tirgusor 32.88 297 *e*P **P 21 13 36.8 +0.6**
comp=Z,534nm,1.9s
TIRR *e*pP **pP 21 14 19.4 +0.8**
AKAS Kas 32.95 282 *i* P **P 21 13 37.0 0.0**
KSL Kastellorizon 32.98 282 P **P 21 13 36.9 -0.2**
CTKS Kestanelik-??a 33.00 291 *e*P **P 21 13 38.3 +1.2**
LEOM Leova 33.03 301 *e*P **P 21 13 38.2 +0.9**
LEOM Leova 33.03 301⇑*i*P **P 21 13 38.3 +0.9**
SORM Soroca 33.06 304⇑*i*P **P 21 13 37.8 +0.2**
PSN Preselentsi 33.07 296 *i* P **P 21 13 39.2 +1.4**
CFR Carcaliu 33.08 299⇑*i*P **P 21 13 38.7 +0.9**
DENT Denizli 33.09 285 *e*P **P 21 13 33.8 -4.3**
DNZL Cakiroluk 33.09 285 *i* P **P 21 13 38.5 +0.3**
TIY Taiyuan 33.11 75 *e*P **P 21 13 39.5 +1.2**
TIY pP **pP 21 14 24.4 +3.6**
TIY sP **sP 21 14 44.4 -0.3**
TIY S **S 21 18 44.4 +2.5**
TIY sS **sS 21 19 58.3 +0.8**
TIY pmax pmax
comp=Z,610nm,1.7s
TIY LR LR
comp=Z,2μm,6.0s
TIY LR LR
comp=Z,3μm,6.2s
TIY LR LR
comp=Z,2μm,13.8s
CTYL Yalikoy Yolu 33.14 292 *e*P **P 21 13 39.6 +1.3**
DURS Dursunbey 33.22 289 *i* P **P 21 13 40.2 +1.0**
KCTX Karacabey (Bur 33.22 290 *e*P **P 21 13 39.2 0.0**
HARR Harsova 33.23 298⇑*i*P **P 21 13 40.0 +0.9**
KULA Kula-Manisa 33.24 287 *e*P **P 21 13 40.6 +1.2**
KULA Kula-Manisa 33.24 287 P **P 21 13 40.3 +0.9**
FETY Fethiye 33.27 283 *e*P P 21 13 33.1 -6.6
FETY Fethiye 33.27 283 P **P 21 13 39.2 -0.4**
PBKT Sadao Pong 33.31 118 P **P 21 13 41.3 +1.2**
comp=Z,538nm,1.3s,comp=Z,5μm
MANT Manisa 33.33 286 *i* P **P 21 13 41.2 +0.9**
SRDT SRDT 33.57 124 P **P 21 13 43.7 +1.4**
comp=Z,1μm,1.1s,comp=Z,16μm
EDC Edincik 33.58 290 *e*P **P 21 13 43.8 +1.6**
TURN Turunc 33.60 284 *i* P **P 21 13 45.7 +3.3**
PRD Provadia 33.66 295 *i* P **P 21 13 44.1 +1.2**
BALB Balikesir 33.67 289 *e*P **P 21 13 43.6 +0.6**
PHSR Pinarhisar 33.69 292 *e*P **P 21 13 43.4 +0.2**
PETR Petresti 33.72 300⇑*i*P **P 21 13 45.8 +2.5**
MRMT Marmara Adasi 33.75 290 *e*P **P 21 13 42.9 -0.9**
AKHS Akhisar 33.84 287 *i* P **P 21 13 45.1 +0.6**
ODBI Odobesti 33.84 300⇑*i*P **P 21 13 46.9 +2.5**
KNL Bal¯kesir 33.85 290 *i* P **P 21 13 42.8 -1.7**
BALY Balya 33.85 289 *i* P **P 21 13 45.0 +0.4**
CIT Chita 33.87 49 *e*P **P 21 13 45.0 +0.4**
CIT *e* 21 14 47.7
CIT *e* 21 18 50.1
CIT pmax pmax
comp=Z,1μm,1.3s
PGOR Pogoanele 33.90 298⇓*i*P **P 21 13 47.6 +2.7**
GRER 33.90 299⇑*i*P **P 21 13 47.3 +2.4**
AYDN Tasoluk 34.00 285 *i* P **P 21 13 46.6 +0.6**
KRBG Karabiga-Canak 34.00 290 *e*P **P 21 13 47.2 +1.3**
TMCR Tamitsa 34.02 335 *e*P **P 21 13 46.9 +1.3**
TMCR *e*S **S 21 18 56.1 +1.1**
TMCR pmax pmax
comp=Z,2μm,1.5s
SART Tekirdag 34.05 291 *i* P **P 21 13 46.7 +0.3**
RKY Sarkoy-Tekirda 34.06 291 *e*P **P 21 13 47.2 +0.8**
VRI Vrincioaia 34.07 300 *e*P **P 21 13 48.2 +1.8**
VRI Vrincioaia 34.07 300⇑*i*P **P 21 13 48.2 +1.8**
VRI Vrincioaia 34.07 300 P **P 21 13 47.7 +1.3**
PLOR Plostina 34.12 300⇑*i*P **P 21 13 49.2 +2.3**
TESR Tescani 34.13 301⇑*i*P **P 21 13 48.0 +1.1**
ISR Istrita 34.21 299⇑*i*P **P 21 13 50.3 +2.7**
NRIK Noril'sk 34.24 11 P **P 21 13 49.2 +1.7**
comp=Z,951nm,0.9s,baz=203,slow=5.7,SNR=896
EDRB Edirne 34.25 293 *e*P **P 21 13 49.2 +1.2**
EDRB Edirne 34.25 293 P **P 21 13 48.8 +0.8**
JMB Yambol 34.31 294 *i* P **P 21 13 50.3 +1.8**
MICGM Minsk 34.40 315⇑*i*P **P 21 13 48.0 -1.0**
MICGM PM 21 13 50.0
comp=Z,1.3nm,1.5s
MICGM PM 21 13 50.0
comp=E,2.5nm,1.5s
MICGM *e*pP **pP 21 14 30.0 -1.7**
MICGM *e*PP **sP 21 14 52.0 -3.6**
MICGM *e*PPP PPP 21 15 10.0
MICGM *e*PcP PcP 21 16 10.0 -10
MICGM *e*S **S 21 18 58.0 -3.1**
MICGM *e*sS **sS 21 20 12.0 -4.9**
MICGM *e*SS SS 21 21 05.0 -32
MICGM *e*SSS SSS 21 21 52.0
MNK Minsk 34.40 315⇑*i*P **P 21 13 48.0 -1.0**
MNK *e**PP **pP 21 14 30.0 -1.7**
MNK *e*PPP PPP 21 15 10.0
MNK *e*S **S 21 18 58.0 -3.1**
MNK pmax pmax
comp=Z,1μm,1.5s
MNK pmax pmax
comp=E,2μm,1.5s
LPK Lapseki 34.41 290 *e*P **P 21 13 50.7 +1.3**
KESN Edirne-Kesan 34.41 291 *i* P **P 21 13 50.3 +0.4**
SULR 34.42 298⇑*i*P **P 21 13 51.5 +2.1**
PRAR RASCA 34.45 303⇓*i*P **P 21 13 51.0 +1.4**
GCAM G?zelcaml? 34.50 285 *i* P **P 21 13 51.2 +1.0**
PLAR PLOIESTI 34.58 298⇓*i*P **P 21 13 53.2 +2.5**
MLR Muntele Rosu 34.62 299 P **P 21 13 53.5 +2.2**
comp=E,40nm,0.9s,baz=67,slow=1.8,SNR=475
MLR Muntele Rosu 34.62 299⇑*i*P **P 21 13 53.7 +2.4**
MLR Muntele Rosu 34.62 299 *e*P **P 21 13 52.7 +1.4**
comp=E,1μm,1.1s
AYVA Ayvalik 34.63 288 *i* P **P 21 13 49.9 -1.4**
GELI Tayfur-Gelibol 34.63 290 *e*P **P 21 13 52.7 +1.5**
SZH Strazhica 34.73 295 *i* P **P 21 13 53.1 +1.0**
KHON Khomkaen 34.79 117 P **P 21 13 53.5 +0.7**
comp=E,149nm,0.8s,comp=E,1μm
SMG Samos 34.80 286 P **P 21 13 53.6 +0.8**
EZN Ezine 34.82 289 P **P 21 13 53.8 +0.9**
ENEZ Enez 34.82 291 *e*P **P 21 13 54.3 +1.4**
ENEZ Enez 34.82 291 P **P 21 13 53.8 +0.9**
PUL Pulkovo 34.84 325*c e*P **P 21 13 53.8 +1.0**
PUL pmax pmax
comp=Z,2μm,1.5s
URLA Izmir 34.87 287 *i* P **P 21 13 53.8 +0.5**
ALN Alexandroupoli 34.88 291 *e*P **P 21 13 55.0 +1.6**
ALN Alexandroupoli 34.88 291 P **P 21 13 54.0 +0.6**
PRK Paraskevi 34.96 288 P **P 21 13 54.8 +0.8**
ZEY ¯zmir 34.96 287 *i* P **P 21 13 54.0 -0.1**
DOPR Dopca 35.01 300⇓*i*P **P 21 13 56.1 +1.7**
BOZC Bozcaada 35.03 289 *i* P **P 21 13 54.3 -0.4**
KARP Karpathos 35.04 282 *e*P **P 21 13 53.7 -1.2**
KARP Karpathos 35.04 282 *e*P **P 21 13 55.4 +0.5**
comp=Z,165nm,1.0s
NACGM Naroch 35.11 316 *e*P **P 21 13 55.0 -0.1**
NACGM *e*P **P 21 13 55.0 -0.1**
NACGM PM 21 13 59.0
comp=Z,1.7nm,1.0s
NACGM *e*pP **pP 21 14 40.0 +2.1**
NACGM *e*PP **sP 21 15 00.0 -1.8**
NACGM *e*PPP PPP 21 15 18.0
NACGM *e*PcP **PcP 21 16 18.0 -3.7**
NACGM *e*S **S 21 19 10.0 -2.0**
NACGM *e*sS **sS 21 20 22.0 -6.0**
NACGM *e*SS SS 21 20 49.0 -64
NACGM *e*SSS SSS 21 21 26.0
NACGM *e*LQ LQ 21 24 28.0
NACGM *e*LR LR 21 26 19.0
BURAR Bucovina Array 35.14 303⇑*i*P **P 21 13 57.0 +1.4**
PVL Pavlikeni 35.17 295 *i* P **P 21 13 58.2 +2.4**
SKNT Sakolnakorn 35.22 114 P **P 21 13 56.8 +0.3**
comp=Z,571nm,1.3s,comp=Z,8μm
IDID Didziasalis 35.23 317 *e*P **P 21 13 57.2 +1.1**
IDID IAmb IAmb 21 13 59.0
comp=Z,205nm,1.2s
MTUR Matau 35.25 299⇓*i*P **P 21 13 58.1 +1.5**
VOIR 35.25 299⇓*i*P **P 21 13 57.8 +1.2**
CHOS Chios island 35.28 287 *e*P **P 21 13 57.7 +0.8**
CHOS Chios island 35.28 287 P **P 21 13 57.9 +1.0**
SIGR SIGRI 35.28 288 *e*P **P 21 13 58.1 +1.3**
SIGR SIGRI 35.28 288 P **P 21 13 57.1 +0.3**
SMTH Samothraki Isl 35.33 291 P **P 21 13 58.0 +0.8**
GOLR 35.34 298⇓*i*P **P 21 13 59.3 +2.1**
HUMR Humele 35.34 298⇑*i*P **P 21 13 58.7 +1.5**
BOD Bodaibo 35.55 39⇓*i*P **P 21 13 59.3 +0.5**
BOD pmax pmax
comp=Z,376nm,1.1s
ARR Arges 35.55 299⇑*i*P **P 21 14 00.5 +1.4**
BJT Baijiatuau 35.59 70 *e*P **P 21 14 00.7 +1.3**
BJT *e* 21 16 23.8
BJT pmax pmax
comp=Z,62nm,0.8s
BJT Baijiatuau 35.59 70 *e*P **P 21 14 00.7 +1.3**
comp=Z,62nm,0.8s
BJT *e*PcP **PcP 21 16 23.8 +0.4**
BJT *e*ScP **ScP 21 19 49.1 -0.3**
BJI Beijing 35.59 70 P **P 21 14 00.6 +1.2**
BJI pP **pP 21 14 40.8 -1.5**
BJI PP **PP 21 15 23.8 -0.9**
BJI PcP **PcP 21 16 23.8 +0.4**
BJI S **S 21 19 18.0 -1.7**
BJI SS **SS 21 21 58.0 -5.8**
BJI ScS **ScS 21 23 56.3 +1.6**
BJI pmax pmax
comp=Z,88nm,1.3s
BJI pmax pmax
comp=Z,3μm,4.9s
BJI LR LR
comp=Z,4μm,12.5s
BJI LR LR
comp=Z,3μm,13.2s
BJI LR LR
comp=Z,3μm,22.2s
IZAR Zarasai 35.61 317 *e*P **P 21 14 00.6 +1.2**
IZAR IAmb IAmb 21 14 02.3
comp=Z,265nm,1.2s
ISAL Salakas 35.63 317 *e*P **P 21 14 00.8 +1.2**
ISAL IAmb IAmb 21 14 02.6
comp=Z,222nm,1.2s
LIA Limnos Island 35.68 290 P **P 21 14 00.7 +0.5**
MDB Medias 35.70 300⇑*i*P **P 21 14 02.8 +2.4**
ARCR ARCALIA 35.72 302⇓*i*P **P 21 14 02.6 +2.2**
APE Apeiranthos 35.96 285 *e*P **P 21 14 04.5 +1.8**
APE Apeiranthos 35.96 285⇓*i*P **P 21 14 03.3 +0.6**
APE Apeiranthos 35.96 285 P **P 21 14 04.0 +1.3**
APE Apeiranthos 35.96 285*c i*P **P 21 14 03.2 +0.6**
APE pmax pmax
comp=Z,65nm,0.9s
KAVA Kavala 36.02 292 P **P 21 14 03.8 +0.7**
LVV L'vov 36.03 307 *e*P **P 21 14 03.5 +0.5**
LVV *e* 21 15 28.7
LVV *e*S **S 21 19 26.9 +0.8**
LVV *e*SS **SS 21 22 11.0 -1.4**
LVV MLR MLR
comp=N,700nm,15.0s
LVV MLR MLR
comp=E,400nm,15.0s
LVV MLR MLR
comp=Z,1μm,15.0s
VSU Vasula 36.10 322*c i*P **P 21 14 03.9 +0.4**
VSU pmax pmax
comp=Z,1μm,0.8s
CMBY CAMPBELL BAY 36.15 138 *e*P **P 21 14 04.8 +0.4**
LOT Lotru 36.15 299⇑*i*P **P 21 14 05.4 +1.1**
SANT Santorini 36.17 284 *e*P **P 21 14 04.5 0.0**
comp=Z,890nm,1.8s
SANT pP **pP 21 14 48.0 +0.5**
CJR Cluj-Napoca 36.24 301⇑*i*P **P 21 14 06.9 +2.0**
THR5 Thira Island, 36.25 284 *e*P **P 21 14 02.5 -2.6**
BMR Baia Mare 36.30 303⇑*i*P **P 21 14 07.2 +1.8**
MPEP Malo Peshtene 36.32 296 P **P 21 14 06.9 +1.3**
NVR1 Nevrokopi 36.46 292 P **P 21 14 07.3 +0.5**
LAST Lasithi 36.47 282⇓*i*P **P 21 14 07.9 +0.9**
LAST Lasithi 36.47 282 P **P 21 14 07.8 +0.8**
LAST Lasithi 36.47 282 *e*P **P 21 14 07.8 +0.8**
comp=Z,523nm,1.2s
OUR Ouranopolis 36.52 291 *e*P **P 21 14 08.1 +0.8**
OUR Ouranopolis 36.52 291 P **P 21 14 07.9 +0.6**
MMB Musomiste 36.52 293 *i* P **P 21 14 08.4 +1.0**
WHN Wuhan 36.62 86⇑*i*P **P 21 14 09.8 +1.5**
WHN sP **sP 21 15 13.4 -1.7**
WHN S **S 21 19 36.8 +1.3**
WHN ScP **ScP 21 19 52.3 -1.1**
WHN sS **sS 21 20 50.0 -1.9**
WHN pmax pmax
comp=Z,1μm,1.1s
WHN pmax pmax
comp=Z,6μm,4.1s
SRS Serrai 36.69 292 P **P 21 14 09.3 +0.5**
DEV Deva 36.74 300⇓*i*P **P 21 14 11.0 +1.9**
AOS Alonnisos 36.80 289 *e*P **P 21 14 10.6 +0.9**
AOS Alonnisos 36.80 289 P **P 21 14 10.2 +0.5**
PAIG Paliouri 36.81 290 P **P 21 14 10.7 +0.9**
DRGR 36.84 302⇑*i*P **P 21 14 11.6 +1.5**
KWP Kalwaria Pacla 36.87 306 *i* P **P 21 14 11.4 +1.2**
comp=Z,2μm,3.8s
KWP *e*pP **pP 21 14 54.3 +1.0**
KWP *e*sP **sP 21 15 17.8 +0.7**
KWP *e*S **S 21 19 40.3 +1.3**
KWP *e*SS **SS 21 22 31.8 +2.4**
KWP Kalwaria Pacla 36.87 306⇑*i*P **P 21 14 11.5 +1.3**
KWP Kalwaria Pacla 36.87 306⇑*i*P **P 21 14 11.4 +1.2**
KWP *e**PP **pP 21 14 54.3 +1.0**
KWP *e*S **S 21 19 40.3 +1.3**
KWP pmax pmax
comp=Z,2μm,3.8s
CHBT CHBT 36.89 122 P **P 21 14 11.7 +1.1**
comp=Z,372nm,0.9s,comp=Z,4μm
IDI Anoyia 36.90 282⇑*i*P **P 21 14 10.5 -0.1**
IDI Anoyia 36.90 282 P **P 21 14 10.3 -0.3**
IDI Anoyia 36.90 282 *e*P **P 21 14 10.6 -0.1**
comp=Z,223nm,1.3s
IDI *e*pP **pP 21 14 54.8 +1.1**
SOH Sokhos 36.91 292 P **P 21 14 11.3 +0.6**
PLG Polygyros 36.92 291 P **P 21 14 11.6 +0.9**
KKB Krupnik 36.97 293 *i* P **P 21 14 12.3 +1.2**
SUW Suwalki 37.01 314 *i* P **P 21 14 11.3 +0.1**
comp=Z,2μm,3.3s
SUW *e*sP **sP 21 15 17.6 -0.5**
SUW *e*PP **PnPn 21 15 41.9 -1.2**
SUW *e*S **S 21 19 42.4 +1.6**
SUW *e* 21 20 58.7
SUW *e*ScS **ScS 21 24 00.1 -2.0**
SUW Suwalki 37.01 314⇑*i*P **P 21 14 11.3 +0.1**
SUW *e* 21 15 41.8
SUW *e*S **S 21 19 42.4 +1.6**
SUW *e* 21 24 00.1
SUW pmax pmax
comp=Z,2μm,3.3s
SIVA Sivas 37.03 282⇓*i*P **P 21 14 12.2 +0.5**
SIVA Sivas 37.03 282 P **P 21 14 12.0 +0.3**
PTL Penteli 37.03 287 P **P 21 14 13.0 +1.3**

TIA	**Tai'an**	**37.10**	**76**	⇑P	**P**	**21 14 13.6 +1.3**
TIA				PcP	**PcP**	**21 16 28.5 +0.4**
TIA				S	**S**	**21 19 44.8 +2.0**
TIA				sS	**sS**	**21 21 03.4 +4.1**
TIA				pmax	pmax	
	comp=Z,280nm,1.3s					
TIA				pmax	pmax	
	comp=Z,3μm,8.0s					
TIA				LR	LR	
	comp=Z,3μm,15.5s					
TIA				LR	LR	
	comp=Z,2μm,16.5s					
TIA				LR	LR	
	comp=Z,3μm,15.5s					
UZH	**Uzhgorod**	**37.12**	**305**	⇓*i*P	**P**	**21 14 13.5 +1.3**
UZH				*e**PP	**pP**	**21 14 53.3 -2.1**
UZH				*e*S	**S**	**21 19 44.9 +2.3**
UZH				*e*SS	**SS**	**21 22 24.0 -10**
UZH				pmax	pmax	
	comp=Z,2μm,2.5s					
VLY	**Voula,Athens**	**37.13**	**287**	P	**P**	**21 14 13.0 +0.5**
KOLS	**Kolonicke sedl**	**37.14**	**305**	*e*P	**P**	**21 14 13.4 +1.0**
KOLS				*e*S	**S**	**21 19 43.5 +0.5**
KOLS				pmax	pmax	
	comp=Z,51nm,0.9s					
KOLS	**Kolonicke sedl**	**37.14**	**305**	*e*P	**P**	**21 14 13.4 +1.0**
KOLS				*e*		21 14 57.9
KOLS				*e*S	**S**	**21 19 43.5 +0.5**
KOLS				*e*		21 20 58.2
KOLS				*e*SS	SS	21 22 10.3 -24
HORT	**Hortiatis**	**37.14**	**291**	*e*P	**P**	**21 14 12.9 +0.3**
HORT	**Hortiatis**	**37.14**	**291**	P	**P**	**21 14 13.0 +0.3**
ATH	**Athens Observa**	**37.17**	**287**	P	**P**	**21 14 13.6 +0.8**
KNT	**Kendrikon**	**37.20**	**292**	*e*P	**P**	**21 14 14.1 +1.0**
KNT	**Kendrikon**	**37.20**	**292**	P	**P**	**21 14 13.3 +0.2**
NEO	**Neokhori**	**37.27**	**289**	P	**P**	**21 14 13.8 +0.1**
XOR	**Xorichti**	**37.29**	**289**	P	**P**	**21 14 14.1 +0.3**
SMIA	**Simia**	**37.37**	**288**	P	**P**	**21 14 15.1 +0.6**
SURT	**Suratani**	**37.39**	**130**	P	**P**	**21 14 15.9 +1.0**
	comp=Z,198nm,0.9s,comp=Z,2μm					
VAM	**Vamos**	**37.41**	**283**	P	**P**	**21 14 15.0 +0.1**
FINES	**FINESS Array B**	**37.42**	**326**	P	**P**	**21 14 15.4 +0.8**
	comp=Z,312nm,0.7s,baz=108,slow=9.8,SNR=1485					
FINES	**FINESS Array B**	**37.42**	**326**	*i* P	**P**	**21 14 15.3 +0.7**
FINES				pmax	pmax	
	comp=Z,312nm,0.7s					
VAY	**Valandovo**	**37.42**	**293**	P	**P**	**21 14 15.1 +0.2**
VAY	**Valandovo**	**37.42**	**293**	*i* P	**P**	**21 14 15.8 +0.9**
LVZ	**Lovozero**	**37.45**	**339***c*	*i*P	**P**	**21 14 15.4 +0.6**
LVZ				pmax	pmax	
	comp=Z,1μm,1.6s					
LVZ	**Lovozero**	**37.45**	**339**	*e*P	**P**	**21 14 15.5 +0.8**
	comp=Z,2μm,1.6s					
LVZ				*e*pP	**pP**	**21 14 58.6 +0.6**
FYTO	**Fytoko, Volos**	**37.47**	**289**	P	**P**	**21 14 15.8 +0.5**
HIA	**Hailar**	**37.52**	**54**	*e*P	**P**	**21 14 16.1 +0.5**
HIA				pmax	pmax	
	comp=Z,197nm,1.2s					
HIA	**Hailar**	**37.52**	**54**	*e*P	**P**	**21 14 16.1 +0.5**
	comp=Z,197nm,1.2s					
HIA				*e*pP	**pP**	**21 14 59.8 +0.9**
IMMV	**Iera Moni Meta**	**37.57**	**283**	P	**P**	**21 14 16.2 0.0**
LKR	**Lokris**	**37.58**	**288**	P	**P**	**21 14 16.1 -0.1**
SIRR	**Siria**	**37.59**	**301**	⇓*i*P	**P**	**21 14 18.2 +1.9**
GRG	**Griva**	**37.61**	**292**	*e*P	**P**	**21 14 17.0 +0.5**
GRG	**Griva**	**37.61**	**292**	P	**P**	**21 14 16.2 -0.3**
APA	**Apatity**	**37.62**	**338**	⇓*i*P	**P**	**21 14 17.8 +1.6**
APA				*i*		21 16 37.6
APA				*i* S	**S**	**21 19 50.0 +0.3**
APA				pmax	pmax	
	comp=Z,436nm,1.2s					
APA				MLR	MLR	
	comp=Z,4μm,19.0s					
DID	**Didima**	**37.64**	**286**	P	**P**	**21 14 15.2 -1.6**
MDVR	**Moldovita**	**37.65**	**298**	⇑*i*P	**P**	**21 14 18.1 +1.3**
GVD	**Gavdhos**	**37.65**	**282**	P	**P**	**21 14 17.1 +0.2**
BZS	**Buzias**	**37.66**	**300**	⇑*i*P	**P**	**21 14 18.3 +1.5**
CRVS	**Cervenica-Dubn**	**37.67**	**305**	*e*P	**P**	**21 14 17.6 +0.7**
CRVS				*e*S	**S**	**21 19 51.0 -0.1**
CRVS	**Cervenica-Dubn**	**37.67**	**305**	*e*P	**P**	**21 14 17.6 +0.7**
CRVS				*e*S	**S**	**21 19 51.0 -0.1**
CRVS				*e*		21 21 05.5
CRVS				*e*SS	SS	21 22 18.6 -27
LIT	**Litokhoron**	**37.69**	**291**	P	**P**	**21 14 16.9 -0.3**
LTK	**Loutraki**	**37.73**	**287**	P	**P**	**21 14 16.7 -0.9**
KRND	**KRANIDI**	**37.74**	**286**	P	**P**	**21 14 16.2 -1.4**
STHS	**Stebnicka Huta**	**37.82**	**306**	*e*P	**P**	**21 14 18.8 +0.6**
STHS				pmax	pmax	
	comp=Z,23nm,0.8s					
STHS	**Stebnicka Huta**	**37.82**	**306**	*e*P	**P**	**21 14 18.8 +0.6**
PKDT	**Phuket**	**37.94**	**132**	P	**P**	**21 14 20.5 +1.0**
	comp=Z,353nm,1.1s,comp=Z,4μm					
DSF	**Desfina**	**37.99**	**288**	P	**P**	**21 14 18.5 -1.2**
ANKY	**Antikythira Is**	**37.99**	**284**	P	**P**	**21 14 18.8 -0.9**
BANR	**Banloc**	**38.01**	**299**	⇑*i*P	**P**	**21 14 21.8 +2.1**
AGG	**Agios Georgios**	**38.01**	**289**	*e*P	**P**	**21 14 20.5 +0.6**
AGG	**Agios Georgios**	**38.01**	**289**	P	**P**	**21 14 19.4 -0.5**
AGG	**Agios Georgios**	**38.01**	**289**	*e*P	**P**	**21 14 20.0 +0.1**
AGG				pmax	pmax	
	comp=Z,520nm,1.3s					
AGG	**Agios Georgios**	**38.01**	**289**	*e*P	**P**	**21 14 20.0 +0.1**
	comp=Z,522nm,1.3s					
VLI	**Veliai**	**38.06**	**285**	P	**P**	**21 14 18.6 -1.7**
KYTH	**Kithira**	**38.09**	**284**	P	**P**	**21 14 19.9 -0.7**
THL	**Klokotos Trika**	**38.14**	**290**	P	**P**	**21 14 20.5 -0.4**
SKO	**Skopje**	**38.17**	**294**	P	**P**	**21 14 21.5 +0.4**
SKO	**Skopje**	**38.17**	**294**	*i* P	**P**	**21 14 21.8 +0.7**
KZN	**Kozani**	**38.19**	**291**	P	**P**	**21 14 21.6 +0.2**
BEL	**Belsk**	**38.21**	**310**	*e*P	**P**	**21 14 22.1 +0.8**
	comp=Z,3μm,3.6s					
BEL				*e*pP	**pP**	**21 15 04.7 0.0**
BEL				*e*sP	**sP**	**21 15 29.1 +0.8**
BEL				*e*PcP	**PcP**	**21 16 35.6 +4.5**
BEL				*e*S	**S**	**21 20 00.2 +1.2**
BEL	**Belsk**	**38.21**	**310**	⇑*e*P	**P**	**21 14 22.1 +0.8**
BEL				*e**PP	**pP**	**21 15 04.7 0.0**
BEL				*e*		21 16 35.6
BEL				*e*S	**S**	**21 20 00.2 +1.2**
BEL				pmax	pmax	
	comp=Z,3μm,3.6s					
KECS	**Kecovo**	**38.32**	**304**	*e*P	**P**	**21 14 23.9 +1.6**
KECS	**Kecovo**	**38.32**	**304**	*e*P	**P**	**21 14 23.9 +1.6**
KECS				*e*		21 15 09.3
VLX	**Vlachokerasia**	**38.34**	**286**	P	**P**	**21 14 21.2 -1.5**
SERG	**Sergoula**	**38.35**	**288**	P	**P**	**21 14 21.6 -1.1**
KLV	**Kalavryta, Ach**	**38.36**	**287**	P	**P**	**21 14 21.2 -1.6**
BIA	**Bitola**	**38.40**	**292**	*i* P	**P**	**21 14 23.4 +0.2**
FNA	**Florina**	**38.40**	**292**	*e*P	**P**	**21 14 23.4 +0.2**
FNA	**Florina**	**38.40**	**292**	P	**P**	**21 14 23.2 0.0**
FNA	**Florina**	**38.40**	**292**	P	**P**	**21 14 23.2 0.0**
QIZ	**Qiongzhong**	**38.41**	**106**	P	**P**	**21 14 23.8 +0.4**
QIZ				sP	**sP**	**21 15 28.3 -2.1**
QIZ				S	**S**	**21 20 02.5 -0.3**
QIZ				sS	**sS**	**21 21 18.3 -1.3**
QIZ				pmax	pmax	
	comp=Z,56nm,1.7s					
QIZ				LR	LR	
	comp=Z,440nm,14.5s					
QIZ				LR	LR	
	comp=Z,400nm,17.7s					
ANX	**Ano Chora**	**38.41**	**288**	P	**P**	**21 14 23.2 -0.1**
EVR	**Evrytania**	**38.43**	**289**	P	**P**	**21 14 23.3 -0.2**
NIE	**Niedzica**	**38.44**	**306**	*i* P	**P**	**21 14 25.1 +1.8**
	comp=Z,800nm,7.0s					
NIE				*e*pP	**pP**	**21 15 08.7 +2.0**
NIE				*e*sP	**sP**	**21 15 31.2 +0.7**
NIE				*e*S	**S**	**21 20 05.1 +2.5**
NIE				*e*		21 21 13.7
NIE	**Niedzica**	**38.44**	**306**	⇑*i*P	**P**	**21 14 25.1 +1.8**
NIE				*e*S	**S**	**21 20 05.1 +2.5**
NIE				*e*		21 21 13.7
LAKA	**Lakka**	**38.45**	**288**	P	**P**	**21 14 22.9 -0.6**
EFP	**Efpalio**	**38.46**	**288**	P	**P**	**21 14 23.0 -0.6**
KPRO	**Kipourio**	**38.56**	**291**	P	**P**	**21 14 24.2 -0.3**
PENT	**Pentalofos**	**38.69**	**291**	P	**P**	**21 14 25.4 -0.2**
PVO	**Paravola**	**38.71**	**289**	P	**P**	**21 14 25.7 0.0**
NEST	**Nestorio**	**38.71**	**291**	P	**P**	**21 14 25.6 -0.2**
DRO	**Drossia**	**38.72**	**287**	P	**P**	**21 14 24.9 -0.9**
PSZ	**Piszkesteto**	**38.73**	**304**	⇑*i*P	**P**	**21 14 27.2 +1.4**
PSZ	**Piszkesteto**	**38.73**	**304**	⇑*e*P	**P**	**21 14 27.2 +1.4**
PSZ	**Piszkesteto**	**38.73**	**304**	*e*P	**P**	**21 14 27.1 +1.3**
PSZ				pmax	pmax	
	comp=Z,280nm,1.2s					
PSZ	**Piszkesteto**	**38.73**	**304**	*e*P	**P**	**21 14 27.1 +1.3**
	comp=Z,282nm,1.2s					
PSZ				*e*pP	**pP**	**21 15 10.9 +1.7**
ITM	**Ithomi**	**38.73**	**286**	P	**P**	**21 14 24.4 -1.5**
OJC	**Ojcow**	**38.77**	**307**	*i* P	**P**	**21 14 26.8 +0.7**
	comp=Z,1μm,36.1s					
OJC				*e*sP	**sP**	**21 15 33.2 0.0**
OJC				*e*S	**S**	**21 20 08.0 +0.5**
OJC				*e*		21 21 24.7
OJC	**Ojcow**	**38.77**	**307**	⇑*i*P	**P**	**21 14 26.8 +0.7**
OJC				*e*S	**S**	**21 20 08.0 +0.5**
OJC	**Ojcow**	**38.77**	**307**	*e*P	**P**	**21 14 26.4 +0.3**
	comp=Z,513nm,1.3s					
OHR	**Ohrid**	**38.78**	**293**	*i* P	**P**	**21 14 25.8 -0.5**
TRTT	**Trang**	**38.81**	**130**	P	**P**	**21 14 27.3 +0.5**
	comp=Z,324nm,1.1s,comp=Z,4μm					
AMT	**Artemida-Makis**	**38.82**	**287**	P	**P**	**21 14 24.9 -1.7**
RLS	**Riolos of Patr**	**38.88**	**288**	P	**P**	**21 14 26.3 -0.8**
DSL	**Palaion Diasel**	**38.93**	**289**	P	**P**	**21 14 27.4 -0.1**
DIVS	**Divibare**	**38.94**	**297**	P	**P**	**21 14 28.1 +0.5**
PYL	**PYLOS**	**38.95**	**286**	P	**P**	**21 14 26.1 -1.6**
PDO	**Prodromos**	**38.98**	**289**	P	**P**	**21 14 27.6 -0.3**
LANS	**Liptovska Anna**	**38.98**	**306**	*e*P	**P**	**21 14 29.4 +1.5**
LANS	**Liptovska Anna**	**38.98**	**306**	*e*P	**P**	**21 14 29.4 +1.5**
LANS				*e*		21 15 14.0
JAN	**Janina**	**39.01**	**290**	P	**P**	**21 14 28.6 +0.4**
GZH	**Guangzhou**	**39.01**	**98**	P	**P**	**21 14 27.0 -1.3**
GZH				sP	**sP**	**21 15 32.9 -2.5**
GZH				S	**S**	**21 20 09.8 -1.8**
GZH				sS	**sS**	**21 21 29.3 +0.7**
GZH				pmax	pmax	
	comp=Z,5μm,4.1s					
IVA	**Berane**	**39.17**	**296**	⇑*i*P	**P**	**21 14 30.2 +0.6**
LHMI	**Lhok Sumawe**	**39.28**	**136**	P	**P**	**21 14 32.4 +1.8**
	comp=Z,415nm,1.0s,comp=Z,5μm					
LHMI	**Lhok Sumawe**	**39.28**	**136**	*e*P	**P**	**21 14 30.6 0.0**
	comp=Z,256nm,0.6s					
BUD	**Budapest**	**39.33**	**303**	⇑*e*P	**P**	**21 14 31.9 +1.2**
BUD				*e*pP	**pP**	**21 15 11.2 -3.1**
LKD2	**Lefkada island**	**39.34**	**289**	P	**P**	**21 14 31.1 +0.2**
KFL	**Anninata**	**39.39**	**288**	P	**P**	**21 14 30.4 -0.9**
VYHS	**Vyhne**	**39.41**	**304**	*e*P	**P**	**21 14 32.4 +1.0**
VYHS				*e*S	**S**	**21 20 17.8 +0.6**
VYHS				*e*		21 21 27.8
VYHS				pmax	pmax	
	comp=Z,355nm,2.7s					
VYHS	**Vyhne**	**39.41**	**304**	*e*P	**P**	**21 14 32.4 +1.0**
VYHS				*e*		21 15 16.4
VYHS				*e*S	**S**	**21 20 17.8 +0.6**
VYHS				*e*		21 21 27.8
VYHS				*e*SS	SS	21 22 52.6 -27
IGT	**Igoumenitsa**	**39.42**	**290**	P	**P**	**21 14 30.8 -0.8**
TIR	**Tirane**	**39.43**	**293**	⇑*i*P	**P**	**21 14 31.6 0.0**
TIR	**Tirane**	**39.43**	**293**	*e*P	**P**	**21 14 32.0 +0.4**
TIR				pmax	pmax	
	comp=Z,97nm,0.9s					
TIR	**Tirane**	**39.43**	**293**	*e*P	**P**	**21 14 32.0 +0.4**
	comp=Z,97nm,0.9s					
TIR				*e*pP	**pP**	**21 15 16.0 +0.8**
PLE	**Pljevlja**	**39.47**	**296**	⇑*i*P	**P**	**21 14 32.0 -0.1**
SGD	**Sagiada**	**39.48**	**290**	P	**P**	**21 14 31.5 -0.5**
ZKS	**Zakynthos**	**39.49**	**287**	P	**P**	**21 14 30.4 -1.8**
VLS	**Valsamata**	**39.52**	**288**	P	**P**	**21 14 31.1 -1.4**
MCO	**Taipa Grande**	**39.67**	**99**	P	**P**	**21 14 35.0 +1.2**
PDG	**Podgorica**	**39.70**	**295**	⇑*i*P	**P**	**21 14 34.7 +0.9**
PDG	**Podgorica**	**39.70**	**295**	P	**P**	**21 14 33.6 -0.2**
TTG	**Podgorica**	**39.70**	**295**	⇑*i*P	**P**	**21 14 33.7 -0.1**
NJ2	**Nanjing**	**39.71**	**82**	⇑P	**P**	**21 14 35.3 +1.3**
NJ2				pP	**pP**	**21 15 22.0 +4.4**
NJ2				sP	**sP**	**21 15 43.8 +2.6**
NJ2				PP	**PnPn**	**21 16 13.1 -1.9**
NJ2				PcP	**PcP**	**21 16 35.0 -1.3**
NJ2				ScP	**ScP**	**21 20 03.4 -1.8**
NJ2				S	**S**	**21 20 24.5 +2.7**
NJ2				sS	**sS**	**21 21 40.9 +2.0**
NJ2				pmax	pmax	
	comp=Z,130nm,0.8s					
NJ2				pmax	pmax	
	comp=Z,2μm,6.0s					
NJ2				LR	LR	
	comp=Z,1μm,15.7s					
NJ2				LR	LR	
	comp=Z,1μm,16.8s					
NJ2				LR	LR	
	comp=Z,1μm,9.8s					
MLSI	**Meulaboh, Aceh**	**39.77**	**138**	P	**P**	**21 14 33.1 -1.6**
	comp=Z,406nm,0.9s,comp=Z,4μm					
ULC	**Ulcinj**	**39.78**	**294**	⇑*i*P	**P**	**21 14 34.0 -0.6**
KEK	**Kerkira**	**39.79**	**291**	P	**P**	**21 14 32.6 -2.0**
DRME	**Dracevica, Mon**	**39.79**	**295**	⇑*i*P	**P**	**21 14 34.6 0.0**
RAC	**Raciborz**	**39.80**	**307**	*e*P	**P**	**21 14 35.3 +0.8**
RAC				*e**PP	**pP**	**21 15 17.9 -0.3**
RAC				*e*		21 16 09.8
RAC				*e*S	**S**	**21 20 23.9 +1.1**
NKY	**Niksic**	**39.83**	**296**	⇑*i*P	**P**	**21 14 35.1 +0.1**
OKC	**Ostrava-Krasne**	**39.84**	**307**	⇑*e*P	**P**	**21 14 35.6 +0.8**
OKC				*e*pP	**pP**	**21 15 20.1 +1.6**
OKC				*e*S	**S**	**21 20 25.1 +1.8**
OKC				*e*x	x	21 21 34.6
OKC				*e*SS	**SS**	**21 23 28.8 +0.5**
OKC	**Ostrava-Krasne**	**39.84**	**307**	*e*P	**P**	**21 14 35.6 +0.8**
OKC				*e*S	**S**	**21 20 25.1 +1.8**
OKC				*e*		21 21 34.6
OKC				*e*SS	**SS**	**21 23 28.8 +0.5**
UPM	**Unac-Piva**	**39.84**	**296**	⇑*i*P	**P**	**21 14 34.8 -0.4**
CSKK	**Cs̄̈kako**	**39.86**	**303**	⇑*e*P	**P**	**21 14 36.0 +0.9**
NKME	**Niksic**	**39.87**	**296**	⇑*i*P	**P**	**21 14 35.4 +0.1**
SKLT	**Songkhla**	**39.91**	**130**	P	**P**	**21 14 36.3 +0.5**
	comp=Z,306nm,1.1s,comp=Z,4μm					
CEME	**Cevo**	**39.93**	**295**	⇑*i*P	**P**	**21 14 35.7 -0.1**
DL2	**Dalian**	**39.95**	**71**	⇑*i*P	**P**	**21 14 36.9 +1.0**
DL2				pP	**pP**	**21 15 22.9 +3.3**
DL2				sP	**sP**	**21 15 41.3 -1.9**
DL2				S	**S**	**21 20 28.8 +3.5**
DL2				sS	**sS**	**21 21 44.5 +2.0**
DL2				pmax	pmax	
	comp=Z,190nm,0.6s					
DL2				pmax	pmax	
	comp=Z,2μm,5.7s					
FURI	**Furi**	**39.97**	**235**	*e*P	**P**	**21 14 39.0 +2.2**
	comp=Z,508nm,1.6s					
BUM	**Brajici-Budva**	**39.99**	**295**	⇑*i*P	**P**	**21 14 36.2 -0.1**
BRY	**Bratogost**	**40.15**	**296**	⇑*i*P	**P**	**21 14 37.9 +0.2**
MORC	**Moravsky Berou**	**40.23**	**307**	⇑*i*P	**P**	**21 14 39.3 +1.1**
MORC	**Moravsky Berou**	**40.23**	**307**	*e*P	**P**	**21 14 39.2 +1.1**
MORC				pmax	pmax	
	comp=Z,1μm,1.3s					
MORC	**Moravsky Berou**	**40.23**	**307**	*e*P	**P**	**21 14 39.2 +1.1**
	comp=Z,1μm,1.3s					
HCY	**Herceg Novi**	**40.26**	**295**	⇑*i*P	**P**	**21 14 38.2 -0.2**
SMOL	**Smolenice**	**40.35**	**305**	*e*P	**P**	**21 14 40.2 +1.1**
SMOL				*e*		21 15 23.9
SMOL	**Smolenice**	**40.35**	**305**	*e*P	**P**	**21 14 40.2 +1.1**
SMOL				*e*		21 15 23.9
KRLC	**Kraliky**	**40.71**	**307**	⇑*i*P	**P**	**21 14 42.9 +0.8**
KRLC				*e*pP	**pP**	**21 15 27.5 +1.6**
KRLC	**Kraliky**	**40.71**	**307**	⇑*i*P	**P**	**21 14 42.9 +0.8**
KEV	**Kevo**	**40.79**	**338**	*e*P	**P**	**21 14 43.2 +0.9**
KEV				pmax	pmax	
	comp=Z,360nm,0.8s					
KEV	**Kevo**	**40.79**	**338**	*e*P	**P**	**21 14 43.2 +0.9**
	comp=Z,365nm,0.8s					
KEV				*e*pP	**pP**	**21 15 26.8 +0.6**
BLY	**Banja Luka**	**40.86**	**299**	⇑*i*P	**P**	**21 14 44.3 +1.0**
VRAC	**Vranov**	**40.86**	**306**	P	**P**	**21 14 44.5 +1.2**
	comp=Z,53nm,0.8s,baz=91,slow=8.5,SNR=94					
VRAC	**Vranov**	**40.86**	**306**	⇑*i*P	**P**	**21 14 44.7 +1.4**
BEHE	**Becsehely**	**40.95**	**301**	⇑*e*P	**P**	**21 14 45.3 +1.3**
SOP	**Sopron**	**40.99**	**303**	⇑*e*P	**P**	**21 14 45.3 +1.0**
DPC	**Dobruska-Polom**	**41.00**	**307**	⇑*i*P	**P**	**21 14 45.7 +1.3**
DPC				*e*pP	**pP**	**21 15 30.5 +2.2**
DPC				*e*x	x	21 17 24.4
DPC				*e*S	**S**	**21 20 42.6 +1.9**
DPC				*e*XS	**sS**	**21 21 53.6 -4.5**
DPC				*e*SS	**SS**	**21 23 47.4 -3.8**
DPC	**Dobruska-Polom**	**41.00**	**307**	⇑*i*P	**P**	**21 14 45.7 +1.3**
DPC				*e*S	**S**	**21 20 42.6 +1.9**
DPC				*e*		21 21 53.6
DPC				*e*SS	**SS**	**21 23 47.4 -3.8**
KSP	**Ksiaz**	**41.01**	**308**	*i* P	**P**	**21 14 45.4 +0.9**
	comp=Z,1μm,3.9s					
KSP				*e*pP	**pP**	**21 15 28.6 +0.3**
KSP				*e*sP	**sP**	**21 15 52.2 +0.4**
KSP				*e*S	**S**	**21 20 41.7 +1.0**
KSP				*e*SS	**SS**	**21 23 49.9 -1.3**
KSP	**Ksiaz**	**41.01**	**308**	⇑*i*P	**P**	**21 14 45.3 +0.9**
KSP				*e**PP	**pP**	**21 15 28.6 +0.3**
KSP				*e*S	**S**	**21 20 41.7 +1.0**
KSP				*e*SS	**SS**	**21 23 49.9 -1.3**
KSP				pmax	pmax	
	comp=Z,1μm,3.9s					
CLNS	**Chul'man**	**41.12**	**43**	*e*P	**P**	**21 14 46.3 +1.0**
CLNS				*e*		21 16 26.7
CLNS				*e*		21 16 39.5
CLNS				*e*PPP	PPP	21 17 04.7
CLNS				*e*S	**S**	**21 20 39.3 -2.9**
CLNS				pmax	pmax	
	comp=Z,289nm,1.0s					
CLNS				pmax	pmax	
	comp=N,56nm,0.8s					
CLNS				pmax	pmax	
	comp=E,191nm,1.0s					
CLNS				pmax	pmax	
	comp=Z,74nm,1.1s					
CLNS				pmax	pmax	
	comp=N,97nm,1.1s					
CLNS				pmax	pmax	
	comp=E,56nm,0.9s					
CLNS				smax	smax	
	comp=E,670nm,14.3s					
CLNS				smax	smax	
	comp=N,211nm,11.4s					
ARCES	**ARCESS Array B**	**41.13**	**338**	P	**P**	**21 14 46.3 +1.1**
	comp=N,429nm,0.7s,baz=111,slow=8.1,SNR=1982					
ARCES				pP	**pP**	**21 15 29.4 +0.3**
	comp=N,166nm,0.8s,baz=112,slow=8.1,SNR=4.5					
ARE0	**ARCESS Array S**	**41.13**	**338**	⇑*i*P	**P**	**21 14 46.4 +1.3**
UPC	**Upice**	**41.19**	**308**	⇑*i*P	**P**	**21 14 47.2 +1.3**
UPC				*e*pP	**pP**	**21 15 32.3 +2.4**
UPC				*e*x	x	21 17 26.0
UPC				*e*S	**S**	**21 20 45.2 +1.7**
UPC	**Upice**	**41.19**	**308**	⇑*i*P	**P**	**21 14 47.2 +1.3**
UPC				*e*S	**S**	**21 20 45.2 +1.7**
KULM	**Kulim**	**41.39**	**131**	*e*P	**P**	**21 14 48.9 +0.9**
	comp=N,513nm,1.5s					
KULM				*e*pP	**pP**	**21 15 32.3 +0.3**
CONA	**Conrad Observa**	**41.43**	**304**	*e*P	**P**	**21 14 49.1 +1.0**
	comp=N,155nm,1.3s,SNR=87					
CONA				*i* pP	**pP**	**21 15 32.6 +0.6**
	comp=N,398nm,1.2s					
TREC	**Trest**	**41.59**	**306**	⇑*i*P	**P**	**21 14 50.3 +1.1**
TREC				*e*pP	**pP**	**21 15 34.9 +1.7**
TREC				*e*x	x	21 17 31.9
TREC				*e*S	**S**	**21 20 51.8 +2.5**
TREC				*e*SS	**SS**	**21 24 05.4 +2.8**
TREC	**Trest**	**41.59**	**306**	⇑*i*P	**P**	**21 14 50.3 +1.1**
TREC				*e*S	**S**	**21 20 51.8 +2.5**
TREC				*e*SS	**SS**	**21 24 05.4 +2.8**
KTK1	**Kautokeino**	**41.59**	**336**	⇑*i*P	**P**	**21 14 49.7 +0.8**
KTK1				lAmb	lAmb	21 14 50.1
	comp=Z,497nm,0.6s					
KTK1				*e*S	**S**	**21 20 49.7 +0.9**
KTK1				*e*SS	**SS**	**21 24 00.9 -1.3**
TSI	**Tuntungan**	**41.61**	**135**	P	**P**	**21 14 48.1 -1.6**
	comp=Z,257nm,0.6s,comp=Z,2μm					
ARSA	**Arzberg**	**41.72**	**303**	*i* P	**P**	**21 14 51.1 +0.8**
	comp=Z,46nm,1.3s,SNR=38					
ARSA				*e*pP	**pP**	**21 15 34.4 +0.1**
	comp=Z,102nm,1.2s					
CN2	**Changchun**	**41.84**	**62**	⇑P	**P**	**21 14 51.9 +0.6**
CN2				*e*sP	sP	21 15 59.9 +1.1
CN2				*e*S	**S**	**21 20 53.0 -0.1**
CN2				pmax	pmax	
	comp=Z,40nm,1.3s					
CN2				pmax	pmax	
	comp=Z,200nm,3.0s					
BSD	**Bornholm Skovb**	**41.90**	**315**	⇑*i*P	**P**	**21 14 51.0 -0.6**
	comp=Z,178nm,1.0s					
BSD				*i* S	**S**	**21 20 53.8 +0.1**
BSD	**Bornholm Skovb**	**41.90**	**315**	⇑*i*P	**P**	**21 14 51.0 -0.6**
BSD				*i* S	**S**	**21 20 53.8 +0.1**
BSD				pmax	pmax	
	comp=Z,180nm,1.0s					
SSE	**Sheshan**	**41.91**	**82**	P	**P**	**21 14 53.3 +1.4**
SSE				sP	**sP**	**21 16 02.4 +2.9**
SSE				S	**S**	**21 20 57.0 +2.7**
SSE				sS	**sS**	**21 22 14.4 +2.4**
SSE				pmax	pmax	
	comp=Z,160nm,0.7s					
SSE				pmax	pmax	
	comp=Z,2μm,5.6s					
SSE				LR	LR	
	comp=Z,920nm,18.4s					
SSE				LR	LR	
	comp=Z,990nm,18.4s					
SSE				LR	LR	
	comp=Z,1μm,19.3s					
MATE	**Matera**	**41.91**	**293**	⇑*i*P	**P**	**21 14 51.8 -0.1**
GOPC	**GO Pecny, Ondr**	**42.01**	**307**	⇑*i*P	**P**	**21 14 53.6 +1.1**
GOPC				*e*pP	**pP**	**21 15 38.3 +1.7**
GOPC				*e*S	**S**	**21 20 58.0 +2.6**
GOPC				*e*XS	**sS**	**21 22 07.2 -5.9**
GOPC				*e*SS	**SS**	**21 24 13.0 +2.2**
GOPC	**GO Pecny, Ondr**	**42.01**	**307**	⇑*i*P	**P**	**21 14 53.6 +1.1**
GOPC				*e*S	**S**	**21 20 58.0 +2.6**
GOPC				*e*		21 22 07.2
GOPC				*e*SS	**SS**	**21 24 13.0 +2.2**
BISS	**Bistriski jare**	**42.06**	**302**	⇑*e*P	**P**	**21 14 54.0 +1.0**
BISS	**Bistriski jare**	**42.06**	**302**	⇑*e*P	**P**	**

QZH ScS **ScS** **21 24 28.0 -6.8**
QZH pmax pmax
comp=Z,920nm,1.5s
QZH pmax pmax
comp=Z,3μm,5.1s
QZH LR LR
comp=N,2μm,8.0s
QZH LR LR
comp=E,2μm,9.0s
QZH LR LR
comp=Z,3μm,12.8s
PSI Prapat 42.38 136 *e*P **P** **21 14 55.9 -0.2**
PSI pmax pmax
comp=Z,170nm,0.8s
PSI Prapat 42.38 136 *e*P **P** **21 14 55.9 -0.2**
comp=Z,168nm,0.8s
OBKA Obir 42.47 302 *i* P **P** **21 14 57.6 +1.1**
OBKA comp=Z,68nm,1.3s,SNR=34
OBKA *i* pP **pP** **21 15 41.4 +0.7**
comp=Z,153nm,1.2s
BRG Berggiesshubel 42.49 308 *i* P **P** **21 14 57.5 +1.1**
comp=Z,93nm,0.9s
BRG *i* 21 14 59.1
comp=Z,268nm,1.6s
BRG *i* pP **pP** **21 15 39.7 -0.9**
comp=Z,237nm,1.4s
BRG sP **sP** **21 16 03.0 -1.1**
BRG *i* PP **PP** **21 16 39.2 0.0**
comp=Z,278nm,1.7s
BRG *e*SCP **ScP** **21 20 15.4 -0.5**
comp=Z,61nm,1.1s
BRG S **S** **21 21 02.0 -0.5**
BRG SCS **ScS** **21 24 33.5 -1.4**
comp=Z,37nm,1.6s
BRG Berggiesshubel 42.49 308 *i* P **P** **21 14 57.5 +1.1**
BRG *i* *PP **pP** **21 15 39.7 -0.9**
BRG *i* 21 16 39.2
BRG S **S** **21 21 02.0 -0.5**
BRG 21 24 33.5
BRG pmax pmax
comp=Z,93nm,1.0s
MOA Molln 42.51 304 *i* P **P** **21 14 57.3 +0.6**
comp=Z,64nm,0.9s,SNR=40
MOA *i* pP **pP** **21 15 41.4 +0.5**
comp=Z,217nm,1.2s
NVLJ Novalja 42.52 299 P **P** **21 14 56.4 -0.3**
LJU Ljubljana 42.55 301⇑*e*P **P** **21 14 58.0 +1.1**
LJU *e*pP **pP** **21 15 42.5 +1.4**
CUC Castrocucco 42.72 292 *e*P **P** **21 14 59.3 +0.8**
comp=Z,572nm,1.4s
CUC *e* 21 15 41.5
GERES GERESS Array B 42.79 305 P **P** **21 14 59.5 +0.6**
comp=Z,15nm,0.8s,baz=90,slow=8.0,SNR=89
GERES pP **pP** **21 15 40.5 -2.8**
comp=Z,36nm,1.1s,baz=82,slow=4.6,SNR=2.7
GERES PP **PP** **21 16 44.2 +1.6**
comp=Z,37nm,0.9s,baz=72,slow=8.6,SNR=4.8
RGN Rugen 42.81 314 *e*P **P** **21 14 59.7 +0.9**
RGN *e*pP **pP** **21 15 43.9 +0.9**
KHC Kasperske Hory 42.85 306⇑*i*P **P** **21 15 00.0 +0.7**
KHC *e*pP **pP** **21 15 44.5 +0.9**
KHC *e*sP **sP** **21 16 11.0 +3.9**
KHC *e*x x 21 17 48.1
KHC *e*x x 21 18 08.5
KHC *e*S **S** **21 21 09.2 +1.4**
KHC *e*XS **sS** **21 22 22.7 -3.0**
KHC *e*SS **SS** **21 24 30.1 +2.8**
KHC Kasperske Hory 42.85 306⇑*i*P **P** **21 15 00.0 +0.7**
KHC *e* 21 16 00.0
KHC *e*S **S** **21 21 09.2 +1.4**
KHC *e* 21 22 22.7
KHC Kasperske Hory 42.85 306 *e*P **P** **21 15 00.1 +0.7**
comp=Z,72nm,1.5s
KHC *e*pP **pP** **21 15 44.6 +1.1**
GSI Gunungsitoli 42.88 138 P **P** **21 15 00.9 +1.0**
comp=Z,862nm,0.9s,comp=Z,8μm
GSI Gunungsitoli 42.88 138 *e*P **P** **21 15 01.0 +1.0**
comp=Z,601nm,0.8s
GSI *e*pP **pP** **21 15 45.3 +1.0**
JAVS Javornik 42.88 301 *i* P **P** **21 15 00.3 +0.5**
JAVS *i* pP **pP** **21 15 46.1 +2.1**
JAVS *e*S **S** **21 21 08.2 -0.3**
JAVS *e*sS **sS** **21 22 21.3 -5.2**
JAVS *e*SS **SS** **21 24 33.0 +4.8**
JAVS Javornik 42.88 301 *i* P **P** **21 15 00.3 +0.5**
JAVS *i* pP **pP** **21 15 46.1 +2.1**
JAVS *e*S **S** **21 21 08.2 -0.3**
JAVS *e*SS **SS** **21 24 33.0 +4.8**
KTGM Kuala Trenggan 42.90 128⇓P **P** **21 15 02.0 +1.9**
HFS Hagfors 42.99 322 P **P** **21 15 00.6 +0.4**
comp=Z,192nm,0.6s,baz=99,slow=9.2,SNR=520
HFS pP **pP** **21 15 42.8 -1.8**
comp=Z,169nm,0.6s,baz=106,slow=11,SNR=4.9
CLL Collm 43.06 309⇑*i*P **P** **21 15 01.3 +0.3**
comp=Z,246nm,1.6s
CLL *e*Pl 21 15 03.0
comp=Z,400nm,25.0s
CLL *i* pP **pP** **21 15 46.3 +1.0**
CLL *i* 21 15 56.1
CLL *i* sP **sP** **21 16 09.5 +0.8**
CLL *i* PP **PP** **21 16 44.4 -0.9**
CLL *i* 21 16 53.0
CLL *e*PPP PPP 21 17 27.0
CLL *e* 21 17 51.0
CLL *e*ScP **ScP** **21 20 18.0 -0.2**
comp=Z,52nm,1.1s
CLL *e*PcS **PcS** **21 20 39.0 -0.5**
CLL *e*S **S** **21 21 12.0 +1.2**
comp=N,1μm,28.2s
CLL *e*S **S** **21 21 12.0 +1.2**
comp=E,1μm,25.5s
CLL *e*sS **sS** **21 22 26.0 -2.8**
CLL *e*SS **SS** **21 24 34.0 +2.8**
CLL *e*SSS SSS 21 26 14.0
CLL *e* 21 27 06.0
CLL Collm 43.06 309⇑*i*P **P** **21 15 01.3 +0.3**
CLL *e*S **S** **21 21 12.0 +1.2**
CLL Collm 43.06 309 *e*P **P** **21 15 01.4 +0.3**
comp=E,182nm,1.4s
CADS Cadrg 43.06 302⇑*i*P **P** **21 15 01.7 +0.5**
CADS Cadrg 43.06 302⇑*i*P **P** **21 15 01.7 +0.5**
MYKA Terra Mystica 43.08 302 *i* P **P** **21 15 02.0 +0.8**
comp=E,22nm,0.7s,SNR=18
MYKA *i* pP **pP** **21 15 45.9 +0.3**
comp=E,150nm,1.2s
CEL Celeste 43.09 290 *e*P **P** **21 15 02.1 +0.7**
comp=E,863nm,1.8s
TRI Trieste 43.12 301 *e*P **P** **21 15 02.0 +0.5**
TRI Trieste 43.12 301 *e*P **P** **21 15 02.0 +0.5**
comp=E,29nm,0.6s
TRI *e*pP **pP** **21 15 46.6 +0.8**
KBA Koelnbreinsper 43.22 303 *i* P **P** **21 15 03.2 +0.6**
comp=E,79nm,1.3s,SNR=36
KBA *i* pP **pP** **21 15 47.1 +0.2**
comp=E,336nm,1.1s
TRO Tromso 43.25 336⇑*i*P **P** **21 15 03.1 +1.0**
TRO IAmb IAmb 21 15 04.0
comp=Z,1μm,1.6s
TRO *e*sP **sP** **21 16 11.1 +1.2**
TRO *e*S **S** **21 21 13.0 +0.1**
TRO *e*SS **SS** **21 24 34.7 +0.7**
COP Copenhagen 43.34 315⇑*i*P **P** **21 15 04.2 +1.1**
comp=Z,135nm,0.9s
COP *i* S **S** **21 21 16.5 +1.9**
COP Copenhagen 43.34 315⇑*i*P **P** **21 15 04.2 +1.1**
COP *i* S **S** **21 21 16.5 +1.9**
COP pmax pmax
comp=Z,140nm,0.9s
NKC Novy Kostel 43.49 307⇑*i*P **P** **21 15 05.4 +1.0**
NKC *e*pP **pP** **21 15 51.1 +2.3**
NKC *e*x x 21 17 54.0
NKC *e*S **S** **21 21 19.4 +2.4**
NKC *e*XS **sS** **21 22 34.5 -0.6**
NKC *e*SS **ScS** **21 24 40.6 -0.6**
NKC Novy Kostel 43.49 307⇑*i*P **P** **21 15 05.4 +1.0**
NKC *e*S **S** **21 21 19.4 +2.4**
NKC *e*SS **ScS** **21 24 40.6 -0.6**
FRIM Kepong 43.60 132⇑P **P** **21 15 07.1 +1.3**
ABTA Abfaltersbach 43.83 302 *i* P **P** **21 15 07.1 -0.2**
comp=Z,54nm,1.7s,SNR=21
ABTA *i* pP **pP** **21 15 51.1 -0.7**
comp=Z,91nm,1.2s
STEI Steigen 43.94 333⇑*i*P **P** **21 15 08.5 +0.8**
STEI IAmb IAmb 21 15 09.0
comp=Z,327nm,0.7s
AQU L'Aquila 43.98 296 *e*P **P** **21 15 09.2 +0.7**
AQU pmax pmax
comp=Z,150nm,1.0s
AQU L'Aquila 43.98 296 *e*P **P** **21 15 09.2 +0.7**
comp=Z,149nm,1.0s
INCN Inchon 44.12 71 P **P** **21 15 10.9 +1.2**
SNR=6.1
INCN Inchon 44.12 71 P **P** **21 15 10.9 +1.2**
SNR=6.1
INCN P **P** **21 15 10.9 +1.2**
SNR=6.1
INCN Inchon 44.12 71 *e*P **P** **21 15 10.6 +0.9**
comp=Z,90nm,0.9s
YAK Yakutsk 44.16 35 P **P** **21 15 09.8 +0.3**
comp=Z,569nm,0.6s,baz=65,slow=2.6,SNR=385
YAK pP **pP** **21 15 54.2 +0.2**
comp=Z,273nm,0.7s,baz=114,slow=3.6,SNR=3.1
YAK Yakutsk 44.16 35*c i*P **P** **21 15 09.7 +0.2**
YAK *e**PP **pP** **21 15 53.9 -0.1**
YAK *e* 21 16 50.7
YAK *e* 21 16 55.5
YAK *e*S **S** **21 21 24.3 -2.0**
YAK *e* 21 24 45.9
YAK pmax pmax
comp=Z,957nm,0.9s
YAK pmax pmax
comp=E,286nm,1.1s
YAK pmax pmax
comp=N,133nm,1.1s
YAK pmax pmax
comp=Z,188nm,0.9s
YAK smax smax
comp=E,1μm,2.0s
YAK smax smax
comp=N,552nm,1.8s
YAK Yakutsk 44.16 35 *e*P **P** **21 15 09.7 +0.2**
comp=N,900nm,0.8s
YAK pP **pP** **21 15 54.2 +0.2**
NB2 NORSAR Subarra 44.30 323 P **P** **21 15 10.6 -0.2**
comp=Z,264nm,0.8s,baz=96,slow=7.9
NB2 NORSAR Subarra 44.30 323 P **P** **21 15 10.6 -0.2**
baz=96,slow=7.9
NB2 NORSAR Subarra 44.30 323 P **P** **21 15 10.6 -0.2**
NB2 pmax pmax
comp=Z,223nm,0.8s
NOA NORSAR Array B 44.30 323 P **P** **21 15 10.7 -0.2**
comp=Z,163nm,0.7s,baz=96,slow=7.8,SNR=890
NOA pP **pP** **21 15 54.4 -0.9**
comp=Z,55nm,0.6s,baz=96,slow=8.2,SNR=2.8
NOA NORSAR Array B 44.30 323 P **P** **21 15 10.7 -0.1**
NOA *PP **pP** **21 15 54.4 -0.9**
NOA pmax pmax
comp=Z,186nm,0.7s
GRF Grafenberg Arr 44.33 307 P **P** **21 15 12.8 +1.7**
WTTA Wattenberg 44.35 303 *i* P **P** **21 15 11.5 -0.1**
comp=Z,44nm,1.1s,SNR=22
WTTA *i* pP **pP** **21 15 55.9 -0.2**
comp=Z,160nm,1.2s
STOK Stokkvaagen 44.37 331 *e*P **P** **21 15 11.9 +0.8**
MNSI Mandailing Nat 44.40 136 P **P** **21 15 12.3 +0.3**
comp=Z,348nm,1.0s,comp=Z,5μm
NSS Namsos 44.44 328⇑*i*P **P** **21 15 11.8 0.0**
NSS IAmb IAmb 21 15 12.3
comp=Z,141nm,0.9s
NSS *e*sP **sP** **21 16 21.0 +1.3**
NSS *e*S **S** **21 21 31.8 +1.4**
NSS *e*SS **SS** **21 24 54.4 -0.2**
OSL Oslo 44.45 321 *e*P **P** **21 15 12.0 +0.1**
OSL IAmb IAmb 21 15 12.6
comp=Z,134nm,0.9s
LOF Lofoten 44.61 333⇑*i*P **P** **21 15 13.0 0.0**
LOF IAmb IAmb 21 15 15.2
comp=Z,3μm,2.2s
LOF *e*sP **sP** **21 16 21.7 +0.7**
LOF *e*PP **PP** **21 17 01.3 0.0**
LOF *e*S **S** **21 21 33.5 +0.9**
MDJ Mudanjiang 44.63 60 P **P** **21 15 13.1 -0.5**
MDJ pP pP 21 15 55.8 -2.4
MDJ sP sP 21 16 18.5 -3.0
MDJ PP **PP** **21 17 00.3 -1.8**
MDJ ScP **ScP** **21 20 25.1 +0.4**
MDJ S **S** **21 21 32.6 -1.1**
MDJ sS sS 21 22 48.9 -3.2
MDJ pmax pmax
comp=Z,63nm,2.2s
MDJ pmax pmax
comp=Z,1μm,8.5s
MDJ Mudanjiang 44.63 60 *e*P **P** **21 15 13.9 +0.3**
comp=Z,186nm,1.4s
MDJ *e*pP **pP** **21 15 59.3 +1.2**
TATO Taipei 44.66 90 *e*P **P** **21 15 15.4 +1.4**
comp=Z,396nm,1.4s
MOTA Moosalm 44.70 303 *i* P **P** **21 15 13.7 -0.5**
comp=Z,39nm,0.8s,SNR=42
MOTA *i* pP **pP** **21 15 58.4 -0.5**
comp=Z,136nm,1.1s
YHNB Yeheng 44.72 91 *e*P **P** **21 15 15.6 +1.0**
comp=Z,290nm,1.0s
TPUB Ta-pu 44.76 93 *e*P **P** **21 15 15.9 +1.0**
comp=Z,521nm,1.6s
SSLB Suanglung 44.79 92 *e*P **P** **21 15 16.7 +1.6**
comp=Z,314nm,0.7s
WDD Wied Dalam 44.82 287 *e*P **P** **21 15 15.9 +0.7**
comp=Z,147nm,0.7s
WDD pP **pP** **21 16 00.6 +0.8**
RETA Reutte 44.91 304 *i* P **P** **21 15 15.6 -0.1**
comp=Z,44nm,1.5s,SNR=17
RETA *i* pP **pP** **21 15 59.6 -0.8**
comp=Z,91nm,1.1s
TBLU Trondheim 45.00 326⇑*i*P **P** **21 15 16.2 +0.1**
TBLU IAmb IAmb 21 15 16.7
comp=Z,239nm,1.1s
TBLU *e*sP **sP** **21 16 24.9 +0.7**
TBLU *e*S **S** **21 21 39.3 +0.9**
TBLU *e*SS **SS** **21 25 10.9 +7.3**
FETA Feichten 45.00 303 *i* P **P** **21 15 16.4 -0.3**
comp=Z,42nm,1.0s,SNR=23
FETA *i* pP **pP** **21 16 00.8 -0.5**
comp=Z,166nm,1.2s
KONO Kongsberg 45.00 321⇑*i*P **P** **21 15 16.3 +0.1**
KONO IAmb IAmb 21 15 16.9
comp=Z,330nm,1.4s
KONO *e*sP **sP** **21 16 25.9 +1.7**
KONO *e*S **S** **21 21 38.6 0.0**
KONO *i* 21 22 52.7
KONO *e*SS **SS** **21 25 03.3 -0.5**
KONO Kongsberg 45.00 321 *e*P **P** **21 15 16.3 +0.1**
KONO pmax pmax
comp=Z,140nm,1.0s
KONO Kongsberg 45.00 321 *e*P **P** **21 15 16.3 +0.1**
comp=Z,135nm,0.9s
KONO *e*pP **pP** **21 16 01.8 +0.9**
TJN Taejon 45.01 72*c i*P **P** **21 15 16.0 -0.6**
HOPEN Hopen 45.02 346⇑*i*P **P** **21 15 18.1 +2.0**
HOPEN IAmb IAmb 21 15 18.8
comp=Z,936nm,1.1s
HOPEN *e*pP **pP** **21 16 01.5 +0.7**
HOPEN *e*sP **sP** **21 16 24.0 -0.1**
HOPEN *e*S **S** **21 21 43.1 +4.7**
HOPEN *i* 21 22 57.6
KSAR Wonju Array Be 45.09 71 P **P** **21 15 17.4 +0.1**
KSAR 21 16 53.1
KSAR Wonju Array Be 45.09 71 P **P** **21 15 17.4 +0.1**
KSAR pP **pP** **21 16 03.6 +1.7**
KSAR PP **PcP** **21 16 53.0 -1.1**
KSAR ScP **ScP** **21 20 25.0 -1.7**
KSRS Korea Array 45.12 71 P **P** **21 15 17.4 0.0**
comp=Z,25nm,0.5s,baz=273,slow=7.0,SNR=119
KSRS pP **pP** **21 16 03.6 +1.5**
comp=Z,61nm,1.1s,baz=282,slow=6.5,SNR=3.3
KSRS PP **PcP** **21 16 53.0 -1.2**
comp=Z,31nm,0.8s,baz=281,slow=6.0,SNR=4.3
KSRS ScP **ScP** **21 20 25.0 -1.8**
comp=Z,13nm,0.8s,baz=285,slow=4.6,SNR=4.3
NACB Ninganchiao 45.12 91 *e*P **P** **21 15 18.6 +0.9**
comp=Z,328nm,1.2s
MUD Monsted U'grnd 45.17 317⇑*i*P **P** **21 15 18.6 +1.0**
comp=Z,510nm,1.6s
MUD *e*pP **sP** **21 16 25.1 -0.5**
MUD *i* 21 17 06.9
MUD *i* S **S** **21 21 43.2 +2.3**
MUD Monsted U'grnd 45.17 317⇑*i*P **P** **21 15 18.6 +1.0**
MUD *i* 21 17 06.9
MUD *i* S **S** **21 21 43.2 +2.3**
MUD pmax pmax
comp=Z,510nm,1.6s
BJO Bjornoya 45.23 343⇑*i*P **P** **21 15 19.3 +1.5**
BJO IAmb IAmb 21 15 19.7
comp=Z,828nm,0.8s
BJO *e*sP **sP** **21 16 26.8 +0.9**
BJO *e*S **S** **21 21 43.2 +1.9**
BJO *i* 21 22 57.3
BJO *e*SS **SS** **21 25 10.6 +3.6**
YULB Yu-li 45.25 92 *e*P **P** **21 15 20.2 +1.5**
comp=Z,311nm,0.9s
CLTB Caltabellotta 45.31 290 *e*P **P** **21 15 19.0 -0.1**
comp=Z,452nm,1.4s
CLTB *e*pP **pP** **21 16 05.1 +1.2**
TWG Pinlang 45.34 93 *e*P **P** **21 15 22.1 +2.7**
comp=Z,2μm,0.7s
KLR Kul'dur 45.37 54 P **P** **21 15 20.0 +0.7**
comp=Z,99nm,0.9s,baz=279,slow=8.2,SNR=189
KLR pP **pP** **21 16 05.4 +1.4**
comp=Z,39nm,0.9s,baz=279,slow=7.9,SNR=3.0
FUORN Ofenpass-Fuorn 45.38 303 *e*P **P** **21 15 20.1 +0.4**
comp=Z,135nm,1.1s
HOMB Homborsund 45.53 319⇑*i*P **P** **21 15 20.3 -0.1**
HOMB IAmb IAmb 21 15 22.4
comp=Z,192nm,1.0s
HOMB *e*sP **sP** **21 16 29.5 +1.1**
HOMB *e*PP **PP** **21 17 14.0 +3.4**
HOMB *e*S **S** **21 21 46.1 +0.1**
HOMB *e*SS **SS** **21 25 15.5 +3.2**
DAVA Damuels 45.53 304 *i* P **P** **21 15 20.8 0.0**
comp=Z,148nm,1.0s,SNR=58
BKNI Bangkinang 45.61 135 P **P** **21 15 21.9 +0.4**
comp=Z,808nm,0.9s,comp=Z,7μm
BKNI Bangkinang 45.61 135 *e*P **P** **21 15 21.6 +0.1**
comp=Z,665nm,0.9s
BKNI *e*pP **pP** **21 16 07.2 +0.8**
VLC Villacollemand 45.76 299 *e*P **P** **21 15 23.0 +0.6**
comp=Z,123nm,1.1s
VLC *e*pP **pP** **21 16 08.3 +1.0**
STU Stuttgart 45.76 306 *e*P **P** **21 15 23.1 +0.7**
STU pmax pmax
comp=Z,130nm,1.2s
STU Stuttgart 45.76 306 *e*P **P** **21 15 23.1 +0.7**
comp=Z,134nm,1.2s
PPI Padang Panjang 45.89 136 P **P** **21 15 24.1 +0.4**
comp=Z,352nm,0.9s,comp=Z,5μm
TIXI Tiksi 45.93 22 P **P** **21 15 24.2 +0.9**
comp=Z,516nm,0.4s,baz=268,slow=4.6,SNR=3954
TIXI pP **pP** **21 16 09.2 +1.1**
comp=Z,413nm,1.0s,baz=280,slow=2.9,SNR=3.4
TIXI Tiksi 45.93 22*c i*P **P** **21 15 24.0 +0.7**
TIXI pmax pmax
comp=Z,1μm,0.8s
TIXI Tiksi 45.93 22 *e*P **P** **21 15 23.9 +0.6**
comp=Z,916nm,0.8s
TIXI *e*pP **pP** **21 16 08.4 +0.3**
TUE Stuetta 46.03 303 *e*P **P** **21 15 24.3 -0.5**
comp=Z,276nm,1.9s
MYKOM Kota Tinggi 46.10 131 *e*P **P** **21 15 25.9 +0.5**
comp=Z,392nm,1.1s
YOJ Yonaguni jima 46.13 90 *e*P **P** **21 15 25.6 0.0**
YOJ Yonaguni jima 46.13 90 *e*P **P** **21 15 25.6 0.0**
comp=Z,40nm,0.6s
MOL Molde 46.17 325⇑*i*P **P** **21 15 25.9 +0.6**
MOL IAmb IAmb 21 15 28.2
comp=Z,893nm,1.9s
MOL *e*sP **sP** **21 16 34.5 +1.0**
MOL *e*S **S** **21 21 57.8 +2.7**
MOL *e*SS **SS** **21 25 24.9 +2.3**
MSHR Mys Shultsa 46.17 63*c e*P **P** **21 15 26.9 +1.3**
SNART Snartemo 46.21 319⇑*i*P **P** **21 15 26.4 +0.6**
SNART IAmb IAmb 21 15 28.4
comp=Z,268nm,1.3s
PDSI Padang 46.30 137 P **P** **21 15 26.7 -0.3**
BFO Black Forest 46.39 305 *e*P **P** **21 15 27.5 +0.1**
BFO pmax pmax
comp=Z,110nm,1.1s
BFO Black Forest 46.39 305 *e*P **P** **21 15 27.5 +0.1**
comp=Z,114nm,1.1s
BFO *e*pP **pP** **21 16 13.1 +0.8**
USRK Ussuriysk Ar. 46.40 61 P **P** **21 15 27.6 +0.1**
comp=Z,17nm,0.7s,baz=276,slow=7.1,SNR=40
USRK pP **pP** **21 16 14.0 +1.6**
comp=Z,47nm,1.0s,baz=276,slow=7.0,SNR=3.9
USRK PP **PP** **21 17 19.6 +0.6**
comp=Z,13nm,0.7s,baz=291,slow=7.7,SNR=4.3
AKN Aaknes 46.40 324⇑*i*P **P** **21 15 27.8 +0.7**
AKN IAmb IAmb 21 15 28.4
comp=Z,144nm,1.1s
AKN *e*sP **sP** **21 16 31.9 -3.5**
AKN *e*S **S** **21 21 56.8 -1.7**
AKN *e*SS **SS** **21 25 28.1 +1.6**
ODD1 Odda 46.51 321⇑*i*P **P** **21 15 28.8 +0.7**
ODD1 IAmb IAmb 21 15 31.1
comp=Z,455nm,1.4s
ODD1 *e*PP **PP** **21 17 20.5 +0.7**
ODD1 *e*S **S** **21 22 01.9 +1.7**
ODD1 *e*SS **SS** **21 25 32.9 +4.5**
VLA Vladivostok 46.57 62*c i*P **P** **21 15 28.9 +0.2**
VLA pmax pmax
comp=Z,121nm,0.9s
BLS5 Blasjo 46.60 321⇑*i*P **P** **21 15 29.8 +1.0**
BLS5 IAmb IAmb 21 15 31.6
comp=Z,402nm,1.3s
BLS5 *e*sP **sP** **21 16 38.4 +1.4**
BLS5 *e*PP **PP** **21 17 20.8 +0.2**
BLS5 *e*S **S** **21 22 02.1 +0.7**
BLS5 *i* 21 23 17.6
BLS5 *e*SS **SS** **21 25 34.1 +4.3**
LANF Langenberg 46.63 306⇑*e*P **P** **21 15 30.2 +1.1**
LANF Langenberg 46.63 306 P **P** **21 15 30.3 +1.1**
HYA Hoyanger 46.75 323⇑*i*P **P** **21 15 30.5 +0.6**
HYA IAmb IAmb 21 15 31.1
comp=Z,301nm,1.4s
HYA *e*sP **sP** **21 16 39.4 +1.3**
HYA *e*PP **PP** **21 17 26.0 +4.1**
HYA *e*S **S** **21 22 05.2 +1.9**
HYA *i* 21 23 23.8
HYA *e*SS **SS** **21 25 37.2 +5.2**
WTSB Winterswijk 46.86 310 *e*P **P** **21 15 31.4 +0.6**
comp=Z,1μm,2.3s
WTSB *e*pP **pP** **21 16 16.6 +0.8**
WTSB *e*sP **sP** **21 16 39.4 +0.3**
STAV Stavanger 46.99 320⇑*i*P **P** **21 15 32.4 +0.6**
STAV IAmb IAmb 21 15 32.8
comp=Z,492nm,1.6s
STAV *e*sP **sP** **21 16 38.7 -1.3**
STAV *e*PP **PP** **21 17 24.3 +0.2**
STAV *e*S **S** **21 22 05.2 -1.7**
STAV *e*SS **SS** **21 25 43.2 +7.1**
HSPB Hornsund (broa 47.15 345⇑*i*P **P** **21 15 34.3 +1.6**
HSPB IAmb IAmb 21 15 35.0
comp=Z,576nm,1.0s
HSPB *e*sP **sP** **21 16 42.2 +1.1**
HSPB *e*S **S** **21 22 10.1 +1.4**
HSPB *i* 21 23 26.1
HSPB Hornsund (broa 47.15 345 *e*P **P** **21 15 34.6 +1.9**
HSPB *e**PP **pP** **21 16 18.8 +1.0**
HSPB *e*S **S** **21 22 12.3 +3.6**
HSPB *e* 21 25 03.4
BER Bergen 47.16 322⇑*i*P **P** **21 15 33.5 +0.5**
BER IAmb IAmb 21 15 34.1
comp=Z,169nm,0.9s
BER *e*sP **sP** **21 16 41.1 -0.3**
BER *e*PP **PP** **21 17 24.1 -1.5**
BER *e*S **S** **21 22 07.2 -2.0**
BER *e*SS **SS** **21 25 45.1 +6.4**
ECH Echery 47.18 305⇑*e*P **P** **21 15 33.5 0.0**
TPRI Tanjung Pinang 47.19 131 P **P** **21 15 34.8 +0.9**
KMY Karmoy 47.22 320⇑*i*P **P** **21 15 34.0 +0.5**
KMY IAmb IAmb 21 15 34.6
comp=Z,398nm,1.6s
KMY *e*sP **sP** **21 16 41.8 0.0**
KMY *e*PP **PP** **21 17 27.2 +1.1**
KMY *e*S **S** **21 22 11.2 +1.2**
ASK Askoy 47.23 322⇑*i*P **P** **21 15 34.0 +0.5**
ASK IAmb IAmb 21 15 34.6
comp=Z,350nm,1.4s
MOF Molkenrain 47.27 305⇑*e*P **P** **21 15 34.5 +0.3**
MOF Molkenrain 47.27 305 P **P** **21 15 34.5 +0.3**
FOO Floro 47.31 324⇑*i*P **P** **21 15 34.7 +0.6**
FOO IAmb IAmb 21 15 35.2
comp=Z,181nm,1.1s
FOO *e*sP **sP** **21 16 42.7 +0.2**

FOO *e*PP **PP** **21 17 28.5 +1.6**
FOO *e*S **S** **21 22 11.8 +0.6**
FOO *i* 21 23 28.1
FOO *e*SS **SS** **21 25 44.6 +3.5**
SENIN Lac Senin/Sane 47.44 303 *e*P **P** **21 15 35.7 0.0**
comp=Z,116nm,1.0s
SUE Sulen 47.44 323 *e*P **P** **21 15 34.6 -0.5**
SUE IAmb IAmb 21 15 37.6
comp=Z,553nm,1.7s
SUE *e*sP **sP** **21 16 44.2 +0.7**
SUE *e*PP **PP** **21 17 29.1 +0.9**
SUE *e*S **S** **21 22 15.7 +2.6**
SPITS Spitsbergen Ar 47.51 347 P **P** **21 15 37.2 +1.7**
comp=Z,228nm,0.7s,baz=129,slow=12,SNR=696
SPITS *p*P **pP** **21 16 21.2 +0.6**
comp=Z,111nm,0.9s,baz=129,slow=20,SNR=2.7
MEM Membach 47.53 309 P **P** **21 15 36.6 +0.5**
MEM Membach 47.53 309 P **P** **21 15 36.9 +0.8**
HGN Heimansgroeve 47.56 309 *e*P **P** **21 15 36.7 +0.4**
comp=Z,239nm,2.1s
HGN *e*pP **pP** **21 16 22.6 +1.2**
HGN *e*sP **sP** **21 16 44.5 -0.1**
LOMF Lomont 47.56 304⇑ *e*P **P** **21 15 36.3 -0.2**
WLF Walferdange 47.59 307 P **P** **21 15 37.7 +1.2**
WLF Walferdange 47.59 307 *e*P **P** **21 15 37.3 +0.8**
WLF pmax pmax
comp=Z,243nm,1.3s
WLF Walferdange 47.59 307 *e*P **P** **21 15 37.3 +0.8**
comp=Z,243nm,1.3s
PPSI Pulau Pagai 47.60 139 P **P** **21 15 38.3 +1.3**
HABR Khabarovsk 47.64 54*c i*P **P** **21 15 35.8 -1.1**
HABR *e**PP **pP** **21 16 19.4 -2.6**
HABR *e* 21 17 01.9
HABR *e* 21 17 29.1
HABR PPP PPP 21 18 24.1
HABR *e*S **S** **21 22 16.5 +0.2**
HABR *e* 21 25 07.7
HABR *e*SS **SS** **21 25 48.6 +1.7**
HABR pmax pmax
comp=N,8.0nm,0.7s
HABR pmax pmax
comp=E,115nm,1.4s
HABR pmax pmax
comp=Z,275nm,1.4s
HABR pmax pmax
comp=Z,2μm,3.0s
HABR MLR MLR
comp=Z,338nm,12.0s
VSL Villasalto 47.64 293 *e*P **P** **21 15 36.9 -0.2**
comp=Z,200nm,1.4s
VSL *e*pP **pP** **21 16 23.1 +0.8**
BEBN Eben Emael 47.71 309 P **P** **21 15 37.7 +0.3**
ABRA Dolores 47.73 99 *e*P **P** **21 15 40.0 +2.0**
BOLP Bolinao 47.80 101 *e*P **P** **21 15 40.1 +1.6**
OG01 Vacheresse 47.86 303⇑ *e*P **P** **21 15 39.3 +0.5**
THEF They Montfort 47.95 305⇑ *e*P **P** **21 15 38.7 -0.7**
LUCF Luceram 47.95 300 *e*P **P** **21 15 39.8 +0.3**
REVF Revere 47.97 299⇑ *e*P **P** **21 15 39.9 +0.3**
BCLA Clavier 48.01 308 P **P** **21 15 40.3 +0.6**
OG22 Abries 48.02 301⇑ *e*P **P** **21 15 40.4 +0.3**
APYP Conner 48.04 99 *e*P **P** **21 15 41.6 +1.3**
RSL Roselend 48.04 302⇑ *e*P **P** **21 15 40.4 +0.2**
MVIF Mont Vial 48.09 300⇑ *e*P **P** **21 15 40.8 +0.2**
SCZP Santa Cruz 48.14 102 *e*P **P** **21 15 42.4 +1.2**
CALN Calern 48.31 299⇑ *e*P **P** **21 15 42.5 +0.2**
BCPH Baguio City Da 48.33 101⇑ *e*P **P** **21 15 46.3 +3.5**
GDM Grand'Maison 48.50 301⇑ *e*P **P** **21 15 43.8 0.0**
DOU Dourbes 48.51 308 P **P** **21 15 44.3 +0.8**
comp=Z,98nm,2.4s
KMBO Kilima Mbogo 48.62 227 *e*P **P** **21 15 46.6 +1.5**
KMBO pmax pmax
comp=Z,100nm,0.8s
KMBO Kilima Mbogo 48.62 227 P **P** **21 15 46.9 +1.9**
SNR=52
KMBO Kilima Mbogo 48.62 227 P **P** **21 15 46.9 +1.9**
SNR=52
KMBO Kilima Mbogo 48.62 227 *e*P **P** **21 15 46.5 +1.4**
comp=Z,103nm,0.8s
KBS Kingsbay 48.63 347⇑ *i*P **P** **21 15 45.5 +1.4**
KBS IAmb IAmb 21 15 46.2
comp=Z,592nm,0.9s
KBS *e*sP **sP** **21 16 54.8 +2.1**
KBS *e*PP **PP** **21 17 40.5 +1.7**
KBS *e*S **S** **21 22 32.5 +3.0**
KBS Kingsbay 48.63 347 *e*P **P** **21 15 45.5 +1.4**
KBS pmax pmax
comp=Z,660nm,1.0s
KBS Kingsbay 48.63 347 *e*P **P** **21 15 45.1 +1.0**
comp=Z,506nm,0.8s
KBS *e*pP **pP** **21 16 30.5 +1.1**
SNF Seneffe 48.64 309 P **P** **21 15 45.0 +0.6**
GRN Grenoble 48.74 302⇑ *e*P **P** **21 15 45.7 +0.2**
JNU Nakatsue 48.83 75 *e*P **P** **21 15 46.8 +0.5**
comp=Z,165nm,0.9s
JNU *e* 21 16 30.2
KEST Kesra 48.85 288 P **P** **21 15 47.5 +1.1**
comp=Z,51nm,0.8s,baz=24,slow=1.5,SNR=99
KEST *p*P **pP** **21 16 32.8 +1.0**
comp=Z,632nm,1.3s,baz=28,slow=2.8,SNR=9.3
MASI Maura Aman, Be 49.13 136 P **P** **21 15 48.4 -0.3**
OG26 St.-Nazaire-De 49.21 301⇑ *e*P **P** **21 15 49.6 +0.5**
JOW Kunigami 49.30 84 *e*P **P** **21 15 49.8 -0.1**
comp=Z,716nm,1.8s
JOW *e*pP **pP** **21 16 36.5 +1.2**
BALP Baler 49.48 101 *e*P **P** **21 15 53.0 +1.6**
SSB Saint Sauveur 49.56 302⇑ *e*P **P** **21 15 52.2 +0.5**
SSB Saint Sauveur 49.56 302 *e*P **P** **21 15 52.0 +0.3**
SSB pmax pmax
comp=Z,26nm,0.7s
SSB Saint Sauveur 49.56 302 *e*P **P** **21 15 52.0 +0.3**
comp=Z,26nm,0.7s
SSB *e*pP **pP** **21 16 38.1 +1.0**
LUBP Lubang 49.59 104 *e*P **P** **21 15 53.8 +1.6**
CMAH Djebel Manchou 50.01 290 P **P** **21 15 55.8 +0.6**
PLDF La Plantade 50.02 303 *e*P **P** **21 15 55.0 -0.1**
ABSA Djebel Ababsia 50.09 290 P **P** **21 15 57.1 +1.3**
NKL Nikolayevsk 50.33 47 *i*P **P** **21 15 58.0 +0.8**
NKL *e* 21 19 04.0
NKL *e*S **S** **21 22 51.0 -2.5**
NKL *e* 21 24 06.0
NKL pmax pmax
comp=E,2μm,10.0s
NKL pmax pmax
comp=Z,3μm,10.0s
NKL smax smax
comp=N,700nm,7.0s
NKL smax smax
comp=E,1μm,7.0s
NKL MLR MLR
comp=N,2μm,12.0s
NKL MLR MLR
comp=E,1μm,12.0s
NKL MLR MLR
comp=Z,2μm,12.0s
YEL1 Yell 50.33 322⇑ *i*P **P** **21 15 57.4 +0.3**
AGO Saint Agoulin 50.33 303⇑ *e*P **P** **21 15 57.8 +0.4**
CAEH 'Ain El Ouahch 50.39 291 P **P** **21 15 58.7 +0.7**
PMBI Palembang 50.40 133 P **P** **21 15 59.1 +0.9**
comp=Z,468nm,0.9s,comp=Z,11μm
LHSI Lahat 50.41 135 P **P** **21 15 55.8 -2.5**
LRW Lerwick 50.41 322⇑ *e*P **P** **21 15 57.0 -0.8**
LRW AMB AMB 21 15 58.6
comp=Z,337nm,1.8s
SAN1 Sandwick 50.46 322⇑ *e*P **P** **21 15 58.0 -0.1**
LBL Lubilhac 50.46 302 *e*P **P** **21 15 58.8 +0.4**
KSM Kuching 50.47 124 *e*P **P** **21 15 59.6 +0.8**
comp=Z,122nm,0.9s
ENPP El Nido 50.47 107 *e*P **P** **21 16 00.5 +1.7**
ELSH Elham, Standar 50.48 310⇑ *e*P **P** **21 15 58.6 +0.2**
PYM Petit Puy Mans 50.49 303⇑ *e*P **P** **21 15 58.8 +0.1**
MNAI Manna 50.53 136 *e*P **P** **21 15 58.3 -0.9**
comp=Z,674nm,1.3s
MNAI *e*pP **pP** **21 16 42.7 -2.2**
BUSP Coron 50.59 106 *e*P **P** **21 16 01.5 +1.9**
PPBI Pangkal Pinang 50.60 131 P **P** **21 16 00.0 +0.3**
CKFL Kef-Lekhel 50.62 290 P **P** **21 15 59.7 -0.1**
WAL1 Walls 50.62 322⇑ *e*P **P** **21 15 58.9 -0.4**
BATP Bataraza 50.75 111 *e*P **P** **21 16 02.1 +1.2**
CASM Ain Smara 50.84 290 P **P** **21 16 01.4 0.0**
VERF Verneugheol 50.84 303⇑ *e*P **P** **21 16 01.7 +0.4**
FRNF Fournols 50.88 303⇑ *e*P **P** **21 16 02.4 +0.8**
CTEI Djebel Teioual 50.97 290 P **P** **21 16 03.0 +0.5**
SJMP San Jose 51.03 105 *e*P **P** **21 16 04.2 +1.3**

SBUM Sibu 51.05 122 *e*P **P** **21 16 04.6 +1.5**
comp=Z,133nm,1.0s
DFRA Djebel Bou Aff 51.20 291 P **P** **21 16 04.5 +0.3**
GQP Guinayangan 51.22 102⇑ *e*P **P** **21 16 05.1 +0.7**
KKM Kota Kinabalu 51.38 115 *e*P **P** **21 16 07.0 +1.3**
comp=Z,439nm,1.1s
SJAF Saint Jean de 51.48 299⇑ *e*P **P** **21 16 05.6 -0.4**
DRUM Mains of Drumt 51.53 318⇑ *e*P **P** **21 16 06.1 0.0**
LRDF Laroque-de-Fa 51.58 300⇑ *e*P **P** **21 16 07.0 +0.2**
CWF Charnwood Fore 51.64 312⇑ *e*P **P** **21 16 06.3 -0.6**
CWF Charnwood Fore 51.64 312 *e*P **P** **21 16 07.0 0.0**
comp=Z,64nm,1.0s
CKHR Kef el Ahmar 51.66 290 P **P** **21 16 08.0 +0.4**
FILF Fillols 51.68 299⇑ *e*P **P** **21 16 08.1 +0.5**
SET Setif 51.68 290 P **P** **21 16 09.0 +1.3**
LWLI Liwa 51.69 136 P **P** **21 16 05.4 -2.5**
MME1 Meikle Cairn 51.72 318⇑ *e*P **P** **21 16 07.3 -0.3**
AUQP San Andres 51.74 103 *e*P **P** **21 16 10.6 +2.4**
ESY Stoneypath 51.77 317⇑ *e*P **P** **21 16 07.9 0.0**
MCD Coleburn Disti 51.83 319⇑ *i*P **P** **21 16 08.2 -0.1**
EDU Dundee 51.88 317⇑ *e*P **P** **21 16 08.4 -0.3**
WOL Wolverton 51.89 311⇑ *e*P **P** **21 16 08.9 0.0**
WOL AMB AMB 21 16 09.8
comp=Z,374nm,1.9s
CUYO Cuyo Island 51.92 106 *e*P **P** **21 16 11.0 +1.4**
TYV Tymovskoe 51.99 50 *e*P **P** **21 16 12.0 +2.4**
TYV pmax pmax
comp=N,48nm,0.8s
TYV pmax pmax
comp=Z,154nm,0.8s
TYV pmax pmax
comp=Z,3μm,9.0s
BIGH Upper Bighouse 52.02 320⇑ *e*P **P** **21 16 09.7 0.0**
BIGH AMB AMB 21 16 10.8
comp=Z,624nm,1.6s
EDI Edinburgh 52.09 317 *e*P **P** **21 16 10.1 -0.2**
VALF Valcebollere 52.11 299⇑ *e*P **P** **21 16 11.1 +0.2**
ECK Cauldkaine Hil 52.20 316⇑ *i*P **P** **21 16 10.7 -0.4**
SWN1 Swindon 52.20 311⇑ *e*P **P** **21 16 10.8 -0.3**
ESK Eskdalemuir 52.21 316⇑ *e*P **P** **21 16 11.0 -0.1**
ESK AMB AMB 21 16 11.9
comp=Z,166nm,1.8s
ESK Eskdalemuir 52.21 316 *e*P **P** **21 16 11.1 -0.1**
ESK pmax pmax
comp=Z,140nm,1.0s
ESK Eskdalemuir 52.21 316 *e*P **P** **21 16 11.1 -0.1**
comp=Z,144nm,1.0s
MVH1 Achvaich 52.26 319⇑ *i*P **P** **21 16 11.2 -0.3**
STKI Sintang 52.29 124 P **P** **21 16 13.6 +1.3**
KESW Keswick, Cumbr 52.30 315⇑ *e*P **P** **21 16 12.0 +0.1**
KESW AMB AMB 21 16 12.9
comp=Z,272nm,1.9s
KASI Kota Agung 52.35 136 P **P** **21 16 09.9 -2.8**
STRD Stroud 52.36 311⇑ *e*P **P** **21 16 11.5 -0.8**
STRD AMB AMB 21 16 12.6
comp=Z,216nm,2.1s
MDO Dochfour 52.44 319⇑ *i*P **P** **21 16 12.1 -0.8**
BWH Wardlaw 52.49 316⇑ *e*P **P** **21 16 12.9 -0.4**
BATH Bath 52.54 311⇑ *e*P **P** **21 16 13.2 -0.5**
BATH AMB AMB 21 16 14.0
comp=Z,165nm,2.0s
JMIC Jan Mayen 52.56 336⇑ *i*P **P** **21 16 15.4 +1.9**
JMIC IAmb IAmb 21 16 15.8
comp=Z,1μm,1.8s
JMIC *e*sP **sP** **21 17 23.9 +1.4**
JMIC *e*S **S** **21 23 26.7 +3.1**
HLM1 Long Mynd 52.62 312⇑ *e*P **P** **21 16 13.0 -1.2**
HLM1 AMB AMB 21 16 15.0
comp=Z,188nm,2.1s
OLDB Oldbury-Upon-S 52.62 311⇑ *e*P **P** **21 16 13.4 -0.8**
BLSI Bandar Lampung 52.65 135 P **P** **21 16 11.9 -3.0**
comp=Z,181nm,0.9s
EAB Aberfoyle 52.67 317⇑ *e*P **P** **21 16 14.2 -0.3**
RSC Scourie 52.70 320⇑ *e*P **P** **21 16 15.3 +0.7**
JAP San Jose, Anti 52.71 106⇓ *e*P **P** **21 16 17.8 +2.4**
FOEL Foel Wylfa 52.73 313⇑ *e*P **P** **21 16 14.8 -0.2**
FOEL AMB AMB 21 16 16.0
comp=Z,204nm,2.0s
INU Inuyama 52.73 70 *e*P **P** **21 16 15.2 -0.1**
comp=Z,50nm,0.8s
MCH1 Michaelchurch 52.81 312⇑ *e*P **P** **21 16 15.3 -0.3**
MCH1 AMB AMB 21 16 16.2
comp=Z,242nm,2.1s
PGBU Glenifferbraes 52.83 317⇑ *e*P **P** **21 16 15.8 +0.1**
PGBU AMB AMB 21 16 16.6
comp=Z,250nm,2.0s
KAC Achnashellach 52.93 319⇑ *i*P **P** **21 16 16.3 -0.1**
YSS Yuzh-Sakhalins 53.05 55*c e*P **P** **21 16 17.6 +0.2**
YSS *e*S **S** **21 23 31.0 +0.1**
YSS *e*SS **SS** **21 27 19.0 +6.3**
YSS pmax pmax
comp=Z,260nm,1.4s
KSB Sheil Bridge 53.05 319⇑ *i*P **P** **21 16 17.2 -0.1**
WPM1 Penmaenmawr 53.05 314⇑ *e*P **P** **21 16 17.2 -0.2**
RRR Rubha Reidh 53.13 319⇑ *e*P **P** **21 16 17.6 -0.2**
KPL Plockton 53.15 319⇑ *e*P **P** **21 16 17.4 -0.5**
KPL AMB AMB 21 16 18.7
comp=Z,227nm,1.8s
GAL1 Galloway 53.15 316 *e*P **P** **21 16 17.7 -0.4**
MAJO Matsushiro 53.19 68*c i*P **P** **21 16 18.1 -0.5**
MAJO pmax pmax
comp=Z,696nm,1.0s
MAJO Matsushiro 53.19 68 *e*P **P** **21 16 18.2 -0.4**
comp=Z,104nm,0.8s
MJAR Matsushiro Arr 53.19 68 P **P** **21 16 18.5 -0.2**
comp=Z,90nm,0.9s,baz=290,slow=9.2,SNR=129
MJAR *p*P **pP** **21 17 05.7 +0.9**
comp=Z,42nm,0.9s,baz=288,slow=10.0,SNR=4.9
MJAR Matsushiro Arr 53.19 68 P **P** **21 16 18.5 -0.2**
MJAR pmax pmax
comp=Z,89nm,1.0s
LABF Labassere 53.27 300 *e*P **P** **21 16 19.3 +0.1**
GUIM Jordan 53.28 105 *e*P **P** **21 16 20.6 +1.1**
WIM Isle of Man 53.30 315⇑ *e*P **P** **21 16 19.1 0.0**
WLF1 Llynfaes 53.33 314⇑ *e*P **P** **21 16 19.1 -0.3**
WLF1 AMB AMB 21 16 20.2
comp=Z,185nm,2.1s
VIEF Viey 53.36 300⇑ *e*P **P** **21 16 20.1 +0.2**
LPW Lampeter 53.42 312⇑ *e*P **P** **21 16 20.1 0.0**
YRE Yr Eifl 53.42 313⇑ *i*P **P** **21 16 19.9 -0.2**
YRC Rhoscolyn 53.45 314⇑ *e*P **P** **21 16 20.2 0.0**
EMHD Djebel Mahouad 53.53 291 P **P** **21 16 21.0 -0.3**
HEX Exmoor 53.53 311⇑ *e*P **P** **21 16 20.0 -0.8**
GMK Mull of Kintyr 53.54 316⇑ *e*P **P** **21 16 21.0 +0.1**
REYF Montagne du Re 53.59 301 *e*P **P** **21 16 22.8 +1.2**
MYLDM Lahad Datu 53.64 114 *e*P **P** **21 16 23.9 +1.7**
comp=Z,434nm,1.2s
DYA Yadsworthy 53.77 310⇑ *e*P **P** **21 16 22.1 -0.6**
DYA AMB AMB 21 16 23.1
comp=Z,127nm,1.9s
DYA Yadsworthy 53.77 310 *e*P **P** **21 16 22.8 +0.1**
DYA *e*pP **pP** **21 17 09.2 +0.4**
ASAJ Asahikawa 53.78 58 *e*P **P** **21 16 22.7 -0.1**
comp=Z,179nm,1.3s
CGJI Cibinong 53.92 135 P **P** **21 16 20.4 -3.7**
HTL Hartland 53.96 311⇑ *e*P **P** **21 16 23.5 -0.5**
COCO West Island 54.26 148 *e*P **P** **21 16 27.5 +1.0**
COCO pmax pmax
comp=Z,550nm,1.2s
COCO West Island 54.26 148 *e*P **P** **21 16 27.5 +1.0**
comp=Z,550nm,1.3s
PBKI Pangkalan Bun 54.49 126 P **P** **21 16 28.7 +0.4**
LLP Lapu-Lapu 54.54 105⇑ *e*P **P** **21 16 29.3 +0.6**
MA2 Magadan 54.56 38 P **P** **21 16 28.8 +0.7**
comp=Z,193nm,1.1s,baz=306,slow=6.6,SNR=45
MA2 *p*P **pP** **21 17 15.8 +1.3**
comp=Z,140nm,1.1s,baz=356,slow=3.4,SNR=3.2
MA2 Magadan 54.56 38 *e*P **P** **21 16 28.7 +0.5**
MA2 pmax pmax
comp=Z,1μm,1.2s
MA2 Magadan 54.56 38 *e*P **P** **21 16 28.7 +0.5**
comp=Z,1μm,1.2s
MA2 *e*pP **pP** **21 17 16.0 +1.5**
EBNR Beni Rached 54.56 292 P **P** **21 16 28.2 -0.4**
SNPH Sibulan 54.57 106⇓ *e*P **P** **21 16 30.0 +1.1**
OCLP Ormoc 54.60 103 *e*P **P** **21 16 30.0 +0.9**
SEY Seymchan 54.60 34 P **P** **21 16 29.6 +1.2**
comp=Z,318nm,1.0s,baz=274,slow=8.7,SNR=340
CCA1 Carnmenellis 54.64 310⇑ *e*P **P** **21 16 27.8 -1.1**
IDGL Inch Island, C 54.67 316⇑ *e*P **P** **21 16 29.3 +0.3**
SKJI Sukabumi 54.73 135 P **P** **21 16 29.9 0.0**
ECHA Ech Chlef 54.73 292 P **P** **21 16 30.0 +0.2**
DAG Danmarks Havn 54.74 344⇑ *i*P **P** **21 16 30.2 +1.0**
comp=Z,394nm,0.9s

DAG Danmarks Havn 54.74 344⇑ *i*P **P** **21 16 30.2 +1.0**
DAG pmax pmax
comp=Z,330nm,0.9s
PLP Palo 54.82 103⇓ *e*P **P** **21 16 29.8 -0.9**
ERM Erimo 54.86 60*de*P **P** **21 16 32.6 +2.0**
ERM pmax pmax
comp=Z,121nm,1.8s
ERM Erimo 54.86 60 *e*P **P** **21 16 30.9 +0.3**
comp=Z,143nm,1.3s
ERM *e*pP **pP** **21 17 17.7 +0.7**
EANR 'Ain N'Sour 55.01 292 P **P** **21 16 31.6 -0.3**
IPIL Ipil 55.02 108 *e*P **P** **21 16 33.4 +1.3**
ETRT Tiaret 55.08 291 P **P** **21 16 32.0 -0.4**
CNJI Cibinong 55.31 134 P **P** **21 16 29.4 -4.6**
PAGZ Pagadian 55.61 107 *e*P **P** **21 16 37.9 +1.6**
CISI Cisompet, Garu 55.90 134 *e*P **P** **21 16 34.2 -4.2**
comp=Z,51nm,0.6s
YUK Yuzh-Kuril'sk 56.03 57*c i*P **P** **21 16 39.0 +0.1**
YUK *i* S **S** **21 24 11.6 +0.8**
YUK pmax pmax
comp=Z,744nm,1.3s
YUK pmax pmax
comp=N,509nm,1.1s
YUK pmax pmax
comp=E,452nm,1.0s
YUK pmax pmax
comp=Z,1μm,2.1s
YUK MLR MLR
comp=Z,1μm,15.0s
YUK MLR MLR
comp=E,1μm,14.0s
CTBH Cotabato--PC H 56.66 107⇑ *i*P **P** **21 16 45.0 +1.2**
UWJI Ujung Watu 56.88 130 P **P** **21 16 45.4 +0.2**
BUKP Musuan 56.88 106 *e*P **P** **21 16 46.8 +1.5**
BKB Balikpapan 56.94 121 P **P** **21 16 46.7 +1.0**
SCO Scoresbysund 57.03 336⇑ *i*P **P** **21 16 47.3 +1.8**
comp=E,196nm,1.4s
SCO Scoresbysund 57.03 336⇑ *i*P **P** **21 16 47.3 +1.8**
SCO pmax pmax
comp=Z,200nm,1.4s
XMIS Christmas Isla 57.08 138 *e*P **P** **21 16 45.7 -0.9**
comp=Z,108nm,0.9s
VAL Valentia 57.13 313⇓ *i*P **P** **21 16 46.9 +0.4**
VAL Valentia 57.13 313⇓ *i*S **S** **21 24 25.3 +0.3**
VAL Valentia 57.13 313⇑ *i*SS sS 21 25 44.2 -2.6
ESDC Sonseca Array 57.29 298 P **P** **21 16 47.9 -0.1**
comp=Z,27nm,0.9s,baz=59,slow=7.5,SNR=92
ESDC *p*P **pP** **21 17 34.0 -0.8**
comp=Z,96nm,0.9s,baz=67,slow=6.9,SNR=8.8
ESDC PKPPKP **P'P'df** **21 46 38.8 +3.0**
comp=Z,1.7nm,0.9s,baz=254,slow=1.8,SNR=6.3
TAM Tamanrasset 57.32 276 *e*P **P** **21 16 48.7 +0.2**
TAM *e**PP **pP** **21 17 36.3 +1.0**
TAM pmax pmax
comp=Z,28nm,0.8s
TAM Tamanrasset 57.32 276 *e*P **P** **21 16 48.7 +0.2**
comp=Z,28nm,0.8s
TAM *e*pP **pP** **21 17 36.3 +1.0**
PAB San Pablo 57.62 298 *e*P **P** **21 16 50.7 +0.5**
PAB pmax pmax
comp=Z,380nm,1.3s
PAB San Pablo 57.62 298 *e*P **P** **21 16 50.4 +0.1**
comp=Z,380nm,1.3s
PAB *e*pP **pP** **21 17 37.5 +0.4**
MRIV Mauritius Mete 57.78 195 *e*P **P** **21 16 52.5 +1.2**
MRIV *e*pP **pP** **21 17 39.0 +0.7**
DAV Davao City (W) 57.79 106 ⇑S **S** **21 24 37.3 +2.8**
DAV Davao City (W) 57.79 106 P **P** **21 16 53.1 +1.5**
SNR=16
DAV Davao City (W) 57.79 106 P **P** **21 16 53.1 +1.5**
SNR=16
UGM Wanagama 57.79 131 P **P** **21 16 52.0 +0.4**
UGM Wanagama 57.79 131 *e*P **P** **21 16 52.5 +0.8**
comp=Z,448nm,1.9s
NGJI Ngawi 57.94 130 P **P** **21 16 52.5 -0.1**
MATI Mati 58.39 106 *e*P **P** **21 16 55.4 -0.4**
PCJI Pacitan 58.41 131 P **P** **21 16 51.9 -3.9**
PBRG Braganca 58.43 301 *e*P **P** **21 16 56.0 +0.2**
comp=Z,84nm,1.8s
PBRG *e*pP **pP** **21 17 43.3 +0.5**
BORG Borgarnes 58.56 330 P **P** **21 16 58.3 +2.1**
comp=Z,62nm,0.8s,baz=96,slow=5.1,SNR=23
BORG Borgarnes 58.56 330 *e*P **P** **21 16 57.7 +1.5**
comp=Z,126nm,0.9s
BORG *e*pP **PcP** **21 17 44.3 +0.2**
PWJI Pagerwojo 58.66 130 P **P** **21 16 54.3 -3.3**
PCI Palu 58.76 118 P **P** **21 16 59.2 +0.8**
comp=Z,484nm,1.2s,comp=Z,5μm
BILL Bilibino 58.77 26*c i*P **P** **21 16 59.1 +1.5**
BILL *i **PP **pP** **21 17 44.7 0.0**
BILL *i* 21 19 10.2
BILL *i* S **S** **21 24 38.3 -7.5**
BILL pmax pmax
comp=Z,555nm,1.1s
BILL Bilibino 58.77 26 *e*P **P** **21 16 58.9 +1.3**
comp=Z,811nm,1.2s
MVO Moncorvo 58.88 300 *e*P **P** **21 16 59.1 +0.2**
comp=Z,79nm,1.5s
MVO Moncorvo 58.88 300 *e*PcP **PcP** **21 17 46.3 +0.3**
RER Riviere de l'E 59.00 196 *e*P **P** **21 17 00.4 +0.6**
comp=Z,445nm,1.1s
RER *e* 21 17 47.6
PVRL Vila Real 59.31 301 *e*P **P** **21 17 02.5 +0.6**
PVRL *e*pP **pP** **21 17 49.8 +0.8**
POLO Lamas de Olo 59.33 301 *e*P **P** **21 17 02.4 +0.4**
comp=Z,32nm,1.6s
POLO *e*pP **pP** **21 17 49.5 +0.3**
POLO *e*sP **sP** **21 18 14.0 +2.1**
MRSI Marisa 59.33 115 P **P** **21 17 02.7 +0.4**
PCAB Cabril 59.36 301 *e*P **P** **21 17 03.4 +1.3**
comp=Z,153nm,1.5s
PCAB *e*pP **pP** **21 17 50.2 +0.9**
PGAV Gavieira, Arco 59.42 302 *e*P **P** **21 17 03.2 +0.5**
comp=Z,115nm,1.8s
PGAV *e*pP **pP** **21 17 50.2 +0.4**
PCBR Castelo Branco 59.72 299 *e*P **P** **21 17 05.4 +0.8**
comp=Z,79nm,1.9s
PCBR *e*pP **pP** **21 17 52.1 +0.3**
PCBR *e*sP **sP** **21 18 17.4 +2.9**
PCBR Castelo Branco 59.72 299 *e*PP PP 21 19 17.9 -0.7
PMRV Marv??o 59.83 299 *e*P **P** **21 17 05.5 +0.1**
comp=Z,114nm,1.4s
PMRV *e*pP **pP** **21 17 52.8 +0.2**
GMJI Gumukmas 59.87 129 P **P** **21 17 03.0 -2.9**
ABJI Asem Bagus 60.01 128 P **P** **21 17 06.2 -0.6**
PBAR Barrancos 60.09 297 *e*P **P** **21 17 07.3 +0.1**
comp=Z,285nm,1.5s
PBAR Barrancos 60.09 297 *e*PcP **PcP** **21 17 54.4 +3.6**
PBAR *e*sP **sP** **21 18 18.0 +0.9**
SKR Severo-Kuril's 60.17 47 *e*P P 21 16 56.9 -11
SKR pmax pmax
comp=Z,22nm,1.0s
SKR MLR MLR
comp=Z,3μm,14.0s
PETK Petropavlovsk- 60.18 44 P **P** **21 17 06.4 -1.1**
comp=Z,27nm,0.7s,baz=354,slow=0.9,SNR=25
PETK *p*P **pP** **21 17 54.3 -0.5**
comp=Z,14nm,0.8s,baz=0.0,slow=1.5,SNR=1.8
PETK Petropavlovsk- 60.18 44 P **P** **21 17 06.4 -1.1**
PETK *PP **pP** **21 17 54.3 -0.5**
PETK pmax pmax
comp=Z,29nm,0.7s
PESTR Estremoz 60.20 298 *e*P **P** **21 17 07.8 -0.1**
comp=Z,81nm,1.7s
PESTR *e*pP **pP** **21 17 54.9 -0.3**
TTSI Tana Toraja 60.25 120 P **P** **21 17 08.6 +0.1**
PCAS Casmilo, Conde 60.35 300 *e*P **P** **21 17 09.1 +0.2**
comp=Z,59nm,1.4s
PCAS *e*pP **pP** **21 17 56.3 +0.1**
PTOM Tomar 60.47 299 *e*P **P** **21 17 10.3 +0.6**
comp=Z,142nm,1.4s
PTOM *e*pP **pP** **21 17 57.1 +0.1**
JAGI Jajag, Banyuwa 60.47 129 P **P** **21 17 06.8 -3.1**
JAGI Jajag, Banyuwa 60.47 129 *e*P **P** **21 17 07.0 -2.9**
comp=Z,71nm,0.9s
JAGI *e*pP **pP** **21 17 58.3 +1.0**
PMTG Montargil 60.56 299 *e*P **P** **21 17 10.5 +0.2**
comp=Z,64nm,1.7s
PMTG *e*pP **pP** **21 17 57.5 -0.2**
MDT Midelt 60.61 291 PKPPKP **P'P'df** **21 46 33.5 +2.9**
comp=Z,2.3nm,1.0s,baz=308,slow=1.2,SNR=4.1
EVO Evora 60.64 298 *e*P **P** **21 17 11.2 +0.3**
comp=Z,119nm,1.7s
EVO *e*pP **pP** **21 17 58.2 0.0**
PET Petropavlovsk 60.74 44*α i*P **P** **21 17 09.8 -1.5**

PET e*PP **pP** **21 17 56.2 -2.4**
PET e 21 19 28.5
PET eS **S** **21 25 06.5 -4.8**
PET pmax pmax
comp=Z,149nm,1.1s
PET pmax pmax
comp=Z,1µm,5.6s
PET pmax pmax
comp=Z,1µm,14.0s
PET pmax pmax
comp=Z,600nm,16.8s
PET Petropavlovsk 60.74 44 eP **P** **21 17 09.8 -1.5**
comp=Z,156nm,1.1s
PET epP **pP** **21 17 58.9 +0.2**
PBEJ Beja 60.75 297 eP **P** **21 17 12.5 +0.9**
comp=Z,107nm,1.9s
PBEJ epP **pP** **21 17 59.2 +0.2**
PBEJ esP **sP** **21 18 23.9 +2.3**
SRBI Singaraja 60.85 127 P **P** **21 17 11.2 -1.3**
SPSI Sidrap Palu 60.87 120 P **P** **21 17 12.3 -0.4**
PVAQ Vaqueiros 60.90 297 eP **P** **21 17 12.8 +0.1**
comp=Z,132nm,2.0s
PVAQ epP **pP** **21 17 59.9 -0.1**
PVAQ esP **sP** **21 18 24.1 +1.4**
PVAQ Vaqueiros 60.90 297 ePP PP 21 19 26.8 -2.3
LUWI Luwuk 60.97 116 P **P** **21 17 14.0 +0.6**
LUWI Luwuk 60.97 116 eP **P** **21 17 12.6 -0.8**
comp=Z,218nm,1.0s
PCVE Castro Verde 61.04 297 eP **P** **21 17 14.0 +0.4**
comp=Z,104nm,1.8s
PCVE epP **pP** **21 18 00.9 -0.1**
SUMG Summit 61.06 341⇑ iP **P** **21 17 15.1 +1.5**
comp=Z,423nm,1.0s
SUMG Summit 61.06 341⇑ iP **P** **21 17 15.1 +1.5**
SUMG pmax pmax
comp=Z,420nm,1.0s
SUMG Summit 61.06 341 eP **P** **21 17 15.0 +1.4**
comp=Z,401nm,1.0s
MESJ Messejana 61.08 297 eP **P** **21 17 14.0 +0.2**
MESJ AMb AMB 21 17 15.8
comp=Z,122nm,1.7s
MESJ eS **S** **21 25 17.0 +0.9**
MESJ Messejana 61.08 297 eP **P** **21 17 12.3 -1.5**
comp=Z,122nm,1.8s
MESJ epP **pP** **21 18 01.0 -0.2**
MESJ Messejana 61.08 297 eP **P** **21 17 14.0 +0.2**
MESJ eS **S** **21 25 17.0 +0.9**
MESJ pmax pmax
comp=Z,122nm,1.7s
PBDV Barranco-do-Ve 61.13 297 eP **P** **21 17 14.6 +0.4**
comp=Z,130nm,1.9s
PBDV epP **pP** **21 18 01.9 +0.3**
PNCL Nicolau / Gran 61.18 298 eP **P** **21 17 14.8 +0.3**
comp=Z,139nm,1.5s
PNCL epP **pP** **21 18 02.0 +0.1**
PNCL Nicolau / Gran 61.18 298 ePP PP 21 19 33.3 +1.7
DNP Denpasar 61.30 128 P **P** **21 17 13.9 -1.6**
PMAFR Mafra 61.36 299 eP **P** **21 17 16.0 +0.3**
comp=Z,204nm,1.6s
PMAFR epP **pP** **21 18 03.5 +0.3**
LIS Lisbon 61.37 299 eP **P** **21 17 15.7 0.0**
LIS AMb AMB 21 17 17.8
comp=Z,160nm,2.4s
LIS eS **S** **21 25 20.7 +1.0**
LIS Lisbon 61.37 299 eP **P** **21 17 15.7 0.0**
LIS eS **S** **21 25 20.7 +1.0**
LIS pmax pmax
comp=Z,161nm,2.4s
PMST Lisbon--Monsan 61.38 299 eP **P** **21 17 16.8 +1.0**
comp=Z,124nm,1.6s
PMST epP **pP** **21 18 03.4 +0.1**
PMST Lisbon--Monsan 61.38 299 ePP PP 21 19 34.7 +1.4
PTEO Sao Teotonio 61.57 297 eP **P** **21 17 17.7 +0.6**
comp=Z,131nm,1.6s
PTEO epP **pP** **21 18 04.8 +0.2**
KAPI Kappang 61.61 121 eP **P** **21 17 16.9 -0.7**
comp=Z,293nm,1.3s
MORF Marmelete 61.62 297 eP **P** **21 17 17.5 0.0**
MORF AMb AMB 21 17 20.4
comp=Z,99nm,1.8s
MORF eS **S** **21 25 23.5 +0.5**
MORF Marmelete 61.62 297 eP **P** **21 17 16.3 -1.2**
comp=Z,93nm,1.6s
MORF epP **pP** **21 18 04.4 -0.6**
MORF Marmelete 61.62 297 eP **P** **21 17 17.5 0.0**
MORF eS **S** **21 25 23.5 +0.5**
MORF pmax pmax
comp=Z,99nm,1.8s
PFVI Vila Bisbo 61.82 297 eP **P** **21 17 19.1 +0.3**
comp=Z,181nm,1.8s
PFVI epP **pP** **21 18 06.4 +0.1**
TWSI Taliwang, Sumb 62.42 126 P **P** **21 17 19.5 -3.5**
KDI Kendari 62.87 118 P **P** **21 17 26.0 0.0**
comp=Z,165nm,1.4s,comp=Z,3µm
BSSI Bau Bau, Buton 62.93 122 P **P** **21 17 25.5 -0.9**
PLAI Plampang 63.07 126 P **P** **21 17 23.9 -3.4**
SANI Sanana 64.01 114 P **P** **21 17 35.4 +1.9**
KULLO Kullorsuaq 64.09 346⇑ iP **P** **21 17 33.9 +0.8**
comp=Z,263nm,1.0s
KULLO Kullorsuaq 64.09 346⇑ iP **P** **21 17 33.9 +0.8**
KULLO pmax pmax
comp=Z,260nm,1.0s
LBMI Labuha 64.19 112 P **P** **21 17 34.6 -0.1**
LSZ Lusaka 65.24 226 eP **P** **21 17 42.2 +0.7**
LSZ pmax pmax
comp=Z,52nm,0.6s
LSZ Lusaka 65.24 226 P **P** **21 17 42.6 +1.1**
SNR=19
LSZ Lusaka 65.24 226 P **P** **21 17 42.6 +1.1**
SNR=19
LSZ Lusaka 65.24 226 eP **P** **21 17 42.2 +0.7**
comp=Z,52nm,0.6s
LSZ epP **pP** **21 18 30.0 +0.5**
WSI Waingapu 65.35 124 P **P** **21 17 39.7 -2.4**
TORD Torodi Ar. Bea 65.49 268 P **P** **21 17 41.8 -1.3**
comp=Z,140nm,0.5s,baz=47,slow=5.0,SNR=848
TORD pP **pP** **21 18 29.2 -1.9**
comp=Z,92nm,0.8s,baz=48,slow=5.3,SNR=4.1
TORD S **S** **21 26 06.5 -4.8**
comp=Z,10nm,1.1s,baz=64,slow=12,SNR=6.5
TORD PKPPKP P'P'df 21 46 12.0 -10
comp=Z,2.7nm,1.2s,baz=224,slow=2.7,SNR=5.2
MMRI Maumere 65.91 122 P **P** **21 17 44.2 -1.5**
MMRI Maumere 65.91 122 eP **P** **21 17 43.9 -1.8**
comp=Z,205nm,1.0s
MMRI ePcP **PcP** **21 18 14.7 -0.1**
MMRI epP **pP** **21 18 33.9 +0.1**
BASI Baing, Sumba 65.94 125 P **P** **21 17 44.9 -1.0**
ILULI Ilulissat 66.40 341⇑ iP **P** **21 17 49.0 +1.0**
comp=Z,387nm,1.0s
ILULI Ilulissat 66.40 341⇑ iP **P** **21 17 49.0 +1.0**
ILULI pmax pmax
comp=Z,390nm,1.0s
MSAI Masohi 67.05 113 P **P** **21 17 53.2 +0.3**
SWI Sorong 67.18 109 P **P** **21 17 53.5 -0.3**
SFJD Kangerlussuaq 67.75 339⇑ iP **P** **21 17 56.9 +0.4**
comp=Z,159nm,1.1s
SFJD Kangerlussuaq 67.75 339⇑ iP **P** **21 17 56.9 +0.4**
SFJD pmax pmax
comp=Z,160nm,1.1s
SFJD Kangerlussuaq 67.75 339 eP **P** **21 17 56.6 +0.1**
comp=Z,181nm,1.1s
SFJD epP **pP** **21 18 45.3 +0.4**
SOEI Soe 68.11 121 P **P** **21 17 58.9 -0.7**
SOEI Soe 68.11 121 eP **P** **21 17 58.5 -1.2**
comp=Z,742nm,1.0s
BNDI Bandanaira 68.55 113 P **P** **21 18 01.8 -0.5**
GAMB Gambell 68.67 25 eP **P** **21 18 02.6 +0.4**
comp=Z,165nm,1.0s
TNA Tin City 68.71 22 eP **P** **21 18 03.6 +1.1**
comp=Z,212nm,1.0s
TNA epP **pP** **21 18 51.8 +0.8**
RES Resolute Bay 68.76 356 eP **P** **21 18 03.4 +0.8**
RES pmax pmax
comp=Z,52nm,0.7s
RES Resolute Bay 68.76 356 eP **P** **21 18 03.4 +0.8**
comp=Z,52nm,0.7s
BLWY Bulawayo 68.91 222 iP **P** **21 18 05.4 +0.9**
SMY Shemya 69.16 39 eP **P** **21 18 05.7 +0.3**
SMY pmax pmax
comp=Z,570nm,1.4s
SMY Shemya 69.16 39 eP **P** **21 18 05.7 +0.3**
comp=Z,567nm,1.4s
MATP Matopo 69.20 222 iP **P** **21 18 07.3 +1.1**
FAKI Fak Fak 69.26 110 P **P** **21 18 06.8 +0.1**

FAKI Fak Fak 69.26 110 eP **P** **21 18 07.0 +0.3**
comp=Z,646nm,1.0s
FAKI epP **pP** **21 18 56.0 +0.7**
GUMO Guam 69.37 88 eP **P** **21 18 07.7 +0.3**
GUMO pmax pmax
comp=Z,350nm,1.2s
GUMO Guam 69.37 88 eP **P** **21 18 07.0 -0.4**
comp=Z,350nm,1.3s
RKPI Ransiki, Papua 69.83 108 P **P** **21 18 10.6 +0.4**
NRS Narsarsuaq 69.83 332⇑ iP **P** **21 18 09.9 +0.5**
comp=Z,170nm,1.0s
NRS Narsarsuaq 69.83 332⇑ iP **P** **21 18 09.9 +0.5**
NRS pmax pmax
comp=Z,170nm,1.0s
SAUI Saumlaki 71.89 115 P **P** **21 18 23.9 +1.4**
comp=Z,5µm,0.8s,comp=Z,46µm
SAUI Saumlaki 71.89 115 eP **P** **21 18 23.7 +1.2**
comp=Z,3µm,0.9s
COLD Coldfoot 72.10 16 eP **P** **21 18 24.1 +1.1**
comp=Z,475nm,1.0s
CMLA Cha da Macela 73.08 305 eP **P** **21 18 29.6 +0.3**
comp=Z,240nm,1.1s
PSET Sete Cidades 73.18 305 eP **P** **21 18 30.0 +0.1**
comp=Z,405nm,1.6s
PSMN Pico do Norte, 73.19 304 eP **P** **21 18 30.9 +0.9**
comp=Z,351nm,1.1s
MBWA Marble Bar 73.64 133 eP **P** **21 18 32.7 +0.1**
comp=Z,1µm,1.4s
MBWA epP **pP** **21 19 22.8 +1.0**
MLY Manley 73.81 17 eP **P** **21 18 33.8 +0.7**
comp=Z,313nm,1.1s
PGRA Graciosa 74.00 307 eP **P** **21 18 35.6 +1.0**
comp=Z,298nm,1.4s
INK Inuvik 74.01 9 eP **P** **21 18 35.2 +1.1**
INK Inuvik 74.01 9 eP **P** **21 18 35.2 +1.1**
TTA Tatalina 74.17 20 eP **P** **21 18 35.6 +0.4**
TTA pmax pmax
comp=Z,200nm,1.0s
TTA Tatalina 74.17 20 eP **P** **21 18 35.6 +0.4**
comp=Z,201nm,1.0s
ROSA Rosais 74.34 307 eP **P** **21 18 36.9 +0.3**
comp=Z,142nm,1.4s
MDM Murphy Dome 74.45 16 eP **P** **21 18 37.5 +0.7**
comp=Z,607nm,1.0s
DBIC Dimbokro 74.47 267 P **P** **21 18 36.8 -0.9**
comp=Z,26nm,0.6s,baz=36,slow=7.1,SNR=63
DBIC pP **pP** **21 19 24.5 -2.5**
comp=Z,97nm,0.9s,baz=44,slow=7.8,SNR=8.0
BPAW Bear Paw Mtn. 74.53 18 eP **P** **21 18 37.7 +0.4**
comp=Z,305nm,1.0s
KIC Kosan Boka 74.56 267 eP **P** **21 18 37.4 -0.8**
comp=Z,74nm,0.6s
COLA College 74.61 16 eP **P** **21 18 38.6 +1.0**
COLA pmax pmax
comp=Z,680nm,0.9s
COLA College 74.61 16 eP **P** **21 18 38.6 +1.0**
comp=Z,677nm,0.9s
COLA epP **pP** **21 19 27.2 +0.3**
TIC Toumodi 74.62 267 eP **P** **21 18 37.6 -1.0**
TSUM Tsumeb 74.70 232 eP **P** **21 18 39.8 +0.9**
comp=Z,40nm,0.6s
TSUM epP **pP** **21 19 28.5 +0.2**
CCB Clear Creek Bu 74.81 16 eP **P** **21 18 38.7 -0.1**
comp=Z,694nm,2.0s
CAST Castle Rocks 74.82 18 eP **P** **21 18 39.7 +0.7**
comp=Z,988nm,1.0s
BWN Browne 74.84 17 eP **P** **21 18 38.5 -0.5**
comp=Z,880nm,1.1s
LIC Lamto 74.87 267 eP **P** **21 18 39.1 -0.9**
comp=Z,80nm,0.7s
WRH Wood River Hil 74.90 16 eP **P** **21 18 37.8 -1.5**
comp=Z,173nm,1.0s
ILAR Eielson Array 74.91 16 P **P** **21 18 39.2 -0.2**
comp=Z,178nm,0.9s,baz=320,slow=4.1,SNR=629
ILAR pP **pP** **21 19 27.6 -1.1**
comp=Z,47nm,0.9s,baz=326,slow=4.8,SNR=2.9
ILAR PP **PP** **21 21 28.7 -0.5**
comp=Z,16nm,0.9s,baz=320,slow=8.3,SNR=4.9
ILAR PKKPbc **PKKPbc** **21 38 02.1 +0.3**
comp=Z,0.5nm,0.6s,baz=188,slow=2.5,SNR=4.6
ILAR PKP2bc 21 45 34.0
comp=Z,0.4nm,0.8s,baz=150,slow=3.4,SNR=4.6
ILAR Eielson Array 74.91 16 P **P** **21 18 39.2 -0.2**
ILAR *PP **pP** **21 19 27.6 -1.1**
ILAR 21 21 28.7
ILAR pmax pmax
comp=Z,187nm,0.9s
ILAR pmax pmax
comp=Z,16nm,0.9s
KTH Kantishna Hill 75.00 18 eP **P** **21 18 40.5 +0.4**
comp=Z,504nm,1.0s
KTH epP **pP** **21 19 30.3 +0.9**
MTN Manton Dam 75.06 119 eP **P** **21 18 40.4 -0.6**
comp=Z,110nm,0.6s
GENI Genyem 75.15 105 P **P** **21 18 42.0 +0.5**
comp=Z,1µm,1.1s,comp=Z,12µm
PPLA Purkeypile 75.23 19 eP **P** **21 18 41.6 +0.2**
comp=Z,902nm,1.8s
PPLA epP **pP** **21 19 31.3 +0.5**
TRF Thorofare Moun 75.25 18 eP **P** **21 18 41.4 -0.2**
comp=Z,103nm,0.9s
MCK McKinley 75.33 17 eP **P** **21 18 41.5 -0.4**
MCK pmax pmax
comp=Z,260nm,1.1s
MCK McKinley 75.33 17 eP **P** **21 18 41.5 -0.4**
comp=Z,259nm,1.1s
JAY Jayapura 75.52 104 P **P** **21 18 43.8 0.0**
comp=Z,7.8nm,0.6s,baz=266,slow=23,SNR=38
RND Reindeer 75.63 17 eP **P** **21 18 43.1 -0.5**
RND pmax pmax
comp=Z,630nm,1.3s
RND Reindeer 75.63 17 eP **P** **21 18 43.1 -0.5**
comp=Z,633nm,1.4s
SVW2 Sparrevohn 75.76 21 eP **P** **21 18 45.1 +0.8**
comp=Z,193nm,1.3s
EGAK Eagle 76.07 13 eP **P** **21 18 46.6 +0.6**
comp=Z,340nm,1.2s
DOT Dot Lake 76.50 15 eP **P** **21 18 48.7 +0.3**
comp=Z,383nm,0.7s
DOT epP **pP** **21 19 38.6 +0.6**
SPU Mount Spurr 76.68 20 eP **P** **21 18 49.1 -0.4**
PAX Paxson 76.79 16 eP **P** **21 18 50.3 +0.1**
PAX pmax pmax
comp=Z,290nm,0.8s
PAX Paxson 76.79 16 eP **P** **21 18 50.3 +0.1**
comp=Z,292nm,0.8s
PAX epP **pP** **21 19 40.1 +0.4**
RSO Redoubt South 77.08 20 eP **P** **21 18 52.0 0.0**
PMR Palmer 77.11 18 eP **P** **21 18 51.8 0.0**
PMR pmax pmax
comp=Z,210nm,0.9s
PMR Palmer 77.11 18 eP **P** **21 18 51.8 0.0**
comp=Z,211nm,0.9s
PMR epP **pP** **21 19 41.7 +0.3**
SML Sawmill 77.12 18 eP **P** **21 18 52.3 +0.3**
SML pmax pmax
comp=Z,760nm,1.0s
SML Sawmill 77.12 18 eP **P** **21 18 52.3 +0.3**
comp=Z,758nm,1.0s
SML epP **pP** **21 19 42.2 +0.6**
MENT Mentasta 77.20 15 eP **P** **21 18 52.9 +0.5**
comp=Z,73nm,0.7s
RC01 Rabbit Creek A 77.38 19 eP **P** **21 18 53.4 0.0**
comp=Z,245nm,0.9s
RC01 epP **pP** **21 19 43.6 +0.6**
UNV Unalaska Valle 77.44 31 eP **P** **21 18 53.2 -0.5**
comp=Z,62nm,0.6s
UNV epP **pP** **21 19 43.6 +0.2**
UNV ePP **PP** **21 21 50.2 -0.4**
BOSA Boshof 77.55 220 iP **P** **21 18 55.8 +1.0**
BOSA Boshof 77.55 220 P **P** **21 18 55.2 +0.4**
comp=Z,84nm,0.7s,baz=14,slow=3.6,SNR=81
BOSA pP **pP** **21 19 43.5 -1.0**
comp=Z,90nm,1.0s,baz=29,slow=7.1,SNR=4.8
FALS False Pass 77.93 29 eP **P** **21 18 56.0 -0.4**
comp=Z,378nm,1.3s
KLU Klutina 77.98 17 eP **P** **21 18 57.7 +0.9**
comp=Z,350nm,0.9s
HOM Homer 78.06 20 eP **P** **21 18 58.3 +1.1**
comp=Z,363nm,1.1s
BRLK Bradley Lake 78.19 20 eP **P** **21 18 57.3 -0.6**
comp=Z,331nm,0.9s
SEW Seward 78.29 19 eP **P** **21 18 58.5 +0.2**
comp=Z,294nm,1.2s
SEW epP **pP** **21 19 48.4 +0.3**
SEW ePP **PP** **21 21 56.9 -0.6**

DIV Divide 78.33 17 eP **P** **21 18 59.5 +0.8**
comp=Z,297nm,0.7s
DIV epP **pP** **21 19 49.0 +0.6**
CHGN Chignik 78.66 25 eP **P** **21 19 00.3 -0.1**
BMRM Bremner River 78.75 17 eP **P** **21 19 01.8 +0.9**
comp=Z,466nm,1.0s
BMRM epP **pP** **21 19 51.5 +0.7**
EYAK Cordova Ski Ar 78.85 17 eP **P** **21 19 02.5 +1.1**
comp=Z,420nm,0.8s
BALM Baldy 79.20 16 eP **P** **21 19 04.3 +0.8**
BALM pmax pmax
comp=Z,240nm,0.8s
BALM Baldy 79.20 16 eP **P** **21 19 04.3 +0.8**
comp=Z,238nm,0.8s
RAGM Ragged Mountai 79.25 17 eP **P** **21 19 04.8 +1.2**
comp=Z,229nm,0.8s
KDAK Kodiak Island 79.35 22 eP **P** **21 19 04.8 +0.6**
KDAK pmax pmax
comp=Z,540nm,0.9s
KDAK Kodiak Island 79.35 22 eP **P** **21 19 04.8 +0.6**
comp=Z,545nm,0.9s
KDAK epP **pP** **21 19 54.3 +0.3**
OHAK Old Harbor 79.60 23 eP **P** **21 19 06.0 +0.5**
comp=Z,472nm,1.0s
OHAK epP **pP** **21 19 55.9 +0.5**
MID Middleton Isla 79.68 18 eP **P** **21 19 03.6 -2.3**
MID pmax pmax
comp=Z,350nm,0.9s
MID Middleton Isla 79.68 18 eP **P** **21 19 03.6 -2.3**
comp=Z,350nm,0.9s
MANU Manus Island 80.49 100 eP **P** **21 19 11.6 +0.6**
comp=Z,157nm,0.8s
YKA Yellowknife Ar 81.33 2 P **P** **21 19 14.9 +0.3**
comp=Z,160nm,0.8s,baz=349,slow=5.3,SNR=1854
YKA pP **pP** **21 20 05.3 +0.6**
comp=Z,106nm,0.8s,baz=349,slow=5.5,SNR=7.7
YKA PP **PP** **21 22 21.9 -0.5**
comp=Z,15nm,0.8s,baz=354,slow=8.2,SNR=4.3
YKA S **S** **21 29 07.9 +0.5**
comp=Z,2.2nm,1.0s,baz=354,slow=11,SNR=4.9
YKA PKKP **PKKPdf** **21 37 30.4 -5.2**
comp=Z,0.3nm,0.6s,baz=126,slow=2.6,SNR=4.6
YKA PKKPbc **PKKPbc** **21 37 45.4 -2.5**
comp=Z,2.2nm,0.6s,baz=168,slow=2.3,SNR=32
YKA PKPPKP P'P'df 21 45 40.8 -14
comp=Z,0.5nm,0.9s,baz=123,slow=2.8,SNR=4.3
YKA Yellowknife Ar 81.33 2 P **P** **21 19 14.9 +0.3**
YKA 21 22 21.9
YKA S **S** **21 29 07.9 +0.5**
YKA pmax pmax
comp=Z,161nm,0.8s
YKA pmax pmax
comp=Z,15nm,0.8s
YKA smax smax
comp=N,2.0nm,1.0s
NWAO Narrogin (SRO) 81.55 142 eP **P** **21 19 15.1 -1.0**
NWAO Narrogin (SRO) 81.55 142 eP **P** **21 19 15.1 -1.0**
comp=N,150nm,0.6s
NWAO epP **pP** **21 20 06.4 +0.1**
SKAG Skagway 82.05 13 eP **P** **21 19 19.6 +1.2**
comp=N,430nm,1.2s
SKAG epP **pP** **21 20 09.5 +0.9**
SCHQ Schefferville 82.08 337 P **P** **21 19 19.0 +0.2**
comp=N,28nm,0.7s,baz=42,slow=5.6,SNR=18
SCHQ pP **pP** **21 20 08.8 -0.1**
comp=N,53nm,0.8s,baz=35,slow=6.8,SNR=4.9
WRA Warramunga Arr 82.14 122 P **P** **21 19 18.6 -0.9**
comp=N,205nm,0.8s,baz=318,slow=5.1,SNR=649
WRA pP **pP** **21 20 09.2 -0.6**
comp=N,72nm,1.1s,baz=321,slow=4.7,SNR=4.0
WRA PKKPbc **PKKPbc** **21 37 47.1 +1.0**
comp=N,2.2nm,0.8s,baz=122,slow=2.3,SNR=13
WRA PKPPKP **P'P'df** **21 45 50.9 -0.2**
comp=N,1.1nm,0.8s,baz=142,slow=2.0,SNR=6.6
WRAB Tennant Creek 82.14 122*c* iP **P** **21 19 18.7 -0.8**
WRAB pmax pmax
comp=Z,604nm,0.9s
WRAB Tennant Creek 82.14 122 eP **P** **21 19 18.8 -0.8**
comp=Z,266nm,0.9s
WRAB ePcP **PcP** **21 19 25.7 +1.3**
WRAB epP **pP** **21 20 10.7 +0.9**
SUR Sutherland 82.86 221 eP **P** **21 19 24.5 +1.4**
comp=Z,714nm,1.9s
SUR epP **pP** **21 20 14.1 +0.6**
DRLN Deer Lake 83.13 329 eP **P** **21 19 24.8 +0.5**
DRLN epP **pP** **21 20 15.4 +0.8**
DLBC Dease Lake 83.91 11 eP **P** **21 19 29.0 +0.9**
comp=Z,166nm,0.8s
DLBC epP **pP** **21 20 19.5 +0.9**
PATS Pohnpei 84.05 86 eP **P** **21 19 30.5 +1.0**
comp=Z,1µm,1.8s
ASAR Alice Springs 84.39 125 P **P** **21 19 30.1 -0.8**
comp=Z,126nm,0.7s,baz=311,slow=5.0,SNR=1460
ASAR pP **pP** **21 20 20.9 -0.6**
comp=Z,57nm,1.1s,baz=312,slow=4.9,SNR=2.1
ASAR S S 21 29 28.4 -11
comp=Z,1.4nm,0.6s,baz=314,slow=6.8,SNR=9.8
ASAR PKKPbc **PKKPbc** **21 37 41.6 +0.5**
comp=Z,1.0nm,0.7s,baz=124,slow=2.9,SNR=9.5
ASAR PKPPKP **P'P'df** **21 45 44.5 -2.3**
comp=Z,0.9nm,0.9s,baz=127,slow=3.2,SNR=4.0
COEN Coen 84.58 112 eP **P** **21 19 31.5 -0.6**
comp=Z,155nm,0.8s
PMG Port Moresby 84.80 106 P **P** **21 19 32.7 -0.4**
comp=Z,155nm,0.9s,baz=327,slow=3.9,SNR=20
PMG pP **pP** **21 20 23.7 0.0**
comp=Z,28nm,0.8s,baz=23,slow=5.1,SNR=1.6
PMG Port Moresby 84.80 106*c* iP **P** **21 19 32.6 -0.6**
PMG pmax pmax
comp=Z,818nm,1.0s
PMG Port Moresby 84.80 106 eP **P** **21 19 32.9 -0.3**
comp=Z,249nm,1.0s
PMG epP **pP** **21 20 23.3 -0.4**
WRAK Wrangell Islan 85.46 13 eP **P** **21 19 37.0 +1.2**
comp=Z,152nm,0.8s
WRAK epP **pP** **21 20 28.0 +1.7**
RABL Rabaul 85.59 98 eP **P** **21 19 36.9 -0.3**
comp=Z,216nm,1.1s
CRAG Craig 86.22 13 eP **P** **21 19 40.1 +0.6**
comp=Z,59nm,0.9s
CRAG epP **pP** **21 20 31.1 +0.9**
LMN Caledonia Moun 88.82 331 eP **P** **21 19 52.6 +0.5**
LMN epP **pP** **21 20 44.6 +1.5**
CTA Charters Tower 90.71 114 P **P** **21 20 00.7 -0.6**
comp=Z,134nm,0.8s,baz=316,slow=5.8,SNR=120
CTA pP **pP** **21 20 52.1 -0.3**
comp=Z,65nm,1.1s,baz=313,slow=6.0,SNR=6.2
CTAO Charters Tower 90.71 114 eP **P** **21 20 00.7 -0.6**
CTAO pmax pmax
comp=Z,120nm,0.8s
CTAO Charters Tower 90.71 114 eP **P** **21 20 00.7 -0.6**
comp=Z,123nm,0.8s
CTAO epP **pP** **21 20 52.8 +0.5**
PKME Peaks-Kenny Pk 91.02 333 eP **P** **21 20 03.0 +0.6**
comp=Z,16nm,0.9s
PKME epP **pP** **21 20 54.6 +1.2**
TRQ Mont Tremblant 91.99 337 eP **P** **21 20 07.1 +0.2**
TRQ epP **pP** **21 20 58.8 +0.7**
BBOO Buckleboo 92.03 130 eP **P** **21 20 05.6 -1.5**
comp=Z,64nm,1.1s
BBOO epP **pP** **21 20 59.0 +0.8**
LBNH Lisbon 92.85 334 eP **P** **21 20 11.9 +1.0**
LBNH pmax pmax
comp=Z,23nm,1.1s
LBNH Lisbon 92.85 334 eP **P** **21 20 11.9 +1.0**
comp=Z,23nm,1.1s
ULM Lac du Bonnet 92.89 351 P **P** **21 20 10.5 -0.4**
comp=Z,55nm,1.0s,baz=7.4,slow=4.7,SNR=32
ULM pP **pP** **21 21 02.1 +0.2**
comp=Z,50nm,1.1s,baz=358,slow=5.1,SNR=6.2
ULM PP **PP** **21 23 56.8 +1.7**
comp=Z,33nm,1.3s,baz=11,slow=8.1,SNR=5.4
FRNY Flat Rock 92.90 335 eP **P** **21 20 10.9 -0.2**
comp=Z,48nm,1.4s
LONY Lake Ozonia 93.42 336 eP **P** **21 20 14.0 +0.5**
comp=Z,73nm,1.4s
LONY epP **pP** **21 21 04.9 +0.3**
MDV Middlebury 93.50 335 eP **P** **21 20 14.5 +0.7**
A33A Warroad 94.12 351 P **P** **21 20 16.5 -0.1**
baz=11
PNT Penticton 94.14 7 P **P** **21 20 17.2 +0.5**
PNT Penticton 94.14 7 P **P** **21 20 17.2 +0.5**
ACCN Adirondack Com 94.21 335 eP **P** **21 20 17.3 +0.2**
comp=Z,31nm,1.3s
A32A Rocking H Ranc 94.27 352 P **P** **21 20 17.1 -0.1**
baz=10,SNR=15

PGC	Sidney	94.36	9	eP	P	21 20 18.3	+0.7
PGC				epP	pP	21 21 09.9	+1.1
A04D	Lummi Island	94.39	9	P	P	21 20 18.2	+0.4
baz=349							
C39A	Grand Marais	94.40	347	P	P	21 20 17.1	-0.8
baz=15							
A30A	Hoffart Farm,	94.45	353	P	P	21 20 18.2	+0.1
baz=8.8,SNR=15							
B35A	Bob, Littlefor	94.46	350	P	P	21 20 17.7	-0.5
baz=12,SNR=6.4							
B34A	Aery, Baudette	94.46	350	P	P	21 20 18.0	-0.2
baz=12,SNR=15							
EYMN	Ely	94.51	348	P	P	21 20 18.3	-0.1
baz=14							
EYMN	Ely	94.51	348	eP	P	21 20 18.8	+0.4
EYMN				epP	pP	21 21 10.1	+0.5
A29A	Manning Farm,	94.56	353	P	P	21 20 18.5	-0.1
baz=8.1,SNR=13							
A28A	Rude Farm, Bot	94.66	354	P	P	21 20 19.2	+0.1
baz=7.2							
A27A	Ledoux Ranch,	94.69	355	P	P	21 20 19.3	+0.1
baz=6.5							
C38A	Sawbill Land.	94.70	348	P	P	21 20 18.7	-0.5
baz=14							
B06A	Marblemount	94.73	8	eP	P	21 20 19.6	+0.2
comp=Z,69nm,1.1s							
CMW	Cultus Mountai	94.75	9	P	P	21 20 20.1	+0.5
B32A	Ashes, Strandq	94.79	352	P	P	21 20 19.5	-0.1
baz=10							
B33A	Robert and Kas	94.80	351	P	P	21 20 19.5	-0.2
baz=11							
A26A	Wade Farm, Ken	94.81	355	P	P	21 20 20.4	+0.7
baz=5.8							
A25A	Svangstu Ranch	94.83	356	P	P	21 20 20.3	+0.5
baz=5.0							
C37A	Embarrass	94.84	349	P	P	21 20 19.8	-0.1
baz=14							
OBC	Olympics--Boni	94.88	10	P	P	21 20 21.8	+1.6
B31A	Greenbush Farm	94.89	352	P	P	21 20 20.0	-0.1
baz=9.3,SNR=5.0							
C36A	Pine Crest Far	94.91	349	P	P	21 20 20.0	-0.3
baz=13,SNR=5.3							
B05A	Bryant	94.91	9	P	P	21 20 20.6	+0.4
baz=350,SNR=30							
STKA	Stephens Creek	94.92	126	P	P	21 20 18.9	-1.5
comp=Z,6.9nm,0.5s,baz=334,slow=3.9,SNR=23							
STKA				pP	pP	21 21 11.1	-0.5
comp=Z,5.6nm,0.9s,baz=308,slow=8.2,SNR=2.0							
B30A	Myrvik Farm, E	94.94	353	P	P	21 20 20.3	0.0
baz=8.8,SNR=15							
JCW	Jim Creek	95.00	8	P	P	21 20 21.1	+0.5
B29A	Wagenman Farm,	95.02	353	P	P	21 20 20.7	0.0
baz=8.0							
B08A	Colville Reser	95.11	7	eP	P	21 20 21.6	+0.4
comp=Z,121nm,1.5s							
C35A	Jirik Farms, M	95.14	350	P	P	21 20 20.5	-0.8
baz=12							
B27A	Peters Farms,	95.24	355	P	P	21 20 22.2	+0.5
baz=6.5							
C34A	RKJ Ranch, Bem	95.32	350	P	P	21 20 21.6	-0.5
baz=12							
C33A	Trail	95.33	351	P	P	21 20 21.7	-0.4
baz=11							
B26A	Jensen Ranch,	95.34	355	P	P	21 20 22.9	+0.7
baz=5.7							
C32A	Crookston	95.35	351	P	P	21 20 21.8	-0.4
baz=10							
DGMT	Dagmar	95.36	357	P	P	21 20 23.2	+0.9
baz=4.1							
DGMT	Dagmar	95.36	357	eP	P	21 20 23.3	+1.0
comp=Z,94nm,1.3s							
C06D	Leavenworth	95.39	8	P	P	21 20 22.6	+0.2
baz=351							
NEW	Newport	95.39	5	P	P	21 20 23.0	+0.5
baz=354,SNR=31							
NEW	Newport	95.39	5	eP	P	21 20 23.1	+0.6
NEW				pmax	pmax		
comp=Z,42nm,0.9s							
NEW	Newport	95.39	5	eP	P	21 20 23.1	+0.6
comp=Z,42nm,0.8s							
NEW				epP	pP	21 21 14.5	+0.8
D37A	Cotton	95.43	349	P	P	21 20 22.0	-0.6
baz=14							
WRW	Wenatchee Ridg	95.45	8	P	P	21 20 22.9	0.0
B25A	Knox Farm, Ray	95.50	356	P	P	21 20 24.0	+1.0
baz=4.9							
C31A	Landman Farms,	95.52	352	P	P	21 20 22.8	-0.3
baz=9.3,SNR=12							
D36A	Goodland	95.53	349	P	P	21 20 22.7	-0.4
baz=13,SNR=7.0							
NLWA	Neilton Lookou	95.54	10	eP	P	21 20 24.2	+1.0
comp=Z,71nm,1.0s							
NLWA				epP	pP	21 21 15.3	+1.0
MDND	Maddock	95.66	353	P	P	21 20 23.9	+0.2
baz=7.8							
MDND	Maddock	95.66	353	eP	P	21 20 23.9	+0.2
comp=Z,19nm,0.4s							
C30A	Mose, Pekin	95.69	353	P	P	21 20 23.5	-0.3
baz=8.7,SNR=7.2							
D35A	Remer	95.75	350	P	P	21 20 23.6	-0.5
baz=12							
SAW	Saint Andrews	95.76	7	P	P	21 20 24.5	+0.4
C09A	Chrisman Ranch	95.76	6	eP	P	21 20 24.9	+0.8
C09A				epP	pP	21 21 17.6	+2.3
COWI	Conover	95.87	346	eP	P	21 20 24.6	0.0
comp=Z,9.9nm,0.8s							
C26A	Wahner Farm, P	95.88	355	P	P	21 20 25.2	+0.6
baz=5.8							
D34A	Park Rapids	95.91	350	P	P	21 20 24.3	-0.5
baz=11							
EGMT	Eagleton	95.92	0	P	P	21 20 25.2	+0.2
baz=360,SNR=8.6							
EGMT	Eagleton	95.92	0	eP	P	21 20 25.7	+0.8
comp=Z,39nm,0.9s							
D33A	AnnSam, Waubun	95.94	351	P	P	21 20 24.8	-0.2
baz=11							
C27A	Sayler Ranch,	95.95	355	P	P	21 20 25.9	+0.9
baz=6.3							
BSMT	Bassoo Peak	95.95	4	P	P	21 20 26.1	+0.9
D05A	Enumclaw	95.98	9	eP	P	21 20 26.3	+1.2
C25A	Freed Ranch, W	96.06	356	P	P	21 20 26.9	+1.4
baz=4.8							
JTMT	Jette	96.08	3	eP	P	21 20 26.8	+1.0
D32A	Dogwood Acres,	96.09	352	P	P	21 20 25.3	-0.3
baz=9.9							
MMNY	Mt. Morris Dam	96.18	337	eP	P	21 20 26.4	+0.4
E36A	McGregor	96.18	349	P	P	21 20 26.1	0.0
baz=13,SNR=8.1							
D31A	Mcclaflin, Tow	96.26	352	P	P	21 20 25.8	-0.5
baz=9.3							
D30A	Buchanan	96.31	353	P	P	21 20 26.3	-0.2
baz=8.5,SNR=9.1							
E35A	Pequot Lakes	96.32	350	P	P	21 20 26.3	-0.3
baz=12							
SWMT	Swartz Lake	96.33	3	eP	P	21 20 27.7	+0.8
D28A	Regan	96.39	354	P	P	21 20 27.5	+0.6
baz=7.0							
E03A	Lebam	96.41	10	eP	P	21 20 28.6	+1.6
D29A	Pettibone, Tap	96.44	353	P	P	21 20 27.3	+0.1
baz=7.8							
LON	Longmire	96.44	9	eP	P	21 20 27.7	+0.4
LON	Longmire	96.44	9	eP	P	21 20 27.7	+0.4
D08A	Wollman Farm,	96.44	7	eP	P	21 20 27.9	+0.7
D08A				epP	pP	21 21 20.5	+2.1
E34A	Wadena	96.47	350	P	P	21 20 27.0	-0.4
baz=11,SNR=5.2							
D27A	Center	96.55	355	P	P	21 20 28.5	+0.7
baz=6.2							
E33A	Westby DABS, E	96.59	351	P	P	21 20 27.9	0.0
baz=11							
D25A	Fairfield	96.63	356	P	P	21 20 29.6	+1.5
baz=4.8							
D26A	Manning	96.69	355	P	P	21 20 29.5	+1.1
baz=5.5,SNR=8.8							
E31A	Nome	96.76	352	P	P	21 20 28.6	0.0
baz=9.2							
F36A	Milaca	96.86	349	P	P	21 20 28.8	-0.3
baz=13							
E30A	Jud	96.92	353	P	P	21 20 29.5	+0.1
baz=8.4							
E29A	Napoleon	96.93	353	P	P	21 20 29.7	+0.3
baz=7.8							
F04D	Rainier, OR	96.94	10	P	P	21 20 30.3	+0.8
baz=349							
CHMT	Chamberlain Mo	96.96	3	eP	P	21 20 29.8	0.0
F03A	Seaside	97.01	10	eP	Pdif	21 20 31.4	+1.5
E28A	Huff	97.02	354	P	Pdif	21 20 30.3	+0.4
baz=6.9,SNR=9.3							
MSO	Missoula	97.02	3	P	Pdif	21 20 30.1	+0.1
baz=356,SNR=10							
MSO	Missoula	97.02	3	eP	Pdif	21 20 30.1	+0.1
E09A	Wood Farm, Sta	97.05	6	eP	Pdif	21 20 31.1	+1.1
N59A	State Game Lan	97.12	335	P	P	21 20 30.4	0.0
baz=27							
F04A	Amboy	97.17	9	eP	Pdif	21 20 31.5	+1.0
HRY	Holter Researc	97.21	2	eP	Pdif	21 20 32.0	+1.2
LAO	LAS A Array	97.22	358	P	Pdif	21 20 31.9	+1.1
baz=2.5,SNR=9.8							
LAO	LASA Array	97.22	358	eP	Pdif	21 20 31.5	+0.7
comp=Z,57nm,0.9s							
LAO				epP	pP	21 21 23.0	+1.0
E27A	Carson	97.23	355	P	Pdif	21 20 31.5	+0.7
baz=6.2,SNR=7.1							
F33A	5 Mile Ranch,	97.28	351	P	Pdif	21 20 31.0	0.0
baz=10,SNR=9.3							
E25A	Miller Ranch,	97.28	356	P	Pdif	21 20 32.0	+0.9
baz=4.7,SNR=8.5							
F32A	Veblen	97.35	351	P	P	21 20 31.1	-0.2
baz=9.8							
SPMN	Marine on St.	97.37	348	P	P	21 20 31.2	-0.2
baz=13							
SPMN	Marine on St.	97.37	348	eP	Pdif	21 20 31.5	0.0
comp=Z,18nm,0.9s							
SPMN				epP	pP	21 21 22.8	+0.1
F31A	Hecla	97.49	352	P	P	21 20 31.5	-0.5
baz=8.9							
G36A	St. Michael	97.51	349	P	Pdif	21 20 32.1	0.0
baz=12							
F10A	Beach Ranch, E	97.66	6	eP	Pdif	21 20 33.4	+0.5
F29A	Eureka	97.67	353	P	P	21 20 32.8	0.0
baz=7.6							
G03D	McMinnville, O	97.76	10	P	Pdif	21 20 34.6	+1.4
baz=349							
G34A	Benson	97.78	350	P	Pdif	21 20 33.3	+0.1
baz=11							
M54A	Oil Creek Stat	97.83	338	P	P	21 20 33.4	-0.2
baz=24							
F25A	Bowman	97.86	356	P	Pdif	21 20 34.5	+0.8
baz=4.7							
F26A	Lodgepole	97.88	355	P	Pdif	21 20 34.6	+0.8
baz=5.3							
G33A	Ortonville	97.93	351	P	Pdif	21 20 34.1	+0.2
baz=10							
G05D	Wamic, OR	97.98	9	P	Pdif	21 20 34.9	+0.7
baz=350							
G06A	Carlson Farm,	98.07	8	eP	Pdif	21 20 35.9	+1.2
SSPA	Standing Stone	98.07	336	eP	P	21 20 34.4	-0.3
comp=Z,13nm,0.6s							
SSPA				epP	pP	21 21 26.3	+0.3
GCMT	Greycliff	98.16	0	eP	Pdif	21 20 35.9	+0.8
H36A	Jessenland, He	98.18	349	P	Pdif	21 20 35.5	+0.4
baz=12							
H35A	Sunnyside Ranc	98.20	350	P	Pdif	21 20 35.6	+0.4
baz=12							
BOZ	Bozeman (W)	98.28	2	P	Pdif	21 20 36.3	+0.6
baz=358							
BOZ	Bozeman (W)	98.28	2	eP	Pdif	21 20 36.3	+0.6
BOZ				pmax	pmax		
comp=Z,30nm,1.1s							
BOZ	Bozeman (W)	98.28	2	eP	Pdif	21 20 36.3	+0.6
comp=Z,30nm,1.1s							
BOZ				epP	pP	21 21 27.4	+0.4
G27A	Dupree	98.30	355	P	Pdif	21 20 36.1	+0.4
baz=5.9,SNR=5.5							
G30A	Faulkton	98.31	353	P	Pdif	21 20 35.7	0.0
baz=8.2,SNR=5.9							
H34A	Spellman Lake,	98.36	350	P	Pdif	21 20 36.3	+0.4
baz=11							
H04A	Detroit Lake	98.42	9	eP	Pdif	21 20 36.8	+0.6
G26A	Maurine	98.43	355	P	Pdif	21 20 36.6	+0.4
baz=5.4,SNR=9.6							
N54A	Moraine State	98.43	338	P	P	21 20 36.0	-0.2
baz=23							
I38A	Scanlan Farm,	98.44	348	P	P	21 20 36.0	-0.3
baz=14							
H33A	Prehn Over Nor	98.47	351	P	P	21 20 36.4	0.0
baz=10							
DLMT	Dillon	98.53	2	eP	Pdif	21 20 38.0	+1.2
comp=Z,32nm,1.1s							
G25A	Newell	98.58	356	P	Pdif	21 20 37.5	+0.6
baz=4.7							
O56A	Blue Knob Stat	98.62	337	P	P	21 20 37.1	-0.1
baz=24							
H32A	Carlson Farm,	98.73	351	P	Pdif	21 20 37.6	0.0
baz=9.6							
I36A	Fitzsimmons Fa	98.74	349	P	Pdif	21 20 37.8	+0.2
baz=12							
RLMT	Red Lodge	98.83	360	P	Pdif	21 20 38.8	+0.6
baz=360,SNR=21							
RLMT	Red Lodge	98.83	360	eP	Pdif	21 20 38.6	+0.4
comp=Z,40nm,1.1s							
RLMT				epP	pP	21 21 30.3	+0.8
I05D	Terrebonne, OR	98.87	9	P	Pdif	21 20 38.9	+0.6
baz=350							
H31A	Wolsey	98.88	352	P	P	21 20 38.1	-0.1
baz=8.8							
H29A	Onida	98.91	353	P	Pdif	21 20 38.3	0.0
baz=7.3							
SUSD	Miller	98.97	353	P	Pdif	21 20 38.7	+0.1
baz=8.4							
MCMT	McKenzie Canyo	99.06	3	ePdif	Pdif	21 20 40.0	+0.7
QLMT	Earthquake Lak	99.10	2	ePdif	Pdif	21 20 40.8	+1.4
H26A	Fairpoint	99.12	355	P	Pdif	21 20 39.7	+0.4
baz=5.3							
JFWS	Jewell Farm	99.15	346	eP	Pdif	21 20 39.4	0.0
JFWS	Jewell Farm	99.15	346	ePdif	Pdif	21 20 39.4	0.0
JFWS				epP	pP	21 21 31.3	+0.5
H25A	Fruitdale	99.17	356	P	Pdif	21 20 40.1	+0.5
baz=4.6							
I03D	Drain, OR	99.23	10	P	Pdif	21 20 40.5	+0.8
baz=349							
I04A	Tendick Farm,	99.27	10	P	Pdif	21 20 40.1	+0.2
baz=349							
J37A	Redenius Farm,	99.36	348	P	Pdif	21 20 40.7	+0.3
baz=13							
ECSD	EROS Data Cent	99.39	351	P	Pdif	21 20 40.5	+0.1
baz=10							
ECSD	EROS Data Cent	99.39	351	ePdif	Pdif	21 20 40.0	-0.5
J36A	Seneca 1, Swea	99.46	349	P	Pdif	21 20 41.1	+0.3
baz=12							
I29A	Vivian Onida	99.52	353	P	Pdif	21 20 41.6	+0.6
baz=7.3							
I30A	Oacoma	99.54	353	P	Pdif	21 20 41.2	+0.1
baz=8.0							
H17A	Grant Village	99.55	1	P	Pdif	21 20 43.7	+2.2
baz=359,SNR=12							
I28A	Midland	99.61	354	P	Pdif	21 20 41.9	+0.4
baz=6.6,SNR=7.6							
RSSD	Black Hills	99.69	356	P	Pdif	21 20 42.5	+0.4
baz=4.2							
RSSD	Black Hills	99.69	356	eP	Pdif	21 20 42.8	+0.7
RSSD	Black Hills	99.69	356	ePdif	Pdif	21 20 42.8	+0.7
RSSD				epP	pP	21 21 32.7	-0.7
J34A	George	99.74	350	P	Pdif	21 20 42.1	0.0
baz=11							
I25A	Rochford	99.77	356	P	Pdif	21 20 43.2	+0.8
baz=4.5							
J05D	Fort Rock, OR	99.92	9	P	Pdif	21 20 43.5	+0.5
baz=350							
IMW	Indian Meadow	100.04	1	ePdif	Pdif	21 20 45.5	+1.8
J30A	Dallas	100.13	353	P	Pdif	21 20 44.2	+0.4
baz=8.0							
K36A	Gilmore City	100.16	349	P	Pdif	21 20 44.3	+0.4
baz=12							
MOOW	Moose Ponds	100.19	1	ePdif	Pdif	21 20 46.1	+1.8
HLID	Hailey	100.25	4	P	Pdif	21 20 45.1	+0.6
baz=356							
HLID	Hailey	100.25	4	ePdif	Pdif	21 20 45.3	+0.7
MFID	Camas Ranch	100.31	5	ePdif	Pdif	21 20 45.7	+1.0
HUMO	Hull Mountain	100.36	10	ePdif	Pdif	21 20 46.1	+1.3
L38A	Oak Wood Farm,	100.40	348	P	Pdif	21 20 44.7	-0.2
baz=13							
J26A	Sides Ranch, S	100.44	355	P	Pdif	21 20 45.0	-0.2
baz=5.0							
K05A	Summer Lake	100.51	9	ePdif	Pdif	21 20 47.0	+1.2
L37A	Phoenix Point,	100.55	348	P	Pdif	21 20 45.2	-0.4
baz=13							
REDW	Red Top Meadow	100.58	1	ePdif	Pdif	21 20 47.2	+1.2
L36A	Harm Buss Farm	100.72	349	P	Pdif	21 20 46.4	0.0
baz=12							
K31A	O'Neill	100.74	352	P	Pdif	21 20 46.8	+0.2
baz=8.6							
K30A	Basset	100.78	353	P	Pdif	21 20 47.2	+0.5
baz=7.9							
BW06	Boulder Array	101.18	0	P	Pdif	21 20 48.6	-0.2
baz=360							
BW06	Boulder Array	101.18	0	ePdif	Pdif	21 20 49.1	+0.3
PDAR	Pinedale Array	101.18	0	P	Pdif	21 20 49.1	+0.4
comp=Z,2.4nm,0.7s,baz=36,slow=2.7,SNR=19							
PDAR				PP	PP	21 24 55.5	-3.4
comp=Z,10.0nm,1.1s,baz=358,slow=4.5,SNR=7.9							
PDAR				PKKPbc	PKKPbc	21 36 56.5	-1.5
comp=Z,1.6nm,0.8s,baz=134,slow=5.0,SNR=8.7							
PDAR				PKPPKP	P'P'df	21 45 12.4	-5.2
comp=Z,0.2nm,0.4s,baz=309,slow=7.5,SNR=3.7							
HDIL	Hopedale	101.22	345	P	Pdif	21 20 49.1	+0.4
baz=16							
YBH	Yreka Blue Hor	101.25	10	eP	Pdif	21 20 49.9	+1.0
YBH	Yreka Blue Hor	101.25	10	ePdif	Pdif	21 20 49.9	+1.0
K22A	Casper	101.26	358	P	Pdif	21 20 49.3	+0.2
baz=2.2							
K22A	Casper	101.26	358	ePdif	Pdif	21 20 49.4	+0.3
M37A	Trindle Farm,	101.30	348	P	Pdif	21 20 49.6	+0.5
baz=12							
M04C	Macdoel	101.32	10	P	Pdif	21 20 49.9	+0.7
baz=350							
MOD	Modoc Plateau	101.40	8	ePdif	Pdif	21 20 51.1	+1.5
N39A	Derby Farms, D	101.55	347	P	Pdif	21 20 50.1	0.0
baz=14							
M02C	Callahan	101.56	10	P	Pdif	21 20 50.5	+0.2
baz=349							
BGNE	Belgrade	101.87	351	P	Pdif	21 20 52.3	+0.7
baz=9.1							
BGNE	Belgrade	101.87	351	ePdif	Pdif	21 20 51.9	+0.3
HVU	Hansel Valley	102.10	3	eP	Pdif	21 20 54.1	+1.3
HVU	Hansel Valley	102.10	3	ePdif	Pdif	21 20 54.1	+1.3
O40A	La Belle	102.16	346	P	Pdif	21 20 52.5	-0.3
baz=14							
HWUT	Hardware Ranch	102.31	2	ePdif	Pdif	21 20 55.1	+1.3
ELK	Elko	103.01	5	eP	Pdif	21 20 58.5	+1.5
ELK	Elko	103.01	5	ePdif	Pdif	21 20 58.5	+1.5
DUG	Dugway, Tooele	103.68	3	eP	Pdif	21 21 01.6	+1.8
DUG	Dugway, Tooele	103.68	3	ePdif	Pdif	21 21 01.6	+1.8
O20A	White River Ci	103.81	359	ePdif	Pdif	21 21 01.6	+1.2
MAW	Mawson	103.88	183	Pdiff	Pdif	21 21 03.9	+4.4
comp=Z,4.5nm,0.8s,baz=0.5,slow=6.7,SNR=11							
MAW				PP	PKiKP	21 25 16.2	+0.3
comp=Z,3.2nm,0.8s,baz=324,slow=7.5,SNR=5.3							
NLU	North Lily Min	103.95	2	ePdif	Pdif	21 21 04.4	+3.3
ISCO	Idaho Springs	104.07	357	P	Pdif	21 21 01.8	0.0
baz=3.0							
ISCO	Idaho Springs	104.07	357	eP	Pdif	21 21 02.5	+0.7
ISCO	Idaho Springs	104.07	357	ePdif	Pdif	21 21 02.5	+0.7
AFDM	Forest Hills D	104.22	9	ePdif	Pdif	21 21 03.1	+1.0
SMCO	Snowmass	104.74	358	ePdif	Pdif	21 21 05.8	+0.9
SRU	San Rafael Swe	104.83	1	eP	Pdif	21 21 06.0	+1.0
SRU	San Rafael Swe	104.83	1	ePdif	Pdif	21 21 06.0	+1.0
NVAR	Mina Array Bea	105.05	7	Pdiff	Pdif	21 21 07.8	+1.7
comp=Z,4.8nm,0.8s,baz=20,slow=2.6,SNR=12							
NVAR				PP	PP	21 25 25.4	-2.4
comp=Z,6.6nm,0.9s,baz=331,slow=5.2,SNR=4.4							
NVAR				PKKPbc	PKKPbc	21 36 45.4	-1.2
comp=Z,2.9nm,0.7s,baz=196,slow=5.6,SNR=7.7							
PSUT	Pine Spring	105.29	4	ePdif	Pdif	21 21 09.0	+1.9
R11A	Troy Canyon, C	105.37	5	ePdif	Pdif	21 21 08.8	+1.4
PV04	Paradox Valley	105.55	360	ePKP	PKiKP	21 25 19.4	-1.0
PV01	Paradox Valley	105.81	359	ePdif	Pdif	21 21 10.4	+1.0
PV01				ePKP	PKiKP	21 25 20.3	-0.7
MTPU	Mount Pierson	105.85	2	ePdif	Pdif	21 21 12.5	+2.7
SDCO	Great Sand Dun	106.12	357	ePdif	Pdif	21 21 12.2	+1.3
LCMT	Little Creek M	106.84	3	ePdif	Pdif	21 21 16.4	+2.5
DZM	Mont Dzumac	107.18	105	Pdiff	Pdif	21 21 15.9	+0.4
comp=Z,11nm,0.9s,baz=242,slow=18,SNR=5.0							
DAC	Darwin (Calif)	107.25	7	eP	Pdif	21 21 17.6	+1.7
DAC	Darwin (Calif)	107.25	7	ePdif	Pdif	21 21 17.6	+1.7
SYO	Syowa Base	107.62	191	‖eX	PKiKP	21 25 19.8	-3.0
GSC	Goldstone, Bar	108.29	6	eP	Pdif	21 21 21.6	+1.2
GSC	Goldstone, Bar	108.29	6	ePdif	Pdif	21 21 21.6	+1.2
ANMO	Albuquerque	108.94	358	PKKPbc	PKKPbc	21 36 35.5	+1.0
comp=Z,1.1nm,0.8s,baz=154,slow=8.6,SNR=3.8							
ANMO	Albuquerque	108.94	358	eP	Pdif	21 21 25.6	+2.2
ANMO	Albuquerque	108.94	358	ePdif	Pdif	21 21 25.6	+2.2
ANMO				PKKPbc	PKKPbc	21 36 35.5	+1.0
MSVF	Nonsavu	114.07	95	⇑/PKIKP	PKPdf	21 25 37.1	+0.4
TXAR	Lajitas Array	114.38	355	PKP	PKPdf	21 25 36.7	-0.5
comp=Z,2.6nm,0.8s,baz=355,slow=2.6,SNR=6.9							
TXAR				PP	PP	21 26 32.0	-2.9
comp=Z,7.5nm,1.0s,baz=321,slow=3.6,SNR=5.9							
TXAR				PKKPbc	PKKPbc	21 36 15.2	-1.4
comp=Z,3.7nm,0.8s,baz=183,slow=5.2,SNR=16							
NVL	N'lazarevskaya	114.81	198	ePKIKP	PKPdf	21 25 34.3	-2.1
NVL				eSP	SP	21 35 55.9	+1.0
SNAA	Sanae	119.25	200	P	PKPdf	21 25 44.8	-0.3
SNAA	Sanae	119.25	200	ePKIKP	PKPdf	21 25 44.6	-0.5
SNAA	Sanae	119.25	200	ePKPdf	PKPdf	21 25 44.6	-0.5
FOZ	Fox Glacier	119.90	124	P	PKPdf	21 25 46.3	-0.7
AFI	Afiamalu	120.19	85	PKP	PKPdf	21 25 48.6	+0.1
comp=Z,103nm,0.8s,baz=186,slow=1.2,SNR=10							
VNA2	Neumayer--Watz	120.25	202	P	PKPdf	21 25 46.6	-0.3
baz=22,slow=3.9							
VNA1	Neumayer--Stat	120.40	202	P	PKPdf	21 25 47.4	+0.2
RPZ	Rata Peaks	120.80	124	P	PKPdf	21 25 47.9	-0.8
VNA3	Neumayer Olymp	121.06	202	P	PKPdf	21 25 47.8	-0.6
KHZ	Kahutara	121.99	122	ePKPdf	PKPdf	21 25 49.6	-1.4
KHZ	Kahutara	121.99	122	P	PKPdf	21 25 50.3	-0.7
URZ	Urewera	122.94	116	PKP	PKPdf	21 25 50.6	-2.4
comp=Z,73nm,0.7s,baz=264,slow=2.9,SNR=45							
URZ	Urewera	122.94	116	ePKPdf	PKPdf	21 25 50.4	-2.6
URZ	Urewera	122.94	116	P	PKPdf	21 25 50.4	-2.6
HAZ	Te Kaha	123.23	115	P	PKPdf	21 25 51.4	-2.2
WMGZ	Waiomatatini S	123.72	115	P	PKPdf	21

NNA	**Nana**	**142.00**	**302**		**SKP**	**SKPdf**	**21**	**29**	**45.9 +1.6**
	comp=Z,19nm,0.9s,baz=351,slow=3.7,SNR=4.1								
NNA	**Nana**	**142.00**	**302**	*i*	**PKIKP**	**PKPdf**	**21**	**26**	**34.0 +4.4**
LVC	**Limon Verde**	**142.54**	**280**		PKhKP	PKPpre	21	26	26.1
	comp=Z,42nm,0.6s,baz=31,slow=2.0,SNR=22								
LVC					SKP	**SKPbc**	**21**	**29**	**48.1 -0.7**
	comp=Z,106nm,0.9s,baz=292,slow=3.1,SNR=5.5								
TRQA	**Tornquist**	**142.63**	**253**	*e*	PKPdf	pPKPdf	21	27	22.6 -1.1
TBI	**Tubuai**	**143.06**	**81**	*e*	PKIKP	PKIKPbc	21	26	28.4 -0.2
	comp=Z,307nm,1.0s								
TBI	**Tubuai**	**143.06**	**81**	*e*	SS	SS	21	48	08.0 +2.1
	comp=Z,1μm,38.2s								
USHA	**Ushuaia**	**146.64**	**223**		PKPbc	**PKPbc**	**21**	**26**	**37.8 -0.4**
	comp=Z,427nm,0.8s,baz=100,slow=4.1,SNR=37								
LCO	**Las Campanas**	**146.88**	**272**	*e*	PKPdf	**PKPdf**	**21**	**26**	**38.4 +0.5**
PLCA	**Paso Flores**	**149.59**	**250**		PKP	**PKPdf**	**21**	**26**	**42.0 +0.3**
	comp=Z,17nm,0.9s,baz=112,slow=2.7,SNR=21								
PLCA					PKPbc	**PKiKP**	**21**	**26**	**47.2 -0.3**
	comp=Z,155nm,1.0s,baz=138,slow=1.6,SNR=76								
PLCA					pPKPbc	**pPKPbc**	**21**	**27**	**38.9 -1.0**
	comp=Z,92nm,1.1s,baz=149,slow=4.8,SNR=4.9								
PLCA	**Paso Flores**	**149.59**	**250**		PKHKP	PKPpre	21	26	42.0
PLCA					pmax	pmax			
	comp=Z,17nm,0.9s								
RKT	**Rikitea**	**154.15**	**66**	*e*	SS	SS	21	50	15.6 +6.3
	comp=Z,784nm,32.5s								

MEX 14 21:16:48.3±0.8, 15°.54N×93°.92W, h68km±346km, MD3.5, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		**0.69**	**77**	*e*P	Pn	21 17 01.1	-1.9
PCIG				*e*S	Sn	21 17 12.2	-1.6

MEX 14 21:22:01.5±0.4, 16°.67N×94°.28W, h172km±10km, MD3.8, Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		**1.40**	**133**	*e*P	Pn	21 22 30.5	-1.3
PCIG				*i* S	Sn	21 22 53.2	-2.0
HUIG	**Huatulco**	**1.98**	**243**	*e*P	Pn	21 22 36.2	-1.5
HUIG				*e*S	Sn	21 23 03.7	-2.1
VHO	**Vista Hermosa**	**2.38**	**280**	*e*P	Pn	21 22 41.4	-1.2
VHO				*e*S	Sn	21 23 12.3	-2.2
PNIG	**Pinotepa**	**3.70**	**266**	*e*P	Pn	21 22 57.6	-1.0
PNIG				*i* S	Sn	21 23 42.1	-1.1

MAN 14 21:26:41, 9°.82N×121°.88E, h33km, mb4.1, ML2.9, MS2.6, 1C, Sulu Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUIM	**Jordan**	**1.07**	**41**	*e*P	Pb	21 27 00.4	-0.7
GUIM				*e*S	Sn	21 27 13.5	+0.1
SNPH	**Sibulan**	**1.42**	**109**	⇑*i*P	Pn	21 27 04.8	+0.2
IPIL	**Ipil**	**2.13**	**161**	*e*P	Pn	21 27 14.4	+0.1
IPIL				*e*S	Sn	21 27 40.6	+1.1

*ISCJB **14** 21:46:44.2±1.4, 36°.44N±0°.03×142°.03E±0°.06, h10km±9km, mb3.6/6, Error ellipse: s-maj=8.1km s-min=5.1km az=9.1*
*JMA **14** 21:46:44.7±0.4, 36°.48N×141°.95E, h7km±4km, M3.5*
*IDC **14** 21:46:44.4±1.0, 36°.33N×142°.04E, h0km, mb3.6/6, mb1 3.8/9, mb1mx3.5/48, mbtmp3.7/9, ML3.4/3, Error ellipse: s-maj=27.6km s-min=19.8km az=108.0*

ISC 14 21:46:44.5±2.0, 36°.43N±0°.04×141°.91E±0°.07, h1km±12km, n29, σ0°.83/32, mb3.6/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**1.09**	**280**	P	**Pg**	**21 47 05.3**	**-0.2**
ONAJ	**Iwakimizuishiy**	**1.11**	**307**	P	**Pg**	**21 47 06.0**	**+0.1**
CHOJ	**Chosi**	**1.12**	**230**	P	**Pb**	**21 47 07.0**	**+0.3**
CHOJ				S	**Sn**	**21 47 23.0**	**-0.4**
JFK	**Kawauchi**	**1.25**	**319**	P	**Pg**	**21 47 08.7**	**+0.2**
JFT	**Otama**	**1.66**	**311**	P	**Pb**	**21 47 15.6**	**-0.4**
JMM	**Marumori**	**1.69**	**328**	P	**Pn**	**21 47 14.3**	**-0.8**
JMM				*e*S	**Sn**	**21 47 36.9**	**-0.5**
BSO1	**Boso 1**	**1.93**	**203**	P	**Pn**	**21 47 18.8**	**+0.8**
BSO1				*e*S	**Sb**	**21 47 44.3**	**-0.3**
JAG	**Ashikaga**	**1.98**	**270**	P	**Pn**	**21 47 18.6**	**-0.6**
JAG				S	**Sb**	**21 47 45.3**	**-1.3**
BSO3	**Boso 3**	**1.99**	**215**	P	**Pn**	**21 47 19.2**	**+0.2**
BSO3				S	**Sb**	**21 47 45.7**	**-0.8**
JFY	**Yanaizu**	**2.02**	**299**	P	**Pb**	**21 47 21.2**	**-0.8**
JIO	**Ouri**	**2.07**	**348**	P	**Pn**	**21 47 20.2**	**-0.2**
JIO				*e*S	**Sn**	**21 47 46.0**	**-0.7**
JKT	**Katashina**	**2.17**	**280**	P	**Pn**	**21 47 22.5**	**+0.6**
JKT				S	**Sb**	**21 47 51.5**	**-0.5**
MJAR	**Matsushiro Arr**	**2.98**	**273**	Pn	**Pn**	**21 47 33.8**	**+0.8**
	6.0nm,0.3s,baz=93,slow=9.2,SNR=46						
MAT	**Matsushiro**	**2.99**	**273**	P	**Pn**	**21 47 34.0**	**+0.9**
MAT				*e*S	**Sn**	**21 48 09.6**	**+0.1**
JHJ	**Hachijo jima 2**	**3.74**	**209**	Pn	**Pn**	**21 47 43.9**	**+0.5**
	10nm,0.3s,baz=333,slow=23,SNR=1.7						
JHJ				Sn	**Sn**	**21 48 26.2**	**-1.9**
	17nm,0.3s,baz=64,slow=23,SNR=1.9						
ASAJ	**Asahikawa**	**7.69**	**4**	Pn	**Pn**	**21 48 37.6**	**-0.1**
	0.4nm,0.3s,baz=191,slow=16,SNR=4.0						
H11N2	**WAKE ISLAND Hy 27.50**	**120**		T	T	22 21 12.4	
	baz=313,slow=75,SNR=18						
H11N1	**WAKE ISLAND Hy 27.51**	**121**		T	T	22 21 10.2	
	baz=313,slow=75,SNR=17						
H11N3	**WAKE ISLAND Hy 27.52**	**120**		T	T	22 21 11.7	
	baz=313,slow=75,SNR=13						
H11S1	**WAKE ISLAND Hy 28.20**	**123**		T	T	22 22 01.2	
	baz=315,slow=76,SNR=9.6						
H11S3	**WAKE ISLAND Hy 28.20**	**123**		T	T	22 22 02.8	
	baz=315,slow=76,SNR=11						
H11S2	**WAKE ISLAND Hy 28.21**	**123**		T	T	22 22 02.5	
	baz=315,slow=76,SNR=12						
SONM	**Songino Array**	**28.45**	**305**	P	**P**	**21 52 42.3**	**+1.3**
	0.3nm,0.5s,baz=106,slow=9.7,SNR=3.3						
ZALV	**Zalesovo Beam**	**42.61**	**313**	P	**P**	**21 54 44.0**	**+1.9**
	0.4nm,0.4s,baz=67,slow=8.2,SNR=2.2						
WRA	**Warramunga Arr**	**56.52**	**189**	P	**P**	**21 56 27.5**	**-1.0**
	0.6nm,0.8s,baz=6.2,slow=7.1,SNR=2.9						
ASAR	**Alice Springs**	**60.25**	**188**	P	**P**	**21 56 53.8**	**-0.8**
	0.6nm,0.9s,baz=19,slow=8.8,SNR=3.0						
YKA	**Yellowknife Ar**	**64.12**	**30**	P	**P**	**21 57 20.4**	**+0.4**
	0.5nm,0.7s,baz=297,slow=6.3,SNR=6.0						
TXAR	**Lajitas Array**	**90.17**	**53**	P	**P**	**21 59 46.6**	**-0.3**
	0.3nm,0.8s,baz=336,slow=4.0,SNR=2.9						
LPAZ	**La Paz**	**146.64**	**61**	PKPbc	**PKPbc**	**22 06 28.9**	**-0.3**
	0.7nm,0.5s,baz=271,slow=2.8,SNR=2.8						

*MEX **14** 22:07:49.2±1.0, 30°.57N×105°.33W, h15km±64km, MD3.9*
*ISCJB **14** 22:07:50.0±0.6, 30°.84N±0°.04×105°.77W±0°.04, h10km, Error ellipse: s-maj=6.4km s-min=4.6km az=152.9*
*NEIC **14** 22:07:51.1±0.6, 30°.82N×105°.74W, h10km, ML3.7, MD3.9(MEX), Error ellipse: s-maj=8.6km s-min=6.2km az=162.0*
NEIC Felt at El Paso, Texas.

ISC 14 22:07:48.8±1.0, 30°.74N±0°.05×105°.77W±0°.04, h10km, n30, σ2°.14/40, Texas-Mexico border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MNTX	**Cornudas Mount**	**1.02**	**19**	*e*Pg	**Pg**	**22 08 07.4**	**-1.0**
MNTX				*e*Sg	**Sg**	**22 08 20.9**	**-0.7**
GDL2	**Guadalupe Moun**	**1.89**	**39**	*e*Pn	**Pb**	**22 08 23.1**	**-0.4**
CGIG		**1.94**	**260**	*e*P	**Pb**	**22 08 23.6**	**-0.6**
CGIG				*e*S	**Sb**	**22 08 49.6**	**+1.1**
CGIG		**1.94**	**260**	*e*P	**Pb**	**22 08 23.6**	**-0.6**
CGIG				*e*S	**Sb**	**22 08 49.6**	**+1.1**
CLNB	**Carlsbad**	**2.22**	**46**	*e*Pn	**Pn**	**22 08 27.7**	**+1.9**
121A	**Cookes Peak, D**	**2.48**	**317**	*e*Pn	**Pn**	**22 08 30.1**	**+0.7**
121A				*e*Pb	**Pb**	**22 08 34.2**	**+0.6**
121A				*e*Sg	**Sg**	**22 09 08.4**	**-0.1**
319A	**Douglas**	**3.08**	**283**	*e*P	**Pn**	**22 08 39.4**	**+1.8**
319A				*e*S	**Sb**	**22 09 21.7**	**+0.3**
319A	**Douglas**	**3.08**	**283**	*e*Pn	**Pn**	**22 08 38.6**	**+1.1**
Y22D	**IRIS PASSCAL I**	**3.47**	**344**	*e*Pn	**Pn**	**22 08 46.1**	**+3.1**
Y22D				*e*Pg	**Pb**	**22 08 52.5**	**+2.1**
BNM	**Barren Site**	**3.48**	**348**	*e*Pn	**Pn**	**22 08 44.9**	**+1.7**
LENM	**Lemitar**	**3.57**	**344**	*e*Pn	**Pn**	**22 08 46.4**	**+2.0**
LPM	**Los Pinos Moun**	**3.64**	**349**	*e*Pn	**Pn**	**22 08 47.0**	**+1.6**
HPIG		**3.79**	**179**	*e*Pn	**Pn**	**22 08 51.3**	**+3.9**
MSTX	**Muleshoe**	**4.10**	**37**	*e*Pn	**Pn**	**22 08 53.3**	**+1.6**
ANMO	**Albuquerque**	**4.24**	**352**	*e*Pn	**Pn**	**22 08 55.7**	**+2.1**
TUC	**Tucson**	**4.56**	**291**	*e*Pn	**Pn**	**22 08 59.1**	**+1.2**
HSIG		**4.81**	**250**	*e*Pn	**Pn**	**22 09 05.7**	**+4.4**
HSIG				*e*Pg	**Pg**	**22 09 19.7**	**-1.2**
HSIG				*e*Sg	**Sg**	**22 10 22.2**	**-1.1**
JCT	**Junction City**	**5.16**	**91**	*e*Pn	**Pn**	**22 09 07.5**	**+1.4**
X18A	**Snowflake**	**5.17**	**318**	*e*Pn	**Pn**	**22 09 09.0**	**+2.6**
AMTX	**Amarillo**	**5.38**	**39**	*e*Pn	**Pn**	**22 09 11.3**	**+2.1**
ABTX	**Abilene, Hawle**	**5.55**	**69**	*e*Pn	**Pn**	**22 09 11.9**	**+0.4**
X16A	**Lo Mia Camp, P**	**6.03**	**309**	*e*Pn	**Pn**	**22 09 22.4**	**+4.2**
214A	**Organ Pipe Nat**	**6.14**	**283**	*e*Pn	**Pn**	**22 09 21.1**	**+1.5**
214A				*e*Sg	**Sg**	**22 11 07.5**	**+1.5**
WUAZ	**Wupatki**	**6.69**	**317**	*e*Pn	**Pn**	**22 09 28.2**	**+0.9**
MVCO	**Mesa Verde**	**6.84**	**341**	*e*Pg	**Pg**	**22 09 57.4**	**-2.5**
Y14A	**Wickenburg**	**6.90**	**299**	*e*Pn	**Pn**	**22 09 31.4**	**+1.3**
SDCO	**Great Sand Dun**	**7.00**	**2**	*e*Pg	**Pg**	**22 09 58.2**	**-4.6**
113A	**Mohawk Valley,**	**7.10**	**289**	*e*Pn	**Pn**	**22 09 37.4**	**+4.6**
IMW	**Indian Meadow**	**13.76**	**344**	*e*Pn	**Pn**	**22 11 04.7**	**+0.5**
GCMT	**Greycliff**	**15.34**	**350**	*e*Pn	**Pn**	**22 11 25.3**	**-0.1**

*IDC **14** 22:25:11.9±10.0, 20°.44S×167°.18E, h0km, mb3.9/3, mb1 4.1/3, mb1mx3.7/38, mbtmp3.9/3, MS4.0/3, Ms1 4.0/3, ms1mx3.2/32, Error ellipse: s-maj=179.2km s-min=33.6km az=83.0*
*NEIC **14** 22:25:13.1±0.7, 20°.48S×167°.28E, h10km, mb4.5/6, Error ellipse: s-maj=15.9km s-min=9.4km az=122.0*
*ISCJB **14** 22:25:14.8±0.8, 20°.40S±0°.07×167°.2E±0°.1, h33km, mb4.1/8, MS4.0/3, Error ellipse: s-maj=19.2km s-min=8.4km az=19.3*

ISC 14 22:25:16.5±1.1, 20°.48S±0°.09×167°.3E±0°.2, h35km, n13, σ0°.97/12, mb4.0/8, MS4.1/3, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**1.77**	**206**	Pn	**Pn**	**22 25 43.3**	**-1.4**
	7.4nm,0.3s,baz=118,slow=12,SNR=107						
DZM				Sn	**Sn**	**22 26 06.6**	**+0.6**
	12nm,0.3s,baz=35,slow=15,SNR=9.3						
HNR	**Honiara**	**13.07**	**326**	*e*Pn	**Pn**	**22 28 18.6**	**-1.1**
FUNA	**Funafuti**	**16.54**	**46**	*e*Pn	**Pn**	**22 29 05.5**	**-0.4**
	8.3nm,0.2s						
STKA	**Stephens Creek**	**25.63**	**238**	P	**P**	**22 30 43.7**	**+0.8**
	1.4nm,0.6s,baz=63,slow=9.1,SNR=3.5						
WRA	**Warramunga Arr**	**30.90**	**265**	P	**P**	**22 31 28.9**	**-1.1**
	0.4nm,0.4s,baz=91,slow=8.5,SNR=6.8						
WRA				LR	LR	22 43 27.0	
	comp=Z,118nm,19.1s,baz=230,slow=36						
ASAR	**Alice Springs**	**31.06**	**258**	P	**P**	**22 31 31.5**	**0.0**
	2.1nm,0.7s,baz=86,slow=9.2,SNR=31						
KAPI	**Kappang**	**48.64**	**282**	*e*P	**P**	**22 33 57.9**	**+0.5**
	0.6nm,0.4s						
CBIJ	**Chichi jima**	**53.18**	**332**	*e*P	**P**	**22 34 31.0**	**-0.3**
	10nm,0.6s						
JHJ	**Hachijo jima 2**	**59.42**	**333**	LR	LR	22 58 59.4	
	comp=Z,231nm,20.0s,baz=76,slow=34						
JOW	**Kunigami**	**60.34**	**320**	*e*P	**P**	**22 35 23.1**	**+1.0**
	4.6nm,0.9s						
CHTO	**Chiang Mai**	**77.51**	**296**	*e*P	**P**	**22 37 10.2**	**+1.2**
	0.5nm,0.6s						
OHAK	**Old Harbor**	**84.14**	**20**	*e*P	**P**	**22 37 43.8**	**+0.2**
	3.7nm,0.8s						
PDAR	**Pinedale Array**	**98.80**	**48**	LR	LR	23 15 36.5	
	comp=Z,69nm,21.1s,baz=322,slow=31						

*NIED **14** 22:30:00, 42°.80N×146°.40E, h32km, Mw4.9 Best double couple: M0=2.97000×10^16 NP1:φs=166.00000°, δ45.00000°, λ24.00000°. NP2:φs=58.00000°, δ73.00000°, λ132.00000°.*
*IDC **14** 22:30:22.7±0.4, 42°.91N×146°.24E, h0km, mb4.9/28, mb1 5.1/32, mb1mx4.8/51, mbtmp4.9/32, ML3.9/4, MS4.3/36, Ms1 4.3/36, ms1mx4.2/50, Error ellipse: s-maj=13.1km s-min=11.1km az=128.0*
*JMA **14** 22:30:27.4±0.1, 42°.85N×146°.31E, h48km±2km, M5.0*
JMA Felt III J1.
*SKHL **14** 22:30:27.5±0.4, 42°.80N×146°.32E, h54km±5km, mb5.8/4, Ms4.7/6, msh5.3/2*
*BJI **14** 22:30:28.2, 43°.05N×146°.25E, h51km, mb4.9/57, mB4.9/51, Ms4.5/66, Ms7 4.3/55*
*ISCJB **14** 22:30:29.6±0.3, 43°.04N±0°.02×146°.20E±0°.02, h54km±2km, mb5.2/347, MS4.5/63, Error ellipse: s-maj=3.5km s-min=2.1km az=166.4*
*MOS **14** 22:30:29.4±0.9, 43°.09N×146°.14E, h53km, mb5.5/104, MS4.4/43, Error ellipse: s-maj=6.7km s-min=5.2km az=104.8*
*GCMT **14** 22:30:29.7±0.5, 42°.95N×146°.37E, h37km±1km, MW5.1/62, Moment Tensor Solution. s25,c27; s62,c89; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr4.21±.57; Mθθ0.14±.32; Mφφ-4.35±.33; Mrθ3.12±.32; Mφθ-1.85±.17; Mφr1.76±.28; Best double couple: M0=5.88000×10^16 NP1:φs=43.00000°, δ65.00000°, λ114.00000°. NP2: φs=177.00000°, δ34.00000°, λ50.00000°. Principal axes: T 5.9460, Plg63.0000°, Azm351.0000°; N -0.1360, Plg21.0000°, Azm212.0000°; P -5.8140, Plg16.0000°, Azm116.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **14** 22:30:29.7±0.4, 43°.14N×146°.13E, h37km±4km, mb5.2/242 Error ellipse: s-maj=3.4km s-min=2.2km az=153.0*
NEIC Recorded [3 JMA] in eastern Hokkaido.

ISC 14 22:30:29.8±0.3, 43°.04N±0°.03×146°.22E±0°.03, h42km±2km, h42km:pP-P, n1212, σ1°.16/1262, mb5.2/369, MS4.5/66, 135C-38D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NEM2	**Nemuro 2**	**0.48**	**314**	⇑P	**Pn**	**22 30 40.6**	**+0.3**
NEM2				S	**Sn**	**22 30 50.1**	**+2.4**
SHO	**Shikotan**	**0.95**	**28***c*	*i*PN	**Pn**	**22 30 46.3**	**-0.3**
SHO				*i* S	**Sn**	**22 30 59.8**	**+0.9**
SHO				pmax	pmax		
	comp=E,5μm,0.7s						
SHO				pmax	pmax		
	comp=Z,11μm,0.7s						
SHO				pmax	pmax		
	comp=N,4μm,0.3s						
SHO				smax	smax		
	comp=E,38μm,0.6s						
SHO				smax	smax		
	comp=N,68μm,0.5s						
SHO	**Shikotan**	**0.95**	**28**⇑	*i*P	**Pn**	**22 30 46.3**	**-0.3**
SHO				AMB	AMB	22 30 48.8	
	comp=N,4μm,0.3s						
SHO				AMB	AMB	22 30 48.8	
	comp=N,5μm,0.7s						
SHO				AMB	AMB	22 30 48.8	
	comp=N,11μm,0.7s						
SHO				*i* S	**Sn**	**22 31 00.3**	**+1.4**
SHO				A	A	22 31 04.3	
	comp=N,68μm,0.6s						
SHO				A	A	22 31 04.3	
	comp=N,38μm,0.6s						
YUK	**Yuzh-Kuril'sk**	**1.03**	**346***c*	*i*PN	**Pn**	**22 30 48.0**	**+0.2**
YUK				*i* S	**Sn**	**22 31 03.3**	**+2.3**
YUK				pmax	pmax		
	comp=Z,15μm,0.4s						
YUK				pmax	pmax		
	comp=N,4μm,0.3s						
YUK				pmax	pmax		
	comp=E,5μm,0.5s						
YUK				smax	smax		
	comp=E,60μm,0.7s						
YUK				smax	smax		
	comp=N,27μm,0.6s						
YUK	**Yuzh-Kuril'sk**	**1.03**	**346**⇑	*i*P	**Pn**	**22 30 48.0**	**+0.2**
YUK				AMB	AMB	22 30 52.5	
	comp=N,4μm,0.4s						
YUK				AMB	AMB	22 30 52.5	
	comp=N,5μm,0.4s						
YUK				AMB	AMB	22 30 52.5	
	comp=N,15μm,0.4s						
YUK				*i* S	**Sn**	**22 31 03.7**	**+2.7**
YUK				A	A	22 31 11.3	
	comp=N,5μm,0.7s						
YUK				A	A	22 31 11.3	
	comp=N,2μm,0.7s						
JAK	**Akkeshi**	**1.12**	**268**	⇓P	**Pn**	**22 30 48.1**	**-0.8**
JAK				*e*S	**Sn**	**22 31 03.4**	**+0.3**
JRA	**Rausu**	**1.20**	**319**	P	**Pn**	**22 30 50.8**	**+0.7**
JRA				*e*S	**Sn**	**22 31 07.8**	**+2.6**
JNK	**Nakash**	**1.22**	**297**	⇑P	**Pn**	**22 30 50.5**	**+0.1**
JNK				*e*S	**Sn**	**22 31 06.8**	**+1.1**
JOB	**Onbets**	**1.75**	**266**	⇓P	**Pn**	**22 30 56.8**	**-0.8**
JAR	**Ashorobuto**	**1.81**	**279**	⇓P	**Pn**	**22 30 58.3**	**-0.1**
JTKR	**Abashiri--Toko**	**1.92**	**300**	⇑P	**Pn**	**22 31 01.2**	**+1.2**
JCH	**Churui**	**2.14**	**260**	P	**Pn**	**22 31 01.7**	**-1.3**
JCH				*e*S	**Sn**	**22 31 28.4**	**+0.1**
JMP	**Maruseppu**	**2.29**	**296**	P	**Pn**	**22 31 06.5**	**+1.4**
ERM	**Erimo**	**2.48**	**247***c*	*e*PN	**Pn**	**22 31 07.6**	**0.0**
ERM	**Erimo**	**2.48**	**247**	*e*Pn	**Pn**	**22 31 07.8**	**+0.2**
ERM				*e*Sn	**Sn**	**22 31 31.8**	**-4.9**
ERM	**Erimo**	**2.48**	**247**⇑	*i*P	**Pn**	**22 31 07.6**	**0.0**
JEM	**Erimo**	**2.48**	**247**	⇓P	**Pn**	**22 31 07.7**	**+0.1**
KUR	**Kuril'sk**	**2.50**	**28***c*	*i*PN	**Pn**	**22 31 08.4**	**+0.6**
KUR				*i* S	**Sn**	**22 31 38.8**	**+1.8**
KUR				pmax	pmax		
	comp=Z,1μm,0.5s						
KUR				pmax	pmax		
	comp=N,277nm,0.3s						
KUR				pmax	pmax		
	comp=E,173nm,0.3s						
KUR				smax	smax		
	comp=E,3μm,0.4s						
KUR				smax	smax		
	comp=N,3μm,0.6s						
KUR	**Kuril'sk**	**2.50**	**28**⇑	*i*P	**Pn**	**22 31 08.3**	**+0.5**
KUR				AMB	AMB	22 31 09.9	
	comp=N,1μm,0.5s						
KUR				AMB	AMB	22 31 09.9	
	comp=N,280nm,0.3s						
KUR				AMB	AMB	22 31 09.9	
	comp=N,170nm,0.3s						
KUR				*i* S	**Sn**	**22 31 38.6**	**+1.6**
KUR				A	A	22 31 40.8	
	comp=N,3μm,0.5s						
KUR				A	A	22 31 40.8	
	comp=N,3μm,0.5s						
JKA	**Kamikawa-asahi**	**2.84**	**294**	*e*P	**Pn**	**22 31 14.8**	**+2.2**
ASAJ	**Asahikawa**	**2.84**	**294**	Pn	**Pn**	**22 31 14.8**	**+2.2**
	comp=N,48nm,0.3s,baz=121,slow=12,SNR=94						
ASAJ				Sn	**Sn**	**22 31 51.4**	**+5.8**
	comp=N,114nm,0.3s,baz=346,slow=29,SNR=4.2						
ASAJ				LR	LR	22 32 30.5	
	comp=N,6μm,21.8s,baz=60,slow=44						
YSS	**Yuzh-Sakhalins**	**4.62**	**329**⇑	*i*PN	**Pn**	**22 31 39.1**	**+2.1**
YSS				*e*S	**Sn**	**22 32 32.2**	**+2.8**
YSS				pmax	pmax		
	comp=Z,110nm,0.7s						
YSS				smax	smax		
	comp=N,340nm,1.0s						
YSS	**Yuzh-Sakhalins**	**4.62**	**329**⇑	*i*P	**Pn**	**22 31 39.3**	**+2.3**
YSS				AMB	AMB	22 31 39.7	
	comp=N,110nm,0.7s						
YSS				*e*S	**Sn**	**22 32 32.2**	**+2.8**
YSS				A	A	22 32 33.8	
	comp=N,340nm,1.0s						
YSS				AMS	AMS	22 33 45.0	
	comp=N,5μm,16.0s						
YSS				AMS	AMS	22 33 45.0	
	comp=N,5μm,16.0s						
YSS				AMS	AMS	22 33 45.0	
	comp=N,1μm,13.0s						
UGL	**Uglegorsk**	**6.70**	**336**	*e*PN	**Pn**	**22 32 07.0**	**+1.5**
UGL				*e*		22 33 30.0	
UGL				pmax	pmax		
	comp=Z,246nm,1.0s						
UGL				pmax	pmax		
	comp=Z,1μm,4.0s						
UGL				MLR	MLR		
	comp=N,5μm,19.0s						
UGL				MLR	MLR		
	comp=Z,3μm,19.0s						
UGL	**Uglegorsk**	**6.70**	**336**⇓	*e*P	**Pn**	**22 32 08.5**	**+3.0**
UGL				AMB	AMB	22 32 10.0	
	comp=Z,250nm,1.0s						
UGL				AMB	AMB	22 32 10.4	
	comp=Z,1μm,4.0s						
UGL				*e*S	**Sn**	**22 33 24.2**	**+3.8**
UGL				A	A	22 33 43.8	
	comp=Z,110nm,0.6s						
UGL				AMS	AMS	22 34 56.0	
	comp=Z,5μm,19.0s						
UGL				AMS	AMS	22 34 56.0	
	comp=Z,3μm,19.0s						
TEY	**Ternei**	**7.21**	**289**	*e*P	**Pn**	**22 32 15.8**	**+3.3**
TEY				AMB	AMB	22 32 21.0	
	comp=Z,30nm,0.7s						
TEY				AMS	AMS	22 35 10.0	
	comp=Z,4μm,18.0s						
TYV	**Tymovskoe**	**8.20**	**344**	*e*PN	**Pn**	**22 32 29.0**	**+2.9**
TYV				*e*		22 34 10.0	
TYV				pmax	pmax		
	comp=N,154nm,1.0s						
TYV				pmax	pmax		
	comp=Z,185nm,1.0s						
TYV				MLR	MLR		
	comp=N,2μm,18.0s						
TYV				MLR	MLR		
	comp=Z,2μm,16.0s						
TYV	**Tymovskoe**	**8.20**	**344**	*e*P	**Pn**	**22 32 29.5**	**+3.4**
TYV				⇓*i*P	**Pn**	**22 32 30.0**	**+3.9**
TYV				AMB	AMB	22 32 32.3	
	comp=Z,50nm,0.7s						
TYV				AMB	AMB	22 32 32.4	
	comp=Z,500nm,2.0s						
TYV				*e*S	**Sn**	**22 34 01.0**	**+3.7**
TYV				A	A	22 34 18.0	
	comp=Z,20nm,0.7s						
TYV				AMS	AMS	22 35 52.0	
	comp=Z,2μm,17.0s						
TYV				AMS	AMS	22 35 52.0	
	comp=Z,2μm,17.0s						
MAJO	**Matsushiro**	**8.94**	**226***d*	*i*PN	**Pn**	**22 32 33.1**	**-3.3**
MAJO	**Matsushiro**	**8.94**	**226**	*e*Pn	**Pn**	**22 32 33.5**	**-2.9**
MAJO	**Matsushiro**	**8.94**	**226**	*e*P	**Pn**	**22 32 33.5**	**-2.9**
MAT	**Matsushiro**	**8.94**	**226**	P	**Pn**	**22 32 33.1**	**-3.3**
MAT				S	**Sn**	**22 34 18.0**	**+2.2**
MJAR	**Matsushiro Arr**	**8.94**	**226**	Pn	**Pn**	**22 32 33.3**	**-3.0**
	comp=Z,2.1nm,0.3s,baz=29,slow

OKH				smax	smax	
	comp=Z,2μm,15.0s					
OKH	**Okha**	**10.74**	**349**	*e*P	**Pn**	**22 33 03.2 +2.3**
OKH				AMB	AMB	22 33 04.4
	comp=Z,1μm,3.0s					
OKH				AMB	AMB	22 33 04.4
	comp=Z,170nm,0.8s					
OKH				*e*S	**Sn**	**22 35 04.2 +4.6**
OKH				A	A	22 35 06.0
	comp=Z,1μm,6.0s					
OKH				AMS	AMS	22 37 58.0
	comp=Z,3μm,16.0s					
OKH				AMS	AMS	22 37 58.0
	comp=Z,2μm,16.0s					
MSHR	**Mys Shultsa**	**11.08**	**273⇑**	*e*PN	**Pn**	**22 33 06.6 +1.1**
PAU	**Pauzhetka**	**11.08**	**37**	*e*P	**Pn**	**22 33 04.1 -1.3**
JHJ2	**Mitsune**	**11.11**	**209**	*e*Pn	**Pn**	**22 33 07.6 +1.6**
JHJ	**Hachijo jima 2**	**11.12**	**209**	Pn	Pn	22 33 00.9 -5.2
	comp=Z,9.9nm,0.3s,baz=296,slow=23,SNR=4.2					
JHJ				Sn	Sn	22 34 54.5 -15
	comp=Z,49nm,0.3s,baz=240,slow=24,SNR=13					
KLR	**Kul'dur**	**11.79**	**307**	Pn	**Pn**	**22 33 18.2 +3.1**
	comp=Z,0.3nm,0.3s,baz=116,slow=15,SNR=18					
KLR				LR	LR	22 38 23.9
	comp=Z,2μm,18.1s,baz=120,slow=40					
MDJ	**Mudanjiang**	**12.11**	**283**	P	**Pn**	**22 33 19.6 -0.1**
MDJ				S	**Sn**	**22 35 33.3 0.0**
MDJ				pmax	pmax	
	comp=Z,14nm,1.0s					
MDJ				pmax	pmax	
	comp=Z,200nm,5.0s					
MDJ				LR	LR	
	comp=Z,650nm,15.1s					
MDJ				LR	LR	
	comp=Z,580nm,16.7s					
MDJ				LR	LR	
	comp=Z,1μm,18.6s					
MDJ	**Mudanjiang**	**12.11**	**283**	*e*Pn	**Pn**	**22 33 19.1 -0.6**
	comp=Z,55nm,1.0s					
MDJ	**Mudanjiang**	**12.11**	**283**	*e*P	**Pn**	**22 33 19.1 -0.6**
PETK	**Petropavlovsk-**	**12.65**	**33**	Pn	**Pn**	**22 33 25.1 -1.8**
	comp=Z,1.5nm,0.3s,baz=321,slow=6.8,SNR=20					
PETK				LR	LR	22 39 07.5
	comp=Z,773nm,18.5s,baz=239,slow=41					
PET	**Petropavlovsk**	**12.98**	**35**	*e*PN	**Pn**	**22 33 27.7 -3.7**
PET				pmax	pmax	
	comp=Z,41nm,1.3s					
PET				MLR	MLR	
	comp=Z,800nm,14.0s					
PET				MLR	MLR	
	comp=Z,1μm,14.0s					
PET	**Petropavlovsk**	**12.98**	**35**	*e*Pn	**Pn**	**22 33 30.9 -0.5**
PET	**Petropavlovsk**	**12.98**	**35**	*e*P	**Pn**	**22 33 31.9 +0.5**
PET				AMS	AMS	22 39 43.0
	comp=Z,1μm,14.0s					
EKMR	**Ekimchan**	**13.38**	**323**	*e*P	**Pn**	**22 33 37.8 +1.0**
EKMR				AMB	AMB	22 33 42.6
	comp=Z,10.0nm,0.7s					
KSRS	**Korea Array**	**15.03**	**254**	Pn	**Pn**	**22 33 58.3 -0.9**
	comp=Z,0.2nm,0.3s,baz=65,slow=13,SNR=7.4					
KSRS				LR	LR	22 39 54.4
	comp=Z,903nm,18.2s,baz=68,slow=38					
KSAR	**Wonju Array Be**	**15.06**	**254**	P	**Pn**	**22 33 58.3 -1.3**
KSAR	**Wonju Array Be**	**15.06**	**254**	Pn	**Pn**	**22 33 58.3 -1.3**
KSAR	**Wonju Array Be**	**15.06**	**254**	*e*P	**Pn**	**22 33 58.3 -1.3**
CN2	**Changchun**	**15.11**	**280**	*e*P	**Pn**	**22 34 02.1 +1.9**
CN2				*e*pP	pP	22 34 12.0 -3.0
CN2				*e*S	**Sn**	**22 36 47.5 +1.1**
CN2				pmax	pmax	
	comp=Z,200nm,3.0s					
CN2				LR	LR	
	comp=Z,600nm,15.0s					
CN2				LR	LR	
	comp=Z,900nm,15.0s					
CN2				LR	LR	
	comp=Z,1μm,17.0s					
JNU	**Nakatsue**	**15.59**	**236**	LR	LR	22 40 28.5
	comp=Z,492nm,20.4s,baz=1.5,slow=39					
JNU	**Nakatsue**	**15.59**	**236**	*e*Pn	**Pn**	**22 34 07.6 +1.0**
	comp=Z,38nm,1.0s					
INCN	**Inchon**	**15.94**	**256**	*e*Pn	**Pn**	**22 34 11.9 +1.0**
	comp=Z,68nm,1.5s					
TJN	**Taejon**	**15.95**	**252⇑**	*e*P	**Pn**	**22 34 09.7 -1.3**
JCJ	**Chichijima**	**16.24**	**193**	Sn	Sn	22 36 53.6 -20
	comp=Z,8.2nm,0.3s,baz=100,slow=23,SNR=6.1					
JCJ				LR	LR	22 40 14.1
	comp=Z,226nm,19.7s,slow=37					
BMKR	**Bomnak**	**16.29**	**322**	*e*P	**Pn**	**22 34 16.4 +1.1**
BMKR				AMB	AMB	22 34 18.4
	comp=Z,10.0nm,0.5s					
ZEA	**Zeya**	**16.48**	**317**	*e*P	**Pn**	**22 34 18.7 +1.1**
ZEA				AMB	AMB	22 34 20.5
	comp=Z,30nm,0.6s					
ZEA				AMB	AMB	22 34 30.0
	comp=Z,400nm,3.0s					
ZEA				A	A	22 37 52.0
	comp=Z,800nm,6.0s					
ZEA				AMS	AMS	22 41 19.0
	comp=Z,1μm,16.0s					
ZEA				AMS	AMS	22 41 19.0
	comp=Z,2μm,16.0s					
ZEA				AMS	AMS	22 41 19.0
	comp=Z,2μm,16.0s					
MA2	**Magadan**	**16.80**	**8**	Pn	**Pn**	**22 34 20.1 -1.5**
	comp=Z,1.4nm,0.3s,baz=218,slow=9.8,SNR=24					
MA2				LR	LR	22 41 16.3
	comp=Z,794nm,18.0s,baz=198,slow=39					
MA2	**Magadan**	**16.80**	**8**	*e*Pn	**Pn**	**22 34 20.6 -1.0**
	comp=Z,161nm,0.8s					
MA2	**Magadan**	**16.80**	**8**	*e*P	**Pn**	**22 34 20.6 -1.0**
KROS	**Kirovskiy**	**17.00**	**319**	*e*P	**Pn**	**22 34 23.6 -0.6**
KROS				AMB	AMB	22 34 27.6
	comp=Z,10.0nm,0.5s					
DL2	**Dalian**	**19.00**	**266**	P	**Pn**	**22 34 49.0 +0.3**
DL2				S	**S**	**22 38 22.6 +1.5**
DL2				sS	**sS**	**22 38 31.6 -5.9**
DL2				pmax	pmax	
	comp=Z,99nm,1.4s					
DL2				pmax	pmax	
	comp=Z,270nm,4.7s					
DL2				LR	LR	
	comp=Z,640nm,17.0s					
DL2				LR	LR	
	comp=Z,530nm,16.5s					
DL2				LR	LR	
	comp=Z,480nm,15.4s					
HIA	**Hailar**	**19.31**	**298**	*e*P	**P**	**22 34 50.4 -0.7**
HIA				pmax	pmax	
	comp=Z,28nm,0.8s					
HIA	**Hailar**	**19.31**	**298**	*e*P	**P**	**22 34 50.4 -0.7**
	comp=Z,28nm,0.8s					
HIA	**Hailar**	**19.31**	**298**	*e*P	**P**	**22 34 50.4 -0.7**
CLNS	**Chul'man**	**19.36**	**323**	*e*P	**P**	**22 34 51.2 -0.3**
CLNS				pmax	pmax	
	comp=Z,13nm,0.9s					
CLNS				pmax	pmax	
	comp=E,12nm,0.8s					
CLNS				pmax	pmax	
	comp=N,13nm,0.8s					
CLNS				MLR	MLR	
	comp=Z,822nm,17.0s					
CLNS				MLR	MLR	
	comp=E,1μm,15.0s					
CLNS				MLR	MLR	
	comp=N,821nm,13.0s					
CLNS	**Chul'man**	**19.36**	**323**	*e*P	**P**	**22 34 51.2 -0.3**
SEY	**Seymchan**	**20.26**	**8**	P	**P**	**22 34 58.6 -2.6**
	comp=N,51nm,0.9s,baz=188,slow=8.5,SNR=49					
SMY	**Shemya**	**20.94**	**53**	*e*P	**P**	**22 35 08.7 0.0**
SMY				pmax	pmax	
	comp=Z,243nm,0.9s					
SMY	**Shemya**	**20.94**	**53**	*e*P	**P**	**22 35 08.7 0.0**
	comp=Z,243nm,0.9s					
YAK	**Yakutsk**	**21.40**	**338**	LR	LR	22 43 56.8
	comp=Z,574nm,19.3s,baz=148,slow=38					
YAK	**Yakutsk**	**21.40**	**338**	*e*P	**P**	**22 35 09.6 -3.9**
YAK				*e*		22 35 27.5
YAK				*e*S	**S**	**22 39 01.0 -7.4**
YAK				*e*		22 39 15.5
YAK				*e*SS	Sn	22 39 23.4 +5.7
YAK				*e*		22 46 34.2
YAK				pmax	pmax	
	comp=Z,27nm,0.9s					
YAK				smax	smax	
	comp=N,122nm,2.2s					
YAK				smax	smax	
	comp=E,50nm,1.9s					
YAK				MLR	MLR	
	comp=Z,725nm,18.0s					
YAK				MLR	MLR	
	comp=N,439nm,16.0s					
YAK				MLR	MLR	
	comp=E,462nm,18.0s					
YAK	**Yakutsk**	**21.40**	**338**	*e*P	**P**	**22 35 09.0 -4.5**
	comp=E,47nm,0.8s					
YAK	**Yakutsk**	**21.40**	**338**	*e*P	**P**	**22 35 09.6 -3.9**
YAK				*e*rx	rx	22 35 27.5
BJI	**Beijing**	**22.63**	**273**	P	**P**	**22 35 25.9 -1.0**
BJI				S	**S**	**22 39 32.3 +0.5**
BJI				pmax	pmax	
	comp=E,130nm,4.3s					
BJI				LR	LR	
	comp=E,410nm,14.8s					
BJI				LR	LR	
	comp=E,510nm,17.9s					
BJI				LR	LR	
	comp=E,630nm,25.3s					
BJT	**Baijiatuau**	**22.64**	**273**	*e*P	**P**	**22 35 26.3 -0.8**
BJT				pmax	pmax	
	comp=Z,37nm,0.8s					
BJT	**Baijiatuau**	**22.64**	**273**	*e*P	**P**	**22 35 26.3 -0.8**
	comp=Z,37nm,0.8s					
BJT	**Baijiatuau**	**22.64**	**273**	*e*P	**P**	**22 35 26.3 -0.8**
SSE	**Sheshan**	**23.17**	**247**	P	**P**	**22 35 32.1 -0.4**
SSE				sP	**sP**	**22 35 50.1 +1.7**
SSE				S	**S**	**22 39 40.3 -0.6**
SSE				sS	Sn	22 40 00.9 +0.4
SSE				pmax	pmax	
	comp=Z,36nm,0.7s					
SSE				pmax	pmax	
	comp=Z,41nm,4.9s					
SSE				LR	LR	
	comp=Z,660nm,19.6s					
SSE				LR	LR	
	comp=Z,440nm,19.6s					
SSE				LR	LR	
	comp=Z,510nm,17.9s					
TIA	**Tai'an**	**23.35**	**263**	⇑P	**P**	**22 35 33.3 -1.0**
TIA				pmax	pmax	
	comp=Z,40nm,1.0s					
TIA				pmax	pmax	
	comp=Z,280nm,5.0s					
TIA				LR	LR	
	comp=Z,360nm,15.0s					
TIA				LR	LR	
	comp=Z,390nm,18.0s					
TIA				LR	LR	
	comp=Z,640nm,16.5s					
NJ2	**Nanjing**	**24.21**	**252**	*e*P	**P**	**22 35 44.8 +2.5**
NJ2				pmax	pmax	
	comp=Z,15nm,0.5s					
NJ2				pmax	pmax	
	comp=Z,90nm,4.4s					
NJ2				LR	LR	
	comp=Z,1μm,17.3s					
NJ2				LR	LR	
	comp=Z,780nm,18.4s					
NJ2				LR	LR	
	comp=Z,1μm,10.3s					
BOD	**Bodaibo**	**24.98**	**318**	*e*P	**P**	**22 35 45.0 -4.1**
HHC	**Hu-ho-hao-te**	**25.76**	**277**	*e*P	**P**	**22 35 57.0 +0.5**
HHC				pP	pP	22 36 06.5 -1.4
HHC				sP	sP	22 36 13.3 +0.3
HHC				S	**S**	**22 40 18.5 -4.2**
HHC				sS	sS	22 40 42.3 +0.5
HHC				pmax	pmax	
	comp=Z,120nm,0.9s					
HHC				LR	LR	
	comp=Z,2μm,11.9s					
HHC				LR	LR	
	comp=Z,2μm,13.3s					
HHC				LR	LR	
	comp=Z,2μm,13.0s					
TIY	**Taiyuan**	**26.17**	**270**	*e*P	P	22 36 10.4 +10
TIY				S	**S**	**22 40 29.8 +0.7**
TIY				sS	sS	22 41 17.5 +29
TIY				SS	**SnSn**	**22 41 35.3 +5.0**
TIY				pmax	pmax	
	comp=Z,310nm,6.5s					
TIY				LR	LR	
	comp=N,160nm,9.7s					
TIY				LR	LR	
	comp=E,150nm,12.3s					
TIY				LR	LR	
	comp=Z,290nm,16.8s					
YOJ	**Yonaguni jima**	**26.61**	**233**	*e*P	**P**	**22 36 05.2 +1.1**
YOJ				pmax	pmax	
	comp=Z,205nm,1.3s					
YOJ	**Yonaguni jima**	**26.61**	**233**	*e*P	**P**	**22 36 05.2 +1.1**
	comp=Z,205nm,1.3s					
BTO	**Baotou**	**26.95**	**277**	*e*P	**P**	**22 36 07.3 0.0**
BILL	**Bilibino**	**27.23**	**16**	*i* P	**P**	**22 36 04.7 -4.7**
BILL				*i*		22 36 55.1
BILL				*i*		22 39 29.0
BILL				*i* S	**S**	**22 40 43.3 -1.9**
BILL				pmax	pmax	
	comp=Z,6.0nm,1.2s					
BILL				MLR	MLR	
	comp=Z,449nm,18.0s					
BILL	**Bilibino**	**27.23**	**16**	*e*P	**P**	**22 36 06.7 -2.6**
	comp=Z,11nm,1.1s					
NACB	**Ninganchiao**	**27.66**	**235**	*e*P	**P**	**22 36 14.5 +0.9**
	comp=Z,142nm,1.9s					
ULN	**Ulaanbaatar**	**27.68**	**294**	*e*P	**P**	**22 36 13.9 +0.1**
ULN				pmax	pmax	
	comp=Z,42nm,1.0s					
ULN	**Ulaanbaatar**	**27.68**	**294**	*e*P	**P**	**22 36 13.9 +0.1**
	comp=Z,42nm,1.0s					
ULN	**Ulaanbaatar**	**27.68**	**294**	*e*P	**P**	**22 36 13.9 +0.1**
SONM	**Songino Array**	**28.13**	**294**	P	**P**	**22 36 18.0 +0.3**
	comp=Z,52nm,0.8s,baz=87,slow=8.4,SNR=446					
SONM				LR	LR	22 48 40.2
	comp=Z,1μm,18.6s,baz=84,slow=39					
WHN	**Wuhan**	**28.23**	**254**	⇑P	**P**	**22 36 21.1 +2.5**
WHN				pP	**pP**	**22 36 31.8 +1.8**
WHN				sP	**sP**	**22 36 37.6 +2.5**
WHN				LR	LR	
	comp=Z,2μm,16.1s					
WHN				LR	LR	
	comp=Z,1μm,19.8s					
WHN				LR	LR	
	comp=Z,1μm,16.3s					
TWG	**Pinlang**	**29.00**	**234**	*e*P	**P**	**22 36 26.6 +1.1**
	comp=Z,86nm,1.0s					
H11N2	**WAKE ISLAND Hy**	**29.03**	**137**	T	T	23 07 15.6
	baz=328,slow=75,SNR=4693					
H11N1	**WAKE ISLAND Hy**	**29.04**	**137**	T	T	23 07 17.0
	baz=328,slow=75,SNR=3673					
H11N3	**WAKE ISLAND Hy**	**29.05**	**137**	T	T	23 07 18.4
	baz=328,slow=75,SNR=2409					
TLY	**Talaya**	**29.74**	**302**	P	**P**	**22 36 31.6 -0.3**
	comp=Z,1.4nm,0.5s,baz=80,slow=8.8,SNR=3.9					
TLY				LR	LR	22 49 42.9
	comp=Z,1μm,18.1s,baz=90,slow=39					
TLY	**Talaya**	**29.74**	**302**	*e*P	**P**	**22 36 31.5 -0.3**
TLY				*e*S	**S**	**22 41 30.9 +6.0**
TLY				pmax	pmax	
	comp=Z,6.0nm,1.1s					
TLY				MLR	MLR	
	comp=Z,915nm,15.0s					
TLY	**Talaya**	**29.74**	**302**	*e*P	**P**	**22 36 32.3 +0.4**
	comp=Z,6.3nm,0.9s					
TLY	**Talaya**	**29.74**	**302**	*e*P	**P**	**22 36 32.3 +0.4**
TIXI	**Tiksi**	**29.93**	**349**	LR	LR	22 49 19.8
	comp=Z,464nm,20.9s,baz=152,slow=38					
TIXI	**Tiksi**	**29.93**	**349**	*i* P	P	22 36 28.3 -4.9
TIXI	**Tiksi**	**29.93**	**349**	*e*P	P	22 36 28.3 -4.9
	comp=Z,6.9nm,1.0s					
H11S1	**WAKE ISLAND Hy**	**29.97**	**138**	T	T	23 08 25.6
	baz=329,slow=76					
H11S3	**WAKE ISLAND Hy**	**29.97**	**138**	T	T	23 08 22.0
	baz=329,slow=76,SNR=8202					
H11S2	**WAKE ISLAND Hy**	**29.98**	**138**	T	T	23 08 22.9
	baz=329,slow=76,SNR=7562					
ZAK	**Zakamensk**	**30.00**	**299**	*e*P	**P**	**22 36 34.2 -0.1**
ZAK				pmax	pmax	
	comp=Z,10.0nm,1.3s					
ZAK	**Zakamensk**	**30.00**	**299**	*e*P	**P**	**22 36 34.2 -0.1**
NIKH	**Nikolski High**	**31.19**	**56**	*e*P	**P**	**22 36 45.4 +0.9**
	comp=Z,446nm,1.8s					
MOY	**Mondy**	**31.39**	**302**	*e*P	**P**	**22 36 47.2 +0.7**
MOY				pmax	pmax	
	comp=Z,4.0nm,1.0s					
GAMB	**Gambell**	**31.68**	**35**	*e*P	**P**	**22 36 49.0 +0.3**
	comp=Z,14nm,0.9s					
ENH	**Enshi**	**31.85**	**259**	*e*P	**P**	**22 36 50.2 -0.5**
UNV	**Unalaska Valle**	**32.59**	**54**	*e*P	**P**	**22 36 57.7 +0.9**
	comp=Z,209nm,1.8s					
LZH	**Lanzhou**	**33.12**	**272**	*e*P	**P**	**22 37 02.3 +0.4**
LZH				pP	pP	22 37 14.0 +0.6
LZH				sP	sP	22 37 19.8 +1.3
LZH				PP	**PnPn**	**22 38 14.0 +1.5**
LZH				S	**S**	**22 42 16.1 -2.2**
LZH				sS	sS	22 42 37.5 -0.1
LZH				pmax	pmax	
	comp=Z,53nm,1.5s					
LZH				pmax	pmax	
	comp=Z,190nm,6.0s					
LZH				LR	LR	
	comp=Z,320nm,12.3s					
LZH				LR	LR	
	comp=Z,260nm,10.5s					
LZH				LR	LR	
	comp=Z,470nm,16.1s					
TNA	**Tin City**	**33.82**	**32**	*e*P	**P**	**22 37 07.9 +0.5**
	comp=Z,68nm,1.0s					
GTA	**Gaotai**	**34.75**	**280**	*e*P	**P**	**22 37 16.4 +0.4**
GTA				pP	pP	22 37 28.8 +1.3
GTA				sP	sP	22 37 33.8 +1.2
GTA				S	**S**	**22 42 41.5 -1.8**
GTA				sS	sS	22 43 02.4 -0.3
GTA				SS	**SnSn**	**22 44 57.1 -1.9**
GTA				pmax	pmax	
	comp=Z,11nm,0.9s					
GTA				pmax	pmax	
	comp=Z,100nm,7.1s					
GTA				LR	LR	
	comp=Z,280nm,13.1s					
GTA				LR	LR	
	comp=Z,320nm,15.4s					
GTA				LR	LR	
	comp=Z,350nm,14.5s					
CD2	**Chengdu**	**35.66**	**264**	P	**P**	**22 37 23.3 -0.5**
CD2				pP	pP	22 37 36.1 +0.7
CD2				PP	**PP**	**22 38 44.8 -0.4**
CD2				S	**S**	**22 42 56.3 -1.0**
CD2				sS	sS	22 43 18.4 +1.7
CD2				pmax	pmax	
	comp=Z,20nm,1.2s					
CD2				pmax	pmax	
	comp=Z,130nm,4.2s					
CD2				LR	LR	
	comp=Z,370nm,15.6s					
CD2				LR	LR	
	comp=Z,370nm,19.2s					
GYA	**Guiyang**	**36.09**	**256⇑**	*i* P	**P**	**22 37 29.0 +1.4**
GYA				pP	sP	22 37 42.3 -1.9
GYA				PP	**PP**	**22 38 51.8 +1.7**
GYA				PcP	**PcP**	**22 39 55.0 +2.1**
GYA				S	**S**	**22 43 04.6 +0.5**
GYA				ScP	**ScP**	**22 43 36.5 +0.8**
GYA				ScS	**ScS**	**22 47 40.1 -1.5**
GYA				pmax	pmax	
	comp=Z,30nm,0.8s					
GYA				pmax	pmax	
	comp=Z,140nm,5.5s					
GYA				LR	LR	
	comp=Z,580nm,17.4s					
GYA				LR	LR	
	comp=Z,520nm,17.6s					
GYA				LR	LR	
	comp=Z,510nm,17.8s					
TGY	**Tagaytay City**	**36.11**	**225**	LR	LR	22 52 59.0
	comp=Z,92nm,18.8s,slow=38					
CHGN	**Chignik**	**37.17**	**49**	*e*P	**P**	**22 37 36.2 -0.1**
TTA	**Tatalina**	**38.41**	**39**	*e*P	**P**	**22 37 46.6 -0.2**
TTA				pmax	pmax	
	comp=Z,21nm,0.7s					
TTA	**Tatalina**	**38.41**	**39**	*e*P	**P**	**22 37 46.6 -0.2**
	comp=Z,21nm,0.7s					
SVW2	**Sparrevohn**	**38.55**	**41**	*e*P	**P**	**22 37 47.6 -0.3**
SVW2				*e*pP	**pP**	**22 37 56.4 -3.2**
QIZ	**Qiongzhong**	**38.84**	**243**	P	**P**	**22 37 51.9 +1.1**
QIZ				S	**S**	**22 43 47.6 +1.8**
QIZ				LR	LR	
	comp=Z,170nm,16.8s					
QIZ				LR	LR	
	comp=Z,220nm,16.5s					
KWAJ	**Kwajalein Atol**	**38.91**	**145**	*e*P	**P**	**22 37 53.0 +1.7**
KWAJ				pmax	pmax	
	comp=Z,233nm,1.3s					
KWAJ	**Kwajalein Atol**	**38.91**	**145**	*e*P	**P**	**22 37 53.0 +1.7**
	comp=Z,233nm,1.3s					
NRIK	**Noril'sk**	**39.55**	**332**	P	**P**	**22 37 54.0 -2.1**
	comp=Z,3.9nm,0.7s,baz=107,slow=6.6,SNR=7.1					
NRIK				PcP	**PcP**	**22 40 03.0 +0.3**
	comp=Z,4.2nm,0.7s,baz=114,slow=8.8,SNR=4.7					
NRIK				LR	LR	22 56 56.0
	comp=Z,283nm,18.1s,baz=104,slow=40					
KMI	**Kunming**	**39.70**	**258**	P	**P**	**22 37 58.3 +0.1**
KMI				pP	pP	22 38 10.8 +0.9
KMI				sP	sP	22 38 16.6 +1.7
KMI				PP	**PnPn**	**22 39 36.9 +3.7**
KMI				S	**S**	**22 43 56.4 -2.6**
KMI				sS	sS	22 44 19.4 +0.9
KMI				SS	**SS**	**22 46 47.6 -7.9**
KMI				pmax	pmax	
	comp=Z,6.0nm,0.8s					
KMI				pmax	pmax	
	comp=Z,37nm,3.5s					
KMI				LR	LR	
	comp=Z,360nm,20.8s					
KMI				LR	LR	
	comp=Z,250nm,19.7s					
KMI				LR	LR	
	comp=Z,270nm,17.9s					
RSO	**Redoubt South**	**39.95**	**42**	*e*P	**P**	**22 37 59.9 +0.1**
PPLA	**Purkeypile**	**40.16**	**39**	*e*P	**P**	**22 38 01.5 +0.1**
	comp=Z,37nm,0.9s					
CAST	**Castle Rocks**	**40.21**	**38**	*e*P	**P**	**22 38 02.1 +0.4**
	comp=Z,46nm,0.8s					
KDAK	**Kodiak Island**	**40.23**	**47**	*i* P	**P**	**22 38 01.2 -0.7**
KDAK	**Kodiak Island**	**40.23**	**47**	*e*P	**P**	**22 38 01.4 -0.5**
	comp=Z,54nm,0.9s					
KDAK	**Kodiak Island**	**40.23**	**47**	*e*P	**P**	**22 38 01.4 -0.5**
SPU	**Mount Spurr**	**40.26**	**41**	*e*P	**P**	**22 38 02.2 0.0**
HOM	**Homer**	**40.55**	**44**	*e*P	**P**	**22 38 04.7 +0.1**
	comp=Z,330nm,1.2s					
BPAW	**Bear Paw Mtn.**	**40.70**	**37**	*e*P	**P**	**22 38 06.4 +0.6**
	comp=Z,14nm,0.8s					
KTH	**Kantishna Hill**	**40.73**	**38**	*e*P	**P**	**22 38 06.7 +0.6**
	comp=Z,67nm,0.8s					
MLY	**Manley**	**40.82**	**35**	*e*P	**P**	**22 38 07.3 +0.6**
	comp=Z,82nm,1.8s					
ZALV	**Zalesovo Beam**	**40.89**	**308**	P	**P**	**22 38 06.7 -0.7**
	comp=Z,4.0nm,0.5s,baz=86,slow=6.8,SNR=16					
ZALV				PcP	**PcP**	**22 40 07.2 -0.1**
	comp=Z,18nm,0.8s,baz=84,slow=3.1,SNR=14					
ZALV				LR	LR	22 56 27.0
	comp=Z,768nm,18.1s,baz=70,slow=38					
BRLK	**Bradley Lake**	**40.93**	**43**	*e*P	**P**	**22 38 07.8 +0.1**
	comp=Z,23nm,0.8s					
TRF	**Thorofare Moun**	**41.02**	**38**	*e*P	**P**	**22 38 08.6 0.0**
	comp=Z,31nm,0.8s					
COLD	**Coldfoot**	**41.12**	**32**	*e*P	**P**	**22 38 09.2 0.0**
	comp=Z,51nm,1.0s					
BWN	**Browne**	**41.37**	**37**	*e*P	**P**	**22 38 12.1 +0.8**
	comp=Z,124nm,1.0s					
RC01	**Rabbit Creek A**	**41.39**	**41**	*e*P	**P**	**22 38 11.4 0.0**
	comp=Z,46nm,1.0s					
MCK	**McKinley**	**41.61**	**37**	*e*P	**P**	**22 38 13.6 +0.3**
MCK				pmax	pmax	
	comp=Z,38nm,0.9s					
MCK	**McKinley**	**41.61**	**37**	*e*P	**P**	**22 38 13.6 +0.3**
	comp=Z,38nm,0.9s					
MCK	**McKinley**	**41.61**	**37**	*e*P	**P**	**22 38 13.6 +0.3**
NVS	**Novosibirsk**	**41.64**	**309⇓**	*i* P	**P**	**22 38 13.3 -0.2**
NVS				*i*		22 40 09.8
NVS				*e*S	**S**	**22 44 25.0 -1.8**
NVS				pmax	pmax	
	comp=Z,18nm,1.5s					
NVS				pmax	pmax	
	comp=N,5.0nm,1.1s					
NVS				pmax	pmax	
	comp=E,11nm,1.4s					
NVS				smax	smax	
	comp=N,17nm,2.0s					
NVS				smax	smax	

comp=E,7.0nm,1.5s
NVS Novosibirsk 41.64 309 ||*i*P **P 22 38 13.3 -0.2**
PMR Palmer 41.64 41 *e*P **P 22 38 13.4 -0.1**
PMR pmax pmax
comp=Z,25nm,0.8s
PMR Palmer 41.64 41 *e*P **P 22 38 13.3 -0.1**
comp=Z,25nm,0.8s
RND Reindeer 41.66 38 *e*P **P 22 38 13.2 -0.5**
RND pmax pmax
comp=Z,33nm,0.8s
RND Reindeer 41.66 38 *e*P **P 22 38 13.2 -0.5**
comp=Z,33nm,0.8s
WMQ Urumqi 41.73 292 P **P 22 38 15.3 +0.8**
WMQ pP pP 22 38 26.3 0.0
WMQ sP sP 22 38 31.5 +0.2
WMQ PP **PnPn 22 39 57.8 +1.3**
WMQ S **S 22 44 26.9 -1.7**
WMQ pmax pmax
comp=Z,16nm,0.8s
WMQ pmax pmax
comp=Z,35nm,4.6s
WMQ LR LR
comp=Z,250nm,18.6s
WMQ LR LR
comp=Z,420nm,15.2s
WMQ LR LR
comp=Z,260nm,18.6s
MDM Murphy Dome 41.88 35 *e*P **P 22 38 15.7 +0.2**
comp=Z,31nm,0.8s
WRH Wood River Hil 41.96 36 *e*P **P 22 38 16.1 0.0**
comp=Z,31nm,0.7s
SML Sawmill 42.00 40 *e*P **P 22 38 16.8 +0.3**
SML pmax pmax
comp=Z,103nm,0.9s
SML Sawmill 42.00 40 *e*P **P 22 38 16.8 +0.3**
comp=Z,103nm,0.9s
COLA College 42.05 36 *e*P **P 22 38 17.6 +0.9**
COLA pmax pmax
comp=Z,55nm,0.7s
COLA College 42.05 36 *e*P **P 22 38 17.6 +0.9**
comp=Z,55nm,0.7s
COLA College 42.05 36 *e*P **P 22 38 17.4 +0.7**
CCB Clear Creek Bu 42.08 36 *e*P **P 22 38 16.9 -0.1**
comp=Z,17nm,0.9s
ILAR Eielson Array 42.47 36 P **P 22 38 19.7 -0.5**
comp=Z,21nm,0.8s,baz=258,slow=6.4,SNR=108
ILAR LR LR 22 57 03.6
comp=Z,174nm,20.7s,baz=270,slow=38
SCM Sheep Creek Mo 42.48 40 *e*P **P 22 38 20.2 -0.2**
SCM pmax pmax
comp=Z,23nm,0.6s
SCM Sheep Creek Mo 42.48 40 *e*P **P 22 38 20.2 -0.2**
comp=Z,23nm,0.6s
KLU Klutina 43.18 40 *e*P **P 22 38 26.5 +0.3**
comp=Z,44nm,1.1s
PAX Paxson 43.23 38 *e*P **P 22 38 27.7 +1.2**
PAX pmax pmax
comp=Z,15nm,0.8s
PAX Paxson 43.23 38 *e*P **P 22 38 27.7 +1.2**
comp=Z,15nm,0.8s
DIV Divide 43.30 41 *e*P **P 22 38 27.4 +0.3**
comp=Z,32nm,0.9s
EYAK Cordova Ski Ar 43.39 42 *e*P **P 22 38 27.4 -0.2**
comp=Z,30nm,1.0s
DOT Dot Lake 43.78 37 *e*P **P 22 38 30.2 -0.7**
comp=Z,34nm,0.7s
BMRM Bremner River 43.88 41 *e*P **P 22 38 32.2 +0.4**
comp=Z,42nm,0.8s
RAGM Ragged Mountai 43.94 42 *e*P **P 22 38 32.8 +0.6**
comp=Z,28nm,1.0s
MENT Mentasta 44.02 38 *e*P **P 22 38 33.4 +0.6**
comp=Z,21nm,0.8s
SKNT Sakolnakorn 44.21 247 P P 22 38 43.5 +8.7
comp=Z,16nm,1.2s
MKAR Makanchi Array 44.32 298 P **P 22 38 35.4 +0.1**
comp=Z,50nm,0.8s,baz=75,slow=9.2,SNR=392
MKAR LR LR 22 58 14.8
comp=Z,348nm,21.2s,baz=78,slow=38
MKAR Makanchi Array 44.32 298 *e*P **P 22 38 35.5 +0.2**
MKAR Makanchi Array 44.32 298 *e*P **P 22 38 35.6 +0.2**
MAKZ Makanchi 44.51 298 *e*P **P 22 38 37.1 +0.2**
MAKZ pmax pmax
comp=Z,59nm,0.8s
MAKZ Makanchi 44.51 298 *e*P **P 22 38 37.1 +0.2**
comp=Z,59nm,0.8s
MANU Manus Island 44.89 178 *e*P **P 22 38 41.5 +1.4**
comp=Z,42nm,1.4s
EGAK Eagle 44.91 35 *e*P **P 22 38 39.4 -0.4**
comp=Z,70nm,1.1s
BALM Baldy 44.96 41 *e*P **P 22 38 40.9 +0.5**
BALM pmax pmax
comp=Z,24nm,0.8s
BALM Baldy 44.96 41 *e*P **P 22 38 40.9 +0.5**
comp=Z,24nm,0.8s
MYLDM Lahad Datu 44.97 221 *e*P **P 22 38 41.8 +0.9**
comp=Z,24nm,1.1s
KURK Kurchatov 45.37 304*c i*P **P 22 38 43.4 -0.2**
KURK pmax pmax
comp=Z,102nm,1.7s
KURK Kurchatov 45.37 304 *e*P **P 22 38 43.2 -0.4**
comp=Z,66nm,1.1s
KURK PcP **PcP 22 40 22.4 0.0**
KURK Kurchatov 45.37 304 *e*P **P 22 38 43.2 -0.4**
KURBB Kurchatov Arra 45.45 304 P **P 22 38 44.1 -0.1**
comp=Z,46nm,0.9s,baz=75,slow=8.4,SNR=192
KURBB PcP **PcP 22 40 22.4 -0.3**
comp=Z,7.8nm,0.8s,baz=74,slow=3.8,SNR=4.4
LSA Lhasa 45.53 272 *e*P **P 22 38 46.8 +1.0**
LSA *e* 22 38 58.3
LSA pmax pmax
comp=Z,10.0nm,0.7s
LSA Lhasa 45.53 272 *e*P **P 22 38 46.8 +1.0**
comp=Z,10nm,0.7s
LSA *e* 22 38 58.3
LSA Lhasa 45.53 272 *e*P **P 22 38 46.8 +1.0**
LSA *e*rx rx 22 38 58.3
CMAI Chiengmai2 45.62 255 P P 22 38 54.5 +8.3
comp=Z,104nm,0.9s
JOHN Johnston Islan 45.75 111 *e*P **P 22 38 48.5 +1.5**
comp=Z,136nm,1.1s
DAWY Dawson 45.77 36 *e*P **P 22 38 46.5 -0.2**
CMMT Chiang Mai 46.43 254 P P 22 39 00.6 +8.2
comp=Z,14nm,1.0s,comp=Z,409nm
CHTO Chiang Mai 46.43 254 P **P 22 38 56.1 +3.7**
comp=Z,48nm,0.8s
CHTO Chiang Mai 46.43 254 *e*P **P 22 38 52.6 +0.2**
CHTO Chiang Mai 46.43 254 *e*P **P 22 38 52.6 +0.2**
comp=Z,0.1nm,0.3s
PBKT Sadao Pong 46.55 250 P P 22 39 02.1 +8.8
comp=Z,8.9nm,1.0s
LBMI Labuha 46.62 206 P **P 22 38 51.4 -2.4**
CMAR Chiang Mai Arr 46.67 253 P **P 22 38 54.3 0.0**
comp=Z,0.7nm,0.7s,baz=29,slow=8.5,SNR=5.9
CMAR Chiang Mai Arr 46.67 253 *i*P **P 22 38 55.4 +1.1**
RABL Rabaul 47.31 172 *e*P **P 22 38 58.4 -0.9**
comp=Z,188nm,1.3s
INK Inuvik 47.36 30 P **P 22 38 59.5 +0.5**
comp=Z,61nm,0.8s,baz=296,slow=7.2,SNR=250
INK Inuvik 47.36 30 *e*P **P 22 39 00.0 +1.0**
INK Inuvik 47.36 30 *e*P **P 22 39 00.0 +1.0**
PDGK Podgornoye 47.45 294 P **P 22 38 59.7 -0.3**
PDGK pmax pmax
comp=Z,31nm,1.0s
FAKI Fak Fak 47.45 199 P P 22 39 09.4 +9.1
FAKI Fak Fak 47.45 199 *e*P **P 22 39 02.0 +1.7**
comp=Z,123nm,1.6s
MRSI Marisa 47.63 214 P P 22 39 09.4 +7.7
TARA Tarawa 47.87 143 *e*P **P 22 39 05.6 +2.0**
comp=Z,210nm,1.6s
SANI Sanana 48.44 208 P **P 22 39 08.3 +0.4**
LUWI Luwuk 48.68 212 *e*P **P 22 39 11.4 +1.6**
comp=Z,87nm,0.5s
SKAG Skagway 48.73 42 *e*P **P 22 39 10.9 +1.2**
comp=Z,11nm,0.9s
BRVK Borovoye 49.48 310*c i*P **P 22 39 15.0 -0.5**
BRVK pmax pmax
comp=Z,35nm,1.7s
BRVK Borovoye 49.48 310 *e*P **P 22 39 15.3 -0.2**
comp=Z,32nm,1.3s
BRVK Borovoye 49.48 310 *e*P **P 22 39 15.3 -0.2**
PCI Palu 49.75 216 P P 22 39 27.6 +10
PCI Palu 49.75 216 P **P 22 39 15.6 -2.4**
PCI pmax pmax
comp=Z,45nm,1.0s
OTUK Ortayu 50.07 303 P **P 22 39 20.1 -0.1**
OTUK pmax pmax
comp=Z,74nm,0.9s
TKM2 Tokmak 2 50.20 296 *e*P **P 22 39 21.9 +0.5**
TKM2 pmax pmax
comp=Z,86nm,0.9s
TKM2 Tokmak 2 50.20 296 *e*P **P 22 39 21.9 +0.5**
comp=Z,86nm,0.9s
ZRNK Zerenda 50.24 310 *e*P **P 22 39 20.8 -0.5**
ZRNK pmax pmax
comp=Z,52nm,1.4s
ZRNK Zerenda 50.24 310 *e*P **P 22 39 20.8 -0.5**
comp=Z,52nm,1.4s
SBUM Sibu 50.49 226 *e*P **P 22 39 24.9 +1.3**
comp=Z,8.9nm,1.2s
OPA Opana 50.70 96 *e*P **P 22 39 27.0 +1.8**
OPA pmax pmax
comp=Z,109nm,1.1s
OPA Opana 50.70 96 *e*P **P 22 39 27.0 +1.8**
comp=Z,109nm,1.1s
KIP Kipapa 50.86 97 *e*P **P 22 39 27.9 +1.5**
KIP pmax pmax
comp=Z,296nm,1.8s
KIP Kipapa 50.86 97 *e*P **P 22 39 27.9 +1.5**
comp=Z,296nm,1.8s
KKN Kakani 50.88 274 *e*P **P 22 39 26.5 -0.3**
comp=Z,43nm,0.8s
FRU Bishkek 50.88 296 *i*P **P 22 39 26.0 -0.4**
FRU *i* 22 39 37.5
FRU pmax pmax
comp=Z,40nm,1.9s
FRU Bishkek 50.88 296 *i*P **P 22 39 26.0 -0.4**
FRU *e*rx rx 22 39 37.5
PKIN Phulchoki 50.92 273 *e*P **P 22 39 27.1 0.0**
comp=Z,26nm,0.7s
HON Honolulu 50.93 97 *e*P **P 22 39 29.0 +2.1**
HON pmax pmax
comp=Z,209nm,0.8s
HON Honolulu 50.93 97 *e*P **P 22 39 29.0 +2.1**
comp=Z,209nm,0.8s
AAK Ala-Archa 51.05 296*c i*P **P 22 39 27.8 0.0**
AAK pmax pmax
comp=Z,17nm,1.0s
AAK Ala-Archa 51.05 296 *e*P **P 22 39 27.9 0.0**
comp=Z,17nm,0.7s
AAK Ala-Archa 51.05 296 *e*P **P 22 39 27.9 +0.1**
CRAG Craig 51.19 46 *e*P **P 22 39 28.8 +0.4**
comp=Z,16nm,0.8s
GKN Gorkha 51.23 274 *e*P **P 22 39 28.9 -0.4**
comp=Z,26nm,0.5s
WRAK Wrangell Islan 51.24 45 *e*P **P 22 39 29.8 +1.0**
comp=Z,12nm,0.8s
KSH Kashi 51.49 292 P **P 22 39 34.8 +3.7**
KSH *e*pP sP 22 39 47.1 -1.0
KSH *e*sP pP 22 39 52.4 +9.3
KSH *e*PcP **PcP 22 40 48.3 +3.4**
KSH PcS **PcS 22 44 44.9 +2.0**
KSH S **S 22 46 51.1 +2.8**
KSH SS **SS 22 50 26.6 +2.4**
KSH pmax pmax
comp=Z,15nm,0.9s
KSH pmax pmax
comp=Z,100nm,5.5s
KSH LR LR
comp=Z,540nm,17.3s
KSH LR LR
comp=Z,260nm,14.4s
KSH LR LR
comp=Z,440nm,17.9s
EKS2 Erkin-Say 51.52 296 *e*P **P 22 39 31.4 +0.2**
EKS2 pmax pmax
comp=Z,28nm,0.8s
EKS2 Erkin-Say 51.52 296 *e*P **P 22 39 31.4 +0.2**
comp=Z,28nm,0.8s
MMPI Merauke 51.53 187 P **P 22 39 34.6 +3.3**
DLBC Dease Lake 51.66 42 P **P 22 39 33.4 +1.4**
comp=Z,4.5nm,0.7s,baz=285,slow=5.5,SNR=8.0
DLBC Dease Lake 51.66 42 *e*P **P 22 39 33.5 +1.5**
comp=Z,16nm,1.2s
TTSI Tana Toraja 51.69 214 P **P 22 39 27.9 -4.7**
KOLN Koldanda 52.12 275 *e*P **P 22 39 36.0 0.0**
comp=Z,51nm,0.7s
PMG Port Moresby 52.20 179 LR LR 22 58 39.6
comp=Z,151nm,20.8s,baz=30,slow=33
PMG Port Moresby 52.20 179||*e*P **P 22 39 38.8 +2.5**
PYUN Piuthan 52.38 275 *e*P **P 22 39 38.0 0.0**
comp=Z,148nm,1.0s
MNAS Manas 52.43 296 P **P 22 39 38.2 +0.1**
MNAS pmax pmax
comp=Z,101nm,0.8s
SVE Sverdlovsk 53.20 317*d i*P **P 22 39 43.3 0.0**
SVE pmax pmax
comp=Z,51nm,0.9s
SVE MLR MLR
comp=Z,543nm,17.0s
SVE Sverdlovsk 53.20 317 ||*i*P **P 22 39 43.3 0.0**
HPAH Hawaii Prepara 53.42 96 *e*P **P 22 39 47.3 +1.8**
comp=Z,129nm,1.3s
KKH Kailua Kona 53.42 97 *e*P **P 22 39 46.4 +1.0**
KKH Kailua Kona 53.42 97 *e*P **P 22 39 46.4 +1.0**
KKAR Karatay Array 53.45 298 *e*P **P 22 39 45.2 -0.2**
KKAR Karatay Array 53.45 298 *e*P **P 22 39 45.2 -0.2**
KAPI Kappang 53.50 214 *e*P **P 22 39 47.5 +1.6**
comp=Z,14nm,0.9s
HNR Honiara 53.70 163 LR LR 23 00 44.6
comp=Z,270nm,20.1s,baz=340,slow=34
HNR Honiara 53.70 163 *e*P **P 22 39 49.6 +2.2**
HNR pmax pmax
comp=Z,58nm,0.9s
HNR Honiara 53.70 163 *e*P **P 22 39 49.6 +2.2**
comp=Z,58nm,0.9s
POHA Pohakuloa 53.71 96 *e*P **P 22 39 48.3 +0.4**
comp=Z,62nm,1.0s
MLOA Mauna Loa Obse 53.82 97 *e*P **P 22 39 49.8 +1.0**
HPO Honuapo 54.12 97 *e*P **P 22 39 52.0 +1.5**
ARU Arti 54.40 317*c i*P **P 22 39 51.5 -0.6**
ARU *e**PP **pP 22 40 03.7 -0.5**
ARU 22 40 53.4
ARU 22 41 55.3
ARU S **S 22 47 29.1 +1.9**
ARU SS **SS 22 51 04.9 -4.3**
ARU pmax pmax
comp=Z,99nm,1.7s
ARU MLR MLR
comp=Z,498nm,17.0s
ARU Arti 54.40 317 *e*P **P 22 39 51.6 -0.5**
comp=Z,49nm,0.9s
ARU Arti 54.40 317||*i*P **P 22 39 51.5 -0.6**
ARU *e*rx rx 22 40 03.7
KULM Kulim 55.01 240 *e*P **P 22 39 56.9 -0.2**
comp=Z,17nm,0.9s
KBS Kingsbay 55.37 350 *e*P **P 22 39 58.2 -0.6**
KBS pmax pmax
comp=Z,26nm,1.0s
KBS Kingsbay 55.37 350 *e*P **P 22 39 58.2 -0.6**
comp=Z,26nm,1.0s
MYKOM Kota Tinggi 55.77 235 *e*P **P 22 40 02.6 +0.2**
comp=Z,11nm,1.1s
RES Resolute Bay 55.84 16 P **P 22 40 01.9 -0.4**
comp=Z,103nm,0.6s,baz=340,slow=6.0,SNR=84
MMRI Maumere 55.88 209 *e*P **P 22 40 05.6 +2.4**
comp=Z,55nm,1.1s
SOEI Soe 56.23 206 *e*P **P 22 40 08.5 +2.7**
comp=Z,46nm,1.0s
HSPB Hornsund (broa 56.35 348 *e*P **P 22 40 06.0 +0.2**
HSPB IAmb IAmb 22 40 06.8
comp=Z,37nm,1.0s
YKA Yellowknife Ar 56.77 33 P **P 22 40 08.8 -0.2**
comp=Z,5.9nm,0.6s,baz=301,slow=6.8,SNR=55
ABKAR Akbulak array 56.98 309 *e*P **P 22 40 10.9 +0.2**
AKTO Aktyubinsk 57.49 311 LR LR 23 07 10.5
comp=Z,474nm,19.1s,slow=38
LVZ Lovozero 58.17 336*d i*P **P 22 40 18.1 -0.7**
LVZ pmax pmax
comp=Z,18nm,0.8s
LVZ Lovozero 58.17 336 *e*P **P 22 40 18.3 -0.6**
comp=Z,35nm,0.8s
APA Apatity 58.74 336||*i*P **P 22 40 22.4 -0.4**
APA pmax pmax
comp=Z,52nm,1.0s
APA Apatity 58.74 336||*i*P **P 22 40 22.4 -0.4**
TMCR Tamitsa 59.27 331 *e*P **P 22 40 26.0 -0.4**
TMCR pmax pmax
comp=Z,181nm,1.2s
HAMF Hammerfest 59.36 341 *e*P **P 22 40 26.2 -0.8**
HAMF IAmb IAmb 22 40 26.7
comp=Z,32nm,0.9s
HAMF IAMs_20 IAMs_20 23 10 32.0
comp=Z,328nm,16.1s
ARCES ARCESS Array B 59.68 339 P **P 22 40 28.4 -0.8**
comp=Z,20nm,0.8s,baz=37,slow=6.6,SNR=61
ARCES LR LR 23 11 49.9
comp=Z,274nm,18.1s,baz=38,slow=42
NLWA Neilton Lookou 60.02 52 *e*P **P 22 40 32.7 +0.7**
comp=Z,19nm,0.9s
DAG Danmarks Havn 60.08 356||*i*P **P 22 40 31.0 -0.9**
comp=Z,26nm,0.8s
DAG Danmarks Havn 60.08 356||*i*P **P 22 40 31.0 -0.9**
DAG pmax pmax
comp=Z,19nm,0.8s
DAG Danmarks Havn 60.08 356||*i*P **P 22 40 31.0 -0.9**
MBW Mount Baker 60.39 49 P **P 22 40 34.6 0.0**
B05A Bryant 60.56 50 P **P 22 40 35.7 +0.2**
baz=303,SNR=6.1
KTK1 Kautokeino 60.62 340 *e*P **P 22 40 34.9 -0.8**
KTK1 IAmb IAmb 22 40 36.2
comp=Z,54nm,0.8s
E03A Lebam 60.65 52 *e*P **P 22 40 37.5 +1.2**
comp=Z,31nm,0.9s
KLMR Klimovskoe 60.67 327 *e*P **P 22 40 34.4 -1.7**
KLMR *e* 22 41 17.3
KLMR pmax pmax
comp=Z,55nm,0.8s
JCW Jim Creek 60.69 50 P **P 22 40 36.7 +0.1**
LEM Lembang 60.74 225 LR LR 23 06 00.2
comp=Z,68nm,19.4s,baz=344,slow=35
B06A Marblemount 60.77 50 *e*P **P 22 40 37.3 +0.3**
comp=Z,37nm,1.4s
SGF Sodankyl 60.84 337 P **P 22 40 38.8 +1.6**
SGF pmax pmax
comp=Z,83nm,0.8s
D05A Enumclaw 61.21 51 *e*P **P 22 40 40.9 +0.9**
comp=Z,28nm,1.1s
TRO Tromso 61.22 341 *e*P **P 22 40 38.7 -1.0**
TRO IAmb IAmb 22 40 39.9
comp=Z,106nm,0.8s
TRO IAMs_20 IAMs_20 23 08 55.1
comp=Z,475nm,29.1s
F04D Rainier, OR 61.23 53 P **P 22 40 41.2 +1.1**
baz=304
OBSR Observation Ro 61.47 51 P **P 22 40 42.8 +0.7**
LON Longmire 61.55 51 *e*P **P 22 40 42.9 +0.5**
LON pmax pmax
comp=Z,14nm,1.4s
LON Longmire 61.55 51 *e*P **P 22 40 42.9 +0.5**
comp=Z,14nm,1.4s
F04A Amboy 61.65 52 *e*P **P 22 40 44.0 +0.9**
comp=Z,34nm,0.8s
ETW Entiat 61.91 50 P **P 22 40 45.4 +0.5**
B08A Colville Reser 62.05 49 *e*P **P 22 40 46.1 +0.4**
comp=Z,51nm,1.5s
HYB Hyderabad 62.07 268 *i*P P 22 40 40.0 -6.3
I03D Drain, OR 62.35 55 P **P 22 40 48.8 +1.1**
baz=304,SNR=5.8
H04A Detroit Lake 62.48 54 *e*P **P 22 40 49.1 +0.4**
comp=Z,25nm,0.9s
G05D Wamic, OR 62.68 53 P **P 22 40 49.9 0.0**
baz=305
CTA Charters Tower 62.81 180 P **P 22 40 48.5 -2.4**
comp=Z,4.6nm,0.8s,baz=354,slow=6.5,SNR=4.1
I04A Tendick Farm, 62.85 54 P **P 22 40 51.5 +0.3**
baz=305,SNR=7.5
C09A Chrisman Ranch 62.95 49 *e*P **P 22 40 52.1 +0.4**
comp=Z,20nm,0.8s
D08A Wollman Farm, 63.02 50 *e*P **P 22 40 52.5 +0.4**
comp=Z,18nm,0.8s
HAWA Hanford 63.05 51 *e*P **P 22 40 53.1 +0.8**
comp=Z,46nm,1.6s
L02D Cave Junction, 63.06 57 P **P 22 40 53.3 +0.7**
baz=305
G06A Carlson Farm, 63.08 52 *e*P **P 22 40 53.6 +1.0**
comp=Z,17nm,1.1s
I05D Terrebonne, OR 63.18 53 P **P 22 40 53.8 +0.5**
baz=305,SNR=5.0
NEW Newport 63.31 48 P **P 22 40 54.2 +0.1**
baz=306,SNR=12
NEW Newport 63.31 48 *e*P **P 22 40 54.3 +0.1**
NEW pmax pmax
comp=Z,26nm,1.0s
NEW Newport 63.31 48 *e*P **P 22 40 54.3 +0.1**
comp=Z,26nm,1.0s
KTRM Thompson Ridge 63.34 57 P **P 22 40 55.5 +0.9**
STEI Steigen 63.39 341 *e*P **P 22 40 53.3 -1.0**
STEI IAmb IAmb 22 40 54.4
comp=Z,33nm,0.8s
WRA Warramunga Arr 63.61 192 P **P 22 40 54.0 -2.3**
comp=Z,4.0nm,0.8s,baz=16,slow=7.1,SNR=15
WRA LR LR 23 07 49.5
comp=Z,40nm,19.6s,baz=280,slow=35
WRA Warramunga Arr 63.61 192 P **P 22 40 54.0 -2.3**
WRA pmax pmax
comp=Z,4.0nm,0.8s
WRA MLR MLR
comp=Z,41nm,19.7s
WRA Warramunga Arr 63.61 192 *e*P **P 22 40 54.0 -2.3**
KHMM Horse Mountain 63.72 58 *e*P **P 22 40 58.6 +1.5**
comp=Z,22nm,0.9s
E09A Wood Farm, Sta 63.77 50 *e*P **P 22 40 57.5 +0.4**
comp=Z,34nm,0.8s
J05D Fort Rock, OR 63.85 54 P **P 22 40 58.9 +1.0**
baz=306,SNR=14
YBH Yreka Blue Hor 63.85 56 *e*P **P 22 40 58.9 +1.0**
YBH pmax pmax
comp=Z,12nm,0.8s
YBH Yreka Blue Hor 63.85 56 *e*P **P 22 40 58.9 +1.0**
comp=Z,12nm,0.8s
M02C Callahan 63.96 57 P **P 22 40 59.5 +0.9**
baz=306,SNR=9.2
G08A Pilot Rock 64.02 51 *e*P **P 22 40 59.6 +0.7**
comp=Z,7.1nm,1.0s
KMRM Mail Ridge 64.11 58 *e*P **P 22 41 00.9 +1.4**
comp=Z,42nm,1.4s
GEYT Alibeck 64.19 299 P **P 22 40 59.9 -0.1**
comp=Z,12nm,0.8s,baz=28,slow=3.5,SNR=34
GEYT LR LR 23 11 22.6
comp=Z,864nm,18.4s,baz=70,slow=38
SUF Sumiainen 64.26 334 P **P 22 40 59.6 -0.5**
SUF pmax pmax
comp=Z,179nm,0.8s
N02D Trinity Center 64.30 57 P **P 22 41 01.9 +1.1**
baz=306,SNR=11
M04C Macdoel 64.36 56 P **P 22 41 02.2 +0.9**
baz=306,SNR=13
K05A Summer Lake 64.38 55 *e*P **P 22 41 02.5 +1.1**
comp=Z,45nm,1.0s
F10A Beach Ranch, E 64.60 50 *e*P **P 22 41 03.2 +0.5**
comp=Z,7.3nm,0.8s
MOS Moscow 64.62 324 *e*P **P 22 41 01.8 -0.7**
MOS *e* 22 41 12.7
MOS *e* 22 41 35.0
MOS pmax pmax
comp=Z,200nm,1.2s
MOS pmax pmax
comp=Z,120nm,1.2s
MOS Moscow 64.62 324 *e*P **P 22 41 01.8 -0.7**
WDC Whiskeytown Da 64.63 57 *e*P **P 22 41 03.7 +0.9**
WDC pmax pmax
comp=Z,15nm,0.9s
WDC Whiskeytown Da 64.63 57 *e*P **P 22 41 03.7 +0.9**
comp=Z,15nm,0.9s
SUMG Summit 64.64 2||*i*P **P 22 41 03.2 +0.3**
comp=Z,164nm,0.9s
SUMG Summit 64.64 2||*i*P **P 22 41 03.2 +0.3**
SUMG pmax pmax
comp=Z,160nm,0.9s
SUMG Summit 64.64 2 *e*P **P 22 41 02.5 -0.4**
comp=Z,146nm,0.8s
PUL Pulkovo 64.89 330||*e*P **P 22 41 04.3 +0.2**
PUL pmax pmax
comp=Z,220nm,1.7s
PUL Pulkovo 64.89 330||*e*P **P 22 41 04.3 +0.2**
JTMT Jette 65.16 47 *e*P **P 22 41 07.2 +0.8**
FINES FINESS Array B 65.20 333 P **P 22 41 05.8 -0.4**
comp=Z,130nm,0.6s,baz=45,slow=7.8,SNR=1055
FINES LR LR 23 13 52.5
comp=Z,300nm,18.9s,baz=44,slow=40
BMO Blue Mountains 65.22 51 *e*P **P 22 41 07.4 +0.7**
comp=Z,15nm,1.1s
SWMT Swartz Lake 65.45 47 *e*P **P 22 41 08.7 +0.4**
OBN Obninsk 65.48 324*c i*P **P 22 41 07.6 -0.5**
OBN *i* 22 41 19.3
OBN *i* 22 41 37.3
OBN *i* 22 43 34.6
OBN pmax pmax
comp=Z,120nm,1.0s

OBN MLR MLR
comp=Z,450nm,16.0s
OBN Obninsk 65.48 324 *eP* **P 22 41 07.8 -0.3**
comp=Z,123nm,0.9s
OBN Obninsk 65.48 324⇑ *iP* **P 22 41 07.6 -0.5**
OBN *erx* rx 22 41 19.3
VRH Novokhopyorsk 65.60 318 *eP* **P 22 41 08.7 -0.2**
VRH pmax pmax
comp=Z,150nm,0.7s
VRH MLR MLR
comp=Z,540nm,17.0s
ORV Oroville 65.88 58 *eP* **P 22 41 11.2 +0.2**
ORV pmax pmax
comp=Z,14nm,0.8s
ORV Oroville 65.88 58 *eP* **P 22 41 11.2 +0.2**
comp=Z,14nm,0.8s
WVOR Wild Horse Val 65.89 54 *eP* **P 22 41 11.9 +0.7**
WVOR pmax pmax
comp=Z,15nm,1.0s
WVOR Wild Horse Val 65.89 54 *eP* **P 22 41 11.9 +0.7**
comp=Z,15nm,1.0s
MSO Missoula 65.90 48 P **P 22 41 11.2 0.0**
baz=308,SNR=17
MSO Missoula 65.90 48 *eP* **P 22 41 11.2 0.0**
comp=Z,35nm,1.2s
LPSR Galich'ya Gora 66.05 320 *eP* **P 22 41 11.8 0.0**
LPSR pmax pmax
comp=Z,150nm,0.8s
LPSR MLR MLR
comp=Z,390nm,17.0s
SCO Scoresbysund 66.47 356⇑ *iP* **P 22 41 14.2 0.0**
comp=Z,50nm,1.0s
SCO Scoresbysund 66.47 356⇑ *iP* **P 22 41 14.2 0.0**
SCO pmax pmax
comp=Z,50nm,1.0s
AFDM Forest Hills D 66.57 58 *eP* **P 22 41 15.4 0.0**
comp=Z,18nm,1.3s
VSR Storozhevoye 66.83 319 *eP* **P 22 41 17.1 +0.3**
VSR pmax pmax
comp=Z,100nm,0.5s
VSR MLR MLR
comp=Z,700nm,17.0s
NSS Namsos 66.93 340 *eP* **P 22 41 16.7 -0.5**
NSS IAmb IAmb 22 41 17.5
comp=Z,44nm,0.9s
MFID Camas Ranch 66.94 52 *eP* **P 22 41 18.4 +0.6**
comp=Z,14nm,0.9s
PAHR Pah Rah Range 67.09 57 *eP* **P 22 41 19.6 +0.7**
comp=Z,24nm,1.0s
HRY Holter Researc 67.11 47 *eP* **P 22 41 19.6 +0.7**
VSU Vasula 67.12 330*c iP* **P 22 41 18.2 -0.3**
VSU pmax pmax
comp=Z,692nm,1.7s
ASAR Alice Springs 67.33 192 P **P 22 41 18.5 -1.8**
comp=Z,4.7nm,0.8s,baz=16,slow=6.8,SNR=37
ASAR LR LR 23 09 34.6
comp=Z,47nm,19.4s,baz=38,slow=35
LRM Limekiln Ridge 67.33 48 *eP* **P 22 41 20.7 +0.2**
ILULI Ilulissat 67.34 7⇑ *iP* **P 22 41 18.9 -0.8**
comp=Z,51nm,0.8s
ILULI Ilulissat 67.34 7⇑ *iP* **P 22 41 18.9 -0.8**
ILULI pmax pmax
comp=Z,51nm,0.8s
EGMT Eagleton 67.38 45 P **P 22 41 19.8 -0.7**
baz=310
EGMT Eagleton 67.38 45 *eP* **P 22 41 20.4 -0.1**
comp=Z,37nm,0.9s
DLMT Dillon 67.54 48 *eP* **P 22 41 22.8 +1.1**
comp=Z,20nm,0.8s
HLID Hailey 67.65 51 P **P 22 41 22.5 0.0**
baz=309,SNR=14
MCMT McKenzie Canyo 67.74 49 *eP* **P 22 41 23.0 0.0**
WAKR Walker 67.79 58 *eP* **P 22 41 24.4 +1.0**
BOZ Bozeman (W) 67.89 48 P **P 22 41 24.2 +0.3**
baz=310,SNR=7.5
BOZ Bozeman (W) 67.89 48 *eP* **P 22 41 24.4 +0.5**
BOZ pmax pmax
comp=Z,30nm,0.7s
BOZ Bozeman (W) 67.89 48 *eP* **P 22 41 24.4 +0.5**
comp=Z,30nm,0.7s
BOZ Bozeman (W) 67.89 48 *eP* **P 22 41 24.4 +0.5**
BMN Battle Mountai 67.95 55 *eP* **P 22 41 25.4 +1.0**
BMN pmax pmax
comp=Z,20nm,1.0s
BMN Battle Mountai 67.95 55 *eP* **P 22 41 25.4 +1.0**
comp=Z,20nm,1.0s
AFI Afiamalu 68.49 136 LR LR 23 05 27.9
comp=Z,90nm,20.7s,baz=36,slow=31
QLMT Earthquake Lak 68.52 48 *eP* **P 22 41 28.6 +0.7**
NVAR Mina Array Bea 68.53 57 P **P 22 41 28.7 +0.6**
comp=Z,17nm,0.7s,baz=288,slow=6.8,SNR=46
GOF Gofitskoye 68.82 312⇑ *eP* P 22 41 18.3 -11
GOF pmax pmax
comp=Z,45nm,1.0s
GCMT Greycliff 68.86 47 *eP* **P 22 41 30.8 +0.9**
YMR Madison River 68.88 48 *eP* **P 22 41 31.1 +1.0**
comp=Z,23nm,0.9s
ELK Elko 68.94 54 *eP* **P 22 41 31.4 +0.8**
ELK pmax pmax
comp=Z,4.0nm,0.7s
ELK Elko 68.94 54 *eP* **P 22 41 31.4 +0.8**
comp=Z,4.4nm,0.7s
YFT Old Faithful 69.09 48 *eP* **P 22 41 33.7 +2.2**
comp=Z,17nm,0.9s
LKWY Lake 69.25 48 *eP* **P 22 41 34.7 +2.2**
LKWY pmax pmax
comp=Z,19nm,1.0s
LKWY Lake 69.25 48 *eP* **P 22 41 34.7 +2.2**
comp=Z,19nm,1.0s
H17A Grant Village 69.27 48 P **P 22 41 34.5 +1.8**
baz=310,SNR=24
H17A Grant Village 69.27 48 *eP* **P 22 41 34.6 +2.0**
comp=Z,35nm,1.0s
IZAR Zarasai 69.28 328 *eP* **P 22 41 32.2 +0.1**
IZAR IAmb IAmb 22 41 33.5
comp=Z,38nm,0.6s
FLWY Flagg Ranch 69.40 49 *eP* **P 22 41 34.9 +1.5**
comp=Z,16nm,0.9s
IDID Didziasalis 69.41 328 *eP* **P 22 41 33.2 +0.2**
IDID IAmb IAmb 22 41 34.5
comp=Z,45nm,0.8s
ISAL Salakas 69.46 328 *eP* **P 22 41 33.4 +0.2**
ISAL IAmb IAmb 22 41 34.9
comp=Z,49nm,0.7s
RLMT Red Lodge 69.50 47 P **P 22 41 34.1 +0.1**
baz=311,SNR=11
RLMT Red Lodge 69.50 47 *eP* **P 22 41 34.9 +0.9**
comp=Z,37nm,1.4s
SFJD Kangerlussuaq 69.55 7⇑ *iP* **P 22 41 32.9 -0.7**
comp=Z,30nm,0.8s
SFJD Kangerlussuaq 69.55 7 *eP* **P 22 41 33.1 -0.4**
SFJD pmax pmax
comp=Z,38nm,0.9s
SFJD Kangerlussuaq 69.55 7 *eP* **P 22 41 33.1 -0.4**
comp=Z,38nm,0.9s
MOOW Moose Ponds 69.59 49 *eP* **P 22 41 35.5 +0.9**
comp=Z,26nm,1.0s
MOL Molde 69.65 341 *eP* **P 22 41 34.3 0.0**
MOL IAmb IAmb 22 41 34.8
comp=Z,40nm,1.1s
GUDG Gudauri 69.69 309 P **P 22 41 36.5 +1.3**
NACGM Naroch 69.69 328 *eP* **P 22 41 33.0 -1.7**
NACGM PM 22 41 35.0
HVU Hansel Valley 69.72 52 *eP* **P 22 41 36.1 +0.8**
HVU pmax pmax
comp=Z,15nm,0.9s
HVU Hansel Valley 69.72 52 *eP* **P 22 41 36.1 +0.8**
comp=Z,15nm,0.9s
KIV Kislovodsk 69.73 312 *i* P **P 22 41 36.2 +0.9**
SNR=15
KIV Kislovodsk 69.73 312*c iP* **P 22 41 35.7 +0.5**
KIV *i* 22 41 46.0
KIV pmax pmax
comp=Z,66nm,1.0s
KIV Kislovodsk 69.73 312 *eP* **P 22 41 35.9 +0.7**
comp=Z,78nm,0.9s
KIV Kislovodsk 69.73 312⇑ *iP* **P 22 41 35.7 +0.5**
KIV *erx* rx 22 41 46.0
LOHW Long Hollow 69.76 49 *eP* **P 22 41 36.4 +0.8**
comp=Z,64nm,1.8s
KBZ Khabaz 69.76 311 P **P 22 41 36.0 +0.7**
comp=Z,16nm,0.8s,baz=56,slow=4.8,SNR=38
KBZ LR LR 23 17 30.2
comp=Z,396nm,18.1s,baz=31,slow=40
KBZ Khabaz 69.76 311 P **P 22 41 36.0 +0.7**
KBZ pmax pmax
comp=Z,16nm,0.8s
KBZ MLR MLR
comp=Z,396nm,18.1s
KBZ Khabaz 69.76 311 *eP* **P 22 41 36.0 +0.7**
SNOW Snow King Moun 69.77 49 *eP* **P 22 41 33.9 -1.8**
comp=Z,20nm,0.9s
REDW Red Top Meadow 69.78 49 *eP* **P 22 41 36.5 +0.7**
comp=Z,39nm,1.3s
PKM Mcpherson Peak 69.79 61 P **P 22 41 35.9 0.0**
baz=309
ZEI Tsey 69.81 310 *eP* **P 22 41 34.8 -1.1**
ZEI *e* 22 41 46.5
ZEI pmax pmax
comp=Z,34nm,0.8s
ZEI MLR MLR
comp=Z,442nm,16.0s
ZEI Tsey 69.81 310 *eP* **P 22 41 34.8 -1.1**
ZEI *erx* rx 22 41 46.5
DGMT Dagmar 69.88 42 P **P 22 41 36.1 +0.1**
baz=313
GRAC Grapevine Rang 70.01 58 P **P 22 41 37.8 +0.8**
baz=309,SNR=5.8
TBLG Delisi 70.02 309 P **P 22 41 37.7 +0.7**
TBLG Delisi 70.02 309 P **P 22 41 37.7 +0.7**
NB2 NORSAR Subarra 70.02 339 P **P 22 41 36.4 -0.3**
comp=Z,106nm,0.8s,baz=34,slow=6.5
NB2 NORSAR Subarra 70.02 339 P **P 22 41 36.4 -0.3**
baz=34,slow=6.5
NB2 NORSAR Subarra 70.02 339 P **P 22 41 36.4 -0.3**
NB2 pmax pmax
comp=Z,89nm,0.9s
NOA NORSAR Array B 70.02 339 P **P 22 41 36.3 -0.4**
comp=Z,76nm,0.8s,baz=34,slow=6.1,SNR=324
NOA LR LR 23 17 24.6
comp=Z,301nm,18.5s,baz=20,slow=40
AHID Auburn Hatcher 70.03 50 *eP* **P 22 41 37.5 +0.3**
comp=Z,12nm,0.8s
LAO LASA Array 70.06 44 P **P 22 41 37.5 +0.3**
baz=312,SNR=5.9
LAO LASA Array 70.06 44 *eP* **P 22 41 37.6 +0.4**
comp=Z,7.0nm,0.7s
BGU Big Grassy Mou 70.12 52 *eP* **P 22 41 38.4 +0.6**
comp=Z,7.4nm,1.1s
AKN Aaknes 70.12 341 *eP* **P 22 41 37.1 -0.1**
AKN IAmb IAmb 22 41 38.8
comp=Z,55nm,1.1s
R11A Troy Canyon, C 70.25 56 P **P 22 41 38.9 +0.2**
baz=310,SNR=22
R11A Troy Canyon, C 70.25 56 *eP* **P 22 41 38.8 +0.2**
comp=Z,17nm,1.1s
ARVC Arvin 70.27 60 P **P 22 41 38.4 -0.2**
baz=309
DAC Darwin (Calif) 70.32 59 *eP* **P 22 41 39.6 +0.4**
DAC pmax pmax
comp=Z,10.0nm,1.1s
DAC Darwin (Calif) 70.32 59 *eP* **P 22 41 39.6 +0.4**
comp=Z,9.9nm,1.1s
HWUT Hardware Ranch 70.52 51 *eP* **P 22 41 41.1 +0.8**
comp=Z,38nm,1.4s
FURC Furnace Creek, 70.66 58 P **P 22 41 41.0 +0.1**
baz=310
OSI Osito Audit: C 70.66 61 P **P 22 41 41.6 +0.5**
baz=310
OSI Osito Audit: C 70.66 61 *eP* **P 22 41 42.3 +1.2**
comp=Z,17nm,0.8s
DUG Dugway, Tooele 70.71 53 P **P 22 41 41.8 +0.4**
baz=311,SNR=16
DUG Dugway, Tooele 70.71 53 *eP* **P 22 41 42.0 +0.6**
DUG pmax pmax
comp=Z,22nm,0.8s
DUG Dugway, Tooele 70.71 53 *eP* **P 22 41 42.0 +0.6**
comp=Z,22nm,0.8s
TPNV Topopah Spring 70.73 57 P **P 22 41 41.6 0.0**
baz=310,SNR=11
TPNV Topopah Spring 70.73 57 *eP* **P 22 41 42.3 +0.7**
TPNV pmax pmax
comp=Z,22nm,0.9s
TPNV Topopah Spring 70.73 57 *eP* **P 22 41 42.3 +0.7**
comp=Z,22nm,0.9s
BLG Laguna Peak, P 70.76 61 P **P 22 41 42.0 +0.4**
baz=310
CHVG Ch'k'valeri 70.87 311 P **P 22 41 43.2 +1.1**
BW06 Boulder Array 70.89 49 P **P 22 41 42.6 +0.1**
baz=311,SNR=21
BW06 Boulder Array 70.89 49 *eP* **P 22 41 42.4 -0.2**
comp=Z,22nm,1.0s
PDAR Pinedale Array 70.89 49 P **P 22 41 42.4 -0.2**
comp=Z,13nm,0.7s,baz=266,slow=2.8,SNR=46
TCUT Tone Canyon 70.93 51 *eP* **P 22 41 43.6 +0.8**
comp=Z,21nm,0.8s
EDW2 Edwards Air Fo 70.95 60 P **P 22 41 42.9 0.0**
baz=310
A27A Ledoux Ranch, 70.97 40 P **P 22 41 43.3 +0.7**
baz=314
BGD Bogdanovka 70.97 309 P **P 22 41 44.5 +1.4**
GNI Garni 71.04 307 *eP* **P 22 41 44.3 +0.9**
GNI pmax pmax
comp=Z,154nm,0.9s
GNI Garni 71.04 307 *eP* **P 22 41 44.3 +0.9**
comp=Z,154nm,0.9s
FOO Floro 71.09 342 *eP* **P 22 41 43.3 +0.3**
FOO IAmb IAmb 22 41 44.0
comp=Z,52nm,0.9s
DECC Green Verdugo 71.14 61 P **P 22 41 44.3 +0.4**
baz=310
PSUT Pine Spring 71.17 55 *eP* **P 22 41 44.6 +0.3**
comp=Z,9.3nm,0.8s
HYA Hoyanger 71.19 341 *eP* **P 22 41 44.0 +0.4**
HYA IAmb IAmb 22 41 44.6
comp=Z,107nm,0.8s
D25A Fairfield 71.21 42 P **P 22 41 44.4 +0.2**
baz=314
JLU Jordanelle 71.24 52 *eP* **P 22 41 45.4 +0.7**
comp=Z,23nm,1.3s
NLU North Lily Min 71.30 53 *eP* **P 22 41 45.8 +0.7**
comp=Z,14nm,0.9s
GSC Goldstone, Bar 71.44 59 P **P 22 41 46.0 +0.2**
baz=310
GSC Goldstone, Bar 71.44 59 *eP* **P 22 41 46.3 +0.5**
GSC *e*PP **sP** 22 42 02.0 -1.2
GSC pmax pmax
comp=Z,8.0nm,0.9s
GSC Goldstone, Bar 71.44 59 *eP* **P 22 41 46.3 +0.5**
comp=Z,8.2nm,0.9s
GSC *e*pP **sP** 22 42 02.0 -1.2
BFSC Mount Baldy Ra 71.58 60 P **P 22 41 47.0 +0.3**
baz=310,SNR=5.9
SOC Sochi 71.59 313 *eP* **P 22 41 44.8 -1.6**
SOC *e*PP **pP** 22 41 58.0 -1.0
SOC *e*PPP PPP 22 46 09.4
SOC *e*SS SS 22 55 40.8 +3.5
SOC *e*SSS SSS 22 58 44.6
SOC pmax pmax
comp=Z,18nm,0.6s
SOC MLR MLR
comp=Z,754nm,24.0s
SOC Sochi 71.59 313 *eP* **P 22 41 46.0 -0.4**
SOC *erx* rx 22 41 58.0
E25A Miller Ranch, 71.62 43 P **P 22 41 46.8 +0.1**
baz=314,SNR=8.5
KONO Kongsberg 71.63 338 *eP* **P 22 41 46.1 -0.3**
KONO pmax pmax
comp=Z,30nm,0.8s
KONO Kongsberg 71.63 338 *eP* **P 22 41 46.1 -0.3**
comp=Z,30nm,0.8s
SUE Sulen 71.63 341 *eP* **P 22 41 46.5 +0.2**
SUE IAmb IAmb 22 41 47.5
comp=Z,82nm,1.0s
SHPR Sheep Range 71.69 57 *eP* **P 22 41 48.3 +0.9**
comp=Z,16nm,0.9s
B28A Dugan Ranch, T 71.74 40 P **P 22 41 47.7 +0.4**
baz=315
AKASG Malin Array Be 71.75 323 P **P 22 41 46.9 -0.4**
comp=Z,36nm,0.7s,baz=41,slow=6.6,SNR=123
AKASG LR LR 23 16 12.0
comp=Z,527nm,19.0s,baz=40,slow=38
AKASG Malin Array Be 71.75 323 P **P 22 41 46.9 -0.4**
AKASG pmax pmax
comp=Z,19nm,0.5s
AKASG MLR MLR
comp=Z,527nm,19.0s
SUW Suwalki 71.76 329 *eP* **P 22 41 46.8 -0.5**
SUW Suwalki 71.76 329⇑ *eP* **P 22 41 46.8 -0.5**
KIEV Kiev 71.76 323*ceP* **P 22 41 46.8 -0.5**
KIEV pmax pmax
comp=Z,60nm,1.0s
KIEV Kiev 71.76 323 *eP* **P 22 41 46.9 -0.4**
comp=Z,59nm,0.9s
TUQ Turquoise Moun 71.90 58 P **P 22 41 49.3 +0.7**
baz=310
A29A Manning Farm, 71.93 39 P **P 22 41 48.6 +0.1**
baz=316,SNR=5.6
ANN Anapa 71.97 315*c iP* **P 22 41 48.5 -0.2**
ANN *e**PP **pP** 22 42 01.0 -0.2
ANN *e*S **S** 22 51 06.2 -0.6
ANN pmax pmax
comp=Z,23nm,0.6s
ANN MLR MLR
comp=Z,252nm,20.0s
ANN Anapa 71.97 315⇑ *iP* **P 22 41 48.5 -0.2**
F25A Bowman 71.99 43 P **P 22 41 48.6 -0.3**
baz=314
ASK Askoy 72.03 341 *eP* **P 22 41 49.3 +0.5**
ASK IAmb IAmb 22 41 49.9
comp=Z,87nm,0.9s
HEC Hector,Ludlow 72.03 59 P **P 22 41 49.7 +0.3**
baz=310,SNR=9.7
BER Bergen 72.08 341 *eP* **P 22 41 49.3 +0.3**
BER IAmb IAmb 22 41 50.2
comp=Z,111nm,0.9s
ODD1 Odda 72.18 340 *eP* **P 22 41 50.1 +0.3**
ODD1 IAmb IAmb 22 41 50.9
comp=Z,79nm,1.0s
B29A Wagenman Farm, 72.20 40 P **P 22 41 49.6 -0.5**
baz=316
TMUT Trail Mountain 72.24 53 *eP* **P 22 41 51.5 +0.6**
comp=Z,14nm,1.0s
MURC Murrieta 72.28 61 P **P 22 41 50.6 -0.2**
baz=310
A30A Hoffart Farm, 72.35 39 P **P 22 41 50.4 -0.5**
baz=316
P17A Butcher Ranch, 72.39 52 *eP* **P 22 41 52.2 +0.6**
comp=Z,22nm,0.8s
F26A Lodgepole 72.44 43 P **P 22 41 51.4 -0.2**
baz=314,SNR=5.8
ULM Lac du Bonnet 72.48 37 P **P 22 41 50.2 -1.5**
comp=Z,6.7nm,0.8s,baz=317,slow=3.6,SNR=3.4
GMRC Granite Mounta 72.49 59 P **P 22 41 52.2 0.0**
baz=311,SNR=5.3
MTPU Mount Pierson 72.49 54 *eP* **P 22 41 53.3 +0.9**
comp=Z,15nm,0.8s
G25A Newell 72.52 44 P **P 22 41 51.6 -0.5**
baz=314
MDND Maddock 72.52 40 P **P 22 41 51.9 -0.1**
baz=316
LCMT Little Creek M 72.53 56 *eP* **P 22 41 53.4 +1.0**
comp=Z,19nm,0.9s
D28A Regan 72.53 41 P **P 22 41 51.6 -0.4**
baz=315
P18A Preston Nutter 72.58 52 *eP* **P 22 41 53.5 +0.7**
comp=Z,33nm,1.4s
E27A Carson 72.58 42 P **P 22 41 52.3 -0.1**
baz=315,SNR=6.1
K22A Casper 72.63 48 P **P 22 41 52.7 -0.2**
baz=313,SNR=12
K22A Casper 72.63 48 *eP* **P 22 41 52.8 -0.1**
comp=Z,79nm,1.4s
BLS5 Blasjo 72.64 340 *eP* **P 22 41 52.5 -0.1**
BLS5 IAmb IAmb 22 41 54.2
comp=Z,66nm,1.1s
B30A Myrvik Farm, E 72.69 39 P **P 22 41 52.9 -0.1**
baz=316,SNR=12
PFO Pinyon Flats O 72.74 60 *eP* **P 22 41 54.3 +0.6**
PFO *e**PP **PcP** 22 42 09.1 -1.8
PFO pmax pmax
comp=Z,9.0nm,1.0s
PFO Pinyon Flats O 72.74 60 *eP* **P 22 41 54.3 +0.6**
comp=Z,8.7nm,1.0s
PFO *e*pP **PcP** 22 42 09.1 -1.8
BANOM Banah 72.75 289 *i* P **P 22 41 53.6 -0.1**
SNR=8.0
TPFO Pinon Flats 72.75 60 P **P 22 41 53.7 0.0**
baz=311
SRU San Rafael Swe 72.76 52 *eP* **P 22 41 54.4 +0.6**
SRU pmax pmax
comp=Z,32nm,0.9s
SRU San Rafael Swe 72.76 52 *eP* **P 22 41 54.4 +0.6**
comp=Z,32nm,0.9s
KNB Kanab 72.78 55 *eP* **P 22 41 54.8 +0.9**
KNB pmax pmax
comp=Z,20nm,0.9s
KNB Kanab 72.78 55 *eP* **P 22 41 54.8 +0.9**
comp=Z,20nm,0.9s
109C Camp Elliot, M 72.80 61 P **P 22 41 53.9 +0.1**
baz=311
H25A Fruitdale 72.82 45 P **P 22 41 53.7 -0.2**
baz=314
G26A Maurine 72.86 44 P **P 22 41 53.8 -0.3**
baz=314,SNR=12
RSSD Black Hills 72.94 45 P **P 22 41 54.4 -0.4**
baz=314
RSSD Black Hills 72.94 45 *eP* **P 22 41 54.4 -0.4**
RSSD pmax pmax
comp=Z,23nm,0.8s
RSSD Black Hills 72.94 45 *eP* **P 22 41 54.4 -0.4**
comp=Z,24nm,0.8s
HOMB Homborsund 73.10 338 *eP* **P 22 41 55.5 +0.3**
HOMB IAmb IAmb 22 41 56.4
comp=Z,40nm,1.0s
HOMB IAMs_20 IAMs_20 23 17 55.9
comp=Z,500nm,25.5s
KMY Karmoy 73.13 340 *eP* **P 22 41 55.7 +0.3**
KMY IAmb IAmb 22 41 56.6
comp=Z,73nm,0.9s
G27A Dupree 73.14 43 P **P 22 41 55.2 -0.5**
baz=315
I25A Rochford 73.17 45 P **P 22 41 55.4 -0.7**
baz=314,SNR=11
A32A Rocking H Ranc 73.18 38 P **P 22 41 55.1 -0.8**
baz=317
IRM Iron Mountain 73.22 59 P **P 22 41 56.9 +0.5**
baz=311,SNR=8.0
STAV Stavanger 73.26 340 *eP* **P 22 41 56.2 +0.1**
STAV IAmb IAmb 22 41 57.1
comp=Z,94nm,1.1s
BC3 Big Chuckawall 73.35 59 P **P 22 41 57.1 -0.2**
baz=311
O20A White River Ci 73.38 50 P **P 22 41 57.1 -0.3**
baz=313,SNR=5.8
O20A White River Ci 73.38 50 *eP* **P 22 41 57.6 +0.1**
comp=Z,27nm,1.3s
W13A Hualapai Mount 73.39 57 *eP* **P 22 41 58.2 +0.6**
comp=Z,6.3nm,0.9s
SNART Snartemo 73.39 339 *eP* **P 22 41 57.0 +0.1**
SNART IAmb IAmb 22 41 57.9
comp=Z,50nm,1.0s
UOSS Minazif 73.44 289 *eP* **P 22 41 57.3 -0.5**
comp=Z,1.4nm,0.9s
C31A Landman Farms, 73.44 39 P **P 22 41 57.1 -0.2**
baz=317
D30A Buchanan 73.45 40 P **P 22 41 56.9 -0.6**
baz=316
B32A Ashes, Strandq 73.55 38 P **P 22 41 57.6 -0.4**
baz=317
HATD Hatta, Dubai 73.56 289 *i* P **P 22 41 58.5 0.0**
SNR=9.5
SIM Simferopol' 73.57 317*ceP* **P 22 41 58.1 -0.1**
SIM S **S** 22 51 28.0 +3.0
SIM pmax pmax
comp=Z,23nm,0.7s
SIM smax smax
comp=Z,250nm,16.0s
SIM Simferopol' 73.57 317 *eP* **P 22 41 58.0 -0.1**
IKP In-Ko-Pah, Jac 73.59 61 P **P 22 41 59.0 +0.4**
baz=311
SWSC Sam W. Stewart 73.59 60 P **P 22 41 58.1 -0.4**
baz=311
A33A Warroad 73.66 37 P **P 22 41 58.0 -0.6**
baz=318,SNR=7.6
ASHO Ashiyiah 73.71 289 *i* P **P 22 41 59.2 -0.2**
SNR=7.6
PDMCI Parker Dam,Lak 73.75 58 P **P 22 41 59.6 +0.2**
baz=311
E30A Jud 73.82 41 P **P 22 41 59.1 -0.6**
baz=316
BSD Bornholm Skovb 73.83 333 *i* P **P 22 41 59.1 -0.4**
comp=Z,58nm,1.0s
BSD Bornholm Skovb 73.83 333 *i* P **P 22 41 59.1 -0.4**
BSD pmax pmax
comp=Z,58nm,1.0s
F29A Eureka 73.86 42 P **P 22 41 59.5 -0.4**
baz=316
Y12C Blythe 73.87 59 P **P 22 42 00.7 +0.5**
baz=311

Y12C Blythe 73.87 59 *e*P **P 22 42 00.9 +0.8**
comp=Z,11nm,0.8s
PV09 Paradox Valley 73.97 52 *e*P **P 22 42 01.6 +0.5**
D31A Mcclaflin, Tow 73.98 40 P **P 22 42 00.0 -0.6**
baz=317
FAQ Al Faqa, Dubai 73.99 289 *i* P **P 22 42 00.4 -0.6**
SNR=14
J26A Sides Ranch, S 74.00 45 P **P 22 42 00.8 0.0**
baz=315
SORM Soroca 74.02 322⇑*i*P **P 22 42 00.6 -0.1**
SORM Soroca 74.02 322⇑P **P 22 42 00.6 -0.1**
PV10 Paradox Valley 74.11 52 *e*P **P 22 42 02.7 +0.9**
PHWY Pilot Hill 74.13 48 *e*P **P 22 42 02.0 +0.1**
comp=Z,51nm,1.9s
GLA Glamis 74.14 60 P **P 22 42 02.0 +0.2**
baz=311
N23A Red Feather La 74.14 49 P **P 22 42 02.3 +0.3**
baz=314
N23A Red Feather La 74.14 49 *e*P **P 22 42 02.5 +0.5**
comp=Z,29nm,1.0s
COP Copenhagen 74.15 335 *i* P **P 22 42 01.4 +0.1**
comp=Z,27nm,0.9s
COP Copenhagen 74.15 335 *i* P **P 22 42 01.4 +0.1**
COP pmax pmax
comp=Z,27nm,0.9s
PV04 Paradox Valley 74.18 52 *e*P **P 22 42 02.2 +0.1**
PV04 *e* 22 42 17.3
D32A Dogwood Acres, 74.25 39 P **P 22 42 01.7 -0.4**
baz=317
PV05 Paradox Valley 74.28 52 *e*P **P 22 42 03.5 +0.8**
B34A Aery, Baudette 74.32 37 P **P 22 42 01.9 -0.6**
baz=318
BEL Belsk 74.36 328 *e*P **P 22 42 03.4 +0.7**
BEL Belsk 74.36 328⇑*e*P **P 22 42 03.4 +0.7**
C33A Trail 74.36 38 P **P 22 42 02.3 -0.5**
baz=318
MUD Monsted U'grnd 74.47 337 *i* P **P 22 42 03.5 +0.3**
comp=Z,32nm,1.0s
MUD Monsted U'grnd 74.47 337 *i* P **P 22 42 03.5 +0.3**
MUD pmax pmax
comp=Z,32nm,1.0s
I28A Midland 74.50 44 P **P 22 42 03.6 -0.1**
baz=316,SNR=7.8
H29A Onida 74.53 43 P **P 22 42 03.5 -0.4**
baz=316
PV01 Paradox Valley 74.55 52 *e*P **P 22 42 04.8 +0.5**
F31A Hecla 74.60 41 P **P 22 42 03.7 -0.5**
baz=317
LVV L'vov 74.63 325 *e*P **P 22 42 04.0 -0.3**
LVV *e* 22 42 14.7
LVV MLR MLR
comp=N,200nm,17.0s
LVV MLR MLR
comp=E,400nm,17.0s
LVV MLR MLR
comp=Z,300nm,17.0s
KIS Kishinev 74.64 321 *e*P **P 22 42 05.0 +0.6**
KIS LRM MLR 23 17 50.0
comp=Z,600nm,16.0s
KIS Kishinev 74.64 321 *e*P **P 22 42 05.0 +0.6**
KIS *e* 22 52 04.0
WUAZ Wupatki 74.65 56 P **P 22 42 04.9 +0.1**
baz=312,SNR=10.0
WUAZ Wupatki 74.65 56 *e*P **P 22 42 05.9 +1.0**
comp=Z,19nm,1.0s
STKA Stephens Creek 74.67 184 P **P 22 42 03.0 -1.5**
comp=Z,4.8nm,0.9s,baz=325,slow=8.4,SNR=8.3
STKA Stephens Creek 74.67 184 P **P 22 42 03.0 -1.5**
STKA pmax pmax
comp=Z,4.0nm,1.0s
G30A Faulkton 74.70 42 P **P 22 42 04.4 -0.4**
baz=316,SNR=12
Y14A Wickenburg 74.70 58 *e*P **P 22 42 05.7 +0.6**
comp=Z,60nm,1.0s
SMCO Snowmass 74.75 50 *e*P **P 22 42 05.8 0.0**
comp=Z,14nm,0.9s
D33A AnnSam, Waubun 74.79 39 P **P 22 42 04.6 -0.7**
baz=318
B35A Bob, Littlefor 74.83 37 P **P 22 42 04.9 -0.6**
baz=319,SNR=6.1
I29A Vivian Onida 74.92 43 P **P 22 42 05.8 -0.3**
baz=316,SNR=5.4
G31A Conde 75.08 41 P **P 22 42 06.7 -0.3**
baz=317
ISCO Idaho Springs 75.08 49 P **P 22 42 07.4 -0.1**
baz=314,SNR=16
ISCO Idaho Springs 75.08 49 *e*P **P 22 42 08.0 +0.5**
ISCO pmax pmax
comp=Z,14nm,0.9s
ISCO Idaho Springs 75.08 49 *e*P **P 22 42 08.0 +0.5**
comp=Z,14nm,0.9s
F32A Veblen 75.13 40 P **P 22 42 06.6 -0.7**
baz=318
ERBA Erbaa 75.18 312 *i* P **P 22 42 07.8 +0.1**
E33A Westby DABS, E 75.19 39 P **P 22 42 07.2 -0.4**
baz=318,SNR=5.6
C35A Jirik Farms, M 75.21 37 P **P 22 42 06.9 -0.8**
baz=319
MVCO Mesa Verde 75.22 53 P **P 22 42 08.1 -0.1**
baz=313,SNR=9.7
MVCO Mesa Verde 75.22 53 *e*P **P 22 42 08.4 +0.2**
comp=Z,16nm,0.8s
LEOM Leova 75.30 321⇑*i*P **P 22 42 08.9 +0.7**
LEOM Leova 75.30 321⇑P **P 22 42 08.9 +0.7**
KWP Kalwaria Pacla 75.32 326 *e*P **P 22 42 08.9 +0.6**
KWP Kalwaria Pacla 75.32 326⇑*i*P **P 22 42 09.2 +0.9**
KWP Kalwaria Pacla 75.32 326⇑P **P 22 42 09.2 +0.9**
X16A Lo Mia Camp, P 75.34 57 *e*P **P 22 42 09.6 +0.7**
comp=Z,18nm,0.8s
I30A Oacoma 75.44 43 P **P 22 42 08.8 -0.3**
baz=317
F33A 5 Mile Ranch, 75.54 40 P **P 22 42 09.1 -0.6**
baz=318
PRAR RASCA 75.55 323⇑*i*P **P 22 42 10.2 +0.5**
E34A Wadena 75.56 39 P **P 22 42 08.2 -1.6**
baz=319
KBSD Kabsdagh 75.59 307 *e*P **P 22 42 10.7 +0.6**
D35A Remer 75.64 38 P **P 22 42 09.6 -0.6**
baz=319
BOYT Boyabat 75.66 314 *i* P **P 22 42 11.6 +1.2**
C36A Pine Crest Far 75.67 37 P **P 22 42 09.2 -1.1**
baz=320
CUKAN kangal_SIVAS 75.74 311 *i* P **P 22 42 11.7 +0.6**
BURAR Bucovina Array 75.80 323⇓*i*P **P 22 42 12.0 +0.8**
BURAR Bucovina Array 75.80 323⇓P **P 22 42 12.0 +0.8**
S22A 4UR Ranch, Cre 75.82 51 P **P 22 42 12.4 +0.7**
baz=314
J30A Dallas 75.83 43 P **P 22 42 11.2 -0.2**
baz=317,SNR=9.6
E35A Pequot Lakes 75.88 38 P **P 22 42 11.1 -0.5**
baz=319
Q24A Divide 75.92 50 P **P 22 42 11.9 -0.4**
baz=314,SNR=5.1
Q24A Divide 75.92 50 *e*P **P 22 42 12.4 +0.1**
comp=Z,14nm,0.9s
G33A Ortonville 75.95 40 P **P 22 42 11.8 -0.2**
baz=318,SNR=12
C37A Embarrass 75.98 36 P **P 22 42 10.5 -1.6**
baz=320
TLCR 75.99 320⇓*i*P **P 22 42 12.7 +0.6**
TLCR 75.99 320⇓P **P 22 42 12.7 +0.6**
OJC Ojcow 76.02 328 *e*P **P 22 42 12.7 +0.4**
OJC Ojcow 76.02 328 *e*P **P 22 42 12.1 -0.2**
OJC pmax pmax
comp=Z,49nm,0.9s
OJC Ojcow 76.02 328 *e*P **P 22 42 12.1 -0.2**
comp=Z,49nm,0.9s
OJC Ojcow 76.02 328 *e*P **P 22 42 12.1 -0.2**
F34A Alexandria 76.06 39 P **P 22 42 12.1 -0.5**
baz=319
STHS Stebnicka Huta 76.08 327 *e*P **P 22 42 14.0 +1.3**
STHS *e* 22 42 26.0
STHS pmax pmax
comp=Z,22nm,0.8s
STHS Stebnicka Huta 76.08 327 *e*P **P 22 42 14.0 +1.3**
STHS *e* 22 42 26.0
EYMN Ely 76.11 36 P **P 22 42 11.3 -1.6**
baz=320
CUALT Altinyayla-SIV 76.17 311 *i* P **P 22 42 14.6 +1.1**
X18A Snowflake 76.17 56 *e*P **P 22 42 14.6 +0.9**
comp=Z,14nm,1.0s
H33A Prehn Over Nor 76.19 41 P **P 22 42 13.0 -0.4**
baz=318,SNR=6.0
OGNE Ogallala 76.22 46 P **P 22 42 13.3 -0.5**
baz=316,SNR=9.7
OGNE Ogallala 76.22 46 *e*P **P 22 42 13.6 -0.1**
comp=Z,66nm,0.8s
OGNE *e*pP **pP 22 42 28.8 +2.4**
SFNV Sufian 76.24 307 *e*P **P 22 42 14.6 +0.7**
K30A Basset 76.24 44 P **P 22 42 13.0 -0.7**
baz=317
UZH Uzhgorod 76.27 325⇓*i*P **P 22 42 13.5 -0.2**
UZH *i* 22 42 26.3
UZH *e* 22 42 36.3
UZH Uzhgorod 76.27 325⇓*e*P **P 22 42 13.5 -0.2**
UZH *erx* rx 22 42 36.3
CFR Carcaliu 76.31 320⇓*i*P **P 22 42 14.5 +0.5**
CFR Carcaliu 76.31 320⇓P **P 22 42 14.5 +0.5**
MZRK Al-Mazaregh 76.33 306 *e*P **P 22 42 14.4 +0.1**
PETR Petresti 76.33 321⇓*i*P **P 22 42 16.0 +1.9**
CUSAR Sarkisla-SIVAS 76.35 311 *i* P **P 22 42 14.1 -0.4**
ODBI Odobesti 76.38 321⇓*i*P **P 22 42 16.5 +2.1**
C38A Sawbill Land. 76.38 36 P **P 22 42 13.0 -1.4**
baz=321
CRVS Cervenica-Dubn 76.40 326 *e*P **P 22 42 15.0 +0.5**
CRVS Cervenica-Dubn 76.40 326 *e*P **P 22 42 15.0 +0.5**
E36A McGregor 76.43 38 P **P 22 42 14.2 -0.4**
baz=320,SNR=7.9
COAL Corum-Alaca 76.44 313 *i* P **P 22 42 15.6 +0.6**
VRI Vrincioaia 76.45 321⇓*i*P **P 22 42 15.9 +1.1**
VRI Vrincioaia 76.45 321⇓P **P 22 42 15.9 +1.1**
NIE Niedzica 76.46 327 *e*P **P 22 42 15.6 +0.7**
NIE Niedzica 76.46 327⇑*e*P **P 22 42 15.6 +0.7**
PLOR Plostina 76.50 321⇑*i*P **P 22 42 16.3 +1.2**
PLOR Plostina 76.50 321⇑P **P 22 42 16.3 +1.2**
BMR Baia Mare 76.50 324⇑*i*P **P 22 42 15.9 +0.8**
BMR Baia Mare 76.50 324⇑P **P 22 42 15.9 +0.8**
SDCO Great Sand Dun 76.57 51 P **P 22 42 16.1 0.0**
baz=314
SDCO Great Sand Dun 76.57 51 *e*P **P 22 42 16.6 +0.6**
comp=Z,10nm,1.1s
ARCR ARCALIA 76.59 323⇑*i*P **P 22 42 17.0 +1.4**
J32A Parkston 76.61 42 P **P 22 42 15.7 -0.1**
baz=318
I33A Coleman 76.63 41 P **P 22 42 15.3 -0.5**
baz=318
H34A Spellman Lake, 76.66 40 P **P 22 42 15.5 -0.5**
baz=318
K31A O'Neill 76.71 43 P **P 22 42 16.4 0.0**
baz=317,SNR=6.2
TIRR Tirgusor 76.72 319⇓*i*P **P 22 42 16.8 +0.5**
TIRR Tirgusor 76.72 319 *e*P **P 22 42 16.3 0.0**
TIRR pmax pmax
comp=Z,16nm,1.2s
TIRR Tirgusor 76.72 319 *e*P **P 22 42 16.3 0.0**
comp=Z,16nm,1.2s
F36A Milaca 76.81 38 P **P 22 42 15.2 -1.6**
baz=320
KSP Ksiaz 76.85 330 *e*P **P 22 42 17.2 +0.3**
KSP Ksiaz 76.85 330⇑*e*P **P 22 42 17.2 +0.3**
G35A Watkins 76.85 39 P **P 22 42 16.7 -0.4**
baz=319
ECSD EROS Data Cent 76.95 41 P **P 22 42 17.0 -0.7**
baz=318,SNR=15
ECSD EROS Data Cent 76.95 41 *e*P **P 22 42 17.4 -0.3**
comp=Z,26nm,0.9s
OKC Ostrava-Krasne 76.97 328⇑*i*P **P 22 42 18.1 +0.5**
OKC AMS AMS 23 19 00.0
comp=Z,400nm,17.8s
OKC Ostrava-Krasne 76.97 328⇑*i*P **P 22 42 18.1 +0.5**
OKC MLR MLR
comp=Z,400nm,17.8s
DOPR Dopca 76.98 322⇑*i*P **P 22 42 19.4 +1.6**
L31A Butterfield Fa 77.00 44 P **P 22 42 17.5 -0.5**
baz=317,SNR=7.0
LANS Liptovska Anna 77.00 327 *e*P **P 22 42 19.1 +1.2**
LANS *e* 22 42 30.8
LANS Liptovska Anna 77.00 327 *e*P **P 22 42 19.1 +1.2**
LANS *e* 22 42 30.8
H35A Sunnyside Ranc 77.08 40 P **P 22 42 18.0 -0.4**
baz=319,SNR=16
J33A Davis 77.09 42 P **P 22 42 17.7 -0.7**
baz=318
MLR Muntele Rosu 77.09 321⇑*i*P **P 22 42 19.6 +1.0**
MLR Muntele Rosu 77.09 321⇑P **P 22 42 19.6 +1.0**
MLR Muntele Rosu 77.09 321 *e*P **P 22 42 18.8 +0.2**
comp=Z,25nm,1.1s
ISR Istrita 77.10 321⇑*i*P **P 22 42 20.2 +1.6**
ISR Istrita 77.10 321⇑P **P 22 42 20.2 +1.6**
AMRR Amara 77.12 320⇓*i*P **P 22 42 20.4 +1.9**
AMRR Amara 77.12 320⇓P **P 22 42 20.4 +1.9**
KECS Kecovo 77.13 326 *e*P **P 22 42 19.0 +0.4**
KECS *e* 22 42 31.2
KECS pmax pmax
comp=Z,7.0nm,0.9s
KECS Kecovo 77.13 326 *e*P **P 22 42 19.0 +0.4**
KECS *e* 22 42 31.2
TUC Tucson 77.17 58 P **P 22 42 19.4 +0.2**
baz=313
TUC Tucson 77.17 58 *e*P **P 22 42 19.8 +0.6**
TUC pmax pmax
comp=Z,7.0nm,1.0s
TUC Tucson 77.17 58 *e*P **P 22 42 19.8 +0.6**
comp=Z,6.8nm,1.0s
G36A St. Michael 77.18 39 P **P 22 42 18.1 -0.8**
baz=320
CJR Cluj-Napoca 77.20 324⇑*i*P **P 22 42 20.2 +1.1**
CJR Cluj-Napoca 77.20 324⇑P **P 22 42 20.2 +1.1**
CDAG Cicekdag 77.22 313 *i* P **P 22 42 19.7 +0.3**
UPC Upice 77.22 330⇑*i*P **P 22 42 19.4 +0.3**
UPC *e*pP **pP 22 42 31.5 -0.2**
UPC AMS AMS 23 19 10.0
comp=Z,500nm,16.7s
UPC Upice 77.22 330⇑*i*P **P 22 42 19.4 +0.3**
UPC *e* 22 42 31.5
UPC MLR MLR
comp=Z,500nm,16.7s
DPC Dobruska-Polom 77.24 330⇑*i*P **P 22 42 19.8 +0.6**
DPC *e*pP **pP 22 42 32.1 +0.2**
DPC AMS AMS 23 19 10.0
comp=Z,400nm,19.4s
DPC Dobruska-Polom 77.24 330⇑*i*P **P 22 42 19.8 +0.6**
DPC *e* 22 42 32.1
DPC MLR MLR
comp=Z,400nm,19.4s
MORC Moravsky Berou 77.25 329⇓*i*P **P 22 42 19.4 +0.1**
MORC Moravsky Berou 77.25 329 *e*P **P 22 42 19.8 +0.5**
MORC pmax pmax
comp=Z,82nm,0.9s
MORC Moravsky Berou 77.25 329 *e*P **P 22 42 19.8 +0.5**
comp=Z,82nm,0.9s
KSCO Kaye Shedlock' 77.28 48 P **P 22 42 19.8 +0.1**
baz=316
KRLC Kraliky 77.29 329⇑*i*P **P 22 42 20.0 +0.5**
KRLC *e*pP **pP 22 42 32.1 -0.1**
KRLC Kraliky 77.29 329⇑*i*P **P 22 42 20.0 +0.5**
KRLC *e* 22 42 32.1
PSN Preselentsi 77.41 319 *e*P **P 22 42 21.1 +0.9**
HCB Kahramanmara¯ 77.44 310 *i* P **P 22 42 21.2 +0.7**
DRGR 77.53 324⇑*i*P **P 22 42 21.4 +0.5**
DRGR 77.53 324⇑P **P 22 42 21.4 +0.5**
BRTR Keskin Array B 77.54 313 P **P 22 42 21.4 +0.1**
comp=Z,5.5nm,0.7s,baz=76,slow=3.6,SNR=63
BRTR LR LR 23 22 50.1
comp=Z,216nm,18.2s,baz=50,slow=40
L32A Elgin 77.54 43 P **P 22 42 20.4 -0.6**
baz=318
VOIR 77.54 322⇓*i*P **P 22 42 21.9 +0.8**
VOIR 77.54 322⇓P **P 22 42 21.9 +0.8**
H36A Jessenland, He 77.60 39 P **P 22 42 21.1 -0.1**
baz=320
T25A Trinidad 77.62 51 P **P 22 42 21.6 -0.2**
baz=315,SNR=6.7
T25A Trinidad 77.62 51 *e*P **P 22 42 22.2 +0.4**
comp=Z,17nm,1.0s
SPMN Marine on St. 77.62 38 *e*P **P 22 42 21.1 -0.3**
comp=Z,14nm,0.9s
CLL Collm 77.63 332⇑*i*P **P 22 42 20.9 -0.4**
comp=Z,29nm,0.8s
CLL *i* PcP **PcP 22 42 29.2 -2.2**
CLL *i* pP **pP 22 42 33.0 -0.9**
CLL *es*P **sP 22 42 39.0 +0.2**
CLL *i* 22 42 49.7
CLL *e*(SS) 22 58 06.0
CLL LmV 23 20 00.0
comp=Z,300nm,18.6s
CLL Collm 77.63 332⇑*i*P **P 22 42 20.9 -0.4**
CLL *i* *PP **pP 22 42 33.0 -0.9**
CLL pmax pmax
comp=Z,246nm,0.8s
CLL MLR MLR
comp=Z,300nm,18.6s
CLL Collm 77.63 332 *e*P **P 22 42 20.1 -1.2**
comp=Z,32nm,1.0s
CLL Collm 77.63 332⇑*i*P **P 22 42 20.9 -0.4**
I35A Creekview Farm 77.64 40 P **P 22 42 21.1 -0.5**
baz=319
BRG Berggiesshubel 77.67 331 *e*P **P 22 42 21.3 -0.2**
comp=Z,12nm,0.9s
BRG *i* 22 42 33.6
comp=Z,8.7nm,1.0s
BRG Berggiesshubel 77.67 331 *e*P **P 22 42 21.3 -0.2**
BRG pmax pmax
comp=Z,12nm,0.9s
KAMA Osmaniye 77.68 310 *i* P **P 22 42 22.3 +0.3**
PVCC Panska Ves 77.73 331⇑*i*P **P 22 42 22.3 +0.4**
PVCC *e*pP **pP 22 42 34.2 -0.3**
PVCC AMS AMS 23 19 30.0
comp=Z,500nm,20.3s
PVCC Panska Ves 77.73 331⇑*i*P **P 22 42 22.3 +0.4**
PVCC *e* 22 42 34.2
PVCC MLR MLR
comp=Z,500nm,20.3s
VYHS Vyhne 77.78 327 *e*P **P 22 42 22.9 +0.7**
VYHS pmax pmax
comp=Z,12nm,1.4s
VYHS Vyhne 77.78 327 *e*P **P 22 42 22.9 +0.7**
ARR Arges 77.78 322⇑*i*P **P 22 42 23.8 +1.4**
PSZ Piszkesteto 77.82 326⇑*i*P **P 22 42 23.5 +1.0**
PSZ Piszkesteto 77.82 326⇑*e*SKKPbc **P 22 42 23.1 +0.6**
PSZ Piszkesteto 77.82 326⇑P **P 22 42 23.5 +1.0**
PSZ Piszkesteto 77.82 326 *e*P **P 22 42 23.2 +0.7**
comp=Z,20nm,0.9s
ANTO Ankara 77.89 314 *e*P **P 22 42 23.8 +0.7**
ANTO pmax pmax
comp=Z,28nm,0.8s
ANTO Ankara 77.89 314 *e*P **P 22 42 23.8 +0.7**
comp=Z,28nm,0.8s
BBAL Bala 77.95 313 *i* P **P 22 42 23.1 -0.3**
LAZ Ladron 77.95 54 *e*P **P 22 42 24.8 +1.1**
ANMO Albuquerque 77.97 53 P **P 22 42 24.2 +0.4**
baz=315
ANMO Albuquerque 77.97 53 *e*P **P 22 42 24.2 +0.4**
ANMO pmax pmax
comp=Z,10.0nm,0.9s
ANMO Albuquerque 77.97 53 *e*P **P 22 42 24.2 +0.4**
comp=Z,9.6nm,0.9s
I36A Fitzsimmons Fa 77.98 40 P **P 22 42 22.9 -0.5**
baz=320
K34A Le Mars 77.98 42 P **P 22 42 23.0 -0.5**
baz=319
VRAC Vranov 77.99 329⇑*i*P **P 22 42 24.1 +0.7**
VRAC Vranov 77.99 329⇑P **P 22 42 24.1 +0.7**
H37A Dierke Farm, C 78.06 39 P **P 22 42 23.6 -0.2**
baz=320
DRWC Darouich 78.08 309 *e*P **P 22 42 24.4 +0.2**
LOT Lotru 78.11 323⇑*i*P **P 22 42 25.0 +0.8**
PRD Provadia 78.15 319 *e*P **P 22 42 24.4 +0.1**
DEV Deva 78.15 323⇑*i*P **P 22 42 25.4 +1.1**
DEV Deva 78.15 323⇑P **P 22 42 25.4 +1.1**
GOPC GO Pecny, Ondr 78.16 330⇑*i*P **P 22 42 24.7 +0.4**
GOPC *e*pP **pP 22 42 37.1 +0.1**
GOPC AMS AMS 23 19 30.0
comp=Z,500nm,21.1s
GOPC GO Pecny, Ondr 78.16 330⇑*i*P **P 22 42 24.7 +0.4**
GOPC *e* 22 42 37.1
GOPC MLR MLR
comp=Z,500nm,21.1s
PRU Pruhonice 78.19 330⇑*i*P **P 22 42 24.6 +0.2**
PRU *e*pP **pP 22 42 36.6 -0.5**
PRU AMS AMS 23 19 40.0
comp=Z,400nm,22.1s
PRU Pruhonice 78.19 330⇑*i*P **P 22 42 24.6 +0.2**
PRU *e* 22 42 36.6
PRU MLR MLR
comp=Z,400nm,22.1s
PRU Pruhonice 78.19 330⇑*i*P **P 22 42 24.6 +0.2**
I37A Lemond, Waseca 78.27 39 P **P 22 42 24.8 -0.2**
baz=320,SNR=15
LPM Los Pinos Moun 78.31 54 *e*P **P 22 42 26.6 +0.9**
KKUL Konya-Kulu 78.33 313 *i* P **P 22 42 25.3 -0.2**
KAND Kocaeli-Kandir 78.34 316 *i* P **P 22 42 24.7 -0.7**
J36A Seneca 1, Swea 78.35 40 P **P 22 42 24.9 -0.5**
baz=320
K35A Storm Lake 78.38 41 P **P 22 42 24.2 -1.4**
baz=319
SIRR Siria 78.39 324⇓*i*P **P 22 42 26.5 +0.8**
TREC Trest 78.42 330⇑*e*P **P 22 42 26.2 +0.4**
TREC AMS AMS 23 21 10.0
comp=Z,600nm,14.8s
TREC Trest 78.42 330 *e*P **P 22 42 26.2 +0.4**
TREC MLR MLR
comp=Z,600nm,14.8s
BNM Barren Site 78.43 54 *e*P **P 22 42 26.9 +0.5**
SCHQ Schefferville 78.52 19 P **P 22 42 25.9 -0.3**
comp=Z,14nm,0.9s,baz=340,slow=6.2,SNR=19
SCHQ LR LR 23 19 35.1
comp=Z,196nm,20.4s,baz=22,slow=38
M34A Aspy Farms, Fr 78.63 43 P **P 22 42 26.1 -0.9**
baz=318
ESK Eskdalemuir 78.63 343 *e*P **P 22 42 27.0 +0.2**
ESK pmax pmax
comp=Z,32nm,0.6s
ESK Eskdalemuir 78.63 343 *e*P **P 22 42 27.0 +0.2**
comp=Z,32nm,0.6s
MOX Moxa 78.66 332 P **P 22 42 27.1 0.0**
MOX pmax pmax
comp=Z,15nm,1.3s
L35A Bielow Farm, R 78.69 42 P **P 22 42 25.8 -1.6**
baz=319
NKC Novy Kostel 78.72 332⇑*i*P **P 22 42 27.3 -0.1**
NKC Novy Kostel 78.72 332⇑P **P 22 42 27.3 -0.1**
J37A Redenius Farm, 78.74 40 P **P 22 42 27.0 -0.6**
baz=320
319A Douglas 78.74 58 *e*P **P 22 42 28.9 +0.9**
comp=Z,27nm,0.9s
I38A Scanlan Farm, 78.75 39 P **P 22 42 26.9 -0.7**
baz=321,SNR=5.2
SZH Strazhica 78.80 320 *e*P **P 22 42 27.2 -0.7**
YAYL Yayladag 78.82 309 *i* P **P 22 42 28.2 -0.1**
K36A Gilmore City 78.82 41 P **P 22 42 27.6 -0.5**
baz=320,SNR=6.4
121A Cookes Peak, D 78.86 56 P **P 22 42 29.4 +0.7**
baz=314,SNR=9.7
121A Cookes Peak, D 78.86 56 *e*P **P 22 42 29.5 +0.9**
comp=Z,34nm,1.2s
BZS Buzias 78.92 324⇓*i*P **P 22 42 28.8 +0.2**
BZS Buzias 78.92 324⇓P **P 22 42 28.8 +0.2**
KERG Konya-Eregli 78.94 311 *i* P **P 22 42 29.0 0.0**
SRE Strehaia 78.97 322⇑*i*P **P 22 42 30.0 +1.1**
SRE Strehaia 78.97 322⇑P **P 22 42 30.0 +1.1**
CBKS Cedar Bluff 78.98 47 P **P 22 42 27.8 -1.3**
baz=317
P32A Huiting Farm, 78.99 45 P **P 22 42 27.7 -1.4**
baz=318
ARNB Al Arnab 79.02 309 *e*P **P 22 42 27.1 -2.2**
WRDH Warideh 79.02 309 *e*P **P 22 42 27.4 -1.9**
WTSB Winterswijk 79.06 336 *e*P **P 22 42 28.8 -0.3**
comp=Z,31nm,0.8s
M35A Neola 79.10 42 P **P 22 42 29.1 -0.5**
baz=319
BORA Eskisehir 79.10 315 *i* P **P 22 42 29.8 0.0**
K37A Belmond 79.11 40 P **P 22 42 29.2 -0.5**
baz=320,SNR=9.8
L36A Harm Buss Farm 79.12 41 P **P 22 42 29.2 -0.6**
baz=320
N34A Lincoln 79.17 43 P **P 22 42 28.9 -1.1**
baz=319
O33A Hebron 79.18 45 P **P 22 42 29.2 -0.9**
baz=318
J38A Wedel Dairy, R 79.23 39 P **P 22 42 29.7 -0.6**
baz=321
KHC Kasperske Hory 79.25 331⇑*i*P **P 22 42 30.6 +0.2**
KHC *e*pP **pP 22 42 43.0 0.0**
KHC *ex* x 22 43 00.0
KHC AMS AMS 23 20 30.0
comp=Z,400nm,17.6s
KHC Kasperske Hory 79.25 331⇑*i*P **P 22 42 30.6 +0.2**
KHC *e* 22 42 43.0
KHC MLR MLR
comp=Z,400nm,17.6s
KHC Kasperske Hory 79.25 331 *e*P **P 22 42 30.6 +0.2**
comp=Z,6.9nm,0.7s
KHC Kasperske Hory 79.25 331⇑*i*P **P 22 42 30.6 +0.2**
SOP Sopron 79.33 328⇑*e*Pdiff **P 22 42 31.5 +0.7**

SOP **Sopron** 79.33 328 P P 22 42 32.0 +1.2
SOP pmax pmax
comp=Z,27nm,1.0s
CONA **Conrad Observa** 79.40 329 *i* P P 22 42 32.0 +0.7
comp=Z,10nm,0.8s,SNR=15
GERES **GERESS Array B** 79.44 330 P P 22 42 31.3 -0.2
comp=Z,6.9nm,0.9s,baz=37,slow=5.6,SNR=40
GERES LR LR 23 21 16.8
comp=Z,475nm,19.5s,baz=34,slow=38
Q32A **Meitler Ranch,** 79.48 46 P P 22 42 30.4 -1.4
baz=318
EDRB **Edirne** 79.49 319 P P 22 42 32.2 +0.5
WET **Wettzell** 79.49 331 P P 22 42 31.8 +0.1
WET pmax pmax
comp=Z,29nm,1.2s
MDVR **Moldovita** 79.54 323⇑ *i* P P 22 42 31.9 -0.1
L37A **Phoenix Point,** 79.55 41 P P 22 42 31.3 -0.7
baz=320,SNR=5.2
M36A **Felix, Anita** 79.55 42 P P 22 42 30.6 -1.5
baz=320
O34A **Beatrice** 79.56 44 P P 22 42 30.8 -1.3
baz=319,SNR=5.8
N35A **Tabor** 79.58 43 P P 22 42 31.9 -0.4
baz=319
GRF **Grafenberg Arr** 79.61 332 P P 22 42 32.6 +0.4
GRF pmax pmax
comp=Z,39nm,1.0s
HAWK **Haweek** 79.72 308 *e* P P 22 42 29.7 -3.6
MPEP **Malo Peshtene** 79.75 321 *e* P P 22 42 33.4 +0.3
Q33A **Connelly Farm,** 79.85 45 P P 22 42 33.1 -0.7
baz=318,SNR=10
L38A **Oak Wood Farm,** 79.91 40 P P 22 42 33.6 -0.5
baz=320
P34A **Walnut Farm, R** 79.97 44 P P 22 42 33.0 -1.4
baz=319
MOA **Molln** 80.07 329 *i* P P 22 42 35.0 +0.2
comp=Z,6.8nm,0.8s
ARSA **Arzberg** 80.09 328 *i* P P 22 42 35.2 +0.3
comp=Z,6.2nm,1.0s,SNR=5.1
ERMK **Ermenek** 80.17 311 *i* P P 22 42 35.3 -0.4
GDZ **Gediz** 80.19 315 *i* P P 22 42 35.9 +0.2
S32A **Newby Ranch, P** 80.23 47 P P 22 42 34.3 -1.6
baz=318
KDZ **Kurdzhali** 80.28 319 *e* P P 22 42 37.0 +1.0
R33A **Olander Ranch,** 80.28 46 P P 22 42 35.3 -0.9
baz=318
KESN **Edirne-Kesan** 80.30 318 *i* P P 22 42 36.4 -0.2
ZALF **Zalf** 80.31 306 *e* P P 22 42 32.3 -4.1
DURS **Dursunbey** 80.33 316 *i* P P 22 42 36.6 +0.2
N37A **Lee Faris, Mou** 80.37 42 P P 22 42 36.0 -0.5
baz=320
Q34A **Chapman** 80.37 45 P P 22 42 35.0 -1.6
baz=319
HGN **Heimansgroeve** 80.38 336 *e* P P 22 42 35.9 -0.4
comp=Z,24nm,0.9s
KSU1 **Kansas State U** 80.41 45 *e* P P 22 42 36.0 -0.8
comp=Z,15nm,0.8s
ALN **Alexandroupoli** 80.55 318 P P 22 42 37.6 +0.1
CWF **Charnwood Fore** 80.57 341 *e* P P 22 42 37.7 +0.4
comp=Z,12nm,0.8s
T32A **Huddler Ranch,** 80.62 47 P P 22 42 37.3 -0.7
baz=318,SNR=5.9
DEMI **Demirci** 80.62 316 *i* P P 22 42 42.0 +4.0
ENEZ **Enez** 80.62 318 P P 22 42 38.3 +0.5
P36A **Good Intent, A** 80.73 43 P P 22 42 37.1 -1.4
baz=320
SOKA **Soboth** 80.75 328 *i* P P 22 42 38.6 0.0
comp=Z,18nm,0.8s,SNR=19
PERS **Pernice** 80.75 328 *i* P P 22 42 38.4 -0.1
AMTX **Amarillo** 80.77 51 P P 22 42 39.3 +0.4
baz=317
AMTX **Amarillo** 80.77 51 *e* P P 22 42 39.5 +0.5
comp=Z,60nm,1.8s
N38A **Joes South For** 80.81 41 P P 22 42 38.5 -0.4
baz=320
DIVS **Divibare** 80.83 324 P P 22 42 38.9 -0.1
O37A **Wolven Farm, M** 80.85 42 P P 22 42 38.9 -0.2
baz=320
Q35A **Mercer Eighty,** 80.89 44 P P 22 42 38.2 -1.1
baz=319
MNTX **Cornudas Mount** 80.89 55 P P 22 42 39.5 0.0
baz=316,SNR=15
MNTX **Cornudas Mount** 80.89 55 *e* P P 22 42 39.8 +0.3
comp=Z,18nm,0.9s
KBA **Koelnbreinsper** 81.06 330 *i* P P 22 42 40.5 +0.2
comp=Z,26nm,0.9s,SNR=16
KBA **Koelnbreinsper** 81.06 330 P P 22 42 40.8 +0.5
KBA pmax pmax
comp=Z,35nm,0.8s
OBKA **Obir** 81.08 329 *i* P P 22 42 40.1 -0.3
comp=Z,7.2nm,0.7s
STU **Stuttgart** 81.08 333 *e* P P 22 42 40.1 -0.1
STU pmax pmax
comp=Z,18nm,0.8s
STU **Stuttgart** 81.08 333 *e* P P 22 42 40.1 -0.1
comp=Z,18nm,0.8s
N39A **Derby Farms, D** 81.10 41 P P 22 42 39.6 -0.8
baz=321,SNR=5.1
MANT **Manisa** 81.12 315 *i* P P 22 42 40.8 -0.1
MMB **Musomiste** 81.13 320 *e* P P 22 42 40.5 -0.1
CSS **Mathiatis** 81.16 310 P P 22 42 40.3 -0.6
CSS **Mathiatis** 81.16 310 *e* P P 22 42 41.0 +0.1
comp=Z,3.7nm,0.7s
U32A **Winter Ranch,** 81.17 48 P P 22 42 41.0 +0.1
baz=318
P37A **Lathrop** 81.19 43 P P 22 42 40.2 -0.7
baz=320,SNR=5.9
R35A **Emporia Munici** 81.21 45 P P 22 42 40.6 -0.4
baz=319
KKB **Krupnik** 81.21 321 *e* P P 22 42 41.1 +0.1
O38A **Galt** 81.21 42 P P 22 42 39.8 -1.3
baz=320
NVR **Nevrokopi** 81.25 320 P P 22 42 41.5 +0.2
KORT **Korkueli** 81.29 313 *i* P P 22 42 41.5 -0.2
MYKA **Terra Mystica** 81.32 329 *i* P P 22 42 40.9 -0.6
comp=Z,11nm,1.1s
LANF **Langenberg** 81.36 334⇑ *e* P P 22 42 41.5 -0.2
BLY **Banja Luka** 81.48 326⇑ *i* P P 22 42 42.7 +0.3
BAIF **Baives** 81.52 336 *e* P P 22 42 41.8 -0.6
BAIF pmax pmax
comp=Z,22nm,1.5s
WTTA **Wattenberg** 81.52 331 *i* P P 22 42 43.0 +0.2
comp=Z,10nm,0.6s
GOLH **Golhisar** 81.53 314 *i* P P 22 42 42.6 -0.3
VISS **Visnje** 81.55 328 *i* P P 22 42 42.1 -0.6
SRS **Serrai** 81.56 320 P P 22 42 42.7 -0.2
R36A **Gordon, Harris** 81.56 44 P P 22 42 42.4 -0.5
baz=320,SNR=18
O39A **Kirksville** 81.57 41 P P 22 42 42.3 -0.6
baz=321
P38A **Dawn** 81.57 42 P P 22 42 42.5 -0.4
baz=320,SNR=8.1
U33A **Lingo Farm, Me** 81.61 47 P P 22 42 42.0 -1.2
baz=318
S35A **Otter Creek Ra** 81.63 45 P P 22 42 43.1 -0.2
baz=319,SNR=7.6
V32A **Arapaho** 81.63 48 P P 22 42 44.0 +0.7
baz=318
BOJS **Bojanci** 81.64 328 *e* P P 22 42 42.8 -0.4
RETA **Reutte** 81.64 331 *i* P P 22 42 43.4 +0.1
comp=Z,12nm,0.9s,SNR=8.5
MOTA **Moosalm** 81.65 331 *i* P P 22 42 43.3 -0.1
comp=Z,19nm,0.8s,SNR=18
T34A **McClaskey Farm** 81.66 46 P P 22 42 43.0 -0.5
baz=319,SNR=6.1
Q37A **Longview Farm,** 81.68 43 P P 22 42 42.7 -0.8
baz=320
PRK **Paraskevi** 81.70 317 P P 22 42 43.6 0.0
PLE **Pljevlja** 81.71 324⇑ *i* P P 22 42 43.6 -0.1
LIA **Limnos Island** 81.74 318 P P 22 42 43.5 -0.3
BFO **Black Forest** 81.75 333 *e* P P 22 42 43.6 -0.2
BFO pmax pmax
comp=Z,9.0nm,0.9s
BFO **Black Forest** 81.75 333 *e* P P 22 42 43.6 -0.2
comp=Z,9.5nm,0.9s
JAVS **Javornik** 81.78 328 *i* P P 22 42 42.9 -1.1
KNT **Kendrikon** 81.85 320 P P 22 42 44.5 +0.1
IVA **Berane** 81.85 323⇑ *i* P P 22 42 44.0 -0.5
VAY **Valandovo** 81.88 321 P P 22 42 44.7 +0.2
VAY **Valandovo** 81.88 321 *i* P P 22 42 44.8 +0.2
SKO **Skopje** 81.88 322 *i* P P 22 42 45.3 +0.8
SOH **Sokhos** 81.90 320 P P 22 42 40.6 -4.1
SOH pmax pmax
comp=Z,6.0nm,0.9s
U34A **Anderson Ranch** 81.92 47 P P 22 42 44.8 -0.1
baz=319,SNR=7.3
U34A **Anderson Ranch** 81.92 47 *e* P P 22 42 44.7 -0.1
comp=Z,38nm,0.9s
R37A **Teagarden Farm** 81.92 44 P P 22 42 44.0 -0.8
baz=320,SNR=5.2
W32A **Sentinel** 81.96 49 P P 22 42 45.1 0.0
baz=318,SNR=6.2
V33A **Lossen Ranch,** 81.97 48 P P 22 42 44.9 -0.2
baz=318
S36A **Lake Cedric, C** 81.97 45 P P 22 42 44.6 -0.5
baz=320,SNR=16
OUR **Ouranopolis** 81.98 319 P P 22 42 45.0 -0.1
O40A **La Belle** 81.99 41 P P 22 42 44.9 -0.2
baz=321,SNR=7.6
WLS **Welschbruch** 82.00 334 *e* P P 22 42 45.2 +0.1
UPM **Unac-Piva** 82.02 324⇑ *i* P P 22 42 44.2 -1.3
Q38A **Cooks Store, C** 82.03 43 P P 22 42 44.7 -0.7
baz=320,SNR=14
PVY **Plav** 82.05 323⇑ *i* P P 22 42 44.7 -0.9
FETA **Feichten** 82.06 331 *i* P P 22 42 45.5 0.0
comp=Z,8.1nm,0.8s
P39B **Salisbury** 82.06 42 P P 22 42 45.0 -0.5
baz=321
AYDN **Tasoluk** 82.10 315 *i* P P 22 42 46.7 +0.8
T35A **Sooner Cattle** 82.10 46 P P 22 42 45.5 -0.3
baz=319,SNR=9.0
DAVA **Damuels** 82.13 332 *i* P P 22 42 45.8 -0.1
comp=Z,12nm,0.7s,SNR=5.8
PLG **Polygyros** 82.21 320 P P 22 42 46.1 -0.2
ECH **Echery** 82.23 334⇑ *e* P P 22 42 46.0 -0.3
GRG **Griva** 82.24 321 P P 22 42 46.3 -0.2
GRG pmax pmax
comp=Z,14nm,1.4s
UDBI **Udbina** 82.24 327 P P 22 42 45.7 -0.8
AKAS **Kas** 82.26 313 *i* P P 22 42 46.1 -0.7
Q39A **Willow Grove F** 82.29 42 P P 22 42 46.3 -0.4
baz=321,SNR=8.6
NKY **Niksic** 82.29 324⇑ *i* P P 22 42 45.7 -1.1
TURN **Turunc** 82.31 314 *i* P P 22 42 51.4 +4.5
T36A **Boggs Farm, Ca** 82.32 46 P P 22 42 46.9 -0.1
baz=319,SNR=7.1
S37A **Fort Scott** 82.34 44 P P 22 42 46.2 -0.8
baz=320,SNR=9.4
P40A **Paris** 82.37 42 P P 22 42 46.7 -0.4
baz=321,SNR=5.5
V34A **Guthrie** 82.37 47 P P 22 42 47.2 -0.1
baz=319,SNR=5.4
V34A **Guthrie** 82.37 47 *e* P P 22 42 47.5 +0.3
comp=Z,23nm,0.9s
U35A **Pawnee** 82.39 46 P P 22 42 46.9 -0.4
baz=319,SNR=7.0
BRY **Bratogost** 82.42 324⇑ *i* P P 22 42 46.5 -1.0
PAIG **Paliouri** 82.45 319 P P 22 42 47.3 -0.2
X32A **Elmer** 82.45 49 P P 22 42 47.3 -0.4
baz=318,SNR=6.5
R38A **Fenwick Farm,** 82.48 44 P P 22 42 46.3 -1.4
baz=320,SNR=7.0
PDG **Podgorica** 82.49 323⇓ *i* P P 22 42 47.8 +0.1
TTG **Podgorica** 82.49 323⇑ *i* P P 22 42 47.1 -0.6
WMOK **Wichita Mounta** 82.50 49 P P 22 42 47.6 -0.4
baz=318,SNR=9.3
MOF **Molkenrain** 82.56 334⇑ *e* P P 22 42 47.6 -0.5
FUORN **Ofenpass-Fuorn** 82.56 331 *e* P P 22 42 48.5 +0.2
comp=Z,18nm,0.9s
HINF **Hinteralfeld** 82.68 334 *e* P P 22 42 47.9 -0.8
HINF pmax pmax
comp=Z,4.0nm,0.8s
W34A **Bridge Creek,** 82.68 48 P P 22 42 48.8 -0.1
baz=319
W34A **Bridge Creek,** 82.68 48 *e* P P 22 42 49.4 +0.5
comp=Z,29nm,1.1s
BIA **Bitola** 82.69 321 *i* P P 22 42 48.5 -0.3
BUM **Brajici-Budva** 82.75 324⇑ *i* P P 22 42 48.5 -0.7
Q40A **Laux Farm, Aux** 82.77 42 P P 22 42 48.7 -0.5
baz=321
BDRM **Kayabasi** 82.77 315 *i* P P 22 42 49.0 -0.3
T37A **Cheneyville 18** 82.78 45 P P 22 42 48.6 -0.7
baz=320,SNR=8.8
V35A **Meyer Ranch, C** 82.79 47 P P 22 42 49.1 -0.3
baz=319
X33A **Lawton** 82.80 49 P P 22 42 48.3 -1.2
baz=318
HCY **Herceg Novi** 82.81 324⇑ *i* P P 22 42 48.5 -0.9
R39A **Chumby, Stover** 82.82 43 P P 22 42 48.6 -0.9
baz=321,SNR=8.8
FNA **Florina** 82.85 321 P P 22 42 49.2 -0.5
FNA **Florina** 82.85 321 *e* P P 22 42 49.2 -0.5
FNA pmax pmax
comp=Z,24nm,0.8s
OHR **Ohrid** 82.86 322 *i* P P 22 42 49.5 -0.3
ULC **Ulcinj** 82.87 323⇑ *i* P P 22 42 49.1 -0.6
HDIL **Hopedale** 82.87 39 P P 22 42 49.0 -0.7
baz=323
HDIL **Hopedale** 82.87 39 *e* P P 22 42 49.2 -0.5
comp=Z,31nm,0.8s
LIT **Litokhoron** 82.88 320 P P 22 42 49.0 -0.8
U36A **Oologah** 82.91 46 P P 22 42 49.8 -0.2
baz=320
S38A **Stockton** 82.91 44 P P 22 42 49.2 -0.7
baz=320
AOS **Alonnisos** 82.94 319 P P 22 42 49.6 -0.5
TUE **Stuetta** 83.01 332 *e* P P 22 42 50.6 -0.1
comp=Z,14nm,0.9s
TIR **Tirane** 83.09 322⇓ *i* P P 22 42 51.1 +0.2
TIR **Tirane** 83.09 322 *e* P P 22 42 51.0 +0.2
TIR pmax pmax
comp=Z,47nm,0.8s
TIR **Tirane** 83.09 322 *e* P P 22 42 51.0 +0.1
comp=Z,47nm,0.8s
LOMF **Lomont** 83.10 334⇑ *e* P P 22 42 50.7 -0.2
XOR **Xorichti** 83.12 319 P P 22 42 50.3 -0.8
X34A **Smith Ranch, M** 83.12 48 P P 22 42 51.2 0.0
baz=319,SNR=6.2
Y33A **Hilltop Ranch,** 83.13 49 P P 22 42 50.7 -0.4
baz=318
NEO **Neokhori** 83.15 319 P P 22 42 50.5 -0.7
S39A **Bolivar** 83.16 44 P P 22 42 50.3 -1.0
baz=321,SNR=12
T38A **Diamond** 83.17 45 P P 22 42 50.8 -0.5
baz=320,SNR=27
FYTO **Fytoko, Volos** 83.21 319 P P 22 42 51.0 -0.5
U37A **Salina** 83.22 45 P P 22 42 51.2 -0.4
baz=320,SNR=11
R40A **Maddies Statio** 83.22 42 P P 22 42 50.8 -0.8
baz=321
W35A **Tecumseh** 83.23 47 P P 22 42 51.6 -0.1
baz=319
TUL1 **Leonard** 83.24 46 P P 22 42 51.4 -0.3
baz=320,SNR=8.0
TUL1 **Leonard** 83.24 46 *e* P P 22 42 51.5 -0.2
comp=Z,23nm,0.8s
V36A **Jenks** 83.25 46 P P 22 42 51.5 -0.3
baz=320,SNR=9.0
NEST **Nestorio** 83.30 321 P P 22 42 51.8 -0.3
DYA **Yadsworthy** 83.33 341 *e* P P 22 42 52.2 +0.3
comp=Z,49nm,1.0s
PMOR **Pomariorio Ree** 83.42 117 *e* T T 00 15 04.4
comp=Z,114nm,0.2s
PENT **Pentalofos** 83.43 321 P P 22 42 52.2 -0.6
SMIA **Simia** 83.49 319 P P 22 42 52.4 -0.6
THL **Klokotos Trika** 83.52 320 P P 22 42 51.3 -1.8
U38A **Gravette** 83.57 45 P P 22 42 52.7 -0.7
baz=320,SNR=11
ABTX **Abilene, Hawle** 83.58 51 P P 22 42 53.3 -0.2
baz=318,SNR=5.7
ABTX **Abilene, Hawle** 83.58 51 *e* P P 22 42 53.8 +0.2
comp=Z,39nm,1.6s
Q42A **Golden Eagle** 83.58 41 P P 22 42 53.1 -0.3
baz=322
W36A **Wetumka** 83.59 47 P P 22 42 53.3 -0.2
baz=319,SNR=9.8
V37A **Hulbert** 83.60 46 P P 22 42 53.2 -0.4
baz=320,SNR=17
TXAR **Lajitas Array** 83.61 56 P P 22 42 54.2 +0.4
comp=Z,8.7nm,0.8s,baz=294,slow=3.7,SNR=66
S40A **Lebanon** 83.64 43 P P 22 42 52.8 -0.9
baz=321,SNR=9.5
T39A **Clever** 83.64 44 P P 22 42 53.0 -0.7
baz=321,SNR=5.9
Y34A **Reagan Ranch,** 83.65 49 P P 22 42 53.6 -0.2
baz=319
X35A **Drake** 83.74 48 P P 22 42 54.1 -0.3
baz=319,SNR=11
LKR **Lokris** 83.77 319 P P 22 42 53.3 -1.1
AGG **Agios Georgios** 83.80 319 P P 22 42 53.0 -1.6
AGG **Agios Georgios** 83.80 319 *e* P P 22 42 53.5 -1.1
AGG pmax pmax
comp=Z,39nm,0.9s
AGG **Agios Georgios** 83.80 319 *e* P P 22 42 53.5 -1.1
comp=Z,39nm,0.9s
SENIN **Lac Senin/Sane** 83.81 333 *e* P P 22 42 54.5 -0.2
comp=Z,10nm,0.8s
HHAR **Hobbs** 83.92 45 *e* P P 22 42 54.8 -0.5
comp=Z,18nm,0.9s
X36A **Centrahoma** 83.95 47 P P 22 42 55.3 -0.1
baz=319,SNR=9.9
T40A **Mansfield** 83.98 43 P P 22 42 54.7 -0.8
baz=321,SNR=6.4
CABF **La Chapelle** 83.99 334 *e* P P 22 42 54.5 -1.0
CABF pmax pmax
comp=Z,5.0nm,0.7s
Z34A **Collier Ranch,** 84.00 49 P P 22 42 55.3 -0.4
baz=319,SNR=5.0
133A **Hamilton Ranch** 84.00 50 P P 22 42 55.4 -0.3
baz=318
V38A **Canehill** 84.00 45 P P 22 42 55.2 -0.5
baz=320,SNR=19
FLN **La Foliniere** 84.01 339 *e* P P 22 42 55.7 +0.3
FLN pmax pmax
comp=Z,17nm,0.8s
W37B **Quinton** 84.02 46 P P 22 42 55.7 0.0
baz=320,SNR=9.3
SFIN **Lafayette** 84.02 38 P P 22 42 55.1 -0.5
baz=324
TRQ **Mont Tremblant** 84.04 27 *e* P P 22 42 55.1 -0.6
Y35A **Marietta** 84.08 48 P P 22 42 55.7 -0.3
baz=319
EVR **Evrytania** 84.13 320 P P 22 42 55.3 -1.1
DSF **Desfina** 84.19 319 P P 22 42 54.8 -1.8
PPT **Papeete** 84.24 120 LR LR 23 18 17.1
comp=Z,162nm,18.2s,baz=2.0,slow=34
PPT2 **Papeete2** 84.26 120 *e* LR LR 23 09 15.5
comp=Z,292nm,21.8s
PPT2 **Papeete2** 84.26 120 *e* T T 00 16 08.1
comp=Z,5.3nm,0.3s
LTK **Loutraki** 84.28 318 P P 22 42 54.9 -2.1
DSL **Palaion Diasel** 84.30 320 P P 22 42 56.6 -0.5
PAE **Paea** 84.31 120 *e* T T 00 16 10.8
comp=Z,0.9nm,0.3s
SGD **Sagiada** 84.31 321 P P 22 42 56.6 -0.5
ANX **Ano Chora** 84.34 319 P P 22 42 56.4 -1.0
TIAR **Tiarei** 84.38 120 *e* T T 00 16 16.3
comp=Z,2.1nm,0.2s
Z35A **Perchaven, San** 84.39 49 P P 22 42 57.2 -0.4
baz=319
SERG **Sergoula** 84.41 319 P P 22 42 56.3 -1.4
V39A **Pettigrew** 84.42 45 P P 22 42 57.0 -0.8
baz=321,SNR=19
U40A **Yellville** 84.42 44 P P 22 42 57.1 -0.7
baz=321,SNR=20
KEK **Kerkira** 84.43 321 P P 22 42 57.1 -0.6
T41A **Mountain View** 84.44 43 P P 22 42 57.4 -0.5
baz=322
233A **Rising Star** 84.45 51 P P 22 42 57.9 -0.1
baz=318,SNR=6.1
X37A **Clayton** 84.47 47 P P 22 42 57.4 -0.6
baz=320,SNR=5.6
Y36A **Durant** 84.50 48 P P 22 42 58.0 -0.2
baz=320
W38A **Poteau** 84.55 46 P P 22 42 58.1 -0.3
baz=320,SNR=9.1
DID **Didima** 84.56 318 P P 22 42 55.8 -2.6
LAKA **Lakka** 84.59 319 P P 22 42 57.8 -0.8
KLV **Kalavryta, Ach** 84.66 319 P P 22 42 57.6 -1.4
PDO **Prodromos** 84.68 320 P P 22 42 58.4 -0.6
X38A **Whitesboro** 84.69 46 P P 22 42 59.0 -0.2
baz=320,SNR=12
LPL **La Plagne** 84.74 333 *e* P P 22 42 58.8 -0.7
LPL pmax pmax
comp=Z,8.0nm,0.8s
LPG **La Plagne** 84.75 333 *e* P P 22 42 59.0 -0.6
LPG pmax pmax
comp=Z,12nm,0.8s
LKD2 **Lefkada island** 84.78 320 P P 22 42 58.7 -0.8
Y37A **Hugo** 84.79 47 P P 22 42 58.8 -0.8
baz=320
W39A **Magazine** 84.84 45 P P 22 42 59.3 -0.6
baz=321,SNR=6.0
V40A **Witts Springs** 84.87 44 P P 22 42 59.1 -0.9
baz=321,SNR=8.4
OLIL **Olney** 84.88 40 *e* P P 22 43 00.2 +0.2
comp=Z,65nm,1.4s
Z36A **Blue Ridge** 84.89 48 P P 22 43 00.0 -0.1
baz=319,SNR=5.7
234A **Clairette** 84.89 50 P P 22 42 59.9 -0.3
baz=319,SNR=9.2
333A **Richland Sprin** 84.92 51 P P 22 43 00.2 -0.1
baz=318,SNR=16
DRO **Drossia** 84.94 319 P P 22 43 00.0 -0.4
RLS **Riolos of Patr** 84.98 319 P P 22 43 00.4 -0.1
AQU **L'Aquila** 85.00 327 *e* P P 22 43 01.1 +0.4
AQU pmax pmax
comp=Z,17nm,0.8s
AQU **L'Aquila** 85.00 327 *e* P P 22 43 01.1 +0.4
comp=Z,17nm,0.8s
MATE **Matera** 85.05 324⇑ *i* P P 22 43 00.6 -0.2
JCT **Junction City** 85.07 52 P P 22 43 00.9 -0.2
baz=318,SNR=5.9
JCT **Junction City** 85.07 52 *e* P P 22 43 01.3 +0.1
JCT pmax pmax
comp=Z,16nm,0.9s
JCT **Junction City** 85.07 52 *e* P P 22 43 01.2 +0.1
comp=Z,16nm,0.9s
VLX **Vlachokerasia** 85.08 318 P P 22 42 59.2 -2.0
SIUC **Southern Illin** 85.16 41 *e* P P 22 43 01.3 -0.1
comp=Z,63nm,0.8s
X39A **Fountain Ranch** 85.19 46 P P 22 43 01.3 -0.4
baz=320,SNR=13
W40A **Ferguson Farm,** 85.21 45 P P 22 43 01.4 -0.3
baz=321
V41A **Mountainview** 85.22 44 P P 22 43 01.0 -0.8
baz=321
LAST **Lasithi** 85.25 315⇑ *i* P P 22 43 01.7 -0.3
LAST **Lasithi** 85.25 315 P P 22 43 01.6 -0.4
LAST **Lasithi** 85.25 315 *e* P P 22 43 01.7 -0.4
comp=Z,57nm,0.8s
KFL **Anninata** 85.26 320 P P 22 43 01.6 -0.3
433A **Art** 85.28 52 P P 22 43 01.9 -0.3
baz=318,SNR=8.3
AMT **Artemida-Makis** 85.28 319 P P 22 43 01.0 -1.1
WHTX **Lake Whitney,** 85.28 50 P P 22 43 01.6 -0.6
baz=319
WHTX **Lake Whitney,** 85.28 50 *e* P P 22 43 02.0 -0.2
comp=Z,10nm,0.7s
VLS **Valsamata** 85.30 320 P P 22 43 01.4 -0.7
Y38A **Idabel** 85.31 47 P P 22 43 01.6 -0.6
baz=320
PBMO **Poplar Bluff** 85.31 42 *e* P P 22 43 02.3 +0.1
comp=Z,42nm,1.0s
334A **Lometa** 85.33 51 P P 22 43 02.0 -0.5
baz=319,SNR=16
PLDF **La Plantade** 85.35 335⇑ *e* P P 22 43 02.9 +0.6
Z37A **Pogue Cattle C** 85.39 48 P P 22 43 02.4 -0.2
baz=320,SNR=5.9
AGO **Saint Agoulin** 85.43 335⇑ *e* P P 22 43 02.8 +0.2
MEH **Mehetia** 85.43 119 *e* T T 00 17 34.9
comp=Z,20nm,0.2s
136A **Ennis** 85.44 49 P P 22 43 02.5 -0.4
baz=319
MIAR **Mount Ida** 85.45 46 P P 22 43 02.6 -0.4
baz=321,SNR=15
MIAR **Mount Ida** 85.45 46 *e* P P 22 43 03.0 +0.1
MIAR pmax pmax
comp=Z,27nm,0.8s
MIAR **Mount Ida** 85.45 46 *e* P P 22 43 03.0 +0.1
comp=Z,27nm,0.8s
ITM **Ithomi** 85.45 319 P P 22 43 01.7 -1.2
IDI **Anoyia** 85.46 315 *e* P P 22 43 02.3 -0.8
comp=Z,14nm,0.7s
X201 **Greenbrier Sit** 85.50 44 *e* P P 22 43 02.9 -0.3
comp=Z,31nm,1.1s
X301 **Greenbrier Sit** 85.52 45 *e* P P 22 43 02.9 -0.3
comp=Z,55nm,1.5s
WHAR **Wooly Hollow** 85.54 44 *e* P P 22 43 03.2 -0.2
comp=Z,41nm,0.8s
ORIF **Oris-en-Rattie** 85.55 333 *e* P P 22 43 02.8 -0.6
ORIF pmax pmax
comp=Z,8.0nm,0.7s
ZKS **Zakynthos** 85.59 320 P P 22 43 02.1 -1.5
V42A **Cord** 85.60 44 P P 22 43 02.7 -0.9
baz=322
Y39A **Lockesburg** 85.64 46 P P 22 43 03.7 -0.2
baz=321,SNR=8.1

W41B	**Gary Mavity, V**	**85.65**	**44**	P	**P**	**22 43 03.3**	**-0.6**
	baz=321,SNR=9.5						
W41A	**Tony Mavity, V**	**85.65**	**44**	P	**P**	**22 43 03.4**	**-0.5**
	baz=321,SNR=9.8						
Z38A	**Mt. Pleasant**	**85.69**	**47**	P	**P**	**22 43 03.7**	**-0.4**
	baz=320						
434A	**Burnet**	**85.70**	**51**	P	**P**	**22 43 03.8**	**-0.5**
	baz=319,SNR=7.0						
SIVA	**Sivas**	**85.71**	**315⇑**	*iP*	**P**	**22 43 04.7**	**+0.5**
PYM	**Petit Puy Mans**	**85.73**	**335⇑**	*eP*	**P**	**22 43 04.5**	**+0.2**
PARMO	**Parma**	**85.74**	**42**	*eP*	**P**	**22 43 05.1**	**+0.8**
PYL	**PYLOS**	**85.77**	**318**	P	**P**	**22 43 02.7**	**-1.8**
236A	**Katherine and**	**85.79**	**49**	P	**P**	**22 43 03.6**	**-1.0**
	baz=319						
533A	**Kerrville**	**85.82**	**52**	P	**P**	**22 43 04.7**	**-0.2**
	baz=318						
335A	**Moody**	**85.83**	**50**	P	**P**	**22 43 04.4**	**-0.5**
	baz=319						
MMNY	**Mt. Morris Dam**	**85.87**	**31**	*eP*	**P**	**22 43 04.4**	**-0.5**
X40A	**Basin Creek Fa**	**85.88**	**45**	P	**P**	**22 43 05.2**	**+0.1**
	baz=321,SNR=8.8						
ALLY	**Alegheny Colle**	**85.93**	**33**	*eP*	**P**	**22 43 05.2**	**0.0**
	comp=Z,21nm,1.0s						
ACSO	**Alum Creek Sta**	**85.95**	**36**	*eP*	**P**	**22 43 05.7**	**+0.4**
	comp=Z,29nm,1.1s						
LUCF	**Luceram**	**85.95**	**332⇑**	*eP*	**P**	**22 43 04.4**	**-1.0**
CUC	**Castrocucco**	**85.97**	**324**	*eP*	**P**	**22 43 04.1**	**-1.4**
	comp=Z,5.5nm,1.0s						
Y40A	**Okolona**	**86.02**	**46**	P	**P**	**22 43 05.6**	**-0.1**
	baz=321						
336A	**Riesel**	**86.08**	**50**	P	**P**	**22 43 05.9**	**-0.2**
	baz=319						
REVF	**Revere**	**86.08**	**331⇑**	*eP*	**P**	**22 43 05.3**	**-0.7**
WCI	**Wyandotte Cave**	**86.12**	**39**	*eP*	**P**	**22 43 06.3**	**0.0**
WCI				pmax	pmax		
	comp=Z,22nm,1.0s						
WCI	**Wyandotte Cave**	**86.12**	**39**	*eP*	**P**	**22 43 06.3**	**0.0**
	comp=Z,22nm,1.0s						
LBL	**Lubilhac**	**86.13**	**335**	*eP*	**P**	**22 43 06.2**	**0.0**
534A	**Blanco**	**86.17**	**52**	P	**P**	**22 43 06.5**	**-0.1**
	baz=319,SNR=8.9						
633A	**Saathoff Ranch**	**86.19**	**53**	P	**P**	**22 43 07.1**	**+0.4**
	baz=318						
TIP	**Timpagrande**	**86.23**	**323⇓**	*iP*	**P**	**22 43 06.8**	**0.0**
TIP	**Timpagrande**	**86.23**	**323**	P	**P**	**22 43 06.2**	**-0.6**
TIP	**Timpagrande**	**86.23**	**323**	*eP*	**P**	**22 43 05.8**	**-1.0**
	comp=Z,22nm,1.1s						
CALN	**Calern**	**86.24**	**332⇑**	*eP*	**P**	**22 43 06.2**	**-0.7**
WLAR	**White Oak Lake**	**86.36**	**46**	*eP*	**P**	**22 43 07.9**	**+0.5**
	comp=Z,38nm,0.9s						
UTMT	**University of**	**86.42**	**42**	*eP*	**P**	**22 43 08.5**	**+0.8**
	comp=Z,97nm,1.0s						
N54A	**Moraine State**	**86.57**	**33**	P	**P**	**22 43 08.1**	**-0.3**
	baz=328,SNR=5.5						
CAF	**Calviac**	**86.77**	**335**	*eP*	**P**	**22 43 09.3**	**0.0**
CAF				pmax	pmax		
	comp=Z,26nm,0.8s						
LEPF	**PUYLOUBIER**	**86.85**	**332⇑**	*eP*	**P**	**22 43 09.5**	**-0.2**
NATX	**Nacogdoches**	**87.01**	**48**	*eP*	**P**	**22 43 11.2**	**+0.6**
	comp=Z,78nm,1.4s						
WVT	**Waverly**	**87.09**	**41**	*eP*	**P**	**22 43 10.7**	**-0.3**
WVT				pmax	pmax		
	comp=Z,21nm,0.8s						
WVT	**Waverly**	**87.09**	**41**	*eP*	**P**	**22 43 10.7**	**-0.3**
	comp=Z,21nm,0.8s						
Z42A	**Norrel Spur, H**	**87.29**	**45**	P	**P**	**22 43 11.9**	**-0.1**
	baz=322,SNR=6.8						
LMN	**Caledonia Moun**	**87.30**	**21**	*eP*	**P**	**22 43 11.8**	**0.0**
	comp=Z,12nm,0.8s						
141A	**Papa Simpson,**	**87.30**	**46**	P	**P**	**22 43 12.6**	**+0.5**
	baz=321						
636A	**Smothers Creek**	**87.39**	**51**	P	**P**	**22 43 13.0**	**+0.4**
	baz=319						
OXF	**Oxford**	**87.61**	**43**	*eP*	**P**	**22 43 13.5**	**0.0**
OXF				pmax	pmax		
	comp=Z,66nm,1.0s						
OXF	**Oxford**	**87.61**	**43**	*eP*	**P**	**22 43 13.5**	**0.0**
	comp=Z,66nm,1.0s						
Y44A	**Strider, Charl**	**87.64**	**44**	P	**P**	**22 43 13.8**	**+0.1**
	baz=323						
SSPA	**Standing Stone**	**87.68**	**32**	*eP*	**P**	**22 43 13.8**	**+0.1**
	comp=Z,23nm,1.1s						
O56A	**Blue Knob Stat**	**87.73**	**33**	P	**P**	**22 43 13.7**	**-0.3**
	baz=329,SNR=8.3						
Y45A	**Yeager Farm, C**	**88.06**	**43**	P	**P**	**22 43 15.4**	**-0.2**
	baz=323						
N59A	**State Game Lan**	**88.24**	**30**	P	**P**	**22 43 15.7**	**-0.7**
	baz=331,SNR=7.1						
Z45A	**Winona**	**88.37**	**44**	P	**P**	**22 43 17.5**	**+0.4**
	baz=323						
Y46A	**Houston**	**88.39**	**43**	P	**P**	**22 43 17.4**	**+0.2**
	baz=323,SNR=12						
TBI	**Tubuai**	**88.62**	**124**	*eT*	T	00 21 34.5	
	comp=Z,11nm,0.3s						
LUPA	**Lehigh Univers**	**88.67**	**30**	*eP*	**P**	**22 43 18.4**	**0.0**
	comp=Z,7.7nm,0.5s						
SWET	**Sewanee**	**88.74**	**40**	*eP*	**P**	**22 43 18.6**	**-0.3**
	comp=Z,12nm,0.9s						
Y47A	**UCPARC, Winfie**	**88.87**	**42**	P	**P**	**22 43 19.0**	**-0.5**
	baz=324,SNR=6.1						
244A	**Avery, Jackson**	**88.91**	**45**	P	**P**	**22 43 20.0**	**+0.3**
	baz=322,SNR=5.9						
CPCT	**Cooper Cave**	**89.21**	**39**	*eP*	**P**	**22 43 21.1**	**0.0**
	comp=Z,14nm,0.9s						
146A	**Union**	**89.28**	**44**	P	**P**	**22 43 22.3**	**+0.9**
	baz=323,SNR=5.6						
Z47A	**Carrollton**	**89.33**	**43**	P	**P**	**22 43 21.4**	**-0.3**
	baz=324						
245A	**Little AP, Sta**	**89.33**	**45**	P	**P**	**22 43 21.9**	**+0.2**
	baz=323						
BLA	**Blacksburg**	**89.57**	**35**	*eP*	**P**	**22 43 22.8**	**0.0**
BLA				pmax	pmax		
	comp=Z,27nm,0.9s						
BLA	**Blacksburg**	**89.57**	**35**	*eP*	**P**	**22 43 22.8**	**0.0**
	comp=Z,27nm,0.9s						
147A	**Livingston**	**89.65**	**43**	P	**P**	**22 43 22.9**	**-0.2**
	baz=324,SNR=5.2						
KMSC	**Kings Mountain**	**90.91**	**37**	P	**P**	**22 43 28.5**	**-0.5**
	baz=328						
KMSC	**Kings Mountain**	**90.91**	**37**	*eP*	**P**	**22 43 29.4**	**+0.4**
	comp=Z,36nm,1.4s						
KEST	**Kesra**	**92.29**	**326**	P	**P**	**22 43 35.1**	**-0.3**
	comp=Z,5.5nm,0.8s,baz=270,slow=2.3,SNR=8.7						
KEST				LR	LR	23 30 07.0	
	comp=Z,369nm,18.1s,baz=336,slow=39						
ESDC	**Sonseca Array**	**93.36**	**337**	P	**P**	**22 43 39.6**	**-0.7**
	comp=Z,3.8nm,0.7s,baz=20,slow=4.2,SNR=25						
ESDC				LR	LR	23 30 18.2	
	comp=Z,104nm,20.9s,baz=185,slow=38						
TORD	**Torodi Ar. Bea**	**115.34**	**321**	**PKP**	**PKPdf**	**22 49 05.8**	**-1.3**
	comp=Z,0.9nm,0.6s,baz=16,slow=2.0,SNR=12						
TORD				PP	PP	22 49 58.9	-8.5
	comp=Z,3.7nm,0.9s,baz=25,slow=7.7,SNR=9.5						
DBIC	**Dimbokro**	**123.98**	**325**	PKP	**PKPdf**	**22 49 22.6**	**-1.2**
	comp=Z,3.6nm,0.6s,baz=321,slow=1.6,SNR=4.9						
DBIC				**PP**	**PP**	**22 51 02.7**	**-4.1**
	comp=Z,8.7nm,1.0s,baz=353,slow=8.7,SNR=4.2						
LPAZ	**La Paz**	**140.44**	**58**	PKP	**PKPdf**	**22 49 56.4**	**+1.1**
	comp=Z,1.1nm,0.8s,baz=57,slow=3.7,SNR=4.0						
LVC	**Limon Verde**	**144.50**	**66**	*e*PKPdf	**PKPdf**	**22 50 01.7**	**-0.4**
LCO	**Las Campanas**	**147.30**	**77**	*e*PKPdf	**PKPbc**	**22 50 09.1**	**+0.1**
SNAA	**Sanae**	**147.57**	**198**	PKP	**PKPbc**	**22 50 07.6**	**-0.5**
SNAA	**Sanae**	**147.57**	**198**	*e*PKP2	**PKPbc**	**22 50 07.6**	**-0.5**
SNAA	**Sanae**	**147.57**	**198**	*e*PKPdf	**PKPbc**	**22 50 07.6**	**-0.5**
VNA2	**Neumayer--Watz**	**149.11**	**197**	PKP	**PKPbc**	**22 50 12.2**	**+0.1**
	baz=107,slow=1.5						
VNA3	**Neumayer Olymp**	**149.31**	**195**	PKP	**PKPbc**	**22 50 11.2**	**-1.4**
VNA1	**Neumayer--Stat**	**149.50**	**196**	PKP	**PKPbc**	**22 50 14.9**	**+1.9**
PLCA	**Paso Flores**	**152.67**	**98**	PKPbc	**PKPbc**	**22 50 19.8**	**-1.6**
	comp=Z,1.4nm,0.6s,baz=291,slow=3.6,SNR=4.5						

ROM 14 22:41:21.6±0.1, 42°.51N×13°.21E, h11km, Md1.3/5, Ml0.5/3, Error ellipse: s-maj=1.3km s-min=0.8km az=172.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RM33	**Pellescritta (**	**0.01**	**54**	Pg	Pg	22 41 23.8	+0.2
RM33				Sg	Sg	22 41 25.1	+0.1
	16nm,0.1s						
RM29	**Verrico (Monte**	**0.06**	**356**	Pg	Pg	22 41 24.2	+0.3
RM29				Sg	Sg	22 41 25.9	+0.3
	23nm,0.2s						
RM32	**Poggio Cancell**	**0.09**	**44**	Pg	Pg	22 41 24.6	+0.3
RM32				Sg	Sg	22 41 26.7	+0.4
	10.0nm,0.2s						
LNSS	**Leonessa**	**0.16**	**309**	Pg	Pg	22 41 25.6	+0.4
LNSS				Sg	Sg	22 41 28.7	+0.9
	7.0nm,0.2s						
SMA1	**SAN MARTINO**	**0.16**	**37**	Pg	Pg	22 41 25.7	+0.5
SMA1				Sg	Sg	22 41 28.5	+0.7
	13nm,0.4s						

*ROM **14** 22:42:08.4±0.4, 42°.53N×13°.22E, h10km±2km, Md1.2/5, Ml0.5/2, Error ellipse: s-maj=3.2km s-min=1.9km az=167.0*

CSEM 14 22:42:08.4, 42°.53N×13°.22E, h10km, MD1.2/5, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RM33	**Pellescritta (**	**0.02**	**181**	Pg	Pg	22 42 10.4	0.0
RM33				Sg	Sg	22 42 11.7	0.0
	16nm,0.1s						
RM33	**Pellescritta (**	**0.02**	**181**	Pg	Pg	22 42 10.4	0.0
RM33				Sg	Sg	22 42 11.7	0.0
	16nm,0.1s						
RM29	**Verrico (Monte**	**0.04**	**345**	Pg	Pg	22 42 10.8	+0.3
RM29				Sg	Sg	22 42 12.6	+0.6
	23nm,0.2s						
RM29	**Verrico (Monte**	**0.04**	**345**	Pg	Pg	22 42 10.8	+0.3
RM29				Sg	Sg	22 42 12.6	+0.6
	23nm,0.2s						
RM32	**Poggio Cancell**	**0.07**	**52**	Pg	Pg	22 42 11.2	+0.3
RM32				Sg	Sg	22 42 13.2	+0.6
	10.0nm,0.2s						
RM32	**Poggio Cancell**	**0.07**	**52**	Pg	Pg	22 42 11.2	+0.3
RM32				Sg	Sg	22 42 13.2	+0.6
	10.0nm,0.2s						
SMA1	**SAN MARTINO**	**0.14**	**40**	Pg	Pg	22 42 12.2	+0.5
SMA1				Sg	Sg	22 42 14.1	+0.1
	13nm,0.4s						
SMA1	**SAN MARTINO**	**0.14**	**40**	Pg	Pg	22 42 12.2	+0.5
SMA1				Sg	Sg	22 42 14.1	+0.1
	13nm,0.4s						
LNSS	**Leonessa**	**0.15**	**301**	Pg	Pg	22 42 12.2	+0.3
LNSS				Sg	Sg	22 42 15.1	+0.8
	7.0nm,0.2s						
LNSS	**Leonessa**	**0.15**	**301**	Pg	Pg	22 42 12.2	+0.3
LNSS				Sg	Sg	22 42 15.1	+0.8
	7.0nm,0.2s						

*IDC **14** 22:45:17.8±1.6, 19°.73N×70°.10W, h0km, mb3.7/7, mb1 3.9/8, mb1mx3.6/33, mbtmp3.7/8, ML3.6/1, Error ellipse: s-maj=43.8km s-min=26.7km az=61.0*
*ISCJB **14** 22:45:19.8±1.2, 19°.7N±0°.2×70°.0W±0°.1, h24km, mb3.7/7, Error ellipse: s-maj=29.8km s-min=11.6km az=37.3*

ISC 14 22:45:21.6±1.3, 19.7N±0°.2×70.0W±0°.2, h24km, n8, σ1°39/9, mb3.7/7, Dominican Republic region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SJG	**San Juan**	**3.98**	**113**	Pn	**Pn**	**22 46 20.3**	**-0.9**
	4.0nm,0.3s,baz=319,slow=15,SNR=7.7						
SJG				Sn	**Sn**	**22 47 06.8**	**-0.3**
	53nm,0.3s,baz=312,slow=19,SNR=14						
CPUP	**Villa Florida**	**47.40**	**164**	P	**P**	**22 53 54.6**	**+0.6**
	0.8nm,0.6s,baz=14,slow=4.1,SNR=3.4						
YKA	**Yellowknife Ar**	**52.52**	**336**	P	**P**	**22 54 30.8**	**-1.8**
	0.4nm,0.7s,baz=112,slow=7.3,SNR=5.3						
ESDC	**Sonseca Array**	**59.44**	**55**	P	**P**	**22 55 23.4**	**+0.8**
	0.3nm,0.6s,baz=270,slow=5.7,SNR=3.5						
TORD	**Torodi Ar. Bea**	**68.66**	**83**	P	**P**	**22 56 23.7**	**+0.2**
	0.5nm,0.8s,baz=300,slow=5.9,SNR=2.5						
GERES	**GERESS Array B**	**71.34**	**44**	P	**P**	**22 56 38.7**	**-0.8**
	0.2nm,0.5s,baz=283,slow=4.9,SNR=3.4						
ARCES	**ARCESS Array B**	**73.61**	**21**	P	**P**	**22 56 53.3**	**+0.7**
	2.6nm,1.0s,baz=290,slow=3.6,SNR=5.2						
FINES	**FINESS Array B**	**75.75**	**30**	P	**P**	**22 57 07.4**	**+2.3**
	1.4nm,0.8s,baz=260,slow=11,SNR=6.6						

IDC 14 22:47:25.6±3.5, 6°.86S×129°.69E, h142km±34km, mb3.5/5, mb1 3.7/6, mb1mx3.4/31, mbtmp4.1/6, Error ellipse: s-maj=45.8km s-min=16.5km az=70.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SIJI	**Sorong**	**6.15**	**15**	P	Pn	22 48 55.9	+1.6
	0.0nm,0.3s,baz=360,slow=24,SNR=2.1						
SIJI				S	Sn	22 50 02.3	-1.4
	0.0nm,0.3s,baz=90,slow=24,SNR=4.7						
WRA	**Warramunga Arr**	**13.77**	**161**	P	Pn	22 50 31.4	-3.6
	1.0nm,0.3s,baz=345,slow=13,SNR=12						
WRA				S	Sn	22 52 57.2	-10
	1.5nm,0.3s,baz=345,slow=23,SNR=7.3						
ASAR	**Alice Springs**	**17.20**	**167**	P	Pn	22 51 17.4	0.0
	1.2nm,0.3s,baz=347,slow=11,SNR=143						
ASAR				S	S	22 54 21.0	-7.9
	0.3nm,0.3s,baz=352,slow=25,SNR=5.6						
STKA	**Stephens Creek**	**27.26**	**157**	P	P	22 52 56.0	-0.7
	1.8nm,0.7s,baz=345,slow=7.8,SNR=4.0						
CMAR	**Chiang Mai Arr**	**39.41**	**310**	P	P	22 54 41.7	-0.2
	1.5nm,0.6s,baz=139,slow=7.1,SNR=9.3						
SONM	**Songino Array**	**58.21**	**342**	P	P	22 57 06.3	+1.3
	0.2nm,0.5s,baz=140,slow=9.4,SNR=2.5						
MKAR	**Makanchi Array**	**67.94**	**327**	P	P	22 58 09.4	+0.2
	1.8nm,0.4s,baz=117,slow=8.1,SNR=32						
ZALV	**Zalesovo Beam**	**71.32**	**334**	P	P	22 58 28.1	-1.6
	0.6nm,0.4s,baz=150,slow=6.1,SNR=4.1						
TORD	**Torodi Ar. Bea**	**128.48**	**281**	PKP	PKPdf	23 06 15.2	-1.5
	0.3nm,0.7s,baz=96,slow=2.9,SNR=2.6						
LPAZ	**La Paz**	**151.02**	**143**	PKPbc	PKPbc	23 07 04.0	+0.5
	0.3nm,0.4s,baz=72,slow=3.2,SNR=4.1						

JMA 14 22:50:59.9±0.2, 38°.34N×142°.22E, h36km±2km, M3.9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.69**	**280**	P	Pn	22 51 13.3	+0.1
JIO				S	Sn	22 51 22.4	-0.3
OFUJ	**Ofunato**	**0.86**	**330**	P	Pn	22 51 15.4	0.0
JMK	**Ichinoseki**	**0.99**	**308**	P	Pn	22 51 17.8	+0.5
JMM	**Marumori**	**1.22**	**248**	P	Pn	22 51 20.5	+0.1
JFK	**Kawauchi**	**1.44**	**228**	P	Pn	22 51 23.1	-0.4

*ATH **14** 23:17:47.2, 38°.55N×21°.89E, h21km±1km, ML1.5/9, Error ellipse: s-maj=1.9km s-min=0.8km az=150.0*
*CSEM **14** 23:17:47.3±0.1, 38°.54N×21°.88E, h12km, ML1.8, Error ellipse: s-maj=2.5km s-min=2.3km az=56.0*

THE 14 23:17:47.4, 38°.55N×21°.90E, h18km, ML1.8/9, Error ellipse: s-maj=0.4km s-min=0.3km az=37.0, Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ANX	**Ano Chora**	**0.05**	**22**	P	Pg	23 17 50.7	-0.2
ANX				S	Sg	23 17 52.8	-0.4
ANX	**Ano Chora**	**0.05**	**22**	P	Pg	23 17 50.7	-0.2
ANX				S	Sg	23 17 52.8	-0.4
EFP	**Efpalio**	**0.12**	**177**	P	Pg	23 17 51.0	-0.3
EFP				S	Sg	23 17 53.1	-0.8
EFP	**Efpalio**	**0.12**	**177**	P	Pg	23 17 51.0	-0.2
EFP				S	Sg	23 17 53.1	-0.8
SERG	**Sergoula**	**0.18**	**136**	P	Pg	23 17 52.2	+0.1
SERG				S	Sg	23 17 55.7	+0.4
SERG	**Sergoula**	**0.18**	**136**	P	Pg	23 17 52.1	0.0
SERG				S	Sg	23 17 55.7	+0.4
PVO	**Paravola**	**0.30**	**284**	P	Pg	23 17 53.6	-0.3
PVO				S	Sb	23 17 58.9	+0.1
PVO	**Paravola**	**0.30**	**284**	P	Pg	23 17 53.6	-0.3
PVO				S	Sb	23 17 58.9	+0.1
PVO	**Paravola**	**0.30**	**284**	P	Pg	23 17 53.2	-0.7
PVO				S	Sg	23 17 58.2	-0.2
LAKA	**Lakka**	**0.31**	**168**	P	Pg	23 17 54.1	-0.1
LAKA				S	Sb	23 17 59.2	0.0
LAKA	**Lakka**	**0.31**	**168**	P	Pg	23 17 54.0	-0.2
LAKA				S	Sb	23 17 59.2	0.0
LAKA	**Lakka**	**0.31**	**168**	P	Pg	23 17 54.0	-0.2
LAKA				S	Sb	23 17 59.9	+0.7
LAKA				AML	AML	23 18 01.1	
	comp=N,56μm,0.2s						
LAKA				AML	AML	23 18 01.5	
	comp=E,63μm,0.2s						
EVR	**Evrytania**	**0.38**	**349**	P	Pg	23 17 55.1	-0.3
EVR				S	Sb	23 18 01.2	-0.1
EVR	**Evrytania**	**0.38**	**349**	P	Pg	23 17 55.1	-0.3
EVR				S	Sb	23 18 01.2	-0.1
EVR	**Evrytania**	**0.38**	**349**	P	Pg	23 17 55.3	-0.1
EVR				S	Sb	23 18 01.3	+0.1
EVR				AML	AML	23 18 02.0	
	comp=N,210μm,0.2s						
DSF	**Desfina**	**0.51**	**105**	P	Pg	23 17 57.3	-0.4
DSF				S	Sb	23 18 05.5	+0.5
DSF	**Desfina**	**0.51**	**105**	P	Pg	23 17 57.3	-0.4
DSF				S	Sb	23 18 05.5	+0.5
DSF	**Desfina**	**0.51**	**105**	P	Pg	23 17 57.3	-0.4
DSF				S	Sn	23 18 06.7	-1.5
DSF				AML	AML	23 18 07.8	
	comp=N,144μm,0.2s						
DSF				AML	AML	23 18 07.8	
	comp=E,69μm,0.1s						
KLV	**Kalavryta, Ach**	**0.54**	**158**	P	Pg	23 17 57.6	-0.6
KLV				S	Sb	23 18 06.0	+0.3
KLV	**Kalavryta, Ach**	**0.54**	**158**	P	Pg	23 17 57.6	-0.6
KLV				S	Sb	23 18 06.0	+0.3
KLV	**Kalavryta, Ach**	**0.54**	**158**	P	Pg	23 17 57.2	-1.0
KLV				S	Sb	23 18 06.6	+0.9
KLV				AML	AML	23 18 07.1	
	comp=N,114μm,0.5s						
KLV				AML	AML	23 18 07.4	
	comp=E,89μm,0.3s						
PDO	**Prodromos**	**0.56**	**276**	P	Pg	23 17 58.4	-0.2
PDO				S	Sb	23 18 06.7	+0.4
PDO	**Prodromos**	**0.56**	**276**	P	Pg	23 17 58.4	-0.2
PDO				S	Sb	23 18 06.7	+0.4
PDO	**Prodromos**	**0.56**	**276**	P	Pg	23 17 58.6	-0.1
PDO				AML	AML	23 18 07.4	
	comp=E,119μm,0.3s						
PDO				AML	AML	23 18 07.4	
	comp=N,172μm,0.3s						
PDO				S	Sb	23 18 07.5	+1.1
AGG	**Agios Georgios**	**0.58**	**35**	P	Pg	23 17 58.4	-0.7
AGG				S	Sb	23 18 07.5	+0.5
AGG	**Agios Georgios**	**0.58**	**35**	P	Pg	23 17 58.6	-0.5
AGG				S	Sb	23 18 07.4	+0.4
AGG	**Agios Georgios**	**0.58**	**35**	P	Pg	23 17 58.6	-0.5
AGG				S	Sb	23 18 07.4	+0.4
AGG				AML	AML	23 18 08.6	
	comp=N,195μm,0.3s						
AGG				AML	AML	23 18 09.9	
	comp=E,177μm,0.2s						
RLS	**Riolos of Patr**	**0.59**	**215**	P	Pb	23 17 58.8	-0.4
RLS				S	Sn	23 18 09.5	-0.6
RLS	**Riolos of Patr**	**0.59**	**215**	S	Sn	23 18 09.5	-0.6
RLS				AML	AML	23 18 10.7	
	comp=E,109μm,0.4s						
RLS				AML	AML	23 18 10.8	
	comp=N,77μm,0.2s						
DRO	**Drossia**	**0.61**	**194**	P	Pb	23 17 59.2	-0.3
DRO				S	Sb	23 18 07.9	+0.2
DRO	**Drossia**	**0.61**	**194**	P	Pb	23 17 59.0	-0.5
DRO				S	Sb	23 18 07.9	+0.2
DRO	**Drossia**	**0.61**	**194**	P	Pb	23 17 59.0	-0.4
DRO				S	Sn	23 18 09.5	-1.0
DRO				AML	AML	23 18 09.8	
	comp=N,182μm,0.4s						
DRO				AML	AML	23 18 10.2	
	comp=E,314μm,0.3s						
DSL	**Palaion Diasel**	**0.86**	**313**	P	Pb	23 18 03.1	-0.7
DSL	**Palaion Diasel**	**0.86**	**313**	P	Pb	23 18 03.1	-0.7
LKR	**Lokris**	**0.87**	**83**	P	Pb	23 18 03.5	-0.5
LKR				S	Sn	23 18 17.8	+0.8
LKR	**Lokris**	**0.87**	**83**	P	Pb	23 18 03.5	-0.5
LKR				S	Sn	23 18 17.8	+0.8
LKR				AML	AML	23 18 19.7	
	comp=N,39μm,0.2s						
LKR				AML	AML	23 18 19.8	
	comp=E,42μm,0.1s						
LKD2	**Lefkada island**	**1.00**	**284**	P	Pb	23 18 05.5	-0.7
LKD2	**Lefkada island**	**1.00**	**284**	P	Pb	23 18 05.5	-0.7
AMT	**Artemida-Makis**	**1.02**	**188**	P	Pb	23 18 06.2	-0.4
AMT	**Artemida-Makis**	**1.02**	**188**	P	Pb	23 18 06.2	-0.4
AMT	**Artemida-Makis**	**1.02**	**188**	P	Pg	23 18 07.2	-0.1
ZKS	**Zakynthos**	**1.22**	**226**	P	Pn	23 18 08.8	-0.7
ZKS	**Zakynthos**	**1.22**	**226**	P	Pn	23 18 09.1	-0.4
ZKS				S	Sg	23 18 26.9	0.0
ZKS	**Zakynthos**	**1.22**	**226**	P	Pn	23 18 09.1	-0.5
ZKS				S	Sg	23 18 26.9	0.0
KPRO	**Kipourio**	**1.47**	**344**	P	Pb	23 18 14.3	+0.1
KPRO	**Kipourio**	**1.47**	**344**	P	Pb	23 18 14.3	+0.1
DID	**Didima**	**1.48**	**134**	P	Pb	23 18 14.1	-0.3
DID	**Didima**	**1.48**	**134**	P	Pb	23 18 14.1	-0.4

*ISCJB **14** 23:22:37.9±0.7, 44°.8S±0°.1×15°.3W±0°.2, h10km, mb4.2/9, MS4.0/11, Error ellipse: s-maj=20.5km s-min=16.6km az=136.7*
*IDC **14** 23:22:38.0±0.9, 44°.78S×15°.28W, h0km, mb4.0/6, mb1 4.2/6, mb1mx3.8/32, mbtmp4.0/6, MS4.0/11, Ms1 4.0/11, ms1mx3.9/17, Error ellipse: s-maj=30.4km s-min=24.9km az=138.0*
*NEIC **14** 23:22:39.9±0.4, 44°.77S×15°.31W, h10km, mb4.6/3, Error ellipse: s-maj=17.2km s-min=14.5km az=141.0*

ISC 14 23:22:39.7±0.6, 44°.8S±0°.1×15°.3W±0°.1, h10km, n35, σ1°10/24, mb4.3/9, MS4.0/11, 1C, Southern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H10S2	**ASCENSION HYDR**	**35.69**	**1**	T	T	00 07 33.4	
	baz=181,slow=75,SNR=26						
H10S3	**ASCENSION HYDR**	**35.69**	**1**	T	T	00 07 33.8	
	baz=181,slow=75,SNR=30						
H10S1	**ASCENSION HYDR**	**35.70**	**1**	T

COLD	**Coldfoot**	**147.37**	**329**	*e*PKPdf	**PKPdf**	**23 42 20.1**	**+0.2**
COLD				*e*PKPbc	**PKPbc**	**23 42 22.6**	**+0.3**
SML	**Sawmill**	**148.04**	**319**	*e*PKPdf	**PKPdf**	**23 42 22.1**	**+0.9**
SML				*e*PKPab	**PKPab**	**23 42 26.9**	**-0.3**
TRF	**Thorofare Moun**	**148.56**	**322**	*e*PKPdf	**PKPdf**	**23 42 23.4**	**+1.3**
TRF				*e*PKPab	**PKPab**	**23 42 30.4**	**+1.0**
BPAW	**Bear Paw Mtn.**	**148.69**	**324**	*e*PKPbc	**PKPbc**	**23 42 25.6**	**-0.3**
KTH	**Kantishna Hill**	**148.81**	**323**	*e*PKPbc	**PKPbc**	**23 42 26.9**	**+0.6**
JNU	**Nakatsue**	**151.46**	**102**	*e*PKPbc	**PKPbc**	**23 42 34.8**	**+1.2**

DHMR 14 23:26:47.0±1.6, 12°.10N×43°.89E, h10km±11km, ML3.6, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TRBA	**At Turbah**	**1.15**	**11**	*i* P	Pg	23 27 09.0	-0.1
TRBA				*i* S	Sn	23 27 25.0	-0.3
ADEN	**Aden**	**1.26**	**58**	*i* P	Pn	23 27 09.9	-0.8
ADEN				*i* S	Sg	23 27 27.7	+0.1
ADEN				AML	AML	23 27 39.1	
	comp=E,910nm,0.5s						
UDYN	**Al 'Udayn**	**1.86**	**2**	*i* P	Pn	23 27 19.8	+0.7
UDYN				*i* S	Sb	23 27 44.9	+0.2
BDHA	**Al Bayda'**	**2.48**	**41**	*i* P	Pb	23 27 30.8	-1.1
BDHA				*i* S	Sb	23 28 03.8	+1.3
BDHA				AML	AML	23 28 09.9	
	comp=N,334nm,0.7s						
DHBB	**Dhamar BB**	**2.50**	**11**	*i* P	Pb	23 27 30.6	-1.7
DHBB				*i* S	Sb	23 28 04.6	+1.2
HAJJ	**Hajjah**	**3.59**	**355**	*i* P	Pn	23 27 44.7	+1.7
HAJJ				*i* S	Sb	23 28 31.8	-2.8
HAJJ				AML	AML	23 28 42.5	
	comp=N,280nm,0.7s						

SKO ***14*** *23:32:28.9, 41°.99N×20°.74E, h11km, M3.0, ML3.8*
ISCJB ***14*** *23:32:29.4±0.3, 42°.051N±0°.010×20°.83E±0°.01, h4km±2km, mb3.8/4, Error ellipse: s-maj=2.0km s-min=1.5km az=145.5*
ATH ***14*** *23:32:29.8, 42°.04N×20°.89E, h14km±1km, ML3.5/9, Error ellipse: s-maj=1.8km s-min=1.4km az=173.0*
IDC ***14*** *23:32:29.8±0.9, 42°.00N×20°.76E, h0km, mb3.7/5, mb1 3.7/15, mb1mx3.5/52, mbtmp3.6/15, ML3.2/9, Error ellipse: s-maj=13.2km s-min=10.6km az=15.0*
THE ***14*** *23:32:30.4, 42°.07N×20°.89E, h1km±1km, ML3.6/5, Error ellipse: s-maj=1.6km s-min=0.7km az=341.0*
LDG ***14*** *23:32:30.3±0.1, 41°.99N×20°.91E, h2km, Ml3.9/2, Error ellipse: s-maj=3.7km s-min=3.2km az=175.0*
CSEM ***14*** *23:32:30.4±0.1, 42°.03N×20°.78E, h2km, ML3.6, Error ellipse: s-maj=2.1km s-min=1.5km az=50.0*
PDG ***14*** *23:32:30.1±0.5, 42°.02N×20°.86E, h2km, MD3.7/6, ML3.7/11, Error ellipse: s-maj=0.4km s-min=0.4km az=90.0*
TIR ***14*** *23:32:31.6, 42°.13N×20°.79E, h50km, ML3.9*
BEO ***14*** *23:32:31.3±0.2, 42°.04N×20°.89E, h11km±2km, M3.3/1*
PRU ***14*** *23:32:33.1, 42°.00N×20°.59E, h4km*

ISC 14 23:32:30.6±1.0, 42°.01N±0°.01×20°.86E±0°.02, h10km±7km, n420, σ1§54/522, mb3.8/4, 49C-42D, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKO	**Skopje**	**0.43**	**95**	P	**Pg**	**23 32 39.0**	**0.0**
SKO				S	**Sb**	**23 32 46.1**	**-0.8**
SKO	**Skopje**	**0.43**	**95**	⇑*i*Pg	**Pg**	**23 32 39.1**	**0.0**
SKO				*i* Sg	**Sb**	**23 32 45.8**	**-1.1**
SKO				*e*Lg	Lg	23 32 46.1	
	comp=E,419nm,0.5s						
SKO				*e*Lg	Lg	23 32 46.1	
	comp=N,383nm,0.4s						
SKO	**Skopje**	**0.43**	**95**	⇑*i*Pg	**Pg**	**23 32 39.0**	**0.0**
SKO				*e*Sg	**Sb**	**23 32 46.0**	**-0.8**
SKO	**Skopje**	**0.43**	**95**	⇑*i*Pg	**Pg**	**23 32 39.1**	**0.0**
SKO				S	**Sb**	**23 32 46.1**	**-0.8**
PVY	**Plav**	**0.89**	**311**	⇓*i*Pg	**Pg**	**23 32 46.1**	**-1.6**
PVY				*e*Sg	**Sb**	**23 33 00.1**	**0.0**
OHR	**Ohrid**	**0.90**	**183**	*i* Pg	**Pg**	**23 32 46.5**	**-1.4**
OHR				*i* Sg	**Sb**	**23 33 00.6**	**+0.1**
OHR				*e*Lg	Lg	23 33 01.8	
	comp=E,4μm,0.8s						
OHR				*e*Lg	Lg	23 33 02.0	
	comp=N,2μm,0.4s						
OHR	**Ohrid**	**0.90**	**183**	*i* Pg	**Pg**	**23 32 46.5**	**-1.4**
OHR				*i* Sg	**Sb**	**23 33 00.5**	**+0.1**
OHR				*e*Lg	Lg	23 33 01.7	
	comp=N,4μm,0.8s						
TIR	**Tirane**	**1.00**	**229**	*i* PG	**Pg**	**23 32 48.6**	**-1.2**
TIR				*i* SG	**Sn**	**23 33 06.2**	**+1.4**
TIR	**Tirane**	**1.00**	**229**	⇑*i*P	**Pg**	**23 32 49.1**	**-0.7**
TIR	**Tirane**	**1.00**	**229**	*e*Pg	**Pg**	**23 32 49.2**	**-0.6**
TIR				*e*Sg	**Sn**	**23 33 05.1**	**+0.3**
TIR	**Tirane**	**1.00**	**229**	P	**Pg**	**23 32 49.1**	**-0.6**
TIR				*e*Sg	**Sn**	**23 33 05.1**	**+0.3**
TIR	**Tirane**	**1.00**	**229**	P	**Pg**	**23 32 49.1**	**-0.6**
BIA	**Bitola**	**1.05**	**161**	P	**Pg**	**23 32 50.0**	**-0.8**
BIA				S	**Sn**	**23 33 06.4**	**+0.2**
BIA	**Bitola**	**1.05**	**161**	⇑*i*Pg	**Pg**	**23 32 49.9**	**-0.8**
BIA				*i* Sg	**Sb**	**23 33 05.4**	**+0.7**
BIA				*e*Lg	Lg	23 33 06.8	
	comp=E,2μm,0.5s						
BIA				*e*Lg	Lg	23 33 07.2	
	comp=N,2μm,0.3s						
BIA	**Bitola**	**1.05**	**161**	P	**Pg**	**23 32 50.0**	**-0.8**
BIA				*i* Sg	**Sb**	**23 33 05.4**	**+0.7**
BIA				S	**Sn**	**23 33 06.4**	**+0.2**
BIA				*e*Lg	Lg	23 33 06.8	
	comp=N,2μm,0.5s						
BARS	**Barje**	**1.07**	**41**	⇑*i*Pg	**Pg**	**23 32 50.6**	**-0.5**
BARS				*e*Sg	**Sb**	**23 33 05.1**	**-0.2**
BARS	**Barje**	**1.07**	**41**	⇑*i*Pg	**Pg**	**23 32 50.6**	**-0.5**
BARS				*e*Sg	**Sb**	**23 33 05.1**	**-0.2**
BEY	**Berane**	**1.12**	**320**	⇓*i*Pg	**Pg**	**23 32 50.7**	**-1.4**
BEY				*e*Sg	**Sn**	**23 33 08.4**	**+0.5**
IVA	**Berane**	**1.12**	**320**	⇓*i*Pg	**Pg**	**23 32 50.7**	**-1.4**
IVA				*e*Sg	**Sn**	**23 33 08.4**	**+0.5**
ULC	**Ulcinj**	**1.21**	**268**	⇑*i*Pg	**Pb**	**23 32 52.5**	**-1.0**
ULC				*e*Sg	**Sn**	**23 33 11.2**	**+1.2**
ULC	**Ulcinj**	**1.21**	**268**	⇑*i*Pg	**Pb**	**23 32 52.5**	**-1.0**
ULC				*e*Sg	**Sn**	**23 33 11.2**	**+1.2**
SELS	**Selova**	**1.22**	**9**	⇑*i*Pg	**Pb**	**23 32 52.8**	**-1.0**
SELS				*e*Sg	**Sg**	**23 33 09.4**	**-0.5**
DRME	**Dracevica, Mon**	**1.26**	**279**	⇓*i*Pg	**Pn**	**23 32 52.9**	**-1.4**
DRME				*e*Sg	**Sn**	**23 33 13.5**	**+2.2**
DRME	**Dracevica, Mon**	**1.26**	**279**	⇓*i*Pn	**Pn**	**23 32 52.4**	**-1.9**
DRME	**Dracevica, Mon**	**1.26**	**279**	⇓*i*Pg	**Pn**	**23 32 52.9**	**-1.4**
DRME				*e*Sg	**Sn**	**23 33 13.5**	**+2.2**
PDG	**Podgorica**	**1.27**	**290**	⇓*i*P	**Pn**	**23 32 52.8**	**-1.5**
PDG				S	**Sn**	**23 33 12.2**	**+0.9**
PDG	**Podgorica**	**1.27**	**290**	P	**Pn**	**23 32 52.6**	**-1.8**
PDG				S	**Sn**	**23 33 12.0**	**+0.7**
PDG	**Podgorica**	**1.27**	**290**	⇑*i*Pg	**Pn**	**23 32 52.4**	**-1.8**
PDG	**Podgorica**	**1.27**	**290**	P	**Pn**	**23 32 52.6**	**-1.8**
PDG				*e*Sg	**Sn**	**23 33 12.9**	**+1.6**
TTG	**Podgorica**	**1.27**	**290**	⇑*i*Pg	**Pn**	**23 32 52.5**	**-1.8**
TTG				*e*Sg	**Sn**	**23 33 12.9**	**+1.6**
FNA	**Florina**	**1.29**	**162**	*e*PN	**Pn**	**23 32 53.0**	**-1.7**
FNA	**Florina**	**1.29**	**162**	P	**Pn**	**23 32 54.0**	**-0.7**
FNA				S	**Sn**	**23 33 13.8**	**+1.8**
FNA	**Florina**	**1.29**	**162**	*e*Pn	**Pn**	**23 32 53.0**	**-1.7**
FNA	**Florina**	**1.29**	**162**	P	**Pn**	**23 32 54.0**	**-0.7**
FNA				S	**Sn**	**23 33 13.8**	**+1.8**
FNA	**Florina**	**1.29**	**162**	P	**Pn**	**23 32 53.2**	**-1.5**
FNA				S	**Sn**	**23 33 13.1**	**+1.1**
FNA				AML	AML	23 33 15.4	
	comp=E,11861μm,0.6s						
FNA				AML	AML	23 33 16.6	
	comp=N,8224μm,0.5s						
VAY	**Valandovo**	**1.45**	**118**	P	**Pn**	**23 32 57.0**	**+0.1**
VAY				S	**Sg**	**23 33 17.4**	**+0.1**
VAY	**Valandovo**	**1.45**	**118**	*i* Pg	**Pb**	**23 32 57.5**	**-0.2**
VAY				*i* Sg	**Sg**	**23 33 17.5**	**+0.2**
VAY				*e*Lg	Lg	23 33 17.8	
	comp=N,866nm,0.7s						
VAY				*e*Lg	Lg	23 33 18.3	
	comp=E,686nm,0.5s						
VAY	**Valandovo**	**1.45**	**118**	*e*Pg	**Pn**	**23 32 57.4**	**+0.5**
VAY				*e*Sg	**Sg**	**23 33 17.4**	**+0.1**
VAY	**Valandovo**	**1.45**	**118**	P	**Pn**	**23 32 57.0**	**+0.1**
VAY				*i* Pg	**Pb**	**23 32 57.5**	**-0.2**
VAY				S	**Sg**	**23 33 17.4**	**+0.1**
VAY				*e*Lg	Lg	23 33 18.2	
	comp=E,686nm,0.5s						
BUM	**Brajici-Budva**	**1.49**	**282**	⇑*i*Pg	**Pn**	**23 32 56.9**	**-0.6**
BUM				*e*Sg	**Sg**	**23 33 21.0**	**+2.4**
BUM	**Brajici-Budva**	**1.49**	**282**	⇑*i*Pg	**Pn**	**23 32 56.9**	**-0.6**
BUM				*e*Sg	**Sg**	**23 33 21.0**	**+2.4**
CEME	**Cevo**	**1.54**	**291**	⇑*i*Pg	**Pn**	**23 32 57.1**	**-1.0**
CEME				*e*Sg	**Sg**	**23 33 22.4**	**+2.3**
CEME	**Cevo**	**1.54**	**291**	⇑*i*Pg	**Pn**	**23 32 57.1**	**-1.0**
CEME				*e*Sg	**Sg**	**23 33 22.4**	**+2.3**
GRG	**Griva**	**1.56**	**132**	*e*PN	**Pn**	**23 32 58.9**	**+0.4**
GRG	**Griva**	**1.56**	**132**	P	**Pn**	**23 32 59.0**	**+0.5**
GRG	**Griva**	**1.56**	**132**	*e*Pn	**Pn**	**23 32 58.9**	**+0.4**
GRG	**Griva**	**1.56**	**132**	P	**Pn**	**23 32 59.2**	**+0.7**
GRG				S	**Sg**	**23 33 21.7**	**+0.8**
GRG	**Griva**	**1.56**	**132**	P	**Pn**	**23 32 59.1**	**+0.7**
GRG				S	**Sg**	**23 33 21.7**	**+0.8**
GRG				AML	AML	23 33 23.6	
	comp=N,2636μm,0.9s						
GRG				AML	AML	23 33 25.6	
	comp=E,2457μm,0.5s						
NKY	**Niksic**	**1.60**	**301**	⇓*i*Pn	**Pn**	**23 32 58.9**	**-0.1**
NKY				*e*Sn	**Sg**	**23 33 24.6**	**+2.6**
NKY	**Niksic**	**1.60**	**301**	⇓*i*Pn	**Pn**	**23 32 58.9**	**-0.1**
NEST	**Nestorio**	**1.60**	**175**	P	**Pn**	**23 32 59.4**	**+0.4**
NEST				S	**Sg**	**23 33 23.2**	**+1.1**
NEST	**Nestorio**	**1.60**	**175**	P	**Pn**	**23 32 59.4**	**+0.4**
NEST				S	**Sg**	**23 33 23.2**	**+1.1**
NEST	**Nestorio**	**1.60**	**175**	P	**Pn**	**23 32 58.0**	**-1.0**
NEST				S	**Sg**	**23 33 23.3**	**+1.3**
NEST				AML	AML	23 33 26.2	
	comp=E,2976μm,1.0s						
NEST				AML	AML	23 33 26.4	
	comp=N,2330μm,0.5s						
NKME	**Niksic**	**1.60**	**299**	*e*Pn	**Pn**	**23 32 58.6**	**-0.4**
NKME				*e*Sn	**Sg**	**23 33 24.1**	**+2.0**
NKME	**Niksic**	**1.60**	**299**	*e*Pn	**Pn**	**23 32 58.6**	**-0.4**
NKME				*e*Sn	**Sg**	**23 33 24.1**	**+2.0**
IVAS	**Ivanjica**	**1.65**	**342**	*i* Pn	**Pn**	**23 32 59.5**	**-0.2**
IVAS				*e*Sg	**Sg**	**23 33 23.8**	**+0.2**
IVAS	**Ivanjica**	**1.65**	**342**	*i* Pn	**Pn**	**23 32 59.5**	**-0.2**
IVAS				*e*Sg	**Sg**	**23 33 23.8**	**+0.2**
PLE	**Pljevlja**	**1.71**	**321**	⇑*i*Pn	**Pb**	**23 33 02.4**	**+0.3**
PLE				*e*Sn	**Sg**	**23 33 27.2**	**+1.7**
PLE	**Pljevlja**	**1.71**	**321**	⇑*i*Pn	**Pb**	**23 33 02.4**	**+0.3**
BOVS	**Bovan**	**1.74**	**21**	*e*Pn	**Pn**	**23 33 01.4**	**+0.6**
BOVS				*e*Sg	**Sb**	**23 33 25.0**	**+0.6**
BOVS	**Bovan**	**1.74**	**21**	*e*Pn	**Pn**	**23 33 01.4**	**+0.6**
BOVS				*e*Sg	**Sb**	**23 33 25.0**	**+0.6**
KNT	**Kendrikon**	**1.75**	**118**	*e*PN	**Pn**	**23 33 01.5**	**+0.5**
KNT	**Kendrikon**	**1.75**	**118**	P	**Pn**	**23 33 01.7**	**+0.7**
KNT	**Kendrikon**	**1.75**	**118**	*e*Pn	**Pn**	**23 33 01.5**	**+0.5**
KNT	**Kendrikon**	**1.75**	**118**	P	**Pn**	**23 33 02.0**	**+1.0**
KNT	**Kendrikon**	**1.75**	**118**	P	**Pn**	**23 33 01.9**	**+1.0**
HCY	**Herceg Novi**	**1.81**	**285**	*e*Pn	**Pn**	**23 33 02.0**	**+0.2**
HCY				*e*Sn	**Sg**	**23 33 29.6**	**+0.8**
HCY	**Herceg Novi**	**1.81**	**285**	*e*Pn	**Pn**	**23 33 02.0**	**+0.2**
HCY				*e*Sn	**Sg**	**23 33 29.6**	**+0.8**
ZAPS	**Zavoj**	**1.82**	**45**	*e*Pn	**Pb**	**23 33 03.1**	**-0.8**
ZAPS				*e*Sg	**Sg**	**23 33 28.2**	**-0.8**
ZAPS	**Zavoj**	**1.82**	**45**	*e*Pn	**Pb**	**23 33 03.1**	**-0.8**
ZAPS				*e*Sg	**Sg**	**23 33 28.2**	**-0.8**
KZN	**Kozani**	**1.84**	**158**	P	**Pb**	**23 33 03.8**	**-0.5**
KZN				S	**Sg**	**23 33 29.0**	**-0.6**
KZN	**Kozani**	**1.84**	**158**	P	**Pb**	**23 33 03.8**	**-0.5**
KZN				S	**Sg**	**23 33 29.0**	**-0.6**
UPM	**Unac-Piva**	**1.87**	**310**	⇑*i*Pn	**Pb**	**23 33 04.1**	**-0.9**
UPM				*e*Sn	**Sg**	**23 33 31.1**	**+0.3**
UPM	**Unac-Piva**	**1.87**	**310**	⇑*i*Pn	**Pb**	**23 33 04.1**	**-0.9**
GRUS	**Gruza**	**1.88**	**357**	*e*Pn	**Pn**	**23 33 02.8**	**0.0**
GRUS				*e*Sg	**Sg**	**23 33 30.6**	**-0.4**
GRUS	**Gruza**	**1.88**	**357**	*e*Pn	**Pn**	**23 33 02.8**	**0.0**
GRUS				*e*Sg	**Sg**	**23 33 30.6**	**-0.4**
BRY	**Bratogost**	**1.94**	**298**	⇓*i*Pn	**Pb**	**23 33 05.2**	**-0.8**
BRY				*e*Sn	**Sg**	**23 33 33.1**	**+0.3**
BRY	**Bratogost**	**1.94**	**298**	⇓*i*Pn	**Pb**	**23 33 05.2**	**-0.8**
BOLS	**Boljevac**	**1.98**	**23**	*e*Pg	**Pb**	**23 33 06.3**	**-0.5**
BOLS				*e*Sg	**Sb**	**23 33 32.5**	**+0.9**
BOLS	**Boljevac**	**1.98**	**23**	*e*Pg	**Pb**	**23 33 06.3**	**-0.5**
BOLS				*e*Sg	**Sb**	**23 33 32.5**	**+0.9**
TREB	**Trebinje**	**1.99**	**292**	*e*Pn	**Pn**	**23 33 05.3**	**+1.0**
KPRO	**Kipourio**	**2.09**	**169**	P	**Pn**	**23 33 07.0**	**+1.3**
KPRO				S	**Sb**	**23 33 34.7**	**+0.1**
KPRO	**Kipourio**	**2.09**	**169**	P	**Pn**	**23 33 07.3**	**+1.6**
KPRO				S	**Sb**	**23 33 34.7**	**+0.1**
KPRO	**Kipourio**	**2.09**	**169**	P	**Pn**	**23 33 07.3**	**+1.6**
KPRO				S	**Sb**	**23 33 36.5**	**+1.9**
KPRO				AML	AML	23 33 48.7	
	comp=N,1478μm,0.9s						
KPRO				AML	AML	23 33 55.5	
	comp=E,1572μm,0.8s						
THE	**Thessaloniki**	**2.10**	**130**	P	**Pn**	**23 33 06.9**	**+1.1**
THE	**Thessaloniki**	**2.10**	**130**	P	**Pn**	**23 33 07.4**	**+1.6**
THE	**Thessaloniki**	**2.10**	**130**	P	**Pn**	**23 33 07.4**	**+1.6**
BBLS	**Lazići**	**2.14**	**330**	⇑*i*Pn	**Pn**	**23 33 06.7**	**+0.3**
BBLS				*e*Sg	**Sg**	**23 33 39.7**	**+0.4**
BBLS	**Lazići**	**2.14**	**330**	⇑*i*Pn	**Pn**	**23 33 06.7**	**+0.3**
BBLS				*e*Sg	**Sg**	**23 33 39.7**	**+0.4**
DIVS	**Divibare**	**2.18**	**343**	P	**Pn**	**23 33 06.3**	**-0.7**
DIVS				S	**Sn**	**23 33 35.0**	**+0.9**
DIVS	**Divibare**	**2.18**	**343**	⇑*i*Pn	**Pn**	**23 33 06.9**	**-0.1**
DIVS	**Divibare**	**2.18**	**343**	P	**Pn**	**23 33 06.3**	**-0.7**
DIVS	**Divibare**	**2.18**	**343**	⇑*i*Pn	**Pn**	**23 33 06.9**	**-0.1**
DIVS				S	**Sn**	**23 33 35.0**	**+0.9**
HORT	**Hortiatis**	**2.20**	**129**	*e*PN	**Pn**	**23 33 07.7**	**+0.5**
HORT	**Hortiatis**	**2.20**	**129**	P	**Pn**	**23 33 08.2**	**+1.0**
HORT	**Hortiatis**	**2.20**	**129**	*e*Pn	**Pn**	**23 33 07.7**	**+0.5**
HORT	**Hortiatis**	**2.20**	**129**	P	**Pn**	**23 33 08.6**	**+1.3**
HORT	**Hortiatis**	**2.20**	**129**	P	**Pn**	**23 33 08.6**	**+1.3**
SOH	**Sokhos**	**2.22**	**122**	P	**Pn**	**23 33 08.3**	**+0.8**
SOH	**Sokhos**	**2.22**	**122**	P	**Pn**	**23 33 09.1**	**+1.6**
SOH	**Sokhos**	**2.22**	**122**	P	**Pn**	**23 33 09.1**	**+1.6**
SRS	**Serrai**	**2.23**	**113**	P	**Pn**	**23 33 08.6**	**+0.9**
SRS				S	**Sn**	**23 33 37.2**	**+1.9**
SRS	**Serrai**	**2.23**	**113**	P	**Pn**	**23 33 09.0**	**+1.3**
SRS				S	**Sn**	**23 33 37.2**	**+1.9**
SRS	**Serrai**	**2.23**	**113**	P	**Pn**	**23 33 09.0**	**+1.3**
SRS				S	**Sn**	**23 33 36.0**	**+0.7**
SRS				AML	AML	23 33 39.1	
	comp=E,405μm,0.6s						
SRS				AML	AML	23 33 50.9	
	comp=N,539μm,0.9s						
TRUS	**Trudelj**	**2.24**	**352**	⇑*i*Pn	**Pn**	**23 33 07.4**	**-0.3**
TRUS	**Trudelj**	**2.24**	**352**	⇑*i*Pn	**Pn**	**23 33 07.4**	**-0.3**
SVIS	**Svilajnac**	**2.27**	**6**	*e*Pg	**Pg**	**23 33 13.0**	**-1.0**
LIT	**Litokhoron**	**2.27**	**147**	P	**Pn**	**23 33 09.5**	**+1.3**
LIT	**Litokhoron**	**2.27**	**147**	P	**Pn**	**23 33 09.8**	**+1.6**
LIT	**Litokhoron**	**2.27**	**147**	P	**Pn**	**23 33 09.8**	**+1.6**
NVR	**Nevrokopi**	**2.34**	**105**	P	**Pn**	**23 33 10.0**	**+0.8**
NVR	**Nevrokopi**	**2.34**	**105**	P	**Pn**	**23 33 11.0**	**+1.8**
JAN	**Janina**	**2.35**	**180**	P	**Pb**	**23 33 13.4**	**+0.3**
KEK	**Kerkira**	**2.43**	**200**	P	**Pn**	**23 33 11.6**	**+1.2**
KEK	**Kerkira**	**2.43**	**200**	P	**Pn**	**23 33 11.6**	**+1.2**
SGD	**Sagiada**	**2.44**	**191**	P	**Pn**	**23 33 12.2**	**+1.7**
SGD	**Sagiada**	**2.44**	**191**	P	**Pn**	**23 33 12.2**	**+1.7**
SGD	**Sagiada**	**2.44**	**191**	P	**Pb**	**23 33 14.3**	**-0.3**
KUBS	**Kucevo**	**2.47**	**14**	*e*Pn	**Pn**	**23 33 09.9**	**-1.0**
KUBS				*e*Sg	**Sg**	**23 33 47.8**	**-2.2**
KUBS	**Kucevo**	**2.47**	**14**	*e*Pn	**Pn**	**23 33 09.9**	**-1.0**
KUBS				*e*Sg	**Sg**	**23 33 47.8**	**-2.2**
HAPS	**Han Pijesak,Bl**	**2.50**	**327**	⇓*i*Pn	**Pn**	**23 33 10.5**	**-0.9**
IGT	**Igoumenitsa**	**2.51**	**189**	P	**Pn**	**23 33 13.2**	**+1.8**
IGT	**Igoumenitsa**	**2.51**	**189**	P	**Pn**	**23 33 13.2**	**+1.8**
IGT	**Igoumenitsa**	**2.51**	**189**	P	**Pb**	**23 33 14.1**	**-1.6**
PLG	**Polygyros**	**2.54**	**129**	P	**Pn**	**23 33 13.0**	**+1.0**
PLG	**Polygyros**	**2.54**	**129**	P	**Pn**	**23 33 13.8**	**+1.8**
PLG	**Polygyros**	**2.54**	**129**	P	**Pn**	**23 33 13.8**	**+1.8**
THL	**Klokotos Trika**	**2.60**	**160**	P	**Pn**	**23 33 14.1**	**+1.5**
THL	**Klokotos Trika**	**2.60**	**160**	P	**Pn**	**23 33 14.3**	**+1.7**
THL				S	**Sn**	**23 33 45.4**	**+1.2**
TEKS	**Tekeris**	**2.72**	**339**	*i* Pn	**Pn**	**23 33 14.5**	**+0.2**
TEKS	**Tekeris**	**2.72**	**339**	*i* Pn	**Pn**	**23 33 14.5**	**+0.2**
MDVR	**Moldovita**	**2.84**	**12**	⇓*i*P	**Pn**	**23 33 16.7**	**+0.7**
MDVR	**Moldovita**	**2.84**	**12**	S	**Sg**	**23 34 00.3**	**-1.4**
MDVR	**Moldovita**	**2.84**	**12**	⇓*i*P	**Pn**	**23 33 16.7**	**+0.7**
DSL	**Palaion Diasel**	**2.88**	**176**	P	**Pb**	**23 33 20.4**	**-1.7**
DSL				S	**Sn**	**23 33 50.9**	**-0.4**
DSL	**Palaion Diasel**	**2.88**	**176**	P	**Pb**	**23 33 20.4**	**-1.7**
DSL				S	**Sn**	**23 33 50.9**	**-0.4**
DSL				AML	AML	23 34 01.8	
	comp=E,755μm,0.7s						
DSL				AML	AML	23 34 06.1	
	comp=N,704μm,0.8s						
OUR	**Ouranopolis**	**2.89**	**124**	*e*PN	**Pn**	**23 33 17.5**	**+0.9**
OUR	**Ouranopolis**	**2.89**	**124**	P	**Pn**	**23 33 17.4**	**+0.8**
OUR	**Ouranopolis**	**2.89**	**124**	*e*Pn	**Pn**	**23 33 17.5**	**+0.9**
OUR	**Ouranopolis**	**2.89**	**124**	P	**Pn**	**23 33 18.1**	**+1.5**
OUR	**Ouranopolis**	**2.89**	**124**	P	**Pn**	**23 33 18.1**	**+1.5**
KAVA	**Kavala**	**2.92**	**109**	P	**Pn**	**23 33 18.1**	**+1.0**
KAVA	**Kavala**	**2.92**	**109**	P	**Pn**	**23 33 19.1**	**+2.0**
KAVA	**Kavala**	**2.92**	**109**	P	**Pn**	**23 33 19.1**	**+2.0**
PAIG	**Paliouri**	**2.98**	**133**	P	**Pn**	**23 33 19.0**	**+1.1**
PAIG	**Paliouri**	**2.98**	**133**	P	**Pn**	**23 33 19.0**	**+1.1**
PAIG				S	**Sn**	**23 33 53.2**	**-0.5**
PAIG	**Paliouri**	**2.98**	**133**	P	**Pn**	**23 33 19.0**	**+1.1**
PAIG				S	**Sn**	**23 33 53.2**	**-0.5**
PAIG				AML	AML	23 33 55.5	
	comp=N,334μm,1.0s						
PAIG				AML	AML	23 34 10.9	
	comp=E,302μm,1.0s						
BLJ	**Bijeljina**	**3.00**	**338**	*e*Pn	**Pn**	**23 33 17.6**	**-0.6**
FYTO	**Fytoko, Volos**	**3.04**	**148**	P	**Pn**	**23 33 19.9**	**+1.2**
FYTO	**Fytoko, Volos**	**3.04**	**148**	P	**Pn**	**23 33 19.9**	**+1.2**
TAR1	**Taranto**	**3.08**	**242**	*e*Pn	**Pn**	**23 33 20.0**	**+0.8**
NOCI	**Noci**	**3.11**	**248**	P	**Pn**	**23 33 20.1**	**+0.4**
NOCI	**Noci**	**3.11**	**248**	P	**Pn**	**23 33 20.1**	**+0.4**
BAI	**Bari**	**3.12**	**254**	*e*Pn	**Pn**	**23 33 21.1**	**+1.3**
BAI				Sn	**Sn**	**23 33 56.4**	**-0.8**
SRE	**Strehaia**	**3.15**	**32**	⇑*i*P	**Pn**	**23 33 22.6**	**+2.3**
SRE	**Strehaia**	**3.15**	**32**	⇑*i*P	**Pn**	**23 33 22.6**	**+2.3**
EVR	**Evrytania**	**3.17**	**167**	P	**Pn**	**23 33 22.0**	**+1.3**
EVR	**Evrytania**	**3.17**	**167**	P	**Pn**	**23 33 22.0**	**+1.3**
EVR	**Evrytania**	**3.17**	**167**	P	**Pn**	**23 33 23.4**	**+2.7**
XOR	**Xorichti**	**3.18**	**145**	P	**Pn**	**23 33 21.7**	**+1.0**
XOR	**Xorichti**	**3.18**	**145**	P	**Pn**	**23 33 21.7**	**+1.0**
XOR	**Xorichti**	**3.18**	**145**	P	**Pn**	**23 33 21.5**	**+0.8**
AGG	**Agios Georgios**	**3.19**	**159**	*e*PN	**Pn**	**23 33 21.9**	**+1.1**
AGG	**Agios Georgios**	**3.19**	**159**	P	**Pn**	**23 33 22.1**	**+1.3**
AGG	**Agios Georgios**	**3.19**	**159**	*e*Pn	**Pn**	**23 33 21.9**	**+1.1**
AGG	**Agios Georgios**	**3.19**	**159**	P	**Pn**	**23 33 22.3**	**+1.5**
AGG				S	**Sn**	**23 34 00.7**	**+1.8**
AGG	**Agios Georgios**	**3.19**	**159**	P	**Pn**	**23 33 22.3**	**+1.5**
AGG				S	**Sn**	**23 34 00.7**	**+1.8**
AGG				AML	AML	23 34 02.3	
	comp=N,2787μm,0.5s						
AGG				AML	AML	23 34 02.6	
	comp=E,1774μm,0.5s						

VLY	Voula,Athens	4.73 151	P	Pn	23 33 43.6	+1.7
VLY	Voula,Athens	4.73 151	P	Pn	23 33 43.6	+1.7
LPK	Lapseki	4.74 108	ePN	Pn	23 33 44.0	+1.9
LPK	Lapseki	4.74 108	ePn	Pn	23 33 44.0	+1.9
SULR		4.75 54	⇓iP	Pn	23 33 44.4	+2.2
SULR		4.75 54	⇓iP	Pn	23 33 44.4	+2.2
DID	Didima	4.86 157	P	Pn	23 33 45.2	+1.5
DID	Didima	4.86 157	P	Pn	23 33 45.2	+1.5
DID	Didima	4.86 157	P	Pn	23 33 44.5	+0.7
ITM	Ithomi	4.89 170	P	Pn	23 33 45.6	+1.4
ITM	Ithomi	4.89 170	P	Pn	23 33 45.6	+1.4
RKY	Sarkoy-Tekirda	4.93 103	ePN	Pn	23 33 46.8	+2.0
RKY	Sarkoy-Tekirda	4.93 103	ePn	Pn	23 33 46.8	+2.0
KRND	KRANIDI	4.95 158	P	Pn	23 33 45.0	0.0
KRND	KRANIDI	4.95 158	P	Pn	23 33 45.0	0.0
DRGR		4.96 15	⇑iP	Pn	23 33 45.8	+0.6
DRGR		4.96 15	⇑iP	Pn	23 33 45.8	+0.6
NVLJ	Novalja	5.06 302	i Pn	Pn	23 33 48.2	+1.7
NVLJ			Sn	Sn	23 34 46.8	+1.8
NVLJ	Novalja	5.06 302	i Pn	Pn	23 33 48.1	+1.7
NVLJ			Sn	Sn	23 34 46.7	+1.8
MLR	Muntele Rosu	5.06 45	Pn	Pn	23 33 48.7	+2.0
	baz=162,slow=15					
MLR			Sn	Sn	23 34 50.2	+5.0
	comp=N,0.3nm,0.3s,baz=59,slow=18,SNR=3.4					
MLR			Lg	Lg	23 35 12.1	
	baz=67,slow=6.7,SNR=3.1					
MLR	Muntele Rosu	5.06 45	⇓iP	Pn	23 33 49.0	+2.3
MLR	Muntele Rosu	5.06 45	⇓iP	Pn	23 33 49.0	+2.3
KRBG	Karabiga-Canak	5.12 106	ePN	Pn	23 33 49.2	+2.0
KRBG	Karabiga-Canak	5.12 106	ePn	Pn	23 33 49.2	+2.0
DOPR	Dopca	5.13 38	⇓iP	Pn	23 33 36.4	-11
PYL	PYLOS	5.16 172	P	Pn	23 33 47.2	-0.6
PYL			S	Sn	23 34 46.7	-0.6
PYL	PYLOS	5.16 172	P	Pn	23 33 47.2	-0.6
PYL			S	Sn	23 34 46.7	-0.6
ISR	Istrita	5.17 51	⇑iP	Pn	23 33 50.5	+2.5
ISR	Istrita	5.17 51	⇑iP	Pn	23 33 50.5	+2.5
AYVA	Ayvalik	5.19 119	P	Pn	23 33 49.8	+1.6
AYVA	Ayvalik	5.19 119	i P	Pn	23 33 49.8	+1.6
MRMT	Marmara Adasi	5.26 103	ePN	Pn	23 33 51.2	+1.9
MRMT	Marmara Adasi	5.26 103	ePn	Pn	23 33 51.2	+1.9
BEHE	Becsehely	5.34 328	ePn	Pn	23 33 50.9	+0.6
CHOS	Chios island	5.38 131	ePN	Pn	23 33 53.1	+2.2
CHOS	Chios island	5.38 131	ePn	Pn	23 33 53.1	+2.2
GCIS	Gornji Cirnik	5.40 317	i Pn	Pn	23 33 51.9	+0.8
GCIS	Gornji Cirnik	5.40 317	Pn	Pn	23 33 51.9	+0.8
CRES	Cresnjev	5.46 316	⇓iPn	Pn	23 33 52.7	+0.8
DKL	Dikili	5.46 121	ePN	Pn	23 33 54.3	+2.3
DKL	Dikili	5.46 121	ePn	Pn	23 33 54.3	+2.3
VLI	Veliai	5.53 162	P	Pn	23 33 51.8	-1.1
AQU	L'Aquila	5.55 276	ePn	Pn	23 33 54.7	+1.4
BALY	Balya	5.60 112	P	Pn	23 33 56.0	+2.0
BALY	Balya	5.60 112	i P	Pn	23 33 56.0	+2.0
CSKK	Cs‡kako	5.66 342	ePn	Pn	23 33 55.7	+1.0
VRI	Vrincioaia	5.72 46	ePN	Pn	23 33 56.5	+1.0
VRI	Vrincioaia	5.72 46	⇓iP	Pn	23 33 57.9	+2.3
VRI	Vrincioaia	5.72 46	ePn	Pn	23 33 56.6	+1.0
VRI	Vrincioaia	5.72 46	⇓iP	Pn	23 33 57.9	+2.3
CTKS	Kestanelik-??a	5.78 95	ePN	Pn	23 33 58.7	+2.3
CTKS	Kestanelik-??a	5.78 95	ePn	Pn	23 33 58.7	+2.3
HARR	Harsova	5.81 60	⇓iP	Pn	23 33 58.4	+1.7
HARR	Harsova	5.81 60	⇓iP	Pn	23 33 58.4	+1.7
PSZ	Piszkesteto	5.95 354	⇑iP	Pn	23 33 59.0	+0.3
PSZ	Piszkesteto	5.95 354	S	Sn	23 35 08.7	+1.8
PSZ	Piszkesteto	5.95 354	⇑iP	Pn	23 33 59.0	+0.3
PSZ			eSn	Sn	23 35 08.7	+1.8
CEY	Cerknica	5.96 311	⇓iPn	Pn	23 34 00.9	+2.1
BGKT	Bogazkoy	5.99 95	ePN	Pn	23 34 01.7	+2.5
BGKT	Bogazkoy	5.99 95	ePn	Pn	23 34 01.7	+2.5
TIRR	Tirgusor	6.03 64	⇓iP	Pn	23 34 01.2	+1.4
TIRR	Tirgusor	6.03 64	⇓iP	Pn	23 34 01.2	+1.4
APE	Apeiranthos	6.11 142	ePN	Pn	23 34 03.7	+2.7
APE	Apeiranthos	6.11 142	⇓iP	Pn	23 34 04.3	+3.3
APE	Apeiranthos	6.11 142	ePn	Pn	23 34 03.7	+2.7
APE	Apeiranthos	6.11 142	⇓iP	Pn	23 34 04.3	+3.3
TESR	Tescani	6.12 41	⇓iP	Pn	23 34 02.6	+1.5
TESR	Tescani	6.12 41	⇓iP	Pn	23 34 02.6	+1.5
KLYT	Kilyos	6.18 94	ePN	Pn	23 34 04.1	+2.3
KLYT	Kilyos	6.18 94	ePn	Pn	23 34 04.1	+2.3
ARMT	Armutlu	6.20 101	ePN	Pn	23 34 04.9	+2.8
ARMT	Armutlu	6.20 101	ePn	Pn	23 34 04.9	+2.8
BUY	Buyukada	6.31 98	i P	Pn	23 34 01.1	-2.6
BURAR	Bucovina Array	6.40 27	⇑iP	Pn	23 34 07.9	+2.9
BURAR	Bucovina Array	6.40 27	⇑iP	Pn	23 34 07.9	+2.9
KECS	Kecovo	6.48 358	ePn	Pn	23 34 07.1	+1.1
KECS	Kecovo	6.48 358	ePN	Pn	23 34 07.0	+1.1
KECS			eLG	Lg	23 35 24.2	
VYHS	Vyhne	6.64 348	ePn	Pn	23 34 09.1	+1.0
VYHS	Vyhne	6.64 348	ePn	Pn	23 34 09.1	+1.0
VYHS			eSN	Sn	23 35 18.6	-5.2
VYHS			eLG	Lg	23 35 28.5	
DEMI	Demirci	6.68 114	P	Pn	23 34 10.5	+1.7
DEMI	Demirci	6.68 114	i P	Pn	23 34 10.5	+1.7
AYDB	Zeytinkoy-Aydi	6.75 125	ePN	Pn	23 34 12.6	+2.7
AYDB	Zeytinkoy-Aydi	6.75 125	ePn	Pn	23 34 12.6	+2.7
MANT	Manisa	6.86 118	P	Pn	23 34 14.1	+2.8
MANT	Manisa	6.86 118	i P	Pn	23 34 14.1	+2.8
CRVS	Cervenica-Dubn	6.90 3	ePn	Pn	23 34 12.9	+1.1
CRVS	Cervenica-Dubn	6.90 3	ePN	Pn	23 34 12.9	+1.1
KULA	Kula-Manisa	6.91 118	ePN	Pn	23 34 14.4	+2.5
KULA	Kula-Manisa	6.91 118	ePn	Pn	23 34 14.5	+2.5
AYDN	Tasoluk	6.93 127	P	Pn	23 34 14.1	+1.9
AYDN	Tasoluk	6.93 127	i P	Pn	23 34 14.1	+1.9
SMOL	Smolenice	6.94 341	eSn	Sn	23 35 30.9	-0.3
SMOL	Smolenice	6.94 341	eSN	Sn	23 35 30.9	-0.3
TVSB	Tavsanli	7.01 109	ePN	Pn	23 34 16.2	+2.8
TVSB	Tavsanli	7.01 109	ePn	Pn	23 34 16.2	+2.8
GDZ	Gediz	7.18 111	P	Pn	23 34 18.8	+3.0
GDZ	Gediz	7.18 111	i P	Pn	23 34 18.8	+3.0
STHS	Stebnicka Huta	7.41 2	ePn	Pn	23 34 20.0	+1.2
STHS	Stebnicka Huta	7.41 2	ePN	Pn	23 34 20.0	+1.2
IDI	Anoyia	7.42 154	Pn	Pn	23 34 18.4	-0.5
	comp=N,0.3nm,0.3s,baz=343,slow=6.4,SNR=5.7					
IDI			Sn	Sn	23 35 41.3	-1.8
	comp=N,0.6nm,0.3s,baz=305,slow=21,SNR=4.3					
GULT	Gulveren	7.45 99	ePN	Pn	23 34 21.3	+1.9
GULT	Gulveren	7.45 99	ePn	Pn	23 34 21.3	+1.9
VRAC	Vranov	7.88 339	Pn	Pn	23 34 26.8	+1.5
	comp=N,0.1nm,0.3s,baz=154,slow=12,SNR=6.6					
VRAC	Vranov	7.88 339	⇓iP	Pn	23 34 26.7	+1.5
GERES	GERESS Array B	8.48 326	Pn	Pn	23 34 34.1	+0.6
	comp=N,0.2nm,0.3s,baz=149,slow=13,SNR=13					
KRLC	Kraliky	8.55 342	eSN	Sn	23 36 08.0	-2.9
KHC	Kasperske Hory	8.76 327	ePN	Pn	23 34 38.2	+0.9
KHC			ex	x	23 34 55.2	
KHC			eSN	Sn	23 36 12.5	-3.5
KHC	Kasperske Hory	8.76 327	Pn	Pn	23 34 38.2	+0.9
PGF	Pioggiola	8.81 277	ePn	Pn	23 34 38.4	+0.3
PGF	Pioggiola	8.81 277	ePn	Pn	23 34 38.4	+0.3
DAVOX	Davos/Dischmat	9.19 305	Pn	Pn	23 34 44.4	+1.1
	comp=N,1.2nm,0.3s,baz=138,slow=16,SNR=10					
DAVOX			Sn	Sn	23 36 26.4	-0.5
	comp=N,0.3nm,0.3s,baz=38,slow=20,SNR=2.0					
BRTR	Keskin Array B	9.95 99	Pn	Pn	23 34 55.8	+2.1
	comp=N,0.2nm,0.3s,baz=282,slow=14,SNR=10					
SBF	Sospel	10.02 285	ePn	Pn	23 34 54.1	-0.5
SBF	Sospel	10.02 285	ePn	Pn	23 34 54.1	-0.5
FRF	La Foret Royal	10.56 283	ePn	Pn	23 35 00.0	-2.0
MBDF	Montbardon	10.61 290	ePn	Pn	23 35 01.5	-1.3
MBDF	Montbardon	10.61 290	ePn	Pn	23 35 01.5	-1.3
LMR	La Mourre	10.65 282	ePn	Pn	23 35 01.0	-2.2
CLL	Collm	10.75 333	eSn	Sn	23 37 05.0	+0.3
CLL			eSg		23 38 16.0	
LPG	La Plagne	10.79 294	ePn	Pn	23 35 03.9	-1.4
LPG			eSn	Sn	23 36 59.4	-6.7
	comp=N,11nm,0.9s					
LPG	La Plagne	10.79 294	ePn	Pn	23 35 03.9	-1.4
LPL	La Plagne	10.80 294	ePn	Pn	23 35 04.1	-1.3
LPL			eSn	Sn	23 36 59.5	-7.0
	comp=N,6.2nm,0.6s					
LPL	La Plagne	10.80 294	ePn	Pn	23 35 04.1	-1.3
KEST	Kesra	10.95 239	Pn	Pn	23 35 07.8	+0.5
	comp=N,0.1nm,0.3s,baz=318,slow=12,SNR=2.3					
ORIF	Oris-en-Rattie	11.27 290	ePn	Pn	23 35 10.2	-1.5
ORIF	Oris-en-Rattie	11.27 290	ePn	Pn	23 35 10.2	-1.5
SMRF	Simiane la Rot	11.37 285	ePn	Pn	23 35 11.3	-1.7
SMRF	Simiane la Rot	11.37 285	ePn	Pn	23 35 11.3	-1.7
HINF	Hinteralfeld	11.50 305	ePn	Pn	23 35 14.5	-0.3
HINF	Hinteralfeld	11.50 305	ePn	Pn	23 35 14.5	-0.3
CDF	Champ du Feu	11.52 308	ePn	Pn	23 35 14.5	-0.5
CDF	Champ du Feu	11.52 308	ePn	Pn	23 35 14.5	-0.5
CABF	La Chapelle	11.54 298	ePn	Pn	23 35 14.7	-0.7
CABF	La Chapelle	11.54 298	ePn	Pn	23 35 14.7	-0.7
VIVF	Saint-Julien-l	12.11 289	ePn	Pn	23 35 21.4	-1.7
VIVF	Saint-Julien-l	12.11 289	ePn	Pn	23 35 21.4	-1.7
SMF	Signal de Mont	13.03 297	ePn	Pn	23 35 35.2	-0.5
SMF	Signal de Mont	13.03 297	ePn	Pn	23 35 35.2	-0.5
LOR	Lormes	13.19 299	ePn	Pn	23 35 37.3	-0.6
LOR	Lormes	13.19 299	ePn	Pn	23 35 37.3	-0.6
SSF	Saint Saulge	13.36 298	ePn	Pn	23 35 39.3	-0.9
SSF	Saint Saulge	13.36 298	ePn	Pn	23 35 39.3	-0.9
AVF	Avril sur Loir	13.39 297	ePn	Pn	23 35 39.7	-0.9
AVF	Avril sur Loir	13.39 297	ePn	Pn	23 35 39.7	-0.9
MMAI	Mount Meron Ar	14.61 123	Pn	P	23 36 01.8	-2.0
	comp=N,0.3nm,0.3s,baz=327,slow=10,SNR=2.7					
HFS	Hagfors	18.68 349	P	Pn	23 36 48.9	0.0
	comp=N,0.1nm,0.3s,baz=175,slow=19,SNR=3.5					
FINES	FINESS Array B	19.71 7	P	Pn	23 37 01.9	+0.5
	comp=N,0.1nm,0.3s,baz=186,slow=11,SNR=4.5					
NOA	NORSAR Array B	19.94 346	P	P	23 37 02.7	+0.3
	comp=N,0.2nm,0.3s,baz=161,slow=10,SNR=4.6					
EKA	Eskdalemuir Ar	20.58 319	P	P	23 37 09.3	-0.1
	comp=N,0.9nm,0.5s,baz=110,slow=10.0,SNR=4.3					
TORD	Torodi Ar. Bea	33.24 216	P	P	23 39 08.6	+0.7
	comp=N,1.6nm,0.7s,baz=16,slow=8.4,SNR=13					
ZALV	Zalesovo Beam	43.01 51	P	P	23 40 31.6	+1.7
	comp=N,1.0nm,0.4s,baz=288,slow=8.8,SNR=6.6					
MKAR	Makanchi Array	43.17 62	P	P	23 40 33.4	+2.1
	comp=N,0.8nm,0.7s,baz=280,slow=7.3,SNR=7.3					
SONM	Songino Array	57.87 52	P	P	23 42 23.9	+1.4
	comp=N,0.7nm,0.8s,baz=303,slow=8.1,SNR=4.6					

KRNET ***14*** *23:32:55.5±0.1, 39°.85N×72°.65E, h3km, mb3.3*
NNC ***14*** *23:32:55.6±2.0, 39°.85N×72°.90E, h0km, mb3.5, mpv3.2,*
Error ellipse: s-maj=17.7km s-min=10.9km az=146.0

ISC 14 23:32:58.5±1.6, 40°.00N±0°.06×72°.56E±0°.04, h6km±10km, n21, σ1§49/39, 33C-11D, Kyrgyzstan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OHH	Osh	0.55	18	⇑iP	Pg	23 33 09.1	-0.1
	baz=8.0						
OHH				⇑iS	Sb	23 33 19.2	+0.3
	baz=8.0						
BTK	Batken	1.34	273	⇑eP	Pg	23 33 23.7	-0.5
	baz=279						
BTK				⇑eS	Sg	23 33 42.6	+1.0
	baz=279						
ARSB	Arslanbob	1.36	13	⇑iP	Pg	23 33 24.7	0.0
	baz=9.0						
ARSB				⇑iS	Sg	23 33 45.3	+3.0
	baz=9.0						
ARK	Arkit	1.85	346	⇓eP	Pb	23 33 32.5	-0.4
	baz=345						
ARK				⇓eS	Sg	23 33 59.3	+1.2
	baz=345						
TOKL	Toktogul	1.95	7	⇑eP	Pb	23 33 34.0	-0.6
	baz=4.0						
TOKL				⇑iS	Sg	23 34 02.0	+0.7
	baz=4.0						
ARLS	Aral	2.29	35	⇑eP	Pn	23 33 36.8	-0.2
	baz=32						
ARLS				⇑eS	Sb	23 34 08.3	-0.7
	baz=32						
AML	Almayashu	2.29	22	⇑iP	Pb	23 33 38.7	-1.9
	baz=18						
AML				⇑iS	Sb	23 34 10.6	+1.2
	baz=18						
MNAS	Manas	2.48	359	⇑iP	Pb	23 33 41.8	-1.9
	baz=358						
MNAS				⇑eS	Sb	23 34 15.9	+1.3
	baz=358						
MNAS	Manas	2.48	359	⇓Pg	Pb	23 33 44.1	+0.4
	7.5nm,0.5s						
MNAS				⇓Lg	Lg	23 34 19.7	
	29nm,0.6s						
UCH	Uchtor	2.67	33	⇑iP	Pn	23 33 42.9	+0.4
	baz=30						
UCH				⇑iS	Sb	23 34 18.0	-2.2
	baz=30						
EKS2	Erkin-Say	2.81	19	⇑iP	Pb	23 33 46.3	-3.0
	baz=17						
EKS2				⇑iS	Sb	23 34 23.9	-0.1
	baz=17						
KZA	Kyzart	2.91	44	⇑iP	Pn	23 33 45.3	-0.4
	baz=41						
KZA				⇑iS	Sn	23 34 21.6	+0.4
	baz=41						
NRN	Naryn	2.98	60	⇑eP	Pn	23 33 47.2	+0.5
	baz=57						
NRN				⇑iS	Sn	23 34 24.8	+1.9
	baz=57						
AAK	Ala-Archa	3.01	28	⇑iP	Pn	23 33 47.7	+0.8
	baz=26						
AAK				⇑iS	Sb	23 34 26.5	-3.1
	baz=26						
AAK	Ala-Archa	3.01	28	⇑Pg	Pn	23 33 48.5	+1.6
	7.3nm,0.4s						
AAK				⇑Lg	Lg	23 34 29.4	
	22nm,0.6s						
DZET	Dzherino	3.13	249	⇑Pg	Pb	23 33 54.5	-0.1
	39nm,0.5s						
DZET				⇑Lg	Lg	23 34 41.9	
	113nm,0.5s						
KK31	Karatay Array	3.46	334	Pn	Pn	23 33 55.3	+2.3
	0.7nm,0.3s,baz=133,slow=13,SNR=74						
KK31				⇑Pg	Pg	23 34 03.1	-1.8
	1.5nm,0.3s,baz=140,slow=13,SNR=24						
KK31				⇑Sn	Sb	23 34 40.9	-1.6
	14nm,0.6s,baz=150,slow=24,SNR=5.3						
KK31				⇓Lg	Lg	23 34 52.4	
	8.3nm,0.4s,baz=137,slow=28,SNR=4.2						
BOOM	Boomskoye usch	3.56	45	⇓eP	Pn	23 33 55.8	+1.3
	baz=42						
BOOM				⇓eS	Sn	23 34 39.4	+2.4
	baz=42						
TKM2	Tokmak 2	3.70	37	⇓Pn	Pn	23 33 55.7	-0.8
	1.2nm,0.8s						
TKM2				⇑Pg	Pb	23 34 03.4	-1.1
	6.0nm,0.8s						
TKM2				⇓Lg	Lg	23 34 52.2	
	12nm,0.5s						
KNDC	Almaty	4.61	44	⇑Pg	Pb	23 34 20.4	+0.6
KNDC				⇓Lg	Lg	23 35 20.0	
AB31	Akbulak array	12.88	320	⇓Pn	Pn	23 36 01.2	-0.9
	0.1nm,0.3s,baz=130,slow=13,SNR=4.8						
AB31				⇑Sn	Sn	23 38 24.9	-0.8
	0.8nm,0.8s						

IDC ***14*** *23:36:10.9±2.5, 37°.08N×2°.69E, h0km, mb2.9/1, mb1 3.2/4, mb1mx2.9/58, mbtmp3.1/4, ML3.5/2, MS3.0/1, Ms1 3.0/1, ms1mx2.3/20, Error ellipse: s-maj=46.5km s-min=26.5km az=24.0*
ISCJB ***14*** *23:36:11.9±0.4, 37°.01N±0°.02×2°.64E±0°.03, h14km, mb2.8/1, MS2.9/1, Error ellipse: s-maj=3.8km s-min=3.4km az=166.3*
CRAAG ***14*** *23:36:12.0, 36°.85N×2°.71E, Ml3.8*
CSEM ***14*** *23:36:12.5±0.2, 36°.89N×2°.68E, h10km, ML3.8, Error ellipse: s-maj=5.2km s-min=5.0km az=62.0*
MDD ***14*** *23:36:13.3±0.8, 36°.91N×2°.75E, h9km±10km, mb3.9/11, Error ellipse: s-maj=7.8km s-min=5.8km az=115.0, PRXIMO*

ISC 14 23:36:12.4±0.8, 36°.92N±0°.03×2°.72E±0°.03, h14km, n107, σ1§80/145, 1C, Northern Algeria

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ABA	Alger-Bouzarea	0.28	114	P	Pg	23 36 17.9	-0.4
ABA	Alger-Bouzarea	0.28	114	P	Pg	23 36 17.9	-0.4
ABA	Alger-Bouzarea	0.28	114	P	Pg	23 36 17.9	-0.4
EMHD	Djebel Mahouad	0.74	165	P	Pg	23 36 26.4	-0.4
EMHD	Djebel Mahouad	0.74	165	P	Pg	23 36 26.4	-0.4
EMHD	Djebel Mahouad	0.74	165	P	Pg	23 36 26.4	-0.4
ADJB	Djebel Djouab	0.95	142	P	Pb	23 36 30.4	-0.4
ADJB	Djebel Djouab	0.95	142	P	Pb	23 36 30.4	-0.4
ADJB	Djebel Djouab	0.95	142	P	Pb	23 36 30.4	-0.4
EBNR	Beni Rached	1.14	237	P	Pn	23 36 34.1	+0.1
EBNR	Beni Rached	1.14	237	P	Pn	23 36 34.1	+0.1
ECHA	Ech Chlef	1.33	235	P	Pn	23 36 36.0	-0.5
ECHA	Ech Chlef	1.33	235	P	Pn	23 36 36.0	-0.5
ECHF	Ech Chlef	1.34	236	P	Pn	23 36 36.0	-0.7
ECHF	Ech Chlef	1.34	236	P	Pn	23 36 36.0	-0.7
EANR	'Ain N'Sour	1.62	234	P	Pb	23 36 42.3	+0.2
EANR	'Ain N'Sour	1.62	234	P	Pb	23 36 42.3	+0.2
EANR	'Ain N'Sour	1.62	234	P	Pb	23 36 42.3	+0.2
OKGL	Djebel Kef Gue	1.89	243	P	Pn	23 36 43.7	-0.5
	7.6nm,0.2s,SNR=7.9						
OKGL				S	Sn	23 37 05.0	-2.8
	793nm,0.4s,SNR=7.9						
OKGL	Djebel Kef Gue	1.89	243	P	Pn	23 36 43.7	-0.5
	7.6nm,0.2s,SNR=7.9						
OKGL				S	Sn	23 37 05.0	-2.8
	793nm,0.4s,SNR=7.9						
ETRT	Tiaret	1.91	217	P	Pb	23 36 48.0	+1.0
ETRT	Tiaret	1.91	217	P	Pb	23 36 48.0	+1.0
ETRT	Tiaret	1.91	217	P	Pb	23 36 48.0	+1.0
SET	Setif	2.28	107	P	Pg	23 36 59.0	+2.9
SET	Setif	2.28	107	P	Pg	23 36 59.0	+2.9
SET	Setif	2.28	107	P	Pg	23 36 59.0	+2.9
EIBI	Ibiza	2.37	333	⇑P	Pn	23 36 51.2	+0.3
	16nm,0.2s,SNR=18						
EIBI				S	Sn	23 37 17.7	-2.0
	40nm,0.2s,SNR=16						
EIBI	Ibiza	2.37	333	P	Pn	23 36 51.2	+0.3
	16nm,0.2s,SNR=18						
EIBI				S	Sn	23 37 17.7	-2.0
	40nm,0.2s,SNR=16						
CKHR	Kef el Ahmar	2.43	111	P	Pg	23 36 59.5	+0.6
CKHR	Kef el Ahmar	2.43	111	P	Pg	23 36 59.5	+0.6
CKHR	Kef el Ahmar	2.43	111	P	Pg	23 36 59.5	+0.6
DFRA	Djebel Bou Aff	2.57	97	P	Pn	23 36 54.8	+1.1
DFRA	Djebel Bou Aff	2.57	97	P	Pn	23 36 54.8	+1.1
DFRA	Djebel Bou Aff	2.57	97	P	Pn	23 36 54.8	+1.1
ODJA	Bouhanifia	2.81	237	P	Pn	23 36 51.0	-5.9
ODJA	Bouhanifia	2.81	237	P	Pn	23 36 51.0	-5.9
ODJA	Bouhanifia	2.81	237	P	Pn	23 36 51.0	-5.9
ETOS	Mallorca	2.85 2	P	Pn	23 36 57.7	+0.2
	4.2nm,1.0s,SNR=36						
ETOS				S	Sn	23 37 29.1	-2.5
	9.0nm,0.1s,SNR=5.9						
ETOS	Mallorca	2.85 2	P	Pn	23 36 57.7	+0.2
	4.2nm,1.0s,SNR=36						
ETOS				S	Sn	23 37 29.1	-2.5
	9.0nm,0.1s,SNR=5.9						
AFON	Font Roja	3.12	305	P	Pn	23 37 03.6	+2.4
	0.2nm,0.2s,SNR=7.9						
AFON				S	Sn	23 37 37.5	-0.7
	0.4nm,0.1s,SNR=7.9						
AFON	Font Roja	3.12	305	P	Pn	23 37 03.6	+2.4
	0.2nm,0.2s,SNR=7.9						
AFON				S	Sn	23 37 37.5	-0.7
	0.4nm,0.1s,SNR=7.9						
EMUR	La Murta	3.28	288	P	Pn	23 37 03.2	-0.3
	1.1nm,0.2s,SNR=9.4						
EMUR				S	Sn	23 37 41.8	-0.5
	1.6nm,0.2s						
EMUR	La Murta	3.28	288	P	Pn	23 37 03.2	-0.3
	1.1nm,0.2s,SNR=9.4						
EMUR				S	Sn	23 37 41.8	-0.5
	1.6nm,0.2s						
ETOB	Tobarra	3.79	298	P	Pn	23 37 11.0	+0.5
	5.5nm,0.3s,SNR=70						
ETOB				S	Sn	23 37 53.9	-1.0
	3.5nm,0.2s						
ETOB	Tobarra	3.79	298	P	Pn	23 37 11.0	+0.5
	5.5nm,0.3s,SNR=70						
ETOB				S	Sn	23 37 53.9	-1.0
	3.5nm,0.2s						
ENIJ	Nijar	3.94	272	P	Pn	23 37 14.2	+1.7
	0.9nm,0.2s,SNR=7.9						
ENIJ				S	Sn	23 37 55.0	-3.6
	3.5nm,0.2s,SNR=7.9						
ENIJ	Nijar	3.94	272	P	Pn	23 37 14.2	+1.7
	0.9nm,0.2s,SNR=7.9						
ENIJ				S	Sn	23 37 55.0	-3.6
	3.5nm,0.2s,SNR=7.9						
EMOS	Mosqueruela	4.25	325	P	Pn	23 37 17.6	+0.7
	8.8nm,0.2s,SNR=64						
EMOS				S	Sn	23 38 03.6	-2.8
	11nm,0.3s,SNR=7.3						
EMOS	Mosqueruela	4.25	325	P	Pn	23 37 17.6	+0.7
	8.8nm,0.2s,SNR=64						
EMOS				S	Sn	23 38 03.6	-2.8
	11nm,0.3s,SNR=7.3						
ERTA	Horta de San J	4.44	336	P	Pn	23 37 20.8	+1.4
	0.7nm,0.1s,SNR=6.6						
ERTA				S	Sn	23 38 07.7	-3.2
	3.3nm,0.2s						
ERTA	Horta de San J	4.44	336	P	Pn	23 37 20.8	+1.4
	0.7nm,0.1s,SNR=6.6						
ERTA				S	Sn	23 38 07.7	-3.2
	3.3nm,0.2s						
EVIA	Vianos	4.48

0.9nm,0.2s,SNR=12
CLLI S **Sn** **23 38 35.9 -3.3**
0.9nm,0.3s,SNR=5.5
CLLI Llivia 5.59 354 P **Pn** **23 37 36.9 +1.7**
0.9nm,0.2s,SNR=12
EADA Adamuz 5.93 284 P **Pn** **23 37 39.2 -0.6**
0.4nm,0.2s,SNR=7.9
EADA S **Sn** **23 38 45.8 -1.7**
0.2nm,0.4s,SNR=7.9
EADA Adamuz 5.93 284 P **Pn** **23 37 39.2 -0.6**
0.4nm,0.2s,SNR=7.9
EADA S **Sn** **23 38 45.8 -1.7**
0.2nm,0.4s,SNR=7.9
ESDC Sonseca Array 5.93 300 Pn **Pn** **23 37 39.9 +0.1**
0.9nm,0.3s,baz=112,slow=14,SNR=7.4
ESDC Sn **Sn** **23 38 44.8 -2.8**
0.4nm,0.3s,baz=132,slow=41,SNR=2.0
ESDC Sonseca Array 5.93 300 P **Pn** **23 37 40.1 +0.3**
0.6nm,0.1s,baz=114,slow=13,SNR=12
ESDC S **Sn** **23 38 44.6 -3.0**
0.0nm,0.3s,baz=116,slow=24,SNR=3.8
ESDC Sonseca Array 5.93 300 P **Pn** **23 37 40.1 +0.3**
0.6nm,0.1s,SNR=12
EMIJ Mijas 6.02 269 P **Pn** **23 37 43.3 +2.2**
0.2nm,0.2s,SNR=7.9
EMIJ Mijas 6.02 269 P **Pn** **23 37 43.3 +2.2**
0.2nm,0.2s,SNR=7.9
GUD Guadarrama 6.53 307 P **Pn** **23 37 49.0 +0.8**
0.5nm,0.2s,SNR=7.9
GUD Guadarrama 6.53 307 P **Pn** **23 37 49.0 +0.8**
0.5nm,0.2s,SNR=7.9
ECAB El Cabril 6.57 283 P **Pn** **23 37 47.5 -1.1**
0.9nm,0.2s,SNR=18
ECAB S **Sn** **23 38 59.9 -3.4**
0.1nm,0.3s
ECAB El Cabril 6.57 283 P **Pn** **23 37 47.5 -1.1**
0.9nm,0.2s,SNR=18
IELO Elcoad 6.65 334 P **Pn** **23 37 51.0 +1.2**
0.5nm,0.2s,SNR=7.9
IELO S **Sn** **23 39 04.1 -1.3**
0.8nm,0.3s,SNR=7.9
IELO Elcoad 6.65 334 P **Pn** **23 37 51.0 +1.2**
0.5nm,0.2s,SNR=7.9
IELO S **Sn** **23 39 04.1 -1.3**
0.8nm,0.3s,SNR=7.9
ATE Arette 6.70 338 P **Pn** **23 37 51.5 +1.2**
0.8nm,0.4s,SNR=7.9
ATE S **Sn** **23 39 02.4 -4.0**
2.1nm,0.3s,SNR=7.9
ATE Arette 6.70 338 P **Pn** **23 37 51.5 +1.2**
0.8nm,0.4s,SNR=7.9
EALK Alkurruntz 7.08 334 P **Pn** **23 37 57.9 +2.3**
1.0nm,0.2s,SNR=7.9
EALK S **Sn** **23 39 12.8 -3.1**
4.0nm,0.4s,SNR=7.9
EALK Alkurruntz 7.08 334 P **Pn** **23 37 57.9 +2.3**
1.0nm,0.2s,SNR=7.9
MDT Midelt 7.28 238 Pn **Pn** **23 37 59.0 +0.6**
0.0nm,0.3s,baz=22,slow=11,SNR=2.0
EMIN Mina Concepcio 7.53 279 P **Pn** **23 38 01.7 0.0**
0.4nm,0.2s,SNR=7.9
EMIN Mina Concepcio 7.53 279 P **Pn** **23 38 01.7 0.0**
0.4nm,0.2s,SNR=7.9
EPLA Plasencia 7.58 297 P **Pn** **23 38 02.7 +0.3**
0.3nm,0.2s,SNR=7.9
EPLA Plasencia 7.58 297 P **Pn** **23 38 02.7 +0.3**
0.3nm,0.2s,SNR=7.9
ELAN Lanestosa 7.87 325 P **Pn** **23 38 06.3 -0.2**
0.2nm,0.2s,SNR=4.0
ELAN Lanestosa 7.87 325 P **Pn** **23 38 06.3 -0.2**
0.2nm,0.2s,SNR=4.0
EARI Arriondas 8.80 319 P **Pn** **23 38 21.3 +2.1**
1.9nm,0.4s,SNR=10
EARI Arriondas 8.80 319 P **Pn** **23 38 21.3 +2.1**
1.9nm,0.4s,SNR=10
ECAL Calabor 8.87 307 P **Pn** **23 38 21.0 +0.8**
1.4nm,0.5s,SNR=7.9
ECAL Calabor 8.87 307 P **Pn** **23 38 21.0 +0.8**
1.4nm,0.5s,SNR=7.9
TORD Torodi Ar. Bea 23.69 182 P **P** **23 41 25.9 +2.2**
0.3nm,0.8s,baz=354,slow=8.6,SNR=2.2
OBN Obninsk 29.32 41 LR LR 23 54 37.3
comp=Z,26nm,20.2s,baz=50,slow=38

IDC 14 23:36:33.7±4.7, 16°.99S×174°.75W, h200km±21km, mb3.4/3, mb1 3.7/4, mb1mx3.2/35, mbtmp4.0/4, Error ellipse: s-maj=196.7km s-min=20.2km az=143.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**4.19**	**44**	P	Pn	23 37 37.0	-1.0
	6.8nm,0.3s,baz=101,slow=3.0,SNR=7.5						
AFI				S	S	23 38 29.3	+1.5
	21nm,0.3s,baz=137,slow=19,SNR=13						
WRA	**Warramunga Arr**	**48.24**	**258**	P	P	23 44 54.1	-0.5
	0.3nm,0.4s,baz=96,slow=7.3,SNR=4.3						
ASAR	**Alice Springs**	**48.40**	**253**	P	P	23 44 56.1	+0.2
	3.7nm,0.6s,baz=88,slow=8.4,SNR=46						
ILAR	**Eielson Array**	**84.25**	**12**	P	P	23 48 41.5	-0.8
	0.5nm,0.6s,baz=231,slow=5.7,SNR=5.1						
BRTR	**Keskin Array B**	**146.52**	**318**	PKPbc	PKPbc	23 55 51.4	-0.5
	0.9nm,0.8s,baz=116,slow=2.7,SNR=6.5						
DAVOX	**Davos/Dischmat**	**150.04**	**354**	PKPbc	PKPbc	23 56 00.7	-0.1
	2.3nm,0.5s,baz=249,slow=3.7,SNR=6.2						

NIED ***14*** *23:43:00, 36°.60N×141°.90E, h14km, Mw3.7 Best double couple: M₀3.46000×10¹⁴ NP1:φs3.00000°, δ54.00000°, λ134.00000°. NP2:φs124.00000°, δ55.00000°, λ46.00000°.*
IDC ***14*** *23:43:49.5±0.8, 36°.47N×142°.03E, h0km, mb3.7/9, mb1 3.9/12, mb1mx3.7/46, mbtmp3.8/12, ML3.7/3, Error ellipse: s-maj=23.7km s-min=17.0km az=99.0*
ISCJB ***14*** *23:43:50.6±0.6, 36°.56N±0°.04×142°.01E±0°.06, h19km, mb3.7/9, Error ellipse: s-maj=7.4km s-min=6.0km az=17.3*
JMA ***14*** *23:43:53.1±0.2, 36°.63N×141°.86E, h64km, M3.8*

ISC 14 23:43:52.6±0.8, 36°.58N±0°.05×141°.97E±0°.08, h19km, n27, σ1§22/26, mb3.7/9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**1.13**	**272**	P	**Pn**	**23 44 11.8**	**-1.5**
CHOJ	**Chosi**	**1.25**	**226**	P	**Pb**	**23 44 15.2**	**-0.4**
JMM	**Marumori**	**1.59**	**324**	P	**Pn**	**23 44 18.5**	**-1.2**
JMM				*e*S	**Sn**	**23 44 37.5**	**-2.2**
JFT	**Otama**	**1.61**	**306**	*e*S	**Sn**	**23 44 38.1**	**-2.1**
JIO	**Ouri**	**1.94**	**345**	P	**Pn**	**23 44 23.5**	**-0.9**
JRY	**Ryogami san**	**2.54**	**258**	P	**Pn**	**23 44 32.1**	**-0.7**
JRY				*e*S	**Sn**	**23 45 02.0**	**-1.2**
MJAR	**Matsushiro Arr**	**3.03**	**270**	Pn	**Pn**	**23 44 40.5**	**+1.0**
	15nm,0.3s,baz=113,slow=9.5,SNR=128						
MAT	**Matsushiro**	**3.03**	**270**	P	**Pn**	**23 44 40.4**	**+0.9**
MAT				*e*S	**Sn**	**23 45 17.1**	**+1.9**
JHJ	**Hachijo jima 2**	**3.89**	**208**	Pn	**Pn**	**23 44 49.7**	**-1.6**
	19nm,0.3s,baz=69,slow=22,SNR=6.1						
JHJ				Sn	**Sn**	**23 45 35.5**	**-1.0**
	27nm,0.3s,baz=70,slow=23,SNR=4.0						
ASAJ	**Asahikawa**	**7.54**	**3**	Pn	**Pn**	**23 45 41.1**	**-0.3**
	1.1nm,0.3s,baz=234,slow=9.4,SNR=5.2						
H11N2	**WAKE ISLAND Hy**	**27.53**	**121**	T	T	00 19 02.7	
	baz=313,slow=75,SNR=20						
H11N1	**WAKE ISLAND Hy**	**27.54**	**121**	T	T	00 19 17.7	
	baz=313,slow=75,SNR=15						
H11N3	**WAKE ISLAND Hy**	**27.55**	**121**	T	T	00 19 02.2	
	baz=313,slow=75,SNR=13						
H11S1	**WAKE ISLAND Hy**	**28.24**	**123**	T	T	00 20 09.6	
	baz=314,slow=76,SNR=19						
H11S3	**WAKE ISLAND Hy**	**28.24**	**123**	T	T	00 19 56.2	
	baz=314,slow=76,SNR=16						
H11S2	**WAKE ISLAND Hy**	**28.25**	**123**	T	T	00 19 48.7	
	baz=314,slow=76,SNR=11						
SONM	**Songino Array**	**28.41**	**305**	P	**P**	**23 49 47.0**	**+1.1**
	1.7nm,0.8s,baz=104,slow=8.8,SNR=9.9						
ZALV	**Zalesovo Beam**	**42.55**	**313**	P	**P**	**23 51 47.9**	**+1.1**
	0.9nm,0.6s,baz=88,slow=7.6,SNR=5.5						
ZALV				PcP	**PcP**	**23 53 38.1**	**-0.9**
	0.3nm,0.4s,baz=86,slow=2.0,SNR=2.9						
MKAR	**Makanchi Array**	**44.74**	**303**	P	**P**	**23 52 05.1**	**+0.5**
	0.7nm,0.7s,baz=89,slow=9.3,SNR=6.7						
ILAR	**Eielson Array**	**49.64**	**32**	P	**P**	**23 52 44.0**	**+1.5**
	0.5nm,0.9s,baz=270,slow=6.9,SNR=4.4						
WRA	**Warramunga Arr**	**56.67**	**189**	P	**P**	**23 53 33.5**	**-1.2**
	0.4nm,0.5s,baz=5.7,slow=7.7,SNR=4.3						
ASAR	**Alice Springs**	**60.40**	**189**	P	**P**	**23 54 00.1**	**-0.6**
	0.6nm,0.7s,baz=18,slow=7.1,SNR=6.0						
YKA	**Yellowknife Ar**	**63.98**	**30**	P	**P**	**23 54 24.0**	**-0.2**
	0.3nm,0.8s,baz=303,slow=6.8,SNR=4.7						
NB2	**NORSAR Subarra**	**74.78**	**338**	P	**P**	**23 55 32.0**	**+0.9**
	comp=Z,0.6nm,0.7s,baz=38,slow=6.2						
NOA	**NORSAR Array B**	**74.78**	**338**	P	**P**	**23 55 31.9**	**+0.9**
	comp=Z,0.9nm,0.7s,baz=39,slow=5.8,SNR=5.6						
AKASG	**Malin Array Be**	**74.93**	**323**	P	**P**	**23 55 32.1**	**0.0**
	comp=Z,0.7nm,0.4s,baz=46,slow=5.9,SNR=4.6						
LPAZ	**La Paz**	**146.53**	**61**	PKPbc	**PKPab**	**00 03 34.5**	**-0.3**
	comp=Z,1.2nm,0.9s,baz=246,slow=3.6,SNR=6.5						

IDC 14 23:45:28.4±1.3, 50°.85N×30°.16W, h0km, mb3.3/6, mb1 3.6/6, mb1mx3.3/58, mbtmp3.4/6, Error ellipse: s-maj=51.9km s-min=21.0km az=25.0, Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ESDC	**Sonseca Array**	**21.44**	**111**	P	P	23 50 18.6	+0.6
	0.7nm,0.7s,baz=288,slow=24,SNR=4.3						
SCHQ	**Schefferville**	**22.33**	**295**	P	P	23 50 27.8	+0.3
	2.8nm,0.9s,baz=88,slow=13,SNR=4.0						
GERES	**GERESS Array B**	**28.05**	**77**	P	P	23 51 21.7	+0.5
	0.1nm,0.3s,baz=295,slow=7.2,SNR=3.1						
YKA	**Yellowknife Ar**	**44.48**	**319**	P	P	23 53 40.8	0.0
	0.2nm,0.7s,baz=61,slow=8.5,SNR=3.6						
BRTR	**Keskin Array B**	**44.92**	**79**	P	P	23 53 44.1	-0.7
	0.3nm,0.5s,baz=306,slow=6.6,SNR=3.7						
TORD	**Torodi Ar. Bea**	**45.63**	**134**	P	P	23 53 50.2	-0.2
	0.6nm,1.0s,baz=320,slow=8.7,SNR=3.1						
ASAR	**Alice Springs**	**150.18**	**30**	PKPbc	PKPbc	00 05 20.3	-0.8
	0.5nm,0.7s,baz=20,slow=3.0,SNR=3.0						

IDC 14 23:46:23.0±1.1, 50°.85N×30°.21W, h0km, mb3.6/5, mb1 3.8/5, mb1mx3.4/57, mbtmp3.6/5, MS3.2/2, Ms1 3.2/2, ms1mx2.7/42, Error ellipse: s-maj=61.3km s-min=21.9km az=19.0, Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFJD	**Kangerlussuaq**	**19.15**	**335**	LR	LR	23 56 36.8	
	comp=Z,66nm,18.8s,baz=135,slow=32						
ESDC	**Sonseca Array**	**21.47**	**111**	P	P	23 51 13.2	+0.2
	1.2nm,0.7s,baz=313,slow=10,SNR=6.6						
SCHQ	**Schefferville**	**22.31**	**295**	P	P	23 51 21.9	+0.1
	4.7nm,1.0s,baz=80,slow=11,SNR=3.8						
SCHQ				LR	LR	23 57 30.6	
	comp=Z,85nm,22.0s,baz=72,slow=30						
BRTR	**Keskin Array B**	**44.94**	**79**	P	P	23 54 39.9	+0.2
	0.5nm,0.7s,baz=302,slow=5.7,SNR=4.6						
TORD	**Torodi Ar. Bea**	**45.65**	**134**	P	P	23 54 45.0	-0.3
	0.9nm,0.9s,baz=336,slow=6.7,SNR=4.9						
TXAR	**Lajitas Array**	**57.69**	**278**	P	P	23 56 15.5	+0.1
	0.7nm,0.9s,baz=54,slow=9.1,SNR=3.7						
ASAR	**Alice Springs**	**150.20**	**30**	PKPbc	PKPbc	00 06 14.8	-0.9
	0.7nm,0.7s,baz=345,slow=1.5,SNR=5.1						

ISK ***14*** *23:48:01.8, 36°.91N×29°.38E, h9km, MD2.7*
ISCJB ***14*** *23:48:02.5±0.6, 36°.93N±0°.03×29°.34E±0°.06, h9km, Error ellipse: s-maj=7.3km s-min=4.1km az=28.1*
DDA ***14*** *23:48:02.7, 36°.94N×29°.31E, h11km, Md2.8*
CSEM ***14*** *23:48:02.2±0.1, 36°.91N×29°.38E, h10km, MD2.7, Error ellipse: s-maj=3.3km s-min=2.6km az=125.0*

ISC 14 23:48:02.1±0.9, 36°.92N±0°.03×29°.37E±0°.04, h9km, n16, σ0§50/24, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GLHS	**Glhisar (BURDU**	**0.26**	**23**	*e*PG	**Pg**	**23 48 07.5**	**+0.1**
GLHS				*e*SG	**Sg**	**23 48 11.7**	**+0.8**
GLHS	**Glhisar (BURDU**	**0.26**	**23**	*e*Pg	**Pg**	**23 48 07.5**	**+0.1**
GLHS				*e*Sg	**Sg**	**23 48 11.7**	**+0.8**
GOLH	**Golhisar**	**0.35**	**25**	P	**Pg**	**23 48 09.3**	**+0.1**
GOLH				S	**Sb**	**23 48 15.9**	**-0.5**
GOLH	**Golhisar**	**0.35**	**25**	*i* P	**Pg**	**23 48 09.3**	**+0.1**
GOLH				*i* S	**Sb**	**23 48 15.9**	**-0.5**
FETY	**Fethiye**	**0.36**	**220**	*e*PG	**Pg**	**23 48 09.4**	**+0.2**
FETY				*e*SG	**Sg**	**23 48 15.0**	**+0.9**
FETY	**Fethiye**	**0.36**	**220**	*e*Pg	**Pg**	**23 48 09.4**	**+0.2**
FETY				*e*Sg	**Sg**	**23 48 15.0**	**+0.9**
ELL	**Elmali**	**0.46**	**111**	*e*PG	**Pg**	**23 48 11.3**	**+0.2**
ELL	**Elmali**	**0.46**	**111**	*e*Pg	**Pg**	**23 48 11.3**	**+0.2**
DALY	**Dalyan (Mu¨la**	**0.58**	**261**	*e*PG	**Pb**	**23 48 13.9**	**-0.6**
DALY	**Dalyan (Mu¨la**	**0.58**	**261**	*e*Pg	**Pb**	**23 48 13.9**	**-0.6**
AKAS	**Kas**	**0.71**	**165**	P	**Pg**	**23 48 15.8**	**+0.1**
AKAS				S	**Sn**	**23 48 28.9**	**-0.6**
AKAS	**Kas**	**0.71**	**165**	*i* P	**Pg**	**23 48 15.8**	**+0.1**
AKAS				*i* S	**Sn**	**23 48 28.9**	**-0.6**
YER	**Yerkesik**	**0.90**	**284**	*e*PG	**Pg**	**23 48 19.4**	**0.0**
YER	**Yerkesik**	**0.90**	**284**	*e*Pg	**Pg**	**23 48 19.4**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**1.57**	**312**	*e*PN	**Pn**	**23 48 30.6**	**+0.4**
AYDB	**Zeytinkoy-Aydi**	**1.57**	**312**	*e*Pn	**Pn**	**23 48 30.6**	**+0.4**

NIED ***14*** *23:50:00, 37°.70N×141°.60E, h56km, Mw5.0 Best double couple: M₀3.69000×10¹⁶ NP1:φs196.00000°, δ35.00000°, λ96.00000°. NP2:φs8.00000°, δ55.00000°, λ86.00000°.*
BJI ***14*** *23:50:46.2, 37°.66N×141°.55E, h58km, mb5.2/81, mB5.0/50, Ms4.4/75, Ms7 4.3/71*
MOS ***14*** *23:50:47.2±0.9, 37°.79N×141°.56E, h51km, mb5.5/109, Error ellipse: s-maj=7.2km s-min=5.3km az=91.9*
JMA ***14*** *23:50:48.1±0.1, 37°.66N×141°.58E, h48km±2km, M5.1 Broadband fault plane solution: P waves. NP1: φs348.00000°, δ51.00000°, λ69.00000°. NP2: φs200.00000°, δ44.00000°, λ114.00000°. Principal axes: T Plg73.0000°, Azm196.0000°; N Plg17.0000°, Azm2.0000°; P Plg4.0000°, Azm93.0000°;*
JMA Felt III J1.
ISCJB ***14*** *23:50:48.2±0.3, 37°.66N±0°.02×141°.45E±0°.02, h59km±2km, mb5.2/291, MS4.3/55 Error ellipse: s-maj=3.1km s-min=2.3km az=153.8*
IDC ***14*** *23:50:49.8±1.8, 37°.66N×141°.49E, h64km±16km, mb4.9/33, mb1 5.0/39, mb1mx4.9/48, mbtmp5.1/39, MS4.1/35, Ms1 4.1/35, ms1mx4.0/49, Error ellipse: s-maj=12.5km s-min=10.2km az=100.0*
NEIC ***14*** *23:50:49.8±0.4, 37°.67N×141°.40E, h60km±3km, mb5.3/181, Error ellipse: s-maj=3.3km s-min=2.2km az=137.0*
NEIC Recorded [3 JMA] in Fukushima and Miyagi.
GCMT ***14*** *23:50:49.8±0.4, 37°.71N×141°.75E, h56km±1km, MW5.0/81, Moment Tensor Solution. s46,c57; s81,c122; Duration: 0 Moment tensor: Scale 10¹⁶Nm; Mrr4.13±.20; Mθθ0.04±.13; Mφφ-4.17±.12; Mrθ-0.66±.10; Mφθ-0.70±.09; Mφr0.63±.10; Best double couple: M₀4.30700×10¹⁶ NP1:φs359.00000°, δ49.00000°, λ76.00000°. NP2: φs199.00000°, δ42.00000°, λ105.00000°. Principal axes: T 4.2980, Plg79.0000°, Azm208.0000°; N 0.0230, Plg10.0000°, Azm8.0000°; P -4.3160, Plg4.0000°, Azm99.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 14 23:50:48.6±0.3, 37°.72N±0°.03×141°.58E±0°.03, h52km±2km, h52km:pP-P, n1048, σ1§27/1127, mb5.2/310, MS4.3/57, 86C-41D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JMM	**Marumori**	**0.64**	**284**	⇓P	**Pn**	**23 51 01.4**	**-0.2**
JMM				S	**Sn**	**23 51 10.7**	**-0.3**
JFK	**Kawauchi**	**0.66**	**238**	⇓P	**Pn**	**23 51 00.9**	**-1.0**
JFK				S	**Sn**	**23 51 09.5**	**-2.1**
JIO	**Ouri**	**0.76**	**346**	⇑P	**Pn**	**23 51 03.4**	**+0.3**
JIO				S	**Sn**	**23 51 13.9**	**+0.2**
ONAJ	**Iwakimizuishiy**	**0.87**	**225**	⇓P	**Pn**	**23 51 03.4**	**-1.3**
ONAJ				S	**Sn**	**23 51 14.0**	**-2.5**
JOU	**Okura**	**0.97**	**312**	⇓P	**Pn**	**23 51 06.1**	**+0.2**
JOU				S	**Sn**	**23 51 19.2**	**+0.5**
JFT	**Otama**	**1.00**	**259**	⇓P	**Pn**	**23 51 06.6**	**+0.2**
JFT				S	**Sn**	**23 51 19.7**	**+0.2**
JMK	**Ichinoseki**	**1.26**	**347**	⇓P	**Pn**	**23 51 10.6**	**+0.7**
JMK				S	**Sn**	**23 51 26.6**	**+0.9**
JYS	**Shirataka**	**1.29**	**293**	⇓P	**Pn**	**23 51 10.5**	**+0.2**
JFY	**Yanaizu**	**1.52**	**259**	⇓P	**Pn**	**23 51 13.3**	**-0.1**
JYK	**Kaneyama**	**1.53**	**322**	⇓P	**Pn**	**23 51 14.3**	**+0.8**
JYK				S	**Sn**	**23 51 33.9**	**+1.6**
MJAR	**Matsushiro Arr**	**2.94**	**247**	P	**Pn**	**23 51 33.3**	**+0.5**
	72nm,0.3s,baz=62,slow=11,SNR=807						
MJAR				LR	LR	23 52 55.5	
	comp=Z,6μm,19.5s,baz=70,slow=44						
MAJO	**Matsushiro**	**2.94**	**247**	*d i*P	**Pn**	**23 51 33.5**	**+0.8**
MAJO	**Matsushiro**	**2.94**	**247**	*e*Pn	**Pn**	**23 51 33.6**	**+0.8**
MAT	**Matsushiro**	**2.94**	**247**	P	**Pn**	**23 51 33.6**	**+0.8**
MAT				*e*S	**Sn**	**23 52 11.5**	**+4.7**
INU	**Inuyama**	**4.37**	**239**	*e*Pn	**Pn**	**23 51 53.2**	**+0.9**
JHJ2	**Mitsune**	**4.82**	**198**	*e*Pn	**Pn**	**23 51 57.1**	**-1.4**
JHJ	**Hachijo jima 2**	**4.82**	**198**	P	**Pn**	**23 51 57.3**	**-1.2**
	224nm,0.3s,baz=64,slow=23,SNR=7.1						
JHJ				S	**Sn**	**23 52 47.9**	**-5.1**
	229nm,0.3s,baz=303,slow=22,SNR=9.3						
JHJ				LR	LR	23 54 13.5	
	comp=Z,2μm,19.9s,baz=70,slow=43						
ASAJ	**Asahikawa**	**6.44**	**7**	P	**Pn**	**23 52 20.4**	**-0.4**
	22nm,0.3s,baz=221,slow=11,SNR=40						
ASAJ				S	**Sn**	**23 53 30.9**	**-1.9**
	15nm,0.3s,baz=259,slow=21,SNR=4.2						
ASAJ	**Asahikawa**	**6.44**	**7**	*e*Pn	**Pn**	**23 52 20.7**	**0.0**
ASAJ				S	**Sn**	**23 53 30.9**	**-1.9**
YUK	**Yuzh-Kuril'sk**	**7.09**	**26**	*e*P	**Pn**	**23 52 27.9**	**-1.8**
YUK				*e*S	**Sn**	**23 53 44.9**	**-4.0**
YUK				pmax	pmax		
	comp=N,306nm,0.4s						
YUK				pmax	pmax		
	comp=Z,400nm,0.4s						
YUK				pmax	pmax		
	comp=E,180nm,0.5s						
KUR	**Kuril'sk**	**8.87**	**30**	*e*P	**Pn**	**23 52 53.5**	**-0.4**
KUR				*i* S	**Sn**	**23 54 29.8**	**-2.5**
KUR				pmax	pmax		
	comp=Z,81nm,0.5s						
KUR				pmax	pmax		
	comp=N,41nm,0.6s						
KUR				pmax	pmax		
	comp=E,35nm,0.3s						
VLA	**Vladivostok**	**9.14**	**309**	⇑*i*P	**Pn**	**23 52 59.2**	**+1.4**
VLA				*e*S	**Sn**	**23 54 43.5**	**+4.3**
VLA				pmax	pmax		
	comp=Z,204nm,1.3s						
YSS	**Yuzh-Sakhalins**	**9.27**	**5**	⇓*i*P	**Pn**	**23 52 58.9**	**-0.5**
YSS				*e*S	**Sn**	**23 54 42.6**	**+0.4**
YSS				pmax	pmax		
	comp=Z,7.0nm,0.6s						
YSS				MLR	MLR		
	comp=Z,800nm,17.0s						
USRK	**Ussuriysk Ar.**	**9.71**	**315**	P	**Pn**	**23 53 07.6**	**+2.1**
	comp=Z,4.2nm,0.3s,baz=126,slow=13,SNR=103						
USRK				LR	LR	23 56 37.6	
	comp=Z,1μm,21.0s,baz=119,slow=36						
JNU	**Nakatsue**	**9.86**	**245**	P	**Pn**	**23 53 08.9**	**+1.2**
	comp=Z,1.8nm,0.3s,baz=56,slow=5.0,SNR=18						
JNU				LR	LR	23 57 18.0	
	comp=Z,3μm,20.7s,baz=60,slow=40						
JNU	**Nakatsue**	**9.86**	**245**	*e*Pn	**Pn**	**23 53 07.8**	**+0.1**
CBIJ	**Chichi jima**	**10.61**	**177**	*e*Pn	**Pn**	**23 53 17.8**	**-0.1**
CBIJ				*e*Sn	Sn	23 55 04.3	-11
JCJ	**Chichijima**	**10.61**	**177**	P	**Pn**	**23 53 13.6**	**-4.2**
	comp=Z,37nm,0.3s,baz=290,slow=19,SNR=12						
JCJ				S	Sn	23 55 04.2	-11
	comp=Z,25nm,0.3s,baz=245,slow=23,SNR=6.9						
KSRS	**Korea Array**	**10.84**	**273**	P	**Pn**	**23 53 24.5**	**+3.6**
	comp=Z,2.9nm,0.3s,baz=84,slow=14,SNR=92						
KSRS				LR	LR	23 57 31.6	
	comp=Z,1μm,18.4s,baz=82,slow=37						
KSAR	**Wonju Array Be**	**10.87**	**273**	P	**Pn**	**23 53 24.5**	**+3.1**
KSAR	**Wonju Array Be**	**10.87**	**273**	P	**Pn**	**23 53 24.5**	**+3.1**
MDJ	**Mudanjiang**	**11.35**	**311**	P	**Pn**	**23 53 28.3**	**+0.4**
MDJ				S	**Sn**	**23 55 33.6**	**+0.4**
MDJ				pmax	pmax		
	comp=Z,9.0nm,1.2s						
MDJ				pmax	pmax		
	comp=Z,140nm,3.9s						
MDJ				LR	LR		
	comp=Z,570nm,22.0s						
MDJ				LR	LR		
	comp=Z,760nm,17.5s						
MDJ				LR	LR		
	comp=Z,1μm,22.4s						
MDJ	**Mudanjiang**	**11.35**	**311**	*e*Pn	**Pn**	**23 53 28.0**	**0.0**
	comp=Z,65nm,0.8s						
UGL	**Uglegorsk**	**11.36**	**2**	*e*P	**Pn**	**23 53 29.0**	**+1.0**
UGL				pmax	pmax		
	comp=Z,112nm,1.0s						
UGL				MLR	MLR		
	comp=Z,900nm,16.0s						
UGL				MLR	MLR		
	comp=N,2μm,18.0s						
TJN	**Taejon**	**11.44**	**268**	*de*P	**Pn**	**23 53 30.9**	**+1.8**
HABR	**Khabarovsk**	**11.75**	**338**	*de*P	**Pn**	**23 53 29.4**	**-4.0**
HABR				*e*S	**Sn**	**23 55 39.3**	**-3.6**
HABR				pmax	pmax		
	comp=N,48nm,2.2s						
HABR				pmax	pmax		
	comp=E,48nm,2.2s						
HABR				pmax	pmax		
	comp=Z,53nm,2.2s						
HABR				MLR	MLR		
	comp=Z,309nm,13.0s						
INCN	**Inchon**	**11.86**	**273**	*e*Pn	**Pn**	**23 53 35.6**	**+0.6**
TYV	**Tymovskoe**	**13.16**	**3**	*e*P	**Pn**	**23 53 52.5**	**-0.1**
TYV				pmax	pmax		
	comp=Z,62nm,0.8s						
TYV				MLR	MLR		
	comp=E,500nm,14.0s						
TYV				MLR	MLR		
	comp=Z,500nm,14.0s						
KLR	**Kul'dur**	**13.52**	**331**	P	**Pn**	**23 53 58.3**	**+0.8**
	comp=Z,0.5nm,0.3s,baz=126,slow=12,SNR=17						
KLR				LR	LR	23 58 49.9	
	comp=Z,877nm,21.6s,baz=144,slow=35						
CN2	**Changchun**	**13.64**	**301**	*e*P	**Pn**	**23 54 00.3**	**+1.1**
CN2				*es*P	P	23 54 16.0	+9.5
CN2				*e*S	**Sn**	**23 56 30.8**	**+1.7**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.7s						
CN2				pmax	pmax		
	comp=Z,200nm,3.0s						
CN2				LR	LR		
	comp=Z,500nm,15.0s						
CN2				LR	LR		
	comp=Z,800nm,15.0s						
CN2				LR	LR		
	comp=Z,800nm,16.0s						
JOW	**Kunigami**	**15.61**	**230**	*e*Pn	**Pn**	**23 54 23.0**	**-2.2**
	comp=Z,148nm,1.3s						
DL2	**Dalian**	**15.71**	**280**	P	**Pn**	**23 54 27.3**	**+1.0**
DL2				sP	**sP**	**23 54 44

comp=Z,750nm,15.7s
NJ2 LR LR
comp=Z,1μm,15.7s
TIA Tai'an 19.59 273 ⇓P **P 23 55 10.9 -1.4**
TIA PP **sP 23 55 33.4 +2.8**
TIA S **S 23 58 46.3 -4.3**
TIA pmax pmax
comp=Z,130nm,1.0s
TIA pmax pmax
comp=Z,240nm,4.0s
TIA LR LR
comp=Z,540nm,15.0s
TIA LR LR
comp=Z,650nm,14.0s
TIA LR LR
comp=Z,780nm,14.5s
BJI Beijing 19.89 285 P **P 23 55 14.0 -1.5**
BJI S **S 23 58 48.9 -7.7**
BJI pmax pmax
comp=Z,35nm,1.4s
BJI LR LR
comp=Z,330nm,16.1s
BJI LR LR
comp=Z,350nm,19.2s
BJI LR LR
comp=Z,650nm,30.7s
BJT Baijiatuau 19.90 285 *e*P **P 23 55 14.6 -1.0**
BJT pmax pmax
comp=Z,61nm,0.6s
BJT Baijiatuau 19.90 285 *e*P **P 23 55 14.6 -1.0**
comp=Z,61nm,0.6s
BJT *e* 23 55 27.3
YOJ Yonaguni jima 20.62 235 *e*P **P 23 55 23.9 +0.3**
YOJ pmax pmax
comp=Z,66nm,0.9s
YOJ Yonaguni jima 20.62 235 *e*P **P 23 55 23.9 +0.3**
comp=Z,66nm,0.9s
TATO Taipei 21.29 239 *e*P **P 23 55 30.4 -0.4**
comp=Z,140nm,1.4s
YHNB Yeheng 21.57 239 *e*P **P 23 55 31.7 -2.1**
comp=Z,30nm,0.8s
NACB Ninganchiao 21.76 237 *e*P **P 23 55 35.0 -0.8**
comp=Z,25nm,0.9s
CLNS Chul'man 22.11 335 *e*P **P 23 55 37.6 -1.8**
CLNS *e**PP **pP 23 55 51.7 +0.4**
CLNS *e* 23 56 02.1
CLNS *e* 23 59 32.4
CLNS *e*S **S 23 59 36.3 -3.6**
CLNS pmax pmax
comp=Z,12nm,0.9s
CLNS pmax pmax
comp=E,25nm,0.8s
CLNS pmax pmax
comp=N,33nm,1.1s
CLNS pmax pmax
comp=E,28nm,1.0s
CLNS pmax pmax
comp=N,33nm,0.8s
CLNS pmax pmax
comp=Z,15nm,1.2s
CLNS smax smax
comp=N,215nm,10.0s
CLNS smax smax
comp=E,136nm,10.9s
CLNS MLR MLR
comp=Z,224nm,15.0s
CLNS MLR MLR
comp=E,142nm,12.0s
CLNS MLR MLR
comp=N,275nm,14.0s
SSLB Suanglung 22.45 238 *e*P **P 23 55 40.2 -3.0**
comp=N,43nm,0.9s
YULB Yu-li 22.49 236 *e*P **P 23 55 42.8 -0.9**
comp=N,29nm,1.0s
MA2 Magadan 22.66 12 P **P 23 55 45.1 0.0**
comp=N,50nm,0.8s,baz=220,slow=8.2,SNR=29
MA2 Magadan 22.66 12 *e*P **P 23 55 45.0 -0.1**
comp=N,205nm,0.8s
TPUB Ta-pu 23.00 237 *e*P **P 23 55 44.7 -4.2**
comp=N,50nm,0.6s
TWG Pinlang 23.04 236 *e*P **P 23 55 48.5 -0.8**
comp=N,232nm,1.0s
HHC Hu-ho-hao-te 23.39 287 *e*P **P 23 55 49.9 -2.8**
HHC sP sP 23 56 08.1 -3.5
HHC PP **PnPn 23 56 26.5 +5.8**
HHC S **S 23 59 58.6 -3.3**
HHC pmax pmax
comp=N,100nm,0.9s
HHC pmax pmax
comp=N,1μm,3.9s
HHC LR LR
comp=N,2μm,12.2s
HHC LR LR
comp=N,2μm,12.6s
HHC LR LR
comp=N,2μm,12.3s
WHN Wuhan 23.59 260 ⇓P **P 23 55 53.6 -1.0**
WHN S S 23 59 52.4 -13
WHN pmax pmax
comp=N,98nm,0.6s
WHN LR LR
comp=N,970nm,16.5s
WHN LR LR
comp=N,1μm,12.6s
WHN LR LR
comp=N,2μm,16.6s
CIT Chita 24.28 315 *e*P **P 23 56 01.1 +0.3**
CIT *e* 23 56 12.1
CIT *e* 23 56 37.1
CIT pmax pmax
comp=Z,311nm,1.3s
YAK Yakutsk 25.43 347 *i*P **P 23 56 10.4 -0.6**
YAK *e**PP **pP 23 56 20.3 -3.9**
YAK *e*S **S 00 00 30.3 -3.7**
YAK *e**SS **sS 00 00 51.2 -5.1**
YAK *e*SS **SnSn 00 01 34.4 +4.0**
YAK pmax pmax
comp=N,74nm,1.1s
YAK pmax pmax
comp=E,24nm,0.9s
YAK pmax pmax
comp=Z,219nm,0.9s
YAK smax smax
comp=N,104nm,1.4s
YAK Yakutsk 25.43 347 *e*P **P 23 56 10.4 -0.6**
comp=N,220nm,0.8s
SEY Seymchan 26.09 11 P **P 23 56 17.8 +0.8**
comp=N,86nm,1.1s,baz=194,slow=8.1,SNR=60
XAN Xi'an 26.64 272 P **P 23 56 21.1 -1.2**
XAN S **S 00 00 52.6 -1.1**
XAN pmax pmax
comp=N,73nm,0.6s
XAN pmax pmax
comp=N,120nm,6.7s
XAN LR LR
comp=N,240nm,17.0s
XAN LR LR
comp=N,270nm,19.0s
XAN LR LR
comp=N,290nm,20.7s
ULN Ulaanbaatar 27.08 303 *e*P **P 23 56 26.0 -0.3**
ULN pmax pmax
comp=Z,18nm,0.7s
ULN Ulaanbaatar 27.08 303 P **P 23 56 27.5 +1.2**
SNR=11
ULN Ulaanbaatar 27.08 303 P **P 23 56 27.5 +1.2**
SNR=11
ULN Ulaanbaatar 27.08 303 *e*P **P 23 56 26.0 -0.3**
comp=Z,18nm,0.7s
SONM Songino Array 27.52 303 P **P 23 56 29.7 -0.5**
comp=Z,24nm,0.6s,baz=101,slow=8.2,SNR=172
SONM LR LR 00 07 49.3
comp=Z,292nm,20.1s,baz=104,slow=37
ENH Enshi 27.52 264 *e*P **P 23 56 28.9 -1.5**
comp=Z,214nm,0.9s
H11N2 WAKE ISLAND Hy 28.39 122 T T 00 27 00.4
baz=315,slow=75,SNR=377
H11N1 WAKE ISLAND Hy 28.40 122 T T 00 26 56.6
baz=315,slow=75,SNR=1061
H11N3 WAKE ISLAND Hy 28.41 122 T T 00 26 59.4
baz=315,slow=75,SNR=310
H11S1 WAKE ISLAND Hy 29.13 124 T T 00 27 51.8
baz=317,slow=76,SNR=712
H11S3 WAKE ISLAND Hy 29.13 124 T T 00 27 50.0
baz=317,slow=76,SNR=876
H11S2 WAKE ISLAND Hy 29.15 124 T T 00 27 52.9
baz=317,slow=76,SNR=629

ZAK Zakamensk 29.95 307 *e*P **P 23 56 51.1 -0.7**
ZAK pmax pmax
comp=Z,26nm,1.1s
TLY Talaya 29.98 310 P **P 23 56 52.6 +0.7**
comp=Z,12nm,0.8s,baz=107,slow=8.1,SNR=9.1
TLY Talaya 29.98 310 *e*P **P 23 56 52.4 +0.5**
TLY *e* 23 58 04.3
TLY *e*S **S 00 01 45.6 -0.4**
TLY pmax pmax
comp=Z,33nm,1.1s
TLY MLR MLR
comp=Z,402nm,14.0s
TLY Talaya 29.98 310 *e*P **P 23 56 53.1 +1.2**
comp=Z,24nm,0.9s
LZH Lanzhou 30.09 279 ⇑P **P 23 56 52.4 -0.8**
LZH pP pP 23 57 06.0 -0.5
LZH sP sP 23 57 12.4 -0.3
LZH PP **PnPn 23 57 51.6 -0.2**
LZH PcP **PcP 23 59 54.0 +0.2**
LZH S S 00 01 36.3 -12
LZH sS sS 00 02 08.3 -2.4
LZH SS **SnSn 00 03 25.5 +1.0**
LZH pmax pmax
comp=Z,63nm,1.1s
LZH pmax pmax
comp=Z,260nm,6.0s
LZH LR LR
comp=Z,410nm,13.0s
LZH LR LR
comp=Z,670nm,14.0s
LZH LR LR
comp=Z,850nm,15.6s
GYA Guiyang 31.47 259 ⇑*i*P **P 23 57 04.0 -1.4**
GYA pP pP 23 57 20.3 +1.6
GYA PP **PnPn 23 58 11.0 +1.1**
GYA PcP **PcP 23 59 58.9 +1.3**
GYA S **S 00 02 07.4 -2.5**
GYA sS sS 00 02 32.3 -0.1
GYA ScP **ScP 00 03 36.6 +0.3**
GYA SS **SnSn 00 03 58.5 +0.2**
GYA ScS **ScS 00 07 32.0 -2.3**
GYA pmax pmax
comp=Z,100nm,1.0s
GYA pmax pmax
comp=Z,150nm,5.0s
GYA LR LR
comp=Z,580nm,17.2s
GYA LR LR
comp=Z,520nm,17.3s
GYA LR LR
comp=Z,510nm,17.6s
MOY Mondy 31.60 309 *e*P **P 23 57 06.5 +0.2**
MOY pmax pmax
comp=Z,26nm,2.3s
CD2 Chengdu 31.81 269 P **P 23 57 07.3 -1.0**
CD2 sP sP 23 57 27.3 -0.5
CD2 S **S 00 02 13.6 -1.4**
CD2 sS sS 00 02 37.1 -0.4
CD2 pmax pmax
comp=Z,80nm,1.0s
CD2 pmax pmax
comp=Z,130nm,5.2s
GTA Gaotai 32.49 286 *e*P **P 23 57 13.4 -0.9**
GTA pP pP 23 57 26.1 -1.5
GTA sP sP 23 57 31.0 -2.8
GTA PcP **PcP 00 00 00.8 +0.6**
GTA S **S 00 02 26.1 +0.5**
GTA sS sS 00 02 47.0 -1.2
GTA pmax pmax
comp=Z,15nm,0.7s
GTA pmax pmax
comp=Z,86nm,5.9s
GTA LR LR
comp=Z,360nm,18.5s
GTA LR LR
comp=Z,500nm,18.1s
GTA LR LR
comp=Z,530nm,17.1s
BILL Bilibino 33.33 17*c i*P **P 23 57 20.8 -0.3**
BILL *i* 23 57 32.8
BILL *i* 00 00 02.7
BILL pmax pmax
comp=Z,14nm,1.0s
BILL MLR MLR
comp=Z,154nm,19.0s
BILL Bilibino 33.33 17 *e*P **P 23 57 20.8 -0.3**
comp=Z,18nm,1.2s
DAV Davao City (W) 33.79 209 *e*P **P 23 57 25.3 -0.3**
comp=Z,230nm,0.4s
TIXI Tiksi 34.63 353 P **P 23 57 31.9 -0.3**
comp=Z,12nm,0.5s,baz=141,slow=6.3,SNR=39
TIXI LR LR 00 12 52.0
comp=Z,215nm,19.0s,baz=197,slow=38
TIXI Tiksi 34.63 353*c i*P **P 23 57 31.8 -0.5**
TIXI pmax pmax
comp=Z,27nm,1.2s
TIXI Tiksi 34.63 353 *e*P **P 23 57 31.8 -0.5**
comp=Z,15nm,0.8s
KMI Kunming 35.20 260 P **P 23 57 37.0 -1.0**
KMI pP pP 23 57 51.8 +0.3
KMI sP sP 23 57 58.8 +1.2
KMI PP **PnPn 23 58 57.1 +0.1**
KMI S **S 00 03 06.6 -1.3**
KMI sS sS 00 03 30.1 -0.5
KMI pmax pmax
comp=Z,82nm,1.2s
KMI pmax pmax
comp=Z,200nm,3.1s
KMI LR LR
comp=Z,220nm,24.8s
KMI LR LR
comp=Z,330nm,22.6s
KMI LR LR
comp=Z,490nm,23.5s
KRAR Krasnoyarsk 37.06 316 ⇓*e*P **P 23 57 53.4 +0.1**
KRAR pmax pmax
comp=Z,23nm,1.2s
KWAJ Kwajalein Atol 37.17 134 *e*P **P 23 57 55.2 +0.6**
KWAJ pmax pmax
comp=Z,171nm,1.0s
KWAJ Kwajalein Atol 37.17 134 *e*P **P 23 57 55.2 +0.6**
comp=Z,171nm,1.0s
NIKH Nikolski High 37.23 50 *e*P **P 23 57 56.1 +1.3**
comp=Z,79nm,0.8s
GAMB Gambell 38.07 32 *e*P **P 23 58 03.5 +1.9**
comp=Z,58nm,1.8s
MYLDM Lahad Datu 38.62 219 ⇓P **P 23 58 07.5 +0.6**
MYLDM Lahad Datu 38.62 219 *e*P **P 23 58 07.3 +0.4**
comp=Z,46nm,0.9s
UNV Unalaska Valle 38.69 48 *e*P **P 23 58 08.3 +1.2**
comp=Z,325nm,1.9s
SDKM Sandakan 38.89 221 ⇑P **P 23 58 09.3 +0.1**
SKNT Sakolnakorn 38.91 248 P **P 23 58 09.1 -0.3**
comp=Z,46nm,1.0s
KKM Kota Kinabalu 39.07 223 ⇑P **P 23 58 10.3 -0.4**
KKM Kota Kinabalu 39.07 223 *e*P **P 23 58 10.7 0.0**
comp=Z,45nm,1.3s
AKUT Akutan 39.13 48 *e*P **P 23 58 12.6 +1.8**
comp=Z,721nm,1.8s
SWI Sorong 39.56 196 P **P 23 58 13.5 -1.1**
comp=Z,24nm,1.1s
SWI Sorong 39.56 196 P **P 23 58 14.9 +0.3**
SWI pmax pmax
comp=Z,24nm,1.0s
CRAI Chiangrai 39.67 256 P **P 23 58 15.4 -0.3**
comp=Z,215nm,1.1s,comp=Z,56μm
TSM Tawau 39.70 219 ⇑P **P 23 58 16.0 +0.2**
MANU Manus Island 39.92 171 *e*P **P 23 58 16.5 -1.2**
comp=Z,21nm,0.9s
GENI Genyem 40.13 182 P **P 23 58 19.5 +0.1**
KHON Khomkaen 40.17 249 P **P 23 58 21.4 +1.6**
comp=Z,13nm,0.8s
TNA Tin City 40.20 30 *e*P **P 23 58 21.4 +1.9**
comp=Z,44nm,1.0s
LBMI Labuha 40.32 202 P **P 23 58 21.2 +0.2**
FALS False Pass 40.54 47 *e*P **P 23 58 23.0 +0.7**
comp=Z,534nm,1.8s
WMQ Urumqi 40.65 296 ⇓*i*P **P 23 58 24.9 +1.3**
WMQ pP pP 23 58 39.0 +1.8
WMQ sP sP 23 58 46.3 +3.0
WMQ S **S 00 04 27.8 -2.0**
WMQ sS sS 00 04 53.6 +0.9
WMQ pmax pmax
comp=Z,57nm,1.0s
WMQ pmax pmax
comp=Z,160nm,3.6s
WMQ LR LR
comp=Z,180nm,24.0s
WMQ LR LR
comp=Z,260nm,29.4s
WMQ LR LR
comp=Z,240nm,27.2s
CMAI Chiengmai2 40.86 256 P **P 23 58 25.5 -0.2**
comp=Z,24nm,1.1s,comp=Z,2μm
UTTA Uttaradit 41.00 252 P **P 23 58 26.2 -0.4**
comp=Z,4.7nm,0.9s,comp=Z,46nm
LAMP Lampang 41.23 254 P **P 23 58 29.0 +0.4**
comp=Z,6.0nm,0.8s
MRSI Marisa 41.24 211 P **P 23 58 28.6 0.0**
comp=Z,56nm,1.1s
FAKI Fak Fak 41.35 194 P **P 23 58 28.9 -0.6**
FAKI Fak Fak 41.35 194 *e*P **P 23 58 27.7 -1.7**
comp=Z,47nm,0.8s
PBKT Sadao Pong 41.41 251 P **P 23 58 29.5 -0.4**
comp=Z,25nm,1.1s
ZALV Zalesovo Beam 41.55 312 P **P 23 58 30.5 -0.3**
comp=Z,33nm,0.9s,baz=91,slow=6.3,SNR=92
ZALV PcP **PcP 00 00 26.6 -0.6**
comp=Z,6.5nm,0.7s,baz=115,slow=3.6,SNR=3.2
ZALV LR LR 00 16 27.9
comp=Z,357nm,19.1s,baz=70,slow=37
CMMT Chiang Mai 41.59 255 P **P 23 58 30.8 -0.7**
comp=Z,26nm,0.9s
CHTO Chiang Mai 41.59 255 P **P 23 58 30.9 -0.5**
comp=Z,118nm,1.1s
CHTO Chiang Mai 41.59 255 *e*P **P 23 58 31.0 -0.5**
CHTO pmax pmax
comp=Z,99nm,1.9s
CHTO Chiang Mai 41.59 255 P **P 23 58 31.4 -0.1**
SNR=8.1
CHTO Chiang Mai 41.59 255 P **P 23 58 31.4 -0.1**
SNR=8.1
CHTO Chiang Mai 41.59 255 *e*P **P 23 58 31.0 -0.5**
comp=Z,99nm,1.9s
CMAR Chiang Mai Arr 41.80 255 PcP **PcP 00 00 28.7 +0.1**
comp=Z,2.4nm,0.6s,baz=23,slow=3.7,SNR=5.2
CMAR LR LR 00 18 38.4
comp=Z,170nm,18.8s,baz=54,slow=40
SANI Sanana 42.12 204 P **P 23 58 35.5 -0.3**
SDPT Sand Point 42.23 46 *e*P **P 23 58 37.4 +1.1**
comp=Z,600nm,1.8s
LSA Lhasa 42.28 275 P **P 23 58 38.3 +0.7**
LSA pmax pmax
comp=Z,32nm,1.1s
LSA Lhasa 42.28 275 *e*P **P 23 58 38.0 +0.4**
LSA pmax pmax
comp=Z,40nm,0.8s
LSA Lhasa 42.28 275 *e*P **P 23 58 38.0 +0.4**
comp=Z,40nm,0.8s
LUWI Luwuk 42.31 209 P **P 23 58 37.5 +0.2**
LUWI Luwuk 42.31 209 *e*P **P 23 58 37.8 +0.6**
comp=Z,55nm,1.0s
NVS Novosibirsk 42.46 313 ⇓*i*P **P 23 58 38.6 +0.5**
NVS *i* 23 58 57.4
NVS *e*S **S 00 04 54.9 -1.2**
NVS pmax pmax
comp=N,10.0nm,1.1s
NVS pmax pmax
comp=E,41nm,1.1s
NVS pmax pmax
comp=Z,53nm,1.1s
NRIK Noril'sk 42.70 335 P **P 23 58 39.5 -0.4**
comp=Z,4.3nm,0.4s,baz=110,slow=9.1,SNR=19
CHBT CHBT 42.88 245 P **P 23 58 42.3 +0.3**
comp=Z,34nm,0.9s,comp=Z,2μm
PCI Palu 43.37 213 P **P 23 58 45.8 -0.1**
comp=Z,65nm,1.2s
BNDI Bandanaira 43.41 197 P **P 23 58 46.1 -0.1**
SHL Shillong 43.55 269 *e*P **P 23 58 48.0 +0.5**
comp=Z,87nm,1.0s
SHL *e*S S 00 04 56.5 -17
MKAR Makanchi Array 43.87 302 P **P 23 58 49.8 +0.1**
comp=Z,22nm,0.7s,baz=85,slow=9.6,SNR=199
MKAR LR LR 00 18 10.6
comp=Z,124nm,18.8s,baz=86,slow=37
MAKZ Makanchi 44.08 302 *e*P **P 23 58 51.5 +0.1**
MAKZ pmax pmax
comp=Z,48nm,1.0s
MAKZ Makanchi 44.08 302 *e*P **P 23 58 51.5 +0.1**
comp=Z,48nm,1.0s
SBUM Sibu 44.24 225 ⇑P **P 23 58 53.0 +0.1**
SBUM Sibu 44.24 225 *e*P **P 23 58 53.0 +0.1**
comp=Z,19nm,1.1s
TTA Tatalina 44.79 35 *e*P **P 23 58 58.4 +1.6**
TTA *e**PP **pP 23 59 11.5 +0.8**
TTA Tatalina 44.79 35 *e*P **P 23 58 58.4 +1.6**
TTA *e*pP **pP 23 59 11.5 +0.8**
SVW2 Sparrevohn 44.90 38 *e*P **P 23 58 59.1 +1.4**
comp=Z,28nm,1.3s
KDI Kendari 45.05 207 P **P 23 58 59.0 -0.3**
comp=Z,21nm,1.2s
TTSI Tana Toraja 45.30 211 P **P 23 59 00.1 -1.2**
KURK Kurchatov 45.61 308 P **P 23 59 03.8 +0.4**
KURK pmax pmax
comp=Z,87nm,0.7s
KURK Kurchatov 45.61 308 *e*P **P 23 59 03.3 -0.2**
comp=Z,166nm,0.8s
KURBB Kurchatov Arra 45.68 307 P **P 23 59 03.8 -0.2**
comp=Z,87nm,0.7s,baz=84,slow=8.3,SNR=461
KSM Kuching 46.12 226 ⇓P **P 23 59 08.4 +0.6**
KSM Kuching 46.12 226 *e*P **P 23 59 07.8 -0.1**
comp=Z,36nm,1.1s
SPSI Sidrap Palu 46.16 211 P **P 23 59 07.9 -0.2**
OHAK Old Harbor 46.17 43 *e*P **P 23 59 08.1 +0.4**
OHAK *e*pP **pP 23 59 22.7 +1.1**
RSO Redoubt South 46.29 39 *e*P **P 23 59 10.4 +1.5**
SAUI Saumlaki 46.47 194 P **P 23 59 08.0 -2.5**
KDAK Kodiak Island 46.51 42 *e*P **P 23 59 11.2 +0.9**
KDAK *e* 23 59 25.8
KDAK Kodiak Island 46.51 42 *e*P **P 23 59 11.2 +0.9**
KDAK *e* 23 59 25.8
PPLA Purkeypile 46.53 35 *e*P **P 23 59 13.2 +2.5**
comp=Z,52nm,1.2s
PDGK Podgornoye 46.57 297 P **P 23 59 10.8 -0.3**
PDGK pmax pmax
comp=Z,101nm,0.9s
CAST Castle Rocks 46.59 35 *e*P **P 23 59 13.0 +2.0**
comp=Z,14nm,0.9s
SPU Mount Spurr 46.61 38 *e*P **P 23 59 12.9 +1.6**
STKI Sintang 46.62 224 P **P 23 59 11.2 -0.6**
HOM Homer 46.88 40 *e*P **P 23 59 13.0 -0.2**
comp=Z,306nm,1.3s
BPAW Bear Paw Mtn. 47.08 34 *e*P **P 23 59 16.3 +1.5**
comp=Z,13nm,1.0s
KTH Kantishna Hill 47.11 34 *e*P **P 23 59 16.8 +1.7**
comp=Z,93nm,1.6s
KAPI Kappang 47.12 210 *e*P **P 23 59 15.5 0.0**
comp=Z,67nm,1.0s
PMG Port Moresby 47.17 172 *e*P **P 23 59 16.3 +0.4**
PMG pmax pmax
comp=Z,38nm,1.1s
PMG Port Moresby 47.17 172 *e*P **P 23 59 16.3 +0.4**
comp=Z,38nm,1.1s
MLY Manley 47.20 32 *e*P **P 23 59 17.6 +1.8**
comp=Z,18nm,0.9s
BRLK Bradley Lake 47.25 40 *e*P **P 23 59 17.2 +0.9**
comp=Z,20nm,0.9s
TRF Thorofare Moun 47.40 35 *e*P **P 23 59 18.8 +1.4**
comp=Z,19nm,0.8s
COLD Coldfoot 47.49 29 *e*P **P 23 59 19.8 +1.9**
comp=Z,6.3nm,0.7s
KTGM Kuala Trenggan 47.57 237 ⇑P **P 23 59 18.9 -0.3**
JOHN Johnston Islan 47.63 102 *e*P **P 23 59 20.1 +0.5**
comp=Z,323nm,1.5s
RC01 Rabbit Creek A 47.74 38 *e*P **P 23 59 21.3 +1.4**
comp=Z,29nm,0.8s
KKN Kakani 47.75 275 *e*P **P 23 59 20.5 -0.2**
comp=Z,111nm,0.7s
BWN Browne 47.75 34 *e*P **P 23 59 22.2 +2.3**
comp=Z,88nm,1.1s
PKIN Phulchoki 47.75 275 *e*P **P 23 59 20.5 -0.3**
comp=Z,38nm,0.6s
BBKI Banjar Baru 47.90 217 P **P 23 59 21.6 -0.1**
SEW Seward 47.95 39 *e*P **P 23 59 22.6 +1.1**
comp=Z,81nm,1.6s
MCK McKinley 47.99 34 *e*P **P 23 59 21.8 -0.1**
MCK pmax pmax
comp=Z,25nm,1.0s
MCK McKinley 47.99 34 *e*P **P 23 59 21.8 -0.1**
comp=Z,25nm,1.0s
PMR Palmer 48.00 37 *e*P **P 23 59 22.5 +0.6**

PMR pmax pmax
comp=Z,24nm,0.8s
PMR Palmer 48.00 37 *e*P **P 23 59 22.5 +0.6**
comp=Z,24nm,0.8s
RND Reindeer 48.04 35 *e*P **P 23 59 23.0 +0.7**
RND pmax pmax
comp=Z,26nm,0.9s
RND Reindeer 48.04 35 *e*P **P 23 59 23.0 +0.7**
comp=Z,26nm,0.9s
GKN Gorkha 48.16 276 *e*P **P 23 59 23.7 -0.1**
comp=Z,396nm,1.0s
MDM Murphy Dome 48.27 32 *e*P **P 23 59 24.5 +0.5**
WRH Wood River Hil 48.34 33 *e*P **P 23 59 25.9 +1.4**
comp=Z,24nm,1.2s
SML Sawmill 48.37 37 *e*P **P 23 59 25.9 +1.1**
SML pmax pmax
comp=Z,37nm,0.8s
SML Sawmill 48.37 37 *e*P **P 23 59 25.9 +1.1**
comp=Z,37nm,0.8s
COLA College 48.43 33 *e*P **P 23 59 25.9 +0.7**
COLA pmax pmax
comp=Z,25nm,0.8s
COLA College 48.43 33 *e*P **P 23 59 25.9 +0.7**
comp=Z,25nm,0.8s
CCB Clear Creek Bu 48.46 33 *e*P **P 23 59 26.6 +1.2**
comp=Z,44nm,1.8s
SCM Sheep Creek Mo 48.84 37 *e*P **P 23 59 30.1 +1.6**
SCM pmax pmax
comp=Z,34nm,0.8s
SCM Sheep Creek Mo 48.84 37 *e*P **P 23 59 30.1 +1.6**
comp=Z,34nm,0.8s
ILAR Eielson Array 48.85 33 P **P 23 59 28.9 +0.5**
comp=Z,18nm,0.8s,baz=269,slow=6.2,SNR=148
ILAR Eielson Array 48.85 33 P **P 23 59 29.0 +0.5**
ILAR pmax pmax
comp=Z,18nm,0.8s
PKDT Phuket 49.05 244 P **P 23 59 31.4 +0.8**
comp=Z,59nm,0.9s
KOLN Koldanda 49.08 276 *e*P **P 23 59 30.9 -0.1**
comp=Z,123nm,0.9s
KULM Kulim 49.27 239 ⇑P **P 23 59 32.2 -0.1**
KULM Kulim 49.27 239 *e*P **P 23 59 31.4 -0.9**
comp=Z,14nm,0.8s
PYUN Piuthan 49.41 277 *e*P **P 23 59 33.6 +0.1**
comp=Z,575nm,1.0s
TKM2 Tokmak 2 49.42 298 *e*P **P 23 59 34.2 +0.8**
TKM2 pmax pmax
comp=Z,72nm,0.8s
TKM2 Tokmak 2 49.42 298 *e*P **P 23 59 34.2 +0.8**
comp=Z,72nm,0.8s
MMRI Maumere 49.53 205 *e*P **P 23 59 34.1 -0.1**
comp=Z,61nm,1.1s
KLU Klutina 49.54 37 *e*P **P 23 59 35.3 +1.4**
comp=Z,24nm,0.9s
PAX Paxson 49.60 35 *e*P **P 23 59 35.9 +1.6**
PAX pmax pmax
comp=Z,8.0nm,0.9s
PAX Paxson 49.60 35 *e*P **P 23 59 35.9 +1.6**
comp=Z,8.4nm,0.9s
DIV Divide 49.65 37 *e*P **P 23 59 36.5 +1.8**
comp=Z,38nm,0.9s
EYAK Cordova Ski Ar 49.73 38 *e*P **P 23 59 37.1 +1.9**
comp=Z,29nm,0.9s
MYKOM Kota Tinggi 49.77 233 ⇓P **P 23 59 36.5 +0.5**
MYKOM Kota Tinggi 49.77 233 *e*P **P 23 59 36.0 -0.1**
comp=Z,44nm,1.7s
SOEI Soe 49.93 203 P **P 23 59 36.7 -0.6**
SOEI Soe 49.93 203 *e*P **P 23 59 36.5 -0.8**
comp=Z,50nm,0.9s
TPRI Tanjung Pinang 50.02 232 P **P 23 59 37.6 -0.3**
OTUK Ortayu 50.13 305 P **P 23 59 38.2 -0.3**
OTUK pmax pmax
comp=Z,60nm,1.0s
FRU Bishkek 50.13 298 *i* P **P 23 59 38.0 -0.6**
FRU *i* 23 59 56.5
FRU *e*S **S 00 06 47.0 +0.6**
FRU pmax pmax
comp=Z,68nm,1.8s
DOT Dot Lake 50.16 34 *e*P **P 23 59 39.2 +0.7**
comp=Z,30nm,0.8s
BMRM Bremner River 50.24 38 *e*P **P 23 59 40.6 +1.5**
comp=Z,29nm,0.9s
KSH Kashi 50.25 294 P **P 23 59 43.6 +4.0**
KSH *e*pP sP 23 59 59.5 -0.1
KSH *e*sP pP 00 00 06.3 +13
KSH *e*PP **PP 00 01 41.1 +6.0**
KSH *e*ScP **ScP 00 04 50.4 +1.0**
KSH S **S 00 06 52.3 +4.0**
KSH ScS **ScS 00 09 24.3 -1.9**
KSH SS **SS 00 10 24.0 +2.1**
KSH pmax pmax
comp=Z,27nm,0.8s
KSH pmax pmax
comp=Z,120nm,3.8s
KSH LR LR
comp=Z,410nm,16.3s
KSH LR LR
comp=Z,120nm,6.9s
KSH LR LR
comp=Z,440nm,16.7s
BRVK Borovoye 50.26 312*c i*P **P 23 59 39.2 -0.2**
BRVK pmax pmax
comp=Z,39nm,1.0s
BRVK Borovoye 50.26 312 *e*P **P 23 59 39.5 +0.1**
comp=Z,37nm,1.0s
AAK Ala-Archa 50.28 298*c i*P **P 23 59 39.9 0.0**
AAK pmax pmax
comp=Z,52nm,0.9s
AAK Ala-Archa 50.28 298 *e*P **P 23 59 39.9 0.0**
comp=Z,172nm,0.9s
RAGM Ragged Mountai 50.28 38 *e*P **P 23 59 41.6 +2.1**
comp=Z,26nm,1.0s
MENT Mentasta 50.40 35 *e*P **P 23 59 42.0 +1.7**
comp=Z,18nm,0.8s
EKS2 Erkin-Say 50.77 298 *e*P **P 23 59 43.7 +0.2**
EKS2 pmax pmax
comp=Z,24nm,0.8s
EKS2 Erkin-Say 50.77 298 *e*P **P 23 59 43.7 +0.2**
comp=Z,24nm,0.8s
ZRNK Zerenda 51.04 312 *e*P **P 23 59 45.3 +0.1**
ZRNK pmax pmax
comp=Z,48nm,1.0s
ZRNK Zerenda 51.04 312 *e*P **P 23 59 45.3 +0.1**
comp=Z,48nm,1.0s
MTN Manton Dam 51.24 193 *e*P **P 23 59 46.4 -0.6**
comp=Z,134nm,1.6s
EGAK Eagle 51.29 32 *e*P **P 23 59 47.6 +0.7**
BALM Baldy 51.31 37 *e*P **P 23 59 48.6 +1.3**
BALM pmax pmax
comp=Z,20nm,0.9s
BALM Baldy 51.31 37 *e*P **P 23 59 48.6 +1.3**
comp=Z,20nm,0.9s
COEN Coen 51.42 178 *e*P **P 23 59 48.7 +0.3**
comp=Z,49nm,1.1s
COEN *e*pP **pP 00 00 02.5 +0.1**
TWSI Taliwang, Sumb 51.66 212 P **P 23 59 48.7 -1.5**
MNAS Manas 51.72 298 P **P 23 59 50.7 0.0**
MNAS pmax pmax
comp=Z,65nm,1.2s
SRBI Singaraja 51.80 214 P **P 23 59 51.1 -0.1**
TSI Tuntungan 51.99 240 P **P 23 59 52.4 -0.4**
DAWY Dawson 52.16 33 *e*P **P 23 59 54.6 +1.2**
comp=Z,28nm,1.6s
PSI Prapat 52.26 239 *e*P **P 23 59 54.2 -0.7**
PSI pmax pmax
comp=Z,19nm,0.7s
PSI Prapat 52.26 239 *e*P **P 23 59 54.2 -0.7**
comp=Z,19nm,0.7s
JAGI Jajag, Banyuwa 52.62 215 *e*P **P 00 00 00.3 +3.0**
comp=Z,36nm,1.0s
GMJI Gumukmas 52.77 216 P **P 23 59 57.9 -0.5**
KKAR Karatay Array 52.89 300 *e*P **P 23 59 59.1 -0.1**
KKAR Karatay Array 52.89 300 *e*P **P 23 59 59.1 -0.1**
INK Inuvik 53.72 27 P **P 00 00 06.1 +1.3**
comp=Z,22nm,0.8s,baz=292,slow=6.7,SNR=85
INK LR LR 00 24 35.8
comp=Z,101nm,19.7s,baz=283,slow=38
INK Inuvik 53.72 27 *e*P **P 00 00 06.1 +1.3**
comp=Z,32nm,1.0s
UGM Wanagama 53.87 219 *e*P **P 00 00 04.6 -2.0**
comp=Z,165nm,1.0s
GSI Gunungsitoli 54.26 239 *e*P **P 00 00 08.7 -0.8**
comp=Z,90nm,0.7s
SVE Sverdlovsk 54.72 318*de*P **P 00 00 12.8 +0.5**
SVE pmax pmax
comp=Z,113nm,1.1s
SVE MLR MLR
comp=Z,456nm,16.0s
SKAG Skagway 55.08 38 *e*P **P 00 00 16.7 +1.9**
SKAG *e* 00 00 30.6
ARU Arti 55.93 318 LR LR 00 26 44.3
comp=Z,417nm,18.1s,baz=66,slow=38
ARU Arti 55.93 318*c i*P **P 00 00 20.9 -0.1**
ARU 00 01 18.0
ARU 00 02 27.5
ARU S **S 00 08 08.1 +3.3**
ARU SS **SS 00 11 45.9 -4.8**
ARU pmax pmax
comp=Z,82nm,1.0s
ARU MLR MLR
comp=Z,403nm,18.0s
ARU Arti 55.93 318 *e*P **P 00 00 20.9 -0.1**
comp=Z,80nm,0.9s
ABKAR Akbulak array 57.60 310 *e*P **P 00 00 32.5 -0.4**
WRAB Tennant Creek 57.75 188 *i* P **P 00 00 33.0 -1.2**
WRA Warramunga Arr 57.76 188 P **P 00 00 33.2 -1.1**
comp=Z,47nm,0.8s,baz=6.1,slow=7.4,SNR=102
WRA Warramunga Arr 57.76 188 P **P 00 00 33.2 -1.1**
WRA pmax pmax
comp=Z,48nm,0.8s
DLBC Dease Lake 58.01 38 LR LR 00 25 55.3
comp=Z,79nm,19.5s,baz=204,slow=36
DLBC Dease Lake 58.01 38 *e*P **P 00 00 37.5 +1.8**
comp=Z,37nm,1.3s
SPITS Spitsbergen Ar 59.88 349 LR LR 00 27 54.6
comp=Z,159nm,21.8s,baz=350,slow=37
HSPB Hornsund (broa 60.80 348 *e*P **P 00 00 55.1 +0.5**
ASAR Alice Springs 61.48 188 P **P 00 00 59.2 -0.7**
comp=Z,22nm,0.8s,baz=13,slow=5.8,SNR=153
ASAR LR LR 00 26 55.2
comp=Z,86nm,21.7s,baz=338,slow=35
ASAR Alice Springs 61.48 188 P **P 00 00 59.2 -0.7**
ASAR pmax pmax
comp=Z,23nm,0.8s
RES Resolute Bay 61.91 15 *e*P **P 00 01 02.7 +0.6**
RES *e*PP **pP 00 01 16.8 +0.3**
RES pmax pmax
comp=Z,32nm,1.0s
RES Resolute Bay 61.91 15 *e*P **P 00 01 02.7 +0.6**
comp=Z,32nm,1.0s
RES *e*pP **pP 00 01 16.8 +0.3**
APA Apatity 62.12 336⇑*i*P **P 00 01 04.0 +0.4**
APA MLR MLR
comp=Z,300nm,14.0s
TMCR Tamitsa 62.21 331 *e*P **P 00 01 04.2 0.0**
TMCR pmax pmax
comp=Z,56nm,1.2s
PALK Pallekele 62.64 257 *i* P **P 00 01 08.6 +0.6**
KEV Kevo 62.85 339 *e*P **P 00 01 09.1 +0.6**
KEV pmax pmax
comp=Z,26nm,0.9s
KEV Kevo 62.85 339 *e*P **P 00 01 09.1 +0.6**
comp=Z,26nm,0.9s
YKA Yellowknife Ar 63.15 30 P **P 00 01 11.0 +0.4**
comp=Z,10nm,0.8s,baz=302,slow=6.7,SNR=123
YKA Yellowknife Ar 63.15 30 P **P 00 01 11.0 +0.4**
YKA pmax pmax
comp=Z,10.0nm,0.8s
KLMR Klimovskoe 63.25 328 *e*P **P 00 01 09.7 -1.5**
KLMR *e* 00 03 28.1
KLMR pmax pmax
comp=Z,61nm,1.4s
EIDS Eidsvold 63.39 170 *e*P **P 00 01 13.0 +0.5**
comp=Z,39nm,1.4s
ARCES ARCESS Array B 63.40 339 P **P 00 01 12.3 +0.1**
comp=Z,14nm,0.8s,baz=53,slow=11,SNR=27
ARCES LR LR 00 32 43.9
comp=Z,89nm,18.5s,baz=44,slow=40
ARCES ARCESS Array B 63.40 339 P **P 00 01 12.3 +0.1**
ARCES pmax pmax
comp=Z,13nm,0.8s
ARCES MLR MLR
comp=Z,89nm,18.5s
GEYT Alibeck 63.62 299 P **P 00 01 14.3 +0.1**
comp=Z,21nm,0.8s,baz=39,slow=2.8,SNR=63
GEYT LR LR 00 30 13.6
comp=Z,155nm,20.2s,baz=205,slow=37
KTK1 Kautokeino 64.36 339 *e*P **P 00 01 18.6 +0.1**
KTK1 IAmb IAmb 00 01 19.3
comp=Z,35nm,1.0s
COCO West Island 64.98 229 *i* P **P 00 01 25.0 +1.9**
DAG Danmarks Havn 65.10 355⇑*i*P **P 00 01 23.2 0.0**
comp=Z,36nm,1.0s
DAG Danmarks Havn 65.10 355⇑*i*P **P 00 01 23.2 0.0**
DAG pmax pmax
comp=Z,36nm,1.0s
TRO Tromso 65.11 341 *e*P **P 00 01 23.1 -0.2**
TRO IAMs_20 IAMs_20 00 31 15.7
comp=Z,179nm,11.3s
NLWA Neilton Lookou 66.16 48 *e*P **P 00 01 32.9 +2.4**
comp=Z,56nm,1.0s
MBW Mount Baker 66.59 46 P **P 00 01 34.8 +1.4**
MOS Moscow 66.78 323 *e*P **P 00 01 33.7 -0.5**
MOS *e* 00 02 01.6
MOS pmax pmax
comp=Z,200nm,1.4s
MOS pmax pmax
comp=Z,97nm,1.2s
MOS pmax pmax
comp=N,100nm,1.0s
MOS pmax pmax
comp=N,52nm,1.0s
JCW Jim Creek 66.88 46 P **P 00 01 36.4 +1.3**
B06A Marblemount 66.96 46 *e*P **P 00 01 37.2 +1.6**
comp=N,61nm,1.3s
VRH Novokhopyorsk 67.16 318 *e*P **P 00 01 36.0 -0.7**
VRH pmax pmax
comp=Z,50nm,0.6s
VRH MLR MLR
comp=Z,460nm,20.0s
KULLO Kullorsuaq 67.28 5 *i* P **P 00 01 36.9 -0.2**
comp=Z,16nm,0.8s
KULLO Kullorsuaq 67.28 5 *i* P **P 00 01 36.9 -0.2**
KULLO pmax pmax
comp=Z,16nm,0.8s
D05A Enumclaw 67.36 47 *e*P **P 00 01 40.6 +2.5**
comp=Z,70nm,1.3s
OBN Obninsk 67.62 323*c i*P **P 00 01 39.2 -0.4**
OBN *e* 00 01 53.4
OBN pmax pmax
comp=Z,105nm,1.7s
OBN MLR MLR
comp=Z,119nm,17.0s
OBN Obninsk 67.62 323 *e*P **P 00 01 39.5 -0.1**
comp=Z,78nm,1.2s
PUL Pulkovo 67.67 329⇑*e*P **P 00 01 39.9 +0.1**
PUL pmax pmax
comp=Z,62nm,0.8s
F04A Amboy 67.77 49 *e*P **P 00 01 42.5 +1.8**
comp=Z,43nm,1.2s
LPSR Galich'ya Gora 67.86 320 *e*P **P 00 01 40.9 -0.2**
LPSR pmax pmax
comp=Z,70nm,0.9s
LPSR MLR MLR
comp=Z,320nm,16.0s
B08A Colville Reser 68.26 45 *e*P **P 00 01 45.2 +1.4**
B08A *e*pP **pP 00 01 59.9 +1.4**
FINES FINESS Array B 68.27 332 P **P 00 01 43.4 -0.1**
comp=Z,46nm,0.8s,baz=45,slow=7.8,SNR=133
FINES LR LR 00 34 04.8
comp=Z,263nm,18.4s,baz=44,slow=38
FINES FINESS Array B 68.27 332 P **P 00 01 43.4 -0.1**
FINES pmax pmax
comp=Z,47nm,0.9s
FINES MLR MLR
comp=Z,263nm,18.4s
I03D Drain, OR 68.38 51 P **P 00 01 46.6 +2.0**
baz=302
VSR Storozhevoye 68.50 319 *e*P **P 00 01 44.9 -0.3**
VSR pmax pmax
comp=Z,120nm,1.2s
VSR MLR MLR
comp=Z,310nm,14.0s
H04A Detroit Lake 68.56 50 *e*P **P 00 01 47.1 +1.4**
H04A *e*pP **pP 00 02 02.2 +1.9**
L02D Cave Junction, 69.03 53 P **P 00 01 49.6 +0.8**
baz=302
C09A Chrisman Ranch 69.16 45 *e*P **P 00 01 50.4 +1.0**
C09A *e*pP **pP 00 02 05.5 +1.5**
STKA Stephens Creek 69.24 180 P **P 00 01 49.5 -0.3**
comp=Z,7.6nm,0.6s,baz=350,slow=7.1,SNR=17
I05D Terrebonne, OR 69.26 50 P **P 00 01 51.6 +1.4**
baz=303
JMIC Jan Mayen 69.49 350 LR LR 00 34 50.0
comp=Z,27nm,19.1s,baz=60,slow=38
NEW Newport 69.55 44 P **P 00 01 52.9 +1.1**
baz=304
NEW Newport 69.55 44 *e*P **P 00 01 53.2 +1.4**
NEW *e*PP **pP 00 02 03.1 -3.4**
NEW Newport 69.55 44 *e*P **P 00 01 53.2 +1.4**
NEW *e*pP **pP 00 02 03.1 -3.4**
KHMM Horse Mountain 69.64 54 *e*P **P 00 01 55.0 +2.4**
KHMM *e*pP **pP 00 02 10.1 +2.8**
GOF Gofitskoye 69.73 312⇑*e*P **P 00 01 53.2 +0.3**
GOF pmax pmax
comp=Z,97nm,1.0s
YBH Yreka Blue Hor 69.82 53 *e*P **P 00 01 55.9 +2.2**
YBH pmax pmax
comp=Z,24nm,1.1s
YBH Yreka Blue Hor 69.82 53 *e*P **P 00 01 55.9 +2.2**
comp=Z,24nm,1.1s
J05D Fort Rock, OR 69.90 50 P **P 00 01 56.3 +2.1**
baz=303
M02C Callahan 69.92 53 P **P 00 01 55.9 +1.6**
baz=303
VSU Vasula 69.93 329*ce*P **P 00 01 53.8 -0.1**
VSU pmax pmax
comp=Z,191nm,1.2s
SUMG Summit 70.00 0 *i* P **P 00 01 55.4 +0.8**
comp=Z,36nm,1.0s
SUMG Summit 70.00 0 *i* P **P 00 01 55.4 +0.8**
SUMG pmax pmax
comp=Z,36nm,1.0s
SUMG Summit 70.00 0 *e*P **P 00 01 55.4 +0.8**
comp=Z,38nm,1.0s
G08A Pilot Rock 70.16 48 *e*P **P 00 01 57.2 +1.5**
G08A *e*pP **pP 00 02 05.2 -5.1**
N02D Trinity Center 70.24 53 P **P 00 01 58.3 +2.1**
baz=303
GUDG Gudauri 70.29 309 P **P 00 01 57.7 +1.0**
M04C Macdoel 70.34 52 P **P 00 01 58.9 +1.9**
baz=303
BBOO Buckleboo 70.36 185 *e*P **P 00 01 56.4 -0.3**
BBOO *e*pP **pP 00 02 11.3 0.0**
K05A Summer Lake 70.41 51 *e*P **P 00 01 59.4 +2.0**
comp=Z,70nm,1.1s
ZEI Tsey 70.46 309 *e*P **P 00 01 56.3 -1.4**
ZEI pmax pmax
comp=Z,45nm,0.8s
TBLG Delisi 70.53 308 P **P 00 01 58.1 +0.2**
TBLG Delisi 70.53 308 P **P 00 01 58.1 +0.2**
KVAR Kislovodsk Arr 70.55 311 LR LR 00 37 49.0
comp=Z,130nm,19.0s,baz=53,slow=40
KBZ Khabaz 70.55 311 P **P 00 01 58.3 +0.4**
comp=Z,35nm,0.9s,baz=40,slow=3.4,SNR=57
KBZ LR LR 00 37 26.8
comp=Z,115nm,18.4s,baz=76,slow=40
KIV Kislovodsk 70.56 311 *e*P **P 00 01 58.0 -0.1**
KIV Kislovodsk 70.56 311 *i* P **P 00 01 58.7 +0.5**
SNR=37
KIV Kislovodsk 70.56 311 *e*P **P 00 01 58.6 +0.5**
KIV pmax pmax
comp=Z,114nm,1.0s
KIV Kislovodsk 70.56 311 *e*P **P 00 01 58.6 +0.4**
comp=Z,114nm,1.0s
WDC Whiskeytown Da 70.56 53 *e*P **P 00 01 59.8 +1.7**
WDC pmax pmax
comp=Z,22nm,1.2s
WDC Whiskeytown Da 70.56 53 *e*P **P 00 01 59.8 +1.7**
comp=Z,22nm,1.2s
ONI Oni 70.85 309 P **P 00 02 00.7 +0.8**
ONI Oni 70.85 309 P **P 00 02 00.7 +0.8**
BANOM Banah 71.11 288 *i* P **P 00 02 01.9 +0.2**
SNR=15
BANOM Banah 71.11 288 P **P 00 02 02.7 +1.0**
SNR=5.9
BANOM Banah 71.11 288 P **P 00 02 02.7 +1.0**
SNR=5.9
SMDO Samad 71.36 285 P **P 00 02 05.4 +2.0**
SNR=5.8
SMDO Samad 71.36 285 P **P 00 02 05.4 +2.0**
SNR=5.8
BMO Blue Mountains 71.37 47 *e*P **P 00 02 04.3 +1.2**
comp=Z,25nm,1.1s
GNI Garni 71.40 307 LR LR 00 36 13.2
comp=Z,142nm,18.4s,baz=60,slow=38
SCO Scoresbysund 71.44 354⇑*i*P **P 00 02 03.7 +0.8**
comp=Z,24nm,1.1s
SCO Scoresbysund 71.44 354⇑*i*P **P 00 02 03.7 +0.8**
SCO pmax pmax
comp=Z,24nm,1.1s
BGD Bogdanovka 71.50 308 P **P 00 02 04.8 +0.8**
CHVG Ch'k'valeri 71.61 310 P **P 00 02 04.3 -0.2**
SWMT Swartz Lake 71.70 44 *e*P **P 00 02 06.5 +1.4**
UOSS Minazif 71.72 288 *e*P **P 00 02 04.3 -1.0**
comp=Z,2.2nm,0.8s
HATD Hatta, Dubai 71.84 288 *i* P **P 00 02 06.1 0.0**
SNR=25
IZAR Zarasai 71.90 327 *e*P **P 00 02 06.0 +0.1**
IZAR IAmb IAmb 00 02 06.8
comp=Z,14nm,0.6s
IDID Didziasalis 71.97 327 *e*P **P 00 02 06.5 +0.1**
IDID IAmb IAmb 00 02 08.1
comp=Z,19nm,0.9s
ASHO Ashiyiah 71.98 288 *i* P **P 00 02 06.8 -0.2**
SNR=22
ASHO Ashiyiah 71.98 288 P **P 00 02 07.7 +0.7**
SNR=11
ASHO Ashiyiah 71.98 288 P **P 00 02 07.7 +0.7**
SNR=11
ISAL Salakas 72.07 327 *e*P **P 00 02 07.0 +0.1**
ISAL IAmb IAmb 00 02 08.0
comp=Z,22nm,0.7s
NAZ Nazwa, Dubai 72.11 288 *i* P **P 00 02 07.7 0.0**
SNR=8.4
MSO Missoula 72.14 44 P **P 00 02 08.4 +0.8**
baz=306
MSO Missoula 72.14 44 *e*P **P 00 02 08.7 +1.0**
comp=Z,20nm,1.1s
NACGM Naroch 72.22 327 *e* **P 00 02 07.0 -0.8**
FAQ Al Faqa, Dubai 72.30 288 *i* P **P 00 02 08.3 -0.5**
SNR=6.1
AFDM Forest Hills D 72.47 54 *e*P **P 00 02 11.4 +1.8**
AFDM *e*pP **PcP 00 02 26.3 -0.9**
CLDR Caldiran 72.49 306 *e*P **P 00 02 10.9 +0.8**
SOC Sochi 72.54 312 *e*P **P 00 02 08.8 -1.1**
SOC *e*PP **pP 00 02 20.3 -4.3**
SOC *e* 00 02 27.4
SOC *e*PPP PPP 00 06 36.5
SOC *e*S **S 00 11 22.8 -7.5**
SOC pmax pmax
comp=Z,66nm,1.3s
SENK Senkaya-Erzuru 72.68 308 *e*P **P 00 02 12.0 +0.9**
PAHR Pah Rah Range 73.05 53 *e*P **P 00 02 14.8 +1.5**
comp=Z,34nm,1.2s
MFID Camas Ranch 73.07 48 *e*P **P 00 02 14.9 +1.7**
comp=Z,42nm,1.4s
ANN Anapa 73.15 314 *i* P **P 00 02 13.1 -0.4**
CMB Columbia Colle 73.37 55 *e*P **P 00 02 16.2 +1.2**
CMB pmax pmax
comp=Z,42nm,1.4s
CMB Columbia Colle 73.37 55 *e*P **P 00 02 16.2 +1.2**
comp=Z,42nm,1.4s
MOL Molde 73.46 340 *e*P **P 00 02 15.8 +0.9**
MOL IAmb IAmb 00 02 16.3
comp=Z,28nm,0.9s
HFS Hagfors 73.52 336 P **P 00 02 15.3 -0.1**
comp=Z,39nm,0.9s,baz=49,slow=4.5,SNR=106
HFS LR LR 00 35 38.9
comp=Z,23nm,20.7s,baz=41,slow=37
LRM Limekiln Ridge 73.57 45 *e*P **P 00 02 17.4 +1.1**
NB2 NORSAR Subarra 73.60 337 P **P 00 02 15.8 -0.2**
comp=Z,75nm,1.1s,baz=39,slow=6.2
NB2 NORSAR Subarra 73.60 337 P **P 00 02 15.8 -0.2**
baz=39,slow=6.2
NOA NORSAR Array B 73.60 337 P **P 00 02 16.1 +0.1**
comp=Z,34nm,0.8s,baz=39,slow=5.8,SNR=120
NOA LR LR 00 37 08.3
comp=Z,185nm,21.6s,baz=35,slow=38
EZM Erzurum 73.67 308 *e*P **P 00 02 18.5 +1.4**
WAKR Walker 73.71 54 *e*P **P 00 02 19.1 +1.9**
WAKR *e*pP **PcP 00 02 33.8 +1.1**
NC602 NORSAR Array S 73.74 337 *e*P **P 00 02 16.4 -0.3**
NC602 IAmb IAmb 00 02 17.4
comp=Z,34nm,1.1s
DLMT Dillon 73.77 45 *e*P **P 00 02 19.3 +2.0**
comp=Z,29nm,1.0s
CUKT Cukurca 73.77 305 *e*P **P 00 02 17.5 0.0**

HLID	Hailey	73.81	47	P		P	00 02 19.0 +1.3
	baz=307						
HLID	Hailey	73.81	47	eP		P	00 02 19.0 +1.3
	comp=Z,25nm,1.3s						
AKASG	Malin Array Be	73.83	322	P		P	00 02 17.2 -0.2
	comp=Z,28nm,0.5s,baz=46,slow=6.1,SNR=113						
AKASG				LR		LR	00 38 06.6
	comp=Z,182nm,18.2s,baz=60,slow=38						
AKASG	Malin Array Be	73.83	322	P		P	00 02 17.2 -0.2
AKASG				pmax		pmax	
	comp=Z,29nm,0.6s						
AKASG				MLR		MLR	
	comp=Z,182nm,18.2s						
KIEV	Kiev	73.85	322	c iP		P	00 02 17.1 -0.4
KIEV				pmax		pmax	
	comp=Z,44nm,1.1s						
KIEV	Kiev	73.85	322	eP		P	00 02 17.1 -0.4
	comp=Z,110nm,1.4s						
AKN	Aaknes	73.93	340	eP		P	00 02 18.4 +0.6
AKN				IAmb		IAmb	00 02 19.2
	comp=Z,56nm,1.3s						
MCMT	McKenzie Canyo	73.95	46	eP		P	00 02 19.4 +0.9
BOZ	Bozeman (W)	74.13	44	P		P	00 02 20.7 +1.2
	baz=308						
BOZ	Bozeman (W)	74.13	44	eP		P	00 02 20.9 +1.4
BOZ				pmax		pmax	
	comp=Z,45nm,1.4s						
BOZ	Bozeman (W)	74.13	44	eP		P	00 02 20.9 +1.4
	comp=Z,45nm,1.4s						
SUW	Suwalki	74.38	327	eP		P	00 02 20.4 -0.1
SUW	Suwalki	74.38	327	eP		P	00 02 20.4 -0.1
SIRT	Sirnak	74.38	305	eP		P	00 02 19.8 -1.2
YEDI	Yedisu-Bingol	74.46	308	eP		P	00 02 20.6 -0.9
NVAR	Mina Array Bea	74.48	53	P		P	00 02 23.1 +1.4
	comp=Z,11nm,0.9s,baz=287,slow=6.2,SNR=29						
NVAR				LR		LR	00 29 27.3
	comp=Z,55nm,20.6s,baz=268,slow=31						
GUMT	Gumushane	74.51	309	eP		P	00 02 22.6 +0.8
OSL	Oslo	74.62	337	eP		P	00 02 22.4 +0.6
OSL				IAmb		IAmb	00 02 23.0
	comp=Z,48nm,1.0s						
BNGB	Bing¶ll	74.64	307	eP		P	00 02 22.3 -0.2
ESPY	Espiye-Giresun	74.70	310	eP		P	00 02 22.3 -0.4
QLMT	Earthquake Lak	74.74	45	eP		P	00 02 24.8 +1.7
QLMT				epP		pP	00 02 39.6 +1.7
FOO	Floro	74.94	340	eP		P	00 02 24.1 +0.5
FOO				IAmb		IAmb	00 02 24.8
	comp=Z,32nm,1.0s						
HYA	Hoyanger	74.98	339	eP		P	00 02 24.6 +0.7
HYA				IAmb		IAmb	00 02 25.1
	comp=Z,36nm,0.9s						
ELK	Elko	75.01	50	eP		P	00 02 26.6 +1.8
ELK				pmax		pmax	
	comp=Z,20nm,1.4s						
ELK	Elko	75.01	50	eP		P	00 02 26.6 +1.8
	comp=Z,20nm,1.4s						
GCMT	Greycliff	75.12	43	eP		P	00 02 26.6 +1.4
SFJD	Kangerlussuaq	75.19	5	⇑iP		P	00 02 25.2 +0.2
	comp=Z,15nm,0.9s						
SFJD	Kangerlussuaq	75.19	5	eP		P	00 02 25.6 +0.6
SFJD				pmax		pmax	
	comp=Z,17nm,0.9s						
SFJD	Kangerlussuaq	75.19	5	eP		P	00 02 25.6 +0.6
	comp=Z,17nm,0.9s						
KONO	Kongsberg	75.20	337	eP		P	00 02 25.4 +0.3
KONO				IAmb		IAmb	00 02 25.8
	comp=Z,17nm,0.8s						
KONO				IAMs_20		IAMs_20	00 38 39.6
	comp=Z,284nm,23.2s						
YFT	Old Faithful	75.31	45	eP		P	00 02 29.7 +3.2
	comp=Z,19nm,0.9s						
SUE	Sulen	75.46	340	eP		P	00 02 26.8 +0.2
SUE				IAmb		IAmb	00 02 27.9
	comp=Z,72nm,1.4s						
LKWY	Lake	75.48	45	eP		P	00 02 30.5 +3.0
LKWY				pmax		pmax	
	comp=Z,16nm,0.9s						
LKWY	Lake	75.48	45	eP		P	00 02 30.5 +3.0
	comp=Z,16nm,0.9s						
VES	Vestal, Richgr	75.49	56	P		P	00 02 27.7 +0.4
	baz=306						
H17A	Grant Village	75.49	45	P		P	00 02 30.3 +2.8
	baz=309						
H17A	Grant Village	75.49	45	eP		P	00 02 30.5 +2.9
	comp=Z,32nm,0.9s						
PTK	Pertek	75.50	308	eP		P	00 02 28.7 +1.1
IMW	Indian Meadow	75.60	45	eP		P	00 02 30.6 +2.4
	comp=Z,21nm,0.8s						
FLWY	Flagg Ranch	75.62	45	eP		P	00 02 30.3 +2.1
	comp=Z,90nm,1.6s						
ILIC	ilic-Erzincan	75.68	309	eP		P	00 02 29.1 +0.7
RLMT	Red Lodge	75.76	44	P		P	00 02 30.5 +1.5
	baz=310						
RLMT	Red Lodge	75.76	44	eP		P	00 02 30.3 +1.3
	comp=Z,85nm,1.8s						
CWC	Cottonwood Cre	75.79	55	P		P	00 02 30.6 +1.4
	baz=307						
MOOW	Moose Ponds	75.80	45	eP		P	00 02 30.9 +1.7
	comp=Z,32nm,1.4s						
ASK	Askoy	75.82	339	eP		P	00 02 29.5 +0.9
ASK				IAmb		IAmb	00 02 30.1
	comp=Z,28nm,0.8s						
HVU	Hansel Valley	75.85	48	eP		P	00 02 31.4 +1.9
HVU				e*PP		pP	00 02 44.0 -0.3
HVU	Hansel Valley	75.85	48	eP		P	00 02 31.4 +1.9
HVU				epP		pP	00 02 44.0 -0.3
BER	Bergen	75.86	339	eP		P	00 02 29.8 +0.9
BER				IAmb		IAmb	00 02 30.3
	comp=Z,30nm,0.8s						
RSDY	Resadiye-TOKAT	75.86	310	eP		P	00 02 29.4 0.0
ODD1	Odda	75.88	338	eP		P	00 02 30.1 +1.0
ODD1				IAmb		IAmb	00 02 30.5
	comp=Z,31nm,0.9s						
SORM	Soroca	75.94	321	⇓iP		P	00 02 29.6 0.0
SORM	Soroca	75.94	321	⇓P		P	00 02 29.6 0.0
LOHW	Long Hollow	75.97	45	eP		P	00 02 32.1 +1.9
	comp=Z,33nm,1.6s						
SNOW	Snow King Moun	75.98	46	eP		P	00 02 32.5 +2.2
	comp=Z,14nm,0.9s						
REDW	Red Top Meadow	75.98	46	eP		P	00 02 32.2 +1.9
	comp=Z,41nm,1.4s						
ARVC	Arvin	76.08	56	P		P	00 02 31.8 +1.1
	baz=306						
FRB	Frobisher Bay	76.08	13	P		P	00 02 30.3 +0.2
	comp=Z,40nm,0.8s,baz=329,slow=6.0,SNR=37						
SNOP	Sinop	76.13	313	eP		P	00 02 30.2 -0.6
DAC	Darwin (Calif)	76.20	55	eP		P	00 02 32.4 +0.8
DAC				pmax		pmax	
	comp=Z,13nm,1.0s						
DAC	Darwin (Calif)	76.20	55	eP		P	00 02 32.4 +0.8
	comp=Z,13nm,1.0s						
KVT	Kavak	76.21	311	eP		P	00 02 32.4 +1.0
BGU	Big Grassy Mou	76.23	49	eP		P	00 02 33.5 +1.8
	comp=Z,25nm,1.4s						
R11A	Troy Canyon, C	76.24	52	P		P	00 02 33.0 +1.2
	baz=307						
R11A	Troy Canyon, C	76.24	52	eP		P	00 02 33.0 +1.2
	comp=Z,49nm,1.5s						
DIKM	Dikmen	76.33	312	eP		P	00 02 32.8 +0.9
BLS5	Blasjo	76.33	338	eP		P	00 02 32.6 +0.9
BLS5				IAmb		IAmb	00 02 33.2
	comp=Z,33nm,1.1s						
SVSK	Karacayir	76.36	310	eP		P	00 02 33.4 +1.3
TOKT	Tokat	76.38	311	eP		P	00 02 32.7 +0.3
A25A	Svangstu Ranch	76.44	38	P		P	00 02 33.4 +0.9
	baz=313						
OSI	Osito Audit: C	76.45	57	P		P	00 02 34.2 +1.4
	baz=307						
KIS	Kishinev	76.46	320	eP		P	00 02 33.0 +0.4
KIS				LRM		MLR	00 39 16.0
	comp=Z,600nm,16.0s						
KIS	Kishinev	76.46	320	eP		P	00 02 30.0 -2.6
KIS				MLR		MLR	
	comp=Z,500nm,15.0s						
KIS				MLR		MLR	
	comp=Z,600nm,16.0s						
SFNV	Sufian	76.53	306	eP		P	00 02 33.1 -0.2
FURC	Furnace Creek,	76.56	54	P		P	00 02 35.0 +1.7
	baz=307						
HOMB	Homborsund	76.64	337	eP		P	00 02 33.6 +0.2
HOMB				IAmb		IAmb	00 02 34.3
	comp=Z,43nm,1.1s						
TPNV	Topopah Spring	76.67	54	P		P	00 02 35.5 +1.3
	baz=307						
TPNV	Topopah Spring	76.67	54	eP		P	00 02 35.7 +1.5
TPNV				pmax		pmax	
	comp=Z,24nm,0.8s						
TPNV	Topopah Spring	76.67	54	eP		P	00 02 35.7 +1.5
	comp=Z,24nm,0.8s						
HWUT	Hardware Ranch	76.67	48	eP		P	00 02 35.4 +1.2
	comp=Z,59nm,1.4s						
EDW2	Edwards Air Fo	76.78	56	P		P	00 02 35.9 +1.2
	baz=307						
DUG	Dugway, Tooele	76.81	49	P		P	00 02 36.3 +1.3
	baz=306						
KMY	Karmoy	76.86	339	eP		P	00 02 35.5 +0.9
KMY				IAmb		IAmb	00 02 35.6
	comp=Z,27nm,0.8s						
BZK	Bozkurt	76.86	313	eP		P	00 02 35.4 +0.5
BSD	Bornholm Skovb	76.90	332	i P		P	00 02 34.7 -0.2
	comp=Z,51nm,1.0s						
BSD	Bornholm Skovb	76.90	332	i P		P	00 02 34.7 -0.2
BSD				pmax		pmax	
	comp=Z,51nm,1.0s						
LVV	L'vov	76.90	324	eP		P	00 02 35.0 -0.1
LVV				MLR		MLR	
	comp=Z,200nm,17.0s						
BEL	Belsk	76.94	327	eP		P	00 02 36.0 +0.8
BEL	Belsk	76.94	327	⇑eP		P	00 02 36.0 +0.8
SNART	Snartemo	76.99	337	eP		P	00 02 35.9 +0.5
SNART				IAmb		IAmb	00 02 36.6
	comp=Z,47nm,1.2s						
TCUT	Toone Canyon	77.07	48	eP		P	00 02 38.2 +1.7
	comp=Z,166nm,1.8s						
BW06	Boulder Array	77.09	46	P		P	00 02 37.4 +0.8
	baz=310						
BW06	Boulder Array	77.09	46	eP		P	00 02 37.1 +0.5
	comp=Z,61nm,1.8s						
PDAR	Pinedale Array	77.09	46	P		P	00 02 37.2 +0.6
	comp=Z,7.1nm,0.8s,baz=273,slow=2.8,SNR=61						
PDAR				LR		LR	00 32 20.8
	comp=Z,75nm,21.9s,baz=309,slow=32						
LEOM	Leova	77.10	319	eP		P	00 02 36.7 +0.5
LEOM	Leova	77.10	319	⇓iP		P	00 02 37.5 +1.3
LEOM	Leova	77.10	319	⇓P		P	00 02 37.5 +1.3
PSUT	Pine Spring	77.20	51	eP		P	00 02 38.8 +1.6
	comp=Z,36nm,1.4s						
B26A	Jensen Ranch,	77.25	38	P		P	00 02 38.7 +1.5
	baz=313						
GSC	Goldstone, Bar	77.30	55	P		P	00 02 38.6 +0.9
	baz=307						
GSC	Goldstone, Bar	77.30	55	eP		P	00 02 38.6 +0.9
GSC				pmax		pmax	
	comp=Z,14nm,1.0s						
GSC	Goldstone, Bar	77.30	55	eP		P	00 02 38.6 +0.9
	comp=Z,14nm,1.0s						
JLU	Jordanelle	77.37	48	eP		P	00 02 39.9 +1.7
COP	Copenhagen	77.37	333	i P		P	00 02 38.0 +0.5
	comp=Z,22nm,0.7s						
COP	Copenhagen	77.37	333	i P		P	00 02 38.0 +0.5
COP				pmax		pmax	
	comp=Z,22nm,0.7s						
BFSC	Mount Baldy Ra	77.38	57	P		P	00 02 39.1 +0.9
	baz=307						
NLU	North Lily Min	77.40	49	eP		P	00 02 40.1 +1.7
	comp=Z,43nm,1.7s						
TOS	Tosya	77.44	312	eP		P	00 02 38.7 +0.4
PRAR	RASCA	77.53	321	⇓iP		P	00 02 38.8 +0.2
D25A	Fairfield	77.55	39	P		P	00 02 40.2 +1.4
	baz=313						
CORM	Corum	77.62	311	eP		P	00 02 40.6 +1.2
SHPR	Sheep Range	77.63	53	eP		P	00 02 41.4 +1.8
	comp=Z,17nm,1.0s						
KWP	Kalwaria Pacla	77.65	324	eP		P	00 02 40.1 +0.8
KWP	Kalwaria Pacla	77.65	324	⇑iP		P	00 02 40.2 +0.9
KWP	Kalwaria Pacla	77.65	324	⇑eP		P	00 02 40.1 +0.8
TUQ	Turquoise Moun	77.79	55	P		P	00 02 41.9 +1.4
	baz=308						
A28A	Rude Farm, Bot	77.82	37	P		P	00 02 41.4 +1.1
	baz=314						
MUD	Monsted U'grnd	77.89	335	eP		P	00 02 41.1 +0.7
MUD				IAmb		IAmb	00 02 41.7
	comp=Z,26nm,1.0s						
MUD	Monsted U'grnd	77.89	335	i P		P	00 02 40.8 +0.4
	comp=Z,25nm,1.0s						
MUD	Monsted U'grnd	77.89	335	i P		P	00 02 40.8 +0.4
MUD				pmax		pmax	
	comp=Z,25nm,1.0s						
TESR	Tescani	77.89	320	⇑iP		P	00 02 41.0 +0.3
HEC	Hector,Ludlow	77.89	55	P		P	00 02 42.7 +1.7
	baz=308						
E25A	Miller Ranch,	77.95	40	P		P	00 02 42.3 +1.2
	baz=313						
CFR	Carcaliu	78.02	318	⇓iP		P	00 02 41.1 -0.3
CFR	Carcaliu	78.02	318	⇑P		P	00 02 41.1 -0.3
MURC	Murrieta	78.07	57	P		P	00 02 43.3 +1.4
	baz=308						
PETR	Petresti	78.12	319	⇓iP		P	00 02 43.5 +1.6
ODBI	Odobesti	78.19	319	⇑iP		P	00 02 43.9 +1.6
VRI	Vrincioaia	78.29	320	eP		P	00 02 44.4 +1.5
VRI	Vrincioaia	78.29	320	⇓iP		P	00 02 43.8 +0.9
VRI	Vrincioaia	78.29	320	⇓P		P	00 02 43.8 +0.9
A29A	Manning Farm,	78.30	36	P		P	00 02 43.8 +0.9
	baz=315						
TMUT	Trail Mountain	78.34	49	eP		P	00 02 45.2 +1.6
	comp=Z,12nm,0.9s						
PLOR	Plostina	78.34	320	⇓iP		P	00 02 44.0 +0.8
PLOR	Plostina	78.34	320	⇓P		P	00 02 44.1 +0.8
TIRR	Tirgusor	78.35	318	⇑iP		P	00 02 43.3 +0.1
TIRR	Tirgusor	78.35	318	⇑P		P	00 02 43.3 +0.1
TIRR	Tirgusor	78.35	318	eP		P	00 02 43.1 -0.1
	comp=Z,33nm,1.3s						
GMRC	Granite Mounta	78.36	55	P		P	00 02 44.9 +1.2
	baz=308						
D27A	Center	78.47	38	P		P	00 02 45.0 +1.1
	baz=314						
GRER		78.49	319	⇑iP		P	00 02 46.5 +2.5
BRTR	Keskin Array B	78.49	312	P		P	00 02 44.4 +0.1
	comp=Z,21nm,1.2s,baz=96,slow=3.8,SNR=53						
BRTR				LR		LR	00 42 15.1
	comp=Z,56nm,19.2s,baz=48,slow=39						
P17A	Butcher Ranch,	78.50	49	eP		P	00 02 46.2 +1.7
	comp=Z,120nm,1.7s						
LCMT	Little Creek M	78.53	52	eP		P	00 02 46.4 +1.9
MTPU	Mount Pierson	78.54	51	eP		P	00 02 46.8 +1.9
	comp=Z,83nm,1.8s						
OJC	Ojcow	78.54	326	eP		P	00 02 44.8 +0.6
OJC	Ojcow	78.54	326	⇑eP		P	00 02 44.8 +0.6
OJC	Ojcow	78.54	326	eP		P	00 02 44.8 +0.6
	comp=Z,62nm,1.1s						
UZH	Uzhgorod	78.55	324	i P		P	00 02 44.0 -0.2
UZH				e			00 02 49.2
PFO	Pinyon Flats O	78.55	56	eP		P	00 02 45.6 +0.9
PFO				e*PP		pP	00 03 01.3 +1.7
PFO	Pinyon Flats O	78.55	56	eP		P	00 02 45.6 +0.9
PFO				epP		pP	00 03 01.3 +1.7
TPFO	Pinon Flats	78.56	56	P		P	00 02 46.1 +1.4
	baz=308						
B29A	Wagenman Farm,	78.57	36	P		P	00 02 45.4 +1.0
	baz=315						
DRWC	Darouich	78.60	308	eP		P	00 02 44.8 -0.1
Q16A	Castle Valley	78.60	49	eP		P	00 02 46.9 +1.9
	comp=Z,52nm,1.4s						
C28A	Hausauer Farms	78.60	37	P		P	00 02 46.0 +1.4
	baz=315						
BELC	Belle Mtn. Jos	78.62	56	P		P	00 02 46.4 +1.3
	baz=308						
BMR	Baia Mare	78.65	323	⇑iP		P	00 02 45.6 +0.8
BMR	Baia Mare	78.65	323	⇑P		P	00 02 45.6 +0.8
P18A	Preston Nutter	78.70	48	eP		P	00 02 47.1 +1.4
	comp=Z,57nm,1.5s						
A30A	Hoffart Farm,	78.72	36	P		P	00 02 46.1 +0.9
	baz=316						
F26A	Lodgepole	78.76	40	P		P	00 02 46.5 +0.9
	baz=313						
KNB	Kanab	78.78	52	eP		P	00 02 47.9 +1.9
KNB				e*PP		pP	00 02 58.8 -2.1
KNB	Kanab	78.78	52	eP		P	00 02 47.9 +1.9
KNB				epP		pP	00 02 58.8 -2.1
PGOR	Pogoanele	78.81	319	⇑iP		P	00 02 47.3 +1.6
G25A	Newell	78.83	41	P		P	00 02 47.0 +1.0
	baz=313						
ULM	Lac du Bonnet	78.86	33	P		P	00 02 45.9 -0.1
	comp=Z,12nm,0.9s,baz=322,slow=7.5,SNR=7.4						
SRU	San Rafael Swe	78.86	49	eP		P	00 02 47.7 +1.2
SRU				pmax		pmax	
	comp=Z,108nm,1.8s						
SRU	San Rafael Swe	78.86	49	eP		P	00 02 47.6 +1.2
	comp=Z,108nm,1.8s						
K22A	Casper	78.87	44	P		P	00 02 47.3 +0.9
	baz=312						
K22A	Casper	78.87	44	eP		P	00 02 47.4 +1.0
	comp=Z,68nm,1.5s						
D28A	Regan	78.88	38	P		P	00 02 47.3 +1.1
	baz=315						
MDND	Maddock	78.89	37	P		P	00 02 47.4 +1.3
	baz=315						
ISR	Istrita	78.89	319	⇑iP		P	00 02 47.1 +0.8
ISR	Istrita	78.89	319	⇑P		P	00 02 47.1 +0.8
NIE	Niedzica	78.90	325	eP		P	00 02 47.1 +0.9
NIE	Niedzica	78.90	325	⇑eP		P	00 02 47.1 +0.9
DOPR	Dopca	78.90	320	⇑iP		P	00 02 47.4 +1.1
ANTO	Ankara	78.90	312	eP		P	00 02 46.9 +0.4
ANTO				pmax		pmax	
	comp=Z,38nm,1.1s						
ANTO	Ankara	78.90	312	eP		P	00 02 46.9 +0.4
	comp=Z,38nm,1.1s						
LOD	Lodumlu	78.91	312	eP		P	00 02 45.0 -1.5
MLR	Muntele Rosu	78.94	320	⇓iP		P	00 02 47.1 +0.4
MLR	Muntele Rosu	78.94	320	eP		P	00 02 46.8 +0.1
MLR				pmax		pmax	
	comp=Z,42nm,1.4s						
MLR	Muntele Rosu	78.94	320	eP		P	00 02 46.8 +0.1
	comp=Z,42nm,1.4s						
PSN	Preselentsi	79.00	317	eP		P	00 02 47.1 +0.3
AFSR	Af`ar-Bala (A	79.01	312	eP		P	00 02 47.6 +0.5
MONP2	Monument Peak	79.02	57	P		P	00 02 48.5 +1.1
	baz=308						
B30A	Myrvik Farm, E	79.06	36	P		P	00 02 48.1 +1.0
	baz=316						
IRM	Iron Mountain	79.08	55	P		P	00 02 48.8 +1.3
	baz=308						
H25A	Fruitdale	79.12	41	P		P	00 02 48.4 +0.8
	baz=313						
G26A	Maurine	79.18	40	P		P	00 02 48.6 +0.8
	baz=314						
BC3	Big Chuckawall	79.19	56	P		P	00 02 49.2 +1.0
	baz=308						
RSSD	Black Hills	79.23	42	P		P	00 02 49.0 +0.6
	baz=313						
RSSD	Black Hills	79.23	42	eP		P	00 02 48.8 +0.4
RSSD				pmax		pmax	
	comp=Z,15nm,0.7s						
RSSD	Black Hills	79.23	42	eP		P	00 02 48.8 +0.4
	comp=Z,15nm,0.7s						
E28A	Huff	79.25	38	P		P	00 02 49.0 +0.9
	baz=315						
CJR	Cluj-Napoca	79.28	322	⇓iP		P	00 02 49.5 +1.2
CJR	Cluj-Napoca	79.28	322	⇓P		P	00 02 49.5 +1.2
W13A	Hualapai Mount	79.31	54	eP		P	00 02 50.2 +1.2
SULR		79.34	319	⇑iP		P	00 02 49.7 +1.1
RAC	Raciborz	79.34	327	eP		P	00 02 49.6 +1.0
VOIR		79.44	320	⇓iP		P	00 02 50.5 +1.2
VOIR		79.44	320	⇓P		P	00 02 50.5 +1.2
WRDH	Warideh	79.45	307	eP		P	00 02 47.5 -2.1
I25A	Rochford	79.46	42	P		P	00 02 49.9 +0.3
	baz=313						
U15A	North Rim	79.49	52	eP		P	00 02 51.5 +1.5
ARNB	Al Arnab	79.51	307	eP		P	00 02 47.4 -2.5
C30A	Mose, Pekin	79.52	37	P		P	00 02 50.5 +0.9
	baz=316						
OKC	Ostrava-Krasne	79.55	327	⇑eP		P	00 02 50.1 +0.4
OKC				ex		x	00 03 04.1
OKC				AMS		AMS	00 41 10.0
	comp=Z,200nm,17.2s						
OKC	Ostrava-Krasne	79.55	327	eP		P	00 02 50.1 +0.4
OKC				e			00 03 04.1
OKC				e			00 03 08.4
OKC				MLR		MLR	
	comp=Z,200nm,17.2s						
O20A	White River Ci	79.55	47	P		P	00 02 51.2 +1.1
	baz=311						
O20A	White River Ci	79.55	47	eP		P	00 02 51.3 +1.1
	comp=Z,15nm,0.9s						
O20A				epP		pP	00 03 06.2 +1.2
A32A	Rocking H Ranc	79.56	35	P		P	00 02 49.9 +0.1
	baz=317						
KSP	Ksiaz	79.59	328	eP		P	00 02 50.5 +0.6
KSP	Ksiaz	79.59	328	⇑eP		P	00 02 50.5 +0.6
PDMCI	Parker Dam,Lak	79.64	55	P		P	00 02 51.8 +1.3
	baz=309						
DRGR		79.65	322	⇑iP		P	00 02 51.2 +0.8
DRGR		79.65	322	⇑P		P	00 02 51.2 +0.8
ARR	Arges	79.70	320	⇓iP		P	00 02 52.1 +1.4
Y12C	Blythe	79.74	55	eP		P	00 02 52.6 +1.6
Y12C				epP		pP	00 03 07.5 +1.6
PRD	Provadia	79.74	317	eP		P	00 02 50.7 -0.1
C31A	Landman Farms,	79.81	36	P		P	00 02 51.7 +0.5
	baz=316						
D30A	Buchanan	79.81	37	P		P	00 02 52.0 +0.8
	baz=316						
MORC	Moravsky Berou	79.86	327	⇑iP		P	00 02 52.1 +0.7
MORC	Moravsky Berou	79.86	327	eP		P	00 02 51.9 +0.5
MORC				pmax		pmax	
	comp=Z,128nm,1.0s						
MORC	Moravsky Berou	79.86	327	eP		P	00 02 51.9 +0.5
	comp=Z,128nm,1.0s						
GULT	Gulveren	79.86	314	eP		P	00 02 52.0 +0.3
H27A	Howes	79.91	41	P		P	00 02 52.5 +0.7
	baz=314						
B32A	Ashes, Strandq	79.92	35	P		P	00 02 52.1 +0.4
	baz=317						
DPC	Dobruska-Polom	79.95	328	⇑iP		P	00 02 52.8 +0.9
DPC	Dobruska-Polom	79.95	328	⇑iP		P	00 02 52.8 +0.9
KRLC	Kraliky	79.96	327	⇑eP		P	00 02 52.6 +0.6
KRLC	Kraliky	79.96	327	eP		P	00 02 52.6 +0.6
UPC	Upice	79.96	328	⇑eP		P	00 02 52.6 +0.7
UPC				AMS		AMS	00 41 10.0
	comp=Z,200nm,14.9s						
UPC	Upice	79.96	328	eP		P	00 02 52.6 +0.7
UPC				MLR		MLR	
	comp=Z,200nm,14.9s						
A33A	Warroad	80.04	34	P		P	00 02 52.6 +0.2
	baz=318						
HAWK	Haweek	80.08	306	eP		P	00 02 47.7 -5.2
PV09	Paradox Valley	80.09	49	eP		P	00 02 54.6 +1.4
E30A	Jud	80.17	38	P		P	00 02 54.0 +0.8
	baz=316						
PSZ	Piszkesteto	80.17	324	⇓iP		P	00 02 54.2 +1.0
PSZ	Piszkesteto	80.17	324	eP		P	00 02 53.9 +0.7
PSZ				pmax		pmax	
	comp=Z,49nm,1.1s						
PSZ	Piszkesteto	80.17	324	eP		P	00 02 53.9 +0.7
	comp=Z,49nm,1.1s						
F29A	Eureka	80.20	39	P		P	00 02 54.3 +1.0
	baz=315						
LADK	Ladik-KONYA	80.23	311	eP		P	00 02 54.0 +0.2
J26A	Sides Ranch, S	80.29	42	P		P	00 02 54.9 +0.9
	baz=314						
PV04	Paradox Valley	80.29	49	eP		P	00 02 55.6 +1.4
P

VRAC	Vranov	80.62	327⇓	iP	P	00 02 56.1	+0.6
D32A	Dogwood Acres,	80.62	36	P	P	00 02 55.4	-0.1
	baz=317						
E31A	Nome	80.62	37	P	P	00 02 55.6	0.0
	baz=316						
WUAZ	Wupatki	80.64	52	P	P	00 02 57.4	+1.3
	baz=310						
WUAZ	Wupatki	80.64	52	eP	P	00 02 57.8	+1.7
	comp=Z,20nm,0.9s						
PV01	Paradox Valley	80.66	49	eP	P	00 02 57.4	+1.1
B34A	Aery, Baudette	80.70	34	P	P	00 02 55.5	-0.5
	baz=318						
C33A	Trail	80.74	35	P	P	00 02 56.0	-0.2
	baz=318						
I28A	Midland	80.81	41	P	P	00 02 57.3	+0.6
	baz=315						
113A	Mohawk Valley,	80.84	56	eP	P	00 02 58.1	+1.2
113A				epP	pP	00 03 13.1	+1.2
H29A	Onida	80.86	40	P	P	00 02 57.5	+0.6
	baz=315						
SMCO	Snowmass	80.92	47	eP	P	00 02 58.9	+1.1
	comp=Z,50nm,1.8s						
GOPC	GO Pecny, Ondr	80.92	328⇑	eP	P	00 02 57.7	+0.6
GOPC				ex	x	00 03 12.3	
GOPC				AMS	AMS	00 41 50.0	
	comp=Z,200nm,14.6s						
GOPC	GO Pecny, Ondr	80.92	328	eP	P	00 02 57.7	+0.6
GOPC				e		00 03 12.3	
GOPC				e		00 03 15.9	
GOPC				MLR	MLR		
	comp=Z,200nm,14.6s						
F31A	Hecla	80.95	38	P	P	00 02 57.4	+0.1
	baz=316						
PRU	Pruhonice	80.97	329⇑	eP	P	00 02 57.9	+0.6
PRU				ex	x	00 03 10.3	
PRU				AMS	AMS	00 42 00.0	
	comp=Z,200nm,15.3s						
PRU	Pruhonice	80.97	329	eP	P	00 02 57.9	+0.6
PRU				e		00 03 10.3	
PRU				MLR	MLR		
	comp=Z,200nm,15.3s						
E32A	Braaten, Kindr	80.99	37	P	P	00 02 57.9	+0.4
	baz=317						
EDRB	Edirne	81.02	317	eP	P	00 02 57.1	-0.7
EDRB	Edirne	81.02	317	P	P	00 02 57.8	0.0
BZS	Buzias	81.02	322⇑	iP	P	00 02 57.8	+0.1
BZS	Buzias	81.02	322⇑	P	P	00 02 57.8	+0.1
G30A	Faulkton	81.04	39	P	P	00 02 58.1	+0.2
	baz=316						
BRBR	Barbar	81.07	305	eP	P	00 02 51.4	-7.0
TREC	Trest	81.10	328⇑	eP	P	00 02 58.7	+0.6
TREC				ex	x	00 03 13.6	
TREC				AMS	AMS	00 42 20.0	
	comp=Z,200nm,12.4s						
TREC	Trest	81.10	328	eP	P	00 02 58.7	+0.6
TREC				e		00 03 13.6	
TREC				MLR	MLR		
	comp=Z,200nm,12.4s						
TVSB	Tavsanli	81.12	313	eP	P	00 02 58.3	-0.1
B35A	Bob, Littlefor	81.21	34	P	P	00 02 58.9	+0.2
	baz=319						
I29A	Vivian Onida	81.24	40	P	P	00 02 59.2	+0.2
	baz=315						
ISCO	Idaho Springs	81.28	46	P	P	00 03 00.7	+1.1
	baz=312						
ISCO	Idaho Springs	81.28	46	eP	P	00 03 00.9	+1.3
ISCO				pmax	pmax		
	comp=Z,59nm,1.8s						
ISCO	Idaho Springs	81.28	46	eP	P	00 03 00.9	+1.3
	comp=Z,59nm,1.8s						
X16A	Lo Mia Camp, P	81.30	53	eP	P	00 03 01.5	+1.9
MVCO	Mesa Verde	81.31	49	P	P	00 03 00.7	+1.0
	baz=311						
MVCO	Mesa Verde	81.31	49	eP	P	00 03 00.8	+1.0
	comp=Z,97nm,1.8s						
EDC	Edincik	81.42	315	eP	P	00 02 58.2	-1.7
F32A	Veblen	81.49	37	P	P	00 03 00.1	-0.1
	baz=317						
D34A	Park Rapids	81.50	35	P	P	00 02 59.9	-0.3
	baz=318						
SUTC	Sutluce-Ispart	81.52	311	eP	P	00 03 00.7	0.0
E33A	Westby DABS, E	81.55	36	P	P	00 03 00.7	+0.1
	baz=318						
MPEP	Malo Peshtene	81.56	319	eP	P	00 03 00.5	-0.1
RKY	Sarkoy-Tekirda	81.57	316	eP	P	00 02 59.8	-1.0
MDVR	Moldovita	81.58	321⇑	iP	P	00 03 00.5	-0.2
C35A	Jirik Farms, M	81.59	34	P	P	00 03 00.5	-0.2
	baz=319						
NKC	Novy Kostel	81.63	330⇑	eP	P	00 03 01.1	+0.2
NKC	Novy Kostel	81.63	330	eP	P	00 03 01.1	+0.2
CSS	Mathiatis	81.74	308	P	P	00 03 01.4	-0.3
CSS	Mathiatis	81.74	308	eP	P	00 03 01.6	-0.2
	comp=Z,3.7nm,0.7s						
H31A	Wolsey	81.84	39	P	P	00 03 02.1	+0.1
	baz=316						
SOP	Sopron	81.86	326⇑	eP	P	00 03 03.0	+0.9
SOP	Sopron	81.86	326	P	P	00 03 03.0	+0.9
SOP				pmax	pmax		
	comp=Z,37nm,1.3s						
PGB	Panagyurishte	81.91	319	eP	P	00 03 03.0	+0.5
S22A	4UR Ranch, Cre	81.95	48	P	P	00 03 04.6	+1.5
	baz=312						
S22A	4UR Ranch, Cre	81.95	48	eP	P	00 03 04.7	+1.5
	comp=Z,49nm,1.7s						
CONA	Conrad Observa	81.98	327	iP	P	00 03 03.7	+0.9
	comp=Z,30nm,1.3s,SNR=20						
214A	Organ Pipe Nat	81.98	56	P	P	00 03 03.8	+0.7
	baz=310						
LPK	Lapseki	82.02	316	eP	P	00 03 02.6	-0.5
D35A	Remer	82.02	35	P	P	00 03 02.6	-0.4
	baz=319						
KHC	Kasperske Hory	82.03	328⇑	eP	P	00 03 03.5	+0.5
KHC				ex	x	00 03 15.8	
KHC				AMS	AMS	00 42 30.0	
	comp=Z,200nm,18.6s						
KHC	Kasperske Hory	82.03	328	eP	P	00 03 03.5	+0.5
KHC				e		00 03 18.5	
KHC				MLR	MLR		
	comp=Z,200nm,18.6s						
KHC	Kasperske Hory	82.03	328	eP	P	00 03 03.4	+0.5
	comp=Z,13nm,1.0s						
ALN	Alexandroupoli	82.05	316	eP	P	00 03 03.9	+0.6
ALN	Alexandroupoli	82.05	316	P	P	00 03 03.1	-0.1
C36A	Pine Crest Far	82.05	34	P	P	00 03 02.9	-0.2
	baz=320						
ENEZ	Enez	82.11	316	P	P	00 03 03.5	0.0
J30A	Dallas	82.15	40	P	P	00 03 03.8	0.0
	baz=316						
GELI	Tayfur-Gelibol	82.16	316	eP	P	00 03 04.0	+0.2
X18A	Snowflake	82.17	52	eP	P	00 03 05.6	+1.4
GERES	GERESS Array B	82.20	328	P	P	00 03 04.0	0.0
	comp=Z,7.5nm,0.6s,baz=38,slow=5.7,SNR=88						
GERES				LR	LR	00 43 14.5	
	comp=Z,150nm,18.2s,baz=24,slow=38						
GERES	GERESS Array B	82.20	328	P	P	00 03 04.0	0.0
GERES				pmax	pmax		
	comp=Z,8.0nm,0.6s						
GERES				MLR	MLR		
	comp=Z,150nm,18.2s						
KULA	Kula-Manisa	82.21	313	eP	P	00 03 03.5	-0.7
KULA	Kula-Manisa	82.21	313	P	P	00 03 04.1	-0.1
RZN	Rozhen	82.22	318	eP	P	00 03 04.0	-0.4
WET	Wettzell	82.31	329	P	P	00 03 04.8	+0.3
WET				pmax	pmax		
	comp=Z,34nm,1.5s						
G33A	Ortonville	82.31	37	P	P	00 03 04.8	+0.2
	baz=317						
C37A	Embarrass	82.36	33	P	P	00 03 04.8	0.0
	baz=320						
F34A	Alexandria	82.43	36	P	P	00 03 05.4	+0.3
	baz=318						
H33A	Prehn Over Nor	82.54	38	P	P	00 03 06.0	+0.2
	baz=317						
SMTH	Samothraki Isl	82.63	316	P	P	00 03 05.7	-0.6
ARSA	Arzberg	82.64	326	iP	P	00 03 06.3	+0.1
	comp=Z,18nm,1.4s,SNR=12						
ELL	Elmali	82.66	311	eP	P	00 03 05.4	-1.3
G34A	Benson	82.66	37	P	P	00 03 06.6	+0.2
	baz=318						
BEHE	Becsehely	82.67	325⇑	eP	P	00 03 03.9	-2.5
MOA	Molln	82.73	327	iP	P	00 03 07.1	+0.4
	comp=Z,23nm,1.2s,SNR=12						
E36A	McGregor	82.81	35	P	P	00 03 07.0	-0.1
	baz=319						
MMB	Musomiste	82.82	318	eP	P	00 03 07.1	-0.2
DKL	Dikili	82.83	315	eP	P	00 03 06.4	-0.9
NVR	Nevrokopi	82.92	318	P	P	00 03 07.6	-0.2
DIVS	Divibare	82.92	322	P	P	00 03 07.2	-0.6
BKZ	Black Stump Fm	82.98	153	eP	P	00 03 11.8	+4.0
	comp=Z,28nm,0.8s						
K31A	O'Neill	83.03	40	P	P	00 03 08.8	+0.5
	baz=316						
AYDB	Zeytinkoy-Aydi	83.04	313	eP	P	00 03 09.0	+0.4
PRK	Paraskevi	83.07	315	P	P	00 03 08.3	-0.2
TUC	Tucson	83.08	54	eP	P	00 03 09.7	+0.9
TUC				pmax	pmax		
	comp=Z,44nm,1.8s						
TUC	Tucson	83.08	54	eP	P	00 03 09.7	+0.9
	comp=Z,44nm,1.8s						
G35A	Watkins	83.22	36	P	P	00 03 09.6	+0.3
	baz=319						
LIA	Limnos Island	83.22	316	P	P	00 03 08.8	-0.5
SRS	Serrai	83.22	318	P	P	00 03 08.5	-0.9
FETY	Fethiye	83.23	312	P	P	00 03 09.2	-0.3
KSL	Kastellorizon	83.25	311	P	P	00 03 08.8	-0.8
PERS	Pernice	83.29	326	iP	P	00 03 09.7	0.0
SOKA	Soboth	83.30	326	iP	P	00 03 09.8	+0.1
	comp=Z,48nm,1.2s,SNR=31						
ECSD	EROS Data Cent	83.30	38	P	P	00 03 09.8	+0.1
	baz=317						
ECSD	EROS Data Cent	83.30	38	eP	P	00 03 09.8	+0.1
	comp=Z,18nm,1.0s						
L31A	Butterfield Fa	83.31	41	P	P	00 03 10.0	+0.2
	baz=316						
J33A	Davis	83.43	39	P	P	00 03 10.9	+0.6
	baz=317						
H35A	Sunnyside Ranc	83.45	37	P	P	00 03 11.0	+0.6
	baz=318						
KNT	Kendrikon	83.56	318	eP	P	00 03 09.4	-1.6
KNT	Kendrikon	83.56	318	P	P	00 03 10.8	-0.3
SOH	Sokhos	83.56	318	P	P	00 03 10.7	-0.4
SOH	Sokhos	83.56	318	P	P	00 03 11.1	0.0
SOH				pmax	pmax		
	comp=Z,8.0nm,1.4s						
OUR	Ouranopolis	83.57	317	eP	P	00 03 10.3	-0.8
OUR	Ouranopolis	83.57	317	P	P	00 03 10.5	-0.6
VAY	Valandovo	83.62	318	P	P	00 03 11.4	+0.1
VAY	Valandovo	83.62	318	iP	P	00 03 11.6	+0.3
OBKA	Obir	83.64	326	iP	P	00 03 11.2	-0.2
	comp=Z,9.0nm,0.8s						
KBA	Koelnbreinsper	83.72	327	iP	P	00 03 11.8	-0.2
	comp=Z,19nm,0.8s,SNR=9.7						
KBA	Koelnbreinsper	83.72	327	P	P	00 03 12.6	+0.6
KBA				pmax	pmax		
	comp=Z,22nm,0.9s						
SKO	Skopje	83.74	320	P	P	00 03 12.8	+0.8
SKO	Skopje	83.74	320	iP	P	00 03 12.7	+0.8
MEM	Membach	83.76	333	P	P	00 03 11.6	-0.3
	comp=Z,15nm,1.3s						
T25A	Trinidad	83.78	47	P	P	00 03 13.4	+0.8
	baz=313						
T25A	Trinidad	83.78	47	eP	P	00 03 13.8	+1.2
T25A				epP	pP	00 03 28.4	+0.8
BLY	Banja Luka	83.78	324⇑	iP	P	00 03 12.7	+0.6
CHOS	Chios island	83.78	314	eP	P	00 03 10.6	-1.7
CHOS	Chios island	83.78	314	P	P	00 03 12.2	-0.2
PLG	Polygyros	83.83	317	P	P	00 03 11.9	-0.6
MYKA	Terra Mystica	83.94	327	iP	P	00 03 12.8	-0.2
	comp=Z,15nm,0.9s,SNR=6.4						
H36A	Jessenland, He	83.96	36	P	P	00 03 13.8	+0.8
	baz=319						
GRG	Griva	83.97	318	eP	P	00 03 12.5	-0.7
GRG	Griva	83.97	318	P	P	00 03 12.6	-0.6
GRG	Griva	83.97	318	P	P	00 03 12.8	-0.4
GRG				pmax	pmax		
	comp=Z,21nm,1.3s						
BODT	Bodrum	83.98	313	eP	P	00 03 12.3	-1.0
BODT	Bodrum	83.98	313	P	P	00 03 13.2	-0.1
SPMN	Marine on St.	84.00	35	eP	P	00 03 13.7	+0.5
	comp=Z,17nm,1.0s						
LJU	Ljubljana	84.01	326	iP	P	00 03 12.8	-0.5
PAIG	Paliouri	84.02	317	P	P	00 03 13.0	-0.4
ANMO	Albuquerque	84.05	50	P	P	00 03 15.1	+1.1
	baz=312						
ANMO	Albuquerque	84.05	50	eP	P	00 03 15.2	+1.3
ANMO				pmax	pmax		
	comp=Z,23nm,1.2s						
ANMO	Albuquerque	84.05	50	eP	P	00 03 15.2	+1.3
	comp=Z,22nm,1.2s						
STU	Stuttgart	84.07	331	eP	P	00 03 13.8	+0.3
STU				pmax	pmax		
	comp=Z,43nm,1.1s						
STU	Stuttgart	84.07	331	eP	P	00 03 13.8	+0.3
	comp=Z,43nm,1.1s						
ARG	Arkhangelos	84.08	312	P	P	00 03 13.9	+0.1
BCLA	Clavier	84.16	334	P	P	00 03 14.0	+0.1
	comp=Z,17nm,1.6s						
WTTA	Wattenberg	84.30	328	iP	P	00 03 14.9	-0.1
	comp=Z,10.0nm,1.1s						
JAVS	Javornik	84.33	326	iP	P	00 03 14.0	-1.0
ABTA	Abfaltersbach	84.34	328	iP	P	00 03 14.5	-0.5
	comp=Z,17nm,1.2s,SNR=6.2						
PMOR	Pomariorio Ree	84.34	114	eT	T	01 36 40.8	
	comp=Z,32nm,0.2s						
H37A	Dierke Farm, C	84.43	36	P	P	00 03 15.9	+0.5
	baz=320						
LANF	Langenberg	84.44	331⇑	eP	P	00 03 15.5	+0.1
SNF	Seneffe	84.44	334	P	P	00 03 15.5	+0.1
AOS	Alonnisos	84.45	316	P	P	00 03 14.6	-1.0
MOTA	Moosalm	84.45	329	iP	P	00 03 15.9	+0.2
	comp=Z,38nm,1.3s,SNR=11						
BNM	Barren Site	84.48	51	eP	P	00 03 17.7	+1.5
BNM				epP	pP	00 03 32.4	+1.2
RETA	Reutte	84.48	329	iP	P	00 03 15.4	-0.3
	comp=Z,51nm,1.4s,SNR=22						
WLF	Walferdange	84.49	333	P	P	00 03 17.0	+1.4
BIA	Bitola	84.49	319	iP	P	00 03 15.2	-0.7
PDG	Podgorica	84.51	321⇑	iP	P	00 03 15.9	+0.1
PDG	Podgorica	84.51	321	P	P	00 03 15.8	0.0
LIT	Litokhoron	84.54	318	P	P	00 03 15.2	-0.9
FNA	Florina	84.63	319	eP	P	00 03 16.7	+0.1
FNA	Florina	84.63	319	P	P	00 03 15.7	-0.9
FNA	Florina	84.63	319	P	P	00 03 15.9	-0.7
FNA				pmax	pmax		
	comp=Z,20nm,1.2s						
I37A	Lemond, Waseca	84.64	36	P	P	00 03 17.1	+0.6
	baz=320						
SCHQ	Schefferville	84.64	16	P	P	00 03 15.9	-0.4
	comp=Z,10nm,0.8s,baz=357,slow=6.4,SNR=15						
319A	Douglas	84.65	54	eP	P	00 03 18.3	+1.4
DOU	Dourbes	84.68	334	P	P	00 03 15.7	-0.9
	comp=Z,6.0nm,1.2s						
XOR	Xorichti	84.68	317	P	P	00 03 15.5	-1.3
OHR	Ohrid	84.69	319	iP	P	00 03 16.6	-0.3
J36A	Seneca 1, Swea	84.71	37	P	P	00 03 17.2	+0.3
	baz=319						
NEO	Neokhori	84.71	317	P	P	00 03 15.5	-1.5
BFO	Black Forest	84.77	331	eP	P	00 03 17.1	0.0
BFO				pmax	pmax		
	comp=Z,54nm,1.1s						
BFO	Black Forest	84.77	331	eP	P	00 03 17.1	0.0
	comp=Z,54nm,1.1s						
KZN	Kozani	84.77	318	P	P	00 03 16.5	-0.8
STR	Strasbourg	84.78	331⇑	eP	P	00 03 17.7	+0.6
FYTO	Fytoko, Volos	84.79	317	P	P	00 03 16.6	-0.7
PPT	Papeete	84.83	117	LR	LR	00 35 36.7	
	comp=Z,113nm,19.6s,baz=344,slow=32						
121A	Cookes Peak, D	84.84	53	P	P	00 03 19.4	+1.4
	baz=312						
PPT2	Papeete2	84.84	117	eLR	LR	00 29 49.5	
	comp=Z,275nm,24.8s						
PPT2	Papeete2	84.84	117	eT	T	01 37 18.1	
	comp=Z,4.2nm,0.3s						
BAIF	Baives	84.85	334	eP	P	00 03 16.6	-0.8
BAIF				pmax	pmax		
	comp=Z,14nm,1.0s						
FETA	Feichten	84.87	329	iP	P	00 03 17.8	+0.1
	comp=Z,22nm,1.1s,SNR=9.9						
PAE	Paea	84.89	117	eT	T	01 37 20.5	
	comp=Z,0.8nm,0.3s						
COWI	Conover	84.94	33	eP	P	00 03 17.9	-0.1
	comp=Z,18nm,0.9s						
TIAR	Tiarei	84.98	117	eT	T	01 37 27.2	
	comp=Z,3.8nm,0.3s						
APE	Apeiranthos	85.00	314	eP	P	00 03 18.1	-0.4
APE	Apeiranthos	85.00	314⇑	iP	P	00 03 17.8	-0.7
APE	Apeiranthos	85.00	314	P	P	00 03 16.7	-1.8
APE	Apeiranthos	85.00	314⇑	P	P	00 03 17.8	-0.7
DAVA	Damuels	85.00	329	iP	P	00 03 18.2	-0.3
	comp=Z,45nm,1.1s,SNR=14						
TIR	Tirane	85.00	320	eP	P	00 03 18.4	0.0
TIR				pmax	pmax		
	comp=Z,26nm,0.7s						
TIR	Tirane	85.00	320	eP	P	00 03 18.4	0.0
	comp=Z,26nm,0.7s						
SMIA	Simia	85.02	316	P	P	00 03 17.8	-0.7
NEST	Nestorio	85.07	319	P	P	00 03 18.3	-0.6
WLS	Welschbruch	85.08	331	eP	P	00 03 18.5	-0.2
J37A	Redenius Farm,	85.10	37	P	P	00 03 19.0	+0.2
	baz=319						
KARP	Karpathos	85.11	312	eP	P	00 03 17.5	-1.5
I38A	Scanlan Farm,	85.12	36	P	P	00 03 19.0	+0.1
	baz=320						
K36A	Gilmore City	85.17	38	P	P	00 03 19.5	+0.3
	baz=319						
P32A	Huiting Farm,	85.28	42	P	P	00 03 19.2	-0.6
	baz=316						
ECH	Echery	85.31	331⇑	eP	P	00 03 19.7	-0.1
FUORN	Ofenpass-Fuorn	85.38	329	eP	P	00 03 20.6	+0.1
	comp=Z,46nm,0.9s						
AGG	Agios Georgios	85.40	317	eP	P	00 03 18.9	-1.5
AGG	Agios Georgios	85.40	317	P	P	00 03 18.8	-1.6
AGG	Agios Georgios	85.40	317	eP	P	00 03 19.3	-1.1
AGG	Agios Georgios	85.40	317	eP	P	00 03 19.3	-1.1
DAVOX	Davos/Dischmat	85.41	329	P	P	00 03 20.0	-0.5
	comp=Z,12nm,0.9s,baz=65,slow=3.3,SNR=20						
VLY	Voula,Athens	85.43	315	P	P	00 03 18.7	-1.9
K37A	Belmond	85.47	37	P	P	00 03 20.8	+0.1
	baz=319						
N34A	Lincoln	85.49	40	P	P	00 03 20.7	-0.1
	baz=318						
MOF	Molkenrain	85.62	331⇑	eP	P	00 03 21.0	-0.5
THEF	They Montfort	85.74	332⇑	eP	P	00 03 21.8	-0.1
HINF	Hinteralfeld	85.76	331	eP	P	00 03 20.9	-1.2
HINF				pmax	pmax		
	comp=Z,13nm,1.0s						
O34A	Beatrice	85.87	41	P	P	00 03 22.3	-0.4
	baz=318						
TUE	Stuetta	85.87	329	eP	P	00 03 23.0	+0.1
	comp=Z,13nm,0.9s						
M36A	Felix, Anita	85.89	39	P	P	00 03 23.0	+0.2
	baz=319						
ANX	Ano Chora	85.93	317	P	P	00 03 21.8	-1.3
DSL	Palaion Diasel	85.98	318	P	P	00 03 22.5	-0.8
SGD	Sagiada	86.08	319	P	P	00 03 23.0	-0.8
MEH	Mehetia	86.10	116	eT	T	01 38 52.0	
	comp=Z,28nm,0.3s						
Q33A	Connelly Farm,	86.14	42	P	P	00 03 24.1	0.0
	baz=317						
LAKA	Lakka	86.15	317	P	P	00 03 23.1	-1.1
LOMF	Lomont	86.15	331⇑	eP	P	00 03 24.0	-0.1
TAOE	Nuku Hiva Isla	86.21	104	eLR	LR	00 30 51.4	
	comp=Z,313nm,23.6s						
KEK	Kerkira	86.24	319	P	P	00 03 23.7	-0.8
P34A	Walnut Farm, R	86.27	41	P	P	00 03 24.4	-0.3
	baz=318						
N36A	Muff Farm, Cla	86.29	39	P	P	00 03 25.4	+0.6
	baz=319						
M37A	Trindle Farm,	86.30	38	P	P	00 03 25.7	+0.9
	baz=319						
PDO	Prodromos	86.32	317	P	P	00 03 23.9	-1.1
LAST	Lasithi	86.36	312⇑	iP	P	00 03 26.1	+0.8
LAST	Lasithi	86.36	312	eP	P	00 03 25.4	+0.1
	comp=Z,124nm,1.4s						
LKD2	Lefkada Island	86.46	318	P	P	00 03 24.7	-1.0
S32A	Newby Ranch, P	86.48	44	P	P	00 03 26.5	+0.7
	baz=316						
R33A	Olander Ranch,	86.56	43	P	P	00 03 26.2	0.0
	baz=317						
IDI	Anoyia	86.62	313⇑	iP	P	00 03 26.4	-0.2
IDI	Anoyia	86.62	313	eP	P	00 03 25.1	-1.4
	comp=Z,20nm,0.8s						
Q34A	Chapman	86.67	42	P	P	00 03 26.5	-0.2
	baz=318						
N37A	Lee Faris, Mou	86.70	39	P	P	00 03 27.7	+0.8
	baz=319						
KSU1	Kansas State U	86.71	41	P	P	00 03 26.8	-0.1
	baz=318						
KSU1	Kansas State U	86.71	41	eP	P	00 03 27.2	+0.3
	comp=Z,25nm,1.0s						
DAMY	Dhamar	86.77	286	eP	P	00 03 28.8	+0.9
	comp=Z,20nm,1.1s						
SENIN	Lac Senin/Sane	86.78	330	eP	P	00 03 27.4	+0.1
	comp=Z,7.0nm,0.8s						
SIVA	Sivas	86.85	313⇑	iP	P	00 03 27.7	+0.1
MNTX	Cornudas Mount	86.91	52	P	P	00 03 27.9	-0.1
	baz=313						
MNTX	Cornudas Mount	86.91	52	eP	P	00 03 28.9	+1.0
MNTX				epP	pP	00 03 44.0	+1.0
MSTX	Muleshoe	86.93	49	eP	P	00 03 28.9	+0.7
MSTX				epP	pP	00 03 44.6	+1.3
AMTX	Amarillo	86.94	47	P	P	00 03 29.0	+0.8
	baz=315						
AMTX	Amarillo	86.94	47	eP	P	00 03 29.1	+1.0
	comp=Z,23nm,0.9s						
ITM	Ithomi	86.94	316	P	P	00 03 26.6	-1.5
R34A	Isabella, Hill	86.96	42	P	P	00 03 28.6	+0.4
	baz=317						
CABF	La Chapelle	87.05	331	eP	P	00 03 27.5	-1.0
CABF				pmax	pmax		
	comp=Z,14nm,1.1s						
P36A	Good Intent, A	87.05	40	P	P	00 03 28.6	0.0
	baz=319						
S33A	Kaszmaul Farm,	87.07	43	P	P	00 03 29.3	+0.6
	baz=317						
MATE	Matera	87.11	321⇑	iP	P	00 03 29.1	+0.4
N38A	Joes South For	87.16	38	P	P	00 03 29.0	0.0
	baz=320						
O37A	Wolven Farm, M	87.18	39	P	P	00 03 29.7	+0.6
	baz=319						
Q35A	Mercer Eighty,	87.19	41	P	P	00 03 29.3	0.0
	baz=318						
AQU	L'Aquila	87.38	324	eP	P	00 03 30.5	+0.3
AQU				pmax	pmax		
	comp=Z,17nm,0.9s						
AQU	L'Aquila	87.38	324	eP	P	00 03 30.4	+0.3
	comp=Z,17nm,0.9s						
N39A	Derby Farms, D	87.46	38	P	P	00 03 30.6	+0.2
	baz=320						
S34A	Willow Spring	87.47	43	P	P	00 03 30.6	0.0
	baz=318						
R35A	Emporia Munici	87.50	42	P	P	00 03 31.6	+0.9
	baz=318						
P37A	Lathrop	87.52	40	P	P	00 03 30.9	+0.2
	baz=319						
FLN	La Foliniere	87.54	336	eP	P	00 03 29.7	-1.0
FLN				pmax	pmax		
	comp=Z,19nm,0.9s						
O38A	Galt	87.55	39	P	P	00 03 31.2	+0.2
	baz=320						
LPL	La Plagne	87.70	330	eP	P	00 03 31.4	-0.4
LPL				pmax	pmax		
	comp=Z,8.0nm,0.8s						
LPG	La Plagne	87.71	330	eP	P	00 03 31

ORIF	Oris-en-Rattie	88.54	330	eP		P	00 03 35.1	-0.5
ORIF				pmax		pmax		
comp=Z,6.0nm,0.8s								
T36A	Boggs Farm, Ca	88.61	42	P		P	00 03 36.3	+0.3
baz=318								
V34A	Guthrie	88.62	44	P		P	00 03 36.6	+0.6
baz=317								
Q39A	Willow Grove F	88.62	39	P		P	00 03 36.4	+0.4
baz=320								
AGO	Saint Agoulin	88.63	332⇑	eP		P	00 03 36.2	+0.3
S37A	Fort Scott	88.64	41	P		P	00 03 36.2	+0.1
baz=319								
WMOK	Wichita Mounta	88.71	46	P		P	00 03 36.8	+0.3
baz=317								
P40A	Paris	88.71	39	P		P	00 03 36.9	+0.5
baz=320								
TBI	Tubuai	88.77	121	eLR		LR	00 31 28.0	
comp=Z,268nm,29.5s								
TBI	Tubuai	88.77	121	eT		T	01 42 08.7	
comp=Z,110nm,0.3s								
R38A	Fenwick Farm,	88.80	40	P		P	00 03 37.1	+0.2
baz=319								
W34A	Bridge Creek,	88.91	45	eP		P	00 03 38.7	+1.2
PYM	Petit Puy Mans	88.93	332⇑	eP		P	00 03 37.7	+0.3
T37A	Cheneyville 18	89.07	42	P		P	00 03 38.2	+0.1
baz=319								
Q40A	Laux Farm, Aux	89.11	39	P		P	00 03 38.7	+0.4
baz=320								
R39A	Chumby, Stover	89.15	40	P		P	00 03 38.3	-0.2
baz=320								
HDIL	Hopedale	89.24	36	eP		P	00 03 39.4	+0.5
comp=Z,36nm,0.9s								
LBL	Lubilhac	89.28	332	eP		P	00 03 38.0	-1.1
Y33A	Hilltop Ranch,	89.32	46	P		P	00 03 39.5	+0.1
baz=317								
CEL	Celeste	89.34	320	eP		P	00 03 39.0	-0.5
comp=Z,28nm,0.9s								
X34A	Smith Ranch, M	89.34	45	P		P	00 03 40.3	+0.8
baz=317								
T38A	Diamond	89.47	41	P		P	00 03 40.0	0.0
baz=319								
S39A	Bolivar	89.47	40	P		P	00 03 39.6	-0.5
baz=320								
TUL1	Leonard	89.51	43	P		P	00 03 40.3	+0.1
baz=318								
TUL1	Leonard	89.51	43	eP		P	00 03 41.0	+0.8
TUL1				epP		pP	00 03 56.5	+1.2
V36A	Jenks	89.52	43	P		P	00 03 40.5	+0.2
baz=318								
R40A	Maddies Statio	89.55	39	P		P	00 03 40.4	0.0
baz=320								
TXAR	Lajitas Array	89.60	52	P		P	00 03 41.6	+0.7
comp=Z,7.4nm,0.8s,baz=291,slow=3.0,SNR=50								
TXAR				LR		LR	00 40 39.7	
comp=Z,43nm,19.9s,baz=0.0,slow=33								
ABTX	Abilene, Hawle	89.73	48	P		P	00 03 41.8	+0.4
baz=316								
ABTX	Abilene, Hawle	89.73	48	eP		P	00 03 42.3	+0.9
ABTX				epP		pP	00 03 57.5	+1.0
W36A	Wetumka	89.84	44	P		P	00 03 42.0	+0.2
baz=318								
Y34A	Reagan Ranch,	89.86	46	P		P	00 03 42.2	+0.3
baz=317								
U38A	Gravette	89.87	42	P		P	00 03 42.0	+0.1
baz=319								
V37A	Hulbert	89.88	43	P		P	00 03 42.1	+0.2
baz=319								
Q42A	Golden Eagle	89.94	38	P		P	00 03 43.2	+1.0
baz=321								
HPIG		89.97	55	eP		P	00 03 41.5	-1.3
S40A	Lebanon	89.97	40	P		P	00 03 42.0	-0.4
baz=320								
X35A	Drake	89.97	45	P		P	00 03 42.3	-0.2
baz=318								
CAF	Calviac	89.98	333	eP		P	00 03 42.1	-0.2
CAF				pmax		pmax		
comp=Z,15nm,1.0s								
133A	Hamilton Ranch	90.17	47	P		P	00 03 43.7	+0.3
baz=317								
X36A	Centrahoma	90.19	44	P		P	00 03 44.0	+0.5
baz=318								
HHAR	Hobbs	90.22	42	eP		P	00 03 43.8	+0.2
HHAR				epP		pP	00 03 59.1	+0.4
W37B	Quinton	90.28	43	P		P	00 03 44.3	+0.5
baz=318								
V38A	Canehill	90.29	42	P		P	00 03 44.1	+0.2
baz=319								
T40A	Mansfield	90.30	40	P		P	00 03 43.9	-0.1
baz=320								
Y35A	Marietta	90.30	45	P		P	00 03 44.2	+0.2
baz=318								
TRQ	Mont Tremblant	90.36	24	eP		P	00 03 44.6	+0.5
Z35A	Perchaven, San	90.60	46	P		P	00 03 45.2	-0.2
baz=318								
233A	Rising Star	90.60	48	P		P	00 03 45.9	+0.4
baz=317								
V39A	Pettigrew	90.71	42	P		P	00 03 45.7	-0.2
baz=320								
X37A	Clayton	90.72	44	P		P	00 03 46.3	+0.4
baz=318								
Y36A	Durant	90.73	45	P		P	00 03 46.0	+0.1
baz=318								
U40A	Yellville	90.73	41	P		P	00 03 45.8	-0.1
baz=320								
W38A	Poteau	90.82	43	P		P	00 03 46.8	+0.4
baz=319								
X38A	Whitesboro	90.96	43	P		P	00 03 47.6	+0.6
baz=319								
333A	Richland Sprin	91.05	48	P		P	00 03 47.8	+0.3
baz=316								
234A	Clairette	91.06	47	P		P	00 03 47.9	+0.4
baz=317								
Z36A	Blue Ridge	91.11	45	P		P	00 03 47.8	+0.1
baz=318								
JCT	Junction City	91.17	49	P		P	00 03 48.3	+0.1
baz=316								
JCT	Junction City	91.17	49	eP		P	00 03 48.8	+0.7
JCT				e*PP		pP	00 04 03.5	+0.2
JCT	Junction City	91.17	49	eP		P	00 03 48.8	+0.7
JCT				epP		pP	00 04 03.5	+0.2
OLIL	Olney	91.25	37	eP		P	00 03 49.3	+1.1
WHTX	Lake Whitney,	91.46	47	P		P	00 03 49.6	+0.2
baz=317								
WHTX	Lake Whitney,	91.46	47	eP		P	00 03 50.5	+1.1
comp=Z,18nm,0.8s								
WHTX				e			00 04 06.1	
X39A	Fountain Ranch	91.46	43	P		P	00 03 49.8	+0.4
baz=319								
334A	Lometa	91.49	48	P		P	00 03 49.9	+0.4
baz=317								
W40A	Ferguson Farm,	91.51	42	P		P	00 03 49.7	+0.1
baz=320								
V41A	Mountainview	91.53	41	P		P	00 03 49.4	-0.3
baz=320								
MIAR	Mount Ida	91.73	43	P		P	00 03 51.0	+0.4
baz=320								
MIAR	Mount Ida	91.73	43	eP		P	00 03 51.5	+0.9
MIAR				e*PP		pP	00 04 06.2	+0.5
MIAR	Mount Ida	91.73	43	eP		P	00 03 51.5	+0.9
MIAR				epP		pP	00 04 06.2	+0.5
X201	Greenbrier Sit	91.80	41	eP		P	00 03 51.3	+0.4
X301	Greenbrier Sit	91.83	41	eP		P	00 03 51.6	+0.6
WHAR	Wooly Hollow	91.84	41	eP		P	00 03 51.5	+0.5
434A	Burnet	91.84	48	P		P	00 03 51.1	-0.2
baz=317								
V42A	Cord	91.91	40	P		P	00 03 51.2	-0.2
baz=321								
W41B	Gary Mavity, V	91.95	41	P		P	00 03 51.7	+0.1
baz=320								
X40A	Basin Creek Fa	92.17	42	P		P	00 03 53.1	+0.5
baz=320								
633A	Saathoff Ranch	92.28	50	P		P	00 03 53.9	+0.6
baz=316								
534A	Blanco	92.29	49	P		P	00 03 53.5	+0.2
baz=317								
PKME	Peaks-Kenny Pk	92.83	21	eP		P	00 03 56.6	+1.2
833A	Chaparral WMA,	92.97	51	P		P	00 03 57.3	+0.9
baz=316								
ACCN	Adirondack Com	93.16	25	eP		P	00 03 57.3	+0.3
LMN	Caledonia Moun	93.49	18	eP		P	00 03 59.3	+0.8
933A	Laredo	93.55	51	P		P	00 04 00.8	+1.8
baz=316								
KEST	Kesra	94.56	323	P		P	00 04 02.4	-1.3
comp=Z,6.0nm,1.0s,baz=312,slow=1.8,SNR=4.9								
KEST				LR		LR	00 51 39.0	
comp=Z,137nm,19.9s,baz=286,slow=39								
FURI	Furi	94.66	285	eP		P	00 04 06.5	+1.7
ZAIG	Zacatecas	94.86	56	eP		P	00 04 07.2	+1.6
ESDC	Sonseca Array	96.73	334	LR		LR	00 52 15.3	
comp=Z,127nm,20.9s,baz=50,slow=38								
RKT	Rikitea	98.89	112	eLR		LR	00 36 43.1	
comp=Z,318nm,28.5s								
CCIG	Comitan	106.32	54	ePdif		Pdif	00 04 56.5	-0.2
VNDA	Vanda	115.65	175	PKP		PKPdf	00 09 21.7	-1.8
comp=Z,0.4nm,0.5s,baz=317,slow=4.5,SNR=4.7								
TORD	Torodi Ar. Bea	116.94	315	PKP		PKPdf	00 09 26.5	-1.4
comp=Z,1.0nm,0.7s,baz=93,slow=1.3,SNR=13								
TORD				PP		PP	00 10 25.8	-11
comp=Z,3.5nm,1.1s,baz=24,slow=5.8,SNR=8.7								
DBIC	Dimbokro	125.88	317	PKP		PKPdf	00 09 44.0	-1.2
comp=Z,3.2nm,0.8s,baz=336,slow=3.0,SNR=5.8								
DBIC	Dimbokro	125.88	317	PKIKP		PKPdf	00 09 44.0	-1.2
DBIC				pmax		pmax		
comp=Z,3.0nm,0.8s								
BOSA	Boshof	126.83	260	PKP		PKPdf	00 09 46.2	-0.4
comp=Z,5.4nm,0.8s,baz=131,slow=0.5,SNR=14								
QSPA	South Pole Qui	127.46	180	ePKPdf		PKPdf	00 09 45.9	-0.7
QSPA				epPKPdf		pPKPdf	00 10 01.6	-0.7
LPAZ	La Paz	146.23	59	PKPbc		PKPbc	00 10 24.4	0.0
comp=Z,19nm,0.8s,baz=346,slow=4.5,SNR=55								
LVC	Limon Verde	149.81	69	ePKPbc		PKPbc	00 10 34.2	+0.7
LVC				ePKPab		PKPab	00 10 40.2	+1.2
LCO	Las Campanas	151.79	82	ePKPbc		PKPbc	00 10 38.4	+0.5

ISK ***15*** *00:01:25.3, 37°.41N×35°.86E, h7km, MD2.9*
DDA ***15*** *00:01:25.5, 37°.51N×35°.83E, h30km, Ml3.0*
CSEM ***15*** *00:01:26.1±0.2, 37°.40N×35°.85E, h15km, MD2.9, Error ellipse: s-maj=4.0km s-min=3.9km az=122.0*
ISC 15 00:01:24.8±1.4**, 37°.43N**±0°.03×**35°.82E**±0°.02**, h1**km±13km**, n41**, σ0°65/49**, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKO	Adana	0.30	276	i P	Pb	00 01 32.9	-0.1
AKO				i S	Sb	00 01 38.5	0.0
CEYT	Ceyhan	0.42	188	ePG	Pg	00 01 33.9	+1.0
CEYT	Ceyhan	0.42	188	ePg	Pg	00 01 33.9	+1.0
KARA	Karaisali	0.64	255	ePG	Pb	00 01 38.5	-0.2
KARA				eSG	Sb	00 01 48.4	+0.2
KARA	Karaisali	0.64	255	ePg	Pb	00 01 38.5	-0.2
KARA				eSg	Sb	00 01 48.4	+0.2
KAMA	Osmaniye	0.72	110	i P	Pg	00 01 39.3	+0.8
GULE	Gulek	0.85	260	P	Pn	00 01 44.0	-0.1
GULE	Gulek	0.85	260	i P	Pn	00 01 44.0	-0.1
HCB	Kahramanmara¯	0.87	95	i P	Pg	00 01 42.0	+0.5
HCB				i S	Sn	00 01 56.9	-0.6
KRTS	Karatas	0.93	203	ePG	Pb	00 01 43.4	-0.3
KRTS	Karatas	0.93	203	ePg	Pb	00 01 43.4	-0.3
DED	Mersin	0.94	241	i P	Pg	00 01 42.6	-0.3
TAHT	Tahtakopru-Hat	1.09	164	ePG	Pb	00 01 46.2	-0.3
TAHT				eSG	Sb	00 02 01.3	+0.1
TAHT	Tahtakopru-Hat	1.09	164	ePg	Pb	00 01 46.2	-0.3
TAHT				eSg	Sb	00 02 01.3	+0.1
GAZ	Gaziantep	1.14	103	ePN	Pg	00 01 46.8	+0.2
GAZ				eSN	Sb	00 02 02.5	-0.1
GAZ	Gaziantep	1.14	103	ePn	Pg	00 01 46.8	+0.2
GAZ				eSn	Sb	00 02 02.5	-0.1
NIG	Nigde	1.18	306	ePN	Pn	00 01 48.7	0.0
NIG	Nigde	1.18	306	ePn	Pn	00 01 48.7	0.0
MERS	Mersin	1.18	242	ePN	Pn	00 01 48.4	-0.2
MERS	Mersin	1.18	242	ePn	Pn	00 01 48.4	-0.2
KUZU	Kuzuini	1.20	123	P	Pg	00 01 47.5	-0.2
KUZU	Kuzuini	1.20	123	i P	Pg	00 01 47.5	-0.2
GZT	Gaziantep	1.39	93	i P	Pn	00 01 51.4	-0.1
BNN	Bunyan	1.42	1	ePN	Pn	00 01 52.3	+0.4
BNN	Bunyan	1.42	1	ePn	Pn	00 01 52.3	+0.4
AVNS	Nevsehir-Avano	1.58	331	P	Pn	00 01 53.0	-1.1
AVNS	Nevsehir-Avano	1.58	331	i P	Pn	00 01 53.0	-1.1
DARE	Darende-Malaty	1.74	48	ePN	Pn	00 01 56.5	+0.3
DARE	Darende-Malaty	1.74	48	ePn	Pn	00 01 56.6	+0.3
AKCD	Akcadag	1.87	62	P	Pg	00 02 01.0	+0.3
AKCD	Akcadag	1.87	62	i P	Pg	00 02 01.0	+0.3
CUALT	Altinyayla-SIV	1.98	21	P	Pn	00 02 00.0	+0.3
CUALT	Altinyayla-SIV	1.98	21	i P	Pn	00 01 60.0	+0.3
CUKAN	kangal_SIVAS	2.28	34	i P	Sn	00 02 33.0	+0.3
SURC	SANLIURFA_SURC	2.29	103	i P	Sg	00 02 36.7	-1.9
ZALF	Zalf	4.66	164	eP	Pb	00 02 47.7	+0.2
MDUB	Mudurnu	4.71	312	eP	Pb	00 02 49.9	+1.6
TCHB	Talchebab	4.75	179	eP	Pb	00 02 51.1	+2.2
DALY	Dalyan (Mu¨la	5.76	266	eP	Pb	00 03 06.4	+0.3
YER	Yerkesik	6.02	269	P	Pb	00 03 10.5	-0.1
HRFI	Mount Harif	7.40	185	eP	Pn	00 03 13.2	-0.9

JMA 15 00:02:01.1±0.2**, 38°.19N×142°.13E, h15**km±2km**, M3.8, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.67	293	P	Pg	00 02 14.0	-0.2
JIO				S	Sg	00 02 22.6	-0.4
OFUJ	Ofunato	0.96	338	P	Pb	00 02 18.9	-0.5
OFUJ				S	Sb	00 02 31.5	-0.4
JMK	Ichinoseki	1.04	317	P	Pb	00 02 20.7	-0.1
JMK				S	Sb	00 02 34.4	+0.1
JMM	Marumori	1.10	253	P	Pb	00 02 21.2	-0.7
JMM				S	Sb	00 02 36.1	0.0
JOU	Okura	1.17	279	P	Pn	00 02 22.9	0.0
MIYJ	Miyakonagasawa	1.41	350	P	Pn	00 02 25.1	-1.1
MIYJ				S	Sn	00 02 42.6	-1.9
MAT	Matsushiro	3.53	243	P	Pb	00 03 02.9	-0.4
MAT				S	Sb	00 03 48.8	+2.8

IDC ***15*** *00:21:36.8±3.1, 36°.81N×142°.13E, h0km, mb3.6/5, mb1 3.7/7, mb1mx3.4/54, mbtmp3.6/7, ML3.7/2, MS3.4/1, Ms1 3.4/1, ms1mx2.4/42, Error ellipse: s-maj=68.2km s-min=24.8km az=160.0*
JMA ***15*** *00:21:42.6±0.4, 36°.92N×141°.71E, h53km±5km, M3.1*
ISC 15 00:21:40.9±1.4**, 37°.00N**±0°.09×**141°.88E**±0°.09**, h19**km**, n18,** σ1°07/20**, mb3.7/5, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.87	277	P	Pb	00 21 57.1	-0.4
JFK	Kawauchi	0.88	295	P	Pb	00 21 58.0	+0.3
JHO	Hitachi	1.12	250	P	Pn	00 22 00.3	-1.3
JMM	Marumori	1.22	315	P	Pb	00 22 03.2	-0.2
JMM				eS	Sn	00 22 16.4	-2.6
JFT	Otama	1.34	293	P	Pb	00 22 05.3	-0.1
JIO	Ouri	1.51	344	P	Pb	00 22 08.1	-0.2
JOU	Okura	1.67	325	P	Pb	00 22 10.9	-0.2
JFY	Yanaizu	1.79	284	P	Pn	00 22 11.5	+0.7
JAG	Ashikaga	2.04	254	P	Pn	00 22 13.8	-0.4
MJAR	Matsushiro Arr	2.98	262	Pn	Pn	00 22 27.9	+0.7
8.7nm,0.3s,baz=86,slow=15,SNR=54							
MJAR				Sn	Sb	00 23 10.3	+0.8
3.5nm,0.3s,baz=88,slow=31,SNR=6.6							
MAT	Matsushiro	2.99	262	P	Pn	00 22 28.4	+1.1
MAT				S	Sn	00 23 00.8	-1.8
ASAJ	Asahikawa	7.13	4	Pn	Pn	00 23 24.2	+0.1
1.4nm,0.3s,baz=229,slow=11,SNR=9.1							
SONM	Songino Array	28.11	304	P	P	00 27 33.3	+1.7
0.3nm,0.3s,baz=105,slow=9.7,SNR=6.0							
MKAR	Makanchi Array	44.45	302	P	P	00 29 51.4	+0.7
0.3nm,0.7s,baz=98,slow=7.9,SNR=2.7							
KURBB	Kurchatov Arra	46.32	308	P	P	00 30 05.6	+0.3
0.4nm,0.5s,baz=83,slow=8.1,SNR=4.8							
HNR	Honiara	49.20	156	LR	LR	00 45 46.9	
comp=Z,45nm,21.8s,baz=124,slow=30							
ILAR	Eielson Array	49.32	32	P	P	00 30 27.4	-1.0
0.6nm,0.8s,baz=259,slow=5.7,SNR=6.2							
INK	Inuvik	54.24	27	P	P	00 31 04.8	-0.3
1.0nm,0.8s,baz=243,slow=9.0,SNR=4.9							

JMA 15 00:36:48.3±0.1**, 37°.72N×141°.82E, h32**km±3km**, M3.7, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.82	333	P	Pn	00 37 03.5	-0.1
JIO				S	Sn	00 37 13.6	-1.1
JMM	Marumori	0.83	280	P	Pn	00 37 03.7	0.0
JMM				S	Sn	00 37 14.2	-0.6
JFK	Kawauchi	0.83	245	P	Pn	00 37 03.6	-0.2
JFK				S	Sn	00 37 14.0	-1.0
ONAJ	Iwakimizuishiy	1.02	233	P	Pn	00 37 06.2	-0.2
JOU	Okura	1.12	306	P	Pb	00 37 08.5	-0.6
JOU				S	Sn	00 37 22.5	+0.5
JFT	Otama	1.20	261	P	Pb	00 37 09.9	-0.5
JFT				S	Sn	00 37 24.7	+0.8
JMK	Ichinoseki	1.32	339	P	Pn	00 37 11.0	+0.5
JYK	Kaneyama	1.66	317	P	Pn	00 37 16.0	+0.8
JFY	Yanaizu	1.71	260	P	Pn	00 37 17.3	+1.4
MAT	Matsushiro	3.12	249	P	Pn	00 37 37.4	+2.2
MAT				S	Sn	00 38 13.0	+1.6

NIED ***15*** *00:51:00, 36°.80N×141°.40E, h41km, Mw4.1 Best double couple: M0:1.35000×10^15 NP1:φs=314.00000°, δ32.00000°, λ=-156.00000°. NP2:φs=203.00000°, δ77.00000°, λ=-60.00000°.*
ISCJB ***15*** *00:51:41.4±1.0, 36°.73N±0°.03×141°.64E±0°.05, h22km±6km, mb3.9/20, MS3.3/2, Error ellipse: s-maj=7.2km s-min=5.6km az=6.7*
JMA ***15*** *00:51:44.7±0.2, 36°.75N×141°.38E, h48km±2km, M4.1*
JMA Felt I J1.
IDC ***15*** *00:51:45.1±0.9, 36°.67N×141°.49E, h35km±5km, mb3.6/13, mb1 3.9/16, mb1mx3.7/35, mbtmp3.9/16, ML4.1/3, MS3.0/6, Ms1 3.1/6, ms1mx2.8/41, Error ellipse: s-maj=20.6km s-min=15.5km az=93.0*
NEIC ***15*** *00:51:45.0±0.7, 36°.68N×141°.61E, h36km±5km, mb4.3/7, Error ellipse: s-maj=9.2km s-min=7.6km az=107.0*
NEIC Recorded [1 JMA] in Fukushima and Ibaraki.
ISC 15 00:51:43.7±0.7**, 36°.76N**±0°.05×**141°.56E**±0°.06**, h24**km±3km**, n51,** σ1°04/54**, mb4.0**/20**, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.70	299	P	Pb	00 51 56.7	-0.6
ONAJ				S	Sb	00 52 05.3	-1.3
JHO	Hitachi	0.81	260	P	Pb	00 51 57.7	-1.5
JHO				eS	Sb	00 52 08.3	-1.4
JFK	Kawauchi	0.82	318	P	Pb	00 51 58.5	-0.8
JFK				S	Sb	00 52 08.3	-1.7
JFT	Otama	1.24	308	P	Pn	00 52 05.4	-0.1
JFT				eS	Sn	00 52 20.6	-0.9
JMM	Marumori	1.26	331	P	Pn	00 52 05.0	-0.9
JMM				eS	Sn	00 52 20.2	-1.9
JFY	Yanaizu	1.62	294	P	Pn	00 52 10.7	-0.1
JIO	Ouri	1.70	354	P	Pn	00 52 11.3	-0.6
JIO				eS	Sn	00 52 30.8	-2.1
JAG	Ashikaga	1.73	259	P	Pn	00 52 11.1	-1.2
JOU	Okura	1.75	336	P	Pn	00 52 12.8	+0.1
JOU				eS	Sn	00 52 34.3	0.0
JKT	Katashina	1.86	271	P	Pn	00 52 13.8	-0.3
MJAR	Matsushiro Arr	2.71	266	Pn	Pn	00 52 25.8	+0.1
31nm,0.3s,baz=88,slow=15,SNR=258							
MJAR				Sn	Sn	00 52 58.9	+1.2
33nm,0.3s,baz=240,slow=12,SNR=11							
MJAR				LR	LR	00 53 38.9	
comp=Z,214nm,21.5s,baz=100,slow=44							
MAJO	Matsushiro	2.71	266	ePn	Pn	00 52 26.3	+0.5
MAT	Matsushiro	2.71	266	P	Pn	00 52 26.3	+0.5
MAT				S	Sn	00 52 58.1	+0.3
ASAJ	Asahikawa	7.39	6	Pn	Pn	00 53 30.1	0.0
1.3nm,0.3s,baz=192,slow=6.4,SNR=11							
ASAJ				Sn	Sn	00 54 52.4	-0.7
1.5nm,0.3s,baz=223,slow=28,SNR=2.7							
JNU	Nakatsue	9.49	251	Pn	Pn	00 54 01.0	+2.0
0.3nm,0.3s,baz=49,slow=7.2,SNR=3.3							
JNU				LR	LR	00 57 44.2	
comp=Z,73nm,19.7s,baz=108,slow=38							
CBIJ	Chichi jima	9.65	177	Pn	Pn	00 53 59.9	-1.2
JCJ	Chichijima	9.65	177	Pn	Pn	00 53 59.9	-1.2
17nm,0.3s,baz=299,slow=21,SNR=5.4							
USRK	Ussuriysk Ar.	10.40	319	Pn	Pn	00 54 16.4	+5.0
0.4nm,0.3s,baz=133,slow=13,SNR=14							
KSRS	Korea Array	10.92	278	Pn	Pn	00 54 23.2	+4.8
0.3nm,0.3s,baz=92,slow=14,SNR=20							
KSRS				LR	LR	00 58 18.1	
comp=Z,84nm,20.2s,baz=109,slow=36							
KSAR	Wonju Array Be	10.95	278	Pn	Pn	00 54 23.2	+4.4
MDJ	Mudanjiang	12.00	315	ePn	Pn	00 54 35.2	+2.1
KLR	Kul'dur	14.37	333	LR	LR	00 59 37.6	
comp=Z,54nm,22.0s,baz=111,slow=33							
MA2	Magadan	23.60	12	P	P	00 56 53.4	+1.0
3.6nm,0.5s,baz=215,slow=12,SNR=3.6							
YAK	Yakutsk	26.36	347	eP	P	00 57 18.3	+0.6
4.3nm,0.4s							
SEY	Seymchan	27.04	11	P	P	00 57 25.2	+1.5
1.5nm,0.6s,baz=163,slow=23,SNR=5.3							
ULN	Ulaanbaatar	27.61	305	eP	P	00 57 30.1	+0.8
2.1nm,0.5s							
H11N2	WAKE ISLAND Hy	27.91	121	T	T	01 26 58.5	
baz=313,slow=75,SNR=137							
H11N1	WAKE ISLAND Hy	27.91	121	T	T	01 26 49.4	
baz=313,slow=75,SNR=48							
H11N3	WAKE ISLAND Hy	27.92	121	T	T	01 26 60.0	
baz=313,slow=75,SNR=38							
SONM	Songino Array	28.04	304	P	P	00 57 33.6	+0.5
1.1nm,0.5s,baz=92,slow=9.1,SNR=10							
H11S1	WAKE ISLAND Hy	28.61	123	T	T	01 27 51.2	
baz=315,slow=76,SNR=102							
H11S3	WAKE ISLAND Hy	28.61	123	T	T	01 27 41.4	
baz=315,slow=76,SNR=91							
H11S2	WAKE ISLAND Hy	28.63	123	T	T	01 27 42.6	
baz=315,slow=76,SNR=71							
CMAR	Chiang Mai Arr	41.54	256	LR	LR	01 18 37.3	
comp=Z,21nm,19.9s,baz=190,slow=39							
ZALV	Zalesovo Beam	42.19	313	P	P	00 59 33.8	-0.5
1.0nm,0.3s,baz=88,slow=7.8,SNR=5.5							
ZALV				pP	sP	00 59 44.5	-0.1
3.5nm,0.6s,baz=95,slow=9.0,SNR=2.9							
MKAR	Makanchi Array	44.37	302	P	P	00 59 50.8	-1.2
0.6nm,0.5s,baz=88,slow=7.9,SNR=6.0							
MKAR				pP	sP	01 00 02.2	-0.2

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.65**	**169**	*e*Pg	**Pg**	**00 53 32.7**	**+0.2**
KSP				*e*Sg	**Sg**	**00 53 41.5**	**+0.6**
KSP	**Ksiaz**	**0.65**	**169**	*e*Pg	**Pg**	**00 53 32.7**	**+0.2**
KSP				*e*Sg	**Sg**	**00 53 41.5**	**+0.6**
UPC	**Upice**	**0.98**	**183**	*e*PG	**Pg**	**00 53 39.0**	**+0.3**
UPC				*e*SG	**Sg**	**00 53 52.0**	**+0.6**
comp=Z,34nm,0.4s							
UPC	**Upice**	**0.98**	**183**	Pg	**Pg**	**00 53 39.0**	**+0.3**
UPC				Sg	**Sg**	**00 53 52.0**	**+0.6**
34nm,0.4s							
DPC	**Dobruska-Polom**	**1.14**	**173**	*e*PG	**Pg**	**00 53 41.8**	**-0.1**
DPC				*e*SG	**Sg**	**00 53 56.5**	**-0.1**
comp=Z,8.7nm,0.4s							
DPC	**Dobruska-Polom**	**1.14**	**173**	Pg	**Pg**	**00 53 41.8**	**-0.1**
DPC				Sg	**Sg**	**00 53 56.5**	**-0.1**
8.7nm,0.4s							
PVCC	**Panska Ves**	**1.36**	**226**	*e*PG	**Pb**	**00 53 46.5**	**+0.2**
PVCC				*e*SG	**Sn**	**00 54 04.9**	**0.0**
comp=Z,52nm,0.2s							
PVCC	**Panska Ves**	**1.36**	**226**	Pg	**Pb**	**00 53 46.5**	**+0.2**
PVCC				Sg	**Sn**	**00 54 04.9**	**0.0**
52nm,0.2s							
KRLC	**Kraliky**	**1.47**	**163**	*e*PG	**Pn**	**00 53 48.0**	**+0.1**
KRLC				*e*SG	**Sg**	**00 54 06.6**	**-0.7**
KRLC	**Kraliky**	**1.47**	**163**	Pg	**Pn**	**00 53 48.0**	**+0.1**
KRLC				Sg	**Sg**	**00 54 06.6**	**-0.7**
BRG	**Berggiesshubel**	**1.49**	**247**	PG	**Pb**	**00 53 49.1**	**+0.6**
BRG				SG	**Sn**	**00 54 08.8**	**+0.7**
24nm,0.3s							
GOPC	**GO Pecny, Ondr**	**1.78**	**209**	*e*PG	**Pb**	**00 53 53.6**	**+0.1**
GOPC				*e*SG	**Sb**	**00 54 16.6**	**+0.3**
comp=Z,4.1nm,0.3s							
GOPC	**GO Pecny, Ondr**	**1.78**	**209**	Pg	**Pb**	**00 53 53.6**	**+0.1**
GOPC				Sg	**Sb**	**00 54 16.6**	**+0.3**
4.1nm,0.3s							
PRU	**Pruhonice**	**1.79**	**214**	*e*PG	**Pb**	**00 53 53.7**	**0.0**
PRU				*e*SG	**Sg**	**00 54 17.7**	**+0.1**
comp=Z,7.6nm,0.4s							
PRU	**Pruhonice**	**1.79**	**214**	Pg	**Pb**	**00 53 53.7**	**0.0**
PRU				Sg	**Sg**	**00 54 17.7**	**+0.1**
7.6nm,0.4s							
MORC	**Moravsky Berou**	**1.94**	**151**	*e*Pn	**Pn**	**00 53 53.6**	**-0.6**
MORC				*e*Sg	**Sn**	**00 54 18.1**	**-1.2**
CLL	**Collm**	**1.95**	**266**	*e*Pn	**Pn**	**00 53 54.0**	**-0.3**
CLL				*e*Pg	**Pb**	**00 53 56.0**	**-0.4**
CLL				*i* Sg	**Sg**	**00 54 22.6**	**0.0**
comp=Z,6.0nm,0.5s							
OKC	**Ostrava-Krasne**	**2.10**	**141**	*e*PG	**Pb**	**00 53 59.2**	**+0.3**
OKC				*e*SG	**Sb**	**00 54 26.2**	**+0.7**
OKC	**Ostrava-Krasne**	**2.10**	**141**	Pg	**Pb**	**00 53 59.2**	**+0.3**
OKC				Sg	**Sb**	**00 54 26.2**	**+0.7**
VRAC	**Vranov**	**2.20**	**172**	*e*Pn	**Pn**	**00 53 58.2**	**+0.4**
VRAC				*e*Sg	**Sb**	**00 54 29.2**	**+0.8**
TREC	**Trest**	**2.22**	**190**	*e*SG	**Sg**	**00 54 30.8**	**-0.6**
comp=Z,4.8nm,0.3s							
TREC	**Trest**	**2.22**	**190**	Sg	**Sg**	**00 54 30.8**	**-0.6**
comp=Z,4.8nm,0.3s							
NKC	**Novy Kostel**	**2.63**	**243**	*e*PG	**Pg**	**00 54 10.4**	**0.0**
NKC				*e*SG	**Sg**	**00 54 44.2**	**-0.3**
comp=Z,13nm,0.3s							
NKC	**Novy Kostel**	**2.63**	**243**	Pg	**Pg**	**00 54 10.4**	**0.0**
NKC				Sg	**Sg**	**00 54 44.2**	**-0.3**
comp=Z,13nm,0.3s							
OJC	**Ojcow**	**2.66**	**117**	*e*Pg	**Pg**	**00 54 10.5**	**-0.5**
OJC				*e*Sg	**Sg**	**00 54 45.7**	**+0.2**
OJC	**Ojcow**	**2.66**	**117**	*e*Pg	**Pg**	**00 54 10.5**	**-0.5**
OJC				*e*Sg	**Sg**	**00 54 45.7**	**+0.2**
OJC	**Ojcow**	**2.66**	**117**	*e*Pg	**Pg**	**00 54 10.5**	**-0.5**
OJC				*e*Sg	**Sg**	**00 54 45.7**	**+0.2**
KHC	**Kasperske Hory**	**2.85**	**215**	*e*PN	**Pn**	**00 54 07.0**	**+0.2**
KHC				*e*PG	**Pb**	**00 54 12.7**	**+0.9**
KHC				*e*SN	**Sn**	**00 54 41.2**	**-0.7**
KHC				*e*SG	**Sg**	**00 54 50.6**	**-1.1**
comp=Z,2.9nm,0.3s							
KHC	**Kasperske Hory**	**2.85**	**215**	Pn	**Pn**	**00 54 07.0**	**+0.2**
LANS	**Liptovska Anna**	**3.18**	**136**	*e*Sg	**Sg**	**00 54 59.7**	**-2.4**
LANS	**Liptovska Anna**	**3.18**	**136**	*e*SG	**Sg**	**00 54 59.7**	**-2.4**
CONA	**Conrad Observa**	**3.56**	**183**	*e*Sg	**Sg**	**00 55 14.7**	**+0.3**
comp=Z,3.3nm,0.4s							
CONA	**Conrad Observa**	**3.56**	**183**	Sg	**Sg**	**00 55 14.7**	**+0.3**
comp=Z,3.3nm,0.4s							
MOA	**Molln**	**3.83**	**199**	*e*Sg	**Sg**	**00 55 20.4**	**-2.5**
comp=Z,0.2nm,0.1s							
MOA	**Molln**	**3.83**	**199**	Sg	**Sg**	**00 55 20.4**	**-2.5**
comp=Z,0.2nm,0.1s							
STHS	**Stebnicka Huta**	**3.88**	**120**	*e*Sg	**Sg**	**00 55 26.0**	**+1.3**
STHS	**Stebnicka Huta**	**3.88**	**120**	*e*SG	**Sg**	**00 55 26.0**	**+1.3**
STHS				*e*LG	Lg	00 55 32.2	

NIED ***15*** *01:06:00, 36°.40N×141°.60E, h32km, Mw3.5 Best double couple: M₀1.78000×10¹⁴ NP1:φs=243.00000°, δ49.00000°, λ-138.00000°. NP2:φs=122.00000°, δ60.00000°, λ-49.00000°.*

JMA 15 01:06:53.1±0.2, 36°.42N×141°.63E, h46km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.88**	**283**	P	Pn	01 07 08.8	-0.3
CHOJ	**Chosi**	**0.95**	**221**	P	Pn	01 07 10.6	+0.6
CHOJ				*e*S	Sn	01 07 23.6	+1.1
ONAJ	**Iwakimizuishiy**	**0.95**	**316**	P	Pn	01 07 10.2	0.0
JFK	**Kawauchi**	**1.12**	**328**	P	Pn	01 07 12.6	+0.2
JFT	**Otama**	**1.51**	**317**	P	Pn	01 07 19.3	+1.6
JMM	**Marumori**	**1.59**	**335**	P	Pn	01 07 19.5	+0.7
MAT	**Matsushiro**	**2.76**	**274**	P	Pn	01 07 37.1	+2.2
MAT				S	Sn	01 08 12.6	+5.6

ISK ***15*** *01:11:04.0, 36°.95N×28°.30E, h8km, MD2.6*
DDA ***15*** *01:11:04.8, 36°.99N×28°.19E, h7km, Md2.7*
CSEM ***15*** *01:11:05.0±0.3, 36°.97N×28°.23E, h8km, MD2.6, Error ellipse: s-maj=7.9km s-min=5.0km az=25.0*

ISC 15 01:11:03.8±1.2, 36°.93N±0°.04×28°.21E±0°.03, h3km±11km, n25, σ0§88/37, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.21**	**17**	*e*PG	**Pg**	**01 11 08.0**	**+0.2**
YER				*e*SG	**Sg**	**01 11 11.2**	**+0.5**
YER	**Yerkesik**	**0.21**	**17**	*e*Pg	**Pg**	**01 11 08.0**	**+0.2**
YER				*e*Sg	**Sg**	**01 11 11.2**	**+0.5**
TURN	**Turunc**	**0.33**	**101**	*i* P	**Pg**	**01 11 08.6**	**-1.4**
TURN				*i* S	**Sg**	**01 11 11.8**	**-2.4**
DALY	**Dalyan (Mu¨la**	**0.38**	**108**	*e*PG	**Pg**	**01 11 11.0**	**0.0**
DALY	**Dalyan (Mu¨la**	**0.38**	**108**	*e*Pg	**Pg**	**01 11 11.0**	**0.0**
BDRM	**Kayabasi**	**0.62**	**282**	P	**Pb**	**01 11 16.9**	**-0.4**
BDRM				S	**Sb**	**01 11 26.7**	**+0.3**
BDRM	**Kayabasi**	**0.62**	**282**	*i* P	**Pb**	**01 11 16.9**	**-0.4**
BDRM				*i* S	**Sb**	**01 11 26.7**	**+0.3**
BODT	**Bodrum**	**0.73**	**280**	*e*PG	**Pb**	**01 11 19.1**	**0.0**
BODT				*e*SG	**Sn**	**01 11 31.7**	**-0.9**
BODT	**Bodrum**	**0.73**	**280**	*e*Pg	**Pb**	**01 11 19.1**	**0.0**
AYDN	**Tasoluk**	**0.77**	**340**	P	**Pg**	**01 11 18.5**	**-0.1**
AYDN				S	**Sg**	**01 11 28.7**	**+0.1**
AYDN	**Tasoluk**	**0.77**	**340**	*i* P	**Pg**	**01 11 18.5**	**-0.1**
AYDN				*i* S	**Sg**	**01 11 28.7**	**+0.1**
DNZL	**Cakiroluk**	**1.01**	**41**	P	**Pb**	**01 11 24.1**	**+0.1**
DNZL	**Cakiroluk**	**1.01**	**41**	*i* P	**Pb**	**01 11 24.1**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**1.04**	**346**	*e*PG	**Pb**	**01 11 24.5**	**0.0**
AYDB				*e*SG	**Sn**	**01 11 39.7**	**-0.8**
AYDB	**Zeytinkoy-Aydi**	**1.04**	**346**	*e*Pg	**Pb**	**01 11 24.5**	**0.0**
AYDB				*e*Sg	**Sn**	**01 11 39.7**	**-0.8**
GCAM	**G?zelcaml?**	**1.09**	**315**	P	**Pn**	**01 11 26.8**	**+0.9**
GCAM				S	**Sg**	**01 11 39.0**	**+0.3**
GCAM	**G?zelcaml?**	**1.09**	**315**	*i* P	**Pn**	**01 11 26.8**	**+0.9**
GCAM				*i* S	**Sg**	**01 11 39.0**	**+0.3**
GOLH	**Golhisar**	**1.13**	**74**	P	**Pn**	**01 11 27.0**	**+0.4**
GOLH	**Golhisar**	**1.13**	**74**	*i* P	**Pn**	**01 11 27.0**	**+0.4**
AKAS	**Kas**	**1.33**	**121**	P	**Pb**	**01 11 31.7**	**+2.3**
AKAS	**Kas**	**1.33**	**121**	*i* P	**Pb**	**01 11 31.7**	**+2.3**
AKAS				*i* S	Sn	01 11 53.5	+5.9
ELL	**Elmali**	**1.38**	**97**	*e*PN	**Pn**	**01 11 29.3**	**-0.7**
ELL	**Elmali**	**1.38**	**97**	*e*Pn	**Pn**	**01 11 29.3**	**-0.7**
KULA	**Kula-Manisa**	**1.62**	**13**	*e*PN	**Pn**	**01 11 33.1**	**-0.2**
KULA	**Kula-Manisa**	**1.62**	**13**	*e*Pn	**Pn**	**01 11 33.1**	**-0.2**

IDC ***15*** *01:26:24.7±1.1, 34°.94N×142°.87E, h0km, mb3.6/4, mb1 3.8/6, mb1mx3.4/37, mbtmp3.6/6, ML3.4/2, MS3.0/5, Ms1 3.0/5, ms1mx2.5/54, Error ellipse: s-maj=42.1km s-min=22.4km az=94.0*
ISCJB ***15*** *01:26:27.8±0.8, 34°.97N±0°.07×142°.80E±0°.07, h33km, mb3.6/4, MS3.5/3, Error ellipse: s-maj=9.9km s-min=7.4km az=21.1*
JMA ***15*** *01:26:27.9±0.5, 34°.88N×142°.80E, h63km, M3.3*

ISC 15 01:26:29.9±1.2, 34°.99N±0°.09×142°.79E±0°.09, h35km, n22, σ1§08/20, mb3.8/4, MS3.4/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**1.53**	**258**	P	**Pn**	**01 26 52.9**	**-1.3**
BSO1				*e*S	**Sn**	**01 27 12.5**	**0.0**
CHOJ	**Chosi**	**1.73**	**295**	P	**Pn**	**01 26 57.4**	**0.0**
BSO3	**Boso 3**	**1.88**	**265**	P	**Pn**	**01 26 58.8**	**-0.5**
BSO4	**Boso 4**	**2.01**	**271**	P	**Pn**	**01 27 01.3**	**+0.1**
JOD2	**Odawara 2**	**3.04**	**276**	P	**Pn**	**01 27 14.3**	**-1.2**
JOD2				S	**Sn**	**01 27 49.0**	**-1.8**
JAG	**Ashikaga**	**3.07**	**299**	P	**Pn**	**01 27 16.0**	**+0.2**
JAG				S	**Sn**	**01 27 51.3**	**0.0**
JFT	**Otama**	**3.21**	**323**	P	**Pn**	**01 27 17.4**	**-0.3**
JFT				S	**Sn**	**01 27 53.8**	**-0.9**
JYN	**Shimob**	**3.51**	**279**	S	**Sn**	**01 28 02.5**	**+0.2**
MJAR	**Matsushiro Arr**	**4.03**	**294**	Pn	**Pn**	**01 27 29.3**	**+0.2**
1.1nm,0.3s,baz=108,slow=7.6,SNR=19							
MJAR				LR	LR	01 29 09.5	
comp=Z,47nm,20.9s,baz=55,slow=40							
MAT	**Matsushiro**	**4.03**	**294**	P	**Pn**	**01 27 30.0**	**+0.9**
MAT				S	**Sn**	**01 28 17.2**	**+2.0**
ASAJ	**Asahikawa**	**9.11**	**359**	Pn	**Pn**	**01 28 36.7**	**-2.1**
0.6nm,0.3s,baz=231,slow=16,SNR=4.5							
KSRS	**Korea Array**	**12.25**	**286**	LR	LR	01 34 16.2	
comp=Z,21nm,19.1s,baz=77,slow=38							
H11N2	**WAKE ISLAND Hy**	**26.16**	**119**	T	T	02 00 48.4	
baz=318,slow=76,SNR=4.1							
H11N1	**WAKE ISLAND Hy**	**26.17**	**119**	T	T	02 00 50.4	
baz=318,slow=76,SNR=4.6							
H11N3	**WAKE ISLAND Hy**	**26.18**	**119**	T	T	02 00 50.5	
baz=318,slow=76,SNR=3.0							
WRA	**Warramunga Arr**	**55.22**	**190**	P	**P**	**01 35 58.3**	**-1.1**
0.5nm,0.4s,baz=10,slow=7.5,SNR=5.4							
ASAR	**Alice Springs**	**58.95**	**190**	P	**P**	**01 36 25.9**	**+0.2**
0.5nm,0.6s,baz=10,slow=11,SNR=7.2							
RES	**Resolute Bay**	**64.29**	**14**	LR	LR	02 04 49.1	
comp=Z,18nm,19.5s,baz=314,slow=36							
YKA	**Yellowknife Ar**	**65.01**	**30**	P	**P**	**01 37 06.6**	**+0.6**
0.1nm,0.5s,baz=307,slow=7.0,SNR=3.3							
NOA	**NORSAR Array B**	**76.49**	**338**	P	**P**	**01 38 16.9**	**+1.0**
0.6nm,0.7s,baz=40,slow=5.7,SNR=3.3							
RPZ	**Rata Peaks**	**82.46**	**160**	LR	LR	02 11 58.1	
comp=Z,50nm,21.6s,baz=330,slow=33							
ANMO	**Albuquerque**	**85.03**	**50**	LR	LR	02 13 05.0	
comp=Z,15nm,19.2s,baz=340,slow=33							

NIED ***15*** *01:31:00, 38°.70N×142°.30E, h56km, Mw3.7 Best double couple: M₀3.82000×10¹⁴ NP1:φs=114.00000°, δ18.00000°, λ13.00000°. NP2:φs=12.00000°, δ86.00000°, λ107.00000°.*
IDC ***15*** *01:31:11.2±8.1, 38°.58N×143°.66E, h0km, mb3.6/2, mb1 3.7/4, mb1mx3.3/34, mbtmp3.6/4, ML2.6/2, MS4.0/2, Ms1 4.0/2, ms1mx2.5/56, Error ellipse: s-maj=132.1km s-min=54.7km az=115.0*
JMA ***15*** *01:31:22.5±0.1, 38°.71N×142°.33E, h33km±2km, M3.6*

ISC 15 01:31:23.2±2.9, 38°.78N±0°.07×142°.3E±0°.1, h26km±15km, n13, σ1§26/16, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.57**	**302**	P	**Pb**	**01 31 35.0**	**+0.3**
OFUJ				S	**Sb**	**01 31 43.7**	**+1.2**
JIO	**Ouri**	**0.81**	**247**	P	**Pb**	**01 31 37.3**	**-1.4**
JIO				S	**Sb**	**01 31 47.9**	**-1.3**
JMK	**Ichinoseki**	**0.86**	**282**	P	**Pb**	**01 31 39.0**	**-0.5**
JMK				S	**Sb**	**01 31 50.8**	**+0.2**
MIYJ	**Miyakonagasawa**	**0.88**	**335**	P	**Pn**	**01 31 39.4**	**-0.5**
MIYJ				S	**Sb**	**01 31 51.5**	**+0.3**
JOM	**Ohasama**	**1.04**	**312**	P	**Pn**	**01 31 42.3**	**+0.1**
JOM				S	**Sb**	**01 31 56.6**	**+0.7**
JOU	**Okura**	**1.34**	**253**	P	**Pn**	**01 31 46.2**	**-0.1**
JOU				*e*S	**Sn**	**01 32 02.7**	**-0.7**
MJAR	**Matsushiro Arr**	**3.94**	**237**	Pn	**Pn**	**01 32 24.4**	**+2.4**
0.7nm,0.3s,baz=37,slow=12,SNR=18							
MAT	**Matsushiro**	**3.94**	**237**	P	**Pn**	**01 32 24.5**	**+2.5**
MAT				S	Sb	01 33 24.7	+5.5
USRK	**Ussuriysk Ar.**	**9.44**	**308**	Pn	Pn	01 33 41.6	+4.2
0.2nm,0.3s,baz=117,slow=13,SNR=7.2							
ZALV	**Zalesovo Beam**	**41.28**	**311**	P	**P**	**01 39 06.1**	**0.0**
0.8nm,0.4s,baz=79,slow=7.5,SNR=4.2							
MKAR	**Makanchi Array**	**43.81**	**301**	P	**P**	**01 39 26.1**	**-0.7**
0.3nm,0.6s,baz=83,slow=10,SNR=4.4							
BVAR	**Borovoye Array**	**49.93**	**311**	LR	LR	02 04 19.8	
comp=Z,124nm,21.1s,baz=73,slow=39							
CTA	**Charters Tower**	**58.67**	**176**	LR	LR	02 04 36.7	
comp=Z,180nm,21.6s,slow=34							

ISCJB ***15*** *01:43:04.4±0.4, 49°.83N±0°.03×18°.43E±0°.03, h0km, Error ellipse: s-maj=4.5km s-min=2.3km az=16.5*
IPEC ***15*** *01:43:05.5±0.2, 49°.80N×18°.54E, h0km, ML1.7/3, Error ellipse: s-maj=2.1km s-min=1.1km az=161.0*
CSEM ***15*** *01:43:05.5±0.2, 49°.79N×18°.43E, h2km, ML2.5/8, Error ellipse: s-maj=6.0km s-min=3.5km az=16.0*

ISC 15 01:43:05.1±0.7, 49°.84N±0°.03×18°.51E±0°.02, h0km, n37, σ0§89/68, Czech and Slovak Republics

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OKC	**Ostrava-Krasne**	**0.23**	**270**	*e*PG	**Pg**	**01 43 10.9**	**+1.3**
OKC				*e*SG	**Sg**	**01 43 14.9**	**+2.3**
OKC	**Ostrava-Krasne**	**0.23**	**270**	Pg	**Pg**	**01 43 10.9**	**+1.3**
OKC				Sg	**Sg**	**01 43 14.9**	**+2.3**
RAC	**Raciborz**	**0.32**	**321**	*e*Pg	**Pb**	**01 43 13.1**	**-0.6**
RAC				*e*Sg	**Sb**	**01 43 18.5**	**-1.0**
MORC	**Moravsky Berou**	**0.63**	**265**	*e*Pg	**Pb**	**01 43 18.0**	**-1.0**
MORC				*e*Sg	**Sg**	**01 43 25.7**	**+0.4**
18nm,0.3s							
OJC	**Ojcow**	**0.92**	**65**	*e*Pg	**Pb**	**01 43 23.1**	**-0.8**
OJC				*e*Sg	**Sb**	**01 43 36.2**	**-0.4**
OJC	**Ojcow**	**0.92**	**65**	*e*Pg	**Pb**	**01 43 23.1**	**-0.8**
OJC				*e*Sg	**Sb**	**01 43 36.2**	**-0.4**
LANS	**Liptovska Anna**	**0.93**	**137**	*e*Pg	**Pb**	**01 43 23.5**	**-0.6**
LANS				*e*Sg	**Sb**	**01 43 37.3**	**+0.3**
LANS	**Liptovska Anna**	**0.93**	**137**	*e*PG	**Pb**	**01 43 23.5**	**-0.6**
LANS				*e*SG	**Sb**	**01 43 37.3**	**+0.3**
KRLC	**Kraliky**	**1.14**	**283**	*e*PG	**Pg**	**01 43 26.5**	**-0.5**
KRLC				*e*SG	**Sb**	**01 43 43.0**	**-0.2**
KRLC	**Kraliky**	**1.14**	**283**	Pg	**Pg**	**01 43 26.5**	**-0.5**
KRLC				Sg	**Sb**	**01 43 43.0**	**-0.2**
NIE	**Niedzica**	**1.24**	**109**	*e*Pg	**Pb**	**01 43 29.3**	**0.0**
NIE				*e*Sg	**Sb**	**01 43 46.3**	**+0.4**
VRAC	**Vranov**	**1.36**	**248**	*e*Pg	**Pg**	**01 43 30.9**	**-0.2**
VRAC				*e*Sg	**Sg**	**01 43 48.3**	**-0.3**
9.0nm,0.4s							
VYHS	**Vyhne**	**1.36**	**171**	*e*Pg	**Pg**	**01 43 30.6**	**-0.6**
VYHS				*e*Sn	**Sb**	**01 43 49.5**	**+0.1**
VYHS	**Vyhne**	**1.36**	**171**	*e*PG	**Pg**	**01 43 30.6**	**-0.6**
VYHS				*e*SN	**Sb**	**01 43 49.5**	**+0.1**
VYHS				*e*LG	Lg	01 43 53.4	
DPC	**Dobruska-Polom**	**1.50**	**291**	*e*PG	**Pg**	**01 43 33.5**	**-0.3**
DPC				*e*SG	**Sn**	**01 43 54.2**	**+0.6**
comp=Z,6.0nm,0.4s							
DPC	**Dobruska-Polom**	**1.50**	**291**	Pg	**Pg**	**01 43 33.5**	**-0.3**
DPC				Sg	**Sn**	**01 43 54.2**	**+0.6**
6.0nm,0.4s							
SMOL	**Smolenice**	**1.50**	**209**	*e*Pg	**Pn**	**01 43 33.2**	**-0.1**
SMOL				*e*Sn	**Sn**	**01 43 53.7**	**+0.1**
SMOL	**Smolenice**	**1.50**	**209**	*e*PG	**Pn**	**01 43 33.2**	**-0.1**
SMOL				*e*SN	**Sn**	**01 43 53.7**	**+0.1**
KRUC	**Moravsky**	**1.58**	**241**	*e*Pg	**Pn**	**01 43 34.2**	**-0.2**
KRUC				*e*Sg	**Sn**	**01 43 55.2**	**-0.4**
7.1nm,0.3s							
UPC	**Upice**	**1.74**	**294**	*e*PG	**Pb**	**01 43 37.7**	**-0.2**
UPC				*e*SG	**Sg**	**01 44 01.5**	**+0.5**
comp=Z,7.7nm,0.4s							
UPC	**Upice**	**1.74**	**294**	Pg	**Pb**	**01 43 37.7**	**-0.2**
UPC				Sg	**Sg**	**01 44 01.5**	**+0.5**
7.7nm,0.4s							
STHS	**Stebnicka Huta**	**1.83**	**102**	*e*Pn	**Pg**	**01 43 40.3**	**+0.2**
STHS	**Stebnicka Huta**	**1.83**	**102**	*e*PN	**Pg**	**01 43 40.3**	**+0.2**
STHS				*e*SN	**Sg**	**01 44 07.1**	**+3.4**
STHS				*e*LG	Lg	01 44 10.5	
KECS	**Kecovo**	**1.88**	**136**	*e*Sn	**Sn**	**01 44 02.8**	**0.0**
KECS	**Kecovo**	**1.88**	**136**	*e*	**Pn**	**01 43 37.8**	**-0.6**
KECS	**Kecovo**	**1.88**	**136**	*e*SN	**Sn**	**01 44 02.8**	**0.0**
KECS				*e*LG	Lg	01 44 06.3	
CRVS	**Cervenica-Dubn**	**2.14**	**115**	*e*Pn	**Pg**	**01 43 45.7**	**-0.5**
CRVS	**Cervenica-Dubn**	**2.14**	**115**	*e*PN	**Pg**	**01 43 45.7**	**-0.5**
GOPC	**GO Pecny, Ondr**	**2.41**	**273**	*e*PG	**Pb**	**01 43 48.8**	**-0.5**
GOPC				*e*SG	**Sb**	**01 44 20.4**	**+0.8**
GOPC	**GO Pecny, Ondr**	**2.41**	**273**	Pg	**Pb**	**01 43 48.8**	**-0.5**
GOPC				Sg	**Sb**	**01 44 20.4**	**+0.8**
PRU	**Pruhonice**	**2.57**	**275**	*e*PG	**Pb**	**01 43 52.8**	**+0.7**
PRU				*e*SG	**Sg**	**01 44 26.1**	**-1.5**
comp=Z,4.2nm,0.6s							
PRU	**Pruhonice**	**2.57**	**275**	Pg	**Pb**	**01 43 52.8**	**+0.7**
PRU				Sg	**Sg**	**01 44 26.1**	**-1.5**
4.2nm,0.6s							
PVCC	**Panska Ves**	**2.63**	**287**	*e*PG	**Pg**	**01 43 54.9**	**-0.5**
PVCC				*e*SG	**Sg**	**01 44 29.1**	**-0.3**
comp=Z,5.9nm,0.4s							
PVCC	**Panska Ves**	**2.63**	**287**	Pg	**Pg**	**01 43 54.9**	**-0.5**
PVCC				Sg	**Sg**	**01 44 29.1**	**-0.3**
5.9nm,0.4s							
BRG	**Berggiesshubel**	**3.10**	**291**	PG	**Pb**	**01 44 02.4**	**+1.3**
BRG				SG	**Sg**	**01 44 44.8**	**0.0**
4.4nm,0.9s							
KHC	**Kasperske Hory**	**3.29**	**259**	*e*PN	**Pn**	**01 43 58.0**	**0.0**
KHC				*e*PG	**Pb**	**01 44 05.2**	**+0.8**
KHC				*e*SG	**Sg**	**01 44 48.3**	**-2.5**
comp=Z,3.0nm,0.5s							
KHC	**Kasperske Hory**	**3.29**	**259**	Pn	**Pn**	**01 43 58.0**	**0.0**

NIED ***15*** *01:45:00, 28°.10N×128°.00E, h5km, Mw4.2 Best double couple: M₀2.45000×10¹⁵ NP1:φs=206.00000°, δ55.00000°, λ-163.00000°. NP2:φs=106.00000°, δ77.00000°, λ-36.00000°.*
ISCJB ***15*** *01:45:53.9±1.4, 28°.10N±0°.04×128°.05E±0°.05, h2km±9km, mb3.5/8, MS3.3/13, Error ellipse: s-maj=7.8km s-min=5.1km az=36.4*
JMA ***15*** *01:45:53.9±0.3, 28°.11N×128°.02E, h9km±4km, M3.6*
IDC ***15*** *01:46:06.7±3.7, 28°.29N×128°.24E, h92km±35km, mb3.3/8, mb1 3.5/9, mb1mx3.2/55, mbtmp3.6/9, MS3.3/17, Ms1 3.3/17, ms1mx3.3/22, Error ellipse: s-maj=28.4km s-min=17.6km az=70.0*

ISC 15 01:45:55.1±1.8, 28°.03N±0°.05×128°.12E±0°.05, h4km±12km, n35, σ1§51/28, mb3.5/8, MS3.3/13, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JOKE	**Okinoerabujima**	**0.78**	**149**	P	**Pb**	**01 46 11.0**	**-0.2**
JOKE				*e*S	**Sn**	**01 46 23.3**	**-1.7**
JTK	**Tokunoshima**	**0.78**	**108**	P	**Pb**	**01 46 10.7**	**-0.5**
JTK				S	**Sb**	**01 46 22.6**	**+0.5**
JAMN	**Amaminishikomi**	**0.96**	**77**	P	**Pg**	**01 46 13.4**	**-0.1**
JAMN				S	**Sn**	**01 46 27.4**	**-2.1**
JIH	**Iheya**	**1.00**	**188**	P	**Pb**	**01 46 14.1**	**-0.8**
JIH				S	**Sn**	**01 46 28.4**	**-2.0**
JOW	**Kunigami**	**1.20**	**173**	P	**Pn**	**01 46 17.5**	**-1.2**
JOW				*e*S	**Sn**	**01 46 34.3**	**-1.1**
JAM	**Amami Oshima**	**1.37**	**73**	P	**Pn**	**01 46 19.8**	**-1.2**
JAM				S	**Sg**	**01 46 39.6**	**+0.5**
JTAJ	**Takarajima**	**1.47**	**40**	P	**Pn**	**01 46 20.2**	**-2.3**
JNTH	**Nagotoyohara**	**1.50**	**183**	P	**Pn**	**01 46 21.9**	**-1.0**
JAGN	**Aguni-jima**	**1.63**	**209**	P	**Pn**	**01 46 24.0**	**-0.6**
JZK	**Kikaishima**	**1.66**	**80**	P	**Pb**	**01 46 25.8**	**-0.5**
JJT2	**Tamagusuku 2**	**1.91**	**190**	P	**Pb**	**01 46 29.6**	**-0.9**
JKE	**Kume jima 2**	**2.07**	**215**	P	**Pb**	**01 46 31.7**	**-1.5**
JNU	**Nakatsue**	**5.61**	**24**	P

TLY				Lg	Lg	01 54 09.6	
	comp=N,0.1nm,0.3s,baz=33,slow=10,SNR=15						
TLY	**Talaya**	**4.62**	**76**	*e*PN	**Pb**	**01 53 07.3**	**+2.6**
TLY				*e*		01 54 07.3	
TLY				pmax	pmax		
	comp=Z,11nm,0.6s						
IRK	**Irkutsk**	**5.12**	**70**	*e*PN	**Pb**	**01 53 16.8**	**+3.7**
IRK				*e*		01 54 22.8	
IRK				pmax	pmax		
	comp=Z,122nm,0.1s						
IRK				smax	smax		
	comp=N,271nm,0.5s						
SONM	**Songino Array**	**7.13**	**110**	Pn	**Pn**	**01 53 27.6**	**-0.4**
	baz=296,slow=15,SNR=4.1						
SONM				Pg	Pb	01 53 51.1	+3.7
	comp=N,1.2nm,0.3s,baz=297,slow=18,SNR=11						
SONM				Lg	Lg	01 55 26.3	
	comp=N,3.7nm,0.3s,baz=304,slow=29,SNR=8.3						
ZALV	**Zalesovo Beam**	**7.81**	**299**	Pn	**Pn**	**01 53 37.0**	**0.0**
	comp=N,0.3nm,0.3s,baz=83,slow=12,SNR=2.9						
ZALV				Lg	Lg	01 55 47.0	
	comp=N,0.9nm,0.3s,baz=108,slow=28,SNR=7.1						
MKAR	**Makanchi Array**	**10.14**	**253**	Pg	Pg	01 54 48.0	
	comp=N,0.2nm,0.3s,baz=67,slow=16,SNR=4.4						
MKAR				Lg	Lg	01 57 02.5	
	comp=N,0.3nm,0.3s,baz=64,slow=30,SNR=4.5						

IDC 15 01:57:01.5±2.6, 22°.60S×171°.44E, h0km, mb3.9/4, mb1 4.1/5, mb1mx3.7/37, mbtmp3.9/5, ML3.6/1, MS3.3/1, Ms1 3.2/1, ms1mx2.7/23, Error ellipse: s-maj=102.0km s-min=35.7km az=165.0, Southeast of Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**4.66**	**276**	Pn	Pn	01 58 14.7	+1.4
	2.4nm,0.3s,baz=93,slow=17,SNR=33						
DZM				Sn	Sn	01 59 09.2	+1.1
	4.8nm,0.3s,baz=161,slow=18,SNR=3.7						
STKA	**Stephens Creek**	**28.02**	**244**	LR	LR	02 14 05.4	
	comp=Z,63nm,19.0s,baz=29,slow=36						
ASAR	**Alice Springs**	**34.47**	**261**	P	P	02 03 51.1	-0.3
	1.2nm,0.9s,baz=83,slow=9.5,SNR=4.9						
WRA	**Warramunga Arr**	**34.62**	**267**	P	P	02 03 51.5	-1.2
	0.4nm,0.6s,baz=96,slow=8.2,SNR=3.5						
CMAR	**Chiang Mai Arr**	**81.75**	**294**	P	P	02 09 23.5	+0.9
	0.8nm,0.3s,baz=120,slow=3.9,SNR=6.6						
SONM	**Songino Array**	**91.13**	**322**	P	P	02 10 08.2	-0.1
	0.4nm,0.6s,baz=123,slow=4.2,SNR=4.6						
GERES	**GERESS Array B**	**148.41**	**331**	PKPbc	PKPbc	02 16 49.2	-0.8
	1.2nm,0.9s,baz=40,slow=4.4,SNR=6.3						

MEX 15 02:08:10.7±0.9, 16°.70N×95°.02W, h140km±22km, MD3.6, Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HUIG	**Huatulco**	**1.40**	**229**	*e*P	Pn	02 08 36.6	-1.9
HUIG				*e*S	Sn	02 08 58.3	-1.4
VHO	**Vista Hermosa**	**1.69**	**283**	*e*P	Pn	02 08 40.9	-0.9
VHO				*e*S	Sn	02 09 03.6	-1.9
PCIG		**1.99**	**120**	*e*P	Pn	02 08 44.7	-0.4
PCIG				*i* S	Sn	02 09 09.1	-2.4
PNIG	**Pinotepa**	**3.00**	**265**	*e*P	Pn	02 08 56.2	-1.5
PNIG				*e*S	Sn	02 09 31.9	-2.1

CSEM 15 02:10:23.8, 37°.90N×14°.90E, h34km, ML2.2/17

ROM 15 02:10:23.8±0.1, 37°.90N×14°.90E, h34km±2km, MI2.2/17, 2C-4D, Error ellipse: s-maj=2.8km s-min=1.9km az=148.0, Sicily

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MNO	**Monte Soro**	**0.16**	**283**	⇑*i*Pg	Pb	02 10 30.1	-0.3
MNO				Sg	Sb	02 10 34.9	0.0
	288nm,0.5s						
MNO	**Monte Soro**	**0.16**	**283**	⇑*i*Pg	Pb	02 10 30.1	-0.3
MNO				Sg	Sb	02 10 34.9	0.0
	288nm,0.5s						
ESLN	**Serra La Nave**	**0.21**	**163**	Pg	Pb	02 10 31.3	+0.4
ESLN	**Serra La Nave**	**0.21**	**163**	Pg	Pb	02 10 31.3	+0.4
NOV	**Novara**	**0.23**	**55**	⇓*i*Pg	Pb	02 10 30.8	-0.1
NOV				Sg	Sb	02 10 35.7	-0.1
	285nm,0.6s						
NOV	**Novara**	**0.23**	**55**	⇓*i*Pg	Pb	02 10 30.8	-0.1
NOV				Sg	Sb	02 10 35.7	-0.1
	285nm,0.6s						
MMME	**Mongiuffi-Meli**	**0.29**	**82**	⇓*i*Pg	Pb	02 10 31.7	+0.1
MMME				Sg	Sb	02 10 37.8	+1.0
	262nm,0.3s						
MMME	**Mongiuffi-Meli**	**0.29**	**82**	⇓*i*Pg	Pb	02 10 31.7	+0.1
MMME				Sg	Sb	02 10 37.8	+1.0
	262nm,0.3s						
GALF	**Gagliano Caste**	**0.32**	**235**	Pg	Pn	02 10 32.7	+0.6
GALF				Sg	Sb	02 10 38.8	+1.3
	71nm,0.5s						
GALF	**Gagliano Caste**	**0.32**	**235**	Pg	Pn	02 10 32.7	+0.6
GALF				Sg	Sb	02 10 38.8	+1.3
	71nm,0.5s						
ECNV	**Catenanuova**	**0.33**	**206**	Pg	Pn	02 10 33.6	+1.3
	164nm,0.5s						
ECNV	**Catenanuova**	**0.33**	**206**	Pg	Pn	02 10 33.6	+1.3
	164nm,0.5s						
MPNC	**Port Mandanici**	**0.44**	**55**	Pg	Pn	02 10 33.7	-0.1
MPNC				Sg	Sn	02 10 41.3	+0.8
	166nm,0.6s						
MPNC	**Port Mandanici**	**0.44**	**55**	Pg	Pn	02 10 33.7	-0.1
MPNC				Sg	Sn	02 10 41.3	+0.8
	166nm,0.6s						
MILZ	**Milazzo**	**0.46**	**35**	Pg	Pb	02 10 33.8	0.0
MILZ				Sg	Sn	02 10 41.6	+0.6
	185nm,0.4s						
MILZ	**Milazzo**	**0.46**	**35**	Pg	Pb	02 10 33.8	0.0
MILZ				Sg	Sn	02 10 41.6	+0.6
	185nm,0.4s						
VPL	**Vulcano Piano**	**0.49**	**8**	Pg	Pb	02 10 33.8	-0.5
VPL				Sg	Sb	02 10 41.3	-0.2
	289nm,0.4s						
VPL	**Vulcano Piano**	**0.49**	**8**	Pg	Pb	02 10 33.8	-0.5
VPL				Sg	Sb	02 10 41.3	-0.2
	289nm,0.4s						
HLNI	**Lentini**	**0.55**	**182**	Pg	Pn	02 10 34.7	-0.4
	63nm,0.3s						
HLNI	**Lentini**	**0.55**	**182**	Pg	Pn	02 10 34.7	-0.4
	63nm,0.3s						
PLLN	**Pollina**	**0.60**	**279**	Pg	Pb	02 10 36.4	+0.3
PLLN				Sg	Sn	02 10 46.6	+2.0
	106nm,0.2s						
PLLN	**Pollina**	**0.60**	**279**	Pg	Pb	02 10 36.4	+0.3
PLLN				Sg	Sn	02 10 46.6	+2.0
	106nm,0.2s						
MSRU	**Castanea**	**0.61**	**53**	Pg	Pb	02 10 36.5	+0.3
MSRU				Sg	Sb	02 10 46.5	+1.9
	90nm,0.4s						
MSRU	**Castanea**	**0.61**	**53**	Pg	Pb	02 10 36.5	+0.3
MSRU				Sg	Sb	02 10 46.5	+1.9
	90nm,0.4s						
HAGA	**Augusta**	**0.65**	**161**	Pg	Pn	02 10 36.3	-0.2
	81nm,0.2s						
HAGA	**Augusta**	**0.65**	**161**	Pg	Pn	02 10 36.3	-0.2
	81nm,0.2s						
AGST	**Augusta-Monte**	**0.69**	**158**	Pg	Pn	02 10 37.3	+0.2
	116nm,0.7s						
AGST	**Augusta-Monte**	**0.69**	**158**	Pg	Pn	02 10 37.3	+0.2
	116nm,0.7s						
GIB	**Gibilmanna**	**0.69**	**278**	Pg	Pb	02 10 37.8	+0.2
	73nm,0.5s						
GIB	**Gibilmanna**	**0.69**	**278**	Pg	Pb	02 10 37.8	+0.2
	73nm,0.5s						
HVZN	**Vizzini**	**0.73**	**191**	Pg	Pn	02 10 37.8	0.0
	63nm,0.3s						
HVZN	**Vizzini**	**0.73**	**191**	Pg	Pn	02 10 37.8	0.0
	63nm,0.3s						
SSY	**Sortino**	**0.76**	**169**	Pg	Pn	02 10 38.1	0.0
SSY	**Sortino**	**0.76**	**169**	Pg	Pn	02 10 38.1	0.0
IACL	**Alicudi**	**0.77**	**326**	Pg	Pn	02 10 37.7	-0.5
IACL	**Alicudi**	**0.77**	**326**	Pg	Pn	02 10 37.7	-0.5
MSCL	**Scilla**	**0.78**	**64**	Pg	Pb	02 10 39.8	+0.7
	101nm,0.8s						
MSCL	**Scilla**	**0.78**	**64**	Pg	Pb	02 10 39.8	+0.7
	101nm,0.8s						
RAFF	**Raffo Rosso**	**0.80**	**212**	Pg	Pb	02 10 39.5	+0.2
	97nm,0.6s						
RAFF	**Raffo Rosso**	**0.80**	**212**	Pg	Pb	02 10 39.5	+0.2
	97nm,0.6s						
MPAZ	**Palizzi**	**0.88**	**86**	Pg	Pb	02 10 41.3	+0.6
	131nm,0.8s						
MPAZ	**Palizzi**	**0.88**	**86**	Pg	Pb	02 10 41.3	+0.6
	131nm,0.8s						
SOI	**Samo**	**0.93**	**79**	Pg	Pb	02 10 42.0	+0.4
	97nm,0.3s						
SOI	**Samo**	**0.93**	**79**	Pg	Pb	02 10 42.0	+0.4
	97nm,0.3s						
HAVL	**Avola**	**0.95**	**169**	Pg	Pn	02 10 40.9	+0.1
HAVL	**Avola**	**0.95**	**169**	Pg	Pn	02 10 40.9	+0.1

CSEM 15 02:10:47.0, 37°.90N×14°.89E, h33km, ML2.4/20

ROM 15 02:10:47.0±0.1, 37°.90N×14°.89E, h33km±2km, MI2.4/20, 4C-4D, Error ellipse: s-maj=2.1km s-min=1.6km az=138.0, Sicily

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MNO	**Monte Soro**	**0.16**	**281**	⇑*i*Pg	Pb	02 10 53.2	-0.3
MNO				Sg	Sb	02 10 58.0	+0.1
	288nm,0.5s						
MNO	**Monte Soro**	**0.16**	**281**	⇑*i*Pg	Pb	02 10 53.2	-0.3
MNO				Sg	Sb	02 10 58.0	+0.1
	288nm,0.5s						
ESLN	**Serra La Nave**	**0.22**	**163**	Pg	Pb	02 10 54.4	+0.3
ESLN				Sg	Sb	02 10 59.3	+0.5
ESLN	**Serra La Nave**	**0.22**	**163**	Pg	Pb	02 10 54.4	+0.3
ESLN				Sg	Sb	02 10 59.3	+0.5
NOV	**Novara**	**0.23**	**57**	⇓*i*Pg	Pn	02 10 53.8	+0.2
NOV				Sg	Sb	02 10 58.8	0.0
	285nm,0.6s						
NOV	**Novara**	**0.23**	**57**	⇓*i*Pg	Pn	02 10 53.8	+0.2
NOV				Sg	Sb	02 10 58.8	0.0
	285nm,0.6s						
MMME	**Mongiuffi-Meli**	**0.29**	**84**	⇓*i*Pg	Pb	02 10 54.7	0.0
MMME				Sg	Sb	02 11 01.0	+1.0
	262nm,0.3s						
MMME	**Mongiuffi-Meli**	**0.29**	**84**	⇓*i*Pg	Pb	02 10 54.7	0.0
MMME				Sg	Sb	02 11 01.0	+1.0
	262nm,0.3s						
GALF	**Gagliano Caste**	**0.32**	**233**	Pg	Pn	02 10 56.0	+0.6
GALF				Sg	Sb	02 11 02.0	+1.4
	71nm,0.5s						
GALF	**Gagliano Caste**	**0.32**	**233**	Pg	Pn	02 10 56.0	+0.6
GALF				Sg	Sb	02 11 02.0	+1.4
	71nm,0.5s						
ECNV	**Catenanuova**	**0.34**	**205**	Pg	Pn	02 10 56.8	+1.2
	164nm,0.5s						
ECNV	**Catenanuova**	**0.34**	**205**	Pg	Pn	02 10 56.8	+1.2
	164nm,0.5s						
MPNC	**Port Mandanici**	**0.44**	**56**	Pg	Pb	02 10 56.8	+0.1
MPNC				Sg	Sn	02 11 04.4	+0.7
	166nm,0.6s						
MPNC	**Port Mandanici**	**0.44**	**56**	Pg	Pb	02 10 56.8	+0.1
MPNC				Sg	Sn	02 11 04.4	+0.7
	166nm,0.6s						
MILZ	**Milazzo**	**0.46**	**36**	⇑*i*Pg	Pb	02 10 56.9	0.0
MILZ				Sg	Sn	02 11 04.6	+0.4
	185nm,0.4s						
MILZ	**Milazzo**	**0.46**	**36**	⇑*i*Pg	Pb	02 10 56.9	0.0
MILZ				Sg	Sn	02 11 04.6	+0.4
	185nm,0.4s						
VPL	**Vulcano Piano**	**0.48**	**9**	Pg	Pb	02 10 56.8	-0.5
	289nm,0.4s						
VPL	**Vulcano Piano**	**0.48**	**9**	Pg	Pb	02 10 56.8	-0.5
	289nm,0.4s						
HLNI	**Lentini**	**0.55**	**182**	Pg	Pb	02 10 57.8	-0.7
	63nm,0.3s						
HLNI	**Lentini**	**0.55**	**182**	Pg	Pb	02 10 57.8	-0.7
	63nm,0.3s						
PLLN	**Pollina**	**0.60**	**279**	Pg	Pb	02 10 59.6	+0.4
	106nm,0.2s						
PLLN	**Pollina**	**0.60**	**279**	Pg	Pb	02 10 59.6	+0.4
	106nm,0.2s						
MSRU	**Castanea**	**0.60**	**53**	Pg	Pb	02 10 59.6	+0.3
	90nm,0.4s						
MSRU	**Castanea**	**0.60**	**53**	Pg	Pb	02 10 59.6	+0.3
	90nm,0.4s						
HAGA	**Augusta**	**0.65**	**161**	Pg	Pn	02 10 59.4	-0.4
	81nm,0.2s						
HAGA	**Augusta**	**0.65**	**161**	Pg	Pn	02 10 59.4	-0.4
	81nm,0.2s						
GIB	**Gibilmanna**	**0.69**	**277**	Pg	Pb	02 11 00.8	+0.1
GIB				Sg	Sb	02 11 11.8	+1.7
	158nm,0.5s						
GIB	**Gibilmanna**	**0.69**	**277**	Pg	Pb	02 11 00.8	+0.1
GIB				Sg	Sb	02 11 11.8	+1.7
	158nm,0.5s						
AGST	**Augusta-Monte**	**0.70**	**157**	Pg	Pn	02 11 00.4	-0.1
AGST				Sg	Sb	02 11 11.0	+0.8
	116nm,0.7s						
AGST	**Augusta-Monte**	**0.70**	**157**	Pg	Pn	02 11 00.4	-0.1
AGST				Sg	Sb	02 11 11.0	+0.8
	116nm,0.7s						
HVZN	**Vizzini**	**0.74**	**191**	Pg	Pn	02 11 01.3	+0.2
	120nm,0.3s						
HVZN	**Vizzini**	**0.74**	**191**	Pg	Pn	02 11 01.3	+0.2
	120nm,0.3s						
IACL	**Alicudi**	**0.76**	**326**	Pg	Pn	02 11 00.9	-0.5
	430nm,0.4s						
IACL	**Alicudi**	**0.76**	**326**	Pg	Pn	02 11 00.9	-0.5
	430nm,0.4s						
SSY	**Sortino**	**0.76**	**169**	Pg	Pb	02 11 01.7	-0.2
	258nm,0.3s						
SSY	**Sortino**	**0.76**	**169**	Pg	Pb	02 11 01.7	-0.2
	258nm,0.3s						
MSCL	**Scilla**	**0.78**	**65**	Pg	Pb	02 11 02.7	+0.4
	101nm,0.8s						
MSCL	**Scilla**	**0.78**	**65**	Pg	Pb	02 11 02.7	+0.4
	101nm,0.8s						
RAFF	**Raffo Rosso**	**0.80**	**212**	Pg	Pb	02 11 02.6	+0.1
	214nm,0.6s						
RAFF	**Raffo Rosso**	**0.80**	**212**	Pg	Pb	02 11 02.6	+0.1
	214nm,0.6s						
MPAZ	**Palizzi**	**0.88**	**86**	Pg	Pb	02 11 04.5	+0.6
	270nm,0.8s						
MPAZ	**Palizzi**	**0.88**	**86**	Pg	Pb	02 11 04.5	+0.6
	270nm,0.8s						
SOI	**Samo**	**0.93**	**79**	Pg	Pb	02 11 05.1	+0.3
	97nm,0.3s						
SOI	**Samo**	**0.93**	**79**	Pg	Pb	02 11 05.1	+0.3
	97nm,0.3s						
HMDC	**Modica**	**0.95**	**185**	Pg	Pn	02 11 03.9	-0.1
HMDC	**Modica**	**0.95**	**185**	Pg	Pn	02 11 03.9	-0.1
HAVL	**Avola**	**0.96**	**169**	Pg	Pb	02 11 05.1	-0.1
	239nm,0.2s						
HAVL	**Avola**	**0.96**	**169**	Pg	Pb	02 11 05.1	-0.1
	239nm,0.2s						
PLAC	**Placanica**	**1.33**	**65**	Pg	Pb	02 11 12.1	+0.6
PLAC	**Placanica**	**1.33**	**65**	Pg	Pb	02 11 12.1	+0.6
USI	**Ustica**	**1.57**	**301**	Pg	Pn	02 11 12.4	-0.1
USI	**Ustica**	**1.57**	**301**	Pg	Pn	02 11 12.4	-0.1

CSEM 15 02:28:18.6, 36°.38N×25°.28E, h20km, ML1.8/2

THE 15 02:28:18.6, 36°.38N×25°.28E, h20km±4km, ML1.8/2, Error ellipse: s-maj=5.9km s-min=1.8km az=84.0, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THR5	**Thira Island,**	**0.07**	**53**	P	Pg	02 28 22.2	-0.1
THR5	**Thira Island,**	**0.07**	**53**	P	Pg	02 28 22.2	-0.1
THR6	**Thira Island,**	**0.10**	**102**	P	Pg	02 28 22.7	+0.2
THR6	**Thira Island,**	**0.10**	**102**	P	Pg	02 28 22.7	+0.2
THR3	**Thira Island,**	**0.10**	**71**	P	Pg	02 28 22.1	-0.4
THR3	**Thira Island,**	**0.10**	**71**	P	Pg	02 28 22.1	-0.4
THT1	**Athinios (Pele**	**0.12**	**85**	P	Pg	02 28 22.7	0.0
THT1				S	Sg	02 28 25.9	+0.4
THT1	**Athinios (Pele**	**0.12**	**85**	P	Pg	02 28 22.7	0.0
THT1				S	Sg	02 28 25.9	+0.4
THT1	**Athinios (Pele**	**0.12**	**85**	P	Sg	02 28 25.8	+0.3
THT1	**Athinios (Pele**	**0.12**	**85**	P	Sg	02 28 25.8	+0.3
CMBO	**Columbo, Santo**	**0.14**	**47**	P	Pg	02 28 23.2	+0.3
CMBO				S	Sg	02 28 26.2	+0.3
CMBO	**Columbo, Santo**	**0.14**	**47**	P	Pg	02 28 23.2	+0.3
CMBO				S	Sg	02 28 26.2	+0.3
CMBO	**Columbo, Santo**	**0.14**	**47**	S	Sg	02 28 26.4	+0.5
CMBO	**Columbo, Santo**	**0.14**	**47**	S	Sg	02 28 26.4	+0.5
THR2	**Thira island,**	**0.14**	**60**	P	Pg	02 28 22.8	-0.2
THR2	**Thira island,**	**0.14**	**60**	P	Pg	02 28 22.8	-0.2

CSEM 15 02:28:24.3, 36°.44N×25°.39E, h4km, ML1.1/2

THE 15 02:28:24.3, 36°.44N×25°.39E, h4km±3km, ML1.1/2, Error ellipse: s-maj=3.9km s-min=0.7km az=17.0, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THR3	**Thira Island,**	**0.03**	**160**	P	Pg	02 28 25.6	+0.5
THR3	**Thira Island,**	**0.03**	**160**	P	Pg	02 28 25.6	+0.5
CMBO	**Columbo, Santo**	**0.04**	**21**	P	Pg	02 28 25.2	-0.1
CMBO	**Columbo, Santo**	**0.04**	**21**	P	Pg	02 28 25.2	-0.1
THR5	**Thira Island,**	**0.04**	**241**	P	Pg	02 28 25.2	0.0
THR5	**Thira Island,**	**0.04**	**241**	P	Pg	02 28 25.2	0.0
THT1	**Athinios (Pele**	**0.06**	**146**	S	Sg	02 28 26.6	+0.1
THT1	**Athinios (Pele**	**0.06**	**146**	S	Sg	02 28 26.6	+0.1
THR6	**Thira Island,**	**0.08**	**175**	P	Pg	02 28 26.4	+0.5
THR6	**Thira Island,**	**0.08**	**175**	P	Pg	02 28 26.4	+0.5

NIED 15 02:42:00, 36°.70N×142°.30E, h11km, Mw4.5 Best double couple: M0 7.29000×10^15 NP1:φs 40.00000°, δ55.00000°, λ-32.00000°. NP2:φs 150.00000°, δ64.00000°, λ-140.00000°.

IDC 15 02:42:03.0±0.6, 36°.70N×142°.37E, h0km, mb4.2/25, mb1 4.3/31, mb1mx4.2/54, mbtmp4.2/31, ML4.2/5, MS3.7/18, Ms1 3.7/18, ms1mx3.5/43, Error ellipse: s-maj=15.3km s-min=13.6km az=120.0

ISCJB 15 02:42:03.2±1.0, 36°.72N±0°.03×142°.25E±0°.03, h7km±6km, mb4.5/111, MS4.0/24, Error ellipse: s-maj=4.8km s-min=3.4km az=167.3

JMA 15 02:42:03.4±0.4, 36°.70N×142°.30E, h16km, M4.5

MOS 15 02:42:07.9±1.0, 36°.94N×142°.19E, h33km, mb4.6/51, Error ellipse: s-maj=7.9km s-min=5.9km az=100.0

NEIC 15 02:42:07.3±2.2, 36°.80N×142°.24E, h21km±15km, mb4.7/62, Error ellipse: s-maj=8.0km s-min=4.9km az=142.0

ISC 15 02:42:06.1±0.7, 36°.68N±0°.04×142°.35E±0°.04, h23km±4km, n222, σ1$93/239, mb4.6/111, MS3.9/24, 10C-4D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**1.31**	**289**	P	**Pn**	**02 42 26.1**	**-3.0**
JFK	**Kawauchi**	**1.37**	**300**	P	**Pn**	**02 42 27.4**	**-2.4**
JHO	**Hitachi**	**1.44**	**268**	P	**Pn**	**02 42 28.3**	**-2.5**
JMM	**Marumori**	**1.71**	**314**	P	**Pn**	**02 42 32.8**	**-1.8**
JMM				*e*S	**Sn**	**02 42 54.5**	**-1.3**
JFT	**Otama**	**1.81**	**298**	P	**Pn**	**02 42 34.2**	**-1.8**
JFT				*e*S	**Sn**	**02 42 57.1**	**-1.2**
JIO	**Ouri**	**1.94**	**336**	P	**Pn**	**02 42 36.5**	**-1.2**
JIO				*e*S	**Sn**	**02 42 59.2**	**-2.1**
JOU	**Okura**	**2.15**	**322**	*e*S	**Sn**	**02 43 06.1**	**-0.5**
BSO1	**Boso 1**	**2.31**	**209**	P	**Pn**	**02 42 41.6**	**-0.8**
BSO1				*e*S	**Sn**	**02 43 09.2**	**-0.6**
JAG	**Ashikaga**	**2.35**	**265**	P	**Pn**	**02 42 42.0**	**-1.3**
JYK	**Kaneyama**	**2.73**	**325**	P	**Pn**	**02 42 47.8**	**-0.8**
JYK				*e*S	**Sn**	**02 43 22.5**	**+1.6**
JRY	**Ryogami san**	**2.87**	**258**	P	**Pn**	**02 42 49.0**	**-1.4**
JRY				S	**Sn**	**02 43 24.4**	**+0.2**
MJAR	**Matsushiro Arr**	**3.34**	**269**	Pn	**Pn**	**02 42 56.7**	**-0.2**
	35nm,0.3s,baz=114,slow=10,SNR=175						
MAJO	**Matsushiro**	**3.34**	**269**	*e i*P	**Pn**	**02 42 56.8**	**-0.2**
MAJO	**Matsushiro**	**3.34**	**269**	*e*Pn	**Pn**	**02 42 57.2**	**+0.3**
MAJO				*e*Sn	**Sn**	**02 43 35.2**	**-0.8**
MAT	**Matsushiro**	**3.34**	**269**	P	**Pn**	**02 42 57.0**	**0.0**
MAT				S	**Sb**	**02 43 41.1**	**-3.7**
JHJ	**Hachijo jima 2**	**4.14**	**211**	Pn	**Pn**	**02 43 07.8**	**0.0**
	41nm,0.3s,baz=68,slow=19,SNR=2.8						
JHJ				Sn	**Sn**	**02 43 51.4**	**-4.2**
	193nm,0.3s,baz=261,slow=22,SNR=4.7						
JHJ				LR	LR	02 44 55.5	
	comp=Z,546nm,18.8s,baz=59,slow=42						
INU	**Inuyama**	**4.53**	**254**	*e*Pn	**Pn**	**02 43 13.9**	**+0.6**
ASAJ	**Asahikawa**	**7.43**	**1**	Pn	**Pn**	**02 43 51.8**	**-1.3**
	6.8nm,0.3s,baz=223,slow=10,SNR=36						
ASAJ				Sn	**Sn**	**02 45 15.2**	**-1.3**
	1.0nm,0.3s,baz=120,slow=20,SNR=3.0						
ASAJ				LR	LR	02 47 09.6	
	comp=Z,485nm,19.3s,baz=275,slow=41						
ASAJ	**Asahikawa**	**7.43**	**1**	*e*Pn	**Pn**	**02 43 51.5**	**-1.6**
ASAJ				*e*Sn	**Sn**	**02 45 09.3**	**-7.3**
ASAJ				Sn	**Sn**	**02 45 15.2**	**-1.3**
YUK	**Yuzh-Kuril'sk**	**7.81**	**19**	P	Pn	02 44 03.6	+5.2
YUK				*e*S	**Sn**	**02 45 23.2**	**-2.9**
YUK				pmax	pmax		
	comp=E,53nm,0.4s						
YUK				pmax	pmax		
	comp=Z,73nm,0.4s						
YUK				pmax	pmax		
	comp=N,37nm,0.2s						
SHO	**Shikotan**	**7.95**	**24**	P	**Pn**	**02 44 03.3**	**+3.1**
SHO				*e*S	**Sn**	**02 45 22.1**	**-7.3**
SHO				pmax	pmax		
	comp=Z,77nm,0.7s						
CBIJ	**Chichi jima**	**9.56**	**181**	Pn	**Pn**	**02 44 20.9**	**-1.5**
CBIJ				Sn	**Sn**	**02 46 01.2**	**-7.9**
JCJ	**Chichijima**	**9.56**	**181**	Pn	**Pn**	**02 44 20.9**	**-1.5**
	comp=Z,4.7nm,0.3s,baz=282,slow=19,SNR=2.7						
JCJ				Sn	**Sn**	**02 46 01.2**	**-7.9**
	comp=Z,8.9nm,0.3s,baz=294,slow=20,SNR=2.9						
JNU	**Nakatsue**	**10.07**	**253**	Pn	**Pn**	**02 44 29.6**	**+0.2**
	comp=Z,0.8nm,0.3s,baz=83,slow=8.2,SNR=7.5						
JNU				LR	LR	02 48 52.7	
	comp=Z,976nm,18.1s,baz=92,slow=41						
JNU	**Nakatsue**	**10.07**	**253**	*e*Pn	**Pn**	**02 44 31.0**	**+1.6**
YSS	**Yuzh-Sakhalins**	**10.27**	**2**	⇑*e*P	**Pn**	**02 44 30.9**	**-1.0**
YSS				*e*S	**Sn**	**02 46 25.3**	**-1.0**
YSS				pmax	pmax		
	comp=Z,40nm,0.7s						
VLA	**Vladivostok**	**10.29**	**312**	⇑*e*P	**Pn**	**02 44 33.5**	**+1.2**
VLA				pmax

BJI LR LR
comp=N,360nm,14.4s
BJI LR LR
comp=E,310nm,14.4s
BJI LR LR
comp=Z,190nm,18.4s
MA2 Magadan 23.55 11 P **P 02 47 14.5 0.0**
comp=Z,25nm,0.7s,baz=214,slow=9.1,SNR=13
MA2 Magadan 23.55 11 *e*P **P 02 47 14.1 -0.4**
MA2 pmax pmax
comp=Z,118nm,0.8s
MA2 Magadan 23.55 11 *e*P **P 02 47 14.1 -0.4**
comp=Z,118nm,0.8s
WHN Wuhan 24.06 263 P **P 02 47 20.0 +0.3**
WHN S **S 02 51 34.0 -1.8**
WHN LR LR
comp=N,670nm,15.8s
WHN LR LR
comp=E,1μm,16.9s
WHN LR LR
comp=Z,1μm,16.2s
HHC Hu-ho-hao-te 24.30 289 *e*P **P 02 47 21.4 -0.5**
HHC PP **PnPn 02 47 56.1 +4.0**
HHC S **S 02 51 38.0 -1.7**
HHC sS sS 02 51 48.0 -2.8
HHC pmax pmax
comp=Z,36nm,0.9s
HHC pmax pmax
comp=Z,130nm,4.2s
HHC LR LR
comp=N,930nm,12.8s
HHC LR LR
comp=E,850nm,11.6s
HHC LR LR
comp=Z,1μm,11.3s
YAK Yakutsk 26.58 347 P **P 02 47 40.6 -1.5**
comp=Z,2.3nm,0.5s,baz=254,slow=7.4,SNR=4.8
YAK Yakutsk 26.58 347 *e*P **P 02 47 40.8 -1.4**
YAK *e**PP **pP 02 47 49.0 0.0**
YAK *e*PPP PPP 02 48 28.6
YAK *e* 02 51 04.0
YAK *e*S **S 02 52 12.4 -2.9**
YAK *e*SSS SSS 02 53 31.6
YAK pmax pmax
comp=Z,30nm,0.9s
YAK pmax pmax
comp=N,8.0nm,1.2s
YAK pmax pmax
comp=E,4.0nm,0.9s
YAK smax smax
comp=N,28nm,2.6s
YAK smax smax
comp=E,23nm,3.2s
YAK MLR MLR
comp=Z,357nm,14.0s
YAK MLR MLR
comp=E,210nm,14.0s
YAK MLR MLR
comp=N,188nm,13.0s
YAK Yakutsk 26.58 347 *e*P **P 02 47 40.8 -1.4**
comp=N,35nm,0.8s
SEY Seymchan 27.00 10 P **P 02 47 46.8 +0.8**
comp=N,15nm,0.8s,baz=197,slow=11,SNR=19
SEY Seymchan 27.00 10⇑ *e*P **P 02 47 47.0 +1.1**
XAN Xi'an 27.32 274 P **P 02 47 49.9 +0.7**
XAN S **S 02 52 25.1 -2.5**
XAN pmax pmax
comp=Z,9.0nm,0.5s
XAN pmax pmax
comp=Z,62nm,5.9s
XAN LR LR
comp=N,280nm,14.3s
XAN LR LR
comp=E,150nm,15.8s
XAN LR LR
comp=Z,210nm,14.6s
H11N2 WAKE ISLAND Hy 27.32 122 T T 03 16 32.9
baz=314,slow=75,SNR=35
H11N1 WAKE ISLAND Hy 27.33 122 T T 03 16 22.5
baz=314,slow=75,SNR=27
H11N3 WAKE ISLAND Hy 27.34 122 T T 03 16 34.9
baz=314,slow=75,SNR=23
H11S1 WAKE ISLAND Hy 28.04 124 T T 03 17 21.2
baz=316,slow=76,SNR=31
H11S3 WAKE ISLAND Hy 28.04 124 T T 03 17 32.5
baz=316,slow=76,SNR=30
H11S2 WAKE ISLAND Hy 28.05 124 T T 03 17 19.6
baz=316,slow=76,SNR=24
ENH Enshi 28.06 266 *e*P **P 02 47 55.5 -0.4**
comp=Z,26nm,0.7s
ULN Ulaanbaatar 28.17 304 *e*P **P 02 47 57.3 +0.4**
ULN pmax pmax
comp=Z,16nm,1.3s
ULN Ulaanbaatar 28.17 304 *e*P **P 02 47 57.3 +0.4**
comp=Z,16nm,1.3s
BOD Bodaibo 28.23 328 *e*P **P 02 47 56.7 -0.3**
BOD pmax pmax
comp=Z,4.0nm,1.2s
SONM Songino Array 28.61 304 P **P 02 48 01.2 +0.5**
comp=Z,4.0nm,0.7s,baz=103,slow=7.5,SNR=25
SONM LR LR 03 00 22.4
comp=Z,118nm,19.0s,baz=92,slow=38
LZH Lanzhou 30.87 281 *e*P **P 02 48 21.5 +0.6**
LZH pP sP 02 48 30.8 +0.2
LZH sP pP 02 48 34.9 +7.1
LZH pmax pmax
comp=Z,17nm,1.0s
LZH pmax pmax
comp=Z,79nm,4.2s
LZH LR LR
comp=N,480nm,14.2s
LZH LR LR
comp=E,310nm,15.1s
LZH LR LR
comp=Z,320nm,19.0s
ZAK Zakamensk 31.08 309 *e*P P 02 48 10.1 -12
ZAK pmax pmax
comp=Z,5.0nm,1.4s
TLY Talaya 31.13 311 *e*P **P 02 48 23.2 +0.3**
TLY *e*S **S 02 53 32.5 +5.4**
TLY pmax pmax
comp=Z,5.0nm,1.0s
TLY MLR MLR
comp=Z,104nm,12.0s
GYA Guiyang 31.91 262 *e*P **P 02 48 31.0 +0.9**
GYA pmax pmax
comp=Z,10.0nm,0.8s
CD2 Chengdu 32.43 271 P **P 02 48 34.6 0.0**
CD2 pmax pmax
comp=Z,6.0nm,0.6s
GTA Gaotai 33.39 288 *e*P **P 02 48 43.5 +0.6**
GTA pP sP 02 48 53.0 +0.4
GTA sP pP 02 48 56.8 +7.0
GTA pmax pmax
comp=Z,4.0nm,1.0s
QIZ Qiongzhong 33.48 247 P **P 02 48 45.4 +1.6**
QIZ S **S 02 54 05.8 +1.5**
QIZ LR LR
comp=N,140nm,14.7s
QIZ LR LR
comp=E,130nm,17.6s
BILL Bilibino 34.15 16⇓ *e*P **P 02 48 48.7 -0.3**
BILL *e* 02 49 04.6
BILL pmax pmax
comp=Z,15nm,1.2s
BILL MLR MLR
comp=Z,121nm,19.0s
BILL Bilibino 34.15 16 *e*P **P 02 48 48.8 -0.3**
comp=Z,17nm,1.3s
KMI Kunming 35.66 263 P **P 02 49 04.5 +1.7**
KMI pP sP 02 49 13.4 +0.9
KMI sP pP 02 49 17.3 +7.6
KMI PP **PP 02 50 24.1 +0.2**
KMI S **S 02 54 37.5 -0.8**
KMI sS sS 02 54 53.1 +3.5
KMI pmax pmax
comp=Z,8.0nm,0.5s
KMI pmax pmax
comp=Z,35nm,3.4s
KMI LR LR
comp=N,160nm,14.2s
KMI LR LR
comp=E,260nm,15.1s
KMI LR LR
comp=Z,230nm,17.5s
TIXI Tiksi 35.73 353 P **P 02 49 02.0 -0.6**
comp=Z,0.8nm,0.3s,baz=136,slow=7.8,SNR=5.5
TIXI Tiksi 35.73 353⇑ *e*P **P 02 49 02.3 -0.3**
TIXI pmax pmax
comp=Z,5.0nm,1.2s
TIXI Tiksi 35.73 353 *e*P **P 02 49 02.5 -0.1**
comp=Z,13nm,1.8s
MYLDM Lahad Datu 38.23 221 *e*P **P 02 49 27.4 +2.9**
comp=Z,24nm,1.0s
WMQ Urumqi 41.67 297 P **P 02 49 52.4 -0.5**
WMQ pmax pmax
comp=Z,6.0nm,0.6s
WMQ pmax pmax
comp=Z,26nm,4.4s
WMQ LR LR
comp=N,330nm,16.8s
WMQ LR LR
comp=E,69nm,15.4s
WMQ LR LR
comp=Z,75nm,20.6s
CMAR Chiang Mai Arr 42.14 256 LR LR 03 10 17.5
comp=Z,107nm,18.2s,baz=64,slow=40
ZALV Zalesovo Beam 42.71 313 P **P 02 50 01.4 +0.3**
comp=Z,1.0nm,0.4s,baz=86,slow=6.7,SNR=5.0
NVS Novosibirsk 43.62 314 *e*P P 02 50 14.6 +6.1
NVS pmax pmax
comp=Z,15nm,1.3s
NVS pmax pmax
comp=E,16nm,1.1s
NRIK Noril'sk 43.90 335 LR LR 03 10 39.3
comp=E,141nm,18.5s,baz=116,slow=39
MKAR Makanchi Array 44.94 303 P **P 02 50 18.9 -0.4**
comp=E,1.0nm,0.5s,baz=84,slow=9.6,SNR=12
MKAR Makanchi Array 44.94 303 *i* P **P 02 50 19.0 -0.2**
MKAR pmax pmax
comp=Z,1.0nm,0.5s
MKAR Makanchi Array 44.94 303 *e*P **P 02 50 20.7 +1.5**
MAKZ Makanchi 45.15 303 *e*P **P 02 50 22.3 +1.4**
MAKZ pmax pmax
comp=Z,5.0nm,0.9s
MAKZ Makanchi 45.15 303 *e*P **P 02 50 22.3 +1.4**
comp=Z,4.6nm,0.9s
KAPI Kappang 46.55 212 *e*P **P 02 50 31.3 -0.8**
comp=Z,28nm,1.3s
KURK Kurchatov 46.74 308⇑ *e*P **P 02 50 32.6 -0.7**
KURK pmax pmax
comp=Z,2.0nm,0.5s
KURK Kurchatov 46.74 308 *e*P **P 02 50 33.0 -0.3**
comp=Z,9.2nm,0.5s
KDAK Kodiak Island 46.86 42 *i* P **P 02 50 35.1 +1.0**
CAST Castle Rocks 47.09 34 *e*P **P 02 50 37.8 +1.9**
comp=Z,6.8nm,0.9s
BPAW Bear Paw Mtn. 47.60 33 *e*P **P 02 50 41.3 +1.4**
comp=Z,5.6nm,1.0s
KTH Kantishna Hill 47.62 34 *e*P **P 02 50 40.7 +0.7**
comp=Z,11nm,1.0s
MLY Manley 47.75 32 *e*P **P 02 50 42.8 +1.8**
comp=Z,12nm,1.0s
TRF Thorofare Moun 47.90 34 *e*P **P 02 50 43.5 +1.2**
comp=Z,42nm,1.9s
MCK McKinley 48.51 34 *e*P **P 02 50 47.1 +0.2**
MCK pmax pmax
comp=Z,12nm,1.2s
MCK McKinley 48.51 34 *e*P **P 02 50 47.1 +0.2**
comp=Z,12nm,1.2s
RND Reindeer 48.54 34 *e*P **P 02 50 47.9 +0.7**
RND pmax pmax
comp=Z,8.0nm,0.8s
RND Reindeer 48.54 34 *e*P **P 02 50 47.9 +0.7**
comp=Z,7.7nm,0.8s
SML Sawmill 48.83 36 *e*P **P 02 50 50.1 +0.7**
SML pmax pmax
comp=Z,11nm,0.8s
SML Sawmill 48.83 36 *e*P **P 02 50 50.1 +0.7**
comp=Z,11nm,0.8s
WRH Wood River Hil 48.87 33 *e*P **P 02 50 49.3 -0.3**
comp=Z,5.8nm,0.8s
COLA College 48.97 32 *e*P **P 02 50 50.7 +0.3**
COLA pmax pmax
comp=Z,9.0nm,0.6s
COLA College 48.97 32 *e*P **P 02 50 50.7 +0.3**
comp=Z,8.6nm,0.6s
CCB Clear Creek Bu 48.99 32 *e*P **P 02 50 52.9 +2.4**
comp=Z,7.4nm,1.6s
ILAR Eielson Array 49.39 32 P **P 02 50 53.8 +0.2**
comp=Z,5.4nm,0.7s,baz=265,slow=6.6,SNR=62
ILAR Eielson Array 49.39 32 P **P 02 50 53.8 +0.2**
ILAR pmax pmax
comp=Z,6.0nm,0.7s
KLU Klutina 50.00 36 *e*P **P 02 50 59.7 +1.3**
comp=Z,4.9nm,0.7s
PAX Paxson 50.09 35 *e*P **P 02 50 59.8 +0.7**
PAX pmax pmax
comp=Z,5.0nm,1.1s
PAX Paxson 50.09 35 *e*P **P 02 50 59.8 +0.7**
comp=Z,5.0nm,1.1s
DIV Divide 50.10 37 *e*P **P 02 51 01.1 +2.0**
comp=Z,12nm,0.9s
TKM2 Tokmak 2 50.46 299 *e*P **P 02 51 04.6 +2.3**
TKM2 pmax pmax
comp=Z,24nm,1.7s
TKM2 Tokmak 2 50.46 299 *e*P **P 02 51 04.6 +2.3**
comp=Z,24nm,1.7s
DOT Dot Lake 50.68 34 *e*P **P 02 51 03.6 +0.2**
comp=Z,14nm,0.8s
MENT Mentasta 50.89 34 *e*P **P 02 51 07.1 +2.0**
comp=Z,9.0nm,0.9s
OTUK Ortayu 51.24 306 P **P 02 51 08.8 +0.9**
OTUK pmax pmax
comp=Z,6.0nm,1.3s
AAK Ala-Archa 51.32 299⇑ *e*P **P 02 51 07.6 -1.1**
AAK pmax pmax
comp=Z,2.0nm,0.9s
BRVK Borovoye 51.42 313⇓ *e*P **P 02 51 08.6 -0.5**
BRVK pmax pmax
comp=Z,1.0nm,0.4s
BALM Baldy 51.77 37 *e*P **P 02 51 13.0 +1.3**
BALM pmax pmax
comp=Z,5.0nm,0.8s
BALM Baldy 51.77 37 *e*P **P 02 51 13.0 +1.3**
comp=Z,5.1nm,0.8s
EGAK Eagle 51.84 32 *e*P **P 02 51 12.8 +0.7**
comp=Z,2.8nm,0.8s
MNAS Manas 52.76 299 P **P 02 51 20.8 +1.3**
MNAS pmax pmax
comp=Z,6.0nm,1.2s
KKAR Karatay Array 53.95 301 *e*P **P 02 51 27.5 -0.5**
KKAR pmax pmax
comp=Z,1.0nm,0.5s
KKAR Karatay Array 53.95 301 *e*P **P 02 51 27.5 -0.5**
comp=Z,1.3nm,0.5s
GSI Gunungsitoli 54.27 240 *e*P **P 02 51 31.3 +0.6**
comp=Z,42nm,1.4s
INK Inuvik 54.35 27 *e*P **P 02 51 31.4 +0.9**
INK pmax pmax
comp=Z,5.0nm,0.7s
INK Inuvik 54.35 27 *e*P **P 02 51 31.4 +0.9**
comp=Z,5.0nm,0.7s
SVE Sverdlovsk 55.91 319 *e*P P 02 51 52.6 +11
SVE pmax pmax
comp=Z,13nm,1.3s
DZET Dzherino 56.68 296 P **P 02 51 49.2 +1.3**
DZET pmax pmax
comp=Z,7.0nm,0.5s
WRAB Tennant Creek 56.82 189 *e*P **P 02 51 51.8 +3.1**
WRAB pmax pmax
comp=Z,6.0nm,0.7s
WRAB Tennant Creek 56.82 189 *e*P **P 02 51 51.8 +3.1**
comp=Z,5.8nm,0.7s
WRA Warramunga Arr 56.83 189 P **P 02 51 49.4 +0.6**
comp=Z,1.5nm,0.9s,baz=6.0,slow=7.2,SNR=4.6
WRA Warramunga Arr 56.83 189 *i* P **P 02 51 51.4 +2.6**
WRA pmax pmax
comp=Z,1.0nm,0.8s
ARU Arti 57.12 319 P **P 02 51 51.4 +0.8**
comp=Z,1.2nm,0.3s,baz=86,slow=7.0
ARU Arti 57.12 319 *c i* P **P 02 51 47.2 -3.3**
ARU 02 52 41.5
ARU 02 53 52.6
ARU S **S 02 59 36.9 -7.2**
ARU pmax pmax
comp=Z,4.0nm,1.7s
ARU Arti 57.12 319 *e*P **P 02 51 50.3 -0.2**
comp=Z,6.1nm,0.8s
DLBC Dease Lake 58.44 38 *e*P **P 02 52 02.2 +2.3**
comp=Z,3.6nm,0.9s
ABKAR Akbulak array 58.74 311 *e*P **P 02 52 01.9 -0.1**
comp=Z,4.1nm,0.7s
AKTO Aktyubinsk 59.47 312 P **P 02 52 07.4 +0.3**
comp=Z,0.4nm,0.3s,baz=56,slow=7.3,SNR=1.8
ASAR Alice Springs 60.55 189 P **P 02 52 15.0 +0.3**
comp=Z,0.7nm,0.8s,baz=0.6,slow=5.5,SNR=8.0
ASAR Alice Springs 60.55 189 P **P 02 52 15.0 +0.3**
ASAR pmax pmax
comp=Z,1.0nm,0.7s
YKA Yellowknife Ar 63.73 30 P **P 02 52 36.0 +0.4**
comp=Z,1.7nm,0.7s,baz=303,slow=6.8,SNR=20
YKA Yellowknife Ar 63.73 30 *i* P **P 02 52 36.0 +0.4**
YKA pmax pmax
comp=Z,2.0nm,0.7s
KLMR Klimovskoe 64.45 328 P **P 02 52 37.8 -2.5**
KLMR pmax pmax
comp=Z,5.0nm,0.8s
GEYT Alibeck 64.66 299 P **P 02 52 43.1 +0.9**
comp=Z,1.0nm,0.6s,baz=27,slow=10.0,SNR=2.5
GEYT LR LR 03 21 20.0
comp=Z,65nm,19.8s,baz=40,slow=36
OBN Obninsk 68.83 324 *e*P P 02 53 19.0 +11
OBN pmax pmax
comp=Z,4.0nm,0.9s
FINES FINESS Array B 69.47 333 P **P 02 53 12.6 +0.3**
comp=Z,1.5nm,0.8s,baz=46,slow=6.0,SNR=5.0
FINES LR LR 03 26 06.8
comp=Z,125nm,18.1s,baz=20,slow=38
K05A Summer Lake 70.58 51 *e*P **P 02 53 22.4 +2.7**
comp=Z,6.9nm,0.9s
SUMG Summit 71.03 0 *e*P **P 02 53 22.8 +0.7**
SUMG pmax pmax
comp=Z,5.0nm,1.0s
SUMG Summit 71.03 0 *e*P **P 02 53 22.8 +0.7**
comp=Z,5.3nm,1.0s
VSU Vasula 71.14 330⇑ *e*P **P 02 53 24.1 +1.6**
VSU pmax pmax
comp=Z,19nm,0.9s
KVAR Kislovodsk Arr 71.70 311 P **P 02 53 27.8 +1.5**
comp=Z,1.9nm,0.5s,baz=328,slow=2.8,SNR=5.8
KBZ Khabaz 71.70 311 P **P 02 53 27.4 +1.3**
comp=Z,0.7nm,0.5s,baz=53,slow=5.1,SNR=2.4
KIV Kislovodsk 71.70 311 *e*P **P 02 53 26.7 +0.4**
KIV pmax pmax
comp=Z,6.0nm,1.1s
KIV MLR MLR
comp=Z,94nm,17.0s
MFID Camas Ranch 73.30 48 *e*P **P 02 53 37.5 +1.6**
comp=Z,22nm,1.5s
LRM Limekiln Ridge 73.87 45 *e*P **P 02 53 40.7 +1.4**
BOZ Bozeman (W) 74.43 44 *e*P **P 02 53 44.1 +1.5**
BOZ pmax pmax
comp=Z,5.0nm,0.8s
BOZ Bozeman (W) 74.43 44 *e*P **P 02 53 44.1 +1.5**
comp=Z,5.5nm,0.8s
NVAR Mina Array Bea 74.59 54 P **P 02 53 44.7 +1.1**
comp=Z,1.1nm,0.5s,baz=294,slow=4.7,SNR=6.6
NVAR LR LR 03 25 10.0
comp=Z,26nm,18.7s,baz=266,slow=35
HFS Hagfors 74.71 336 P **P 02 53 44.5 +0.8**
comp=Z,1.1nm,0.7s,baz=45,slow=8.6,SNR=3.5
NB2 NORSAR Subarra 74.80 338 P **P 02 53 44.6 +0.4**
comp=Z,1.3nm,0.8s,baz=39,slow=5.9
NOA NORSAR Array B 74.80 338 P **P 02 53 43.8 -0.4**
comp=Z,0.8nm,0.8s,baz=38,slow=6.0,SNR=3.3
NOA LR LR 03 29 28.8
comp=Z,68nm,19.9s,baz=30,slow=38
AKASG Malin Array Be 75.03 323 P **P 02 53 45.6 -0.1**
comp=Z,1.1nm,0.6s,baz=31,slow=6.1,SNR=3.8
AKASG LR LR 03 28 33.7
comp=Z,44nm,18.1s,baz=50,slow=37
KIEV Kiev 75.05 323⇓ *e*P **P 02 53 46.0 +0.3**
KIEV pmax pmax
comp=Z,2.0nm,0.8s
LKWY Lake 75.78 45 *e*P **P 02 53 53.6 +3.1**
LKWY pmax pmax
comp=Z,8.0nm,1.4s
LKWY Lake 75.78 45 *e*P **P 02 53 53.6 +3.1**
comp=Z,7.8nm,1.4s
H17A Grant Village 75.79 45 *e*P **P 02 53 53.3 +2.8**
comp=Z,6.9nm,0.8s
FLWY Flagg Ranch 75.91 45 *e*P **P 02 53 53.7 +2.5**
comp=Z,13nm,1.5s
RLMT Red Lodge 76.08 44 *e*P **P 02 53 53.7 +1.6**
comp=Z,15nm,1.6s
MOOW Moose Ponds 76.08 46 *e*P **P 02 53 54.1 +2.0**
comp=Z,5.7nm,1.2s
R11A Troy Canyon, C 76.38 52 *e*P **P 02 53 54.1 +0.2**
comp=Z,4.7nm,1.3s
LAO LASA Array 76.74 41 *e*P **P 02 53 57.7 +2.0**
comp=Z,8.9nm,1.1s
HWUT Hardware Ranch 76.91 48 *e*P **P 02 53 58.6 +1.8**
comp=Z,7.6nm,1.3s
DUG Dugway, Tooele 77.01 49 *e*P **P 02 53 58.8 +1.4**
DUG pmax pmax
comp=Z,4.0nm,0.8s
DUG Dugway, Tooele 77.01 49 *e*P **P 02 53 58.8 +1.4**
comp=Z,3.9nm,0.8s
PDAR Pinedale Array 77.37 46 P **P 02 54 00.0 +0.5**
comp=Z,1.5nm,0.6s,baz=243,slow=1.0,SNR=18
JLU Jordanelle 77.59 48 *e*P **P 02 54 03.0 +2.3**
comp=Z,17nm,1.8s
NLU North Lily Min 77.61 49 *e*P **P 02 54 02.9 +2.1**
comp=Z,3.5nm,1.2s
MSU Marysvale 78.42 51 *e*P **P 02 54 07.9 +2.5**
MSU Marysvale 78.42 51 *e*P **P 02 54 07.9 +2.5**
LCMT Little Creek M 78.67 52 *e*P **P 02 54 08.5 +1.8**
comp=Z,7.9nm,1.4s
P17A Butcher Ranch, 78.72 49 *e*P **P 02 54 08.6 +1.7**
comp=Z,7.8nm,0.8s
Q16A Castle Valley 78.80 50 *e*P **P 02 54 09.8 +2.4**
comp=Z,14nm,1.6s
P18A Preston Nutter 78.92 49 *e*P **P 02 54 10.6 +2.4**
comp=Z,27nm,0.7s
KNB Kanab 78.93 52 *e*P **P 02 54 10.7 +2.5**
KNB pmax pmax
comp=Z,9.0nm,1.3s
KNB Kanab 78.93 52 *e*P **P 02 54 10.7 +2.5**
comp=Z,9.2nm,1.3s
SRU San Rafael Swe 79.07 49 *e*P **P 02 54 10.7 +1.8**
SRU pmax pmax
comp=Z,6.0nm,0.8s
SRU San Rafael Swe 79.07 49 *e*P **P 02 54 10.7 +1.8**
comp=Z,5.8nm,0.8s
VRI Vrincioaia 79.48 320 P **P 02 54 11.2 +0.5**
VRI pmax pmax
comp=Z,35nm,1.7s
BRTR Keskin Array B 79.65 312 P **P 02 54 13.1 +1.1**
comp=Z,0.5nm,0.7s,baz=107,slow=5.0,SNR=4.0
BRTR LR LR 03 31 42.9
comp=Z,37nm,18.5s,baz=46,slow=37
STHS Stebnicka Huta 79.68 325 *e*P **P 02 54 07.8 -4.0**
STHS *e* 02 54 23.1
STHS pmax pmax
comp=Z,3.0nm,1.3s
STHS Stebnicka Huta 79.68 325 *e*P **P 02 54 07.8 -4.0**
STHS *e* 02 54 23.1
PV10 Paradox Valley 80.44 49 *e*P **P 02 54 18.3 +1.9**
PV04 Paradox Valley 80.51 49 *e*P **P 02 54 17.6 +0.9**
PV05 Paradox Valley 80.59 49 *e*P **P 02 54 19.0 +1.8**
N23A Red Feather La 80.64 46 *e*P **P 02 54 19.2 +1.7**
comp=Z,14nm,1.4s
Y14A Wickenburg 80.70 55 *e*P **P 02 54 20.3 +2.7**
PV01 Paradox Valley 80.87 49 *e*P **P 02 54 20.2 +1.5**
DPC Dobruska-Polom 81.15 328 *e*P **P 02 54 20.8 +1.1**
DPC *e*pP **sP 02 54 29.7 -0.1**
DPC Dobruska-Polom 81.15 328 *e*P **P 02 54 20.8 +1.1**
DPC *e* 02 54 29.7
SMCO Snowmass 81.16 47 *e*P **P 02 54 21.8 +1.3**
comp=Z,3.3nm,0.8s
X16A Lo Mia Camp, P 81.42 53 *e*P **P 02 54 23.4 +1.7**
VYHS Vyhne 81.44 326 *e*P **P 02 54 20.4 -0.8**
VYHS *e* 02 54 29.9
VYHS pmax pmax
comp=Z,2.0nm,1.1s
VYHS Vyhne 81.44 326 *e*P **P 02 54 20.4 -0.8**
VYHS *e* 02 54 29.9
MVCO Mesa Verde 81.51 50 *e*P **P 02 54 22.6 +0.5**
comp=Z,4.0nm,1.0s
ISCO Idaho Springs 81.55 46 *e*P **P 02 54 23.4 +1.0**
ISCO pmax pmax
comp=Z,1.0nm,0.6s
ISCO Idaho Springs 81.55 46 *e*P **P 02 54 23.4 +1.0**
comp=Z,1.3nm,0.6s
CLL Collm 81.77 331 *i* P **P 02 54 24.1 +1.2**
CLL *i* 02 54 30.7
CLL LmH 03 28 00.0
comp=N,100nm,19.0s

CLL LmH 03 28 00.0
comp=E,100nm,19.4s
CLL Collm 81.77 331 *i* P **P 02 54 24.1 +1.2**
CLL *i* 02 54 30.7
S22A 4UR Ranch, Cre 82.18 48 *eP* **P 02 54 27.6 +1.9**
KHC Kasperske Hory 83.23 329 *eP* **P 02 54 31.3 +0.7**
KHC *ep*P **pP 02 54 38.2 +0.1**
KHC Kasperske Hory 83.23 329 *eP* **P 02 54 31.3 +0.7**
KHC *e* 02 54 38.2
GERES GERESS Array B 83.40 329 P **P 02 54 31.9 +0.3**
comp=E,0.9nm,0.7s,baz=32,slow=5.2,SNR=7.1
GERES LR LR 03 34 23.9
comp=E,82nm,18.8s,baz=28,slow=38
ECSD EROS Data Cent 83.72 39 *eP* **P 02 54 33.6 +0.4**
comp=E,19nm,1.9s
T25A Trinidad 84.02 48 *eP* **P 02 54 36.6 +1.5**
ANMO Albuquerque 84.23 50 *eP* **P 02 54 37.4 +1.2**
ANMO pmax pmax
comp=Z,5.0nm,1.1s
ANMO Albuquerque 84.23 50 *eP* **P 02 54 37.4 +1.2**
comp=Z,4.8nm,1.1s
BFO Black Forest 85.97 331 *i* P **P 02 54 47.0 +2.5**
TXAR Lajitas Array 89.73 53 P **P 02 55 03.6 +0.7**
comp=Z,1.8nm,0.7s,baz=295,slow=2.9,SNR=16
TXAR LR LR 03 32 05.3
comp=Z,25nm,19.7s,baz=0.0,slow=34
MIAR Mount Ida 92.06 43 *eP* **P 02 55 14.5 +1.0**
MIAR pmax pmax
comp=Z,13nm,1.3s
MIAR Mount Ida 92.06 43 *eP* **P 02 55 14.5 +1.0**
comp=Z,12nm,1.3s
LPAZ La Paz 146.21 61 PKPbc **PKPbc 03 01 45.9 0.0**
comp=Z,1.9nm,0.7s,baz=319,slow=2.8,SNR=10
LCO Las Campanas 151.30 84 *e*PKPbc **PKPbc 03 01 59.3 +1.0**

DHMR 15 02:47:18.2±1.9, 12°00N×44°59E, h8km±11km, ML4.3, 3C, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ADEN	**Aden**	**0.86**	**27⇑**	*i*P	Pb	02 47 35.1	-0.3
ADEN				*i* S	Sb	02 47 46.8	-0.3
ADEN				AML	AML	02 47 57.8	
	comp=E,13μm,0.5s						
TRBA	**At Turbah**	**1.31**	**339⇑**	*i*P	Pn	02 47 41.5	-1.5
TRBA				*i* S	Sn	02 48 00.9	+0.2
TRBA				AML	AML	02 48 06.5	
	comp=E,3μm,0.4s						
UDYN	**Al 'Udayn**	**2.05**	**343**	*i* P	Pb	02 47 55.1	-0.7
UDYN				*i* S	Sb	02 48 22.4	+1.1
BDHA	**Al Bayda'**	**2.18**	**26⇑**	*i*P	Pn	02 47 55.5	+0.5
BDHA				*i* S	Sb	02 48 26.2	+0.8
BDHA				AML	AML	02 48 40.5	
	comp=E,5μm,0.6s						
DHBB	**Dhamar BB**	**2.56**	**356**	*i* P	Pb	02 48 03.0	-1.6
DHBB				*i* S	Sb	02 48 37.7	+1.3

*IDC **15** 02:52:13.0±1.0, 17°47N×119°32E, h0km, mb3.6/6, mb1 3.8/6, mb1mx3.4/48, mbtmp3.6/6, MS3.4/2, Ms1 3.4/2, ms1mx2.6/34, Error ellipse: s-maj=50.9km s-min=19.3km az=70.0*
*MAN **15** 02:52:15, 17°68N×119°00E, h30km, mb4.6, ML3.5, MS3.5*
*ISCJB **15** 02:52:17.0±0.8, 17°63N±0°06×119°10E±0°06, h33km, mb3.6/6, MS3.6/1, Error ellipse: s-maj=8.7km s-min=8.0km az=35.1*
ISC 15 02:52:18.3±1.0, 17°63N±0°07×119°12E±0°09, h35km, n16, σ1§51/17, mb3.6/6, 2C-1D, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SIPP	**Brgy, Tapao**	**1.30**	**77⇑**	*e*P	**Pn**	**02 52 38.9**	**-1.1**
SIPP				*e*S	Sn	02 52 42.4	-14
BOLP	**Bolinao**	**1.45**	**149**	*e*P	**Pn**	**02 52 41.1**	**-1.0**
ABRA	**Dolores**	**1.52**	**89**	*e*P	**Pn**	**02 52 42.4**	**-0.5**
PIP	**Pasuquin**	**1.58**	**64⇓**	*i*P	**Pn**	**02 52 42.8**	**-1.1**
PIP				*e*S	**Sn**	**02 53 01.9**	**-1.2**
BCPH	**Baguio City Da**	**1.86**	**131⇑**	*i*P	**Pn**	**02 52 49.8**	**+1.8**
BCPH				*e*S	**Sn**	**02 53 10.6**	**+0.2**
SCZP	**Santa Cruz**	**1.99**	**158**	*e*P	**Pn**	**02 52 48.7**	**-0.8**
APYP	**Conner**	**2.03**	**83**	*e*P	**Pn**	**02 52 49.6**	**-0.4**
APYP				*e*S	**Sn**	**02 53 15.5**	**+1.3**
CAUP	**Cauayan**	**2.67**	**104**	*e*P	**Pn**	**02 53 01.3**	**+2.5**
DAV	**Davao City (W)**	**12.24**	**148**	LR	LR	02 59 50.8	
	comp=Z,122nm,20.9s,baz=176,slow=38						
KSRS	**Korea Array**	**21.21**	**20**	P	**P**	**02 57 01.6**	**+0.6**
	2.0nm,0.6s,baz=202,slow=11,SNR=7.6						
WRA	**Warramunga Arr**	**40.21**	**158**	P	**P**	**02 59 49.5**	**-2.1**
	0.5nm,0.6s,baz=332,slow=9.4,SNR=4.2						
MKAR	**Makanchi Array**	**42.00**	**322**	P	**P**	**03 00 07.8**	**+1.6**
	0.2nm,0.3s,baz=126,slow=10,SNR=3.9						
ASAR	**Alice Springs**	**43.51**	**160**	P	**P**	**03 00 16.9**	**-1.7**
	0.7nm,0.5s,baz=340,slow=6.6,SNR=11						
KURBB	**Kurchatov Arra**	**46.11**	**325**	P	**P**	**03 00 41.1**	**+2.0**
	1.2nm,0.6s,baz=122,slow=8.4,SNR=11						
STKA	**Stephens Creek**	**53.73**	**156**	LR	LR	03 26 51.3	
	comp=Z,52nm,18.9s,baz=25,slow=39						
YKA	**Yellowknife Ar**	**89.73**	**22**	P	**P**	**03 05 12.5**	**-0.3**
	0.1nm,0.4s,baz=325,slow=3.5,SNR=4.3						

IDC 15 02:53:44.0±5.1, 18°62S×177°98W, h0km, mb3.8/2, mb1 4.1/2, mb1mx3.5/28, mbtmp3.8/2, Error ellipse: s-maj=274.2km s-min=43.1km az=148.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**44.91**	**260**	P	P	03 02 01.1	+0.2
	0.3nm,0.4s,baz=95,slow=7.4,SNR=5.6						
ASAR	**Alice Springs**	**44.99**	**255**	P	P	03 02 01.2	-0.3
	1.3nm,0.8s,baz=97,slow=7.7,SNR=14						
FINES	**FINESS Array B**	**133.97**	**344**	PKP	PKPdf	03 13 03.1	+0.3
	0.5nm,0.7s,baz=196,slow=3.9,SNR=3.3						
AKASG	**Malin Array Be**	**141.37**	**332**	PKhKP	PKPpre	03 13 10.7	
	0.8nm,0.4s,baz=44,slow=4.4,SNR=6.2						
BRTR	**Keskin Array B**	**145.56**	**314**	PKPbc	PKPdf	03 13 23.1	-1.6
	0.5nm,0.7s,baz=140,slow=4.7,SNR=5.0						
GERES	**GERESS Array B**	**148.40**	**345**	PKPbc	PKPbc	03 13 32.1	-0.4
	0.2nm,0.4s,baz=349,slow=2.7,SNR=3.7						

*IDC **15** 03:04:46.7±0.8, 2°18S×128°51E, h0km, mb4.2/7, mb1 4.3/9, mb1mx4.0/26, mbtmp4.2/9, ML4.2/2, MS3.2/3, Ms1 3.3/3, ms1mx2.7/34, Error ellipse: s-maj=33.8km s-min=16.7km az=76.0*
*ISCJB **15** 03:04:50.2±0.4, 2°25S±0°05×128°22E±0°03, h34km, mb4.2/12, MS3.2/2, Error ellipse: s-maj=6.6km s-min=4.6km az=7.4*
*NEIC **15** 03:04:52.1±1.0, 2°21S×128°39E, h41km±11km, mb4.3/8, Error ellipse: s-maj=11.6km s-min=7.0km az=220.0*
*DJA **15** 03:04:53.1±0.3, 2°S±3°×12°8E±°, h102km±6km, M4.4/9, mb4.4/6, mB5.1/3, MLv4.3/9, Mw(mB)4.5/3*
ISC 15 03:04:51.7±0.6, 2°24S±0°06×128°23E±0°05, h34km, n36, σ1§19/39, mb4.3/12, Ceram Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSAI	**Masohi**	**1.30**	**147**	P	**Pb**	**03 05 16.7**	**+1.1**
MSAI				S	Sb	03 05 39.2	+7.2
LBMI	**Labuha**	**1.75**	**336**	P	**Pn**	**03 05 20.3**	**+0.6**
LBMI				S	**Sb**	**03 05 44.4**	**-0.5**
SANI	**Sanana**	**2.25**	**275**	P	**Pn**	**03 05 26.4**	**-0.1**
SANI				S	**Sn**	**03 05 52.9**	**-0.1**
BNDI	**Bandanaira**	**2.82**	**144**	P	**Pn**	**03 05 36.3**	**+2.0**
SWI	**Sorong**	**3.33**	**66**	P	**Pn**	**03 05 42.6**	**+1.2**
SWI				S	**Sn**	**03 06 21.5**	**+1.7**
FAKI	**Fak Fak**	**4.07**	**100**	P	**Pn**	**03 05 51.7**	**+0.1**
FAKI	**Fak Fak**	**4.07**	**100**	*e*Pn	**Pn**	**03 05 51.3**	**-0.4**
LUWI	**Luwuk**	**5.58**	**282**	P	**Pn**	**03 06 12.7**	**+0.3**
	73nm,1.0s,5μm0.9nm						
LUWI	**Luwuk**	**5.58**	**282**	*e*Pn	**Pn**	**03 06 12.4**	**0.0**
LUWI				*e*Sn	**Sn**	**03 07 14.5**	**-0.9**
KDI	**Kendari**	**5.85**	**253**	P	**Pn**	**03 06 17.9**	**+1.8**
	23nm,0.9s,0.1nm						
SAUI	**Saumlaki**	**6.47**	**152**	P	**Pn**	**03 06 26.7**	**+2.1**
MRSI	**Marisa**	**6.84**	**293**	P	**Pn**	**03 06 30.5**	**+0.8**
	38nm,0.9s,1μm0.3nm						
TTSI	**Tana Toraja**	**8.44**	**264**	P	**Pn**	**03 06 52.2**	**+0.6**
SPSI	**Sidrap Palu**	**8.62**	**258**	P	**Pn**	**03 06 56.1**	**+2.0**
	23nm,0.8s						
BSSI	**Bau Bau, Buton**	**8.63**	**243**	P	**Pn**	**03 06 55.3**	**+1.0**
MMRI	**Maumere**	**8.71**	**223**	P	**Pn**	**03 06 56.8**	**+1.5**
KAPI	**Kappang**	**8.89**	**252**	Pn	Pn	03 07 02.2	+4.4
	11nm,0.3s,baz=103,slow=5.3,SNR=38						
KAPI				LR	LR	03 10 53.0	
	comp=Z,131nm,18.4s,baz=94,slow=40						
WRAB	**Tennant Creek**	**18.57**	**162**	*e*P	**P**	**03 09 05.2**	**-0.7**
	6.9nm,0.8s						
WRA	**Warramunga Arr**	**18.58**	**162**	P	**P**	**03 09 05.3**	**-0.7**
	0.5nm,0.3s,baz=340,slow=12,SNR=7.8						
COEN	**Coen**	**18.81**	**129**	*e*P	**P**	**03 09 06.8**	**-1.7**
	12nm,0.7s						
PMG	**Port Moresby**	**20.12**	**111**	*e*P	**P**	**03 09 20.5**	**-2.4**
	17nm,0.8s						
ASAR	**Alice Springs**	**21.99**	**166**	P	**P**	**03 09 42.6**	**-0.4**
	7.1nm,0.6s,baz=347,slow=12,SNR=64						
ASAR				S	**S**	**03 13 41.7**	**-2.4**
	1.5nm,0.8s,baz=347,slow=21,SNR=4.1						
STKA	**Stephens Creek**	**32.06**	**158**	P	**P**	**03 11 14.9**	**-0.5**
	0.8nm,0.4s,baz=354,slow=11,SNR=3.0						
CMAR	**Chiang Mai Arr**	**35.41**	**307**	P	**P**	**03 11 46.6**	**+1.8**
	0.6nm,0.4s,baz=137,slow=9.6,SNR=4.9						
CMAR				LR	LR	03 28 15.3	
	comp=Z,17nm,20.1s,baz=140,slow=40						
CHTO	**Chiang Mai**	**35.60**	**307**	*e*P	**P**	**03 11 47.3**	**+0.9**
	2.1nm,0.5s						
MAJO	**Matsushiro**	**39.69**	**13**	*e*P	**P**	**03 12 19.4**	**-1.3**
	3.6nm,0.7s						
MJAR	**Matsushiro Arr**	**39.69**	**13**	P	**P**	**03 12 19.8**	**-0.9**
	1.1nm,0.6s,baz=192,slow=8.9,SNR=7.0						
DZM	**Mont Dzumac**	**42.03**	**121**	LR	LR	03 28 04.2	
	comp=Z,85nm,19.2s,baz=300,slow=33						
USRK	**Ussuriysk Ar.**	**46.36**	**4**	P	**P**	**03 13 14.9**	**+0.4**
	3.4nm,0.6s,baz=183,slow=7.4,SNR=9.8						
ULN	**Ulaanbaatar**	**53.23**	**342**	*e*P	**P**	**03 14 06.8**	**-0.1**
	3.5nm,0.5s						
SONM	**Songino Array**	**53.40**	**342**	P	**P**	**03 14 08.3**	**+0.1**
	1.4nm,0.6s,baz=152,slow=8.3,SNR=9.1						
MKAR	**Makanchi Array**	**63.31**	**326**	P	**P**	**03 15 17.1**	**-0.1**
	1.7nm,0.7s,baz=121,slow=8.3,SNR=15						
TKM2	**Tokmak 2**	**65.22**	**320**	*e*P	**P**	**03 15 29.8**	**-0.4**
	1.8nm,0.7s						
EKS2	**Erkin-Say**	**66.28**	**319**	*e*P	**P**	**03 15 37.4**	**+0.5**
	2.3nm,0.8s						
TORD	**Torodi Ar. Bea**	**126.03**	**285**	PKP	**PKPdf**	**03 23 51.8**	**+0.4**
	0.7nm,0.7s,baz=67,slow=2.3,SNR=6.9						
CPUP	**Villa Florida**	**151.09**	**170**	PKPbc	**PKPbc**	**03 24 42.3**	**+0.2**
	2.2nm,0.9s,baz=315,slow=2.9,SNR=2.0						

*ISCJB **15** 03:20:10.1±0.9, 28°52S×0°06×68°86W±0°05, h113km±10km, Error ellipse: s-maj=9.6km s-min=7.3km az=4.0*
*SJA **15** 03:20:10.1±0.6, 28°57S×68°83W, h111km±4km, ML3.7, MW3.5*
*GUC **15** 03:20:10.4±0.6, 28°51S×68°94W, h115km±190km, ML3.5*
ISC 15 03:20:11.0±1.7, 28°53S±0°06×68°87W±0°05, h107km±15km, n13, σ0§44/18, 2C, La Rioja Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VCA	**Vinchina**	**0.62**	**110**	*i* P	**Pn**	**03 20 28.7**	**+0.1**
VCA				*i* S	**Sn**	**03 20 41.8**	**0.0**
VCA				IAML		03 20 42.2	
	comp=Z,1μm,0.2s						
AGUA	**GUANDACOL**	**1.01**	**161**	*i* P	**Pn**	**03 20 32.2**	**0.0**
VACH	**Vallenar**	**1.67**	**268⇑**	*i*P	**Pn**	**03 20 39.9**	**+0.2**
VACH				*i* S	**Sn**	**03 21 01.5**	**0.0**
LCO	**Las Campanas**	**1.68**	**253**	*i* P	**Pn**	**03 20 40.5**	**+0.4**
LCO	**Las Campanas**	**1.68**	**253**	*e*P	**Pn**	**03 20 40.4**	**+0.2**
LCO				*i* S	**Sn**	**03 21 02.7**	**+0.4**
LCO				IAML		03 21 03.7	
	comp=N,757nm,0.4s						
CPCH	**Copiapo**	**1.76**	**311⇑**	*i*P	**Pn**	**03 20 40.4**	**-0.5**
CPCH				*i* S	**Sn**	**03 21 02.7**	**-0.9**
TLL	**Tololo Astrono**	**2.35**	**226**	*e*P	**Pn**	**03 20 48.6**	**-0.1**
TLL				*i* S	**Sn**	**03 21 17.7**	**+0.3**
TLL				IAML		03 21 24.2	
	comp=N,261nm,0.6s						
AVFE	**Valle Fertil**	**2.45**	**150**	*i* P	**Pn**	**03 20 49.3**	**-0.5**
CYA	**Choya**	**2.70**	**89**	*i* P	**Pn**	**03 20 52.8**	**-0.2**
RTLL	**Cerro Villicun**	**2.81**	**173**	*i* P	**Pn**	**03 20 54.0**	**-0.6**
RTLS	**Leoncito**	**3.28**	**186**	*i* P	**Pn**	**03 21 01.3**	**+0.3**
RTCV	**Cerro Valdivia**	**3.33**	**175**	*i* P	**Pn**	**03 21 01.5**	**+0.1**
FSA	**Cafayete**	**3.52**	**48**	*i* P	**Pn**	**03 21 04.8**	**+0.8**

*ISCJB **15** 03:23:46.5±0.5, 4°46S±0°05×135°10E±0°05, h16km, mb4.0/8, Error ellipse: s-maj=8.2km s-min=5.7km az=136.5*
*IDC **15** 03:23:47.3±1.2, 4°28S×135°05E, h0km, mb3.8/4, mb1 4.2/6, mb1mx3.9/27, mbtmp4.0/6, ML4.4/2, Error ellipse: s-maj=36.4km s-min=24.3km az=58.0*
*NEIC **15** 03:23:51.3±4.8, 4°39S×134°92E, h28km±35km, mb4.3/5, Error ellipse: s-maj=27.0km s-min=7.7km az=47.0*
*DJA **15** 03:23:52.9±0.7, 4°S±5°×13°5E±°, h42km±54km, M4.4/9, mB5.3/2, mb4.6/6, MLv4.3/9, Mw(mB)4.8/2*
ISC 15 03:23:47.9±0.7, 4°48S±0°07×135°12E±0°07, h16km, n27, σ2§55/30, mb4.2/8, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RKPI	**Ransiki, Papua**	**3.09**	**342**	P	**Pn**	**03 24 32.8**	**-3.3**
FAKI	**Fak Fak**	**3.26**	**298**	P	**Pn**	**03 24 38.4**	**0.0**
FAKI				S	**Sn**	**03 25 15.4**	**-1.5**
FAKI	**Fak Fak**	**3.26**	**298**	*e*Pn	**Pn**	**03 24 38.4**	**0.0**
SAUI	**Saumlaki**	**5.15**	**227**	P	Pb	03 25 12.0	-5.7
	717nm,1.4s,2.6nm						
BNDI	**Bandanaira**	**5.20**	**269**	P	**Pn**	**03 25 08.3**	**+3.2**
	196nm,2.0s,0.9nm						
SWI	**Sorong**	**5.27**	**313**	P	**Pn**	**03 25 04.6**	**-1.4**
SWI				S	**Sn**	**03 26 03.3**	**-3.2**
GENI	**Genyem**	**5.38**	**70**	P	**Pn**	**03 25 07.9**	**+0.4**
	54nm,0.6s,0.7nm						
JAY	**Jayapura**	**5.91**	**71**	Pn	**Pn**	**03 25 15.2**	**+0.3**
	0.1nm,0.3s,baz=261,slow=24,SNR=6.0						
JAY	**Jayapura**	**5.91**	**71**	P	**Pn**	**03 25 15.5**	**+0.6**
	18nm,0.9s,0.1nm						
MSAI	**Masohi**	**6.28**	**280**	P	**Pn**	**03 25 22.0**	**+2.1**
	9.6nm,0.4s,854nm0.2nm						
SANI	**Sanana**	**9.43**	**285**	P	**Pn**	**03 26 05.0**	**+1.8**
COEN	**Coen**	**12.32**	**140**	*e*Pn	**Pn**	**03 26 43.7**	**+0.8**
LUWI	**Luwuk**	**12.80**	**285**	*e*Pn	**Pn**	**03 26 47.4**	**-1.9**
KAPI	**Kappang**	**15.32**	**267**	*e*Pn	**Pn**	**03 27 23.7**	**0.0**
WRAB	**Tennant Creek**	**15.38**	**183**	*e*Pn	**Pn**	**03 27 23.6**	**-0.9**
	22nm,0.7s						
WRA	**Warramunga Arr**	**15.39**	**183**	Pn	**Pn**	**03 27 23.9**	**-0.7**
	0.7nm,0.3s,baz=4.8,slow=13,SNR=10						
WRA				Sn	**Sn**	**03 30 06.5**	**-8.4**
	0.3nm,0.3s,baz=358,slow=23,SNR=4.7						
CTA	**Charters Tower**	**18.93**	**146**	P	**Pn**	**03 28 12.1**	**+3.1**
	0.6nm,0.3s,baz=308,slow=11,SNR=6.1						
CTAO	**Charters Tower**	**18.93**	**146**	*e*P	**Pn**	**03 28 11.8**	**+2.8**
	26nm,0.4s						
ASAR	**Alice Springs**	**19.11**	**183**	P	**Pn**	**03 28 13.6**	**+2.4**
	1.4nm,0.3s,baz=8.1,slow=10,SNR=134						
ASAR				S	**Sn**	**03 31 40.2**	**-5.0**
	0.2nm,0.3s,baz=4.0,slow=28,SNR=4.0						
CMAR	**Chiang Mai Arr**	**42.31**	**304**	P	**P**	**03 31 41.8**	**+0.4**
	0.6nm,0.3s,baz=125,slow=7.8,SNR=2.7						
MKAR	**Makanchi Array**	**69.05**	**324**	P	**P**	**03 34 53.4**	**+0.3**
	0.6nm,0.6s,baz=113,slow=7.4,SNR=3.6						
TKM2	**Tokmak 2**	**71.41**	**318**	*e*P	**P**	**03 35 08.3**	**+0.5**
	1.1nm,0.6s						
ZALV	**Zalesovo Beam**	**71.71**	**331**	P	**P**	**03 35 10.1**	**+1.1**
	0.7nm,0.3s,baz=128,slow=6.4,SNR=3.6						
KURK	**Kurchatov**	**73.14**	**326**	*e*P	**P**	**03 35 17.9**	**+0.2**
	2.1nm,0.4s						
BRVK	**Borovoye**	**78.81**	**326**	*e*P	**P**	**03 35 50.2**	**+0.2**
	3.3nm,0.8s						
ABKAR	**Akbulak array**	**83.77**	**320**	*e*P	**P**	**03 36 16.3**	**-0.1**
	0.7nm,0.4s						
ILAR	**Eielson Array**	**88.92**	**25**	P	**P**	**03 36 43.8**	**+2.4**
	0.3nm,0.7s,baz=250,slow=4.7,SNR=2.8						

*IDC **15** 03:27:55.1±2.0, 20°79S×178°18W, h553km±22km, mb3.4/9, mb1 3.7/12, mb1mx3.4/33, mbtmp4.3/12, Error ellipse: s-maj=27.1km s-min=15.1km az=144.0*
*ISCJB **15** 03:27:57.1±0.8, 20°9S±0°2×178°3W±0°1, h587km, mb3.8/9, Error ellipse: s-maj=22.9km s-min=13.9km az=145.4*
ISC 15 03:27:58.2±0.8, 20°9S±0°2×178°3W±0°1, h587km, n25, σ0§84/27, mb3.8/9, 1D, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**9.33**	**43**	P	P	03 30 04.2	-6.1
	7.0nm,0.3s,baz=232,slow=12,SNR=9.9						
AFI				S	S	03 31 45.2	-13
	5.1nm,0.3s,baz=252,slow=20,SNR=7.3						
DZM	**Mont Dzumac**	**14.24**	**263**	P	**P**	**03 30 58.7**	**-1.1**
	0.6nm,0.3s,baz=80,slow=18,SNR=6.8						
URZ	**Urewera**	**17.76**	**192**	P	**P**	**03 31 31.2**	**-0.7**
	1.9nm,0.3s,baz=358,slow=9.2,SNR=10						
STKA	**Stephens Creek**	**37.36**	**245**	P	**P**	**03 34 22.9**	**+0.7**
	1.7nm,0.6s,baz=60,slow=10,SNR=4.3						
ASAR	**Alice Springs**	**44.15**	**257**	P	**P**	**03 35 16.5**	**+0.3**
	7.2nm,0.5s,baz=94,slow=7.8,SNR=44						
ASAR				PcP	**PcP**	**03 36 48.6**	**+0.6**
	1.1nm,0.6s,baz=101,slow=3.8,SNR=5.0						
ASAR				S	**S**	**03 41 07.6**	**+0.1**
	1.7nm,0.9s,baz=91,slow=17,SNR=7.3						
WRA	**Warramunga Arr**	**44.26**	**263**	P	**P**	**03 35 16.5**	**-0.5**
	4.1nm,0.3s,baz=97,slow=7.6,SNR=32						
WRA				PcP	**PcP**	**03 36 49.1**	**+0.6**
	0.8nm,0.7s,baz=92,slow=3.4,SNR=2.7						
MJAR	**Matsushiro Arr**	**70.35**	**324**	P	**P**	**03 38 13.3**	**-0.6**
	1.9nm,0.6s,baz=154,slow=5.8,SNR=8.4						
KSRS	**Korea Array**	**76.99**	**319**	P	**P**	**03 38 52.2**	**+0.8**
	1.4nm,0.7s,baz=123,slow=5.7,SNR=5.2						
TXAR	**Lajitas Array**	**87.51**	**57**	P	**P**	**03 39 45.0**	**+0.2**
	0.8nm,1.0s,baz=223,slow=6.8,SNR=4.9						
ILAR	**Eielson Array**	**88.76**	**13**	P	**P**	**03 39 48.6**	**-1.0**
	0.5nm,0.5s,baz=220,slow=5.5,SNR=6.9						
PDAR	**Pinedale Array**	**89.44**	**43**	P	**P**	**03 39 53.9**	**+0.2**
	0.4nm,0.6s,baz=207,slow=3.0,SNR=5.9						
CMAR	**Chiang Mai Arr**	**89.97**	**290**	P	**P**	**03 39 57.3**	**+1.0**
	1.2nm,0.5s,baz=130,slow=3.7,SNR=9.8						
MKAR	**Makanchi Array**	**111.25**	**313**	PKiKP	**PKiKP**	**03 45 26.3**	**+0.2**
	0.3nm,0.4s,baz=101,slow=1.5,SNR=3.4						
ARCES	**ARCESS Array B**	**129.25**	**349**	PKP	**PKPdf**	**03 45 59.4**	**-0.4**
	0.7nm,0.4s,baz=27,slow=1.2,SNR=15						
FINES	**FINESS Array B**	**136.06**	**343**	PKhKP	PKPpre	03 46 00.9	
	1.2nm,1.0s,baz=330,slow=4.8,SNR=2.7						
FINES				PKP	**PKPdf**	**03 46 12.3**	**-0.5**
	1.1nm,0.8s,baz=90,slow=1.9,SNR=4.9						
AKASG	**Malin Array Be**	**143.21**	**331**	PKP	**PKPdf**	**03 46 23.6**	**-2.4**
	2.9nm,0.6s,baz=43,slow=4.4,SNR=25						
BRTR	**Keskin Array B**	**146.88**	**312**	PKPbc	**PKPdf**	**03 46 34.6**	**+1.7**
	1.4nm,0.5s,baz=146,slow=3.0,SNR=14						
CLL	**Collm**	**148.37**	**346⇓**	*i*PKP	**PKPbc**	**03 46 39.3**	**+0.2**
	comp=Z,6.0nm,0.7s						
DPC	**Dobruska-Polom**	**148.41**	**342**	*e*PKP	**PKPbc**	**03 46 40.0**	**+0.7**
DPC				*ex*	x	03 46 43.4	
KRLC	**Kraliky**	**148.52**	**341**	*e*PKP	**PKPbc**	**03 46 40.1**	**+0.6**
BRG	**Berggiesshubel**	**148.56**	**345**	*e*PKP	**PKPbc**	**03 46 40.0**	**+0.5**
	comp=Z,3.0nm,0.8s						
BRG	**Berggiesshubel**	**148.56**	**345**	*e*PKP	**PKPbc**	**03 46 40.0**	**+0.5**
	comp=Z,3.0nm,0.8s						
PRU	**Pruhonice**	**149.23**	**344**	*e*PKP	**PKPbc**	**03 46 41.7**	**+0.5**
KHC	**Kasperske Hory**	**150.26**	**344**	*e*PKP	**PKPbc**	**03 46 44.2**	**+0.5**
KHC				*ex*	x	03 46 53.0	
GERES	**GERESS Array B**	**150.50**	**344**	PKPbc	**PKPbc**	**03 46 44.4**	**0.0**
	comp=Z,1.6nm,0.7s,baz=38,slow=2.2,SNR=16						

*BYKL **15** 03:36:47.1±0.3, 55°25N×109°18E*
*MOS **15** 03:36:48.0±1.9, 55°24N×109°21E, h10km, mb4.2/1, Error ellipse: s-maj=24.1km s-min=12.7km az=69.2*
ISC 15 03:36:46.2±0.7, 55°21N±0°03×109°19E±0°03, h10km, n33, σ2§60/77, 3C-5D, Lake Baykal region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NIZ	**Nizh Angarsk**	**0.60**	**19⇓**	*i*Pg	**Pg**	**03 36 57.8**	**0.0**
NIZ				*e*Pb	**Pn**	**03 37 00.9**	**+0.2**
NIZ				*e*Sg	**Sg**	**03 37 05.5**	**-0.1**
NIZ				Pmax			
	175nm,0.3s						
NIZ				Smax			
	503nm,0.6s						
NIZ	**Nizh Angarsk**	**0.60**	**19⇓**	*i*PG	**Pg**	**03 36 57.8**	**0.0**
NIZ				*e*		03 37 05.4	
NIZ				pmax	pmax		
	comp=Z,171nm,0.3s						
NIZ				smax	smax		
	comp=N,500nm,0.5s						
YLYR	**Ulyunkhan**	**1.18**	**106⇑**	*i*Pg	**Pg**	**03 37 08.6**	**-0.2**
YLYR				*e*Pb	**Pn**	**03 37 10.5**	**+1.7**
YLYR				*e*Sg	**Sg**	**03 37 24.2**	**0.0**
YLYR				*e*Sb	**Sn**	**03 37 28.0**	**+3.1**
YLYR				max			
YLYR				max			
	comp=N,167nm,0.2s						
YLYR	**Ulyunkhan**	**1.18**	**106⇑**	*i*PG	**Pg**	**03 37 08.7**	**-0.1**
YLYR				*e*		03 37 25.3	
YLYR				pmax	pmax		
	comp=Z,51nm,0.1s						
YLYR				smax	smax		
	comp=E,166nm,0.3s						
KMO	**Kumora**	**1.33**	**59**	*e*Pg	**Pn**	**03 37 10.6**	**-0.2**
KMO				*e*		03 37 16.7	
KMO				*e*Sg	**Sb**	**03 37 27.8**	**-0.4**
K

TRG *e*Pg **Pg** **03 37 41.0 -2.2**
TRG *e*Sg **Sg** **03 38 20.2 -1.5**
TRG Pmax
comp=E,19nm,0.3s
TRG Smax
comp=E,98nm,0.2s
UUDB Ulan-Yde 3.47 196 *e*Pg **Pg** **03 37 50.0 -2.7**
UUDB *e*PgPg **PbPb** **03 37 53.3 +2.4**
UUDB *e*Sg **Sg** **03 38 35.5 -2.1**
UUDB max
comp=E,14nm,0.5s
UUDB Smax
comp=E,45nm,0.9s
KAB Kabansk 3.51 207 Sg **Sg** **03 38 35.6 -3.2**
BOD Bodaibo 3.73 44 *e*Pn **Pn** **03 37 45.8 +2.0**
BOD Pg **Pb** **03 37 52.9 +0.8**
BOD *e*Sn **Sn** **03 38 28.1 +0.4**
BOD *e*Sg **Sg** **03 38 41.4 -4.5**
BOD Pmax
comp=E,9.0nm,0.3s
BOD Smax
comp=E,41nm,0.5s
HRMR Khuramsha 3.83 201 *e*Pn **Pn** **03 37 46.7 +1.5**
HRMR *e*Pg **Pb** **03 37 56.1 +2.3**
HRMR *e* 03 37 59.2
HRMR *e*Sg **Sg** **03 38 46.0 -3.1**
HRMR *e*SgSg **SbSb** **03 38 47.8 +2.4**
HRMR Pmax
comp=E,20nm,0.5s
HRMR max
comp=E,166nm,0.4s
NLYR Nelyaty 3.89 68 *e*Pg **Pb** **03 37 57.2 +2.5**
NLYR *e*Sg **Sg** **03 38 47.3 -3.5**
NLYR Pmax
comp=E,14nm,0.6s
NLYR Smax
comp=E,71nm,1.1s
LSTR Listvyanka 4.24 220 *e* **Pn** **03 37 50.8 0.0**
LSTR *e*Pg **Pb** **03 38 02.8 +2.0**
LSTR *e*Sn **Sn** **03 38 41.3 +1.0**
LSTR *e*Sg **Sg** **03 38 58.3 -4.0**
LSTR Pmax
comp=E,8.0nm,0.3s
LSTR Smax
comp=E,19nm,0.5s
TLY Talaya 4.85 225 *e*Pn **Pn** **03 38 00.0 +0.8**
TLY *e*Pg **Pb** **03 38 13.0 +1.8**
TLY *e*Sn **Sn** **03 38 53.6 -1.7**
TLY *e*Sg **Sg** **03 39 17.0 -4.7**
TLY Pmax
comp=E,9.0nm,0.5s
TLY Smax
comp=E,28nm,0.4s
TLY Talaya 4.85 225 *e*PN **Pb** **03 38 13.8 +2.6**
TLY *e* 03 39 16.3
TLY pmax pmax
comp=Z,7.0nm,0.3s
ARS Arshan 5.21 234 *e* **Pn** **03 38 04.1 -0.1**
ARS *e* 03 38 08.4
ARS *e*Pg **Pb** **03 38 21.3 +4.0**
ARS *e*Sn **Sn** **03 39 04.6 +0.3**
ARS *e*Sg **Sg** **03 39 29.1 -4.2**
ARS Pmax
comp=Z,20nm,0.4s
ARS Smax
comp=Z,107nm,0.7s
CRS Chara 5.36 68 *e*Sg **Sg** **03 39 31.2 -6.9**
CRS Smax
comp=Z,46nm,1.5s
KPC Khapcheranga 5.85 159 *e*Pn **Pb** **03 38 25.7 -2.5**
KPC *e* 03 38 34.7
KPC *e*Sg **Sg** **03 39 50.1 -3.7**
KPC max
comp=Z,3.0nm,0.5s
KPC Smax
comp=Z,39nm,1.7s
ZAK Zakamensk 6.02 219 *e* **Sn** **03 39 29.6 +5.3**
ZAK *e*Sg **Sg** **03 39 56.1 -3.2**
ZAK Smax
comp=Z,23nm,1.4s
MOY Mondy 6.05 237 *e*Pn **Pn** **03 38 18.9 +3.2**
MOY *e* 03 38 25.7
MOY *e*Sn **Sn** **03 39 24.7 -0.4**
MOY *e* 03 39 45.3
MOY *e*Sg **Sg** **03 39 54.3 -6.0**
MOY max
comp=Z,5.0nm,0.3s
MOY Smax
comp=Z,32nm,0.9s
ORL Orlik 6.16 248 *e*Pn **Pn** **03 38 20.8 +3.5**
ORL *e* 03 38 28.7
ORL *e* 03 38 36.9
ORL *e* 03 39 30.7
ORL *e*Sg **Sg** **03 39 58.9 -4.9**
ORL max
comp=Z,7.0nm,0.4s
ORL Smax
comp=Z,40nm,1.1s
ORL Orlik 6.16 248 *e*PN **Pn** **03 38 21.0 +3.7**
ORL *e* 03 38 40.0
ORL *e* 03 39 59.0
ORL pmax pmax
comp=Z,8.0nm,0.4s
ORL smax smax
comp=N,40nm,1.0s
TUP Tupik 6.27 93 *e*Pn **Pn** **03 38 19.3 +0.6**
TUP *e* 03 38 29.0
TUP *e*Pg **Pb** **03 38 38.8 +3.5**
TUP *e* 03 39 38.0
TUP *e*Sg **Sg** **03 40 01.8 -5.5**
TUP Smax
comp=N,41nm,0.9s
TUP Tupik 6.27 93 *e*PN **Pn** **03 38 19.0 +0.3**
TUP *e* 03 38 39.0
TUP *e*S **Sn** **03 39 30.3 0.0**
TUP *e* 03 40 01.2
TUP pmax pmax
comp=Z,5.0nm,0.4s
TUP smax smax
comp=N,41nm,0.9s

ISCJB ***15*** *03:38:39.3±0.5, 4.°70N±0.°08×126.°9E±0.°1, h85km, mb4.2/16, Error ellipse: s-maj=22.2km s-min=4.8km az=153.6*
NEIC ***15*** *03:38:40.2±0.8, 4.°73N×126.°74E, h75km±7km, mb4.3/5, Error ellipse: s-maj=15.9km s-min=5.6km az=64.0*
MAN ***15*** *03:38:40, 4.°19N×125.°37E, h32km, mb4.7, ML3.6, MS3.5*
IDC ***15*** *03:38:41.2±2.8, 4.°77N×126.°70E, h82km±25km, mb4.0/10, mb1 4.1/11, mb1mx3.7/36, mbtmp4.3/11, MS2.6/1, Ms1 2.8/1, ms1mx2.4/40, Error ellipse: s-maj=113.3km s-min=12.4km az=68.0*

ISC 15 03:38:41.2±0.7, **4.°70N**±0.°08×**126.°8E**±0.°1, **h85**km, **n29,** σ**1**§**44/33, mb4.3**/16, **2C-2D, Talaud Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MATI	**Mati**	**2.30**	**345**	*e*P	**Pn**	**03 39 14.5**	**-2.8**
DAV	**Davao City (W)**	**2.67**	**332**	P	**Pn**	**03 39 20.7**	**-1.5**
	81nm,0.3s,baz=19,slow=16,SNR=4.2						
DAV				S	**Sn**	**03 39 55.2**	**+1.6**
	72nm,0.3s,baz=119,slow=23,SNR=6.1						
DMPH	**Davao City--Mi**	**2.71**	**331**⇑	*e*P	**Pn**	**03 39 25.4**	**+2.7**
DMPH				*e*S	**Sn**	**03 39 57.3**	**+2.6**
KCP	**Kidapawan**	**2.88**	**323**⇓	*e*P	**Pn**	**03 39 23.6**	**-1.5**
KCP				*i* S	**Sn**	**03 39 57.7**	**-1.1**
CTBH	**Cotabato--PC H**	**3.59**	**314**⇑	*i*P	**Pn**	**03 39 35.4**	**+0.7**
BUKP	**Musuan**	**3.62**	**331**	*e*P	**Pn**	**03 39 33.7**	**-1.3**
BUKP				*e*S	**Sn**	**03 40 18.7**	**+2.0**
CGP	**Cagayan de Oro**	**4.29**	**330**⇓	*e*P	**Pn**	**03 39 45.9**	**+1.7**
CGP				*e*S	**Sn**	**03 40 34.9**	**+1.8**
IPIL	**Ipil**	**5.24**	**306**	*e*P	Pn	03 39 48.2	-8.8
FAKI	**Fak Fak**	**9.30**	**144**	*e*Pn	**Pn**	**03 40 52.0**	**-0.5**
KKM	**Kota Kinabalu**	**10.66**	**278**	*e*Pn	**Pn**	**03 41 08.3**	**-2.9**
SOEI	**Soe**	**14.59**	**190**	*e*Pn	**Pn**	**03 42 03.3**	**-0.3**
WRAB	**Tennant Creek**	**25.57**	**163**	*e*P	**P**	**03 44 02.8**	**+0.3**
	8.7nm,0.6s						
WRA	**Warramunga Arr**	**25.58**	**163**	P	**P**	**03 44 03.1**	**+0.6**
	7.0nm,0.6s,baz=344,slow=10,SNR=41						
ASAR	**Alice Springs**	**29.03**	**167**	P	**P**	**03 44 34.2**	**+0.8**
	1.5nm,0.6s,baz=352,slow=7.5,SNR=20						
ASAR				PcP	**PcP**	**03 47 41.5**	**+1.5**
	0.4nm,0.3s,baz=353,slow=2.2,SNR=6.3						
CMAR	**Chiang Mai Arr**	**30.49**	**299**	LR	LR	03 56 37.8	
	comp=Z,10nm,20.1s,baz=130,slow=36						
STKA	**Stephens Creek**	**39.00**	**160**	P	**P**	**03 46 01.2**	**+1.8**
	8.7nm,0.7s,baz=333,slow=8.4,SNR=15						
ULN	**Ulaanbaatar**	**46.23**	**342**	*e*P	**P**	**03 46 58.0**	**0.0**
	3.1nm,0.5s						
SONM	**Songino Array**	**46.42**	**341**	P	**P**	**03 46 58.8**	**-0.6**
	2.3nm,0.5s,baz=156,slow=7.9,SNR=16						
MKAR	**Makanchi Array**	**56.83**	**325**	P	**P**	**03 48 16.6**	**-0.3**
	1.7nm,0.4s,baz=120,slow=8.0,SNR=18						
TKM2	**Tokmak 2**	**59.10**	**318**	*e*P	**P**	**03 48 33.6**	**+0.5**
	1.0nm,0.5s						
ZALV	**Zalesovo Beam**	**59.78**	**333**	P	**P**	**03 48 37.0**	**-0.2**
	1.8nm,0.3s,baz=117,slow=6.0,SNR=1.6						
KURK	**Kurchatov**	**60.99**	**327**	*e*P	**P**	**03 48 44.6**	**-0.9**
	8.4nm,0.7s						
BVAR	**Borovoye Array**	**66.57**	**327**	P	**P**	**03 49 21.9**	**-0.3**
	1.2nm,0.5s,baz=103,slow=6.4,SNR=4.1						
BRVK	**Borovoye**	**66.64**	**327**	*e*P	**P**	**03 49 23.0**	**+0.3**
	2.3nm,0.5s						
ABKAR	**Akbulak array**	**71.47**	**321**	*e*P	**P**	**03 49 52.4**	**-0.2**
	0.6nm,0.4s						
BRTR	**Keskin Array B**	**89.49**	**310**	P	**P**	**03 51 28.4**	**-1.0**
	0.8nm,0.7s,baz=135,slow=4.0,SNR=6.5						
ARCES	**ARCESS Array B**	**89.58**	**340**	P	**P**	**03 51 27.8**	**-1.2**
	1.0nm,0.6s,baz=82,slow=5.4,SNR=11						
FINES	**FINESS Array B**	**91.03**	**332**	P	**P**	**03 51 35.0**	**-0.8**
	0.8nm,0.5s,baz=57,slow=5.1,SNR=16						
TORD	**Torodi Ar. Bea**	**122.72**	**289**	PKP	**PKPdf**	**03 57 28.7**	**+0.4**
	0.4nm,0.6s,baz=72,slow=1.8,SNR=5.3						

SCB ***15*** *03:41:08.1±0.3, 15.°08S×75.°99W, h10km, Ml3.7/1, Error ellipse: s-maj=7.3km s-min=6.4km az=164.0*
IDC ***15*** *03:41:55.5±2.0, 15.°90S×73.°15W, h112km±19km, mb3.4/5, mb1 3.7/8, mb1mx3.5/31, mbtmp4.0/8, Error ellipse: s-maj=31.8km s-min=16.8km az=65.0*

ISC 15 03:41:52.4±0.7, **15.°91S**±0.°08×**73.°15W**±0.°10, **h82**km, **n22,** σ**2**§**12/23, mb3.5/4, 4C-1D, Southern Peru**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB12	**IPOC Station P**	**3.81**	**135**	*e*P	**Pn**	**03 42 50.6**	**+1.7**
PB12				*e*S	**Sn**	**03 43 31.3**	**-1.3**
BBOD	**La Paz, Gloria**	**4.43**	**100**⇑	*i*Pn	Pn	03 43 02.0	+4.2
BBOD				*e*Sn	Sn	03 44 25.0	+37
	14nm,0.5s						
PSGC	**Pisagua**	**4.67**	**142**⇑	*i*P	**Pn**	**03 43 02.2**	**+1.6**
PSGC				*e*S	**Sn**	**03 43 50.9**	**-2.6**
BBOB	**La Paz, Bander**	**4.83**	**93**	*e*Pn	**Pn**	**03 43 06.0**	**+2.8**
LPAZ	**La Paz**	**4.84**	**95**	P	**Pn**	**03 43 06.8**	**+3.4**
	3.9nm,0.3s,baz=272,slow=8.8,SNR=117						
BBOJ	**La Paz, Jacaqu**	**4.88**	**103**⇑	*i*Pn	Pn	03 43 08.4	+4.6
BBOE	**La Paz, Chanca**	**5.04**	**101**⇑	*i*Pn	Pn	03 43 10.8	+4.7
NNA	**Nana**	**5.29**	**317**	P	**Pn**	**03 43 12.4**	**+3.3**
	6.0nm,0.3s,baz=144,slow=11,SNR=11						
NNA				S	**Sn**	**03 44 06.1**	**-2.7**
	13nm,0.3s,baz=205,slow=14,SNR=5.8						
PB08	**IPOC Station P**	**5.67**	**138**	*e*P	**Pn**	**03 43 16.4**	**+1.9**
PB08				*e*S	**Sn**	**03 44 16.7**	**-1.8**
LVC	**Limon Verde**	**7.78**	**150**	P	**Pn**	**03 43 46.0**	**+2.8**
	113nm,0.3s,baz=335,slow=9.8,SNR=26						
LVC				S	**Sn**	**03 45 09.6**	**-0.4**
	325nm,0.3s,baz=126,slow=22,SNR=15						
PB10	**IPOC Station P**	**7.95**	**162**⇓	*i*P	**Pn**	**03 43 46.0**	**+0.7**
MOCB	**Mochara**	**8.89**	**128**	*e*Pn	**Pn**	**03 44 01.9**	**+3.4**
SIV	**San Ignacio**	**11.62**	**92**	P	**Pn**	**03 44 33.0**	**-2.4**
	0.6nm,0.3s,baz=289,slow=9.9,SNR=8.5						
SIV	**San Ignacio**	**11.62**	**92**	*e*P	**Pn**	**03 44 34.2**	**-1.2**
ROSC	**El Rosal**	**20.65**	**357**	P	Pn	03 46 27.6	-1.4
	9.3nm,0.6s,baz=150,slow=17,SNR=8.1						
PLCA	**Paso Flores**	**24.84**	**175**	P	**P**	**03 47 07.8**	**+0.6**
	0.8nm,0.8s,baz=80,slow=5.0,SNR=2.6						
TXAR	**Lajitas Array**	**53.77**	**327**	P	**P**	**03 51 06.4**	**-0.3**
	0.1nm,0.3s,baz=153,slow=8.1,SNR=3.5						
YKA	**Yellowknife Ar**	**84.63**	**342**	P	**P**	**03 54 15.4**	**-1.1**
	1.5nm,0.8s,baz=135,slow=5.1,SNR=23						
ESDC	**Sonseca Array**	**84.80**	**46**	P	**P**	**03 54 17.2**	**-0.7**
	0.4nm,0.6s,baz=252,slow=5.0,SNR=5.2						
WRA	**Warramunga Arr**	**135.28**	**218**	PKP	**PKPdf**	**04 01 03.5**	**0.0**
	0.6nm,0.8s,baz=151,slow=1.8,SNR=4.9						
MJAR	**Matsushiro Arr**	**145.40**	**312**	PKPbc	**PKPdf**	**04 01 20.0**	**-1.3**
	1.0nm,0.7s,baz=115,slow=1.8,SNR=4.7						
SONM	**Songino Array**	**148.16**	**1**	PKPbc	**PKPbc**	**04 01 28.3**	**-0.7**
	1.0nm,0.5s,baz=319,slow=0.7,SNR=7.6						

IDC 15 03:51:37.7±4.1, **20.°50S**×**168.°27E, h0**km, **mb3.8**/3, **mb1 4.1**/4, **mb1mx3.7**/35, **mbtmp3.8**/4, **ML3.2**/1, **MS3.3**/3, **Ms1 3.3**/3, **ms1mx2.8**/32, **Error ellipse: s-maj=112.2km s-min=31.1km az=126.0, Loyalty Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.31**	**227**	Pn	Pn	03 52 17.5	+0.4
	6.6nm,0.3s,baz=103,slow=8.8,SNR=119						
DZM				Sn	Sn	03 52 46.7	+0.4
	13nm,0.3s,baz=70,slow=21,SNR=6.6						
DZM				LR	LR	03 53 16.2	
	comp=Z,315nm,19.6s,baz=52,slow=43						
STKA	**Stephens Creek**	**26.41**	**239**	LR	LR	04 07 00.8	
	comp=Z,89nm,18.2s,baz=23,slow=35						
WRA	**Warramunga Arr**	**31.81**	**265**	P	P	03 58 03.9	-0.4
	2.0nm,1.3s,baz=94,slow=8.4,SNR=3.5						
ASAR	**Alice Springs**	**31.96**	**258**	P	P	03 58 05.4	-0.2
	1.4nm,0.8s,baz=87,slow=9.0,SNR=14						
ASAR				LR	LR	04 10 00.5	
	comp=Z,56nm,18.4s,baz=98,slow=34						
CMAR	**Chiang Mai Arr**	**78.20**	**295**	P	P	04 03 40.1	+0.6
	0.4nm,0.3s,baz=149,slow=3.2,SNR=5.2						
GERES	**GERESS Array B**	**145.15**	**330**	PKPbc	PKPbc	04 11 15.6	-1.2
	0.4nm,0.8s,baz=30,slow=1.6,SNR=4.4						

NIED ***15*** *03:53:00, 36.°50N×142.°40E, h11km, Mw3.8 Best double couple: M0:5.78000×10^14 NP1:*φ*=8.00000°,* δ*39.00000°,* λ*-82.00000°. NP2:*φ*=178.00000°,* δ*52.00000°,* λ*-96.00000°.*
IDC ***15*** *03:53:47.4±0.8, 36.°39N×142.°52E, h0km, mb3.7/12, mb1 3.9/15, mb1mx3.8/47, mbtmp3.7/15, ML3.8/3, MS2.7/3, Ms1 2.7/3, ms1mx2.4/46, Error ellipse: s-maj=21.7km s-min=17.5km az=112.0*
NEIC ***15*** *03:53:48.3±3.8, 36.°41N×142.°55E, h7km±22km, mb4.1/3, Error ellipse: s-maj=11.3km s-min=8.0km az=132.0*
JMA ***15*** *03:53:51.0±0.2, 36.°46N×142.°42E, h63km, M3.8*

ISC 15 03:53:48.6±2.9, **36.°42N**±0.°04×**142.°42E**±0.°07, **h7**km±17km, **n44,** σ**1**§**19/48, mb3.8**/15, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.45**	**241**	P	**Pn**	**03 54 15.9**	**+0.7**
CHOJ				*e*S	**Sg**	**03 54 34.4**	**-0.9**
ONAJ	**Iwakimizuishiy**	**1.47**	**298**	P	**Pn**	**03 54 15.2**	**-0.4**
ONAJ				*e*S	**Sn**	**03 54 33.9**	**-1.2**
JHO	**Hitachi**	**1.51**	**278**	P	**Pn**	**03 54 16.0**	**0.0**
JHO				S	**Sn**	**03 54 34.4**	**-1.4**
JFK	**Kawauchi**	**1.56**	**308**	P	**Pn**	**03 54 16.5**	**-0.3**
JFK				S	**Sn**	**03 54 35.4**	**-1.9**
JMM	**Marumori**	**1.95**	**318**	P	**Pn**	**03 54 21.8**	**-0.2**
JMM				*e*S	**Sn**	**03 54 44.5**	**-2.2**
JFT	**Otama**	**2.00**	**304**	P	**Pn**	**03 54 23.6**	**+0.8**
JFT				S	**Sn**	**03 54 47.8**	**-0.2**
BSO1	**Boso 1**	**2.12**	**214**	P	**Pn**	**03 54 25.0**	**+1.1**
BSO1				S	**Sn**	**03 54 51.4**	**+1.3**
JAG	**Ashikaga**	**2.40**	**271**	P	**Pn**	**03 54 28.7**	**+0.5**
JMK	**Ichinoseki**	**2.70**	**340**	P	**Pn**	**03 54 32.9**	**+0.5**
JMK				*e*S	**Sn**	**03 55 04.5**	**-0.9**
JRY	**Ryogami san**	**2.88**	**263**	P	**Pn**	**03 54 35.4**	**+0.6**
JRY				*e*S	**Sn**	**03 55 07.9**	**-1.8**
JOD2	**Odawara 2**	**2.94**	**248**	P	**Pn**	**03 54 36.6**	**+0.8**
JOD2				*e*S	**Sn**	**03 55 10.3**	**-1.0**
JYK	**Kaneyama**	**2.98**	**327**	P	**Pn**	**03 54 36.7**	**+0.4**
JYN	**Shimob**	**3.28**	**255**	P	**Pn**	**03 54 42.1**	**+1.7**
MJAR	**Matsushiro Arr**	**3.40**	**273**	Pn	**Pn**	**03 54 43.3**	**+1.3**
	7.7nm,0.3s,baz=94,slow=10.0,SNR=88						
MJAR				LR	LR	03 56 29.4	
	comp=Z,118nm,18.6s,baz=125,slow=47						
MAJO	**Matsushiro**	**3.40**	**273**	*e*Pn	**Pn**	**03 54 43.8**	**+1.8**
MAT	**Matsushiro**	**3.40**	**273**	P	**Pn**	**03 54 43.7**	**+1.7**
MAT				S	**Sn**	**03 55 22.9**	**+0.3**
JHJ	**Hachijo jima 2**	**3.94**	**214**	Pn	**Pn**	**03 54 49.2**	**-0.3**
	21nm,0.3s,baz=317,slow=23,SNR=15						
JHJ				Sn	**Sn**	**03 55 31.1**	**-4.9**
	98nm,0.3s,baz=287,slow=22,SNR=20						
ASAJ	**Asahikawa**	**7.69**	**1**	Pn	**Pn**	**03 55 40.2**	**-0.7**
	1.7nm,0.3s,baz=145,slow=0.9,SNR=10.0						
JCJ	**Chichijima**	**9.30**	**181**	LR	LR	04 00 24.9	
	comp=Z,15nm,19.8s,baz=350,slow=43						
JNU	**Nakatsue**	**10.05**	**254**	LR	LR	04 00 50.9	
	comp=Z,96nm,18.1s,baz=125,slow=42						
H11N2	**WAKE ISLAND Hy**	**27.14**	**121**	T	T	04 28 00.2	
	baz=313,slow=75,SNR=8.1						
H11N1	**WAKE ISLAND Hy**	**27.14**	**121**	T	T	04 28 10.0	
	baz=313,slow=75,SNR=6.6						
H11N3	**WAKE ISLAND Hy**	**27.15**	**121**	T	T	04 28 02.6	
	baz=313,slow=75,SNR=4.7						
H11S1	**WAKE ISLAND Hy**	**27.84**	**123**	T	T	04 28 50.6	
	baz=315,slow=76,SNR=7.5						
H11S3	**WAKE ISLAND Hy**	**27.84**	**123**	T	T	04 29 01.4	
	baz=315,slow=76,SNR=6.4						
H11S2	**WAKE ISLAND Hy**	**27.86**	**123**	T	T	04 28 58.3	
	baz=315,slow=76,SNR=5.2						
SONM	**Songino Array**	**28.80**	**305**	P	**P**	**03 59 48.3**	**+1.1**
	0.9nm,0.7s,baz=112,slow=10.0,SNR=5.3						
MKAR	**Makanchi Array**	**45.13**	**303**	P	**P**	**04 02 06.1**	**+0.5**
	0.3nm,0.4s,baz=89,slow=11,SNR=3.4						
KURK	**Kurchatov**	**46.95**	**309**	P	**P**	**04 02 20.1**	**+0.3**
KURBB	**Kurchatov Arra**	**47.02**	**309**	P	**P**	**04 02 20.1**	**-0.2**
	1.0nm,0.7s,baz=82,slow=7.7,SNR=8.9						
ILAR	**Eielson Array**	**49.58**	**32**	P	**P**	**04 02 39.6**	**-0.3**
	0.6nm,0.8s,baz=270,slow=6.3,SNR=6.9						
TKM2	**Tokmak 2**	**50.64**	**299**	*e*P	**P**	**04 02 48.3**	**-0.2**
	0.8nm,0.5s						
INK	**Inuvik**	**54.57**	**27**	P	**P**	**04 03 17.0**	**+0.1**
	0.4nm,0.5s,baz=292,slow=6.7,SNR=4.5						
WRA	**Warramunga Arr**	**56.57**	**189**	P	**P**	**04 03 31.4**	**-0.4**
	1.0nm,0.6s,baz=8.6,slow=7.3,SNR=5.2						
ARU	**Arti**	**57.36**	**319**	*e*P	**P**	**04 03 37.3**	**+0.2**
	1.9nm,0.7s						
ABKAR	**Akbulak array**	**58.96**	**311**	*e*P	**P**	**04 03 48.5**	**0.0**
ASAR	**Alice Springs**	**60.30**	**189**	P	**P**	**04 03 57.5**	**-0.4**
	0.4nm,0.6s,baz=5.8,slow=6.6,SNR=8.2						
YKA	**Yellowknife Ar**	**63.93**	**30**	P	**P**	**04 04 21.4**	**-0.5**
	0.5nm,0.7s,baz=303,slow=6.6,SNR=6.5						
FINES	**FINESS Array B**	**69.73**	**333**	P	**P**	**04 04 59.1**	**+0.3**
	1.4nm,0.9s,baz=80,slow=2.1,SNR=4.7						
SUMG	**Summit**	**71.30**	**0**	*e*P	**P**	**04 05 08.7**	**0.0**
	0.8nm,0.5s						
BRTR	**Keskin Array B**	**79.87**	**312**	P	**P**	**04 05 59.1**	**+1.0**
	0.6nm,0.9s,baz=160,slow=3.9,SNR=4.3						
GERES	**GERESS Array B**	**83.66**	**329**	P	**P**	**04 06 17.6**	**-0.3**
	0.1nm,0.3s,baz=0.0,slow=1.3,SNR=3.6						
TXAR	**Lajitas Array**	**89.85**	**53**	P	**P**	**04 06 48.8**	**+0.3**
	0.4nm,0.8s,baz=298,slow=3.3,SNR=6.6						
LPAZ	**La Paz**	**146.29**	**62**	PKPbc	**PKPdf**	**04 13 30.4**	**+0.4**
	0.8nm,0.5s,baz=243,slow=1.5,SNR=7.5						

NEIC ***15*** *04:01:24.1, 38.°90S×174.°96E, h227km, MG4.0(WEL), After WEL.*

WEL 15 04:01:25.2±0.4, **38.°92S**×**175.°03E, h219**km±3km, **ML4.0**/17, **15C-5D, Error ellipse: s-maj=3.1km s-min=2.2km az=90.0, North Island**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWVZ	**Taurewa**	**0.36**	**116**	PN	Pn	04 01 53.5	-0.7
HIZ	**Hauiti**	**0.42**	**342**	⇑PN	Pn	04 01 53.3	-1.0
HIZ	**Hauiti**	**0.42**	**342**	Pn	Pn	04 01 53.1	-1.2
PKVZ	**Pokaka**	**0.45**	**146**	PN	Pn	04 01 53.9	-0.5
PKVZ	**Pokaka**	**0.45**	**146**	Pn	Pn	04 01 54.1	-0.3
WTVZ	**West Tongariro**	**0.48**	**114**	⇓PN	Pn	04 01 54.4	-0.2
WTVZ				SN	S	04 02 16.6	-1.0
WTVZ	**West Tongariro**	**0.48**	**114**	Pn	Pn	04 01 54.4	-0.2
KRVZ	**Karewarewa**	**0.51**	**110**	⇓PN	Pn	04 01 54.5	-0.1
KRVZ	**Karewarewa**	**0.51**	**110**	Pn	Pn	04 01 54.5	-0.1
FWVZ	**Far West T-bar**	**0.53**	**130**	⇑PN	Pn	04 01 54.7	-0.1
FWVZ	**Far West T-bar**	**0.53**	**130**	Pn	Pn	04 01 54.8	-0.1
TRVZ	**Turoa**	**0.56**	**133**	PN	Pn	04 01 54.8	-0.2
TRVZ	**Turoa**	**0.56**	**133**	Pn	Pn	04 01 54.8	-0.2
WNVZ	**Wahianoa**	**0.60**	**133**	PN	Pn	04 01 54.9	-0.1
WNVZ	**Wahianoa**	**0.60**	**133**	Pn	Pn	04 01 54.9	-0.1
MOVZ	**Moawhango**	**0.75**	**131**	PN	Pn	04 01 55.1	-0.4
MOVZ	**Moawhango**	**0.75**	**131**	Pn	Pn	04 01 55.1	-0.4
WAZ	**Wanganui**	**0.84**	**182**	⇑PN	Pn	04 01 56.0	0.0
WAZ				SN	S	04 02 20.1	0.0
WAZ	**Wanganui**	**0.84**	**182**	Pn	Pn	04 01 56.0	0.0
WAZ				Sn	S	04 02 20.1	0.0
BHHZ	**Black Hill Sta**	**0.99**	**126**	⇑PN	Pn	04 01 56.5	-0.3
BHHZ	**Black Hill Sta**	**0.99**	**126**	Pn	Pn	04 01 56.5	-0.3
MRHZ	**Matea Rd**	**1.09**	**86**	⇑PN	Pn	04 01 56.7	-0.9
BKZ	**Black Stump Fm**	**1.17**	**103**	⇑PN	Pn	04 01 57.6	-0.5
BKZ				SN	S	04 02 21.9	-1.8
BKZ				AML	AML	04 02 23.2	
BKZ	**Black Stump Fm**	**1.17**	**103**	Pn	Pn	04 01 57.6	-0.5
BKZ				Sn	S	04 02 22.0	-1.6
KWHZ	**Kaweka Forest**	**1.20**	**115**	PN	Pn	04 01 58.4	+0.1
KWHZ				SN	S	04 02 23.7	-0.3
KRHZ	**Kereru**	**1.27**	**125**	⇓PN	Pn	04 01 58.8	+0.1
OHWZ	**Ohakea**	**1.31**	**170**	PN	Pn	04 01 59.4	+0.4
PNHZ	**Pukenui**	**1.35**	**138**	PN	Pn	04 01 59.3	-0.1
PNHZ	**Pukenui**	**1.35**	**138**	Pn	Pn	04 01 59.3	-0.1
TSZ	**Takapari Road**	**1.35**	**148**	PN	Pn	04 01 59.4	0.0
TSZ				SN	S	04 02 25.2	-0.8
TSZ				AML	AML	04 02 27.4	
TSZ	**Takapari Road**	**1.35**	**148**	Pn	Pn	04 01 59.4	0.0
NMHZ	**Naumai**	**1.40**	**98**	⇑PN	Pn	04 02 00.2	+0.4
NMHZ	**Naumai**	**1.40**	**98**	Pn	Pn	04 02 00.2	+0.4
MCHZ	**McNeill Hill**	**1.40**	**113**	PN	Pn	04 02 00.3	+0.6
MCHZ	**McNeill Hill**	**1.40**	**113**	Pn	Pn	04 02 00.3	+0.6
ARHZ	**Aropaoanui**	**1.57**	**103**	PN	Pn	04 02 01.3	+0.2
ARHZ	**Aropaoanui**	**1.57**	**103**	Pn	Pn	04 02 01.3	+0.2
POWZ	**Post Office Ro**	**1.58**	**159**	PN	Pn	04 02 00.8	-0.4
POWZ	**Post Office Ro**	**1.58**	**159**	Pn	Pn	04 02 00.8	-0.4
WPHZ	**Waipukurau**	**1.58**	**137**	⇑PN	Pn	04 02 01.3	+0.1
WPHZ				SN	S	04 02 29.0	-0.4
WPHZ	**Waipukurau**	**1.58**	**137**	Pn	Pn	04 02 01.3	+0.1
DVHZ	**Dannevirke**	**1.64**	**148**	⇑PN	Pn	04 02 01.4	-0.3
DVHZ				SN	S	04 02 28.

MTW				AML	AML	04 02 40.8	
MTW				AML	AML	04 02 40.8	
MTW	**Mount Morrison**	**2.27 171**		Pn	Pn	04 02 06.6	-1.2
TCW	**Tory Channel**	**2.36 194**		PN	Pn	04 02 07.6	-1.1
TCW				SN	S	04 02 38.4	-4.3
TCW				AML	AML	04 02 40.4	
TCW	**Tory Channel**	**2.36 194**		Pn	Pn	04 02 07.7	-1.1
WEL	**Wellington**	**2.37 185**		AML	AML	04 02 42.2	
WEL				AML	AML	04 02 43.2	
HAZ	**Te Kaha**	**2.46 63**		PN	Pn	04 02 07.3	-2.5
HAZ				SN	S	04 02 39.2	-5.3
PAWZ	**Paruwai Farm**	**2.48 173**		SN	S	04 02 42.5	-2.5
PAWZ				AML	AML	04 02 43.8	
BHW	**Baring Head**	**2.49 183**		PN	Pn	04 02 08.7	-1.4
BHW				SN	S	04 02 41.9	-3.3
BHW				AML	AML	04 02 44.1	
BHW	**Baring Head**	**2.49 183**		Pn	Pn	04 02 08.8	-1.3
MSWZ	**Moikau Station**	**2.50 176**		PN	Pn	04 02 08.8	-1.4
MSWZ				AML	AML	04 02 44.4	
MSWZ				AML	AML	04 02 46.4	
MSWZ	**Moikau Station**	**2.50 176**		Pn	Pn	04 02 08.8	-1.4
TRWZ	**Traveller**	**2.53 169**		SN	S	04 02 43.8	-2.2
TRWZ				AML	AML	04 02 45.8	
PKGZ	**Pakihiroa**	**2.61 68**		PN	Pn	04 02 09.8	-1.7
NNZ	**Nelson**	**2.62 208**	⇓	PN	Pn	04 02 09.5	-2.0
NNZ				SN	S	04 02 44.4	-3.2
NNZ	**Nelson**	**2.62 208**		Pn	Pn	04 02 09.5	-2.0
TUWZ	**Tuamarina**	**2.64 198**		PN	Pn	04 02 10.4	-1.3
TUWZ				SN	S	04 02 44.8	-3.3
TUWZ				AML	AML	04 02 46.8	
TUWZ	**Tuamarina**	**2.64 198**		Pn	Pn	04 02 10.4	-1.3
PLWZ	**Palliser**	**2.66 176**		PN	Pn	04 02 10.3	-1.6
PLWZ	**Palliser**	**2.66 176**		Pn	Pn	04 02 10.3	-1.6
PUZ	**Puketiti**	**2.67 73**		SN	S	04 02 44.3	-4.4
PUZ				AML	AML	04 02 49.2	
QRZ	**Quartz Range**	**2.71 224**		PN	Pn	04 02 09.7	-2.8
QRZ	**Quartz Range**	**2.71 224**		Pn	Pn	04 02 09.7	-2.8
BSWZ	**Blackbirch Sta**	**2.93 197**		PN	Pn	04 02 13.6	-1.4
BSWZ				AML	AML	04 02 52.8	
BSWZ				AML	AML	04 02 55.6	
BSWZ	**Blackbirch Sta**	**2.93 197**		Pn	Pn	04 02 13.6	-1.4
THZ	**Tophouse**	**3.27 209**	⇑	PN	Pn	04 02 16.3	-2.7
THZ				SN	S	04 02 57.2	-3.8
THZ	**Tophouse**	**3.27 209**		Pn	Pn	04 02 16.3	-2.7
KHZ	**Kahutara**	**3.67 197**		PN	Pn	04 02 21.3	-2.3
KHZ				SN	S	04 03 05.2	-4.3
KHZ	**Kahutara**	**3.67 197**		Pn	Pn	04 02 21.3	-2.3
DSZ	**Denniston Nort**	**3.75 220**		PN	Pn	04 02 21.1	-3.5
DSZ				SN	S	04 03 05.4	-5.8
LTZ	**Lake Taylor**	**4.39 208**		PN	Pn	04 02 29.1	-3.2
LTZ	**Lake Taylor**	**4.39 208**		Pn	Pn	04 02 29.1	-3.2
INZ	**Inchbonnie**	**4.67 214**		PN	Pn	04 02 32.2	-3.7
OXZ	**Oxford**	**4.95 206**		PN	Pn	04 02 35.3	-4.0
MQZ	**McQueen's Vall**	**5.11 200**		PN	Pn	04 02 36.9	-4.3
FOZ	**Fox Glacier**	**6.06 219**	*e*	PN	Pn	04 02 48.8	-4.5
LBZ	**Lake Benmore**	**6.56 212**	*e*	PN	Pn	04 02 54.6	-5.1
ODZ	**Otahua Downs**	**6.94 207**		PN	Pn	04 03 00.9	-3.7
JCZ	**Jackson Bay**	**6.96 220**	*e*	PN	Pn	04 02 59.6	-5.4

ISCJB ***15*** *04:08:47.2±0.7, 54.°94N±0.°08×160.°30W±0.°08, h62km±5km, mb3.9/11, Error ellipse: s-maj=14.9km s-min=3.8km az=154.2*
IDC ***15*** *04:08:47.8±6.0, 55.°17N×160.°47W, h42km±43km, mb3.7/11, mb1 3.8/13, mb1mx3.5/66, mbtmp3.9/13, ML3.7/2, MS3.2/3, Ms1 3.3/3, ms1mx2.6/52, Error ellipse: s-maj=63.6km s-min=22.2km az=157.0*
NEIC ***15*** *04:08:48.5, 54.°93N×160.°40W, h12km, ML3.6(AEIC), After AEIC.*
NEIC Felt at Sand Point.

ISC 15 04:08:47.1±1.6, 54.°9N±0.°1×160.°30W±0.°07, h47km±11km, n56, σ1§42/62, mb4.0/11, Alaska Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SDPT	**Sand Point**	**0.45**	**347**	P	**Pn**	**04 08 57.0**	**-0.6**
SDPT				S	**Sn**	**04 09 04.7**	**-0.3**
DOL	**Dolgoi Island**	**0.93**	**285**	P	**Pn**	**04 09 03.5**	**-0.3**
PVV	**Pavlof Volcano**	**0.97**	**299**	P	**Pn**	**04 09 04.5**	**+0.1**
PVV				S	**Sn**	**04 09 17.6**	**+0.5**
PS4A	**Pavlof South-4**	**0.99**	**297**	P	**Pn**	**04 09 04.8**	**+0.2**
PN6	**Pavlof North-6**	**1.08**	**301**	P	**Pn**	**04 09 07.2**	**+1.3**
PN6				S	**Sn**	**04 09 21.2**	**+1.5**
DTNA	**Dutton South F**	**1.15**	**283**	P	**Pn**	**04 09 06.9**	**+0.2**
DTNA				S	**Sn**	**04 09 21.8**	**+0.4**
DT1	**Dutton Round H**	**1.16**	**281**	P	**Pn**	**04 09 06.7**	**-0.2**
VNSW	**Veniaminof 7**	**1.24**	**20**	P	**Pn**	**04 09 09.1**	**+1.1**
VNSW				S	**Sn**	**04 09 26.1**	**+2.5**
VNWF	**Veniaminof 8**	**1.31**	**18**	P	**Pn**	**04 09 10.6**	**+1.5**
VNSS	**Veniaminof 8**	**1.40**	**20**	P	**Pn**	**04 09 11.9**	**+1.5**
BALA	**Baldy Mountain**	**1.46**	**282**	P	**Pn**	**04 09 12.8**	**+1.9**
VNHG	**Veniaminof 1**	**1.46**	**26**	P	**Pn**	**04 09 12.8**	**+1.6**
VNNF	**Veniaminof 3**	**1.48**	**22**	P	**Pn**	**04 09 13.8**	**+2.4**
CHGN	**Chignik**	**1.76**	**37**	P	**Pn**	**04 09 16.3**	**+1.3**
FALS	**False Pass**	**1.80**	**270**	P	**Pn**	**04 09 16.6**	**+1.0**
FALS				S	**Sn**	**04 09 38.6**	**+1.3**
SSLN	**Shishaldin Nor**	**2.14**	**269**	P	**Pn**	**04 09 22.1**	**+1.8**
SSLS	**Shishaldin Sou**	**2.15**	**266**	P	**Pn**	**04 09 22.1**	**+1.6**
SSLS				S	**Sn**	**04 09 48.4**	**+2.4**
ANPB	**Aniakchak Plen**	**2.21**	**30**	P	**Pn**	**04 09 22.5**	**+1.2**
SSLW	**Shishaldin Wes**	**2.21**	**268**	P	**Pn**	**04 09 22.8**	**+1.4**
AZAC	**Aniakchak**	**2.31**	**30**	P	**Pn**	**04 09 24.0**	**+1.4**
WESN	**West Dahl Nort**	**2.51**	**264**	P	**Pn**	**04 09 27.2**	**+1.8**
WESE	**West Dahl East**	**2.53**	**262**	P	**Pn**	**04 09 27.4**	**+1.7**
WEBT	**Westdahl Beart**	**2.60**	**265**	P	**Pn**	**04 09 28.7**	**+2.0**
PLK4	**Peulik 4**	**3.50**	**37**	P	**Pn**	**04 09 41.4**	**+2.4**
PLK1	**Peulik 1**	**3.55**	**34**	P	**Pn**	**04 09 41.3**	**+1.6**
UNV	**Unalaska Valle**	**3.78**	**256**	P	**Pn**	**04 09 43.5**	**+0.7**
MTBL	**Makushin Table**	**3.84**	**258**	P	**Pn**	**04 09 45.0**	**+1.2**
CNTC	**Contact Creek**	**4.15**	**34**	P	**Pn**	**04 09 49.8**	**+1.8**
KABR	**Katmai Barrier**	**4.37**	**40**	P	**Pn**	**04 09 52.3**	**+1.3**
KVTA	**Katmai Vly 10**	**4.44**	**36**	P	**Pn**	**04 09 53.5**	**+1.6**
OHAK	**Old Harbor**	**4.56**	**57**	P	**Pn**	**04 09 53.3**	**-0.2**
KAHC	**Katmai Hardscr**	**4.74**	**36**	P	**Pn**	**04 09 58.2**	**+2.1**
KDAK	**Kodiak Island**	**5.17**	**53**	P	Pn	04 10 18.1	+16
	2.9nm,0.3s,baz=241,slow=8.8,SNR=16						
KDAK				S	Sn	04 11 14.3	+14
	1.0nm,0.3s,baz=329,slow=19,SNR=3.5						
KDAK	**Kodiak Island**	**5.17**	**53**	P	**Pn**	**04 10 02.9**	**+1.2**
FOPK	**Fourpeaked Vol**	**5.38**	**41**	P	**Pn**	**04 10 06.2**	**+1.5**
RDWB	**Redoubt West**	**6.87**	**33**	P	**Pn**	**04 10 27.4**	**+2.1**
SEW	**Seward**	**7.82**	**44**	P	**Pn**	**04 10 39.3**	**+1.2**
TT01	**Tatalina**	**8.32**	**14**	P	**Pn**	**04 10 45.6**	**+0.6**
TTA	**Tatalina**	**8.34**	**14**	P	**Pn**	**04 10 46.0**	**+0.7**
PPLA	**Purkeypile**	**9.03**	**24**	*e*Pn	**Pn**	**04 10 57.9**	**+3.0**
	5.8nm,0.7s						
ILAR	**Eielson Array**	**11.94**	**29**	P	**Pn**	**04 11 33.0**	**-1.4**
	0.1nm,0.3s,baz=219,slow=14,SNR=4.6						
ILAR				S	**Sn**	**04 13 43.0**	**-2.9**
	0.1nm,0.3s,baz=206,slow=24,SNR=3.0						
ILAR				LR	LR	04 16 29.0	
	comp=Z,44nm,19.8s,baz=275,slow=39						
DAWY	**Dawson**	**13.96**	**41**	*e*Pn	**P**	**04 12 08.2**	**-0.7**
	2.1nm,0.4s						
INK	**Inuvik**	**18.27**	**32**	P	**P**	**04 12 55.4**	**-1.1**
	0.3nm,0.3s,baz=222,slow=12,SNR=12						
YKA	**Yellowknife Ar**	**24.44**	**53**	P	**P**	**04 14 01.2**	**+0.1**
	0.2nm,0.4s,baz=271,slow=8.7,SNR=7.4						
PETK	**Petropavlovsk-**	**24.48**	**283**	P	**P**	**04 14 01.1**	**-0.4**
	3.1nm,0.4s,baz=80,slow=14,SNR=22						
YBH	**Yreka Blue Hor**	**27.88**	**103**	LR	LR	04 23 25.4	
	comp=Z,64nm,18.2s,baz=279,slow=31						
SONM	**Songino Array**	**54.49**	**304**	P	**P**	**04 18 09.5**	**-0.3**
	0.7nm,0.6s,baz=46,slow=6.4,SNR=4.9						
SONM				LR	LR	04 44 15.4	
	comp=Z,51nm,19.0s,baz=108,slow=39						
ARCES	**ARCESS Array B**	**55.79**	**358**	P	**P**	**04 18 17.7**	**-1.0**
	1.6nm,0.8s,baz=6.0,slow=7.8,SNR=10						
FINES	**FINESS Array B**	**63.88**	**357**	P	**P**	**04 19 13.7**	**-0.6**
	1.2nm,0.4s,baz=20,slow=7.6,SNR=36						
NB2	**NORSAR Subarra**	**64.20**	**5**	P	**P**	**04 19 16.0**	**-0.5**
	comp=Z,0.6nm,0.7s,baz=356,slow=6.5						
NOA	**NORSAR Array B**	**64.20**	**5**	P	**P**	**04 19 15.9**	**-0.6**
	comp=Z,0.8nm,0.7s,baz=356,slow=6.5,SNR=4.6						
AKASG	**Malin Array Be**	**74.46**	**354**	P	**P**	**04 20 19.4**	**-0.5**
	comp=Z,0.6nm,0.3s,baz=7.0,slow=6.0,SNR=4.5						
KBZ	**Khabaz**	**79.77**	**343**	P	**P**	**04 20 49.8**	**-0.1**
	comp=Z,1.5nm,0.8s,baz=18,slow=4.0,SNR=3.8						
CMAR	**Chiang Mai Arr**	**81.11**	**289**	P	**P**	**04 20 57.6**	**+0.2**
	comp=Z,0.9nm,0.3s,baz=14,slow=5.9,SNR=11						
ESDC	**Sonseca Array**	**83.63**	**18**	P	**P**	**04 21 11.1**	**+0.7**
	comp=Z,0.5nm,0.6s,baz=342,slow=4.9,SNR=4.8						
BRTR	**Keskin Array B**	**84.98**	**349**	P	**P**	**04 21 17.4**	**+0.1**
	comp=Z,0.3nm,0.4s,baz=29,slow=2.8,SNR=4.7						

NIED ***15*** *04:12:00, 38.°10N×141.°70E, h56km, Mw3.7 Best double couple: M0:4.54000×10^14 NP1:φ0=48.00000°, δ41.00000°, λ109.00000°. NP2:φ0=203.00000°, δ51.00000°, λ74.00000°.*
ISCJB ***15*** *04:12:15.7±0.8, 38.°15N±0.°05×141.°78E±0.°09, h63km±6km, mb3.7/12, Error ellipse: s-maj=12.8km s-min=5.8km az=25.9*
JMA ***15*** *04:12:16.8±0.1, 38.°15N×141.°73E, h55km±1km, M3.9*
JMA Felt II J1.
IDC ***15*** *04:12:20.6±3.1, 38.°13N×141.°64E, h92km±28km, mb3.4/12, mb1 3.6/14, mb1mx3.4/50, mbtmp3.7/14, MS2.5/2, Ms1 2.5/2, ms1mx2.1/30, Error ellipse: s-maj=23.7km s-min=17.0km az=83.0*

ISC 15 04:12:16.2±1.4, 38.°14N±0.°06×141.°82E±0.°10, h50km±12km, n32, σ1§02/33, mb3.7/12, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.49**	**310**	P	**Pn**	**04 12 27.6**	**+0.3**
JIO				S	**Sn**	**04 12 35.2**	**-0.1**
JMM	**Marumori**	**0.86**	**252**	P	**Pn**	**04 12 31.7**	**-0.3**
JMM				S	**Sn**	**04 12 42.5**	**-1.1**
JMK	**Ichinoseki**	**0.94**	**330**	P	**Pn**	**04 12 33.5**	**+0.4**
JMK				S	**Sn**	**04 12 45.5**	**0.0**
JOU	**Okura**	**0.94**	**284**	P	**Pn**	**04 12 33.1**	**0.0**
JOU				S	**Sn**	**04 12 45.0**	**-0.6**
OFUJ	**Ofunato**	**0.95**	**353**	P	**Pn**	**04 12 33.6**	**+0.4**
OFUJ				S	**Sn**	**04 12 45.9**	**+0.2**
JFK	**Kawauchi**	**1.08**	**225**	P	**Pn**	**04 12 35.1**	**+0.1**
JFK				S	**Sn**	**04 12 48.6**	**-0.3**
JFT	**Otama**	**1.33**	**243**	P	**Pn**	**04 12 38.7**	**+0.3**
JFT				S	**Sn**	**04 12 54.9**	**-0.1**
JYS	**Shiratake**	**1.39**	**274**	P	**Pn**	**04 12 39.3**	**+0.1**
JYS				S	**Sn**	**04 12 56.2**	**-0.2**
MJAR	**Matsushiro Arr**	**3.29**	**242**	P	**Pn**	**04 13 08.0**	**+2.8**
	2.7nm,0.3s,baz=61,slow=11,SNR=12						
MAT	**Matsushiro**	**3.29**	**242**	P	**Pn**	**04 13 07.0**	**+1.7**
MAT				S	**Sn**	**04 13 44.8**	**+1.6**
USRK	**Ussuriysk Ar.**	**9.57**	**312**	P	**Pn**	**04 14 34.1**	**+2.9**
	0.2nm,0.3s,baz=113,slow=13,SNR=5.2						
KLR	**Kul'dur**	**13.25**	**330**	LR	LR	04 20 27.6	
	comp=Z,26nm,18.8s,baz=171,slow=37						
GUMO	**Guam**	**24.60**	**173**	LR	LR	04 31 28.3	
	comp=Z,7.6nm,19.1s,baz=115,slow=47						
SONM	**Songino Array**	**27.46**	**302**	P	**P**	**04 17 57.2**	**-0.2**
	0.2nm,0.3s,baz=90,slow=7.2,SNR=2.5						
H11N2	**WAKE ISLAND Hy**	**28.45**	**123**	T	T	04 48 22.7	
	baz=316,slow=76,SNR=31						
H11N1	**WAKE ISLAND Hy**	**28.46**	**123**	T	T	04 48 27.9	
	baz=316,slow=76,SNR=29						
H11N3	**WAKE ISLAND Hy**	**28.47**	**123**	T	T	04 48 28.6	
	baz=316,slow=76,SNR=20						
H11S1	**WAKE ISLAND Hy**	**29.21**	**125**	T	T	04 49 28.5	
	baz=318,slow=76,SNR=42						
H11S3	**WAKE ISLAND Hy**	**29.21**	**125**	T	T	04 49 28.7	
	baz=318,slow=76,SNR=36						
H11S2	**WAKE ISLAND Hy**	**29.22**	**125**	T	T	04 49 30.5	
	baz=318,slow=76,SNR=43						
ZALV	**Zalesovo Beam**	**41.42**	**311**	P	**P**	**04 19 56.0**	**-1.4**
	1.0nm,0.3s,baz=86,slow=10,SNR=3.1						
MKAR	**Makanchi Array**	**43.82**	**301**	P	**P**	**04 20 17.0**	**-0.1**
	0.3nm,0.3s,baz=88,slow=10,SNR=2.7						
ILAR	**Eielson Array**	**48.39**	**33**	P	**P**	**04 20 53.1**	**+0.4**
	0.3nm,0.7s,baz=263,slow=6.0,SNR=4.2						
INK	**Inuvik**	**53.26**	**28**	P	**P**	**04 21 29.9**	**+0.7**
	0.7nm,0.8s,baz=291,slow=3.0,SNR=4.1						
WRA	**Warramunga Arr**	**58.20**	**188**	P	**P**	**04 22 04.5**	**-0.6**
	0.9nm,0.5s,baz=5.9,slow=7.3,SNR=6.5						
ASAR	**Alice Springs**	**61.93**	**188**	P	**P**	**04 22 30.2**	**-0.4**
	0.4nm,0.6s,baz=13,slow=8.7,SNR=6.0						
ARCES	**ARCESS Array B**	**63.08**	**339**	P	**P**	**04 22 37.1**	**-0.7**
	1.5nm,0.8s,baz=57,slow=8.8,SNR=5.4						
FINES	**FINESS Array B**	**67.99**	**332**	P	**P**	**04 23 08.4**	**-1.2**
	0.9nm,0.6s,baz=46,slow=8.2,SNR=4.6						
NOA	**NORSAR Array B**	**73.29**	**337**	P	**P**	**04 23 41.3**	**-0.6**
	0.8nm,0.8s,baz=38,slow=5.6,SNR=3.1						
PDAR	**Pinedale Array**	**76.66**	**46**	P	**P**	**04 24 02.4**	**+0.5**
	0.4nm,0.6s,baz=343,slow=1.9,SNR=4.6						
TXAR	**Lajitas Array**	**89.19**	**53**	P	**P**	**04 25 07.0**	**+0.2**
	0.3nm,0.7s,baz=303,slow=2.3,SNR=3.8						
LPAZ	**La Paz**	**145.85**	**59**	PKPbc	**PKPdf**	**04 31 50.2**	**-0.2**
	0.6nm,0.6s,baz=55,slow=2.2,SNR=4.7						

ISCJB ***15*** *04:16:31.3±0.6, 51.°04N±0.°10×179.°02E±0.°06, h35km, mb4.0/34, MS3.2/2, Error ellipse: s-maj=14.0km s-min=4.6km az=171.3*
NEIC ***15*** *04:16:32.8, 50.°86N×179.°24E, h25km, mb4.1/18, ML3.9(AEIC), After AEIC.*
IDC ***15*** *04:16:38.6±4.7, 51.°28N×179.°32E, h75km±42km, mb3.7/18, mb1 3.8/19, mb1mx3.6/52, mbtmp4.0/19, ML2.8/1, MS3.0/4, Ms1 3.0/4, ms1mx2.6/54, Error ellipse: s-maj=28.0km s-min=12.7km az=172.0*

ISC 15 04:16:33.5±0.8, 51.°0N±0.°1×179.°23E±0.°04, h35km, n67, σ1§46/68, mb4.0/34, Rat Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GALAA	**Gareloi Lava P**	**1.48**	**57**	P	**Pn**	**04 16 58.0**	**+0.4**
GALAA				S	**Sn**	**04 17 18.0**	**+2.4**
GAEA	**Gareloi East**	**1.50**	**57**	P	**Pn**	**04 16 58.4**	**+0.5**
TANO	**Tanaga North**	**1.91**	**60**	P	**Pn**	**04 17 04.0**	**+0.6**
TANO				S	**Sn**	**04 17 28.9**	**+2.7**
TASE	**Tanaga Southea**	**1.92**	**62**	P	**Pn**	**04 17 04.4**	**+0.8**
TAPA	**Tanaga Point A**	**2.03**	**65**	P	**Pn**	**04 17 05.7**	**+0.5**
KICM	**Kanaga Island**	**2.43**	**66**	P	**Pn**	**04 17 11.2**	**+0.7**
KIKV	**Kanaga Island**	**2.43**	**67**	P	**Pn**	**04 17 11.4**	**+0.8**
KIKV				S	**Sn**	**04 17 43.0**	**+4.0**
ETKA	**Kagalaska Isla**	**2.87**	**70**	P	**Pn**	**04 17 17.3**	**+0.6**
GSTD	**Great Sitkin T**	**3.08**	**68**	P	**Pn**	**04 17 20.3**	**+0.6**
GSTD				S	**Sn**	**04 17 58.8**	**+3.4**
GSMY	**Great Sitkin M**	**3.13**	**68**	P	**Pn**	**04 17 20.8**	**+0.5**
SMY	**Shemya**	**3.63**	**301**	P	**Pn**	**04 17 28.7**	**+1.6**
SMY				S	**Sn**	**04 18 11.8**	**+3.1**
KOWE	**Korovin West**	**4.29**	**69**	P	**Pn**	**04 17 36.8**	**+0.6**
KOKL	**Mount Kliuchef**	**4.31**	**69**	P	**Pn**	**04 17 37.5**	**+1.0**
KOFP	**Korovin Flat P**	**4.36**	**70**	P	**Pn**	**04 17 38.0**	**+0.9**
NIKH	**Nikolski High**	**7.63**	**70**	P	**Pn**	**04 18 22.8**	**+0.8**
OKTU	**Okmok Mt. Tuli**	**8.19**	**68**	P	**Pn**	**04 18 30.9**	**+1.2**
UNV	**Unalaska Valle**	**9.18**	**66**	*e*Pn	Pn	04 18 49.5	+6.3
PETK	**Petropavlovsk-**	**13.41**	**288**	P	**Pn**	**04 19 45.1**	**+4.0**
	0.2nm,0.3s,baz=66,slow=18,SNR=4.1						
PETK				LR	LR	04 24 36.0	
	comp=Z,38nm,21.1s,baz=93,slow=36						
KDAK	**Kodiak Island**	**17.68**	**56**	P	P	04 20 48.2	+11
	1.4nm,0.3s,baz=262,slow=7.1,SNR=7.3						
KDAK	**Kodiak Island**	**17.68**	**56**	*e*Pn	**Pn**	**04 20 35.1**	**-1.5**
MA2	**Magadan**	**18.22**	**309**	LR	LR	04 27 28.4	
	comp=Z,42nm,19.0s,baz=122,slow=36						
BILL	**Bilibino**	**18.25**	**344**	*e*P	**P**	**04 20 42.2**	**-1.4**
	2.6nm,0.6s						
RSO	**Redoubt South**	**18.27**	**48**	*e*P	**Pn**	**04 20 45.3**	**+1.1**
CAST	**Castle Rocks**	**19.70**	**40**	*e*P	**P**	**04 20 59.6**	**+0.2**
	4.8nm,0.8s						
SEW	**Seward**	**19.76**	**50**	*e*P	**P**	**04 21 00.4**	**+0.4**
KTH	**Kantishna Hill**	**20.23**	**40**	*e*P	**P**	**04 21 05.5**	**+0.3**
	12nm,0.9s						
BPAW	**Bear Paw Mtn.**	**20.43**	**39**	*e*P	**P**	**04 21 06.9**	**-0.5**
	3.4nm,0.8s						
MLY	**Manley**	**20.95**	**36**	*e*P	**P**	**04 21 12.8**	**-0.2**
	4.9nm,1.0s						
RND	**Reindeer**	**21.02**	**42**	*e*P	**P**	**04 21 14.3**	**+0.5**
	8.2nm,1.2s						
MCK	**McKinley**	**21.11**	**41**	*e*P	**P**	**04 21 16.0**	**+1.3**
	5.7nm,0.9s						
SCM	**Sheep Creek Mo**	**21.20**	**46**	*e*P	**P**	**04 21 14.2**	**-1.4**
	40nm,1.8s						
KLU	**Klutina**	**21.76**	**48**	*e*P	**P**	**04 21 23.1**	**+1.4**
	7.4nm,1.2s						
COLA	**College**	**21.99**	**38**	*e*P	**P**	**04 21 23.9**	**-0.2**
	3.3nm,0.8s						
ILAR	**Eielson Array**	**22.33**	**39**	P	**P**	**04 21 25.4**	**-2.4**
	0.8nm,0.5s,baz=235,slow=8.7,SNR=12						
PAX	**Paxson**	**22.34**	**44**	*e*P	**P**	**04 21 27.7**	**-0.2**
EGAK	**Eagle**	**24.66**	**41**	*e*P	**P**	**04 21 50.2**	**-0.3**
	5.7nm,0.9s						
DAWY	**Dawson**	**25.25**	**43**	*e*P	**P**	**04 21 54.5**	**-1.3**
	13nm,1.8s						
ASAJ	**Asahikawa**	**25.46**	**269**	P	**P**	**04 21 59.9**	**+2.0**
	8.1nm,0.8s,baz=59,slow=6.9,SNR=5.6						
INK	**Inuvik**	**28.50**	**35**	P	**P**	**04 22 24.1**	**-0.9**
	1.7nm,0.8s,baz=269,slow=9.2,SNR=3.9						
INK	**Inuvik**	**28.50**	**35**	*e*P	**P**	**04 22 23.4**	**-1.5**
	1.3nm,0.7s						
YAK	**Yakutsk**	**28.75**	**312**	LR	LR	04 34 01.3	
	comp=Z,33nm,18.4s,baz=174,slow=36						
KLR	**Kul'dur**	**30.09**	**286**	P	**P**	**04 22 40.4**	**+1.1**
	6.8nm,0.6s,baz=67,slow=7.4,SNR=27						
YKA	**Yellowknife Ar**	**36.40**	**46**	P	**P**	**04 23 33.1**	**-0.9**
	1.2nm,0.6s,baz=280,slow=7.9,SNR=19						
HLID	**Hailey**	**44.24**	**73**	*e*P	**P**	**04 24 39.7**	**+0.4**
	1.2nm,0.8s						
BOZ	**Bozeman (W)**	**44.76**	**69**	*e*P	**P**	**04 24 43.1**	**-0.3**
	1.7nm,0.7s						
NVAR	**Mina Array Bea**	**44.84**	**81**	P	**P**	**04 24 45.8**	**+1.6**
	0.6nm,0.8s,baz=302,slow=8.4,SNR=3.5						
ELK	**Elko**	**45.35**	**76**	*e*P	**P**	**04 24 47.9**	**-0.4**
	1.1nm,0.7s						
SONM	**Songino Array**	**45.71**	**296**	P	**P**	**04 24 52.0**	**+1.1**
	1.2nm,0.6s,baz=52,slow=8.5,SNR=9.4						
HHC	**Hu-ho-hao-te**	**46.60**	**285**	*e*P	**P**	**04 24 55.6**	**-2.4**
HHC				pmax	pmax		
	comp=Z,22nm,1.1s						
HHC				pmax	pmax		
	comp=Z,57nm,6.4s						
BW06	**Boulder Array**	**47.61**	**71**	*e*P	**P**	**04 25 05.7**	**-0.3**
	comp=Z,1.6nm,0.7s						
PDAR	**Pinedale Array**	**47.61**	**71**	P	**P**	**04 25 06.0**	**0.0**
	comp=Z,2.7nm,0.7s,baz=297,slow=3.2,SNR=32						
ZALV	**Zalesovo Beam**	**53.40**	**313**	P	**P**	**04 25 48.9**	**-0.3**
	comp=Z,1.0nm,0.5s,baz=60,slow=8.5,SNR=3.7						
ARCES	**ARCESS Array B**	**58.26**	**349**	P	**P**	**04 26 22.5**	**-1.4**
	comp=Z,1.3nm,0.8s,baz=21,slow=7.0,SNR=4.7						
WMOK	**Wichita Mounta**	**59.20**	**72**	*e*P	**P**	**04 26 30.6**	**-0.3**
	comp=Z,1.2nm,0.8s						
MKAR	**Makanchi Array**	**59.30**	**308**	P	**P**	**04 26 31.5**	**+0.1**
	comp=Z,1.4nm,0.5s,baz=51,slow=6.8,SNR=12						
TXAR	**Lajitas Array**	**59.94**	**80**	P	**P**	**04 26 36.0**	**-0.1**
	comp=Z,0.3nm,0.5s,baz=307,slow=3.3,SNR=2.6						
BRVK	**Borovoye**	**60.40**	**319**	*e*P	**P**	**04 26 38.7**	**-0.1**
	comp=Z,4.4nm,0.8s						
SCHQ	**Schefferville**	**61.08**	**37**	P	**P**	**04 26 41.9**	**-1.5**
	comp=Z,1.4nm,0.7s,baz=316,slow=5.9,SNR=2.9						
FINES	**FINESS Array B**	**65.89**	**346**	P	**P**	**04 27 12.9**	**-2.1**
	comp=Z,1.2nm,0.9s,baz=69,slow=6.3,SNR=4.0						
FINES				LR	LR	04 59 47.2	
	comp=Z,22nm,18.9s,baz=17,slow=40						
ABKAR	**Akbulak array**	**67.49**	**322**	*e*P	**P**	**04 27 25.9**	**+0.4**
	comp=Z,0.7nm,0.4s						
KKAR	**Karatay Array**	**67.73**	**311**	*e*P	**P**	**04 27 24.2**	**-2.9**
	comp=Z,0.9nm,0.4s						
NB2	**NORSAR Subarra**	**67.92**	**354**	P	**P**	**04 27 26.9**	**-1.1**
	comp=Z,0.7nm,0.6s,baz=5.8,slow=6.2						
NOA	**NORSAR Array B**	**67.92**	**354**	P	**P**	**04 27 27.2**	**-0.8**
	comp=Z,0.7nm,0.

JCZ				AML	AML	04 21 54.1	
JCZ				AML	AML	04 21 55.1	
EAZ	**Earnscleugh**	**1.74**	**98**	PN	Pn	04 21 30.1	+0.2
EAZ				SN	Sn	04 21 50.5	-1.6
EAZ				AML	AML	04 21 51.6	
EAZ				AML	AML	04 21 56.5	
EAZ				AML	AML	04 21 56.5	
APZ	**The Paps**	**1.97**	**157**	PN	Pn	04 21 33.9	+0.7
APZ				AML	AML	04 22 07.1	
TUZ	**Tuapeka**	**2.15**	**117**	PN	Pn	04 21 35.4	-0.2
TUZ				AML	AML	04 22 00.8	
TUZ				AML	AML	04 22 00.8	
TUZ				AML	AML	04 22 02.3	
TUZ				AML	AML	04 22 02.4	
SYZ	**Scrubby Hill**	**2.19**	**134**	⇑PN	Pn	04 21 35.7	-0.5
SYZ				AML	AML	04 22 02.2	
SYZ				AML	AML	04 22 02.3	
SYZ				AML	AML	04 22 02.3	
SYZ				AML	AML	04 22 02.3	
LBZ	**Lake Benmore**	**2.45**	**76**	⇑PN	Pn	04 21 39.1	-0.6
LBZ				AML	AML	04 22 16.9	
LBZ				AML	AML	04 22 25.2	
FOZ	**Fox Glacier**	**2.59**	**56**	*e*PN	Pn	04 21 39.0	-2.6
FOZ				AML	AML	04 22 27.4	
ODZ	**Otahua Downs**	**2.68**	**92**	PN	Pn	04 21 42.0	-0.9
ODZ				AML	AML	04 21 42.1	
ODZ				AML	AML	04 21 55.5	
ODZ				AML	AML	04 22 14.0	
ODZ				AML	AML	04 25 30.5	
HHSZ	**Highcliff Hill**	**2.76**	**109**	PN	Pn	04 21 43.7	-0.2
HHSZ				SN	Sn	04 22 13.1	-4.2
INZ	**Inchbonnie**	**4.03**	**57**	*e*PN	Pn	04 21 58.8	-2.6
QRZ	**Quartz Range**	**5.91**	**47**	*e*PN	Pn	04 22 25.3	-1.9

*IDC **15** 04:25:00.1±1.0, 36°.66N×141°.47E, h0km, mb3.7/8, mb1 3.9/9, mb1mx3.6/38, mbtmp3.7/9, ML3.8/1, MS3.0/1, Ms1 3.0/1, ms1mx2.2/46, Error ellipse: s-maj=30.4km s-min=21.2km az=84.0*
*NIED **15** 04:25:00, 36°.60N×141°.20E, h11km, Mw3.7 Best double couple: M₀3.77000×10¹⁴ NP1:φ₀=9.00000°, δ47.00000°, λ-120.00000°. NP2:φ₀=229.00000°, δ51.00000°, λ-62.00000°.*
*ISCJB **15** 04:25:01.5±1.2, 36°.56N±0°.06×141°.37E±0°.07, h21km±7km, mb3.8/11, MS3.0/1, Error ellipse: s-maj=11.0km s-min=7.3km az=140.5*
*JMA **15** 04:25:04.2±0.1, 36°.61N×141°.17E, h39km±2km, M3.8*
JMA Felt I J1.
*NEIC **15** 04:25:05.6±0.6, 36°.64N×141°.32E, h35km, mb4.1/3, Error ellipse: s-maj=12.4km s-min=9.3km az=136.0*
NEIC Recorded [1 JMA] in Ibaraki.

ISC 15 04:25:01.3±2.1, 36°.61N±0°.07×141°.33E±0°.08, h7km±11km, n28, σ0ˢ63/28, mb3.9/11, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.61**	**270**	P	**Pb**	**04 25 14.3**	**-0.1**
JHO				S	**Sg**	**04 25 21.5**	**+0.4**
ONAJ	**Iwakimizuishiy**	**0.65**	**319**	P	**Pb**	**04 25 15.6**	**+0.5**
ONAJ				S	**Sb**	**04 25 24.2**	**-0.3**
JFK	**Kawauchi**	**0.84**	**334**	P	**Pb**	**04 25 18.7**	**+0.4**
JYT	**Yasato**	**0.99**	**248**	P	**Pg**	**04 25 20.2**	**-0.2**
JYT				S	**Sg**	**04 25 32.1**	**-1.2**
JFT	**Otama**	**1.21**	**319**	P	**Pb**	**04 25 24.7**	**+0.1**
JMM	**Marumori**	**1.33**	**341**	P	**Pn**	**04 25 26.2**	**-0.1**
MJAR	**Matsushiro Arr**	**2.51**	**269**	Pn	**Pn**	**04 25 43.0**	**+0.3**
	17nm,0.3s,baz=85,slow=10,SNR=200						
MJAR				Sn	**Sn**	**04 26 13.1**	**-0.5**
	24nm,0.3s,baz=98,slow=15,SNR=12						
MAJO	**Matsushiro**	**2.52**	**269**	*e*Pn	**Pn**	**04 25 43.5**	**+0.7**
MAJO				*e*Sn	**Sn**	**04 26 13.5**	**-0.1**
MAT	**Matsushiro**	**2.52**	**269**	P	**Pn**	**04 25 43.0**	**+0.3**
MAT				S	**Sn**	**04 26 13.1**	**-0.6**
JNU	**Nakatsue**	**9.27**	**251**	*e*Pn	**Pn**	**04 27 16.6**	**+1.1**
YHNB	**Yeheng**	**20.84**	**241**	*e*P	**P**	**04 29 45.0**	**+1.2**
	17nm,1.0s						
H11N2	**WAKE ISLAND Hy**	**27.99**	**120**	T	T	05 00 17.3	
	baz=313,slow=75,SNR=59						
H11N1	**WAKE ISLAND Hy**	**28.00**	**120**	T	T	05 00 17.8	
	baz=313,slow=75,SNR=61						
H11N3	**WAKE ISLAND Hy**	**28.01**	**120**	T	T	05 00 19.3	
	baz=313,slow=75,SNR=12						
H11S1	**WAKE ISLAND Hy**	**28.69**	**122**	T	T	05 01 09.1	
	baz=314,slow=76,SNR=80						
H11S3	**WAKE ISLAND Hy**	**28.69**	**122**	T	T	05 01 09.3	
	baz=314,slow=76,SNR=86						
H11S2	**WAKE ISLAND Hy**	**28.70**	**122**	T	T	05 01 08.7	
	baz=314,slow=76,SNR=67						
ZALV	**Zalesovo Beam**	**42.15**	**313**	P	**P**	**04 32 54.7**	**+0.4**
	0.7nm,0.4s,baz=91,slow=7.2,SNR=3.4						
MKAR	**Makanchi Array**	**44.29**	**302**	P	**P**	**04 33 12.2**	**+0.5**
	0.6nm,0.7s,baz=102,slow=9.1,SNR=3.7						
MKAR				LR	LR	04 52 44.0	
	comp=Z,19nm,20.2s,baz=36,slow=38						
TKM2	**Tokmak 2**	**49.77**	**299**	*e*P	**P**	**04 33 54.5**	**-0.4**
	0.8nm,0.5s						
ILAR	**Eielson Array**	**49.89**	**32**	P	**P**	**04 33 53.9**	**-1.2**
	0.2nm,0.8s,baz=277,slow=7.0,SNR=2.6						
WRA	**Warramunga Arr**	**56.63**	**188**	P	**P**	**04 34 45.4**	**+0.2**
	1.1nm,0.5s,baz=4.9,slow=7.4,SNR=4.7						
ARU	**Arti**	**56.63**	**319**	*e*P	**P**	**04 34 44.9**	**0.0**
	2.4nm,0.5s						
ABKAR	**Akbulak array**	**58.16**	**310**	*e*P	**P**	**04 34 56.0**	**+0.2**
	0.5nm,0.5s						
ASAR	**Alice Springs**	**60.36**	**188**	P	**P**	**04 35 11.5**	**+0.4**
	0.3nm,0.4s,baz=7.7,slow=7.6,SNR=9.1						
ARCES	**ARCESS Array B**	**64.37**	**339**	P	**P**	**04 35 37.8**	**+0.3**
	1.1nm,0.7s,baz=67,slow=6.9,SNR=3.6						
FINES	**FINESS Array B**	**69.16**	**332**	P	**P**	**04 36 08.3**	**+0.2**
	0.8nm,0.6s,baz=97,slow=6.3,SNR=4.6						
AKASG	**Malin Array Be**	**74.59**	**322**	P	**P**	**04 36 39.9**	**-1.0**
	0.5nm,0.4s,baz=46,slow=5.9,SNR=6.2						

DHMR 15 04:26:30.5±1.5, 12°.18N×44°.50E, h2km±7km, ML4.0, 1C, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ADEN	**Aden**	**0.76**	**39**	*i* P	Pg	04 26 44.4	-0.7
ADEN				*i* S	Sb	04 26 56.1	-1.0
ADEN				AML	AML	04 26 56.9	
	comp=E,5μm,0.9s						
TRBA	**At Turbah**	**1.11**	**340**	⇑*i* P	Pg	04 26 50.6	-1.2
TRBA				*i* S	Sb	04 27 07.2	-0.3
UDYN	**Al 'Udayn**	**1.85**	**344**	*i* P	Pb	04 27 04.2	-0.9
UDYN				*i* S	Sg	04 27 30.4	+0.4
BDHA	**Al Bayda'**	**2.07**	**30**	*i* P	Pb	04 27 08.0	-0.9
BDHA				*i* S	Sb	04 27 35.5	+0.4
BDHA				AML	AML	04 27 49.0	
	comp=E,2μm,0.6s						
DHBB	**Dhamar BB**	**2.38**	**358**	*i* S	Sb	04 27 45.5	+1.3

*ISCJB **15** 04:28:18.2±0.7, 6°.80N±0°.06×73°.03W±0°.06, h150km±6km, Error ellipse: s-maj=13.5km s-min=5.9km az=136.3*
*FUNV **15** 04:28:18.9, 6°.87N×73°.03W, h174km, MW2.6*
*RSNC **15** 04:28:20.2±1.2, 6°.78N×73°.09W, h141km±6km, ML2.3*

ISC 15 04:28:17.3±1.6, 6°.81N±0°.06×73°.04W±0°.06, h159km±9km, n19, σ1ˢ39/31, 1C-2D, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BTLC	**Betulia, Santa**	**0.25**	**295**	*i* P	**Pn**	**04 28 39.5**	**+0.5**
BTLC				*e*S	**Sn**	**04 28 53.8**	**-1.8**
BARC	**Barichara**	**0.26**	**212**	*e*P	**Pn**	**04 28 39.3**	**+0.2**
BARC				*e*S	**Sn**	**04 28 54.1**	**-1.6**
BARC				*i*		04 28 56.0	
	comp=Z,48nm,0.2s						
GIRC	**Giron, Santand**	**0.30**	**330**	*e*P	**Pn**	**04 28 39.3**	**+0.2**
GIRC				*e*S	**Sn**	**04 28 54.1**	**-1.6**
PAMC	**Pamplona, Colo**	**0.62**	**33**	*e*P	**Pn**	**04 28 42.2**	**+1.3**
PAMC				*e*S	**Sn**	**04 28 59.4**	**+0.5**
BRRC	**Barranca, Sant**	**0.72**	**294**	⇑*i* P	**Pn**	**04 28 41.1**	**+0.3**
BRRC				*i*		04 28 41.5	
	comp=Z,34nm,0.1s						
BRRC				*e*S	**Sn**	**04 28 58.5**	**-0.4**
RUSC	**La Rusia**	**0.92**	**183**	⇓*i* P	**Pn**	**04 28 43.3**	**+0.4**
RUSC				*i*		04 29 03.2	
	comp=Z,12nm,0.5s						
CBRI	**Barrientos, No**	**0.93**	**15**	*e*P	**Pn**	**04 28 43.8**	**+1.2**
CBRI				*e*S	**Sn**	**04 29 01.3**	**-0.6**
GRMC	**Gramalote, San**	**0.93**	**15**	*i* P	**Pn**	**04 28 45.0**	**+2.5**
GRMC				*i*		04 28 46.1	
	comp=Z,31nm,0.3s						
CAPV	**Capacho**	**1.27**	**35**	*e*P	**Pn**	**04 28 47.0**	**+1.5**
CAPV				*e*S	**Sn**	**04 29 08.6**	**+1.3**
OCAC	**Ocana**	**1.44**	**349**	*e*P	**Pn**	**04 28 47.6**	**+0.5**
OCAC				*e*S	**Sn**	**04 29 11.0**	**+0.9**
OCAC				*i*		04 29 13.8	
	comp=Z,30nm,0.2s						
NORC	**Norcasia**	**2.20**	**236**	*e*P	**Pn**	**04 28 55.8**	**+0.4**
NORC				*e*S	**Sn**	**04 29 23.0**	**-1.7**
HELC	**Santa Helena**	**2.55**	**256**	*e*P	**Pn**	**04 29 01.7**	**+1.9**
HELC				*i*		04 29 39.9	
	comp=Z,5.9nm,0.2s						
VIGV	**El Vigia**	**2.61**	**39**	*e*P	**Pn**	**04 29 01.5**	**+1.2**
VIGV				*e*S	**Sn**	**04 29 31.4**	**-2.2**
SOCV	**Socops**	**2.61**	**56**	*e*P	**Pn**	**04 29 01.5**	**+1.2**
SOCV				*e*S	**Sn**	**04 29 32.6**	**-0.9**
GUYC	**Guyana, Colomb**	**2.82**	**236**	*e*P	**Pn**	**04 29 05.1**	**+1.8**
GUYC				*i*		04 29 49.3	
	comp=Z,9.4nm,0.4s						
ELOV	**Elorza**	**3.54**	**87**	*e*P	**Pn**	**04 29 12.3**	**+0.5**
PRAC	**Prado**	**3.58**	**211**	*e*P	**Pn**	**04 29 13.4**	**+0.9**
PRAC				*i*		04 29 58.2	
	comp=Z,18nm,0.2s						
VIRV	**Villa del Rosa**	**3.72**	**10**	*e*P	**Pn**	**04 29 13.4**	**-0.7**
VIRV				⇓*e*S	**Sn**	**04 29 55.8**	**-2.7**
CURV	**Curarigua**	**4.40**	**44**	*e*P	**Pn**	**04 29 23.7**	**+0.5**

*NIED **15** 04:34:00, 37°.80N×143°.50E, h5km, Mw3.6 Best double couple: M₀3.06000×10¹⁴ NP1:φ₀=232.00000°, δ42.00000°, λ-39.00000°. NP2:φ₀=353.00000°, δ65.00000°, λ-125.00000°.*
*IDC **15** 04:34:39.2±1.0, 37°.79N×143°.89E, h0km, mb3.6/9, mb1 3.8/11, mb1mx3.6/43, mbtmp3.6/11, ML3.7/2, MS2.5/2, Ms1 2.5/2, ms1mx2.1/54, Error ellipse: s-maj=25.7km s-min=20.7km az=147.0*
*ISCJB **15** 04:34:40.6±0.6, 37°.85N±0°.04×143°.65E±0°.05, h19km, mb3.6/9, Error ellipse: s-maj=5.9km s-min=5.2km az=135.9*
*JMA **15** 04:34:43.6±0.2, 37°.82N×143°.54E, h44km, M3.7*

ISC 15 04:34:42.3±0.8, 37°.83N±0°.05×143°.68E±0°.08, h19km, n26, σ1ˢ57/32, mb3.6/9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.94**	**289**	*e*S	**Sn**	**04 35 35.8**	**-2.3**
OFUJ	**Ofunato**	**2.01**	**309**	*e*S	**Sn**	**04 35 37.6**	**-2.2**
JMK	**Ichinoseki**	**2.23**	**301**	*e*S	**Sn**	**04 35 43.7**	**-1.6**
JFK	**Kawauchi**	**2.28**	**259**	S	**Sn**	**04 35 43.8**	**-2.6**
JOM	**Ohasama**	**2.49**	**312**	P	**Pn**	**04 35 21.6**	**-0.1**
JOM				*e*S	**Sn**	**04 35 50.3**	**-1.2**
JFT	**Otama**	**2.67**	**264**	*e*S	**Sn**	**04 35 54.5**	**-1.7**
JYK	**Kaneyama**	**2.83**	**294**	P	**Pn**	**04 35 27.0**	**+0.6**
JYK				*e*S	**Sn**	**04 35 59.4**	**-0.5**
JAG	**Ashikaga**	**3.66**	**249**	P	**Pn**	**04 35 37.9**	**0.0**
JAG				*e*S	**Sn**	**04 36 17.9**	**-2.6**
BSO1	**Boso 1**	**3.85**	**215**	P	**Pn**	**04 35 40.2**	**+0.2**
BSO1				*e*S	**Sn**	**04 36 23.6**	**-0.9**
JRY	**Ryogami san**	**4.24**	**246**	P	**Pn**	**04 35 45.9**	**+0.1**
JRY				S	**Sn**	**04 36 30.7**	**-4.1**
JOD2	**Odawara 2**	**4.50**	**237**	P	**Pn**	**04 35 52.1**	**+2.7**
MJAR	**Matsushiro Arr**	**4.56**	**255**	Pn	**Pn**	**04 35 51.3**	**+1.1**
	2.9nm,0.3s,baz=89,slow=15,SNR=18						
MJAR				LR	LR	04 37 47.7	
	comp=Z,52nm,18.8s,baz=90,slow=40						
MAT	**Matsushiro**	**4.56**	**255**	P	**Pn**	**04 35 51.9**	**+1.7**
MAT				S	**Sn**	**04 36 42.8**	**+0.1**
MAT	**Matsushiro**	**4.56**	**255**	P	**Pn**	**04 35 51.8**	**+1.6**
JYN	**Shimob**	**4.74**	**242**	P	**Pn**	**04 35 53.4**	**+0.6**
ASAJ	**Asahikawa**	**6.33**	**353**	Pn	**Pn**	**04 36 14.6**	**0.0**
	1.5nm,0.3s,baz=207,slow=15,SNR=9.8						
ASAJ				Sn	**Sn**	**04 37 24.7**	**-1.6**
	0.4nm,0.3s,baz=73,slow=19,SNR=2.7						
KSRS	**Korea Array**	**12.50**	**273**	LR	LR	04 41 50.7	
	comp=Z,18nm,18.2s,baz=138,slow=34						
SONM	**Songino Array**	**28.86**	**302**	P	**P**	**04 40 40.6**	**+1.0**
	0.4nm,0.5s,baz=79,slow=7.5,SNR=2.3						
ZALV	**Zalesovo Beam**	**42.72**	**312**	P	**P**	**04 42 39.4**	**+1.5**
	0.7nm,0.4s,baz=54,slow=7.3,SNR=1.8						
MKAR	**Makanchi Array**	**45.23**	**302**	P	**P**	**04 42 59.1**	**+1.0**
	0.4nm,0.7s,baz=82,slow=9.6,SNR=4.2						
ILAR	**Eielson Array**	**47.85**	**33**	P	**P**	**04 43 17.9**	**-0.5**
	0.8nm,0.7s,baz=265,slow=6.4,SNR=9.5						
INK	**Inuvik**	**52.85**	**28**	P	**P**	**04 43 56.5**	**+0.3**
	0.8nm,0.9s,baz=310,slow=6.9,SNR=5.1						
WRA	**Warramunga Arr**	**58.14**	**190**	P	**P**	**04 44 34.7**	**0.0**
	0.4nm,0.7s,baz=8.1,slow=7.0,SNR=6.3						
YKA	**Yellowknife Ar**	**62.20**	**31**	P	**P**	**04 45 01.6**	**-0.5**
	0.3nm,0.7s,baz=302,slow=6.7,SNR=3.6						
FINES	**FINESS Array B**	**68.94**	**333**	P	**P**	**04 45 46.4**	**+0.7**
	1.7nm,0.7s,baz=51,slow=9.8,SNR=6.0						
PDAR	**Pinedale Array**	**75.81**	**47**	P	**P**	**04 46 26.5**	**-0.8**
	0.2nm,0.5s,baz=312,slow=4.4,SNR=3.0						

DHMR 15 04:36:00.6±1.0, 12°.15N×44°.48E, h3km±5km, ML3.6, 2C, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ADEN	**Aden**	**0.80**	**38**	⇑*i* P	Pg	04 36 15.5	-0.5
ADEN				*i* S	Sg	04 36 27.3	+0.9
ADEN				AML	AML	04 36 27.9	
	comp=E,2μm,0.4s						
TRBA	**At Turbah**	**1.14**	**342**	⇑*i* P	Pg	04 36 21.6	-0.8
TRBA				*i* S	Sb	04 36 38.1	-0.1
TRBA				AML	AML	04 36 44.9	
	comp=E,684nm,0.5s						
BDHA	**Al Bayda'**	**2.11**	**30**	*i* P	Pn	04 36 38.0	+1.1
BDHA				*i* S	Sb	04 37 07.0	+0.7
BDHA				AML	AML	04 37 20.2	
	comp=E,749nm,0.6s						
DHBB	**Dhamar BB**	**2.41**	**358**	*i* P	Pb	04 36 43.5	-1.4
DHBB				*i* S	Sg	04 37 16.9	-1.4

*IDC **15** 04:39:21.7±11.0, 35°.05N×143°.19E, h0km, mb3.7/2, mb1 3.9/3, mb1mx3.4/42, mbtmp3.6/3, ML3.6/1, Error ellipse: s-maj=298.9km s-min=39.8km az=46.0*
*ISCJB **15** 04:39:25.4±1.0, 35°.03N±0°.05×142°.94E±0°.08, h33km, mb3.8/2, Error ellipse: s-maj=9.3km s-min=6.7km az=16.5*
*JMA **15** 04:39:25.5±0.4, 34°.88N×142°.91E, h49km, M3.5*

ISC 15 04:39:27.1±1.6, 34°.99N±0°.07×142°.92E±0°.10, h35km, n15, σ0ˢ92/20, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**1.63**	**259**	P	**Pn**	**04 39 51.8**	**-1.0**
BSO1				*e*S	**Sn**	**04 40 11.6**	**-0.7**
CHOJ	**Chosi**	**1.82**	**293**	P	**Pn**	**04 39 56.2**	**+0.2**
BSO3	**Boso 3**	**1.99**	**265**	P	**Pn**	**04 39 57.7**	**-0.3**
BSO3				*e*S	**Sn**	**04 40 21.9**	**+0.4**
BSO4	**Boso 4**	**2.12**	**271**	P	**Pn**	**04 40 00.1**	**+0.2**
JOD2	**Odawara 2**	**3.15**	**276**	S	**Sn**	**04 40 48.6**	**-2.0**
JAG	**Ashikaga**	**3.16**	**298**	P	**Pn**	**04 40 14.4**	**0.0**
JFT	**Otama**	**3.27**	**321**	P	**Pn**	**04 40 16.5**	**+0.6**
JFT				S	**Sn**	**04 40 53.1**	**-0.5**
JRY	**Ryogami san**	**3.43**	**288**	P	**Pn**	**04 40 18.5**	**+0.4**
MJAR	**Matsushiro Arr**	**4.13**	**293**	Pn	**Pn**	**04 40 28.1**	**+0.4**
	3.4nm,0.3s,baz=106,slow=8.9,SNR=23						
MAT	**Matsushiro**	**4.13**	**293**	P	**Pn**	**04 40 28.5**	**+0.8**
MAT				S	**Sn**	**04 41 16.3**	**+1.5**
JMK	**Ichinoseki**	**4.18**	**342**	P	**Pn**	**04 40 28.1**	**-0.3**
JMK				S	**Sn**	**04 41 14.5**	**-1.4**
JYK	**Kaneyama**	**4.42**	**333**	P	**Pn**	**04 40 32.4**	**+0.7**
JOM	**Ohasama**	**4.66**	**344**	S	**Sn**	**04 41 26.5**	**-1.2**
WRA	**Warramunga Arr**	**55.23**	**190**	P	**P**	**04 48 57.0**	**+0.3**
	1.2nm,0.8s,baz=12,slow=7.7,SNR=6.4						
ASAR	**Alice Springs**	**58.96**	**190**	P	**P**	**04 49 23.6**	**+0.6**
	0.5nm,0.8s,baz=14,slow=12,SNR=4.6						

*ISCJB **15** 04:45:59.4±0.9, 12°.0S±0°.2×73°.6W±0°.1, h33km, mb3.4/2, Error ellipse: s-maj=27.3km s-min=12.4km az=26.1*
*IDC **15** 04:46:02.4±2.3, 12°.22S×73°.75W, h60km±29km, mb3.2/2, mb1 3.6/6, mb1mx3.4/30, mbtmp3.7/6, ML3.7/4, MS2.4/3, Ms1 2.4/3, ms1mx2.3/12, Error ellipse: s-maj=51.7km s-min=23.5km az=25.0*

ISC 15 04:46:01.8±1.0, 12°.1S±0°.1×73°.54W±0°.09, h35km, n6, σ2ˢ34/7, Central Peru

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NNA	**Nana**	**3.24**	**271**	P	**Pn**	**04 46 48.9**	**-1.3**
	3.9nm,0.3s,baz=93,slow=12,SNR=11						
NNA				S	**Sn**	**04 47 30.4**	**+2.9**
	21nm,0.3s,baz=172,slow=19,SNR=12						
NNA				LR	LR	04 48 07.7	
	comp=Z,37nm,21.5s,baz=68,slow=41						
LPAZ	**La Paz**	**6.72**	**129**	P	**Pn**	**04 47 39.1**	**+0.5**
	0.8nm,0.3s,baz=310,slow=8.8,SNR=46						
ATAH	**Atahualpa**	**6.85**	**315**	P	**Pn**	**04 47 39.8**	**-0.3**
	1.7nm,0.3s,baz=122,slow=4.7,SNR=5.9						
ATAH				LR	LR	04 50 54.7	
	comp=Z,17nm,19.6s,baz=213,slow=43						
PTGA	**Pitinga**	**17.54**	**51**	P	**P**	**04 50 07.1**	**+2.5**
	0.7nm,0.3s,baz=240,slow=18,SNR=6.8						
PTGA				LR	LR	04 57 50.6	
	comp=Z,32nm,18.9s,baz=217,slow=40						
TORD	**Torodi Ar. Bea**	**78.69**	**74**	P	**P**	**04 58 00.6**	**-0.5**
	0.5nm,0.8s,baz=247,slow=3.7,SNR=5.5						
YKA	**Yellowknife Ar**	**80.87**	**342**	P	**P**	**04 58 09.7**	**-2.2**
	0.2nm,0.5s,baz=137,slow=6.2,SNR=5.3						

*ISCJB **15** 04:49:57.5±1.1, 34°.98N±0°.07×142°.95E±0°.08, h35km, mb3.7/4, Error ellipse: s-maj=11.0km s-min=8.7km az=39.8*
*JMA **15** 04:49:57.3±0.4, 34°.88N×142°.93E, h45km, M3.5*
*IDC **15** 04:50:05.0±9.0, 33°.74N×140°.92E, h0km, mb3.7/4, mb1 3.8/5, mb1mx3.4/56, mbtmp3.6/5, ML3.4/1, Error ellipse: s-maj=348.5km s-min=21.9km az=67.0*

ISC 15 04:49:59.5±1.7, 34°.96N±0°.09×142°.9E±0°.1, h35km, n13, σ0ˢ65/17, mb3.8/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**1.61**	**260**	P	**Pn**	**04 50 23.9**	**-1.1**
BSO1				S	**Sn**	**04 50 43.6**	**-0.7**
CHOJ	**Chosi**	**1.83**	**295**	P	**Pn**	**04 50 28.3**	**-0.2**
CHOJ				*e*S	**Sn**	**04 50 50.2**	**-0.2**
BSO3	**Boso 3**	**1.98**	**266**	P	**Pn**	**04 50 29.8**	**-0.4**
BSO3				S	**Sn**	**04 50 54.3**	**+0.7**
BSO4	**Boso 4**	**2.11**	**272**	P	**Pn**	**04 50 32.0**	**-0.2**
BSO4				*e*S	**Sn**	**04 50 57.9**	**+0.7**
JAG	**Ashikaga**	**3.17**	**299**	P	**Pn**	**04 50 46.8**	**-0.1**
JFT	**Otama**	**3.29**	**322**	P	**Pn**	**04 50 48.6**	**0.0**
JFT				S	**Sn**	**04 51 25.2**	**-1.4**
JRY	**Ryogami san**	**3.44**	**289**	P	**Pn**	**04 50 50.6**	**0.0**
MJAR	**Matsushiro Arr**	**4.13**	**294**	Pn	**Pn**	**04 51 00.2**	**0.0**
	3.7nm,0.3s,baz=103,slow=9.3,SNR=32						
MAT	**Matsushiro**	**4.14**	**294**	P	**Pn**	**04 51 00.5**	**+0.3**
MAT				S	**Sn**	**04 51 48.1**	**+0.7**
MKAR	**Makanchi Array**	**46.26**	**304**	P	P	04 58 27.1	+5.6
	0.4nm,0.7s,baz=94,slow=8.7,SNR=3.5						
KURBB	**Kurchatov Arra**	**48.24**	**310**	P	P	04 58 43.8	+7.1
	0.5nm,0.4s,baz=82,slow=7.7,SNR=3.5						
WRA	**Warramunga Arr**	**55.20**	**190**	P	**P**	**04 59 29.0**	**+0.1**
	0.4nm,0.3s,baz=10,slow=7.5,SNR=12						
ASAR	**Alice Springs**	**58.92**	**190**	P	**P**	**04 59 55.7**	**+0.5**
	0.6nm,0.7s,baz=5.9,slow=7.1,SNR=7.5						

*NIED **15** 04:54:00, 38°.60N×142°.40E, h47km, Mw4.1 Best double couple: M₀1.88000×10¹⁵ NP1:φ₀=37.00000°, δ37.00000°, λ101.00000°. NP2:φ₀=203.00000°, δ54.00000°, λ82.00000°.*
*ISCJB **15** 04:54:57.1±0.8, 38°.66N±0°.04×142°.50E±0°.07, h46km±6km, mb4.2/33, MS3.2/7, Error ellipse: s-maj=10.0km s-min=5.2km az=26.3*
*JMA **15** 04:54:58.1±0.1, 38°.63N×142°.41E, h38km±2km, M4.3*
JMA Felt I J1.
*NEIC **15** 04:54:58.6±0.8, 38°.64N×142°.45E, h44km±7km, mb4.3/10, Error ellipse: s-maj=8.0km s-min=5.5km az=128.0*
NEIC Recorded [1 JMA] in Iwate and Miyagi.
*IDC **15** 04:55:02.0±2.5, 38°.57N×142°.35E, h76km±22km, mb3.8/22, mb1 4.0/26, mb1mx3.8/59, mbtmp4.2/26, MS3.1/14, Ms1 3.1/14, ms1mx2.9/47, Error ellipse: s-maj=15.3km s-min=14.1km az=100.0*

ISC 15 04:54:58.3±1.6, 38°.64N±0°.05×142°.50E±0°.07, h40km±13km, n70, σ1ˢ00/66, mb4.2/33, MS3.2/7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.78**	**304**	P	**Pn**	**04 55 12.2**	**-0.6**
OFUJ				S	**Sn**	**04 55 22.3**	**-1.0**
JIO	**Ouri**	**0.92**	**259**	P	**Pn**	**04 55 13.7**	**-1.0**
JIO				S	**Sn**	**04 55 24.6**	**-2.1**
JMK	**Ichinoseki**	**1.04**	**288**	P	**Pn**	**04 55 15.9**	**-0.5**
JMK				S	**Sn**	**04 55 28.7**	**-1.1**
JOM	**Ohasama**	**1.25**	**312**	P	**Pn**	**04 55 19.3**	**0.0**
JOM				S	**Sn**	**04 55 34.8**	**-0.1**
JOU	**Okura**	**1.46**	**260**	P	**Pn**	**04 55 21.7**	**-0.5**
JOU				S	**Sn**	**04 55 39.5**	**-0.7**
JMM	**Marumori**	**1.55**	**241**	P	**Pn**	**04 55 22.3**	**-1.0**
JMM				*e*S	**Sn**	**04 55 40.1**	**-2.1**
JRG	**Rokugo**	**1.63**	**298**	P	**Pn**	**04 55 24.6**	**+0.1**
JYK	**Kaneyama**	**1.69**	**280**	P	**Pn**	**04 55 25.0**	**-0.3**
JFK

comp=Z,48nm,18.1s,baz=85,slow=38
BILL Bilibino 32.24 17 *e*P **P 05 01 23.0 +0.6**
1.6nm,0.4s
ZALV Zalesovo Beam 41.49 311 P **P 05 02 40.8 -0.3**
3.7nm,0.4s,baz=87,slow=8.1,SNR=11
ZALV LR LR 05 20 41.1
comp=Z,32nm,18.1s,baz=72,slow=37
CMAR Chiang Mai Arr 42.74 254 LR LR 05 20 58.7
comp=Z,14nm,20.9s,baz=185,slow=36
MKAR Makanchi Array 44.01 301 P **P 05 03 01.1 -0.6**
1.5nm,0.4s,baz=85,slow=9.0,SNR=22
MKAR LR LR 05 21 50.9
comp=Z,17nm,19.3s,baz=72,slow=37
KURK Kurchatov 45.63 307 *e*P **P 05 03 13.7 -0.8**
24nm,0.6s
KURBB Kurchatov Arra 45.70 307 P **P 05 03 14.4 -0.7**
6.4nm,0.4s,baz=80,slow=8.2,SNR=48
ILAR Eielson Array 47.68 33 P **P 05 03 30.9 +0.5**
1.6nm,0.7s,baz=271,slow=6.6,SNR=20
TKM2 Tokmak 2 49.63 298 *e*P **P 05 03 45.9 -0.1**
2.4nm,0.5s
BVAR Borovoye Array 50.14 312 P **P 05 03 49.0 -0.4**
1.6nm,0.4s,baz=70,slow=9.3,SNR=8.6
BVAR LR LR 05 28 24.8
comp=Z,93nm,19.3s,baz=252,slow=40
BRVK Borovoye 50.19 312 *e*P **P 05 03 49.7 0.0**
2.6nm,0.7s
INK Inuvik 52.57 28 P **P 05 04 08.0 +0.8**
0.9nm,0.5s,baz=304,slow=7.4,SNR=9.9
KKAR Karatay Array 53.07 299 *e*P **P 05 04 10.9 -0.5**
1.6nm,0.6s
ARU Arti 55.73 318 P **P 05 04 30.4 -0.1**
4.6nm,0.2s,baz=104,slow=19,SNR=7.6
ABKAR Akbulak array 57.57 310 *e*P **P 05 04 42.7 -1.0**
2.9nm,0.5s
AKTO Aktyubinsk 58.24 312 P **P 05 04 48.0 -0.4**
2.1nm,0.5s,baz=60,slow=12,SNR=4.1
AKTO LR LR 05 31 07.9
comp=Z,32nm,18.8s,baz=88,slow=37
WRAB Tennant Creek 58.76 189 *e*P **P 05 04 51.5 -0.7**
2.7nm,0.6s
WRA Warramunga Arr 58.77 189 P **P 05 04 51.4 -0.9**
3.4nm,0.7s,baz=7.5,slow=7.2,SNR=19
YKA Yellowknife Ar 61.99 31 P **P 05 04 14.2 +0.4**
0.4nm,0.5s,baz=300,slow=6.3,SNR=7.0
ASAR Alice Springs 62.50 189 P **P 05 05 17.0 -0.6**
1.5nm,0.8s,baz=13,slow=5.8,SNR=10.0
ARCES ARCESS Array B 62.80 339 P **P 05 05 19.2 0.0**
1.5nm,0.9s,baz=66,slow=7.0,SNR=3.8
FINES FINESS Array B 67.79 332 P **P 05 05 51.2 -0.3**
1.8nm,0.7s,baz=48,slow=8.5,SNR=7.5
SUMG Summit 69.08 0 *e*P **P 05 06 00.2 +0.3**
1.8nm,0.6s
KBZ Khabaz 70.51 311 P **P 05 06 09.4 +0.7**
0.7nm,0.3s,baz=95,slow=4.8,SNR=4.5
NOA NORSAR Array B 73.03 338 P **P 05 06 23.5 -0.2**
0.7nm,0.7s,baz=38,slow=6.0,SNR=3.6
NVAR Mina Array Bea 73.35 54 P **P 05 06 26.9 +0.7**
1.2nm,0.8s,baz=289,slow=5.3,SNR=3.9
AKASG Malin Array Be 73.55 322 P **P 05 06 26.4 -0.4**
1.1nm,0.6s,baz=44,slow=5.9,SNR=4.0
PDAR Pinedale Array 75.93 46 P **P 05 06 41.7 +0.6**
1.3nm,0.5s,baz=270,slow=1.8,SNR=18
GERES GERESS Array B 81.79 329 P **P 05 07 12.3 -0.6**
0.2nm,0.3s,baz=30,slow=8.0,SNR=3.2
TXAR Lajitas Array 88.47 53 P **P 05 07 46.9 +0.3**
0.6nm,0.7s,baz=297,slow=3.6,SNR=12
TORD Torodi Ar. Bea 116.78 316 PKP **PKPdf 05 13 37.5 -1.3**
0.2nm,0.6s,baz=38,slow=2.8,SNR=2.5
VNA2 Neumayer--Watz 144.10 196 P **PKPab 05 14 25.6 -0.4**
baz=115,slow=3.1
VNA3 Neumayer Olymp 144.34 195 P **PKPab 05 14 26.2 -0.7**
LPAZ La Paz 145.14 59 PKPbc **PKPbc 05 14 31.7 -0.4**
1.0nm,0.6s,baz=336,slow=2.3,SNR=9.5
LCO Las Campanas 150.93 81 *e*PKPbc **PKPbc 05 14 47.0 0.0**

IDC 15 04:57:26.7±3.2, 5°98S×147°39E, h0km, mb3.6/1, mb1 4.0/3, mb1mx3.4/36, mbtmp3.8/3, ML3.8/1, MS3.7/1, Ms1 3.7/1, ms1mx2.5/29, Error ellipse: s-maj=83.9km s-min=39.2km az=96.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**3.41**	**184**	Pn	Pn	04 58 21.4	+0.1
	18nm,0.3s,baz=340,slow=7.7,SNR=26						
PMG				Sn	Sn	04 59 00.0	-2.5
	10nm,0.3s,baz=291,slow=22,SNR=5.2						
WRA	**Warramunga Arr**	**18.81**	**221**	P	Pn	05 01 48.5	0.0
	0.3nm,0.3s,baz=45,slow=12,SNR=9.2						
ASAR	**Alice Springs**	**21.86**	**215**	P	P	05 02 21.3	+0.1
	1.3nm,0.5s,baz=53,slow=9.3,SNR=20						
JCJ	**Chichijima**	**33.26**	**352**	LR	LR	05 17 36.2	
	comp=Z,107nm,18.1s,baz=107,slow=36						
TORD	**Torodi Ar. Bea**	**145.46**	**284**	PKPbc	PKPbc	05 17 06.7	-1.2
	0.3nm,0.6s,baz=84,slow=3.1,SNR=3.5						

*ISCJB **15** 05:01:06.0±0.8, 36°73S±0°06×73°29W±0°09, h35km, mb4.1/5, Error ellipse: s-maj=10.7km s-min=8.8km az=14.2*
*NEIC **15** 05:01:08.0, 36°68S×72°97W, h40km, mb4.5/2, After GUC.*
NEIC Felt [IV] at Coelemu, Coronel and Penco; [III] at Cauquenes, Chiguayante, Concepcion, Hualpen, Linares, Parral, Talcahuano and Tome; [II] at Longavi and Pelluhue.
*GUC **15** 05:01:08.9±0.5, 36°68S×72°97W, h40km±3km, ML3.8*
*IDC **15** 05:01:12.1±4.2, 36°76S×72°71W, h64km±44km, mb3.0/3, mb1 3.3/4, mb1mx3.2/20, mbtmp3.3/4, ML3.4/1, MS2.8/1, Ms1 2.8/1, ms1mx2.7/4, Error ellipse: s-maj=62.6km s-min=36.7km az=69.0*
ISC 15 05:01:06.2±0.9, 36°71S±0°07×73°2W±0°1, h35km, n24, σ2°64/24, mb4.4/5, 4C-1D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
COCH	**Cobquecura**	**0.67**	**30**	⇑*i*P	**Pn**	**05 01 20.2**	**+1.1**
COCH				*i* S	**Sn**	**05 01 29.4**	**+1.1**
COCH				IAML		05 01 30.8	
	comp=E,8μm,0.4s						
CCHI	**Chillan**	**0.91**	**84**	*e*P	**Pn**	**05 01 23.0**	**+0.5**
CCHI				*e*S	**Sn**	**05 01 33.1**	**-1.3**
CCHI				IAML		05 01 37.8	
	comp=N,10μm,0.3s						
TALC	**Talca**	**1.83**	**45**	⇑*i*P	**Pn**	**05 01 36.6**	**+1.6**
PEL	**Peldehue**	**4.12**	**31**	⇑*i*P	**Pn**	**05 02 08.7**	**+2.1**
ROC1	**El Roble**	**4.14**	**26**	*i* P	**Pn**	**05 02 09.7**	**+2.6**
PLCA	**Paso Flores**	**4.52**	**153**	P	**Pn**	**05 02 15.3**	**+3.1**
	comp=N,0.5nm,0.3s,baz=345,slow=13,SNR=20						
PLCA				S	Sn	05 03 21.6	+18
	comp=N,2.4nm,0.3s,baz=290,slow=22,SNR=5.2						
PLCA				LR	LR	05 04 00.9	
	comp=N,141nm,22.0s,baz=304,slow=39						
ARCO	**CERRO ARCO**	**5.22**	**44**	*i* P	Pn	05 02 26.7	+4.8
ARCO				*i* S	Sn	05 03 53.6	+33
ARCO				IAML		05 03 57.3	
	comp=Z,19nm,0.6s						
ASAL	**Salagasta**	**5.46**	**42**	*i* P	Pn	05 02 29.9	+4.8
AUSP	**Uspallata**	**5.47**	**36**	*i* P	**Pn**	**05 02 28.8**	**+3.3**
RTLS	**Leoncito**	**5.87**	**35**	*i* P	**Pn**	**05 02 33.6**	**+2.7**
RTCV	**Cerro Valdivia**	**6.19**	**40**	*i* P	**Pn**	**05 02 37.7**	**+2.6**
LCO	**Las Campanas**	**7.96**	**16**	*e*Pn	**Pn**	**05 03 00.5**	**+0.9**
	comp=Z,9.0nm,0.7s						
LCO				*e*Sn	**Sn**	**05 04 21.6**	**-6.9**
TRQA	**Tornquist**	**9.04**	**102**	*e*Pn	**Pn**	**05 03 16.4**	**+2.3**
LVC	**Limon Verde**	**14.54**	**16**	Pn	**Pn**	**05 04 30.1**	**+0.4**
LPAZ	**La Paz**	**20.83**	**14**	P	Pn	05 05 48.9	+0.8
	comp=Z,0.6nm,0.7s,baz=192,slow=8.0,SNR=4.9						
NNA	**Nana**	**24.83**	**351**	*e*P	**P**	**05 06 26.4**	**+1.1**
	comp=Z,6.1nm,0.3s						
SDV	**Santo Domingo**	**45.42**	**4**	*e*P	**P**	**05 09 19.9**	**-1.8**
	comp=Z,7.4nm,1.5s						
SYO	**Syowa Base**	**63.70**	**158**	⇓*e*P	**P**	**05 11 31.0**	**-2.6**
SYO	**Syowa Base**	**63.70**	**158**	⇓*e*PcP	**PcP**	**05 16 08.6**	**-2.7**
TXAR	**Lajitas Array**	**71.60**	**332**	P	**P**	**05 12 28.3**	**+4.0**
	comp=Z,0.2nm,0.5s,baz=150,slow=9.2,SNR=4.5						
ABTX	**Abilene, Hawle**	**73.27**	**337**	*e*P	**P**	**05 12 35.1**	**+1.4**
WMOK	**Wichita Mounta**	**74.97**	**338**	*e*P	**P**	**05 12 45.1**	**+1.5**
	comp=Z,21nm,2.6s						
ANMO	**Albuquerque**	**77.72**	**333**	P	**P**	**05 12 58.8**	**-0.7**
TORD	**Torodi Ar. Bea**	**86.02**	**71**	P	**P**	**05 13 44.2**	**+0.9**
	comp=Z,0.4nm,1.0s,baz=216,slow=4.6,SNR=2.2						

IDC 15 05:03:37.0±2.9, 6°12S×147°97E, h0km, mb3.8/2, mb1 4.0/4, mb1mx3.5/32, mbtmp3.8/4, ML3.9/1, MS2.9/1, Ms1 2.9/1, ms1mx2.4/30, Error ellipse: s-maj=78.0km s-min=34.8km az=97.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**3.37**	**194**	Pn	Pn	05 04 32.3	+1.4
	16nm,0.3s,baz=12,slow=9.3,SNR=24						
PMG				Sn	Sn	05 05 12.4	+0.9
	9.9nm,0.3s,baz=74,slow=22,SNR=3.2						
WRA	**Warramunga Arr**	**19.09**	**223**	P	P	05 08 00.7	-0.7
	0.4nm,0.3s,baz=50,slow=11,SNR=13						
GUMO	**Guam**	**19.82**	**351**	LR	LR	05 13 57.3	
	comp=Z,31nm,19.8s,baz=86,slow=31						
ASAR	**Alice Springs**	**22.08**	**216**	P	P	05 08 33.5	-0.4
	1.6nm,0.5s,baz=52,slow=8.9,SNR=26						
STKA	**Stephens Creek**	**26.31**	**192**	P	P	05 09 15.0	+0.4
	0.8nm,0.3s,baz=8.1,slow=13,SNR=3.9						
TORD	**Torodi Ar. Bea**	**146.06**	**284**	PKPbc	PKPdf	05 23 19.0	-0.2
	0.2nm,0.5s,baz=84,slow=2.9,SNR=4.5						

*NIED **15** 05:19:00, 42°70N×143°00E, h116km, Mw3.9 Best double couple: M0=7.19000×10^14 NP1:φs125.00000°, δ29.00000°, λ46.00000°. NP2:φs353.00000°, δ69.00000°, λ112.00000°.*
*MOS **15** 05:19:40.9±1.3, 42°56N×142°89E, h115km, mb3.9/8, Error ellipse: s-maj=16.9km s-min=10.7km az=68.7*
*ISCJB **15** 05:19:41.5±0.3, 42°59N±0°04×142°96E±0°04, h118km±2km, mb3.9/14, Error ellipse: s-maj=7.2km s-min=4.5km az=149.7*
*IDC **15** 05:19:42.7±1.6, 42°58N×142°75E, h109km±10km, mb3.6/13, mb1 3.6/14, mb1mx3.4/51, mbtmp3.9/14, MS2.7/1, Ms1 2.7/1, ms1mx2.0/33, Error ellipse: s-maj=19.5km s-min=15.2km az=118.0*
*JMA **15** 05:19:43.4±0.1, 42°67N×143°01E, h106km±2km, M3.5*
JMA Felt II J1.
ISC 15 05:19:42.7±0.7, 42°60N±0°05×142°97E±0°04, h112km±5km, n47, σ1°10/57, mb3.8/14, 3C, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCH	**Churui**	**0.29**	**87**	P	**Pn**	**05 19 58.5**	**-0.2**
JCH				*e*S	**Sn**	**05 20 09.7**	**-1.0**
JNBK	**Urakawa-nobuka**	**0.36**	**207**	P	**Pn**	**05 19 59.8**	**+0.8**
JNBK				*e*S	**Sn**	**05 20 12.7**	**+1.5**
JBT2	**Biratori 2**	**0.48**	**292**	P	**Pn**	**05 19 59.7**	**0.0**
JBT2				*e*S	**Sn**	**05 20 12.6**	**+0.1**
JEM	**Erimo**	**0.60**	**167**	P	**Pn**	**05 20 01.3**	**+0.8**
JFR	**Furan**	**0.63**	**334**	P	**Pn**	**05 20 00.4**	**-0.4**
JFR				*e*S	**Sn**	**05 20 13.7**	**-0.7**
JOB	**Onbets**	**0.71**	**64**	P	**Pn**	**05 20 01.6**	**+0.3**
JOB				*e*S	**Sn**	**05 20 15.4**	**0.0**
JAR	**Ashorobuto**	**0.91**	**40**	P	**Pn**	**05 20 02.9**	**-0.3**
JAR				*e*S	**Sn**	**05 20 17.7**	**-1.0**
JAB	**Ashibetsu**	**1.06**	**329**	P	**Pn**	**05 20 04.6**	**-0.1**
JAB				*e*S	**Sn**	**05 20 21.2**	**-0.1**
JEW	**Eniwo**	**1.15**	**283**	P	**Pn**	**05 20 05.7**	**+0.1**
JKK2	**Kamakawa 2**	**1.28**	**353**	P	**Pn**	**05 20 07.1**	**-0.1**
JAK	**Akkeshi**	**1.33**	**72**	P	**Pn**	**05 20 07.4**	**-0.3**
JAK				*e*S	**Sn**	**05 20 25.6**	**-1.0**
JHR	**Hokuryu**	**1.46**	**322**	P	**Pn**	**05 20 09.4**	**+0.2**
JHR				*e*S	**Sn**	**05 20 29.9**	**+0.6**
JTKR	**Abashiri--Toko**	**1.53**	**26**	P	**Pn**	**05 20 10.0**	**0.0**
JTKR				*e*S	**Sn**	**05 20 30.2**	**-0.6**
ASAJ	**Asahikawa**	**1.54**	**350**	P	**Pn**	**05 20 09.9**	**-0.2**
	9.1nm,0.3s,baz=221,slow=8.9,SNR=41						
ASAJ				S	**Sn**	**05 20 30.7**	**-0.4**
	13nm,0.3s,baz=183,slow=17,SNR=20						
JKB	**Kayabe**	**1.60**	**244**	P	**Pn**	**05 20 10.3**	**-0.6**
JKB				*e*S	**Sn**	**05 20 31.5**	**-0.8**
JOT	**Ohata**	**1.88**	**230**	P	**Pn**	**05 20 13.6**	**-0.7**
JOT				*e*S	**Sn**	**05 20 36.6**	**-1.7**
YUK	**Yuzh-Kuril'sk**	**2.55**	**55***c*	*i*PN	**Pn**	**05 20 23.7**	**+0.9**
YUK				*i* S	**Sn**	**05 20 53.7**	**0.0**
YUK				pmax	pmax		
	comp=Z,358nm,0.3s						
YUK				pmax	pmax		
	comp=N,103nm,0.2s						
YUK				pmax	pmax		
	comp=E,135nm,0.2s						
YUK				smax	smax		
	comp=N,1μm,0.3s						
YUK				smax	smax		
	comp=E,1μm,0.4s						
SHO	**Shikotan**	**3.09**	**64***c*	*i*PN	**Pn**	**05 20 29.4**	**-0.6**
SHO				*i* S	**Sn**	**05 21 03.2**	**-3.2**
SHO				pmax	pmax		
	comp=Z,209nm,0.5s						
SHO				pmax	pmax		
	comp=N,98nm,0.6s						
SHO				pmax	pmax		
	comp=E,127nm,0.6s						
SHO				smax	smax		
	comp=N,1μm,0.5s						
SHO				smax	smax		
	comp=E,1μm,0.3s						
KUR	**Kuril'sk**	**4.41**	**52***c*	*i*PN	**Pn**	**05 20 48.9**	**+1.4**
KUR				*i* S	**Sn**	**05 21 39.6**	**+1.7**
KUR				pmax	pmax		
	comp=Z,88nm,0.3s						
KUR				pmax	pmax		
	comp=N,19nm,0.2s						
KUR				pmax	pmax		
	comp=E,27nm,0.2s						
KUR				smax	smax		
	comp=N,27nm,0.2s						
KUR				smax	smax		
	comp=E,77nm,0.3s						
MJAR	**Matsushiro Arr**	**7.08**	**213**	P	**Pn**	**05 21 22.5**	**-1.2**
	comp=E,1.1nm,0.3s,baz=24,slow=14,SNR=11						
USRK	**Ussuriysk Ar.**	**8.16**	**285**	P	**Pn**	**05 21 38.8**	**+0.6**
	comp=E,0.3nm,0.3s,baz=89,slow=13,SNR=4.3						
JHJ	**Hachijo jima 2**	**9.79**	**196**	LR	LR	05 26 17.2	
	comp=E,38nm,19.3s,baz=45,slow=41						
KSRS	**Korea Array**	**12.62**	**251**	P	**Pn**	**05 22 41.2**	**+3.0**
	comp=E,0.3nm,0.3s,baz=61,slow=14,SNR=3.1						
PETK	**Petropavlovsk-**	**14.40**	**38**	P	**Pn**	**05 22 58.3**	**-2.9**
	comp=E,0.6nm,0.3s,baz=207,slow=9.8,SNR=11						
SONM	**Songino Array**	**26.12**	**294**	P	**P**	**05 25 05.7**	**-0.4**
	comp=E,0.9nm,0.6s,baz=79,slow=8.0,SNR=5.1						
H11N2	**WAKE ISLAND Hy**	**30.45**	**131**	T	T	05 57 25.2	
	baz=327,slow=76,SNR=42						
H11N1	**WAKE ISLAND Hy**	**30.46**	**131**	T	T	05 57 25.9	
	baz=327,slow=76,SNR=41						
H11N3	**WAKE ISLAND Hy**	**30.46**	**131**	T	T	05 57 26.6	
	baz=327,slow=76,SNR=31						
H11S1	**WAKE ISLAND Hy**	**31.33**	**133**	T	T	05 58 36.1	
	baz=328,slow=76,SNR=80						
H11S3	**WAKE ISLAND Hy**	**31.33**	**133**	T	T	05 58 35.6	
	baz=328,slow=76,SNR=60						
H11S2	**WAKE ISLAND Hy**	**31.34**	**133**	T	T	05 58 37.4	
	baz=328,slow=76,SNR=60						
ZALV	**Zalesovo Beam**	**39.26**	**307**	P	**P**	**05 26 60.0**	**0.0**
	comp=E,2.3nm,0.6s,baz=82,slow=7.9,SNR=10						
ZALV	**Zalesovo Beam**	**39.26**	**307**	P	**P**	**05 27 00.0**	**0.0**
ZALV				pmax	pmax		
	comp=Z,2.0nm,0.6s						
MKAR	**Makanchi Array**	**42.40**	**297**	P	**P**	**05 27 25.5**	**-0.4**
	comp=Z,0.8nm,0.4s,baz=80,slow=9.6,SNR=10						
KURK	**Kurchatov**	**43.63**	**304**	P	**P**	**05 27 36.1**	**+0.4**
KURK						05 29 20.1	
KURK				pmax	pmax		
	comp=Z,4.0nm,0.6s						
KURBB	**Kurchatov Arra**	**43.71**	**304**	P	**P**	**05 27 36.1**	**-0.3**
	comp=Z,3.9nm,0.6s,baz=74,slow=8.7,SNR=21						
KURBB				PcP	**PP**	**05 29 20.1**	**+0.1**
	comp=Z,0.4nm,0.5s,baz=67,slow=3.2,SNR=5.3						
ILAR	**Eielson Array**	**44.21**	**35**	P	**P**	**05 27 40.5**	**+0.3**
	comp=Z,0.5nm,0.7s,baz=261,slow=7.0,SNR=7.9						
BVAR	**Borovoye Array**	**47.86**	**309**	P	**P**	**05 28 08.7**	**-0.2**
	comp=Z,1.2nm,0.4s,baz=72,slow=9.2,SNR=7.5						
INK	**Inuvik**	**48.92**	**29**	P	**P**	**05 28 18.6**	**+1.8**
	comp=Z,0.3nm,0.3s,baz=291,slow=5.7,SNR=5.9						
AKTO	**Aktyubinsk**	**55.95**	**310**	P	**P**	**05 29 08.8**	**-0.1**
	comp=Z,0.4nm,0.4s,baz=53,slow=10,SNR=3.6						
YKA	**Yellowknife Ar**	**58.43**	**32**	P	**P**	**05 29 28.9**	**+2.7**
	comp=Z,0.2nm,0.5s,baz=306,slow=7.5,SNR=4.4						
GEYT	**Alibeck**	**62.28**	**297**	P	**P**	**05 29 51.3**	**-1.5**
	comp=Z,3.9nm,0.6s,baz=94,slow=5.9,SNR=7.0						
WRA	**Warramunga Arr**	**62.73**	**189**	P	**P**	**05 29 55.6**	**-0.2**
	comp=Z,0.5nm,0.6s,baz=5.9,slow=7.1,SNR=5.3						
FINES	**FINESS Array B**	**64.47**	**332**	P	**P**	**05 30 06.0**	**-0.8**
	comp=Z,1.3nm,0.5s,baz=51,slow=7.8,SNR=20						
FINES	**FINESS Array B**	**64.47**	**332**	P	**P**	**05 30 06.0**	**-0.8**
FINES				pmax	pmax		
	comp=Z,1.0nm,0.5s						
NB2	**NORSAR Subarra**	**69.53**	**337**	P	**P**	**05 30 37.9**	**-0.9**
	comp=Z,0.5nm,0.6s,baz=36,slow=6.5						
NOA	**NORSAR Array B**	**69.53**	**337**	P	**P**	**05 30 37.9**	**-0.9**
	comp=Z,0.5nm,0.5s,baz=36,slow=6.1,SNR=4.2						

*DHMR **15** 05:24:38.9±1.4, 11°96N×44°47E, h5km±6km, ML4.8*
*ISCJB **15** 05:24:42.9±0.6, 11°98N±0°04×44°49E±0°05, h10km, mb3.9/12, MS3.5/14, Error ellipse: s-maj=7.5km s-min=5.5km az=26.4*
*IDC **15** 05:24:43.0±1.2, 11°93N×44°41E, h0km, mb3.9/11, mb1 4.0/12, mb1mx3.7/51, mbtmp3.9/12, ML3.7/1, MS3.5/15, Ms1 3.5/15, ms1mx3.3/38, Error ellipse: s-maj=31.5km s-min=15.5km az=160.0*
*NEIC **15** 05:24:44.6±0.7, 11°96N×44°35E, h10km, mb4.0/1, Error ellipse: s-maj=16.9km s-min=10.3km az=153.0*
ISC 15 05:24:44.7±0.7, 12°07N±0°05×44°47E±0°06, h10km, n32, σ2°13/31, mb3.9/12, MS3.5/14, 1C, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ADEN	**Aden**	**0.87**	**36**	*i* P	**Pg**	**05 24 57.1**	**-4.4**
ADEN				*i* S	**Sg**	**05 25 10.4**	**-2.4**
TRBA	**At Turbah**	**1.21**	**344**	*i* P	**Pn**	**05 25 03.4**	**-4.5**
TRBA				*i* S	**Sb**	**05 25 21.9**	**-1.7**
ATD	**Arta Tunnel**	**1.67**	**252**	Pn	**Pn**	**05 25 11.2**	**-2.9**
	83nm,0.3s,baz=50,slow=10,SNR=44						
ATD				Sn	**Sb**	**05 25 34.6**	**-2.2**
	473nm,0.3s,baz=245,slow=23,SNR=46						
ATD				LR	LR	05 25 53.3	
	comp=Z,234nm,21.2s,baz=297,slow=44						
UDYN	**Al 'Udayn**	**1.95**	**346**	*i* P	**Pn**	**05 25 14.6**	**-3.5**
UDYN				*i* S	**Sb**	**05 25 43.9**	**-1.0**
UDYN				AML	AML	05 25 58.1	
	comp=N,5μm,0.5s						
BDHA	**Al Bayda'**	**2.18**	**29**	⇑*i* P	**Pn**	**05 25 18.3**	**-3.0**
BDHA				*i* S	**Sb**	**05 25 50.1**	**-1.5**
BDHA				AML	AML	05 26 03.3	
	comp=E,13μm,0.6s						
DHBB	**Dhamar BB**	**2.49**	**358**	*i* P	**Pn**	**05 25 24.8**	**-0.8**
DHBB				*i* S	**Sb**	**05 26 00.3**	**-0.3**
DHBB				AML	AML	05 26 09.9	
	comp=N,17μm,0.7s						
DAMY	**Dhamar**	**2.49**	**358**	*e*Pn	**Pn**	**05 25 26.4**	**+0.7**
DAMY				*e*Sn	**Sb**	**05 26 00.1**	**-0.6**
SANA	**San'a**	**3.31**	**356**	*i* P	**Pn**	**05 25 36.5**	**-0.4**
SANA				*i* S	**Sn**	**05 26 19.8**	**+3.3**
HAJJ	**Hajjah**	**3.71**	**347**	*i* P	**Pn**	**05 25 40.7**	**-1.6**
HAJJ				*i* S	**Sn**	**05 26 29.6**	**+3.4**
WSAR	**Wadi Sarin**	**17.47**	**49**	Pn	**P**	**05 28 52.0**	**+2.1**
	comp=N,0.2nm,0.3s,baz=246,slow=10,SNR=5.0						
WSAR				LR	LR	05 36 03.4	
	comp=N,95nm,19.8s,baz=256,slow=39						
MMAI	**Mount Meron Ar**	**22.45**	**340**	LR	LR	05 38 03.7	
	comp=N,84nm,21.1s,baz=235,slow=36						
GNI	**Garni**	**27.97**	**0**	LR	LR	05 43 11.1	
	comp=N,129nm,19.4s,baz=175,slow=39						
GEYT	**Alibeck**	**28.50**	**23**	LR	LR	05 44 01.8	
	comp=N,143nm,18.2s,baz=95,slow=40						
BRTR	**Keskin Array B**	**29.17**	**343**	P	**P**	**05 30 48.0**	**+1.6**
	comp=N,1.3nm,0.8s,baz=162,slow=10.0,SNR=9.4						
KBZ	**Khabaz**	**31.58**	**358**	LR	LR	05 45 12.7	
	comp=N,98nm,18.9s,baz=186,slow=39						
ABKAR	**Akbulak array**	**39.23**	**16**	*e*P	**P**	**05 32 14.0**	**+0.7**
	comp=N,3.1nm,0.8s						
AKTO	**Aktyubinsk**	**39.84**	**14**	P	**P**	**05 32 19.2**	**+0.9**
	comp=N,0.4nm,0.3s,baz=203,slow=13,SNR=1.9						
AAK	**Ala-Archa**	**40.08**	**35**	P	**P**	**05 32 21.8**	**+1.2**
	comp=N,0.6nm,0.3s,baz=188,slow=7.7,SNR=2.1						
TORD	**Torodi Ar. Bea**	**41.72**	**276**	P	**P**	**05 32 34.1**	**-0.2**
	comp=N,1.6nm,0.7s,baz=94,slow=7.6,SNR=11						
GERES	**GERESS Array B**	**44.67**	**331**	P	**P**	**05 32 58.7**	**+0.9**
	comp=N,0.9nm,0.8s,baz=132,slow=8.0,SNR=9.1						
GERES				LR	LR	05 53 32.2	
	comp=N,24nm,18.1s,baz=34,slow=39						
BVAR	**Borovoye Array**	**45.82**	**22**	P	**P**	**05 33 07.2**	**+0.5**
	comp=N,1.3nm,0.7s,baz=212,slow=5.1,SNR=6.3						
MKAR	**Makanchi Array**	**47.02**	**35**	P	**P**	**05 33 15.8**	**-0.5**
	comp=N,0.7nm,0.7s,baz=224,slow=8.1,SNR=8.4						
MKAR				LR	LR	05 56 26.9	
	comp=N,34nm,18.9s,baz=255,slow=40						
FINES	**FINESS Array B**	**51.08**	**349**	LR	LR	05 55 15.1	
	comp=N,34nm,20.3s,baz=206,slow=36						
ZALV	**Zalesovo Beam**	**52.54**	**29**	P	**P**	**05 33 59.1**	**+0.9**
	comp=N,0.5nm,0.3s,baz=241,slow=7.9,SNR=3.6						
ZALV				LR	LR	06 00 54.6	
	comp=N,46nm,18.3s,baz=250,slow=41						
CMAR	**Chiang Mai Arr**	**52.78**	**76**	P	**P**	**05 34 01.3**	**+0.7**
	comp=N,0.5nm,0.3s,baz=276,slow=9.0,SNR=4.4						
NOA	**NORSAR Array B**	**54.58**	**341**	LR	LR	05 58 55.9	
	comp=N,17nm,18.1s,baz=5.0,slow=38						
ARCES	**ARCESS Array B**	**58.68**	**352**	LR	LR	06 02 09.7	
	comp=N,27nm,18.3s,baz=141,slow=38						
SONM	**Songino Array**	**62.38**	**42**	P	**P**	**05 35 07.7**	**-0.2**
	comp=N,1.6nm,0.9s,baz=257,slow=6.7,SNR=3.5						
SONM				LR	LR	06 04 09.1	
	comp=N,39nm,19.5s,baz=108,slow=38						
NRIK	**Noril'sk**	**63.40**	**16**	LR	LR	06 07 41.5	
	comp=N,58nm,18.3s,baz=150,slow=41						
MAW	**Mawson**	**80.57**	**173**	LR	LR	06 05 37.9	
	comp=N,49nm,18.7s,baz=241,slow=30						
PETK	**Petropavlovsk-**	**93.84**	**34**	LR	LR	06 27 21.4	
	comp=N,26nm,18.5s,baz=103,slow=40						
ASAR	**Alice Springs**	**94.25**	**113**	P	**P**	**05 38

BSO1			X		06 04 32.2	
TATJ	**Tateyama 2**	**0.55 321**	P	**Pn**	**06 04 25.8**	**+0.3**
TATJ			*i* S	**Sn**	**06 04 35.8**	**+1.2**
JIM2	**Oshima 3**	**0.73 279**	P	**Pn**	**06 04 27.5**	**-0.2**
JIM2			S	**Sn**	**06 04 37.9**	**-0.5**
JKO	**Kozu shima**	**1.06 247**	P	**Pn**	**06 04 32.5**	**+0.8**
KTJJ	**Kamata 2**	**1.08 288**	P	**Pn**	**06 04 31.8**	**-0.2**
JOD2	**Odawara 2**	**1.20 304**	P	**Pn**	**06 04 33.3**	**-0.4**
JOD2			S	**Sn**	**06 04 48.0**	**-1.2**
MJAR	**Matsushiro Arr**	**2.59 319**	P	**Pn**	**06 04 53.4**	**+0.9**
	2.1nm,0.3s,baz=149,slow=12,SNR=11					
MJAR			S	**Sn**	**06 05 23.5**	**+0.8**
	6.7nm,0.3s,baz=114,slow=12,SNR=11					
MAT	**Matsushiro**	**2.59 319**	P	**Pn**	**06 04 52.9**	**+0.4**
MAT			S	**Sn**	**06 05 23.6**	**+0.8**
MKAR	**Makanchi Array**	**44.69 304**	P	**P**	**06 12 19.4**	**-0.6**
	0.2nm,0.7s,baz=98,slow=8.9,SNR=2.7					
WRA	**Warramunga Arr**	**54.54 187**	P	**P**	**06 13 35.0**	**0.0**
	1.2nm,0.7s,baz=359,slow=7.2,SNR=8.2					

IDC ***15*** *06:10:22.7±1.1,26°.92N×143°.90E,h0km,mb3.7/9, mb1 3.9/11,mb1mx3.7/41,mbtmp3.7/11,ML3.8/2,Error ellipse: s-maj=24.8km s-min=23.2km az=147.0*
ISCJB ***15*** *06:10:26.0±0.9,26°.9N±0°.1×143°.85E±0°.08,h33km, mb3.7/9,Error ellipse: s-maj=19.1km s-min=10.6km az=175.7*
ISC 15 06:10:28.2±1.1,27°.0N±0°.1×143°.8E±0°.1,h35km,n12, σ0$71/13,mb3.7/9,Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
JCJ	**Chichijima**	**1.43**	**275**	Pn	**Pn**		**06 10 51.4**	**-0.3**
	10nm,0.3s,baz=264,slow=23,SNR=10							
JCJ				Sn	**Sn**		**06 11 09.1**	**-0.3**
	baz=270,slow=20							
MJAR	**Matsushiro Arr**	**10.66**	**335**	Pn	**Pn**		**06 12 57.0**	**-1.4**
	1.0nm,0.3s,baz=164,slow=11,SNR=5.5							
KSRS	**Korea Array**	**16.99**	**312**	P	**Pn**		**06 14 23.4**	**+0.2**
	0.2nm,0.3s,baz=121,slow=9.1,SNR=3.5							
KLR	**Kul'dur**	**24.10**	**340**	P	**P**		**06 15 40.9**	**+0.5**
	1.5nm,0.7s,baz=145,slow=6.2,SNR=7.2							
SONM	**Songino Array**	**35.80**	**316**	P	**P**		**06 17 25.3**	**+1.0**
	0.5nm,0.5s,baz=116,slow=13,SNR=2.3							
WRA	**Warramunga Arr**	**47.52**	**192**	P	**P**		**06 18 59.7**	**-0.5**
	1.5nm,0.8s,baz=11,slow=8.3,SNR=6.3							
MKAR	**Makanchi Array**	**51.66**	**310**	P	**P**		**06 19 32.4**	**+0.9**
	0.4nm,0.3s,baz=87,slow=9.4,SNR=9.7							
ILAR	**Eielson Array**	**57.14**	**29**	P	**P**		**06 20 10.8**	**-0.3**
	0.3nm,0.8s,baz=260,slow=5.4,SNR=4.1							
INK	**Inuvik**	**62.55**	**25**	P	**P**		**06 20 48.1**	**0.0**
	0.9nm,0.9s,baz=314,slow=6.7,SNR=7.6							
YKA	**Yellowknife Ar**	**71.57**	**29**	P	**P**		**06 21 45.4**	**-0.1**
	0.4nm,0.8s,baz=292,slow=5.8,SNR=4.1							
FINES	**FINESS Array B**	**78.69**	**334**	P	**P**		**06 22 27.0**	**+0.5**
	0.8nm,0.7s,baz=64,slow=4.4,SNR=5.3							
BRTR	**Keskin Array B**	**87.13**	**314**	P	**P**		**06 23 10.4**	**-0.5**
	0.2nm,0.4s,baz=48,slow=2.1,SNR=2.7							

IDC 15 06:14:02.0±2.3,16°.83S×177°.74W,h0km,mb3.8/4, mb1 4.2/4,mb1mx3.7/31,mbtmp3.8/4,MS3.3/1,Ms1 3.3/1, ms1mx2.6/30,Error ellipse: s-maj=137.0km s-min=29.0km az=152.0,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
PPT	**Papeete**	**26.90**	**96**	LR		LR	06 29 15.1	
	comp=Z,52nm,18.2s,baz=314,slow=34							
WRA	**Warramunga Arr**	**45.47**	**258**	P		P	06 22 23.5	+0.2
	1.1nm,0.5s,baz=94,slow=7.0,SNR=9.5							
ASAR	**Alice Springs**	**45.71**	**253**	P		P	06 22 24.8	-0.4
	2.0nm,0.4s,baz=89,slow=8.1,SNR=32							
ILAR	**Eielson Array**	**84.70**	**13**	P		P	06 26 37.0	-0.4
	0.3nm,0.5s,baz=226,slow=6.2,SNR=4.1							
TXAR	**Lajitas Array**	**84.88**	**57**	P		P	06 26 39.6	+0.4
	0.2nm,0.7s,baz=207,slow=7.8,SNR=3.7							

JMA ***15*** *06:23:29.7±0.3,43°.77N×147°.51E,h55km,M2.7*
SKHL ***15*** *06:23:30.2±0.1,44°.12N×147°.48E,h30km,mb4.3/2*
ISC 15 06:23:26.4±3.0,44°.0N±0°.1×147°.7E±0°.2,h63km,n8, σ1$57/12,1C,Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
SHO	**Shikotan**	**0.66**	**263**	*i* P		**Pn**	**06 23 40.5**	**+0.2**
SHO					AMB	AMB	06 23 40.7	
	300nm,0.3s							
SHO				*i* S		**Sn**	**06 23 48.3**	**-2.2**
SHO					A	A	06 23 48.9	
	220nm,0.3s							
SHO					A	A	06 23 48.9	
	200nm,0.3s							
KUR	**Kuril'sk**	**1.28**	**4**	*e*S		**Sn**	**06 24 03.2**	**-1.3**
KUR					A	A	06 24 04.4	
	90nm,0.2s							
KUR					A	A	06 24 04.4	
	70nm,0.2s							
YUK	**Yuzh-Kuril'sk**	**1.35**	**274**	⇑*i*P		**Pn**	**06 23 50.1**	**+1.0**
YUK					AMB	AMB	06 23 51.1	
	30nm,0.2s							
YUK					AMB	AMB	06 23 51.1	
	50nm,0.2s							
YUK					AMB	AMB	06 23 51.1	
	40nm,0.2s							
YUK				*i* S		**Sn**	**06 24 04.9**	**-1.3**
YUK					A	A	06 24 07.4	
	90nm,0.2s							
YUK					A	A	06 24 07.4	
	170nm,0.2s							
NEM2	**Nemuro 2**	**1.56**	**248**	P		**Pn**	**06 23 52.7**	**+0.8**
NEM2				*e*S		**Sn**	**06 24 09.1**	**-2.1**
JRA	**Rausu**	**1.89**	**270**	P		**Pn**	**06 23 58.3**	**+2.0**
JNK	**Nakash**	**2.21**	**261**	*e*S		**Sn**	**06 24 26.3**	**-0.8**
JAK	**Akkeshi**	**2.41**	**248**	P		**Pn**	**06 24 04.6**	**+1.2**
JAK				*e*S		**Sn**	**06 24 30.5**	**-1.3**
JAR	**Ashorobuto**	**2.95**	**258**	*e*S		**Sn**	**06 24 45.9**	**+0.8**

IDC ***15*** *06:29:10.9±3.8,7°.04S×129°.28E,h124km±35km,mb3.7/8, mb1 3.9/11,mb1mx3.7/33,mbtmp4.1/11,MS3.2/2, Ms1 3.2/2,ms1mx2.7/45,Error ellipse: s-maj=37.2km s-min=15.0km az=60.0*
ISCJB ***15*** *06:29:12.6±0.3,7°.31S±0°.03×128°.95E±0°.04,h150km, mb3.8/8,Error ellipse: s-maj=5.4km s-min=4.5km az=136.4*
DJA ***15*** *06:29:14.9±0.2,7°.5±3°×12°.9E±°,h153km±7km,M5.1/10, mb4.9/10,mB5.5/7,MLv5.3/4,Mw(mB)4.9/7*
ISC 15 06:29:13.5±0.5,7°.34S±0°.06×129°.03E±0°.06,h150km,n50, σ1$91/52,mb3.9/8,Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
SAUI	**Saumlaki**	**2.34**	**106**	P		**Pn**	**06 29 53.1**	**+0.4**
SAUI				S		**Sn**	**06 30 22.7**	**-0.1**
BNDI	**Bandanaira**	**2.93**	**17**	P		**Pn**	**06 30 01.1**	**+1.1**
MSAI	**Masohi**	**3.96**	**359**	P		**Pn**	**06 30 14.9**	**+1.5**
SOEI	**Soe**	**5.29**	**243**	P		**Pn**	**06 30 32.9**	**+2.0**
	179nm,1.0s,6μm4.3nm							
FAKI	**Fak Fak**	**5.43**	**36**	P		**Pn**	**06 30 33.6**	**+0.8**
MTN	**Manton Dam**	**5.85**	**159**	P		**Pn**	**06 30 40.3**	**+2.0**
	baz=6.0,SNR=63							
SANI	**Sanana**	**6.06**	**330**	P		**Pn**	**06 30 43.2**	**+2.1**
KDU	**Kakadu**	**6.30**	**148**	P		**Pn**	**06 30 46.0**	**+1.7**
	baz=6.4,SNR=148							
SWI	**Sorong**	**6.80**	**19**	P		**Pn**	**06 30 50.9**	**-0.1**
	42nm,0.3s,2μm0.5nm							
LBMI	**Labuha**	**6.83**	**347**	P		**Pn**	**06 30 53.1**	**+1.8**
MMRI	**Maumere**	**6.85**	**259**	P		**Pn**	**06 30 54.1**	**+2.5**
KNRA	**Kununurra**	**8.29**	**182**	P		**Pn**	**06 31 11.5**	**+0.6**
	baz=8.5							
WSI	**Waingapu**	**8.94**	**254**	P		**Pn**	**06 31 20.7**	**+1.1**
	295nm,0.6s,6μm							
KAPI	**Kappang**	**9.51**	**284**	P		**Pn**	**06 31 27.2**	**+0.1**
	0.4nm,0.3s,baz=108,slow=9.4,SNR=4.9							
KAPI						LR	06 34 58.0	
	comp=Z,45nm,18.4s,baz=356,slow=36							
MRSI	**Marisa**	**10.50**	**317**	P		**Pn**	**06 31 43.5**	**+3.3**
	100nm,0.9s,2μm							
PLAI	**Plampang**	**11.24**	**262**	P		**Pn**	**06 31 48.2**	**-1.8**
TWSI	**Taliwang, Sumb**	**12.11**	**263**	P		**Pn**	**06 31 59.0**	**-2.4**
JAY	**Jayapura**	**12.57**	**68**	P		**Pn**	**06 32 07.4**	**0.0**
	0.2nm,0.3s,baz=264,slow=21,SNR=5.3							
JAY				S		**Sn**	**06 34 27.1**	**+0.5**
	0.1nm,0.3s,baz=90,slow=20,SNR=3.2							
JAY	**Jayapura**	**12.57**	**68**	P		**Pn**	**06 32 06.9**	**-0.5**
WB7	**Warramunga Arr**	**13.47**	**158**	P		**P**	**06 32 21.0**	**-1.8**
	baz=14							
WRA	**Warramunga Arr**	**13.55**	**158**	P		**Pn**	**06 32 19.0**	**-0.8**
	3.1nm,0.3s,baz=346,slow=12,SNR=44							
WRA				S		Sn	06 34 40.1	-10
	8.3nm,0.3s,baz=339,slow=22,SNR=7.2							
BBKI	**Banjar Baru**	**14.64**	**284**	P		**P**	**06 32 39.0**	**+3.1**
JAGI	**Jajag, Banyuwa**	**14.78**	**265**	P		**Pn**	**06 32 34.6**	**-0.8**
COEN	**Coen**	**15.37**	**117**	P		**P**	**06 32 44.3**	**+0.3**
	baz=15,SNR=46							
QIS	**Mount Isa**	**16.66**	**143**	P		**Pn**	**06 32 59.9**	**+1.4**
	baz=17,SNR=10							
ASAR	**Alice Springs**	**16.90**	**164**	P		**Pn**	**06 33 03.0**	**+1.7**
	1.1nm,0.3s,baz=342,slow=9.9,SNR=54							
ASAR				S		**S**	**06 36 02.3**	**-7.0**
	1.7nm,0.3s,baz=340,slow=15,SNR=6.8							
PWJI	**Pagerwojo**	**17.09**	**267**	P		**P**	**06 33 00.9**	**-2.0**
WRKA	**Warakurna**	**17.62**	**182**	P		**Pn**	**06 33 11.2**	**+1.3**
	baz=18,SNR=22							
MTSU	**Mount Surprise**	**18.35**	**127**	P		**P**	**06 33 17.4**	**+0.6**
	baz=18,SNR=8.0							
QLP	**Quilpie**	**23.99**	**145**	P		**P**	**06 34 16.5**	**+2.2**
	baz=24,SNR=16							
BBOO	**Buckleboo**	**26.18**	**166**	P		**P**	**06 34 35.4**	**+1.3**
	baz=26,SNR=5.2							
STKA	**Stephens Creek**	**27.08**	**156**	P		**P**	**06 34 43.8**	**+1.6**
	1.6nm,0.4s,baz=333,slow=9.5,SNR=7.4							
STKA	**Stephens Creek**	**27.08**	**156**	P		**P**	**06 34 43.9**	**+1.6**
	baz=27,SNR=6.5							
ARPS	**Mount Arapiles**	**31.54**	**160**	P		**P**	**06 35 24.1**	**+2.5**
	baz=32,SNR=13							
TOO	**Toolangi**	**33.61**	**156**	P		**P**	**06 35 43.0**	**+3.4**
	baz=34,SNR=4.7							
CMAR	**Chiang Mai Arr**	**39.22**	**311**	P		**P**	**06 36 27.4**	**-0.1**
	2.4nm,0.6s,baz=138,slow=6.9,SNR=13							
MJAR	**Matsushiro Arr**	**44.49**	**11**	P		**P**	**06 37 07.7**	**-2.2**
	2.5nm,0.7s,baz=188,slow=9.5,SNR=11							
PKIN	**Phulchoki**	**54.63**	**311**	*e*Pn		**P**	**06 38 25.4**	**-1.9**
	5.7nm,0.4s							
KKN	**Kakani**	**54.83**	**311**	*e*Pn		**P**	**06 38 27.2**	**-1.5**
	5.2nm,0.3s							
GKN	**Gorkha**	**55.43**	**311**	*e*Pn		**P**	**06 38 31.6**	**-1.3**
	22nm,0.3s							
KOLN	**Koldanda**	**56.08**	**310**	*e*Pn		**P**	**06 38 36.2**	**-1.4**
	12nm,0.5s							
PYUN	**Piuthan**	**56.71**	**310**	*e*Pn		**P**	**06 38 41.0**	**-1.1**
MKAR	**Makanchi Array**	**67.98**	**327**	P		**P**	**06 39 56.0**	**-0.4**
	1.1nm,0.4s,baz=117,slow=8.3,SNR=22							
MA2	**Magadan**	**68.92**	**12**	LR		LR	07 07 03.1	
	comp=Z,48nm,21.7s,baz=212,slow=33							
ZALV	**Zalesovo Beam**	**71.46**	**334**	P		**P**	**06 40 17.1**	**-0.4**
	0.7nm,0.3s,baz=130,slow=13,SNR=2.9							
BVAR	**Borovoye Array**	**77.84**	**328**	P		**P**	**06 40 52.8**	**-1.5**
	0.2nm,0.3s,baz=108,slow=9.3,SNR=3.4							
AKTO	**Aktyubinsk**	**83.75**	**323**	P		**P**	**06 41 26.4**	**+0.6**
	1.4nm,0.6s,baz=131,slow=4.2,SNR=4.3							
ILAR	**Eielson Array**	**94.06**	**25**	P		**P**	**06 42 12.1**	**-2.4**
	0.3nm,0.7s,baz=293,slow=4.4,SNR=4.3							
CPUP	**Villa Florida**	**145.97**	**170**	PKPbc		**PKPab**	**06 48 38.0**	**+1.0**
	0.6nm,0.7s,baz=190,slow=6.1,SNR=3.3							
LPAZ	**La Paz**	**151.03**	**144**	PKPbc		**PKPbc**	**06 48 50.5**	**-0.1**
	1.1nm,0.7s,baz=33,slow=2.5,SNR=7.6							

ISCJB ***15*** *06:33:27.0±0.4,8°.60S±0°.04×75°.04W±0°.05,h136km, mb3.8/12,Error ellipse: s-maj=7.7km s-min=5.1km az=150.9*
IDC ***15*** *06:33:27.0±1.6,8°.60S×75°.00W,h124km±17km,mb3.7/12, mb1 3.9/18,mb1mx3.9/31,mbtmp4.2/18,MS2.5/1, Ms1 2.5/1,ms1mx2.3/37,Error ellipse: s-maj=19.8km s-min=9.6km az=53.0*
SCB ***15*** *06:34:17.5±0.6,11°.35S×71°.89W,h150km,Ml3.5/1,Error ellipse: s-maj=17.6km s-min=9.0km az=106.0*
ISC 15 06:33:28.1±0.5,8°.62S±0°.06×75°.02W±0°.08,h136km,n31, σ1$08/33,mb3.9/12,1D,Central Peru

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
ATAH	**Atahualpa**	**3.66**	**294**	P		**Pn**	**06 34 23.4**	**-0.5**
	38nm,0.3s,baz=97,slow=5.1,SNR=150							
ATAH				S		**Sn**	**06 35 05.8**	**-1.2**
	38nm,0.3s,baz=92,slow=6.0,SNR=5.9							
NNA	**Nana**	**3.80**	**208**	P		**Pn**	**06 34 24.9**	**-0.5**
	32nm,0.3s,baz=27,slow=9.5,SNR=90							
NNA				S		**Sn**	**06 35 08.9**	**-1.0**
	112nm,0.3s,baz=224,slow=17,SNR=19							
NNA				LR		LR	06 35 30.9	
	comp=Z,64nm,18.9s,baz=266,slow=32							
OTAV	**Otavalo**	**9.44**	**339**	*e*P		**Pn**	**06 35 42.6**	**+1.2**
BBOB	**La Paz, Bander**	**10.05**	**139**	*e*Pn		**Pn**	**06 35 49.7**	**+0.1**
BBOD	**La Paz, Gloria**	**10.13**	**142**	*e*Pn		**Pn**	**06 35 52.3**	**+1.6**
BBOD				*e*Sn		Sn	06 37 01.0	-42
	21nm,0.8s							
FLOC	**Florencia**	**10.15**	**356**	*e*P		**Pn**	**06 35 48.2**	**-2.3**
LPAZ	**La Paz**	**10.16**	**139**	P		**Pn**	**06 35 51.1**	**-0.1**
	0.4nm,0.3s,baz=332,slow=15,SNR=13							
BBOJ	**La Paz, Jacaju**	**10.64**	**142**	*e*Pn		**Pn**	**06 35 58.7**	**+1.3**
BBOE	**La Paz, Chanca**	**10.65**	**141**	⇓*i*Pn		**Pn**	**06 35 58.1**	**+0.6**
RUSC	**La Rusia**	**14.54**	**8**	*e*P		**P**	**06 36 49.9**	**-0.9**
LVC	**Limon Verde**	**15.10**	**158**	P		**Pn**	**06 36 55.8**	**+1.0**
	11nm,0.3s,baz=250,slow=2.6,SNR=6.6							
SIV	**San Ignacio**	**15.46**	**120**	P		**Pn**	**06 36 58.1**	**-1.0**
	1.1nm,0.3s,baz=311,slow=9.0,SNR=34							
SIV	**San Ignacio**	**15.46**	**120**	*e*P		**Pn**	**06 36 57.8**	**-1.3**
MOCB	**Mochara**	**15.48**	**145**	*e*P		**Pn**	**06 36 59.7**	**+0.1**
CBRI	**Barrientos, No**	**16.38**	**8**	*e*P		**Pn**	**06 37 09.7**	**-0.8**
GRMC	**Gramalote, San**	**16.38**	**8**	*e*P		**P**	**06 37 13.7**	**+2.9**
PTGA	**Pitinga**	**16.91**	**63**	P		**P**	**06 37 15.7**	**-0.9**
	3.5nm,0.3s,baz=333,slow=22,SNR=28							
CPUP	**Villa Florida**	**24.34**	**139**	P		**P**	**06 38 33.6**	**+0.3**
	2.7nm,0.7s,baz=329,slow=8.6,SNR=7.3							
PLCA	**Paso Flores**	**32.23**	**174**	P		**P**	**06 39 44.1**	**+0.6**
	0.6nm,0.7s,baz=341,slow=12,SNR=3.2							
TXAR	**Lajitas Array**	**46.75**	**325**	P		**P**	**06 41 45.2**	**+1.2**
	0.5nm,0.5s,baz=152,slow=8.6,SNR=16							
PDAR	**Pinedale Array**	**60.06**	**331**	P		**P**	**06 43 21.9**	**+0.8**
	0.3nm,0.4s,baz=140,slow=7.7,SNR=4.9							
ULM	**Lac du Bonnet**	**61.38**	**345**	P		**P**	**06 43 29.3**	**-0.2**
	2.9nm,0.6s,baz=150,slow=6.1,SNR=4.3							
NVAR	**Mina Array Bea**	**61.76**	**322**	P		**P**	**06 43 31.4**	**-1.3**
	1.0nm,0.6s,baz=125,slow=5.6,SNR=4.9							
DBIC	**Dimbokro**	**71.57**	**80**	P		**P**	**06 44 34.8**	**-0.3**
	5.2nm,0.5s,baz=247,slow=6.5,SNR=8.5							
YKA	**Yellowknife Ar**	**77.17**	**342**	P		**P**	**06 45 06.8**	**+0.3**
	2.0nm,0.8s,baz=137,slow=6.1,SNR=33							
TORD	**Torodi Ar. Bea**	**79.18**	**75**	P		**P**	**06 45 18.4**	**-0.2**
	1.3nm,0.6s,baz=252,slow=4.3,SNR=11							
ESDC	**Sonseca Array**	**81.19**	**48**	P		**P**	**06 45 29.3**	**+0.3**
	0.2nm,0.3s,baz=248,slow=6.0,SNR=4.7							
INK	**Inuvik**	**86.91**	**341**	P		**P**	**06 45 57.4**	**+0.2**
	3.2nm,0.9s,baz=119,slow=6.1,SNR=9.3							
ILAR	**Eielson Array**	**90.15**	**336**	P		**P**	**06 46 12.8**	**+0.3**
	1.0nm,0.9s,baz=150,slow=3.9,SNR=8.3							
BVAR	**Borovoye Array**	**127.61**	**26**	PKP		**PKPdf**	**06 52 17.7**	**+0.5**
	0.6nm,0.6s,baz=8.5,slow=2.9,SNR=4.6							
ZALV	**Zalesovo Beam**	**131.97**	**16**	PKP		**PKPdf**	**06 52 26.7**	**+1.3**
	0.3nm,0.3s,baz=251,slow=4.5,SNR=3.9							

BJI ***15*** *06:46:58.5,3°.44S×140°.10E,h90km,mb5.4/75,mB5.5/51*
ISCJB ***15*** *06:47:02.9±0.4,3°.08S±0°.02×139°.71E±0°.02,h93km±3km, mb5.4/181,Error ellipse: s-maj=3.5km s-min=3.2km az=24.0*
MOS ***15*** *06:47:02.5±1.0,3°.04S×139°.68E,h89km,mb5.5/36,Error ellipse: s-maj=9.2km s-min=5.2km az=103.6*
IDC ***15*** *06:47:03.5±0.5,3°.11S×139°.81E,h88km±4km,mb4.9/40, mb1 4.9/44,mb1mx4.9/51,mbtmp5.2/44,MS4.3/19, Ms1 4.3/19,ms1mx4.1/32,Error ellipse: s-maj=8.8km s-min=7.3km az=80.0*
NEIC ***15*** *06:47:04.0±0.0,3°.26S×139°.67E,h86km,Moment Tensor Solution. s22 Moment tensor: Scale 1017Nm; Mrr1.20; Mθθ-0.60; Mφφ-0.60; Mrθ-0.50; Mrφ0.70; Mθφ0.60; Best double couple: M0 1.00000×10^17^ NP1:ϕs316.00000°, δ60.00000°,λ93.00000°. NP2:ϕs130.00000°,δ29.00000°, λ84.00000°. Principal axes: T 1.4000, Plg74.0000°, Azm235.0000°; N 0.1000, Plg2.0000°, Azm135.0000°; P -1.5000, Plg15.0000°, Azm44.0000°;*
NEIC ***15*** *06:47:05.3±0.6,3°.11S×139°.70E,h103km±6km,mb5.6/80, MW5.4,MW5.3 Error ellipse: s-maj=4.1km s-min=3.5km az=207.0,Moment Tensor Solution. s19 Moment tensor: Scale 1017Nm; Mrr1.51; Mθθ-0.66; Mφφ-0.86; Mrθ0.04; Mrφ0.67; Mθφ0.18; Best double couple: M0 1.50000×10^17^ NP1:ϕs134.00000°,δ43.00000°,λ82.00000°. NP2: ϕs325.00000°,δ47.00000°,λ97.00000°. Principal axes: T 1.5300, Plg84.0000°, Azm297.0000°; N -0.0900, Plg5.0000°, Azm140.0000°; P -1.4400, Plg2.0000°, Azm49.0000°;*
NEIC Felt [III] at Genyem, Jayapura, Sentani and Wamena.
DJA ***15*** *06:47:05.2±0.2,3°.5±2°×14°.0E±°,h92km±3km,M5.6/102, mb5.7/102,mB6.0/82,MLv5.8/2,Mw(mB)5.6/82,Mwp6.7/3*
GCMT ***15*** *06:47:05.3±0.1,3°.01S×139°.76E,h95km,MW5.4/115, Moment Tensor Solution. s115,c184; s115,c206; Duration: 1s2 Moment tensor: Scale 1017Nm; Mrr1.40±.02; Mθθ-0.81±.02; Mφφ-0.58±.03; Mrθ0.06±.02; Mrφ0.83±.02; Mθφ0.26±.02; Best double couple: M0 1.49100×10^17^ NP1:ϕs321.00000°,δ48.00000°, λ104.00000°. NP2:ϕs121.00000°,δ43.00000°,λ75.00000°. Principal axes: T 1.4470, Plg80.0000°, Azm298.0000°; N 0.0940, Plg10.0000°, Azm132.0000°; P -1.5360, Plg2.0000°, Azm42.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*
ISC 15 06:47:04.2±0.3,3°.07S±0°.03×139°.70E±0°.03,h93km±2km, h93km:pP-P,n669,σ1$36/724,mb5.5/195,32C-7D,Irian Jaya

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
GENI	**Genyem**	**0.67**	**44**	P		**Pn**	**06 47 19.7**	**-1.0**
JAY	**Jayapura**	**1.15**	**61**	P		**Pn**	**06 47 23.1**	**-2.8**
	388nm,0.3s,baz=80,slow=24,SNR=1200							
JAY				S		**Sn**	**06 47 38.8**	**-3.4**
	baz=90,slow=20							
JAY	**Jayapura**	**1.15**	**61**	P		**Pn**	**06 47 24.9**	**-1.0**
JAY				S		**Sn**	**06 47 40.7**	**-1.5**
WAMI	**Wamena**	**1.27**	**231**	P		**Pn**	**06 47 30.1**	**+2.8**
MMPI	**Merauke**	**5.40**	**173**	P		**Pn**	**06 48 22.8**	**+0.5**
RKPI	**Ransiki, Papua**	**5.73**	**286**	P		**Pn**	**06 48 29.0**	**+2.1**
	2μm,0.8s,21μm8.5nm							
RKPI				S		**Sn**	**06 49 30.6**	**-0.7**
	2μm,0.8s,21μm8.5nm							
FAKI	**Fak Fak**	**7.44**	**271**	P		**Pn**	**06 48 50.4**	**+0.3**
	370nm,0.8s,4μm1.4nm							
FAKI				S		**Sn**	**06 50 09.6**	**-3.5**
	370nm,0.8s,4μm1.4nm							
FAKI	**Fak Fak**	**7.44**	**271**	*e*Pn		**Pn**	**06 48 50.5**	**+0.3**
FAKI				*e*Sn		**Sn**	**06 50 11.3**	**-1.7**
MANU	**Manus Island**	**7.73**	**83**	*e*Pn		**Pn**	**06 48 55.8**	**+1.7**
SWI	**Sorong**	**8.72**	**284**	P		**Pn**	**06 49 09.0**	**+1.5**
	346nm,0.7s,4μm107μm							
SWI				S		**Sn**	**06 50 40.1**	**-4.0**
	346nm,0.7s,4μm107μm							
SAUI	**Saumlaki**	**9.68**	**239**	P		**Pn**	**06 49 24.2**	**+3.6**
	2μm,1.1s,20μm							
SAUI	**Saumlaki**	**9.68**	**239**	*e*Pn		**Pn**	**06 49 24.4**	**+3.8**
PMG	**Port Moresby**	**9.72**	**131**	P		**Pn**	**06 49 21.0**	**-0.2**
	2.8nm,0.3s,baz=309,slow=14,SNR=7.0							
PMG				LR		LR	06 53 38.0	
	comp=Z,1μm,19.2s,baz=292,slow=41							
PMG	**Port Moresby**	**9.72**	**131**	*ce*P		**Pn**	**06 49 22.3**	**+1.1**
PMG				pmax		pmax		
	comp=Z,995nm,1.2s							
PMG	**Port Moresby**	**9.72**	**131**	*e*Pn		**Pn**	**06 49 22.1**	**+0.8**
BNDI	**Bandanaira**	**9.88**	**261**	P		**Pn**	**06 49 23.0**	**-0.4**
	comp=Z,786nm,1.3s,comp=Z,12μm							
MSAI	**Masohi**	**10.76**	**268**	P		**Pn**	**06 49 35.9**	**+0.5**
COEN	**Coen**	**11.35**	**163**	P		**Pn**	**06 49 41.3**	**-2.0**
	baz=11,SNR=117							
COEN	**Coen**	**11.35**	**163**	*e*Pn		**Pn**	**06 49 41.3**	**-2.0**
COEN				*e*Sn		**Sn**	**06 51 43.1**	**-5.1**
PALU	**Palau**	**11.59**	**333**	P		**Pn**	**06 49 49.0**	**+2.4**
	baz=12,SNR=21							
KDU	**Kakadu**	**11.93**	**216**	P		**Pn**	**06 49 48.6**	**-2.6**
	baz=12,SNR=505							
LBMI	**Labuha**	**12.43**	**281**	P		**Pn**	**06 50 00.2**	**+2.3**
	comp=Z,568nm,1.4s,comp=Z,6μm							
RABL	**Rabaul**	**12.49**	**95**	*e*Pn		**Pn**	**06 49 59.4**	**+0.7**
MTN	**Manton Dam**	**12.89**	**221**	*e*Pn		**Pn**	**06 50 01.7**	**-2.2**
SANI	**Sanana**	**13.74**	**274**	P		**Pn**	**06 50

comp=Z,397nm,0.9s
ASAR Alice Springs 21.23 195 P P 06 51 42.2 -0.5
comp=Z,208nm,0.8s,baz=26,slow=10.0,SNR=825
ASAR pP **pP 06 52 01.3 +0.3**
comp=Z,338nm,0.9s,baz=24,slow=11,SNR=10
ASAR S **S 06 55 28.0 -5.6**
comp=Z,151nm,1.1s,baz=17,slow=26,SNR=6.9
ASAR LR LR 07 00 15.9
comp=Z,2μm,20.1s,baz=30,slow=37
GUIM Jordan 21.80 309 *eP* **P 06 51 49.1 +0.2**
RCP Roxas 22.26 311⇑*eP* **P 06 51 55.3 +1.5**
PLAI Plampang 22.53 254 P **P 06 51 55.0 -1.7**
comp=Z,165nm,1.0s,comp=Z,1μm
PVCP Virac 22.63 317 *eP* **P 06 51 56.7 -1.0**
MYLDM Lahad Datu 22.71 291 ⇑P **P 06 52 01.7 +3.2**
MYLDM Lahad Datu 22.71 291 *eP* **P 06 51 59.8 +1.4**
comp=Z,584nm,1.4s
TSM Tawau 23.01 288 ⇓P **P 06 52 03.4 +2.0**
CUYO Cuyo Island 23.17 307 *eP* **P 06 52 03.4 +0.4**
OTRP Odiongan 23.32 311 *eP* **P 06 52 05.0 +0.7**
TWSI Taliwang, Sumb 23.37 255 P **P 06 52 03.8 -1.1**
comp=Z,73nm,1.4s,comp=Z,1μm
QLP Quilpie 23.78 170 P **P 06 52 08.2 -0.2**
baz=24,SNR=96
SJMP San Jose 24.06 310 *eP* **P 06 52 11.8 +0.8**
SDKM Sandakan 24.09 291 ⇑P **P 06 52 14.2 +2.8**
BOAC Boac 24.16 313 *eP* **P 06 52 12.3 +0.4**
WRKA Warakurna 24.44 206 P **P 06 52 13.9 -0.6**
baz=24,SNR=448
ENPP El Nido 24.66 305 *eP* **P 06 52 17.2 +0.7**
EIDS Eidsvold 24.73 155 P **P 06 52 18.4 +1.4**
baz=25,SNR=97
EIDS Eidsvold 24.73 155 *eP* **P 06 52 18.4 +1.4**
comp=Z,565nm,0.9s
BBKI Banjar Baru 24.82 268 P **P 06 52 20.2 +2.2**
comp=Z,712nm,1.1s,comp=Z,7μm
RMQ Roma 24.85 160 P **P 06 52 20.2 +2.1**
baz=25,SNR=101
SRBI Singaraja 24.87 257 P **P 06 52 17.7 -0.7**
comp=Z,136nm,1.3s,comp=Z,2μm
MTKI Muara Teweh, K 24.88 274 P **P 06 52 20.4 +1.9**
comp=Z,150nm,1.1s,comp=Z,11μm
DNP Denpasar 24.98 256 P **P 06 52 20.7 +1.3**
comp=Z,409nm,1.0s
KKM Kota Kinabalu 25.14 291 ⇑P **P 06 52 22.9 +1.8**
KKM Kota Kinabalu 25.14 291 *eP* **P 06 52 21.4 +0.4**
comp=Z,181nm,1.0s
LUBP Lubang 25.52 311 *eP* **P 06 52 22.8 -1.4**
ABJI Asem Bagus 25.77 258 P **P 06 52 26.7 +0.1**
comp=Z,118nm,1.0s,comp=Z,2μm
JAGI Jajag, Banyuwa 25.97 257 P **P 06 52 26.5 -1.9**
JAGI Jajag, Banyuwa 25.97 257 *eP* **P 06 52 26.6 -1.9**
comp=Z,107nm,1.0s
MBWA Marble Bar 26.47 226 *eP* **P 06 52 34.0 +1.1**
comp=Z,844nm,1.0s
GMJI Gumukmas 26.62 258 P **P 06 52 33.2 -1.1**
comp=Z,67nm,1.0s,comp=Z,1μm
BTM Bintulu 27.32 283 ⇑P **P 06 52 43.4 +2.8**
PBKI Pangkalan Bun 28.00 270 P **P 06 52 47.8 +1.2**
SBUM Sibu 28.01 281 ⇑P **P 06 52 49.3 +2.6**
SBUM Sibu 28.01 281 *eP* **P 06 52 48.3 +1.6**
comp=Z,96nm,1.3s
PWJI Pagerwojo 28.19 259 P **P 06 52 46.8 -1.5**
STKI Sintang 28.38 276 P **P 06 52 51.9 +1.9**
comp=Z,140nm,0.7s,comp=Z,26μmcomp=Z,19μm
NGJI Ngawi 28.43 260 P **P 06 52 52.0 +1.5**
STKA Stephens Creek 28.71 177 P **P 06 52 52.5 -0.2**
comp=Z,75nm,0.8s,baz=348,slow=8.6,SNR=126
STKA LR LR 07 05 25.2
comp=Z,2μm,19.7s,baz=347,slow=38
STKA Stephens Creek 28.71 177 P **P 06 52 52.2 -0.4**
baz=29,SNR=104
PCJI Pacitan 28.83 259 P **P 06 52 52.8 -1.1**
comp=Z,84nm,1.2s
CMSA Cobar Meteorol 28.87 169 P **P 06 52 55.7 +1.6**
baz=29,SNR=129
SMRI Semarang 29.40 261 *eP* **P 06 52 59.7 +0.6**
comp=Z,128nm,1.1s
UGM Wanagama 29.43 259 P **P 06 53 00.6 +1.3**
comp=Z,114nm,1.5s
UGM Wanagama 29.43 259 *eP* **P 06 52 59.5 +0.2**
comp=Z,208nm,1.4s
ARMA Armidale 29.45 159 P **P 06 53 00.8 +1.4**
baz=30,SNR=22
ARMA Armidale 29.45 159 *eP* **P 06 53 00.4 +1.1**
comp=Z,94nm,0.9s
KSM Kuching 29.73 278 ⇑P **P 06 53 03.2 +1.3**
KSM Kuching 29.73 278 *eP* **P 06 53 03.0 +1.1**
comp=Z,181nm,1.4s
BBOO Buckleboo 29.78 186 P **P 06 53 01.8 -0.3**
baz=30,SNR=129
BBOO Buckleboo 29.78 186 *eP* **P 06 53 02.1 0.0**
comp=Z,200nm,0.8s
HTT Hallett 30.21 181 P **P 06 53 06.1 +0.1**
baz=30,SNR=88
GIRL Giralia 31.43 230 P **P 06 53 19.0 +2.2**
baz=31,SNR=15
CMJI Cimerak 31.45 260 P **P 06 53 15.3 -1.8**
JCJI Jatiwangi 31.50 263 P **P 06 53 19.1 +1.5**
comp=Z,240nm,1.5s,comp=Z,4μm
JOW Kunigami 31.71 340 *eP* **P 06 53 19.9 +0.6**
comp=Z,86nm,1.3s
MGCD Mangrove Creek 31.83 162 P **P 06 53 21.6 +1.4**
baz=32,SNR=15
CISI Cisompet, Garu 32.05 261 *eP* **P 06 53 21.1 -1.4**
comp=Z,152nm,1.0s
DZM Mont Dzumac 32.10 128 P **P 06 53 22.6 -0.3**
comp=Z,38nm,0.9s,baz=299,slow=8.4,SNR=17
DZM LR LR 07 05 58.3
comp=Z,678nm,21.8s,baz=314,slow=36
YNG Young 32.10 166 P **P 06 53 24.4 +1.7**
baz=32,SNR=118
TPUB Ta-pu 32.14 326 *eP* **P 06 53 23.5 +0.4**
LEM Lembang 32.17 262 P P 06 53 29.1 +5.5
comp=Z,76nm,1.1s,baz=79,slow=8.9,SNR=17
CNJI Cibinong 32.70 261 P **P 06 53 26.7 -1.4**
KMBL Kambalda 32.77 209 P **P 06 53 28.5 0.0**
baz=33,SNR=25
CBJI Citeko 32.90 263 P **P 06 53 29.6 -0.2**
comp=Z,337nm,1.1s
CAN Canberra 33.23 166 *eP* **P 06 53 34.2 +1.7**
CAN pmax pmax
comp=Z,180nm,0.8s
CAN Canberra 33.23 166 *eP* **P 06 53 34.2 +1.7**
comp=Z,181nm,0.8s
CNB Canberra Magne 33.31 166 P **P 06 53 35.0 +1.8**
baz=33,SNR=96
TARA Tarawa 33.50 83 *eP* **P 06 53 35.8 +0.7**
comp=Z,242nm,1.3s
ARPS Mount Arapiles 33.59 177 P **P 06 53 36.7 +1.2**
baz=34,SNR=55
CGJI Cibinong 34.06 263 P **P 06 53 38.2 -1.7**
MORW Morawa 34.26 219 P **P 06 53 42.0 +0.5**
baz=34,SNR=88
BLSI Bandar Lampung 34.43 265 P **P 06 53 44.2 +1.0**
comp=Z,137nm,1.2s
XMIS Christmas Isla 34.57 256 *eP* **P 06 53 43.8 -0.6**
comp=Z,130nm,1.0s
QZH Quanzhou 34.58 325⇑*iP* P 06 53 38.8 -5.4
QZH pP pP 06 53 59.9 -5.7
QZH S **S 06 58 58.3 -8.4**
QZH pmax pmax
comp=Z,650nm,4.0s
QZH LR LR
comp=Z,2μm,38.2s
TOO Toolangi 34.74 172 P **P 06 53 47.8 +2.2**
baz=35,SNR=76
PMBI Palembang 34.88 269 P **P 06 53 50.0 +3.0**
comp=Z,811nm,1.1s
MILA Mila 34.92 167 P **P 06 53 49.0 +1.9**
baz=35,SNR=38
BLDU Ballidu 34.97 216 P **P 06 53 48.2 +0.6**
baz=35,SNR=66
KLBR Kellerberrin 35.10 214 P **P 06 53 48.9 +0.3**
baz=35,SNR=54
KASI Kota Agung 35.18 265 P **P 06 53 48.3 -1.3**
TPRI Tanjung Pinang 35.38 276 P **P 06 53 53.0 +1.7**
comp=Z,198nm,1.4s,comp=Z,25μm
HKC Hong Kong Obse 35.47 317 P P 06 53 59.0 +7.1
LWLI Liwa 35.60 266 P **P 06 53 54.3 +1.0**
comp=Z,370nm,1.2s,comp=Z,73μm
JHJ Hachijo jima 2 36.00 0 LR LR 07 06 28.0
comp=Z,518nm,18.5s,baz=222,slow=32
LHSI Lahat 36.12 268 P **P 06 53 58.9 +1.3**
comp=Z,567nm,1.1s,comp=Z,6μm
MYKOM Kota Tinggi 36.16 277 ⇑P **P 06 54 00.0 +2.0**
MYKOM Kota Tinggi 36.16 277 *eP* **P 06 53 58.8 +0.8**
comp=Z,237nm,1.4s
NWAO Narrogin (SRO) 36.40 213 P **P 06 53 59.6 -0.1**
comp=Z,143nm,1.0s,baz=276,slow=7.6,SNR=37
NWAO Narrogin (SRO) 36.40 213 P **P 06 54 00.9 +1.1**
baz=36,SNR=25
NWAO Narrogin (SRO) 36.40 213 *eP* **P 06 54 00.8 +1.1**
NWAO pmax pmax
comp=Z,200nm,1.0s
NWAO Narrogin (SRO) 36.40 213 P **P 06 54 01.6 +1.8**
SNR=8.5
NWAO Narrogin (SRO) 36.40 213 P **P 06 54 01.6 +1.8**
SNR=8.5
NWAO Narrogin (SRO) 36.40 213 *eP* **P 06 54 00.8 +1.1**
comp=Z,198nm,1.0s
NWAO *e*pP **pP 06 54 23.7 +2.4**
QIZ Qiongzhong 36.68 308 P **P 06 54 02.6 +0.3**
QIZ S **S 06 59 42.6 +3.6**
QIZ pmax pmax
comp=Z,43nm,1.2s
QIZ LR LR
comp=Z,1μm,9.7s
QIZ LR LR
comp=Z,490nm,9.9s
MNAI Manna 36.69 267 *eP* **P 06 54 02.5 0.0**
comp=Z,190nm,1.1s
KGM Kluang 36.72 277 ⇓P **P 06 54 04.2 +1.5**
JNU Nakatsue 36.95 348 P **P 06 54 04.9 +0.4**
comp=Z,86nm,1.1s,baz=151,slow=5.1,SNR=27
JNU Nakatsue 36.95 348 *eP* **P 06 54 05.2 +0.7**
comp=Z,214nm,1.3s
MASI Maura Aman, Be 37.40 269 P **P 06 54 09.5 +0.9**
comp=Z,572nm,1.2s,comp=Z,9μm
RKGY Rocky Gully 37.83 211 P **P 06 54 14.1 +2.3**
baz=38,SNR=9.8
SSE Sheshan 38.29 334 P **P 06 54 16.3 +0.6**
SSE pP **pP 06 54 34.4 -3.0**
SSE S **S 07 00 02.3 -0.8**
SSE SS **SnSn 07 02 58.4 +0.7**
SSE pmax pmax
comp=Z,70nm,0.9s
SSE pmax pmax
comp=Z,140nm,3.3s
SSE LR LR
comp=Z,340nm,32.9s
SSE LR LR
comp=Z,290nm,33.4s
SSE LR LR
comp=Z,460nm,30.7s
INU Inuyama 38.30 356 *eP* **P 06 54 15.4 -0.4**
comp=Z,44nm,1.5s
SDSI Sungai Dareh 38.30 272 P **P 06 54 16.8 +0.7**
comp=Z,293nm,1.2s,comp=Z,34μm
BKNI Bangkinang 38.79 274 P **P 06 54 21.4 +1.2**
comp=Z,755nm,1.0s,comp=Z,7μm
BKNI Bangkinang 38.79 274 *eP* **P 06 54 21.1 +0.9**
comp=Z,812nm,1.1s
PDSI Padang 39.27 272 P **P 06 54 23.5 -0.8**
comp=Z,128nm,1.0s
PPI Padang Panjang 39.37 273 P **P 06 54 25.1 +0.1**
comp=Z,758nm,1.0s,comp=Z,6μm
MJAR Matsushiro Arr 39.44 358 P **P 06 54 24.0 -1.2**
comp=Z,5.4nm,0.7s,baz=172,slow=8.6,SNR=15
MJAR PcP **PcP 06 56 31.1 -0.5**
comp=Z,7.4nm,0.9s,baz=192,slow=3.3,SNR=8.1
MJAR LR LR 07 08 59.0
comp=Z,245nm,21.7s,baz=165,slow=33
MAJO Matsushiro 39.44 358*c iP* **P 06 54 24.1 -1.2**
MAJO pmax pmax
comp=Z,95nm,0.8s
MAJO Matsushiro 39.44 358 *eP* **P 06 54 24.6 -0.6**
comp=Z,16nm,0.8s
MAT Matsushiro 39.44 358 P **P 06 54 24.0 -1.3**
MAT S **S 07 00 15.8 -4.5**
PPSI Pulau Pagai 39.64 269 P P 06 54 37.9 +11
FUNA Funafuti 39.65 100 *eP* **P 06 54 28.2 +0.9**
comp=Z,430nm,0.8s
MOO Moorlands 39.77 171 P **P 06 54 30.1 +2.2**
baz=40,SNR=7.9
KULM Kulim 39.88 282 *eP* **P 06 54 29.1 -0.2**
comp=Z,114nm,1.1s
NJ2 Nanjing 40.15 332 *eP* **P 06 54 32.5 +1.3**
NJ2 pmax pmax
comp=Z,22nm,0.5s
TAU Tasmania Unive 40.24 171 *eP* **P 06 54 33.7 +1.9**
TAU pmax pmax
comp=Z,150nm,0.9s
TAU Tasmania Unive 40.24 171 *eP* **P 06 54 33.7 +1.9**
comp=Z,151nm,0.8s
MNSI Mandailing Nat 40.29 275 P **P 06 54 32.9 +0.2**
comp=Z,184nm,0.9s,comp=Z,4μm
CHBT CHBT 40.31 294 P **P 06 54 32.9 +0.2**
comp=Z,146nm,1.0s
SKLT Songkhla 40.31 285 P **P 06 54 33.1 +0.3**
comp=Z,134nm,1.4s,comp=Z,2μm
MSVF Nonsavu 40.31 114 *eP* **P 06 54 34.6 +1.7**
MSVF pmax pmax
comp=Z,54nm,1.0s
MSVF Nonsavu 40.31 114 *eP* **P 06 54 34.6 +1.7**
comp=Z,54nm,1.0s
SKNT Sakolnakorn 40.50 301 P **P 06 54 34.0 -0.3**
comp=Z,130nm,1.7s
TJN Taejon 40.90 345*cc*eP **P 06 54 38.1 +0.8**
PSI Prapat 41.17 278 *eP* **P 06 54 40.0 -0.1**
PSI pmax pmax
comp=Z,510nm,1.1s
PSI Prapat 41.17 278 *eP* **P 06 54 40.0 -0.1**
comp=Z,512nm,1.1s
KHON Khomkaen 41.23 299 P **P 06 54 40.7 +0.4**
comp=Z,32nm,1.0s
WHN Wuhan 41.27 326⇑*iP* **P 06 54 42.1 +1.7**
WHN pP **pP 06 55 03.4 +1.1**
WHN S **S 07 00 53.3 +5.6**
WHN pmax pmax
comp=Z,120nm,1.4s
TRTT Trang 41.36 285 P **P 06 54 41.7 +0.3**
comp=Z,120nm,0.9s,comp=Z,1μm
TSI Tuntungan 41.63 279 P **P 06 54 44.1 +0.4**
comp=Z,297nm,1.2s,comp=Z,4μm
KSAR Wonju Array Be 41.78 346 P **P 06 54 45.4 +0.9**
KSAR 06 56 38.9
KSAR Wonju Array Be 41.78 346 P **P 06 54 45.4 +0.9**
KSAR PcP **PcP 06 56 38.9 -0.2**
KSRS Korea Array 41.78 346 P **P 06 54 45.4 +0.9**
comp=Z,7.8nm,0.6s,baz=162,slow=7.9,SNR=23
KSRS PcP **PcP 06 56 38.9 -0.2**
comp=Z,11nm,0.9s,baz=175,slow=3.8,SNR=12
INCN Inchon 42.14 344 *eP* **P 06 54 47.8 +0.3**
comp=Z,323nm,1.8s
GSI Gunungsitoli 42.33 275 P **P 06 54 48.5 -0.9**
comp=Z,311nm,0.9s,comp=Z,4μm
GSI Gunungsitoli 42.33 275 *eP* **P 06 54 48.7 -0.7**
comp=Z,1μm,1.7s
KCSI Kotacane, Aceh 42.41 279 P **P 06 54 49.2 -0.9**
comp=Z,183nm,1.1s,comp=Z,3μm
SURT Suratani 42.49 287 P **P 06 54 51.1 +0.5**
comp=Z,18nm,1.1s,comp=Z,333nm
PKDT Phuket 42.68 285 P **P 06 54 52.4 +0.2**
comp=Z,72nm,1.1s
PBKT Sadao Pong 42.95 298 P **P 06 54 54.3 0.0**
comp=Z,39nm,1.3s,comp=Z,785nm
GYA Guiyang 43.38 315⇑*iP* **P 06 54 58.8 +1.0**
GYA pP pP 06 55 20.3 +0.4
GYA sP sP 06 55 31.0 +0.5
GYA PP **PcP 06 56 43.6 -1.3**
GYA ScP **ScP 07 00 29.8 +1.8**
GYA S **S 07 01 21.4 +2.3**
GYA sS sS 07 01 57.5 +0.5
GYA SS **SS 07 04 30.0 -6.5**
GYA pmax pmax
comp=Z,50nm,1.0s
GYA pmax pmax
comp=Z,150nm,6.0s
GYA LR LR
comp=Z,7μm,17.2s
GYA LR LR
comp=Z,5μm,17.3s
GYA LR LR
comp=Z,7μm,17.6s
COCO West Island 43.38 256 *eP* **P 06 54 59.3 +1.5**
COCO pmax pmax
comp=Z,310nm,0.9s
COCO West Island 43.38 256 *eP* **P 06 54 59.2 +1.5**
comp=Z,312nm,0.8s
LHMI Lhok Sumawe 43.50 281 P **P 06 54 59.6 +0.8**
comp=Z,325nm,1.0s,comp=Z,4μm
LHMI Lhok Sumawe 43.50 281 *eP* **P 06 54 58.8 0.0**
comp=Z,317nm,1.0s
SRDT SRDT 43.78 294 P **P 06 55 01.6 +0.5**
comp=Z,202nm,1.4s,comp=Z,5μm
UTTA Uttaradit 43.79 300 P **P 06 55 01.1 +0.1**
comp=Z,22nm,1.0s,comp=Z,193nm
MLSI Meulaboh, Aceh 43.87 279 P **P 06 55 00.9 -0.9**
comp=Z,426nm,1.2s,comp=Z,4μm
ENH Enshi 43.96 321 *eP* **P 06 55 02.9 +0.5**
comp=Z,52nm,1.0s
TIA Tai'an 44.41 334⇑P **P 06 55 05.9 +0.2**
TIA PP **PP 06 56 51.3 +0.2**
TIA S **S 07 01 33.8 +0.2**
TIA SS **SS 07 04 56.0 +0.1**
TIA pmax pmax
comp=Z,50nm,1.2s
TIA pmax pmax
comp=Z,410nm,5.0s
TIA LR LR
comp=Z,960nm,10.0s
TIA LR LR
comp=Z,840nm,10.0s
TIA LR LR
comp=Z,660nm,9.0s
LAMP Lampang 44.91 300 P **P 06 55 10.7 +0.7**
comp=Z,23nm,1.1s,comp=Z,279nm
DL2 Dalian 44.98 340 P **P 06 55 11.3 +1.1**
DL2 *e*S **S 07 01 43.4 +1.7**
DL2 pmax pmax
comp=Z,37nm,0.8s
DL2 pmax pmax
comp=Z,300nm,4.1s
DL2 LR LR
comp=Z,1μm,13.3s
DL2 LR LR
comp=Z,880nm,14.4s
CRAI Chiangrai 45.00 303 P **P 06 55 10.8 +0.1**
comp=Z,431nm,1.3s,comp=Z,5μm
CMAR Chiang Mai Arr 45.48 300 P **P 06 55 15.1 +0.6**
comp=Z,48nm,1.0s,baz=121,slow=6.1,SNR=87
CMAR LR LR 07 15 44.0
comp=Z,100nm,19.9s,baz=150,slow=38
KMI Kunming 45.51 310 P **P 06 55 16.0 +1.1**
KMI pP pP 06 55 35.3 -1.8
KMI sP sP 06 55 47.1 -0.6
KMI PP **PP 06 57 03.8 +0.5**
KMI S **S 07 01 50.9 +0.6**
KMI sS sS 07 02 30.3 +1.9
KMI SS **SS 07 05 13.5 -2.2**
KMI pmax pmax
comp=Z,83nm,1.2s
KMI pmax pmax
comp=Z,190nm,3.1s
KMI LR LR
comp=Z,440nm,4.7s
KMI LR LR
comp=Z,480nm,5.2s
KMI LR LR
comp=Z,220nm,4.4s
CMMT Chiang Mai 45.62 300 P **P 06 55 15.8 +0.2**
comp=Z,68nm,1.3s,comp=Z,1μm
CHTO Chiang Mai 45.62 300 P **P 06 55 15.9 +0.3**
comp=Z,304nm,1.3s,comp=Z,4μm
CHTO Chiang Mai 45.62 300 *eP* **P 06 55 16.1 +0.5**
CHTO pmax pmax
comp=Z,95nm,1.2s
CHTO Chiang Mai 45.62 300 P **P 06 55 16.2 +0.5**
SNR=11
CHTO Chiang Mai 45.62 300 P **P 06 55 16.2 +0.5**
SNR=11
CHTO Chiang Mai 45.62 300 *eP* **P 06 55 16.1 +0.5**
comp=Z,95nm,1.3s
CMAI Chiengmai2 46.00 302 P **P 06 55 19.2 +0.4**
comp=Z,50nm,1.5s,comp=Z,776nm
VLA Vladivostok 46.52 352⇑*iP* **P 06 55 22.9 +0.7**
VLA pmax pmax
comp=Z,111nm,1.5s
XAN Xi'an 46.94 324 P **P 06 55 25.9 +0.1**
XAN sP sP 06 55 58.1 -0.6
XAN S **S 07 02 07.9 -2.3**
XAN sS sS 07 02 50.0 +1.5
XAN pmax pmax
comp=Z,72nm,1.3s
XAN pmax pmax
comp=Z,220nm,4.1s
ASAJ Asahikawa 47.05 3 P **P 06 55 26.9 +0.6**
comp=Z,35nm,0.8s,baz=226,slow=14,SNR=19
ASAJ Asahikawa 47.05 3 P **P 06 55 27.0 +0.6**
ASAJ pmax pmax
comp=Z,35nm,0.8s
ASAJ Asahikawa 47.05 3 *eP* **P 06 55 27.4 +1.1**
comp=Z,72nm,1.1s
USRK Ussuriysk Ar. 47.57 352 P **P 06 55 31.7 +1.3**
comp=Z,15nm,0.9s,baz=169,slow=7.9,SNR=27
USRK pP **pP 06 55 53.0 +0.3**
comp=Z,9.3nm,0.9s,baz=163,slow=7.0,SNR=3.7
USRK LR LR 07 12 39.4
comp=Z,363nm,21.7s,baz=169,slow=32
BJT Baijiatuau 48.01 336 *eP* **P 06 55 34.4 +0.5**
BJT pmax pmax
comp=Z,88nm,1.4s
BJT Baijiatuau 48.01 336 *eP* **P 06 55 34.4 +0.5**
comp=Z,88nm,1.4s
BJI Beijing 48.03 336 P **P 06 55 34.3 +0.3**
BJI S **S 07 02 27.5 +2.3**
BJI pmax pmax
comp=Z,46nm,2.0s
BJI pmax pmax
comp=Z,510nm,4.1s
BJI LR LR
comp=Z,4μm,11.5s
BJI LR LR
comp=Z,3μm,11.1s
BJI LR LR
comp=Z,640nm,25.9s
CD2 Chengdu 48.12 317 P **P 06 55 35.6 +0.7**
CD2 pP pP 06 55 56.6 -0.8
CD2 sP sP 06 56 06.8 -1.1
CD2 PP **PP 06 57 28.8 +0.7**
CD2 S **S 07 02 28.9 +2.0**
CD2 sS sS 07 03 05.6 +0.2
CD2 SS **SS 07 06 00.8 +3.4**
CD2 pmax pmax
comp=Z,100nm,1.1s
CD2 pmax pmax
comp=Z,380nm,6.0s
CD2 LR LR
comp=Z,420nm,7.7s
CD2 LR LR
comp=Z,290nm,7.1s
MDJ Mudanjiang 48.33 350 P **P 06 55 37.0 +0.7**
MDJ pP pP 06 55 56.1 -2.6
MDJ sP sP 06 56 05.1 -4.2
MDJ ScP **ScP 07 00 49.4 +1.4**
MDJ PcS **PcS 07 00 57.3 -0.2**
MDJ S **S 07 02 31.1 +1.7**
MDJ sS sS 07 03 05.0 -2.9
MDJ ScS **ScS 07 05 21.4 +1.4**
MDJ pmax pmax
comp=Z,35nm,1.2s
MDJ pmax pmax
comp=Z,210nm,5.4s
MDJ LR LR
comp=Z,450nm,9.5s
MDJ LR LR
comp=Z,170nm,8.9s
MDJ LR LR
comp=Z,400nm,8.3s
MDJ Mudanjiang 48.33 350 *eP* **P 06 55 37.2 +1.0**
comp=Z,117nm,1.6s
CN2 Changchun 48.39 346 *eP* **P 06 55 37.0 +0.2**
CN2 *e*pP pP 06 56 00.4 +1.2
CN2 PcP **PcP 06 57 01.4 -0.5**
CN2 *e*S **S 07 02 31.0 +0.7**
CN2 pmax pmax
comp=Z,20nm,0.9s
CN2 pmax pmax
comp=Z,200nm,4.0s
CN2 LR LR
comp=Z,1μm,12.0s
CN2 LR LR
comp=Z,700nm,12.0s
CN2 LR LR
comp=Z,600nm,14.0s
KNTN Kanton 48.52 91 *eP* **P 06 55 39.2 +0.9**
comp=Z,172nm,1.5s
DCZ Deep Cove 48.59 154 *eP* **P 06 55 39.9 +1.7**
comp=Z,122nm,1.2s

URZ Urewera 48.91 141 P **P 06 55 39.5 -1.4**
comp=Z,12nm,0.6s,baz=256,slow=4.7,SNR=7.8
BKZ Black Stump Fm 49.07 142 *e*P **P 06 55 42.2 +0.1**
comp=Z,39nm,0.8s
RPZ Rata Peaks 49.08 150 P **P 06 55 41.2 -0.8**
comp=Z,93nm,0.9s,baz=313,slow=3.1,SNR=9.4
RPZ Rata Peaks 49.08 150 *e*P **P 06 55 41.3 -0.8**
comp=Z,126nm,1.0s
AFI Afiamalu 49.08 106 P **P 06 55 42.7 0.0**
comp=Z,95nm,1.0s,baz=214,slow=23,SNR=7.5
AFI Afiamalu 49.08 106 *e*P **P 06 55 43.2 +0.5**
AFI pmax pmax
comp=Z,100nm,1.0s
AFI Afiamalu 49.08 106 *e*P **P 06 55 43.2 +0.5**
comp=Z,104nm,0.9s
YSS Yuzh-Sakhalins 49.89 3⇓*e*P **P 06 55 48.0 -0.1**
YSS *e**SP **sP 06 56 18.5 -2.6**
YSS *e*S S 07 03 00.6 +10
YSS pmax pmax
comp=Z,50nm,1.1s
HHC Hu-ho-hao-te 50.71 332 *e*P **P 06 55 55.0 +0.4**
HHC PP **PP 06 57 48.8 -2.8**
HHC S **S 07 03 01.0 -1.9**
HHC SS **SS 07 06 33.6 -5.1**
HHC pmax pmax
comp=Z,100nm,1.1s
HHC pmax pmax
comp=Z,1μm,6.3s
HHC LR LR
comp=Z,4μm,15.6s
HHC LR LR
comp=Z,3μm,15.4s
HHC LR LR
comp=Z,3μm,15.2s
LZH Lanzhou 51.37 323 ⇑P **P 06 56 01.1 +1.4**
LZH pP pP 06 56 22.6 +0.3
LZH sP sP 06 56 33.3 +0.5
LZH PP **PP 06 58 00.0 +2.3**
LZH *e*S **S 07 03 12.1 -0.2**
LZH sS sS 07 03 52.0 +0.8
LZH pmax pmax
comp=Z,140nm,1.1s
LZH pmax pmax
comp=Z,450nm,5.7s
HABR Khabarovsk 51.50 356 *e*P **P 06 55 58.6 -1.5**
HABR *e**PP **pP 06 56 20.6 -2.2**
HABR *e**SP **sP 06 56 31.0 -2.3**
HABR *e* 06 57 11.0
HABR *e* 06 57 57.0
HABR *e*PPP PPP 06 58 59.6
HABR *e*S **S 07 03 13.2 -0.1**
HABR *e**SS **sS 07 03 51.6 -0.5**
HABR *e* 07 05 39.6
HABR *e*SS **SS 07 06 51.8 +1.2**
HABR *e*SSS SSS 07 08 37.5
HABR pmax pmax
comp=E,21nm,1.5s
HABR pmax pmax
comp=N,29nm,1.5s
HABR pmax pmax
comp=Z,77nm,1.5s
HABR MLR MLR
comp=Z,114nm,16.0s
KLR Kul'dur 52.55 353 P **P 06 56 08.8 +0.8**
comp=Z,36nm,1.0s,baz=178,slow=4.7,SNR=78
KLR LR LR 07 16 23.9
comp=Z,223nm,21.6s,slow=34
KLR Kul'dur 52.55 353*c i*P **P 06 56 09.1 +1.1**
TYV Tymovskoe 53.79 2 *e*P **P 06 56 18.5 +1.5**
TYV pmax pmax
comp=Z,180nm,1.6s
SHL Shillong 54.35 305 *e*P **P 06 56 22.2 +0.4**
SKR Severo-Kuril's 55.37 13⇑*e*P **P 06 56 30.0 +1.5**
GTA Gaotai 55.95 323 P **P 06 56 33.9 +0.9**
GTA pP pP 06 56 53.3 -2.7
GTA sP sP 06 57 02.1 -4.3
GTA S **S 07 04 13.6 -0.5**
GTA SS **SS 07 08 01.1 -0.5**
GTA pmax pmax
comp=Z,61nm,1.1s
GTA pmax pmax
comp=Z,380nm,6.7s
GTA LR LR
comp=Z,330nm,16.4s
GTA LR LR
comp=Z,460nm,16.9s
GTA LR LR
comp=Z,120nm,16.4s
LSA Lhasa 56.71 309 *e*P **P 06 56 40.4 +1.4**
LSA pmax pmax
comp=Z,84nm,1.4s
LSA Lhasa 56.71 309 *e*P **P 06 56 40.4 +1.4**
comp=Z,84nm,1.4s
BWNR Bhubaneshwar 57.73 296 *e*P **P 06 56 45.8 +0.1**
BWNR IAmb IAmb 06 56 47.4
PETK Petropavlovsk- 57.99 13 P **P 06 56 48.0 +1.0**
comp=Z,24nm,0.9s,baz=171,slow=4.9,SNR=14
PETK LR LR 07 19 04.3
comp=Z,166nm,21.3s,baz=212,slow=33
PET Petropavlovsk 58.13 13 *e*P **P 06 56 46.8 -1.1**
PET *e*S **S 07 04 42.1 +0.2**
PET pmax pmax
comp=Z,100nm,16.9s
ULN Ulaanbaatar 58.21 335 *e*P **P 06 56 50.0 +1.1**
ULN Ulaanbaatar 58.21 335 P **P 06 56 50.0 +1.1**
SNR=13
ULN Ulaanbaatar 58.21 335 P **P 06 56 50.0 +1.1**
SNR=13
ULN Ulaanbaatar 58.21 335 *e*P **P 06 56 50.0 +1.1**
SONM Songino Array 58.47 334 P **P 06 56 51.4 +0.7**
comp=Z,6.8nm,0.9s,baz=146,slow=7.6,SNR=20
SONM LR LR 07 24 49.1
comp=Z,264nm,18.0s,baz=148,slow=39
BOK Bokaro 58.76 300 *e*P **P 06 56 53.8 +0.9**
BOK IAmb IAmb 06 56 55.3
comp=Z,88nm,1.1s
CHLP Challavanipeta 58.80 294 *e*P **P 06 56 54.0 +0.7**
CHLP IAmb IAmb 06 56 55.4
comp=Z,127nm,1.1s
VIS Vishakhapatnam 59.27 293 *e*P **P 06 56 55.3 -1.2**
PALK Pallekele 59.76 280 P **P 06 56 59.6 -0.5**
comp=Z,25nm,0.9s,baz=115,slow=5.4,SNR=7.6
PALK Pallekele 59.76 280 P **P 06 56 59.6 -0.5**
PALK pmax pmax
comp=Z,24nm,0.9s
PALK Pallekele 59.76 280 *e*P **P 06 57 00.8 +0.7**
PVM Polavaram 60.73 292 *e*P **P 06 57 06.5 0.0**
PVM IAmb IAmb 06 57 08.0
comp=Z,50nm,1.0s
CLNS Chul'man 60.92 351 *e*P **P 06 57 07.4 +0.3**
CLNS pmax pmax
comp=Z,12nm,0.8s
CLNS pmax pmax
comp=E,30nm,1.0s
CLNS pmax pmax
comp=N,20nm,1.2s
ZAK Zakamensk 61.74 334 *e*P **P 06 57 12.7 -0.2**
ZAK pmax pmax
comp=Z,42nm,1.2s
SKHT Srikalahasti 61.79 287 *e*P **P 06 57 13.3 -0.4**
SKHT IAmb IAmb 06 57 14.1
comp=Z,29nm,0.8s
ADKI Addanki 61.97 290 *e*P **P 06 57 14.5 -0.4**
ADKI IAmb IAmb 06 57 15.5
comp=Z,40nm,0.9s
TLY Talaya 62.55 336 P **P 06 57 18.9 +0.7**
comp=Z,11nm,0.8s,baz=179,slow=5.5,SNR=17
TLY Talaya 62.55 336 *e*P **P 06 57 19.1 +0.9**
TLY pmax pmax
comp=Z,29nm,1.3s
TLY Talaya 62.55 336 *e*P **P 06 57 19.1 +0.9**
IRK Irkutsk 62.72 336 *e*P **P 06 57 19.8 +0.5**
IRK pmax pmax
comp=Z,60nm,2.3s
NJS Nagarjunasagar 62.74 290 *e*P **P 06 57 19.4 -0.6**
NJS IAmb IAmb 06 57 20.7
comp=Z,73nm,1.3s
RCLA Racherla 62.84 289 *e*P **P 06 57 19.9 -0.9**
RCLA IAmb IAmb 06 57 20.5
comp=Z,13nm,0.8s
SRLM Srisailam 63.03 290 *e*P **P 06 57 21.2 -0.8**
SRLM IAmb IAmb 06 57 22.6
comp=Z,32nm,0.9s
MA2 Magadan 63.07 6 P **P 06 57 22.3 +0.9**
comp=Z,35nm,0.9s,baz=193,slow=7.9,SNR=14
MA2 Magadan 63.07 6 *e*P **P 06 57 22.0 +0.6**
comp=Z,145nm,0.9s
RPR Rampur 63.26 293 *e*P **P 06 57 23.3 -0.2**
RPR IAmb IAmb 06 57 23.9
comp=Z,109nm,1.2s
HYB Hyderabad 63.63 291 *e*P **P 06 57 25.3 -0.7**
HYB IAmb IAmb 06 57 26.6
comp=Z,39nm,0.8s
HYBB Hyderabad (bro 63.63 291 *e*P **P 06 57 24.9 -1.0**
HYBB IAmb IAmb 06 57 26.2
comp=Z,67nm,1.2s
MOY Mondy 63.66 334 *e*P **P 06 57 26.3 +0.6**
MOY pmax pmax
comp=Z,93nm,2.4s
NGP Nagpur 64.04 295 *e*P **P 06 57 28.4 -0.2**
NGP IAmb IAmb 06 57 29.8
comp=Z,55nm,1.1s
BOD Bodaibo 64.12 345 *e*P **P 06 57 28.3 0.0**
BOD pmax pmax
comp=Z,21nm,1.8s
YAK Yakutsk 65.38 355 P **P 06 57 37.5 +1.1**
comp=Z,1.7nm,0.3s,baz=354,slow=24,SNR=11
YAK Yakutsk 65.38 355*c i*P **P 06 57 37.0 +0.6**
YAK *e**PP **pP 06 57 59.9 -0.1**
YAK *e* 07 00 00.6
YAK *e*S **S 07 06 14.6 +1.5**
YAK *e**SS sS 07 07 05.2 +12
YAK pmax pmax
comp=Z,64nm,1.0s
YAK pmax pmax
comp=E,3.0nm,0.9s
YAK pmax pmax
comp=N,42nm,1.3s
YAK pmax pmax
comp=Z,6.0nm,0.4s
YAK smax smax
comp=E,99nm,1.9s
YAK smax smax
comp=N,69nm,2.0s
YAK Yakutsk 65.38 355 *e*P **P 06 57 37.2 +0.8**
KIP Kipapa 65.58 65*ce*P **P 06 57 40.8 +2.2**
KIP Kipapa 65.58 65 *e*P **P 06 57 40.5 +1.9**
KLRI Killari 65.58 291 *e*P **P 06 57 40.1 +1.4**
KLRI IAmb IAmb 06 57 42.0
comp=Z,81nm,1.1s
WMQ Urumqi 65.91 321 P **P 06 57 41.0 +0.6**
WMQ pP pP 06 58 05.8 +1.8
WMQ PcP **PcP 06 58 10.8 +0.3**
WMQ sP sP 06 58 17.5 +3.3
WMQ S **S 07 06 19.3 -1.2**
WMQ pmax pmax
comp=Z,34nm,1.0s
WMQ pmax pmax
comp=Z,230nm,5.4s
WMQ LR LR
comp=Z,89nm,18.6s
WMQ LR LR
comp=Z,41nm,35.6s
WMQ LR LR
comp=Z,63nm,27.0s
BHPL Bhopal 66.02 297 *e*P **P 06 57 41.0 -0.5**
BHPL IAmb IAmb 06 57 41.7
comp=Z,35nm,0.7s
CASY Casey 66.33 192 *e*P **P 06 57 43.1 +0.6**
SEY Seymchan 66.53 6 P **P 06 57 44.2 +0.4**
comp=Z,9.7nm,0.8s,baz=189,slow=5.0,SNR=20
SEY Seymchan 66.53 6*ce*P **P 06 57 45.1 +1.3**
DDI Dehra Dun 67.46 305 *e*P **P 06 57 50.8 +0.3**
POHA Pohakuloa 67.48 67 *e*P **P 06 57 52.7 +1.7**
SMLA Simla 68.43 305 *e*P **P 06 57 57.4 +0.9**
DHRM DHARAMSHALA 69.48 306 *e*P **P 06 58 03.4 +0.1**
DHRM IAmb IAmb 06 58 04.4
comp=Z,110nm,0.7s
MKAR Makanchi Array 70.68 322 P **P 06 58 10.6 +0.6**
comp=Z,36nm,0.8s,baz=116,slow=8.2,SNR=74
PPT Papeete 70.70 107 LR LR 07 28 07.3
comp=Z,72nm,18.8s,baz=292,slow=35
PPT2 Papeete2 70.70 107 *e*S **S 07 07 13.4 -5.0**
comp=Z,162nm,23.0s
PPT2 Papeete2 70.70 107 *e*LR LR 07 19 36.5
comp=Z,819nm,35.2s
MAKZ Makanchi 70.88 322 *e*P **P 06 58 11.9 +0.6**
MAKZ Makanchi 70.88 322 *e*P **P 06 58 11.9 +0.6**
TIAR Tiarei 70.92 107 *e*P **P 06 58 12.7 +0.6**
comp=Z,12nm,0.9s
MIR Mirnyy 71.16 198 *i*P **P 06 58 13.0 +0.5**
MIR pmax pmax
comp=Z,16nm,1.0s
TBI Tubuai 71.20 113 *e*S **S 07 07 23.6 -0.2**
comp=Z,296nm,27.0s
TBI Tubuai 71.20 113 *e*LR LR 07 19 58.6
comp=Z,768nm,34.5s
KSH Kashi 72.05 313 P **P 06 58 20.6 +2.0**
KSH *ep*P pP 06 58 45.8 +3.3
KSH *es*P sP 06 58 55.8 +3.1
KSH *e*PP **PP 07 01 03.9 +4.0**
KSH S **S 07 07 33.0 -0.3**
KSH SKS **SKSac 07 08 11.6 -3.0**
KSH pmax pmax
comp=Z,85nm,1.2s
KSH LR LR
comp=Z,380nm,11.7s
KSH LR LR
comp=Z,650nm,12.1s
KSH LR LR
comp=Z,480nm,10.8s
UNV Unalaska Valle 72.15 30 *e*P **P 06 58 19.3 +0.7**
PMOR Pomariorio Ree 72.22 105 *e*P **P 06 58 20.3 +0.5**
comp=Z,184nm,1.3s
ZALV Zalesovo Beam 72.75 330 P **P 06 58 21.4 -0.8**
comp=Z,17nm,0.9s,baz=107,slow=5.6,SNR=23
ZALV pP **pP 06 58 45.7 -0.5**
comp=Z,7.8nm,0.8s,baz=132,slow=6.0,SNR=3.9
BHJ Bhuj 72.99 295 *e*P **P 06 58 25.2 +0.9**
BHJ IAmb IAmb 06 58 26.9
comp=Z,244nm,1.2s
BILL Bilibino 73.35 10*c i*P **P 06 58 25.8 +0.3**
BILL *i* 06 58 46.3
BILL *e*S **SKiKP 07 07 52.4 +4.7**
BILL pmax pmax
comp=Z,45nm,1.2s
BILL Bilibino 73.35 10 *e*P **P 06 58 26.0 +0.5**
TKM2 Tokmak 2 73.49 316 *e*P **P 06 58 27.5 +0.4**
TKM2 Tokmak 2 73.49 316 *e*P **P 06 58 27.5 +0.4**
NVS Novosibirsk 74.00 330⇓*i*P **P 06 58 29.6 +0.1**
NVS *i* 06 58 54.8
NVS pmax pmax
comp=E,26nm,1.3s
NVS pmax pmax
comp=Z,15nm,1.3s
AAK Ala-Archa 74.15 316 P **P 06 58 31.0 0.0**
comp=Z,11nm,0.9s,baz=109,slow=5.6,SNR=15
AAK Ala-Archa 74.15 316*c i*P **P 06 58 31.6 +0.6**
AAK pmax pmax
comp=Z,93nm,1.6s
AAK Ala-Archa 74.15 316 *e*P **P 06 58 31.8 +0.8**
KURK Kurchatov 74.58 325*c i*P **P 06 58 32.4 -0.6**
KURK pmax pmax
comp=Z,92nm,1.7s
KURK Kurchatov 74.58 325 P **P 06 58 33.1 +0.1**
KURBB Kurchatov Arra 74.59 325 P **P 06 58 33.1 0.0**
comp=Z,22nm,0.9s,baz=116,slow=5.2,SNR=37
EKS2 Erkin-Say 74.66 316 *e*P **P 06 58 34.7 +0.9**
EKS2 pmax pmax
comp=Z,19nm,0.8s
EKS2 Erkin-Say 74.66 316 *e*P **P 06 58 34.7 +0.9**
comp=Z,19nm,0.8s
TIXI Tiksi 74.92 356 P **P 06 58 34.2 -0.4**
comp=Z,14nm,1.1s,baz=135,slow=7.2,SNR=9.6
TIXI Tiksi 74.92 356*c i*P **P 06 58 33.4 -1.1**
TIXI pmax pmax
comp=Z,16nm,1.0s
TIXI Tiksi 74.92 356 *e*P **P 06 58 33.7 -0.8**
VNDA Vanda 75.33 175 P **P 06 58 35.6 -1.2**
comp=Z,17nm,0.8s,baz=323,slow=6.7,SNR=68
VNDA LR LR 07 32 38.0
comp=Z,267nm,18.4s,baz=347,slow=36
SDPT Sand Point 75.94 31 *e*P **P 06 58 41.0 +0.3**
comp=Z,136nm,1.3s
SBA Scott Base 76.09 174 *e*P **P 06 58 42.6 +1.4**
SBA Scott Base 76.09 174 *e*P **P 06 58 42.6 +1.4**
KKAR Karatay Array 77.08 315 *e*P **P 06 58 47.7 +0.2**
KKAR pmax pmax
comp=Z,9.0nm,0.8s
KKAR Karatay Array 77.08 315 *e*P **P 06 58 47.7 +0.2**
comp=Z,9.2nm,0.8s
TNA Tin City 78.16 20 *e*P **P 06 58 53.8 +0.9**
comp=Z,100nm,1.5s
TAOE Nuku Hiva Isla 79.81 98 *e*SS SS 07 14 07.6 -3.0
comp=Z,123nm,23.1s
TAOE *e*LR LR 07 23 59.6
comp=Z,632nm,33.7s
BVAR Borovoye Array 80.17 325 P **P 06 59 04.4 +0.1**
comp=Z,41nm,0.8s,baz=113,slow=6.9,SNR=62
BRVK Borovoye 80.25 325*c i*P **P 06 59 04.7 +0.1**
BRVK pmax pmax
comp=Z,121nm,1.7s
BRVK Borovoye 80.25 325 *e*P **P 06 59 03.5 -1.1**
comp=Z,58nm,0.9s
NRIK Noril'sk 80.35 343 P **P 06 59 05.0 +0.2**
comp=Z,21nm,0.9s,baz=152,slow=5.6,SNR=35
NRIK Noril'sk 80.35 343 P **P 06 59 05.0 +0.2**
NRIK pmax pmax
comp=Z,21nm,0.9s
OHAK Old Harbor 80.36 31 *e*P **P 06 59 05.9 +0.8**
comp=Z,97nm,1.0s
KDAK Kodiak Island 80.92 30 P P 06 59 23.9 +16
comp=Z,52nm,0.9s,baz=152,slow=0.6,SNR=14
KDAK Kodiak Island 80.92 30 *e*P **P 06 59 08.6 +0.6**
KDAK pmax pmax
comp=Z,113nm,1.3s
KDAK Kodiak Island 80.92 30 *e*P **P 06 59 08.6 +0.6**
comp=Z,113nm,1.3s
MRIV Mauritius Mete 81.63 250 *e*P **P 06 59 14.0 +1.3**
MAW Mawson 82.16 202 P **P 06 59 13.7 -0.7**
comp=Z,39nm,1.0s,baz=70,slow=6.7,SNR=40
MAW LR LR 07 35 23.8
comp=Z,217nm,18.0s,baz=62,slow=35
MAW Mawson 82.16 202 P **P 06 59 15.1 +0.6**
baz=82,SNR=24
PPLA Purkeypile 82.93 25 *e*P **P 06 59 18.6 -0.1**
comp=Z,175nm,1.7s
WSAR Wadi Sarin 83.01 294 P **P 06 59 20.1 +0.3**
comp=Z,25nm,1.1s,baz=136,slow=2.8,SNR=9.1
SEW Seward 83.22 28 *e*P **P 06 59 19.9 -0.2**
comp=Z,158nm,1.6s
JMDO Jabal Madar 83.40 293 P **P 06 59 22.6 +0.7**
SNR=5.7
JMDO Jabal Madar 83.40 293 P **P 06 59 22.6 +0.7**
SNR=5.7
RC01 Rabbit Creek A 83.40 27 *e*P **P 06 59 20.6 -0.4**
comp=Z,78nm,0.9s
BIDO Bidbid 83.50 294 P **P 06 59 23.1 +0.7**
SNR=16
BIDO Bidbid 83.50 294 P **P 06 59 23.1 +0.7**
SNR=16
SMDO Samad 83.52 293 P **P 06 59 23.2 +0.7**
SNR=9.6
SMDO Samad 83.52 293 P **P 06 59 23.2 +0.7**
SNR=9.6
KTH Kantishna Hill 83.69 25 *e*P **P 06 59 22.0 -0.5**
comp=Z,70nm,1.2s
PMR Palmer 83.84 27 *e*P **P 06 59 22.7 -0.5**
PMR pmax pmax
comp=Z,82nm,1.0s
PMR Palmer 83.84 27 *e*P **P 06 59 22.7 -0.5**
comp=Z,82nm,1.0s
BPAW Bear Paw Mtn. 83.86 24 *e*P **P 06 59 23.5 +0.2**
comp=Z,11nm,1.5s
TRF Thorofare Moun 83.93 25 *e*P **P 06 59 23.1 -0.8**
comp=Z,67nm,1.4s
SML Sawmill 84.27 27 *e*P **P 06 59 25.5 +0.1**
SML pmax pmax
comp=Z,35nm,1.1s
SML Sawmill 84.27 27 *e*P **P 06 59 25.5 +0.1**
comp=Z,35nm,1.1s
BSY Bisya 84.27 293 P **P 06 59 26.9 +0.6**
SNR=8.9
BSY Bisya 84.27 293 P **P 06 59 26.9 +0.6**
SNR=8.9
MCK McKinley 84.59 25 *e*P **P 06 59 26.4 -0.6**
MCK pmax pmax
comp=Z,72nm,1.1s
MCK McKinley 84.59 25 *e*P **P 06 59 26.4 -0.6**
comp=Z,72nm,1.1s
COLD Coldfoot 85.22 22 *e*P **P 06 59 31.2 +1.1**
comp=Z,35nm,1.0s
GEYT Alibeck 85.24 308 P **P 06 59 31.5 +0.6**
comp=Z,20nm,0.9s,baz=122,slow=2.3,SNR=24
GEYT pP **pP 06 59 55.4 -0.1**
comp=Z,44nm,1.2s,baz=113,slow=3.4,SNR=6.3
DIV Divide 85.26 28 *e*P **P 06 59 30.7 +0.3**
comp=Z,130nm,0.9s
COLA College 85.39 24 *e*P **P 06 59 30.3 -0.6**
COLA pmax pmax
comp=Z,33nm,0.9s
COLA College 85.39 24 *e*P **P 06 59 30.2 -0.6**
comp=Z,33nm,0.9s
BANOM Banah 85.40 296 *i*P **P 06 59 32.2 +0.3**
SNR=7.4
BANOM Banah 85.40 296 *i*P **P 06 59 32.2 +0.3**
SNR=7.4
BANOM Banah 85.40 296 P **P 06 59 34.7 +2.8**
SNR=5.5
BANOM Banah 85.40 296 PcP **P 06 59 34.7 +2.8**
SNR=5.5
HATD Hatta, Dubai 85.44 295 *i*P **P 06 59 32.1 0.0**
SNR=12
HATD Hatta, Dubai 85.44 295 *i*P **P 06 59 32.1 0.0**
SNR=12
HATD Hatta, Dubai 85.44 295 P **P 06 59 33.0 +0.8**
SNR=14
HATD Hatta, Dubai 85.44 295 P **P 06 59 33.0 +0.8**
SNR=14
ASHO Ashiyiah 85.50 295 *i*P **P 06 59 32.1 -0.3**
SNR=12
ASHO Ashiyiah 85.50 295 *i*P **P 06 59 32.1 -0.3**
SNR=12
ASHO Ashiyiah 85.50 295 P **P 06 59 33.7 +1.3**
SNR=12
ASHO Ashiyiah 85.50 295 PcP **P 06 59 33.7 +1.3**
SNR=12
ABKAR Akbulak array 85.64 320 *e*P **P 06 59 31.4 -1.1**
ILAR Eielson Array 85.75 24 P **P 06 59 31.5 -1.3**
comp=Z,33nm,0.8s,baz=259,slow=4.7,SNR=228
ILAR LR LR 07 33 19.3
comp=Z,154nm,21.1s,baz=268,slow=32
BMRM Bremner River 85.77 28 *e*P **P 06 59 33.3 +0.4**
comp=Z,70nm,1.0s
BMRM *ep*PP **PP 07 02 52.7 -0.7**
PAX Paxson 85.87 26 *e*P **P 06 59 33.5 0.0**
PAX *e* 07 02 52.6
PAX pmax pmax
comp=Z,97nm,1.8s
PAX Paxson 85.87 26 *e*P **P 06 59 33.5 0.0**
comp=Z,97nm,1.8s
PAX *e*PP **PP 07 02 52.6 -1.7**
NAZ Nazwa, Dubai 85.89 295 *i*P **P 06 59 34.5 +0.2**
SNR=5.6
NAZ Nazwa, Dubai 85.89 295 *i*P **P 06 59 34.5 +0.2**
SNR=5.6
NAZ Nazwa, Dubai 85.89 295 P **P 06 59 36.0 +1.7**
SNR=6.0
NAZ Nazwa, Dubai 85.89 295 PcP **P 06 59 36.0 +1.7**
SNR=6.0
FAQ Al Faqa, Dubai 85.93 295 *i*P **P 06 59 34.3 -0.2**
SNR=6.6
FAQ Al Faqa, Dubai 85.93 295 *i*P **P 06 59 34.3 -0.2**
SNR=6.6
FAQ Al Faqa, Dubai 85.93 295 P **P 06 59 36.0 +1.5**
SNR=6.1
FAQ Al Faqa, Dubai 85.93 295 PcP **P 06 59 36.0 +1.5**
SNR=6.1
SVE Sverdlovsk 86.58 327 *e*P **P 06 59 36.0 -1.0**
SVE pmax pmax
comp=Z,12nm,1.3s
DOT Dot Lake 86.66 26 *e*P **P 06 59 36.7 -0.5**
comp=Z,269nm,1.4s
QSPA South Pole Qui 86.87 180 *e*P **P 06 59 38.2 -0.2**
comp=Z,154nm,0.9s
QSPA *ep*PP **PP 07 03 03.0 +0.8**
AKTO Aktyubinsk 87.05 321 P **P 06 59 37.9 -1.5**
comp=Z,6.2nm,1.1s,baz=40,slow=2.9,SNR=4.0
ARU Arti 87.64 327 P **P 06 59 40.7 -1.5**
comp=Z,4.7nm,0.6s,baz=311,slow=3.4,SNR=8.8
ARU Arti 87.64 327*c i*P **P 06 59 40.6 -1.5**
ARU *PP **pP 07 00 04.5 -2.3**
ARU S **SKSac 07 09 59.7 -1.8**
ARU pmax pmax
comp=Z,22nm,1.2s
ARU Arti 87.64 327 *e*P **P 06 59 40.5 -1.6**
EGAK Eagle 88.14 25 *e*P **P 06 59 44.7 +0.5**

comp=Z,109nm,1.3s
EGAK eP P 07 03 12.3 0.0
SKAG Skagway 90.06 31 eP P 06 59 54.0 +0.6
comp=Z,102nm,1.6s
SKAG eP pP 07 00 19.2 +1.0
SYO Syowa Base 90.77 201⇓eP P 06 59 55.0 -1.5
WRAK Wrangell Islan 91.40 34 eP P 06 59 60.0 +0.3
comp=Z,31nm,1.3s
INK Inuvik 91.64 22 P P 06 59 59.5 -1.0
comp=Z,7.7nm,1.2s,baz=297,slow=7.2,SNR=12
DLBC Dease Lake 92.74 32 eP P 07 00 06.8 +0.8
comp=Z,20nm,1.4s
DLBC epP pP 07 00 32.7 +1.9
DLBC esP sP 07 00 44.0 +3.2
ZEI Tsey 96.33 313 eP P 07 00 18.4 -4.6
ZEI pmax pmax
comp=Z,10.0nm,0.9s
L02D Cave Junction, 97.02 48 P P 07 00 25.4 -0.4
baz=272
KBZ Khabaz 97.03 314 P P 07 00 24.6 -1.2
comp=Z,0.9nm,0.5s,baz=150,slow=9.6,SNR=3.7
HUMO Hull Mountain 97.48 48 eP Pdif 07 00 28.6 +0.6
comp=Z,30nm,0.8s
HUMO epP pP 07 00 54.2 +1.4
M02C Callahan 97.61 49 P Pdif 07 00 29.0 +0.4
baz=273,SNR=7.3
KLMR Klimovskoe 97.64 331 eP P 07 00 24.5 -3.6
KLMR pmax pmax
comp=Z,10.0nm,1.2s
YBH Yreka Blue Hor 97.70 48 P P 07 00 29.0 0.0
comp=Z,5.0nm,1.0s,baz=226,slow=1.7,SNR=12
YBH Yreka Blue Hor 97.70 48 eP Pdif 07 00 29.4 +0.3
YBH e*PP pP 07 00 55.5 +1.6
YBH pmax pmax
comp=Z,19nm,1.5s
YBH Yreka Blue Hor 97.70 48 eP Pdif 07 00 29.4 +0.3
comp=Z,18nm,1.5s
YBH epP pP 07 00 55.5 +1.6
N02D Trinity Center 97.74 49 P Pdif 07 00 29.6 +0.3
baz=273,SNR=6.1
B05A Bryant 97.75 42 P Pdif 07 00 29.7 +0.8
baz=274
M04C Macdoel 98.35 48 P P 07 00 31.6 -0.4
baz=273
O03D Paynes Creek 98.46 50 P Pdif 07 00 32.9 +0.4
baz=273,SNR=9.0
I05D Terrebonne, OR 98.55 46 P Pdif 07 00 32.8 +0.1
baz=274
J05D Fort Rock, OR 98.70 47 P Pdif 07 00 34.1 +0.5
baz=274,SNR=8.6
APA Apatity 99.02 338 eP Pdif 07 00 31.0 -3.2
APA MLR MLR
comp=Z,200nm,16.0s
YKA Yellowknife Ar 99.94 27 P Pdif 07 00 37.7 -0.6
comp=Z,2.0nm,0.9s,baz=288,slow=4.6,SNR=18
YKA PP PP 07 04 46.9 +2.7
comp=Z,1.4nm,0.9s,baz=286,slow=6.9,SNR=4.3
OBN Obninsk 100.02 325⇓eP Pdif 07 00 37.6 -1.3
OBN e 07 04 44.4
OBN pmax pmax
comp=Z,7.0nm,0.5s
ARCES ARCESS Array B 101.17 341 P Pdif 07 00 42.6 -1.2
comp=Z,7.2nm,0.9s,baz=65,slow=6.8,SNR=12
NVAR Mina Array Bea 101.30 52 P Pdif 07 00 44.9 -0.5
comp=Z,2.1nm,0.8s,baz=251,slow=4.9,SNR=9.3
SNAA Sanae 101.55 191 P Pdif 07 00 46.1 +0.6
VNA2 Neumayer--Watz 103.02 191 P Pdif 07 00 50.3 -1.7
baz=295,slow=13
VNA3 Neumayer Olymp 103.15 190 P Pdif 07 00 49.2 -3.4
MONP2 Monument Peak 103.31 57 P Pdif 07 00 54.6 +0.2
baz=275
VNA1 Neumayer--Stat 103.41 190 P Pdif 07 00 48.3 -5.4
R11A Troy Canyon, C 103.44 51 P Pdif 07 00 55.9 +1.1
baz=277
FINES FINESS Array B 103.83 333 PP PP 07 05 12.3 -1.0
comp=Z,1.7nm,0.9s,baz=103,slow=4.4,SNR=4.2
IRM Iron Mountain 104.26 56 P Pdif 07 00 58.8 +0.4
baz=276
BRTR Keskin Array B 104.30 310 Pdiff **Pdif 07 00 56.5 -2.1**
comp=Z,0.8nm,0.8s,baz=102,slow=5.7,SNR=5.7
BRTR PP **PP 07 05 20.2 +2.3**
comp=Z,1.7nm,1.0s,baz=123,slow=9.0,SNR=5.6
BOZ Bozeman (W) 105.20 44 eP Pdif 07 01 02.8 +0.4
BOZ pmax pmax
comp=Z,2.0nm,0.8s
BOZ Bozeman (W) 105.20 44 ePdif **Pdif 07 01 02.8 +0.4**
comp=Z,1.6nm,0.8s
EGMT Eagleton 105.95 41 P PKiKP 07 05 17.5 -0.1
baz=284
BW06 Boulder Array 107.25 46 P PKiKP 07 05 19.9 -0.5
baz=282
PDAR Pinedale Array 107.25 46 Pdiff **Pdif 07 01 11.4 -0.3**
comp=Z,1.0nm,0.9s,baz=225,slow=0.6,SNR=5.9
PDAR PKiKP **PKiKP 07 05 18.9 -1.4**
comp=Z,0.3nm,0.8s,baz=242,slow=3.2,SNR=4.3
TIRR Tirgusor 107.27 316 ePKPdf **PKiKP 07 05 19.8 -0.1**
UZH Uzhgorod 110.17 321 ePKIKP PKiKP 07 05 35.4 +10
F26A Lodgepole 111.21 42 P PKiKP 07 05 27.4 0.0
baz=288
ANMO Albuquerque 111.22 54 P PKiKP 07 05 28.1 +0.1
baz=282
SDCO Great Sand Dun 111.38 51 P PKiKP 07 05 27.7 -0.6
baz=283
G26A Maurine 111.43 42 P PKiKP 07 05 27.8 -0.1
baz=288
G27A Dupree 111.85 42 P PKiKP 07 05 28.1 -0.5
baz=289
H27A Howes 111.99 43 P PKiKP 07 05 28.4 -0.5
baz=288
VYHS Vyhne 112.37 322 ePP PP 07 06 19.9 +3.9
MNTX Cornudas Mount 112.74 57 P PKiKP 07 05 30.2 -0.5
baz=281
KRLC Kraliky 112.98 324 ePKP **PKiKP 07 05 30.9 +0.3**
KRLC Kraliky 112.98 324 ePKIKP **PKiKP 07 05 30.9 +0.3**
DPC Dobruska-Polom 113.13 324 ePKP **PKiKP 07 05 31.3 +0.4**
DPC ePP **PP 07 06 19.8 -1.6**
DPC Dobruska-Polom 113.13 324 ePKIKP **PKiKP 07 05 31.3 +0.4**
DPC e 07 06 19.8
VRAC Vranov 113.41 323⇑ i P **PKKPbc 07 16 17.1 -0.9**
C31A Landman Farms, 113.69 38 P PKiKP 07 05 31.6 -0.4
baz=293
B32A Ashes, Strandq 114.18 37 P PKPdf 07 05 31.9 -1.0
baz=294
J30A Dallas 114.18 43 P PKPdf 07 05 32.4 -0.7
baz=290
BRG Berggiesshubel 114.26 326 ePKP PKPdf 07 05 32.5 -0.4
comp=Z,2.9nm,0.9s
BRG Berggiesshubel 114.26 326 ePKIKP PKPdf 07 05 32.5 -0.5
BRG pmax pmax
comp=Z,3.0nm,0.9s
K30A Basset 114.32 44 P PKPdf 07 05 33.2 -0.2
baz=290
H31A Wolsey 114.46 42 P PKPdf 07 05 33.7 +0.1
baz=291
CLL Collm 114.58 326 ePdif **Pdif 07 01 42.0 -1.8**
CLL i PKiKP **PKiKP 07 05 32.9 -0.7**
comp=Z,3.0nm,0.8s
CLL ePP **PP 07 06 29.0 -2.5**
CLL epPP 07 06 52.0
CLL ePPP PPP 07 08 50.0
CLL LmV 07 57 00.0
comp=Z,100nm,21.0s
CLL Collm 114.58 326 eP **Pdif 07 01 42.0 -1.8**
CLL i 07 05 32.9
CLL e 07 06 29.0
CLL pmax pmax
comp=Z,6.0nm,0.8s
TXAR Lajitas Array 114.64 59 PKP PKPdf 07 05 34.1 -0.4
comp=Z,1.7nm,0.9s,baz=252,slow=2.3,SNR=15
K31A O'Neill 114.93 44 P PKPdf 07 05 34.2 -0.4
baz=290
D33A AnnSam, Waubun 115.13 38 P PKPdf 07 05 34.1 -0.7
baz=295
KHC Kasperske Hory 115.27 324 ePKP **PKPdf 07 05 35.0 0.0**
KHC ex x 07 06 15.3
KHC Kasperske Hory 115.27 324 ePKIKP **PKPdf 07 05 35.0 0.0**
B34A Aery, Baudette 115.28 37 P PKPdf 07 05 34.2 -0.9
baz=296
GERES GERESS Array B 115.32 324 PKP **PKPdf 07 05 34.7 -0.5**
comp=Z,1.2nm,0.7s,baz=66,slow=1.6,SNR=13
F33A 5 Mile Ranch, 115.37 40 P PKPdf 07 05 34.7 -0.5
baz=294
K32A Verdigre 115.46 44 P PKPdf 07 05 35.3 -0.3
baz=291
C34A RKJ Ranch, Bem 115.48 38 P PKPdf 07 05 35.0 -0.5
baz=296

G33A Ortonville 115.54 41 P PKPdf 07 05 34.9 -0.7
baz=293
D34A Park Rapids 115.55 38 P PKPdf 07 05 34.9 -0.7
baz=295
ECSD EROS Data Cent 115.99 42 P PKPdf 07 05 36.0 -0.5
baz=292
P32A Huiting Farm, 116.05 47 P PKPdf 07 05 36.6 -0.3
baz=289
H34A Spellman Lake, 116.18 41 P PKPdf 07 05 36.7 -0.2
baz=294
D35A Remer 116.26 38 P PKPdf 07 05 36.4 -0.5
baz=296
Q32A Meitler Ranch, 116.28 48 P PKPdf 07 05 37.0 -0.3
baz=289
R32A Long Quarter, 116.35 48 P PKPdf 07 05 37.1 -0.3
baz=288
O33A Hebron 116.63 46 P PKPdf 07 05 37.5 -0.5
baz=290
K34A Le Mars 116.74 43 P PKPdf 07 05 37.1 -0.9
baz=292
H35A Sunnyside Ranc 116.78 41 P PKPdf 07 05 37.6 -0.4
baz=294
G35A Watkins 116.79 40 P PKPdf 07 05 37.7 -0.3
baz=295
Q33A Connelly Farm, 116.81 47 P PKPdf 07 05 37.9 -0.4
baz=289
E36A McGregor 117.00 38 P PKPdf 07 05 37.7 -0.7
baz=297
I35A Creekview Farm 117.03 42 P PKPdf 07 05 37.9 -0.6
baz=294
F36A Milaca 117.12 39 P PKPdf 07 05 38.0 -0.7
baz=296
G36A St. Michael 117.25 40 P PKPdf 07 05 38.7 -0.3
baz=296
ABTX Abilene, Hawle 117.28 55 P PKPdf 07 05 39.3 -0.1
baz=285
ABTX Abilene, Hawle 117.28 55 ePKPdf **PKPdf 07 05 38.3 -1.1**
L35A Bielow Farm, R 117.33 43 P PKPdf 07 05 39.0 -0.2
baz=293
P34A Walnut Farm, R 117.36 47 P PKPdf 07 05 39.0 -0.3
baz=290
Q34A Chapman 117.50 47 P PKPdf 07 05 39.5 -0.1
baz=290
I36A Fitzsimmons Fa 117.60 41 P PKPdf 07 05 39.3 -0.3
baz=295
JCT Junction City 117.67 57 P PKPdf 07 05 39.9 -0.3
baz=284
JCT Junction City 117.67 57 ePKIKP **PKPdf 07 05 40.0 -0.3**
JCT Junction City 117.67 57 ePKPdf **PKPdf 07 05 40.0 -0.3**
X33A Lawton 117.67 52 P PKPdf 07 05 39.7 -0.3
baz=287
KSU1 Kansas State U 117.68 47 P PKPdf 07 05 39.7 -0.3
baz=290
SPMN Marine on St. 117.86 39 P PKPdf 07 05 39.4 -0.7
baz=296
K36A Gilmore City 117.87 43 P PKPdf 07 05 39.7 -0.5
baz=294
T34A McClaskey Farm 117.94 49 P PKPdf 07 05 40.1 -0.4
baz=289
P35A Duane Minner, 117.95 46 P PKPdf 07 05 40.0 -0.5
baz=291
I37A Lemond, Waseca 118.00 41 P PKPdf 07 05 40.2 -0.2
baz=295
832A Faith Ranch, C 118.02 60 P PKPdf 07 05 40.4 -0.5
baz=282
233A Rising Star 118.04 55 P PKPdf 07 05 40.5 -0.4
baz=285
333A Richland Sprin 118.15 56 P PKPdf 07 05 40.7 -0.4
baz=285
X34A Smith Ranch, M 118.19 52 P PKPdf 07 05 40.9 -0.2
baz=287
433A Art 118.20 57 P PKPdf 07 05 40.5 -0.7
baz=284
N36A Muff Farm, Cla 118.23 45 P PKPdf 07 05 40.7 -0.3
baz=292
S35A Otter Creek Ra 118.38 48 P PKPdf 07 05 41.1 -0.2
baz=290
533A Kerrville 118.41 57 P PKPdf 07 05 41.4 -0.3
baz=284
Y34A Reagan Ranch, 118.43 53 P PKPdf 07 05 41.3 -0.2
baz=287
T35A Sooner Cattle 118.48 49 P PKPdf 07 05 41.2 -0.4
baz=289
U35A Pawnee 118.50 50 P PKPdf 07 05 41.1 -0.5
baz=289
833A Chaparral WMA, 118.51 59 P PKPdf 07 05 41.5 -0.3
baz=283
Q36A Arnold C. Orve 118.56 47 P PKPdf 07 05 41.2 -0.5
baz=291
M37A Trindle Farm, 118.63 44 P PKPdf 07 05 41.2 -0.6
baz=294
234A Clairette 118.67 55 P PKPdf 07 05 41.7 -0.4
baz=286
I38A Scanlan Farm, 118.68 40 P PKPdf 07 05 40.9 -0.8
baz=296
R36A Gordon, Harris 118.76 47 P PKPdf 07 05 41.7 -0.4
baz=291
334A Lometa 118.76 56 P PKPdf 07 05 42.0 -0.3
baz=285
W35A Tecumseh 118.77 51 P PKPdf 07 05 41.9 -0.3
baz=288
434A Burnet 118.87 56 P PKPdf 07 05 42.1 -0.4
baz=285
534A Blanco 118.89 57 P PKPdf 07 05 42.0 -0.5
baz=284
T36A Boggs Farm, Ca 118.92 49 P PKPdf 07 05 41.6 -0.8
baz=290
Y35A Marietta 119.02 53 P PKPdf 07 05 42.5 -0.2
baz=287
O37A Wolven Farm, M 119.06 45 P PKPdf 07 05 42.2 -0.3
baz=293
L38A Oak Wood Farm, 119.08 43 P PKPdf 07 05 42.2 -0.3
baz=295
WHTX Lake Whitney, 119.23 55 P PKPdf 07 05 43.5 +0.4
baz=286
R37A Teagarden Farm 119.26 47 P PKPdf 07 05 42.4 -0.6
baz=291
W36A Wetumka 119.28 51 P PKPdf 07 05 42.6 -0.5
baz=289
V36A Jenks 119.29 50 P PKPdf 07 05 42.6 -0.5
baz=289
X36A Centrahoma 119.36 52 P PKPdf 07 05 43.0 -0.3
baz=288
TUL1 Leonard 119.36 50 P PKPdf 07 05 42.8 -0.5
baz=289
034A Hebbronville 119.40 61 P PKPdf 07 05 44.4 +0.9
baz=283
335A Moody 119.44 56 P PKPdf 07 05 43.5 -0.1
baz=286
435B Jarrell 119.45 56 P PKPdf 07 05 43.7 +0.1
baz=285
N38A Joes South For 119.45 44 P PKPdf 07 05 43.2 -0.1
baz=294
S37A Fort Scott 119.46 48 P PKPdf 07 05 42.9 -0.5
baz=291
T37A Cheneyville 18 119.61 49 P PKPdf 07 05 43.4 -0.3
baz=291
Y36A Durant 119.62 52 P PKPdf 07 05 43.5 -0.4
baz=288
635A Leesville 119.64 58 P PKPdf 07 05 44.4 +0.5
baz=284
535A Dale 119.65 57 P PKPdf 07 05 44.0 0.0
baz=285
Z36A Blue Ridge 119.69 53 P PKPdf 07 05 43.6 -0.4
baz=287
P38A Dawn 119.70 45 P PKPdf 07 05 43.3 -0.6
baz=293
U37A Salina 119.71 49 P PKPdf 07 05 43.4 -0.5
baz=290
V37A Hulbert 119.87 50 P PKPdf 07 05 43.7 -0.5
baz=290
W37B Quinton 119.89 51 P PKPdf 07 05 44.0 -0.3
baz=289
Q38A Cooks Store, C 119.90 46 P PKPdf 07 05 43.2 -1.0
baz=293
236A Katherine and 119.98 55 P PKPdf 07 05 44.2 -0.3
baz=287
R38A Fenwick Farm, 119.98 47 P PKPdf 07 05 43.6 -0.8
baz=292
T38A Diamond 120.11 48 P PKPdf 07 05 44.1 -0.6
baz=291
Y37A Hugo 120.12 52 P PKPdf 07 05 44.5 -0.3
baz=288
X37A Clayton 120.12 51 P PKPdf 07 05 44.4 -0.3
baz=289
636A Smothers Creek 120.22 58 P PKPdf 07 05 45.7 +0.6
baz=285
U38A Gravette 120.25 49 P PKPdf 07 05 44.4 -0.6
baz=291
P39B Salisbury 120.31 45 P PKPdf 07 05 44.4 -0.6
baz=294
Q39A Willow Grove F 120.33 46 P PKPdf 07 05 44.4 -0.6
baz=293
V38A Canehill 120.44 50 P PKPdf 07 05 44.6 -0.8
baz=290
X38A Whitesboro 120.52 51 P PKPdf 07 05 45.1 -0.4
baz=289
R39A Chumby, Stover 120.56 47 P PKPdf 07 05 44.9 -0.6
baz=293
S39A Bolivar 120.59 47 P PKPdf 07 05 45.1 -0.5
baz=292
W38A Poteau 120.62 51 P PKPdf 07 05 45.4 -0.3
baz=290
O40A La Belle 120.67 44 P PKPdf 07 05 45.5 -0.2
baz=295
P40A Paris 120.79 45 P PKPdf 07 05 45.4 -0.5
baz=294
T39A Clever 120.80 48 P PKPdf 07 05 45.3 -0.8
baz=292
Q40A Laux Farm, Aux 120.99 46 P PKPdf 07 05 45.9 -0.4
baz=294
V39A Pettigrew 121.03 50 P PKPdf 07 05 46.1 -0.5
baz=291
X39A Fountain Ranch 121.12 51 P PKPdf 07 05 46.4 -0.3
baz=290
R40A Maddies Statio 121.13 46 P PKPdf 07 05 45.7 -0.9
baz=293
W39A Magazine 121.15 50 P PKPdf 07 05 46.4 -0.3
baz=290
S40A Lebanon 121.23 47 P PKPdf 07 05 46.0 -0.9
baz=293
Y39A Lockesburg 121.33 52 P PKPdf 07 05 46.6 -0.5
baz=289
T40A Mansfield 121.39 48 P PKPdf 07 05 46.3 -0.9
baz=292
U40A Yellville 121.44 49 P PKPdf 07 05 46.6 -0.6
baz=292
MIAR Mount Ida 121.53 51 P PKPdf 07 05 47.0 -0.4
baz=290
MIAR Mount Ida 121.53 51 ePKIKP **PKPdf 07 05 47.3 -0.2**
MIAR Mount Ida 121.53 51 ePKPdf **PKPdf 07 05 47.3 -0.2**
V40A Witts Springs 121.66 49 P PKPdf 07 05 47.0 -0.8
baz=291
W40A Ferguson Farm, 121.69 50 P PKPdf 07 05 47.5 -0.3
baz=291
T41A Mountain View 121.99 48 P PKPdf 07 05 47.8 -0.5
baz=293
Q42A Golden Eagle 122.12 45 P PKPdf 07 05 48.1 -0.3
baz=295
X40A Basin Creek Fa 122.12 51 P PKPdf 07 05 47.7 -0.9
baz=291
140A Cam and Jess, 122.17 53 P PKPdf 07 05 48.2 -0.5
baz=289
HDIL Hopedale 122.26 43 P PKPdf 07 05 48.4 -0.3
baz=297
W41B Gary Mavity, V 122.33 50 P PKPdf 07 05 48.6 -0.4
baz=292
X41A Kaden, Bauxite 122.37 51 P PKPdf 07 05 48.8 -0.3
baz=291
Y41A Eaglette Beard 122.51 51 P PKPdf 07 05 49.2 -0.1
baz=290
Z41A Richland Creek 122.58 52 P PKPdf 07 05 49.3 -0.2
baz=290
V42A Cord 122.74 49 P PKPdf 07 05 48.5 -1.3
baz=293
341A Kurthwood 122.91 54 P PKPdf 07 05 49.9 -0.3
baz=288
Z42A Norrel Spur, H 123.24 52 P PKPdf 07 05 50.9 +0.1
baz=291
242A Grayson 123.50 53 P PKPdf 07 05 51.4 +0.1
baz=290
SFIN Lafayette 123.82 42 P PKPdf 07 05 51.5 -0.2
baz=299
KEST Kesra 123.85 312 PKP **PKPdf 07 05 51.5 -0.5**
comp=Z,4.8nm,0.8s,baz=235,slow=6.4,SNR=6.7
KEST PP **PP 07 07 36.6 +0.6**
comp=Z,11nm,1.0s,baz=286,slow=5.4,SNR=5.0
143A Socs Landing, 123.87 52 P PKPdf 07 05 52.1 +0.1
baz=291
SCHQ Schefferville 124.08 18 PKP **PKPdf 07 05 51.3 -0.5**
comp=Z,6.1nm,0.9s,baz=247,slow=0.7,SNR=8.3
X44A Crenshaw 124.18 50 P PKPdf 07 05 52.4 -0.1
baz=293
Z44A Pea Ridge, Bel 124.42 51 P PKPdf 07 05 52.7 -0.3
baz=292
244A Avery, Jackson 124.67 53 P PKPdf 07 05 53.4 -0.1
baz=291
CMIG Matias Romero 124.68 71 PKP **PKPdf 07 05 53.5 -0.5**
comp=Z,4.7nm,0.8s,baz=335,slow=1.6,SNR=6.9
344A Westbrook Farm 124.84 53 P PKPdf 07 05 54.0 +0.1
baz=290
WCI Wyandotte Cave 125.39 44 ePKIKP **PKPdf 07 05 54.5 -0.3**
WCI Wyandotte Cave 125.39 44 ePKPdf **PKPdf 07 05 54.5 -0.3**
Y46A Houston 125.41 50 P PKPdf 07 05 54.6 -0.3
baz=293
Z46A Louisville 125.61 51 P PKPdf 07 05 55.1 -0.3
baz=293
146A Union 125.74 51 P PKPdf 07 05 55.5 -0.1
baz=292
M54A Oil Creek Stat 127.95 37 P PKPdf 07 05 59.3 -0.3
baz=307
PLCA Paso Flores 128.38 151 PKP **PKPdf 07 06 00.3 -0.3**
comp=Z,5.5nm,0.8s,baz=226,slow=1.8,SNR=24
O56A Blue Knob Stat 129.36 38 P PKPdf 07 06 02.4 0.0
baz=307
KMSC Kings Mountain 130.38 45 P PKPdf 07 06 05.0 +0.6
baz=301
LCO Las Campanas 136.78 140 ePKPdf **PKPdf 07 06 17.4 +0.5**
TORD Torodi Ar. Bea 137.31 286 PKhKP PKPpre 07 06 07.5
comp=Z,1.3nm,1.0s,baz=98,slow=1.5,SNR=4.1
TORD PKP **PKPdf 07 06 17.1 -0.8**
comp=Z,3.8nm,0.9s,baz=59,slow=2.7,SNR=14
TORD PP **PP 07 09 04.0 +0.1**
comp=Z,4.3nm,1.0s,baz=85,slow=4.9,SNR=3.7
OTAV Otavalo 141.77 94 ePKPdf **PKPdf 07 06 23.0 -3.7**
KIC Kosan Boka 144.42 277 ePKP1 **PKPab 07 06 29.0 -0.2**
comp=Z,201nm,1.0s
DBIC Dimbokro 144.51 277 PKP **PKPab 07 06 29.4 -0.1**
comp=Z,51nm,0.8s,baz=85,slow=3.4,SNR=34
TIC Toumodi 144.68 277 ePKP1 **PKPab 07 06 29.7 -0.4**
LIC Lamto 144.71 276 ePKP1 **PKPab 07 06 29.8 -0.4**
comp=Z,116nm,1.3s
BETC Betania 144.90 90 eP PKPbc 07 06 31.2 +0.2
GUYC Guyana, Colomb 144.94 85 eP PKPbc 07 06 31.2 -0.5
TOLC Tolima 145.03 86 eP **PKPbc 07 06 31.2 -0.6**
NORC Norcasia 145.44 85 eP **PKPdf 07 06 31.8 -0.8**
SDDR Presa de Saban 145.82 60 ePKPdf **PKPdf 07 06 33.0 0.0**
ROSC El Rosal 146.02 86 PKPbc **PKPdf 07 06 34.3 +0.3**
comp=Z,30nm,0.7s,baz=97,slow=6.2,SNR=18
ROSC El Rosal 146.02 86 eP **PKPdf 07 06 34.0 0.0**
SJAC San Juan de Ar 146.40 89 eP **PKPdf 07 06 32.9 -1.4**
LPAZ La Paz 146.43 126 PKPbc **PKPdf 07 06 35.3 +0.4**
comp=Z,52nm,0.8s,baz=269,slow=1.4,SNR=162
CPUP Villa Florida 146.45 152 PKPbc **PKPdf 07 06 34.3 +0.4**
comp=Z,10.0nm,1.0s,baz=268,slow=1.3,SNR=16
BRRC Barranca, Sant 146.49 82 eP **PKPdf 07 06 32.9 -1.4**
VILC Villavicencio, 146.66 87 eP **PKPbc 07 06 35.7 -0.8**
OCAC Ocana 146.76 80 eP **PKPdf 07 06 34.6 -0.3**
BTLC Betulia, Santa 146.94 82 eP **PKPdf 07 06 34.7 -0.7**
GIRC Giron, Santand 147.00 82 eP **PKPdf 07 06 34.6 -0.7**
BARC Barichara 147.06 83 eP **PKPdf 07 06 36.3 +0.7**
RUSC La Rusia 147.20 84 eP **PKPdf 07 06 36.9 +0.7**
GRMC Gramalote, San 147.32 81 eP **PKPdf 07 06 36.9 +1.0**
CBRI Barrientos, No 147.33 81 eP **PKPbc 07 06 37.4 -1.0**
URIC Uribia, Colomb 147.46 73 eP **PKPdf 07 06 35.2 -0.7**
PAMC Pamplona, Colo 147.47 81 eP **PKPdf 07 06 37.4 +0.9**
SDV Santo Domingo 149.30 78 ePKPdf **PKPdf 07 06 38.7 -0.5**
SDV ePKPbc **PKPbc 07 06 43.3 -0.3**
SDV ePKPab **PKPab 07 06 48.4 0.0**
SDV Santo Domingo 149.30 78 eP **PKPbc 07 06 43.1 -0.5**
SJG San Juan 150.59 58 ePKIKP **PKPdf 07 06 40.4 -0.4**
SJG San Juan 150.59 58 ePKPdf **PKPdf 07 06 40.4 -0.4**
SJG ePKPbc **PKPbc 07 06 45.8 -0.5**
SJG San Juan 150.59 58 eP **PKPdf 07 06 41.4 +0.6**
SAML Samuel 154.25 118 ePKPbc **PKPbc 07 06 54.1 -0.5**
SAML ePKPab **PKPab 07 07 08.2 -0.6**

*ISCJB **15** 06:48:30.3±0.3,34°.90N±0°.03×72°.84E±0°.05,h33km, mb4.0/17,MS3.4/4,Error ellipse: s-maj=5.9km s-min=2.8km az=151.5*
*MOS **15** 06:48:30.4±1.3,34°.82N×72°.75E,h33km,mb4.3/12,Error ellipse: s-maj=16.7km s-min=8.4km az=90.0*

*NDI **15** 06:48:32.7±2.8, 34.°94N×72.°54E, h33km, ML4.5*
*IDC **15** 06:48:37.9±2.6, 35.°16N×72.°53E, h69km±22km, mb3.7/14, mb1 3.9/19, mb1mx3.7/60, mbtmp4.1/19, MS3.3/7, Ms1 3.3/7, ms1mx3.0/47, Error ellipse: s-maj=18.0km s-min=12.3km az=145.0*
*NNC **15** 06:48:39.3±1.6, 35.°21N×72.°77E, h90km±11km, mb4.3, mpv4.9, Error ellipse: s-maj=13.0km s-min=8.6km az=179.0*
ISC 15 06:48:32.4±0.5, 34.°90N±0.°05×72.°71E±0.°05, h35km, n71, σ2§19/82, mb4.1/17, MS3.1/4, 10C-15D, Pakistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHCP	**Chirah Chowk**	**1.32**	**160**	⇓P	Pn	06 48 59.2	+4.9
THW	**Thamme Wali**	**2.25**	**201**	⇓P	Pn	06 49 11.9	+4.8
SARP	**Sargodha**	**2.97**	**181**	⇓P	**Pn**	**06 49 20.9**	**+3.9**
DHRM	**DHARAMSHALA**	**3.99**	**130**	*e*P	**Pn**	**06 49 34.7**	**+3.4**
DHRM				*e*S	**Sn**	**06 50 19.1**	**+2.1**
PONG	**Pong**	**4.00**	**136**	*e*P	Pn	06 49 35.0	+3.9
PONG				*ex*	x	06 50 38.0	
JWA	**Jwalamukhi**	**4.28**	**134**	*e*P	**Pn**	**06 49 38.0**	**+3.0**
JWA				*e*S	**Sn**	**06 50 24.0**	**+0.3**
DZET	**Dzherino** 36nm,0.4s	**4.99**	**323**	⇑P	**Pn**	**06 49 48.4**	**+3.5**
DZET	612nm,0.7s			⇓S	**Sn**	**06 50 43.4**	**+2.0**
SMLA	**Simla**	**5.30**	**134**	*e*P	**Pn**	**06 49 52.0**	**+3.0**
SMLA				*e*S	**Sn**	**06 50 48.7**	**-0.2**
SMLA	comp=N,2μm,0.4s			IAML		06 51 21.1	
SMLA	comp=E,3μm,0.8s			IAML		06 51 25.0	
DDI	**Dehra Dun**	**6.41**	**134**	*e*P	**Pn**	**06 50 06.4**	**+2.0**
DDI				*e*S	**Sn**	**06 51 13.4**	**-3.0**
JOSI	**Joshimath** comp=N,3μm,0.8s	**7.21**	**125**	IAML		06 52 17.2	
JOSI	comp=E,4μm,0.7s			IAML		06 52 19.8	
JOSI	**Joshimath**	**7.21**	**125**	*e*P	**Pn**	**06 50 17.8**	**+2.3**
JOSI				*e*S	**Sn**	**06 51 34.1**	**-2.2**
JOSI	comp=N,3μm,0.8s			IAML		06 52 17.2	
JOSI	comp=E,4μm,0.7s			IAML		06 52 19.8	
KHET	**Khetri**	**7.30**	**158**	*e*P	**Pn**	**06 50 17.2**	**+0.7**
KHET				*e*S	**Sn**	**06 51 34.1**	**-4.1**
KHET	comp=E,138nm,0.5s			IAML		06 52 31.3	
KHET	comp=N,129nm,0.3s			IAML		06 52 32.8	
KUDL	**Kundal**	**7.47**	**153**	*e*P	**Pn**	**06 50 19.6**	**+0.9**
KUDL				*e*S	**Sn**	**06 51 36.9**	**-5.3**
KUDL	comp=N,159nm,0.5s			IAML		06 52 34.2	
KUDL	comp=E,208nm,0.7s			IAML		06 52 35.3	
MNAS	**Manas** comp=E,75nm,0.5s	**7.58**	**359**	⇓P	**Pn**	**06 50 23.7**	**+3.3**
MNAS	comp=E,114nm,0.5s			⇑S	**Sn**	**06 51 45.3**	**+0.2**
SONA	**Sohna**	**7.61**	**149**	*e*P	**Pn**	**06 50 21.5**	**+0.8**
SONA				*e*S	**Sn**	**06 51 43.5**	**-2.1**
SONA	comp=N,123nm,0.4s			IAML		06 52 39.6	
SONA	comp=E,297nm,0.8s			IAML		06 52 46.8	
AAK	**Ala-Archa** comp=E,14nm,0.3s,baz=175,slow=6.6,SNR=100	**7.85**	**10**	P	**Pn**	**06 50 28.0**	**+3.9**
AAK	comp=E,13nm,0.3s,baz=324,slow=20,SNR=12			S	**Sn**	**06 51 52.5**	**+0.7**
AAK	comp=E,156nm,19.0s,baz=182,slow=41			LR	LR	06 53 48.9	
AAK	**Ala-Archa** comp=E,39nm,0.6s	**7.85**	**10**	⇓P	**Pn**	**06 50 27.9**	**+3.8**
AAK	comp=E,77nm,0.7s			⇑S	**Sn**	**06 51 51.5**	**-0.2**
FRU	**Bishkek**	**8.06**	**10**	*e*P	**Pn**	**06 50 30.0**	**+3.1**
FRU				*i*		06 52 08.0	
FRU	comp=Z,57nm,1.8s			pmax	pmax		
FRU	comp=E,580nm,1.8s			pmax	pmax		
TKM2	**Tokmak 2** comp=E,27nm,0.6s	**8.32**	**15**	⇑P	**Pn**	**06 50 33.8**	**+3.1**
TKM2	comp=E,40nm,0.8s			⇑S	**Sn**	**06 52 01.7**	**-1.7**
KK31	**Karatay Array** comp=E,111nm,0.6s,baz=167,slow=12,SNR=726	**8.37**	**349**	P	**Pn**	**06 50 34.5**	**+3.4**
KK31	comp=E,54nm,0.4s,baz=140,slow=13,SNR=9.7			S	**Sn**	**06 52 03.3**	**-1.1**
KNDC	**Almaty**	**8.94**	**20**	⇑P	**Pn**	**06 50 42.4**	**+3.4**
KNDC				⇑S	**Sn**	**06 52 19.2**	**+0.8**
PDGK	**Podgornoye** comp=E,16nm,0.6s	**9.92**	**30**	⇓P	**Pn**	**06 50 54.3**	**+2.0**
PDGK	comp=E,68nm,0.8s			⇓S	**Sn**	**06 52 40.1**	**-2.3**
PYUN	**Piuthan** comp=E,91nm,0.3s	**11.08**	**125**	*e*P	**Pn**	**06 51 06.9**	**-1.6**
PYUN				*e*S	Sn	06 52 59.9	-11
KOLN	**Koldanda** comp=E,56nm,0.4s	**11.71**	**124**	*e*P	**Pn**	**06 51 15.8**	**-1.3**
KOLN				*e*S	Sn	06 53 15.4	-11
BHJ	**Bhuj**	**11.91**	**194**	*e*P	**Pn**	**06 51 19.9**	**+0.2**
BHJ				*ex*	x	06 53 26.3	
BHJ	comp=N,109nm,1.0s			IAML		06 53 48.2	
BHJ	comp=E,148nm,1.0s			IAML		06 53 52.0	
GEYT	**Alibeck** comp=E,2.1nm,0.3s,baz=125,slow=9.3,SNR=13	**12.14**	**289**	P	**Pn**	**06 51 23.6**	**+0.8**
GEYT	comp=E,2.9nm,0.3s,baz=276,slow=27,SNR=4.2			S	**Sn**	**06 53 35.6**	**-1.3**
GEYT	comp=E,76nm,20.9s,baz=20,slow=42			LR	LR	06 56 57.6	
GKN	**Gorkha** comp=E,63nm,0.3s	**12.28**	**121**	*e*P	**Pn**	**06 51 23.1**	**-1.8**
DMN	**Daman** comp=E,78nm,0.4s	**12.85**	**121**	*e*P	**Pn**	**06 51 30.8**	**-1.9**
KKN	**Kakani** comp=E,60nm,0.4s	**12.86**	**120**	*e*P	**Pn**	**06 51 31.1**	**-1.8**
PKIN	**Phulchoki** comp=E,78nm,0.3s	**13.07**	**120**	*e*P	**Pn**	**06 51 33.9**	**-1.9**
GUN	**Gumba** comp=E,50nm,0.2s	**13.22**	**118**	*e*P	**Pn**	**06 51 35.6**	**-2.3**
OTUK	**Ortayu** comp=E,8.0nm,0.8s	**13.34**	**359**	⇓P	**Pn**	**06 51 38.8**	**-0.3**
MAKZ	**Makanchi** comp=E,9.0nm,0.8s	**13.79**	**28**	⇑P	**Pn**	**06 51 44.6**	**-0.8**
MKAR	**Makanchi Array** comp=E,0.4nm,0.3s,baz=201,slow=13,SNR=8.4	**13.90**	**28**	P	**Pn**	**06 51 48.2**	**+1.4**
KURBB	**Kurchatov Arra** comp=E,0.2nm,0.3s,baz=203,slow=11,SNR=34	**16.27**	**13**	P	**Pn**	**06 52 16.1**	**-1.9**
KURBB	**Kurchatov Arra** comp=E,7.4nm,0.6s	**16.27**	**13**	⇓P	**Pn**	**06 52 16.0**	**-2.1**
KURK	**Kurchatov**	**16.38**	**13**	P	**Pn**	**06 52 16.2**	**-3.2**
WSAR	**Wadi Sarin** comp=E,53nm,18.3s,baz=105,slow=42	**16.91**	**230**	LR	LR	07 00 28.6	
AB31	**Akbulak array** comp=E,4.1nm,0.5s,baz=136,slow=12,SNR=9.2	**17.16**	**331**	⇓P	**Pn**	**06 52 28.7**	**-0.5**
AB31	comp=E,3.4nm,0.5s,baz=160,slow=22,SNR=5.9			⇓S	**Sn**	**06 55 30.5**	**-8.3**
BVA0	**Borovoye Array**	**18.20**	**356**	P	**P**	**06 52 41.0**	**-1.0**
BVAR	**Borovoye Array** comp=E,6.1nm,0.6s,baz=166,slow=14,SNR=37	**18.20**	**356**	P	**P**	**06 52 41.4**	**-0.6**
BRVK	**Borovoye** comp=E,1.3nm,0.3s,baz=163,slow=12,SNR=42	**18.24**	**355**	⇑P	**Pn**	**06 52 42.7**	**+0.2**
ZRNK	**Zerenda** comp=E,19nm,0.9s	**18.24**	**353**	⇓P	**Pn**	**06 52 42.2**	**-0.3**
AKTO	**Aktyubinsk** comp=E,8.8nm,0.7s	**18.86**	**330**	P	**Pn**	**06 52 50.6**	**+0.5**
AKTO	comp=E,3.9nm,0.3s,baz=131,slow=11,SNR=33			LR	LR	07 00 46.1	
AKTO	**Aktyubinsk** comp=E,69nm,18.2s,baz=146,slow=39	**18.86**	**330**	⇑P	**Pn**	**06 52 50.7**	**+0.5**
AKTO	comp=E,12nm,0.6s			⇓S	**Sn**	**06 56 17.6**	**-2.5**
SHL	**Shillong** comp=E,12nm,0.8s	**18.97**	**114**	*e*P	**Pn**	**06 52 51.6**	**-0.2**
ZALV	**Zalesovo Beam** comp=E,18nm,0.6s,baz=216,slow=11,SNR=26	**20.86**	**20**	P	**P**	**06 53 10.2**	**-0.8**
ZALV	comp=E,2.1nm,0.7s,baz=218,slow=18,SNR=4.1			S	**S**	**06 56 59.4**	**-2.2**
NVS	**Novosibirsk**	**21.24**	**17**	⇓*i*P	**P**	**06 53 15.4**	**+0.3**
NVS				*e*		06 53 29.5	
NVS				*e*S	**S**	**06 57 10.4**	**+1.2**
NVS				pmax	pmax		
NVS	comp=Z,12nm,0.5s			pmax	pmax		
NVS	comp=N,8.0nm,0.6s			pmax	pmax		
NVS	comp=E,2.0nm,0.6s			smax	smax		
NVS	comp=N,17nm,1.7s			smax	smax		
NVS	comp=E,12nm,1.7s			smax	smax		
GNI	**Garni**	**22.75**	**292**	LR	LR	07 04 36.9	
	comp=E,38nm,18.3s,baz=88,slow=43						
ARU	**Arti**	**23.60**	**340**	P	**P**	**06 53 39.4**	**-0.4**
	comp=E,4.1nm,0.5s,baz=136,slow=6.5,SNR=7.4						
ARU				LR	LR	07 03 51.3	
	comp=E,138nm,19.4s,baz=253,slow=39						
ARU	**Arti**	**23.60**	**340**	P	**P**	**06 53 40.9**	**+1.1**
ZEI	**Tsey**	**23.70**	**298**	*e*P	**P**	**06 53 42.6**	**+1.5**
ZEI	comp=Z,12nm,0.8s			pmax	pmax		
KBZ	**Khabaz** comp=Z,1.3nm,0.6s,baz=172,slow=7.1,SNR=2.7	**24.59**	**300**	P	**P**	**06 53 49.8**	**+0.7**
KIV	**Kislovodsk**	**24.78**	**300**	*e*P	P	06 53 59.8	+8.9
KIV	comp=Z,6.0nm,0.9s			pmax	pmax		
KIV	comp=Z,24nm,15.0s			MLR	MLR		
ZAK	**Zakamensk**	**27.05**	**46**	*e*P	**P**	**06 54 12.1**	**+0.7**
ZAK	comp=Z,4.0nm,1.2s			pmax	pmax		
SONM	**Songino Array** comp=Z,0.4nm,0.3s,baz=236,slow=12,SNR=4.0	**28.15**	**52**	P	**P**	**06 54 22.3**	**+1.0**
CMAR	**Chiang Mai Arr** comp=Z,0.7nm,0.3s,baz=308,slow=8.4,SNR=5.1	**28.47**	**118**	P	P	06 54 30.4	+6.2
CMAR	**Chiang Mai Arr**	**28.47**	**118**	P	P	06 54 30.4	+6.2
CMAR	comp=Z,2.0nm,0.4s			pmax	pmax		
BRTR	**Keskin Array B** comp=Z,0.8nm,0.6s,baz=93,slow=9.9,SNR=6.1	**31.27**	**291**	P	**P**	**06 54 49.6**	**+0.6**
AKASG	**Malin Array Be** comp=Z,1.1nm,0.4s,baz=81,slow=7.5,SNR=5.2	**35.04**	**310**	P	**P**	**06 55 21.2**	**-0.3**
BOD	**Bodaibo**	**35.74**	**37**	*e*P	**P**	**06 55 28.0**	**+0.5**
BOD	comp=Z,3.0nm,3.1s			pmax	pmax		
FINES	**FINESS Array B** comp=Z,0.7nm,0.3s,baz=111,slow=10,SNR=10	**39.59**	**327**	P	**P**	**06 56 00.6**	**+0.6**
ARCES	**ARCESS Array B** comp=Z,4.3nm,0.4s,baz=113,slow=8.2,SNR=93	**43.15**	**338**	P	**P**	**06 56 30.1**	**+1.0**
NB2	**NORSAR Subarra** comp=Z,2.9nm,0.6s,baz=96,slow=7.9	**46.49**	**324**	P	**P**	**06 56 56.0**	**+0.1**
NOA	**NORSAR Array B** comp=Z,1.0nm,0.7s,baz=96,slow=7.7,SNR=4.8	**46.49**	**324**	P	**P**	**06 56 55.6**	**-0.2**
TIXI	**Tiksi** comp=Z,1.8nm,0.3s,baz=276,slow=3.2,SNR=3.7	**46.75**	**21**	P	**P**	**06 56 56.9**	**-0.8**
ESDC	**Sonseca Array** comp=Z,0.3nm,0.5s,baz=62,slow=7.8,SNR=3.6	**59.45**	**299**	P	**P**	**06 58 31.4**	**-0.3**
TORD	**Torodi Ar. Bea** comp=Z,1.6nm,0.5s,baz=49,slow=5.9,SNR=26	**67.10**	**270**	P	**P**	**06 59 22.4**	**-0.3**
YKA	**Yellowknife Ar** comp=Z,0.2nm,0.5s,baz=348,slow=5.6,SNR=5.4	**82.77**	**3**	P	**P**	**07 00 53.1**	**+0.7**
YKA	**Yellowknife Ar** comp=Z,1.0nm,0.8s	**82.77**	**3**	P	**P**	**07 00 53.1**	**+0.7**
YKA				pmax	pmax		
ULM	**Lac du Bonnet** comp=Z,129nm,20.5s,baz=344,slow=38	**94.62**	**353**	LR	LR	07 47 53.8	

WEL 15 06:58:52.8±0.8, 47.°00S×166.°15E, h5km, ML3.6/10, 1C, Error ellipse: s-maj=7.6km s-min=5.0km az=90.0, Off west coast of South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PYZ	**Puysegur Point**	**0.91**	**24**	*e*P+	Pg	06 59 09.9	-0.3
APZ	**The Paps**	**1.27**	**83**	P*	Pg	06 59 15.4	-1.8
APZ				S*	Sg	06 59 32.7	-1.0
APZ				AML	AML	06 59 40.1	
WHZ	**Wether Hill Ro**	**1.66**	**49**	PN	Pn	06 59 22.0	-0.7
WHZ				SN	Sn	06 59 43.9	-0.4
WHZ				AML	AML	06 59 45.5	
DCZ	**Deep Cove**	**1.69**	**25**	PN	Pn	06 59 21.6	-1.3
DCZ				AML	AML	06 59 50.2	
DCZ				AML	AML	06 59 56.3	
SYZ	**Scrubby Hill**	**2.11**	**78**	PN	Pn	06 59 28.5	-0.2
SYZ				SN	Sn	06 59 54.4	-0.8
SYZ				AML	AML	06 59 58.1	
SYZ				AML	AML	06 59 58.9	
SYZ				AML	AML	06 59 58.9	
MLZ	**Mavora Lakes**	**2.13**	**41**	PN	Pn	06 59 28.9	-0.2
MLZ				AML	AML	07 00 08.3	
MLZ				AML	AML	07 00 10.9	
TUZ	**Tuapeka**	**2.62**	**68**	⇑PN	Pn	06 59 35.4	-0.4
TUZ				AML	AML	07 00 43.8	
TUZ				AML	AML	07 01 06.7	
EAZ	**Earnscleugh**	**2.82**	**52**	PN	Pn	06 59 38.5	0.0
EAZ				SN	Sn	07 00 13.2	+0.3
EAZ				AML	AML	07 00 13.3	
WKZ	**Wanaka**	**2.95**	**44**	PN	Pn	06 59 40.7	+0.3
WKZ				AML	AML	07 00 26.3	
JCZ	**Jackson Bay**	**3.46**	**33**	PN	Pn	06 59 50.1	+2.6
JCZ				AML	AML	07 00 41.6	
ODZ	**Otahua Downs**	**3.69**	**60**	PN	Pn	06 59 48.2	-2.3
ODZ				AML	AML	07 01 06.8	
ODZ				AML	AML	07 02 18.7	

JMA 15 07:03:30.5, 37.°11N×140.°79E, h9km±1km, M3.5, 5C-2D Broadband fault plane solution: P waves. NP1: ϕ_s215.00000°, δ54.00000°, λ-85.00000°. **NP2:** ϕ_s26.00000°, δ36.00000°, λ-97.00000°. **Principal axes:** T Plg9.0000°, Azm301.0000°; N Plg4.0000°, Azm32.0000°; P Plg80.0000°, Azm147.0000°; **Eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.01**	**141**	⇓P	Pg	07 03 31.9	-0.3
ONAJ				S	Sg	07 03 33.2	-0.1
JFK	**Kawauchi**	**0.27**	**15**	⇑P	Pg	07 03 35.9	0.0
JFK				S	Sg	07 03 39.7	+0.2
JHO	**Hitachi**	**0.53**	**200**	⇓P	Pg	07 03 40.5	-0.3
JHO				S	Sg	07 03 47.5	-0.2
JFT	**Otama**	**0.55**	**319**	⇑P	Pg	07 03 41.1	0.0
JSB	**Shiboa**	**0.71**	**259**	⇑P	Pb	07 03 44.8	-0.3
JSB				S	Sb	07 03 54.4	-0.6
JMM	**Marumori**	**0.76**	**0**	⇑P	Pg	07 03 44.5	-0.6
JMM				S	Sg	07 03 55.0	+0.1
JFY	**Yanaizu**	**0.92**	**289**	⇑P	Pg	07 03 47.9	-0.2
JFY				S	Sg	07 03 59.8	-0.2
MAT	**Matsushiro**	**2.15**	**255**	P	Pn	07 04 07.5	+1.0
MAT				S	Sb	07 04 36.6	+0.3

*ISCJB **15** 07:05:30.4±0.9, 32.°55N±0.°02×105.°44E±0.°02, h8km±5km, mb4.9/115, MS4.2/20 Error ellipse: s-maj=3.4km s-min=2.8km az=166.8*
*IDC **15** 07:05:30.1±0.5, 32.°46N×105.°37E, h0km, mb4.7/33, mb1 4.8/37, mb1mx4.7/48, mbtmp4.7/37, ML3.8/4, MS4.0/7, Ms1 4.0/7, ms1mx3.5/50, Error ellipse: s-maj=15.2km s-min=10.4km az=27.0*
*MOS **15** 07:05:31.2±1.1, 32.°45N×105.°48E, h19km, mb5.2/43, MS4.3/10, Error ellipse: s-maj=6.5km s-min=3.9km az=115.0*
*NEIC **15** 07:05:32.1±0.2, 32.°50N×105.°42E, h10km, mb5.0/37, Error ellipse: s-maj=4.3km s-min=3.5km az=58.0*
NEIC Felt at Chengdu and Chongqing.
*BJI **15** 07:05:32.4, 32.°59N×105.°34E, h17km, mb4.7/43, mB4.8/31, ML4.9/27, Ms4.8/59, Ms7 4.5/62*
ISC 15 07:05:32.5±0.6, 32.°53N±0.°02×105.°46E±0.°03, h11km±3km, h11km:pP-P, n374, σ1§67/422, mb5.0/123, MS4.2/20, 26C-19D, Sichuan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CD2	**Chengdu**	**2.17**	**222**	Pn	**Pn**	**07 06 08.8**	**+0.2**
CD2				Pg	**Pb**	**07 06 12.0**	**+0.2**
CD2				Sn	**Sb**	**07 06 38.8**	**0.0**
CD2				Sg	**Sg**	**07 06 41.3**	**-1.1**
CD2				smax	smax		
CD2	comp=N,44μm,1.0s			smax	smax		
CD2	comp=E,34μm,0.9s			smax	smax		
CD2	**Chengdu**	**2.17**	**222**	Pn	**Pn**	**07 06 08.8**	**+0.2**
CD2				Pg	**Pb**	**07 06 12.0**	**+0.2**
CD2				Sn	**Sb**	**07 06 38.8**	**0.0**
CD2				Sg	**Sg**	**07 06 41.3**	**-1.1**
XAN	**Xi'an**	**3.26**	**62**	Pn	**Pn**	**07 06 23.9**	**+0.3**
XAN				Pg	**Pb**	**07 06 26.4**	**-4.0**
XAN				Sg	**Sb**	**07 07 12.3**	**+2.1**
XAN				smax	smax		
XAN	comp=N,9μm,1.0s			smax	smax		
XAN	comp=E,5μm,0.9s			LR	LR		
XAN	comp=Z,9μm,5.9s			LR	LR		
XAN	**Xi'an**	**3.26**	**62**	P	**Pn**	**07 06 23.9**	**+0.3**
XAN						07 07 12.3	
XAN	**Xi'an**	**3.26**	**62**	Pn	**Pn**	**07 06 23.9**	**+0.3**
XAN				Pg	**Pb**	**07 06 26.4**	**-4.0**
XAN				Sg	**Sb**	**07 07 12.3**	**+2.1**
LZH	**Lanzhou**	**3.79**	**340**	⇓Pn	**Pn**	**07 06 31.8**	**+0.9**
LZH				Pg	**Pb**	**07 06 38.8**	**-0.6**
LZH				Sn	**Sn**	**07 07 17.6**	**+2.1**
LZH				Sg	**Sb**	**07 07 28.0**	**+2.6**
LZH				smax	smax		
LZH	comp=N,4μm,1.0s			smax	smax		
LZH	comp=E,4μm,0.8s			LR	LR		
LZH	comp=N,15μm,4.3s			LR	LR		
LZH	comp=E,13μm,5.8s			LR	LR		
LZH	comp=Z,12μm,6.4s			LR	LR		
LZH	**Lanzhou**	**3.79**	**340**	⇓P	**Pn**	**07 06 31.8**	**+0.9**
LZH						07 07 17.6	
LZH	**Lanzhou**	**3.79**	**340**	⇓Pn	**Pn**	**07 06 31.8**	**+0.9**
LZH				Pg	**Pb**	**07 06 38.8**	**-0.6**
LZH				Sn	**Sn**	**07 07 17.6**	**+2.1**
LZH				Sg	**Sb**	**07 07 28.0**	**+2.6**
ENH	**Enshi**	**4.12**	**122**	*e*Pn	**Pn**	**07 06 36.4**	**+1.1**
ENH				*e*Sn	**Sn**	**07 07 21.0**	**-2.4**
GYA	**Guiyang**	**6.14**	**170**	⇑*i*Pn	**Pn**	**07 07 03.8**	**+0.5**
GYA				Sn	**Sn**	**07 08 15.6**	**+2.0**
GYA				Sg	**Sg**	**07 08 47.5**	**-2.3**
GYA				smax	smax		
GYA	comp=N,940nm,0.8s			smax	smax		
GYA	comp=E,1μm,0.8s			LR	LR		
GYA	comp=N,2μm,5.6s			LR	LR		
GYA	comp=E,2μm,5.3s			LR	LR		
GYA	comp=Z,2μm,8.1s						
GYA	**Guiyang**	**6.14**	**170**	⇑*i*Pn	**Pn**	**07 07 03.8**	**+0.5**
GYA				Sn	**Sn**	**07 08 15.6**	**+2.0**
GYA				Sg	**Sg**	**07 08 47.5**	**-2.3**
TIY	**Taiyuan**	**7.70**	**46**	*e*Pg	Pb	07 07 53.4	+7.4
TIY				Sg	Sb	07 09 28.1	+10
TIY				smax	smax		
TIY	comp=N,1μm,1.4s			smax	smax		
TIY	comp=E,770nm,1.1s						
KMI	**Kunming**	**7.76**	**199**	Pn	**Pn**	**07 07 25.3**	**-0.3**
KMI				Sn	**Sn**	**07 08 52.8**	**-0.7**
KMI				Sg	**Sg**	**07 09 41.8**	**+0.2**
KMI				smax	smax		
KMI	comp=N,200nm,1.2s			smax	smax		
KMI	comp=E,190nm,1.5s			LR	LR		
KMI	comp=N,2μm,5.0s			LR	LR		
KMI	comp=E,2μm,5.2s			LR	LR		
KMI	comp=Z,2μm,6.9s						
WHN	**Wuhan**	**7.84**	**102**	P	**Pn**	**07 07 26.1**	**-0.3**
WHN				S	**Sn**	**07 08 54.3**	**-0.9**
WHN				LR	LR		
WHN	comp=N,12μm,5.7s			LR	LR		
WHN	comp=E,8μm,8.6s			LR	LR		
WHN	comp=Z,9μm,5.1s						
GTA	**Gaotai**	**8.25**	**328**	*e*P	**Pn**	**07 07 30.3**	**-1.8**
GTA				pP	pP	07 07 34.4	
GTA				sP	sP	07 07 37.4	
GTA				S	**Sn**	**07 08 59.4**	**-5.9**
GTA				pmax	pmax		
GTA	comp=Z,9.0nm,1.0s			pmax	pmax		
GTA	comp=Z,45nm,5.5s			LR	LR		
GTA	comp=N,4μm,10.9s			LR	LR		
GTA	comp=E,6μm,10.7s			LR	LR		
GTA	comp=Z,5μm,10.5s						
BTO	**Baotou**	**8.85**	**23**	*e*P	**Pn**	**07 07 38.8**	**-1.6**
HHC	**Hu-ho-hao-te**	**9.63**	**29**	*e*P	**Pn**	**07 07 51.0**	**-0.1**
HHC				S	**Sn**	**07 09 40.3**	**+0.9**
HHC				pmax	pmax		
HHC	comp=Z,32nm,0.8s			pmax	pmax		
HHC	comp=Z,100nm,3.6s			LR	LR		
HHC	comp=N,2μm,6.4s			LR	LR		
HHC	comp=E,3μm,6.3s			LR	LR		
HHC	comp=Z,2μm,6.0s						
TIA	**Tai'an**	**10.31**	**66**	*e*P	**Pn**	**07 08 02.1**	**+1.8**
TIA				S	Sn	07 10 06.4	+11
TIA				pmax	pmax		
TIA	comp=Z,20nm,1.1s			LR	LR		
TIA	comp=N,1μm,13.0s			LR	LR		
TIA	comp=E,1μm,11.6s			LR	LR		
TIA	comp=Z,2μm,15.0s						
NJ2	**Nanjing**	**11.35**	**89**	*e*P	**Pn**	**07 08 16.0**	**+1.5**
NJ2				S	**Sn**	**07 10 21.1**	**-0.1**
NJ2				pmax	pmax		
NJ2	comp=Z,9.0nm,0.7s			LR	LR		
NJ2	comp=N,1μm,10.3s			LR	LR		
NJ2	comp=E,2μm,8.7s			LR	LR		
NJ2	comp=Z,3μm,9.8s						
BJT	**Baijiatuau**	**11.41**	**46**	*e*P	**Pn**	**07 08 15.1**	**-0.3**
BJT				pmax	pmax		
BJT	comp=Z,9.0nm,0.6s						
BJT	**Baijiatuau** comp=Z,9.1nm,0.6s	**11.41**	**46**	*e*Pn	**Pn**	**07 08 15.1**	**-0.3**
BJI	**Beijing**	**11.43**	**46**	P	**Pn**	**07 08 16.3**	**+0.7**
BJI				pmax	pmax		
BJI	comp=Z,23nm,0.6s						
GZH	**Guangzhou**	**11.71**	**142**	P	Pn	07 08 14.0	-5.5
GZH				S	Sn	07 10 18.4	-12
GZH				LR	LR		
GZH	comp=N,5μm,4.9s			LR	LR		
GZH	comp=E,5μm,5.1s						
LSA	**Lhasa**	**12.58**	**261**	P	**Pn**	**07 08 31.8**	**-0.1**
LSA				pP	P	07 08 37.3	-6.2
LSA				pmax	pmax		
LSA	comp=E,4.0nm,0.7s			pmax	pmax		
LSA	comp=E,86nm,11.5s			LR	LR		
LSA	comp=E,310nm,6.3s			LR	LR		
LSA	comp=E,430nm,5.5s			LR	LR		
LSA	comp=E,580nm,6.3s						
LSA	**Lhasa**	**12.58**	**261**	*e*P	**Pn**	**07 08 31.4**	**-0.5**
LSA				pmax	pmax		
LSA	comp=Z,13nm,0.6s						
LSA	**Lhasa** comp=Z,14nm,0.6s	**12.58**	**261**	*e*Pn	**Pn**	**07 08 31.4**	**-0.5**
CRAI	**Chiangrai** comp=Z,86nm,1.4s	**13.07**	**202**	P	**Pn**	**07 08 39.7**	**+1.6**
QZH	**Quanzhou**	**13.77**	**120**	*e*P	**Pn**	**07 08 50.5**	**+2.9**
QZH				*e*S	**Sn**	**07 11 17.3**	**-3.3**
QZH				LR	LR		

comp=Z,5μm,12.0s
QZH LR LR
comp=Z,4μm,10.6s
QZH LR LR
comp=Z,4μm,12.4s
CMAI Chiengmai2 13.80 206 P **Pn 07 08 49.6 +1.4**
comp=Z,12nm,1.1s
QIZ Qiongzhong 14.01 163 P **Pn 07 08 51.3 +0.3**
QIZ S **Sn 07 11 28.1 +1.6**
QIZ LR LR
comp=Z,500nm,10.5s
QIZ LR LR
comp=Z,1μm,7.9s
DL2 Dalian 14.58 60 P P 07 09 10.3 +5.1
DL2 S **S 07 12 03.9 +4.3**
DL2 pmax pmax
comp=Z,27nm,0.7s
DL2 LR LR
comp=N,940nm,16.5s
DL2 LR LR
comp=E,760nm,14.5s
DL2 LR LR
comp=Z,880nm,14.9s
CHTO Chiang Mai 14.87 205 P **Pn 07 09 04.0 +1.4**
comp=Z,102nm,1.0s
CHTO Chiang Mai 14.87 205 *e*P **Pn 07 09 02.3 -0.3**
CHTO Chiang Mai 14.87 205 *e*Pn **Pn 07 09 02.3 -0.3**
CMMT Chiang Mai 14.87 205 P **Pn 07 09 04.0 +1.3**
comp=Z,23nm,1.0s,comp=Z,334nm
LAMP Lampang 14.90 202 P **Pn 07 09 04.0 +0.8**
comp=Z,18nm,1.0s
CMAR Chiang Mai Arr 15.20 204 Pn **Pn 07 09 04.7 -2.4**
comp=Z,0.3nm,0.3s,baz=14,slow=12,SNR=27
SONM Songino Array 15.30 2 Pn **Pn 07 09 07.5 -0.9**
comp=Z,0.3nm,0.3s,baz=184,slow=13,SNR=16
ULN Ulaanbaatar 15.36 4 *e*P **Pn 07 09 09.6 +0.3**
ULN pmax pmax
comp=Z,23nm,1.0s
ULN Ulaanbaatar 15.36 4 *e*Pn **Pn 07 09 09.6 +0.3**
comp=Z,23nm,1.0s
UTTA Uttaradit 15.38 198 P **P 07 09 13.3 -0.8**
comp=Z,9.4nm,1.0s,comp=Z,86nm
SKNT Sakolnakorn 15.55 185 P **Pn 07 09 12.5 +0.8**
comp=Z,40nm,1.1s
TATO Taipei 15.94 114 *e*Pn **Pn 07 09 17.6 +1.0**
comp=Z,497nm,1.8s
YHNB Yeheng 16.01 115 *e*Pn **Pn 07 09 17.0 -0.7**
comp=Z,90nm,0.9s
SSLB Suanglung 16.19 119 *e*Pn **P 07 09 25.7 +2.6**
comp=Z,92nm,1.2s
KHON Khomkaen 16.30 189 P **P 07 09 22.8 -1.6**
comp=Z,21nm,0.7s,comp=Z,782nm
PBKT Sadao Pong 16.41 195 P **Pn 07 09 23.3 +0.6**
comp=Z,30nm,1.0s,comp=Z,1μm
GUN Gumba 17.54 260 *e*P **Pn 07 09 36.8 -0.5**
comp=Z,176nm,0.9s
WMQ Urumqi 17.91 314 P **P 07 09 42.6 +0.5**
WMQ pP sP 07 09 46.8 0.0
WMQ sP pP 07 09 50.6 +5.3
WMQ S **Sn 07 13 02.5 +1.4**
WMQ sS S 07 13 08.3 +0.7
WMQ pmax pmax
comp=Z,13nm,0.6s
WMQ pmax pmax
comp=Z,81nm,6.4s
WMQ LR LR
comp=Z,1μm,16.2s
WMQ LR LR
comp=Z,660nm,13.6s
WMQ LR LR
comp=Z,300nm,19.4s
ZAK Zakamensk 17.91 355 *e*P **Pn 07 09 41.4 -0.1**
ZAK pmax pmax
comp=Z,8.0nm,1.0s
PKIN Phulchoki 18.05 259 *e*P **Pn 07 09 41.9 -1.7**
comp=Z,35nm,0.6s
KKN Kakani 18.07 260 *e*P **Pn 07 09 42.2 -1.6**
comp=Z,116nm,1.0s
DMN Daman 18.28 260 *e*P **Pn 07 09 44.5 -1.9**
comp=Z,81nm,0.7s
TJN Taejon 18.46 72 *ce*P **Pn 07 09 49.4 +1.2**
GKN Gorkha 18.54 261 *e*P **P 07 09 48.1 -1.2**
comp=Z,58nm,0.6s
KSAR Wonju Array Be 19.00 69 P **P 07 09 54.9 +0.8**
KSAR Wonju Array Be 19.00 69 P **P 07 09 54.9 +0.8**
SRDT SRDT 19.00 199 P **Pn 07 09 54.8 -0.1**
comp=Z,114nm,0.9s
KSRS Korea Array 19.03 69 P **P 07 09 54.9 +0.4**
comp=Z,1.9nm,0.3s,baz=254,slow=9.8,SNR=49
TLY Talaya 19.18 357 P **Pn 07 09 56.6 -0.3**
comp=Z,0.0nm,0.3s,baz=218,slow=17,SNR=5.9
TLY Talaya 19.18 357 *e*P **Pn 07 09 59.7 +2.8**
TLY pmax pmax
comp=Z,12nm,1.0s
TLY MLR MLR
comp=Z,535nm,10.0s
TLY Talaya 19.18 357 *e*P **P 07 09 56.1 +0.2**
comp=Z,9.1nm,0.9s
CN2 Changchun 19.27 49 *e*P **Pn 07 10 00.1 +2.1**
CN2 *ep*P sP 07 10 03.8 +2.0
CN2 PP **PnPn 07 10 17.6 +6.7**
CN2 *e*S **Sn 07 13 31.6 -2.4**
CN2 pmax pmax
comp=Z,10.0nm,0.9s
CN2 pmax pmax
comp=Z,200nm,4.0s
CN2 LR LR
comp=Z,1μm,12.0s
CN2 LR LR
comp=Z,700nm,12.0s
CN2 LR LR
comp=Z,600nm,14.0s
MOY Mondy 19.40 352 *e*P **Pn 07 10 01.0 +1.4**
MOY pmax pmax
comp=Z,36nm,2.7s
KOLN Koldanda 19.48 262 *e*P **P 07 09 57.9 -1.8**
comp=Z,113nm,0.7s
IRK Irkutsk 19.72 358 *e*P **Pn 07 10 03.6 +0.3**
IRK pmax pmax
comp=Z,69nm,2.3s
HIA Hailar 19.84 28 *e*P **P 07 10 03.9 +0.7**
HIA pmax pmax
comp=Z,14nm,0.4s
HIA Hailar 19.84 28 *e*P **P 07 10 03.9 +0.7**
comp=Z,14nm,0.4s
PYUN Piuthan 19.89 263 *e*P **P 07 10 03.4 -0.7**
comp=Z,203nm,0.9s
CHBT CHBT 19.90 189 P **Pn 07 10 05.6 0.0**
comp=Z,88nm,1.0s
PATY Pattaya 19.97 193 P **Pn 07 10 08.6 +2.1**
comp=Z,17nm,0.9s
JOW Kunigami 20.60 100 *e*P **P 07 10 10.2 -1.5**
comp=Z,89nm,0.9s
JNU Nakatsue 21.36 82 P **P 07 10 19.1 -0.7**
comp=Z,20nm,0.9s,baz=325,slow=3.7,SNR=11
JNU LR LR 07 19 22.2
comp=Z,362nm,21.6s,baz=300,slow=39
JNU Nakatsue 21.36 82 *e*P **P 07 10 19.8 0.0**
comp=Z,26nm,0.9s
MDJ Mudanjiang 22.30 50 P **P 07 10 30.0 +0.2**
MDJ PcP **PcP 07 14 25.0 -0.3**
MDJ S **S 07 14 35.8 +0.9**
MDJ ScS **ScS 07 21 47.8 +0.2**
MDJ pmax pmax
comp=Z,27nm,1.2s
MDJ pmax pmax
comp=Z,140nm,5.2s
MDJ LR LR
comp=Z,420nm,13.2s
MDJ LR LR
comp=Z,300nm,17.1s
MDJ LR LR
comp=Z,380nm,10.6s
MDJ Mudanjiang 22.30 50 *e*P **P 07 10 30.9 +1.1**
comp=Z,55nm,1.4s
MKAR Makanchi Array 22.71 316 P **P 07 10 33.5 -0.7**
comp=Z,16nm,0.7s,baz=114,slow=11,SNR=42
MKAR LR LR 07 18 55.0
comp=Z,350nm,18.8s,baz=112,slow=35
MAKZ Makanchi 22.91 315 *e*P **P 07 10 35.8 -0.4**
MAKZ pmax pmax
comp=Z,32nm,1.0s
MAKZ Makanchi 22.91 315 *e*P **P 07 10 35.8 -0.4**
comp=Z,32nm,1.0s
PDGK Podgornoye 23.06 305 P **P 07 10 37.3 -0.5**
PDGK pmax pmax
comp=Z,44nm,0.9s

USRK Ussuriysk Ar. 23.73 53 P **P 07 10 45.2 +0.7**
comp=Z,14nm,0.8s,baz=251,slow=9.5,SNR=28
SURT Suratani 24.26 196 P **P 07 10 51.0 +1.4**
comp=Z,18nm,0.9s
KSH Kashi 24.77 295 P **P 07 10 58.1 +3.8**
KSH *es*P sP 07 11 05.3 +6.0
KSH *e*PP **PnPn 07 11 34.4 +8.0**
KSH S **S 07 15 18.3 +1.7**
KSH SS **SnSn 07 16 16.5 +13**
KSH pmax pmax
comp=Z,34nm,0.8s
KSH pmax pmax
comp=Z,100nm,4.9s
KSH LR LR
comp=Z,290nm,10.9s
KSH LR LR
comp=Z,650nm,12.1s
KSH LR LR
comp=Z,470nm,11.4s
TRTT Trang 25.15 194 P **P 07 10 59.1 +1.4**
comp=Z,19nm,1.0s
TKM2 Tokmak 2 25.67 302 *e*P **P 07 11 03.0 +0.4**
TKM2 pmax pmax
comp=Z,15nm,0.9s
TKM2 Tokmak 2 25.67 302 *e*P **P 07 11 03.0 +0.4**
comp=Z,14nm,0.9s
KLR Kul'dur 25.76 42 P **P 07 11 03.8 +0.8**
comp=Z,12nm,0.7s,baz=256,slow=10.0,SNR=45
KLR Kul'dur 25.76 42 *i*P **P 07 11 02.5 -0.5**
BOD Bodaibo 25.95 10 *e*P **P 07 11 04.8 +0.2**
BOD pmax pmax
comp=Z,22nm,1.3s
ZALV Zalesovo Beam 25.98 332 P **P 07 11 04.4 -0.5**
comp=Z,18nm,0.9s,baz=134,slow=9.0,SNR=35
AAK Ala-Archa 26.40 301 P **P 07 11 09.3 +0.2**
comp=Z,5.1nm,0.7s,baz=125,slow=7.0,SNR=14
AAK LR LR 07 22 25.5
comp=Z,486nm,21.4s,baz=87,slow=38
AAK Ala-Archa 26.40 301 *i*P **P 07 11 09.6 +0.5**
AAK pmax pmax
comp=Z,21nm,0.9s
AAK Ala-Archa 26.40 301 *e*P **P 07 11 10.5 +1.4**
comp=Z,7.7nm,0.8s
KURBB Kurchatov Arra 26.84 320 P **P 07 11 13.1 +0.3**
comp=Z,14nm,1.0s,baz=131,slow=9.0,SNR=84
KURBB PcP **PcP 07 14 32.9 -2.2**
comp=Z,3.1nm,1.0s,baz=112,slow=2.1,SNR=6.2
KURK Kurchatov 26.84 321 *ce*P **P 07 11 12.3 -0.4**
KURK pmax pmax
comp=Z,28nm,1.0s
KURK Kurchatov 26.84 321 *e*P **P 07 11 13.8 +1.1**
comp=Z,20nm,0.9s
KURK PcP **PcP 07 14 32.9 -2.2**
EKS2 Erkin-Say 26.92 301 *e*P **P 07 11 14.6 +0.8**
EKS2 pmax pmax
comp=Z,5.0nm,0.8s
EKS2 Erkin-Say 26.92 301 *e*P **P 07 11 14.6 +0.8**
comp=Z,5.3nm,0.8s
MJAR Matsushiro Arr 27.20 72 P **P 07 11 18.2 +2.0**
comp=Z,4.5nm,0.9s,baz=275,slow=9.9,SNR=11
MJAR LR LR 07 22 17.1
comp=Z,156nm,19.1s,baz=285,slow=37
NVS Novosibirsk 27.26 331⇑ *i*P **P 07 11 17.5 +1.0**
NVS *e*S **S 07 15 51.0 -4.4**
NVS pmax pmax
comp=N,14nm,1.8s
NVS pmax pmax
comp=Z,20nm,1.8s
NVS pmax pmax
comp=E,20nm,2.1s
NVS smax smax
comp=E,14nm,2.0s
MNAS Manas 27.82 300 P **P 07 11 24.0 +2.2**
MNAS pmax pmax
comp=Z,7.0nm,1.0s
KKM Kota Kinabalu 28.20 157 *e*P **P 07 11 25.2 -0.1**
comp=Z,31nm,0.9s
JHJ Hachijo jima 2 28.77 79 LR LR 07 23 50.8
comp=Z,207nm,18.9s,baz=218,slow=38
KKAR Karatay Array 29.36 301 *e*P **P 07 11 36.0 +0.6**
KKAR *e* 07 14 42.5
KKAR Karatay Array 29.36 301 *e*P **P 07 11 36.0 +0.6**
KKAR *e*PcP **PcP 07 14 42.5 +1.0**
MLSI Meulaboh, Aceh 29.37 199 P **P 07 11 36.8 +1.2**
OTUK Ortayu 29.43 312 P **P 07 11 36.9 +1.0**
OTUK pmax pmax
comp=Z,23nm,0.9s
TSI Tuntungan 29.60 194 P **P 07 11 37.9 +0.3**
comp=Z,175nm,0.9s
MYLDM Lahad Datu 29.82 153 *e*P **P 07 11 41.0 +1.4**
comp=Z,69nm,1.0s
PSI Prapat 30.21 193 *e*P **P 07 11 43.0 -0.2**
PSI pmax pmax
comp=Z,31nm,1.0s
PSI Prapat 30.21 193 *e*P **P 07 11 43.0 -0.2**
comp=Z,31nm,1.0s
DZET Dzherino 30.27 292 P **P 07 11 44.5 +0.9**
DZET pmax pmax
comp=Z,29nm,0.7s
SBUM Sibu 30.59 167 *e*P **P 07 11 46.7 +0.3**
comp=Z,22nm,0.8s
MYKOM Kota Tinggi 30.62 183 *e*P **P 07 11 46.7 +0.1**
comp=Z,18nm,0.9s
TPRI Tanjung Pinang 31.46 182 P P 07 11 59.8 +5.7
YSS Yuzh-Sakhalins 31.76 52 *e*P **P 07 11 55.4 -1.1**
YSS pmax pmax
comp=Z,10.0nm,0.6s
YSS MLR MLR
comp=Z,400nm,15.0s
YSS MLR MLR
comp=N,400nm,12.0s
YSS MLR MLR
comp=E,300nm,10.0s
GSI Gunungsitoli 31.94 195 P **P 07 11 57.5 -0.8**
comp=E,29nm,0.8s
GSI Gunungsitoli 31.94 195 *e*P **P 07 11 57.1 -1.2**
comp=E,17nm,0.7s
MNSI Mandailing Nat 32.05 191 P **P 07 12 00.8 +1.5**
BKNI Bangkinang 32.31 188 P **P 07 12 02.8 +1.3**
BVAR Borovoye Array 32.42 320 P **P 07 12 02.1 -0.1**
comp=E,2.8nm,0.6s,baz=120,slow=8.8,SNR=21
BRVK Borovoye 32.49 320 *ce*P **P 07 12 03.2 +0.4**
BRVK pmax pmax
comp=Z,14nm,1.2s
BRVK Borovoye 32.49 320 *e*P **P 07 12 03.3 +0.4**
comp=Z,8.4nm,0.9s
STKI Sintang 32.79 169 P **P 07 12 09.4 +3.6**
ZRNK Zerenda 33.15 319 *e*P **P 07 12 09.5 +0.8**
ZRNK pmax pmax
comp=Z,10.0nm,0.9s
ZRNK Zerenda 33.15 319 *e*P **P 07 12 09.4 +0.8**
comp=Z,10nm,0.9s
YAK Yakutsk 33.36 21 *e*P **P 07 12 11.2 +0.9**
YAK pmax pmax
comp=Z,24nm,0.8s
YAK pmax pmax
comp=N,5.0nm,1.2s
YAK pmax pmax
comp=E,10.0nm,1.2s
YAK MLR MLR
comp=Z,262nm,20.0s
BKB Balikpapan 35.31 160 P **P 07 12 28.3 +0.7**
MRSI Marisa 35.47 151 P **P 07 12 30.2 +1.2**
comp=Z,51nm,0.9s
MASI Maura Aman, Be 35.61 186 P **P 07 12 32.2 +1.9**
comp=Z,140nm,0.9s,comp=Z,9μm
LHSI Lahat 36.21 183 P **P 07 12 36.8 +1.5**
comp=Z,54nm,0.9s
BBKI Banjar Baru 36.89 164 P **P 07 12 42.6 +1.4**
comp=Z,59nm,0.9s,comp=Z,9μm
LUWI Luwuk 37.19 151 P **P 07 12 45.9 +2.2**
ABKAR Akbulak array 37.61 310 *e*P **P 07 12 48.2 +1.2**
BLSI Bandar Lampung 37.69 180 P **P 07 12 49.3 +1.3**
KASI Kota Agung 37.86 182 P **P 07 12 52.1 +2.7**
comp=Z,28nm,0.8s
TTSI Tana Toraja 37.91 156 P **P 07 12 50.6 +0.7**
comp=Z,47nm,0.8s
NRIK Noril'sk 38.22 350 P **P 07 12 53.3 +1.4**
comp=Z,34nm,1.0s,baz=141,slow=7.7,SNR=42
GEYT Alibeck 38.72 292 P **P 07 12 56.8 +0.3**
comp=Z,24nm,0.8s,baz=86,slow=6.1,SNR=31
SPSI Sidrap Palu 38.76 157 P **P 07 12 57.4 +0.5**
comp=Z,53nm,0.7s,comp=Z,530nm
SVE Sverdlovsk 39.06 322⇑ *i*P **P 07 12 59.4 +0.3**
SVE pmax pmax
comp=Z,39nm,1.1s

SANI Sanana 39.51 147 P **P 07 13 05.5 +2.3**
SMRI Semarang 39.65 172 *e*P **P 07 13 08.8 +4.4**
comp=Z,72nm,1.0s
CNJI Cibinong 39.65 177 P **P 07 13 05.8 +1.4**
KAPI Kappang 39.73 157 *e*P **P 07 13 05.2 0.0**
comp=Z,79nm,0.9s
ARU Arti 40.03 321 *c i*P **P 07 13 06.8 -0.4**
ARU 07 14 38.0
ARU S **S 07 19 12.7 +0.1**
ARU SS **SnSn 07 22 11.0 -2.0**
ARU pmax pmax
comp=Z,58nm,1.2s
ARU Arti 40.03 321 *e*P **P 07 13 07.3 +0.1**
comp=Z,36nm,0.9s
NGJI Ngawi 40.09 171 P **P 07 13 12.3 +4.3**
UGM Wanagama 40.51 172 P **P 07 13 14.5 +2.9**
comp=Z,84nm,1.1s
UGM Wanagama 40.51 172 *e*P **P 07 13 10.8 -0.8**
comp=Z,94nm,1.1s
PWJI Pagerwojo 40.78 170 P **P 07 13 14.4 +0.6**
TIXI Tiksi 41.13 11 *e*P **P 07 13 14.7 -1.4**
TIXI pmax pmax
comp=Z,33nm,1.1s
TIXI Tiksi 41.13 11 *e*P **P 07 13 14.7 -1.4**
comp=Z,33nm,1.1s
SWI Sorong 41.20 139 P **P 07 13 17.8 +0.5**
comp=Z,20nm,1.2s
GMJI Gumukmas 41.29 168 P **P 07 13 20.6 +2.7**
comp=Z,38nm,0.9s
JAGI Jajag, Banyuwa 41.61 167 P **P 07 13 21.3 +0.7**
comp=Z,82nm,1.0s
JAGI Jajag, Banyuwa 41.61 167 *e*P **P 07 13 19.9 -0.8**
comp=Z,70nm,0.9s
PETK Petropavlovsk- 42.36 45 P **P 07 13 27.4 +0.9**
comp=Z,3.9nm,0.7s,baz=246,slow=10,SNR=3.4
PETK LR LR 07 32 39.9
comp=Z,272nm,18.5s,baz=253,slow=38
TWSI Taliwang, Sumb 42.46 163 P **P 07 13 29.7 +2.1**
comp=Z,28nm,1.1s,comp=Z,529nm
PLAI Plampang 42.77 162 P **P 07 13 31.6 +1.5**
comp=Z,78nm,1.0s
MMRI Maumere 43.96 156 P **P 07 13 39.1 -0.6**
MMRI Maumere 43.96 156 *e*P **P 07 13 38.6 -1.0**
comp=Z,142nm,0.8s
ZEI Tsey 48.82 301 *e*P **P 07 14 15.9 -2.1**
ZEI pmax pmax
comp=Z,12nm,0.6s
VRH Novokhopyorsk 49.37 312 *e*P **P 07 14 21.9 +0.2**
VRH pmax pmax
comp=Z,50nm,0.9s
BILL Bilibino 49.39 26⇓ *e*P **P 07 14 22.8 +1.1**
BILL *e* 07 14 26.6
BILL pmax pmax
comp=Z,8.0nm,0.8s
BILL MLR MLR
comp=Z,353nm,16.0s
BILL Biibino 49.39 26 *e*P **P 07 14 21.6 0.0**
comp=Z,6.6nm,0.7s
KBZ Khabaz 49.40 302 P **P 07 14 22.4 +0.3**
comp=Z,4.1nm,0.7s,baz=121,slow=6.6,SNR=9.7
KIV Kislovodsk 49.51 302 *e*P **P 07 14 22.3 -0.8**
KIV pmax pmax
comp=Z,20nm,1.1s
KIV MLR MLR
comp=Z,132nm,16.0s
KIV Kislovodsk 49.51 302 *e*P **P 07 14 23.2 +0.1**
comp=Z,14nm,0.8s
KLMR Klimovskoe 50.56 325 *e*P **P 07 14 28.5 -2.1**
KLMR *e**PP **sP 07 14 36.7 +1.0**
KLMR *e* 07 15 44.3
KLMR *e* 07 16 25.3
KLMR pmax pmax
comp=Z,45nm,0.8s
VSR Storozhevoye 50.97 312 *e*P **P 07 14 34.6 +0.7**
VSR pmax pmax
comp=Z,30nm,1.0s
LPSR Galich'ya Gora 51.00 314 *e*P **P 07 14 34.8 +0.7**
LPSR pmax pmax
comp=Z,50nm,1.0s
TMCR Tamitsa 51.45 329 *e*P **P 07 14 36.8 -0.5**
TMCR pmax pmax
comp=Z,45nm,0.8s
MOS Moscow 51.56 318 *e*P **P 07 14 38.4 +0.1**
MOS pmax pmax
comp=Z,99nm,1.0s
MOS pmax pmax
comp=Z,74nm,0.9s
OBN Obninsk 52.20 317⇓ *e*P **P 07 14 41.2 -1.8**
OBN *e* 07 16 42.2
OBN *e*S **S 07 22 05.7 -1.7**
OBN *e*SS **SS 07 25 37.3 -7.1**
OBN pmax pmax
comp=Z,44nm,1.2s
OBN MLR MLR
comp=Z,162nm,19.0s
ANN Anapa 53.07 304 *e*P **P 07 14 46.9 -2.7**
ANN pmax pmax
comp=Z,37nm,1.2s
LVZ Lovozero 53.09 333 *ce*P **P 07 14 49.3 -0.2**
LVZ pmax pmax
comp=Z,62nm,1.7s
LVZ Lovozero 53.09 333 *e*P **P 07 14 49.8 +0.3**
comp=Z,39nm,1.0s
APA Apatity 53.55 333⇑ *i*P **P 07 14 53.2 +0.4**
APA MLR MLR
comp=Z,400nm,15.0s
KEV Kevo 55.90 336 *e*P **P 07 15 10.2 +0.4**
KEV pmax pmax
comp=Z,26nm,0.9s
KEV Kevo 55.90 336 *e*P **P 07 15 10.2 +0.4**
comp=Z,26nm,0.9s
SGF Sodankyl 56.20 333 P **P 07 15 14.9 +2.9**
SGF pmax pmax
comp=Z,139nm,0.9s
ARCES ARCESS Array B 56.44 335 P **P 07 15 12.8 -0.9**
comp=Z,15nm,0.9s,baz=74,slow=8.9,SNR=31
FINES FINESS Array B 57.03 326 P **P 07 15 17.1 -0.9**
comp=Z,18nm,0.8s,baz=94,slow=7.6,SNR=51
BRTR Keskin Array B 57.05 299 P **P 07 15 17.9 -0.8**
comp=Z,6.0nm,0.8s,baz=103,slow=6.2,SNR=39
VSU Vasula 57.17 322 *ce*P **P 07 15 18.6 -0.4**
VSU pmax pmax
comp=Z,144nm,1.2s
AKASG Malin Array Be 57.26 313 P **P 07 15 18.4 -1.3**
comp=Z,17nm,0.6s,baz=68,slow=6.7,SNR=36
KIEV Kiev 57.27 313 *i*P **P 07 15 18.4 -1.4**
KIEV pmax pmax
comp=Z,15nm,0.6s
PMG Port Moresby 57.63 129 *ce*P **P 07 15 23.3 +0.5**
PMG pmax pmax
comp=Z,102nm,1.0s
NACGM Naroch 57.81 318 *e* **P 07 15 24.0 +0.4**
KIS Kishinev 58.41 309 *e*P **P 07 15 30.0 +2.0**
KIS Kishinev 58.41 309 *e*P **P 07 15 30.0 +2.0**
COEN Coen 58.64 136 *e*P **P 07 15 29.6 -0.2**
comp=Z,21nm,0.8s
CSS Mathiatis 58.79 294 *e*P **P 07 15 31.2 +0.4**
comp=Z,2.6nm,0.8s
WRAB Tennant Creek 59.04 148 *ce*P **P 07 15 30.0 -2.6**
WRAB pmax pmax
comp=Z,175nm,1.2s
WRAB Tennant Creek 59.04 148 *e*P **P 07 15 32.3 -0.2**
comp=Z,42nm,0.8s
WRA Warramunga Arr 59.04 148 P **P 07 15 32.2 -0.4**
comp=Z,26nm,0.7s,baz=342,slow=7.2,SNR=83
CFR Carcaliu 59.37 307⇓ *i*P **P 07 15 35.1 +0.5**
TIRR Tirgusor 59.39 306⇑ *i*P **P 07 15 36.0 +1.2**
TIRR Tirgusor 59.39 306 *e*P **P 07 15 34.6 -0.2**
TIRR Tirgusor 59.39 306 *e*P **P 07 15 34.6 -0.2**
HARR Harsova 59.65 306⇑ *i*P **P 07 15 38.0 +1.4**
PSN Preselentsi 59.78 305 *e*P **P 07 15 38.3 +0.8**
ISP Isparta 59.96 298⇓ *i*P **P 07 15 38.7 -0.3**
ISP Isparta 59.96 298 *e*P **P 07 15 38.2 -0.8**
ISP pmax pmax
comp=Z,22nm,0.8s
ISP Isparta 59.96 298 *e*P **P 07 15 38.2 -0.8**
comp=Z,22nm,0.8s
TESR Tescani 59.98 309⇓ *i*P **P 07 15 39.8 +0.9**
SUW Suwalki 60.06 318 *e*P **P 07 15 39.3 0.0**
SUW Suwalki 60.06 318 *e*P **P 07 15 39.3 0.0**
VRI Vrincioaia 60.12 308⇓ *i*P **P 07 15 40.8 +0.9**
VRI Vrincioaia 60.12 308 P **P 07 15 40.7 +0.9**
PLOR Plostina 60.17 308⇓ *i*P **P 07 15 40.5 +0.3**
ISR Istrita 60.47 307⇑ *i*P **P 07 15 44.4 +2.1**
PRD Provadia 60.47 305 *e*P **P 07 15 43.1 +0.9**

BURAR	Bucovina Array	60.60 310	⇓	*i* P	P	07 15 44.0	+0.8
BURAR	Bucovina Array	60.60 310		P	P	07 15 44.0	+0.8
LVV	L'vov	60.70 313		*e*P	P	07 15 44.5	+0.8
MLR	Muntele Rosu	60.76 308		P	P	07 15 44.5	+0.1
	comp=Z,1.7nm,0.7s,baz=74,slow=1.7,SNR=22						
MLR	Muntele Rosu	60.76 308	⇓	*i* P	P	07 15 44.4	+0.1
MLR	Muntele Rosu	60.76 308		*e*P	P	07 15 44.8	+0.5
DOPR	Dopca	60.98 308	⇑	*i* P	P	07 15 46.0	+0.3
JMB	Yambol	61.27 304		*e*P	P	07 15 48.7	+1.0
ARCR	ARCALIA	61.31 310	⇑	*i* P	P	07 15 50.2	+2.3
VOIR		61.37 308	⇓	*i* P	P	07 15 50.1	+1.6
VOIR		61.37 308		P	P	07 15 50.0	+1.6
SZH	Strazhica	61.47 305		*e*P	P	07 15 49.1	+0.1
KWP	Kalwaria Pacla	61.58 313		*e*P	P	07 15 51.2	+1.5
KWP	Kalwaria Pacla	61.58 313	⇑	*i* P	P	07 15 51.6	+1.9
KWP	Kalwaria Pacla	61.58 313		*e*P	P	07 15 51.2	+1.5
ARR	Arges	61.67 308	⇓	*i* P	P	07 15 50.1	-0.4
BMR	Baia Mare	61.69 311	⇑	*i* P	P	07 15 52.7	+2.3
HUMR	Humele	61.71 307	⇑	*i* P	P	07 15 51.8	+1.2
BEL	Belsk	62.07 316		*e*P	P	07 15 53.9	+1.0
BEL	Belsk	62.07 316		*e*P	P	07 15 53.9	+1.0
ASAR	Alice Springs	62.14 150		P	P	07 15 52.9	-0.8
	comp=Z,17nm,0.7s,baz=337,slow=7.3,SNR=168						
UZH	Uzhgorod	62.15 312		*e*P	P	07 15 53.2	-0.3
UZH				*e*		07 15 56.0	
UZH				*e*		07 16 03.6	
UZH				*e*S	S	07 24 13.8	-4.8
UZH				*e*PS	PnS	07 24 33.0	-0.2
UZH				*e*SSS	SSS	07 31 11.6	
UZH				MLR	MLR		
	comp=N,400nm,13.0s						
UZH				MLR	MLR		
	comp=E,330nm,13.0s						
UZH				MLR	MLR		
	comp=Z,300nm,13.0s						
KDZ	Kurdzhali	62.37 304		*e*P	P	07 15 56.2	+1.1
DRGR		62.48 310	⇑	*i* P	P	07 15 57.4	+1.6
STHS	Stebnicka Huta	62.55 313		*e*P	P	07 15 57.7	+1.4
STHS				pmax	pmax		
	comp=Z,9.0nm,0.9s						
STHS	Stebnicka Huta	62.55 313		*e*P	P	07 15 57.7	+1.4
CRVS	Cervenica-Dubn	62.59 312		*e*P	P	07 15 57.1	+0.6
CRVS	Cervenica-Dubn	62.59 312		*e*P	P	07 15 57.1	+0.6
DEV	Deva	62.65 309	⇑	*i* P	P	07 15 58.0	+1.1
RZN	Rozhen	62.85 304		*e*P	P	07 15 59.5	+1.0
MPEP	Malo Peshtene	62.94 306		*e*P	P	07 15 58.2	-0.7
NIE	Niedzica	63.14 313		*e*P	P	07 16 01.8	+1.6
NIE	Niedzica	63.14 313		*e*P	P	07 16 01.8	+1.6
OJC	Ojcow	63.18 314		*e*P	P	07 16 01.6	+1.2
OJC	Ojcow	63.18 314		*e*P	P	07 16 00.5	+0.1
OJC	Ojcow	63.18 314		*e*P	P	07 16 00.5	+0.1
HFS	Hagfors	63.23 326		P	P	07 16 00.0	-0.5
	comp=Z,17nm,0.9s,baz=104,slow=6.3,SNR=19						
KECS	Kecovo	63.33 312		*e*P	P	07 16 02.5	+1.1
KECS				pmax	pmax		
	comp=Z,4.0nm,0.8s						
KECS	Kecovo	63.33 312		*e*P	P	07 16 02.5	+1.1
BZS	Buzias	63.59 309	⇓	*i* P	P	07 16 04.4	+1.3
MDVR	Moldovita	63.82 308	⇓	*i* P	P	07 16 06.2	+1.5
PSZ	Piszkesteto	63.90 312	⇓	*i* P	P	07 16 05.3	+0.1
PSZ	Piszkesteto	63.90 312		*e*P	P	07 16 05.4	+0.1
PSZ	Piszkesteto	63.90 312		*e*P	P	07 16 05.4	+0.1
KKB	Krupnik	63.92 304		*e*P	P	07 16 04.4	-1.1
NB2	NORSAR Subarra	64.08 327		P	P	07 16 04.7	-1.5
	comp=Z,19nm,0.8s,baz=70,slow=6.9						
NB2	NORSAR Subarra	64.08 327		P	P	07 16 04.7	-1.5
	baz=70,slow=6.9						
NB2	NORSAR Subarra	64.08 327		P	P	07 16 04.7	-1.5
NB2				pmax	pmax		
	comp=Z,16nm,0.8s						
NOA	NORSAR Array B	64.08 327		P	P	07 16 04.8	-1.4
	comp=Z,14nm,0.8s,baz=70,slow=6.7,SNR=38						
OKC	Ostrava-Krasne	64.31 314		*e*P	P	07 16 08.2	+0.4
OKC				*ep*P	pP	07 16 09.4	-2.1
OKC	Ostrava-Krasne	64.31 314		*e*P	P	07 16 08.2	+0.4
OKC				*e*		07 16 09.4	
VYHS	Vyhne	64.36 313		*e*P	P	07 16 08.7	+0.5
VYHS				pmax	pmax		
	comp=Z,13nm,1.2s						
VYHS	Vyhne	64.36 313		*e*P	P	07 16 08.7	+0.5
MORC	Moravsky Berou	64.70 314	⇓	*i* P	P	07 16 10.2	-0.2
MORC	Moravsky Berou	64.70 314		*e*P	P	07 16 10.2	-0.2
MORC	Moravsky Berou	64.70 314		*e*P	P	07 16 10.2	-0.2
LAST	Lasithi	64.71 297	⇑	*i* P	P	07 16 10.6	-0.2
LAST	Lasithi	64.71 297		*e*P	P	07 16 11.8	+1.1
KRLC	Kraliky	65.05 315		*e*P	P	07 16 12.4	-0.3
KRLC				*ep*P	pP	07 16 14.3	-2.1
KRLC	Kraliky	65.05 315		*e*P	P	07 16 12.4	-0.3
KRLC				*e*		07 16 14.3	
KSP	Ksiaz	65.06 316		*e*P	P	07 16 13.9	+1.2
KSP	Ksiaz	65.06 316		*e*P	P	07 16 13.9	+1.2
IDI	Anoyia	65.10 297	⇑	*i* P	P	07 16 13.5	+0.2
DPC	Dobruska-Polom	65.22 315		*e*P	P	07 16 14.0	+0.2
DPC				*ex*	x	07 16 25.9	
DPC	Dobruska-Polom	65.22 315		*e*P	P	07 16 14.0	+0.2
DPC				*e*		07 16 25.9	
SIVA	Sivas	65.27 297	⇑	*i* P	P	07 16 15.2	+0.9
UPC	Upice	65.35 315		*e*P	P	07 16 14.7	+0.1
UPC	Upice	65.35 315		*e*P	P	07 16 14.7	+0.1
VRAC	Vranov	65.44 314		P	P	07 16 15.3	+0.1
	comp=Z,9.4nm,0.8s,baz=80,slow=6.3,SNR=9.8						
AGG	Agios Georgios	65.52 302		*e*P	P	07 16 14.0	-2.0
AGG	Agios Georgios	65.52 302		*e*P	P	07 16 13.9	-2.0
DAG	Danmarks Havn	65.69 348		*i* P	P	07 16 15.6	-0.7
	comp=Z,3.9nm,1.1s						
DAG	Danmarks Havn	65.69 348		*i* P	P	07 16 15.6	-0.7
DAG				pmax	pmax		
	comp=Z,5.0nm,1.1s						
COLD	Coldfoot	65.70 24		*e*P	P	07 16 16.6	0.0
SOP	Sopron	66.08 312		P	P	07 16 20.9	+1.6
TREC	Trest	66.12 314		AMS	AMS	07 45 20.0	
	comp=Z,200nm,11.0s						
GOPC	GO Pecny, Ondr	66.30 315		AMS	AMS	07 46 20.0	
	comp=Z,200nm,15.1s						
PDG	Podgorica	66.35 306	⇓	*i* P	P	07 16 22.2	+1.1
CONA	Conrad Observa	66.42 313		*i* pP	P	07 16 22.4	+0.7
	comp=Z,5.6nm,0.9s,SNR=9.1						
PRU	Pruhonice	66.42 315		*e*P	P	07 16 20.9	-0.6
PRU				*ep*P	pP	07 16 22.9	-2.3
PRU				AMS	AMS	07 44 50.0	
	comp=Z,200nm,13.5s						
PRU	Pruhonice	66.42 315		*e*P	P	07 16 20.9	-0.6
PRU				*e*		07 16 22.9	
PRU				MLR	MLR		
	comp=Z,200nm,13.5s						
BRG	Berggiesshubel	66.43 316		*e*P	P	07 16 22.7	+1.2
	comp=Z,11nm,0.9s						
BRG	Berggiesshubel	66.43 316		*e*P	P	07 16 22.7	+1.2
BRG				pmax	pmax		
	comp=Z,11nm,0.9s						
MLY	Manley	66.48 27		*e*P	P	07 16 23.2	+1.5
CAST	Castle Rocks	66.67 29		*e*P	P	07 16 25.1	+2.2
BPAW	Bear Paw Mtn.	66.80 28		*e*P	P	07 16 23.9	+0.2
CLL	Collm	66.80 317		*e*P	P	07 16 23.0	-0.9
	comp=Z,15nm,1.1s						
CLL				*i*		07 16 24.5	
	comp=Z,15nm,1.1s						
CLL				*e*		07 16 42.0	
CLL	Collm	66.80 317		*e*P	P	07 16 23.0	-0.9
CLL				pmax	pmax		
	comp=Z,3.0nm,1.1s						
CLL	Collm	66.80 317		*e*P	P	07 16 23.8	-0.1
PPLA	Purkeypile	66.86 29		*e*P	P	07 16 25.8	+1.5
ARSA	Arzberg	66.89 312		*i* P	P	07 16 23.8	-0.8
KHC	Kasperske Hory	67.33 315		*e*P	P	07 16 26.3	-1.1
KHC				*ep*P	pP	07 16 28.6	-2.5
KHC				*ex*	x	07 16 43.1	
KHC				AMS	AMS	07 46 00.0	
	comp=Z,200nm,13.1s						
KHC	Kasperske Hory	67.33 315		*e*P	P	07 16 26.3	-1.1
KHC				*e*		07 16 28.6	
KHC				MLR	MLR		
	comp=Z,200nm,13.1s						
KHC	Kasperske Hory	67.33 315		*e*P	P	07 16 28.0	+0.6
GERES	GERESS Array B	67.38 314		P	P	07 16 27.2	-0.5
	comp=Z,8.4nm,0.9s,baz=76,slow=5.6,SNR=40						
PERS	Pernice	67.39 312		*e*P	P	07 16 26.7	-1.2
SOKA	Soboth	67.43 312		*i* pP	P	07 16 28.4	+0.3
	comp=Z,8.1nm,0.8s,SNR=6.7						
MOA	Molln	67.43 313		*i* pP	P	07 16 28.7	+0.6
	comp=Z,5.1nm,0.7s,SNR=5.3						
COLA	College	67.64 26		*e*P	P	07 16 28.3	-0.6
COLA	College	67.64 26		*e*P	P	07 16 28.3	-0.6
PDKS	Podkum	67.70 311		*e*P	P	07 16 29.8	0.0
RND	Reindeer	67.97 28		*e*P	P	07 16 29.6	-1.6
RND	Reindeer	67.97 28		*e*P	P	07 16 29.6	-1.6
ILAR	Eielson Array	68.05 26		P	P	07 16 30.4	-1.1
	comp=Z,1.2nm,0.8s,baz=291,slow=5.3,SNR=14						
KBA	Koelnbreinsper	68.32 313		*i* pP	P	07 16 35.3	+1.5
	comp=Z,6.1nm,0.6s						
PMR	Palmer	68.73 30		*e*P	P	07 16 34.6	-1.3
PMR	Palmer	68.73 30		*e*P	P	07 16 34.6	-1.3
SML	Sawmill	68.96 29		*e*P	P	07 16 34.3	-3.1
SML	Sawmill	68.96 29		*e*P	P	07 16 34.3	-3.1
ABTA	Abfaltersbach	68.98 313		*i* P	P	07 16 33.4	-4.4
	comp=Z,1.0nm,0.5s						
WTTA	Wattenberg	69.30 313		*i* pP	P	07 16 40.9	+1.0
	comp=Z,5.2nm,0.7s						
SCM	Sheep Creek Mo	69.36 29		*e*P	P	07 16 36.9	-3.0
SCM	Sheep Creek Mo	69.36 29		*e*P	P	07 16 36.9	-3.0
TIP	Timpagrande	69.41 304		*e*P	P	07 16 39.1	-1.5
MOTA	Moosalm	69.59 314		*i* pP	P	07 16 42.2	+0.5
	comp=Z,4.8nm,0.6s,SNR=8.1						
CUC	Castrocucco	69.72 305		*e*P	P	07 16 42.2	-0.2
RETA	Reutte	69.73 314		*i* pP	P	07 16 43.3	+0.9
	comp=Z,2.4nm,0.6s						
FETA	Feichten	69.96 313		*i* P	P	07 16 43.0	-1.0
	comp=Z,11nm,1.0s,SNR=8.7						
AQU	L'Aquila	70.32 308		*e*P	P	07 16 47.3	+1.2
AQU	L'Aquila	70.32 308		*e*P	P	07 16 47.3	+1.2
DAVA	Damuels	70.36 314		*i* pP	P	07 16 47.5	+1.1
	comp=Z,2.4nm,0.6s						
FUORN	Ofenpass-Fuorn	70.42 313		*e*P	P	07 16 47.3	+0.4
DAVOX	Davos/Dischmat	70.59 314		P	P	07 16 46.3	-1.6
	comp=Z,18nm,0.9s,baz=68,slow=4.2,SNR=17						
EYAK	Cordova Ski Ar	70.68 30		*e*P	P	07 16 50.4	+2.6
BFO	Black Forest	70.81 315		*i* P	P	07 16 50.4	+1.4
LANF	Langenberg	70.82 316		*e*P	P	07 16 50.5	+1.5
BMRM	Bremner River	70.93 29		*e*P	P	07 16 50.9	+1.4
TUE	Stuetta	71.06 313		*e*P	P	07 16 50.5	-0.3
DAWY	Dawson	71.16 25		*e*P	P	07 16 49.8	-1.1
WLS	Welschbruch	71.35 316		*e*P	P	07 16 53.0	+0.7
CDF	Champ du Feu	71.40 316		*e*P	P	07 16 52.7	+0.1
CDF				pmax	pmax		
	comp=Z,15nm,1.0s						
WLF	Walferdange	71.45 317		P	P	07 16 54.9	+2.1
	comp=Z,24nm,1.3s						
WLF	Walferdange	71.45 317		*e*P	P	07 16 53.3	+0.5
WLF	Walferdange	71.45 317		*e*P	P	07 16 53.3	+0.5
ECH	Echery	71.56 316		*e*P	P	07 16 54.4	+0.9
BCLA	Clavier	71.57 318		P	P	07 16 54.9	+1.4
	comp=Z,14nm,1.8s						
HINF	Hinteralfeld	71.93 315		*e*P	P	07 16 55.6	-0.2
HINF				pmax	pmax		
	comp=Z,7.0nm,0.8s						
LOMF	Lomont	72.17 315		*e*P	P	07 16 57.7	+0.4
SUMG	Summit	72.26 349		*i* P	P	07 16 58.9	+1.1
	comp=Z,6.1nm,0.8s						
SUMG	Summit	72.26 349		*e*P	P	07 16 58.7	+1.0
SUMG	Summit	72.26 349		*e*P	P	07 16 58.7	+1.0
KMBO	Kilima Mbogo	72.36 257		*e*P	P	07 16 58.6	-0.5
KMBO	Kilima Mbogo	72.36 257		*e*P	P	07 16 58.6	-0.5
BAIF	Baives	72.36 318		*e*P	P	07 16 58.7	+0.5
BAIF				pmax	pmax		
	comp=Z,14nm,1.2s						
STKA	Stephens Creek	72.59 148		P	P	07 16 59.5	-0.2
	comp=Z,12nm,0.9s,baz=324,slow=6.2,SNR=8.3						
LPG	La Plagne	73.11 313		*e*P	P	07 17 02.3	-0.9
LPG				pmax	pmax		
	comp=Z,30nm,0.8s						
LPL	La Plagne	73.11 313		*e*P	P	07 17 02.2	-0.9
LPL				pmax	pmax		
	comp=Z,28nm,0.8s						
EKA	Eskdalemuir Ar	73.43 326		P	P	07 17 04.0	-0.5
	comp=Z,1.7nm,0.6s,baz=55,slow=5.8,SNR=7.4						
AVF	Avril sur Loir	74.51 316		*e*P	P	07 17 10.9	0.0
AVF				pmax	pmax		
	comp=Z,14nm,1.0s						
VIVF	Saint-Julien-l	74.70 314		*e*P	P	07 17 12.3	+0.1
VIVF				pmax	pmax		
	comp=Z,17nm,1.0s						
PLDF	La Plantade	74.77 315		*e*P	P	07 17 13.5	+0.9
PYM	Petit Puy Mans	75.25 315		*e*P	P	07 17 16.0	+0.6
SKAG	Skagway	75.54 27		*e*P	P	07 17 16.7	+0.1
KEST	Kesrz	76.23 304		P	P	07 17 20.0	-1.2
	comp=Z,9.0nm,1.0s,baz=30,slow=2.1,SNR=7.5						
YKA	Yellowknife Ar	79.99 18		P	P	07 17 40.1	-1.2
	comp=Z,3.0nm,0.9s,baz=323,slow=4.8,SNR=17						
YKA				PP	PP	07 20 43.4	+1.0
	comp=Z,0.2nm,0.6s,baz=329,slow=8.0,SNR=4.0						
YKA				PKKPbc	PKKPbc	07 36 22.5	-4.2
	comp=Z,0.2nm,0.5s,baz=148,slow=1.9,SNR=5.3						
ESDC	Sonseca Array	82.90 313		P	P	07 17 55.8	-1.6
	comp=Z,2.1nm,0.8s,baz=41,slow=5.1,SNR=8.8						
MDT	Midelt	87.45 308		P	P	07 18 19.3	-1.1
	comp=Z,4.0nm,1.0s,baz=66,slow=3.0,SNR=4.6						
TORD	Torodi Ar. Bea	94.29 288		P	P	07 18 51.1	-1.2
	comp=Z,1.3nm,0.9s,baz=44,slow=2.6,SNR=4.9						
TORD				LR	LR	08 07 25.5	
	comp=Z,65nm,18.2s,baz=225,slow=39						
TXAR	Lajitas Array	112.55 27		PKKPbc	PKKPbc	07 34 56.6	-1.3
	comp=Z,0.3nm,0.7s,baz=152,slow=5.7,SNR=6.5						
LPAZ	La Paz	162.81 339		PKP	PKPdf	07 25 35.9	-0.1
	comp=Z,1.2nm,1.0s,baz=332,slow=1.6,SNR=4.1						

*IDC **15** 07:16:06.7±3.1, 36°.79N×142°.73E, h0km, mb3.3/2, mb1 3.6/3, mb1mx3.3/39, mbtmp3.4/3, ML3.5/1, Error ellipse: s-maj=76.8km s-min=34.0km az=56.0*
*JMA **15** 07:16:11.0±0.4, 36°.98N×142°.37E, h28km, M3.4*
ISC 15 07:16:13.1±2.5, 37°.2N±0°.1×142°.1E±0°.1, h10km, n9, σ1.9 06/11, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	1.01	280	P	Pn	07 16 33.7	+0.3
JFK				S	Sn	07 16 48.9	+1.1
ONAJ	Iwakimizuishiy	1.07	265	S	Sn	07 16 49.1	0.0
JMM	Marumori	1.25	303	P	Pg	07 16 36.9	-0.3
JFT	Otama	1.46	283	P	Pn	07 16 39.7	+0.1
JFT				*e*S	Sg	07 17 01.3	+1.1
JOU	Okura	1.65	316	P	Pg	07 16 44.1	-0.6
MJAR	Matsushiro Arr	3.21	259	Pn	Pn	07 17 04.1	+0.5
	4.0nm,0.3s,baz=88,slow=15,SNR=26						
MAT	Matsushiro	3.21	259	P	Pn	07 17 04.7	+1.1
MAT				S	Sb	07 17 47.3	-2.1
MKAR	Makanchi Array	44.52	302	P	P	07 24 24.6	-0.1
	0.2nm,0.6s,baz=85,slow=7.8,SNR=3.0						
WRA	Warramunga Arr	57.30	189	P	P	07 25 54.0	-7.1
	0.5nm,0.9s,baz=7.1,slow=7.2,SNR=2.6						

*CSEM **15** 07:30:46.9±0.2, 36°.94N×28°.14E, h5km, MD2.5, Error ellipse: s-maj=6.2km s-min=5.1km az=21.0*
*ISK **15** 07:30:46.0, 36°.95N×28°.15E, h8km, MD2.5*
*DDA **15** 07:30:47.8, 36°.96N×28°.14E, h7km, Md2.5*
ISC 15 07:30:46.8±1.1, 36°.96N±0°.03×28°.13E±0°.03, h6km±10km, n24, σ1.9 53/35, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	Yerkesik	0.21	35	PG	Pg	07 30 51.1	+0.1
YER				SG	Sg	07 30 54.0	+0.1
YER	Yerkesik	0.21	35	*i* Pg	Pg	07 30 51.1	+0.1
YER				*i* Sg	Sg	07 30 54.0	+0.1
TURN	Turunc	0.39	103	*i* P	Pg	07 30 51.9	-2.4
TURN				*i* S	Sg	07 30 55.2	-4.2
DALY	Dalyan (Mu¨la	0.44	109	*e*PG	Pg	07 30 55.0	-0.3
DALY				*e*SG	Sg	07 31 01.1	-0.1
DALY	Dalyan (Mu¨la	0.44	109	*e*Pg	Pg	07 30 55.0	-0.3
DALY				*e*Sg	Sg	07 31 01.1	-0.1
BDRM	Kayabasi	0.56	281	P	Pb	07 30 59.2	+0.2
BDRM				S	Sn	07 31 09.6	-1.4
BDRM	Kayabasi	0.56	281	*i* P	Pb	07 30 59.2	+0.2
BDRM				*i* S	Sn	07 31 09.6	-1.4
BODT	Bodrum	0.66	279	*e*PG	Pg	07 30 59.8	+0.2
BODT	Bodrum	0.66	279	*e*Pg	Pg	07 30 59.8	+0.2
AYDN	Tasoluk	0.73	344	P	Pb	07 31 02.0	+0.1
AYDN				S	Sb	07 31 12.3	+0.2
AYDN	Tasoluk	0.73	344	*i* P	Pb	07 31 02.0	+0.1
AYDN				*i* S	Sb	07 31 12.3	+0.2
FETY	Fethiye	0.83	113	*e*PG	Pg	07 31 01.8	-1.0
FETY	Fethiye	0.83	113	*e*Pg	Pg	07 31 01.8	-1.0
NIS1	Nisyros Isl.	0.84	245	*e*PG	Pg	07 31 02.7	-0.3
NIS1	Nisyros Isl.	0.84	245	*e*Pg	Pg	07 31 02.7	-0.3
AYDB	Zeytinkoy-Aydi	1.00	349	*e*PG	Pg	07 31 06.0	-0.1
AYDB	Zeytinkoy-Aydi	1.00	349	*e*Pg	Pg	07 31 06.0	-0.1
DNZL	Cakiroluk	1.03	45	*i* P	Pg	07 31 06.4	-0.2
AKAS	Kas	1.39	121	P	Pg	07 31 14.5	+1.0
AKAS				S	Sg	07 31 36.0	+4.5
AKAS	Kas	1.39	121	*i* P	Pg	07 31 14.5	+1.0
AKAS				*i* S	Sg	07 31 36.0	+4.5
KULA	Kula-Manisa	1.61	15	*e*PN	Pn	07 31 16.2	+0.4
KULA	Kula-Manisa	1.61	15	*e*Pn	Pn	07 31 16.2	+0.4
KARP	Karpathos	1.61	209	*e*PN	Pn	07 31 15.3	-0.5
KARP	Karpathos	1.61	209	*e*Pn	Pn	07 31 15.3	-0.5

MAN 15 07:35:51, 18°.24N×120°.69E, h37km, mb3.9, ML2.6, MS2.2, 1C-1D, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PIP	Pasuquin	0.11	325	⇑ *i* P	Pn	07 35 59.2	-4.9
PIP				*e*S	Sn	07 36 04.3	-13
SIPP	Brgy, Tapao	0.38	215	⇓ *e*P	Pn	07 36 01.8	+2.1
SIPP				*e*S	Sn	07 36 08.4	+1.9
ABRA	Dolores	0.58	178	*e*P	Pn	07 36 06.3	+3.3
APYP	Conner	0.65	125	*e*P	Pn	07 36 05.2	+1.4
APYP				*e*S	Sn	07 36 20.5	+7.8

IDC 15 07:36:20.9±1.2, 48°.75N×38°.85E, h0km, mb1 3.5/6, mb1mx3.2/38, mbtmp3.4/6, ML3.2/6, Error ellipse: s-maj=47.8km s-min=8.8km az=52.0, Ukraine-Moldova-Southwestern Russia region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KVAR	Kislovodsk Arr	5.48	150	Pn	Pn	07 37 42.3	-1.6
	baz=315,slow=14,SNR=2.9						
KVAR				Sn	Sn	07 38 48.6	+0.8
	baz=137,slow=19,SNR=9.3						
KBZ	Khabaz	5.75	149	Pn	Pn	07 37 46.1	-1.4
	0.8nm,0.3s,baz=346,slow=14,SNR=12						
KBZ				Sn	Sn	07 38 54.8	+0.6
	0.8nm,0.3s,baz=259,slow=10,SNR=2.6						
AKASG	Malin Array Be	6.54	291	Pn	Pn	07 37 57.1	-1.2
	0.9nm,0.3s,baz=105,slow=12,SNR=4.0						
FINES	FINESS Array B	14.63	335	Pn	Pn	07 39 43.4	-5.5
	0.1nm,0.3s,baz=150,slow=16,SNR=4.4						
HFS	Hagfors	18.41	318	Pn	Pn	07 40 30.5	-6.8
	0.1nm,0.3s,baz=146,slow=10,SNR=3.0						
NOA	NORSAR Array B	19.91	318	P	P	07 40 52.8	-1.1
	0.1nm,0.3s,baz=127,slow=11,SNR=2.7						

DHMR 15 07:44:17.9±0.8, 12°.11N×44°.46E, h10km±8km, ML3.8, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ADEN	Aden	0.84	37	*i* P	Pg	07 44 33.4	-0.7
ADEN				*i* S	Sb	07 44 45.6	-0.3
ADEN				AML	AML	07 44 46.5	
	comp=E,3μm,0.2s						
TRBA	At Turbah	1.17	343	*i* P	Pb	07 44 40.0	-0.3
TRBA				*i* S	Sg	07 44 56.0	+0.3
BDHA	Al Bayda'	2.15	30	*i* P	Pn	07 44 55.2	+1.2
BDHA				*i* S	Sb	07 45 25.0	+1.1
DHBB	Dhamar BB	2.45	358	*i* P	Pb	07 45 00.4	-1.9
DHBB				*i* S	Sb	07 45 34.0	+1.3

*NDI **15** 07:50:52.5±2.1, 32°.24N×71°.84E, h39km±669km, ML3.9*
*ISCJB **15** 07:51:01.1±0.6, 33°.15N±0°.06×73°.82E±0°.09, h15km, mb3.6/8, MS3.6/1, Error ellipse: s-maj=12.9km s-min=5.1km az=148.5*
*IDC **15** 07:51:07.9±6.4, 33°.23N×73°.72E, h54km±58km, mb3.5/9, mb1 3.6/13, mb1mx3.3/54, mbtmp3.7/13, ML3.4/4, MS3.6/1, Ms1 3.6/1, ms1mx2.4/35, Error ellipse: s-maj=42.7km s-min=16.8km az=38.0*
*NNC **15** 07:51:14.4±3.8, 33°.49N×73°.72E, h90km±34km, mb3.5, Error ellipse: s-maj=44.1km s-min=27.3km az=94.0*
ISC 15 07:51:02.7±0.8, 33°.06N±0°.08×73°.68E±0°.09, h15km, n32, σ2.9 17/36, mb3.7/8, 5C-6D, Pakistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PONG	Pong	2.21	119	*e*P	Pb	07 51 43.0	+0.6
PONG				*ex*	x	07 52 13.0	
JWA	Jwalamukhi	2.54	117	*e*P	Pb	07 51 49.0	+1.0
SMLA	Simla	3.53	122	*e*P	Pn	07 52 00.6	+3.6
SMLA				*e*S	Sb	07 52 50.5	+2.9
SMLA				IAML		07 53 05.9	
	comp=N,282nm,0.3s						
SMLA				IAML		07 53 07.1	
	comp=E,362nm,0.7s						
NDI	New Delhi	5.32	144	*e*P	Pn	07 52 17.0	-4.5
NDI				*e*S	Sn	07 53 16.0	-6.6
PYUN	Piuthan	9.42	119	*e*P	Pn	07 53 18.6	+0.5
	comp=E,16nm,0.2s						
PYUN				*e*S	Sn	07 55 01.3	-2.7
MNAS	Manas	9.46	355	⇓ P	Pn	07 53 22.3	+3.8
	comp

IDC ***15*** *07:56:39.5±0.9, 36°.61N×26°.79E, h128km±13km, mb3.4/7, mb1 3.6/15, mb1mx3.3/52, mbtmp3.9/15, Error ellipse: s-maj=18.9km s-min=9.5km az=155.0*
CSEM ***15*** *07:56:40.6±0.1, 36°.54N×26°.90E, h138km±2km, ML3.7, Error ellipse: s-maj=3.7km s-min=2.3km az=13.0*
ATH ***15*** *07:56:40.3, 36°.61N×26°.83E, h140km±3km, ML3.7/11, Error ellipse: s-maj=3.3km s-min=1.0km az=121.0*
HLW ***15*** *07:56:41.0, 36°.43N×27°.06E, h30km±17km, Md3.8, Ml3.9*
THE ***15*** *07:56:42.8, 36°.60N×26°.85E, h150km±2km, ML3.9/9, Error ellipse: s-maj=2.4km s-min=0.6km az=113.0*
GII ***15*** *07:56:43.6±0.0, 36°.09N×27°.37E, h1km, mb4.1/1, MD3.8/1*
DDA ***15*** *07:56:43.4, 36°.61N×26°.69E, h46km, Md3.4*
ISK ***15*** *07:56:44.0, 36°.73N×26°.95E, h82km, ML3.4*

ISC 15 07:56:40.3±0.6, 36°.57N±0°.03×26°.90E±0°.03, h141km±5km, n202, σ1°.44/253, mb3.6/7, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NISR	**Nisiros**	**0.19**	**78**	P	**Pn**	**07 56 59.2**	**-0.2**
NISR	**Nisiros**	**0.19**	**78**	P	**Pn**	**07 56 59.2**	**-0.2**
NIS1	**Nisyros Isl.**	**0.23**	**83**	P	**Pn**	**07 57 00.2**	**+0.6**
NIS1	**Nisyros Isl.**	**0.23**	**83**	P	**Pn**	**07 57 00.2**	**+0.6**
BODT	**Bodrum**	**0.59**	**34**	P	**Pn**	**07 57 01.4**	**+0.2**
BODT				S	**Sn**	**07 57 15.5**	**-1.6**
BODT	**Bodrum**	**0.59**	**34**	P	**Pn**	**07 57 01.4**	**+0.2**
BODT				S	**Sn**	**07 57 15.5**	**-1.6**
KARP	**Karpathos**	**1.05**	**168**	PN	**Pn**	**07 57 06.3**	**+1.6**
KARP	**Karpathos**	**1.05**	**168**	P	**Pn**	**07 57 05.6**	**+0.9**
KARP				S	**Sn**	**07 57 23.8**	**+0.5**
KARP	**Karpathos**	**1.05**	**168**	P	**Pn**	**07 57 05.6**	**+0.9**
KARP	**Karpathos**	**1.05**	**168**	*i* Pn	**Pn**	**07 57 06.3**	**+1.6**
KARP				S	**Sn**	**07 57 23.8**	**+0.5**
KARP	**Karpathos**	**1.05**	**168**	P	**Pn**	**07 57 06.0**	**+1.3**
KARP				S	**Sn**	**07 57 24.4**	**+1.1**
KARP				AML	AML	07 57 27.2	
	comp=E,4635μm,0.2s						
KARP				AML	AML	07 57 27.3	
	comp=N,9375μm,0.3s						
ARG	**Arkhangelos**	**1.05**	**109**	P	**Pn**	**07 57 05.8**	**+1.1**
ARG				S	**Sn**	**07 57 23.2**	**-0.1**
ARG	**Arkhangelos**	**1.05**	**109**	P	**Pn**	**07 57 05.8**	**+1.1**
ARG				S	**Sn**	**07 57 24.4**	**+1.1**
SMG	**Samos**	**1.13**	**358**	P	**Pn**	**07 57 05.5**	**0.0**
SMG	**Samos**	**1.13**	**358**	P	**Pn**	**07 57 05.5**	**0.0**
GCAM	**G?zelcaml?**	**1.16**	**13**	*i* P	**Pn**	**07 57 05.9**	**+0.2**
SANT	**Santorini**	**1.18**	**261**	P	**Pn**	**07 57 06.1**	**+0.2**
THT1	**Athinios (Pele**	**1.20**	**261**	P	**Pn**	**07 57 06.2**	**+0.2**
APE	**Apeiranthos**	**1.20**	**295**	*e*PN	**Pn**	**07 57 06.5**	**+0.4**
APE	**Apeiranthos**	**1.20**	**295**	P	**Pn**	**07 57 06.2**	**+0.1**
APE				S	**Sn**	**07 57 24.1**	**-1.8**
APE	**Apeiranthos**	**1.20**	**295**	P	**Pn**	**07 57 06.2**	**+0.1**
APE	**Apeiranthos**	**1.20**	**295**	*e*Pn	**Pn**	**07 57 06.5**	**+0.4**
APE				S	**Sn**	**07 57 24.1**	**-1.8**
APE	**Apeiranthos**	**1.20**	**295**	P	**Pn**	**07 57 06.3**	**+0.2**
CMBO	**Columbo, Santo**	**1.21**	**266**	P	**Pn**	**07 57 06.2**	**+0.1**
CMBO	**Columbo, Santo**	**1.21**	**266**	P	**Pn**	**07 57 06.8**	**+0.7**
CMBO	**Columbo, Santo**	**1.21**	**266**	P	**Pn**	**07 57 06.8**	**+0.7**
THR3	**Thira Island,**	**1.22**	**263**	P	**Pn**	**07 57 06.6**	**+0.4**
THR6	**Thira Island,**	**1.23**	**260**	P	**Pn**	**07 57 06.7**	**+0.4**
YER	**Yerkesik**	**1.25**	**63**	*e*PN	**Pn**	**07 57 05.8**	**-0.8**
YER				*e*SN	**Sn**	**07 57 21.3**	**-5.3**
YER	**Yerkesik**	**1.25**	**63**	P	**Pn**	**07 57 07.8**	**+1.2**
YER				S	**Sn**	**07 57 26.1**	**-0.6**
YER	**Yerkesik**	**1.25**	**63**	*e*Pn	**Pn**	**07 57 05.8**	**-0.8**
YER	**Yerkesik**	**1.25**	**63**	P	**Pn**	**07 57 07.8**	**+1.2**
YER				S	**Sn**	**07 57 26.1**	**-0.6**
THR5	**Thira Island,**	**1.26**	**263**	*e*PN	**Pn**	**07 57 08.3**	**+1.7**
THR5	**Thira Island,**	**1.26**	**263**	P	**Pn**	**07 57 06.7**	**+0.1**
THR5	**Thira Island,**	**1.26**	**263**	*e*Pn	**Pn**	**07 57 08.3**	**+1.7**
TURN	**Turunc**	**1.40**	**77**	*i* P	**Pn**	**07 57 06.1**	**-2.0**
TURN				*i* S	**Sn**	**07 57 24.1**	**-5.3**
DALY	**Dalyan (Mu¨la**	**1.43**	**80**	*e*PN	**Pn**	**07 57 08.8**	**+0.4**
DALY				*e*SN	**Sn**	**07 57 27.3**	**-2.6**
DALY	**Dalyan (Mu¨la**	**1.43**	**80**	*e*Pn	**Pn**	**07 57 08.8**	**+0.4**
DALY				*e*Sn	**Sn**	**07 57 27.3**	**-2.6**
ZKR	**Zakros**	**1.56**	**201**	P	**Pn**	**07 57 10.8**	**+1.0**
ZKR				S	**Sn**	**07 57 32.0**	**-0.4**
ZKR	**Zakros**	**1.56**	**201**	P	**Pn**	**07 57 10.8**	**+1.0**
ZKR				S	**Sn**	**07 57 33.0**	**+0.6**
ZKR	**Zakros**	**1.56**	**201**	P	**Pn**	**07 57 11.2**	**+1.3**
ZKR				S	**Sn**	**07 57 33.0**	**+0.6**
ZKR				AML	AML	07 57 35.0	
	comp=N,2984μm,0.5s						
ZKR				AML	AML	07 57 35.0	
	comp=E,3660μm,0.5s						
AYDB	**Zeytinkoy-Aydi**	**1.58**	**30**	*e*PN	**Pn**	**07 57 09.1**	**-1.1**
AYDB				*e*SN	**Sn**	**07 57 29.0**	**-4.2**
AYDB	**Zeytinkoy-Aydi**	**1.58**	**30**	*e*Sn	**Sn**	**07 57 29.0**	**-4.2**
NPS	**Neapolis**	**1.67**	**219**	P	**Pn**	**07 57 11.6**	**+0.5**
NPS				S	**Sn**	**07 57 34.1**	**-0.6**
NPS	**Neapolis**	**1.67**	**219**	P	**Pn**	**07 57 11.6**	**+0.5**
NPS				S	**Sn**	**07 57 34.1**	**-0.6**
NPS	**Neapolis**	**1.67**	**219**	P	**Pn**	**07 57 11.5**	**+0.4**
NPS				S	**Sn**	**07 57 33.9**	**-0.8**
NPS				AML	AML	07 57 35.5	
	comp=N,2770μm,0.3s						
NPS				AML	AML	07 57 36.2	
	comp=E,2041μm,0.2s						
FETY	**Fethiye**	**1.76**	**87**	*e*PN	**Pn**	**07 57 13.2**	**+1.1**
FETY	**Fethiye**	**1.76**	**87**	P	**Pn**	**07 57 13.4**	**+1.3**
FETY				S	**Sn**	**07 57 36.7**	**+0.2**
FETY	**Fethiye**	**1.76**	**87**	*e*Pn	**Pn**	**07 57 13.2**	**+1.1**
FETY				S	**Sn**	**07 57 36.7**	**+0.2**
LAST	**Lasithi**	**1.82**	**220**	P	**Pn**	**07 57 13.3**	**+0.4**
LAST				S	**Sn**	**07 57 37.0**	**-0.8**
LAST	**Lasithi**	**1.82**	**220**	P	**Pn**	**07 57 13.3**	**+0.4**
LAST				S	**Sn**	**07 57 37.0**	**-0.8**
LAST	**Lasithi**	**1.82**	**220**	P	**Pn**	**07 57 13.2**	**+0.4**
CHOS	**Chios island**	**1.93**	**340**	*e*PN	**Pn**	**07 57 14.1**	**0.0**
CHOS	**Chios island**	**1.93**	**340**	P	**Pn**	**07 57 13.7**	**-0.4**
CHOS	**Chios island**	**1.93**	**340**	*e*Pn	**Pn**	**07 57 14.1**	**0.0**
CHOS	**Chios island**	**1.93**	**340**	P	**Pn**	**07 57 13.7**	**-0.4**
IACM	**Heraklion**	**1.95**	**230**	P	**Pn**	**07 57 15.1**	**+0.9**
IACM	**Heraklion**	**1.95**	**230**	P	**Pn**	**07 57 15.1**	**+0.9**
MHLO	**Agia Marina, M**	**2.01**	**274**	P	**Pn**	**07 57 15.3**	**+0.3**
MHLO	**Agia Marina, M**	**2.01**	**274**	P	**Pn**	**07 57 15.3**	**+0.3**
MHLO	**Agia Marina, M**	**2.01**	**274**	P	**Pn**	**07 57 15.4**	**+0.5**
SERI	**Serifos**	**2.02**	**288**	P	**Pn**	**07 57 15.1**	**0.0**
SERI	**Serifos**	**2.02**	**288**	P	**Pn**	**07 57 15.1**	**0.0**
DNZL	**Cakiroluk**	**2.05**	**56**	*i* P	**Pn**	**07 57 17.2**	**+1.6**
DNZL				*i* S	**Sn**	**07 57 43.0**	**+0.2**
IDI	**Anoyia**	**2.07**	**232**	P	**Pn**	**07 57 15.6**	**-0.2**
	comp=E,59nm,0.3s,baz=12,slow=5.4,SNR=445						
IDI				S	**Sn**	**07 57 39.2**	**-3.8**
	comp=E,25nm,0.3s,baz=18,slow=7.0,SNR=4.1						
IDI	**Anoyia**	**2.07**	**232**	P	**Pn**	**07 57 15.8**	**0.0**
IDI	**Anoyia**	**2.07**	**232**	P	**Pn**	**07 57 15.8**	**0.0**
IDI				S	**Sn**	**07 57 42.8**	**-0.2**
IDI	**Anoyia**	**2.07**	**232**	P	**Pn**	**07 57 15.7**	**-0.2**
IDI				S	**Sn**	**07 57 42.9**	**-0.2**
IDI				AML	AML	07 57 44.3	
	comp=E,677μm,0.5s						
IDI				AML	AML	07 57 47.6	
	comp=N,576μm,0.3s						
DENT	**Denizli**	**2.08**	**55**	*e*PN	**Pn**	**07 57 16.6**	**+0.8**
GLHS	**Glhisar (BURDU**	**2.17**	**74**	*e*PN	**Pn**	**07 57 18.5**	**+1.5**
GLHS	**Glhisar (BURDU**	**2.17**	**74**	*e*Pn	**Pn**	**07 57 18.5**	**+1.5**
KSL	**Kastellorizon**	**2.21**	**100**	P	**Pn**	**07 57 18.9**	**+1.5**
KSL				S	**Sn**	**07 57 46.2**	**+0.3**
KSL	**Kastellorizon**	**2.21**	**100**	P	**Pn**	**07 57 18.8**	**+1.4**
KSL				S	**Sn**	**07 57 45.8**	**-0.1**
KSL				AML	AML	07 57 49.0	
	comp=N,1517μm,0.4s						
KSL				AML	AML	07 57 49.6	
	comp=E,2316μm,0.3s						
AKAS	**Kas**	**2.21**	**98**	P	**Pn**	**07 57 18.8**	**+1.2**
AKAS				S	**Sn**	**07 57 44.5**	**-1.7**
AKAS	**Kas**	**2.21**	**98**	*i* P	**Pn**	**07 57 18.8**	**+1.2**
AKAS				*i* S	**Sn**	**07 57 44.5**	**-1.7**
GOLH	**Golhisar**	**2.24**	**72**	P	**Pn**	**07 57 19.5**	**+1.7**
GOLH	**Golhisar**	**2.24**	**72**	*i* P	**Pn**	**07 57 19.5**	**+1.7**
SIVA	**Sivas**	**2.30**	**228**	P	**Pn**	**07 57 19.5**	**+1.0**
SIVA	**Sivas**	**2.30**	**228**	P	**Pn**	**07 57 19.5**	**+1.0**
SIVA	**Sivas**	**2.30**	**228**	P	**Pn**	**07 57 19.9**	**+1.4**
MANT	**Manisa**	**2.33**	**34**	P	**Pn**	**07 57 19.5**	**+0.5**
MANT	**Manisa**	**2.33**	**34**	*i* P	**Pn**	**07 57 19.5**	**+0.5**
KULA	**Kula-Manisa**	**2.39**	**35**	*e*PN	**Pn**	**07 57 20.0**	**+0.3**
KULA	**Kula-Manisa**	**2.39**	**35**	P	**Pn**	**07 57 20.2**	**+0.5**
KULA	**Kula-Manisa**	**2.39**	**35**	P	**Pn**	**07 57 20.2**	**+0.5**
ELL	**Elmali**	**2.43**	**85**	*e*PN	Pn	07 57 23.0	+2.8
ELL	**Elmali**	**2.43**	**85**	*e*Pn	Pn	07 57 23.0	+2.8
VAM	**Vamos**	**2.48**	**243**	P	**Pn**	**07 57 21.2**	**+0.5**
VAM	**Vamos**	**2.48**	**243**	P	**Pn**	**07 57 21.2**	**+0.5**
IMMV	**Iera Moni Meta**	**2.61**	**246**	P	**Pn**	**07 57 22.6**	**+0.3**
IMMV				S	**Sn**	**07 57 53.1**	**-1.6**
IMMV	**Iera Moni Meta**	**2.61**	**246**	P	**Pn**	**07 57 22.6**	**+0.3**
IMMV				S	**Sn**	**07 57 53.1**	**-1.6**
IMMV	**Iera Moni Meta**	**2.61**	**246**	P	**Pn**	**07 57 23.3**	**+1.0**
IMMV				AML	AML	07 57 55.1	
	comp=N,1371μm,0.3s						
IMMV				AML	AML	07 57 56.5	
	comp=E,1246μm,0.4s						
KHL	**Karahalli**	**2.73**	**49**	*e*PN	**Pn**	**07 57 25.1**	**+1.3**
KHL	**Karahalli**	**2.73**	**49**	*e*Pn	**Pn**	**07 57 25.1**	**+1.3**
KHAL	**Karahalli**	**2.73**	**48**	P	**Pn**	**07 57 24.8**	**+0.8**
KHAL				S	**Sn**	**07 57 57.5**	**-0.2**
KHAL	**Karahalli**	**2.73**	**48**	*i* P	**Pn**	**07 57 24.8**	**+0.8**
KHAL				*i* S	**Sn**	**07 57 57.5**	**-0.2**
KORT	**Korkueli**	**2.81**	**80**	P	**Pn**	**07 57 27.1**	**+2.2**
KORT	**Korkueli**	**2.81**	**80**	*i* P	**Pn**	**07 57 27.1**	**+2.2**
GVD	**Gavdhos**	**2.87**	**234**	P	**Pn**	**07 57 26.5**	**+0.9**
GVD	**Gavdhos**	**2.87**	**234**	P	**Pn**	**07 57 26.5**	**+0.9**
GVD				S	**Sn**	**07 58 00.1**	**-0.4**
GVD	**Gavdhos**	**2.87**	**234**	P	**Pn**	**07 57 27.1**	**+1.5**
GVD				S	**Sn**	**07 58 00.1**	**-0.4**
GVD				AML	AML	07 58 07.6	
	comp=E,734μm,0.3s						
GVD				AML	AML	07 58 08.4	
	comp=N,912μm,0.3s						
ANKY	**Antikythira Is**	**2.99**	**257**	P	**Pn**	**07 57 27.3**	**+0.2**
ANKY				S	**Sn**	**07 58 02.4**	**-0.9**
ANKY	**Antikythira Is**	**2.99**	**257**	P	**Pn**	**07 57 27.3**	**+0.2**
ANKY				S	**Sn**	**07 58 02.4**	**-0.9**
ANKY	**Antikythira Is**	**2.99**	**257**	P	**Pn**	**07 57 26.8**	**-0.4**
ANKY				AML	AML	07 58 10.2	
	comp=E,620μm,0.5s						
ANKY				AML	AML	07 58 11.3	
	comp=N,698μm,0.5s						
ANTB	**Antalya**	**3.04**	**83**	*e*PN	Pn	07 57 31.3	+3.6
ANTB	**Antalya**	**3.04**	**83**	*e*Pn	Pn	07 57 31.3	+3.6
DID	**Didima**	**3.07**	**289**	P	**Pn**	**07 57 28.7**	**+0.5**
DID	**Didima**	**3.07**	**289**	P	**Pn**	**07 57 28.7**	**+0.5**
BCK	**Bucak**	**3.09**	**72**	*e*PN	Pn	07 57 31.4	+3.0
KYTH	**Kithira**	**3.13**	**266**	P	**Pn**	**07 57 29.0**	**+0.1**
KYTH	**Kithira**	**3.13**	**266**	P	**Pn**	**07 57 29.0**	**+0.1**
KYTH	**Kithira**	**3.13**	**266**	P	**Pn**	**07 57 28.6**	**-0.3**
VLI	**Veliai**	**3.19**	**274**	P	**Pn**	**07 57 29.4**	**-0.2**
VLI	**Veliai**	**3.19**	**274**	P	**Pn**	**07 57 29.5**	**-0.2**
VLI	**Veliai**	**3.19**	**274**	P	**Pn**	**07 57 29.5**	**-0.2**
VLI				AML	AML	07 58 08.1	
	comp=N,827μm,0.3s						
VLI				AML	AML	07 58 09.2	
	comp=E,438μm,0.6s						
LTK	**Loutraki**	**3.45**	**296**	P	**Pn**	**07 57 34.1**	**+1.0**
LTK	**Loutraki**	**3.45**	**296**	P	**Pn**	**07 57 34.1**	**+1.0**
AOS	**Alonnisos**	**3.52**	**318**	P	**Pn**	**07 57 34.1**	**+0.1**
AOS	**Alonnisos**	**3.52**	**318**	P	**Pn**	**07 57 34.1**	**+0.1**
VLX	**Vlachokerasia**	**3.70**	**284**	P	**Pn**	**07 57 37.5**	**+1.0**
VLX	**Vlachokerasia**	**3.70**	**284**	P	**Pn**	**07 57 37.5**	**+1.0**
VLX				AML	AML	07 58 21.5	
	comp=E,345μm,0.6s						
VLX				AML	AML	07 58 23.7	
	comp=N,333μm,0.4s						
DSF	**Desfina**	**3.93**	**299**	P	**Pn**	**07 57 39.5**	**+0.1**
DSF	**Desfina**	**3.93**	**299**	P	**Pn**	**07 57 39.5**	**+0.1**
ITM	**Ithomi**	**4.03**	**280**	P	**Pn**	**07 57 40.6**	**-0.1**
ITM	**Ithomi**	**4.03**	**280**	P	**Pn**	**07 57 40.6**	**-0.1**
ITM	**Ithomi**	**4.03**	**280**	P	**Pn**	**07 57 42.5**	**+1.8**
ITM				AML	AML	07 58 28.7	
	comp=N,274μm,0.2s						
ITM				AML	AML	07 58 30.4	
	comp=E,442μm,0.4s						
KLV	**Kalavryta, Ach**	**4.06**	**293**	P	**Pn**	**07 57 42.8**	**+1.7**
KLV	**Kalavryta, Ach**	**4.06**	**293**	P	**Pn**	**07 57 42.8**	**+1.7**
PYL	**PYLOS**	**4.15**	**276**	P	**Pn**	**07 57 41.7**	**-0.6**
PYL	**PYLOS**	**4.15**	**276**	P	**Pn**	**07 57 41.7**	**-0.6**
SERG	**Sergoula**	**4.26**	**297**	P	**Pn**	**07 57 45.2**	**+1.4**
DRO	**Drossia**	**4.36**	**290**	P	**Pn**	**07 57 47.5**	**+2.5**
DRO	**Drossia**	**4.36**	**290**	P	**Pn**	**07 57 47.5**	**+2.5**
AGG	**Agios Georgios**	**4.37**	**305**	P	**Pn**	**07 57 46.9**	**+1.8**
AGG	**Agios Georgios**	**4.37**	**305**	P	**Pn**	**07 57 46.9**	**+1.8**
PDO	**Prodromos**	**4.97**	**296**	P	**Pn**	**07 57 54.5**	**+1.5**
PDO	**Prodromos**	**4.97**	**296**	P	**Pn**	**07 57 54.5**	**+1.5**
KFL	**Anninata**	**5.10**	**289**	P	**Pn**	**07 57 55.6**	**+0.7**
KFL	**Anninata**	**5.10**	**289**	P	**Pn**	**07 57 55.6**	**+0.7**
DSL	**Palaion Diasel**	**5.25**	**301**	P	**Pn**	**07 57 58.7**	**+1.8**
DSL	**Palaion Diasel**	**5.25**	**301**	P	**Pn**	**07 57 58.7**	**+1.8**
SLUM	**Salum**	**5.26**	**196**	P	**Pn**	**07 57 56.2**	**-0.8**
	baz=198						
SLUM				AMP		07 58 00.0	
	comp=N,190μm,0.4s,logA/T=5.7,baz=198						
SLUM	**Salum**	**5.26**	**196**	P	**Pn**	**07 57 56.2**	**-0.8**
LKD2	**Lefkada island**	**5.42**	**296**	P	**Pn**	**07 58 01.3**	**+2.2**
LKD2	**Lefkada island**	**5.42**	**296**	P	**Pn**	**07 58 01.3**	**+2.2**
HMAT	**Matruh**	**5.47**	**178**	S	**Sn**	**07 58 57.4**	**-4.4**
	baz=179						
HMAT				AMP		07 59 00.0	
	comp=E,80μm,0.4s,logA/T=5.3,baz=179						
HMAT	**Matruh**	**5.47**	**178**	S	**Sn**	**07 58 57.4**	**-4.4**
CSS	**Mathiatis**	**5.47**	**105**	Pn	**Pn**	**07 57 59.5**	**-0.3**
CSS				Sn	**Sn**	**07 58 59.2**	**-2.7**
CSS	**Mathiatis**	**5.47**	**105**	Pn	**Pn**	**07 57 59.5**	**-0.3**
CSS				Sn	**Sn**	**07 58 59.2**	**-2.7**
IGT	**Igoumenitsa**	**5.96**	**302**	P	**Pn**	**07 58 07.2**	**+0.9**
IGT	**Igoumenitsa**	**5.96**	**302**	P	**Pn**	**07 58 07.2**	**+0.9**
BRTR	**Keskin Array B**	**6.17**	**57**	P	**Pn**	**07 58 10.8**	**+1.5**
	comp=E,0.4nm,0.3s,baz=233,slow=14,SNR=31						
BRTR				S	**Sn**	**07 59 20.6**	**+1.8**
	comp=E,0.3nm,0.3s,baz=249,slow=24,SNR=7.8						
KEK	**Kerkira**	**6.41**	**301**	P	**Pn**	**07 58 12.6**	**+0.3**
HNAT	**Natroun**	**7.59**	**155**	P	**Pn**	**07 58 27.5**	**-0.7**
	baz=155						
HNAT	**Natroun**	**7.59**	**155**	P	**Pn**	**07 58 27.5**	**-0.7**
KOT	**Kottamia**	**7.81**	**147**	P	**Pn**	**07 58 30.8**	**-0.4**
	baz=147						
KOT	**Kottamia**	**7.81**	**147**	P	**Pn**	**07 58 30.8**	**-0.4**
MMC7	**Mount Meron ar**	**7.83**	**114**	Pn	**Pn**	**07 58 30.5**	**-1.0**
MMC7	**Mount Meron ar**	**7.83**	**114**	Pn	**Pn**	**07 58 30.5**	**-1.0**
MMA0B	**Mount Meron ar**	**7.85**	**114**	Pn	**Pn**	**07 58 31.5**	**-0.2**
MMA0B				Sn	**Sn**	**07 59 56.1**	**-3.0**
MMA0B	**Mount Meron ar**	**7.85**	**114**	Pn	**Pn**	**07 58 31.5**	**-0.2**
MMA0B				Sn	**Sn**	**07 59 56.1**	**-3.0**
MMAI	**Mount Meron Ar**	**7.85**	**114**	P	**Pn**	**07 58 30.8**	**-0.9**
	comp=E,9.7nm,0.3s,baz=302,slow=12,SNR=26						
MMAI				S	**Sn**	**07 59 56.4**	**-2.7**
	comp=E,8.3nm,0.3s,baz=308,slow=23,SNR=12						
KSDI	**Kefar Szold**	**7.95**	**113**	Pn	**Pn**	**07 58 32.8**	**-0.2**
KSDI	**Kefar Szold**	**7.95**	**113**	Pn	**Pn**	**07 58 32.8**	**-0.2**
RSH		**7.98**	**133**	P	**Pn**	**07 58 33.0**	**-0.4**
	baz=132						
RSH		**7.98**	**133**	P	**Pn**	**07 58 32.9**	**-0.4**
MMLI	**Mount Malkishu**	**8.16**	**118**	Pn	**Pn**	**07 58 36.0**	**+0.2**
MMLI	**Mount Malkishu**	**8.16**	**118**	Pn	**Pn**	**07 58 36.0**	**+0.2**
HMDT	**Nahal Hemdat**	**8.33**	**119**	Pn	**Pn**	**07 58 38.6**	**+0.5**
HMDT	**Nahal Hemdat**	**8.33**	**119**	Pn	**Pn**	**07 58 38.6**	**+0.5**
SUZ	**Suez**	**8.35**	**142**	P	**Pn**	**07 58 38.3**	**-0.1**
	baz=142						
SUZ	**Suez**	**8.35**	**142**	P	**Pn**	**07 58 38.3**	**-0.1**
KZIT	**Kziot**	**8.42**	**130**	Pn	**Pn**	**07 58 38.3**	**-1.0**
KZIT	**Kziot**	**8.42**	**130**	Pn	**Pn**	**07 58 38.3**	**-1.0**
DSI	**Dead Sea**	**8.63**	**123**	Pn	**Pn**	**07 58 42.0**	**-0.1**
DSI				Sn	**Sn**	**08 00 15.1**	**-2.7**
DSI	**Dead Sea**	**8.63**	**123**	Pn	**Pn**	**07 58 42.0**	**-0.1**
DSI				Sn	**Sn**	**08 00 15.1**	**-2.7**
ZAF	**Zafarana**	**8.68**	**145**	P	**Pn**	**07 58 42.6**	**-0.2**
	baz=145						
ZAF	**Zafarana**	**8.68**	**145**	P	**Pn**	**07 58 42.6**	**-0.2**
ZNM	**Zenema**	**8.76**	**143**	P	**Pn**	**07 58 43.7**	**-0.2**
	baz=143						
ZNM	**Zenema**	**8.76**	**143**	P	**Pn**	**07 58 43.7**	**-0.2**
HNKL	**Nakhl**	**8.89**	**136**	P	**Pn**	**07 58 45.4**	**-0.2**
	baz=136						
HNKL	**Nakhl**	**8.89**	**136**	P	**Pn**	**07 58 45.4**	**-0.2**
PRNI	**Paran**	**9.18**	**130**	Pn	**Pn**	**07 58 49.2**	**-0.3**
PRNI				Sn	**Sn**	**08 00 26.9**	**-4.4**
PRNI	**Paran**	**9.18**	**130**	Pn	**Pn**	**07 58 49.2**	**-0.3**
PRNI				Sn	**Sn**	**08 00 26.9**	**-4.4**
HRFI	**Mount Harif**	**9.43**	**131**	Pn	**Pn**	**07 58 52.4**	**-0.4**
HRFI	**Mount Harif**	**9.43**	**131**	Pn	**Pn**	**07 58 52.4**	**-0.4**
MBRI	**Mt Berech**	**9.53**	**133**	Pn	**Pn**	**07 58 54.2**	**0.0**
MBRI				Sn	**Sn**	**08 00 36.6**	**-3.1**
MBRI	**Mt Berech**	**9.53**	**133**	Pn	**Pn**	**07 58 54.2**	**0.0**
MBRI				Sn	**Sn**	**08 00 36.6**	**-3.1**
EIL	**Elat**	**9.64**	**133**	P	**Pn**	**07 58 55.0**	**-0.6**
	comp=E,0.8nm,0.3s,baz=346,slow=11,SNR=5.1						
EIL				S	**Sn**	**08 00 38.0**	**-4.4**
	comp=E,2.1nm,0.3s,baz=346,slow=14,SNR=6.9						
AQBJ	**Aqaba**	**9.66**	**133**	Pn	**Pn**	**07 58 54.8**	**-1.0**
VAE	**Valguarnera**	**10.02**	**279**	P	**Pn**	**07 59 03.4**	**+2.6**
	comp=E,2.6nm,0.3s,baz=102,slow=8.0,SNR=5.2						
VAE				S	**Sn**	**08 00 48.0**	**-3.6**
	comp=E,3.5nm,0.3s,baz=186,slow=14,SNR=8.0						
KVAR	**Kislovodsk Arr**	**14.12**	**54**	P	**Pn**	**07 59 55.9**	**+1.8**
	baz=270,slow=4.0,SNR=2.2						
KBZ	**Khabaz**	**14.16**	**55**	P	**P**	**07 59 56.8**	**-0.8**
	comp=E,0.5nm,0.3s,baz=240,slow=5.9,SNR=25						
KEST	**Kesra**	**14.21**	**272**	P	**Pn**	**07 59 53.9**	**-1.3**
	comp=E,0.1nm,0.3s,baz=225,slow=2.9,SNR=2.2						
GERES	**GERESS Array B**	**15.61**	**326**	P	**Pn**	**08 00 12.6**	**+0.1**
	comp=E,0.1nm,0.3s,baz=134,slow=11,SNR=11						
ESDC	**Sonseca Array**	**24.41**	**287**	P	**P**	**08 01 45.1**	**-0.5**
	comp=E,0.3nm,0.5s,baz=85,slow=9.8,SNR=4.7						
HFS	**Hagfors**	**25.06**	**344**	P	**P**	**08 01 50.2**	**-0.9**
	comp=E,0.7nm,0.3s,baz=155,slow=12,SNR=8.3						
NOA	**NORSAR Array B**	**26.43**	**343**	P	**P**	**08 02 02.4**	**-1.2**
	comp=E,0.3nm,0.5s,baz=157,slow=10,SNR=2.8						
EKA	**Eskdalemuir Ar**	**27.75**	**322**	P	**P**	**08 02 16.3**	**+1.0**
	comp=E,0.6nm,0.6s,baz=118,slow=10,SNR=3.5						
TORD	**Torodi Ar. Bea**	**32.48**	**231**	P	**P**	**08 02 58.9**	**+1.5**
	comp=E,1.3nm,0.4s,baz=34,slow=8.8,SNR=25						
MKAR	**Makanchi Array**	**41.83**	**58**	P	**P**	**08 04 17.1**	**+1.1**
	comp=E,1.1nm,0.4s,baz=272,slow=8.3,SNR=11						
ZALV	**Zalesovo Beam**	**43.01**	**47**	P	**P**	**08 04 24.6**	**-0.8**
	comp=E,2.4nm,0.4s,baz=270,slow=8.8,SNR=8.3						

NIED ***15*** *07:56:00, 37°.70N×139°.90E, h8km, Mw3.6 Best double couple: M0 3.05000×10^14 NP1:φ=238.00000°, δ46.00000°, λ125.00000°. NP2:φ=13.00000°, δ54.00000°, λ60.00000°.*
IDC ***15*** *07:56:40.8±3.7, 38°.05N×139°.84E, h0km, mb3.6/2, mb1 3.9/2, mb1mx3.3/47, mbtmp3.6/2, Error ellipse: s-maj=74.4km s-min=40.5km az=156.0*
ISCJB ***15*** *07:56:44.9±0.5, 37°.70N±0°.02×139°.95E±0°.03, h8km±4km, mb3.7/2, Error ellipse: s-maj=4.3km s-min=3.6km az=150.3*
JMA ***15*** *07:56:45.2

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1				eS	Sn	08 04 48.9	-1.0
CHOJ	Chosi	1.89	293	P	Pn	08 04 33.3	+0.2
BSO3	Boso 3	2.04	266	P	Pn	08 04 34.8	-0.2
BSO4	Boso 4	2.18	271	P	Pn	08 04 37.1	+0.2
JAG	Ashikaga	3.22	298	P	Pn	08 04 52.0	+0.6
JFT	Otama	3.32	321	P	Pn	08 04 53.4	+0.5
JFT				S	Sn	08 05 30.2	-0.9
JRY	Ryogami san	3.49	289	P	Pn	08 04 55.6	+0.4
JYN	Shimob	3.67	279	P	Pn	08 04 57.2	-0.5
MJAR	Matsushiro Arr	4.19	293	Pn	Pn	08 05 05.1	+0.3
	2.5nm,0.3s,baz=100,slow=10.0,SNR=25						
MJAR				LR	LR	08 07 12.8	
	comp=Z,34nm,18.4s,baz=85,slow=45						
MAT	Matsushiro	4.19	293	P	Pn	08 05 05.5	+0.7
MAT				S	Sn	08 05 53.3	+0.7
MAT	Matsushiro	4.19	293	P	Pn	08 05 06.1	+1.3
ASAJ	Asahikawa	9.14	358	Pn	Pn	08 06 12.2	-0.4
	0.5nm,0.3s,baz=184,slow=7.4,SNR=4.7						
ASAR	Alice Springs	58.95	190	P	P	08 13 59.9	+0.7
	0.4nm,0.8s,baz=11,slow=9.8,SNR=6.1						
TXAR	Lajitas Array	90.35	53	P	P	08 17 00.5	-0.7
	0.1nm,0.4s,baz=293,slow=4.7,SNR=3.8						

IDC 15 08:05:46.0±6.8, 20°.88S×170°.32E, h89km±51km, mb2.8/2, mb1 3.1/3, mb1mx3.0/28, mbtmp3.2/3, ML3.5/1, Error ellipse: s-maj=218.0km s-min=46.7km az=159.0, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	3.80	251	P	Pn	08 06 44.0	+1.6
	3.2nm,0.3s,baz=89,slow=11,SNR=13						
DZM				S	Sn	08 07 25.7	-0.4
	20nm,0.3s,baz=13,slow=11,SNR=17						
WRA	Warramunga Arr	33.69	265	P	P	08 12 18.8	-0.2
	0.5nm,1.0s,baz=98,slow=8.3,SNR=3.0						
ASAR	Alice Springs	33.76	258	P	P	08 12 20.7	+1.2
	0.2nm,0.7s,baz=96,slow=9.4,SNR=2.5						
ARCES	ARCESS Array B	126.91	345	PKP	PKPdf	08 24 37.1	-1.7
	0.7nm,0.8s,baz=56,slow=2.3,SNR=3.7						
GERES	GERESS Array B	146.41	332	PKPbc	PKPdf	08 25 16.1	+0.6
	0.4nm,0.5s,baz=42,slow=4.3,SNR=6.4						

NIED ***15*** *08:21:00, 37°.80N×143°.50E, h8km, Mw3.7 Best double couple: M0 3.76000×10^14 NP1:φs 13.00000°, δ30.00000°, λ-87.00000°. NP2:φs 189.00000°, δ60.00000°, λ-92.00000°.*

IDC ***15*** *08:21:36.9±1.0, 37°.71N×143°.74E, h0km, mb3.5/6, mb1 3.7/10, mb1mx3.6/42, mbtmp3.6/10, ML3.7/4, MS2.7/3, Ms1 2.7/3, ms1mx2.3/37, Error ellipse: s-maj=26.9km s-min=18.4km az=101.0*

ISCJB ***15*** *08:21:38.2±0.7, 37°.82N±0°.04×143°.54E±0°.06, h19km, mb3.6/6, MS3.1/1, Error ellipse: s-maj=6.4km s-min=5.9km az=4.6*

JMA ***15*** *08:21:40.2±0.3, 37°.85N×143°.50E, h43km, M3.6*

ISC 15 08:21:39.8±0.9, 37°.79N±0°.05×143°.55E±0°.08, h19km, n23, σ1§74/31, mb3.7/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	1.86	292	P	Pn	08 22 09.8	-0.8
JIO				eS	Sn	08 22 32.1	-1.4
OFUJ	Ofunato	1.96	312	P	Pn	08 22 10.9	-1.1
OFUJ				S	Sn	08 22 33.5	-2.6
JMK	Ichinoseki	2.17	303	P	Pn	08 22 14.2	-0.7
JMK				eS	Sn	08 22 39.5	-1.7
JOM	Ohasama	2.44	314	P	Pn	08 22 17.8	-0.8
JOM				eS	Sn	08 22 46.3	-1.6
JFT	Otama	2.56	265	P	Pn	08 22 20.9	+0.6
JFT				eS	Sn	08 22 50.4	-0.6
JYK	Kaneyama	2.75	295	P	Pn	08 22 22.9	0.0
JYK				eS	Sn	08 22 54.6	-1.0
JANG	Nango	3.03	329	P	Pn	08 22 27.1	+0.4
JANG				eS	Sn	08 22 59.4	-3.0
JAG	Ashikaga	3.54	249	P	Pn	08 22 34.0	+0.2
JAG				eS	Sn	08 23 15.3	+0.1
JRY	Ryogami san	4.12	246	P	Pn	08 22 42.2	+0.4
JRY				eS	Sn	08 23 26.6	-2.9
MJAR	Matsushiro Arr	4.44	255	Pn	Pn	08 22 48.0	+1.8
	5.4nm,0.3s,baz=90,slow=16,SNR=42						
MAT	Matsushiro	4.44	255	P	Pn	08 22 48.0	+1.8
MAT				S	Sn	08 23 37.1	-0.3
JHJ	Hachijo jima 2	5.58	215	Pn	Pn	08 23 00.7	-1.1
	11nm,0.3s,baz=346,slow=17,SNR=12						
JHJ				Sn	Sn	08 23 59.6	-5.8
	20nm,0.3s,baz=117,slow=23,SNR=7.4						
ASAJ	Asahikawa	6.36	354	Pn	Pn	08 23 12.4	-0.1
	1.9nm,0.3s,baz=217,slow=9.3,SNR=14						
USRK	Ussuriysk Ar.	10.83	310	LR	LR	08 28 40.9	
	comp=Z,33nm,18.4s,baz=63,slow=39						
KSRS	Korea Array	12.40	273	LR	LR	08 29 12.5	
	comp=Z,14nm,18.4s,baz=120,slow=36						
KLR	Kul'dur	14.26	327	Pn	Pn	08 25 00.4	-0.2
	0.1nm,0.3s,baz=138,slow=12,SNR=3.7						
SONM	Songino Array	28.80	302	P	P	08 27 38.7	+2.2
	0.3nm,0.5s,baz=95,slow=8.7,SNR=2.6						
MKAR	Makanchi Array	45.16	302	P	P	08 29 56.2	+1.0
	0.7nm,0.7s,baz=94,slow=11,SNR=6.0						
ILAR	Eielson Array	47.94	33	P	P	08 30 16.9	+0.1
	0.5nm,0.7s,baz=272,slow=6.6,SNR=6.5						
AAK	Ala-Archa	51.63	298	LR	LR	08 53 52.0	
	comp=Z,18nm,18.2s,baz=122,slow=37						
WRA	Warramunga Arr	58.07	190	P	P	08 31 31.4	-0.4
	0.5nm,0.5s,baz=8.9,slow=7.0,SNR=10						
ASAR	Alice Springs	61.80	190	P	P	08 31 57.2	-0.1
	0.2nm,0.4s,baz=2.3,slow=6.4,SNR=8.1						
YKA	Yellowknife Ar	62.30	31	P	P	08 32 00.5	+0.2
	0.2nm,0.7s,baz=304,slow=7.0,SNR=3.7						

ISCJB ***15*** *08:22:05.6±1.1, 9°.85±0°.1×152°.0E±0°.2, h17km, mb3.7/6, MS3.3/1, Error ellipse: s-maj=27.5km s-min=17.4km az=32.0*

IDC ***15*** *08:22:05.2±1.6, 9°.66S×151°.85E, h0km, mb3.8/6, mb1 3.9/7, mb1mx3.7/35, mbtmp3.8/7, ML3.3/1, MS3.5/1, Ms1 3.5/1, ms1mx2.7/25, Error ellipse: s-maj=61.6km s-min=23.5km az=114.0*

ISC 15 08:22:07.8±1.6, 9°.7S±0°.2×151°.9E±0°.4, h17km, n9, σ0§50/8, mb3.9/6, D'Entrecasteaux Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	Port Moresby	4.64	273	Pn	Pn	08 23 20.7	+3.6
	1.4nm,0.3s,baz=342,slow=19,SNR=3.1						
WRA	Warramunga Arr	19.74	237	P	P	08 26 36.9	-0.1
	0.1nm,0.3s,baz=61,slow=11,SNR=14						
ASAR	Alice Springs	22.07	229	P	P	08 27 02.0	-0.1
	0.4nm,0.8s,baz=71,slow=9.8,SNR=8.3						
ASAR				LR	LR	08 35 38.3	
	comp=Z,119nm,18.9s,baz=69,slow=37						
STKA	Stephens Creek	24.04	202	P	P	08 27 21.9	-0.2
	1.8nm,0.6s,baz=13,slow=8.8,SNR=4.5						
SONM	Songino Array	69.98	329	P	P	08 33 18.2	-0.4
	0.4nm,0.6s,baz=130,slow=6.6,SNR=4.6						
MKAR	Makanchi Array	83.39	320	P	P	08 34 34.8	+0.5
	0.7nm,0.7s,baz=111,slow=6.6,SNR=6.3						
ZALV	Zalesovo Beam	84.69	327	P	P	08 34 40.3	-0.3
	2.1nm,0.7s,baz=122,slow=5.3,SNR=5.7						
ILAR	Eielson Array	87.02	22	P	P	08 34 51.9	-0.1
	0.6nm,0.7s,baz=261,slow=4.7,SNR=7.2						
TORD	Torodi Ar. Bea	150.56	280	PKPbc	PKPbc	08 42 00.7	+0.9
	1.5nm,0.8s,baz=69,slow=2.7,SNR=9.1						

NIED ***15*** *08:30:00, 27°.40N×143°.60E, h8km, Mw3.6 Best double couple: M0 2.94000×10^14 NP1:φs 279.00000°, δ71.00000°, λ-162.00000°. NP2:φs 183.00000°, δ73.00000°, λ-20.00000°.*

IDC ***15*** *08:30:10.4±0.8, 26°.96N×143°.83E, h0km, mb3.9/11, mb1 4.1/15, mb1mx3.9/45, mbtmp3.9/15, ML3.8/4, Error ellipse: s-maj=21.7km s-min=17.7km az=79.0*

NEIC ***15*** *08:30:12.1±0.5, 26°.98N×143°.75E, h10km, mb4.6/4, Error ellipse: s-maj=11.4km s-min=8.9km az=67.0*

JMA ***15*** *08:30:13.4±0.1, 27°.36N×143°.64E, h13km±5km, M4.5*

ISCJB ***15*** *08:30:15.9±0.7, 27°.35N±0°.05×143°.64E±0°.06, h33km, mb4.0/15, Error ellipse: s-maj=9.2km s-min=5.0km az=40.4*

ISC 15 08:30:16.5±0.8, 27°.16N±0°.07×143°.72E±0°.08, h35km, n32, σ1§31/37, mb4.1/15, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	Chichi jima	1.36	268	P	Pn	08 30 37.5	-1.6
CBIJ				eS	Sn	08 30 55.0	-1.0
CBIJ	Chichi jima	1.36	268	ePn	Pn	08 30 37.2	-1.9
CBIJ				Sn	Sn	08 30 54.0	-2.0
CBIJ				eSn	Sn	08 30 55.3	-0.6
JCJ	Chichijima	1.36	268	Pn	Pn	08 30 38.4	-0.7
	44nm,0.3s,baz=89,slow=21,SNR=15						
JCJ				Sn	Sn	08 30 54.0	-2.0
	163nm,0.3s,baz=270,slow=20,SNR=29						
JHHJ	Haha-jima-NKT	1.47	249	P	Pn	08 30 40.3	-0.2
JHHJ				eS	Sn	08 30 59.0	+0.4
JHJ	Hachijo jima 2	6.84	331	Pn	Pn	08 31 53.9	-0.5
	6.6nm,0.3s,baz=273,slow=22,SNR=6.5						
JHJ				Sn	Sn	08 33 08.5	-2.5
	8.3nm,0.3s,baz=108,slow=3.2,SNR=2.7						
BSO1	Boso 1	7.83	343	eS	Sn	08 33 31.3	-3.2
JOD2	Odawara 2	8.99	335	P	Pn	08 32 23.3	-0.6
JHU	Hanno	9.45	338	P	Pn	08 32 29.2	-1.0
JRY	Ryogami san	9.73	336	P	Pn	08 32 34.2	+0.1
JAG	Ashikaga	9.92	340	P	Pn	08 32 35.5	-1.1
MJAR	Matsushiro Arr	10.46	335	Pn	Pn	08 32 43.2	-0.7
	4.2nm,0.3s,baz=150,slow=7.4,SNR=37						
MAJO	Matsushiro	10.46	335	ePn	Pn	08 32 44.0	0.0
	17nm,0.3s						
MAJO				eSn	Sn	08 34 40.6	+0.7
MAT	Matsushiro	10.46	335	P	Pn	08 32 43.7	-0.3
KSRS	Korea Array	16.82	312	Pn	Pn	08 34 09.3	+0.1
	0.3nm,0.3s,baz=120,slow=11,SNR=8.5						
KSAR	Wonju Array Be	16.84	311	Pn	Pn	08 34 09.3	-0.1
USRK	Ussuriysk Ar.	19.45	334	P	Pn	08 34 41.2	-0.2
	0.5nm,0.3s,baz=151,slow=9.4,SNR=7.6						
KLR	Kul'dur	23.90	340	P	P	08 35 28.1	+1.2
	3.8nm,0.6s,baz=147,slow=7.5,SNR=16						
SONM	Songino Array	35.62	315	P	P	08 37 11.8	+0.8
	0.6nm,0.4s,baz=122,slow=7.9,SNR=5.2						
WRA	Warramunga Arr	47.70	192	P	P	08 38 47.0	-2.9
	2.1nm,0.8s,baz=11,slow=8.4,SNR=9.2						
ASAR	Alice Springs	51.41	192	P	P	08 39 15.8	-2.4
	0.3nm,0.7s,baz=5.5,slow=7.5,SNR=4.2						
MKAR	Makanchi Array	51.48	310	P	P	08 39 19.4	+0.9
	0.9nm,0.5s,baz=91,slow=8.7,SNR=11						
NRIK	Noril'sk	53.09	338	P	P	08 39 30.8	+0.7
	1.4nm,0.4s,baz=105,slow=9.1,SNR=4.0						
KURK	Kurchatov	53.91	314	eP	P	08 39 37.1	+0.7
	10nm,1.1s						
ILAR	Eielson Array	57.00	29	P	P	08 39 57.8	-0.6
	0.5nm,0.8s,baz=250,slow=5.5,SNR=5.5						
AAK	Ala-Archa	57.34	305	eP	P	08 39 53.9	-7.4
	5.7nm,1.0s						
KKAR	Karatay Array	60.15	306	eP	P	08 40 21.6	+0.8
	3.6nm,0.6s						
INK	Inuvik	62.40	25	P	P	08 40 35.6	+0.2
	0.4nm,0.6s,baz=273,slow=5.4,SNR=5.8						
ABKAR	Abkulak array	66.02	315	eP	P	08 41 00.3	+0.7
	0.8nm,0.5s						
YKA	Yellowknife Ar	71.43	29	P	P	08 41 32.9	0.0
	0.5nm,0.8s,baz=292,slow=5.9,SNR=5.4						
FINES	FINESS Array B	78.49	334	P	P	08 42 15.0	+1.3
	0.7nm,0.7s,baz=26,slow=4.9,SNR=4.3						
KBZ	Khabaz	78.96	313	P	P	08 42 17.5	+0.9
	0.8nm,0.4s,baz=199,slow=4.5,SNR=4.6						
LPAZ	La Paz	148.59	76	PKPbc	PKPbc	08 50 01.1	-0.1
	0.8nm,0.5s,baz=360,slow=5.6,SNR=5.6						

DHMR 15 08:31:56.8±1.8, 12°.03N×44°.47E, h9km±16km, ML4.4, 3C, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ADEN	Aden	0.90	34⇑	iP	Pg	08 32 13.9	-0.2
ADEN				i S	Sb	08 32 26.4	-0.2
ADEN				AML	AML	08 32 26.8	
	comp=E,11μm,0.3s						
TRBA	At Turbah	1.24	344⇑	iP	Pn	08 32 20.1	-0.6
TRBA				i S	Sn	08 32 37.4	-0.2
UDYN	Al 'Udayn	1.99	346	i P	Pn	08 32 32.0	+1.2
UDYN				i S	Sg	08 32 59.8	-1.0
BDHA	Al Bayda'	2.21	29⇑	iP	Pn	08 32 34.2	+0.2
BDHA				i S	Sg	08 33 06.5	-1.6
BDHA				AML	AML	08 33 19.0	
	comp=E,4μm,0.5s						
DHBB	Dhamar BB	2.53	358	i P	Pb	08 32 41.2	-1.4
DHBB				i S	Sb	08 33 14.3	+0.3

CASC ***15*** *08:34:47.9±14.0, 12°.76N×88°.06W, h85km±133km, MD4.8, ML4.8, MW4.9(GCMT)*

ISCJB ***15*** *08:34:48.3±0.3, 12°.58N±0°.03×88°.11W±0°.02, h70km±2km, mb4.7/180, Error ellipse: s-maj=5.5km s-min=2.5km az=38.2*

GCMT ***15*** *08:34:48.6±0.4, 12°.61N×88°.25W, h48km±1km, MW4.9/45, Moment Tensor Solution. s36,c45; s45,c56; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr 2.16±.14; Mθθ -2.21±.10; Mφφ 0.04±.12; Mrθ 0.30±.07; Mθφ 1.11±.10; Mφr -0.33±.08; Best double couple: M0 2.45700×10^16 NP1:φs 118.00000°, δ50.00000°, λ98.00000°. NP2: φs 286.00000°, δ41.00000°, λ80.00000°. Principal axes: T 2.2150, Plg82.0000°, Azm75.0000°; N 0.4780, Plg6.0000°, Azm293.0000°; P -2.6990, Plg5.0000°, Azm203.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

IDC ***15*** *08:34:48.1±0.7, 12°.77N×87°.88W, h55km±5km, mb4.4/24, mb1 4.6/26, mb1mx4.4/43, mbtmp4.6/26, MS3.6/26, Ms1 3.6/26, ms1mx3.6/36 Error ellipse: s-maj=18.4km s-min=9.4km az=58.0*

NEIC ***15*** *08:34:48.6±0.2, 12°.57N×88°.07W, mb4.8/163, MD5.0(SNET), Error ellipse: s-maj=5.2km s-min=3.2km az=217.0*

NEIC Felt [II] at San Salvador, El Salvador. Also felt at Usulutan.

ISC 15 08:34:48.6±0.4, 12°.59N±0°.04×88°.14W±0°.04, h59km±3km, h59km:pP-P, n725, σ1§30/758, mb4.8/180, MS3.6/24, 3C-6D, Off coast of central America

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LCY	Lacayo	0.84	350	↓iP	Pn	08 35 04.2	-0.5
SMIG	San Miguel	0.85	359	eP	Pn	08 35 04.2	-0.5
SMIG				eS	Sn	08 35 16.8	+0.4
SMIG				AML	AML	08 35 20.8	
	comp=Z,69μm,0.4s						
PACA	Pacayal	0.89	349	↓iP	Pn	08 35 04.9	-0.5
UCHI	Chinameca	0.94	348	i P	Pn	08 35 05.2	-0.7
UCHI				eS	Sn	08 35 17.8	-0.9
UCHI				AML	AML	08 35 19.8	
	comp=Z,46μm,0.2s						
SNVI	San Vicente	1.22	326	eP	Pn	08 35 08.7	-1.1
AIES	Las Flores	1.24	314	eP	Pn	08 35 08.4	-1.3
AIES				eS	Sn	08 35 23.2	-2.4
AIES				AML	AML	08 35 26.4	
	comp=Z,16μm,0.6s						
TEL3	Telica 3	1.27	91	eP	Pn	08 35 10.1	-0.1
TEL3				AML	AML	08 35 29.5	
	comp=Z,55μm,0.6s						
TELN	Telica	1.28	89	eP	Pn	08 35 10.3	-0.1
TELN				eS	Sn	08 35 27.0	+0.3
LFRS	El Faro	1.36	319	↓iP	Pn	08 35 10.6	-1.0
CNGN	Cerro Negro	1.41	93	eP	Pn	08 35 11.8	-0.4
CNGN			⇑	eP	Pn	08 35 12.3	+0.2
CNGN				AML	AML	08 35 33.4	
	comp=N,10μm,0.3s						
LBRS	Las Brisas	1.44	323	↓iP	Pn	08 35 12.2	-0.4
LFU	La Fuente	1.49	321	↓iP	Pn	08 35 12.8	-0.5
SNET	Serv Nac Est T	1.52	316	eP	Pn	08 35 12.5	-1.2
SNET				eP	Pn	08 35 12.6	-1.1
SNET				eS	Sn	08 35 30.8	-1.8
SNET				eS	Sn	08 35 31.0	-1.6
SNET				AML	AML	08 35 33.6	
	comp=Z,23μm,0.2s						
SNET				AML	AML	08 35 33.6	
	comp=Z,20μm,0.3s						
COLS	Colinas	1.56	314	eP	Pn	08 35 13.3	-0.9
COPN	Copaltepe	1.57	105	eP	Pn	08 35 13.9	-0.3
COPN				eP	Pn	08 35 14.0	-0.2
MOMN	Momotombo	1.57	96	eP	Pn	08 35 14.1	-0.3
BOQS	Boqueron	1.59	316⇑	eP	Pn	08 35 14.1	-0.6
BOQS				eP	Pn	08 35 15.0	+0.3
TGUH	Tegucigalpa,Un	1.69	30	eP	Pn	08 35 16.9	+1.1
TGUH	Tegucigalpa,Un	1.69	30	ePn	Pn	08 35 17.0	+1.1
APYN	Apoyeque	1.79	101	eP	Pn	08 35 17.4	+0.2
ESTN	Estel	1.80	73	eP	Pn	08 35 17.9	+0.4
ESTN				AML	AML	08 35 49.2	
	comp=N,3μm,0.7s						
CRUN	El Crucero	1.90	108	eP	Pn	08 35 19.5	+0.7
MGAN	Managua	1.90	103	eP	Pn	08 35 18.6	-0.2
MGAN				eP	Sn	08 35 35.7	-5.9
MGAN	Managua	1.90	103	ePn	Pn	08 35 19.4	+0.7
SBLS	San Blas	1.91	311	eP	Pn	08 35 18.5	-0.5
SNJE	San Jose	1.91	312	eP	Pn	08 35 18.5	-0.6
MONT	Ecomontaæa	1.94	311	eP	Pn	08 35 18.7	-0.8
RTR	El Retiro	1.96	312	eP	Pn	08 35 19.2	-0.5
MASN	Masaya	2.04	107	eP	Pn	08 35 20.1	-0.5
MASN				AML	AML	08 35 50.1	
	comp=E,7μm,0.7s						
RBDL	Robledal	2.13	315	eP	Pn	08 35 21.7	-0.4
CUS1	Cusmapa	2.20	307	eP	Pn	08 35 22.1	-0.8
BOAB	BOACO BROADBAN	2.42	93	eP	Pn	08 35 25.7	-0.1
JTS	JuntasAbangare	3.87	126⇑	iP	Pn	08 35 54.8	+9.0
JTS				eS	Sn	08 36 47.1	+17
JTS	JuntasAbangare	3.87	126	ePn	Pn	08 35 47.1	+1.4
JTS				eSn	Sn	08 36 28.3	-1.7
JCR	Jicaral	4.03	132	eP	Pn	08 35 50.3	+2.4
CGA2	Cerro Gallo 2	4.42	125	eP	Pn	08 35 56.6	+3.3
HDC	Heredia	4.71	123	eP	Pn	08 36 01.3	+3.9
HDC				eS	Sn	08 36 52.1	+1.3
HDC	Heredia	4.71	123	ePn	Pn	08 35 59.1	+1.7
QCR	Guepos	5.01	128	↓eP	Pn	08 36 03.8	+2.5
URSC	Urasca	5.08	122	eP	Pn	08 36 05.4	+3.0
BUS	Buena Vista	5.25	125	eP	Pn	08 36 08.2	+3.2
CCIG	Comitan	5.33	314	ePn	Pn	08 36 07.5	+1.6
BRU2	Volcan	6.55	125	eP	Pn	08 36 25.3	+2.8
BRU2				eS	Sn	08 37 35.1	-0.8
BRU	Baru	6.65	124	eP	Pn	08 36 28.9	+4.8
TEIG	Tepich	7.60	359	P	Pn	08 36 38.6	+1.9
	comp=E,12nm,0.3s,baz=89,slow=23,SNR=162						
TEIG	Tepich	7.60	359	ePn	Pn	08 36 38.1	+1.4
CMIG	Matias Romero	7.91	305	P	Pn	08 36 42.3	+1.3
	comp=E,3.8nm,0.3s,baz=131,slow=8.6,SNR=57						
BCIP	Isla Barro Col	8.84	112	ePn	Pn	08 36 53.0	-0.7
AZU	Azuero	9.09	121	eP	Pn	08 37 01.7	+4.5
AZU				eS	Sn	08 37 41.5	-57
TLIG	Tlapa	11.22	297	ePn	Pn	08 37 27.7	+1.4
MTDJ	Mount Denham	11.66	60	ePn	Pn	08 37 35.1	+2.7
SJCC	San Jacinto, C	12.99	101	eP	Pn	08 37 49.4	-1.2
HELC	Santa Helena	13.97	116	eP	P	08 38 09.2	-1.1
GTBY	Guantanamo Bay	14.48	58	ePn	Pn	08 38 09.3	-1.1
NORC	Norcasia	14.84	117	eP	P	08 38 18.8	-0.9
POPC	Popayan, Colom	15.12	130	eP	P	08 38 25.6	+2.7
OCAC	Ocana	15.20	105	eP	P	08 38 23.4	-0.5
CRUC	La Cruz	15.58	134	eP	P	08 38 27.9	-0.4
OTAV	Otavalo	15.59	141	ePn	Pn	08 38 24.0	-1.2
	comp=E,5.8nm,0.8s						
OTAV	Otavalo	15.59	141	eP	P	08 38 30.1	+1.7
ROSC	El Rosal	15.67	118	P	P	08 38 29.4	+0.1
	comp=E,0.7nm,0.3s,baz=67,slow=8.5,SNR=9.2						
ROSC				LR	LR	08 45 56.1	
	comp=E,82nm,20.2s,baz=323,slow=43						
ROSC	El Rosal	15.67	118	eP	P	08 38 29.6	+0.3
URIC	Uribia, Colomb	15.81	91	eP	Pn	08 38 26.5	-1.1
GRMC	Gramalote, San	15.85	106	eP	Pn	08 38 29.6	+1.3
RUSC	La Rusia	16.28	113	eP	P	08 38 37.5	+1.4
PAPH	Port-au-Prince	16.36	67	ePn	Pn	08 38 33.9	-0.6
	comp=E,45nm,0.6s						
FLOC	Florencia	16.51	130	eP	P	08 38 38.1	-0.2
035Z	Hargill	16.66	327	P	P	08 38 42.2	+2.4
	baz=144						
SJAC	San Juan de Ar	16.82	122	eP	P	08 38 41.5	-0.2
ZAIG	Zacatecas	17.06	308	ePn	P	08 38 47.5	+3.0
035A	Encino	17.06	328	P	P	08 38 47.2	+3.0
	baz=145						
034A	Hebbronville	17.47	327	P	P	08 38 50.7	+2.0
	baz=144,SNR=14						
SDV	Santo Domingo	17.59	100	P	Pn	08 38 48.5	-1.5
	comp=E,0.5nm,0.3s,baz=274,slow=4.7,SNR=6.7						
SDV				LR	LR	08 47 37.6	
	comp=E,142nm,19.4s,baz=298,slow=44						
SDV	Santo Domingo	17.59	100	ePn	P	08 38 50.5	+0.1
	comp=E,14nm,0.6s						
543A	St. Martinvill	17.75	349	S	S	08 42 14.6	+2.0
	baz=168						
934A	Benavides	17.82	329	P	P	08 38 55.3	+2.8
	baz=145						
737A	Port Lavaca	17.86	336	P	Pn	08 38 56.8	+3.8
	baz=153						
541A	Lake Charles	18.00	346	P	Pn	08 38 57.2	+2.5
	baz=164						
835A	Beeville	18.05	331	P	Pn	08 38 58.0	+2.7
	baz=148						
638A	Rosharon	18.07	339	P	Pn	08 38 58.0	+2.4
	baz=156						
447A	Lucedale	18.13	359	P	Pn	08 38 59.7	+3.5
	baz=178						
446A	Poplarville	18.15	357	P	Pn	08 39 01.0	+4.5
	baz=176						
933A	Laredo	18.22	327	P	Pn	08 38 58.6	+1.2
	baz=143,SNR=9.4						
834A	Tilden	18.26	329	P	Pn	08 39 00.1	+2.2
	baz=146,SNR=7.3						
736A	Circle Diamond	18.28	334	P	Pn	08 39 01.3	+3.2
	baz=151,SNR=8.6						
540A	Vidor	18.35	344	P	Pn	08 39 01.0	+2.1
	baz=162						
637A	Eagle Lake	18.41	337	P	Pn	08 39 03.5	+3.8
	baz=154,SNR=7.3						
442A	Mamou	18.47	348	P	Pn	08 39 07.8	+7.4
	baz=166						
735A	Kenedy	18.52	332	P	Pn	08 39 08.1	+7.1
	baz=149						
441A	De

baz=170
340A Bronson 19.47 345 P Pn 08 39 12.7 +0.3
baz=163
244A Avery, Jackson 19.50 354 P Pn 08 39 13.8 +1.1
baz=172,SNR=20
339A Huntington 19.57 343 P Pn 08 39 14.6 +1.0
baz=161,SNR=6.7
437A Phantom Ranch, 19.60 339 P Pn 08 39 15.0 +1.1
baz=156
VBMS Vicksburg 19.66 354 P Pn 08 39 15.8 +1.3
baz=173,SNR=14
VBMS Vicksburg 19.66 354 eP Pn 08 39 15.9 +1.3
comp=E,106nm,0.6s
633A Saathoff Ranch 19.67 330 P P 08 39 13.5 +0.6
baz=146,SNR=11
242A Grayson 19.73 350 P Pn 08 39 17.1 +1.7
baz=168,SNR=16
436A Wall Ranch, Ga 19.78 338 P Pn 08 39 17.0 +0.9
baz=154
338A Crockett 19.81 342 P Pn 08 39 17.0 +0.6
baz=159
534A Blanco 19.82 333 P P 08 39 15.2 +0.7
baz=149,SNR=30
241A Mo Tay, Goldon 19.84 348 P Pn 08 39 17.4 +0.8
baz=166,SNR=8.2
337A Centerville 19.96 340 P Pn 08 39 21.0 +2.9
baz=157,SNR=6.1
145A Houston Renfro 19.99 356 P Pn 08 39 18.5 +0.1
baz=175
147A Livingston 19.99 360 P Pn 08 39 19.0 +0.6
baz=179,SNR=15
NATX Nacogdoches 20.00 344 P Pn 08 39 18.4 -0.2
baz=161
NATX Nacogdoches 20.00 344 eP P 08 39 16.7 +0.3
comp=E,50nm,0.7s
240A Hunter Patters 20.04 346 P Pn 08 39 22.1 +3.1
baz=164
144A Alexander Plac 20.06 354 P Pn 08 39 20.2 +0.9
baz=173
435B Jarrell 20.10 336 P P 08 39 18.5 +1.0
baz=152
533A Kerrville 20.12 332 P P 08 39 18.6 +0.8
baz=148,SNR=26
239A Gary 20.20 344 P Pn 08 39 20.4 -0.4
baz=162
143A Socs Landing, 20.24 352 P Pn 08 39 21.1 -0.3
baz=171
336A Riesel 20.36 338 P Pn 08 39 22.3 -0.5
baz=155
238A Jacksonville 20.36 343 P Pn 08 39 23.9 +1.1
baz=160
LRAL Lakeview Retre 20.38 3 eP Pn 08 39 22.4 -0.7
comp=E,24nm,0.9s
141A Papa Simpson, 20.40 348 P Pn 08 39 23.1 -0.1
baz=166
434A Burnet 20.41 334 P P 08 39 22.0 +1.1
baz=150,SNR=16
335A Moody 20.48 337 P Pn 08 39 24.3 0.0
baz=153,SNR=5.7
Z47A Carrollton 20.52 0 P Pn 08 39 25.2 +0.6
baz=180,SNR=9.2
Z46A Louisville 20.52 358 P Pn 08 39 25.5 +0.8
baz=178,SNR=15
237A Washetta, Mont 20.57 341 P Pn 08 39 26.4 +1.1
baz=158,SNR=7.9
140A Cam and Jess, 20.57 347 P Pn 08 39 26.1 +0.8
baz=165
Z48A Northport 20.70 1 P Pn 08 39 26.2 -0.6
baz=181
Z44A Pea Ridge, Bel 20.70 355 P Pn 08 39 27.8 +1.0
baz=174,SNR=8.1
433A Art 20.72 332 P P 08 39 25.5 +1.3
baz=148,SNR=25
Z43A Armstrong Fami 20.72 353 P P 08 39 25.2 +1.1
baz=171
Z45A Winona 20.74 356 P Pn 08 39 26.8 -0.5
baz=176
139A Bunkhouse Ranc 20.80 345 P Pn 08 39 28.2 +0.2
baz=162
236A Katherine and 20.80 340 P P 08 39 26.2 +1.1
baz=156
JCT Junction City 20.82 331 P P 08 39 26.2 +0.9
baz=146,SNR=60
JCT Junction City 20.82 331 eP P 08 39 26.1 +0.8
comp=E,60nm,0.6s
334A Lometa 20.85 335 P P 08 39 26.5 +0.9
baz=151,SNR=37
Z42A Norrel Spur, H 20.88 351 P Pn 08 39 28.6 -0.4
baz=169
138A Matatall Enter 20.97 343 P Pn 08 39 29.2 -0.8
baz=161
Z41A Richland Creek 21.01 349 P P 08 39 30.0 +2.7
baz=167,SNR=12
WHTX Lake Whitney, 21.13 338 P P 08 39 32.1 +3.6
baz=154
WHTX Lake Whitney, 21.13 338 eP P 08 39 29.4 +0.8
comp=E,14nm,0.7s
Z40A Long Farm, Mag 21.13 348 P P 08 39 31.9 +3.3
baz=166,SNR=12
333A Richland Sprin 21.16 334 P P 08 39 29.9 +0.9
baz=149,SNR=40
GOGA Godfrey 21.16 11 eP P 08 39 30.9 +2.0
comp=E,31nm,0.7s
Y46A Houston 21.21 358 P P 08 39 31.2 +1.8
baz=178,SNR=32
Y45A Yeager Farm, C 21.22 357 P P 08 39 32.4 +2.9
baz=176
Y47A UCPARC, Winfie 21.22 1 P P 08 39 31.2 +1.7
baz=181,SNR=11
136A Ennis 21.24 340 P P 08 39 32.8 +3.1
baz=157,SNR=8.8
Z39A Irene McRaven, 21.29 346 P P 08 39 31.0 +0.7
baz=164
Y44A Strider, Charl 21.36 355 P P 08 39 31.8 +0.8
baz=174
Y43A Makayla and Ka 21.38 354 P P 08 39 34.4 +3.2
baz=172
234A Clairette 21.40 336 P P 08 39 33.2 +1.7
baz=152,SNR=41
Y42A Garnett, Star 21.41 352 P P 08 39 33.5 +1.9
baz=170
WLAR White Oak Lake 21.49 349 eP P 08 39 35.6 +3.2
comp=E,67nm,1.1s
Z38A Mt. Pleasant 21.50 344 P P 08 39 34.8 +2.3
baz=161
Y41A Eaglette Beard 21.58 350 P P 08 39 35.6 +2.2
baz=168
135A Vickery Place, 21.62 338 P P 08 39 34.6 +0.8
baz=155,SNR=7.4
233A Rising Star 21.72 335 P P 08 39 36.6 +1.7
baz=150,SNR=49
HPIG 21.77 314 eP P 08 39 37.0 +1.3
comp=E,7.1nm,0.7s
HPIG eS S 08 43 36.0 +2.5
Y40A Okolona 21.84 348 P P 08 39 38.4 +2.3
baz=166,SNR=20
OXF Oxford 21.86 357 eP P 08 39 37.3 +1.0
OXF epP pP 08 39 52.4 +2.9
ATAH Atahualpa 21.86 153 LR LR 08 47 21.7
comp=E,230nm,19.5s,baz=336,slow=34
SJG San Juan 21.90 73 P P 08 39 35.4 -1.6
comp=E,4.9nm,0.3s,baz=264,slow=8.3,SNR=4.2
SJG LR LR 08 48 23.3
comp=E,176nm,20.6s,baz=269,slow=38
Y39A Lockesburg 21.93 347 P P 08 39 38.8 +1.6
baz=164,SNR=7.2
Z36A Blue Ridge 21.94 341 P P 08 39 39.3 +2.0
baz=158,SNR=7.1
TXAR Lajitas Array 22.04 321 P P 08 39 39.8 +1.2
comp=E,25nm,0.5s,baz=141,slow=9.9,SNR=553
TXAR PcP PcP 08 43 33.8 -1.0
comp=E,2.1nm,0.8s,baz=141,slow=4.2,SNR=6.2
TXAR ScP ScP 08 47 09.1 +1.8
comp=E,0.8nm,0.8s,baz=145,slow=5.8,SNR=9.4
TXAR LR LR 08 49 02.5
comp=E,81nm,20.6s,baz=0.0,slow=39
Y38A Idabel 22.08 345 P P 08 39 39.8 +1.1
baz=163,SNR=6.3
X41A Kaden, Bauxite 22.17 350 P P 08 39 41.3 +1.6
baz=168,SNR=21
X40A Basin Creek Fa 22.21 350 P P 08 39 42.1 +1.9
baz=168,SNR=7.3
133A Hamilton Ranch 22.24 335 P P 08 39 41.4 +0.9
baz=151,SNR=39
Z35A Perchaven, San 22.26 340 P P 08 39 42.6 +1.8
baz=156
Y37A Hugo 22.36 343 P P 08 39 42.8 +1.0
baz=160,SNR=23

MIAR Mount Ida 22.41 348 P P 08 39 43.4 +1.1
baz=166,SNR=30
MIAR Mount Ida 22.41 348 eP P 08 39 43.2 +0.9
comp=E,34nm,0.8s
UALR University of 22.41 351 eP P 08 39 43.6 +1.2
comp=E,34nm,0.6s
Y36A Durant 22.48 342 P P 08 39 43.9 +0.9
baz=159,SNR=11
X39A Fountain Ranch 22.49 347 P P 08 39 44.3 +1.1
baz=164,SNR=19
Z34A Collier Ranch, 22.53 338 P P 08 39 44.7 +1.0
baz=154,SNR=9.9
ABTX Abilene, Hawle 22.56 334 P P 08 39 44.8 +0.7
baz=150,SNR=11
ABTX Abilene, Hawle 22.56 334 eP P 08 39 44.7 +0.7
comp=E,24nm,0.7s
SWET Sewanee 22.62 5 eP P 08 39 45.0 +0.4
comp=E,5.0nm,0.8s
Y35A Marietta 22.72 341 P P 08 39 47.2 +1.7
baz=157,SNR=17
Z33A Whitaker Ranch 22.78 336 P P 08 39 46.7 +0.5
baz=152,SNR=29
W41A Tony Mavity, V 22.79 351 P P 08 39 47.0 +0.7
baz=170,SNR=12
W41B Gary Mavity, V 22.79 351 P P 08 39 47.3 +1.0
baz=170,SNR=13
X38A Whitesboro 22.81 346 P P 08 39 48.3 +1.8
baz=163,SNR=17
X37A Clayton 22.87 345 P P 08 39 48.1 +1.0
baz=162,SNR=10.0
X301 Greenbrier Sit 22.88 351 eP P 08 39 47.8 +0.6
comp=E,18nm,0.8s
WHAR Wooly Hollow 22.91 351 eP P 08 39 48.2 +0.6
comp=E,30nm,0.8s
X201 Greenbrier Sit 22.93 351 eP P 08 39 48.2 +0.5
comp=E,27nm,0.8s
W40A Feuson Farm, 22.94 350 P P 08 39 49.1 +1.2
baz=168,SNR=11
CPCT Cooper Cave 23.00 8 eP P 08 39 49.1 +0.6
comp=E,12nm,0.9s
Y34A Reagan Ranch, 23.01 339 P P 08 39 49.5 +1.0
baz=155,SNR=5.4
STVI Saint Thomas 23.06 73 eP P 08 39 48.6 -0.6
comp=E,81nm,0.5s
W39A Magazine 23.08 348 P P 08 39 50.5 +1.2
baz=166,SNR=19
W38A Poteau 23.12 347 P P 08 39 50.8 +1.2
baz=164,SNR=16
X36A Centrahoma 23.12 343 P P 08 39 50.5 +0.9
baz=159,SNR=42
X35A Drake 23.15 341 P P 08 39 51.1 +1.1
baz=158,SNR=22
KMSC Kings Mountain 23.29 14 P P 08 39 52.7 +1.4
baz=197,SNR=28
KMSC Kings Mountain 23.29 14 eP P 08 39 52.6 +1.4
comp=E,52nm,0.6s
V42A Cord 23.30 353 P P 08 39 51.4 0.0
baz=172
TKL Tuckaleechee C 23.31 9 P P 08 39 51.1 -0.4
comp=E,29nm,0.7s,baz=182,slow=6.7,SNR=36
TKL LR LR 08 49 41.5
comp=E,93nm,21.6s,baz=196,slow=39
Y33A Hilltop Ranch, 23.36 338 P P 08 39 52.8 +0.8
baz=153,SNR=6.3
V41A Mountainview 23.38 352 P P 08 39 52.6 +0.5
baz=170
W37B Quinton 23.40 345 P P 08 39 53.1 +0.7
baz=162,SNR=30
SLBS Sierra La Lagu 23.44 301 eP P 08 39 59.3 +6.4
comp=E,15nm,0.8s
WVT Waverly 23.44 1 eP P 08 39 52.4 -0.3
comp=E,8.9nm,0.8s
V40A Witts Springs 23.50 350 P P 08 39 53.7 +0.4
baz=168,SNR=60
W36A Wetumka 23.62 343 P P 08 39 54.6 +0.2
baz=160,SNR=16
X34A Smith Ranch, M 23.62 340 P P 08 39 55.6 +1.3
baz=156,SNR=39
V39A Pettigrew 23.68 349 P P 08 39 56.0 +1.0
baz=166,SNR=72
X33A Lawton 23.80 338 P P 08 39 56.5 +0.5
baz=154,SNR=43
W35A Tecumseh 23.82 342 P P 08 39 56.8 +0.6
baz=158,SNR=13
V38A Canehill 23.85 347 P P 08 39 57.1 +0.6
baz=165,SNR=12
LPIG La Paz 23.91 302 LR LR 08 50 11.1
comp=E,112nm,18.8s,baz=21,slow=38
X32A Elmer 23.98 337 P P 08 39 58.6 +1.0
baz=152,SNR=23
PARMO Parma 24.02 357 eP P 08 39 58.7 +0.7
V37A Hulbert 24.04 346 P P 08 39 58.5 +0.4
baz=163,SNR=25
U40A Yellville 24.04 351 P P 08 39 58.7 +0.5
baz=168,SNR=40
WMOK Wichita Mounta 24.07 338 P P 08 39 59.2 +0.6
baz=154
WMOK Wichita Mounta 24.07 338 eP P 08 39 58.3 -0.2
comp=E,7.8nm,0.5s
V36A Jenks 24.15 344 P P 08 39 59.9 +0.7
baz=161
HHAR Hobbs 24.16 348 eP P 08 39 59.8 +0.4
comp=E,35nm,0.6s
PBMO Poplar Bluff 24.18 356 eP P 08 39 59.3 -0.1
comp=E,19nm,0.8s
W34A Bridge Creek, 24.18 340 P P 08 40 00.3 +0.9
baz=156,SNR=30
W34A Bridge Creek, 24.18 340 eP P 08 39 60.0 +0.5
comp=E,90nm,0.6s
TUL1 Leonard 24.23 345 P P 08 40 00.2 +0.3
baz=162,SNR=10.0
TUL1 Leonard 24.23 345 eP P 08 39 59.7 -0.2
comp=E,28nm,0.9s
W33A Caddo, Fort Co 24.33 339 P P 08 40 01.9 +1.0
baz=155,SNR=14
V35A Meyer Ranch, C 24.37 343 P P 08 40 01.2 -0.1
baz=159,SNR=16
U38A Gravette 24.41 348 P P 08 40 02.2 +0.7
baz=165,SNR=11
U37A Salina 24.53 346 P P 08 40 03.1 +0.5
baz=163,SNR=18
T41A Mountain View 24.57 353 P P 08 40 03.2 +0.2
baz=171
W32A Sentinel 24.59 338 P P 08 40 03.6 +0.4
baz=153,SNR=21
V34A Guthrie 24.64 341 P P 08 40 03.8 +0.1
baz=158
V34A Guthrie 24.64 341 eP P 08 40 03.8 +0.1
V34A epP pP 08 40 17.8 -0.6
U36A Oologah 24.67 345 P P 08 40 04.1 +0.2
baz=162,SNR=5.2
MNTX Cornudas Mount 24.77 323 P P 08 40 05.4 +0.5
baz=136,SNR=27
MNTX Cornudas Mount 24.77 323 eP P 08 40 05.1 +0.2
comp=E,12nm,0.8s
T40A Mansfield 24.77 352 P P 08 40 05.5 +0.6
baz=170,SNR=15
T39A Clever 24.78 350 P P 08 40 05.4 +0.4
baz=168,SNR=19
V33A Lossen Ranch, 24.88 340 P P 08 40 06.1 +0.2
baz=156,SNR=17
U35A Pawnee 24.91 343 P P 08 40 06.4 +0.3
baz=160,SNR=7.5
T38A Diamond 24.96 348 P P 08 40 07.3 +0.7
baz=166,SNR=24
SIUC Southern Illin 25.04 358 eP P 08 40 07.5 +0.2
comp=E,31nm,0.7s
V32A Arapaho 25.05 339 P P 08 40 09.0 +1.6
baz=154,SNR=5.8
MSTX Muleshoe 25.11 330 P P 08 40 08.4 +0.3
baz=144,SNR=37
MSTX Muleshoe 25.11 330 eP P 08 40 08.4 +0.3
comp=E,65nm,0.7s
MSTX ePcP PcP 08 43 42.6 +1.3
T37A Cheneyville 18 25.18 347 P P 08 40 08.9 +0.4
baz=164,SNR=24
U34A Anderson Ranch 25.21 342 P P 08 40 08.8 0.0
baz=158,SNR=13
U34A Anderson Ranch 25.21 342 eP P 08 40 08.8 0.0
comp=E,42nm,0.6s
S40A Lebanon 25.21 352 P P 08 40 09.1 +0.3
baz=170,SNR=19
USIN University of 25.28 1 eP P 08 40 09.4 0.0
comp=E,17nm,0.7s
T36A Boggs Farm, Ca 25.34 345 P P 08 40 09.9 -0.1
baz=162,SNR=20
T35A Sooner Cattle 25.36 344 P P 08 40 12.8 +2.6
baz=161,SNR=5.8

AMTX Amarillo 25.37 333 P P 08 40 10.9 +0.5
baz=148
AMTX Amarillo 25.37 333 eP P 08 40 10.6 +0.2
comp=E,36nm,0.7s
U33A Lingo Farm, Me 25.38 341 P P 08 40 10.5 +0.1
baz=157,SNR=10.0
S39A Bolivar 25.42 350 P P 08 40 10.9 +0.2
baz=168,SNR=60
S38A Stockton 25.47 349 P P 08 40 11.8 +0.7
baz=167,SNR=8.4
BLA Blacksburg 25.48 14 eP P 08 40 12.4 +1.1
comp=E,23nm,0.8s
WCI Wyandotte Cave 25.59 3 eP P 08 40 12.2 0.0
comp=E,28nm,0.6s
VWCC Virginia Weste 25.62 15 eP P 08 40 13.3 +0.7
U32A Winter Ranch, 25.63 339 P P 08 40 13.0 +0.3
baz=155,SNR=7.8
T34A McClaskey Farm 25.65 343 P P 08 40 12.9 +0.1
baz=159,SNR=8.3
S37A Fort Scott 25.77 348 P P 08 40 14.4 +0.5
baz=165,SNR=25
R40A Maddies Statio 25.86 353 P P 08 40 14.6 -0.1
baz=171,SNR=12
S36A Lake Cedric, C 25.90 346 P P 08 40 15.1 0.0
baz=163,SNR=9.6
R39A Chumby, Stover 25.99 351 P P 08 40 15.8 -0.1
baz=169,SNR=28
R38A Fenwick Farm, 26.01 350 P P 08 40 15.9 -0.2
baz=167,SNR=14
T33A Patterson Ranc 26.02 341 P P 08 40 15.9 -0.3
baz=157
S35A Otter Creek Ra 26.04 345 P P 08 40 16.3 0.0
baz=162,SNR=12
OLIL Olney 26.04 0 eP P 08 40 16.1 -0.2
comp=E,15nm,0.8s
S34A Willow Spring 26.26 344 P P 08 40 18.6 +0.2
baz=160
Q42A Golden Eagle 26.30 356 P P 08 40 18.6 -0.1
baz=175
R37A Teagarden Farm 26.30 348 P P 08 40 19.4 +0.7
baz=165
T32A Huddler Ranch, 26.33 340 P P 08 40 19.4 +0.4
baz=156
S33A Kaszmaul Farm, 26.42 342 P P 08 40 19.6 -0.1
baz=158,SNR=5.4
R36A Gordon, Harris 26.46 347 P P 08 40 20.0 -0.1
baz=164
BLO Bloomington 26.52 3 eP P 08 40 20.4 -0.2
comp=E,14nm,0.9s
Q40A Laux Farm, Aux 26.53 353 P P 08 40 20.4 -0.4
baz=171,SNR=8.2
Q39A Willow Grove F 26.70 352 P P 08 40 22.1 -0.1
baz=169,SNR=15
Q38A Cooks Store, C 26.71 350 P P 08 40 22.6 +0.3
baz=168,SNR=17
Q37A Longview Farm, 26.77 349 P P 08 40 22.8 -0.2
baz=166,SNR=7.2
121A Cookes Peak, D 26.80 321 P P 08 40 25.0 +1.5
baz=133
121A Cookes Peak, D 26.80 321 eP P 08 40 25.0 +1.5
comp=E,9.7nm,0.7s
S32A Newby Ranch, P 26.80 341 P P 08 40 24.1 +0.9
baz=156
R34A Isabella, Hill 26.86 344 P P 08 40 24.3 +0.5
baz=160
NNA Nana 26.87 155 LR LR 08 49 21.3
comp=E,103nm,21.6s,baz=306,slow=32
SRIG Santa Rosalia 26.91 307 eP P 08 40 26.1 +1.8
comp=E,20nm,0.7s
319A Douglas 27.00 317 eP P 08 40 27.5 +2.3
comp=E,9.1nm,1.0s
P40A Paris 27.06 353 P P 08 40 25.6 +0.1
baz=172
Q36A Arnold C. Orve 27.06 347 P P 08 40 26.1 +0.6
baz=164
R33A Olander Ranch, 27.07 343 P P 08 40 25.9 +0.2
baz=158,SNR=7.0
Q35A Mercer Eighty, 27.09 346 P P 08 40 25.9 +0.2
baz=163
P39B Salisbury 27.10 352 P P 08 40 25.9 0.0
baz=170
CBN Corbin Frederi 27.26 19 eP P 08 40 28.5 +1.2
BNM Barren Site 27.27 325 eP P 08 40 30.4 +2.7
P38A Dawn 27.35 351 P P 08 40 28.0 -0.1
baz=168,SNR=14
Q34A Chapman 27.37 345 P P 08 40 28.3 0.0
baz=161
LPM Los Pinos Moun 27.39 325 eP P 08 40 31.9 +3.1
R32A Long Quarter, 27.40 342 P P 08 40 28.6 0.0
baz=157,SNR=6.1
P37A Lathrop 27.45 350 P P 08 40 28.6 -0.4
baz=167,SNR=8.2
KSU1 Kansas State U 27.45 346 P P 08 40 28.9 -0.1
baz=162
KSU1 Kansas State U 27.45 346 eP P 08 40 29.1 +0.1
KSU1 epP pP 08 40 42.2 -1.4
O40A La Belle 27.62 354 P P 08 40 30.4 -0.1
baz=172
P36A Good Intent, A 27.64 348 P P 08 40 31.2 +0.5
baz=165,SNR=7.7
Q33A Connelly Farm, 27.67 344 P P 08 40 31.0 -0.1
baz=159,SNR=7.2
SFIN Lafayette 27.70 2 P P 08 40 30.5 -0.6
baz=182
P35A Duane Minner, 27.72 347 P P 08 40 31.6 +0.1
baz=163,SNR=11
LAZ Ladron 27.74 325 eP P 08 40 34.9 +3.0
ANMO Albuquerque 27.77 326 P P 08 40 33.4 +1.2
comp=E,2.4nm,0.6s,baz=139,slow=8.8,SNR=13
ANMO PcP PcP 08 43 47.8 +0.3
comp=E,2.2nm,0.5s,baz=88,slow=2.3,SNR=5.9
ANMO LR LR 08 53 05.9
comp=E,81nm,22.0s,baz=123,slow=40
ANMO Albuquerque 27.77 326 P P 08 40 33.9 +1.7
baz=139
ANMO Albuquerque 27.77 326 eP P 08 40 34.3 +2.1
comp=E,3.6nm,0.8s
ANMO ePcP PcP 08 43 49.1 +1.6
O38A Galt 27.83 351 P P 08 40 32.1 -0.3
baz=169,SNR=5.9
O39A Kirksville 27.83 353 P P 08 40 32.0 -0.4
baz=171,SNR=6.4
Q32A Meitler Ranch, 27.88 342 P P 08 40 32.9 +0.1
baz=158,SNR=8.3
HDIL Hopedale 27.88 358 P P 08 40 32.4 -0.5
baz=178
HDIL Hopedale 27.88 358 eP P 08 40 32.3 -0.5
comp=E,14nm,0.5s
ACSO Alum Creek Sta 27.91 8 eP P 08 40 33.3 +0.2
comp=E,27nm,0.8s
P34A Walnut Farm, R 27.93 346 P P 08 40 33.4 +0.1
baz=162,SNR=7.6
MCWV Mont Chateau 27.94 14 eP P 08 40 33.9 +0.5
comp=E,16nm,0.6s
O37A Wolven Farm, M 27.98 350 P P 08 40 33.5 -0.1
baz=167,SNR=7.1
CBKS Cedar Bluff 28.08 341 P P 08 40 35.2 +0.5
baz=155
O36A Bolckow 28.09 349 P P 08 40 34.5 -0.2
baz=166
O35A Humboldt 28.41 347 P P 08 40 36.6 -0.9
baz=164
N39A Derby Farms, D 28.44 353 P P 08 40 37.7 -0.1
baz=171,SNR=7.1
N38A Joes South For 28.45 352 P P 08 40 37.8 -0.1
baz=169,SNR=10.0
T25A Trinidad 28.47 332 P P 08 40 40.1 +1.7
baz=145,SNR=30
T25A Trinidad 28.47 332 eP P 08 40 39.5 +1.2
comp=E,18nm,0.7s
P32A Huiting Farm, 28.47 343 P P 08 40 38.6 +0.4
baz=158,SNR=11
O34A Beatrice 28.50 346 P P 08 40 38.5 +0.1
baz=162,SNR=15
SDMD Soldier's Deli 28.53 19 eP P 08 40 39.4 +0.8
comp=E,11nm,0.7s
N37A Lee Faris, Mou 28.56 350 P P 08 40 39.1 +0.1
baz=167,SNR=20
TUC Tucson 28.58 317 P P 08 40 40.2 +0.9
baz=128
TUC Tucson 28.58 317 eP P 08 40 45.4 +6.2
comp=E,8.9nm,1.1s
TUC ePcP PcP 08 43 51.4 +2.0
O33A Hebron 28.62 345 P P 08 40 40.0 +0.5
baz=160,SNR=6.0
O56A Blue Knob Stat 28.83 15 P P 08 40 41.5 +0.1
baz=200
N35A Tabor 28.92 348 P P 08 40 42.1 0.0

baz=165,SNR=5.5
O32A **Brockman Farm,** 28.98 344 P P 08 40 43.0 +0.4
baz=159
M38A **Pleasantville** 29.06 352 P P 08 40 42.9 -0.4
baz=170,SNR=7.6
N34A **Lincoln** 29.08 347 P P 08 40 43.6 +0.1
baz=163
BBSR **BB Station** 29.15 44 eP P 08 40 44.3 +0.1
comp=E,24nm,0.8s
N54A **Moraine State** 29.16 13 P P 08 40 44.5 +0.3
baz=196,SNR=12
M37A **Trindle Farm,** 29.17 351 P P 08 40 44.4 +0.1
baz=168,SNR=9.0
O31A **Woolen Ranch,** 29.17 342 P P 08 40 44.7 +0.3
baz=157
N33A **J Bar K, Exete** 29.21 345 P P 08 40 45.3 +0.6
baz=161
MVL **Millersville** 29.22 19 eP P 08 40 45.2 +0.5
comp=E,8.0nm,0.7s
KSCO **Kaye Shedlock'** 29.29 337 P P 08 40 46.5 +0.9
baz=150,SNR=8.7
KSCO **Kaye Shedlock'** 29.29 337 eP P 08 40 46.5 +0.9
comp=E,22nm,0.7s
M36A **Felix, Anita** 29.34 350 P P 08 40 45.8 0.0
baz=167,SNR=27
SSPA **Standing Stone** 29.36 16 eP P 08 40 46.2 +0.3
comp=E,14nm,0.6s
N32A **Stulken Farm,** 29.45 344 P P 08 40 47.4 +0.6
baz=160
SDCO **Great Sand Dun** 29.46 331 P P 08 40 48.5 +1.2
baz=144,SNR=16
SDCO **Great Sand Dun** 29.46 331 eP P 08 40 48.7 +1.4
comp=E,7.6nm,0.6s
SDCO ePcP PcP 08 43 53.2 +1.3
M35A **Neola** 29.52 348 P P 08 40 47.7 +0.3
baz=165,SNR=17
SCIA **State Center** 29.54 352 eP P 08 40 47.8 +0.2
comp=E,12nm,0.6s
M34A **Aspy Farms, Fr** 29.74 347 P P 08 40 50.3 +1.0
baz=163
L38A **Oak Wood Farm,** 29.74 353 P P 08 40 49.2 -0.1
baz=170,SNR=11
M54A **Oil Creek Stat** 29.75 13 P P 08 40 49.8 +0.4
baz=197,SNR=11
214A **Organ Pipe Nat** 29.75 314 P P 08 40 50.1 +0.5
baz=125
214A **Organ Pipe Nat** 29.75 314 eP P 08 40 50.2 +0.5
L37A **Phoenix Point,** 29.83 352 P P 08 40 50.1 -0.1
baz=169
AAM **Ann Arbor** 29.86 7 eP P 08 40 50.1 -0.3
comp=E,24nm,0.6s
M33A **Taylor Creek F** 29.94 346 P P 08 40 51.3 +0.2
baz=162
L36A **Harm Buss Farm** 29.95 350 P P 08 40 51.2 +0.1
baz=167,SNR=9.7
BGNE **Belgrade** 30.02 345 P P 08 40 52.0 +0.2
baz=160
BGNE **Belgrade** 30.02 345 eP P 08 40 52.0 +0.2
comp=E,34nm,0.7s
LUPA **Lehigh Univers** 30.08 20 eP P 08 40 53.5 +1.2
comp=E,27nm,0.6s
S22A **4UR Ranch, Cre** 30.11 330 P P 08 40 54.6 +1.6
baz=141,SNR=27
S22A **4UR Ranch, Cre** 30.11 330 eP P 08 40 54.3 +1.3
comp=E,14nm,0.9s
S22A ePcP PcP 08 43 55.3 +1.8
L35A **Bielow Farm, R** 30.11 349 P P 08 40 52.4 -0.2
baz=165,SNR=9.3
L34A **Svendsen Farm,** 30.14 348 P P 08 40 52.5 -0.4
baz=164
M31A **Lambtecht Ranc** 30.18 344 P P 08 40 54.3 +1.0
baz=158
K38A **Parkersburg** 30.22 353 P P 08 40 53.1 -0.4
baz=171,SNR=5.7
N59A **State Game Lan** 30.24 19 P P 08 40 55.0 +1.2
baz=204,SNR=15
JFWS **Jewell Farm** 30.27 357 eP P 08 40 53.8 -0.2
comp=E,90nm,1.9s
X16A **Lo Mia Camp, P** 30.33 320 eP P 08 40 56.2 +1.3
comp=E,4.3nm,0.7s
X16A ePcP PcP 08 43 56.1 +2.1
BRNJ **Basking Ridge** 30.42 21 eP P 08 40 55.8 +0.5
comp=E,38nm,0.7s
K36A **Gilmore City** 30.44 351 P P 08 40 55.5 0.0
baz=168
K37A **Belmond** 30.45 352 P P 08 40 55.1 -0.4
baz=169,SNR=16
L33A **Hoskins** 30.52 347 P P 08 40 56.6 +0.3
baz=162
L32A **Elgin** 30.54 345 P P 08 40 57.0 +0.5
baz=161
MVCO **Mesa Verde** 30.55 327 P P 08 40 58.3 +1.4
baz=138,SNR=6.5
MVCO **Mesa Verde** 30.55 327 eP P 08 40 58.3 +1.4
comp=E,5.4nm,0.6s
MVCO ePcP PcP 08 43 56.4 +1.8
K35A **Storm Lake** 30.65 350 P P 08 40 58.0 +0.6
baz=166
ODNJ **Ogdensburg** 30.77 20 eP P 08 40 58.5 +0.1
comp=E,11nm,0.6s
K34A **Le Mars** 30.77 348 P P 08 40 58.4 -0.1
baz=165,SNR=9.0
J38A **Wedel Dairy, R** 30.85 354 P P 08 40 58.6 -0.5
baz=172
K33A **Hardington** 30.88 347 P P 08 40 58.8 -0.7
baz=163
L31A **Butterfield Fa** 30.91 344 P P 08 41 00.5 +0.8
baz=159,SNR=6.2
PTGA **Pitinga** 30.93 113 eP P 08 41 01.0 +0.8
comp=E,4.9nm,0.8s
PAL **Palisades** 30.94 21 eP P 08 41 00.4 +0.5
comp=E,22nm,0.7s
J37A **Redenius Farm,** 30.97 352 P P 08 41 00.4 +0.3
baz=170,SNR=10
WUAZ **Wupatki** 31.01 321 P P 08 41 00.8 0.0
baz=132
WUAZ **Wupatki** 31.01 321 eP P 08 41 02.1 +1.3
comp=E,6.1nm,1.0s
Y14A **Wickenburg** 31.05 317 eP P 08 41 02.0 +0.9
comp=E,7.7nm,0.6s
Y14A ePcP PcP 08 43 57.3 +1.6
J36A **Seneca 1, Swea** 31.10 351 P P 08 41 01.0 -0.3
baz=168,SNR=5.4
K32A **Verdigre** 31.15 346 P P 08 41 01.9 +0.1
baz=161,SNR=10
ISCO **Idaho Springs** 31.19 333 P P 08 41 03.7 +1.1
baz=146,SNR=20
ISCO **Idaho Springs** 31.19 333 eP P 08 41 03.6 +1.1
comp=E,8.3nm,0.8s
PV01 **Paradox Valley** 31.28 328 eP P 08 41 04.7 +1.4
PV01 ePcP PcP 08 43 58.1 +1.6
SMCO **Snowmass** 31.30 331 eP P 08 41 04.9 +1.3
comp=E,11nm,0.8s
SMCO ePcP PcP 08 43 58.4 +1.6
K31A **O'Neill** 31.31 345 P P 08 41 04.0 +0.8
baz=160,SNR=8.1
PV05 **Paradox Valley** 31.52 327 eP P 08 41 06.2 +0.8
PV05 ePcP PcP 08 43 58.3 +1.2
I38A **Scanlan Farm,** 31.55 354 P P 08 41 04.8 -0.4
baz=172,SNR=5.9
K30A **Basset** 31.59 344 P P 08 41 06.5 +0.8
baz=158,SNR=16
I37A **Lemond, Waseca** 31.64 353 P P 08 41 05.7 -0.3
baz=170
PV04 **Paradox Valley** 31.65 328 eP P 08 41 07.5 +1.1
PV04 epP pP 08 41 22.4 +1.2
PV10 **Paradox Valley** 31.71 328 eP P 08 41 07.5 +0.4
PV10 ePcP PcP 08 43 59.1 +1.4
I35A **Creekview Farm** 31.71 351 P P 08 41 06.5 -0.2
baz=167
I36A **Fitzsimmons Fa** 31.73 352 P P 08 41 06.6 -0.2
baz=169,SNR=5.8
J32A **Parkston** 31.80 347 P P 08 41 06.9 -0.6
baz=162,SNR=14
PV09 **Paradox Valley** 31.85 328 eP P 08 41 09.7 +1.4
PV09 ePcP PcP 08 44 00.6 +2.5
ECSD **EROS Data Cent** 31.88 348 P P 08 41 07.6 -0.6
baz=164,SNR=14
ECSD **EROS Data Cent** 31.88 348 eP P 08 41 07.4 -0.9
comp=E,13nm,1.0s
PDMCI **Parker Dam,Lak** 32.02 317 P P 08 41 11.4 +1.9
baz=126
H37A **Dierke Farm, C** 32.14 354 P P 08 41 11.4 +0.9
baz=171
J30A **Dallas** 32.16 344 P P 08 41 11.0 +0.3
baz=159,SNR=8.0
N23A **Red Feather La** 32.23 334 P P 08 41 12.9 +1.2
baz=146,SNR=8.2
N23A **Red Feather La** 32.23 334 eP P 08 41 12.5 +0.8
comp=E,6.1nm,0.7s
H36A **Jessenland, He** 32.26 352 P P 08 41 11.9 +0.3
baz=169,SNR=8.0
W13A **Hualapai Mount** 32.33 318 eP P 08 41 13.3 +0.9
comp=E,3.0nm,0.8s
W13A epP pP 08 41 28.7 +1.4
W13A ePcP PcP 08 44 01.3 +1.9
PHWY **Pilot Hill** 32.37 335 eP P 08 41 13.4 +0.5
comp=E,8.1nm,0.6s
PHWY epP pP 08 41 28.6 +0.9
IKP **In-Ko-Pah, Jac** 32.47 313 P P 08 41 13.6 0.0
baz=122
H35A **Sunnyside Ranc** 32.51 351 P P 08 41 13.3 -0.4
baz=168,SNR=23
BC3 **Big Chuckawall** 32.54 315 P P 08 41 16.1 +1.8
baz=124
TRY **Troy** 32.55 20 eP P 08 41 15.1 +1.0
comp=E,19nm,0.7s
BRYW **Bryant College** 32.61 23 eP P 08 41 14.8 +0.2
comp=E,26nm,0.7s
IRM **Iron Mountain** 32.61 316 P P 08 41 16.6 +1.8
baz=125
QUA2 **Belchertown** 32.61 22 eP P 08 41 14.9 +0.3
comp=E,9.5nm,0.6s
H34A **Spellman Lake,** 32.63 350 P P 08 41 14.7 -0.1
baz=166
O20A **White River Ci** 32.66 331 P P 08 41 17.0 +1.7
baz=142,SNR=34
O20A **White River Ci** 32.66 331 eP P 08 41 16.9 +1.7
comp=E,36nm,0.8s
O20A ePcP PcP 08 44 01.4 +1.2
I30A **Oacoma** 32.69 345 P P 08 41 15.4 +0.1
baz=159,SNR=16
SPMN **Marine on St.** 32.77 354 P P 08 41 15.2 -0.7
baz=172,SNR=13
SPMN **Marine on St.** 32.77 354 eP P 08 41 14.9 -1.0
comp=E,20nm,0.8s
H32A **Carlson Farm,** 32.79 348 P P 08 41 15.6 -0.6
baz=163
H33A **Prehn Over Nor** 32.82 349 P P 08 41 15.9 -0.5
baz=164
MONP2 **Monument Peak** 32.82 313 P P 08 41 15.4 -1.4
baz=122
KNB **Kanab** 32.88 322 eP P 08 41 19.0 +1.8
comp=E,4.3nm,1.0s
G36A **St. Michael** 32.89 353 P P 08 41 16.4 -0.6
baz=170,SNR=6.4
G35A **Watkins** 32.97 352 P P 08 41 16.8 -0.9
baz=168
SADO **Sadowa** 32.98 12 P P 08 41 16.3 -1.5
comp=E,14nm,0.5s,baz=216,slow=8.9,SNR=26
SADO **Sadowa** 32.98 12 eP P 08 41 17.6 -0.3
comp=E,16nm,0.7s
I29A **Vivian Onida** 33.02 344 P P 08 41 18.5 +0.3
baz=158,SNR=16
SRU **San Rafael Swe** 33.03 327 eP P 08 41 19.2 +0.7
comp=E,24nm,1.6s
SUSD **Miller** 33.07 346 P P 08 41 18.4 -0.3
baz=160
LCMT **Little Creek M** 33.13 322 eP P 08 41 21.1 +1.7
comp=E,2.8nm,0.7s
ACCN **Adirondack Com** 33.13 19 eP P 08 41 19.4 +0.2
comp=E,9.9nm,1.0s
G34A **Benson** 33.17 350 P P 08 41 19.0 -0.4
baz=165,SNR=11
MTPU **Mount Pierson** 33.19 324 eP P 08 41 21.6 +1.4
comp=E,6.0nm,0.6s
J26A **Sides Ranch, S** 33.22 340 P P 08 41 21.2 +1.2
baz=153
Q16A **Castle Valley** 33.24 326 eP P 08 41 21.7 +1.3
comp=E,3.6nm,0.7s
I28A **Midland** 33.25 343 P P 08 41 20.8 +0.7
baz=156,SNR=20
G33A **Ortonville** 33.26 349 P P 08 41 19.6 -0.6
baz=165,SNR=22
P18A **Preston Nutter** 33.27 328 eP P 08 41 21.6 +0.9
comp=E,12nm,1.1s
GMRC **Granite Mounta** 33.32 316 P P 08 41 21.7 +0.6
baz=125
P17A **Butcher Ranch,** 33.41 327 eP P 08 41 22.9 +1.0
comp=E,12nm,0.7s
P17A epP pP 08 41 37.9 +1.2
COWI **Conover** 33.41 359 eP P 08 41 20.3 -1.3
comp=E,14nm,0.7s
F36A **Milaca** 33.48 353 P P 08 41 21.3 -0.9
baz=170,SNR=7.6
MSU **Marysvale** 33.51 325 eP P 08 41 24.5 +1.7
MSU ePcP PcP 08 44 04.9 +2.3
G32A **Webster** 33.52 348 P P 08 41 22.1 -0.5
baz=163
TMUT **Trail Mountain** 33.53 327 eP P 08 41 24.3 +1.2
comp=E,3.9nm,0.9s
TMUT ePcP PcP 08 44 04.4 +1.6
F35A **Swanville** 33.61 352 P P 08 41 22.7 -0.6
baz=168,SNR=8.1
G31A **Conde** 33.64 347 P P 08 41 22.8 -0.8
baz=162
F34A **Alexandria** 33.65 351 P P 08 41 23.1 -0.5
baz=167,SNR=6.8
G30A **Faulkton** 33.76 346 P P 08 41 23.9 -0.7
baz=160,SNR=5.8
HEC **Hector,Ludlow** 33.80 316 P P 08 41 27.4 +2.2
baz=124
F33A **5 Mile Ranch,** 33.86 350 P P 08 41 24.7 -0.7
baz=166,SNR=36
FFD **Franklin Falls** 33.90 22 eP P 08 41 25.9 +0.1
comp=E,16nm,0.6s
K22A **Casper** 33.93 335 P P 08 41 27.4 +1.1
baz=146,SNR=7.4
K22A **Casper** 33.93 335 eP P 08 41 27.5 +1.2
comp=E,19nm,0.9s
LONY **Lake Ozonia** 33.97 17 eP P 08 41 26.2 -0.2
comp=E,8.2nm,0.6s
SHPR **Sheep Range** 34.00 319 eP P 08 41 27.9 +0.9
comp=E,3.2nm,1.1s
SHPR ePcP PcP 08 44 05.5 +1.5
G29A **Hoven** 34.01 345 P P 08 41 26.3 -0.5
baz=159
I25A **Rochford** 34.07 340 P P 08 41 28.6 +1.1
baz=152,SNR=14
H27A **Howes** 34.09 342 P P 08 41 28.4 +0.9
baz=155,SNR=29
E36A **McGregor** 34.09 354 P P 08 41 26.6 -0.9
baz=171,SNR=6.5
F31A **Hecla** 34.26 347 P P 08 41 27.4 -1.5
baz=162
RSSD **Black Hills** 34.26 339 P P 08 41 30.4 +1.2
baz=152
RSSD **Black Hills** 34.26 339 eP P 08 41 30.3 +1.1
comp=E,13nm,0.4s
E35A **Pequot Lakes** 34.27 352 P P 08 41 28.5 -0.5
baz=169,SNR=6.7
H26A **Fairpoint** 34.29 341 P P 08 41 30.0 +0.7
baz=154
E34A **Wadena** 34.33 351 P P 08 41 29.4 -0.2
baz=168,SNR=13
E33A **Westby DABS, E** 34.45 350 P P 08 41 30.0 -0.6
baz=166,SNR=7.8
NLU **North Lily Min** 34.47 327 eP P 08 41 32.2 +1.1
comp=E,6.6nm,1.3s
H25A **Fruitdale** 34.56 340 P P 08 41 32.4 +0.8
baz=153
F29A **Eureka** 34.59 346 P P 08 41 31.2 -0.6
baz=160
D37A **Cotton** 34.65 355 P P 08 41 31.5 -0.8
baz=172,SNR=7.4
G27A **Dupree** 34.73 343 P P 08 41 33.4 +0.4
baz=156,SNR=19
D36A **Goodland** 34.74 354 P P 08 41 32.0 -1.0
baz=171,SNR=7.4
D35A **Remer** 34.74 353 P P 08 41 32.1 -1.0
baz=170,SNR=11
E31A **Nome** 34.85 348 P P 08 41 33.5 -0.5
baz=163
G26A **Maurine** 34.85 342 P P 08 41 34.4 +0.3
baz=155,SNR=12
LPAZ **La Paz** 34.85 145 P P 08 41 36.2 +1.2
comp=E,0.9nm,0.4s,baz=318,slow=6.4,SNR=5.1
LPAZ LR LR 08 56 36.3
comp=E,90nm,20.1s,baz=305,slow=38
D34A **Park Rapids** 34.90 352 P P 08 41 33.6 -0.8
baz=168,SNR=10
TCUT **Toone Canyon** 34.97 329 eP P 08 41 36.6 +1.2
comp=E,24nm,0.6s
E30A **Jud** 35.01 347 P P 08 41 35.0 -0.4
baz=161
G25A **Newell** 35.01 341 P P 08 41 36.4 +0.9
baz=153,SNR=6.4
DUG **Dugway, Tooele** 35.04 326 P P 08 41 37.3 +1.4
baz=135
DUG **Dugway, Tooele** 35.04 326 eP P 08 41 36.6 +0.7
comp=E,4.5nm,1.0s
D33A **AnnSam, Waubun** 35.05 351 P P 08 41 35.1 -0.6
baz=167,SNR=18
LRMC **Laurel Mtn Rad** 35.08 316 P P 08 41 36.3 0.0
baz=123
C38A **Sawbill Land.** 35.12 356 P P 08 41 35.0 -1.3
baz=175
C39A **Grand Marais** 35.16 358 P P 08 41 35.2 -1.4
baz=176
C37A **Embarrass** 35.19 355 P P 08 41 36.5 -0.5
baz=173
D32A **Dogwood Acres,** 35.24 349 P P 08 41 36.5 -0.8
baz=165,SNR=8.0
C36A **Pine Crest Far** 35.28 355 P P 08 41 37.3 -0.4
baz=172,SNR=5.7
D31A **Mcclaflin, Tow** 35.28 349 P P 08 41 37.0 -0.7
baz=164,SNR=13
BW06 **Boulder Array** 35.34 332 P P 08 41 38.8 +0.3
baz=142,SNR=21
BW06 **Boulder Array** 35.34 332 eP P 08 41 38.9 +0.3
comp=E,8.4nm,0.6s
PDAR **Pinedale Array** 35.34 332 P P 08 41 38.9 +0.3
comp=E,7.4nm,0.6s,baz=120,slow=10,SNR=105
PDAR PcP PcP 08 44 07.8 0.0
comp=E,2.2nm,0.5s,baz=140,slow=5.0,SNR=8.2
C35A **Jirik Farms, M** 35.34 353 P P 08 41 37.5 -0.7
baz=170,SNR=12
EYMN **Ely** 35.36 356 P P 08 41 37.1 -1.3
baz=174,SNR=6.0
EYMN **Ely** 35.36 356 eP P 08 41 37.1 -1.3
comp=E,9.0nm,0.7s
F26A **Lodgepole** 35.37 342 P P 08 41 39.0 +0.4
baz=155,SNR=16
HWUT **Hardware Ranch** 35.41 329 eP P 08 41 39.8 +0.7
comp=E,24nm,0.6s
HWUT ePcP PcP 08 44 08.9 +0.9
C34A **RKJ Ranch, Bem** 35.41 352 P P 08 41 38.1 -0.7
baz=168,SNR=6.1
E28A **Huff** 35.50 345 P P 08 41 39.4 -0.2
baz=158
D30A **Buchanan** 35.55 348 P P 08 41 39.5 -0.5
baz=162,SNR=16
WVL **Waterville** 35.58 23 eP P 08 41 40.4 +0.1
comp=E,18nm,0.8s
E27A **Carson** 35.59 344 P P 08 41 40.6 +0.2
baz=157,SNR=20
C33A **Trail** 35.64 351 P P 08 41 40.1 -0.7
baz=167,SNR=6.7
BGU **Big Grassy Mou** 35.67 327 eP P 08 41 42.2 +0.9
comp=E,6.3nm,1.0s
F25A **Bowman** 35.68 342 P P 08 41 42.0 +0.8
baz=154,SNR=8.9
B35A **Bob, Littlefor** 35.97 354 P P 08 41 43.8 +0.2
baz=171
C31A **Landman Farms,** 36.00 349 P P 08 41 43.3 -0.6
baz=164,SNR=11
D28A **Regan** 36.04 346 P P 08 41 44.5 +0.2
baz=159
AHID **Auburn Hatcher** 36.05 331 eP P 08 41 45.2 +0.6
comp=E,60nm,0.5s
AHID ePcP PcP 08 44 10.5 +0.7
C30A **Mose, Pekin** 36.06 348 P P 08 41 44.5 +0.1
baz=163,SNR=11
B33A **Robert and Kas** 36.11 352 P P 08 41 44.1 -0.7
baz=168,SNR=7.7
HVU **Hansel Valley** 36.15 328 eP P 08 41 45.8 +0.4
comp=E,11nm,0.8s
E25A **Miller Ranch,** 36.18 342 P P 08 41 46.1 +0.6
baz=154,SNR=11
B34A **Aery, Baudette** 36.20 353 P P 08 41 44.7 -0.8
baz=169,SNR=12
D27A **Center** 36.20 344 P P 08 41 46.2 +0.5
baz=158,SNR=8.8
PKME **Peaks-Kenny Pk** 36.31 23 eP P 08 41 46.9 +0.4
comp=E,16nm,0.8s
B32A **Ashes, Strandq** 36.38 351 P P 08 41 46.9 -0.2
baz=166,SNR=92
D26A **Manning** 36.38 343 P P 08 41 47.5 +0.3
baz=156,SNR=7.2
REDW **Red Top Meadow** 36.39 332 eP P 08 41 48.6 +1.1
comp=E,118nm,0.5s
SNOW **Snow King Moun** 36.42 332 eP P 08 41 49.1 +1.3
comp=E,117nm,0.6s
MDND **Maddock** 36.44 347 P P 08 41 47.9 +0.3
baz=161
MDND **Maddock** 36.44 347 eP P 08 41 47.8 +0.2
MDND epP pP 08 42 02.4 -0.1
LOHW **Long Hollow** 36.47 332 eP P 08 41 49.1 +0.8
comp=E,30nm,0.6s
RCTC **Rector, Farmer** 36.59 316 P P 08 41 50.6 +1.5
baz=122
B31A **Greenbush Farm** 36.59 349 P P 08 41 48.4 -0.5
baz=164,SNR=21
MOOW **Moose Ponds** 36.64 332 eP P 08 41 50.4 +0.8
comp=E,23nm,0.6s
MOOW ePcP PcP 08 44 12.2 +0.6
A33A **Warroad** 36.74 352 P P 08 41 49.6 -0.5
baz=168,SNR=31
D25A **Fairfield** 36.74 343 P P 08 41 50.8 +0.6
baz=155
B30A **Myrvik Farm, E** 36.75 349 P P 08 41 50.1 -0.2
baz=163,SNR=13
C27A **Sayler Ranch,** 36.76 345 P P 08 41 50.8 +0.4
baz=158
ELK **Elko** 36.76 325 eP P 08 41 51.5 +0.8
comp=E,2.6nm,0.8s
ELK ePcP PcP 08 44 13.8 +1.7
IMW **Indian Meadow** 36.85 332 eP P 08 41 52.1 +0.6
comp=E,17nm,0.6s
IMW ePcP PcP 08 44 13.8 +1.4
A32A **Rocking H Ranc** 36.88 351 P P 08 41 50.6 -0.7
baz=166,SNR=29
FLWY **Flagg Ranch** 36.88 333 eP P 08 41 52.9 +1.2
comp=E,23nm,0.6s
B29A **Wagenman Farm,** 36.97 348 P P 08 41 52.3 +0.2
baz=162,SNR=5.6
C26A **Wahner Farm, P** 37.02 344 P P 08 41 52.8 +0.2
baz=157,SNR=5.9
H17A **Grant Village** 37.07 333 P P 08 41 54.9 +1.5
baz=142,SNR=14
H17A **Grant Village** 37.07 333 eP P 08 41 54.7 +1.3
comp=E,13nm,0.8s
H17A ePcP PcP 08 44 15.0 +2.0
RLMT **Red Lodge** 37.09 335 P P 08 41 54.1 +0.7
baz=144,SNR=40
RLMT **Red Lodge** 37.09 335 eP P 08 41 54.2 +0.7
comp=E,32nm,0.9s
LKWY **Lake** 37.13 333 eP P 08 41 55.7 +1.8
comp=E,15nm,0.6s
NVAR **Mina Array Bea** 37.16 319 P P 08 41 55.6 +1.5
comp=E,4.6nm,0.7s,baz=129,slow=7.4,SNR=26
NVAR PcP PcP 08 44 14.3 +1.0
comp=E,6.6nm,0.6s,baz=133,slow=3.8,SNR=24
NVAR pPcP 08 44 29.3
comp=E,3.4nm,0.5s,baz=154,slow=2.7,SNR=8.7
B28A **Dugan Ranch, T** 37.17 347 P P 08 41 53.9 +0.1
baz=160,SNR=12
A30A **Hoffart Farm,** 37.21 349 P P 08 41 53.9 -0.2
baz=163,SNR=9.0
C25A **Freed Ranch, W** 37.23 343 P P 08 41 54.9 +0.5
baz=155,SNR=17
YFT **Old Faithful** 37.23 333 eP P 08 41 57.1 +2.4
comp=E,26nm,0.6s
YFT ePcP PcP 08 44 16.0 +2.6
LAO **LASA Array** 37.26 339 P P 08 41 55.3 +0.7
baz=150
LAO **LASA Array** 37.26 339 eP P 08 41 55.3 +0.7
comp=E,21nm,0.7s
A29A **Manning Farm,** 37.38 348 P P 08 41 55.3 -0.2
baz=162,SNR=12
YMR **Madison River** 37.46 333 eP P 08 41 58.3 +1.7
comp=E,45nm,0.9s
B26A **Jensen Ranch,** 37.56 345 P P 08 41 57.4 +0.2
baz=157
A28A **Rude Farm, Bot** 37.58 347 P P 08 41 57.0 -0.4
baz=160
BMN **Battle Mountai** 37.70 323 eP P 08 41 59.2 +0.6
comp=E,13nm,1.6s
QLMT **Earthquake Lak** 37.79 333 eP P 08 42 01.0 +1.6
GCMT **Greycliff** 37.80 335 eP P 08 41 59.8 +0.5
A26A **Wade Farm, Ken** 37.99 345 P P 08 42 01.1 +0.3
baz=158
ULM **Lac du Bonnet** 38.09 352 P P 08 42 00.1 -1.4
comp=E,20nm,0.5s,baz=169,slow=8.7,SNR=21

ULM				LR	LR	08 59 57.2	
	comp=E,60nm,20.8s,baz=152,slow=40						
DGMT	**Dagmar**	**38.19 343**		P	**P**	**08 42 03.1**	**+0.7**
	baz=154,SNR=29						
DGMT	**Dagmar**	**38.19 343**	*e*P		**P**	**08 42 03.1**	**+0.7**
	comp=E,62nm,0.6s						
HLID	**Hailey**	**38.27 329**		P	**P**	**08 42 04.6**	**+1.2**
	baz=136,SNR=12						
HLID	**Hailey**	**38.27 329**	*e*P		**P**	**08 42 04.3**	**+0.9**
	comp=E,4.9nm,0.6s						
HLID			*e*PcP		**PcP**	**08 44 18.2**	**+1.6**
MCMT	**McKenzie Canyo**	**38.44 331**	*e*P		**P**	**08 42 06.8**	**+1.9**
BOZ	**Bozeman (W)**	**38.52 333**		P	**P**	**08 42 06.5**	**+1.1**
	baz=141,SNR=68						
BOZ	**Bozeman (W)**	**38.52 333**	*e*P		**P**	**08 42 06.0**	**+0.6**
	comp=E,26nm,0.6s						
LMN	**Caledonia Moun**	**38.61 26**	*e*P		**P**	**08 42 06.2**	**+0.2**
	comp=E,30nm,0.8s						
LMN			*e*pP		**pP**	**08 42 21.6**	**+0.5**
DLMT	**Dillon**	**38.73 332**	*e*P		**P**	**08 42 08.3**	**+1.1**
	comp=E,22nm,0.8s						
LRM	**Limekiln Ridge**	**39.02 333**	*e*P		**P**	**08 42 10.7**	**+1.0**
SIV	**San Ignacio**	**39.03 136**		P	**P**	**08 42 10.1**	**+0.3**
	comp=E,28nm,0.7s,baz=320,slow=9.6,SNR=70						
HRY	**Holter Researc**	**39.44 334**	*e*P		**P**	**08 42 14.0**	**+1.0**
EGMT	**Eagleton**	**39.66 337**		P	**P**	**08 42 15.6**	**+0.7**
	baz=146,SNR=12						
EGMT	**Eagleton**	**39.66 337**	*e*P		**P**	**08 42 15.7**	**+0.8**
	comp=E,47nm,0.6s						
EGMT			*e*pP		**pP**	**08 42 30.3**	**+0.3**
EGMT			*e*ScS		ScS	08 52 13.6	-3.6
LVC	**Limon Verde**	**39.73 152**		P	**P**	**08 42 16.3**	**+0.3**
	comp=E,9.8nm,0.6s,baz=326,slow=6.6,SNR=6.2						
LVC	**Limon Verde**	**39.73 152**	*e*P		**P**	**08 42 16.6**	**+0.6**
	comp=E,6.2nm,1.0s						
CHMT	**Chamberlain Mo**	**40.21 333**	*e*P		**P**	**08 42 20.0**	**+0.4**
O03D	**Paynes Creek**	**40.45 319**		P	**P**	**08 42 21.6**	**+0.1**
	baz=124						
MSO	**Missoula**	**40.45 333**		P	**P**	**08 42 21.8**	**+0.3**
	baz=139,SNR=14						
MSO	**Missoula**	**40.45 333**	*e*P		**P**	**08 42 21.9**	**+0.5**
	comp=E,46nm,1.3s						
SWMT	**Swartz Lake**	**40.99 333**	*e*P		**P**	**08 42 26.6**	**+0.7**
YBMT	**Yellow Bay**	**41.27 334**	*e*P		**P**	**08 42 28.9**	**+0.7**
M04C	**Macdoel**	**41.30 321**		P	**P**	**08 42 28.6**	**0.0**
	baz=125						
F10A	**Beach Ranch, E**	**41.39 329**	*e*P		**P**	**08 42 29.1**	**-0.1**
	comp=E,14nm,0.8s						
BSMT	**Bassoo Peak**	**41.60 333**	*e*P		**P**	**08 42 31.4**	**+0.4**
M02C	**Callahan**	**41.72 320**		P	**P**	**08 42 32.0**	**+0.1**
	baz=123						
YBH	**Yreka Blue Hor**	**41.81 320**		P	**P**	**08 42 31.0**	**-1.7**
	comp=E,0.9nm,0.5s,baz=133,slow=3.3,SNR=7.3						
YBH				PcP	**PcP**	**08 44 28.4**	**+0.6**
	comp=E,2.7nm,0.8s,baz=146,slow=1.8,SNR=6.9						
J05D	**Fort Rock, OR**	**41.82 323**		P	**P**	**08 42 33.0**	**+0.2**
	baz=127						
I05D	**Terrebonne, OR**	**42.52 324**		P	**P**	**08 42 38.9**	**+0.5**
	baz=128						
I04A	**Tendick Farm,**	**42.81 323**		P	**P**	**08 42 40.8**	**0.0**
	baz=126						
NEW	**Newport**	**42.97 332**		P	**P**	**08 42 40.7**	**-1.2**
	comp=E,8.7nm,0.7s,baz=135,slow=8.6,SNR=14						
NEW	**Newport**	**42.97 332**		P	**P**	**08 42 41.9**	**0.0**
	baz=136,SNR=5.7						
NEW	**Newport**	**42.97 332**	*e*P		**P**	**08 42 41.6**	**-0.3**
	comp=E,7.1nm,0.7s						
D08A	**Wollman Farm,**	**42.99 329**	*e*P		**P**	**08 42 42.6**	**+0.6**
	comp=E,13nm,0.7s						
G05D	**Wamic, OR**	**43.07 326**		P	**P**	**08 42 43.0**	**+0.2**
	baz=129						
C09A	**Chrisman Ranch**	**43.18 330**	*e*P		**P**	**08 42 43.9**	**+0.3**
	comp=E,11nm,0.5s						
H04A	**Detroit Lake**	**43.21 324**	*e*P		**P**	**08 42 43.9**	**0.0**
	comp=E,47nm,1.9s						
I03D	**Drain, OR**	**43.31 322**		P	**P**	**08 42 45.0**	**+0.3**
	baz=125						
B08A	**Colville Reser**	**44.08 330**	*e*P		**P**	**08 42 50.8**	**-0.1**
	comp=E,7.7nm,0.8s						
G03D	**McMinnville, O**	**44.14 324**		P	**P**	**08 42 51.9**	**+0.6**
	baz=126						
LON	**Longmire**	**44.28 327**	*e*P		**P**	**08 42 53.0**	**+0.5**
	comp=E,4.4nm,0.6s						
SCHQ	**Schefferville**	**45.34 17**		P	**P**	**08 42 59.6**	**-1.2**
	comp=E,26nm,0.5s,baz=218,slow=6.2,SNR=108						
SCHQ				LR	LR	09 02 46.4	
	comp=E,180nm,20.0s,baz=213,slow=37						
B05A	**Bryant**	**45.40 328**		P	**P**	**08 43 00.9**	**-0.3**
	baz=130,SNR=5.1						
A04D	**Lummi Island**	**46.00 329**		P	**P**	**08 43 06.5**	**+0.5**
	baz=130						
PGC	**Sidney**	**46.34 328**	*e*P		**P**	**08 43 09.6**	**+0.9**
	comp=E,13nm,0.9s						
CPUP	**Villa Florida**	**48.93 142**		P	**P**	**08 43 28.5**	**-0.5**
	comp=E,1.9nm,0.6s,baz=334,slow=9.5,SNR=11						
CPUP				LR	LR	09 05 39.8	
	comp=E,73nm,18.1s,baz=312,slow=38						
YKA	**Yellowknife Ar**	**53.30 345**		P	**P**	**08 44 00.5**	**-0.8**
	comp=E,8.7nm,0.6s,baz=131,slow=8.7,SNR=184						
YKA				pP	**pP**	**08 44 15.0**	**-2.0**
	comp=E,11nm,0.7s,baz=140,slow=7.6,SNR=13						
YKA				PcP	**PcP**	**08 45 07.3**	**-0.9**
	comp=E,2.6nm,0.5s,baz=146,slow=3.8,SNR=8.9						
DLBC	**Dease Lake**	**55.50 335**		LR	LR	09 10 55.6	
	comp=E,135nm,21.2s,baz=120,slow=39						
DLBC	**Dease Lake**	**55.50 335**	*e*P		**P**	**08 44 18.4**	**+1.0**
	comp=E,43nm,0.7s						
PLCA	**Paso Flores**	**55.50 164**		P	**P**	**08 44 18.6**	**+0.9**
	comp=E,3.2nm,0.6s,baz=5.0,slow=7.6,SNR=11						
PLCA				LR	LR	09 03 33.5	
	comp=E,72nm,19.1s,baz=34,slow=31						
TAOE	**Nuku Hiva Isla**	**55.89 250**	*e*LR		LR	09 00 30.1	
	comp=E,220nm,26.7s						
TAOE	**Nuku Hiva Isla**	**55.89 250**	*e*T		T	09 43 54.1	
	comp=E,24nm,0.2s						
RKT	**Rikitea**	**57.97 232**	*e*T		T	09 46 46.2	
	comp=E,4.5nm,0.3s						
BALM	**Baldy**	**62.15 333**	*e*P		**P**	**08 45 04.0**	**+0.4**
	comp=E,12nm,0.8s						
RES	**Resolute Bay**	**62.20 358**		P	**P**	**08 45 02.1**	**-1.4**
	comp=E,7.7nm,0.6s,baz=174,slow=9.6,SNR=36						
RES				LR	LR	09 13 27.5	
	comp=E,33nm,21.8s,baz=164,slow=37						
RES	**Resolute Bay**	**62.20 358**	*e*P		**P**	**08 45 02.3**	**-1.2**
	comp=E,7.4nm,0.6s						
DAWY	**Dawson**	**62.41 337**	*e*P		**P**	**08 45 04.4**	**-0.8**
	comp=E,6.2nm,0.9s						
INK	**Inuvik**	**62.87 343**		P	**P**	**08 45 07.5**	**-0.6**
	comp=E,6.8nm,0.8s,baz=127,slow=7.4,SNR=32						
INK				pP	**pP**	**08 45 23.0**	**-1.1**
	comp=E,12nm,0.8s,baz=130,slow=7.5,SNR=14						
RAGM	**Ragged Mountai**	**62.91 332**	*e*P		**P**	**08 45 08.9**	**+0.3**
	comp=E,21nm,1.2s						
BMRM	**Bremner River**	**63.12 333**	*e*P		**P**	**08 45 10.6**	**+0.6**
	comp=E,16nm,0.7s						
EGAK	**Eagle**	**63.43 337**	*e*P		**P**	**08 45 11.2**	**-0.7**
	comp=E,13nm,1.1s						
EGAK			*e*pP		**pP**	**08 45 25.4**	**-2.6**
EYAK	**Cordova Ski Ar**	**63.47 332**	*e*P		**P**	**08 45 13.0**	**+0.8**
	comp=E,18nm,0.8s						
MENT	**Mentasta**	**63.58 335**	*e*P		**P**	**08 45 12.9**	**0.0**
	comp=E,6.9nm,0.6s						
DIV	**Divide**	**63.70 333**	*e*P		**P**	**08 45 14.1**	**+0.3**
	comp=E,12nm,0.6s						
KLU	**Klutina**	**63.91 333**	*e*P		**P**	**08 45 15.3**	**+0.1**
	comp=E,17nm,0.6s						
DOT	**Dot Lake**	**64.03 336**	*e*P		**P**	**08 45 15.7**	**-0.2**
	comp=E,25nm,0.6s						
DOT			*e*pP		**pP**	**08 45 30.7**	**-1.2**
PAX	**Paxson**	**64.32 335**	*e*P		**P**	**08 45 17.4**	**-0.5**
	comp=E,7.2nm,0.7s						
PAX			*e*pP		**pP**	**08 45 32.1**	**-1.8**
SCM	**Sheep Creek Mo**	**64.67 333**	*e*P		**P**	**08 45 20.0**	**-0.2**
	comp=E,13nm,0.6s						
SML	**Sawmill**	**65.10 333**	*e*P		**P**	**08 45 22.7**	**-0.2**
	comp=E,12nm,0.8s						
PMOR	**Pomariorio Ree**	**65.19 247**	*e*T		T	09 55 34.1	
	comp=E,3.8nm,0.2s						
PMR	**Palmer**	**65.38 333**	*e*P		**P**	**08 45 24.3**	**-0.4**
	comp=E,7.3nm,0.7s						
RC01	**Rabbit Creek A**	**65.48 332**	*e*P		**P**	**08 45 25.3**	**0.0**
	comp=E,18nm,0.7s						
ILAR	**Eielson Array**	**65.62 336**		P	**P**	**08 45 25.4**	**-0.9**
	comp=E,4.7nm,0.7s,baz=164,slow=4.9,SNR=87						
ILAR				pP	**pP**	**08 45 39.9**	**-2.4**
	comp=E,9.9nm,1.0s,baz=119,slow=4.7,SNR=18						
ILAR				LR	LR	09 16 54.3	
	comp=E,115nm,21.9s,baz=128,slow=38						
RND	**Reindeer**	**65.90 335**	*e*P		**P**	**08 45 27.9**	**-0.2**
	comp=E,39nm,0.8s						
CCB	**Clear Creek Bu**	**65.94 336**	*e*P		**P**	**08 45 27.3**	**-0.9**
	comp=E,4.7nm,0.8s						
WRH	**Wood River Hil**	**65.98 336**	*e*P		**P**	**08 45 27.6**	**-0.9**
	comp=E,11nm,1.0s						
COLA	**College**	**66.04 336**	*e*P		**P**	**08 45 28.4**	**-0.4**
	comp=E,14nm,1.0s						
MCK	**McKinley**	**66.05 335**	*e*P		**P**	**08 45 28.8**	**-0.2**
	comp=E,15nm,0.9s						
BWN	**Browne**	**66.43 335**	*e*P		**P**	**08 45 30.9**	**-0.4**
BWN			*e*pP		**pP**	**08 45 45.8**	**-1.8**
TRF	**Thorofare Moun**	**66.52 334**	*e*P		**P**	**08 45 31.8**	**-0.4**
	comp=E,16nm,0.8s						
SPU	**Mount Spurr**	**66.58 332**	*e*P		**P**	**08 45 32.1**	**-0.4**
SPU			*e*pP		**pP**	**08 45 46.8**	**-1.9**
SUMG	**Summit**	**66.62 14**	*i* P		**P**	**08 45 31.3**	**-1.7**
	comp=E,12nm,1.2s						
SUMG			*e*			08 45 49.2	
SUMG	**Summit**	**66.62 14**	*e*P		**P**	**08 45 31.7**	**-1.3**
SUMG			*e*pP		**pP**	**08 45 48.7**	**-0.5**
KTH	**Kantishna Hill**	**66.82 334**	*e*P		**P**	**08 45 33.4**	**-0.6**
	comp=E,15nm,1.0s						
BPAW	**Bear Paw Mtn.**	**67.03 335**	*e*P		**P**	**08 45 34.4**	**-0.9**
	comp=E,17nm,1.0s						
PPLA	**Purkeypile**	**67.16 333**	*e*P		**P**	**08 45 35.6**	**-0.7**
	comp=E,10nm,0.9s						
MLY	**Manley**	**67.25 336**	*e*P		**P**	**08 45 36.0**	**-0.6**
	comp=E,34nm,1.4s						
CAST	**Castle Rocks**	**67.27 334**	*e*P		**P**	**08 45 35.8**	**-1.0**
	comp=E,9.4nm,0.8s						
PPT	**Papeete**	**67.64 245**	LR		LR	09 06 58.4	
	comp=E,110nm,19.5s,baz=64,slow=28						
PPT2	**Papeete2**	**67.65 245**	*e*LR		LR	09 06 04.0	
	comp=E,240nm,26.0s						
COLD	**Coldfoot**	**67.82 338**	*e*P		**P**	**08 45 40.6**	**+0.5**
	comp=E,10nm,0.9s						
TBI	**Tubuai**	**69.80 239**	*e*LR		LR	09 07 16.3	
	comp=E,154nm,26.5s						
TBI	**Tubuai**	**69.80 239**	*e*T		T	10 01 26.5	
	comp=E,8.2nm,0.2s						
UNV	**Unalaska Valle**	**73.07 323**	*e*P		**P**	**08 46 12.8**	**+0.4**
UNV			*e*pP		**pP**	**08 46 27.1**	**-1.6**
DAG	**Danmarks Havn**	**73.17 13**	*i* P		**P**	**08 46 10.4**	**-2.2**
	comp=E,3.3nm,0.7s						
DAG			*e*			08 46 25.6	
ESDC	**Sonseca Array**	**77.64 52**		P	**P**	**08 46 36.5**	**-2.4**
	comp=E,0.2nm,0.3s,baz=291,slow=5.3,SNR=3.8						
ESDC				LR	LR	09 14 49.2	
	comp=E,37nm,21.6s,baz=145,slow=31						
DBIC	**Dimbokro**	**82.05 85**		LR	LR	09 20 51.0	
	comp=E,37nm,18.5s,baz=257,slow=34						
NOA	**NORSAR Array B**	**83.57 29**		P	**P**	**08 47 08.1**	**-2.2**
	comp=E,0.7nm,0.7s,baz=286,slow=5.1,SNR=3.2						
NOA				LR	LR	09 20 43.6	
	comp=E,18nm,20.9s,baz=280,slow=33						
BILL	**Bilibino**	**84.15 339**	*e*P		**P**	**08 47 12.5**	**-0.5**
	comp=E,6.8nm,0.8s						
ARCES	**ARCESS Array B**	**86.27 19**		P	**P**	**08 47 21.6**	**-2.1**
	comp=E,1.3nm,0.6s,baz=284,slow=5.0,SNR=7.7						
ARCES				LR	LR	09 23 22.3	
	comp=E,26nm,22.0s,baz=271,slow=34						
TORD	**Torodi Ar. Bea**	**87.04 77**		P	**P**	**08 47 25.3**	**-3.1**
	comp=E,0.3nm,0.4s,baz=296,slow=5.4,SNR=5.5						
TORD				LR	LR	09 22 58.2	
	comp=E,56nm,21.1s,baz=230,slow=33						
GERES	**GERESS Array B**	**88.27 40**		LR	LR	09 25 54.2	
	comp=E,32nm,18.0s,baz=286,slow=35						
FINES	**FINESS Array B**	**90.14 26**		LR	LR	09 25 59.7	
	comp=E,29nm,21.7s,baz=216,slow=34						
SEY	**Seymchan**	**91.56 337**		P	**P**	**08 47 47.4**	**-1.3**
	comp=E,4.2nm,0.8s,baz=79,slow=6.4,SNR=12						
TIXI	**Tiksi**	**92.38 349**		P	**P**	**08 47 50.5**	**-1.9**
	comp=E,2.9nm,0.7s,baz=27,slow=4.6,SNR=9.9						
TIXI	**Tiksi**	**92.38 349**	*e*P		**P**	**08 47 50.9**	**-1.5**
	comp=E,3.8nm,0.9s						
NRIK	**Noril'sk**	**98.22 2**		LR	LR	09 34 49.0	
	comp=E,46nm,21.1s,baz=313,slow=37						
KURK	**Kurchatov**	**115.91 9**		PKP	**PKPdf**	**08 53 23.4**	**-1.4**
KURBB	**Kurchatov Arra**	**115.99 9**		PKP	**PKPdf**	**08 53 23.4**	**-1.5**
	comp=E,0.4nm,0.6s,baz=339,slow=1.5,SNR=5.0						
BOSA	**Boshof**	**116.36 116**		PKP	**PKPdf**	**08 53 25.4**	**-1.0**
	comp=E,2.3nm,0.6s,baz=254,slow=2.3,SNR=9.3						
SONM	**Songino Array**	**118.47 349**		PKP	**PKPdf**	**08 53 28.6**	**-1.4**
	comp=E,0.7nm,0.4s,baz=296,slow=1.1,SNR=6.4						
KSRS	**Korea Array**	**119.80 327**		PKP	**PKPdf**	**08 53 32.2**	**-0.3**
	comp=E,4.8nm,0.6s,baz=14,slow=1.6,SNR=11						
KSRS				pPKP	**pPKPdf**	**08 53 48.4**	**-1.7**
	comp=E,3.0nm,0.7s,baz=0.9,slow=1.5,SNR=5.0						
KSAR	**Wonju Array Be**	**119.82 327**		PKP	**PKPdf**	**08 53 32.2**	**-0.4**
KSAR				pPKP	**pPKPdf**	**08 53 48.4**	**-1.7**
MKAR	**Makanchi Array**	**120.27 8**		PKP	**PKPdf**	**08 53 31.7**	**-1.6**
	comp=E,0.4nm,0.3s,baz=307,slow=2.6,SNR=5.6						
HHC	**Hu-ho-hao-te**	**123.79 342**	*e*P		**PKPdf**	**08 53 40.5**	**+0.1**
STKA	**Stephens Creek**	**130.59 239**		PKP	**PKPdf**	**08 53 54.3**	**+0.9**
	comp=E,2.4nm,0.5s,baz=99,slow=5.0,SNR=11						
WRAB	**Tennant Creek**	**138.65 254**	*e*PKPdf		**PKPdf**	**08 54 09.2**	**+0.4**
WRA	**Warramunga Arr**	**138.66 254**		PKhKP	PKPpre	08 54 00.8	
	comp=E,0.8nm,0.6s,baz=90,slow=3.7,SNR=16						
WRA				PKP	**PKiKP**	**08 54 10.2**	**-0.8**
	comp=E,2.9nm,0.5s,baz=86,slow=2.4,SNR=25						
ASAR	**Alice Springs**	**138.69 248**		PKhKP	PKPpre	08 53 59.6	
	comp=E,1.0nm,0.6s,baz=112,slow=2.2,SNR=10						
ASAR				PKP	**PKPdf**	**08 54 09.4**	**+0.6**
	comp=E,1.9nm,0.8s,baz=115,slow=2.4,SNR=9.8						
CHTO	**Chiang Mai**	**148.03 347**	*e*PKPdf		**PKPdf**	**08 54 25.5**	**+0.2**
CHTO			*e*PKPbc		**PKPbc**	**08 54 27.7**	**-0.7**
CHTO			*e*pPKPdf		**pPKPdf**	**08 54 43.1**	**+0.4**
CMAR	**Chiang Mai Arr**	**148.37 347**	PKPbc		**PKPdf**	**08 54 26.5**	**+0.7**
	comp=E,9.3nm,0.7s,baz=324,slow=2.4,SNR=27						
KAPI	**Kappang**	**151.45 283**	PKPbc		**PKPbc**	**08 54 37.9**	**+1.0**
	comp=E,6.8nm,0.5s,baz=150,slow=3.2,SNR=8.8						
MBWA	**Marble Bar**	**152.04 249**	*e*PKPbc		**PKPbc**	**08 54 39.4**	**+1.3**
MBWA			*e*PKPab		**PKPab**	**08 54 48.8**	**+1.2**

DHMR 15 08:34:48.4±1.1, 12°.11N×44°.44E, h8km±8km, ML3.8, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ADEN	**Aden**	**0.84**	**39**	*i* P	Pg	08 35 04.3	-0.4
ADEN				*i* S	Sg	08 35 16.3	+0.6
ADEN				AML	AML	08 35 16.8	
	comp=E,3μm,0.4s						
TRBA	**At Turbah**	**1.16**	**344**	*i* P	Pg	08 35 10.4	-0.2
TRBA				*i* S	Sb	08 35 26.3	+0.3
BDHA	**Al Bayda'**	**2.15**	**31**	*i* P	Pn	08 35 25.7	+0.8
BDHA				*i* S	Sg	08 35 56.3	-1.4

GUC 15 08:36:40.8±0.5, 37°.67S×73°.53W, h47km±3km, ML3.7, 2C-1D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PSCH	**Puerto Saavedr**	**1.13**	**175**	⇑*i*P	Pn	08 37 00.5	+0.3
PSCH				*e*S	Sn	08 37 15.5	+0.8
CCHI	**Chillan**	**1.57**	**48**	⇓*i*P	Pn	08 37 07.0	+0.7
CCHI				*e*S	Sn	08 37 26.4	+1.0
CCHI				IAML		08 37 28.1	
	comp=N,3μm,0.4s						
COCH	**Cobquecura**	**1.65**	**21**	*e*P	Pn	08 37 07.7	+0.5
COCH				*e*S	Sn	08 37 28.2	+1.0
COCH				IAML		08 37 36.5	
	comp=E,874nm,0.6s						
VLCH	**Valdivia**	**2.14**	**174**	*e*P	Pn	08 37 14.8	+0.8
VLCH				*i* S	Sn	08 37 40.4	+1.0
TALC	**Talca**	**2.73**	**34**	⇑*i*P	Pn	08 37 22.5	+0.4

ISCJB ***15*** *08:42:52.3±0.5, 25°.06N±0°.02×122°.41E±0°.02, h12km±3km, mb4.0/17, MS3.0/6, Error ellipse: s-maj=4.0km s-min=2.7km az=178.2*
JMA ***15*** *08:42:53.7±0.1, 24°.98N×122°.37E, h48km±3km, M3.4*
BJI ***15*** *08:42:54.2, 25°.05N×122°.19E, h10km, mb4.0/6, mB4.1/1, ML4.4/4, Ms3.9/2, Ms7 3.7/3*
NEIC ***15*** *08:42:54.0±2.0, 24°.91N×122°.34E, h6km±11km, ML4.4(TAP), Error ellipse: s-maj=27.5km s-min=9.3km az=195.0*
NEIC Recorded [2 TAP] in Yilan and [1 TAP] in Hualien and Taipei.
TAP ***15*** *08:42:54.4, 25°.00N×122°.29E, h19km, ML4.2, C*
IDC ***15*** *08:43:00.4±4.1, 24°.96N×122°.27E, h74km±38km, mb3.7/18, mb1 3.8/20, mb1mx3.7/42, mbtmp4.0/20, ML3.4/2, MS3.0/11, Ms1 3.0/11, ms1mx2.9/46, Error ellipse: s-maj=19.5km s-min=13.1km az=72.0*

ISC 15 08:42:52.6±1.1, 24°.94N±0°.03×122°.41E±0°.03, h12km±7km, n87, σ0°.75/113, mb4.0/17, MS2.9/6, 7C-3D, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWB1	**Santiao Chiao**	**0.39**	**281**	⇓*i*P	Pg	**08 43 00.8**	**+0.5**
	baz=272						
TWB1				*i* S	Sg	08 43 05.1	-0.4
	baz=272						
NWF	**Wu-fen Shan**	**0.58**	**283**	⇓*i*P	Pb	08 43 04.7	-0.1
	baz=279						
NWF				*i* S	Sg	08 43 11.3	-0.4
	baz=279						
TWC	**Suao**	**0.60**	**237**	*e*P	Pb	08 43 05.2	+0.2
	baz=221						
TWC				S	Sb	08 43 13.2	-0.2
	baz=221						
ILA	**Ilan**	**0.62**	**254**	*e*P	Pb	08 43 05.8	+0.5
	baz=245						
JYNG	**Yonagunijimaku**	**0.69**	**134**	P	Pn	08 43 08.0	-0.1
JYNG				*e*S	Sn	08 43 18.7	0.0
TWE	**Neicheng**	**0.70**	**253**	⇑*i*P	Pb	08 43 06.9	+0.1
	baz=244						
TWE				S	Sb	08 43 16.4	-0.1
	baz=244						
YOJ	**Yonaguni jima**	**0.72**	**131**	P	Pn	08 43 08.4	-0.2
YOJ				S	Sn	08 43 19.2	-0.4
YOJ	**Yonaguni jima**	**0.72**	**131**	⇓*e*P	Pn	08 43 08.5	-0.1
	baz=121						
YOJ	**Yonaguni jima**	**0.72**	**131**	*e*Pg	Pn	08 43 08.6	0.0
TWA	**Mucha**	**0.75**	**274**	P	Pb	08 43 07.8	+0.3
	baz=268						
TWA				S	Sg	08 43 17.0	+0.1
	baz=268						
ENA	**Nanau**	**0.79**	**230**	*i* P	Pb	08 43 08.8	+0.5
	baz=207						
ENA				S	Sb	08 43 18.6	-0.3
	baz=207						
TWY	**Chenhua**	**0.81**	**295**	⇑*i*P	Pb	08 43 08.5	0.0
	baz=293						
TWY				S	Sg	08 43 18.6	-0.2
	baz=293						
TAP1	**Taipei**	**0.81**	**277**	P	Pb	08 43 08.7	+0.2
	baz=273						
TAP1				*e*S	Sg	08 43 18.1	-0.7
	baz=273						
ENTT	**Nioudou**	**0.82**	**249**	P	Pb	08 43 08.7	0.0
	baz=251						
ENTT				*e*S	Sb	08 43 20.1	+0.4
	baz=251						
TAP	**Taipei**	**0.82**	**277**	*e*P	Pb	08 43 08.9	+0.1
	baz=273						
TAP				*e*S	Sg	08 43 19.1	-0.2
	baz=273						
TATO	**Taipei**	**0.83**	**273**	*e*Pg	Pb	08 43 08.9	-0.1
TATO				*e*Sg	Sb	08 43 19.9	-0.2
TWS1	**Kuangyinshan**	**0.91**	**281**	*e*P	Pg	08 43 10.3	+0.1
	baz=277						
TWS1				*e*S	Sg	08 43 22.0	-0.1
	baz=277						
YHNB	**Yeheng**	**0.97**	**254**	*e*Pg	Pg	08 43 11.2	-0.2
YHNB				*e*Sg	Sb	08 43 24.0	-0.2
NSK	**Sanguang**	**0.99**	**255**	⇑*i*P	Pg	08 43 11.6	-0.1
	baz=249						
NSK				*e*S	Sg	08 43 23.9	-0.6
	baz=249						
NACB	**Ninganchiao**	**1.06**	**224**	*e*Pg	Pn	08 43 13.4	+0.2
NACB				*e*Sg	Sb	08 43 26.5	-0.2
NNS	**Nan Shan**	**1.06**	**243**	*e*P	Pn	08 43 13.3	-0.1
	baz=237						
NNS				*e*S	Sb	08 43 26.1	-0.8
	baz=237						
NCU	**National Centr**	**1.11**	**272**	*e*P	Pb	08 43 13.6	-0.1
	baz=268						
NCU				S	Sb	08 43 27.3	-0.7
	baz=268						
TWD	**Chiawan**	**1.13**	**221**	*e*P	Pg	08 43 14.6	+0.3
	baz=216						
TWD				*e*S	Sn	08 43 29.7	+0.1
	baz=216						
HWA	**Hwalien**	**1.20**	**218**	*e*P	Pg	08 43 16.7	+1.0
	baz=213						
WHF	**Hehuan Shan**	**1.30**	**233**	P	Pg	08 43 17.6	-0.1
	baz=229						
WHF				*e*S	Sg	08 43 35.6	+0.9
	baz=229						
TWT	**Tachien**	**1.31**	**239**	⇑*i*P	Pg	08 43 17.7	-0.1
	baz=228						
TWT				*e*S	Sg	08 43 34.4	-0.4
	baz=228						
HSN	**Hsinchu**	**1.31**	**264**	*e*P	Pn	08 43 15.9	-0.8
	baz=278						
HSN				*e*S	Sb	08 43 31.4	-2.5
	baz=278						
NSTT	**Nanjuang**	**1.31**	**257**	⇑*i*P	Pn	08 43 16.6	-0.1
	baz=253						
NSTT				*e*S	Sb	08 43 33.0	-1.0

	baz=195						
QZH	**Quanzhou**	**3.46 271**	Pn	Pn	08 43 40.8	-5.5
QZH			Sn	Sn	08 44 17.1	-10
QZH	comp=N,480nm,0.9s		smax	smax		
QZH	comp=E,240nm,0.7s		smax	smax		
QZH	comp=N,1μm,9.4s		LR	LR		
QZH	comp=E,1μm,6.3s		LR	LR		
QZH	comp=Z,1μm,11.0s		LR	LR		
TGY	**Tagaytay City**	**10.87 188**	LR	LR	08 49 42.1	
KSRS	comp=Z,78nm,20.7s,baz=122,slow=37 **Korea Array** 0.3nm,0.3s,baz=199,slow=13,SNR=4.6	**13.34 19**	P	P	08 46 07.2	-4.2
KSRS	comp=Z,64nm,19.8s,baz=193,slow=38		LR	LR	08 51 32.5	
JHJ	**Hachijo jima 2**	**17.23 58**	LR	LR	08 53 26.9	
MJAR	comp=Z,37nm,21.7s,baz=268,slow=36 **Matsushiro Arr** 0.1nm,0.3s,baz=230,slow=9.3,SNR=3.4	**17.81 46**	P	**P**	**08 47 03.9**	**+2.8**
MJAR	comp=Z,36nm,18.5s,baz=155,slow=42		LR	LR	08 55 28.8	
DAV	**Davao City (W)** comp=Z,29nm,20.3s,baz=7.5,slow=36	**18.02 170**	LR	LR	08 53 53.5	
USRK	**Ussuriysk Ar.** 2.9nm,0.7s,baz=199,slow=6.6,SNR=8.4	**20.75 20**	P	**P**	**08 47 34.5**	**+1.4**
CMAR	**Chiang Mai Arr** 0.8nm,0.3s,baz=58,slow=8.6,SNR=7.7	**22.72 258**	P	**P**	**08 47 54.5**	**+0.1**
CMAR	comp=Z,39nm,19.1s,baz=350,slow=41		LR	LR	08 58 30.9	
ASAJ	**Asahikawa** comp=Z,34nm,19.0s,baz=339,slow=37	**25.23 36**	LR	LR	08 58 30.8	
KLR	**Kul'dur** 3.0nm,0.8s,baz=224,slow=7.4,SNR=14	**25.33 14**	P	**P**	**08 48 20.9**	**+1.9**
KLR	comp=Z,41nm,20.4s,baz=188,slow=35		LR	LR	08 57 49.7	
SONM	**Songino Array** 1.4nm,0.8s,baz=145,slow=10.0,SNR=7.7	**26.13 335**	P	**P**	**08 48 27.0**	**+0.4**
SONM	comp=Z,22nm,19.6s,baz=115,slow=37		LR	LR	08 58 55.8	
MKAR	**Makanchi Array** 2.1nm,0.7s,baz=102,slow=11,SNR=20	**38.59 315**	P	**P**	**08 50 15.8**	**+0.4**
ZALV	**Zalesovo Beam** 1.0nm,0.4s,baz=111,slow=8.1,SNR=5.1	**40.23 326**	P	**P**	**08 50 28.4**	**-0.5**
ZALV	comp=Z,32nm,20.2s,baz=224,slow=37		LR	LR	09 07 59.7	
KURBB	**Kurchatov Arra** 2.0nm,0.9s,baz=111,slow=8.4,SNR=11	**42.26 319**	P	**P**	**08 50 45.2**	**-0.4**
WRA	**Warramunga Arr** 3.2nm,0.6s,baz=346,slow=8.8,SNR=26	**46.09 164**	P	**P**	**08 51 17.4**	**+0.7**
WRA	0.4nm,0.6s,baz=346,slow=3.5,SNR=12		PcP	**PcP**	**08 52 52.9**	**0.0**
TIXI	**Tiksi** 1.4nm,0.4s,baz=312,slow=2.5,SNR=5.6	**46.89 3**	P	**P**	**08 51 21.9**	**-0.4**
BVAR	**Borovoye Array** 1.4nm,0.5s,baz=104,slow=7.8,SNR=12	**47.81 320**	P	**P**	**08 51 30.0**	**+0.2**
NRIK	**Noril'sk** 2.0nm,0.6s,baz=104,slow=3.9,SNR=5.4	**48.97 344**	P	**P**	**08 51 38.9**	**+0.4**
ASAR	**Alice Springs** 1.2nm,0.8s,baz=347,slow=12,SNR=13	**49.58 166**	P	**P**	**08 51 44.6**	**+0.9**
ASAR	0.8nm,0.5s,baz=343,slow=3.1,SNR=9.2		PcP	**PcP**	**08 53 05.3**	**0.0**
STKA	**Stephens Creek** 0.6nm,0.7s,baz=298,slow=4.9,SNR=2.8	**59.40 161**	PcP	**PcP**	**08 53 42.0**	**-0.7**
KBZ	**Khabaz** 1.1nm,0.5s,baz=124,slow=0.8,SNR=4.2	**65.88 309**	P	**P**	**08 53 37.9**	**-0.3**
ARCES	**ARCESS Array B** 1.6nm,0.7s,baz=76,slow=10,SNR=7.0	**69.26 338**	P	**P**	**08 53 58.8**	**-0.4**
FINES	**FINESS Array B** 3.0nm,0.8s,baz=71,slow=12,SNR=11	**71.36 330**	P	**P**	**08 54 12.0**	**-0.1**
AKASG	**Malin Array Be** 0.6nm,0.5s,baz=58,slow=5.6,SNR=4.6	**73.05 318**	P	**P**	**08 54 20.9**	**-1.5**
BRTR	**Keskin Array B** 1.0nm,0.8s,baz=103,slow=5.6,SNR=6.4	**73.62 307**	P	**P**	**08 54 25.1**	**-1.0**
BRTR	comp=Z,18nm,20.6s,baz=288,slow=40		LR	LR	09 31 38.5	
YKA	**Yellowknife Ar** 0.4nm,0.8s,baz=312,slow=4.9,SNR=7.8	**81.84 23**	P	**P**	**08 55 10.7**	**-0.6**

*ISCJB **15** 09:01:05.9±0.5, 4°.33S±0°.04×129°.76E±0°.04, h150km, mb3.6/3, Error ellipse: s-maj=6.1km s-min=5.8km az=2.9*
*IDC **15** 09:01:08.5±3.9, 4°.32S×130°.36E, h178km±44km, mb3.5/3, mb1 3.9/6, mb1mx3.3/36, mbtmp4.3/6, Error ellipse: s-maj=95.8km s-min=12.8km az=75.0*
*DJA **15** 09:01:10.4±0.4, 4°.5S±3°.×13°.0E±°, h124km±4km, M4.3/4, mb4.0/2, MLv4.5/4*

ISC 15 09:01:06.5±0.7, 4°.32S±0°.06×129°.77E±0°.06, h150km, n19, σ2°.29/26, mb3.8/3, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BNDI	**Bandanaira**	**0.25**	**146**	P	**Pn**	**09 01 28.9**	**+2.0**
BNDI				S	**Sn**	**09 01 45.1**	**+2.6**
MSAI	**Masohi**	**1.27**	**319**	P	**Pn**	**09 01 33.3**	**-0.5**
MSAI				S	**Sn**	**09 01 54.0**	**-0.7**
FAKI	**Fak Fak**	**2.84**	**61**	P	**Pn**	**09 01 54.0**	**+2.1**
FAKI				S	**Sn**	**09 02 27.8**	**+0.8**
SIJI	**Sorong** 14nm,0.3s,baz=90,slow=23,SNR=6.1	**3.74**	**24**	P	**Pn**	**09 02 05.1**	**+1.7**
SIJI	16nm,0.3s,baz=267,slow=23,SNR=10			S	**Sn**	**09 02 46.5**	**-1.2**
SWI	**Sorong**	**3.74**	**24**	P	**Pn**	**09 02 03.9**	**+0.5**
SWI				S	**Sn**	**09 02 47.2**	**-0.4**
SAUI	**Saumlaki**	**3.95**	**157**	P	Pn	09 02 12.0	+5.8
LBMI	**Labuha**	**4.30**	**328**	P	**Pn**	**09 02 12.5**	**+1.8**
LBMI				S	**Sn**	**09 02 59.3**	**-1.4**
SANI	**Sanana**	**4.39**	**301**	P	**Pn**	**09 02 13.6**	**+1.7**
SANI				S	**Sn**	**09 03 00.8**	**-2.1**
RKPI	**Ransiki, Papua**	**5.21**	**58**	P	**Pn**	**09 02 24.5**	**+1.7**
KDI	**Kendari** 15nm,0.9s,0.1nm	**7.14**	**273**	P	**Pn**	**09 02 52.0**	**+3.6**
LUWI	**Luwuk**	**7.71**	**295**	P	**Pn**	**09 02 58.1**	**+2.1**
MMRI	**Maumere**	**8.62**	**240**	P	**Pn**	**09 03 12.2**	**+3.9**
PLAI	**Plampang**	**12.72**	**249**	P	**Pn**	**09 04 04.0**	**+1.7**
WRA	**Warramunga Arr** 3.6nm,0.3s,baz=341,slow=12,SNR=52	**16.16**	**164**	P	**Pn**	**09 04 43.4**	**-2.0**
WRA	0.9nm,0.3s,baz=337,slow=20,SNR=7.3			S	S	09 07 30.5	-15
ASAR	**Alice Springs** 4.9nm,0.3s,baz=343,slow=11,SNR=447	**19.65**	**169**	P	**P**	**09 05 24.0**	**+0.2**
ASAR	0.2nm,0.3s,baz=352,slow=19,SNR=6.7			S	**S**	**09 08 50.8**	**-6.7**
STKA	**Stephens Creek** 0.7nm,0.3s,baz=344,slow=9.2,SNR=4.2	**29.58**	**159**	P	**P**	**09 06 56.5**	**-0.9**
MKAR	**Makanchi Array** 0.8nm,0.5s,baz=130,slow=7.3,SNR=8.2	**65.87**	**326**	P	**P**	**09 11 36.1**	**0.0**
VNDA	**Vanda** 0.4nm,0.5s,baz=324,slow=6.3,SNR=10.0	**75.12**	**173**	P	**P**	**09 12 31.6**	**0.0**
TORD	**Torodi Ar. Bea** 0.4nm,0.8s,baz=98,slow=4.4,SNR=3.2	**128.02**	**283**	PKP	**PKPdf**	**09 19 55.4**	**-0.4**

NEIC 15 09:02:55.9, 51°.25N×178°.52W, h23km, ML3.8(AEIC), After AEIC., Andreanof Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GALAA	**Gareloi Lava P**	**0.54**	**343**	P	Pb	09 03 07.2	+0.5
GAEA	**Gareloi East**	**0.55**	**345**	P	Pb	09 03 07.3	+0.4
GANE	**Gareloi Northe**	**0.59**	**344**	P	Pb	09 03 07.6	0.0
TAFL	**Tanaga Flats**	**0.64**	**37**	P	Pb	09 03 08.6	+0.2
TANO	**Tanaga North**	**0.71**	**20**	P	Pb	09 03 10.1	+0.5
TAPA	**Tanaga Point A**	**0.72**	**38**	P	Pb	09 03 09.7	0.0
TAFP	**Tanaga Falls P**	**0.73**	**27**	P	Pb	09 03 10.0	+0.1
TAFP				S	Sn	09 03 21.6	+0.3
KIKV	**Kanaga Island**	**1.05**	**53**	P	Pn	09 03 14.4	-0.8
KICM	**Kanaga Island**	**1.06**	**50**	P	Pn	09 03 14.8	-0.5
KIRH	**Kanaga Island**	**1.10**	**53**	P	Pn	09 03 15.2	-0.7
ADAG	**Mount Adagdak**	**1.40**	**58**	P	Pn	09 03 20.1	+0.1
ETKA	**Kagalaska Isla**	**1.45**	**64**	P	Pn	09 03 20.4	-0.3
ETKA				S	Sn	09 03 39.1	0.0
GSCK	**Great Sitkin C**	**1.65**	**62**	P	Pn	09 03 23.4	-0.1
GSTD	**Great Sitkin T**	**1.68**	**60**	P	Pn	09 03 24.1	+0.1
GSTD				S	Sb	09 03 46.2	-0.8
GSMY	**Great Sitkin M**	**1.73**	**62**	P	Pn	09 03 24.3	-0.2
GSTR	**Great Sitkin T**	**1.75**	**60**	P	Pn	09 03 25.0	+0.2
KOWE	**Korovin Ext**	**2.87**	**65**	P	Pn	09 03 41.0	+0.7
KOKL	**Mount Kliuchef**	**2.89**	**66**	P	Pn	09 03 41.3	+0.8
KOFP	**Korovin Flat P**	**2.93**	**68**	P	Pn	09 03 41.9	+0.8
KOSE	**Korovin Southe**	**2.98**	**67**	P	Pn	09 03 42.4	+0.6
NIKH	**Nikolski High**	**6.20**	**70**	P	Pn	09 04 27.1	+1.1
MSOM	**Makushin Julie**	**7.51**	**65**	P	Pn	09 04 45.4	+1.6
UNV	**Unalaska Valle**	**7.77**	**66**	P	Pn	09 04 48.5	+1.0

MAN 15 09:03:04, 9°.77N×121°.93E, h24km, mb4.0, ML2.8, MS2.4, 1C-2D, Sulu Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAP	**San Jose, Anti**	**0.98**	**1**	↑*e*P	Pn	09 03 22.2	-0.1
JAP				*e*S	Sn	09 03 48.0	+13
GUIM	**Jordan**	**1.07**	**37**	*e*P	Pn	09 03 22.5	-1.0
SNPH	**Sibulan**	**1.35**	**108**	↓*i*P	Pn	09 03 27.6	+0.2
SNPH				*i* S	Sb	09 03 45.6	0.0
CUYO	**Cuyo Island**	**1.41**	**320**	*e*P	Pb	09 03 29.1	-0.5
CUYO				*e*S	Sb	09 03 46.7	-0.4
RCP	**Roxas**	**1.95**	**24**	↓*e*P	Pn	09 03 37.1	+1.4
RCP				*e*S	Sb	09 04 01.4	-1.5
LLP	**Lapu-Lapu**	**2.08**	**75**	*e*P	Pn	09 03 37.9	+0.5
LLP				*e*S	Sb	09 04 04.6	-1.8
SJMP	**San Jose**	**2.80**	**343**	*e*P	Pn	09 03 48.4	+1.1

IDC 15 09:13:20.1±3.0, 11°.35S×165°.54E, h0km, mb3.9/3, mb1 4.1/5, mb1mx3.6/46, mbtmp4.0/5, ML4.1/2, MS3.2/1, Ms1 3.2/1, ms1mx2.5/32, Error ellipse: s-maj=58.6km s-min=37.8km az=68.0, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	**Honiara** 6.5nm,0.3s,baz=191,slow=16,SNR=3.5	**5.82**	**289**	Pn	Pn	09 14 47.9	+0.2
DZM	**Mont Dzumac** 1.1nm,0.3s,baz=335,slow=4.9,SNR=14	**10.70**	**175**	Pn	Pn	09 15 54.3	-0.4
PMG	**Port Moresby** comp=Z,67nm,18.0s,baz=82,slow=36	**18.18**	**274**	LR	LR	09 24 21.3	
WRA	**Warramunga Arr** 2.2nm,0.8s,baz=81,slow=9.2,SNR=10	**31.19**	**250**	P	P	09 19 41.5	+0.2
ASAR	**Alice Springs** 0.5nm,0.7s,baz=64,slow=9.9,SNR=6.6	**32.47**	**244**	P	P	09 19 52.3	-0.3
MKAR	**Makanchi Array** 0.6nm,0.8s,baz=94,slow=6.2,SNR=5.3	**93.60**	**317**	P	P	09 26 38.3	0.0

DJA 15 09:17:35.0±0.6, 8°S±4°×10°8E±°, h27km±6km, M3.9/7, MLv3.9/7, Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMJI	**Cimerak**	**0.67**	**55**	P	Pb	09 17 48.4	+0.2
CMJI				S	Sb	09 17 57.2	0.0
CNJI	**Cibinong**	**1.14**	**319**	P	Pn	09 17 54.3	-0.9
CNJI				S	Sn	09 18 08.2	-1.7
LEM	**Lembang**	**1.36**	**349**	P	Pb	09 18 04.3	+4.3
SKJI	**Sukabumi**	**1.76**	**311**	P	Pn	09 18 04.6	+0.9
SKJI				S	Sn	09 18 26.3	+1.1
UGM	**Wanagama**	**2.62**	**85**	P	Pn	09 18 15.2	-0.4
CGJI	**Cibinong**	**2.67**	**305**	P	Pn	09 18 16.9	+0.6
CGJI				S	Sn	09 18 44.9	-2.9
PCJI	**Pacitan**	**3.25**	**91**	P	Pn	09 18 24.6	+0.3
PWJI	**Pagerwojo**	**3.88**	**88**	P	Pn	09 18 33.5	+0.6
PWJI				S	Sn	09 19 16.4	-1.2

*ISCJB **15** 09:23:30.6±0.8, 39°.41N±0°.06×143°.6E±0°.2, h11km, mb3.5/6, Error ellipse: s-maj=19.5km s-min=8.4km az=11.9*
*IDC **15** 09:23:31.0±1.1, 39°.44N×143°.52E, h0km, mb3.5/6, mb1 3.7/9, mb1mx3.5/37, mbtmp3.6/9, ML3.5/3, Error ellipse: s-maj=29.3km s-min=17.9km az=111.0*

ISC 15 09:23:32.5±1.0, 39°.43N±0°.08×143°.6E±0°.2, h11km, n15, σ0°.70/10, mb3.6/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAJ	**Asahikawa** 2.2nm,0.3s,baz=204,slow=14,SNR=26	**4.74**	**351**	Pn	**Pn**	**09 24 43.2**	**-0.7**
ASAJ	0.9nm,0.3s,baz=160,slow=26,SNR=3.7			Sn	**Sn**	**09 25 40.0**	**+1.1**
MJAR	**Matsushiro Arr** 1.1nm,0.3s,baz=36,slow=12,SNR=23	**5.13**	**238**	Pn	**Pn**	**09 24 49.8**	**+0.5**
JHJ	**Hachijo jima 2** 3.8nm,0.3s,baz=78,slow=19,SNR=4.9	**7.00**	**207**	Pn	**Pn**	**09 25 15.1**	**+0.1**
JHJ	3.0nm,0.3s,baz=52,slow=19,SNR=3.7			Sn	Sn	09 26 29.0	-5.6
SEY	**Seymchan**	**24.13**	**10**	P	**P**	**09 28 48.3**	**+0.2**
SONM	**Songino Array** 0.5nm,0.5s,baz=78,slow=9.0,SNR=3.4	**27.97**	**300**	P	**P**	**09 29 22.9**	**-0.2**
H11N2	**WAKE ISLAND Hy** baz=321,SNR=7.3	**28.08**	**128**	T	T	09 59 06.2	
H11N1	**WAKE ISLAND Hy** baz=321,slow=74,SNR=12	**28.09**	**128**	T	T	09 59 04.2	
H11N3	**WAKE ISLAND Hy** baz=321,slow=74,SNR=7.6	**28.10**	**128**	T	T	09 59 04.2	
H11S1	**WAKE ISLAND Hy** baz=319,SNR=4.0	**28.89**	**130**	T	T	10 00 08.7	
H11S3	**WAKE ISLAND Hy** baz=319	**28.90**	**130**	T	T	10 00 07.9	
H11S2	**WAKE ISLAND Hy** baz=319	**28.91**	**130**	T	T	10 00 08.2	
MKAR	**Makanchi Array** 0.7nm,0.7s,baz=81,slow=7.7,SNR=6.3	**44.34**	**300**	P	**P**	**09 31 41.8**	**-0.8**
ILAR	**Eielson Array** 0.3nm,0.7s,baz=269,slow=5.7,SNR=4.2	**46.56**	**34**	P	**P**	**09 32 00.7**	**+0.8**
WRA	**Warramunga Arr** 0.3nm,0.6s,baz=8.4,slow=7.1,SNR=3.5	**59.69**	**190**	P	**P**	**09 33 36.6**	**-0.3**
YKA	**Yellowknife Ar** 0.2nm,0.6s,baz=302,slow=6.2,SNR=3.2	**60.88**	**31**	P	**P**	**09 33 45.0**	**+0.3**

*NEIC **15** 09:36:14.2, 37°.77S×176°.25E, h235km, MG4.1(WEL), After WEL.*

WEL 15 09:36:18.1±0.3, 37°.80S×176°.21E, h197km±2km, ML4.1/17, 6C-3D, Error ellipse: s-maj=3.0km s-min=2.9km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OPRZ	**Ohinepanea**	**0.28**	**100**	↑PN	Pn	09 36 44.5	+0.4
OPRZ	**Ohinepanea**	**0.28**	**100**	Pn	Pn	09 36 44.6	+0.5
MUGZ	**Murupara**	**0.81**	**147**	PN	Pn	09 36 46.1	-0.1
MUGZ				SN	Sn	09 37 08.8	+0.5
URZ	**Urewera**	**0.85**	**123**	↓PN	Pn	09 36 46.2	-0.2
URZ				SN	Sn	09 37 08.0	-0.5
URZ				AML	AML	09 37 09.3	
URZ	**Urewera**	**0.85**	**123**	Pn	Pn	09 36 46.2	-0.2
RTZ	**Ruatahuna**	**1.02**	**144**	PN	Pn	09 36 47.8	+0.1
MRHZ	**Matea Rd**	**1.05**	**171**	PN	Pn	09 36 48.3	+0.4
MWZ	**Matawai**	**1.17**	**118**	PN	Pn	09 36 48.6	-0.2
MWZ				SN	Sn	09 37 12.0	-0.6
MWZ				AML	AML	09 37 14.6	
MWZ				AML	AML	09 37 15.0	
MWZ	**Matawai**	**1.17**	**118**	Pn	Pn	09 36 48.6	-0.2
RAGZ	**Rawiri**	**1.18**	**127**	↓PN	Pn	09 36 49.0	+0.1
RAGZ	**Rawiri**	**1.18**	**127**	Pn	Pn	09 36 49.0	+0.1
HAZ	**Te Kaha**	**1.25**	**89**	PN	Pn	09 36 48.5	-0.8
SNGZ	**Shannon Statio**	**1.33**	**138**	PN	Pn	09 36 50.2	+0.2
NMHZ	**Naumai**	**1.38**	**160**	PN	Pn	09 36 51.5	+1.0
NMHZ	**Naumai**	**1.38**	**160**	Pn	Pn	09 36 51.5	+1.0
BKZ	**Black Stump Fm**	**1.39**	**171**	PN	Pn	09 36 50.2	-0.3
BKZ				SN	Sn	09 37 14.6	-1.2
BKZ				AML	AML	09 37 15.3	
BKZ	**Black Stump Fm**	**1.39**	**171**	Pn	Pn	09 36 50.2	-0.3
TWVZ	**Taurewa**	**1.41**	**205**	PN	Pn	09 36 51.0	+0.2
TWVZ	**Taurewa**	**1.41**	**205**	Pn	Pn	09 36 51.0	+0.2
TKGZ	**Te Karaka**	**1.45**	**117**	PN	Pn	09 36 51.0	+0.1
TKGZ	**Te Karaka**	**1.45**	**117**	Pn	Pn	09 36 51.0	+0.1
TWGZ	**Tauwhareparae**	**1.45**	**106**	PN	Pn	09 36 51.2	+0.1
TWGZ	**Tauwhareparae**	**1.45**	**106**	Pn	Pn	09 36 51.2	+0.1
PKGZ	**Pakihiroa**	**1.48**	**94**	PN	Pn	09 36 51.1	-0.3
PKGZ				SN	Sn	09 37 16.5	-0.7
WHHZ	**Waihua**	**1.51**	**148**	PN	Pn	09 36 51.9	+0.4
RIGZ	**Rimuhau**	**1.52**	**127**	PN	Pn	09 36 52.0	+0.3
RIGZ				SN	Sn	09 37 17.7	-0.2
FWVZ	**Far West T-bar**	**1.54**	**199**	PN	Pn	09 36 52.3	+0.2
FWVZ	**Far West T-bar**	**1.54**	**199**	Pn	Pn	09 36 52.3	+0.2
ARHZ	**Aropaoanui**	**1.59**	**157**	PN	Pn	09 36 53.0	+0.7
ARHZ	**Aropaoanui**	**1.59**	**157**	Pn	Pn	09 36 53.0	+0.7
WNVZ	**Wahianoa**	**1.60**	**197**	↓PN	Pn	09 36 52.4	-0.2
WNVZ	**Wahianoa**	**1.60**	**197**	Pn	Pn	09 36 52.4	-0.2
KWHZ	**Kaweka Forest**	**1.63**	**174**	PN	Pn	09 36 53.1	+0.4
KWHZ				SN	Sn	09 37 19.4	-0.5
PUZ	**Puketiti**	**1.65**	**100**	SN	Sn	09 37 18.8	-1.0
PUZ	**Puketiti**	**1.65**	**100**	Pn	Pn	09 36 52.4	-0.5
MOVZ	**Moawhango**	**1.65**	**192**	↑PN	Pn	09 36 52.4	-0.5
MOVZ	**Moawhango**	**1.65**	**192**	Pn	Pn	09 36 52.4	-0.5
KNZ	**Kokohu**	**1.68**	**137**	PN	Pn	09 36 53.0	-0.1
KNZ				AML	AML	09 37 21.5	
KNZ	**Kokohu**	**1.68**	**137**	Pn	Pn	09 36 53.0	-0.1
MXZ	**Matakaoa Point**	**1.68**	**83**	PN	Pn	09 36 52.7	-0.4
MXZ				SN	Sn	09 37 19.7	-0.6
MXZ				AML	AML	09 37 24.2	
MXZ	**Matakaoa Point**	**1.68**	**83**	Pn	Pn	09 36 52.9	-0.3
MCHZ	**McNeill Hill**	**1.69**	**167**	PN	Pn	09 36 54.6	+1.4
MCHZ	**McNeill Hill**	**1.69**	**167**	Pn	Pn	09 36 54.6	+1.4
BHHZ	**Black Hill Sta**	**1.69**	**184**	PN	Pn	09 36 52.7	-0.6
CNGZ	**Carnagh Statio**	**1.72**	**114**	↑PN	Pn	09 36 54.0	+0.5
CNGZ	**Carnagh Statio**	**1.72**	**114**	Pn	Pn	09 36 54.0	+0.5
PRGZ	**Paritu Road**	**1.73**	**131**	PN	Pn	09 36 53.6	-0.1
WMGZ	**Waiomatatini S**	**1.75**	**91**	PN	Pn	09 36 53.4	-0.4
WMGZ	**Waiomatatini S**	**1.75**	**91**	Pn	Pn	09 36 53.4	-0.4
MHGZ	**Mahia Peninsul**	**1.90**	**136**	PN	Pn	09 36 55.2	-0.1
MHGZ	**Mahia Peninsul**	**1.90**	**136**	Pn	Pn	09 36 55.2	0.0
CKHZ	**Cape Kidnapper**	**1.98**	**160**	PN	Pn	09 36 56.2	+0.1
CKHZ	**Cape Kidnapper**	**1.98**	**160**	Pn	Pn	09 36 56.2	+0.1
KAHZ	**Kahuranaki**	**2.06**	**165**	PN	Pn	09 36 56.7	-0.3
KAHZ	**Kahuranaki**	**2.06**	**165**	Pn	Pn	09 36 56.7	-0.3
WAZ	**Wanganui**	**2.17**	**206**	*e*PN	Pn	09 36 57.6	-0.6
TSZ	**Takapari Road**	**2.27**	**185**	PN	Pn	09 36 58.1	-1.0
TSZ				AML	AML	09 37 31.4	
TSZ				AML	AML	09 37 31.6	
TSZ	**Takapari Road**	**2.27**	**185**	Pn	Pn	09 36 58.1	-1.0
WPHZ	**Waipukurau**	**2.27**	**175**	PN	Pn	09 36 58.5	-0.7
WPHZ	**Waipukurau**	**2.27**	**175**	Pn	Pn	09 36 58.5	-0.7
PXZ	**Pawanui**	**2.29**	**167**	PN	Pn	09 36 58.4	-0.8
PXZ				SN	Sn	09 37 29.7	-2.0
PXZ				AML	AML	09 37 33.3	
PXZ				AML	AML	09 38 23.8	
PXZ				AML	AML	09 38 23.8	
PXZ	**Pawanui**	**2.29**	**167**	Pn	Pn	09 36 58.6	-0.8
PRHZ	**Porangahau**	**2.49**	**172**	PN	Pn	09 37 00.4	-1.2
PRHZ	**Porangahau**	**2.49**	**172**	Pn	Pn	09 37 00.7	-0.9
DVHZ	**Dannevirke**	**2.50**	**181**	PN	Pn	09 37 00.3	-1.5
DVHZ	**Dannevirke**	**2.50**	**181**	Pn	Pn	09 37 00.3	-1.4
OHWZ	**Ohakea**	**2.50**	**196**	SN	Sn	09 37 35.3	-0.7
POWZ	**Post Office Ro**	**2.61**	**187**	PN	Pn	09 37 01.6	-1.4
POWZ	**Post Office Ro**	**2.61**	**187**	Pn	Pn	09 37 01.6	-1.4
ANWZ	**Angora Road**	**2.67**	**176**	↑PN	Pn	09 37 02.4	-1.2
ANWZ				SN	Sn	09 37 36.6	-2.7
PRWZ	**Pori Road**	**2.76**	**184**	PN	Pn	09 37 03.2	-1.5
PRWZ	**Pori Road**	**2.76**	**184**	Pn	Pn	09 37 03.2	-1.5
BFZ	**Birch Farm**	**2.88**	**179**	SN	Sn	09 37 40.8	-2.9
BFZ				AML	AML	09 37 42.7	
MRZ	**Mangatainoka R**	**2.90**	**189**	PN	Pn	09 37 04.2	-2.1
MRZ	**Mangatainoka R**	**2.90**	**189**	Pn	Pn	09 37 04.2	-2.1
OGWZ	**Otaki Gorge**	**3.12**	**195**	PN	Pn	09 37 06.7	-2.2
OGWZ	**Otaki Gorge**	**3.12**	**195**	Pn	Pn	09 37 06.8	-2.1
HOWZ	**Holdsworth Sta**	**3.14**	**190**	PN	Pn	09 37 06.7	-2.5
KIW	**Kapiti Island**	**3.22**	**198**	PN	Pn	09 37 07.5	-2.7
KIW				AML	AML	09 37 47.8	
KIW				AML	AML	09 37 49.1	
KIW	**Kapiti Island**	**3.22**	**198**	Pn	Pn	09 37 07.5	-2.6
TMWZ	**Te Maipa**	**3.31**	**184**	SN	Sn	09 37 48.4	-4.7
MTW	**Mount Morrison**	**3.40**	**189**	PN	Pn	09 37 09.2	-3.1
MTW				AML	AML	09 37 52.6	
MTW				AML	AML	09 37 53.5	
MTW	**Mount Morrison**	**3.40**	**189**	Pn	Pn	09 37 09.3	-3.0
CAW	**Cannon Point**	**3.42**	**195**	PN	Pn	09 37 09.8	-2.8
CAW				AML	AML	09 37 55.2	
CAW				AML	AML	09 37 55.6	
CAW	**Cannon Point**	**3.42**	**195**	Pn	Pn	09 37 09.8	-2.8
TRWZ	**Traveller**	**3.62**	**186**	PN	Pn	09 37 12.2	-2.7
TRWZ				AML	AML	09 37 57.7	
TRWZ				AML	AML	09 37 58.0	
TRWZ	**Traveller**	**3.62**	**186**	Pn	Pn	09 37 12.2	-2.7
WEL	**Wellington**	**3.66**	**197**	PN	Pn	09 37 12.3	-3.0
WEL				AML	AML	09 37 57.3	
WEL				AML	AML	09 37 57.4	
WEL	**Wellington**	**3.66**	**197**	Pn	Pn	09 37 12.5	-2.9
MSWZ	**Moikau Station**	**3.69**	**191**	PN	Pn	09 37 12.4	-3.4
MSWZ				SN	Sn	09 37 55.3	-6.0
MSWZ				AML	AML	09 37 59.0	
MSWZ	**Moikau Station**	**3.69**	**191**	Pn	Pn	09 37 12.4	-3.4
TCW	**Tory Channel**	**3.72**	**203**	PN	Pn	09 37 13.2	-3.0
TCW				AML	AML	09 37 59.7	
TCW				AML	AML	09 38 00.2	
TCW	**Tory Channel**	**3.72**	**203**	Pn	Pn	09 37 13.2	-3.0
BHW	**Baring Head**	**3.75**	**196**	SN	Sn	09 37 56.4	-6.2
BHW				AML	AML	09 37 56.9	
PLWZ	**Palliser**	**3.

0.4nm,0.5s,baz=148,slow=8.5,SNR=2.8
MKAR Makanchi Array 58.19 324 P **P 09 50 25.7 +0.4**
0.7nm,0.5s,baz=118,slow=8.3,SNR=10
KURK Kurchatov 62.30 327 *eP* **P 09 50 53.6 +0.2**
6.2nm,0.6s
BVAR Borovoye Array 67.90 326 P **P 09 51 30.5 +0.8**
0.3nm,0.4s,baz=165,slow=6.0,SNR=2.3
ARCES ARCESS Array B 90.64 340 P **P 09 53 32.5 -0.7**
1.1nm,0.8s,baz=76,slow=5.1,SNR=4.4

NIED ***15*** *09:56:00,38.°30N×141.°70E,h68km,Mw3.8 Best double couple: M0:5.79000×10^14 NP1:φ:228.00000°,δ20.00000°, λ:140.00000°. NP2:φ:356.00000°,δ:78.00000°,λ:75.00000°.*
ISCJB ***15*** *09:56:37.2±0.6,38.°30N×0.°03×141.°76E±0.°08,h59km±5km, mb3.6/8,Error ellipse: s-maj=10.3km s-min=4.5km az=15.8*
JMA ***15*** *09:56:38.5±0.1,38.°33N×141.°72E,h52km±1km,M3.7*
JMA Felt II J1.
IDC ***15*** *09:56:38.7±1.8,38.°30N×141.°59E,h55km±17km,mb3.4/8, mb1 3.6/12,mb1mx3.4/43,mbtmp3.7/12,ML3.7/3,MS2.7/5, Ms1 2.7/5,ms1mx2.5/22,Error ellipse: s-maj=22.5km s-min=10.8km az=98.0*
ISC 15 09:56:38.0±1.2,38.°32N±0.°04×141.°78E±0.°09,h46km±11km, n34,σ1§47/39,mb3.7/8,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.36**	**292**	P	**Pn**	**09 56 48.0**	**+0.5**
JIO				S	**Sn**	**09 56 54.4**	**+0.2**
OFUJ	**Ofunato**	**0.77**	**354**	P	**Pn**	**09 56 52.8**	**+0.3**
OFUJ				S	**Sn**	**09 57 03.0**	**0.0**
JMK	**Ichinoseki**	**0.77**	**325**	P	**Pn**	**09 56 53.0**	**+0.5**
JMK				S	**Sn**	**09 57 03.0**	**-0.1**
JOU	**Okura**	**0.88**	**273**	P	**Pn**	**09 56 54.2**	**+0.2**
JOU				S	**Sn**	**09 57 05.6**	**-0.2**
JMM	**Marumori**	**0.90**	**240**	P	**Pn**	**09 56 54.2**	**-0.1**
JMM				S	**Sn**	**09 57 05.4**	**-0.8**
JFK	**Kawauchi**	**1.19**	**217**	P	**Pn**	**09 56 58.4**	**+0.1**
JFK				S	**Sn**	**09 57 13.0**	**-0.3**
JOM	**Ohasama**	**1.21**	**342**	P	**Pn**	**09 56 59.1**	**+0.5**
JOM				S	**Sn**	**09 57 14.1**	**+0.2**
JYK	**Kaneyama**	**1.26**	**299**	P	**Pn**	**09 56 59.5**	**+0.2**
JYK				*e*S	**Sn**	**09 57 14.9**	**-0.2**
JYS	**Shiratake**	**1.35**	**266**	P	**Pn**	**09 57 00.8**	**+0.3**
JYS				S	**Sn**	**09 57 17.6**	**+0.3**
JFT	**Otama**	**1.39**	**235**	P	**Pn**	**09 57 01.6**	**+0.6**
JFT				S	**Sn**	**09 57 18.2**	**-0.1**
JRG	**Rokugo**	**1.40**	**321**	P	**Pn**	**09 57 01.7**	**+0.6**
JRG				S	**Sn**	**09 57 19.7**	**+1.3**
MJAR	**Matsushiro Arr**	**3.35**	**239**	P	**Pn**	**09 57 28.3**	**+0.4**
	8.8nm,0.3s,baz=32,slow=14,SNR=43						
MJAR				LR	LR	09 59 02.9	
	comp=Z,84nm,20.3s,baz=60,slow=45						
MAT	**Matsushiro**	**3.35**	**239**	P	**Pn**	**09 57 29.7**	**+1.8**
MAT				*e*S	**Sn**	**09 58 13.2**	**+6.8**
JHJ	**Hachijo jima 2**	**5.44**	**198**	P	**Pn**	**09 57 56.8**	**+0.2**
	9.7nm,0.3s,baz=323,slow=19,SNR=12						
JHJ				S	**Sn**	**09 58 56.8**	**-1.0**
	27nm,0.3s,baz=39,slow=22,SNR=7.5						
JHJ				LR	LR	09 59 53.5	
	comp=Z,48nm,18.7s,baz=66,slow=36						
ASAJ	**Asahikawa**	**5.83**	**6**	P	**Pn**	**09 58 01.3**	**-0.5**
	1.5nm,0.3s,baz=216,slow=10,SNR=14						
ASAJ				S	**Sn**	**09 59 10.7**	**+3.5**
	1.1nm,0.3s,baz=143,slow=26,SNR=3.9						
USRK	**Ussuriysk Ar.**	**9.42**	**312**	P	**Pn**	**09 58 49.4**	**-1.7**
	0.4nm,0.3s,baz=122,slow=14,SNR=5.2						
JNU	**Nakatsue**	**10.27**	**243**	LR	LR	10 03 14.0	
	comp=Z,68nm,19.5s,baz=204,slow=39						
KLR	**Kul'dur**	**13.08**	**330**	LR	LR	10 03 49.8	
	comp=Z,34nm,19.4s,baz=138,slow=33						
PETK	**Petropavlovsk-**	**18.44**	**32**	LR	LR	10 08 12.3	
	comp=Z,19nm,19.7s,baz=167,slow=37						
H11N2	**WAKE ISLAND Hy 28.58**	**123**		T	T	10 32 58.8	
	baz=316,slow=76,SNR=372						
H11N1	**WAKE ISLAND Hy 28.59**	**123**		T	T	10 32 50.1	
	baz=316,slow=76,SNR=660						
H11N3	**WAKE ISLAND Hy 28.60**	**123**		T	T	10 32 50.8	
	baz=316,slow=76,SNR=355						
H11S1	**WAKE ISLAND Hy 29.34**	**125**		T	T	10 33 48.4	
	baz=318,slow=76,SNR=135						
H11S3	**WAKE ISLAND Hy 29.34**	**125**		T	T	10 33 40.1	
	baz=318,slow=76,SNR=222						
H11S2	**WAKE ISLAND Hy 29.35**	**125**		T	T	10 33 41.7	
	baz=318,slow=76,SNR=110						
ZALV	**Zalesovo Beam**	**41.27**	**311**	P	**P**	**10 04 17.2**	**-1.3**
	0.9nm,0.3s,baz=69,slow=7.0,SNR=3.9						
MKAR	**Makanchi Array**	**43.70**	**301**	P	**P**	**10 04 37.1**	**-1.2**
	1.0nm,0.6s,baz=83,slow=10,SNR=10						
KURBB	**Kurchatov Arra**	**45.45**	**307**	P	**P**	**10 04 51.1**	**-1.1**
	2.1nm,0.6s,baz=82,slow=8.2,SNR=20						
WRA	**Warramunga Arr**	**58.37**	**188**	P	**P**	**10 06 28.1**	**-0.6**
	0.6nm,0.4s,baz=6.1,slow=7.1,SNR=16						
ASAR	**Alice Springs**	**62.10**	**188**	P	**P**	**10 06 53.2**	**-0.8**
	0.1nm,0.4s,baz=350,slow=3.3,SNR=5.7						
YKA	**Yellowknife Ar**	**62.55**	**31**	P	**P**	**10 06 56.6**	**0.0**
	0.1nm,0.7s,baz=301,slow=6.4,SNR=3.1						
PDAR	**Pinedale Array**	**76.56**	**46**	P	**P**	**10 08 24.2**	**+0.5**
	0.2nm,0.5s,baz=89,slow=0.1,SNR=4.0						
TXAR	**Lajitas Array**	**89.11**	**53**	P	**P**	**10 09 29.5**	**+0.8**
	0.2nm,0.6s,baz=242,slow=2.7,SNR=3.6						
LPAZ	**La Paz**	**145.78**	**58**	PKPbc	**PKPab**	**10 16 13.3**	**-0.3**
	1.4nm,1.0s,baz=68,slow=5.4,SNR=3.0						

ISCJB ***15*** *10:06:01.8±0.4,32.°95N±0.°05×137.°23E±0.°08,h400km, mb3.5/23,Error ellipse: s-maj=9.0km s-min=6.7km az=168.5*
IDC ***15*** *10:06:03.9±0.6,33.°05N×137.°15E,h402km±6km,mb3.3/23, mb1 3.4/30,mb1mx3.3/44,mbtmp4.1/30,Error ellipse: s-maj=11.5km s-min=8.9km az=84.0*
ISC 15 10:06:02.9±0.5,32.°94N±0.°07×137.°22E±0.°07,h400km,n34, σ1§29/41,mb3.6/23,Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHJ	**Hachijo jima 2**	**2.16**	**84**	P	**Pn**	**10 07 01.9**	**+2.1**
	24nm,0.3s,baz=332,slow=22,SNR=61						
JHJ				S	**S**	**10 07 48.5**	**+2.6**
	12nm,0.3s,baz=252,slow=20,SNR=1.9						
MJAR	**Matsushiro Arr**	**3.69**	**12**	P	**Pn**	**10 07 12.4**	**+0.4**
	16nm,0.3s,baz=183,slow=8.4,SNR=186						
MJAR				S	**S**	**10 08 07.1**	**-1.0**
	2.7nm,0.3s,baz=187,slow=15,SNR=15						
MAT	**Matsushiro**	**3.69**	**12**	P	**Pn**	**10 07 12.2**	**+0.2**
MAT				S	**S**	**10 08 06.0**	**-2.0**
JNU	**Nakatsue**	**5.33**	**274**	P	**Pn**	**10 07 29.7**	**+1.3**
	1.7nm,0.3s,baz=140,slow=2.7,SNR=17						
JCJ	**Chichijima**	**7.24**	**142**	P	**Pn**	**10 07 48.5**	**-0.7**
	14nm,0.3s,baz=283,slow=20,SNR=6.0						
JCJ				S	**S**	**10 09 11.5**	**-4.7**
	61nm,0.3s,baz=243,slow=22,SNR=21						
KSRS	**Korea Array**	**8.85**	**303**	P	**P**	**10 08 07.8**	**+0.3**
	1.8nm,0.3s,baz=114,slow=12,SNR=41						
ASAJ	**Asahikawa**	**11.93**	**19**	P	**P**	**10 08 42.2**	**+0.7**
	3.9nm,0.3s,baz=214,slow=11,SNR=35						
USRK	**Ussuriysk Ar.**	**11.97**	**342**	P	**P**	**10 08 40.9**	**-1.1**
	0.5nm,0.3s,baz=166,slow=10,SNR=7.0						
KLR	**Kul'dur**	**16.79**	**347**	P	**P**	**10 09 33.2**	**-1.0**
	1.0nm,0.3s,baz=165,slow=8.8,SNR=40						
PETK	**Petropavlovsk-**	**24.95**	**30**	P	**P**	**10 10 52.1**	**+0.3**
	3.2nm,1.0s,baz=220,slow=7.0,SNR=5.4						
SONM	**Songino Array**	**27.58**	**312**	P	**P**	**10 11 15.3**	**0.0**
	1.4nm,0.6s,baz=110,slow=7.9,SNR=9.9						
MA2	**Magadan**	**28.13**	**15**	P	**P**	**10 11 20.2**	**+0.4**
	2.5nm,0.3s,baz=237,slow=17,SNR=4.1						
SEY	**Seymchan**	**31.52**	**13**	P	**P**	**10 11 50.1**	**+0.8**
	0.9nm,0.6s,baz=180,slow=20,SNR=5.4						
CMAR	**Chiang Mai Arr**	**37.17**	**257**	P	**P**	**10 12 38.2**	**+0.4**
	0.4nm,0.4s,baz=40,slow=8.4,SNR=5.3						
TIXI	**Tiksi**	**39.03**	**356**	P	**P**	**10 12 51.7**	**-0.7**
	1.5nm,0.3s,baz=129,slow=20,SNR=3.8						
ZALV	**Zalesovo Beam**	**42.29**	**316**	P	**P**	**10 13 18.9**	**0.0**
	2.0nm,0.3s,baz=85,slow=7.0,SNR=6.6						
ZALV				PcP	**PcP**	**10 15 03.9**	**0.0**
	0.8nm,0.5s,baz=117,slow=5.2,SNR=3.1						
MKAR	**Makanchi Array**	**43.52**	**305**	P	**P**	**10 13 28.7**	**-0.1**
	2.0nm,0.4s,baz=86,slow=9.8,SNR=26						
MKAR				PcP	**PcP**	**10 15 07.2**	**-1.2**
	0.2nm,0.3s,baz=98,slow=4.4,SNR=3.3						
MKAR				ScP	**ScP**	**10 18 20.0**	**-0.9**
	0.3nm,0.5s,baz=73,slow=5.2,SNR=3.5						
AAK	**Ala-Archa**	**49.49**	**300**	P	**P**	**10 14 14.6**	**-0.3**
	1.4nm,0.6s,baz=103,slow=5.2,SNR=5.2						
BVAR	**Borovoye Array**	**50.87**	**314**	P	**P**	**10 14 24.2**	**-0.4**
	baz=101,slow=7.9						
WRA	**Warramunga Arr**	**52.65**	**183**	P	**P**	**10 14 39.2**	**+1.3**
	1.1nm,0.3s,baz=0.4,slow=7.6,SNR=63						
ILAR	**Eielson Array**	**54.78**	**31**	P	**P**	**10 14 52.5**	**-0.1**
	0.3nm,0.4s,baz=260,slow=4.9,SNR=4.6						
ASAR	**Alice Springs**	**56.37**	**184**	P	**P**	**10 15 06.0**	**+1.6**
	0.5nm,0.3s,baz=354,slow=4.8,SNR=26						
AKTO	**Aktyubinsk**	**58.89**	**313**	P	**P**	**10 15 23.1**	**+1.8**
	1.6nm,0.5s,baz=78,slow=13,SNR=6.3						
INK	**Inuvik**	**59.58**	**26**	P	**P**	**10 15 26.4**	**+0.8**
	1.2nm,0.6s,baz=274,slow=3.7,SNR=8.0						
STKA	**Stephens Creek**	**64.60**	**176**	P	**P**	**10 16 00.8**	**+1.8**
	3.2nm,1.2s,baz=6.8,slow=5.3,SNR=3.8						
ARCES	**ARCESS Array B**	**66.60**	**339**	P	**P**	**10 16 11.2**	**0.0**
	2.4nm,1.0s,baz=55,slow=9.3,SNR=5.7						
YKA	**Yellowknife Ar**	**69.05**	**28**	P	**P**	**10 16 26.7**	**+0.3**
	0.2nm,0.4s,baz=300,slow=5.9,SNR=4.5						
FINES	**FINESS Array B**	**70.81**	**332**	P	**P**	**10 16 36.6**	**-0.3**
	1.1nm,0.5s,baz=72,slow=5.6,SNR=19						
KBZ	**Khabaz**	**70.93**	**310**	P	**P**	**10 16 37.9**	**-0.2**
	3.4nm,0.7s,baz=82,slow=1.9,SNR=8.8						
NOA	**NORSAR Array B**	**76.58**	**336**	P	**P**	**10 17 09.8**	**-0.4**
	0.5nm,0.4s,baz=54,slow=6.6,SNR=3.9						
BRTR	**Keskin Array B**	**78.92**	**310**	P	**P**	**10 17 23.9**	**+0.4**
	1.2nm,0.6s,baz=81,slow=4.9,SNR=5.8						
NVAR	**Mina Array Bea**	**80.22**	**51**	P	**P**	**10 17 31.9**	**+1.4**
	0.3nm,0.5s,baz=294,slow=8.8,SNR=2.9						
GERES	**GERESS Array B**	**84.29**	**326**	P	**P**	**10 17 49.8**	**-1.3**
	0.3nm,0.5s,baz=35,slow=4.9,SNR=3.7						
TORD	**Torodi Ar. Bea**	**117.53**	**310**	PKP	**PKPdf**	**10 24 02.0**	**-0.5**
	0.1nm,0.3s,baz=50,slow=0.8,SNR=2.9						

SJA 15 10:09:56.4±0.6,31.°23S×68.°37W,h100km±3km,ML2.9, MW3.5,San Juan Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RTLL	**Cerro Villicun**	**0.14**	**220**	*i* P	Pn	10 10 11.2	+0.7
RTLL				*i* S	Sn	10 10 21.6	+0.5
SJA	**San Juan**	**0.34**	**208**	*i* P	Pn	10 10 11.9	+0.6
SJA				*i* S	Sn	10 10 23.8	+1.4
SJA				IAML		10 10 25.0	
	comp=Z,336nm,0.2s						
RTCV	**Cerro Valdivia**	**0.65**	**193**	*i* P	Pn	10 10 14.2	+0.7
AVFE	**Valle Fertil**	**0.97**	**55**	*i* P	Pn	10 10 17.8	+1.2
AVFE				*i* S	Sn	10 10 33.0	+1.2
RTLS	**Leoncito**	**0.97**	**234**	*i* P	Pn	10 10 18.2	+1.3
RTLS				*i* S	Sn	10 10 34.3	+2.0
AUSP	**Uspallata**	**1.32**	**221**	*i* P	Pn	10 10 22.2	+1.4
ASAL	**Salagasta**	**1.42**	**196**	*i* P	Pn	10 10 22.9	+1.1
ACAN	**Cantantal**	**1.45**	**136**	*i* P	Pn	10 10 23.5	+1.4
ARCO	**CERRO ARCO**	**1.68**	**196**	*i* P	Pn	10 10 26.2	+1.1
ARCO				*i* S	Sn	10 10 48.3	+1.4
AAGR	**Agrelo**	**1.90**	**192**	*i* P	Pn	10 10 28.9	+1.2
MRA	**San Martin**	**2.56**	**118**	*i* P	Pn	10 10 37.4	+1.1

NSSC ***15*** *10:10:05.1±2.4,36.°13N×37.°37E,h36km±54km,MD1.3, ML1.7*
CSEM ***15*** *10:10:13.4,36.°29N×37.°08E,h7km,MD2.8,Suspected Mining explosion.*
DDA 15 10:10:13.3,36.°29N×37.°08E,h7km,Md2.8,Suspected Mining explosion.,Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DRWC	**Darouich**	**0.47**	**315**	*e*P	Pg	10 10 21.2	-1.2
DRWC				*e*S	Sg	10 10 28.0	-0.5
DRWC				AML	AML	10 10 29.4	
	comp=E,33nm,0.3s						
DRWC				AML	AML	10 10 31.9	
	comp=N,36nm,0.7s						
DRWC	**Darouich**	**0.47**	**315**	*e*P	Pg	10 10 21.2	-1.2
DRWC				*e*S	Sg	10 10 28.0	-0.5
	comp=N,36nm,0.7s						
KUZU	**Kuzuini**	**0.48**	**360**	P	Pg	10 10 23.1	+0.4
KUZU	**Kuzuini**	**0.48**	**360**	*i* P	Pg	10 10 23.1	+0.4
BTCH	**Batrach**	**0.56**	**243**	*e*P	Pg	10 10 19.6	-4.6
BTCH				*e*S	Sg	10 10 30.2	-1.3
BTCH				AML	AML	10 10 37.4	
	comp=E,30nm,0.6s						
BTCH				AML	AML	10 10 39.9	
	comp=N,22nm,0.4s						
BTCH	**Batrach**	**0.56**	**243**	*e*P	Pg	10 10 19.6	-4.6
BTCH				*e*S	Sg	10 10 30.2	-1.3
	comp=N,22nm,0.4s						
YAYL	**Yayladag**	**0.82**	**252**	P	Pg	10 10 28.5	-0.7
YAYL				S	Sb	10 10 41.9	+0.5
YAYL	**Yayladag**	**0.82**	**252**	*i* P	Pg	10 10 28.6	-0.7
YAYL				*i* S	Sb	10 10 41.9	+0.5
WRDH	**Warideh**	**0.95**	**215**	*e*P	Pg	10 10 22.2	-9.4
WRDH				*e*S	Sg	10 10 35.5	-8.4
WRDH				AML	AML	10 10 42.4	
	comp=E,18nm,0.2s						
WRDH	**Warideh**	**0.95**	**215**	*e*P	Pg	10 10 22.2	-9.4
WRDH				*e*S	Sg	10 10 35.5	-8.4
	comp=E,18nm,0.2s						
KAMA	**Osmaniye**	**0.95**	**340**	*i* P	Pg	10 10 31.8	+0.1
KAMA				*i* S	Sg	10 10 44.3	+0.3
ARNB	**Al Arnab**	**0.99**	**245**	*e*P	Pg	10 10 26.0	-6.4
ARNB				*e*S	Sg	10 10 40.4	-4.9
ARNB	**Al Arnab**	**0.99**	**245**	*e*P	Pg	10 10 26.0	-6.4
ARNB				*e*S	Sg	10 10 40.4	-4.9
HCB	**Kahramanmara¯**	**1.06**	**353**	*i* P	Pn	10 10 34.4	-0.3
HCB				*i* S	Sn	10 10 49.2	-0.5
SURC	**SANLIURFA_SURC**	**1.37**	**64**	P	Pn	10 10 38.2	-0.7
SURC				S	Sg	10 10 59.4	+2.0
SURC	**SANLIURFA_SURC**	**1.37**	**64**	*i* P	Pn	10 10 38.2	-0.7
SURC				*i* S	Sg	10 10 59.4	+2.0

IDC 15 10:24:00.5±4.3,20.°59S×139.°26E,h0km,mb1 3.0/3, mb1mx3.0/26,mbtmp2.8/3,ML2.5/3,Error ellipse: s-maj=36.5km s-min=26.1km az=39.0,Queensland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**4.66**	**277**	Pn	Pn	10 25 11.5	-0.7
	0.1nm,0.3s,baz=93,slow=14,SNR=6.3						
WRA				Sn	Sn	10 26 07.8	+0.8
	0.2nm,0.3s,baz=115,slow=19,SNR=8.6						
WRA				Lg	Lg	10 26 30.0	
	0.5nm,0.3s,baz=102,slow=27,SNR=5.1						
ASAR	**Alice Springs**	**5.83**	**237**	Pn	Pn	10 25 29.1	+0.8
	0.1nm,0.3s,baz=54,slow=14,SNR=7.2						
ASAR				Sn	Sn	10 26 35.4	-0.6
	0.3nm,0.3s,baz=59,slow=22,SNR=15						
ASAR				Lg	Lg	10 27 06.3	
	0.2nm,0.3s,baz=52,slow=26,SNR=6.3						
STKA	**Stephens Creek**	**11.43**	**170**	Pn	Pn	10 26 44.5	-0.5
	0.1nm,0.3s,baz=312,slow=16,SNR=2.9						

NIED ***15*** *10:25:00,37.°10N×142.°50E,h20km,Mw4.8 Best double couple: M0:1.92000×10^16 NP1:φ:333.00000°,δ54.00000°, λ:162.00000°. NP2:φ:232.00000°,δ75.00000°, λ:37.00000°.*
JMA ***15*** *10:25:14.4±0.4,37.°07N×142.°49E,h6km±4km,M5.1*
JMA Felt II J1.
ISCJB ***15*** *10:25:15.8±0.8,37.°06N±0.°02×142.°37E±0.°02,h5km±4km, mb5.0/276,MS4.6/62,Error ellipse: s-maj=3.1km s-min=2.1km az=174.0*
IDC ***15*** *10:25:15.9±0.4,37.°07N×142.°41E,h0km,mb4.8/29, mb1 4.9/35,mb1mx4.8/45,mbtmp4.8/35,ML4.6/5,MS4.3/31, Ms1 4.3/31,ms1mx4.0/50,Error ellipse: s-maj=12.8km s-min=10.2km az=97.0*
BJI ***15*** *10:25:19.1,37.°15N×142.°24E,h33km,mb5.1/73,mB5.0/50, Ms4.7/77,Ms7 4.6/70*
MOS ***15*** *10:25:20.1±0.9,37.°46N×142.°27E,h23km,mb5.3/92, MS4.6/23,Error ellipse: s-maj=5.9km s-min=3.8km az=100.7*
NEIC ***15*** *10:25:21.3±1.1,37.°06N×142.°33E,h31km±8km,mb5.1/194, Error ellipse: s-maj=3.8km s-min=2.3km az=131.0*
NEIC Reported [2 JMA] in Fukushima and Miyagi.
ISC 15 10:25:18.5±0.5,37.°10N±0.°03×142.°37E±0.°03,h17km±2km, h17km:pP-P,n726,σ1§59/777,mb5.1/281,MS4.6/64, 47C-24D,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.22**	**283**	⇑P	**Pn**	**10 25 38.9**	**-1.9**
JFK				S	**Sg**	**10 25 57.5**	**-0.7**
ONAJ	**Iwakimizuishiy**	**1.26**	**271**	⇑P	**Pn**	**10 25 39.1**	**-2.2**
ONAJ				*e*S	**Sb**	**10 25 56.5**	**-1.2**
JMM	**Marumori**	**1.47**	**302**	⇑P	**Pn**	**10 25 42.6**	**-1.6**
JMM				*e*S	**Sn**	**10 26 01.6**	**-1.4**
JIO	**Ouri**	**1.58**	**329**	⇑P	**Pn**	**10 25 44.7**	**-1.0**
JIO				*e*S	**Sn**	**10 26 05.5**	**-0.2**
JFT	**Otama**	**1.68**	**285**	S	**Sb**	**10 26 10.7**	**+1.0**
JOU	**Okura**	**1.85**	**314**	⇑P	**Pn**	**10 25 48.7**	**-0.8**
JOU				S	**Sn**	**10 26 12.4**	**-0.1**
JMK	**Ichinoseki**	**2.06**	**334**	⇑P	**Pn**	**10 25 51.5**	**-0.8**
JMK				*e*S	**Sn**	**10 26 18.3**	**+0.7**
JYS	**Shiratake**	**2.15**	**302**	P	**Pn**	**10 25 53.9**	**+0.4**
JYS				*e*S	**Sn**	**10 26 20.8**	**+1.1**
JYK	**Kaneyama**	**2.42**	**319**	⇑P	**Pn**	**10 25 56.7**	**-0.5**
JYK				*e*S	**Sn**	**10 26 27.5**	**+1.2**
JAG	**Ashikaga**	**2.44**	**255**	⇑P	**Pn**	**10 25 56.8**	**-0.7**
JAG				S	**Sn**	**10 26 27.5**	**+0.6**
JOM	**Ohasama**	**2.52**	**341**	⇑P	**Pn**	**10 25 58.2**	**-0.4**
JNS	**Sasagawa**	**2.54**	**287**	S	**Sb**	**10 26 31.7**	**-2.7**
BSO1	**Boso 1**	**2.69**	**205**	P	**Pn**	**10 26 00.3**	**-0.1**
JAW	**Awa shima**	**2.82**	**300**	P	**Pn**	**10 26 02.9**	**+0.1**
JAW				*e*S	**Sn**	**10 26 37.0**	**+0.7**
JRY	**Ryogami san**	**2.99**	**250**	P	**Pn**	**10 26 04.4**	**-0.8**
JRY				S	**Sn**	**10 26 40.8**	**+0.1**
MJAR	**Matsushiro Arr**	**3.38**	**262**	Pn	**Pn**	**10 26 11.1**	**+0.6**
	79nm,0.3s,baz=90,slow=15,SNR=306						
MAJO	**Matsushiro**	**3.39**	**262**	*i* P	**Pn**	**10 26 12.0**	**+1.4**
MAJO	**Matsushiro**	**3.39**	**262**	*e*Pn	**Pn**	**10 26 12.2**	**+1.7**
MAT	**Matsushiro**	**3.39**	**262**	P	**Pn**	**10 26 11.0**	**+0.4**
MAT				S	**Sb**	**10 26 55.1**	**-3.8**
JHJ2	**Mitsune**	**4.49**	**209**	*e*Pn	**Pn**	**10 26 24.6**	**-1.1**
JHJ2				*e*Sn	**Sn**	**10 27 16.2**	**-1.4**
JHJ	**Hachijo jima 2**	**4.50**	**209**	Pn	**Pn**	**10 26 24.9**	**-0.9**
	236nm,0.3s,baz=335,slow=18,SNR=153						
JHJ				Sn	**Sn**	**10 27 14.4**	**-3.3**
	301nm,0.3s,baz=108,slow=22,SNR=7.6						
INU	**Inuyama**	**4.67**	**250**	*e*Pn	**Pn**	**10 26 29.9**	**+1.8**
INU				*e*Sn	**Sb**	**10 27 30.4**	**-5.3**
ERM	**Erimo**	**4.95**	**7**	*ce*P	**Pn**	**10 26 30.9**	**-1.1**
ERM				pmax	pmax		
	comp=Z,149nm,0.7s						
ERM	**Erimo**	**4.95**	**7**	*e*Pn	**Pn**	**10 26 31.2**	**-0.7**
ERM				*e*Sn	**Sn**	**10 27 30.3**	**+1.5**
ASAJ	**Asahikawa**	**7.01**	**1**	Pn	**Pn**	**10 27 00.0**	**-0.4**
	comp=Z,14nm,0.3s,baz=211,slow=11,SNR=74						
ASAJ				Sn	**Sn**	**10 28 16.0**	**-3.7**
	comp=Z,5.1nm,0.3s,baz=233,slow=20,SNR=2.6						
ASAJ	**Asahikawa**	**7.01**	**1**	*e*Pn	**Pn**	**10 26 59.9**	**-0.5**
ASAJ				Sn	**Sn**	**10 28 16.0**	**-3.7**
ASAJ				*e*Sn	**Sn**	**10 28 21.3**	**+1.6**
YUK	**Yuzh-Kuril'sk**	**7.42**	**20**	*e*P	**Pn**	**10 27 04.1**	**-1.8**
YUK				*i* S	**Sn**	**10 28 22.4**	**-7.3**
YUK				pmax	pmax		
	comp=Z,386nm,0.3s						
YUK				pmax	pmax		
	comp=E,86nm,0.2s						
YUK				MLR	MLR		
	comp=Z,3μm,12.0s						
YUK				MLR	MLR		
	comp=E,3μm,11.0s						
YUK				MLR	MLR		
	comp=N,2μm,9.0s						
SHO	**Shikotan**	**7.57**	**25**	*e*P	**Pn**	**10 27 05.7**	**-2.3**
SHO				*i* S	**Sn**	**10 28 25.6**	**-7.7**
SHO				pmax	pmax		
	comp=E,62nm,0.6s						
SHO				pmax	pmax		
	comp=Z,197nm,0.6s						
SHO				pmax	pmax		
	comp=N,101nm,0.4s						
KUR	**Kuril'sk**	**9.12**	**25**	*e*P	**Pn**	**10 27 29.7**	**+0.5**
KUR				*e*S	**Sn**	**10 29 03.9**	**-7.5**
KUR				pmax	pmax		
	comp=Z,48nm,0.8s						
KUR				smax	smax		
	comp=N,155nm,0.6s						
KUR				smax	smax		
	comp=E,94nm,0.6s						
YSS	**Yuzh-Sakhalins**	**9.86**	**2**	⇓*e*P	**Pn**	**10 27 38.9**	**-0.4**
YSS				pmax	pmax		
	comp=Z,70nm,0.8s						
YSS				MLR	MLR		
	comp=Z,2μm,14.0s						
YSS				MLR	MLR		
	comp=N,1μm,18.0s						
YSS				MLR	MLR		
	comp=E,2μm,14.0s						
CBIJ	**Chichi jima**	**9.97**	**181**	*e*Pn	**Pn**	**10 27 36.4**	**-4.6**
CBIJ				Sn	Sn	10 29 22.6	-10
CBIJ				*e*Sn	Sn	10 29 28.1	-4.4
JCJ	**Chichijima**	**9.97**	**181**	Pn	**Pn**	**10 27 37.6**	**-3.4**
	comp=E,28nm,0.3s,baz=263,slow=23,SNR=15						

CN2			*e*S	Sn	10 31 25.8	+2.5
CN2			pmax	pmax		
	comp=Z,30nm,1.0s					
CN2			pmax	pmax		
	comp=Z,200nm,4.0s					
CN2			LR	LR		
	comp=Z,900nm,15.0s					
CN2			LR	LR		
	comp=Z,1μm,15.0s					
CN2			LR	LR		
	comp=Z,1μm,16.0s					
JOW	**Kunigami**	**15.72 233**	*e*Pn	**P**	**10 29 01.1**	**-2.0**
	comp=Z,42nm,0.9s					
NKL	**Nikolayevsk**	**16.10 356**	*e*P	**Pn**	**10 29 00.5**	**-3.3**
NKL			pmax	pmax		
	comp=Z,43nm,1.0s					
NKL			MLR	MLR		
	comp=N,1μm,18.0s					
NKL			MLR	MLR		
	comp=E,500nm,18.0s					
NKL			MLR	MLR		
	comp=Z,2μm,18.0s					
DL2	**Dalian**	**16.45 283**	P	**P**	**10 29 09.8**	**-1.3**
DL2			S	**Sn**	**10 32 12.0**	**+1.4**
DL2			pmax	pmax		
	comp=Z,59nm,1.2s					
DL2			pmax	pmax		
	comp=Z,310nm,4.1s					
DL2			LR	LR		
	comp=Z,2μm,13.3s					
DL2			LR	LR		
	comp=Z,2μm,13.8s					
SSE	**Sheshan**	**18.52 257**	P	**P**	**10 29 33.0**	**-1.0**
SSE			S	**Sn**	**10 32 58.1**	**-2.7**
SSE			pmax	pmax		
	comp=Z,39nm,0.7s					
SSE			pmax	pmax		
	comp=Z,96nm,5.7s					
SSE			LR	LR		
	comp=Z,1μm,20.1s					
SSE			LR	LR		
	comp=Z,630nm,20.3s					
SSE			LR	LR		
	comp=Z,910nm,14.4s					
PETK	**Petropavlovsk-**	**19.26 29**	P	**Pn**	**10 29 42.5**	**-0.4**
	comp=Z,0.3nm,0.3s,baz=204,slow=9.9,SNR=5.7					
PETK			LR	LR	10 37 41.7	
	comp=Z,441nm,18.3s,baz=215,slow=39					
PET	**Petropavlovsk**	**19.57 30**	*e*P	**Pn**	**10 29 52.6**	**+5.9**
PET			pmax	pmax		
	comp=Z,47nm,1.0s					
PET			MLR	MLR		
	comp=Z,760nm,14.0s					
PET	**Petropavlovsk**	**19.57 30**	*e*P	**Pn**	**10 29 46.8**	**+0.1**
	comp=Z,35nm,0.9s					
NJ2	**Nanjing**	**19.99 262**	*e*P	**P**	**10 29 49.5**	**-0.6**
NJ2			pmax	pmax		
	comp=Z,33nm,0.8s					
NJ2			LR	LR		
	comp=Z,920nm,14.1s					
NJ2			LR	LR		
	comp=Z,2μm,16.3s					
NJ2			LR	LR		
	comp=Z,2μm,17.9s					
TIA	**Tai'an**	**20.26 275**	*e*P	**P**	**10 29 51.1**	**-1.9**
TIA			pmax	pmax		
	comp=Z,80nm,1.0s					
TIA			pmax	pmax		
	comp=Z,200nm,3.0s					
TIA			LR	LR		
	comp=Z,910nm,12.0s					
TIA			LR	LR		
	comp=Z,2μm,15.0s					
TIA			LR	LR		
	comp=Z,2μm,14.0s					
BJI	**Beijing**	**20.67 286**	P	**P**	**10 29 55.6**	**-1.8**
BJI			S	**S**	**10 33 45.8**	**-1.8**
BJI			pmax	pmax		
	comp=Z,18nm,1.0s					
BJI			pmax	pmax		
	comp=Z,91nm,3.5s					
BJI			LR	LR		
	comp=Z,1μm,13.4s					
BJI			LR	LR		
	comp=Z,560nm,16.0s					
BJI			LR	LR		
	comp=Z,350nm,23.3s					
BJT	**Baijiatuau**	**20.67 286**	*e*P	**P**	**10 29 55.2**	**-2.3**
BJT			pmax	pmax		
	comp=Z,50nm,0.8s					
BJT	**Baijiatuau**	**20.67 286**	*e*P	**P**	**10 29 55.2**	**-2.3**
	comp=Z,50nm,0.8s					
YHNB	**Yeheng**	**21.81 241**	*e*P	**P**	**10 30 09.8**	**-0.1**
	comp=Z,35nm,0.9s					
NACB	**Ninganchiao**	**21.98 240**	*e*P	**P**	**10 30 13.7**	**+2.1**
	comp=Z,32nm,1.1s					
SSLB	**Suanglung**	**22.67 240**	*e*P	**P**	**10 30 19.6**	**+0.6**
	comp=Z,18nm,0.8s					
YULB	**Yu-li**	**22.69 239**	*e*P	**P**	**10 30 18.6**	**-0.7**
	comp=Z,21nm,0.8s					
CLNS	**Chul'man**	**22.94 335**	*e*P	**P**	**10 30 19.2**	**-2.5**
CLNS			pmax	pmax		
	comp=Z,19nm,0.8s					
CLNS			pmax	pmax		
	comp=N,19nm,1.0s					
CLNS			pmax	pmax		
	comp=E,9.0nm,0.9s					
MA2	**Magadan**	**23.14 11**	P	**P**	**10 30 23.4**	**-0.2**
	comp=E,23nm,0.7s,baz=225,slow=11,SNR=12					
MA2			LR	LR	10 40 21.0	
	comp=E,588nm,18.7s,baz=218,slow=39					
MA2	**Magadan**	**23.14 11**	*e*P	**P**	**10 30 22.9**	**-0.7**
	comp=E,271nm,1.0s					
TPUB	**Ta-pu**	**23.21 240**	*e*P	**P**	**10 30 24.4**	**-0.3**
	comp=E,46nm,0.7s					
TWG	**Pinlang**	**23.23 238**	*e*P	**P**	**10 30 25.9**	**+1.1**
	comp=E,171nm,0.8s					
QZH	**Quanzhou**	**23.64 246**	*e*P	**P**	**10 30 29.0**	**+0.2**
QZH			S	**S**	**10 34 35.0**	**-7.7**
QZH			LR	LR		
	comp=E,1μm,12.9s					
QZH			LR	LR		
	comp=E,1μm,13.8s					
QZH			LR	LR		
	comp=E,970nm,18.0s					
TIY	**Taiyuan**	**23.75 281**	*e*P	**P**	**10 30 30.3**	**+0.4**
TIY			S	**S**	**10 34 42.0**	**-2.5**
TIY			pmax	pmax		
	comp=E,51nm,0.5s					
TIY			pmax	pmax		
	comp=E,150nm,8.7s					
TIY			LR	LR		
	comp=E,440nm,13.6s					
TIY			LR	LR		
	comp=E,1μm,13.2s					
TIY			LR	LR		
	comp=E,1μm,14.1s					
WHN	**Wuhan**	**24.13 263**	⇑P	**P**	**10 30 32.8**	**-0.6**
WHN			S	**S**	**10 34 50.6**	**+0.1**
WHN			pmax	pmax		
	comp=E,66nm,1.0s					
WHN			LR	LR		
	comp=E,2μm,16.0s					
WHN			LR	LR		
	comp=E,3μm,12.0s					
WHN			LR	LR		
	comp=E,3μm,15.8s					
HHC	**Hu-ho-hao-te**	**24.18 288**	*e*P	**P**	**10 30 35.0**	**+1.0**
HHC			pP	sP	10 30 44.3	+2.9
HHC			sP	pP	10 30 49.3	+10
HHC			PP	**PnPn**	**10 31 04.3**	**+0.9**
HHC			S	**S**	**10 34 43.4**	**-8.0**
HHC			sS	sS	10 35 03.9	+3.9
HHC			pmax	pmax		
	comp=E,47nm,0.8s					
HHC			pmax	pmax		
	comp=E,220nm,4.0s					
HHC			LR	LR		
	comp=E,1μm,11.8s					
HHC			LR	LR		
	comp=E,2μm,13.5s					
HHC			LR	LR		
	comp=E,2μm,13.9s					
CIT	**Chita**	**25.17 316**	*e*P	**P**	**10 30 43.6**	**+0.8**
CIT			pmax	pmax		
	comp=Z,307nm,1.4s					
YAK	**Yakutsk**	**26.18 346**	P	**P**	**10 30 51.8**	**0.0**
	comp=Z,8.5nm,0.5s,baz=320,slow=14,SNR=9.3					
YAK			LR	LR	10 42 44.2	
	comp=Z,469nm,20.4s,baz=160,slow=40					
YAK	**Yakutsk**	**26.18 346**	*e*P	**P**	**10 30 50.7**	**-1.1**
YAK			*e**PP	**pP**	**10 30 55.2**	**-1.8**
YAK			*e*PPP	PPP	10 31 34.7	
YAK			*e*		10 34 24.9	
YAK			*e*S	**S**	**10 35 18.9**	**-3.8**
YAK			*e**SS	**sS**	**10 35 28.6**	**-2.7**
YAK			*e*SSS	SSS	10 36 28.8	
YAK			pmax	pmax		
	comp=N,8.0nm,0.8s					
YAK			pmax	pmax		
	comp=E,4.0nm,0.7s					
YAK			pmax	pmax		
	comp=Z,69nm,0.8s					
YAK			smax	smax		
	comp=E,41nm,1.8s					
YAK			smax	smax		
	comp=N,105nm,2.0s					
YAK			MLR	MLR		
	comp=N,825nm,14.0s					
YAK			MLR	MLR		
	comp=Z,905nm,13.0s					
YAK			MLR	MLR		
	comp=E,469nm,15.0s					
YAK	**Yakutsk**	**26.18 346**	*e*P	**P**	**10 30 52.2**	**+0.4**
	comp=E,131nm,0.8s					
SEY	**Seymchan**	**26.59 10**	P	**P**	**10 30 56.7**	**+1.3**
	comp=E,23nm,0.8s,baz=186,slow=7.9,SNR=45					
SEY	**Seymchan**	**26.59 10**	*c e*P	**P**	**10 30 56.0**	**+0.6**
XAN	**Xi'an**	**27.30 274**	P	**P**	**10 31 02.0**	**-0.2**
XAN			PP	**PnPn**	**10 31 44.4**	**-1.7**
XAN			S	**S**	**10 35 36.9**	**-4.1**
XAN			pmax	pmax		
	comp=E,30nm,0.7s					
XAN			pmax	pmax		
	comp=E,71nm,5.2s					
XAN			LR	LR		
	comp=E,380nm,13.6s					
XAN			LR	LR		
	comp=E,700nm,14.2s					
XAN			LR	LR		
	comp=E,750nm,13.9s					
H11N2	**WAKE ISLAND Hy**	**27.53 122**	T	T	10 59 49.9	
	baz=315,slow=75,SNR=378					
H11N1	**WAKE ISLAND Hy**	**27.54 122**	T	T	10 59 50.4	
	baz=315,slow=75,SNR=467					
H11N3	**WAKE ISLAND Hy**	**27.55 122**	T	T	10 59 51.0	
	baz=315,slow=75,SNR=302					
BOD	**Bodaibo**	**27.89 327**	*e*P	**P**	**10 31 06.5**	**-0.7**
BOD			pmax	pmax		
	comp=Z,32nm,1.0s					
ULN	**Ulaanbaatar**	**27.95 304**	*e*P	**P**	**10 31 08.8**	**+0.7**
ULN			pmax	pmax		
	comp=Z,54nm,1.1s					
ULN	**Ulaanbaatar**	**27.95 304**	*e*P	**P**	**10 31 08.8**	**+0.7**
	comp=Z,54nm,1.1s					
H11S1	**WAKE ISLAND Hy**	**28.26 124**	T	T	11 00 44.8	
	baz=316,slow=76,SNR=274					
H11S3	**WAKE ISLAND Hy**	**28.26 124**	T	T	11 00 45.9	
	baz=316,slow=76,SNR=322					
H11S2	**WAKE ISLAND Hy**	**28.27 124**	T	T	11 00 46.5	
	baz=316,slow=76,SNR=294					
SONM	**Songino Array**	**28.39 304**	P	**P**	**10 31 12.5**	**+0.6**
	comp=Z,41nm,0.8s,baz=99,slow=8.4,SNR=163					
SONM			LR	LR	10 42 51.6	
	comp=Z,289nm,21.9s,baz=97,slow=37					
IRK	**Irkutsk**	**30.63 312**	*e*P	**P**	**10 31 28.7**	**-2.9**
IRK			pmax	pmax		
	comp=Z,44nm,2.1s					
LZH	**Lanzhou**	**30.81 280**	*e*P	**P**	**10 31 34.5**	**+1.0**
LZH			pP	sP	10 31 44.4	+3.4
LZH			sP	pP	10 31 47.3	+8.5
LZH			*e*S	**S**	**10 36 37.0**	**+0.6**
LZH			sS	sS	10 36 49.3	+4.2
LZH			SS	**SnSn**	**10 38 15.0**	**-0.4**
LZH			pmax	pmax		
	comp=Z,60nm,1.0s					
LZH			pmax	pmax		
	comp=Z,150nm,4.0s					
LZH			LR	LR		
	comp=Z,880nm,12.3s					
LZH			LR	LR		
	comp=Z,1μm,14.2s					
LZH			LR	LR		
	comp=Z,1μm,16.0s					
ZAK	**Zakamensk**	**30.83 308**	*e*P	**P**	**10 31 33.6**	**+0.1**
ZAK			pmax	pmax		
	comp=Z,35nm,1.2s					
TLY	**Talaya**	**30.87 311**	*c i*P	**P**	**10 31 34.0**	**+0.3**
TLY			*e*S	**S**	**10 36 39.6**	**+2.8**
TLY			pmax	pmax		
	comp=Z,45nm,1.6s					
TLY			MLR	MLR		
	comp=Z,551nm,14.0s					
TLY	**Talaya**	**30.87 311**	*e*P	**P**	**10 31 34.6**	**+0.9**
	comp=Z,23nm,1.0s					
GYA	**Guiyang**	**31.99 261**	P	**P**	**10 31 44.8**	**+0.9**
GYA			pP	sP	10 31 53.4	+2.1
GYA			PP	**PnPn**	**10 32 51.0**	**+1.9**
GYA			PcP	**PcP**	**10 34 34.3**	**+0.6**
GYA			S	**S**	**10 36 52.8**	**-2.1**
GYA			sS	sS	10 37 08.0	+4.5
GYA			ScP	**ScP**	**10 38 15.6**	**-0.8**
GYA			SS	**SnSn**	**10 38 45.4**	**+1.3**
GYA			ScS	**ScS**	**10 42 12.3**	**-2.9**
GYA			pmax	pmax		
	comp=Z,20nm,0.8s					
GYA			pmax	pmax		
	comp=Z,120nm,5.0s					
GYA			LR	LR		
	comp=Z,640nm,17.2s					
GYA			LR	LR		
	comp=Z,560nm,17.3s					
GYA			LR	LR		
	comp=Z,590nm,17.6s					
MOY	**Mondy**	**32.48 310**	*e*P	**P**	**10 31 48.0**	**0.0**
MOY			pmax	pmax		
	comp=Z,44nm,2.7s					
GTA	**Gaotai**	**33.28 287**	*e*P	**P**	**10 31 56.4**	**+1.3**
GTA			pP	sP	10 32 05.6	+3.0
GTA			sP	pP	10 32 09.6	+9.2
GTA			S	**S**	**10 37 14.3**	**-0.4**
GTA			sS	sS	10 37 31.3	+7.8
GTA			SS	**SnSn**	**10 39 15.1**	**0.0**
GTA			pmax	pmax		
	comp=Z,14nm,1.4s					
GTA			pmax	pmax		
	comp=Z,120nm,6.4s					
GTA			LR	LR		
	comp=Z,660nm,18.1s					
GTA			LR	LR		
	comp=Z,420nm,15.7s					
GTA			LR	LR		
	comp=Z,550nm,15.0s					
QIZ	**Qiongzhong**	**33.65 247**	P	**P**	**10 31 58.5**	**+0.1**
QIZ			S	**S**	**10 37 19.8**	**-0.8**
QIZ			LR	LR		
	comp=N,260nm,18.5s					
QIZ			LR	LR		
	comp=E,300nm,17.7s					
QIZ	**Qiongzhong**	**33.65 247**	P	**P**	**10 31 58.6**	**+0.1**
QIZ			S	**S**	**10 37 19.8**	**-0.8**
QIZ			LR	LR		
	comp=E,270nm,18.8s					
QIZ			LR	LR		
	comp=E,300nm,19.3s					
BILL	**Bilibino**	**33.75 16**	⇓*i*P	**P**	**10 31 58.2**	**-0.6**
BILL			pmax	pmax		
	comp=Z,10.0nm,1.2s					
BILL			MLR	MLR		
	comp=Z,391nm,15.0s					
BILL	**Bilibino**	**33.75 16**	*e*P	**P**	**10 31 58.6**	**-0.1**
	comp=Z,40nm,1.3s					
TIXI	**Tiksi**	**35.32 353**	P	**P**	**10 32 11.9**	**-0.4**
	comp=Z,5.2nm,0.7s,baz=139,slow=7.1,SNR=16					
TIXI	**Tiksi**	**35.32 353**	⇑*i*P	**P**	**10 32 11.7**	**-0.5**
TIXI			pmax	pmax		
	comp=Z,6.0nm,0.7s					
TIXI	**Tiksi**	**35.32 353**	*e*P	**P**	**10 32 11.8**	**-0.5**
	comp=Z,8.7nm,0.8s					
KMI	**Kunming**	**35.73 262**	P	**P**	**10 32 17.8**	**+1.2**
KMI			pP	sP	10 32 27.1	+3.1
KMI			sP	pP	10 32 31.3	+9.4
KMI			PP	**PP**	**10 33 38.8**	**+1.0**
KMI			S	**S**	**10 37 50.9**	**-2.1**
KMI			sS	sS	10 38 04.5	+2.8
KMI			SS	**SnSn**	**10 40 12.3**	**-2.7**
KMI			pmax	pmax		
	comp=Z,44nm,0.8s					
KMI			pmax	pmax		
	comp=Z,64nm,3.1s					
KMI			LR	LR		
	comp=Z,280nm,13.0s					
KMI			LR	LR		
	comp=Z,620nm,18.1s					
KMI			LR	LR		
	comp=Z,610nm,20.1s					
KRAR	**Krasnoyarsk**	**37.95 316**	*i* P	**P**	**10 32 33.5**	**-1.3**
KRAR			pmax	pmax		
	comp=Z,44nm,1.0s					
MYLDM	**Lahad Datu**	**38.55 220**	*e*P	**P**	**10 32 42.5**	**+2.2**
	comp=Z,59nm,1.2s					
SKNT	**Sakolnakorn**	**39.28 250**	P	**P**	**10 32 48.2**	**+1.7**
	comp=Z,37nm,1.2s					
JAY	**Jayapura**	**39.44 183**	P	**P**	**10 32 47.4**	**-0.4**
	comp=Z,1.0nm,0.7s,baz=96,slow=23,SNR=5.3					
CRAI	**Chiangrai**	**40.14 257**	P	**P**	**10 32 55.1**	**+1.5**
	comp=Z,178nm,1.0s					
KHON	**Khomkaen**	**40.55 250**	P	P	10 33 02.9	+5.9
	comp=Z,16nm,0.8s,comp=Z,620nm					
FAKI	**Fak Fak**	**40.91 196**	*e*P	**P**	**10 32 59.7**	**-0.2**
	comp=Z,19nm,0.9s					
MRSI	**Marisa**	**41.04 212**	P	**P**	**10 32 58.7**	**-2.3**
	comp=Z,46nm,1.2s,comp=Z,2μm					
CMAI	**Chiengmai2**	**41.34 258**	P	**P**	**10 33 05.4**	**+1.7**
	comp=Z,19nm,1.2s					
UTTA	**Uttaradit**	**41.42 254**	P	**P**	**10 33 06.0**	**+1.8**
	comp=Z,4.6nm,0.9s,comp=Z,51nm					
WMQ	**Urumqi**	**41.49 297**	P	**P**	**10 33 06.1**	**+1.5**
WMQ			pP	sP	10 33 15.1	+3.0
WMQ			sP	pP	10 33 20.3	+10
WMQ			ScP	**ScP**	**10 38 51.5**	**+0.2**
WMQ			S	**S**	**10 39 16.9**	**-2.5**
WMQ			sS	sS	10 39 33.3	+5.1
WMQ			pmax	pmax		
	comp=Z,23nm,0.8s					
WMQ			pmax	pmax		
	comp=Z,150nm,4.6s					
WMQ			LR	LR		
	comp=Z,450nm,18.0s					
WMQ			LR	LR		
	comp=Z,180nm,13.8s					
WMQ			LR	LR		
	comp=Z,99nm,26.6s					
LAMP	**Lampang**	**41.68 256**	P	P	10 33 11.3	+5.0
	comp=Z,8.3nm,0.8s					
PBKT	**Sadao Pong**	**41.81 252**	P	**P**	**10 33 09.1**	**+1.8**
	comp=Z,29nm,1.3s					
SANI	**Sanana**	**41.82 205**	P	**P**	**10 33 08.0**	**+0.6**
CMMT	**Chiang Mai**	**42.05 256**	P	**P**	**10 33 11.0**	**+1.7**
	comp=Z,14nm,1.1s,comp=Z,411nm					
CHTO	**Chiang Mai**	**42.05 256**	P	**P**	**10 33 11.0**	**+1.6**
	comp=Z,65nm,1.1s					
CHTO	**Chiang Mai**	**42.05 256**	*e*P	**P**	**10 33 10.2**	**+0.9**
CHTO			pmax	pmax		
	comp=Z,13nm,1.0s					
CHTO	**Chiang Mai**	**42.05 256**	*e*P	**P**	**10 33 10.2**	**+0.9**
	comp=Z,13nm,1.0s					
RABL	**Rabaul**	**42.08 165**	*e*P	**P**	**10 33 08.6**	**-1.0**
	comp=Z,54nm,0.4s					
CMAR	**Chiang Mai Arr**	**42.25 256**	P	**P**	**10 33 12.2**	**+1.1**
	comp=Z,4.6nm,0.8s,baz=47,slow=6.7,SNR=14					
CMAR			LR	LR	10 52 21.9	
	comp=Z,262nm,18.2s,baz=51,slow=38					
ZALV	**Zalesovo Beam**	**42.44 312**	P	**P**	**10 33 12.5**	**+0.4**
	comp=Z,30nm,0.8s,baz=90,slow=6.8,SNR=81					
ZALV			PcP	**PcP**	**10 35 05.3**	**+0.4**
	comp=Z,6.0nm,0.8s,baz=90,slow=2.9,SNR=3.7					
ZALV			LR	LR	10 51 38.3	
	comp=Z,583nm,18.6s,baz=70,slow=37					
LSA	**Lhasa**	**42.97 276**	P	**P**	**10 33 18.3**	**+1.0**
LSA			pmax	pmax		
	comp=Z,8.0nm,0.9s					
LSA	**Lhasa**	**42.97 276**	*e*P	**P**	**10 33 16.4**	**-0.8**
LSA			pmax	pmax		
	comp=Z,55nm,1.1s					
LSA	**Lhasa**	**42.97 276**	*e*P	**P**	**10 33 16.4**	**-0.8**
	comp=Z,54nm,1.1s					
PCI	**Palu**	**43.20 214**	P	**P**	**10 33 16.5**	**-2.1**
	comp=Z,70nm,1.1s					
CHBT	**CHBT**	**43.20 246**	P	P	10 33 26.7	+8.0
	comp=Z,34nm,1.0s,comp=Z,3μm					
NVS	**Novosibirsk**	**43.35 314**	⇓*i*P	**P**	**10 33 20.0**	**+0.5**
NVS			*e*S	**S**	**10 39 47.0**	**+0.8**
NVS			pmax	pmax		
	comp=Z,52nm,1.4s					
NVS			pmax	pmax		
	comp=N,12nm,1.3s					
NVS			pmax	pmax		
	comp=E,46nm,1.3s					
NVS			smax	smax		
	comp=E,12nm,2.2s					
NRIK	**Noril'sk**	**43.53 335**	P	**P**	**10 33 20.7**	**0.0**
	comp=E,5.1nm,0.5s,baz=116,slow=7.1,SNR=17					
NRIK			LR	LR	10 53 21.4	
	comp=E,758nm,18.2s,baz=110,slow=39					
SHL	**Shillong**	**44.17 270**	*e*P	**P**	**10 33 26.5**	**-0.2**
SBUM	**Sibu**	**44.25 226**	*e*P	**P**	**10 33 28.0**	**+0.9**
	comp=E,12nm,1.0s					
SRDT	**SRDT**	**44.57 251**	P	P	10 33 39.8	+10
MKAR	**Makanchi Array**	**44.73 302**	P	**P**	**10 33 30.9**	**+0.2**
	comp=E,20nm,0.7s,baz=88,slow=9.4,SNR=115					
MKAR			LR	LR	10 52 05.4	
	comp=E,193nm,19.8s,baz=84,slow=36					
MKAR	**Makanchi Array**	**44.73 302**	P	**P**	**10 33 30.9**	**+0.2**
MKAR			pmax	pmax		
	comp=Z,20nm,0.7s					
MKAR			MLR	MLR		
	comp=Z,193nm,19.8s					
MKAR	**Makanchi Array**	**44.73 302**	*e*P	**P**	**10 33 31.0**	**+0.2**
MAKZ	**Makanchi**	**44.94 302**	*e*P	**P**	**10 33 32.5**	**+0.1**
MAKZ			pmax	pmax		
	comp=Z,35nm,0.9s					
MAKZ	**Makanchi**	**44.94 302**	*e*P	**P**	**10 33 32.5**	**+0.1**
	comp=Z,35nm,0.9s					
KSM	**Kuching**	**46.15 227**	*e*P	**P**	**10 33 43.6**	**+1.4**
	comp=Z,20nm,1.0s					
RSO	**Redoubt South**	**46.38 38**	*e*P	**P**	**10 33 45.8**	**+2.0**
KURK	**Kurchatov**	**46.50 308**	*c i*P	**P**	**10 33 44.4**	**-0.2**
KURK			pmax	pmax		
	comp=Z,79nm,0.7s					
KURK	**Kurchatov**	**46.50 308**	*e*P	**P**	**10 33 44.8**	**+0.3**
	comp=Z,112nm,0.8s					
KDAK	**Kodiak Island**	**46.54 42**	*e*P	**P**	**10 33 45.6**	**+0.8**
KDAK			pmax	pmax		
	comp=Z,68nm,0.8s					
KDAK	**Kodiak Island**	**46.54 42**	*e*P	**P**	**10 33 45.5**	**+0.8**
	comp=Z,68nm,0.8s					
PPLA	**Purkeypile**	**46.68 35**	*e*P	**P**	**10 33 48.0**	**+1.9**
	comp=Z,41nm,1.2s					
SPU	**Mount Spurr**	**46.72 37**	*e*P	**P**	**10 33 47.6**	**+1.4**
CAST	**Castle Rocks**	**46.74 34**	*e*P	**P**	**10 33 48.1**	**+1.7**
	comp=Z,19nm,0.8s					
KAPI	**Kappang**	**46.91 212**	*e*P	**P**	**10 33 49.0**	**+0.9**
	comp=Z,37nm,1.1s					
BPAW	**Bear Paw Mtn.**	**47.25 33**	*e*P	**P**	**10 33 51.9**	**+1.5**
	comp=Z,11nm,0.8s					
KTH	**Kantishna Hill**	**47.27 34**	*e*P	**P**	**10 33 52.0**	**+1.5**
	comp=Z,50nm,1.0s					
BRLK	**Bradley Lake**	**47.33 39**	*e*P	**P**	**10 33 52.5**	**+1.5**
	comp=Z,26nm,0.9s					
MLY	**Manley**	**47.39 32**	*e*P	**P**	**10 33 53.0**	**+1.6**
	comp=Z,38nm,1.0s					
PDGK	**Podgornoye**	**47.42 298**	P	**P**	**10 33 51.9**	**0.0**
PDGK			pmax	pmax		
	comp=Z,37nm,0.9s					
TRF	**Thorofare Moun**	**47.55 34**	*e*P	**P**	**10 33 55.1**	**+2.2**
	comp=Z,22nm,0.8s					
COLD	**Coldfoot**	**47.73 29**	*e*P	**P**	**10 33 55.9**	**+2.0**
	comp=Z,6.6nm,1.1s					
RC01	**Rabbit Creek A**	**47.85 37**	*e*P	**P**	**10 33 57.2**	**+2.2**
	comp=Z,48nm,0.9s					
BWN	**Browne**	**47.92 33**	*e*P	**P**	**10 33 57.5**	**+2.0**
	comp=Z,116nm,1.0s					
PMR	**Palmer**	**48.12 37**	*e*P	**P**	**10 33 57.4**	**+0.4**
PMR			pmax	pmax		
	comp=Z,31nm,0.8s					
PMR	**Palmer**	**48.12 37**	*e*P	**P**	**10 33 57.4**	**+0.4**
	comp=Z,31nm,0.8s					
MCK	**McKinley**	**48.16 34**	*e*P	**P**	**10 33 57.8**	**+0.4**
MCK			pmax	pmax		

comp=Z,34nm,0.9s
MCK McKinley 48.16 34 *e*P **P 10 33 57.8 +0.4**
comp=Z,34nm,0.9s
RND Reindeer 48.20 34 *e*P **P 10 33 58.2 +0.5**
RND pmax pmax
comp=Z,42nm,0.9s
RND Reindeer 48.20 34 *e*P **P 10 33 58.2 +0.5**
comp=Z,42nm,0.9s
SURT Suratani 48.30 246 P P 10 34 06.6 +7.6
comp=Z,9.9nm,1.2s
TRTT Trang 48.41 244 P **P 10 34 03.8 +3.9**
comp=Z,18nm,1.2s
KKN Kakani 48.44 276 *e*P **P 10 34 00.6 +0.3**
comp=Z,138nm,0.8s
PKIN Phulchoki 48.44 276 *e*P **P 10 34 01.7 +1.4**
comp=Z,34nm,0.7s
SML Sawmill 48.49 36 *e*P **P 10 34 00.8 +0.8**
SML pmax pmax
comp=Z,46nm,0.8s
SML Sawmill 48.49 36 *e*P **P 10 34 00.8 +0.8**
comp=Z,46nm,0.8s
WRH Wood River Hil 48.52 33 *e*P **P 10 34 00.9 +0.8**
comp=Z,16nm,0.7s
COLA College 48.62 32 *e*P **P 10 34 01.6 +0.8**
COLA pmax pmax
comp=Z,26nm,0.9s
COLA College 48.62 32 *e*P **P 10 34 01.6 +0.8**
comp=Z,26nm,0.9s
CCB Clear Creek Bu 48.64 33 *e*P **P 10 34 01.8 +0.8**
comp=Z,9.7nm,1.0s
GKN Gorkha 48.86 277 *e*P **P 10 34 03.3 -0.1**
comp=Z,140nm,0.9s
SCM Sheep Creek Mo 48.96 36 *e*P **P 10 34 04.7 +1.1**
SCM pmax pmax
comp=Z,52nm,1.0s
SCM Sheep Creek Mo 48.96 36 *e*P **P 10 34 04.7 +1.1**
comp=Z,52nm,1.0s
ILAR Eielson Array 49.03 32 P **P 10 34 04.5 +0.5**
comp=Z,5.5nm,0.8s,baz=267,slow=6.5,SNR=71
ILAR LR LR 10 54 28.7
comp=Z,94nm,21.2s,baz=278,slow=36
PKDT Phuket 49.36 245 P **P 10 34 09.6 +2.5**
comp=Z,82nm,0.9s
KULM Kulim 49.51 241 *e*P **P 10 34 09.3 +1.0**
comp=Z,13nm,1.0s
SOEI Soe 49.61 204 *e*P **P 10 34 08.5 -0.6**
comp=Z,77nm,0.8s
KLU Klutina 49.66 37 *e*P **P 10 34 10.2 +1.2**
comp=Z,37nm,0.9s
FYU Fort Yukon 49.67 30 *e*P **P 10 34 11.4 +2.5**
comp=Z,117nm,1.7s
PAX Paxson 49.75 35 *e*P **P 10 34 10.5 +0.9**
PAX pmax pmax
comp=Z,14nm,1.0s
PAX Paxson 49.75 35 *e*P **P 10 34 10.5 +0.9**
comp=Z,14nm,1.0s
DIV Divide 49.76 37 *e*P **P 10 34 11.0 +1.3**
comp=Z,53nm,0.9s
KOLN Koldanda 49.78 277 *e*P **P 10 34 10.3 -0.2**
comp=Z,38nm,0.6s
EYAK Cordova Ski Ar 49.84 38 *e*P **P 10 34 11.7 +1.5**
comp=Z,40nm,0.8s
PYUN Piuthan 50.12 278 *e*P **P 10 34 13.0 -0.1**
comp=Z,332nm,1.1s
TKM2 Tokmak 2 50.27 299 *e*P **P 10 34 15.0 +0.9**
TKM2 pmax pmax
comp=Z,32nm,0.8s
TKM2 Tokmak 2 50.27 299 *e*P **P 10 34 15.0 +0.9**
comp=Z,32nm,0.8s
DOT Dot Lake 50.33 34 *e*P **P 10 34 14.4 +0.4**
comp=Z,50nm,0.8s
BMRM Bremner River 50.35 37 *e*P **P 10 34 15.5 +1.3**
comp=Z,44nm,1.0s
RAGM Ragged Mountai 50.38 38 *e*P **P 10 34 16.0 +1.6**
comp=Z,41nm,0.9s
MENT Mentasta 50.55 35 *e*P **P 10 34 17.0 +1.4**
comp=Z,25nm,0.7s
COEN Coen 50.78 179 *e*P **P 10 34 18.4 +0.6**
comp=Z,27nm,0.8s
MTN Manton Dam 50.79 194 *e*P **P 10 34 17.6 -0.3**
comp=Z,61nm,1.3s
WSI Waingapu 50.92 209 P **P 10 34 16.5 -2.4**
comp=Z,229nm,0.5s
FRU Bishkek 50.99 299 *e*P **P 10 34 19.0 -0.3**
FRU *i* 10 34 26.0
FRU *e* 10 36 21.0
FRU pmax pmax
comp=Z,70nm,2.1s
KSH Kashi 51.08 294 P **P 10 34 24.6 +4.5**
KSH *e*pP sP 10 34 34.4 +6.7
KSH *e*sP pP 10 34 38.4 +13
KSH *e*PcP **PcP 10 35 39.3 +3.5**
KSH *e*PP **PP 10 36 23.1 +6.5**
KSH S **S 10 41 40.5 +3.5**
KSH ScS **ScS 10 44 08.6 -1.5**
KSH pmax pmax
comp=Z,58nm,2.2s
KSH LR LR
comp=Z,470nm,12.8s
KSH LR LR
comp=Z,770nm,17.4s
KSH LR LR
comp=Z,1μm,14.9s
BVAR Borovoye Array 51.10 312 LR LR 10 56 57.7
comp=Z,374nm,19.8s,baz=71,slow=37
AAK Ala-Archa 51.13 299 LR LR 10 57 33.0
comp=Z,702nm,18.6s,baz=62,slow=38
AAK Ala-Archa 51.13 299⇓ *i*P **P 10 34 21.0 +0.5**
AAK pmax pmax
comp=Z,33nm,0.9s
AAK Ala-Archa 51.13 299 *e*P **P 10 34 21.1 +0.6**
comp=Z,13nm,0.8s
BRVK Borovoye 51.15 312*c i*P **P 10 34 20.4 +0.2**
BRVK pmax pmax
comp=Z,15nm,0.7s
BRVK Borovoye 51.15 312 *e*P **P 10 34 20.5 +0.2**
comp=Z,34nm,1.0s
BALM Baldy 51.43 37 *e*P **P 10 34 23.5 +1.1**
BALM pmax pmax
comp=Z,27nm,0.8s
BALM Baldy 51.43 37 *e*P **P 10 34 23.5 +1.1**
comp=Z,27nm,0.8s
EGAK Eagle 51.48 32 *e*P **P 10 34 23.1 +0.5**
comp=Z,15nm,1.0s
EKS2 Erkin-Say 51.63 299 *e*P **P 10 34 24.6 +0.4**
EKS2 pmax pmax
comp=Z,11nm,0.8s
EKS2 Erkin-Say 51.63 299 *e*P **P 10 34 24.6 +0.4**
comp=Z,11nm,0.8s
ZRNK Zerenda 51.93 313 *e*P **P 10 34 26.5 +0.4**
ZRNK pmax pmax
comp=Z,80nm,1.6s
ZRNK Zerenda 51.93 313 *e*P **P 10 34 26.5 +0.4**
comp=Z,80nm,1.6s
UWJI Ujung Watu 52.31 221 P **P 10 34 28.7 -0.6**
DAWY Dawson 52.33 33 *e*P **P 10 34 29.7 +0.7**
comp=Z,32nm,1.7s
PSI Prapat 52.48 240 *e*P **P 10 34 31.1 +0.3**
PSI pmax pmax
comp=Z,17nm,0.8s
PSI Prapat 52.48 240 *e*P **P 10 34 31.1 +0.3**
comp=Z,17nm,0.8s
MNAS Manas 52.57 299 P **P 10 34 31.8 +0.5**
MNAS pmax pmax
comp=Z,38nm,0.9s
BKNI Bangkinang 52.86 236 *e*P **P 10 34 34.7 +1.2**
comp=Z,78nm,0.5s
KKAR Karatay Array 53.76 300 *e*P **P 10 34 40.1 +0.3**
KKAR Karatay Array 53.76 300 *e*P **P 10 34 40.1 +0.3**
INK Inuvik 53.98 27 P **P 10 34 41.9 +0.9**
comp=Z,3.1nm,0.6s,baz=302,slow=7.0,SNR=32
INK Inuvik 53.98 27 *e*P **P 10 34 42.1 +1.1**
INK pmax pmax
comp=Z,24nm,0.8s
INK Inuvik 53.98 27 *e*P **P 10 34 42.1 +1.1**
comp=Z,24nm,0.8s
GSI Gunungsitoli 54.49 240 *e*P **P 10 34 45.9 +0.4**
comp=Z,66nm,0.9s
SVE Sverdlovsk 55.61 319*de*P **P 10 34 53.5 +0.6**
SVE pmax pmax
comp=Z,41nm,0.9s
SVE MLR MLR
comp=Z,838nm,15.0s
ARU Arti 56.82 319 LR LR 11 03 23.0
comp=Z,382nm,18.6s,baz=59,slow=40
ARU Arti 56.82 319*c i*P **P 10 35 01.7 +0.1**
ARU 10 35 56.3
ARU 10 37 12.6
ARU S **S 10 42 53.6 -0.3**
ARU 10 44 44.2
ARU SS **SS 10 46 37.3 -4.1**
ARU pmax pmax
comp=Z,58nm,1.2s
ARU MLR MLR
comp=Z,681nm,17.0s
ARU Arti 56.82 319 *e*P **P 10 35 01.8 +0.2**
comp=Z,41nm,0.9s
CTAO Charters Tower 56.99 176 *e*P **P 10 35 03.0 -0.2**
CTAO pmax pmax
comp=Z,70nm,1.9s
CTAO Charters Tower 56.99 176 *e*P **P 10 35 03.0 -0.2**
comp=Z,70nm,1.9s
WRAB Tennant Creek 57.22 189 *e*P **P 10 35 04.4 -0.4**
WRAB pmax pmax
comp=Z,32nm,0.8s
WRAB Tennant Creek 57.22 189 *e*P **P 10 35 04.4 -0.4**
comp=Z,32nm,0.8s
WRA Warramunga Arr 57.23 189 P **P 10 35 04.2 -0.7**
comp=Z,30nm,0.8s,baz=7.7,slow=7.1,SNR=199
DLBC Dease Lake 58.10 38 *e*P **P 10 35 12.9 +2.2**
comp=Z,24nm,0.9s
ABKAR Akbulak array 58.48 310 *e*P **P 10 35 13.4 -0.1**
HYB Hyderabad 58.97 269 *i*P **P 10 35 17.0 -0.3**
AKTO Aktyubinsk 59.20 312 LR LR 11 01 55.2
comp=Z,293nm,19.2s,slow=37
ASAR Alice Springs 60.96 189 P **P 10 35 30.4 -0.3**
comp=Z,12nm,0.8s,baz=15,slow=7.1,SNR=136
ASAR LR LR 10 59 10.0
comp=Z,72nm,21.9s,baz=12,slow=33
MBWA Marble Bar 61.75 204 *e*P **P 10 35 35.4 -0.6**
comp=Z,415nm,1.9s
POO Poona 62.13 273 *e*P **P 10 35 36.0 -2.9**
RES Resolute Bay 62.35 15 LR LR 11 06 21.2
comp=Z,143nm,18.0s,baz=4.0,slow=40
RES Resolute Bay 62.35 15 *e*P **P 10 35 40.0 +0.6**
RES pmax pmax
comp=Z,40nm,0.9s
RES Resolute Bay 62.35 15 *e*P **P 10 35 40.0 +0.6**
comp=Z,40nm,0.9s
LVZ Lovozero 62.37 336*ce*P **P 10 35 38.4 -1.3**
LVZ pmax pmax
comp=Z,40nm,1.2s
LVZ Lovozero 62.37 336 *e*P **P 10 35 39.9 +0.2**
comp=Z,54nm,1.4s
EIDS Eidsvold 62.67 171 *e*P **P 10 35 42.0 -0.1**
comp=Z,28nm,1.3s
APA Apatity 62.94 336⇑ *i*P **P 10 35 44.0 +0.5**
APA MLR MLR
comp=Z,600nm,16.0s
TMCR Tamitsa 63.06 332 *e*P **P 10 35 45.0 +0.7**
TMCR pmax pmax
comp=Z,36nm,0.9s
DZM Mont Dzumac 63.08 155 P **P 10 35 45.9 +0.9**
comp=Z,13nm,0.9s,baz=339,slow=8.6,SNR=4.9
PALK Pallekele 63.13 258 *i*P **P 10 35 49.9 +4.3**
YKA Yellowknife Ar 63.37 30 P **P 10 35 46.4 +0.1**
comp=Z,1.9nm,0.8s,baz=300,slow=6.6,SNR=26
KEV Kevo 63.65 339 *e*P **P 10 35 48.6 +0.4**
KEV pmax pmax
comp=Z,31nm,1.3s
KEV Kevo 63.65 339 *e*P **P 10 35 48.5 +0.4**
comp=Z,31nm,1.3s
KLMR Klimovskoe 64.11 328 *e*P **P 10 35 49.1 -2.2**
KLMR *e* 10 38 10.3
KLMR pmax pmax
comp=Z,29nm,0.9s
ARCES ARCESS Array B 64.21 340 P **P 10 35 51.9 +0.1**
comp=Z,4.8nm,0.7s,baz=56,slow=8.1,SNR=31
ARCES LR LR 11 08 01.5
comp=Z,241nm,18.1s,baz=64,slow=40
GEYT Alibeck 64.47 299 P **P 10 35 54.5 +0.4**
comp=Z,8.7nm,0.8s,baz=40,slow=4.8,SNR=14
GEYT LR LR 11 05 14.5
comp=Z,158nm,19.6s,baz=35,slow=37
DAG Danmarks Havn 65.78 355 *i*P **P 10 36 02.0 +0.1**
comp=Z,8.0nm,0.9s
DAG Danmarks Havn 65.78 355 *i*P **P 10 36 02.0 +0.1**
DAG pmax pmax
comp=Z,7.0nm,0.9s
NLWA Neilton Lookou 66.11 48 *e*P **P 10 36 06.5 +1.9**
comp=Z,30nm,1.1s
TDL Tradedollar La 67.61 48 P **P 10 36 15.8 +1.5**
MOS Moscow 67.65 324 *e*P **P 10 36 14.8 +0.6**
MOS *e* 10 36 21.2
MOS *e* 10 38 41.0
MOS pmax pmax
comp=Z,100nm,1.6s
MOS pmax pmax
comp=Z,50nm,1.3s
ARMA Armidale 67.72 171 *e*P **P 10 36 15.9 +1.0**
comp=Z,31nm,1.1s
VRH Novokhopyorsk 68.05 318 *e*P **P 10 36 16.2 -0.5**
VRH *e**SP **pP 10 36 22.9 +0.6**
VRH pmax pmax
comp=Z,30nm,1.1s
VRH MLR MLR
comp=Z,540nm,13.0s
I03D Drain, OR 68.27 51 P **P 10 36 19.9 +1.6**
baz=301
EBG Ellensburg 68.30 47 P **P 10 36 19.8 +1.3**
H04A Detroit Lake 68.48 50 *e*P **P 10 36 21.0 +1.3**
comp=Z,28nm,1.0s
OBN Obninsk 68.50 324⇓ *i*P **P 10 36 20.0 +0.5**
OBN *i* 10 36 26.4
OBN *e* 10 38 50.1
OBN *e*S **PnS 10 45 48.2 +3.5**
OBN pmax pmax
comp=Z,43nm,1.2s
OBN MLR MLR
comp=Z,309nm,16.0s
VFP Flag Point 68.59 49 P **P 10 36 21.9 +1.4**
STKA Stephens Creek 68.62 181 P **P 10 36 20.1 -0.3**
comp=Z,7.4nm,0.7s,baz=346,slow=7.0,SNR=20
STKA LR LR 11 03 52.8
comp=Z,63nm,22.0s,baz=25,slow=34
G05D Wamic, OR 68.72 49 P **P 10 36 22.3 +1.2**
baz=302
LPSR Galich'ya Gora 68.74 320 *e*P **P 10 36 21.3 +0.2**
LPSR *e**SP **sP 10 36 27.7 -1.1**
LPSR pmax pmax
comp=Z,50nm,1.4s
LPSR MLR MLR
comp=Z,590nm,17.0s
I04A Tendick Farm, 68.81 51 P **P 10 36 23.1 +1.3**
baz=301
L02D Cave Junction, 68.91 53 P **P 10 36 23.6 +1.3**
baz=301
FINES FINESS Array B 69.11 333 P **P 10 36 23.7 +0.5**
comp=Z,26nm,0.7s,baz=55,slow=7.2,SNR=76
FINES LR LR 11 10 46.5
comp=Z,405nm,18.7s,baz=24,slow=40
G06A Carlson Farm, 69.13 49 *e*P **P 10 36 25.1 +1.4**
comp=Z,23nm,1.2s
VSR Storozhevoye 69.39 319 *e*P **P 10 36 25.7 +0.6**
VSR *e**SP **sP 10 36 31.8 -1.0**
VSR pmax pmax
comp=Z,30nm,0.6s
VSR MLR MLR
comp=Z,670nm,16.0s
KHMM Horse Mountain 69.50 54 *e*P **P 10 36 26.6 +0.4**
comp=Z,21nm,1.3s
YBH Yreka Blue Hor 69.70 53 *e*P **P 10 36 29.1 +1.7**
YBH pmax pmax
comp=Z,18nm,1.3s
YBH Yreka Blue Hor 69.70 53 *e*P **P 10 36 29.1 +1.7**
comp=Z,18nm,1.3s
M02C Callahan 69.79 53 P **P 10 36 29.5 +1.6**
baz=302
BBOO Buckleboo 69.80 186 *e*P **P 10 36 28.1 +0.4**
comp=Z,28nm,0.8s
J05D Fort Rock, OR 69.80 51 P **P 10 36 28.7 +0.7**
baz=302
LHEM Herd Peak 70.06 53 P **P 10 36 30.9 +1.1**
N02D Trinity Center 70.10 53 P **P 10 36 31.3 +1.4**
baz=302
M04C Macdoel 70.22 52 P **P 10 36 31.8 +1.1**
baz=302
K05A Summer Lake 70.31 51 *e*P **P 10 36 33.1 +1.8**
comp=Z,40nm,1.0s
WDC Whiskeytown Da 70.42 54 *e*P **P 10 36 32.9 +1.2**
WDC pmax pmax
comp=Z,13nm,1.0s
WDC Whiskeytown Da 70.42 54 *e*P **P 10 36 32.9 +1.2**
comp=Z,13nm,1.0s
GOF Gofitskoye 70.62 312⇑ *e*P **P 10 36 34.1 +1.3**
GOF pmax pmax
comp=Z,44nm,0.9s
SUMG Summit 70.62 0 *i*P **P 10 36 33.6 +0.7**
comp=Z,9.6nm,0.7s
SUMG Summit 70.62 0 *e*P **P 10 36 34.0 +1.1**
SUMG pmax pmax
comp=Z,26nm,1.1s
SUMG Summit 70.62 0 *e*P **P 10 36 34.0 +1.1**
comp=Z,26nm,1.1s
VSU Vasula 70.79 330*d i*P **P 10 36 34.4 +0.9**
VSU pmax pmax
comp=Z,111nm,1.2s
O03D Paynes Creek 71.05 54 P **P 10 36 36.2 +0.5**
baz=303
MOD Modoc Plateau 71.13 51 *e*P **P 10 36 37.4 +1.2**
comp=Z,14nm,1.0s
BMO Blue Mountains 71.32 48 *e*P **P 10 36 38.4 +1.2**
comp=Z,16nm,1.1s
ZEI Tsey 71.35 310 *e*P **P 10 36 34.9 -2.7**
ZEI pmax pmax
comp=Z,24nm,0.9s
KBZ Khabaz 71.44 311 P **P 10 36 38.7 +0.9**
comp=Z,14nm,0.8s,baz=66,slow=4.6,SNR=23
KIV Kislovodsk 71.44 311 *i*P **P 10 36 39.8 +1.8**
SNR=12
KIV Kislovodsk 71.44 311 *e*P **P 10 36 38.8 +0.8**
KIV *e*S **S 10 45 54.3 -1.4**
KIV *e*SS **SS 10 50 29.4 -0.2**
KIV pmax pmax
comp=Z,45nm,4.6s
KIV pmax pmax
comp=Z,45nm,1.1s
KIV Kislovodsk 71.44 311 *e*P **P 10 36 39.4 +1.4**
comp=Z,45nm,1.0s
ORV Oroville 71.64 54 *e*P **P 10 36 39.6 +0.5**
ORV pmax pmax
comp=Z,11nm,0.9s
ORV Oroville 71.64 54 *e*P **P 10 36 39.6 +0.5**
comp=Z,11nm,0.9s
SWMT Swartz Lake 71.71 44 *e*P **P 10 36 41.1 +1.5**
WVOR Wild Horse Val 71.87 50 *e*P **P 10 36 42.0 +1.4**
WVOR pmax pmax
comp=Z,17nm,1.1s
WVOR Wild Horse Val 71.87 50 *e*P **P 10 36 42.0 +1.4**
comp=Z,17nm,1.1s
MSO Missoula 72.14 44 *e*P **P 10 36 42.9 +0.7**
comp=Z,12nm,1.1s
GNI Garni 72.28 307 P **P 10 36 44.4 +1.3**
AFDM Forest Hills D 72.32 54 *e*P **P 10 36 44.7 +1.5**
comp=Z,6.9nm,1.0s
UOSS Minazif 72.52 288 *e*P **P 10 36 45.0 +0.4**
comp=Z,1.0nm,0.9s
HATD Hatta, Dubai 72.64 288 P **P 10 36 45.9 +0.6**
MICGM Minsk 72.87 326 *e* **P 10 36 47.0 +0.8**
MNK Minsk 72.87 326 *e*P **P 10 36 47.0 +0.8**
PAHR Pah Rah Range 72.92 53 *e*P **P 10 36 48.0 +1.1**
comp=Z,18nm,1.0s
FAQ Al Faqa, Dubai 73.09 288 P **P 10 36 47.8 -0.2**
NACGM Naroch 73.09 327 *e* **P 10 36 47.0 -0.5**
NACGM *e*LR LR 11 11 24.0
CMB Columbia Colle 73.21 55 *e*P **P 10 36 49.3 +0.8**
CMB pmax pmax
comp=Z,16nm,1.0s
CMB Columbia Colle 73.21 55 *e*P **P 10 36 49.3 +0.8**
comp=Z,16nm,1.0s
HRY Holter Researc 73.38 44 *e*P **P 10 36 51.0 +1.5**
SOC Sochi 73.42 312 *e*P **P 10 36 48.8 -0.8**
SOC *e*S **S 10 46 15.0 -3.1**
SOC pmax pmax
comp=Z,21nm,0.6s
SOC MLR MLR
comp=Z,667nm,22.0s
NWAO Narrogin (SRO) 73.51 202 *e*P **P 10 36 50.0 0.0**
NWAO pmax pmax
comp=Z,84nm,1.9s
NWAO Narrogin (SRO) 73.51 202 *e*P **P 10 36 50.0 0.0**
comp=Z,84nm,1.9s
WAKR Walker 73.56 54 *e*P **P 10 36 52.3 +1.4**
LRM Limekiln Ridge 73.56 45 *e*P **P 10 36 51.8 +1.0**
DLMT Dillon 73.76 45 *e*P **P 10 36 53.0 +1.3**
comp=Z,20nm,0.9s
HLID Hailey 73.77 47 P **P 10 36 52.9 +1.0**
baz=306
HLID Hailey 73.77 47 *e*P **P 10 36 52.2 +0.3**
comp=Z,12nm,1.0s
BMN Battle Mountai 73.88 51 *e*P **P 10 36 54.1 +1.5**
BMN pmax pmax
comp=Z,17nm,1.0s
BMN Battle Mountai 73.88 51 *e*P **P 10 36 54.1 +1.5**
comp=Z,17nm,1.0s
MCMT McKenzie Canyo 73.93 46 *e*P **P 10 36 54.1 +1.2**
ANN Anapa 74.04 314 *e*P **P 10 36 52.6 -0.6**
ANN *e*S **SKiKP 10 46 19.6 -0.9**
ANN pmax pmax
comp=Z,41nm,1.4s
ANN MLR MLR
comp=N,347nm,15.0s
ANN MLR MLR
comp=Z,197nm,15.0s
BOZ Bozeman (W) 74.13 45 P **P 10 36 54.7 +0.7**
baz=307
BOZ Bozeman (W) 74.13 45 *e*P **P 10 36 55.2 +1.2**
BOZ pmax pmax
comp=Z,18nm,0.9s
BOZ Bozeman (W) 74.13 45 *e*P **P 10 36 55.2 +1.2**
comp=Z,18nm,0.9s
NVAR Mina Array Bea 74.34 54 P **P 10 36 56.7 +1.3**
comp=Z,7.0nm,0.8s,baz=282,slow=6.5,SNR=40
NVAR LR LR 11 02 14.3
comp=Z,39nm,21.9s,baz=264,slow=30
NB2 NORSAR Subarra 74.42 338 P **P 10 36 55.2 0.0**
comp=Z,3.4nm,0.7s,baz=39,slow=6.2
NOA NORSAR Array B 74.42 338 P **P 10 36 55.7 +0.5**
comp=Z,5.7nm,0.8s,baz=39,slow=5.8,SNR=18
NOA LR LR 11 14 40.4
comp=Z,290nm,18.7s,baz=35,slow=40
AKASG Malin Array Be 74.71 323 P **P 10 36 57.1 +0.1**
comp=Z,8.0nm,0.6s,baz=45,slow=6.0,SNR=34
AKASG PP **PP 10 39 42.4 -1.2**
comp=Z,0.3nm,0.2s,baz=42,slow=8.5,SNR=4.6
AKASG LR LR 11 13 37.9
comp=Z,206nm,19.3s,baz=50,slow=39
KIEV Kiev 74.73 323⇑ *i*P **P 10 36 57.3 +0.2**
KIEV pmax pmax
comp=Z,26nm,1.1s
KIEV Kiev 74.73 323 *e*P **P 10 36 57.0 -0.1**
comp=Z,101nm,1.8s
QLMT Earthquake Lak 74.74 45 *e*P **P 10 36 59.5 +1.9**
ELK Elko 74.92 50 *e*P **P 10 37 00.3 +1.5**
ELK pmax pmax
comp=Z,7.0nm,0.9s
ELK Elko 74.92 50 *e*P **P 10 37 00.3 +1.5**
comp=Z,6.6nm,0.9s
YMR Madison River 75.10 45 *e*P **P 10 37 01.3 +1.6**
comp=Z,13nm,0.9s
GCMT Greycliff 75.13 44 *e*P **P 10 37 01.1 +1.4**
SUW Suwalki 75.25 328 *e*P **P 10 37 00.7 +0.6**
SUW Suwalki 75.25 328 *e*P **P 10 37 00.7 +0.6**
YFT Old Faithful 75.30 45 *e*P **P 10 37 03.8 +2.8**
comp=Z,15nm,0.9s
VES Vestal, Richgr 75.31 56 P **P 10 37 01.1 +0.3**
baz=305
LKWY Lake 75.48 45 *e*P **P 10 37 04.2 +2.2**
LKWY pmax pmax
comp=Z,22nm,1.1s
LKWY Lake 75.48 45 *e*P **P 10 37 04.2 +2.2**
comp=Z,22nm,1.1s
H17A Grant Village 75.48 45 P **P 10 37 04.5 +2.6**
baz=308
H17A Grant Village 75.48 45 *e*P **P 10 37 04.6 +2.6**
comp=Z,33nm,0.9s
IMW Indian Meadow 75.58 46 *e*P **P 10 37 03.9 +1.3**
comp=Z,21nm,1.0s
FLWY Flagg Ranch 75.61 45 *e*P **P 10 37 04.8 +2.1**
comp=Z,19nm,1.0s
SFJD Kangerlussuaq 75.76 5 *i*P **P 10 37 04.5 +1.8**
comp=Z,25nm,1.1s
SFJD Kangerlussuaq 75.76 5 *e*P **P 10 37 05.0 +2.3**
SFJD pmax pmax
comp=Z,27nm,1.1s
SFJD Kangerlussuaq 75.76 5 *e*P **P 10 37 05.0 +2.3**
comp=Z,27nm,1.1s
RLMT Red Lodge 75.77 44 P **P 10 37 04.3 +0.7**
baz=309

RLMT	Red Lodge	75.77	44	eP	P	10 37 04.8	+1.3
	comp=Z,20nm,1.3s						
MOOW	Moose Ponds	75.79	46	eP	P	10 37 05.3	+1.7
	comp=Z,17nm,1.1s						
HVU	Hansel Valley	75.80	48	eP	P	10 37 05.6	+1.9
HVU				pmax	pmax		
	comp=Z,11nm,1.0s						
HVU	Hansel Valley	75.80	48	eP	P	10 37 05.5	+1.9
	comp=Z,11nm,1.0s						
SIM	Simferopol'	75.82	316	eP	P	10 37 05.4	+1.9
SIM				pmax	pmax		
	comp=Z,19nm,1.0s						
SIM				MLR	MLR		
	comp=E,200nm,17.2s						
ARVC	Arvin	75.89	57	P	P	10 37 04.8	+0.7
	baz=306						
LOHW	Long Hollow	75.95	46	eP	P	10 37 06.2	+1.5
	comp=E,8.4nm,1.0s						
SNOW	Snow King Moun	75.96	46	eP	P	10 37 06.4	+1.7
	comp=E,13nm,0.9s						
REDW	Red Top Meadow	75.96	46	eP	P	10 37 06.1	+1.4
	comp=E,17nm,1.0s						
DAC	Darwin (Calif)	76.04	55	eP	P	10 37 06.1	+0.9
DAC				pmax	pmax		
	comp=Z,10.0nm,0.9s						
DAC	Darwin (Calif)	76.04	55	eP	P	10 37 06.0	+0.9
	comp=Z,10nm,0.9s						
R11A	Troy Canyon, C	76.12	52	P	P	10 37 06.2	+0.6
	baz=306						
R11A	Troy Canyon, C	76.12	52	eP	P	10 37 06.8	+1.2
	comp=Z,17nm,1.0s						
BGU	Big Grassy Mou	76.16	49	eP	P	10 37 07.1	+1.4
	comp=Z,8.8nm,1.0s						
AHID	Auburn Hatcher	76.18	47	eP	P	10 37 06.8	+0.8
	comp=Z,10nm,0.8s						
DGMT	Dagmar	76.31	39	P	P	10 37 06.3	0.0
	baz=311						
DGMT	Dagmar	76.31	39	eP	P	10 37 06.5	+0.2
	comp=Z,20nm,0.9s						
LAO	LASA Array	76.42	41	P	P	10 37 08.4	+1.4
	baz=310						
LAO	LASA Array	76.42	41	eP	P	10 37 08.2	+1.2
	comp=Z,29nm,1.0s						
TPNV	Topopah Spring	76.52	54	P	P	10 37 08.4	+0.5
	baz=306						
TPNV	Topopah Spring	76.52	54	eP	P	10 37 08.9	+1.0
TPNV				pmax	pmax		
	comp=Z,24nm,1.0s						
TPNV	Topopah Spring	76.52	54	eP	P	10 37 08.9	+1.0
	comp=Z,24nm,1.0s						
EDW2	Edwards Air Fo	76.59	56	P	P	10 37 09.0	+0.8
	baz=306						
HWUT	Hardware Ranch	76.62	48	eP	P	10 37 09.8	+1.4
	comp=Z,20nm,1.1s						
DECC	Green Verdugo	76.73	57	P	P	10 37 09.7	+0.8
	baz=306						
DUG	Dugway, Tooele	76.73	50	P	P	10 37 09.9	+0.9
	baz=308						
DUG	Dugway, Tooele	76.73	50	eP	P	10 37 10.3	+1.3
DUG				pmax	pmax		
	comp=Z,20nm,1.0s						
DUG	Dugway, Tooele	76.73	50	eP	P	10 37 10.3	+1.3
	comp=Z,20nm,1.0s						
SORM	Soroca	76.83	321	⇓iP	P	10 37 10.3	+1.1
SORM	Soroca	76.83	321	⇓P	P	10 37 10.3	+1.1
MWC	Mount Wilson	76.93	57	eP	P	10 37 10.6	+0.3
MWC				pmax	pmax		
	comp=Z,19nm,1.2s						
MWC	Mount Wilson	76.93	57	eP	P	10 37 10.6	+0.3
	comp=Z,19nm,1.2s						
TCUT	Toone Canyon	77.02	48	eP	P	10 37 12.1	+1.4
	comp=Z,23nm,0.9s						
BW06	Boulder Array	77.08	46	P	P	10 37 11.2	+0.2
	baz=309						
BW06	Boulder Array	77.08	46	eP	P	10 37 11.6	+0.6
	comp=Z,9.9nm,1.0s						
PDAR	Pinedale Array	77.08	46	P	P	10 37 11.4	+0.4
	comp=Z,3.4nm,0.7s,baz=266,slow=2.1,SNR=34						
A26A	Wade Farm, Ken	77.10	38	P	P	10 37 11.1	+0.4
	baz=312						
PSUT	Pine Spring	77.10	51	eP	P	10 37 12.4	+1.2
	comp=Z,13nm,1.1s						
GSC	Goldstone, Bar	77.13	55	P	P	10 37 12.0	+0.8
	baz=306						
GSC	Goldstone, Bar	77.13	55	eP	P	10 37 12.1	+0.8
GSC				pmax	pmax		
	comp=Z,10.0nm,1.1s						
GSC	Goldstone, Bar	77.13	55	eP	P	10 37 12.1	+0.8
	comp=Z,10nm,1.1s						
BFSC	Mount Baldy Ra	77.19	57	P	P	10 37 11.9	+0.3
	baz=306						
JLU	Jordanelle	77.31	49	eP	P	10 37 13.4	+1.0
	comp=Z,11nm,1.0s						
NLU	North Lily Min	77.33	49	eP	P	10 37 13.8	+1.3
	comp=Z,13nm,0.9s						
KIS	Kishinev	77.34	320	eP	P	10 37 13.0	+0.9
KIS				LRM	MLR	11 14 17.0	
	comp=Z,500nm,15.0s						
KIS	Kishinev	77.34	320	eP	P	10 37 13.0	+0.9
KIS				e		10 37 21.0	
KIS				e		10 47 05.0	
KIS				MLR	MLR		
	comp=N,1µm,16.0s						
KIS				MLR	MLR		
	comp=Z,1µm,16.0s						
KIS				MLR	MLR		
	comp=E,500nm,15.0s						
KIS				MLR	MLR		
	comp=Z,800nm,16.0s						
SHPR	Sheep Range	77.49	54	eP	P	10 37 14.7	+1.4
	comp=Z,14nm,1.0s						
TUQ	Turquoise Moun	77.63	55	P	P	10 37 14.8	+0.7
	baz=307						
LVV	L'vov	77.78	324	eP	P	10 37 15.3	+0.8
LVV				MLR	MLR		
	comp=N,300nm,14.0s						
LVV				MLR	MLR		
	comp=E,300nm,14.0s						
LVV				MLR	MLR		
	comp=Z,400nm,14.0s						
E25A	Miller Ranch,	78.02	40	P	P	10 37 16.6	+0.6
	baz=312						
MSU	Marysvale	78.15	51	eP	P	10 37 18.6	+1.5
MSU	Marysvale	78.15	51	eP	P	10 37 18.6	+1.5
D26A	Manning	78.16	39	P	P	10 37 17.3	+0.6
	baz=312						
B28A	Dugan Ranch, T	78.22	37	P	P	10 37 17.5	+0.6
	baz=314						
TMUT	Trail Mountain	78.26	49	eP	P	10 37 19.0	+1.2
	comp=Z,6.8nm,0.9s						
109C	Camp Elliot, M	78.36	58	P	P	10 37 18.8	+0.7
	baz=307						
PFO	Pinyon Flats O	78.37	57	eP	P	10 37 17.9	-0.3
PFO				pmax	pmax		
	comp=Z,12nm,1.2s						
PFO	Pinyon Flats O	78.37	57	eP	P	10 37 17.9	-0.3
	comp=Z,12nm,1.2s						
LDFC	Landfair	78.38	55	eP	P	10 37 19.1	+0.8
	comp=Z,27nm,0.4s						
LCMT	Little Creek M	78.41	52	eP	P	10 37 19.7	+1.3
	comp=Z,20nm,1.0s						
PRAR	RASCA	78.41	321	⇓iP	P	10 37 25.5	+7.4
A29A	Manning Farm,	78.43	36	P	P	10 37 18.7	+0.6
	baz=314						
P17A	Butcher Ranch,	78.44	49	eP	P	10 37 20.0	+1.4
	comp=Z,29nm,0.9s						
MTPU	Mount Pierson	78.44	51	eP	P	10 37 20.4	+1.6
	comp=Z,16nm,0.9s						
BELC	Belle Mtn. Jos	78.44	56	P	P	10 37 19.0	+0.3
	baz=307						
Q16A	Castle Valley	78.52	50	eP	P	10 37 20.6	+1.5
	comp=Z,14nm,1.1s						
KWP	Kalwaria Pacla	78.52	325	eP	P	10 37 20.4	+1.8
KWP	Kalwaria Pacla	78.52	325	⇓iP	P	10 37 20.2	+1.6
KWP	Kalwaria Pacla	78.52	325	eP	P	10 37 20.4	+1.8
P18A	Preston Nutter	78.64	49	eP	P	10 37 21.1	+1.3
	comp=Z,9.5nm,0.8s						
KNB	Kanab	78.67	52	eP	P	10 37 21.7	+1.8
KNB				pmax	pmax		
	comp=Z,35nm,1.2s						
KNB	Kanab	78.67	52	eP	P	10 37 21.7	+1.8
	comp=Z,35nm,1.2s						
BURAR	Bucovina Array	78.73	322	⇑iP	P	10 37 21.3	+1.3
BURAR	Bucovina Array	78.73	322	⇑P	P	10 37 21.3	+1.3
TESR	Tescani	78.77	321	⇓iP	P	10 37 21.9	+1.8
BAR	Barrett	78.78	58	eP	P	10 37 20.8	+0.4
	comp=Z,7.2nm,0.8s						
SRU	San Rafael Swe	78.79	49	eP	P	10 37 21.8	+1.2
SRU				pmax	pmax		
	comp=Z,32nm,0.9s						
SRU	San Rafael Swe	78.79	49	eP	P	10 37 21.8	+1.2
	comp=Z,32nm,0.9s						
F26A	Lodgepole	78.83	40	P	P	10 37 20.7	+0.2
	baz=312						
K22A	Casper	78.87	45	P	P	10 37 21.7	+0.8
	baz=311						
K22A	Casper	78.87	45	eP	P	10 37 22.1	+1.2
	comp=Z,19nm,1.1s						
G25A	Newell	78.88	41	P	P	10 37 21.2	+0.4
	baz=312						
CFR	Carcaliu	78.91	319	⇑iP	P	10 37 22.2	+1.4
CFR	Carcaliu	78.91	319	⇑P	P	10 37 22.2	+1.4
IRM	Iron Mountain	78.91	56	P	P	10 37 22.0	+0.9
	baz=307						
MDND	Maddock	79.00	37	eP	P	10 37 21.1	-0.2
	comp=Z,32nm,1.1s						
ULM	Lac du Bonnet	79.03	34	P	P	10 37 21.6	+0.2
	comp=Z,1.3nm,0.3s,baz=256,slow=6.6,SNR=2.4						
ODBI	Odobesti	79.07	320	⇓iP	P	10 37 30.6	+8.9
W13A	Hualapai Mount	79.16	54	eP	P	10 37 23.7	+1.0
	comp=Z,5.8nm,1.0s						
VRI	Vrincioaia	79.17	320	⇑iP	P	10 37 24.3	+2.0
VRI	Vrincioaia	79.17	320	⇑P	P	10 37 24.3	+2.0
IKP	In-Ko-Pah, Jac	79.18	57	P	P	10 37 23.4	+0.7
	baz=307						
B30A	Myrvik Farm, E	79.19	36	P	P	10 37 22.9	+0.6
	baz=315						
PLOR	Plostina	79.22	320	⇑iP	P	10 37 24.3	+1.7
PLOR	Plostina	79.22	320	⇑P	P	10 37 24.3	+1.7
TIRR	Tirgusor	79.24	318	⇑iP	P	10 37 23.8	+1.2
TIRR	Tirgusor	79.24	318	⇑P	P	10 37 23.8	+1.2
TIRR	Tirgusor	79.24	318	eP	P	10 37 23.0	+0.4
	comp=Z,11nm,1.0s						
G26A	Maurine	79.24	41	P	P	10 37 23.0	+0.3
	baz=313						
RSSD	Black Hills	79.27	42	P	P	10 37 23.1	-0.1
	baz=312						
RSSD	Black Hills	79.27	42	eP	P	10 37 23.5	+0.3
RSSD				pmax	pmax		
	comp=Z,10.0nm,0.9s						
RSSD	Black Hills	79.27	42	eP	P	10 37 23.5	+0.3
	comp=Z,9.9nm,0.9s						
HARR	Harsova	79.34	319	⇑iP	P	10 37 23.8	+0.6
HARR	Harsova	79.34	319	⇑P	P	10 37 23.8	+0.6
STHS	Stebnicka Huta	79.35	325	eP	P	10 37 25.0	+1.8
STHS				pmax	pmax		
	comp=Z,10.0nm,1.0s						
STHS	Stebnicka Huta	79.35	325	eP	P	10 37 25.0	+1.8
BRTR	Keskin Array B	79.38	312	P	P	10 37 24.1	+0.3
	comp=Z,3.7nm,0.9s,baz=108,slow=4.0,SNR=25						
BRTR				PP	PP	10 40 22.1	-1.1
	comp=Z,3.7nm,1.1s,baz=80,slow=6.9,SNR=3.8						
BRTR				LR	LR	11 18 23.6	
	comp=Z,89nm,18.1s,baz=35,slow=40						
BRTR	Keskin Array B	79.38	312	i P	P	10 37 24.7	+1.0
BRTR				pmax	pmax		
	comp=Z,4.0nm,0.9s						
OJC	Ojcow	79.41	327	eP	P	10 37 24.8	+1.3
OJC	Ojcow	79.41	327	eP	P	10 37 24.6	+1.1
OJC				pmax	pmax		
	comp=Z,44nm,1.2s						
OJC	Ojcow	79.41	327	eP	P	10 37 24.6	+1.1
	comp=Z,44nm,1.2s						
UZH	Uzhgorod	79.42	324	eP	P	10 37 23.4	-0.2
UZH				e		10 37 28.6	
UZH				eS	S	10 47 18.2	-5.5
UZH				ePS	PnS	10 48 09.8	+2.5
UZH				MLR	MLR		
	comp=N,800nm,14.0s						
UZH				MLR	MLR		
	comp=E,1µm,14.0s						
UZH				MLR	MLR		
	comp=Z,850nm,14.0s						
PDMCI	Parker Dam,Lak	79.48	55	P	P	10 37 24.9	+0.8
	baz=308						
I25A	Rochford	79.50	42	P	P	10 37 24.4	0.0
	baz=312						
O20A	White River Ci	79.51	47	P	P	10 37 24.8	+0.4
	baz=310						
O20A	White River Ci	79.51	47	eP	P	10 37 25.2	+0.7
	comp=Z,14nm,0.9s						
B31A	Greenbush Farm	79.53	36	P	P	10 37 24.9	+0.8
	baz=315						
G27A	Dupree	79.53	40	P	P	10 37 24.7	+0.4
	baz=313						
Y12C	Blythe	79.57	56	eP	P	10 37 25.4	+0.8
	comp=Z,10nm,0.9s						
H26A	Fairpoint	79.61	41	P	P	10 37 25.3	+0.5
	baz=313						
CRVS	Cervenica-Dubn	79.62	325	eP	P	10 37 26.6	+2.0
CRVS	Cervenica-Dubn	79.62	325	eP	P	10 37 26.6	+2.0
C30A	Mose, Pekin	79.64	37	P	P	10 37 25.5	+0.7
	baz=315						
A32A	Rocking H Ranc	79.71	35	P	P	10 37 25.4	+0.3
	baz=316						
NIE	Niedzica	79.77	326	eP	P	10 37 27.2	+1.7
NIE	Niedzica	79.77	326	eP	P	10 37 27.2	+1.7
ISR	Istrita	79.78	320	⇑iP	P	10 37 26.6	+1.0
ISR	Istrita	79.78	320	⇑P	P	10 37 26.6	+1.0
DOPR	Dopca	79.78	321	⇓iP	P	10 37 27.6	+2.0
ANTO	Ankara	79.79	313	eP	P	10 37 27.7	+1.8
ANTO				pmax	pmax		
	comp=Z,20nm,1.1s						
ANTO	Ankara	79.79	313	eP	P	10 37 27.7	+1.8
	comp=Z,20nm,1.1s						
MLR	Muntele Rosu	79.83	320	⇓iP	P	10 37 26.4	+0.4
MLR	Muntele Rosu	79.83	320	eP	P	10 37 27.0	+1.0
MLR				pmax	pmax		
	comp=Z,9.0nm,0.9s						
MLR	Muntele Rosu	79.83	320	eP	P	10 37 27.0	+1.0
	comp=Z,8.8nm,0.9s						
H27A	Howes	79.96	41	P	P	10 37 27.2	+0.5
	baz=313						
PV09	Paradox Valley	80.02	49	eP	P	10 37 28.7	+1.3
B32A	Ashes, Strandq	80.06	35	P	P	10 37 27.0	-0.1
	baz=316						
CJR	Cluj-Napoca	80.16	322	⇑iP	P	10 37 30.4	+2.7
CJR	Cluj-Napoca	80.16	322	⇑P	P	10 37 30.4	+2.7
PV10	Paradox Valley	80.16	49	eP	P	10 37 29.6	+1.5
A33A	Warroad	80.20	34	P	P	10 37 27.7	-0.1
	baz=317						
PV04	Paradox Valley	80.23	49	eP	P	10 37 29.3	+0.9
PV05	Paradox Valley	80.31	49	eP	P	10 37 30.0	+1.1
VOIR		80.32	321	⇓iP	P	10 37 33.7	+5.1
VOIR		80.32	321	⇓P	P	10 37 33.7	+5.1
J26A	Sides Ranch, S	80.33	42	P	P	10 37 28.9	+0.2
	baz=313						
LANS	Liptovska Anna	80.34	326	eP	P	10 37 30.9	+2.3
LANS	Liptovska Anna	80.34	326	eP	P	10 37 30.9	+2.3
N23A	Red Feather La	80.35	46	P	P	10 37 30.4	+1.4
	baz=311						
N23A	Red Feather La	80.35	46	eP	P	10 37 30.5	+1.4
	comp=Z,19nm,1.0s						
OKC	Ostrava-Krasne	80.42	327	eP	P	10 37 30.9	+2.0
OKC				epP	sP	10 37 36.6	-0.1
OKC				AMS	AMS	11 17 10.0	
	comp=Z,500nm,15.7s						
OKC	Ostrava-Krasne	80.42	327	eP	P	10 37 30.9	+2.0
OKC				e		10 37 36.6	
OKC				MLR	MLR		
	comp=Z,500nm,15.7s						
KSP	Ksiaz	80.45	329	eP	P	10 37 30.6	+1.5
KSP	Ksiaz	80.45	329	eP	P	10 37 30.6	+1.5
Y14A	Wickenburg	80.45	55	eP	P	10 37 30.2	+0.7
	comp=Z,48nm,0.8s						
WUAZ	Wupatki	80.52	53	P	P	10 37 31.6	+1.6
	baz=309						
WUAZ	Wupatki	80.52	53	eP	P	10 37 31.3	+1.3
	comp=Z,18nm,0.9s						
DRGR		80.53	323	⇓iP	P	10 37 30.8	+1.1
DRGR		80.53	323	⇓P	P	10 37 30.8	+1.1
ARR	Arges	80.58	321	⇓iP	P	10 37 32.1	+2.1
PV01	Paradox Valley	80.59	49	eP	P	10 37 31.5	+1.1
113A	Mohawk Valley,	80.67	56	eP	P	10 37 31.4	+0.8
	comp=Z,12nm,1.0s						
MORC	Moravsky Berou	80.72	327	⇓iP	P	10 37 31.0	+0.4
MORC	Moravsky Berou	80.72	327	eP	P	10 37 31.8	+1.1
MORC				pmax	pmax		
	comp=Z,98nm,1.4s						
MORC	Moravsky Berou	80.72	327	eP	P	10 37 31.8	+1.1
	comp=Z,98nm,1.4s						
E31A	Nome	80.74	37	P	P	10 37 31.3	+0.5
	baz=315						
DPC	Dobruska-Polom	80.81	328	eP	P	10 37 32.0	+0.9
DPC				epP	sP	10 37 39.4	+0.5
DPC				ePP	PP	10 40 28.2	-6.4
DPC				AMS	AMS	11 20 50.0	
	comp=Z,400nm,15.0s						
DPC	Dobruska-Polom	80.81	328	eP	P	10 37 32.0	+0.9
DPC				e		10 37 39.4	
DPC				MLR	MLR		
	comp=Z,400nm,15.0s						
UPC	Upice	80.82	329	AMS	AMS	11 16 40.0	
	comp=Z,400nm,13.9s						
KRLC	Kraliky	80.82	328	eP	P	10 37 32.4	+1.2
KRLC	Kraliky	80.82	328	eP	P	10 37 32.4	+1.2
I28A	Midland	80.87	41	P	P	10 37 32.0	+0.4
	baz=314						
SMCO	Snowmass	80.87	47	eP	P	10 37 33.2	+1.1
	comp=Z,6.5nm,0.8s						
PSZ	Piszkesteto	81.05	325	⇑iP	P	10 37 33.4	+0.9
PSZ	Piszkesteto	81.05	325	eP	P	10 37 33.3	+0.8
PSZ				pmax	pmax		
	comp=Z,24nm,1.2s						
PSZ	Piszkesteto	81.05	325	eP	P	10 37 33.3	+0.8
	comp=Z,24nm,1.2s						
F31A	Hecla	81.06	38	P	P	10 37 32.5	+0.1
	baz=315						
VYHS	Vyhne	81.11	326	eP	P	10 37 34.6	+1.9
VYHS				pmax	pmax		
	comp=Z,7.0nm,1.1s						
VYHS	Vyhne	81.11	326	eP	P	10 37 34.6	+1.9
X16A	Lo Mia Camp, P	81.16	53	eP	P	10 37 34.7	+1.2
	comp=Z,15nm,0.9s						
MVCO	Mesa Verde	81.23	50	P	P	10 37 34.9	+1.0
	baz=310						
MVCO	Mesa Verde	81.23	50	eP	P	10 37 35.0	+1.1
	comp=Z,18nm,0.9s						
ISCO	Idaho Springs	81.26	46	P	P	10 37 35.2	+1.2
	baz=312						
ISCO	Idaho Springs	81.26	46	eP	P	10 37 35.3	+1.2
ISCO				pmax	pmax		
	comp=Z,4.0nm,0.9s						
ISCO	Idaho Springs	81.26	46	eP	P	10 37 35.2	+1.2
	comp=Z,4.1nm,0.9s						
I29A	Vivian Onida	81.31	40	P	P	10 37 34.1	+0.2
	baz=314						
SZH	Strazhica	81.37	319	eP	P	10 37 35.1	+1.0
B35A	Bob, Littlefor	81.37	34	P	P	10 37 34.1	0.0
	baz=318						
BRG	Berggiesshubel	81.39	330	eP	P	10 37 35.6	+1.5
	comp=Z,8.8nm,1.2s						
BRG				e		10 37 41.2	
	comp=Z,11nm,1.0s						
BRG	Berggiesshubel	81.39	330	eP	P	10 37 35.6	+1.5
BRG				e		10 37 41.2	
BRG				pmax	pmax		
	comp=Z,9.0nm,1.2s						
PVCC	Panska Ves	81.40	329	eP	P	10 37 35.4	+1.2
PVCC				epP	sP	10 37 41.6	-0.3
PVCC				AMS	AMS	11 17 30.0	
	comp=Z,600nm,14.1s						
PVCC	Panska Ves	81.40	329	eP	P	10 37 35.4	+1.2
PVCC				e		10 37 41.6	
PVCC				MLR	MLR		
	comp=Z,600nm,14.1s						
CLL	Collm	81.42	331	i P	P	10 37 34.5	+0.2
	comp=Z,15nm,1.2s						
CLL				i		10 37 41.2	
	comp=Z,22nm,1.4s						
CLL				i		10 37 44.7	
CLL				eS	S	10 47 45.0	+0.4
CLL				ePS	PnS	10 48 32.0	-0.2
CLL				e		10 54 36.0	
CLL				LmH		11 11 00.0	
	comp=N,300nm,19.3s						
CLL				LmH		11 11 00.0	
	comp=E,500nm,19.9s						
CLL	Collm	81.42	331	i P	P	10 37 34.5	+0.2
CLL				i		10 37 41.2	
CLL				i		10 37 44.7	
CLL				eS	S	10 47 45.0	+0.4
CLL				pmax	pmax		
	comp=Z,15nm,1.2s						
CLL	Collm	81.42	331	eP	P	10 37 33.7	-0.6
	comp=Z,15nm,1.1s						
VRAC	Vranov	81.48	328	⇑iP	P	10 37 37.1	+2.4
VRAC	Vranov	81.48	328	⇑P	P	10 37 37.1	+2.4
D34A	Park Rapids	81.64	36	P	P	10 37 36.0	+0.4
	baz=317						
E33A	Westby DABS, E	81.68	36	P	P	10 37 36.0	+0.2
	baz=317						
GOPC	GO Pecny, Ondr	81.78	329	AMS	AMS	11 16 50.0	
	comp=Z,400nm,15.3s						
214A	Organ Pipe Nat	81.81	56	P	P	10 37 37.5	+0.8
	baz=309						
PRU	Pruhonice	81.83	329	eP	P	10 37 38.3	+1.9
PRU				epP	sP	10 37 43.7	-0.5
PRU				AMS	AMS	11 19 10.0	
	comp=Z,400nm,15.5s						
PRU	Pruhonice	81.83	329	eP	P	10 37 38.3	+1.9
PRU				e		10 37 43.7	
PRU				MLR	MLR		
	comp=Z,400nm,15.5s						
S22A	4UR Ranch, Cre	81.89	48	P	P	10 37 38.9	+1.5
	baz=311						
S22A	4UR Ranch, Cre	81.89	48	eP	P	10 37 38.5	+1.1
	comp=Z,18nm,1.1s						
BZS	Buzias	81.90	322	⇑iP	P	10 37 38.0	+1.1
BZS	Buzias	81.90	322	⇑P	P	10 37 38.0	+1.1
TREC	Trest	81.96	328	AMS	AMS	11 20 50.0	
	comp=Z,400nm,15.6s						
F33A	5 Mile Ranch,	82.02	37	P	P	10 37 37.7	+0.2
	baz=316						
X18A	Snowflake	82.05	53	eP	P	10 37 38.8	+0.6
	comp=Z,7.0nm,0.8s						
J30A	Dallas	82.22	41	P	P	10 37 38.9	+0.2
	baz=315						
G33A	Ortonville	82.42	38	P	P	10 37 39.5	-0.1
	baz=316						
MPEP	Malo Peshtene	82.45	320	eP	P	10 37 39.9	+0.1
MDVR	Moldovita	82.46	322	⇓iP	P	10 37 39.6	-0.3
NKC	Novy Kostel	82.48	330	AMS	AMS	11 21 30.0	
	comp=Z,500nm,13.7s						
K30A	Basset	82.61	41	P	P	10 37 41.2	+0.5
	baz=315						
CSS	Mathiatis	82.62	308	eP	P	10 37 41.8	+0.8
	comp=Z,2.7nm,0.9s						
H33A	Prehn Over Nor	82.64	38	P	P	10 37 41.1	+0.3
	baz=316						
SDCO	Great Sand Dun	82.68	48	P	P	10 37 42.8	+1.3
	baz=312						
SDCO	Great Sand Dun	82.68	48	eP	P	10 37 42.5	+1.0
	comp=Z,8.9nm,1.0s						
KDZ	Kurdzhali	82.76	318	eP	P	10 37 42.6	+1.1
G34A	Benson	82.78	37	P	P	10 37 42.0	+0.5
	baz=317						
CONA	Conrad Observa	82.85	327	ePcP	P	10 37 44.2	+2.3
	comp=Z,17nm,1.8s						
D37A	Cotton	82.85	34	P	P	10 37 40.0	-1.8
	baz=319						
KHC	Kasperske Hory	82.89	329	eP	P	10 37 42.8	+0.7
KHC				epP	sP	10 37 49.3	-0.5
KHC				ex	x	10 37 59.6	
KHC				AMS	AMS	11 18 50.0	
	comp=Z,500nm,14.8s						
KHC	Kasperske Hory	82.89	329	eP	P	10 37 42.8	+0.7
KHC				e		10 37 49.3	
KHC				MLR	MLR		
	comp=Z,500nm,14.8s						
KHC	Kasperske Hory	82.89	329	eP	P	10 37 44.0	+1.9
	comp=Z,5.2nm,0.9s						
TUC	Tucson	82.92	55	P	P	10 37 43.1	+0

baz=316
ECSD EROS Data Cent 83.39 39 *e*P **P 10 37 44.8 +0.1**
comp=Z,8.0nm,0.8s
KSCO Kaye Shedlock' 83.50 45 *e*P **P 10 37 46.0 +0.4**
comp=Z,39nm,1.6s
PMOR Pomariorio Ree 83.50 114 *e*T T 12 09 36.5
comp=Z,5.7nm,0.2s
ARSA Arzberg 83.51 327 *i* pP pP 10 37 51.9 +0.9
comp=Z,16nm,1.9s
H35A Sunnyside Ranc 83.56 37 P P 10 37 46.2 +0.6
baz=318
MOA Molln 83.59 328 *i* PcP **P 10 37 48.6 +2.8**
comp=Z,11nm,1.5s
MMB Musomiste 83.70 319 *e*P **P 10 37 47.1 +0.7**
T25A Trinidad 83.73 48 P **P 10 37 48.0 +1.1**
baz=312
T25A Trinidad 83.73 48 *e*P **P 10 37 48.0 +1.1**
comp=Z,20nm,0.9s
KKB Krupnik 83.85 319 *e*P **P 10 37 48.4 +1.3**
LAZ Ladron 83.89 51 *e*P **P 10 37 49.1 +1.4**
ANMO Albuquerque 83.96 50 P **P 10 37 49.5 +1.4**
baz=312
ANMO Albuquerque 83.96 50 *e*P **P 10 37 49.4 +1.4**
ANMO pmax pmax
comp=Z,16nm,1.1s
ANMO Albuquerque 83.96 50 *e*P **P 10 37 49.4 +1.3**
comp=Z,16nm,1.1s
PPT Papeete 83.98 117 LR LR 11 10 05.7
comp=Z,90nm,20.7s,baz=312,slow=32
PPT2 Papeete2 83.99 117 *e*LR LR 11 03 40.9
comp=Z,141nm,24.0s
PPT2 Papeete2 83.99 117 *e*T T 12 10 17.0
comp=Z,1.6nm,0.3s
SOKA Soboth 84.17 327 *i* P **P 10 37 46.7 -2.0**
comp=Z,16nm,1.2s
LPM Los Pinos Moun 84.27 51 *e*P **P 10 37 50.8 +1.1**
BNM Barren Site 84.38 51 *e*P **P 10 37 51.5 +1.2**
319A Douglas 84.50 55 *e*P **P 10 37 51.9 +1.1**
comp=Z,34nm,1.0s
VAY Valandovo 84.51 319 *i* P **P 10 37 52.2 +1.7**
KBA Koelnbreinsper 84.59 328 *i* PcP **P 10 37 53.3 +2.3**
comp=Z,14nm,0.9s
SKO Skopje 84.62 320 *i* P **P 10 37 53.5 +2.5**
121A Cookes Peak, D 84.71 53 P **P 10 37 53.1 +1.2**
baz=311
121A Cookes Peak, D 84.71 53 *e*P **P 10 37 52.9 +1.0**
comp=Z,19nm,0.9s
HSIG 84.90 57 *e*P **P 10 37 52.6 0.0**
comp=Z,13nm,1.0s
SCHQ Schefferville 85.06 16 P **P 10 37 53.2 +0.2**
comp=Z,2.8nm,0.7s,baz=329,slow=5.4,SNR=5.2
SCHQ LR LR 11 19 23.8
comp=Z,98nm,19.0s,baz=301,slow=38
P32A Huiting Farm, 85.31 43 P **P 10 37 54.3 -0.3**
baz=316
MOTA Moosalm 85.31 329 *i* PcP **P 10 37 56.1 +1.5**
comp=Z,10nm,0.9s
RETA Reutte 85.34 329 *i* PcP **P 10 37 56.7 +2.1**
comp=Z,16nm,1.0s
BIA Bitola 85.38 319 *e*P **P 10 37 55.7 +0.8**
PDG Podgorica 85.39 322 ⇓*i*P **P 10 37 54.6 -0.3**
TAOE Nuku Hiva Isla 85.44 105 *e*LR LR 11 04 44.6
comp=Z,214nm,23.4s
L36A Harm Buss Farm 85.56 39 P **P 10 37 56.0 +0.3**
baz=318
OHR Ohrid 85.58 320 *i* P **P 10 37 57.1 +1.2**
BFO Black Forest 85.62 331 *e*P **P 10 37 56.5 +0.5**
BFO pmax pmax
comp=Z,33nm,1.4s
BFO Black Forest 85.62 331 *e*P **P 10 37 56.5 +0.5**
comp=Z,33nm,1.4s
FETA Feichten 85.73 329 *i* P **P 10 37 55.9 -0.8**
comp=Z,11nm,1.1s
DAVA Damuels 85.86 330 *i* P **P 10 37 55.5 -1.8**
comp=Z,17nm,1.3s
O34A Beatrice 85.92 41 P **P 10 37 57.0 -0.6**
baz=317
N35A Tabor 85.98 40 P **P 10 37 57.9 0.0**
baz=317
FUORN Ofenpass-Fuorn 86.24 329 *e*P **P 10 38 00.8 +1.5**
comp=Z,18nm,0.9s
P34A Walnut Farm, R 86.31 42 P **P 10 37 59.0 -0.5**
baz=317
S32A Newby Ranch, P 86.49 44 P **P 10 38 00.9 +0.5**
baz=316
KSU1 Kansas State U 86.75 42 P **P 10 38 01.7 0.0**
baz=317
KSU1 Kansas State U 86.75 42 *e*P **P 10 38 01.8 +0.1**
comp=Z,29nm,1.4s
N37A Lee Faris, Mou 86.79 39 P **P 10 38 02.4 +0.6**
baz=318
MNTX Cornudas Mount 86.79 52 P **P 10 38 02.5 +0.5**
baz=312
MNTX Cornudas Mount 86.79 52 *e*P **P 10 38 02.6 +0.6**
comp=Z,5.3nm,0.9s
AMTX Amarillo 86.89 48 P **P 10 38 03.4 +0.9**
baz=314
AMTX Amarillo 86.89 48 *e*P **P 10 38 03.7 +1.1**
comp=Z,21nm,1.1s
Q35A Mercer Eighty, 87.23 42 P **P 10 38 04.4 +0.3**
baz=317
LAST Lasithi 87.25 313 ⇑*i*P **P 10 38 04.7 +0.4**
IDI Anoyia 87.50 313 ⇓*i*P P 10 38 11.1 +5.6
P37A Lathrop 87.58 40 P **P 10 38 05.9 +0.2**
baz=318
O38A Galt 87.64 39 P **P 10 38 06.2 +0.2**
baz=319
V32A Arapaho 87.83 46 P **P 10 38 07.8 +0.8**
baz=316
TBI Tubuai 87.90 121 *e*LR LR 11 04 55.9
comp=Z,149nm,24.2s
TBI Tubuai 87.90 121 *e*T T 12 15 14.0
comp=Z,14nm,0.3s
R36A Gordon, Harris 87.91 42 P **P 10 38 08.1 +0.8**
baz=318
W32A Sentinel 88.14 46 P **P 10 38 09.6 +1.1**
baz=315
U34A Anderson Ranch 88.17 44 P **P 10 38 09.1 +0.5**
baz=316
U34A Anderson Ranch 88.17 44 *e*P **P 10 38 09.5 +0.9**
comp=Z,32nm,1.1s
T35A Sooner Cattle 88.39 43 P **P 10 38 09.6 0.0**
baz=317
V34A Guthrie 88.62 45 P **P 10 38 11.4 +0.8**
baz=316
V34A Guthrie 88.62 45 *e*P **P 10 38 11.9 +1.2**
comp=Z,18nm,0.9s
WMOK Wichita Mounta 88.69 46 P **P 10 38 11.1 +0.1**
baz=316
WMOK Wichita Mounta 88.69 46 *e*P **P 10 38 11.5 +0.4**
WMOK pmax pmax
comp=Z,11nm,1.2s
WMOK Wichita Mounta 88.69 46 *e*P **P 10 38 11.5 +0.4**
comp=Z,11nm,1.2s
Q39A Willow Grove F 88.70 40 P **P 10 38 11.6 +0.6**
baz=319
TXAR Lajitas Array 89.47 53 P **P 10 38 15.6 +0.6**
comp=Z,4.4nm,0.8s,baz=296,slow=3.3,SNR=56
T38A Diamond 89.51 42 P **P 10 38 14.8 0.0**
baz=318
S39A Bolivar 89.53 41 P **P 10 38 14.7 -0.2**
baz=319
R40A Maddies Statio 89.63 40 P **P 10 38 15.4 +0.1**
baz=319
ABTX Abilene, Hawle 89.68 48 P **P 10 38 16.4 +0.7**
baz=315
ABTX Abilene, Hawle 89.68 48 *e*P **P 10 38 16.4 +0.7**
comp=Z,14nm,1.1s
HPIG 89.79 56 *e*P **P 10 38 17.4 +0.8**
comp=Z,6.7nm,0.7s
U38A Gravette 89.90 42 P **P 10 38 17.3 +0.6**
baz=318
V37A Hulbert 89.90 43 P **P 10 38 17.0 +0.3**
baz=318
X35A Drake 89.96 45 P **P 10 38 17.3 +0.3**
baz=317
S40A Lebanon 90.03 41 P **P 10 38 17.1 -0.2**
baz=319
X36A Centrahoma 90.19 45 P **P 10 38 18.7 +0.6**
baz=317
V38A Canehill 90.32 43 P **P 10 38 18.9 +0.2**
baz=318
233A Rising Star 90.55 48 P **P 10 38 20.2 +0.4**
baz=316
Y36A Durant 90.72 45 P **P 10 38 20.6 +0.1**
baz=317
U40A Yellville 90.78 42 P **P 10 38 20.6 -0.2**
baz=319
333A Richland Sprin 90.99 49 P **P 10 38 22.3 +0.4**
baz=316
234A Clairette 91.01 48 P **P 10 38 22.5 +0.5**
baz=316
Z36A Blue Ridge 91.09 46 P **P 10 38 22.8 +0.5**
baz=317
JCT Junction City 91.09 50 *e*P **P 10 38 22.8 +0.4**
JCT pmax pmax
comp=Z,8.0nm,0.8s
JCT Junction City 91.09 50 *e*P **P 10 38 22.8 +0.4**
comp=Z,7.9nm,0.8s
433A Art 91.33 49 P **P 10 38 23.3 -0.2**
baz=316
WHTX Lake Whitney, 91.42 47 P **P 10 38 24.7 +0.9**
baz=316
WHTX Lake Whitney, 91.42 47 *e*P **P 10 38 24.8 +0.9**
comp=Z,23nm,0.9s
334A Lometa 91.43 48 P **P 10 38 24.4 +0.4**
baz=316
V41A Mountainview 91.58 41 P **P 10 38 24.1 -0.5**
baz=320
MIAR Mount Ida 91.75 43 P **P 10 38 25.9 +0.6**
baz=319
MIAR Mount Ida 91.75 43 *e*P **P 10 38 26.0 +0.7**
MIAR pmax pmax
comp=Z,21nm,1.1s
MIAR Mount Ida 91.75 43 *e*P **P 10 38 26.0 +0.7**
comp=Z,21nm,1.1s
X201 Greenbrier Sit 91.85 42 *e*P **P 10 38 26.3 +0.6**
comp=Z,9.7nm,0.9s
WHAR Wooly Hollow 91.89 42 *e*P **P 10 38 26.5 +0.6**
comp=Z,16nm,0.9s
Y39A Lockesburg 91.92 44 P **P 10 38 26.7 +0.6**
baz=318
336A Riesel 92.22 47 P **P 10 38 27.8 +0.3**
baz=317
534A Blanco 92.22 49 P **P 10 38 27.1 -0.5**
baz=316
933A Laredo 93.44 51 P **P 10 38 34.3 +1.1**
baz=315
ZAIG Zacatecas 94.67 57 *e*P **P 10 38 40.9 +1.5**
comp=Z,8.8nm,1.0s
KEST Kesra 95.43 323 LR LR 11 26 49.3
comp=Z,261nm,18.2s,baz=302,slow=39
ESDC Sonseca Array 97.57 334 LR LR 11 28 04.6
comp=Z,236nm,18.5s,baz=10.0,slow=39
TORD Torodi Ar. Bea 117.83 316 PKP **PKPdf 10 44 03.9 -0.6**
comp=Z,1.3nm,1.0s,baz=358,slow=1.8,SNR=5.4
TORD PP PP 10 45 08.0 -9.2
comp=Z,1.4nm,1.0s,baz=39,slow=4.7,SNR=4.5
ROSC El Rosal 126.06 47 PKP **PKPdf 10 44 20.4 -0.4**
comp=Z,2.8nm,0.5s,baz=15,slow=15,SNR=4.1
DBIC Dimbokro 126.76 318 PKP **PKPdf 10 44 22.4 +0.7**
comp=Z,3.8nm,0.8s,baz=0.2,slow=4.3,SNR=4.1
QSPA South Pole Qui 126.84 180 *e*PKPdf **PKPdf 10 44 20.1 -0.1**
SNAA Sanae 141.03 197 PKP PKPpre 10 44 39.1
SNAA Sanae 141.03 197 *e*PKHKP PKPpre 10 44 39.2
SNAA Sanae 141.03 197 *e*PKPpre PKPpre 10 44 39.2
VNA2 Neumayer--Watz 142.59 196 PKP PKPpre 10 44 45.0
baz=109,slow=2.7
VNA3 Neumayer Olymp 142.82 195 PKP PKPpre 10 44 44.9
VNA1 Neumayer--Stat 142.99 196 PKP PKPpre 10 44 46.4
SAML Samuel 143.66 46 *e*PKPdf **PKPdf 10 44 53.6 +0.6**
LPAZ La Paz 146.00 61 PKPbc **PKPbc 10 44 58.3 -0.1**
comp=Z,8.9nm,0.8s,baz=18,slow=10.0,SNR=33
PB01 IPOC Station P 148.08 69 *e*PKPbc **PKPbc 10 45 04.1 +0.5**
PB10 IPOC Station P 148.69 74 *e*PKPbc **PKPbc 10 45 05.8 +0.8**
LVC Limon Verde 149.43 71 *e*PKPbc **PKPbc 10 45 07.5 +0.1**
LCO Las Campanas 151.24 83 *e*PKPbc **PKPbc 10 45 11.7 +0.2**
ROC1 El Roble 152.44 91 *e*PKPbc **PKPbc 10 45 14.2 +0.1**
ROC1 *e*PKPab **PKPab 10 45 24.3 0.0**
PLCA Paso Flores 154.21 108 PKPbc **PKPbc 10 45 17.7 +0.3**
comp=Z,1.3nm,0.8s,baz=302,slow=5.3,SNR=3.0
PLCA PKPab **PKPab 10 45 30.0 -1.4**
comp=Z,1.7nm,0.8s,baz=216,slow=7.9,SNR=4.8
CPUP Villa Florida 160.14 63 PKPab **PKPab 10 45 54.5 -2.6**
comp=Z,2.2nm,1.1s,baz=294,slow=10,SNR=2.9

IDC 15 10:49:18.4±0.9, 27.°35N×144.°42E, h0km, mb3.5/8, mb1 3.8/8, mb1mx3.5/52, mbtmp3.5/8, Error ellipse: s-maj=32.1km s-min=24.0km az=93.0, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SONM	**Songino Array**	**35.92**	**315**	P	P	10 56 21.3	+0.7
	0.3nm,0.4s,baz=123,slow=10,SNR=2.8						
WRA	**Warramunga Arr**	**48.02**	**193**	P	P	10 57 58.9	-0.5
	0.8nm,0.5s,baz=14,slow=8.6,SNR=9.3						
ASAR	**Alice Springs**	**51.73**	**192**	P	P	10 58 28.2	+0.6
	0.3nm,0.7s,baz=16,slow=10,SNR=3.2						
MKAR	**Makanchi Array**	**51.85**	**309**	P	P	10 58 28.2	-0.1
	0.2nm,0.6s,baz=101,slow=7.5,SNR=3.2						
KURBB	**Kurchatov Arra**	**54.28**	**314**	P	P	10 58 45.3	-0.9
	0.2nm,0.3s,baz=89,slow=8.3,SNR=3.4						
YKA	**Yellowknife Ar**	**70.96**	**29**	P	P	11 00 37.7	+0.3
	0.2nm,0.5s,baz=294,slow=6.7,SNR=4.1						
NVAR	**Mina Array Bea**	**78.79**	**53**	P	P	11 01 23.7	+0.2
	0.7nm,0.7s,baz=288,slow=6.1,SNR=4.2						
PDAR	**Pinedale Array**	**82.62**	**46**	P	P	11 01 43.4	-0.6
	0.2nm,0.6s,baz=262,slow=6.3,SNR=2.8						

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*ISN **15** 10:49:11.6±1.5, 39.°07N×45.°15E, h0km±85km, ML3.6*
*NSSP **15** 10:49:14.0, 38.°55N×45.°22E, h5km, Ms3.6*
*CSEM **15** 10:49:20.6±0.2, 38.°62N×45.°21E, h2km, ML3.8, Error ellipse: s-maj=5.5km s-min=4.1km az=155.0*
*TEH **15** 10:49:21.0, 38.°53N×44.°98E, h8km, ML3.8*
*AZER **15** 10:49:21.7±0.0, 38.°63N×45.°07E, h12km, Error ellipse: s-maj=3.0km s-min=1.2km az=234.0*
*ISK **15** 10:49:24.6, 38.°52N×44.°75E, h5km, ML3.4*
*THR **15** 10:49:25.0±0.4, 39.°35N×45.°45E, h14km±13km, ML3.5*
*DDA **15** 10:49:26.3, 38.°58N×44.°60E, h5km, Md3.3*

ISC 15 10:49:20.8±1.1, 38.°57N±0.°02×45.°13E±0.°01, h4km±10km, n110, σ1§75/163, 23C-37D, Iran-Armenia-Azerbaijan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IMRD	**Marand**	**0.47**	**72**⇑	*e*Pg	**Pb**	**10 49 31.9**	**+0.1**
IMRD				*e*Sg	**Sb**	**10 49 40.0**	**+0.8**
IMRD				*e*AMB	AMB	10 49 40.6	
	comp=Z,13μm,0.1s						
ISHB	**Shabestar**	**0.48**	**127**⇓	*e*Pg	**Pb**	**10 49 31.4**	**-0.6**
ISHB				*e*Sg	**Sb**	**10 49 39.0**	**-0.5**
ISHB				*e*AMB	AMB	10 49 40.1	
	comp=Z,64μm,0.1s						
NAX	**Nakhchivan**	**0.66**	**25**	⇓P	**Pb**	**10 49 35.1**	**0.0**
	SNR=438						
NAX				⇓S	**Sb**	**10 49 45.6**	**+0.9**
NAX	**Nakhchivan**	**0.66**	**25**	P	**Pb**	**10 49 35.1**	**0.0**
	SNR=438						
MAKU	**Maku**	**0.85**	**336**	*e*Pg	**Pg**	**10 49 36.7**	**-0.6**
MAKU	**Maku**	**0.85**	**336**	*e*Pg	**Pg**	**10 49 36.7**	**-0.6**
ITBZ	**Tabriz**	**0.87**	**113**⇓	*e*Pg	**Pg**	**10 49 38.2**	**+0.7**
ITBZ				*e*Sg	**Sb**	**10 49 50.9**	**+0.3**
ITBZ				*e*AMB	AMB	10 49 52.5	
	comp=Z,29μm,0.1s						
ITBZ	**Tabriz**	**0.87**	**113**⇓	*e*Pg	**Pg**	**10 49 38.2**	**+0.7**
ITBZ				*e*Sg	**Sb**	**10 49 50.9**	**+0.3**
MGRZ	**Megri**	**0.93**	**69**	⇓*i*P	Pg	10 49 32.8	-5.8
MGRZ				⇓*i*S	**Sg**	**10 49 46.3**	**-4.3**
MGRZ	**Megri**	**0.93**	**69**	⇓P	Pg	10 49 32.8	-5.8
MGRZ				S	**Sg**	**10 49 46.3**	**-4.3**
KDR	**Kadzharan**	**0.95**	**52**	⇓*i*P	Pg	10 49 33.8	-5.2
KDR				⇓*i*S	**Sg**	**10 49 47.7**	**-3.7**
KDR	**Kadzharan**	**0.95**	**52**	⇓P	Pg	10 49 33.8	-5.3
KDR				S	**Sg**	**10 49 47.7**	**-3.7**
CLDR	**Caldiran**	**1.11**	**301**	*e*PG	**Pg**	**10 49 42.3**	**+0.2**
CLDR				*e*SG	**Sb**	**10 49 57.0**	**-0.6**
CLDR	**Caldiran**	**1.11**	**301**	*e*Pg	**Pg**	**10 49 42.3**	**+0.2**
CLDR				*e*Sg	**Sb**	**10 49 57.0**	**-0.6**
XTNZ	**Xhotanan**	**1.20**	**54**	⇓*i*P	Pn	10 49 37.3	-7.1
XTNZ				⇓*i*S	**Sb**	**10 49 53.6**	**-6.4**
VMUR	**Van-Muradiye**	**1.29**	**289**	*i* P	**Pn**	**10 49 44.5**	**-1.4**
VMUR				*i* S	**Sn**	**10 50 04.1**	**+0.4**
GRS	**Goris**	**1.31**	**45**⇑	*i*P	Pn	10 49 39.0	-7.2
GRS				⇓*i*S	**Sb**	**10 49 57.0**	**-6.5**
TVAN	**Van**	**1.35**	**269**	S	**Sg**	**10 50 08.0**	**+3.6**
TVAN	**Van**	**1.35**	**269**	*i* P	**Pn**	**10 49 45.2**	**-1.6**
TVAN				*i* S	**Sg**	**10 50 08.0**	**+3.6**
VANB	**Van**	**1.37**	**271**	*e*PG	**Pn**	**10 49 46.0**	**-0.9**
VANB				*e*SG	**Sb**	**10 50 02.1**	**-2.8**
VANB	**Van**	**1.37**	**271**	*e*Pg	**Pn**	**10 49 46.0**	**-0.9**
VANB				*e*Sg	**Sb**	**10 50 02.2**	**-2.8**
DYDN	**Diyadin**	**1.48**	**311**	P	**Pg**	**10 49 49.3**	**0.0**
DYDN				S	**Sg**	**10 50 12.2**	**+3.7**
DYDN	**Diyadin**	**1.48**	**311**	*i* P	**Pg**	**10 49 49.3**	**0.0**
DYDN				*i* S	**Sg**	**10 50 12.2**	**+3.7**
IHRS	**Heris**	**1.52**	**99**	*e*Pn	**Pb**	**10 49 49.9**	**+0.1**
IHRS				*e*AMB	AMB	10 49 51.2	
	comp=Z,17μm,0.1s						
IHRS	**Heris**	**1.52**	**99**	*e*Pn	**Pb**	**10 49 49.9**	**+0.1**
GNI	**Garni**	**1.60**	**349**⇓	*i*P	**Pn**	**10 49 50.3**	**+0.1**
GNI				⇑*i*S	**Sg**	**10 50 15.1**	**+2.7**
IBST	**Bostanabad**	**1.64**	**122**	*e*Pn	**Pn**	**10 49 51.0**	**+0.3**
IBST				*e*AMB	AMB	10 50 19.4	
	comp=Z,6μm,0.2s						
IBST	**Bostanabad**	**1.64**	**122**	*e*Pn	**Pn**	**10 49 51.0**	**+0.3**
GEVA	**Gevas**	**1.65**	**262**	P	**Pn**	**10 49 50.0**	**-0.8**
GEVA				S	**Sg**	**10 50 13.9**	**+0.1**
GEVA	**Gevas**	**1.65**	**262**	*i* P	**Pn**	**10 49 50.0**	**-0.8**
GEVA				*i* S	**Sg**	**10 50 13.9**	**+0.1**
VADZ	**Vardenis**	**1.67**	**16**	⇑P	**Pg**	**10 49 55.0**	**+2.2**
CUKT	**Cukurca**	**1.79**	**223**	*e*PN	**Pg**	**10 49 54.9**	**-0.3**
CUKT				*e*SN	**Sb**	**10 50 16.4**	**-0.7**
CUKT	**Cukurca**	**1.79**	**223**	*e*Pn	**Pg**	**10 49 54.9**	**-0.3**
CUKT				*e*Sn	**Sb**	**10 50 16.5**	**-0.7**
ISRB	**Sarab**	**2.13**	**110**	*e*Pn	**Pb**	**10 49 59.3**	**-0.9**
ISRB				*e*AMB	AMB	10 50 11.2	
	comp=Z,5μm,0.2s						
ISRB	**Sarab**	**2.13**	**110**	*e*Pn	**Pb**	**10 49 59.3**	**-0.9**
GRMI	**Germi**	**2.17**	**83**	*e*Pg	**Pb**	**10 50 01.1**	**+0.3**
GRMI				AML	AML	10 50 34.4	
	comp=N,346nm,0.4s						
GRMI				AML	AML	10 50 35.5	
	comp=E,527nm,0.5s						
GRMI	**Germi**	**2.17**	**83**	*e*Pn	**Pb**	**10 50 01.2**	**+0.3**
GRMI				*e*Sg	**Sg**	**10 50 31.0**	**+0.3**
GDB	**GEDABAY**	**2.20**	**12**	⇓Pg	**Pb**	**10 50 00.1**	**-1.2**
	SNR=105						
GDB				⇓Sg	**Sg**	**10 50 30.8**	**-0.7**
GANJ	**Ganja**	**2.26**	**24**	⇓Pg	**Pb**	**10 50 01.6**	**-0.8**
GANJ				⇑Sg	**Sg**	**10 50 33.2**	**-0.4**
GANJ	**Ganja**	**2.26**	**24**	Pg	**Pb**	**10 50 01.6**	**-0.8**
GANJ				Sg	**Sg**	**10 50 33.2**	**-0.4**
BRDA	**Brd**	**2.31**	**43**	⇑Pg	**Pb**	**10 50 03.8**	**+0.6**
	SNR=4.0						
BRDA				⇓Sg	**Sg**	**10 50 35.2**	**0.0**
BRDA	**Brd**	**2.31**	**43**	Pg	**Pb**	**10 50 03.8**	**+0.6**
	SNR=4.0						
BRDA				Sg	**Sg**	**10 50 35.2**	**0.0**
SIRT	**Sirnak**	**2.38**	**244**	*e*PN	**Pb**	**10 50 02.2**	**-2.2**
SIRT	**Sirnak**	**2.38**	**244**	*e*Pn	**Pb**	**10 50 02.2**	**-2.2**
EAK	**Akyaka**	**2.42**	**331**	P	**Pb**	**10 50 05.5**	**+0.5**
EAK	**Akyaka**	**2.42**	**331**	*i* P	**Pb**	**10 50 05.5**	**+0.5**
EATA	**Eleskirt**	**2.42**	**303**	P	**Pb**	**10 50 05.3**	**+0.1**
EATA	**Eleskirt**	**2.42**	**303**	*i* P	**Pb**	**10 50 05.3**	**+0.1**
EATA				*i* S	**Sg**	**10 50 39.5**	**+0.8**
QZX	**Qazax, Azerbai**	**2.49**	**4**	⇓Pg	**Pb**	**10 50 04.2**	**-2.0**
	SNR=83						
QZX				⇓Sg	**Sb**	**10 50 36.8**	**-0.4**
QZX	**Qazax, Azerbai**	**2.49**	**4**	Pg	**Pb**	**10 50 04.2**	**-2.0**
	SNR=83						
QZX				Sg	**Sb**	**10 50 36.8**	**-0.4**
STEZ	**Stepenevan**	**2.49**	**347**⇑	*e*P	**Pn**	**10 50 03.4**	**+1.1**
STEZ				⇑*e*S	**Sn**	**10 50 34.0**	**+0.8**
EKAR	**Karacoban**	**2.49**	**287**	*i* P	**Pg**	**10 50 07.7**	**-0.8**
STE	**Stepanavan**	**2.49**	**347**	⇑P	**Pn**	**10 50 03.4**	**+1.0**
LRK	**Lerik**	**2.51**	**87**	⇓Pg	**Pb**	**10 50 07.6**	**+1.0**
	SNR=27						
LRK				⇑Sg	**Sg**	**10 50 43.0**	**+1.4**
LRK	**Lerik**	**2.51**	**87**	Pg	**Pb**	**10 50 07.6**	**+1.0**
	SNR=27						
LRK				Sg	**Sg**	**10 50 43.0**	**+1.4**
KARS	**Kars**	**2.59**	**323**	*e*PN	**Pb**	**10 50 07.5**	**-0.5**
KARS	**Kars**	**2.59**	**323**	*e*Pn	**Pb**	**10 50 07.5**	**-0.5**
ZRD	**Zardab**	**2.61**	**48**	⇓Pg	**Pb**	**10 50 08.3**	**+0.1**
ZRD				⇓Sg	**Sg**	**10 50 46.2**	**+1.6**
ZRD	**Zardab**	**2.61**	**48**	Pg	**Pb**	**10 50 08.3**	**+0.1**
ZRD				Sg	**Sg**	**10 50 46.2**	**+1.6**
GLBA	**Clilabad**	**2.63**	**74**	⇑Pg	**Pb**	**10 50 09.8**	**+1.3**
	SNR=7.7						
GLBA				⇑Sg	**Sg**	**10 50 45.9**	**+0.6**
GLBA	**Clilabad**	**2.63**	**74**	Pg	**Pb**	**10 50 09.8**	**+1.3**
	SNR=7.7						
GLBA				Sg	**Sg**	**10 50 45.9**	**+0.6**
MNGR	**Mingechevir, A**	**2.66**	**34**	⇑Pg	**Pb**	**10 50 10.8**	**+1.7**
	SNR=11						
MNGR				⇑Sg	**Sg**	**10 50 47.2**	**+0.8**
MSL	**Mosul**	**2.70**	**217**	*e*Pn	**Pn**	**10 50 03.0**	**-2.1**
	SNR=3.0						
MSL				*e*Sn	**Sn**	**10 50 38.0**	**-0.3**
	SNR=3.0						
LKRN	**Lenkeran, Azer**	**2.86**	**86**	⇓Pg	**Pb**	**10 50 13.6**	**+1.2**
	SNR=15						
LKRN				⇓Sg	**Sg**	**10 50 54.6**	**+1.9**
LKRN	**Lenkeran, Azer**	**2.86**	**86**	Pg	**Pb**	**10 50 13.6**	**+1.2**
	SNR=15						
LKRN				Sg	**Sg**	**10 50 54.6**	**+1.9**
ASTR	**Astara**	**2.87**	**89**	⇓Pg	**Pb**	**10 50 13.9**	**+1.3**
	SNR=10						
ASTR				⇑Sg	**Sg**	**10 50 53.8**	**+0.9**
ASTR	**Astara**	**2.87**	**89**	Pg	**Pb**	**10 50 13.9**	**+1.3**
	SNR=10						
ASTR				Sg	**Sg**	**10 50 53.8**	**+0.9**
HOMI	**Horasan**	**2.90**	**301**	*i* P	**Pb**	**10 50 14.1**	**+0.7**
SENK	**Senkaya-Erzuru**	**2.93**	**314**	*e*PN	**Pb**	**10 50 11.3**	**-2.4**
SENK	**Senkaya-Erzuru**	**2.93**	**314**	*e*Pn	**Pb**	**10 50 11.3**	**-2.4**
BGD	**Bogdanovka**	**2.94**	**337**	P	**Pb**	**10 50 15.6**	**+1.7**
KDMR	**Kurdemir**	**2.97**	**52**	⇑Sg	**Sg**	**10 50 57.2**	**+1.0**
KDMR	**Kurdemir**	**2.97**	**52**	Sg	**Sg**	**10 50 57.2**	**+1.0**
SEKA	**Sheki**	**3.07**	**30**	Pg	**Pb**	**10 50 16.7**	**+0.5**
	SNR=23						
SEKA				⇓Sg	**Sg**	**10 50 59.9**	**+0.3**
SEKA	**Sheki**	**3.07**	**30**	Pg	**Pb**	**10 50 16.7**	**+0.5**
	SNR=23						
SEKA				Sg	**Sg**	**10 50 59.9**	**+0.3**
AKH	**Akhalkalaki**	**3.10**	**337**	P	**Pb**	**10 50 17.8**	**+1.1**
BTMN	**Batman**	**3.12**	**259**	P	**Pn**	**10 50 10.9**	**0.0**
BTMN	**Batman**	**3.12**	**259**	*i* P	**Pn**	**10 50 10.9**	**0.0**
BNGL	**BINGOL**	**3.14**	**278**	*i* P	**Pb**	**10 50 17.6**	**+0.3**
QBL	**Gabala**	**3.15**	**40**	⇓Sg	**Sg**	**10 51 02.2**	**0.0**
QBL	**Gabala**	**3.15**	**40**	Sg	**Sg**	**10 51 02.2**	**0.0**
TBLG	**Delisi**	**3.17**	**355**	P	**Pb**	**10 50 18.6**	**+0.9**
ERZM	**Erzurum**	**3.21**	**296**	P	**Pn**	**10 50 14.9**	**+2.5**
ERZM	**Erzurum**	**3.21**	**296**	*i* P	**Pn**	**10 50 14.9**	**+2.5**
EZM	**Erzurum**	**3.22**	**296**	*e*PN	**Pn**	**10 50 15.1**	**+2.7**
IML	**Ismayilli**	**3.23**	**46**	⇑Pg	**Pb**	**10 50 19.4**	**+0.5**
	SNR=7.0						
IML				⇓Sg	**Sg**	**10 51 03.9**	**-0.7**
ZKTA	**Zakatala**	**3.27**	**20**	⇓Pg	**Pb**	**10 50 19.9**	**+0.5**
	SNR=31						
ZNJK	**Zanjan**	**3.40**	**123**	*e*Pn	**Pg**	**10 50 24.2**	**-1.9**
XNQ	**Khinaliq**	**3.48**	**41**	⇑Pg	**Pb**	**10 50 24.1**	**+1.0**
	SNR=8.2						
XNQ				⇑Sg	**Sg**	**10 51 10.5**	**-2.0**
XNQ	**Khinaliq**	**3.48**	**41**	Pg	**Pb**	**10 50 24.1**	**+1.0**
	SNR=8.2						
XNQ				Sg	**Sg**	**10 51 10.5**	**-2.0**
DAGI	**Agillar**	**3.52**	**316**	*i* P	**Pg**	**10 50 26.2**	**-2.1**
GBS	**Qobustan**	**3.54**	**55**	⇑Pg	**Pb**	**10 50 25.8**	**+1.8**
GBS				⇑Sg	**Sg**	**10 51 12.9**	**-1.6**
ARTV	**Artvin**	**3.59**	**318**	*i* P	**Sb**	**10 51 06.4**	**-2.6**
DBAD	**Bademkaya**	**3.60**	**314**	*i* P	**Pg**	**10 50 28.5**	**-1.4**
YEDI	**Yedisu-Bingol**	**3.68**	**285**	*e*PN	**Pn**	**10 50 20.9**	**+2.2**
YEDI	**Yedisu-Bingol**	**3.68**	**285**	*e*Pn	**Pn**	**10 50 20.9**

GUDG	Gudauri	3.92 353	P	Pg	10 50 34.0	-1.9
IDHR	Dehrash	4.00 165	ePn	Pn	10 50 24.7	+1.6
IDHR			eAMB	AMB	10 50 44.3	
	comp=Z,732nm,0.3s					
IDHR	Dehrash	4.00 165	ePn	Pn	10 50 24.7	+1.6
ONI	Oni	4.21 343	P	Pb	10 50 37.7	+2.1
KELT	Kelkit	4.82 291	i P	Pb	10 50 48.5	+2.6
BHD	Baghdad	5.33 187	ePn	Pn	10 50 40.0	-1.2
BHD	SNR=3.0		i Sn	Sn	10 51 43.0	0.0
	SNR=3.0					
NSR	Nassriya	7.59 173	ePn	Pn	10 51 12.0	-0.3
	SNR=3.0					

*ISCJB **15** 10:58:19.8±0.6, 72.°82N±0.°09×121.°0E±0.°2, h10km, mb3.5/10, MS3.1/1, Error ellipse: s-maj=13.7km s-min=7.7km az=15.5*
*IDC **15** 10:58:19.9±0.8, 72.°76N×121.°12E, h0km, mb3.6/10, mb1 3.8/11, mb1mx3.5/56, mbtmp3.6/11, ML5.9/1, MS3.2/1, Ms1 3.2/1, ms1mx2.5/45, Error ellipse: s-maj=22.4km s-min=16.7km az=159.0*
*YARS **15** 10:58:26.6±0.9, 73.°14N±0.°03×123.°36E±0.°09, h10km*
ISC 15 10:58:21.5±0.8, 72.8N±0.1×120.96E±0.07, h10km, n21, σ1946/19, mb3.6/10, Northern and central Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TIXI	Tiksi	2.67	111	Pn	Pn	10 59 05.6	+1.1
	9.0nm,0.3s,baz=300,slow=9.4,SNR=11						
TIXI				Sn	Sn	10 59 37.9	+1.1
	25nm,0.3s,baz=263,slow=8.6,SNR=12						
TIXI	Tiksi	2.67	111	eP	Pn	10 59 05.7	+1.2
TIXI				eS	Sn	10 59 36.1	-0.7
BTGS	Batagay	6.90	131	eP	Pn	11 00 04.3	+1.8
BTGS				eS	Sn	11 01 17.2	-3.7
BTGS				eS	Sb	11 01 52.8	+9.2
DEPR	Deputatskiy	7.00	109	eP	Pb	11 00 23.4	+0.3
DEPR				Pmax		11 00 23.4	
	comp=Z,4.0nm,0.5s						
DEPR				eS	Sb	11 01 47.5	+0.9
MOMR	Moma	9.94	118	eP	Pn	11 00 44.6	+0.5
MOMR				eS	Sn	11 02 26.1	-9.4
MOMR				eS		11 03 21.4	
YAK	Yakutsk	11.26	159	eS		11 04 19.5	
TBGR	Tabaga	11.46	159	eS		11 04 25.8	
OLMR	Olekminsk	12.44	181	eS		11 05 04.6	
ALDR	Aldan	14.31	171	eS	S	11 05 58.2	+75
CGD	Chagda	14.58	160	eS	S	11 06 01.3	+73
ZALV	Zalesovo Beam	24.18	238	P	P	11 03 37.2	-0.3
	comp=Z,1.2nm,0.5s,baz=38,slow=9.5,SNR=3.8						
SONM	Songino Array	25.86	203	P	P	11 03 54.9	+1.9
	comp=Z,0.4nm,0.6s,baz=14,slow=12,SNR=2.4						
KURBB	Kurchatov Arra	28.83	243	P	P	11 04 18.5	-1.0
	comp=Z,0.5nm,0.7s,baz=29,slow=8.4,SNR=3.3						
ILAR	Eielson Array	30.96	56	P	P	11 04 37.3	-0.8
	comp=Z,0.3nm,0.8s,baz=322,slow=9.1,SNR=4.2						
MKAR	Makanchi Array	31.40	235	P	P	11 04 42.9	+0.7
	comp=Z,2.0nm,1.2s,baz=0.0,slow=2.8,SNR=4.3						
FINES	FINESS Array B	34.42	302	P	P	11 05 08.8	+0.4
	comp=Z,1.0nm,0.6s,baz=50,slow=10,SNR=4.0						
KDAK	Kodiak Island	35.33	68	LR	LR	11 22 53.5	
	comp=Z,32nm,18.1s,baz=313,slow=42						
NOA	NORSAR Array B	38.30	312	P	P	11 05 42.9	+1.3
	comp=Z,0.5nm,0.8s,baz=37,slow=8.9,SNR=2.5						
YKA	Yellowknife Ar	39.91	37	P	P	11 05 54.8	-0.2
	comp=Z,0.1nm,0.5s,baz=342,slow=8.8,SNR=3.6						
TXAR	Lajitas Array	73.75	40	P	P	11 09 54.7	-0.8
	comp=Z,0.6nm,0.8s,baz=360,slow=3.8,SNR=9.0						
WRA	Warramunga Arr	92.90	167	P	P	11 11 32.3	-1.8
	comp=Z,0.5nm,0.8s,baz=356,slow=5.5,SNR=6.4						

*IDC **15** 11:01:03.0±0.6, 0.°02S×124.°87E, h0km, mb4.2/19, mb1 4.3/19, mb1mx4.1/40, mbtmp4.2/19, MS3.1/5, Ms1 3.1/5, ms1mx2.7/47, Error ellipse: s-maj=30.2km s-min=13.4km az=70.0*
*ISCJB **15** 11:01:08.5±0.3, 0.°01S±0.°03×124.°98E±0.°3, h53km, mb4.3/29, MS3.0/3, Error ellipse: s-maj=5.5km s-min=4.0km az=38.4*
*NEIC **15** 11:01:10.2±1.1, 0.°04S×125.°04E, h55km±11km, mb4.3/10, Error ellipse: s-maj=11.2km s-min=7.1km az=218.0*
*DJA **15** 11:01:12.4±0.3, 0.°S±4.°×12.°5E±.°, h92km±13km, M4.5/14, mb4.6/11, mB4.8/5, MLv4.6/14, Mw(mB)4.0/5*
ISC 15 11:01:10.3±0.4, 0.°03S±0.°05×125.°05E±0.°04, h53km, n55, σ1955/66, mb4.2/29, MS2.8/3, Southern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SANI	Sanana	2.21	155	P	Pn	11 01 45.2	+0.5
SANI				S	Sn	11 02 12.1	+1.2
LUWI	Luwuk	2.49	246	P	Pn	11 01 49.9	+1.5
LUWI				S	Sn	11 02 21.3	+3.7
LUWI	Luwuk	2.49	246	ePn	Pn	11 01 49.6	+1.1
LUWI				eS	Sn	11 02 21.7	+4.1
LBMI	Labuha	2.52	104	P	Pn	11 01 50.5	+1.6
LBMI				S	Sn	11 02 21.4	+2.9
MRSI	Marisa	3.15	279	P	Pn	11 01 55.3	-2.2
MRSI				S	Sn	11 02 37.0	+3.1
KDI	Kendari	4.59	212	P	Pn	11 02 17.4	+0.1
MSAI	Masohi	5.09	130	P	Pn	11 02 26.2	+2.1
	63nm,0.8s,527nm0.2nm						
MSAI				S	Sn	11 03 23.2	+1.7
	63nm,0.8s,527nm0.2nm						
PCI	Palu	5.29	261	P	Pn	11 02 29.4	+2.6
	268nm,0.9s,2μm1.2nm						
TTSI	Tana Toraja	6.03	240	P	Pn	11 02 37.2	+0.3
	99nm,0.7s,1μm0.3nm						
SWI	Sorong	6.26	98	P	Pn	11 02 41.5	+1.3
	24nm,1.2s,0.7nm						
SPSI	Sidrap Palu	6.57	233	P	Pn	11 02 45.1	+0.7
	73nm,0.6s,943nm0.3nm						
SPSI				S	Sn	11 03 57.6	-0.3
	73nm,0.6s,943nm0.3nm						
BNDI	Bandanaira	6.59	133	P	Pn	11 02 45.2	+0.5
	131nm,1.8s,0.9nm						
BNDI				S	Sn	11 03 59.3	+0.8
	131nm,1.8s,0.9nm						
DAV	Davao City (W)	7.07	4	LR	LR	11 05 51.4	
	comp=Z,224nm,19.8s,baz=174,slow=41						
KAPI	Kappang	7.25	227	Pn	Pn	11 02 52.6	-1.1
	3.4nm,0.3s,baz=66,slow=11,SNR=4.8						
KAPI				Sn	Sn	11 04 10.9	-3.7
	1.4nm,0.3s,baz=90,slow=20,SNR=2.9						
KAPI				LR	LR	11 05 26.1	
	comp=Z,95nm,19.1s,baz=71,slow=37						
KAPI	Kappang	7.25	227	ePn	Pn	11 02 52.8	-0.9
	15nm,0.6s						
KAPI				Sn	Sn	11 04 10.9	-3.7
BSSI	Bau Bau, Buton	7.59	217	P	Pn	11 02 58.4	0.0
	62nm,1.4s,0.2nm						
FAKI	Fak Fak	7.75	112	P	Pn	11 03 01.5	+0.9
	14nm,0.8s,0.1nm						
FAKI	Fak Fak	7.75	112	eP	Pn	11 02 59.9	-0.7
	8.3nm,0.4s						
NGJI	Ngawi	15.39	241	P	P	11 04 47.8	-0.1
PWJI	Pagerwojo	15.41	239	P	P	11 04 51.8	+3.7
WRAB	Tennant Creek	21.78	156	eP	P	11 05 56.8	-1.1
	4.3nm,0.6s						
WRA	Warramunga Arr	21.78	156	P	P	11 05 56.4	-1.5
	2.3nm,0.4s,baz=334,slow=11,SNR=34						
COEN	Coen	22.66	128	eP	P	11 06 08.0	+0.6
	52nm,1.5s						
KULM	Kulim	24.93	283	eP	P	11 06 27.0	-1.9
	5.5nm,0.8s						
ASAR	Alice Springs	25.02	161	P	P	11 06 29.9	+0.3
	3.6nm,0.8s,baz=344,slow=11,SNR=38						
ASAR				PcP	PcP	11 10 04.4	+0.8
	0.7nm,0.5s,baz=345,slow=1.9,SNR=10						
CMAR	Chiang Mai Arr	31.55	307	P	P	11 07 28.0	0.0
	0.6nm,0.3s,baz=134,slow=7.7,SNR=4.1						
CMAR				PcP	PcP	11 10 20.6	+0.9
	1.5nm,0.7s,baz=169,slow=2.0,SNR=8.5						
CMAR				LR	LR	11 19 47.3	
	comp=Z,14nm,21.5s,baz=270,slow=36						
CHTO	Chiang Mai	31.74	308	eP	P	11 07 29.4	-0.2
	2.1nm,0.5s						
STKA	Stephens Creek	35.33	155	P	P	11 08 01.3	+0.6
	6.3nm,0.6s,baz=330,slow=9.0,SNR=14						
KSAR	Wonju Array Be	37.38	4	P	P	11 08 17.6	-0.4
KSRS	Korea Array	37.39	4	P	P	11 08 17.6	-0.5
	1.7nm,0.8s,baz=173,slow=11,SNR=4.6						
KSRS				LR	LR	11 23 22.1	
	comp=Z,18nm,21.9s,baz=150,slow=36						
MJAR	Matsushiro Arr	38.38	17	P	P	11 08 26.6	0.0
	1.6nm,0.8s,baz=194,slow=8.6,SNR=6.7						
USRK	Ussuriysk Ar.	44.47	7	P	P	11 09 17.4	+1.1
	1.4nm,0.5s,baz=207,slow=6.1,SNR=5.1						
KLR	Kul'dur	49.41	6	P	P	11 09 54.7	0.0
	1.4nm,0.5s,baz=184,slow=3.2,SNR=6.9						
SONM	Songino Array	50.36	344	P	P	11 10 02.2	0.0
	2.1nm,0.8s,baz=153,slow=9.2,SNR=6.6						
MKAR	Makanchi Array	59.73	327	P	P	11 11 08.5	-1.3
	3.9nm,0.5s,baz=126,slow=8.1,SNR=37						
MKAR				PcP	PcP	11 11 55.6	-0.5
	1.7nm,0.8s,baz=105,slow=5.8,SNR=4.4						
TKM2	Tokmak 2	61.50	321	eP	P	11 11 21.1	-0.9
	4.4nm,0.6s						
AAK	Ala-Archa	62.06	320	eP	P	11 11 26.7	+0.8
	1.2nm,0.6s						
EKS2	Erkin-Say	62.54	320	eP	P	11 11 29.8	+0.8
	3.9nm,0.9s						
ZALV	Zalesovo Beam	63.20	335	P	P	11 11 32.4	-0.5
	1.9nm,0.5s,baz=123,slow=6.2,SNR=6.6						
KURBB	Kurchatov Arra	64.03	329	P	P	11 11 37.3	-1.2
	5.1nm,0.7s,baz=135,slow=6.7,SNR=48						
KURK	Kurchatov	64.04	329	P	P	11 11 37.3	-1.2
BVAR	Borovoye Array	69.58	328	P	P	11 12 12.6	-1.2
	2.0nm,0.5s,baz=145,slow=8.8,SNR=17						
BRVK	Borovoye	69.65	328	eP	P	11 12 14.8	+0.6
	7.1nm,1.0s						
NRIK	Noril'sk	73.67	347	P	P	11 12 37.6	-0.4
	6.8nm,0.6s,baz=125,slow=4.8,SNR=6.3						
ABKAR	Akbulak array	74.02	322	eP	P	11 12 40.6	+0.1
	1.9nm,0.6s						
ARU	Arti	77.22	329	P	P	11 12 58.3	-0.3
	2.4nm,0.6s,baz=101,slow=1.1,SNR=4.9						
ARU	Arti	77.22	329	eP	P	11 12 58.3	-0.3
	3.2nm,0.8s						
ATD	Arta Tunnel	82.37	282	LR	LR	11 49 17.5	
	comp=Z,24nm,18.1s,slow=35						
ILAR	Eielson Array	89.20	25	P	P	11 13 59.1	-1.0
	0.2nm,0.7s,baz=240,slow=5.1,SNR=3.0						
BRTR	Keskin Array B	91.11	310	P	P	11 14 08.5	-1.3
	0.3nm,0.5s,baz=90,slow=3.2,SNR=3.1						
SPITS	Spitsbergen Ar	93.82	349	P	P	11 14 21.0	-0.3
	11nm,1.0s,baz=106,slow=12,SNR=5.0						
INK	Inuvik	94.25	21	P	P	11 14 23.8	+0.3
	1.2nm,1.0s,baz=288,slow=2.7,SNR=2.7						
FINES	FINESS Array B	94.33	332	P	P	11 14 22.1	-1.8
	1.1nm,0.8s,baz=90,slow=7.5,SNR=2.8						
TORD	Torodi Ar. Bea	122.39	286	PKP	PKPdf	11 20 00.6	-0.2
	1.0nm,0.6s,baz=82,slow=1.6,SNR=7.9						
TXAR	Lajitas Array	125.19	53	PKP	PKPdf	11 20 07.5	+1.6
	0.2nm,0.8s,baz=243,slow=4.0,SNR=2.7						

*NIED **15** 11:02:00, 36.°40N×142.°80E, h5km, Mw4.0 Best double couple: M0 1.10000×10^15 NP1:φs 10.00000°, δ24.00000°, λ-96.00000°. NP2:φs 197.00000°, δ66.00000°, λ-87.00000°.*
*IDC **15** 11:02:55.7±0.7, 36.°24N×142.°99E, h0km, mb3.6/10, mb1 3.9/13, mb1mx3.7/46, mbtmp3.7/13, ML3.7/3, MS2.9/6, Ms1 2.9/6, ms1mx2.6/50, Error ellipse: s-maj=21.0km s-min=17.6km az=129.0*
*ISCJB **15** 11:02:58.4±0.5, 36.°35N±0.°04×142.°81E±0.°05, h29km, mb3.6/10, MS2.9/1, Error ellipse: s-maj=5.9km s-min=4.7km az=34.7*
*JMA **15** 11:02:59.7±0.2, 36.°37N×142.°75E, h49km, M3.6*
ISC 15 11:02:59.8±0.7, 36.°37N±0.°05×142.°86E±0.°07, h29km, n41, σ2908/43, mb3.7/10, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	1.75	248	P	Pn	11 03 27.4	-0.8
ONAJ	Iwakimizuishiy	1.81	295	P	Pn	11 03 28.3	-0.8
JHO	Hitachi	1.86	278	P	Pn	11 03 28.6	-1.1
JHO				S	Sn	11 03 50.1	-2.2
BSO1	Boso 1	2.30	222	P	Pn	11 03 34.6	-0.6
BSO1				S	Sn	11 04 03.4	+1.1
JFT	Otama	2.32	300	P	Pn	11 03 36.5	+0.4
JFT				eS	Sn	11 04 02.4	-1.4
JAG	Ashikaga	2.75	272	P	Pn	11 03 41.5	-0.4
JMK	Ichinoseki	2.89	334	P	Pn	11 03 43.5	-0.4
JMK				eS	Sn	11 04 17.3	-0.4
JRY	Ryogami san	3.22	265	P	Pn	11 03 47.7	-0.8
JRY				eS	Sn	11 04 21.7	-4.2
JYK	Kaneyama	3.23	323	P	Pn	11 03 48.3	-0.3
JYK				S	Sn	11 04 21.0	-5.0
JOD2	Odawara 2	3.25	251	P	Pn	11 03 48.6	-0.3
JOD2				eS	Sn	11 04 25.2	-1.5
JOM	Ohasama	3.34	339	P	Pn	11 03 49.6	-0.5
JOM				S	Sn	11 04 28.6	-0.2
JYN	Shimob	3.61	257	P	Pn	11 03 53.7	-0.1
JYN				eS	Sn	11 04 34.3	-1.2
MJAR	Matsushiro Arr	3.75	274	Pn	Pn	11 03 55.9	+0.1
	2.6nm,0.3s,baz=103,slow=8.4,SNR=38						
MJAR				LR	LR	11 05 29.6	
	comp=Z,163nm,20.9s,baz=120,slow=40						
MAT	Matsushiro	3.75	274	P	Pn	11 03 55.8	0.0
MAT				eS	Sn	11 04 38.7	-0.3
MAT	Matsushiro	3.75	274	P	Pn	11 03 56.3	+0.5
JHJ2	Mitsune	4.10	219	P	Pn	11 03 59.9	-0.6
JHJ	Hachijo jima 2	4.11	219	Pn	Pn	11 03 58.6	-2.1
	19nm,0.3s,baz=351,slow=16,SNR=33						
JHJ				Sn	Sn	11 04 42.2	-5.6
	32nm,0.3s,baz=93,slow=22,SNR=7.9						
JHJ				LR	LR	11 05 34.4	
	comp=Z,76nm,19.9s,baz=242,slow=39						
JIE	Ise	5.40	250	S	Sn	11 05 16.3	-3.2
JCH	Churui	6.25	3	eS	Sn	11 05 34.2	-6.3
ASAJ	Asahikawa	7.74	359	Pn	Pn	11 04 50.2	-0.3
	1.3nm,0.3s,baz=226,slow=13,SNR=12						
ASAJ				Sn	Sn	11 06 13.8	-3.4
	0.3nm,0.3s,baz=240,slow=23,SNR=5.1						
JNU	Nakatsue	10.37	255	LR	LR	11 10 02.8	
	comp=Z,89nm,20.9s,baz=123,slow=41						
USRK	Ussuriysk Ar.	11.40	317	LR	LR	11 09 14.2	
	comp=Z,66nm,19.6s,baz=152,slow=33						
KSRS	Korea Array	12.01	280	LR	LR	11 09 37.1	
	comp=Z,74nm,19.1s,baz=78,slow=33						
H11N2	WAKE ISLAND Hy	26.81	122	T	T	11 36 27.3	
	baz=304						
H11N1	WAKE ISLAND Hy	26.82	122	T	T	11 36 31.9	
	baz=304						
H11N3	WAKE ISLAND Hy	26.83	122	T	T	11 36 26.9	
	baz=304						
H11S1	WAKE ISLAND Hy	27.52	124	T	T	11 37 22.8	
	baz=316						
H11S3	WAKE ISLAND Hy	27.52	124	T	T	11 37 19.4	
	baz=316						
H11S2	WAKE ISLAND Hy	27.54	124	T	T	11 37 20.0	
	baz=316						
SONM	Songino Array	29.12	305	P	P	11 09 00.8	+2.7
	1.0nm,0.7s,baz=111,slow=8.3,SNR=5.5						
TIXI	Tiksi	36.09	353	LR	LR	11 24 47.3	
	comp=Z,18nm,18.2s,baz=149,slow=36						
ZALV	Zalesovo Beam	43.22	313	P	P	11 10 59.4	+1.3
	0.6nm,0.3s,baz=101,slow=7.5,SNR=3.2						
KURBB	Kurchatov Arra	47.33	309	P	P	11 11 31.9	+1.2
	0.8nm,0.5s,baz=84,slow=7.9,SNR=15						
ILAR	Eielson Array	49.44	32	P	P	11 11 47.3	+0.5
	0.3nm,0.9s,baz=243,slow=6.0,SNR=4.1						
WRA	Warramunga Arr	56.58	190	P	P	11 12 38.8	-1.1
	1.0nm,1.0s,baz=7.2,slow=7.4,SNR=4.7						
ASAR	Alice Springs	60.30	189	P	P	11 13 05.6	-0.3
	0.4nm,0.8s,baz=16,slow=14,SNR=4.5						
YKA	Yellowknife Ar	63.80	30	P	P	11 13 29.0	+0.2
	0.2nm,0.7s,baz=297,slow=6.9,SNR=3.2						
NVAR	Mina Array Bea	74.45	54	P	P	11 14 36.9	+1.2
	0.5nm,0.6s,baz=269,slow=5.9,SNR=6.0						
PDAR	Pinedale Array	77.30	46	P	P	11 14 51.7	-0.2
	0.1nm,0.5s,baz=324,slow=4.5,SNR=2.8						
TXAR	Lajitas Array	89.60	53	P	P	11 15 56.2	+1.1
	0.5nm,0.8s,baz=300,slow=3.0,SNR=7.7						
LPAZ	La Paz	146.00	62	PKPbc	PKPbc	11 22 38.0	0.0
	1.6nm,1.1s,baz=25,slow=5.6,SNR=3.8						

DHMR 15 11:11:17.0±0.9, 11.°93N×43.°69E, h14km±16km, ML3.7, Ethiopia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TRBA	At Turbah	1.36	18	i P	Pn	11 11 42.1	+0.2
TRBA				i S	Sg	11 12 01.2	+0.1
ADEN	Aden	1.52	56	i P	Pn	11 11 43.6	-0.3
ADEN				i S	Sg	11 12 05.7	-0.5
ADEN				AML	AML	11 12 06.6	
	comp=E,1μm,0.4s						
BDHA	Al Bayda'	2.74	42	i P	Pb	11 12 04.0	-2.1
BDHA				i S	Sb	11 12 39.8	+0.2

MEX 15 11:15:35.5±0.6, 16.°65N×98.°89W, h15km±8km, MD3.6, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PNIG	Pinotepa	0.77	110	eP	Pg	11 15 47.7	-2.9
PNIG				eS	Sg	11 15 58.0	-2.8
TLIG	Tlapa	0.95	19	eP	Pb	11 15 50.5	-3.4
TLIG				eS	Sb	11 16 02.5	-3.9
MEIG	Mezcala	1.45	331	eP	Pn	11 15 58.5	-2.8
MEIG				i S	Sn	11 16 14.7	-5.3
VHO	Vista Hermosa	2.10	78	eP	Pn	11 16 07.3	-3.1
VHO				i S	Sn	11 16 32.4	-4.0
ARIG	Puente Sto Nin	2.14	319	eP	Pn	11 16 07.7	-3.0
ARIG				i S	Sn	11 16 32.0	-5.0
YAIG	Yautepec	2.20	356	eP	Pn	11 16 09.3	-2.4
YAIG				eS	Sn	11 16 33.9	-4.9

*BYKL **15** 11:18:56.8±0.3, 56.°37N×117.°81E*
*MOS **15** 11:18:56.7±2.1, 56.°37N×117.°81E, h10km, mb4.2/1, Error ellipse: s-maj=46.3km s-min=29.6km az=31.9*
ISC 15 11:18:55.3±0.7, 56.°29N±0.°03×117.°75E±0.°02, h10km, n33, σ2954/60, 4C-1D, East of Lake Baykal

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRS	Chara	0.68	25	⇑i Pg	Pb	11 19 08.2	-1.0
CRS				e		11 19 09.6	
CRS				eSg	Sg	11 19 16.6	-0.7
CRS				Pmax			
	127nm,0.3s						
CRS				Smax			
	379nm,0.3s						
NLYR	Nelyaty	1.16	281	⇑i Pg	Pn	11 19 17.6	0.0
NLYR				ePb	Pg	11 19 19.9	+2.4
NLYR				eSg	Sn	11 19 34.1	+0.7
NLYR				eSb	Sg	11 19 36.8	+4.3
NLYR				max			
	244nm,0.5s						
NLYR				max			
	1μm,0.8s						
NLYR	Nelyaty	1.16	281	ePG	Pn	11 19 17.5	0.0
NLYR				e		11 19 33.8	
NLYR				pmax	pmax		
	comp=Z,228nm,0.5s						
NLYR				smax	smax		
	comp=N,1μm,0.8s						
KHNR	Khani	1.39	62	⇑i Pg	Pg	11 19 21.0	-0.9
KHNR				⇓i Pb	Pb	11 19 22.9	+1.6
KHNR				eSg	Sg	11 19 39.0	-0.9
TUP	Tupik	2.25	145	ePn	Pb	11 19 35.7	-0.3
TUP				ePg	Pg	11 19 37.5	-0.9
TUP				e		11 19 41.2	
TUP				eSn	Sb	11 20 04.0	+0.1
TUP				eSg	Sg	11 20 08.1	+0.6
TUP				max			
	comp=N,119nm,0.7s						
TUP				Smax			
	comp=N,190nm,0.3s						
TUP	Tupik	2.25	145	ePN	Pb	11 19 34.9	-1.1
TUP				e		11 19 37.9	
TUP				eS	Sb	11 20 04.0	+0.1
TUP				e		11 20 08.4	
TUP				pmax	pmax		
	comp=Z,113nm,0.6s						
TUP				smax	smax		
	comp=E,190nm,0.6s						
SVKR	Severomuysk	2.35	268	ePg	Pg	11 19 39.5	-0.8
SVKR				eSg	Sg	11 20 10.8	+0.1
SVKR				Pmax			
	comp=E,161nm,0.3s						
SVKR				Smax			
	comp=E,587nm,0.6s						
SVKR	Severomuysk	2.35	268	ePN	Pg	11 19 39.5	-0.8
SVKR				e		11 20 10.2	
SVKR				pmax	pmax		
	comp=Z,195nm,0.5s						
SVKR				smax	smax		
	comp=N,586nm,0.6s						
UKT	Uakit	2.46	253	ePn	Pb	11 19 38.5	-1.1
UKT				⇑i Pg	Pg	11 19 41.2	-1.1
UKT				e		11 19 47.0	
UKT				eSg	Sg	11 20 14.2	+0.1
UKT				Pmax			
	comp=N,34nm,0.7s						
UKT				Smax			
	comp=N,149nm,0.6s						
BOD	Bodaibo	2.56	308	ePg	Pb	11 19 42.0	+0.8
BOD				eSg	Sg	11 20 15.0	-2.4
BOD				Pmax			
	comp=N,83nm,0.8s						
BOD				Smax			
	comp=N,150nm,0.6s						
BOD	Bodaibo	2.56	308	ePN	Pb	11 19 42.1	+0.8
BOD				e		11 20 15.0	
BOD				pmax	pmax		
	comp=Z,83nm,0.6s						
BOD				smax	smax		
	comp=E,152nm,0.7s						
YOA	Uoyan	3.37	270	ePg	Pg	11 19 57.3	-2.5
YOA				eSg	Sg	11 20 43.6	+0.2
YOA				Pmax			
	comp=E,89nm,0.3s						
YOA				Smax			
	comp=E,286nm,0.8s						
YOA	Uoyan	3.37	270	ePN	Pg	11 19 58.2	-1.6
YOA				e		11 20 44.2	
YOA				pmax	pmax		
	comp=Z,89nm,0.3s						
YOA				smax	smax		
	comp=E,288nm,0.8s						
KMO	Kumora	3.69	266	ePn	Pn	11 19 55.2	+2.8
KMO				ePg	Pb	11 20 02.6	+2.1
KMO				e		11 20 35.9	
KMO				eSg	Sg	11 20 51.2	-2.5
KMO				Pmax			
	comp=E,34nm,0.3s						
KMO				Smax			
	comp=E,85nm,0.9s						
KMO	Kumora	3.69	266	ePN	Pn	11 19 53.5	+1.1
KMO				e		11 20 02.5	
KMO				e		11 20 50.6	
KMO				pmax	pmax		
	comp=Z,34nm,0.3s						
KMO				smax	smax		
	comp=N,75nm,0.7s						
IENR	Iengra	3.96	88	ePn	Pn	11 19 57.5	+1.4
IENR				ePg	Pb	11 20 07.3	+2.1
IENR				eSn	Sn	11 20 43.6	+0.9
IENR				eSg	Sg	11 20 58.3	-4.2
CLNS	Chul'man	3.99	79	e	Sn	11 20 46.0	+2.7
CLNS				e		11 20 49.4	
CLNS		

comp=N,87nm,0.2s
SYVR Suvo 5.18 243 *e*Pg **Pg 11 20 30.9 -3.6**
SYVR *e*Sn **Sn 11 21 13.0 +0.3**
SYVR *e*Sg **Sg 11 21 39.2 -2.4**
SYVR Pmax
comp=N,5.0nm,1.0s
SYVR Smax
comp=N,49nm,1.0s
OGRR Ongureny 6.42 250 *e*Sn **Pn 11 20 32.4 +2.6**
OGRR *e*Pn Pn 11 20 34.6 +4.8
OGRR *e*Pg **Pg 11 20 53.4 -4.7**
OGRR *e*Sg **Sg 11 22 16.9 -4.3**
OGRR Pmax
comp=N,3.0nm,0.8s
OGRR Smax
comp=N,24nm,1.8s
KPC Khapcheranga 7.34 208 *e*Pn **Pn 11 20 45.1 +2.5**
KPC *e*Sn Sb 11 22 19.5 -11
KPC *e*Sg **Sg 11 22 47.2 -3.6**
KPC max
comp=N,1.0nm,0.3s
KPC Smax
comp=N,27nm,1.4s
UUDB Ulan-Yde 7.40 237 *e*Pg Pg 11 21 12.0 -4.9
UUDB *e* 11 21 17.5
UUDB *e*Sg **Sg 11 22 49.7 -2.9**
UUDB *e* 11 23 01.4
UUDB Pmax
comp=N,15nm,0.9s
UUDB Smax
comp=N,54nm,0.9s
TRG Tyrgan 7.52 247 *e*Sg **Sg 11 22 50.5 -5.8**
TRG Smax
comp=N,13nm,1.3s
HRMR Khuramsha 7.89 238 *e*Pn Pb 11 21 04.7 -7.3
HRMR *e* 11 21 12.7
HRMR *e*Pg Pg 11 21 20.1 -6.1
HRMR *e*Sg **Sg 11 23 03.8 -4.5**
HRMR Pmax
comp=N,11nm,0.5s
HRMR Smax
comp=N,100nm,1.1s
TLY Talaya 9.50 247 *e*Sg Sn 11 23 51.2 +52
ARS Arshan 10.00 250 *e*Sg Sn 11 24 10.9 +60
ARS *e* 11 24 16.7
ARS max
comp=N,25nm,1.0s
ZAK Zakamensk 10.47 242 *e*Sg 11 24 23.1
ZAK *e* 11 24 25.9
ZAK max
comp=N,4.0nm,0.1s
MOY Mondy 10.89 252 *e*Sg 11 24 35.9
MOY Smax
comp=N,17nm,2.8s
ORL Orlik 11.10 258 *e*Sg 11 24 41.2
ORL Smax
comp=N,3.0nm,1.5s

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*ISCJB **15** 11:26:28.4±0.5, 36°.16N±0°.04×36°.7E±0°.1, h21km±14km, Error ellipse: s-maj=16.1km s-min=4.1km az=18.0*
*CSEM **15** 11:26:28.1±0.2, 36°.19N×36°.61E, h20km, ML1.7, Error ellipse: s-maj=11.2km s-min=4.7km az=117.0*
*NSSC **15** 11:26:28.0±1.6, 36°.21N×36°.51E, h28km±7km, ML1.7*
*DDA **15** 11:26:29.1, 36°.29N×36°.58E, h7km, Md2.7*

ISC 15 11:26:27.4±1.2, 36°.15N±0°.03×36°.71E±0°.04, h15km±12km, n17, σ0°56/31, Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BTCH	**Batrach**	**0.23**	**241**	*e*P	**Pb**	**11 26 33.7**	**+0.4**
BTCH				*e*S	**Sb**	**11 26 37.8**	**+0.5**
BTCH				AML	AML	11 26 41.1	
comp=N,100nm,0.2s							
BTCH	**Batrach**	**0.23**	**241**	*e*P	**Pb**	**11 26 33.7**	**+0.4**
BTCH				*e*S	**Sb**	**11 26 37.8**	**+0.5**
comp=N,100nm,0.2s							
DRWC	**Darouich**	**0.47**	**356**	*e*P	**Pg**	**11 26 36.8**	**-0.1**
DRWC				*e*S	**Sb**	**11 26 43.7**	**-0.6**
DRWC				AML	AML	11 26 56.5	
comp=N,57nm,0.5s							
DRWC	**Darouich**	**0.47**	**356**	*e*P	**Pg**	**11 26 36.8**	**-0.1**
DRWC				*e*S	**Sb**	**11 26 43.7**	**-0.6**
comp=N,57nm,0.5s							
YAYL	**Yayladag**	**0.50**	**257**	P	**Pb**	**11 26 38.1**	**+0.1**
YAYL	**Yayladag**	**0.50**	**257**	*i* P	**Pb**	**11 26 38.1**	**+0.1**
WRDH	**Warideh**	**0.69**	**201**	*e*P	**Pn**	**11 26 42.5**	**-0.1**
WRDH				*e*S	**Sb**	**11 26 50.8**	**+0.5**
WRDH				AML	AML	11 27 02.7	
comp=E,22nm,0.2s							
WRDH	**Warideh**	**0.69**	**201**	*e*P	**Pn**	**11 26 42.5**	**-0.1**
WRDH				*e*S	**Sb**	**11 26 50.8**	**+0.5**
comp=E,23nm,0.2s							
KUZU	**Kuzuini**	**0.69**	**25**	P	**Pg**	**11 26 40.7**	**-0.2**
KUZU				S	**Sb**	**11 26 50.5**	**0.0**
KUZU	**Kuzuini**	**0.69**	**25**	*i* P	**Pg**	**11 26 40.7**	**-0.2**
KUZU				*i* S	**Sb**	**11 26 50.5**	**0.0**
KAMA	**Osmaniye**	**1.03**	**358**	*i* P	**Pb**	**11 26 46.8**	**-0.3**
BIDA	**Albida**	**1.18**	**196**	*e*P	**Pn**	**11 26 49.6**	**+0.2**
BIDA				*e*S	**Sb**	**11 27 02.9**	**-1.7**
BIDA				AML	AML	11 27 14.8	
comp=N,30nm,0.3s							
BIDA	**Albida**	**1.18**	**196**	*e*P	**Pn**	**11 26 49.6**	**+0.2**
BIDA				*e*S	**Sb**	**11 27 02.9**	**-1.7**
comp=N,30nm,0.3s							
HCB	**Kahramanmara˜**	**1.20**	**8**	*i* P	**Pg**	**11 26 50.5**	**-0.1**
HCB				*i* S	**Sg**	**11 27 06.5**	**+0.2**
GZT	**Gaziantep**	**1.39**	**30**	*i* P	**Pn**	**11 26 52.5**	**+0.1**
GZT				*i* S	**Sg**	**11 27 12.2**	**0.0**
SURC	**SANLIURFA_SURC**	**1.70**	**64**	P	**Pb**	**11 26 58.5**	**+0.1**
SURC				S	**Sb**	**11 27 20.2**	**+0.6**
SURC	**SANLIURFA_SURC**	**1.70**	**64**	*i* P	**Pb**	**11 26 58.5**	**+0.1**
SURC				*i* S	**Sb**	**11 27 20.2**	**+0.6**

IDC 15 11:34:58.8±14.0, 0°.51S×127°.73E, h0km, mb3.8/3, mb1 4.1/3, mb1mx3.5/36, mbtmp3.9/3, Error ellipse: s-maj=227.1km s-min=150.3km az=151.0, Halmahera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**20.37**	**162**	P	Pn	11 39 38.4	-0.8
1.2nm,0.3s,baz=341,slow=11,SNR=28							
ASAR	**Alice Springs**	**23.78**	**166**	P	P	11 40 12.6	-0.8
1.6nm,0.3s,baz=340,slow=11,SNR=49							
STKA	**Stephens Creek**	**33.84**	**159**	P	P	11 41 42.9	-0.1
0.9nm,0.4s,baz=331,slow=7.6,SNR=8.9							

WEL 15 11:42:32.1±0.2, 38°.61S×176°.29E, h87km±2km, ML3.7/12, 20C-9D, Error ellipse: s-maj=1.0km s-min=0.8km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ALRZ	**Allen Road**	**0.06**	**43**	⇑P*	Pn	11 42 43.7	-0.7
WPRZ	**Whakapapatarin**	**0.13**	**312**	⇑P*	Pn	11 42 44.2	-0.3
PRRZ	**Plateau Road**	**0.14**	**37**	⇑P*	Pn	11 42 43.9	-0.6
PRRZ				S*	Sn	11 42 53.8	+0.1
HRRZ	**Handcock Road**	**0.22**	**359**	⇑P*	Pn	11 42 44.6	-0.2
MRHZ	**Matea Rd**	**0.25**	**156**	⇑P*	Pn	11 42 44.4	-0.5
WHTZ	**Whakaora**	**0.27**	**257**	P*	Pn	11 42 45.1	0.0
GRRZ	**Galatos Road**	**0.29**	**331**	⇑P*	Pn	11 42 45.2	0.0
HSRZ	**Hossack Road**	**0.30**	**353**	⇑P*	Pn	11 42 45.0	-0.1
HSRZ				S*	Sn	11 42 55.9	+1.0
RRRZ	**Republican Roa**	**0.32**	**33**	⇑P*	Pn	11 42 45.0	-0.4
KUTZ	**Kaahu Road**	**0.38**	**288**	⇑P*	Pn	11 42 45.6	-0.1
MUGZ	**Murupara**	**0.40**	**71**	P*	Pn	11 42 45.1	-0.7
MUGZ				S*	Sn	11 42 54.9	-1.0
TARZ	**Mount Tarawera**	**0.41**	**25**	P*	Pn	11 42 45.7	-0.2
WATZ	**Wairara**	**0.45**	**257**	⇑P*	Pn	11 42 45.9	-0.2
RATZ	**Rangitukua**	**0.48**	**237**	⇑P*	Pn	11 42 46.1	-0.3
RITZ	**Rihia Road**	**0.50**	**222**	⇑P*	Pn	11 42 46.7	+0.1
RTZ	**Ruatahuna**	**0.54**	**91**	⇑P*	Pn	11 42 46.6	-0.4
BKZ	**Black Stump Fm**	**0.58**	**164**	P*	Pn	11 42 46.8	-0.5
BKZ				AML	AML	11 42 58.0	
BKZ				AML	AML	11 42 58.0	
KARZ	**Kaharoa**	**0.59**	**357**	⇑P*	Pn	11 42 47.3	0.0
NMHZ	**Naumai**	**0.63**	**141**	⇑PN	Pn	11 42 48.1	+0.4
TLZ	**Tolley Road**	**0.65**	**295**	⇑P*	Pn	11 42 48.0	+0.2
RAHZ	**Arahi**	**0.69**	**117**	⇑PN	Pn	11 42 48.4	+0.1
KRVZ	**Karewarewa**	**0.70**	**226**	P*	Pn	11 42 48.5	+0.1
URZ	**Urewera**	**0.73**	**62**	⇓P*	Pn	11 42 48.1	-0.5
URZ				S*	Sn	11 42 59.9	-1.0
URZ				AML	AML	11 43 00.7	
WTVZ	**West Tongariro**	**0.74**	**227**	⇓P*	Pn	11 42 48.8	-0.1
NGZ	**Ngauruhoe**	**0.78**	**223**	P*	Pn	11 42 49.6	+0.3
OPRZ	**Ohinepanea**	**0.79**	**15**	⇓P*	Pn	11 42 49.0	-0.2
TWVZ	**Taurewa**	**0.81**	**235**	P*	Pn	11 42 49.4	-0.2
TWVZ				S*	Sn	11 43 02.1	-0.5
KWHZ	**Kaweka Forest**	**0.82**	**173**	P*	Pn	11 42 49.6	-0.1
SNGZ	**Shannon Statio**	**0.84**	**102**	PN	Pn	11 42 50.1	+0.3
ARHZ	**Aropaoanui**	**0.85**	**140**	PN	Pn	11 42 50.0	+0.1
FWVZ	**Far West T-bar**	**0.86**	**221**	P*	Pn	11 42 50.1	-0.2
WHVZ	**Whangaehu Hut**	**0.87**	**219**	⇓P*	Pn	11 42 50.3	0.0
WHHZ	**Waihua**	**0.87**	**123**	PN	Pn	11 42 50.0	-0.2
TGRZ	**Tauranga**	**0.88**	**359**	P*	Pn	11 42 50.3	+0.1
RAGZ	**Rawiri**	**0.89**	**83**	P*	Pn	11 42 50.3	-0.1
MCHZ	**McNeill Hill**	**0.89**	**159**	PN	Pn	11 42 50.8	+0.5
BHHZ	**Black Hill Sta**	**0.90**	**191**	P*	Pn	11 42 50.1	-0.3
WNVZ	**Wahianoa**	**0.90**	**217**	P*	Pn	11 42 50.5	0.0
MOVZ	**Moawhango**	**0.90**	**207**	P*	Pn	11 42 50.1	-0.4
TRVZ	**Turoa**	**0.90**	**220**	P*	Pn	11 42 50.4	-0.2
MTVZ	**Mangateitei**	**1.00**	**219**	P*	Pn	11 42 51.8	+0.1
MWZ	**Matawai**	**1.01**	**75**	⇓P*	Pn	11 42 51.4	-0.3
MWZ				AML	AML	11 42 56.6	
MWZ				AML	AML	11 43 11.4	
MWZ				AML	AML	11 43 12.9	
TOZ	**Tahuroa Road**	**1.07**	**324**	⇑P*	Pn	11 42 52.7	+0.3
HIZ	**Hauiti**	**1.13**	**274**	⇓PN	Pn	11 42 53.3	+0.3
KNZ	**Kokohu**	**1.16**	**111**	PN	Pn	11 42 53.3	0.0
KNZ				AML	AML	11 43 16.6	
KNZ				AML	AML	11 43 17.3	
RIGZ	**Rimuhau**	**1.16**	**95**	SN	Sn	11 43 14.5	+5.0
CKHZ	**Cape Kidnapper**	**1.22**	**150**	PN	Pn	11 42 53.9	-0.2
TKGZ	**Te Karaka**	**1.23**	**83**	PN	Pn	11 42 54.8	+0.5
TKGZ				SN	Sn	11 43 11.6	+0.5
KAHZ	**Kahuranaki**	**1.27**	**159**	PN	Pn	11 42 54.5	-0.3
PRGZ	**Paritu Road**	**1.28**	**105**	PN	Pn	11 42 54.8	-0.2
VRZ	**Vera Road**	**1.30**	**246**	⇓P*	Pn	11 42 55.4	+0.2
MHGZ	**Mahia Peninsul**	**1.38**	**114**	PN	Pn	11 42 56.0	-0.1
TWGZ	**Tauwhareparae**	**1.40**	**73**	PN	Pn	11 42 56.7	+0.3
HAZ	**Te Kaha**	**1.45**	**55**	⇓P*	Pn	11 42 56.1	-1.0
WPHZ	**Waipukurau**	**1.46**	**175**	PN	Pn	11 42 56.2	-0.9
TSZ	**Takapari Road**	**1.47**	**190**	PN	Pn	11 42 56.5	-0.8
TSZ				AML	AML	11 43 23.2	
TSZ				AML	AML	11 43 23.3	
PXZ	**Pawanui**	**1.49**	**163**	⇑PN	Pn	11 42 56.6	-0.9
PXZ				AML	AML	11 43 17.4	
PXZ				AML	AML	11 43 17.4	
PXZ				AML	AML	11 43 24.0	
PXZ				AML	AML	11 43 24.0	
CNZZ	**Carnagh Statio**	**1.51**	**86**	PN	Pn	11 42 57.7	0.0
WAZ	**Wanganui**	**1.53**	**221**	⇓PN	Pn	11 42 58.5	+0.4
PKGZ	**Pakihiroa**	**1.58**	**63**	PN	Pn	11 42 58.8	0.0
PUZ	**Puketiti**	**1.64**	**72**	AML	AML	11 43 29.1	
PUZ				AML	AML	11 43 30.2	
LREZ	**Lake Rotokare**	**1.70**	**239**	PN	Pn	11 43 00.8	+0.6
MKAZ	**Moumakai**	**1.75**	**329**	⇑PN	Pn	11 43 01.2	+0.3
OHWZ	**Ohakea**	**1.77**	**205**	PN	Pn	11 43 01.6	+0.6
PREZ	**Palmer Road**	**1.81**	**246**	PN	Pn	11 43 03.1	+1.4
POWZ	**Post Office Ro**	**1.83**	**193**	PN	Pn	11 43 02.4	+0.6
WMGZ	**Waiomatatini S**	**1.85**	**65**	PN	Pn	11 43 01.8	-0.4
KHEZ	**Kahui Hut**	**1.90**	**248**	*e*PN	Pn	11 43 03.7	+0.8
MXZ	**Matakaoa Point**	**1.90**	**57**	PN	Pn	11 43 03.0	+0.2
MXZ				AML	AML	11 43 36.8	
MXZ				AML	AML	11 43 37.0	
ETAZ	**East Tamaki Re**	**1.97**	**326**	PN	Pn	11 43 04.2	+0.4
OGWZ	**Otaki Gorge**	**2.37**	**201**	PN	Pn	11 43 07.1	-1.9
KIW	**Kapiti Island**	**2.49**	**205**	PN	Pn	11 43 08.5	-2.2
KIW				AML	AML	11 43 48.2	
KIW				AML	AML	11 43 48.2	
TMWZ	**Te Maipa**	**2.51**	**187**	PN	Pn	11 43 08.8	-2.2
CAW	**Cannon Point**	**2.67**	**200**	PN	Pn	11 43 10.2	-2.8
CAW				AML	AML	11 43 54.6	
TRWZ	**Traveller**	**2.82**	**189**	PN	Pn	11 43 12.4	-2.8
MSWZ	**Moikau Station**	**2.92**	**196**	PN	Pn	11 43 13.4	-3.0
WEL	**Wellington**	**2.92**	**203**	PN	Pn	11 43 13.4	-2.9
WEL				AML	AML	11 44 40.6	
TCW	**Tory Channel**	**3.02**	**210**	PN	Pn	11 43 14.9	-2.9
TCW				AML	AML	11 43 56.6	
TCW				AML	AML	11 44 02.6	
PLWZ	**Palliser**	**3.06**	**195**	PN	Pn	11 43 15.1	-3.3
NNZ	**Nelson**	**3.43**	**220**	PN	Pn	11 43 20.3	-3.0
BSWZ	**Blackbirch Sta**	**3.61**	**210**	*e*PN	Pn	11 43 22.6	-3.2
QRZ	**Quartz Range**	**3.65**	**231**	PN	Pn	11 43 25.8	-0.5
THZ	**Tophouse**	**4.08**	**218**	*e*PN	Pn	11 43 28.8	-3.3
KHZ	**Kahutara**	**4.34**	**208**	*e*PN	Pn	11 43 31.4	-4.3
MQZ	**McQueen's Vall**	**5.78**	**207**	*e*PN	Pn	11 43 49.2	-6.0
MQZ				SN	Sn	11 44 50.7	-9.4

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*ISCJB **15** 11:57:17.9±0.6, 72°.88N±0°.08×121°.2E±0°.2, h10km, mb3.5/10, MS3.0/1, Error ellipse: s-maj=11.9km s-min=7.8km az=22.4*
*IDC **15** 11:57:18.5±0.8, 72°.86N×121°.15E, h0km, mb3.6/10, mb1 3.8/11, mb1mx3.5/47, mbtmp3.6/11, ML5.9/1, MS3.0/1, Ms1 3.2/1, ms1mx2.2/47, Error ellipse: s-maj=22.8km s-min=16.8km az=154.0*
*YARS **15** 11:57:22.8±0.8, 73°.25N±0°.02×123°.24E±0°.07, h10km*

ISC 15 11:57:20.2±0.8, 72°.86N±0°.09×121°.32E±0°.07, h10km, n22, σ1°83/20, mb3.7/10, Northern and central Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TIXI	**Tiksi**	**2.61**	**114**	Pn	**Pn**	**11 58 04.5**	**+2.1**
8.7nm,0.3s,baz=292,slow=13,SNR=4.3							
TIXI				Sn	**Sb**	**11 58 36.6**	**-2.5**
30nm,0.3s,baz=308,slow=17,SNR=7.9							
TIXI	**Tiksi**	**2.61**	**114**	*e*P	**Pn**	**11 58 04.5**	**+2.1**
TIXI				*e*S	**Sn**	**11 58 35.3**	**+1.2**
BTGS	**Batagay**	**6.89**	**133**	*e*P	**Pn**	**11 59 02.1**	**+1.0**
BTGS				*e*S	**Sn**	**12 00 15.6**	**-3.8**
BTGS				*e*S	Sg	12 00 51.4	-10
DEPR	**Deputatskiy**	**6.94**	**111**	*e*P	**Pn**	**11 59 00.2**	**-1.5**
DEPR				*e*P	**Pb**	**11 59 20.4**	**-0.2**
DEPR				*e*S	Sn	12 00 12.4	-8.2
DEPR				*e*S	**Sb**	**12 00 46.5**	**+3.1**
MOMR	**Moma**	**9.89**	**119**	*e*P	**Pn**	**11 59 42.1**	**-0.1**
MOMR				*e*S	Sn	12 01 24.8	-8.3
MOMR				*e*S		12 02 20.0	
YAK	**Yakutsk**	**11.32**	**160**	Sn	Sn	12 01 59.1	-8.9
0.0nm,0.3s,baz=27,slow=22,SNR=10.0							
YAK	**Yakutsk**	**11.32**	**160**	*e*S	**Sn**	**12 02 10.2**	**+2.1**
YAK				*e*S		12 03 19.0	
NRIK	**Noril'sk**	**11.38**	**269**	Sn	Sn	12 02 03.5	-6.0
0.6nm,0.3s,baz=22,slow=5.4,SNR=4.5							
UNR	**Ust'-Nera**	**11.42**	**126**	*e*S	Sn	12 02 02.5	-8.0
UNR				*e*S		12 03 09.3	
TBGR	**Tabaga**	**11.52**	**160**	*e*S		12 03 25.1	
OLMR	**Olekminsk**	**12.54**	**182**	*e*S		12 04 03.8	
ALDR	**Aldan**	**14.40**	**171**	*e*S	S	12 04 58.0	+74
ZALV	**Zalesovo Beam**	**24.32**	**239**	P	**P**	**12 02 36.0**	**-1.6**
0.8nm,0.5s,baz=17,slow=10,SNR=4.2							
SONM	**Songino Array**	**26.00**	**203**	P	**P**	**12 02 53.4**	**+0.4**
0.4nm,0.4s,baz=12,slow=7.7,SNR=3.6							
KURBB	**Kurchatov Arra**	**28.98**	**243**	P	**P**	**12 03 19.0**	**-0.4**
1.1nm,0.8s,baz=27,slow=8.4,SNR=4.8							
ILAR	**Eielson Array**	**30.81**	**57**	P	**P**	**12 03 34.3**	**-1.2**
0.1nm,0.5s,baz=317,slow=8.7,SNR=3.3							
ILAR				LR	LR	12 17 53.9	
comp=Z,30nm,19.4s,baz=147,slow=40							
MKAR	**Makanchi Array**	**31.55**	**236**	P	**P**	**12 03 42.1**	**-0.1**
0.2nm,0.4s,baz=26,slow=6.1,SNR=3.8							
FINES	**FINESS Array B**	**34.46**	**302**	P	P	12 04 04.8	-2.6
0.6nm,0.5s,baz=22,slow=15,SNR=3.6							
YKA	**Yellowknife Ar**	**39.76**	**37**	P	**P**	**12 04 52.9**	**+0.5**
0.3nm,0.7s,baz=339,slow=7.9,SNR=5.7							
ESDC	**Sonseca Array**	**61.64**	**314**	P	**P**	**12 07 39.2**	**+1.5**
0.3nm,0.5s,baz=12,slow=4.1,SNR=3.8							
TXAR	**Lajitas Array**	**73.60**	**40**	P	**P**	**12 08 53.1**	**-0.2**
0.6nm,0.7s,baz=15,slow=3.7,SNR=7.1							
WRA	**Warramunga Arr**	**92.98**	**168**	P	**P**	**12 10 32.0**	**-1.2**
0.7nm,0.6s,baz=354,slow=5.4,SNR=9.2							

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*ISCJB **15** 12:00:02.7±0.5, 33°.78N±0°.03×35°.78E±0°.09, h6km±8km, Error ellipse: s-maj=12.9km s-min=3.7km az=161.2*
*CSEM **15** 12:00:02.5±0.1, 33°.78N×35°.77E, h5km, ML2.8, Error ellipse: s-maj=4.3km s-min=1.9km az=86.0*
*NSSC **15** 12:00:02.3±1.2, 33°.78N×35°.77E, h2km±4km, MD1.2, ML1.5*
*GRAL **15** 12:00:03.4±0.3, 33°.79N×35°.79E, h0km±37km, MD2.8*

ISC 15 12:00:02.8±0.9, 33°.78N±0°.02×35°.79E±0°.04, h8km±9km, n21, σ0°49/38, Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BHL	**Bhannes**	**0.16**	**318**	*e*P	**Pg**	**12 00 06.3**	**0.0**
BHL				*e*S	**Sg**	**12 00 08.5**	**-0.2**
BHL	**Bhannes**	**0.16**	**318**	*e*P	**Pg**	**12 00 06.3**	**0.0**
BHL				*e*S	**Sg**	**12 00 08.5**	**-0.2**
DQRL	**Deir Qamar**	**0.20**	**247**	*e*P	**Pg**	**12 00 07.0**	**+0.2**
DQRL	**Deir Qamar**	**0.20**	**247**	*e*P	**Pg**	**12 00 07.0**	**+0.2**
RCY	**Rachaya**	**0.29**	**172**	*e*P	**Pg**	**12 00 08.7**	**+0.1**
RCY				*e*S	**Sg**	**12 00 12.5**	**+0.1**
BRBR	**Barbar**	**0.40**	**159**	*e*P	**Pg**	**12 00 10.6**	**0.0**
BRBR				*e*S	**Sg**	**12 00 16.2**	**+0.4**
BRBR				AML	AML	12 00 19.5	
comp=N,68nm,0.5s							
BRBR				AML	AML	12 00 21.5	
comp=E,35nm,0.3s							
BRBR	**Barbar**	**0.40**	**159**	*e*P	**Pg**	**12 00 10.6**	**0.0**
BRBR				*e*S	**Sg**	**12 00 16.2**	**+0.4**
HWQ	**Hawqa**	**0.51**	**15**	*e*P	**Pg**	**12 00 12.5**	**-0.3**
HWQ	**Hawqa**	**0.51**	**15**	*e*P	**Pg**	**12 00 12.5**	**-0.3**
HAWK	**Haweek**	**0.90**	**35**	*e*P	**Pg**	**12 00 19.8**	**-0.3**
HAWK				*e*S	**Sg**	**12 00 32.3**	**+0.5**
HAWK				AML	AML	12 00 40.4	
comp=N,11nm,0.3s							
HAWK				AML	AML	12 00 41.3	
comp=E,12nm,0.4s							
HAWK	**Haweek**	**0.90**	**35**	*e*P	**Pg**	**12 00 19.8**	**-0.3**
HAWK				*e*S	**Sg**	**12 00 32.3**	**+0.5**
BIDA	**Albida**	**1.31**	**20**	*e*P	**Pn**	**12 00 27.3**	**-0.2**
BIDA				*e*S	**Sg**	**12 00 46.0**	**+1.2**
BIDA				AML	AML	12 00 51.6	
comp=E,50nm,0.4s							
BIDA				AML	AML	12 00 52.8	
comp=N,72nm,0.4s							
BIDA	**Albida**	**1.31**	**20**	*e*P	**Pn**	**12 00 27.3**	**-0.2**
BIDA				*e*S	**Sg**	**12 00 46.0**	**+1.2**
SALA	**Sala**	**1.33**	**143**	*e*P	**Pn**	**12 00 27.5**	**-0.3**
SALA				*e*S	**Sb**	**12 00 44.5**	**-0.9**
SALA				AML	AML	12 00 51.2	
comp=E,1.0nm,0.3s							
SALA				AML	AML	12 00 52.0	
comp=N,12nm,0.4s							
SALA	**Sala**	**1.33**	**143**	*e*P	**Pn**	**12 00 27.5**	**-0.3**
SALA				*e*S	**Sb**	**12 00 44.5**	**-0.9**
ZALF	**Zalf**	**1.55**	**123**	*e*P	**Pb**	**12 00 31.7**	**-0.1**
ZALF				*e*S	**Sb**	**12 00 52.0**	**+0.3**
ZALF				AML	AML	12 00 56.6	
comp=E,5.8nm,0.4s							
ZALF				AML	AML	12 00 59.9	
comp=N,8.5nm,0.9s							
ZALF	**Zalf**	**1.55**	**123**	*e*P	**Pb**	**12 00 31.7**	**-0.1**
ZALF				*e*S	**Sb**	**12 00 52.0**	**+0.3**
WRDH	**Warideh**	**1.80**	**17**	*e*P	**Pn**	**12 00 34.1**	**-0.1**
WRDH				*e*S	**Sb**	**12 00 58.2**	**-0.6**
ARNB	**Al Arnab**	**2.08**	**4**	*e*P	**Pn**	**12 00 37.8**	**-0.3**
ARNB				*e*S	**Sn**	**12 01 04.9**	**+0.7**
ARNB				AML	AML	12 01 11.0	
comp=N,9.9nm,0.6s							
ARNB				AML	AML	12 01 13.6	
comp=E,12nm,0.3s							
ARNB	**Al Arnab**	**2.08**	**4**	*e*P	**Pn**	**12 00 37.8**	**-0.3**
ARNB				*e*S	**Sn**	**12 01 04.9**	**+0.7**

MEX 15 12:02:47.2±0.6, 17°.96N×100°.46W, h52km±6km, MD3.5, Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ARIG	**Puente Sto Nin**	**0.34**	**19**	*i* P	Pn	12 02 55.3	-1.6
ARIG				*e*S	Sn	12 03 02.2	-1.6
MEIG	**Mezcala**	**0.80**	**92**	*e*P	Pn	12 03 00.8	-1.7
MEIG				*e*S	Sn	12 03 11.7	-1.8
CAIG	**El Cayaco**	**0.93**	**168**	*e*P	Pn	12 03 02.0	-1.9
CAIG				*e*S	Sn	12 03 14.3	-2.0
PLIG	**Platanillo**	**1.01**	**65**	*e*P	Pn	12 03 03.7	-1.5
PLIG				*e*S	Sn	12 03 16.0	-2.5
ZIIG	**Zihuatanejo**	**1.02**	**250**	*e*P	Pn	12 03 03.7	-1.5
ZIIG				*e*S	Sn	12 03 16.8	-1.7
YAIG	**Yautepec**	**1.60**	**56**	*e*P	Pn	12 03 11.5	-1.8
YAIG				*e*S	Sn	12 03 30.6	-2.2
MZVM		**1.69**	**44**	*i* P	Pn	12 03 13.2	-1.1
MZVM				*i* S	Sn	12 03 32.7	-2.2
TLIG	**Tlapa**	**1.85**	**102**	*e*P	Pn	12 03 15.8	-0.8
TLIG				*e*S	Sn	12 03 37.6	-1.3
PPM	**Popocatepetl**	**2.06**	**57**	*i* P	Pn	12 03 18.8	-1.1
PPM				*e*S	Sn	12 03 43.1	-1.6

JMA 15 12:09:12.1±0.2, 37°.09N×141°.38E, h48km±2km, M2.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.47**	**272**	S	Sn	12 09 30.2	-0.4
JFK	**Kawauchi**	**0.49**	**305**	P	Pn	12 09 22.8	-0.3
JFK				S	Sn	12 09 30.5	-0.5
JHO	**Hitachi**	**0.81**	**234**	*e*S	Sn	12 09 37.4	-0.8
JFT	**Otama**	**0.94**	**298**	S	Sn	12 09 42.7	+1.4
JIO	**Ouri**	**1.36**	**359**	P	Pn	12 09 35.4	+0.7
JIO				S	Sn	12 09 50.5	-1.1

IDC 15 12:09:32.5±2.6, 36°.83N×143°.81E, h0km, mb3.4/3, mb1 3.5/5, mb1mx3.2/61, mbtmp3.5/5, ML3.1/2, Error ellipse: s-maj=57.0km s-min=30.4km az=73.0, Off east coast of Honshu

| Code | Station Name | Δ

ellipse: s-maj=7.0km s-min=4.5km az=100.2
NEIC **15** *12:14:20.3±0.6, 37°.24N×142°.61E, h57km±5km, mb4.9/108, Error ellipse: s-maj=5.2km s-min=3.8km az=129.0*
NEIC *Recorded [3 JMA] in Iwate and Miyagi.*
GCMT **15** *12:14:20.3±0.2, 37°.29N×142°.67E, h72km±1km, MW5.1/95, Moment Tensor Solution. s55,c73; s95,c156; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-1.17±.13; $M_{\theta\theta}$4.54±.12; $M_{\phi\phi}$-3.37±.12; $M_{r\theta}$1.59±.09; $M_{\theta\phi}$-1.53±.10; $M_{r\phi}$1.91±.08; Best double couple: $M_0$5.01700×10^{16} NP1:ϕ_s239.00000°, δ78.00000°, λ-149.00000°. NP2: ϕ_s142.00000°, δ59.00000°, λ-14.00000°. Principal axes: T 5.0830, Plg12.0000°, Azm8.0000°; N -0.1310, Plg56.0000°, Azm259.0000°; P -4.9520, Plg31.0000°, Azm105.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
IDC **15** *12:14:20.9±1.8, 37°.24N×142°.65E, h67km±16km, mb4.2/32, mb1 4.4/38, mb1mx4.3/62, mbtmp4.6/38, MS3.7/24, Ms1 3.7/24, ms1mx3.6/44 Error ellipse: s-maj=11.9km s-min=10.0km az=91.0*
JMA **15** *12:14:20.7±0.2, 37°.29N×142°.56E, h68km, M5.3*
JMA *Felt III J1.*
ISC 15 12:14:18.8±0.5,**37°.27N**±0°.03×**142°.76E**±0°.03,**h45**km±3km, **h44**km:**pP-P**,**n420**,σ1§**98**/416,**mb4.8**/172,**MS3.9**/38, **36C-31D**,**Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.51**	**274**	⇓P	**Pn**	**12 14 44.0**	**+0.6**
JFK				S	**Sn**	**12 15 00.4**	**-1.5**
ONAJ	**Iwakimizuishiy**	**1.58**	**265**	S	**Sn**	**12 15 02.0**	**-1.6**
JIO	**Ouri**	**1.63**	**317**	⇓P	**Pn**	**12 14 46.4**	**+1.4**
JIO				S	**Sn**	**12 15 04.2**	**-0.6**
JMM	**Marumori**	**1.68**	**292**	⇓P	**Pn**	**12 14 46.6**	**+1.0**
JMM				S	**Sn**	**12 15 04.6**	**-1.3**
JHO	**Hitachi**	**1.87**	**250**	⇓P	**Pn**	**12 14 48.6**	**+0.2**
JHO				S	**Sn**	**12 15 08.5**	**-2.3**
JFT	**Otama**	**1.95**	**278**	⇓P	**Pn**	**12 14 50.7**	**+1.3**
JFT				S	**Sn**	**12 15 11.8**	**-0.8**
JOU	**Okura**	**1.99**	**304**	⇓P	**Pn**	**12 14 51.1**	**+1.1**
JOU				S	**Sn**	**12 15 12.7**	**-1.0**
OFUJ	**Ofunato**	**2.01**	**335**	⇑P	**Pn**	**12 14 51.3**	**+1.1**
JMK	**Ichinoseki**	**2.08**	**325**	⇑P	**Pn**	**12 14 52.3**	**+1.2**
JMK				S	**Sn**	**12 15 15.3**	**-0.5**
CHOJ	**Chosi**	**2.19**	**225**	⇑P	**Pn**	**12 14 53.4**	**+0.8**
JSB	**Shiboa**	**2.29**	**263**	⇓P	**Pn**	**12 14 55.2**	**+1.1**
JSB				S	**Sn**	**12 15 20.3**	**-0.8**
JYT	**Yasato**	**2.31**	**244**	⇓P	**Pn**	**12 14 54.4**	**+0.1**
JYT				S	**Sn**	**12 15 18.5**	**-2.9**
JYS	**Shirataka**	**2.34**	**295**	⇓P	**Pn**	**12 14 55.9**	**+1.1**
MIYJ	**Miyakonagasawa**	**2.42**	**343**	⇑P	**Pn**	**12 14 56.9**	**+1.0**
MIYJ				S	**Sn**	**12 15 23.1**	**-1.2**
JFY	**Yanaizu**	**2.44**	**274**	⇓P	**Pn**	**12 14 57.1**	**+0.9**
JYK	**Kaneyama**	**2.51**	**312**	⇓P	**Pn**	**12 14 58.4**	**+1.3**
JYK				S	**Sn**	**12 15 25.8**	**-0.7**
JRG	**Rokugo**	**2.71**	**322**	⇑P	**Pn**	**12 15 00.8**	**+1.0**
JRG				S	**Sn**	**12 15 31.6**	**+0.3**
JYA	**Atsumi**	**2.75**	**300**	⇓P	**Pn**	**12 15 01.4**	**+1.0**
JTH	**Tanohata**	**2.76**	**346**	⇑P	**Pn**	**12 15 01.4**	**+0.9**
JCN	**Nagara**	**2.77**	**229**	S	**Sn**	**12 15 33.1**	**+0.3**
JNS	**Sasagawa**	**2.79**	**282**	⇓P	**Pn**	**12 15 01.5**	**+0.5**
JKT	**Katashina**	**2.85**	**261**	⇓P	**Pn**	**12 15 03.2**	**+1.3**
JKT				S	**Sn**	**12 15 34.6**	**-0.5**
BSO1	**Boso 1**	**2.98**	**210**	⇑P	**Pn**	**12 15 03.8**	**+0.7**
JYW	**Yuwa**	**3.03**	**319**	P	**Pn**	**12 15 05.9**	**+1.7**
JHU	**Hanno**	**3.14**	**244**	P	**Pn**	**12 15 03.9**	**-1.8**
JTB	**Tobi-shima**	**3.17**	**308**	⇓P	**Pn**	**12 15 07.2**	**+1.0**
JIZZ	**Izumozaki**	**3.24**	**276**	⇓P	**Pn**	**12 15 08.1**	**+1.0**
MJAR	**Matsushiro Arr**	**3.72**	**260**	P	**Pn**	**12 15 14.8**	**+1.1**
	50nm,0.3s,baz=78,slow=14,SNR=590						
MAJO	**Matsushiro**	**3.72**	**260**	*d iP*	**Pn**	**12 15 15.1**	**+1.4**
MAJO	**Matsushiro**	**3.72**	**260**	*e*Pn	**Pn**	**12 15 15.4**	**+1.6**
MAT	**Matsushiro**	**3.72**	**260**	P	**Pn**	**12 15 15.1**	**+1.4**
MAT				S	**Sn**	**12 15 54.3**	**-2.0**
ERM	**Erimo**	**4.75**	**4**	*d iP*	**Pn**	**12 15 28.7**	**+0.8**
ERM				pmax	pmax		
	comp=Z,2μm,1.0s						
ERM	**Erimo**	**4.75**	**4**	*e*Pn	**Pn**	**12 15 28.9**	**+1.1**
ERM				*e*Sn	**Sn**	**12 16 21.3**	**-0.3**
JHJ2	**Mitsune**	**4.79**	**211**	*e*Pn	**Pn**	**12 15 28.4**	**-0.1**
JHJ2				*e*Sn	**Sn**	**12 16 21.7**	**-1.0**
JHJ	**Hachijo jima 2**	**4.80**	**211**	P	**Pn**	**12 15 28.4**	**-0.1**
	comp=Z,382nm,0.3s,baz=346,slow=5.2,SNR=284						
JHJ				S	**Sn**	**12 16 19.5**	**-3.4**
	comp=Z,655nm,0.3s,baz=68,slow=22,SNR=13						
INU	**Inuyama**	**5.02**	**249**	*e*Pn	**Pn**	**12 15 33.2**	**+1.7**
ASAJ	**Asahikawa**	**6.85**	**359**	P	**Pn**	**12 15 58.2**	**+1.7**
	comp=Z,393nm,0.3s,baz=208,slow=10,SNR=190						
ASAJ				S	**Sn**	**12 17 10.0**	**-3.1**
	comp=Z,53nm,0.3s,baz=131,slow=7.2,SNR=6.5						
ASAJ	**Asahikawa**	**6.85**	**359**	*e*Pn	**Pn**	**12 15 57.5**	**+1.0**
ASAJ				*e*Sn	**Sn**	**12 17 10.6**	**-2.5**
YUK	**Yuzh-Kuril'sk**	**7.16**	**18**	*e*P	**Pn**	**12 16 00.5**	**-0.4**
YUK				*i* S	**Sn**	**12 17 16.8**	**-4.0**
YUK				pmax	pmax		
	comp=Z,1μm,0.4s						
YUK				pmax	pmax		
	comp=N,506nm,0.3s						
YUK				pmax	pmax		
	comp=E,372nm,0.3s						
YUK				MLR	MLR		
	comp=Z,1μm,14.0s						
SHO	**Shikotan**	**7.29**	**24**	*e*P	**Pn**	**12 16 01.6**	**-1.0**
SHO				*i* S	**Sn**	**12 17 19.1**	**-4.9**
SHO				pmax	pmax		
	comp=N,219nm,0.5s						
SHO				pmax	pmax		
	comp=E,148nm,0.5s						
SHO				pmax	pmax		
	comp=Z,497nm,0.5s						
KUR	**Kuril'sk**	**8.84**	**24**	*d iP*	**Pn**	**12 16 24.9**	**+1.1**
KUR				*i* S	**Sn**	**12 17 58.5**	**-3.5**
KUR				pmax	pmax		
	comp=N,56nm,0.8s						
KUR				pmax	pmax		
	comp=E,79nm,0.8s						
KUR				pmax	pmax		
	comp=Z,140nm,0.8s						
KUR				smax	smax		
	comp=E,438nm,0.5s						
KUR				smax	smax		
	comp=N,304nm,0.3s						
KUR				smax	smax		
	comp=N,1μm,2.2s						
KUR				smax	smax		
	comp=E,820nm,3.1s						
YSS	**Yuzh-Sakhalins**	**9.68**	**360**	⇑ *i P*	**Pn**	**12 16 36.3**	**+0.9**
YSS				*e*S	**Sn**	**12 18 19.6**	**-3.1**
YSS				*e*S	**Sn**	**12 18 21.4**	**-1.3**
YSS				pmax	pmax		
	comp=Z,4μm,1.0s						
YSS				pmax	pmax		
	comp=N,4μm,1.1s						
YSS				pmax	pmax		
	comp=Z,3μm,0.9s						
YSS				MLR	MLR		
	comp=Z,700nm,10.0s						
YSS				MLR	MLR		
	comp=N,400nm,13.0s						
YSS				MLR	MLR		
	comp=E,300nm,11.0s						
CBIJ	**Chichi jima**	**10.15**	**183**	*e*Pn	**Pn**	**12 16 40.3**	**-1.7**
CBIJ				*e*Sn	**Sn**	**12 18 27.4**	**-7.0**
JCJ	**Chichijima**	**10.15**	**183**	P	**Pn**	**12 16 40.6**	**-1.3**
	comp=E,131nm,0.3s,baz=283,slow=23,SNR=41						
JCJ				S	Sn	12 18 25.0	-9.5
	comp=E,12nm,0.3s,baz=330,slow=20,SNR=2.6						
JCJ				LR	LR	12 21 40.2	
	comp=E,119nm,20.9s,baz=340,slow=43						
VLA	**Vladivostok**	**10.16**	**308**	*i P*	**Pn**	**12 16 40.8**	**-1.2**
MSHR	**Mys Shultsa**	**10.37**	**304**	*e*P	**Pn**	**12 16 44.5**	**-0.3**
JNU	**Nakatsue**	**10.56**	**250**	P	**Pn**	**12 16 48.5**	**+0.9**
	comp=E,1.1nm,0.3s,baz=61,slow=9.7,SNR=24						
JNU				LR	LR	12 21 16.2	
	comp=E,682nm,20.3s,baz=62,slow=40						
JNU	**Nakatsue**	**10.56**	**250**	*e*Pn	**Pn**	**12 16 47.9**	**+0.3**
USRK	**Ussuriysk Ar.**	**10.71**	**314**	P	**Pn**	**12 16 51.3**	**+1.8**
	comp=E,3.3nm,0.3s,baz=122,slow=14,SNR=30						
KSRS	**Korea Array**	**11.81**	**275**	P	**Pn**	**12 17 06.8**	**+2.2**
	comp=E,1.8nm,0.3s,baz=88,slow=14,SNR=62						
KSRS				LR	LR	12 21 15.4	
	comp=E,449nm,21.3s,baz=100,slow=35						
UGL	**Uglegorsk**	**11.82**	**358**	*e*P	**Pn**	**12 17 04.0**	**-0.6**
UGL				pmax	pmax		
	comp=Z,224nm,1.0s						
UGL				MLR	MLR		
	comp=Z,800nm,18.0s						
UGL				MLR	MLR		
	comp=N,1μm,20.0s						
UGL				MLR	MLR		
	comp=E,600nm,20.0s						
KSAR	**Wonju Array Be**	**11.84**	**275**	P	**Pn**	**12 17 06.8**	**+1.8**
KSAR	**Wonju Array Be**	**11.84**	**275**	P	**Pn**	**12 17 06.8**	**+1.8**
MDJ	**Mudanjiang**	**12.36**	**311**	P	**Pn**	**12 17 13.3**	**+1.2**
MDJ				S	**Sn**	**12 19 27.1**	**-1.2**
MDJ				PcP	**PcP**	**12 22 52.9**	**+2.3**
MDJ				ScP	**ScP**	**12 26 23.3**	**+3.4**
MDJ				PcS	**PcS**	**12 26 26.6**	**+1.9**
MDJ	**Mudanjiang**	**12.36**	**311**	ScS	ScS	12 29 59.5	+3.7
MDJ				pmax	pmax		
	comp=Z,17nm,1.1s						
MDJ				pmax	pmax		
	comp=Z,120nm,4.5s						
MDJ				LR	LR		
	comp=N,800nm,12.3s						
MDJ				LR	LR		
	comp=E,64nm,9.0s						
MDJ				LR	LR		
	comp=Z,830nm,15.7s						
TJN	**Taejon**	**12.37**	**271**	*e*P	**Pn**	**12 17 09.9**	**-2.3**
HABR	**Khabarovsk**	**12.54**	**336**	*ce*P	**Pn**	**12 17 11.4**	**-3.0**
HABR				*e*S	**Sn**	**12 19 27.1**	**-5.5**
HABR				pmax	pmax		
	comp=N,129nm,1.7s						
HABR				pmax	pmax		
	comp=E,119nm,1.7s						
HABR				pmax	pmax		
	comp=Z,292nm,1.7s						
HABR				MLR	MLR		
	comp=Z,286nm,14.0s						
TYV	**Tymovskoe**	**13.60**	**360**	*e*P	**Pn**	**12 17 28.5**	**-0.3**
TYV				pmax	pmax		
	comp=Z,233nm,1.0s						
TYV				pmax	pmax		
	comp=Z,500nm,4.0s						
TYV				MLR	MLR		
	comp=N,700nm,20.0s						
TYV				MLR	MLR		
	comp=Z,800nm,20.0s						
KLR	**Kul'dur**	**14.38**	**330**	P	**Pn**	**12 17 37.2**	**-2.2**
	comp=Z,1.3nm,0.3s,baz=133,slow=13,SNR=40						
KLR				LR	LR	12 23 24.5	
	comp=Z,459nm,18.4s,baz=146,slow=38						
KLR	**Kul'dur**	**14.38**	**330**	*c iP*	**Pn**	**12 17 36.9**	**-2.6**
CN2	**Changchun**	**14.68**	**302**	*e*P	**P**	**12 17 48.9**	**0.0**
CN2				*e*S	**Sn**	**12 20 31.3**	**+6.4**
CN2				pmax	pmax		
	comp=Z,20nm,1.3s						
CN2				pmax	pmax		
	comp=Z,200nm,4.0s						
CN2				LR	LR		
	comp=N,500nm,12.0s						
CN2				LR	LR		
	comp=E,500nm,12.0s						
CN2				LR	LR		
	comp=Z,600nm,12.0s						
NKL	**Nikolayevsk**	**15.95**	**355**	*e*P	**Pn**	**12 17 59.2**	**-0.7**
NKL				pmax	pmax		
	comp=N,140nm,1.0s						
NKL				pmax	pmax		
	comp=E,120nm,1.0s						
NKL				pmax	pmax		
	comp=Z,260nm,1.0s						
NKL				MLR	MLR		
	comp=N,500nm,20.0s						
JOW	**Kunigami**	**16.07**	**234**	*e*Pn	**Pn**	**12 18 02.0**	**+0.4**
	comp=N,112nm,1.5s						
SKR	**Severo-Kuril's**	**16.47**	**31**	*e*P	Pn	12 17 58.9	-7.5
SKR				pmax	pmax		
	comp=Z,80nm,0.5s						
DL2	**Dalian**	**16.72**	**282**	P	**P**	**12 18 11.3**	**-0.2**
DL2				S	**Sn**	**12 21 16.0**	**+1.7**
DL2				pmax	pmax		
	comp=Z,38nm,0.8s						
DL2				pmax	pmax		
	comp=Z,210nm,6.0s						
DL2				LR	LR		
	comp=E,470nm,17.8s						
DL2				LR	LR		
	comp=Z,580nm,19.6s						
SSE	**Sheshan**	**18.86**	**257**	P	**P**	**12 18 29.6**	**-5.6**
SSE				sP	**pP**	**12 18 48.8**	**+3.0**
SSE				S	**Sn**	**12 21 57.4**	**-8.9**
SSE				pmax	pmax		
	comp=Z,21nm,0.7s						
SSE				pmax	pmax		
	comp=Z,28nm,2.8s						
SSE				LR	LR		
	comp=N,300nm,15.5s						
SSE				LR	LR		
	comp=E,230nm,14.8s						
SSE				LR	LR		
	comp=Z,470nm,10.6s						
PETK	**Petropavlovsk-**	**18.96**	**29**	P	**Pn**	**12 18 37.9**	**+0.8**
	comp=Z,0.9nm,0.3s,baz=200,slow=8.2,SNR=24						
PETK				LR	LR	12 26 41.8	
	comp=Z,147nm,19.4s,baz=220,slow=39						
PET	**Petropavlovsk**	**19.27**	**30**	*c iP*	**P**	**12 18 40.2**	**+0.8**
PET				*e*S	**S**	**12 22 12.8**	**-2.2**
PET				pmax	pmax		
	comp=Z,600nm,3.7s						
PET				pmax	pmax		
	comp=Z,80nm,1.5s						
PET				pmax	pmax		
	comp=Z,400nm,12.4s						
PET				MLR	MLR		
	comp=Z,300nm,14.0s						
PET	**Petropavlovsk**	**19.27**	**30**	*e*P	**P**	**12 18 40.3**	**+0.8**
	comp=Z,174nm,1.5s						
NJ2	**Nanjing**	**20.32**	**262**	*e*P	Pn	12 18 52.9	-0.5
NJ2				S	Sn	12 22 45.8	+4.4
NJ2				pmax	pmax		
	comp=Z,6.0nm,0.9s						
NJ2				LR	LR		
	comp=N,450nm,15.2s						
NJ2				LR	LR		
	comp=E,320nm,14.6s						
NJ2				LR	LR		
	comp=Z,190nm,13.0s						
BJI	**Beijing**	**20.92**	**286**	P	**P**	**12 18 55.6**	**-1.9**
BJI				S	**S**	**12 22 49.8**	**+1.7**
BJI				pmax	pmax		
	comp=Z,11nm,0.8s						
BJI				pmax	pmax		
	comp=Z,110nm,3.6s						
BJI				LR	LR		
	comp=N,370nm,13.6s						
BJI				LR	LR		
	comp=E,200nm,13.9s						
BJI				LR	LR		
	comp=Z,390nm,18.7s						
MA2	**Magadan**	**22.92**	**10**	P	**P**	**12 19 18.8**	**+0.2**
	comp=Z,99nm,0.8s,baz=213,slow=8.4,SNR=64						
MA2				LR	LR	12 28 33.9	
	comp=Z,65nm,20.4s,baz=224,slow=37						
CLNS	**Chul'man**	**22.92**	**334**	*e*P	**P**	**12 19 16.8**	**-2.0**
CLNS				*e**PP	**sP**	**12 19 34.9**	**-0.4**
CLNS				*e*S	**S**	**12 23 18.3**	**-7.0**
CLNS				*e**SS	sS	12 23 58.7	+14
CLNS				pmax	pmax		
	comp=Z,65nm,1.2s						
CLNS				pmax	pmax		
	comp=N,47nm,0.9s						
CLNS				pmax	pmax		
	comp=E,17nm,1.1s						
CLNS				smax	smax		
	comp=E,185nm,16.2s						
CLNS				smax	smax		
	comp=N,229nm,10.8s						
TPUB	**Ta-pu**	**23.57**	**240**	*e*P	**P**	**12 19 24.3**	**-1.1**
	comp=N,75nm,1.3s						
TWG	**Pinlang**	**23.58**	**238**	*e*P	**P**	**12 19 24.1**	**-1.3**
	comp=N,278nm,1.4s						
GUMO	**Guam**	**23.65**	**175**	LR	LR	12 28 42.4	
	comp=N,77nm,19.6s,baz=24,slow=36						
TIY	**Taiyuan**	**24.02**	**280**	*e*P	**P**	**12 19 32.5**	**+3.0**
TIY				PP	**PnPn**	**12 20 09.3**	**+10**
TIY				S	**S**	**12 23 43.1**	**-0.5**
TIY				SS	**SnSn**	**12 24 34.4**	**+7.5**
TIY				pmax	pmax		
	comp=Z,130nm,6.2s						
TIY				LR	LR		
	comp=N,360nm,17.1s						
TIY				LR	LR		
	comp=E,230nm,10.7s						
TIY				LR	LR		
	comp=Z,380nm,18.9s						
HHC	**Hu-ho-hao-te**	**24.42**	**288**	*e*P	**P**	**12 19 35.3**	**+2.1**
HHC				pP	pP	12 19 46.0	+0.9
HHC				sP	sP	12 19 49.6	-0.8
HHC				PP	**PnPn**	**12 20 06.4**	**+1.2**
HHC				S	**S**	**12 23 45.3**	**-4.7**
HHC				SS	**SnSn**	**12 24 35.5**	**-1.2**
HHC				pmax	pmax		
	comp=Z,38nm,0.9s						
HHC				pmax	pmax		
	comp=Z,160nm,4.4s						
HHC				LR	LR		
	comp=N,1μm,12.0s						
HHC				LR	LR		
	comp=E,1μm,13.0s						
HHC				LR	LR		
	comp=Z,1μm,12.6s						
WHN	**Wuhan**	**24.46**	**262**	⇓P	**P**	**12 19 33.8**	**+0.3**
WHN				pP	**pP**	**12 19 39.6**	**-5.7**
WHN				S	**S**	**12 23 50.0**	**-0.5**
WHN				pmax	pmax		
	comp=Z,44nm,0.6s						
WHN				LR	LR		
	comp=N,1μm,18.2s						
WHN				LR	LR		
	comp=E,860nm,11.2s						
WHN				LR	LR		
	comp=Z,930nm,15.7s						
CIT	**Chita**	**25.27**	**315**	*e*P	**P**	**12 19 41.0**	**+0.3**
CIT				*e*		12 19 53.3	
CIT				*e*		12 20 03.7	
CIT				*e*		12 20 14.7	
CIT				*e*		12 23 58.4	
CIT				pmax	pmax		
	comp=Z,307nm,1.4s						
YAK	**Yakutsk**	**26.09**	**346**	P	**P**	**12 19 47.2**	**-0.7**
	comp=Z,6.0nm,0.4s,baz=334,slow=22,SNR=27						
YAK				LR	LR	12 30 34.9	
	comp=Z,193nm,18.3s,baz=160,slow=37						
YAK	**Yakutsk**	**26.09**	**346**	*e*P	**P**	**12 19 46.6**	**-1.3**
YAK				*e**PP	**pP**	**12 20 01.0**	**+1.2**
YAK				*e*		12 20 33.1	
YAK				*e*S	**S**	**12 24 18.1**	**+2.2**
YAK				*e*SS	SnSn	12 25 36.4	+19
YAK				pmax	pmax		
	comp=E,41nm,1.2s						
YAK				pmax	pmax		
	comp=N,109nm,1.3s						
YAK				pmax	pmax		
	comp=Z,169nm,1.0s						
YAK				pmax	pmax		
	comp=N,17nm,0.4s						
YAK				pmax	pmax		
	comp=E,12nm,0.4s						
YAK				pmax	pmax		
	comp=Z,89nm,0.8s						
YAK				smax	smax		
	comp=E,475nm,1.7s						
YAK				smax	smax		
	comp=N,832nm,1.6s						
YAK	**Yakutsk**	**26.09**	**346**	*e*P	**P**	**12 19 47.3**	**-0.7**
	comp=N,185nm,1.1s						
YAK				*e*S	**S**	**12 24 25.6**	**+10**
SEY	**Seymchan**	**26.37**	**10**	P	**P**	**12 19 51.7**	**+1.3**
	comp=N,61nm,0.8s,baz=192,slow=7.1,SNR=78						
SEY	**Seymchan**	**26.37**	**10**	⇑ *iP*	**P**	**12 19 51.9**	**+1.5**
H11N2	**WAKE ISLAND Hy**	**27.36**	**123**	T	T	12 49 13.6	
	baz=316,slow=75,SNR=1407						
H11N1	**WAKE ISLAND Hy**	**27.36**	**123**	T	T	12 49 13.1	
	baz=316,slow=75,SNR=1210						
H11N3	**WAKE ISLAND Hy**	**27.37**	**123**	T	T	12 49 13.1	
	baz=316,slow=75,SNR=1238						
XAN	**Xi'an**	**27.60**	**274**	P	**P**	**12 20 01.9**	**0.0**
XAN				S	**S**	**12 24 33.5**	**-6.9**
XAN				pmax	pmax		
	comp=Z,13nm,0.7s						
XAN				pmax	pmax		
	comp=Z,70nm,5.4s						
XAN				LR	LR		
	comp=N,230nm,20.0s						
XAN				LR	LR		
	comp=E,200nm,15.8s						
XAN				LR	LR		
	comp=Z,230nm,15.9s						
BOD	**Bodaibo**	**27.92**	**327**	*e*P	**P**	**12 20 03.2**	**-1.2**
BOD				pmax	pmax		
	comp=Z,46nm,1.2s						
H11S1	**WAKE ISLAND Hy**	**28.10**	**125**	T	T	12 50 09.6	
	baz=317,slow=75,SNR=26						
H11S3	**WAKE ISLAND Hy**	**28.10**	**125**	T	T	12 50 07.9	
	baz=317,slow=75,SNR=482						
H11S2	**WAKE ISLAND Hy**	**28.11**	**125**	T	T	12 50 08.5	
	baz=317,slow=75,SNR=20						
ULN	**Ulaanbaatar**	**28.12**	**304**	*e*P	**P**	**12 20 06.3**	**-0.3**
ULN				pmax	pmax		
	comp=Z,17nm,0.7s						
ULN	**Ulaanbaatar**	**28.12**	**304**	*e*P	**P**	**12 20 06.3**	**-0.3**
	comp=Z,17nm,0.7s						
SONM	**Songino Array**	**28.55**	**303**	P	**P**	**12 20 10.8**	**+0.5**
	comp=Z,6.7nm,0.8s,baz=102,slow=8.2,SNR=30						
SONM				LR	LR	12 31 33.5	
	comp=Z,134nm,19.7s,baz=105,slow=36						
ZAK	**Zakamensk**	**30.98**	**308**	*e*P	**P**	**12 20 31.2**	**-0.5**
ZAK				pmax	pmax		
	comp=Z,16nm,1.2s						
TLY	**Talaya**	**31.00**	**310**	P	**P**	**12 20 32.5**	**+0.7**
	comp=Z,11nm,1.1s,baz=124,slow=7.7,SNR=15						
TLY	**Talaya**	**31.00**	**310**	*c iP*	**P**	**12 20 31.3**	**-0.5**
TLY				*e*S	**S**	**12 25 28.3**	**-5.1**
TLY				pmax	pmax		
	comp=Z,20nm,1.3s						
TLY				MLR	MLR		
	comp=Z,236nm,15.0s						
TLY	**Talaya**	**31.00**	**310**	*e*P	**P**	**12 20 31.5**	**-0.3**
	comp=Z,9.3nm,0.7s						
LZH	**Lanzhou**	**31.09**	**280**	*e*P	**P**	**12 20 34.6**	**+1.6**
LZH				pP	pP	12 20 45.0	+0.1
LZH				sP	sP	12 20 48.9	-1.4
LZH				PP	**PnPn**	**12 21 37.0**	**+1.6**
LZH				*e*S	**S**	**12 25 32.5**	**-2.9**
LZH				sS	sS	12 25 44.0	-11
LZH				SS	**SnSn**	**12 27 21.3**	**+1.9**
LZH				pmax	pmax		
	comp=Z,20nm,1.0s						
LZH				pmax	pmax		
	comp=Z,110nm,4.0s						
LZH				LR	LR		
	comp=N,230nm,12.1s						
LZH				LR	LR		
	comp=E,180nm,14.1s						
LZH				LR	LR		
	comp=Z,300nm,15.3s						
GYA	**Guiyang**	**32.32**	**261**	P	**P**	**12 20 45.6**	**+1.8**
GYA				pP	pP	12 20 55.3	-0.5
GYA				PP	**PnPn**	**12 21 54.0**	**+2.6**
GYA				PcP	**PcP**	**12 23 32.8**	**+1.8**
GYA				S	**S**	**12 25 55.6**	**+0.9**
GYA				sS	sS	12 26 13.0	-1.8
GYA				ScP	**ScP**	**12 27 13.4**	**+2.4**
GYA				SS	**SnSn**	**12 27 51.5**	**+2.0**
GYA	**Guiyang**	**32.32**	**261**	ScS	ScS	12 31 11.8	+1.4
GYA				pmax	pmax		
	comp=Z,20nm,0.8s						
GYA				pmax	pmax		
	comp=Z,120nm,5.3s						
GYA				LR	LR		
	comp=N,540nm,17.0s						
GYA				LR	LR		
	comp=E,460nm,17.1s						
GYA				LR	LR		
	comp=Z,510nm,17.4s						
MOY	**Mondy**	**32.62**	**310**	*e*P	**P**	**12 20 45.6**	**-0.5**
MOY				pmax	pmax		
	comp=Z,16nm,1.6s						
BILL	**Bilibino**	**33.51**	**16**	*c iP*	**P**	**12 20 53.3**	**-0.3**
BILL				*e*		12 22 10.6	
BILL				pmax	pmax		
	comp=Z,35nm,1.7s						

BILL MLR MLR
comp=Z,142nm,22.0s
BILL Bilibino 33.51 16 *e*P **P 12 20 53.9 +0.3**
comp=Z,15nm,0.9s
GTA Gaotai 33.52 287 *e*P **P 12 20 53.6 -0.6**
GTA pP pP 12 20 57.8 -8.4
GTA sP sP 12 21 01.1 -10
GTA S **S 12 26 11.0 -2.2**
GTA sS sS 12 26 28.4 -4.9
GTA SS **SnSn 12 28 14.1 -4.3**
GTA pmax pmax
comp=Z,7.0nm,1.1s
GTA pmax pmax
comp=Z,29nm,6.4s
GTA LR LR
comp=N,230nm,14.7s
GTA LR LR
comp=E,220nm,16.2s
GTA LR LR
comp=Z,300nm,23.5s
DAV Davao City (W) 33.88 212 LR LR 12 34 06.9
comp=Z,120nm,21.8s,baz=32,slow=35
QIZ Qiongzhong 34.01 247 P **P 12 21 00.1 +1.7**
QIZ S **S 12 26 23.6 +2.9**
QIZ LR LR
comp=N,140nm,30.6s
QIZ LR LR
comp=E,100nm,27.4s
TIXI Tiksi 35.20 352 P **P 12 21 07.3 -0.8**
comp=E,4.5nm,0.7s,baz=144,slow=10,SNR=16
TIXI Tiksi 35.20 352 *i* P **P 12 21 06.9 -1.2**
TIXI pmax pmax
comp=Z,16nm,1.2s
TIXI Tiksi 35.20 352 *e*P **P 12 21 07.2 -0.8**
comp=Z,9.4nm,0.7s
KMI Kunming 36.06 262 P **P 12 21 17.1 +0.8**
KMI pP pP 12 21 26.4 -2.0
KMI sP sP 12 21 31.3 -2.4
KMI PP **PP 12 22 39.5 +0.7**
KMI S **S 12 26 54.3 +1.6**
KMI sS sS 12 27 12.6 -0.3
KMI SS **SnSn 12 29 16.0 -4.3**
KMI pmax pmax
comp=Z,11nm,0.7s
KMI pmax pmax
comp=Z,78nm,3.7s
KMI LR LR
comp=N,170nm,13.8s
KMI LR LR
comp=E,190nm,14.7s
KMI LR LR
comp=Z,210nm,19.1s
SKNT Sakolnakorn 39.64 250 P sP 12 22 03.4 -0.4
comp=Z,21nm,1.0s
KHON Khomkaen 40.90 250 P sP 12 22 15.0 +0.7
comp=Z,14nm,0.9s
FAKI Fak Fak 41.16 196 *e*P **P 12 21 57.7 -1.2**
comp=Z,68nm,1.7s
CMAI Chiengmai2 41.68 258 P sP 12 22 21.6 +0.7
comp=Z,767nmcomp=Z,26nm,0.9s
WMQ Urumqi 41.70 297 P P 12 22 08.6 +5.5
WMQ pP pP 12 22 18.0 +2.6
WMQ sP sP 12 22 25.1 +4.4
WMQ S **S 12 28 17.0 +0.2**
WMQ sS sS 12 28 36.5 -0.8
WMQ SS **SS 12 31 22.5 -0.8**
WMQ pmax pmax
comp=Z,24nm,0.8s
WMQ pmax pmax
comp=Z,44nm,3.8s
WMQ LR LR
comp=N,180nm,24.4s
WMQ LR LR
comp=E,97nm,16.2s
WMQ LR LR
comp=Z,120nm,35.4s
UTTA Uttaradit 41.77 254 P sP 12 22 22.8 +1.4
comp=Z,3.9nm,0.9s
LAMP Lampang 42.03 256 P sP 12 22 26.0 +2.5
comp=Z,4.9nm,0.8s
PBKT Sadao Pong 42.16 252 P sP 12 22 22.8 -1.8
comp=Z,16nm,0.9s
CMMT Chiang Mai 42.39 257 P sP 12 22 26.9 +0.4
comp=Z,328nmcomp=Z,9.6nm,1.1s
CHTO Chiang Mai 42.39 257 P sP 12 22 27.0 +0.5
comp=Z,39nm,0.8s
CHTO Chiang Mai 42.39 257 *e*P **P 12 22 07.0 -2.0**
CHTO pmax pmax
comp=Z,6.0nm,0.8s
CHTO Chiang Mai 42.39 257 *e*P **P 12 22 07.0 -2.0**
comp=Z,6.3nm,0.8s
ZALV Zalesovo Beam 42.56 312 P **P 12 22 09.5 -0.4**
comp=Z,8.2nm,0.9s,baz=90,slow=7.4,SNR=25
ZALV LR LR 12 39 37.0
comp=Z,119nm,21.1s,baz=68,slow=36
CMAR Chiang Mai Arr 42.60 256 P **P 12 22 11.6 +0.9**
comp=Z,0.4nm,0.4s,baz=46,slow=6.6,SNR=3.2
CMAR LR LR 12 40 52.6
comp=Z,90nm,18.0s,baz=64,slow=37
NVS Novosibirsk 43.46 314⇑ *i*P **P 12 22 17.0 -0.2**
NVS *e*S **S 12 28 34.5 -7.8**
NVS pmax pmax
comp=N,9.0nm,1.2s
NVS pmax pmax
comp=E,43nm,1.2s
NVS pmax pmax
comp=Z,45nm,1.2s
NVS smax smax
comp=N,12nm,2.0s
NVS smax smax
comp=E,22nm,2.0s
NRIK Noril'sk 43.51 335 P **P 12 22 16.8 -0.6**
comp=E,6.9nm,0.8s,baz=106,slow=10.0,SNR=20
NRIK LR LR 12 40 54.6
comp=E,223nm,21.3s,baz=110,slow=37
CHBT CHBT 43.55 247 P sP 12 22 37.0 +1.1
comp=E,36nm,0.9s
SHL Shillong 44.48 270 *e*P **P 12 22 29.0 +3.0**
MKAR Makanchi Array 44.91 302 P **P 12 22 27.8 -1.2**
comp=E,8.0nm,0.8s,baz=84,slow=11,SNR=14
MKAR LR LR 12 41 23.1
comp=E,110nm,21.7s,baz=80,slow=36
MKAR Makanchi Array 44.91 302 *i* P **P 12 22 30.2 +1.2**
MKAR pmax pmax
comp=Z,8.0nm,0.8s
MKAR Makanchi Array 44.91 302 *e*P **P 12 22 28.4 -0.6**
MAKZ Makanchi 45.12 302 *e*P **P 12 22 29.6 -1.0**
MAKZ pmax pmax
comp=Z,33nm,1.0s
MAKZ Makanchi 45.12 302 *e*P **P 12 22 29.6 -1.0**
comp=Z,33nm,1.0s
KDAK Kodiak Island 46.21 42 *e*P **P 12 22 38.1 -0.9**
KDAK pmax pmax
comp=Z,26nm,0.8s
KDAK Kodiak Island 46.21 42 *e*P **P 12 22 38.1 -0.9**
comp=Z,26nm,0.8s
PPLA Purkeypile 46.36 35 *e*P **P 12 22 42.5 +2.1**
comp=Z,19nm,0.9s
SPU Mount Spurr 46.40 37 *e*P **P 12 22 41.6 +1.1**
CAST Castle Rocks 46.43 34 *e*P **P 12 22 43.2 +2.5**
comp=Z,19nm,0.7s
KSM Kuching 46.50 228 *e*P **P 12 22 42.8 +1.1**
comp=Z,12nm,0.7s
KURK Kurchatov 46.64 308 P **P 12 22 41.8 -0.7**
KURK pmax pmax
comp=Z,6.0nm,0.7s
KURK Kurchatov 46.64 308 *e*P **P 12 22 41.1 -1.4**
comp=Z,66nm,0.9s
KURBB Kurchatov Arra 46.71 308 P **P 12 22 41.8 -1.2**
comp=Z,5.9nm,0.7s,baz=83,slow=8.1,SNR=68
BPAW Bear Paw Mtn. 46.94 33 *e*P **P 12 22 46.9 +2.1**
comp=Z,6.3nm,0.8s
KTH Kantishna Hill 46.95 34 *e*P **P 12 22 44.9 0.0**
comp=Z,68nm,1.7s
MLY Manley 47.08 32 *e*P **P 12 22 45.6 -0.3**
comp=Z,14nm,0.8s
KAPI Kappang 47.22 212 LR LR 12 41 53.8
comp=Z,46nm,21.0s,baz=51,slow=35
KAPI Kappang 47.22 212 *e*P **P 12 22 48.5 +1.1**
comp=Z,83nm,1.3s
TRF Thorofare Moun 47.24 34 *e*P **P 12 22 48.0 +0.8**
comp=Z,20nm,1.2s
COLD Coldfoot 47.43 29 *e*P **P 12 22 44.4 -4.0**
comp=Z,7.7nm,0.7s
SURT Suratani 48.66 246 P sP 12 23 18.3 +2.1
comp=Z,8.0nm,1.1s
ILAR Eielson Array 48.72 32 P **P 12 22 57.1 -1.3**
comp=Z,2.9nm,0.9s,baz=246,slow=6.8,SNR=14
ILAR LR LR 12 45 25.5
comp=Z,38nm,20.3s,baz=292,slow=38
KKN Kakani 48.73 276 *e*P **P 12 23 02.7 +3.4**
comp=Z,118nm,1.0s
PKIN Phulchoki 48.73 276 *e*P **P 12 23 02.5 +3.1**
comp=Z,52nm,1.1s
TRTT Trang 48.77 244 P sP 12 23 18.5 +1.4
DMN Daman 48.95 276 *e*P **P 12 23 05.0 +4.0**
comp=Z,59nm,0.9s
GKN Gorkha 49.15 277 *e*P **P 12 23 05.5 +3.1**
comp=Z,122nm,1.0s
SOEI Soe 49.89 204 *e*P **P 12 23 08.8 +0.8**
comp=Z,59nm,0.9s
KOLN Koldanda 50.07 277 *e*P **P 12 23 13.8 +4.3**
comp=Z,109nm,1.1s
PYUN Piuthan 50.41 278 *e*P **P 12 23 16.4 +4.3**
comp=Z,412nm,1.1s
TKM2 Tokmak 2 50.47 299 *e*P **P 12 23 12.1 -0.2**
TKM2 pmax pmax
comp=Z,36nm,0.8s
TKM2 Tokmak 2 50.47 299 *e*P **P 12 23 12.1 -0.2**
comp=Z,36nm,0.8s
COEN Coen 50.95 179 *e*P **P 12 23 14.3 -1.5**
comp=Z,26nm,0.9s
MTN Manton Dam 51.03 195 *e*P **P 12 23 15.8 -0.6**
comp=Z,36nm,1.1s
OTUK Ortayu 51.16 306 P **P 12 23 16.5 -0.7**
OTUK pmax pmax
comp=Z,34nm,0.8s
FRU Bishkek 51.18 299 *e*P **pP 12 23 32.0 +2.0**
FRU pmax pmax
comp=Z,35nm,1.5s
BVAR Borovoye Array 51.21 312 P **P 12 23 16.3 -1.2**
comp=Z,1.7nm,0.8s,baz=64,slow=6.9,SNR=10
BRVK Borovoye 51.27 312 *c i*P **P 12 23 16.8 -1.1**
BRVK pmax pmax
comp=Z,13nm,2.5s
BRVK Borovoye 51.27 312 *e*P **P 12 23 16.6 -1.3**
comp=Z,18nm,0.9s
KSH Kashi 51.29 294 *e*P P 12 23 26.4 +7.9
KSH *es*P sP 12 23 40.4 +4.2
KSH *e*PcP **PcP 12 24 39.5 +6.5**
KSH PcS **PcS 12 28 35.8 +4.9**
KSH S S 12 30 44.4 +10
KSH Kashi 51.29 294 SS SS 12 34 20.1 +10
KSH pmax pmax
comp=Z,19nm,0.9s
KSH pmax pmax
comp=Z,130nm,3.1s
KSH LR LR
comp=N,89nm,7.8s
KSH LR LR
comp=E,110nm,6.9s
KSH LR LR
comp=Z,160nm,14.1s
AAK Ala-Archa 51.33 299 LR LR 12 46 07.5
comp=Z,251nm,19.6s,baz=58,slow=37
AAK Ala-Archa 51.33 299 *e*P **P 12 23 17.7 -1.0**
AAK pmax pmax
comp=Z,3.0nm,0.9s
AAK Ala-Archa 51.33 299 *e*P **P 12 23 19.1 +0.4**
comp=Z,12nm,0.7s
ZRNK Zerenda 52.04 313 *e*P **P 12 23 22.7 -1.0**
ZRNK pmax pmax
comp=Z,20nm,0.9s
ZRNK Zerenda 52.04 313 *e*P **P 12 23 22.7 -1.0**
comp=Z,20nm,0.9s
MNAS Manas 52.77 299 P **P 12 23 29.6 +0.2**
MNAS pmax pmax
comp=Z,30nm,0.8s
KIP Kipapa 53.18 90⇑ *e*P **P 12 23 34.5 +2.0**
KKAR Karatay Array 53.94 300 *e*P **P 12 23 37.3 -0.6**
KKAR Karatay Array 53.94 300 *e*P **P 12 23 37.3 -0.6**
KKAR *e*pP pP 12 23 43.8 -6.7
GSI Gunungsitoli 54.85 240 *e*P **P 12 23 44.9 +0.2**
comp=Z,60nm,0.8s
SVE Sverdlovsk 55.69 319 *e*P **pP 12 24 05.1 +2.2**
SVE pmax pmax
comp=Z,60nm,0.9s
DZET Dzherino 56.72 296 P **P 12 23 57.5 -0.5**
DZET pmax pmax
comp=Z,39nm,0.8s
ARU Arti 56.90 319 *e*P **P 12 23 57.8 -1.1**
ARU pmax pmax
comp=Z,37nm,0.8s
ARU Arti 56.90 319 *e*P **P 12 23 57.8 -1.1**
comp=Z,37nm,0.8s
WRAB Tennant Creek 57.44 189⇓ *i*P **P 12 24 02.0 -1.0**
WRAB pmax pmax
comp=Z,92nm,1.2s
WRAB Tennant Creek 57.44 189 *e*P **P 12 24 02.3 -0.8**
comp=Z,43nm,1.2s
WRA Warramunga Arr 57.45 189 P **P 12 24 01.9 -1.2**
comp=Z,22nm,0.9s,baz=7.9,slow=7.3,SNR=76
ABKAR Akbulak array 58.61 310 *e*P **P 12 24 09.7 -1.4**
HYB Hyderabad 59.28 269 *i*P pP 12 24 32.0 +3.1
AKTO Aktyubinsk 59.32 312 P **P 12 24 14.6 -1.3**
comp=Z,3.1nm,0.8s,baz=65,slow=9.6,SNR=4.1
AKTO LR LR 12 50 13.2
comp=Z,57nm,18.8s,slow=36
ASAR Alice Springs 61.18 189 P **P 12 24 27.9 -0.9**
comp=Z,8.4nm,0.8s,baz=9.3,slow=6.0,SNR=60
ASAR LR LR 12 51 44.2
comp=Z,28nm,20.4s,baz=16,slow=37
RES Resolute Bay 62.11 15 P **P 12 24 34.4 -0.1**
comp=Z,3.4nm,0.8s,baz=302,slow=6.3,SNR=6.7
RES Resolute Bay 62.11 15 *e*P **P 12 24 34.4 -0.1**
RES pmax pmax
comp=Z,14nm,0.7s
RES Resolute Bay 62.11 15 *e*P **P 12 24 34.4 -0.1**
comp=Z,14nm,0.7s
TMCR Tamitsa 63.06 332 *e*P **P 12 24 40.0 -0.9**
TMCR pmax pmax
comp=Z,16nm,0.9s
KLMR Klimovskoe 64.13 328 *e*P **P 12 24 45.6 -2.5**
KLMR *e* 12 27 06.7
KLMR pmax pmax
comp=Z,11nm,1.1s
ARCES ARCESS Array B 64.16 340 P **P 12 24 47.7 -0.5**
comp=Z,2.5nm,0.9s,baz=60,slow=7.2,SNR=7.0
ARCES LR LR 12 55 10.9
comp=Z,98nm,21.7s,baz=54,slow=38
GEYT Alibeck 64.66 299 P **P 12 24 50.8 -1.3**
comp=Z,1.3nm,0.4s,baz=27,slow=6.8,SNR=4.7
GEYT LR LR 12 57 01.4
comp=Z,54nm,18.2s,baz=150,slow=40
DAG Danmarks Havn 65.63 355 *i*P **P 12 24 56.2 -1.4**
comp=Z,4.5nm,0.9s
DAG Danmarks Havn 65.63 355 *i*P **P 12 24 56.2 -1.4**
DAG pmax pmax
comp=Z,4.0nm,0.9s
JOF Joensuu 66.26 332 P **P 12 25 01.2 -0.7**
JOF pmax pmax
comp=Z,16nm,1.0s
OUL Oulu 66.83 336 P **P 12 25 06.5 +1.1**
OUL pmax pmax
comp=Z,29nm,1.0s
H04A Detroit Lake 68.14 50 *e*P **P 12 25 15.5 +1.4**
comp=Z,13nm,1.0s
OBN Obninsk 68.55 324 *i*P **P 12 25 15.8 -0.6**
OBN *i* 12 25 38.0
OBN *e* 12 27 47.7
OBN *e*S S 12 34 05.3 -10
OBN pmax pmax
comp=Z,8.0nm,0.9s
OBN MLR MLR
comp=Z,108nm,17.0s
STKA Stephens Creek 68.79 181 P **P 12 25 17.2 -0.9**
comp=Z,2.3nm,0.7s,baz=339,slow=5.6,SNR=8.4
FINES FINESS Array B 69.11 333 P **P 12 25 19.4 -0.5**
comp=Z,3.2nm,0.8s,baz=39,slow=7.3,SNR=11
FINES LR LR 12 57 10.2
comp=Z,136nm,20.7s,baz=25,slow=37
FINES FINESS Array B 69.11 333 *i*P **P 12 25 19.0 -0.8**
FINES pmax pmax
comp=Z,3.0nm,0.8s
YBH Yreka Blue Hor 69.35 53 P **P 12 25 23.2 +1.4**
comp=Z,4.7nm,1.0s,baz=278,slow=1.1,SNR=8.3
YBH Yreka Blue Hor 69.35 53 *e*P **P 12 25 23.7 +1.9**
YBH pmax pmax
comp=Z,9.0nm,1.2s
YBH Yreka Blue Hor 69.35 53 *e*P **P 12 25 23.7 +1.9**
comp=Z,8.7nm,1.2s
K05A Summer Lake 69.96 51 *e*P **P 12 25 26.1 +0.4**
comp=Z,26nm,1.1s
BBOO Buckleboo 70.00 186 *e*P **P 12 25 24.7 -0.8**
comp=Z,17nm,1.0s
WDC Whiskeytown Da 70.07 54 *e*P **P 12 25 26.7 +0.6**
WDC pmax pmax
comp=Z,9.0nm,1.1s
WDC Whiskeytown Da 70.07 54 *e*P **P 12 25 26.7 +0.6**
comp=Z,8.9nm,1.1s
SUMG Summit 70.45 0 *i*P **P 12 25 28.3 -0.1**
comp=Z,14nm,1.1s
SUMG Summit 70.45 0 *e*P **P 12 25 28.8 +0.4**
SUMG pmax pmax
comp=Z,16nm,0.8s
SUMG Summit 70.45 0 *e*P **P 12 25 28.8 +0.4**
comp=Z,16nm,0.8s
MOD Modoc Plateau 70.78 52 *e*P **P 12 25 32.0 +1.4**
comp=Z,4.9nm,0.8s
VSU Vasula 70.80 330 *i*P **P 12 25 29.5 -0.7**
VSU pmax pmax
comp=Z,30nm,1.2s
ZEI Tsey 71.48 310 *e*P **P 12 25 31.3 -3.6**
ZEI pmax pmax
comp=Z,6.0nm,0.9s
KIV Kislovodsk 71.56 311 *e*P **P 12 25 35.0 -0.3**
KIV pmax pmax
comp=Z,9.0nm,0.9s
KBZ Khabaz 71.56 311 P **P 12 25 34.8 -0.4**
comp=Z,3.9nm,0.9s,baz=357,slow=1.4,SNR=8.0
MSO Missoula 71.80 45 *e*P **P 12 25 37.1 +0.5**
comp=Z,4.3nm,0.9s
PAHR Pah Rah Range 72.57 53 *e*P **P 12 25 42.6 +1.2**
comp=Z,11nm,1.1s
CMB Columbia Colle 72.86 55 *e*P **P 12 25 43.9 +0.9**
CMB pmax pmax
comp=Z,13nm,1.1s
CMB Columbia Colle 72.86 55 *e*P **P 12 25 43.9 +0.9**
comp=Z,13nm,1.1s
MICGM Minsk 72.90 326 *e* sP 12 26 01.0 -0.1
NACGM Naroch 73.12 327 *e* sP 12 26 03.0 +0.6
LRM Limekiln Ridge 73.23 45 *e*P **P 12 25 46.4 +1.1**
DLMT Dillon 73.42 45 *e*P **P 12 25 47.5 +1.2**
comp=Z,6.9nm,0.8s
HLID Hailey 73.42 48 *e*P **P 12 25 47.8 +1.3**
comp=Z,5.3nm,1.0s
BMN Battle Mountai 73.53 52 *e*P **P 12 25 48.7 +1.6**
BMN pmax pmax
comp=Z,9.0nm,1.0s
BMN Battle Mountai 73.53 52 *e*P **P 12 25 48.7 +1.6**
comp=Z,9.4nm,1.0s
BOZ Bozeman (W) 73.79 45 *e*P **P 12 25 49.5 +0.9**
BOZ pmax pmax
comp=Z,8.0nm,1.0s
BOZ Bozeman (W) 73.79 45 *e*P **P 12 25 49.5 +0.9**
comp=Z,7.8nm,1.0s
NVAR Mina Array Bea 73.98 54 P **P 12 25 51.0 +1.1**
comp=Z,8.5nm,0.9s,baz=281,slow=7.3,SNR=28
NB2 NORSAR Subarra 74.39 338 P **P 12 25 50.4 -1.2**
comp=Z,4.5nm,0.8s,baz=40,slow=6.2
NOA NORSAR Array B 74.39 338 P **P 12 25 51.0 -0.6**
comp=Z,2.9nm,0.8s,baz=38,slow=5.8,SNR=11
NOA LR LR 13 01 22.6
comp=Z,107nm,21.8s,baz=35,slow=38
NOA NORSAR Array B 74.39 338 P **P 12 25 51.0 -0.6**
ELK Elko 74.58 50 *e*P **P 12 25 54.4 +1.1**
ELK pmax pmax
comp=Z,4.0nm,0.9s
ELK Elko 74.58 50 *e*P **P 12 25 54.4 +1.1**
comp=Z,4.1nm,0.9s
AKASG Malin Array Be 74.77 323 P **P 12 25 52.6 -1.3**
comp=Z,2.9nm,0.7s,baz=45,slow=6.3,SNR=11
KIEV Kiev 74.78 323 *c i*P **P 12 25 52.5 -1.5**
KIEV pmax pmax
comp=Z,5.0nm,0.9s
LKWY Lake 75.14 45 *e*P **P 12 25 59.4 +2.8**
LKWY pmax pmax
comp=Z,12nm,1.4s
LKWY Lake 75.14 45 *e*P **P 12 25 59.4 +2.8**
comp=Z,12nm,1.4s
H17A Grant Village 75.14 45 *e*P **P 12 25 59.2 +2.6**
comp=Z,11nm,0.9s
FLWY Flagg Ranch 75.27 46 *e*P **P 12 25 59.3 +2.1**
comp=Z,24nm,1.5s
RLMT Red Lodge 75.43 44 *e*P **P 12 25 59.4 +1.3**
comp=Z,11nm,1.4s
MOOW Moose Ponds 75.44 46 *e*P **P 12 25 59.5 +1.3**
comp=Z,6.6nm,1.1s
SNOW Snow King Moun 75.61 46 *e*P **P 12 26 01.0 +1.7**
comp=Z,5.8nm,0.9s
REDW Red Top Meadow 75.62 46 *e*P **P 12 26 00.8 +1.5**
comp=Z,7.7nm,1.1s
DAC Darwin (Calif) 75.69 55 *e*P **P 12 26 00.1 +0.3**
DAC pmax pmax
comp=Z,8.0nm,1.0s
DAC Darwin (Calif) 75.69 55 *e*P **P 12 26 00.1 +0.3**
comp=Z,7.8nm,1.0s
R11A Troy Canyon, C 75.77 53 *e*P **P 12 26 01.2 +1.0**
comp=Z,8.2nm,0.9s
BGU Big Grassy Mou 75.81 49 *e*P **P 12 26 01.7 +1.3**
comp=Z,14nm,1.7s
AHID Auburn Hatcher 75.84 47 *e*P **P 12 26 01.0 +0.4**
comp=Z,9.4nm,0.8s
HWUT Hardware Ranch 76.28 48 *e*P **P 12 26 04.3 +1.3**
comp=Z,15nm,1.2s
FRB Frobisher Bay 76.30 14 P **P 12 26 02.1 -0.3**
comp=Z,4.1nm,0.8s,baz=324,slow=3.4,SNR=6.0
DUG Dugway, Tooele 76.39 50 *e*P **P 12 26 04.7 +1.1**
DUG pmax pmax
comp=Z,13nm,1.1s
DUG Dugway, Tooele 76.39 50 *e*P **P 12 26 04.7 +1.1**
comp=Z,12nm,1.1s
BW06 Boulder Array 76.73 46 *e*P **P 12 26 05.9 +0.3**
comp=Z,4.9nm,0.8s
PDAR Pinedale Array 76.73 46 P **P 12 26 05.8 +0.2**
comp=Z,2.4nm,0.7s,baz=276,slow=2.0,SNR=19
GSC Goldstone, Bar 76.78 56 *e*P **P 12 26 06.8 +1.0**
GSC pmax pmax
comp=Z,16nm,1.4s
GSC Goldstone, Bar 76.78 56 *e*P **P 12 26 06.8 +1.0**
comp=Z,16nm,1.4s
SORM Soroca 76.89 321⇑ *i*P sP 12 26 24.5 +0.2
JLU Jordanelle 76.96 49 *e*P **P 12 26 08.3 +1.3**
comp=Z,6.3nm,1.0s
NLU North Lily Min 76.98 50 *e*P **P 12 26 08.1 +1.0**
comp=Z,6.9nm,1.0s
SHPR Sheep Range 77.14 54 *e*P **P 12 26 09.4 +1.4**
comp=Z,11nm,1.1s
MSU Marysvale 77.81 51 *e*P **P 12 26 13.5 +1.8**
MSU Marysvale 77.81 51 *e*P **P 12 26 13.5 +1.8**
LVV L'vov 77.82 324 *e*P **PcP 12 26 21.7 +0.6**
TMUT Trail Mountain 77.92 50 *e*P **P 12 26 13.6 +1.2**
comp=Z,10nm,1.3s
PFO Pinyon Flats O 78.01 57 *e*P **P 12 26 13.6 +0.8**
PFO pmax pmax
comp=Z,10.0nm,1.1s
PFO Pinyon Flats O 78.01 57 *e*P **P 12 26 13.6 +0.8**
comp=Z,10nm,1.1s
LCMT Little Creek M 78.06 53 *e*P **P 12 26 14.3 +1.3**
comp=Z,13nm,1.0s
P17A Butcher Ranch, 78.09 49 *e*P **P 12 26 14.3 +1.1**
comp=Z,19nm,1.1s
Q16A Castle Valley 78.17 50 *e*P **P 12 26 15.2 +1.5**
comp=Z,13nm,1.2s
P18A Preston Nutter 78.29 49 *e*P **P 12 26 15.7 +1.2**
comp=Z,4.9nm,0.8s
KNB Kanab 78.32 52 *e*P **P 12 26 16.2 +1.7**
KNB pmax pmax
comp=Z,27nm,1.2s
KNB Kanab 78.32 52 *e*P **P 12 26 16.2 +1.7**
comp=Z,27nm,1.2s
BAR Barrett 78.43 58 *e*P **P 12 26 15.0 0.0**
comp=Z,7.4nm,0.8s
SRU San Rafael Swe 78.45 50 *e*P **P 12 26 16.0 +0.8**
SRU pmax pmax
comp=Z,15nm,1.0s
SRU San Rafael Swe 78.45 50 *e*P **P 12 26 16.0 +0.8**
comp=Z,15nm,1.0s
KWP Kalwaria Pacla 78.56 325⇑ *i*P sP 12 26 36.3 +2.6
TLCR 78.62 319⇑ *i*P sP 12 26 32.5 -1.5
BURAR Bucovina Array 78.79 322⇓ *i*P sP 12 26 36.8 +1.7
W13A Hualapai Mount 78.81 54 *e*P **P 12 26 18.2 +0.9**
comp=Z,5.0nm,1.0s
TESR Tescani 78.84 321⇑ *i*P sP 12 26 33.4 -1.9
CFR Carcaliu 78.98 319⇓ *i*P sP 12 26 36.4 +0.4
PETR Petresti 79.08 320⇓ *i*P sP 12 26 38.4 +1.8
ODBI Odobesti 79.14 320⇑ *i*P sP 12 26 35.3 -1.6
O20A White River Ci 79.16 48 *e*P **P 12 26 19.8 +0.6**
comp=Z,9.4nm,0.9s
Y12C Blythe 79.22 56 *e*P **P 12 26 20.5 +1.2**

comp=Z,12nm,1.0s
VRI Vrincioaia 79.24 320⇑ iP PcP 12 26 29.4 +2.0
PLOR Plostina 79.29 320⇓ iP sP 12 26 38.7 +0.9
TIRR Tirgusor 79.32 318⇑ iP sP 12 26 37.6 -0.3
STHS Stebnicka Huta 79.38 325 eP P 12 26 22.9 +3.0
STHS e 12 26 38.3
STHS Stebnicka Huta 79.38 325 eP P 12 26 22.9 +3.0
STHS e 12 26 38.3
HARR Harsova 79.42 319⇑ iP pP 12 26 36.1 +2.7
RAR Rarotonga 79.43 127 P P 12 26 20.0 -0.4
comp=Z,14nm,1.0s,baz=354,slow=19,SNR=2.9
RAR Rarotonga 79.43 127 eP P 12 26 19.9 -0.5
RAR Rarotonga 79.43 127 eP P 12 26 19.9 -0.5
comp=Z,190nm,1.7s
GLA Glamis 79.44 57 eP P 12 26 21.9 +1.3
GLA pmax pmax
comp=Z,12nm,0.8s
GLA Glamis 79.44 57 eP P 12 26 21.9 +1.3
comp=Z,12nm,0.8s
OJC Ojcow 79.44 327 eP P 12 26 19.9 -0.3
OJC pmax pmax
comp=Z,27nm,1.1s
OJC Ojcow 79.44 327 eP P 12 26 19.9 -0.3
comp=Z,27nm,1.1s
BRTR Keskin Array B 79.50 312 P P 12 26 20.8 -0.1
comp=Z,1.6nm,1.1s,baz=96,slow=5.0,SNR=4.9
BRTR Keskin Array B 79.50 312 i P P 12 26 20.2 -0.7
BRTR pmax pmax
comp=Z,2.0nm,1.1s
ARCR ARCALIA 79.58 322⇑ iP sP 12 26 39.9 +0.6
BMR Baia Mare 79.58 323⇓ iP sP 12 26 42.0 +2.7
CRVS Cervenica-Dubn 79.66 325 e pP 12 26 36.0 +1.4
PV09 Paradox Valley 79.67 49 eP P 12 26 23.3 +1.2
PV10 Paradox Valley 79.81 49 eP P 12 26 23.9 +1.1
ISR Istrita 79.85 320⇑ iP sP 12 26 41.4 +0.5
DOPR Dopca 79.85 321⇑ iP sP 12 26 43.9 +3.1
PV04 Paradox Valley 79.88 49 eP P 12 26 23.5 +0.5
MLR Muntele Rosu 79.90 320⇓ iP sP 12 26 42.2 +1.0
PV05 Paradox Valley 79.96 50 eP P 12 26 24.5 +0.9
N23A Red Feather La 80.00 46 eP P 12 26 25.0 +1.2
comp=Z,17nm,1.3s
Y14A Wickenburg 80.10 55 eP P 12 26 24.9 +0.8
comp=Z,43nm,0.8s
WUAZ Wupatki 80.17 53 eP P 12 26 25.9 +1.3
comp=Z,16nm,1.0s
CJR Cluj-Napoca 80.21 322⇑ iP pP 12 26 41.8 +4.1
PV01 Paradox Valley 80.25 49 eP P 12 26 26.1 +1.0
113A Mohawk Valley, 80.32 56 eP P 12 26 26.1 +0.8
comp=Z,10nm,1.0s
LANS Liptovska Anna 80.37 326 e sP 12 26 44.2 +0.6
VOIR 80.39 321⇑ iP sP 12 26 44.4 +0.6
SMCO Snowmass 80.53 48 eP P 12 26 27.4 +0.7
comp=Z,7.2nm,1.2s
DRGR 80.59 323⇑ iP sP 12 26 44.7 -0.1
ARR Arges 80.65 321⇓ iP P 12 26 27.7 +0.8
MORC Moravsky Berou 80.75 328⇓ iP sP 12 26 47.9 +2.3
MORC Moravsky Berou 80.75 328 eP P 12 26 27.5 +0.2
MORC pmax pmax
comp=Z,49nm,0.9s
MORC Moravsky Berou 80.75 328 eP P 12 26 27.5 +0.2
comp=Z,48nm,0.9s
X16A Lo Mia Camp, P 80.81 54 eP P 12 26 28.9 +0.7
comp=Z,13nm,0.9s
DPC Dobruska-Polom 80.83 329 eP P 12 26 27.9 +0.2
DPC ex x 12 26 38.3
DPC Dobruska-Polom 80.83 329 eP P 12 26 27.9 +0.2
MVCO Mesa Verde 80.89 50 eP P 12 26 29.3 +0.8
comp=Z,11nm,1.0s
ISCO Idaho Springs 80.92 46 eP P 12 26 29.4 +0.7
ISCO pmax pmax
comp=Z,3.0nm,0.9s
ISCO Idaho Springs 80.92 46 eP P 12 26 29.4 +0.7
comp=Z,3.0nm,0.9s
PSZ Piszkesteto 81.09 325⇑ iP sP 12 26 46.5 -1.0
VYHS Vyhne 81.14 326 eP P 12 26 24.5 -4.9
VYHS e 12 26 39.4
VYHS Vyhne 81.14 326 e P 12 26 24.5 -4.9
VYHS e 12 26 39.4
BRG Berggiesshubel 81.40 330 eP sP 12 26 48.6 -0.4
comp=Z,7.4nm,1.0s
BRG e 12 26 51.3
comp=Z,10nm,0.9s
PVCC Panska Ves 81.41 330 AMS AMS 13 06 10.0
comp=Z,100nm,19.8s
CLL Collm 81.43 331 eP P 12 26 29.0 -1.8
CLL i 12 26 48.4
CLL i 12 26 50.8
CLL i 12 27 06.0
CLL eS **S 12 36 37.0 -1.5**
CLL eSS SS 12 42 24.0 +30
CLL e 12 46 54.0
CLL LmV 13 07 00.0
comp=Z,100nm,20.0s
CLL Collm 81.43 331 eP P 12 26 29.0 -1.8
CLL i 12 26 48.4
CLL eS **S 12 36 37.0 -1.5**
SZH Strazhica 81.44 319 eP sP 12 26 51.0 +1.6
VRAC Vranov 81.51 328⇑ iP sP 12 26 52.3 +2.7
S22A 4UR Ranch, Cre 81.55 49 eP P 12 26 33.2 +1.1
comp=Z,9.4nm,1.1s
X18A Snowflake 81.69 53 eP P 12 26 33.6 +0.8
comp=Z,4.9nm,0.8s
PRU Pruhonice 81.84 329 eP P 12 26 30.9 -2.1
PRU epP **sP 12 26 51.7 +0.3**
PRU AMS AMS 13 04 10.0
comp=Z,200nm,22.7s
PRU Pruhonice 81.84 329 eP P 12 26 30.9 -2.1
PRU e 12 26 51.7
PRU MLR MLR
comp=Z,200nm,22.7s
BZS Buzias 81.96 323⇓ iP sP 12 26 53.2 +1.1
SDCO Great Sand Dun 82.34 48 eP P 12 26 37.3 +1.1
comp=Z,5.1nm,1.1s
MDVR Moldovita 82.52 322⇑ iP sP 12 26 55.3 +0.2
MPEP Malo Peshtene 82.52 320 eP sP 12 26 55.6 +0.5
TUC Tucson 82.57 55 eP P 12 26 37.4 +0.1
TUC pmax pmax
comp=Z,19nm,1.8s
TUC Tucson 82.57 55 eP P 12 26 37.4 +0.1
comp=Z,19nm,1.8s
CONA Conrad Observa 82.87 327 i P P 12 26 37.8 -0.8
comp=Z,4.1nm,1.0s
KHC Kasperske Hory 82.90 329 eP P 12 26 38.1 -0.6
KHC ex x 12 26 48.0
KHC ex x 12 26 56.8
KHC AMS AMS 13 01 30.0
comp=Z,100nm,18.6s
KHC Kasperske Hory 82.90 329 eP P 12 26 38.1 -0.6
KHC e 12 26 56.8
KHC MLR MLR
comp=Z,100nm,18.6s
ECSD EROS Data Cent 83.06 39 eP P 12 26 39.4 -0.2
comp=Z,6.3nm,0.9s
GERES GERESS Array B 83.08 329 P P 12 26 38.5 -1.1
comp=Z,0.6nm,0.8s,baz=18,slow=5.6,SNR=6.3
RZN Rozhen 83.19 318 eP sP 12 26 59.2 +0.4
PMOR Pomariorio Ree 83.29 114 eT T 13 58 28.1
comp=Z,9.8nm,0.2s
T25A Trinidad 83.39 48 eP P 12 26 42.6 +1.0
comp=Z,10nm,1.0s
ARSA Arzberg 83.54 327 i P P 12 26 39.8 -2.2
LAZ Ladron 83.55 51 eP P 12 26 43.4 +0.9
ANMO Albuquerque 83.61 51 eP P 12 26 44.0 +1.2
ANMO pmax pmax
comp=Z,13nm,1.1s
ANMO Albuquerque 83.61 51 eP P 12 26 44.0 +1.2
comp=Z,12nm,1.1s
MOA Molln 83.62 328 i P P 12 26 41.9 -0.5
comp=Z,2.9nm,0.7s
PPT Papeete 83.78 117 LR LR 12 59 41.1
comp=Z,58nm,19.4s,baz=326,slow=32
PPT2 Papeete2 83.79 117 eLR LR 12 52 47.7
comp=Z,350nm,31.2s
PPT2 Papeete2 83.79 117 eT T 13 59 13.8
comp=Z,2.1nm,0.2s
KKB Krupnik 83.92 319 eP pP 12 26 54.4 -2.9
TIAR Tiarei 83.94 117 eT T 13 59 23.1
comp=Z,1.4nm,0.3s
BNM Barren Site 84.03 51 eP P 12 26 45.8 +0.8
319A Douglas 84.15 55 eP P 12 26 46.5 +1.0
comp=Z,19nm,1.0s
SOKA Soboth 84.20 327 i PcP P 12 26 46.3 +0.9
comp=Z,6.7nm,0.7s
121A Cookes Peak, D 84.36 53 eP P 12 26 47.5 +0.9
comp=Z,19nm,1.1s
OBKA Obir 84.54 327 i PcP P 12 26 48.2 +1.0
comp=Z,3.3nm,0.7s
HSIG 84.55 58 eP P 12 26 47.7 +0.3
comp=Z,13nm,1.1s
KBA Koelnbreinsper 84.61 328 i PcP P 12 26 48.5 +0.9
comp=Z,8.7nm,0.7s
MYKA Terra Mystica 84.84 328 i PcP P 12 26 49.9 +1.3
comp=Z,6.7nm,0.6s
MEH Mehetia 85.06 117 eT T 14 01 15.7
comp=Z,12nm,0.3s
WTTA Wattenberg 85.18 329 i P P 12 26 50.1 -0.3
comp=Z,1.3nm,0.4s
TAOE Nuku Hiva Isla 85.19 105 eLR LR 12 53 39.5
comp=Z,245nm,24.8s
RETA Reutte 85.35 330 i PcP P 12 26 52.2 +1.0
comp=Z,5.7nm,0.5s
PDG Podgorica 85.45 322⇓ iP pP 12 27 07.8 +2.8
BFO Black Forest 85.62 331 i P P 12 26 52.7 +0.3
FETA Feichten 85.74 329 i PcP P 12 26 53.2 0.0
comp=Z,5.6nm,0.8s
DAVA Damuels 85.87 330 i PcP P 12 26 53.9 0.0
comp=Z,7.4nm,0.8s
FUORN Ofenpass-Fuorn 86.25 329 eP P 12 26 58.3 +2.4
comp=Z,14nm,0.6s
MNTX Cornudas Mount 86.44 52 eP P 12 26 56.6 -0.1
comp=Z,7.1nm,1.1s
AMTX Amarillo 86.54 48 eP P 12 26 58.2 +0.9
comp=Z,14nm,1.1s
LAST Lasithi 87.36 313⇑ iP sP 12 27 21.3 +1.6
TBI Tubuai 87.72 122 eLR LR 12 54 27.7
comp=Z,223nm,34.5s
TXAR Lajitas Array 89.12 53 P P 12 27 09.7 0.0
comp=Z,4.3nm,0.8s,baz=295,slow=3.6,SNR=42
MIAR Mount Ida 91.42 43 eP P 12 27 20.5 +0.3
MIAR pmax pmax
comp=Z,6.0nm,0.8s
MIAR Mount Ida 91.42 43 eP P 12 27 20.5 +0.3
comp=Z,6.2nm,0.8s
WHAR Wooly Hollow 91.55 42 eP P 12 27 20.9 0.0
comp=Z,8.9nm,0.8s
LMN Caledonia Moun 93.62 19 eP P 12 27 32.6 +2.4
comp=Z,15nm,0.8s
ZAIG Zacatecas 94.32 57 eP P 12 27 34.9 +0.7
comp=Z,4.4nm,0.9s
SBA Scott Base 115.78 175 ePKIKP PKPdf 12 32 54.4 -0.5
SBA Scott Base 115.78 175 ePKPdf PKPdf 12 32 54.4 -0.5
TORD Torodi Ar. Bea 117.92 316 PP PP 12 34 19.9 +5.4
comp=Z,1.4nm,0.9s,baz=30,slow=6.9,SNR=4.3
VNA2 Neumayer--Watz 142.84 196 PKP PKPpre 12 33 40.9
baz=92,slow=2.5
VNA3 Neumayer Olymp 143.06 194 PKP PKPab 12 33 40.8 -1.2
VNA1 Neumayer--Stat 143.23 196 PKP PKPab 12 33 42.0 -0.6
LPAZ La Paz 145.64 61 PKPbc PKPdf 12 33 53.1 -0.3
comp=Z,11nm,0.8s,baz=334,slow=2.4,SNR=32
PB01 IPOC Station P 147.73 69 ePKPdf PKPdf 12 33 56.0 -0.2
PB04 IPOC Station P 147.99 72 ePKPbc PKPbc 12 33 59.3 -0.5
PB10 IPOC Station P 148.34 74 ePKPdf PKPbc 12 33 59.3 -1.2
LVC Limon Verde 149.08 71 ePKPdf PKPdf 12 34 00.0 +1.3
LCO Las Campanas 150.91 83 ePKPbc PKPbc 12 34 05.9 -1.0
ROC1 El Roble 152.13 91 ePKPbc PKPbc 12 34 08.8 -0.9
PLCA Paso Flores 153.97 108 PKPbc PKPbc 12 34 12.7 -0.5
comp=Z,4.4nm,1.0s,baz=328,slow=2.1,SNR=6.3
PLCA PKPab **PKPab 12 34 27.4 +0.6**
comp=Z,7.8nm,1.1s,baz=254,slow=5.3,SNR=9.7
CPUP Villa Florida 159.78 63 PKPab PKPab 12 34 50.9 -1.1
comp=Z,4.7nm,1.1s,baz=340,slow=6.5,SNR=4.4

*ISCJB **15** 12:15:42.9±0.3, 1°.22S±0°.04×80°.39W±0°.04, h16km, mb4.4/31, MS4.1/2, Error ellipse: s-maj=6.5km s-min=5.0km az=172.4*
*NEIC **15** 12:15:48.9±1.0, 1°.08S×80°.26W, h50km±11km, mb4.6/25, MD4.4(IGQ), Error ellipse: s-maj=9.3km s-min=7.5km az=57.0*
NEIC Felt [III] at Manta and [II] at Bahia de Caraquez. Also felt at Esmeraldas, Guayaquil and Portoviejo.
*IDC **15** 12:15:51.2±2.4, 1°.18S×80°.00W, h75km±23km, mb3.5/10, mb1 3.8/15, mb1mx3.6/41, mbtmp3.9/15, MS3.2/4, Ms1 3.2/4, ms1mx3.0/19, Error ellipse: s-maj=24.2km s-min=13.3km az=82.0*

ISC 15 12:15:44.8±0.4, 1°.10S±0°.05×80°.21W±0°.07, h16km, n66, σ1.984/62, mb4.6/31, Near coast of Ecuador

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OTAV	**Otavalo**	**2.21**	**53**	*e*Pn	**Pb**	**12 16 23.9**	**-0.6**
OTAV	**Otavalo**	**2.21**	**53**	*e*P	**Pn**	**12 16 22.0**	**+0.8**
GRGC	**Isla de Gorgon**	**4.56**	**27**	*e*P	**Pn**	**12 16 55.4**	**+2.2**
POPC	**Popayan, Colom**	**5.06**	**44**	*e*P	**Pn**	**12 17 03.9**	**+3.7**
FLOC	**Florencia**	**5.28**	**60**	*e*P	**Pn**	**12 17 06.7**	**+3.6**
MALC	**Bahia Malaga**	**5.84**	**30**	*e*P	Pn	12 17 16.9	+6.2
BETC	**Betania**	**6.07**	**52**	*e*P	Pn	12 17 19.7	+5.7
ATAH	**Atahualpa**	**6.26**	**163**	P	**Pn**	**12 17 20.2**	**+3.2**
	5.3nm,0.3s,baz=351,slow=6.6,SNR=13						
ATAH				S	**Sn**	**12 18 28.8**	**+0.2**
	3.2nm,0.3s,baz=36,slow=19,SNR=2.6						
ATAH				LR	LR	12 19 46.4	
	comp=Z,432nm,20.1s,baz=339,slow=38						
PRAC	**Prado**	**7.16**	**48**	*e*P	**Pn**	**12 17 32.2**	**+3.3**
SJAC	**San Juan de Ar**	**7.62**	**55**	*e*P	Pn	12 17 40.6	+5.3
GUYC	**Guyana, Colomb**	**7.92**	**37**	*e*P	Pn	12 17 45.2	+5.5
ROSC	**El Rosal**	**8.33**	**45**	P	**Pn**	**12 17 49.2**	**+3.8**
	8.3nm,0.3s,baz=214,slow=12,SNR=19						
ROSC				LR	LR	12 20 58.1	
	comp=Z,81nm,19.2s,baz=148,slow=37						
NORC	**Norcasia**	**8.50**	**39**	*e*P	**Pn**	**12 17 51.4**	**+4.0**
HELC	**Santa Helena**	**8.62**	**33**	*e*P	Pn	12 17 54.8	+5.5
RUSC	**La Rusia**	**9.95**	**46**	*e*P	**Pn**	**12 18 08.4**	**+0.8**
PAYG	**Puerto Ayora**	**10.08**	**272**	*e*Pn	**Pn**	**12 18 10.7**	**+1.6**
CAPC	**Capurgana**	**10.08**	**16**	*e*P	Pn	12 18 15.7	+6.7
BCIP	**Isla Barro Col**	**10.20**	**2**	*e*Pn	Pn	12 18 16.4	+5.7
NNA	**Nana**	**11.32**	**163**	P	**Pn**	**12 18 27.3**	**+1.2**
	4.3nm,0.3s,baz=320,slow=12,SNR=7.8						
NNA				S	**Sn**	**12 20 29.7**	**-2.7**
	8.4nm,0.3s,baz=47,slow=8.7,SNR=9.8						
NNA				LR	LR	12 23 49.5	
	comp=Z,94nm,20.1s,baz=338,slow=43						
NNA	**Nana**	**11.32**	**163**	*e*Pn	**Pn**	**12 18 27.2**	**+1.2**
NNA				*e*Sn	**Sn**	**12 20 30.4**	**-2.1**
SDV	**Santo Domingo**	**13.77**	**44**	P	**Pn**	**12 19 01.8**	**+2.2**
	0.4nm,0.3s,baz=277,slow=8.1,SNR=3.3						
SAML	**Samuel**	**18.66**	**115**	*e*P	**P**	**12 20 02.6**	**+0.4**
	10nm,0.9s						
LPAZ	**La Paz**	**19.23**	**142**	P	**P**	**12 20 08.8**	**-0.3**
	0.1nm,0.3s,baz=323,slow=5.1,SNR=3.0						
MTDJ	**Mount Denham**	**19.38**	**8**	*e*P	**Pn**	**12 20 11.0**	**-0.4**
	24nm,0.9s						
PTGA	**Pitinga**	**20.25**	**89**	P	**P**	**12 20 19.0**	**-0.6**
	0.9nm,0.4s,baz=342,slow=19,SNR=2.0						
PTGA	**Pitinga**	**20.25**	**89**	*e*P	**P**	**12 20 20.1**	**+0.5**
	5.8nm,0.8s						
PB11	**IPOC Station P**	**21.23**	**152**	*e*P	**P**	**12 20 33.2**	**+2.9**
	17nm,0.9s						
SJG	**San Juan**	**23.58**	**35**	P	**P**	**12 20 54.9**	**0.0**
	12nm,0.7s,baz=193,slow=5.3,SNR=5.9						
SJG	**San Juan**	**23.58**	**35**	*e*P	**P**	**12 20 55.8**	**+0.9**
	21nm,1.0s						
HUMP	**Col San Antoni**	**23.78**	**36**	*e*P	**P**	**12 20 58.7**	**+1.9**
	18nm,0.9s						
MTP	**Monte Pirata**	**23.92**	**36**	*e*P	**P**	**12 20 59.2**	**+1.0**
	106nm,1.7s						
SIV	**San Ignacio**	**23.98**	**129**	P	**P**	**12 20 57.4**	**-1.5**
	2.1nm,0.7s,baz=275,slow=19,SNR=3.7						
LVC	**Limon Verde**	**24.04**	**154**	*e*P	**P**	**12 21 01.7**	**+2.0**
FDF	**Fort de France**	**24.56**	**49**	*e*P	**P**	**12 21 04.6**	**+0.4**
	195nm,1.8s						
ROC1	**El Roble**	**32.87**	**166**	*e*P	**P**	**12 22 18.6**	**+0.2**
	12nm,0.8s						
CPUP	**Vila Florida**	**33.38**	**141**	LR	LR	12 39 03.9	
	comp=Z,61nm,19.2s,baz=302,slow=42						
LRAL	**Lakeview Retre**	**34.55**	**350**	*e*P	**P**	**12 22 32.6**	**0.0**
	5.5nm,0.7s						
TXAR	**Lajitas Array**	**37.66**	**325**	P	**P**	**12 23 02.4**	**+2.8**
	0.3nm,0.7s,baz=143,slow=9.1,SNR=3.1						
TXAR				PcP	**PcP**	**12 25 16.0**	**-0.9**
	0.4nm,0.8s,baz=165,slow=5.2,SNR=4.1						
WVT	**Waverly**	**37.71**	**350**	*e*P	**P**	**12 22 57.9**	**-1.8**
	5.7nm,1.1s						
SLBS	**Sierra La Lagu**	**37.97**	**312**	*e*P	**P**	**12 23 02.8**	**+0.6**
	33nm,1.5s						
PLCA	**Paso Flores**	**40.41**	**169**	P	**P**	**12 23 21.6**	**-0.8**
	3.6nm,0.8s,baz=0.8,slow=9.6,SNR=11						
MSTX	**Muleshoe**	**40.82**	**331**	*e*P	**P**	**12 23 25.6**	**-0.3**
	4.6nm,0.8s						
ANMO	**Albuquerque**	**43.46**	**328**	*e*P	**P**	**12 23 46.8**	**-0.8**
	4.3nm,0.9s						
JFWS	**Jewell Farm**	**44.74**	**350**	*e*P	**P**	**12 23 55.7**	**-1.7**
	29nm,1.4s						
SDCO	**Great Sand Dun**	**45.17**	**331**	*e*P	**P**	**12 24 02.3**	**+1.0**
	2.2nm,0.8s						
LONY	**Lake Ozonia**	**45.80**	**6**	*e*P	**P**	**12 24 05.2**	**-0.5**
	13nm,1.3s						
X16A	**Lo Mia Camp, P**	**45.89**	**323**	*e*P	**P**	**12 24 08.1**	**+1.2**
	2.2nm,0.9s						
WUAZ	**Wupatki**	**46.61**	**324**	*e*P	**P**	**12 24 12.0**	**-0.5**
	2.8nm,0.8s						
PDAR	**Pinedale Array**	**51.03**	**332**	P	**P**	**12 24 48.4**	**+1.9**
	0.1nm,0.4s,baz=156,slow=6.7,SNR=2.9						
NVAR	**Mina Array Bea**	**52.68**	**322**	P	**P**	**12 24 59.6**	**+0.7**
	0.3nm,0.3s,baz=129,slow=8.3,SNR=3.3						
NEW	**Newport**	**58.67**	**332**	*e*P	**P**	**12 25 41.1**	**-0.4**
	5.0nm,0.9s						
H04A	**Detroit Lake**	**58.88**	**326**	*e*P	**P**	**12 25 42.4**	**-0.6**
	9.9nm,0.9s						
FRB	**Frobisher Bay**	**65.27**	**6**	P	**P**	**12 26 23.6**	**-1.9**
	26nm,0.7s,baz=289,slow=5.9,SNR=7.8						
YKA	**Yellowknife Ar**	**68.52**	**344**	P	**P**	**12 26 45.2**	**-1.0**
	0.7nm,0.8s,baz=133,slow=6.2,SNR=4.2						
SCM	**Sheep Creek Mo**	**80.34**	**334**	*e*P	**P**	**12 27 53.1**	**-2.1**
	11nm,0.8s						
ILAR	**Eielson Array**	**81.23**	**337**	P	**P**	**12 27 59.7**	**0.0**
	0.5nm,0.9s,baz=113,slow=2.3,SNR=2.7						
RND	**Reindeer**	**81.55**	**335**	*e*P	**P**	**12 28 01.6**	**0.0**
	24nm,1.9s						
TORD	**Torodi Ar. Bea**	**82.37**	**77**	P	**P**	**12 28 05.2**	**-1.6**
	1.6nm,0.9s,baz=277,slow=6.2,SNR=9.0						
RSO	**Redoubt South**	**82.41**	**332**	*e*P	**P**	**12 28 04.0**	**-2.3**
PPLA	**Purkeypile**	**82.83**	**334**	*e*P	**P**	**12 28 07.6**	**-0.8**
	43nm,1.7s						
CAST	**Castle Rocks**	**82.94**	**334**	*e*P	**P**	**12 28 08.2**	**-0.5**
	22nm,1.9s						
SNAA	**Sanae**	**85.00**	**162**	PKP	**PKiKP**	**12 33 33.7**	**+2.6**
WMQ	**Urumqi**	**136.12**	**13**	PKP	**PKPdf**	**12 35 05.3**	**-0.5**
WMQ				LR	LR		
	comp=N,80nm,11.2s						
WMQ				LR	LR		
	comp=E,71nm,13.0s						
WMQ				LR	LR		
	comp=Z,42nm,22.6s						
ASAR	**Alice Springs**	**138.71**	**231**	PKP	**PKPdf**	**12 35 07.1**	**-4.0**
	comp=Z,0.3nm,0.6s,baz=116,slow=1.3,SNR=2.9						
WRA	**Warramunga Arr**	**140.19**	**236**	PKhKP	PKPpre	12 35 05.3	
	comp=Z,0.4nm,0.6s,baz=117,slow=2.0,SNR=6.2						
WRA				PKP	**PKPdf**	**12 35 11.7**	**-2.2**
	comp=Z,1.2nm,1.1s,baz=108,slow=2.4,SNR=4.9						
MTN	**Manton Dam**	**145.95**	**245**	*e*PKPdf	**PKPdf**	**12 35 22.4**	**-1.7**

*ISCJB **15** 12:20:56.2±0.3, 6°.19N±0°.04×133°.38W±0°.06, h10km, mb3.6/2, Error ellipse: s-maj=5.6km s-min=2.6km az=153.0*
*IDC **15** 12:20:58.3±0.8, 65°.38N×133°.71W, h0km, mb3.6/2, mb1 3.7/6, mb1mx3.5/50, mbtmp3.6/6, ML3.7/4, MS2.7/1, Ms1 2.7/1, ms1mx2.3/45, Error ellipse: s-maj=11.6km s-min=9.5km az=36.0*
*PGC **15** 12:20:59.6±0.0, 65°.28N×133°.53W, h5km, ML3.8/11, 243km Sse of Fort McPherson, Nt Northern Yukon Territory, Canada*

ISC 15 12:20:57.5±0.6, 65°.17N±0°.04×133°.41W±0°.04, h10km, n48, σ1980/61, Northern Yukon Territory

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DAWY	**Dawson**	**2.81**	**249**	Pn	**Pn**	**12 21 44.5**	**+2.0**
DAWY				Sg	**Sb**	**12 22 21.5**	**-0.6**
INK	**Inuvik**	**3.15**	**359**	Pn	**Pn**	**12 21 47.8**	**+0.7**
	3.1nm,0.3s,baz=179,slow=16,SNR=186						
INK				Lg	Lg	12 22 31.4	
	40nm,0.3s,baz=267,slow=18,SNR=8.5						
INK	**Inuvik**	**3.15**	**359**	Pn	**Pn**	**12 21 47.5**	**+0.4**
SMPN	**Simpson Lake**	**4.06**	**38**	Pn	**Pn**	**12 22 01.9**	**+2.3**
SMPN				Sn	**Sn**	**12 22 47.4**	**+0.2**
BVCY	**Beaver Creek**	**4.31**	**233**	Pn	**Pn**	**12 22 05.3**	**+2.2**
BVCY				Sn	**Sn**	**12 22 53.4**	**+0.1**
BVCY				Sg	**Sg**	**12 23 13.3**	**-2.4**
YUK1	**Sand Pete Hill**	**4.39**	**230**	Pn	**Pn**	**12 22 06.0**	**+1.7**
YUK1				Sn	**Sn**	**12 22 55.6**	**+0.3**
YUK5	**Granite Creek**	**4.53**	**208**	Pn	**Pn**	**12 22 08.6**	**+2.4**
YUK5				Sn	**Sn**	**12 22 59.8**	**+0.9**
WHY	**Whitehorse**	**4.58**	**189**	Pn	Pn	12 22 10.4	+3.6
WHY				Sg	**Sg**	**12 23 24.3**	**-0.1**
YUK3	**Moose Creek**	**4.65**	**226**	Pn	**Pn**	**12 22 10.2**	**+2.3**
YUK3				Sn	**Sn**	**12 23 02.6**	**+0.7**
YUK3				Sg	**Sg**	**12 23 23.7**	**-2.9**
HYT	**Haines Junctio**	**4.75**	**205**	Pn	Pn	12 22 12.2	+3.1
HYT				Sn	**Sn**	**12 23 05.9**	**+1.7**
HYT				Sg	**Sg**	**12 23 26.7**	**-3.0**
YUK2	**White River**	**4.76**	**228**	Pn	**Pn**	**12 22 11.6**	**+2.3**
YUK2				Sn	**Sn**	**12 23 04.8**	**+0.3**
YUK6	**Outpost Mounta**	**4.80**	**210**	Pn	Pn	12 22 13.1	+3.0
YUK6				Sg	**Sg**	**12 23 28.3**	**-3.4**
DOT	**Dot Lake**	**4.87**	**257**	Pn	**Pn**	**12 22 11.5**	**+0.8**
DOT				Sn	**Sn**	**12 23 05.8**	**-1.3**
YUK7	**Dusty Glacier**	**5.14**	**207**	Pn	Pn	12 22 17.8	+3.2
YUK7				Sn	**Sn**	**12 23 14.4**	**+0.4**
YUK7				Sg	**Sg**	**12 23 39.3**	**-3.0**
CTGM	**Chitina Glacie**	**5.55**	**224**	Pn	**Pn**	**12 22 22.9**	**+2.7**
CTGM				Sn	**Sn**	**12 23 23.2**	**-0.8**
PAX	**Paxson**	**5.73**	**253**	Pn	**Pn**	**12 22 23.1**	**+0.5**
ILAR	**Eielson Array**	**5.74**	**272**	Pn	**Pn**	**12 22 22.1**	**-0.5**
	0.3nm,0.3s,baz=78,slow=13,SNR=11						
ILAR				Lg	Lg	12 23 56.5	
	1.8nm,0.3s,baz=76,slow=27,SNR=4.5						
BALM	**Baldy**	**5.80**	**228**	Pn	**Pn**	**12 22 25.7**	**+2.1**
PLBC	**Pleasant Camp**	**5.90**	**195**	Pn	Pn	12 22 28.0	+3.2
PLBC				Sg	Sb	12 24 00.6	+10
DHRN	**Dharma Camp**	**5.95**	**65**	Pn	**Pn**	**12 22 27.1**	**+1.7**
DLBC	**Dease Lake**	**6.95**	**165**	Pn	Pn	12 22 43.5	+4.3
	2.3nm,0.3s,baz=353,slow=8.6,SNR=38						
DLBC				Lg	Lg	12 24 39.3	
	1.4nm,0.3s,baz=265,slow=23,SNR=5.8						
DLBC				LR	LR	12 25 30.9	
	comp=Z,56nm,19.7s,baz=101,slow=38						
DLBC	**Dease Lake**	**6.95**	**165**	Pn	Pn	12 22 43.2	+3.9
DLBC				Sg	**Sg**	**12 24 38.4**	**-1.8**
COLD	**Coldfoot**	**7.09**	**294**	Pn	**Pn**	**12 22 41.8**	**+0.5**
KUKN	**Kugluktuk,NWT**	**7.78**	**62**	Pn	**Pn**	**12 22 51.4**	**+0.8**
KUKN				Sn	**Sn**	**12 24 13.9**	**-4.7**
FNBB	**Fort Nelson**	**7.97**	**137**	Pn	Pn	12 22 56.4	+3.2
YKR1	**Yellowknife Ar**	**8.58**	**100**	Pn	**Pn**	**12 23 02.9**	**+1.4**
YKR2	**Yellowknife Ar**	**8.60**	**100**	Pn	**Pn**	**12 23 03.3**	**+1.4**
YKR3	**Yellowknife Ar**	**8.62**	**100**	Pn	**Pn**	**12 23 03.7**	**+1.6**
YKR4	**Yellowknife Ar**	**8.64**	**100**	Pn	**Pn**	**12 23 04.0**	**+1.6**
YKB0	**Yellowknife Ar**	**8.67**	**99**	Pn	**Pn**	**12 23 04.7**	**+1.8**
YKR6	**Yellowknife Ar**	**8.68**	**99**	Pn	**Pn**	**12 23 04.4**	**+1.4**
YKB9	**Yellowknife Ar**	**8.68**	**99**	Pn	**Pn**	**12 23 04.7**	**+1.7**
YKW3	**Yellowknife Ar**	**8.69**	**99**	Pn	**Pn**	**12 23 05.0**	**+1.9**
YKW3				Sn	**Sn**	**12 24 37.8**	**-3.1**
YKB8	**Yellowknife Ar**	**8.69**	**99**	Pn	**Pn**	**12 23 04.9**	**+1.8**
YKB7	**Yellowknife Ar**	**8.70**	**99**	Pn	**Pn**	**12 23 04.7**	**+1.5**
YKR7	**

CUKAN	**kangal_SIVAS**	**0.69**	**9**	*i* P	Pg	12 24 35.6	+0.5
ELZG	**Elazig**	**1.30**	**95**	*i* P	Pg	12 24 46.7	0.0
ELZG				*i* S	Sn	12 25 05.6	+1.3

TEH ***15*** *12:24:47.0, 38°.55N×44°.93E, h5km, ML2.7*
CSEM ***15*** *12:24:47.0, 38°.55N×44°.93E, h5km, ML2.7*
ISCJB ***15*** *12:24:49.1±1.2, 38°.52N±0°.07×45°.12E±0°.09, h15km, Error ellipse: s-maj=12.4km s-min=7.4km az=44.8*
ISC 15 12:24:50.0±1.5, 38°.52N±0°.06×45°.20E±0°.09, h15km, n10, σ0.71/13, Iran-Armenia-Azerbaijan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ISHB	**Shabestar**	**0.40**	**125**	*e*Pg	**Pg**	**12 24 58.1**	**-0.1**
ISHB				*e*AMB	AMB	12 24 58.8	
	comp=Z,16μm,0.0s						
ISHB				*e*Sg	**Sb**	**12 25 05.9**	**+0.9**
IMRD	**Marand**	**0.44**	**64**	*e*Pg	**Pg**	**12 24 58.5**	**-0.4**
IMRD				*e*Sg	**Sb**	**12 25 06.6**	**+0.5**
IMRD				*e*AMB	AMB	12 25 07.5	
	comp=Z,28μm,0.1s						
IMRD	**Marand**	**0.44**	**64**	*e*Pg	**Pg**	**12 24 58.5**	**-0.4**
IMRD				*e*Sg	**Sb**	**12 25 06.6**	**+0.5**
ITBZ	**Tabriz**	**0.80**	**111**	eAMB	AMB	12 25 05.9	
	comp=Z,2μm,0.1s						
ITBZ				*e*Pg	**Pg**	**12 25 04.7**	**-0.8**
IBST	**Bostanabad**	**1.57**	**121**	*e*Pn	**Pb**	**12 25 18.3**	**-0.5**
IBST				*e*AMB	AMB	12 25 18.7	
	comp=Z,230nm,0.1s						
IBST	**Bostanabad**	**1.57**	**121**	*e*Pn	**Pb**	**12 25 18.3**	**-0.5**
DGRG	**David-gareji**	**2.93**	**3**	P	**Pb**	**12 25 41.3**	**-0.6**
DGRG	**David-gareji**	**2.93**	**3**	P	**Pb**	**12 25 41.3**	**-0.7**
GUDG	**Gudauri**	**3.98**	**352**	P	**Pn**	**12 25 51.9**	**+1.2**
ONI	**Oni**	**4.28**	**342**	P	**Pn**	**12 25 54.7**	**+0.1**

CSEM ***15*** *12:28:17.2, 40°.76N×16°.27E, h8km, MD1.8/5*
ROM 15 12:28:17.2±0.5, 40°.76N×16°.27E, h8km±5km, Md1.8/5, Ml1.3/5, Error ellipse: s-maj=2.9km s-min=1.5km az=172.0, Southern Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ACER	**Acerenza**	**0.25**	**277**	Pg	Pg	12 28 23.0	+0.8
ACER				Sg	Sg	12 28 27.7	+2.2
	53nm,0.3s						
ACER	**Acerenza**	**0.25**	**277**	Pg	Pg	12 28 23.0	+0.8
ACER				Sg	Sg	12 28 27.7	+2.2
	53nm,0.3s						
PTRP	**Pietrapertosa**	**0.28**	**214**	Pg	Pb	12 28 24.6	+0.1
PTRP				Sg	Sb	12 28 28.8	-0.6
	23nm,0.6s						
PTRP	**Pietrapertosa**	**0.28**	**214**	Pg	Pb	12 28 24.6	+0.1
PTRP				Sg	Sb	12 28 28.8	-0.6
	23nm,0.6s						
AMUR	**Altamura**	**0.30**	**59**	Pg	Pb	12 28 24.1	-0.7
AMUR				Sg	Sb	12 28 29.1	-0.8
	25nm,0.2s						
AMUR	**Altamura**	**0.30**	**59**	Pg	Pb	12 28 24.1	-0.7
AMUR				Sg	Sb	12 28 29.1	-0.8
	25nm,0.2s						
MATE	**Matera**	**0.35**	**107**	Pg	Pb	12 28 24.9	-0.7
MATE				Sg	Sb	12 28 30.7	-0.6
	25nm,0.2s						
MATE	**Matera**	**0.35**	**107**	Pg	Pb	12 28 24.9	-0.7
MATE				Sg	Sb	12 28 30.7	-0.6
	25nm,0.2s						
LTRZ	**Laterza**	**0.45**	**110**	Pg	Pg	12 28 26.6	+0.7
LTRZ				Sg	Sb	12 28 33.5	-0.7
	29nm,0.2s						
LTRZ	**Laterza**	**0.45**	**110**	Pg	Pg	12 28 26.6	+0.7
LTRZ				Sg	Sb	12 28 33.5	-0.7
	29nm,0.2s						
SIRI	**Monte Sirino -**	**0.65**	**208**	Pg	Pg	12 28 29.7	0.0
SIRI				Sg	Sg	12 28 38.9	+0.7
SIRI	**Monte Sirino -**	**0.65**	**208**	Pg	Pg	12 28 29.7	0.0
SIRI				Sg	Sg	12 28 38.9	+0.7

NIED ***15*** *12:32:00, 39°.80N×142°.70E, h20km, Mw4.5 Best double couple: M0=5.98000×10^15 NP1:φ=158.00000°, δ57.00000°, λ14.00000°. NP2:φ=60.00000°, δ78.00000°, λ146.00000°.*
JMA ***15*** *12:32:58.4±0.2, 39°.77N×142°.73E, h31km±2km, M4.7*
JMA Felt II J1.
ISCJB ***15*** *12:32:58.4±0.6, 39°.88N±0°.03×142°.69E±0°.03, h20km±4km, mb4.7/163, MS3.9/16, Error ellipse: s-maj=5.3km s-min=3.0km az=147.5*
MOS ***15*** *12:33:01.8±0.8, 39°.98N×142°.57E, h43km, mb5.0/70, Error ellipse: s-maj=7.4km s-min=4.5km az=100.3*
IDC ***15*** *12:33:02.0±1.7, 39°.75N×142°.76E, h45km±15km, mb4.2/37, mb1 4.3/44, mb1mx4.2/59, mbtmp4.4/44, ML3.9/6, MS3.7/13, Ms1 3.7/13, ms1mx3.6/43, Error ellipse: s-maj=13.3km s-min=10.6km az=101.0*
NEIC ***15*** *12:33:03.2±0.6, 39°.85N×142°.61E, h46km±5km, mb4.8/85, Error ellipse: s-maj=5.5km s-min=3.4km az=143.0*
NEIC Recorded [2 JMA] in Iwate and Miyagi.
ISC 15 12:32:59.9±0.7, 39°.84N±0°.04×142°.75E±0°.04, h27km±4km, n339, σ19/75/351, mb4.7/165, MS3.8/16, 12C-9D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**0.69**	**278**	P	**Pb**	**12 33 11.6**	**-1.7**
JTH				*e*S	**Sb**	**12 33 21.7**	**-0.7**
MIYJ	**Miyakonagasawa**	**0.76**	**250**	P	**Pb**	**12 33 12.1**	**-2.5**
MIYJ				*e*S	**Sb**	**12 33 21.7**	**-2.9**
JANG	**Nango**	**1.08**	**300**	P	**Pn**	**12 33 17.4**	**-2.0**
JKZ	**Kuzumaki**	**1.10**	**278**	P	**Pn**	**12 33 18.2**	**-1.4**
JKZ				*e*S	**Sn**	**12 33 32.7**	**-1.2**
OFUJ	**Ofunato**	**1.13**	**228**	P	**Pn**	**12 33 17.3**	**-2.7**
OFUJ				*e*S	**Sn**	**12 33 30.9**	**-3.7**
JOM	**Ohasama**	**1.18**	**252**	P	**Pn**	**12 33 19.0**	**-1.7**
JOM				*e*S	**Sn**	**12 33 33.9**	**-2.0**
JMK	**Ichinoseki**	**1.48**	**234**	P	**Pn**	**12 33 23.2**	**-1.6**
JMK				S	**Sn**	**12 33 40.5**	**-2.7**
JTM	**Tenmabayashi**	**1.59**	**307**	P	**Pn**	**12 33 25.8**	**-0.5**
JTM				*e*S	**Sn**	**12 33 46.8**	**+0.8**
JAH	**Hinai**	**1.66**	**283**	P	**Pn**	**12 33 27.0**	**-0.2**
JAH				*e*S	**Sn**	**12 33 48.7**	**+1.1**
JRG	**Rokugo**	**1.69**	**255**	P	**Pn**	**12 33 27.1**	**-0.6**
JRG				S	**Sn**	**12 33 49.2**	**+0.7**
ERM	**Erimo**	**2.19**	**8**	*e*P	**Pn**	**12 33 35.4**	**+0.8**
ERM	**Erimo**	**2.19**	**8**	*e*Pn	**Pn**	**12 33 35.4**	**+0.8**
ASAJ	**Asahikawa**	**4.27**	**359**	P	**Pn**	**12 34 04.7**	**+1.5**
	7.7nm,0.3s,baz=213,slow=9.6,SNR=69						
ASAJ				S	**Sb**	**12 35 02.0**	**-3.4**
	4.7nm,0.3s,baz=311,slow=30,SNR=4.0						
YUK	**Yuzh-Kuril'sk**	**4.79**	**28**	*i* P	**Pn**	**12 34 09.3**	**-1.0**
YUK				*i* S	**Sn**	**12 35 04.1**	**-0.7**
YUK				pmax	pmax		
	comp=N,253nm,0.5s						
YUK				pmax	pmax		
	comp=Z,780nm,0.5s						
YUK				pmax	pmax		
	comp=E,310nm,0.6s						
YUK				MLR	MLR		
	comp=Z,998nm,12.0s						
MJAR	**Matsushiro Arr**	**4.86**	**229**	P	**Pn**	**12 34 12.6**	**+1.2**
	comp=Z,8.2nm,0.3s,baz=39,slow=11,SNR=60						
MJAR				S	**Sn**	**12 35 10.6**	**+3.9**
	comp=Z,4.0nm,0.3s,baz=30,slow=21,SNR=4.9						
MJAR				LR	LR	12 36 11.5	
	comp=Z,968nm,18.1s,baz=45,slow=40						
MAJO	**Matsushiro**	**4.86**	**229**	*c* *i* P	**Pn**	**12 34 12.3**	**+1.0**
MAJO	**Matsushiro**	**4.86**	**229**	*e*Pn	**Pn**	**12 34 12.9**	**+1.6**
MAT	**Matsushiro**	**4.86**	**229**	P	**Pn**	**12 34 12.6**	**+1.3**
MAT				*e*S	**Sn**	**12 35 10.3**	**+3.6**
SHO	**Shikotan**	**5.05**	**36**	*e*P	**Pn**	**12 34 11.6**	**-2.2**
SHO				*e*S	**Sn**	**12 35 06.9**	**-4.3**
SHO				pmax	pmax		
	comp=E,291nm,0.4s						
SHO				pmax	pmax		
	comp=Z,256nm,0.4s						
SHO				pmax	pmax		
	comp=N,79nm,0.3s						
INU	**Inuyama**	**6.39**	**227**	*e*Pn	**Pn**	**12 34 34.0**	**+1.8**
KUR	**Kuril'sk**	**6.58**	**33**	*e*P	**Pn**	**12 34 34.5**	**-0.3**
KUR				*e*S	**Sn**	**12 35 46.8**	**-2.1**
KUR				pmax	pmax		
	comp=Z,136nm,0.6s						
KUR				pmax	pmax		
	comp=N,34nm,0.2s						
KUR				pmax	pmax		
	comp=E,81nm,0.5s						
YSS	**Yuzh-Sakhalins**	**7.11**	**0**	*e*P	**Pn**	**12 34 43.2**	**+1.1**
YSS				pmax	pmax		
	comp=Z,30nm,1.1s						
YSS				MLR	MLR		
	comp=N,700nm,14.0s						
YSS				MLR	MLR		
	comp=Z,800nm,14.0s						
YSS				MLR	MLR		
	comp=E,200nm,15.0s						
YSS				MLR	MLR		
	comp=N,1μm,21.0s						
YSS				MLR	MLR		
	comp=E,1μm,21.0s						
YSS				MLR	MLR		
	comp=Z,1μm,21.0s						
JHJ2	**Mitsune**	**7.12**	**200**	*e*Pn	**Pn**	**12 34 40.3**	**-2.0**
JHJ	**Hachijo jima 2**	**7.12**	**200**	P	**Pn**	**12 34 40.5**	**-1.9**
	comp=Z,18nm,0.3s,baz=294,slow=21,SNR=25						
JHJ				S	**Sn**	**12 35 55.8**	**-6.6**
	comp=Z,60nm,0.3s,baz=55,slow=23,SNR=6.8						
JHJ				LR	LR	12 37 26.2	
	comp=Z,595nm,20.3s,baz=316,slow=38						
VLA	**Vladivostok**	**8.79**	**295**	*e*P	**Pn**	**12 35 04.8**	**-0.3**
USRK	**Ussuriysk Ar.**	**9.11**	**302**	P	**Pn**	**12 35 12.7**	**+3.1**
	comp=Z,0.9nm,0.3s,baz=112,slow=14,SNR=17						
USRK				LR	LR	12 38 25.7	
	comp=Z,490nm,19.2s,baz=105,slow=35						
HABR	**Khabarovsk**	**10.24**	**330**	*e*P	**Pn**	**12 35 22.7**	**-2.3**
HABR				*e*S	**Sn**	**12 37 16.4**	**-2.5**
HABR				pmax	pmax		
	comp=Z,5.0nm,1.3s						
HABR				MLR	MLR		
	comp=Z,269nm,11.0s						
TYV	**Tymovskoe**	**11.02**	**360**	*e*P	**Pn**	**12 35 37.5**	**+1.8**
TYV				pmax	pmax		
	comp=Z,44nm,1.0s						
JNU	**Nakatsue**	**11.67**	**239**	P	**Pn**	**12 35 45.9**	**+1.2**
	comp=Z,0.3nm,0.3s,baz=68,slow=5.4,SNR=3.4						
JNU				LR	LR	12 40 23.1	
	comp=Z,271nm,19.7s,baz=12,slow=38						
JNU	**Nakatsue**	**11.67**	**239**	*e*Pn	**Pn**	**12 35 46.4**	**+1.7**
KSRS	**Korea Array**	**11.84**	**263**	P	**Pn**	**12 35 50.5**	**+3.6**
	comp=Z,1.4nm,0.3s,baz=70,slow=14,SNR=16						
KSRS				S	**Sn**	**12 38 02.1**	**+4.1**
	comp=Z,0.3nm,0.3s,baz=74,slow=23,SNR=4.6						
KSRS				LR	LR	12 40 18.9	
	comp=Z,209nm,18.4s,baz=71,slow=37						
KSAR	**Wonju Array Be**	**11.87**	**263**	P	**Pn**	**12 35 50.5**	**+3.1**
KSAR				S	**Sn**	**12 38 02.1**	**+3.3**
KSAR	**Wonju Array Be**	**11.87**	**263**	P	**Pn**	**12 35 50.5**	**+3.1**
KSAR				S	**Sn**	**12 38 02.1**	**+3.3**
KLR	**Kul'dur**	**12.22**	**324**	P	**Pn**	**12 35 53.4**	**+1.3**
	comp=Z,0.1nm,0.3s,baz=130,slow=13,SNR=4.4						
KLR				LR	LR	12 40 46.2	
	comp=Z,433nm,18.7s,baz=140,slow=38						
CBIJ	**Chichi jima**	**12.72**	**182**	P	Pn	12 35 53.0	-6.1
CBIJ				S	Sn	12 38 01.1	-19
JCJ	**Chichijima**	**12.72**	**182**	P	Pn	12 35 53.0	-6.1
	comp=Z,8.2nm,0.3s,baz=285,slow=23,SNR=4.7						
JCJ				S	Sn	12 38 01.1	-19
	baz=324,slow=19						
NKL	**Nikolayevsk**	**13.39**	**355**	*e*P	**Pn**	**12 36 08.8**	**+0.8**
NKL				pmax	pmax		
	comp=Z,20nm,1.0s						
NKL				MLR	MLR		
	comp=N,500nm,20.0s						
NKL				MLR	MLR		
	comp=Z,600nm,20.0s						
CN2	**Changchun**	**13.49**	**293**	*e*P	**Pn**	**12 36 10.8**	**+1.3**
CN2				*e*S	**Sn**	**12 38 38.6**	**+0.1**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
CN2				pmax	pmax		
	comp=Z,200nm,3.0s						
CN2				LR	LR		
	comp=N,200nm,13.0s						
CN2				LR	LR		
	comp=E,300nm,13.0s						
CN2				LR	LR		
	comp=Z,300nm,15.0s						
SKR	**Severo-Kuril's**	**14.33**	**36**	*i* P	**Pn**	**12 36 20.9**	**0.0**
PETK	**Petropavlovsk-**	**16.75**	**33**	P	**Pn**	**12 36 48.7**	**-3.8**
	comp=Z,0.3nm,0.3s,baz=224,slow=8.5,SNR=6.2						
PETK				LR	LR	12 43 33.7	
	comp=Z,132nm,18.8s,baz=219,slow=38						
MA2	**Magadan**	**20.39**	**12**	P	**P**	**12 37 34.4**	**0.0**
	comp=Z,16nm,0.7s,baz=220,slow=9.6,SNR=17						
TIA	**Tai'an**	**20.48**	**268**	*e*P	**P**	**12 37 36.4**	**+0.7**
TIA				pmax	pmax		
	comp=Z,20nm,1.2s						
NJ2	**Nanjing**	**20.81**	**256**	*e*P	**P**	**12 37 39.4**	**+0.2**
NJ2				S	Sn	12 41 33.6	-2.2
NJ2				pmax	pmax		
	comp=Z,7.0nm,0.6s						
NJ2				LR	LR		
	comp=N,310nm,15.7s						
NJ2				LR	LR		
	comp=E,220nm,21.7s						
NJ2				LR	LR		
	comp=Z,380nm,20.6s						
YAK	**Yakutsk**	**23.60**	**345**	P	**P**	**12 38 06.3**	**-1.9**
	comp=Z,5.4nm,0.4s,baz=170,slow=0.7,SNR=5.7						
YAK	**Yakutsk**	**23.60**	**345**	*i* P	**P**	**12 38 06.4**	**-1.9**
YAK				pmax	pmax		
	comp=Z,63nm,1.0s						
YAK	**Yakutsk**	**23.60**	**345**	*e*P	**P**	**12 38 06.4**	**-1.9**
	comp=Z,50nm,0.8s						
NACB	**Ninganchiao**	**23.70**	**235**	*e*P	**P**	**12 38 10.8**	**+1.3**
	comp=Z,19nm,1.0s						
HHC	**Hu-ho-hao-te**	**23.73**	**283**	*e*P	**P**	**12 38 09.6**	**-0.3**
HHC				sP	sP	12 38 23.8	+2.9
HHC				PP	**PnPn**	**12 38 47.1**	**+9.4**
HHC				S	**S**	**12 42 13.1**	**-10**
HHC				pmax	pmax		
	comp=Z,40nm,0.9s						
HHC				pmax	pmax		
	comp=Z,160nm,4.6s						
HHC				LR	LR		
	comp=N,1μm,12.7s						
HHC				LR	LR		
	comp=E,2μm,12.9s						
HHC				LR	LR		
	comp=Z,2μm,13.2s						
SEY	**Seymchan**	**23.84**	**11**	P	**P**	**12 38 10.7**	**+0.1**
	comp=Z,49nm,0.9s,baz=197,slow=6.8,SNR=58						
SEY	**Seymchan**	**23.84**	**11**	*i* P	**P**	**12 38 11.0**	**+0.5**
SSLB	**Suanglung**	**24.38**	**235**	*e*P	**P**	**12 38 17.1**	**+1.1**
	comp=Z,80nm,2.0s						
YULB	**Yu-li**	**24.45**	**234**	*e*P	**P**	**12 38 17.8**	**+1.2**
	comp=Z,48nm,1.6s						
WHN	**Wuhan**	**24.91**	**257**	P	P	12 38 29.0	+8.4
TPUB	**Ta-pu**	**24.94**	**235**	*e*P	**P**	**12 38 21.3**	**+0.3**
	comp=Z,27nm,1.2s						
BOD	**Bodaibo**	**25.80**	**324**	*e*P	**P**	**12 38 28.5**	**0.0**
BOD				pmax	pmax		
	comp=Z,10.0nm,1.2s						
ULN	**Ulaanbaatar**	**26.77**	**299**	*e*P	**P**	**12 38 38.7**	**+1.1**
ULN				pmax	pmax		
	comp=Z,23nm,1.7s						
ULN	**Ulaanbaatar**	**26.77**	**299**	*e*P	**P**	**12 38 38.7**	**+1.1**
	comp=Z,23nm,1.7s						
SONM	**Songino Array**	**27.21**	**299**	P	**P**	**12 38 42.1**	**+0.6**
	comp=Z,1.8nm,0.6s,baz=97,slow=8.2,SNR=15						
SONM				LR	LR	12 49 58.8	
	comp=Z,335nm,18.2s,baz=100,slow=37						
XAN	**Xi'an**	**27.54**	**269**	P	**P**	**12 38 45.9**	**+1.4**
XAN				S	S	12 42 54.9	-29
XAN				pmax	pmax		
	comp=Z,6.0nm,0.5s						
XAN				pmax	pmax		
	comp=Z,58nm,5.4s						
XAN				LR	LR		
	comp=N,120nm,13.7s						
XAN				LR	LR		
	comp=E,200nm,13.5s						
XAN				LR	LR		
	comp=Z,220nm,12.3s						
H11N2	**WAKE ISLAND Hy**	**28.84**	**127**	T	T	13 09 27.6	
	baz=318,slow=75,SNR=1672						
H11N1	**WAKE ISLAND Hy**	**28.85**	**127**	T	T	13 09 27.6	
	baz=318,slow=75,SNR=1397						
H11N3	**WAKE ISLAND Hy**	**28.86**	**127**	T	T	13 09 28.1	
	baz=318,slow=75,SNR=2628						
TLY	**Talaya**	**29.38**	**307**	P	**P**	**12 39 01.7**	**+1.0**
	comp=Z,3.1nm,0.5s,baz=21,slow=20,SNR=16						
TLY	**Talaya**	**29.38**	**307**	*e*P	**P**	**12 39 00.5**	**-0.2**
TLY				pmax	pmax		
	comp=Z,8.0nm,1.2s						
TLY				MLR	MLR		
	comp=Z,185nm,16.0s						
TLY	**Talaya**	**29.38**	**307**	*e*P	**P**	**12 39 02.2**	**+1.5**
	comp=Z,19nm,1.6s						
ZAK	**Zakamensk**	**29.45**	**304**	*e*P	**P**	**12 39 01.4**	**0.0**
ZAK				pmax	pmax		
	comp=Z,9.0nm,1.2s						
H11S1	**WAKE ISLAND Hy**	**29.66**	**129**	T	T	13 10 26.1	
	baz=322,SNR=361						
H11S3	**WAKE ISLAND Hy**	**29.66**	**129**	T	T	13 10 26.6	
	baz=322,slow=74,SNR=441						
H11S2	**WAKE ISLAND Hy**	**29.67**	**129**	T	T	13 10 27.2	
	baz=322,slow=74,SNR=324						
MOY	**Mondy**	**31.02**	**306**	*e*P	P	12 39 24.3	+9.0
BILL	**Bilibino**	**31.04**	**17**	*e*P	**P**	**12 39 15.3**	**+0.2**
BILL				*i*		12 39 33.0	
BILL				*e*S	**S**	**12 44 17.4**	**-0.8**
BILL				*e*SS	**SS**	**12 46 24.9**	**-6.2**
BILL				pmax	pmax		
	comp=Z,10.0nm,1.0s						
BILL				MLR	MLR		
	comp=Z,105nm,18.0s						
BILL	**Bilibino**	**31.04**	**17**	*e*P	**P**	**12 39 15.9**	**+0.8**
	comp=Z,15nm,1.1s						
TIXI	**Tiksi**	**32.65**	**352**	P	**P**	**12 39 28.6**	**-0.5**
	comp=Z,2.5nm,0.7s,baz=138,slow=5.8,SNR=5.4						
TIXI	**Tiksi**	**32.65**	**352**	*i* P	**P**	**12 39 28.5**	**-0.6**
TIXI				pmax	pmax		
	comp=Z,3.0nm,0.8s						
TIXI	**Tiksi**	**32.65**	**352**	*e*P	**P**	**12 39 28.9**	**-0.2**
	comp=Z,3.3nm,0.8s						
GYA	**Guiyang**	**32.80**	**257**	P	**P**	**12 39 31.3**	**+0.2**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
GTA	**Gaotai**	**32.84**	**283**	*e*P	**P**	**12 39 32.4**	**+1.0**
GTA				pP	sP	12 39 41.8	-0.8
GTA				sP	pP	12 39 46.0	+6.7
GTA				S	**S**	**12 44 45.1**	**-2.0**
GTA				sS	sS	12 45 00.8	+0.6
GTA				SS	**SnSn**	**12 46 41.8**	**-2.6**
GTA				pmax	pmax		
	comp=Z,5.0nm,0.8s						
GTA				pmax	pmax		
	comp=Z,56nm,5.5s						
GTA				LR	LR		
	comp=N,120nm,12.1s						
GTA				LR	LR		
	comp=E,290nm,17.1s						
GTA				LR	LR		
	comp=Z,280nm,16.4s						
QIZ	**Qiongzhong**	**35.08**	**243**	P	**P**	**12 39 52.1**	**+1.3**
QIZ				S	**S**	**12 45 23.3**	**+1.5**
QIZ				LR	LR		
	comp=N,67nm,17.2s						
QIZ				LR	LR		
	comp=E,84nm,18.1s						
KMI	**Kunming**	**36.48**	**259**	P	**P**	**12 40 07.0**	**+3.9**
KMI				pmax	pmax		
	comp=Z,11nm,0.8s						
KMI				pmax	pmax		
	comp=Z,69nm,5.7s						
TNA	**Tin City**	**37.90**	**31**	*e*P	**P**	**12 40 16.7**	**+2.3**
	comp=Z,23nm,1.2s						
WMQ	**Urumqi**	**40.58**	**294**	P	**P**	**12 40 38.5**	**+1.4**
WMQ				pP	pP	12 40 46.5	+1.3
WMQ				sP	sP	12 40 53.9	+5.5
WMQ				S	**S**	**12 46 40.8**	**-4.1**
WMQ				sS	sS	12 46 57.9	-0.2
WMQ				SS	**SS**	**12 49 38.6**	**-6.4**
WMQ				ScS	ScS	12 50 24.1	-17
WMQ				pmax	pmax		
	comp=Z,17nm,1.2s						
WMQ				pmax	pmax		
	comp=Z,44nm,4.2s						
WMQ				LR	LR		
	comp=N,82nm,15.8s						
WMQ				LR	LR		
	comp=E,21nm,10.0s						
WMQ				LR	LR		
	comp=Z,25nm,18.6s						
ZALV	**Zalesovo Beam**	**40.85**	**310**	P	**P**	**12 40 39.6**	**+0.4**
	comp=Z,6.0nm,0.5s,baz=90,slow=8.1,SNR=27						
ZALV				PcP	**PcP**	**12 42 38.5**	**-1.0**
	comp=Z,4.2nm,0.8s,baz=93,slow=2.6,SNR=3.7						
ZALV				LR	LR	12 58 14.1	
	comp=Z,96nm,19.1s,baz=70,slow=37						
NRIK	**Noril'sk**	**41.19**	**334**	P	**P**	**12 40 42.1**	**+0.4**
	comp=Z,4.1nm,0.6s,baz=105,slow=7.9,SNR=6.5						
NRIK				LR	LR	12 58 56.6	
	comp=Z,270nm,18.6s,baz=100,slow=38						
NVS	**Novosibirsk**	**41.71**	**311**	*e*P	**P**	**12 40 46.5**	**+0.3**
NVS				pmax	pmax		
	comp=Z,17nm,1.0s						
NVS				pmax	pmax		
	comp=N,3.0nm,0.9s						
NVS				pmax	pmax		
	comp=E,16nm,1.3s						
CHTO	**Chiang Mai**	**43.04**	**254**	*e*P	**P**	**12 40 59.3**	**+1.9**
CHTO				pmax	pmax		
	comp=Z,4.0nm,0.7s						
CHTO	**Chiang Mai**	**43.04**	**254**	*e*P	**P**	**12 40 59.3**	**+1.9**
	comp=Z,3.7nm,0.7s						
CMAR	**Chiang Mai Arr**	**43.26**	**253**	P	**P**	**12 40 59.0**	**-0.2**
	comp=Z,0.5nm,0.5s,baz=40,slow=8.3,SNR=4.9						
CMAR	**Chiang Mai Arr**	**43.26**	**253**	*i* P	**P**	**12 40 58.2**	**-1.0**
CMAR				pmax	pmax		
	comp=Z,1.0nm,0.5s						
MKAR	**Makanchi Array**	**43.57**	**300**	P	**P**	**12 41 01.5**	**0.0**
	comp=Z,3.1nm,0.6s,baz=85,slow=10,SNR=34						
MKAR				LR	LR	12 59 47.6	
	comp=Z,122nm,18.4s,baz=76,slow=37						
MKAR	**Makanchi Array**	**43.57**	**300**	*e*P	**P**	**12 41 01.7**	**+0.2**
MAKZ	**Makanchi**	**43.78**	**300**	*e*P	**P**	**12 41 03.4**	**+0.3**
MAKZ				pmax	pmax		
	comp=Z,20nm,1.1s						
MAKZ	**Makanchi**	**43.78**	**300**	*e*P	**P**	**12 41 03.4**	**+0.3**
	comp=Z,20nm,1.1s						
RSO	**Redoubt South**	**44.07**	**40**	*e*P	**P**	**12 41 07.4**	**+1.9**
PPLA	**Purkeypile**	**44.28**	**37**	*e*P	**P**	**12 41 09.2**	**+2.1**
	comp=Z,45nm,1.6s						
CAST	**Castle Rocks**	**44.33**	**36**	*e*P	**P**	**12 41 09.7**	**+2.4**
	comp=Z,43nm,2.0s						
SPU	**Mount Spurr**	**44.38**	**39**	*e*P	**P**	**12 41 09.8**	**+2.0**
BPAW	**Bear Paw Mtn.**	**44.81**	**35**	*e*P	**P**	**12 41 13.2**	**+2.0**
	comp=Z,16nm,1.6s						
KTH	**Kantishna Hill**	**44.85**	**36**	*e*P	**P**	**12 41 13.7**	**+2.2**
	comp=Z,16nm,1.0s						
MLY	**Manley**	**44.92**	**33**	*e*P	**P**	**12 41 14.4**	**+2.3**
	comp=Z,7.2nm,0.9s						
BRLK	**Bradley Lake**	**45.04**	**41**	*e*P	**P**	**12 41 14.4**	**+1.4**
	comp=Z,64nm,1.8s						
KURK	**Kurchatov**	**45.08**	**306**	*e*P	**P**	**12 41 13.3**	**-0.1**
KURK				pmax	pmax		
	comp=Z,47nm,0.8s					

comp=Z,64nm,2.0s
SML Sawmill 46.12 38 *e*P **P 12 41 23.0 +1.4**
comp=Z,64nm,2.0s
COLA College 46.16 34 *e*P **P 12 41 23.7 +2.0**
COLA pmax pmax
comp=Z,12nm,0.8s
COLA College 46.16 34 *e*P **P 12 41 23.7 +2.0**
comp=Z,12nm,0.8s
CCB Clear Creek Bu 46.19 34 *e*P **P 12 41 23.3 +1.4**
comp=Z,10nm,1.5s
PDGK Podgornoye 46.44 296 P **P 12 41 24.2 0.0**
PDGK pmax pmax
comp=Z,13nm,0.7s
ILAR Eielson Array 46.57 34 P **P 12 41 26.1 +1.1**
comp=Z,4.4nm,0.8s,baz=266,slow=6.2,SNR=58
ILAR LR LR 13 03 03.7
comp=Z,48nm,19.6s,baz=312,slow=39
SCM Sheep Creek Mo 46.60 38 *e*P **P 12 41 27.0 +1.6**
SCM pmax pmax
comp=Z,18nm,1.0s
SCM Sheep Creek Mo 46.60 38 *e*P **P 12 41 27.0 +1.6**
comp=Z,18nm,1.0s
KLU Klutina 47.30 38 *e*P **P 12 41 32.4 +1.5**
comp=Z,7.3nm,0.7s
DIV Divide 47.42 39 *e*P **P 12 41 33.7 +1.9**
comp=Z,13nm,0.8s
EYAK Cordova Ski Ar 47.51 39 *e*P **P 12 41 34.4 +2.0**
comp=Z,8.8nm,0.8s
DOT Dot Lake 47.90 35 *e*P **P 12 41 36.4 +1.0**
comp=Z,36nm,1.6s
BMRM Bremner River 48.01 39 *e*P **P 12 41 38.0 +1.7**
comp=Z,15nm,1.0s
RAGM Ragged Mountai 48.06 40 *e*P **P 12 41 38.9 +2.2**
comp=Z,30nm,1.6s
MENT Mentasta 48.14 36 *e*P **P 12 41 39.3 +2.0**
comp=Z,9.2nm,1.0s
KKN Kakani 48.49 274 *e*P **P 12 41 40.1 -0.6**
comp=Z,43nm,0.6s
PKIN Phulchoki 48.50 274 *e*P **P 12 41 43.5 +2.7**
comp=Z,20nm,0.6s
DMN Daman 48.71 274 *e*P **P 12 41 43.9 +1.5**
comp=Z,10nm,0.4s
EGAK Eagle 49.01 33 *e*P **P 12 41 44.7 +0.8**
comp=Z,7.5nm,0.9s
BALM Baldy 49.08 38 *e*P **P 12 41 46.1 +1.5**
BALM pmax pmax
comp=Z,10.0nm,0.8s
BALM Baldy 49.08 38 *e*P **P 12 41 46.1 +1.5**
comp=Z,9.7nm,0.8s
TKM2 Tokmak 2 49.26 297 *e*P **P 12 41 47.1 +0.7**
TKM2 pmax pmax
comp=Z,25nm,1.0s
TKM2 Tokmak 2 49.26 297 *e*P **P 12 41 47.1 +0.7**
comp=Z,25nm,1.0s
KAPI Kappang 49.41 211 P **P 12 41 47.3 -0.1**
comp=Z,5.9nm,0.8s,baz=82,slow=14,SNR=3.1
BVAR Borovoye Array 49.50 311 P **P 12 41 48.1 +0.4**
comp=Z,3.3nm,0.6s,baz=72,slow=9.5,SNR=25
BRVK Borovoye 49.55 311 *c i*P **P 12 41 48.5 +0.3**
BRVK pmax pmax
comp=Z,5.0nm,0.7s
BRVK Borovoye 49.55 311 *e*P **P 12 41 47.9 -0.2**
comp=Z,11nm,1.0s
OTUK Ortayu 49.67 304 P **P 12 41 49.2 0.0**
OTUK pmax pmax
comp=Z,6.0nm,0.7s
KOLN Koldanda 49.79 275 *e*P **P 12 41 50.0 -0.6**
comp=Z,15nm,0.5s
DAWY Dawson 49.88 34 *e*P **P 12 41 51.4 +0.8**
comp=Z,2.3nm,0.7s
PYUN Piuthan 50.09 276 *e*P **P 12 41 53.1 +0.2**
AAK Ala-Archa 50.12 297 P **P 12 41 52.8 -0.1**
comp=Z,2.2nm,0.5s,baz=121,slow=5.9,SNR=4.9
AAK LR LR 13 04 03.2
comp=Z,90nm,18.8s,baz=58,slow=37
AAK Ala-Archa 50.12 297 *e*P **P 12 41 52.5 -0.4**
AAK pmax pmax
comp=Z,6.0nm,1.0s
AAK Ala-Archa 50.12 297 *e*P **P 12 41 53.4 +0.5**
comp=Z,26nm,1.8s
ZRNK Zerenda 50.32 311 *e*P **P 12 41 54.6 +0.5**
ZRNK pmax pmax
comp=Z,11nm,0.8s
ZRNK Zerenda 50.32 311 *e*P **P 12 41 54.6 +0.5**
comp=Z,11nm,0.8s
EKS2 Erkin-Say 50.60 297 *e*P **P 12 41 57.0 +0.5**
EKS2 pmax pmax
comp=Z,7.0nm,0.7s
EKS2 Erkin-Say 50.60 297 *e*P **P 12 41 57.0 +0.5**
comp=Z,6.6nm,0.7s
INK Inuvik 51.42 28 *e*P **P 12 42 03.6 +1.6**
INK pmax pmax
comp=Z,10.0nm,0.9s
INK Inuvik 51.42 28 *e*P **P 12 42 03.6 +1.6**
comp=Z,9.7nm,0.9s
KKAR Karatay Array 52.66 299 *e*P **P 12 42 11.8 +0.1**
KKAR Karatay Array 52.66 299 *e*P **P 12 42 11.8 +0.1**
SVE Sverdlovsk 53.76 318 *e*P P 12 42 28.1 +8.5
SVE pmax pmax
comp=Z,27nm,1.1s
ARU Arti 54.98 318 P **P 12 42 28.7 +0.3**
comp=Z,5.1nm,0.6s,baz=49,slow=2.9,SNR=11
ARU Arti 54.98 318 *e*P **P 12 42 28.7 +0.3**
ARU pmax pmax
comp=Z,13nm,0.8s
ARU Arti 54.98 318 *e*P **P 12 42 28.7 +0.3**
comp=Z,13nm,0.8s
DZET Dzherino 55.60 295 P **P 12 42 31.9 -1.5**
DZET pmax pmax
comp=Z,8.0nm,0.8s
DLBC Dease Lake 55.78 39 *e*P **P 12 42 32.8 -1.5**
comp=Z,5.2nm,1.0s
ABKAR Akbulak array 56.96 309 *e*P **P 12 42 42.8 +0.1**
AKTO Aktyubinsk 57.60 311 P **P 12 42 47.3 0.0**
comp=Z,2.8nm,0.6s,baz=76,slow=14,SNR=9.2
RES Resolute Bay 59.62 15 *e*P **P 12 43 01.4 +0.5**
RES pmax pmax
comp=Z,12nm,0.8s
RES Resolute Bay 59.62 15 *e*P **P 12 43 01.4 +0.5**
comp=Z,12nm,0.8s
WRA Warramunga Arr 59.99 189 P **P 12 43 02.6 -1.5**
comp=Z,4.0nm,0.5s,baz=6.9,slow=6.9,SNR=81
TMCR Tamitsa 60.79 331 *e*P **P 12 43 09.7 +0.7**
TMCR pmax pmax
comp=Z,17nm,1.0s
YKA Yellowknife Ar 60.86 31 P **P 12 43 10.3 +0.7**
comp=Z,2.2nm,0.7s,baz=300,slow=6.3,SNR=35
KEV Kevo 61.19 339 *e*P **P 12 43 12.2 +0.5**
KEV pmax pmax
comp=Z,11nm,0.9s
KEV Kevo 61.19 339 *e*P **P 12 43 12.2 +0.5**
comp=Z,11nm,0.9s
ARCES ARCESS Array B 61.74 339 P **P 12 43 15.9 +0.5**
comp=Z,3.7nm,1.0s,baz=49,slow=8.2,SNR=10
ARCES ARCESS Array B 61.74 339 P **P 12 43 16.0 +0.5**
KLMR Klimovskoe 61.95 327 *e*P **P 12 43 14.4 -2.6**
KLMR *e* 12 43 54.5
KLMR pmax pmax
comp=Z,21nm,1.1s
DAG Danmarks Havn 63.07 355 *i* P **P 12 43 24.5 +0.3**
comp=Z,6.3nm,0.8s
DAG Danmarks Havn 63.07 355 *i* P **P 12 43 24.5 +0.3**
DAG pmax pmax
comp=Z,5.0nm,0.8s
GEYT Alibeck 63.41 298 P **P 12 43 27.4 +0.2**
comp=Z,1.5nm,0.6s,baz=343,slow=4.6,SNR=3.8
ASAR Alice Springs 63.72 189 P **P 12 43 28.1 -0.9**
comp=Z,3.7nm,0.9s,baz=7.9,slow=6.0,SNR=22
MOS Moscow 65.63 323 *e*P P 12 43 51.7 +10
VRH Novokhopyorsk 66.21 318 *e*P P 12 43 53.7 +8.6
VRH pmax pmax
comp=Z,20nm,0.7s
OBN Obninsk 66.48 323 *i* P **P 12 43 46.5 -0.2**
OBN *i* 12 43 55.4
OBN pmax pmax
comp=Z,25nm,2.5s
OBN MLR MLR
comp=Z,172nm,16.0s
H04A Detroit Lake 66.50 51 *e*P **P 12 43 49.1 +1.9**
comp=Z,10nm,1.3s
FINES FINESS Array B 66.82 332 P **P 12 43 49.1 +0.4**
comp=Z,5.5nm,0.7s,baz=54,slow=9.7,SNR=24
LPSR Galich'ya Gora 66.83 320 *e*P P 12 43 58.6 +10
LPSR pmax pmax
comp=Z,30nm,1.0s
VAF Ylistaro 66.91 335 P **P 12 43 49.3 0.0**
VAF pmax pmax
comp=Z,12nm,1.4s
VSR Storozhevoye 67.52 319 *e*P P 12 44 02.6 +9.2
VSR pmax pmax
comp=Z,10.0nm,0.7s
YBH Yreka Blue Hor 67.82 54 *e*P **P 12 43 57.8 +2.2**
YBH pmax pmax
comp=Z,14nm,1.8s
YBH Yreka Blue Hor 67.82 54 *e*P **P 12 43 57.8 +2.2**
comp=Z,14nm,1.8s
SUMG Summit 67.88 0 *i* P **P 12 43 57.1 +1.3**
comp=Z,14nm,0.9s
SUMG Summit 67.88 0 *e*P **P 12 43 57.2 +1.3**
SUMG pmax pmax
comp=Z,13nm,0.8s
SUMG Summit 67.88 0 *e*P **P 12 43 57.2 +1.3**
comp=Z,13nm,0.8s
K05A Summer Lake 68.37 52 *e*P **P 12 44 00.8 +1.6**
comp=Z,15nm,1.1s
ZEI Tsey 69.83 309 *e*P **P 12 44 05.8 -2.5**
ZEI pmax pmax
comp=Z,17nm,1.0s
KVAR Kislovodsk Arr 69.86 311 P **P 12 44 09.0 +0.7**
comp=Z,12nm,1.0s,baz=18,slow=3.2,SNR=11
KIV Kislovodsk 69.86 311 *e*P **P 12 44 07.5 -0.8**
KIV pmax pmax
comp=Z,19nm,1.0s
KIV Kislovodsk 69.86 311 *e*P **P 12 44 09.1 +0.8**
comp=Z,33nm,0.9s
KBZ Khabaz 69.87 310 P **P 12 44 08.9 +0.8**
comp=Z,4.9nm,0.8s,baz=67,slow=4.1,SNR=12
KBZ Khabaz 69.87 310 P **P 12 44 09.0 +0.8**
STKA Stephens Creek 71.37 181 P **P 12 44 16.4 -0.8**
comp=Z,1.1nm,0.6s,baz=278,slow=9.0,SNR=3.9
LRM Limekiln Ridge 71.42 46 *e*P **P 12 44 19.1 +1.1**
DLMT Dillon 71.62 46 *e*P **P 12 44 20.9 +1.8**
comp=Z,4.1nm,0.7s
HFS Hagfors 71.96 336 P **P 12 44 21.0 +0.4**
comp=Z,5.4nm,0.6s,baz=47,slow=6.5,SNR=19
HFS Hagfors 71.96 336 P **P 12 44 21.0 +0.4**
BOZ Bozeman (W) 71.98 45 *e*P **P 12 44 22.6 +1.4**
BOZ pmax pmax
comp=Z,4.0nm,0.6s
BOZ Bozeman (W) 71.98 45 *e*P **P 12 44 22.6 +1.4**
comp=Z,3.6nm,0.6s
NB2 NORSAR Subarra 72.00 337 P **P 12 44 20.8 -0.1**
comp=Z,9.8nm,0.8s,baz=39,slow=6.2
NB2 NORSAR Subarra 72.00 337 P **P 12 44 20.7 -0.1**
NB2 pmax pmax
comp=Z,8.0nm,0.8s
NOA NORSAR Array B 72.00 337 P **P 12 44 21.1 +0.2**
comp=Z,7.2nm,0.7s,baz=39,slow=6.0,SNR=33
NVAR Mina Array Bea 72.49 54 P **P 12 44 25.2 +0.8**
comp=Z,1.9nm,0.7s,baz=288,slow=6.5,SNR=6.9
AKASG Malin Array Be 72.72 322 P **P 12 44 25.3 0.0**
comp=Z,4.3nm,0.5s,baz=44,slow=6.1,SNR=21
KIEV Kiev 72.73 322 *c i*P **P 12 44 25.3 0.0**
KIEV pmax pmax
comp=Z,8.0nm,0.9s
KIEV Kiev 72.73 322 *e*P **P 12 44 25.4 +0.1**
comp=Z,12nm,0.8s
SFJD Kangerlussuaq 73.00 5 *i* P **P 12 44 27.2 +0.6**
comp=Z,10nm,0.9s
SFJD Kangerlussuaq 73.00 5 *i* P **P 12 44 27.2 +0.6**
SFJD pmax pmax
comp=Z,10.0nm,0.9s
H17A Grant Village 73.35 46 *e*P **P 12 44 32.9 +3.4**
comp=Z,15nm,1.7s
RLMT Red Lodge 73.60 45 *e*P **P 12 44 32.7 +1.8**
comp=Z,3.4nm,1.0s
MOOW Moose Ponds 73.67 46 *e*P **P 12 44 33.5 +2.1**
comp=Z,14nm,1.9s
SIM Simferopol' 74.06 316 *e*P P 12 44 43.1 +10
SIM pmax pmax
comp=Z,12nm,0.9s
SORM Soroca 74.88 321 ||*i*P **P 12 44 37.9 -0.1**
BW06 Boulder Array 74.97 47 *e*P **P 12 44 40.0 +1.1**
comp=Z,2.1nm,0.7s
PDAR Pinedale Array 74.97 47 P **P 12 44 39.8 +0.9**
comp=Z,1.6nm,0.6s,baz=264,slow=1.7,SNR=17
SHPR Sheep Range 75.64 54 *e*P **P 12 44 45.3 +2.5**
comp=Z,3.7nm,1.0s
P17A Butcher Ranch, 76.43 50 *e*P **P 12 44 49.1 +1.9**
comp=Z,18nm,1.6s
LCMT Little Creek M 76.51 53 *e*P **P 12 44 49.8 +2.0**
comp=Z,3.7nm,0.9s
BURAR Bucovina Array 76.75 322 ||*i*P **P 12 44 49.6 +0.7**
KNB Kanab 76.76 53 *e*P **P 12 44 51.1 +1.9**
KNB pmax pmax
comp=Z,5.0nm,1.0s
KNB Kanab 76.76 53 *e*P **P 12 44 51.0 +1.9**
comp=Z,4.8nm,1.0s
SRU San Rafael Swe 76.79 50 *e*P **P 12 44 50.9 +1.5**
SRU pmax pmax
comp=Z,6.0nm,1.1s
SRU San Rafael Swe 76.79 50 *e*P **P 12 44 50.9 +1.5**
comp=Z,5.8nm,1.1s
TESR Tescani 76.84 320 ⇑*i*P **P 12 44 50.0 +0.7**
CFR Carcaliu 77.04 319 ⇑*i*P **P 12 44 49.8 -0.5**
RSSD Black Hills 77.05 43 *e*P **P 12 44 52.3 +1.5**
RSSD pmax pmax
comp=Z,13nm,1.6s
RSSD Black Hills 77.05 43 *e*P **P 12 44 52.3 +1.5**
comp=Z,13nm,1.6s
STHS Stebnicka Huta 77.26 325 *e*P **P 12 44 53.2 +1.6**
STHS *e* 12 45 03.7
STHS pmax pmax
comp=Z,7.0nm,0.8s
STHS Stebnicka Huta 77.26 325 *e*P **P 12 44 53.2 +1.6**
STHS *e* 12 45 03.6
VRI Vrincioaia 77.26 320 ⇑*i*P **P 12 44 52.7 +1.1**
VRI Vrincioaia 77.26 320 P **P 12 44 52.6 +1.0**
VRI pmax pmax
comp=Z,61nm,1.0s
OJC Ojcow 77.29 326 *e*P **P 12 44 52.5 +0.8**
OJC pmax pmax
comp=Z,20nm,1.0s
OJC Ojcow 77.29 326 *e*P **P 12 44 52.5 +0.8**
comp=Z,20nm,1.0s
PLOR Plostina 77.31 320 ⇑*i*P P 12 45 01.6 +10
HARR Harsova 77.48 318 ⇑*i*P **P 12 44 52.3 -0.5**
BRTR Keskin Array B 77.77 312 P **P 12 44 55.1 +0.4**
comp=Z,1.1nm,0.6s,baz=90,slow=3.7,SNR=7.2
BRTR Keskin Array B 77.77 312 *i* P **P 12 44 55.5 +0.7**
BRTR pmax pmax
comp=Z,1.0nm,0.7s
DOPR Dopca 77.85 321 ||*i*P **P 12 44 56.4 +1.5**
MLR Muntele Rosu 77.91 320 P **P 12 44 55.9 +0.5**
comp=Z,0.2nm,0.5s,baz=78,slow=5.9,SNR=3.3
MLR Muntele Rosu 77.91 320 ⇑*i*P **P 12 44 55.8 +0.4**
MLR Muntele Rosu 77.91 320 *e*P **P 12 44 56.3 +0.9**
MLR pmax pmax
comp=Z,10.0nm,1.2s
MLR Muntele Rosu 77.91 320 *e*P **P 12 44 56.3 +0.9**
comp=Z,10nm,1.2s
PV10 Paradox Valley 78.15 50 *e*P **P 12 44 59.0 +2.0**
OKC Ostrava-Krasne 78.27 327 *e*P **P 12 44 58.0 +0.8**
OKC Ostrava-Krasne 78.27 327 *e*P **P 12 44 58.0 +0.8**
PV05 Paradox Valley 78.31 50 *e*P **P 12 44 59.8 +1.9**
VOIR 78.39 320 ||*i*P **P 12 44 57.5 -0.5**
VOIR 78.39 320 P **P 12 44 59.3 +1.3**
VOIR pmax pmax
comp=Z,4.0nm,1.3s
DRGR 78.53 323 ||*i*P **P 12 44 57.7 -1.1**
MORC Moravsky Berou 78.57 327 ⇑*i*P **P 12 44 59.9 +1.0**
MORC Moravsky Berou 78.57 327 *e*P **P 12 44 59.9 +1.0**
MORC pmax pmax
comp=Z,71nm,1.4s
MORC Moravsky Berou 78.57 327 *e*P **P 12 44 59.9 +1.0**
comp=Z,71nm,1.4s
WUAZ Wupatki 78.62 53 *e*P **P 12 45 02.1 +2.5**
comp=Z,4.8nm,0.9s
DPC Dobruska-Polom 78.63 328 *i* P **P 12 45 00.4 +1.2**
DPC *e*pP **sP 12 45 10.9 -0.1**
DPC Dobruska-Polom 78.63 328 *i* P **P 12 45 00.4 +1.2**
DPC *e* 12 45 10.9
UPC Upice 78.63 329 *e*P **P 12 44 59.9 +0.7**
UPC Upice 78.63 329 *e*P **P 12 44 59.9 +0.7**
ARR Arges 78.65 321 ||*i*P **P 12 45 01.1 +1.7**
KRLC Kraliky 78.66 328 *i* P **P 12 44 59.9 +0.5**
KRLC *ex* x 12 45 09.3
KRLC Kraliky 78.66 328 *i* P **P 12 44 59.9 +0.5**
KRLC *e* 12 45 09.3
PSZ Piszkesteto 78.97 325 ⇑*i*P P 12 45 08.6 +7.4
VYHS Vyhne 79.00 326 *e*P **P 12 45 02.1 +0.9**
VYHS *e* 12 45 11.5
VYHS pmax pmax
comp=Z,6.0nm,1.4s
VYHS Vyhne 79.00 326 *e*P **P 12 45 02.1 +0.9**
VYHS *e* 12 45 11.5
BRG Berggiesshubel 79.16 330 *e*P **P 12 45 02.4 +0.3**
comp=Z,5.0nm,1.2s
comp=N,98nm,16.2s
comp=E,91nm,24.6s
comp=Z,171nm,16.8s
BRG Berggiesshubel 79.16 330 *e*P **P 12 45 02.4 +0.3**
BRG pmax pmax
comp=Z,5.0nm,1.2s
BRG MLR MLR
comp=N,98nm,16.2s
BRG MLR MLR
comp=E,91nm,24.6s
BRG MLR MLR
comp=Z,171nm,16.8s
CLL Collm 79.18 331 *i* P **P 12 45 01.8 -0.3**
comp=Z,6.0nm,0.9s
CLL *e* 12 45 09.0
CLL *i* 12 45 13.3
comp=Z,9.0nm,0.9s
CLL Collm 79.18 331 *e*P **P 12 45 02.2 +0.1**
CLL pmax pmax
comp=Z,9.0nm,0.9s
CLL Collm 79.18 331 *e*P **P 12 45 02.1 +0.1**
comp=Z,8.5nm,0.9s
PVCC Panska Ves 79.19 329 *i* P **P 12 45 03.4 +1.2**
PVCC *e*pP **sP 12 45 13.9 -0.1**
PVCC Panska Ves 79.19 329 *i* P **P 12 45 03.4 +1.2**
PVCC *e* 12 45 13.9
VRAC Vranov 79.33 327 P **P 12 45 03.5 +0.5**
comp=Z,2.9nm,0.7s,baz=346,slow=10.0,SNR=4.5
VRAC Vranov 79.33 327 ||*i*P **P 12 45 03.9 +0.9**
SIRR Siria 79.41 323 ||*i*P P 12 45 11.7 +8.2
GOPC GO Pecny, Ondr 79.59 329 *e*P **P 12 45 05.7 +1.3**
GOPC GO Pecny, Ondr 79.59 329 *e*P **P 12 45 05.7 +1.3**
PRU Pruhonice 79.63 329 *e*P **P 12 45 05.7 +1.1**
PRU *e*pP **sP 12 45 15.1 -1.2**
PRU Pruhonice 79.63 329 *e*P **P 12 45 05.7 +1.1**
PRU *e* 12 45 15.1
TREC Trest 79.79 328 *e*P **P 12 45 06.7 +1.2**
TREC Trest 79.79 328 *e*P **P 12 45 06.7 +1.2**
S22A 4UR Ranch, Cre 79.86 49 *e*P **P 12 45 08.5 +2.0**
comp=Z,5.4nm,1.3s
KHC Kasperske Hory 80.69 329 *i* P **P 12 45 11.3 +0.9**
KHC *ex* x 12 45 20.3
KHC Kasperske Hory 80.69 329 *e*P **P 12 45 11.6 +1.2**
KHC pmax pmax
comp=Z,3.0nm,0.8s
KHC Kasperske Hory 80.69 329 *e*P **P 12 45 11.6 +1.2**
comp=Z,2.9nm,0.8s
CONA Conrad Observa 80.71 327 *i* P **P 12 45 11.8 +1.2**
comp=Z,2.7nm,0.7s
GERES GERESS Array B 80.87 329 P **P 12 45 11.8 +0.4**
comp=Z,2.0nm,0.7s,baz=31,slow=5.4,SNR=20
WET Wettzell 80.96 329 P **P 12 45 13.5 +1.7**
WET pmax pmax
comp=Z,13nm,2.1s
ECSD EROS Data Cent 81.07 39 *e*P **P 12 45 13.2 +0.7**
comp=Z,5.5nm,0.9s
ARSA Arzberg 81.38 327 *i* P **P 12 45 15.1 +1.0**
comp=Z,1.6nm,0.6s
MOA Molln 81.43 328 *i* P **P 12 45 16.1 +1.8**
comp=Z,1.2nm,0.5s
T25A Trinidad 81.67 48 *e*P **P 12 45 17.7 +1.6**
comp=Z,5.3nm,1.0s
ANMO Albuquerque 81.99 51 *e*P **P 12 45 19.8 +2.0**
ANMO pmax pmax
comp=Z,6.0nm,1.2s
ANMO Albuquerque 81.99 51 *e*P **P 12 45 19.8 +2.0**
comp=Z,6.0nm,1.2s
SOKA Soboth 82.04 327 *i* P **P 12 45 18.5 +0.8**
OBKA Obir 82.38 327 *i* P **P 12 45 20.0 +0.6**
comp=Z,4.9nm,0.8s
KBA Koelnbreinsper 82.42 328 *i* P **P 12 45 21.0 +1.3**
comp=Z,1.3nm,0.2s
KBA Koelnbreinsper 82.42 328 P **P 12 45 20.8 +1.0**
KBA pmax pmax
comp=Z,12nm,0.8s
MYKA Terra Mystica 82.66 327 *i* P **P 12 45 21.3 +0.4**
comp=Z,2.8nm,0.4s
WTTA Wattenberg 82.97 329 *i* P **P 12 45 22.4 -0.2**
comp=Z,0.8nm,0.2s
MOTA Moosalm 83.11 329 *i* P **P 12 45 24.2 +0.9**
comp=Z,3.2nm,0.7s
RETA Reutte 83.13 329 *i* P **P 12 45 24.1 +0.8**
comp=Z,1.3nm,0.4s
BFO Black Forest 83.36 331 *e*P **P 12 45 25.1 +0.7**
BFO pmax pmax
comp=Z,5.0nm,0.9s
BFO Black Forest 83.36 331 *e*P **P 12 45 25.1 +0.7**
comp=Z,4.9nm,0.9s
FETA Feichten 83.52 329 *i* PcP **P 12 45 26.7 +1.3**
comp=Z,2.0nm,0.6s
DAVA Damuels 83.64 330 *i* PcP **P 12 45 27.5 +1.5**
comp=Z,2.9nm,0.6s
CDF Champ du Feu 83.67 332 *e*P **P 12 45 26.3 +0.2**
CDF pmax pmax
comp=Z,14nm,1.3s
FUORN Ofenpass-Fuorn 84.03 329 *e*P **P 12 45 29.2 +1.0**
comp=Z,12nm,0.8s
DAVOX Davos/Dischmat 84.05 330 P **P 12 45 28.3 +0.1**
comp=Z,2.5nm,0.5s,baz=305,slow=6.7,SNR=6.9
MNTX Cornudas Mount 84.88 53 *e*P **P 12 45 33.8 +1.3**
comp=Z,6.9nm,1.4s
SENIN Lac Senin/Sane 85.39 331 *e*P **P 12 45 35.4 +0.4**
comp=Z,26nm,1.7s
LAST Lasithi 85.59 313 *e*P **P 12 45 36.4 +0.3**
comp=Z,24nm,1.1s
IDI Anoyia 85.83 314 P **P 12 45 36.2 -1.0**
comp=Z,2.3nm,0.4s,baz=37,slow=8.3,SNR=8.6
FLN La Foliniere 85.96 337 *e*P **P 12 45 40.2 +2.7**
FLN pmax pmax
comp=Z,23nm,1.3s
LPL La Plagne 86.31 331 *e*P **P 12 45 39.9 +0.3**
LPL pmax pmax
comp=Z,17nm,1.3s
LPG La Plagne 86.32 331 *e*P **P 12 45 40.1 +0.4**
LPG pmax pmax
comp=Z,11nm,1.0s
AVF Avril sur Loir 86.44 333 *e*P **P 12 45 40.3 +0.4**
AVF pmax pmax
comp=Z,13nm,0.7s
ORIF Oris-en-Rattie 87.14 331 *e*P **P 12 45 43.7 +0.2**
ORIF pmax pmax
comp=Z,35nm,1.7s
TCF Toulx Ste Croi 87.27 334 *e*P **P 12 45 44.4 +0.4**
TCF pmax pmax
comp=Z,4.0nm,0.8s
TXAR Lajitas Array 87.59 53 P **P 12 45 46.1 +0.1**
comp=Z,0.6nm,0.6s,baz=288,slow=3.3,SNR=6.6
WHZ Wether Hill Ro 88.29 163 *e*P **P 12 45 50.0 +1.6**
comp=Z,314nm,2.0s
MIAR Mount Ida 89.55 43 *e*P **P 12 45 56.0 +1.0**
MIAR pmax pmax
comp=Z,5.0nm,0.8s
MIAR Mount Ida 89.55 43 *e*P **P 12 45 56.0 +1.0**
comp=Z,5.1nm,0.8s
WHAR Wooly Hollow 89.65 42 *e*P **P 12 45 56.3 +0.9**
comp=Z,9.8nm,0.9s
ESDC Sonseca Array 95.22 335 P **P 12 46 20.8 -0.4**
comp=Z,0.3nm,0.5s,baz=8.1,slow=3.9,SNR=4.0
TORD Torodi Ar. Bea 116.04 317 PKP **PKPdf 12 51 39.4 -1.5**
comp=Z,0.2nm,0.5s,baz=355,slow=2.1,SNR=4.1
SNAA Sanae 143.74 198 PKP PKPab 12 52 27.8 -0.4
SNAA Sanae 143.74 198 *e*PKHKP PKPab 12 52 28.1 -0.1
SNAA Sanae 143.74 198 *e*PKPpre PKPab 12 52 28.1 -0.1
LPAZ La Paz 144.34 58 PKP PKPbc 12 52 33.5 +0.4
comp=Z,0.9nm,0.6s,baz=316,slow=6.4,SNR=2.9
VNA2 Neumayer--Watz 145.30 197 PKP **PKPbc 12 52 33.7 -0.1**
baz=108,slow=2.5
VNA3 Neumayer Olymp 145.55 195 PKP **PKPdf 12 52 33.5 -0.9**
VNA1 Neumayer--Stat 145.70 197 PKP **PKPdf 12 52 34.0 -0.6**
LCO Las Campanas 150.53 79 *e*PKPbc **PKPbc 12 52 50.2 +0.6**
LCO *e*PKPab **PKPab 12 52 58.9 +2.6**
PLCA Paso Flores 154.66 103 PKPab **PKPab 12 53 08.7 -4.5**
comp=Z,1.6nm,0.7s,baz=217,slow=3.1,SNR=6.2
SPB Sao Paulo 161.65 31 *e*PKPdf **PKPdf 12 52 56.9 -1.7**

DDA 15 12:46:14.4, 37°23N×28°24E, h7km, Md2.7, Turkey

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

TURN	**Turunc**	**0.46**	**141**	*i* P	Pg	12 46 23.4	+0.2
AYDN	**Tasoluk**	**0.52**	**326**	*i* P	Pg	12 46 24.9	+0.4
AYDN				*i* S	Sg	12 46 32.3	+1.0
DNZL	**Cakiroluk**	**0.79**	**54**	*i* P	Pg	12 46 29.6	0.0

IDC 15 12:59:38.1±358.0, 47°.45N×49°.40E, h0km, Error ellipse: s-maj=166.8km s-min=114.8km az=24.0, Western Kazakhstan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I31KZ	**AKTYUBINSK INF**	**6.41**	**59**	*i*		13 44 30.0	
	baz=248,slow=324,SNR=2.4						
I46RU	**ZALESOVO INFRA**	**23.18**	**61**	*i*		15 18 20.0	
	baz=262,slow=323,SNR=2.3						
I26DE	**FREYUNG INFRAS**	**23.72**	**287**	*i*		15 25 00.0	
	baz=81,slow=337,SNR=0.4						

IDC 15 13:03:10.1±2.1, 54°.27N×86°.13E, h0km, mb1 3.3/3, mb1mx3.1/47, mbtmp3.3/3, ML3.1/3, 3C-3D, Error ellipse: s-maj=16.6km s-min=10.1km az=56.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**0.84**	**248**	*i*		13 09 07.3	
	baz=66,slow=320,SNR=5.5						
ZALV	**Zalesovo Beam**	**0.84**	**248**	Pg	Pg	13 03 24.8	-1.3
	2.3nm,0.3s,baz=64,slow=17,SNR=20						
ZALV				Lg	Lg	13 03 38.5	
	9.1nm,0.3s,baz=68,slow=30,SNR=46						
KURBB	**Kurchatov Arra**	**5.91**	**235**	Pn	Pn	13 04 39.7	+0.9
	0.2nm,0.3s,baz=52,slow=14,SNR=30						
KURBB				Sn	Sn	13 05 46.6	-0.6
	baz=46,slow=13,SNR=2.3						
KURBB				Lg	Lg	13 06 20.7	
	0.1nm,0.3s,baz=53,slow=33,SNR=6.4						
KURBB	**Kurchatov Arra**	**5.91**	**235**	⇓Pn	Pn	13 04 40.1	+1.3
	3.6nm,0.8s						
KURBB				⇑Sn	Sn	13 05 51.5	+4.4
	3.3nm,0.7s						
KURBB				⇑Lg	Lg	13 06 22.1	
	7.9nm,0.7s						
MK31	**Makanchi Array**	**7.88**	**200**	⇑Pn	Pn	13 05 07.7	+1.9
	0.8nm,0.5s,baz=30,slow=14,SNR=15						
MK31				⇓Sn	Sn	13 06 36.3	+0.8
	0.7nm,0.5s,baz=28,slow=27,SNR=4.3						
MK31				⇓Lg	Lg	13 07 18.0	
	3.4nm,1.1s,baz=33,slow=30,SNR=4.1						
MKAR	**Makanchi Array**	**7.88**	**200**	Pn	Pn	13 05 06.3	+0.5
	0.7nm,0.3s,baz=17,slow=14,SNR=18						
MKAR				Sn	Sn	13 06 35.6	+0.1
	0.2nm,0.3s,baz=22,slow=28,SNR=7.6						
MKAR				Lg	Lg	13 07 17.0	
	baz=31,slow=26,SNR=4.0						
BVAR	**Borovoye Array**	**9.44**	**269**	Pn	Pn	13 05 27.7	+0.6
	0.1nm,0.3s,baz=58,slow=16,SNR=2.5						
BVAR				Sn	Sn	13 07 07.9	-5.9
	0.2nm,0.3s,baz=78,slow=24,SNR=3.5						

BJI ***15*** *13:08:11.5, 0°.50N×25°.60W, h10km, mb5.6/1, mB5.6/19, Ms5.9/24, Ms7 5.8/24*

NEIC ***15*** *13:08:12.0±0.0, 0°.46N×25°.60W, h15km, Moment Tensor Solution. s58 Moment tensor: Scale 10^18^Nm; M_{rr}0.01; $M_{\theta\theta}$0.14; $M_{\phi\phi}$-0.15; $M_{r\theta}$-0.57; $M_{\phi\phi}$-1.33; $M_{\phi r}$0.69; Best double couple: $M_0$1.60000×10^18^ NP1:ϕ_s359.00000°, δ76.00000°, λ24.00000°. NP2:ϕ_s263.00000°, δ66.00000°, λ165.00000°. Principal axes: T 1.7800, Plg26.0000°, Azm223.0000°; N -0.4200, Plg62.0000°, Azm26.0000°; P -1.3600, Plg6.0000°, Azm129.0000°;*

GCMT ***15*** *13:08:13.1±0.1, 0°.87N×25°.62W, h13km, MW6.1/138, Moment Tensor Solution. s133,c287; s138,c505; Duration: 2s? Moment tensor: Scale 10^18^Nm; M_{rr}-0.08±.01; $M_{\theta\theta}$0.24±.01; $M_{\phi\phi}$-0.15±.01; $M_{r\theta}$0.29±.02; $M_{\theta\phi}$-1.57±.01; $M_{\phi r}$-0.07±.02; Best double couple: $M_0$1.61000×10^18^ NP1:ϕ_s86.00000°, δ88.00000°, λ170.00000°. NP2:ϕ_s177.00000°, δ80.00000°, λ2.00000°. Principal axes: T 1.6640, Plg9.0000°, Azm41.0000°; N -0.1080, Plg80.0000°, Azm253.0000°; P -1.5550, Plg5.0000°, Azm132.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*

NEIC ***15*** *13:08:13.1±0.3, 0°.57N×25°.65W, h10km, mb5.6/16, MS5.4/188, MW6.1, MW6.1, MW6.1 Error ellipse: s-maj=8.7km s-min=5.1km az=168.0, Moment Tensor Solution. s84 Moment tensor: Scale 10^18^Nm; M_{rr}-0.08; $M_{\theta\theta}$0.36; $M_{\phi\phi}$-0.28; $M_{r\theta}$0.11; $M_{\theta\phi}$-1.42; $M_{\phi r}$0.04; Best double couple: $M_0$1.50000×10^18^ NP1:ϕ_s264.00000°, δ88.00000°, λ-176.00000°. NP2:ϕ_s174.00000°, δ86.00000°, λ-2.00000°. Principal axes: T 1.5000, Plg2.0000°, Azm39.0000°; N -0.0800, Plg85.0000°, Azm283.0000°; P -1.4200, Plg4.0000°, Azm129.0000°;*

IDC ***15*** *13:08:13.8±0.4, 0°.47N×25°.53W, h0km, mb4.5/34, mb1 4.6/34, mb1mx4.6/39, mbtmp4.5/34, ML5.4/1, MS5.4/33, Ms1 5.4/33, ms1mx5.4/38 Error ellipse: s-maj=14.6km s-min=10.4km az=156.0*

ISCJB ***15*** *13:08:14.3±1.1, 0°.66N±0°.04×25°.94W±0°.02, h13km±7km, mb5.0/107, MS5.5/258, Error ellipse: s-maj=7.3km s-min=3.8km az=166.3*

MOS ***15*** *13:08:15.8±1.7, 1°.19N×25°.97W, h10km, mb5.4/39, Error ellipse: s-maj=9.7km s-min=4.7km az=58.2*

NEIC ***15*** *13:08:28.5±0.0, 1°.21N×25°.63W, h19km, Moment Tensor Solution. s56 Moment tensor: Scale 10^18^Nm; M_{rr}-0.22; $M_{\theta\theta}$0.33; $M_{\phi\phi}$-0.11; $M_{r\theta}$-1.05; $M_{\theta\phi}$-1.72; $M_{\phi r}$0.61; Best double couple: $M_0$2.00000×10^18^ NP1:ϕ_s0.00000°, δ63.00000°, λ9.00000°. NP2:ϕ_s266.00000°, δ82.00000°, λ153.00000°. Principal axes: T 2.3900, Plg25.0000°, Azm220.0000°; N -0.7100, Plg62.0000°, Azm71.0000°; P -1.6800, Plg13.0000°, Azm316.0000°;*

ISC 15 13:08:15.4±0.6, 0°.46N±0°.05×25°.61W±0°.04, h19km±2km, h19km:pP-P, n883, σ2°62/704, mb5.1/116, MS5.5/271, 25C-22D, Central Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RCBR	**Riachuelo**	**12.03**	**239**	Pn	**Pn**	**13 11 04.2**	**-1.8**
	2.2nm,0.3s,baz=57,slow=13,SNR=12						
RCBR				Sn	Sn	13 13 05.6	-14
	baz=40,slow=15,SNR=1.3						
RCBR				LR	LR	13 14 48.2	
	comp=Z,25μm,20.6s,baz=12,slow=33						
RCBR	**Riachuelo**	**12.03**	**239**	*e*Pn	Pn	13 11 00.9	-5.1
RCBR				Sn	Sn	13 13 05.6	-14
H10N3	**ASCENSION HYDR**	**13.81**	**127**	Pn	**P**	**13 11 38.7**	**+0.4**
	baz=300,slow=13,SNR=14						
H10N3				T	T	13 26 01.2	
	baz=306,slow=74,SNR=3349						
H10N2	**ASCENSION HYDR**	**13.81**	**127**	Pn	**P**	**13 11 38.6**	**+0.2**
	baz=300,slow=13,SNR=10						
H10N2				T	T	13 25 54.9	
	baz=306,slow=74,SNR=3221						
H10N1	**ASCENSION HYDR**	**13.83**	**127**	Pn	**P**	**13 11 39.8**	**+1.2**
	baz=300,slow=13,SNR=10						
H10N1				T	T	13 26 02.7	
	baz=306,slow=74,SNR=6045						
ASCN	**Ascension**	**13.97**	**127**	*e*Pn	**Pn**	**13 11 31.7**	**-0.9**
H10S3	**ASCENSION HYDR**	**14.36**	**131**	Pn	**P**	**13 11 45.6**	**+1.0**
H10S3				T	T	13 26 41.4	
	baz=311,slow=74,SNR=2659						
H10S1	**ASCENSION HYDR**	**14.37**	**131**	Pn	**P**	**13 11 45.6**	**+1.0**
H10S1				T	T	13 26 41.7	
	baz=311,slow=74,SNR=3762						
H10S2	**ASCENSION HYDR**	**14.38**	**131**	Pn	**P**	**13 11 45.8**	**+1.0**
H10S2				T	T	13 26 43.1	
	baz=311,slow=74,SNR=2871						
BBTS	**Babate**	**16.72**	**32**	Pn	**Pn**	**13 12 07.2**	**-1.6**
	13nm,0.3s,baz=220,slow=7.0,SNR=18						
BBTS				Sn	Sn	13 14 54.5	-20
	2.8nm,0.3s,baz=233,slow=20,SNR=3.5						
BBTS				LR	LR	13 17 05.5	
	comp=Z,48μm,21.1s,baz=222,slow=32						
LIC	**Lamto**	**21.32**	**74**	*e*P	**P**	**13 13 01.3**	**-0.2**
	600nm,1.5s						
TIC	**Toumodi**	**21.44**	**73**	*e*P	**P**	**13 13 02.9**	**+0.1**
DBIC	**Dimbokro**	**21.60**	**73**	P	**P**	**13 13 05.2**	**+0.7**
	141nm,0.9s,baz=240,slow=12,SNR=37						
DBIC				S	**S**	**13 17 01.2**	**-2.1**
	6.7nm,0.3s,baz=143,slow=20,SNR=5.9						
DBIC				LR	LR	13 19 36.8	
	comp=Z,23μm,20.3s,baz=234,slow=32						
KIC	**Kosan Boka**	**21.63**	**74**	*e*P	**P**	**13 13 05.1**	**+0.3**
	713nm,0.8s						
SHEL	**Horse Pasture**	**25.51**	**131**	PFAKE		13 13 50.0	+7.0
SHEL				LR	LR		
	comp=Z,18μm,20.0s						
TORD	**Torodi Ar. Bea**	**29.85**	**64**	P	**P**	**13 14 20.9**	**-1.0**
	comp=Z,17nm,0.7s,baz=247,slow=7.6,SNR=34						
SPB	**Sao Paulo**	**31.95**	**220**	PFAKE		13 14 50.0	+10
SPB				LR	LR		
	comp=Z,10μm,20.0s						
PTGA	**Pitinga**	**34.38**	**268**	P	**P**	**13 15 04.9**	**+3.2**
	comp=Z,3.5nm,0.7s,baz=90,slow=18,SNR=3.0						
PTGA	**Pitinga**	**34.38**	**268**	*e*P	**P**	**13 15 01.2**	**-0.5**
PTGA				LR	LR		
	comp=Z,2μm,22.0s						
BBGH	**Gun Hill**	**35.92**	**292**	PFAKE		13 15 30.0	+15
BBGH				LR	LR		
	comp=Z,3μm,20.0s						
H05S1	**Guadeloupe/Mar**	**37.50**	**293**	T	T	13 55 05.4	
	SNR=31						
TAM	**Tamanrasset**	**37.54**	**52**	*e*P	**P**	**13 15 28.9**	**+0.1**
TAM				MLR	MLR		
	comp=Z,25μm,18.0s						
TAM	**Tamanrasset**	**37.54**	**52**	*e*P	**P**	**13 15 28.9**	**+0.1**
TAM				LR	LR		
	comp=Z,25μm,18.0s						
GRGR	**Grenville**	**37.59**	**289**	PFAKE		13 15 40.0	+11
GRGR				LR	LR		
	comp=Z,2μm,22.0s						
MDT	**Midelt**	**37.77**	**30**	P	**P**	**13 15 32.3**	**+1.6**
	comp=Z,21nm,1.0s,baz=226,slow=8.8,SNR=19						
FDF	**Fort de France**	**37.88**	**294**	PFAKE		13 15 40.0	+8.3
FDF				LR	LR		
	comp=Z,2μm,22.0s						
H05N1	**Guadeloupe/Mar**	**38.33**	**296**	T	T	13 56 02.1	
	SNR=7.4						
SAML	**Samuel**	**38.58**	**255**	*e*P	**P**	**13 15 38.0**	**+0.5**
SIV	**San Ignacio**	**38.63**	**243**	P	**P**	**13 15 39.0**	**+1.0**
	comp=Z,1.1nm,0.6s,baz=93,slow=4.7,SNR=2.8						
GDHS	**Morne Mazeau,**	**38.95**	**296**	PFAKE		13 15 50.0	+9.3
GDHS				LR	LR		
	comp=Z,2μm,20.0s						
H09W1	**TRISTAN DA CUN**	**39.34**	**163**	T	T	13 57 57.1	
	SNR=5.3						
ANWB	**Willy Bob**	**39.47**	**298**	PFAKE		13 15 50.0	+5.1
ANWB				LR	LR		
	comp=Z,2μm,19.0s						
PFVI	**Vila Bisbo**	**39.66**	**21**	*e*P	**P**	**13 15 48.6**	**+2.4**
PFVI	**Vila Bisbo**	**39.66**	**21**	*e*PP	PP	13 17 26.8	+9.3
PFVI				*e*LR	LR	13 26 41.6	
	comp=Z,5μm,18.0s						
PFVI	**Vila Bisbo**	**39.66**	**21**	PFAKE		13 16 00.0	+14
PFVI				LR	LR		
	comp=Z,5μm,18.0s						
MORF	**Marmelete**	**39.87**	**21**	*e*P	**P**	**13 15 45.7**	**-2.4**
MORF				*e*PP	**PP**	**13 17 17.1**	**-2.9**
MORF				*e*S	**S**	**13 21 52.2**	**+0.1**
MORF				AMS	AMS	13 30 13.7	
	comp=E,5μm,15.9s						
MORF	**Marmelete**	**39.87**	**21**	*e*P	**P**	**13 15 49.3**	**+1.2**
MORF	**Marmelete**	**39.87**	**21**	*e*PP	PP	13 17 18.1	-1.9
MORF				*e*LR	LR	13 26 35.1	
	comp=E,5μm,18.0s						
MORF	**Marmelete**	**39.87**	**21**	*e*P	**P**	**13 15 45.7**	**-2.4**
MORF				*e*		13 17 17.0	
MORF				*e*S	**S**	**13 21 52.1**	**+0.1**
PTEO	**Sao Teotonio**	**40.06**	**21**	*e*P	**P**	**13 15 51.5**	**+1.9**
PBDV	**Barranco-do-Ve**	**40.08**	**22**	*e*P	**P**	**13 15 48.2**	**-1.6**
	comp=E,81nm,2.1s						
PBDV	**Barranco-do-Ve**	**40.08**	**22**	*e*PP	PP	13 17 28.9	+6.7
PBDV				*e*LR	LR	13 26 35.1	
	comp=E,6μm,20.0s						
PVAQ	**Vaqueiros**	**40.30**	**22**	*e*P	**P**	**13 15 51.2**	**-0.4**
	comp=E,88nm,1.8s						
PVAQ	**Vaqueiros**	**40.30**	**22**	*e*PP	PP	13 17 32.3	+7.7
PVAQ				*e*LR	LR	13 27 06.1	
	comp=E,6μm,18.0s						
PCVE	**Castro Verde**	**40.39**	**22**	*e*P	**P**	**13 15 53.1**	**+0.8**
	comp=E,90nm,2.0s						
PCVE	**Castro Verde**	**40.39**	**22**	*e*PP	PP	13 17 22.2	-3.3
PCVE				*e*LR	LR	13 26 43.3	
	comp=E,6μm,20.0s						
SEUS	**St. Eustatius**	**40.47**	**297**	PFAKE		13 16 00.0	+6.7
SEUS				LR	LR		
	comp=Z,3μm,20.0s						
MESJ	**Messejana**	**40.50**	**21**	*e*P	**P**	**13 15 50.9**	**-2.4**
MESJ				*e*PP	**PP**	**13 17 23.7**	**-3.1**
MESJ				*e*S	**S**	**13 22 01.1**	**-0.3**
MESJ				AMS	AMS	13 30 41.2	
	comp=E,5μm,17.7s						
MESJ	**Messejana**	**40.50**	**21**	*e*P	**P**	**13 15 57.3**	**+4.0**
MESJ	**Messejana**	**40.50**	**21**	*e*PP	PP	13 17 33.5	+6.8
MESJ	**Messejana**	**40.50**	**21**	*e*P	**P**	**13 15 50.8**	**-2.4**
MESJ				*e*		13 17 23.6	
MESJ				*e*S	**S**	**13 22 01.0**	**-0.3**
CPUP	**Villa Florida**	**40.55**	**227**	P	**P**	**13 15 58.0**	**+4.2**
	comp=E,4.8nm,1.1s,baz=63,slow=13,SNR=3.5						
CPUP				LR	LR	13 32 35.4	
	comp=E,6μm,18.8s,baz=61,slow=36						
PNCL	**Nicolau / Gran**	**40.63**	**21**	*e*P	**P**	**13 15 54.7**	**+0.4**
	comp=E,59nm,2.0s						
PNCL	**Nicolau / Gran**	**40.63**	**21**	*e*PP	PP	13 17 36.5	+8.3
PNCL				*e*LR	LR	13 26 48.4	
	comp=E,5μm,18.0s						
SABA	**Saba**	**40.75**	**297**	PFAKE		13 16 10.0	+14
SABA				LR	LR		
	comp=Z,2μm,19.0s						
SMRT	**St. Maarten**	**40.75**	**298**	PFAKE		13 16 10.0	+14
SMRT				LR	LR		
	comp=Z,3μm,22.0s						
PBEJ	**Beja**	**40.80**	**22**	*e*P	**P**	**13 15 58.6**	**+2.9**
LIS	**Lisbon**	**40.96**	**20**	*e*P	**P**	**13 15 54.6**	**-2.4**
LIS				*e*PP	**PP**	**13 17 29.0**	**-2.7**
LIS				*e*S	**S**	**13 22 08.1**	**-0.1**
LIS				AMS	AMS	13 31 52.2	
	comp=E,7μm,17.5s						
LIS	**Lisbon**	**40.96**	**20**	*e*P	**P**	**13 15 54.6**	**-2.4**
LIS				*e*		13 17 29.0	
LIS				*e*S	**S**	**13 22 08.0**	**-0.1**
PMAFR	**Mafra**	**41.13**	**19**	*e*LR	LR	13 26 59.6	
	comp=E,4μm,18.0s						
EVO	**Evora**	**41.19**	**21**	*e*P	**P**	**13 16 00.7**	**+1.8**
	comp=E,70nm,1.3s						
EVO	**Evora**	**41.19**	**21**	*e*PP	PP	13 17 42.4	+8.2
PBAR	**Barrancos**	**41.24**	**22**	*e*P	**P**	**13 16 02.1**	**+2.8**
	comp=E,106nm,2.2s						
PBAR	**Barrancos**	**41.24**	**22**	*e*PP	PP	13 17 42.6	+7.9
PBAR				*e*LR	LR	13 26 51.4	
	comp=E,10μm,20.0s						
PMTG	**Montargil**	**41.59**	**21**	*e*P	**P**	**13 16 02.4**	**+0.2**
	comp=E,58nm,1.5s						
PMTG	**Montargil**	**41.59**	**21**	*e*PP	PP	13 17 46.6	+8.0
PMTG				*e*LR	LR	13 27 03.6	
	comp=E,6μm,18.0s						
PESTR	**Estremoz**	**41.64**	**21**	*e*P	**P**	**13 16 07.2**	**+4.6**
	comp=E,57nm,1.5s						
PESTR	**Estremoz**	**41.64**	**21**	*e*PP	PP	13 17 46.6	+7.5
PESTR				*e*LR	LR	13 27 07.7	
	comp=E,5μm,20.0s						
PTOM	**Tomar**	**42.02**	**20**	*e*P	**P**	**13 16 05.3**	**-0.4**
PTOM	**Tomar**	**42.02**	**20**	*e*PP	PP	13 17 39.0	-4.2
ABVI	**Anegada Island**	**42.11**	**298**	PFAKE		13 16 20.0	+13
ABVI				LR	LR		
	comp=Z,2μm,22.0s						
PMRV	**Marv??o**	**42.21**	**21**	*e*P	**P**	**13 16 08.3**	**+1.0**
	comp=Z,124nm,1.5s						
PMRV	**Marv??o**	**42.21**	**21**	*e*LR	LR	13 27 28.1	
	comp=Z,5μm,16.0s						
PCAS	**Casmilo, Conde**	**42.38**	**20**	*e*P	**P**	**13 16 09.4**	**+0.7**
PCAS	**Casmilo, Conde**	**42.38**	**20**	*e*PP	PP	13 17 53.3	+6.2
PCAS				*e*LR	LR	13 27 19.9	
	comp=Z,4μm,18.0s						
OJGS	**Djebel Guires**	**42.64**	**32**	P	P	13 16 18.7	+7.8
OKGL	**Djebel Kef Gue**	**42.98**	**32**	P	P	13 16 18.5	+4.8
HUMP	**Col San Antoni**	**43.26**	**296**	*e*P	**P**	**13 16 15.9**	**-0.1**
HUMP				LR	LR		
	comp=Z,2μm,21.0s						
CBYP	**Canovanas**	**43.31**	**296**	PFAKE		13 16 30.0	+13
CBYP				LR	LR		
	comp=Z,3μm,22.0s						
PAB	**San Pablo**	**43.48**	**24**	*e*P	**P**	**13 16 17.7**	**0.0**
PAB	**San Pablo**	**43.48**	**24**	*e*P	**P**	**13 16 17.7**	**0.0**
PAB				LR	LR		
	comp=Z,5μm,18.0s						
SJG	**San Juan**	**43.52**	**296**	P	**P**	**13 16 19.0**	**+0.8**
	comp=Z,5.7nm,0.7s,baz=113,slow=7.7,SNR=2.0						
SJG	**San Juan**	**43.52**	**296**	P	**P**	**13 16 19.0**	**+0.8**
SJG				pmax	pmax		
	comp=Z,6.0nm,0.7s						
SJG	**San Juan**	**43.52**	**296**	*e*P	**P**	**13 16 18.3**	**+0.2**
SJG				LR	LR		
	comp=Z,2μm,21.0s						
ESDC	**Sonseca Array**	**43.75**	**24**	P	**P**	**13 16 20.0**	**+0.2**
	comp=Z,12nm,1.0s,baz=224,slow=9.1,SNR=28						
POLO	**Lamas de Olo**	**43.80**	**19**	*e*P	**P**	**13 16 22.5**	**+2.2**
	comp=Z,20nm,1.5s						
POLO	**Lamas de Olo**	**43.80**	**19**	*e*LR	LR	13 26 31.1	
	comp=Z,3μm,18.0s						
MVO	**Moncorvo**	**43.88**	**20**	*e*P	**P**	**13 16 23.4**	**+2.6**
	comp=Z,65nm,1.9s						
MVO	**Moncorvo**	**43.88**	**20**	*e*PP	PP	13 18 09.7	+6.5
MVO				*e*LR	LR	13 26 01.7	
	comp=Z,5μm,20.0s						
CELP	**Cerrillos**	**43.89**	**296**	*e*P	**P**	**13 16 22.3**	**+1.1**
PGAV	**Gavieira, Arco**	**44.18**	**19**	*e*P	**P**	**13 16 26.6**	**+3.3**
PGAV	**Gavieira, Arco**	**44.18**	**19**	*e*LR	LR	13 28 04.8	
	comp=Z,6μm,18.0s						
EMHD	**Djebel Mahouad**	**44.35**	**34**	P	P	13 16 31.6	+6.8
MPR	**Mayaguez**	**44.44**	**296**	PFAKE		13 16 40.0	+14
MPR				LR	LR		
	comp=Z,2μm,20.0s						
PBRG	**Braganca**	**44.54**	**20**	*e*LR	LR	13 28 41.4	
	comp=Z,5μm,18.0s						
ABA	**Alger-Bouzarea**	**44.84**	**33**	P	**P**	**13 16 32.5**	**+4.0**
ATAF	**Djebel Tarf**	**44.86**	**35**	P	**P**	**13 16 31.1**	**+2.2**
LPAZ	**La Paz**	**45.12**	**246**	P	**P**	**13 16 32.4**	**+0.6**
	comp=Z,4.3nm,0.7s,baz=68,slow=6.2,SNR=9.6						
LPAZ				LR	LR	13 34 41.0	
	comp=Z,4μm,21.6s,baz=72,slow=35						
SDV	**Santo Domingo**	**45.60**	**282**	P	**P**	**13 16 39.2**	**+4.0**
	comp=Z,4.0nm,0.3s,baz=107,slow=7.9,SNR=4.7						
SDV	**Santo Domingo**	**45.60**	**282**	*e*P	**P**	**13 16 32.3**	**-2.8**
SDV				LR	LR		
	comp=Z,2μm,22.0s						
SET	**Setif**	**45.74**	**36**	P	P	13 16 42.0	+6.2
CTEI	**Djebel Teioual**	**46.24**	**36**	P	**P**	**13 16 40.6**	**+0.8**
DFRA	**Djebel Bou Aff**	**46.26**	**36**	P	**P**	**13 16 39.3**	**-0.6**
LPA	**La Plata**	**46.37**	**217**	*ce*P	**P**	**13 16 42.0**	**+1.3**
LPA				sS	**S**	**13 23 31.0**	**+3.6**
LPA				SCS	**ScS**	**13 26 36.0**	**+0.7**
CKFL	**Kef-Lekhel**	**46.65**	**36**	P	**P**	**13 16 46.3**	**+3.3**
TSUM	**Tsumeb**	**46.66**	**117**	P	**P**	**13 16 44.0**	**+0.7**
	comp=Z,2.5nm,0.9s,baz=267,slow=8.3,SNR=3.2						
TSUM	**Tsumeb**	**46.66**	**117**	*e*P	**P**	**13 16 45.5**	**+2.1**
TSUM				LR	LR		
	comp=Z,13μm,21.0s						
ABSA	**Djebel Ababsia**	**47.02**	**37**	P	**P**	**13 16 47.7**	**+1.8**
CMAH	**Djebel Manchou**	**47.22**	**37**	P	**P**	**13 16 50.5**	**+3.1**
BANI	**BANI**	**47.40**	**295**	*e*P	**P**	**13 16 50.0**	**+0.8**
CBRI	**Barrientos, No**	**47.58**	**280**	*e*P	**P**	**13 16 53.9**	**+3.2**
GRMC	**Gramalote, San**	**47.59**	**280**	*e*P	**P**	**13 16 53.9**	**+3.1**
PB11	**IPOC Station P**	**47.60**	**242**	*e*P	**P**	**13 16 52.2**	**+1.5**
PB11				LR	LR		
	comp=Z,3μm,20.0s						
RUSC	**La Rusia**	**47.69**	**278**	*e*P	P	13 17 00.6	+8.8
KEST	**Kesra**	**47.82**	**39**	P	**P**	**13 16 53.0**	**+0.9**
	comp=Z,17nm,0.8s,baz=328,slow=2.4,SNR=14						
PB01	**IPOC Station P**	**47.90**	**241**	PFAKE		13 17 00.0	+7.1
PB01				LR	LR		
	comp=Z,5μm,22.0s						
ATE	**Arette**	**47.94**	**25**	*e*P	**P**	**13 16 56.1**	**+3.3**
LVC	**Limon Verde**	**47.98**	**239**	P	**P**	**13 16 56.1**	**+2.2**
	comp=Z,21nm,0.8s,baz=47,slow=5.0,SNR=5.6						
LVC	**Limon Verde**	**47.98**	**239**	*e*P	**P**	**13 16 56.1**	**+2.2**
LVC				LR	LR		
	comp=Z,4μm,20.0s						
REYF	**Montagne du Re**	**48.06**	**25**	*e*P	**P**	**13 16 57.7**	**+3.9**
LABF	**Labassere**	**48.24**	**25**	*e*P	**P**	**13 16 58.4**	**+3.2**
SDDR	**Presa de Saban**	**48.42**	**295**	*e*P	**P**	**13 16 57.9**	**+0.9**
SDDR				LR	LR		
	comp=Z,2μm,22.0s						
SALF	**Salau**	**48.49**	**26**	*e*P	**P**	**13 17 00.1**	**+3.0**
BBSR	**BB Station**	**48.62**	**315**	PFAKE		13 17 10.0	+12
BBSR				LR	LR		
	comp=Z,3μm,20.0s						
ROSC	**El Rosal**	**48.84**	**276**	P	**P**	**13 17 04.0**	**+3.3**
	comp=Z,3.2nm,0.3s,baz=246,slow=20,SNR=4.7						
PB04	**IPOC Station P**	**48.94**	**239**	*e*P	**P**	**13 17 00.4**	**-0.7**
PB04				LR	LR		
	comp=Z,4μm,22.0s						
GRTK	**Grand Turk**	**49.06**	**298**	PFAKE		13 17 10.0	+8.3
GRTK				LR	LR		
	comp=Z,2μm,20.0s						
PAPH	**Port-au-Prince**	**49.21**	**294**	PFAKE		13 17 10.0	+7.1
PAPH				LR	LR		
	comp=Z,2μm,20.0s						
PRAC	**Prado**	**49.34**	**274**	*e*P	P	13 17 10.3	+6.1
PB10	**IPOC Station P**	**49.72**	**238**	*e*P	**P**	**13 17 04.8**	**-2.0**
PB10				LR	LR		
	comp=Z,4μm,20.0s						
VSL	**Villasalto**	**50.29**	**35**	PFAKE		13 17 20.0	+9.2
VSL				LR	LR		
	comp=Z,10μm,20.0s						
TRQA	**Tornquist**	**50.90**	**217**	*e*P	**P**	**13 17 12.3**	**-3.2**
TRQA				LR	LR		
	comp=Z,4μm,20.0s						
WDD	**Wied Dalam**	**51.27**	**42**	PFAKE		13 17 30.0	+12
WDD				LR	LR		
	comp=Z,28μm,20.0s						
LBL	**Lubilhac**	**51.36**	**26**	*e*P	**P**	**13 17 23.1**	**+4.2**
CLTB	**Caltabellotta**	**51.41**	**40**	*e*P	**P**	**13 17 15.8**	**-3.6**
CLTB				LR

comp=Z,16µm,18.0s
LOMF Lomont 54.57 27 *e*P P 13 17 47.6 +5.0
TIP Timpagrande 54.60 40 *e*P **P 13 17 41.1 -1.8**
TIP LR LR
comp=Z,37µm,20.0s
SUR Sutherland 54.62 131 P **P 13 17 43.1 -0.2**
comp=Z,0.1nm,0.8s,baz=231,slow=13,SNR=2.2
SUR Sutherland 54.62 131 P **P 13 17 41.4 -1.9**
comp=Z,61nm,1.1s
SUR LR LR
comp=Z,7µm,19.0s
BCIP Isla Barro Col 54.66 281 *e*P **P 13 17 43.3 -0.4**
comp=Z,147nm,1.7s
BCIP LR LR
comp=Z,700nm,20.0s
DSB Dublin 54.99 14 PFAKE 13 18 00.0 +15
DSB LR LR
comp=Z,4µm,18.0s
MOF Molkenrain 55.08 26 *e*P **P 13 17 49.4 +3.1**
TUE Stuetta 55.10 29 PFAKE 13 18 00.0 +13
TUE LR LR
comp=Z,6µm,19.0s
HOPE Hope Point 55.29 188 PFAKE 13 18 00.0 +12
HOPE LR LR
comp=Z,12µm,21.0s
ECH Echery 55.37 26 *e*P **P 13 17 50.2 +1.9**
LSZ Lusaka 55.39 109 *e*P **P 13 17 47.3 -1.8**
LSZ MLR MLR
comp=Z,8µm,22.0s
LSZ Lusaka 55.39 109 P **P 13 17 53.6 +4.4**
LSZ Lusaka 55.39 109 *e*P **P 13 17 47.3 -1.8**
LSZ LR LR
comp=Z,8µm,22.0s
DRLN Deer Lake 55.79 335 PFAKE 13 18 00.0 +8.8
DRLN LR LR
comp=Z,6µm,20.0s
CWF Charnwood Fore 55.91 18 PFAKE 13 18 00.0 +8.0
CWF LR LR
comp=Z,6µm,22.0s
DAVA Damuels 55.94 28 *i* P **P 13 17 51.9 -0.6**
comp=Z,36nm,1.4s
BFO Black Forest 55.98 27 *e*P **P 13 17 52.4 -0.2**
BFO pmax pmax
comp=Z,16nm,1.2s
BFO MLR MLR
comp=Z,4µm,18.0s
BFO Black Forest 55.98 27 *e*P **P 13 17 52.4 -0.2**
comp=Z,16nm,1.2s
BFO LR LR
comp=Z,4µm,18.0s
WLF Walferdange 56.05 24 PFAKE 13 18 00.0 +6.9
WLF LR LR
comp=Z,7µm,18.0s
FETA Feichten 56.16 29 *i* pP **P 13 17 55.9 +1.8**
comp=Z,33nm,1.2s
RETA Reutte 56.50 29 *i* sP **P 13 18 00.6 +4.2**
comp=Z,22nm,1.2s
BOSA Boshof 56.56 125 P **P 13 17 59.2 +2.0**
comp=Z,1.5nm,0.6s,baz=305,slow=9.0,SNR=5.6
BOSA LR LR 13 37 51.8
comp=Z,9µm,20.6s,baz=280,slow=32
MOTA Moosalm 56.57 29 *i* P **P 13 17 54.3 -2.7**
comp=Z,8,6nm,0.8s
VLS Valsamata 56.61 43 P P 13 18 05.9 +8.6
VLS Valsamata 56.61 43 P P 13 18 05.9 +8.6
STU Stuttgart 56.69 27 PFAKE 13 18 10.0 +12
STU LR LR
comp=Z,3µm,20.0s
WTTA Wattenberg 56.77 30 *i* sP **P 13 18 03.2 +4.7**
comp=Z,22nm,1.4s
PYL PYLOS 56.78 45 P P 13 18 07.2 +8.7
PYL PYLOS 56.78 45 P P 13 18 07.2 +8.7
HGN Heimansgroeve 56.81 23 *e*P **P 13 18 01.6 +3.2**
comp=Z,116nm,1.9s
HGN *e*S **S 13 25 54.2 +3.4**
LMN Caledonia Moun 56.82 328 *e*P **P 13 17 56.3 -2.3**
LMN LR LR
comp=Z,4µm,22.0s
TRI Trieste 56.82 32 PFAKE 13 18 10.0 +11
TRI LR LR
comp=Z,8µm,18.0s
ABTA Abfaltersbach 56.86 30 *i* sP **P 13 18 02.9 +3.9**
comp=Z,51nm,1.3s
LKD2 Lefkada island 56.96 42 P P 13 18 08.9 +9.1
LKD2 Lefkada island 56.96 42 P P 13 18 08.9 +9.1
ITM Ithomi 57.04 45 P P 13 18 09.5 +9.1
ITM Ithomi 57.04 45 P P 13 18 09.5 +9.1
AMT Artemida-Makis 57.06 44 P P 13 18 09.6 +9.0
SGD Sagiada 57.10 41 P P 13 18 10.0 +9.2
IGT Igoumenitsa 57.12 41 P P 13 18 09.8 +8.8
IGT Igoumenitsa 57.12 41 P P 13 18 09.8 +8.8
RLS Riolos of Patr 57.15 43 P P 13 18 10.4 +9.3
RLS Riolos of Patr 57.15 43 P P 13 18 10.4 +9.3
DRO Drossia 57.27 44 P P 13 18 12.0 +10
MYKA Terra Mystica 57.36 31 *i* P **P 13 18 02.1 -0.5**
comp=Z,39nm,1.4s
KYTH Kithira 57.42 46 P P 13 18 12.3 +9.2
KYTH Kithira 57.42 46 P P 13 18 12.3 +9.2
ANKY Antikythira Is 57.42 47 P P 13 18 07.9 +4.8
ANKY Antikythira Is 57.42 47 P P 13 18 07.9 +4.8
DSL Palaion Diasel 57.43 42 P P 13 18 12.4 +9.2
DSL Palaion Diasel 57.43 42 P P 13 18 12.4 +9.2
VLX Vlachokerasia 57.45 45 P P 13 18 13.1 +10
VLX Vlachokerasia 57.45 45 P P 13 18 13.1 +10
PVO Paravola 57.46 43 P P 13 18 12.8 +9.5
KBA Koelnbreinsper 57.50 31 *i* sP P 13 18 08.9 +5.2
comp=Z,18nm,1.3s
VLI Veliai 57.54 46 P P 13 18 13.7 +10
VLI Veliai 57.54 46 P P 13 18 13.7 +10
GVD Gavdhos 57.55 48 P P 13 18 12.9 +8.9
GVD Gavdhos 57.55 48 P P 13 18 12.9 +8.9
LAKA Lakka 57.59 44 P **P 13 18 07.7 +3.4**
LAKA Lakka 57.59 44 P **P 13 18 07.7 +3.4**
KLV Kalavryta, Ach 57.61 44 P P 13 18 14.3 +10
KLV Kalavryta, Ach 57.61 44 P P 13 18 14.3 +10
ESK Eskdalemuir 57.66 15 PFAKE 13 18 20.0 +16
ESK LR LR
comp=Z,7µm,20.0s
EKA Eskdalemuir Ar 57.68 15 P **P 13 18 05.6 +1.0**
comp=Z,5.0nm,0.8s,baz=202,slow=6.3,SNR=6.3
ANX Ano Chora 57.72 43 P **P 13 18 08.9 +3.6**
IMMV Iera Moni Meta 57.74 47 P P 13 18 14.4 +9.0
OBKA Obir 57.75 32 *i* P **P 13 18 05.1 -0.2**
comp=Z,30nm,1.7s
TIR Tirane 57.78 39 PFAKE 13 18 20.0 +14
TIR LR LR
comp=Z,20µm,18.0s
EVR Evrytania 57.80 43 P **P 13 18 07.4 +1.5**
EVR Evrytania 57.80 43 P **P 13 18 07.4 +1.5**
PLCA Paso Flores 57.81 219 P **P 13 18 07.0 +1.2**
comp=Z,1.6nm,0.9s,baz=45,slow=4.3,SNR=3.2
PLCA LR LR 13 42 06.3
comp=Z,3µm,20.2s,baz=79,slow=35
PDG Podgorica 57.99 38 ⇓*i* P **P 13 18 11.2 +4.2**
PDG Podgorica 57.99 38 P P 13 18 16.2 +9.2
TTG Podgorica 57.99 38 P P 13 18 16.2 +9.2
KPRO Kipourio 58.02 41 P **P 13 18 09.1 +1.7**
DSF Desfina 58.05 44 P **P 13 18 09.9 +2.3**
DSF Desfina 58.05 44 P **P 13 18 09.9 +2.3**
NEST Nestorio 58.05 41 P P 13 18 12.6 +5.0
WTSB Winterswijk 58.09 23 *e*P **P 13 18 06.6 -0.9**
comp=Z,121nm,1.8s
SOKA Soboth 58.12 32 *i* pP **P 13 18 09.4 +1.5**
comp=Z,39nm,1.4s
DID Didima 58.12 45 P **P 13 18 08.1 +0.1**
DID Didima 58.12 45 P **P 13 18 08.1 +0.1**
LTK Loutraki 58.17 44 P **P 13 18 08.1 -0.3**
LTK Loutraki 58.17 44 P **P 13 18 08.1 -0.3**
AGG Agios Georgios 58.21 43 P **P 13 18 12.0 +3.4**
AGG Agios Georgios 58.21 43 *e*P **P 13 18 08.0 -0.6**
AGG Agios Georgios 58.21 43 *e*P **P 13 18 07.7 -1.0**
AGG LR LR
comp=Z,21µm,20.0s
THL Klokotos Trika 58.26 42 P P 13 18 18.1 +9.2
GRF Grafenberg Arr 58.28 27 P **P 13 18 12.8 +3.9**
GRF pmax pmax
comp=Z,24nm,1.9s
IDI Anoyia 58.34 48 ⇑*i* P P 13 18 14.6 +5.0
IDI Anoyia 58.34 48 P P 13 18 19.5 +10
IDI Anoyia 58.34 48 *e*P **P 13 18 08.6 -1.1**
IDI LR LR
comp=Z,7µm,20.0s
BCX Boston College 58.37 322 PFAKE 13 18 20.0 +10
BCX LR LR
comp=Z,8µm,21.0s
BRYW Bryant College 58.37 321 PFAKE 13 18 20.0 +10
BRYW LR LR
comp=Z,5µm,20.0s
FNA Florina 58.45 41 P **P 13 18 10.6 +0.3**
FNA Florina 58.45 41 P **P 13 18 10.6 +0.3**
FNA Florina 58.45 41 P **P 13 18 10.6 +0.3**
KZN Kozani 58.47 41 P P 13 18 19.1 +8.6
KZN Kozani 58.47 41 P P 13 18 19.1 +8.6
MOA Molln 58.48 30 *i* sP P 13 18 18.1 +7.7
comp=Z,24nm,1.2s
WES Weston 58.49 322 PFAKE 13 18 20.0 +10
WES LR LR
comp=Z,6µm,21.0s
WET Wettzell 58.67 29 P **P 13 18 14.2 +2.6**
WET pmax pmax
comp=Z,28nm,1.6s
VLY Voula,Athens 58.67 45 P P 13 18 20.3 +8.5
VLY Voula,Athens 58.67 45 P P 13 18 20.3 +8.5
HRV Adam Dziewonsk 58.70 322 *e*P **P 13 18 10.9 -1.0**
HRV MLR MLR
comp=Z,3µm,20.0s
HRV Adam Dziewonsk 58.70 322 *e*P **P 13 18 10.9 -1.0**
HRV LR LR
comp=Z,3µm,20.0s
WVL Waterville 58.71 324 PFAKE 13 18 20.0 +8.0
WVL LR LR
comp=Z,7µm,21.0s
LAST Lasithi 58.72 48 ⇑*i* P **P 13 18 15.8 +3.5**
LAST Lasithi 58.72 48 *e*P **P 13 18 10.9 -1.5**
LAST LR LR
comp=Z,9µm,20.0s
EFI East Falkland 58.72 203 PFAKE 13 18 20.0 +8.1
EFI LR LR
comp=Z,3µm,20.0s
ARSA Arzberg 58.74 32 *i* sP **P 13 18 16.9 +4.7**
comp=Z,20nm,1.6s
PTL Penteli 58.81 45 P P 13 18 21.6 +8.8
PTL Penteli 58.81 45 P P 13 18 21.6 +8.8
LIT Litokhoron 58.85 42 P P 13 18 21.8 +8.8
LIT Litokhoron 58.85 42 P P 13 18 21.8 +8.8
NPS Neapolis 58.86 48 P P 13 18 22.4 +9.2
NPS Neapolis 58.86 48 P P 13 18 22.4 +9.2
GERES GERESS Array B 58.86 29 P **P 13 18 13.3 +0.2**
comp=Z,3.9nm,0.9s,baz=243,slow=5.8,SNR=12
GERES PP **PP 13 20 24.1 +0.7**
comp=Z,1.8nm,0.8s,baz=201,slow=10,SNR=3.0
GERES LR LR 13 43 25.6
comp=Z,4µm,18.6s,baz=236,slow=36
PKME Peaks-Kenny Pk 58.91 325 PFAKE 13 18 20.0 +6.7
PKME LR LR
comp=Z,3µm,19.0s
HDC Heredia 58.94 281 PFAKE 13 18 30.0 +16
HDC LR LR
comp=Z,900nm,20.0s
YLE Yale 58.95 320 PFAKE 13 18 20.0 +6.3
YLE LR LR
comp=Z,4µm,22.0s
XOR Xorichti 58.96 43 P P 13 18 22.6 +8.7
XOR Xorichti 58.96 43 P P 13 18 22.6 +8.7
KHC Kasperske Hory 59.00 29 *e*P **P 13 18 13.3 -0.6**
KHC *ex* x 13 18 22.2
KHC *ex* x 13 18 36.2
KHC *e*PP **PP 13 20 23.1 -1.4**
KHC *e*S **S 13 26 23.5 +3.9**
KHC AMS AMS 13 47 10.0
comp=Z,6µm,15.3s
KHC Kasperske Hory 59.00 29 *e*P **P 13 18 12.5 -1.4**
KHC MLR MLR
comp=Z,2µm,18.0s
KHC Kasperske Hory 59.00 29 *e*P **P 13 18 12.5 -1.4**
KHC LR LR
comp=Z,2µm,18.0s
QUA2 Belchertown 59.08 321 PFAKE 13 18 30.0 +15
QUA2 LR LR
comp=Z,4µm,21.0s
SKO Skopje 59.11 39 P P 13 18 23.8 +9.0
SKO Skopje 59.11 39 P P 13 18 23.8 +9.0
SKO Skopje 59.11 39 P P 13 18 23.8 +9.0
MOX Moxa 59.13 27 P **P 13 18 17.1 +2.3**
MOX pmax pmax
comp=Z,20nm,1.7s
SANT Santorini 59.21 47 ⇑*i* P **P 13 18 18.5 +2.8**
SANT Santorini 59.21 47 PFAKE 13 18 30.0 +14
SANT LR LR
comp=Z,8µm,20.0s
NKC Novy Kostel 59.22 27 *e*S **S 13 26 29.4 +7.0**
NKC AMS AMS 13 49 10.0
comp=Z,4µm,13.2s
ZKR Zakros 59.26 49 P P 13 18 24.7 +8.8
ZKR Zakros 59.26 49 P P 13 18 24.7 +8.8
FFD Franklin Falls 59.28 322 PFAKE 13 18 30.0 +14
FFD LR LR
comp=Z,6µm,21.0s
AOS Alonnisos 59.34 43 P **P 13 18 18.9 +2.5**
AOS Alonnisos 59.34 43 P **P 13 18 18.9 +2.5**
CONA Conrad Observa 59.35 31 *i* P **P 13 18 15.3 -1.2**
comp=Z,18nm,1.7s
DIVS Divibare 59.36 37 P **P 13 18 20.6 +4.0**
PAL Palisades 59.43 319 PFAKE 13 18 30.0 +13
PAL LR LR
comp=Z,4µm,22.0s
HORT Hortiatis 59.49 42 P P 13 18 26.3 +8.7
HORT Hortiatis 59.49 42 P P 13 18 26.3 +8.7
VAY Valandovo 59.51 41 P P 13 18 25.8 +8.3
VAY Valandovo 59.51 41 P P 13 18 25.8 +8.3
VAY Valandovo 59.51 41 P P 13 18 25.8 +8.3
SOP Sopron 59.56 32 P **P 13 18 20.5 +2.7**
SOP pmax pmax
comp=Z,29nm,1.2s
PAIG Paliouri 59.56 43 P P 13 18 26.0 +8.1
PAIG Paliouri 59.56 43 P P 13 18 26.0 +8.1
PAIG Paliouri 59.56 43 P P 13 18 26.0 +8.1
APE Apeiranthos 59.56 46 ⇑*i* P **P 13 18 22.4 +4.3**
APE Apeiranthos 59.56 46 P **P 13 18 20.3 +2.2**
APE Apeiranthos 59.56 46 P **P 13 18 20.3 +2.2**
APE Apeiranthos 59.56 46 P **P 13 18 20.3 +2.2**
PLG Polygyros 59.62 42 P P 13 18 27.1 +8.7
PLG Polygyros 59.62 42 P P 13 18 27.1 +8.7
PLG Polygyros 59.62 42 P P 13 18 27.1 +8.7
KNT Kendrikon 59.64 41 P P 13 18 27.1 +8.6
KNT Kendrikon 59.64 41 P P 13 18 27.1 +8.6
KNT Kendrikon 59.64 41 P P 13 18 27.1 +8.6
BRNJ Basking Ridge 59.70 318 PFAKE 13 18 30.0 +11
BRNJ LR LR
comp=Z,4µm,22.0s
SOH Sokhos 59.77 41 P **P 13 18 21.7 +2.2**
SOH pmax pmax
comp=Z,25nm,1.5s
JTS JuntasAbangare 59.79 282 PFAKE 13 18 30.0 +10
JTS LR LR
comp=Z,700nm,20.0s
HNH Hanover 59.80 322 *e*P **P 13 18 17.9 -1.6**
HNH LR LR
comp=Z,6µm,21.0s
LBNH Lisbon 59.87 323 *e*P **P 13 18 17.2 -2.8**
LBNH MLR MLR
comp=Z,5µm,21.0s
LBNH Lisbon 59.87 323 *e*P **P 13 18 17.2 -2.8**
LBNH LR LR
comp=Z,5µm,21.0s
ODNJ Ogdensburg 59.92 319 *e*P **P 13 18 16.8 -3.6**
ODNJ LR LR
comp=Z,3µm,22.0s
OUR Ouranopolis 59.96 42 P P 13 18 29.6 +8.9
OUR Ouranopolis 59.96 42 P P 13 18 29.6 +8.9
OUR Ouranopolis 59.96 42 P P 13 18 29.6 +8.9
DWPF Disney Wildern 60.01 302 PFAKE 13 18 30.0 +8.8
DWPF LR LR
comp=Z,4µm,20.0s
PRU Pruhonice 60.04 29 *e*P **P 13 18 21.4 +0.4**
PRU *ex* x 13 18 28.9
PRU *e*PP **PP 13 20 30.6 -3.0**
PRU *ex* x 13 22 06.6
PRU *e*S **S 13 26 35.3 +2.4**
PRU AMS AMS 13 50 10.0
comp=Z,5µm,14.1s
PRU Pruhonice 60.04 29 *e*P **P 13 18 21.4 +0.4**
PRU *e* 13 18 28.9
PRU *e* 13 20 30.6
PRU *e* 13 22 06.6
PRU *e*S **S 13 26 35.3 +2.4**
PRU MLR MLR
comp=Z,5µm,14.1s
TREC Trest 60.04 30 *e*P **P 13 18 21.0 -0.1**
TREC *e*S **S 13 26 36.1 +3.1**
TREC AMS AMS 13 48 20.0
comp=Z,6µm,15.0s
TREC Trest 60.04 30 *e*P **P 13 18 21.0 -0.1**
TREC *e*S **S 13 26 36.1 +3.1**
TREC MLR MLR
comp=Z,6µm,15.0s
SRS Serrai 60.08 41 P P 13 18 30.4 +8.9
SRS Serrai 60.08 41 P P 13 18 30.4 +8.9
SRS Serrai 60.08 41 P P 13 18 30.4 +8.9
GOPC GO Pecny, Ondr 60.11 29 *e*P **P 13 18 21.7 +0.1**
GOPC *e*PP **PP 13 20 30.8 -3.5**
GOPC *e*S **S 13 26 38.6 +4.8**
GOPC AMS AMS 13 50 40.0
comp=Z,5µm,16.6s
GOPC GO Pecny, Ondr 60.11 29 *e*P **P 13 18 21.7 +0.1**
GOPC *e* 13 20 30.8
GOPC *e*S **S 13 26 38.6 +4.8**
GOPC MLR MLR
comp=Z,5µm,16.6s
KKB Krupnik 60.11 40 *e*P P 13 18 27.9 +6.2
KARP Karpathos 60.13 48 P P 13 18 30.6 +8.6
KARP Karpathos 60.13 48 *e*P **P 13 18 20.7 -1.4**
KARP LR LR
comp=Z,2µm,20.0s
TRY Troy 60.14 321 PFAKE 13 18 30.0 +8.1
TRY LR LR
comp=Z,5µm,21.0s
LUPA Lehigh Univers 60.20 318 PFAKE 13 18 30.0 +7.7
LUPA LR LR
comp=Z,4µm,22.0s
CLL Collm 60.22 27 *e*Plp **P 13 18 21.0 -1.3**
CLL *e*Pmax 13 18 24.0
CLL *e*pP **pP 13 18 27.0 -1.4**
CLL *i* sP **sP 13 18 29.8 -0.9**
comp=Z,55nm,1.8s
CLL *i* 13 18 45.0
comp=Z,62nm,1.7s
CLL *e* 13 19 18.0
CLL *e*PP **PP 13 20 37.0 +1.8**
CLL *e*PPP PPP 13 21 55.0
CLL *e*S **S 13 26 37.0 +1.8**
comp=N,4µm,28.4s
CLL *e*S **S 13 26 37.0 +1.8**
comp=E,4µm,25.9s
CLL *e* 13 29 30.0
CLL *e*SSS SSS 13 33 14.0
CLL LmV 13 45 00.0
comp=Z,4µm,18.6s
CLL Lmax 13 50 00.0
CLL Collm 60.22 27 *e*P **P 13 18 18.8 -3.5**
CLL MLR MLR
comp=Z,4µm,18.0s
CLL Collm 60.22 27 *e*P **P 13 18 18.8 -3.5**
CLL LR LR
comp=Z,4µm,18.0s
BRG Berggiesshubel 60.35 28 *e*P P 13 18 30.3 +7.1
comp=Z,43nm,1.9s
BRG PP **PP 13 20 34.0 -2.4**
BRG S **S 13 26 45.0 +8.1**
comp=N,4µm,16.7s
comp=E,4µm,14.0s
comp=Z,6µm,15.0s
BRG Berggiesshubel 60.35 28 *e*P P 13 18 30.3 +7.1
BRG 13 20 34.0
BRG S **S 13 26 45.0 +8.1**
BRG pmax pmax
comp=Z,43nm,1.9s
BRG MLR MLR
comp=N,4µm,16.7s
BRG MLR MLR
comp=E,4µm,14.0s
BRG MLR MLR
comp=Z,6µm,15.0s
NVR Nevrokopi 60.37 41 P P 13 18 32.6 +9.1
NVR Nevrokopi 60.37 41 P P 13 18 32.6 +9.1
MMB Musomiste 60.39 41 *e*P P 13 18 29.2 +5.5
PVCC Panska Ves 60.41 28 *e*P **P 13 18 23.6 0.0**
PVCC *ex* x 13 18 31.5
PVCC AMS AMS 13 44 00.0
comp=Z,6µm,16.2s
PVCC Panska Ves 60.41 28 *e*P **P 13 18 23.6 0.0**
PVCC *e* 13 18 31.5
PVCC MLR MLR
comp=Z,6µm,16.2s
ACCN Adirondack Com 60.48 321 PFAKE 13 18 30.0 +5.8
ACCN LR LR
comp=Z,3µm,21.0s
CBN Corbin Frederi 60.50 315 PFAKE 13 18 30.0 +5.6
CBN LR LR
comp=Z,3µm,20.0s
CHOS Chios island 60.51 45 P **P 13 18 28.9 +4.3**
CHOS Chios island 60.51 45 P **P 13 18 28.9 +4.3**
LIA Limnos Island 60.57 43 P **P 13 18 28.7 +3.8**
LIA Limnos Island 60.57 43 P **P 13 18 28.7 +3.8**
MVL Millersville 60.58 317 PFAKE 13 18 40.0 +15
MVL LR LR
comp=Z,2µm,21.0s
NHSC New Hope 60.60 308 PFAKE 13 18 40.0 +15
NHSC LR LR
comp=Z,4µm,21.0s
VRAC Vranov 60.60 30 ⇑*i* P **P 13 18 26.8 +1.8**
VRAC Vranov 60.60 30 ⇑P **P 13 18 26.8 +1.8**
KAVA Kavala 60.63 42 P P 13 18 34.2 +8.9
KAVA Kavala 60.63 42 P P 13 18 34.2 +8.9
SDMD Soldier's Deli 60.65 316 *e*P **P 13 18 22.7 -2.8**
SDMD LR LR
comp=Z,2µm,21.0s
SIGR SIGRI 60.73 44 P P 13 18 35.0 +9.1
SIGR SIGRI 60.73 44 P P 13 18 35.0 +9.1
BUD Budapest 60.76 33 P **P 13 18 29.2 +3.2**
BUD pmax pmax
comp=Z,34nm,1.9s
MDVR Moldovita 60.77 37 ⇓*i* P **P 13 18 30.2 +4.0**
SMG Samos 60.77 46 P P 13 18 35.0 +8.6
SMG Samos 60.77 46 P P 13 18 35.0 +8.6
LMQ La Malbaie 60.84 327 PFAKE 13 18 40.0 +13
LMQ LR LR
comp=Z,2µm,20.0s
BODT Bodrum 60.85 47 P **P 13 18 23.0 -3.9**
BODT Bodrum 60.85 47 P **P 13 18 23.0 -3.9**
KSPA Keystone Colle 60.92 319 PFAKE 13 18 40.0 +13
KSPA LR LR
comp=Z,3µm,22.0s
PRK Paraskevi 61.03 44 P P 13 18 37.1 +9.1
PRK Paraskevi 61.03 44 P P 13 18 37.1 +9.1
PRK Paraskevi 61.03 44 P P 13 18 37.1 +9.1
GCAM G?zelcaml? 61.06 46 *i* P P 13 18 34.5 +6.3
SMTH Samothraki Isl 61.07 43 P P 13 18 36.7 +8.4
SMTH Samothraki Isl 61.07 43 P P 13 18 36.7 +8.4
RZN Rozhen 61.09 41 *e*P P 13 18 34.2 +5.6
UPC Upice 61.09 29 *e*P **P 13 18 28.3 +0.1**
UPC *ex* x 13 18 36.4
UPC *e*S **S 13 26 48.6 +2.2**
UPC AMS AMS 13 50 20.0
comp=Z,7µm,14.8s
UPC Upice 61.09 29 *e*P **P 13 18 28.3 +0.1**
UPC *e* 13 18 36.4
UPC *e*S **S 13 26 48.6 +2.2**
UPC MLR MLR
comp=Z,7µm,14.8s
DPC Dobruska-Polom 61.14 29 *e*P **P 13 18 25.6 -3.0**
DPC *e*pP **pP 13 18 31.6 -3.1**
DPC *ex* x 13 18 48.7
DPC *e*PP **PP 13 20 38.5 -4.9**
DPC *e*S **S 13 26 48.7 +1.6**
DPC AMS AMS 13 50 10.0
comp=Z,6µm,14.9s
DPC Dobruska-Polom 61.14 29 *e*P **P 13 18 25.6 -3.0**
DPC *e* 13 18 31.6
DPC *e* 13 20 38.5
DPC *e*S **S 13 26 48.7 +1.6**
DPC MLR MLR
comp=Z,6µm,14.9s
BOZC Bozcaada 61.14 44 *i* P **P 13 18 30.0 +1.3**
BZS Buzias 61.16 36 ⇓*i* P **P 13 18 32.6 +3.8**
BZS Buzias 61.16 36 ⇓P **P 13 18 32.6 +3.8**
FRNY Flat Rock 61.19 323 PFAKE 13 18 40.0 +11
FRNY LR LR
comp=Z,4µm,21.0s
VYHS Vyhne 61.26 32 *e*P **P 13 18 29.7 +0.3**

VYHS e 13 22 10.8
VYHS eS **S** **13 26 47.6 -1.1**
VYHS pmax pmax
comp=Z,27nm,1.4s
VYHS Vyhne 61.26 32 eP **P** **13 18 29.7 +0.3**
VYHS e 13 18 51.3
VYHS e 13 22 10.8
VYHS eS **S** **13 26 47.6 -1.1**
VYHS eSS **SS** **13 30 56.1 +6.9**
VYHS eL L 13 38 10.8
MPEP Malo Peshtene 61.28 39 eP **P** **13 18 30.0 +0.4**
PLD Plovdiv 61.28 41 eP P 13 18 34.7 +5.0
AYVA Ayvalik 61.35 44 i P **P** **13 18 28.9 -1.3**
MORC Moravsky Berou 61.38 30 ⇓iP **P** **13 18 32.8 +2.5**
MORC Moravsky Berou 61.38 30 eP **P** **13 18 28.4 -1.8**
MORC MLR MLR
comp=Z,21μm,19.0s
MORC Moravsky Berou 61.38 30 eP **P** **13 18 28.4 -1.8**
MORC LR LR
comp=Z,21μm,19.0s
KSP Ksiaz 61.45 29 eP P 13 18 36.7 +6.1
KSP eS **S** **13 26 57.4 +6.5**
KSP LMZ LR 13 39 08.4
comp=Z,7μm,36.3s
KSP Ksiaz 61.45 29 eP P 13 18 36.7 +6.1
KSP eS **S** **13 26 57.4 +6.5**
PSZ Piszkesteto 61.49 33 ⇑iP **P** **13 18 35.3 +4.2**
PSZ Piszkesteto 61.49 33 eP **P** **13 18 28.8 -2.3**
PSZ MLR MLR
comp=Z,8μm,20.0s
PSZ Piszkesteto 61.49 33 eP **P** **13 18 28.8 -2.3**
PSZ LR LR
comp=Z,8μm,20.0s
KDZ Kurdzhali 61.53 42 eP P 13 18 36.6 +5.2
SIRR Siria 61.55 35 ⇑iP **P** **13 18 33.5 +2.1**
YER Yerkesik 61.59 47 P P 13 18 39.9 +7.9
YER Yerkesik 61.59 47 P P 13 18 39.9 +7.9
YER Yerkesik 61.59 47 P P 13 18 39.9 +7.9
ALN Alexandroupoli 61.61 43 P **P** **13 18 34.7 +2.8**
ALN Alexandroupoli 61.61 43 P **P** **13 18 34.7 +2.8**
ALN Alexandroupoli 61.61 43 P **P** **13 18 34.7 +2.8**
ENEZ Enez 61.61 43 P **P** **13 18 36.1 +4.2**
LONY Lake Ozonia 61.69 322 PFAKE 13 18 40.0 +7.6
LONY LR LR
comp=Z,3μm,21.0s
OKC Ostrava-Krasne 61.72 31 eP **P** **13 18 32.6 +0.1**
OKC epP **pP** **13 18 37.6 -1.0**
OKC eS **S** **13 26 55.1 +0.7**
OKC AMS AMS 13 50 10.0
comp=Z,5μm,14.9s
OKC Ostrava-Krasne 61.72 31 eP **P** **13 18 32.6 +0.1**
OKC e 13 18 37.6
OKC eS **S** **13 26 55.1 +0.7**
OKC MLR MLR
comp=Z,5μm,14.9s
RAC Raciborz 61.90 30 eP P 13 18 39.0 +5.3
RAC MLR MLR
comp=Z,5μm,20.2s
SSPA Standing Stone 61.92 317 eP **P** **13 18 32.6 -1.4**
SSPA LR LR
comp=Z,3μm,21.0s
AKHS Akhisar 61.96 45 i P P 13 18 27.8 -6.6
LANS Liptovska Anna 61.99 32 eP **P** **13 18 36.5 +2.1**
LANS Liptovska Anna 61.99 32 eP **P** **13 18 36.5 +2.1**
FETY Fethiye 61.99 48 P P 13 18 43.1 +8.5
FETY Fethiye 61.99 48 P P 13 18 43.1 +8.5
KECS Kecovo 62.14 33 eP **P** **13 18 38.3 +2.9**
KECS pmax pmax
comp=Z,8.0nm,1.2s
KECS Kecovo 62.14 33 eP **P** **13 18 38.3 +2.9**
KMSC Kings Mountain 62.22 310 PFAKE 13 18 50.0 +14
KMSC LR LR
comp=Z,4μm,22.0s
AKAS Kas 62.23 49 i P P 13 18 26.6 -10
BLA Blacksburg 62.30 313 PFAKE 13 18 50.0 +13
BLA LR LR
comp=Z,2μm,21.0s
MANT Manisa 62.33 46 i P **P** **13 18 40.2 +3.1**
DNZL Cakiroluk 62.37 47 i P **P** **13 18 33.4 -3.9**
KULA Kula-Manisa 62.42 46 P P 13 18 46.2 +8.7
KULA Kula-Manisa 62.42 46 P P 13 18 46.2 +8.7
DRGR 62.44 35 ⇑iP **P** **13 18 40.1 +2.6**
DRGR 62.44 35 ⇑P **P** **13 18 40.1 +2.6**
MUD Monsted U'grnd 62.45 21 i P P 13 18 42.5 +5.3
comp=Z,5μm,18.0s
TGUH Tegucigalpa,Un 62.45 286 eP **P** **13 18 35.6 -2.4**
TGUH LR LR
comp=Z,1μm,22.0s
TRQ Mont Tremblant 62.50 324 eP **P** **13 18 35.8 -2.2**
EDRB Edirne 62.51 42 P **P** **13 18 38.4 +0.5**
EDRB Edirne 62.51 42 P **P** **13 18 38.4 +0.5**
GOLH Golhisar 62.57 48 i P **P** **13 18 36.8 -1.8**
NIE Niedzica 62.59 32 eP P 13 18 45.1 +6.7
NIE eS S 13 27 21.4 +16
NIE LMZ LR 13 40 03.4
comp=Z,4μm,32.3s
NIE Niedzica 62.59 32 eP P 13 18 45.1 +6.7
NIE eS S 13 27 21.4 +16
RGN Rugen 62.63 24 PFAKE 13 18 50.0 +12
RGN LR LR
comp=Z,4μm,20.0s
JMB Yambol 62.68 41 eP **P** **13 18 35.4 -3.7**
DURS Dursunbey 62.73 45 i P P 13 18 32.3 -7.3
TIGA Tifton 62.79 305 PFAKE 13 18 50.0 +10
TIGA LR LR
comp=Z,4μm,22.0s
OJC Ojcow 62.80 31 eP **P** **13 18 41.8 +2.1**
OJC eS **S** **13 27 14.1 +6.0**
OJC LMZ LR 13 40 13.1
comp=Z,8μm,33.2s
OJC Ojcow 62.80 31 eP **P** **13 18 41.8 +2.1**
OJC eS **S** **13 27 14.0 +6.0**
OJC Ojcow 62.80 31 eP **P** **13 18 36.8 -3.0**
ARR Arges 62.84 38 ⇑iP **P** **13 18 41.3 +1.1**
MCWV Mont Chateau 62.86 315 PFAKE 13 18 50.0 +10
MCWV LR LR
comp=Z,1μm,20.0s
KMBO Kilima Mbogo 62.88 91 eP **P** **13 18 45.0 +3.7**
KMBO pmax pmax
comp=Z,108nm,1.8s
KMBO MLR MLR
comp=Z,8μm,19.0s
KMBO Kilima Mbogo 62.88 91 eP **P** **13 18 45.0 +3.7**
comp=Z,108nm,1.8s
KMBO LR LR
comp=Z,8μm,19.0s
CRVS Cervenica-Dubn 62.91 33 eP **P** **13 18 41.6 +1.1**
CRVS eS **S** **13 27 15.1 +5.6**
CRVS Cervenica-Dubn 62.91 33 eP **P** **13 18 41.6 +1.1**
CRVS e 13 22 21.8
CRVS eS **S** **13 27 15.1 +5.6**
CRVS eSS SS 13 31 40.5 +25
KHAL Karahalli 62.96 46 i P P 13 18 35.7 -5.5
MTUR Matau 63.03 38 ⇓iP **P** **13 18 44.2 +2.7**
MTUR Matau 63.03 38 ⇓P **P** **13 18 44.2 +2.7**
KORT Korkueli 63.07 48 i P **P** **13 18 40.2 -1.8**
STHS Stebnicka Huta 63.09 32 eP **P** **13 18 45.2 +3.5**
STHS Stebnicka Huta 63.09 32 eP **P** **13 18 45.2 +3.5**
COP Copenhagen 63.09 23 i P P 13 18 47.1 +5.6
comp=Z,2μm,19.0s
COP Copenhagen 63.09 23 eP P 13 18 47.1 +5.6
COP MLR MLR
comp=Z,2μm,19.0s
VOIR 63.13 38 ⇓iP **P** **13 18 41.6 -0.5**
VOIR 63.13 38 ⇓P **P** **13 18 41.6 -0.5**
UZH Uzhgorod 63.21 33 eP **P** **13 18 45.0 +2.5**
UZH e 13 18 48.4
UZH i 13 21 04.6
UZH i S **S** **13 27 14.0 +0.8**
UZH ePS **PnS** **13 27 33.0 +2.6**
UZH MLR MLR
comp=N,8μm,14.0s
UZH MLR MLR
comp=E,8μm,14.0s
UZH MLR MLR
comp=Z,6μm,14.0s
GDZ Gediz 63.23 46 i P P 13 18 37.9 -5.1
GOGA Godfrey 63.30 308 PFAKE 13 18 50.0 +6.6
GOGA LR LR
comp=Z,2μm,20.0s
ISP Isparta 63.50 47 PFAKE 13 19 00.0 +15
ISP LR LR
comp=Z,8μm,22.0s

IGD Bursa 63.51 44 i P **P** **13 18 42.5 -2.2**
PRD Provadia 63.55 41 eP **P** **13 18 47.3 +2.5**
ARCR ARCALIA 63.55 36 ⇑iP P 13 18 52.3 +7.5
DOPR Dopca 63.60 37 ⇓iP **P** **13 18 45.6 +0.4**
BSD Bornholm Skovb 63.69 25 i P **P** **13 18 49.9 +4.4**
comp=Z,4μm,16.0s
BSD Bornholm Skovb 63.69 25 eP **P** **13 18 49.9 +4.4**
BSD MLR MLR
comp=Z,4μm,16.0s
MLR Muntele Rosu 63.70 38 LR LR 13 49 29.6
comp=Z,3μm,18.5s,baz=236,slow=39
MLR Muntele Rosu 63.70 38 ⇓iP **P** **13 18 49.0 +3.0**
MLR Muntele Rosu 63.70 38 eP **P** **13 18 44.3 -1.7**
MLR Muntele Rosu 63.70 38 eP **P** **13 18 44.3 -1.7**
BAGO Egridir - ISPA 63.76 47 i P **P** **13 18 47.0 +0.5**
SCHQ Schefferville 63.79 335 P **P** **13 18 49.1 +2.9**
comp=Z,6.8nm,0.6s,baz=153,slow=6.8,SNR=1.9
SCHQ LR LR 13 42 46.3
comp=Z,3μm,19.8s,baz=136,slow=32
ALLY Alegheny Colle 63.89 317 PFAKE 13 19 00.0 +13
ALLY LR LR
comp=Z,3μm,21.0s
ISR Istrita 63.90 39 ⇓iP **P** **13 18 48.6 +1.4**
ISR Istrita 63.90 39 ⇓P **P** **13 18 48.6 +1.4**
ERPA Erie 63.98 318 PFAKE 13 19 00.0 +12
ERPA LR LR
comp=Z,3μm,22.0s
BOLV Bolvadin 64.15 46 i P **P** **13 18 49.2 +0.2**
BORA Eskisehir 64.24 45 i P **P** **13 18 48.1 -1.4**
BEL Belsk 64.27 30 eP P 13 18 59.4 +10
BEL LMZ LR 13 40 31.3
comp=Z,8μm,37.6s
BEL Belsk 64.27 30 eP P 13 18 59.4 +10
PSN Preselentsi 64.28 41 eP **P** **13 18 53.8 +4.2**
GAZI Gazipasa 64.28 50 i P **P** **13 18 47.0 -2.8**
TEIG Tepich 64.28 292 eP **P** **13 18 49.2 -0.9**
TEIG LR LR
comp=Z,900nm,20.0s
PLOR Plostina 64.31 38 ⇓iP **P** **13 18 53.0 +3.1**
PLOR Plostina 64.31 38 ⇓P **P** **13 18 53.0 +3.1**
BURAR Bucovina Array 64.33 36 ⇑iP **P** **13 18 53.3 +3.3**
BURAR Bucovina Array 64.33 36 ⇑P **P** **13 18 53.3 +3.3**
VRI Vrincioaia 64.37 38 ⇓iP **P** **13 18 47.5 -2.7**
VRI Vrincioaia 64.37 38 ⇓P **P** **13 18 47.5 -2.7**
EIL Elat 64.43 57 LR LR 13 45 52.1
comp=Z,11μm,21.1s,baz=266,slow=35
KAND Kocaeli-Kandir 64.53 44 i P **P** **13 18 56.0 +4.7**
FURI Furi 64.54 80 PFAKE 13 19 00.0 +7.7
FURI LR LR
comp=Z,3μm,18.0s
HARR Harsova 64.57 39 ⇓iP **P** **13 18 50.3 -1.2**
HARR Harsova 64.57 39 ⇓P **P** **13 18 50.3 -1.2**
SADO Sadowa 64.60 321 eP **P** **13 18 49.5 -2.2**
SADO LR LR
comp=Z,3μm,21.0s
TESR Tescani 64.63 37 ⇑iP **P** **13 18 55.1 +3.2**
CSS Mathiatis 64.64 51 P **P** **13 18 52.1 -0.1**
CSS Mathiatis 64.64 51 eP **P** **13 18 50.9 -1.4**
CSS LR LR
comp=Z,2μm,22.0s
PAYG Puerto Ayora 64.69 269 PFAKE 13 19 00.0 +7.1
PAYG LR LR
comp=Z,1μm,20.0s
TIRR Tirgusor 64.77 40 eP **P** **13 18 53.3 +0.5**
TIRR Tirgusor 64.77 40 eP **P** **13 18 53.3 +0.5**
TIRR LR LR
comp=Z,9μm,20.0s
CPCT Cooper Cave 64.78 309 PFAKE 13 19 00.0 +6.9
CPCT LR LR
comp=Z,2μm,22.0s
LVV L'vov 64.82 33 eP P 13 18 59.1 +6.1
LVV eS **S** **13 27 38.9 +5.8**
LVV eSS **SS** **13 31 47.3 +2.6**
LVV MLR MLR
comp=Z,2μm,15.0s
LVV MLR MLR
comp=N,3μm,16.0s
LVV MLR MLR
comp=E,2μm,16.0s
KMER Konya-Meram 64.85 48 i P **P** **13 18 53.8 +0.1**
ERMK Ermenek 64.87 49 i P **P** **13 18 57.1 +3.2**
BTAS Taskesti 64.89 45 i P **P** **13 18 53.8 0.0**
CFR Carcaliu 64.92 39 ⇑iP **P** **13 18 54.1 +0.3**
CFR Carcaliu 64.92 39 ⇑P **P** **13 18 54.1 +0.3**
KDHN Kadinhani 64.93 47 i P **P** **13 18 52.6 -1.5**
KONO Kongsberg 65.05 19 PFAKE 13 19 10.0 +16
KONO LR LR
comp=Z,5μm,20.0s
ACSO Alum Creek Sta 65.30 315 eP **P** **13 18 56.8 +0.4**
ACSO LR LR
comp=Z,2μm,19.0s
MMAI Mount Meron Ar 65.70 54 P **P** **13 18 59.9 +0.7**
comp=Z,1.4nm,0.5s,baz=142,slow=47,SNR=2.4
MMAI LR LR 13 50 59.6
comp=Z,3μm,18.1s,baz=280,slow=39
BCAM Yenicaga 65.73 45 i P **P** **13 18 54.9 -4.4**
SWET Sewanee 65.80 309 eP **P** **13 18 59.6 -0.1**
SWET LR LR
comp=Z,800nm,21.0s
ANTO Ankara 65.90 46 eP **P** **13 18 59.8 -0.6**
ANTO Ankara 65.90 46 eP **P** **13 18 59.8 -0.6**
ANTO LR LR
comp=Z,11μm,21.0s
LRAL Lakeview Retre 66.01 306 PFAKE 13 19 10.0 +8.9
LRAL LR LR
comp=Z,2μm,21.0s
BTIN Bart'–n 66.17 44 i P **P** **13 19 05.0 +3.1**
KIS Kishinev 66.17 37 eP **P** **13 19 06.0 +4.2**
KIS Kishinev 66.17 37 ePPP PPP 13 23 44.0
KIS eS **S** **13 27 50.0 +0.2**
KIS LRM MLR 13 50 24.0
comp=Z,8μm,20.0s
KIS Kishinev 66.17 37 eP **P** **13 19 06.0 +4.2**
KIS e 13 19 10.0
KIS e 13 21 30.0
KIS eS **S** **13 27 50.0 +0.2**
KIS e 13 28 22.0
KIS MLR MLR
comp=N,4μm,20.0s
KIS MLR MLR
comp=Z,9μm,20.0s
KIS MLR MLR
comp=E,4μm,17.0s
KIS MLR MLR
comp=Z,8μm,20.0s
DED Mersin 66.40 49 i P **P** **13 19 01.6 -1.9**
SORM Soroca 66.42 36 ⇑iP **P** **13 19 03.0 -0.3**
SORM Soroca 66.42 36 ⇑P **P** **13 19 03.1 -0.3**
BRTR Keskin Array B 66.46 46 P **P** **13 19 02.2 -1.9**
comp=Z,11nm,0.9s,baz=232,slow=5.7,SNR=24
BRTR PP **PP** **13 21 26.4 -4.2**
comp=Z,2.2nm,0.8s,baz=243,slow=7.3,SNR=3.6
BRTR LR LR 13 49 30.7
comp=Z,6μm,19.8s,baz=223,slow=37
BRTR Keskin Array B 66.46 46 ceP **P** **13 19 05.4 +1.4**
BRTR pmax pmax
comp=Z,11nm,0.9s
AAM Ann Arbor 66.55 317 PFAKE 13 19 10.0 +5.6
AAM LR LR
comp=Z,3μm,22.0s
NB2 NORSAR Subarra 66.64 19 P **P** **13 19 05.6 +1.0**
comp=Z,14nm,1.0s,baz=220,slow=6.5
NB2 NORSAR Subarra 66.64 19 P **P** **13 19 05.1 +0.5**
NB2 pmax pmax
comp=Z,11nm,0.9s
NOA NORSAR Array B 66.64 19 P **P** **13 19 05.7 +1.1**
comp=Z,12nm,1.0s,baz=220,slow=6.3,SNR=17
NOA LR LR 13 47 05.9
comp=Z,2μm,18.1s,baz=225,slow=35
ASF Jabal al Asfar 66.69 55 P **P** **13 19 06.2 +0.6**
comp=Z,2.6nm,0.5s,baz=0.0,slow=4.0,SNR=3.2
ASF LR LR 13 50 23.1
comp=Z,3μm,18.3s,baz=206,slow=38
SUW Suwalki 66.72 29 eP **P** **13 19 08.2 +3.0**
SUW LMZ LR 13 42 38.4
comp=Z,5μm,32.7s
SUW Suwalki 66.72 29 eP **P** **13 19 08.2 +3.0**
Z47A Carrollton 66.92 306 P **P** **13 19 08.2 +1.3**
baz=106
Y47A UCPARC, Winfie 66.94 307 P **P** **13 19 09.0 +2.0**
baz=106
CDAG Cicekdag 66.96 47 i P P 13 19 00.5 -6.6
ILGA Ilgaz 66.98 45 i P **P** **13 19 06.2 -1.3**
WCI Wyandotte Cave 67.02 312 eP **P** **13 19 07.1 -0.4**

WCI MLR MLR
comp=Z,4μm,22.0s
WCI Wyandotte Cave 67.02 312 eP **P** **13 19 07.1 -0.4**
WCI LR LR
comp=Z,4μm,22.0s
CCIG Comitan 67.37 287 eP **P** **13 19 09.7 -0.6**
BLO Bloomington 67.49 313 eP **P** **13 19 11.7 +1.3**
BLO Bloomington 67.49 313 eP **P** **13 19 11.7 +1.3**
BLO LR LR
comp=Z,2μm,20.0s
WVT Waverly 67.55 309 eP **P** **13 19 09.8 -1.0**
WVT MLR MLR
comp=Z,3μm,22.0s
WVT Waverly 67.55 309 eP **P** **13 19 09.8 -1.0**
WVT LR LR
comp=Z,3μm,22.0s
BOYT Boyabat 67.95 45 i P P 13 19 07.3 -6.0
KIEV Kiev 68.12 34 i P **P** **13 19 16.6 +2.4**
KIEV pmax pmax
comp=Z,36nm,0.9s
KIEV MLR MLR
comp=Z,4μm,19.0s
KIEV Kiev 68.12 34 eP **P** **13 19 12.3 -1.9**
KIEV LR LR
comp=Z,4μm,20.0s
AKASG Malin Array Be 68.14 34 P **P** **13 19 12.8 -1.4**
comp=Z,27nm,0.9s,baz=240,slow=6.3,SNR=24
AKASG LR LR 13 50 03.6
comp=Z,3μm,19.8s,baz=235,slow=37
AKASG Malin Array Be 68.14 34 i P **P** **13 19 14.8 +0.6**
AKASG pmax pmax
comp=Z,27nm,0.9s
CUSAR Sarkisla-SIVAS 68.26 47 i P P 13 19 05.0 -10
SFIN Lafayette 68.30 314 PFAKE 13 19 30.0 +15
SFIN LR LR
comp=Z,2μm,18.0s
OXF Oxford 68.34 307 PFAKE 13 19 30.0 +14
OXF LR LR
comp=Z,2μm,20.0s
OLIL Olney 68.52 312 eP **P** **13 19 17.3 +0.4**
OLIL LR LR
comp=Z,4μm,22.0s
GZT Gaziantep 68.63 50 i P **P** **13 19 22.0 +4.2**
HALT Halls 68.66 309 PFAKE 13 19 30.0 +12
HALT LR LR
comp=Z,2514μm,21.0s
VBMS Vicksburg 68.67 305 PFAKE 13 19 30.0 +12
VBMS LR LR
comp=Z,3μm,21.0s
SIM Simferopol' 68.68 41 eP **P** **13 19 20.3 +2.5**
SIM 13 21 54.0
SIM i PPP PPP 13 23 36.0
SIM i PS **PnS** **13 28 55.0 +10**
SIM i SS SS 13 32 50.0 +5.2
SIM pmax pmax
comp=Z,132nm,9.4s
SIM MLR MLR
comp=N,3μm,18.6s
SFJD Kangerlussuaq 68.69 350 P **P** **13 19 19.8 +2.5**
comp=N,6.8nm,0.8s,baz=162,slow=9.6,SNR=4.5
SFJD Kangerlussuaq 68.69 350 i P P 13 19 24.2 +6.9
SFJD Kangerlussuaq 68.69 350 eP **P** **13 19 17.5 +0.2**
SFJD Kangerlussuaq 68.69 350 eP **P** **13 19 15.1 -2.2**
ATD Arta Tunnel 68.81 78 LR LR 13 47 52.2
comp=N,2μm,19.5s,baz=270,slow=35
MET Memphis--Engin 68.92 308 PFAKE 13 19 30.0 +11
MET LR LR
comp=Z,2μm,22.0s
NACGM Naroch 68.97 29 eP **P** **13 19 22.0 +2.7**
NACGM eS **S** **13 28 24.0 +1.0**
NACGM ePS **PnS** **13 29 02.0 +13**
NACGM eLQ LQ 13 41 17.0
NACGM eLR LR 13 50 15.0
NACGM LRM MLR 13 54 22.0
comp=Z,8.2nm,17.0s
ISAL Salakas 69.01 29 eP **P** **13 19 21.7 +2.2**
ISAL IAmb IAmb 13 19 34.7
comp=Z,7.2nm,0.7s
PVMO Portageville 69.08 309 PFAKE 13 19 30.0 +10
PVMO LR LR
comp=Z,3μm,22.0s
IZAR Zarasai 69.16 28 eP **P** **13 19 22.7 +2.2**
IZAR IAmb IAmb 13 19 38.0
comp=Z,17nm,0.5s
IDID Didziasalis 69.16 29 eP **P** **13 19 22.7 +2.2**
IDID IAmb IAmb 13 19 35.6
comp=Z,10nm,0.9s
MICGM Minsk 69.30 30 eP **P** **13 19 25.0 +3.6**
MICGM ePcP **PcP** **13 19 44.0 -0.9**
MICGM eS **S** **13 28 28.0 +1.0**
MICGM ePS **PnS** **13 28 59.0 +5.7**
MICGM eSS SS 13 33 08.0 +14
MICGM eSSS SSS 13 36 10.0
MICGM eLQ LQ 13 41 40.0
MICGM eLR LR 13 47 20.0
MICGM LRM MLR 13 53 04.0
comp=Z,7.2nm,14.0s
MNK Minsk 69.30 30 eP **P** **13 19 25.0 +3.6**
MNK e 13 19 44.0
MNK eS **S** **13 28 28.0 +1.0**
MNK ePS **PnS** **13 28 54.0 +0.7**
MNK MLR MLR
comp=Z,7μm,14.0s
CUZAR Zara_SIVAS 69.52 47 i P **P** **13 19 23.1 -0.2**
PBMO Poplar Bluff 69.74 309 PFAKE 13 19 30.0 +5.5
PBMO LR LR
comp=Z,3μm,22.0s
KEMA Kemaliye 69.88 48 i P P 13 19 19.7 -5.7
SUSE Susehri 69.94 47 i P **P** **13 19 27.6 +1.8**
HDIL Hopedale 69.95 313 PFAKE 13 19 40.0 +14
HDIL LR LR
comp=Z,2μm,19.0s
ELZG Elazig 70.03 49 i P P 13 19 14.1 -12
CMIG Matias Romero 70.08 288 LR LR 13 49 30.9
comp=Z,330nm,21.9s,baz=102,slow=35
SLM Saint Louis 70.09 311 PFAKE 13 19 40.0 +13
SLM LR LR
comp=Z,4μm,22.0s
CCAR Cane Creek 70.09 306 PFAKE 13 19 40.0 +13
CCAR LR LR
comp=Z,1μm,22.0s
V42A Cord 70.24 308 P **P** **13 19 29.2 +1.6**
baz=104
DAMY Dhamar 70.54 75 PFAKE 13 19 40.0 +10
DAMY LR LR
comp=Z,2μm,19.0s
FRB Frobisher Bay 70.57 341 P **P** **13 19 33.0 +4.0**
comp=Z,6.4nm,0.9s,baz=144,slow=5.6,SNR=5.8
FRB Frobisher Bay 70.57 341 P **P** **13 19 33.0 +4.0**
TNCL Tunceli-Merkez 70.62 48 i P **P** **13 19 34.4 +4.4**
KELT Kelkit 70.69 47 i P **P** **13 19 27.6 -2.9**
UALR University of 70.75 307 eP **P** **13 19 27.8 -2.9**
UALR LR LR
comp=Z,2μm,22.0s
ILULI Ilulissat 70.75 351 i P **P** **13 19 33.4 +3.4**
ILULI Ilulissat 70.75 351 eP **P** **13 19 33.4 +3.4**
W41B Gary Mavity, V 70.77 307 P **P** **13 19 30.4 -0.4**
baz=104
WHAR Wooly Hollow 70.83 307 PFAKE 13 19 40.0 +8.8
WHAR LR LR
comp=Z,2μm,20.0s
ANN Anapa 70.83 42 eP **P** **13 19 34.9 +3.9**
ANN e 13 22 05.3
ANN eS **S** **13 28 50.1 +4.8**
ANN eSS **SS** **13 33 15.2 -2.8**
ANN pmax pmax
comp=Z,90nm,1.8s
ANN MLR MLR
comp=N,707nm,22.0s
ANN MLR MLR
comp=E,596nm,22.0s
ANN MLR MLR
comp=Z,4μm,22.0s
T41A Mountain View 70.84 309 P **P** **13 19 31.9 +0.6**
baz=104
V41A Mountainview 70.84 308 P **P** **13 19 32.7 +1.4**
baz=104
VSU Vasula 70.86 26 ceP **P** **13 19 33.6 +2.7**
VSU pmax pmax
comp=Z,25nm,0.9s
VSU MLR MLR
comp=Z,8μm,19.0s
X201 Greenbrier Sit 70.89 307 PFAKE 13 19 40.0 +8.4
X201 LR LR

comp=Z,2μm,20.0s
X301 Greenbrier Sit 70.91 307 *e*P **P 13 19 30.1 -1.6**
X301 LR LR
comp=Z,2μm,21.0s
HEL Helsinki 71.07 24 PFAKE 13 19 40.0 +7.9
HEL LR LR
comp=Z,4μm,22.0s
MARD Mardin 71.09 51 *i* P **P 13 19 36.7 +3.7**
WLAR White Oak Lake 71.13 306 *e*P **P 13 19 31.2 -1.9**
WLAR LR LR
comp=Z,2μm,20.0s
JFWS Jewell Farm 71.33 316 PFAKE 13 19 40.0 +5.9
JFWS LR LR
comp=Z,2μm,20.0s
V40A Witts Springs 71.37 308 P **P 13 19 35.6 +1.0**
baz=103
W40A Ferguson Farm, 71.43 307 P **P 13 19 34.8 -0.1**
baz=103
T40A Mansfield 71.45 309 P **P 13 19 34.8 -0.2**
baz=104
U40A Yellville 71.52 308 P **P 13 19 36.4 +0.9**
baz=104
S40A Lebanon 71.55 310 P **P 13 19 34.5 -1.0**
baz=104
KOPT Kop Dagi 71.57 48 *i* P **P 13 19 40.0 +4.1**
COWI Conover 71.59 319 PFAKE 13 19 50.0 +14
COWI LR LR
comp=Z,3μm,22.0s
MIAR Mount Ida 71.69 306 *e*P **P 13 19 36.8 +0.3**
MIAR Mount Ida 71.69 306 *e*P **P 13 19 36.8 +0.3**
MIAR LR LR
comp=Z,1μm,20.0s
VNA1 Neumayer--Stat 71.90 174 P P 13 19 47.4 +10
VAF Ylistaro 71.92 21 P **P 13 19 40.3 +3.1**
VAF pmax pmax
comp=Z,29nm,1.2s
SOC Sochi 72.01 44 *e*P **P 13 19 42.4 +4.2**
SOC *e**PP **sP 13 19 46.7 0.0**
SOC *e* 13 22 20.1
SOC *e*S **S 13 28 58.0 -1.0**
SOC *e*SS **SS 13 33 30.6 -5.5**
SOC pmax pmax
comp=Z,25nm,0.8s
SOC MLR MLR
comp=Z,3μm,19.0s
NATX Nacogdoches 72.02 303 *e*P **P 13 19 35.9 -2.6**
comp=Z,111nm,1.3s
T39A Clever 72.09 309 P **P 13 19 39.3 +0.5**
baz=103
R39A Chumby, Stover 72.13 310 P **P 13 19 38.7 -0.4**
baz=104
S39A Bolivar 72.20 310 P **P 13 19 40.3 +0.9**
baz=104
FINES FINESS Array B 72.25 23 P **P 13 19 40.2 +1.0**
comp=Z,9.1nm,0.9s,baz=222,slow=4.9,SNR=19
FINES LR LR 13 49 54.2
comp=Z,4μm,19.4s,baz=230,slow=35
VNA2 Neumayer--Watz 72.25 174 P P 13 19 49.3 +10
baz=338,slow=5.6
VNA3 Neumayer Olymp 72.33 175 P P 13 19 48.8 +9.2
HHAR Hobbs 72.36 308 PFAKE 13 19 50.0 +10
HHAR LR LR
comp=Z,2μm,22.0s
SUMG Summit 72.46 356 *i* P P 13 19 46.5 +5.7
comp=Z,2μm,20.0s
SUMG Summit 72.46 356 *e*P **P 13 19 41.1 +0.3**
SUMG Summit 72.46 356 *e*P **P 13 19 41.1 +0.3**
SUMG LR LR
comp=Z,2μm,19.0s
EKAR Karacoban 72.55 49 *i* P **P 13 19 38.9 -2.9**
W38A Poteau 72.56 307 P **P 13 19 42.6 +0.9**
baz=102
HOMI Horasan 72.62 48 *i* P **P 13 19 43.4 +1.2**
V38A Canehill 72.64 307 P **P 13 19 43.7 +1.6**
baz=102
HKT Hockley 72.69 301 *e*P **P 13 19 39.5 -2.9**
HKT MLR MLR
comp=Z,2μm,21.0s
HKT Hockley 72.69 301 *e*P **P 13 19 39.5 -2.9**
HKT LR LR
comp=Z,2μm,21.0s
DBAD Bademkaya 72.71 47 *i* P P 13 19 36.7 -5.9
X38A Whitesboro 72.73 306 P **P 13 19 43.8 +1.2**
baz=102
R38A Fenwick Farm, 72.77 310 P **P 13 19 42.3 -0.5**
baz=103
DBOC Borcka 72.78 47 *i* P P 13 19 48.0 +5.1
P38A Dawn 72.82 311 P **P 13 19 45.4 +2.3**
baz=104
DAGI Agillar 72.89 47 *i* P **P 13 19 40.0 -3.6**
EATA Eleskirt 73.01 48 *i* P **P 13 19 45.7 +1.0**
GEVA Gevas 73.08 50 *i* P P 13 19 50.2 +5.3
I38A Scanlan Farm, 73.11 316 P **P 13 19 46.5 +1.8**
baz=106
SCIA State Center 73.16 314 PFAKE 13 20 00.0 +15
SCIA LR LR
comp=Z,2μm,19.0s
V37A Hulbert 73.23 307 P **P 13 19 44.5 -1.1**
baz=102
T37A Cheneyville 18 73.31 309 P **P 13 19 45.6 -0.4**
baz=102
U37A Salina 73.31 308 P **P 13 19 44.7 -1.5**
baz=102
S37A Fort Scott 73.38 309 P **P 13 19 46.3 -0.2**
baz=103
CHVG Ch'k'valeri 73.44 45 P P 13 19 55.8 +9.1
SNAA Sanae 73.49 173 P P 13 19 55.7 +9.2
SNAA Sanae 73.49 173 *e*P **P 13 19 45.8 -0.7**
SNAA MLR MLR
comp=Z,2μm,21.0s
SNAA Sanae 73.49 173 *e*P **P 13 19 45.8 -0.7**
SNAA LR LR
comp=Z,2μm,21.0s
EPOS Posof 73.59 47 *i* P P 13 19 40.0 -7.8
EYMN Ely 73.71 320 PFAKE 13 20 00.0 +12
EYMN LR LR
comp=Z,2μm,22.0s
TUL1 Leonard 73.75 307 P **P 13 19 49.1 +0.4**
baz=102
TUL1 Leonard 73.75 307 *e*P **P 13 19 46.8 -1.9**
TUL1 LR LR
comp=Z,2μm,21.0s
SPMN Marine on St. 73.77 317 *e*P **P 13 19 49.4 +0.8**
SPMN LR LR
comp=Z,3μm,22.0s
V36A Jenks 73.84 307 P **P 13 19 48.4 -0.8**
baz=101
S36A Lake Cedric, C 73.96 309 P **P 13 19 49.6 -0.3**
baz=102
EAK Akyaka 74.04 48 *i* P **P 13 19 54.7 +4.2**
OBN Obninsk 74.06 32⇑ *e*P **P 13 19 51.9 +1.9**
OBN *e* 13 22 38.6
OBN pmax pmax
comp=Z,53nm,1.7s
OBN MLR MLR
comp=Z,3μm,19.0s
OBN Obninsk 74.06 32 PFAKE 13 20 00.0 +10
OBN LR LR
comp=Z,4μm,21.0s
VSR Storozhevoye 74.08 36 *e*P **P 13 19 52.9 +2.6**
VSR *e* 13 20 08.1
VSR *e* 13 22 33.7
VSR *e*S **S 13 29 21.1 -1.2**
VSR pmax pmax
comp=Z,40nm,1.4s
VSR smax smax
comp=E,550nm,10.1s
VSR MLR MLR
comp=Z,3μm,21.0s
AKH Akhalkalaki 74.12 47 P **P 13 19 55.2 +4.2**
AKH Akhalkalaki 74.12 47 P **P 13 19 55.2 +4.2**
KIV Kislovodsk 74.18 44 *e*P **P 13 19 52.8 +1.6**
KIV *e*S **S 13 29 23.1 -0.8**
KIV *e*SS **SS 13 34 08.6 -0.9**
KIV pmax pmax
comp=Z,37nm,1.1s
KIV MLR MLR
comp=Z,2μm,18.0s
KIV Kislovodsk 74.18 44 *e*P **P 13 19 49.6 -1.5**
KIV LR LR
comp=Z,3μm,20.0s
KVAR Kislovodsk Arr 74.19 44 P **P 13 19 52.2 +1.0**
comp=Z,4.0nm,0.7s,baz=284,slow=4.2,SNR=5.3
KBZ Khabaz 74.27 44 P **P 13 19 52.9 +1.4**
comp=Z,15nm,1.0s,baz=196,slow=2.3,SNR=17
KBZ LR LR 13 54 56.7
comp=Z,2μm,21.4s,baz=257,slow=38
UNM Universidad Na 74.35 290 PFAKE 13 20 00.0 +7.2
UNM LR LR
comp=Z,600nm,20.0s
ONI Oni 74.38 46 P **P 13 19 54.1 +1.7**
ONI Oni 74.38 46 P **P 13 19 54.0 +1.7**
LPSR Galich'ya Gora 74.42 35 *e*P **P 13 19 54.6 +2.4**
LPSR *e* 13 20 08.2
LPSR *e*S **S 13 29 25.2 -0.8**
LPSR pmax pmax
comp=Z,40nm,1.4s
LPSR smax smax
comp=N,640nm,13.6s
LPSR MLR MLR
comp=Z,2μm,20.0s
W35A Tecumseh 74.47 306 P **P 13 19 52.9 0.0**
baz=101
S35A Otter Creek Ra 74.52 309 P **P 13 19 55.5 +2.4**
baz=102
V35A Meyer Ranch, C 74.55 307 P **P 13 19 55.1 +1.7**
baz=101
GOF Gofitskoye 74.72 43⇑ *e*P P 13 20 02.7 +8.6
GOF pmax pmax
comp=Z,89nm,1.6s
ZEI Tsey 74.75 46 *e*P **P 13 19 55.2 +0.6**
ZEI pmax pmax
comp=Z,72nm,1.6s
MOS Moscow 74.86 32 *e*P P 13 20 00.0 +5.3
MOS *e* 13 20 03.3
MOS *e* 13 20 12.0
MOS pmax pmax
comp=Z,81nm,1.2s
MOS MLR MLR
comp=Z,3μm,18.0s
434A Burnet 74.90 302 P **P 13 19 53.5 -2.0**
baz=99
534A Blanco 74.96 301 P **P 13 19 55.0 -0.9**
baz=98
H35A Sunnyside Ranc 75.02 316 P **P 13 19 57.6 +1.8**
baz=105
KSU1 Kansas State U 75.03 310 *e*P **P 13 19 55.1 -1.0**
KSU1 LR LR
comp=Z,2μm,22.0s
GUDG Gudauri 75.09 46 P P 13 20 02.5 +5.9
TBLG Delisi 75.11 47 P **P 13 19 59.3 +2.8**
TBLG Delisi 75.11 47 P **P 13 19 59.3 +2.8**
V34A Guthrie 75.11 307 *e*P **P 13 19 56.5 -0.1**
comp=Z,121nm,1.8s
V34A LR LR
comp=Z,1μm,20.0s
NVL N'lazarevskaya 75.19 168 *e*P P 13 20 05.8 +10
W34A Bridge Creek, 75.21 306 *e*P **P 13 19 56.8 -0.5**
W34A LR LR
comp=Z,2μm,20.0s
U34A Anderson Ranch 75.23 308 *e*P **P 13 19 56.2 -1.1**
U34A LR LR
comp=Z,1μm,20.0s
633A Saathoff Ranch 75.49 300 P **P 13 19 58.9 0.0**
baz=98
DGRG David-gareji 75.51 47 P **P 13 20 02.9 +4.1**
DGRG David-gareji 75.51 47 P **P 13 20 02.9 +4.1**
333A Richland Sprin 75.58 302 P **P 13 19 56.6 -2.9**
baz=98
433A Art 75.59 302 P **P 13 19 58.3 -1.2**
baz=98
VRH Novokhopyorsk 75.60 37 *e*P P 13 20 07.5 +8.4
VRH *e* 13 20 21.1
VRH *e*S **S 13 29 35.6 -3.6**
VRH pmax pmax
comp=Z,60nm,1.6s
VRH smax smax
comp=E,460nm,8.7s
VRH MLR MLR
comp=Z,4μm,22.0s
133A Hamilton Ranch 75.72 303 P **P 13 20 00.3 +0.1**
baz=99
WMOK Wichita Mounta 75.94 306 PFAKE 13 20 10.0 +8.6
WMOK LR LR
comp=Z,1μm,20.0s
ECSD EROS Data Cent 76.03 315 P **P 13 20 01.2 -0.6**
baz=103
ECSD EROS Data Cent 76.03 315 *e*P **P 13 19 59.9 -1.9**
ECSD LR LR
comp=Z,2μm,20.0s
JCT Junction City 76.16 301 *e*P **P 13 20 00.2 -2.6**
JCT MLR MLR
comp=Z,2μm,20.0s
JCT Junction City 76.16 301 *e*P **P 13 20 00.2 -2.6**
JCT LR LR
comp=Z,2μm,20.0s
MOIG Morelia 76.27 290 *e*P P 13 19 58.1 -5.7
MOIG LR LR
comp=Z,900nm,22.0s
ABTX Abilene, Hawle 76.33 303 P **P 13 20 04.5 +0.8**
baz=98
ABTX Abilene, Hawle 76.33 303 *e*P **P 13 19 59.8 -3.9**
ABTX LR LR
comp=Z,3μm,21.0s
KULLO Kullorsuaq 76.38 352 *i* P P 13 20 09.8 +6.8
A33A Warroad 76.48 320 P **P 13 20 04.4 +0.2**
baz=105
BGNE Belgrade 76.65 312 PFAKE 13 20 20.0 +15
BGNE LR LR
comp=Z,4μm,22.0s
ARCES ARCESS Array B 76.81 16 P **P 13 20 07.5 +1.9**
comp=Z,1.6nm,0.9s,baz=190,slow=6.2,SNR=5.7
ARCES LR LR 13 49 28.9
comp=Z,3μm,20.4s,baz=228,slow=32
ULM Lac du Bonnet 77.12 322 P **P 13 20 08.2 +0.4**
comp=Z,1.1nm,0.4s,baz=95,slow=2.3,SNR=2.4
ULM LR LR 13 48 02.5
comp=Z,3μm,21.6s,baz=98,slow=31
KEV Kevo 77.36 16 PFAKE 13 20 20.0 +11
KEV LR LR
comp=Z,4μm,22.0s
CBKS Cedar Bluff 77.37 310 PFAKE 13 20 20.0 +11
CBKS LR LR
comp=Z,2μm,21.0s
KLMR Klimovskoe 77.71 27 *e*P **P 13 20 10.6 -0.2**
KLMR *e* 13 23 04.4
KLMR pmax pmax
comp=Z,108nm,1.5s
ZAIG Zacatecas 77.80 293 PFAKE 13 20 20.0 +7.5
ZAIG LR LR
comp=Z,600nm,21.0s
APA Apatity 78.18 20⇓ *i*P P 13 20 20.0 +6.8
APA *i* S S 13 30 20.0 +13
APA pmax pmax
comp=Z,54nm,1.4s
B30A Myrvik Farm, E 78.25 320 P **P 13 20 14.1 0.0**
baz=103
AMTX Amarillo 78.32 305 *e*P **P 13 20 12.2 -2.7**
AMTX LR LR
comp=Z,1μm,22.0s
TMCR Tamitsa 78.37 24 *e*P P 13 20 23.3 +9.0
TMCR pmax pmax
comp=Z,30nm,0.4s
LVZ Lovozero 78.75 20 *e*P **P 13 20 14.7 -1.8**
LVZ Lovozero 78.75 20 *e*P **P 13 20 14.7 -1.8**
LVZ LR LR
comp=Z,6μm,20.0s
MDND Maddock 78.95 319 *e*P **P 13 20 14.5 -3.5**
MDND LR LR
comp=Z,3μm,21.0s
MSTX Muleshoe 79.10 304 P **P 13 20 19.1 -0.2**
baz=97
MSTX Muleshoe 79.10 304 *e*P **P 13 20 17.9 -1.4**
MSTX LR LR
comp=Z,2μm,22.0s
TXAR Lajitas Array 79.36 300 P **P 13 20 20.9 +0.2**
comp=Z,1.8nm,0.9s,baz=120,slow=5.5,SNR=16
TXAR LR LR 13 50 26.3
comp=Z,1μm,21.9s,baz=0.0,slow=32
OGNE Ogallala 79.46 311 PFAKE 13 20 30.0 +9.0
OGNE LR LR
comp=Z,3μm,20.0s
KSCO Kaye Shedlock' 79.63 309 *e*P **P 13 20 19.8 -2.2**
KSCO LR LR
comp=Z,2μm,22.0s
KBS Kingsbay 80.73 7 PFAKE 13 20 40.0 +13
KBS LR LR
comp=Z,4μm,19.0s
T25A Trinidad 80.80 307 PFAKE 13 20 40.0 +12
T25A LR LR
comp=Z,1μm,19.0s
HPIG 80.92 297 PFAKE 13 20 40.0 +11
HPIG LR LR
comp=Z,1μm,22.0s
MNTX Cornudas Mount 81.06 302 P **P 13 20 29.1 -0.6**
baz=95
MNTX Cornudas Mount 81.06 302 *e*P **P 13 20 27.2 -2.5**
MNTX LR LR
comp=Z,1μm,21.0s
I25A Rochford 81.14 314 P **P 13 20 29.9 -0.2**
baz=98
RSSD Black Hills 81.37 314 *e*P **P 13 20 29.5 -1.9**
RSSD MLR MLR
comp=Z,2μm,21.0s
RSSD Black Hills 81.37 314 *e*P **P 13 20 29.5 -1.9**
RSSD LR LR
comp=Z,2μm,21.0s
Q24A Divide 81.58 309 P **P 13 20 31.7 -1.0**
baz=96
Q24A Divide 81.58 309 *e*P **P 13 20 29.7 -3.0**
Q24A LR LR
comp=Z,2μm,21.0s
SDCO Great Sand Dun 81.72 308 P **P 13 20 32.5 -1.0**
baz=96
SDCO Great Sand Dun 81.72 308 *e*P **P 13 20 30.4 -3.0**
SDCO LR LR
comp=Z,2μm,21.0s
SYO Syowa Base 81.74 161⇑ *e*X P 13 20 26.0 -6.5
ISCO Idaho Springs 82.02 310 *e*P **P 13 20 32.9 -2.2**
ISCO MLR MLR
comp=Z,2μm,21.0s
ISCO Idaho Springs 82.02 310 *e*P **P 13 20 32.9 -2.2**
ISCO LR LR
comp=Z,2μm,21.0s
PHWY Pilot Hill 82.07 312 PFAKE 13 20 50.0 +15
PHWY LR LR
comp=Z,3μm,20.0s
DGMT Dagmar 82.09 319 PFAKE 13 20 40.0 +5.2
DGMT LR LR
comp=Z,2μm,22.0s
ANMO Albuquerque 82.23 305 *e*P **P 13 20 35.1 -1.0**
ANMO Albuquerque 82.23 305 *e*P **P 13 20 35.0 -1.0**
ASHO Ashiyiah 82.23 65 P P 13 20 46.7 +11
SNR=6.7
BNM Barren Site 82.31 304 *e*P **P 13 20 35.6 -0.9**
HATD Hatta, Dubai 82.31 65 P **P 13 20 39.5 +3.0**
SNR=8.9
HATD Hatta, Dubai 82.31 65 P **P 13 20 39.5 +3.0**
SNR=8.9
UOSS Minazif 82.38 65 *e*P **P 13 20 36.0 -0.9**
UOSS LR LR
comp=Z,6μm,21.0s
N23A Red Feather La 82.39 311 P **P 13 20 36.6 -0.3**
baz=96
N23A Red Feather La 82.39 311 *e*P **P 13 20 35.5 -1.4**
BANOM Banah 82.52 64 P **P 13 20 39.9 +2.3**
LAZ Ladron 82.75 304 *e*P **P 13 20 36.0 -2.8**
S22A 4UR Ranch, Cre 82.77 308 P **P 13 20 39.0 0.0**
baz=95
S22A 4UR Ranch, Cre 82.77 308 *e*P **P 13 20 36.6 -2.4**
K22A Casper 83.00 313 *e*P **P 13 20 36.8 -3.1**
SMCO Snowmass 83.01 309 *e*P **P 13 20 38.1 -2.3**
121A Cookes Peak, D 83.15 303 P **P 13 20 40.2 -0.8**
comp=Z,25nm,1.4s
LAO LASA Array 83.22 317 *e*P **P 13 20 42.7 +1.9**
comp=Z,48nm,1.1s
SMDO Samad 83.98 67 P **P 13 20 46.7 +1.4**
SNR=7.1
SMDO Samad 83.98 67 P **P 13 20 46.7 +1.4**
SNR=7.1
MVCO Mesa Verde 84.05 307 *e*P **P 13 20 41.9 -3.6**
O20A White River Ci 84.06 310 *e*P **P 13 20 42.3 -3.1**
RES Resolute Bay 84.17 346 P **P 13 20 47.8 +2.8**
comp=Z,10nm,0.9s,baz=110,slow=7.9,SNR=12
RES Resolute Bay 84.17 346 *e*P **P 13 20 43.5 -1.4**
RES Resolute Bay 84.17 346 *e*P **P 13 20 43.5 -1.4**
PV01 Paradox Valley 84.17 308 *e*P **P 13 20 43.5 -2.6**
PV04 Paradox Valley 84.45 308 *e*P **P 13 20 48.8 +1.3**
PV05 Paradox Valley 84.59 308 *e*P **P 13 20 46.8 -1.4**
GEYT Alibeck 84.76 52 P **P 13 20 48.8 0.0**
comp=Z,4.3nm,0.8s,baz=85,slow=4.6,SNR=4.6
GEYT LR LR 14 01 36.3
comp=Z,3μm,20.0s,baz=215,slow=38
X18A Snowflake 85.07 304 *e*P **P 13 20 48.8 -1.9**
RLMT Red Lodge 85.19 315 *e*P **P 13 20 49.8 -1.3**
BW06 Boulder Array 85.24 313 P **P 13 20 51.0 -0.4**
baz=94
BW06 Boulder Array 85.24 313 *e*P **P 13 20 50.5 -0.9**
PDAR Pinedale Array 85.24 313 P **P 13 20 51.6 +0.2**
comp=Z,0.6nm,0.8s,baz=75,slow=7.8,SNR=6.4
PDAR LR LR 13 53 10.7
comp=Z,3μm,21.9s,baz=111,slow=32
P18A Preston Nutter 85.57 310 *e*P **P 13 20 52.1 -1.1**
AKTO Aktyubinsk 85.58 40 P **P 13 20 53.9 +1.3**
comp=Z,4.2nm,0.9s,baz=269,slow=4.8,SNR=4.6
AKTO LR LR 14 02 49.0
comp=Z,2μm,21.2s,slow=38
HSIG 85.70 299 *e*P **P 13 20 53.6 0.0**
SRU San Rafael Swe 85.76 309 *e*P **P 13 20 52.5 -1.5**
SRU San Rafael Swe 85.76 309 *e*P **P 13 20 52.5 -1.5**
LKWY Lake 85.96 314 *e*P **P 13 20 53.3 -1.7**
LKWY pmax pmax
comp=Z,110nm,1.9s
LKWY Lake 85.96 314 *e*P **P 13 20 53.3 -1.7**
comp=Z,110nm,1.9s
LOHW Long Hollow 86.05 314 *e*P **P 13 20 53.4 -2.1**
H17A Grant Village 86.08 314 *e*P **P 13 20 52.9 -2.7**
FLWY Flagg Ranch 86.15 314 *e*P **P 13 20 53.0 -2.8**
SNOW Snow King Moun 86.16 313 *e*P **P 13 20 53.8 -2.2**
MOOW Moose Ponds 86.16 314 *e*P **P 13 20 54.1 -1.8**
REDW Red Top Meadow 86.22 313 *e*P **P 13 20 55.5 -0.7**
WUAX Wupatki 86.28 305 *e*P **P 13 20 55.5 -1.2**
TMUT Trail Mountain 86.30 309 *e*P **P 13 20 55.7 -1.1**
X16A Lo Mia Camp, P 86.30 304 *e*P **P 13 20 55.7 -1.1**
YMR Madison River 86.37 315 *e*P **P 13 20 56.8 -0.1**
AHID Auburn Hatcher 86.37 313 *e*P **P 13 20 55.1 -1.9**
comp=Z,79nm,1.4s
ARU Arti 86.39 34 P **P 13 21 00.6 +4.1**
comp=Z,6.8nm,0.6s,baz=254,slow=4.8,SNR=9.5
ARU LR LR 14 01 52.8
comp=Z,2μm,18.3s,baz=264,slow=37
ARU Arti 86.39 34 *d i*P **P 13 20 59.9 +3.5**
ARU 13 24 12.2
ARU S **S 13 31 23.2 -8.1**
ARU pmax pmax
comp=Z,19nm,1.2s
ARU Arti 86.39 34 *e*P **P 13 20 56.0 -0.5**
JLU Jordanelle 86.54 310 *e*P **P 13 20 56.3 -1.6**
HWUT Hardware Ranch 86.67 311 *e*P **P 13 20 55.5 -2.9**
QLMT Earthquake Lak 86.71 315 *e*P **P 13 20 56.6 -2.0**
ABKAR Akbulak array 86.74 41 *e*P **P 13 20 56.4 -1.9**
BOZ Bozeman (W) 86.89 316 *e*P **P 13 20 57.2 -2.2**
BOZ Bozeman (W) 86.89 316 *e*P **P 13 20 57.2 -2.2**
NLU North Lily Min 86.99 310 *e*P **P 13 20 57.9 -2.2**
LRM Limekiln Ridge 87.47 316 *e*P **P 13 21 00.5 -1.8**
SVE Sverdlovsk 87.56 33 *e*P **P 13 21 06.9 +4.8**
SVE pmax pmax
comp=Z,31nm,1.5s
DUG Dugway, Tooele 87.57 310 *e*P **P 13 21 01.3 -1.5**
DUG Dugway, Tooele 87.57 310 *e*P **P 13 21 01.3 -1.5**
MCMT McKenzie Canyo 87.72 315 *e*P **P 13 21 01.5 -2.1**
BGU Big Grassy Mou 87.75 311 *e*P **P 13 21 02.5 -1.1**
WALA Waterton Lakes 88.54 319 P **P 13 21 06.3 -0.9**
comp=Z,78nm,1.8s
SWMT Swartz Lake 88.57 317 *e*P **P 13 21 04.9 -2.4**
YKA Yellowknife Ar 89.13 332 P **P 13 21 10.6 +1.1**
comp=Z,0.9nm,0.7s,baz=93,slow=5.3,SNR=14
YKA PKKPbc **PKKPbc 13 38 53.7 +4.2**
comp=Z,0.1nm,0.3s,baz=297,slow=2.7,SNR=4.3
ELK Elko 89.42 311 *e*P **P 13 21 11.2 -0.5**
ELK pmax pmax
comp=Z,10.0nm,1.3s
ELK Elko 89.42 311 *e*P **P 13 21 11.2 -0.5**
comp=Z,10nm,1.3s
MAW Mawson 89.84 157 P P 13 21 20.4 +7.7
comp=Z,7.0nm,1.2s,baz=271,slow=6.1,SNR=2.6
MAW LR LR 13 53 08.7
comp=Z,1μm,19.7s,baz=281,slow=30
NEW Newport 90.67 318 P P 13 21 22.9 +5.8
comp=Z,1.6nm,0.6s,baz=63,slow=6.8,SNR=2.3
NVAR Mina Array Bea 91.83 308 P **P 13 21 26.6 +3.6**
comp=Z,0.1nm,0.3s,baz=94,slow=5.5,SNR=3.0
NVAR LR LR 13 57 42.9
comp=Z,967nm,21.2s,baz=92,slow=32
WVOR Wild Horse Val 91.94 312 *e*P **P 13 21 21.6 -1.6**
WVOR pmax pmax

comp=Z,32nm,1.6s
WVOR Wild Horse Val 91.94 312 *e*P **P 13 21 21.6 -1.6**
comp=Z,32nm,1.6s
ZRNK Zerenda 92.43 37 *e*P **P 13 21 23.1 -2.0**
ZRNK Zerenda 92.43 37 *e*P **P 13 21 23.1 -2.0**
BRVK Borovoye 93.19 37 *i* P **P 13 21 33.0 +4.5**
BRVK pmax pmax
comp=Z,12nm,2.0s
BRVK MLR MLR
comp=Z,3μm,19.0s
BVAR Borovoye Array 93.25 37 PP PP 13 25 08.1 -4.3
comp=Z,0.4nm,0.5s,baz=270,slow=7.2,SNR=2.8
KKAR Karatay Array 94.17 47 *e*P **P 13 21 32.1 -1.2**
KKAR Karatay Array 94.17 47 *e*P **P 13 21 32.1 -1.2**
PGC Sidney 94.85 319 *e*P **P 13 21 36.2 0.0**
INK Inuvik 96.14 339 LR LR 14 00 52.4
comp=Z,2μm,21.4s,baz=78,slow=33
INK Inuvik 96.14 339 *e*P **P 13 21 41.4 -0.3**
INK Inuvik 96.14 339 *e*P **P 13 21 41.4 -0.3**
AAK Ala-Archa 97.13 47 P Pdif 13 21 50.0 +2.9
comp=Z,0.8nm,0.3s,baz=216,slow=8.7,SNR=2.6
AAK PP **PP 13 25 41.0 -2.1**
comp=Z,1.0nm,0.6s,baz=198,slow=17,SNR=2.7
AAK Ala-Archa 97.13 47 *i* P Pdif 13 21 50.1 +3.0
AAK pmax pmax
comp=Z,13nm,1.2s
AAK MLR MLR
comp=Z,7μm,20.0s
FRU Bishkek 97.19 47 *e*P Pdif 13 21 56.0 +8.8
FRU *e* 13 25 42.0
FRU *i* S **PS 13 34 35.0 +1.1**
NRIK Noril'sk 97.59 19 P Pdif 13 21 52.8 +4.4
comp=Z,1.5nm,0.4s,baz=140,slow=7.9,SNR=2.4
NRIK LR LR 14 07 14.0
comp=Z,2μm,18.3s,baz=293,slow=36
KURBB Kurchatov Arra 98.60 39 P Pdif 13 21 56.8 +3.6
comp=Z,0.5nm,0.4s,baz=284,slow=5.0,SNR=7.4
KURBB PP **PP 13 25 57.6 +3.8**
comp=Z,2.5nm,1.2s,baz=282,slow=8.1,SNR=6.1
KURK Kurchatov 98.63 39 P Pdif 13 21 56.8 +3.4
KURK 13 25 57.6
KURK Kurchatov 98.63 39 P Pdif 13 21 56.8 +3.5
KURK PP **PP 13 25 57.6 +3.5**
KSH Kashi 98.64 50 *e*P **P 13 21 52.0 -1.9**
KSH *es*P pP 13 21 59.3 -0.9
KSH *e*PP **PP 13 25 55.6 +0.9**
KSH SKS **SKSac 13 32 28.8 -2.6**
KSH S **S 13 33 16.9 -5.8**
KSH SS **SS 13 40 06.5 -1.6**
KSH pmax pmax
comp=Z,84nm,5.3s
KSH LR LR
comp=Z,1μm,12.2s
KSH LR LR
comp=Z,4μm,18.5s
NVS Novosibirsk 100.39 34 ⇓*i* P **Pdif 13 22 06.4 +5.3**
NVS *e* 13 26 07.0
NVS pmax pmax
comp=Z,14nm,1.3s
NVS pmax pmax
comp=N,5.0nm,1.4s
NVS pmax pmax
comp=E,6.0nm,1.4s
KLRI Killari 101.46 72 *e*Pdif **Pdif 13 22 01.3 -5.4**
KLRI *e*PP **PP 13 26 16.5 -0.2**
KLRI *e*SKSac **SKSac 13 32 45.2 -0.7**
KLRI IVMs_BB IVMs_BB 14 10 56.1
comp=Z,1μm,20.4s
MKAR Makanchi Array 101.85 42 P **Pdif 13 22 09.3 +1.4**
comp=Z,0.3nm,0.8s,baz=262,slow=9.9,SNR=2.6
MKAR PP **PP 13 26 16.3 -2.4**
comp=Z,0.5nm,0.8s,baz=283,slow=8.1,SNR=3.0
ILAR Eielson Array 102.44 338 P **Pdif 13 22 16.0 +6.0**
comp=Z,0.5nm,0.9s,baz=39,slow=5.0,SNR=4.5
SRSP Sriramsagar 103.04 71 *e*Pdif **Pdif 13 22 12.1 -1.6**
SRSP *e*PP **PP 13 26 28.5 0.0**
SRSP *e*SKSac **SKSac 13 32 58.1 +4.8**
SRSP IVMs_BB IVMs_BB 14 13 26.1
comp=Z,863nm,21.9s
HYBB Hyderabad (bro 103.37 72 *e*Pdif **Pdif 13 22 13.7 -1.5**
HYBB *e*PP **PP 13 26 29.2 -1.8**
HYBB *e*SKSac **SKSac 13 32 58.7 +3.8**
HYBB IVMs_BB IVMs_BB 14 10 28.4
comp=Z,833nm,16.9s
SRLM Srisailam 103.80 73 *e*Pdif **Pdif 13 22 14.4 -2.7**
SRLM *e*PP **PP 13 26 32.1 -2.1**
SRLM *e*SKSac **SKSac 13 32 58.6 +1.7**
SRLM IVMs_BB IVMs_BB 14 13 12.8
comp=Z,834nm,14.7s
RCLA Racherla 103.91 74 *e*Pdif **Pdif 13 22 13.7 -3.9**
RCLA *e*PP **PP 13 26 32.5 -2.5**
RCLA *e*SKSac **SKSac 13 32 58.1 +0.7**
RCLA IVMs_BB IVMs_BB 14 08 54.9
comp=Z,1μm,19.9s
RPR Rampur 103.94 71 *e*PP PP 13 26 33.1 -2.2
RPR *e*SKSac **SKSac 13 32 57.2 -0.2**
RPR IVMs_BB IVMs_BB 14 14 11.1
comp=Z,865nm,18.2s
NJS Nagarjunasagar 104.16 73 *e*Pdif **Pdif 13 22 18.2 -0.5**
NJS *e*PP **PKiKP 13 26 35.5 -0.4**
NJS *e*SKSac **SKSac 13 33 00.7 +2.2**
NJS IVMs_BB IVMs_BB 14 11 59.4
comp=Z,868nm,15.2s
SKHT Srikalahasti 104.76 76 *e*Pdif **Pdif 13 22 19.9 -1.5**
SKHT *e*SKSac **SKSac 13 33 03.2 +1.9**
SKHT *e*SS **SS 13 41 37.0 +3.0**
SKHT IVMs_BB IVMs_BB 13 59 26.5
comp=Z,622nm,48.8s
ADKI Addanki 104.85 74 *e*Pdif **Pdif 13 22 13.9 -7.8**
ADKI *e*PP **PP 13 26 40.7 -1.3**
ADKI *e*SKSac **SKSac 13 33 00.1 -1.5**
ADKI IVMs_BB IVMs_BB 14 11 30.9
comp=Z,1μm,17.5s
PVM Polavaram 106.31 72 *e*Pdif **Pdif 13 22 25.7 -2.5**
PVM *e*PP **PP 13 26 48.5 -4.2**
PVM *e*SKSac **SKSac 13 33 07.5 -0.6**
PVM IVMs_BB IVMs_BB 14 14 57.0
comp=Z,852nm,12.9s
WMQ Urumqi 106.31 44 *e*Pdif **Pdif 13 22 28.9 +1.1**
WMQ PP **PP 13 26 53.5 +1.5**
WMQ S **Sdif 13 34 21.8 -4.7**
WMQ SS **SS 13 41 55.6 +2.0**
WMQ AMB AMB
comp=Z,200nm,12.0s
WMQ LR LR
comp=Z,1μm,20.6s
WMQ LR LR
comp=Z,1μm,24.2s
WMQ LR LR
comp=Z,2μm,27.6s
RKT Rikitea 107.96 246 *e*SP SP 13 36 21.8 -4.1
comp=Z,637nm,32.5s
RKT Rikitea 107.96 246 *e*LQ LQ 13 53 27.8
comp=Z,3μm,33.0s
RKT *e*LR LR 13 58 07.2
comp=Z,2μm,36.8s
CHLP Challavanipeta 108.47 70 *e*Pdif **Pdif 13 22 36.8 -1.0**
CHLP *e*PP **PP 13 27 10.1 +1.5**
CHLP *e*SKSac **SKSac 13 33 23.8 +6.3**
CHLP IVMs_BB IVMs_BB 14 16 39.5
comp=Z,667nm,16.2s
BILL Bilibino 111.14 355 *i* PKIKP **PKiKP 13 26 52.2 +4.7**
BILL *e* 13 27 26.8
BILL *e*SS SS 13 43 03.3 +6.7
BILL pmax pmax
comp=Z,1.0nm,1.2s
BILL MLR MLR
comp=Z,631nm,18.0s
TLY Talaya 112.81 32 *i* PKIKP PKiKP 13 27 00.9 +10
TLY *e*PS **PS 13 37 16.4 +2.5**
TLY *e*PPS PPS 13 38 24.5
TLY *e*SS SS 13 43 23.8 +3.8
TAOE Nuku Hiva Isla 114.31 261 *e*LR LR 14 00 58.5
comp=Z,939nm,30.6s
SONM Songino Array 116.42 34 PKP **PKPdf 13 27 01.7 +3.4**
comp=Z,0.5nm,0.7s,baz=243,slow=1.6,SNR=3.0
SONM PP **PP 13 27 59.8 -4.5**
comp=Z,0.4nm,0.7s,baz=317,slow=5.9,SNR=2.3
LZH Lanzhou 120.67 47 *e*PKP **PKPdf 13 27 00.3 -6.6**
LZH sPKP 13 27 04.8
LZH PP **PP 13 28 32.0 -2.2**
LZH *e*SS SS 13 44 58.0 -5.8
LZH AMB AMB
comp=Z,180nm,6.6s

PPT2 Papeete2 122.36 249 *e*PP PP 13 28 41.5 -5.0
comp=Z,122nm,27.0s
PPT2 *e*SP SP 13 38 34.1 -5.2
comp=Z,703nm,29.2s
PPT2 *e*SS **SS 13 45 21.9 -4.9**
comp=Z,960nm,26.8s
PPT2 Papeete2 122.36 249 *e*LQ LQ 13 59 34.1
comp=Z,10μm,34.0s
PPT2 *e*LR LR 14 04 50.2
comp=Z,2μm,28.8s
CMAR Chiang Mai Arr 122.40 68 PKP **PKPdf 13 27 11.9 +1.4**
comp=Z,0.4nm,0.3s,baz=266,slow=5.2,SNR=5.4
HHC Hu-ho-hao-te 123.45 38 *e*PKP **PKPdf 13 27 09.8 -2.2**
HHC PP **PP 13 28 50.3 -2.4**
HHC SKKS 13 35 50.3
HHC SS **SS 13 45 33.1 -5.4**
HHC AMB AMB
comp=Z,100nm,9.5s
HHC LR LR
comp=Z,2μm,20.6s
HHC LR LR
comp=Z,3μm,21.0s
KMI Kunming 123.99 59 PKP **PKPdf 13 27 10.6 -3.1**
KMI PP **PP 13 29 01.5 +4.2**
KMI SKS **SKSdf 13 34 20.6 -4.7**
KMI SS **SS 13 45 43.4 -3.7**
KMI LR LR
comp=Z,990nm,20.4s
KMI LR LR
comp=Z,2μm,23.5s
BJI Beijing 126.73 36 PKP **PKPdf 13 27 15.3 -2.9**
BJI PP **PP 13 29 11.3 -3.1**
BJI PKS **PKSdf 13 30 49.3 -5.4**
BJI SS SS 13 46 17.9 -1.5
BJI LR LR
comp=Z,2μm,24.1s
BJI LR LR
comp=Z,4μm,30.1s
GYA Guiyang 126.83 56 Pdif **Pdif 13 23 56.0 -3.5**
GYA PKP **PKPdf 13 27 16.0 -2.9**
GYA PP **PP 13 29 16.8 +0.7**
GYA PKS **PKSdf 13 30 51.3 -4.5**
GYA SS SS 13 46 20.6 -1.8
GYA AMB AMB
comp=Z,160nm,7.8s
GYA LR LR
comp=Z,340nm,20.0s
GYA LR LR
comp=Z,260nm,21.1s
GYA LR LR
comp=Z,310nm,20.8s
CN2 Changchun 128.91 27 *e*PKP **PKPdf 13 27 15.8 -6.4**
CN2 PP **PP 13 29 26.8 -1.6**
CN2 LR LR
comp=Z,2μm,18.0s
CN2 LR LR
comp=Z,1μm,18.0s
CN2 LR LR
comp=Z,2μm,21.0s
MDJ Mudanjiang 130.00 23 PKP **PKPdf 13 27 21.1 -3.2**
MDJ sPKP 13 27 25.9
MDJ PP **PP 13 29 34.3 -1.1**
MDJ PKS **PKSdf 13 30 57.8 -2.9**
MDJ SKS **SKSdf 13 34 29.5 -5.6**
MDJ AMB AMB
comp=Z,190nm,9.9s
MDJ LR LR
comp=Z,1μm,19.6s
MDJ LR LR
comp=Z,2μm,19.6s
DL2 Dalian 130.63 34 SS SS 13 47 17.0 +10
DL2 AMB AMB
comp=Z,360nm,11.2s
DL2 LR LR
comp=N,2μm,20.6s
DL2 LR LR
comp=E,1μm,20.6s
DL2 LR LR
comp=Z,4μm,22.4s
QIZ Qiongzhong 132.19 64 PKP **PKPdf 13 27 26.3 -2.8**
QIZ PP **PP 13 29 47.6 -3.6**
QIZ SS SS 13 47 27.3 -1.5
QIZ LR LR
comp=Z,270nm,20.4s
QIZ LR LR
comp=Z,430nm,21.2s
NJ2 Nanjing 133.38 43 *e*PKP **PKPdf 13 27 27.1 -3.9**
NJ2 PP **PP 13 29 59.0 +1.1**
NJ2 LR LR
comp=Z,1μm,26.4s
NJ2 LR LR
comp=Z,2μm,28.2s
NJ2 LR LR
comp=Z,1μm,25.8s
SSE Sheshan 135.53 42 PKP **PKPdf 13 27 35.3 +0.2**
SSE PKS **PKSdf 13 31 09.9 -1.6**
SSE AMB AMB
comp=Z,180nm,8.2s
SSE LR LR
comp=Z,1μm,30.0s
SSE LR LR
comp=Z,2μm,30.0s
SSE LR LR
comp=Z,2μm,18.9s
MJAR Matsushiro Arr 140.24 21 PKP **PKPdf 13 27 46.5 +2.9**
comp=Z,0.8nm,0.8s,baz=21,slow=2.6,SNR=4.2
MJAR PP **PP 13 30 43.2 +3.1**
comp=Z,1.7nm,1.1s,baz=317,slow=7.0,SNR=4.0
MYLDM Lahad Datu 143.72 81 *e*PKPpre PKPpre 13 27 45.5
MYLDM *ep*PKPdf pPKPdf 13 28 00.2 +3.2
KAPI Kappang 145.12 98 *e*PKPbc **PKPbc 13 27 48.8 -3.5**
STKA Stephens Creek 146.49 160 PKPbc **PKPab 13 27 59.5 +2.5**
comp=Z,7.6nm,1.0s,baz=128,slow=7.8,SNR=6.4
ASAR Alice Springs 149.55 141 PKPbc **PKPbc 13 28 06.3 +1.7**
comp=Z,2.7nm,0.9s,baz=217,slow=1.9,SNR=14
WRA Warramunga Arr 152.43 136 PKPbc **PKPbc 13 28 13.5 +2.1**
comp=Z,0.8nm,0.9s,baz=247,slow=1.7,SNR=5.8

*SKHL **15** 13:11:56.7±0.3, 42.°89N×144.°66E, h34km±1km, mb4.3/2*
*JMA **15** 13:11:56.4±0.1, 43.°18N×144.°51E, h86km±1km, M3.0*
ISC 15 13:11:57.8±1.6, 43.°12N±0.°06×144.°53E±0.°04, h74km±10km, n15, σ1§36/27, 1D, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAK	**Akkeshi**	**0.17**	**135**	P	**Pn**	**13 12 09.0**	**+0.2**
JAK				*e*S	**Sn**	**13 12 18.8**	**+2.0**
JNK	**Nakash**	**0.49**	**17**	P	**Pn**	**13 12 10.1**	**-0.8**
JNK				*e*S	**Sn**	**13 12 20.7**	**+0.2**
JOB	**Onbets**	**0.55**	**247**	P	**Pn**	**13 12 11.7**	**+0.2**
JOB				*e*S	**Sn**	**13 12 22.6**	**+1.1**
JAR	**Ashorobuto**	**0.58**	**288**	P	**Pn**	**13 12 11.3**	**-0.5**
JAR				*e*S	**Sn**	**13 12 22.0**	**-0.1**
NEM2	**Nemuro 2**	**0.92**	**74**	P	**Pn**	**13 12 14.5**	**-1.0**
NEM2				*e*S	**Sn**	**13 12 28.0**	**-0.7**
JRA	**Rausu**	**0.93**	**28**	P	**Pn**	**13 12 14.6**	**-1.0**
JRA				*e*S	**Sn**	**13 12 29.4**	**+0.6**
JTKR	**Abashiri--Toko**	**0.96**	**332**	P	**Pn**	**13 12 15.1**	**-1.0**
JTKR				*e*S	**Sn**	**13 12 28.4**	**-1.2**
JCH	**Churui**	**0.99**	**240**	P	**Pn**	**13 12 16.1**	**-0.3**
JCH				*e*S	**Sn**	**13 12 30.2**	**-0.1**
JMP	**Maruseppu**	**1.23**	**317**	P	**Pn**	**13 12 18.1**	**-1.3**
JMP				*e*S	**Sn**	**13 12 33.8**	**-1.8**
YUK	**Yuzh-Kuril'sk**	**1.33**	**46**	⇓*i* P	**Pn**	**13 12 20.0**	**-0.7**
YUK				AMB	AMB	13 12 21.0	
	20nm,0.2s						
YUK				AMB	AMB	13 12 21.0	
	30nm,0.2s						
YUK				AMB	AMB	13 12 21.0	
	130nm,0.2s						
YUK				*i* S	**Sn**	**13 12 37.7**	**-0.2**
YUK				A	A	13 12 38.9	
	570nm,0.4s						
YUK				A	A	13 12 38.9	
	410nm,0.4s						
JKK2	**Kamakawa 2**	**1.50**	**301**	P	**Pn**	**13 12 22.1**	**-0.8**
JNBK	**Urakawa-nobuka**	**1.55**	**238**	P	**Pn**	**13 12 22.5**	**-1.1**
SHO	**Shikotan**	**1.84**	**65**	*e*P	**Pn**	**13 12 26.1**	**-1.2**
SHO				*i* S	**Sn**	**13 12 47.9**	**-1.8**
SHO				A	A	13 12 49.0	
	120nm,0.4s						
SHO				A	A	13 12 49.0	
	230nm,0.4s						
KUR	**Kuril'sk**	**3.20**	**48**	*e*P	**Pn**	**13 12 46.6**	**+0.9**
KUR				AMB	AMB	13 12 49.0	
	10.0nm,0.2s						
KUR				*e*S	**Sn**	**13 13 24.8**	**+2.1**
KUR				A	A	13 13 27.2	
	30nm,0.4s						
YSS	**Yuzh-Sakhalins**	**4.04**	**342**	*e*P	**Pn**	**13 13 00.8**	**+3.7**

*NEIC **15** 13:17:14.9, 17.°57N×101.°10W, h38km, MD4.0(MEX), After MEX.*
MEX 15 13:17:14.9±0.8, 17.°57N×101.°10W, h38km±6km, MD4.0, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZIIG	**Zihuatanejo**	**0.35**	**277**	*e*P	Pn	13 17 21.8	-1.6
ZIIG				*e*S	Sn	13 17 28.3	-1.8
ZIIG	**Zihuatanejo**	**0.35**	**277**	*e*P	Pn	13 17 21.8	-1.6
ZIIG				*e*S	Sn	13 17 28.3	-1.8
CAIG	**El Cayaco**	**0.95**	**123**	*e*P	Pn	13 17 29.3	-2.4
CAIG				*e*S	Sn	13 17 41.6	-2.5
CAIG	**El Cayaco**	**0.95**	**123**	*e*P	Pn	13 17 29.3	-2.4
CAIG				*e*S	Sn	13 17 41.6	-2.5
ARIG	**Puente Sto Nin**	**1.01**	**45**	*i* P	Pn	13 17 31.1	-1.5
ARIG				*e*S	Sn	13 17 43.1	-2.5
ACP2	**Acapulco**	**1.35**	**120**	*e*P	Pn	13 17 36.5	-0.8
ACP2				*e*S	Sn	13 17 52.5	-1.4
MEIG	**Mezcala**	**1.46**	**76**	*e*P	Pn	13 17 37.2	-1.5
MEIG				*e*S	Sn	13 17 54.2	-2.4
MEIG	**Mezcala**	**1.46**	**76**	*e*P	Pn	13 17 37.2	-1.5
MEIG				*e*S	Sn	13 17 54.2	-2.4
PLIG	**Platanillo**	**1.73**	**61**	*e*P	Pn	13 17 41.3	-1.2
PLIG				*e*S	Sn	13 18 01.6	-1.8
PLIG	**Platanillo**	**1.73**	**61**	*e*P	Pn	13 17 41.3	-1.2
PLIG				*e*S	Sn	13 18 01.6	-1.8
MAVM	**Malinalco, Edo**	**2.06**	**48**	*e*P	Pn	13 17 46.2	-1.0
MOIG	**Morelia**	**2.10**	**358**	*e*P	Pn	13 17 45.9	-1.9
MOIG				*i* S	Sn	13 18 11.2	-1.6
MOIG	**Morelia**	**2.10**	**358**	*e*P	Pn	13 17 45.9	-1.9
MOIG				*i* S	Sn	13 18 11.2	-1.6
MMIG	**Aquila**	**2.25**	**289**	*e*P	Pn	13 17 48.1	-1.5
MMIG				*e*S	Sn	13 18 14.7	-1.5
MMIG	**Aquila**	**2.25**	**289**	*e*P	Pn	13 17 48.1	-1.5
MMIG				*e*S	Sn	13 18 14.7	-1.5
YAIG	**Yautepec**	**2.33**	**56**	*e*P	Pn	13 17 49.2	-1.6
YAIG				*e*S	Sn	13 18 15.9	-2.3
YAIG	**Yautepec**	**2.33**	**56**	*e*P	Pn	13 17 49.2	-1.6
YAIG				*e*S	Sn	13 18 15.9	-2.3
PPM	**Popocatepetl**	**2.79**	**57**	*e*P	Pn	13 17 56.4	-1.1
PPM				*i* S	Sn	13 18 27.9	-2.2
PPM	**Popocatepetl**	**2.79**	**57**	*e*P	Pn	13 17 56.4	-1.1
PPM				*i* S	Sn	13 18 27.9	-2.2
TPIG	**Tehuac#an**	**3.66**	**76**	*i* P	Pn	13 18 08.7	-0.4
TPIG				*i* S	Sn	13 18 50.5	-0.7
TPIG	**Tehuac#an**	**3.66**	**76**	*i* P	Pn	13 18 08.7	-0.4
TPIG				*i* S	Sn	13 18 50.5	-0.7

MEX 15 13:19:24.2±0.8, 17.°49N×101.°13W, h41km±5km, MD3.7, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZIIG	**Zihuatanejo**	**0.34**	**290**	*e*P	Pn	13 19 31.3	-1.7
ZIIG				*e*S	Sn	13 19 37.9	-1.3
CAIG	**El Cayaco**	**0.93**	**118**	*e*P	Pn	13 19 39.1	-1.7
CAIG				*e*S	Sn	13 19 50.8	-2.1
ARIG	**Puente Sto Nin**	**1.08**	**43**	*i* P	Pn	13 19 40.5	-2.4
ARIG				*e*S	Sn	13 19 54.1	-2.6
ACP2	**Acapulco**	**1.33**	**117**	*e*P	Pn	13 19 44.7	-1.7
ACP2				*e*S	Sn	13 20 01.4	-1.4
MEIG	**Mezcala**	**1.50**	**73**	*e*P	Pn	13 19 46.5	-2.2
MEIG				*e*S	Sn	13 20 05.0	-2.1
PLIG	**Platanillo**	**1.79**	**60**	*e*P	Pn	13 19 51.9	-0.8
PLIG				*i* S	Sn	13 20 12.6	-1.6
MMIG	**Aquila**	**2.26**	**291**	*i* P	Pn	13 19 57.6	-1.4
MMIG				*e*S	Sn	13 20 23.6	-2.1
YAIG	**Yautepec**	**2.39**	**55**	*e*P	Pn	13 19 59.6	-1.4
YAIG				*e*S	Sn	13 20 27.1	-2.0

*IDC **15** 13:22:34.3±0.8, 35.°55N×141.°25E, h0km, mb3.7/11, mb1 3.8/16, mb1mx3.7/43, mbtmp3.8/16, ML4.0/4, MS2.9/3, Ms1 2.9/3, ms1mx2.7/42, Error ellipse: s-maj=23.8km s-min=15.4km az=85.0*
*ISCJB **15** 13:22:38.1±0.6, 35.°53N±0.°03×141.°20E±0.°07, h43km±6km, mb3.7/12, Error ellipse: s-maj=9.2km s-min=5.7km az=179.0*
*NEIC **15** 13:22:39.5±0.7, 35.°53N×141.°17E, h36km±6km, mb4.6/1, Error ellipse: s-maj=9.8km s-min=6.2km az=90.0*
*JMA **15** 13:22:40.6±0.2, 35.°57N×140.°95E, h38km±1km, M3.3*
ISC 15 13:22:39.4±1.1, 35.°53N±0.°04×141.°20E±0.°07, h34km±3km, n39, σ1§58/41, mb3.8/12, 3C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.33**	**302**	P	**Pb**	**13 22 47.3**	**-0.3**
CHOJ				S	**Sn**	**13 22 52.2**	**-0.7**
KTR	**Katsuura**	**0.82**	**243**	P	**Pn**	**13 22 53.4**	**-1.1**
JCN	**Nagara**	**0.82**	**263**	⇑P	**Pn**	**13 22 54.2**	**-0.4**
BSO4	**Boso 4**	**0.89**	**233**	P	**Pn**	**13 22 54.8**	**-0.6**
BSO1	**Boso 1**	**0.89**	**192**	P	**Pb**	**13 22 56.3**	**+0.1**
BSO3	**Boso 3**	**0.92**	**218**	⇑P	**Pn**	**13 22 55.5**	**-0.2**
JYT	**Yasato**	**1.07**	**311**	⇓P	**Pn**	**13 22 57.1**	**-1.0**
JHO	**Hitachi**	**1.20**	**335**	P	**Pn**	**13 22 59.6**	**-0.2**
JIM2	**Oshima 3**	**1.66**	**241**	P	**Pn**	**13 23 04.8**	**-1.4**
JIM2				S	**Sn**	**13 23 24.4**	**-2.0**
JAG	**Ashikaga**	**1.68**	**303**	P	**Pn**	**13 23 05.7**	**-0.7**
JOD2	**Odawara 2**	**1.75**	**262**	⇑P	**Pn**	**13 23 06.2**	**-1.2**
JOD2				S	**Sn**	**13 23 25.6**	**-2.9**
MJAR	**Matsushiro Arr**	**2.63**	**293**	Pn	**Pn**	**13 23 19.8**	**+0.3**
	6.2nm,0.3s,baz=290,slow=23,SNR=39						
MJAR				LR	LR	13 24 25.2	
	comp=Z,261nm,19.5s,baz=135,slow=42						
MAJO	**Matsushiro**	**2.63**	**294**	*e*Pn	**Pn**	**13 23 18.8**	**-0.7**
MAT	**Matsushiro**	**2.63**	**294**	P	**Pn**	**13 23 19.5**	**0.0**
MAT				*e*S	**Sn**	**13 23 50.5**	**+0.3**
JHJ2	**Mitsune**	**2.67**	**206**	*e*Pn	**Pn**	**13 23 20.1**	**+0.1**
JHJ	**Hachijo jima 2**	**2.67**	**206**	**Pn**	**Pn**	**13 23 20.2**	**+0.1**
	41nm,0.3s,baz=92,slow=17,SNR=20						
JHJ				Sn	**Sn**	**13 23 51.0**	**-0.4**
	69nm,0.3s,baz=126,slow=24,SNR=8.6						
JHJ				LR	LR	13 24 29.4	
	comp=Z,147nm,20.9s,baz=77,slow=42						
ERM	**Erimo**	**6.65**	**13**	*e*Pn	**Pn**	**13 24 15.0**	**+0.2**
CBIJ	**Chichi jima**	**8.45**	**174**	*e*Pn	**Pn**	**13 24 39.3**	**-0.2**
CBIJ				Sn	**Sn**	**13 26 08.7**	**-4.9**
JCJ	**Chichijima**	**8.45**	**174**	**Pn**	**Pn**	**13 24 39.1**	**-0.4**
	7.6nm,0.3s,baz=280,slow=23,SNR=5.4						
JCJ				Sn	**Sn**	**13 26 08.7**	**-5.0**
	4.4nm,0.3s,baz=288,slow=19,SNR=2.9						
JCJ				LR	LR	13 28 01.0	
	comp=Z,104nm,21.8s,baz=144,slow=39						
ASAJ	**Asahikawa**	**8.64**	**7**	Pn	**Pn**	**13 24 41.8**	**-0.3**
	1.9nm,0.3s,baz=228,slow=8.3,SNR=25						
ASAJ				Sn	**Sn**	**13 26 14.1**	**-4.2**
	0.0nm,0.3s,baz=313,slow=19,SNR=2.1						
USRK	**Ussuriysk Ar.**	**11.18**	**324**	Pn	**Pn**	**13 25 16.3**	**-0.5**
	0.1nm,0.3s,baz=118,slow=15,SNR=2.7						
H11N2	**WAKE ISLAND Hy**	**27.56**	**118**	T	T	13 57 37.4	
	baz=310,slow=75,SNR=16						
H11N1	**WAKE ISLAND Hy**	**27.57**	**118**	T	T	13 57 28.9	
	baz=310,slow=75,SNR=21						
H11N3	**WAKE ISLAND Hy**	**27.58**	**118**	T	T	13 57 34.8	
	baz=310,slow=75,SNR=18						
H11S1	**WAKE ISLAND Hy**	**28.22**	**120**	T	T	13 58 22.0	
	baz=312,slow=75,SNR=42						
H11S3	**WAKE ISLAND Hy**	**28.22**	**120**	T	T	13 58 19.1	
	baz=312,slow=75,SNR=54						
H11S2	**WAKE ISLAND Hy**	**28.23**	**120**	T	T	13 58 21.7	
	baz=312,slow=75,SNR=40						
SONM	**Songino Array**	**28.51**	**306**	P	**P**	**13 28 31.4**	**-0.3**
	0.5nm,0.6s,baz=108,slow=9.3,SNR=4.2						
ZALV	**Zalesovo Beam**	**42.81**	**314**	P	**P**	**13 30 32.5**	**-1.3**
	0.6nm,0.5s,baz=84,slow=6.1,SNR=4.2						
MKAR	**Makanchi Array**	**44.79**	**303**	P	**P**	**13 30 49.2**	**-0.6**
	0.3nm,0.5s,baz=85,slow=12,SNR=4.6						
KURK	**Kurchatov**	**46.74**	**309**	*e*P	**P**	**13 31 04.1**	**-0.9**
	5.6nm,0.8s						
ILAR	**Eielson Array**	**50.86**	**32**	P	**P**	**13 31 36.6**	**+0.1**
	0.4nm,0.7s,baz=272,slow=6.3,SNR=5.8						

WRA	**Warramunga Arr**	**55.55 188**	P	**P**	**13 32 10.9**	**-0.6**
	1.2nm,0.7s,baz=5.6,slow=7.5,SNR=4.9					
ASAR	**Alice Springs**	**59.28 188**	P	**P**	**13 32 38.2**	**+0.5**
	0.4nm,0.6s,baz=22,slow=12,SNR=3.7					
GEYT	**Alibeck**	**64.42 300**	P	**P**	**13 33 12.5**	**+0.1**
	1.1nm,0.6s,baz=77,slow=9.0,SNR=2.5					
YKA	**Yellowknife Ar**	**65.19 30**	P	**P**	**13 33 16.4**	**-0.5**
	0.1nm,0.5s,baz=304,slow=5.8,SNR=2.2					
FINES	**FINESS Array B**	**70.06 332**	P	**P**	**13 33 48.0**	**+0.4**
	1.3nm,0.9s,baz=43,slow=10,SNR=2.7					
AKASG	**Malin Array Be**	**75.38 322**	P	**P**	**13 34 19.1**	**-0.3**
	0.5nm,0.5s,baz=47,slow=5.4,SNR=3.3					
NOA	**NORSAR Array B**	**75.51 337**	P	**P**	**13 34 20.8**	**+0.8**
	1.1nm,0.9s,baz=53,slow=6.7,SNR=2.7					

*ISN **15** 13:32:04.7±0.8, 31°.03N×48°.13E, h0km±11km, ML3.0*
*CSEM **15** 13:32:09.8±0.4, 31°.58N×48°.03E, h10km, ML3.2, Error ellipse: s-maj=11.2km s-min=6.7km az=174.0*

TEH 15 13:32:11.4, 31°.70N×48°.14E, h2km, ML3.3, Western Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IKMR	**Kamar-syah**	**1.83**	**6**	*e*Pn	Pn	13 32 43.9	+0.2
IKMR				*e*AMB	AMB	13 33 09.5	
	comp=Z,99nm,0.3s						
IKMR	**Kamar-syah**	**1.83**	**6**	*e*Pn	Pn	13 32 43.9	+0.2
IKFM	**Kafar-mosalman**	**1.84**	**352**	*e*Pn	Pn	13 32 43.8	-0.1
IKFM				*e*Sg	Sb	13 33 08.7	-0.4
IKFM				*e*AMB	AMB	13 33 17.8	
	comp=Z,99nm,0.3s						
IKFM	**Kafar-mosalman**	**1.84**	**352**	*e*Pn	Pn	13 32 43.8	-0.1
IKFM				*e*Sg	Sb	13 33 08.7	-0.4
NSR	**Nassriya**	**1.84**	**249**	*e*Pg	Pn	13 32 41.0	-3.0
	SNR=9.0						
NSR				*e*Sg	Sn	13 33 06.0	-1.8
	SNR=9.0						
IPIR	**Pirpir**	**2.53**	**66**	*e*Pn	Pn	13 32 53.5	-0.3
IPIR				*e*AMB	AMB	13 33 28.8	
	comp=Z,1μm,0.4s						
IPIR	**Pirpir**	**2.53**	**66**	*e*Pn	Pn	13 32 53.5	-0.3
KHMZ	**Khomeyn**	**2.55**	**37**	*e*P	Pn	13 32 53.3	-0.6
KHMZ				*e*Sg	Sn	13 33 26.4	+0.8
IGHG	**Ghaleghazi**	**2.94**	**334**	*e*Pn	Pn	13 32 53.4	-5.9
IGHG				*e*AMB	AMB	13 34 19.4	
	comp=Z,744nm,0.4s						
IGHG	**Ghaleghazi**	**2.94**	**334**	*e*Pn	Pn	13 32 53.4	-5.9
IVIS	**Veis**	**3.02**	**339**	*e*Pn	Pn	13 32 57.4	-2.9
IVIS				*e*AMB	AMB	13 34 08.7	
	comp=Z,348nm,0.3s						
IVIS	**Veis**	**3.02**	**339**	*e*Pn	Pn	13 32 57.4	-2.9
ASAO	**Ashtian**	**3.25**	**29**	*e*P	Pn	13 33 03.4	-0.2
IKLH	**Kolahrood**	**3.33**	**60**	*e*AMB	AMB	13 33 05.5	
	comp=Z,2μm,0.1s						
IKLH				*e*Pn	Pn	13 33 04.4	-0.2
IDHR	**Dehrash**	**3.33**	**334**	*e*Pn	Pn	13 33 04.3	-0.4
IDHR				*e*AMB	AMB	13 34 01.9	
	comp=Z,424nm,0.2s						
IDHR	**Dehrash**	**3.33**	**334**	*e*Pn	Pn	13 33 04.3	-0.4
IGAR	**Gharneh**	**3.39**	**77**	*e*Pn	Pn	13 33 04.9	-0.6
IGAR				*e*AMB	AMB	13 33 52.4	
	comp=Z,509nm,0.2s						
QAM	**Ghamsar**	**3.46**	**53**	*e*AMB	AMB	13 33 13.3	
	comp=Z,1μm,0.1s						
QAM				*e*Pn	Pn	13 33 06.8	+0.4
BHD	**Baghdad**	**3.54**	**297**	*e*Pn	Pn	13 33 06.0	-1.4
BHD	SNR=3.0						
				i Sn	Sn	13 33 50.0	+0.2
	SNR=3.0						
IKAZ	**Kazeroun**	**3.72**	**120**	*e*Pn	Pn	13 33 09.4	-0.7
IKAZ				*e*AMB	AMB	13 34 02.1	
	comp=Z,1μm,0.2s						
IKAZ	**Kazeroun**	**3.72**	**120**	*e*Pn	Pn	13 33 09.4	-0.7
IZEF	**Zefreh**	**3.74**	**70**	*e*AMB	AMB	13 33 10.7	
	comp=Z,434nm,0.1s						
IZEF				*e*Pn	Pn	13 33 09.3	-1.1
IRAZ	**Razeghan**	**3.99**	**22**	*e*Pn	Pn	13 33 12.8	-0.9
IRAZ				*e*AMB	AMB	13 33 14.2	
	comp=Z,468nm,0.2s						
IRAZ	**Razeghan**	**3.99**	**22**	*e*Pn	Pn	13 33 12.8	-0.9
IVRN	**Varamin**	**4.45**	**41**	*e*Pn	Pn	13 33 18.5	-1.5
IVRN				*e*AMB	AMB	13 33 33.9	
	comp=Z,191nm,0.1s						
IVRN	**Varamin**	**4.45**	**41**	*e*Pn	Pn	13 33 18.5	-1.5
IDMV	**Damavand**	**5.05**	**39**	*e*Pn	Pn	13 33 23.6	-4.8
IDMV				*e*AMB	AMB	13 33 30.9	
	comp=Z,118nm,0.2s						
IDMV	**Damavand**	**5.05**	**39**	*e*Pn	Pn	13 33 23.6	-4.8

*IDC **15** 13:38:43.0±0.9, 38°.26N×143°.31E, h0km, mb3.7/10, mb1 3.8/14, mb1mx3.6/54, mbtmp3.7/14, ML3.2/4, MS3.2/1, Ms1 3.2/1, ms1mx2.7/37, Error ellipse: s-maj=25.8km s-min=16.3km az=87.0*
*ISCJB **15** 13:38:44.8±0.7, 38°.32N±0°.05×143°.25E±0°.06, h23km, mb3.7/10, Error ellipse: s-maj=7.9km s-min=6.9km az=15.6*
*JMA **15** 13:38:44.1±0.2, 38°.39N×143°.19E, h10km, M4.0*

ISC 15 13:38:47.2±0.9, 38°.39N±0°.08×143°.22E±0°.08, h23km, n26, σ1§07/20, mb3.7/10, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**1.39**	**300**	P	Pn	13 39 09.3	-1.9
OFUJ				S	**Sn**	**13 39 28.0**	**-0.9**
JIO	**Ouri**	**1.47**	**273**	P	Pn	13 39 10.3	-1.9
JIO				S	**Sn**	**13 39 28.5**	**-2.2**
JMK	**Ichinoseki**	**1.66**	**290**	P	Pn	13 39 13.1	-1.8
JMK				S	**Sn**	**13 39 35.1**	**-0.4**
JOM	**Ohasama**	**1.85**	**306**	P	Pn	13 39 16.1	-1.4
JOM				S	**Sn**	**13 39 39.9**	**-0.3**
JOU	**Okura**	**2.01**	**270**	P	**Pn**	**13 39 18.6**	**-1.1**
MJAR	**Matsushiro Arr**	**4.39**	**247**	Pn	**Pn**	**13 39 52.8**	**+0.4**
	1.5nm,0.3s,baz=55,slow=11,SNR=16						
MAT	**Matsushiro**	**4.39**	**247**	P	**Pn**	**13 39 52.9**	**+0.4**
MAT				*e*S	**Sn**	**13 40 44.0**	**+1.1**
ASAJ	**Asahikawa**	**5.74**	**356**	Pn	**Pn**	**13 40 10.1**	**-0.9**
	0.6nm,0.3s,baz=231,slow=21,SNR=9.2						
ASAJ				LR	LR	13 42 52.9	
	comp=Z,204nm,18.7s,baz=81,slow=42						
JHJ	**Hachijo jima 2**	**5.95**	**209**	Pn	Pn	13 40 10.6	-3.3
	5.3nm,0.3s,baz=1.9,slow=22,SNR=10						
JHJ				Sn	Sn	13 41 12.9	-8.5
	2.1nm,0.3s,baz=238,slow=13,SNR=2.0						
KLR	**Kul'dur**	**13.62**	**326**	Pn	**Pn**	**13 42 00.1**	**+1.2**
	0.1nm,0.3s,baz=99,slow=13,SNR=2.1						
SEY	**Seymchan**	**25.20**	**10**	P	**P**	**13 44 11.7**	**+1.0**
	1.5nm,0.6s,baz=196,slow=7.8,SNR=12						
H11N2	**WAKE ISLAND Hy**	**27.69**	**125**	T	T	14 13 27.6	
	baz=318,slow=76,SNR=58						
H11N1	**WAKE ISLAND Hy**	**27.70**	**126**	T	T	14 13 26.8	
	baz=318,slow=76,SNR=34						
H11N3	**WAKE ISLAND Hy**	**27.71**	**125**	T	T	14 13 27.3	
	baz=318,slow=76,SNR=56						
SONM	**Songino Array**	**28.26**	**301**	P	**P**	**13 44 38.9**	**+0.3**
	0.5nm,0.6s,baz=111,slow=9.9,SNR=3.6						
H11S1	**WAKE ISLAND Hy**	**28.47**	**128**	T	T	14 14 31.8	
	baz=319,slow=76,SNR=17						
H11S3	**WAKE ISLAND Hy**	**28.47**	**128**	T	T	14 14 24.0	
	baz=319,slow=76,SNR=11						
H11S2	**WAKE ISLAND Hy**	**28.49**	**128**	T	T	14 14 26.6	
	baz=319,slow=76,SNR=15						
ZALV	**Zalesovo Beam**	**42.08**	**311**	P	**P**	**13 46 38.3**	**+1.3**
	0.5nm,0.3s,baz=96,slow=11,SNR=2.5						
MKAR	**Makanchi Array**	**44.62**	**301**	P	**P**	**13 46 57.0**	**-0.8**
	0.3nm,0.4s,baz=80,slow=11,SNR=4.4						
KURBB	**Kurchatov Arra**	**46.31**	**307**	P	**P**	**13 47 10.3**	**-0.6**
	1.7nm,0.6s,baz=82,slow=8.1,SNR=4.1						
WRA	**Warramunga Arr**	**58.62**	**190**	P	**P**	**13 48 40.7**	**-1.7**
	1.7nm,0.7s,baz=8.2,slow=7.0,SNR=16						
AKTO	**Aktyubinsk**	**58.84**	**312**	P	**P**	**13 48 44.7**	**+1.0**
	0.6nm,0.4s,baz=96,slow=9.2,SNR=3.0						
ASAR	**Alice Springs**	**62.34**	**190**	P	**P**	**13 49 06.9**	**-0.9**
	0.6nm,0.7s,baz=13,slow=6.8,SNR=8.8						
NOA	**NORSAR Array B**	**73.48**	**338**	P	**P**	**13 50 17.7**	**+0.2**
	0.6nm,0.8s,baz=37,slow=6.2,SNR=2.2						
TXAR	**Lajitas Array**	**88.17**	**53**	P	**P**	**13 51 36.2**	**-0.3**
	0.1nm,0.6s,baz=318,slow=12,SNR=2.1						

*ISN **15** 13:40:54.6±1.2, 31°.19N×48°.11E, h0km±18km, ML3.9*
*ISCJB **15** 13:40:57.4±0.5, 31°.60N±0°.05×48°.12E±0°.04, h10km, mb3.6/13, Error ellipse: s-maj=7.5km s-min=4.6km az=3.5*
*IDC **15** 13:40:57.7±1.2, 31°.75N×48°.21E, h0km, mb3.7/13, mb1 3.9/16, mb1mx3.7/54, mbtmp3.8/16, ML3.5/3, Error ellipse: s-maj=25.7km s-min=18.1km az=173.0*
*CSEM **15** 13:40:58.6±0.4, 31°.57N×48°.08E, h10km, ML3.8, Error ellipse: s-maj=11.3km s-min=6.5km az=3.0*
*TEH **15** 13:41:00.2, 31°.72N×48°.16E, h3km, ML3.9*
*THR **15** 13:41:00.3±0.6, 31°.71N×48°.37E, h14km±9km, ML3.8*

ISC 15 13:40:58.9±0.6, 31°.68N±0°.05×48°.17E±0°.04, h10km, n62, σ1§58/69, mb3.7/13, Western Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHGR	**Shooshtar-Gavs**	**0.68**	**51**	*e*Pg	**Pg**	**13 41 10.8**	**-1.4**
SHGR				AML	AML	13 41 25.5	
	comp=N,5μm,0.6s						
SHGR				AML	AML	13 41 27.0	
	comp=E,6μm,0.6s						
IKMR	**Kamar-syah**	**1.84**	**5**	*e*Pn	**Pb**	**13 41 32.5**	**-0.1**
IKMR				*e*Sg	**Sb**	**13 41 56.2**	**+0.5**
IKMR	**Kamar-syah**	**1.84**	**5**	*e*Pn	**Pb**	**13 41 32.5**	**-0.1**
IKMR				*e*Sg	**Sb**	**13 41 56.2**	**+0.5**
IKFM	**Kafar-mosalman**	**1.86**	**352**	*e*Pn	**Pn**	**13 41 32.1**	**+1.3**
IKFM				*e*Sg	**Sb**	**13 41 57.3**	**+1.1**
IKFM	**Kafar-mosalman**	**1.86**	**352**	*e*Pn	**Pn**	**13 41 32.1**	**+1.3**
IKFM				*e*Sg	**Sb**	**13 41 57.3**	**+1.1**
NSR	**Nassriya**	**1.86**	**249**	*e*Pg	**Pn**	**13 41 31.0**	**+0.1**
	SNR=9.0						
NSR				*e*Sg	**Sn**	**13 41 55.0**	**+0.6**
	SNR=9.0						
IPIR	**Pirpir**	**2.51**	**66**	*e*Pn	**Pn**	**13 41 42.1**	**+2.0**
IPIR				*e*AMB	AMB	13 42 22.1	
	comp=Z,4μm,0.3s						
IPIR	**Pirpir**	**2.51**	**66**	*e*Pn	**Pn**	**13 41 42.1**	**+2.0**
KHMZ	**Khomeyn**	**2.54**	**36**	*e*Pn	**Pn**	**13 41 42.1**	**+1.6**
KHMZ				*e*Sg	**Sb**	**13 42 16.7**	**+0.4**
KHMZ	**Khomeyn**	**2.54**	**36**	*e*P	**Pn**	**13 41 41.7**	**+1.2**
IGHG	**Ghaleghazi**	**2.96**	**333**	*e*Pn	**Pn**	**13 41 48.0**	**+1.7**
IGHG				*e*AMB	AMB	13 42 56.0	
	comp=Z,6μm,0.3s						
IGHG	**Ghaleghazi**	**2.96**	**333**	*e*Pn	**Pn**	**13 41 48.0**	**+1.7**
IVIS	**Veis**	**3.05**	**339**	*e*Pn	**Pn**	**13 41 47.8**	**+0.5**
IVIS				*e*AMB	AMB	13 42 44.0	
	comp=Z,3μm,0.3s						
IVIS	**Veis**	**3.05**	**339**	*e*Pn	**Pn**	**13 41 47.8**	**+0.5**
ASAO	**Ashtian**	**3.25**	**28**	*e*Pn	**Pn**	**13 41 51.8**	**+1.5**
ASAO				AML	AML	13 42 49.4	
	comp=E,184nm,0.7s						
ASAO				AML	AML	13 42 55.7	
	comp=N,253nm,0.7s						
ASAO	**Ashtian**	**3.25**	**28**	*e*P	**Pn**	**13 41 51.7**	**+1.5**
IKLH	**Kolahrood**	**3.31**	**60**	*e*Pn	**Pn**	**13 41 52.7**	**+1.7**
IKLH				*e*AMB	AMB	13 42 43.8	
	comp=Z,2μm,0.2s						
IKLH	**Kolahrood**	**3.31**	**60**	*e*Pn	**Pn**	**13 41 52.7**	**+1.7**
IDHR	**Dehrash**	**3.36**	**334**	*e*Pn	**Pn**	**13 41 51.6**	**-0.1**
IDHR				*e*AMB	AMB	13 42 52.1	
	comp=Z,4μm,0.2s						
IDHR	**Dehrash**	**3.36**	**334**	*e*Pn	**Pn**	**13 41 51.6**	**-0.1**
IGAR	**Gharneh**	**3.36**	**77**	*e*Pn	**Pn**	**13 41 53.1**	**+1.3**
IGAR				*e*AMB	AMB	13 42 55.0	
	comp=Z,1μm,0.2s						
QAM	**Ghamsar**	**3.45**	**52**	*e*Pn	**Pn**	**13 41 55.3**	**+2.4**
QAM				*e*AMB	AMB	13 41 56.9	
	comp=Z,2μm,0.1s						
SNGE	**Sanandaj**	**3.47**	**349**	*e*Pn	**Pn**	**13 41 56.2**	**+3.0**
SNGE				AML	AML	13 43 02.7	
	comp=N,224nm,0.8s						
SNGE				AML	AML	13 43 04.1	
	comp=E,196nm,0.7s						
SNGE	**Sanandaj**	**3.47**	**349**	*e*P	**Pn**	**13 41 56.2**	**+3.0**
BHD	**Baghdad**	**3.57**	**297**	*e*Pn	**Pn**	**13 41 55.0**	**+0.6**
BHD	SNR=39						
				i Sn	**Sn**	**13 42 37.0**	**+0.3**
	SNR=3.0						
IRAM	**Ramesheh**	**3.59**	**87**	*e*Pn	**Pn**	**13 41 56.3**	**+1.5**
IRAM	**Ramesheh**	**3.59**	**87**	*e*Pn	**Pn**	**13 41 56.3**	**+1.5**
IKAZ	**Kazeroun**	**3.68**	**120**	*e*Pn	**Pn**	**13 41 58.3**	**+2.0**
IKAZ				*e*AMB	AMB	13 42 52.6	
	comp=Z,2μm,0.3s						
IKAZ	**Kazeroun**	**3.68**	**120**	*e*Pn	**Pn**	**13 41 58.3**	**+2.0**
IZEF	**Zefreh**	**3.72**	**70**	*e*Pn	**Pn**	**13 41 57.9**	**+1.2**
IZEF				*e*AMB	AMB	13 43 08.0	
	comp=Z,981nm,0.4s						
IZEF	**Zefreh**	**3.72**	**70**	*e*Pn	**Pn**	**13 41 57.9**	**+1.2**
IRAZ	**Razeghan**	**3.99**	**21**	*e*Pn	**Pn**	**13 42 02.3**	**+1.9**
IRAZ				*e*AMB	AMB	13 43 25.7	
	comp=Z,2μm,0.4s						
IRAZ	**Razeghan**	**3.99**	**21**	*e*Pn	**Pn**	**13 42 02.3**	**+1.9**
NASN	**Na'in**	**4.08**	**73**	*e*P	**Pn**	**13 42 02.3**	**+0.6**
NASN	**Na'in**	**4.08**	**73**	*e*P	**Pn**	**13 42 02.3**	**+0.6**
IR3	**Iran Long-Peri**	**4.47**	**31**	*e*Pn	**Pn**	**13 42 07.6**	**+0.8**
IR3	**Iran Long-Peri**	**4.47**	**31**	*e*Pn	**Pn**	**13 42 07.6**	**+0.8**
IMHD	**Mahdasht**	**4.50**	**27**	*e*AMB	AMB	13 42 31.9	
	comp=Z,512nm,0.4s						
IMHD				*e*Pn	**Pn**	**13 42 08.2**	**+0.9**
IDMV	**Damavand**	**5.05**	**39**	*e*Pn	**Pn**	**13 42 15.3**	**+0.4**
IDMV				*e*AMB	AMB	13 43 55.8	
	comp=Z,881nm,0.6s						
IDMV	**Damavand**	**5.05**	**39**	*e*Pn	**Pn**	**13 42 15.3**	**+0.4**
ASF	**Jabal al Asfar**	**9.60**	**276**	Pn	**Pn**	**13 43 18.8**	**+1.6**
	comp=Z,0.5nm,0.3s,baz=36,slow=5.2,SNR=3.5						
ASF				Sn	**Sn**	**13 44 59.3**	**-5.8**
	comp=Z,0.2nm,0.3s,baz=54,slow=19,SNR=3.1						
ASF				Lg	Lg	13 46 09.0	
	comp=Z,0.3nm,0.3s,baz=204,slow=20,SNR=1.9						
GEYT	**Alibeck**	**10.28**	**50**	Pn	**Pn**	**13 43 27.4**	**+1.0**
	comp=Z,0.2nm,0.3s,baz=254,slow=10,SNR=8.0						
EIL	**Elat**	**11.56**	**263**	Lg	Lg	13 47 14.3	
	comp=Z,0.3nm,0.3s,baz=331,slow=17,SNR=2.3						
WSAR	**Wadi Sarin**	**12.52**	**130**	Pn	**Pn**	**13 43 56.8**	**-0.4**
	comp=Z,0.5nm,0.3s,baz=5.7,slow=10,SNR=3.7						
WSAR				Sn	Sn	13 46 06.6	-10
	comp=Z,0.1nm,0.3s,baz=119,slow=19,SNR=2.4						
BRTR	**Keskin Array B**	**14.26**	**308**	Pn	**P**	**13 44 27.9**	**-0.5**
	comp=Z,0.1nm,0.3s,baz=135,slow=12,SNR=5.2						
IDI	**Anoyia**	**19.74**	**287**	P	**Pn**	**13 45 34.4**	**+4.0**
	comp=Z,0.1nm,0.3s,baz=18,slow=16,SNR=2.3						
AKTO	**Aktyubinsk**	**20.12**	**19**	P	**P**	**13 45 31.8**	**-1.0**
	comp=Z,0.4nm,0.3s,baz=213,slow=16,SNR=2.5						
MLR	**Muntele Rosu**	**22.09**	**315**	P	**P**	**13 45 57.3**	**+3.0**
	comp=Z,0.4nm,0.6s,baz=191,slow=6.9,SNR=4.5						
AKASG	**Malin Array Be**	**23.63**	**329**	P	**P**	**13 46 10.0**	**-0.1**
	comp=Z,0.2nm,0.3s,baz=140,slow=9.0,SNR=3.2						
ARU	**Arti**	**25.78**	**13**	P	**P**	**13 46 31.4**	**+1.6**
	comp=Z,1.3nm,0.3s,baz=216,slow=6.1,SNR=5.6						
BVAR	**Borovoye Array**	**26.71**	**31**	P	**P**	**13 46 37.5**	**-0.8**
	comp=Z,2.7nm,0.6s,baz=217,slow=9.1,SNR=6.6						
KURBB	**Kurchatov Arra**	**29.37**	**41**	P	**P**	**13 47 02.1**	**+0.1**
	comp=Z,0.5nm,0.6s,baz=242,slow=9.8,SNR=5.3						
MKAR	**Makanchi Array**	**30.15**	**50**	P	**P**	**13 47 09.3**	**+0.3**
	comp=Z,1.2nm,0.7s,baz=242,slow=3.1,SNR=11						
FINES	**FINESS Array B**	**33.08**	**341**	P	**P**	**13 47 33.9**	**-0.6**
	comp=Z,2.2nm,0.7s,baz=160,slow=12,SNR=4.8						
ZALV	**Zalesovo Beam**	**34.32**	**39**	P	**P**	**13 47 44.9**	**-0.5**
	comp=Z,0.5nm,0.5s,baz=302,slow=8.3,SNR=3.1						
NB2	**NORSAR Subarra**	**37.99**	**332**	P	**P**	**13 48 15.5**	**-1.3**
	comp=Z,0.6nm,0.6s,baz=124,slow=8.6						
NB2	**NORSAR Subarra**	**37.99**	**332**	P	**P**	**13 48 15.5**	**-1.3**
	comp=Z,0.6nm,0.6s,SNR=4.1						
NOA	**NORSAR Array B**	**37.99**	**332**	P	**P**	**13 48 15.9**	**-0.9**
	comp=Z,0.9nm,0.7s,baz=124,slow=8.5,SNR=4.7						
ARCES	**ARCESS Array B**	**40.01**	**348**	P	**P**	**13 48 32.9**	**-0.6**
	comp=Z,1.0nm,0.8s,baz=148,slow=10,SNR=4.2						
TORD	**Torodi Ar. Bea**	**46.37**	**257**	P	**P**	**13 49 27.0**	**+1.3**
	comp=Z,1.1nm,0.7s,baz=50,slow=8.4,SNR=9.0						
CMAR	**Chiang Mai Arr**	**47.45**	**94**	P	**P**	**13 49 33.5**	**-0.5**
	comp=Z,0.4nm,0.6s,baz=292,slow=6.9,SNR=4.1						
YKA	**Yellowknife Ar**	**85.13**	**352**	P	**P**	**13 53 33.6**	**-1.3**
	comp=Z,0.4nm,0.7s,baz=7.5,slow=5.5,SNR=7.5						

*ISCJB **15** 13:44:56.8±1.2, 39°.22N±0°.04×142°.6E±0°.1, h40km±12km, mb3.4/6, Error ellipse: s-maj=14.1km s-min=6.9km az=9.6*
*JMA **15** 13:44:56.9±0.1, 39°.26N×142°.57E, h28km±1km, M3.4*
*IDC **15** 13:44:59.2±2.2, 39°.21N×142°.57E, h46km±22km, mb3.3/6, mb1 3.5/9, mb1mx3.2/54, mbtmp3.6/9, ML3.2/3, Error ellipse: s-maj=37.7km s-min=14.0km az=100.0*

ISC 15 13:44:56.6±1.1, 39°.25N±0°.04×142°.6E±0°.1, h21km±6km, n17, σ1§66/25, mb3.4/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**0.68**	**299**	P	**Pb**	**13 45 09.5**	**-0.3**
MIYJ				S	**Sb**	**13 45 18.7**	**0.0**
OFUJ	**Ofunato**	**0.74**	**257**	P	**Pb**	**13 45 10.6**	**-0.1**
OFUJ				S	**Sb**	**13 45 20.1**	**-0.2**
JOM	**Ohasama**	**1.03**	**283**	P	**Pn**	**13 45 15.3**	**-0.4**
JOM				S	**Sn**	**13 45 28.6**	**-0.9**
JMK	**Ichinoseki**	**1.11**	**255**	P	**Pn**	**13 45 16.5**	**-0.3**
JKZ	**Kuzumaki**	**1.22**	**307**	P	**Pn**	**13 45 18.4**	**0.0**
JKZ				S	**Sn**	**13 45 33.9**	**-0.3**
JIO	**Ouri**	**1.26**	**231**	P	**Pn**	**13 45 18.2**	**-0.6**
JANG	**Nango**	**1.39**	**324**	P	**Pn**	**13 45 20.2**	**-0.5**
JANG				S	**Sn**	**13 45 38.2**	**-0.3**
MAT	**Matsushiro**	**4.40**	**233**	P	**Pn**	**13 46 05.2**	**+3.1**
MAT				*e*S	**Sn**	**13 46 56.6**	**+3.9**
MJAR	**Matsushiro Arr**	**4.40**	**233**	P	**Pn**	**13 46 04.5**	**+2.5**
	0.6nm,0.3s,baz=41,slow=12,SNR=13						
ASAJ	**Asahikawa**	**4.86**	**0**	P	**Pn**	**13 46 09.2**	**+0.8**
	1.2nm,0.3s,baz=193,slow=15,SNR=12						
ASAJ				S	**Sn**	**13 47 06.5**	**+2.6**
	0.4nm,0.3s,baz=205,slow=1.9,SNR=1.5						
JHJ	**Hachijo jima 2**	**6.53**	**201**	P	**Pn**	**13 46 30.7**	**-0.6**
	2.3nm,0.3s,baz=3.6,slow=16,SNR=1.4						
JHJ				S	**Sn**	**13 47 41.6**	**-3.5**
	3.0nm,0.3s,baz=38,slow=19,SNR=1.2						
MA2	**Magadan**	**20.99**	**12**	P	**P**	**13 49 38.5**	**+0.2**
	2.8nm,0.6s,baz=185,slow=11,SNR=5.6						
SEY	**Seymchan**	**24.44**	**11**	P	**P**	**13 50 14.6**	**+1.2**
	0.6nm,0.5s,baz=81,slow=23,SNR=4.2						
MKAR	**Makanchi Array**	**43.76**	**300**	P	**P**	**13 53 00.6**	**+0.2**
	0.2nm,0.5s,baz=84,slow=13,SNR=2.3						
KURBB	**Kurchatov Arra**	**45.40**	**306**	P	**P**	**13 53 12.4**	**-0.9**
	0.4nm,0.4s,baz=79,slow=8.5,SNR=4.7						
WRA	**Warramunga Arr**	**59.39**	**189**	P	**P**	**13 54 56.3**	**-1.1**
	0.3nm,0.8s,baz=6.5,slow=7.0,SNR=8.5						
ASAR	**Alice Springs**	**63.12**	**189**	P	**P**	**13 55 21.9**	**-0.7**
	0.3nm,0.9s,baz=6.9,slow=7.6,SNR=2.0						

*NIED **15** 13:48:00, 37°.60N×142°.80E, h26km, Mw4.6 Best double couple: M0:8.95000×10^15 NP1:φ=67.00000°, δ41.00000°, λ113.00000°. NP2:φ=217.00000°, δ53.00000°, λ71.00000°.*
*JMA **15** 13:48:31.6±0.3, 37°.66N×142°.84E, h12km±4km, M4.8*
JMA Felt I J1.
*IDC **15** 13:48:32.0±0.5, 37°.63N×142°.83E, h0km, mb4.2/32, mb1 4.3/37, mb1mx4.2/48, mbtmp4.2/37, ML3.7/4, MS4.6/2, Ms1 4.6/2, ms1mx3.6/37, Error ellipse: s-maj=14.1km s-min=11.7km az=92.0*
*ISCJB **15** 13:48:32.3±1.0, 37°.71N±0°.03×142°.85E±0°.03, h12km±6km, mb4.5/69, MS4.7/18, Error ellipse: s-maj=5.2km s-min=3.9km az=140.6*
*MOS **15** 13:48:35.6±1.4, 37°.82N×142°.81E, h33km, mb4.9/29, Error ellipse: s-maj=8.1km s-min=4.7km az=108.0*
*NEIC **15** 13:48:37.1±1.9, 37°.72N×142°.83E, h32km±13km, mb4.8/19, Error ellipse: s-maj=8.0km s-min=5.6km az=118.0*
NEIC Recorded [1 JMA] in Miyagi.

ISC 15 13:48:33.4±0.7, 37°.67N±0°.04×142°.87E±0°.05, h11km±4km, n191, σ1§84/197, mb4.6/69, MS4.8/19, 5C-2D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.43**	**304**	P	**Pn**	**13 48 57.3**	**-1.9**
JIO				*e*S	**Sn**	**13 49 15.7**	**-2.3**
JFK	**Kawauchi**	**1.61**	**260**	P	**Pn**	**13 48 59.8**	**-2.0**
JFK				*e*S	**Sn**	**13 49 20.4**	**-2.2**
JMM	**Marumori**	**1.66**	**277**	P	**Pn**	**13 49 00.3**	**-2.0**
JMK	**Ichinoseki**	**1.82**	**315**	P	**Pn**	**13 49 03.3**	**-1.3**
JOU	**Okura**	**1.87**	**292**	P	**Pn**	**13 49 04.1**	**-1.2**
JFT	**Otama**	**2.02**	**266**	P	**Pb**	**13 49 06.7**	**-

KSAR	**Wonju Array Be**	**11.90 273**	P	**Pn**	**13 51 25.1**	**+2.2**
KSAR	**Wonju Array Be**	**11.90 273**	Pn	**Pn**	**13 51 25.1**	**+2.2**
HABR	**Khabarovsk**	**12.21 335**	*e*P	**Pn**	**13 51 24.7**	**-2.3**
HABR			*e*S	**Sn**	**13 53 38.4**	**-4.6**
HABR			pmax	pmax		
	comp=E,5.0nm,0.6s					
HABR			pmax	pmax		
	comp=Z,14nm,1.1s					
HABR			pmax	pmax		
	comp=N,12nm,1.1s					
HABR			MLR	MLR		
	comp=Z,604nm,13.0s					
TYV	**Tymovskoe**	**13.19 359**	*e*P	P	13 51 45.0	-5.5
KLR	**Kul'dur**	**14.07 329**	Pn	**Pn**	**13 51 49.7**	**-2.9**
	comp=Z,0.3nm,0.3s,baz=131,slow=15,SNR=8.0					
KLR	**Kul'dur**	**14.07 329**	*e*P	**Pn**	**13 51 50.3**	**-2.3**
CN2	**Changchun**	**14.54 300**	*e*P	**P**	**13 52 02.1**	**-3.5**
CN2			pmax	pmax		
	comp=Z,10.0nm,0.8s					
CN2			LR	LR		
	comp=N,700nm,12.0s					
CN2			LR	LR		
	comp=E,700nm,12.0s					
CN2			LR	LR		
	comp=Z,700nm,14.0s					
NKL	**Nikolayevsk**	**15.55 355**	*e*P	**Pn**	**13 52 11.0**	**-1.4**
DL2	**Dalian**	**16.72 281**	P	**P**	**13 52 27.5**	**-2.3**
DL2			S	**Sn**	**13 55 30.8**	**-2.3**
DL2			pmax	pmax		
	comp=Z,34nm,0.8s					
DL2			pmax	pmax		
	comp=Z,280nm,3.9s					
DL2			LR	LR		
	comp=N,390nm,10.0s					
DL2			LR	LR		
	comp=E,290nm,11.8s					
DL2			LR	LR		
	comp=Z,520nm,19.4s					
HIA	**Hailar**	**20.31 312**	P	Pn	13 53 10.6	-0.6
HIA			pmax	pmax		
	comp=Z,34nm,1.4s					
HIA	**Hailar**	**20.31 312**	P	Pn	13 53 10.6	-0.6
	comp=Z,34nm,1.4s					
NJ2	**Nanjing**	**20.46 261**	*e*P	Pn	13 53 12.3	-0.8
NJ2			S	Sn	13 57 14.5	+11
NJ2			pmax	pmax		
	comp=Z,10.0nm,0.9s					
NJ2			LR	LR		
	comp=N,540nm,14.1s					
NJ2			LR	LR		
	comp=E,480nm,11.4s					
NJ2			LR	LR		
	comp=Z,380nm,14.1s					
TIA	**Tai'an**	**20.61 274**	⇑P	Pn	13 53 11.6	-3.2
TIA			pmax	pmax		
	comp=Z,30nm,1.3s					
BJI	**Beijing**	**20.90 285**	P	Pn	13 53 14.9	-3.2
BJI			pmax	pmax		
	comp=Z,19nm,1.5s					
MA2	**Magadan**	**22.50 11**	P	**P**	**13 53 27.0**	**-5.6**
	comp=Z,3.0nm,0.9s,baz=40,slow=19,SNR=2.1					
MA2	**Magadan**	**22.50 11**	*e*P	**P**	**13 53 34.8**	**+2.2**
MA2	**Magadan**	**22.50 11**	*e*P	**P**	**13 53 34.8**	**+2.2**
CLNS	**Chul'man**	**22.59 334**	*e*P	**P**	**13 53 30.1**	**-3.6**
CLNS			pmax	pmax		
	comp=Z,22nm,1.2s					
CLNS			pmax	pmax		
	comp=N,18nm,1.2s					
CLNS			pmax	pmax		
	comp=E,6.0nm,1.2s					
GUMO	**Guam**	**24.05 175**	P	**P**	**13 53 41.8**	**-6.7**
	comp=E,144nm,1.2s,baz=7.1,slow=16,SNR=1.8					
HHC	**Hu-ho-hao-te**	**24.38 287**	*e*P	**P**	**13 53 52.0**	**+0.4**
HHC			S	**S**	**13 58 09.3**	**-1.7**
HHC			pmax	pmax		
	comp=Z,38nm,0.8s					
HHC			pmax	pmax		
	comp=Z,150nm,4.5s					
HHC			LR	LR		
	comp=N,1μm,12.2s					
HHC			LR	LR		
	comp=E,2μm,11.7s					
HHC			LR	LR		
	comp=Z,2μm,13.3s					
WHN	**Wuhan**	**24.60 262**	⇑P	P	13 54 00.3	+6.8
WHN			pP	sP	13 54 07.1	+8.7
CIT	**Chita**	**25.04 314**	*e*P	**P**	**13 53 57.9**	**+0.5**
CIT			*e*		13 54 04.6	
CIT			*e*		13 54 14.6	
CIT			*e*		13 54 27.4	
CIT			pmax	pmax		
	comp=Z,268nm,1.9s					
YAK	**Yakutsk**	**25.72 346**	P	**P**	**13 54 02.9**	**-0.4**
	comp=Z,6.6nm,0.5s,baz=154,slow=23,SNR=11					
YAK	**Yakutsk**	**25.72 346**	*e*P	**P**	**13 54 02.2**	**-1.1**
YAK			*e**PP	**sP**	**13 54 07.4**	**-0.8**
YAK			*e*S	**S**	**13 58 34.9**	**+3.2**
YAK			*e*SS	**SnSn**	**13 59 30.0**	**+3.6**
YAK			*e*SSS	SSS	13 59 47.2	
YAK			pmax	pmax		
	comp=Z,24nm,1.3s					
YAK			pmax	pmax		
	comp=N,18nm,1.4s					
YAK			pmax	pmax		
	comp=E,8.0nm,1.5s					
YAK			smax	smax		
	comp=N,35nm,1.8s					
YAK			smax	smax		
	comp=E,39nm,1.9s					
SEY	**Seymchan**	**25.95 10**	P	**P**	**13 54 07.4**	**+1.9**
	comp=E,9.2nm,0.8s,baz=182,slow=9.6,SNR=25					
SEY	**Seymchan**	**25.95 10**	⇓*i*P	**P**	**13 54 07.3**	**+1.8**
H11N2	**WAKE ISLAND Hy 27.51 124**		T	T	14 23 11.6	
	baz=316,slow=75,SNR=1066					
H11N1	**WAKE ISLAND Hy 27.52 124**		T	T	14 23 14.8	
	baz=316,slow=75,SNR=490					
H11N3	**WAKE ISLAND Hy 27.53 124**		T	T	14 23 14.9	
	baz=316,slow=75,SNR=937					
BOD	**Bodaibo**	**27.63 326**	*e*P	**P**	**13 54 20.5**	**-0.1**
BOD			pmax	pmax		
	comp=Z,23nm,1.7s					
XAN	**Xi'an**	**27.66 273**	P	**P**	**13 54 20.6**	**-0.7**
XAN			S	S	13 58 41.8	-21
XAN			pmax	pmax		
	comp=Z,14nm,0.6s					
XAN			LR	LR		
	comp=N,2μm,30.9s					
XAN			LR	LR		
	comp=E,2μm,30.9s					
XAN			LR	LR		
	comp=Z,2μm,38.8s					
ULN	**Ulaanbaatar**	**27.97 303**	*e*P	**P**	**13 54 23.8**	**-0.2**
ULN			pmax	pmax		
	comp=Z,23nm,1.3s					
ULN	**Ulaanbaatar**	**27.97 303**	*e*P	**P**	**13 54 23.8**	**-0.2**
	comp=Z,23nm,1.3s					
H11S1	**WAKE ISLAND Hy 28.26 126**		T	T	14 24 12.3	
	baz=318,slow=76,SNR=500					
H11S3	**WAKE ISLAND Hy 28.27 126**		T	T	14 24 12.2	
	baz=318,slow=76,SNR=694					
H11S2	**WAKE ISLAND Hy 28.28 126**		T	T	14 24 11.6	
	baz=318,slow=76,SNR=184					
SONM	**Songino Array**	**28.40 303**	P	**P**	**13 54 28.3**	**+0.4**
	comp=Z,4.5nm,0.7s,baz=104,slow=8.4,SNR=34					
ENH	**Enshi**	**28.54 265**	*e*P	**P**	**13 54 29.2**	**+0.1**
ZAK	**Zakamensk**	**30.79 307**	*e*P	**P**	**13 54 48.8**	**-0.2**
ZAK			pmax	pmax		
	comp=Z,8.0nm,1.6s					
TLY	**Talaya**	**30.80 310**	P	**P**	**13 54 50.1**	**+1.2**
	comp=Z,3.5nm,0.7s,baz=123,slow=5.2,SNR=10					
TLY	**Talaya**	**30.80 310**	*e*P	**P**	**13 54 49.3**	**+0.4**
TLY			pmax	pmax		
	comp=Z,9.0nm,1.1s					
TLY	**Talaya**	**30.80 310**	*e*P	**P**	**13 54 49.8**	**+0.9**
	comp=Z,5.8nm,0.8s					
LZH	**Lanzhou**	**31.11 279**	*e*P	**P**	**13 54 52.9**	**+1.0**
LZH			pP	sP	13 54 57.9	+1.1
LZH			sP	pP	13 54 59.6	+4.2
LZH			pmax	pmax		
	comp=Z,14nm,1.0s					
MOY	**Mondy**	**32.42 309**	*e*P	**P**	**13 55 03.0**	**-0.3**
GYA	**Guiyang**	**32.47 261**	*e*P	**P**	**13 55 04.8**	**+0.8**
GYA			pmax	pmax		
	comp=Z,10.0nm,0.8s					
BILL	**Bilibino**	**33.09 16**	*e*P	**P**	**13 55 11.1**	**+2.3**
BILL			pmax	pmax		
	comp=Z,6.0nm,1.3s					
BILL			MLR	MLR		
	comp=Z,809nm,18.0s					
GTA	**Gaotai**	**33.49 287**	*e*P	**P**	**13 55 13.8**	**+1.0**
GTA			pP	sP	13 55 17.9	+0.2
GTA			sP	pP	13 55 21.1	+4.9
GTA			pmax	pmax		
	comp=Z,5.0nm,1.0s					
QIZ	**Qiongzhong**	**34.25 246**	P	**P**	**13 55 19.8**	**+0.4**
QIZ			S	**S**	**14 00 46.0**	**-0.2**
QIZ			LR	LR		
	comp=N,140nm,20.1s					
QIZ			LR	LR		
	comp=E,400nm,19.3s					
TIXI	**Tiksi**	**34.80 352**	P	**P**	**13 55 23.8**	**+0.2**
	comp=E,0.6nm,0.5s,baz=153,slow=7.0,SNR=3.6					
TIXI	**Tiksi**	**34.80 352**	*i* P	**P**	**13 55 22.3**	**-1.3**
TIXI			pmax	pmax		
	comp=Z,7.0nm,2.5s					
TIXI	**Tiksi**	**34.80 352**	*e*P	P	13 55 27.9	+4.3
	comp=Z,16nm,1.8s					
KMI	**Kunming**	**36.20 262**	P	P	13 55 39.3	+2.9
KMI			pP	sP	13 55 46.4	+5.1
KMI			sP	pP	13 55 49.5	+10
KMI			pmax	pmax		
	comp=Z,12nm,0.5s					
KMI			pmax	pmax		
	comp=Z,190nm,18.9s					
KMI			LR	LR		
	comp=N,240nm,13.9s					
KMI			LR	LR		
	comp=E,420nm,20.6s					
KMI			LR	LR		
	comp=Z,510nm,22.6s					
WMQ	**Urumqi**	**41.59 296**	P	**P**	**13 56 23.5**	**+2.3**
WMQ			pP	sP	13 56 27.3	+1.2
WMQ			sP	pP	13 56 31.9	+7.2
WMQ			S	**S**	**14 02 33.9**	**-3.2**
WMQ			sS	sS	14 02 47.9	+4.9
WMQ			ScS	**ScS**	**14 06 23.1**	**-1.6**
WMQ			pmax	pmax		
	comp=Z,6.0nm,1.0s					
WMQ			pmax	pmax		
	comp=Z,98nm,4.2s					
WMQ			LR	LR		
	comp=N,1μm,18.0s					
WMQ			LR	LR		
	comp=E,1μm,22.0s					
WMQ			LR	LR		
	comp=Z,2μm,27.6s					
ZALV	**Zalesovo Beam**	**42.35 312**	P	**P**	**13 56 27.4**	**+0.3**
	comp=Z,4.1nm,0.5s,baz=93,slow=7.4,SNR=18					
ZALV			PcP	**PcP**	**13 58 24.3**	**+3.9**
	comp=Z,1.8nm,0.6s,baz=93,slow=3.7,SNR=3.8					
CHTO	**Chiang Mai**	**42.57 256**	*e*P	**P**	**13 56 30.5**	**+1.1**
CHTO			pmax	pmax		
	comp=Z,11nm,1.4s					
CHTO	**Chiang Mai**	**42.57 256**	*e*P	**P**	**13 56 30.5**	**+1.1**
	comp=Z,11nm,1.4s					
CMAR	**Chiang Mai Arr**	**42.78 256**	P	**P**	**13 56 31.9**	**+0.8**
	comp=Z,0.3nm,0.5s,baz=62,slow=6.7,SNR=3.2					
NRIK	**Noril'sk**	**43.18 335**	P	**P**	**13 56 34.5**	**+0.9**
	comp=Z,1.4nm,0.4s,baz=122,slow=8.0,SNR=5.3					
NVS	**Novosibirsk**	**43.24 313**	⇑*i*P	**P**	**13 56 35.3**	**+0.9**
NVS			pmax	pmax		
	comp=E,17nm,2.2s					
NVS			pmax	pmax		
	comp=Z,38nm,2.2s					
NVS			pmax	pmax		
	comp=N,12nm,2.0s					
MKAR	**Makanchi Array**	**44.76 302**	P	**P**	**13 56 47.0**	**+0.2**
	comp=N,9.4nm,0.8s,baz=81,slow=7.5,SNR=48					
MKAR	**Makanchi Array**	**44.76 302**	P	**P**	**13 56 47.0**	**+0.2**
MKAR			pmax	pmax		
	comp=Z,9.0nm,0.8s					
MKAR	**Makanchi Array**	**44.76 302**	*e*P	**P**	**13 56 46.7**	**-0.1**
MAKZ	**Makanchi**	**44.97 302**	*e*P	**P**	**13 56 48.0**	**-0.4**
MAKZ			pmax	pmax		
	comp=Z,8.0nm,0.8s					
MAKZ	**Makanchi**	**44.97 302**	*e*P	**P**	**13 56 48.0**	**-0.4**
	comp=Z,8.0nm,0.8s					
KURK	**Kurchatov**	**46.45 308**	*c i*P	**P**	**13 56 59.9**	**-0.2**
KURK			pmax	pmax		
	comp=Z,13nm,0.6s					
KURK	**Kurchatov**	**46.45 308**	*e*P	**P**	**13 56 59.8**	**-0.2**
	comp=Z,18nm,0.5s					
KURBB	**Kurchatov Arra**	**46.52 308**	P	**P**	**13 57 00.6**	**0.0**
	comp=Z,15nm,0.6s,baz=81,slow=8.1,SNR=93					
PMG	**Port Moresby**	**47.00 174**	P	**P**	**13 57 07.3**	**+2.7**
	comp=Z,22nm,1.0s,baz=286,slow=9.6,SNR=3.2					
BWN	**Browne**	**47.22 34**	*e*P	P	13 57 11.1	+5.2
	comp=Z,63nm,1.2s					
ILAR	**Eielson Array**	**48.33 33**	P	**P**	**13 57 15.8**	**+1.3**
	comp=Z,0.8nm,0.7s,baz=261,slow=6.0,SNR=12					
KKN	**Kakani**	**48.77 276**	*e*P	P	13 57 22.2	+3.6
	comp=Z,26nm,0.6s					
PKIN	**Phulchoki**	**48.78 276**	*e*P	P	13 57 24.4	+5.7
	comp=Z,7.2nm,0.5s					
GKN	**Gorkha**	**49.18 277**	*e*P	**P**	**13 57 21.3**	**-0.4**
	comp=Z,28nm,0.6s					
KOLN	**Koldanda**	**50.10 277**	*e*P	**P**	**13 57 30.6**	**+1.8**
	comp=Z,8.1nm,0.4s					
TKM2	**Tokmak 2**	**50.35 298**	*e*P	**P**	**13 57 30.1**	**-0.4**
TKM2			pmax	pmax		
	comp=Z,30nm,1.4s					
TKM2	**Tokmak 2**	**50.35 298**	*e*P	**P**	**13 57 30.1**	**-0.4**
	comp=Z,30nm,1.4s					
PYUN	**Piuthan**	**50.44 278**	*e*P	**P**	**13 57 32.2**	**+0.9**
BVAR	**Borovoye Array**	**51.00 312**	P	**P**	**13 57 35.4**	**+0.5**
	comp=Z,2.7nm,0.5s,baz=72,slow=8.1,SNR=24					
BRVK	**Borovoye**	**51.05 312**	*i* P	**P**	**13 57 35.2**	**-0.2**
BRVK			pmax	pmax		
	comp=Z,14nm,2.5s					
BRVK	**Borovoye**	**51.05 312**	*e*P	**P**	**13 57 35.2**	**-0.2**
	comp=Z,13nm,1.3s					
KSH	**Kashi**	**51.20 294**	P	P	13 57 42.1	+5.2
KSH			*e*pP	sP	13 57 48.0	+6.2
KSH			*e*PcP	**PcP**	**13 58 56.5**	**+4.4**
KSH			S	**S**	**14 04 59.3**	**+4.1**
KSH			pmax	pmax		
	comp=Z,210nm,6.6s					
AAK	**Ala-Archa**	**51.20 298**	P	**P**	**13 57 36.9**	**0.0**
	comp=Z,1.2nm,0.3s,baz=169,slow=5.2,SNR=3.1					
AAK	**Ala-Archa**	**51.20 298**	*e*P	**P**	**13 57 36.9**	**0.0**
AAK			pmax	pmax		
	comp=Z,8.0nm,1.0s					
AAK	**Ala-Archa**	**51.20 298**	*e*P	**P**	**13 57 36.5**	**-0.3**
	comp=Z,11nm,1.3s					
ZRNK	**Zerenda**	**51.83 312**	*e*P	**P**	**13 57 41.3**	**+0.1**
ZRNK			pmax	pmax		
	comp=Z,13nm,1.2s					
ZRNK	**Zerenda**	**51.83 312**	*e*P	**P**	**13 57 41.2**	**+0.1**
	comp=Z,13nm,1.2s					
INK	**Inuvik**	**53.29 27**	P	**P**	**13 57 53.3**	**+1.6**
	comp=Z,0.7nm,0.5s,baz=294,slow=7.1,SNR=10.0					
KKAR	**Karatay Array**	**53.81 300**	*e*P	**P**	**13 57 56.3**	**+0.3**
KKAR	**Karatay Array**	**53.81 300**	*e*P	**P**	**13 57 56.3**	**+0.3**
GSI	**Gunungsitoli**	**55.12 240**	*e*P	P	13 58 09.7	+3.9
	comp=Z,91nm,1.6s					
SVE	**Sverdlovsk**	**55.44 319**	*e*P	**P**	**13 58 08.0**	**+0.5**
ARU	**Arti**	**56.65 319**	P	**P**	**13 58 16.6**	**+0.4**
	comp=Z,5.8nm,0.5s,baz=89,slow=6.4,SNR=10					
ARU	**Arti**	**56.65 319**	*c i*P	**P**	**13 58 16.5**	**+0.3**
ARU					14 00 22.0	
ARU			S	**S**	**14 06 07.4**	**-0.7**
ARU			SS	**SS**	**14 09 55.8**	**+0.7**
ARU			pmax	pmax		
	comp=Z,21nm,1.7s					
ARU	**Arti**	**56.65 319**	*e*P	**P**	**13 58 16.3**	**+0.1**
	comp=Z,7.1nm,0.6s					
WRAB	**Tennant Creek**	**57.86 189**	*i* P	**P**	**13 58 24.7**	**-0.4**
WRAB			pmax	pmax		
	comp=Z,31nm,1.2s					
WRA	**Warramunga Arr**	**57.87 189**	P	**P**	**13 58 25.2**	**0.0**
	comp=Z,5.7nm,0.5s,baz=7.3,slow=7.1,SNR=109					
ABKAR	**Akbulak array**	**58.41 310**	*e*P	**P**	**13 58 28.6**	**-0.2**
AKTO	**Aktyubinsk**	**59.11 312**	P	**P**	**13 58 34.0**	**+0.4**
	comp=Z,1.6nm,0.5s,baz=85,slow=11,SNR=4.8					
ASAR	**Alice Springs**	**61.59 189**	P	**P**	**13 58 51.2**	**+0.5**
	comp=Z,2.5nm,0.7s,baz=2.2,slow=6.5,SNR=51					
ASAR			LR	LR	14 25 07.9	
	comp=Z,2μm,21.4s,baz=242,slow=36					
YKA	**Yellowknife Ar**	**62.67 31**	P	**P**	**13 58 58.0**	**+0.4**
	comp=Z,0.3nm,0.6s,baz=301,slow=6.0,SNR=6.2					
ARCES	**ARCESS Array B**	**63.80 340**	P	**P**	**13 59 05.0**	**-0.1**
	comp=Z,1.5nm,0.8s,baz=49,slow=8.3,SNR=10.0					
ARCES	**ARCESS Array B**	**63.80 340**	P	**P**	**13 59 05.0**	**-0.1**
KLMR	**Klimovskoe**	**63.83 328**	*e*P	**P**	**13 59 02.1**	**-3.2**
KLMR			*e*		13 59 39.2	
KLMR			*e*		14 01 21.6	
KLMR			pmax	pmax		
	comp=Z,12nm,1.3s					
GEYT	**Alibeck**	**64.54 299**	P	**P**	**13 59 11.3**	**+0.9**
	comp=Z,1.5nm,0.5s,baz=46,slow=4.2,SNR=3.5					
VRH	**Novokhopyorsk**	**67.88 318**	*e*P	**P**	**13 59 28.2**	**-3.3**
VRH			pmax	pmax		
	comp=Z,10.0nm,0.9s					
VRH			MLR	MLR		
	comp=Z,430nm,16.0s					
OBN	**Obninsk**	**68.27 324**	*e*P	**P**	**13 59 34.6**	**+0.7**
OBN			*i*		13 59 39.8	
OBN			*e*		14 02 07.3	
OBN			pmax	pmax		
	comp=Z,10.0nm,1.5s					
OBN			MLR	MLR		
	comp=Z,367nm,16.0s					
LPSR	**Galich'ya Gora**	**68.55 321**	*e*P	**P**	**13 59 35.2**	**-0.5**
LPSR			pmax	pmax		
	comp=Z,10.0nm,1.3s					
LPSR			MLR	MLR		
	comp=Z,380nm,18.0s					
FINES	**FINESS Array B**	**68.78 333**	P	**P**	**13 59 36.7**	**-0.4**
	comp=Z,4.3nm,0.7s,baz=47,slow=7.5,SNR=14					
FINES	**FINESS Array B**	**68.78 333**	*i* P	**P**	**13 59 37.7**	**+0.7**
FINES			pmax	pmax		
	comp=Z,4.0nm,0.7s					
STKA	**Stephens Creek**	**69.20 181**	P	**P**	**13 59 38.9**	**-1.0**
	comp=Z,1.5nm,0.9s,baz=356,slow=16,SNR=3.9					
VSR	**Storozhevoye**	**69.21 319**	*e*P	**P**	**13 59 37.3**	**-2.6**
VSR			pmax	pmax		
	comp=Z,5.0nm,0.5s					
VSR			MLR	MLR		
	comp=Z,550nm,16.0s					
K05A	**Summer Lake**	**69.64 51**	*e*P	P	13 59 46.9	+3.9
	comp=Z,9.9nm,1.1s					
ZEI	**Tsey**	**71.28 310**	*e*P	**P**	**13 59 50.1**	**-2.9**
ZEI			pmax	pmax		
	comp=Z,11nm,1.0s					
KIV	**Kislovodsk**	**71.36 311**	*e*P	**P**	**13 59 54.1**	**+0.8**
KIV			pmax	pmax		
	comp=Z,17nm,1.0s					
KIV	**Kislovodsk**	**71.36 311**	*e*P	**P**	**13 59 54.3**	**+1.0**
	comp=Z,21nm,1.1s					
KBZ	**Khabaz**	**71.36 311**	P	**P**	**13 59 53.4**	**+0.3**
	comp=Z,2.0nm,0.7s,baz=65,slow=4.6,SNR=7.2					
NVAR	**Mina Array Bea**	**73.68 54**	P	**P**	**14 00 08.5**	**+1.1**
	comp=Z,0.9nm,0.8s,baz=270,slow=5.9,SNR=5.2					
NB2	**NORSAR Subarra**	**74.04 338**	P	**P**	**14 00 09.4**	**+0.5**
	comp=Z,4.5nm,0.8s,baz=40,slow=6.2					
NOA	**NORSAR Array B**	**74.04 338**	P	**P**	**14 00 09.2**	**+0.3**
	comp=Z,2.6nm,0.8s,baz=39,slow=5.8,SNR=7.1					
AKASG	**Malin Array Be**	**74.50 323**	P	**P**	**14 00 11.9**	**+0.3**
	comp=Z,0.8nm,0.4s,baz=48,slow=6.2,SNR=12					
AKASG			PP	**PP**	**14 02 58.0**	**+0.5**
	comp=Z,0.6nm,0.3s,baz=52,slow=6.3,SNR=6.1					
AKASG	**Malin Array Be**	**74.50 323**	*i* P	**P**	**14 00 12.3**	**+0.7**
AKASG			pmax	pmax		
	comp=Z,1.0nm,0.4s					
KIEV	**Kiev**	**74.51 323**	*e*P	**P**	**14 00 11.6**	**-0.1**
KIEV			pmax	pmax		
	comp=Z,4.0nm,1.1s					
KIEV	**Kiev**	**74.51 323**	*e*P	**P**	**14 00 10.9**	**-0.8**
	comp=Z,8.0nm,1.1s					
PDAR	**Pinedale Array**	**76.39 46**	P	**P**	**14 00 24.1**	**+1.1**
	comp=Z,0.3nm,0.5s,baz=329,slow=3.2,SNR=3.3					
PSUT	**Pine Spring**	**76.43 52**	*e*P	**P**	**14 00 24.3**	**+1.0**
	comp=Z,19nm,0.8s					
OJC	**Ojcow**	**79.15 327**	*e*P	**P**	**14 00 37.1**	**-0.8**
OJC			pmax	pmax		
	comp=Z,18nm,1.4s					
OJC	**Ojcow**	**79.15 327**	*e*P	**P**	**14 00 37.1**	**-0.8**
	comp=Z,18nm,1.4s					
BRTR	**Keskin Array B**	**79.29 312**	P	**P**	**14 00 39.4**	**+0.4**
	comp=Z,0.4nm,0.5s,baz=105,slow=8.1,SNR=5.3					
BRTR	**Keskin Array B**	**79.29 312**	*i* P	**P**	**14 00 40.4**	**+1.3**
OKC	**Ostrava-Krasne**	**80.14 327**	*e*P	**P**	**14 00 44.8**	**+1.5**
OKC			*e*pP	**PcP**	**14 00 50.9**	**+0.3**
OKC	**Ostrava-Krasne**	**80.14 327**	*e*P	**P**	**14 00 44.8**	**+1.5**
OKC			*e*		14 00 50.9	
DPC	**Dobruska-Polom**	**80.53 329**	*e*P	**P**	**14 00 46.5**	**+1.1**
DPC			*e*pP	**PcP**	**14 00 53.2**	**+0.8**
DPC			AMS	AMS	14 39 40.0	
	comp=Z,300nm,15.4s					
DPC	**Dobruska-Polom**	**80.53 329**	*e*P	**P**	**14 00 46.5**	**+1.1**
DPC			*e*		14 00 53.2	
DPC			MLR	MLR		
	comp=Z,300nm,15.4s					
UPC	**Upice**	**80.53 329**	*e*P	**P**	**14 00 47.6**	**+2.2**
UPC			AMS	AMS	14 39 10.0	
	comp=Z,400nm,16.3s					
UPC	**Upice**	**80.53 329**	*e*P	**P**	**14 00 47.6**	**+2.2**
UPC			MLR	MLR		
	comp=Z,400nm,16.3s					
PVCC	**Panska Ves**	**81.10 330**	AMS	AMS	14 38 20.0	
	comp=Z,200nm,17.6s					
CLL	**Collm**	**81.11 331**	*e*P	**P**	**14 00 50.0**	**+1.5**
CLL			*i*		14 00 54.8	
	comp=Z,7.0nm,1.2s					
CLL			*i*		14 01 06.2	
CLL	**Collm**	**81.11 331**	*e*P	**P**	**14 00 50.0**	**+1.5**
CLL			*i*		14 01 06.2	
VRAC	**Vranov**	**81.21 328**	P	**P**	**14 00 50.4**	**+1.3**
	comp=Z,2.5nm,1.0s,baz=42,slow=5.7,SNR=2.6					
GOPC	**GO Pecny, Ondr**	**81.49 329**	*e*P	**P**	**14 00 52.2**	**+1.6**
GOPC			*e*pP	**PcP**	**14 00 58.2**	**+1.6**
GOPC	**GO Pecny, Ondr**	**81.49 329**	*e*P	**P**	**14 00 52.2**	**+1.6**
GOPC			*e*		14 00 58.2	
PRU	**Pruhonice**	**81.53 329**	*e*P	**P**	**14 00 50.5**	**-0.3**
PRU			*e*pP	**PcP**	**14 00 58.5**	**+1.8**
PRU			AMS	AMS	14 42 40.0	
	comp=Z,300nm,15.6s					
PRU	**Pruhonice**	**81.53 329**	*e*P	**P**	**14 00 50.5**	**-0.3**
PRU			*e*		14 00 58.5	
PRU			MLR	MLR		
	comp=Z,300nm,15.6s					
TREC	**Trest**	**81.68 328**	AMS	AMS	14 41 20.0	
	comp=Z,300nm,16.2s					
NKC	**Novy Kostel**	**82.18 330**	AMS	AMS	14 43 00.0	
	comp=Z,400nm,15.3s					
KHC	**Kasperske Hory**	**82.60 329**	*e*P	**P**	**14 00 57.4**	**+1.0**
KHC			*e*pP	**sP**	**14 01 03.9**	**+2.4**
KHC			AMS	AMS	14 44 20.0	
	comp=Z,300nm,14.0s					
KHC	**Kasperske Hory**	**82.60 329**	*e*P	**P**	**14 00 57.4**	**+1.0**
KHC			*e*		14 01 03.9	
KHC			MLR	MLR		
	comp=Z,300nm,14.0s					
GERES	**GERESS Array B**	**82.77 329**	P	**P**	**14 00 58.0**	**+0.7**
	comp=Z,0.2nm,0.3s,baz=49,slow=4.4,SNR=3.2					
TXAR	**Lajitas Array**	**88.81 53**	P	**P**	**14 01 27.7**	**0.0**
	comp=Z,0.3nm,0.6s,baz=312,slow=2.9,SNR=6.0					
LPAZ	**La Paz**	**145.37 61**	PKPbc	**PKPab**	**14 08 13.3**	**+0.8**
	comp=Z,1.3nm,0.4s,baz=343,slow=4.7,SNR=6.5					

JMA 15 13:51:10.2±0.1, 37°.41N×141°.39E, h28km±1km, M3.7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.41**	**264**	P	Pb	13 51 18.9	-0.3
JFK				S	Sb	13 51 24.8	-0.5
ONAJ	**Iwakimizuishiy**	**0.56**	**237**	P	Pb	13 51

baz=248,slow=318,SNR=4.4
I46RU ZALESOVO INFRA23.38 60 *i* 16 15 50.0
baz=261,slow=320,SNR=1.1
I26DE FREYUNG INFRAS23.63 287 *i* 16 20 10.0
baz=81,slow=332,SNR=0.6

MAN 15 14:44:51, 7°.29N×127°.42E, h0km, mb4.3, ML3.1, MS2.9, 1C-1D, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MATI	**Mati**	**1.21**	**254**	*e*P	Pg	14 45 14.0	-0.2
BIPH	**Bislig**	**1.38**	**310**	⇑*i*P	Pg	14 45 16.4	-1.1
BIPH				*i* S	Sg	14 45 33.2	-2.2
BUKP	**Musuan**	**2.41**	**284**	*e*P	Pn	14 45 32.7	+0.9
BUKP				*e*S	Sn	14 46 02.6	+0.5
CGP	**Cagayan de Oro**	**2.94**	**293**	⇓*i*P	Pn	14 45 40.4	+1.3
CGP				*i* S	Sn	14 46 16.8	+1.7

*ATH **15** 14:49:12.9, 36°.54N×23°.01E, h19km±3km, ML1.7/2, Error ellipse: s-maj=3.7km s-min=1.2km az=239.0*
*CSEM **15** 14:49:13.2±0.2, 36°.53N×22°.97E, h16km±1km, ML1.7, Error ellipse: s-maj=5.7km s-min=3.6km az=62.0*
THE 15 14:49:14.0, 36°.53N×23°.12E, h3km±3km, ML1.9/5, Error ellipse: s-maj=4.0km s-min=0.6km az=270.0, Southern Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VLI	**Veliai**	**0.24**	**322**	P	Pg	14 49 18.4	-0.2
VLI				S	Sg	14 49 21.9	+0.1
VLI	**Veliai**	**0.24**	**322**	P	Pg	14 49 18.8	+0.2
VLI				S	Sg	14 49 21.9	+0.1
VLI	**Veliai**	**0.24**	**322**	P	Pg	14 49 18.8	+0.2
VLI				S	Sg	14 49 20.2	-1.6
VLI				AML	AML	14 49 22.3	
	comp=E,364μm,0.3s						
VLI				AML	AML	14 49 23.8	
	comp=N,300μm,0.3s						
KYTH	**Kithira**	**0.27**	**192**	P	Pg	14 49 19.5	+0.3
KYTH				S	Sg	14 49 23.5	+0.8
KYTH	**Kithira**	**0.27**	**192**	P	Pg	14 49 19.5	+0.3
KYTH				S	Sg	14 49 23.5	+0.8
KYTH	**Kithira**	**0.27**	**192**	P	Pg	14 49 19.8	+0.6
ANKY	**Antikythira Is**	**0.68**	**167**	P	Pg	14 49 27.0	0.0
ANKY				S	Sg	14 49 35.9	+0.2
ANKY	**Antikythira Is**	**0.68**	**167**	P	Pg	14 49 27.0	0.0
ANKY				S	Sg	14 49 35.9	+0.2
ANKY	**Antikythira Is**	**0.68**	**167**	P	Pg	14 49 27.2	+0.2
ANKY				S	Sg	14 49 35.5	-0.3
ANKY				AML	AML	14 49 36.3	
	comp=E,103μm,0.4s						
ANKY				AML	AML	14 49 42.1	
	comp=N,112μm,0.4s						
DID	**Didima**	**0.98**	**5**	P	Pg	14 49 32.7	-0.1
DID				S	Sb	14 49 46.6	-0.4
DID	**Didima**	**0.98**	**5**	P	Pg	14 49 32.3	-0.5
DID				S	Sg	14 49 46.0	+0.5
DID	**Didima**	**0.98**	**5**	P	Pg	14 49 32.3	-0.5
DID				S	Sg	14 49 46.0	+0.4
MHLO	**Agia Marina, M**	**1.04**	**81**	P	Pg	14 49 33.9	-0.1
MHLO				S	Sb	14 49 48.5	-0.3
MHLO	**Agia Marina, M**	**1.04**	**81**	P	Pg	14 49 34.3	+0.3
MHLO				S	Sb	14 49 48.8	0.0
MHLO	**Agia Marina, M**	**1.04**	**81**	P	Pg	14 49 34.3	+0.3
MHLO				S	Sb	14 49 48.8	0.0
ITM	**Ithomi**	**1.16**	**305**	P	Pg	14 49 32.1	-4.1
ITM	**Ithomi**	**1.16**	**305**	P	Pg	14 49 32.1	-4.1
PYL	**PYLOS**	**1.17**	**289**	P	Pg	14 49 33.4	-2.9
PYL	**PYLOS**	**1.17**	**289**	P	Pg	14 49 33.4	-3.0
IMMV	**Iera Moni Meta**	**1.27**	**146**	P	Pg	14 49 37.7	-0.7
IMMV	**Iera Moni Meta**	**1.27**	**146**	P	Pg	14 49 37.7	-0.7

*IDC **15** 14:49:34.7±1.1, 37°.45N×55°.81E, h0km, mb3.5/7, mb1 3.7/13, mb1mx3.5/40, mbtmp3.7/13, ML3.1/5, Error ellipse: s-maj=21.2km s-min=11.8km az=168.0*
*ISCJB **15** 14:49:35.1±0.9, 37°.83N±0°.03×55°.79E±0°.03, h3km±7km, mb3.5/8, Error ellipse: s-maj=5.6km s-min=3.4km az=2.7*
*CSEM **15** 14:49:36.7±0.2, 37°.72N×55°.81E, h2km, ML3.8, Error ellipse: s-maj=6.1km s-min=3.5km az=15.0*
*THR **15** 14:49:36.7±0.4, 37°.67N×55°.87E, h14km±4km, ML3.8*
*TEH **15** 14:49:37.9, 37°.75N×55°.80E, h7km, ML4.0*
*NNC **15** 14:49:37.5±2.3, 38°.12N×55°.52E, h0km, mb4.2, mpv4.9, Error ellipse: s-maj=24.1km s-min=8.9km az=40.0*
*AZER **15** 14:49:43.0±4.7, 37°.53N×54°.88E, h15km, Error ellipse: s-maj=4.9km s-min=1.2km az=353.0*
ISC 15 14:49:36.7±1.3, 37°.78N±0°.05×55°.80E±0°.04, h8km±10km, n110, σ1§68/128, mb3.4/8, 19C-22D, Iran-Turkmenistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MRVT	**Maraveh tapeh**	**0.26**	**117**	*e*Pg	**Pg**	**14 49 40.9**	**-1.0**
MRVT				*e*Sg	**Sg**	**14 49 44.3**	**-1.0**
MRVT				AML	AML	14 49 45.0	
	comp=N,21μm,0.5s						
MRVT				AML	AML	14 49 45.6	
	comp=E,19μm,0.1s						
MRVT	**Maraveh tapeh**	**0.26**	**117**	*e*P	**Pg**	**14 49 40.9**	**-1.0**
MRVT				*e*Sg	**Sg**	**14 49 44.3**	**-1.0**
BJRD	**Bojnurd**	**1.28**	**93**	*e*Pg	**Pg**	**14 49 59.6**	**-1.6**
BJRD				AML	AML	14 50 21.7	
	comp=N,1μm,0.4s						
BJRD	**Bojnurd**	**1.28**	**93**	*e*Pg	**Pg**	**14 49 59.6**	**-1.6**
SHRO	**Shahrood**	**1.79**	**175**	*e*Pg	**Pn**	**14 50 07.2**	**-0.9**
SHRO				*e*Sg	**Sn**	**14 50 29.6**	**-1.5**
SHRO				AML	AML	14 50 32.3	
	comp=E,850nm,0.4s						
GEYT	**Alibeck**	**1.84**	**85**	Pn	**Pb**	**14 50 10.1**	**-0.6**
	comp=E,78nm,0.3s,baz=259,slow=17,SNR=300						
GEYT				Sn	**Sg**	**14 50 35.4**	**-0.4**
	comp=E,97nm,0.3s,baz=253,slow=28,SNR=11						
ISFR	**Sfrayin**	**1.89**	**112**	*e*Pn	**Pn**	**14 50 10.3**	**+0.6**
ISFR				*e*Sg	**Sg**	**14 50 37.5**	**-0.1**
ISFR				*e*AMB	AMB	14 50 43.3	
	comp=Z,17μm,0.2s						
ISFR	**Sfrayin**	**1.89**	**112**	*e*Pn	**Pn**	**14 50 10.3**	**+0.6**
ISFR				*e*Sg	**Sg**	**14 50 37.5**	**-0.1**
IGLO	**Ghaloghah**	**2.02**	**232**	*e*AMB	AMB	14 50 45.4	
	comp=Z,31μm,0.2s						
IGLO				*e*Pn	**Pn**	**14 50 09.8**	**-1.6**
ASHT	**Ashkhabad**	**2.05**	**85**	⇓Pn	**Pg**	**14 50 15.5**	**-0.6**
	comp=Z,849nm,1.0s						
ASHT				⇑Sn	**Sg**	**14 50 46.2**	**+3.5**
	comp=Z,1μm,0.9s						
ASHT	**Ashkhabad**	**2.05**	**85**	Pn	**Pg**	**14 50 15.5**	**-0.6**
	comp=Z,849nm,1.0s						
IEMG	**Emamgholi**	**2.29**	**98**	*e*Pn	**Pn**	**14 50 15.8**	**+0.6**
IEMG				*e*AMB	AMB	14 50 54.2	
	comp=Z,5μm,0.1s						
IEMG	**Emamgholi**	**2.29**	**98**	*e*Pn	**Pn**	**14 50 15.8**	**+0.6**
IKRD	**Kardeh**	**2.38**	**114**	*e*Pn	Pg	14 50 27.6	+5.2
IKRD				*e*AMB	AMB	14 50 40.8	
	comp=Z,2μm,0.2s						
IAKL	**Akhelmad**	**2.63**	**116**	*e*Pn	**Pn**	**14 50 20.5**	**+0.6**
IAKL				*e*AMB	AMB	14 51 11.3	
	comp=Z,3μm,0.2s						
IANJ	**Anjilo**	**2.76**	**214**	*e*Pn	**Pn**	**14 50 21.5**	**0.0**
IANJ				*e*AMB	AMB	14 51 02.0	
	comp=Z,4μm,0.3s						
IANJ	**Anjilo**	**2.76**	**214**	*e*Pn	**Pn**	**14 50 21.5**	**0.0**
ISHM	**Shahmirzad**	**2.81**	**226**	*e*Pn	**Pn**	**14 50 23.3**	**+1.0**
ISHM				*e*AMB	AMB	14 50 26.1	
	comp=Z,8μm,0.1s						
IPAY	**Payeh**	**2.88**	**116**	*e*Pn	**Pn**	**14 50 24.0**	**+0.9**
IPAY				*e*Sg	**Sg**	**14 51 06.6**	**-2.6**
IPAY				*e*AMB	AMB	14 51 14.2	
	comp=Z,3μm,0.1s						
IPAY	**Payeh**	**2.88**	**116**	*e*Pn	**Pn**	**14 50 24.0**	**+0.9**
IPAY				*e*Sg	**Sg**	**14 51 06.6**	**-2.6**
IALA	**Alasht**	**2.93**	**236**	*e*Pn	**Pn**	**14 50 24.1**	**+0.1**
IALA				*e*AMB	AMB	14 51 07.7	
	comp=Z,11μm,0.2s						
IALA	**Alasht**	**2.93**	**236**	*e*Pn	**Pn**	**14 50 24.1**	**+0.1**
IPRN	**Peran**	**3.17**	**242**	*e*Pn	**Pn**	**14 50 26.4**	**-0.6**
IPRN				*e*AMB	AMB	14 51 15.6	
	comp=Z,7μm,0.2s						
IFIR	**Firoozkooh**	**3.25**	**230**	*e*Pn	**Pn**	**14 50 29.0**	**+0.8**
IFIR				*e*AMB	AMB	14 50 29.9	
	comp=Z,5μm,0.2s						
IFIR	**Firoozkooh**	**3.25**	**230**	*e*Pn	**Pn**	**14 50 29.0**	**+0.8**
ISRO	**Mashad**	**3.28**	**115**	*e*Pn	**Pn**	**14 50 29.6**	**+1.0**
ISRO	**Mashad**	**3.28**	**115**	*e*Pn	**Pn**	**14 50 29.6**	**+1.0**
IMOG	**Moghan**	**3.29**	**119**	*e*Pn	**Pn**	**14 50 29.9**	**+1.1**
IMOG				*e*AMB	AMB	14 50 45.8	
	comp=Z,1μm,0.2s						
IMOG	**Moghan**	**3.29**	**119**	*e*Pn	**Pn**	**14 50 29.9**	**+1.1**
ILAS	**Lasjerd**	**3.31**	**225**	*e*Pn	**Pn**	**14 50 29.8**	**+0.7**
ILAS				*e*AMB	AMB	14 51 21.6	
	comp=E,2μm,0.2s						
ILAS	**Lasjerd**	**3.31**	**225**	*e*Pn	**Pn**	**14 50 29.8**	**+0.7**
IMYA	**Miami**	**3.73**	**111**	*e*Pn	**Pn**	**14 50 35.2**	**+0.4**
IMYA	**Miami**	**3.73**	**111**	*e*Pn	**Pn**	**14 50 35.2**	**+0.4**
IDMV	**Damavand**	**3.74**	**235**	*e*Pn	**Pn**	**14 50 36.3**	**+1.2**
IDMV				*e*AMB	AMB	14 50 49.5	
	comp=Z,2μm,0.2s						
IDMV	**Damavand**	**3.74**	**235**	*e*Pn	**Pn**	**14 50 36.3**	**+1.2**
IAFJ	**Afjeh**	**3.80**	**241**	*e*Pn	**Pn**	**14 50 37.1**	**+1.2**
IAFJ	**Afjeh**	**3.80**	**241**	*e*Pn	**Pn**	**14 50 37.1**	**+1.2**
CHTH	**Charan**	**4.19**	**245**	*e*Pn	**Pn**	**14 50 42.5**	**+1.3**
CHTH	**Charan**	**4.19**	**245**	*e*Pn	**Pn**	**14 50 42.5**	**+1.3**
TABS	**Tabas**	**4.26**	**165**	*e*Pn	**Pn**	**14 50 41.8**	**-0.2**
TABS	**Tabas**	**4.26**	**165**	*e*Pn	**Pn**	**14 50 41.8**	**-0.2**
IVRN	**Varamin**	**4.30**	**231**	*e*Pn	**Pn**	**14 50 42.8**	**+0.2**
IVRN				*e*AMB	AMB	14 50 58.9	
	comp=Z,836nm,0.2s						
IVRN				*e*Sg	**Sb**	**14 51 49.5**	**+4.7**
IVRN	**Varamin**	**4.30**	**231**	*e*Pn	**Pn**	**14 50 42.8**	**+0.2**
IVRN				*e*Sg	**Sb**	**14 51 49.5**	**+4.7**
THKV	**Tehran--Karaj**	**4.36**	**246**	*e*Pn	**Pn**	**14 50 45.0**	**+1.5**
THKV				AML	AML	14 52 01.0	
	comp=E,110nm,0.6s						
THKV				AML	AML	14 52 05.3	
	comp=N,86nm,0.6s						
THKV	**Tehran--Karaj**	**4.36**	**246**	*e*Pn	**Pn**	**14 50 45.0**	**+1.5**
IRAZ	**Razeghan**	**5.28**	**245**	*e*Pn	**Pn**	**14 50 57.1**	**+0.9**
IRAZ				*e*AMB	AMB	14 52 36.3	
	comp=Z,430nm,0.3s						
IRAZ	**Razeghan**	**5.28**	**245**	*e*Pn	**Pn**	**14 50 57.1**	**+0.9**
NDR	**Nardaran**	**5.31**	**304**	⇑Pn	Pn	14 50 59.7	+3.3
	SNR=3.1						
NDR				⇑Sn	**Sn**	**14 51 56.7**	**-1.1**
NDR	**Nardaran**	**5.31**	**304**	Pn	Pn	14 50 59.7	+3.3
	SNR=3.1						
NDR				Sn	**Sn**	**14 51 56.7**	**-1.1**
ASTR	**Astara**	**5.58**	**280**	⇑Pn	**Pn**	**14 50 59.5**	**-0.5**
	SNR=3.2						
ASTR	**Astara**	**5.58**	**280**	Pn	**Pn**	**14 50 59.5**	**-0.5**
	SNR=3.2						
LKRN	**Lenkeran, Azer**	**5.61**	**282**	⇓Pn	**Pn**	**14 50 59.6**	**-0.8**
	SNR=4.6						
LKRN				⇓Sn	Sn	14 51 58.9	-6.0
LKRN	**Lenkeran, Azer**	**5.61**	**282**	Pn	**Pn**	**14 50 59.6**	**-0.8**
	SNR=4.6						
ALIB	**Äli-Bayra**	**5.73**	**294**	⇓Pn	**Pn**	**14 51 03.5**	**+1.4**
ALIB				⇓Sn	**Sn**	**14 52 04.1**	**-4.0**
ALIB	**Äli-Bayra**	**5.73**	**294**	Pn	**Pn**	**14 51 03.5**	**+1.4**
LRK	**Lerik**	**5.94**	**281**	⇓Pn	**Pn**	**14 51 04.2**	**-0.9**
LRK				⇑Sn	Sn	14 52 06.1	-7.4
LRK	**Lerik**	**5.94**	**281**	Pn	**Pn**	**14 51 04.2**	**-0.9**
IKOO	**Kooshah**	**5.95**	**153**	*e*AMB	AMB	14 51 10.5	
	comp=Z,332nm,0.2s						
IKOO				*e*Pn	**Pn**	**14 51 05.3**	**-0.1**
GLBA	**Clilabad**	**5.99**	**286**	⇓Pn	**Pn**	**14 51 06.2**	**+0.5**
GLBA	**Clilabad**	**5.99**	**286**	Pn	**Pn**	**14 51 06.2**	**+0.5**
GBS	**Qobustan**	**6.00**	**299**	⇓Pn	**Pn**	**14 51 07.6**	**+1.7**
GBS				⇓Sn	**Sn**	**14 52 11.1**	**-3.7**
GBS	**Qobustan**	**6.00**	**299**	Pn	**Pn**	**14 51 07.6**	**+1.7**
ATGJ	**Altiaghaj**	**6.15**	**302**	⇑Pn	**Pn**	**14 51 09.8**	**+1.8**
	SNR=3.0						
ATGJ	**Altiaghaj**	**6.15**	**302**	Pn	**Pn**	**14 51 09.8**	**+1.8**
	SNR=3.0						
IBAF	**Bafgh**	**6.17**	**182**	*e*Pn	**Pn**	**14 51 08.7**	**+0.3**
IBAF	**Bafgh**	**6.17**	**182**	*e*Pn	**Pn**	**14 51 08.7**	**+0.3**
SIZA	**Siyzn**	**6.28**	**304**	⇑Pn	**Pn**	**14 51 12.4**	**+2.7**
	SNR=3.9						
SIZA	**Siyzn**	**6.28**	**304**	Pn	**Pn**	**14 51 12.4**	**+2.7**
	SNR=3.9						
PQL	**Pirkuli**	**6.35**	**301**	⇑Pn	**Pn**	**14 51 12.8**	**+2.1**
PQL				⇑Sn	**Sn**	**14 52 22.1**	**-1.4**
PQL	**Pirkuli**	**6.35**	**301**	Pn	**Pn**	**14 51 12.8**	**+2.1**
QUBA	**Quba, Azerbaij**	**6.68**	**305**	⇓Pn	**Pn**	**14 51 17.4**	**+2.2**
QUBA	**Quba, Azerbaij**	**6.68**	**305**	Pn	**Pn**	**14 51 17.4**	**+2.2**
ZRD	**Zardab**	**6.79**	**294**	⇓Pn	**Pn**	**14 51 17.6**	**+0.9**
	SNR=3.5						
ZRD				⇓Sn	Sn	14 52 28.0	-6.2
ZRD	**Zardab**	**6.79**	**294**	Pn	**Pn**	**14 51 17.6**	**+0.9**
	SNR=3.5						
XNQ	**Khinaliq**	**6.83**	**302**	⇓Pn	**Pn**	**14 51 18.6**	**+1.2**
XNQ				⇓Sn	**Sn**	**14 52 30.9**	**-4.5**
XNQ	**Khinaliq**	**6.83**	**302**	Pn	**Pn**	**14 51 18.6**	**+1.2**
QSAR	**Qusar**	**6.91**	**305**	⇑Pn	**Pn**	**14 51 20.6**	**+2.2**
QSAR				⇑Sn	**Sn**	**14 52 33.9**	**-3.3**
SEKA	**Sheki**	**7.48**	**300**	⇑Pn	**Pn**	**14 51 27.5**	**+1.2**
	SNR=5.5						
SEKA	**Sheki**	**7.48**	**300**	Pn	**Pn**	**14 51 27.5**	**+1.2**
	SNR=5.5						
GANJ	**Ganja**	**7.90**	**294**	⇓Pn	**Pn**	**14 51 31.8**	**-0.1**
	SNR=3.1						
GANJ				⇑Sn	Sn	14 52 54.3	-7.2
GANJ	**Ganja**	**7.90**	**294**	Pn	**Pn**	**14 51 31.8**	**-0.1**
	SNR=3.1						
ZKTA	**Zakatala**	**8.06**	**301**	⇑Pn	**Pn**	**14 51 36.0**	**+1.9**
	SNR=9.3						
ZKTA				⇓Sn	**Sn**	**14 53 02.0**	**-3.3**
GDB	**GEDABAY**	**8.33**	**294**	⇑Pn	**Pn**	**14 51 38.7**	**+0.7**
	SNR=7.9						
GDB	**GEDABAY**	**8.33**	**294**	Pn	**Pn**	**14 51 38.7**	**+0.7**
	SNR=7.9						
QZX	**Qazax, Azerbai**	**8.71**	**295**	⇑Pn	**Pn**	**14 51 43.8**	**+0.7**
	SNR=4.4						
QZX	**Qazax, Azerbai**	**8.71**	**295**	Pn	**Pn**	**14 51 43.8**	**+0.7**
	SNR=4.4						
GNI	**Garni**	**8.94**	**289**	Pn	**Pn**	**14 51 48.9**	**+2.6**
	comp=Z,1.2nm,0.3s,baz=140,slow=16,SNR=3.1						
GNI				Sn	**Sn**	**14 53 30.4**	**+3.3**
	comp=Z,1.2nm,0.3s,baz=230,slow=16,SNR=2.3						
KBZ	**Khabaz**	**11.45**	**305**	Pn	Pn	14 52 17.8	-2.6
	comp=Z,0.3nm,0.3s,baz=116,slow=12,SNR=4.1						
KBZ				Sn	Sn	14 54 22.2	-6.2
	comp=Z,0.4nm,0.3s,baz=108,slow=20,SNR=3.8						
AB31	**Akbulak array**	**11.86**	**13**	⇑Pn	**Pn**	**14 52 25.3**	**-0.8**
	comp=Z,2.6nm,0.6s,baz=197,slow=13,SNR=49						
AB31				⇑Sn	**Sn**	**14 54 34.7**	**-3.8**
	comp=Z,2.0nm,0.5s,baz=193,slow=24,SNR=8.9						
KK31	**Karatay Array**	**12.40**	**60**	⇑Pn	**Pn**	**14 52 36.6**	**+3.0**
	comp=Z,0.7nm,0.3s,baz=273,slow=10,SNR=4.6						
KK31				⇑Sn	**Sn**	**14 54 54.1**	**+2.2**
	comp=Z,1.6nm,0.6s,baz=326,slow=2.5,SNR=4.9						
KK31	**Karatay Array**	**12.40**	**60**	Pn	**Pn**	**14 52 36.6**	**+3.0**
	comp=Z,0.7nm,0.3s,SNR=4.6						
KK31				Sn	**Sn**	**14 54 54.1**	**+2.2**
	comp=Z,1.6nm,0.6s,SNR=4.9						
AKTO	**Aktyubinsk**	**12.75**	**6**	Pn	**Pn**	**14 52 38.9**	**+0.6**
	comp=Z,2.5nm,0.3s,baz=164,slow=7.9,SNR=30						
AKTO				Sn	Sn	14 54 54.4	-6.1
	comp=Z,0.2nm,0.3s,baz=78,slow=20,SNR=3.7						
AKTO	**Aktyubinsk**	**12.75**	**6**	⇓Pn	**Pn**	**14 52 37.0**	**-1.3**
	comp=Z,4.6nm,0.5s						
AKTO				⇓Sn	Sn	14 54 54.0	-6.4
	comp=Z,2.1nm,0.5s						
AAK	**Ala-Archa**	**15.08**	**65**	Pn	**Pn**	**14 53 08.3**	**-1.9**
	comp=Z,0.3nm,0.3s,baz=239,slow=5.9,SNR=3.5						
AAK				Sn	**Sn**	**14 55 55.5**	**-2.0**
	comp=Z,0.2nm,0.3s,baz=6.9,slow=18,SNR=3.1						
BRTR	**Keskin Array B**	**17.39**	**283**	P	**Pn**	**14 53 38.2**	**-1.8**
	comp=Z,0.1nm,0.3s,baz=76,slow=14,SNR=2.6						
BRVK	**Borovoye**	**18.30**	**29**	⇓Pn	**Pn**	**14 53 50.5**	**-0.3**
	comp=Z,4.3nm,0.8s						
BRVK	**Borovoye**	**18.30**	**29**	Pn	**Pn**	**14 53 50.5**	**-0.3**
	comp=Z,4.3nm,0.8s						
BVA0	**Borovoye Array**	**18.31**	**29**	⇓Pn	**Pn**	**14 53 51.6**	**+0.6**
	comp=Z,3.2nm,0.7s						
BVA0	**Borovoye Array**	**18.31**	**29**	Pn	**Pn**	**14 53 51.6**	**+0.6**
	comp=Z,3.2nm,0.7s						
BVAR	**Borovoye Array**	**18.31**	**29**	P	**Pn**	**14 53 51.6**	**+0.5**
	comp=Z,0.3nm,0.3s,baz=219,slow=11,SNR=10						
ARU	**Arti**	**18.75**	**5**	P	**Pn**	**14 53 58.5**	**+2.2**
	comp=Z,0.0nm,0.3s,baz=195,slow=6.1,SNR=4.3						
KURBB	**Kurchatov Arra**	**20.64**	**44**	P	**P**	**14 54 17.7**	**+1.1**
	comp=Z,0.6nm,0.7s,baz=246,slow=12,SNR=5.1						
MK31	**Makanchi Array**	**21.49**	**57**	⇓Pn	P	14 54 30.7	+4.9
	comp=Z,1.3nm,0.8s,baz=232,slow=5.8,SNR=9.7						
MKAR	**Makanchi Array**	**21.49**	**57**	P	**P**	**14 54 26.7**	**+0.9**
	comp=Z,1.0nm,0.6s,baz=242,slow=9.1,SNR=7.7						
AKASG	**Malin Array Be**	**22.86**	**313**	P	**P**	**14 54 41.3**	**+0.9**
	comp=Z,0.3nm,0.3s,baz=116,slow=9.6,SNR=5.1						
IDI	**Anoyia**	**24.91**	**274**	P	**P**	**14 55 01.1**	**+0.9**
	comp=Z,4.3nm,0.6s,baz=73,slow=7.6,SNR=6.9						
ATD	**Arta Tunnel**	**28.60**	**207**	P	P	14 55 30.2	-3.4
	comp=Z,3.2nm,0.3s,baz=333,slow=4.5,SNR=3.1						
NOA	**NORSAR Array B**	**36.14**	**325**	P	**P**	**14 56 40.1**	**+0.9**
	comp=Z,0.5nm,0.7s,baz=121,slow=8.1,SNR=3.3						
SONM	**Songino Array**	**37.84**	**58**	P	**P**	**14 56 53.3**	**-0.6**
	comp=Z,0.1nm,0.3s,baz=261,slow=9.7,SNR=2.8						
TORD	**Torodi Ar. Bea**	**53.81**	**258**	P	**P**	**14 58 58.3**	**-1.9**
	comp=Z,0.2nm,0.5s,baz=54,slow=7.8,SNR=3.2						

*ISCJB **15** 14:49:38.2±1.0, 6°.27S±0°.08×147°.8E±0°.3, h51km, mb3.5/6, Error ellipse: s-maj=40.8km s-min=9.5km az=9.4*
*IDC **15** 14:49:42.0±3.7, 6°.44S×147°.97E, h75km±37km, mb3.3/6, mb1 3.5/8, mb1mx3.3/35, mbtmp3.7/8, ML4.1/1, Error ellipse: s-maj=56.7km s-min=25.0km az=109.0*
ISC 15 14:49:39.9±1.1, 6°.3S±0°.1×147°.9E±0°.4, h51km, n9, σ1§21/10, mb3.5/6, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**3.19**	**193**	P	**Pn**	**14 50 29.2**	**+1.6**
	15nm,0.3s,baz=23,slow=5.3,SNR=40						
PMG				S	**Sn**	**14 51 03.8**	**-0.5**
	20nm,0.3s,baz=216,slow=20,SNR=16						
WRA	**Warramunga Arr**	**18.91**	**223**	P	**P**	**14 53 55.6**	**-0.9**
	0.6nm,0.3s,baz=45,slow=11,SNR=31						
ASAR	**Alice Springs**	**21.90**	**216**	P	**P**	**14 54 28.5**	**-0.4**
	2.3nm,0.7s,baz=48,slow=9.4,SNR=40						
STKA	**Stephens Creek**	**26.13**	**192**	P	**P**	**14 55 08.4**	**-0.9**
	0.4nm,0.4s,baz=332,slow=15,SNR=4.7						
PETK	**Petropavlovsk-**	**59.75**	**7**	P	**P**	**14 59 40.7**	**+1.3**
	0.7nm,0.4s,baz=158,slow=7.8,SNR=4.4						
SONM	**Songino Array**	**65.08**	**331**	P	**P**	**15 00 16.2**	**+0.9**
	0.3nm,0.6s,baz=134,slow=6.2,SNR=2.6						
MKAR	**Makanchi Array**	**78.27**	**320**	P	**P**	**15 01 34.0**	**-0.5**
	0.3nm,0.6s,baz=109,slow=8.3,SNR=3.7						
ILAR	**Eielson Array**	**85.40**	**23**	P	**P**	**15 02 09.9**	**-1.6**
	0.1nm,0.6s,baz=242,slow=9.1,SNR=3.4						
TORD	**Torodi Ar. Bea**	**146.01**	**284**	PKPbc	**PKPbc**	**15 09 14.7**	**-0.4**
	0.5nm,0.4s,baz=70,slow=2.8,SNR=6.2						

*ISK **15** 14:50:30.6, 37°.25N×28°.14E, h5km, MD2.8*
*CSEM **15** 14:50:31.6±0.2, 37°.26N×28°.21E, h2km, MD2.8, Error ellipse: s-maj=4.7km s-min=4.1km az=28.0*
*DDA **15** 14:50:31.3, 37°.24N×28°.23E, h7km, Md2.7*
ISC 15 14:50:31.7±1.0, 37°.26N±0°.02×28°.21E±0°.02, h6km±11km, n33, σ1§02/44, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.13**	**155**	*e*PG	**Pg**	**14 50 34.0**	**-0.5**
YER	**Yerkesik**	**0.13**	**155**	*e*Pg	**Pg**	**14 50 34.0**	**-0.5**
AYDN	**Tasoluk**	**0.48**	**327**	P	**Pg**	**14 50 41.0**	**0.0**
AYDN				S	**Sg**	**14 50 48.5**	**+1.1**
AYDN	**Tasoluk**	**0.48**	**327**	*i* P	**Pg**	**14 50 41.0**	**0.0**
AYDN				*i* S	**Sg**	**14 50 48.5**	**+1.1**
TURN	**Turunc**	**0.49**	**141**	*i* P	**Pg**	**14 50 39.8**	**-1.5**
TURN				*i* S	**Sg**	**14 50 47.1**	**-0.5**
DALY	**Dalyan (Mu¨la**	**0.56**	**141**	*e*PG	**Pb**	**14 50 43.2**	**-0.7**
DALY				*e*SG	**Sb**	**14 50 53.4**	**+1.3**
DALY	**Dalyan (Mu¨la**	**0.56**	**141**	*e*Pg	**Pb**	**14 50 43.2**	**-0.7**
BDRM	**Kayabasi**	**0.64**	**253**	P	**Pg**	**14 50 43.5**	**-0.5**
BDRM				S	**Sb**	**14 50 54.1**	**-0.4**
BDRM	**Kayabasi**	**0.64**	**253**	*i* P	**Pg**	**14 50 43.5**	**-0.5**
BDRM				*i* S	**Sb**	**14 50 54.

JTM	**Tenmabayashi**	**3.18 320**	P	**Pb**	**15 11 08.8**	**-1.8**
JTM			*e*S	**Sb**	**15 11 46.4**	**-3.5**
JOT	**Ohata**	**3.66 326**	P	**Pb**	**15 11 15.0**	**-3.6**
JOT			*e*S	**Sn**	**15 11 56.1**	**+1.3**
JNBK	**Urakawa-nobuka**	**3.97 349**	P	**Pn**	**15 11 18.1**	**+2.8**
JNBK			*e*S	**Sn**	**15 12 02.2**	**-0.4**
JKB	**Kayabe**	**4.08 330**	P	Pn	15 11 21.1	+4.3
JKB			*e*S	**Sn**	**15 12 06.2**	**+0.9**
JCH	**Churui**	**4.24 356**	P	**Pn**	**15 11 19.9**	**+0.9**
JCH			*e*S	**Sn**	**15 12 07.3**	**-1.9**
JRY	**Ryogami san**	**4.55 240**	P	**Pn**	**15 11 25.9**	**+2.6**
JRY			*e*S	**Sn**	**15 12 17.5**	**+0.7**
MJAR	**Matsushiro Arr**	**4.79 249**	Pn	Pn	15 11 31.2	+4.6
2.5nm,0.3s,baz=62,slow=9.2,SNR=47						
MAT	**Matsushiro**	**4.79 249**	P	Pn	15 11 31.2	+4.6
MAT			*e*S	**Sn**	**15 12 23.9**	**+1.1**
ASAJ	**Asahikawa**	**5.80 352**	Pn	**Pn**	**15 11 42.2**	**+1.8**
1.0nm,0.3s,baz=171,slow=11,SNR=19						
ASAJ			Sn	**Sn**	**15 12 43.6**	**-4.0**
0.5nm,0.3s,baz=318,slow=16,SNR=1.6						
JHJ	**Hachijo jima 2**	**6.17 213**	Pn	**Pn**	**15 11 45.0**	**-0.5**
4.9nm,0.3s,baz=13,slow=24,SNR=10						
JHJ			Sn	**Sn**	**15 12 50.5**	**-6.3**
13nm,0.3s,baz=66,slow=20,SNR=10						
USRK	**Ussuriysk Ar.**	**10.60 307**	Pn	Pn	15 12 53.2	+7.0
0.2nm,0.3s,baz=124,slow=15,SNR=4.2						
KLR	**Kul'dur**	**13.87 325**	Pn	**P**	**15 13 36.3**	**-3.2**
0.1nm,0.3s,baz=126,slow=14,SNR=2.5						
SEY	**Seymchan**	**25.14 9**	P	**P**	**15 15 41.2**	**+1.7**
0.8nm,0.6s,baz=76,slow=22,SNR=6.4						
SONM	**Songino Array**	**28.63 301**	P	**P**	**15 16 13.3**	**+1.9**
0.8nm,0.7s,baz=98,slow=8.6,SNR=5.1						
ZALV	**Zalesovo Beam**	**42.41 311**	PcP	**PcP**	**15 20 03.3**	**+0.9**
0.8nm,0.3s,baz=96,slow=5.8,SNR=5.6						
MKAR	**Makanchi Array**	**45.00 301**	P	**P**	**15 18 33.0**	**+2.8**
0.2nm,0.3s,baz=91,slow=7.6,SNR=4.2						
WRA	**Warramunga Arr**	**58.69 190**	P	**P**	**15 20 11.0**	**-1.5**
1.0nm,0.7s,baz=12,slow=7.2,SNR=9.3						
ASAR	**Alice Springs**	**62.41 190**	P	**P**	**15 20 37.5**	**-0.3**
0.5nm,0.8s,baz=15,slow=7.7,SNR=3.9						
PDAR	**Pinedale Array**	**75.39 47**	P	**P**	**15 21 58.2**	**-0.7**
0.5nm,0.6s,baz=153,slow=0.3,SNR=5.6						
TXAR	**Lajitas Array**	**87.82 54**	P	**P**	**15 23 02.1**	**-2.6**
0.2nm,0.7s,baz=298,slow=1.9,SNR=3.5						

ISCJB ***15*** *15:15:34.5±0.5,36°.56N±0°.03×38°.59E±0°.03,h0km, Error ellipse: s-maj=4.5km s-min=3.5km az=14.0*
CSEM ***15*** *15:15:34.4±0.4,36°.56N×38°.55E,h1km,MD3.1,Error ellipse: s-maj=8.4km s-min=7.2km az=4.0,Suspected Mining explosion.*
NSSC ***15*** *15:15:34.7±1.0,36°.37N×38°.58E,h104km±12km,ML2.1*
DDA ***15*** *15:15:35.0,36°.55N×38°.51E,h7km,Md3.1,Suspected Mining explosion.*
ISK ***15*** *15:15:36.0,36°.68N×38°.37E,h10km,MD2.9*

ISC 15 15:15:33.2±0.8,36°.48N±0°.04×38°.57E±0°.03,h0km,n28, σ1§15/46,Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SURC	**SANLIURFA_SURC**	**0.40**	**5**	P	**Pg**	**15 15 41.0**	**+0.1**
SURC	**SANLIURFA_SURC**	**0.40**	**5**	*i* P	**Pg**	**15 15 41.0**	**+0.1**
JHLN	**Al Jahlan**	**0.81**	**188**	*e*P	**Pn**	**15 15 52.9**	**+0.9**
JHLN				*e*S	**Sn**	**15 16 05.5**	**+0.8**
JHLN				AML	AML	15 16 10.3	
comp=N,44nm,0.3s							
JHLN				AML	AML	15 16 10.5	
comp=E,42nm,0.5s							
JHLN	**Al Jahlan**	**0.81**	**188**	*e*P	**Pn**	**15 15 52.9**	**+0.9**
JHLN				*e*S	**Sn**	**15 16 05.5**	**+0.8**
comp=E,43nm,0.5s							
URFA	**Urfa**	**0.98**	**12**	*e*PG	**Pg**	**15 15 52.6**	**+0.6**
URFA				*e*SG	**Sg**	**15 16 04.9**	**+0.1**
URFA	**Urfa**	**0.98**	**12**	*e*Pg	**Pg**	**15 15 52.7**	**+0.6**
URFA				*e*Sg	**Sg**	**15 16 04.9**	**+0.1**
GZT	**Gaziantep**	**1.19**	**318**	*i* P	**Pg**	**15 15 55.8**	**-0.3**
GZT				*i* S	**Sg**	**15 16 11.3**	**-0.2**
KUZU	**Kuzuini**	**1.24**	**284**	P	**Pg**	**15 15 57.7**	**+0.7**
KUZU				S	**Sb**	**15 16 14.7**	**+0.6**
KUZU	**Kuzuini**	**1.24**	**284**	*i* P	**Pg**	**15 15 57.7**	**+0.7**
KUZU				*i* S	**Sb**	**15 16 14.7**	**+0.6**
SFNV	**Sufian**	**1.24**	**92**	*e*P	**Pn**	**15 15 57.9**	**0.0**
SFNV				*e*S	**Sn**	**15 16 15.4**	**0.0**
SFNV				AML	AML	15 16 18.9	
comp=N,62nm,0.5s							
SFNV				AML	AML	15 16 23.1	
comp=E,52nm,0.4s							
SFNV	**Sufian**	**1.24**	**92**	*e*P	**Pn**	**15 15 57.9**	**0.0**
SFNV				*e*S	**Sn**	**15 16 15.4**	**0.0**
comp=E,52nm,0.4s							
GAZ	**Gaziantep**	**1.29**	**303**	*e*PG	**Pg**	**15 15 56.6**	**-1.4**
GAZ				*e*SG	**Sg**	**15 16 11.7**	**-3.1**
GAZ	**Gaziantep**	**1.29**	**303**	*e*Pg	**Pg**	**15 15 56.6**	**-1.4**
GAZ				*e*Sg	**Sg**	**15 16 11.7**	**-3.1**
HCB	**Kahramanmara¯**	**1.59**	**303**	*i* P	**Pb**	**15 16 03.8**	**+0.3**
HCB				*i* S	**Sg**	**15 16 24.9**	**+0.6**
KBSD	**Kabsdagh**	**1.67**	**71**	*e*P	**Pn**	**15 16 03.4**	**-0.3**
KBSD				*e*S	**Sn**	**15 16 25.1**	**-0.8**
KBSD				AML	AML	15 16 29.6	
comp=N,33nm,0.4s							
KBSD				AML	AML	15 16 32.4	
comp=E,26nm,0.3s							
KBSD	**Kabsdagh**	**1.67**	**71**	*e*P	**Pn**	**15 16 03.4**	**-0.3**
KBSD				*e*S	**Sn**	**15 16 25.1**	**-0.8**
comp=E,26nm,0.3s							
KAMA	**Osmaniye**	**1.68**	**295**	*i* P	**Pb**	**15 16 05.6**	**+0.4**
KAMA				*i* S	**Sb**	**15 16 27.4**	**+0.5**
MAZI	**Mazidag**	**1.79**	**56**	*e*PN	**Pg**	**15 16 08.5**	**+0.9**
MAZI	**Mazidag**	**1.79**	**56**	*e*Pn	**Pg**	**15 16 08.5**	**+0.9**
MZRK	**Al-Mazaregh**	**1.81**	**111**	*e*P	**Pn**	**15 16 05.2**	**-0.4**
MZRK				*e*S	**Sn**	**15 16 26.0**	**-3.2**
MZRK				AML	AML	15 16 29.8	
comp=E,33nm,0.4s							
MZRK				AML	AML	15 16 32.1	
comp=N,30nm,0.5s							
MZRK	**Al-Mazaregh**	**1.81**	**111**	*e*P	**Pn**	**15 16 05.2**	**-0.4**
MZRK				*e*S	**Sn**	**15 16 26.0**	**-3.2**
comp=N,30nm,0.5s							
AKCD	**Akcadag**	**1.89**	**344**	*i* P	**Pg**	**15 16 10.0**	**+0.6**
AKCD				*i* S	**Sg**	**15 16 34.8**	**+0.9**
TAHT	**Tahtakopru-Hat**	**1.93**	**268**	*e*PN	**Pn**	**15 16 07.7**	**+0.4**
TAHT	**Tahtakopru-Hat**	**1.93**	**268**	*e*Pn	**Pn**	**15 16 07.7**	**+0.4**
SVRC	**Sivrice-ELAZID**	**1.98**	**17**	*e*PN	**Pn**	**15 16 08.8**	**+0.5**
SVRC	**Sivrice-ELAZID**	**1.98**	**17**	*e*Pn	**Pn**	**15 16 08.8**	**+0.5**
PTK	**Pertek**	**2.50**	**15**	*e*PN	**Pn**	**15 16 15.8**	**+0.5**
PTK	**Pertek**	**2.50**	**15**	*e*Pn	**Pn**	**15 16 15.8**	**+0.5**

KRNET ***15*** *15:26:56.6±0.1,43°.59N×77°.68E,h22km,mb2.0*
NNC ***15*** *15:26:56.8±1.0,43°.58N×77°.69E,h5km±3km,mb2.7, mpv2.4,Error ellipse: s-maj=13.6km s-min=1.8km az=170.0*
ISCJB ***15*** *15:26:57.5±0.5,43°.57N±0°.03×77°.68E±0°.02,h4km±3km, Error ellipse: s-maj=4.8km s-min=2.5km az=164.1*
SOME ***15*** *15:26:57.6,43°.60N×77°.67E,h15km*

ISC 15 15:26:56.8±1.1,43°.57N±0°.03×77°.63E±0°.02,h14km±9km, n30,σ0§43/52,22C-19D,Lake Issyk-Kul region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KURS	**Kuram**	**0.40**	**102**	⇓*e*P	**Pb**	**15 27 05.6**	**-0.1**
5.2nm,0.1s							
KURS				⇑*e*S	**Sb**	**15 27 11.6**	**-0.2**
39nm,0.3s							
AAA	**Alma-Ata**	**0.58**	**239**	⇑*i* P	**Pn**	**15 27 10.4**	**-0.4**
26nm,0.1s							
AAA				⇑*i* S	**Sn**	**15 27 20.1**	**0.0**
166nm,0.1s							
MDOK	**Medeo**	**0.59**	**226**	*e*P	**Pb**	**15 27 09.3**	**+0.3**
7.2nm,0.2s							
MDOK				*e*S	**Sb**	**15 27 17.8**	**+0.5**
39nm,0.2s							
KNDC	**Almaty**	**0.60**	**234**	⇓S	**Sb**	**15 27 18.9**	**+1.3**
ZHN	**Zhinishke**	**0.71**	**124**	*e*P	**Pg**	**15 27 10.9**	**+0.2**
13nm,0.1s							
ZHN				*e*S	**Sg**	**15 27 20.1**	**0.0**
176nm,0.2s							
MNBS	**Baschi**	**0.75**	**48**	*e*P	**Pb**	**15 27 12.0**	**+0.2**
1.0nm,0.2s							
MNBS				*e*S	**Sg**	**15 27 21.3**	**-0.1**
43nm,0.5s							
SATY	**Saty**	**0.76**	**132**	⇓*i*P	**Pb**	**15 27 11.9**	**-0.1**
21nm,0.2s							
SATY				⇑*i*S	**Sg**	**15 27 21.7**	**-0.1**
296nm,0.1s							
KPKS	**Kokpek**	**0.77**	**98**	*e*P	**Pg**	**15 27 11.8**	**-0.1**
11nm,0.3s							
KPKS				*e*S	**Sg**	**15 27 22.0**	**0.0**
41nm,0.4s							
ANVS	**Anan'yevo**	**0.79**	**178**	⇓*i*P	**Pb**	**15 27 12.5**	**0.0**
baz=181							
ANVS				⇓*i*S	**Sb**	**15 27 22.9**	**-0.2**
baz=181							
IZV	**Izvestkoviy**	**0.92**	**234**	*e*P	**Pn**	**15 27 15.7**	**+0.2**
3.3nm,0.1s							
IZV				*e*S	**Sn**	**15 27 28.5**	**-0.1**
25nm,0.1s							
MTBS	**Maitube**	**0.98**	**244**	*e*P	**Pn**	**15 27 16.4**	**+0.1**
7.3nm,0.1s							
MTBS				⇑*i*S	**Sn**	**15 27 29.7**	**-0.4**
22nm,0.2s							
UZB	**Uzynbulak**	**1.10**	**112**	⇑*i*P	**Pb**	**15 27 17.7**	**-0.1**
18nm,0.2s							
UZB				⇓*i*S	**Sb**	**15 27 31.7**	**-0.4**
20nm,0.2s							
PRZ	**Przheval'sk**	**1.23**	**152**	⇓*e*P	**Pg**	**15 27 20.3**	**-0.1**
baz=155							
PRZ				⇓*i*S	**Sg**	**15 27 37.5**	**+1.1**
baz=155							
KST	**Kastek**	**1.33**	**247**	⇑*i*P	**Pg**	**15 27 22.4**	**0.0**
1.6nm,0.3s							
KST				⇓*i*S	**Sg**	**15 27 39.8**	**+0.2**
9.1nm,0.4s							
PDGK	**Podgornoye**	**1.37**	**100**	⇑*e*P	**Pn**	**15 27 21.7**	**+0.1**
baz=101							
PDGK				⇑*i*S	**Sn**	**15 27 39.5**	**0.0**
baz=101							
PDGK	**Podgornoye**	**1.37**	**100**	⇓P	**Pn**	**15 27 21.7**	**+0.1**
1.8nm,0.2s							
PDGK				⇓S	**Sb**	**15 27 39.6**	**0.0**
11nm,0.7s							
KDJ	**Kajisay**	**1.48**	**193**	⇓*i*P	**Pg**	**15 27 25.1**	**-0.2**
baz=194							
KDJ				⇓*i*S	**Sg**	**15 27 45.1**	**+0.6**
baz=194							
TKM2	**Tokmak 2**	**1.62**	**247**	⇑*i*P	**Pb**	**15 27 26.8**	**+0.2**
baz=247							
TKM2				⇑*i*S	**Sg**	**15 27 48.7**	**-0.3**
baz=247							
TKM2	**Tokmak 2**	**1.62**	**247**	⇑P	**Pb**	**15 27 26.9**	**+0.2**
0.8nm,0.5s							
TKM2				⇑S	**Sg**	**15 27 48.8**	**-0.3**
4.6nm,0.3s							
BOOM	**Boomskoye usch**	**1.65**	**229**	⇑*e*P	**Pb**	**15 27 27.6**	**+0.6**
baz=230							
BOOM				⇑*i*S	**Sg**	**15 27 50.2**	**+0.4**
baz=230							
ULHL	**Ulahol**	**1.67**	**218**	⇓*i*P	**Pg**	**15 27 28.4**	**-0.6**
baz=219							
ULHL				⇓*i*S	**Sg**	**15 27 50.1**	**-0.6**
baz=219							
SHLS	**Shalkode**	**1.69**	**103**	*e*P	**Pb**	**15 27 27.6**	**-0.3**
2.4nm,0.1s							
SHLS				*e*S	**Sb**	**15 27 49.8**	**+0.6**
8.1nm,0.3s							
KAPS	**Kapalarasan**	**2.11**	**35**	*e*P	**Pb**	**15 27 34.8**	**-0.2**
2.3nm,0.2s							
KAPS				⇓*i*S	**Sb**	**15 28 01.6**	**+0.6**
14nm,0.5s							
CHMS	**Chumysh**	**2.18**	**256**	⇑*i*P	**Pb**	**15 27 35.3**	**-0.8**
baz=256							
CHMS				⇑*i*S	**Sb**	**15 28 03.8**	**+0.8**
baz=256							
KZA	**Kyzart**	**2.30**	**230**	⇑*i*P	**Pb**	**15 27 38.0**	**-0.4**
baz=231							
KZA				⇑*i*S	**Sb**	**15 28 07.3**	**+0.4**
baz=231							
NRN	**Naryn**	**2.46**	**210**	⇑*e*P	**Pb**	**15 27 40.4**	**-0.5**
baz=211							
NRN				⇑*e*S	**Sb**	**15 28 11.0**	**-0.2**
baz=211							
AAK	**Ala-Archa**	**2.48**	**249**	⇓S	**Sb**	**15 28 11.3**	**-0.4**
3.1nm,0.8s							
MK31	**Makanchi Array**	**4.61**	**44**	⇑Lg	Lg	15 29 20.7	
0.3nm,0.6s,baz=217,slow=28,SNR=4.4							
KK31	**Karatay Array**	**5.21**	**267**	⇓Lg	Lg	15 29 42.8	
0.5nm,0.5s							
KURBB	**Kurchatov Arra**	**7.08**	**5**	⇓Lg	Lg	15 30 39.4	
1.4nm,0.6s							

IDC ***15*** *15:32:42.4±0.7,26°.04N×96°.59E,h0km,mb3.8/19, mb1 3.9/20,mb1mx3.8/49,mbtmp3.8/20,ML4.4/1,MS3.1/2, Ms1 3.1/2,ms1mx2.7/43,Error ellipse: s-maj=30.2km s-min=13.3km az=59.0*
ISCJB ***15*** *15:32:45.1±0.4,25°.94N±0°.06×96°.37E±0°.05,h33km, mb3.9/27,MS3.5/1,Error ellipse: s-maj=8.6km s-min=6.2km az=19.6*
NEIC ***15*** *15:32:46.4±3.0,26°.07N×96°.62E,h26km±23km,mb4.2/7, Error ellipse: s-maj=16.0km s-min=7.6km az=60.0*

ISC 15 15:32:47.5±0.6,26°.04N±0°.06×96°.41E±0°.07,h35km,n38, σ1§53/39,mb3.9/27,1D,Myanmar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHL	**Shillong**	**4.11**	**264**	⇓*i*PN	**Pn**	**15 33 50.0**	**+2.0**
SHL				*e*SN	**Sn**	**15 34 35.5**	**+0.6**
LSA	**Lhasa**	**5.92**	**309**	*e*Pn	**Pn**	**15 34 13.2**	**+0.1**
17nm,0.5s							
CHTO	**Chiang Mai**	**7.56**	**161**	*e*Pn	**Pn**	**15 34 34.4**	**-1.0**
3.8nm,0.6s							
CMAR	**Chiang Mai Arr**	**7.90**	**162**	Pn	**Pn**	**15 34 39.9**	**-0.1**
1.3nm,0.3s,baz=337,slow=13,SNR=28							
CMAR				Sn	Sn	15 36 17.9	+10
baz=341,slow=19,SNR=2.2							
CMAR				Lg	Lg	15 36 56.9	
0.2nm,0.3s,baz=346,slow=29,SNR=3.7							
CMAR				LR	LR	15 37 40.1	
comp=Z,43nm,19.8s,baz=335,slow=38							
PKIN	**Phulchoki**	**9.96**	**281**	*e*P	**Pn**	**15 35 08.5**	**+0.1**
21nm,0.5s							
PKIN				*e*S	**Sn**	**15 36 58.9**	**-0.2**
KKN	**Kakani**	**10.09**	**282**	*e*P	**Pn**	**15 35 09.5**	**-0.6**
17nm,0.3s							
GKN	**Gorkha**	**10.68**	**283**	*e*P	**Pn**	**15 35 16.6**	**-1.6**
23nm,0.4s							
KOLN	**Koldanda**	**11.56**	**281**	*e*P	**Pn**	**15 35 28.7**	**-1.6**
8.7nm,0.3s							
PYUN	**Piuthan**	**12.13**	**283**	*e*P	**Pn**	**15 35 35.2**	**-3.0**
21nm,0.6s							
PYUN				*e*S	**Sn**	**15 37 47.7**	**-4.7**
SONM	**Songino Array**	**23.14**	**17**	P	**P**	**15 37 49.8**	**-0.9**
0.6nm,0.5s,baz=208,slow=11,SNR=3.7							
ULN	**Ulaanbaatar**	**23.35**	**18**	*e*P	**P**	**15 37 52.0**	**-0.8**
2.2nm,0.8s							
MKAR	**Makanchi Array**	**23.56**	**335**	P	**P**	**15 37 56.3**	**+1.6**
3.5nm,0.7s,baz=148,slow=9.7,SNR=45							
TKM2	**Tokmak 2**	**23.94**	**320**	*e*P	**P**	**15 38 00.2**	**+1.6**
2.3nm,0.6s							
AAK	**Ala-Archa**	**24.42**	**318**	P	**P**	**15 38 06.1**	**+3.1**
2.1nm,0.6s,baz=150,slow=8.2,SNR=8.7							
EKS2	**Erkin-Say**	**24.87**	**318**	*e*P	**P**	**15 38 09.2**	**+2.2**
6.9nm,0.9s							
KURBB	**Kurchatov Arra**	**28.12**	**335**	P	**P**	**15 38 37.0**	**+0.9**
1.1nm,0.6s,baz=147,slow=8.9,SNR=20							
KURK	**Kurchatov**	**28.17**	**336**	*e*P	**P**	**15 38 35.3**	**-1.2**
6.5nm,0.9s							
ZALV	**Zalesovo Beam**	**29.18**	**346**	P	**P**	**15 38 45.0**	**-0.5**
1.6nm,0.6s,baz=173,slow=8.9,SNR=11							
BVAR	**Borovoye Array**	**33.25**	**331**	P	**P**	**15 39 22.4**	**+1.1**
0.6nm,0.4s,baz=138,slow=11,SNR=4.7							
BRVK	**Borovoye**	**33.32**	**331**	*e*P	P	15 39 25.7	+3.8
2.7nm,0.8s							
ABKAR	**Akbulak array**	**36.50**	**319**	*e*P	**P**	**15 39 50.1**	**+0.7**
1.3nm,0.6s							
NRIK	**Noril'sk**	**43.65**	**355**	P	**P**	**15 40 49.2**	**+0.9**
0.7nm,0.5s,baz=153,slow=11,SNR=3.6							
GNI	**Garni**	**44.92**	**302**	LR	LR	16 03 04.0	
comp=Z,59nm,20.3s,slow=40							
TIXI	**Tiksi**	**49.12**	**13**	*e*P	**P**	**15 41 30.6**	**-0.6**
1.3nm,0.3s							
BRTR	**Keskin Array B**	**53.46**	**301**	P	**P**	**15 42 05.2**	**+0.7**
0.6nm,0.7s,baz=86,slow=8.2,SNR=4.4							
AKASG	**Malin Array Be**	**56.03**	**315**	P	**P**	**15 42 22.1**	**-0.6**
0.7nm,0.4s,baz=75,slow=6.8,SNR=3.1							
FINES	**FINESS Array B**	**58.11**	**328**	P	**P**	**15 42 39.8**	**+2.6**
0.9nm,0.6s,baz=95,slow=6.3,SNR=4.0							
WRA	**Warramunga Arr**	**58.70**	**137**	P	**P**	**15 42 41.1**	**-0.7**
1.3nm,0.7s,baz=329,slow=7.6,SNR=9.0							
ARCES	**ARCESS Array B**	**59.19**	**337**	P	**P**	**15 42 45.3**	**+0.7**
1.6nm,0.8s,baz=100,slow=7.4,SNR=6.0							
ASAR	**Alice Springs**	**61.30**	**140**	P	**P**	**15 42 59.4**	**-0.3**
1.2nm,0.8s,baz=323,slow=6.9,SNR=18							
NB2	**NORSAR Subarra**	**65.29**	**328**	P	**P**	**15 43 26.0**	**+0.3**
comp=Z,2.5nm,0.9s,baz=82,slow=6.5							
NOA	**NORSAR Array B**	**65.29**	**328**	P	**P**	**15 43 25.5**	**-0.2**
comp=Z,0.9nm,0.6s,baz=82,slow=6.4,SNR=6.9							
GERES	**GERESS Array B**	**66.22**	**314**	P	**P**	**15 43 33.3**	**+1.3**
comp=Z,0.2nm,0.5s,baz=68,slow=8.6,SNR=2.8							
STKA	**Stephens Creek**	**71.94**	**141**	P	**P**	**15 44 07.5**	**+0.1**
comp=Z,0.9nm,0.7s,baz=315,slow=2.9,SNR=4.0							
ILAR	**Eielson Array**	**77.22**	**23**	P	**P**	**15 44 38.1**	**+0.4**
comp=Z,0.2nm,0.5s,baz=289,slow=4.3,SNR=2.7							
INK	**Inuvik**	**79.05**	**17**	P	**P**	**15 44 46.7**	**-1.0**
comp=Z,0.7nm,0.7s,baz=5.6,slow=4.4,SNR=4.2							
YKA	**Yellowknife Ar**	**88.36**	**14**	P	**P**	**15 45 33.6**	**-1.9**
comp=Z,0.1nm,0.3s,baz=333,slow=5.1,SNR=2.8							
TORD	**Torodi Ar. Bea**	**88.47**	**284**	P	**P**	**15 45 36.8**	**-0.1**
comp=Z,0.4nm,0.6s,baz=51,slow=3.9,SNR=5.2							

NIED ***15*** *15:34:00,38°.40N×142°.20E,h80km,Mw4.0 Best double couple: M0:9.49000×10^14 NP1:φ0=160.00000°,δ67.00000°, λ=-5.00000°. NP2:φ0=252.00000°,δ85.00000°, λ=-157.00000°.*
IDC ***15*** *15:34:05.2±1.1,38°.40N×142°.32E,h0km,mb3.8/6, mb1 3.9/9,mb1mx3.5/45,mbtmp3.8/9,ML3.4/3,MS3.2/2, Ms1 3.3/2,ms1mx2.6/39,Error ellipse: s-maj=37.6km s-min=17.0km az=93.0*
JMA ***15*** *15:34:08.8±0.1,38°.44N×142°.21E,h31km±2km,M3.8*
JMA Felt I J1.
NEIC ***15*** *15:34:11.0±0.8,38°.39N×142°.22E,h42km±8km,mb4.4/1, Error ellipse: s-maj=15.9km s-min=6.5km az=108.0*
NEIC Recorded [1 JMA] in Iwate and Miyagi.

ISC 15 15:34:07.2±3.0,38°.41N±0°.05×142°.26E±0°.09,h14km±17km, n25,σ1§20/33,mb4.1/7,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.71**	**274**	P	**Pb**	**15 34 21.8**	**+0.3**
JIO				S	**Sg**	**15 34 30.6**	**0.0**
OFUJ	**Ofunato**	**0.81**	**326**	P	**Pb**	**15 34 23.1**	**-0.1**
OFUJ				S	**Sb**	**15 34 33.1**	**-1.0**
JMK	**Ichinoseki**	**0.98**	**304**	P	**Pb**	**15 34 25.7**	**-0.3**
JOU	**Okura**	**1.25**	**269**	P	**Pn**	**15 34 30.4**	**+0.1**
JOU				S	**Sb**	**15 34 45.9**	**-0.7**
JMM	**Marumori**	**1.27**	**245**	P	**Pn**	**15 34 30.0**	**-0.6**
JMM				S	**Sb**	**15 34 45.7**	**-1.5**
JOM	**Ohasama**	**1.30**	**325**	P	**Pn**	**15 34 30.7**	**-0.4**
JOM				S	**Sb**	**15 34 46.8**	**-1.3**
JFK	**Kawauchi**	**1.51**	**227**	P	**Pn**	**15 34 33.2**	**-0.7**
JFK				*e*S	**Sn**	**15 34 50.7**	**-2.6**
JYK	**Kaneyama**	**1.57**	**290**	P	**Pn**	**15 34 34.8**	**+0.1**
JRG	**Rokugo**	**1.61**	**309**	P	**Pn**	**15 34 35.6**	**+0.4**
ERM	**Erimo**	**3.67**	**11**	*e*Pn	**Pn**	**15 35 06.0**	**+2.5**
MJAR	**Matsushiro Arr**	**3.72**	**241**	Pn	**Pn**	**15 35 05.7**	**+1.5**
1.1nm,0.3s,baz=18,slow=16,SNR=14							
MJAR				Sn	**Sb**	**15 35 57.0**	**-0.6**
1.4nm,0.3s,baz=59,slow=10,SNR=4.8							
MAJO	**Matsushiro**	**3.72**	**241**	*e*Pn	**Pn**	**15 35 05.7**	**+1.4**
MAT	**Matsushiro**	**3.72**	**241**	P	**Pn**	**15 35 05.4**	**+1.1**
MAT				*e*S	**Sn**	**15 35 51.4**	**+3.5**
JHJ2	**Mitsune**	**5.64**	**201**	Pn	**Pn**	**15 35 31.6**	**+0.9**
JHJ	**Hachijo jima 2**	**5.64**	**202**	Pn	**Pn**	**15 35 30.9**	**+0.2**
4.4nm,0.3s,baz=48,slow=15,SNR=2.1							
JHJ				Sn	Sn	15 36 17.5	-18
3.2nm,0.3s,baz=114,slow=22,SNR=5.7							
JHJ				LR	LR	15 37 54.0	
comp=Z,55nm,18.4s,baz=272,slow=40							
ASAJ	**Asahikawa**	**5.71**	**2**	Pn	**Pn**	**15 35 32.8**	**+1.2**
1.1nm,0.3s,baz=214,slow=13,SNR=14							
ASAJ				Sn	**Sn**	**15 36 36.9**	**-0.1**
baz=285,slow=20,SNR=1.2							
SEY	**Seymchan**	**25.32**	**11**	P	**P**	**15 39 34.1**	**+1.0**
1.7nm,0.8s,baz=233,slow=20,SNR=5.8							
MKAR	**Makanchi Array**	**43.97**	**301**	P	**P**	**15 42 14.0**	**+0.1**
0.2nm,0.3s,baz=87,slow=8.0,SNR=2.1							
KURK	**Kurchatov**	**45.62**	**307**	*e*P	**P**	**15 42 26.7**	**-0.2**
KURBB	**Kurchatov Arra**	**45.70**	**307**	P	**P**	**15 42 27.6**	**+0.1**
1.2nm,0.6s,baz=81,slow=8.1,SNR=11							
WRAB	**Tennant Creek**	**58.50**	**189**	*e*P	**P**	**15 44 02.8**	**-0.2**
3.1nm,0.9s							
WRA	**Warramunga Arr**	**58.51**	**189**	P	**P**	**15 44 02.7**	**-0.4**
1.8nm,0.7s,baz=7.4,slow=7.5,SNR=9.1							
ASAR	**Alice Springs**	**62.24**	**189**	P	**P**	**15 44 29.0**	**+0.4**
0

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TBP	**Tagbilaran**	**0.28**	**41⇑**	*eP*	Pn	15 47 26.7	+2.0
TBP				*eS*	Sb	15 47 31.4	+1.9
SNPH	**Sibulan**	**0.46**	**252⇑**	*i P*	Pn	15 47 28.2	+0.8
SNPH				*i S*	Sn	15 47 34.5	+0.1
LLP	**Lapu-Lapu**	**0.88**	**19**	*eP*	Pb	15 47 34.7	+0.9
LLP				*i S*	Sb	15 47 45.3	0.0
GUIM	**Jordan**	**1.56**	**317**	*eP*	Pb	15 47 44.2	-1.2
GUIM				*eS*	Sn	15 48 02.5	+0.9

MEX 15 16:00:19.4±0.8, 20°.01N×104°.02W, h8km±9km, MD3.8, Jalisco

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EZ5V		**0.66**	**143**	*eP*	Pg	16 00 31.4	-0.8
EZ5V				*i S*	Sg	16 00 39.5	-1.2
R15V		**0.83**	**177**	*eP*	Pg	16 00 33.5	-1.9
R15V				*eS*	Sg	16 00 45.1	-1.2
CJM	**Chamela**	**1.08**	**242**	*eP*	Pg	16 00 36.7	-3.6
CJM				*eS*	Sg	16 00 50.6	-3.8
ANIG	**Ahuacatlan**	**1.14**	**336**	*eP*	Pg	16 00 37.7	-3.6
ANIG				*eS*	Sg	16 00 52.3	-4.0

*IDC **15** 16:04:45.6±1.2, 37°.56N×20°.21E, h0km, mb3.5/8, mb1 3.6/12, mb1mx3.5/41, mbtmp3.5/12, ML3.2/4, MS3.2/1, Ms1 3.2/1, ms1mx2.2/43, Error ellipse: s-maj=22.8km s-min=18.7km az=79.0*
*ISCJB **15** 16:04:46.3±0.9, 37°.33N±0°.03×20°.14E±0°.04, h15km±7km, mb3.5/8, MS3.2/1, Error ellipse: s-maj=6.6km s-min=4.3km az=135.5*
*CSEM **15** 16:04:46.6±0.3, 37°.36N×20°.26E, h0km±1km, ML3.3, Error ellipse: s-maj=4.3km s-min=2.1km az=54.0*
*ATH **15** 16:04:46.9, 37°.39N×20°.23E, h14km±1km, ML3.3/2, Error ellipse: s-maj=3.6km s-min=1.3km az=61.0*
*THE **15** 16:04:48.1, 37°.39N×20°.34E, h1km±1km, ML3.3/10, Error ellipse: s-maj=1.5km s-min=0.5km az=235.0*

ISC 15 16:04:46.3±1.3, 37°.37N±0°.03×20°.21E±0°.04, h13km±8km, n124, σ1§26/152, mb3.6/8, Ionian Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZKS	**Zakynthos**	**0.57**	**54**	P	**Pg**	**16 04 57.3**	**-0.1**
ZKS				S	**Sg**	**16 05 04.4**	**-0.5**
ZKS	**Zakynthos**	**0.57**	**54**	P	**Pg**	**16 04 57.3**	**-0.1**
ZKS				S	**Sg**	**16 05 04.4**	**-0.5**
ZKS	**Zakynthos**	**0.57**	**54**	P	**Pb**	**16 04 57.7**	**-0.4**
ZKS				S	**Sg**	**16 05 05.2**	**+0.3**
ZKS				AML	AML	16 05 06.3	
	comp=N,30565μm,0.3s						
ZKS				AML	AML	16 05 06.8	
	comp=E,23844μm,0.3s						
VLS	**Valsamata**	**0.86**	**21**	P	**Pg**	**16 05 02.7**	**-0.3**
VLS				S	**Sb**	**16 05 15.4**	**+0.7**
VLS	**Valsamata**	**0.86**	**21**	P	**Pg**	**16 05 02.7**	**-0.3**
VLS				S	**Sb**	**16 05 15.4**	**+0.7**
KFL	**Anninata**	**0.87**	**32**	P	**Pg**	**16 05 02.9**	**-0.3**
KFL				S	**Sg**	**16 05 14.6**	**0.0**
KFL	**Anninata**	**0.87**	**32**	P	**Pg**	**16 05 02.9**	**-0.3**
KFL				S	**Sg**	**16 05 14.6**	**0.0**
KFL	**Anninata**	**0.87**	**32**	P	**Pg**	**16 05 02.3**	**-0.8**
KFL				S	**Sg**	**16 05 14.3**	**-0.3**
AMT	**Artemida-Makis**	**1.21**	**82**	P	**Pg**	**16 05 09.0**	**-0.6**
AMT				S	**Sg**	**16 05 24.5**	**-0.8**
AMT	**Artemida-Makis**	**1.21**	**82**	P	**Pg**	**16 05 09.0**	**-0.6**
AMT				S	**Sg**	**16 05 24.5**	**-0.8**
AMT	**Artemida-Makis**	**1.21**	**82**	P	**Pn**	**16 05 10.4**	**+1.4**
RLS	**Riolos of Patr**	**1.21**	**55**	P	**Pg**	**16 05 08.8**	**-0.9**
RLS				S	**Sb**	**16 05 25.1**	**+0.3**
RLS	**Riolos of Patr**	**1.21**	**55**	P	**Pg**	**16 05 09.0**	**-0.7**
RLS				S	**Sb**	**16 05 25.1**	**+0.3**
RLS	**Riolos of Patr**	**1.21**	**55**	AML	AML	16 05 33.3	
	comp=E,1664μm,0.9s						
RLS				AML	AML	16 05 34.0	
	comp=N,1498μm,0.5s						
AXS	**Araxos**	**1.24**	**48**	P	**Pb**	**16 05 09.2**	**-0.4**
AXS				S	**Sn**	**16 05 27.0**	**+1.0**
AXS	**Araxos**	**1.24**	**48**	P	**Pb**	**16 05 09.3**	**-0.4**
AXS				S	**Sn**	**16 05 27.0**	**+1.0**
AXS	**Araxos**	**1.24**	**48**	P	**Pb**	**16 05 09.3**	**-0.3**
PYL	**PYLOS**	**1.32**	**111**	P	**Pn**	**16 05 10.8**	**+0.4**
PYL				S	**Sn**	**16 05 28.5**	**+0.6**
PYL	**PYLOS**	**1.32**	**111**	P	**Pg**	**16 05 11.1**	**-0.5**
PYL				S	**Sn**	**16 05 28.5**	**+0.6**
PYL	**PYLOS**	**1.32**	**111**	P	**Pg**	**16 05 11.1**	**-0.5**
DRO	**Drossia**	**1.33**	**64**	P	**Pb**	**16 05 11.3**	**+0.2**
DRO				S	**Sn**	**16 05 29.1**	**+0.9**
DRO	**Drossia**	**1.33**	**64**	P	**Pb**	**16 05 11.3**	**+0.2**
DRO				S	**Sn**	**16 05 29.1**	**+0.9**
DRO	**Drossia**	**1.33**	**64**	P	**Pg**	**16 05 12.3**	**+0.5**
ITM	**Ithomi**	**1.39**	**97**	P	**Pb**	**16 05 12.2**	**+0.1**
ITM				S	**Sg**	**16 05 30.3**	**-0.7**
ITM	**Ithomi**	**1.39**	**97**	P	**Pb**	**16 05 12.2**	**+0.1**
ITM				S	**Sg**	**16 05 30.3**	**-0.7**
ITM	**Ithomi**	**1.39**	**97**	P	**Pn**	**16 05 11.9**	**+0.5**
ITM				S	**Sg**	**16 05 31.4**	**+0.4**
PDO	**Prodromos**	**1.45**	**32**	P	**Pb**	**16 05 13.6**	**+0.4**
PDO				S	**Sg**	**16 05 33.2**	**+0.2**
PDO	**Prodromos**	**1.45**	**32**	P	**Pb**	**16 05 13.6**	**+0.4**
PDO				S	**Sg**	**16 05 33.2**	**+0.2**
PDO	**Prodromos**	**1.45**	**32**	P	**Pg**	**16 05 15.4**	**+1.2**
LKD2	**Lefkada island**	**1.46**	**14**	P	**Pb**	**16 05 13.7**	**+0.3**
LKD2				S	**Sg**	**16 05 34.1**	**+0.7**
LKD2	**Lefkada island**	**1.46**	**14**	P	**Pb**	**16 05 13.7**	**+0.3**
LKD2				S	**Sg**	**16 05 34.1**	**+0.7**
LKD2	**Lefkada island**	**1.46**	**14**	P	**Pb**	**16 05 13.6**	**+0.2**
PVO	**Paravola**	**1.62**	**40**	P	**Pb**	**16 05 16.2**	**0.0**
PVO	**Paravola**	**1.62**	**40**	P	**Pb**	**16 05 16.2**	**0.0**
PVO	**Paravola**	**1.62**	**40**	P	**Pg**	**16 05 17.8**	**+0.2**
LAKA	**Lakka**	**1.65**	**58**	P	**Pb**	**16 05 16.4**	**-0.3**
LAKA	**Lakka**	**1.65**	**58**	P	**Pb**	**16 05 16.4**	**-0.3**
LAKA	**Lakka**	**1.65**	**58**	P	**Pg**	**16 05 17.8**	**-0.3**
KLV	**Kalavryta, Ach**	**1.68**	**66**	P	**Pb**	**16 05 16.8**	**-0.4**
KLV	**Kalavryta, Ach**	**1.68**	**66**	P	**Pb**	**16 05 16.8**	**-0.4**
KLV	**Kalavryta, Ach**	**1.68**	**66**	P	**Pb**	**16 05 17.0**	**-0.2**
EFP	**Efpalio**	**1.71**	**51**	P	**Pn**	**16 05 16.9**	**+1.1**
EFP	**Efpalio**	**1.71**	**51**	P	**Pn**	**16 05 16.9**	**+1.1**
EFP	**Efpalio**	**1.71**	**51**	P	**Pb**	**16 05 17.8**	**+0.2**
VLX	**Vlachokerasia**	**1.73**	**89**	P	**Pn**	**16 05 17.1**	**+0.9**
VLX	**Vlachokerasia**	**1.73**	**89**	P	**Pn**	**16 05 17.1**	**+0.9**
VLX	**Vlachokerasia**	**1.73**	**89**	P	**Pg**	**16 05 19.7**	**+0.1**
ANX	**Ano Chora**	**1.83**	**47**	P	**Pn**	**16 05 18.5**	**+1.0**
ANX	**Ano Chora**	**1.83**	**47**	P	**Pn**	**16 05 18.5**	**+1.0**
DSL	**Palaion Diasel**	**1.90**	**21**	P	**Pb**	**16 05 20.5**	**-0.3**
DSL	**Palaion Diasel**	**1.90**	**21**	P	**Pb**	**16 05 20.5**	**-0.3**
DSL	**Palaion Diasel**	**1.90**	**21**	P	**Pb**	**16 05 21.2**	**+0.4**
EVR	**Evrytania**	**2.00**	**39**	P	**Pn**	**16 05 21.2**	**+1.3**
EVR	**Evrytania**	**2.00**	**39**	P	**Pn**	**16 05 21.2**	**+1.3**
EVR	**Evrytania**	**2.00**	**39**	P	**Pb**	**16 05 22.8**	**+0.2**
DSF	**Desfina**	**2.11**	**60**	P	**Pn**	**16 05 22.7**	**+1.3**
DSF	**Desfina**	**2.11**	**60**	P	**Pn**	**16 05 22.7**	**+1.3**
DSF	**Desfina**	**2.11**	**60**	P	**Pb**	**16 05 24.0**	**-0.5**
IGT	**Igoumenitsa**	**2.16**	**3**	P	**Pb**	**16 05 24.8**	**-0.5**
IGT	**Igoumenitsa**	**2.16**	**3**	P	**Pb**	**16 05 24.8**	**-0.5**
IGT	**Igoumenitsa**	**2.16**	**3**	P	**Pb**	**16 05 25.4**	**+0.1**
SGD	**Sagiada**	**2.24**	**1**	P	**Pb**	**16 05 25.5**	**-1.2**
SGD	**Sagiada**	**2.24**	**1**	P	**Pb**	**16 05 25.5**	**-1.2**
SGD	**Sagiada**	**2.24**	**1**	P	**Pb**	**16 05 26.9**	**+0.3**
VLI	**Veliai**	**2.28**	**106**	P	**Pn**	**16 05 25.0**	**+1.3**
VLI				S	**Sb**	**16 05 54.3**	**-1.2**
VLI	**Veliai**	**2.28**	**106**	P	**Pn**	**16 05 25.0**	**+1.3**
VLI				S	**Sb**	**16 05 54.3**	**-1.2**
VLI	**Veliai**	**2.28**	**106**	P	**Pb**	**16 05 26.6**	**-0.8**
LTK	**Loutraki**	**2.29**	**73**	P	**Pn**	**16 05 25.2**	**+1.4**
LTK	**Loutraki**	**2.29**	**73**	P	**Pn**	**16 05 25.1**	**+1.3**
LTK	**Loutraki**	**2.29**	**73**	P	**Pn**	**16 05 25.1**	**+1.3**
AGG	**Agios Georgios**	**2.35**	**45**	P	**Pn**	**16 05 26.1**	**+1.4**
AGG	**Agios Georgios**	**2.35**	**45**	P	**Pn**	**16 05 26.1**	**+1.4**
AGG	**Agios Georgios**	**2.35**	**45**	P	**Pn**	**16 05 27.0**	**+2.3**
KEK	**Kerkira**	**2.36**	**352**	P	**Pb**	**16 05 27.6**	**-1.1**
KEK	**Kerkira**	**2.36**	**352**	P	**Pb**	**16 05 27.6**	**-1.1**
DID	**Didima**	**2.42**	**86**	P	**Pn**	**16 05 26.5**	**+0.9**
DID	**Didima**	**2.42**	**86**	P	**Pn**	**16 05 26.5**	**+0.9**
DID	**Didima**	**2.42**	**86**	P	**Pb**	**16 05 28.3**	**-1.4**
KYTH	**Kithira**	**2.53**	**115**	P	**Pn**	**16 05 29.1**	**+1.9**
KYTH	**Kithira**	**2.53**	**115**	P	**Pn**	**16 05 29.1**	**+1.9**
KYTH	**Kithira**	**2.53**	**115**	P	**Pn**	**16 05 29.6**	**+2.4**
THL	**Klokotos Trika**	**2.61**	**32**	P	**Pn**	**16 05 29.9**	**+1.7**
THL	**Klokotos Trika**	**2.61**	**32**	P	**Pn**	**16 05 29.9**	**+1.7**
SMIA	**Simia**	**2.81**	**57**	P	**Pn**	**16 05 32.2**	**+1.2**
SMIA	**Simia**	**2.81**	**57**	P	**Pn**	**16 05 32.2**	**+1.2**
VLY	**Voula,Athens**	**2.89**	**79**	P	**Pn**	**16 05 33.7**	**+1.7**
VLY	**Voula,Athens**	**2.89**	**79**	P	**Pn**	**16 05 33.7**	**+1.7**
VLY	**Voula,Athens**	**2.89**	**79**	P	**Pn**	**16 05 33.8**	**+1.7**
ANKY	**Antikythira Is**	**2.91**	**120**	P	**Pn**	**16 05 34.0**	**+1.7**
ANKY	**Antikythira Is**	**2.91**	**120**	P	**Pn**	**16 05 33.8**	**+1.5**
ANKY	**Antikythira Is**	**2.91**	**120**	P	**Pn**	**16 05 33.9**	**+1.5**
PTL	**Penteli**	**2.98**	**76**	P	**Pn**	**16 05 34.2**	**+0.9**
PTL	**Penteli**	**2.98**	**76**	P	**Pn**	**16 05 34.2**	**+0.9**
XOR	**Xorichti**	**3.08**	**49**	P	**Pn**	**16 05 36.4**	**+1.7**
XOR	**Xorichti**	**3.08**	**49**	P	**Pn**	**16 05 36.2**	**+1.5**
XOR	**Xorichti**	**3.08**	**49**	P	**Pn**	**16 05 36.2**	**+1.5**
NEST	**Nestorio**	**3.11**	**12**	P	**Pb**	**16 05 39.1**	**-2.5**
NEST	**Nestorio**	**3.11**	**12**	P	**Pb**	**16 05 39.1**	**-2.5**
LIT	**Litokhoron**	**3.26**	**33**	P	**Pn**	**16 05 38.7**	**+1.5**
LIT	**Litokhoron**	**3.26**	**33**	P	**Pn**	**16 05 38.7**	**+1.5**
LIT	**Litokhoron**	**3.26**	**33**	P	**Pn**	**16 05 37.7**	**+0.5**
FNA	**Florina**	**3.53**	**15**	P	**Pn**	**16 05 43.0**	**+2.1**
FNA	**Florina**	**3.53**	**15**	P	**Pn**	**16 05 43.0**	**+2.1**
FNA	**Florina**	**3.53**	**15**	P	**Pn**	**16 05 42.3**	**+1.4**
HORT	**Hortiatis**	**3.94**	**34**	P	**Pn**	**16 05 47.3**	**+0.8**
HORT	**Hortiatis**	**3.94**	**34**	P	**Pn**	**16 05 47.3**	**+0.8**
NOCI	**Noci**	**4.20**	**325**	P	**Pn**	**16 05 52.5**	**+2.4**
NOCI	**Noci**	**4.20**	**325**	P	**Pn**	**16 05 52.5**	**+2.4**
IDI	**Anoyia**	**4.32**	**117**	Pn	**Pn**	**16 05 53.1**	**+1.3**
	comp=N,0.3nm,0.3s,baz=312,slow=14,SNR=3.0						
IDI				Sn	**Sn**	**16 06 41.7**	**-0.2**
	comp=N,2.3nm,0.3s,baz=253,slow=23,SNR=6.6						
VAE	**Valguarnera**	**4.61**	**273**	Sn	**Sn**	**16 06 50.0**	**+0.7**
	comp=N,2.8nm,0.3s,baz=143,slow=19,SNR=3.0						
UDBI	**Udbina**	**7.90**	**336**	*e*Pn	**Pn**	**16 06 43.5**	**+2.5**
NVLJ	**Novalja**	**8.24**	**332**	*e*Pn	**Pn**	**16 06 46.9**	**+1.4**
NVLJ				Sn	**Sn**	**16 08 14.9**	**-3.5**
MLR	**Muntele Rosu**	**9.19**	**26**	Pn	**Pn**	**16 06 58.1**	**-0.5**
	comp=N,0.0nm,0.3s,baz=208,slow=7.1,SNR=12						
GERES	**GERESS Array B**	**12.41**	**340**	Pn	**Pn**	**16 07 41.5**	**-1.1**
	comp=N,0.1nm,0.3s,baz=152,slow=17,SNR=2.9						
GERES				Sn	**Sn**	**16 09 53.5**	**-7.3**
	comp=N,0.1nm,0.3s,baz=176,slow=22,SNR=2.1						
KVAR	**Kislovodsk Arr**	**18.26**	**62**	P	**Pn**	**16 08 58.8**	**-0.7**
	baz=211,slow=7.6,SNR=2.2						
HFS	**Hagfors**	**23.16**	**352**	P	**P**	**16 09 52.1**	**-0.2**
	comp=N,1.3nm,0.6s,baz=165,slow=7.7,SNR=6.2						
EKA	**Eskdalemuir Ar**	**23.95**	**326**	P	**P**	**16 10 00.4**	**+0.4**
	comp=N,2.0nm,0.8s,baz=111,slow=7.9,SNR=3.2						
NOA	**NORSAR Array B**	**24.36**	**349**	P	**P**	**16 10 03.9**	**0.0**
	comp=N,0.5nm,0.6s,baz=131,slow=11,SNR=3.0						
FINES	**FINESS Array B**	**24.38**	**7**	P	**P**	**16 10 04.0**	**0.0**
	comp=N,1.6nm,0.8s,baz=156,slow=11,SNR=3.4						
TORD	**Torodi Ar. Bea**	**29.25**	**219**	P	**P**	**16 10 50.4**	**+2.2**
	comp=N,0.8nm,0.6s,baz=29,slow=8.9,SNR=7.9						
ARCES	**ARCESS Array B**	**32.35**	**3**	P	**P**	**16 11 14.5**	**-0.6**
	comp=N,0.7nm,0.8s,baz=193,slow=8.6,SNR=2.9						
MKAR	**Makanchi Array**	**45.94**	**58**	P	**P**	**16 13 09.6**	**+0.8**
	comp=N,0.1nm,0.3s,baz=263,slow=8.6,SNR=2.7						
TLY	**Talaya**	**58.02**	**47**	LR	LR	16 39 51.5	
	comp=N,18nm,18.8s,baz=358,slow=36						
SONM	**Songino Array**	**61.17**	**50**	P	**P**	**16 15 00.8**	**+0.2**
	comp=N,0.2nm,0.4s,baz=300,slow=12,SNR=4.2						

MAN 15 16:06:06, 16°.89N×120°.95E, h31km, mb3.9, ML2.7, MS2.3, 1C, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BCPH	**Baguio City Da**	**0.62**	**215⇑**	*i P*	Pn	16 06 19.7	+0.9
BCPH				*i S*	Sn	16 06 27.9	+0.1
ABRA	**Dolores**	**0.79**	**343**	*eP*	Pn	16 06 20.5	-0.5
ABRA				*eS*	Sn	16 06 32.0	+0.3
CAUP	**Cauayan**	**0.84**	**86**	*eP*	Pb	16 06 22.3	+0.2
APYP	**Conner**	**1.01**	**16**	*eP*	Pb	16 06 25.2	+0.2
BALP	**Baler**	**1.29**	**152**	*eP*	Pn	16 06 27.6	-0.4
BALP				*eS*	Sn	16 06 44.7	+0.6

*ISCJB **15** 16:14:01.7±0.4, 28°.75S±0°.03×70°.46W±0°.06, h53km±3km, mb4.8/68, MS3.7/9, Error ellipse: s-maj=9.2km s-min=4.5km az=177.3*
*GUC **15** 16:14:02.6±0.5, 28°.80S×70°.78W, h50km±2km, ML4.6*
*NEIC **15** 16:14:03.0±0.1, 28°.75S×70°.58W, mb4.8/59, Error ellipse: s-maj=7.0km s-min=3.7km az=78.0*
NEIC Felt [IV] at Alto del Carmen; [III] at Copiapo, Freirina, Huasco, La Higuera, Tierra Amarilla, Vallenar and Vicuna; [II] at Caldera, Coquimbo, La Serena and Los Loros.
*IDC **15** 16:14:03.0±0.4, 28°.80S×70°.69W, h47km±3km, mb4.2/11, mb1 4.3/14, mb1mx4.2/20, mbtmp4.4/14, MS3.7/14, Ms1 3.7/14, ms1mx3.6/23, Error ellipse: s-maj=16.7km s-min=13.0km az=84.0*

ISC 15 16:14:03.0±0.4, 28°.77S±0°.04×70°.61W±0°.08, h49km±3km, h49km:pP-P, n344, σ0§97/368, mb4.8/68, MS3.8/9, 1C-1D, Central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VACH	**Vallenar**	**0.23**	**326**	*i P*	**Pn**	**16 14 11.5**	**-0.1**
VACH				*i S*	**Sn**	**16 14 17.7**	**0.0**
LCO	**Las Campanas**	**0.25**	**199**	*i P*	**Pn**	**16 14 12.3**	**+0.3**
LCO				*i S*	**Sn**	**16 14 18.9**	**+0.5**
LCO				IAML		16 14 19.5	
	comp=N,121μm,0.5s						
LCO	**Las Campanas**	**0.25**	**199**	*e*Pn	**Pn**	**16 14 12.2**	**+0.3**
LSCH	**La Serena**	**1.26**	**206**	IAML		16 14 43.2	
	comp=E,17μm,0.6s						
TLL	**Tololo Astrono**	**1.40**	**187**	*i P*	**Pn**	**16 14 26.4**	**0.0**
TLL				*i S*	**Sn**	**16 14 44.2**	**+0.3**
TLL				IAML		16 14 50.6	
	comp=E,18μm,0.6s						
CPCH	**Copiapo**	**1.43**	**9**	*i P*	**Pn**	**16 14 27.4**	**+0.8**
CPCH				*i S*	**Sn**	**16 14 46.4**	**+2.2**
CDCH	**Caldera**	**1.71**	**354**	*i P*	**Pn**	**16 14 30.7**	**+0.3**
CDCH				*i S*	**Sn**	**16 14 51.8**	**+0.8**
CDCH				IAML		16 14 59.2	
	comp=E,6μm,0.5s						
ROC1	**El Roble**	**4.21**	**185**	*e*Pn	**Pn**	**16 15 05.0**	**+0.1**
PB10	**IPOC Station P**	**5.24**	**1**	*e*Pn	**Pn**	**16 15 16.0**	**-2.8**
LVC	**Limon Verde**	**6.32**	**14**	P	**Pn**	**16 15 32.8**	**-1.2**
	comp=E,902nm,0.3s,baz=186,slow=8.8,SNR=128						
LVC				S	**Sn**	**16 16 46.3**	**+1.1**
	comp=E,2μm,0.3s,baz=341,slow=13,SNR=3.1						
LVC				LR	LR	16 18 07.5	
	comp=E,3μm,21.5s,baz=206,slow=38						
LVC	**Limon Verde**	**6.32**	**14**	*e*Pn	**Pn**	**16 15 33.3**	**-0.8**
LVC				S	**Sn**	**16 16 46.3**	**+1.1**
PB04	**IPOC Station P**	**6.42**	**4**	*e*Pn	**Pn**	**16 15 32.1**	**-3.2**
PB01	**IPOC Station P**	**7.76**	**8**	*e*Pn	**Pn**	**16 15 50.6**	**-2.9**
PB11	**IPOC Station P**	**9.01**	**6**	*e*Pn	**Pn**	**16 16 06.1**	**-4.6**
TRQA	**Tornquist**	**11.73**	**144**	*e*Pn	**Pn**	**16 16 47.8**	**+0.1**
PLCA	**Paso Flores**	**11.93**	**180**	P	**Pn**	**16 16 48.7**	**-1.8**
	comp=E,0.3nm,0.3s,baz=7.1,slow=14,SNR=15						
PLCA				LR	LR	16 21 17.4	
	comp=E,202nm,18.4s,baz=28,slow=36						
CPUP	**Villa Florida**	**12.03**	**81**	P	**Pn**	**16 16 52.2**	**+0.3**
	comp=E,0.1nm,0.3s,baz=252,slow=16,SNR=3.6						
CPUP				LR	LR	16 22 09.6	
	comp=E,284nm,18.8s,baz=262,slow=40						
LPAZ	**La Paz**	**12.63**	**11**	P	**Pn**	**16 16 58.9**	**-1.8**
	comp=E,1.3nm,0.3s,baz=208,slow=6.0,SNR=24						
LPAZ				LR	LR	16 22 20.7	
	comp=E,338nm,20.2s,baz=218,slow=39						
SIV	**San Ignacio**	**15.47**	**37**	P	**Pn**	**16 17 34.1**	**-3.9**
	comp=E,1.7nm,0.3s,baz=259,slow=8.1,SNR=13						
NNA	**Nana**	**17.68**	**340**	P	**Pn**	**16 18 05.2**	**-0.7**
	comp=E,0.5nm,0.3s,baz=211,slow=5.5,SNR=3.0						
NNA				LR	LR	16 23 47.1	
	comp=E,111nm,19.8s,baz=164,slow=33						
CHRN	**Cochrane**	**18.51**	**184**	*e*P	**P**	**16 18 14.4**	**-0.7**
	comp=E,18nm,0.9s						
SAML	**Samuel**	**20.92**	**21**	*e*P	**P**	**16 18 42.4**	**+0.8**
	comp=E,26nm,0.9s						
ATAH	**Atahalpa**	**22.74**	**340**	LR	LR	16 26 26.2	
	comp=E,153nm,18.4s,baz=190,slow=33						
EFI	**East Falkland**	**24.73**	**161**	P	**P**	**16 19 17.6**	**-2.0**
USHA	**Ushuaia**	**26.09**	**177**	P	**P**	**16 19 31.6**	**-0.2**
	comp=E,149nm,1.0s,baz=355,slow=5.7,SNR=4.4						
USHA				LR	LR	16 29 33.9	
	comp=E,1μm,20.1s,baz=280,slow=36						
PTGA	**Pitinga**	**29.68**	**22**	P	**P**	**16 20 05.5**	**+1.2**
	comp=E,1.7nm,0.4s,baz=246,slow=14,SNR=3.9						
PTGA				LR	LR	16 33 01.5	
	comp=E,248nm,18.8s,baz=196,slow=38						
PTGA	**Pitinga**	**29.68**	**22**	*e*P	**P**	**16 20 05.1**	**+0.8**
	comp=E,6.3nm,0.8s						
OTAV	**Otavalo**	**29.81**	**344**	*e*P	**P**	**16 20 07.6**	**+1.7**
	comp=E,14nm,1.5s						
PRAC	**Prado**	**32.56**	**352**	*e*P	**P**	**16 20 29.5**	**-0.2**
ROSC	**El Rosal**	**33.61**	**353**	LR	LR	16 33 56.8	
	comp=E,75nm,21.6s,baz=89,slow=36						
NORC	**Norcasia**	**34.38**	**352**	*e*P	**P**	**16 20 45.4**	**-0.1**
RUSC	**La Rusia**	**34.55**	**356**	*e*P	**P**	**16 20 47.7**	**+0.2**
HELC	**Santa Helena**	**35.08**	**351**	*e*P	**P**	**16 20 49.4**	**-2.6**
CBRI	**Barrientos, No**	**36.34**	**356**	*e*P	**P**	**16 21 00.2**	**-2.3**
BANI	**BANI**	**46.89**	**0**	*e*P	**P**	**16 22 29.0**	**+0.3**
TEIG	**Tepich**	**51.61**	**339**	*e*P	**P**	**16 23 04.1**	**-0.5**
	comp=E,26nm,0.6s						
TLIG	**Tlapa**	**53.41**	**326**	*e*P	**P**	**16 23 18.1**	**+0.1**
	comp=E,11nm,0.8s						
VNA3	**Neumayer Olymp**	**53.77**	**159**	P	**P**	**16 23 21.7**	**+1.7**
VNA1	**Neumayer--Stat**	**54.04**	**159**	P	pP	16 23 36.4	+0.9
VNA2	**Neumayer--Watz**	**54.39**	**159**	P	**P**	**16 23 21.6**	**-2.9**
	baz=285,slow=8.5						
SNAA	**Sanae**	**55.99**	**159**	P	**P**	**16 23 37.2**	**+1.0**
SNAA	**Sanae**	**55.99**	**159**	*e*P	**P**	**16 23 36.8**	**+0.7**
SNAA				*e*pP	**pP**	**16 23 50.3**	**+0.5**
ZAIG	**Zacatecas**	**59.79**	**326**	*e*P	**P**	**16 24 04.7**	**+1.1**
	comp=E,9.3nm,1.0s						
QSPA	**South Pole Qui**	**61.45**	**180**	*e*P	**P**	**16 24 14.9**	**+0.7**
	comp=E,15nm,1.0s						
QSPA				*e*pP	**pP**	**16 24 28.5**	**+0.5**
933A	**Laredo**	**62.43**	**331**	P	**P**	**16 24 22.2**	**+1.1**
	baz=152						
834A	**Tilden**	**62.58**	**332**	P	**P**	**16 24 23.6**	**+1.5**
	baz=152						
736A	**Circle Diamond**	**62.73**	**334**	P	**P**	**16 24 24.9**	**+2.0**
	baz=154						
833A	**Chaparral WMA,**	**63.11**	**332**	P	**P**	**16 24 26.9**	**+1.3**
	baz=152,SNR=5.7						
636A	**Smothers Creek**	**63.20**	**334**	P	**P**	**16 24 27.5**	**+1.4**
	baz=154						
832A	**Faith Ranch, C**	**63.32**	**331**	P	**P**	**16 24 28.2**	**+1.3**
	baz=151,SNR=6.4						
Z48A	**Northport**	**63.86**	**344**	P	**P**	**16 24 30.1**	**-0.3**
	baz=164						
633A	**Saathoff Ranch**	**64.02**	**332**	P	**P**	**16 24 32.4**	**+0.8**
	baz=152						
Y47A	**UCPARC, Winfie**	**64.44**	**344**	P	**P**	**16 24 34.1**	**0.0**
	baz=163						
Y46A	**Houston**	**64.67**	**343**	P	**P**	**16 24 35.6**	**0.0**
	baz=162						
HPIG		**64.80**	**325**	*e*P	**P**	**16 24 37.1**	**+0.2**
	comp=E,17nm,1.0s						
434A	**Burnet**	**64.86**	**334**	P	**P**	**16 24 37.4**	**+0.4**
	baz=153,SNR=5.8						
335A	**Moody**	**64.95**	**335**	P	**P**	**16 24 38.4**	**+0.9**
	baz=154						
433A	**Art**	**65.12**	**333**	P	**P**	**16 24 39.4**	**+0.7**
	baz=153,SNR=16						
JCT	**Junction City**	**65.17**	**332**	P	**P**	**16 24 40.1**	**+1.0**
	baz=152,SNR=7.4						
JCT	**Junction City**	**65.17**	**332**	*e*P	**P**	**16 24 39.3**	**+0.3**
	comp=E,32nm,1.3s						
Z41A	**Richland Creek**	**65.18**	**340**	P	**P**	**16 24 40.4**	**+1.4**
	baz=159						
**SWET

O56A **Blue Knob Stat** 69.08 353 P P 16 25 04.2 +0.6
baz=172
T38A **Diamond** 69.14 340 P P 16 25 04.5 +0.5
baz=158,SNR=15
S40A **Lebanon** 69.14 342 P P 16 25 04.1 +0.1
baz=160,SNR=5.2
U35A **Pawnee** 69.30 338 P P 16 25 05.5 +0.4
baz=156,SNR=5.3
V33A **Lossen Ranch,** 69.34 336 P P 16 25 05.6 +0.3
baz=154
T37A **Cheneyville 18** 69.41 339 P P 16 25 06.0 +0.3
baz=157,SNR=7.9
MSTX **Muleshoe** 69.43 332 P P 16 25 06.4 +0.3
baz=150,SNR=9.7
MSTX **Muleshoe** 69.43 332 eP P 16 25 05.6 -0.4
comp=E,28nm,1.1s
VNDA **Vanda** 69.45 191 P P 16 25 07.4 +1.9
comp=E,1.1nm,1.0s,baz=324,slow=3.9,SNR=4.5
S39A **Bolivar** 69.46 341 P P 16 25 06.3 +0.3
baz=159,SNR=8.0
N59A **State Game Lan** 69.50 356 P P 16 25 07.5 +1.3
baz=175
S38A **Stockton** 69.57 340 P P 16 25 07.0 +0.3
baz=158,SNR=7.1
T36A **Boggs Farm, Ca** 69.65 339 P P 16 25 07.5 +0.3
baz=156
R40A **Maddies Statio** 69.72 342 P P 16 25 08.0 +0.4
baz=160,SNR=19
T35A **Sooner Cattle** 69.72 338 P P 16 25 08.0 +0.4
baz=156
AMTX **Amarillo** 69.78 333 P P 16 25 09.1 +0.9
baz=151
AMTX **Amarillo** 69.78 333 eP P 16 25 08.4 +0.2
comp=E,17nm,1.3s
U33A **Lingo Farm, Me** 69.83 337 P P 16 25 08.6 +0.3
baz=154
Q42A **Golden Eagle** 69.86 344 P P 16 25 08.6 +0.2
baz=162
N54A **Moraine State** 69.92 352 P P 16 25 08.9 +0.1
baz=171
R39A **Chumby, Stover** 69.96 341 P P 16 25 09.3 +0.3
baz=159,SNR=6.4
S37A **Fort Scott** 69.97 340 P P 16 25 09.4 +0.3
baz=158,SNR=7.8
T34A **McClaskey Farm** 70.05 338 P P 16 25 10.2 +0.6
baz=155
R38A **Fenwick Farm,** 70.09 341 P P 16 25 09.9 +0.1
baz=158,SNR=5.4
S36A **Lake Cedric, C** 70.17 339 P P 16 25 10.5 +0.1
baz=157,SNR=5.5
319A **Douglas** 70.23 325 eP P 16 25 11.5 +0.5
comp=E,12nm,0.9s
SYO **Syowa Base** 70.28 159 eP P 16 25 09.0 -1.7
SYO **Syowa Base** 70.28 159 eX P 16 25 16.6 +5.9
Q40A **Laux Farm, Aux** 70.33 342 P P 16 25 11.7 +0.4
baz=160
S35A **Otter Creek Ra** 70.36 339 P P 16 25 11.9 +0.3
baz=156
R37A **Teagarden Farm** 70.48 340 P P 16 25 12.2 0.0
baz=158
Q39A **Willow Grove F** 70.62 342 P P 16 25 13.3 +0.3
baz=159,SNR=5.1
S34A **Willow Spring** 70.64 338 P P 16 25 13.4 +0.2
baz=156
Q38A **Cooks Store, C** 70.72 341 P P 16 25 14.2 +0.5
baz=159,SNR=8.8
T32A **Huddler Ranch,** 70.78 336 P P 16 25 15.0 +0.9
baz=154
P40A **Paris** 70.83 343 P P 16 25 14.8 +0.4
baz=160,SNR=8.5
S33A **Kaszmaul Farm,** 70.84 337 P P 16 25 14.7 +0.2
baz=155
P39B **Salisbury** 70.97 342 P P 16 25 15.3 +0.1
baz=160
HDIL **Hopedale** 71.12 345 P P 16 25 15.9 -0.2
baz=163
R34A **Isabella, Hill** 71.22 338 P P 16 25 17.5 +0.7
baz=156
O40A **La Belle** 71.34 343 P P 16 25 17.4 0.0
baz=160
Q35A **Mercer Eighty,** 71.35 339 P P 16 25 17.5 0.0
baz=157
O39A **Kirksville** 71.64 342 P P 16 25 19.6 +0.4
baz=160
Q34A **Chapman** 71.69 339 P P 16 25 20.0 +0.4
baz=156
TUC **Tucson** 71.74 325 P P 16 25 21.2 +1.0
baz=144
ANMO **Albuquerque** 71.85 330 P P 16 25 22.1 +1.2
baz=147
ANMO **Albuquerque** 71.85 330 eP P 16 25 21.5 +0.6
comp=E,9.9nm,1.4s
O37A **Wolven Farm, M** 71.99 341 P P 16 25 21.6 +0.3
baz=158
N39A **Derby Farms, D** 72.21 343 P P 16 25 22.9 +0.2
baz=160
P34A **Walnut Farm, R** 72.22 339 P P 16 25 23.4 +0.6
baz=156
N38A **Joes South For** 72.33 342 P P 16 25 23.6 +0.3
baz=159
DBIC **Dimbokro** 72.37 72 P P 16 25 25.4 +1.2
comp=E,11nm,0.6s,baz=217,slow=5.8,SNR=23
DBIC pP pP 16 25 38.9 +0.6
comp=E,8.4nm,0.7s,baz=205,slow=5.5,SNR=6.1
DBIC sP sP 16 25 43.6 -0.3
comp=E,5.4nm,0.5s,baz=214,slow=6.7,SNR=4.4
DBIC LR LR 16 55 19.4
comp=E,20nm,18.8s,baz=191,slow=34
214A **Organ Pipe Nat** 72.51 323 P P 16 25 25.5 +0.8
baz=142
O34A **Beatrice** 72.76 339 P P 16 25 26.1 +0.1
baz=156,SNR=5.1
N36A **Muff Farm, Cla** 72.83 341 P P 16 25 26.5 +0.2
baz=158
T25A **Trinidad** 72.84 332 P P 16 25 27.7 +1.0
baz=149,SNR=7.4
T25A **Trinidad** 72.84 332 eP P 16 25 27.1 +0.3
comp=E,14nm,1.2s
O33A **Hebron** 72.94 339 P P 16 25 27.5 +0.4
baz=155
N35A **Tabor** 73.07 340 P P 16 25 27.8 +0.1
baz=157
M37A **Trindle Farm,** 73.12 342 P P 16 25 28.7 +0.7
baz=159,SNR=8.0
X18A **Snowflake** 73.12 327 eP P 16 25 28.4 -0.1
comp=E,20nm,1.6s
N34A **Lincoln** 73.30 340 P P 16 25 29.1 0.0
baz=156
O32A **Brockman Farm,** 73.34 338 P P 16 25 29.6 +0.2
baz=155
M36A **Felix, Anita** 73.37 341 P P 16 25 29.8 +0.3
baz=158
X16A **Lo Mia Camp, P** 73.76 326 eP P 16 25 33.3 +1.1
comp=E,20nm,1.4s
SDCO **Great Sand Dun** 73.80 332 P P 16 25 33.7 +1.2
baz=148,SNR=8.8
SDCO **Great Sand Dun** 73.80 332 eP P 16 25 33.1 +0.6
comp=E,22nm,1.8s
L36A **Harm Buss Farm** 73.93 342 P P 16 25 33.1 +0.3
baz=158
Y14A **Wickenburg** 74.16 324 eP P 16 25 35.1 +0.7
comp=E,25nm,0.9s
S22A **4UR Ranch, Cre** 74.36 331 P P 16 25 36.8 +1.0
baz=148,SNR=5.4
S22A **4UR Ranch, Cre** 74.36 331 eP P 16 25 36.4 +0.6
comp=E,10nm,1.6s
K36A **Gilmore City** 74.37 342 P P 16 25 35.8 +0.4
baz=158
M31A **Lambtecht Ranc** 74.54 338 P P 16 25 37.3 +0.9
baz=154
WUAZ **Wupatki** 74.60 326 P P 16 25 38.2 +1.1
baz=144
WUAZ **Wupatki** 74.60 326 eP P 16 25 37.7 +0.6
comp=E,14nm,1.1s
MVCO **Mesa Verde** 74.64 329 P P 16 25 38.2 +0.9
baz=146
MVCO **Mesa Verde** 74.64 329 eP P 16 25 37.8 +0.4
comp=E,12nm,1.1s
Q24A **Divide** 74.70 333 P P 16 25 38.8 +1.1
baz=149
Q24A **Divide** 74.70 333 eP P 16 25 38.4 +0.6
comp=E,53nm,1.9s
J36A **Seneca 1, Swea** 74.99 342 P P 16 25 39.0 +0.2
baz=159
I38A **Scanlan Farm,** 75.14 344 P P 16 25 39.8 +0.1
baz=160,SNR=5.7
BC3 **Big Chuckawall** 75.22 323 P P 16 25 41.6 +1.0
baz=140

L31A **Butterfield Fa** 75.25 339 P P 16 25 41.8 +1.3
baz=155
I37A **Lemond, Waseca** 75.38 343 P P 16 25 41.5 +0.4
baz=160
PV01 **Paradox Valley** 75.44 330 eP P 16 25 42.7 +0.8
IRM **Iron Mountain** 75.44 323 P P 16 25 42.3 +0.5
baz=141
ISCO **Idaho Springs** 75.60 333 P P 16 25 44.0 +1.1
baz=149
ISCO **Idaho Springs** 75.60 333 eP P 16 25 43.3 +0.4
comp=E,17nm,1.7s
K31A **O'Neill** 75.62 339 P P 16 25 43.6 +1.0
baz=155
SMCO **Snowmass** 75.63 332 eP P 16 25 44.0 +0.9
comp=E,8.0nm,0.8s
PV05 **Paradox Valley** 75.63 330 eP P 16 25 43.5 +0.5
I35A **Creekview Farm** 75.65 342 P P 16 25 42.9 +0.2
baz=158
J33A **Davis** 75.71 340 P P 16 25 43.2 +0.1
baz=156
H37A **Dierke Farm, C** 75.79 344 P P 16 25 43.9 +0.5
baz=160
K30A **Basset** 75.94 338 P P 16 25 45.5 +1.1
baz=154
ECSD **EROS Data Cent** 75.99 341 P P 16 25 45.0 +0.4
baz=157
ECSD **EROS Data Cent** 75.99 341 eP P 16 25 44.5 -0.2
comp=E,13nm,0.8s
J32A **Parkston** 76.02 340 P P 16 25 45.4 +0.6
baz=156
H36A **Jessenland, He** 76.04 343 P P 16 25 45.4 +0.5
baz=159
GMRC **Granite Mounta** 76.20 323 P P 16 25 47.0 +0.8
baz=140
SPMN **Marine on St.** 76.37 344 P P 16 25 46.6 -0.1
baz=160
H35A **Sunnyside Ranc** 76.39 342 P P 16 25 46.9 0.0
baz=158,SNR=5.4
SCI2 **San Clemente I** 76.41 320 P P 16 25 48.2 +0.9
baz=138
J30A **Dallas** 76.49 339 P P 16 25 48.4 +0.9
baz=154
HEC **Hector,Ludlow** 76.59 323 P P 16 25 49.5 +1.2
baz=140
G36A **St. Michael** 76.61 343 P P 16 25 48.4 +0.3
baz=159
H34A **Spellman Lake,** 76.61 342 P P 16 25 48.5 +0.4
baz=158
H33A **Prehn Over Nor** 76.90 341 P P 16 25 50.3 +0.5
baz=157,SNR=7.7
O20A **White River Ci** 76.96 331 P P 16 25 51.7 +1.2
baz=147,SNR=7.2
O20A **White River Ci** 76.96 331 eP P 16 25 51.1 +0.6
comp=E,13nm,0.8s
G34A **Benson** 77.11 342 P P 16 25 50.8 -0.1
baz=158
SRU **San Rafael Swe** 77.11 329 eP P 16 25 51.5 +0.1
comp=E,7.7nm,0.7s
F36A **Milaca** 77.14 344 P P 16 25 51.3 +0.2
baz=160
GSC **Goldstone, Bar** 77.20 323 P P 16 25 52.6 +0.8
baz=140
GSC **Goldstone, Bar** 77.20 323 eP P 16 25 52.6 +0.8
comp=E,8.6nm,1.3s
Q16A **Castle Valley** 77.25 329 eP P 16 25 52.7 +0.6
comp=E,10nm,1.0s
SHPR **Sheep Range** 77.27 325 eP P 16 25 53.1 +0.8
comp=E,7.2nm,1.2s
G33A **Ortonville** 77.28 342 P P 16 25 51.9 0.0
baz=157
P18A **Preston Nutter** 77.41 330 eP P 16 25 54.0 +0.9
comp=E,26nm,1.4s
P17A **Butcher Ranch,** 77.50 329 eP P 16 25 53.9 +0.4
comp=E,11nm,1.0s
TMUT **Trail Mountain** 77.57 329 eP P 16 25 54.6 +0.5
comp=E,12nm,1.4s
E36A **McGregor** 77.69 344 P P 16 25 54.3 +0.1
baz=160
MAW **Mawson** 77.83 163 pP pP 16 26 09.0 0.0
comp=E,12nm,1.0s,baz=216,slow=7.5,SNR=3.7
MAW LR LR 17 00 24.0
comp=E,43nm,19.2s,baz=241,slow=36
F33A **5 Mile Ranch,** 77.84 342 P P 16 25 54.6 -0.3
baz=157
C39A **Grand Marais** 78.23 347 P P 16 25 57.0 -0.1
baz=163
DAC **Darwin (Calif)** 78.35 323 eP P 16 25 58.9 +0.6
comp=E,8.9nm,1.0s
ISA **Isabella, Lake** 78.36 322 P P 16 25 59.2 +0.9
baz=138
K22A **Casper** 78.39 334 P P 16 25 59.6 +1.3
baz=148
K22A **Casper** 78.39 334 eP P 16 25 58.8 +0.5
comp=E,45nm,1.8s
D35A **Remer** 78.41 344 P P 16 25 58.7 +0.5
baz=159
H27A **Howes** 78.50 338 P P 16 25 59.7 +0.9
baz=152
PKM **Mcpherson Peak** 78.53 321 P P 16 26 00.1 +0.7
baz=137
I25A **Rochford** 78.53 336 P P 16 26 00.2 +1.1
baz=151
RSSD **Black Hills** 78.73 336 P P 16 26 01.5 +1.2
baz=150
RSSD **Black Hills** 78.73 336 eP P 16 26 00.8 +0.6
comp=E,3.9nm,0.8s
JLU **Jordanelle** 78.74 329 eP P 16 26 00.8 +0.3
comp=E,8.5nm,0.7s
VES **Vestal, Richgr** 78.83 322 P P 16 26 01.7 +1.0
baz=138
R11A **Troy Canyon, C** 78.91 326 P P 16 26 02.2 +0.9
baz=141
R11A **Troy Canyon, C** 78.91 326 eP P 16 26 02.3 +1.0
comp=E,2.4nm,1.1s
C35A **Jirik Farms, M** 78.97 344 P P 16 26 01.2 0.0
baz=159
DUG **Dugway, Tooele** 79.03 328 P P 16 26 02.8 +0.8
baz=143
DUG **Dugway, Tooele** 79.03 328 eP P 16 26 02.7 +0.8
comp=E,42nm,1.9s
G27A **Dupree** 79.11 338 P P 16 26 02.4 +0.3
baz=152
TCUT **Toone Canyon** 79.14 330 eP P 16 26 03.1 +0.5
comp=E,9.3nm,0.7s
G26A **Maurine** 79.26 338 P P 16 26 03.2 +0.3
baz=152
C33A **Trail** 79.47 343 P P 16 26 04.1 +0.2
baz=158
B35A **Bob, Littlefor** 79.53 345 P P 16 26 04.4 +0.2
baz=160
HWUT **Hardware Ranch** 79.60 330 eP P 16 26 05.2 +0.2
comp=E,13nm,0.7s
BW06 **Boulder Array** 79.70 332 P P 16 26 05.3 -0.3
baz=146
BW06 **Boulder Array** 79.70 332 eP P 16 26 05.2 -0.3
comp=E,3.6nm,1.0s
PDAR **Pinedale Array** 79.70 332 P P 16 26 05.7 +0.1
comp=E,1.6nm,0.6s,baz=124,slow=6.9,SNR=17
PDAR pP pP 16 26 19.3 -0.6
comp=E,0.9nm,0.6s,baz=151,slow=6.8,SNR=4.4
PDAR LR LR 16 59 09.5
comp=E,25nm,20.0s,baz=110,slow=34
B34A **Aery, Baudette** 79.87 344 P P 16 26 06.2 +0.2
baz=159
E27A **Carson** 79.93 339 P P 16 26 07.4 +0.9
baz=153
C31A **Landman Farms,** 80.02 342 P P 16 26 07.1 +0.2
baz=156
F25A **Bowman** 80.10 337 P P 16 26 08.2 +0.8
baz=151
C30A **Mose, Pekin** 80.15 341 P P 16 26 08.2 +0.7
baz=155
D28A **Regan** 80.30 340 P P 16 26 08.7 +0.3
baz=154
NVAR **Mina Array Bea** 80.35 324 P P 16 26 09.8 +0.6
comp=E,0.5nm,0.3s,baz=108,slow=12,SNR=3.3
A33A **Warroad** 80.47 344 P P 16 26 09.2 -0.1
baz=158
B31A **Greenbush Farm** 80.58 342 P P 16 26 10.1 +0.2
baz=156
ELK **Elko** 80.60 327 eP P 16 26 10.6 +0.1
comp=E,6.5nm,0.9s
MDND **Maddock** 80.60 341 P P 16 26 10.8 +0.8
baz=154
MDND **Maddock** 80.60 341 eP P 16 26 10.1 +0.1
comp=E,35nm,0.9s
B30A **Myrvik Farm, E** 80.79 342 P P 16 26 11.6 +0.6
baz=156

LOHW **Long Hollow** 80.83 332 eP P 16 26 11.2 -0.5
comp=E,14nm,1.7s
B29A **Wagenman Farm,** 81.09 341 P P 16 26 13.2 +0.6
baz=155
D25A **Fairfield** 81.13 338 P P 16 26 14.0 +1.1
baz=151
A30A **Hoffart Farm,** 81.23 342 P P 16 26 13.6 +0.3
baz=156
TORD **Torodi Ar. Bea** 81.27 70 P P 16 26 15.2 +0.9
comp=E,5.3nm,0.6s,baz=263,slow=4.8,SNR=33
TORD pP pP 16 26 28.8 +0.1
comp=E,5.5nm,0.7s,baz=256,slow=5.0,SNR=13
TORD LR LR 17 01 30.5
comp=E,39nm,19.9s,baz=175,slow=35
BOSA **Boshof** 81.42 118 P P 16 26 15.4 +0.2
comp=E,3.3nm,0.8s,baz=240,slow=2.4,SNR=8.4
RLMT **Red Lodge** 81.54 333 P P 16 26 16.1 +0.7
baz=146
RLMT **Red Lodge** 81.54 333 eP P 16 26 15.5 +0.2
ULM **Lac du Bonnet** 81.81 344 P P 16 26 15.7 -0.6
comp=E,8.1nm,0.8s,baz=142,slow=5.7,SNR=7.1
PAHR **Pah Rah Range** 81.86 324 eP P 16 26 17.8 +0.7
comp=E,7.1nm,0.9s
A26A **Wade Farm, Ken** 82.27 340 P P 16 26 19.5 +0.7
baz=152
HLID **Hailey** 82.43 329 P P 16 26 21.0 +1.0
baz=142
HLID **Hailey** 82.43 329 eP P 16 26 20.7 +0.7
comp=E,7.9nm,1.2s
MCMT **McKenzie Canyo** 82.76 331 eP P 16 26 22.5 +0.8
LRM **Limekiln Ridge** 83.39 332 eP P 16 26 25.4 +0.3
MOD **Modoc Plateau** 83.95 325 eP P 16 26 28.1 +0.2
comp=E,4.9nm,0.6s
M04C **Macdoel** 84.65 324 P P 16 26 31.5 +0.1
baz=137
K05A **Summer Lake** 84.86 325 eP P 16 26 32.5 0.0
comp=E,50nm,1.9s
YBH **Yreka Blue Hor** 85.06 324 eP P 16 26 32.1 -1.4
comp=E,16nm,1.8s
J05D **Fort Rock, OR** 85.44 326 P P 16 26 35.9 +0.6
baz=137
L02D **Cave Junction,** 85.83 323 P P 16 26 38.1 +0.9
baz=135
I05D **Terrebonne, OR** 86.26 326 P P 16 26 40.2 +0.9
baz=137
I04A **Tendick Farm,** 86.39 325 P P 16 26 40.0 +0.1
baz=136
WALA **Waterton Lakes** 86.58 333 eP P 16 26 40.6 -0.2
comp=E,17nm,1.3s
I03D **Drain, OR** 86.80 325 P P 16 26 42.4 +0.6
baz=136
H04A **Detroit Lake** 86.93 326 eP P 16 26 41.6 -0.9
comp=E,8.0nm,0.9s
B05A **Bryant** 89.48 328 P P 16 26 54.1 -0.3
baz=137
ESDC **Sonseca Array** 92.06 45 P P 16 27 06.4 -0.4
comp=E,0.1nm,0.3s,baz=253,slow=5.3,SNR=2.8
YKA **Yellowknife Ar** 97.52 341 P P 16 27 30.8 -0.3
comp=E,1.3nm,0.7s,baz=140,slow=4.2,SNR=28
KEST **Kesra** 98.85 54 LR LR 17 12 17.0
comp=E,64nm,21.5s,baz=275,slow=35
FINES **FINESS Array B** 117.97 33 PKP PKPdf 16 32 43.3 -0.2
comp=E,0.8nm,0.8s,baz=177,slow=5.4,SNR=3.4
BRTR **Keskin Array B** 118.13 58 PKP PKPdf 16 32 44.1 -0.5
comp=E,0.9nm,0.7s,baz=192,slow=2.3,SNR=8.0
BRTR pPKP pPKPdf 16 32 59.0 -0.8
comp=E,1.0nm,0.8s,baz=187,slow=1.3,SNR=5.2
ARCES **ARCESS Array B** 118.76 24 PKP PKPdf 16 32 43.5 -1.3
comp=E,0.5nm,0.8s,baz=264,slow=3.3,SNR=4.9
ARCES PKKPab PKKPab 16 43 01.4 +0.3
comp=E,1.1nm,0.9s,baz=61,slow=5.7,SNR=3.9
ASAR **Alice Springs** 122.77 207 PKP PKPdf 16 32 53.0 -1.1
comp=E,1.7nm,0.5s,baz=128,slow=1.7,SNR=50
ASAR pPKP pPKPdf 16 33 07.8 -1.2
comp=E,0.8nm,0.7s,baz=112,slow=2.5,SNR=4.8
ASAR PKKPbc PKKPbc 16 42 47.0 +0.2
comp=E,0.4nm,0.5s,baz=334,slow=3.7,SNR=13
KBZ **Khabaz** 125.71 55 PKP PKPdf 16 32 59.1 +0.2
comp=E,2.2nm,0.9s,baz=223,slow=2.3,SNR=4.8
KBZ pPKP pPKPdf 16 33 13.7 -0.2
comp=E,2.5nm,1.0s,baz=332,slow=4.5,SNR=2.8
WRA **Warramunga Arr** 125.91 209 PKP PKPdf 16 32 59.5 -0.6
comp=E,4.4nm,0.5s,baz=153,slow=1.8,SNR=54
WRA pPKP pPKPdf 16 33 14.2 -1.0
comp=E,2.8nm,0.7s,baz=156,slow=1.6,SNR=8.1
H11S2 **WAKE ISLAND Hyl** 26.93 272 T T 18 52 20.7
baz=113,slow=76,SNR=12
H11S1 **WAKE ISLAND Hyl** 26.94 272 T T 18 52 23.4
baz=113,slow=76,SNR=13
H11S3 **WAKE ISLAND Hyl** 26.95 272 T T 18 52 22.1
baz=113,slow=76,SNR=19
H11N3 **WAKE ISLAND Hyl** 27.21 274 T T 18 52 32.5
baz=113,slow=75,SNR=6.0
H11N1 **WAKE ISLAND Hyl** 27.22 274 T T 18 52 34.2
baz=113,slow=75,SNR=4.1
H11N2 **WAKE ISLAND Hyl** 27.23 274 T T 18 52 37.4
baz=113,slow=75,SNR=5.3
BILL **Bilibino** 128.62 336 ePKPdf PKPdf 16 33 03.9 +0.1
ARU **Arti** 134.93 37 ePKPdf PKPdf 16 33 17.1 +1.1
TIXI **Tiksi** 135.75 351 ePKPdf PKPdf 16 33 18.7 +1.6
SEY **Seymchan** 136.02 333 PKP PKPdf 16 33 18.5 +0.7
comp=E,2.2nm,0.7s,baz=115,slow=4.0,SNR=16
SEY pPKP pPKPdf 16 33 32.5 -0.3
comp=E,2.9nm,0.8s,baz=118,slow=3.1,SNR=5.4
GEYT **Alibeck** 136.67 64 PKP PKPdf 16 33 20.4 +0.5
comp=E,2.2nm,0.8s,baz=323,slow=2.2,SNR=5.3
GEYT pPKP pPKPdf 16 33 33.8 -1.2
comp=E,1.5nm,0.6s,baz=258,slow=7.0,SNR=3.8
PETK **Petropavlovsk-** 137.23 318 PKP PKPdf 16 33 20.3 -0.1
comp=E,4.0nm,0.9s,baz=66,slow=1.7,SNR=3.5
ABKAR **Akbulak array** 137.37 47 ePKPdf PKPdf 16 33 21.5 +0.7
ZRNK **Zerenda** 141.80 39 ePKPdf PKPdf 16 33 28.1 -0.6
YAK **Yakutsk** 144.14 344 PKP PKPbc 16 33 30.7 0.0
comp=E,7.9nm,0.3s,baz=228,slow=15,SNR=11
YAK pPKP pPKPdf 16 33 45.6 -2.0
comp=E,8.6nm,0.4s,baz=151,slow=0.5,SNR=4.3
KKAR **Karatay Array** 145.75 55 ePKPdf PKPab 16 33 36.8 -0.2
KURK **Kurchatov** 148.12 38 ePKPbc PKPbc 16 33 43.8 +0.9
EKS2 **Erkin-Say** 148.19 55 ePKPdf PKPdf 16 33 40.8 +0.6
EKS2 ePKPbc PKiKP 16 33 45.1 -0.2
AAK **Ala-Archa** 148.71 54 ePKPdf PKPdf 16 33 41.5 +0.4
AAK ePKPdf PKPbc 16 33 41.7 -3.3
AAK ePKPbc PKiKP 16 33 46.8 +0.4
ZALV **Zalesovo Beam** 149.11 29 PKP PKPdf 16 33 42.1 +1.0
comp=E,30nm,0.5s,baz=292,slow=3.4,SNR=31
ZALV PKPbc PKiKP 16 33 46.2 -0.4
comp=E,30nm,0.5s,baz=303,slow=3.5,SNR=103
ZALV pPKPbc pPKPbc 16 34 00.6 +0.3
comp=E,14nm,0.7s,baz=301,slow=3.3,SNR=7.9
TKM2 **Tokmak 2** 149.41 53 ePKPbc PKPbc 16 33 47.8 +1.0
ASAJ **Asahikawa** 149.46 309 PKPbc PKPbc 16 33 45.2 -1.3
comp=E,7.0nm,0.9s,baz=253,slow=4.5,SNR=5.5
HYB **Hyderabad** 149.56 105 i PKP PKPbc 16 33 50.0 +2.4
HYB epPKP pPKPdf 16 34 04.0 +5.9
GSI **Gunungsitoli** 150.45 155 ePKPbc PKPbc 16 33 50.4 +0.5
KSH **Kashi** 150.49 60 ePKPbc PKPdf 16 33 43.6 -0.4
KSH epPKP PKPab 16 33 54.5 -1.7
KSH esPKP 16 33 57.8
KSH PKS PKSdf 16 37 17.6 -1.3
KSH ePP PP 16 37 23.5 -2.5
KSH SKS SKSdf 16 40 46.6 -1.3
KSH **Kashi** 150.49 60 SKKS SKKSac 16 44 07.8 -4.9
MAKZ **Makanchi** 152.04 42 ePKPdf PKPdf 16 33 45.2 -0.8
MAKZ ePKPbc PKPbc 16 33 52.6 0.0
MKAR **Makanchi Array** 152.24 42 PKP PKPdf 16 33 46.7 +0.4
comp=E,0.4nm,0.6s,baz=325,slow=1.9,SNR=7.0
MKAR PKPbc PKiKP 16 33 53.6 +0.2
comp=E,10.0nm,0.6s,baz=319,slow=1.9,SNR=100
MKAR PKPab PKPab 16 34 04.3 +1.3
comp=E,5.2nm,0.6s,baz=313,slow=2.4,SNR=12
MKAR pPKPbc pPKPbc 16 34 07.8 -0.2
comp=E,5.2nm,0.6s,baz=320,slow=2.2,SNR=10
KLR **Kul'dur** 153.36 326 PKPbc PKPbc 16 33 55.3 -0.1
comp=E,2.7nm,0.6s,baz=31,slow=3.4,SNR=11
KLR PKPab PKPab 16 34 08.7 +1.0
comp=E,2.0nm,0.7s,baz=317,slow=4.0,SNR=6.5
MJAR **Matsushiro Arr** 154.60 295 PKPbc PKPbc 16 33 58.0 -0.5
comp=E,0.8nm,0.5s,baz=122,slow=2.2,SNR=7.2
MJAR PKPab PKPab 16 34 13.6 +0.2
comp=E,1.8nm,0.6s,baz=109,slow=2.6,SNR=9.2
USRK **Ussuriysk Ar.** 156.29 317 PKPab PKPab 16 34 20.5 +0.2
comp=E,2.0nm,0.6s,baz=16,slow=2.4,SNR=5.2
SONM **Songino Array** 160.82 6 PKPab PKPab 16 34 40.9 +1.0
comp=E,1.0nm,0.6s,baz=325,slow=5.3,SNR=6.3

MEX 15 17:00:57.2±0.5, 19°55N×104°38W, h66km±7km, MD3.9, Near coast of Jalisco

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
R15V		**0.53**	**135**	*i* P	Pn	17 01 08.8	-1.2
R15V				*i* S	Sn	17 01 17.4	-2.1
CJM	**Chamela**	**0.63**	**265**	*i* P	Pn	17 01 09.8	-1.2
CJM				*e*S	Sn	17 01 19.3	-1.8
EZ5V		**0.73**	**95**	*i* P	Pn	17 01 11.1	-1.4
EZ5V				*e*S	Sn	17 01 22.1	-1.6
ANIG	**Ahuacatlan**	**1.50**	**355**	*e*P	Pn	17 01 20.3	-1.9
ANIG				*e*S	Sn	17 01 39.2	-1.7

NIED ***15*** *17:06:00, 39°20N×144°50E, h5km, Mw3.5 Best double couple: M₀2.07000×10¹⁴ NP1:φ₀174.00000°, δ37.00000°, λ-96.00000°. NP2:φ₀2.00000°, δ53.00000°, λ-85.00000°.*
ISCJB ***15*** *17:06:21.3±0.8, 39°30N±0°04×144°57E±0°06, h23km, mb3.4/7, Error ellipse: s-maj=7.2km s-min=4.7km az=40.2*
JMA ***15*** *17:06:23.8±0.2, 39°20N×144°46E, h44km, M3.5*
IDC ***15*** *17:06:24.1±4.8, 39°11N×144°57E, h36km±39km, mb3.2/7, mb1 3.5/10, mb1mx3.2/46, mbtmp3.5/10, ML3.1/3, MS2.6/2, Ms1 2.6/2, ms1mx2.2/19, Error ellipse: s-maj=31.2km s-min=19.2km az=90.0*

ISC 15 17:06:22.2±1.0, 39°25N±0°06×144°62E±0°08, h23km, n26, σ1§22/37, mb3.5/7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**2.20**	**280**	P	**Pn**	**17 06 57.3**	**0.0**
MIYJ				S	**Sn**	**17 07 21.9**	**-1.8**
JTH	**Tanohata**	**2.24**	**289**	P	**Pn**	**17 06 58.3**	**+0.4**
JTH				*e*S	**Sn**	**17 07 23.4**	**-1.4**
OFUJ	**Ofunato**	**2.30**	**267**	P	**Pn**	**17 06 58.6**	**-0.1**
OFUJ				*e*S	**Sn**	**17 07 24.9**	**-1.4**
JOM	**Ohasama**	**2.59**	**276**	P	**Pn**	**17 07 03.2**	**+0.5**
JOM				S	**Sn**	**17 07 32.2**	**-1.3**
JANG	**Nango**	**2.65**	**296**	P	**Pn**	**17 07 03.1**	**-0.3**
JMK	**Ichinoseki**	**2.66**	**265**	P	**Pn**	**17 07 03.8**	**+0.1**
JTM	**Tenmabayashi**	**3.13**	**301**	P	**Pn**	**17 07 11.3**	**+1.2**
JTM				*e*S	**Sn**	**17 07 45.9**	**-0.9**
JOU	**Okura**	**3.21**	**255**	P	**Pn**	**17 07 11.4**	**+0.1**
JOU				*e*S	**Sn**	**17 07 47.3**	**-1.6**
JAH	**Hinai**	**3.22**	**288**	P	**Pn**	**17 07 12.2**	**+0.9**
JAH				*e*S	**Sn**	**17 07 48.8**	**-0.1**
JYK	**Kaneyama**	**3.33**	**266**	P	**Pn**	**17 07 13.6**	**+0.7**
JYK				*e*S	**Sn**	**17 07 51.8**	**0.0**
JNBK	**Urakawa-nobuka**	**3.35**	**335**	*e*S	**Sn**	**17 07 52.0**	**-0.1**
JCH	**Churui**	**3.50**	**345**	P	**Pn**	**17 07 15.3**	**+0.2**
JCH				*e*S	**Sn**	**17 07 54.5**	**-1.3**
JAR	**Ashorobuto**	**4.10**	**351**	P	**Pn**	**17 07 23.0**	**-0.4**
JAR				*e*S	**Sn**	**17 08 07.0**	**-3.6**
JTKR	**Abashiri--Toko**	**4.75**	**354**	P	**Pn**	**17 07 32.9**	**+0.6**
JTKR				*e*S	**Sn**	**17 08 24.4**	**-2.3**
ASAJ	**Asahikawa**	**5.10**	**343**	Pn	**Pn**	**17 07 38.1**	**+0.9**
ASAJ	0.5nm,0.3s,baz=205,slow=15,SNR=7.9			Sn	**Sn**	**17 08 34.5**	**-0.8**
MJAR	**Matsushiro Arr**	**5.75**	**244**	Pn	**Pn**	**17 07 46.8**	**+0.7**
MJAR	0.3nm,0.3s,baz=340,slow=17,SNR=3.3 4.2nm,0.3s,baz=54,slow=11,SNR=101			Sn	Sn	17 08 42.5	-8.8
MJAR	1.3nm,0.3s,baz=54,slow=11,SNR=6.1			LR	LR	17 10 12.9	
MAT	**Matsushiro**	**5.75**	**244**	P	**Pn**	**17 07 46.8**	**+0.7**
USRK	**Ussuriysk Ar.**	**10.66**	**302**	Pn	**Pn**	**17 08 55.4**	**+2.0**
KSRS	**Korea Array**	**13.23**	**267**	LR	LR	17 13 40.1	
SONM	**Songino Array**	**28.77**	**300**	P	**P**	**17 12 17.7**	**-0.4**
ZALV	**Zalesovo Beam**	**42.35**	**311**	P	**P**	**17 14 14.1**	**-0.1**
MKAR	**Makanchi Array**	**45.12**	**301**	P	**P**	**17 14 37.1**	**+0.4**
ILAR	**Eielson Array**	**46.27**	**33**	P	**P**	**17 14 46.6**	**+1.2**
WRA	**Warramunga Arr**	**59.66**	**191**	P	**P**	**17 16 23.4**	**-1.3**
ASAR	**Alice Springs**	**63.38**	**191**	P	**P**	**17 16 48.6**	**-1.1**
FINES	**FINESS Array B**	**68.02**	**333**	P	**P**	**17 17 20.9**	**+1.7**

IDC ***15*** *17:39:29.7±0.8, 21°63S×169°83E, h0km, mb4.2/16, mb1 4.3/19, mb1mx4.3/35, mbtmp4.3/19, ML4.1/3, MS3.6/10, Ms1 3.6/10, ms1mx3.4/32, Error ellipse: s-maj=24.7km s-min=17.8km az=142.0*
ISCJB ***15*** *17:39:33.0±0.4, 21°69S±0°06×169°78E±0°06, h35km, mb4.2/20, MS3.6/6, Error ellipse: s-maj=9.2km s-min=7.8km az=4.8*
NEIC ***15*** *17:39:36.7±1.2, 21°75S×169°71E, h52km±11km, mb4.0/4, Error ellipse: s-maj=10.5km s-min=9.6km az=179.0*

ISC 15 17:39:34.6±0.5, 21°68S±0°09×169°80E±0°08, h35km, n71, σ1§13/69, mb4.2/20, MS3.6/6, 1C, Southeast of Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**3.14**	**262**	Pn	**Pn**	**17 40 21.4**	**-0.3**
DZM	11nm,0.3s,baz=87,slow=15,SNR=39 19nm,0.3s,baz=223,slow=23,SNR=8.7			Sn	**Sn**	**17 40 56.5**	**-1.6**
DZM				LR	LR	17 41 03.0	
MSVF	**Nonsavu**	**8.71**	**65**	*e*Pn	Pn	17 41 44.3	+6.2
HNR	**Honiara**	**15.43**	**321**	Pn	**Pn**	**17 43 10.4**	**+0.7**
HNR	0.8nm,0.3s,baz=167,slow=19,SNR=1.8			LR	LR	17 48 26.2	
URZ	**Urewera**	**17.68**	**161**	LR	LR	17 49 15.7	
URZ	**Urewera**	**17.68**	**161**	*e*P	**P**	**17 43 37.6**	**-1.0**
AFI	**Afiamalu**	**19.16**	**69**	P	**Pn**	**17 43 55.6**	**-0.6**
AFI	1.1nm,0.3s,baz=180,slow=4.0,SNR=2.8			LR	LR	17 49 45.2	
SNZO	**South Karori**	**20.00**	**169**	*e*P	**P**	**17 44 03.1**	**-1.0**
RPZ	**Rata Peaks**	**22.00**	**178**	LR	LR	17 51 46.4	
CTA	**Charters Tower**	**22.06**	**270**	P	**P**	**17 44 27.1**	**+0.6**
PMG	**Port Moresby**	**24.95**	**296**	LR	LR	17 53 54.9	
STKA	**Stephens Creek**	**27.08**	**242**	P	**P**	**17 45 15.3**	**+1.3**
STKA	2.5nm,0.7s,baz=89,slow=12,SNR=4.2			LR	LR	17 55 15.9	
ASAR	**Alice Springs**	**33.13**	**260**	P	**P**	**17 46 08.2**	**+0.5**
ASAR	0.9nm,0.6s,baz=99,slow=9.3,SNR=29 1.1nm,1.0s,baz=93,slow=3.2,SNR=3.2			PcP	**PcP**	**17 48 50.9**	**+0.5**
ASAR				LR	LR	17 59 17.5	
WRAB	**Tennant Creek**	**33.14**	**266**	*e*P	**P**	**17 46 06.8**	**-1.1**
WRA	**Warramunga Arr**	**33.15**	**266**	P	**P**	**17 46 07.7**	**-0.2**
GUMO	**Guam**	**42.75**	**323**	LR	LR	18 02 59.0	
VNDA	**Vanda**	**56.02**	**182**	P	**P**	**17 49 09.9**	**+0.6**
VNDA	0.5nm,0.7s,baz=6.8,slow=6.0,SNR=4.1			LR	LR	18 09 04.0	
MJAR	**Matsushiro Arr**	**65.15**	**332**	P	**P**	**17 50 11.4**	**-0.6**
JNU	**Nakatsue**	**65.95**	**325**	P	**P**	**17 50 17.6**	**+0.2**
QSPA	**South Pole Qui**	**68.38**	**180**	*e*P	**P**	**17 50 33.0**	**+0.5**
ASAJ	**Asahikawa**	**70.06**	**339**	P	**P**	**17 50 43.7**	**+0.9**
KSRS	**Korea Array**	**70.81**	**326**	P	**P**	**17 50 48.1**	**+0.5**
KSAR	**Wonju Array Be**	**70.82**	**326**	P	**P**	**17 50 48.1**	**+0.5**
USRK	**Ussuriysk Ar.**	**74.14**	**333**	P	**P**	**17 51 07.8**	**+0.6**
PETK	**Petropavlovsk-**	**75.21**	**352**	P	**P**	**17 51 13.8**	**+0.5**
KLR	**Kul'dur**	**78.30**	**336**	P	**P**	**17 51 31.4**	**+0.6**

	5.4nm,0.7s,baz=151,slow=2.9,SNR=22						
CMAR	**Chiang Mai Arr**	**79.99**	**294**	P	**P**	**17 51 42.1**	**+1.4**
	1.7nm,0.9s,baz=131,slow=3.7,SNR=14						
CHTO	**Chiang Mai**	**80.15**	**295**	P	**P**	**17 51 39.8**	**-1.8**
	2.2nm,0.9s						
SEY	**Seymchan**	**85.45**	**352**	P	**P**	**17 52 08.1**	**0.0**
	0.9nm,0.6s,baz=167,slow=18,SNR=2.9						
SNAA	**Sanae**	**86.75**	**182**	P	**P**	**17 52 14.9**	**+0.1**
SNAA	**Sanae**	**86.75**	**182**	*e*P	**P**	**17 52 14.4**	**-0.4**
VNA3	**Neumayer Olymp**	**87.32**	**180**	P	**P**	**17 52 17.7**	**+0.2**
VNA2	**Neumayer--Watz**	**87.62**	**181**	P	**P**	**17 52 19.3**	**+0.4**
	baz=173,slow=4.0						
VNA1	**Neumayer--Stat**	**87.91**	**181**	P	**P**	**17 52 20.8**	**+0.5**
SONM	**Songino Array**	**89.48**	**323**	P	**P**	**17 52 28.6**	**+0.5**
	2.7nm,1.0s,baz=150,slow=7.1,SNR=15						
NVAR	**Mina Array Bea**	**90.02**	**48**	P	**P**	**17 52 31.3**	**+0.4**
	1.5nm,0.5s,baz=220,slow=8.3,SNR=3.5						
ILAR	**Eielson Array**	**92.40**	**17**	P	**P**	**17 52 38.8**	**-2.3**
	0.5nm,0.6s,baz=230,slow=5.1,SNR=10						
YKA	**Yellowknife Ar**	**102.58**	**27**	P	**Pdif**	**17 53 28.3**	**+1.2**
	0.1nm,0.4s,baz=263,slow=9.8,SNR=3.1						
ARCES	**ARCESS Array B**	**127.55**	**345**	PKP	**PKPdf**	**17 58 34.8**	**-0.5**
	2.8nm,0.5s,baz=60,slow=1.1,SNR=64						
FINES	**FINESS Array B**	**133.03**	**337**	PKP	**PKPdf**	**17 58 45.6**	**-0.1**
	1.4nm,0.5s,baz=31,slow=1.7,SNR=18						
AKASG	**Malin Array Be**	**137.76**	**323**	PKP	**PKPdf**	**17 58 55.2**	**+0.3**
	0.7nm,0.5s,baz=54,slow=2.7,SNR=4.0						
NB2	**NORSAR Subarra**	**137.93**	**345**	PKP	**PKPdf**	**17 58 57.1**	**+2.1**
	comp=Z,0.4nm,0.6s,baz=17,slow=2.6						
NOA	**NORSAR Array B**	**137.93**	**345**	PKP	**PKPdf**	**17 58 56.0**	**+1.0**
	comp=Z,0.3nm,0.5s,baz=30,slow=2.1,SNR=3.5						
BRTR	**Keskin Array B**	**138.70**	**306**	PKP	**PKPdf**	**17 58 59.5**	**+2.3**
	comp=Z,0.4nm,0.7s,baz=169,slow=2.9,SNR=3.2						
KRLC	**Kraliky**	**144.58**	**330**	*e*PKP	**PKPdf**	**17 59 07.7**	**+0.4**
DPC	**Dobruska-Polom**	**144.61**	**330**	*e*PKP	**PKPdf**	**17 59 06.8**	**-0.5**
UPC	**Upice**	**144.64**	**331**	*e*PKP	**PKPdf**	**17 59 06.8**	**-0.5**
PVCC	**Panska Ves**	**145.26**	**332**	*e*PKP	**PKPdf**	**17 59 08.8**	**+0.4**
BRG	**Berggiesshubel**	**145.28**	**333**	*e*PKP	**PKPdf**	**17 59 08.6**	**+0.2**
	comp=Z,17nm,0.6s						
CLL	**Collm**	**145.34**	**334**	↑*i*PKP	**PKPab**	**17 59 08.6**	**+0.1**
	comp=Z,16nm,0.6s						
CLL				*i*		17 59 11.4	
GOPC	**GO Pecny, Ondr**	**145.61**	**331**	*e*PKP	**PKPab**	**17 59 09.5**	**-0.1**
PRU	**Pruhonice**	**145.67**	**331**	*e*PKP	**PKPab**	**17 59 09.3**	**-0.5**
PRU				*ex*	x	17 59 19.5	
NKC	**Novy Kostel**	**146.39**	**333**	*e*PKP	**PKPab**	**17 59 12.3**	**-0.3**
CONA	**Conrad Observa**	**146.49**	**328**	*e*PKPab	**PKPab**	**17 59 13.2**	**+0.1**
	comp=Z,4.3nm,0.6s						
KHC	**Kasperske Hory**	**146.72**	**331**	*e*PKP	**PKPab**	**17 59 13.2**	**-0.7**
KHC				*e*pPKP	**pPKPdf**	**17 59 24.7**	**+2.2**
GERES	**GERESS Array B**	**146.88**	**331**	PKPbc	**PKPab**	**17 59 13.1**	**-1.5**
	comp=Z,8.0nm,0.8s,baz=40,slow=2.4,SNR=78						
ARSA	**Arzberg**	**147.11**	**327**	*i* PKPab	**PKPab**	**17 59 14.2**	**-1.3**
	comp=Z,1.4nm,0.5s						
MOA	**Molln**	**147.32**	**329**	*i* PKPab	**PKPab**	**17 59 14.9**	**-1.4**
	comp=Z,2.3nm,0.4s						
SOKA	**Soboth**	**147.75**	**327**	*i* PKPbc	**PKPbc**	**17 59 15.0**	**-0.7**
	comp=Z,1.9nm,0.5s						
OBKA	**Obir**	**148.11**	**327**	*i* PKiKP	**PKPab**	**17 59 18.3**	**-1.3**
KBA	**Koelnbreinsper**	**148.31**	**329**	*i* PKiKP	**PKiKP**	**17 59 17.8**	**-1.2**
	comp=Z,5.5nm,0.7s						
MEM	**Membach**	**148.45**	**340**	P	**PKPbc**	**17 59 17.9**	**+0.6**
MYKA	**Terra Mystica**	**148.48**	**328**	*i* PKPbc	**PKPbc**	**17 59 17.5**	**-0.1**
	comp=Z,3.3nm,0.4s						
BCLA	**Clavier**	**148.83**	**341**	P	**PKPdf**	**17 59 10.2**	**-4.2**
ABTA	**Abfaltersbach**	**148.95**	**329**	*i* PKPbc	**PKPbc**	**17 59 18.5**	**-0.4**
	comp=Z,7.1nm,0.7s						
WTTA	**Wattenberg**	**148.98**	**331**	*i* PKiKP	**PKiKP**	**17 59 19.3**	**-1.0**
	comp=Z,2.6nm,0.4s						
MOTA	**Moosalm**	**149.16**	**331**	*i* PKiKP	**PKiKP**	**17 59 19.6**	**-1.1**
	comp=Z,7.9nm,0.7s						
RETA	**Reutte**	**149.20**	**332**	*i* PKPbc	**PKPbc**	**17 59 18.6**	**-0.9**
	comp=Z,2.8nm,0.6s						
WLF	**Walferdange**	**149.22**	**339**	P	**PKPab**	**17 59 20.6**	**-3.1**
DOU	**Dourbes**	**149.33**	**341**	P	**PKPbc**	**17 59 20.2**	**+0.6**
FETA	**Feichten**	**149.57**	**331**	*i* PKPbc	**PKPbc**	**17 59 20.3**	**-0.2**
	comp=Z,10nm,0.9s						
DAVA	**Damuels**	**149.74**	**332**	*i* PKPbc	**PKPbc**	**17 59 20.3**	**-0.6**
	comp=Z,4.1nm,0.7s						

ISCJB ***15*** *17:39:45.5±0.2, 14°82N±0°02×61°45W±0°04, h185km±2km, mb3.8/19, Error ellipse: s-maj=6.3km s-min=2.9km az=169.4*
TRN ***15*** *17:39:45.7, 14°84N×61°45W, h182km, MD4.5*
NEIC ***15*** *17:39:45.6, 14°84N×61°41W, h182km, mb4.4/6, MD4.5(TRN), After TRN.*
IDC ***15*** *17:39:46.9±2.6, 14°79N×61°53W, h184km±26km, mb3.4/15, mb1 3.7/19, mb1mx3.6/38, mbtmp4.1/19, Error ellipse: s-maj=17.6km s-min=11.8km az=75.0*

ISC 15 17:39:46.4±0.6, 14°82N±0°03×61°45W±0°05, h183km±4km, n119, σ1§23/149, mb3.7/19, 5C-5D, Windward Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCM	**Pelee Case Pet**	**0.23**	**91**	*e*P	**Pn**	**17 40 10.7**	**-0.1**
PCM	**Pelee Case Pet**	**0.23**	**91**	*e*P	**Pn**	**17 40 11.2**	**+0.4**
PML	**Morne Lenard**	**0.26**	**99**	‖*e*P	**Pn**	**17 40 11.0**	**+0.1**
CXM	**Morne La Croix**	**0.27**	**92**	*e*P	**Pn**	**17 40 11.1**	**+0.1**
CXM				*e*S	**Sn**	**17 40 30.5**	**+0.6**
SVN	**Savane Anatole**	**0.27**	**86**	*e*P	**Pn**	**17 40 11.1**	**+0.2**
GBMF	**Grand Be**	**0.28**	**95**	*e*P	**Pn**	**17 40 11.1**	**+0.1**
BAMF	**Morne Balai**	**0.29**	**91**	*e*P	**Pn**	**17 40 11.3**	**+0.3**
FDF	**Fort de France**	**0.30**	**107**	*e*P	**Pn**	**17 40 11.1**	**+0.1**
FDF	**Fort de France**	**0.30**	**107**	‖*i*P	**Pn**	**17 40 11.1**	**+0.1**
FDF	**Fort de France**	**0.30**	**107**	‖*e*P	**Pn**	**17 40 11.1**	**+0.1**
FDF				*e*S	**Sn**	**17 40 29.2**	**-0.6**
FDF	**Fort de France**	**0.30**	**107**	‖*i*Pn	**Pn**	**17 40 11.1**	**+0.1**
FDF				*e*Sn	**Sn**	**17 40 29.9**	**+0.1**
DSHT	**Scott's Head**	**0.40**	**11**	*e*S	**Sn**	**17 40 30.1**	**-0.4**
BIM	**Bigot**	**0.47**	**129**	*e*P	**Pn**	**17 40 11.7**	**+0.1**
ZAM	**Aeronautique**	**0.48**	**121**	*e*P	**Pn**	**17 40 11.7**	**+0.3**
TRMF	**Trois Ilets**	**0.48**	**126**	‖*e*P	**Pn**	**17 40 11.6**	**+0.1**
MDN	**Morne-Daniel**	**0.50**	**6**	*e*P	**Pn**	**17 40 12.4**	**+0.8**
MDN				*e*S	**Sn**	**17 40 31.2**	**+0.1**
MDN	**Morne-Daniel**	**0.50**	**6**	*e*P	**Pn**	**17 40 12.4**	**+0.8**
MDN				*e*S	**Sn**	**17 40 31.6**	**+0.5**
LPMF	**Morne Lapointe**	**0.53**	**118**	*e*P	**Pn**	**17 40 11.8**	**+0.1**
DLPL	**La Plaine**	**0.55**	**21**	*e*P	**Pn**	**17 40 12.2**	**+0.4**
DLPL				*e*S	**Sn**	**17 40 30.4**	**-1.1**
DLPL	**La Plaine**	**0.55**	**21**	*e*P	**Pn**	**17 40 12.2**	**+0.4**
MVM	**Montagne Vauci**	**0.60**	**116**	‖*e*P	**Pn**	**17 40 12.2**	**+0.2**
BBL	**Barber's Block**	**0.70**	**358**	*i* P	**Pn**	**17 40 12.9**	**+0.3**
BBL	**Barber's Block**	**0.70**	**358**	*i* P	**Pn**	**17 40 12.9**	**+0.3**
H05S1	**Guadeloupe/Mar**	**0.71**	**124**	P	**Pn**	**17 40 13.2**	**+0.6**
H05S1				S	**Sn**	**17 40 31.3**	**-1.4**
DWS	**Wesley**	**0.76**	**10**	*e*P	**Pn**	**17 40 12.9**	**+0.1**
DWS				*e*S	**Sn**	**17 40 32.2**	**-1.2**
DWS	**Wesley**	**0.76**	**10**	*e*P	**Pn**	**17 40 12.9**	**+0.1**
TBG	**Guadaloupe-3**	**1.04**	**350**	*i* P	**Pn**	**17 40 14.9**	**+0.2**
MGG	**Marie-Galante**	**1.10**	**7**	*e*P	**Pn**	**17 40 15.1**	**-0.1**
MGG	**Marie-Galante**	**1.10**	**7**	*e*P	**Pn**	**17 40 15.1**	**-0.1**
MCLT	**Moule a Chique**	**1.21**	**156**	*e*P	**Pn**	**17 40 16.1**	**0.0**
MCLT				*e*S	**Sn**	**17 40 38.4**	**-0.8**
SCG	**Saint Claude**	**1.22**	**349**	↑*i*P	**Pn**	**17 40 16.6**	**+0.4**
H05N1	**Guadeloupe/Mar**	**1.53**	**14**	P	**Pn**	**17 40 18.9**	**0.0**
H05N1				S	**Sn**	**17 40 42.5**	**-1.9**
SVB	**Belmont**	**1.55**	**173**	*e*P	**Pn**	**17 40 19.5**	**+0.3**
SVB				*e*S	**Sn**	**17 40 43.8**	**-0.8**
SVB	**Belmont**	**1.55**	**173**	*e*P	**Pn**	**17 40 19.5**	**+0.3**
SVB				*e*S	**Sn**	**17 40 43.8**	**-0.8**
SEG	**Port Louis**	**1.57**	**358**	‖*i*P	**Pn**	**17 40 19.4**	**+0.1**
FCV	**Fort Charlotte**	**1.67**	**173**	*i* P	**Pn**	**17 40 20.2**	**-0.1**
FCV				*e*S	**Sn**	**17 40 45.6**	**-1.0**
FCV	**Fort Charlotte**	**1.67**	**173**	*i* P	**Pn**	**17 40 20.2**	**-0.1**
MLYT	**Lee's Yard**	**2.02**	**339**	*i* P	**Pn**	**17 40 24.3**	**+0.4**
MLYT				*e*S	**Sn**	**17 40 53.0**	**-0.2**
BPA	**Boggy Peak**	**2.25**	**350**	*i* P	**Pn**	**17 40 26.0**	**-0.5**
BPA				*e*S	**Sn**	**17 40 56.0**	**-1.7**
BPA	**Boggy Peak**	**2.25**	**350**	*i* P	**Pn**	**17 40 26.0**	**-0.5**
BPA				*e*S	**Sn**	**17 40 55.0**	**-2.7**
BBGH	**Gun Hill**	**2.48**	**132**	*e*P	**Pn**	**17 40 30.2**	**+1.1**
BBGH				*e*S	**Sn**	**17 41 02.4**	**+0.1**
BBGH	**Gun Hill**	**2.48**	**132**	*e*Pn	**Pn**	**17 40 30.0**	**+1.0**
GRSS	**Sisters**	**2.51**	**184**	*i* P	**Pn**	**17 40 29.4**	**0.0**
GRSS				*e*S	**Sn**	**17 41 01.9**	**-1.2**
GRSS	**Sisters**	**2.51**	**184**	*i* P	**Pn**	**17 40 29.4**	**0.0**
NEV	**Hard Times**	**2.54**	**335**	*i* P	**Pn**	**17 40 30.1**	**+0.3**
NEV				*e*S	**Sn**	**17 41 01.8**	**-1.9**
NEV	**Hard Times**	**2.54**	**335**	*i* P	**Pn**	**17 40 30.1**	**+0.3**
NEV				*e*S	**Sn**	**17 41 01.8**	**-1.9**
BBSP	**Saint Philip**	**2.58**	**131**	*e*P	**Pn**	**17 40 31.8**	**+1.6**
BBSP				*e*S	**Sn**	**17 41 02.7**	**-1.6**
BBSP	**Saint Philip**	**2.58**	**131**	*e*P	**Pn**	**17 40 32.4**	**+2.2**
GRW	**Mount Saint Ca**	**2.65**	**184**	*i* P	**Pn**	**17 40 31.4**	**+0.2**
GRW				*e*S	**Sn**	**17 41 05.1**	**-1.0**
GRW	**Mount Saint Ca**	**2.65**	**184**	*i* P	**Pn**	**17 40 31.4**	**+0.2**
GRW				*e*S	**Sn**	**17 41 05.1**	**-1.0**
GRGR	**Grenville**	**2.68**	**184**	*i* P	**Pn**	**17 40 31.7**	**+0.3**
GRGR				*e*S	**Sn**	**17 41 05.9**	**-0.6**
GRGR	**Grenville**	**2.68**	**184**	‖↑*i*Pn	**Pn**	**17 40 31.8**	**+0.3**
GRGR				*e*Sn	**Sn**	**17 41 06.7**	**+0.1**
ANWB	**Willy Bob**	**2.85**	**354**	*e*P	**Pn**	**17 40 32.9**	**-0.5**
ANWB				*e*S	**Sn**	**17 41 08.2**	**-1.9**
ANWB	**Willy Bob**	**2.85**	**354**	‖↑*i*Pn	**Pn**	**17 40 32.3**	**-1.1**
ANWB				*e*S	**Sn**	**17 41 03.5**	**-6.7**
SEUS	**St. Eustatius**	**3.04**	**331**	*e*P	**Pn**	**17 40 36.2**	**+0.6**
SEUS	**St. Eustatius**	**3.04**	**331**	*e*P	**Pn**	**17 40 36.2**	**+0.6**
SABA	**Saba**	**3.27**	**328**	*e*P	**Pn**	**17 40 39.0**	**+0.5**
SABA	**Saba**	**3.27**	**328**	*e*P	**Pn**	**17 40 39.0**	**+0.5**
SMRT	**St. Maarten**	**3.57**	**334**	*e*P	**Pn**	**17 40 41.4**	**-0.8**
SMRT				*e*S	**Sn**	**17 41 23.6**	**-2.3**
SMRT	**St. Maarten**	**3.57**	**334**	*e*P	**Pn**	**17 40 41.4**	**-0.8**
SMRT				*e*S	**Sn**	**17 41 23.6**	**-2.3**
TOSP	**Speyside**	**3.61**	**166**	*i* P	**Pn**	**17 40 42.6**	**-0.1**
TOSP				*e*S	**Sn**	**17 41 25.8**	**-1.1**
TOSP	**Speyside**	**3.61**	**166**	*i* P	**Pn**	**17 40 42.6**	**-0.1**
BOT	**Bacolet**	**3.70**	**169**	*e*P	**Pn**	**17 40 43.7**	**-0.2**
BOT	**Bacolet**	**3.70**	**169**	*e*S	**Sn**	**17 41 26.3**	**-2.6**
BOT	**Bacolet**	**3.70**	**169**	*e*P	**Pn**	**17 40 42.6**	**-1.2**
BOT				*e*S	**Sn**	**17 41 26.3**	**-2.6**
TCE	**Chacachacare**	**4.11**	**184**	*e*P	**Pn**	**17 40 49.6**	**+0.6**
TCE	**Chacachacare**	**4.11**	**184**	*e*P	**Pn**	**17 40 49.6**	**+0.6**
TRN	**Trinidad (W)**	**4.15**	**179**	*e*P	**Pn**	**17 40 49.7**	**+0.2**
TRN	**Trinidad (W)**	**4.15**	**179**	*e*P	**Pn**	**17 40 49.7**	**+0.2**
TRN				*e*S	**Sn**	**17 41 37.0**	**-2.0**
TBH	**Brigand Hill**	**4.33**	**175**	*e*P	**Pn**	**17 40 52.0**	**+0.2**
TBH	**Brigand Hill**	**4.33**	**175**	*e*P	**Pn**	**17 40 51.2**	**-0.7**
TPP	**Pointe-a-Pierr**	**4.48**	**180**	*e*P	**Pn**	**17 40 54.7**	**+1.0**
TPP	**Pointe-a-Pierr**	**4.48**	**180**	*e*S	**Sn**	**17 41 44.9**	**-1.7**
SJG	**San Juan**	**5.57**	**307**	P	**Pn**	**17 41 07.9**	**+0.1**
	2.9nm,0.3s,baz=118,slow=9.8,SNR=9.3						
SJG				S	**Sn**	**17 42 15.2**	**+3.2**
	8.2nm,0.3s,baz=199,slow=18,SNR=17						
SJG	**San Juan**	**5.57**	**307**	*e*Pn	**Pn**	**17 41 08.2**	**+0.4**
SDDR	**Presa de Saban**	**10.29**	**295**	*e*Pn	**Pn**	**17 42 10.0**	**+0.3**
	32nm,0.8s						
SDDR				*e*S	**S**	**17 44 05.9**	**+0.9**
SDV	**Santo Domingo**	**10.75**	**238**	P	**Pn**	**17 42 14.8**	**-1.1**
	3.5nm,0.3s,baz=37,slow=7.4,SNR=2.4						
CBRI	**Barrientos, No**	**13.18**	**239**	*e*P	**Pn**	**17 42 47.9**	**+1.0**
GRMC	**Gramalote, San**	**13.18**	**239**	*e*P	**Pn**	**17 42 47.0**	**0.0**
PAMC	**Pamplona, Colo**	**13.31**	**237**	*e*P	**Pn**	**17 42 49.3**	**+0.4**
OCAC	**Ocana**	**13.34**	**242**	*e*P	**Pn**	**17 42 48.6**	**-0.4**
BARC	**Barichara**	**14.13**	**236**	*e*P	**Pn**	**17 42 59.3**	**+0.4**
BRRC	**Barranca, Sant**	**14.27**	**239**	*e*P	**Pn**	**17 42 59.7**	**-0.7**
RUSC	**La Rusia**	**14.47**	**233**	*e*P	**P**	**17 43 04.5**	**-0.6**
PTGA	**Pitinga**	**15.52**	**174**	P	**Pn**	**17 43 15.0**	**-0.8**
	5.2nm,0.3s,baz=14,slow=16,SNR=33						
PTGA				S	**S**	**17 46 03.6**	**-5.5**
	3.2nm,0.3s,baz=300,slow=20,SNR=3.6						
NORC	**Norcasia**	**16.09**	**236**	*e*P	**Pn**	**17 43 23.4**	**+0.6**
ROSC	**El Rosal**	**16.09**	**233**	P	**Pn**	**17 43 24.1**	**+1.0**
	2.0nm,0.3s,baz=72,slow=5.8,SNR=20						
ROSC				S	**S**	**17 46 22.3**	**+0.7**
	0.8nm,0.3s,baz=210,slow=20,SNR=2.7						
HELC	**Santa Helena**	**16.27**	**240**	*e*P	**Pn**	**17 43 25.1**	**-0.2**
DBBC	**Dabeiba**	**16.43**	**243**

mb1 4.2/19, mb1mx4.1/39, mbtmp4.1/19, ML4.4/2, MS3.4/5, Ms1 3.4/5, ms1mx3.1/33, Error ellipse: s-maj=21.8km s-min=14.8km az=126.0

ISC 15 17:49:35.3±0.5, 21°.04S±0°.09×175°.22W±0°.09, h10km, n43, σ1§44/33, mb4.1/18, MS3.2/4, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSVF	**Nonsavu**	**7.15**	**296**	*e*Pn	Pb	17 51 33.4	-6.3
AFI	**Afiamalu**	**7.82**	**25**	Pn	**Pn**	**17 51 30.2**	**+1.0**
	5.1nm,0.3s,baz=202,slow=12,SNR=7.6						
AFI				Sn	**Sn**	**17 52 52.6**	**-5.3**
	5.6nm,0.3s,baz=119,slow=19,SNR=2.5						
RAR	**Rarotonga**	**14.42**	**93**	*e*Pn	**Pn**	**17 52 58.4**	**-1.2**
DZM	**Mont Dzumac**	**17.09**	**263**	LR	LR	17 59 17.3	
	comp=Z,190nm,19.1s,baz=17,slow=34						
URZ	**Urewera**	**18.39**	**199**	P	**Pn**	**17 53 49.0**	**-1.5**
	1.3nm,0.3s,baz=268,slow=5.1,SNR=6.4						
URZ				S	Sn	17 56 57.8	-18
	0.4nm,0.3s,baz=127,slow=20,SNR=3.6						
URZ	**Urewera**	**18.39**	**199**	*e*Pn	**Pn**	**17 53 48.3**	**-2.2**
TBI	**Tubuai**	**23.95**	**100**	*e*T	T	18 18 54.1	
	10.0nm,0.2s						
PAE	**Paea**	**24.42**	**87**	*e*T	T	18 19 35.9	
	17nm,0.3s						
PPT2	**Papeete2**	**24.43**	**86**	*e*LR	LR	18 00 34.9	
	264nm,28.0s						
PPT2	**Papeete2**	**24.43**	**86**	*e*T	T	18 19 38.6	
	13nm,0.3s						
PPT	**Papeete**	**24.44**	**86**	LR	LR	18 03 32.4	
	comp=Z,47nm,18.2s,baz=294,slow=34						
TIAR	**Tiarei**	**24.66**	**86**	*e*T	T	18 19 54.2	
	4.9nm,0.4s						
TVO	**Taravao**	**24.70**	**87**	*e*T	T	18 19 57.1	
	6.3nm,0.4s						
RPZ	**Rata Peaks**	**25.34**	**204**	P	**P**	**17 55 02.9**	**+0.5**
	18nm,0.7s,baz=66,slow=1.8,SNR=10						
MEH	**Mehetia**	**25.79**	**88**	*e*T	T	18 21 17.9	
	36nm,0.3s						
HNR	**Honiara**	**26.55**	**292**	LR	LR	18 04 07.1	
	comp=Z,68nm,20.0s,baz=158,slow=33						
PMOR	**Pomariorio Ree**	**26.65**	**82**	*e*T	T	18 22 26.9	
	3.0nm,0.2s						
CTAO	**Charters Tower**	**36.02**	**264**	*e*P	**P**	**17 56 36.8**	**-0.2**
RKT	**Rikitea**	**37.27**	**101**	*e*T	T	18 35 42.5	
	12nm,0.3s						
STKA	**Stephens Creek**	**39.91**	**245**	P	**P**	**17 57 08.8**	**-0.9**
	2.8nm,0.5s,baz=96,slow=12,SNR=22						
STKA				LR	LR	18 11 42.5	
	comp=Z,101nm,18.6s,baz=28,slow=33						
JAY	**Jayapura**	**46.68**	**287**	P	**P**	**17 58 05.2**	**+0.5**
	1.0nm,0.5s,baz=101,slow=24,SNR=9.6						
ASAR	**Alice Springs**	**46.93**	**257**	P	**P**	**17 58 05.7**	**-0.9**
	2.6nm,0.6s,baz=98,slow=8.3,SNR=44						
ASAR				PcP	**PcP**	**17 59 38.6**	**-0.6**
	0.6nm,0.7s,baz=103,slow=4.1,SNR=3.1						
ASAR				ScP	**ScP**	**18 03 32.5**	**-0.6**
	0.9nm,1.0s,baz=106,slow=4.1,SNR=5.0						
ASAR				LR	LR	18 15 32.3	
	comp=Z,35nm,21.3s,baz=105,slow=33						
WRAB	**Tennant Creek**	**47.09**	**262**	*e*P	**P**	**17 58 06.9**	**-0.9**
	1.4nm,0.6s						
WRA	**Warramunga Arr**	**47.10**	**262**	P	**P**	**17 58 06.9**	**-1.0**
	0.6nm,0.3s,baz=96,slow=8.0,SNR=24						
WRA				PcP	**PcP**	**17 59 39.0**	**-0.9**
	0.8nm,0.8s,baz=96,slow=2.9,SNR=2.8						
VNDA	**Vanda**	**57.62**	**186**	P	**P**	**17 59 25.9**	**+0.8**
	1.0nm,0.9s,baz=346,slow=6.1,SNR=5.2						
MJAR	**Matsushiro Arr**	**72.21**	**322**	P	**P**	**18 01 01.3**	**+0.6**
	0.6nm,0.6s,baz=153,slow=6.7,SNR=4.0						
PETK	**Petropavlovsk-**	**77.49**	**344**	P	**P**	**18 01 32.2**	**+1.4**
	2.7nm,0.7s,baz=107,slow=8.2,SNR=5.5						
NVAR	**Mina Array Bea**	**79.66**	**42**	P	**P**	**18 01 46.0**	**+2.5**
	2.8nm,0.8s,baz=225,slow=7.6,SNR=3.9						
MAW	**Mawson**	**81.92**	**199**	P	**P**	**18 01 55.0**	**+0.2**
	1.5nm,0.7s,baz=146,slow=9.1,SNR=5.6						
TXAR	**Lajitas Array**	**85.18**	**56**	P	**P**	**18 02 13.7**	**+1.3**
	0.4nm,0.8s,baz=215,slow=11,SNR=4.9						
PLCA	**Paso Flores**	**87.01**	**133**	P	**P**	**18 02 21.4**	**+0.2**
	1.0nm,0.7s,baz=284,slow=4.3,SNR=4.0						
SEY	**Seymchan**	**87.51**	**346**	P	**P**	**18 02 24.3**	**+1.4**
	0.9nm,0.6s,baz=96,slow=6.6,SNR=4.3						
PDAR	**Pinedale Array**	**87.59**	**42**	P	**P**	**18 02 25.7**	**+1.6**
	0.5nm,0.7s,baz=224,slow=3.8,SNR=4.4						
ILAR	**Eielson Array**	**88.29**	**12**	P	**P**	**18 02 27.2**	**+0.7**
	0.2nm,0.4s,baz=223,slow=4.8,SNR=5.1						
CMAR	**Chiang Mai Arr**	**92.75**	**289**	P	**P**	**18 02 47.4**	**-1.0**
	0.3nm,0.8s,baz=102,slow=12,SNR=2.9						
YKA	**Yellowknife Ar**	**95.93**	**24**	P	**P**	**18 03 02.2**	**+0.3**
	0.2nm,0.7s,baz=234,slow=3.7,SNR=3.2						
ZALV	**Zalesovo Beam**	**112.55**	**321**	PKiKP	**PKiKP**	**18 08 10.3**	**-1.3**
	0.7nm,0.5s,baz=126,slow=2.6,SNR=3.8						
MKAR	**Makanchi Array**	**113.46**	**313**	PKiKP	**PKiKP**	**18 08 12.9**	**-0.7**
	0.5nm,0.5s,baz=190,slow=0.6,SNR=8.0						
ARCES	**ARCESS Array B**	**129.90**	**351**	PKP	**PKPdf**	**18 08 44.1**	**-0.4**
	0.7nm,0.5s,baz=53,slow=4.7,SNR=19						
FINES	**FINESS Array B**	**136.99**	**345**	PKhKP	PKPpre	18 08 51.9	
	1.4nm,1.0s,baz=27,slow=1.6,SNR=2.8						
AKASG	**Malin Array Be**	**144.71**	**333**	PKP	**PKPab**	**18 09 10.5**	**-0.4**
	1.0nm,0.4s,baz=42,slow=4.0,SNR=8.0						
BRTR	**Keskin Array B**	**149.11**	**314**	PKPbc	**PKPbc**	**18 09 24.4**	**0.0**
	1.9nm,0.5s,baz=142,slow=5.4,SNR=15						
GERES	**GERESS Array B**	**151.35**	**348**	PKPbc	**PKPbc**	**18 09 29.2**	**-0.1**
	0.6nm,0.4s,baz=40,slow=2.3,SNR=7.7						

*ISCJB **15** 17:50:57.5±1.0, 36°.52N±0°.04×141°.66E±0°.09, h26km, mb3.0/2, Error ellipse: s-maj=10.1km s-min=6.0km az=8.1*
*JMA **15** 17:50:59.5±0.2, 36°.54N×141°.51E, h47km±4km, M2.9*
*IDC **15** 17:51:02.2±8.8, 36°.39N×141°.59E, h63km±52km, mb2.9/2, mb1 3.1/4, mb1mx2.9/46, mbtmp3.3/4, ML3.3/2, Error ellipse: s-maj=106.7km s-min=24.8km az=83.0*

ISC 15 17:50:59.6±1.2, 36°.55N±0°.04×141°.39E±0°.08, h26km, n14, σ0§90/19, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.66**	**276**	P	**Pn**	**17 51 14.0**	**+0.7**
JHO				*e*S	**Sn**	**17 51 23.4**	**+0.5**
ONAJ	**Iwakimizuishiy**	**0.73**	**319**	P	**Pn**	**17 51 14.5**	**+0.2**
JFK	**Kawauchi**	**0.91**	**333**	P	**Pb**	**17 51 16.7**	**-0.1**
CHOJ	**Chosi**	**0.95**	**207**	P	**Pb**	**17 51 17.0**	**-0.4**
JFT	**Otama**	**1.28**	**319**	P	**Pb**	**17 51 23.3**	**+0.2**
JFT				*e*S	**Sb**	**17 51 39.8**	**+0.6**
JMM	**Marumori**	**1.40**	**340**	P	**Pn**	**17 51 22.6**	**-0.8**
JAG	**Ashikaga**	**1.57**	**266**	P	**Pb**	**17 51 27.5**	**-0.4**
JFY	**Yanaizu**	**1.60**	**303**	P	**Pb**	**17 51 28.5**	**+0.1**
JIO	**Ouri**	**1.90**	**359**	P	**Pn**	**17 51 29.6**	**-0.7**
JIO				S	**Sn**	**17 51 53.0**	**-0.4**
MJAR	**Matsushiro Arr**	**2.56**	**271**	P	**Pb**	**17 51 43.5**	**-1.4**
	4.8nm,0.3s,baz=92,slow=9.0,SNR=87						
MAT	**Matsushiro**	**2.56**	**271**	P	**Pb**	**17 51 42.2**	**-2.7**
MAT				S	**Sb**	**17 52 15.7**	**-0.3**
JHJ	**Hachijo jima 2**	**3.67**	**202**	P	**Pn**	**17 51 55.1**	**+0.5**
	6.6nm,0.3s,baz=97,slow=21,SNR=15						
JHJ				S	**Sn**	**17 52 36.8**	**-0.3**
	9.2nm,0.3s,baz=250,slow=22,SNR=7.0						
SONM	**Songino Array**	**28.04**	**305**	P	**P**	**17 56 49.0**	**+0.2**
	0.2nm,0.6s,baz=115,slow=10,SNR=2.6						
MKAR	**Makanchi Array**	**44.36**	**303**	P	**P**	**17 59 08.4**	**+0.7**
	0.2nm,0.6s,baz=78,slow=9.9,SNR=2.0						

*NIED **15** 18:01:00, 38°.80N×144°.10E, h5km, Mw3.5 Best double couple: M0 2.26000×10^14 NP1:φs 163.00000°, δ31.00000°, λ-142.00000°. NP2:φs 39.00000°, δ72.00000°, λ-65.00000°.*
*IDC **15** 18:01:30.4±1.8, 38°.67N×144°.51E, h0km, mb3.5/4, mb1 3.7/8, mb1mx3.4/40, mbtmp3.7/8, ML3.2/4, MS2.3/1, Ms1 2.3/1, ms1mx1.9/44, Error ellipse: s-maj=47.3km s-min=20.8km az=75.0*
*ISCJB **15** 18:01:33.8±0.8, 38°.75N±0°.04×144°.22E±0°.06, h29km, mb3.5/4, Error ellipse: s-maj=7.1km s-min=5.6km az=41.6*
*JMA **15** 18:01:35.7±0.2, 38°.76N×144°.13E, h43km, M3.7*

ISC 15 18:01:35.3±1.4, 38°.76N±0°.06×144°.23E±0°.10, h29km, n23, σ1§12/35, mb3.5/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.02**	**280**	P	**Pn**	**18 02 07.3**	**-0.2**
OFUJ				*e*S	**Sn**	**18 02 31.1**	**-0.7**
JTH	**Tanohata**	**2.18**	**303**	P	**Pn**	**18 02 09.4**	**-0.2**
JTH				*e*S	**Sn**	**18 02 34.9**	**-0.8**
JIO	**Ouri**	**2.28**	**263**	P	**Pn**	**18 02 10.9**	**0.0**
JIO				*e*S	**Sn**	**18 02 36.5**	**-1.5**
JMK	**Ichinoseki**	**2.36**	**276**	P	**Pn**	**18 02 12.3**	**+0.2**
JMK				*e*S	**Sn**	**18 02 39.6**	**-0.4**
JOM	**Ohasama**	**2.40**	**288**	P	**Pn**	**18 02 12.8**	**+0.2**
JOM				*e*S	**Sn**	**18 02 40.5**	**-0.4**
JANG	**Nango**	**2.65**	**308**	P	**Pn**	**18 02 15.6**	**-0.5**
JOU	**Okura**	**2.82**	**263**	P	**Pn**	**18 02 19.1**	**+0.6**
JOU				*e*S	**Sn**	**18 02 50.8**	**-0.7**
JMM	**Marumori**	**2.85**	**253**	P	**Pn**	**18 02 18.9**	**+0.1**
JMM				*e*S	**Sn**	**18 02 49.9**	**-2.2**
JRG	**Rokugo**	**2.87**	**284**	P	**Pn**	**18 02 20.1**	**+1.0**
JRG				*e*S	**Sn**	**18 02 52.8**	**+0.1**
JYK	**Kaneyama**	**3.03**	**274**	P	**Pn**	**18 02 22.5**	**+1.2**
JTM	**Tenmabayashi**	**3.17**	**311**	*e*S	**Sn**	**18 02 59.1**	**-0.9**
JFT	**Otama**	**3.31**	**249**	P	**Pn**	**18 02 25.8**	**+0.6**
JFT				*e*S	**Sn**	**18 03 02.4**	**-1.1**
JNBK	**Urakawa-nobuka**	**3.69**	**343**	P	**Pn**	**18 02 30.3**	**-0.1**
JCH	**Churui**	**3.91**	**351**	P	**Pn**	**18 02 32.4**	**-1.0**
MJAR	**Matsushiro Arr**	**5.26**	**247**	Pn	**Pn**	**18 02 53.2**	**+1.1**
	1.8nm,0.3s,baz=142,slow=8.5,SNR=22						
MJAR				Sn	**Sn**	**18 03 53.3**	**+1.5**
	0.4nm,0.3s,baz=67,slow=23,SNR=4.4						
MJAR				LR	LR	18 04 46.9	
	comp=Z,28nm,19.1s,baz=90,slow=36						
MAT	**Matsushiro**	**5.27**	**247**	P	**Pn**	**18 02 53.0**	**+0.9**
MAT				*e*S	**Sn**	**18 03 50.1**	**-1.7**
ASAJ	**Asahikawa**	**5.49**	**348**	Pn	**Pn**	**18 02 54.6**	**-0.5**
	0.6nm,0.3s,baz=182,slow=18,SNR=10						
ASAJ				Sn	**Sn**	**18 03 56.0**	**-1.4**
	0.5nm,0.3s,baz=131,slow=20,SNR=3.9						
JHJ	**Hachijo jima 2**	**6.68**	**214**	Pn	**Pn**	**18 03 09.0**	**-2.5**
	6.3nm,0.3s,baz=71,slow=22,SNR=6.3						
JHJ				Sn	Sn	18 04 19.4	-7.2
	5.6nm,0.3s,baz=253,slow=19,SNR=3.8						
USRK	**Ussuriysk Ar.**	**10.67**	**305**	Pn	**Pn**	**18 04 08.3**	**+2.2**
	0.2nm,0.3s,baz=92,slow=14,SNR=4.2						
ZALV	**Zalesovo Beam**	**42.43**	**311**	P	**P**	**18 09 28.7**	**+1.5**
	0.3nm,0.3s,baz=93,slow=6.8,SNR=2.4						
MKAR	**Makanchi Array**	**45.12**	**301**	P	**P**	**18 09 49.5**	**+0.6**
	0.4nm,0.7s,baz=94,slow=7.3,SNR=4.7						
WRA	**Warramunga Arr**	**59.12**	**191**	P	**P**	**18 11 32.1**	**-1.0**
	0.7nm,0.7s,baz=11,slow=6.9,SNR=3.7						
ASAR	**Alice Springs**	**62.84**	**191**	P	**P**	**18 11 58.3**	**-0.1**
	0.4nm,0.8s,baz=17,slow=6.8,SNR=3.4						

WEL 15 18:14:48.1±0.5, 38°.08S×175°.75E, h150km±7km, ML3.5/7, 2C-1D, Error ellipse: s-maj=8.7km s-min=3.3km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**1.09**	**100**	⇑PN	Pn	18 15 13.8	+0.1
URZ				SN	Sn	18 15 33.2	+0.1
BKZ	**Black Stump Fm**	**1.23**	**152**	PN	Pn	18 15 15.0	-0.1
BKZ				SN	Sn	18 15 35.3	-0.5
MOVZ	**Moawhango**	**1.33**	**180**	PN	Pn	18 15 16.3	+0.3
ARHZ	**Aropaoanui**	**1.54**	**141**	PN	Pn	18 15 18.0	-0.1
ARHZ				SN	Sn	18 15 40.3	-0.7
MCHZ	**McNeill Hill**	**1.55**	**152**	PN	Pn	18 15 18.4	+0.2
MCHZ				SN	Sn	18 15 41.3	-0.1
KNZ	**Kokohu**	**1.78**	**123**	PN	Pn	18 15 19.6	-1.1
KNZ				AML	AML	18 20 33.5	
PNHZ	**Pukenui**	**1.87**	**169**	PN	Pn	18 15 20.8	-1.0
TSZ	**Takapari Road**	**1.99**	**175**	⇑PN	Pn	18 15 22.1	-1.0
ANWZ	**Angora Road**	**2.45**	**167**	⇓PN	Pn	18 15 26.7	-1.8
MRZ	**Mangatainoka R**	**2.58**	**183**	PN	Pn	18 15 28.0	-2.2
MTW	**Mount Morrison**	**3.08**	**183**	PN	Pn	18 15 33.1	-3.4
TCW	**Tory Channel**	**3.33**	**199**	PN	Pn	18 15 37.0	-2.6
PLWZ	**Palliser**	**3.51**	**186**	PN	Pn	18 15 38.1	-3.8
TUWZ	**Tuamarina**	**3.63**	**202**	PN	Pn	18 15 40.5	-3.0
NNZ	**Nelson**	**3.63**	**209**	PN	Pn	18 15 40.7	-2.8
NNZ				SN	Sn	18 16 24.7	-1.8
KHZ	**Kahutara**	**4.65**	**201**	PN	Pn	18 15 53.0	-3.8
LTZ	**Lake Taylor**	**5.40**	**208**	PN	Pn	18 16 02.5	-4.2
MQZ	**McQueen's Vall**	**6.09**	**202**	PN	Pn	18 16 09.8	-6.1

*NNC **15** 18:26:48.7±1.4, 44°.96N×78°.79E, h0km, mb2.4, mpv2.2, Error ellipse: s-maj=18.1km s-min=5.7km az=95.0*

SOME 15 18:26:48.9, 44°.97N×78°.58E, h15km, 8C-4D, Eastern Kazakhstan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAPS	**Kapalarasan**	**0.63**	**60**	⇑*i*P	Pg	18 26 60.0	-1.4
	6.9nm,0.3s						
KAPS				⇓*i*S	Sg	18 27 07.9	-1.9
	27nm,0.4s						
MNBS	**Baschi**	**0.90**	**188**	*e*P	Pn	18 27 07.0	0.0
	0.8nm,0.1s						
MNBS				*e*S	Sn	18 27 19.6	-0.2
	19nm,0.6s						
ARXS	**Arharly**	**0.93**	**216**	*e*P	Pb	18 27 06.3	-0.4
	4.0nm,0.1s						
ARXS				*e*S	Sb	18 27 18.2	-0.6
	44nm,0.3s						
DJR	**Jarkent**	**1.07**	**126**	*e*P	Pb	18 27 07.4	-1.8
	2.6nm,0.2s						
DJR				*e*S	Sb	18 27 21.2	-1.8
	7.9nm,0.2s						
KURS	**Kuram**	**1.51**	**191**	⇓*e*P	Pn	18 27 16.0	+0.5
	4.9nm,0.2s						
KURS				⇑*e*S	Sb	18 27 35.5	-0.1
	5.5nm,0.2s						
CHKK	**Chushkaly**	**1.58**	**227**	*e*P	Pb	18 27 17.3	-0.5
	4.7nm,0.2s						
CHKK				⇑*i*S	Sb	18 27 38.2	+0.6
	17nm,0.2s						
PDGK	**Podgornoye**	**1.76**	**158**	⇑P	Pn	18 27 19.6	+0.7
	0.4nm,0.3s						
PDGK				⇑S	Sb	18 27 42.9	+0.1
	16nm,0.2s						
SATY	**Saty**	**1.91**	**184**	⇑*i*P	Pb	18 27 22.9	-0.7
	2.9nm,0.1s						
SATY				⇓*i*S	Sb	18 27 47.8	+0.6
	29nm,0.2s						
KTMS	**Ketmen**	**1.98**	**139**	*e*P	Pb	18 27 24.4	-0.4
	0.7nm,0.2s						
KTMS				*e*S	Sb	18 27 49.5	+0.2
	11nm,0.4s						
SHLS	**Shalkode**	**2.04**	**152**	*e*P	Pb	18 27 25.2	-0.5
	2.1nm,0.2s						
SHLS				*e*S	Sb	18 27 50.8	-0.2
	11nm,0.3s						
MDOK	**Medeo**	**2.12**	**212**	*e*P	Pb	18 27 25.8	-1.3
	2.8nm,0.4s						
MDOK				*e*S	Sb	18 27 53.6	+0.5
	5.5nm,0.5s						
TNSS	**Tian-Shan**	**2.26**	**212**	*e*P	Pb	18 27 28.6	-1.1
	2.3nm,0.3s						
TNSS				*e*S	Sb	18 27 56.7	-0.8
	6.1nm,0.2s						
DGS	**Degeres**	**2.66**	**231**	*e*P	Pb	18 27 35.7	-0.6
	0.5nm,0.2s						
DGS				*e*S	Sb	18 28 09.0	+0.2
	6.9nm,0.8s						
MK31	**Makanchi Array**	**3.17**	**53**	⇓Pg	Pb	18 27 45.4	+0.5
	0.4nm,0.3s,baz=228,slow=15,SNR=7.2						
MK31				⇑Lg	Lg	18 28 25.5	
	0.5nm,0.6s,baz=235,slow=30,SNR=6.6						
KURBB	**Kurchatov Arra**	**5.66**	**360**	⇑Lg	Lg	18 29 47.7	
	2.7nm,0.6s						

*ISCJB **15** 18:33:36.9±1.3, 37°.72N±0°.05×29°.37E±0°.08, h12km, Error ellipse: s-maj=9.9km s-min=6.3km az=36.2*
*ISK **15** 18:33:36.8, 37°.75N×29°.36E, h22km, MD2.6*
*CSEM **15** 18:33:36.9±0.5, 37°.72N×29°.36E, h15km, MD2.5, Error ellipse: s-maj=11.3km s-min=5.6km az=122.0*
*DDA **15** 18:33:39.1, 37°.81N×29°.20E, h7km, Md2.5*

ISC 15 18:33:36.1±1.5, 37°.72N±0°.05×29°.39E±0°.07, h12km, n18, σ0§41/26, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DNZL	**Cakiroluk**	**0.27**	**264**	P	**Pb**	**18 33 42.8**	**-0.2**
DNZL				S	**Sg**	**18 33 45.2**	**-0.4**
DNZL	**Cakiroluk**	**0.27**	**264**	*i* P	**Pb**	**18 33 42.8**	**-0.2**
DNZL				*i* S	**Sg**	**18 33 45.2**	**-0.4**
DENT	**Denizli**	**0.28**	**277**	*e*PG	**Pb**	**18 33 43.4**	**+0.3**
DENT				*e*SG	**Sb**	**18 33 48.1**	**+0.3**
DENT	**Denizli**	**0.28**	**277**	*e*Pg	**Pb**	**18 33 43.4**	**+0.3**
DENT				*e*Sg	**Sb**	**18 33 48.1**	**+0.3**
KHL	**Karahalli**	**0.61**	**10**	*e*PG	**Pb**	**18 33 49.1**	**+0.3**
KHL	**Karahalli**	**0.61**	**10**	*e*Pg	**Pb**	**18 33 49.1**	**+0.3**
KHAL	**Karahalli**	**0.66**	**7**	P	**Pn**	**18 33 50.6**	**-0.7**
KHAL	**Karahalli**	**0.66**	**7**	*i* P	**Pn**	**18 33 50.6**	**-0.7**
KULA	**Kula-Manisa**	**0.98**	**324**	*e*PG	**Pg**	**18 33 55.0**	**0.0**
KULA				*e*SG	**Sb**	**18 34 08.6**	**+0.7**
KULA	**Kula-Manisa**	**0.98**	**324**	*e*Pg	**Pg**	**18 33 55.0**	**0.0**
KULA				*e*Sg	**Sb**	**18 34 08.6**	**+0.7**
MANT	**Manisa**	**1.01**	**320**	P	**Pn**	**18 33 56.3**	**0.0**
MANT				S	**Sg**	**18 34 08.4**	**-0.4**
MANT	**Manisa**	**1.01**	**320**	*i* P	**Pn**	**18 33 56.3**	**0.0**
MANT				*i* S	**Sg**	**18 34 08.4**	**-0.4**
YER	**Yerkesik**	**1.05**	**237**	*e*PG	**Pg**	**18 33 56.8**	**+0.4**
YER	**Yerkesik**	**1.05**	**237**	*e*Pg	**Pg**	**18 33 56.8**	**+0.4**
AYDN	**Tasoluk**	**1.20**	**268**	P	**Pg**	**18 33 59.5**	**+0.4**
AYDN	**Tasoluk**	**1.20**	**268**	*i* P	**Pg**	**18 33 59.5**	**+0.4**
AYDB	**Zeytinkoy-Aydi**	**1.21**	**281**	*e*PN	**Pb**	**18 33 58.6**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**1.21**	**281**	*e*Pn	**Pb**	**18 33 58.6**	**-0.3**

*NIED **15** 18:33:00, 35°.90N×141°.90E, h20km, Mw3.8 Best double couple: M0 4.97000×10^14 NP1:φs 118.00000°, δ68.00000°, λ23.00000°. NP2:φs 19.00000°, δ69.00000°, λ156.00000°.*
*IDC **15** 18:33:34.4±1.7, 35°.79N×141°.98E, h0km, mb3.6/5, mb1 3.7/8, mb1mx3.5/63, mbtmp3.6/8, ML3.6/3, MS2.8/1, Ms1 2.8/1, ms1mx2.3/51, Error ellipse: s-maj=37.1km s-min=23.0km az=151.0*
*ISCJB **15** 18:33:36.0±0.8, 35°.77N±0°.05×141°.93E±0°.08, h23km, mb3.5/5, Error ellipse: s-maj=9.5km s-min=7.0km az=33.2*
*JMA **15** 18:33:37.5±0.3, 35°.89N×141°.87E, h26km±4km, M3.5*

ISC 15 18:33:37.8±1.1, 35°.84N±0°.07×141°.86E±0°.08, h23km, n18, σ1§12/21, mb3.6/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.83**	**261**	P	**Pb**	**18 33 53.1**	**-0.4**
CHOJ				S	**Sb**	**18 34 04.1**	**-0.1**
JHO	**Hitachi**	**1.30**	**307**	P	**Pn**	**18 33 59.9**	**-0.6**
BSO1	**Boso 1**	**1.39**	**212**	P	**Pn**	**18 34 01.2**	**0.0**
JFK	**Kawauchi**	**1.72**	**333**	P	**Pn**	**18 34 06.3**	**0.0**
JAG	**Ashikaga**	**2.04**	**287**	P	**Pn**	**18 34 10.4**	**-0.2**
JFT	**Otama**	**2.08**	**324**	P	**Pn**	**18 34 12.3**	**+1.1**
JMM	**Marumori**	**2.20**	**337**	P	**Pn**	**18 34 13.0**	**+0.1**
JKT	**Katashina**	**2.31**	**294**	P	**Pn**	**18 34 14.9**	**+0.5**
MJAR	**Matsushiro Arr**	**3.04**	**284**	Pn	**Pn**	**18 34 25.7**	**+1.3**
	3.0nm,0.3s,baz=103,slow=8.0,SNR=24						
MAT	**Matsushiro**	**3.04**	**284**	P	**Pn**	**18 34 25.2**	**+0.7**
MAT				*e*S	**Sn**	**18 34 59.2**	**-0.9**
JHJ	**Hachijo jima 2**	**3.21**	**213**	Pn	**Pn**	**18 34 25.9**	**-0.9**
	22nm,0.3s,baz=65,slow=4.2,SNR=22						
JHJ				Sn	**Sn**	**18 35 02.0**	**-2.3**
	52nm,0.3s,baz=269,slow=22,SNR=12						
ASAJ	**Asahikawa**	**8.29**	**4**	Pn	**Pn**	**18 35 35.4**	**-1.1**
	1.3nm,0.3s,baz=206,slow=8.6,SNR=17						
ASAJ				Sn	**Sn**	**18 37 06.8**	**-2.6**
	0.2nm,0.3s,baz=75,slow=20,SNR=2.1						
USRK	**Ussuriysk Ar.**	**11.26**	**321**	LR	LR	18 40 16.8	
	comp=Z,43nm,19.9s,baz=205,slow=35						
SONM	**Songino Array**	**28.76**	**306**	P	**P**	**18 39 34.7**	**+1.0**
	0.3nm,0.5s,baz=106,slow=7.2,SNR=3.6						
ZALV	**Zalesovo Beam**	**42.99**	**313**	P	**P**	**18 41 35.8**	**+0.8**
	0.6nm,0.4s,baz=88,slow=6.7,SNR=3.0						
MKAR	**Makanchi Array**	**45.07**	**303**	P	**P**	**18 41 52.6**	**+0.8**
	0.4nm,0.6s,baz=88,slow=10,SNR=7.3						
ILAR	**Eielson Array**	**50.31**	**32**	P	**P**	**18 42 33.5**	**+1.2**
	0.6nm,0.7s,baz=266,slow=6.1,SNR=7.5						
YKA	**Yellowknife Ar**	**64.66**	**30**	P	**P**	**18 44 12.8**	**-0.4**
	0.4nm,0.7s,baz=301,slow=6.7,SNR=7.3						

*MOS **15** 18:37:08.4±1.2, 6°.02S×154°.46E, h41km, mb6.3/33, MS6.1/57, Error ellipse: s-maj=7.0km s-min=5.5km az=95.2*
*ISCJB **15** 18:37:09.3±0.6, 6°.09S±0°.02×154°.45E±0°.02, h43km±5km, mb6.1/172, MS6.1/242, Error ellipse: s-maj=3.2km s-min=2.5km az=30.3*
*BJI **15** 18:37:09.0, 6°.15S×154°.35E, h45km, mb5.9/82, mB6.3/76, Ms6.1/92, Ms7 6.0/84*
*GCMT **15** 18:37:10.4±0.1, 6°.22S×

baz=14,SNR=12
COEN Coen 13.57 234 *e*Pn **Pn 18 40 21.7 +0.7**
JAY Jayapura 14.13 284 P **Pn 18 40 29.9 +1.4**
0.1nm,0.3s,baz=90,slow=23,SNR=26
JAY LR LR 18 46 04.0
comp=Z,2μm,21.0s,baz=6.5,slow=38
JAY Jayapura 14.13 284 P **Pn 18 40 31.4 +2.8**
300nm,1.5s,8μm
JAY Jayapura 14.13 284 P **Pn 18 40 30.0 +1.4**
MMPI Merauke 14.14 259 P **P 18 40 33.4 -1.6**
GENI Genyem 14.63 283 P **P 18 40 37.9 -2.7**
966nm,1.2s,22μm144μm
MTSU Mount Surprise 15.54 219 P **P 18 40 49.1 -1.4**
baz=16,SNR=98
CTA Charters Tower 16.04 209 P **Pn 18 40 53.9 +0.5**
1.0nm,0.3s,baz=33,slow=14,SNR=24
CTA LR LR 18 46 28.1
comp=Z,51μm,21.2s,baz=26,slow=35
CTAO Charters Tower 16.04 209 *e*P **Pn 18 40 54.0 +0.5**
CTAO Charters Tower 16.04 209 *e*Pn **Pn 18 40 54.0 +0.5**
EIDS Eidsvold 19.46 189 P **Pn 18 41 35.1 -0.3**
baz=20,SNR=64
EIDS Eidsvold 19.46 189 *e*P **Pn 18 41 35.1 -0.3**
EIDS *e*S **S 18 45 08.6 -2.8**
DZM Mont Dzumac 19.70 145 P **Pn 18 41 37.5 -0.8**
13nm,0.3s,baz=261,slow=7.3,SNR=86
DZM S **Sn 18 45 18.7 -0.1**
0.7nm,0.3s,baz=23,slow=15,SNR=2.3
DZM LR LR 18 48 09.5
comp=Z,50μm,21.7s,baz=329,slow=34
KWAJ Kwajalein Atol 19.77 42 *e*P **Pn 18 41 39.6 +0.5**
KWAJ Kwajalein Atol 19.77 42 *e*P **Pn 18 41 39.6 +0.5**
KWAJ *e*PcP **PcP 18 46 02.0 +7.6**
TARA Tarawa 19.88 69 *e*P **Pn 18 41 40.0 -0.4**
QIS Mount Isa 20.36 224 P **P 18 41 44.8 +1.1**
baz=20,SNR=93
RKPI Ransiki, Papua 20.71 282 P Pn 18 41 50.8 +0.6
RMQ Roma 21.02 194 P **P 18 41 52.7 +2.0**
baz=21,SNR=143
GUMO Guam 21.71 334 P **P 18 41 59.5 +1.3**
2μm,1.0s,baz=169,slow=7.6,SNR=45
GUMO S **S 18 45 59.6 +3.5**
347nm,1.3s,baz=180,slow=20,SNR=4.2
GUMO LR LR 18 49 49.9
comp=Z,14μm,20.9s,baz=156,slow=35
GUMO Guam 21.71 334 *e*P **P 18 42 00.8 +2.6**
GUMO MLR MLR
comp=Z,15μm,20.0s
GUMO Guam 21.71 334 *e*P **P 18 41 59.2 +1.0**
GUMO S **S 18 45 59.6 +3.5**
FAKI Fak Fak 22.33 277 P **P 18 42 07.7 +2.7**
comp=Z,743nm,1.0s,comp=Z,16μmcomp=Z,134μm
FAKI Fak Fak 22.33 277 *e*P **P 18 42 06.9 +1.9**
FAKI *e*PcP **PcP 18 45 58.0 -1.4**
QLP Quilpie 22.60 204 P **P 18 42 07.9 +0.2**
baz=23,SNR=150
KDU Kakadu 22.63 252 P **P 18 42 10.0 +1.9**
baz=23,SNR=23
SAUI Saumlaki 23.04 264 P **P 18 42 16.0 +3.7**
SAUI Saumlaki 23.04 264 *e*P **P 18 42 14.0 +1.7**
SIJI Sorong 23.68 282 P **P 18 42 20.6 +2.0**
comp=Z,43nm,0.3s,baz=272,slow=23,SNR=9.5
SIJI S **S 18 46 35.2 +4.7**
comp=Z,55nm,0.3s,baz=178,slow=8.9,SNR=2.6
SWI Sorong 23.69 282 P **P 18 42 20.1 +1.4**
comp=Z,914nm,1.1s,comp=Z,16μm
SWI Sorong 23.69 282 P **P 18 42 20.2 +1.5**
SWI pmax pmax
comp=Z,910nm,1.1s
WRAB Tennant Creek 23.89 233 *d iP* **P 18 42 21.9 +1.4**
WRAB pmax pmax
comp=Z,3μm,1.7s
WRAB MLR MLR
comp=Z,187μm,22.0s
WRAB Tennant Creek 23.89 233 *e*P **P 18 42 21.5 +1.0**
WRAB *e*PcP **PcP 18 46 01.1 -1.4**
WRAB LR LR
comp=Z,73μm,22.0s
WRA Warramunga Arr 23.91 233 P **P 18 42 21.5 +0.9**
comp=Z,866nm,1.2s,baz=55,slow=8.9,SNR=124
WRA PcP **PcP 18 46 02.6 +0.1**
comp=Z,30nm,0.5s,baz=52,slow=2.8,SNR=6.7
WRA S **S 18 46 36.0 +2.1**
comp=Z,85nm,1.3s,baz=53,slow=13,SNR=4.4
WRA LR LR 18 52 02.0
comp=Z,57μm,20.0s,baz=55,slow=37
WRA PKiKP **PKiKP 18 53 45.5 -0.4**
comp=Z,2.6nm,0.6s,baz=320,slow=1.2,SNR=9.3
WRA P3KPbc 19 15 41.5
comp=Z,4.9nm,1.1s,baz=242,slow=3.0,SNR=9.0
WRA P3KP 19 16 41.8
comp=Z,4.2nm,0.9s,baz=166,slow=1.9,SNR=9.5
MTN Manton Dam 23.94 252 P **P 18 42 22.4 +1.5**
baz=24,SNR=37
MTN Manton Dam 23.94 252 *e*P **P 18 42 20.7 -0.2**
PALU Palau 23.96 304 P **P 18 42 22.3 +1.2**
baz=24,SNR=80
ARMA Armidale 24.37 186 P **P 18 42 25.0 +0.2**
baz=24,SNR=192
ARMA Armidale 24.37 186 *e*P **P 18 42 25.0 +0.2**
BNDI Bandanaira 24.47 272 P **P 18 42 29.5 +3.7**
FUNA Funafuti 24.68 97 *e*P **P 18 42 26.4 -1.3**
FUNA LR LR
comp=Z,27μm,22.0s
MSAI Masohi 25.56 275 P **P 18 42 38.5 +2.8**
LHI Lord Howe Isla 25.69 171 P **P 18 42 36.2 -0.5**
baz=26,SNR=16
LHI Lord Howe Isla 25.69 171 *e*P **P 18 42 35.3 -1.4**
MSVF Nonsavu 25.82 119 *e*P **P 18 42 36.8 -1.3**
MSVF pmax pmax
comp=Z,90nm,0.9s
MSVF Nonsavu 25.82 119 *e*P **P 18 42 35.8 -2.3**
MSVF *e*ScP **ScP 18 49 42.4 -0.4**
MSVF LR LR
comp=Z,47μm,22.0s
ASAR Alice Springs 26.39 226 P **P 18 42 43.0 -0.2**
comp=Z,56nm,0.7s,baz=59,slow=8.7,SNR=247
ASAR PcP **PcP 18 46 08.9 +0.8**
comp=Z,85nm,0.7s,baz=57,slow=2.6,SNR=13
ASAR S **S 18 47 14.7 +1.2**
comp=Z,5.0nm,0.8s,baz=87,slow=23,SNR=4.4
ASAR ScP **ScP 18 49 44.9 +0.6**
comp=Z,14nm,0.8s,baz=42,slow=3.2,SNR=4.5
ASAR LR LR 18 52 55.5
comp=Z,58μm,21.5s,baz=101,slow=36
ASAR PKiKP **PKiKP 18 53 46.8 -0.4**
comp=Z,4.7nm,1.0s,baz=92,slow=3.2,SNR=3.8
ASAR P3KPbc 19 15 23.9
comp=Z,0.5nm,0.7s,baz=227,slow=3.3,SNR=5.2
ASAR P3KP 19 16 31.6
comp=Z,2.5nm,0.9s,baz=148,slow=2.8,SNR=7.2
CMSA Cobar Meteorol 26.63 197 P **P 18 42 45.0 -0.2**
baz=27,SNR=132
MGCD Mangrove Creek 27.18 186 P **P 18 42 50.9 +0.8**
baz=27,SNR=65
H11S3 WAKE ISLAND Hy 27.23 26 T T 19 11 13.2
baz=206,slow=76
H11S2 WAKE ISLAND Hy 27.24 26 T T 19 11 28.1
baz=206,slow=76
H11S1 WAKE ISLAND Hy 27.25 26 T T 19 11 30.4
baz=206,slow=76
LBMI Labuha 27.41 280 P **P 18 42 55.3 +2.9**
STKA Stephens Creek 28.35 203 P **P 18 43 00.4 -0.1**
comp=Z,168nm,0.7s,baz=15,slow=11,SNR=37
STKA PcP **PcP 18 46 13.1 +0.5**
comp=Z,94nm,0.8s,baz=359,slow=2.6,SNR=5.9
STKA ScP **ScP 18 49 50.2 +0.2**
comp=Z,25nm,1.0s,baz=28,slow=2.6,SNR=3.4
STKA LR LR 18 54 05.5
comp=Z,41μm,22.0s,baz=19,slow=36
STKA P3KPbc 19 15 20.2
comp=Z,3.9nm,1.0s,baz=155,slow=4.1,SNR=6.8
STKA Stephens Creek 28.35 203 P **P 18 43 00.9 +0.3**
baz=28,SNR=37
YNG Young 28.64 190 P **P 18 43 03.4 +0.2**
baz=29,SNR=74
SANI Sanana 28.65 277 P **P 18 43 07.0 +3.6**
CNB Canberra Magne 29.48 188 P **P 18 43 11.6 +0.9**
baz=30,SNR=28
CAN Canberra 29.54 189 *e*P **P 18 43 11.4 +0.2**
CAN Canberra 29.54 189 *e*P **P 18 43 11.4 +0.2**
CAN *e*PcP **PcP 18 46 16.4 +0.8**
CAN LR LR
comp=Z,46μm,22.0s
SOEI Soe 30.09 261 P **P 18 43 19.9 +3.5**
comp=Z,661nm,1.2s,comp=Z,13μm
SOEI Soe 30.09 261 *e*P **P 18 43 19.1 +2.7**
SGSI Sangihe 30.45 288 P P 18 43 24.5 +5.1
comp=Z,973nm,1.1s,comp=Z,14μm
HTT Hallett 30.81 206 P **P 18 43 22.5 +0.1**
baz=31,SNR=60
MATI Mati 30.94 294 *e*P **P 18 43 23.8 0.0**
MILA Mila 31.22 188 P **P 18 43 27.4 +1.4**
baz=31,SNR=57
DAV Davao City (W) 31.61 294 P **P 18 43 31.6 +2.0**
comp=Z,202nm,0.5s,baz=130,slow=2.4,SNR=7.4
DAV S S 18 48 45.0 +9.4
comp=Z,172nm,0.4s,baz=288,slow=20,SNR=4.3
DAV LR LR 18 56 22.6
comp=Z,17μm,19.3s,baz=104,slow=36
DAV Davao City (W) 31.61 294⇑ *e*P **P 18 43 29.6 -0.1**
DAV Davao City (W) 31.61 294 P **P 18 43 32.5 +2.8**
SNR=10
DAV Davao City (W) 31.61 294 P **P 18 43 32.5 +2.8**
SNR=10
BBOO Buckleboo 31.64 210 P **P 18 43 31.2 +1.5**
baz=32,SNR=48
BBOO Buckleboo 31.64 210 *e*P **P 18 43 31.1 +1.5**
BBOO *e*PcP **PcP 18 46 22.0 +0.9**
BBOO *e*ScP **ScP 18 50 00.3 -0.4**
KDI Kendari 31.76 272 P **P 18 43 34.0 +3.0**
comp=Z,203nm,1.3s,comp=Z,4μmcomp=Z,74μm
LUWI Luwuk 31.98 278 P **P 18 43 34.4 +1.4**
comp=Z,4μm,1.2s,comp=Z,36μmcomp=Z,53μm
LUWI Luwuk 31.98 278 *e*P **P 18 43 34.3 +1.4**
MMRI Maumere 32.03 263 P **P 18 43 33.9 +0.6**
comp=Z,2μm,1.1s,comp=Z,20μmcomp=Z,61μm
MMRI Maumere 32.03 263 *e*P **P 18 43 33.3 0.0**
TOO Toolangi 32.40 193 P **P 18 43 36.8 +0.4**
baz=32,SNR=11
BUKP Musuan 32.41 295 *e*P **P 18 43 37.2 +0.5**
ARPS Mount Arapiles 32.66 199 P **P 18 43 38.5 0.0**
baz=33,SNR=145
CTBH Cotabato--PC H 32.88 293⇑ *e*P **P 18 43 41.9 +1.1**
CGP Cagayan de Oro 32.98 296⇓ *e*P **P 18 43 45.4 +3.8**
MRSI Marisa 33.08 280 P **P 18 43 43.6 +1.1**
comp=Z,433nm,1.2s,comp=Z,4μm
BSSI Bau Bau, Buton 33.75 268 P **P 18 43 51.0 +2.6**
comp=Z,716nm,1.1s,comp=Z,10μm
BASI Baing, Sumba 33.75 261 P **P 18 43 50.8 +2.4**
comp=Z,3μm,1.2s,comp=Z,24μm
KNTN Kanton 33.90 86 *e*P **P 18 43 49.9 +0.2**
PAGZ Pagadian 33.91 294 *e*P **P 18 43 51.1 +1.3**
PLP Palo 33.95 300⇑ *e*P **P 18 43 50.1 +0.1**
OUZ Omahuta 33.96 151 *e*P **P 18 43 51.1 +1.1**
OUZ Omahuta 33.96 151 *e*PN **P 18 43 49.9 -0.1**
WSI Waingapu 33.99 262 P **P 18 43 51.9 +1.4**
comp=Z,4μm,1.2s,comp=Z,40μm
AFI Afiamalu 34.14 106 P **P 18 43 51.3 -0.6**
comp=Z,89nm,0.8s,baz=86,slow=13,SNR=9.5
AFI PcP **PcP 18 46 29.2 +0.7**
comp=Z,89nm,0.9s,baz=212,slow=2.9,SNR=3.9
AFI LR LR 18 55 17.7
comp=Z,29μm,21.9s,baz=284,slow=32
AFI Afiamalu 34.14 106 *e*P **P 18 43 50.2 -1.7**
AFI *e* 18 46 30.4
AFI Afiamalu 34.14 106 *e*PcP **PcP 18 46 30.4 +2.0**
OCLP Ormoc 34.21 300 *e*P **P 18 43 52.8 +0.4**
DCPH Dipolog City 34.23 295⇑ *iP* **P 18 43 56.3 +3.7**
LLP Lapu-Lapu 34.43 298 *iP* **P 18 43 54.9 +0.6**
KAPI Kappang 34.53 270 P **P 18 43 56.0 +0.8**
comp=Z,140nm,0.9s,baz=120,slow=4.7,SNR=19
KAPI ScP **ScP 18 50 10.6 -0.5**
comp=Z,35nm,0.9s,baz=169,slow=6.9,SNR=5.3
KAPI LR LR 19 01 19.5
comp=Z,7μm,20.1s,baz=102,slow=42
SPSI Sidrap Palu 34.59 272 P **P 18 43 56.7 +1.0**
comp=Z,276nm,1.3s,comp=Z,4μmcomp=Z,35μm
TTSI Tana Toraja 34.63 273 P **P 18 43 58.5 +2.5**
comp=Z,384nm,1.2s,comp=Z,6μmcomp=Z,38μm
IPIL Ipil 34.63 293 *e*P **P 18 43 58.2 +2.1**
SNPH Sibulan 34.65 296 *e*P **P 18 43 58.3 +2.0**
RAO Raoul Island 34.83 135 PFAKE 18 44 10.0 +12
RAO LR LR
comp=Z,17μm,21.0s
PCI Palu 34.90 277 P **P 18 44 00.5 +2.1**
comp=Z,4μm,1.1s,comp=Z,31μmcomp=Z,61μm
WCZ Waipu Caves 34.90 151 PN **P 18 43 59.7 +1.6**
WCZ PcP **PcP 18 46 31.6 +1.5**
JCJ Chichijima 35.03 341 P **P 18 43 57.7 -1.6**
comp=Z,577nm,0.7s,baz=262,slow=2.5,SNR=32
JCJ LR LR 18 55 33.2
comp=Z,9μm,21.5s,baz=170,slow=31
GUIM Jordan 35.78 297 *e*P **P 18 44 06.5 +0.7**
PVCP Virac 35.85 303 *e*P **P 18 44 06.8 +0.3**
RCP Roxas 36.06 299⇓ *e*P **P 18 44 10.0 +1.7**
KUZ Kuaotunu 36.21 150 *e*PN **P 18 44 08.8 -0.5**
MKAZ Moumakai 36.23 151 PN **P 18 44 10.8 +1.4**
JAP San Jose, Anti 36.40 297⇑ *e*P **P 18 44 15.4 +4.2**
PLAI Plampang 36.44 263 P **P 18 44 11.3 -0.3**
comp=Z,630nm,1.1s,comp=Z,7μmcomp=Z,52μm
MOO Moorlands 36.79 189 P **P 18 44 15.1 +0.9**
baz=37,SNR=31
MBWA Marble Bar 36.79 243 P **P 18 44 17.8 +3.3**
SNR=8.2
MBWA Marble Bar 36.79 243 P **P 18 44 17.8 +3.3**
SNR=8.2
MBWA Marble Bar 36.79 243 *e*P **P 18 44 14.6 +0.1**
MBWA *e*PcP **PcP 18 46 36.8 +0.7**
MBWA LR LR
comp=Z,45μm,21.0s
TOZ Tahuroa Road 36.89 152 PN **P 18 44 15.5 +0.5**
OTRP Odiongan 37.06 300 *e*P **P 18 44 17.9 +1.1**
TAU Tasmania Unive 37.23 189 *e*P **P 18 44 18.6 +0.8**
TAU MLR MLR
comp=Z,24μm,20.0s
TAU Tasmania Unive 37.23 189 *e*P **P 18 44 18.6 +0.8**
TAU LR LR
comp=Z,24μm,20.0s
HIZ Hauiti 37.23 153 *e*P **P 18 44 17.9 -0.1**
HIZ Hauiti 37.23 153 PN **P 18 44 21.7 +3.8**
CUYO Cuyo Island 37.27 297 *e*P **P 18 44 20.0 +1.4**
TWSI Taliwang, Sumb 37.32 264 P **P 18 44 19.3 +0.2**
comp=Z,304nm,1.3s,comp=Z,5μm
GQP Guinayangan 37.44 302⇑ *e*P **P 18 44 22.2 +2.2**
OPRZ Ohinepanea 37.49 151 *e*PN **P 18 44 19.6 -0.6**
MYLDM Lahad Datu 37.57 287 ⇓P **P 18 44 25.0 +3.9**
MYLDM Lahad Datu 37.57 287 *e*P **P 18 44 22.1 +1.0**
OMRZ Omania 37.61 151 *e*PN **P 18 44 22.2 +1.0**
HSRZ Hossack Road 37.71 151 *e*PN **P 18 44 25.3 +3.3**
BKB Balikpapan 37.75 276 P **P 18 44 26.8 +4.1**
comp=Z,1μm,1.3s,comp=Z,15μmcomp=Z,48μm
WPRZ Whakapapatarin 37.84 152 *e*PN **P 18 44 24.5 +1.3**
RRRZ Republican Roa 37.86 151 *e*PN **P 18 44 24.4 +1.0**
SJMP San Jose 37.89 299 *e*P **P 18 44 25.4 +1.6**
TSM Tawau 37.93 285 ⇓P **P 18 44 28.5 +4.2**
HAZ Te Kaha 38.03 149 PN **P 18 44 25.3 +0.6**
URZ Urewera 38.09 151 P **P 18 44 25.4 +0.3**
comp=Z,456nm,0.5s,baz=286,slow=1.1,SNR=97
URZ S **S 18 50 17.4 +2.6**
comp=Z,60nm,0.8s,baz=275,slow=23,SNR=12
URZ LR LR 18 59 41.6
comp=Z,16μm,19.1s,baz=333,slow=36
URZ Urewera 38.09 151 *e*P **P 18 44 25.1 -0.2**
URZ S **S 18 50 17.4 +2.6**
URZ Urewera 38.09 151 *e*PN **P 18 44 25.0 -0.2**
URZ SN **S 18 50 15.6 +0.8**
MXZ Matakaoa Point 38.15 149 *e*P **P 18 44 24.7 -1.1**
MXZ Matakaoa Point 38.15 149 PN **P 18 44 25.5 -0.3**
PKGZ Pakihiroa 38.28 149 *e*PN **P 18 44 26.4 -0.5**
LQP Lukban 38.30 302⇑ *e*P **P 18 44 30.8 +3.2**
MWZ Matawai 38.35 150 PN **P 18 44 27.8 +0.3**
WMGZ Waiomatatini S 38.40 149 PN **P 18 44 26.5 -1.4**
TWGZ Tauwhareparae 38.45 150 PN **P 18 44 28.0 -0.4**
BUSP Coron 38.49 298 *e*P **P 18 44 30.1 +1.2**
BKZ Black Stump Fm 38.51 152 *e*P **P 18 44 27.9 -0.9**
BKZ *e*S **S 18 50 25.7 +4.4**
BKZ Black Stump Fm 38.51 152 *e*PN **P 18 44 28.6 -0.2**
PUZ Puketiti 38.51 149 PN **P 18 44 27.7 -1.1**
TKGZ Te Karaka 38.59 150 PN **P 18 44 29.1 -0.3**
NMHZ Naumai 38.60 152 PN **P 18 44 31.3 +1.7**
RIGZ Rimuhau 38.75 150 PN **P 18 44 30.1 -0.8**
CNGZ Carnagh Statio 38.80 150 PN **P 18 44 31.3 +0.1**
TGY Tagaytay City 38.81 301 P **P 18 44 34.3 +2.7**
comp=Z,614nm,0.8s,baz=165,slow=2.6,SNR=18
ENPP El Nido 38.84 296 *e*P **P 18 44 33.0 +1.2**
SDKM Sandakan 38.95 287 ⇓P **P 18 44 35.3 +2.5**
KNZ Kokohu 38.96 151 PN **P 18 44 31.6 -0.8**
KNZ SN **S 18 50 26.7 -1.1**
SRBI Singaraja 38.96 265 P **P 18 44 34.3 +1.4**
comp=Z,325nm,1.2s,comp=Z,5μmcomp=Z,34μm
DNP Denpasar 38.97 264 P **P 18 44 35.4 +2.4**
PNHZ Pukenui 38.97 153 *e*PN **P 18 44 31.4 -1.3**
PRGZ Paritu Road 38.98 150 *e*PN **P 18 44 32.6 -0.1**
TSZ Takapari Road 38.98 153 PN **P 18 44 32.1 -0.6**
BALP Baler 39.09 304 *e*P **P 18 44 34.2 +0.4**
THZ Tophouse 39.17 158 *e*P **P 18 44 32.9 -1.4**
THZ Tophouse 39.17 158 PN **P 18 44 32.9 -1.4**
MHGZ Mahia Peninsul 39.17 151 PN **P 18 44 33.9 -0.4**
CKHZ Cape Kidnapper 39.17 152 PN **P 18 44 36.4 +2.1**
LUBP Lubang 39.23 300 *e*P **P 18 44 34.5 -0.5**
TCW Tory Channel 39.23 156 *e*PN **P 18 44 33.8 -0.9**
TUWZ Tuamarina 39.28 157 PN **P 18 44 34.1 -1.0**
MRZ Mangatainoka R 39.31 154 PN **P 18 44 34.1 -1.3**
BATP Bataraza 39.39 292 *e*P **P 18 44 37.1 +0.7**
PRHZ Porangahau 39.46 153 *e*SN **S 18 50 27.5 -7.9**
HOWZ Holdsworth Sta 39.48 155 *e*PN **P 18 44 38.2 +1.4**
SNZO South Karori 39.48 156 P **P 18 44 37.3 +0.4**
SNZO *e*PcP **PcP 18 46 42.7 -1.2**
SNZO LR LR
comp=Z,16μm,19.0s
INZ Inchbonnie 39.49 160 PN **P 18 44 35.4 -1.5**
BSWZ Blackbirch Sta 39.50 157 *e*PN **P 18 44 35.7 -1.2**
KMBL Kambalda 39.52 226 P **P 18 44 37.2 -0.1**
baz=40,SNR=18
CAUP Cauayan 39.52 306 *e*P **P 18 44 38.8 +1.3**
BBKI Banjar Baru 39.53 272 P **P 18 44 40.2 +2.5**
ANWZ Angora Road 39.54 153 PN **P 18 44 39.4 +2.1**
WVZ Waitaha Valley 39.57 161 *e*PN **P 18 44 36.8 -0.7**
BFZ Birch Farm 39.62 154 *e*P **P 18 44 36.6 -1.4**
KDM Kudat 39.67 288 ⇑P **P 18 44 41.8 +3.0**
MTW Mount Morrison 39.69 155 *e*PN **P 18 44 36.6 -1.9**
FOZ Fox Glacier 39.70 162 *e*P **P 18 44 37.3 -1.2**
MSWZ Moikau Station 39.80 155 *e*PN **P 18 44 37.5 -2.0**
LTZ Lake Taylor 39.83 159 *e*P **P 18 44 38.4 -1.3**
LTZ Lake Taylor 39.83 159 *e*PN **P 18 44 39.1 -0.6**
ABJI Asem Bagus 39.93 265 P **P 18 44 43.3 +2.3**
comp=Z,399nm,0.8s,comp=Z,7μm
TRWZ Traveller 39.97 155 *e*PN **P 18 44 42.2 +1.3**
KHZ Kahutara 39.97 158 *e*P **P 18 44 39.1 -1.7**
KHZ Kahutara 39.97 158 *e*PN **P 18 44 38.7 -2.1**
KKM Kota Kinabalu 40.00 287 ⇓P **P 18 44 44.3 +2.7**
KKM Kota Kinabalu 40.00 287 *e*P **P 18 44 42.6 +1.0**
KKM LR LR
comp=Z,17μm,22.0s
JAGI Jajag, Banyuwa 40.02 264 P **P 18 44 40.6 -1.1**
JAGI Jajag, Banyuwa 40.02 264 *e*P **P 18 44 40.5 -1.2**
comp=Z,874nm,1.1s
SGCP Mt. Cagua 40.05 308 *e*P **P 18 44 44.6 +2.7**
MSZ Milford Sound 40.23 165 PN **P 18 44 43.6 +0.7**
OXZ Oxford 40.23 160 *e*P **P 18 44 41.6 -1.4**
OXZ Oxford 40.23 160 PN **P 18 44 41.8 -1.2**
BCPH Baguio City Da 40.24 304⇓ *e*P **P 18 44 46.1 +2.5**
RPZ Rata Peaks 40.25 161 P **P 18 44 42.6 -0.6**
comp=Z,316nm,0.9s,baz=312,slow=0.9,SNR=32
RPZ LR LR 18 59 32.5
comp=Z,24μm,20.4s,baz=321,slow=33
RPZ Rata Peaks 40.25 161 PN **P 18 44 42.2 -0.9**
APYP Conner 40.48 307 *e*P **P 18 44 47.6 +2.2**
SCZP Santa Cruz 40.49 303 *e*P **P 18 44 46.2 +0.7**
LBZ Lake Benmore 40.59 163 *e*P **P 18 44 45.4 -0.6**
LBZ Lake Benmore 40.59 163 PN **P 18 44 44.6 -1.4**
CRLZ Canterbury Las 40.65 160 *e*P **P 18 44 45.7 -0.7**
WKZ Wanaka 40.66 164 *e*P **P 18 44 45.8 -0.8**
GMJI Gumukmas 40.71 264 P **P 18 44 48.7 +1.2**
comp=Z,159nm,1.3s,comp=Z,4μmcomp=Z,26μm
MQZ McQueen's Vall 40.77 160 *e*P **P 18 44 47.0 -0.5**
MQZ McQueen's Vall 40.77 160 *e*PN **P 18 44 46.6 -0.9**
DCZ Deep Cove 40.78 166 *e*P **P 18 44 46.9 -0.5**
BOLP Bolinao 40.79 304 *e*P **P 18 44 49.2 +1.2**
ABRA Dolores 40.79 306 *e*P **P 18 44 48.5 +0.5**
MLZ Mavora Lakes 40.92 165 *e*P **P 18 44 48.1 -0.6**
MLZ Mavora Lakes 40.92 165 PN **P 18 44 48.0 -0.7**
PIP Pasuquin 41.23 307⇑ *e*P **P 18 44 54.0 +2.4**
ODZ Otahua Downs 41.32 163 *e*P **P 18 44 51.0 -1.0**
ODZ *e*PcP **PcP 18 46 49.4 -0.4**
ODZ Otahua Downs 41.32 163 PN **P 18 44 50.6 -1.4**
JHJ2 Mitsune 41.36 341 *e*P **P 18 44 51.5 -0.9**
JHJ2 *e*ScP **ScP 18 50 35.6 -0.9**
JOW Kunigami 41.37 323 *e*P **P 18 44 53.9 +1.2**
WHZ Wether Hill Ro 41.37 166 *e*P **P 18 44 51.4 -1.0**
JHJ Hachijo jima 2 41.38 341 P **P 18 44 51.8 -0.8**
comp=Z,421nm,0.8s,baz=180,slow=10.0,SNR=17
JHJ LR LR 18 59 21.7
comp=Z,9μm,21.7s,baz=169,slow=32
TUZ Tuapeka 41.86 164 PN **P 18 44 55.3 -1.1**
GIRL Giralia 42.10 243 P **P 18 45 00.2 +1.5**
baz=42,SNR=23
JOHN Johnston Islan 42.23 57 P **P 18 45 01.6 +1.8**
comp=Z,637nm,1.6s
JOHN LR LR
comp=Z,3μm,22.0s
PWJI Pagerwojo 42.34 265 P **P 18 45 02.1 +1.3**
KLBR Kellerberrin 42.66 229 P **P 18 45 02.4 -0.8**
baz=43,SNR=43
NGJI Ngawi 42.68 266 P **P 18 45 07.1 +3.5**
comp=Z,209nm,1.4s,comp=Z,7μm
MORW Morawa 42.85 233 P **P 18 45 04.5 -0.3**
baz=43,SNR=77
PCJI Pacitan 42.96 265 P **P 18 45 06.3 +0.5**
comp=Z,1μm,1.3s,comp=Z,16μm
SBUM Sibu 42.99 280 *e*P **P 18 45 07.2 +1.1**
BLDU Ballidu 43.00 231 P **P 18 45 05.2 -0.8**
baz=43,SNR=47
YOJ Yonaguni jima 43.10 316 *e*P **P 18 45 07.5 +0.8**
YOJ Yonaguni jima 43.10 316 *e*P **P 18 45 07.5 +0.8**
WOJI Wonogiri, Jawa 43.21 265 P **P 18 45 10.1 +2.3**
STKI Sintang 43.30 277 P **P 18 45 11.7 +3.1**
TWG Pinlang 43.46 312 *e*P **P 18 45 09.7 0.0**
UGM Wanagama 43.61 265 P **P 18 45 12.7 +1.6**
comp=Z,559nm,1.2s,comp=Z,11μm
UGM Wanagama 43.61 265 *e*P **P 18 45 11.2 +0.1**
YULB Yu-li 43.64 313 *e*P **P 18 45 11.7 +0.5**
NWAO Narrogin (SRO) 43.70 227 P **P 18 45 11.9 +0.4**
comp=Z,289nm,1.2s,baz=289,slow=8.8,SNR=19
NWAO Narrogin (SRO) 43.70 227 P **P 18 45 12.0 +0.4**
baz=44,SNR=18
NWAO Narrogin (SRO) 43.70 227 *e*P **P 18 45 09.6 -1.9**
NWAO *e* 18 46 57.0
NWAO MLR MLR
comp=Z,45μm,21.0s
NWAO Narrogin (SRO) 43.70 227 P **P 18 45 12.3 +0.8**
SNR=18
NWAO Narrogin (SRO) 43.70 227 P **P 18 45 12.3 +0.8**
SNR=18
NWAO Narrogin (SRO) 43.70 227 *e*P **P 18 45 09.6 -1.9**
NWAO *e*PcP **PcP 18 46 57.0 -1.0**
NWAO LR LR
comp=Z,45μm,21.0s
NACB Ninganchiao 43.91 314 *e*P **P 18 45 14.1 +0.8**
TPUB Ta-pu 44.07 313 *e*P **P 18 45 14.5 -0.1**
SSLB Suanglung 44.13 313 *e*P **P 18 45 15.4 +0.3**
INU Inuyama 44.34 340 *e*P **P 18 45 15.8 -0.7**
YHNB Yeheng 44.38 315 *e*P **P 18 45 17.8 +0.7**
YHNB LR LR
comp=Z,9μm,21.0s
TATO Taipei 44.49 315 *e*P **P 18 45 17.4 -0.6**
TATO LR LR
comp=Z,14μm,22.0s
KSM Kuching 44.69 278 *e*P **P 18 45 20.4 +0.7**
KSM LR LR
comp=Z,9μm,22.0s
RKGY Rocky Gully 44.72 225 P **P 18 45 20.2 +0.5**
baz=45,SNR=30
JNU Nakatsue 44.93 332 P **P 18 45 21.1 -0.3**
comp=Z,623nm,0.7s,baz=108,slow=4.1,SNR=114
JNU S **S 18 51 57.9 +1.5**
comp=Z,20nm,1.1s,baz=36,slow=22,SNR=7.6
JNU LR LR 19 03 56.2
comp=Z,3μm,18.1s,baz=143,slow=36
JNU Nakatsue 44.93 332 *e*P **P 18 45 21.2 -0.2**
JNU S **S 18 51 57.9 +1.5**
JNU *e*S S 18 52 01.7 +5.3
MJAR Matsushiro Arr 45.03 341 P **P 18 45 20.5 -1.6**
comp=Z,44nm,0.8s,baz=165,slow=8.7,SNR=67
MJAR PcP **PcP 18 47 03.0 +0.5**
comp=Z,43nm,1.0s,baz=170,slow=3.3,SNR=6.7
MJAR LR LR 19 05 04.0
comp=Z,4μm,18.4s,baz=180,slow=37
MAJO Matsushiro 45.03 341 *c iP* **P 18 45 20.3 -1.7**
MAJO pmax pmax
comp=Z,669nm,1.1s
MAJO MLR MLR

comp=Z,37μm,18.0s
MAJO Matsushiro 45.03 341 *e*P **P 18 45 20.4 -1.7**
MAJO LR LR
comp=Z,7μm,21.0s
MAT Matsushiro 45.03 341 P **P 18 45 19.3 -2.8**
MAT S **S 18 51 49.4 -8.2**
CMJI Cimerak 45.66 265 P **P 18 45 27.7 +0.2**
comp=Z,450nm,0.7s,comp=Z,8μm
JCJI Jatiwangi 45.88 267 P **P 18 45 31.7 +2.6**
comp=Z,721nm,0.8s,comp=Z,12μmcomp=Z,52μm
CISI Cisompet, Garu 46.30 265 P **P 18 45 33.1 +0.6**
CISI Cisompet, Garu 46.30 265 *e*P **P 18 45 31.6 -0.9**
comp=Z,454nm,0.6s
LEM Lembang 46.51 266 P P 18 45 41.1 +6.8
comp=Z,192nm,0.7s,baz=64,slow=5.6,SNR=21
LEM S **S 18 52 25.9 +6.0**
comp=Z,24nm,1.0s,baz=17,slow=20,SNR=1.9
QZH Quanzhou 46.54 313⇑ *i*P **P 18 45 30.1 -4.0**
QZH sP **pP 18 45 46.4 -0.6**
QZH S **S 18 52 13.0 -6.7**
QZH Quanzhou 46.54 313 SS SS 18 55 40.0 -6.3
RAR Rarotonga 46.79 113 P **P 18 45 36.0 -0.2**
comp=Z,75nm,1.1s,baz=102,slow=3.5,SNR=5.3
RAR LR LR 19 02 14.9
comp=Z,7μm,20.6s,baz=286,slow=32
RAR Rarotonga 46.79 113 *e*P **P 18 45 37.1 +0.9**
RAR Rarotonga 46.79 113 *e*P **P 18 45 37.0 +0.9**
CNJI Cibinong 46.98 266 P **P 18 45 38.1 +0.3**
comp=Z,1μm,1.2s,comp=Z,14μmcomp=Z,26μm
CBJI Citeko 47.29 267 P **P 18 45 41.2 +1.0**
comp=Z,1μm,0.7s,comp=Z,28μm
SKJI Sukabumi 47.56 266 P **P 18 45 44.9 +2.6**
comp=Z,822nm,0.8s,comp=Z,13μm
CGJI Cibinong 48.43 267 P **P 18 45 48.8 -0.2**
comp=Z,476nm,1.1s,comp=Z,6μmcomp=Z,23μm
MCQ Macquarie Isla 48.43 176 *e*P **P 18 45 48.6 +0.3**
MCQ Macquarie Isla 48.43 176 *e*P **P 18 45 48.6 +0.3**
XMIS Christmas Isla 48.43 261 *e*P **P 18 45 49.6 +0.5**
XMIS *e*PcP **PcP 18 47 14.4 -0.5**
HKC Hong Kong Obse 48.45 307 P **P 18 45 52.0 +3.0**
XMAS Kiritimati 48.72 82 *e*P **P 18 45 51.3 0.0**
XMAS LR LR
comp=Z,3.0nm,21.0s
SSE Sheshan 48.74 321 P **P 18 45 51.3 +0.2**
SSE sP **sP 18 46 08.5 -0.9**
SSE S **S 18 52 50.8 +0.1**
SSE sS **sS 18 53 10.4 -1.8**
SSE pmax pmax
comp=Z,43nm,0.9s
SSE pmax pmax
comp=Z,3μm,9.0s
SSE LR LR
comp=Z,9μm,26.7s
SSE LR LR
comp=Z,6μm,27.1s
SSE LR LR
comp=Z,10μm,25.9s
MCO Taipa Grande 48.85 306 P P 18 45 57.0 +4.9
ERM Erimo 48.95 349 *e*P **P 18 45 52.7 +0.2**
ERM pmax pmax
comp=Z,27nm,0.7s
ERM MLR MLR
comp=Z,8μm,17.0s
ERM Erimo 48.95 349 P **P 18 45 52.5 0.0**
ERM LR LR
comp=Z,19μm,21.0s
TJN Taejon 49.26 331 *ce*P **P 18 45 53.5 -1.5**
GZH Guangzhou 49.51 307 P **P 18 45 57.0 -0.1**
GZH sP **pP 18 46 10.3 +0.2**
GZH S **S 18 53 02.9 +1.1**
GZH pmax pmax
comp=Z,9μm,7.5s
KASI Kota Agung 49.67 268 P **P 18 45 59.8 +1.3**
KSRS Korea Array 49.86 332 P **P 18 46 00.3 +0.8**
comp=Z,158nm,0.8s,baz=149,slow=7.9,SNR=143
KSRS S **S 18 53 09.4 +3.2**
comp=Z,9.0nm,1.1s,baz=152,slow=14,SNR=5.9
KSRS LR LR 19 07 03.5
comp=Z,3μm,18.3s,baz=142,slow=36
KSAR Wonju Array Be 49.87 332 P **P 18 46 00.3 +0.7**
KSAR S **S 18 53 09.4 +3.0**
KSAR Wonju Array Be 49.87 332 P **P 18 46 00.3 +0.7**
KSAR S **S 18 53 09.4 +3.0**
LWLI Liwa 50.13 269 P **P 18 46 02.9 +0.7**
comp=Z,217nm,0.9s,comp=Z,4μm
TPRI Tanjung Pinang 50.30 276 P **P 18 46 05.7 +2.3**
YUK Yuzh-Kuril'sk 50.47 352 *c i*P **P 18 46 00.2 -3.8**
YUK *i* *PP **pP 18 46 19.3 +2.4**
YUK *e* 18 47 57.7
YUK *i* PPP PPP 18 48 51.6
YUK *e*S **S 18 53 09.5 -4.9**
YUK *e**SS **sS 18 53 34.1 -1.9**
YUK *e*SS **SS 18 56 48.4 -0.6**
YUK *i* SSS SSS 18 58 18.3
YUK pmax pmax
comp=Z,3μm,5.8s
YUK pmax pmax
comp=Z,357nm,1.2s
YUK pmax pmax
comp=E,165nm,1.0s
YUK pmax pmax
comp=N,310nm,1.3s
INCN Inchon 50.49 331 P **P 18 46 05.2 +0.8**
SNR=39
INCN Inchon 50.49 331 P **P 18 46 05.2 +0.8**
SNR=39
INCN Inchon 50.49 331 *e*P **P 18 46 04.6 +0.3**
INCN LR LR
comp=Z,6μm,21.0s
QIZ Qiongzhong 50.51 301 P **P 18 46 06.5 +1.7**
QIZ pP **pP 18 46 13.9 -3.9**
QIZ sP **sP 18 46 22.5 -0.7**
QIZ S **S 18 53 18.5 +2.7**
QIZ sS **sS 18 53 39.3 +1.8**
QIZ pmax pmax
comp=Z,2μm,9.2s
QIZ LR LR
comp=Z,3μm,16.4s
QIZ LR LR
comp=Z,6μm,20.2s
LHSI Lahat 50.75 270 P **P 18 46 07.9 +1.1**
NJ2 Nanjing 50.85 320 *e*P **P 18 46 08.1 +1.0**
NJ2 pP **pP 18 46 18.3 -1.8**
NJ2 sP **sP 18 46 23.0 -2.5**
NJ2 S **S 18 53 22.0 +1.9**
NJ2 sS **sS 18 53 40.0 -1.8**
NJ2 pmax pmax
comp=Z,220nm,0.7s
NJ2 pmax pmax
comp=Z,2μm,6.7s
NJ2 LR LR
comp=Z,5μm,28.5s
NJ2 LR LR
comp=Z,4μm,31.4s
NJ2 LR LR
comp=Z,6μm,29.9s
ASAJ Asahikawa 51.08 349 P **P 18 46 09.5 +0.9**
comp=Z,247nm,0.8s,baz=212,slow=9.4,SNR=88
ASAJ S **S 18 53 25.8 +2.8**
comp=Z,17nm,1.2s,baz=74,slow=30,SNR=6.5
ASAJ LR LR 19 05 29.4
comp=Z,17μm,21.2s,baz=180,slow=33
MYKOM Kota Tinggi 51.10 277 *e*P **P 18 46 09.4 0.0**
MNAI Manna 51.28 269 P **P 18 46 08.7 -2.0**
KUR Kuril'sk 51.41 354 *ce*P **P 18 46 10.8 -0.2**
KUR *e* 18 48 10.4
KUR *e*PPP PPP 18 49 11.4
KUR *i* S **S 18 53 28.7 +1.4**
KUR *e*SS **SS 18 57 06.9 +3.0**
KUR pmax pmax
comp=Z,2μm,7.0s
KUR pmax pmax
comp=N,31nm,1.6s
KUR pmax pmax
comp=E,40nm,1.6s
KUR pmax pmax
comp=Z,227nm,1.6s
KUR MLR MLR
comp=N,13μm,23.0s
KUR MLR MLR
comp=E,8μm,23.0s
KUR MLR MLR
comp=Z,15μm,23.0s
MSHR Mys Shultsa 52.85 339 *e*P **P 18 46 22.8 +1.0**
KEKH Kekaha 52.86 57 *e*P **P 18 46 23.1 +0.9**

WHN Wuhan 52.89 316⇑P **P 18 46 23.3 +0.9**
WHN S **S 18 53 49.0 +0.8**
WHN pmax pmax
comp=Z,470nm,1.0s
WHN pmax pmax
comp=Z,8μm,7.8s
WHN LR LR
comp=Z,12μm,18.1s
WHN LR LR
comp=Z,11μm,19.2s
WHN LR LR
comp=Z,61μm,28.9s
VLA Vladivostok 53.06 339 *e*P **P 18 46 24.2 +0.9**
VLA pmax pmax
comp=Z,145nm,0.9s
BKNI Bangkinang 53.67 275 *e*P **P 18 46 28.1 -0.4**
comp=Z,414nm,0.8s
YSS Yuzh-Sakhalins 53.80 350α *i*P **P 18 46 29.0 +0.3**
YSS *e*S **S 18 53 52.0 -7.9**
YSS *e*PS **PKiKP 18 54 07.0 -3.0**
YSS *e* 18 56 09.0
YSS *e*SS **SKiKP 18 57 32.0 -6.8**
YSS pmax pmax
comp=Z,3μm,7.5s
YSS pmax pmax
comp=N,1μm,10.0s
YSS pmax pmax
comp=Z,110nm,0.7s
USRK Ussuriysk Ar. 53.97 340 P **P 18 46 30.1 0.0**
comp=Z,109nm,0.8s,baz=177,slow=8.6,SNR=86
USRK S **S 18 54 04.8 +2.4**
comp=Z,15nm,1.2s,baz=151,slow=9.4,SNR=3.4
USRK LR LR 19 08 01.6
comp=Z,3μm,21.9s,baz=143,slow=34
USRK PKP2bc 19 16 57.9
comp=Z,5.2nm,1.0s,baz=350,slow=7.4,SNR=4.2
KIP Kipapa 54.04 58 *e*P **P 18 46 31.8 +0.8**
KIP Kipapa 54.04 58 *e*P **P 18 46 31.3 +0.4**
KIP LR LR
comp=Z,33μm,21.0s
DL2 Dalian 54.09 329⇑ *i*P **P 18 46 30.8 -0.2**
DL2 S **S 18 54 02.3 -1.9**
DL2 pmax pmax
comp=Z,29nm,1.0s
DL2 pmax pmax
comp=Z,4μm,9.4s
DL2 LR LR
comp=Z,7μm,25.3s
DL2 LR LR
comp=Z,8μm,22.9s
DL2 LR LR
comp=Z,21μm,27.8s
OPA Opana 54.15 58 *e*P **P 18 46 31.7 -0.1**
OPA Opana 54.15 58 *e*P **P 18 46 31.7 -0.1**
PPI Padang Panjang 54.21 274 P **P 18 46 34.1 +1.7**
TIA Tai'an 54.69 323⇑P **P 18 46 34.8 -0.7**
TIA PcP **PcP 18 47 35.8 -2.0**
TIA S **S 18 54 10.3 -2.2**
TIA pmax pmax
comp=Z,170nm,0.9s
TIA pmax pmax
comp=Z,5μm,12.0s
TIA LR LR
comp=Z,7μm,23.0s
TIA LR LR
comp=Z,5μm,24.0s
TIA LR LR
comp=Z,15μm,25.0s
SKNT Sakolnakorn 54.86 296 P **P 18 46 38.0 +1.0**
comp=Z,246nm,1.1s,comp=Z,7μm
KULM Kulim 54.87 281 *e*P **P 18 46 36.1 -1.0**
KULM *e*PcP **PcP 18 47 38.2 -0.7**
KULM LR LR
comp=Z,10μm,22.0s
CHBT CHBT 55.04 290 P **P 18 46 39.1 +0.8**
comp=Z,222nm,1.5s,comp=Z,6μm
MDJ Mudanjiang 55.18 339 P **P 18 46 38.3 -0.5**
MDJ pP pP 18 46 49.9 -2.0
MDJ sP sP 18 46 54.8 -2.5
MDJ PcP **PcP 18 47 39.6 +0.1**
MDJ PP **PP 18 48 40.3 -2.4**
MDJ ScP **ScP 18 51 33.9 -0.6**
MDJ PcS **PcS 18 51 38.4 -0.9**
MDJ S **S 18 54 16.6 -2.1**
MDJ ScS **ScS 18 56 24.0 -0.1**
MDJ pmax pmax
comp=Z,130nm,0.8s
MDJ pmax pmax
comp=Z,3μm,11.2s
MDJ LR LR
comp=Z,7μm,25.1s
MDJ LR LR
comp=Z,3μm,23.3s
MDJ LR LR
comp=Z,9μm,26.9s
MDJ Mudanjiang 55.18 339 *e*P **P 18 46 38.6 -0.2**
comp=Z,108nm,0.8s
MDJ LR LR
comp=Z,5μm,20.0s
MNSI Mandailing Nat 55.18 275 P **P 18 46 40.5 +1.1**
HLK Haleakala 55.27 60 *e*P **P 18 46 39.0 -1.2**
MLOA Mauna Loa Obse 55.38 61 *e*P **P 18 46 40.0 -1.3**
HPAH Hawaii Prepara 55.47 61 *e*P **P 18 46 38.6 -2.8**
POHA Pohakuloa 55.50 61 *e*P **P 18 46 42.1 +0.2**
POHA LR LR
comp=Z,23μm,19.0s
KHON Khomkaen 55.69 294 P **P 18 46 44.9 +1.9**
comp=Z,93nm,0.8s,comp=Z,757nm
PPT Papeete 55.80 107 P **P 18 46 48.4 +4.6**
comp=Z,61nm,1.0s,baz=282,slow=2.3,SNR=6.2
PPT LR LR 19 05 44.5
comp=Z,4μm,19.8s,baz=272,slow=31
PPT2 Papeete2 55.80 107 *e*S **S 18 54 27.4 -0.7**
comp=Z,12μm,28.0s
PPT2 *e*LQ LQ 19 00 37.6
comp=Z,21μm,28.8s
PPT2 *e*LR LR 19 03 04.9
comp=Z,27μm,27.5s
TIAR Tiarei 56.02 107 *e*P **P 18 46 46.8 +1.4**
comp=Z,17nm,0.8s
CN2 Changchun 56.12 335 *e*P **P 18 46 44.8 -0.8**
CN2 *es*P sP 18 47 02.8 -1.3
CN2 *e*PP **PP 18 48 50.8 -0.4**
CN2 *e*S **S 18 54 28.9 -2.4**
CN2 pmax pmax
comp=Z,20nm,0.9s
CN2 LR LR
comp=Z,6μm,21.0s
CN2 LR LR
comp=Z,8μm,21.0s
CN2 LR LR
comp=Z,7μm,23.0s
PSI Prapat 56.12 277 *e*P **P 18 46 44.5 -1.9**
PSI Prapat 56.12 277 *e*P **P 18 46 44.5 -1.9**
ENH Enshi 56.20 313 *e*P **P 18 46 46.6 +0.1**
comp=Z,406nm,0.9s
ENH LR LR
comp=Z,9μm,21.0s
TRTT Trang 56.32 284 P **P 18 46 48.7 +1.1**
comp=Z,142nm,1.3s,comp=Z,4μm
GYA Guiyang 56.45 307⇑ *i*P **P 18 46 49.3 +0.9**
GYA pP pP 18 47 04.0 +2.4
GYA PcP **PcP 18 47 47.4 +2.4**
GYA PP **PP 18 48 58.8 +4.2**
GYA ScP **ScP 18 51 42.0 +1.3**
GYA S **S 18 54 40.9 +4.4**
GYA sS sS 18 54 59.8 +1.3
GYA ScS **ScS 18 56 33.3 -1.0**
GYA pmax pmax
comp=Z,190nm,1.0s
GYA pmax pmax
comp=Z,4μm,13.1s
GYA LR LR
comp=Z,5μm,23.3s
GYA LR LR
comp=Z,12μm,22.0s
GYA LR LR
comp=Z,18μm,21.8s
PATY Pattaya 56.46 290 P **P 18 46 51.7 +3.2**
comp=Z,43nm,0.8s,comp=Z,804nm
SKR Severo-Kuril's 56.54 1 *e*P P 18 46 40.5 -7.9
SKR *e* 18 46 57.0
SKR *e*S **S 18 54 32.0 -4.5**
SKR *e*SSS SSS 19 00 28.0
SKR pmax pmax

comp=Z,220nm,1.0s
SKR pmax pmax
comp=N,3μm,12.0s
SKR pmax pmax
comp=E,3μm,12.0s
SKR pmax pmax
comp=Z,5μm,12.0s
SKR MLR MLR
comp=N,4μm,20.0s
SKR MLR MLR
comp=E,4μm,20.0s
SKR MLR MLR
comp=Z,6μm,20.0s
TSI Tuntungan 56.59 278 P **P 18 46 51.7 +2.2**
HABR Khabarovsk 56.91 345 *c i*P **P 18 46 48.0 -3.1**
HABR *e**PP **pP 18 47 02.1 -2.1**
HABR *e* 18 47 43.2
HABR *e* 18 48 55.1
HABR *e*S **S 18 54 38.1 -3.4**
HABR *e**SS **sS 18 55 02.1 -1.4**
HABR *e* 18 56 32.7
HABR *e*SS **SS 18 58 28.1 -2.6**
HABR pmax pmax
comp=E,33nm,1.4s
HABR pmax pmax
comp=N,52nm,1.4s
HABR pmax pmax
comp=Z,156nm,1.4s
HABR pmax pmax
comp=Z,2μm,4.9s
HABR MLR MLR
comp=Z,2μm,17.0s
COCO West Island 57.11 259 *e*P **P 18 46 52.3 -0.8**
GSI Gunungsitoli 57.23 275 P **P 18 46 56.0 +1.9**
GSI Gunungsitoli 57.23 275 *e*P **P 18 46 52.9 -1.2**
PMOR Pomariorio Ree 57.26 104 *e*P **P 18 46 55.4 +1.2**
comp=Z,328nm,1.1s
SURT Suratani 57.43 285 P **P 18 46 56.9 +1.5**
comp=Z,80nm,1.6s,comp=Z,2μm
PBKT Sadao Pong 57.45 294 P **P 18 46 56.8 +1.3**
comp=Z,155nm,1.4s,comp=Z,5μm
VAH Vaihoa 57.52 104 *e*P **P 18 46 57.0 +1.0**
comp=Z,144nm,1.1s
TYV Tymovskoe 57.60 351 *e*P **P 18 46 57.0 +1.1**
TYV pmax pmax
comp=Z,198nm,1.0s
TYV pmax pmax
comp=Z,4μm,10.0s
PKDT Phuket 57.64 283 P **P 18 46 57.9 +1.0**
comp=Z,278nm,0.6s,comp=Z,5μm
BJT Baijiatuau 57.83 326 *e*P **P 18 46 58.6 +0.8**
BJT pmax pmax
comp=Z,234nm,0.8s
BJT MLR MLR
comp=Z,9μm,22.0s
BJT Baijiatuau 57.83 326 *e*P **P 18 46 58.6 +0.8**
comp=Z,234nm,0.8s
BJT LR LR
comp=Z,9μm,22.0s
BJI Beijing 57.84 326 P **P 18 46 57.1 -0.7**
BJI S **S 18 54 49.8 -4.3**
BJI pmax pmax
comp=Z,75nm,0.9s
BJI pmax pmax
comp=Z,4μm,10.7s
BJI LR LR
comp=Z,6μm,22.6s
BJI LR LR
comp=Z,9μm,23.4s
BJI LR LR
comp=Z,16μm,26.2s
UTTA Uttaradit 58.20 295 P **P 18 47 01.8 +1.0**
comp=Z,110nm,0.9s,comp=Z,798nm
LHMI Lhok Sumawe 58.48 280 P **P 18 47 05.1 +2.3**
LHMI Lhok Sumawe 58.48 280 *e*P **P 18 47 02.2 -0.6**
SRDT SRDT 58.49 291 P **P 18 47 04.5 +1.7**
comp=Z,547nm,0.7s,comp=Z,15μm
KLR Kul'dur 58.52 343 P **P 18 47 03.2 +0.8**
comp=Z,196nm,0.8s,baz=170,slow=3.7,SNR=155
KLR S **S 18 55 06.3 +3.7**
comp=Z,17nm,1.3s,baz=292,slow=19,SNR=7.9
KLR LR LR 19 12 15.9
comp=Z,4μm,20.1s,baz=159,slow=36
KLR Kul'dur 58.52 343 *c i*P **P 18 47 01.8 -0.6**
TIY Taiyuan 58.52 322 *e*P **P 18 47 02.4 -0.4**
TIY PP **PP 18 49 16.9 +4.1**
TIY S **S 18 55 03.0 -0.2**
TIY pmax pmax
comp=Z,130nm,1.2s
TIY pmax pmax
comp=Z,3μm,9.5s
TIY LR LR
comp=Z,5μm,16.5s
TIY LR LR
comp=Z,3μm,15.3s
TIY LR LR
comp=Z,10μm,20.5s
XAN Xi'an 58.65 316 P **P 18 47 03.6 -0.1**
XAN S **S 18 55 03.8 -1.2**
XAN pmax pmax
comp=Z,40nm,0.7s
XAN pmax pmax
comp=Z,4μm,9.2s
XAN LR LR
comp=Z,6μm,30.5s
XAN LR LR
comp=Z,10μm,34.5s
XAN LR LR
comp=Z,14μm,31.3s
MLSI Meulaboh, Aceh 58.84 279 P **P 18 47 06.2 +0.9**
PET Petropavlovsk 58.97 3 *c i*P **P 18 47 05.2 -0.2**
PET *i* S **S 18 55 08.2 -0.1**
PET *e*SS **SS 18 58 58.8 -4.1**
PET pmax pmax
comp=Z,160nm,0.7s
PET pmax pmax
comp=Z,4μm,12.3s
PET MLR MLR
comp=Z,8μm,20.0s
PET Petropavlovsk 58.97 3 P **P 18 47 07.0 +1.6**
PET LR LR
comp=Z,11μm,21.0s
PETK Petropavlovsk- 59.01 2 P **P 18 47 07.5 +1.7**
comp=Z,115nm,0.8s,baz=158,slow=6.5,SNR=55
PETK LR LR 19 08 49.2
comp=Z,12μm,21.4s,baz=178,slow=32
KMI Kunming 59.04 304 P **P 18 47 08.3 +1.5**
KMI sP sP 18 47 25.5 +0.1
KMI PP **PP 18 49 19.0 +1.3**
KMI S **S 18 55 11.3 +0.6**
KMI sS sS 18 55 32.6 -0.1
KMI pmax pmax
comp=Z,720nm,1.0s
KMI pmax pmax
comp=Z,4μm,9.6s
KMI LR LR
comp=Z,3μm,20.6s
KMI LR LR
comp=Z,12μm,24.9s
KMI LR LR
comp=Z,19μm,26.8s
CRAI Chiangrai 59.20 298 P **P 18 47 08.5 +0.8**
comp=Z,2μm,1.0s
LAMP Lampang 59.28 296 P **P 18 47 10.0 +1.7**
comp=Z,177nm,0.9s,comp=Z,1μm
CMAR Chiang Mai Arr 59.88 295 P **P 18 47 13.7 +1.3**
comp=Z,215nm,0.8s,baz=119,slow=4.8,SNR=169
CMAR S **S 18 55 28.9 +7.6**
comp=Z,5.1nm,1.1s,baz=103,slow=11,SNR=9.0
CMAR LR LR 19 11 30.2
comp=Z,7μm,21.6s,baz=118,slow=34
CMAR PKPPKP **P'P'df 19 16 39.0 -0.9**
comp=Z,7.3nm,1.2s,baz=307,slow=3.6,SNR=6.5
CMMT Chiang Mai 59.99 296 P **P 18 47 13.7 +0.5**
comp=Z,282nm,1.1s,comp=Z,6μm
CHTO Chiang Mai 60.00 296 P **P 18 47 13.8 +0.6**
comp=Z,1μm,1.2s,comp=Z,27μm
CHTO Chiang Mai 60.00 296 *e*P **P 18 47 14.1 +0.9**
CHTO MLR MLR
comp=Z,8μm,20.0s
CHTO Chiang Mai 60.00 296 P **P 18 47 14.6 +1.4**
SNR=186
CHTO Chiang Mai 60.00 296 P **P 18 47 14.6 +1.4**
SNR=186
CHTO Chiang Mai 60.00 296 *e*P **P 18 47 14.1 +0.9**
CHTO LR LR

comp=Z,8μm,20.0s
NKL Nikolayevsk 60.13 350 *e*P **P 18 47 13.6 +0.2**
NKL *e*S **S 18 55 20.0 -3.2**
NKL *e* 18 55 57.0
NKL pmax pmax
comp=N,63nm,0.9s
NKL pmax pmax
comp=Z,180nm,0.9s
NKL pmax pmax
comp=N,1μm,10.0s
NKL pmax pmax
comp=Z,4μm,10.0s
NKL smax smax
comp=E,3μm,18.0s
CMAI Chiengmai2 60.27 297 P **P 18 47 16.0 +0.7**
comp=E,214nm,1.1s,comp=E,5μm
SMY Shemya 60.91 14 *e*P **P 18 47 20.7 +2.0**
SMY Shemya 60.91 14 *e*P **P 18 47 20.7 +2.0**
HHC Hu-ho-hao-te 61.02 324 *e*P **P 18 47 19.6 -0.3**
HHC sP sP 18 47 37.8 -0.8
HHC PP **PP 18 49 33.3 -1.6**
HHC S **S 18 55 31.1 -4.3**
HHC sS sS 18 55 56.4 -1.1
HHC SS **SS 18 59 31.8 -4.0**
HHC pmax pmax
comp=E,190nm,1.3s
HHC pmax pmax
comp=E,4μm,6.9s
HHC LR LR
comp=E,5μm,16.2s
HHC LR LR
comp=E,6μm,16.5s
HHC LR LR
comp=E,10μm,16.4s
CMBY CAMPBELL BAY 61.75 281 *e*P **P 18 47 25.7 +0.5**
CMBY IAmb IAmb 18 47 28.8
comp=Z,93nm,0.8s
BTO Baotou 61.78 323 *e*P **P 18 47 25.6 +0.5**
HIA Hailar 62.85 335 *e*P **P 18 47 32.2 +0.2**
HIA pmax pmax
comp=Z,388nm,0.8s
HIA MLR MLR
comp=Z,6μm,21.0s
HIA Hailar 62.85 335 *e*P **P 18 47 32.1 +0.2**
comp=Z,388nm,0.8s
HIA LR LR
comp=Z,6μm,21.0s
LZH Lanzhou 63.27 316 ⇓P **P 18 47 36.8 +1.7**
LZH pP pP 18 47 48.6 +0.1
LZH sP sP 18 47 54.3 +0.5
LZH PcP **PcP 18 48 13.0 +0.9**
LZH PP **PP 18 49 56.1 +1.3**
LZH *e*S **S 18 56 05.3 +1.3**
LZH sS sS 18 56 28.4 +2.1
LZH SS **SS 19 00 12.9 +1.6**
LZH pmax pmax
comp=Z,630nm,1.0s
LZH pmax pmax
comp=Z,4μm,7.1s
PBA Port Blair 63.84 286 *e*P P 18 47 38.2 -0.8
PBA IAmb IAmb 18 47 42.2
DGPR DIGLIPUR 64.00 288 *e*P **P 18 47 38.4 -1.8**
DGPR IAmb IAmb 18 47 48.2
comp=Z,764nm,2.1s
TAOE Nuku Hiva Isla 64.86 97 *e*P **P 18 47 46.8 +0.9**
comp=Z,336nm,1.3s
TAOE Nuku Hiva Isla 64.86 97 *e*LR LR 19 06 51.9
comp=Z,16μm,24.7s
MA2 Magadan 65.50 358 P **P 18 47 49.0 0.0**
comp=Z,93nm,0.8s,baz=187,slow=5.7,SNR=43
MA2 S **S 18 56 34.2 +3.9**
comp=Z,21nm,1.2s,baz=65,slow=17,SNR=3.6
MA2 LR LR 19 15 34.4
comp=Z,3μm,20.5s,baz=200,slow=35
MA2 Magadan 65.50 358 P **P 18 47 49.0 0.0**
MA2 S **S 18 56 34.2 +3.9**
MA2 pmax pmax
comp=Z,30nm,0.8s
MA2 Magadan 65.50 358 P **P 18 47 49.0 0.0**
comp=Z,30nm,0.8s
MA2 S **S 18 56 34.2 +3.9**
NIKH Nikolski High 66.52 23 *e*P **P 18 47 56.8 +1.1**
CLNS Chul'man 67.18 343 *e*P **P 18 48 01.1 +1.2**
CLNS pmax pmax
comp=Z,217nm,0.9s
CLNS pmax pmax
comp=N,74nm,0.9s
CLNS pmax pmax
comp=E,33nm,0.8s
CASY Casey 67.30 198 *e*P **P 18 47 59.8 -0.7**
CASY LR LR
comp=Z,4μm,22.0s
CIT Chita 67.54 334 *e*P **P 18 48 04.2 +1.9**
CIT *e* 18 48 17.8
CIT *e*S **S 18 57 00.0 +4.6**
CIT pmax pmax
comp=Z,516nm,1.0s
GTA Gaotai 67.68 317 *e*P **P 18 48 03.9 +0.3**
GTA pP pP 18 48 17.1 +0.1
GTA sP sP 18 48 22.5 +0.1
GTA S **S 18 56 55.4 -2.5**
GTA sS sS 18 57 16.6 -3.7
GTA SS **SS 19 01 15.5 -4.3**
GTA pmax pmax
comp=Z,20nm,1.0s
GTA pmax pmax
comp=Z,4μm,7.6s
GTA LR LR
comp=Z,4μm,26.4s
GTA LR LR
comp=Z,6μm,26.4s
GTA LR LR
comp=Z,12μm,26.4s
ULN Ulaanbaatar 67.92 328 *e*P **P 18 48 05.0 +0.1**
ULN MLR MLR
comp=Z,9μm,21.0s
ULN Ulaanbaatar 67.92 328 P **P 18 48 05.5 +0.5**
SNR=178
ULN Ulaanbaatar 67.92 328 P **P 18 48 05.5 +0.5**
SNR=178
ULN Ulaanbaatar 67.92 328 *e*P **P 18 48 05.0 +0.1**
ULN LR LR
comp=Z,9μm,21.0s
UNV Unalaska Valle 68.10 24 *e*P **P 18 48 04.7 -1.0**
SONM Songino Array 68.26 327 P **P 18 48 07.1 +0.1**
comp=Z,224nm,0.9s,baz=136,slow=6.3,SNR=153
SONM S **S 18 57 11.9 +7.5**
comp=Z,13nm,1.1s,baz=114,slow=4.3,SNR=8.8
SONM PKP2bc 19 16 26.2
comp=Z,6.6nm,1.0s,baz=295,slow=2.4,SNR=10
SONM LR LR 19 19 34.4
comp=Z,6μm,18.6s,baz=127,slow=37
SHL Shillong 68.34 300 ⇑*i*P **P 18 48 09.0 +0.9**
comp=Z,82nm,1.0s
SHL *e*S **S 18 57 07.0 +0.7**
AKUT Akutan 68.61 24 *e*P **P 18 48 09.7 +0.8**
SEY Seymchan 68.82 359 P **P 18 48 10.4 +0.4**
comp=Z,29nm,0.9s,baz=167,slow=5.4,SNR=39
SEY LR LR 19 15 51.7
comp=Z,6μm,21.4s,baz=156,slow=34
SEY Seymchan 68.82 359 *i*P **P 18 48 09.9 -0.1**
RKT Rikitea 69.81 112 *e*S **S 18 57 22.7 -0.7**
RKT *e*SS **SS 19 01 52.1 -0.7**
comp=Z,4μm,27.5s
RKT *e*LQ LQ 19 06 36.7
comp=Z,3μm,31.5s
RKT *e*LR LR 19 09 28.6
comp=Z,9μm,38.0s
RKT *e*LR LR 19 09 28.6
comp=Z,37μm,31.8s
FALS False Pass 70.08 24 *e*P **P 18 48 18.9 +0.9**
LSA Lhasa 70.29 304 P **P 18 48 21.5 +1.1**
LSA pP **pP 18 48 32.5 -1.4**
LSA S S 18 57 18.8 -11
LSA pmax pmax
comp=Z,73nm,0.8s
LSA pmax pmax
comp=Z,1μm,9.3s
LSA LR LR
comp=Z,2μm,21.0s
LSA LR LR
comp=Z,6μm,24.5s
LSA LR LR
comp=Z,13μm,24.5s
LSA Lhasa 70.29 304 *e*P **P 18 48 20.7 +0.3**
LSA pmax pmax
comp=Z,148nm,0.8s
LSA MLR MLR
comp=Z,11μm,22.0s
LSA Lhasa 70.29 304 *e*P **P 18 48 20.6 +0.3**
comp=Z,148nm,0.8s
LSA LR LR
comp=Z,11μm,22.0s
YAK Yakutsk 70.54 348 P **P 18 48 22.3 +1.7**
comp=Z,19nm,0.7s,baz=323,slow=20,SNR=36
YAK S **S 18 57 35.7 +5.4**
comp=Z,1.4nm,0.3s,baz=76,slow=23,SNR=9.7
YAK LR LR 19 17 16.6
comp=Z,6μm,21.7s,baz=158,slow=34
YAK Yakutsk 70.54 348 *e*P **P 18 48 19.8 -0.8**
YAK *e**PP **sP 18 48 37.7 -1.7**
YAK *e* 18 48 45.3
YAK *e* 18 50 59.2
YAK *e*S **S 18 57 26.5 -3.8**
YAK *e**SS **sS 18 57 54.7 +1.8**
YAK *e* 18 58 07.8
YAK pmax pmax
comp=Z,298nm,1.0s
YAK pmax pmax
comp=N,74nm,1.1s
YAK pmax pmax
comp=E,94nm,1.5s
YAK pmax pmax
comp=Z,90nm,1.3s
YAK pmax pmax
comp=N,95nm,1.6s
YAK smax smax
comp=N,2μm,6.8s
YAK smax smax
comp=E,487nm,2.1s
YAK Yakutsk 70.54 348 *e*P **P 18 48 20.0 -0.6**
YAK S **S 18 57 35.7 +5.4**
ZAK Zakamensk 71.42 328 *e*P **P 18 48 25.9 -0.4**
ZAK *e* 18 57 46.4
ZAK pmax pmax
comp=Z,234nm,0.9s
VNDA Vanda 71.52 178 P **P 18 48 26.0 -0.4**
comp=Z,81nm,0.9s,baz=330,slow=6.3,SNR=63
VNDA LR LR 19 15 24.7
comp=Z,3μm,19.9s,baz=1.5,slow=32
VNDA Vanda 71.52 178 P **P 18 48 26.0 -0.4**
BOD Bodaibo 71.55 339 *e*P **P 18 48 25.2 -1.6**
BOD *e*S **S 18 57 46.8 +4.5**
BOD pmax pmax
comp=Z,88nm,0.8s
SDPT Sand Point 71.65 25 *e*P **P 18 48 27.0 -0.5**
TLY Talaya 71.98 330 P **P 18 48 31.2 +1.6**
comp=Z,75nm,0.9s,baz=172,slow=3.1,SNR=42
TLY S **S 18 57 52.3 +4.7**
comp=Z,4.7nm,0.9s,baz=21,slow=21,SNR=9.0
TLY LR LR 19 19 20.1
comp=Z,3μm,21.7s,baz=124,slow=35
TLY Talaya 71.98 330*c i*P **P 18 48 28.8 -0.8**
TLY *e* 18 48 47.5
TLY *e* 18 51 10.5
TLY *e*S **S 18 57 41.3 -6.3**
TLY *e* 18 58 13.1
TLY *e* 18 58 28.8
TLY pmax pmax
comp=Z,91nm,0.9s
TLY MLR MLR
comp=Z,3μm,21.0s
TLY Talaya 71.98 330 *e*P **P 18 48 29.2 -0.4**
TLY S **S 18 57 52.3 +4.7**
IRK Irkutsk 72.00 330 *e*P **P 18 48 28.9 -0.8**
IRK *e* 18 51 10.8
IRK *e* 18 57 50.6
IRK pmax pmax
comp=Z,193nm,2.0s
SBA Scott Base 72.04 177 *e*P **P 18 48 30.2 +0.7**
SBA Scott Base 72.04 177 *e*P **P 18 48 30.1 +0.7**
SBA LR LR
comp=Z,5μm,21.0s
BOK Bokaro 73.08 297 *e*P **P 18 48 37.7 +1.0**
CHGN Chignik 73.15 25 *e*P **P 18 48 37.0 +0.6**
MOY Mondy 73.33 329 *e*P **P 18 48 37.2 -0.6**
MOY pmax pmax
comp=Z,205nm,3.0s
MIR Mirnyy 73.34 202 ⇓*i*P **P 18 48 36.0 -1.4**
MIR *i*S **S 18 58 02.0 -0.6**
MIR pmax pmax
comp=Z,4μm,12.0s
MIR smax smax
comp=E,4μm,10.0s
MIR MLR MLR
comp=Z,11μm,20.0s
CHLP Challavanipeta 73.51 291 *e*P **P 18 48 40.0 +0.6**
CHLP IAmb IAmb 18 48 43.7
comp=Z,1μm,0.8s
CHLP *e*pP **pP 18 48 52.1 -0.8**
CHLP *e*sP **PcP 18 48 56.0 +0.8**
CHLP *e*PP **PP 18 51 23.8 0.0**
CHLP *e*S **S 18 58 02.2 -3.9**
CHLP *e*SKSac **SKSac 18 58 37.9 -4.7**
CHLP IVMs_BB IVMs_BB 19 16 06.9
comp=Z,3μm,27.1s
VIS Vishakhapatnam 74.03 290 *e*P **P 18 48 42.4 +0.1**
VIS IAmb IAmb 18 48 46.4
comp=Z,518nm,0.9s
GAMB Gambell 74.17 15 *e*P **P 18 48 44.4 +2.2**
PTCN Pitcairn Islan 74.31 114 PFAKE 18 49 00.0 +16
PTCN LR LR
comp=Z,4μm,20.0s
BILL Bilibino 74.41 5*c i*P **P 18 48 42.7 -0.8**
BILL *i* 18 48 58.6
BILL *i*S **S 18 58 16.3 +1.9**
BILL pmax pmax
comp=Z,324nm,1.0s
BILL MLR MLR
comp=Z,6μm,20.0s
BILL Bilibino 74.41 5 *e*P **P 18 48 43.1 -0.5**
comp=Z,232nm,0.7s
BILL LR LR
comp=Z,6μm,20.0s
PKIN Phulchoki 74.48 301 *e*P **P 18 48 45.2 0.0**
comp=Z,324nm,1.0s
KKN Kakani 74.64 301 *e*P **P 18 48 45.2 -0.9**
comp=Z,656nm,1.1s
PALK Pallekele 74.74 279 P **P 18 48 47.0 +0.3**
comp=Z,182nm,1.1s,baz=113,slow=4.1,SNR=28
PALK Pallekele 74.74 279 *e*P **P 18 48 48.6 +1.9**
PALK Pallekele 74.74 279 *e*P **P 18 48 48.6 +1.9**
DMN Daman 74.74 301 *e*P **P 18 48 46.2 -0.5**
comp=Z,1μm,0.9s
GKN Gorkha 75.25 301 *e*P **P 18 48 48.4 -1.1**
comp=Z,598nm,1.0s
PVM Polavaram 75.53 289 *e*P **P 18 48 50.8 -0.3**
PVM IAmb IAmb 18 48 54.4
comp=Z,379nm,0.8s
PVM *e*pP **PcP 18 49 02.8 -1.1**
PVM *e*sP **sP 18 49 07.5 -2.4**
PVM *e*PP **PP 18 51 38.7 -2.2**
PVM *e*S **S 18 58 22.1 -6.5**
PVM IVMs_BB IVMs_BB 19 15 41.0
comp=Z,4μm,28.1s
OHAK Old Harbor 75.94 26 *e*P **P 18 48 53.5 +0.9**
KOLN Koldanda 76.07 300 *e*P **P 18 48 53.0 -1.3**
comp=Z,312nm,0.6s
MDRS Chennai 76.08 285 *e*P **P 18 48 52.7 -1.6**
MDRS IAmb IAmb 18 48 58.4
comp=Z,527nm,1.6s
MDRS *e*x x 19 13 13.8
TNA Tin City 76.58 15 *e*P **P 18 48 58.0 +2.0**
KDAK Kodiak Island 76.58 26 P P 18 49 12.7 +17
comp=Z,211nm,0.9s,baz=249,slow=2.6,SNR=45
KDAK Kodiak Island 76.58 26 *e*P **P 18 48 58.0 +1.8**
KDAK Kodiak Island 76.58 26 *e*P **P 18 48 58.0 +1.8**
KDAK LR LR
comp=Z,23μm,22.0s
PYUN Piuthan 76.68 301 *e*P **P 18 48 56.2 -1.5**
comp=Z,687nm,0.9s
SKHT Srikalahasti 76.71 286 *e*P **P 18 48 57.7 -0.2**
SKHT IAmb IAmb 18 49 01.3
comp=Z,306nm,0.8s
SKHT *e*pP **PcP 18 49 09.6 +0.5**
SKHT *e*sP **sP 18 49 15.0 -1.7**
SKHT *e*S **S 18 58 39.0 -2.9**
SKHT *e*SKSac **SKKSac 18 59 07.0 -0.1**
SKHT IVMs_BB IVMs_BB 19 18 23.5
comp=Z,3μm,27.1s
ADKI Addanki 76.83 288 *e*P **P 18 48 58.2 -0.2**
ADKI IAmb IAmb 18 49 01.9
comp=Z,485nm,0.8s
ADKI *e*pP **PcP 18 49 10.4 +0.9**
ADKI *e*sP **sP 18 49 15.6 -1.8**
ADKI *e*PP **PP 18 51 51.2 -0.7**
ADKI *e*S **S 18 58 39.8 -3.2**
ADKI *e*SKSac **SKSac 18 59 04.2 -3.2**
ADKI IVMs_BB IVMs_BB 19 16 18.4
comp=Z,2μm,29.5s
SVW2 Sparrevohn 77.36 22 *e*P **P 18 49 05.1 +4.6**
NJS Nagarjunasagar 77.58 288 *e*P **P 18 49 02.2 -0.5**
NJS IAmb IAmb 18 49 05.7
comp=Z,514nm,0.9s
NJS *e*pP **PcP 18 49 14.4 +1.5**
NJS *e*sP **sP 18 49 19.4 -2.2**
NJS *e*PP **PP 18 52 00.5 +2.2**
NJS *e*S **S 18 58 47.9 -3.4**
NJS *e*SKSac **SKSac 18 59 11.2 -1.7**
NJS IVMs_BB IVMs_BB 19 16 40.2
comp=Z,2μm,31.0s
RCLA Racherla 77.72 287 *e*P **P 18 49 02.8 -0.7**
RCLA IAmb IAmb 18 49 07.4
comp=Z,117nm,0.8s
RCLA *e*pP **PcP 18 49 14.8 +1.3**
RCLA *e*sP **pP 18 49 19.5 +2.3**
RCLA *e*PP **PP 18 52 00.8 +1.4**
RCLA *e*S **S 18 58 46.8 -6.0**
RCLA *e*SKSac **SKSac 18 59 13.1 -0.9**
RCLA IVMs_BB IVMs_BB 19 19 44.3
comp=Z,2μm,28.1s
WMQ Urumqi 77.77 317 P **P 18 49 03.8 +0.5**
WMQ PcP **PcP 18 49 14.1 +0.9**
WMQ pP pP 18 49 17.6 +0.6
WMQ sP sP 18 49 22.3 0.0
WMQ S **S 18 58 53.1 +0.6**
WMQ sS sS 18 59 16.3 +0.9
WMQ SS **SS 19 03 57.8 +4.1**
WMQ pmax pmax
comp=Z,45nm,1.0s
WMQ pmax pmax
comp=Z,2μm,7.4s
WMQ LR LR
comp=Z,2μm,28.0s
WMQ LR LR
comp=Z,2μm,25.4s
WMQ LR LR
comp=Z,4μm,33.0s
SRLM Srisailam 77.89 288 *e*P **P 18 49 03.8 -0.6**
SRLM IAmb IAmb 18 49 07.4
comp=Z,752nm,0.8s
SRLM *e*pP **PcP 18 49 16.0 +1.8**
SRLM *e*sP **sP 18 49 21.0 -2.4**
SRLM *e*PP **PP 18 52 01.1 +0.2**
SRLM *e*S **S 18 58 48.6 -6.1**
SRLM *e*SKSac **SKSac 18 59 14.3 -1.0**
SRLM IVMs_BB IVMs_BB 19 17 22.2
comp=Z,2μm,24.9s
RPR Rampur 78.00 291 *e*P **P 18 49 04.6 -0.4**
RPR IAmb IAmb 18 49 08.0
comp=Z,350nm,0.9s
RPR *e*pP **PcP 18 49 16.3 +1.7**
RPR *e*sP **sP 18 49 21.6 -2.4**
RPR *e*S **S 18 58 51.7 -4.0**
RPR *e*SKSac **SKSac 18 59 14.4 -1.5**
RPR IVMs_BB IVMs_BB 19 16 47.5
comp=Z,2μm,36.9s
HOM Homer 78.06 25 *e*P **P 18 49 06.5 +2.0**
RSO Redoubt South 78.07 24 *e*P **P 18 49 05.1 +0.3**
TTA Tatalina 78.36 21 *e*P **P 18 49 06.1 0.0**
TTA Tatalina 78.36 21 *e*P **P 18 49 06.1 0.0**
BRLK Bradley Lake 78.44 25 *e*P **P 18 49 07.4 +0.8**
HYB Hyderabad 78.44 289 *i*P **P 18 49 06.0 -1.5**
comp=Z,315nm,1.0s
HYB *e*S **S 18 59 00.0 -0.6**
HYB Hyderabad 78.44 289 *e*P **P 18 49 06.1 -1.4**
HYB IAmb IAmb 18 49 10.3
HYBB Hyderabad (bro 78.44 289 *e*P **P 18 49 06.6 -0.9**
HYBB IAmb IAmb 18 49 10.1
comp=Z,331nm,0.8s
HYBB *e*pP **pP 18 49 19.1 -2.1**
HYBB *e*sP **sP 18 49 23.7 -2.8**
HYBB *e*PP **PP 18 52 00.1 -5.4**
HYBB *e*S **S 18 58 56.5 -4.1**
HYBB *e*SKSac **SKSac 18 59 17.9 -1.2**
HYBB IVMs_BB IVMs_BB 19 17 03.8
comp=Z,3μm,30.6s
TRD Trivandrum 78.58 280 *e*P **P 18 49 08.5 +0.2**
SPU Mount Spurr 78.77 23 *e*P **P 18 49 08.2 -0.3**
SRSP Sriramsagar 78.90 291 *e*P **P 18 49 09.1 -0.9**
SRSP IAmb IAmb 18 49 12.6
comp=Z,579nm,0.8s
SRSP *e*PcP **PcP 18 49 17.1 -1.4**
SRSP *e*pP **pP 18 49 21.6 -2.1**
SRSP *e*PP **PP 18 52 08.6 -0.8**
SRSP *e*S **S 18 58 57.3 -8.1**
SRSP *e*SKSac **SKSac 18 59 19.9 -2.5**
SRSP IVMs_BB IVMs_BB 19 17 13.9
comp=Z,3μm,33.5s
SEW Seward 79.23 25 *e*P **P 18 49 12.3 +1.4**
TIXI Tiksi 79.36 352 P **P 18 49 10.8 -0.6**
comp=Z,23nm,0.7s,baz=151,slow=5.7,SNR=36
TIXI S **S 18 59 08.7 +0.4**
comp=Z,4.4nm,1.2s,baz=238,slow=22,SNR=8.7
TIXI LR LR 19 26 17.9
comp=Z,793nm,18.0s,baz=144,slow=37
TIXI Tiksi 79.36 352*c i*P **P 18 49 09.9 -1.5**
TIXI pmax pmax
comp=Z,52nm,1.1s
TIXI Tiksi 79.36 352 *e*P **P 18 49 11.2 -0.2**
TIXI S **S 18 59 08.7 +0.4**
RC01 Rabbit Creek A 79.65 24 *e*P **P 18 49 12.7 -0.5**
KRAR Krasnoyarsk 79.68 330 *e*P **P 18 49 12.3 -1.1**
KRAR pmax pmax
comp=Z,57nm,0.8s
PPLA Purkeypile 79.72 22 *e*P **P 18 49 13.9 +0.2**
CAST Castle Rocks 80.07 22 *e*P **P 18 49 14.2 -1.3**
PMR Palmer 80.17 24 *e*P **P 18 49 15.1 -0.8**
PMR Palmer 80.17 24 *e*P **P 18 49 15.1 -0.8**
MID Middleton Isla 80.22 26 *e*P **P 18 49 17.3 +1.1**
MID pmax pmax
comp=Z,208nm,1.1s
MID Middleton Isla 80.22 26 *e*P **P 18 49 17.3 +1.1**
comp=Z,208nm,1.1s
KLRI Killari 80.39 289 *e*P **P 18 49 16.9 -1.2**
KLRI IAmb IAmb 18 49 21.6
comp=Z,192nm,0.8s
KLRI *e*pP **pP 18 49 29.7 -2.2**
KLRI *e*sP **sP 18 49 34.6 -2.5**
KLRI *e*PP **PP 18 52 18.1 -3.6**
KLRI *e*S **S 18 59 16.3 -4.9**
KLRI *e*SKSac **SKSac 18 59 33.4 +0.5**
KLRI IVMs_BB IVMs_BB 19 18 08.8
comp=Z,4μm,32.3s
BHPL Bhopal 80.53 295 *e*P **P 18 49 18.3 -0.5**
BHPL IAmb IAmb 18 49 21.7
comp=Z,451nm,1.4s
KTH Kantishna Hill 80.57 22 *e*P **P 18 49 16.5 -1.7**
SML Sawmill 80.61 24 *e*P **P 18 49 17.8 -0.6**
SML Sawmill 80.61 24 *e*P **P 18 49 17.8 -0.6**
TRF Thorofare Moun 80.75 22 *e*P **P 18 49 18.4 -0.9**
BPAW Bear Paw Mtn. 80.86 21 *e*P **P 18 49 18.7 -1.0**
SCM Sheep Creek Mo 81.03 24 *e*P **P 18 49 20.2 -0.4**
SCM Sheep Creek Mo 81.03 24 *e*P **P 18 49 20.2 -0.4**
EYAK Cordova Ski Ar 81.04 26 *e*P **P 18 49 21.9 +1.4**
ZSN Zaisan 81.18 320 *i*P **P 18 49 18.7 -3.0**
comp=Z,281nm,1.0s
ZSN *i*S **S 18 59 25.2 -3.1**
RND Reindeer 81.26 22 *e*P **P 18 49 20.4 -1.5**
RND Reindeer 81.26 22 *e*P **P 18 49 20.4 -1.5**
DGAR Diego Garcia 81.31 263*c i*P **P 18 49 21.7 -1.4**
DGAR Diego Garcia 81.31 263 *e*P **P 18 49 24.6 +1.5**
DGAR LR LR
comp=Z,3μm,20.0s
DIV Divide 81.31 25 *e*P **P 18 49 21.9 -0.3**
DDI Dehra Dun 81.38 302 *e*P **P 18 49 22.8 -0.5**
DDI IAmb IAmb 18 49 40.1
comp=Z,307nm,1.4s
MCK McKinley 81.41 22 *e*P **P 18 49 21.2 -1.4**
MCK McKinley 81.41 22 *e*P **P 18 49 21.1 -1.4**
RAGM Ragged Mountai 81.42 26 *e*P **P 18 49 22.7 -0.1**
KLU Klutina 81.43 25 *e*P **P 18 49 22.3 -0.5**
BWN Browne 81.45 22 *e*P **P 18 49 23.8 +1.0**
MLY Manley 81.48 21 *e*P **P 18 49 22.2 -0.8**
PAF Port-aux-Franc 81.67 221 *e*P **P 18 49 25.8 +1.6**

PAF pmax pmax
comp=Z,842nm,1.2s
PAF MLR MLR
comp=Z,7μm,20.0s
PAF Port-aux-Franc 81.67 221 *e*P **P 18 49 25.8 +1.6**
comp=Z,842nm,1.2s
PAF LR LR
comp=Z,7μm,20.0s
BMRM Bremner River 81.73 26 *e*P **P 18 49 23.9 -0.4**
NDI New Delhi 81.77 300 *e*P P 18 49 18.0 -7.2
NDI *e*S S 18 59 26.0 -9.1
WRH Wood River Hil 82.12 22 *e*P **P 18 49 24.2 -2.1**
SMLA Simla 82.30 302 *e*P **P 18 49 26.3 -1.6**
SMLA IAmb IAmb 18 49 32.8
comp=Z,1μm,2.3s
CCB Clear Creek Bu 82.32 22 *e*P **P 18 49 25.4 -1.9**
MKAR Makanchi Array 82.34 319 P **P 18 49 28.6 +0.8**
comp=Z,41nm,0.7s,baz=100,slow=5.0,SNR=130
MKAR S **S 18 59 37.9 -2.5**
comp=Z,0.7nm,0.9s,baz=129,slow=11,SNR=2.4
MKAR PKKPbc **PKKPbc 19 07 55.8 -1.1**
comp=Z,6.6nm,1.0s,baz=302,slow=2.3,SNR=16
MKAR LR LR 19 26 15.5
comp=Z,4μm,20.9s,baz=112,slow=36
MKAR Makanchi Array 82.34 319 *i* P **P 18 49 27.0 -0.9**
MKAR pmax pmax
comp=Z,41nm,0.7s
MKAR Makanchi Array 82.34 319 *e*P **P 18 49 27.2 -0.7**
MKAR S **S 18 59 37.9 -2.5**
MKAR PKKPbc **PKKPbc 19 07 55.8 -1.1**
PAX Paxson 82.35 24 *e*P **P 18 49 28.1 +0.5**
PAX Paxson 82.35 24 *e*P **P 18 49 28.1 +0.5**
COLA College 82.42 21 *e*P **P 18 49 26.2 -1.6**
COLA College 82.42 21 *e*P **P 18 49 26.2 -1.6**
COLA LR LR
comp=Z,21μm,22.0s
MAKZ Makanchi 82.55 319 *e*P **P 18 49 28.0 -1.0**
MAKZ Makanchi 82.55 319 *e*P **P 18 49 28.0 -1.0**
GOA Goa 82.61 286 *e*P **P 18 49 29.6 -0.2**
GOA IAmb IAmb 18 49 32.0
comp=Z,1μm,2.0s
ILAR Eielson Array 82.72 22 P **P 18 49 29.2 -0.2**
comp=Z,121nm,0.8s,baz=250,slow=5.0,SNR=77
ILAR S **S 18 59 44.5 +1.0**
comp=Z,3.8nm,1.1s,baz=244,slow=12,SNR=7.7
ILAR PKKPbc **PKKPbc 19 07 53.8 -3.1**
comp=Z,1.5nm,0.8s,baz=185,slow=5.3,SNR=4.1
ILAR PKPPKP **P'P'df 19 15 58.8 +1.2**
comp=Z,1.3nm,0.9s,baz=353,slow=2.1,SNR=6.2
ILAR LR LR 19 21 32.0
comp=Z,28μm,22.0s,baz=242,slow=32
BALM Baldy 82.74 26 *e*P **P 18 49 29.4 -0.3**
BALM Baldy 82.74 26 *e*P **P 18 49 29.4 -0.3**
COLD Coldfoot 82.92 19 *e*P **P 18 49 30.1 -0.2**
SHLS Shalkode 82.97 315 *i* P **P 18 49 29.5 -2.0**
SHLS *e*S **S 18 59 46.0 -1.5**
SHLS LRM MLR 19 28 32.0
comp=Z,338nm,18.1s
MENT Mentasta 83.04 24 *e*P **P 18 49 31.3 +0.1**
POO Poona 83.04 289 *e*P **P 18 49 31.0 -1.1**
POO IAmb IAmb 18 49 34.4
comp=Z,245nm,0.4s
ZALV Zalesovo Beam 83.10 326 P **P 18 49 30.9 -0.7**
comp=Z,40nm,0.8s,baz=111,slow=5.3,SNR=75
ZALV PKKPbc **PKKPbc 19 07 54.3 -1.2**
comp=Z,4.6nm,0.9s,baz=300,slow=2.9,SNR=9.1
ZALV LR LR 19 27 22.6
comp=Z,2μm,21.0s,baz=94,slow=36
DOT Dot Lake 83.24 23 *e*P **P 18 49 30.8 -1.3**
DHRM DHARAMSHALA 83.25 303 *e*P **P 18 49 31.4 -1.8**
DHRM IAmb IAmb 18 49 36.4
comp=Z,184nm,0.9s
UZB Uzynbulak 83.58 315 *i* P **P 18 49 32.9 -1.6**
comp=Z,320nm,1.1s
UZB *i* PP **PP 18 52 48.7 +1.1**
UZB LRM MLR 19 29 15.2
comp=Z,696nm,19.2s
KPKS Kokpek 83.90 315 *i* P **P 18 49 34.5 -1.6**
comp=Z,426nm,1.1s
KPKS *i* PP **PP 18 52 47.3 -2.8**
KPKS *e*S **S 18 59 53.3 -3.2**
KPKS LRM MLR 19 29 06.1
comp=Z,1μm,18.5s
QSPA South Pole Qui 83.90 180 *e*P **P 18 49 35.0 -0.7**
comp=Z,5μm,1.0s
QSPA LR LR
comp=Z,5μm,21.0s
SATY Saty 84.00 314 *i* P **P 18 49 37.0 +0.3**
comp=Z,576nm,0.9s
SATY *i* PP **PP 18 52 48.5 -2.4**
SATY *e*S **S 18 59 56.1 -1.5**
FYU Fort Yukon 84.22 20 *e*P **P 18 49 38.6 +1.5**
NVS Novosibirsk 84.27 327 ‖ *i*P **P 18 49 38.4 +0.8**
NVS *i* 18 49 49.8
NVS *e* 18 52 48.0
NVS *i* S **S 18 59 57.9 -1.6**
NVS *i* PS **PnS 19 01 11.0 +13**
NVS pmax pmax
comp=N,34nm,1.1s
NVS pmax pmax
comp=E,72nm,1.1s
NVS pmax pmax
comp=Z,125nm,1.1s
SEM Semipalatinsk 84.68 322 *e*P **P 18 49 38.7 -1.0**
comp=Z,438nm,1.1s
SEM *i* PP **PP 18 52 56.0 -0.1**
SEM *e*S **S 18 59 58.4 -5.3**
SEM *i* SS **SS 19 05 27.1 -9.1**
SEM LRM MLR 19 28 39.1
comp=Z,1μm,19.9s
EGAK Eagle 84.88 23 *e*P **P 18 49 40.1 -0.4**
comp=Z,209nm,0.9s
EGAK LR LR
comp=Z,45μm,22.0s
MDOK Medeo 84.99 314 *i* P **P 18 49 39.5 -2.2**
comp=Z,244nm,1.5s
MDOK *i* PP **PP 18 52 57.8 -1.3**
MDOK *e*S **S 18 59 59.9 -7.6**
MDOK *i* SS **SS 19 05 38.4 -3.1**
MDOK LRM MLR 19 25 43.1
comp=Z,3μm,26.1s
KSH Kashi 84.99 310 P **P 18 49 42.8 +1.1**
KSH *e*pP pP 18 49 56.1 +0.5
KSH *e*sP sP 18 50 01.1 +0.3
KSH *e*PP **PP 18 53 01.9 +2.8**
KSH SKS **SKSac 19 00 00.3 -2.5**
KSH S **S 19 00 05.6 -2.0**
KSH SS **SS 19 05 43.8 +2.3**
KSH pmax pmax
comp=Z,98nm,1.1s
KSH pmax pmax
comp=Z,4μm,7.3s
KSH LR LR
comp=Z,5μm,22.7s
KSH LR LR
comp=Z,4μm,19.1s
KSH LR LR
comp=Z,7μm,22.8s
MAW Mawson 85.03 203 P **P 18 49 40.6 -0.6**
comp=Z,229nm,0.6s,baz=98,slow=6.7,SNR=72
MAW LR LR 19 23 42.8
comp=Z,7μm,21.9s,baz=91,slow=33
MAW Mawson 85.03 203 P **P 18 49 40.6 -0.6**
baz=85,SNR=131
AAA Alma-Ata 85.08 314 *i* P **P 18 49 41.5 -0.5**
AAA *i* S **S 19 00 11.3 +3.1**
AAA pmax pmax
comp=Z,5μm,4.2s
AAA smax smax
comp=E,5μm,6.9s
AAA Alma-Ata 85.08 314 *e*P **P 18 49 41.8 -0.2**
comp=E,406nm,1.0s
AAA *e*S **S 19 00 02.6 -5.6**
AAA LRM MLR 19 28 23.9
comp=E,1μm,20.3s
DAWY Dawson 85.28 24 *e*P **P 18 49 42.0 -0.5**
SKAG Skagway 85.33 29 *e*P **P 18 49 44.5 +1.7**
KURK Kurchatov 85.76 322 *c i*P **P 18 49 43.0 -2.1**
KURK pmax pmax
comp=Z,102nm,1.1s
KURK Kurchatov 85.76 322 *e*P **P 18 49 43.2 -1.9**
KURK LR LR
comp=Z,7μm,20.0s
KURBB Kurchatov Arra 85.79 322 P **P 18 49 44.7 -0.6**
comp=Z,50nm,0.9s,baz=105,slow=3.2,SNR=88

WRAK Wrangell Islan 85.86 32 *e*P **P 18 49 47.8 +2.3**
WRAK LR LR
comp=Z,12μm,20.0s
BMNS Besmoynak 85.96 314 *e*P **P 18 49 44.9 -1.6**
comp=Z,416nm,1.0s
BMNS *i* PP **PP 18 53 05.0 -2.0**
BMNS *e*S **SKSac 19 00 06.5 -2.3**
BMNS LRM MLR 19 28 47.0
comp=Z,2μm,22.8s
TKM2 Tokmak 2 85.97 314 *e*P **P 18 49 45.5 -1.2**
TKM2 Tokmak 2 85.97 314 *e*P **P 18 49 45.5 -1.2**
TKM2 LR LR
comp=Z,3μm,20.0s
FRU Bishkek 86.66 314 ‖ *i*P **P 18 49 48.0 -1.8**
FRU *i* 19 00 21.0
FRU *e* 19 01 27.0
FRU *e* 19 02 00.0
FRU *e*SS SS 19 06 03.0 -2.8
FRU pmax pmax
comp=E,6μm,11.0s
AAK Ala-Archa 86.71 313 P **P 18 49 50.7 +0.5**
comp=E,30nm,0.7s,baz=121,slow=5.2,SNR=17
AAK Ala-Archa 86.71 313 *c i*P **P 18 49 47.3 -2.9**
AAK pmax pmax
comp=Z,121nm,1.0s
AAK Ala-Archa 86.71 313 *e*P **P 18 49 51.0 +0.8**
AAK LR LR
comp=Z,5μm,21.0s
BBB Bella Bella 87.12 37 P **P 18 49 53.3 +1.6**
comp=Z,23nm,0.9s,baz=292,slow=5.2,SNR=7.9
EKS2 Erkin-Say 87.23 313 *e*P **P 18 49 53.3 +0.6**
EKS2 Erkin-Say 87.23 313 *e*P **P 18 49 53.3 +0.6**
EKS2 LR LR
comp=Z,4μm,20.0s
BTLS Baital 87.49 316 *e*P **P 18 49 51.5 -2.3**
comp=Z,104nm,1.3s
BTLS *i* PP **PP 18 53 16.5 -2.6**
BTLS *e*S **SKSac 19 00 14.8 -3.0**
BHJ Bhuj 87.59 294 *e*P **P 18 49 54.6 -0.1**
BHJ IAmb IAmb 18 49 57.8
comp=Z,140nm,1.0s
DLBC Dease Lake 87.63 31 P **P 18 49 55.4 +1.2**
comp=Z,38nm,0.9s,baz=268,slow=5.7,SNR=23
DLBC Dease Lake 87.63 31 *e*P **P 18 49 53.8 -0.4**
NRIK Noril'sk 87.68 341 P **P 18 49 51.9 -2.2**
comp=Z,120nm,1.0s,baz=111,slow=4.8,SNR=45
NRIK LR LR 19 28 41.2
comp=Z,6μm,21.7s,baz=106,slow=35
KHMM Horse Mountain 87.78 49 *e*P **P 18 49 58.1 +2.7**
HOPS Hopland Field 87.97 51 *e*P **P 18 49 58.7 +2.6**
L02D Cave Junction, 88.10 47 P **P 18 49 58.3 +1.6**
baz=260,SNR=16
M02C Callahan 88.53 48 P **P 18 49 59.3 +0.4**
baz=261,SNR=46
I03D Drain, OR 88.55 46 P **P 18 49 59.6 +0.8**
baz=260,SNR=5.9
WDC Whiskeytown Da 88.63 49 *e*P **P 18 49 59.9 +0.7**
WDC Whiskeytown Da 88.63 49 *e*P **P 18 49 59.9 +0.7**
HUMO Hull Mountain 88.65 47 *e*P **P 18 49 58.4 -0.9**
YBH Yreka Blue Hor 88.69 48 P **P 18 50 01.1 +1.5**
comp=Z,46nm,0.9s,baz=165,slow=3.4,SNR=26
YBH PKKPbc **PKKPbc 19 07 41.9 +0.3**
comp=Z,1.6nm,0.6s,baz=47,slow=8.1,SNR=6.1
YBH Yreka Blue Hor 88.69 48 *e*P **P 18 50 00.1 +0.5**
YBH Yreka Blue Hor 88.69 48 *e*P **P 18 50 00.1 +0.5**
YBH PKKPbc **PKKPbc 19 07 41.9 +0.3**
COR Corvallis 88.73 45 *e*P **P 18 50 02.2 +2.6**
COR Corvallis 88.73 45 *e*P **P 18 50 02.2 +2.6**
F03A Seaside 88.78 44 *e*P **P 18 50 02.2 +2.4**
NLWA Neilton Lookou 88.82 42 *e*P **P 18 50 01.8 +1.8**
NLWA LR LR
comp=Z,41μm,22.0s
G03D McMinnville, O 88.86 44 P **P 18 50 01.2 +1.0**
baz=260,SNR=8.2
E03A Lebam 88.88 43 *e*P **P 18 50 00.4 +0.1**
SAO San Andreas Ge 88.90 53 *e*P **P 18 50 02.2 +1.6**
SAO San Andreas Ge 88.90 53 *e*P **P 18 50 02.2 +1.6**
INK Inuvik 89.05 21 P **P 18 50 00.4 -0.2**
comp=Z,62nm,0.9s,baz=220,slow=4.2,SNR=55
INK PKKP **PKKPdf 19 07 36.1 -0.4**
comp=Z,11nm,0.8s,baz=72,slow=6.1,SNR=18
INK Inuvik 89.05 21 *e*P **P 18 49 58.9 -1.7**
INK Inuvik 89.05 21 *e*P **P 18 49 58.9 -1.7**
INK PKKP **PKKPdf 19 07 36.1 -0.4**
O03D Paynes Creek 89.14 50 P **P 18 50 02.3 +0.5**
baz=261,SNR=33
I04A Tendick Farm, 89.23 46 P **P 18 50 03.4 +1.4**
baz=261,SNR=12
ORV Oroville 89.26 50 *e*P **P 18 50 04.1 +1.9**
ORV Oroville 89.26 50 *e*P **P 18 50 04.1 +1.9**
BRZS Berezniki 89.32 320 *i* P **P 18 50 01.0 -1.3**
comp=Z,26nm,0.9s
BRZS *i* PP **PP 18 53 30.4 -3.2**
BRZS *e*S **SKSac 19 00 27.0 -1.5**
BRZS *i* SS **SS 19 06 42.5 -1.6**
BRZS LRM MLR 19 31 10.2
comp=Z,432nm,19.8s
PGC Sidney 89.32 41 *e*P **P 18 50 03.3 +1.1**
M04C Macdoel 89.34 48 P **P 18 50 04.0 +1.3**
baz=261
K04D Chiloquin, OR 89.53 47 P **P 18 50 04.1 +0.5**
baz=261
H04A Detroit Lake 89.53 45 *e*P **P 18 50 02.5 -1.0**
F04A Amboy 89.56 44 *e*P **P 18 50 02.9 -0.6**
AFDM Forest Hills D 89.58 51 *e*P **P 18 50 03.8 -0.1**
KKAR Karatay Array 89.68 313 *e*P **P 18 50 05.0 +0.9**
KKAR Karatay Array 89.68 313 *e*P **P 18 50 05.0 +0.9**
A04D Lummi Island 89.82 41 P **P 18 50 05.8 +1.2**
baz=261,SNR=8.7
SMMC Simmler 89.86 55 P **P 18 50 05.8 +0.5**
baz=262
IUG Iuzhnay 89.89 312 *i* P **P 18 50 04.7 -0.5**
IUG *e*S **SKSac 19 00 31.7 -0.8**
IUG LR LR 19 31 34.0
comp=Z,1μm,20.4s
CMB Columbia Colle 89.91 52 *e*P **P 18 50 05.1 -0.3**
CMB Columbia Colle 89.91 52 *e*P **P 18 50 05.1 -0.3**
PKM Mcpherson Peak 89.96 55 P **P 18 50 06.5 +0.6**
baz=263
SBC Santa Barbara 89.98 56 P **P 18 50 07.2 +1.5**
baz=263
SNCC San Nicolas Is 89.99 57 P **P 18 50 06.5 +0.7**
baz=263,SNR=7.0
SNCC San Nicolas Is 89.99 57 *e*P **P 18 50 07.6 +1.8**
SCZ2 Santa Cruz Isl 89.99 56 P **P 18 50 06.5 +0.7**
baz=263
J05D Fort Rock, OR 90.00 47 P **P 18 50 05.9 +0.1**
baz=262,SNR=41
D05A Enumclaw 90.05 43 *e*P **P 18 50 07.6 +1.9**
I05D Terrebonne, OR 90.08 46 P **P 18 50 05.9 -0.1**
baz=262
LON Longmire 90.11 43 *e*P **P 18 50 05.7 -0.4**
LON Longmire 90.11 43 *e*P **P 18 50 05.7 -0.4**
VFP Flag Point 90.13 45 P **P 18 50 07.0 +0.6**
B05A Bryant 90.15 42 P **P 18 50 06.8 +0.6**
baz=261,SNR=13
CMW Cultus Mountai 90.16 41 P **P 18 50 07.1 +0.7**
K05A Summer Lake 90.17 47 *e*P **P 18 50 06.5 -0.2**
G05D Wamic, OR 90.22 45 P **P 18 50 06.7 0.0**
baz=262,SNR=7.7
CROR Criterion Ridg 90.42 45 P **P 18 50 06.2 -1.4**
BLG Laguna Peak, P 90.47 56 P **P 18 50 08.2 +0.2**
baz=263
MOD Modoc Plateau 90.49 48 *e*P **P 18 50 08.3 +0.2**
B06A Marblemount 90.59 41 *e*P **P 18 50 09.8 +1.6**
RCTC Rector, Farmer 90.59 54 P **P 18 50 08.4 -0.2**
baz=263,SNR=5.5
VES Vestal, Richgr 90.67 54 P **P 18 50 09.5 +0.6**
baz=263
G06A Carlson Farm, 90.70 45 *e*P **P 18 50 10.1 +1.1**
WAKR Walker 90.71 52 *e*P **P 18 50 09.3 0.0**
SCI2 San Clemente I 90.77 57 P **P 18 50 10.1 +0.7**
baz=263,SNR=5.8
ARVC Arvin 90.79 55 P **P 18 50 09.5 0.0**
baz=263,SNR=7.8
OSI Osito Audit: C 90.81 55 P **P 18 50 10.9 +1.2**
baz=263,SNR=8.4
OSI Osito Audit: C 90.81 55 *e*P **P 18 50 11.3 +1.6**
PAHR Pah Rah Range 90.90 50 *e*P **P 18 50 10.2 +0.1**
CIS Catalina Islan 90.93 57 P **P 18 50 10.8 +0.6**
baz=263,SNR=14
MLAC Mammoth, Mammo 91.08 52 P **P 18 50 12.2 +1.1**
baz=263
DECC Green Verdugo 91.09 56 P **P 18 50 11.8 +0.8**
baz=263,SNR=14

ISA Isabella, Lake 91.14 54 P **P 18 50 12.2 +1.0**
baz=263,SNR=7.5
ISA Isabella, Lake 91.14 54 *e*P **P 18 50 11.2 0.0**
ISA Isabella, Lake 91.14 54 *e*P **P 18 50 11.2 0.0**
PASC Pasadena Art C 91.20 56 *e*P **P 18 50 11.8 +0.3**
BVAR Borovoye Array 91.22 323 P **P 18 50 09.7 -1.4**
comp=Z,52nm,0.9s,baz=105,slow=5.0,SNR=99
BRVK Borovoye 91.29 323 *c i*P **P 18 50 09.3 -2.1**
BRVK pmax pmax
comp=Z,89nm,1.0s
BRVK Borovoye 91.29 323 *e*P **P 18 50 08.7 -2.7**
BRVK LR LR
comp=Z,8μm,22.0s
MWC Mount Wilson 91.32 56 *e*P **P 18 50 12.7 +0.5**
MWC Mount Wilson 91.32 56 *e*P **P 18 50 12.7 +0.5**
E07A Sunnyside 91.41 43 *e*P **P 18 50 14.4 +2.2**
EDW2 Edwards Air Fo 91.44 55 P **P 18 50 13.0 +0.4**
baz=264,SNR=47
TIN Tinemaha, Big 91.49 53 P **P 18 50 13.8 +1.0**
baz=264,SNR=5.5
NVAR Mina Array Bea 91.59 52 P **P 18 50 13.6 +0.2**
comp=Z,217nm,1.0s,baz=253,slow=6.6,SNR=27
NVAR PKKP **PKKPbc 19 07 34.9 +0.5**
comp=Z,2.5nm,0.5s,baz=110,slow=3.5,SNR=4.2
NVAR LR LR 19 27 16.7
comp=Z,11μm,18.9s,baz=280,slow=33
HAWA Hanford 91.61 44 *e*P **P 18 50 13.1 0.0**
HAWA LR LR
comp=Z,37μm,22.0s
BFSC Mount Baldy Ra 91.65 56 P **P 18 50 14.1 +0.5**
baz=264,SNR=38
LRMC Laurel Mtn Rad 91.76 55 P **P 18 50 14.7 +0.5**
baz=264,SNR=9.2
WVOR Wild Horse Val 91.78 48 *e*P **P 18 50 13.2 -0.9**
WVOR Wild Horse Val 91.78 48 *e*P **P 18 50 13.2 -0.9**
WVOR LR LR
comp=Z,32μm,22.0s
G08A Pilot Rock 91.88 45 *e*P **P 18 50 14.3 -0.2**
DAC Darwin (Calif) 91.92 54 *e*P **P 18 50 14.7 -0.2**
DAC Darwin (Calif) 91.92 54 *e*P **P 18 50 14.7 -0.2**
MURC Murrieta 91.96 57 P **P 18 50 15.7 +0.7**
baz=264,SNR=15
109C Camp Elliot, M 91.97 57 P **P 18 50 15.9 +0.9**
baz=264,SNR=25
B08A Colville Reser 91.99 42 *e*P **P 18 50 15.1 +0.3**
ZRNK Zerenda 92.04 323 *e*P **P 18 50 11.7 -3.2**
ZRNK Zerenda 92.04 323 *e*P **P 18 50 11.7 -3.2**
D08A Wollman Farm, 92.11 43 *e*P **P 18 50 16.1 +0.8**
GRAC Grapevine Rang 92.17 53 P **P 18 50 15.8 -0.1**
baz=264
RRX Edison Barstow 92.26 55 P **P 18 50 17.0 +0.7**
baz=264
BBRC Big Bear Solar 92.26 56 P **P 18 50 15.9 -0.7**
baz=264
BAR Barrett 92.31 58 *e*P **P 18 50 17.2 +0.6**
GSC Goldstone, Bar 92.45 55 P **P 18 50 18.0 +0.6**
baz=264,SNR=26
GSC Goldstone, Bar 92.45 55 *e*P **P 18 50 17.1 -0.2**
GSC Goldstone, Bar 92.45 55 *e*P **P 18 50 17.1 -0.2**
FURC Furnace Creek, 92.52 54 P **P 18 50 18.4 +1.0**
baz=264,SNR=7.4
MONP2 Monument Peak 92.54 57 P **P 18 50 18.7 +0.8**
baz=264,SNR=31
PFO Pinyon Flats O 92.58 57 P **P 18 50 18.5 +0.5**
comp=Z,86nm,0.9s,baz=256,slow=3.6,SNR=28
PFO Pinyon Flats O 92.58 57 *e*P **P 18 50 18.4 +0.4**
PFO LR LR
comp=Z,20μm,20.0s
TPFO Pinon Flats 92.58 57 P **P 18 50 18.0 0.0**
baz=264
E09A Wood Farm, Sta 92.58 44 *e*P **P 18 50 21.1 +3.5**
C09A Chrisman Ranch 92.63 42 *e*P **P 18 50 17.8 0.0**
IKP In-Ko-Pah, Jac 92.78 58 P **P 18 50 19.9 +1.0**
baz=265,SNR=22
RPN Rapa Nui 92.79 117 PFAKE 18 50 30.0 +11
RPN LR LR
comp=Z,2μm,21.0s
HEC Hector,Ludlow 92.79 55 P **P 18 50 19.6 +0.7**
baz=265,SNR=26
SHOC Shoshone, Teco 92.94 54 P **P 18 50 20.0 +0.5**
baz=265,SNR=6.1
BELC Belle Mtn. Jos 92.99 56 P **P 18 50 20.2 +0.3**
baz=265,SNR=49
BMO Blue Mountains 93.00 45 *e*P **P 18 50 18.7 -0.9**
BMO Blue Mountains 93.00 45 *e*P **P 18 50 18.7 -0.9**
BMO LR LR
comp=Z,23μm,20.0s
SYO Syowa Base 93.02 199 ‖ *e*X **P 18 50 15.0 -4.0**
SYO Syowa Base 93.02 199 ‖ *i*PcP **P 18 50 18.0 -1.0**
TPNV Topopah Spring 93.06 53 P **P 18 50 20.9 +0.7**
baz=265
TPNV Topopah Spring 93.06 53 *e*P **P 18 50 23.0 +2.8**
TPNV Topopah Spring 93.06 53 *e*P **P 18 50 23.0 +2.8**
SWSC Sam W. Stewart 93.06 57 P **P 18 50 20.7 +0.6**
baz=265,SNR=17
F10A Beach Ranch, E 93.16 44 *e*P **P 18 50 19.2 -1.1**
TUQ Turquoise Moun 93.18 55 P **P 18 50 21.5 +0.8**
baz=265,SNR=6.7
GMRC Granite Mounta 93.34 56 P **P 18 50 21.7 +0.2**
baz=265,SNR=54
BC3 Big Chuckawall 93.41 57 P **P 18 50 22.3 +0.5**
baz=265,SNR=64
NEW Newport 93.44 42 P **P 18 50 21.1 -0.4**
comp=Z,31nm,0.8s,baz=254,slow=2.8,SNR=15
NEW Newport 93.44 42 P **P 18 50 21.8 +0.3**
baz=265
NEW Newport 93.44 42 *e*P **P 18 50 20.5 -1.0**
NEW MLR MLR
comp=Z,50μm,20.0s
NEW Newport 93.44 42 *e*P **P 18 50 20.4 -1.0**
NEW LR LR
comp=Z,50μm,20.0s
R11A Troy Canyon, C 93.70 52 P **P 18 50 23.5 +0.3**
baz=265,SNR=107
R11A Troy Canyon, C 93.70 52 *e*P **P 18 50 23.2 +0.1**
IRM Iron Mountain 93.71 56 P **P 18 50 23.4 +0.3**
baz=265,SNR=85
GLA Glamis 93.89 57 P **P 18 50 24.6 +0.7**
baz=265,SNR=12
GLA Glamis 93.89 57 *e*P **P 18 50 27.2 +3.3**
GLA Glamis 93.89 57 *e*P **P 18 50 27.2 +3.3**
SHPR Sheep Range 93.89 54 *e*P **P 18 50 24.3 +0.3**
MFID Camas Ranch 93.93 47 *e*P **P 18 50 25.4 +1.4**
ELK Elko 94.16 50 *e*P **P 18 50 25.1 -0.2**
ELK Elko 94.16 50 *e*P **P 18 50 25.1 -0.2**
Y12C Blythe 94.19 57 P **P 18 50 25.8 +0.5**
baz=266,SNR=17
Y12C Blythe 94.19 57 *e*P **P 18 50 26.0 +0.8**
MRIV Mauritius Mete 94.39 249 *e*P **P 18 50 28.1 +1.7**
PDMCI Parker Dam,Lak 94.55 56 P **P 18 50 27.2 +0.4**
baz=266,SNR=27
113A Mohawk Valley, 94.75 58 *e*P **P 18 50 30.6 +2.8**
W13A Hualapai Mount 94.82 55 *e*P **P 18 50 28.8 +0.4**
HLID Hailey 94.97 47 P **P 18 50 29.4 +0.6**
baz=266
HLID Hailey 94.97 47 *e*P **P 18 50 28.3 -0.6**
HLID LR LR
comp=Z,46μm,20.0s
BSMT Bassoo Peak 94.97 43 *e*P **P 18 50 29.0 +0.2**
PSUT Pine Spring 95.07 52 *e*P **P 18 50 32.0 +2.6**
LCMT Little Creek M 95.46 53 *e*P **P 18 50 32.4 +1.2**
Y14A Wickenburg 95.47 57 *e*P **P 18 50 31.6 +0.4**
SWMT Swartz Lake 95.49 43 *e*P **P 18 50 33.9 +2.9**
MSO Missoula 95.49 44 P **P 18 50 32.1 +1.0**
baz=267
214A Organ Pipe Nat 95.50 59 P **P 18 50 31.9 +0.6**
baz=266
214A Organ Pipe Nat 95.50 59 *e*P **P 18 50 33.8 +2.5**
comp=Z,129nm,1.1s
WALA Waterton Lakes 95.62 41 *e*P **P 18 50 33.0 +1.4**
YKA Yellowknife Ar 95.78 28 P **P 18 50 32.9 +1.1**
comp=Z,15nm,0.7s,baz=266,slow=4.5,SNR=92
YKA PKiKP **PKiKP 18 55 13.1 +2.1**
comp=Z,1.2nm,0.6s,baz=269,slow=1.5,SNR=5.5
YKA PKKP **PKKPbc 19 07 19.3 -4.6**
comp=Z,9.2nm,0.8s,baz=89,slow=2.8,SNR=20
YKA PKPPKP **P'P'df 19 15 29.9 -3.7**
comp=Z,0.5nm,0.8s,baz=78,slow=2.9,SNR=4.4
KNB Kanab 95.80 53 *e*P **P 18 50 35.8 +3.0**
KNB Kanab 95.80 53 *e*P **P 18 50 35.8 +3.0**
RER Riviere de l'E 95.88 248 PFAKE 18 50 40.0 +6.6
RER LR LR
comp=Z,6μm,19.0s
CHMT Chamberlain Mo 95.97 44 *e*P **P 18 50 35.9 +2.6**
DUG Dugway, Tooele 95.97 50 PFAKE 18 50 50.0 +17

DUG LR LR
comp=Z,12µm,21.0s
HVU Hansel Valley 96.08 49 *eP* **P 18 50 34.3 +0.4**
HVU Hansel Valley 96.08 49 *eP* **P 18 50 34.3 +0.4**
MCMT McKenzie Canyo 96.16 46 *eP* **P 18 50 36.6 +2.2**
MTPU Mount Pierson 96.36 52 *eP* **P 18 50 38.1 +2.6**
DLMT Dillon 96.36 45 *eP* **P 18 50 37.0 +1.9**
MSU Marysvale 96.39 52 *eP* **P 18 50 31.2 -4.2**
MSU Marysvale 96.39 52 *eP* **P 18 50 31.2 -4.2**
LRM Limekiln Ridge 96.48 45 *eP* **P 18 50 36.9 +1.2**
NLU North Lily Min 96.53 51 *eP* **P 18 50 36.7 +0.6**
WUAZ Wupatki 96.89 55 P **P 18 50 37.0 -0.7**
baz=267,SNR=7.5
WUAZ Wupatki 96.89 55 *eP* **P 18 50 40.0 +2.2**
WUAZ LR LR
comp=Z,15µm,20.0s
HSIG 96.94 62 *eP* **P 18 50 40.5 +2.7**
HWUT Hardware Ranch 96.98 49 *eP* **P 18 50 39.0 +1.0**
HWUT LR LR
comp=Z,15µm,21.0s
JLU Jordanelle 97.03 50 *eP* **P 18 50 41.5 +3.1**
BOZ Bozeman (W) 97.05 45 P Pdif 18 50 38.7 +0.4
baz=268
BOZ Bozeman (W) 97.05 45 *eP* Pdif 18 50 38.5 +0.2
BOZ Bozeman (W) 97.05 45 *eP* Pdif 18 50 38.5 +0.2
BOZ LR LR
comp=Z,15µm,19.0s
TCUT Toone Canyon 97.08 49 *eP* Pdif 18 50 40.3 +1.6
SVE Sverdlovsk 97.12 326 *eP* **P 18 50 37.1 -0.9**
SVE *eS* **SKSac 19 01 06.1 -5.1**
SVE *e* 19 03 22.4
SVE *e* 19 08 33.7
SVE pmax pmax
comp=Z,37nm,1.4s
QLMT Earthquake Lak 97.17 46 *eP* Pdif 18 50 40.6 +1.6
TMUT Trail Mountain 97.17 51 *eP* Pdif 18 50 39.7 +0.5
Q16A Castle Valley 97.19 52 *eP* Pdif 18 50 42.0 +2.8
LPIG La Paz 97.23 67 P Pdif 18 50 40.6 +1.3
comp=Z,39nm,0.3s,baz=358,slow=9.3,SNR=4.0
TUC Tucson 97.24 58 P Pdif 18 50 40.1 +0.7
baz=267
TUC Tucson 97.24 58 *eP* Pdif 18 50 42.7 +3.3
TUC Tucson 97.24 58 *eP* Pdif 18 50 42.7 +3.3
TUC LR LR
comp=Z,21µm,20.0s
AHID Auburn Hatcher 97.36 48 *eP* Pdif 18 50 41.2 +1.4
AHID LR LR
comp=Z,26µm,22.0s
TPAW Teton Pass 97.48 47 *eP* Pdif 18 50 41.8 +1.3
ABKAR Akbulak array 97.49 319 *eP* **P 18 50 38.6 -1.2**
YMR Madison River 97.50 46 *eP* Pdif 18 50 41.1 +0.7
IMW Indian Meadow 97.50 47 *eP* Pdif 18 50 41.9 +1.4
P17A Butcher Ranch, 97.54 51 *eP* Pdif 18 50 42.6 +2.0
SLBS Sierra La Lagu 97.54 67 *eP* Pdif 18 50 44.1 +3.2
REDW Red Top Meadow 97.55 47 *eP* Pdif 18 50 41.9 +1.2
YFT Old Faithful 97.59 46 *eP* Pdif 18 50 42.9 +2.0
SNOW Snow King Moun 97.63 47 *eP* Pdif 18 50 42.4 +1.4
MOOW Moose Ponds 97.64 47 *eP* **P 18 50 41.0 0.0**
FLWY Flagg Ranch 97.68 46 *eP* Pdif 18 50 42.9 +1.7
WSAR Wadi Sarin 97.68 293 P **P 18 50 41.0 -0.3**
comp=Z,15nm,1.0s,baz=144,slow=6.4,SNR=7.9
LOHW Long Hollow 97.74 47 *eP* Pdif 18 50 42.6 +1.1
H17A Grant Village 97.77 46 P Pdif 18 50 42.6 +0.9
baz=269
H17A Grant Village 97.77 46 *eP* Pdif 18 50 43.5 +1.9
LKWY Lake 97.90 46 *eP* Pdif 18 50 45.4 +3.2
LKWY Lake 97.90 46 *eP* Pdif 18 50 45.4 +3.2
LKWY LR LR
comp=Z,31µm,19.0s
X18A Snowflake 98.03 56 *eP* Pdif 18 50 43.9 +1.0
W18A Petrified Fore 98.22 55 P Pdif 18 50 43.9 +0.1
baz=268
W18A Petrified Fore 98.22 55 *eP* **P 18 50 42.5 -1.2**
comp=Z,51nm,0.8s
ARU Arti 98.27 326 LR LR 19 36 13.9
comp=Z,4µm,21.3s,baz=82,slow=36
ARU Arti 98.27 326 *c iP* **P 18 50 41.7 -1.5**
ARU 18 54 42.9
ARU S **SKSac 19 01 15.2 -1.9**
ARU SP **SP 19 03 32.3 +1.1**
ARU PS **PS 19 03 43.7 +6.1**
ARU SS **SS 19 08 55.1 +3.7**
ARU pmax pmax
comp=Z,48nm,1.0s
ARU Arti 98.27 326 *eP* **P 18 50 40.8 -2.4**
EGMT Eagleton 98.36 42 PFAKE 18 51 00.0 +16
EGMT LR LR
comp=Z,44µm,22.0s
319A Douglas 98.48 59 *eP* Pdif 18 50 49.2 +4.3
BW06 Boulder Array 98.49 48 P **P 18 50 44.4 -0.4**
baz=270
BW06 Boulder Array 98.49 48 *eP* **P 18 50 43.8 -1.1**
BW06 LR LR
comp=Z,27µm,22.0s
PDAR Pinedale Array 98.49 48 P **P 18 50 44.5 -0.4**
comp=Z,17nm,0.8s,baz=230,slow=2.1,SNR=20
PDAR PKKP **PKKPbc 19 07 16.2 +0.1**
comp=Z,1.9nm,0.6s,baz=96,slow=5.3,SNR=12
PDAR PKPPKP **P'P'df 19 15 33.0 +2.7**
comp=Z,0.3nm,0.4s,baz=91,slow=5.9,SNR=4.5
PDAR LR LR 19 28 33.7
comp=Z,17µm,21.9s,baz=276,slow=31
GEYT Alibeck 98.67 307 P Pdif 18 50 46.0 +0.5
comp=Z,5.6nm,0.7s,baz=79,slow=3.2,SNR=14
GEYT PP **PP 18 54 48.4 +1.4**
comp=Z,15nm,0.9s,baz=108,slow=4.8,SNR=3.5
GEYT PKKPbc **PKKPbc 19 07 15.2 0.0**
comp=Z,1.4nm,0.7s,baz=267,slow=3.0,SNR=4.2
GEYT LR LR 19 37 12.0
comp=Z,3µm,20.8s,baz=65,slow=36
RLMT Red Lodge 98.71 45 *eP* Pdif 18 50 47.4 +1.6
RLMT LR LR
comp=Z,12µm,19.0s
AKTO Aktyubinsk 98.73 320 LR LR 19 35 45.5
comp=Z,2µm,21.9s,slow=36
PV01 Paradox Valley 99.21 52 *eP* **Pdif 18 50 50.2 +2.0**
MVCO Mesa Verde 99.26 53 P **Pdif 18 50 49.3 +0.9**
baz=269,SNR=7.1
MVCO Mesa Verde 99.26 53 *eP* **Pdif 18 50 51.0 +2.5**
MVCO LR LR
comp=Z,16µm,20.0s
NVL N'lazarevskaya 99.37 192 *eP* **Pdif 18 50 48.4 +0.5**
NVL *e**PP **pP 18 51 03.1 +1.2**
NVL *e* 18 54 56.3
NVL *eS* **SKSac 19 01 23.1 +0.9**
NVL *ePS* **PS 19 03 44.7 -4.0**
NVL MLR MLR
comp=Z,21µm,21.0s
O20A White River Ci 99.47 50 P **Pdif 18 50 50.7 +1.4**
baz=270,SNR=11
O20A White River Ci 99.47 50 *eP* **Pdif 18 50 51.3 +2.1**
121A Cookes Peak, D 99.78 58 P **Pdif 18 50 51.6 +0.8**
baz=269
121A Cookes Peak, D 99.78 58 *e*Pdif **Pdif 18 50 51.8 +1.0**
comp=Z,19nm,1.1s
LAZ Ladron 100.34 56 *e*Pdif **Pdif 18 50 55.8 +2.5**
SMCO Snowmass 100.46 51 *e*Pdif **Pdif 18 50 54.9 +1.0**
S22A 4UR Ranch, Cre 100.59 53 P **Pdif 18 50 55.4 +1.0**
baz=270,SNR=9.3
S22A 4UR Ranch, Cre 100.59 53 *e*Pdif **Pdif 18 50 57.3 +2.9**
K22A Casper 100.73 48 P **Pdif 18 50 55.6 +0.8**
baz=272
K22A Casper 100.73 48 *e*Pdif **Pdif 18 50 56.0 +1.2**
BNM Barren Site 100.77 57 *e*Pdif **Pdif 18 50 57.1 +1.9**
LAO LASA Array 100.80 44 P **Pdif 18 50 56.0 +1.2**
baz=273
LAO LASA Array 100.80 44 PFAKE 18 51 10.0 +15
LAO LR LR
comp=Z,26µm,22.0s
ANMO Albuquerque 100.91 56 P **Pdif 18 50 56.3 +0.6**
comp=Z,7.8nm,1.0s,baz=270,slow=5.1,SNR=12
ANMO PKKPbc **PKKPbc 19 07 09.2 +0.3**
comp=Z,2.1nm,0.8s,baz=110,slow=4.4,SNR=6.9
ANMO Albuquerque 100.91 56 P **Pdif 18 50 56.2 +0.5**
baz=270
ANMO Albuquerque 100.91 56 *eP* **Pdif 18 50 56.5 +0.7**
ANMO Albuquerque 100.91 56 *e*Pdif **Pdif 18 50 56.5 +0.7**
ANMO PKKPbc **PKKPbc 19 07 09.2 +0.3**
ANMO LR LR
comp=Z,11µm,20.0s
SNAA Sanae 100.99 187 P **Pdif 18 50 56.1 +0.9**
SNAA Sanae 100.99 187 *eP* **Pdif 18 50 53.6 -1.6**
SNAA Sanae 100.99 187 *e*Pdif **Pdif 18 50 53.5 -1.6**
RES Resolute Bay 101.21 15 P **Pdif 18 50 57.6 +1.7**
comp=Z,12nm,0.8s,baz=326,slow=4.3,SNR=18
RES PKKPbc **PKKPbc 19 07 06.7 -2.3**
comp=Z,7.0nm,0.7s,baz=125,slow=3.6,SNR=13
RES Resolute Bay 101.21 15 *eP* **Pdif 18 50 57.4 +1.5**
N23A Red Feather La 101.22 50 P **Pdif 18 50 57.8 +0.7**
baz=272,SNR=11
N23A Red Feather La 101.22 50 *e*Pdif **Pdif 18 50 59.1 +2.1**
ISCO Idaho Springs 101.50 51 P **Pdif 18 50 59.0 +0.6**
baz=272,SNR=6.6
ISCO Idaho Springs 101.50 51 PFAKE 18 51 10.0 +12
ISCO LR LR
comp=Z,14µm,20.0s
SDCO Great Sand Dun 101.64 53 P **Pdif 18 50 59.5 +0.4**
baz=271
SDCO Great Sand Dun 101.64 53 *e*Pdif **Pdif 18 51 03.0 +4.0**
SDCO LR LR
comp=Z,22µm,20.0s
MNTX Cornudas Mount 101.82 59 P **Pdif 18 50 60.0 +0.3**
baz=270
MNTX Cornudas Mount 101.82 59 *e*Pdif **Pdif 18 51 02.2 +2.6**
Q24A Divide 101.89 52 P **Pdif 18 51 00.4 +0.2**
baz=272
DGMT Dagmar 102.06 42 P **Pdif 18 51 00.2 -0.1**
baz=274
DGMT Dagmar 102.06 42 PFAKE 18 51 10.0 +10
DGMT LR LR
comp=Z,37µm,20.0s
VNA3 Neumayer Olymp 102.13 185 P **Pdif 18 51 01.9 +1.7**
VNA2 Neumayer--Watz 102.21 186 P **Pdif 18 51 02.0 +1.4**
baz=141,slow=4.5
RSSD Black Hills 102.47 46 P **Pdif 18 51 02.7 +0.1**
baz=274
RSSD Black Hills 102.47 46 *eP* **Pdif 18 51 03.5 +0.9**
RSSD Black Hills 102.47 46 *e*Pdif **Pdif 18 51 03.5 +0.9**
T25A Trinidad 102.53 53 P **Pdif 18 51 03.2 +0.3**
baz=272
VNA1 Neumayer--Stat 102.56 186 P **Pdif 18 51 03.7 +1.7**
I25A Rochford 102.70 46 P **Pdif 18 51 03.1 -0.4**
baz=274
D25A Fairfield 102.75 43 P **Pdif 18 51 03.2 -0.3**
baz=275
H25A Fruitdale 102.75 46 P **Pdif 18 51 03.2 -0.4**
baz=274
F25A Bowman 102.76 44 P **Pdif 18 51 03.2 -0.3**
baz=274
B25A Knox Farm, Ray 102.76 42 P **Pdif 18 51 03.1 -0.4**
baz=275
G25A Newell 102.84 45 P **Pdif 18 51 03.7 -0.2**
baz=274
F26A Lodgepole 103.31 44 P **Pdif 18 51 06.3 +0.3**
baz=275
TXAR Lajitas Array 103.31 61 Pdiff **Pdif 18 51 09.6 +3.1**
comp=Z,1.7nm,1.0s,baz=64,slow=2.9,SNR=11
TXAR PKiKP **PKiKP 18 55 26.2 +0.6**
comp=Z,4.2nm,1.0s,baz=268,slow=4.8,SNR=4.7
TXAR PKKPbc **PKKPbc 19 07 00.1 -1.4**
comp=Z,9.7nm,0.7s,baz=111,slow=3.3,SNR=35
TXAR PKPPKP **P'P'df 19 15 22.7 +0.8**
comp=Z,0.5nm,0.8s,baz=119,slow=4.4,SNR=3.9
H26A Fairpoint 103.34 46 P **Pdif 18 51 06.4 +0.2**
baz=275
D26A Manning 103.36 43 P **Pdif 18 51 06.6 +0.4**
baz=276
G26A Maurine 103.41 45 P **Pdif 18 51 05.8 -0.7**
baz=275
A26A Wade Farm, Ken 103.44 41 P **Pdif 18 51 07.5 +1.1**
baz=276
C26A Wahner Farm, P 103.51 42 P **Pdif 18 51 07.4 +0.6**
baz=276
PMSA Palmer Station 103.81 164 PFAKE 18 51 20.0 +12
PMSA LR LR
comp=Z,8µm,21.0s
H27A Howes 103.84 46 P **Pdif 18 51 07.8 -0.6**
baz=275
G27A Dupree 103.87 45 P **Pdif 18 51 08.6 +0.1**
baz=276
MSTX Muleshoe 103.97 57 P **Pdif 18 51 10.2 +0.9**
baz=272
D27A Center 103.97 43 P **Pdif 18 51 10.1 +1.2**
baz=276
E27A Carson 104.02 44 P **Pdif 18 51 09.6 +0.5**
baz=276
OGNE Ogallala 104.17 49 PFAKE 18 51 20.0 +10
OGNE LR LR
comp=Z,15µm,20.0s
HOPEN Hopen 104.50 349 *e* **Pdif 18 51 09.8 -0.7**
HOPEN *eP* **PP 18 55 32.5 +2.9**
I28A Midland 104.54 46 P **Pdif 18 51 12.6 +1.1**
baz=276
A28A Rude Farm, Bot 104.60 41 P **Pdif 18 51 12.9 +1.3**
baz=278
E28A Huff 104.60 44 P **Pdif 18 51 13.4 +1.7**
baz=277
D28A Regan 104.61 43 P **Pdif 18 51 14.1 +2.4**
baz=277
SPITS Spitsbergen Ar 104.79 352 PKKPbc PKKPbc 19 06 54.2 -4.3
comp=Z,1.1nm,0.4s,baz=188,slow=5.1,SNR=9.7
KBS Kingsbay 104.80 353 *eP* PP 18 55 35.4 +3.5
KBS Kingsbay 104.80 353 PFAKE 18 51 20.0 +8.1
KBS LR LR
comp=Z,5µm,22.0s
HSPB Hornsund (broa 105.78 351 *e*PP PP 18 55 41.0 +2.0
HSPB Hornsund (broa 105.78 351 *eP* **Pdif 18 51 20.5 +4.3**
HSPB *e* 18 55 45.0
HSPB *e*PS **PS 19 05 00.9 +4.5**
CBKS Cedar Bluff 106.11 51 PFAKE 18 55 40.0
CBKS LR LR
comp=Z,21µm,22.0s
LVZ Lovozero 106.50 340 PFAKE 18 55 40.0
LVZ LR LR
comp=Z,3µm,20.0s
JCT Junction City 106.63 60 *eP* **Pdif 18 51 25.5 +4.4**
JCT Junction City 106.63 60 *e*Pdif **Pdif 18 51 25.5 +4.4**
JCT LR LR
comp=Z,38µm,22.0s
TMCR Tamitsa 106.74 336 *i* P **Pdif 18 51 19.6 -1.1**
TMCR pmax pmax
comp=Z,19nm,0.9s
BJO Bjornoya 106.92 349 *e* **PP 18 55 51.2 +3.8**
APA Apatity 107.08 340 ‖ *iP* **Pdif 18 51 22.0 -0.2**
APA *i* 18 56 02.0
APA *i* 19 02 42.0
APA pmax pmax
comp=Z,18nm,1.0s
APA MLR MLR
comp=Z,14µm,22.0s
WMOK Wichita Mounta 107.22 56 PFAKE 18 55 40.0
WMOK LR LR
comp=Z,14µm,19.0s
KLMR Klimovskoe 107.25 332 *eP* **Pdif 18 51 20.6 -2.5**
KLMR pmax pmax
comp=Z,30nm,1.1s
ECSD EROS Data Cent 107.85 46 *e*Pdif **Pdif 18 51 28.8 +2.6**
ECSD LR LR
comp=Z,25µm,22.0s
KEV Kevo 107.99 343 PFAKE 18 55 40.0
KEV LR LR
comp=Z,6µm,22.0s
KSU1 Kansas State U 108.50 51 PFAKE 18 55 50.0
KSU1 LR LR
comp=Z,15µm,22.0s
ARCES ARCESS Array B 108.54 343 Pdiff **Pdif 18 51 29.6 +0.9**
comp=Z,4.1nm,0.9s,baz=71,slow=5.3,SNR=8.4
ARCES PKiKP **PKiKP 18 55 36.2 +2.2**
comp=Z,2.7nm,0.6s,baz=115,slow=1.1,SNR=11
ARE0 ARCESS Array S 108.54 343 *e* **Pdif 18 51 28.3 -0.4**
ARE0 IVMs_BB IVMs_BB 19 37 34.2
comp=Z,3µm,25.4s
TBLG Delisi 108.69 312 P **PP 18 56 03.7 +2.2**
GUDG Gudauri 108.77 313 P **PP 18 56 05.4 +3.1**
S35A Otter Creek Ra 108.91 52 P **PKiKP 18 55 35.2 -0.4**
baz=277
GNI Garni 108.92 310 PKiKP **PKiKP 18 55 38.2 +2.4**
comp=Z,3.1nm,0.6s,baz=140,slow=4.4,SNR=3.7
GNI Garni 108.92 310 PKiKP **PKiKP 18 55 38.2 +2.4**
GNI LR LR
comp=Z,2µm,19.0s
ZEI Tsey 109.14 313 *eP* **Pdif 18 51 30.7 -1.5**
ZEI pmax pmax
comp=Z,21nm,1.3s
DAG Danmarks Havn 109.24 358 *i* P **PKKPbc 19 06 41.7 -2.8**
comp=Z,7.9nm,1.1s
T36A Boggs Farm, Ca 109.33 53 P **PKiKP 18 55 36.0 -0.4**
baz=277
V36A Jenks 109.43 54 P **PKiKP 18 55 37.2 +0.5**
baz=277
ONI Oni 109.50 313 P **PP 18 56 09.9 +2.6**
N36A Muff Farm, Cla 109.51 49 P **PKiKP 18 55 36.1 -0.5**
baz=279
BGD Bogdanovka 109.61 312 P **PP 18 56 07.3 -1.2**
AKH Akhalkalaki 109.66 312 P **PP 18 56 11.6 +2.8**
KIV Kislovodsk 109.80 315 *i* P **Pdif 18 51 32.3 -2.6**
KIV *e* 18 56 07.3
KIV *e*PPP PPP 18 58 28.1
KIV *e* 19 02 07.3
KIV *e*PS **PS 19 05 33.1 -5.9**
KIV *e*SS SS 19 11 28.1 -2.4
KIV MLR MLR
comp=Z,3µm,21.0s
KIV Kislovodsk 109.80 315 PFAKE 18 55 50.0
KIV LR LR
comp=Z,3µm,22.0s
W37B Quinton 109.92 55 P **PKiKP 18 55 37.1 -0.6**
baz=277
R37A Teagarden Farm 109.99 52 P **PKiKP 18 55 36.5 -1.1**
baz=278
X37A Clayton 110.03 56 P **PKiKP 18 55 38.7 +0.9**
baz=277
V37A Hulbert 110.07 54 P **PKiKP 18 55 37.7 -0.1**
baz=277
S37A Fort Scott 110.07 52 P **PKiKP 18 55 38.2 +0.3**
baz=278
J37A Redenius Farm, 110.11 46 P **PKiKP 18 55 37.4 -0.3**
baz=281
LPSR Galich'ya Gora 110.14 324 *i* PKIKP **PKiKP 18 55 38.7 +1.3**
LPSR *e* 18 56 10.2
LPSR pmax pmax
comp=Z,10.0nm,1.2s
TRO Tromso 110.28 345 *e*PP PP 18 56 11.9 0.0
TRO IVMs_BB IVMs_BB 19 39 29.5
comp=Z,3µm,22.8s
VSR Storozhevoye 110.40 323 *i* PKIKP **PKiKP 18 55 37.1 -0.9**
VSR *e*SS SS 19 11 37.5 -0.3
VSR *e*SSS SSS 19 15 44.0
VSR pmax pmax
comp=Z,10.0nm,1.1s
EYMN Ely 110.51 41 PFAKE 18 55 50.0
EYMN LR LR
comp=Z,42µm,22.0s
T38A Diamond 110.59 53 P **PKiKP 18 55 38.2 -0.6**
baz=278
U38A Gravette 110.60 53 P **PKiKP 18 55 38.1 -0.8**
baz=278
SCIA State Center 110.62 48 PFAKE 18 55 50.0
SCIA LR LR
comp=Z,24µm,21.0s
OBN Obninsk 110.67 327 ‖ *iP*KIKP **PKiKP 18 55 37.8 -0.5**
OBN *i* 18 56 17.0
OBN *e* 19 02 52.6
OBN *i* PS **PS 19 05 42.6 -3.7**
OBN *i* SS SS 19 11 54.6 +14
OBN pmax pmax
comp=Z,22nm,1.6s
OBN MLR MLR
comp=Z,4µm,21.0s
OBN Obninsk 110.67 327 PFAKE 18 55 50.0
OBN LR LR
comp=Z,3µm,22.0s
P38A Dawn 110.78 50 P **PKiKP 18 55 37.3 -1.8**
baz=280
NATX Nacogdoches 110.93 58 PFAKE 18 55 50.0
NATX LR LR
comp=Z,17µm,21.0s
HHAR Hobbs 110.98 54 *e*Pdif **Pdif 18 51 48.2 +7.9**
W39A Magazine 111.25 55 P **PKiKP 18 55 39.0 -1.1**
baz=278
S39A Bolivar 111.26 52 P **PKiKP 18 55 38.2 -1.9**
baz=279
V39A Pettigrew 111.28 54 P **PKiKP 18 55 38.2 -2.0**
baz=278
R39A Chumby, Stover 111.38 51 P **PKiKP 18 55 39.0 -1.3**
baz=280
P39B Salisbury 111.40 50 P **PKiKP 18 55 39.4 -0.8**
baz=280
CMIG Matias Romero 111.51 74 PKKPbc PKKPbc 19 06 37.6 +2.1
comp=Z,5.0nm,0.7s,baz=28,slow=3.9,SNR=8.8
MIAR Mount Ida 111.51 55 PFAKE 18 55 50.0
MIAR LR LR
comp=Z,13µm,19.0s
U40A Yellville 111.83 53 P **PKiKP 18 55 40.2 -1.0**
baz=279
V40A Witts Springs 111.94 54 P **PKiKP 18 55 41.5 +0.1**
baz=279
T40A Mansfield 111.98 52 P **PKiKP 18 55 40.3 -1.2**
baz=279
SOC Sochi 111.98 315 *eP* **Pdif 18 51 34.0 -11**
SOC *e* 19 02 14.8
SOC *e*PS **PS 19 05 51.2 -7.7**
SOC *e*SS SS 19 12 00.2 +0.8
SOC MLR MLR
comp=Z,5µm,22.0s
Q40A Laux Farm, Aux 112.01 50 P **PKiKP 18 55 41.2 -0.2**
baz=280
W41B Gary Mavity, V 112.50 55 P **PKiKP 18 55 41.7 -0.8**
baz=279
COWI Conover 112.55 42 PFAKE 18 55 50.0
COWI LR LR
comp=Z,40µm,22.0s
JFWS Jewell Farm 112.56 46 PFAKE 18 55 50.0
JFWS LR LR
comp=Z,20µm,22.0s
T41A Mountain View 112.59 52 P **PKiKP 18 55 42.1 -0.5**
baz=280
LOF Lofoten 112.73 345 *e*PP PP 18 56 32.2 +2.7
LOF IVMs_BB IVMs_BB 19 40 37.7
comp=Z,3µm,23.5s
FINES FINESS Array B 112.87 336 Pdiff **Pdif 18 51 47.5 -0.5**
comp=Z,5.6nm,0.9s,baz=54,slow=3.3,SNR=15
FINES PKiKP **PKiKP 18 55 42.0 -0.4**
comp=Z,3.8nm,0.7s,baz=100,slow=4.5,SNR=5.1
FINES PKKPbc **PKKPbc 19 06 28.4 -3.9**
comp=Z,5.2nm,0.8s,baz=226,slow=2.3,SNR=12
SUMG Summit 113.09 4 *i* P **PKiKP 18 55 43.7 +0.6**
SUMG *i* 18 56 32.0
SUMG Summit 113.09 4 *i* P **PKKPbc 19 06 30.3 -2.0**
comp=Z,19nm,1.0s
SUMG *i* 19 06 38.6
SUMG Summit 113.09 4 *i* PKIKP **PKiKP 18 55 43.7 +0.6**
SUMG *i* 18 56 32.0
SUMG MLR MLR
comp=Z,14µm,28.0s
SUMG Summit 113.09 4 *e*PKPdf **PKiKP 18 55 43.5 +0.4**
V42A Cord 113.09 54 P **PKiKP 18 55 42.3 -1.3**
baz=280
ANN Anapa 113.27 316 *eP* **Pdif 18 51 48.8 -1.4**
ANN *e* 19 02 21.3
ANN *e*PS **PS 19 06 05.0 -5.7**
ANN pmax pmax
comp=Z,36nm,1.3s
HDIL Hopedale 113.79 48 PFAKE 18 56 00.0
HDIL LR LR
comp=Z,18µm,20.0s
JMIC Jan Mayen 114.25 354 *e*PP **PP 18 56 41.1 +0.9**
FRB Frobisher Bay 114.68 19 PKP PKPdf 18 55 45.0 -0.8
comp=Z,8.3nm,0.5s,baz=280,slow=1.7,SNR=8.0
PAYG Puerto Ayora 115.05 94 PFAKE 18 56 00.0 +12
PAYG LR LR
comp=Z,5µm,19.0s
Y46A Houston 115.47 55 P **PKPdf 18 55 47.6 -0.6**
baz=280
NSS Namsos 115.83 343 *e* **PP 18 56 52.5 +1.1**
NSS IVMs_BB IVMs_BB 19 42 24.1
comp=Z,4µm,26.8s
EFI East Falkland 116.11 158 PFAKE 18 56 00.0 +11
EFI LR LR
comp=Z,4µm,22.0s
FURI Furi 116.30 277 P **PKPdf 18 55 52.0 +1.3**
FURI S **PP 18 56 55.3 -1.8**
AKASG Malin Array Be 116.46 325 Pdiff **Pdif 18 52 04.6 +0.3**
comp=Z,1.9nm,0.7s,baz=53,slow=4.9,SNR=7.6
AKASG PKP **PKiKP 18 55 49.6 0.0**
comp=Z,5.7nm,0.7s,baz=60,slow=2.2,SNR=16
AKASG PKKPbc **PKKPbc 19 06 18.0 -1.6**
comp=Z,2.7nm,0.5s,baz=260,slow=3.8,SNR=13
KIEV Kiev 116.47 325 PFAKE 18 56 00.0 +10
KIEV LR LR
comp=Z,6µm,21.0s
WCI Wyandotte Cave 116.59 50 *e*PKIKP **PKPdf 18 55 49.8 -0.5**
WCI Wyandotte Cave 116.59 50 *e*PKPdf **PKPdf 18 55 49.8 -0.5**
SFJD Kangerlussuaq 116.78 11 PKKPbc PKKPbc 19 06 17.5 -1.5
comp=Z,26nm,0.9s,baz=141,slow=2.0,SNR=13

SFJD	**Kangerlussuaq**	**116.78**	**11**	*i* P	**PKPdf**	**18 55 49.3**	**-0.4**
SFJD	**Kangerlussuaq**	**116.78**	**11**	*e*PKIKP	**PKPdf**	**18 55 49.7**	**0.0**
SFJD				MLR	MLR		
comp=Z,6μm,20.0s							
SFJD	**Kangerlussuaq**	**116.78**	**11**	*e*PKPdf	**PKPdf**	**18 55 49.7**	**0.0**
SFJD				PKKPbc	**PKKPbc**	**19 06 17.5**	**-1.5**
SFJD				LR	LR		
comp=Z,6μm,20.0s							
KMBO	**Kilima Mbogo**	**116.88**	**266**	PFAKE		18 56 00.0	+8.2
KMBO				LR	LR		
comp=Z,3μm,21.0s							
LRAL	**Lakeview Retre**	**117.16**	**56**	*e*PKPdf	**PKPdf**	**18 55 50.4**	**-1.0**
TBLU	**Trondheim**	**117.29**	**343**	*e*	PP	18 56 52.4	-9.2
BRTR	**Keskin Array B**	**117.35**	**312**	Pdiff	**Pdif**	**18 52 09.5**	**+0.8**
comp=Z,0.5nm,0.8s,baz=101,slow=2.5,SNR=3.7							
BRTR				PKP	**PKPdf**	**18 55 51.6**	**-0.2**
comp=Z,6.4nm,1.0s,baz=132,slow=1.8,SNR=15							
BRTR				PKKPbc	**PKKPbc**	**19 06 16.6**	**+0.3**
comp=Z,5.3nm,0.9s,baz=207,slow=3.8,SNR=17							
AAM	**Ann Arbor**	**117.41**	**45**	PFAKE		18 56 00.0	+8.3
AAM				LR	LR		
comp=Z,21μm,22.0s							
BRAL	**Brewton**	**117.45**	**58**	PFAKE		18 56 00.0	+7.9
BRAL				LR	LR		
comp=Z,11μm,20.0s							
TEIG	**Tepich**	**117.66**	**70**	PFAKE		18 56 00.0	+7.2
TEIG				LR	LR		
comp=Z,3μm,21.0s							
PLCA	**Paso Flores**	**117.79**	**143**	PKP	**PKPdf**	**18 55 51.3**	**-1.4**
comp=Z,13nm,1.0s,baz=239,slow=2.6,SNR=17							
PLCA				PKKPbc	**PKKPbc**	**19 06 14.1**	**-0.7**
comp=Z,9.0nm,0.8s,baz=75,slow=4.3,SNR=17							
ANTO	**Ankara**	**117.94**	**312**	PFAKE		18 56 00.0	+7.1
ANTO				LR	LR		
comp=Z,9.0nm,20.0s							
SORM	**Soroca**	**118.05**	**322**	⇓*i*P	**PKPdf**	**18 55 52.6**	**-0.1**
SORM	**Soroca**	**118.05**	**322**	⇓*i*P	**PKKPbc**	**19 06 11.9**	**-2.0**
SORM	**Soroca**	**118.05**	**322**	⇓PKIKP	**PKPdf**	**18 55 52.6**	**-0.1**
SUW	**Suwalki**	**118.15**	**330**	*e*PKPdf	**PKPdf**	**18 55 53.4**	**+0.6**
SUW				*e*PP	**PP**	**18 57 09.1**	**+1.2**
SUW				*e*SKSac	**SKSac**	**19 02 43.2**	**+0.5**
SUW				*e*PS	**PS**	**19 06 53.5**	**-1.2**
SUW				LMZ	LR	19 41 53.3	
comp=Z,7μm,29.8s							
SUW	**Suwalki**	**118.15**	**330**	*e*PKIKP	**PKPdf**	**18 55 53.4**	**+0.6**
SUW				*e*		18 57 09.1	
SUW				*e*		19 02 43.2	
SUW				*e*PS	**PS**	**19 06 53.5**	**-1.2**
KIS	**Kishinev**	**118.22**	**321**	*e*P	**Pdif**	**18 52 12.0**	**-0.2**
KIS	**Kishinev**	**118.22**	**321**	*e*PKP	**PP**	**18 57 12.0**	**+3.2**
KIS				*e*SKS	**SKKSac**	**19 04 01.0**	**-4.7**
KIS	**Kishinev**	**118.22**	**321**	*e*PS	PS	19 07 00.0	+4.3
KIS				LRM	MLR	19 44 52.0	
comp=Z,7μm,24.0s							
KIS	**Kishinev**	**118.22**	**321**	*e*P	**Pdif**	**18 52 12.0**	**-0.2**
KIS				*e*		18 57 12.0	
KIS				*e*PS	**PS**	**19 07 00.0**	**+4.3**
KIS				*e*		19 13 50.0	
KIS				MLR	MLR		
comp=E,7μm,22.0s							
KIS				MLR	MLR		
comp=Z,8μm,22.0s							
KIS				MLR	MLR		
comp=Z,7μm,24.0s							
HFS	**Hagfors**	**118.44**	**339**	PKKPbc	PKKPbc	19 06 13.2	+0.4
comp=Z,2.4nm,0.7s,baz=178,slow=4.2,SNR=6.5							
ACSO	**Alum Creek Sta**	**118.53**	**47**	*e*PKPdf	**PKPdf**	**18 55 53.5**	**-0.4**
ACSO				LR	LR		
comp=Z,24μm,22.0s							
MOL	**Molde**	**118.61**	**343**	*e*PP	PP	18 57 09.6	-1.1
NB2	**NORSAR Subarra**	**118.64**	**341**	PKPdf	**PKPdf**	**18 55 53.1**	**-0.5**
comp=Z,3.2nm,0.8s,baz=39,slow=1.9							
NB2	**NORSAR Subarra**	**118.64**	**341**	PKPdf	**PKPdf**	**18 55 53.1**	**-0.5**
baz=39,slow=1.9							
NOA	**NORSAR Array B**	**118.64**	**341**	PKP	**PKPdf**	**18 55 53.0**	**-0.5**
comp=Z,3.5nm,0.6s,baz=47,slow=2.0,SNR=20							
NOA				PP	**PP**	**18 57 08.5**	**-2.6**
comp=Z,5.9nm,0.8s,baz=34,slow=7.7,SNR=6.0							
NOA				PKKPbc	**PKKPbc**	**19 06 11.2**	**-1.0**
comp=Z,2.7nm,0.7s,baz=42,slow=3.5,SNR=10							
NC602	**NORSAR Array S**	**118.76**	**340**	*e*P	**Pdif**	**18 52 13.9**	**-0.4**
NC602				IVMs_BB	IVMs_BB	19 43 04.0	
comp=Z,3μm,22.9s							
CSS	**Mathiatis**	**118.80**	**307**	P	**PKPdf**	**18 55 53.9**	**-0.7**
CSS	**Mathiatis**	**118.80**	**307**	*e*PKPdf	**PKPdf**	**18 55 54.6**	**0.0**
CSS				LR	LR		
comp=Z,468nm,22.0s							
AKN	**Aaknes**	**119.07**	**343**	*e*PP	PP	18 57 14.5	+0.5
HOPE	**Hope Point**	**119.18**	**173**	*e*PKPdf	**PKPdf**	**18 55 53.2**	**-1.5**
HOPE				LR	LR		
comp=Z,4μm,21.0s							
TKL	**Tuckaleechee C**	**119.18**	**52**	PKP	**PKPdf**	**18 55 54.0**	**-1.4**
comp=Z,18nm,0.7s,baz=169,slow=2.8,SNR=23							
TKL	**Tuckaleechee C**	**119.18**	**52**	PKIKP	**PKPdf**	**18 55 54.0**	**-1.4**
CFR	**Carcaliu**	**119.38**	**319**	⇓*i*P	**PKPdf**	**18 55 55.5**	**+0.1**
CFR	**Carcaliu**	**119.38**	**319**	⇓*i*P	**PKKPbc**	**19 06 08.3**	**-0.7**
CFR	**Carcaliu**	**119.38**	**319**	⇓PKIKP	**PKPdf**	**18 55 55.5**	**+0.1**
TIRR	**Tirgusor**	**119.48**	**318**	⇑*i*P	**PKPdf**	**18 55 56.5**	**+1.0**
TIRR	**Tirgusor**	**119.48**	**318**	⇑PKIKP	**PKPdf**	**18 55 56.6**	**+1.0**
OSL	**Oslo**	**119.62**	**340**	*e*PP	PP	18 57 17.7	-0.1
SADO	**Sadowa**	**119.62**	**41**	PKP	**PKPdf**	**18 55 55.6**	**-0.3**
comp=Z,12nm,0.7s,baz=329,slow=3.0,SNR=8.9							
HARR	**Harsova**	**119.70**	**319**	⇑*i*P	**PKKPbc**	**19 06 07.9**	**+0.1**
TESR	**Tescani**	**119.78**	**321**	⇑*i*P	**PKKPbc**	**19 06 06.1**	**-1.5**
LVV	**L'vov**	**119.83**	**325**	*e*PKIKP	**PKPdf**	**18 55 56.1**	**0.0**
LVV				*e*		18 57 18.5	
LVV				*e*		19 02 47.5	
LVV				*e*SS	SS	19 14 10.1	+29
LVV				MLR	MLR		
comp=N,2μm,23.0s							
LVV				MLR	MLR		
comp=E,5μm,23.0s							
LVV				MLR	MLR		
comp=Z,6μm,23.0s							
GOGA	**Godfrey**	**119.97**	**55**	*e*PKIKP	**PKPdf**	**18 55 55.6**	**-1.3**
GOGA				MLR	MLR		
comp=Z,9μm,20.0s							
GOGA	**Godfrey**	**119.97**	**55**	*e*PKPdf	**PKPdf**	**18 55 55.6**	**-1.3**
GOGA				LR	LR		
comp=Z,9μm,20.0s							
VRI	**Vrincioaia**	**120.00**	**320**	⇓*i*P	**PKPdf**	**18 55 56.6**	**0.0**
VRI	**Vrincioaia**	**120.00**	**320**	⇑*i*P	**PKKPbc**	**19 06 05.1**	**-1.7**
VRI	**Vrincioaia**	**120.00**	**320**	⇓PKIKP	**PKPdf**	**18 55 56.6**	**0.0**
PLOR	**Plostina**	**120.06**	**320**	⇑*i*P	**PKPdf**	**18 55 56.7**	**-0.1**
PLOR	**Plostina**	**120.06**	**320**	⇑*i*P	**PKKPbc**	**19 06 04.8**	**-1.8**
PLOR	**Plostina**	**120.06**	**320**	⇑PKIKP	**PKPdf**	**18 55 56.7**	**-0.1**
FOO	**Floro**	**120.09**	**344**	*e*PP	PP	18 57 21.6	+0.6
HYA	**Hoyanger**	**120.11**	**343**	*e*PP	PP	18 57 21.4	+0.3
BOSA	**Boshof**	**120.15**	**232**	PKP	**PKPdf**	**18 55 56.8**	**-0.8**
comp=Z,26nm,0.6s,baz=122,slow=1.7,SNR=41							
BOSA				PKKPbc	**PKKPbc**	**19 06 05.0**	**-0.9**
comp=Z,6.0nm,0.8s,baz=311,slow=4.1,SNR=10							
BURAR	**Bucovina Array**	**120.18**	**323**	⇑*i*P	**PKKPbc**	**19 06 04.8**	**-1.5**
KONO	**Kongsberg**	**120.22**	**340**	*e*PP	PP	18 57 21.0	-0.9
KONO	**Kongsberg**	**120.22**	**340**	PFAKE		18 56 10.0	+13
KONO				LR	LR		
comp=Z,8μm,22.0s							
ISP	**Isparta**	**120.23**	**310**	PFAKE		18 56 10.0	+13
ISP				LR	LR		
comp=Z,3μm,22.0s							
TIGA	**Tifton**	**120.31**	**57**	P	**PKPdf**	**18 55 56.4**	**-1.1**
baz=282							
ISR	**Istrita**	**120.43**	**320**	⇓*i*P	**PKKPbc**	**19 06 05.3**	**+0.1**
N54A	**Moraine State**	**120.45**	**46**	P	**PKPdf**	**18 55 57.3**	**-0.3**
baz=290							
M54A	**Oil Creek Stat**	**120.48**	**45**	P	**PKPdf**	**18 55 56.0**	**-1.7**
baz=291							
BEL	**Belsk**	**120.54**	**329**	*e*PKPdf	**PKPdf**	**18 55 57.3**	**-0.1**
BEL				*e*PP	**PP**	**18 57 28.1**	**+3.6**
BEL				LMZ	LR	19 46 20.6	
comp=Z,7μm,26.6s							
BEL	**Belsk**	**120.54**	**329**	*e*PKIKP	**PKPdf**	**18 55 57.3**	**-0.1**
BEL				*e*		18 57 28.1	
BEL				MLR	MLR		
comp=Z,7μm,26.6s							
SUE	**Sulen**	**120.61**	**343**	*e*PP	PP	18 57 26.1	+1.6
MLR	**Muntele Rosu**	**120.66**	**320**	PKP	**PKPdf**	**18 55 56.9**	**-1.2**
comp=Z,2.4nm,1.1s,baz=208,slow=0.5,SNR=5.2							
MLR				PKKPbc	**PKKPab**	**19 06 03.4**	**-0.9**
comp=Z,2.4nm,1.0s,baz=200,slow=5.2,SNR=13							
MLR	**Muntele Rosu**	**120.66**	**320**	⇓*i*P	**PKPdf**	**18 55 58.3**	**+0.3**
MLR	**Muntele Rosu**	**120.66**	**320**	⇑*i*P	**PKKPab**	**19 06 04.2**	**-0.1**
MLR	**Muntele Rosu**	**120.66**	**320**	⇓PKIKP	**PKPdf**	**18 55 58.3**	**+0.3**
KWP	**Kalwaria Pacla**	**120.67**	**326**	*e*PKPdf	**PKPdf**	**18 55 58.5**	**+0.7**
KWP				*e*PP	**PP**	**18 57 28.5**	**+3.0**
KWP				LMZ	LR	19 41 48.4	
comp=Z,7μm,31.9s							
KWP	**Kalwaria Pacla**	**120.67**	**326**	⇓*i*P	**PKKPab**	**19 06 03.3**	**-0.7**
KWP	**Kalwaria Pacla**	**120.67**	**326**	*e*PKIKP	**PKPdf**	**18 55 58.5**	**+0.7**
KWP				*e*		18 57 28.5	
MATP	**Matopo**	**120.72**	**242**	PKP	**PKPdf**	**18 55 57.7**	**-1.2**
comp=Z,19nm,0.6s,baz=110,slow=1.6,SNR=9.0							
MATP				PKKPbc	**PKKPbc**	**19 06 04.2**	**+0.7**
comp=Z,3.3nm,0.7s,baz=267,slow=3.2,SNR=8.1							
SULR		**120.80**	**319**	⇑*i*P	**PKPdf**	**18 56 00.0**	**+1.9**
DOPR	**Dopca**	**120.81**	**321**	⇓*i*P	**PKPdf**	**18 55 59.3**	**+1.1**
DOPR	**Dopca**	**120.81**	**321**	⇑*i*P	**PKKPab**	**19 06 02.5**	**-1.0**
ARCR	**ARCALIA**	**120.94**	**322**	⇓*i*P	**PKPdf**	**18 56 00.2**	**+1.8**
ARCR	**ARCALIA**	**120.94**	**322**	⇑*i*P	**PKKPab**	**19 06 02.7**	**-0.2**
ODD1	**Odda**	**120.98**	**342**	*e*PP	PP	18 57 28.6	+1.4
BER	**Bergen**	**120.99**	**343**	*e*PP	PP	18 57 27.7	+0.6
JTS	**JuntasAbangare**	**121.13**	**82**	*e*PKIKP	**PKPdf**	**18 55 59.5**	**-0.1**
JTS				MLR	MLR		
comp=Z,9μm,22.0s							
JTS	**JuntasAbangare**	**121.13**	**82**	*e*PKPdf	**PKPdf**	**18 55 59.5**	**-0.1**
JTS				LR	LR		
comp=Z,9μm,22.0s							
SCHQ	**Schefferville**	**121.20**	**26**	PKP	**PKPdf**	**18 55 58.8**	**+0.2**
comp=Z,8.0nm,0.8s,baz=313,slow=2.4,SNR=5.4							
SCHQ				PKKPab	**PKKPab**	**19 06 00.7**	**-0.9**
comp=Z,38nm,1.0s,baz=86,slow=3.6,SNR=14							
KMSC	**Kings Mountain**	**121.24**	**52**	P	**PKPdf**	**18 55 58.2**	**-1.1**
baz=286							
KMSC	**Kings Mountain**	**121.24**	**52**	*e*PKPdf	**PKPdf**	**18 55 58.1**	**-1.1**
VOIR		**121.25**	**320**	⇑*i*P	**PKPdf**	**18 56 01.0**	**+1.9**
VOIR		**121.25**	**320**	⇑*i*P	**PKKPab**	**19 06 02.1**	**+0.4**
VOIR		**121.25**	**320**	⇑PKIKP	**PKPdf**	**18 56 01.0**	**+1.9**
KOLS	**Kolonicke sedl**	**121.27**	**325**	*e*PKIKP	**PKPdf**	**18 56 00.0**	**+1.1**
KOLS				MLR	MLR		
comp=Z,5μm,23.8s							
KOLS	**Kolonicke sedl**	**121.27**	**325**	*e*PKP	**PKPdf**	**18 56 00.0**	**+1.1**
BORG	**Borgarnes**	**121.35**	**358**	PFAKE		18 56 10.0	+11
BORG				LR	LR		
comp=Z,5μm,21.0s							
BLA	**Blacksburg**	**121.35**	**50**	*e*PKIKP	**PKPdf**	**18 55 58.6**	**-0.9**
BLA				MLR	MLR		
comp=Z,28μm,22.0s							
BLA	**Blacksburg**	**121.35**	**50**	*e*PKPdf	**PKPdf**	**18 55 58.6**	**-0.9**
BLA				LR	LR		
comp=Z,28μm,22.0s							
BSD	**Bornholm Skovb**	**121.37**	**334**	*i* P	**PKPdf**	**18 56 03.4**	**+4.5**
BSD				*i*		18 57 29.1	
BSD	**Bornholm Skovb**	**121.37**	**334**	*e*PKIKP	**PKPdf**	**18 56 03.4**	**+4.5**
BSD				*i*		18 57 29.1	
BSD				MLR	MLR		
comp=Z,5μm,26.0s							
UZH	**Uzhgorod**	**121.41**	**325**	*i* PKIKP	**PKPdf**	**18 56 06.8**	**+7.6**
UZH				*e*		18 56 16.6	
UZH				*e*		19 07 16.0	
UZH				MLR	MLR		
comp=N,6μm,20.0s							
UZH				MLR	MLR		
comp=E,4μm,20.0s							
UZH				MLR	MLR		
comp=Z,6μm,20.0s							
BLS5	**Blasjo**	**121.42**	**341**	*e*PP	PP	18 57 27.5	-2.6
LBTB	**Lobatse**	**121.44**	**236**	PKP	**PKPdf**	**18 55 59.0**	**-1.1**
comp=Z,12nm,0.7s,baz=161,slow=3.6,SNR=4.8							
LBTB				PKKPbc	**PKKPab**	**19 06 01.6**	**-0.4**
comp=Z,4.6nm,0.7s,baz=292,slow=5.5,SNR=8.8							
LBTB	**Lobatse**	**121.44**	**236**	PKIKP	**PKPdf**	**18 55 59.0**	**-1.1**
ARR	**Arges**	**121.55**	**321**	⇓*i*P	**PKPdf**	**18 56 00.6**	**+0.9**
ARR	**Arges**	**121.55**	**321**	⇓*i*P	**PKKPbc**	**19 06 00.9**	**-0.1**
STHS	**Stebnicka Huta**	**121.60**	**326**	*e*PKIKP	**PKPdf**	**18 56 01.2**	**+1.6**
STHS	**Stebnicka Huta**	**121.60**	**326**	*e*PKP	**PKPdf**	**18 56 01.2**	**+1.6**
SUR	**Sutherland**	**121.64**	**226**	PKKPbc	PKKPbc	19 06 01.8	+1.3
comp=Z,0.5nm,0.8s,baz=308,slow=5.6,SNR=6.2							
SUR	**Sutherland**	**121.64**	**226**	*e*PKPdf	**PKPdf**	**18 56 01.3**	**+0.8**
SUR				PKKPbc	**PKKPab**	**19 06 01.8**	**+0.5**
SUR				LR	LR		
comp=Z,8μm,21.0s							
FETY	**Fethiye**	**121.68**	**310**	P	**PKPdf**	**18 55 58.2**	**-1.9**
HUMR	**Humele**	**121.69**	**320**	⇑*i*P	**PKPdf**	**18 56 00.3**	**+0.4**
HUMR	**Humele**	**121.69**	**320**	⇓*i*P	**PKKPbc**	**19 06 00.6**	**+0.2**
O56A	**Blue Knob Stat**	**121.70**	**46**	P	**PKPdf**	**18 55 58.4**	**-1.7**
baz=291							
CRVS	**Cervenica-Dubn**	**121.75**	**325**	*e*PKIKP	**PKPdf**	**18 56 01.1**	**+1.2**
CRVS	**Cervenica-Dubn**	**121.75**	**325**	*e*PKP	**PKPdf**	**18 56 01.0**	**+1.2**
OJC	**Ojcow**	**121.96**	**327**	*e*PKPdf	**PKPdf**	**18 55 58.5**	**-1.7**
OJC				*e*PP	**PP**	**18 57 35.8**	**+1.6**
OJC				*e*PPP	PPP	19 00 09.3	
OJC				*e*SKSac	**SKSac**	**19 03 00.9**	**+4.7**
OJC				*e*PS	**PS**	**19 07 23.0**	**-5.9**
OJC				LMZ	LR	19 46 43.1	
comp=Z,7μm,26.0s							
OJC	**Ojcow**	**121.96**	**327**	*e*PKIKP	**PKPdf**	**18 55 58.5**	**-1.7**
OJC				*e*		18 57 35.8	
OJC				*e*PPP	PPP	19 00 09.3	
OJC				*e*		19 03 00.9	
OJC				*e*PS	**PS**	**19 07 23.0**	**-5.9**
OJC				MLR	MLR		
comp=Z,7μm,26.0s							
KMY	**Karmoy**	**121.96**	**342**	*e*	**PP**	**18 57 36.1**	**+2.3**
COP	**Copenhagen**	**122.03**	**336**	*i* P	**PKPdf**	**18 56 02.7**	**+2.6**
COP				*i*		18 57 34.0	
COP	**Copenhagen**	**122.03**	**336**	*e*PKIKP	**PKPdf**	**18 56 02.7**	**+2.6**
COP				*i*		18 57 34.0	
COP				MLR	MLR		
comp=Z,3μm,22.0s							
STAV	**Stavanger**	**122.04**	**341**	*e*		18 57 33.8	
SSPA	**Standing Stone**	**122.05**	**45**	*e*PKPdf	**PKPdf**	**18 55 59.0**	**-1.7**
DRGR		**122.07**	**323**	⇓*i*P	**PKPdf**	**18 56 01.2**	**+0.6**
DRGR		**122.07**	**323**	⇑*i*P	**PKKPab**	**19 05 56.0**	**-2.1**
DRGR		**122.07**	**323**	⇓PKIKP	**PKPdf**	**18 56 01.2**	**+0.6**
NIE	**Niedzica**	**122.12**	**326**	*e*PKPdf	**PKPdf**	**18 56 01.7**	**+1.1**
NIE				*e*PP	**PP**	**18 57 39.4**	**+4.0**
NIE				*e*PS	**PS**	**19 07 24.1**	**-6.4**
NIE				LMZ	LR	19 47 46.1	
comp=Z,5μm,26.1s							
NIE	**Niedzica**	**122.12**	**326**	*e*PKIKP	**PKPdf**	**18 56 01.7**	**+1.1**
NIE				*e*		18 57 39.4	
NIE				*e*PS	**PS**	**19 07 24.1**	**-6.4**
NIE				MLR	MLR		
comp=Z,5μm,26.1s							
LONY	**Lake Ozonia**	**122.63**	**40**	*e*PKPdf	**PKPdf**	**18 56 01.5**	**-0.2**
LONY				LR	LR		
comp=Z,16μm,21.0s							
LSZ	**Lusaka**	**122.68**	**248**	PKP	**PKPdf**	**18 56 03.6**	**+0.9**
comp=Z,13nm,0.6s,baz=51,slow=2.4,SNR=14							
LSZ				PKKPbc	**PKKPab**	**19 05 59.9**	**+3.2**
comp=Z,5.6nm,0.7s,baz=238,slow=0.9,SNR=9.0							
LSZ	**Lusaka**	**122.68**	**248**	*e*PKIKP	**PKPdf**	**18 56 02.2**	**-0.5**
LSZ				MLR	MLR		
comp=Z,7μm,22.0s							
LSZ	**Lusaka**	**122.68**	**248**	*e*PKPdf	**PKPdf**	**18 56 02.2**	**-0.5**
LSZ				PKP	**PKPdf**	**18 56 03.6**	**+0.9**
LSZ				PKKPbc	**PKKPab**	**19 05 59.9**	**+3.2**
LSZ				LR	LR		
comp=Z,7μm,22.0s							
NHSC	**New Hope**	**122.72**	**54**	PFAKE		18 56 10.0	+7.9
NHSC				LR	LR		
comp=Z,10μm,20.0s							
LANS	**Liptovska Anna**	**122.72**	**326**	*e*PKIKP	**PKPdf**	**18 56 03.3**	**+1.5**
LANS	**Liptovska Anna**	**122.72**	**326**	*e*PKP	**PKPdf**	**18 56 03.3**	**+1.5**
PRK	**Paraskevi**	**122.91**	**313**	P	**PKPdf**	**18 56 02.1**	**-0.2**
SMTH	**Samothraki Isl**	**122.98**	**315**	P	**PKPdf**	**18 56 01.3**	**-1.2**
NRS	**Narsarsuaq**	**123.05**	**11**	*i* P	**PKPdf**	**18 56 01.4**	**-0.5**
NRS	**Narsarsuaq**	**123.05**	**11**	*i* PKIKP	**PKPdf**	**18 56 01.4**	**-0.5**
NRS				MLR	MLR		
comp=Z,10μm,20.0s							
OKC	**Ostrava-Krasne**	**123.05**	**328**	*e*PDIFF	**Pdif**	**18 52 33.3**	**-0.3**
OKC				*e*PKPdf	**PKiKP**	**18 56 03.4**	**+0.9**
OKC				*e*PP	**PP**	**18 57 41.1**	**-0.5**
OKC				*e*PKKP	**PKKPbc**	**19 05 55.6**	**+0.3**
OKC				*e*PS	**PS**	**19 07 36.5**	**-2.1**
OKC				*e*SS	SS	19 14 29.5	+7.2
OKC				AMS	AMS	19 48 40.0	
comp=Z,5μm,22.7s							
OKC	**Ostrava-Krasne**	**123.05**	**328**	*e*P	**Pdif**	**18 52 33.3**	**-0.3**
OKC				*e*		18 56 03.4	
OKC				*e*		18 57 41.1	
OKC				*e*PS	**PS**	**19 07 36.5**	**-2.1**
OKC				*e*SS	SS	19 14 29.5	+7.2
OKC				MLR	MLR		
comp=Z,5μm,22.7s							
PSZ	**Piszkesteto**	**123.15**	**325**	⇑*i*P	**PKPdf**	**18 56 02.8**	**+0.1**
PSZ	**Piszkesteto**	**123.15**	**325**	⇑*i*P	**PKKPbc**	**19 05 55.2**	**+0.3**
PSZ	**Piszkesteto**	**123.15**	**325**	⇑PKIKP	**PKPdf**	**18 56 02.9**	**+0.2**
PSZ	**Piszkesteto**	**123.15**	**325**	*e*PKPdf	**PKPdf**	**18 56 02.6**	**-0.1**
PSZ				LR	LR		
comp=Z,5μm,22.0s							
CBN	**Corbin Frederi**	**123.31**	**48**	*e*PKPdf	**PKPdf**	**18 56 03.1**	**0.0**
CBN				LR	LR		
comp=Z,20μm,22.0s							
BZS	**Buzias**	**123.31**	**322**	⇓*i*P	**PKPdf**	**18 56 02.1**	**-0.8**
BZS	**Buzias**	**123.31**	**322**	⇑*i*P	**PKKPbc**	**19 05 53.5**	**-0.6**
BZS	**Buzias**	**123.31**	**322**	⇓PKIKP	**PKPdf**	**18 56 02.1**	**-0.8**
MORC	**Moravsky Berou**	**123.41**	**328**	⇓*i*P	**PKPdf**	**18 56 04.4**	**+1.3**
MORC	**Moravsky Berou**	**123.41**	**328**	⇑*i*P	**PKKPbc**	**19 05 51.3**	**-2.7**
MORC	**Moravsky Berou**	**123.41**	**328**	⇓PKIKP	**PKPdf**	**18 56 04.4**	**+1.3**
KSP	**Ksiaz**	**123.42**	**330**	*e*PKPdf	**PKPdf**	**18 56 04.2**	**+1.2**
KSP				*e*PP	**PP**	**18 57 46.9**	**+2.9**
KSP				*e*PPP	PPP	19 00 17.7	
KSP				*e*SP	SP	19 07 34.7	-0.4
KSP				LMZ	LR	19 49 44.2	
comp=Z,10μm,23.8s							
KSP	**Ksiaz**	**123.42**	**330**	*e*PKIKP	**PKPdf**	**18 56 04.2**	**+1.2**
KSP				*e*		18 57 46.9	
KSP				*e*SP	SP	19 07 34.7	-0.4
KSP				MLR	MLR		
comp=Z,10μm,23.8s							
N59A	**State Game Lan**	**123.43**	**44**	P	**PKPdf**	**18 56 02.5**	**-0.9**
baz=294							
VYHS	**Vyhne**	**123.44**	**326**	*e*PKIKP	**PKPdf**	**18 56 03.6**	**+0.5**
VYHS				*e*		18 57 49.9	
VYHS				MLR	MLR		
comp=Z,5μm,25.7s							
VYHS	**Vyhne**	**123.44**	**326**	*e*PKP	**PKPdf**	**18 56 03.6**	**+0.5**
VYHS				*e*PP	**PP**	**18 57 49.9**	**+5.6**
VYHS				*e*S	**SP**	**19 07 23.9**	**-12**
LIA	**Limnos Island**	**123.44**	**314**	P	**PKPdf**	**18 56 02.5**	**-0.8**
KRLC	**Kraliky**	**123.63**	**329**	*e*PKPdf	**PKPdf**	**18 56 04.6**	**+1.1**
KRLC				*e*PP	**PP**	**18 57 46.5**	**+1.0**
KRLC				*e*PKKP	**PKKPbc**	**19 05 52.8**	**-0.3**
KRLC	**Kraliky**	**123.63**	**329**	*e*PKIKP	**PKPdf**	**18 56 04.6**	**+1.1**
KRLC				*e*		18 57 46.5	
MDVR	**Moldovita**	**123.65**	**321**	⇑*i*P	**PKPdf**	**18 56 04.4**	**+0.7**
MDVR	**Moldovita**	**123.65**	**321**	⇑*i*P	**PKKPbc**	**19 05 51.8**	**-1.0**
DPC	**Dobruska-Polom**	**123.70**	**329**	*e*PDIFF	**Pdif**	**18 52 35.5**	**-1.1**
DPC				*e*PKPdf	**PKPdf**	**18 56 02.6**	**-1.0**
DPC				*e*x	x	18 56 04.9	
DPC				*e*pPKP	**pPKPdf**	**18 56 15.8**	**-2.2**
DPC				*e*x	x	18 56 31.3	
DPC				*e*PP	**PP**	**18 57 47.7**	**+1.7**
DPC				*e*PKKP	**PKKPbc**	**19 05 52.8**	**0.0**
DPC				*e*PS	**PS**	**19 07 37.3**	**-7.1**
DPC				*e*SS	SS	19 14 33.4	+2.8
DPC				AMS	AMS	19 49 10.0	
comp=Z,10μm,23.3s							
DPC	**Dobruska-Polom**	**123.70**	**329**	*e*P	**Pdif**	**18 52 35.5**	**-1.1**
DPC				*e*		18 56 02.6	
DPC				*e*		18 56 15.8	
DPC				*e*		18 57 47.7	
DPC				*e*PS	**PS**	**19 07 37.3**	**-7.1**
DPC				*e*SS	SS	19 14 33.4	+2.8
DPC				MLR	MLR		
comp=Z,10μm,23.3s							
UPC	**Upice**	**123.77**	**329**	*e*

TREC			*e*PS	**PS**	**19 07 53.4**	**-0.5**
TREC			*e*SS	SS	19 14 45.9	+1.8
TREC			AMS	AMS	19 53 00.0	
	comp=Z,7μm,22.2s					
TREC	**Trest**	**124.77 328**	*e*P	**Pdif**	**18 52 42.4**	**+1.1**
TREC			*e*		18 56 06.1	
TREC			*e*		18 57 58.2	
TREC			*e*PS	**PS**	**19 07 53.4**	**-0.5**
TREC			*e*SS	SS	19 14 45.9	+1.8
TREC			MLR	MLR		
	comp=Z,7μm,22.2s					
PRU	**Pruhonice**	**124.83 330**	*e*PDIFF	**Pdif**	**18 52 43.0**	**+1.5**
PRU			*e*PKPdf	**PKPdf**	**18 56 04.9**	**-0.8**
PRU			*ex*	x	18 56 06.5	
PRU			*e*PP	**PP**	**18 57 58.5**	**+5.0**
PRU			*e*PKKP	**PKKPbc**	**19 05 47.9**	**-0.4**
PRU			*e*PS	**PS**	**19 07 51.5**	**-2.7**
PRU			*e*SS	SS	19 14 47.4	+2.8
PRU			AMS	AMS	19 51 00.0	
	comp=Z,7μm,23.1s					
PRU	**Pruhonice**	**124.83 330**	*e*P	**Pdif**	**18 52 43.0**	**+1.5**
PRU			*e*		18 56 06.5	
PRU			*e*		18 57 58.5	
PRU			*e*PS	**PS**	**19 07 51.5**	**-2.7**
PRU			*e*SS	SS	19 14 47.4	+2.8
PRU			MLR	MLR		
	comp=Z,7μm,23.1s					
LAST	**Lasithi**	**124.92 309**	‖ *i*P	**PKPdf**	**18 56 07.6**	**+1.1**
XOR	**Xorichti**	**125.07 315**	P	**PKPdf**	**18 56 05.6**	**-0.9**
SKO	**Skopje**	**125.14 318**	*i* PKP	**PKPdf**	**18 56 06.8**	**+0.2**
IDI	**Anoyia**	**125.33 309**	PKP	**PKPdf**	**18 56 08.0**	**+0.7**
	comp=Z,21nm,0.8s,baz=5.8,slow=16,SNR=9.9					
IDI	**Anoyia**	**125.33 309**	⇑ *i*P	**PKPdf**	**18 56 08.5**	**+1.3**
IDI	**Anoyia**	**125.33 309**	⇑ *i*P	**PKKPbc**	**19 05 48.0**	**+2.1**
IDI	**Anoyia**	**125.33 309**	*e*PKPdf	**PKPdf**	**18 56 07.8**	**+0.6**
IDI			PKP	**PKPdf**	**18 56 08.0**	**+0.7**
CONA	**Conrad Observa**	**125.39 327**	*i* PKiKP	**PKiKP**	**18 56 07.8**	**+0.5**
	comp=Z,10nm,0.9s					
SIVA	**Sivas**	**125.49 309**	⇑ *i*P	**PKPdf**	**18 56 09.8**	**+2.4**
PKME	**Peaks-Kenny Pk**	**125.58 37**	*e*PKPdf	**PKPdf**	**18 56 07.1**	**-0.1**
PKME			LR	LR		
	comp=Z,12μm,19.0s					
BIA	**Bitola**	**125.65 317**	*e*PKP	**PKPdf**	**18 56 08.0**	**+0.4**
ATAH	**Atahualpa**	**125.69 103**	PKP	**PKPdf**	**18 56 09.7**	**+0.7**
	comp=Z,60nm,0.7s					
NKC	**Novy Kostel**	**125.71 331**	*e*PKPdf	**PKPdf**	**18 56 07.4**	**0.0**
NKC			*ex*	x	18 56 08.5	
NKC			*ex*	x	18 56 34.6	
NKC			*e*PP	**PP**	**18 57 59.7**	**+0.4**
NKC			*e*SP	SP	19 07 53.9	-1.3
NKC			*e*SS	**SS**	**19 15 00.8**	**+5.2**
NKC			AMS	AMS	19 47 10.0	
	comp=Z,10μm,26.9s					
NKC	**Novy Kostel**	**125.71 331**	*e*PKIKP	**PKPdf**	**18 56 07.4**	**0.0**
NKC			*e*		18 57 59.7	
NKC			*e*PS	**PS**	**19 07 53.9**	**-8.1**
NKC			*e*SS	SS	19 15 00.8	+5.2
NKC			MLR	MLR		
	comp=Z,10μm,26.9s					
FNA	**Florina**	**125.72 317**	P	**PKPdf**	**18 56 07.4**	**-0.4**
DID	**Didima**	**125.77 312**	P	**PKPdf**	**18 56 06.6**	**-1.4**
THL	**Klokotos Trika**	**125.81 315**	P	**PKPdf**	**18 56 06.6**	**-1.3**
AGG	**Agios Georgios**	**125.82 315**	P	**PKPdf**	**18 56 07.0**	**-1.0**
KHC	**Kasperske Hory**	**125.86 329**	*e*PDIFF	**Pdif**	**18 52 45.2**	**-1.0**
KHC			*e*PKPdf	**PKiKP**	**18 56 08.6**	**+0.4**
KHC			*ex*	x	18 56 31.3	
KHC			*ex*	x	18 56 40.4	
KHC			*e*PP	**PP**	**18 58 05.1**	**+4.7**
KHC			*ex*	x	18 59 11.0	
KHC			*ex*	x	19 07 52.7	
KHC			AMS	AMS	19 52 00.0	
	comp=Z,10μm,22.5s					
KHC	**Kasperske Hory**	**125.86 329**	*e*PKIKP	**PKPdf**	**18 56 07.7**	**-0.1**
KHC	**Kasperske Hory**	**125.86 329**	*e*PKPdf	**PKPdf**	**18 56 07.7**	**-0.1**
DSF	**Desfina**	**125.93 314**	P	**PKPdf**	**18 56 07.0**	**-1.3**
NNA	**Nana**	**125.95 109**	PKP	**PKPdf**	**18 56 07.6**	**-1.3**
	comp=Z,64nm,1.1s,baz=284,slow=7.9,SNR=14					
NNA	**Nana**	**125.95 109**	PKIKP	**PKPdf**	**18 56 07.6**	**-1.3**
NNA			MLR	MLR		
	comp=Z,2μm,21.0s					
NNA	**Nana**	**125.95 109**	PKP	**PKPdf**	**18 56 07.6**	**-1.3**
NNA			*e*PKPdf	**PKiKP**	**18 56 09.8**	**+0.5**
NNA			LR	LR		
	comp=Z,2μm,21.0s					
OHR	**Ohrid**	**125.97 317**	*i* PKP	**PKPdf**	**18 56 08.3**	**+0.1**
GERES	**GERESS Array B**	**125.97 329**	PKP	**PKPdf**	**18 56 07.0**	**-1.1**
	comp=Z,9.2nm,0.8s,baz=106,slow=4.7,SNR=43					
GERES	**GERESS Array B**	**125.97 329**	PKIKP	**PKPdf**	**18 56 07.0**	**-1.1**
ARSA	**Arzberg**	**125.98 326**	*i* PKPdf	**PKPdf**	**18 56 07.5**	**-0.6**
	comp=Z,11nm,1.2s					
BCIP	**Isla Barro Col**	**126.16 83**	*e*PKPdf	**PKPdf**	**18 56 08.7**	**-0.6**
BCIP			LR	LR		
	comp=Z,6μm,22.0s					
BCIP	**Isla Barro Col**	**126.16 83**	*e*P	**PKPdf**	**18 56 08.1**	**-1.2**
EVR	**Evrytania**	**126.23 315**	P	**PKPdf**	**18 56 09.0**	**+0.1**
SERG	**Sergoula**	**126.26 314**	P	**PKPdf**	**18 56 06.6**	**-2.3**
MOA	**Molln**	**126.30 328**	*i* PKPdf	**PKPdf**	**18 56 07.6**	**-1.0**
	comp=Z,6.0nm,1.0s					
KLV	**Kalavryta, Ach**	**126.35 314**	P	**PKPdf**	**18 56 08.6**	**-0.5**
LAKA	**Lakka**	**126.39 314**	P	**PKPdf**	**18 56 09.0**	**-0.1**
TIR	**Tirane**	**126.48 318**	PFAKE		18 56 20.0	+11
TIR			LR	LR		
	comp=Z,5μm,22.0s					
PVO	**Paravola**	**126.56 314**	P	**PKPdf**	**18 56 10.1**	**+0.7**
SOKA	**Soboth**	**126.58 326**	*i* PKiKP	**PKPdf**	**18 56 09.5**	**+0.2**
	comp=Z,22nm,1.3s					
DSL	**Palaion Diasel**	**126.64 315**	P	**PKPdf**	**18 56 09.2**	**-0.4**
LEGS	**Legarje**	**126.85 325**	*e*PKPdf	**PKPdf**	**18 56 13.6**	**+3.9**
LEGS			*e*PP	**PP**	**18 58 10.5**	**+3.4**
OTAV	**Otavalo**	**126.91 94**	*e*PKPdf	**PKPdf**	**18 56 12.0**	**+0.6**
OTAV			LR	LR		
	comp=Z,4μm,20.0s					
OTAV	**Otavalo**	**126.91 94**	*e*P	**PKPdf**	**18 56 11.3**	**0.0**
SGD	**Sagiada**	**127.03 316**	P	**PKPdf**	**18 56 07.4**	**-2.8**
LJU	**Ljubljana**	**127.24 326**	*e*PP	PP	18 58 12.5	+2.9
KBA	**Koelnbreinsper**	**127.26 327**	*i* PKPdf	**PKPdf**	**18 56 10.2**	**-0.6**
	comp=Z,20nm,1.3s					
GORS	**Gorjuse**	**127.38 326**	*e*PKPdf	**PKPdf**	**18 56 11.3**	**+0.5**
GORS			*e*PP	**PP**	**18 58 13.1**	**+2.5**
GORS			*e*		18 59 28.0	
GORS			*e*		19 00 59.6	
GORS			*e*		19 09 48.4	
GORS			*e*		19 12 58.4	
MYKA	**Terra Mystica**	**127.38 327**	*i* PKPdf	**PKPdf**	**18 56 09.4**	**-1.4**
	comp=Z,12nm,1.2s					
GRGC	**Isla de Gorgon**	**127.49 91**	*e*P	**PKPdf**	**18 56 11.3**	**-0.6**
JAVS	**Javornik**	**127.59 326**	*e*PKPdf	**PKPdf**	**18 56 10.9**	**-0.3**
EKA	**Eskdalemuir Ar**	**127.70 344**	PKP	**PKPdf**	**18 56 10.3**	**-0.8**
	comp=Z,20nm,1.2s,baz=26,slow=4.0,SNR=9.0					
EKA			PP	**PP**	**18 58 14.2**	**+2.1**
	comp=Z,3.8nm,0.7s,baz=46,slow=6.1,SNR=4.5					
ESK	**Eskdalemuir**	**127.72 344**	PFAKE		18 56 20.0	+8.9
ESK			LR	LR		
	comp=Z,4μm,21.0s					
ABTA	**Abfaltersbach**	**127.92 327**	*i* PKPdf	**PKPdf**	**18 56 11.6**	**-0.3**
	comp=Z,19nm,0.9s					
MTDJ	**Mount Denham**	**127.95 72**	*e*PKPdf	**PKPdf**	**18 56 12.3**	**-0.4**
MTDJ			LR	LR		
	comp=Z,5μm,20.0s					
WTTA	**Wattenberg**	**128.05 328**	*i* PKiKP	**PKiKP**	**18 56 13.0**	**+0.1**
	comp=Z,20nm,1.0s					
MOTA	**Moosalm**	**128.27 329**	*i* PKiKP	**PKiKP**	**18 56 13.4**	**+0.2**
	comp=Z,22nm,0.9s					
RETA	**Reutte**	**128.35 329**	*i* PKPdf	**PKPdf**	**18 56 12.5**	**-0.2**
	comp=Z,10nm,0.9s					
MEM	**Membach**	**128.37 335**	PKP	**PKPdf**	**18 56 13.4**	**+1.0**
MALC	**Bahia Malaga**	**128.41 90**	*e*P	**PKPdf**	**18 56 15.1**	**+1.5**
CRUC	**La Cruz**	**128.56 93**	*e*P	**PKPdf**	**18 56 15.5**	**+1.2**
CAPC	**Capurgana**	**128.61 84**	*e*P	**PKPdf**	**18 56 10.7**	**-3.2**
FETA	**Feichten**	**128.68 329**	*i* PKiKP	**PKiKP**	**18 56 13.8**	**-0.3**
	comp=Z,28nm,1.1s					
LANF	**Langenberg**	**128.76 332**	PKP	**PKPdf**	**18 56 14.4**	**+1.1**
BCLA	**Clavier**	**128.81 335**	PKP	**PKPdf**	**18 56 13.4**	**+0.1**
MATE	**Matera**	**128.90 319**	‖ *i*P	**PKPdf**	**18 56 15.5**	**+1.7**
LVC	**Limon Verde**	**128.92 125**	PKP	**PKPdf**	**18 56 14.0**	**-0.9**
	comp=Z,188nm,1.0s,baz=271,slow=4.2,SNR=21					
LVC	**Limon Verde**	**128.92 125**	PKP	**PKPdf**	**18 56 14.0**	**-0.9**
LVC			*e*PKPdf	**PKiKP**	**18 56 14.4**	**-1.1**
LVC			LR	LR		
	comp=Z,4μm,22.0s					
POPC	**Popayan, Colom**	**128.93 92**	*e*P	**PKPdf**	**18 56 14.0**	**-0.9**
DAVA	**Damuels**	**128.93 329**	*i* PKiKP	**PKiKP**	**18 56 14.7**	**+0.2**
	comp=Z,17nm,0.9s					
BFO	**Black Forest**	**128.98 331**	PFAKE		18 56 30.0	+16
BFO			LR	LR		
	comp=Z,5μm,21.0s					
WLF	**Walferdange**	**129.01 334**	PKP	**PKPdf**	**18 56 15.3**	**+1.6**
WLF	**Walferdange**	**129.01 334**	*e*PKIKP	**PKPdf**	**18 56 14.3**	**+0.6**
WLF			MLR	MLR		
	comp=Z,7μm,22.0s					
WLF	**Walferdange**	**129.01 334**	*e*PKPdf	**PKPdf**	**18 56 14.3**	**+0.6**
WLF			LR	LR		
	comp=Z,7μm,22.0s					
SNF	**Seneffe**	**129.16 336**	PKP	**PKPdf**	**18 56 15.1**	**+1.1**
DAVOX	**Davos/Dischmat**	**129.27 329**	PKhKP	PKPpre	18 56 04.2	
	comp=Z,3.9nm,0.6s,baz=288,slow=3.7,SNR=8.8					
DAVOX			PKP	**PKiKP**	**18 56 16.3**	**+1.0**
	comp=Z,8.4nm,0.7s,baz=18,slow=3.2,SNR=8.0					
DOU	**Dourbes**	**129.35 335**	PKP	**PKPdf**	**18 56 14.8**	**+0.5**
TIP	**Timpagrande**	**129.61 317**	⇑ *i*P	**PKPdf**	**18 56 16.7**	**+1.4**
TIP	**Timpagrande**	**129.61 317**	*e*PKPdf	**PKPdf**	**18 56 15.3**	**0.0**
TIP			LR	LR		
	comp=Z,4μm,22.0s					
ECH	**Echery**	**129.61 332**	PKP	**PKPdf**	**18 56 15.1**	**+0.1**
TUE	**Stuetta**	**129.75 329**	PFAKE		18 56 30.0	+14
TUE			LR	LR		
	comp=Z,5μm,20.0s					
CUC	**Castrocucco**	**129.82 319**	PFAKE		18 56 30.0	+14
CUC			LR	LR		
	comp=Z,3μm,22.0s					
FLOC	**Florencia**	**129.85 93**	*e*P	**PKPdf**	**18 56 15.1**	**-1.3**
MOF	**Molkenrain**	**129.88 332**	PKP	**PKPdf**	**18 56 15.5**	**-0.1**
GTBY	**Guantanamo Bay**	**129.99 69**	PFAKE		18 56 30.0	+14
GTBY			LR	LR		
	comp=Z,6μm,22.0s					
AQU	**L'Aquila**	**130.06 322**	PFAKE		18 56 30.0	+14
AQU			LR	LR		
	comp=Z,5μm,22.0s					
HELC	**Santa Helena**	**130.34 87**	*e*P	**PKPdf**	**18 56 18.1**	**+0.3**
LOMF	**Lomont**	**130.39 331**	PKP	**PKPdf**	**18 56 16.6**	**+0.1**
GUYC	**Guyana, Colomb**	**130.43 88**	*e*P	**PKPdf**	**18 56 18.5**	**+0.4**
TSUM	**Tsumeb**	**130.64 238**	PKhKP	PKPpre	18 56 05.9	
	comp=Z,4.9nm,0.8s,baz=271,slow=2.5,SNR=7.5					
TSUM			PKP	**PKPdf**	**18 56 16.3**	**-1.6**
	comp=Z,16nm,0.8s,baz=101,slow=2.4,SNR=13					
TSUM			SKPbc	**SKPab**	**18 59 40.0**	**+1.9**
	comp=Z,11nm,0.9s,baz=70,slow=4.9,SNR=4.6					
TSUM	**Tsumeb**	**130.64 238**	PKPpre	PKPpre	18 56 05.9	
TSUM			PKP	**PKPdf**	**18 56 16.3**	**-1.6**
TSUM			*e*PKPdf	**PKiKP**	**18 56 17.9**	**-0.9**
TSUM			SKPbc	**SKPab**	**18 59 40.0**	**+1.9**
TSUM			LR	LR		
	comp=Z,7μm,21.0s					
CEL	**Celeste**	**130.65 317**	PFAKE		18 56 30.0	+13
CEL			LR	LR		
	comp=Z,3μm,22.0s					
VLC	**Villacollemand**	**130.71 326**	PFAKE		18 56 30.0	+13
VLC			LR	LR		
	comp=Z,3μm,22.0s					
SJCC	**San Jacinto, C**	**130.76 82**	*e*P	**PKPdf**	**18 56 15.1**	**-3.0**
PRAC	**Prado**	**130.82 90**	*e*P	**PKPdf**	**18 56 16.6**	**-1.6**
NORC	**Norcasia**	**130.96 88**	*e*P	**PKPdf**	**18 56 19.0**	**+0.5**
ROSC	**El Rosal**	**131.47 89**	PKP	**PKPdf**	**18 56 20.1**	**+0.2**
	comp=Z,32nm,0.6s,baz=61,slow=3.6,SNR=8.0					
ROSC			SKPbc	**SKPab**	**18 59 42.4**	**+0.4**
	comp=Z,23nm,0.9s,baz=278,slow=20,SNR=8.4					
ROSC	**El Rosal**	**131.47 89**	*e*P	**PKPdf**	**18 56 20.7**	**+0.8**
SJAC	**San Juan de Ar**	**131.71 91**	*e*P	**PKPdf**	**18 56 20.3**	**+0.3**
BNI	**Bardonecchia**	**132.09 329**	PFAKE		18 56 30.0	+10
BNI			LR	LR		
	comp=Z,6μm,21.0s					
LPAZ	**La Paz**	**132.39 118**	PKhKP	PKPpre	18 56 05.5	
	comp=Z,2.5nm,0.6s,baz=205,slow=2.5,SNR=8.0					
LPAZ			PKP	**PKiKP**	**18 56 23.4**	**+0.4**
	comp=Z,117nm,1.2s,baz=311,slow=2.3,SNR=7.2					
LPAZ			SKPbc	**SKPab**	**18 59 46.6**	**+0.4**
	comp=Z,14nm,0.9s,baz=16,slow=1.2,SNR=6.0					
OCAC	**Ocana**	**132.59 84**	*e*P	PKPpre	18 56 13.4	
BARC	**Barichara**	**132.69 87**	*e*P	PKPpre	18 56 15.5	
RUSC	**La Rusia**	**132.75 88**	*e*P	**PKPdf**	**18 56 21.1**	**-1.3**
WDD	**Wied Dalam**	**132.78 315**	PFAKE		18 56 30.0	+8.7
WDD			LR	LR		
	comp=Z,2μm,20.0s					
CLTB	**Caltabellotta**	**132.82 317**	PFAKE		18 56 30.0	+8.6
CLTB			LR	LR		
	comp=Z,1μm,22.0s					
SSB	**Saint Sauveur**	**132.98 331**	PFAKE		18 56 30.0	+8.5
SSB			LR	LR		
	comp=Z,5μm,21.0s					
GRMC	**Gramalote, San**	**133.09 85**	*e*P	**PKPdf**	**18 56 22.1**	**-0.5**
CBRI	**Barrientos, No**	**133.10 85**	*e*P	**PKPdf**	**18 56 21.9**	**-0.9**
PAMC	**Pamplona, Colo**	**133.19 86**	*e*P	**PKPdf**	**18 56 19.6**	**-3.7**
GRTK	**Grand Turk**	**133.36 66**	PFAKE		18 56 30.0	+7.3
GRTK			LR	LR		
	comp=Z,10μm,22.0s					
SDDR	**Presa de Saban**	**133.71 70**	*e*PKPdf	**PKPdf**	**18 56 22.9**	**-0.6**
SDDR			LR	LR		
	comp=Z,13μm,21.0s					
VSL	**Villasalto**	**134.21 322**	PFAKE		18 56 40.0	+16
VSL			LR	LR		
	comp=Z,3μm,22.0s					
BBSR	**BB Station**	**135.13 49**	PFAKE		18 56 40.0	+14
BBSR			LR	LR		
	comp=Z,12μm,21.0s					
SDV	**Santo Domingo**	**135.25 84**	*e*PKPdf	**PKPdf**	**18 56 26.5**	**-0.3**
SDV			LR	LR		
	comp=Z,3μm,21.0s					
SDV	**Santo Domingo**	**135.25 84**	*e*P	**PKPdf**	**18 56 26.5**	**-0.3**
CPUP	**Villa Florida**	**135.44 138**	PKhKP	PKPpre	18 56 12.3	
	comp=Z,5.5nm,0.9s,baz=284,slow=4.3,SNR=6.4					
CPUP			PKP	**PKPdf**	**18 56 26.7**	**+0.1**
	comp=Z,38nm,1.0s,baz=265,slow=1.5,SNR=23					
KEST	**Kesra**	**136.43 317**	PKhKP	PKPpre	18 56 21.5	
	comp=Z,3.7nm,0.7s,baz=321,slow=17,SNR=4.5					
KEST			PKP	**PKiKP**	**18 56 30.2**	**+0.2**
	comp=Z,16nm,0.9s,baz=193,slow=3.7,SNR=7.3					
SIV	**San Ignacio**	**138.58 122**	PKhKP	PKPpre	18 56 21.2	
	comp=Z,8.9nm,0.7s,baz=243,slow=3.0,SNR=17					
SIV			PKP	**PKPdf**	**18 56 33.3**	**+0.7**
	comp=Z,46nm,1.1s,baz=238,slow=2.8,SNR=20					
SIV			SKP		19 00 04.1	
	comp=Z,7.6nm,0.7s,baz=292,slow=3.3,SNR=5.3					
SJG	**San Juan**	**138.66 69**	*e*PKIKP	**PKPdf**	**18 56 33.0**	**+0.4**
SJG			MLR	MLR		
	comp=Z,8μm,21.0s					
SJG	**San Juan**	**138.66 69**	*e*PKPdf	**PKPdf**	**18 56 33.0**	**+0.4**
SJG			*e*SKPbc	**SKPbc**	**19 00 03.5**	**-0.3**
SJG			LR	LR		
	comp=Z,8μm,21.0s					
SJG	**San Juan**	**138.66 69**	*e*P	PKPpre	18 56 21.4	
SAML	**Samuel**	**139.65 111**	PFAKE		18 56 50.0	+15
SAML			LR	LR		
	comp=Z,4μm,21.0s					
PBRG	**Braganca**	**140.66 338**	*e*PKP	PKPpre	18 56 28.1	
PBRG	**Braganca**	**140.66 338**	*e*LR	LR	19 45 35.7	
PGAV	**Gavieira, Arco**	**141.08 339**	*e*PKP	PKPpre	18 56 28.4	
PGAV	**Gavieira, Arco**	**141.08 339**	*e*LR	LR	19 45 11.7	
	comp=Z,5μm,20.0s					
PCAB	**Cabril**	**141.22 339**	*e*PKP	PKPpre	18 56 31.4	
ESDC	**Sonseca Array**	**141.29 333**	PKhKP	PKPpre	18 56 32.3	
	comp=Z,1.6nm,0.6s,baz=19,slow=2.6,SNR=10					
ESDC			PP	**PP**	**18 59 37.6**	**-1.0**
	comp=Z,7.3nm,0.9s,baz=30,slow=7.1,SNR=6.5					
MVO	**Moncorvo**	**141.33 337**	*e*PKP	**PKPdf**	**18 56 33.4**	**-3.6**
MVO	**Moncorvo**	**141.33 337**	*e*LR	LR	19 46 35.6	
	comp=Z,4μm,22.0s					
POLO	**Lamas de Olo**	**141.43 338**	*e*PKP	PKPpre	18 56 32.4	
POLO	**Lamas de Olo**	**141.43 338**	*e*LR	LR	19 45 59.6	
PVRL	**Vila Real**	**141.49 338**	*e*PKP	PKPpre	18 56 32.2	
SMRT	**St. Maarten**	**141.53 69**	*e*	PKPpre	18 56 31.4	
PAB	**San Pablo**	**141.57 333**	*e*PKIKP	**PKPdf**	**18 56 37.1**	**-0.4**
PAB			MLR	MLR		
	comp=Z,4μm,20.0s					
PAB	**San Pablo**	**141.57 333**	*e*PKPdf	**PKPdf**	**18 56 37.1**	**-0.4**
PAB			LR	LR		
	comp=Z,4μm,20.0s					
MLYT	**Lee's Yard**	**142.64 70**	*e*	**PKPdf**	**18 56 37.5**	**-2.5**
PCBR	**Castelo Branco**	**142.64 337**	*e*PKP	**PKPdf**	**18 56 36.5**	**-2.8**
ANWB	**Willy Bob**	**142.81 69**	*e*	PKPpre	18 56 27.5	
ANWB	**Willy Bob**	**142.81 69**	*e*P	PKPpre	18 56 35.0	
ANWB	**Willy Bob**	**142.81 69**	*e*PKPdf	**PKPdf**	**18 56 40.7**	**+0.5**
ANWB			LR	LR		
	comp=Z,11μm,22.0s					
PCAS	**Casmilo, Conde**	**142.84 338**	*e*PKP	**PKPdf**	**18 56 36.5**	**-3.2**
PCAS	**Casmilo, Conde**	**142.84 338**	*e*LR	LR	19 46 05.6	
BPA	**Boggy Peak**	**142.88 70**	*e*	**PKPdf**	**18 56 37.2**	**-3.1**
PMRV	**Marv??o**	**142.96 336**	*e*PKP	**PKPdf**	**18 56 36.5**	**-3.4**
PMRV	**Marv??o**	**142.96 336**	*e*LR	LR	19 46 59.5	
	comp=Z,4μm,24.0s					
PTOM	**Tomar**	**143.19 338**	*e*PKP	PKPab	18 56 36.4	+0.5
TBG	**Guadaloupe-3**	**143.33 72**	*e*	PKPab	18 56 33.6	-3.5
PESTR	**Estremoz**	**143.52 336**	*e*PKP	PKPab	18 56 35.9	-1.4
PESTR	**Estremoz**	**143.52 336**	*e*LR	LR	19 47 35.4	
PMTG	**Montargil**	**143.60 337**	*e*PKP	PKPbc	18 56 38.4	0.0
PMTG	**Montargil**	**143.60 337**	*e*LR	LR	19 46 59.5	
SPB	**Sao Paulo**	**143.60 145**	PFAKE		18 56 50.0	+8.5
SPB			LR	LR		
	comp=Z,4μm,22.0s					
MGG	**Marie-Galante**	**143.62 71**	*e*P	PKPab	18 56 36.9	-1.4
MGG	**Marie-Galante**	**143.62 71**	*e*	PKPab	18 56 37.3	-1.0
MDN	**Morne-Daniel**	**143.67 72**	*e*	PKPbc	18 56 39.0	-0.3
DPMT	**Pointe Michel**	**143.69 73**	*e*	PKPab	18 56 38.5	-0.1
DSHT	**Scott's Head**	**143.71 73**	*e*	PKPbc	18 56 39.8	+0.4
DEG	**La Desirade**	**143.79 71**	*e*	PKPab	18 56 38.2	-0.8
DLPL	**La Plaine**	**143.80 72**	*e*	PKPab	18 56 37.2	-1.8
GRW	**Mount Saint Ca**	**143.88 78**	*e*	PKPab	18 56 36.9	-2.5
PBAR	**Barrancos**	**143.88 335**	*e*PKP	PKPbc	18 56 39.2	-0.1
PBAR	**Barrancos**	**143.88 335**	*e*LR	LR	19 49 11.3	
GRGR	**Grenville**	**143.89 78**	*e*	PKPab	18 56 36.8	-2.6
GRGR	**Grenville**	**143.89 78**	*e*P	PKPab	18 56 37.1	-2.3
GRGR	**Grenville**	**143.89 78**	*e*P	PKPab	18 56 38.5	-0.9
GRGR	**Grenville**	**143.89 78**	PFAKE		18 56 50.0	+7.8
GRGR			LR	LR		
	comp=Z,5μm,21.0s					
GRSS	**Sisters**	**143.91 77**	*e*	PKPab	18 56 38.5	-1.0
PCM	**Pelee Case Pet**	**143.93 73**	*e*P	PKPab	18 56 38.4	-1.1
PCM	**Pelee Case Pet**	**143.93 73**	*e*P	PKPbc	18 56 40.3	+0.2
PML	**Morne Lenard**	**143.96 73**	*e*P	PKPbc	18 56 40.6	+0.4
CXM	**Morne La Croix**	**143.97 73**	*e*P	PKPab	18 56 40.0	+0.2
EVO	**Evora**	**143.97 336**	*e*PKP	PKPab	18 56 39.1	+0.1
GBMF	**Grand Be**	**143.98 73**	*e*P	PKPab	18 56 39.6	-0.1
BAMF	**Morne Balai**	**143.99 73**	*e*P	PKPab	18 56 38.3	-1.5
FDF	**Fort de France**	**144.00 73**	*e*	**PKPab**	**18 56 38.5**	**-1.4**
FDF	**Fort de France**	**144.00 73**	*e*P	PKPbc	18 56 40.3	-0.1
FDF	**Fort de France**	**144.00 73**	*e*P	PKPbc	18 56 40.9	+0.6
FDF	**Fort de France**	**144.00 73**	*e*PKIKP	**PKPdf**	**18 56 42.6**	**+0.2**
FDF			MLR	MLR		
	comp=Z,4μm,20.0s					
FDF	**Fort de France**	**144.00 73**	*e*PKPdf	**PKPdf**	**18 56 42.6**	**+0.2**
FDF			LR	LR		
	comp=Z,4μm,20.0s					
PMAFR	**Mafra**	**144.10 338**	*e*PKP	PKPbc	18 56 40.1	+0.1
PMAFR	**Mafra**	**144.10 338**	*e*LR	LR	19 46 59.5	
BIM	**Bigot**	**144.12 74**	*e*P	PKPbc	18 56 41.0	+0.3
TRMF	**Trois Ilets**	**144.13 74**	*e*P	**PKPab**	**18 56 40.3**	**0.0**
SVB	**Belmont**	**144.14 76**	*e*	**PKPab**	**18 56 37.6**	**-2.7**
ZAM	**Aeronautique**	**144.15 74**	*e*P	PKPbc	18 56 40.6	-0.2
SVV	**Soufriere Volc**	**144.16 76**	*e*	**PKPab**	**18 56 38.3**	**-2.1**
LPMF	**Morne Lapointe**	**144.21 74**	*e*P	**PKPab**	**18 56 38.8**	**-1.7**
TPP	**Pointe-a-Pierr**	**144.25 81**	*e*	**PKPab**	**18 56 36.0**	**-4.7**
PMST	**Lisbon--Monsan**	**144.25 338**	*e*PKP	PKPbc	18 56 41.2	+0.8
LIS	**Lisbon**	**144.26 338**	*e*P	PKPbc	18 56 41.1	+0.7
LIS			AMS	AMS	20 02 21.9	
	comp=Z,6μm,22.8s					
LIS	**Lisbon**	**144.26 338**	*e*PKIKP	PKPbc	18 56 41.1	+0.7
TRN	**Trinidad (W)**	**144.27 80**	*e*	**PKPab**	**18 56 37.3**	**-3.5**
MVM	**Montagne Vaucl**	**144.28 74**	*e*P	**PKPab**	**18 56 40.0**	**-0.8**
PBEJ	**Beja**	**144.35 336**	*e*PKP	**PKPab**	**18 56 39.8**	**-0.6**
MCLT	**Moule a Chique**	**144.37 75**	*e*	**PKPab**	**18 56 36.1**	**-5.1**
PNCL	**Nicolau / Gran**	**144.54 337**	*e*PKP	**PKPdf**	**18 56 42.1**	**-0.6**
PNCL	**Nicolau / Gran**	**144.

*ISCJB **15** 18:45:38.4±0.3, 43°.77N±0°.04×105°.47W±0°.03, h0km, Error ellipse: s-maj=5.3km s-min=2.5km az=169.8*
*IDC **15** 18:45:38.4±2.2, 43°.66N×105°.38W, h0km, mb1 3.6/3, mb1mx3.4/65, mbtmp3.4/3, ML2.8/2, Error ellipse: s-maj=50.6km s-min=9.2km az=151.0*
*NEIC **15** 18:45:39.4±1.1, 43°.75N×105°.36W, h0km, ML3.1, Error ellipse: s-maj=12.2km s-min=11.5km az=69.0, Suspected Mining explosion.*
NEIC 61 km [38 miles] S of Gillette.
ISC 15 18:45:40.0±0.7, 43°.84N±0°.03×105°.28W±0°.02, h0km, n39, σ1§52/53, Wyoming

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RSSD	**Black Hills**	**0.94**	**72**	P	**Pg**	**18 45 58.1**	**+0.1**
	baz=249						
I25A	**Rochford**	**1.13**	**80**	P	**Pg**	**18 46 01.1**	**-0.6**
	baz=258						
H25A	**Fruitdale**	**1.44**	**56**	P	**Pn**	**18 46 07.3**	**-0.2**
	baz=236						
K22A	**Casper**	**1.49**	**218**	P	**Pn**	**18 46 05.8**	**-2.4**
	baz=37						
K22A	**Casper**	**1.49**	**218**	*e*P	**Pn**	**18 46 05.8**	**-2.4**
J26A	**Sides Ranch, S**	**1.69**	**107**	Sb	**Sg**	**18 46 34.5**	**+0.3**
	baz=286						
G25A	**Newell**	**1.90**	**44**	P	**Pb**	**18 46 15.1**	**-0.5**
	baz=225						
G25A				S	**Sg**	**18 46 42.0**	**+0.9**
	baz=225						
H26A	**Fairpoint**	**1.96**	**66**	Pb	**Pb**	**18 46 16.1**	**-0.5**
	baz=246						
H26A				Sb	**Sg**	**18 46 44.7**	**+1.6**
	baz=246						
G26A	**Maurine**	**2.41**	**52**	P	**Pn**	**18 46 22.1**	**+1.4**
	baz=233						
G26A				Sb	**Sg**	**18 46 56.5**	**-0.9**
	baz=233						
H27A	**Howes**	**2.44**	**70**	P	**Pn**	**18 46 22.2**	**+1.1**
	baz=251						
H27A				Sb	**Sg**	**18 46 58.2**	**-0.1**
	baz=251						
F25A	**Bowman**	**2.46**	**31**	P	**Pn**	**18 46 23.1**	**+1.7**
	baz=212						
F25A				S	**Sb**	**18 46 56.7**	**+0.8**
	baz=212						
PHWY	**Pilot Hill**	**2.54**	**183**	*e*Pg	**Pn**	**18 46 23.5**	**+0.8**
PHWY				*e*Sg	**Sn**	**18 46 54.5**	**0.0**
F26A	**Lodgepole**	**2.74**	**42**	Pb	**Pb**	**18 46 29.7**	**-0.1**
	baz=223						
G27A	**Dupree**	**2.85**	**56**	P	**Pn**	**18 46 27.8**	**+1.1**
	baz=238						
LAO	**LASA Array**	**2.93**	**347**	P	**Pn**	**18 46 27.8**	**0.0**
I28A	**Midland**	**2.98**	**85**	Pb	**Pb**	**18 46 33.4**	**-0.5**
	baz=267						
N23A	**Red Feather La**	**2.98**	**190**	P	**Pn**	**18 46 28.3**	**-0.4**
	baz=8.4						
RLMT	**Red Lodge**	**3.13**	**296**	P	**Pn**	**18 46 31.1**	**+0.4**
	baz=115						
RLMT	**Red Lodge**	**3.13**	**296**	*e*Pn	**Pn**	**18 46 30.8**	**0.0**
RLMT				*e*Sn	**Sn**	**18 47 07.0**	**-1.9**
BW06	**Boulder Array**	**3.30**	**253**	P	**Pn**	**18 46 33.0**	**-0.2**
	baz=71						
BW06	**Boulder Array**	**3.30**	**253**	*e*Pn	**Pn**	**18 46 33.1**	**0.0**
PDAR	**Pinedale Array**	**3.30**	**253**	Pn	**Pn**	**18 46 33.0**	**-0.2**
	5.3nm,0.3s,baz=77,slow=14,SNR=62						
PDAR				Lg	Lg	18 47 17.6	
	16nm,0.3s,baz=76,slow=28,SNR=10.0						
D25A	**Fairfield**	**3.59**	**22**	P	**Pn**	**18 46 39.3**	**+2.3**
	baz=204						
LKWY	**Lake**	**3.75**	**283**	*e*Pg	**Pg**	**18 46 51.0**	**-0.9**
LKWY				*e*Sg	**Sg**	**18 47 41.2**	**+0.7**
OGNE	**Ogallala**	**3.76**	**139**	P	**Pn**	**18 46 39.2**	**-0.1**
	baz=320						
H17A	**Grant Village**	**3.85**	**280**	*e*Pn	**Pn**	**18 46 41.4**	**+0.6**
H17A				*e*Sn	**Sn**	**18 47 24.4**	**-2.4**
LOHW	**Long Hollow**	**3.86**	**269**	*e*Pg	**Pb**	**18 46 50.9**	**+1.7**
LOHW				*e*Sg	**Sb**	**18 47 39.7**	**+3.2**
FLWY	**Flagg Ranch**	**3.92**	**275**	*e*Pg	**Pb**	**18 46 52.1**	**+2.1**
FLWY				*e*Sg	**Sg**	**18 47 42.9**	**-3.0**
MOOW	**Moose Ponds**	**3.96**	**271**	*e*Pn	**Pn**	**18 46 43.2**	**+1.1**
MOOW				*e*Sn	**Sn**	**18 47 24.1**	**-5.2**
SNOW	**Snow King Moun**	**3.99**	**267**	Pn	**Pn**	**18 46 43.3**	**+0.7**
ISCO	**Idaho Springs**	**4.04**	**184**	P	**Pn**	**18 46 42.9**	**-0.5**
	baz=2.6						
ISCO	**Idaho Springs**	**4.04**	**184**	*e*Pn	**Pn**	**18 46 42.8**	**-0.6**
ISCO				*e*Sg	**Sb**	**18 47 44.0**	**+2.2**
REDW	**Red Top Meadow**	**4.07**	**265**	*e*Pg	**Pb**	**18 46 54.3**	**+1.6**
IMW	**Indian Meadow**	**4.09**	**273**	*e*Pg	**Pb**	**18 46 55.5**	**+2.5**
TPAW	**Teton Pass**	**4.13**	**267**	*e*Pg	**Pb**	**18 46 54.1**	**+0.4**
O20A	**White River Ci**	**4.31**	**212**	P	**Pn**	**18 46 46.6**	**-0.3**
	baz=30						
O20A	**White River Ci**	**4.31**	**212**	*e*Pn	**Pn**	**18 46 46.6**	**-0.3**
O20A				*e*Sg	**Sb**	**18 47 50.6**	**+1.3**
ULM	**Lac du Bonnet**	**9.07**	**42**	Pn	**Pn**	**18 47 50.9**	**-1.2**
	0.7nm,0.3s,baz=236,slow=10,SNR=3.0						
ULM				Lg	Lg	18 50 22.9	
	0.4nm,0.3s,baz=127,slow=20,SNR=2.7						
YKA	**Yellowknife Ar**	**19.47**	**347**	P	**Pn**	**18 50 08.7**	**-0.5**
	0.1nm,0.3s,baz=163,slow=12,SNR=5.5						

*IDC **15** 18:46:45.2±0.9, 26°.65N×144°.16E, h0km, mb4.1/8, mb1 4.3/11, mb1mx4.0/76, mbtmp4.1/11, ML3.6/3, Error ellipse: s-maj=22.7km s-min=19.2km az=67.0*
*NEIC **15** 18:46:46.6±0.4, 26°.68N×144°.16E, h10km, mb4.3/1, Error ellipse: s-maj=11.1km s-min=7.1km az=68.0*
*ISCJB **15** 18:46:47.7±0.7, 26°.76N±0°.07×144°.16E±0°.07, h31km, mb4.1/9, Error ellipse: s-maj=10.7km s-min=8.4km az=21.6*
ISC 15 18:46:49.9±0.9, 26°.7N±0°.1×144°.08E±0°.09, h31km, n20, σ0§75/22, mb4.2/9, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**1.73**	**284**	Pn	**Pn**	**18 47 17.6**	**-0.4**
CBIJ				Sn	**Sn**	**18 47 38.8**	**-0.3**
JCJ	**Chichijima**	**1.73**	**284**	Pn	**Pn**	**18 47 17.6**	**-0.4**
	29nm,0.3s,baz=277,slow=21,SNR=19						
JCJ				Sn	**Sn**	**18 47 38.8**	**-0.3**
	144nm,0.3s,baz=98,slow=23,SNR=15						
JHJ2	**Mitsune**	**7.38**	**331**	Pn	**Pn**	**18 48 34.3**	**-1.3**
JHJ	**Hachijo jima 2**	**7.41**	**331**	Pn	**Pn**	**18 48 34.4**	**-1.5**
	1.7nm,0.3s,baz=73,slow=19,SNR=3.6						
MJAR	**Matsushiro Arr**	**11.01**	**334**	Pn	**Pn**	**18 49 24.3**	**-1.1**
	0.6nm,0.3s,baz=129,slow=31,SNR=4.5						
MAJO	**Matsushiro**	**11.01**	**334**	Pn	**Pn**	**18 49 24.7**	**-0.7**
KSRS	**Korea Array**	**17.36**	**312**	P	**P**	**18 50 50.9**	**-0.1**
	0.2nm,0.3s,baz=124,slow=10,SNR=5.2						
KSAR	**Wonju Array Be**	**17.38**	**312**	P	**P**	**18 50 50.9**	**-0.3**
USRK	**Ussuriysk Ar.**	**20.01**	**334**	P	**Pn**	**18 51 23.0**	**+1.1**
	7.5nm,1.1s,baz=152,slow=13,SNR=3.5						
SONM	**Songino Array**	**36.17**	**316**	P	**P**	**18 53 50.7**	**+1.0**
	3.8nm,0.7s,baz=112,slow=6.9,SNR=5.0						
CMAR	**Chiang Mai Arr**	**42.30**	**268**	P	**P**	**18 54 41.8**	**+0.8**
	1.3nm,0.9s,baz=54,slow=6.8,SNR=4.3						
WRAB	**Tennant Creek**	**47.30**	**192**	*e*P	**P**	**18 55 20.6**	**-0.2**
	1.9nm,0.8s						
WRA	**Warramunga Arr**	**47.31**	**192**	P	**P**	**18 55 20.7**	**-0.1**
	5.3nm,0.7s,baz=14,slow=8.4,SNR=8.8						
ASAR	**Alice Springs**	**51.02**	**192**	P	**P**	**18 55 48.3**	**-0.9**
	0.7nm,0.6s,baz=15,slow=14,SNR=4.5						
MKAR	**Makanchi Array**	**52.03**	**310**	P	**P**	**18 55 57.2**	**+0.6**
	2.7nm,0.8s,baz=98,slow=11,SNR=5.0						
ILAR	**Eielson Array**	**57.26**	**28**	P	**P**	**18 56 34.3**	**+0.1**
	1.4nm,1.0s,baz=254,slow=5.5,SNR=2.5						
BVAR	**Borovoye Array**	**59.48**	**318**	P	**P**	**18 56 50.1**	**+0.2**
	4.2nm,0.8s,baz=89,slow=7.1,SNR=6.0						
YKA	**Yellowknife Ar**	**71.69**	**29**	P	**P**	**18 58 08.7**	**+0.2**
	0.4nm,0.7s,baz=291,slow=6.3,SNR=2.4						
PTGA	**Pitinga**	**145.34**	**46**	PKPbc	**PKPbc**	**19 06 24.8**	**-0.6**
	3.9nm,0.7s,baz=290,slow=1.3,SNR=4.1						
LPAZ	**La Paz**	**148.37**	**77**	PKPbc	**PKPbc**	**19 06 34.3**	**-0.5**
	6.1nm,0.9s,baz=1.8,slow=3.8,SNR=6.4						

*ISCJB **15** 18:49:05.6±0.7, 37°.78N±0°.04×42°.85E±0°.05, h2km±9km, Error ellipse: s-maj=7.7km s-min=5.2km az=42.8*
*DDA **15** 18:49:05.2, 37°.79N×42°.82E, h7km, Md3.0*
*ISK **15** 18:49:05.7, 37°.75N×42°.84E, h9km, MD2.8*
*CSEM **15** 18:49:05.9±0.3, 37°.78N×42°.85E, h5km, MD2.8, Error ellipse: s-maj=6.2km s-min=5.3km az=137.0*
ISC 15 18:49:05.8±1.1, 37°.79N±0°.03×42°.84E±0°.03, h7km±12km, n19, σ0§63/30, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SIRT	**Sirnak**	**0.43**	**228**	*e*PG	**Pg**	**18 49 14.2**	**+0.1**
SIRT				*e*SG	**Sg**	**18 49 20.1**	**+0.4**
SIRT	**Sirnak**	**0.43**	**228**	*e*Pg	**Pg**	**18 49 14.2**	**+0.1**
SIRT				*e*Sg	**Sg**	**18 49 20.1**	**+0.4**
SIRN	**S¨–rnak**	**0.45**	**229**	P	**Pg**	**18 49 14.1**	**-0.4**
SIRN				S	**Sg**	**18 49 20.9**	**+0.6**
SIRN	**S¨–rnak**	**0.45**	**229**	*i* P	**Pg**	**18 49 14.1**	**-0.4**
SIRN				*i* S	**Sg**	**18 49 20.9**	**+0.6**
GEVA	**Gevas**	**0.55**	**18**	P	**Pg**	**18 49 15.8**	**-0.7**
GEVA				S	**Sg**	**18 49 24.6**	**+0.9**
GEVA	**Gevas**	**0.55**	**18**	*i* P	**Pg**	**18 49 15.8**	**-0.7**
GEVA				*i* S	**Sg**	**18 49 24.6**	**+0.9**
CUKT	**Cukurca**	**0.82**	**131**	*e*PG	**Pg**	**18 49 21.4**	**-0.1**
CUKT				*e*SG	**Sg**	**18 49 32.7**	**+0.5**
CUKT	**Cukurca**	**0.82**	**131**	*e*Pg	**Pg**	**18 49 21.4**	**-0.1**
CUKT				*e*Sg	**Sg**	**18 49 32.7**	**+0.5**
BTMN	**Batman**	**1.24**	**275**	P	**Pb**	**18 49 28.6**	**-1.1**
BTMN				S	**Sb**	**18 49 46.2**	**+0.2**
BTMN	**Batman**	**1.24**	**275**	*i* P	**Pb**	**18 49 28.6**	**-1.1**
BTMN				*i* S	**Sb**	**18 49 46.2**	**+0.2**
EKAR	**Karacoban**	**1.58**	**338**	P	**Pg**	**18 49 36.3**	**+0.1**
EKAR	**Karacoban**	**1.58**	**338**	*i* P	**Pg**	**18 49 36.3**	**+0.1**
MARD	**Mardin**	**1.70**	**254**	*i* P	**Pn**	**18 49 36.2**	**+0.1**
MARD				*i* S	**Sb**	**18 49 59.2**	**+0.1**
MAZI	**Mazidag**	**1.93**	**261**	*e*PN	**Pn**	**18 49 39.5**	**+0.4**
MAZI	**Mazidag**	**1.93**	**261**	*e*Pn	**Pn**	**18 49 39.5**	**+0.4**
DIY	**Diyarbakir**	**2.07**	**274**	*e*Pn	**Pb**	**18 49 42.6**	**-1.1**
DYBB	**Diyarbakir**	**2.14**	**275**	*e*PN	**Pn**	**18 49 42.6**	**+0.6**
PTK	**Pertek**	**2.92**	**293**	*e*PN	**Pn**	**18 49 53.8**	**+0.9**
PTK	**Pertek**	**2.92**	**293**	*e*Pn	**Pn**	**18 49 53.8**	**+0.9**

*ISCJB **15** 18:49:06.6±0.7, 36°.30N±0°.04×142°.20E±0°.08, h19km, mb3.8/7, Error ellipse: s-maj=9.0km s-min=5.3km az=1.6*
*IDC **15** 18:49:06.7±1.3, 36°.33N×142°.01E, h0km, mb3.8/6, mb1 3.9/11, mb1mx3.7/78, mbtmp3.9/11, ML3.8/4, Error ellipse: s-maj=32.0km s-min=19.1km az=75.0*
*JMA **15** 18:49:10.8±0.2, 36°.35N×141°.83E, h70km±4km, M3.4*
*NEIC **15** 18:49:11.4±0.7, 36°.30N×142°.02E, h35km, mb4.0/1, Error ellipse: s-maj=14.1km s-min=9.6km az=70.0*
ISC 15 18:49:08.9±0.9, 36°.34N±0°.06×142°.03E±0°.08, h19km, n27, σ1§02/32, mb3.8/7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.14**	**236**	P	**Pn**	**18 49 29.8**	**-0.1**
CHOJ				*e*S	**Sb**	**18 49 44.3**	**-0.2**
JHO	**Hitachi**	**1.21**	**283**	P	**Pn**	**18 49 29.6**	**-1.1**
ONAJ	**Iwakimizuishiy**	**1.24**	**308**	P	**Pn**	**18 49 30.9**	**-0.4**
JFK	**Kawauchi**	**1.38**	**318**	P	**Pn**	**18 49 33.2**	**0.0**
JFT	**Otama**	**1.79**	**311**	P	**Pn**	**18 49 39.6**	**+0.8**
JMM	**Marumori**	**1.81**	**327**	P	**Pn**	**18 49 39.3**	**+0.2**
BSO1	**Boso 1**	**1.89**	**207**	P	**Pn**	**18 49 40.5**	**+0.8**
BSO1				*e*S	**Sn**	**18 50 03.2**	**+0.5**
BSO3	**Boso 3**	**1.97**	**219**	P	**Pn**	**18 49 41.6**	**+0.5**
JAG	**Ashikaga**	**2.08**	**273**	P	**Pn**	**18 49 42.2**	**-0.6**
JFY	**Yanaizu**	**2.14**	**300**	P	**Pn**	**18 49 44.7**	**+1.0**
MJAR	**Matsushiro Arr**	**3.08**	**275**	Pn	**Pn**	**18 49 58.1**	**+1.5**
	12nm,0.3s,baz=114,slow=9.0,SNR=50						
MAJO	**Matsushiro**	**3.09**	**275**	*e*Pn	**Pn**	**18 49 57.9**	**+1.2**
MAT	**Matsushiro**	**3.09**	**275**	P	**Pn**	**18 49 57.6**	**+1.0**
MAT				*e*S	**Sn**	**18 50 31.6**	**-1.4**
JHJ	**Hachijo jima 2**	**3.71**	**211**	Pn	**Pn**	**18 50 05.3**	**+0.1**
	28nm,0.3s,baz=346,slow=16,SNR=20						
JHJ				Sn	**Sn**	**18 50 46.5**	**-1.9**
	30nm,0.3s,baz=76,slow=23,SNR=8.4						
ASAJ	**Asahikawa**	**7.78**	**3**	Pn	**Pn**	**18 51 02.5**	**+1.5**
	0.6nm,0.3s,baz=200,slow=17,SNR=8.7						
ASAJ				Sn	**Sn**	**18 52 26.0**	**-2.5**
	0.1nm,0.3s,baz=12,slow=14,SNR=2.0						
CBIJ	**Chichi jima**	**9.22**	**179**	Pn	**Pn**	**18 51 19.7**	**-1.2**
CBIJ				Sn	Sn	18 52 56.6	-7.5
JCJ	**Chichijima**	**9.22**	**179**	Pn	**Pn**	**18 51 19.7**	**-1.2**
	4.3nm,0.3s,baz=287,slow=19,SNR=2.7						
JCJ				Sn	Sn	18 52 56.6	-7.5
	6.0nm,0.3s,baz=270,slow=20,SNR=3.7						
USRK	**Ussuriysk Ar.**	**10.96**	**319**	Pn	**Pn**	**18 51 45.1**	**+0.4**
	0.2nm,0.3s,baz=133,slow=12,SNR=2.4						
SONM	**Songino Array**	**28.58**	**305**	P	**P**	**18 55 03.1**	**-0.7**
	1.4nm,0.5s,baz=107,slow=8.9,SNR=5.6						
CMAR	**Chiang Mai Arr**	**41.81**	**257**	P	**P**	**18 56 58.5**	**+1.0**
	0.7nm,0.9s,baz=61,slow=4.2,SNR=3.2						
ZALV	**Zalesovo Beam**	**42.74**	**313**	P	**P**	**18 57 04.6**	**-0.1**
	1.2nm,0.5s,baz=96,slow=6.9,SNR=3.0						
LSA	**Lhasa**	**42.77**	**276**	*e*P	**P**	**18 57 06.0**	**+0.2**
MKAR	**Makanchi Array**	**44.90**	**303**	P	**P**	**18 57 23.0**	**+0.7**
	0.8nm,0.6s,baz=96,slow=6.7,SNR=3.7						
WRAB	**Tennant Creek**	**56.44**	**189**	P	**P**	**18 58 49.6**	**+0.2**
	1.2nm,0.7s						
WRA	**Warramunga Arr**	**56.45**	**189**	P	**P**	**18 58 49.3**	**-0.2**
	0.7nm,0.8s,baz=6.9,slow=7.4,SNR=3.0						
ASAR	**Alice Springs**	**60.18**	**189**	P	**P**	**18 59 16.8**	**+1.3**
	0.5nm,0.8s,baz=347,slow=6.7,SNR=2.7						
LPAZ	**La Paz**	**146.60**	**61**	PKPbc	**PKPab**	**19 08 51.4**	**0.0**
	6.8nm,1.2s,baz=118,slow=3.9,SNR=4.1						

*NIED **15** 19:07:00, 38°.60N×141°.90E, h41km, Mw5.0 Best double couple: M0 3.70000×10^16 NP1:φs133.00000°, δ14.00000°, λ40.00000°. NP2:φs3.00000°, δ81.00000°, λ101.00000°.*
*MOS **15** 19:07:38.4±0.9, 38°.71N×141°.89E, h37km, mb5.2/69, Error ellipse: s-maj=6.8km s-min=3.9km az=105.6*
*ISCJB **15** 19:07:39.9±0.4, 38°.66N±0°.02×141°.89E±0°.04, h51km±2km, mb4.9/149, MS4.8/6, Error ellipse: s-maj=5.3km s-min=3.1km az=30.7*
*JMA **15** 19:07:40.9±0.1, 38°.63N×141°.93E, h48km±1km, M4.7*
JMA Felt III J1.
*IDC **15** 19:07:41.6±1.6, 38°.64N×141°.89E, h52km±14km, mb4.3/31, mb1 4.5/38, mb1mx4.4/42, mbtmp4.6/38, ML4.1/6, MS4.7/2, Ms1 4.7/2, ms1mx3.8/58, Error ellipse: s-maj=12.7km s-min=10.2km az=109.0*
*NEIC **15** 19:07:42.0±0.6, 38°.66N×141°.80E, h56km±5km, mb4.9/49, Error ellipse: s-maj=6.7km s-min=4.4km az=131.0*
NEIC Recorded [3 JMA] in Miyagi.
ISC 15 19:07:40.2±0.4, 38°.64N±0°.03×141°.99E±0°.04, h46km±2km, h46km:pP-P, n383, σ1§34/430, mb4.9/153, MS4.7/7, 27C-33D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.50**	**330**	P	**Pn**	**19 07 52.0**	**+0.7**
OFUJ				S	**Sn**	**19 07 59.7**	**+0.5**
JIO	**Ouri**	**0.54**	**250**	P	**Pn**	**19 07 51.9**	**+0.2**
JIO				*i* S	**Sn**	**19 07 59.3**	**-0.6**
JMK	**Ichinoseki**	**0.68**	**297**	P	**Pn**	**19 07 54.3**	**+0.8**
JMK				S	**Sn**	**19 08 03.2**	**+0.1**
JOM	**Ohasama**	**0.99**	**327**	P	**Pn**	**19 07 58.5**	**+0.8**
JOM				S	**Sn**	**19 08 09.0**	**-1.6**
JOU	**Okura**	**1.08**	**256**	P	**Pn**	**19 07 59.1**	**+0.2**
JOU				S	**Sn**	**19 08 12.6**	**-0.1**
JMM	**Marumori**	**1.22**	**231**	P	**Pn**	**19 08 00.6**	**-0.2**
JMM				S	**Sn**	**19 08 15.1**	**-1.1**
JRG	**Rokugo**	**1.30**	**306**	P	**Pn**	**19 08 02.4**	**+0.5**
JYK	**Kaneyama**	**1.30**	**283**	P	**Pn**	**19 08 02.4**	**+0.4**
JYK				*e*S	**Sn**	**19 08 14.6**	**-3.7**
JFK	**Kawauchi**	**1.55**	**215**	P	**Pn**	**19 08 05.6**	**+0.2**
JFK				S	**Sn**	**19 08 23.1**	**-1.2**
ERM	**Erimo**	**3.48**	**14**	*d i* P	**Pn**	**19 08 32.5**	**+0.6**
ERM				pmax	pmax		
	comp=Z,77nm,1.0s						
ERM	**Erimo**	**3.48**	**14**	*e*Pn	**Pn**	**19 08 32.9**	**+1.0**
ERM				*e*Sn	**Sn**	**19 09 13.8**	**+2.0**
MAJO	**Matsushiro**	**3.66**	**236**	*d i* P	**Pn**	**19 08 36.2**	**+1.8**
MAJO	**Matsushiro**	**3.66**	**236**	*e*Pn	**Pn**	**19 08 36.5**	**+2.1**
MAT	**Matsushiro**	**3.66**	**236**	P	**Pn**	**19 08 35.9**	**+1.5**
MAT				*e*S	**Sn**	**19 09 19.2**	**+2.8**
MJAR	**Matsushiro Arr**	**3.66**	**236**	P	**Pn**	**19 08 36.2**	**+1.8**
	comp=Z,27nm,0.3s,baz=38,slow=12,SNR=285						
INU	**Inuyama**	**5.16**	**232**	*e*Pn	**Pn**	**19 08 57.2**	**+2.3**
ASAJ	**Asahikawa**	**5.49**	**5**	P	**Pn**	**19 09 00.4**	**+1.1**
	comp=Z,6.5nm,0.3s,baz=235,slow=13,SNR=50						
ASAJ				S	**Sn**	**19 09 59.3**	**-1.9**
	comp=Z,13nm,0.3s,baz=38,slow=16,SNR=6.0						
ASAJ	**Asahikawa**	**5.49**	**5**	*e*Pn	**Pn**	**19 08 60.0**	**+0.6**
ASAJ				S	**Sn**	**19 09 59.3**	**-1.9**
ASAJ				*e*Sn	Sn	19 10 02.3	+1.2
JHJ2	**Mitsune**	**5.79**	**198**	*e*Pn	**Pn**	**19 09 03.2**	**-0.4**
JHJ2				*e*Sn	**Sn**	**19 10 09.0**	**+0.2**
JHJ	**Hachijo jima 2**	**5.79**	**199**	P	**Pn**	**19 09 03.5**	**-0.2**
	comp=Z,28nm,0.3s,baz=321,slow=23,SNR=32						
JHJ				S	**Sn**	**19 10 05.8**	**-3.0**
	comp=Z,96nm,0.3s,baz=75,slow=23,SNR=7.1						
JHJ				LR	LR	19 11 51.7	
	comp=Z,6μm,18.2s,baz=200,slow=43						
YUK	**Yuzh-Kuril'sk**	**6.12**	**27**	*e*P	**Pn**	**19 09 08.1**	**0.0**
YUK				*e*S	**Sn**	**19 10 13.8**	**-2.9**
YUK				pmax	pmax		
	comp=E,62nm,0.5s						
YUK				pmax	pmax		
	comp=Z,182nm,0.5s						
YUK				pmax	pmax		
	comp=N,105nm,0.3s						
SHO	**Shikotan**	**6.37**	**33**	*e*P	**Pn**	**19 09 09.9**	**-1.5**
SHO				*i* S	**Sn**	**19 10 17.0**	**-5.8**
SHO				pmax	pmax		
	comp=Z,55nm,0.6s						
SHO				pmax	pmax		
	comp=E,69nm,0.7s						
SHO				pmax	pmax		
	comp=N,18nm,0.3s						
KUR	**Kuril'sk**	**7.91**	**32**	*e*P	**Pn**	**19 09 33.4**	**+0.9**
KUR				*i* S	**Sn**	**19 10 56.9**	**-3.6**
KUR				pmax	pmax		
	comp=N,22nm,0.6s						
KUR				pmax	pmax		
	comp=E,15nm,0.6s						
KUR				pmax	pmax		
	comp=Z,37nm,0.6s						
KUR				smax	smax		
	comp=N,86nm,0.7s						
KUR				smax	smax		
	comp=E,115nm,0.7s						
YSS	**Yuzh-Sakhalins**	**8.33**	**4⇑**	*e*P	**Pn**	**19 09 38.3**	**+0.1**
YSS				*e*S	**Sn**	**19 11 11.3**	**+0.5**
YSS				pmax	pmax		
	comp=Z,70nm,1.1s						
VLA	**Vladivostok**	**8.86**	**304**	*e*P	**Pn**	**19 09 45.2**	**-0.4**
MSHR	**Mys Shultsa**	**9.13**	**299**	*i* P	**Pn**	**19 09 49.7**	**+0.4**
USRK	**Ussuriysk Ar.**	**9.34**	**310**	P	**Pn**	**19 09 53.4**	**+1.3**
	comp=Z,2.4nm,0.3s,baz=124,slow=15,SNR=30						
JNU	**Nakatsue**	**10.56**	**242**	P	**Pn**	**19 10 10.9**	**+2.0**
	comp=Z,1.7nm,0.3s,baz=42,slow=4.6,SNR=31						
JNU	**Nakatsue**	**10.56**	**242**	*e*Pn	**Pn**	**19 10 09.6**	**+0.6**
MDJ	**Mudanjiang**	**11.03**	**307**	P	**Pn**	**19 10 15.0**	**-0.2**
MDJ				S	**Sn**	**19 12 15.1**	**-2.0**
MDJ				PcP	**PcP**	**19 16 11.3**	**+0.9**
MDJ				ScP	**ScP**	**19 19 40.4**	**+1.3**
MDJ				PcS	**PcS**	**19 19 45.9**	**+1.9**
MDJ	**Mudanjiang**	**11.03**	**307**	ScS	ScS	19 23 15.9	+1.7
MDJ				pmax	pmax		
	comp=Z,8.0nm,1.9s						
MDJ				pmax	pmax		
	comp=Z,3μm,18.3s						
MDJ				LR	LR		
	comp=N,2μm,23.4s						
MDJ				LR	LR		
	comp=E,3μm,21.8s						
MDJ				LR	LR		
	comp=Z,3μm,20.1s						
MDJ	**Mudanjiang**	**11.03**	**307**	*e*Pn	**Pn**	**19 10 16.0**	**+0.8**
	comp=Z,49nm,1.0s						
MDJ				*e*Sn	**Sn**	**19 12 16.1**	**-1.0**
HABR	**Khabarovsk**	**11.04**	**335**	*e*P	**Pn**	**19 10 12.6**	**-2.7**
HABR				*e*S	**Sn**	**19 12 12.3**	**-4.9**
HABR				pmax	pmax		
	comp=Z,18nm,0.9s						
HABR				MLR	MLR		
	comp=Z,2μm,15.0s						
KSRS	**Korea Array**	**11.16**	**268**	P	**Pn**	**19 10 20.5**	**+3.5**
	comp=Z,1.0nm,0.3s,baz=79,slow=14,SNR=43						
KSAR	**Wonju Array Be**	**11.19**	**268**	P	**Pn**	**19 10 20.5**	**+3.0**
KSAR	**Wonju Array Be**	**11.19**	**268**	P	**Pn**	**19 10 20.5**	**+3.0**
CBIJ	**Chichi jima**	**11.52**	**179**	P	**Pn**	**19 10 19.7**	**-2.3**
CBIJ				S	Sn	19 12 18.0	-11
JCJ	**Chichijima**	**11.52**	**179**	P	**Pn**	**19 10 19.7**	**-2.3**
	comp=Z,7.6nm,0.3s,baz=299,slow=19,SNR=4.6						
JCJ				S	Sn	19 12 18.0	-11
	comp=Z,7.9nm,0.3s,baz=311,slow=20,SNR=3.5						
TJN	**Taejon**	**11.84**	**264**	*i* P	**Pn**	**19 10 26.1**	**-0.2**
INCN	**Inchon**	**12.16**	**269**	*e*Pn	**Pn**	**19 10 30.2**	**-0.6**
TYV	**Tymovskoe**	**12.23**	**2**	*e*P	**Pn**	**19 10 32.2**	**+0.6**
TYV				pmax	pmax		
	comp=Z,22nm,

comp=E,67nm,0.8s
SEY Seymchan 25.13 11 P **P 19 13 02.7 +2.2**
comp=E,34nm,0.8s,baz=202,slow=6.8,SNR=67
SEY Seymchan 25.13 11⇑ *i*P **P 19 13 01.1 +0.6**
BOD Bodaibo 26.44 326 *e*P **P 19 13 12.2 -0.2**
BOD pmax pmax
comp=Z,18nm,0.9s
ULN Ulaanbaatar 26.87 301 *e*P **P 19 13 16.2 -0.4**
ULN pmax pmax
comp=Z,11nm,0.8s
ULN Ulaanbaatar 26.87 301 *e*P **P 19 13 16.2 -0.4**
comp=Z,11nm,0.8s
XAN Xi'an 26.95 270 P **P 19 13 15.8 -1.5**
XAN pmax pmax
comp=Z,15nm,0.7s
SONM Songino Array 27.30 301 P **P 19 13 20.5 0.0**
comp=Z,7.2nm,0.9s,baz=103,slow=8.2,SNR=24
SONM PcP **PcP 19 16 39.4 +0.4**
comp=Z,3.0nm,0.8s,baz=114,slow=2.4,SNR=7.1
ENH Enshi 27.96 263 *e*P **P 19 13 25.4 -1.0**
comp=Z,73nm,0.6s
H11N2 WAKE ISLAND Hy 28.62 124 T T 19 43 53.0
baz=316,slow=75,SNR=3178
H11N1 WAKE ISLAND Hy 28.63 124 T T 19 43 53.6
baz=316,slow=75,SNR=4166
H11N3 WAKE ISLAND Hy 28.64 124 T T 19 43 54.3
baz=316,slow=75,SNR=2975
H11S1 WAKE ISLAND Hy 29.39 126 T T 19 44 46.7
baz=318,slow=76,SNR=1741
H11S3 WAKE ISLAND Hy 29.39 126 T T 19 44 46.8
baz=318,slow=76,SNR=1733
H11S2 WAKE ISLAND Hy 29.41 126 T T 19 44 48.9
baz=318,slow=76,SNR=1332
TLY Talaya 29.65 309 P **P 19 13 41.7 +0.4**
comp=Z,14nm,0.8s,baz=113,slow=5.2,SNR=28
TLY PcP **PcP 19 16 45.2 +0.6**
comp=Z,2.1nm,0.7s,baz=234,slow=4.0,SNR=3.8
TLY Talaya 29.65 309 *e*P **P 19 13 42.0 +0.8**
TLY pmax pmax
comp=Z,23nm,0.9s
TLY Talaya 29.65 309 *e*P **P 19 13 39.9 -1.4**
comp=Z,20nm,0.9s
TLY PcP **PcP 19 16 45.2 +0.6**
ZAK Zakamensk 29.66 306 *e*P **P 19 13 41.7 +0.3**
ZAK pmax pmax
comp=Z,21nm,0.9s
LZH Lanzhou 30.28 277 *e*P **P 19 13 47.0 -0.1**
LZH pP pP 19 14 04.9 +5.6
LZH sP sP 19 14 10.8 +6.0
LZH pmax pmax
comp=Z,52nm,1.0s
MOY Mondy 31.28 308 *e*P **P 19 13 56.2 +0.5**
MOY pmax pmax
comp=Z,16nm,1.1s
GYA Guiyang 31.97 258 P **P 19 14 02.0 0.0**
GYA pP sP 19 14 18.3 -1.4
GYA PP **PnPn 19 15 10.0 +1.8**
GYA PcP PcP 19 16 25.6 -26
GYA S **S 19 19 07.4 -3.0**
GYA sS sS 19 19 33.0 +2.1
GYA ScP **ScP 19 20 29.8 -1.1**
GYA SS **SnSn 19 21 01.3 -1.0**
GYA Guiyang 31.97 258 ScS ScS 19 24 27.4 -2.3
GYA pmax pmax
comp=Z,20nm,0.8s
GYA pmax pmax
comp=Z,120nm,5.3s
GYA LR LR
comp=N,520nm,17.0s
GYA LR LR
comp=E,460nm,17.1s
GYA LR LR
comp=Z,490nm,17.4s
BILL Bilibino 32.36 17⇑ *i*P **P 19 14 05.0 +0.2**
BILL *i* 19 14 17.9
BILL pmax pmax
comp=Z,8.0nm,1.0s
BILL Bilibino 32.36 17 *e*P **P 19 14 05.3 +0.5**
comp=Z,8.8nm,0.9s
GTA Gaotai 32.56 285 *e*P **P 19 14 06.8 -0.3**
GTA pP pP 19 14 21.6 +2.3
GTA sP sP 19 14 29.0 +4.2
GTA pmax pmax
comp=Z,3.0nm,0.9s
TIXI Tiksi 33.75 353 P **P 19 14 16.7 -0.2**
comp=Z,9.0nm,0.7s,baz=141,slow=6.7,SNR=59
TIXI Tiksi 33.75 353 *i* P **P 19 14 16.4 -0.5**
TIXI pmax pmax
comp=Z,9.0nm,0.7s
TIXI Tiksi 33.75 353 *e*P **P 19 14 16.6 -0.3**
comp=Z,9.2nm,0.8s
DAV Davao City (W) 34.76 209 LR LR 19 26 43.9
comp=Z,2μm,20.6s,baz=92,slow=33
KMI Kunming 35.68 260 P **P 19 14 34.0 -0.4**
KMI pP sP 19 14 50.5 -1.6
KMI pmax pmax
comp=Z,24nm,0.9s
KMI pmax pmax
comp=Z,3μm,16.8s
KMI LR LR
comp=N,720nm,23.2s
KMI LR LR
comp=E,900nm,22.7s
KMI LR LR
comp=Z,1μm,17.5s
KRAR Krasnoyarsk 36.64 315 *e*P **P 19 14 41.3 -0.6**
KRAR pmax pmax
comp=Z,73nm,0.9s
SKNT Sakolnakorn 39.56 248 P **P 19 15 08.5 +1.5**
comp=Z,14nm,1.4s
CRAI Chiangrai 40.22 255 P **P 19 15 13.2 +0.7**
comp=Z,340nm,1.3s
WMQ Urumqi 40.55 295⇓ *i*P **P 19 15 16.3 +1.3**
WMQ pP pP 19 15 33.3 +5.9
WMQ sP sP 19 15 39.1 +6.2
WMQ S **S 19 21 24.3 +3.4**
WMQ SS **SS 19 24 18.1 -3.5**
WMQ ScS **ScS 19 25 16.0 -0.5**
WMQ pmax pmax
comp=Z,36nm,0.8s
WMQ pmax pmax
comp=Z,1μm,11.2s
WMQ LR LR
comp=N,890nm,21.0s
WMQ LR LR
comp=E,850nm,17.8s
WMQ LR LR
comp=Z,820nm,17.8s
KHON Khomkaen 40.82 248 P **P 19 15 18.2 +0.8**
comp=Z,8.9nm,0.7s
ZALV Zalesovo Beam 41.19 311 P **P 19 15 20.0 0.0**
comp=Z,16nm,0.5s,baz=87,slow=7.2,SNR=97
ZALV PcP **PcP 19 17 18.6 +0.3**
comp=Z,7.7nm,0.7s,baz=103,slow=2.8,SNR=7.0
CMAI Chiengmai2 41.41 256 P **P 19 15 23.4 +1.0**
comp=Z,42nm,0.8s
UTTA Uttaradit 41.59 252 P **P 19 15 25.0 +1.3**
comp=Z,3.7nm,0.9s
LAMP Lampang 41.80 254 P P 19 15 31.8 +6.3
comp=Z,4.8nm,0.8s
NRIK Noril'sk 42.01 334 P **P 19 15 26.2 -0.3**
comp=Z,6.7nm,0.5s,baz=102,slow=11,SNR=9.0
PBKT Sadao Pong 42.02 250 P **P 19 15 27.7 +0.5**
comp=Z,45nm,1.3s
NVS Novosibirsk 42.08 312⇓ *i*P **P 19 15 27.8 +0.5**
NVS pmax pmax
comp=E,26nm,1.2s
NVS pmax pmax
comp=Z,40nm,1.2s
NVS pmax pmax
comp=N,9.0nm,1.5s
CMMT Chiang Mai 42.14 254 P **P 19 15 28.4 +0.1**
comp=N,23nm,0.7s
CHTO Chiang Mai 42.15 254 P **P 19 15 28.5 +0.2**
comp=N,140nm,1.5s
CHTO Chiang Mai 42.15 254 *e*P **P 19 15 28.1 -0.2**
CHTO pmax pmax
comp=Z,15nm,0.6s
CHTO Chiang Mai 42.15 254 *e*P **P 19 15 28.1 -0.2**
comp=Z,15nm,0.6s
MRSI Marisa 42.20 211 P P 19 15 34.9 +6.2
CMAR Chiang Mai Arr 42.36 254 P **P 19 15 30.1 +0.1**
comp=Z,1.9nm,0.7s,baz=45,slow=7.5,SNR=18
LSA Lhasa 42.54 274 *e*P **P 19 15 31.3 -0.6**
LSA pmax pmax
comp=Z,6.0nm,0.6s
LSA Lhasa 42.54 274 *e*P **P 19 15 31.3 -0.6**
comp=Z,6.1nm,0.6s
MKAR Makanchi Array 43.67 301 P **P 19 15 40.6 +0.3**
comp=Z,24nm,0.9s,baz=86,slow=9.3,SNR=120
MKAR PcP **PcP 19 17 27.0 +0.2**
comp=Z,2.1nm,0.7s,baz=103,slow=3.8,SNR=2.0
MKAR ScP **ScP 19 21 13.8 -0.7**
comp=Z,0.2nm,0.3s,baz=76,slow=6.1,SNR=3.2
MKAR Makanchi Array 43.67 301 *i* P **P 19 15 40.5 +0.2**
MKAR pmax pmax
comp=Z,25nm,0.9s
MAKZ Makanchi 43.88 301 *e*P **P 19 15 42.3 +0.3**
MAKZ pmax pmax
comp=Z,26nm,0.9s
MAKZ Makanchi 43.88 301 *e*P **P 19 15 42.3 +0.3**
comp=Z,26nm,0.9s
SHL Shillong 43.90 268 *e*P **P 19 15 43.0 +0.4**
PCI Palu 44.32 213 P **P 19 15 47.0 +1.2**
comp=Z,30nm,1.0s
PCI Palu 44.32 213 P **P 19 15 45.7 -0.1**
PCI pmax pmax
comp=Z,30nm,1.0s
SRDT SRDT 44.81 249 P **P 19 15 51.7 +2.0**
KURK Kurchatov 45.32 307*c i*P **P 19 15 53.3 0.0**
KURK pmax pmax
comp=Z,133nm,1.0s
KURK Kurchatov 45.32 307 *e*P **P 19 15 53.4 0.0**
comp=Z,97nm,0.8s
RSO Redoubt South 45.36 39 *e*P **P 19 15 55.4 +1.6**
CAST Castle Rocks 45.64 35 *e*P **P 19 15 58.0 +2.1**
comp=Z,13nm,1.4s
SPU Mount Spurr 45.68 38 *e*P **P 19 15 56.1 -0.1**
BPAW Bear Paw Mtn. 46.13 34 *e*P **P 19 16 01.2 +1.6**
comp=Z,15nm,1.3s
MLY Manley 46.25 33 *e*P **P 19 16 03.3 +2.7**
comp=Z,44nm,1.8s
SML Sawmill 47.43 37 P **P 19 16 09.7 -0.2**
SML pmax pmax
comp=Z,15nm,1.0s
SML Sawmill 47.43 37 P **P 19 16 09.7 -0.2**
comp=Z,15nm,1.0s
ILAR Eielson Array 47.90 33 P **P 19 16 14.9 +1.6**
comp=Z,4.4nm,0.7s,baz=268,slow=6.4,SNR=56
KKN Kakani 47.99 275 *e*P **P 19 16 15.1 +0.2**
comp=Z,68nm,0.8s
PKIN Phulchoki 48.00 274 *e*P **P 19 16 14.8 -0.2**
comp=Z,19nm,0.6s
GKN Gorkha 48.40 275 *e*P **P 19 16 17.9 0.0**
comp=Z,97nm,1.1s
TKM2 Tokmak 2 49.28 297 P **P 19 16 24.9 +0.3**
TKM2 pmax pmax
comp=Z,29nm,0.9s
TKM2 Tokmak 2 49.28 297 P **P 19 16 24.9 +0.3**
comp=Z,29nm,0.9s
KOLN Koldanda 49.31 276 *e*P **P 19 16 25.3 +0.3**
comp=Z,18nm,0.7s
PYUN Piuthan 49.63 276 *e*P **P 19 16 27.8 +0.3**
comp=Z,62nm,0.7s
OTUK Ortayu 49.87 305 P **P 19 16 28.9 +0.1**
OTUK pmax pmax
comp=Z,25nm,1.0s
BRVK Borovoye 49.90 311 *e*P **P 19 16 28.8 0.0**
BRVK pmax pmax
comp=Z,16nm,0.8s
BRVK Borovoye 49.90 311 *e*P **P 19 16 28.7 -0.1**
comp=Z,18nm,0.8s
BRVK *e*PcP **PcP 19 17 47.0 -1.6**
KULM Kulim 50.03 239 *e*P **P 19 16 31.0 +0.7**
comp=Z,14nm,0.8s
AAK Ala-Archa 50.14 297 *e*P **P 19 16 29.7 -1.4**
AAK pmax pmax
comp=Z,16nm,0.9s
KSH Kashi 50.18 293 P **P 19 16 35.8 +4.4**
KSH *es*P sP 19 16 58.4 +8.9
KSH S **S 19 23 43.5 +3.4**
KSH pmax pmax
comp=Z,11nm,0.9s
KSH pmax pmax
comp=Z,480nm,9.8s
KSH LR LR
comp=N,920nm,16.9s
KSH LR LR
comp=E,2μm,18.3s
KSH LR LR
comp=Z,1μm,18.5s
EKS2 Erkin-Say 50.63 298 *e*P **P 19 16 32.6 -2.2**
EKS2 *e* 19 17 51.6
EKS2 pmax pmax
comp=Z,8.0nm,0.8s
EKS2 Erkin-Say 50.63 298 *e*P **P 19 16 32.5 -2.2**
comp=Z,8.4nm,0.8s
EKS2 *e*PcP **PcP 19 17 51.5 -0.2**
ZRNK Zerenda 50.67 312 *e*P **P 19 16 35.0 +0.3**
ZRNK pmax pmax
comp=Z,26nm,0.8s
ZRNK Zerenda 50.67 312 *e*P **P 19 16 35.0 +0.3**
comp=Z,26nm,0.8s
MNAS Manas 51.58 298 P **P 19 16 42.3 +0.5**
MNAS pmax pmax
comp=Z,24nm,0.9s
KKAR Karatay Array 52.73 299 *e*P **P 19 16 48.7 -1.5**
KKAR Karatay Array 52.73 299 *e*P **P 19 16 48.7 -1.5**
TSI Tuntungan 52.74 240 P P 19 16 56.9 +6.3
INK Inuvik 52.75 28 *e*P **P 19 16 49.8 -0.1**
INK pmax pmax
comp=Z,8.0nm,1.0s
INK Inuvik 52.75 28 *e*P **P 19 16 49.8 -0.1**
comp=Z,8.0nm,1.0s
PSI Prapat 53.02 239 *e*P **P 19 16 53.2 +0.4**
PSI pmax pmax
comp=Z,32nm,1.2s
PSI Prapat 53.02 239 *e*P **P 19 16 53.2 +0.4**
comp=Z,32nm,1.2s
MLSI Meulaboh, Aceh 53.67 242 P **P 19 16 53.7 -3.7**
MNSI Mandailing Nat 54.08 236 P **P 19 16 56.0 -4.4**
comp=Z,93nm,0.9s
SVE Sverdlovsk 54.25 318⇓ *e*P **P 19 17 02.0 +0.9**
SVE pmax pmax
comp=Z,50nm,0.9s
PWJI Pagerwojo 54.26 218 P **P 19 17 01.5 -0.1**
comp=Z,48nm,0.7s
UGM Wanagama 54.79 219 P **P 19 17 05.2 -0.3**
comp=Z,59nm,1.1s
GSI Gunungsitoli 55.02 239 P **P 19 17 07.4 +0.1**
comp=Z,58nm,1.1s
LHSI Lahat 55.21 229 P **P 19 17 09.6 +1.0**
comp=Z,43nm,1.0s
ARU Arti 55.47 318*c i*P **P 19 17 10.0 +0.1**
ARU *PP **sP 19 17 26.7 -1.5**
ARU 19 18 10.2
ARU 19 19 11.4
ARU S **S 19 24 51.3 0.0**
ARU pmax pmax
comp=Z,38nm,1.0s
ARU Arti 55.47 318 *e*P **P 19 17 09.5 -0.4**
comp=Z,32nm,0.9s
ARU *e*PP **PP 19 19 11.9 -1.9**
DZET Dzherino 55.57 295 P **P 19 17 10.8 -0.3**
DZET pmax pmax
comp=Z,14nm,0.7s
ABKAR Akbulak array 57.26 310 *e*P **P 19 17 22.9 0.0**
WRAB Tennant Creek 58.70 188 *e*P **P 19 17 33.4 +0.2**
WRAB *e* 19 18 22.9
WRAB Tennant Creek 58.70 188 *e*P **P 19 17 33.4 +0.2**
WRAB *e*PcP **PcP 19 18 22.9 +0.3**
WRA Warramunga Arr 58.72 188 P **P 19 17 33.0 -0.2**
comp=Z,4.3nm,0.6s,baz=5.8,slow=7.0,SNR=24
WRA Warramunga Arr 58.72 188 P **P 19 17 33.0 -0.2**
RES Resolute Bay 60.93 15 *e*P **P 19 17 48.7 +0.9**
RES *e**PP **sP 19 18 06.8 +0.6**
RES pmax pmax
comp=Z,7.0nm,0.9s
RES Resolute Bay 60.93 15 *e*P **P 19 17 48.7 +0.9**
comp=Z,6.7nm,0.9s
RES *e*pP **sP 19 18 06.8 +0.6**
TMCR Tamitsa 61.56 331 *e*P **P 19 17 52.3 +0.1**
TMCR pmax pmax
comp=Z,30nm,1.2s
YKA Yellowknife Ar 62.19 31 P **P 19 17 57.5 +1.0**
comp=Z,2.6nm,0.8s,baz=302,slow=6.6,SNR=31
ASAR Alice Springs 62.44 188 P **P 19 17 58.8 +0.2**
comp=Z,2.3nm,0.7s,baz=11,slow=4.5,SNR=14
KLMR Klimovskoe 62.65 327 *e*P **P 19 17 57.2 -2.3**
KLMR *e* 19 18 36.0
KLMR *e* 19 20 15.0
KLMR pmax pmax
comp=Z,14nm,1.0s
ARCES ARCESS Array B 62.66 339 P **P 19 17 59.8 +0.3**
comp=Z,3.5nm,0.8s,baz=55,slow=7.9,SNR=27
GEYT Alibeck 63.46 298 P **P 19 18 05.7 +0.2**
comp=Z,8.7nm,0.7s,baz=29,slow=3.4,SNR=21
DAG Danmarks Havn 64.21 355 *i* P **P 19 18 09.5 -0.2**
comp=Z,11nm,0.9s
DAG Danmarks Havn 64.21 355 *i* P **P 19 18 09.5 -0.2**
DAG pmax pmax
comp=Z,9.0nm,0.9s
MOS Moscow 66.23 323 *e*P P 19 18 12.1 -11
MOS *e* 19 18 23.1
MOS *e* 19 18 54.5
VRH Novokhopyorsk 66.70 318 *e*P **P 19 18 25.2 -0.9**
VRH pmax pmax
comp=Z,10.0nm,0.8s
SUF Sumiainen 66.75 333 P **P 19 18 26.5 +0.2**
SUF pmax pmax
comp=Z,20nm,0.8s
OBN Obninsk 67.08 323*c i*P **P 19 18 28.4 -0.1**
OBN *i* 19 18 47.5
OBN pmax pmax
comp=Z,11nm,1.0s
LPSR Galich'ya Gora 67.36 320 *e*P **P 19 18 29.8 -0.5**
LPSR pmax pmax
comp=Z,10.0nm,1.0s
FINES FINESS Array B 67.61 332 P **P 19 18 31.8 +0.1**
comp=Z,15nm,0.8s,baz=46,slow=8.2,SNR=60
FINES PP **PP 19 20 57.9 -2.6**
comp=Z,2.5nm,0.8s,baz=57,slow=10,SNR=3.9
VAF Ylistaro 67.74 335 P **P 19 18 33.2 +0.7**
VAF pmax pmax
comp=Z,16nm,0.9s
VSR Storozhevoye 68.03 319 *e*P **P 19 18 33.9 -0.6**
VSR pmax pmax
comp=Z,20nm,1.4s
SUMG Summit 69.08 0 *i* P **P 19 18 42.3 +1.1**
comp=Z,19nm,0.8s
SUMG Summit 69.08 0 *e*P **P 19 18 42.5 +1.3**
SUMG pmax pmax
comp=Z,20nm,0.8s
SUMG Summit 69.08 0 *e*P **P 19 18 42.5 +1.3**
comp=Z,20nm,0.8s
VSU Vasula 69.30 329 *e*P **P 19 18 42.3 0.0**
VSU pmax pmax
comp=Z,38nm,0.9s
ZEI Tsey 70.14 309 *e*P **P 19 18 46.6 -1.4**
ZEI pmax pmax
comp=Z,21nm,0.8s
STKA Stephens Creek 70.16 180 P **P 19 18 47.9 +0.1**
comp=Z,1.6nm,0.9s,baz=26,slow=8.0,SNR=3.7
KIV Kislovodsk 70.20 311 *e*P **P 19 18 48.7 +0.4**
KIV pmax pmax
comp=Z,54nm,0.9s
KIV Kislovodsk 70.20 311 *e*P **P 19 18 48.5 +0.3**
comp=Z,45nm,0.8s
KIV *e*PcP **sP 19 19 07.8 +0.9**
KBZ Khabaz 70.21 310 P **P 19 18 48.8 +0.7**
comp=Z,18nm,0.8s,baz=45,slow=3.6,SNR=39
SCO Scoresbysund 70.56 354 *i* P **P 19 18 50.6 +0.8**
comp=Z,77nm,1.5s
SCO Scoresbysund 70.56 354 *e*P **P 19 18 50.6 +0.8**
SCO pmax pmax
comp=Z,77nm,1.5s
SWMT Swartz Lake 70.81 44 *e*P **P 19 18 54.1 +2.1**
GNI Garni 71.11 307 P **P 19 18 55.1 +1.1**
comp=Z,4.2nm,0.6s,baz=210,slow=3.2,SNR=4.5
NACGM Naroch 71.64 327 *e* **P 19 18 56.0 -0.6**
UOSS Minazif 71.76 288 *e*P **P 19 18 58.2 +0.3**
comp=Z,1.1nm,1.1s
SOC Sochi 72.17 312 *e*P **P 19 18 58.9 -1.1**
SOC *e* 19 21 40.5
SOC *e*PPP PPP 19 23 23.0
SOC *e*S **S 19 28 17.3 -1.6**
SOC *e* 19 28 56.5
SOC *e*SSS SSS 19 36 01.7
SOC pmax pmax
comp=Z,16nm,0.8s
LRM Limekiln Ridge 72.68 45 *e*P **P 19 19 05.5 +2.1**
ANN Anapa 72.75 314 *e*P **P 19 19 03.2 -0.2**
ANN pmax pmax
comp=Z,39nm,1.2s
NB2 NORSAR Subarra 72.88 337 P sP 19 19 23.5 +0.9
comp=Z,2.5nm,0.6s,baz=40,slow=6.2
NOA NORSAR Array B 72.88 337 P **P 19 19 04.3 +0.3**
comp=Z,13nm,0.8s,baz=39,slow=6.0,SNR=54
BOZ Bozeman (W) 73.24 45 *e*P **P 19 19 08.5 +1.9**
BOZ pmax pmax
comp=Z,27nm,2.0s
BOZ Bozeman (W) 73.24 45 *e*P **P 19 19 08.5 +1.9**
comp=Z,27nm,2.0s
AKASG Malin Array Be 73.31 322 P **P 19 19 06.6 -0.1**
comp=Z,7.4nm,0.6s,baz=46,slow=6.4,SNR=38
KIEV Kiev 73.32 322 *e*P **P 19 19 06.0 -0.7**
KIEV pmax pmax
comp=Z,15nm,0.9s
KIEV Kiev 73.32 322 *e*P **P 19 19 05.8 -0.9**
comp=Z,17nm,0.9s
NVAR Mina Array Bea 73.66 54 P **P 19 19 10.8 +1.5**
comp=Z,1.7nm,0.7s,baz=298,slow=4.6,SNR=3.2
SFJD Kangerlussuaq 74.25 5 *i* P **P 19 19 12.4 +0.6**
comp=Z,8.2nm,1.0s
SFJD Kangerlussuaq 74.25 5 *e*P **P 19 19 12.8 +1.0**
SFJD pmax pmax
comp=Z,7.0nm,0.8s
SFJD Kangerlussuaq 74.25 5 *e*P **P 19 19 12.8 +1.0**
comp=Z,7.1nm,0.8s
SIM Simferopol' 74.50 315 *e*P **P 19 19 14.1 +0.3**
SIM *e* 19 19 33.0
SIM pmax pmax
comp=Z,14nm,0.8s
SIM MLR MLR
comp=N,2μm,19.4s
H17A Grant Village 74.61 45 *e*P **P 19 19 18.7 +4.0**
comp=N,6.8nm,1.0s
MOOW Moose Ponds 74.92 46 *e*P **P 19 19 19.2 +2.6**
comp=N,3.8nm,1.0s
SORM Soroca 75.44 321⇓ *i*P **P 19 19 18.7 -0.4**
SORM Soroca 75.44 321⇓ P **P 19 19 18.7 -0.4**
KBSD Kabsdagh 75.63 306 *e*P **P 19 19 18.9 -1.5**
HWUT Hardware Ranch 75.81 48 *e*P **P 19 19 24.0 +2.4**
comp=N,22nm,1.8s
TCUT Toone Canyon 76.21 48 *e*P **P 19 19 26.5 +2.6**
comp=N,10nm,0.6s
PDAR Pinedale Array 76.22 46 P **P 19 19 25.3 +1.3**
comp=N,3.3nm,0.7s,baz=260,slow=2.3,SNR=30
BSD Bornholm Skovb 76.25 332 *i* P **P 19 19 23.6 +0.1**
comp=N,22nm,0.8s
BSD Bornholm Skovb 76.25 332 *i* P **P 19 19 23.6 +0.1**
BSD pmax pmax
comp=Z,22nm,0.8s
SFNV Sufian 76.26 306 *e*P **P 19 19 22.4 -1.7**
LVV L'vov 76.35 324 *e*P **P 19 19 24.1 -0.2**
LVV MLR MLR
comp=Z,2μm,20.0s
COAL Corum-Alaca 77.00 311 *i* P **P 19 19 28.8 +0.6**
KWP Kalwaria Pacla 77.09 324⇓ *i*P **P 19 19 29.9 +1.4**
KWP Kalwaria Pacla 77.09 324⇓ P **P 19 19 29.9 +1.4**
ILGA Ilgaz 77.22 313 *i* P **P 19 19 30.5 +0.8**
ILGA *i* S **sP 19 19 48.6 +0.3**
BURAR Bucovina Array 77.33 322⇑ *i*P **P 19 19 30.8 +0.8**
BURAR Bucovina Array 77.33 322⇑ P **P 19 19 30.8 +0.8**
TESR Tescani 77.39 320⇑ *i*P **P 19 19 30.8 +0.6**
CFR Carcaliu 77.55 319⇓ *i*P **P 19 19 31.2 +0.2**
CFR Carcaliu 77.55 319⇓ P **P 19 19 31.2 +0.2**
PETR Petresti 77.64 319⇓ *i*P **P 19 19 33.8 +2.2**
ODBI Odobesti 77.70 319⇑ *i*P **P 19 19 34.2 +2.3**
ELDT Eldivan 77.75 312 *i* P **P 19 19 33.1 +0.5**
CDAG Cicekdag 77.76 311 *i* P **P 19 19 33.2 +0.7**
KOLS Kolonicke sedl 77.79 324 *e*P **P 19 19 32.8 +0.4**
KOLS pmax pmax
comp=Z,6.0nm,1.1s
KOLS Kolonicke sedl 77.79 324 *e*P **P 19 19 32.8 +0.4**
VRI Vrincioaia 77.80 320⇑ *i*P **P 19 19 33.5 +1.0**
VRI Vrincioaia 77.80 320⇑ P **P 19 19 33.5 +1.0**
PLOR Plostina 77.85 320⇑ *i*P **P 19 19 33.6 +0.8**
PLOR Plostina 77.85 320⇑ P **P 19 19 33.6 +0.8**
TIRR Tirgusor 77.89 318⇓ *i*P **P 19 19 33.7 +0.7**
TIRR Tirgusor 77.89 318⇓ P **P 19 19 33.7 +0.7**
STHS Stebnicka Huta 77.91 325 *e*P **P 19 19 34.7 +1.7**
STHS pmax pmax
comp=Z,5.0nm,0.7s
STHS Stebnicka Huta 77.91 325 *e*P **P 19 19 34.7 +1.7**
ULM Lac du Bonnet 77.91 34 P **P 19 19 32.6 -0.4**
comp=Z,2.4nm,0.6s,baz=302,slow=7.4,SNR=3.4

OJC	Ojcow	77.96	326	eP	P	19 19 34.1 +0.8
OJC				pmax	pmax	
	comp=Z,23nm,1.0s					
OJC	Ojcow	77.96	326	eP	P	19 19 34.1 +0.8
	comp=Z,23nm,1.0s					
UZH	Uzhgorod	78.00	324	⇓iP	P	19 19 34.6 +1.1
UZH				e		19 19 43.6
SRU	San Rafael Swe	78.01	49	eP	P	19 19 36.2 +2.2
SRU				pmax	pmax	
	comp=Z,7.0nm,0.7s					
SRU	San Rafael Swe	78.01	49	eP	P	19 19 36.2 +2.2
	comp=Z,7.0nm,0.7s					
ARCR	ARCALIA	78.12	322	⇑iP	P	19 19 35.8 +1.5
BRTR	Keskin Array B	78.13	312	P	P	19 19 34.9 +0.3
	comp=Z,2.3nm,0.5s,baz=94,slow=4.3,SNR=26					
BRTR				PP	PP	19 22 31.4 +0.5
	comp=Z,1.1nm,0.9s,baz=69,slow=6.8,SNR=4.2					
CRVS	Cervenica-Dubn	78.18	325	eP	P	19 19 35.5 +0.9
CRVS	Cervenica-Dubn	78.18	325	eP	P	19 19 35.5 +0.9
DRWC	Darouich	78.30	308	eP	P	19 19 31.5 -4.1
PGOR	Pogoanele	78.33	319	⇓iP	P	19 19 37.3 +1.9
DOPR	Dopca	78.40	320	⇓iP	P	19 19 37.6 +1.8
ISR	Istrita	78.41	319	⇓iP	P	19 19 37.4 +1.5
ISR	Istrita	78.41	319	⇓iP	P	19 19 37.4 +1.5
MLR	Muntele Rosu	78.45	320	⇑iP	P	19 19 36.7 +0.4
MLR	Muntele Rosu	78.45	320	⇑iP	P	19 19 36.7 +0.4
MLR	Muntele Rosu	78.45	320	eP	P	19 19 36.7 +0.4
	comp=Z,5.6nm,0.9s					
ANTO	Ankara	78.53	312	eP	P	19 19 37.8 +1.1
ANTO				pmax	pmax	
	comp=Z,13nm,0.8s					
ANTO	Ankara	78.53	312	eP	P	19 19 37.8 +1.1
	comp=Z,13nm,0.8s					
CJR	Cluj-Napoca	78.75	322	⇓iP	P	19 19 39.4 +1.6
CJR	Cluj-Napoca	78.75	322	⇓iP	P	19 19 39.4 +1.6
LANS	Liptovska Anna	78.89	326	eP	P	19 19 40.2 +1.7
LANS	Liptovska Anna	78.89	326	eP	P	19 19 40.2 +1.7
KKUL	Konya-Kulu	78.91	312	iP	P	19 19 40.2 +1.3
KKUL				iS	sP	19 19 58.8 +1.2
VOIR		78.94	320	⇓iP	P	19 19 40.0 +1.1
VOIR		78.94	320	⇓iP	P	19 19 40.0 +1.1
OKC	Ostrava-Krasne	78.96	327	eP	P	19 19 39.7 +0.9
OKC	Ostrava-Krasne	78.96	327	eP	P	19 19 39.7 +0.9
DRGR		79.12	322	⇓iP	P	19 19 40.3 +0.4
DRGR		79.12	322	⇓iP	P	19 19 40.3 +0.4
KAND	Kocaeli-Kandir	79.20	314	iP	P	19 19 40.2 0.0
ARR	Arges	79.20	320	⇓iP	P	19 19 42.1 +1.8
ARNB	Al Arnab	79.21	307	eP	P	19 19 37.4 -3.2
MORC	Moravsky Berou	79.26	327	⇑iP	P	19 19 41.5 +1.0
MORC	Moravsky Berou	79.26	327	⇑iP	P	19 19 41.5 +1.0
MORC	Moravsky Berou	79.26	327	eP	P	19 19 41.5 +1.0
	comp=Z,48nm,0.9s					
AUMIH	MIHALICIK	79.28	313	iP	P	19 19 40.9 -0.1
DPC	Dobruska-Polom	79.34	328	eP	P	19 19 42.1 +1.2
DPC				epP	sP	19 20 01.0 +1.3
DPC	Dobruska-Polom	79.34	328	eP	P	19 19 42.1 +1.2
DPC				e		19 20 01.0
UPC	Upice	79.35	328	eP	P	19 19 42.0 +1.1
UPC				epP	sP	19 20 00.8 +1.2
UPC	Upice	79.35	328	eP	P	19 19 42.0 +1.1
UPC				e		19 20 00.8
KRLC	Kraliky	79.36	328	eP	P	19 19 41.9 +0.9
KRLC	Kraliky	79.36	328	eP	P	19 19 41.9 +0.9
LOT	Lotru	79.57	321	⇑iP	P	19 19 42.9 +0.5
PSZ	Piszkesteto	79.61	325	⇓iP	P	19 19 43.7 +1.2
PSZ	Piszkesteto	79.61	325	⇓iP	P	19 19 43.7 +1.2
PSZ	Piszkesteto	79.61	325	eP	P	19 19 42.0 -0.5
	comp=Z,11nm,0.9s					
VYHS	Vyhne	79.66	326	eP	P	19 19 43.6 +0.9
VYHS				pmax	pmax	
	comp=Z,4.0nm,0.9s					
VYHS	Vyhne	79.66	326	eP	P	19 19 43.6 +0.9
KDHN	Kadinhani	79.81	311	iP	P	19 19 42.0 -1.8
ESKT	Eskisehir	79.88	313	iP	P	19 19 43.5 -0.7
ESKT				iS	sP	19 20 00.6 -2.3
PVCC	Panska Ves	79.92	329	eP	P	19 19 45.3 +1.3
PVCC				epP	sP	19 20 04.0 +1.3
PVCC	Panska Ves	79.92	329	eP	P	19 19 45.3 +1.3
PVCC				e		19 20 04.0
CLL	Collm	79.93	330	⇑iP	P	19 19 44.2 +0.2
	comp=Z,19nm,0.8s					
CLL				e		19 20 03.0
CLL	Collm	79.93	330	eP	P	19 19 44.4 +0.3
CLL				pmax	pmax	
	comp=Z,18nm,0.8s					
CLL	Collm	79.93	330	eP	P	19 19 44.4 +0.3
	comp=Z,18nm,0.8s					
VRAC	Vranov	80.02	327	⇓iP	P	19 19 45.9 +1.3
VRAC	Vranov	80.02	327	⇓iP	P	19 19 45.9 +1.3
SMOL	Smolenice	80.27	326	eP	P	19 19 47.4 +1.5
SMOL	Smolenice	80.27	326	eP	P	19 19 47.4 +1.5
GOPC	GO Pecny, Ondr	80.31	329	eP	P	19 19 47.1 +0.9
GOPC				epP	sP	19 20 06.0 +1.1
GOPC	GO Pecny, Ondr	80.31	329	eP	P	19 19 47.1 +0.9
GOPC				e		19 20 06.0
PRU	Pruhonice	80.35	329	eP	P	19 19 47.2 +0.9
PRU				epP	sP	19 20 06.2 +1.1
PRU	Pruhonice	80.35	329	eP	P	19 19 47.2 +0.9
PRU				e		19 20 06.2
TREC	Trest	80.50	328	eP	P	19 19 48.0 +0.8
TREC				epP	sP	19 20 07.0 +1.1
TREC	Trest	80.50	328	eP	P	19 19 48.0 +0.8
TREC				e		19 20 07.0
BZS	Buzias	80.50	322	⇑iP	P	19 19 47.6 +0.4
BZS	Buzias	80.50	322	⇑iP	P	19 19 47.6 +0.4
BANR	Banloc	80.90	322	⇑iP	P	19 19 52.7 +3.4
MOX	Moxa	80.99	331	P	P	19 19 50.6 +0.8
MOX				pmax	pmax	
	comp=Z,10.0nm,1.2s					
NKC	Novy Kostel	81.00	330	eP	P	19 19 50.4 +0.6
NKC	Novy Kostel	81.00	330	eP	P	19 19 50.4 +0.6
MDVR	Moldovita	81.06	321	⇑iP	P	19 19 50.5 +0.2
DURS	Dursunbey	81.17	314	iP	P	19 19 50.5 -0.5
CONA	Conrad Observa	81.39	327	iP	P	19 19 52.8 +0.7
	comp=Z,12nm,0.9s					
KHC	Kasperske Hory	81.41	329	eP	P	19 19 52.9 +0.8
KHC				epP	sP	19 20 12.0 +1.2
KHC	Kasperske Hory	81.41	329	eP	P	19 19 52.9 +0.8
KHC				e		19 20 12.0
KHAL	Karahalli	81.44	313	iP	P	19 19 52.5 0.0
GERES	GERESS Array B	81.59	328	P	P	19 19 53.4 +0.3
	comp=Z,5.4nm,0.8s,baz=36,slow=5.5,SNR=39					
WET	Wettzell	81.69	329	P	P	19 19 54.7 +1.2
WET				pmax	pmax	
	comp=Z,11nm,1.1s					
GRF	Grafenberg Arr	81.91	330	P	P	19 19 56.0 +1.4
GRF				pmax	pmax	
	comp=Z,37nm,1.2s					
MOA	Molin	82.13	327	iP	P	19 19 56.3 +0.4
	comp=Z,12nm,1.3s					
ECSD	EROS Data Cent	82.37	39	eP	P	19 19 58.3 +1.1
	comp=Z,4.6nm,0.8s					
SOKA	Soboth	82.71	326	iP	P	19 19 59.6 +0.5
	comp=Z,20nm,1.0s					
MEM	Membach	83.08	334	P	P	19 20 01.2 +0.5
	comp=Z,7.4nm,0.9s					
KBA	Koelnbreinsper	83.12	327	iPcP	P	19 20 03.0 +1.7
	comp=Z,14nm,0.8s					
KBA	Koelnbreinsper	83.12	327	P	P	19 20 01.9 +0.7
KBA				pmax	pmax	
	comp=Z,18nm,1.0s					
ANMO	Albuquerque	83.21	50	P	P	19 20 03.1 +1.1
	comp=Z,1.3nm,0.8s,baz=307,slow=6.2,SNR=2.8					
MYKA	Terra Mystica	83.35	327	iP	P	19 20 02.4 +0.1
	comp=Z,8.1nm,0.6s					
BCLA	Clavier	83.48	334	P	P	19 20 02.9 +0.1
GRG	Griva	83.50	318	P	P	19 20 02.9 -0.2
GRG				pmax	pmax	
	comp=Z,10.0nm,1.4s					
SCHQ	Schefferville	83.67	16	P	P	19 20 04.2 +0.5
	comp=Z,4.8nm,0.7s,baz=347,slow=6.9,SNR=4.8					
WTTA	Wattenberg	83.69	329	iPcP	P	19 20 05.5 +1.4
	comp=Z,6.3nm,0.8s					
ABTA	Abfaltersbach	83.73	328	iP	P	19 20 03.9 -0.4
	comp=Z,8.1nm,0.8s					
WLF	Walferdange	83.82	333	P	P	19 20 06.0 +1.5
MOTA	Moosalm	83.84	329	iPcP	P	19 20 05.5 +0.6
	comp=Z,8.4nm,0.8s,SNR=7.7					
RETA	Reutte	83.86	329	iP	P	19 20 05.2 +0.3
	comp=Z,19nm,0.9s,SNR=7.9					
PDG	Podgorica	84.00	321	⇑iP	P	19 20 05.8 +0.2
BFO	Black Forest	84.12	331	iP	P	19 20 06.9 +0.7
FNA	Florina	84.16	319	P	P	19 20 07.1 +0.6
FNA				pmax	pmax	
	comp=Z,9.0nm,0.9s					
FETA	Feichten	84.25	329	iPcP	P	19 20 07.5 +0.5
	comp=Z,9.8nm,0.7s					
DAVA	Damuels	84.37	330	iPcP	P	19 20 08.3 +0.7
	comp=Z,24nm,0.9s,SNR=5.9					
FUORN	Ofenpass-Fuorn	84.76	329	eP	P	19 20 09.7 -0.1
AGG	Agios Georgios	84.95	317	eP	P	19 20 10.0 -0.5
AGG				pmax	pmax	
	comp=Z,14nm,0.8s					
AGG	Agios Georgios	84.95	317	eP	P	19 20 10.0 -0.5
	comp=Z,14nm,0.8s					
HINF	Hinteralfeld	85.11	332	eP	P	19 20 10.6 -0.5
HINF				pmax	pmax	
	comp=Z,5.0nm,0.8s					
LAST	Lasithi	85.98	313	⇓iP	P	19 20 16.7 +0.9
LAST	Lasithi	85.98	313	eP	P	19 20 16.5 +0.8
	comp=Z,19nm,0.9s					
IDI	Anoyia	86.23	313	⇓iP	P	19 20 16.3 -0.7
IDI	Anoyia	86.23	313	eP	P	19 20 15.7 -1.2
	comp=Z,15nm,1.1s					
CABF	La Chapelle	86.40	331	eP	P	19 20 17.3 -0.3
CABF				pmax	pmax	
	comp=Z,43nm,1.7s					
LPL	La Plagne	87.07	330	eP	P	19 20 21.7 +0.6
LPL				pmax	pmax	
	comp=Z,7.0nm,0.8s					
LPG	La Plagne	87.08	330	eP	P	19 20 21.8 +0.6
LPG				pmax	pmax	
	comp=Z,7.0nm,0.6s					
AVF	Avril sur Loir	87.25	333	eP	P	19 20 21.6 0.0
AVF				pmax	pmax	
	comp=Z,20nm,0.9s					
VIVF	Saint-Julien-l	88.41	331	eP	P	19 20 27.4 +0.1
VIVF				pmax	pmax	
	comp=Z,37nm,1.7s					
TXAR	Lajitas Array	88.78	53	P	P	19 20 30.9 +1.5
	comp=Z,1.3nm,0.7s,baz=289,slow=2.8,SNR=21					
CAF	Calviac	89.31	333	eP	P	19 20 32.0 +0.5
CAF				pmax	pmax	
	comp=Z,6.0nm,0.8s					
ESDC	Sonseca Array	96.05	334	P	P	19 21 03.0 +0.3
	comp=Z,0.4nm,0.6s,baz=32,slow=4.0,SNR=4.9					
VNDA	Vanda	116.54	175	PKP	PKPdf	19 26 18.1 +0.4
	comp=Z,0.6nm,0.8s,baz=292,slow=3.8,SNR=3.2					
MAW	Mawson	121.18	206	PKP	PKPdf	19 26 26.7 0.0
	comp=Z,1.5nm,0.7s,baz=56,slow=3.6,SNR=5.5					
DBIC	Dimbokro	125.42	318	PKP	PKPdf	19 26 36.6 0.0
	comp=Z,2.1nm,0.7s,baz=89,slow=3.8,SNR=4.4					
BOSA	Boshof	127.30	261	PKP	PKPdf	19 26 40.5 +0.6
	comp=Z,3.4nm,1.1s,baz=250,slow=3.9,SNR=4.6					
SNAA	Sanae	142.42	197	PKP	PKPpre	19 27 01.2
VNA2	Neumayer--Watz	143.99	197	PKP	PKPbc	19 27 07.5 +0.1
	baz=89,slow=2.4					
VNA3	Neumayer Olymp	144.24	195	PKP	PKPab	19 27 07.9 +0.1
VNA1	Neumayer--Stat	144.39	196	PKP	PKPbc	19 27 08.6 0.0
LPAZ	La Paz	145.47	58	PKPbc	PKPab	19 27 15.3 +0.6
	comp=Z,4.2nm,0.7s,baz=341,slow=3.6,SNR=24					

DDA ***15*** *19:11:28.9,39°.45N×26°.10E,h19km,Md2.9*
CSEM ***15*** *19:11:29.7±0.1,39°.44N×26°.07E,h10km,ML1.6,Error ellipse: s-maj=3.3km s-min=2.2km az=94.0*
ISK ***15*** *19:11:29.6,39°.47N×26°.09E,h8km,MD3.0*
ISCJB ***15*** *19:11:29.5±0.5,39°.46N±0°.02×26°.07E±0°.04,h6km±4km, Error ellipse: s-maj=4.9km s-min=2.7km az=176.0*
ATH ***15*** *19:11:29.1,39°.45N×26°.08E,h17km±4km,ML1.6/4,Error ellipse: s-maj=4.8km s-min=0.8km az=154.0*
THE ***15*** *19:11:29.5,39°.45N×26°.07E,h12km±1km,ML1.8/5,Error ellipse: s-maj=1.3km s-min=0.5km az=105.0*
ISC 15 19:11:29.7±0.9,**39°.45N**±0°.01×**26°.06E**±0°.02,**h11**km±7km, **n61**,σ0**°52**/92,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PRK	Paraskevi	0.26	141	P	Pg	19 11 35.0	0.0
PRK				S	Sg	19 11 38.9	+0.3
PRK	Paraskevi	0.26	141	P	Pg	19 11 35.0	0.0
PRK				S	Sg	19 11 38.7	+0.1
PRK	Paraskevi	0.26	141	P	Pg	19 11 35.3	+0.3
PRK				S	Sg	19 11 38.7	+0.1
PRK				AML	AML	19 11 39.3	
	comp=N,1329μm,0.2s						
PRK				AML	AML	19 11 40.6	
	comp=E,838μm,0.3s						
SIGR	SIGRI	0.28	214	ePG	Pb	19 11 36.4	-0.4
SIGR				eSG	Sb	19 11 41.1	-0.4
SIGR	SIGRI	0.28	214	P	Pg	19 11 35.4	-0.1
SIGR				S	Sg	19 11 39.8	+0.5
SIGR	SIGRI	0.28	214	P	Pg	19 11 35.4	-0.1
SIGR	SIGRI	0.28	214	ePg	Pb	19 11 36.4	-0.4
SIGR				S	Sg	19 11 39.8	+0.5
SIGR				eSg	Sb	19 11 41.1	-0.4
SIGR	SIGRI	0.28	214	P	Pg	19 11 35.3	-0.1
SIGR				S	Sg	19 11 39.8	+0.5
SIGR				AML	AML	19 11 42.5	
	comp=E,286μm,0.1s						
SIGR				AML	AML	19 11 42.5	
	comp=N,290μm,0.3s						
BOZC	Bozcaada	0.40	359	iP	Pg	19 11 37.2	-0.3
BOZC				iS	Sg	19 11 42.7	-0.1
EZN	Ezine	0.43	28	P	Pg	19 11 37.6	-0.6
EZN				S	Sg	19 11 43.9	0.0
EZN	Ezine	0.43	28	P	Pg	19 11 37.6	-0.6
EZN				S	Sg	19 11 43.9	0.0
AYVA	Ayvalik	0.51	106	P	Pg	19 11 39.1	-0.5
AYVA				S	Sg	19 11 46.1	-0.2
AYVA	Ayvalik	0.51	106	iP	Pg	19 11 39.1	-0.5
AYVA				iS	Sg	19 11 46.1	-0.2
LIA	Limnos Island	0.81	304	P	Pg	19 11 45.3	-0.1
LIA				S	Sb	19 11 56.9	+0.1
LIA	Limnos Island	0.81	304	P	Pg	19 11 45.1	-0.3
LIA				S	Sb	19 11 56.9	+0.1
GELI	Tayfur-Gelibol	1.00	18	ePG	Pb	19 11 48.6	-0.5
GELI	Tayfur-Gelibol	1.00	18	ePg	Pb	19 11 48.6	-0.5
CHOS	Chios island	1.06	180	ePN	Pn	19 11 50.9	+0.4
CHOS				eSN	Sn	19 12 05.9	+0.6
CHOS	Chios island	1.06	180	P	Pb	19 11 49.4	-0.6
CHOS				S	Sg	19 12 04.0	+0.1
CHOS	Chios island	1.06	180	P	Pb	19 11 49.5	-0.6
CHOS	Chios island	1.06	180	ePn	Pn	19 11 50.9	+0.4
CHOS				S	Sb	19 12 03.7	-0.2
CHOS				eSn	Sn	19 12 05.9	+0.6
CHOS	Chios island	1.06	180	P	Pb	19 11 49.5	-0.6
CHOS				S	Sb	19 12 03.7	-0.2
CHOS				AML	AML	19 12 06.8	
	comp=E,225μm,0.2s						
CHOS				AML	AML	19 12 06.8	
	comp=N,79μm,0.2s						
LPK	Lapseki	1.07	30	ePG	Pb	19 11 50.1	-0.1
LPK	Lapseki	1.07	30	ePg	Pb	19 11 50.1	-0.1
SMTH	Samothraki Isl	1.10	338	P	Pb	19 11 50.0	-0.8
SMTH				S	Sb	19 12 05.0	-0.1
SMTH	Samothraki Isl	1.10	338	P	Pb	19 11 50.4	-0.4
SMTH				S	Sb	19 12 05.0	-0.1
SMTH	Samothraki Isl	1.10	338	P	Pb	19 11 50.4	-0.4
SMTH				S	Sb	19 12 04.7	-0.5
SMTH				AML	AML	19 12 05.8	
	comp=E,33μm,0.2s						
SMTH				AML	AML	19 12 07.2	
	comp=N,35μm,0.2s						
URLA	Izmir	1.16	159	P	Pb	19 11 50.9	-0.9
URLA				S	Sb	19 12 06.8	-0.1
URLA	Izmir	1.16	159	iP	Pb	19 11 50.9	-0.9
URLA				iS	Sb	19 12 06.8	-0.1
ZEY	˜zmir	1.25	164	iP	Pb	19 11 52.5	-0.6
ZEY				iS	Sb	19 12 09.4	-0.1
ENEZ	Enez	1.29	3	ePN	Pb	19 11 53.8	-0.2
ENEZ	Enez	1.29	3	ePn	Pb	19 11 53.8	-0.2
KRBG	Karabiga-Canak	1.34	45	ePN	Pb	19 11 54.6	-0.2
KRBG	Karabiga-Canak	1.34	45	ePn	Pb	19 11 54.6	-0.2
BALB	Balikesir	1.42	82	ePN	Pb	19 11 56.5	+0.3
BALB	Balikesir	1.42	82	ePn	Pb	19 11 56.5	+0.3
ALN	Alexandroupoli	1.45	360	ePN	Pb	19 11 56.5	-0.2
ALN	Alexandroupoli	1.45	360	P	Pn	19 11 55.8	0.0
ALN	Alexandroupoli	1.45	360	ePn	Pb	19 11 56.5	-0.2
ALN	Alexandroupoli	1.45	360	P	Pn	19 11 55.8	0.0
KESN	Edirne-Kesan	1.46	19	P	Pn	19 11 56.6	+0.3
KESN				S	Sn	19 12 15.5	-0.1
KESN	Edirne-Kesan	1.46	19	iP	Pn	19 11 56.6	+0.3
KESN				iS	Sn	19 12 15.5	-0.1
RKY	Sarkoy-Tekirda	1.51	34	ePN	Pn	19 11 57.0	+0.3
RKY	Sarkoy-Tekirda	1.51	34	ePn	Pn	19 11 57.0	+0.3
SART	Tekirdag	1.51	34	P	Pn	19 11 56.8	+0.1
SART				S	Sb	19 12 17.2	+0.3
SART	Tekirdag	1.51	34	iP	Pn	19 11 56.8	+0.1
SART				iS	Sb	19 12 17.2	+0.3
DGB	˜zmir	1.53	155	iP	Pg	19 11 59.5	+0.3
DGB				iS	Sg	19 12 19.5	+0.5
MRMT	Marmara Adasi	1.65	45	ePN	Pn	19 11 58.6	-0.1
MRMT	Marmara Adasi	1.65	45	ePn	Pn	19 11 58.6	-0.1
DURS	Dursunbey	1.87	85	P	Pn	19 12 01.3	-0.4
DURS	Dursunbey	1.87	85	iP	Pn	19 12 01.3	-0.4
KCTX	Karacabey (Bur	1.95	64	ePN	Pn	19 12 03.1	+0.4
KCTX	Karacabey (Bur	1.95	64	ePn	Pn	19 12 03.1	+0.4
AYDB	Zeytinkoy-Aydi	2.07	136	ePN	Pn	19 12 05.7	+1.2
AYDB	Zeytinkoy-Aydi	2.07	136	ePn	Pn	19 12 05.7	+1.2
AYDN	Tasoluk	2.28	141	P	Pn	19 12 06.2	-1.1
AYDN	Tasoluk	2.28	141	iP	Pn	19 12 06.2	-1.1
ARMT	Armutlu	2.42	62	ePN	Pn	19 12 10.2	+1.0
ARMT	Armutlu	2.42	62	ePn	Pn	19 12 10.2	+1.0
EDRB	Edirne	2.45	12	ePN	Pn	19 12 11.3	+1.7
EDRB	Edirne	2.45	12	ePn	Pn	19 12 11.3	+1.7

ISCJB ***15*** *19:21:25.5±0.9,37°.43N±0°.06×35°.44E±0°.05,h10km±6km, Error ellipse: s-maj=11.1km s-min=6.2km az=18.3*
CSEM ***15*** *19:21:25.9±0.3,37°.42N×35°.42E,h15km,MD2.6,Error ellipse: s-maj=8.4km s-min=4.2km az=24.0*
ISK ***15*** *19:21:25.7,37°.39N×35°.41E,h14km,MD2.6*
DDA ***15*** *19:21:25.4,37°.43N×35°.42E,h7km,Md2.5*
ISC 15 19:21:25.1±1.2,**37°.47N**±0°.05×**35°.43E**±0°.04,**h13**km±7km, **n15**,σ0**°32**/23,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKO	Adana	0.02	103	iP	Pg	19 21 27.3	-0.1
KARA	Karaisali	0.36	235	ePG	Pg	19 21 32.5	+0.1
KARA				eSG	Sg	19 21 37.3	+0.1
KARA	Karaisali	0.36	235	ePg	Pg	19 21 32.5	+0.1
KARA				eSg	Sg	19 21 37.3	+0.1
CEYT	Ceyhan	0.52	150	ePG	Pg	19 21 35.5	+0.1
CEYT				eSG	Sg	19 21 42.3	0.0
CEYT	Ceyhan	0.52	150	ePg	Pg	19 21 35.5	+0.1
CEYT				eSg	Sg	19 21 42.3	0.0
GULE	Gulek	0.55	251	P	Pb	19 21 37.2	+0.5
GULE				S	Sb	19 21 44.6	+0.1
GULE	Gulek	0.55	251	iP	Pb	19 21 37.2	+0.5
GULE				iS	Sb	19 21 44.6	+0.1
MERS	Mersin	0.94	231	ePG	Pg	19 21 43.2	0.0
MERS	Mersin	0.94	231	ePg	Pg	19 21 43.2	0.0
KERG	Konya-Eregli	1.04	268	P	Pb	19 21 44.4	-0.6
KERG				S	Sn	19 21 59.6	-0.3
KERG	Konya-Eregli	1.04	268	iP	Pb	19 21 44.4	-0.6
KERG				iS	Sn	19 21 59.6	-0.3
TAHT	Tahtakopru-Hat	1.25	151	ePN	Pb	19 21 48.5	0.0
TAHT	Tahtakopru-Hat	1.25	151	ePn	Pb	19 21 48.5	0.0
GULA	Gulagac	1.29	313	ePN	Pg	19 21 50.2	+0.4
GULA	Gulagac	1.29	313	ePn	Pg	19 21 50.2	+0.4

NEIC ***15*** *19:23:05.0±0.8,37°.30N×144°.19E,h10km,mb4.3/1,Error ellipse: s-maj=16.3km s-min=10.3km az=108.0*
IDC ***15*** *19:23:04.2±1.0,37°.35N×144°.07E,h0km,mb3.8/13, mb1 4.0/17,mb1mx3.8/61,mbtmp4.0/17,ML4.0/3,MS4.6/1, Ms1 4.6/1,ms1mx3.5/48,Error ellipse: s-maj=25.9km s-min=17.0km az=107.0*
ISCJB ***15*** *19:23:05.9±1.4,37°.49N±0°.04×143°.87E±0°.05, h19km±11km,mb3.8/14,MS4.6/1,Error ellipse: s-maj=6.9km s-min=5.3km az=38.0*
JMA ***15*** *19:23:08.1±0.3,37°.48N×143°.81E,h49km,M3.9*
ISC 15 19:23:06.7±4.3,**37°.50N**±0°.05×**144°.00E**±0°.08,**h16**km±28km, **n44**,σ2**°19**/61,**mb3.9**/14,**Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	2.30	295	P	Pn	19 23 43.2	-0.7
JIO				S	Sn	19 24 08.8	-3.1
OFUJ	Ofunato	2.42	312	P	Pn	19 23 44.8	-0.8
OFUJ				S	Sn	19 24 11.5	-3.3
JFK	Kawauchi	2.49	268	P	Pn	19 23 45.2	-1.3
JFK				eS	Sn	19 24 12.7	-3.9
JMK	Ichinoseki	2.62	304	P	Pn	19 23 47.8	-0.6
JMK				S	Sn	19 24 17.3	-2.6
JOM	Ohasama	2.90	314	P	Pn	19 23 51.9	-0.2
JOM				eS	Sn	19 24 24.2	-2.4
JFT	Otama	2.91	272	P	Pn	19 23 52.3	0.0
JFT				S	Sn	19 24 24.4	-2.6
JYK	Kaneyama	3.20	297	P	Pn	19 23 56.3	0.0
JYK				eS	Sn	19 24 32.3	-1.7
JANG	Nango	3.46	327	P	Pn	19 23 59.9	0.0
JANG				S	Sn	19 24 36.7	-3.9
JAG	Ashikaga	3.79	255	P	Pn	19 24 03.6	-0.8
JAG				S	Sn	19 24 44.8	-3.9
JRY	Ryogami san	4.35	252	P	Pn	19 24 10.7	-1.4
JRY				S	Sn	19 24 56.6	-5.9
JOT	Ohata	4.50	330	P	Pn	19 24 15.0	+0.8
JOT				S	Sn	19 25 00.7	-5.5
JOD2	Odawara 2	4.54	242	P	Pn	19 24 13.1	-1.7
JOD2				eS	Sn	19 25 01.5	-5.8
ERM	Erimo	4.56	352	ePn	Pn	19 24 13.8	-1.1
MJAR	Matsushiro Arr	4.73	260	Pn	Pn	19 24 17.9	+0.6
	6.5nm,0.3s,baz=90,slow=15,SNR=110						
MJAR				Sn	Sn	19 25 11.4	-0.4
	2.1nm,0.3s,baz=92,slow=25,SNR=5.5				

1.5nm,1.0s,baz=44,slow=6.6,SNR=3.6
FINES FINESS Array B 69.35 333 P P 19 34 14.1 +1.1
0.7nm,0.6s,baz=68,slow=9.1,SNR=4.3
FINES PcP **PcP 19 34 37.2 +0.7**
0.6nm,0.6s,baz=56,slow=5.4,SNR=5.9
AKASG Malin Array Be 75.17 323 P **P 19 34 49.0 +0.9**
0.7nm,0.5s,baz=43,slow=6.2,SNR=4.3

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*MOS **15** 19:34:09.7±1.4, 43°.29N×146°.79E, h50km, mb4.6/15, Error ellipse: s-maj=9.5km s-min=5.8km az=105.9*
*SKHL **15** 19:34:09.9±0.9, 43°.17N×146°.99E, h56km±5km, mb5.0/12*
*JMA **15** 19:34:10.5±0.2, 43°.16N×146°.87E, h48km±3km, M4.3*
*ISCJB **15** 19:34:10.4±0.6, 43°.20N±0°.03×146°.86E±0°.05, h58km±4km, mb4.3/50, MS4.6/1, Error ellipse: s-maj=7.1km s-min=3.8km az=44.5*
*NEIC **15** 19:34:11.8±0.9, 43°.24N×146°.85E, h52km±9km, mb4.6/18, Error ellipse: s-maj=11.0km s-min=6.7km az=148.0*
*IDC **15** 19:34:11.9±2.8, 43°.27N×146°.77E, h53km±25km, mb3.9/25, mb1 4.1/28, mb1mx3.9/54, mbtmp4.2/28, ML3.7/3, MS4.6/1, Ms1 4.6/1, ms1mx3.6/49, Error ellipse: s-maj=15.1km s-min=12.9km az=135.0*
ISC 15 19:34:10.5±0.8, 43°.23N±0°.05×146°.90E±0°.05, h45km±6km, n145, σ1§43/159, mb4.3/50, 4C-3D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHO	**Shikotan**	**0.65**	**356**	*d iPN*	**Pn**	**19 34 23.3**	**-0.1**
SHO				*i* S	**Sn**	**19 34 32.9**	**+0.3**
SHO				pmax	pmax		
	comp=E,697nm,0.2s						
SHO				pmax	pmax		
	comp=Z,3μm,0.2s						
SHO				pmax	pmax		
	comp=N,1μm,0.1s						
SHO				smax	smax		
	comp=N,84nm,0.5s						
SHO				smax	smax		
	comp=E,47nm,0.4s						
SHO	**Shikotan**	**0.65**	**356**	*i iP*	**Pn**	**19 34 23.4**	**0.0**
SHO				AMB	AMB	19 34 24.5	
	comp=E,700nm,0.2s						
SHO				AMB	AMB	19 34 24.5	
	comp=E,3μm,0.2s						
SHO				AMB	AMB	19 34 24.5	
	comp=E,1μm,0.1s						
SHO				*i* S	**Sn**	**19 34 33.1**	**+0.5**
SHO				A	A	19 34 33.5	
	comp=E,55μm,0.4s						
SHO				A	A	19 34 33.5	
	comp=E,38μm,0.4s						
NEM2	**Nemuro 2**	**0.85**	**280**	P	**Pn**	**19 34 26.3**	**+0.1**
NEM2				*eS*	**Sn**	**19 34 37.9**	**+0.3**
YUK	**Yuzh-Kuril'sk**	**1.10**	**317**	*c iPN*	**Pn**	**19 34 29.8**	**+0.2**
YUK				*i* S	**Sn**	**19 34 44.7**	**+1.1**
YUK				pmax	pmax		
	comp=E,2μm,0.2s						
YUK				pmax	pmax		
	comp=Z,5μm,0.2s						
YUK				pmax	pmax		
	comp=N,694nm,0.1s						
YUK				smax	smax		
	comp=N,23μm,0.7s						
YUK				smax	smax		
	comp=E,21μm,0.3s						
YUK	**Yuzh-Kuril'sk**	**1.10**	**317**	*i iP*	**Pn**	**19 34 29.9**	**+0.3**
YUK				AMB	AMB	19 34 31.3	
	comp=E,2μm,0.2s						
YUK				*i* S	**Sn**	**19 34 44.6**	**+1.0**
YUK				A	A	19 34 48.4	
	comp=E,11μm,0.4s						
YUK				A	A	19 34 48.4	
	comp=E,21μm,0.4s						
JRA	**Rausu**	**1.47**	**299**	P	**Pn**	**19 34 35.3**	**+0.7**
JRA				*eS*	**Sn**	**19 34 53.4**	**+0.7**
JAK	**Akkeshi**	**1.63**	**263**	P	**Pn**	**19 34 37.0**	**+0.3**
JAK				*eS*	**Sn**	**19 34 56.4**	**-0.1**
JNK	**Nakash**	**1.63**	**283**	P	**Pn**	**19 34 36.9**	**+0.2**
JNK				*eS*	**Sn**	**19 34 56.9**	**+0.4**
KUR	**Kuril'sk**	**2.12**	**19**	*e*PN	**Pn**	**19 34 44.1**	**+0.6**
KUR				*i* S	**Sn**	**19 35 09.3**	**+0.7**
KUR				pmax	pmax		
	comp=Z,130nm,0.3s						
KUR				pmax	pmax		
	comp=N,89nm,0.2s						
KUR				pmax	pmax		
	comp=E,142nm,0.2s						
KUR				smax	smax		
	comp=E,987nm,0.3s						
KUR				smax	smax		
	comp=N,571nm,0.2s						
KUR	**Kuril'sk**	**2.12**	**19**	*e*P	**Pn**	**19 34 42.1**	**-1.4**
KUR				AMB	AMB	19 34 43.9	
	comp=N,2μm,0.6s						
KUR				*e*S	**Sn**	**19 35 07.0**	**-1.6**
KUR				A	A	19 35 07.8	
	comp=N,7μm,0.4s						
KUR				A	A	19 35 07.8	
	comp=N,6μm,0.4s						
JOB	**Onbets**	**2.27**	**263**	P	**Pn**	**19 34 46.2**	**+0.7**
JAR	**Ashorobuto**	**2.29**	**273**	P	**Pn**	**19 34 46.6**	**+0.8**
JAR				*eS*	**Sn**	**19 35 12.7**	**0.0**
JTKR	**Abashiri--Toko**	**2.30**	**290**	P	**Pn**	**19 34 47.3**	**+1.4**
JCH	**Churui**	**2.67**	**258**	P	**Pn**	**19 34 51.4**	**+0.4**
JCH				*eS*	**Sn**	**19 35 22.3**	**+0.2**
JMP	**Maruseppu**	**2.69**	**288**	P	**Pn**	**19 34 53.0**	**+1.7**
ERM	**Erimo**	**3.02**	**248**	*e*PN	**Pn**	**19 34 58.4**	**+2.7**
ERM				*e*		19 35 32.4	
ERM	**Erimo**	**3.02**	**248**	*e*Pn	**Pn**	**19 34 58.4**	**+2.7**
ERM				*e*Sn	**Sn**	**19 35 32.4**	**+1.8**
ERM	**Erimo**	**3.02**	**248**	*e*P	**Pn**	**19 34 57.5**	**+1.8**
JFR	**Furan**	**3.15**	**270**	P	**Pn**	**19 34 59.7**	**+2.1**
JFR				*eS*	**Sn**	**19 35 36.1**	**+2.2**
JNBK	**Urakawa-nobuka**	**3.20**	**254**	P	**Pn**	**19 34 58.8**	**+0.6**
JNBK				*eS*	**Sn**	**19 35 35.6**	**+0.5**
JKA	**Kamikawa-asahi**	**3.24**	**287**	*e*P	**Pn**	**19 35 00.8**	**+1.9**
ASAJ	**Asahikawa**	**3.25**	**287**	P	**Pn**	**19 35 00.8**	**+1.8**
	comp=N,4.2nm,0.3s,baz=148,slow=10,SNR=38						
ASAJ	**Asahikawa**	**3.25**	**287**	*e*Pn	**Pn**	**19 35 01.8**	**+2.9**
ASAJ				*e*Sn	**Sn**	**19 35 36.7**	**+0.4**
ASAJ	**Asahikawa**	**3.25**	**287**	*e*P	**Pn**	**19 35 01.8**	**+2.9**
YSS	**Yuzh-Sakhalins**	**4.74**	**323**	*e*PN	**Pn**	**19 35 21.5**	**+2.1**
YSS				*e*		19 36 14.3	
YSS	**Yuzh-Sakhalins**	**4.74**	**323**	*e*P	**Pn**	**19 35 21.5**	**+2.1**
YSS				AMB	AMB	19 35 22.9	
	comp=N,390nm,0.6s						
YSS				*eS*	**Sn**	**19 36 14.3**	**+1.2**
UGL	**Uglegorsk**	**6.75**	**332**	*e*P	**Pn**	**19 35 51.0**	**+4.1**
UGL				AMB	AMB	19 35 53.7	
	comp=N,40nm,0.6s						
TEY	**Ternei**	**7.63**	**287**	*e*P	Pn	19 36 04.5	+5.5
TYV	**Tymovskoe**	**8.17**	**341**	*e*PN	**Pn**	**19 36 10.0**	**+3.6**
TYV	**Tymovskoe**	**8.17**	**341**	*e*P	**Pn**	**19 36 10.0**	**+3.6**
TYV				AMB	AMB	19 36 12.0	
	comp=N,10.0nm,0.7s						
MJAR	**Matsushiro Arr**	**9.44**	**228**	P	**Pn**	**19 36 23.3**	**-0.6**
	comp=N,0.6nm,0.3s,baz=30,slow=15,SNR=9.1						
MJAR				S	**Sn**	**19 38 09.6**	**+0.9**
	comp=N,0.9nm,0.3s,baz=92,slow=19,SNR=5.4						
MAJO	**Matsushiro**	**9.44**	**228**	*e*PN	**Pn**	**19 36 24.6**	**+0.7**
MAJO	**Matsushiro**	**9.44**	**228**	*e*Pn	**Pn**	**19 36 24.6**	**+0.7**
MAJO				*e*Sn	**Sn**	**19 38 11.1**	**+2.4**
MAJO	**Matsushiro**	**9.44**	**228**	*e*P	**Pn**	**19 36 24.6**	**+0.7**
MAT	**Matsushiro**	**9.44**	**228**	P	**Pn**	**19 36 22.6**	**-1.3**
MAT				*eS*	**Sn**	**19 38 09.5**	**+0.9**
SKR	**Severo-Kuril's**	**9.76**	**37**	*e*P	**Pn**	**19 36 29.4**	**+1.3**
SKR				AMB	AMB	19 36 29.9	
	comp=N,80nm,0.4s						
HABR	**Khabarovsk**	**9.79**	**307**	*e*PN	**Pn**	**19 36 26.1**	**-2.4**
HABR				pmax	pmax		
	comp=N,4.0nm,0.7s						
HABR				pmax	pmax		
	comp=E,10.0nm,1.4s						
HABR				pmax	pmax		
	comp=Z,13nm,1.4s						
HABR				MLR	MLR		
	comp=Z,1μm,15.0s						
HABR	**Khabarovsk**	**9.79**	**307**	*e*P	**Pn**	**19 36 26.1**	**-2.4**
HABR				AMB	AMB	19 36 26.9	
	comp=Z,10.0nm,1.4s						
HABR				AMS	AMS	19 41 24.0	
	comp=Z,1μm,15.0s						
GRNR	**Gornyy**	**10.39**	**320**	*e*P	Pn	19 36 42.0	+5.2
GRNR				AMB	AMB	19 36 42.4	
	comp=Z,10.0nm,0.6s						
OKH	**Okha**	**10.66**	**347**	*e*P	**Pn**	**19 36 43.1**	**+2.7**
OKH				AMB	AMB	19 36 44.1	
	comp=Z,170nm,0.7s						
NKL	**Nikolayevsk**	**10.76**	**340**	*e*P	**Pn**	**19 36 44.0**	**+2.2**
NKL				AMB	AMB	19 36 46.4	
	comp=Z,10.0nm,0.7s						
JHJ	**Hachijo jima 2**	**11.53**	**211**	P	**Pn**	**19 36 48.8**	**-3.8**
	comp=Z,3.7nm,0.3s,baz=349,slow=18,SNR=6.1						
JHJ				S	Sn	19 38 48.6	-11
	comp=Z,29nm,0.3s,baz=116,slow=24,SNR=11						
KLR	**Kul'dur**	**12.08**	**305**	*e*PN	**Pn**	**19 36 58.5**	**-1.4**
KLR	**Kul'dur**	**12.08**	**305**	*e*P	**Pn**	**19 36 58.5**	**-1.4**
PETK	**Petropavlovsk-**	**12.22**	**32**	P	**Pn**	**19 37 00.5**	**-1.3**
	comp=Z,0.9nm,0.3s,baz=193,slow=11,SNR=16						
EKMR	**Ekimchan**	**13.53**	**322**	*e*P	**Pn**	**19 37 20.0**	**+0.3**
EKMR				AMB	AMB	19 37 25.7	
	comp=Z,10.0nm,0.9s						
BMKR	**Bomnak**	**16.45**	**321**	*e*P	**P**	**19 37 59.7**	**-0.4**
ZEA	**Zeya**	**16.68**	**316**	*e*P	**Pn**	**19 37 58.4**	**-2.5**
KROS	**Kirovskiy**	**17.19**	**318**	*e*P	**Pn**	**19 38 07.5**	**+0.3**
SEY	**Seymchan**	**20.00**	**7**	P	**P**	**19 38 37.6**	**-1.4**
	comp=Z,0.5nm,0.3s,baz=189,slow=9.6,SNR=11						
SEY	**Seymchan**	**20.00**	**7**	*e*P	**P**	**19 38 37.8**	**-1.2**
SEY	**Seymchan**	**20.00**	**7**	*e*P	**P**	**19 38 37.8**	**-1.2**
BOD	**Bodaibo**	**25.18**	**317**	*e*P	**P**	**19 39 30.2**	**-1.2**
BOD				pmax	pmax		
	comp=Z,2.0nm,0.8s						
BOD	**Bodaibo**	**25.18**	**317**	*e*P	**P**	**19 39 30.2**	**-1.2**
ULN	**Ulaanbaatar**	**28.06**	**294**	*e*P	**P**	**19 39 59.4**	**+1.7**
ULN				pmax	pmax		
	comp=Z,4.0nm,1.0s						
ULN	**Ulaanbaatar**	**28.06**	**294**	*e*P	**P**	**19 39 59.4**	**+1.7**
	comp=Z,3.8nm,1.0s						
ULN	**Ulaanbaatar**	**28.06**	**294**	*e*P	**P**	**19 39 59.4**	**+1.7**
SONM	**Songino Array**	**28.51**	**294**	P	**P**	**19 40 02.4**	**+0.8**
	comp=Z,2.8nm,0.5s,baz=90,slow=8.5,SNR=29						
H11N2	**WAKE ISLAND Hy**	**28.83**	**138**	T	T	20 10 59.9	
	baz=329,slow=75,SNR=267						
H11N1	**WAKE ISLAND Hy**	**28.84**	**138**	T	T	20 10 58.2	
	baz=329,slow=75,SNR=230						
H11N3	**WAKE ISLAND Hy**	**28.85**	**138**	T	T	20 10 58.6	
	baz=329,slow=75,SNR=285						
H11S1	**WAKE ISLAND Hy**	**29.78**	**140**	T	T	20 11 59.1	
	baz=331,slow=76,SNR=420						
H11S3	**WAKE ISLAND Hy**	**29.79**	**140**	T	T	20 11 56.5	
	baz=331,slow=76,SNR=439						
H11S2	**WAKE ISLAND Hy**	**29.80**	**140**	T	T	20 12 05.0	
	baz=331,slow=76,SNR=253						
TIXI	**Tiksi**	**29.84**	**349**	P	**P**	**19 40 08.6**	**-4.4**
	comp=Z,0.7nm,0.5s,baz=148,slow=4.3,SNR=6.0						
CAST	**Castle Rocks**	**39.75**	**38**	*e*P	**P**	**19 41 40.4**	**+2.0**
	comp=Z,29nm,2.0s						
KTH	**Kantishna Hill**	**40.27**	**38**	*e*P	**P**	**19 41 44.6**	**+1.8**
	comp=Z,6.0nm,1.0s						
MLY	**Manley**	**40.37**	**35**	*e*P	**P**	**19 41 45.4**	**+1.8**
	comp=Z,20nm,1.9s						
COLD	**Coldfoot**	**40.69**	**32**	*e*P	**P**	**19 41 47.4**	**+1.2**
	comp=Z,6.7nm,0.6s						
ZALV	**Zalesovo Beam**	**41.17**	**307**	P	**P**	**19 41 48.4**	**-1.9**
	comp=Z,0.4nm,0.3s,baz=87,slow=8.0,SNR=3.1						
ZALV				LR	LR	20 00 48.3	
	comp=Z,747nm,19.4s,baz=36,slow=39						
WRH	**Wood River Hil**	**41.51**	**36**	*e*P	**P**	**19 41 54.1**	**+1.2**
	comp=Z,19nm,1.7s						
SML	**Sawmill**	**41.53**	**40**	*e*P	**P**	**19 41 54.4**	**+1.2**
SML				pmax	pmax		
	comp=Z,1.0nm,0.7s						
SML	**Sawmill**	**41.53**	**40**	*e*P	**P**	**19 41 54.4**	**+1.2**
	comp=Z,1.4nm,0.7s						
SML	**Sawmill**	**41.53**	**40**	*e*P	**P**	**19 41 54.4**	**+1.2**
ILAR	**Eielson Array**	**42.02**	**36**	P	**P**	**19 41 57.5**	**+0.4**
	comp=Z,1.5nm,0.5s,baz=265,slow=5.0,SNR=26						
FYU	**Fort Yukon**	**42.64**	**33**	*e*P	**P**	**19 42 04.4**	**+2.3**
	comp=Z,13nm,0.7s						
KLU	**Klutina**	**42.71**	**41**	*e*P	**P**	**19 42 04.1**	**+1.3**
	comp=Z,20nm,1.8s						
DOT	**Dot Lake**	**43.33**	**37**	*e*P	**P**	**19 42 08.2**	**+0.4**
	comp=Z,48nm,2.0s						
EGAK	**Eagle**	**44.46**	**36**	*e*P	**P**	**19 42 17.5**	**+0.8**
	comp=Z,4.0nm,0.9s						
BALM	**Baldy**	**44.49**	**41**	*e*P	**P**	**19 42 18.7**	**+1.6**
BALM				pmax	pmax		
	comp=Z,5.0nm,0.9s						
BALM	**Baldy**	**44.49**	**41**	*e*P	**P**	**19 42 18.7**	**+1.6**
	comp=Z,5.3nm,0.9s						
MKAR	**Makanchi Array**	**44.67**	**298**	P	**P**	**19 42 19.2**	**+0.5**
	comp=Z,4.5nm,0.5s,baz=81,slow=9.1,SNR=53						
MKAR	**Makanchi Array**	**44.67**	**298**	*e*P	**P**	**19 42 19.6**	**+0.9**
MKAR				pmax	pmax		
	comp=Z,5.0nm,0.5s						
MKAR	**Makanchi Array**	**44.67**	**298**	*e*P	**P**	**19 42 19.8**	**+1.1**
MKAR	**Makanchi Array**	**44.67**	**298**	*e*P	**P**	**19 42 19.7**	**+1.1**
MAKZ	**Makanchi**	**44.86**	**298**	*e*P	**P**	**19 42 21.2**	**+1.0**
MAKZ				pmax	pmax		
	comp=Z,7.0nm,0.9s						
MAKZ	**Makanchi**	**44.86**	**298**	*e*P	**P**	**19 42 21.2**	**+1.0**
	comp=Z,6.9nm,0.9s						
KURK	**Kurchatov**	**45.67**	**304**	*e*P	**P**	**19 42 26.6**	**+0.1**
KURK				pmax	pmax		
	comp=Z,1.0nm,0.8s						
KURK	**Kurchatov**	**45.67**	**304**	P	**P**	**19 42 26.8**	**+0.2**
KURK	**Kurchatov**	**45.67**	**304**	*e*P	**P**	**19 42 26.7**	**+0.2**
KURBB	**Kurchatov Arra**	**45.76**	**304**	P	**P**	**19 42 26.8**	**-0.4**
	comp=Z,0.8nm,0.3s,baz=67,slow=9.1,SNR=9.0						
INK	**Inuvik**	**46.95**	**30**	P	**P**	**19 42 37.5**	**+1.3**
	comp=Z,9.1nm,0.6s,baz=294,slow=6.5,SNR=65						
INK	**Inuvik**	**46.95**	**30**	*e*P	**P**	**19 42 37.6**	**+1.3**
INK				pmax	pmax		
	comp=Z,11nm,0.8s						
INK	**Inuvik**	**46.95**	**30**	*e*P	**P**	**19 42 37.6**	**+1.3**
	comp=Z,11nm,0.8s						
INK	**Inuvik**	**46.95**	**30**	*e*P	**P**	**19 42 37.6**	**+1.3**
BVAR	**Borovoye Array**	**49.69**	**310**	P	**P**	**19 42 56.9**	**-0.7**
	comp=Z,0.5nm,0.3s,baz=75,slow=8.9,SNR=5.3						
TKM2	**Tokmak 2**	**50.57**	**296**	*e*P	**P**	**19 43 06.3**	**+1.6**
TKM2				pmax	pmax		
	comp=Z,6.0nm,1.0s						
TKM2	**Tokmak 2**	**50.57**	**296**	*e*P	**P**	**19 43 06.2**	**+1.6**
	comp=Z,6.3nm,1.0s						
AAK	**Ala-Archa**	**51.42**	**296**	*e*P	**P**	**19 43 11.0**	**-0.1**
AAK				pmax	pmax		
	comp=Z,3.0nm,1.1s						
AAK	**Ala-Archa**	**51.42**	**296**	*e*P	**P**	**19 43 11.0**	**-0.1**
KKAR	**Karatay Array**	**53.80**	**298**	*e*P	**P**	**19 43 27.3**	**-1.1**
KKAR	**Karatay Array**	**53.80**	**298**	*e*P	**P**	**19 43 27.3**	**-1.1**
ARU	**Arti**	**54.60**	**317**	P	**P**	**19 43 32.7**	**-1.4**
	comp=Z,0.9nm,0.3s,baz=79,slow=5.2,SNR=3.0						
SPITS	**Spitsbergen Ar**	**55.26**	**349**	P	**P**	**19 43 37.5**	**-1.0**
	comp=Z,0.7nm,0.4s,baz=66,slow=8.1,SNR=4.9						
RES	**Resolute Bay**	**55.52**	**17**	P	**P**	**19 43 40.6**	**+0.2**
	comp=Z,9.8nm,0.5s,baz=339,slow=6.8,SNR=34						
RES	**Resolute Bay**	**55.52**	**17**	*e*P	**P**	**19 43 40.3**	**-0.1**
	comp=Z,16nm,0.8s						
RES	**Resolute Bay**	**55.52**	**17**	*e*P	**P**	**19 43 40.3**	**-0.1**
YKA	**Yellowknife Ar**	**56.34**	**33**	P	**P**	**19 43 47.2**	**+0.8**
	comp=Z,2.2nm,0.6s,baz=298,slow=6.6,SNR=25						
ABKAR	**Akbulak array**	**57.25**	**309**	*e*P	**P**	**19 43 53.2**	**+0.1**
AKTO	**Aktyubinsk**	**57.74**	**311**	P	**P**	**19 43 56.7**	**+0.2**
	comp=Z,1.8nm,0.7s,baz=57,slow=7.8,SNR=4.7						
ARCES	**ARCESS Array B**	**59.67**	**340**	P	**P**	**19 44 09.7**	**0.0**
	comp=Z,2.4nm,1.0s,baz=48,slow=7.6,SNR=9.8						
ARCES	**ARCESS Array B**	**59.67**	**340**	*e*P	**P**	**19 44 10.2**	**+0.5**
ARCES				pmax	pmax		
	comp=Z,1.0nm,0.7s						
KLMR	**Klimovskoe**	**60.78**	**328**	*e*P	**P**	**19 44 15.0**	**-2.3**
KLMR				pmax	pmax		
	comp=Z,11nm,1.5s						
WRAB	**Tennant Creek**	**63.90**	**193**	*e*P	**P**	**19 44 38.0**	**-0.6**
WRAB				pmax	pmax		
	comp=Z,1.0nm,0.7s						
WRAB	**Tennant Creek**	**63.90**	**193**	*e*P	**P**	**19 44 38.0**	**-0.6**
	comp=Z,1.0nm,0.7s						
WRA	**Warramunga Arr**	**63.91**	**193**	P	**P**	**19 44 38.7**	**0.0**
	comp=Z,3.2nm,0.8s,baz=16,slow=7.1,SNR=16						
SUMG	**Summit**	**64.44**	**2**	*i iP*	**P**	**19 44 43.0**	**+0.9**
	comp=Z,14nm,0.5s						
SUMG	**Summit**	**64.44**	**2**	*i iP*	**P**	**19 44 43.0**	**+0.9**
SUMG				pmax	pmax		
	comp=Z,14nm,0.5s						
SUMG	**Summit**	**64.44**	**2**	*e*P	**P**	**19 44 43.0**	**+0.9**
	comp=Z,13nm,0.5s						
GEYT	**Alibeck**	**64.53**	**299**	P	**P**	**19 44 42.3**	**-0.5**
	comp=Z,0.7nm,0.5s,baz=45,slow=2.2,SNR=4.6						
FINES	**FINESS Array B**	**65.26**	**333**	P	**P**	**19 44 46.9**	**-0.1**
	comp=Z,4.1nm,0.6s,baz=43,slow=8.2,SNR=29						
FINES	**FINESS Array B**	**65.26**	**333**	*e*P	**P**	**19 44 47.2**	**+0.2**
FINES				pmax	pmax		
	comp=Z,4.0nm,0.6s						
ASAR	**Alice Springs**	**67.63**	**193**	P	**P**	**19 45 03.4**	**+0.8**
	comp=Z,1.4nm,0.9s,baz=13,slow=6.2,SNR=9.6						
ASAR	**Alice Springs**	**67.63**	**193**	*e*P	**P**	**19 45 04.0**	**+1.4**
ASAR				pmax	pmax		
	comp=Z,1.0nm,0.7s						
NVAR	**Mina Array Bea**	**68.01**	**58**	P	**P**	**19 45 06.6**	**+1.3**
	comp=Z,0.8nm,0.4s,baz=272,slow=6.8,SNR=2.7						
RCWM	**Renegade Canyo**	**69.97**	**59**	*e*P	**P**	**19 45 16.8**	**-0.5**
KIV	**Kislovodsk**	**69.98**	**312**	*e*P	**P**	**19 45 16.9**	**-0.3**
KIV				pmax	pmax		
	comp=Z,4.0nm,1.0s						
KIV	**Kislovodsk**	**69.98**	**312**	*e*P	**P**	**19 45 16.9**	**-0.3**
KBZ	**Khabaz**	**70.01**	**312**	P	**P**	**19 45 18.5**	**+1.3**
	comp=Z,1.7nm,0.8s,baz=45,slow=8.7,SNR=4.5						
NB2	**NORSAR Subarra**	**70.02**	**339**	P	**P**	**19 45 17.2**	**0.0**
	comp=Z,12nm,1.1s,baz=32,slow=6.5						
NB2	**NORSAR Subarra**	**70.02**	**339**	P	**P**	**19 45 17.1**	**-0.1**
NB2				pmax	pmax		
	comp=Z,10.0nm,1.1s						
NOA	**NORSAR Array B**	**70.02**	**339**	P	**P**	**19 45 17.5**	**+0.3**
	comp=Z,3.9nm,0.6s,baz=32,slow=6.2,SNR=19						
ZEI	**Tsey**	**70.07**	**310**	*e*P	**P**	**19 45 17.3**	**-0.7**
ZEI				pmax	pmax		
	comp=Z,6.0nm,0.6s						
ZEI	**Tsey**	**70.07**	**310**	*e*P	**P**	**19 45 17.3**	**-0.7**
PDAR	**Pinedale Array**	**70.39**	**49**	P	**P**	**19 45 20.7**	**+0.7**
	comp=Z,0.2nm,0.3s,baz=222,slow=2.0,SNR=3.9						
AKASG	**Malin Array Be**	**71.89**	**324**	P	**P**	**19 45 28.5**	**-0.1**
	comp=Z,1.9nm,0.6s,baz=39,slow=6.2,SNR=9.6						
KIEV	**Kiev**	**71.90**	**324**	*e*P	**P**	**19 45 27.8**	**-0.8**
KIEV				pmax	pmax		
	comp=Z,2.0nm,0.9s						
BURAR	**Bucovina Array**	**75.95**	**324**	*i iP*	**P**	**19 45 53.5**	**+1.0**
BURAR				S	**pP**	**19 46 09.5**	**+3.8**
CLL	**Collm**	**77.69**	**332**	*e*P	**P**	**19 46 03.0**	**+0.9**
	comp=Z,5.0nm,0.9s						
CLL				*e*pP	**pP**	**19 46 15.0**	**-0.4**
CLL	**Collm**	**77.69**	**332**	*e*P	**P**	**19 46 03.0**	**+0.9**
CLL				*e**PP	**pP**	**19 46 15.0**	**-0.4**
CLL				pmax	pmax		
	comp=Z,19nm,0.9s						
CLL	**Collm**	**77.69**	**332**	*e*P	**P**	**19 46 03.0**	**+0.9**
BRTR	**Keskin Array B**	**77.77**	**314**	P	**P**	**19 46 03.6**	**+0.6**
	comp=Z,0.5nm,0.6s,baz=58,slow=3.5,SNR=4.1						
KHC	**Kasperske Hory**	**79.33**	**331**	*e*pP	pP	19 46 25.0	+0.5
GERES	**GERESS Array B**	**79.53**	**331**	P	**P**	**19 46 11.8**	**-0.6**
	comp=Z,0.2nm,0.4s,baz=32,slow=5.8,SNR=3.4						
TXAR	**Lajitas Array**	**83.09**	**56**	P	**P**	**19 46 32.9**	**+1.3**
	comp=Z,1.5nm,0.5s,baz=298,slow=3.6,SNR=14						

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*NIC **15** 19:34:37.4±0.2, 34°.41N×32°.03E, h25km, ML3.6*
*HLW **15** 19:34:37.2, 34°.53N×32°.07E, h30km±32km, Md3.1, Ml3.0*
*ISK **15** 19:34:37.3, 34°.34N×32°.17E, h36km, ML3.3*
*ISCJB **15** 19:34:38.1±0.3, 34°.39N±0°.02×32°.17E±0°.03, h36km±21km, Error ellipse: s-maj=4.4km s-min=2.7km az=147.4*
*CSEM **15** 19:34:38.4±0.1, 34°.42N×32°.23E, h20km, ML3.6, Error ellipse: s-maj=3.2km s-min=2.2km az=65.0*
*GII **15** 19:34:39.0±0.4, 34°.39N×32°.35E, h10km±1km, MD2.2/4*
*NSSC **15** 19:34:41.4±0.8, 34°.50N×32°.47E, h38km±999km, ML2.4*
*DDA **15** 19:34:56.1, 34°.34N×32°.09E, h30km, Ml3.3*
ISC 15 19:34:37.5±1.4, 34°.41N±0°.02×32°.25E±0°.03, h17km±11km, n143, σ1§42/185, Cyprus region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PPCY	**Paphos**	**0.48**	**10**	P	**Pb**	**19 34 47.7**	**+0.3**
	baz=208						
PPCY	**Paphos**	**0.48**	**10**	P	**Pb**	**19 34 47.7**	**+0.3**
AKMC	**Akamas**	**0.62**	**6**	P	**Pg**	**19 34 49.6**	**-0.1**
	baz=201						
AKMC	**Akamas**	**0.62**	**6**	P	**Pg**	**19 34 49.6**	**-0.1**
SZAC	**Souni**	**0.63**	**57**	P	**Pb**	**19 34 51.0**	**+1.0**
	baz=243						
SZAC				S	**Sn**	**19 35 01.4**	**+0.1**
SZAC	**Souni**	**0.63**	**57**	P	**Pb**	**19 34 51.0**	**+1.0**
SZAC				S	**Sn**	**19 35 01.4**	**+0.1**
ALFC	**Alefka**	**0.80**	**21**	P	**Pg**	**19 34 52.5**	**-0.6**
	baz=212						
ALFC				S	**Sb**	**19 35 04.2**	**+0.8**
ALFC	**Alefka**	**0.80**	**21**	P	**Pg**	**19 34 52.5**	**-0.6**
ALFC				S	**Sb**	**19 35 04.2**	**+0.8**
LEF	**Lefka**	**0.88**	**37**	*e*PG	**Pb**	**19 34 54.4**	**+0.1**
LEF				*e*SG	**Sn**	**19 35 07.3**	**-0.2**
LEF	**Lefka**	**0.88**	**37**	*e*Pg	**Pb**	**19 34 54.4**	**+0.1**
LEF				*e*Sg	**Sn**	**19 35

ARNB AML AML 19 36 16.0
comp=N,22nm,0.6s
ARNB AML AML 19 36 17.8
comp=E,23nm,0.3s
ARNB Al Arnab 3.38 64 *e*P **Pn 19 35 29.0 -0.5**
FETY Fethiye 3.40 312 *e*PN **Pn 19 35 29.7 -0.1**
FETY Fethiye 3.40 312 *e*Pn **Pn 19 35 29.7 -0.1**
BIDA Albida 3.41 79 *e*P **Pn 19 35 29.7 -0.3**
BIDA *e*S **Sn 19 36 05.2 -4.8**
BIDA AML AML 19 36 15.2
comp=N,60nm,0.4s
BIDA AML AML 19 36 16.7
comp=E,51nm,0.6s
BIDA Albida 3.41 79 *e*P **Pn 19 35 29.7 -0.3**
HAWK Haweek 3.44 87 *e*P **Pn 19 35 30.6 +0.2**
HAWK *e*S **Sn 19 36 05.9 -4.8**
HAWK AML AML 19 36 18.9
comp=E,21nm,0.5s
HAWK AML AML 19 36 19.5
comp=N,17nm,0.3s
HAWK Haweek 3.44 87 *e*P **Pn 19 35 30.6 +0.2**
HMDT Nahal Hemdat 3.49 127 Pn **Pn 19 35 32.2 +1.2**
HMDT Sn **Sn 19 36 13.9 +2.1**
HMDT Nahal Hemdat 3.49 127 Pn **Pn 19 35 32.2 +1.2**
HMDT Sn **Sn 19 36 13.9 +2.1**
KONT Konya--Tatoy 3.53 1 *e*PN **Pn 19 35 32.6 +1.1**
KONT Konya--Tatoy 3.53 1 *e*Pn **Pn 19 35 32.6 +1.1**
GLHS Glhisar (BURDU 3.53 322 *e*PN **Pn 19 35 32.4 +0.7**
GLHS Glhisar (BURDU 3.53 322 *e*Pn **Pn 19 35 32.4 +0.7**
GOLH Golhisar 3.56 323 P **Pn 19 35 33.8 +1.7**
GOLH S **Sn 19 36 13.6 -0.3**
GOLH Golhisar 3.56 323 *i* P **Pn 19 35 33.8 +1.7**
GOLH *i* S **Sn 19 36 13.6 -0.3**
WRDH Warideh 3.59 71 *e*P **Pn 19 35 32.4 0.0**
WRDH *e*S Sn 19 36 08.8 -5.6
WRDH AML AML 19 36 21.3
comp=E,25nm,0.4s
WRDH Warideh 3.59 71 *e*P **Pn 19 35 32.4 0.0**
AMAZ Amatzia 3.64 141 Pn **Pn 19 35 34.6 +1.5**
AMAZ Amatzia 3.64 141 Pn **Pn 19 35 34.6 +1.5**
KARA Karaisali 3.64 38 *e*PN **Pn 19 35 34.9 +1.8**
KARA Karaisali 3.64 38 *e*Pn **Pn 19 35 34.9 +1.8**
RSH 3.66 160 P **Pn 19 35 34.0 +0.7**
baz=158
RSH 3.66 160 P **Pn 19 35 34.0 +0.7**
TAHT Tahtakopru-Hat 3.77 58 *e*PN **Pn 19 35 35.8 +1.0**
TAHT Tahtakopru-Hat 3.77 58 *e*Pn **Pn 19 35 35.8 +1.0**
DALY Dalyan (Mu˙la 3.79 310 *e*PN **Pn 19 35 35.3 +0.3**
DALY Dalyan (Mu˙la 3.79 310 *e*Pn **Pn 19 35 35.3 +0.3**
BTCH Batrach 3.81 64 *e*P **Pn 19 35 35.9 +0.5**
BTCH *e*S Sn 19 36 14.4 -5.5
BTCH AML AML 19 36 23.8
comp=E,27nm,0.6s
BTCH AML AML 19 36 27.0
comp=N,16nm,0.3s
BTCH Batrach 3.81 64 *e*P **Pn 19 35 35.9 +0.5**
TURN Turunc 3.85 311 *i* P **Pn 19 35 38.4 +2.5**
TURN *i* S **Sn 19 36 18.8 -1.9**
DSI Dead Sea 3.87 136 Pn **Pn 19 35 37.5 +1.3**
DSI Dead Sea 3.87 136 Pn **Pn 19 35 37.5 +1.3**
KZIT Kziot 3.94 152 Pn **Pn 19 35 38.4 +1.2**
KZIT Kziot 3.94 152 Pn **Pn 19 35 38.4 +1.2**
MZDA Masada 4.06 139 Pn **Pn 19 35 40.0 +1.3**
MZDA Sn **Sn 19 36 27.0 +1.3**
MZDA Masada 4.06 139 Pn **Pn 19 35 40.0 +1.3**
MZDA Sn **Sn 19 36 27.0 +1.3**
RABH Abou Rabah 4.10 88 *e*P **Pn 19 35 40.2 +0.8**
RABH *e*S **Sn 19 36 22.2 -4.8**
RABH Abou Rabah 4.10 88 *e*P **Pn 19 35 40.2 +0.8**
SALA Sala 4.11 113 *e*P **Pn 19 35 40.9 +1.2**
SALA *e*S **Sn 19 36 24.0 -3.5**
SALA Sala 4.11 113 *e*P **Pn 19 35 40.9 +1.2**
SALA *e*S **Sn 19 36 24.0 -3.5**
YER Yerkesik 4.21 311 *e*PN **Pn 19 35 41.1 +0.1**
YER Yerkesik 4.21 311 *e*Pn **Pn 19 35 41.1 +0.1**
DRWC Darouich 4.22 57 *e*P **Pn 19 35 41.4 +0.2**
DRWC *e*S Sn 19 36 23.8 -6.3
DRWC Darouich 4.22 57 *e*P **Pn 19 35 41.4 +0.2**
GULA Gulagac 4.24 22 *e*PN **Pn 19 35 43.5 +2.2**
GULA Gulagac 4.24 22 *e*Pn **Pn 19 35 43.6 +2.2**
HHAG Hagoal 4.45 182 P **Pn 19 35 44.8 +0.6**
baz=179
HHAG S **Sn 19 36 35.4 -0.2**
baz=179
HHAG Hagoal 4.45 182 P **Pn 19 35 44.8 +0.6**
HHAG S **Sn 19 36 35.4 -0.2**
KHL Karahalli 4.48 331 *e*PN **Pn 19 35 45.9 +1.2**
KHL Karahalli 4.48 331 *e*Pn **Pn 19 35 45.9 +1.2**
KOT Kottamia 4.49 185 P **Pn 19 35 44.9 +0.2**
baz=183
KOT AMP 19 36 00.0
comp=E,20μm,0.2s,logA/T=4.9,baz=183
KOT Kottamia 4.49 185 P **Pn 19 35 44.9 +0.2**
ZFRI Zfri 4.58 146 Pn **Pn 19 35 47.7 +1.8**
ZFRI Zfri 4.58 146 Pn **Pn 19 35 47.7 +1.8**
SUZ Suez 4.59 174 P **Pn 19 35 46.8 +0.7**
baz=171
SUZ S **Sn 19 36 38.5 -0.4**
baz=171
SUZ Suez 4.59 174 P **Pn 19 35 46.8 +0.7**
SUZ S **Sn 19 36 38.5 -0.4**
PRNI Paran 4.67 149 Pn **Pn 19 35 48.4 +1.1**
PRNI Paran 4.67 149 Pn **Pn 19 35 48.4 +1.1**
HNKL Nakhl 4.71 161 P **Pn 19 35 48.2 +0.5**
baz=160
HNKL Nakhl 4.71 161 P **Pn 19 35 48.2 +0.5**
BDRM Kayabasi 4.72 305 P **Pn 19 35 48.0 +0.1**
BDRM Kayabasi 4.72 305 *i* P **Pn 19 35 48.0 +0.1**
BDRM *i* S Sn 19 36 35.3 -6.9
AYDN Tasoluk 4.80 314 P **Pn 19 35 49.3 +0.3**
AYDN Tasoluk 4.80 314 *i* P **Pn 19 35 49.3 +0.3**
AYDN *i* S Sn 19 36 37.4 -6.8
BODT Bodrum 4.81 305 *e*PN **Pn 19 35 49.0 0.0**
BODT Bodrum 4.81 305 *e*Pn **Pn 19 35 49.1 0.0**
GLL Jalalah 4.84 186 P **Pn 19 35 49.8 +0.2**
baz=184
GLL Jalalah 4.84 186 P **Pn 19 35 49.8 +0.2**
HRFI Mount Harif 4.96 151 Pn **Pn 19 35 52.7 +1.4**
HRFI Mount Harif 4.96 151 Pn **Pn 19 35 52.7 +1.4**
AYDB Zeytinkoy-Aydi 4.98 316 *e*PN **Pn 19 35 51.7 +0.1**
AYDB Zeytinkoy-Aydi 4.98 316 *e*Pn **Pn 19 35 51.7 +0.1**
ZNM Zenema 5.05 174 P **Pn 19 35 53.0 +0.6**
baz=172
ZNM Zenema 5.05 174 P **Pn 19 35 53.0 +0.6**
MBRI Mt Berech 5.13 153 Pn **Pn 19 35 54.8 +1.2**
MBRI Mt Berech 5.13 153 Pn **Pn 19 35 54.8 +1.2**
GCAM G?zelcaml? 5.22 310 P **Pn 19 35 53.8 -0.9**
GCAM G?zelcaml? 5.22 310 *i* P **Pn 19 35 53.8 -0.9**
GCAM *i* S Sn 19 36 47.2 -7.3
AQBJ Aqaba 5.24 152 Pn **Pn 19 35 55.4 +0.3**
EIL Elat 5.26 153 Pn **Pn 19 35 56.7 +1.4**
EIL Sn **Sn 19 36 56.6 +1.1**
EIL Elat 5.26 153 Pn **Pn 19 35 56.7 +1.4**
EIL Sn **Sn 19 36 56.6 +1.1**
HMAT Matruh 5.46 234 P **Pn 19 35 55.6 -2.4**
baz=233
HDHB Dhahab 6.02 160 P **Pn 19 36 06.3 +0.5**
baz=158
HDHB Dhahab 6.02 160 P **Pn 19 36 06.3 +0.5**
CHOS Chios island 6.38 310 *e*PN **Pn 19 36 11.6 +0.9**
CHOS Chios island 6.38 310 *e*Pn **Pn 19 36 11.6 +0.9**

*IDC **15** 19:40:21.1±3.2,36˚27N×142˚37E,h0km,mb3.8/6, mb1 3.7/9,mb1mx3.5/46,mbtmp3.8/9,ML3.3/3,MS3.8/1, Ms1 3.8/1,ms1mx3.3/46,Error ellipse: s-maj=63.0km s-min=25.5km az=116.0*
*JMA **15** 19:40:27.4±0.2,36˚35N×141˚88E,h64km,M3.5*
ISC 15 19:40:21.6±2.1,36˚34N±0˚04×142˚17E±0˚08,h1km±11km, n20,σ1°70/29,mb3.8/6,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.24**	**239**	P	**Pn**	**19 40 46.6**	**+0.5**
CHOJ				*e*S	**Sg**	**19 41 01.1**	**-0.2**
JHO	**Hitachi**	**1.32**	**282**	P	**Pg**	**19 40 46.3**	**-0.5**
JHO				S	**Sg**	**19 41 02.3**	**-1.6**
ONAJ	**Iwakimizuishiy**	**1.34**	**305**	P	**Pn**	**19 40 47.6**	**+0.1**
JFK	**Kawauchi**	**1.46**	**315**	P	**Pg**	**19 40 50.0**	**+0.5**
JMM	**Marumori**	**1.88**	**325**	P	**Pb**	**19 40 56.6**	**-0.1**
JFT	**Otama**	**1.88**	**309**	P	**Pb**	**19 40 56.7**	**-0.1**
JFT				S	**Sn**	**19 41 18.5**	**-0.8**
BSO1	**Boso 1**	**1.94**	**210**	P	**Pb**	**19 40 57.2**	**-0.3**
BSO1				S	**Sn**	**19 41 20.9**	**+0.8**
BSO3	**Boso 3**	**2.04**	**222**	P	**Pn**	**19 40 58.4**	**+1.5**
JAG	**Ashikaga**	**2.19**	**273**	P	**Pn**	**19 40 59.7**	**+0.5**
JAG				*e*S	**Sn**	**19 41 24.4**	**-2.6**
JFY	**Yanaizu**	**2.24**	**299**	P	**Pb**	**19 41 01.5**	**-1.5**
JFY				*e*S	**Sn**	**19 41 28.5**	**+0.2**
MJAR	**Matsushiro Arr**	**3.20**	**275**	Pn	**Pn**	**19 41 14.2**	**+1.1**
6.0nm,0.3s,baz=108,slow=8.8,SNR=39							
MAT	**Matsushiro**	**3.20**	**275**	P	**Pn**	**19 41 14.4**	**+1.3**
MAT				*e*S	**Sn**	**19 41 50.9**	**-1.0**
JHJ	**Hachijo jima 2**	**3.77**	**212**	Pn	**Pn**	**19 41 21.6**	**+0.8**
9.0nm,0.3s,baz=157,slow=24,SNR=7.4							
JHJ				Sn	**Sn**	**19 42 01.9**	**-3.9**
23nm,0.3s,baz=64,slow=23,SNR=7.1							
JHJ				LR	LR	19 43 00.6	
comp=Z,1μm,19.6s,baz=212,slow=42							
ASAJ	**Asahikawa**	**7.78**	**2**	Pn	**Pn**	**19 42 17.8**	**+1.9**
0.2nm,0.3s,baz=214,slow=19,SNR=3.2							
ASAJ				Sn	**Sn**	**19 43 39.8**	**-4.8**
0.1nm,0.3s,baz=225,slow=11,SNR=1.6							
YAK	**Yakutsk**	**26.88**	**347**	P	**P**	**19 46 05.1**	**+1.4**
1.9nm,0.3s,baz=140,slow=1.8,SNR=2.2							
SONM	**Songino Array**	**28.68**	**305**	P	**P**	**19 46 20.9**	**+0.8**
2.0nm,0.9s,baz=102,slow=9.0,SNR=10							
CMAR	**Chiang Mai Arr**	**41.92**	**257**	P	**P**	**19 48 15.1**	**+1.1**
0.4nm,0.8s,baz=49,slow=6.2,SNR=4.3							
ZALV	**Zalesovo Beam**	**42.83**	**313**	P	**P**	**19 48 22.2**	**+1.2**
0.6nm,0.5s,baz=93,slow=5.8,SNR=3.4							
MKAR	**Makanchi Array**	**45.00**	**303**	P	**P**	**19 48 40.0**	**+1.4**
0.7nm,0.7s,baz=87,slow=9.3,SNR=5.2							
AKASG	**Malin Array Be**	**75.22**	**323**	P	**P**	**19 52 04.4**	**-1.4**
0.6nm,0.5s,baz=54,slow=4.8,SNR=4.6							

*IDC **15** 19:43:00.1±0.6,13˚99N×120˚89E,h230km±4km,mb3.2/6, mb1 3.5/6,mb1mx2.9/42,mbtmp3.8/6,Error ellipse: s-maj=29.1km s-min=12.7km az=70.0*
*ISCJB **15** 19:43:01.6±0.5,13˚86N±0˚05×120˚5E±0˚1,h200km, mb3.5/6,Error ellipse: s-maj=16.1km s-min=7.1km az=174.9*
*MAN **15** 19:43:01,13˚88N×120˚61E,h197km,mb4.4,ML3.3, MS3.1*
ISC 15 19:43:00.2±0.8,13˚85N±0˚05×120˚5E±0˚1,h200km,n20, σ3°02/21,mb3.6/6,2C-1D,Mindoro

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LUBP	**Lubang**	**0.29**	**246**	*e*P	**Pn**	**19 43 28.6**	**+1.9**
TGY	**Tagaytay City**	**0.47**	**58**	P	**Pn**	**19 43 29.2**	**+2.0**
313nm,0.3s,baz=241,slow=2.6,SNR=48							
TGY				S	**Sn**	**19 43 55.3**	**+7.0**
102nm,0.3s,baz=334,slow=1.8,SNR=3.5							
TGY	**Tagaytay City**	**0.47**	**58**	*e*P	**Pn**	**19 43 30.1**	**+2.9**
LQP	**Lukban**	**1.02**	**75**	*e*P	**Pn**	**19 43 32.2**	**+1.9**
SJMP	**San Jose**	**1.50**	**157**	*e*P	**Pn**	**19 43 35.3**	**+1.4**
SJMP				*e*S	**Sn**	**19 44 01.7**	**+1.5**
BUSP	**Coron**	**1.87**	**190**	*e*P	**Pn**	**19 43 39.8**	**+2.4**
GQP	**Guinayangan**	**1.87**	**88**	*e*P	Pn	19 43 31.7	-5.7
BALP	**Baler**	**2.13**	**28**	*e*P	**Pn**	**19 43 41.0**	**+0.9**
BCPH	**Baguio City Da**	**2.51**	**1**	*i* P	**Pn**	**19 43 48.4**	**+3.9**
BCPH				*i* S	**Sn**	**19 44 20.3**	**+1.2**
BOLP	**Bolinao**	**2.58**	**347**	*e*P	**Pn**	**19 43 46.3**	**+1.3**
ENPP	**El Nido**	**2.84**	**202**	*e*P	**Pn**	**19 43 50.9**	**+2.9**
CUYO	**Cuyo Island**	**3.02**	**171**	*e*P	**Pn**	**19 43 51.8**	**+1.6**
GUIM	**Jordan**	**3.79**	**148**	*e*P	**Pn**	**19 44 01.2**	**+1.8**
CMAR	**Chiang Mai Arr**	**21.22**	**285**	P	**P**	**19 47 31.2**	**+0.5**
0.5nm,0.8s,baz=96,slow=8.3,SNR=6.1							
SONM	**Songino Array**	**35.86**	**344**	P	**P**	**19 49 38.6**	**-2.3**
0.3nm,0.8s,baz=164,slow=5.6,SNR=3.5							
WRA	**Warramunga Arr**	**36.23**	**158**	P	**P**	**19 49 40.8**	**-3.5**
2.8nm,0.5s,baz=330,slow=10.0,SNR=32							
KLR	**Kul'dur**	**36.47**	**12**	P		19 49 40.8	-5.1
0.5nm,0.4s,baz=3.8,slow=11,SNR=3.3							
ASAR	**Alice Springs**	**39.52**	**161**	P	**P**	**19 50 09.3**	**-2.5**
2.4nm,0.4s,baz=337,slow=7.4,SNR=74							
ARCES	**ARCESS Array B**	**78.88**	**339**	P	**P**	**19 54 37.3**	**-3.6**
1.5nm,1.0s,baz=82,slow=8.3,SNR=5.7							
PLCA	**Paso Flores**	**151.52**	**162**	PKPbc	**PKPdf**	**20 02 28.4**	**+3.8**
0.9nm,0.8s,baz=206,slow=6.7,SNR=3.6							

*DDA **15** 19:45:06.9,37˚80N×29˚19E,h7km,Md2.6*
*CSEM **15** 19:45:06.7±0.2,37˚77N×29˚20E,h10km,MD2.7,Error ellipse: s-maj=4.9km s-min=4.1km az=94.0*
*ISCJB **15** 19:45:07.3±0.6,37˚80N±0˚03×29˚15E±0˚05,h7km±7km, Error ellipse: s-maj=6.4km s-min=5.0km az=10.1*
*ISK **15** 19:45:08.4,37˚78N×29˚02E,h13km,MD2.7*
ISC 15 19:45:06.4±0.9,37˚79N±0˚03×29˚20E±0˚03,h15km±6km, n18,σ0°37/32,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DENT	**Denizli**	**0.14**	**256**	*e*PG	**Pb**	**19 45 10.9**	**+0.2**
DENT	**Denizli**	**0.14**	**256**	*e*Pg	**Pb**	**19 45 10.9**	**+0.2**
DNZL	**Cakiroluk**	**0.16**	**232**	P	**Pg**	**19 45 10.6**	**0.0**
DNZL				S	**Sg**	**19 45 13.4**	**0.0**
DNZL	**Cakiroluk**	**0.16**	**232**	*i* P	**Pg**	**19 45 10.6**	**0.0**
DNZL				*i* S	**Sg**	**19 45 13.4**	**0.0**
GOLH	**Golhisar**	**0.62**	**152**	P	**Pb**	**19 45 18.9**	**-0.1**
GOLH				S	**Sn**	**19 45 30.6**	**+0.1**
GOLH	**Golhisar**	**0.62**	**152**	*i* P	**Pb**	**19 45 18.9**	**-0.1**
GOLH				*i* S	**Sn**	**19 45 30.6**	**+0.1**
KHAL	**Karahalli**	**0.63**	**21**	P	**Pg**	**19 45 18.5**	**-0.3**
KHAL				S	**Sb**	**19 45 28.3**	**+0.5**
KHAL	**Karahalli**	**0.63**	**21**	*i* P	**Pg**	**19 45 18.5**	**-0.3**
KHAL				*i* S	**Sb**	**19 45 28.3**	**+0.5**
KULA	**Kula-Manisa**	**0.84**	**330**	*e*PG	**Pn**	**19 45 24.1**	**+0.3**
KULA				*e*SG	**Sn**	**19 45 35.5**	**-0.5**
KULA	**Kula-Manisa**	**0.84**	**330**	*e*Pg	**Pn**	**19 45 24.1**	**+0.3**
KULA				*e*Sg	**Sn**	**19 45 35.5**	**-0.5**
MANT	**Manisa**	**0.87**	**324**	P	**Pn**	**19 45 24.0**	**-0.3**
MANT				S	**Sb**	**19 45 35.6**	**+0.8**
MANT	**Manisa**	**0.87**	**324**	*i* P	**Pn**	**19 45 24.0**	**-0.3**
MANT				*i* S	**Sb**	**19 45 35.6**	**+0.8**
YER	**Yerkesik**	**0.98**	**229**	*e*PG	**Pg**	**19 45 25.4**	**0.0**
YER	**Yerkesik**	**0.98**	**229**	*e*Pg	**Pg**	**19 45 25.4**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**1.05**	**279**	*e*PG	**Pb**	**19 45 26.4**	**0.0**
AYDB				*e*SG	**Sb**	**19 45 39.3**	**-0.7**
AYDB	**Zeytinkoy-Aydi**	**1.05**	**279**	*e*Pg	**Pb**	**19 45 26.4**	**0.0**
AYDB				*e*Sg	**Sb**	**19 45 39.3**	**-0.7**
AYDN	**Tasoluk**	**1.05**	**264**	P	**Pg**	**19 45 27.0**	**+0.2**
AYDN				S	**Sg**	**19 45 40.6**	**0.0**
AYDN	**Tasoluk**	**1.05**	**264**	*i* P	**Pg**	**19 45 27.1**	**+0.2**
AYDN				*i* S	**Sg**	**19 45 40.6**	**0.0**

*ISCJB **15** 20:01:19.0±1.1,39˚27N±0˚05×142˚5E±0˚1,h54km±10km, mb3.3/4,Error ellipse: s-maj=14.2km s-min=6.9km az=16.7*
*JMA **15** 20:01:19.9,39˚26N×142˚47E,h49km±1km,M3.2*
*IDC **15** 20:01:21.4±3.1,39˚22N×142˚46E,h61km±29km,mb3.1/4, mb1 3.3/6,mb1mx3.0/41,mbtmp3.4/6,ML3.2/2,Error ellipse: s-maj=32.7km s-min=21.5km az=105.0*
ISC 15 20:01:19.5±1.8,39˚28N±0˚05×142˚6E±0˚1,h42km±18km, n16,σ0°81/27,mb3.5/4,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**0.64**	**298**	P	**Pn**	**20 01 32.2**	**0.0**
MIYJ				S	**Sn**	**20 01 41.2**	**0.0**
OFUJ	**Ofunato**	**0.71**	**254**	P	**Pn**	**20 01 33.1**	**0.0**
OFUJ				S	**Sn**	**20 01 42.5**	**-0.4**
JOM	**Ohasama**	**0.99**	**282**	P	**Pn**	**20 01 37.0**	**0.0**
JOM				S	**Sn**	**20 01 49.6**	**-0.2**
JMK	**Ichinoseki**	**1.08**	**253**	P	**Pn**	**20 01 38.1**	**-0.1**
JMK				S	**Sn**	**20 01 51.7**	**-0.3**
JKZ	**Kuzumaki**	**1.18**	**307**	P	**Pn**	**20 01 39.9**	**+0.4**
JKZ				*e*S	**Sn**	**20 01 54.4**	**0.0**
JIO	**Ouri**	**1.25**	**229**	P	**Pn**	**20 01 40.2**	**-0.2**
JIO				*e*S	**Sn**	**20 01 54.8**	**-1.2**
JANG	**Nango**	**1.35**	**324**	P	**Pn**	**20 01 41.9**	**0.0**
JANG				*e*S	**Sn**	**20 01 58.5**	**-0.2**
JRG	**Rokugo**	**1.49**	**275**	P	**Pn**	**20 01 44.0**	**+0.2**
JRG				*e*S	**Sn**	**20 02 02.8**	**+0.8**
JOU	**Okura**	**1.73**	**239**	P	**Pn**	**20 01 47.5**	**+0.4**
JOU				*e*S	**Sn**	**20 02 07.7**	**-0.3**
JYK	**Kaneyama**	**1.74**	**259**	P	**Pn**	**20 01 47.6**	**+0.4**
JYK				*e*S	**Sn**	**20 02 08.0**	**-0.2**
MJAR	**Matsushiro Arr**	**4.38**	**233**	P	**Pn**	**20 02 25.7**	**+2.1**
0.9nm,0.3s,baz=39,slow=11,SNR=9.1							
ASAJ	**Asahikawa**	**4.84**	**0**	P	**Pn**	**20 02 30.6**	**+1.0**
1.1nm,0.3s,baz=202,slow=12,SNR=14							
ASAJ				S	**Sn**	**20 03 22.7**	**-1.7**
0.4nm,0.3s,baz=60,slow=31,SNR=5.9							
ZALV	**Zalesovo Beam**	**41.10**	**311**	P	**P**	**20 08 58.9**	**-0.1**
0.6nm,0.6s,baz=98,slow=9.3,SNR=3.9							
MKAR	**Makanchi Array**	**43.72**	**300**	P	**P**	**20 09 19.8**	**-0.6**
0.1nm,0.3s,baz=93,slow=7.2,SNR=3.4							
ILAR	**Eielson Array**	**47.13**	**33**	P	**P**	**20 09 48.4**	**+1.3**
0.3nm,0.6s,baz=260,slow=6.2,SNR=6.3							
WRA	**Warramunga Arr**	**59.41**	**189**	P	**P**	**20 11 16.4**	**-1.3**
0.4nm,0.8s,baz=6.6,slow=7.1,SNR=2.5							

*ISCJB **15** 20:02:14.5±0.4,24˚48N±0˚02×122˚01E±0˚02,h3km±3km, Error ellipse: s-maj=3.5km s-min=2.5km az=161.5*
*JMA **15** 20:02:14.8±0.1,24˚45N×121˚95E,h16km,M2.2*
*TAP **15** 20:02:16.0,24˚50N×121˚86E,h7km,ML2.7,D*
ISC 15 20:02:14.6±0.9,24˚48N±0˚02×122˚00E±0˚02,h12km±7km, n33,σ0°61/64,1C,Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWC	**Suao**	**0.19**	**315**	*i* P	**Pg**	**20 02 19.0**	**+0.2**
baz=358							
TWC				*i* S	**Sg**	**20 02 21.3**	**-0.4**
baz=358							
ENA	**Nanau**	**0.24**	**259**	⇑ *i* P	**Pg**	**20 02 19.4**	**-0.1**
baz=235							
ENA				*i* S	**Sg**	**20 02 22.0**	**-0.9**
baz=235							
ILA	**Ilan**	**0.37**	**322**	P	**Pb**	**20 02 22.7**	**-0.3**
baz=339							
ILA				S	**Sg**	**20 02 27.5**	**+0.7**
baz=339							
TWE	**Neicheng**	**0.39**	**309**	*i* P	**Pg**	**20 02 22.6**	**+0.3**
baz=323							
TWE				*i* S	**Sg**	**20 02 27.2**	**-0.3**
baz=323							
ENTT	**Nioudou**	**0.42**	**293**	*i* P	**Pg**	**20 02 23.2**	**+0.2**
baz=297							
ENTT				*i* S	**Sg**	**20 02 28.2**	**-0.4**
baz=297							
TWB1	**Santiao Chiao**	**0.53**	**359**	*e*P	**Pb**	**20 02 26.0**	**+0.1**
baz=13							
TWB1				*e*S	**Sg**	**20 02 32.8**	**+0.7**
baz=13							
TWD	**Chiawan**	**0.54**	**223**	*e*P	**Pg**	**20 02 24.9**	**-0.2**
baz=209							
TWD				*e*S	**Sg**	**20 02 32.4**	**+0.2**
baz=209							
NNS	**Nan Shan**	**0.57**	**267**	*i* P	**Pg**	**20 02 25.5**	**-0.2**
baz=262							
NNS				S	**Sg**	**20 02 32.6**	**-0.7**
baz=262							
NSK	**Sanguang**	**0.61**	**289**	*i* P	**Pg**	**20 02 26.8**	**+0.2**
baz=291							
NSK				S	**Sg**	**20 02 34.0**	**-0.7**
baz=291							
NWF	**Wu-fen Shan**	**0.62**	**342**	P	**Pb**	**20 02 28.2**	**+0.7**
baz=352							
NWF				*e*S	**Sb**	**20 02 35.9**	**-0.4**
baz=352							
WHF	**Hehuan Shan**	**0.74**	**244**	*e*S	**Sg**	**20 02 38.3**	**-0.6**
baz=236							
TWT	**Tachien**	**0.78**	**254**	P	**Pb**	**20 02 30.4**	**+0.1**
baz=248							
TWT				*e*S	**Sg**	**20 02 39.7**	**-0.3**
baz=248							
TWS1	**Kuangyinshan**	**0.81**	**320**	*e*P	**Pn**	**20 02 32.0**	**+0.1**
baz=326							
TWS1				S	**Sb**	**20 02 42.4**	**+0.7**
baz=326							
ESL	**Shilin**	**0.83**	**218**	*e*P	**Pg**	**20 02 30.5**	**-0.3**
baz=209							
ESL				*e*S	**Sb**	**20 02 42.2**	**0.0**
baz=209							
JYNG	**Yonagunijimaku**	**0.87**	**91**	P	**Pb**	**20 02 32.0**	**+0.4**
JYNG				S	**Sb**	**20 02 43.5**	**+0.4**
TWY	**Chenhua**	**0.88**	**336**	P	**Pn**	**20 02 32.7**	**0.0**
baz=343							
TWY				*e*S	**Sb**	**20 02 44.1**	**+0.7**
baz=343							
NSTT	**Nanjuang**	**0.92**	**280**	P	**Pb**	**20 02 33.0**	**+0.5**
baz=279							
NSTT				S	**Sg**	**20 02 43.8**	**-0.6**
baz=279							
YOJ	**Yonaguni jima**	**0.93**	**91**	P	**Pb**	**20 02 32.8**	**+0.2**
YOJ				S	**Sb**	**20 02 45.5**	**+0.6**
TWQ1	**Liyutan**	**1.12**	**264**	*e*P	**Pn**	**20 02 36.5**	**+0.4**
baz=261							
TWQ1				*e*S	**Sb**	**20 02 50.3**	**-0.2**
baz=261							
SMLT	**Sun Moon Lake**	**1.16**	**240**	P	**Pn**	**20 02 37.0**	**+0.2**
baz=234							
SMLT				*e*S	**Sn**	**20 02 52.9**	**+0.2**
baz=234							
TYC	**Yuchr**	**1.19**	**242**	*e*P	**Pg**	**20 02 37.5**	**+0.1**
baz=236							
TYC				*e*S	**Sg**	**20 02 52.8**	**0.0**
baz=236							
TWF1	**Yuli**	**1.29**	**210**	P	**Pg**	**20 02 39.8**	**+0.4**
baz=204							
TWF1				*e*S	**Sg**	**20 02 58.9**	**+2.8**
baz=204							
ALS	**Alishan**	**1.45**	**229**	*e*P	**Pg**	**20 02 42.5**	**0.0**
baz=224							
ALS				*e*S	**Sg**	**20 03 01.6**	**+0.1**
baz=224							
CHN5	**Tsauling**	**1.49**	**234**	*e*P	**Pb**	**20 02 42.7**	**+0.4**
baz=230							
CHN5				*e*S	**Sb**	**20 03 01.7**	**+0.5**
baz=230							
ELDTW	**Lidau**	**1.56**	**215**	*e*P	**Pg**	**20 02 44.5**	**-0.1**
baz=210							
ELDTW				*e*S	**Sg**	**20 03 04.4**	**-0.6**
baz=210							
IRIF	**Iriomote-Funau**	**1.59**	**95**	P	**Pn**	**20 02 42.1**	**-0.4**
IRIF				S	**Sn**	**20 03 01.6**	**-1.4**
CHN4	**Tsaushan**	**1.70**	**229**	*e*P	**Pg**	**20 02 47.2**	**-0.1**
baz=225							
CHN4				*e*S	**Sb**	**20 03 07.5**	**+0.3**
baz=225							
STYT	**Tauyuan**	**1.73**	**221**	*e*P	**Pg**	**20 02 47.7**	**-0.1**
baz=217							
STYT				*e*S	**Sg**	**20 03 10.7**	**+0.4**
baz=217							
WTP	**Ta-pu**	**1.76**	**226**	*e*P	**Pg**	**20 02 48.3**	**-0.1**
baz=222							
WTP	

DIY				*e*Sn	**Sg**	**20 14 41.9**	**+1.6**
DIYA	**Diyarbakir**	**1.70**	**340**	P	**Pb**	**20 14 18.7**	**-0.2**
DIYA				S	**Sg**	**20 14 42.7**	**+0.6**
DIYA	**Diyarbakir**	**1.70**	**340**	*i* P	**Pb**	**20 14 18.7**	**-0.2**
DIYA				*i* S	**Sg**	**20 14 42.7**	**+0.6**
SIRN	**S¨–rnak**	**1.70**	**46**	P	**Pn**	**20 14 17.2**	**-0.3**
SIRN				S	**Sn**	**20 14 39.2**	**-0.3**
SIRN	**S¨–rnak**	**1.70**	**46**	*i* P	**Pn**	**20 14 17.2**	**-0.3**
SIRN				*i* S	**Sn**	**20 14 39.2**	**-0.3**
DYBB	**Diyarbakir**	**1.72**	**341**	*e*PN	**Pn**	**20 14 16.8**	**-0.9**
DYBB				*e*SN	**Sb**	**20 14 41.9**	**+0.8**
SIRT	**Sirnak**	**1.72**	**47**	*e*PN	**Pn**	**20 14 17.0**	**-0.7**
SIRT	**Sirnak**	**1.72**	**47**	*e*Pn	**Pn**	**20 14 17.0**	**-0.7**
URFA	**Urfa**	**1.98**	**305**	*e*PN	**Pn**	**20 14 20.6**	**-0.6**
URFA				*e*SN	**Sn**	**20 14 46.5**	**+0.3**
URFA	**Urfa**	**1.98**	**305**	*e*Pn	**Pn**	**20 14 20.6**	**-0.6**
URFA				*e*Sn	**Sn**	**20 14 46.5**	**+0.3**
SVRC	**Sivrice-ELAZID**	**2.39**	**329**	*e*PN	**Pn**	**20 14 26.9**	**-0.1**
SVRC	**Sivrice-ELAZID**	**2.39**	**329**	*e*Pn	**Pn**	**20 14 26.9**	**-0.1**
BINT	**Bingol**	**2.56**	**353**	*e*Pn	**Pb**	**20 14 31.7**	**-2.0**
BNGB	**Bing¶ll**	**2.66**	**357**	*e*PN	**Pn**	**20 14 31.7**	**+1.0**
PTK	**Pertek**	**2.81**	**336**	*e*PN	**Pn**	**20 14 33.6**	**+0.8**
PTK	**Pertek**	**2.81**	**336**	*e*Pn	**Pn**	**20 14 33.6**	**+0.8**
GAZ	**Gaziantep**	**3.05**	**287**	*e*PN	**Pn**	**20 14 34.6**	**-1.4**
GAZ	**Gaziantep**	**3.05**	**287**	*e*Pn	**Pn**	**20 14 34.6**	**-1.4**
DARE	**Darende-Malaty**	**3.50**	**311**	*e*PN	**Pn**	**20 14 42.6**	**+0.4**
DARE	**Darende-Malaty**	**3.50**	**311**	*e*Pn	**Pn**	**20 14 42.6**	**+0.4**
TAHT	**Tahtakopru-Hat**	**3.77**	**272**	*e*PN	**Pn**	**20 14 44.4**	**-1.5**
TAHT	**Tahtakopru-Hat**	**3.77**	**272**	*e*Pn	**Pn**	**20 14 44.4**	**-1.5**

ISCJB ***15*** *20:14:34.9±1.6, 38°.35N±0°.07×142°.2E±0°.1, h25km±11km, mb3.4/2, MS4.1/1, Error ellipse: s-maj=13.4km s-min=10.7km az=14.8*
IDC ***15*** *20:14:35.0±3.0, 37°.95N×142°.87E, h0km, mb3.4/2, mb1 3.6/4, mb1mx3.2/39, mbtmp3.5/4, ML2.8/2, MS4.2/1, Ms1 4.2/1, ms1mx3.3/36, Error ellipse: s-maj=62.9km s-min=34.0km az=72.0*
JMA ***15*** *20:14:36.7±0.1, 38°.43N×142°.16E, h31km±2km, M3.5*
ISC 15 20:14:35.4±2.2, 38°.38N±0°.05×142°.2E±0°.1, h26km±15km, n13, σ1§33/16, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.67**	**276**	P	**Pb**	**20 14 49.0**	**+0.5**
JIO				S	**Sb**	**20 14 57.3**	**-0.1**
OFUJ	**Ofunato**	**0.81**	**329**	P	**Pn**	**20 14 50.8**	**-0.3**
OFUJ				S	**Sb**	**20 15 00.6**	**-0.8**
JMK	**Ichinoseki**	**0.96**	**307**	P	**Pn**	**20 14 53.2**	**+0.1**
JMK				S	**Sn**	**20 15 05.0**	**-0.8**
JOU	**Okura**	**1.21**	**270**	P	**Pn**	**20 14 57.6**	**+1.0**
JOU				S	**Sn**	**20 15 12.4**	**+0.3**
JMM	**Marumori**	**1.22**	**246**	P	**Pn**	**20 14 57.3**	**+0.6**
JOM	**Ohasama**	**1.30**	**327**	P	**Pn**	**20 14 58.6**	**+0.8**
JFK	**Kawauchi**	**1.46**	**226**	P	**Pn**	**20 15 00.0**	**0.0**
JFK				S	**Sn**	**20 15 17.0**	**-1.3**
JYK	**Kaneyama**	**1.54**	**291**	P	**Pb**	**20 15 02.7**	**-0.5**
MJAR	**Matsushiro Arr**	**3.67**	**241**	Pn	Pn	20 15 35.9	+5.5
	0.3nm,0.3s,baz=66,slow=10,SNR=4.5						
JHJ	**Hachijo jima 2**	**5.61**	**201**	Pn	**Pn**	**20 15 58.5**	**+1.4**
	1.8nm,0.3s,baz=47,slow=19,SNR=3.3						
JHJ				Sn	**Sn**	**20 16 57.1**	**-3.5**
	2.8nm,0.3s,baz=75,slow=20,SNR=2.7						
YAK	**Yakutsk**	**24.90**	**346**	LR	LR	20 30 06.1	
	comp=Z,531nm,19.2s,baz=7.0,slow=37						
MKAR	**Makanchi Array**	**43.95**	**301**	P	P	20 22 49.0	+9.0
	0.2nm,0.3s,baz=83,slow=8.0,SNR=3.4						
WRA	**Warramunga Arr**	**58.48**	**189**	P	**P**	**20 24 30.1**	**+1.0**
	0.4nm,0.8s,baz=7.8,slow=7.7,SNR=4.8						

ISCJB ***15*** *20:33:23.6±1.7, 34°.72S±0°.06×71°.9W±0°.2, h29km±14km, Error ellipse: s-maj=24.5km s-min=5.2km az=22.1*
GUC ***15*** *20:33:23.9±0.6, 34°.72S×71°.83W, h42km±3km, ML3.6*
ISC 15 20:33:21.7±2.7, 34°.68S±0°.07×72°.1W±0°.1, h12km±16km, n12, σ1§53/18, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TALC	**Talca**	**0.80**	**154**	*i* P	**Pg**	**20 33 37.3**	**0.0**
TALC				*i* S	**Sg**	**20 33 46.8**	**-1.0**
COCH	**Cobquecura**	**1.57**	**202**	*i* P	**Pn**	**20 33 50.0**	**+0.7**
COCH				*i* S	**Sn**	**20 34 10.0**	**+0.4**
COCH				IAML		20 34 18.1	
	comp=E,608nm,0.7s						
STL	**Santa Lucia**	**1.71**	**44**	*i* P	**Pn**	**20 33 50.6**	**-0.9**
STL				*i* S	**Sn**	**20 34 10.2**	**-3.2**
ROC1	**El Roble**	**1.91**	**28**	*i* P	**Pn**	**20 33 55.1**	**+0.8**
ROCH	**El Roble**	**1.92**	**28**	*i* P	**Pn**	**20 33 54.2**	**-0.2**
ROCH				*i* S	**Sn**	**20 34 17.6**	**-0.9**
ROCH				IAML		20 34 24.5	
	comp=N,1μm,0.4s						
CCHI	**Chillan**	**1.92**	**180**	*i* P	**Pn**	**20 33 54.2**	**-0.1**
CCHI				*i* S	**Sn**	**20 34 17.2**	**-1.2**
CCHI				IAML		20 34 27.4	
	comp=E,824nm,0.7s						
ARCO	**CERRO ARCO**	**3.19**	**56**	*i* P	**Pn**	**20 34 14.2**	**+2.3**
ARCO				IAML		20 34 31.0	
	comp=Z,82nm,0.3s						
AUSP	**Uspallata**	**3.32**	**43**	*i* P	**Pn**	**20 34 15.3**	**+1.6**
AUSP				*i* S	**Sb**	**20 35 03.1**	**+1.9**
ASAL	**Salagasta**	**3.41**	**53**	*i* P	**Pn**	**20 34 16.6**	**+1.8**
RTLS	**Leoncito**	**3.69**	**40**	*i* P	**Pn**	**20 34 20.1**	**+1.2**
AMOG	**MOGNA**	**4.79**	**40**	*i* P	**Pn**	**20 34 34.4**	**+0.6**
AGUA	**GUANDACOL**	**6.00**	**31**	*i* P	**Pn**	**20 34 49.7**	**-0.7**

CSEM ***15*** *20:37°.47.2, 37°.61N×20°.39E, h24km, ML1.5/2*
ATH 15 20:37:47.1, 37°.61N×20°.39E, h24km±2km, ML1.5/1, Error ellipse: s-maj=5.2km s-min=1.4km az=62.0, Ionian Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZKS	**Zakynthos**	**0.33**	**74**	P	Pb	20 37 53.4	-1.1
ZKS				S	Sb	20 38 00.0	+0.4
ZKS	**Zakynthos**	**0.33**	**74**	P	Pb	20 37 53.4	-1.1
ZKS				S	Sb	20 37 60.0	+0.4
ZKS				AML	AML	20 38 02.7	
	comp=E,491μm,0.4s						
ZKS				AML	AML	20 38 03.4	
	comp=N,290μm,0.2s						
VLS	**Valsamata**	**0.59**	**15**	P	Pb	20 37 58.8	-0.1
VLS				S	Sn	20 38 08.2	-0.8
KFL	**Anninata**	**0.59**	**32**	P	Pb	20 37 59.4	+0.5
KFL				S	Sb	20 38 07.2	+0.2
KFL	**Anninata**	**0.59**	**32**	P	Pb	20 37 59.4	+0.5
KFL				S	Sb	20 38 07.2	+0.2
AMT	**Artemida-Makis**	**1.05**	**94**	P	Pb	20 38 07.9	+1.2
AMT	**Artemida-Makis**	**1.05**	**94**	P	Pb	20 38 07.9	+1.3
DRO	**Drossia**	**1.10**	**71**	P	Pb	20 38 08.5	+1.0
DRO	**Drossia**	**1.10**	**71**	P	Pb	20 38 08.5	+1.0
LKD2	**Lefkada island**	**1.20**	**10**	P	Pb	20 38 10.2	+1.0
LKD2	**Lefkada island**	**1.20**	**10**	P	Pb	20 38 10.2	+0.9
PYL	**PYLOS**	**1.29**	**123**	P	Pb	20 38 11.3	+0.6
PYL	**PYLOS**	**1.29**	**123**	P	Pb	20 38 11.3	+0.6
LAKA	**Lakka**	**1.41**	**63**	P	Pb	20 38 14.3	+1.6
LAKA	**Lakka**	**1.41**	**63**	P	Pb	20 38 14.3	+1.6
KLV	**Kalavryta, Ach**	**1.46**	**72**	P	Pb	20 38 13.3	-0.4
KLV	**Kalavryta, Ach**	**1.46**	**72**	P	Pb	20 38 13.3	-0.4

ISK ***15*** *20:39:32.5, 37°.16N×28°.48E, h6km, ML3.1*
ATH ***15*** *20:39:32.4, 37°.15N×28°.47E, h22km±1km, ML3.0/4, Error ellipse: s-maj=2.3km s-min=0.9km az=184.0*
CSEM ***15*** *20:39:32.7±0.1, 37°.15N×28°.47E, h2km, ML3.1, Error ellipse: s-maj=1.7km s-min=1.5km az=9.0*
DDA ***15*** *20:39:32.3, 37°.16N×28°.46E, h23km, Ml3.4*
ISCJB ***15*** *20:39:32.7±0.4, 37°.16N±0°.02×28°.45E±0°.02, h4km±3km, Error ellipse: s-maj=2.8km s-min=2.4km az=8.1*
THE ***15*** *20:39:33.1, 37°.09N×28°.49E, h2km±2km, ML3.3/3, Error ellipse: s-maj=2.7km s-min=0.8km az=38.0*
ISC 15 20:39:32.9±0.8, 37°.16N±0°.02×28°.47E±0°.01, h9km±6km, n121, σ1§04/172, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.15**	**262**	PG	**Pg**	**20 39 36.2**	**-0.1**
YER				SG	**Sg**	**20 39 39.4**	**+0.7**
YER	**Yerkesik**	**0.15**	**262**	P	**Pg**	**20 39 36.2**	**-0.1**
YER				S	**Sg**	**20 39 39.3**	**+0.6**
YER	**Yerkesik**	**0.15**	**262**	*i* Pg	**Pg**	**20 39 36.2**	**-0.1**
YER				S	**Sg**	**20 39 39.3**	**+0.6**
TURN	**Turunc**	**0.30**	**160**	*i* P	**Pb**	**20 39 40.3**	**-0.2**
TURN				*i* S	**Sb**	**20 39 47.4**	**+1.9**
DALY	**Dalyan (Mu¨la**	**0.37**	**157**	*e*PG	**Pg**	**20 39 39.6**	**-0.6**
DALY				*e*SG	**Sg**	**20 39 46.0**	**+1.0**
DALY	**Dalyan (Mu¨la**	**0.37**	**157**	*e*Pg	**Pg**	**20 39 39.6**	**-0.6**
DALY				*e*Sg	**Sg**	**20 39 46.0**	**+1.0**
AYDN	**Tasoluk**	**0.69**	**317**	P	**Pg**	**20 39 46.6**	**+0.3**
AYDN				S	**Sg**	**20 39 55.1**	**-0.2**
AYDN	**Tasoluk**	**0.69**	**317**	*i* P	**Pg**	**20 39 46.6**	**+0.3**
AYDN				*i* S	**Sg**	**20 39 55.1**	**-0.2**
DNZL	**Cakiroluk**	**0.70**	**40**	P	**Pg**	**20 39 45.9**	**-0.6**
DNZL				S	**Sg**	**20 39 56.4**	**+0.7**
DNZL	**Cakiroluk**	**0.70**	**40**	*i* P	**Pg**	**20 39 45.9**	**-0.6**
DNZL				*i* S	**Sg**	**20 39 56.4**	**+0.7**
FETY	**Fethiye**	**0.71**	**137**	*e*PG	**Pg**	**20 39 45.9**	**-0.8**
FETY	**Fethiye**	**0.71**	**137**	P	**Pg**	**20 39 45.8**	**-0.9**
FETY				S	**Sg**	**20 39 56.0**	**0.0**
FETY	**Fethiye**	**0.71**	**137**	*e*Pg	**Pg**	**20 39 45.9**	**-0.8**
FETY				S	**Sg**	**20 39 56.0**	**0.0**
DENT	**Denizli**	**0.74**	**37**	*e*PG	**Pg**	**20 39 47.0**	**-0.3**
DENT	**Denizli**	**0.74**	**37**	*e*Pg	**Pg**	**20 39 47.0**	**-0.3**
GLHS	**Glhisar (BURDU**	**0.82**	**90**	*e*PG	**Pg**	**20 39 48.9**	**+0.2**
GLHS	**Glhisar (BURDU**	**0.82**	**90**	*e*Pg	**Pg**	**20 39 48.9**	**+0.2**
BDRM	**Kayabasi**	**0.83**	**264**	*i* P	**Pg**	**20 39 48.9**	**+0.1**
BDRM				*i* S	**Sn**	**20 40 03.3**	**+0.3**
GOLH	**Golhisar**	**0.87**	**84**	P	**Pg**	**20 39 49.1**	**-0.6**
GOLH				S	**Sn**	**20 40 04.3**	**0.0**
GOLH	**Golhisar**	**0.87**	**84**	*i* P	**Pg**	**20 39 49.1**	**-0.6**
GOLH				*i* S	**Sn**	**20 40 04.3**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**0.92**	**330**	*e*PG	**Pg**	**20 39 50.3**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**0.92**	**330**	*e*Pg	**Pg**	**20 39 50.3**	**-0.2**
BODT	**Bodrum**	**0.93**	**265**	*e*PG	**Pg**	**20 39 50.9**	**0.0**
BODT	**Bodrum**	**0.93**	**265**	P	**Pg**	**20 39 50.7**	**-0.2**
BODT				S	**Sb**	**20 40 04.9**	**+1.2**
BODT	**Bodrum**	**0.93**	**265**	*e*Pg	**Pg**	**20 39 50.9**	**0.0**
BODT				S	**Sb**	**20 40 04.9**	**+1.2**
ARG	**Arkhangelos**	**0.98**	**197**	P	**Pg**	**20 39 50.6**	**-1.1**
ARG				S	**Sb**	**20 40 05.5**	**+0.5**
ARG	**Arkhangelos**	**0.98**	**197**	P	**Pg**	**20 39 50.6**	**-1.1**
ARG				S	**Sb**	**20 40 05.5**	**+0.5**
GCAM	**G?zelcaml?**	**1.13**	**299**	P	**Pg**	**20 39 54.8**	**+0.2**
GCAM	**G?zelcaml?**	**1.13**	**299**	*i* P	**Pg**	**20 39 54.8**	**+0.2**
GCAM				*i* S	**Sb**	**20 40 09.5**	**+0.2**
NIS1	**Nisyros Isl.**	**1.18**	**242**	*e*PN	**Pb**	**20 39 55.3**	**-0.1**
NIS1	**Nisyros Isl.**	**1.18**	**242**	P	**Pb**	**20 39 54.6**	**-0.8**
NIS1				S	**Sn**	**20 40 11.7**	**+0.1**
NIS1	**Nisyros Isl.**	**1.18**	**242**	P	**Pb**	**20 39 54.9**	**-0.5**
NIS1	**Nisyros Isl.**	**1.18**	**242**	*e*Pn	**Pb**	**20 39 55.3**	**-0.1**
NIS1				S	**Sb**	**20 40 10.2**	**-0.5**
NIS1	**Nisyros Isl.**	**1.18**	**242**	P	**Pb**	**20 39 54.9**	**-0.5**
NIS1				S	**Sb**	**20 40 10.2**	**-0.5**
NIS1				AML	AML	20 40 20.8	
	comp=E,5016μm,0.7s						
NIS1				AML	AML	20 40 22.8	
	comp=N,5732μm,0.5s						
NISR	**Nisiros**	**1.21**	**244**	P	**Pb**	**20 39 54.6**	**-1.3**
NISR	**Nisiros**	**1.21**	**244**	P	**Pb**	**20 39 55.6**	**-0.3**
NISR	**Nisiros**	**1.21**	**244**	P	**Pb**	**20 39 55.6**	**-0.3**
ELL	**Elmali**	**1.22**	**109**	*e*PN	**Pb**	**20 39 56.5**	**+0.3**
ELL	**Elmali**	**1.22**	**109**	*e*Pn	**Pb**	**20 39 56.5**	**+0.3**
AKAS	**Kas**	**1.29**	**135**	P	**Pn**	**20 39 57.5**	**+0.3**
AKAS	**Kas**	**1.29**	**135**	*i* P	**Pn**	**20 39 57.5**	**+0.3**
AKAS				*i* S	**Sn**	**20 40 19.8**	**+5.1**
MANT	**Manisa**	**1.33**	**3**	P	**Pn**	**20 39 57.8**	**-0.1**
MANT				S	**Sg**	**20 40 16.7**	**+0.8**
MANT	**Manisa**	**1.33**	**3**	*i* P	**Pn**	**20 39 57.8**	**-0.1**
MANT				*i* S	**Sg**	**20 40 16.7**	**+0.8**
KSL	**Kastellorizon**	**1.34**	**138**	P	**Pn**	**20 39 57.6**	**-0.2**
KSL				S	**Sn**	**20 40 16.2**	**+0.5**
KSL				AML	AML	20 40 23.4	
	comp=E,685μm,0.4s						
KSL				AML	AML	20 40 24.6	
	comp=N,749μm,0.4s						
KULA	**Kula-Manisa**	**1.36**	**6**	*e*PN	**Pn**	**20 39 58.4**	**+0.3**
KULA	**Kula-Manisa**	**1.36**	**6**	P	**Pn**	**20 39 58.3**	**+0.1**
KULA	**Kula-Manisa**	**1.36**	**6**	P	**Pn**	**20 39 58.3**	**+0.1**
SMG	**Samos**	**1.42**	**293**	P	**Pn**	**20 39 59.0**	**+0.2**
SMG	**Samos**	**1.42**	**293**	P	**Pn**	**20 39 59.2**	**+0.4**
SMG				S	**Sb**	**20 40 17.9**	**+0.3**
SMG	**Samos**	**1.42**	**293**	P	**Pn**	**20 39 59.2**	**+0.4**
SMG				S	**Sb**	**20 40 17.9**	**+0.3**
SMG				AML	AML	20 40 21.3	
	comp=E,600μm,0.4s						
SMG				AML	AML	20 40 23.4	
	comp=N,778μm,0.3s						
KHL	**Karahalli**	**1.43**	**35**	*e*PN	**Pn**	**20 39 59.6**	**+0.6**
KHL	**Karahalli**	**1.43**	**35**	*e*Pn	**Pn**	**20 39 59.7**	**+0.6**
KHAL	**Karahalli**	**1.46**	**33**	P	**Pn**	**20 39 59.4**	**-0.1**
KHAL				S	**Sg**	**20 40 19.8**	**0.0**
KHAL	**Karahalli**	**1.46**	**33**	*i* P	**Pn**	**20 39 59.4**	**-0.1**
KHAL				*i* S	**Sg**	**20 40 19.8**	**0.0**
KORT	**Korkueli**	**1.51**	**95**	P	**Pg**	**20 40 02.2**	**+0.4**
KORT	**Korkueli**	**1.51**	**95**	*i* P	**Pg**	**20 40 02.2**	**+0.4**
KORT				*i* S	**Sg**	**20 40 25.7**	**+4.3**
DGB	**¯zmir**	**1.55**	**306**	*i* P	**Pn**	**20 40 01.0**	**+0.4**
DGB				*i* S	**Sn**	**20 40 19.0**	**-1.7**
BCK	**Bucak**	**1.71**	**79**	*e*PN	**Pn**	**20 40 03.5**	**+0.5**
BCK	**Bucak**	**1.71**	**79**	*e*Pn	**Pn**	**20 40 03.5**	**+0.5**
ISP	**Isparta**	**1.76**	**67**	*e*PN	**Pn**	**20 40 04.1**	**+0.5**
ISP	**Isparta**	**1.76**	**67**	*e*Pn	**Pn**	**20 40 04.1**	**+0.5**
ANTB	**Antalya**	**1.76**	**98**	*e*PN	**Pn**	**20 40 04.4**	**+0.9**
ANTB	**Antalya**	**1.76**	**98**	*e*Pn	**Pn**	**20 40 04.4**	**+0.9**
AKHS	**Akhisar**	**1.80**	**343**	P	**Pn**	**20 40 03.9**	**-0.2**
AKHS				S	**Sb**	**20 40 29.1**	**+0.5**
AKHS	**Akhisar**	**1.80**	**343**	*i* P	**Pn**	**20 40 03.9**	**-0.2**
AKHS				*i* S	**Sb**	**20 40 29.1**	**+0.5**
AKS	**Akhisar**	**1.80**	**343**	*e*PN	**Pn**	**20 40 04.7**	**+0.7**
AKS	**Akhisar**	**1.80**	**343**	*e*Pn	**Pn**	**20 40 04.7**	**+0.7**
DEMI	**Demirci**	**1.89**	**6**	P	**Pn**	**20 40 06.2**	**+0.8**
DEMI				S	**Sb**	**20 40 32.3**	**+0.9**
DEMI	**Demirci**	**1.89**	**6**	*i* P	**Pn**	**20 40 06.2**	**+0.8**
DEMI				*i* S	**Sb**	**20 40 32.3**	**+0.9**
ZEY	**¯zmir**	**1.90**	**305**	*i* P	**Pn**	**20 40 05.5**	**0.0**
ZEY				*i* S	**Sn**	**20 40 29.0**	**-0.4**
URLA	**Izmir**	**1.91**	**309**	P	**Pn**	**20 40 05.8**	**+0.1**
URLA				S	**Sg**	**20 40 35.6**	**+1.2**
URLA	**Izmir**	**1.91**	**309**	*i* P	**Pn**	**20 40 05.8**	**+0.1**
URLA				*i* S	**Sg**	**20 40 35.6**	**+1.2**
KARP	**Karpathos**	**1.92**	**214**	*e*PN	**Pn**	**20 40 06.7**	**+0.9**
KARP	**Karpathos**	**1.92**	**214**	P	**Pn**	**20 40 05.0**	**-0.8**
KARP				S	**Sn**	**20 40 28.6**	**-1.5**
KARP	**Karpathos**	**1.92**	**214**	P	**Pn**	**20 40 06.0**	**+0.2**
KARP	**Karpathos**	**1.92**	**214**	*e*Pn	**Pn**	**20 40 06.7**	**+0.9**
KARP				S	**Sn**	**20 40 30.5**	**+0.4**
KARP	**Karpathos**	**1.92**	**214**	P	**Pn**	**20 40 06.0**	**+0.2**
KARP				S	**Sn**	**20 40 30.5**	**+0.4**
KARP				AML	AML	20 40 37.7	
	comp=N,482μm,0.4s						
KARP				AML	AML	20 40 38.8	
	comp=E,543μm,0.3s						
BAGO	**Egridir - ISPA**	**2.02**	**65**	*i* P	**Pn**	**20 40 07.6**	**+0.4**
BAGO				*i* S	**Sb**	**20 40 34.8**	**-0.3**
SUTC	**Sutluce-Ispart**	**2.04**	**80**	*e*PN	**Pn**	**20 40 08.5**	**+1.0**
SUTC	**Sutluce-Ispart**	**2.04**	**80**	*e*Pn	**Pn**	**20 40 08.5**	**+1.0**
GDZ	**Gediz**	**2.09**	**22**	P	**Pn**	**20 40 09.3**	**+1.1**
GDZ	**Gediz**	**2.09**	**22**	*i* P	**Pn**	**20 40 09.3**	**+1.1**
CHOS	**Chios island**	**2.28**	**303**	*e*PN	**Pn**	**20 40 11.6**	**+0.9**
CHOS	**Chios island**	**2.28**	**303**	P	**Pn**	**20 40 11.1**	**+0.4**
CHOS	**Chios island**	**2.28**	**303**	P	**Pn**	**20 40 11.1**	**+0.4**
CHOS	**Chios island**	**2.28**	**303**	*e*Pn	**Pn**	**20 40 11.6**	**+0.9**
CHOS	**Chios island**	**2.28**	**303**	P	**Pn**	**20 40 11.6**	**+0.9**
APE	**Apeiranthos**	**2.35**	**269**	*e*PN	**Pn**	**20 40 12.4**	**+0.7**
APE	**Apeiranthos**	**2.35**	**269**	*e*Pn	**Pn**	**20 40 12.4**	**+0.7**
APE	**Apeiranthos**	**2.35**	**269**	P	**Pn**	**20 40 12.2**	**+0.5**
TVSB	**Tavsanli**	**2.42**	**18**	*e*PN	**Pn**	**20 40 13.8**	**+1.1**
TVSB	**Tavsanli**	**2.42**	**18**	*e*Pn	**Pn**	**20 40 13.8**	**+1.1**
DURS	**Dursunbey**	**2.44**	**0**	P	**Pn**	**20 40 13.4**	**+0.4**
DURS	**Dursunbey**	**2.44**	**0**	*i* P	**Pn**	**20 40 13.4**	**+0.4**
DURS				*i* S	**Sn**	**20 40 41.9**	**-1.1**
BOLV	**Bolvadin**	**2.50**	**51**	P	**Pn**	**20 40 15.3**	**+1.4**
BOLV	**Bolvadin**	**2.50**	**51**	*i* P	**Pn**	**20 40 15.3**	**+1.4**
BALB	**Balikesir**	**2.52**	**350**	*e*PN	**Pn**	**20 40 15.2**	**+1.2**
BALB	**Balikesir**	**2.52**	**350**	*e*Pn	**Pn**	**20 40 15.2**	**+1.2**
THR3	**Thira Island,**	**2.58**	**254**	P	**Pn**	**20 40 14.8**	**+0.1**
THR5	**Thira Island,**	**2.62**	**255**	*e*PN	**Pn**	**20 40 16.6**	**+1.3**
THR5	**Thira Island,**	**2.62**	**255**	*e*Pn	**Pn**	**20 40 16.6**	**+1.3**
PRK	**Paraskevi**	**2.71**	**321**	P	**Pn**	**20 40 17.2**	**+0.6**
PRK	**Paraskevi**	**2.71**	**321**	P	**Pn**	**20 40 17.2**	**+0.6**
ZKR	**Zakros**	**2.74**	**223**	P	**Pb**	**20 40 19.8**	**-2.2**
ZKR	**Zakros**	**2.74**	**223**	P	**Pb**	**20 40 19.8**	**-2.2**
SIGR	**SIGRI**	**2.91**	**316**	*e*PN	**Pn**	**20 40 20.5**	**+1.2**
SIGR	**SIGRI**	**2.91**	**316**	*e*Pn	**Pn**	**20 40 20.5**	**+1.2**
NPS	**Neapolis**	**2.99**	**232**	P	**Pn**	**20 40 21.2**	**+0.8**
KCTX	**Karacabey (Bur**	**3.11**	**358**	*e*PN	**Pn**	**20 40 23.1**	**+1.1**
KCTX	**Karacabey (Bur**	**3.11**	**358**	*e*Pn	**Pn**	**20 40 23.1**	**+1.1**
KDHN	**Kadinhani**	**3.19**	**64**	P	**Pn**	**20 40 24.7**	**+1.4**
KDHN				S	**Sn**	**20 41 02.4**	**+0.9**
KDHN	**Kadinhani**	**3.19**	**64**	*i* P	**Pn**	**20 40 24.7**	**+1.4**
KDHN				*i* S	**Sn**	**20 41 02.4**	**+0.9**
GAZI	**Gazipasa**	**3.22**	**105**	P	**Pn**	**20 40 24.5**	**+0.9**
GAZI				S	**Sb**	**20 41 07.8**	**-1.8**
GAZI	**Gazipasa**	**3.22**	**105**	*i* P	**Pn**	**20 40 24.6**	**+0.9**
GAZI				*i* S	**Sb**	**20 41 07.8**	**-1.8**
BOZC	**Bozcaada**	**3.29**	**325**	*i* P	**Pn**	**20 40 25.7**	**+1.2**
BOZC				*i* S	**Sn**	**20 41 01.0**	**-2.6**
ERMK	**Ermenek**	**3.59**	**97**	P	**Pb**	**20 40 33.5**	**-3.3**
ERMK	**Ermenek**	**3.59**	**97**	*i* P	**Pb**	**20 40 33.5**	**-3.3**
ERMK				*i* S	**Sb**	**20 41 17.4**	**-3.2**
LIA	**Limnos Island**	**3.76**	**318**	P	**Pn**	**20 40 31.7**	**+0.7**
LIA	**Limnos Island**	**3.76**	**318**	P	**Pn**	**20 40 31.7**	**+0.7**
SMTH	**Samothraki Isl**	**4.03**	**326**	P	**Pn**	**20 40 35.4**	**+0.7**
SMTH	**Samothraki Isl**	**4.03**	**326**	P	**Pn**	**20 40 35.4**	**+0.7**

IDC ***15*** *20:42:19.5±1.2, 35°.24N×142°.24E, h0km, mb3.4/5, mb1 3.6/9, mb1mx3.4/52, mbtmp3.6/9, ML3.6/4, Error ellipse: s-maj=25.1km s-min=18.9km az=100.0*
ISCJB ***15*** *20:42:21.7±2.3, 35°.25N±0°.06×142°.34E±0°.07, h33km±19km, mb3.4/5, Error ellipse: s-maj=10.3km s-min=8.9km az=39.2*
JMA ***15*** *20:42:21.7±0.3, 35°.39N×142°.39E, h46km, M3.4*
ISC 15 20:42:20.2±2.3, 35°.23N±0°.06×142°.35E±0°.07, h13km±13km, n16, σ2§00/24, mb3.4/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**1.26**	**243**	P	**Pn**	**20 42 44.3**	**+1.3**
BSO1				S	**Sn**	**20 43 02.3**	**+2.8**
CHOJ	**Chosi**	**1.30**	**292**	P	**Pn**	**20 42 44.4**	**+0.3**
CHOJ				*e*S	**Sb**	**20 42 59.4**	**-1.7**
BSO3	**Boso 3**	**1.56**	**255**	P	**Pg**	**20 42 49.7**	**-0.5**
JHU	**Hanno**	**2.58**	**285**	P	**Pn**	**20 43 02.2**	**+0.6**
JHU				*e*S	**Sn**	**20 43 32.6**	**-0.1**
JAG	**Ashikaga**	**2.64**	**298**	P	**Pn**	**20 43 02.5**	**+0.1**
JOD2	**Odawara 2**	**2.67**	**272**	P	**Pn**	**20 43 03.7**	**+0.8**
JOD2				*e*S	**Sn**	**20 43 34.4**	**-0.6**

IGAR	**Gharneh**	**3.29**	**78**	*e*Pn	Pn	21 10 25.1	-0.5
IGAR				*e*AMB	AMB	21 10 26.4	
comp=Z,508nm,0.1s							
IDHR	**Dehrash**	**3.31**	**332**	*e*Pn	Pn	21 10 25.0	-0.9
IDHR				*e*AMB	AMB	21 11 25.5	
comp=Z,406nm,0.2s							
IDHR	**Dehrash**	**3.31**	**332**	*e*Pn	Pn	21 10 25.0	-0.9
ILIN	**Lien**	**3.32**	**341**	*e*Pn	Pn	21 10 26.4	+0.4
ILIN				*e*AMB	AMB	21 10 28.0	
comp=Z,329nm,0.1s							
ILIN	**Lien**	**3.32**	**341**	*e*Pn	Pn	21 10 26.4	+0.4
QAM	**Ghamsar**	**3.34**	**53**	*e*Pn	Pn	21 10 27.0	+0.6
QAM				*e*AMB	AMB	21 10 27.7	
comp=Z,1μm,0.1s							
SNGE	**Sanandaj**	**3.40**	**347**	*e*Pn	Pn	21 10 28.2	+1.1
IRAM	**Ramesheh**	**3.52**	**88**	*e*Pn	Pn	21 10 28.1	-0.8
IRAM				*e*AMB	AMB	21 10 32.0	
comp=Z,193nm,0.1s							
IRAM	**Ramesheh**	**3.52**	**88**	*e*Pn	Pn	21 10 28.1	-0.8
IZEF	**Zefreh**	**3.63**	**71**	*e*Pn	Pn	21 10 29.5	-0.9
IZEF				*e*AMB	AMB	21 10 30.8	
comp=Z,484nm,0.1s							
IZEF	**Zefreh**	**3.63**	**71**	*e*Pn	Pn	21 10 29.5	-0.9
IKAZ	**Kazeroun**	**3.68**	**122**	*e*Pn	Pn	21 10 30.8	-0.3
IKAZ				*e*AMB	AMB	21 11 22.5	
comp=Z,580nm,0.2s							
IKAZ	**Kazeroun**	**3.68**	**122**	*e*Pn	Pn	21 10 30.8	-0.3
IRAZ	**Razeghan**	**3.89**	**21**	*e*Pn	Pn	21 10 34.0	+0.2
IRAZ				*e*AMB	AMB	21 10 34.4	
comp=Z,387nm,0.1s							
IRAZ	**Razeghan**	**3.89**	**21**	*e*Pn	Pn	21 10 34.0	+0.2
IVRN	**Varamin**	**4.34**	**41**	*e*Pn	Pn	21 10 38.9	-1.0
IVRN				*e*AMB	AMB	21 10 54.0	
comp=Z,177nm,0.2s							
IVRN	**Varamin**	**4.34**	**41**	*e*Pn	Pn	21 10 38.9	-1.0
IMHD	**Mahdasht**	**4.39**	**27**	*e*Pn	Pn	21 10 40.2	-0.5
IMHD				*e*AMB	AMB	21 10 55.5	
comp=Z,162nm,0.2s							
IMHD	**Mahdasht**	**4.39**	**27**	*e*Pn	Pn	21 10 40.2	-0.5
ISAD	**Sadrabad**	**4.63**	**87**	*e*Pn	Pn	21 10 43.2	-1.0
ISAD				*e*AMB	AMB	21 10 43.7	
comp=Z,146nm,0.2s							
ISAD	**Sadrabad**	**4.63**	**87**	*e*Pn	Pn	21 10 43.2	-1.0
IDMV	**Damavand**	**4.94**	**39**	*e*Pn	Pn	21 10 47.0	-1.4
IDMV				*e*AMB	AMB	21 10 51.1	
comp=Z,77nm,0.1s							
IDMV	**Damavand**	**4.94**	**39**	*e*Pn	Pn	21 10 47.0	-1.4
IMEH	**Mehriz**	**5.45**	**92**	*e*Pn	Pn	21 10 54.9	-0.4
IMEH				*e*AMB	AMB	21 11 09.2	
comp=Z,56nm,0.1s							
IMEH	**Mehriz**	**5.45**	**92**	*e*Pn	Pn	21 10 54.9	-0.4

TIF ***15*** *21:19:59.7, 41.°37N×43.°88E, h18km*
ISCJB ***15*** *21:20:00.2±0.8, 41.°34N±0.°04×43.°89E±0.°05, h8km±5km,*
Error ellipse: s-maj=7.3km s-min=5.3km az=146.8
CSEM ***15*** *21:20:00.2±0.2, 41.°35N×43.°86E, h5km, MD2.8, Error*
ellipse: s-maj=5.2km s-min=3.6km az=133.0
DDA ***15*** *21:20:20.3, 40.°99N×43.°40E, h4km, Md2.8*

ISC 15 21:19:59.8±1.1, 41.°37N±0.°03×43.°81E±0.°03, h14km±14km, n14, σ0.°36/28, Turkey-Georgia-Armenia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BGD	**Bogdanovka**	**0.19**	**237**	P	**Pb**	**21 20 05.4**	**+0.2**
BGD				S	**Sb**	**21 20 09.0**	**+0.2**
BGD	**Bogdanovka**	**0.19**	**237**	P	**Pb**	**21 20 05.4**	**+0.2**
BGD				S	**Sb**	**21 20 09.0**	**+0.2**
AKH	**Akhalkalaki**	**0.24**	**280**	P	**Pb**	**21 20 06.1**	**0.0**
AKH				S	**Sb**	**21 20 10.2**	**-0.1**
AKH	**Akhalkalaki**	**0.24**	**280**	P	**Pb**	**21 20 06.1**	**0.0**
AKH				S	**Sb**	**21 20 10.2**	**-0.1**
EAK	**Akyaka**	**0.70**	**193**	P	**Pg**	**21 20 13.3**	**-0.2**
EAK				S	**Sg**	**21 20 22.9**	**+0.2**
EAK	**Akyaka**	**0.70**	**193**	*i* P	**Pg**	**21 20 13.3**	**-0.2**
EAK				*i* S	**Sg**	**21 20 22.9**	**+0.2**
TBLG	**Delisi**	**0.79**	**62**	P	**Pg**	**21 20 14.7**	**-0.4**
TBLG				S	**Sb**	**21 20 25.7**	**-0.1**
TBLG	**Delisi**	**0.79**	**62**	P	**Pg**	**21 20 14.7**	**-0.4**
TBLG				S	**Sb**	**21 20 25.7**	**-0.1**
ONI	**Oni**	**1.25**	**348**	P	**Pg**	**21 20 23.6**	**-0.3**
ONI				S	**Sg**	**21 20 41.3**	**+1.1**
ARTV	**Artvin**	**1.43**	**263**	P	**Pg**	**21 20 26.9**	**-0.5**
ARTV				S	**Sg**	**21 20 45.9**	**-0.1**
ARTV	**Artvin**	**1.43**	**263**	*i* P	**Pg**	**21 20 26.9**	**-0.5**
ARTV				*i* S	**Sg**	**21 20 45.9**	**-0.1**
DAGI	**Agillar**	**1.46**	**259**	*i* P	**Pg**	**21 20 27.5**	**-0.4**
DAGI				*i* S	**Sg**	**21 20 47.5**	**+0.7**
DBAD	**Bademkaya**	**1.64**	**258**	P	**Pg**	**21 20 31.2**	**0.0**
DBAD				S	**Sg**	**21 20 52.3**	**-0.2**
DBAD	**Bademkaya**	**1.64**	**258**	*i* P	**Pg**	**21 20 31.2**	**0.0**
DBAD				*i* S	**Sg**	**21 20 52.3**	**-0.2**

ISCJB ***15*** *21:21:34.4±1.4, 6.°5S±0.°2×152.°3E±0.°2, h23km, mb3.9/8,*
Error ellipse: s-maj=41.2km s-min=10.6km az=44.2
IDC ***15*** *21:21:39.5±5.9, 6.°71S×152.°58E, h63km±50km, mb3.7/8,*
mb1 3.8/9, mb1mx3.6/23, mbtmp4.0/9, ML1.8/1, Error
ellipse: s-maj=56.0km s-min=27.7km az=117.0

ISC 15 21:21:35.5±1.9, 6.°6S±0.°3×152.°5E±0.°3, h23km, n9, σ1.9/31/10, mb4.0/8, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**6.01**	**242**	P	**Pn**	**21 23 05.1**	**+2.0**
1.5nm,0.3s,baz=66,slow=12,SNR=3.6							
PMG				S	**Sn**	**21 24 09.3**	**-2.0**
1.9nm,0.3s,baz=54,slow=11,SNR=5.3							
WRA	**Warramunga Arr**	**22.10**	**231**	P	**P**	**21 26 29.7**	**+0.3**
2.0nm,0.7s,baz=55,slow=10.0,SNR=9.4							
ASAR	**Alice Springs**	**24.69**	**224**	P	**P**	**21 26 54.1**	**-0.9**
3.2nm,0.9s,baz=58,slow=8.9,SNR=15							
CMAR	**Chiang Mai Arr**	**58.38**	**296**	P	**P**	**21 31 29.4**	**-0.2**
0.4nm,0.7s,baz=129,slow=5.6,SNR=4.6							
PETK	**Petropavlovsk-**	**59.60**	**4**	P	**P**	**21 31 37.9**	**+0.5**
4.5nm,0.8s,baz=155,slow=4.9,SNR=4.1							
SONM	**Songino Array**	**67.65**	**328**	P	**P**	**21 32 31.7**	**+0.9**
2.2nm,0.9s,baz=147,slow=4.4,SNR=15							
MKAR	**Makanchi Array**	**81.46**	**319**	P	**P**	**21 33 50.3**	**-0.6**
0.8nm,0.7s,baz=111,slow=5.3,SNR=8.6							
ZALV	**Zalesovo Beam**	**82.45**	**327**	P	**P**	**21 33 54.8**	**-1.2**
1.3nm,0.7s,baz=117,slow=5.7,SNR=5.3							
ILAR	**Eielson Array**	**83.88**	**22**	P	**P**	**21 34 02.5**	**-0.6**
0.9nm,0.8s,baz=253,slow=6.0,SNR=9.0							

MEX 15 21:41:34.1±0.4, 16.°63N×98.°86W, h7km±6km, MD3.8, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PNIG	**Pinotepa**	**0.74**	**108**	*i* P	Pg	21 41 46.9	-1.4
PNIG				*e*S	Sg	21 41 57.1	-0.8
ACX	**Acapulco**	**0.99**	**284**	*i* P	Pg	21 41 47.0	-6.1
ACX				*e*S	Sg	21 42 00.0	-5.9
CAIG	**El Cayaco**	**1.41**	**287**	*i* P	Pn	21 41 56.1	-4.2
CAIG				*i* S	Sb	21 42 14.5	-4.6
MEIG	**Mezcala**	**1.48**	**331**	*i* P	Pn	21 41 58.0	-3.4
MEIG				*i* S	Sn	21 42 15.9	-5.2
PLIG	**Platanillo**	**1.86**	**341**	*e*P	Pn	21 42 03.1	-3.5
PLIG				*e*S	Sn	21 42 26.6	-3.8
ARIG	**Puente Sto Nin**	**2.17**	**319**	*e*P	Pn	21 42 07.7	-3.1
ARIG				*e*S	Sn	21 42 32.9	-5.2
YAIG	**Yautepec**	**2.23**	**355**	*e*P	Pn	21 42 09.1	-2.7
YAIG				*i* S	Sn	21 42 34.6	-5.1
ZIIG	**Zihuatanejo**	**2.68**	**292**	*e*P	Pn	21 42 15.4	-2.3

NIED ***15*** *21:58:00, 35.°90N×140.°60E, h53km, Mw4.4 Best double*
couple: M0=4.32000×10^15 NP1:φs=226.00000°, δ21.00000°,
λ139.00000°. NP2:φs=356.00000°, δ76.00000°, λ74.00000°.
MOS ***15*** *21:58:17.7±1.2, 35.°94N×140.°71E, h60km, mb4.8/26, Error*
ellipse: s-maj=10.1km s-min=6.0km az=121.1
JMA ***15*** *21:58:18.0±0.1, 35.°87N×140.°62E, h52km±1km, M3.8*
Broadband fault plane solution: P waves. NP1:
φs=358.00000°, δ87.00000°, λ73.00000°. NP2:
φs=260.00000°, δ17.00000°, λ171.00000°. Principal axes:
T Plg45.0000°, Azm251.0000°; N Plg17.0000°,
Azm359.0000°; P Plg40.0000°, Azm104.0000°;
JMA Felt II J1.

NEIC ***15*** *21:58:19.8±0.7, 35.°74N×140.°55E, h64km±6km, mb4.7/21*
Error ellipse: s-maj=5.9km s-min=5.1km az=100.0
NEIC Recorded [2 JMA] in Chiba and Ibaraki.
IDC ***15*** *21:58:19.7±1.4, 35.°75N×140.°53E, h62km±12km, mb3.9/25,*
mb1 4.0/30, mb1mx3.9/59, mbtmp4.2/30, MS3.6/3,
Ms1 3.6/3, ms1mx3.1/39, Error ellipse: s-maj=13.4km
s-min=7.4km az=66.0

ISC 15 21:58:16.1±0.7, 35.°83N±0.°03×140.°56E±0.°04, h30km±4km, n154, σ1.9/60/160, mb4.5/58, MS3.9/3, 3C-7D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.28**	**117**	↑P	**Pn**	**21 58 26.8**	**+2.7**
CHOJ				*e*S	**Sn**	**21 58 34.1**	**+4.8**
JYT	**Yasato**	**0.49**	**324**	↓P	**Pn**	**21 58 29.6**	**+2.4**
JHO	**Hitachi**	**0.78**	**1**	↓P	**Pb**	**21 58 32.8**	**+1.6**
BSO3	**Boso 3**	**1.03**	**182**	P	**Pb**	**21 58 36.9**	**+1.8**
JAG	**Ashikaga**	**1.07**	**304**	↓P	**Pb**	**21 58 37.6**	**+1.5**
JOD2	**Odawara 2**	**1.32**	**245**	P	**Pb**	**21 58 41.8**	**+1.4**
JRY	**Ryogami san**	**1.36**	**278**	↓P	**Pb**	**21 58 42.2**	**+1.3**
MJAR	**Matsushiro Arr**	**2.03**	**291**	P	**Pb**	**21 58 51.9**	**-0.4**
53nm,0.3s,baz=96,slow=11,SNR=383							
MJAR				S	**Sb**	**21 59 16.0**	**-1.2**
26nm,0.3s,baz=136,slow=30,SNR=6.1							
MJAR				LR	LR	21 59 49.3	
comp=Z,970nm,21.7s,baz=125,slow=45							
MAJO	**Matsushiro**	**2.03**	**291**	*d* P	**Pb**	**21 58 52.2**	**-0.2**
MAJO	**Matsushiro**	**2.03**	**291**	*e*Pn	**Pb**	**21 58 52.5**	**+0.1**
MAT	**Matsushiro**	**2.03**	**291**	P	**Pb**	**21 58 52.0**	**-0.4**
MAT				*e*S	**Sn**	**21 59 14.2**	**+1.5**
JHJ	**Hachijo jima 2**	**2.78**	**194**	P	**Pn**	**21 59 00.5**	**+1.9**
88nm,0.3s,baz=322,slow=23,SNR=64							
JHJ				S	**Sn**	**21 59 32.4**	**+1.3**
116nm,0.3s,baz=259,slow=22,SNR=7.4							
JHJ2	**Mitsune**	**2.78**	**193**	*e*Pn	**Pn**	**21 59 00.5**	**+1.9**
JHJ2				*e*Sn	**Sn**	**21 59 30.9**	**-0.2**
INU	**Inuyama**	**2.92**	**262**	*e*Pn	**Pb**	**21 59 05.2**	**-2.4**
ERM	**Erimo**	**6.50**	**17**	*i* P	**Pn**	**21 59 49.3**	**-0.4**
ERM	**Erimo**	**6.50**	**17**	*e*Pn	**Pn**	**21 59 49.4**	**-0.4**
ERM				*e*Sn	**Sn**	**22 01 04.0**	**+1.2**
ASAJ	**Asahikawa**	**8.42**	**10**	P	**Pn**	**22 00 15.6**	**-0.5**
1.9nm,0.3s,baz=209,slow=9.8,SNR=11							
ASAJ				S	**Sn**	**22 01 43.9**	**-6.3**
baz=321,slow=29,SNR=2.0							
JNU	**Nakatsue**	**8.44**	**254**	P	**Pn**	**22 00 18.8**	**+2.4**
0.7nm,0.3s,baz=28,slow=2.1,SNR=6.6							
JNU				LR	LR	22 03 57.6	
comp=Z,726nm,19.1s,baz=120,slow=40							
CBIJ	**Chichi jima**	**8.82**	**170**	*e*Pn	**Pn**	**22 00 19.7**	**-1.9**
CBIJ				*e*Sn	Sn	22 01 48.2	-12
JCJ	**Chichijima**	**8.82**	**170**	P	**Pn**	**22 00 20.6**	**-1.0**
15nm,0.3s,baz=287,slow=22,SNR=9.8							
JCJ				S	**Sn**	**22 01 51.6**	**-8.3**
12nm,0.3s,baz=95,slow=23,SNR=5.2							
VLA	**Vladivostok**	**9.89**	**320**	P	Pn	22 00 43.2	+7.0
VLA				S	Sn	22 02 37.0	+11
VLA				pmax	pmax		
comp=Z,19nm,0.6s							
KSRS	**Korea Array**	**10.28**	**283**	P	Pn	22 00 48.5	+7.0
comp=Z,0.6nm,0.3s,baz=96,slow=14,SNR=20							
KSRS				LR	LR	22 04 47.9	
comp=Z,229nm,21.3s,baz=136,slow=38							
KS15	**Wonju Array Si**	**10.31**	**283**	*e*Pn	Pn	22 00 48.5	+6.6
KSAR	**Wonju Array Be**	**10.31**	**283**	P	Pn	22 00 48.6	+6.6
KSAR	**Wonju Array Be**	**10.31**	**283**	P	Pn	22 00 48.5	+6.6
USRK	**Ussuriysk Ar.**	**10.63**	**324**	P	**Pn**	**22 00 50.4**	**+4.1**
comp=Z,0.2nm,0.3s,baz=136,slow=12,SNR=11							
YSS	**Yuzh-Sakhalins**	**11.24**	**8**	*e*P	Pn	22 00 45.4	-9.2
CN2	**Changchun**	**14.07**	**309**	*e*P	**Pn**	**22 01 33.1**	**-0.2**
CN2				pmax	pmax		
comp=Z,10.0nm,0.5s							
KLR	**Kul'dur**	**14.87**	**337**	P	**P**	**22 01 47.4**	**-2.1**
comp=Z,0.1nm,0.3s,baz=134,slow=12,SNR=4.0							
KLR	**Kul'dur**	**14.87**	**337**	*i* P	**Pn**	**22 01 44.7**	**+0.6**
NJ2	**Nanjing**	**18.39**	**264**	*e*P	**Pn**	**22 02 29.1**	**+0.3**
NJ2				pmax	pmax		
comp=Z,5.0nm,0.7s							
TIA	**Tai'an**	**18.95**	**278**	*e*P	**P**	**22 02 33.8**	**-1.1**
TIA				pmax	pmax		
comp=Z,10.0nm,1.2s							
YHNB	**Yeheng**	**19.92**	**241**	*e*P	**P**	**22 02 45.0**	**-0.6**
comp=Z,30nm,1.2s							
SSLB	**Suanglung**	**20.77**	**240**	*e*P	**P**	**22 02 54.3**	**-0.4**
comp=Z,42nm,1.6s							
YULB	**Yu-li**	**20.79**	**239**	*e*P	**P**	**22 02 52.7**	**-2.2**
comp=Z,62nm,1.9s							
PETK	**Petropavlovsk-**	**21.07**	**30**	P	**P**	**22 02 59.0**	**+1.3**
comp=Z,2.7nm,0.7s,baz=223,slow=12,SNR=3.2							
PEA1	**Petropavlovsk-**	**21.08**	**30**	*e*P	**P**	**22 02 59.0**	**+1.2**
WHN	**Wuhan**	**22.53**	**264**	↓P	**P**	**22 03 14.0**	**+0.5**
HHC	**Hu-ho-hao-te**	**23.23**	**291**	*e*P	**P**	**22 03 23.4**	**+2.5**
HHC				S	**S**	**22 07 27.3**	**-3.7**
HHC				pmax	pmax		
comp=Z,34nm,0.9s							
HHC				pmax	pmax		
comp=Z,170nm,4.5s							
HHC				LR	LR		
comp=N,820nm,11.9s							
HHC				LR	LR		
comp=E,970nm,12.7s							
HHC				LR	LR		
comp=Z,850nm,11.8s							
MA2	**Magadan**	**24.68**	**12**	*e*P	**P**	**22 03 32.7**	**-1.4**
ENH	**Enshi**	**26.56**	**267**	*e*P	**P**	**22 03 51.0**	**-0.5**
comp=Z,27nm,1.0s							
ULN	**Ulaanbaatar**	**27.48**	**306**	*e*P	**P**	**22 04 01.4**	**+1.6**
ULN				pmax	pmax		
comp=Z,5.0nm,1.0s							
ULN	**Ulaanbaatar**	**27.48**	**306**	*e*P	**P**	**22 04 01.4**	**+1.6**
comp=Z,4.9nm,1.0s							
SONA0	**Songino Array**	**27.91**	**306**	*e*P	**P**	**22 04 03.6**	**0.0**
SONM	**Songino Array**	**27.91**	**306**	P	**P**	**22 04 03.6**	**0.0**
comp=Z,2.3nm,0.6s,baz=112,slow=8.2,SNR=22							
H11N2	**WAKE ISLAND Hy**	**28.16**	**118**	T	T	22 33 26.2	
baz=310,slow=75,SNR=22							
H11N1	**WAKE ISLAND Hy**	**28.17**	**118**	T	T	22 33 22.9	
baz=310,slow=75,SNR=26							
H11N3	**WAKE ISLAND Hy**	**28.18**	**118**	T	T	22 33 22.9	
baz=310,slow=75,SNR=23							
BOD	**Bodaibo**	**28.20**	**330**	*e*P	**P**	**22 04 06.1**	**+0.2**
BOD				pmax	pmax		
comp=Z,7.0nm,0.8s							
H11S1	**WAKE ISLAND Hy**	**28.82**	**120**	T	T	22 34 03.4	
baz=312,slow=75,SNR=37							
H11S3	**WAKE ISLAND Hy**	**28.82**	**120**	T	T	22 34 03.0	
baz=312,slow=75,SNR=33							
H11S2	**WAKE ISLAND Hy**	**28.84**	**120**	T	T	22 34 02.9	
baz=312,slow=75,SNR=28							
ZAK	**Zakamensk**	**30.50**	**310**	*e*P	**P**	**22 04 25.9**	**-0.6**
ZAK				pmax	pmax		
comp=Z,1.0nm,1.0s							
TLY	**Talaya**	**30.62**	**313**	*e*P	**P**	**22 04 27.6**	**+0.2**
TLY				pmax	pmax		
comp=Z,3.0nm,1.5s							
GTA	**Gaotai**	**32.28**	**289**	*e*P	**P**	**22 04 43.6**	**+1.3**
GTA				pP	pP	22 04 47.8	-3.2
GTA				sP	sP	22 04 50.9	-3.8
GTA				pmax	pmax		
comp=Z,7.0nm,0.9s							
KMI	**Kunming**	**34.11**	**262**	P	**P**	**22 05 00.3**	**+1.8**
KMI				pmax	pmax		
comp=Z,4.0nm,0.8s							
KMI				pmax	pmax		
comp=Z,47nm,3.8s							
BILL	**Bilibino**	**35.38**	**16**	*e*P	**P**	**22 05 07.2**	**-1.5**
BILL				pmax	pmax		
comp=Z,5.0nm,1.6s							
TIXI	**Tiksi**	**36.41**	**354**	*i* P	**P**	**22 05 16.3**	**-1.2**
TIXI				pmax	pmax		
comp=Z,4.0nm,1.2s							
FAKI	**Fak Fak**	**39.32**	**193**	*e*P	**P**	**22 05 42.6**	**-0.1**
comp=Z,17nm,1.0s							
CM31	**Chiang Mai Arr**	**40.53**	**256**	*e*P	**P**	**22 05 51.2**	**-1.6**
CMAR	**Chiang Mai Arr**	**40.53**	**256**	P	**P**	**22 05 51.2**	**-1.6**
comp=Z,0.7nm,0.7s,baz=59,slow=5.5,SNR=4.9							
WMQ	**Urumqi**	**40.78**	**298**	P	**P**	**22 05 55.0**	**+0.4**
WMQ				pP	sP	22 06 08.4	+1.3
WMQ				sP	pP	22 06 16.4	+13
WMQ				S	**S**	**22 12 04.6**	**+1.1**
WMQ				sS	sS	22 12 24.3	+6.2
WMQ				SS	**SS**	**22 15 05.0**	**+0.2**
WMQ				LR	LR		
comp=N,36nm,22.0s							
WMQ				LR	LR		
comp=E,33nm,25.0s							
WMQ				LR	LR		
comp=Z,67nm,29.4s							
LSA	**Lhasa**	**41.64**	**276**	*e*P	**P**	**22 06 04.3**	**+1.9**
LSA				pmax	pmax		
comp=Z,7.0nm,1.0s							
LSA	**Lhasa**	**41.64**	**276**	*e*P	**P**	**22 06 04.2**	**+1.9**
comp=Z,6.5nm,1.0s							
ZAA1	**Zalesovo Array**	**42.23**	**313**	*e*P	**P**	**22 06 06.1**	**-0.2**
ZAA1				*e*PcP	**PcP**	**22 07 59.8**	**0.0**
ZALV	**Zalesovo Beam**	**42.23**	**313**	P	**P**	**22 06 06.1**	**-0.2**
comp=Z,2.6nm,0.6s,baz=90,slow=5.9,SNR=12							
ZALV				PcP	**PcP**	**22 07 59.8**	**0.0**
comp=Z,0.5nm,0.4s,baz=99,slow=4.7,SNR=3.4							
NVS	**Novosibirsk**	**43.18**	**315**	↓*i* P	**P**	**22 06 14.8**	**+0.8**
NVS				pmax	pmax		
comp=Z,10.0nm,1.4s							
NVS				pmax	pmax		
comp=E,8.0nm,1.3s							
MK32	**Makanchi Array**	**44.18**	**303**	*e*P	**P**	**22 06 22.8**	**+0.5**
MKAR	**Makanchi Array**	**44.18**	**303**	P	**P**	**22 06 22.8**	**+0.5**
comp=E,5.6nm,0.8s,baz=91,slow=10.0,SNR=53							
MAKZ	**Makanchi**	**44.40**	**303**	*e*P	**P**	**22 06 20.3**	**-3.6**
MAKZ				pmax	pmax		
comp=Z,7.0nm,0.8s							
MAKZ	**Makanchi**	**44.40**	**303**	*e*P	**P**	**22 06 20.3**	**-3.6**
comp=Z,6.8nm,0.8s							
KURK	**Kurchatov**	**46.14**	**309**	*e*P	**P**	**22 06 37.6**	**0.0**
KURK				pmax	pmax		
comp=Z,20nm,1.0s							
KURK	**Kurchatov**	**46.14**	**309**	*e*P	**P**	**22 06 37.6**	**0.0**
comp=Z,20nm,1.0s							
PKIN	**Phulchoki**	**47.12**	**276**	*e*P	**P**	**22 06 47.0**	**+1.0**
comp=Z,4.9nm,0.5s							
KKN	**Kakani**	**47.13**	**276**	*e*P	**P**	**22 06 46.6**	**+0.6**
comp=Z,13nm,0.7s							
GKN	**Gorkha**	**47.56**	**277**	*e*P	**P**	**22 06 49.5**	**+0.2**
comp=Z,35nm,1.0s							
SOEI	**Soe**	**47.87**	**202**	*e*P	**P**	**22 06 50.8**	**-0.8**
comp=Z,23nm,1.0s							
KOLN	**Koldanda**	**48.49**	**277**	*e*P	**P**	**22 06 58.0**	**+1.5**
comp=Z,9.7nm,0.6s							
PYUN	**Piuthan**	**48.85**	**278**	*e*P	**P**	**22 06 59.6**	**+0.3**
MTN	**Manton Dam**	**49.22**	**192**	*e*P	**P**	**22 07 01.4**	**-0.4**
comp=Z,81nm,1.6s							
TKM2	**Tokmak 2**	**49.60**	**299**	*e*P	**P**	**22 07 06.1**	**+1.2**
TKM2				pmax	pmax		
comp=Z,26nm,1.4s							
TKM2	**Tokmak 2**	**49.60**	**299**	*e*P	**P**	**22 07 06.1**	**+1.2**
comp=Z,26nm,1.4s							
KSH	**Kashi**	**50.27**	**295**	P	P	22 07 16.5	+6.6
KSH				*e*sP	sP	22 07 34.3	+12
KSH				S	**S**	**22 14 27.3**	**+6.7**
KSH				ScS	**ScS**	**22 16 59.6**	**+0.6**
KSH				pmax	pmax		
comp=Z,88nm,4.6s							
KSH				LR	LR		
comp=N,82nm,3.9s							
KSH				LR	LR		
comp=E,74nm,5.5s							
AAK	**Ala-Archa**	**50.46**	**299**	P	**P**	**22 07 11.8**	**+0.4**
comp=E,2.6nm,0.5s,baz=124,slow=6.5,SNR=5.2							
AAK	**Ala-Archa**	**50.46**	**299**	*e*P	**P**	**22 07 11.7**	**+0.4**
AAK				pmax	pmax		
comp=Z,9.0nm,1.0s							
AAK	**Ala-Archa**	**50.46**	**299**	*e*P	**P**	**22 07 12.2**	**+0.9**
ILAR	**Eielson Array**	**50.88**	**32**	P	**P**	**22 07 14.2**	**+0.3**
comp=Z,0.8nm,0.7s,baz=268,slow=5.5,SNR=9.1							
ILB	**Eielson Array**	**50.88**	**32**	*e*P	**P**	**22 07 14.2**	**+0.3**
BRVK	**Borovoye**	**50.94**	**313**	*e*P	**P**	**22 07 15.2**	**+0.7**
BRVK				pmax	pmax		
comp=Z,5.0nm,0.8s							
BRVK	**Borovoye**	**50.94**	**313**	*e*P	**P**	**22 07 15.2**	**+0.7**
comp=Z,4.5nm,0.8s							
EKS2	**Erkin-Say**	**50.96**	**299**	*e*P	**P**	**22 07 15.6**	**+0.5**
EKS2				pmax	pmax		
comp=Z,2.0nm,0.8s							
EKS2	**Erkin-Say**	**50.96**	**299**	*e*P	**P**	**22 07 15.6**	**+0.5**
comp=Z,2.3nm,0.8s							
ZRNK	**Zerenda**	**51.72**	**313**	*e*P	**P**	**22 07 20.7**	**+0.4**
ZRNK				pmax	pmax		
comp=Z,9.0nm,1.0s							
ZRNK	**Zerenda**	**51.72**	**313**	*e*P	**P**	**22 07 20.7**	**+0.4**
comp=Z,9.2nm,1.0s							
KKAR	**Karatay Array**	**53.14**	**301**	*e*P	**P**	**22 07 31.8**	**+0.7**
KKAR	**Karatay Array**	**53.14**	**301**	*e*P	**P**	**22 07 31.8**	**+0.7**
SVE	**Sverdlovsk**	**55.60**	**319**	↑*e*P	**P**	**22 07 49.7**	**+1.0**
SVE				pmax	pmax		
comp=Z,14nm,0.9s							
INK	**Inuvik**	**55.77**	**27**	P	**P**	**22 07 50.3**	**+0.5**
comp=Z,0.8nm,0.6s,baz=323,slow=6.2,SNR=5.9							
INK	**Inuvik**	**55.77**	**27**	*e*P	**P**	**22 07 50.3**	**+0.5**
INK				pmax	pmax		

AKBB	Malin Array Si	74.82	322	*e*P		P	22 09 53.1	-0.4
KIEV	Kiev	74.84	322	*e*P		P	22 09 53.0	-0.5
KIEV				pmax		pmax		
	comp=Z,4.0nm,0.9s							
KIEV	Kiev	74.84	322	*e*P		P	22 09 53.2	-0.3
	comp=Z,5.0nm,0.8s							
NB2	NORSAR Subarra	75.03	337	P		P	22 09 54.4	-0.1
	comp=Z,4.9nm,0.9s,baz=41,slow=5.9							
NB200	NORSAR Array S	75.03	337	*e*P		P	22 09 54.7	+0.2
NOA	NORSAR Array B	75.03	337	P		P	22 09 54.7	+0.2
	comp=Z,3.1nm,0.8s,baz=39,slow=5.8,SNR=14							
NV01	Mina Array Sit	76.27	52	*e*P		P	22 10 02.3	0.0
NVAR	Mina Array Bea	76.27	52	P		P	22 10 02.3	0.0
	comp=Z,0.5nm,0.4s,baz=278,slow=6.3,SNR=3.1							
PD31	Pinedale Array	79.00	45	*e*P		P	22 10 17.8	+0.3
PDAR	Pinedale Array	79.00	45	P		P	22 10 17.8	+0.3
	comp=Z,0.7nm,0.6s,baz=264,slow=2.7,SNR=6.6							
BR101	Keskin Array S	79.13	311	*e*P		P	22 10 18.4	+0.3
BRTR	Keskin Array B	79.13	311	P		P	22 10 18.4	+0.3
	comp=Z,1.2nm,0.8s,baz=85,slow=3.9,SNR=10							
CLL	Collm	81.79	330	*e*P		P	22 10 32.0	0.0
CLL				*e*pP		sP	22 10 45.0	0.0
CLL	Collm	81.79	330	*e*P		P	22 10 32.0	0.0
CLL				*e**PP		sP	22 10 45.0	0.0
113A	Mohawk Valley,	82.59	55	*e*P		P	22 10 36.5	0.0
	comp=Z,7.5nm,0.8s							
GERES	GERESS Array B	83.37	328	P		P	22 10 39.4	-0.9
	comp=Z,0.5nm,0.6s,baz=35,slow=5.3,SNR=5.7							
WMOK	Wichita Mounta	90.61	45	*e*P		P	22 11 12.9	-2.9
WMOK				pmax		pmax		
	comp=Z,4.0nm,0.8s							
WMOK	Wichita Mounta	90.61	45	*e*P		P	22 11 12.9	-2.9
	comp=Z,4.4nm,0.8s							
LTX	Lajitas	91.40	52	*e*P		P	22 11 20.1	+0.4
LTX	Lajitas	91.40	52	*e*P		P	22 11 20.1	+0.4
TXAR	Lajitas Array	91.40	52	P		P	22 11 20.1	+0.5
	comp=Z,0.7nm,0.7s,baz=321,slow=3.2,SNR=5.9							
LPAZ	La Paz	147.89	60	PKPbc		PKPbc	22 17 58.9	-0.7
	comp=Z,1.9nm,0.7s,baz=22,slow=15,SNR=14							
LVC	Limon Verde	151.23	71	PKPbc		PKPbc	22 18 07.0	-0.3
	comp=Z,8.4nm,0.6s,baz=280,slow=6.1,SNR=3.8							

*DDA **15** 22:00:45.5, 36°.07N×35°.66E, h26km, Md3.0*
*ISK **15** 22:00:46.7, 36°.12N×35°.69E, h18km, MD3.1*
*ISCJB **15** 22:00:47.1±0.6, 36°.12N±0°.03×35°.69E±0°.03, h11km±4km, Error ellipse: s-maj=5.8km s-min=3.7km az=179.2*
*CSEM **15** 22:00:47.2±0.2, 36°.14N×35°.68E, h10km, MD3.0, Error ellipse: s-maj=5.5km s-min=3.7km az=10.0*

ISC 15 22:00:45.3±1.2, **36°.09N**±0°.03×**35°.69E**±0°.02, **h3**km±11km, **n45**, σ0**58**/69, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YAYL	**Yayladag**	**0.35**	**98**	P	**Pb**	22 00 53.6	-0.6
YAYL				S	**Sb**	22 01 00.3	+0.1
YAYL	**Yayladag**	**0.35**	**98**	*i* P	**Pb**	22 00 53.6	-0.6
YAYL				*i* S	**Sb**	22 01 00.3	+0.1
TAHT	**Tahtakopru-Hat**	**0.50**	**54**	*e*PG	**Pb**	22 00 56.7	-0.1
TAHT				*e*SG	**Sb**	22 01 03.8	-0.7
TAHT	**Tahtakopru-Hat**	**0.50**	**54**	*e*Pg	**Pb**	22 00 56.7	-0.1
TAHT				*e*Sg	**Sb**	22 01 03.8	-0.7
KRTS	**Karatas**	**0.55**	**333**	*e*PG	**Pb**	22 00 57.4	-0.2
KRTS	**Karatas**	**0.55**	**333**	*e*Pg	**Pb**	22 00 57.4	-0.2
CEYT	**Ceyhan**	**0.92**	**3**	*e*PG	**Pb**	22 01 04.6	+0.6
CEYT	**Ceyhan**	**0.92**	**3**	*e*Pg	**Pb**	22 01 04.6	+0.6
DED	**Mersin**	**1.13**	**321**	*i* P	**Pg**	22 01 05.9	-1.0
DED				*i* S	**Sb**	22 01 23.6	+0.9
MERS	**Mersin**	**1.22**	**310**	*e*PN	**Pb**	22 01 09.1	0.0
MERS	**Mersin**	**1.22**	**310**	*e*Pn	**Pb**	22 01 09.1	0.0
KARA	**Karaisali**	**1.28**	**337**	*e*PN	**Pg**	22 01 09.9	+0.1
KARA	**Karaisali**	**1.28**	**337**	*e*Pn	**Pg**	22 01 09.9	+0.1
KIZK	**Mersin**	**1.31**	**288**	P	**Pg**	22 01 09.7	-0.7
KIZK				S	**Sg**	22 01 27.0	-0.3
KIZK	**Mersin**	**1.31**	**288**	*i* P	**Pg**	22 01 09.7	-0.7
KIZK				*i* S	**Sg**	22 01 27.0	-0.3
KUZU	**Kuzuini**	**1.31**	**58**	P	**Pb**	22 01 11.0	+0.3
KUZU				S	**Sn**	22 01 29.8	+1.0
KUZU	**Kuzuini**	**1.31**	**58**	*i* P	**Pb**	22 01 11.0	+0.3
KUZU				*i* S	**Sn**	22 01 29.8	+1.0
KAMA	**Osmaniye**	**1.35**	**35**	*i* P	**Pg**	22 01 11.2	-0.1
KAMA				*i* S	**Sg**	22 01 28.8	-0.1
AKO	**Adana**	**1.39**	**352**	*i* P	**Pb**	22 01 12.7	+0.7
AKO				*i* S	**Sg**	22 01 29.8	-0.1
GULE	**Gulek**	**1.40**	**329**	P	**Pb**	22 01 12.4	+0.1
GULE				S	**Sb**	22 01 30.7	0.0
GULE	**Gulek**	**1.40**	**329**	*i* P	**Pb**	22 01 12.4	+0.1
GULE				*i* S	**Sb**	22 01 30.7	0.0
HCB	**Kahramanmara¯**	**1.59**	**38**	*i* P	**Pn**	22 01 14.3	-0.2
HCB				*i* S	**Sn**	22 01 33.7	-2.1
GAZ	**Gaziantep**	**1.64**	**48**	*e*PN	**Pn**	22 01 15.2	0.0
GAZ				*e*SN	**Sn**	22 01 35.7	-1.2
GAZ	**Gaziantep**	**1.64**	**48**	*e*Pn	**Pn**	22 01 15.2	0.0
GAZ				*e*Sn	**Sn**	22 01 35.7	-1.2
HWQ	**Hawqa**	**1.82**	**173**	*e*P	**Pb**	22 01 19.4	+0.1
HWQ	**Hawqa**	**1.82**	**173**	*e*P	**Pb**	22 01 19.4	+0.1
KERG	**Konya-Eregli**	**1.82**	**317**	P	**Pn**	22 01 18.1	+0.3
KERG				S	**Sb**	22 01 43.0	+0.2
KERG	**Konya-Eregli**	**1.82**	**317**	*i* P	**Pn**	22 01 18.1	+0.3
KERG				*i* S	**Sb**	22 01 43.0	+0.2
FKH	**Fakeheh**	**1.93**	**162**	*e*P	**Pg**	22 01 22.4	+0.1
FKH	**Fakeheh**	**1.93**	**162**	*e*P	**Pg**	22 01 22.4	+0.1
GZT	**Gaziantep**	**1.97**	**49**	*i* P	**Pg**	22 01 23.7	+0.6
GZT				*i* S	**Sg**	22 01 49.6	+0.9
NIG	**Nigde**	**2.20**	**337**	*e*PN	**Pn**	22 01 22.9	-0.1
NIG	**Nigde**	**2.20**	**337**	*e*Pn	**Pn**	22 01 23.0	-0.1
ERMK	**Ermenek**	**2.31**	**285**	P	**Pb**	22 01 27.4	-0.3
ERMK	**Ermenek**	**2.31**	**285**	*i* P	**Pb**	22 01 27.4	-0.3
ERMK				*i* S	**Sb**	22 01 57.1	+0.3
SURC	**SANLIURFA_SURC**	**2.49**	**71**	P	**Pn**	22 01 27.3	+0.4
SURC				S	**Sn**	22 01 56.8	-1.0
SURC	**SANLIURFA_SURC**	**2.49**	**71**	*i* P	**Pn**	22 01 27.3	+0.4
SURC				*i* S	**Sn**	22 01 56.8	-1.0
GULA	**Gulagac**	**2.53**	**333**	*e*PN	**Pn**	22 01 27.7	+0.2
GULA	**Gulagac**	**2.53**	**333**	*e*Pn	**Pn**	22 01 27.7	+0.2
GAZI	**Gazipasa**	**2.73**	**274**	P	**Pn**	22 01 30.9	+0.7
GAZI				S	**Sn**	22 02 04.2	+0.5
GAZI	**Gazipasa**	**2.73**	**274**	*i* P	**Pn**	22 01 30.9	+0.7
GAZI				*i* S	**Sn**	22 02 04.2	+0.5
URFA	**Urfa**	**2.86**	**61**	*e*PN	**Pn**	22 01 32.5	+0.5
URFA	**Urfa**	**2.86**	**61**	*e*Pn	**Pn**	22 01 32.5	+0.5
DARE	**Darende-Malaty**	**2.87**	**29**	*e*PN	**Pn**	22 01 32.8	+0.7
DARE	**Darende-Malaty**	**2.87**	**29**	*e*Pn	**Pn**	22 01 32.8	+0.7

*ISCJB **15** 22:04:02.0±1.2, 6°.97S±0°.05×155°.03E±0°.05, h65km±10km, mb4.6/54, Error ellipse: s-maj=8.9km s-min=7.7km az=-4.1*
*IDC **15** 22:04:02.9±2.1, 6°.91S×154°.97E, h61km±19km, mb4.1/20, mb1 4.3/24, mb1mx4.1/48, mbtmp4.4/24, MS4.0/3, Ms1 4.0/3, ms1mx3.3/33, Error ellipse: s-maj=13.1km s-min=12.2km az=172.0*
*NEIC **15** 22:04:04.3±0.7, 6°.98S×155°.03E, h74km±7km, mb4.8/28, Error ellipse: s-maj=6.0km s-min=5.6km az=112.0*

ISC 15 22:04:03.9±0.9, **6°.88S**±0°.06×**155°.03E**±0°.05, **h66**km±8km, **n102**, σ2**00**/115, **mb4.7**/54, **1C, Bougainville-Solomon Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RABL	**Rabaul**	**3.91**	**313**	*e*Pn	**Pn**	22 05 04.2	+2.7
HNR	**Honiara**	**5.49**	**118**	P	**Pn**	22 05 22.4	-0.7
	6.4nm,0.3s,baz=278,slow=7.1,SNR=2.8						
HNR				S	**Sn**	22 06 26.1	+1.1
	7.2nm,0.3s,baz=74,slow=15,SNR=2.4						
HNR	**Honiara**	**5.49**	**118**	*e*P	Pn	22 05 33.0	+10
HNR				*e*S	Sn	22 06 37.0	+12
HNR	**Honiara**	**5.49**	**118**	*e*Pn	**Pn**	22 05 22.5	-0.7
HNR				*e*Sn	**Sn**	22 06 30.6	+5.6
PMG	**Port Moresby**	**8.18**	**252**	P	**Pn**	22 05 58.0	-2.0
	6.8nm,0.3s,baz=104,slow=13,SNR=9.7						
PMG				S	**Sn**	22 07 30.9	-0.1
	6.1nm,0.3s,baz=101,slow=17,SNR=7.6						
PMG				LR	LR	22 08 57.6	
	comp=Z,877nm,19.2s,baz=68,slow=36						
PMG	**Port Moresby**	**8.18**	**252**	*e*Pn	**Pn**	22 06 00.3	+0.3
PMG				*e*Sn	**Sn**	22 07 27.9	-3.1
MANU	**Manus Island**	**9.02**	**302**	*e*Pn	Pn	22 06 17.4	+5.9
MANU				*e*Sn	Sn	22 08 01.6	+10
COEN	**Coen**	**13.61**	**238**	*e*Pn	**P**	22 07 21.5	+0.7
PATS	**Pohnpei**	**14.02**	**14**	*e*Pn	**Pn**	22 07 15.9	-3.6
CTA	**Charters Tower**	**15.64**	**212**	P	**Pn**	22 07 38.1	-2.4
	0.5nm,0.3s,baz=44,slow=15,SNR=3.9						
DZM	**Mont Dzumac**	**18.69**	**145**	P	**P**	22 08 17.0	-0.2
	0.6nm,0.3s,baz=308,slow=19,SNR=4.8						
GUMO	**Guam**	**22.70**	**334**	*e*P	**P**	22 08 57.1	-3.3
	160nm,1.1s						
WRAB	**Tennant Creek**	**23.89**	**235**	*e*P	**P**	22 09 11.5	-0.2
	32nm,1.2s						
WRAB				*e*S	**S**	22 13 28.2	+4.7
WR1	**Warramunga Arr**	**23.91**	**235**	*e*P	**P**	22 09 10.7	-1.2
WR1				*e*PcP	**PcP**	22 12 53.2	-0.1
WRA	**Warramunga Arr**	**23.91**	**235**	P	**P**	22 09 10.7	-1.2
	7.9nm,0.6s,baz=59,slow=9.5,SNR=22						
WRA				PcP	**PcP**	22 12 53.2	-0.1
	1.9nm,0.6s,baz=57,slow=2.1,SNR=6.5						
MTN	**Manton Dam**	**24.26**	**254**	*e*P	**P**	22 09 20.5	+5.3
	70nm,1.2s						
MSVF	**Nonsavu**	**24.91**	**118**	*e*P	**P**	22 09 20.3	-0.8
	39nm,1.2s						
AS31	**Alice Springs**	**26.27**	**228**	*e*P	**P**	22 09 32.1	-1.2
AS31				*e*PcP	**PcP**	22 12 57.9	-0.6
ASAR	**Alice Springs**	**26.27**	**228**	P	**P**	22 09 32.1	-1.2
	3.6nm,0.7s,baz=62,slow=8.6,SNR=19						
ASAR				PcP	**PcP**	22 12 57.9	-0.6
	1.0nm,0.8s,baz=56,slow=2.9,SNR=3.9						
STKA	**Stephens Creek**	**27.85**	**205**	P	**P**	22 09 45.6	-1.8
	14nm,0.9s,baz=45,slow=8.6,SNR=16						
STKA				LR	LR	22 19 25.9	
	comp=Z,301nm,20.6s,baz=1.7,slow=33						
THZ	**Tophouse**	**38.19**	**158**	*e*P	**P**	22 11 21.0	+3.7
	202nm,1.7s						
MJAR	**Matsushiro Arr**	**45.99**	**341**	P	**P**	22 12 20.6	-0.1
	0.4nm,0.5s,baz=163,slow=7.7,SNR=2.4						
KSRS	**Korea Array**	**50.85**	**332**	P	**P**	22 12 57.2	-0.9
	1.6nm,0.8s,baz=142,slow=8.1,SNR=5.9						
KS15	**Wonju Array Si**	**50.86**	**332**	*e*P	**P**	22 12 57.2	-0.9
KSAR	**Wonju Array Be**	**50.86**	**332**	P	**P**	22 12 57.2	-0.9
NJ2	**Nanjing**	**51.85**	**320**	*e*P	**P**	22 13 06.8	+1.1
ENH	**Enshi**	**57.19**	**313**	*e*P	**P**	22 13 45.6	+1.1
	11nm,0.9s						
GYA	**Guiyang**	**57.41**	**307**	P	**P**	22 13 50.3	+4.1
GYA				pP	sP	22 14 13.8	+3.0
GYA				sP	PcP	22 14 25.4	-14
GYA				PP	**PP**	22 16 00.3	+5.9
GYA				ScP	**ScP**	22 18 31.8	-2.0
GYA				S	**S**	22 21 38.0	-0.6
GYA				sS	sS	22 22 20.3	+13
PBKT	**Sadao Pong**	**58.32**	**294**	P	**P**	22 13 57.2	+4.6
	5.7nm,1.0s						
UTTA	**Uttaradit**	**59.08**	**295**	P	**P**	22 13 59.9	+2.0
	4.1nm,0.9s						
KLR	**Kul'dur**	**59.47**	**342**	P	**P**	22 13 58.9	-1.1
	0.9nm,0.7s,baz=134,slow=7.7,SNR=3.8						
XAN	**Xi'an**	**59.65**	**316**	P	**P**	22 14 00.8	-0.8
PETK	**Petropavlovsk-**	**59.80**	**2**	P	**P**	22 14 02.1	-0.1
	5.3nm,0.9s,baz=183,slow=8.5,SNR=3.4						
PEA1	**Petropavlovsk-**	**59.81**	**2**	*e*P	**P**	22 14 02.1	-0.1
KMI	**Kunming**	**59.98**	**304**	P	**P**	22 14 06.0	+1.8
CRAI	**Chiangrai**	**60.10**	**298**	P	**P**	22 14 06.6	+1.7
	71nm,1.0s,162μm						
LAMP	**Lampang**	**60.17**	**296**	P	**P**	22 14 07.6	+2.2
	9.7nm,0.8s,81nm						
CM31	**Chiang Mai Arr**	**60.76**	**295**	*e*P	**P**	22 14 09.4	0.0
CM31				*e*PcP	**PcP**	22 14 50.1	-2.7
CMAR	**Chiang Mai Arr**	**60.76**	**295**	P	**P**	22 14 09.4	0.0
	8.8nm,0.7s,baz=121,slow=5.2,SNR=70						
CMAR				PcP	**PcP**	22 14 50.1	-2.7
	1.6nm,0.7s,baz=119,slow=5.0,SNR=2.1						
CMMT	**Chiang Mai**	**60.88**	**296**	P	**P**	22 14 11.7	+1.5
	9.3nm,1.1s						
CHTO	**Chiang Mai**	**60.88**	**296**	P	**P**	22 14 11.8	+1.6
	29nm,1.1s						
CHTO	**Chiang Mai**	**60.88**	**296**	*e*P	**P**	22 14 11.3	+1.0
	8.3nm,0.9s						
CMAI	**Chiengmai2**	**61.17**	**297**	P	**P**	22 14 13.8	+1.5
	112nm,1.5s,6μm						
HHC	**Hu-ho-hao-te**	**62.02**	**324**	*e*P	**P**	22 14 21.4	+3.7
HHC				S	**S**	22 22 41.6	+4.1
HHC				pmax	pmax		
	comp=Z,33nm,1.2s						
HHC				pmax	pmax		
	comp=Z,190nm,7.2s						
HHC				LR	LR		
	comp=N,560nm,17.1s						
HHC				LR	LR		
	comp=E,620nm,17.0s						
HHC				LR	LR		
	comp=Z,710nm,16.8s						
LZH	**Lanzhou**	**64.26**	**316**	*e*P	**P**	22 14 34.8	+2.2
LZH				pP	pP	22 15 02.3	+12
LZH				sP	sP	22 15 25.0	+28
SONA0	**Songino Array**	**69.26**	**327**	*e*P	**P**	22 15 04.3	+0.1
SONM	**Songino Array**	**69.26**	**327**	P	**P**	22 15 04.3	+0.1
	comp=Z,8.0nm,0.9s,baz=134,slow=7.0,SNR=18						
SHL	**Shillong**	**69.27**	**301**	*e*P	**P**	22 15 06.5	+1.8
SEY	**Seymchan**	**69.64**	**359**	P	**P**	22 15 05.2	-0.8
	comp=Z,0.6nm,0.2s,baz=0,slow=20,SNR=3.3						
VNDA	**Vanda**	**70.69**	**178**	P	**P**	22 15 11.9	-0.4
	comp=Z,2.3nm,0.9s,baz=358,slow=8.5,SNR=7.9						
LSA	**Lhasa**	**71.23**	**304**	*e*P	**P**	22 15 18.6	+1.5
	comp=Z,7.8nm,0.9s						
BILL	**Bilibino**	**75.17**	**4**	*e*P	**P**	22 15 39.0	+0.2
	comp=Z,7.7nm,0.8s						
WMQ	**Urumqi**	**78.77**	**317**	P	**P**	22 16 01.3	+1.6
CAST	**Castle Rocks**	**80.61**	**21**	*e*P	**P**	22 16 09.0	-0.2
	comp=Z,8.5nm,0.7s						
KTH	**Kantishna Hill**	**81.11**	**22**	*e*P	**P**	22 16 11.3	-0.6
	comp=Z,10nm,1.0s						
SML	**Sawmill**	**81.11**	**24**	*e*P	**P**	22 16 12.5	+0.6
	comp=Z,18nm,0.8s						
TRF	**Thorofare Moun**	**81.28**	**22**	*e*P	**P**	22 16 12.2	-0.7
	comp=Z,8.1nm,0.8s						
SCM	**Sheep Creek Mo**	**81.53**	**24**	*e*P	**P**	22 16 14.8	+0.6
	comp=Z,16nm,0.9s						
KLU	**Klutina**	**81.92**	**25**	*e*P	**P**	22 16 17.1	+0.8
	comp=Z,14nm,1.0s						
MCK	**McKinley**	**81.94**	**22**	*e*P	**P**	22 16 16.0	-0.3
	comp=Z,19nm,0.9s						
MLY	**Manley**	**82.04**	**20**	*e*P	**P**	22 16 16.5	-0.2
	comp=Z,5.0nm,0.8s						
WRH	**Wood River Hil**	**82.66**	**21**	*e*P	**P**	22 16 19.4	-0.6
	comp=Z,16nm,1.6s						
CCB	**Clear Creek Bu**	**82.86**	**21**	*e*P	**P**	22 16 19.9	-1.1
	comp=Z,3.2nm,0.7s						
QSPA	**South Pole Qui**	**83.09**	**180**	*e*P	**P**	22 16 22.9	+0.5
BALM	**Baldy**	**83.21**	**26**	*e*P	**P**	22 16 23.6	+0.6
	comp=Z,9.5nm,0.8s						
ILAR	**Eielson Array**	**83.26**	**21**	P	**P**	22 16 21.9	-1.2
	comp=Z,3.2nm,0.8s,baz=253,slow=5.2,SNR=30						
ILAR				LR	LR	22 49 21.6	
	comp=Z,88nm,20.2s,baz=243,slow=33						
ILB	**Eielson Array**	**83.26**	**21**	*e*P	**P**	22 16 21.9	-1.2
MK32	**Makanchi Array**	**83.34**	**319**	*e*P	**P**	22 16 23.8	-0.1
MKAR	**Makanchi Array**	**83.34**	**319**	P	**P**	22 16 23.8	-0.1
	comp=Z,2.3nm,0.7s,baz=103,slow=5.5,SNR=16						
MKAR	**Makanchi Array**	**83.34**	**319**	*e*P	**P**	22 16 24.4	+0.5
COLD	**Coldfoot**	**83.50**	**19**	*e*P	**P**	22 16 25.2	+1.0
	comp=Z,2.5nm,0.6s						
MAKZ	**Makanchi**	**83.55**	**319**	*e*P	**P**	22 16 24.9	-0.1
	comp=Z,5.1nm,1.0s						
DOT	**Dot Lake**	**83.75**	**23**	*e*P	**P**	22 16 26.1	+0.5
	comp=Z,29nm,0.8s						
ZALV	**Zalesovo Beam**	**84.11**	**326**	P	**P**	22 16 26.4	-1.2
	comp=Z,2.3nm,0.7s,baz=118,slow=4.8,SNR=6.0						
ZAA1	**Zalesovo Array**	**84.11**	**326**	*e*P	**P**	22 16 26.4	-1.2
MAW	**Mawson**	**84.51**	**203**	P	**P**	22 16 27.7	-1.7
	comp=Z,2.7nm,0.6s,baz=105,slow=14,SNR=5.0						
EGAK	**Eagle**	**85.40**	**23**	*e*P	**P**	22 16 34.8	+0.9
	comp=Z,9.2nm,0.8s						
DAWY	**Dawson**	**85.78**	**24**	*e*P	**P**	22 16 37.1	+1.2
	comp=Z,5.7nm,0.8s						
KSH	**Kashi**	**85.96**	**310**	P	**P**	22 16 40.3	+2.9
KSH				*e*sP	sP	22 17 16.3	+14
KSH	**Kashi**	**85.96**	**310**	SKS	**SKSac**	22 26 54.1	-3.8
KSH	**Kashi**	**85.96**	**310**	S	**S**	22 27 04.5	-1.8
KSH				pmax	pmax		
	comp=Z,110nm,5.9s						
KSH				LR	LR		
	comp=N,120nm,5.6s						
KSH				LR	LR		
	comp=E,59nm,6.0s						
KURK	**Kurchatov**	**86.76**	**322**	*e*P	**P**	22 16 39.9	-1.0
KURBB	**Kurchatov Arra**	**86.80**	**322**	P	**P**	22 16 39.9	-1.2
	comp=E,0.6nm,0.2s,baz=92,slow=6.5,SNR=3.3						
INK	**Inuvik**	**89.61**	**21**	P	**P**	22 16 53.7	-0.2
	comp=E,1.7nm,0.5s,baz=258,slow=4.1,SNR=17						
INK	**Inuvik**	**89.61**	**21**	*e*P	**P**	22 16 53.7	-0.2
	comp=E,12nm,1.4s						
NV01	**Mina Array Sit**	**91.63**	**52**	*e*P	**P**	22 17 04.7	+0.3
NVAR	**Mina Array Bea**	**91.63**	**52**	P	**P**	22 17 04.7	+0.3
	comp=E,2.0nm,0.7s,baz=238,slow=6.3,SNR=7.7						
RCWM	**Renegade Canyo**	**91.83**	**54**	*e*P	**P**	22 17 09.7	+4.4
SYO	**Syowa Base**	**92.44**	**199⇑**	*e*P	**P**	22 17 03.9	-3.3
C09A	**Chrisman Ranch**	**92.83**	**42**	*e*P	**P**	22 17 05.6	-3.9
	comp=E,22nm,1.0s						
NEW	**Newport**	**93.65**	**42**	*e*P	**P**	22 17 08.7	-4.6
	comp=E,20nm,0.9s						
YKA	**Yellowknife Ar**	**96.22**	**28**	P	**P**	22 17 24.6	0.0
	comp=E,2.8nm,0.9s,baz=266,slow=4.6,SNR=28						
YKB5	**Yellowknife Ar**	**96.22**	**28**	*e*P	**P**	22 17 24.6	0.0
PD31	**Pinedale Array**	**98.60**	**48**	*e*P	**P**	22 17 35.0	-1.2
PDAR	**Pinedale Array**	**98.60**	**48**	P	**P**	22 17 35.0	-1.2
	comp=E,0.7nm,0.8s,baz=245,slow=2.8,SNR=5.8						
AKASG	**Malin Array Be**	**117.47**	**324**	PKP	**PKPdf**	22 22 41.4	-0.8
	comp=E,0.3nm,0.3s,baz=52,slow=1.8,SNR=2.8						
AKBB	**Malin Array Si**	**117.47**	**324**	*e*PKPdf	**PKPdf**	22 22 41.4	-0.8
BR101	**Keskin Array S**	**118.33**	**312**	*e*PKPdf	**PKPdf**	22 22 43.8	-0.7
BRTR	**Keskin Array B**	**118.33**	**312**	PKP	**PKPdf**	22 22 43.8	-0.7
	comp=E,0.3nm,0.7s,baz=195,slow=1.8,SNR=3.7						
BOSA	**Boshof**	**120.11**	**231**	PKP	**PKPdf**	22 22 48.0	-0.3
	comp=E,1.7nm,0.8s,baz=140,slow=2.0,SNR=4.0						
GERES	**GERESS Array B**	**126.97**	**329**	PKP	**PKPdf**	22 23 00.8	+0.1
	comp=E,0.9nm,0.7s,baz=153,slow=0.6,SNR=8.2						
LPAZ	**La Paz**	**131.48**	**119**	PKP	**PKPdf**	22 23 11.3	+0.5
	comp=E,1.1nm,0.6s,baz=32,slow=0.6,SNR=6.6						

*IDC **15** 22:10:23.4±3.2, 36°.26N×70°.40E, h184km±26km, mb3.4/7, mb1 3.4/13, mb1mx3.2/48, mbtmp3.9/13, MS2.9/1, Ms1 2.9/1, ms1mx2.6/30, Error ellipse: s-maj=27.7km s-min=19.6km az=19.0*
*ISCJB **15** 22:10:26.1±0.5, 36°.60N±0°.04×70°.33E±0°.05, h204km, mb3.5/6, Error ellipse: s-maj=6.3km s-min=4.9km az=157.9*
*NNC **15** 22:10:30.2±1.2, 36°.81N×70°.39E, h194km±11km, mb3.2, mpv4.4, Error ellipse: s-maj=14.9km s-min=7.9km az=144.0*

ISC 15 22:10:26.6±0.7, **36°.56N**±0°.06×**70°.32E**±0°.07, **h204**km, **n33**, σ1**37**/40, **mb3.6/6, 6C-13D, Hindu Kush region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**2.54**	**333**	⇓P	**Pn**	22 11 11.8	+0.5
	111nm,0.3s						
DZET				⇓S	**S**	22 11 45.3	-0.4
	368nm,0.6s						
CHCP	**Chirah Chowk**	**3.77**	**139**	⇓P	**Pn**	22 11 26.1	+0.3
THW	**Thamme Wali**	**3.93**	**162**	⇓P	**Pn**	22 11 27.4	-0.4
MNAS	**Manas**	**6.16**	**15**	⇓P	**Pn**	22 11 56.4	+0.4
	9.7nm,0.4s						
MNAS				⇓S	**S**	22 13 04.9	-1.8
	56nm,0.5s						
KK31	**Karatay Array**	**6.54**	**1**	⇑P	**Pn**	22 12 01.1	+0.2
	7.2nm,0.3s,baz=170,slow=9.4,SNR=478						
KK31				⇑S	**S**	22 13 12.6	-2.8
	3.3nm,0.3s,baz=193,slow=24,SNR=4.6						
AAK	**Ala-Archa**	**6.87**	**27**	P	**Pn**	22 12 05.9	+0.6
	9.1nm,0.3s,baz=188,slow=7.3,SNR=70						
AAK				S	**S**

0.4nm,0.5s,baz=105,slow=8.7,SNR=4.5
MKAR Makanchi Array 44.43 302 P **P 22 37 50.3 +0.4**
0.2nm,0.4s,baz=82,slow=8.8,SNR=4.7

IDC 15 22:54:02.6±7.1, 0°37S×132°05E, h0km, mb3.4/2, mb1 3.5/3, mb1mx3.3/28, mbtmp3.3/3, ML3.2/1, MS3.5/1, Ms1 3.7/1, ms1mx2.9/10, Error ellipse: s-maj=468.2km s-min=27.8km az=73.0, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**19.58**	**174**	P	Pn	22 58 33.5	-0.1
	0.1nm,0.3s,baz=351,slow=12,SNR=3.1						
ASAR	**Alice Springs**	**23.23**	**176**	P	P	22 59 10.8	-0.7
	0.7nm,0.7s,baz=5.7,slow=10,SNR=5.0						
CMAR	**Chiang Mai Arr**	**37.53**	**302**	LR	LR	23 16 43.1	
	comp=Z,66nm,20.9s,baz=310,slow=36						
MKAR	**Makanchi Array**	**63.95**	**324**	P	P	23 04 37.7	0.0
	0.2nm,0.4s,baz=110,slow=7.3,SNR=4.5						

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*ISCJB **15** 22:56:07.9±0.9, 11°.39N±0°.06×62°.27W±0°.05, h101km±10km, Error ellipse: s-maj=10.9km s-min=6.2km az=141.2*
*TRN **15** 22:56:07.3, 11°.66N×62°.02W, h144km, MD3.6*
*FUNV **15** 22:56:11.2, 11°.39N×62°.38W, h89km, MW2.4*
ISC 15 22:56:06.5±1.9, 11°.48N±0°.06×62°.29W±0°.05, h124km±15km, n13, σ1§83/23, 1C, Windward Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GRGR	**Grenville**	**0.90**	**44**	⇑*e*P	**Pn**	**22 56 29.0**	**+1.0**
GRGR				*e*S	**Sn**	**22 56 43.5**	**-0.7**
GRGR				*e*S	**Sn**	**22 56 45.4**	**+1.2**
GRW	**Mount Saint Ca**	**0.92**	**42**	*e*P	**Pn**	**22 56 27.9**	**-0.4**
GRW				*e*S	**Sn**	**22 56 44.8**	**+0.2**
GRSS	**Sisters**	**1.05**	**39**	*e*P	**Pn**	**22 56 29.0**	**-0.4**
GRSS				*e*S	**Sn**	**22 56 46.2**	**-0.5**
TRN	**Trinidad (W)**	**1.20**	**133**	*i* P	**Pn**	**22 56 33.3**	**+2.4**
TRN				*e*S	**Sn**	**22 56 51.8**	**+2.5**
CRUV	**Carupano**	**1.22**	**229**	*e*P	**Pn**	**22 56 31.8**	**+0.7**
CRUV				*e*S	**Sn**	**22 56 46.6**	**-3.2**
GUNV	**Guanoco**	**1.45**	**206**	*e*P	**Pn**	**22 56 34.5**	**+0.8**
GUNV				*e*S	**Sn**	**22 56 52.1**	**-2.2**
BOT	**Bacolet**	**1.57**	**101**	*e*P	**Pn**	**22 56 36.0**	**+1.0**
BOT				*e*S	**Sn**	**22 56 54.8**	**-2.0**
TOSP	**Speyside**	**1.73**	**96**	*e*P	**Pn**	**22 56 36.1**	**-0.8**
TOSP				*e*S	**Sn**	**22 56 57.9**	**-2.1**
ORIV	**Oritupano**	**2.63**	**205**	*e*P	**Pn**	**22 56 49.0**	**+0.8**
CUPV	**Ccepira**	**3.71**	**248**	*e*P	**Pn**	**22 57 04.8**	**+2.4**
GURV	**El Guri**	**3.77**	**192**	*e*P	**Pn**	**22 57 04.3**	**+1.1**
LUEV	**Luepa**	**5.66**	**172**	*e*P	**Pn**	**22 57 30.3**	**+1.7**
LUEV				*e*S	**Sn**	**22 58 29.3**	**-3.2**
BAUV	**El Baul**	**6.19**	**247**	*e*P	**Pn**	**22 57 36.4**	**+0.8**

NNC 15 23:13:19.4±1.4, 36°.81N×70°.64E, h181km±19km, mb2.5, mpv3.5, 5C-3D, Error ellipse: s-maj=19.0km s-min=9.4km az=132.0, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**2.46**	**325**	⇑P	Pn	23 14 01.6	-0.1
	3.6nm,0.5s						
DZET				⇑S	Sn	23 14 35.2	+0.4
	182nm,0.6s						
MNAS	**Manas**	**5.86**	**14**	⇓S	Sn	23 15 53.1	+1.5
	0.7nm,0.4s						
KK31	**Karatay Array**	**6.29**	**359**	P	Pn	23 14 50.3	+0.2
	1.7nm,0.3s,baz=175,slow=11,SNR=34						
KK31				⇓S	Sn	23 16 01.4	-0.4
	1.0nm,0.4s,baz=202,slow=22,SNR=3.6						
AAK	**Ala-Archa**	**6.54**	**26**	⇓P	Pn	23 14 54.0	+0.5
	1.9nm,0.4s						
AAK				⇑S	Sn	23 16 07.7	0.0
	2.0nm,0.6s						
TKM2	**Tokmak 2**	**7.20**	**30**	⇑P	Pn	23 15 02.0	-0.3
	5.7nm,0.5s						
AB31	**Akbulak array**	**14.68**	**331**	⇑P	Pn	23 16 38.7	+0.5
	0.1nm,0.3s,baz=150,slow=12,SNR=6.2						

IDC 15 23:23:56.6±2.3, 6°75S×129°54E, h0km, mb3.2/1, mb1 3.7/3, mb1mx3.4/29, mbtmp3.5/3, ML3.9/2, Error ellipse: s-maj=164.4km s-min=31.3km az=68.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**13.92**	**161**	Pn	Pn	23 27 15.1	-0.2
	0.6nm,0.3s,baz=344,slow=13,SNR=15						
WRA				Sn	Sn	23 29 36.2	-14
	0.6nm,0.3s,baz=330,slow=22,SNR=6.6						
ASAR	**Alice Springs**	**17.34**	**166**	P	Pn	23 28 00.3	+0.1
	0.3nm,0.3s,baz=338,slow=10.0,SNR=12						
MKAR	**Makanchi Array**	**67.77**	**327**	P	P	23 34 56.2	0.0
	0.1nm,0.4s,baz=112,slow=7.5,SNR=3.0						

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*ISCJB **15** 23:25:00.7±0.9, 6°.84S±0°.02×155°.09E±0°.03, h8km±5km, mb5.2/151, MS4.9/183, Error ellipse: s-maj=4.3km s-min=4.0km az=3.6*
*BJI **15** 23:25:03.6, 6°.85S×154°.90E, h20km, mb4.9/64, mB5.2/55, Ms4.9/61, Ms7 4.6/58*
*NEIC **15** 23:25:04.0±0.0, 7°.03S×154°.84E, h21km, Moment Tensor Solution. s19 Moment tensor: Scale 10^{17}Nm; M_{rr}1.60; $M_{\theta\theta}$-1.00; $M_{\phi\phi}$-0.60; $M_{r\theta}$1.60; $M_{\theta\phi}$0.60; $M_{\phi r}$-0.50; Best double couple: $M_0$2.00000×10^{17} NP1:ϕ_s112.00000°, δ69.00000°, λ82.00000°. NP2:ϕ_s314.00000°, δ21.00000°, λ110.00000°. Principal axes: T 2.4000, Plg64.0000°, Azm9.0000°; N -0.3000, Plg7.0000°, Azm115.0000°; P -2.1000, Plg24.0000°, Azm208.0000°;*
*MOS **15** 23:25:05.0±1.2, 6°.85S×155°.06E, h40km, mb5.4/29, MS4.7/15 Error ellipse: s-maj=7.4km s-min=6.7km az=79.5*
*NEIC **15** 23:25:06.2±0.1, 6°.86S×155°.06E, h35km, mb5.4/100, MS5.0/131, MW5.5, Error ellipse: s-maj=4.0km s-min=3.7km az=76.0*
*IDC **15** 23:25:06.9±1.5, 6°.93S×155°.10E, h45km±14km, mb4.5/21, mb1 4.6/25, mb1mx4.6/31, mbtmp4.7/25, ML3.6/5, MS4.6/30, Ms1 4.6/30, ms1mx4.6/33, Error ellipse: s-maj=10.5km s-min=9.5km az=132.0*
*GCMT **15** 23:25:06.2±0.1, 7°.15S×155°.00E, h25km, MW5.5/115, Moment Tensor Solution. s105,c175; s115,c202; Duration: 1§3 Moment tensor: Scale 10^{17}Nm; M_{rr}1.45±.03; $M_{\theta\theta}$-0.97±.02; $M_{\phi\phi}$-0.47±.02; $M_{r\theta}$1.03±.05; $M_{\theta\phi}$0.76±.02; $M_{\phi r}$-0.94±.05; Best double couple: $M_0$2.04100×10^{17} NP1:ϕ_s131.00000°, δ67.00000°, λ94.00000°. NP2:ϕ_s301.00000°, δ24.00000°, λ81.00000°. Principal axes: T 2.0080, Plg68.0000°, Azm48.0000°; N 0.0680, Plg3.0000°, Azm309.0000°; P -2.0750, Plg22.0000°, Azm218.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*DJA **15** 23:25:23.7±2.2, 8°.S±10°.×15°.4E±1°.4, h88km±13km, M5.3/25, mb5.1/25, mB5.6/15, MLv5.7/1, Mw(mB)5.1/15*
ISC 15 23:25:05.3±0.5, 6°.84S±0°.04×155°.10E±0°.04, h29km±3km, h28km:pP-P, n446, σ1§70/358, mb5.3/151, MS4.9/186, 15C-18D, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RABL	**Rabaul**	**3.93**	**312**	*e*Pn	**Pn**	**23 26 04.9**	**+1.0**
HNR	**Honiara**	**5.44**	**119**	P	**Pn**	**23 26 24.7**	**+0.1**
	11nm,0.3s,baz=194,slow=18,SNR=1.8						
HNR				S	**Sn**	**23 27 28.5**	**+2.1**
	29nm,0.3s,baz=150,slow=14,SNR=3.1						
HNR				LR	LR	23 28 37.1	
	comp=Z,18μm,20.2s,baz=280,slow=39						
HNR	**Honiara**	**5.44**	**119**	*e*P	Pb	23 26 32.0	-7.8
HNR				*e*S	**Sb**	**23 27 47.0**	**+2.3**
HNR	**Honiara**	**5.44**	**119**	*e*P	**Pn**	**23 26 26.8**	**+2.2**
HNR				S	**Sn**	**23 27 28.5**	**+2.1**
HNR	**Honiara**	**5.44**	**119**	*e*Pn	**Pn**	**23 26 26.8**	**+2.2**
HNR				S	**Sn**	**23 27 28.5**	**+2.1**
PMG	**Port Moresby**	**8.27**	**252**	P	**Pn**	**23 27 04.3**	**+0.9**
	5.8nm,0.3s,baz=62,slow=12,SNR=16						
PMG				S	**Sn**	**23 28 37.4**	**+1.5**
	7.3nm,0.3s,baz=124,slow=18,SNR=10						
PMG				LR	LR	23 30 13.7	
	comp=Z,8μm,20.0s,baz=53,slow=37						
PMG	**Port Moresby**	**8.27**	**252**	*i* P	**Pn**	**23 27 05.4**	**+2.0**
PMG				pmax	pmax		
	comp=Z,384nm,0.6s						
MANU	**Manus Island**	**9.06**	**301**	*e*Pn	**Pn**	**23 27 14.8**	**+0.4**
COEN	**Coen**	**13.69**	**238**	P	**Pn**	**23 28 17.4**	**-0.4**
	baz=14,SNR=9.9						
COEN	**Coen**	**13.69**	**238**	*e*Pn	**Pn**	**23 28 18.6**	**+0.8**
PATS	**Pohnpei**	**13.96**	**13**	*e*Pn	**Pn**	**23 28 23.4**	**+2.0**
JAY	**Jayapura**	**14.98**	**286**	P	**Pn**	**23 28 35.4**	**+0.1**
	comp=Z,0.0nm,0.3s,baz=128,slow=19,SNR=2.6						
MTSU	**Mount Surprise**	**15.38**	**222**	P	**Pn**	**23 28 40.6**	**0.0**
	baz=15,SNR=9.4						
CTA	**Charters Tower**	**15.72**	**212**	P	**Pn**	**23 28 44.1**	**-0.8**
	comp=Z,0.8nm,0.3s,baz=32,slow=15,SNR=7.4						
CTA				S	**Sn**	**23 31 38.3**	**-0.1**
	comp=Z,0.2nm,0.3s,baz=16,slow=19,SNR=1.5						
CTA				LR	LR	23 34 18.1	
	comp=Z,5μm,18.1s,baz=7.5,slow=35						
CTAO	**Charters Tower**	**15.72**	**212**	*e*P	**Pn**	**23 28 45.3**	**+0.4**
CTAO				pmax	pmax		
	comp=Z,349nm,1.9s						
CTAO	**Charters Tower**	**15.72**	**212**	*e*Pn	**Pn**	**23 28 45.3**	**+0.4**
	comp=Z,349nm,1.9s						
DZM	**Mont Dzumac**	**18.69**	**145**	P	**P**	**23 29 19.3**	**-2.3**
	comp=Z,0.8nm,0.3s,baz=327,slow=14,SNR=8.3						
DZM				LR	LR	23 35 49.9	
	comp=Z,3μm,19.9s,baz=316,slow=35						
EIDS	**Eidsvold**	**18.82**	**191**	P	**Pn**	**23 29 23.1**	**-0.5**
	baz=19,SNR=4.2						
EIDS	**Eidsvold**	**18.82**	**191**	*e*P	**Pn**	**23 29 25.1**	**+1.5**
	comp=Z,123nm,1.5s						
KWAJ	**Kwajalein Atol**	**19.92**	**39**	*e*P	**Pn**	**23 29 37.0**	**+0.2**
KWAJ				pmax	pmax		
	comp=Z,344nm,1.1s						
KWAJ	**Kwajalein Atol**	**19.92**	**39**	*e*P	**Pn**	**23 29 37.0**	**+0.2**
	comp=Z,344nm,1.1s						
QIS	**Mount Isa**	**20.29**	**226**	P	**P**	**23 29 38.8**	**-0.1**
	baz=20,SNR=14						
RMQ	**Roma**	**20.45**	**196**	P	Pn	23 29 41.6	-1.3
	baz=20,SNR=16						
QLP	**Quilpie**	**22.19**	**207**	P	**P**	**23 29 59.0**	**-0.5**
	baz=22,SNR=24						
GUMO	**Guam**	**22.70**	**333**	LR	LR	23 38 04.4	
	comp=Z,334nm,20.5s,baz=146,slow=34						
FAKI	**Fak Fak**	**23.10**	**279**	P	**P**	**23 30 14.2**	**+5.1**
	comp=Z,91nm,1.3s,comp=Z,2μm						
FAKI	**Fak Fak**	**23.10**	**279**	*e*P	**P**	**23 30 08.7**	**-0.4**
	comp=Z,122nm,1.2s						
SAUI	**Saumlaki**	**23.63**	**266**	*e*P	**P**	**23 30 15.5**	**+1.1**
	comp=Z,597nm,1.1s						
ARMA	**Armidale**	**23.68**	**187**	P	**P**	**23 30 15.6**	**+0.8**
	baz=24,SNR=8.6						
ARMA	**Armidale**	**23.68**	**187**	*e*P	**P**	**23 30 17.0**	**+2.2**
	comp=Z,215nm,1.5s						
FUNA	**Funafuti**	**23.93**	**96**	PFAKE		23 30 30.0	+13
FUNA				LR	LR		
	comp=Z,3μm,21.0s						
WRAB	**Tennant Creek**	**23.98**	**235**	*d i* P	**P**	**23 30 16.7**	**-1.0**
WRAB				pmax	pmax		
	comp=Z,439nm,1.7s						
WRAB	**Tennant Creek**	**23.98**	**235**	*e*P	**P**	**23 30 17.1**	**-0.6**
	comp=Z,119nm,1.2s						
WRAB				LR	LR		
	comp=Z,3μm,22.0s						
WRA	**Warramunga Arr**	**23.99**	**235**	P	**P**	**23 30 16.9**	**-0.9**
	comp=Z,34nm,0.7s,baz=59,slow=9.9,SNR=56						
WRA				PcP	**PcP**	**23 33 59.8**	**+0.2**
	comp=Z,2.3nm,0.6s,baz=58,slow=2.2,SNR=4.9						
WRA				S	**S**	**23 34 30.9**	**-2.2**
	comp=Z,1.1nm,0.9s,baz=62,slow=16,SNR=3.6						
WRA				LR	LR	23 39 09.5	
	comp=Z,3μm,21.2s,baz=50,slow=35						
MTN	**Manton Dam**	**24.35**	**254**	P	**P**	**23 30 23.2**	**+2.1**
	baz=24,SNR=4.4						
MTN	**Manton Dam**	**24.35**	**254**	*e*P	**P**	**23 30 22.0**	**+1.0**
	comp=Z,444nm,1.6s						
SWI	**Sorong**	**24.51**	**283**	P	**P**	**23 30 23.0**	**+0.4**
SWI	**Sorong**	**24.51**	**283**	P	**P**	**23 30 23.5**	**+0.9**
SWI				pmax	pmax		
	comp=Z,175nm,1.1s						
MSVF	**Nonsavu**	**24.86**	**118**	*e*P	**P**	**23 30 24.0**	**-1.8**
MSVF				pmax	pmax		
	comp=Z,28nm,1.0s						
MSVF	**Nonsavu**	**24.86**	**118**	*e*P	**P**	**23 30 26.3**	**+0.5**
	comp=Z,420nm,2.0s						
MSVF				LR	LR		
	comp=Z,2μm,19.0s						
CMSA	**Cobar Meteorol**	**26.10**	**199**	P	**P**	**23 30 37.2**	**+0.5**
	baz=26,SNR=30						
ASAR	**Alice Springs**	**26.36**	**228**	P	**P**	**23 30 38.1**	**-1.1**
	comp=Z,10.0nm,0.7s,baz=60,slow=8.5,SNR=65						
ASAR				S	**S**	**23 35 10.3**	**-0.6**
	comp=Z,1.3nm,1.1s,baz=57,slow=12,SNR=2.1						
ASAR				LR	LR	23 40 30.6	
	comp=Z,2μm,19.5s,baz=114,slow=35						
MGCD	**Mangrove Creek**	**26.50**	**188**	P	**P**	**23 30 42.5**	**+2.2**
	baz=26,SNR=5.3						
STKA	**Stephens Creek**	**27.92**	**205**	P	**P**	**23 30 51.5**	**-1.7**
	comp=Z,13nm,0.6s,baz=13,slow=9.4,SNR=33						
STKA				LR	LR	23 42 03.5	
	comp=Z,3μm,18.6s,baz=20,slow=36						
STKA	**Stephens Creek**	**27.92**	**205**	P	**P**	**23 30 54.0**	**+0.9**
	baz=28,SNR=22						
CAN	**Canberra**	**28.90**	**190**	*e*P	**P**	**23 31 02.5**	**+0.6**
CAN				pmax	pmax		
	comp=Z,59nm,1.5s						
CAN				MLR	MLR		
	comp=Z,3μm,22.0s						
CAN	**Canberra**	**28.90**	**190**	*e*P	**P**	**23 31 02.5**	**+0.6**
	comp=Z,59nm,1.5s						
CAN				LR	LR		
	comp=Z,3μm,22.0s						
SANI	**Sanana**	**29.41**	**278**	P	P	23 31 13.0	+6.4
HTT	**Hallett**	**30.42**	**207**	P	**P**	**23 31 17.3**	**+1.9**
	baz=30,SNR=6.7						
BBOO	**Buckleboo**	**31.32**	**212**	P	**P**	**23 31 21.8**	**-1.5**
	baz=31,SNR=5.0						
BBOO	**Buckleboo**	**31.32**	**212**	*e*P	**P**	**23 31 21.9**	**-1.5**
	comp=Z,143nm,1.8s						
WRKA	**Warakurna**	**31.38**	**232**	P	**P**	**23 31 22.5**	**-1.5**
	baz=31,SNR=21						
DAV	**Davao City (W)**	**32.53**	**295**	PFAKE		23 31 50.0	+16
DAV				LR	LR		
	comp=Z,672nm,20.0s						
MMRI	**Maumere**	**32.61**	**265**	P	**P**	**23 31 33.3**	**-1.6**
MMRI	**Maumere**	**32.61**	**265**	*e*P	**P**	**23 31 34.7**	**-0.2**
	comp=Z,302nm,1.5s						
LUWI	**Luwuk**	**32.75**	**279**	P	P	23 31 43.3	+7.2
	comp=Z,80nm,1.4s,comp=Z,2μm						
LUWI	**Luwuk**	**32.75**	**279**	*e*P	**P**	**23 31 36.1**	**0.0**
	comp=Z,147nm,1.4s						
AFI	**Afiamalu**	**33.30**	**105**	P	**P**	**23 31 39.9**	**-1.0**
	comp=Z,28nm,0.7s,baz=262,slow=7.1,SNR=3.0						
AFI				LR	LR	23 44 10.9	
	comp=Z,2μm,18.1s,baz=286,slow=34						
AFI	**Afiamalu**	**33.30**	**105**	*e*P	**P**	**23 31 40.8**	**-0.2**
AFI				pmax	pmax		
	comp=Z,55nm,1.0s						
AFI	**Afiamalu**	**33.30**	**105**	*e*P	**P**	**23 31 40.8**	**-0.2**
	comp=Z,54nm,1.0s						
KNTN	**Kanton**	**33.30**	**85**	*e*P	**P**	**23 31 41.7**	**+0.8**
	comp=Z,52nm,1.0s						
RAO	**Raoul Island**	**33.82**	**135**	*e*P	**P**	**23 31 46.0**	**+0.8**
RAO				pmax	pmax		
	comp=Z,479nm,1.0s						
RAO	**Raoul Island**	**33.82**	**135**	*e*P	**P**	**23 31 46.0**	**+0.8**
	comp=Z,479nm,1.0s						
BSSI	**Bau Bau, Buton**	**34.39**	**269**	P	**P**	**23 31 54.7**	**+4.3**
	comp=Z,111nm,1.1s,comp=Z,2μm						
KAPI	**Kappang**	**35.20**	**271**	*e*P	**P**	**23 31 57.7**	**+0.3**
	comp=Z,51nm,1.1s						
KAPI				LR	LR		
	comp=Z,564nm,19.0s						
TTSI	**Tana Toraja**	**35.34**	**274**	P	P	23 32 08.8	+10
	comp=Z,29nm,1.1s,comp=Z,1μm						
PCI	**Palu**	**35.66**	**278**	P	**P**	**23 32 05.8**	**+4.4**
	comp=Z,100nm,1.1s,comp=Z,956nm						
CBIJ	**Chichi jima**	**35.98**	**340**	*e*P	**P**	**23 32 02.1**	**-1.8**
	comp=Z,144nm,1.1s						
TAU	**Tasmania Unive**	**36.58**	**190**	PFAKE		23 32 20.0	+11
TAU				LR	LR		
	comp=Z,2μm,20.0s						
PLAI	**Plampang**	**37.02**	**264**	P	**P**	**23 32 12.6**	**-0.4**
URZ	**Urewera**	**37.09**	**151**	P	**P**	**23 32 11.5**	**-1.8**
	comp=Z,7.6nm,0.8s,baz=264,slow=18,SNR=2.4						
URZ				LR	LR	23 46 39.7	
	comp=Z,894nm,18.2s,baz=338,slow=35						
MXZ	**Matakaoa Point**	**37.15**	**149**	*e*P	**P**	**23 32 13.2**	**-0.6**
	comp=Z,347nm,1.6s						
BKZ	**Black Stump Fm**	**37.52**	**152**	*e*P	**P**	**23 32 16.6**	**-0.3**
	comp=Z,287nm,2.0s						
TWSI	**Taliwang, Sumb**	**37.90**	**265**	P	**P**	**23 32 16.2**	**-4.3**
THZ	**Tophouse**	**38.20**	**158**	*e*P	**P**	**23 32 22.4**	**-0.3**
	comp=Z,136nm,1.4s						
MYLDM	**Lahad Datu**	**38.43**	**287**	⇓P	P	23 32 32.3	+7.4
MYLDM	**Lahad Datu**	**38.43**	**287**	*e*P	**P**	**23 32 24.8**	**-0.2**
MYLDM				*e*pP	**pP**	**23 32 31.3**	**-2.1**
SNZO	**South Karori**	**38.51**	**156**	*e*P	**P**	**23 32 25.5**	**+0.4**
	comp=Z,534nm,1.8s						
SNZO				LR	LR		
	comp=Z,2μm,19.0s						
LTZ	**Lake Taylor**	**38.87**	**160**	*e*P	**P**	**23 32 28.8**	**+0.5**
	comp=Z,80nm,1.3s						
KHZ	**Kahutara**	**39.01**	**158**	*e*P	**P**	**23 32 29.9**	**+0.6**
	comp=Z,332nm,2.0s						
OXZ	**Oxford**	**39.28**	**160**	*e*P	**P**	**23 32 31.8**	**+0.1**
	comp=Z,236nm,2.0s						
RPZ	**Rata Peaks**	**39.31**	**162**	P	**P**	**23 32 30.1**	**-1.8**
	comp=Z,12nm,0.8s,baz=335,slow=2.8,SNR=2.3						
RPZ				LR	LR	23 48 05.0	
	comp=Z,3μm,18.3s,baz=326,slow=35						
RPZ	**Rata Peaks**	**39.31**	**162**	*e*P	**P**	**23 32 32.4**	**+0.5**
	comp=Z,231nm,1.7s						
KMBL	**Kambalda**	**39.48**	**227**	P	**P**	**23 32 33.2**	**-0.3**
	baz=39,SNR=5.0						
LBZ	**Lake Benmore**	**39.66**	**163**	*e*P	**P**	**23 32 35.3**	**+0.5**
	comp=Z,149nm,1.6s						
CRLZ	**Canterbury Las**	**39.70**	**160**	*e*P	**P**	**23 32 36.0**	**+1.0**
CRLZ				*e*pP	**pP**	**23 32 41.6**	**-2.0**
WKZ	**Wanaka**	**39.74**	**164**	*e*P	**P**	**23 32 35.8**	**+0.3**
	comp=Z,181nm,1.4s						
MLZ	**Mavora Lakes**	**40.01**	**166**	*e*P	**P**	**23 32 38.2**	**+0.5**
	comp=Z,308nm,2.0s						
JAGI	**Jajag, Banyuwa**	**40.60**	**265**	P	P	23 32 48.5	+5.4
	comp=Z,90nm,1.0s						
JAGI	**Jajag, Banyuwa**	**40.60**	**265**	*e*P	**P**	**23 32 41.7**	**-1.4**
	comp=Z,60nm,0.8s						
KKM	**Kota Kinabalu**	**40.86**	**287**	⇓P	P	23 32 51.2	+6.0
KKM	**Kota Kinabalu**	**40.86**	**287**	*e*P	**P**	**23 32 45.4**	**+0.2**
	comp=Z,34nm,0.8s						
KKM				LR	LR		
	comp=Z,354nm,20.0s						
JOHN	**Johnston Islan**	**42.10**	**56**	*e*P	**P**	**23 32 55.2**	**+0.1**
	comp=Z,452nm,1.3s						
JOHN				LR	LR		
	comp=Z,143nm,19.0s						
JHJ2	**Mitsune**	**42.30**	**341**	*e*P	**P**	**23 32 57.1**	**+0.5**
	comp=Z,140nm,1.0s						
JOW	**Kunigami**	**42.38**	**323**	*e*P	**P**	**23 32 56.9**	**-0.5**
	comp=Z,221nm,1.8s						
KLBR	**Kellerberrin**	**42.67**	**230**	P	**P**	**23 32 58.5**	**-1.2**
	baz=42,SNR=5.7						
PWJI	**Pagerwojo**	**42.94**	**266**	P	**P**	**23 33 05.7**	**+3.6**
	comp=Z,57nm,1.1s						
BLDU	**Ballidu**	**43.04**	**232**	P	**P**	**23 33 03.8**	**+1.0**
	baz=43,SNR=5.0						
PCJI	**Pacitan**	**43.55**	**265**	P	**P**	**23 33 11.5**	**+4.4**
NWAO	**Narrogin (SRO)**	**43.68**	**228**	*e*P	**P**	**23 33 07.3**	**-0.6**
NWAO				pmax	pmax		
	comp=Z,110nm,1.7s						
NWAO				MLR	MLR		
	comp=Z,2μm,19.0s						
NWAO	**Narrogin (SRO)**	**43.68**	**228**	*e*P	**P**	**23 33 07.3**	**-0.6**
	comp=Z,110nm,1.7s						
NWAO				LR	LR		
	comp=Z,2μm,19.0s						
SBUM	**Sibu**	**43.79**	**281**	⇓P	P	23 33 15.1	+6.1
SBUM	**Sibu**	**43.79**	**281**	*e*P	**P**	**23 33 07.8**	**-1.2**
SBUM				*e*pP	**pP**	**23 33 14.7**	**-2.9**
TWG	**Pinlang**	**44.47**	**313**	*e*P	**P**	**23 33 13.6**	**-0.7**
	comp=Z,139nm,1.3s						
YULB	**Yu-li**	**44.65**	**313**	*e*P	**P**	**23 33 15.9**	**+0.1**
	comp=Z,189nm,2.0s						
NACB	**Ninganchiao**	**44.93**	**314**	*e*P	**P**	**23 33 17.5**	**-0.4**
	comp=Z,62nm,1.1s						
TPUB	**Ta-pu**	**45.08**	**313**	*e*P	**P**	**23 33 19.1**	**-0.1**
	comp=Z,230nm,2.0s						
SSLB	**Suanglung**	**45.14**	**313**	*e*P	**P**	**23 33 19.6**	**-0.1**
	comp=Z,32nm,1.0s						
INU	**Inuyama**	**45.29**	**339**	*e*P	**P**	**23 33 19.3**	**-1.3**
	comp=Z,57nm,1.9s						
YHNB	**Yeheng**	**45.39**	**315**	*e*P	**P**	**23 33 22.2**	**+0.4**
	comp=Z,258nm,1.7s						
YHNB				LR	LR		
	comp=Z,1μm,21.0s						
KSM	**Kuching**	**45.46**	**279**	*e*P	**P**	**23 33 21.6**	**-0.8**
	comp=Z,39nm,1.2s						
KSM				LR	LR		
	comp=Z,423nm,22.0s						
TATO	**Taipei**	**45.51**	**315**	*e*P	**P**	**23 33 22.8**	**+0.3**
	comp=Z,202nm,1.5s						
TATO				LR	LR		
	comp=Z,1μm,22.0s						
JNU	**Nakatsue**	**45.93**	**331**	*e*P	**P**	**23 33 25.1**	**-0.6**
	comp=Z,75nm,0.8s						
MJAR	**Matsushiro Arr**	**45.97**	**341**	P	**P**	**23 33 25.6**	**-0.4**
	comp=Z,1.4nm,0.5s,baz=162,slow=8.1,SNR=4.7						
MJAR				LR	LR	23 53 12.0	
	comp=Z,210nm,18.0s,baz=165,slow=37						
MAJO	**Matsushiro**	**45.97**	**341**	*e*P	**P**	**23 33 26.2**	**+0.2**
MAJO				pmax	pmax		
	comp=Z,20nm,1.3s						
MAJO				MLR	MLR		
	comp=Z,497nm,19.0s						
MAJO	**Matsushiro**	**45.97**	**341**	*e*P	**P**	**23 33 26.2**	**+0.2**
	comp=Z,20nm,1.3s						
MAJO				LR	LR		
	comp=Z,497nm,19.0s						
QZH	**Quanzhou**	**47.55**	**313**	⇑*i* P	**P**	**23 33 34.1**	**-4.5**
QZH				S	**S**	**23

comp=Z,161nm,0.8s
HON Honolulu 53.85 57 *e*P **P 23 34 25.8 -0.4**
comp=Z,161nm,0.8s
KIP Kipapa 53.89 57 *e*P **P 23 34 25.3 -1.1**
KIP pmax pmax
comp=Z,277nm,1.9s
KIP Kipapa 53.89 57 *e*P **P 23 34 25.3 -1.1**
comp=Z,276nm,1.9s
WHN Wuhan 53.90 316 ⇑P **P 23 34 28.0 +1.6**
WHN sP **sP 23 34 42.8 +4.2**
WHN S **S 23 42 02.0 +1.9**
WHN LR LR
comp=Z,1μm,16.6s
WHN LR LR
comp=Z,990nm,18.8s
WHN LR LR
comp=Z,2μm,18.1s
BKNI Bangkinang 54.40 275 *e*P **P 23 34 29.4 -1.0**
comp=Z,111nm,1.3s
USRK Ussuriysk Ar. 54.92 340 P **P 23 34 33.2 -0.4**
comp=Z,4.0nm,0.7s,baz=177,slow=8.2,SNR=4.9
USRK LR LR 23 54 17.8
comp=Z,252nm,21.6s,baz=147,slow=32
PPT Papeete 54.94 107 LR LR 23 54 08.9
comp=Z,562nm,19.4s,baz=268,slow=32
PPT2 Papeete2 54.94 107 *e*S **S 23 42 13.2 -1.5**
comp=Z,633nm,26.0s
PPT2 *e*LQ LQ 23 48 17.5
comp=Z,1μm,28.0s
PPT2 *e*LR LR 23 50 42.2
comp=Z,537nm,20.8s,baz=264
DL2 Dalian 55.09 328 P **P 23 34 37.8 +2.9**
DL2 S **S 23 42 18.8 +3.0**
DL2 pmax pmax
comp=Z,14nm,0.9s
DL2 pmax pmax
comp=Z,200nm,7.5s
DL2 LR LR
comp=Z,410nm,21.0s
DL2 LR LR
comp=Z,470nm,16.9s
DL2 LR LR
comp=Z,630nm,19.6s
POHA Pohakuloa 55.30 60 PFAKE 23 34 50.0 +13
POHA LR LR
comp=Z,1μm,19.0s
TBI Tubuai 55.64 114 *e*S **S 23 42 25.3 +1.5**
comp=Z,265nm,30.5s
TBI *e*LQ LQ 23 48 36.1
comp=Z,3μm,30.5s
TBI *e*LR LR 23 50 57.2
comp=Z,979nm,31.5s
KULM Kulim 55.66 281 *e*P **P 23 34 38.7 -0.8**
comp=Z,26nm,1.1s
KULM LR LR
comp=Z,293nm,19.0s
TIA Tai'an 55.71 323 *e*P **P 23 34 38.3 -1.1**
TIA S S 23 42 14.0 -10
TIA pmax pmax
comp=Z,10.0nm,1.3s
TIA LR LR
comp=Z,410nm,23.0s
TIA LR LR
comp=Z,380nm,21.0s
TIA LR LR
comp=Z,540nm,18.0s
SKNT Sakolnakorn 55.80 296 P **P 23 34 42.3 +1.9**
comp=Z,27nm,1.4s,comp=Z,5μm
CHBT CHBT 55.93 290 P P 23 34 47.2 +5.8
comp=Z,27nm,1.6s
MDJ Mudanjiang 56.14 338 PFAKE 23 34 50.0 +7.7
MDJ LR LR
comp=Z,436nm,21.0s
KHON Khomkaen 56.62 295 P P 23 34 58.0 +12
PSI Prapat 56.89 278 *e*P **P 23 34 47.3 -1.1**
PSI pmax pmax
comp=Z,53nm,1.7s
PSI Prapat 56.89 278 *e*P **P 23 34 47.3 -1.1**
comp=Z,53nm,1.7s
CN2 Changchun 57.10 335 *e*P P 23 34 55.4 +6.3
CN2 *e*S **S 23 42 42.9 +0.5**
CN2 pmax pmax
comp=Z,10.0nm,0.8s
CN2 pmax pmax
comp=Z,200nm,5.0s
CN2 LR LR
comp=Z,300nm,20.0s
CN2 LR LR
comp=Z,500nm,20.0s
CN2 LR LR
comp=Z,400nm,21.0s
TRTT Trang 57.15 284 P P 23 34 56.6 +6.5
comp=Z,17nm,1.2s,comp=Z,480nm
ENH Enshi 57.21 313 *e*P **P 23 34 50.8 +0.6**
comp=Z,50nm,1.0s
ENH LR LR
comp=Z,673nm,20.0s
GYA Guiyang 57.44 307⇑ *i*P **P 23 34 52.5 +0.4**
GYA PP **PP 23 37 03.6 +3.7**
GYA ScP **ScP 23 39 45.4 +1.6**
GYA S **S 23 42 49.0 +1.2**
GYA SS **SS 23 46 40.3 +2.3**
GYA pmax pmax
comp=Z,20nm,0.9s
GYA pmax pmax
comp=Z,130nm,5.6s
GYA LR LR
comp=Z,580nm,18.6s
GYA LR LR
comp=Z,540nm,19.1s
GYA LR LR
comp=Z,550nm,18.8s
COCO West Island 57.62 260 *e*P **P 23 34 52.1 -1.3**
COCO pmax pmax
comp=Z,755nm,2.0s
COCO West Island 57.62 260 *e*P **P 23 34 52.1 -1.3**
comp=Z,755nm,2.0s
GSI Gunungsitoli 57.97 276 *e*P **P 23 34 55.2 -0.7**
comp=Z,46nm,0.8s
PBKT Sadao Pong 58.37 294 P **P 23 35 00.7 +2.1**
comp=Z,20nm,2.0s,comp=Z,1μm
PKDT Phuket 58.47 284 P P 23 35 09.6 +10
BJT Baijiatuau 58.84 326 PFAKE 23 35 10.0 +8.6
BJT LR LR
comp=Z,573nm,22.0s
BJI Beijing 58.85 326 P **P 23 35 03.0 +1.5**
BJI S **S 23 43 09.0 +3.6**
BJI pmax pmax
comp=Z,6.0nm,0.8s
BJI pmax pmax
comp=Z,180nm,7.0s
BJI LR LR
comp=Z,430nm,19.0s
BJI LR LR
comp=Z,290nm,19.5s
BJI LR LR
comp=Z,480nm,23.9s
SRDT SRDT 59.38 291 P **P 23 35 07.4 +1.8**
comp=Z,122nm,1.0s,comp=Z,3μm
KLR Kul'dur 59.45 342 LR LR 00 01 50.8
comp=Z,208nm,18.4s,baz=144,slow=37
KLR Kul'dur 59.45 342*c i*P **P 23 35 04.7 -0.8**
XAN Xi'an 59.67 316 P **P 23 35 07.3 -0.1**
XAN PP **PP 23 37 18.3 -1.1**
XAN S **S 23 43 14.3 -2.1**
XAN pmax pmax
comp=Z,7.0nm,0.7s
XAN pmax pmax
comp=Z,210nm,8.5s
XAN LR LR
comp=Z,410nm,22.7s
XAN LR LR
comp=Z,370nm,22.0s
XAN LR LR
comp=Z,540nm,21.0s
PET Petropavlovsk 59.71 2 *e*P **P 23 35 05.7 -1.4**
PET *e*S **S 23 43 13.2 -2.8**
PET *e*SS **SS 23 47 13.6 +1.2**
PET pmax pmax
comp=Z,200nm,17.8s
PET Petropavlovsk 59.71 2 PFAKE 23 35 20.0 +13
PET LR LR
comp=Z,664nm,22.0s
PETK Petropavlovsk- 59.76 2 P **P 23 35 08.4 +0.9**
comp=Z,11nm,0.8s,baz=142,slow=7.5,SNR=4.7
PETK LR LR 23 56 48.0
comp=Z,472nm,21.6s,baz=176,slow=32

KMI Kunming 60.02 304 P **P 23 35 11.6 +1.4**
KMI pP pP 23 35 16.8 -2.2
KMI S **S 23 43 21.1 -0.4**
KMI sS sS 23 43 30.6 -5.5
KMI pmax pmax
comp=Z,31nm,1.1s
KMI pmax pmax
comp=Z,270nm,6.3s
KMI LR LR
comp=Z,260nm,15.2s
KMI LR LR
comp=Z,270nm,24.8s
KMI LR LR
comp=Z,580nm,22.4s
CMAR Chiang Mai Arr 60.81 295 P **P 23 35 16.6 +1.2**
comp=Z,16nm,0.8s,baz=121,slow=5.1,SNR=83
CMAR LR LR 00 00 03.9
comp=Z,248nm,21.3s,baz=112,slow=34
CMAR PKP2bc 00 04 43.5
comp=Z,0.7nm,0.4s,baz=287,slow=5.0,SNR=6.3
CMMT Chiang Mai 60.93 296 P **P 23 35 17.5 +1.3**
comp=Z,27nm,1.3s,comp=Z,534nm
CHTO Chiang Mai 60.93 296 P **P 23 35 17.5 +1.3**
comp=Z,92nm,1.8s,comp=Z,2μm
CHTO Chiang Mai 60.93 296 PFAKE 23 35 30.0 +14
CHTO LR LR
comp=Z,422nm,20.0s
NKL Nikolayevsk 61.00 350 *e*P P 23 35 21.2 +5.2
NKL pmax pmax
comp=Z,15nm,0.9s
CMAI Chiengmai2 61.21 297 P **P 23 35 19.6 +1.3**
comp=Z,58nm,1.1s,comp=Z,5μm
HHC Hu-ho-hao-te 62.03 324 *e*P **P 23 35 26.3 +2.9**
HHC S **S 23 43 52.1 +5.7**
HHC ScS **SKSac 23 45 12.3 -1.3**
HHC pmax pmax
comp=Z,37nm,1.2s
HHC pmax pmax
comp=Z,240nm,6.5s
HHC LR LR
comp=Z,1μm,16.2s
HHC LR LR
comp=Z,1μm,16.7s
HHC LR LR
comp=Z,1μm,16.4s
BTO Baotou 62.80 323 *e*P P 23 35 33.8 +5.3
HIA Hailar 63.83 335 PFAKE 23 35 50.0 +15
HIA LR LR
comp=Z,388nm,20.0s
TAOE Nuku Hiva Isla 64.11 97 *e*LR LR 23 54 56.7
comp=Z,837nm,21.8s
LZH Lanzhou 64.28 315 *e*P **P 23 35 40.8 +2.3**
LZH pP sP 23 35 49.8 -1.0
LZH sP pP 23 35 51.6 +4.2
LZH PcP **PcP 23 36 12.3 -0.8**
LZH PP **PP 23 38 04.8 +4.6**
LZH *e*S **S 23 44 17.4 +2.6**
LZH sS sS 23 44 27.0 -2.6
LZH SS **SS 23 48 29.1 +4.1**
LZH pmax pmax
comp=Z,27nm,1.0s
LZH pmax pmax
comp=Z,220nm,4.9s
LZH LR LR
comp=Z,400nm,15.9s
LZH LR LR
comp=Z,560nm,17.9s
LZH LR LR
comp=Z,560nm,18.0s
MA2 Magadan 66.29 358 *e*P **P 23 35 51.1 +0.3**
MA2 pmax pmax
comp=Z,46nm,0.6s
MA2 MLR MLR
comp=Z,393nm,19.0s
MA2 Magadan 66.29 358 *e*P **P 23 35 51.1 +0.3**
comp=Z,46nm,0.6s
MA2 LR LR
comp=Z,393nm,19.0s
CASY Casey 66.77 198 *e*P **P 23 35 53.5 -0.3**
comp=Z,41nm,1.4s
CASY LR LR
comp=Z,202nm,20.0s
GTA Gaotai 68.70 317 *e*P **P 23 36 07.8 +1.1**
GTA pP pP 23 36 13.8 -1.8
GTA sP sP 23 36 17.1 -1.9
GTA S **S 23 45 08.3 0.0**
GTA sS sS 23 45 20.1 -3.0
GTA pmax pmax
comp=Z,4.0nm,0.7s
GTA pmax pmax
comp=Z,200nm,5.2s
GTA LR LR
comp=Z,190nm,15.4s
GTA LR LR
comp=Z,240nm,19.2s
GTA LR LR
comp=Z,290nm,18.5s
RKT Rikitea 68.90 112 *e*LQ LQ 23 54 11.6
comp=Z,786nm,31.0s
RKT *e*LR LR 23 57 10.9
comp=Z,1μm,23.5s,baz=280
ULN Ulaanbaatar 68.93 328 *e*P **P 23 36 08.4 +0.5**
ULN pmax pmax
comp=Z,36nm,1.5s
ULN MLR MLR
comp=Z,338nm,19.0s
ULN Ulaanbaatar 68.93 328 *e*P **P 23 36 08.4 +0.5**
comp=Z,36nm,1.5s
ULN LR LR
comp=Z,338nm,19.0s
SONM Songino Array 69.26 327 P **P 23 36 10.2 +0.2**
comp=Z,6.0nm,0.8s,baz=140,slow=6.0,SNR=43
SONM PKP2bc 00 04 20.0
comp=Z,0.1nm,0.3s,baz=348,slow=4.7,SNR=2.5
SONM LR LR 00 04 52.4
comp=Z,298nm,21.4s,baz=119,slow=34
SEY Seymchan 69.60 359⇑ *e*P **P 23 36 10.3 -1.2**
VNDA Vanda 70.73 178 P **P 23 36 17.1 -1.2**
comp=Z,2.2nm,0.8s,baz=322,slow=5.7,SNR=16
VNDA LR LR 00 04 23.8
comp=Z,245nm,18.1s,baz=4.5,slow=33
LSA Lhasa 71.27 304 P **P 23 36 24.0 +0.9**
LSA pmax pmax
comp=Z,23nm,1.1s
LSA Lhasa 71.27 304 *e*P **P 23 36 23.2 +0.1**
LSA pmax pmax
comp=Z,61nm,1.4s
LSA MLR MLR
comp=Z,511nm,22.0s
LSA Lhasa 71.27 304 *e*P **P 23 36 23.2 +0.1**
comp=Z,61nm,1.4s
LSA LR LR
comp=Z,511nm,22.0s
YAK Yakutsk 71.43 348 LR LR 00 05 50.4
comp=Z,53nm,21.1s,baz=150,slow=34
YAK Yakutsk 71.43 348 *e*P P 23 36 31.9 +9.2
YAK *e**PP **PcP 23 36 43.5 +1.4**
YAK *e* 23 36 50.3
YAK *e* 23 39 05.8
YAK *e**SS SKiKP 23 46 12.3 +12
YAK pmax pmax
comp=Z,20nm,1.3s
YAK pmax pmax
comp=N,5.0nm,0.9s
YAK pmax pmax
comp=Z,124nm,4.4s
YAK pmax pmax
comp=N,21nm,2.2s
YAK pmax pmax
comp=E,44nm,3.2s
ZAK Zakamensk 72.42 328 *e*P **P 23 36 29.2 +0.1**
ZAK pmax pmax
comp=Z,9.0nm,1.0s
BOD Bodaibo 72.51 338 *e*P **P 23 36 27.6 -1.7**
BOD pmax pmax
comp=Z,9.0nm,1.4s
MIR Mirnyy 72.88 202 *e*P **P 23 36 35.0 +3.6**
MIR pmax pmax
comp=Z,8.0nm,1.4s
TLY Talaya 72.98 329 LR LR 00 08 25.3
comp=Z,174nm,19.9s,baz=120,slow=36
TLY Talaya 72.98 329 *e*P **P 23 36 32.3 0.0**
TLY *e*S **S 23 45 49.4 -8.0**
TLY *e* 23 46 49.2
TLY pmax pmax
comp=Z,6.0nm,0.9s

TLY MLR MLR
comp=Z,187nm,15.0s
BILL Bilibino 75.12 4*c i*P **P 23 36 44.6 +0.2**
BILL *e*S **S 23 46 24.7 +4.0**
BILL pmax pmax
comp=Z,24nm,1.0s
BILL MLR MLR
comp=Z,491nm,18.0s
BILL Bilibino 75.12 4 *e*P **P 23 36 45.0 +0.6**
comp=Z,19nm,0.9s
BILL LR LR
comp=Z,684nm,21.0s
PKIN Phulchoki 75.45 301 *e*P **P 23 36 48.7 +1.2**
comp=Z,46nm,1.0s
KKN Kakani 75.61 301 *e*P **P 23 36 48.5 +0.2**
comp=Z,71nm,1.0s
GKN Gorkha 76.21 301 *e*P **P 23 36 51.8 +0.1**
comp=Z,90nm,1.0s
KDAK Kodiak Island 76.98 26 PFAKE 23 37 10.0 +15
KDAK LR LR
comp=Z,512nm,19.0s
KOLN Koldanda 77.04 300 *e*P **P 23 36 56.2 -0.3**
comp=Z,37nm,0.8s
PYUN Piuthan 77.64 301 *e*P **P 23 36 59.5 -0.3**
comp=Z,81nm,1.0s
WMQ Urumqi 78.78 317 *e*P **P 23 37 08.0 +2.3**
WMQ pP pP 23 37 13.3 -1.5
WMQ sP sP 23 37 15.5 -2.6
WMQ S **S 23 47 01.4 -0.4**
WMQ pmax pmax
comp=Z,7.0nm,1.0s
WMQ pmax pmax
comp=Z,53nm,3.8s
WMQ LR LR
comp=Z,130nm,22.4s
WMQ LR LR
comp=Z,61nm,21.0s
WMQ LR LR
comp=Z,82nm,25.2s
TTA Tatalina 78.84 21 *e*P **P 23 37 06.6 +1.1**
TTA pmax pmax
comp=Z,15nm,1.0s
TTA Tatalina 78.84 21 *e*P **P 23 37 06.6 +1.1**
comp=Z,15nm,1.0s
HYB Hyderabad 79.32 289 *i* P **P 23 37 09.0 -0.1**
RC01 Rabbit Creek A 80.08 24 *e*P **P 23 37 12.8 +0.5**
comp=Z,25nm,1.0s
PPLA Purkeypile 80.19 22 *e*P **P 23 37 12.9 -0.1**
comp=Z,54nm,1.5s
TIXI Tiksi 80.22 352 *i* P **P 23 37 12.5 -0.2**
TIXI pmax pmax
comp=Z,6.0nm,1.7s
TIXI Tiksi 80.22 352 *e*P **P 23 37 14.2 +1.4**
comp=Z,11nm,1.4s
TIXI LR LR
comp=Z,353nm,19.0s
CAST Castle Rocks 80.54 21 *e*P **P 23 37 14.6 -0.1**
comp=Z,21nm,0.9s
PMR Palmer 80.61 24 *e*P **P 23 37 15.2 +0.2**
PMR pmax pmax
comp=Z,25nm,1.0s
PMR Palmer 80.61 24 *e*P **P 23 37 15.2 +0.2**
comp=Z,25nm,1.0s
KTH Kantishna Hill 81.04 22 *e*P **P 23 37 17.3 -0.1**
comp=Z,13nm,0.7s
SML Sawmill 81.04 24 *e*P **P 23 37 18.1 +0.6**
SML pmax pmax
comp=Z,41nm,0.9s
SML Sawmill 81.04 24 *e*P **P 23 37 18.1 +0.6**
comp=Z,41nm,0.9s
TRF Thorofare Moun 81.22 22 *e*P **P 23 37 17.9 -0.6**
comp=Z,13nm,0.7s
BPAW Bear Paw Mtn. 81.34 21 *e*P **P 23 37 18.6 -0.4**
comp=Z,12nm,1.1s
SCM Sheep Creek Mo 81.46 24 *e*P **P 23 37 20.4 +0.7**
SCM pmax pmax
comp=Z,48nm,1.1s
SCM Sheep Creek Mo 81.46 24 *e*P **P 23 37 20.4 +0.7**
comp=Z,48nm,1.1s
RND Reindeer 81.72 22 *e*P **P 23 37 20.9 -0.1**
RND pmax pmax
comp=Z,34nm,1.1s
RND Reindeer 81.72 22 *e*P **P 23 37 20.9 -0.1**
comp=Z,34nm,1.1s
DIV Divide 81.73 25 *e*P **P 23 37 22.3 +1.2**
comp=Z,24nm,1.0s
KLU Klutina 81.85 25 *e*P **P 23 37 22.8 +1.0**
comp=Z,33nm,0.9s
MCK McKinley 81.87 22 *e*P **P 23 37 21.5 -0.3**
MCK pmax pmax
comp=Z,37nm,0.8s
MCK McKinley 81.87 22 *e*P **P 23 37 21.5 -0.3**
comp=Z,37nm,0.8s
MLY Manley 81.97 20 *e*P **P 23 37 22.6 +0.3**
comp=Z,61nm,1.8s
BMRM Bremner River 82.14 25 *e*P **P 23 37 24.3 +1.0**
comp=Z,53nm,1.3s
WRH Wood River Hil 82.59 21 *e*P **P 23 37 25.0 -0.5**
comp=Z,30nm,1.2s
NDI New Delhi 82.73 300 *e*P P 23 37 20.0 -7.0
PAX Paxson 82.79 23 *e*P **P 23 37 27.3 +0.6**
PAX pmax pmax
comp=Z,18nm,1.3s
PAX Paxson 82.79 23 *e*P **P 23 37 27.2 +0.6**
comp=Z,18nm,1.3s
CCB Clear Creek Bu 82.79 21 *e*P **P 23 37 25.6 -0.9**
comp=Z,26nm,1.2s
COLA College 82.90 21 *e*P **P 23 37 26.7 -0.3**
COLA pmax pmax
comp=Z,26nm,0.7s
COLA MLR MLR
comp=Z,790nm,22.0s
COLA College 82.90 21 *e*P **P 23 37 26.7 -0.3**
comp=Z,26nm,0.7s
COLA LR LR
comp=Z,790nm,22.0s
QSPA South Pole Qui 83.13 180 *e*P **P 23 37 28.4 -0.1**
comp=Z,554nm,1.6s
QSPA LR LR
comp=Z,648nm,20.0s
BALM Baldy 83.14 26 *e*P **P 23 37 29.3 +0.8**
BALM pmax pmax
comp=Z,16nm,0.7s
BALM Baldy 83.14 26 *e*P **P 23 37 29.3 +0.8**
comp=Z,16nm,0.7s
ILAR Eielson Array 83.19 21 P **P 23 37 27.8 -0.8**
comp=Z,9.7nm,0.9s,baz=251,slow=5.4,SNR=66
ILAR LR LR 00 13 01.9
comp=Z,904nm,19.4s,baz=247,slow=34
MKAR Makanchi Array 83.36 319 P **P 23 37 30.0 +0.1**
comp=Z,5.9nm,0.8s,baz=103,slow=5.9,SNR=49
MKAR PKKPbc **PKKPbc 23 55 48.6 -2.8**
comp=Z,0.1nm,0.3s,baz=276,slow=1.1,SNR=3.8
MKAR LR LR 00 16 25.6
comp=Z,271nm,19.2s,baz=102,slow=37
MKAR Makanchi Array 83.36 319 P **P 23 37 30.0 +0.1**
COLD Coldfoot 83.43 19 *e*P **P 23 37 29.2 -0.6**
comp=Z,27nm,1.3s
MENT Mentasta 83.47 24 *e*P **P 23 37 31.1 +1.0**
comp=Z,10nm,0.8s
MAKZ Makanchi 83.57 319 *e*P **P 23 37 30.7 -0.3**
MAKZ pmax pmax
comp=Z,26nm,1.0s
MAKZ Makanchi 83.57 319 *e*P **P 23 37 30.7 -0.3**
comp=Z,26nm,1.0s
DOT Dot Lake 83.68 23 *e*P **P 23 37 31.7 +0.5**
comp=Z,65nm,1.0s
ZALV Zalesovo Beam 84.11 326 P **P 23 37 32.1 -1.4**
comp=Z,3.2nm,0.6s,baz=115,slow=4.9,SNR=15
ZALV LR LR 00 16 55.8
comp=Z,188nm,20.1s,baz=70,slow=37
MAW Mawson 84.58 203 P **P 23 37 34.4 -1.3**
comp=Z,7.7nm,0.8s,baz=95,slow=8.1,SNR=10
MAW LR LR 00 12 19.8
comp=Z,365nm,19.0s,baz=68,slow=34
MAW Mawson 84.58 203 P **P 23 37 36.4 +0.7**
baz=84,SNR=8.1
NVS Novosibirsk 85.28 327 *e*P **P 23 37 39.9 +0.5**
NVS pmax pmax
comp=E,26nm,1.2s
EGAK Eagle 85.33 23 *e*P **P 23 37 40.4 +0.9**
comp=E,33nm,1.0s
EGAK LR LR
comp=Z,1μm,22.0s
SKAG Skagway 85.68 29 *e*P **P 23 37 41.9 +0.6**
comp=Z,5.4nm,0.8s
DAWY Dawson 85.71 24 *e*P **P 23 37 42.6 +1.2**

KSH Kashi 85.99 310 P **P 23 37 45.9 +2.4**
KSH *es*P sP 23 37 54.9 -1.1
KSH *e*PP **PP 23 41 08.0 +4.2**
KSH SKS **S 23 48 08.3 -7.6**
KSH S **SKKSac 23 48 17.6 +2.4**
KSH SS **SS 23 54 00.0 +5.7**
KSH pmax pmax
comp=Z,14nm,1.0s
KSH pmax pmax
comp=Z,180nm,3.4s
KSH LR LR
comp=Z,370nm,19.0s
KSH LR LR
comp=Z,130nm,13.0s
KSH LR LR
comp=Z,240nm,13.8s
KURK Kurchatov 86.78 322 *i* P **P 23 37 46.2 -0.7**
KURK pmax pmax
comp=Z,2.0nm,1.0s
KURK Kurchatov 86.78 322 *e*P **P 23 37 47.4 +0.5**
comp=Z,12nm,1.2s
KURK LR LR
comp=Z,599nm,21.0s
TKM2 Tokmak 2 86.99 314 *e*P **P 23 37 44.9 -3.5**
TKM2 pmax pmax
comp=Z,4.0nm,0.6s
TKM2 MLR MLR
comp=Z,169nm,19.0s
TKM2 Tokmak 2 86.99 314 *e*P **P 23 37 44.9 -3.5**
comp=Z,4.5nm,0.6s
TKM2 LR LR
comp=Z,169nm,19.0s
FRU Bishkek 87.67 313 *e*P **P 23 37 51.0 -0.5**
FRU *e* 23 38 12.0
AAK Ala-Archa 87.72 313 *e*P **P 23 37 51.4 -0.5**
AAK pmax pmax
comp=Z,4.0nm,1.0s
AAK Ala-Archa 87.72 313 *e*P **P 23 37 52.0 +0.1**
comp=Z,5.5nm,0.9s
AAK LR LR
comp=Z,278nm,22.0s
DLBC Dease Lake 87.95 31 *e*P **P 23 37 54.2 +1.6**
comp=Z,44nm,1.7s
EKS2 Erkin-Say 88.25 313 *e*P **P 23 37 54.6 +0.3**
EKS2 pmax pmax
comp=Z,7.0nm,1.0s
EKS2 MLR MLR
comp=Z,322nm,21.0s
EKS2 Erkin-Say 88.25 313 *e*P **P 23 37 54.6 +0.3**
comp=Z,6.6nm,1.0s
EKS2 LR LR
comp=Z,322nm,21.0s
NRIK Noril'sk 88.62 341 P **P 23 37 54.0 -1.3**
comp=Z,4.4nm,0.9s,baz=108,slow=3.7,SNR=8.2
NRIK LR LR 00 19 50.2
comp=Z,183nm,18.9s,baz=114,slow=37
NLWA Neilton Lookou 88.94 42 PFAKE 23 38 10.0 +13
NLWA LR LR
comp=Z,744nm,20.0s
INK Inuvik 89.54 21 *e*P **P 23 37 59.9 +0.3**
INK Inuvik 89.54 21 *e*P **P 23 37 59.9 +0.3**
NVAR Mina Array Bea 91.54 52 P **P 23 38 10.8 +0.8**
comp=Z,3.7nm,0.8s,baz=252,slow=7.4,SNR=13
NVAR LR LR 00 15 12.1
comp=Z,556nm,19.1s,baz=283,slow=33
HAWA Hanford 91.71 44 PFAKE 23 38 20.0 +10
HAWA LR LR
comp=Z,860nm,20.0s
WVOR Wild Horse Val 91.81 48 PFAKE 23 38 20.0 +9.0
WVOR LR LR
comp=Z,582nm,20.0s
DAC Darwin (Calif) 91.83 54 *e*P **P 23 38 12.2 +0.9**
DAC pmax pmax
comp=Z,17nm,1.4s
DAC Darwin (Calif) 91.83 54 *e*P **P 23 38 12.2 +0.9**
comp=Z,17nm,1.4s
BRVK Borovoye 92.31 323 *e*P **P 23 38 12.3 -0.6**
BRVK pmax pmax
comp=Z,1.0nm,0.8s
BRVK Borovoye 92.31 323 PFAKE 23 38 20.0 +7.1
BRVK LR LR
comp=Z,323nm,20.0s
PFO Pinyon Flats O 92.44 57 PFAKE 23 38 30.0 +16
PFO LR LR
comp=Z,1μm,19.0s
SYO Syowa Base 92.51 199⇑ *e*P **P 23 38 11.4 -2.1**
SYO Syowa Base 92.51 199⇓ *e*X pP 23 38 21.2 -1.5
BMO Blue Mountains 93.06 45 PFAKE 23 38 30.0 +13
BMO LR LR
comp=Z,686nm,21.0s
NEW Newport 93.57 42 PFAKE 23 38 30.0 +11
NEW LR LR
comp=Z,1μm,21.0s
R11A Troy Canyon, C 93.65 52 *e*P **P 23 38 20.9 +1.2**
comp=Z,16nm,1.5s
SHPR Sheep Range 93.81 54 *e*P **P 23 38 22.1 +1.7**
comp=Z,18nm,1.6s
HLID Hailey 95.01 47 PFAKE 23 38 40.0 +14
HLID LR LR
comp=Z,855nm,20.0s
DUG Dugway, Tooele 95.95 50 PFAKE 23 38 40.0 +10
DUG LR LR
comp=Z,468nm,22.0s
YKA Yellowknife Ar 96.15 28 P **P 23 38 30.6 +0.4**
comp=Z,5.9nm,0.8s,baz=266,slow=4.6,SNR=62
YKA PKKPbc **PKKPbc 23 55 15.7 -4.1**
comp=Z,0.1nm,0.5s,baz=82,slow=3.1,SNR=5.4
MTPU Mount Pierson 96.30 53 *e*P **P 23 38 30.1 -2.0**
comp=Z,13nm,1.1s
WUAZ Wupatki 96.79 55 PFAKE 23 38 50.0 +16
WUAZ LR LR
comp=Z,731nm,19.0s
HWUT Hardware Ranch 96.98 49 *e*P **P 23 38 35.9 +1.0**
comp=Z,2.7nm,0.7s
HWUT LR LR
comp=Z,707nm,19.0s
TUC Tucson 97.08 58 PFAKE 23 38 50.0 +15
TUC LR LR
comp=Z,450nm,20.0s
BOZ Bozeman (W) 97.12 45 PFAKE 23 38 50.0 +15
BOZ LR LR
comp=Z,829nm,21.0s
AHID Auburn Hatcher 97.38 48 PFAKE 23 38 50.0 +13
AHID LR LR
comp=Z,435nm,19.0s
LKWY Lake 97.95 46 PFAKE 23 38 50.0 +11
LKWY LR LR
comp=Z,878nm,19.0s
EGMT Eagleton 98.48 43 PFAKE 23 38 50.0 +8.7
EGMT LR LR
comp=Z,632nm,21.0s
BW06 Boulder Array 98.52 48 PFAKE 23 38 50.0 +8.2
BW06 LR LR
comp=Z,544nm,19.0s
PDAR Pinedale Array 98.52 48 P **P 23 38 41.8 0.0**
comp=Z,1.5nm,0.8s,baz=222,slow=2.0,SNR=11
PDAR LR LR 00 19 31.0
comp=Z,284nm,19.3s,baz=266,slow=33
RLMT Red Lodge 98.77 45 PFAKE 23 38 50.0 +7.1
RLMT LR LR
comp=Z,633nm,20.0s
MVCO Mesa Verde 99.18 53 PFAKE 23 39 00.0 +15
MVCO LR LR
comp=Z,521nm,20.0s
ARU Arti 99.28 326 PFAKE 23 39 00.0 +15
ARU LR LR
comp=Z,362nm,20.0s
GEYT Alibeck 99.67 307 LR LR 00 25 25.6
comp=Z,302nm,21.7s,baz=95,slow=36
ANMO Albuquerque 100.79 56 PFAKE 23 39 00.0 +8.0
ANMO LR LR
comp=Z,361nm,20.0s
LAO LASA Array 100.89 44 PFAKE 23 39 00.0 +8.0
LAO LR LR
comp=Z,530nm,20.0s
ISCO Idaho Springs 101.47 51 PFAKE 23 39 10.0 +15
ISCO LR LR
comp=Z,526nm,20.0s
SDCO Great Sand Dun 101.57 53 PFAKE 23 39 10.0 +14
SDCO LR LR
comp=Z,764nm,20.0s
DGMT Dagmar 102.18 42 PFAKE 23 39 10.0 +12
DGMT LR LR
comp=Z,774nm,20.0s
OGNE Ogallala 104.16 50 PFAKE 23 39 20.0 +13
OGNE LR LR
comp=Z,658nm,20.0s
KBS Kingsbay 105.65 353 PFAKE 23 43 40.0
KBS LR LR
comp=Z,342nm,19.0s
JCT Junction City 106.44 60 PFAKE 23 43 40.0
JCT LR LR
comp=Z,815nm,20.0s
WMOK Wichita Mounta 107.10 56 PFAKE 23 43 40.0
WMOK LR LR
comp=Z,658nm,20.0s
LVZ Lovozero 107.45 340 PFAKE 23 43 40.0
LVZ LR LR
comp=Z,234nm,21.0s
ECSD EROS Data Cent 107.90 46 PFAKE 23 43 40.0
ECSD LR LR
comp=Z,682nm,21.0s
KSU1 Kansas State U 108.47 51 PFAKE 23 43 40.0
KSU1 LR LR
comp=Z,541nm,21.0s
KEV Kevo 108.92 343 PFAKE 23 43 40.0
KEV LR LR
comp=Z,214nm,19.0s
ARCES ARCESS Array B 109.47 343 PKiKP **PKiKP 23 43 31.4 -1.2**
comp=Z,1.8nm,1.0s,baz=71,slow=5.3,SNR=3.9
ARCES PKKPbc **PKKPbc 23 54 37.4 -3.1**
comp=Z,1.4nm,0.9s,baz=289,slow=5.6,SNR=4.8
GNI Garni 109.93 310 PFAKE 23 43 50.0
GNI LR LR
comp=Z,176nm,20.0s
SCIA State Center 110.64 48 PFAKE 23 43 50.0
SCIA LR LR
comp=Z,808nm,21.0s
EYMN Ely 110.66 41 PFAKE 23 43 50.0
EYMN LR LR
comp=Z,903nm,21.0s
NATX Nacogdoches 110.77 59 PFAKE 23 43 50.0
NATX LR LR
comp=Z,872nm,20.0s
KIV Kislovodsk 110.81 314 *i* PKIKP **PKiKP 23 43 34.4 -1.6**
KIV *e* 23 44 12.4
KIV *e* 23 50 10.5
KIV *e*PS **PS 23 53 43.9 -0.9**
KIV *e*SS SS 23 59 41.6 -0.6
KIV pmax pmax
comp=Z,3.0nm,1.0s
KIV Kislovodsk 110.81 314 PFAKE 23 43 50.0
KIV LR LR
comp=Z,185nm,22.0s
MIAR Mount Ida 111.39 56 PFAKE 23 43 50.0
MIAR LR LR
comp=Z,521nm,20.0s
OBN Obninsk 111.67 327 PFAKE 23 43 50.0
OBN LR LR
comp=Z,262nm,20.0s
JFWS Jewell Farm 112.61 46 PFAKE 23 43 50.0
JFWS LR LR
comp=Z,638nm,21.0s
COWI Conover 112.66 43 PFAKE 23 43 50.0
COWI LR LR
comp=Z,889nm,19.0s
HDIL Hopedale 113.80 49 PFAKE 23 43 50.0
HDIL LR LR
comp=Z,898nm,21.0s
FINES FINESS Array B 113.84 336*c i*PKIKP **PKiKP 23 43 43.2 +2.1**
FINES pmax pmax
comp=Z,2.0nm,0.9s
EFI East Falkland 115.15 158 PFAKE 23 44 00.0 +16
EFI LR LR
comp=Z,306nm,20.0s
PLCA Paso Flores 116.78 143 PKP **PKPdf 23 43 44.7 -2.9**
comp=Z,1.0nm,0.5s,baz=352,slow=2.2,SNR=3.8
TEIG Tepich 117.29 71 PFAKE 23 44 00.0 +11
TEIG LR LR
comp=Z,318nm,22.0s
BRAL Brewton 117.29 59 PFAKE 23 44 00.0 +11
BRAL LR LR
comp=Z,744nm,21.0s
SFJD Kangerlussuaq 117.41 11 PFAKE 23 44 00.0 +12
SFJD LR LR
comp=Z,335nm,19.0s
AAM Ann Arbor 117.48 46 PFAKE 23 44 00.0 +11
AAM LR LR
comp=Z,461nm,19.0s
AKASG Malin Array Be 117.48 324 PKP **PKPdf 23 43 47.3 -1.1**
comp=Z,1.1nm,0.6s,baz=64,slow=1.6,SNR=4.2
KMBO Kilima Mbogo 117.48 265 PFAKE 23 44 00.0 +10
KMBO LR LR
comp=Z,290nm,20.0s
KIEV Kiev 117.49 324 PFAKE 23 44 00.0 +12
KIEV LR LR
comp=Z,313nm,21.0s
HOPE Hope Point 118.33 172 PFAKE 23 44 00.0 +10
HOPE LR LR
comp=Z,318nm,20.0s
BRTR Keskin Array B 118.36 312 PKP **PKPdf 23 43 49.6 -1.1**
comp=Z,0.7nm,0.7s,baz=100,slow=3.8,SNR=7.0
BRTR PKKPbc **PKKPbc 23 54 09.3 -0.2**
comp=Z,0.6nm,0.8s,baz=222,slow=2.9,SNR=7.6
BRTR Keskin Array B 118.36 312*c i*PKIKP **PKPdf 23 43 50.0 -0.7**
BRTR pmax pmax
comp=Z,1.0nm,0.9s
ACSO Alum Creek Sta 118.56 48 PFAKE 23 44 00.0 +9.1
ACSO LR LR
comp=Z,591nm,19.0s
ANTO Ankara 118.95 312 PFAKE 23 44 00.0 +8.3
ANTO LR LR
comp=Z,10.0nm,20.0s
SORM Soroca 119.07 322⇑ *i*P **PKPdf 23 43 50.8 -0.8**
SORM Soroca 119.07 322⇑ PKIKP **PKPdf 23 43 50.8 -0.8**
CSS Mathiatis 119.80 306 PFAKE 23 44 00.0 +6.6
CSS LR LR
comp=Z,49nm,20.0s
GOGA Godfrey 119.86 55 PFAKE 23 44 10.0 +16
GOGA LR LR
comp=Z,527nm,20.0s
BOSA Boshof 120.20 231 PKP **PKPdf 23 43 53.8 -0.7**
comp=Z,2.1nm,0.7s,baz=78,slow=0.9,SNR=7.3
JTS JuntasAbangare 120.58 82 PFAKE 23 44 10.0 +15
JTS LR LR
comp=Z,374nm,20.0s
KONO Kongsberg 121.17 340 PFAKE 23 44 10.0 +15
KONO LR LR
comp=Z,347nm,21.0s
BURAR Bucovina Array 121.19 323⇓ *i*P **PKPdf 23 43 56.8 +1.0**
BURAR Bucovina Array 121.19 323⇓ PKIKP **PKPdf 23 43 56.8 +1.0**
ISP Isparta 121.23 310 PFAKE 23 44 10.0 +14
ISP LR LR
comp=Z,158nm,21.0s
BLA Blacksburg 121.33 50 PFAKE 23 44 10.0 +14
BLA LR LR
comp=Z,769nm,20.0s
SCHQ Schefferville 121.59 27 PKP **PKPdf 23 43 53.6 -2.6**
comp=Z,2.6nm,0.8s,baz=172,slow=4.0,SNR=4.0
MLR Muntele Rosu 121.68 320⇓ *i*P **PKPdf 23 43 57.3 +0.4**
MLR Muntele Rosu 121.68 320⇓ PKIKP **PKPdf 23 43 57.3 +0.4**
KWP Kalwaria Pacla 121.68 326⇑ *i*P **PKPdf 23 43 53.8 -2.8**
KWP Kalwaria Pacla 121.68 326⇑ PKIKP **PKPdf 23 43 53.8 -2.8**
UZH Uzhgorod 122.42 325 *e*PKIKP **PKPdf 23 43 54.4 -3.6**
UZH *e* 23 44 02.0
ARR Arges 122.56 320⇓ *i*P **PKPdf 23 43 59.6 +1.1**
NHSC New Hope 122.62 55 PFAKE 23 44 10.0 +11
NHSC LR LR
comp=Z,807nm,19.0s
HUMR Humele 122.71 319⇓ *i*P **PKPdf 23 43 58.5 -0.2**
LONY Lake Ozonia 122.79 40 PFAKE 23 44 10.0 +11
LONY LR LR
comp=Z,1μm,19.0s
LSZ Lusaka 123.00 247 PFAKE 23 44 10.0 +10
LSZ LR LR
comp=Z,370nm,20.0s
DRGR 123.09 323⇓ *i*P **PKPdf 23 43 59.3 -0.2**
DRGR 123.09 323⇓ PKIKP **PKPdf 23 43 59.3 -0.2**
CBN Corbin Frederi 123.32 48 PFAKE 23 44 10.0 +10
CBN LR LR
comp=Z,576nm,20.0s
OKC Ostrava-Krasne 124.06 328 AMS AMS 00 46 50.0
comp=Z,200nm,15.3s
PSZ Piszkesteto 124.16 325 PFAKE 23 44 10.0 +8.5
PSZ LR LR
comp=Z,277nm,20.0s
BZS Buzias 124.32 322⇓ *i*P **PKPdf 23 44 01.8 0.0**
BZS Buzias 124.32 322⇓ PKIKP **PKPdf 23 44 01.8 0.0**
MORC Moravsky Berou 124.41 328⇑ *i*P **PKPdf 23 44 01.4 -0.5**
MORC Moravsky Berou 124.41 328⇑ PKIKP **PKPdf 23 44 01.4 -0.5**
MDVR Moldovita 124.67 321⇓ *i*P **PKPdf 23 44 03.2 +0.7**
DPC Dobruska-Polom 124.70 329 AMS AMS 00 38 10.0
comp=Z,200nm,15.5s
UPC Upice 124.77 329 AMS AMS 00 41 20.0
comp=Z,300nm,17.5s
NNA Nana 125.06 110 PFAKE 23 44 20.0 +16
NNA LR LR
comp=Z,125nm,20.0s
PVCC Panska Ves 125.47 330 AMS AMS 00 47 20.0
comp=Z,300nm,16.6s
SANT Santorini 125.53 310 PFAKE 23 44 20.0 +16
SANT LR LR
comp=Z,102nm,21.0s
BRG Berggiesshubel 125.56 331 *e*PKP **PKPdf 23 44 04.2 +0.2**
comp=Z,6.7nm,1.2s
BRG PP **PP 23 45 53.0 -1.9**
comp=N,152nm,15.7s
comp=E,141nm,15.1s
comp=Z,284nm,16.2s
BRG Berggiesshubel 125.56 331 *e*PKIKP **PKPdf 23 44 04.2 +0.2**
BRG 23 45 53.0
BRG pmax pmax
comp=Z,8.0nm,1.2s
BRG MLR MLR
comp=E,152nm,15.1s
BRG MLR MLR
comp=Z,141nm,16.2s
BCIP Isla Barro Col 125.59 84 PFAKE 23 44 20.0 +15
BCIP LR LR
comp=Z,318nm,19.0s
CLL Collm 125.73 332 *e*PKPdf **PKPdf 23 44 04.0 -0.3**
CLL *e* 23 44 13.0
CLL *e* 23 44 40.0
CLL *e*PP PP 23 45 48.0 -8.0
CLL *e* 23 48 47.0
CLL *e*PS **PS 23 55 54.0 -4.5**
CLL *e*PPS PPS 23 57 20.0
CLL *e*SS SS 00 02 55.0 +1.0
CLL Lm MLR 00 42 00.0
comp=Z,200nm,21.0s
CLL Collm 125.73 332 *e*PKIKP **PKPdf 23 44 04.0 -0.3**
CLL *e* 23 44 13.0
CLL MLR MLR
comp=Z,200nm,21.0s
GOPC GO Pecny, Ondr 125.75 329 AMS AMS 00 48 20.0
comp=Z,200nm,14.3s
TREC Trest 125.78 328 AMS AMS 00 43 00.0
PKME Peaks-Kenny Pk 125.79 38 PFAKE 23 44 20.0 +15
PKME LR LR
comp=Z,928nm,19.0s
PRU Pruhonice 125.83 330 AMS AMS 00 48 30.0
comp=Z,300nm,16.9s
LAST Lasithi 125.92 309⇓ *i*P **PKPdf 23 44 05.8 +0.5**
OTAV Otavalo 126.18 95 PFAKE 23 44 20.0 +13
OTAV LR LR
comp=Z,417nm,19.0s
IDI Anoyia 126.33 309⇓ *i*P **PKPdf 23 44 06.7 +0.7**
KHC Kasperske Hory 126.86 329 *e*PKPdf **PKPdf 23 44 06.6 0.0**
KHC *ep*PKP **pPKPdf 23 44 15.5 -0.6**
KHC AMS AMS 00 40 20.0
comp=Z,200nm,17.4s
KHC Kasperske Hory 126.86 329 *e*PKIKP **PKPdf 23 44 06.6 0.0**
KHC *e* 23 44 15.5
GERES GERESS Array B 126.97 329 PKP **PKPdf 23 44 07.1 +0.2**
comp=Z,1.9nm,0.8s,baz=93,slow=2.7,SNR=16
TIR Tirane 127.50 318 PFAKE 23 44 20.0 +12
TIR LR LR
comp=Z,440nm,21.0s
MTDJ Mount Denham 127.56 72 PFAKE 23 44 20.0 +11
MTDJ LR LR
comp=Z,261nm,20.0s
LVC Limon Verde 127.93 126 PKP **PKPdf 23 44 10.4 +0.6**
comp=Z,22nm,0.7s,baz=344,slow=9.7,SNR=6.7
GTBY Guantanamo Bay 129.64 70 PFAKE 23 44 20.0 +7.4
GTBY LR LR
comp=Z,359nm,19.0s
BFO Black Forest 129.97 332 PFAKE 23 44 20.0 +7.5
BFO LR LR
comp=Z,226nm,19.0s
WLF Walferdange 129.99 334 PFAKE 23 44 20.0 +7.5
WLF LR LR
comp=Z,395nm,19.0s
TIP Timpagrande 130.62 317 PFAKE 23 44 30.0 +16
TIP LR LR
comp=Z,158nm,20.0s
TUE Stuetta 130.75 329 PFAKE 23 44 30.0 +16
TUE LR LR
comp=Z,308nm,19.0s
TSUM Tsumeb 130.80 237 PFAKE 23 44 30.0 +15
TSUM LR LR
comp=Z,547nm,20.0s
CUC Castrocucco 130.84 319 PFAKE 23 44 30.0 +16
CUC LR LR
comp=Z,132nm,21.0s
AQU L'Aquila 131.07 322 PFAKE 23 44 30.0 +15
AQU LR LR
comp=Z,314nm,21.0s
LPAZ La Paz 131.44 119 PKP **PKPdf 23 44 17.1 +0.2**
comp=Z,2.2nm,0.6s,baz=276,slow=0.5,SNR=12
CEL Celeste 131.66 316 PFAKE 23 44 30.0 +14
CEL LR LR
comp=Z,175nm,19.0s
VLC Villacollemand 131.72 326 PFAKE 23 44 30.0 +14
VLC LR LR
comp=Z,304nm,20.0s
GRTK Grand Turk 133.06 67 PFAKE 23 44 30.0 +11
GRTK LR LR
comp=Z,444nm,21.0s
SDDR Presa de Saban 133.34 70 PFAKE 23 44 30.0 +10
SDDR LR LR
comp=Z,316nm,20.0s
WDD Wied Dalam 133.79 314 PFAKE 23 44 30.0 +10
WDD LR LR
comp=Z,106nm,19.0s
CLTB Caltabellotta 133.83 317 PFAKE 23 44 30.0 +10
CLTB LR LR
comp=Z,137nm,20.0s
SSB Saint Sauveur 133.97 331 PFAKE 23 44 30.0 +10
SSB LR LR
comp=Z,228nm,19.0s
CPUP Villa Florida 134.42 138 PKP **PKPdf 23 44 21.2 -0.4**
comp=Z,3.3nm,0.8s,baz=289,slow=2.0,SNR=8.9
SDV Santo Domingo 134.67 84 PFAKE 23 44 30.0 +7.4
SDV LR LR
comp=Z,404nm,21.0s
BBSR BB Station 135.12 50 PFAKE 23 44 30.0 +7.4
BBSR LR LR
comp=Z,426nm,20.0s
SIV San Ignacio 137.61 123 PKP **PKPdf 23 44 27.6 -0.2**
comp=Z,1.8nm,0.5s,baz=215,slow=4.5,SNR=4.2
SJG San Juan 138.29 70 PFAKE 23 44 40.0 +11
SJG LR LR
comp=Z,285nm,22.0s
SAML Samuel 138.74 112 PFAKE 23 44 40.0 +10
SAML LR LR
comp=Z,708nm,19.0s
PGAV Gavieira, Arco 142.03 340 *e*LR LR 00 36 03.1
comp=Z,208nm,20.0s
ESDC Sonseca Array 142.28 333 PKP **PKPdf 23 44 33.0 -2.6**
comp=Z,0.3nm,0.5s,baz=17,slow=3.1,SNR=4.8
MVO Moncorvo 142.29 338 *e*LR LR 00 36 01.7
comp=Z,170nm,18.0s
PAB San Pablo 142.56 333 PFAKE 23 44 50.0 +14
PAB LR LR
comp=Z,247nm,20.0s
GRGR Grenville 143.39 79 PFAKE 23 44 50.0 +12
GRGR LR LR
comp=Z,335nm,21.0s
FDF Fort de France 143.58 75 PFAKE 23 44 50.0 +11
FDF LR LR
comp=Z,424nm,20.0s
PMRV Marv??o 143.93 337 *e*PKP PKPbc 23 44 36.6 +0.3
PMRV Marv??o 143.93 337 *e*LR LR 00 30 40.5
comp=Z,191nm,20.0s
PTGA Pitinga 144.21 101 PKP **PKPab 23 44 37.1 -0.4**
comp=Z,9.2nm,0.6s,baz=260,slow=5.3,SNR=18
PTGA Pitinga 144.21 101 PKP **PKPab 23 44 37.1 -0.4**
PTGA LR LR
comp=Z,40μm,20.0s
PBAR Barrancos 144.86 335 *e*PKP **PKPdf 23 44 40.8 +0.7**
EVO Evora 144.95 337 *e*PKP **PKPdf 23 44 41.5 +1.2**
PBEJ Beja 145.32 336 *e*PKP **PKPdf 23 44 41.9 +0.9**
PNCL Nicolau / Gran 145.51 337 *e*PKP **PKPab 23 44 41.7 +0.2**
MESJ Messejana 145.62 336 *e*P **PKPdf 23 44 40.6 -0.9**
MESJ Messejana 145.62 336 *e*PKP **PKPab 23 44 43.8 +1.8**
PVAQ Vaqueiros 145.79 335 *e*PKP **PKPab 23 44 43.2 +0.6**

PVAQ	Vaqueiros	145.79	335	eLR	LR	00 36 01.1
	comp=Z,217nm,20.0s					
MORF	Marmelete	146.26	336	eP	PKPdf	23 44 41.7 -1.0
TAM	Tamanrasset	146.70	302	ePKP2	PKPbc	23 44 45.7 +0.1
TAM				MLR	MLR	
	comp=Z,241nm,19.0s					
TAM	Tamanrasset	146.70	302	ePKPbc	PKPbc	23 44 45.7 +0.1
TAM				LR	LR	
	comp=Z,241nm,19.0s					
DBIC	Dimbokro	160.10	271	PKPab	PKPab	23 45 43.7 +0.6
	comp=Z,3.7nm,0.9s,baz=61,slow=5.2,SNR=3.5					
ASCN	Ascension	161.95	216	PFAKE		23 45 20.0 +15
ASCN				LR	LR	
	comp=Z,1μm,19.0s					
RCBR	Riachuelo	163.30	139	PFAKE		23 45 20.0 +14
RCBR				LR	LR	
	comp=Z,455nm,19.0s					

*IDC **15** 23:33:16.8±6.0, 20°.45S×169°.00E, h0km, mb4.0/4, mb1 4.1/5, mb1mx3.8/25, mbtmp3.9/5, ML3.3/1, Error ellipse: s-maj=137.7km s-min=45.4km az=118.0*
*NEIC **15** 23:33:18.7±0.9, 20°.50S×168°.95E, h10km, mb4.1/2, Error ellipse: s-maj=27.4km s-min=13.8km az=137.0*
*ISCJB **15** 23:33:19.9±1.1, 20°.6S±0°.2×168°.9E±0°.2, h31km, mb4.1/8, Error ellipse: s-maj=35.1km s-min=11.4km az=139.4*

ISC 15 23:33:22.0±1.3, 20°.5S±0°.2×168°.9E±0°.2, h31km, n10, σ0s75/11, mb4.0/8, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	2.74	236	Pn	Pn	23 34 04.6	+0.7
	4.7nm,0.3s,baz=62,slow=11,SNR=98						
DZM				Sn	Sn	23 34 34.9	-1.1
	59nm,0.3s,baz=127,slow=21,SNR=13						
STKA	Stephens Creek	26.88	240	P	P	23 39 00.1	-0.2
	1.4nm,0.5s,baz=80,slow=11,SNR=2.6						
WRA	Warramunga Arr	32.38	265	P	P	23 39 48.9	-0.2
	0.5nm,0.7s,baz=90,slow=8.7,SNR=2.8						
ASAR	Alice Springs	32.51	258	P	P	23 39 51.0	+0.7
	1.3nm,0.6s,baz=89,slow=8.6,SNR=13						
POHA	Pohakuloa	53.09	43	eP	P	23 42 36.6	-0.5
	51nm,0.4s						
KKM	Kota Kinabalu	58.08	291	eP	P	23 43 13.4	+0.4
	1.6nm,0.4s						
CASY	Casey	58.80	204	eP	P	23 43 17.4	+0.3
	0.3nm,1.2s						
COCO	West Island	69.17	264	eP	P	23 44 24.9	-1.1
	40nm,0.4s						
CMAR	Chiang Mai Arr	78.73	295	P	P	23 45 22.4	+0.4
	1.0nm,0.3s,baz=133,slow=4.0,SNR=4.3						
CHTO	Chiang Mai	78.89	295	eP	P	23 45 23.4	+0.5
	0.5nm,0.4s						

MEX 15 23:42:58.1±0.5, 16°.80N×99°.89W, h25km±7km, MD3.7, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ACX	Acapulco	0.07	27	eP	Pb	23 43 01.4	-1.3
ACX				eS	Sb	23 43 04.8	-0.9
CAIG	El Cayaco	0.43	304	i P	Pb	23 43 05.9	-1.4
CAIG				eS	Sb	23 43 11.3	-2.2
TLIG	Tlapa	1.48	59	eP	Pn	23 43 20.8	-2.4
TLIG				eS	Sn	23 43 38.0	-3.7
ARIG	Puente Sto Nin	1.53	344	eP	Pn	23 43 21.4	-2.5
ARIG				eS	Sn	23 43 39.6	-3.4
PLIG	Platanillo	1.62	13	eP	Pn	23 43 22.5	-2.7
PLIG				eS	Sn	23 43 42.5	-2.8
ZIIG	Zihuatanejo	1.70	298	eP	Pn	23 43 24.4	-1.8
ZIIG				i S	Sn	23 43 44.5	-2.6

JMA 15 23:48:50.1±0.2, 37°.83N×141°.97E, h33km±2km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.79	322	P	Pn	23 49 04.9	0.0
JIO				S	Sn	23 49 14.8	-0.8
JMM	Marumori	0.93	273	P	Pn	23 49 06.9	0.0
JMM				S	Sn	23 49 18.6	-0.5
JFK	Kawauchi	0.98	242	P	Pn	23 49 07.7	+0.1
JFK				S	Sn	23 49 19.8	-0.7
JOU	Okura	1.16	298	P	Pb	23 49 11.1	-0.6
JOU				S	Sn	23 49 25.5	+0.7
JMK	Ichinoseki	1.27	332	P	Pn	23 49 12.3	+0.8
JMK				S	Sn	23 49 28.2	+0.9
OFUJ	Ofunato	1.27	349	P	Pn	23 49 11.7	+0.2
JFT	Otama	1.33	257	P	Pb	23 49 13.9	-0.6
JFT				S	Sb	23 49 30.4	-0.9
JYK	Kaneyama	1.67	311	P	Pb	23 49 19.1	-1.1
JOM	Ohasama	1.72	342	P	Pn	23 49 19.0	+1.2
MIYJ	Miyakonagasawa	1.75	356	P	Pn	23 49 18.1	0.0

*ISCJB **15** 23:51:21.6±0.7, 36°.94N±0°.04×28°.28E±0°.04, h0km, Error ellipse: s-maj=6.9km s-min=4.2km az=33.0*
*DDA **15** 23:51:22.1, 36°.98N×28°.25E, h7km, Md2.6, Suspected Mining explosion.*
*CSEM **15** 23:51:22.5±0.3, 36°.96N×28°.25E, h1km, MD2.4, Error ellipse: s-maj=5.8km s-min=4.9km az=24.0, Suspected Mining explosion.*
*ISK **15** 23:51:22.2, 36°.97N×28°.29E, h6km, MD2.4*

ISC 15 23:51:20.3±1.1, 36°.87N±0°.06×28°.22E±0°.04, h0km, n13, σ0s43/22, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	Yerkesik	0.27	11	ePG	Pg	23 51 26.2	+0.7
YER				eSG	Sg	23 51 28.8	-0.2
YER	Yerkesik	0.27	11	ePg	Pg	23 51 26.2	+0.7
YER				eSg	Sg	23 51 28.8	-0.2
TURN	Turunc	0.31	89	i P	Pg	23 51 26.6	+0.4
TURN				i S	Sg	23 51 30.1	0.0
DALY	Dalyan (Mu¨la	0.35	99	ePG	Pb	23 51 29.3	-0.1
DALY	Dalyan (Mu¨la	0.35	99	ePg	Pb	23 51 29.3	-0.1
BDRM	Kayabasi	0.65	288	P	Pb	23 51 34.5	0.0
BDRM				S	Sb	23 51 44.7	+0.5
BDRM	Kayabasi	0.65	288	i P	Pb	23 51 34.5	0.0
BDRM				i S	Sb	23 51 44.7	+0.5
BODT	Bodrum	0.75	285	ePG	Pn	23 51 37.7	-0.5
BODT	Bodrum	0.75	285	ePg	Pn	23 51 37.7	-0.5
AYDN	Tasoluk	0.83	341	P	Pg	23 51 36.8	+0.5
AYDN				S	Sg	23 51 46.8	-0.3
AYDN	Tasoluk	0.83	341	i P	Pg	23 51 36.8	+0.5
AYDN				i S	Sg	23 51 46.8	-0.3
AYDB	Zeytinkoy-Aydi	1.11	346	ePG	Pg	23 51 41.9	+0.4
AYDB				eSG	Sb	23 51 57.2	-0.2
AYDB	Zeytinkoy-Aydi	1.11	346	ePg	Pg	23 51 41.9	+0.4
AYDB				eSg	Sb	23 51 57.2	-0.2

*SJA **15** 23:53:21.3±0.6, 23°.92S×66°.84W, h218km±7km, ML2.2, MW2.7*
*ISCJB **15** 23:53:24.5±0.6, 23°.97S±0°.05×66°.88W±0°.07, h181km, Error ellipse: s-maj=9.6km s-min=7.0km az=152.4*
*IDC **15** 23:53:27.0±1.6, 23°.62S×67°.17W, h223km±17km, mb1 3.1/2, mb1mx2.9/24, mbtmp3.4/2, Error ellipse: s-maj=34.9km s-min=25.0km az=62.0*

ISC 15 23:53:24.2±1.2, 23°.90S±0°.06×66°.87W±0°.07, h181km, n12, σ1s65/16, Jujuy Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SLA	San Lorenzo	1.48	123	i P	Pn	23 53 57.2	+1.0
HJA	Humahuaca	1.51	63	i P	Pn	23 53 57.6	+0.9
HJA				i S	Sn	23 54 25.0	+3.2
AZAP	Zapla	1.68	101	i P	Pn	23 53 58.8	+0.6
YJA	Yavi	2.12	36	i P	Pn	23 54 03.6	+0.5
YJA				i S	Sn	23 54 35.4	+2.0
YJA				IAML		23 54 36.9	
	comp=Z,7.8nm,0.6s						
ASTB	Santa Barbara	2.21	92	i P	Pn	23 54 03.6	-0.2
LVC	Limon Verde	2.28	304	P	Pn	23 54 06.0	+1.3
	comp=Z,247nm,0.3s,baz=112,slow=8.4,SNR=133						
LVC				S	Sn	23 54 37.9	+1.7
	comp=Z,847nm,0.3s,baz=257,slow=22,SNR=64						
FSA	Cafayete	2.34	160	i P	Pn	23 54 05.5	+0.3
FSA				i S	Sn	23 54 37.4	+0.1
ALOL	LOMAS DE OLMED	2.64	89	i P	Pn	23 54 08.0	-0.6
AHML	Horco Molle	3.19	155	i P	Pn	23 54 14.4	-0.7
LPAZ	La Paz	7.67	351	P	Pn	23 55 12.7	-1.0
	comp=Z,0.5nm,0.3s,baz=179,slow=10.0,SNR=19						
LPAZ				S	Sn	23 56 37.2	-3.2
	comp=Z,0.1nm,0.3s,baz=185,slow=11,SNR=4.8						
CPUP	Villa Florida	8.97	108	P	Pn	23 55 37.4	+7.2
	comp=Z,0.1nm,0.3s,baz=265,slow=13,SNR=3.1						
MKAR	Makanchi Array	146.37	40	PKPbc	PKPdf	00 12 40.6	-1.4
	comp=Z,0.6nm,0.5s,baz=308,slow=2.9,SNR=5.5						

MEX 15 23:54:58.8±0.7, 17°.91N×101°.64W, h15km, MD3.8, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZIIG	Zihuatanejo	0.34	152	eP	Pg	23 55 04.8	-1.1
ZIIG				eS	Sg	23 55 10.4	-0.3
ARIG	Puente Sto Nin	1.28	73	eP	Pn	23 55 19.1	-3.1
ARIG				eS	Sb	23 55 34.2	-4.8
MOIG	Morelia	1.81	13	i P	Pg	23 55 44.2	+11
MOIG				i S	Sg	23 56 06.4	+9.2
MEIG	Mezcala	1.92	89	eP	Pn	23 55 27.0	-4.0
MEIG				eS	Sn	23 55 49.7	-5.3
PLIG	Platanillo	2.08	76	eP	Pn	23 55 30.8	-2.6
PLIG				i S	Sn	23 55 54.5	-4.6
YAIG	Yautepec	2.62	68	i P	Pn	23 55 38.4	-2.3
YAIG				i S	Sn	23 56 08.7	-3.6

*JMA **15** 23:56:31.6±0.1, 23°.68N×121°.92E, h10km, M3.0*
*ISCJB **15** 23:56:32.8±0.6, 23°.68N±0°.02×121°.94E±0°.03, h17km±8km, Error ellipse: s-maj=5.7km s-min=2.9km az=35.1*
*TAP **15** 23:56:33.4, 23°.72N×121°.83E, h13km±1km, ML2.8, D*

ISC 15 23:56:32.4±1.1, 23°.68N±0°.03×121°.90E±0°.03, h17km±8km, n31, σ0s51/60, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TEGC	Jichi Village	0.33	275	eP	Pn	23 56 41.6	-0.8
TEGC	baz=268						
				eS	Sb	23 56 46.5	+1.7
	baz=268						
HWA	Hwalien	0.40	317	eP	Pg	23 56 40.4	-0.1
HWA	baz=322						
				eS	Sb	23 56 46.5	-0.4
	baz=322						
ESL	Shilin	0.45	287	P	Pb	23 56 41.9	+0.1
ESL	baz=284						
				eS	Sg	23 56 47.7	+0.1
	baz=284						
TWD	Chiawan	0.48	325	P	Pg	23 56 41.9	-0.2
TWD	baz=330						
				eS	Sb	23 56 49.3	0.0
	baz=330						
TWF1	Yuli	0.64	239	P	Pb	23 56 45.5	+0.3
TWF1	baz=233						
				eS	Sb	23 56 54.5	+0.7
	baz=233						
WDT	Danda	0.71	276	P	Pb	23 56 46.8	+0.3
WDT	baz=273						
				eS	Sg	23 56 55.8	+0.1
	baz=273						
WHF	Hehuan Shan	0.74	309	P	Pg	23 56 46.8	-0.2
WHF	baz=309						
				eS	Sb	23 56 57.1	0.0
	baz=309						
ENA	Nanau	0.76	349	eP	Pn	23 56 49.1	+0.8
ENA	baz=353						
				eS	Sb	23 56 57.1	0.0
	baz=353						
CHKT	Chengkung	0.76	220	eP	Pg	23 56 47.8	+0.5
CHKT	baz=214						
				eS	Sn	23 56 59.4	0.0
	baz=214						
TWT	Tachien	0.87	311	eP	Pg	23 56 49.4	0.0
TWT	baz=310						
				eS	Sg	23 57 01.1	+0.2
	baz=310						
YUS	Yu-Shan	0.89	258	P	Pg	23 56 50.0	+0.2
YUS	baz=254						
				eS	Sb	23 57 01.0	-0.4
	baz=254						
NNS	Nan Shan	0.90	328	eP	Pb	23 56 49.3	-0.2
NNS	baz=330						
				eS	Sb	23 57 00.9	-0.3
	baz=330						
TWC	Suao	0.92	357	P	Pn	23 56 51.4	+0.8
TWC	baz=1.0						
				eS	Sn	23 57 03.4	0.0
	baz=1.0						
SMLT	Sun Moon Lake	0.94	283	eP	Pg	23 56 50.5	-0.1
SMLT	baz=280						
				eS	Sg	23 57 03.1	+0.2
	baz=280						
ELDTW	Lidau	0.95	239	eP	Pb	23 56 49.7	-0.7
ELDTW	baz=234						
				eS	Sb	23 57 01.5	-1.2
	baz=234						
TYC	Yuchr	0.98	283	eP	Pb	23 56 51.0	+0.1
TYC	baz=282						
				eS	Sg	23 57 04.5	+0.2
	baz=282						
ENTT	Nioudou	1.00	342	P	Pg	23 56 52.0	+0.2
ENTT	baz=345						
				eS	Sn	23 57 05.3	-0.1
	baz=345						
ALS	Alishan	1.02	261	P	Pg	23 56 52.4	+0.3
ALS	baz=257						
				eS	Sg	23 57 05.3	-0.3
	baz=257						
TWE	Neicheng	1.06	348	eP	Pb	23 56 52.2	0.0
TWE	baz=352						
				eS	Sb	23 57 06.0	+0.2
	baz=352						
NSK	Sanguang	1.11	334	eP	Pb	23 56 52.9	-0.2
NSK	baz=335						
				eS	Sb	23 57 06.3	-0.9
	baz=335						
CHN5	Tsauling	1.12	266	P	Pg	23 56 54.1	0.0
CHN5	baz=263						
				eS	Sg	23 57 08.9	0.0
	baz=263						
STYT	Tauyuan	1.17	244	eP	Pn	23 56 53.9	-0.1
STYT	baz=240						
				eS	Sb	23 57 09.1	+0.1
	baz=240						
JYNG	Yonagunijimaku	1.22	51	eS	Sb	23 57 09.1	-1.5
TWQ1	Liyutan	1.23	303	eP	Pg	23 56 55.6	-0.4
TWQ1	baz=303						
				eS	Sn	23 57 10.9	0.0
	baz=303						
CHN4	Tsaushan	1.24	255	P	Pg	23 56 56.5	+0.1
CHN4	baz=252						
				eS	Sg	23 57 12.7	0.0
	baz=252						
WTP	Ta-pu	1.26	250	P	Pb	23 56 56.0	+0.4
WTP	baz=247						
				eS	Sg	23 57 12.5	-0.6
	baz=247						
CHN1	Nanshi	1.35	249	P	Pg	23 56 57.9	-0.5
CHN1	baz=246						
				eS	Sg	23 57 15.9	-0.3
	baz=246						
NWF	Wu-fen Shan	1.39	356	eP	Pg	23 56 58.9	-0.2
NWF	baz=357						
				eS	Sb	23 57 15.7	+0.3
	baz=357						
IRIF	Iriomote-Funau	1.79	68	P	Pn	23 57 03.5	+0.9
JIJ	Ishigaki jima	2.16	71	P	Pn	23 57 08.2	+0.6
JIJ				eS	Sn	23 57 33.6	-0.4
JISG	Ishigakijimahi	2.38	67	P	Pn	23 57 10.7	+0.1
JISG				eS	Sn	23 57 39.2	-0.2

IDC 16 00:22:20.0±3.8, 6°.18S×129°.04E, h413km±45km, mb3.0/2, mb1 3.2/4, mb1mx2.9/28, mbtmp3.9/4, Error ellipse: s-maj=96.2km s-min=14.2km az=71.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	14.62	160	P	P	00 25 28.1	0.0
	0.9nm,0.3s,baz=339,slow=11,SNR=10						
WRA				S	S	00 28 04.0	+0.4
	0.4nm,0.3s,baz=334,slow=20,SNR=7.9						
ASAR	Alice Springs	18.01	165	P	P	00 26 04.2	-0.1
	0.4nm,0.3s,baz=340,slow=11,SNR=21						
ASAR				S	S	00 29 10.2	+0.8
	0.2nm,0.3s,baz=348,slow=24,SNR=6.8						
MKAR	Makanchi Array	67.02	327	P	P	00 32 30.5	+0.1
	0.5nm,0.6s,baz=109,slow=7.8,SNR=5.5						
ZALV	Zalesovo Beam	70.43	334	P	P	00 32 50.9	-0.1
	0.4nm,0.5s,baz=114,slow=6.5,SNR=2.3						

*ISCJB **16** 00:36:21.7±0.7, 36°.98N±0°.04×28°.26E±0°.04, h3km±13km, Error ellipse: s-maj=7.9km s-min=4.5km az=37.5*
*ISK **16** 00:36:21.4, 37°.04N×28°.29E, h19km, MD2.5*
*DDA **16** 00:36:21.7, 36°.99N×28°.27E, h7km, Md2.6*
*CSEM **16** 00:36:22.4±0.3, 37°.00N×28°.24E, h5km, MD2.5, Error ellipse: s-maj=6.8km s-min=5.1km az=23.0*

ISC 16 00:36:20.2±1.1, 36°.93N±0°.04×28°.31E±0°.03, h19km±2km, n14, σ0s33/25, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	Yerkesik	0.20	355	ePG	Pg	00 36 25.6	+0.3
YER				eSG	Sb	00 36 28.2	+0.3
YER	Yerkesik	0.20	355	ePg	Pg	00 36 25.6	+0.3
YER				eSg	Sb	00 36 28.2	+0.3
TURN	Turunc	0.25	104	i P	Pg	00 36 26.2	+0.3
TURN				i S	Sb	00 36 29.8	+0.2
DALY	Dalyan (Mu¨la	0.30	112	ePG	Pn	00 36 29.3	-0.4
DALY				eSG	Sn	00 36 35.7	+0.1
DALY	Dalyan (Mu¨la	0.30	112	ePg	Pn	00 36 29.3	-0.4
DALY				eSg	Sn	00 36 35.7	+0.1
BDRM	Kayabasi	0.70	281	P	Pg	00 36 34.0	0.0
BDRM				S	Sn	00 36 45.0	-0.6
BDRM	Kayabasi	0.70	281	i P	Pg	00 36 34.0	0.0
BDRM				i S	Sn	00 36 45.0	-0.6
AYDN	Tasoluk	0.80	335	P	Pn	00 36 36.4	-0.2
AYDN				S	Sg	00 36 46.7	+0.1
AYDN	Tasoluk	0.80	335	i P	Pn	00 36 36.4	-0.2
AYDN				i S	Sg	00 36 46.7	+0.1
BODT	Bodrum	0.81	280	ePG	Pn	00 36 37.1	+0.5
BODT	Bodrum	0.81	280	ePg	Pn	00 36 37.1	+0.5
AYDB	Zeytinkoy-Aydi	1.06	342	ePG	Pn	00 36 40.3	0.0
AYDB				eSG	Sn	00 36 54.3	-0.4
AYDB	Zeytinkoy-Aydi	1.06	342	ePg	Pn	00 36 40.3	0.0
AYDB				eSg	Sn	00 36 54.3	-0.4
KHAL	Karahalli	1.72	33	P	Pg	00 36 53.3	0.0

*NIED **16** 00:36:00, 37°.60N×142°.80E, h5km, Mw4.0 Best double couple: M0=9.74000×10^14 NP1:φs=287.00000°, δ25.00000°, λ-172.00000°. NP2:φs=190.00000°, δ87.00000°, λ-65.00000°.*
*IDC **16** 00:36:42.0±1.0, 37°.61N×142°.74E, h0km, mb4.0/11, mb1 4.1/14, mb1mx3.9/36, mbtmp3.9/14, ML3.3/3, MS3.0/3, Ms1 3.0/3, ms1mx2.7/42, Error ellipse: s-maj=24.1km s-min=20.0km az=91.0*
*JMA **16** 00:36:42.2±0.3, 37°.65N×142°.77E, h15km±4km, M4.4*
*ISCJB **16** 00:36:43.3±0.6, 37°.62N±0°.04×142°.79E±0°.06, h21km, mb4.1/17, Error ellipse: s-maj=7.7km s-min=5.6km az=33.8*
*NEIC **16** 00:36:47.2±2.5, 37°.65N×142°.79E, h34km±17km, mb4.2/6, Error ellipse: s-maj=13.4km s-min=7.8km az=126.0*

ISC 16 00:36:46.0±0.8, 37°.73N±0°.06×142°.68E±0°.07, h21km, n46, σ1s33/45, mb4.1/17, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	1.27	305	P	Pn	00 37 07.0	-1.5
JIO				eS	Sb	00 37 25.6	+0.5
JFK	Kawauchi	1.48	256	P	Pn	00 37 09.3	-2.0
JMM	Marumori	1.50	276	P	Pn	00 37 09.7	-1.9
JMK	Ichinoseki	1.67	317	P	Pn	00 37 13.7	-0.3
JOU	Okura	1.71	292	P	Pn	00 37 13.8	-0.8
JFT	Otama	1.87	264	P	Pn	00 37 15.9	-0.8
JOM	Ohasama	2.05	329	P	Pn	00 37 18.8	-0.4
JOM				eS	Sb	00 37 46.5	-1.1
JYS	Shirataka	2.12	284	P	Pn	00 37 19.8	-0.4
JYK	Kaneyama	2.17	304	P	Pn	00 37 20.0	-0.9
JNS	Sasagawa	2.66	273	P	Pn	00 37 28.3	+0.7
JANG	Nango	2.79	341	P	Pn	00 37 29.6	+0.2
JAW	Awa shima	2.80	286	P	Pn	00 37 29.5	0.0
JAG	Ashikaga	2.89	244	P	Pn	00 37 29.2	-1.5
MJAR	Matsushiro Arr	3.76	253	Pn	Pn	00 37 43.4	+0.7
	13nm,0.3s,baz=76,slow=14,SNR=50						
MJAR				Sn	Sb	00 38 37.9	+1.2
	baz=82,slow=28,SNR=2.6						
MJAR				LR	LR	00 39 22.6	
	comp=Z,152nm,20.7s,baz=90,slow=43						
MAJO	Matsushiro	3.76	253	ePn	Pn	00 37 44.3	+1.6
MAT	Matsushiro	3.76	253	P	Pn	00 37 44.2	+1.4
MAT				S	Sn	00 38 27.0	+0.6
ERM	Erimo	4.30	5	ePn	Pn	00 37 51.0	+0.9
ERM				eSn	Sn	00 38 43.3	+3.7
ASAJ	Asahikawa	6.38	359	Pn	Pn	00 38 19.1	+0.4
	0.6nm,0.3s,baz=186,slow=10,SNR=2.3						
ASAJ				Sn	Sn	00 39 28.3	-2.6
	0.8nm,0.3s,baz=131,slow=20,SNR=3.1						
USRK	Ussuriysk Ar.	10.34	312	Pn	Pn	00 39 14.4	+1.3
	0.4nm,0.3s,baz=127,slow=15,SNR=4.1						
JNU	Nakatsue	10.66	248	LR	LR	00 43 16.5	
	comp=Z,84nm,18.2s,baz=308,slow=37						
KSRS	Korea Array	11.71	273	Pn	Pn	00 39 34.3	+2.6
	0.2nm,0.3s,baz=87,slow=13,SNR=7.6						
KSRS				LR	LR	00 43 51.9	
	comp=Z,95nm,18.4s,baz=57,slow=36						
KSAR	Wonju Array Be	11.74	273	Pn	Pn	00 39 34.3	+2.1
KLR	Kul'dur	13.95	329	Pn	P	00 40 08.2	-2.0
	0.3nm,0.3s,baz=148,slow=14,SNR=6.6						
H11N2	WAKE ISLAND Hy	27.68	124	T	T	01 11 26.2	
	baz=316,slow=75,SNR=95						
H11N1	WAKE ISLAND Hy	27.68	124	T	T	01 11 27.3	
	baz=316,slow=75,SNR=67						
H11N3	WAKE ISLAND Hy	27.68	124	T	T	01 11 26.5	
	baz=316,slow=75,SNR=77						
ULN	Ulaanbaatar	27.81	303	eP	P	00 42 34.1	+0.4
	2.0nm,0.7s						
SONM	Songino Array	28.25	303	P	P	00 42 38.3	+0.7
	3.0nm,0.8s,baz=103,slow=9.2,SNR=20						
H11S1	WAKE ISLAND Hy	28.42	126	T	T	01 12 20.1	
	baz=318,slow=76,SNR=75						
H11S3	WAKE ISLAND Hy	28.42	126	T	T	01 12 22.6	
	baz=318,slow=76,SNR=91						
H11S2	WAKE ISLAND Hy	28.44	126	T	T	01 12 21.3	
	baz=318,slow=76,SNR=62						
ZALV	Zalesovo Beam	42.20	312	P	P	00 44 36.9	-0.1
	5.2nm,0.9s,baz=88,slow=7.3,SNR=13						
MKAR	Makanchi Array	44.61	302	P	P	00 44 56.2	-0.4
	5.1nm,0.8s,baz=89,slow=9.5,SNR=34						
KURK	Kurchatov	46.30	308	eP	P	00 45 09.5	-0.4
	16nm,0.6s						
ILAR	Eielson Array	48.37	33	P	P	00 45 25.2	-0.6
	0.5nm,0.8s,baz=270,slow=7.0,SNR=5.1						
TKM2	Tokmak 2	50.19	298	eP	P	00 45 41.0	+0.7
	4.8nm,0.8s						
AAK	Ala-Archa	51.05	298	eP	P	00 45 47.2	+0.4
	1.3nm,0.5s						
EKS2	Erkin-Say	51.54	298	eP	P	00 45 51.7	+1.3
	1.9nm,0.8s						
WRA	Warramunga Arr	57.90	189	P	P	00 46 34.9	-1.6
	1.2nm,0.8s,baz=9.4,slow=6.8,SNR=5.1						
ABKAR	Akbulak array	58.26	310	eP	P	00 46 38.5	-0.3
	1.0nm,0.4s						
ASAR	Alice Springs	61.62	189	P	P	00 47 00.5	-1.5
	0.4nm,0.5s,baz=15,slow=7.7,SNR=4.1						
YKA	Yellowknife Ar	62.70	31	P	P	00 47 10.3	+1.5
	0.3nm,0.6s,baz=300,slow=6.4,SNR=4.4						
GEYT	Alibeck	64.38	299	P	P	00 47 20.0	-0.4
	1.3nm,0.7s,baz=66,slow=3.7,SNR=4.2						
FINES	FINESS Array B	68.67	333	P	P	00 47 47.1	-0.2
	1.6nm,0.7s,baz=60,slow=5.5,SNR=6.8						
KBZ	Khabaz	71.21	311	P	P	00

s-maj=26.6km s-min=16.7km az=114.0

ISC 16 00:57:40.5±0.9, 59.89N±0.04×153.15W±0.05, h127km±6km, n48, σ0.72/58, Southern Alaska

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ILW	**Iliamna West**	**0.17**	**2**	P	**Pn**	**00 57 58.0**	**-0.2**
AUL	**Augustine Lava**	**0.53**	**196**	P	**Pn**	**00 57 59.8**	**+0.4**
AUL				S	**Sn**	**00 58 13.9**	**+0.2**
AUE	**Augustine Isla**	**0.55**	**192**	P	**Pn**	**00 57 59.7**	**+0.2**
AUSE	**Augustine SEas**	**0.57**	**193**	P	**Pn**	**00 57 59.8**	**+0.2**
RDWB	**Redoubt West**	**0.62**	**14**	P	**Pn**	**00 58 00.2**	**0.0**
RDWB				S	**Sn**	**00 58 14.4**	**-0.7**
NCT	**North Crescent**	**0.68**	**9**	P	**Pn**	**00 58 00.7**	**+0.1**
RDJH	**Redoubt Jeurge**	**0.72**	**14**	P	**Pn**	**00 58 01.1**	**+0.2**
RDJH				S	**Sn**	**00 58 16.3**	**-0.1**
HOM	**Homer**	**0.80**	**106**	P	**Pn**	**00 58 02.3**	**+1.0**
HOM				S	**Sn**	**00 58 18.6**	**+1.5**
MCNL	**McNeil River**	**0.93**	**221**	P	**Pn**	**00 58 02.3**	**-0.2**
CDD	**Cape Douglas**	**1.00**	**195**	P	**Pn**	**00 58 03.3**	**+0.2**
FOSS	**Fourpeaked Sta**	**1.13**	**195**	P	**Pn**	**00 58 04.8**	**+0.3**
FOPK	**Fourpeaked Vol**	**1.15**	**188**	P	**Pn**	**00 58 04.6**	**-0.1**
BRLK	**Bradley Lake**	**1.15**	**95**	P	**Pn**	**00 58 05.3**	**+0.7**
BRLK				S	**Sn**	**00 58 23.6**	**+0.6**
SPWE	**Spurr West**	**1.42**	**12**	P	**Pn**	**00 58 08.2**	**+0.7**
KAHC	**Katmai Hardscr**	**1.57**	**218**	P	**Pn**	**00 58 09.1**	**-0.2**
KAWH	**Katmai**	**1.73**	**210**	P	**Pn**	**00 58 11.2**	**+0.1**
SEW	**Seward**	**1.87**	**82**	P	**Pn**	**00 58 13.4**	**+0.8**
KVTA	**Katmai Vly 10**	**1.88**	**217**	P	**Pn**	**00 58 12.8**	**+0.1**
KAKN	**Katmai Knife C**	**1.88**	**212**	P	**Pn**	**00 58 12.9**	**0.0**
KABU	**Katmai Buttres**	**1.96**	**215**	P	**Pn**	**00 58 14.3**	**+0.4**
KELA	**Mount Kelaz**	**1.98**	**224**	P	**Pn**	**00 58 13.8**	**-0.3**
KABR	**Katmai Barrier**	**2.00**	**209**	P	**Pn**	**00 58 14.3**	**0.0**
RC01	**Rabbit Creek A**	**2.07**	**53**	P	**Pn**	**00 58 15.6**	**+0.4**
KDAK	**Kodiak Island**	**2.14**	**172**	P	Pn	00 58 30.1	+14
	5.2nm,0.3s,baz=350,slow=12,SNR=8.0						
KDAK				S	Sn	00 58 56.3	+13
	52nm,0.3s,baz=312,slow=23,SNR=43						
KDAK	**Kodiak Island**	**2.14**	**172**	*e*Pn	**Pn**	**00 58 17.3**	**+1.4**
KDAK				S	Sn	00 58 56.3	+13
CNTC	**Contact Creek**	**2.16**	**222**	P	**Pn**	**00 58 16.3**	**0.0**
PMR	**Palmer**	**2.61**	**47**	P	**Pn**	**00 58 22.2**	**+0.4**
OHAK	**Old Harbor**	**2.68**	**182**	P	**Pn**	**00 58 21.6**	**-1.2**
PLK3	**Peulik 3**	**2.74**	**218**	P	**Pn**	**00 58 24.1**	**+0.5**
PPLA	**Purkeypile**	**3.05**	**8**	*e*Pn	**Pn**	**00 58 29.0**	**+1.3**
PPLA				*e*Sn	**Sn**	**00 59 03.9**	**-0.3**
TRF	**Thorofare Moun**	**3.82**	**20**	*e*Pn	**Pn**	**00 58 37.7**	**-0.1**
KTH	**Kantishna Hill**	**3.82**	**15**	*e*Pn	**Pn**	**00 58 37.9**	**+0.1**
DIV	**Divide**	**3.85**	**68**	*e*Pn	**Pn**	**00 58 38.5**	**+0.3**
DIV				*e*Sn	**Sn**	**00 59 22.0**	**-0.9**
MCK	**McKinley**	**4.34**	**26**	*e*Pn	**Pn**	**00 58 44.9**	**+0.3**
BPAW	**Bear Paw Mtn.**	**4.34**	**13**	*e*Pn	**Pn**	**00 58 43.9**	**-0.8**
BMRM	**Bremner River**	**4.37**	**72**	*e*Pn	**Pn**	**00 58 45.5**	**+0.4**
BMRM				*e*Sn	**Sn**	**00 59 34.0**	**-1.2**
PAX	**Paxson**	**4.81**	**47**	*e*Pn	**Pn**	**00 58 51.0**	**+0.1**
PAX				*e*Sn	**Sn**	**00 59 46.3**	**+0.6**
COLA	**College**	**5.57**	**24**	*e*Pn	**Pn**	**00 59 00.7**	**-0.4**
COLA				*e*Sn	**Sn**	**01 00 05.3**	**+1.5**
ILAR	**Eielson Array**	**5.70**	**28**	P	**Pn**	**00 59 02.0**	**-0.7**
	5.9nm,0.3s,baz=218,slow=14,SNR=207						
ILAR				S	**Sn**	**01 00 05.6**	**-1.3**
	1.6nm,0.3s,baz=218,slow=22,SNR=8.6						
DOT	**Dot Lake**	**5.73**	**45**	*e*Pn	**Pn**	**00 59 03.8**	**+0.6**
EGAK	**Eagle**	**7.42**	**44**	*e*Pn	**Pn**	**00 59 25.5**	**-0.4**
COLD	**Coldfoot**	**7.48**	**9**	*e*Pn	**Pn**	**00 59 26.8**	**+0.1**
DAWY	**Dawson**	**7.71**	**51**	*e*Pn	**Pn**	**00 59 30.6**	**+0.8**
DLBC	**Dease Lake**	**11.94**	**87**	P	**P**	**01 00 32.0**	**-2.0**
	0.5nm,0.3s,baz=254,slow=12,SNR=14						
INK	**Inuvik**	**11.97**	**37**	P	**Pn**	**01 00 26.9**	**+0.2**
	0.2nm,0.3s,baz=236,slow=11,SNR=8.4						
YKA	**Yellowknife Ar**	**18.57**	**65**	P	**Pn**	**01 01 48.6**	**-0.2**
	0.2nm,0.3s,baz=276,slow=9.9,SNR=20						
SONM	**Songino Array**	**54.79**	**306**	P	**P**	**01 06 58.4**	**+1.6**
	0.6nm,0.7s,baz=49,slow=6.1,SNR=5.8						
ZALV	**Zalesovo Beam**	**57.42**	**324**	P	**P**	**01 07 15.6**	**+0.5**
	1.6nm,0.5s,baz=32,slow=6.5,SNR=8.2						

MAN 16 01:06:25, 17.09N×120.29E, h34km, mb4.1, ML2.9, MS2.6, 1C, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ABRA	**Dolores**	**0.69**	**36**	*e*P	Pb	01 06 40.0	+1.2
BCPH	**Baguio City Da**	**0.76**	**158**	⇑*i*P	Pb	01 06 47.2	+7.3
BCPH				*i* S	Sb	01 07 03.0	+13
BOLP	**Bolinao**	**0.79**	**207**	*e*P	Pb	01 06 41.2	+0.9
BOLP				*e*S	Sb	01 06 51.8	+1.0
BALP	**Baler**	**1.82**	**137**	*e*P	Pn	01 06 55.2	+1.2
BALP				*e*S	Sn	01 07 17.3	+1.4

NIED ***16*** *01:11:00, 37.20N×143.40E, h5km, Mw4.2 Best double couple: M0=2.49000×10^15 NP1:φs=18.00000°, δ15.00000°, λ-109.00000°. NP2:φs=217.00000°, δ76.00000°, λ-85.00000°.*

IDC ***16*** *01:11:01.9±0.6, 36.98N×143.60E, h0km, mb4.0/21, mb1 4.3/26, mb1mx4.2/36, mbtmp4.1/26, ML3.7/5, MS3.3/9, Ms1 3.3/9, ms1mx3.0/39, Error ellipse: s-maj=15.5km s-min=13.5km az=117.0*

NEIC ***16*** *01:11:03.6±0.4, 37.09N×143.58E, h10km, mb4.5/12, Error ellipse: s-maj=9.0km s-min=6.8km az=140.0*

ISCJB ***16*** *01:11:05.7±0.3, 37.09N±0.04×143.37E±0.04, h33km, mb4.3/43, MS3.5/8, Error ellipse: s-maj=5.4km s-min=4.0km az=160.9*

JMA ***16*** *01:11:05.6±0.2, 37.15N×143.39E, h57km, M4.2*

ISC 16 01:11:07.6±0.6, 37.11N±0.05×143.49E±0.06, h35km, n84, σ2.39/88, mb4.3/43, MS3.5/10, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**2.11**	**278**	S	**Sn**	**01 12 02.7**	**-2.7**
ONAJ	**Iwakimizuishiy**	**2.15**	**271**	*e*S	**Sn**	**01 12 03.4**	**-3.2**
JIO	**Ouri**	**2.17**	**309**	P	**Pn**	**01 11 38.9**	**-2.3**
JMM	**Marumori**	**2.28**	**290**	*e*S	**Sn**	**01 12 07.1**	**-2.5**
JFT	**Otama**	**2.55**	**280**	*e*S	**Sn**	**01 12 12.7**	**-3.6**
JMK	**Ichinoseki**	**2.57**	**316**	P	**Pn**	**01 11 44.5**	**-2.3**
JOM	**Ohasama**	**2.93**	**324**	P	**Pn**	**01 11 49.5**	**-2.2**
JOM				*e*S	**Sn**	**01 12 22.3**	**-3.4**
JYK	**Kaneyama**	**3.06**	**307**	P	**Pn**	**01 11 52.0**	**-1.6**
BSO1	**Boso 1**	**3.19**	**221**	P	**Pn**	**01 11 53.0**	**-1.8**
BSO1				S	**Sn**	**01 12 30.0**	**-1.3**
JAG	**Ashikaga**	**3.31**	**259**	P	**Pn**	**01 11 55.5**	**-1.5**
JANG	**Nango**	**3.61**	**335**	P	**Pn**	**01 11 58.6**	**-2.5**
JANG				*e*S	**Sn**	**01 12 37.8**	**-4.6**
JRY	**Ryogami san**	**3.85**	**255**	P	**Pn**	**01 12 02.7**	**-1.7**
JRY				*e*S	**Sn**	**01 12 44.5**	**-4.0**
MJAR	**Matsushiro Arr**	**4.28**	**264**	Pn	**Pn**	**01 12 09.3**	**-0.9**
	1.3nm,0.3s,baz=99,slow=26,SNR=4.7						
MJAR				Sn	**Sn**	**01 12 56.4**	**-2.6**
	3.4nm,0.3s,baz=81,slow=26,SNR=4.1						
MAJO	**Matsushiro**	**4.28**	**264**	*e*Pn	**Pn**	**01 12 09.9**	**-0.4**
MAJO				*e*S	**Sn**	**01 12 56.1**	**-2.9**
MAT	**Matsushiro**	**4.28**	**264**	P	**Pn**	**01 12 10.0**	**-0.3**
MAT				S	**Sn**	**01 12 58.2**	**-0.8**
ERM	**Erimo**	**4.91**	**357**	*e*Pn	**Pn**	**01 12 15.6**	**-3.3**
ERM				*e*S	Sn	01 13 04.3	-10
JHJ	**Hachijo jima 2**	**5.01**	**218**	Pn	**Pn**	**01 12 16.7**	**-3.6**
	63nm,0.3s,baz=77,slow=19,SNR=3.1						
JHJ				Sn	**Sn**	**01 13 09.7**	**-7.2**
	94nm,0.3s,baz=75,slow=20,SNR=3.4						
INU	**Inuyama**	**5.52**	**253**	*e*Pn	**Pn**	**01 12 27.5**	**+0.1**
ASAJ	**Asahikawa**	**7.04**	**355**	Pn	**Pn**	**01 12 45.5**	**-2.6**
	8.0nm,0.3s,baz=211,slow=8.7,SNR=26						
ASAJ				Sn	**Sn**	**01 14 02.0**	**-4.8**
	baz=90,slow=20,SNR=2.8						
ASAJ				LR	LR	01 15 48.3	
	comp=Z,188nm,21.4s,baz=140,slow=40						
ASAJ	**Asahikawa**	**7.04**	**355**	*e*Pn	**Pn**	**01 12 45.0**	**-3.0**
ASAJ				*e*S	Sn	01 13 51.6	-15
CBIJ	**Chichi jima**	**10.04**	**187**	*e*Pn	Pn	01 13 21.3	-8.1
CBIJ				*e*S	Sn	01 15 07.5	-13
JCJ	**Chichijima**	**10.04**	**187**	Pn	Pn	01 13 23.1	-6.4
	9.0nm,0.3s,baz=67,slow=22,SNR=7.3						
JCJ				Sn	Sn	01 15 07.4	-13
	8.3nm,0.3s,baz=311,slow=19,SNR=3.8						
JNU	**Nakatsue**	**11.07**	**253**	Pn	**Pn**	**01 13 42.4**	**-1.1**
	0.8nm,0.3s,baz=100,slow=5.2,SNR=8.4						
JNU	**Nakatsue**	**11.07**	**253**	*e*Pn	**Pn**	**01 13 42.9**	**-0.5**
USRK	**Ussuriysk Ar.**	**11.24**	**313**	Pn	**Pn**	**01 13 45.3**	**-0.4**
	0.8nm,0.3s,baz=122,slow=14,SNR=13						
USRK				LR	LR	01 18 03.5	
	comp=Z,93nm,20.3s,baz=162,slow=37						
KSRS	**Korea Array**	**12.41**	**276**	Pn	**Pn**	**01 14 03.2**	**+1.5**
	0.3nm,0.3s,baz=90,slow=14,SNR=18						
KSRS				LR	LR	01 18 18.2	
	comp=Z,82nm,21.6s,baz=72,slow=35						
KSAR	**Wonju Array Be**	**12.44**	**276**	Pn	**Pn**	**01 14 03.2**	**+1.0**
MDJ	**Mudanjiang**	**12.91**	**310**	P	**Pn**	**01 14 08.6**	**+0.1**
MDJ				pmax	pmax		
	comp=Z,7.0nm,0.6s						
MDJ				pmax	pmax		
	comp=Z,60nm,3.0s						
KLR	**Kul'dur**	**14.82**	**329**	Pn	**Pn**	**01 14 31.2**	**-3.2**
	comp=Z,0.8nm,0.3s,baz=130,slow=14,SNR=39						
TPUB	**Ta-pu**	**24.00**	**241**	*e*P	**P**	**01 16 17.4**	**-1.7**
	comp=Z,5.1nm,0.5s						
HHC	**Hu-ho-hao-te**	**25.03**	**288**	*e*P	**P**	**01 16 28.4**	**-0.1**
HHC				PP	**PnPn**	**01 17 11.9**	**+9.4**
HHC				S	**S**	**01 20 50.3**	**0.0**
HHC				sS	sS	01 21 01.8	-5.0
HHC				pmax	pmax		
	comp=Z,33nm,0.7s						
HHC				pmax	pmax		
	comp=Z,240nm,4.1s						
HHC				LR	LR		
	comp=N,810nm,12.4s						
HHC				LR	LR		
	comp=E,700nm,12.6s						
HHC				LR	LR		
	comp=Z,850nm,12.1s						
SEY	**Seymchan**	**26.43**	**9**	P	**P**	**01 16 41.4**	**+0.6**
	comp=Z,5.3nm,0.8s,baz=187,slow=6.6,SNR=7.8						
H11N2	**WAKE ISLAND Hy**	**26.78**	**124**	T	T	01 44 32.2	
	baz=322,slow=75,SNR=2.1						
H11N3	**WAKE ISLAND Hy**	**26.80**	**124**	T	T	01 44 49.4	
	baz=312,slow=75,SNR=3.4						
H11S1	**WAKE ISLAND Hy**	**27.53**	**126**	T	T	01 45 45.5	
	baz=318,slow=76,SNR=4.5						
H11S3	**WAKE ISLAND Hy**	**27.53**	**126**	T	T	01 45 45.2	
	baz=318,slow=76,SNR=4.1						
H11S2	**WAKE ISLAND Hy**	**27.55**	**126**	T	T	01 45 45.1	
	baz=318,slow=76,SNR=4.5						
ULN	**Ulaanbaatar**	**28.70**	**304**	*e*P	**P**	**01 17 00.4**	**-1.1**
	comp=Z,4.9nm,0.7s						
ENH	**Enshi**	**29.00**	**266**	*e*P	**P**	**01 17 04.7**	**+0.6**
	comp=Z,12nm,0.7s						
SONM	**Songino Array**	**29.13**	**303**	P	**P**	**01 17 06.8**	**+1.5**
	comp=Z,5.9nm,0.8s,baz=98,slow=7.9,SNR=43						
SONM				LR	LR	01 28 36.7	
	comp=Z,45nm,21.8s,baz=85,slow=36						
LZH	**Lanzhou**	**31.69**	**280**	*e*P	**P**	**01 17 27.1**	**-1.0**
LZH				pP	pP	01 17 30.8	-7.3
LZH				sP	sP	01 17 32.4	-10
LZH				pmax	pmax		
	comp=Z,13nm,1.0s						
CD2	**Chengdu**	**33.34**	**271**	P	**P**	**01 17 41.8**	**-0.6**
CD2				pmax	pmax		
	comp=Z,4.0nm,0.8s						
GTA	**Gaotai**	**34.13**	**288**	*e*P	**P**	**01 17 50.1**	**+0.8**
GTA				pP	pP	01 17 59.3	-0.1
GTA				sP	sP	01 18 03.3	-0.3
GTA				S	**S**	**01 23 21.0**	**+7.9**
GTA				sS	sS	01 23 37.3	+7.5
GTA				SS	**SS**	**01 25 38.0**	**-3.4**
GTA				pmax	pmax		
	comp=Z,4.0nm,0.9s						
GTA				pmax	pmax		
	comp=Z,41nm,5.7s						
GTA				LR	LR		
	comp=N,61nm,19.5s						
GTA				LR	LR		
	comp=E,76nm,15.7s						
GTA				LR	LR		
	comp=Z,81nm,15.7s						
KMI	**Kunming**	**36.62**	**263**	P	**P**	**01 18 10.6**	**-0.3**
KMI				pmax	pmax		
	comp=Z,8.0nm,0.5s						
KMI				pmax	pmax		
	comp=Z,66nm,4.7s						
WMQ	**Urumqi**	**42.29**	**297**	P	**P**	**01 19 00.3**	**+2.5**
WMQ				pP	pP	01 19 05.8	-2.3
WMQ				sP	sP	01 19 11.5	-0.8
WMQ				S	**S**	**01 25 14.4**	**-1.8**
WMQ				pmax	pmax		
	comp=Z,7.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,62nm,5.4s						
WMQ				LR	LR		
	comp=N,22nm,37.2s						
WMQ				LR	LR		
	comp=Z,15nm,31.8s						
ZALV	**Zalesovo Beam**	**43.09**	**312**	P	**P**	**01 19 03.9**	**-0.2**
	comp=Z,1.6nm,0.6s,baz=90,slow=6.2,SNR=8.3						
ZALV				LR	LR	01 36 22.1	
	comp=Z,27nm,22.0s,baz=68,slow=35						
CMAR	**Chiang Mai Arr**	**43.13**	**257**	P	**P**	**01 19 05.9**	**+1.1**
	comp=Z,0.7nm,0.3s,baz=48,slow=6.4,SNR=5.6						
NRIK	**Noril'sk**	**43.90**	**335**	P	**P**	**01 19 10.8**	**+0.4**
	comp=Z,0.7nm,0.3s,baz=119,slow=10,SNR=3.7						
MKAR	**Makanchi Array**	**45.49**	**302**	P	**P**	**01 19 23.1**	**-0.3**
	comp=Z,2.2nm,0.5s,baz=87,slow=9.1,SNR=15						
MKAR				LR	LR	01 38 21.4	
	comp=Z,55nm,19.3s,baz=350,slow=36						
MAKZ	**Makanchi**	**45.70**	**302**	*e*P	**P**	**01 19 26.8**	**+1.7**
	comp=Z,5.2nm,0.8s						
KURK	**Kurchatov**	**47.19**	**308**	*e*P	**P**	**01 19 36.6**	**-0.1**
	comp=Z,12nm,0.6s						
ILAR	**Eielson Array**	**48.54**	**32**	P	**P**	**01 19 47.1**	**+0.2**
	comp=Z,0.8nm,0.9s,baz=270,slow=6.5,SNR=7.6						
MTN	**Manton Dam**	**51.03**	**196**	*e*P	**P**	**01 20 07.4**	**+1.1**
	comp=Z,61nm,1.4s						
TKM2	**Tokmak 2**	**51.05**	**299**	*e*P	**P**	**01 20 07.1**	**+0.5**
	comp=Z,8.3nm,0.6s						
AAK	**Ala-Archa**	**51.91**	**299**	*e*P	**P**	**01 20 13.2**	**+0.2**
	comp=Z,0.9nm,0.4s						
ZRNK	**Zerenda**	**52.58**	**313**	*e*P	**P**	**01 20 17.9**	**+0.4**
	comp=Z,2.6nm,0.6s						
INK	**Inuvik**	**53.56**	**27**	P	**P**	**01 20 25.3**	**+0.8**
	comp=Z,1.5nm,0.8s,baz=248,slow=5.4,SNR=3.8						
INK	**Inuvik**	**53.56**	**27**	*e*P	**P**	**01 20 26.1**	**+1.5**
KKAR	**Karatay Array**	**54.52**	**301**	*e*P	**P**	**01 20 31.6**	**-0.4**
	comp=Z,2.6nm,0.9s						
WRAB	**Tennant Creek**	**57.38**	**190**	*e*P	**P**	**01 20 50.7**	**-1.9**
	comp=Z,14nm,0.7s						
WRA	**Warramunga Arr**	**57.40**	**190**	P	**P**	**01 20 51.1**	**-1.5**
	comp=Z,18nm,0.6s,baz=11,slow=7.4,SNR=39						
ARU	**Arti**	**57.40**	**319**	*e*P	**P**	**01 20 51.6**	**-0.7**
	comp=Z,14nm,1.5s						
ABKAR	**Akbulak array**	**59.16**	**311**	*e*P	**P**	**01 21 04.3**	**-0.4**
	comp=Z,1.4nm,0.4s						
ASAR	**Alice Springs**	**61.12**	**190**	P	**P**	**01 21 16.9**	**-1.4**
	comp=Z,5.8nm,0.6s,baz=9.3,slow=7.9,SNR=58						
YKA	**Yellowknife Ar**	**62.90**	**31**	P	**P**	**01 21 30.2**	**+0.3**
	comp=Z,0.3nm,0.7s,baz=302,slow=6.4,SNR=6.6						
ARCES	**ARCESS Array B**	**64.51**	**340**	P	**P**	**01 21 41.6**	**+1.2**
	comp=Z,0.8nm,0.7s,baz=46,slow=6.9,SNR=6.5						
GEYT	**Alibeck**	**65.25**	**300**	P	**P**	**01 21 46.9**	**+1.1**
	comp=Z,2.2nm,1.0s,baz=48,slow=8.9,SNR=4.7						
STKA	**Stephens Creek**	**68.65**	**182**	P	**P**	**01 22 06.2**	**-0.9**
	comp=Z,2.5nm,0.5s,baz=349,slow=8.4,SNR=5.9						
FINES	**FINESS Array B**	**69.52**	**333**	P	**P**	**01 22 12.0**	**-0.2**
	comp=Z,2.3nm,0.7s,baz=53,slow=7.4,SNR=11						
FINES				LR	LR	01 54 39.4	
	comp=Z,54nm,18.9s,baz=356,slow=38						
KBZ	**Khabaz**	**72.11**	**312**	P	**P**	**01 22 28.7**	**+0.3**
	comp=Z,3.1nm,0.9s,baz=24,slow=4.7,SNR=5.4						
LRM	**Limekiln Ridge**	**72.92**	**45**	*e*P	**P**	**01 22 34.0**	**+0.4**
NVAR	**Mina Array Bea**	**73.61**	**54**	P	**P**	**01 22 38.0**	**+0.4**
	comp=Z,0.6nm,0.6s,baz=305,slow=5.4,SNR=3.7						
NB2	**NORSAR Subarra**	**74.75**	**338**	P	**P**	**01 22 43.8**	**+0.1**
	comp=Z,5.6nm,1.1s,baz=39,slow=5.9						
NOA	**NORSAR Array B**	**74.75**	**338**	P	**P**	**01 22 43.6**	**0.0**
	comp=Z,2.3nm,0.9s,baz=39,slow=5.8,SNR=7.6						
NOA				LR	LR	02 01 34.6	
	comp=Z,23nm,18.1s,baz=190,slow=40						
H17A	**Grant Village**	**74.84**	**46**	*e*P	**P**	**01 22 46.9**	**+2.1**
	comp=Z,2.4nm,0.8s						
AKASG	**Malin Array Be**	**75.25**	**323**	P	**P**	**01 22 45.6**	**-1.0**
	comp=Z,0.2nm,0.3s,baz=44,slow=5.8,SNR=5.5						
AKASG				LR	LR	01 56 47.9	
	comp=Z,19nm,20.8s,baz=30,slow=36						
PDAR	**Pinedale Array**	**76.42**	**46**	P	**P**	**01 22 52.7**	**-1.1**
	comp=Z,0.7nm,0.7s,baz=285,slow=2.9,SNR=4.6						
BRTR	**Keskin Array B**	**80.04**	**313**	P	**P**	**01 23 16.1**	**+2.3**
	comp=Z,0.5nm,0.7s,baz=72,slow=3.0,SNR=5.1						
CLL	**Collm**	**81.85**	**331**	*e*P	**P**	**01 23 25.0**	**+2.0**
	comp=Z,5.0nm,1.1s						
CLL				*i*		01 23 35.1	
CLL				Lm	MLR	03 44 00.0	
	comp=Z,200nm,19.4s						
TXAR	**Lajitas Array**	**88.75**	**54**	P	**P**	**01 23 57.9**	**-0.1**
	comp=Z,0.9nm,0.6s,baz=302,slow=3.1,SNR=7.4						
SNAA	**Sanae**	**141.29**	**196**	PKP	PKPpre	01 30 25.7	
VNA2	**Neumayer--Watz**	**142.84**	**195**	PKP	PKPpre	01 30 31.7	
	baz=126,slow=3.0						
VNA3	**Neumayer Olymp**	**143.05**	**194**	PKP	PKPab	01 30 31.9	0.0
LPAZ	**La Paz**	**145.21**	**62**	PKPbc	**PKPbc**	**01 30 41.7**	**-0.7**
	comp=Z,1.3nm,0.5s,baz=339,slow=4.0,SNR=11						

IDC ***16*** *01:25:19.9±0.8, 2.65S×99.97E, h0km, mb4.3/17, mb1 4.4/18, mb1mx4.1/38, mbtmp4.3/18, ML4.3/1, MS3.4/3, Ms1 3.4/3, ms1mx2.9/36, Error ellipse: s-maj=27.6km s-min=13.9km az=50.0*

NEIC ***16*** *01:25:21.3±3.4, 2.71S×99.93E, h10km±20km, mb4.5/7, Error ellipse: s-maj=16.2km s-min=5.6km az=52.0*

DJA ***16*** *01:25:21.6±0.6, 3.3S±3.3×10.0E±.1, h14km±4km, M4.5/11, mB5.0/2, mb4.5/6, MLv4.5/11, Mw(mB)4.3/2*

ISC 16 01:25:22.8±0.8, 2.73S±0.09×100.0E±0.1, h21km±5km, n54, σ0.92/52, mb4.3/24, MS3.2/3, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PPSI	**Pulau Pagai**	**0.06**	**129**	P	**Pb**	**01 25 27.0**	**+0.5**
PDSI	**Padang**	**1.87**	**15**	P	**Pn**	**01 25 54.5**	**+0.9**
PDSI				S	**Sb**	**01 26 20.5**	**+1.3**
PPI	**Padang Panjang**	**2.30**	**11**	P	**Pn**	**01 26 00.1**	**+0.6**
PPI				S	**Sb**	**01 26 30.7**	**-0.8**
MASI	**Maura Aman, Be**	**2.31**	**100**	P	**Pn**	**01 26 01.5**	**+1.8**
MASI				S	**Sb**	**01 26 31.8**	**-0.1**
PBSI	**Pulau Batu**	**3.14**	**328**	P	**Pn**	**01 26 10.7**	**-0.4**
BKNI	**Bangkinang**	**3.22**	**20**	P	**Pn**	**01 26 13.6**	**+1.5**
BKNI	**Bangkinang**	**3.22**	**20**	*e*Pn	**Pn**	**01 26 13.0**	**+0.8**
BKNI				*e*S	Sn	01 26 42.7	-7.2
MNAI	**Manna**	**3.40**	**119**	P	**Pn**	**01 26 15.6**	**+1.0**
MNAI	**Manna**	**3.40**	**119**	*e*Pn	**Pn**	**01 26 15.4**	**+0.8**
MNAI				*e*S	**Sn**	**01 26 51.0**	**-3.4**
MNSI	**Mandailing Nat**	**3.52**	**354**	P	**Pn**	**01 26 16.6**	**+0.3**
GSI	**Gunungsitoli**	**4.66**	**329**	P	**Pn**	**01 26 31.3**	**-0.7**
GSI	**Gunungsitoli**	**4.66**	**329**	*e*Pn	**Pn**	**01 26 30.8**	**-1.2**
GSI				*e*S	Sn	01 27 17.9	-7.6
KASI	**Kota Agung**	**5.30**	**122**	P	**Pn**	**01 26 41.7**	**+0.8**
	73nm,0.6s,0.4nm						
TPRI	**Tanjung Pinang**	**5.82**	**52**	P	Pn	01 26 53.7	+5.7
CGJI	**Cibinong**	**6.89**	**124**	P	**Pn**	**01 27 03.5**	**+0.8**
	48nm,0.9s,2μm0.2nm						
KULM	**Kulim**	**7.99**	**5**	*e*Pn	**Pn**	**01 27 17.4**	**-0.4**
CNJI	**Cibinong**	**8.46**	**123**	P	**Pn**	**01 27 24.7**	**+0.4**
CISI	**Cisompet, Garu**	**9.17**	**122**	*e*Pn	**Pn**	**01 27 33.6**	**-0.4**
	48nm,0.5s						
CISI				*e*S	Sn	01 29 08.8	-7.9
KAPI	**Kappang**	**19.87**	**97**	P	**Pn**	**01 29 54.8**	**+0.3**
	0.9nm,0.3s,baz=279,slow=7.3,SNR=6.3						
CMAR	**Chiang Mai Arr**	**21.07**	**357**	P	**P**	**01 30 04.0**	**-1.8**
	3.7nm,0.6s,baz=186,slow=10.0,SNR=22						
PALK	**Palikekele**	**21.64**	**297**	LR	LR	01 38 05.9	
	comp=Z,89nm,18.8s,baz=116,slow=36						
H08S2	**Diego Garcia H**	**27.78**	**259**	T	T	02 00 03.4	
	baz=81,slow=76,SNR=2510						
H08S3	**Diego Garcia H**	**27.79**	**259**	T	T	02 00 04.4	
	baz=81,slow=76,SNR=4839						
H08S1	**Diego Carcia H**	**27.80**	**259**	T	T	02 00 05.3	
	baz=81,slow=76,SNR=1988						
H01W3	**Cape Leeuwin H**	**34.60**	**159**	T	T	02 08 42.6	
	baz=336,slow=75,SNR=24						
H01W2	**Cape Leeuwin H**	**34.62**	**159**	T	T	02 08 41.2	
	baz=336,slow=75,SNR=36						
H01W1	**Cape Leeuwin H**	**34.62**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HOPE	**Hope Point** 118nm,1.0s	**6.74**	**296**	*e*Pn	**Pn**	**02 00 45.3**	**+0.1**
HOPE				*e*S	**Sg**	**02 02 41.0**	**-1.5**
VNA1	**Neumayer--Stat**	**15.06**	**157**	P	**P**	**02 02 41.9**	**-2.2**
VNA3	**Neumayer Olymp**	**15.26**	**160**	P	**P**	**02 02 43.3**	**-3.0**
VNA2	**Neumayer--Watz** baz=323,slow=14	**15.46**	**157**	P	**P**	**02 02 45.7**	**-2.8**
SNAA	**Sanae**	**17.01**	**155**	P	**P**	**02 03 06.5**	**+0.8**
SNAA	**Sanae** 534nm,0.6s	**17.01**	**155**	*e*Pn	**P**	**02 03 05.2**	**-0.6**
SYO	**Syowa Base**	**29.95**	**139‖**	*e*pP	pP	02 05 22.6	+5.6
QSPA	**South Pole Qui** 18nm,0.6s	**32.57**	**180**	*e*P	**P**	**02 05 38.6**	**+1.3**
SUR	**Sutherland** 9.4nm,1.0s	**40.53**	**72**	*e*P	**P**	**02 06 46.2**	**+0.6**
VNDA	**Vanda** 1.9nm,0.6s,baz=188,slow=5.7,SNR=16	**44.97**	**182**	P	**P**	**02 07 22.2**	**+1.4**
BOSA	**Boshof** 4.5nm,0.8s,baz=206,slow=7.3,SNR=11	**45.83**	**73**	P	**P**	**02 07 28.0**	**-0.3**
BOSA				LR	LR	02 24 34.9	
LVC	**Limon Verde** 1.4nm,0.9s	**46.63**	**300**	*e*P	**P**	**02 07 36.8**	**+1.8**
LPAZ	**La Paz** 0.4nm,0.3s,baz=181,slow=6.5,SNR=5.3	**51.80**	**305**	P	**P**	**02 08 16.3**	**+1.5**
LSZ	**Lusaka** 2.1nm,0.5s	**58.43**	**67**	*e*P	**P**	**02 09 02.1**	**0.0**
DBIC	**Dimbokro** 2.9nm,0.5s,baz=166,slow=8.2,SNR=5.6	**66.42**	**23**	P	**P**	**02 09 55.9**	**+0.6**
FINES	**FINESS Array B** 0.8nm,0.7s,baz=198,slow=2.8,SNR=5.3	**125.55**	**28**	PKP	**PKPdf**	**02 18 04.9**	**-1.1**
ARCES	**ARCESS Array B** 1.3nm,0.9s,baz=227,slow=2.0,SNR=4.4	**132.24**	**22**	PKP	**PKPdf**	**02 18 17.4**	**-1.2**
YKA	**Yellowknife Ar** 1.0nm,0.6s,baz=128,slow=2.5,SNR=20	**137.77**	**316**	PKP	**PKPdf**	**02 18 28.5**	**-0.5**
INK	**Inuvik** 1.6nm,0.6s,baz=83,slow=1.6,SNR=8.9	**147.43**	**319**	PKPbc	**PKPbc**	**02 18 47.8**	**-0.7**
DOT	**Dot Lake**	**150.13**	**308**	*e*PKPbc	**PKPbc**	**02 18 55.3**	**-0.3**
SONM	**Songino Array** 2.0nm,0.8s,baz=215,slow=2.3,SNR=11	**150.20**	**88**	PKPbc	**PKPbc**	**02 18 55.4**	**-1.1**
ILAR	**Eielson Array** 2.2nm,0.7s,baz=122,slow=1.2,SNR=19	**151.63**	**309**	PKPbc	**PKPbc**	**02 18 58.6**	**-0.4**
BPAW	**Bear Paw Mtn.**	**153.21**	**307**	*e*PKPbc	**PKPbc**	**02 19 02.0**	**-0.7**

IDC 16 02:05:44.2±1.7, 11°.49S×165°.41E, $h0^{km}$, mb3.9/4, mb1 4.1/5, mb1mx3.7/36, mbtmp3.9/5, ML4.0/1, Error ellipse: s-maj=51.0km s-min=31.0km az=123.0, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac** 1.3nm,0.3s,baz=100,slow=20,SNR=9.0	**10.57**	**175**	Pn	Pn	02 08 17.1	0.0
WRA	**Warramunga Arr** 2.0nm,0.9s,baz=79,slow=9.6,SNR=7.9	**31.03**	**250**	P	P	02 12 04.2	+0.2
ASAR	**Alice Springs** 0.8nm,0.8s,baz=67,slow=9.6,SNR=5.0	**32.30**	**244**	P	P	02 12 14.7	-0.6
ILAR	**Eielson Array** 0.4nm,0.7s,baz=237,slow=5.3,SNR=5.4	**84.03**	**19**	P	P	02 18 16.0	-0.3
MKAR	**Makanchi Array** 0.8nm,0.7s,baz=119,slow=5.6,SNR=5.6	**93.62**	**317**	P	P	02 19 03.0	+0.5

IDC 16 02:08:30.6±1.6, 11°.58S×165°.45E, $h0^{km}$, mb3.8/5, mb1 4.1/6, mb1mx3.7/40, mbtmp3.9/6, ML4.1/1, Error ellipse: s-maj=47.3km s-min=29.6km az=123.0, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac** 1.4nm,0.3s,baz=263,slow=8.4,SNR=7.1	**10.48**	**175**	Pn	Pn	02 11 02.8	+0.6
WRA	**Warramunga Arr** 1.5nm,0.6s,baz=81,slow=9.1,SNR=8.0	**31.03**	**251**	P	P	02 14 50.3	-0.1
ASAR	**Alice Springs** 0.4nm,0.8s,baz=62,slow=11,SNR=3.5	**32.30**	**244**	P	P	02 15 00.8	-0.7
CMAR	**Chiang Mai Arr** 0.5nm,0.3s,baz=116,slow=5.4,SNR=4.2	**72.06**	**294**	P	P	02 19 58.2	+1.0
ILAR	**Eielson Array** 0.2nm,0.7s,baz=236,slow=6.2,SNR=3.1	**84.11**	**19**	P	P	02 21 02.7	-0.4
MKAR	**Makanchi Array** 0.4nm,0.5s,baz=92,slow=4.3,SNR=4.4	**93.71**	**317**	P	P	02 21 49.2	-0.1

*IDC **16** 02:14:07.8±0.8, 11°.50S×165°.52E, $h0^{km}$, mb4.4/17, mb1 4.5/18, mb1mx4.3/44, mbtmp4.4/18, ML4.4/1, MS4.1/2, Ms1 4.0/2, ms1mx3.2/50, Error ellipse: s-maj=24.8km s-min=16.0km az=116.0*

*ISCJB **16** 02:14:10.4±0.3, 11°.58S±0°.06×165°.34E±0°.06, $h24^{km}$, mb4.6/44, MS4.3/6, Error ellipse: s-maj=8.7km s-min=7.4km az=44.7*

*GCMT **16** 02:14:14.2±0.3, 11°.63S×165°.35E, $h18^{km}\pm1^{km}$, MW5.0/89, Moment Tensor Solution. s28,c28; s89,c120; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-3.96±.24; $M_{\theta\theta}$0.81±.15; $M_{\phi\phi}$3.15±.17; $M_{r\theta}$-1.15±.47; $M_{r\phi}$-0.71±.10; $M_{\theta\phi}$0.34±.37; Best double couple: $M_0$3.81700×10^{16} NP1:ϕ_s152.00000°, δ51.00000°, λ-105.00000°. NP2: ϕ_s355.00000°, δ41.00000°, λ-72.00000°. Principal axes: T 3.4060, Plg5.0000°, Azm252.0000°; N 0.8230, Plg12.0000°, Azm161.0000°; P -4.2270, Plg77.0000°, Azm6.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

*NEIC **16** 02:14:14.2±1.0, 11°.55S×165°.36E, $h40^{km}\pm9^{km}$, mb4.8/23 Error ellipse: s-maj=8.1km s-min=6.9km az=161.0*

ISC 16 02:14:12.3±0.5, 11°.55S±0°.08×165°.40E±0°.07, $h24^{km}$, n68, σ1^{s}60/68, mb4.8/44, MS4.2/7, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	**Honiara**	**5.76**	**291**	*e*Pn	**Pn**	**02 15 37.1**	**+0.7**
HNR				*e*S	**Sn**	**02 16 47.4**	**+5.7**
DZM	**Mont Dzumac** 3.1nm,0.3s,baz=70,slow=20,SNR=4.9	**10.51**	**175**	Pn	**Pn**	**02 16 41.2**	**-0.5**
MSVF	**Nonsavu**	**13.70**	**118**	Pn	**Pn**	**02 17 27.9**	**+2.7**
PMG	**Port Moresby** 181nm,1.8s	**18.06**	**275**	*e*Pn	**Pn**	**02 18 19.8**	**-2.0**
EIDS	**Eidsvold** 114nm,1.6s	**19.30**	**223**	*e*P	**P**	**02 18 35.0**	**-0.6**
MANU	**Manus Island** 601nm,1.8s	**20.23**	**297**	*e*P	**P**	**02 18 45.8**	**-0.1**
CTA	**Charters Tower** 14nm,0.9s,baz=63,slow=13,SNR=6.3	**20.26**	**243**	P	Pn	02 18 47.9	-0.4
CTAO	**Charters Tower**	**20.26**	**243**	P	**P**	**02 18 47.0**	**+0.7**
ARMA	**Armidale** 50nm,1.3s	**22.71**	**212**	*e*P	**P**	**02 19 12.8**	**+0.1**
STKA	**Stephens Creek** 5.3nm,0.9s,baz=42,slow=12,SNR=6.7	**29.84**	**224**	P	**P**	**02 20 17.6**	**-0.3**
WRAB	**Tennant Creek** 31nm,1.3s	**30.98**	**251**	*e*P	**P**	**02 20 28.0**	**0.0**
WRA	**Warramunga Arr** 9.5nm,0.8s,baz=80,slow=9.3,SNR=26	**30.99**	**250**	P	**P**	**02 20 27.9**	**-0.3**
ASAR	**Alice Springs** 4.4nm,1.0s,baz=65,slow=10,SNR=19	**32.26**	**244**	P	**P**	**02 20 37.8**	**-1.5**
RAR	**Rarotonga** comp=Z,294nm,22.0s,baz=282,slow=32	**34.70**	**111**	LR	LR	02 32 34.2	
FITZ	**Fitzroy Crossi** 10nm,0.9s,baz=93,slow=7.2,SNR=8.5	**38.92**	**256**	P	**P**	**02 21 36.0**	**-0.6**
PPT2	**Papeete2** 99nm,23.0s	**43.91**	**103**	*e*S	**S**	**02 28 51.9**	**+3.8**
PPT2	564nm,27.5s			*e*LR	LR	02 34 38.3	
TBI	**Tubuai** 467nm,26.8s,baz=292	**44.46**	**112**	*e*LR	LR	02 34 56.7	
MJAR	**Matsushiro Arr** 1.3nm,0.6s,baz=165,slow=5.8,SNR=6.5	**54.26**	**333**	P	**P**	**02 23 35.2**	**-1.3**
JNU	**Nakatsue** 7.9nm,0.7s,baz=12,slow=4.8,SNR=5.0	**55.29**	**325**	P	**P**	**02 23 43.9**	**-0.1**
RKT	**Rikitea** 534nm,26.0s,baz=276	**57.73**	**110**	*e*LR	LR	02 41 04.6	
KSRS	**Korea Array** 1.8nm,0.8s,baz=140,slow=6.5,SNR=5.9	**60.10**	**326**	P	**P**	**02 24 17.8**	**0.0**
KSAR	**Wonju Array Be**	**60.11**	**326**	P	**P**	**02 24 17.8**	**-0.1**
QIZ	**Qiongzhong**	**62.62**	**299**	P	**P**	**02 24 34.3**	**-0.9**
QIZ				S	**S**	**02 33 01.8**	**-0.5**
QIZ	comp=N,60nm,11.6s			LR	LR		
QIZ	comp=E,62nm,20.0s			LR	LR		
USRK	**Ussuriysk Ar.** comp=E,2.8nm,0.7s,baz=81,slow=12,SNR=6.4	**63.24**	**334**	P	**P**	**02 24 37.0**	**-1.8**
CASY	**Casey**	**65.79**	**201**	*e*P	**P**	**02 24 54.4**	**-0.8**
	comp=E,0.6nm,0.8s						
VNDA	**Vanda** comp=E,1.6nm,1.1s,baz=353,slow=7.4,SNR=5.5	**65.99**	**181**	P	**P**	**02 24 56.6**	**+0.3**
PSI	**Prapat** comp=E,8.2nm,1.0s	**67.60**	**278**	*e*P	**P**	**02 25 04.3**	**-3.5**
GYA	**Guiyang**	**68.42**	**305**	*e*P	**P**	**02 25 13.0**	**+0.3**
GYA				pP	sP	02 25 24.4	+1.1
GYA				PP	**PP**	**02 27 47.6**	**+3.5**
GYA				ScP		02 29 24.8	
GYA				S	**S**	**02 34 11.0**	**-2.3**
GYA				sS	sS	02 34 28.3	+2.3
GYA				SKS	**SKiKP**	**02 35 05.3**	**-0.4**
GYA	**Guiyang**	**68.42**	**305**	SS	SS	02 38 37.9	+0.4
GYA	comp=Z,10.0nm,1.0s			pmax	pmax		
GYA	comp=Z,110nm,6.2s			pmax	pmax		
GYA	comp=N,460nm,18.7s			LR	LR		
GYA	comp=E,410nm,19.2s			LR	LR		
GYA	comp=Z,430nm,19.4s			LR	LR		
KMI	**Kunming**	**71.09**	**302**	P	**P**	**02 25 29.8**	**+0.4**
KMI	comp=Z,12nm,1.2s			pmax	pmax		
KMI	comp=Z,74nm,4.8s			pmax	pmax		
HHC	**Hu-ho-hao-te**	**72.00**	**320**	*e*P	**P**	**02 25 35.9**	**+1.6**
HHC				sP	PcP	02 25 54.5	+1.7
HHC				S	**S**	**02 34 51.5**	**-3.1**
HHC				sS	sS	02 35 03.8	-3.5
HHC	comp=Z,22nm,1.2s			pmax	pmax		
HHC	comp=Z,140nm,7.1s			pmax	pmax		
HHC	comp=N,160nm,17.2s			LR	LR		
HHC	comp=E,220nm,17.7s			LR	LR		
HHC	comp=Z,220nm,17.7s			LR	LR		
CMAR	**Chiang Mai Arr** comp=Z,1.6nm,0.5s,baz=119,slow=4.3,SNR=9.3	**72.00**	**294**	P	**P**	**02 25 34.6**	**0.0**
CD2	**Chengdu**	**72.64**	**308**	P	**P**	**02 25 37.4**	**-0.9**
CD2	comp=Z,2.0nm,0.6s			pmax	pmax		
ULN	**Ulaanbaatar** comp=Z,22nm,1.6s	**78.51**	**324**	*e*P	**P**	**02 26 12.4**	**+0.6**
SONM	**Songino Array** comp=Z,2.2nm,1.0s,baz=134,slow=4.7,SNR=7.8	**78.87**	**324**	P	**P**	**02 26 14.3**	**+0.6**
GTA	**Gaotai**	**79.16**	**314**	*e*P	**P**	**02 26 19.3**	**+3.8**
GTA				pP	sP	02 26 28.1	+2.0
GTA				sP	PcP	02 26 32.3	+8.5
GTA				S	**S**	**02 36 16.8**	**+2.7**
GTA	**Gaotai**	**79.16**	**314**	SKS	**SKSac**	**02 36 27.8**	**-2.5**
GTA	**Gaotai**	**79.16**	**314**	sS	ScS	02 36 34.4	-2.5
GTA	**Gaotai**	**79.16**	**314**	SS	SS	02 41 27.5	+6.6
GTA	comp=Z,6.0nm,1.0s			pmax	pmax		
GTA	comp=Z,48nm,6.4s			pmax	pmax		
GTA	comp=N,120nm,19.0s			LR	LR		
GTA	comp=E,130nm,19.0s			LR	LR		
GTA	comp=Z,140nm,19.5s			LR	LR		
BILL	**Biiibino** comp=Z,7.7nm,1.0s	**79.38**	**0**	*e*P	**P**	**02 26 15.7**	**-0.2**
SHL	**Shillong**	**80.46**	**299**	*e*P	**P**	**02 26 24.0**	**+1.1**
CAST	**Castle Rocks** comp=Z,4.6nm,0.8s	**81.53**	**18**	*e*P	**P**	**02 26 27.3**	**-0.3**
DIV	**Divide** comp=Z,13nm,1.1s	**82.00**	**22**	*e*P	**P**	**02 26 29.2**	**-0.9**
KLU	**Klutina** comp=Z,9.9nm,1.1s	**82.19**	**21**	*e*P	**P**	**02 26 31.8**	**+0.7**
RND	**Reindeer** comp=Z,15nm,1.2s	**82.52**	**19**	*e*P	**P**	**02 26 32.5**	**-0.3**
MCK	**McKinley** comp=Z,10nm,1.1s	**82.73**	**19**	*e*P	**P**	**02 26 34.7**	**+0.9**
MLY	**Manley** comp=Z,22nm,1.8s	**83.12**	**17**	*e*P	**P**	**02 26 35.5**	**-0.3**
BALM	**Baldy** comp=Z,10nm,1.1s	**83.21**	**23**	*e*P	**P**	**02 26 36.2**	**-0.3**
WRH	**Wood River Hil** comp=Z,6.6nm,0.9s	**83.51**	**18**	*e*P	**P**	**02 26 37.4**	**-0.4**
CCB	**Clear Creek Bu** comp=Z,7.4nm,1.2s	**83.72**	**18**	*e*P	**P**	**02 26 38.3**	**-0.6**
COLA	**College** comp=Z,6.6nm,0.8s	**83.87**	**18**	*e*P	**P**	**02 26 39.1**	**-0.5**
ILAR	**Eielson Array** comp=Z,2.4nm,0.8s,baz=235,slow=6.2,SNR=20	**84.10**	**19**	P	**P**	**02 26 39.6**	**-1.2**
MAW	**Mawson** comp=Z,86nm,18.4s,baz=62,slow=34	**84.13**	**202**	LR	LR	03 02 28.3	
DOT	**Dot Lake** comp=Z,67nm,1.4s	**84.27**	**20**	*e*P	**P**	**02 26 40.9**	**-0.8**
COLD	**Coldfoot** comp=Z,16nm,2.0s	**84.88**	**16**	*e*P	**P**	**02 26 45.2**	**+0.5**
EGAK	**Eagle** comp=Z,28nm,1.4s	**85.97**	**20**	*e*P	**P**	**02 26 49.9**	**-0.2**
DAWY	**Dawson** comp=Z,15nm,1.6s	**86.15**	**21**	*e*P	**P**	**02 26 51.5**	**+0.3**
TIXI	**Tiksi** comp=Z,16nm,1.7s	**86.52**	**349**	*e*P	**P**	**02 26 51.8**	**-1.0**
NVAR	**Mina Array Bea** comp=Z,0.7nm,0.6s,baz=230,slow=8.3,SNR=4.5	**86.61**	**50**	P	**P**	**02 26 51.5**	**-2.8**
R11A	**Troy Canyon, C** comp=Z,1.2nm,1.0s	**88.63**	**51**	*e*P	**P**	**02 27 04.6**	**+0.6**
WMQ	**Urumqi**	**89.21**	**315**	*e*P	**P**	**02 27 06.6**	**+0.2**
WMQ	comp=N,70nm,19.0s			LR	LR		
WMQ	comp=E,43nm,16.4s			LR	LR		
WMQ	comp=Z,30nm,24.6s			LR	LR		
MKAR	**Makanchi Array** comp=Z,1.8nm,0.7s,baz=103,slow=5.5,SNR=15	**93.65**	**317**	P	**P**	**02 27 26.6**	**-0.3**
ZALV	**Zalesovo Beam** comp=Z,1.8nm,0.3s,baz=104,slow=6.1,SNR=3.3	**93.76**	**324**	P	**P**	**02 27 26.5**	**-0.6**
MAKZ	**Makanchi** comp=Z,11nm,1.3s	**93.87**	**317**	*e*P	**P**	**02 27 28.1**	**+0.2**
YKA	**Yellowknife Ar** comp=Z,0.5nm,0.8s,baz=256,slow=4.8,SNR=5.6	**95.58**	**27**	P	**P**	**02 27 32.8**	**-2.5**
ARCES	**ARCESS Array B** comp=Z,1.2nm,0.7s,baz=76,slow=1.1,SNR=6.9	**116.73**	**345**	PKP	**PKPdf**	**02 32 54.1**	**-0.1**
KEST	**Kesra** comp=Z,7.1nm,1.0s,baz=63,slow=2.3,SNR=4.3	**147.60**	**322**	PKPbc	**PKPbc**	**02 33 55.0**	**-0.3**
ESDC	**Sonseca Array** comp=Z,0.8nm,0.7s,baz=28,slow=3.6,SNR=4.4	**150.44**	**343**	PKPbc	**PKPbc**	**02 34 02.4**	**+0.1**
ESDC				PKPab	**PKPab**	**02 34 08.0**	**-0.8**

IDC 16 02:18:02.2±1.6, 11°.48S×165°.51E, $h0^{km}$, mb3.9/4, mb1 4.1/5, mb1mx3.7/46, mbtmp3.9/5, ML4.1/1, Error ellipse: s-maj=51.7km s-min=30.0km az=125.0, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac** 1.3nm,0.3s,baz=134,slow=21,SNR=6.4	**10.57**	**175**	Pn	Pn	02 20 35.2	+0.1
WRA	**Warramunga Arr** 2.0nm,0.7s,baz=80,slow=9.2,SNR=5.6	**31.11**	**250**	P	P	02 24 22.9	+0.2
ASAR	**Alice Springs** 0.6nm,0.7s,baz=70,slow=9.0,SNR=3.8	**32.39**	**244**	P	P	02 24 33.5	-0.5
ILAR	**Eielson Array** 0.4nm,0.7s,baz=228,slow=5.6,SNR=4.1	**84.00**	**19**	P	P	02 30 33.8	-0.3
MKAR	**Makanchi Array** 0.5nm,0.6s,baz=104,slow=6.1,SNR=4.3	**93.68**	**317**	P	P	02 31 21.4	+0.6

*IDC **16** 02:19:57.2±0.6, 11°.54S×165°.48E, $h0^{km}$, mb4.4/20, mb1 4.6/21, mb1mx4.4/42, mbtmp4.4/21, ML4.7/1, MS4.4/5, Ms1 4.4/5, ms1mx3.6/46, Error ellipse: s-maj=21.7km s-min=15.1km az=114.0*

*ISCJB **16** 02:19:59.5±0.3, 11°.55S±0°.06×165°.36E±0°.05, $h24^{km}$, mb4.9/97, MS4.4/16, Error ellipse: s-maj=8.6km s-min=6.3km az=153.6*

*MOS **16** 02:20:01.7±1.6, 11°.35S×165°.10E, $h33^{km}$, mb5.2/31, Error ellipse: s-maj=9.7km s-min=8.7km az=116.5*

*GCMT **16** 02:20:02.5±0.3, 11°.72S×165°.25E, $h15^{km}\pm1^{km}$, MW5.0/71, Moment Tensor Solution. s26,c27; s71,c97; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-3.50±.23; $M_{\theta\theta}$0.34±.16; $M_{\phi\phi}$3.17±.18; $M_{r\theta}$-2.45±.41; $M_{r\phi}$-0.14±.10; $M_{\theta\phi}$1.21±.34; Best double couple: $M_0$4.17100×10^{16} NP1:ϕ_s149.00000°, δ62.00000°, λ-115.00000°. NP2: ϕ_s13.00000°, δ36.00000°, λ-51.00000°. Principal axes: T 3.5140, Plg14.0000°, Azm256.0000°; N 1.3170, Plg22.0000°, Azm161.0000°; P -4.8270, Plg64.0000°, Azm17.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

*NEIC **16** 02:20:02.5±0.3, 11°.53S×165°.32E, $h35^{km}$, mb5.1/54 Error ellipse: s-maj=9.2km s-min=6.3km az=141.0*

ISC 16 02:20:01.0±0.4, 11°.49S±0°.07×165°.35E±0°.07, $h24^{km}$, n175, σ1^{s}79/177, mb5.0/97, MS4.5/16, 4C-2D, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	**Honiara**	**5.70**	**291**	*e*P	**Pn**	**02 21 24.0**	**-0.1**
HNR				*e*S	**Sn**	**02 22 29.0**	**+0.2**
HNR	**Honiara**	**5.70**	**291**	*e*P	**Pn**	**02 21 21.2**	**-3.0**
HNR				*e*S	Sn	02 22 19.0	-10
HNR	**Honiara**	**5.70**	**291**	*e*Pn	**Pn**	**02 21 21.2**	**-3.0**
HNR				*e*S	Sn	02 22 19.0	-10
DZM	**Mont Dzumac** 6.1nm,0.3s,baz=173,slow=14,SNR=22	**10.57**	**174**	Pn	**Pn**	**02 22 30.2**	**-1.0**
MSVF	**Nonsavu**	**13.76**	**118**	*e*P	**P**	**02 23 23.0**	**-0.2**
MSVF	**Nonsavu**	**13.76**	**118**	*e*Pn	**P**	**02 23 23.0**	**-0.2**
RABL	**Rabaul**	**14.94**	**298**	*e*Pn	Pn	02 23 22.6	-8.2
MANU	**Manus Island** 434nm,1.4s	**20.16**	**296**	*e*P	**P**	**02 24 35.3**	**+1.5**
CTA	**Charters Tower** 3.1nm,0.4s,baz=78,slow=9.7,SNR=3.8	**20.25**	**243**	P	Pn	02 24 38.7	+1.9
CTA	comp=Z,2μm,19.0s,baz=62,slow=33			LR	LR	02 31 14.8	
CTA	**Charters Tower**	**20.25**	**243**	P	Pn	02 24 38.7	+1.9
CTA	comp=Z,9.0nm,0.8s			pmax	pmax		
CTA	comp=Z,2μm,19.0s			MLR	MLR		
CTAO	**Charters Tower**	**20.25**	**243**	*e*P	**P**	**02 24 32.4**	**-2.4**
CTAO	comp=Z,94nm,1.2s			pmax	pmax		
CTAO	**Charters Tower** comp=Z,94nm,1.2s	**20.25**	**243**	*e*P	**P**	**02 24 32.4**	**-2.4**
ARMA	**Armidale** comp=Z,137nm,1.8s	**22.74**	**212**	*e*P	**P**	**02 25 00.9**	**-0.7**
STKA	**Stephens Creek** comp=Z,4.1nm,0.7s,baz=32,slow=11,SNR=6.1	**29.85**	**224**	P	**P**	**02 26 07.2**	**+0.5**
WRAB	**Tennant Creek**	**30.96**	**250**	*e*P	**P**	**02 26 16.0**	**-0.5**
WRAB	comp=Z,89nm,1.4s			pmax	pmax		
WRAB	**Tennant Creek** comp=Z,67nm,1.4s	**30.96**	**250**	*e*P	**P**	**02 26 15.6**	**-1.0**
WRA	**Warramunga Arr** comp=Z,16nm,0.8s,baz=80,slow=9.3,SNR=25	**30.97**	**250**	P	**P**	**02 26 16.5**	**-0.1**
WRA				PcP	**PcP**	**02 29 13.1**	**+0.4**
ASAR	**Alice Springs** comp=Z,0.8nm,0.8s,baz=78,slow=3.4,SNR=3.5	**32.25**	**244**	P	**P**	**02 26 27.0**	**-0.9**
ASAR	comp=Z,5.6nm,1.1s,baz=75,slow=9.3,SNR=16			PcP	**PcP**	**02 29 16.4**	**+0.2**
ASAR	**Alice Springs**	**32.25**	**244**	P	**P**	**02 26 27.0**	**-0.9**
ASAR						02 29 16.4	
ASAR	comp=Z,5.0nm,1.0s			pmax	pmax		
FITZ	**Fitzroy Crossi** comp=Z,8.3nm,0.7s,baz=92,slow=9.5,SNR=12	**38.89**	**255**	P	**P**	**02 27 25.4**	**+0.5**
PPT2	**Papeete2** comp=Z,925nm,30.5s	**43.97**	**103**	*e*LR	LR	02 40 30.6	
TBI	**Tubuai** comp=Z,667nm,27.8s	**44.53**	**112**	*e*LR	LR	02 40 47.3	
MBWA	**Marble Bar** comp=Z,167nm,1.2s	**44.69**	**252**	*e*P	**P**	**02 28 12.7**	**+0.3**
KAPI	**Kappang** comp=Z,4.7nm,0.5s,baz=104,slow=14,SNR=4.1	**45.54**	**274**	P	**P**	**02 28 20.8**	**+1.6**
KKM	**Kota Kinabalu** comp=Z,7.2nm,0.8s	**51.90**	**287**	*e*P	**P**	**02 29 09.2**	**+1.0**
MJAR	**Matsushiro Arr** comp=Z,1.4nm,0.3s,baz=159,slow=5.8,SNR=9.1	**54.19**	**333**	P	**P**	**02 29 24.5**	**-0.1**
MAJO	**Matsushiro**	**54.19**	**333**	*e*P	**P**	**02 29 22.0**	**-2.7**
MAJO	comp=Z,39nm,0.9s			pmax	pmax		
JNU	**Nakatsue** comp=Z,17nm,1.4s	**55.22**	**325**	*e*P	**P**	**02 29 31.7**	**-0.5**
TPUB	**Ta-pu** comp=Z,50nm,1.2s	**55.77**	**309**	*e*P	**P**	**02 29 38.0**	**+1.7**
LEM	**Lembang** comp=Z,21nm,0.4s,baz=85,slow=6.3,SNR=9.9	**57.11**	**269**	P	P	02 29 52.7	+6.4
LEM	comp=Z,242nm,19.2s,baz=107,slow=39			LR	LR	02 57 08.9	
RKT	**Rikitea** comp=Z,774nm,27.8s	**57.80**	**110**	*e*LR	LR	02 46 55.8	
KSRS	**Korea Array** comp=Z,2.0nm,0.9s,baz=155,slow=6.8,SNR=11	**60.03**	**326**	P	**P**	**02 30 06.8**	**+1.0**
KSAR	**Wonju Array Be**	**60.04**	**326**	P	**P**	**02 30 06.9**	**+0.9**
KSAR	**Wonju Array Be**	**60.04**	**326**	P	**P**	**02 30 06.8**	**+0.9**
YSS	**Yuzh-Sakhalins**	**61.59**	**343⇑**	*e*P	P	02 30 28.9	+13
YSS	comp=Z,20nm,1.2s			pmax	pmax		
QIZ	**Qiongzhong**	**62.55**	**299**	P	**P**	**02 30 22.4**	**-1.0**
QIZ				S	**S**	**02 38 48.3**	**-1.8**
QIZ	comp=N,61nm,17.3s			LR	LR		
QIZ	comp=E,87nm,21.4s			LR	LR		
USRK	**Ussuriysk Ar.** comp=E,8.5nm,1.0s,baz=132,slow=5.7,SNR=11	**63.17**	**334**	P	**P**	**02 30 27.7**	**+0.7**
HABR	**Khabarovsk**	**65.45**	**338**	*e*P	**P**	**02 30 38.7**	**-3.1**
HABR				*e**SP	**sP**	**02 30 53.0**	**+0.7**
HABR				*e*		02 31 10.9	
HABR				*e*		02 33 02.0	
HABR				*e*PPP	PPP	02 34 35.1	
HABR				*e*S	**S**	**02 39 19.8**	**-5.2**
HABR				*e**SS	**sS**	**02 39 36.9**	**-0.7**
HABR				*e*		02 40 30.9	
HABR				*e*SS	**SS**	**02 43 33.0**	**-6.1**
HABR	comp=N,29nm,1.5s			pmax	pmax		
HABR	comp=E,13nm,1.5s			pmax	pmax		
HABR	comp=Z,51nm,1.5s			pmax	pmax		
HABR	comp=Z,277nm,20.0s			MLR	MLR		
IPM	**Ipoh** comp=Z,26nm,1.0s	**65.92**	**280**	*e*P	**P**	**02 30 46.0**	**+0.4**
CN2	**Changchun**	**65.92**	**329**	*e*P	**P**	**02 30 46.4**	**+1.4**
CN2				*e*S	**S**	**02 39 33.3**	**+2.3**
CN2	comp=Z,20nm,1.5s			pmax	pmax		
CN2	comp=Z,40nm,3.0s			pmax	pmax		
CN2	comp=N,200nm,19.0s			LR	LR		
CN2	comp=E,200nm,19.0s			LR	LR		
CN2	comp=Z,200nm,20.0s			LR	LR		
VNDA	**Vanda** comp=Z,0.5nm,0.8s,baz=348,slow=8.5,SNR=5.1	**66.04**	**181**	P	**P**	**02 30 45.2**	**-0.1**
SBA	**Scott Base**	**66.36**	**180**	*e*P	**P**	**02 30 47.3**	**0.0**
SBA	comp=Z,16nm,1.7s			pmax	pmax		
SBA	**Scott Base** comp=Z,16nm,1.7s	**66.36**	**180**	*e*P	**P**	**02 30 47.3**	**0.0**
KULM	**Kulim** comp=Z,32nm,1.5s	**66.48**	**281**	*e*P	**P**	**02 30 47.4**	**-1.8**
SKNT	**Sakolnakorn** comp=Z,32nm,1.6s	**66.92**	**294**	P	**P**	**02 30 53.7**	**+1.8**
KLR	**Kul'dur**	**67.31**	**337**	*d*iP	**P**	**02 30 52.8**	**-1.0**
PSI	**Prapat**	**67.55**	**278**	*e*P	**P**	**02 30 55.1**	**-1

GYA			SKS	SKiKP	02 40 52.3	-1.9
GYA	**Guiyang**	**68.35 305**	SS	SS	02 44 23.6	-1.5
GYA			pmax	pmax		
comp=Z,20nm,0.8s						
GYA			pmax	pmax		
comp=Z,120nm,6.6s						
GYA			LR	LR		
comp=N,490nm,18.7s						
GYA			LR	LR		
comp=E,440nm,19.2s						
GYA			LR	LR		
comp=Z,460nm,19.4s						
BJI	**Beijing**	**68.59 321**	P	**P**	**02 31 02.5**	**+0.5**
BJI			S	**S**	**02 40 03.8**	**+0.7**
BJI	**Beijing**	**68.59 321**	SS	SS	02 44 29.5	+1.5
BJI			pmax	pmax		
comp=Z,13nm,1.5s						
BJI			pmax	pmax		
comp=Z,160nm,5.4s						
BJI			LR	LR		
comp=N,300nm,18.9s						
BJI			LR	LR		
comp=E,190nm,18.4s						
BJI			LR	LR		
comp=Z,310nm,24.5s						
SURT	**Suratani**	**69.23 284**	P	**P**	**02 31 10.3**	**+3.8**
comp=Z,6.5nm,1.4s						
PBKT	**Sadao Pong**	**69.49 293**	P	**P**	**02 31 10.7**	**+2.7**
comp=Z,13nm,1.9s						
KMI	**Kunming**	**71.02 302**	P	**P**	**02 31 17.8**	**+0.2**
KMI			pP	sP	02 31 29.5	+1.4
KMI			sP	PcP	02 31 32.9	-5.0
KMI			PP	**PP**	**02 33 57.3**	**+1.9**
KMI			S	**S**	**02 40 27.3**	**-5.6**
KMI			sS	sS	02 40 45.3	-0.3
CRAI	**Chiangrai**	**71.26 296**	P	**P**	**02 31 21.1**	**+2.2**
comp=Z,87nm,1.3s						
LAMP	**Lampang**	**71.34 294**	P	**P**	**02 31 22.9**	**+3.5**
comp=Z,4.8nm,1.1s,comp=Z,224nm						
HHC	**Hu-ho-hao-te**	**71.92 320**	*e*P	**P**	**02 31 24.4**	**+1.9**
HHC			pP	sP	02 31 35.3	+2.2
HHC			S	**S**	**02 40 46.9**	**+4.5**
HHC			pmax	pmax		
comp=Z,22nm,1.2s						
HHC			pmax	pmax		
comp=Z,140nm,7.1s						
HHC			LR	LR		
comp=N,290nm,17.5s						
HHC			LR	LR		
comp=E,310nm,17.9s						
HHC			LR	LR		
comp=Z,250nm,17.1s						
CMAR	**Chiang Mai Arr**	**71.94 294**	P	**P**	**02 31 24.6**	**+1.7**
comp=Z,3.9nm,0.7s,baz=120,slow=4.9,SNR=19						
CMMT	**Chiang Mai**	**72.05 294**	P	**P**	**02 31 25.9**	**+2.3**
comp=Z,14nm,1.6s,comp=Z,395nm						
CHTO	**Chiang Mai**	**72.05 294**	P	**P**	**02 31 26.0**	**+2.3**
comp=Z,49nm,1.4s						
CHTO	**Chiang Mai**	**72.05 294**	*e*P	**P**	**02 31 22.1**	**-1.6**
CHTO			pmax	pmax		
comp=Z,29nm,1.5s						
CHTO	**Chiang Mai**	**72.05 294**	*e*P	**P**	**02 31 22.1**	**-1.6**
comp=Z,29nm,1.5s						
CMAI	**Chiengmai2**	**72.33 295**	P	**P**	**02 31 27.9**	**+2.4**
comp=Z,12nm,1.4s,comp=Z,601nm						
CD2	**Chengdu**	**72.57 308**	P	**P**	**02 31 28.3**	**+1.8**
CD2			sP	PcP	02 31 43.9	-0.2
CD2			PP	**PP**	**02 34 09.8**	**+1.5**
CD2			S	**S**	**02 40 50.8**	**+0.7**
CD2			sS	sS	02 41 07.1	+4.3
CD2	**Chengdu**	**72.57 308**	SS	SS	02 45 28.1	-1.6
CD2			pmax	pmax		
comp=Z,30nm,1.2s						
CD2			pmax	pmax		
comp=Z,150nm,6.1s						
CD2			LR	LR		
comp=N,210nm,13.7s						
CD2			LR	LR		
comp=Z,300nm,17.8s						
LZH	**Lanzhou**	**74.77 312**	*e*P	**P**	**02 31 43.3**	**+3.8**
LZH			pP	PcP	02 31 53.3	-0.3
LZH			sP	sP	02 31 58.3	+8.2
LZH			pmax	pmax		
comp=Z,54nm,1.4s						
LZH			pmax	pmax		
comp=Z,170nm,5.4s						
LZH			LR	LR		
comp=N,170nm,13.3s						
LZH			LR	LR		
comp=E,250nm,15.2s						
LZH			LR	LR		
comp=Z,200nm,16.0s						
SEY	**Seymchan**	**74.87 354**	P	**P**	**02 31 39.4**	**+0.1**
comp=Z,1.0nm,0.2s,baz=209,slow=6.9,SNR=4.5						
SEY			LR	LR	03 00 05.0	
comp=Z,904nm,21.8s,baz=152,slow=32						
YAK	**Yakutsk**	**78.41 344**	*i* P	**P**	**02 31 59.6**	**+0.3**
YAK			pmax	pmax		
comp=Z,40nm,1.7s						
ULN	**Ulaanbaatar**	**78.43 324**	*e*P	**P**	**02 32 00.8**	**+0.8**
ULN			pmax	pmax		
comp=Z,37nm,1.4s						
ULN	**Ulaanbaatar**	**78.43 324**	*e*P	**P**	**02 32 00.8**	**+0.8**
comp=Z,37nm,1.4s						
SONM	**Songino Array**	**78.80 324**	P	**P**	**02 32 03.2**	**+1.2**
comp=Z,6.8nm,1.2s,baz=130,slow=3.6,SNR=28						
GTA	**Gaotai**	**79.09 314**	⇑P	**P**	**02 32 05.9**	**+2.1**
GTA			pP	sP	02 32 16.8	+2.4
GTA			sP	PcP	02 32 20.6	+8.4
GTA			S	**S**	**02 42 05.3**	**+3.3**
GTA	**Gaotai**	**79.09 314**	SKS	**SKSac**	**02 42 15.3**	**-3.1**
GTA	**Gaotai**	**79.09 314**	sS	sS	02 42 21.8	+7.0
GTA	**Gaotai**	**79.09 314**	SS	SS	02 47 16.0	+7.5
GTA			pmax	pmax		
comp=Z,14nm,1.5s						
GTA			pmax	pmax		
comp=Z,120nm,5.2s						
GTA			LR	LR		
comp=N,99nm,18.5s						
GTA			LR	LR		
comp=E,150nm,18.5s						
GTA			LR	LR		
comp=Z,190nm,18.5s						
BILL	**Bilibino**	**79.33 0**	⇑*i*P	**P**	**02 32 04.5**	**+0.2**
BILL			pmax	pmax		
comp=Z,29nm,2.5s						
BILL			MLR	MLR		
comp=Z,136nm,19.0s						
BILL	**Bilibino**	**79.33 0**	*e*P	**P**	**02 32 04.4**	**+0.2**
comp=Z,25nm,1.0s						
TTA	**Tatalina**	**79.96 17**	*e*P	**P**	**02 32 08.6**	**+0.7**
TTA	**Tatalina**	**79.96 17**	*e*P	**P**	**02 32 08.6**	**+0.7**
SHL	**Shillong**	**80.39 299**	*e*P	**P**	**02 32 12.0**	**+0.8**
SHL			*ex*	x	02 37 14.0	
BOD	**Bodaibo**	**80.77 335**	*e*P	**P**	**02 32 10.4**	**-1.8**
BOD			pmax	pmax		
comp=Z,14nm,1.6s						
PMR	**Palmer**	**81.11 20**	*e*P	**P**	**02 32 12.3**	**-1.6**
PMR			pmax	pmax		
comp=Z,33nm,1.6s						
PMR	**Palmer**	**81.11 20**	*e*P	**P**	**02 32 12.3**	**-1.6**
comp=Z,34nm,1.6s						
CAST	**Castle Rocks**	**81.49 18**	*e*P	**P**	**02 32 15.3**	**-0.7**
comp=Z,14nm,1.0s						
SML	**Sawmill**	**81.53 20**	*e*P	**P**	**02 32 14.9**	**-1.3**
SML			pmax	pmax		
comp=Z,28nm,1.4s						
SML	**Sawmill**	**81.53 20**	*e*P	**P**	**02 32 14.9**	**-1.3**
comp=Z,28nm,1.4s						
ZAK	**Zakamensk**	**81.84 325**	*e*P	**P**	**02 32 18.8**	**+0.5**
ZAK			pmax	pmax		
comp=Z,10.0nm,1.4s						
RAGM	**Ragged Mountai**	**81.88 23**	*e*P	**P**	**02 32 17.0**	**-1.1**
comp=Z,20nm,1.0s						
SCM	**Sheep Creek Mo**	**81.89 21**	*e*P	**P**	**02 32 17.5**	**-0.7**
SCM			pmax	pmax		
comp=Z,34nm,1.1s						
SCM	**Sheep Creek Mo**	**81.89 21**	*e*P	**P**	**02 32 17.5**	**-0.7**
comp=Z,34nm,1.1s						
KTH	**Kantishna Hill**	**81.94 18**	*e*P	**P**	**02 32 16.6**	**-1.9**
comp=Z,16nm,1.1s						
DIV	**Divide**	**81.96 22**	*e*P	**P**	**02 32 18.3**	**-0.3**
comp=Z,30nm,1.0s						
TRF	**Thorofare Moun**	**82.06 18**	*e*P	**P**	**02 32 20.9**	**+1.7**
comp=Z,13nm,1.1s						
KLU	**Klutina**	**82.15 21**	*e*P	**P**	**02 32 20.5**	**+0.8**
comp=Z,22nm,1.1s						
TLY	**Talaya**	**82.28 326**	P	**P**	**02 32 21.2**	**+0.8**
comp=Z,2.5nm,0.4s,baz=138,slow=6.8,SNR=4.4						
TLY	**Talaya**	**82.28 326**	*e*P	**P**	**02 32 22.4**	**+2.0**
TLY			*e*		02 32 32.2	
TLY			*e*S	S	02 42 25.4	-9.2
TLY			pmax	pmax		
comp=Z,23nm,1.5s						
BMRM	**Bremner River**	**82.28 22**	*e*P	**P**	**02 32 20.8**	**+0.6**
comp=Z,23nm,1.1s						
BPAW	**Bear Paw Mtn.**	**82.32 18**	*e*P	**P**	**02 32 18.8**	**-1.6**
comp=Z,25nm,1.7s						
RND	**Reindeer**	**82.48 19**	*e*P	**P**	**02 32 20.8**	**-0.5**
RND			pmax	pmax		
comp=Z,26nm,1.1s						
RND	**Reindeer**	**82.48 19**	*e*P	**P**	**02 32 20.8**	**-0.5**
comp=Z,26nm,1.1s						
MCK	**McKinley**	**82.69 19**	*e*P	**P**	**02 32 22.0**	**-0.3**
MCK			pmax	pmax		
comp=Z,30nm,1.2s						
MCK	**McKinley**	**82.69 19**	*e*P	**P**	**02 32 22.0**	**-0.3**
comp=Z,30nm,1.2s						
BWN	**Browne**	**82.84 18**	*e*P	**P**	**02 32 23.7**	**+0.7**
comp=Z,67nm,1.0s						
MLY	**Manley**	**83.08 17**	*e*P	**P**	**02 32 24.6**	**+0.2**
comp=Z,11nm,1.2s						
BALM	**Baldy**	**83.17 23**	*e*P	**P**	**02 32 25.3**	**+0.3**
BALM			pmax	pmax		
comp=Z,18nm,1.1s						
BALM	**Baldy**	**83.17 23**	*e*P	**P**	**02 32 25.3**	**+0.3**
comp=Z,18nm,1.1s						
PAX	**Paxson**	**83.30 20**	*e*P	**P**	**02 32 25.7**	**+0.1**
PAX			pmax	pmax		
comp=Z,8.0nm,1.2s						
PAX	**Paxson**	**83.30 20**	*e*P	**P**	**02 32 25.7**	**+0.1**
comp=Z,7.7nm,1.2s						
WRH	**Wood River Hil**	**83.47 18**	*e*P	**P**	**02 32 24.5**	**-1.8**
comp=Z,23nm,1.0s						
CCB	**Clear Creek Bu**	**83.68 18**	*e*P	**P**	**02 32 26.9**	**-0.4**
comp=Z,12nm,1.0s						
MOY	**Mondy**	**83.72 326**	*e*P	**P**	**02 32 28.9**	**+0.9**
COLA	**College**	**83.83 18**	*e*P	**P**	**02 32 27.1**	**-1.0**
COLA			pmax	pmax		
comp=Z,21nm,0.8s						
COLA	**College**	**83.83 18**	*e*P	**P**	**02 32 27.1**	**-1.0**
comp=Z,21nm,0.8s						
MENT	**Mentasta**	**83.88 21**	*e*P	**P**	**02 32 29.2**	**+0.7**
comp=Z,32nm,1.2s						
ILAR	**Eielson Array**	**84.06 19**	P	**P**	**02 32 28.5**	**-0.8**
comp=Z,1.9nm,0.7s,baz=254,slow=4.1,SNR=17						
MAW	**Mawson**	**84.17 202**	P	**P**	**02 32 30.1**	**+0.3**
comp=Z,2.7nm,0.9s,baz=63,slow=5.2,SNR=3.8						
WDC	**Whiskeytown Da**	**84.20 47**	*e*P	**P**	**02 32 34.0**	**+3.5**
WDC			pmax	pmax		
comp=Z,12nm,1.4s						
WDC	**Whiskeytown Da**	**84.20 47**	*e*P	**P**	**02 32 34.0**	**+3.5**
comp=Z,12nm,1.4s						
DOT	**Dot Lake**	**84.23 20**	*e*P	**P**	**02 32 30.1**	**-0.1**
comp=Z,111nm,1.1s						
YBH	**Yreka Blue Hor**	**84.48 46**	LR	LR	03 04 09.2	
comp=Z,66nm,18.5s,baz=260,slow=31						
AFDM	**Forest Hills D**	**84.78 49**	*e*P	**P**	**02 32 33.6**	**0.0**
comp=Z,12nm,1.3s						
COLD	**Coldfoot**	**84.83 16**	*e*P	**P**	**02 32 33.8**	**+0.7**
comp=Z,7.9nm,1.0s						
SKAG	**Skagway**	**85.11 26**	*e*P	**P**	**02 32 35.9**	**+1.2**
EGAK	**Eagle**	**85.93 20**	*e*P	**P**	**02 32 39.0**	**+0.4**
comp=Z,31nm,1.0s						
DAWY	**Dawson**	**86.11 21**	*e*P	**P**	**02 32 40.9**	**+1.3**
comp=Z,14nm,1.1s						
F04A	**Amboy**	**86.16 42**	*e*P	**P**	**02 32 42.1**	**+1.9**
comp=Z,85nm,1.8s						
TIXI	**Tiksi**	**86.45 349**	*i* P	**P**	**02 32 41.1**	**0.0**
TIXI			pmax	pmax		
comp=Z,14nm,1.7s						
TIXI	**Tiksi**	**86.45 349**	*e*P	**P**	**02 32 40.7**	**-0.4**
comp=Z,24nm,1.4s						
NVAR	**Mina Array Bea**	**86.61 50**	P	**P**	**02 32 43.3**	**+0.4**
comp=Z,0.4nm,0.5s,baz=221,slow=6.7,SNR=4.6						
SHPR	**Sheep Range**	**88.46 52**	*e*P	**P**	**02 32 50.3**	**-1.5**
comp=Z,14nm,1.4s						
R11A	**Troy Canyon, C**	**88.63 51**	*e*P	**P**	**02 32 52.3**	**-0.3**
comp=Z,7.7nm,1.3s						
W13A	**Hualapai Mount**	**89.10 54**	*e*P	**P**	**02 32 54.8**	**-0.1**
comp=Z,9.3nm,1.2s						
WMQ	**Urumqi**	**89.14 315**	P	**P**	**02 32 55.3**	**+0.6**
WMQ			pP	sP	02 33 04.6	-0.8
WMQ			sP	pP	02 33 07.1	+4.5
WMQ	**Urumqi**	**89.14 315**	S	**S**	**02 43 41.3**	**-1.1**
WMQ	**Urumqi**	**89.14 315**	sS	sS	02 43 56.1	+0.7
WMQ			pmax	pmax		
comp=Z,4.0nm,1.0s						
WMQ			pmax	pmax		
comp=Z,42nm,5.2s						
WMQ			LR	LR		
comp=N,76nm,21.0s						
WMQ			LR	LR		
comp=E,51nm,21.0s						
WMQ			LR	LR		
comp=Z,54nm,21.0s						
ELK	**Elko**	**89.53 48**	*e*P	**P**	**02 32 56.2**	**-0.6**
ELK			pmax	pmax		
comp=Z,8.0nm,1.3s						
ELK	**Elko**	**89.53 48**	*e*P	**P**	**02 32 56.2**	**-0.6**
comp=Z,7.8nm,1.3s						
LPIG	**La Paz**	**89.54 65**	LR	LR	03 04 40.4	
comp=Z,101nm,20.6s,baz=248,slow=30						
PSUT	**Pine Spring**	**89.99 51**	*e*P	**P**	**02 32 59.8**	**+0.8**
comp=Z,20nm,1.8s						
LCMT	**Little Creek M**	**90.08 52**	*e*P	**P**	**02 33 00.3**	**+0.9**
comp=Z,36nm,1.9s						
INK	**Inuvik**	**90.45 19**	P	**P**	**02 33 00.6**	**+0.5**
comp=Z,0.7nm,0.8s,baz=199,slow=8.4,SNR=3.2						
U15A	**North Rim**	**90.68 53**	*e*P	**P**	**02 33 05.0**	**+2.6**
comp=Z,23nm,1.5s						
HLID	**Hailey**	**90.86 46**	*e*P	**P**	**02 33 03.2**	**+0.3**
comp=Z,4.9nm,1.1s						
TCUT	**Toone Canyon**	**92.44 49**	*e*P	P	02 33 16.1	+5.7
comp=Z,65nm,0.9s						
CHMT	**Chamberlain Mo**	**92.50 43**	*e*P	**P**	**02 33 11.6**	**+1.1**
MKAR	**Makanchi Array**	**93.58 317**	P	**P**	**02 33 15.8**	**+0.5**
comp=Z,1.6nm,0.6s,baz=94,slow=6.4,SNR=14						
MKAR	**Makanchi Array**	**93.58 317**	*i* P	**P**	**02 33 16.1**	**+0.9**
MKAR			pmax	pmax		
comp=Z,2.0nm,0.6s						
ZALV	**Zalesovo Beam**	**93.69 324**	P	**P**	**02 33 15.4**	**0.0**
comp=Z,1.0nm,0.3s,baz=90,slow=3.1,SNR=9.1						
MAKZ	**Makanchi**	**93.79 317**	*e*P	**P**	**02 33 17.5**	**+1.3**
MAKZ	**Makanchi**	**93.79 317**	*e*P	**P**	**02 33 17.5**	**+1.3**
NVS	**Novosibirsk**	**94.80 325**	*e*P	**P**	**02 33 18.7**	**-1.8**
NVS			pmax	pmax		
comp=Z,11nm,1.4s						
NVS			pmax	pmax		
comp=N,6.0nm,1.7s						
NVS			pmax	pmax		
comp=E,13nm,1.7s						
YKA	**Yellowknife Ar**	**95.55 27**	P	**P**	**02 33 21.9**	**-1.9**
comp=E,0.5nm,0.7s,baz=259,slow=4.5,SNR=7.4						
NRIK	**Norilsk**	**96.40 340**	P	**P**	**02 33 28.4**	**+0.9**
comp=E,2.8nm,0.3s,baz=95,slow=3.1,SNR=6.4						
ARCES	**ARCESS Array B**	**116.67 345**	PKP	**PKPdf**	**02 38 42.7**	**0.0**
comp=E,1.7nm,0.9s,baz=48,slow=1.8,SNR=5.5						
ARCES	**ARCESS Array B**	**116.67 345**	PKIKP	**PKPdf**	**02 38 42.7**	**0.0**
ARCES			pmax	pmax		
comp=Z,1.0nm,0.8s						
KLMR	**Klimovskoe**	**116.97 334**	*e*PKIKP	**PKPdf**	**02 38 38.6**	**-4.8**
KLMR			pmax	pmax		
comp=Z,7.0nm,1.3s						
LPAZ	**La Paz**	**120.33 117**	PKP	**PKPdf**	**02 38 51.8**	**-0.2**
comp=Z,1.6nm,1.1s,baz=0.0,slow=5.1,SNR=4.0						
OBN	**Obninsk**	**120.98 329**	*d i* PKIKP	**PKPdf**	**02 38 52.5**	**+1.2**
OBN			*e*		02 40 18.1	
OBN			pmax	pmax		
comp=Z,12nm,0.5s						
FINES	**FINESS Array B**	**122.04 338**	PKP	**PKPdf**	**02 38 52.8**	**-0.4**
comp=Z,0.8nm,0.6s,baz=90,slow=4.4,SNR=3.4						
AKASG	**Malin Array Be**	**127.02 326**	PKP	**PKPdf**	**02 39 02.2**	**-0.8**
comp=Z,0.1nm,0.3s,baz=42,slow=2.4,SNR=5.1						
AKASG	**Malin Array Be**	**127.02 326**	*i* PKIKP	**PKPdf**	**02 39 04.0**	**+1.0**
NOA	**NORSAR Array B**	**127.03 345**	PKP	**PKPdf**	**02 39 02.2**	**-0.6**
comp=Z,0.3nm,0.7s,baz=12,slow=4.3,SNR=2.5						
BRTR	**Keskin Array B**	**128.98 312**	PKP	**PKPdf**	**02 39 08.1**	**+0.7**
comp=Z,0.7nm,1.1s,baz=116,slow=2.9,SNR=5.6						
KOLS	**Kolonicke sedl**	**131.73 328**	*e*PKIKP	**PKPdf**	**02 39 13.6**	**+1.5**
KOLS	**Kolonicke sedl**	**131.73 328**	*e*PKP	**PKPdf**	**02 39 13.6**	**+1.5**
KHC	**Kasperske Hory**	**135.77 334**	*ep*PKP	**pPKPdf**	**02 39 32.5**	**+4.7**
KHC			*ex*	x	02 39 41.6	
GERES	**GERESS Array B**	**135.93 333**	PKP	**PKPdf**	**02 39 21.3**	**+1.2**
comp=Z,0.1nm,0.4s,baz=20,slow=3.1,SNR=4.9						
KEST	**Kesra**	**147.53 322**	PKPbc	**PKPbc**	**02 39 44.9**	**+1.2**
comp=Z,3.7nm,0.8s,baz=321,slow=7.6,SNR=3.5						
ESDC	**Sonseca Array**	**150.37 343**	PKPbc	**PKPbc**	**02 39 51.5**	**+0.7**
comp=Z,1.6nm,0.8s,baz=24,slow=3.1,SNR=12						
ESDC			PKPab	**PKPab**	**02 39 57.6**	**+0.6**
comp=Z,4.9nm,1.0s,baz=14,slow=3.0,SNR=7.7						
PAB	**San Pablo**	**150.60 344**	*e*PKIKP	**PKPdf**	**02 39 40.7**	**-5.3**
PAB	**San Pablo**	**150.60 344**	*e*PKPdf	**PKPdf**	**02 39 40.7**	**-5.3**

JMA 16 02:22:59.0±0.3, 37°.32N×142°.45E, h0km, M3.7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.26**	**273**	P	Pg	02 23 22.8	-0.3
JFK				*e*S	Sn	02 23 41.4	-0.1
ONAJ	**Iwakimizuishiy**	**1.34**	**261**	P	Pn	02 23 25.5	+0.5
ONAJ				*e*S	Sb	02 23 42.9	+0.2
JMM	**Marumori**	**1.43**	**293**	P	Pn	02 23 25.7	-0.4
JMM				S	Sn	02 23 46.1	+0.5
JIO	**Ouri**	**1.43**	**323**	P	Pn	02 23 26.1	-0.1
JIO				S	Sn	02 23 45.6	-0.1
JFT	**Otama**	**1.69**	**277**	P	Pn	02 23 30.2	+0.3
JFT				S	Sg	02 23 53.9	+0.5
JOU	**Okura**	**1.76**	**307**	P	Pn	02 23 31.4	+0.7
JOU				S	Sb	02 23 54.5	-0.3
JMK	**Ichinoseki**	**1.90**	**330**	P	Pb	02 23 33.8	-0.7
JYK	**Kaneyama**	**2.29**	**315**	P	Pb	02 23 39.7	-1.6
JYK				*e*S	Sn	02 24 07.7	+0.6
JAG	**Ashikaga**	**2.56**	**251**	P	Pn	02 23 43.2	+1.4
MAT	**Matsushiro**	**3.49**	**258**	P	Pn	02 23 57.0	+2.5
MAT				*e*S	Sn	02 24 38.8	+2.3

*IDC **16** 02:24:08.5±1.6, 11°.56S×165°.48E, h0km, mb4.1/8, mb1 4.3/9, mb1mx4.0/43, mbtmp4.1/9, ML4.2/1, MS3.3/1, Ms1 3.3/1, ms1mx3.0/37, Error ellipse: s-maj=44.6km s-min=24.7km az=118.0*

*ISCJB **16** 02:24:10.5±1.1, 11°.7S±0°.1×165°.5E±0°.2, h24km, mb4.0/8, MS3.2/1, Error ellipse: s-maj=27.3km s-min=17.1km az=0.6*

ISC 16 02:24:12.3±1.2, 11°.6S±0°.1×165°.5E±0°.2, h24km, n10, σ0s87/9, mb4.1/8, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**10.48**	**175**	Pn	**Pn**	**02 26 41.4**	**+0.2**
1.7nm,0.3s,baz=192,slow=15,SNR=7.2							
JAY	**Jayapura**	**26.14**	**288**	LR	LR	02 38 50.4	
comp=Z,74nm,21.5s,baz=187,slow=34							
STKA	**Stephens Creek**	**29.86**	**224**	P	**P**	**02 30 18.6**	**+0.6**
1.9nm,0.7s,baz=51,slow=9.1,SNR=3.6							
WRA	**Warramunga Arr**	**31.04**	**251**	P	**P**	**02 30 28.4**	**-0.2**
3.5nm,0.8s,baz=80,slow=9.3,SNR=9.2							
ASAR	**Alice Springs**	**32.30**	**244**	P	**P**	**02 30 38.6**	**-1.1**
1.6nm,0.9s,baz=67,slow=11,SNR=5.9							
FITZ	**Fitzroy Crossi**	**38.97**	**256**	P	**P**	**02 31 36.3**	**-0.7**
5.3nm,0.9s,baz=88,slow=7.9,SNR=5.9							
CMAR	**Chiang Mai Arr**	**72.06**	**294**	P	**P**	**02 35 36.1**	**+1.1**
0.9nm,0.3s,baz=127,slow=3.8,SNR=5.3							
SONM	**Songino Array**	**78.92**	**324**	P	**P**	**02 36 14.7**	**+0.7**
0.4nm,0.7s,baz=134,slow=8.3,SNR=5.6							
ILAR	**Eielson Array**	**84.11**	**19**	P	**P**	**02 36 40.0**	**-0.9**
0.5nm,0.6s,baz=228,slow=5.1,SNR=6.6							
MKAR	**Makanchi Array**	**93.71**	**317**	P	**P**	**02 37 27.1**	**-0.1**
0.9nm,0.7s,baz=89,slow=6.3,SNR=4.7							

*IDC **16** 02:24:58.8±0.8, 11°.48S×165°.48E, h0km, mb4.4/19, mb1 4.5/20, mb1mx4.4/44, mbtmp4.4/20, ML4.5/1, MS4.2/1, Ms1 4.2/1, ms1mx3.4/35, Error ellipse: s-maj=23.8km s-min=15.7km az=116.0*

*ISCJB **16** 02:25:00.7±0.3, 11°.55S±0°.06×165°.52E±0°.06, h24km, mb4.8/58, MS4.4/10, Error ellipse: s-maj=9.8km s-min=7.8km az=41.2*

*BJI **16** 02:25:02.0, 11°.50S×165°.60E, h39km, mb4.8/42, mB5.1/32, Ms4.8/22, Ms7 4.5/23*

*NEIC **16** 02:25:05.3±2.5, 11°.46S×165°.49E, h45km±21km, mb4.9/29, Error ellipse: s-maj=15.5km s-min=10.0km az=120.0*

ISC 16 02:25:02.2±0.5, 11°.50S±0°.08×165°.58E±0°.09, h24km, n82, σ1s27/74, mb4.8/58, MS4.4/10, 2C-1D, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	**Honiara**	**5.91**	**290**	*e*P	**Pn**	**02 26 29.0**	**+0.7**
HNR				*e*S	Sn	02 27 24.0	-11
HNR	**Honiara**	**5.91**	**290**	*e*Pn	**Pn**	**02 26 29.6**	**+1.3**
336nm,0.6s							
HNR				*e*S	Sn	02 27 24.9	-10
DZM	**Mont Dzumac**	**10.54**	**176**	Pn	**Pn**	**02 27 31.8**	**-0.2**
3.3nm,0.3s,baz=303,slow=13,SNR=10							
MSVF	**Nonsavu**	**13.56**	**119**	*e*Pn	P	02 28 24.9	+2.8
RABL	**Rabaul**	**15.14**	**298**	*e*Pn	P	02 28 43.3	+3.6
236nm,0.4s							
MANU	**Manus Island**	**20.37**	**296**	*e*P	Pn	02 29 37.7	-1.7
363nm,1.1s							
CTA	**Charters Tower**	**20.45**	**243**	P	**P**	**02 29 37.8**	**-0.3**
13nm,0.9s,baz=66,slow=10,SNR=4.7							
CTAO	**Charters Tower**	**20.45**	**243**	*e*P	Pn	02 29 41.2	+0.9
77nm,1.4s							
AFI	**Afiamalu**	**22.21**	**99**	LR	LR	02 36 53.0	
comp=Z,557nm,20.1s,baz=274,slow=32							
ARMA	**Armidale**	**22.85**	**212**	*e*P	**P**	**02 30 05.4**	**+1.4**
66nm,1.4s							
STKA	**Stephens Creek**	**30.00**	**224**	P	**P**	**02 31 08.9**	**-0.2**
4.4nm,0.9s,baz=66,slow=9.3,SNR=5.6							
WRAB	**Tennant Creek**	**31.17**	**250**	*e*P	**P**	**02 31 18.0**	**-1.6**
93nm,1.4s							
WRA	**Warramunga Arr**	**31.18**	**250**	P	**P**	**02 31 18.3**	**-1.4**
20nm,1.0s,baz=79,slow=9.0,SNR=18							
ASAR	**Alice Springs**	**32.45**	**244**	P	**P**	**02 31 29.3**	**-1.6**
3.0nm,0.9s,baz=75,slow=9.9,SNR=11							
BBOO	**Buckleboo**	**34.40**	**227**	*e*P	**P**	**02 31 47.0**	**-0.7**
64nm,1.7s							
FITZ	**Fitzroy Crossi**	**39.11**	**255**	P	**P**	**02 32 27.0**	**-1.0**
8.4nm,0.8s,baz=112,slow=4.1,SNR=5.8							
PPT2	**Papeete2**	**43.74**	**103**	*e*LR	LR	02 45 21.8	
915nm,32.0s							
TBI	**Tubuai**	**44.31**	**112**	*e*LR	LR	02 45 38.9	

CN2				LR	LR		
	comp=Z,100nm,17.0s						
PSI	**Prapat**	**67.77**	**278**	*e*P	**P**	**02 35 57.9**	**-0.9**
	16nm,1.0s						
ENH	**Enshi**	**68.06**	**309**	*e*P	**P**	**02 35 60.0**	**-0.2**
	31nm,1.2s						
GYA	**Guiyang**	**68.54**	**304**	P	P	02 36 06.0	+2.6
GYA				pP	sP	02 36 17.0	+3.1
GYA				PP	PP	02 38 39.4	+4.4
GYA				ScP		02 40 30.3	
GYA				S	**S**	**02 45 04.8**	**+0.2**
GYA				sS	sS	02 45 22.0	+4.7
GYA				SKS	**SKSac**	**02 45 57.8**	**-3.7**
GYA				SS	**SS**	**02 49 30.3**	**+1.0**
GYA				pmax	pmax		
	comp=Z,20nm,0.8s						
GYA				pmax	pmax		
	comp=Z,120nm,6.8s						
GYA				LR	LR		
	comp=N,460nm,18.8s						
GYA				LR	LR		
	comp=E,410nm,19.0s						
GYA				LR	LR		
	comp=Z,440nm,19.2s						
PBKT	**Sadao Pong**	**69.70**	**293**	P	**P**	**02 36 12.1**	**+1.5**
	11nm,1.5s,1μm						
KMI	**Kunming**	**71.22**	**302**	P	P	02 36 21.8	+1.8
KMI				pP	sP	02 36 33.3	+2.8
KMI				sP	PcP	02 36 38.0	-1.9
KMI				PP	PP	02 39 01.9	+3.6
KMI				S	**S**	**02 45 35.6**	**-0.8**
KMI				sS	sS	02 45 50.8	+1.7
KMI				SS	**SS**	**02 50 08.6**	**-2.2**
KMI				pmax	pmax		
	comp=Z,19nm,1.6s						
KMI				pmax	pmax		
	comp=Z,110nm,6.8s						
KMI				LR	LR		
	comp=N,160nm,14.4s						
KMI				LR	LR		
	comp=E,130nm,16.6s						
KMI				LR	LR		
	comp=Z,190nm,18.1s						
CRAI	**Chiangrai**	**71.47**	**296**	P	**P**	**02 36 22.9**	**+1.6**
	62nm,1.3s						
LAMP	**Lampang**	**71.55**	**294**	P	P	02 36 24.9	+3.1
	4.2nm,1.1s						
HHC	**Hu-ho-hao-te**	**72.07**	**320**	*e*P	P	02 36 26.8	+2.1
HHC				pP	PcP	02 36 37.8	-5.2
HHC				S	S	02 45 50.4	+5.0
HHC				pmax	pmax		
	comp=Z,22nm,1.0s						
HHC				pmax	pmax		
	comp=Z,140nm,7.2s						
HHC				LR	LR		
	comp=N,290nm,17.7s						
HHC				LR	LR		
	comp=E,310nm,17.7s						
HHC				LR	LR		
	comp=Z,240nm,17.9s						
CMAR	**Chiang Mai Arr**	**72.15**	**294**	P	**P**	**02 36 26.1**	**+0.6**
	4.5nm,0.8s,baz=120,slow=5.3,SNR=15						
CMMT	**Chiang Mai**	**72.26**	**294**	P	P	02 36 27.9	+1.8
	9.8nm,1.3s,338nm						
CHTO	**Chiang Mai**	**72.26**	**294**	P	P	02 36 27.9	+1.8
	42nm,1.2s						
CHTO	**Chiang Mai**	**72.26**	**294**	*e*P	**P**	**02 36 26.6**	**+0.5**
	15nm,1.3s						
CMAI	**Chiengmai2**	**72.54**	**295**	P	P	02 36 29.8	+1.9
	9.8nm,1.7s						
CD2	**Chengdu**	**72.75**	**308**	P	**P**	**02 36 28.8**	**0.0**
CD2				sP	PcP	02 36 44.3	-1.8
CD2				PP	**PP**	**02 39 10.8**	**-0.3**
CD2				S	**S**	**02 45 52.4**	**-1.0**
CD2				sS	sS	02 46 11.5	+5.4
CD2				SS	**SS**	**02 50 33.6**	**-0.1**
CD2				pmax	pmax		
	comp=Z,20nm,1.3s						
CD2				pmax	pmax		
	comp=Z,170nm,7.1s						
CD2				LR	LR		
	comp=N,210nm,13.7s						
CD2				LR	LR		
	comp=E,230nm,19.0s						
CD2				LR	LR		
	comp=Z,140nm,16.7s						
LZH	**Lanzhou**	**74.94**	**312**	*e*P	P	02 36 46.6	+4.9
LZH				pP	PcP	02 36 55.6	+0.1
LZH				sP	sP	02 36 59.1	+6.8
LZH				pmax	pmax		
	comp=Z,28nm,1.0s						
ULN	**Ulaanbaatar**	**78.57**	**324**	*e*P	**P**	**02 37 02.8**	**+0.9**
	12nm,1.0s						
SONM	**Songino Array**	**78.94**	**324**	P	**P**	**02 37 03.7**	**-0.3**
	3.9nm,0.8s,baz=138,slow=6.2,SNR=13						
GTA	**Gaotai**	**79.26**	**314**	⇑P	**P**	**02 37 07.4**	**+1.5**
GTA				pP	sP	02 37 18.4	+1.9
GTA				sP	PcP	02 37 22.5	+8.4
GTA				S	**S**	**02 47 07.0**	**+2.1**
GTA				SKS	**SKSac**	**02 47 17.3**	**-3.5**
GTA				sS	ScS	02 47 23.8	-3.7
GTA				pmax	pmax		
	comp=Z,9.0nm,1.4s						
GTA				pmax	pmax		
	comp=Z,140nm,5.5s						
GTA				LR	LR		
	comp=N,93nm,16.2s						
GTA				LR	LR		
	comp=E,140nm,18.1s						
GTA				LR	LR		
	comp=Z,130nm,17.6s						
BILL	**Biiibino**	**79.33**	**0**	*e*P	**P**	**02 37 05.5**	**0.0**
	9.7nm,1.0s						
CAST	**Castle Rocks**	**81.43**	**18**	*e*P	**P**	**02 37 14.6**	**-2.3**
	6.4nm,1.0s						
KLU	**Klutina**	**82.08**	**21**	*e*P	**P**	**02 37 20.6**	**+0.2**
	8.2nm,1.0s						
RND	**Reindeer**	**82.42**	**19**	*e*P	**P**	**02 37 21.1**	**-1.1**
	30nm,1.8s						
MCK	**McKinley**	**82.62**	**19**	*e*P	**P**	**02 37 23.8**	**+0.6**
	26nm,1.4s						
BALM	**Baldy**	**83.09**	**23**	*e*P	**P**	**02 37 26.8**	**+1.1**
	9.2nm,1.0s						
WRH	**Wood River Hil**	**83.41**	**18**	*e*P	**P**	**02 37 28.6**	**+1.5**
	7.1nm,1.0s						
CCB	**Clear Creek Bu**	**83.62**	**18**	*e*P	**P**	**02 37 29.7**	**+1.4**
	7.4nm,1.1s						
COLA	**College**	**83.77**	**18**	*e*P	**P**	**02 37 29.9**	**+1.0**
	21nm,0.3s						
MENT	**Mentasta**	**83.81**	**21**	*e*P	**P**	**02 37 29.9**	**+0.6**
	24nm,1.5s						
ILAR	**Eielson Array**	**83.99**	**19**	P	**P**	**02 37 30.0**	**-0.2**
	2.3nm,0.8s,baz=234,slow=5.9,SNR=13						
DOT	**Dot Lake**	**84.16**	**20**	*e*P	**P**	**02 37 31.0**	**-0.1**
	40nm,1.2s						
AFDM	**Forest Hills D**	**84.62**	**49**	*e*P	**P**	**02 37 32.3**	**-1.7**
	8.3nm,1.2s						
EGAK	**Eagle**	**85.86**	**20**	*e*P	**P**	**02 37 39.8**	**+0.3**
	13nm,1.0s						
DAWY	**Dawson**	**86.03**	**21**	*e*P	**P**	**02 37 41.2**	**+0.7**
	5.0nm,1.0s						
NVAR	**Mina Array Bea**	**86.44**	**50**	P	P	02 37 45.2	+1.9
	0.6nm,0.8s,baz=230,slow=6.7,SNR=4.0						
TIXI	**Tiksi**	**86.50**	**349**	*e*P	**P**	**02 37 42.4**	**-0.1**
	9.2nm,1.4s						
WMQ	**Urumqi**	**89.30**	**315**	P	P	02 37 58.8	+2.1
WMQ				pP	sP	02 38 07.1	-0.3
WMQ				sP	pP	02 38 17.8	+13
WMQ				pmax	pmax		
	comp=Z,4.0nm,1.2s						
WMQ				pmax	pmax		
	comp=Z,39nm,5.0s						
WMQ				LR	LR		
	comp=N,62nm,21.0s						
WMQ				LR	LR		
	comp=E,49nm,18.4s						
WMQ				LR	LR		
	comp=Z,45nm,23.6s						
SYO	**Syowa Base**	**91.31**	**197**	⇓*e*P	**P**	**02 38 05.8**	**+0.4**
MKAR	**Makanchi Array**	**93.74**	**317**	P	**P**	**02 38 17.4**	**+0.3**
	2.9nm,0.8s,baz=96,slow=6.0,SNR=14						
ZALV	**Zalesovo Beam**	**93.83**	**324**	P	**P**	**02 38 16.3**	**-1.0**
	1.6nm,0.3s,baz=101,slow=4.6,SNR=5.5						
MAKZ	**Makanchi**	**93.95**	**317**	*e*P	**P**	**02 38 18.4**	**+0.3**
	11nm,1.3s						
BW06	**Boulder Array**	**93.98**	**47**	*e*P	**P**	**02 38 18.9**	**+0.3**
	6.0nm,1.0s						
PDAR	**Pinedale Array**	**93.98**	**47**	P	**P**	**02 38 17.4**	**-1.2**
	0.1nm,0.3s,baz=308,slow=2.2,SNR=2.1						
YKA	**Yellowknife Ar**	**95.45**	**27**	P	**P**	**02 38 23.2**	**-1.3**
	0.3nm,0.6s,baz=256,slow=4.7,SNR=5.1						
ARCES	**ARCESS Array B**	**116.73**	**345**	PKP	**PKPdf**	**02 43 44.1**	**+0.1**
	0.7nm,0.6s,baz=31,slow=2.8,SNR=4.8						
BRTR	**Keskin Array B**	**129.15**	**312**	PKP	**PKPdf**	**02 44 11.8**	**+3.0**
	0.4nm,0.7s,baz=111,slow=3.2,SNR=3.6						
GERES	**GERESS Array B**	**136.04**	**333**	PKP	**PKPdf**	**02 44 23.6**	**+2.1**
	0.4nm,0.6s,baz=48,slow=1.5,SNR=4.0						
KEST	**Kesra**	**147.68**	**322**	PKPbc	**PKPab**	**02 44 47.0**	**-0.6**
	14nm,0.8s,baz=267,slow=2.1,SNR=8.6						
ESDC	**Sonseca Array**	**150.45**	**344**	PKPbc	**PKPbc**	**02 44 52.8**	**+0.6**
	0.5nm,0.5s,baz=5.3,slow=3.0,SNR=5.5						

IDC ***16*** *02:35:15.7±0.5,2°.63S×136°.67E, h0km, mb4.5/17, mb1 4.7/19, mb1mx4.5/35, mbtmp4.6/19, ML4.8/2, MS3.8/3, Ms1 3.8/3, ms1mx3.2/34, Error ellipse: s-maj=27.3km s-min=13.0km az=85.0*

ISCJB ***16*** *02:35:19.6±0.2,2°.77S±0°.03×136°.56E±0°.02, h34km, mb4.8/60, MS4.0/6, Error ellipse: s-maj=4.1km s-min=3.4km az=25.6*

NEIC ***16*** *02:35:21.9±0.7,2°.71S×136°.55E, h43km±7km, mb4.8/35, Error ellipse: s-maj=6.4km s-min=5.6km az=183.0*

NEIC Felt [II] at Serui.

DJA ***16*** *02:35:23.2±1.1,3°.3S±3°.3×13°.7E±°, h36km±11km, M4.9/27, mb4.9/27, mB5.5/10, MLv5.0/6, Mw(mB)4.9/10*

ISC 16 02:35:21.4±0.3, 2°.78S±0°.04×136°.52E±0°.04, h34km, n148, σ1 97/164, mb4.8/59, MS3.9/7, 1C, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
RKPI	**Ransiki, Papua**	**2.66**	**298**	P	**Pn**	**02 36 01.7**	**-0.2**
RKPI				S	**Sn**	**02 36 34.1**	**+1.1**
GENI	**Genyem**	**3.65**	**87**	P	**Pn**	**02 36 17.5**	**+2.0**
GENI				S	**Sn**	**02 37 01.0**	**+3.6**
JAY	**Jayapura**	**4.19**	**86**	Pn	**Pn**	**02 36 23.2**	**+0.3**
	3.1nm,0.3s,baz=272,slow=22,SNR=45						
JAY				Sn	**Sn**	**02 37 12.7**	**+1.9**
	0.7nm,0.3s,baz=90,slow=20,SNR=2.1						
JAY	**Jayapura**	**4.19**	**86**	P	**Pn**	**02 36 23.5**	**+0.5**
FAKI	**Fak Fak**	**4.27**	**268**	P	**Pn**	**02 36 25.0**	**+1.0**
FAKI				S	**Sn**	**02 37 14.9**	**+2.2**
FAKI	**Fak Fak**	**4.27**	**268**	*e*Pn	**Pn**	**02 36 24.7**	**+0.7**
FAKI				*e*S	**Sn**	**02 37 12.2**	**-0.5**
SWI	**Sorong**	**5.59**	**290**	P	**Pn**	**02 36 42.8**	**+0.6**
	122nm,0.7s,2μm0.8nm						
SWI				S	**Sn**	**02 37 46.5**	**+1.1**
	122nm,0.7s,2μm0.8nm						
MMPI	**Merauke**	**6.83**	**146**	P	Pn	02 37 04.8	+5.5
	1μm,0.7s,7.0nm						
MMPI				S	**Sn**	**02 38 23.3**	**+7.4**
	1μm,0.7s,7.0nm						
KDU	**Kakadu**	**10.62**	**202**	P	**Pn**	**02 37 52.3**	**+0.9**
	baz=10,SNR=38						
MANU	**Manus Island**	**10.86**	**86**	*e*Pn	**Pn**	**02 37 54.4**	**-0.2**
MTN	**Manton Dam**	**11.33**	**208**	*e*Pn	**Pn**	**02 38 02.0**	**+1.1**
MTN				*e*Sn	**Sn**	**02 40 00.5**	**-6.0**
PMG	**Port Moresby**	**12.45**	**122**	Pn	**Pn**	**02 38 17.6**	**+1.2**
	0.6nm,0.3s,baz=320,slow=14,SNR=2.1						
PMG	**Port Moresby**	**12.45**	**122**	*e*Pn	**Pn**	**02 38 18.1**	**+1.7**
COEN	**Coen**	**12.90**	**150**	P	**Pn**	**02 38 22.5**	**0.0**
	baz=13,SNR=57						
COEN	**Coen**	**12.90**	**150**	*e*Pn	**Pn**	**02 38 22.5**	**0.0**
COEN				*e*S	**Sn**	**02 40 43.6**	**-1.4**
KDI	**Kendari**	**13.93**	**265**	P	**Pn**	**02 38 37.9**	**+1.4**
	32nm,0.9s						
SOEI	**Soe**	**14.01**	**240**	P	**Pn**	**02 38 39.9**	**+2.2**
	217nm,1.0s,3μm						
SOEI	**Soe**	**14.01**	**240**	*e*Pn	**Pn**	**02 38 38.9**	**+1.2**
SOEI				*e*S	**Sn**	**02 41 20.6**	**+8.5**
MRSI	**Marisa**	**14.93**	**282**	P	**Pn**	**02 38 50.5**	**+0.4**
	35nm,1.1s						
RABL	**Rabaul**	**15.68**	**96**	*e*Pn	**Pn**	**02 38 59.7**	**-0.3**
	95nm,0.4s						
TTSI	**Tana Toraja**	**16.68**	**269**	P	**P**	**02 39 14.4**	**-0.4**
	56nm,1.2s						
SPSI	**Sidrap Palu**	**16.76**	**266**	P	**P**	**02 39 15.2**	**-0.5**
	68nm,1.1s						
PCI	**Palu**	**16.78**	**276**	P	**P**	**02 39 15.0**	**-0.9**
	70nm,1.1s						
KAPI	**Kappang**	**16.88**	**262**	Pn	**P**	**02 39 19.4**	**+2.5**
	0.4nm,0.3s,baz=101,slow=14,SNR=3.5						
MTSU	**Mount Surprise**	**17.06**	**154**	P	**Pn**	**02 39 17.6**	**0.0**
	baz=17,SNR=21						
WRAB	**Tennant Creek**	**17.18**	**187**	*e*Pn	**Pn**	**02 39 17.5**	**-1.4**
	51nm,0.7s						
WRAB				*e*S	**Sn**	**02 42 24.3**	**-4.8**
WRA	**Warramunga Arr**	**17.19**	**187**	P	**Pn**	**02 39 18.1**	**-1.0**
	3.1nm,0.3s,baz=5.3,slow=12,SNR=35						
WRA				S	**Sn**	**02 42 23.8**	**-5.6**
	2.2nm,0.3s,baz=5.7,slow=23,SNR=6.3						
QIS	**Mount Isa**	**17.92**	**171**	P	**Pn**	**02 39 26.7**	**-1.4**
	baz=18,SNR=37						
FITZ	**Fitzroy Crossi**	**18.59**	**214**	P	**Pn**	**02 39 37.9**	**+1.6**
	2.4nm,0.3s,baz=47,slow=12,SNR=16						
FITZ				S	**Sn**	**02 42 57.4**	**-5.8**
	3.0nm,0.3s,baz=172,slow=14,SNR=6.7						
FITZ	**Fitzroy Crossi**	**18.59**	**214**	P	**Pn**	**02 39 36.7**	**+0.4**
	baz=18,SNR=17						
FITZ	**Fitzroy Crossi**	**18.59**	**214**	*e*P	**Pn**	**02 39 36.4**	**+0.1**
	17nm,0.8s						
FITZ				*e*S	**Sn**	**02 42 58.6**	**-4.6**
PLAI	**Plampang**	**19.58**	**251**	P	**P**	**02 39 46.5**	**-0.3**
	50nm,0.9s						
CTA	**Charters Tower**	**19.65**	**152**	P	**Pn**	**02 39 50.1**	**+1.1**
	1.1nm,0.3s,baz=332,slow=11,SNR=7.3						
CTAO	**Charters Tower**	**19.65**	**152**	*e*P	**P**	**02 39 47.7**	**+0.2**
	28nm,0.8s						
MYLDM	**Lahad Datu**	**19.66**	**294**	*e*P	**Pn**	**02 39 49.9**	**+0.7**
	65nm,1.2s						
TWSI	**Taliwang, Sumb**	**20.41**	**252**	P	Pn	02 39 59.8	+1.8
	30nm,0.9s,975nm						
ASAR	**Alice Springs**	**20.91**	**187**	P	Pn	02 40 02.7	-1.2
	74nm,0.8s,baz=11,slow=11,SNR=249						
ASAR				S	**S**	**02 43 52.9**	**+0.2**
	6.9nm,0.8s,baz=9.3,slow=28,SNR=5.2						
KKM	**Kota Kinabalu**	**22.09**	**293**	*e*P	**P**	**02 40 15.4**	**+1.4**
	18nm,0.9s						
JAGI	**Jajag, Banyuwa**	**22.96**	**255**	P	**P**	**02 40 24.7**	**+1.6**
	43nm,1.0s,1μm						
JAGI	**Jajag, Banyuwa**	**22.96**	**255**	*e*P	**P**	**02 40 21.3**	**-1.8**
	34nm,0.9s						
WRKA	**Warakurna**	**23.50**	**199**	P	**P**	**02 40 28.1**	**-0.3**
	baz=24,SNR=64						
MBWA	**Marble Bar**	**24.51**	**221**	*e*P	**P**	**02 40 38.1**	**+0.2**
	334nm,1.0s						
QLP	**Quilpie**	**24.79**	**163**	P	**P**	**02 40 41.1**	**+0.7**
	baz=25,SNR=5.9						
SBUM	**Sibu**	**24.84**	**282**	*e*P	**P**	**02 40 40.1**	**-0.8**
TBJI	**Tambak Boyo**	**24.90**	**260**	P	**P**	**02 40 43.8**	**+2.3**
	107nm,1.1s,4μm						
PWJI	**Pagerwojo**	**25.14**	**257**	P	**P**	**02 40 43.5**	**-0.1**
	30nm,0.9s						
SMRI	**Semarang**	**26.32**	**260**	*e*P	**P**	**02 40 55.5**	**+1.1**
	142nm,0.9s						
EIDS	**Eidsvold**	**26.47**	**149**	P	**P**	**02 40 56.9**	**+1.3**
	baz=26,SNR=3.5						
KSM	**Kuching**	**26.54**	**279**	*e*P	**P**	**02 40 55.8**	**-0.6**
STKA	**Stephens Creek**	**29.33**	**171**	P	**P**	**02 41 22.3**	**+1.3**
	8.5nm,0.9s,baz=341,slow=12,SNR=10						
STKA				LR	LR	02 53 28.5	
	comp=Z,259nm,19.8s,baz=353,slow=37						
STKA	**Stephens Creek**	**29.33**	**171**	P	**P**	**02 41 21.7**	**+0.7**
	baz=29,SNR=8.1						
BLDU	**Ballidu**	**33.43**	**212**	P	**P**	**02 41 57.9**	**+0.7**
	baz=33,SNR=4.7						
KLBR	**Kellerberrin**	**33.67**	**210**	P	**P**	**02 41 59.9**	**+0.6**
	baz=34,SNR=6.2						
QIZ	**Qiongzhong**	**34.03**	**311**	P	**P**	**02 42 02.0**	**-0.6**
QIZ				S	**S**	**02 47 26.3**	**+0.3**
QIZ				LR	LR		
	comp=N,31nm,2.7s						
QIZ				LR	LR		
	comp=E,84nm,14.3s						
PPI	**Padang Panjang**	**36.18**	**273**	P	**P**	**02 42 22.7**	**+1.5**
	comp=E,24nm,0.8s						
RKGY	**Rocky Gully**	**36.52**	**208**	P	**P**	**02 42 26.0**	**+2.3**
	baz=36,SNR=4.8						
SKLT	**Songkhla**	**37.17**	**286**	P	**P**	**02 42 30.4**	**+0.8**
	comp=E,20nm,0.9s						
SKNT	**Sakolnakorn**	**37.64**	**303**	P	P	02 42 46.1	+13
GYA	**Guiyang**	**40.96**	**317**	*e*P	**P**	**02 43 02.3**	**+1.0**
GYA				pmax	pmax		
	comp=Z,10.0nm,1.0s						
CMAR	**Chiang Mai Arr**	**42.59**	**301**	P	**P**	**02 43 14.4**	**-0.2**
	comp=Z,1.1nm,0.4s,baz=110,slow=8.0,SNR=5.5						
KMI	**Kunming**	**42.93**	**312**	P	**P**	**02 43 18.4**	**+0.9**
KMI				pmax	pmax		
	comp=Z,8.0nm,0.9s						
KMI				pmax	pmax		
	comp=Z,66nm,4.9s						
MSVF	**Nonsavu**	**43.34**	**113**	P	**P**	**02 43 22.7**	**+1.9**
	comp=Z,20nm,0.9s						
CD2	**Chengdu**	**45.79**	**320**	P	**P**	**02 43 39.5**	**-0.6**
CD2				pmax	pmax		
	comp=Z,10.0nm,0.9s						
USRK	**Ussuriysk Ar.**	**46.95**	**356**	P	**P**	**02 43 47.7**	**-1.2**
	comp=Z,1.3nm,0.7s,baz=152,slow=9.4,SNR=3.8						
HHC	**Hu-ho-hao-te**	**49.04**	**335**	*e*P	**P**	**02 44 06.6**	**+1.3**
HHC				pP	pP	02 44 16.4	+0.9
HHC				sP	sP	02 44 29.8	+10
HHC				S	**S**	**02 51 11.8**	**+4.0**
HHC				pmax	pmax		
	comp=Z,21nm,1.0s						
HHC				pmax	pmax		
	comp=Z,110nm,6.7s						
HHC				LR	LR		
	comp=N,290nm,15.9s						
HHC				LR	LR		
	comp=E,280nm,15.1s						
HHC				LR	LR		
	comp=Z,240nm,15.9s						
LZH	**Lanzhou**	**49.25**	**325**	*e*P	**P**	**02 44 08.3**	**+1.2**
LZH				pP	sP	02 44 20.3	-1.0
LZH				sP	pP	02 44 25.8	+8.5
LZH				pmax	pmax		
	comp=Z,21nm,1.0s						
GTA	**Gaotai**	**53.85**	**325**	*e*P	**P**	**02 44 41.5**	**+0.1**
GTA				pP	sP	02 44 54.3	-1.4
GTA				sP	pP	02 44 58.8	+7.1
GTA				PcP	**PcP**	**02 45 46.9**	**+0.1**
GTA				S	**S**	**02 52 14.9**	**+0.6**
GTA				sS	sS	02 52 36.3	+5.0
GTA	**Gaotai**	**53.85**	**325**	SS	**SKiKP**	**02 55 57.0**	**+4.2**
GTA				pmax	pmax		
	comp=Z,10.0nm,0.9s						
GTA				pmax	pmax		
	comp=Z,89nm,6.9s						
GTA				LR	LR		
	comp=N,99nm,18.1s						
GTA				LR	LR		
	comp=E,120nm,20.4s						
GTA				LR	LR		
	comp=Z,160nm,19.0s						
ULN	**Ulaanbaatar**	**56.64**	**337**	*e*P	**P**	**02 45 00.8**	**-0.5**
	comp=Z,2.7nm,0.4s						
SONM	**Songino Array**	**56.88**	**336**	P	**P**	**02 45 02.6**	**-0.5**
	comp=Z,2.6nm,0.6s,baz=154,slow=8.0,SNR=15						
PKIN	**Phulchoki**	**57.70**	**305**	*e*P	**P**	**02 45 10.3**	**+0.9**
KKN	**Kakani**	**57.88**	**305**	*e*P	**P**	**02 45 10.9**	**+0.3**
PETK	**Petropavlovsk-**	**58.46**	**15**	P	**P**	**02 45 13.1**	**-0.8**
	comp=Z,5.8nm,0.8s,baz=171,slow=9.8,SNR=5.3						
GKN	**Gorkha**	**58.49**	**305**	*e*P	**P**	**02 45 15.3**	**+0.5**
	comp=Z,126nm,1.1s						
KOLN	**Koldanda**	**59.25**	**305**	*e*P	**P**	**02 45 20.7**	**+0.6**
	comp=Z,76nm,0.9s						
PYUN	**Piuthan**	**59.87**	**305**	*e*P	**P**	**02 45 25.2**	**+0.8**
	comp=Z,291nm,0.9s						
HYB	**Hyderabad**	**60.56**	**292**	*i* P	**P**	**02 45 29.0**	**-0.1**
WMQ	**Urumqi**	**63.72**	**323**	P	**P**	**02 45 50.5**	**+0.6**
WMQ				pP	sP	02 46 03.0	-1.3
WMQ				sP	pP	02 46 10.1	+10
WMQ				pmax	pmax		
	comp=Z,5.0nm,0.8s						
WMQ				pmax	pmax		
	comp=Z,69nm,5.0s						
WMQ				LR	LR		
	comp=N,80nm,21.6s						
WMQ				LR	LR		
	comp=E,49nm,23.0s						
WMQ				LR	LR		
	comp=Z,54nm,23.0s						
POO	**Poona**	**65.17**	**292**	*e*P	**P**	**02 45 57.0**	**-2.8**
CASY	**Casey**	**65.96**	**191**	*e*P	**P**	**02 46 03.4**	**-0.5**
	comp=Z,2.3nm,1.0s						
SEY	**Seymchan**	**66.63**	**8**	P	**P**	**02 46 07.8**	**-0.4**
	comp=Z,1.1nm,0.2s,baz=180,slow=8.5,SNR=5.7						
MKAR	**Makanchi Array**	**68.52**	**323**	P	**P**	**02 46 19.9**	**-0.7**
	comp=Z,3.7nm,0.9s,baz=109,slow=7.4,SNR=20						
MKAR				LR	LR	03 15 41.4	
	comp=Z,92nm,21.7s,baz=88,slow=35						
MAKZ	**Makanchi**	**68.72**	**323**	*e*P	**P**	**02 46 21.8**	**0.0**
	comp=Z,8.8nm,0.8s						
KSH	**Kashi**	**69.55**	**314**	P	**P**	**02 46 29.1**	**+1.8**
KSH				*es*P	PcP	02 46 46.8	-3.4
KSH				PcS		02 50 56.0	
KSH				S	**S**	**02 55 33.5**	**+0.3**
KSH				ScS	**SKSac**	**02 56 21.8**	**-3.8**
KSH				pmax	pmax		
	comp=Z,20nm,1.0s						
KSH				pmax	pmax		
	comp=Z,65nm,3.2s						
ZALV	**Zalesovo Beam**	**70.91**	**331**	P	**P**	**02 46 33.3**	**-1.8**
	comp=Z,3.0nm,0.6s,baz=118,slow=6.5,SNR=9.3						
TKM2	**Tokmak 2**	**71.10**	**317**	*e*P	**P**	**02 46 36.7**	**-0.1**
	comp=Z,13nm,1.5s						
AAK	**Ala-Archa**	**71.75**	**317**	*e*P	**P**	**02 46 36.7**	**-3.9**
	comp=Z,7.1nm,1.1s						
EKS2	**Erkin-Say**	**72.25**	**316**	*e*P	**P**	**02 46 43.5**	**0.0**
	comp=Z,18nm,1.4s						
KURK	**Kurchatov**	**72.53**	**326**	*e*P	**P**	**02 46 44.0**	**-0.9**
	comp=Z,5.4nm,0.9s						
KURK				*e*PP	**PP**	**02 49 25.7**	**-0.8**
PPT	**Papeete**	**73.82**	**107**	LR	LR	03 16 31.3	
	comp=Z,41nm,19.3s,baz=292,slow=34						
TIXI	**Tiksi**	**74.47**	**357**	P	**P**	**02 46 54.0**	**-1.8**
	comp=Z,0.7nm,0.3s,baz=170,slow=4.1,SNR=4.7						
TIXI	**Tiksi**	**74.47**	**357**	*e*P	**P**	**02 46 53.0**	**-2.8**
	comp=Z,6.4nm,1.1s						
KKAR	**Karatay Array**	**74.66**	**316**	*e*P	**P**	**02 46 57.4**	**-0.2**
	comp=Z,8.4nm,0.8s						
VNDA	**Vanda**	**75.91**	**174**	P	**P**	**02 47 04.5**	**+0.4**
	comp=Z,8.0nm,0.8s,baz=333,slow=6.8,SNR=44						
SBA	**Scott Base**	**76.71**	**174**	*e*P	**P**	**02 47 10.1**	**+1.4**
	comp=Z,6.8nm,1.0s						
BRVK	**Borovoye**	**78.20**	**326**	*e*P	**P**	**02 47 16.4**	**-1.0**
	comp=Z,6.5nm,0.8s						
ZRNK	**Zerenda**	**78.89**	**325**	*e*P	**P**	**02 47 20.4**	**-0.

comp=Z,6.3nm,0.9s
SYO Syowa Base 89.91 201 ↑eX **P 02 48 13.1 -3.6**
INK Inuvik 92.55 22 P **P 02 48 27.6 -1.3**
comp=Z,2.1nm,0.9s,baz=307,slow=10,SNR=7.0
ARCES ARCESS Array B 99.85 341 P **Pdif 02 49 01.2 -0.9**
comp=Z,1.3nm,0.7s,baz=86,slow=4.6,SNR=5.6
YKA Yellowknife Ar 101.11 27 P **Pdif 02 49 06.3 -1.5**
comp=Z,0.5nm,0.8s,baz=288,slow=5.2,SNR=5.8
BRTR Keskin Array B 101.68 310 P **Pdif 02 49 08.8 -2.3**
comp=Z,0.6nm,0.9s,baz=104,slow=6.1,SNR=4.8
MOOW Moose Ponds 108.24 45 *e*Pdif **Pdif 02 49 34.5 -5.8**
JCT Junction City 120.17 56 *e*PKPdif **PKPdf 02 54 09.8 +0.2**
LVC Limon Verde 144.60 137 *e*PKPdif **PKPdf 02 54 55.7 -0.1**
OTAV Otavalo 144.95 94 *e*PKPdif PKPbc 02 54 56.5 +0.4
OTAV Otavalo 144.95 94 *e*P **PKPab 02 54 55.1 -1.0**
GRGC Isla de Gorgon 145.36 89 *e*P **PKPbc 02 54 54.0 -2.9**
CAPC Capurgana 145.82 79 *e*P **PKPdf 02 54 57.4 -0.3**
CRUC La Cruz 146.53 91 *e*P **PKPab 02 55 01.8 -0.1**
POPC Popayan, Colom 146.84 90 *e*P **PKPdf 02 54 54.0 -5.8**
MOTC Monteria, Cord 147.45 78 *e*P **PKPdf 02 55 00.7 +0.3**
SJCC San Jacinto, C 147.73 76 *e*P **PKPbc 02 55 03.0 -0.8**
HELC Santa Helena 147.88 83 *e*P **PKPdf 02 55 02.4 +0.8**
BETC Betania 148.08 89 *e*P **PKPab 02 55 08.8 +1.2**
GUYC Guyana, Colomb 148.08 85 *e*P **PKPbc 02 55 04.9 -0.4**
CPUP Villa Florida 148.11 156 PKPbc **PKPbc 02 55 04.6 +0.2**
comp=Z,4.0nm,0.7s,baz=225,slow=2.1,SNR=9.9
SDDR Presa de Saban 148.39 57 PKPdf **PKPdf 02 55 01.7 -0.2**
NORC Norcasia 148.58 84 *e*P **PKPbc 02 55 05.2 -0.9**
PRAC Prado 148.63 87 *e*P **PKPbc 02 55 04.9 -1.3**
LPAZ La Paz 149.14 129 PKPbc **PKPdf 02 55 05.5 +1.6**
comp=Z,4.2nm,0.7s,baz=248,slow=1.3,SNR=20
ROSC El Rosal 149.16 85 PKPbc **PKPbc 02 55 07.0 -1.0**
comp=Z,6.1nm,0.6s,baz=49,slow=21,SNR=7.2
ROSC El Rosal 149.16 85 *e*P **PKPbc 02 55 07.8 -0.2**
OCAC Ocana 149.82 78 *e*P **PKPbc 02 55 08.8 -0.5**
RUSC La Rusia 150.32 83 *e*P **PKPbc 02 55 10.0 -1.0**
URIC Uribia, Colomb 150.39 71 *e*P **PKPbc 02 55 09.3 -1.2**
GRMC Gramalote, San 150.40 79 *e*P **PKPbc 02 55 10.7 0.0**

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*ATH **16** 02:36:35.6,36.′27N×28.′23E,h27km±1km,ML2.3/2,Error ellipse: s-maj=2.7km s-min=1.5km az=17.0*
*ISK **16** 02:36:37.8,36.′28N×28.′08E,h2km,MD2.8*
*CSEM **16** 02:36:38.7±0.2,36.′26N×28.′03E,h5km,ML2.3,Error ellipse: s-maj=5.0km s-min=3.7km az=149.0*
*DDA **16** 02:36:40.2,36.′38N×27.′95E,h7km,Md2.7*
ISC 16 02:36:38.0±1.2,36.′28N±0.′03×27.′95E±0.′03,h4km±11km, n36,σ0§91/53,Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ARG	**Arkhangelos**	**0.16**	**115**	P	**Pg**	**02 36 41.1**	**0.0**
ARG				S	**Sg**	**02 36 42.3**	**-0.9**
NIS1	**Nisyros Isl.**	**0.70**	**297**	P	**Pn**	**02 36 54.0**	**-0.7**
NIS1	**Nisyros Isl.**	**0.70**	**297**	P	**Pn**	**02 36 54.0**	**-0.7**
NIS1				S	**Sn**	**02 37 06.8**	**+0.8**
NIS1				AML	AML	02 37 09.6	
	comp=E,461μm,0.5s						
NIS1				AML	AML	02 37 11.6	
	comp=N,528μm,0.4s						
NISR	**Nisiros**	**0.74**	**297**	P	**Pb**	**02 36 53.7**	**+0.3**
NISR	**Nisiros**	**0.74**	**297**	P	**Pb**	**02 36 53.7**	**+0.3**
DALY	**Dalyan (Mu¨la**	**0.78**	**47**	*e*PG	**Pg**	**02 36 52.1**	**-0.8**
DALY				*e*SG	**Sg**	**02 37 03.1**	**0.0**
DALY	**Dalyan (Mu¨la**	**0.78**	**47**	*e*Pg	**Pg**	**02 36 52.1**	**-0.8**
DALY				*e*Sg	**Sg**	**02 37 03.1**	**0.0**
TURN	**Turunc**	**0.79**	**42**	*i* P	Pg	02 36 47.8	-5.4
TURN				*i* S	Sg	02 36 55.8	-7.6
BDRM	**Kayabasi**	**0.88**	**333**	P	**Pb**	**02 36 56.1**	**+0.3**
BDRM				S	**Sn**	**02 37 09.5**	**-1.0**
BDRM	**Kayabasi**	**0.88**	**333**	*i* P	**Pb**	**02 36 56.1**	**+0.3**
BDRM				*i* S	**Sn**	**02 37 09.5**	**-1.0**
YER	**Yerkesik**	**0.89**	**17**	*e*PG	**Pg**	**02 36 55.4**	**+0.3**
YER	**Yerkesik**	**0.89**	**17**	*e*Pg	**Pg**	**02 36 55.4**	**+0.3**
BODT	**Bodrum**	**0.93**	**327**	*e*PG	**Pn**	**02 36 57.9**	**0.0**
BODT	**Bodrum**	**0.93**	**327**	*e*Pg	**Pn**	**02 36 57.9**	**0.0**
KARP	**Karpathos**	**0.97**	**221**	*e*PG	**Pn**	**02 36 58.7**	**+0.2**
KARP	**Karpathos**	**0.97**	**221**	P	**Pb**	**02 36 57.8**	**+0.3**
KARP	**Karpathos**	**0.97**	**221**	*e*Pg	**Pn**	**02 36 58.7**	**+0.2**
KARP				S	**Sn**	**02 37 12.1**	**-0.7**
KARP	**Karpathos**	**0.97**	**221**	P	**Pb**	**02 36 57.8**	**+0.3**
KARP				S	**Sn**	**02 37 12.1**	**-0.7**
KARP				AML	AML	02 37 16.3	
	comp=N,128μm,0.4s						
KARP				AML	AML	02 37 17.2	
	comp=E,135μm,0.4s						
FETY	**Fethiye**	**0.98**	**69**	*e*PG	**Pg**	**02 36 55.7**	**-1.1**
FETY				*e*SG	**Sg**	**02 37 08.7**	**-0.8**
FETY	**Fethiye**	**0.98**	**69**	*e*Pg	**Pg**	**02 36 55.7**	**-1.1**
FETY				*e*Sg	**Sg**	**02 37 08.7**	**-0.8**
KSL	**Kastellorizon**	**1.33**	**95**	P	Pn	02 36 56.6	-6.7
AKAS	**Kas**	**1.34**	**92**	P	**Pg**	**02 37 03.4**	**-0.3**
AKAS	**Kas**	**1.34**	**92**	*i* P	**Pg**	**02 37 03.4**	**-0.3**
AKAS				*i* S	**Sn**	**02 37 25.1**	**+3.1**
AYDN	**Tasoluk**	**1.38**	**358**	P	**Pb**	**02 37 04.3**	**-0.1**
AYDN				S	**Sn**	**02 37 22.5**	**-0.3**
AYDN	**Tasoluk**	**1.38**	**358**	*i* P	**Pb**	**02 37 04.3**	**-0.1**
AYDN				*i* S	**Sn**	**02 37 22.5**	**-0.3**
GOLH	**Golhisar**	**1.61**	**53**	P	**Pg**	**02 37 08.7**	**-0.1**
GOLH				S	**Sg**	**02 37 31.3**	**+1.7**
GOLH	**Golhisar**	**1.61**	**53**	*i* P	**Pg**	**02 37 08.7**	**-0.1**
GOLH				*i* S	**Sg**	**02 37 31.3**	**+1.7**
ELL	**Elmali**	**1.65**	**73**	*e*PN	**Pn**	**02 37 07.2**	**-0.6**
ELL	**Elmali**	**1.65**	**73**	*e*Pn	**Pn**	**02 37 07.2**	**-0.6**
DNZL	**Cakiroluk**	**1.66**	**32**	P	**Pg**	**02 37 10.3**	**+0.6**
DNZL				S	**Sg**	**02 37 33.2**	**+2.0**
DNZL	**Cakiroluk**	**1.66**	**32**	*i* P	**Pg**	**02 37 10.3**	**+0.6**
DNZL				*i* S	**Sg**	**02 37 33.2**	**+2.0**
AYDB	**Zeytinkoy-Aydi**	**1.66**	**358**	*e*PN	**Pb**	**02 37 09.1**	**-0.1**
AYDB				*e*SN	**Sg**	**02 37 31.7**	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**1.66**	**358**	*e*Pn	**Pb**	**02 37 09.1**	**-0.1**
AYDB				*e*Sn	**Sg**	**02 37 31.7**	**+0.3**
SMG	**Samos**	**1.68**	**328**	P	**Pn**	**02 37 06.0**	**-2.1**
LAST	**Lasithi**	**2.30**	**242**	P	**Pn**	**02 37 16.7**	**-0.1**
LAST	**Lasithi**	**2.30**	**242**	P	**Pn**	**02 37 16.7**	**-0.1**

CASC 16 02:47:39.0±3.7,11.°05N×86.°65W,h42km±396km,MD3.9, Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
COPN	**Copaltepe**	**1.12**	**3**	*e*P	Pn	02 47 58.0	-0.3
COPN				*e*S	Sn	02 48 15.5	+2.9
XAVN	**Gruta Xavier**	**1.14**	**16**	*e*P	Pn	02 47 58.5	0.0
MGAN	**Managua**	**1.16**	**20**	*e*P	Pn	02 47 58.9	+0.1
MGAN				*e*P	Pn	02 47 59.1	+0.4
APYN	**Apoyeque**	**1.21**	**14**	*e*P	Pn	02 47 59.8	+0.3
MOMN	**Momotombo**	**1.35**	**4**	*e*P	Pn	02 48 01.5	0.0
CNGN	**Cerro Negro**	**1.44**	**358**	*e*P	Pn	02 48 01.9	-0.8
CNGN				*e*S	Sn	02 48 18.2	-2.2
JTS	**JuntasAbangare**	**1.83**	**114**	*e*P	Pn	02 48 06.2	-1.8
JCR	**Jicaral**	**1.92**	**128**	*e*P	Pn	02 48 10.9	+1.6
CGA2	**Cerro Gallo 2**	**2.38**	**115**	*e*P	Pn	02 48 16.7	+1.0
CGA2				*e*S	Sn	02 48 43.1	-0.5
URSC	**Urasca**	**3.07**	**113**	*e*P	Pn	02 48 26.4	+1.2

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*HLW **16** 02:49:16.8,36.′81N×30.′72E,h33km±31km,Ml3.3*
*ISCJB **16** 02:49:17.5±0.3,36.′77N±0.′03×30.′66E±0.′03,h110km±5km, Error ellipse: s-maj=4.7km s-min=3.4km az=176.0*
*ISK **16** 02:49:18.7,36.′84N×30.′70E,h85km,MD3.3*
*CSEM **16** 02:49:18.8±0.1,36.′77N×30.′69E,h94km±3km,MD3.3, Error ellipse: s-maj=3.7km s-min=2.9km az=2.0*
*THE **16** 02:49:21.0,36.′85N×30.′70E,h91km±2km,ML2.8/3,Error ellipse: s-maj=2.7km s-min=0.7km az=18.0*
*NSSC **16** 02:49:27.5±1.2,36.′13N×32.′46E,h292km±64km,ML2.4*
*DDA **16** 02:49:52.8,36.′86N×30.′63E,h102km,Md3.4*
ISC 16 02:49:18.0±1.2,36.′77N±0.′03×30.′70E±0.′02,h100km±6km, n117,σ1§76/159,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ANTB	**Antalya**	**0.13**	**344**	*e*PG	**Pn**	**02 49 31.2**	**-0.9**
ANTB				*e*SG	**Sn**	**02 49 40.1**	**-2.5**
ANTB	**Antalya**	**0.13**	**344**	*e*Pg	**Pn**	**02 49 31.2**	**-0.9**
ANTB				*e*Sg	**Sn**	**02 49 40.1**	**-2.5**
KORT	**Korkueli**	**0.36**	**309**	P	**Pn**	**02 49 33.2**	**0.0**
KORT				S	**Sn**	**02 49 44.3**	**-0.2**
KORT	**Korkueli**	**0.36**	**309**	*i* P	**Pn**	**02 49 33.2**	**0.0**
KORT				*i* S	**Sn**	**02 49 44.3**	**-0.2**
ELL	**Elmali**	**0.64**	**268**	*e*PG	**Pn**	**02 49 35.7**	**+0.7**
ELL	**Elmali**	**0.64**	**268**	*e*Pg	**Pn**	**02 49 35.7**	**+0.7**
BCK	**Bucak**	**0.69**	**353**	*e*PG	**Pn**	**02 49 35.3**	**-0.2**
BCK				*e*SG	**Sn**	**02 49 46.6**	**-2.0**
BCK	**Bucak**	**0.69**	**353**	*e*Pg	**Pn**	**02 49 35.3**	**-0.2**
BCK				*e*Sg	**Sn**	**02 49 46.6**	**-2.0**
SUTC	**Sutluce-Ispart**	**0.74**	**19**	*e*PG	**Pn**	**02 49 35.3**	**-0.8**
SUTC	**Sutluce-Ispart**	**0.74**	**19**	*e*Pg	**Pn**	**02 49 35.3**	**-0.8**
GOLH	**Golhisar**	**1.02**	**297**	P	**Pn**	**02 49 39.9**	**+1.1**
GOLH				S	**Sn**	**02 49 55.9**	**+1.4**
GOLH	**Golhisar**	**1.02**	**297**	*i* P	**Pn**	**02 49 39.9**	**+1.1**
GOLH				*i* S	**Sn**	**02 49 55.9**	**+1.4**
AKAS	**Kas**	**1.03**	**239**	P	**Pn**	**02 49 40.2**	**+1.2**
AKAS				S	**Sn**	**02 49 56.7**	**+2.0**
AKAS	**Kas**	**1.03**	**239**	*i* P	**Pn**	**02 49 40.2**	**+1.2**
AKAS				*i* S	**Sn**	**02 49 56.7**	**+2.0**
GLHS	**Glhisar (BURDU**	**1.03**	**292**	*e*PG	**Pn**	**02 49 38.8**	**-0.2**
GLHS	**Glhisar (BURDU**	**1.03**	**292**	*e*Pg	**Pn**	**02 49 38.8**	**-0.2**
ISP	**Isparta**	**1.06**	**352**	*e*PG	**Pn**	**02 49 38.4**	**-0.8**
ISP	**Isparta**	**1.06**	**352**	P	**Pn**	**02 49 38.9**	**-0.3**
ISP				S	**Sn**	**02 49 53.4**	**-1.8**
ISP	**Isparta**	**1.06**	**352**	*e*Pg	**Pn**	**02 49 38.4**	**-0.8**
ISP	**Isparta**	**1.06**	**352**	P	**Pn**	**02 49 38.9**	**-0.3**
ISP				S	**Sn**	**02 49 53.4**	**-1.8**
KSL	**Kastellorizon**	**1.09**	**236**	P	**Pn**	**02 49 40.8**	**+1.3**
KSL				S	**Sn**	**02 49 55.8**	**+0.1**
FETY	**Fethiye**	**1.30**	**264**	*e*PN	**Pn**	**02 49 43.3**	**+1.4**
FETY	**Fethiye**	**1.30**	**264**	P	**Pn**	**02 49 43.2**	**+1.2**
FETY				S	**Sn**	**02 50 00.5**	**+0.4**
FETY	**Fethiye**	**1.30**	**264**	P	**Pn**	**02 49 43.2**	**+1.2**
FETY				S	**Sn**	**02 50 00.5**	**+0.4**
GAZI	**Gazipasa**	**1.41**	**112**	P	**Pn**	**02 49 45.1**	**+1.9**
GAZI				S	**Sn**	**02 50 06.2**	**+3.9**
GAZI	**Gazipasa**	**1.41**	**112**	*i* P	**Pn**	**02 49 45.1**	**+1.9**
GAZI				*i* S	**Sn**	**02 50 06.2**	**+3.9**
DALY	**Dalyan (Mu¨la**	**1.64**	**272**	*e*PN	**Pn**	**02 49 47.0**	**+1.0**
DALY	**Dalyan (Mu¨la**	**1.64**	**272**	*e*Pn	**Pn**	**02 49 47.0**	**+1.0**
DENT	**Denizli**	**1.65**	**307**	*e*PN	**Pn**	**02 49 47.1**	**+0.9**
DENT	**Denizli**	**1.65**	**307**	*e*Pn	**Pn**	**02 49 47.1**	**+0.9**
KMER	**Konya-Meram**	**1.66**	**53**	P	**Pn**	**02 49 47.6**	**+1.2**
KMER				S	**Sn**	**02 50 09.4**	**+1.4**
KMER	**Konya-Meram**	**1.66**	**53**	*i* P	**Pn**	**02 49 47.6**	**+1.2**
KMER				*i* S	**Sn**	**02 50 09.4**	**+1.4**
TURN	**Turunc**	**1.68**	**274**	*i* P	**Pn**	**02 49 51.2**	**+4.7**
TURN				*i* S	**Sn**	**02 50 14.3**	**+6.0**
KONT	**Konya--Tatoy**	**1.77**	**48**	*e*PN	**Pn**	**02 49 49.0**	**+1.3**
KONT	**Konya--Tatoy**	**1.77**	**48**	*e*Pn	**Pn**	**02 49 49.0**	**+1.3**
ERMK	**Ermenek**	**1.79**	**94**	P	**Pn**	**02 49 51.1**	**+3.0**
ERMK				S	**Sn**	**02 50 14.7**	**+3.8**
ERMK	**Ermenek**	**1.79**	**94**	*i* P	**Pn**	**02 49 51.1**	**+3.0**
ERMK				*i* S	**Sn**	**02 50 14.7**	**+3.8**
KHL	**Karahalli**	**1.81**	**329**	*e*PN	**Pn**	**02 49 48.3**	**+0.1**
KHL	**Karahalli**	**1.81**	**329**	*e*Pn	**Pn**	**02 49 48.3**	**+0.1**
LADK	**Ladik-KONYA**	**1.95**	**42**	*e*PN	**Pn**	**02 49 50.8**	**+0.8**
LADK	**Ladik-KONYA**	**1.95**	**42**	*e*Pn	**Pn**	**02 49 50.8**	**+0.8**
YER	**Yerkesik**	**1.97**	**281**	*e*PN	**Pn**	**02 49 51.4**	**+1.2**
YER	**Yerkesik**	**1.97**	**281**	P	**Pn**	**02 49 51.4**	**+1.2**
YER				S	**Sn**	**02 50 14.6**	**-0.2**
YER	**Yerkesik**	**1.97**	**281**	*e*Pn	**Pn**	**02 49 51.4**	**+1.2**
YER				S	**Sn**	**02 50 14.6**	**-0.2**
KIZT	**Kizilcal**	**2.30**	**24**	*e*PN	**Pn**	**02 49 55.1**	**+0.4**
KIZT	**Kizilcal**	**2.30**	**24**	*e*Pn	**Pn**	**02 49 55.1**	**+0.4**
KULA	**Kula-Manisa**	**2.37**	**318**	*e*PN	**Pn**	**02 49 56.4**	**+0.8**
KULA	**Kula-Manisa**	**2.37**	**318**	P	**Pn**	**02 49 55.8**	**+0.2**
KULA				S	**Sn**	**02 50 23.0**	**-1.3**
KULA	**Kula-Manisa**	**2.37**	**318**	P	**Pn**	**02 49 55.8**	**+0.2**
KULA	**Kula-Manisa**	**2.37**	**318**	*e*Pn	**Pn**	**02 49 56.4**	**+0.8**
KULA				S	**Sn**	**02 50 23.0**	**-1.3**
LEF	**Lefka**	**2.43**	**132**	*e*PN	**Pn**	**02 49 57.9**	**+1.7**
LEF	**Lefka**	**2.43**	**132**	*e*Pn	**Pn**	**02 49 57.9**	**+1.7**
CHBY	**Cihanbeyli**	**2.51**	**43**	*e*PN	**Pn**	**02 49 58.4**	**+1.1**
CHBY	**Cihanbeyli**	**2.51**	**43**	*e*Pn	**Pn**	**02 49 58.4**	**+1.1**
AYDB	**Zeytinkoy-Aydi**	**2.52**	**298**	*e*PN	**Pn**	**02 49 57.9**	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**2.52**	**298**	*e*Pn	**Pn**	**02 49 57.9**	**+0.3**
BODT	**Bodrum**	**2.73**	**277**	*e*PN	**Pn**	**02 50 01.4**	**+1.2**
BODT	**Bodrum**	**2.73**	**277**	P	**Pn**	**02 50 00.8**	**+0.6**
BODT				S	**Sn**	**02 50 31.6**	**-1.0**
BODT	**Bodrum**	**2.73**	**277**	P	**Pn**	**02 50 00.8**	**+0.6**
BODT	**Bodrum**	**2.73**	**277**	*e*Pn	**Pn**	**02 50 01.4**	**+1.2**
BODT				S	**Sn**	**02 50 31.6**	**-1.0**
SVRH	**Sivrihisar-ESK**	**2.75**	**13**	*e*PN	**Pn**	**02 50 01.1**	**+0.6**
SVRH	**Sivrihisar-ESK**	**2.75**	**13**	*e*Pn	**Pn**	**02 50 01.1**	**+0.6**
CSS	**Mathiatis**	**2.80**	**129**	P	**Pn**	**02 50 02.6**	**+1.5**
CSS				S	**Sn**	**02 50 34.9**	**+0.6**
CSS	**Mathiatis**	**2.80**	**129**	P	**Pn**	**02 50 02.6**	**+1.5**
CSS				S	**Sn**	**02 50 34.9**	**+0.6**
TVSB	**Tavsanli**	**2.84**	**340**	*e*PN	**Pn**	**02 50 02.3**	**+0.5**
TVSB	**Tavsanli**	**2.84**	**340**	*e*Pn	**Pn**	**02 50 02.3**	**+0.5**
AKS	**Akhisar**	**3.10**	**313**	*e*PN	**Pn**	**02 50 06.3**	**+1.1**
AKS	**Akhisar**	**3.10**	**313**	*e*Pn	**Pn**	**02 50 06.3**	**+1.1**
KARP	**Karpathos**	**3.11**	**248**	*e*PN	**Pn**	**02 50 06.6**	**+1.3**
KARP	**Karpathos**	**3.11**	**248**	P	**Pn**	**02 50 06.5**	**+1.2**
KARP				S	**Sn**	**02 50 41.7**	**-0.1**
KARP	**Karpathos**	**3.11**	**248**	P	**Pn**	**02 50 06.5**	**+1.2**
KARP				S	**Sn**	**02 50 41.7**	**-0.1**
BALB	**Balikesir**	**3.62**	**323**	*e*PN	**Pn**	**02 50 14.0**	**+1.9**
BALB	**Balikesir**	**3.62**	**323**	*e*Pn	**Pn**	**02 50 14.0**	**+1.9**
ZKR	**Zakros**	**4.00**	**247**	P	**Pn**	**02 50 18.0**	**+0.9**
ZKR				S	**Sn**	**02 51 02.7**	**-0.3**
ZKR	**Zakros**	**4.00**	**247**	P	**Pn**	**02 50 18.0**	**+0.9**
ZKR				S	**Sn**	**02 51 02.7**	**-0.3**
APE	**Apeiranthos**	**4.15**	**276**	*e*PN	**Pn**	**02 50 21.4**	**+2.1**
APE	**Apeiranthos**	**4.15**	**276**	P	**Pn**	**02 50 19.9**	**+0.6**
APE	**Apeiranthos**	**4.15**	**276**	P	**Pn**	**02 50 19.9**	**+0.6**
APE	**Apeiranthos**	**4.15**	**276**	*e*Pn	**Pn**	**02 50 21.4**	**+2.1**
CMBO	**Columbo, Santo**	**4.27**	**268**	P	**Pn**	**02 50 21.5**	**+0.7**
CMBO	**Columbo, Santo**	**4.27**	**268**	P	**Pn**	**02 50 21.5**	**+0.7**
THR3	**Thira Island,**	**4.28**	**267**	P	**Pn**	**02 50 20.7**	**-0.2**
THR3	**Thira Island,**	**4.28**	**267**	P	**Pn**	**02 50 20.7**	**-0.2**
THR6	**Thira Island,**	**4.29**	**266**	P	**Pn**	**02 50 21.6**	**+0.5**
THR6	**Thira Island,**	**4.29**	**266**	P	**Pn**	**02 50 21.6**	**+0.5**
ARNB	**Al Arnab**	**4.36**	**101**	*e*P	**Pn**	**02 50 22.5**	**+0.4**
ARNB				*e*S	**Sn**	**02 51 04.1**	**-7.7**
ARNB				AML	AML	02 51 16.4	
	comp=E,22nm,0.4s						
ARNB				AML	AML	02 51 17.0	
	comp=N,23nm,0.2s						
ARNB	**Al Arnab**	**4.36**	**101**	*e*P	**Pn**	**02 50 22.5**	**+0.4**
ARNB				*e*S	**Sn**	**02 51 04.1**	**-7.7**
	comp=N,23nm,0.2s						
LAST	**Lasithi**	**4.53**	**251**	P	**Pn**	**02 50 24.8**	**+0.4**
LAST				S	**Sn**	**02 51 14.4**	**-1.6**
LAST	**Lasithi**	**4.53**	**251**	P	**Pn**	**02 50 24.8**	**+0.4**
LAST				S	**Sn**	**02 51 14.4**	**-1.6**
BTCH	**Batrach**	**4.71**	**97**	*e*P	**Pn**	**02 50 28.4**	**+1.7**
BTCH				*e*S	Sn	02 51 10.8	-9.4
BTCH				AML	AML	02 51 31.5	
	comp=E,34nm,0.3s						
BTCH				AML	AML	02 51 32.6	
	comp=N,13nm,0.4s						
BTCH	**Batrach**	**4.71**	**97**	*e*P	**Pn**	**02 50 28.5**	**+1.7**
BTCH				*e*S	Sn	02 51 10.8	-9.4
	comp=N,13nm,0.4s						
WRDH	**Warideh**	**4.79**	**104**	*e*P	**Pn**	**02 50 28.0**	**0.0**
WRDH				*e*S	Sn	02 51 11.0	-11
WRDH				AML	AML	02 51 24.8	
	comp=E,13nm,0.4s						
WRDH	**Warideh**	**4.79**	**104**	*e*P	**Pn**	**02 50 28.0**	**0.0**
WRDH				*e*S	Sn	02 51 11.0	-11
	comp=E,13nm,0.4s						
DRWC	**Darouich**	**4.80**	**90**	*e*P	**Pn**	**02 50 29.6**	**+1.5**
DRWC				*e*S	Sn	02 51 14.2	-8.3
DRWC				AML	AML	02 51 25.3	
	comp=N,6.7nm,0.4s						
DRWC				AML	AML	02 51 30.9	
	comp=E,8.2nm,0.6s						
DRWC	**Darouich**	**4.80**	**90**	*e*P	**Pn**	**02 50 29.6**	**+1.5**
DRWC				*e*S	Sn	02 51 14.2	-8.3
	comp=E,8.0nm,0.6s						
BIDA	**Albida**	**4.89**	**109**	*e*P	**Pn**	**02 50 27.9**	**-1.4**
BIDA				*e*S	Sn	02 51 12.5	-12
BIDA				AML	AML	02 51 27.6	
	comp=N,19nm,0.3s						
BIDA				AML	AML	02 51 28.1	
	comp=E,19nm,0.7s						
BIDA	**Albida**	**4.89**	**109**	*e*P	**Pn**	**02 50 27.9**	**-1.4**
BIDA				*e*S	Sn	02 51 12.5	-12
	comp=E,19nm,0.7s						
RSH		**6.32**	**156**	P	**Pn**	**02 50 48.5**	**-0.2**
	baz=156						
RSH		**6.32**	**156**	P	**Pn**	**02 50 48.5**	**-0.2**
HMAT	**Matruh**	**6.41**	**209**	P	**Pn**	**02 50 49.6**	**-0.2**
HMAT	baz=209			S	**Sn**	**02 51 58.3**	**-3.2**
HMAT	**Matruh**	**6.41**	**209**	P	**Pn**	**02 50 49.6**	**-0.2**
HMAT				S	**Sn**	**02 51 58.3**	**-3.2**
KOT	**Kottamia**	**6.89**	**172**	P	**Pn**	**02 50 56.6**	**+0.1**
KOT	baz=172			S	**Sn**	**02 52 08.6**	**-4.8**
KOT	**Kottamia**	**6.89**	**172**	P	**Pn**	**02 50 56.6**	**+0.1**
KOT	baz=172			S	**Sn**	**02 52 08.6**	**-4.8**
HHAG	**Hagoal**	**6.90**	**170**	P	**Pn**	**02 50 56.9**	**+0.3**
HHAG	**Hagoal**	**6.90**	**170**	P	**Pn**	**02 50 56.9**	**+0.3**
SLUM	**Salum**	**6.96**	**222**	P	**Pn**	**02 50 57.3**	**0.0**
SLUM	baz=223 **Salum**	**6.96**	**222**	P	**Pn**	**02 50 57.3**	**0.0**
HNAT	**Natroun**	**7.12**	**181**	P	**Pn**	**02 50 59.9**	**+0.2**
HNAT	baz=181 **Natroun**	**7.12**	**181**	P	**Pn**	**02 50 59.8**	**+0.2**
SUZ	**Suez**	**7.14**	**165**	P	**Pn**	**02 50 59.8**	**-0.1**
SUZ	baz=165 **Suez**	**7.14**	**165**	P	**Pn**	**02 50 59.8**	**-0.1**
GLL	**Jalalah**	**7.23**	**173**	P	**Pn**	**02 51 01.6**	**+0.6**
GLL	baz=173 **Jalalah**	**7.23**	**173**	P	**Pn**	**02 51 01.6**	**+0.6**
AWBH		**8.56**	**191**	P	**Pn**	**02 51 19.7**	**+0.5**
AWBH	baz=191	**8.56**	**191**	P	**Pn**	**02 51 19.7**	**+0.5**
SWA2		**8.70**	**212**	P	**Pn**	**02 51 21.4**	**+0.3**
SWA2	baz=212	**8.70**	**212**	P	**Pn**	**02 51 21.4**	**+0.3**

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*ISCJB **16** 02:54:59.4±0.8,24.′76S±0.′08×179.′8E±0.′1,h501km, mb4.1/11,Error ellipse: s-maj=16.8km s-min=11.1km az=5.8*
*IDC **16** 02:55:01.8±2.4,24.′92S×179.′81E,h524km±27km, mb3.7/11,mb1 3.8/13,mb1mx3.5/38,mbtmp4.5/13,Error ellipse: s-maj=31.0km s-min=16.0km az=159.0*
ISC 16 02:54:59.8±0.8,24.′9S±0.′1×179.′9E±0.′1,h501km,n20, σ1§10/20,mb4.2/11,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**12.66**	**280**	P	**P**	**02 57 47.5**	**+2.1**
	0.5nm,0.3s,baz=84,slow=19,SNR=3.0						
URZ	**Urewera**	**13.56**	**189**	P	**P**	**02 57 54.5**	**-0.1**
	1.7nm,0.3s,baz=312,slow=5.6,SNR=5.6						
URZ				S	**S**	**03 00 18.9**	**+0.1**
	1.1nm,0.3s,baz=80,slow=23,SNR=7.1						
CTA	**Charters Tower**	**31.40**	**272**	P	**P**	**03 00 39.7**	**+0.4**
	26nm,0.4s,baz=94,slow=11,SNR=47						
STKA	**Stephens Creek**	**34.29**	**249**	P	**P**	**03 01 04.0**	**+0.3**
	3.6nm,0.4s,baz=91,slow=13,SNR=17						
ASAR	**Alice Springs**	**41.80**	**262**	P	**P**	**03 02 04.4**	**-0.7**
	2.8nm,0.4s,baz=99,slow=7.6,SNR=35						
WRA	**Warramunga Arr**	**42.26**	**267**	P	**P**	**03 02 07.7**	**-1.1**
	9.7nm,0.4s,baz=99,slow=6.9,SNR=32						
WRA				S	**S**	**03 07 50.7**	**-2.1**
	2.7nm,0.9s,baz=98,slow=14,SNR=5.5						
FITZ	**Fitzroy Crossi**	**50.67**	**266**	P	**P**	**03 03 12.2**	**-0.4**
	9.0nm,0.8s,baz=113,slow=8.1,SNR=14						
MJAR

s-min=29.8km az=48.0, Chagos Archipelago region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08N3	**Diego Garcia H**	**3.37**	**60**	T	T	03 08 23.6	
	baz=236,slow=76						
H08N2	**Diego Garcia H**	**3.39**	**59**	T	T	03 08 24.1	
	baz=236,slow=76						
H08N1	**Diego Garcia H**	**3.39**	**60**	T	T	03 08 32.5	
	baz=236,slow=76						
H08S1	**Diego Garcia H**	**4.39**	**85**	Pn	Pn	03 04 24.2	-1.6
	baz=275,slow=16,SNR=74						
H08S1				T	T	03 09 33.4	
	baz=273,slow=20,SNR=11						
H08S3	**Diego Garcia H**	**4.40**	**85**	Pn	Pn	03 04 24.5	-1.4
	baz=275,slow=16,SNR=37						
H08S3				T	T	03 09 33.4	
	baz=273,slow=20,SNR=9.2						
H08S2	**Diego Garcia H**	**4.41**	**85**	Pn	Pn	03 04 24.3	-1.7
	baz=275,slow=16,SNR=100						
H08S2				T	T	03 09 33.4	
	baz=273,slow=20,SNR=9.7						
CMAR	**Chiang Mai Arr**	**40.28**	**49**	P	P	03 10 58.6	+1.3
	0.5nm,0.4s,baz=225,slow=10,SNR=4.3						
H01W3	**Cape Leeuwin H**	**49.90**	**129**	T	T	04 05 39.5	
	baz=290,slow=75,SNR=22						
H01W2	**Cape Leeuwin H**	**49.90**	**129**	T	T	04 05 40.9	
	baz=290,slow=75,SNR=25						
H01W1	**Cape Leeuwin H**	**49.92**	**129**	T	T	04 05 42.4	
	baz=290,slow=75,SNR=25						
MKAR	**Makanchi Array**	**56.07**	**12**	P	P	03 12 57.1	-1.8
	0.5nm,0.5s,baz=200,slow=7.0,SNR=5.6						
BRTR	**Keskin Array B**	**57.23**	**329**	P	P	03 13 07.9	+0.4
	0.1nm,0.3s,baz=130,slow=7.9,SNR=3.5						
ASAR	**Alice Springs**	**64.71**	**112**	P	P	03 13 57.9	-0.7
	0.3nm,0.5s,baz=282,slow=5.6,SNR=3.7						
WRA	**Warramunga Arr**	**65.03**	**108**	P	P	03 14 00.8	+0.1
	0.7nm,0.8s,baz=272,slow=5.7,SNR=3.4						
SONM	**Songino Array**	**65.14**	**27**	P	P	03 14 00.8	-0.1
	0.7nm,0.8s,baz=224,slow=5.5,SNR=3.7						
PDAR	**Pinedale Array**	**145.37**	**357**	PKPbc	PKPbc	03 22 57.8	-0.7
	0.2nm,0.4s,baz=29,slow=2.1,SNR=2.9						
NVAR	**Mina Array Bea**	**149.23**	**10**	PKPbc	PKPbc	03 23 09.6	+0.2
	0.6nm,0.7s,baz=251,slow=4.5,SNR=4.7						

*ISK **16** 03:18:29.8, 38.48N×39.22E, h4km, MD2.6*
*ISCJB **16** 03:18:30.2±0.6, 38.46N±0.05×39.21E±0.04, h5km±7km, Error ellipse: s-maj=8.1km s-min=5.3km az=12.0*
*DDA **16** 03:18:30.3, 38.47N×39.15E, h7km, Md2.2*
*CSEM **16** 03:18:30.1±0.2, 38.47N×39.20E, h5km, MD2.6, Error ellipse: s-maj=6.2km s-min=5.2km az=55.0*

ISC 16 03:18:30.4±0.9, 38.47N±0.04×39.21E±0.03, h10km±7km, n15, σ1°59/24, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SVRC	**Sivrice-ELAZID**	**0.12**	**137**	*e*PG	**Pg**	**03 18 33.0**	**-0.5**
SVRC	**Sivrice-ELAZID**	**0.12**	**137**	*e*Pg	**Pg**	**03 18 33.0**	**-0.5**
ELZG	**Elazig**	**0.18**	**281**	P	**Pg**	**03 18 34.2**	**-0.1**
ELZG				S	**Sg**	**03 18 37.2**	**+0.2**
ELZG	**Elazig**	**0.18**	**281**	*i* P	**Pg**	**03 18 34.2**	**-0.1**
ELZG				*i* S	**Sg**	**03 18 37.2**	**+0.2**
PTK	**Pertek**	**0.45**	**19**	*e*PG	**Pg**	**03 18 38.7**	**-0.6**
PTK				*e*SG	**Sg**	**03 18 45.6**	**+0.3**
PTK	**Pertek**	**0.45**	**19**	*e*Pg	**Pg**	**03 18 38.7**	**-0.6**
PTK				*e*Sg	**Sg**	**03 18 45.6**	**+0.3**
DYBB	**Diyarbakir**	**0.90**	**124**	*e*PG	**Pb**	**03 18 47.9**	**-0.2**
DIYA	**Diyarbakir**	**0.90**	**127**	P	**Pb**	**03 18 48.3**	**+0.1**
DIYA				S	**Sb**	**03 19 01.0**	**+0.7**
DIYA	**Diyarbakir**	**0.90**	**127**	*i* P	**Pb**	**03 18 48.3**	**+0.1**
DIYA				*i* S	**Sb**	**03 19 01.0**	**+0.7**
DIY	**Diyarbakir**	**0.98**	**125**	*e*Pg	**Pg**	**03 18 47.9**	**-1.5**
AKCD	**Akcadag**	**1.02**	**261**	*i* P	**Pg**	**03 18 48.8**	**-1.3**
AKCD				*i* S	**Sg**	**03 19 03.3**	**-0.1**
URFA	**Urfa**	**1.07**	**197**	*e*PN	**Pn**	**03 18 51.7**	**+0.2**
URFA				*e*SN	**Sn**	**03 19 06.7**	**+0.2**
URFA	**Urfa**	**1.07**	**197**	*e*Pn	**Pn**	**03 18 51.7**	**+0.2**
URFA				*e*Sn	**Sn**	**03 19 06.7**	**+0.2**
MAZI	**Mazidag**	**1.40**	**135**	*e*PN	**Pg**	**03 18 57.1**	**-0.3**
MAZI	**Mazidag**	**1.40**	**135**	*e*Pn	**Pg**	**03 18 57.1**	**-0.3**

*NIED **16** 03:20:00, 39.10N×142.10E, h17km, Mw3.9 Best double couple: M0:8.64000×10^14 NP1:φ0=246.00000°, δ64.00000°, λ-21.00000°. NP2:φ0=345.00000°, δ71.00000°, λ-153.00000°.*

JMA 16 03:20:46.7±0.1, 39.11N×142.13E, h45km±1km, M3.7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.36**	**265**	P	Pn	03 20 56.1	+0.1
OFUJ				S	Sn	03 21 02.6	0.0
MIYJ	**Miyakonagasawa**	**0.53**	**333**	P	Pn	03 20 57.9	-0.1
MIYJ				S	Sn	03 21 05.6	-0.4
JMK	**Ichinoseki**	**0.73**	**258**	P	Pn	03 21 00.5	-0.1
JMK				S	Sn	03 21 10.4	-0.2
JOM	**Ohasama**	**0.74**	**299**	P	Pn	03 21 01.0	+0.1
JOM				S	Sn	03 21 11.2	+0.1
JTH	**Tanohata**	**0.85**	**346**	P	Pn	03 21 02.1	-0.2
JIO	**Ouri**	**0.90**	**223**	P	Pn	03 21 02.5	-0.4
JIO				S	Sn	03 21 13.5	-1.2
JRG	**Rokugo**	**1.20**	**284**	P	Pn	03 21 07.3	+0.3
JANG	**Nango**	**1.35**	**340**	P	Pn	03 21 09.2	+0.1
JANG				*e*S	Sn	03 21 26.1	+0.3
JOU	**Okura**	**1.37**	**237**	P	Pn	03 21 09.2	-0.1
JOU				*e*S	Sn	03 21 26.7	+0.4
JYK	**Kaneyama**	**1.39**	**263**	P	Pn	03 21 10.0	+0.3

JMA 16 03:22:52.6±0.1, 35.78N×140.98E, h13km±1km, M3.6, 3C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.12**	**232**	⇑P	Pg	03 22 55.9	0.0
CHOJ				S	Sg	03 22 57.9	-0.3
JCN	**Nagara**	**0.73**	**241**	⇑P	Pb	03 23 07.7	+0.5
JCN				S	Sn	03 23 18.9	-0.7
JYT	**Yasato**	**0.78**	**305**	⇑P	Pg	03 23 06.7	-1.0
JYT				S	Sg	03 23 17.3	-0.6
JHO	**Hitachi**	**0.89**	**338**	P	Pg	03 23 08.8	-1.1
JHO				*e*S	Sg	03 23 20.8	-0.8
BSO4	**Boso 4**	**0.95**	**214**	P	Pg	03 23 11.1	+0.2
BSO3	**Boso 3**	**1.05**	**202**	P	Pb	03 23 12.1	-0.3
BSO3				*e*S	Sn	03 23 28.0	+0.9
MAT	**Matsushiro**	**2.37**	**290**	P	Pn	03 23 30.7	-0.5
MAT				S	Sb	03 24 04.5	+0.2

IDC 16 03:23:55.1±1.6, 11.76S×165.70E, h0km, mb4.0/8, mb1 4.2/8, mb1mx3.9/29, mbtmp3.9/8, MS3.4/2, Ms1 3.4/2, ms1mx2.8/19, Error ellipse: s-maj=70.0km s-min=24.6km az=149.0, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**10.28**	**176**	LR	LR	03 29 43.5	
	comp=Z,146nm,18.6s,baz=60,slow=34						
WRA	**Warramunga Arr**	**31.20**	**251**	P	P	03 30 16.1	-0.4
	2.7nm,0.9s,baz=79,slow=9.3,SNR=8.3						
ASAR	**Alice Springs**	**32.44**	**244**	P	P	03 30 27.3	0.0
	0.7nm,0.9s,baz=64,slow=11,SNR=4.2						
ASAR				LR	LR	03 42 31.9	
	comp=Z,74nm,18.8s,baz=70,slow=34						
CMAR	**Chiang Mai Arr**	**72.35**	**294**	P	P	03 35 24.1	+0.7
	0.6nm,0.4s,baz=124,slow=4.9,SNR=5.3						
SONM	**Songino Array**	**79.21**	**324**	P	P	03 36 02.5	+0.3
	0.4nm,0.4s,baz=136,slow=6.2,SNR=4.4						
ILAR	**Eielson Array**	**84.20**	**18**	P	P	03 36 27.6	-0.4
	0.7nm,0.6s,baz=237,slow=5.2,SNR=14						
NVAR	**Mina Array Bea**	**86.52**	**50**	P	P	03 36 42.0	+1.4
	0.2nm,0.3s,baz=269,slow=5.4,SNR=4.1						
MKAR	**Makanchi Array**	**94.00**	**317**	P	P	03 37 15.3	0.0
	0.7nm,0.7s,baz=95,slow=5.8,SNR=5.1						
YKA	**Yellowknife Ar**	**95.62**	**27**	P	P	03 37 20.4	-1.9
	0.1nm,0.5s,baz=261,slow=5.0,SNR=4.9						
ARCES	**ARCESS Array B**	**117.01**	**345**	PKP	PKPdf	03 42 40.9	-0.6
	1.2nm,0.8s,baz=66,slow=3.1,SNR=5.3						

*ISCJB **16** 04:11:29.1±0.5, 8.81S±0.05×120.60E±0.05, h142km±5km, mb3.9/3, Error ellipse: s-maj=8.0km s-min=7.4km az=4.3*

*DJA **16** 04:11:32.7±0.5, 9.52S×120.38E, h375km±98km, mb3.4/3, mb1 3.1/5, mb1mx2.9/23, mbtmp3.8/5, Error ellipse: s-maj=108.5km s-min=30.8km az=49.0*

ISC 16 04:11:30.2±0.9, 8.81S±0.05×120.60E±0.05, h134km±9km, n13, σ0°89/19, mb4.0/3, Flores region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WSI	**Waingapu**	**0.91**	**199**	P	**Pn**	**04 11 52.7**	**0.0**
WSI				S	**Sn**	**04 12 08.4**	**-1.4**
BASI	**Baing, Sumba**	**1.40**	**181**	P	**Pn**	**04 11 58.4**	**+0.8**
BASI				S	**Sn**	**04 12 18.8**	**+0.3**
MMRI	**Maumere**	**1.62**	**84**	P	**Pn**	**04 12 00.3**	**+0.3**
MMRI				S	**Sn**	**04 12 22.9**	**+0.1**
BSSI	**Bau Bau, Buton**	**2.65**	**358**	P	**Pn**	**04 12 12.7**	**+0.1**
BSSI				S	**Sn**	**04 12 44.9**	**-0.3**
PLAI	**Plampang**	**2.79**	**269**	P	**Pn**	**04 12 15.0**	**+0.6**
PLAI				S	**Sn**	**04 12 48.6**	**+0.2**
TWSI	**Taliwang, Sumb**	**3.68**	**271**	P	**Pn**	**04 12 26.7**	**+0.8**
TWSI				S	**Sn**	**04 13 09.1**	**+0.1**
SPSI	**Sidrap Palu**	**4.88**	**350**	P	**Pn**	**04 12 42.7**	**+0.8**
KDI	**Kendari**	**5.22**	**23**	P	**Pn**	**04 12 47.4**	**+1.0**
WRA	**Warramunga Arr**	**17.29**	**131**	P	**Pn**	**04 15 23.5**	**0.0**
	0.2nm,0.3s,baz=306,slow=13,SNR=6.7						
WRA				S	S	04 18 23.6	-13
	0.6nm,0.3s,baz=301,slow=23,SNR=11						
ASAR	**Alice Springs**	**19.50**	**141**	P	**P**	**04 15 48.2**	**+1.1**
	0.2nm,0.3s,baz=312,slow=9.9,SNR=13						
SONM	**Songino Array**	**57.78**	**349**	P	**P**	**04 21 08.0**	**+0.5**
	1.1nm,0.7s,baz=172,slow=8.0,SNR=5.2						
MKAR	**Makanchi Array**	**65.02**	**332**	P	**P**	**04 21 54.7**	**-1.3**
	0.7nm,0.6s,baz=128,slow=7.9,SNR=6.7						
ZALV	**Zalesovo Beam**	**69.44**	**338**	P	**P**	**04 22 21.9**	**-1.7**
	2.7nm,0.4s,baz=147,slow=4.9,SNR=7.1						

*KRNET **16** 04:19:47.9±0.1, 39.25N×72.48E, mb2.6*
*NNC **16** 04:19:50.9±2.0, 39.37N×72.59E, h0km, mb3.8, mpv3.4, Error ellipse: s-maj=20.6km s-min=11.9km az=137.0*
*ISCJB **16** 04:19:51.4±1.2, 39.11N±0.06×72.53E±0.06, h31km, Error ellipse: s-maj=9.4km s-min=6.5km az=165.8*
*SOME **16** 04:19:57.2, 39.90N×72.25E, h0km*

ISC 16 04:19:50.6±1.6, 39.05N±0.09×72.37E±0.05, h31km, n20, σ1°45/30, 20C-8D, Kyrgyzstan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BTK	**Batken**	**1.57**	**311**	⇑*e*P	**Pn**	**04 20 16.9**	**+0.5**
	baz=303						
BTK				⇑*e*S	**Sb**	**04 20 38.6**	**+0.1**
	baz=303						
ARSB	**Arslanbob**	**2.32**	**11**	⇑*e*P	**Pn**	**04 20 26.8**	**0.0**
	baz=10.0						
ARSB				⇑*e*S	**Sn**	**04 20 54.9**	**+0.5**
	baz=10.0						
ARK	**Arkit**	**2.77**	**354**	⇑*e*P	**Pn**	**04 20 33.7**	**+0.8**
	baz=352						
ARK				⇑*i*S	**Sn**	**04 21 06.1**	**+0.8**
	baz=352						
DZET	**Dzherino**	**2.77**	**266**	⇓Pn	**Pb**	**04 20 39.0**	**-0.5**
	16nm,0.4s						
DZET				⇓Lg	Lg	04 21 23.3	
	79nm,0.4s						
TOKL	**Toktogul**	**2.92**	**7**	⇑*i*P	**Pn**	**04 20 36.0**	**+1.1**
	baz=6.0						
TOKL				⇑*i*S	**Sn**	**04 21 09.9**	**+1.0**
	baz=6.0						
ARLS	**Aral**	**3.18**	**27**	⇑*e*P	**Pn**	**04 20 38.3**	**-0.3**
	baz=28						
ARLS				⇑*e*S	**Sn**	**04 21 15.5**	**-0.1**
	baz=28						
MNAS	**Manas**	**3.44**	**2**	⇑*e*P	**Pn**	**04 20 42.8**	**+0.6**
	baz=0.0						
MNAS				⇑*e*S	**Sn**	**04 21 22.0**	**+0.1**
	baz=0.0						
MNAS	**Manas**	**3.44**	**2**	⇓Pn	**Pn**	**04 20 41.9**	**-0.2**
	4.3nm,0.4s						
MNAS				⇑Lg	Lg	04 21 24.1	
	19nm,0.6s						
IUG	**luzhnay**	**3.57**	**331**	*e*P	**Pb**	**04 20 50.4**	**-2.8**
	14nm,0.2s						
IUG				*e*S	**Sn**	**04 21 27.9**	**+2.8**
	25nm,0.3s						
NRN	**Naryn**	**3.66**	**48**	⇑*e*P	**Pn**	**04 20 45.9**	**+0.5**
	baz=50						
NRN				⇑*e*S	**Sn**	**04 21 27.2**	**-0.5**
	baz=50						
MRKS	**Merke**	**3.75**	**10**	⇑*i*P	**Pb**	**04 20 53.3**	**-2.9**
	14nm,0.3s						
MRKS				*e*S	**Sn**	**04 21 32.6**	**+3.1**
	34nm,0.5s						
AAK	**Ala-Archa**	**3.93**	**24**	⇑Pn	**Pn**	**04 20 47.1**	**-1.8**
	4.9nm,0.5s						
AAK				⇓Lg	Lg	04 21 42.9	
	22nm,0.6s						
KK31	**Karatay Array**	**4.29**	**341**	Pn	**Pn**	**04 20 55.4**	**+1.7**
	3.2nm,0.4s,baz=151,slow=11,SNR=36						
KK31				⇑Sn	**Sn**	**04 21 44.1**	**+1.4**
	2.6nm,0.3s,baz=150,slow=25,SNR=4.9						
TKM2	**Tokmak 2**	**4.58**	**31**	⇓Pn	**Pn**	**04 20 56.6**	**-1.2**
	1.0nm,0.3s						
TKM2				⇓Lg	Lg	04 22 03.6	
	11nm,0.6s						
DGS	**Degeres**	**4.92**	**30**	*e*P	**Pb**	**04 21 16.8**	**+0.8**
	5.2nm,0.4s						
DGS				*e*S	**Sb**	**04 22 15.9**	**+1.2**
	18nm,0.6s						
TNSS	**Tian-Shan**	**5.28**	**39**	*e*P	**Pb**	**04 21 23.5**	**+1.1**
	5.2nm,0.4s						
TNSS				*e*S	**Sb**	**04 22 25.6**	**+0.2**
	8.6nm,1.0s						
PDGK	**Podgornoye**	**6.86**	**49**	⇑Lg	Lg	04 23 18.4	
	3.0nm,0.7s						
OTUK	**Ortayu**	**9.19**	**360**	⇓Lg	Lg	04 24 32.1	
	2.0nm,0.8s						
AB31	**Akbulak array**	**13.54**	**323**	⇓P	**Pn**	**04 22 58.5**	**-1.8**
	0.6nm,0.4s,baz=126,slow=8.5,SNR=23						
AKTO	**Aktyubinsk**	**15.25**	**323**	⇑P	**P**	**04 23 29.4**	**+1.2**
	3.4nm,0.6s						

MEX 16 04:21:13.5±0.5, 18.24N×102.15W, h16km±419km, MD3.9, Michoacan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZIIG	**Zihuatanejo**	**0.90**	**134**	*e*P	Pb	04 21 27.8	-3.0
ZIIG				*e*S	Sb	04 21 38.1	-4.4
MMIG	**Aquila**	**1.14**	**273**	*e*P	Pn	04 21 31.0	-3.8
MMIG				*e*S	Sb	04 21 44.7	-4.8
MOIG	**Morelia**	**1.70**	**32**	*e*P	Pn	04 21 39.4	-3.3
MOIG				*i* S	Sn	04 21 58.6	-5.6
ARIG	**Puente Sto Nin**	**1.71**	**88**	*e*P	Pn	04 21 38.9	-3.7
ARIG				*i* S	Sn	04 22 00.0	-4.2
EZ5V		**1.85**	**312**	*e*P	Pn	04 21 41.3	-3.5
EZ5V				*e*S	Sn	04 22 02.7	-5.4
R15V		**1.97**	**298**	*e*P	Pn	04 21 43.2	-3.1
R15V				*i* S	Sn	04 22 06.0	-4.8

KRSC 16 04:26:22.6±1.6, 51.13N×157.90E, h100km±26km, ML3.9, Near east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**1.22**	**249**	*i* P	Pn	04 26 46.5	+1.2
SKR				*i* S	Sn	04 27 02.8	+0.3
ASAK	**Asacha**	**1.26**	**360**	*i* P	Pn	04 26 47.1	+1.1
ASAK				*e*S	Sn	04 27 04.2	+0.6
RUS	**Russkaya**	**1.36**	**16**	*i* P	Pn	04 26 49.0	+1.9
RUS				*i* S	Sn	04 27 06.8	+1.2
MTVR	**Mutnovka**	**1.37**	**7**	*i* P	Pn	04 26 49.0	+1.7
MTVR				*i* S	Sn	04 27 07.4	+1.3
KRMR	**Karymshinskiy**	**1.71**	**5**	*i* P	Pn	04 26 52.8	+1.4
KRMR				S	Sn	04 27 14.5	+1.2
PET	**Petropavlovsk**	**1.96**	**13**	P	Pn	04 26 57.3	+2.8
PET				S	Sn	04 27 20.9	+2.0
DALK	**Dalny**	**1.98**	**15**	*e*P	Pn	04 26 57.1	+2.3
DALK				S	Sn	04 27 22.7	+3.3
UGLR	**Uglovaya**	**2.16**	**15**	*i* P	Pn	04 27 00.1	+2.8
UGLR				*e*S	Sn	04 27 26.3	+2.5
AVH	**Avacha**	**2.20**	**13**	*i* P	Pn	04 27 00.6	+2.8
AVH				S	Sn	04 27 26.9	+2.2
SMAR	**Somma**	**2.21**	**14**	*i* P	Pn	04 27 00.5	+2.5
KOK	**Koryaka**	**2.22**	**11**	P	Pn	04 27 00.7	+2.7
KOK				S	Sn	04 27 27.1	+2.0
SDLR	**Sedlovina**	**2.24**	**15**	*i* P	Pn	04 27 00.6	+2.3
SDLR				S	Sn	04 27 26.4	+0.8
KRER	**Koryakskii**	**2.24**	**13**	*i* P	Pn	04 27 01.0	+2.6
KRER				*e*S	Sn	04 27 27.8	+1.9
SPN	**Mys Shipunski**	**2.37**	**33**	*i* P	Pn	04 27 03.1	+3.2
SPN				*i* S	Sn	04 27 32.0	+3.5
GNL	**Ganaly**	**2.57**	**1**	*i* P	Pn	04 27 03.6	+0.9
KII	**Karymskiy**	**3.06**	**17**	P	Pn	04 27 10.8	+1.6
MKZ	**Mys Kozlova**	**4.15**	**33**	*i* P	Pn	04 27 25.8	+2.2
MKZ				*e*S	Sn	04 28 10.4	-0.5
BKI	**Bering**	**6.34**	**47**	*i* P	Pn	04 27 56.7	+3.4
BKI				*e*S	Sn	04 29 01.4	-2.8

*ISCJB **16** 05:12:36.4±0.2, 6.76N±0.02×72.99W±0.02, h161km±1km, mb4.4/70, Error ellipse: s-maj=4.0km s-min=2.9km az=139.8*
*NEIC **16** 05:12:37.5±0.4, 6.74N×72.93W, h154km±4km, mb4.7/51, Error ellipse: s-maj=3.9km s-min=3.6km az=72.0*
NEIC Felt at San Cristobal, Venezuela.
*IDC **16** 05:12:37.6±0.6, 6.76N×72.93W, h156km±6km, mb4.0/19, mb1 4.2/24, mb1mx4.0/36, mbtmp4.5/24, Error ellipse: s-maj=9.7km s-min=6.6km az=123.0*
*FUNV **16** 05:12:38.0, 6.79N×73.11W, h164km, MW4.6*
*RSNC **16** 05:12:39.0±1.0, 6.76N×73.11W, h142km±6km, ML4.7*

ISC 16 05:12:37.2±0.5, 6.80N±0.03×72.99W±0.04, h152km±4km, n520, σ1°09/551, mb4.5/70, 3C-19D, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BARC	**Barichara**	**0.29**	**223**	*i* P	**Pn**	**05 12 58.4**	**+0.1**
BARC				*e*S	**Sn**	**05 13 12.5**	**-1.9**
BARC				*i*		05 13 14.3	
	comp=Z,15μm,0.4s						
PAMC	**Pamplona, Colo**	**0.60**	**28**	*i* P	**Pn**	**05 13 01.3**	**+1.3**
PAMC				*e*S	**Sn**	**05 13 18.1**	**+0.8**
BRRC	**Barranca, Sant**	**0.78**	**293**	⇓*i* P	**Pn**	**05 13 00.4**	**-0.1**
BRRC				*e*S	**Sn**	**05 13 16.9**	**-1.4**
BRRC				*i*		05 13 21.9	
	comp=Z,7μm,0.1s						
CBRI	**Barrientos, No**	**0.93**	**12**	*i* P	**Pn**	**05 13 03.1**	**+1.3**
CBRI				*e*S	**Sn**	**05 13 21.0**	**+0.3**
GRMC	**Gramalote, San**	**0.93**	**11**	*i* P	**Pn**	**05 13 04.4**	**+2.6**
GRMC				*e*S	**Sn**	**05 13 23.1**	**+2.5**
GRMC				*i*		05 13 25.2	
	comp=Z,8μm,0.3s						
GUEC	**Guerrero, Nort**	**1.02**	**3**	*e*P	**Pn**	**05 13 03.5**	**+0.7**
CAPV	**Capacho**	**1.25**	**32**	⇓*i*P	**Pn**	**05 13 06.6**	**+1.9**
CAPV				*e*S	**Sn**	**05 13 27.5**	**+1.8**
OCAC	**Ocana**	**1.47**	**347**	*i* P	**Pn**	**05 13 07.2**	**+0.5**
OCAC				*e*S	**Sn**	**05 13 29.3**	**-0.1**
OCAC				*i*		05 13 33.2	
	comp=Z,9μm,0.2s						
NORC	**Norcasia**	**2.24**	**237**	*e*P	**Pn**	**05 13 14.2**	**-1.2**
NORC				*e*S	**Sn**	**05 13 42.3**	**-2.5**
ROSC	**El Rosal**	**2.36**	**214**	P	**Pn**	**05 13 18.3**	**+1.1**
	comp=Z,261nm,0.3s,baz=84,slow=12,SNR=617						
ROSC				S	**Sn**	**05 13 49.1**	**+1.2**
	comp=Z,417nm,0.3s,baz=43,slow=22,SNR=22						
SOCV	**Socops**	**2.57**	**55**	⇓*i*P	**Pn**	**05 13 20.9**	**+1.5**
SOCV				*e*S	**Sn**	**05 13 52.6**	**+0.6**
VIGV	**El Vigia**	**2.58**	**38**	⇓*i*P	**Pn**	**05 13 21.2**	**+1.6**
VIGV				*e*S	**Sn**	**05 13 53.2**	**+1.0**
HELC	**Santa Helena**	**2.60**	**257**	*e*P	**Pn**	**05 13 18.7**	**-1.3**
HELC				*i*		05 13 57.5	
	comp=Z,3μm,0.5s						
VILC	**Villavicencio,**	**2.77**	**195**	*e*P	**Pn**	**05 13 21.9**	**0.0**
GUYC	**Guyana, Colomb**	**2.86**	**237**	*e*P	**Pn**	**05 13 23.4**	**-0.1**
GUYC				*e*S	**Sn**	**05 13 56.4**	**-2.6**
GUYC				*i*		05 14 02.9	
	comp=Z,2μm,0.3s						
SDV	**Santo Domingo**	**3.12**	**48**	P	**Pn**	**05 13 28.2**	**+1.8**
	comp=Z,280nm,0.3s,baz=231,slow=11,SNR=181						
SDV				S	**Sn**	**05 14 04.6**	**+0.2**
	comp=Z,367nm,0.3s,baz=252,slow=19,SNR=19						
SDV	**Santo Domingo**	**3.12**	**48**	*e*Pn	**Pn**	**05 13 28.2**	**+1.8**
SDV				*e*Sn	**Sn**	**05 14 05.8**	**+1.4**
SDV	**Santo Domingo**	**3.12**	**48**	*i* P	**Pn**	**05 13 28.2**	**+1.8**
SDV				*e*S	**Sn**	**05 14 04.1**	**-0.3**
SDV				*i*		05 14 10.0	
	comp=Z,2μm,0.7s						
DBBC	**Dabeiba**	**3.21**	**274**	*i* P	**Pn**	**05 13 27.0**	**-0.4**
MOTC	**Monteria, Cord**	**3.30**	**307**	⇑*i*P	**Pn**	**05 13 26.2**	**-2.4**
MOTC				*i*		05 14 11.0	
	comp=Z,1μm,0.4s						
ELOV	**Elorza**	**3.48**	**87**	⇑*i*P	**Pn**	**05 13 32.9**	**+2.0**
PRAC	**Prado**	**3.61**	**212**	*e*P	**Pn**	**05 13 31.6**	**-1.0**
PRAC				*i*		05 14 18.0	
	comp=Z,2μm,0.3s						
SJAC	**San Juan de Ar**	**3.64**	**195**	*i* P	**Pn**	**05 13 32.5**	**-0.5**
SJAC				*i*		05 14 17.5	
	comp=Z,2μm,0.5s						
VIRV	**Villa del Rosa**	**3.72**	**9**	⇓*i*P	**Pn**	**05 13 33.6**	**-0.3**
VIRV				*e*S	**Sn**	**05 14 15.9**	**-2.1**
SJCC	**San Jacinto, C**	**3.76**	**325**	⇑*i*P	**Pn**	**05 13 32.8**	**-1.7**
SJCC				*i*		05 14 18.5	
	comp=Z,3μm,0.5s						
SANV	**Sanarito**	**4.34**	**52**	⇓*i*P	**Pn**	**05 13 43.0**	**+0.9**
CURV	**Curarigua**	**4.37**	**43**	⇓*i*P	**Pn**	**05 13 43.5**	**+1.0**
SOLC	**Bahia Solano**	**4.43**	**263**	*e*P	**Pn**	**05 13 42.4**	**-0.9**
CAPC	**Capurgana**	**4.69**	**293**	*e*P	**Pn**	**05 13 42.6**	**-4.1**
CAPC

MTP	Monte Pirata	13.36	32	*e*Pn	Pn	05 15 41.5 +0.5
CDVI	St. Croix	13.52	36	*e*Pn	Pn	05 15 43.7 +0.7
STVI	Saint Thomas	13.89	34	*e*Pn	Pn	05 15 48.5 +0.8
FDF	Fort de France	14.04	55	*e*P	Pn	05 15 50.0 +0.3
FDF	Fort de France	14.04	55	*e*Pn	Pn	05 15 49.0 -0.7
FDF				*e*Sn	Sn	05 18 19.0 -6.5
CXM	Morne La Croix	14.07	55	*e*P	P	05 15 56.3 +3.1
BAMF	Morne Balai	14.09	55	*e*P	P	05 15 52.9 -0.5
ATAH	Atahualpa	14.86	201	P	P	05 16 02.6 +0.3
	comp=Z,1.6nm,0.3s,baz=76,slow=3.6,SNR=4.0					
PTGA	Pitinga	14.99	119	P	Pn	05 16 01.4 -0.2
	comp=Z,1.1nm,0.3s,baz=301,slow=13,SNR=9.1					
PTGA	Pitinga	14.99	119	*e*Pn	Pn	05 16 01.7 +0.1
SAML	Samuel	18.45	148	*e*P	P	05 16 41.7 +0.3
	comp=Z,17nm,0.6s					
NNA	Nana	19.06	192	P	P	05 16 48.3 +0.2
	comp=Z,1.1nm,0.3s,baz=9.9,slow=8.9,SNR=5.2					
NNA	Nana	19.06	192	*e*P	P	05 16 47.5 -0.6
	comp=Z,97nm,1.2s					
TEIG	Tepich	19.95	313	P	P	05 16 59.1 +1.4
	comp=Z,19nm,0.4s,baz=266,slow=23,SNR=25					
TEIG	Tepich	19.95	313	*e*P	P	05 16 58.9 +1.3
	comp=Z,28nm,0.5s					
CCIG	Comitan	20.98	298	*e*P	P	05 17 08.0 -0.9
	comp=Z,22nm,0.7s					
LPAZ	La Paz	23.44	168	P	P	05 17 33.3 -0.4
	comp=Z,5.9nm,0.8s,baz=356,slow=4.0,SNR=22					
CMIG	Matias Romero	23.71	297	P	P	05 17 32.2 -3.3
	comp=Z,1.6nm,0.4s,baz=112,slow=7.9,SNR=6.0					
SIV	San Ignacio	25.54	153	P	P	05 17 51.4 -0.7
	comp=Z,0.6nm,0.4s,baz=341,slow=11,SNR=6.9					
SIV				pP	pP	05 18 22.6 -1.2
	comp=Z,5.4nm,0.8s,baz=347,slow=10,SNR=10.0					
TLIG	Tlapa	27.16	296	*e*P	P	05 18 07.7 +0.9
	comp=Z,9.6nm,0.8s					
447A	Lucedale	28.03	330	P	P	05 18 16.1 +1.9
	baz=145					
GOGA	Godfrey	28.21	341	*e*P	P	05 18 17.5 +1.8
	comp=Z,25nm,1.5s					
JSC	Jenkinsville	28.39	345	*e*P	P	05 18 19.2 +1.8
	comp=Z,46nm,1.9s					
347A	Saraland	28.47	331	P	P	05 18 20.4 +2.3
	baz=146					
248A	Dixon Mills	28.68	333	P	P	05 18 22.4 +2.4
	baz=148					
346A	Big Creek Wild	28.91	330	P	P	05 18 24.0 +2.0
	baz=144					
LRAL	Lakeview Retre	29.17	335	*e*P	P	05 18 26.1 +1.8
	comp=Z,41nm,1.8s					
KMSC	Kings Mountain	29.23	346	P	P	05 18 26.7 +1.9
	baz=163					
147A	Livingston	29.41	333	P	P	05 18 28.0 +1.6
	baz=148					
542A	Morse	29.61	324	P	P	05 18 29.3 +1.2
	baz=138					
344A	Westbrook Farm	29.61	328	P	P	05 18 30.3 +2.1
	baz=142,SNR=5.1					
245A	Little AP, Sta	29.65	330	P	P	05 18 30.1 +1.6
	baz=144					
Z48A	Northport	29.70	335	P	P	05 18 30.5 +1.5
	baz=150					
Z47A	Carrollton	29.77	334	P	P	05 18 31.3 +1.8
	baz=149,SNR=5.4					
244A	Avery, Jackson	30.05	329	P	P	05 18 33.7 +1.6
	baz=143					
VBMS	Vicksburg	30.11	329	P	P	05 18 34.4 +1.8
	baz=144					
145A	Houston Renfro	30.13	331	P	P	05 18 34.6 +1.9
	baz=145					
Z46A	Louisville	30.15	333	P	P	05 18 35.2 +2.3
	baz=147					
Y47A	UCPARC, Winfie	30.27	335	P	P	05 18 35.6 +1.6
	baz=150,SNR=5.5					
144A	Alexander Plac	30.39	330	P	P	05 18 36.8 +1.7
	baz=144					
Z45A	Winona	30.64	332	P	P	05 18 39.0 +1.7
	baz=146					
Y46A	Houston	30.69	334	P	P	05 18 39.3 +1.6
	baz=148,SNR=9.9					
440A	Kirbyville	30.89	323	P	P	05 18 40.5 +1.0
	baz=136					
Z44A	Pea Ridge, Bel	30.92	331	P	P	05 18 41.5 +1.8
	baz=145					
Y45A	Yeager Farm, C	30.99	333	P	P	05 18 41.7 +1.4
	baz=147					
142A	Monroe	31.11	328	P	P	05 18 43.0 +1.6
	baz=142					
035A	Encino	31.16	313	P	P	05 18 42.5 +0.6
	baz=126					
Z43A	Armstrong Fami	31.27	330	P	P	05 18 44.0 +1.3
	baz=143					
Y44A	Strider, Charl	31.38	332	P	P	05 18 45.1 +1.4
	baz=146					
736A	Circle Diamond	31.66	317	P	P	05 18 47.2 +1.0
	baz=130					
034A	Hebbronville	31.66	313	P	P	05 18 46.5 +0.2
	baz=125,SNR=10					
Y43A	Makayla and Ka	31.68	331	P	P	05 18 47.9 +1.6
	baz=144					
835A	Beeville	31.77	315	P	P	05 18 48.1 +0.9
	baz=128					
X44A	Crenshaw	31.79	332	P	P	05 18 48.7 +1.3
	baz=146					
934A	Benavides	31.85	314	P	P	05 18 48.5 +0.5
	baz=126					
537A	Green Hill Far	31.89	319	P	P	05 18 49.2 +0.9
	baz=132					
636A	Smothers Creek	31.98	318	P	P	05 18 49.9 +0.8
	baz=130					
NATX	Nacogdoches	32.03	324	P	P	05 18 50.6 +1.1
	baz=136					
Y42A	Garnett, Star	32.04	330	P	P	05 18 50.9 +1.4
	baz=143					
735A	Kenedy	32.10	316	P	P	05 18 50.5 +0.4
	baz=128					
239A	Gary	32.11	324	P	P	05 18 51.2 +1.1
	baz=137					
Z41A	Richland Creek	32.11	328	P	P	05 18 50.9 +0.8
	baz=141					
338A	Crockett	32.13	322	P	P	05 18 51.6 +1.2
	baz=135					
834A	Tilden	32.18	314	P	P	05 18 51.1 +0.2
	baz=127					
WVT	Waverly	32.20	337	*e*P	P	05 18 52.0 +1.1
	comp=Z,21nm,0.9s					
933A	Laredo	32.40	313	P	P	05 18 52.8 0.0
	baz=125,SNR=16					
Z40A	Long Farm, Mag	32.43	327	P	P	05 18 53.7 +0.7
	baz=140					
Y41A	Eaglette Beard	32.49	329	P	P	05 18 54.2 +0.7
	baz=142					
436A	Wall Ranch, Ga	32.66	320	P	P	05 18 55.5 +0.5
	baz=132					
634A	China Grove, S	32.80	316	P	P	05 18 56.6 +0.4
	baz=128					
237A	Washetta, Mont	32.89	323	P	P	05 18 57.8 +0.8
	baz=135					
X41A	Kaden, Bauxite	32.93	329	P	P	05 18 58.6 +1.3
	baz=142					
Y40A	Okolona	32.95	328	P	P	05 18 58.2 +0.8
	baz=141					
X40A	Basin Creek Fa	33.08	329	P	P	05 18 59.1 +0.4
	baz=142,SNR=6.5					
435B	Jarrell	33.18	319	P	P	05 18 59.9 +0.4
	baz=131					
137A	Heron Place, G	33.28	323	P	P	05 19 01.3 +0.9
	baz=136					
534A	Blanco	33.28	317	P	P	05 19 00.3 -0.1
	baz=129					
832A	Faith Ranch, C	33.29	313	P	P	05 19 00.3 -0.2
	baz=125					
Z38A	Mt. Pleasant	33.30	325	P	P	05 19 01.9 +1.3
	baz=138					
Y39A	Lockesburg	33.32	327	P	P	05 19 01.2 +0.5
	baz=140,SNR=5.2					
236A	Katherine and	33.33	322	P	P	05 19 01.3 +0.5
	baz=134					
W41B	Gary Mavity, V	33.34	331	P	P	05 19 01.5 +0.7
	baz=144					
335A	Moody	33.40	320	P	P	05 19 01.9 +0.4
	baz=132,SNR=7.4					
633A	Saathoff Ranch	33.41	316	P	P	05 19 01.5 -0.1
	baz=127					
V42A	Cord	33.44	332	P	P	05 19 02.2 +0.5
	baz=145					
WHAR	Wooly Hollow	33.45	331	*e*P	P	05 19 02.5 +0.7
	comp=Z,13nm,0.9s					
X301	Greenbrier Sit	33.46	330	*e*P	P	05 19 02.9 +1.0
	comp=Z,9.7nm,0.6s					
X201	Greenbrier Sit	33.49	331	*e*P	P	05 19 02.8 +0.7
	comp=Z,12nm,0.7s					
MIAR	Mount Ida	33.51	328	P	P	05 19 02.6 +0.3
	baz=141					
MIAR	Mount Ida	33.51	328	*e*P	P	05 19 02.7 +0.3
	comp=Z,4.7nm,0.8s					
WCI	Wyandotte Cave	33.53	341	*e*P	P	05 19 03.8 +1.3
	comp=Z,46nm,0.6s					
434A	Burnet	33.64	318	P	P	05 19 03.2 -0.3
	baz=130					
136A	Ennis	33.66	322	P	P	05 19 04.0 +0.4
	baz=134					
Y38A	Idabel	33.66	326	P	P	05 19 03.9 +0.3
	baz=138,SNR=6.5					
533A	Kerrville	33.69	317	P	P	05 19 03.8 -0.2
	baz=128					
O56A	Blue Knob Stat	33.70	352	P	P	05 19 06.3 +2.4
	baz=170					
W40A	Ferguson Farm,	33.76	330	P	P	05 19 05.3 +0.9
	baz=142,SNR=8.7					
X39A	Fountain Ranch	33.77	328	P	P	05 19 05.4 +0.8
	baz=140					
V41A	Mountainview	33.78	331	P	P	05 19 05.2 +0.5
	baz=144					
PBMO	Poplar Bluff	33.82	334	*e*P	P	05 19 06.3 +1.4
	comp=Z,22nm,0.7s					
WHTX	Lake Whitney,	33.90	321	P	P	05 19 06.2 +0.5
	baz=133					
334A	Lometa	33.96	319	P	P	05 19 06.1 -0.1
	baz=131,SNR=7.2					
N59A	State Game Lan	34.06	356	P	P	05 19 09.3 +2.3
	baz=175					
V40A	Witts Springs	34.12	331	P	P	05 19 08.1 +0.4
	baz=143,SNR=16					
W39A	Magazine	34.12	329	P	P	05 19 08.3 +0.7
	baz=141,SNR=9.3					
SIUC	Southern Illin	34.12	337	*e*P	P	05 19 08.8 +1.3
	comp=Z,25nm,0.7s					
433A	Art	34.15	318	P	P	05 19 07.9 -0.1
	baz=129,SNR=30					
Y37A	Hugo	34.20	325	P	P	05 19 08.9 +0.6
	baz=137					
135A	Vickery Place,	34.25	322	P	P	05 19 09.3 +0.6
	baz=133					
X38A	Whitesboro	34.27	327	P	P	05 19 09.8 +0.9
	baz=139					
234A	Clairette	34.33	320	P	P	05 19 09.6 +0.1
	baz=132,SNR=7.1					
333A	Richland Sprin	34.44	318	P	P	05 19 10.4 -0.1
	baz=130,SNR=17					
BLO	Bloomington	34.46	341	*e*P	P	05 19 12.1 +1.7
	comp=Z,26nm,0.7s					
Y36A	Durant	34.52	325	P	P	05 19 12.4 +1.3
	baz=136					
V39A	Pettigrew	34.55	330	P	P	05 19 11.8 +0.4
	baz=142,SNR=14					
U40A	Yellville	34.58	331	P	P	05 19 12.3 +0.7
	baz=144,SNR=24					
OLIL	Olney	34.60	339	*e*P	P	05 19 12.7 +1.1
	comp=Z,19nm,0.7s					
T41A	Mountain View	34.63	333	P	P	05 19 12.4 +0.4
	baz=146					
Z35A	Perchaven, San	34.69	323	P	P	05 19 13.4 +0.9
	baz=134					
233A	Rising Star	34.83	319	P	P	05 19 14.0 +0.2
	baz=131,SNR=6.1					
V38A	Canehill	34.96	329	P	P	05 19 14.8 0.0
	baz=141,SNR=17					
X36A	Centrahoma	35.04	325	P	P	05 19 15.6 +0.1
	baz=137					
HHAR	Hobbs	35.05	330	*e*P	P	05 19 15.7 +0.1
	comp=Z,8.0nm,0.8s					
T40A	Mansfield	35.06	332	P	P	05 19 16.3 +0.6
	baz=145,SNR=7.9					
Z34A	Collier Ranch,	35.12	322	P	P	05 19 16.6 +0.4
	baz=133					
133A	Hamilton Ranch	35.23	320	P	P	05 19 17.6 +0.4
	baz=131,SNR=5.5					
X35A	Drake	35.27	324	P	P	05 19 17.5 -0.1
	baz=136					
V37A	Hulbert	35.36	328	P	P	05 19 18.1 -0.2
	baz=140					
T39A	Clever	35.36	331	P	P	05 19 18.4 +0.1
	baz=143,SNR=5.4					
W36A	Wetumka	35.39	326	P	P	05 19 18.4 -0.1
	baz=138					
S40A	Lebanon	35.42	333	P	P	05 19 19.4 +0.6
	baz=145,SNR=22					
Y34A	Reagan Ranch,	35.42	323	P	P	05 19 19.1 +0.3
	baz=134,SNR=6.6					
Z33A	Whitaker Ranch	35.58	321	P	P	05 19 20.6 +0.4
	baz=132,SNR=9.0					
ABTX	Abilene, Hawle	35.70	320	P	P	05 19 21.5 +0.3
	baz=130,SNR=11					
ABTX	Abilene, Hawle	35.70	320	*e*P	P	05 19 21.5 +0.3
V36A	Jenks	35.71	327	P	P	05 19 21.0 -0.2
	baz=138,SNR=5.9					
TUL1	Leonard	35.72	327	P	P	05 19 21.1 -0.2
	baz=139,SNR=5.5					
TUL1	Leonard	35.72	327	*e*P	P	05 19 21.5 +0.2
	comp=Z,9.7nm,0.7s					
SFIN	Lafayette	35.74	341	P	P	05 19 22.5 +1.1
	baz=156,SNR=6.1					
SFIN	Lafayette	35.74	341	*e*P	P	05 19 22.5 +1.1
U37A	Salina	35.74	329	P	P	05 19 21.4 -0.1
	baz=140					
W35A	Tecumseh	35.76	325	P	P	05 19 21.4 -0.3
	baz=137					
T38A	Diamond	35.82	330	P	P	05 19 21.8 -0.3
	baz=142,SNR=8.5					
S39A	Bolivar	35.87	332	P	P	05 19 22.6 0.0
	baz=144,SNR=8.8					
R40A	Maddies Statio	35.88	334	P	P	05 19 22.9 +0.2
	baz=146,SNR=12					
U36A	Oologah	36.05	328	P	P	05 19 24.0 -0.2
	baz=139,SNR=5.4					
S38A	Stockton	36.10	331	P	P	05 19 24.7 +0.2
	baz=143					
V35A	Meyer Ranch, C	36.18	326	P	P	05 19 25.0 -0.3
	baz=137					
T37A	Cheneyville 18	36.20	330	P	P	05 19 25.1 -0.3
	baz=141,SNR=17					
R39A	Chumby, Stover	36.25	333	P	P	05 19 25.7 0.0
	baz=145,SNR=14					
CPUP	Villa Florida	36.27	156	P	P	05 19 21.9 -4.1
	comp=Z,2.2nm,0.9s,baz=328,slow=9.5,SNR=3.3					
X33A	Lawton	36.27	323	P	P	05 19 25.8 -0.3
	baz=134,SNR=13					
W34A	Bridge Creek,	36.33	325	P	P	05 19 26.3 -0.2
	baz=136,SNR=7.4					
W34A	Bridge Creek,	36.33	325	*e*P	P	05 19 26.9 +0.3
	comp=Z,20nm,0.4s					
Q40A	Laux Farm, Aux	36.39	335	P	P	05 19 27.3 +0.4
	baz=147,SNR=17					
R38A	Fenwick Farm,	36.54	332	P	P	05 19 28.2 -0.1
	baz=144,SNR=13					
U35A	Pawnee	36.57	327	P	P	05 19 28.5 -0.1
	baz=138,SNR=6.7					
TXAR	Lajitas Array	36.57	312	P	P	05 19 29.4 +0.6
	comp=Z,6.1nm,0.6s,baz=127,slow=9.2,SNR=45					
TXAR				PcP	PcP	05 21 50.1 +1.2
	comp=Z,1.6nm,0.6s,baz=141,slow=6.3,SNR=6.9					
WMOK	Wichita Mounta	36.57	323	P	P	05 19 28.0 -0.7
	baz=134,SNR=12					
V34A	Guthrie	36.61	326	P	P	05 19 28.5 -0.4
	baz=136,SNR=6.4					
V34A	Guthrie	36.61	326	*e*P	P	05 19 28.7 -0.2
T36A	Boggs Farm, Ca	36.64	329	P	P	05 19 29.3 +0.2
	baz=140					
HDIL	Hopedale	36.64	339	P	P	05 19 29.0 0.0
	baz=152					
S37A	Fort Scott	36.65	330	P	P	05 19 28.8 -0.4
	baz=142,SNR=12					
X32A	Elmer	36.66	322	P	P	05 19 29.5 +0.2
	baz=133,SNR=7.8					
Q39A	Willow Grove F	36.82	334	P	P	05 19 30.6 0.0
	baz=146,SNR=16					
P40A	Paris	36.82	335	P	P	05 19 30.8 +0.1
	baz=147,SNR=8.1					
T35A	Sooner Cattle	36.86	328	P	P	05 19 30.8 -0.3
	baz=139,SNR=5.1					
HPIG		36.95	307	*e*P	P	05 19 32.2 +0.1
	comp=Z,8.2nm,0.6s					
S36A	Lake Cedric, C	37.00	330	P	P	05 19 31.7 -0.5
	baz=141					
Q38A	Cooks Store, C	37.04	333	P	P	05 19 32.7 +0.3
	baz=145,SNR=16					
V33A	Lossen Ranch,	37.04	325	P	P	05 19 32.3 -0.3
	baz=135,SNR=11					
U34A	Anderson Ranch	37.06	326	P	P	05 19 32.6 -0.1
	baz=137,SNR=7.0					
U34A	Anderson Ranch	37.06	326	*e*P	P	05 19 32.6 -0.1
	comp=Z,18nm,0.5s					
R37A	Teagarden Farm	37.08	331	P	P	05 19 32.2 -0.6
	baz=142,SNR=5.8					
P39B	Salisbury	37.09	334	P	P	05 19 32.8 0.0
	baz=146					
W32A	Sentinel	37.12	323	P	P	05 19 33.1 -0.1
	baz=133,SNR=13					
O40A	La Belle	37.25	336	P	P	05 19 34.3 +0.1
	baz=148					
T34A	McClaskey Farm	37.30	327	P	P	05 19 34.6 -0.1
	baz=138,SNR=5.3					
S35A	Otter Creek Ra	37.34	329	P	P	05 19 34.5 -0.5
	baz=140					
Q37A	Longview Farm,	37.35	332	P	P	05 19 35.1 0.0
	baz=143,SNR=9.4					
U33A	Lingo Farm, Me	37.38	326	P	P	05 19 35.4 +0.1
	baz=136					
P38A	Dawn	37.54	334	P	P	05 19 36.8 +0.2
	baz=145,SNR=12					
O39A	Kirksville	37.64	335	P	P	05 19 37.6 +0.1
	baz=147					
S34A	Willow Spring	37.76	328	P	P	05 19 38.5 -0.1
	baz=139					
U32A	Winter Ranch,	37.84	325	P	P	05 19 38.9 -0.4
	baz=135					
P37A	Lathrop	37.88	333	P	P	05 19 39.2 -0.3
	baz=144,SNR=5.5					
O38A	Galt	37.92	334	P	P	05 19 40.0 +0.1
	baz=146,SNR=8.0					
Q35A	Mercer Eighty,	38.10	330	P	P	05 19 40.8 -0.6
	baz=141					
N39A	Derby Farms, D	38.14	336	P	P	05 19 41.7 -0.1
	baz=148					
S33A	Kaszmaul Farm,	38.16	327	P	P	05 19 41.9 0.0
	baz=137					
O37A	Wolven Farm, M	38.25	333	P	P	05 19 42.5 -0.1
	baz=145,SNR=5.7					
P36A	Good Intent, A	38.30	332	P	P	05 19 42.6 -0.4
	baz=143					
N38A	Joes South For	38.38	335	P	P	05 19 43.7 +0.1
	baz=146					
AMTX	Amarillo	38.45	321	P	P	05 19 44.8 +0.2
	baz=130					
AMTX	Amarillo	38.45	321	*e*P	P	05 19 45.1 +0.6
	comp=Z,26nm,1.0s					
KSU1	Kansas State U	38.57	330	P	P	05 19 44.8 -0.5
	baz=140,SNR=7.5					
KSU1	Kansas State U	38.57	330	*e*P	P	05 19 45.1 -0.2
	comp=Z,19nm,0.6s					
MSTX	Muleshoe	38.58	319	P	P	05 19 45.5 -0.1
	baz=128,SNR=7.7					
MSTX	Muleshoe	38.58	319	*e*P	P	05 19 45.1 -0.6
	comp=Z,5.9nm,0.6s					
O36A	Bolckow	38.59	333	P	P	05 19 45.1 -0.4
	baz=144					
Q34A	Chapman	38.60	329	P	P	05 19 45.3 -0.3
	baz=140					
R33A	Olander Ranch,	38.68	328	P	P	05 19 46.1 -0.1
	baz=138					
S32A	Newby Ranch, P	38.75	326	P	P	05 19 46.8 -0.1
	baz=136					
N37A	Lee Faris, Mou	38.77	334	P	P	05 19 46.8 -0.2
	baz=145,SNR=7.6					
M38A	Pleasantville	38.88	336	P	P	05 19 47.7 -0.1
	baz=147					
P34A	Walnut Farm, R	39.02	330	P	P	05 19 48.5 -0.5
	baz=140,SNR=5.9					
JFWS	Jewell Farm	39.06	340	*e*P	P	05 19 49.3 0.0
	comp=Z,22nm,0.4s					
RCBR	Riachuelo	39.08	108	P	P	05 19 50.6 +0.7
	comp=Z,2.9nm,0.4s,baz=280,slow=6.9,SNR=5.9					
MNTX	Cornudas Mount	39.08	314	P	P	05 19 50.1 +0.3
	baz=123,SNR=38					
MNTX	Cornudas Mount	39.08	314	*e*P	P	05 19 50.2 +0.5
Q33A	Connelly Farm,	39.11	329	P	P	05 19 49.7 -0.1
	baz=139,SNR=6.3					
N36A	Muff Farm, Cla	39.14	333	P	P	05 19 49.9 -0.2
	baz=144,SNR=6.5					
R32A	Long Quarter,	39.15	327	P	P	05 19 49.9 -0.3
	baz=137					
M37A	Trindle Farm,	39.23	335	P	P	05 19 50.6 -0.2
	baz=146					
SCIA	State Center	39.30	336	*e*P	P	05 19 51.9 +0.5
	comp=Z,19nm,0.6s					
L38A	Oak Wood Farm,	39.39	336	P	P	05 19 52.0 -0.1
	baz=148					
O34A	Beatrice	39.45	331	P	P	05 19 52.9 +0.3
	baz=141					
Q32A	Meitler Ranch,	39.48	328	P	P	05 19 52.9 -0.1
	baz=138					
N35A	Tabor	39.49	333	P	P	05 19 52.6 -0.3
	baz=143					
M36A	Felix, Anita	39.59	334	P	P	05 19 53.8 0.0
	baz=145					
L37A	Phoenix Point,	39.70	336	P	P	05 19 54.4 -0.3
	baz=147					
O33A	Hebron	39.80	330	P	P	05 19 55.5 0.0
	baz=140					
P32A	Huiting Farm,	39.97	329	P	P	05 19 56.6 -0.4
	baz=138					
M35A	Neola	40.00	333	P	P	05 19 57.1 0.0
	baz=144,SNR=15					
L36A	Harm Buss Farm	40.06	335	P	P	05 19 57.5 -0.1
	baz=145					
O32A	Brockman Farm,	40.28	330	P	P	05 19 59.2 -0.3
	baz=139					
M34A	Aspy Farms, Fr	40.43	332	P	P	05 20 00.4 -0.3
	baz=142					
L35A	Bielow Farm, R	40.45	334	P	P	05 20 01.5 +0.6
	baz=144					
L34A	Svendsen Farm,	40.70	333	P	P	05 20 03.1 +0.1
	baz=143,SNR=6.0					
O31A	Woolen Ranch,	40.74	329	P	P	05 20 02.8 -0.5
	baz=138					
M33A	Taylor Creek F	40.77	332	P	P	05 20 03.2 -0.2
	baz=142					
I38A	Scanlan Farm,	40.78	339	P	P	05 20 03.3 -0.2
	baz=150					
K35A	Storm Lake	40.81	335	P	P	05 20 03.9 +0.1
	baz=145					
K34A	Le Mars	41.15	334	P	P	05 20 06.3 -0.3
	baz=144,SNR=9.4					
121A	Cookes Peak, D	41.25	313	P	P	05 20 09.1 +1.3
	baz=121,SNR=7.2					
121A	Cookes Peak, D	41.25	313	*e*P	P	05 20 09.2 +1.5
	comp=Z,13nm,1.2s					
L32A	Elgin	41.48	332	P	P	05 20 08.8 -0.5
	baz=141					
K33A	Hardington	41.49	333	P	P	05 20 09.5 +0.2
	baz=142					
T25A	Trinidad	41.59	321	P	P	05 20 11.8 +1.2
	baz=129,SNR=5.4					
T25A	Trinidad	41.59	321	*e*P	P	05 20 12.1 +1.6
ANMO	Albuquerque	41.62	317	P	P	05 20 11.5 +0.7
	baz=125					
ANMO	Albuquerque	41.62	317	*e*P	P	05 20 11.6 +0.9
	comp=Z,2.1nm,0.8s					
KSCO	Kaye Shedlock'	41.74	325	P	P	05 20 11.8 +0.2
	baz=133					
KSCO	Kaye Shedlock'	41.74	325	*e*P	P	05 20 12.3 +0.7
LAZ	Ladron	41.78	316	*e*P	P	05 20 13.2 +1.1
H36A	Jessenland, He	41.83	337	P	P	05 20 12.1 0.0
	baz=148					
K32A	Verdigre	41.98	332	P	P	05 20 12.6 -0.7
	baz=141,SNR=6.8					
L31A	Butterfield Fa	42.01	331	P	P	05 20 13.2 -0.4
	baz=140					
J33A	Davis	42.04	334	P	P	05 20 13.2 -0.6
	baz=143,SNR=5.6					
ECSD	EROS Data Cent	42.22	334	P	P	05 20 14.6 -0.7
	baz=144,SNR=13					
ECSD	EROS Data Cent	42.22	334	*e*P	P	05 20 14.8 -0.5
	comp=Z,6.3nm,0.4s					
H35A	Sunnyside Ranc	42.28	337	P	P	05 20 15.3 -0.4
	baz=147,SNR=6.7					
K31A	O'Neill	42.31	332	P	P	05 20 15.8 -0.3
	baz=140,SNR=7.3					
J32A	Parkston	42.48	333	P	P	05 20 16.9 -0.4
	baz=142,SNR=26					
G35A	Watkins	42.59	337	P	P	05 20 18.1 -0.1
	baz=148,SNR=8.7					
H34A	Spellman Lake,	42.63	336	P	P	05 20 18.3 -0.3
	baz=145					

SDCO	Great Sand Dun	42.65	321	P	P	05 20 20.4	+1.2
	baz=128,SNR=12						
SDCO	Great Sand Dun	42.65	321	eP	P	05 20 20.1	+1.0
K30A	Basset	42.76	331	P	P	05 20 19.6	-0.1
	baz=139,SNR=15						
F35A	Swanville	43.16	338	P	P	05 20 22.7	-0.1
	baz=148,SNR=5.2						
Q24A	Divide	43.19	323	P	P	05 20 24.1	+0.6
	baz=130						
H32A	Carlson Farm,	43.19	334	P	P	05 20 22.5	-0.6
	baz=143,SNR=6.1						
J30A	Dallas	43.20	332	P	P	05 20 22.2	-1.0
	baz=140,SNR=5.4						
E36A	McGregor	43.25	340	P	P	05 20 23.8	+0.3
	baz=150,SNR=11						
I31A	Royce, Wessing	43.30	333	P	P	05 20 24.0	0.0
	baz=141						
G33A	Ortonville	43.33	336	P	P	05 20 23.5	-0.7
	baz=145						
TUC	Tucson	43.36	311	P	P	05 20 25.4	+0.7
	baz=118						
TUC	Tucson	43.36	311	eP	P	05 20 25.6	+0.9
F34A	Alexandria	43.36	337	P	P	05 20 24.3	-0.2
	baz=147						
C39A	Grand Marais	43.41	343	P	P	05 20 25.0	+0.3
	baz=155						
S22A	4UR Ranch, Cre	43.48	320	P	P	05 20 27.1	+1.2
	baz=127,SNR=10						
S22A	4UR Ranch, Cre	43.48	320	eP	P	05 20 27.2	+1.3
D37A	Cotton	43.53	341	P	P	05 20 26.1	+0.4
	baz=151,SNR=8.3						
I30A	Oacoma	43.62	332	P	P	05 20 25.9	-0.6
	baz=140,SNR=9.2						
H31A	Wolsey	43.63	333	P	P	05 20 26.3	-0.3
	baz=142,SNR=16						
C38A	Sawbill Land.	43.66	342	P	P	05 20 26.5	-0.3
	baz=153						
E35A	Pequot Lakes	43.69	339	P	P	05 20 27.5	+0.5
	baz=148						
D36A	Goodland	43.79	340	P	P	05 20 27.7	-0.1
	baz=150						
F33A	5 Mile Ranch,	43.80	336	P	P	05 20 27.3	-0.6
	baz=146,SNR=5.8						
SUSD	Miller	43.81	333	P	P	05 20 27.7	-0.4
	baz=141,SNR=20						
G32A	Webster	43.82	335	P	P	05 20 27.6	-0.5
	baz=144,SNR=10.0						
EYMN	Ely	43.93	342	P	P	05 20 28.9	0.0
	baz=153,SNR=14						
EYMN	Ely	43.93	342	eP	P	05 20 29.2	+0.3
E34A	Wadena	43.93	338	P	P	05 20 29.1	+0.2
	baz=147,SNR=12						
C37A	Embarrass	43.95	341	P	P	05 20 29.3	+0.2
	baz=152						
W18A	Petrified Fore	43.97	315	P	P	05 20 29.2	-0.5
	baz=121						
ISCO	Idaho Springs	44.00	323	P	P	05 20 31.1	+1.1
	baz=130,SNR=15						
ISCO	Idaho Springs	44.00	323	eP	P	05 20 31.3	+1.3
	comp=Z,9.6nm,1.0s						
D35A	Remer	44.01	339	P	P	05 20 29.5	-0.1
	baz=149						
G31A	Conde	44.10	334	P	P	05 20 29.7	-0.7
	baz=143,SNR=9.3						
I29A	Vivian Onida	44.11	332	P	P	05 20 29.9	-0.6
	baz=139						
F32A	Veblen	44.16	336	P	P	05 20 30.2	-0.6
	baz=144						
C36A	Pine Crest Far	44.19	341	P	P	05 20 31.2	+0.3
	baz=151,SNR=7.0						
E33A	Westby DABS, E	44.24	337	P	P	05 20 31.1	-0.3
	baz=146						
MVCO	Mesa Verde	44.26	318	P	P	05 20 32.7	+0.7
	baz=124,SNR=5.9						
MVCO	Mesa Verde	44.26	318	eP	P	05 20 33.0	+1.0
D34A	Park Rapids	44.42	338	P	P	05 20 32.7	-0.2
	baz=148,SNR=6.3						
G30A	Faulkton	44.43	334	P	P	05 20 32.5	-0.4
	baz=141,SNR=12						
I28A	Midland	44.51	331	P	P	05 20 32.7	-0.9
	baz=138,SNR=8.8						
C35A	Jirik Farms, M	44.52	340	P	P	05 20 33.6	0.0
	baz=150,SNR=11						
H29A	Onida	44.53	332	P	P	05 20 33.1	-0.7
	baz=140						
F31A	Hecla	44.62	335	P	P	05 20 33.8	-0.6
	baz=143,SNR=9.8						
D33A	AnnSam, Waubun	44.71	338	P	P	05 20 35.4	+0.2
	baz=147,SNR=37						
214A	Organ Pipe Nat	44.74	309	P	P	05 20 36.8	+1.1
	baz=116						
C34A	RKJ Ranch, Bem	44.80	339	P	P	05 20 35.7	-0.1
	baz=148,SNR=5.3						
N23A	Red Feather La	44.90	324	P	P	05 20 37.9	+0.8
	baz=130,SNR=7.5						
N23A	Red Feather La	44.90	324	eP	P	05 20 38.5	+1.5
F30A	Leola	44.93	334	P	P	05 20 36.6	-0.3
	baz=142,SNR=5.5						
J26A	Sides Ranch, S	44.96	329	P	P	05 20 38.0	+0.7
	baz=135						
B35A	Bob, Littlefor	45.00	340	P	P	05 20 37.7	+0.3
	baz=150						
E31A	Nome	45.03	336	P	P	05 20 37.6	-0.1
	baz=144						
D32A	Dogwood Acres,	45.16	337	P	P	05 20 38.9	+0.3
	baz=145						
C33A	Trail	45.20	338	P	P	05 20 39.0	0.0
	baz=147,SNR=8.7						
F29A	Eureka	45.28	334	P	P	05 20 39.7	0.0
	baz=141						
WUAZ	Wupatki	45.33	315	P	P	05 20 41.4	+0.9
	baz=120,SNR=7.8						
WUAZ	Wupatki	45.33	315	eP	P	05 20 42.0	+1.6
	comp=Z,14nm,0.8s						
D31A	Mcclaflin, Tow	45.36	336	P	P	05 20 40.3	0.0
	baz=144						
E30A	Jud	45.41	335	P	P	05 20 40.4	-0.3
	baz=142						
H27A	Howes	45.42	331	P	P	05 20 40.3	-0.5
	baz=137,SNR=9.0						
B34A	Aery, Baudette	45.42	340	P	P	05 20 40.9	+0.2
	baz=149,SNR=20						
C32A	Crookston	45.54	338	P	P	05 20 42.0	+0.3
	baz=146						
H26A	Fairpoint	45.74	330	P	P	05 20 43.2	-0.2
	baz=136						
E29A	Napoleon	45.77	334	P	P	05 20 43.5	-0.1
	baz=142,SNR=5.2						
O20A	White River Ci	45.79	322	P	P	05 20 44.2	+0.1
	baz=127						
O20A	White River Ci	45.79	322	eP	P	05 20 44.1	+0.1
	comp=Z,3.5nm,0.4s						
I25A	Rochford	45.80	329	P	P	05 20 44.4	+0.5
	baz=135,SNR=7.6						
D30A	Buchanan	45.83	336	P	P	05 20 43.9	-0.1
	baz=143,SNR=7.3						
G27A	Dupree	45.90	332	P	P	05 20 44.4	-0.2
	baz=138,SNR=7.7						
C31A	Landman Farms,	45.97	337	P	P	05 20 45.0	0.0
	baz=145,SNR=23						
B32A	Ashes, Strandq	46.02	338	P	P	05 20 45.7	+0.3
	baz=147,SNR=13						
RSSD	Black Hills	46.02	329	P	P	05 20 46.4	+0.6
	baz=135						
A33A	Warroad	46.06	340	P	P	05 20 45.9	+0.2
	baz=148,SNR=13						
D29A	Pettibone, Tap	46.14	335	P	P	05 20 46.3	-0.1
	baz=142,SNR=8.5						
G26A	Maurine	46.15	331	P	P	05 20 45.9	-0.7
	baz=137						
H25A	Fruitdale	46.16	330	P	P	05 20 46.5	-0.1
	baz=136						
C30A	Mose, Pekin	46.19	336	P	P	05 20 46.9	+0.1
	baz=144,SNR=11						
E28A	Huff	46.24	334	P	P	05 20 47.4	+0.3
	baz=140,SNR=7.3						
A32A	Rocking H Ranc	46.44	339	P	P	05 20 48.7	+0.1
	baz=147,SNR=12						
B31A	Greenbush Farm	46.46	337	P	P	05 20 48.7	-0.1
	baz=145,SNR=6.7						
G25A	Newell	46.48	330	P	P	05 20 48.9	-0.2
	baz=136,SNR=6.2						
E27A	Carson	46.52	333	P	P	05 20 50.0	+0.6
	baz=139,SNR=11						
F26A	Lodgepole	46.59	332	P	P	05 20 50.0	0.0
	baz=138						
SRU	San Rafael Swe	46.64	319	eP	P	05 20 52.4	+1.7
A31A	Linda, St. Vin	46.70	338	P	P	05 20 50.3	-0.4
	baz=146						
B30A	Myrvik Farm, E	46.74	337	P	P	05 20 50.9	-0.1
	baz=144,SNR=9.0						
GLA	Glamis	46.75	310	P	P	05 20 52.3	+0.9
	baz=115						
P18A	Preston Nutter	46.75	320	eP	P	05 20 53.0	+1.3
MDND	Maddock	46.77	336	P	P	05 20 51.5	+0.3
	baz=142,SNR=8.7						
MDND	Maddock	46.77	336	eP	P	05 20 51.5	+0.3
	comp=Z,36nm,0.9s						
P17A	Butcher Ranch,	46.98	320	eP	P	05 20 54.6	+1.3
C28A	Hausauer Farms	46.99	335	P	P	05 20 53.8	+0.8
	baz=141						
D27A	Center	47.01	334	P	P	05 20 53.7	+0.5
	baz=140						
F25A	Bowman	47.02	331	P	P	05 20 53.0	-0.4
	baz=137						
KNB	Kanab	47.09	316	eP	P	05 20 55.9	+1.7
A30A	Hoffart Farm,	47.13	337	P	P	05 20 53.7	-0.3
	baz=145,SNR=7.8						
B29A	Wagenman Farm,	47.16	336	P	P	05 20 54.6	+0.4
	baz=143,SNR=28						
ULM	Lac du Bonnet	47.35	340	P	P	05 20 55.5	-0.2
	comp=Z,11nm,0.4s,baz=136,slow=6.9,SNR=13						
PLCA	Paso Flores	47.35	177	P	P	05 20 54.1	-1.9
	comp=Z,2.6nm,0.9s,baz=12,slow=8.1,SNR=7.3						
D26A	Manning	47.36	333	P	P	05 20 56.0	+0.1
	baz=138,SNR=7.8						
LCMT	Little Creek M	47.38	315	eP	P	05 20 57.9	+1.5
E25A	Miller Ranch,	47.42	332	P	P	05 20 56.5	+0.1
	baz=137,SNR=6.7						
C27A	Sayler Ranch,	47.47	334	P	P	05 20 57.1	+0.4
	baz=140						
A29A	Manning Farm,	47.48	337	P	P	05 20 56.7	0.0
	baz=144,SNR=9.5						
B28A	Dugan Ranch, T	47.55	335	P	P	05 20 57.9	+0.6
	baz=142						
C26A	Wahner Farm, P	47.81	334	P	P	05 20 60.0	+0.6
	baz=139						
D25A	Fairfield	47.86	332	P	P	05 21 00.4	+0.6
	baz=138						
A28A	Rude Farm, Bot	47.88	336	P	P	05 21 00.4	+0.5
	baz=142						
SCHQ	Schefferville	48.15	5	P	P	05 21 03.0	+1.2
	comp=Z,9.2nm,0.5s,baz=195,slow=7.0,SNR=42						
BW06	Boulder Array	48.17	324	P	P	05 21 02.5	0.0
	baz=128,SNR=8.7						
BW06	Boulder Array	48.17	324	eP	P	05 21 02.7	+0.2
PDAR	Pinedale Array	48.17	324	P	P	05 21 02.7	+0.2
	comp=Z,3.3nm,0.6s,baz=119,slow=8.2,SNR=26						
PDAR				PcP	PcP	05 22 27.1	-0.4
	comp=Z,0.8nm,0.6s,baz=121,slow=5.7,SNR=3.8						
C25A	Freed Ranch, W	48.24	333	P	P	05 21 03.2	+0.5
	baz=138						
A27A	Ledoux Ranch,	48.31	335	P	P	05 21 04.1	+0.9
	baz=141						
TCUT	Toone Canyon	48.33	321	eP	P	05 21 04.9	+1.2
SHPR	Sheep Range	48.50	314	eP	P	05 21 06.4	+1.4
PSUT	Pine Spring	48.55	317	eP	P	05 21 06.9	+1.5
TUQ	Turquoise Moun	48.58	312	P	P	05 21 06.1	+0.5
	baz=116						
A26A	Wade Farm, Ken	48.60	335	P	P	05 21 05.9	+0.5
	baz=140						
B25A	Knox Farm, Ray	48.62	333	P	P	05 21 06.8	+1.3
	baz=138,SNR=5.4						
HWUT	Hardware Ranch	48.70	322	eP	P	05 21 06.7	+0.2
	comp=Z,4.7nm,0.6s						
DUG	Dugway, Tooele	48.71	319	P	P	05 21 07.4	+0.8
	baz=122,SNR=5.7						
DUG	Dugway, Tooele	48.71	319	eP	P	05 21 07.8	+1.3
AHID	Auburn Hatcher	49.08	323	eP	P	05 21 09.6	+0.1
GSC	Goldstone, Bar	49.17	312	P	P	05 21 10.7	+0.6
	baz=115,SNR=5.9						
GSC	Goldstone, Bar	49.17	312	eP	P	05 21 11.4	+1.3
DGMT	Dagmar	49.23	333	P	P	05 21 11.1	+0.9
	baz=137,SNR=13						
DGMT	Dagmar	49.23	333	eP	P	05 21 11.3	+1.1
REDW	Red Top Meadow	49.29	324	eP	P	05 21 11.4	+0.4
	comp=Z,24nm,1.0s						
SNOW	Snow King Moun	49.29	324	eP	P	05 21 11.5	+0.4
	comp=Z,6.0nm,0.5s						
LOHW	Long Hollow	49.29	324	eP	P	05 21 11.8	+0.8
	comp=Z,6.9nm,0.6s						
BFSC	Mount Baldy Ra	49.39	310	P	P	05 21 12.3	+0.5
	baz=113						
MOOW	Moose Ponds	49.46	324	eP	P	05 21 12.5	+0.3
	comp=Z,5.4nm,0.8s						
RLMT	Red Lodge	49.47	327	P	P	05 21 12.6	+0.3
	baz=129,SNR=5.5						
RLMT	Red Lodge	49.47	327	eP	P	05 21 12.8	+0.4
TPNV	Topopah Spring	49.48	314	P	P	05 21 13.6	+1.1
	baz=117,SNR=8.6						
R11A	Troy Canyon, C	49.65	316	P	P	05 21 14.6	+0.9
	baz=118,SNR=10						
R11A	Troy Canyon, C	49.65	316	eP	P	05 21 14.7	+0.9
	comp=Z,4.0nm,0.9s						
IMW	Indian Meadow	49.66	324	eP	P	05 21 14.3	+0.5
	comp=Z,6.3nm,0.6s						
EDW2	Edwards Air Fo	49.89	311	P	P	05 21 16.3	+0.7
	baz=114						
GCMT	Greycliff	50.11	327	eP	P	05 21 18.1	+1.0
BOZ	Bozeman (W)	51.10	326	P	P	05 21 25.0	+0.5
	baz=127,SNR=12						
BOZ	Bozeman (W)	51.10	326	eP	P	05 21 24.8	+0.3
	comp=Z,4.5nm,0.8s						
HLID	Hailey	51.53	322	P	P	05 21 28.4	+0.6
	baz=123,SNR=8.2						
HLID	Hailey	51.53	322	eP	P	05 21 28.7	+0.9
	comp=Z,5.3nm,0.8s						
SMMC	Simmler	51.58	310	P	P	05 21 29.2	+1.1
	baz=112						
NVAR	Mina Array Bea	51.59	315	P	P	05 21 29.1	+0.8
	comp=Z,2.9nm,0.7s,baz=125,slow=7.0,SNR=25						
NVAR				PcP	PcP	05 22 40.4	+0.2
	comp=Z,0.8nm,0.4s,baz=129,slow=4.9,SNR=7.0						
MFID	Camas Ranch	52.33	321	eP	P	05 21 34.1	+0.5
	comp=Z,8.5nm,0.7s						
MSO	Missoula	53.09	326	P	P	05 21 39.5	+0.3
	baz=126						
O03D	Paynes Creek	54.83	315	P	P	05 21 51.5	-0.4
	baz=114						
M04C	Macdoel	55.47	317	P	P	05 21 57.1	+0.6
	baz=115						
NEW	Newport	55.68	326	P	P	05 21 58.1	+0.4
	baz=123						
J05D	Fort Rock, OR	55.72	319	P	P	05 21 58.9	+0.7
	baz=116,SNR=6.2						
N02D	Trinity Center	55.74	316	P	P	05 21 58.1	-0.2
	baz=114						
YBH	Yreka Blue Hor	56.05	316	P	P	05 21 59.4	-1.1
	comp=Z,3.9nm,0.6s,baz=138,slow=2.6,SNR=27						
G05D	Wamic, OR	56.65	321	P	P	05 22 05.7	+1.0
	baz=118						
I04A	Tendick Farm,	56.71	319	P	P	05 22 05.9	+0.8
	baz=116						
I03D	Drain, OR	57.28	318	P	P	05 22 10.2	+1.1
	baz=115						
B05A	Bryant	58.54	324	P	P	05 22 17.8	+0.1
	baz=118						
YKA	Yellowknife Ar	63.33	340	P	P	05 22 49.9	+0.1
	comp=Z,9.1nm,0.6s,baz=133,slow=6.6,SNR=266						
DLBC	Dease Lake	67.40	331	eP	P	05 23 17.3	+1.1
	comp=Z,3.4nm,0.9s						
TIC	Tomtodi	67.44	86	eP	P	05 23 16.3	-0.9
LIC	Lamto	67.47	86	eP	P	05 23 16.8	-0.5
	comp=Z,75nm,1.9s						
DBIC	Dimbokro	67.60	86	P	P	05 23 16.7	-1.4
	comp=Z,2.9nm,0.6s,baz=201,slow=4.1,SNR=6.4						
KIC	Kosan Boka	67.74	86	eP	P	05 23 18.6	-0.5
	comp=Z,13nm,0.6s						
SUMG	Summit	68.98	11	i P	P	05 23 26.7	+0.6
	comp=Z,7.7nm,0.5s						
SUMG	Summit	68.98	11	eP	P	05 23 26.8	+0.6
	comp=Z,6.7nm,0.6s						
INK	Inuvik	73.09	340	P	P	05 23 51.2	+0.8
	comp=Z,2.7nm,0.5s,baz=97,slow=5.5,SNR=31						
INK	Inuvik	73.09	340	eP	P	05 23 51.0	+0.5
	comp=Z,3.2nm,0.6s						
TORD	Torodi Ar. Bea	73.61	78	P	P	05 23 53.8	-0.8
	comp=Z,0.5nm,0.5s,baz=288,slow=5.4,SNR=14						
DOT	Dot Lake	75.58	334	eP	P	05 24 06.5	+1.5
	comp=Z,27nm,1.0s						
DAG	Danmarks Havn	75.65	11	i P	P	05 24 04.6	-0.5
	comp=Z,1.8nm,0.7s						
ILAR	Eielson Array	77.04	335	P	P	05 24 13.4	+0.2
	comp=Z,1.3nm,0.7s,baz=110,slow=4.4,SNR=15						
ILAR				PP	PP	05 27 08.5	0.0
	comp=Z,0.6nm,1.0s,baz=101,slow=7.4,SNR=4.4						
TRF	Thorofare Moun	78.28	333	eP	P	05 24 20.9	+0.6
	comp=Z,17nm,1.5s						
KTH	Kantishna Hill	78.57	333	eP	P	05 24 22.1	+0.3
	comp=Z,1.8nm,0.4s						
BPAW	Bear Paw Mtn.	78.67	334	eP	P	05 24 22.8	+0.5
	comp=Z,0.3nm,0.5s						
NOA	NORSAR Array B	81.28	29	P	P	05 24 37.2	+0.8
	comp=Z,0.6nm,0.6s,baz=267,slow=5.4,SNR=3.5						
GERES	GERESS Array B	82.75	42	P	P	05 24 45.1	+0.7
	comp=Z,0.3nm,0.4s,baz=266,slow=2.9,SNR=3.2						
ARCES	ARCESS Array B	86.64	20	P	P	05 25 03.4	+0.1
	comp=Z,1.3nm,0.7s,baz=267,slow=4.7,SNR=9.1						
VNA3	Neumayer Olymp	88.11	163	P	P	05 25 08.0	-2.3
VNA2	Neumayer--Watz	88.64	163	P	P	05 25 04.9	-7.8
	baz=284,slow=30						
MKAR	Makanchi Array	122.29	20	PKP	PKPdf	05 31 14.1	-0.4
	comp=Z,0.7nm,0.4s,baz=325,slow=1.7,SNR=8.8						
SONM	Songino Array	125.60	1	PKP	PKPdf	05 31 21.3	+0.4
	comp=Z,0.5nm,0.3s,baz=322,slow=1.0,SNR=3.8						
CD2	Chengdu	142.37	5	PKP	PKPdf	05 31 51.3	-1.3
GYA	Guiyang	146.94	1	ePKPbc	PKPdf	05 31 59.3	-1.4
GYA				PKPab	PKiKP	05 32 05.0	-0.3
GYA				pPKP	pPKPdf	05 32 41.6	+0.5
GYA				sPKP		05 32 57.5	
GYA				PP	PP	05 35 30.8	+4.3
GYA				AMB	AMB		
	comp=Z,120nm,8.4s						
ASAR	Alice Springs	149.21	234	PKP	PKPdf	05 32 04.5	+0.1
	comp=Z,5.2nm,0.5s,baz=118,slow=3.5,SNR=35						
ASAR				PKPbc	PKPbc	05 32 08.2	-0.6
	comp=Z,6.3nm,0.5s,baz=118,slow=3.5,SNR=72						
WRA	Warramunga Arr	150.45	241	PKPbc	PKPbc	05 32 11.1	-0.7
	comp=Z,5.8nm,0.4s,baz=108,slow=2.7,SNR=122						
CMAR	Chiang Mai Arr	153.67	17	PKP	PKPdf	05 32 12.1	+0.9
	comp=Z,0.7nm,0.6s,baz=308,slow=1.7,SNR=4.6						
CMAR				PKPbc	PKiKP	05 32 19.7	+0.5
	comp=Z,1.9nm,0.6s,baz=328,slow=3.4,SNR=8.4						

ISCJB ***16*** *05:16:17.8±0.6,26°.26S±0°.03×28°.23E±0°.03,h1km±5km,*
Error ellipse: s-maj=5.9km s-min=4.0km az=152.2
PRE ***16*** *05:16:18.6±1.1,26°.24S×28°.21E,h2km,ML3.5*

ISC 16 05:16:18.1±1.0,26°.25S±0°.03×28°.24E±0°.04,h5km±7km,
n16,σ1°.96/32,South Africa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ERPM	east rand prop	0.09	179	eP	Pg	05 16 19.5	-0.7
ERPM				eS	Sg	05 16 19.9	-1.8
ERPM				AML	AML	05 16 22.8	
	comp=Z,5μm,0.2s						
BNON	Benoni	0.12	38	eP	Pg	05 16 21.1	+0.5
BNON				eS	Sg	05 16 22.5	+0.3
BNON				AML	AML	05 16 23.6	
	comp=Z,21μm,0.2s						
KLOF	Kloof	0.57	260	eP	Pg	05 16 29.8	+0.6
KLOF				eS	Sg	05 16 36.4	-0.3
KLOF				AML	AML	05 16 38.7	
	comp=Z,4μm,0.1s						
WDLM	Western Deep L	0.75	257	eP	Pg	05 16 33.0	+0.4
WDLM				eS	Sg	05 16 42.4	-0.1
WDLM				AML	AML	05 16 44.4	
	comp=Z,1μm,0.4s						
PRYS	Parys	1.04	229	eP	Pb	05 16 39.1	+0.4
PRYS				eS	Sb	05 16 53.0	+0.4
PRYS				AML	AML	05 16 56.2	
	comp=Z,566nm,0.5s						
KSR	Koster	1.27	288	eP	Pb	05 16 42.7	0.0
KSR				eS	Sb	05 16 59.7	+0.3
KSR				AML	AML	05 17 03.9	
	comp=Z,344nm,0.4s						
BFSD	Buffelsfontein	1.44	244	eP	Pb	05 16 45.5	-0.1
BFSD				eS	Sn	05 17 05.0	+0.6
BFSD				AML	AML	05 17 07.5	
	comp=Z,533nm,0.4s						
SWZ	Schweizer	2.76	250	eP	Pn	05 17 04.8	+1.6
SWZ				eS	Sn	05 17 37.6	+0.5
SWZ				AML	AML	05 17 43.9	
	comp=Z,443nm,0.5s						
POGA	Pongola	3.21	111	eP	Pn	05 17 11.3	+2.0
POGA				eS	Sn	05 17 50.9	+2.9
POGA				AML	AML	05 18 06.0	
	comp=Z,292nm,0.5s						
BOSA	Boshof	3.55	228	i P	Pn	05 17 12.1	-1.9
BOSA				i S	Sb	05 18 08.4	+3.6
MSNA	Messina	4.21	23	eP	Pn	05 17 23.2	+0.1
MSNA				eS	Sn	05 18 10.9	-1.9
MSNA				AML	AML	05 18 34.9	
	comp=Z,84nm,0.6s						
MATP	Matopo	5.80	2	i P	Pn	05 17 46.7	+1.6
MATP				i S	Sb	05 19 11.9	+2.1
BLWY	Bulawayo	6.09	3	i P	Pn	05 17 50.3	+1.3
BLWY				i S	Sb	05 19 16.9	-1.3
UPI	Upington	6.56	250	eP	Pn	05 17 56.4	+1.0
UPI				eS	Sn	05 19 07.9	-2.8
UPI				AML	AML	05 19 47.2	
	comp=Z,29nm,0.5s						
CVNA	Calvinia	9.08	233	eP	Pn	05 18 31.8	+1.9
CVNA				eS	Sn	05 20 08.8	-3.8
CVNA				AML	AML	05 20 09.8	
	comp=Z,6.8nm,0.4s						
KOMG	Komaggas	10.14	247	eP	Pn	05 18 45.7	+1.3
KOMG				eS	Sn	05 20 33.3	-5.2
KOMG				AML	AML	05 20 47.4	
	comp=Z,4.0nm,0.5s						

IDC ***16*** *05:26:38.9±1.1,6°.99S×155°.33E,h0km,mb4.1/7,*
mb1 4.3/7,mb1mx3.9/40,mbtmp4.0/7,MS3.3/2,Ms1 3.3/2,
ms1mx2.7/24,Error ellipse: s-maj=49.0km s-min=23.4km
az=126.0
NEIC ***16*** *05:26:40.3±0.5,7°.02S×155°.35E,h10km,mb4.1/3,Error*
ellipse: s-maj=14.4km s-min=11.4km az=186.0
ISCJB ***16*** *05:26:44.1±0.6,7°.1S±0°.1×155°.41E±0°.07,h50km,mb4.0/9,*
MS3.2/1,Error ellipse: s-maj=16.9km s-min=9.1km
az=19.2

ISC 16 05:26:45.5±0.8,7°.1S±0°.2×155°.4E±0°.1,h50km,n14,
σ0°.99/13,mb4.0/9,Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	Honiara	5.05	117	LR	LR	05 29 09.5	
	comp=Z,27nm,21.9s,baz=274,slow=29						
HNR	Honiara	5.05	117	Pn	Pn	05 27 57.0	-1.7
HNR				eSn	Sn	05 28 56.6	+0.9
PMG	Port Moresby	8.47	254	LR	LR	05 31 41.7	
	comp=Z,196nm,19.6s,baz=101,slow=36						
WRAB	Tennant Creek	24.07	236	eP	P	05 31 55.9	-0.5
	3.6nm,0.7s						
WRA	Warramunga Arr	24.08	236	P	P	05 31 56.0	-0.5
	3.8nm,0.6s,baz=59,slow=9.3,SNR=26						
MSVF	Nonsavu	24.47	118	eP	P	05 32 01.1	+1.0

JKS	**Kasai**	**0.72 241**	P	Pg	05 37 02.0	-0.3
JKSM	**Kasumi**	**0.81 288**	P	Pg	05 37 03.7	-0.3
JKSM			S	Sg	05 37 14.3	-0.3
TSUJ	**Tsu 2**	**0.92 133**	P	Pg	05 37 05.4	-0.6
TSUJ			S	Sg	05 37 17.2	-0.7
MAT	**Matsushiro**	**2.42 60**	P	Pg	05 37 33.9	-1.0
MAT			*e*S	Sb	05 38 03.3	+1.2

ISCJB ***16*** *05:51:01.8±0.2, 15°.97N±0°.03×92°.67W±0°.03, h192km±2km, mb4.3/48, Error ellipse: s-maj=5.3km s-min=3.1km az=139.6*
IDC ***16*** *05:51:03.3±0.8, 16°.22N×92°.02W, h183km±7km, mb3.9/12, mb1 4.1/13, mb1mx3.7/43, mbtmp4.4/13, Error ellipse: s-maj=43.4km s-min=9.3km az=60.0*
MEX ***16*** *05:51:03.4±0.4, 15°.95N×92°.86W, h190km±4km, MD4.3*
NEIC ***16*** *05:51:03.2±0.3, 15°.89N×92°.66W, mb4.5/65, MD4.3(MEX), Error ellipse: s-maj=7.8km s-min=4.9km az=216.0*
ISC 16 05:51:02.4±0.5, 15°.90N±0°.05×92°.76W±0°.04, h189km±4km, n407, σ1§38/430, mb4.3/48, 1C, Mexico-Guatemala border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		**0.49**	**246**	*e*P	**Pn**	**05 51 27.6**	**-0.5**
PCIG				*e*S	**Sn**	**05 51 46.5**	**-1.4**
PCIG		**0.49**	**246**	*e*P	**Pn**	**05 51 27.6**	**-0.5**
PCIG				*e*S	**Sn**	**05 51 46.5**	**-1.4**
CCIG	**Comitan**	**0.70**	**57**	*i* P	**Pn**	**05 51 29.4**	**0.0**
CCIG				*e*S	**Sn**	**05 51 49.5**	**-0.6**
CCIG	**Comitan**	**0.70**	**57**	*e*Pn	**Pn**	**05 51 29.2**	**-0.2**
CCIG				*e*Sn	**Sn**	**05 51 49.6**	**-0.6**
THIG		**1.10**	**154**	*i* P	**Pn**	**05 51 31.6**	**-0.1**
THIG				*e*S	**Sn**	**05 51 54.2**	**-0.3**
THIG		**1.10**	**154**	*i* P	**Pn**	**05 51 31.6**	**-0.1**
THIG				*e*S	**Sn**	**05 51 54.2**	**-0.3**
CMIG	**Matias Romero** 132nm,0.3s,baz=102,slow=8.8,SNR=1806	**2.36**	**300**	P	**Pn**	**05 51 43.7**	**-0.3**
CMIG	271nm,0.3s,baz=353,slow=20,SNR=39			S	**Sn**	**05 52 13.8**	**-2.6**
MRL	**Marmol**	**3.07**	**105**	*e*P	**Pn**	**05 51 51.5**	**-1.0**
MRL				*e*S	**Sn**	**05 52 28.4**	**-3.2**
HUIG	**Huatulco**	**3.23**	**268**	*e*P	**Pn**	**05 51 52.9**	**-1.4**
HUIG				*e*S	**Sn**	**05 52 31.3**	**-3.5**
HUIG	**Huatulco**	**3.23**	**268**	*e*P	**Pn**	**05 51 52.9**	**-1.4**
HUIG				*e*S	**Sn**	**05 52 31.3**	**-3.5**
CUS1	**Cusmapa**	**3.36**	**126**	*e*P	**Pn**	**05 51 55.4**	**-0.6**
CUS1				*e*S	**Sn**	**05 52 37.2**	**-0.6**
RBDL	**Robledal**	**3.46**	**121**	*e*P	**Pn**	**05 51 56.5**	**-0.8**
RTR	**El Retiro**	**3.61**	**123**	*e*P	**Pn**	**05 51 59.1**	**0.0**
MONT	**Ecomontaæa**	**3.63**	**124**	*e*P	**Pn**	**05 51 59.4**	**-0.1**
MONT				*e*S	**Sn**	**05 52 45.0**	**+1.0**
SNJE	**San Jose**	**3.66**	**123**	*e*P	**Pn**	**05 51 59.5**	**-0.3**
SBLS	**San Blas**	**3.66**	**124**	*e*P	**Pn**	**05 51 59.8**	**0.0**
SBLS				*e*S	**Sn**	**05 52 45.0**	**+0.3**
VHO	**Vista Hermosa**	**3.99**	**288**	*e*P	**Pn**	**05 52 04.0**	**+0.1**
VHO				*e*S	**Sn**	**05 52 49.1**	**-2.9**
VHO	**Vista Hermosa**	**3.99**	**288**	*e*P	**Pn**	**05 52 04.0**	**+0.1**
VHO				*e*S	**Sn**	**05 52 49.1**	**-2.9**
BOQS	**Boqueron**	**3.99**	**122**	*e*P	**Pn**	**05 52 04.1**	**+0.2**
SNET	**Serv Nac Est T** comp=Z,237nm,0.6s	**4.06**	**122**	AML	AML	05 52 05.7	
PNIG	**Pinotepa**	**5.18**	**276**	*i* P	**Pn**	**05 52 18.9**	**-0.1**
PNIG				*e*S	**Sn**	**05 53 15.3**	**-4.0**
PNIG	**Pinotepa**	**5.18**	**276**	*i* P	**Pn**	**05 52 18.9**	**-0.1**
PNIG				*e*S	**Sn**	**05 53 15.3**	**-4.0**
TGUH	**Tegucigalpa,Un**	**5.61**	**108**	*e*Pn	**Pn**	**05 52 24.2**	**-0.2**
TLIG	**Tlapa**	**5.81**	**287**	*e*Pn	**Pn**	**05 52 28.7**	**+1.6**
TEIG	**Tepich** comp=Z,13nm,0.3s,baz=270,slow=24,SNR=219	**6.05**	**44**	P	**Pn**	**05 52 28.5**	**-1.7**
MOIG	**Morelia**	**8.87**	**296**	*e*Pn	**Pn**	**05 53 11.5**	**+4.2**
JTS	**JuntasAbangare**	**9.43**	**125**	*e*Pn	**Pn**	**05 53 14.5**	**+0.1**
JTS				*e*Sn	Sn	05 54 50.5	-9.3
035Z	**Hargill** baz=153	**11.62**	**336**	P	**Pn**	**05 53 43.5**	**+0.8**
035A	**Encino** baz=154	**12.05**	**337**	P	**Pn**	**05 53 47.6**	**-0.6**
936A	**North Padre Is** baz=158	**12.22**	**341**	P	**Pn**	**05 53 47.6**	**-2.8**
034A	**Hebbronville** baz=152,SNR=13	**12.40**	**335**	P	**Pn**	**05 53 52.0**	**-0.7**
934A	**Benavides** baz=154,SNR=10	**12.81**	**336**	P	**Pn**	**05 53 57.9**	**0.0**
933A	**Laredo** baz=151,SNR=17	**13.13**	**334**	P	**Pn**	**05 54 01.4**	**-0.5**
738A	**Farr-Stevens R** baz=167	**13.15**	**349**	P	**Pn**	**05 54 02.1**	**0.0**
835A	**Beeville** baz=158,SNR=7.2	**13.19**	**340**	P	**Pn**	**05 54 02.0**	**-0.6**
737A	**Port Lavaca** baz=164	**13.24**	**346**	P	**Pn**	**05 54 03.5**	**+0.2**
834A	**Tilden** baz=155,SNR=14	**13.29**	**337**	P	**Pn**	**05 54 04.2**	**+0.3**
736A	**Circle Diamond** baz=162	**13.59**	**344**	P	**Pn**	**05 54 08.3**	**+0.7**
645A	**Chauvin** baz=188	**13.64**	**8**	P	**Pn**	**05 54 09.0**	**+0.8**
638A	**Rosharon** baz=169	**13.68**	**350**	P	**Pn**	**05 54 09.5**	**+0.8**
735A	**Kenedy** baz=159	**13.71**	**341**	P	**Pn**	**05 54 09.2**	**+0.1**
833A	**Chaparral WMA,** baz=152,SNR=5.2	**13.80**	**335**	P	**Pn**	**05 54 10.6**	**+0.3**
637A	**Eagle Lake** baz=165	**13.87**	**347**	P	**Pn**	**05 54 11.9**	**+0.8**
646A	**Port Sulphur** baz=191	**13.88**	**11**	P	**Pn**	**05 54 11.7**	**+0.5**
734A	**La Parita Cree** baz=156,SNR=5.4	**13.95**	**338**	P	**Pn**	**05 54 12.5**	**+0.3**
832A	**Faith Ranch, C** baz=150,SNR=25	**14.02**	**333**	P	**Pn**	**05 54 13.0**	**0.0**
636A	**Smothers Creek** baz=162,SNR=6.8	**14.08**	**344**	P	**Pn**	**05 54 14.2**	**+0.4**
733A	**Divot King Ran** baz=153,SNR=30	**14.11**	**336**	P	**Pn**	**05 54 14.3**	**+0.2**
543A	**St. Martinvill** baz=183	**14.14**	**3**	P	**Pn**	**05 54 14.6**	**+0.1**
635A	**Leesville** baz=160	**14.20**	**342**	P	**Pn**	**05 54 15.1**	**-0.1**
539A	**Cross D Ranch,** baz=172	**14.26**	**353**	P	**Pn**	**05 54 16.3**	**+0.4**
HKT	**Hockley**	**14.27**	**349**	*e*Pn	**P**	**05 54 16.8**	**-0.9**
540A	**Vidor** baz=175	**14.29**	**356**	P	**Pn**	**05 54 16.5**	**+0.2**
634A	**China Grove, S** baz=157	**14.37**	**340**	P	**Pn**	**05 54 17.5**	**+0.2**
538A	**Harpers Horsep** baz=169	**14.47**	**350**	P	**Pn**	**05 54 18.9**	**+0.3**
537A	**Green Hill Far** baz=166	**14.49**	**348**	P	**Pn**	**05 54 18.9**	**+0.2**
546A	**Slidell** baz=191	**14.53**	**11**	P	**Pn**	**05 54 18.7**	**-0.6**
633A	**Saathoff Ranch** baz=155,SNR=8.7	**14.73**	**337**	P	**Pn**	**05 54 21.5**	**-0.3**
MTDJ	**Mount Denham**	**14.74**	**79**	*e*Pn	**P**	**05 54 24.0**	**+0.7**
MTDJ				*e*Sn	**Sn**	**05 57 02.9**	**-3.9**
535A	**Dale** baz=161,SNR=8.9	**14.74**	**343**	P	**Pn**	**05 54 21.8**	**-0.1**
442A	**Mamou** baz=181	**14.74**	**1**	P	**Pn**	**05 54 22.2**	**+0.3**
441A	**DeRidder** baz=178	**14.79**	**359**	P	**P**	**05 54 23.0**	**-0.6**
440A	**Kirbyville** baz=175	**14.82**	**356**	P	**Pn**	**05 54 22.4**	**-0.4**
443A	**Delano Plantat** baz=183	**14.82**	**3**	P	**P**	**05 54 23.5**	**-0.5**
444A	**Pine Grove** baz=187	**14.86**	**7**	P	**Pn**	**05 54 22.0**	**-1.4**
445A	**Amite** baz=189	**14.93**	**8**	P	**Pn**	**05 54 23.3**	**-0.8**
438A	**Sam Houston St** baz=169	**14.99**	**351**	P	**Pn**	**05 54 24.6**	**-0.3**
534A	**Blanco** baz=158,SNR=13	**15.01**	**341**	P	**Pn**	**05 54 25.0**	**-0.2**
446A	**Poplarville** baz=192,SNR=8.1	**15.14**	**11**	P	**Pn**	**05 54 26.5**	**-0.3**
437A	**Phantom Ranch,** baz=167	**15.18**	**349**	P	**Pn**	**05 54 27.4**	**+0.1**
533A	**Kerrville** baz=156,SNR=38	**15.24**	**339**	P	**P**	**05 54 28.2**	**-0.5**
436A	**Wall Ranch, Ga** baz=165	**15.26**	**347**	P	**P**	**05 54 28.4**	**-0.4**
343A	**Vidalia** baz=184	**15.35**	**4**	P	**Pn**	**05 54 29.1**	**-0.2**
341A	**Kurthwood** baz=178	**15.37**	**359**	P	**Pn**	**05 54 29.5**	**0.0**
339A	**Huntington** baz=173	**15.45**	**354**	P	**P**	**05 54 30.7**	**-0.3**
435B	**Jarrell** baz=162,SNR=5.8	**15.46**	**344**	P	**Pn**	**05 54 29.8**	**-0.9**
340A	**Bronson** baz=176	**15.48**	**356**	P	**P**	**05 54 31.0**	**-0.2**
345A	**Thompson Farm,** baz=189	**15.54**	**9**	P	**P**	**05 54 32.2**	**+0.2**
338A	**Crockett** baz=170	**15.56**	**352**	P	**P**	**05 54 32.1**	**-0.1**
344A	**Westbrook Farm** baz=187	**15.59**	**6**	P	**P**	**05 54 32.6**	**+0.1**
337A	**Centerville** baz=168	**15.61**	**350**	P	**P**	**05 54 32.9**	**+0.2**
448A	**Bay Minette** baz=197	**15.62**	**16**	P	**P**	**05 54 32.6**	**-0.2**
434A	**Burnet** baz=160,SNR=14	**15.68**	**342**	P	**P**	**05 54 34.1**	**+0.6**
346A	**Big Creek Wild** baz=191	**15.71**	**10**	P	**P**	**05 54 33.8**	**0.0**
336A	**Riesel** baz=165	**15.86**	**347**	P	**Pn**	**05 54 35.7**	**+0.1**
433A	**Art** baz=157,SNR=13	**15.88**	**340**	P	**P**	**05 54 35.3**	**-0.4**
JCT	**Junction City** baz=154,SNR=12	**15.88**	**337**	P	**Pn**	**05 54 35.7**	**-0.2**
JCT	**Junction City** comp=Z,24nm,1.0s	**15.88**	**337**	*e*P	**Pn**	**05 54 37.7**	**+1.8**
JCT				*e*S	**S**	**05 57 31.3**	**-0.9**
NATX	**Nacogdoches** baz=173	**15.88**	**354**	P	**Pn**	**05 54 35.6**	**-0.2**
NATX	**Nacogdoches** comp=Z,17nm,0.8s	**15.88**	**354**	*e*Pn	**Pn**	**05 54 36.1**	**+0.3**
335A	**Moody** baz=163,SNR=5.7	**15.89**	**345**	P	**Pn**	**05 54 35.8**	**-0.1**
347A	**Saraland** baz=194	**15.90**	**13**	P	**Pn**	**05 54 35.8**	**-0.2**
243A	**Waterproof** baz=184	**15.95**	**4**	P	**P**	**05 54 36.0**	**-0.4**
241A	**Mo Tay, Goldon** baz=179	**16.05**	**359**	P	**Pn**	**05 54 37.7**	**-0.1**
348A	**Jackson** baz=197	**16.06**	**15**	P	**P**	**05 54 37.4**	**-0.3**
BRAL	**Brewton** comp=Z,295nm,1.8s	**16.07**	**18**	*e*P	**Pn**	**05 54 41.2**	**+3.2**
240A	**Hunter Patters** baz=176	**16.09**	**357**	P	**Pn**	**05 54 38.5**	**+0.2**
242A	**Grayson** baz=182,SNR=8.1	**16.10**	**2**	P	**Pn**	**05 54 38.4**	**0.0**
239A	**Gary** baz=174	**16.12**	**355**	P	**Pn**	**05 54 38.6**	**-0.1**
334A	**Lometa** baz=160,SNR=22	**16.16**	**343**	P	**Pn**	**05 54 39.5**	**+0.3**
238A	**Jacksonville** baz=171	**16.17**	**353**	P	**Pn**	**05 54 39.7**	**+0.4**
244A	**Avery, Jackson** baz=187,SNR=6.0	**16.18**	**6**	P	**Pn**	**05 54 39.6**	**+0.2**
HPIG	comp=Z,42nm,1.3s	**16.26**	**315**	*e*P	**Pn**	**05 54 43.2**	**+2.5**
237A	**Washetta, Mont** baz=169	**16.27**	**351**	P	**Pn**	**05 54 40.9**	**+0.5**
245A	**Little AP, Sta** baz=189,SNR=9.8	**16.27**	**9**	P	**Pn**	**05 54 40.8**	**+0.3**
VBMS	**Vicksburg** baz=187	**16.37**	**7**	P	**Pn**	**05 54 42.0**	**+0.3**
VBMS	**Vicksburg** comp=Z,112nm,0.3s	**16.37**	**7**	*e*P	**Pn**	**05 54 42.9**	**+1.2**
333A	**Richland Sprin** baz=158,SNR=10.0	**16.37**	**341**	P	**Pn**	**05 54 41.7**	**0.0**
246A	**Jackson Lee, B** baz=192	**16.38**	**11**	P	**Pn**	**05 54 42.0**	**+0.2**
236A	**Katherine and** baz=167	**16.39**	**349**	P	**Pn**	**05 54 42.0**	**+0.1**
247A	**Quitman** baz=194	**16.52**	**12**	P	**Pn**	**05 54 43.6**	**+0.2**
WHTX	**Lake Whitney,** baz=164,SNR=7.6	**16.58**	**346**	P	**Pn**	**05 54 44.0**	**-0.2**
WHTX	**Lake Whitney,** comp=Z,28nm,0.9s	**16.58**	**346**	*e*P	**Pn**	**05 54 44.6**	**+0.4**
142A	**Monroe** baz=182	**16.59**	**2**	P	**Pn**	**05 54 44.3**	**0.0**
141A	**Papa Simpson,** baz=179	**16.63**	**360**	P	**Pn**	**05 54 44.6**	**-0.2**
140A	**Cam and Jess,** baz=177	**16.68**	**358**	P	**Pn**	**05 54 45.5**	**+0.1**
CAPC	**Capurgana**	**16.69**	**114**	*e*P	**P**	**05 54 40.1**	**-4.7**
TXAR	**Lajitas Array** comp=Z,0.9nm,0.3s,baz=152,slow=12,SNR=64	**16.72**	**325**	P	**Pn**	**05 54 48.6**	**+2.6**
248A	**Dixon Mills** baz=196	**16.75**	**15**	P	**Pn**	**05 54 45.8**	**-0.5**
234A	**Clairette** baz=162,SNR=14	**16.76**	**344**	P	**Pn**	**05 54 46.0**	**-0.4**
143A	**Socs Landing,** baz=184	**16.77**	**4**	P	**Pn**	**05 54 45.8**	**-0.6**
144A	**Alexander Plac** baz=187	**16.79**	**7**	P	**Pn**	**05 54 46.5**	**-0.2**
138A	**Matatall Enter** baz=172,SNR=6.1	**16.82**	**353**	P	**Pn**	**05 54 47.0**	**-0.1**
145A	**Houston Renfro** baz=189	**16.82**	**8**	P	**Pn**	**05 54 46.6**	**-0.5**
137A	**Heron Place, G** baz=170	**16.84**	**351**	P	**P**	**05 54 46.6**	**+0.3**
136A	**Ennis** baz=167	**16.85**	**349**	P	**Pn**	**05 54 47.2**	**-0.2**
233A	**Rising Star** baz=159,SNR=45	**16.99**	**342**	P	**Pn**	**05 54 49.0**	**-0.1**
146A	**Union** baz=192	**17.00**	**11**	P	**Pn**	**05 54 49.3**	**+0.1**
135A	**Vickery Place,** baz=164,SNR=5.1	**17.11**	**347**	P	**Pn**	**05 54 50.1**	**-0.4**
147A	**Livingston** baz=194	**17.19**	**13**	P	**P**	**05 54 50.3**	**+0.3**
GTBY	**Guantanamo Bay** comp=Z,44nm,0.8s	**17.26**	**74**	*e*P	**Pn**	**05 54 51.6**	**-0.8**
Z41A	**Richland Creek** baz=180,SNR=6.6	**17.28**	**360**	P	**Pn**	**05 54 52.2**	**-0.3**
Z43A	**Armstrong Fami** baz=184	**17.29**	**4**	P	**Pn**	**05 54 52.0**	**-0.6**
Z40A	**Long Farm, Mag** baz=178	**17.29**	**358**	P	**Pn**	**05 54 52.1**	**-0.5**
Z42A	**Norrel Spur, H** baz=182,SNR=9.3	**17.31**	**2**	P	**P**	**05 54 51.9**	**+0.5**
Z39A	**Irene McRaven,** baz=175	**17.31**	**356**	P	**Pn**	**05 54 52.0**	**-0.9**
Z38A	**Mt. Pleasant** baz=172	**17.39**	**354**	P	**Pn**	**05 54 53.0**	**-0.8**
Z37A	**Pogue Cattle C** baz=170,SNR=6.0	**17.41**	**352**	P	**Pn**	**05 54 53.6**	**-0.5**
133A	**Hamilton Ranch** baz=160,SNR=18	**17.55**	**343**	P	**Pn**	**05 54 54.8**	**-0.9**
Z46A	**Louisville** baz=192,SNR=8.5	**17.56**	**11**	P	**P**	**05 54 54.2**	**+0.1**
Z36A	**Blue Ridge** baz=168,SNR=7.2	**17.61**	**350**	P	**Pn**	**05 54 55.4**	**-1.0**
Z45A	**Winona** baz=189	**17.61**	**9**	P	**Pn**	**05 54 55.5**	**-1.0**
WLAR	**White Oak Lake** comp=Z,50nm,0.9s	**17.71**	**359**	*e*P	**Pn**	**05 54 58.0**	**+0.4**
ABTX	**Abilene, Hawle** baz=158,SNR=29	**17.78**	**341**	P	**Pn**	**05 54 57.5**	**-1.0**
ABTX	**Abilene, Hawle** comp=Z,43nm,0.8s	**17.78**	**341**	*e*P	**Pn**	**05 54 57.7**	**-0.8**
Z35A	**Perchaven, San** baz=165	**17.82**	**348**	P	**P**	**05 54 57.8**	**+0.7**
LRAL	**Lakeview Retre** comp=Z,22nm,0.9s	**17.84**	**16**	*e*P	**P**	**05 54 57.9**	**+0.7**
Y42A	**Garnett, Star** baz=183	**17.88**	**3**	P	**P**	**05 54 57.6**	**0.0**
Y41A	**Eaglette Beard** baz=180,SNR=6.6	**17.90**	**0**	P	**Pn**	**05 54 59.0**	**-0.8**
Y39A	**Lockesburg** baz=176	**18.00**	**356**	P	**Pn**	**05 55 00.1**	**-0.8**
Y43A	**Makayla and Ka** baz=185	**18.01**	**5**	P	**Pn**	**05 55 00.7**	**-0.3**
Z34A	**Collier Ranch,** baz=163,SNR=9.9	**18.01**	**346**	P	**P**	**05 54 59.8**	**+0.7**
Z48A	**Northport** baz=196	**18.02**	**14**	P	**Pn**	**05 55 00.8**	**-0.4**
Y38A	**Idabel** baz=174,SNR=13	**18.04**	**355**	P	**P**	**05 54 59.9**	**+0.6**
Y40A	**Okolona** baz=178	**18.04**	**359**	P	**P**	**05 54 59.7**	**+0.3**
MOTC	**Monteria, Cord**	**18.13**	**111**	*e*P	**P**	**05 54 55.4**	**-5.1**
Y44A	**Strider, Charl** baz=188	**18.13**	**7**	P	**P**	**05 55 00.5**	**+0.2**
SJCC	**San Jacinto, C**	**18.14**	**107**	*e*P	**P**	**05 54 57.1**	**-3.6**
Z33A	**Whitaker Ranch** baz=161,SNR=24	**18.14**	**344**	P	**Pn**	**05 55 01.6**	**-1.1**
Y37A	**Hugo** baz=171,SNR=10	**18.18**	**352**	P	**P**	**05 55 01.3**	**+0.4**
Y36A	**Durant** baz=169	**18.20**	**351**	P	**P**	**05 55 02.0**	**+0.9**
Y46A	**Houston** baz=192,SNR=28	**18.25**	**10**	P	**Pn**	**05 55 02.7**	**-1.1**
Y35A	**Marietta** baz=166	**18.34**	**349**	P	**P**	**05 55 03.1**	**+0.5**
Y47A	**UCPARC, Winfie** baz=195,SNR=16	**18.46**	**13**	P	**Pn**	**05 55 05.0**	**-1.4**
X40A	**Basin Creek Fa** baz=179	**18.51**	**360**	P	**P**	**05 55 04.9**	**+0.4**
X41A	**Kaden, Bauxite** baz=180	**18.52**	**1**	P	**P**	**05 55 04.4**	**-0.1**
Y34A	**Reagan Ranch,** baz=164,SNR=7.2	**18.54**	**347**	P	**P**	**05 55 05.1**	**+0.4**
X39A	**Fountain Ranch** baz=176	**18.57**	**356**	P	**P**	**05 55 05.3**	**+0.2**
MIAR	**Mount Ida** baz=177,SNR=14	**18.58**	**358**	P	**P**	**05 55 05.5**	**+0.3**
MIAR	**Mount Ida** comp=Z,30nm,1.0s	**18.58**	**358**	*e*P	**P**	**05 55 06.0**	**+0.8**
X44A	**Crenshaw** baz=188	**18.67**	**7**	P	**P**	**05 55 06.1**	**0.0**
X37A	**Clayton** baz=172,SNR=10	**18.76**	**353**	P	**P**	**05 55 08.1**	**+1.0**
OXF	**Oxford** comp=Z,41nm,1.0s	**18.77**	**9**	*e*P	**Pn**	**05 55 11.0**	**+1.0**
X38A	**Whitesboro** baz=174,SNR=31	**18.78**	**355**	P	**P**	**05 55 08.4**	**+1.0**
Y33A	**Hilltop Ranch,** baz=162,SNR=14	**18.79**	**345**	P	**P**	**05 55 07.7**	**+0.1**
UALR	**University of** comp=Z,22nm,0.9s	**18.80**	**1**	*e*P	**P**	**05 55 08.6**	**+1.0**
X35A	**Drake** baz=167,SNR=30	**18.81**	**349**	P	**P**	**05 55 07.7**	**0.0**
X36A	**Centrahoma** baz=169,SNR=10	**18.87**	**351**	P	**P**	**05 55 08.2**	**-0.1**
W38A	**Poteau** baz=174	**19.15**	**356**	P	**P**	**05 55 11.4**	**0.0**
X34A	**Smith Ranch, M** baz=165	**19.17**	**347**	P	**P**	**05 55 11.8**	**+0.1**
W41B	**Gary Mavity, V** baz=181	**19.20**	**1**	P	**P**	**05 55 11.7**	**-0.2**
W40A	**Ferguson Farm,** baz=179	**19.21**	**359**	P	**P**	**05 55 10.9**	**-1.2**
W39A	**Magazine** baz=177	**19.24**	**357**	P	**P**	**05 55 12.5**	**+0.2**
X33A	**Lawton** baz=163	**19.27**	**345**	P	**P**	**05 55 12.7**	**0.0**
W37B	**Quinton** baz=172,SNR=7.2	**19.31**	**353**	P	**P**	**05 55 13.5**	**+0.4**
WHAR	**Wooly Hollow** comp=Z,22nm,1.4s	**19.31**	**1**	*e*P	**P**	**05 55 13.7**	**+0.5**
GOGA	**Godfrey** comp=Z,17nm,0.8s	**19.35**	**24**	*e*P	**P**	**05 55 14.4**	**+0.8**
X32A	**Elmer** baz=160,SNR=22	**19.35**	**344**	P	**P**	**05 55 13.5**	**-0.1**
W36A	**Wetumka** baz=170	**19.41**	**351**	P	**P**	**05 55 14.1**	**-0.1**
HELC	**Santa Helena**	**19.45**	**118**	*e*P	**P**	**05 55 11.8**	**-3.4**
MNTX	**Cornudas Mount** baz=141,SNR=43	**19.48**	**326**	P	**P**	**05 55 15.0**	**0.0**
MNTX	**Cornudas Mount** comp=Z,27nm,0.9s	**19.48**	**326**	*e*P	**Pn**	**05 55 17.0**	**-1.5**
WMOK	**Wichita Mounta** baz=162	**19.52**	**345**	P	**P**	**05 55 15.2**	**-0.3**
WMOK	**Wichita Mounta** comp=Z,13nm,1.0s	**19.52**	**345**	*e*P	**Pn**	**05 55 17.5**	**-1.5**
W35A	**Tecumseh** baz=168,SNR=13	**19.52**	**350**	P	**P**	**05 55 14.9**	**-0.5**
PAPH	**Port-au-Prince** comp=Z,67nm,0.9s	**19.71**	**79**	*e*P	**P**	**05 55 18.9**	**+1.2**
W34A	**Bridge Creek,** baz=165,SNR=12	**19.77**	**348**	P	**P**	**05 55 17.7**	**-0.4**
W34A	**Bridge Creek,** comp=Z,53nm,0.6s	**19.77**	**348**	*e*P	**P**	**05 55 18.5**	**+0.4**
V40A	**Witts Springs** baz=180	**19.82**	**360**	P	**P**	**05 55 17.7**	**-1.0**
W33A	**Caddo, Fort Co** baz=163,SNR=8.3	**19.84**	**346**	P	**P**	**05 55 18.9**	**0.0**
V39A	**Pettigrew** baz=177,SNR=8.8	**19.87**	**358**	P	**P**	**05 55 18.9**	**-0.4**
V38A	**Canehill** baz=175	**19.93**	**356**	P	**P**	**05 55 19.0**	**-0.8**
W32A	**Sentinel** baz=161,SNR=11	**20.01**	**344**	P	**P**	**05 55 20.0**	**-0.6**
V36A	**Jenks** baz=171	**20.01**	**352**	P	**P**	**05 55 19.9**	**-0.7**
V37A	**Hulbert** baz=173,SNR=9.4	**20.01**	**354**	P	**P**	**05 55 20.0**	**-0.6**
GUYC	**Guyana, Colomb**	**20.08**	**120**	*e*P	**P**	**05 55 20.9**	**-1.2**
TUL1	**Leonard** baz=171	**20.11**	**353**	P	**P**	**05 55 20.7**	**-1.0**
TUL1	**Leonard** comp=Z,15nm,0.8s	**20.11**	**353**	*e*P	**P**	**05 55 19.7**	**-2.0**
V35A	**Meyer Ranch, C** baz=168,SNR=6.2	**20.11**	**350**	P	**P**	**05 55 20.9**	**-0.9**
MSTX	**Muleshoe** baz=151,SNR=9.2	**20.13**	**335**	P	**P**	**05 55 21.6**	**-0.5**
MSTX	**Muleshoe** comp=Z,19nm,0.8s	**20.13**	**335**	*e*P	**P**	**05 55 22.7**	**+0.7**
V34A	**Guthrie** baz=166,SNR=8.6	**20.30**	**349**	P	**P**	**05 55 23.0**	**-0.7**
V34A	**Guthrie** comp=Z,20nm,0.8s	**20.30**	**349**	*e*P	**P**	**05 55 23.4**	**-0.3**
HHAR	**Hobbs** comp=Z,9.2nm,1.0s	**20.32**	**357**	*e*P	**P**	**05 55 24.3**	**+0.2**
U40A	**Yellville** baz=179	**20.37**	**360**	P	**P**	**05 55 23.2**	**-1.3**
V33A	**Lossen Ranch,** baz=164,SNR=9.5	**20.44**	**347**	P	**P**	**05 55 24.3**	**-1.0**
OCAC	**Ocana**	**20.46**	**110**	*e*P	**P**	**05 55 21.4**	**-4.4**
U38A	**Gravette** baz=175	**20.51**	**356**	P	**P**	**05 55 25.3**	**-0.7**
V32A	**Arapaho** baz=162	**20.52**	**345**	P	**P**	**05 55 25.8**	**-0.4**
AMTX	**Amarillo** baz=155	**20.53**	**339**	P	**P**	**05 55 26.8**	**+0.5**
AMTX	**Amarillo** comp=Z,41nm,0.8s	**20.53**	**339**	*e*P	**P**	**05 55 27.1**	**+0.8**
U37A	**Salina** baz=173,SNR=5.8	**20.53**	**355**	P	**P**	**05 55 24.7**	**-1.5**
U36A	**Oologah** baz=172	**20.58**	**353**	P	**P**	**05 55 26.0**	**-0.7**
URIC	**Uribia, Colomb**	**20.59**	**99**	*e*P	**P**	**05 55 22.6**	**-4.4**
U35A	**Pawnee** baz=169,SNR=14	**20.69**	**351**	P	**P**	**05 55 26.2**	**-1.7**
SDDR	**Presa de Saban** comp=Z,15nm,0.8s	**20.71**	**78**	*e*P	**P**	**05 55 28.6**	**+0.3**
U34A	**Anderson Ranch** baz=167,SNR=5.5	**20.89**	**349**	P	**P**	**05 55 28.8**	**-1.2**
U34A	**Anderson Ranch** comp=Z,33nm,1.3s	**20.89**	**349**	*e*P	**P**	**05 55 30.6**	**+0.6**
PBMO	**Poplar Bluff** comp=Z,10nm,1.0s	**20.90**	**5**	*e*P	**P**	**05 55 29.5**	**-0.5**
U33A	**Lingo Farm, Me** baz=165,SNR=12	**21.00**	**348**	P	**P**	**05 55 29.9**	**-1.2**
OTAV	**Otavalo** comp=Z,13nm,0.8s	**21.01**	**136**	*e*P	**P**	**05 55 34.1**	**+2.1**
OTAV	**Otavalo**	**21.01**	**136**	*e*P	**P**	**05 55 31.6**	**-0.4**
T39A	**Clever** baz=178,SNR=7.5	**21.05**	**359**	P	**P**	**05 55 30.7**	**-0.9**
T38A	**Diamond** baz=176,SNR=8.1	**21.09**	**357**	P	**P**	**05 55 30.9**	**-1.3**
GRMC	**Gramalote, San**	**21.14**	**110**	*e*P	**P**	**05 55 32.7**	**-0.3**
U32A	**Winter Ranch,** baz=163	**21.14**	**346**	P	**P**	**05 55 32.1**	**-0.6**
T40A	**Mansfield** baz=180	**21.16**	**1**	P	**P**	**05 55 31.5**	**-1.5**
T35A	**Sooner Cattle** baz=170,SNR=11	**21.20**	**352**	P	**P**	**05 55 32.0**	**-1.2**
T37A	**Cheneyville 18** baz=174,SNR=11	**21.22**	**355**	P	**P**	**05 55 32.1**	**-1.4**
HSIG	comp=Z,4.9nm,0.8s	**21.25**	**311**	*e*P	**P**	**05 55 36.7**	**+2.8**
T36A	**Boggs Farm, Ca** baz=171,SNR=8.5	**21.26**	**353**	P	**P**	**05 55 32.0**	**-1.9**

BANI	BANI	21.54	80	eP	P	05 55 38.3	+1.1
319A	Douglas	21.55	319	eP	P	05 55 40.5	+3.4
	comp=Z,21nm,1.1s						
S40A	Lebanon	21.61	1	P	P	05 55 36.3	-1.3
	baz=180,SNR=7.1						
T33A	Patterson Ranc	21.65	348	P	P	05 55 36.9	-1.1
	baz=165						
S38A	Stockton	21.67	358	P	P	05 55 36.4	-1.7
	baz=177,SNR=7.2						
S39A	Bolivar	21.71	359	P	P	05 55 37.6	-1.0
	baz=178,SNR=12						
KMSC	Kings Mountain	21.72	26	P	P	05 55 37.4	-1.4
	baz=211						
S37A	Fort Scott	21.85	356	P	P	05 55 38.8	-1.2
	baz=174,SNR=21						
S36A	Lake Cedric, C	21.88	354	P	P	05 55 39.3	-1.0
	baz=172,SNR=9.1						
T32A	Huddler Ranch,	21.89	347	P	P	05 55 38.6	-1.8
	baz=164						
S35A	Otter Creek Ra	21.92	352	P	P	05 55 39.3	-1.4
	baz=170,SNR=14						
SIUC	Southern Illin	21.95	8	eP	P	05 55 40.7	-0.3
	comp=Z,11nm,0.8s						
BNM	Barren Site	22.05	328	eP	P	05 55 44.8	+2.5
S34A	Willow Spring	22.05	351	P	P	05 55 40.7	-1.3
	baz=168,SNR=8.4						
S33A	Kaszmaul Farm,	22.10	349	P	P	05 55 40.9	-1.6
	baz=166						
Y22D	IRIS PASSCAL I	22.14	327	eP	P	05 55 46.6	+3.6
	comp=Z,59nm,1.2s						
LPM	Los Pinos Moun	22.18	328	eP	P	05 55 45.6	+2.2
R38A	Fenwick Farm,	22.22	358	P	P	05 55 42.5	-1.0
	baz=177,SNR=21						
R40A	Maddies Statio	22.31	1	P	P	05 55 43.4	-1.0
	baz=181						
R39A	Chumby, Stover	22.33	359	P	P	05 55 43.5	-1.1
	baz=179						
SJAC	San Juan de Ar	22.36	122	eP	P	05 55 45.2	0.0
S32A	Newby Ranch, P	22.39	347	P	P	05 55 44.3	-0.9
	baz=164						
R37A	Teagarden Farm	22.40	356	P	P	05 55 44.2	-1.1
	baz=174,SNR=5.4						
R36A	Gordon, Harris	22.47	354	P	P	05 55 44.9	-0.9
	baz=173,SNR=6.1						
LAZ	Ladron	22.51	328	eP	P	05 55 49.2	+2.7
R35A	Emporia Munici	22.54	353	P	P	05 55 45.9	-0.7
	baz=171						
ANMO	Albuquerque	22.60	330	P	P	05 55 49.6	+2.3
	comp=Z,6.5nm,0.8s,baz=147,slow=11,SNR=33						
ANMO				pP	pP	05 56 24.1	+3.1
	comp=Z,2.8nm,0.8s,baz=135,slow=10,SNR=3.4						
ANMO	Albuquerque	22.60	330	P	P	05 55 46.7	-0.6
	baz=144						
ANMO	Albuquerque	22.60	330	eP	P	05 55 49.3	+2.0
	comp=Z,7.7nm,0.8s						
R34A	Isabella, Hill	22.66	351	P	P	05 55 46.7	-0.9
	baz=168,SNR=8.4						
R33A	Olander Ranch,	22.79	349	P	P	05 55 48.2	-0.6
	baz=167						
Q37A	Longview Farm,	22.94	357	P	P	05 55 49.3	-0.8
	baz=176						
Q40A	Laux Farm, Aux	23.01	1	P	P	05 55 50.2	-0.5
	baz=181						
R32A	Long Quarter,	23.04	348	P	P	05 55 50.2	-0.9
	baz=165,SNR=13						
Q35A	Mercer Eighty,	23.05	353	P	P	05 55 50.4	-0.7
	baz=172						
Q39A	Willow Grove F	23.06	360	P	P	05 55 50.4	-0.8
	baz=179,SNR=6.5						
Q36A	Arnold C. Orve	23.09	355	P	P	05 55 50.8	-0.7
	baz=173						
TUC	Tucson	23.13	318	P	P	05 55 50.9	-1.1
	baz=131						
TUC	Tucson	23.13	318	eP	P	05 55 54.9	+2.9
	comp=Z,7.2nm,1.0s						
Q34A	Chapman	23.23	352	P	P	05 55 52.2	-0.5
	baz=170,SNR=15						
KSU1	Kansas State U	23.36	352	P	P	05 55 53.0	-0.9
	baz=170,SNR=22						
KSU1	Kansas State U	23.36	352	eP	P	05 55 53.7	-0.2
	comp=Z,51nm,0.8s						
Q33A	Connelly Farm,	23.44	350	P	P	05 55 54.4	-0.2
	baz=167						
T25A	Trinidad	23.54	336	P	P	05 55 55.5	-0.4
	baz=151,SNR=23						
T25A	Trinidad	23.54	336	eP	P	05 55 58.5	+2.6
	comp=Z,25nm,0.8s						
P40A	Paris	23.55	1	P	P	05 55 54.9	-0.7
	baz=181						
Q32A	Meitler Ranch,	23.56	349	P	P	05 55 55.1	-0.6
	baz=166,SNR=26						
CBKS	Cedar Bluff	23.64	346	P	P	05 55 56.4	-0.1
	baz=163,SNR=8.7						
CBKS	Cedar Bluff	23.64	346	eP	P	05 55 57.0	+0.5
	comp=Z,30nm,0.9s						
P37A	Lathrop	23.64	357	P	P	05 55 55.9	-0.6
	baz=176,SNR=12						
P38A	Dawn	23.64	359	P	P	05 55 56.9	+0.4
	baz=178						
P35A	Duane Minner,	23.71	354	P	P	05 55 56.2	-1.0
	baz=172,SNR=7.8						
P36A	Good Intent, A	23.73	355	P	P	05 55 56.5	-0.7
	baz=174,SNR=6.9						
P34A	Walnut Farm, R	23.82	352	P	P	05 55 57.7	-0.5
	baz=170,SNR=26						
P33A	Williams Farm,	23.84	351	P	P	05 55 57.7	-0.6
	baz=168,SNR=6.0						
O38A	Galt	24.14	359	P	P	05 56 00.1	-0.9
	baz=178						
O40A	La Belle	24.14	2	P	P	05 56 00.1	-0.9
	baz=182						
P32A	Huiting Farm,	24.18	349	P	P	05 56 00.8	-0.6
	baz=166,SNR=10						
O37A	Wolven Farm, M	24.21	357	P	P	05 56 01.1	-0.5
	baz=176,SNR=7.1						
214A	Organ Pipe Nat	24.25	315	P	P	05 56 03.8	+1.6
	baz=126						
O34A	Beatrice	24.43	353	P	P	05 56 03.0	-0.7
	baz=171,SNR=17						
W18A	Petrified Fore	24.45	325	P	P	05 56 05.6	+1.5
	baz=137						
O33A	Hebron	24.45	351	P	P	05 56 03.8	-0.1
	baz=168,SNR=5.6						
SDCO	Great Sand Dun	24.50	335	P	P	05 56 05.3	+0.7
	baz=149,SNR=7.5						
SDCO	Great Sand Dun	24.50	335	eP	P	05 56 06.8	+2.1
	comp=Z,8.1nm,1.3s						
KSCO	Kaye Shedlock'	24.60	341	P	P	05 56 05.9	+0.5
	baz=156						
KSCO	Kaye Shedlock'	24.60	341	eP	P	05 56 06.3	+1.0
	comp=Z,20nm,0.7s						
O32A	Brockman Farm,	24.74	350	P	P	05 56 06.3	-0.2
	baz=167						
N37A	Lee Faris, Mou	24.80	357	P	P	05 56 06.9	-0.1
	baz=176,SNR=5.4						
N38A	Joes South For	24.80	359	P	P	05 56 06.5	-0.5
	baz=179						
O31A	Woolen Ranch,	24.83	348	P	P	05 56 07.1	-0.2
	baz=165						
N39A	Derby Farms, D	24.89	0	P	P	05 56 07.3	-0.5
	baz=180						
N36A	Muff Farm, Cla	24.90	356	P	P	05 56 07.3	-0.6
	baz=175						
X16A	Lo Mia Camp, P	24.94	321	eP	P	05 56 11.8	+3.2
	comp=Z,6.3nm,0.9s						
N35A	Tabor	25.00	355	P	P	05 56 08.3	-0.5
	baz=173						
S22A	4UR Ranch, Cre	25.06	333	P	P	05 56 10.5	+0.8
	baz=146,SNR=8.3						
S22A	4UR Ranch, Cre	25.06	333	eP	P	05 56 12.2	+2.5
	comp=Z,6.9nm,1.0s						
MVCO	Mesa Verde	25.40	330	P	P	05 56 14.3	+1.5
	baz=142,SNR=11						
MVCO	Mesa Verde	25.40	330	eP	P	05 56 15.1	+2.4
	comp=Z,13nm,0.9s						
M37A	Trindle Farm,	25.44	358	P	P	05 56 12.5	-0.2
	baz=177						
M35A	Neola	25.60	355	P	P	05 56 15.3	+1.1
	baz=173						
MTP	Monte Pirata	26.10	81	eP	P	05 56 17.0	-1.9
	comp=Z,104nm,1.6s						
GLA	Glamis	26.27	315	P	P	05 56 21.2	+0.8
	baz=125						
ISCO	Idaho Springs	26.32	337	P	P	05 56 22.3	+1.2
	baz=151						
L32A	Elgin	26.40	351	P	P	05 56 24.0	+2.5
	baz=168						
Y12C	Blythe	26.48	316	P	P	05 56 24.0	+1.8
	baz=127						
PDMCI	Parker Dam,Lak	26.56	318	P	P	05 56 24.7	+1.7
	baz=128						
K34A	Le Mars	26.85	355	P	P	05 56 26.6	+1.2
	baz=173						
BC3	Big Chuckawall	27.05	315	P	P	05 56 28.6	+1.2
	baz=125,SNR=5.8						
KNB	Kanab	27.55	324	eP	P	05 56 35.4	+3.5
	comp=Z,9.7nm,1.4s						
BELC	Belle Mtn. Jos	27.62	315	P	P	05 56 33.0	+0.5
	baz=125						
O20A	White River Ci	27.66	334	P	P	05 56 33.4	+0.6
	baz=146						
TPFO	Pinon Flats	27.71	314	P	P	05 56 33.6	+0.3
	baz=124						
ECSD	EROS Data Cent	27.93	354	P	P	05 56 34.3	-0.7
	baz=172						
SHPR	Sheep Range	28.59	320	eP	P	05 56 44.5	+3.3
	comp=Z,7.2nm,1.3s						
I29A	Vivian Onida	28.75	349	P	P	05 56 42.4	0.0
	baz=165						
H32A	Carlson Farm,	28.79	353	P	P	05 56 42.4	-0.2
	baz=170						
BFSC	Mount Baldy Ra	28.89	314	P	P	05 56 44.0	+0.2
	baz=123						
GSC	Goldstone, Bar	28.91	316	P	P	05 56 44.4	+0.5
	baz=126						
K22A	Casper	29.16	339	P	P	05 56 46.6	+0.5
	baz=152						
SPMN	Marine on St.	29.23	360	P	P	05 56 46.7	+0.2
	baz=180						
G36A	St. Michael	29.25	359	P	P	05 56 47.2	+0.5
	baz=178						
TPNV	Topopah Spring	29.55	320	P	P	05 56 50.4	+0.8
	baz=129						
TPNV	Topopah Spring	29.55	320	eP	P	05 56 53.4	+3.8
	comp=Z,17nm,2.0s						
G30A	Faulkton	29.63	351	P	P	05 56 49.5	-0.6
	baz=167						
FURC	Furnace Creek,	29.64	318	P	P	05 56 50.3	+0.1
	baz=127						
DAC	Darwin (Calif)	30.00	317	eP	P	05 56 56.7	+3.1
	comp=Z,3.4nm,0.9s						
R11A	Troy Canyon, C	30.06	322	P	P	05 56 55.4	+1.4
	baz=132						
R11A	Troy Canyon, C	30.06	322	eP	P	05 56 57.2	+3.1
	comp=Z,13nm,1.8s						
PDAR	Pinedale Array	30.40	335	P	P	05 56 58.3	+1.2
	comp=Z,0.5nm,0.8s,baz=120,slow=8.8,SNR=4.2						
E34A	Wadena	30.59	357	P	P	05 56 57.7	-0.7
	baz=175						
VES	Vestal, Richgr	30.75	315	P	P	05 57 01.4	+1.4
	baz=123,SNR=8.3						
REDW	Red Top Meadow	31.42	334	eP	P	05 57 07.8	+1.7
	comp=Z,12nm,1.0s						
SNOW	Snow King Moun	31.46	334	eP	P	05 57 08.5	+2.1
	comp=Z,12nm,0.9s						
LOHW	Long Hollow	31.52	335	eP	P	05 57 08.8	+1.8
	comp=Z,3.0nm,0.8s						
MOOW	Moose Ponds	31.70	335	eP	P	05 57 10.0	+1.6
	comp=Z,4.9nm,1.1s						
C35A	Jirik Farms, M	31.72	358	P	P	05 57 07.6	-0.7
	baz=178						
NVAR	Mina Array Bea	31.75	320	P	P	05 57 12.5	+3.5
	comp=Z,9.3nm,0.7s,baz=133,slow=8.6,SNR=86						
NVAR				pP	pP	05 57 50.2	+2.2
	comp=Z,2.2nm,0.8s,baz=143,slow=9.1,SNR=3.1						
E25A	Miller Ranch,	31.77	346	P	P	05 57 08.7	-0.2
	baz=160						
C30A	Mose, Pekin	32.06	353	P	P	05 57 10.2	-1.2
	baz=169						
D26A	Manning	32.06	347	P	P	05 57 11.6	+0.2
	baz=162						
C31A	Landman Farms,	32.06	354	P	P	05 57 10.3	-1.0
	baz=171						
YMR	Madison River	32.55	336	eP	P	05 57 18.2	+2.4
	comp=Z,7.8nm,1.2s						
B32A	Ashes, Strandq	32.55	355	P	P	05 57 14.7	-0.9
	baz=173						
B31A	Greenbush Farm	32.68	354	P	P	05 57 15.7	-1.0
	baz=171,SNR=5.1						
B30A	Myrvik Farm, E	32.78	353	P	P	05 57 17.2	-0.4
	baz=170						
CMB	Columbia Colle	32.84	318	eP	P	05 57 21.6	+3.3
	comp=Z,5.0nm,1.0s						
A33A	Warroad	33.02	357	P	P	05 57 18.5	-1.1
	baz=175						
B28A	Dugan Ranch, T	33.05	351	P	P	05 57 19.5	-0.4
	baz=166						
HLID	Hailey	33.17	331	P	P	05 57 22.7	+1.5
	baz=139						
HLID	Hailey	33.17	331	eP	P	05 57 24.1	+2.8
	comp=Z,4.1nm,1.2s						
PAHR	Pah Rah Range	33.20	321	eP	P	05 57 24.9	+3.4
	comp=Z,5.3nm,0.9s						
A30A	Hoffart Farm,	33.26	353	P	P	05 57 20.6	-1.1
	baz=170,SNR=5.9						
A29A	Manning Farm,	33.36	352	P	P	05 57 22.1	-0.5
	baz=168,SNR=7.0						
MCMT	McKenzie Canyo	33.45	334	eP	P	05 57 26.6	+2.8
A26A	Wade Farm, Ken	33.77	349	P	P	05 57 26.7	+0.5
	baz=164						
WVOR	Wild Horse Val	34.52	325	eP	P	05 57 32.6	-0.2
	comp=Z,22nm,1.1s						
O03D	Paynes Creek	35.03	320	P	P	05 57 38.0	+0.7
	baz=126						
MSO	Missoula	35.51	335	P	P	05 57 41.8	+0.6
	baz=143						
F10A	Beach Ranch, E	36.30	331	eP	P	05 57 50.5	+2.5
	comp=Z,7.7nm,1.0s						
I03D	Drain, OR	37.98	323	P	P	05 58 03.6	+1.7
	baz=127						
SAML	Samuel	38.30	128	eP	P	05 58 02.2	-2.8
	comp=Z,6.0nm,0.6s						
LPAZ	La Paz	40.17	142	P	P	05 58 21.6	+0.5
	comp=Z,12nm,0.7s,baz=334,slow=6.1,SNR=80						
B05A	Bryant	40.27	330	P	P	05 58 21.9	+1.1
	baz=133						
A04D	Lummi Island	40.87	330	P	P	05 58 27.0	+1.2
	baz=133						
LVC	Limon Verde	44.83	148	P	P	05 59 00.1	+1.7
	comp=Z,16nm,0.7s,baz=279,slow=4.2,SNR=7.7						
LVC	Limon Verde	44.83	148	eP	P	05 59 00.5	+2.2
	comp=Z,4.4nm,0.8s						
YKA	Yellowknife Ar	49.02	347	P	P	05 59 29.6	-0.1
	comp=Z,3.6nm,0.7s,baz=148,slow=7.5,SNR=79						
YKA				pP	pP	06 00 11.1	-0.5
	comp=Z,0.5nm,0.6s,baz=152,slow=7.4,SNR=2.8						
DLBC	Dease Lake	50.63	336	P	P	05 59 45.0	+2.9
	comp=Z,4.0nm,1.0s,baz=87,slow=4.0,SNR=5.6						
DLBC	Dease Lake	50.63	336	eP	P	05 59 45.0	+2.9
	comp=Z,12nm,0.6s						
CPUP	Villa Florida	54.30	140	P	P	06 00 08.1	-1.3
	comp=Z,8.2nm,0.8s,baz=323,slow=8.0,SNR=18						
INK	Inuvik	58.42	343	P	P	06 00 38.5	+0.7
	comp=Z,1.7nm,0.8s,baz=138,slow=7.3,SNR=6.9						
INK				pP	pP	06 01 20.6	-0.5
	comp=Z,2.6nm,0.8s,baz=117,slow=6.1,SNR=4.9						
KLU	Klutina	58.96	333	eP	P	06 00 44.1	+2.2
	comp=Z,8.6nm,0.5s						
PAX	Paxson	59.43	335	eP	P	06 00 46.1	+1.0
	comp=Z,3.6nm,0.8s						
PLCA	Paso Flores	60.00	161	P	P	06 00 50.7	+1.5
	comp=Z,7.1nm,0.9s,baz=355,slow=7.5,SNR=18						
ILAR	Eielson Array	60.81	337	P	P	06 00 55.2	+0.9
	comp=Z,2.2nm,1.0s,baz=121,slow=5.1,SNR=18						
ILAR				pP	PcP	06 01 36.7	+0.6
	comp=Z,0.4nm,0.5s,baz=145,slow=7.3,SNR=3.0						
RND	Reindeer	61.01	335	eP	P	06 00 58.0	+2.3
	comp=Z,32nm,1.7s						
SPU	Mount Spurr	61.56	332	eP	P	06 01 00.3	+0.9
MLY	Manley	62.41	336	eP	P	06 01 06.2	+1.1
	comp=Z,3.0nm,0.8s						
TORD	Torodi Ar. Bea	90.64	76	P	P	06 03 42.6	-1.6
	comp=Z,0.4nm,0.9s,baz=295,slow=5.2,SNR=3.1						
CD2	Chengdu	130.82	341	PKP	PKPdf	06 09 50.8	-1.1

*IDC **16** 05:59:52.8±0.9, 52°.21N×131°.40W, h0km, mb3.7/4, mb1 4.0/10, mb1mx3.8/45, mbtmp3.8/10, ML4.0/5, MS3.4/21, Ms1 3.4/21, ms1mx3.3/39, Error ellipse: s-maj=14.8km s-min=6.3km az=34.0*

*NEIC **16** 05:59:52.9, 52°.04N×132°.05W, h20km, mb4.1/12, MW4.6(OTT), After OTT.*

*PGC **16** 05:59:52.9±0.1, 52°.04N×132°.05W, h20km, ML4.7/21, Mw4.6, 135km south of Sandspit, Bc Haida Gwaii Region*

ISC 16 05:59:52.2±2.2, 52°.14N±0°.05×131°.54W±0°.05, h4km±14km, n162, g2°.02/150, mb4.0/13, MS3.4/15, Queen Charlotte Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BNB	Barry Inlet	0.46	344	P	Pn	06 00 03.6	-2.0
BNB				S	Sb	06 00 11.3	+1.2
BNB	Barry Inlet	0.46	344	P	Pn	06 00 03.6	-2.0
MOBC	Moresby Island	1.04	346	P	Pn	06 00 12.7	-0.9
MOBC				S	Sn	06 00 27.9	-0.7
MOBC	Moresby Island	1.04	346	P	Pn	06 00 12.7	-0.9
MOBC				S	Sn	06 00 27.9	-0.7
DIB	Dawson Inlet,	1.21	332	P	Pn	06 00 14.4	-1.4
DIB				S	Sb	06 00 30.3	-1.3
H02S1	DAWSON INLET T	1.21	332	Pg	Pn	06 00 14.6	-1.3
H02S1				Lg	Lg	06 00 30.4	
H02N1	VAN INLET T-PH	1.27	332	Pg	Pb	06 00 16.0	-0.8
H02N1				Lg	Lg	06 00 32.3	
VIB	Van Inlet	1.27	332	P	Pn	06 00 15.4	-1.3
VIB				S	Sb	06 00 31.9	-1.6
VIB	Van Inlet	1.27	332	P	Pn	06 00 15.5	-1.3
VIB				S	Sb	06 00 31.4	-2.2
BNAB	Bonilla	1.47	22	Pn	Pb	06 00 18.7	-1.3
BNAB				Sn	Sg	06 00 39.5	+0.3
BNAB	Bonilla	1.47	22	P	Pb	06 00 18.9	-1.0
NDB	Naden	2.01	336	Pn	Pn	06 00 26.0	-0.9
NDB				Sg	Sg	06 00 57.0	+0.2
NDB	Naden	2.01	336	P	Pn	06 00 26.1	-0.8
BBB	Bella Bella	2.11	87	Pn	Pn	06 00 26.4	-1.8
	20nm,0.3s,baz=282,slow=9.6,SNR=129						
BBB				Lg	Lg	06 00 56.6	
	1µm,0.3s,baz=165,slow=20,SNR=29						
BBB	Bella Bella	2.11	87	Pn	Pn	06 00 26.4	-1.8
BBB				Sn	Sb	06 00 55.2	-2.3
BBB	Bella Bella	2.11	87	P	Pn	06 00 26.5	-1.8
BBB				S	Sb	06 00 55.7	-1.8
BBB				Lg	Lg	06 00 56.6	
HOLB	Holberg	2.61	124	Pn	Pn	06 00 32.4	-2.7
PHC	Port Hardy	2.94	117	Pn	Pn	06 00 36.2	-3.5
PHC				Sn	Sn	06 01 09.8	-5.6
BCBC	Bella Coola	2.95	84	Pn	Pn	06 00 40.8	+1.1
BPBC	Brooks Peninsu	3.09	128	Pn	Pn	06 00 38.9	-2.9
MAYB	Maynard	3.25	121	Pn	Pn	06 00 41.1	-2.9
TLCB	Telegraph Cove	3.35	117	Pn	Pn	06 00 42.6	-2.7
CRAG	Craig	3.47	345	P	Pn	06 00 46.8	-0.1
FHRB	Fair Harbour	3.48	125	Pn	Pn	06 00 45.4	-1.7
EDB	Eliza Dome	3.59	127	Pn	Pn	06 00 46.8	-1.8
WOSB	Woss	3.70	120	Pn	Pn	06 00 48.1	-2.0
NCRB	Newcastle Ridg	3.86	115	Pn	Pn	06 00 50.5	-1.8
GDR	Gold River	4.21	122	Pn	Pn	06 00 55.6	-1.4
WRAK	Wrangell Islan	4.32	354	ePn	Pn	06 00 59.7	+1.2
WRAK				eSn	Sn	06 01 50.7	+1.5
SPLB	Strathcona Par	4.34	119	Pn	Pn	06 00 57.4	-1.5
CBB	Campbell River	4.43	116	Pn	Pn	06 00 59.1	-1.0
UBRB	Upper Baezaeko	4.62	78	Pn	Pn	06 01 03.6	+0.8
BTB	Buttle Lake	4.66	123	Pn	Pn	06 01 02.2	-1.2
TOFB	Tofino	4.66	128	Pn	Pn	06 00 59.0	-4.3
TXB	Texada	5.11	116	Pn	Pn	06 01 08.5	-1.0
B928	Bamfield	5.26	126	Pn	Pn	06 01 11.3	-0.1
MGB	Mount Grey	5.38	123	Pn	Pn	06 01 12.1	-1.1
GHNB	Nanoose	5.43	119	Pn	Pn	06 01 13.6	-0.2
SHB	Sechelt	5.48	115	Pn	Pn	06 01 13.8	-0.8
NLLB	Nanaimo Lost L	5.61	118	Pn	Pn	06 01 15.6	-0.7
YOUB	Youbou, Lake C	5.66	122	Pn	Pn	06 01 16.1	-1.0
PFB	Port Renfrew	5.78	125	Pn	Pn	06 01 17.7	-0.9
WSLR	Whistler	5.79	107	Pn	Pn	06 01 18.3	-0.5
WPB	Watts Point	5.83	112	Pn	Pn	06 01 19.1	-0.2
BIB	Bowen Island	5.89	114	Pn	Pn	06 01 19.3	-0.9
LZB	Mount Lazard	6.07	123	Pn	Pn	06 01 20.5	-2.1
B010	North Saanich	6.24	121	Pn	Pn	06 01 24.6	-0.3
PGC	Sidney	6.24	121	Pn	Pn	06 01 24.5	-0.4
PGC	Sidney	6.24	121	ePn	Pn	06 01 28.0	+3.1
	40nm,0.9s						
PGC				eSn	Sn	06 02 38.3	+1.8
B009	North Saanich	6.24	121	Pn	Pn	06 01 24.5	-0.5
LLLB	Lillooet	6.24	100	Pn	Pn	06 01 26.4	+1.4
B011	North Saanich	6.24	121	Pn	Pn	06 01 25.2	+0.3
DLBC	Dease Lake	6.37	7	Pn	Pn	06 01 29.8	+2.9
	2.1nm,0.3s,baz=217,slow=14,SNR=30						
DLBC				LR	LR	06 03 05.9	
	comp=Z,61nm,19.7s,baz=176,slow=31						
DLBC				Lg	Lg	06 03 08.9	
	5.6nm,0.3s,baz=289,slow=24,SNR=12						
DLBC	Dease Lake	6.37	7	Pn	Pn	06 01 29.8	+2.9
MCW	Mount Constitu	6.55	118	Pn	Pn	06 01 30.2	+0.9
BLN	Blyn Mountain	6.89	123	Pn	Pn	06 01 34.0	0.0
CMW	Cultus Mountai	7.09	118	Pn	Pn	06 01 37.8	+1.1
B05A	Bryant	7.19	119	P	Pn	06 01 38.9	+0.8
	baz=307						
JCW	Jim Creek	7.32	119	Pn	Pn	06 01 40.1	+0.2
BLBC	Blue River	7.58	86	Pn	Pn	06 01 44.6	+1.0
SKAG	Skagway	7.64	345	ePn	Pn	06 01 45.8	+1.6
	14nm,0.5s						
SKAG				eSn	Sn	06 03 02.6	-8.5
PLBC	Pleasant Camp	7.82	342	Pn	Pn	06 01 47.2	+0.6
MNB	Mounoet Dainar	8.09	84	Pn	Pn	06 01 51.4	+0.8
FNBB	Fort Nelson	8.31	32	Pn	Pn	06 01 54.7	+1.2
WHY	Whitehorse	8.74	349	Pn	Pn	06 02 01.1	+1.7
YUK7	Dusty Glacier	9.17	339	Pn	Pn	06 02 07.1	+1.8
HYT	Haines Junctio	9.31	342	Pn	Pn	06 02 07.9	+0.8
NEW	Newport	10.02	107	Pn	Pn	06 02 15.4	-1.4
	0.3nm,0.3s,baz=288,slow=16,SNR=3.9						
NEW				Lg	Lg	06 04 57.9	
	0.2nm,0.3s,baz=3.8,slow=15,SNR=2.9						
NEW				LR	LR	06 06 07.3	
	comp=Z,237nm,19.0s,baz=294,slow=38						
CTGM	Chitina Glacie	10.36	333	Pn	Pn	06 02 23.2	+1.7
YUK3	Moose Creek	10.81	337	Pn	Pn	06 02 30.1	+2.4
J05D	Fort Rock, OR	11.24	138	P	Pn	06 02 38.1	+4.5
	baz=326						
YBH	Yreka Blue Hor	12.02	147	Pn	Pn	06 02 46.3	+2.1
	0.0nm,0.3s,baz=354,slow=9.2,SNR=3.8						
YBH				LR	LR	06 06 39.6	
	comp=Z,263nm,19.8s,baz=322,slow=34						
MSO	Missoula	12.61	108	P	Pn	06 02 53.5	+1.2
	baz=302						
DAWY	Dawson	12.65	344	ePn

REDW	Red Top Meadow 16nm,1.1s	16.40	114	eP		P	06 03 49.1	+2.9
NVAR	Mina Array Bea 0.0nm,0.3s,baz=315,slow=11,SNR=10	16.53	141	Pn		P	06 03 47.7	0.0
WHFN	White Fish Lak	16.70	42	Pn		P	06 03 47.0	-2.2
BW06	Boulder Array baz=310	17.51	114	P		P	06 04 01.5	+3.0
PDAR	Pinedale Array 0.2nm,0.3s,baz=308,slow=7.3,SNR=14	17.51	114	P		P	06 03 59.8	+1.3
DUG	Dugway, Tooele 6.5nm,1.0s	17.57	125	eP		P	06 03 59.8	+0.8
R11A	Troy Canyon, C 4.3nm,1.3s	17.73	135	ePn		P	06 04 01.1	+0.2
VES	Vestal, Richgr baz=336	18.55	147	P		Pn	06 04 12.9	+3.1
TPNV	Topopah Spring baz=330	18.63	139	P		Pn	06 04 13.0	+2.0
C25A	Freed Ranch, W baz=295	18.68	92	P		Pn	06 04 16.4	+4.9
ISA	Isabella, Lake baz=335	18.92	145	P		Pn	06 04 18.3	+3.9
PKM	Mcpherson Peak baz=338	19.18	149	P		Pn	06 04 21.6	+3.9
K22A	Casper baz=309	19.32	109	P		Pn	06 04 20.0	+0.6
I25A	Rochford baz=304	20.18	103	P		Pn	06 04 30.7	+1.2
C28A	Hausauer Farms baz=295	20.45	90	P		Pn	06 04 33.8	+1.3
A29A	Manning Farm, baz=292	20.69	86	P		Pn	06 04 34.2	-1.1
N23A	Red Feather La baz=312	20.78	113	P		Pn	06 04 35.4	-1.3
H27A	Howes baz=302	20.85	99	P		Pn	06 04 36.3	-0.9
B30A	Myrvik Farm, E baz=293	21.42	87	P		P	06 04 42.1	+1.1
PFO	Pinyon Flats O comp=Z,118nm,18.6s,baz=321,slow=39	21.48	144	LR		LR	06 13 51.2	
ISCO	Idaho Springs 5.9nm,1.2s	21.70	114	eP		P	06 04 44.4	+0.1
D30A	Buchanan baz=296	21.71	90	P		P	06 04 46.3	+2.4
MVCO	Mesa Verde baz=320	22.03	124	P		P	06 04 49.0	+1.3
MVCO	Mesa Verde 7.4nm,1.1s	22.03	124	eP		P	06 04 48.5	+0.7
ARVN	Arviat, NU	22.19	52	Pn		P	06 04 50.4	+1.4
ULM	Lac du Bonnet 1.9nm,0.6s,baz=309,slow=5.0,SNR=2.8	22.30	81	P		P	06 04 48.9	-1.3
ULM				LR		LR	06 13 38.9	
	comp=Z,208nm,18.6s,baz=346,slow=37							
TNA	Tin City 13nm,1.0s	22.70	320	eP		P	06 04 48.7	-5.7
SDCO	Great Sand Dun baz=317	23.21	118	P		P	06 05 01.5	+1.2
B34A	Aery, Baudette baz=293	23.67	84	P		P	06 05 05.9	+1.4
D34A	Park Rapids baz=296	23.91	88	P		P	06 05 08.9	+2.0
G33A	Ortonville baz=300	24.02	93	P		P	06 05 10.5	+2.6
T25A	Trinidad baz=317	24.25	117	P		P	06 05 11.8	+1.5
B35A	Bob, Littlefor baz=294	24.29	84	P		P	06 05 13.5	+3.2
D35A	Remer baz=296	24.62	87	P		P	06 05 15.0	+1.6
ECSD	EROS Data Cent 20nm,1.5s	24.66	96	eP		P	06 05 13.7	-0.2
ANMO	Albuquerque 2.7nm,1.0s,baz=325,slow=10,SNR=9.3	24.82	124	P		P	06 05 17.6	+2.1
ANMO				LR		LR	06 15 26.5	
	comp=Z,65nm,18.6s,baz=320,slow=38							
ANMO	Albuquerque baz=322	24.82	124	P		P	06 05 17.1	+1.5
D36A	Goodland baz=296	25.12	86	P		P	06 05 19.1	+1.2
EYMN	Ely baz=295	25.82	83	P		P	06 05 27.6	+3.4
EYMN	Ely 8.9nm,1.0s	25.82	83	eP		P	06 05 27.8	+3.5
121A	Cookes Peak, D 5.3nm,1.0s	26.10	129	eP		P	06 05 27.9	+0.8
RES	Resolute Bay comp=Z,111nm,18.8s,baz=304,slow=37	27.05	20	LR		LR	06 16 19.9	
Q34A	Chapman baz=311	27.32	105	P		P	06 05 42.4	+4.6
AMTX	Amarillo 3.7nm,0.7s	27.41	117	eP		P	06 05 40.0	+1.2
TXAR	Lajitas Array 0.6nm,0.8s,baz=242,slow=1.9,SNR=3.7	30.73	127	P		P	06 06 10.4	+2.0
TXAR				LR		LR	06 17 30.8	
	comp=Z,56nm,20.4s,baz=0.0,slow=34							
SCHQ	Schefferville	37.38	60	LR		LR	06 21 38.7	
	comp=Z,63nm,19.0s,baz=312,slow=35							
PETK	Petropavlovsk-	41.35	301	LR		LR	06 23 18.0	
	comp=Z,30nm,19.8s,baz=81,slow=34							
NRIK	Noril'sk	55.50	344	LR		LR	06 34 18.5	
	comp=Z,36nm,21.0s,baz=110,slow=37							
H11N2	WAKE ISLAND Hy 57.27	260		T		T	07 11 55.4	
	baz=40,slow=76,SNR=2312							
H11N3	WAKE ISLAND Hy 57.27	260		T		T	07 11 55.8	
	baz=40,slow=76,SNR=1911							
H11N1	WAKE ISLAND Hy 57.28	260		T		T	07 11 56.7	
	baz=40,slow=76,SNR=1899							
ARCES	ARCESS Array B	57.48	9	LR		LR	06 36 32.9	
	comp=Z,30nm,18.1s,baz=322,slow=38							
H11S1	WAKE ISLAND Hy 58.32	259		T		T	07 13 13.7	
	baz=40,slow=76,SNR=293							
H11S2	WAKE ISLAND Hy 58.33	259		T		T	07 13 14.7	
	baz=40,slow=76,SNR=200							
H11S3	WAKE ISLAND Hy 58.34	259		T		T	07 13 15.3	
	baz=40,slow=76,SNR=158							
SJG	San Juan	60.83	98	LR		LR	06 35 13.7	
	comp=Z,36nm,21.7s,baz=262,slow=35							
NOA	NORSAR Array B	63.31	19	P		P	06 10 26.6	+4.8
	1.6nm,0.9s,baz=334,slow=6.8,SNR=3.7							
KSRS	Korea Array	67.22	302	LR			06 39 14.5	
	comp=Z,14nm,20.1s,baz=20,slow=35							
OBN	Obninsk	72.66	7	LR		LR	06 43 55.1	
	comp=Z,29nm,20.7s,baz=82,slow=36							
GERES	GERESS Array B	75.13	23	P		P	06 11 38.5	+3.3
	0.3nm,0.2s,baz=316,slow=5.6,SNR=4.1							
MKAR	Makanchi Array	77.27	337	P		P	06 11 48.1	+0.8
	0.2nm,0.4s,baz=42,slow=6.2,SNR=3.4							
MKAR				LR		LR	06 51 16.1	
	comp=Z,32nm,18.5s,baz=9.5,slow=40							
KBZ	Khabaz	84.39	4	LR		LR	06 51 36.4	
	comp=Z,34nm,21.8s,baz=30,slow=37							
CMAR	Chiang Mai Arr	97.15	312	LR		LR	07 01 54.6	
	comp=Z,11nm,18.6s,baz=210,slow=38							
BOSA	Boshof	150.84	45	PKPbc		PKPab	06 19 48.4	-4.5
	2.3nm,0.9s,baz=357,slow=5.8,SNR=3.8							

IDC 16 06:08:09.2±1.6, 11°.52S×165°.56E, h0km, mb3.9/4, mb1 4.1/5, mb1mx3.7/30, mbtmp3.9/5, ML3.7/1, MS3.0/2, Ms1 3.0/2, ms1mx2.6/30, Error ellipse: s-maj=51.0km s-min=32.8km az=112.0, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
HNR	Honiara	5.89	290	LR	LR	06 11 49.1	
	comp=Z,117nm,18.2s,baz=180,slow=37						
DZM	Mont Dzumac	10.53	175	Pn	Pn	06 10 42.2	+0.7
	0.6nm,0.3s,baz=112,slow=19,SNR=4.7						
PMG	Port Moresby	18.21	275	LR	LR	06 18 18.3	
	comp=Z,47nm,21.9s,baz=136,slow=33						
WRA	Warramunga Arr	31.15	251	P	P	06 14 29.4	-0.6
	1.2nm,0.9s,baz=80,slow=9.3,SNR=7.8						
SONM	Songino Array	78.94	324	P	P	06 20 16.0	+1.2
	0.2nm,0.3s,baz=129,slow=11,SNR=3.8						
ILAR	Eielson Array	84.02	19	P	P	06 20 40.6	-0.6
	0.2nm,0.6s,baz=229,slow=6.5,SNR=4.2						
MKAR	Makanchi Array	93.74	317	P	P	06 21 28.0	-0.1
	0.4nm,0.6s,baz=94,slow=5.9,SNR=5.4						

MEX 16 06:25:40.3±0.3, 15°.57N×97°.13W, h5km, MD3.6, Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
HUIG	Huatulco	1.00	79	eP	Pg	06 25 57.1	-2.4
HUIG				eS	Sg	06 26 10.2	-2.3
VHO	Vista Hermosa	1.54	14	eP	Pn	06 26 04.5	-4.2
VHO				eS	Sn	06 26 24.1	-5.0
PCIG		3.77	87	eP	Pn	06 26 36.6	-2.5
PCIG				eS	Sn	06 27 20.3	-3.6

ISCJB 16 06:28:34.7±0.6, 13°.21N±0°.08×89°.23W±0°.05, h70km±5km, mb3.7/3, Error ellipse: s-maj=15.0km s-min=3.7km az=31.4
CASC 16 06:28:36.1±3.5, 13°.22N×89°.19W, h55km±22km, MD4.0, ML4.2
IDC 16 06:28:38.0±6.8, 13°.31N×89°.08W, h95km±39km, mb3.2/4, mb1 3.6/6, mb1mx3.3/44, mbtmp3.7/6, MS2.9/3, Ms1 3.0/3, ms1mx2.7/14, Error ellipse: s-maj=69.0km s-min=48.6km az=155.0

ISC 16 06:28:35.0±1.1, 13°.22N±0°.09×89°.24W±0°.06, h63km±8km, n36, σ1°.15/57, mb3.9/3, 3C-12D, El Salvador

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AIES	Las Flores	0.30	37	⇓iP	Pn	06 28 45.2	-0.2
AIES				eS	Sn	06 28 52.4	-0.5
AIES				AML	AML	06 28 52.8	
	comp=Z,10μm,0.2s						
LFRS	El Faro	0.44	23	⇓iP	Pn	06 28 47.0	+0.3
COLS	Colinas	0.45	352	eP	Pn	06 28 47.3	+0.4
COLS				eS	Sn	06 28 55.4	-0.1
SNET	Serv Nac Est T	0.47	1	eP	Pn	06 28 47.3	+0.3
SNET				⇓eP	Pn	06 28 47.3	+0.3
SNET				eP	Pn	06 28 47.3	+0.3
SNET				eS	Sn	06 28 56.3	+0.6
SNET				eS	Sn	06 28 56.4	+0.7
SNET				AML	AML	06 28 57.5	
	comp=Z,12μm,0.4s						
SNET				AML	AML	06 28 57.5	
	comp=Z,13μm,0.3s						
BOQS	Boqueron	0.52	355	eP	Pn	06 28 48.2	+0.6
BOQS				⇑iP	Pn	06 28 48.2	+0.6
BOQS				eS	Sn	06 28 58.7	+1.9
LFU	La Fuente	0.54	13	⇓iP	Pn	06 28 48.6	+0.9
LFU				eS	Sn	06 28 57.4	+0.4
LBRS	Las Brisas	0.55	20	⇓iP	Pn	06 28 48.7	+0.9
SNVI	San Vicente	0.55	45	⇓eP	Pn	06 28 48.1	+0.3
SNVI				iP	Pn	06 28 48.2	+0.3
SNVI				eS	Sn	06 28 57.6	+0.2
SNVI				eS	Sn	06 28 57.9	+0.5
SBLS	San Blas	0.72	329	⇓eP	Pn	06 28 50.5	+0.6
SBLS				eP	Pn	06 28 50.6	+0.6
SNJE	San Jose	0.74	331	⇓eP	Pn	06 28 50.7	+0.6
MONT	Ecomontaæa	0.75	328	⇓eP	Pn	06 28 50.8	+0.5
RTR	El Retiro	0.78	330	eP	Pn	06 28 51.6	+0.9
PACA	Pacayal	0.92	74	⇓iP	Pn	06 28 52.9	+0.6
LCY	Lacayo	0.94	77	⇓eP	Pn	06 28 53.2	+0.6
LCY				eS	Sn	06 29 06.3	+0.9
VSM	San Miguel	0.96	77	⇓eP	Pn	06 28 53.4	+0.5
CUS1	Cusmapa	0.98	315	eP	Pn	06 28 53.3	+0.4
CUS1				eS	Sn	06 29 06.8	+0.6
RBDL	Robledal	0.99	334	⇓iP	Pn	06 28 54.2	+0.9
MRL	Marmol	1.89	347	⇑eP	Pn	06 29 07.0	+1.7
CRIN	San Cristobal	2.19	103	eP	Pn	06 29 10.3	+1.1
CRIN				eS	Sn	06 29 36.0	+0.7
CNGN	Cerro Negro	2.58	106	eP	Pn	06 29 14.4	-0.1
CNGN				eS	Sn	06 29 44.1	-0.5
MOMN	Momotombo	2.75	107	eP	Pn	06 29 16.8	0.0
MOMN				eS	Sn	06 29 50.3	+1.4
COPN	Copaltepe	2.78	111	eP	Pn	06 29 17.0	-0.2
COPN				eP	Pn	06 29 17.0	-0.2
COPN				eS	Sn	06 29 47.6	-2.0
ESTN	Estel	2.80	92	eP	Pn	06 29 18.0	+0.5
APYN	Apoyeque	2.98	109	eP	Pn	06 29 20.9	+0.9
APYN				eS	Sn	06 29 56.2	+1.6
JCR	Jicaral	5.25	129	eP	Pn	06 30 00.6	+10
CGA2	Cerro Gallo 2	5.65	124	eP	Pn	06 29 58.9	+2.3
CGA2				eS	Sn	06 30 59.4	-0.9
URSC	Urasca	6.32	122	eP	Pn	06 30 08.4	+2.6
URSC				eS	Sn	06 31 20.1	+3.4
CMIG	Matias Romero	6.67	306	P	Pn	06 30 12.9	+2.4
	comp=Z,1.0nm,0.3s,baz=132,slow=10,SNR=11						
CMIG				S	Sn	06 31 25.8	+0.6
	comp=Z,1.9nm,0.3s,baz=282,slow=17,SNR=5.7						
TEIG	Tepich	7.03	7	P	Pn	06 30 17.8	+2.4
	comp=Z,2.7nm,0.3s,baz=269,slow=24,SNR=45						
TXAR	Lajitas Array	20.89	322	P	Pn	06 33 14.7	-0.8
	comp=Z,0.7nm,0.5s,baz=142,slow=11,SNR=12						
TXAR				LR	LR	06 41 57.2	
	comp=Z,27nm,18.6s,baz=0.0,slow=38						
TKL	Tuckaleechee C	22.88	12	LR	LR	06 41 53.5	
	comp=Z,31nm,21.3s,baz=260,slow=35						
PDAR	Pinedale Array	34.29	333	P	P	06 35 15.4	-0.2
	comp=Z,0.2nm,0.6s,baz=94,slow=8.2,SNR=3.0						
PDAR				PcP	PcP	06 37 49.5	-1.3
	comp=Z,0.2nm,0.5s,baz=127,slow=6.0,SNR=3.2						
LPAZ	La Paz	35.98	144	LR	LR	06 49 11.4	
	comp=Z,25nm,18.1s,baz=325,slow=34						
YKA	Yellowknife Ar	52.43	345	P	P	06 37 39.9	-1.0
	comp=Z,0.5nm,0.4s,baz=142,slow=7.7,SNR=22						
INK	Inuvik	61.96	343	P	P	06 38 46.5	-1.6
	comp=Z,1.1nm,0.7s,baz=139,slow=7.7,SNR=7.7						
WRA	Warramunga Arr	137.80	255	PKP	PKPdf	06 47 54.3	+1.0
	comp=Z,0.3nm,0.5s,baz=88,slow=2.3,SNR=3.2						

IDC 16 06:34:00.4±1.5, 52°.59N×170°.41W, h0km, mb3.5/6, mb1 3.8/7, mb1mx3.5/47, mbtmp3.5/7, ML3.4/1, MS2.9/1, Ms1 2.9/1, ms1mx2.3/34, Error ellipse: s-maj=41.8km s-min=30.8km az=142.0
NEIC 16 06:34:07.3, 52°.42N×170°.02W, h28km, ML3.6(AEIC), After AEIC.

ISC 16 06:34:07.7±0.9, 52°.5N±0°.2×170°.10W±0°.08, h44km, n31, σ1°.95/31, mb3.4/6, Fox Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
NIKH	Nikolski High	0.89	59	P	Pn	06 34 22.9	-0.9
NIKH				S	Sn	06 34 35.0	-0.5
OKAK	Okmok	1.50	44	P	Pn	06 34 31.8	-0.3
OKTU	Okmok Mt. Tuli	1.52	54	P	Pn	06 34 33.5	+1.1
OKER	Okmok East Rim	1.55	52	P	Pn	06 34 34.5	+1.6
MSOM	Makushin Julie	2.30	54	P	Pn	06 34 44.4	+1.3
MGOD	Makushin Gods	2.33	55	P	Pn	06 34 44.9	+1.4
MCIR	Makushin Cirqu	2.40	52	P	Pn	06 34 46.3	+1.7
KOSE	Korovin Southe	2.42	267	P	Pn	06 34 46.3	+1.5
MSW	Makushin Switc	2.44	54	P	Pn	06 34 46.8	+1.8
MSW				S	Sn	06 35 15.4	+1.9
KOFP	Korovin Flat P	2.46	266	P	Pn	06 34 46.6	+1.2
KOKL	Mount Kliuchef	2.52	267	P	Pn	06 34 47.7	+1.5
MTBL	Makushin Table	2.52	53	P	Pn	06 34 47.8	+1.7
UNV	Unalaska Valle	2.54	57	P	Pn	06 34 47.3	+0.9
UNV				S	Sn	06 35 17.4	+1.4
KOWE	Korovin West	2.54	268	P	Pn	06 34 48.0	+1.5
AKRB	Akutan Reef Bi	2.91	55	P	Pn	06 34 53.6	+2.2
AKRB				S	Sn	06 35 30.5	+5.4
AKGG	Akutan Green G	2.98	54	P	Pn	06 34 54.8	+2.3
AKUT	Akutan	3.06	56	P	Pn	06 34 56.2	+2.7
GSTD	Great Sitkin T	3.74	265	P	Pn	06 35 04.6	+1.7
ADAG	Mount Adagdak	4.03	265	P	Pn	06 35 09.5	+2.6
FALS	False Pass	4.61	57	P	Pn	06 35 17.5	+2.7
KDAK	Kodiak Island	11.31	55	Pn	Pn	06 36 58.8	+12
	0.3nm,0.3s,baz=156,slow=20,SNR=5.4						
ILAR	Eielson Array	17.08	35	P	Pn	06 38 00.9	-2.1
	0.1nm,0.3s,baz=228,slow=13,SNR=3.0						
INK	Inuvik	23.47	34	P	P	06 39 11.4	-1.4
	0.7nm,0.5s,baz=206,slow=4.6,SNR=3.6						
INK				LR	LR	06 49 44.8	
	comp=Z,29nm,20.0s,baz=123,slow=40						
YKA	Yellowknife Ar	30.48	49	P	P	06 40 15.5	-0.4
	0.1nm,0.5s,baz=273,slow=7.8,SNR=5.4						
H11S1	WAKE ISLAND Hy 38.49	217		T	T	07 22 20.5	
	baz=22,slow=76,SNR=17						
H11S2	WAKE ISLAND Hy 38.50	217		T	T	07 22 18.9	
	baz=22,slow=76,SNR=21						
H11S3	WAKE ISLAND Hy 38.51	217		T	T	07 22 17.5	
	baz=22,slow=76,SNR=19						
PDAR	Pinedale Array	40.81	79	P	P	06 41 45.4	+0.4
	0.3nm,0.5s,baz=292,slow=3.8,SNR=5.8						
TXAR	Lajitas Array	53.19	88	P	P	06 43 21.2	-0.2
	0.3nm,0.6s,baz=308,slow=4.6,SNR=4.1						
HFS	Hagfors	67.66	358	P	P	06 44 58.0	-1.5
	0.4nm,0.3s,baz=24,slow=3.9,SNR=4.1						
ASAR	Alice Springs	90.15	229	P	P	06 47 01.8	-1.2
	0.6nm,0.7s,baz=34,slow=5.0,SNR=4.2						

MEX 16 06:36:51.2±0.6, 18°.47N×103°.36W, h50km±8km, MD3.7, Near coast of Michoacan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MMIG	Aquila	0.18	177	eP	Pn	06 36 57.7	-1.7
MMIG				eS	Sn	06 37 03.7	-1.5
R15V		0.92	320	eP	Pn	06 37 06.5	-1.4
R15V				eS	Sn	06 37 18.2	-1.8
EZ5V		1.03	347	eP	Pn	06 37 08.1	-1.5
EZ5V				eS	Sn	06 37 20.7	-2.5
ZIIG	Zihuatanejo	1.99	115	eP	Pn	06 37 21.4	-1.1
ZIIG				eS	Sn	06 37 45.0	-1.3

MEX 16 06:38:45.8±0.6, 16°.20N×97°.69W, h31km±7km, MD3.8, Oaxaca

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PNIG	Pinotepa	0.46	294	iP	Pb	06 38 53.9	-1.8
PNIG				eS	Sb	06 39 00.8	-1.6
VHO	Vista Hermosa	1.26	47	eP	Pn	06 39 05.3	-2.2
VHO				eS	Sn	06 39 20.9	-2.6
HUIG	Huatulco	1.58	106	eP	Pn	06 39 10.8	-0.9
HUIG				eS	Sn	06 39 28.4	-2.8

IDC 16 06:49:57.6±0.8, 72°.68N×120°.72E, h0km, mb3.8/10, mb1 4.0/12, mb1mx3.7/35, mbtmp3.8/12, ML3.5/1, MS3.0/4, Ms1 3.1/4, ms1mx2.6/35, Error ellipse: s-maj=23.7km s-min=14.6km az=167.0
YARS 16 06:49:58.3±1.2, 73°.58N±0°.04×124°.0E±0°.1, h10km
MOS 16 06:49:58.3±2.0, 72°.81N×120°.40E, h9km, mb4.0/12, Error ellipse: s-maj=30.8km s-min=16.4km az=89.1
NEIC 16 06:49:59.6±0.6, 72°.78N×120°.69E, h10km, mb4.1/2, Error ellipse: s-maj=16.6km s-min=12.0km az=170.0

ISC 16 06:49:59.0±0.6, 72°.49N±0°.08×120°.81E±0°.05, h10km, n39, σ2°.39/35, mb3.9/16, MS3.0/3, 3C-2D, Northern and central Siberia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TIXI	Tiksi	2.63	105	Pn	Pn	06 50 42.3	+0.8
	22nm,0.3s,baz=309,slow=10,SNR=106						
TIXI				Sn	Sn	06 51 15.6	+2.2
	66nm,0.3s,baz=275,slow=12,SNR=12						
TIXI	Tiksi	2.63	105	diP	Pn	06 50 42.1	+0.6
TIXI	Tiksi	2.63	105	eP	Pn	06 50 42.2	+0.7
TIXI				eS	Sn	06 51 14.1	+0.7
BTGS	Batagay	6.77	129	eP	Pn	06 51 40.7	+2.5
BTGS				eS	Sn	06 52 55.9	+0.8
BTGS				eS	Sg	06 53 32.3	-3.6
DEPR	Deputatskiy	6.96	107	eP	Pb	06 51 55.1	-4.8
DEPR				eS	Sn	06 52 45.2	-15
DEPR				eS	Sb	06 53 19.4	-3.5
MOMR	Moma	9.86	117	eS	Sn	06 54 00.0	-11
MOMR				eS		06 54 55.6	
YAK	Yakutsk	11.04	158	Sn	Sn	06 54 38.2	-1.6
	0.0nm,0.3s,baz=217,slow=20,SNR=5.6						
YAK				LR	LR	06 57 14.6	
	comp=Z,49nm,18.2s,baz=346,slow=39						
YAK	Yakutsk	11.04	158	eS		06 56 03.0	
NRIK	Noril'sk	11.22	270	Pn	Pn	06 52 37.5	-1.7
	0.4nm,0.3s,baz=49,slow=14,SNR=4.1						
NRIK				Sn	Sn	06 54 39.6	-4.8
	0.4nm,0.3s,baz=29,slow=19,SNR=3.1						
NRIK				Lg	Lg	06 55 51.4	
	0.4nm,0.3s,baz=180,slow=20,SNR=2.8						
TBGR	Tabaga	11.23	158	eS		06 56 08.5	
OLMR	Olekminsk	12.17	181	eS		06 56 50.1	
ALDR	Aldan	14.07	170	eS	S	06 57 43.1	+88
CGD	Chagda	14.35	159	eS	S	06 57 45.4	+84
BOD	Bodaibo	14.99	194	eP	Pn	06 53 27.1	-3.5
BOD				pmax	pmax		
	comp=Z,4.0nm,1.0s						
SEY	Seymchan	15.10	113	⇑eP	P	06 53 37.3	0.0
BILL	Bilibino	15.65	84	⇑eP	P	06 53 42.1	-1.2
BILL				pmax	pmax		
	comp=Z,6.0nm,1.2s						
BILL				MLR	MLR		
	comp=Z,54nm,16.0s						
CLNS	Chul'man	15.81	172	eS	S	06 58 37.5	
ZALV	Zalesovo Beam	24.00	239	P	P	06 55 15.3	+1.9
	comp=Z,2.1nm,0.7s,baz=16,slow=7.3,SNR=4.5						
ZALV	Zalesovo Beam	24.00	239	eP	P	06 55 16.3	+2.9
ZALV				pmax	pmax		
	comp=Z,2.0nm,0.7s						
PETK	Petropavlovsk-	25.00	121	P	P	06 55 26.4	+4.0
	comp=Z,3.9nm,0.9s,baz=29,slow=3.4,SNR=3.6						
SONM	Songino Array	25.60	203	P	P	06 55 32.6	+4.4
	comp=Z,0.5nm,0.5s,baz=1.9,slow=8.8,SNR=3.7						
KURK	Kurchatov	28.56	243	P	P	06 55 57.1	+2.5
KURK				pmax	pmax		
	comp=Z,1.0nm,0.8s						
KURK	Kurchatov	28.56	243	eP	P	06 55 55.7	+1.2
	comp=Z,5.2nm,0.6s						
KURBB	Kurchatov Arra	28.67	243	P	P	06 55 57.1	+1.6
	comp=Z,1.3nm,0.8s,baz=26,slow=8.4,SNR=6.2						
ARU	Arti	29.45	271	⇑eP	P	06 56 06.3	+3.9
ARU				pmax	pmax		
	comp=Z,5.0nm,1.5s						
ILAR	Eielson Array	31.14	56	P	P	06 56 18.1	+0.8
	comp=Z,0.3nm,0.6s,baz=322,slow=8.6,SNR=5.4						
ILAR				LR	LR	07 10 01.2	
	comp=Z,31nm,20.7s,baz=342,slow=39						
ILAR	Eielson Array	31.14	56	eP	P	06 56 21.6	+4.4
MKAR	Makanchi Array	31.22	236	P	P	06 56 19.6	+1.5
	comp=Z,1.0nm,0.9s,baz=38,slow=6.1,SNR=8.5						
MKAR				LR	LR	07 10 47.6	
	comp=Z,19nm,18.3s,baz=15,slow=40						
MKAR	Makanchi Array	31.22	236	iP	P	06 56 20.0	+1.9
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.9s						
KLMR	Klimovskoe	31.40	292	eP	P	06 56 18.4	-1.1
KLMR				pmax	pmax		
	comp=Z,5.0nm,0.9s						
FINES	FINESS Array B	34.52	302	P	P	06 56 45.9	-0.9
	comp=Z,1.6nm,0.9s,baz=49,slow=9.4,SNR=3.0						
AAK	Ala-Archa	37.11	242	⇓eP	P	06 57 11.9	+2.5
AAK				pmax	pmax		
	comp=Z,2.0nm,0.7s						
AAK	Ala-Archa	37.11	242	P	P	06 57 11.8	+2.4
	comp=Z,1.3nm,0.8s						
NOA	NORSAR Array B	38.44	312	P	P	06 57 19.2	-1.1
	comp=Z,0.5nm,0.7s,baz=28,slow=8.4,SNR=2.4				

0.0nm,0.3s,baz=49,slow=20,SNR=3.5
YAK Yakutsk 11.13 158 *e*S 07 08 41.3
NRIK Noril'sk 11.20 269 Sn **Sn 07 07 26.4 -2.0**
0.8nm,0.3s,baz=231,slow=18,SNR=6.5
NRIK Lg Lg 07 08 39.1
0.3nm,0.3s,baz=155,slow=19,SNR=4.6
TBGR Tabaga 11.33 158 *e*S 07 08 47.1
BILL Bilibino 15.66 84⇑ *e*P **Pn 07 06 24.4 +0.5**
BILL pmax pmax
comp=Z,4.0nm,1.6s
BILL MLR MLR
comp=Z,101nm,22.0s
MA2 Magadan 17.54 122⇓ *e*P **P 07 06 51.6 +2.7**
ZALV Zalesovo Beam 24.03 238 P **P 07 08 00.4 +2.2**
comp=Z,0.5nm,0.4s,baz=30,slow=8.9,SNR=3.1
SONM Songino Array 25.68 203 P **P 07 08 16.5 +3.1**
comp=Z,0.7nm,0.7s,baz=3.5,slow=11,SNR=4.5
SONM Songino Array 25.68 203 *e*P P 07 08 18.7 +5.3
SONM pmax pmax
comp=Z,1.0nm,0.6s
KURK Kurchatov 28.59 243 P **P 07 08 42.2 +2.9**
KURK pmax pmax
comp=Z,1.0nm,0.8s
KURBB Kurchatov Arra 28.70 243 P **P 07 08 42.1 +1.9**
comp=Z,0.8nm,0.8s,baz=26,slow=8.5,SNR=7.3
ILAR Eielson Array 31.11 56 P **P 07 08 59.7 -1.8**
comp=Z,0.3nm,0.8s,baz=320,slow=9.7,SNR=5.6
ILAR LR LR 07 24 06.3
comp=Z,12nm,20.2s,baz=234,slow=42
ILAR Eielson Array 31.11 56 *e*P **P 07 09 02.1 +0.6**
MKAR Makanchi Array 31.25 235 P **P 07 09 03.6 +0.7**
comp=Z,0.6nm,0.9s,baz=38,slow=6.1,SNR=4.5
MKAR Makanchi Array 31.25 235 *e*P **P 07 09 05.1 +2.1**
YKA Yellowknife Ar 40.09 36 P **P 07 10 17.8 -0.6**
comp=Z,0.2nm,0.6s,baz=343,slow=9.0,SNR=3.5
TXAR Lajitas Array 73.92 39 P **P 07 14 16.5 -2.1**
comp=Z,0.7nm,0.8s,baz=318,slow=1.7,SNR=3.8
TORD Torodi Ar. Bea 85.80 301 P **P 07 15 21.9 -1.0**
comp=Z,0.7nm,1.0s,baz=18,slow=4.6,SNR=3.7
WRA Warramunga Arr 92.75 167 P **P 07 15 55.2 -0.2**
comp=Z,0.4nm,0.3s,baz=358,slow=5.8,SNR=18

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*IDC **16** 07:14:31.7±3.0, 37.°18N×142.°69E, h0km, mb3.4/2, mb1 3.5/3, mb1mx3.3/36, mbtmp3.3/3, ML3.1/1, Error ellipse: s-maj=74.6km s-min=35.9km az=55.0*
*JMA **16** 07:14:36.7±0.2, 37.°04N×142.°29E, h30km±5km, M3.3*
*ISCJB **16** 07:14:38.0±1.7, 37.°01N±0.°07×142.°3E±0.°1, h49km±16km, mb3.4/2, Error ellipse: s-maj=17.3km s-min=12.4km az=8.0*
ISC 16 07:14:38.9±1.7, 37.°05N±0.°10×142.°3E±0.°3, h39km±11km, n10, σ1s07/17, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.15**	**286**	P	**Pn**	**07 14 57.3**	**-1.1**
JFK				S	**Sn**	**07 15 12.8**	**-0.1**
ONAJ	**Iwakimizuishiy**	**1.17**	**273**	P	**Pn**	**07 14 57.8**	**-0.9**
ONAJ				*e*S	**Sn**	**07 15 13.5**	**0.0**
JMM	**Marumori**	**1.42**	**305**	P	**Pn**	**07 15 00.5**	**-1.6**
JMM				*e*S	**Sn**	**07 15 19.3**	**-0.3**
JHO	**Hitachi**	**1.43**	**253**	P	**Pn**	**07 15 01.5**	**-0.7**
JHO				S	**Sn**	**07 15 19.8**	**+0.1**
JFT	**Otama**	**1.60**	**287**	P	**Pn**	**07 15 04.9**	**+0.3**
JFT				*e*S	**Sn**	**07 15 24.9**	**+0.8**
JOU	**Okura**	**1.82**	**317**	P	**Pn**	**07 15 08.2**	**+0.5**
JOU				*e*S	**Sn**	**07 15 30.8**	**+1.3**
MJAR	**Matsushiro Arr**	**3.29**	**262**	Pn	**Pn**	**07 15 29.2**	**+1.4**
	1.6nm,0.3s,baz=90,slow=15,SNR=10						
MAT	**Matsushiro**	**3.29**	**262**	P	**Pn**	**07 15 29.8**	**+1.9**
MAT				*e*S	**Sn**	**07 16 04.7**	**-1.1**
MKAR	**Makanchi Array**	**44.68**	**302**	P	**P**	**07 22 47.9**	**+0.1**
	0.2nm,0.5s,baz=52,slow=9.5,SNR=2.8						
WRA	**Warramunga Arr**	**57.18**	**189**	P	**P**	**07 24 21.6**	**-0.2**
	0.2nm,0.3s,baz=6.0,slow=7.2,SNR=7.1						

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*NIED **16** 07:17:00, 37.°40N×142.°60E, h5km, Mw4.2 Best double couple: M=2.49000×10^15 NP1:φ=67.00000°, δ=47.00000°, λ=-43.00000°. NP2:φ=189.00000°, δ=60.00000°, λ=-129.00000°.*
*ISCJB **16** 07:17:02.8±1.5, 37.°36N±0.°04×142.°68E±0.°04, h2km±10km, mb4.0/17, MS3.5/10, Error ellipse: s-maj=6.3km s-min=5.1km az=171.4*
*JMA **16** 07:17:02.8±0.4, 37.°36N×142.°61E, h0km, M4.6*
*IDC **16** 07:17:04.2±0.7, 37.°30N×142.°65E, h0km, mb3.9/14, mb1 4.1/17, mb1mx4.0/38, mbtmp3.9/17, ML3.7/3, MS3.3/16, Ms1 3.4/16, ms1mx3.2/37, Error ellipse: s-maj=19.5km s-min=15.9km az=121.0*
*NEIC **16** 07:17:09.5±0.5, 37.°38N×142.°66E, h35km, mb4.7/3, Error ellipse: s-maj=11.6km s-min=8.6km az=134.0*
ISC 16 07:17:05.0±2.8, 37.°41N±0.°05×142.°53E±0.°07, h2km±16km, n52, σ1s67/53, mb3.9/17, MS3.5/10, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.32**	**269**	P	**Pn**	**07 17 28.8**	**-1.6**
JFK				*e*S	**Sb**	**07 17 47.4**	**-0.4**
JIO	**Ouri**	**1.40**	**319**	P	**Pb**	**07 17 31.4**	**-0.4**
JIO				*e*S	**Sg**	**07 17 50.0**	**0.0**
ONAJ	**Iwakimizuishiy**	**1.41**	**258**	P	**Pn**	**07 17 31.3**	**-0.5**
ONAJ				S	**Sg**	**07 17 51.5**	**+1.1**
JMM	**Marumori**	**1.45**	**289**	P	**Pn**	**07 17 30.7**	**-1.5**
JMM				S	**Sg**	**07 17 52.5**	**+0.9**
JFT	**Otama**	**1.75**	**274**	P	**Pn**	**07 17 35.5**	**-0.8**
JFT				*e*S	**Sg**	**07 18 00.9**	**-0.2**
JOU	**Okura**	**1.76**	**303**	P	**Pn**	**07 17 35.7**	**-0.7**
JOU				*e*S	**Sg**	**07 18 01.0**	**-0.5**
JMK	**Ichinoseki**	**1.85**	**327**	P	**Pb**	**07 17 38.5**	**-1.1**
JMK				S	**Sb**	**07 18 02.6**	**-0.6**
JOM	**Ohasama**	**2.28**	**335**	P	**Pn**	**07 17 44.3**	**+0.7**
JOM				*e*S	**Sb**	**07 18 12.9**	**-2.5**
JYK	**Kaneyama**	**2.28**	**312**	P	**Pn**	**07 17 43.4**	**-0.2**
JYK				*e*S	**Sb**	**07 18 14.5**	**-0.9**
JAG	**Ashikaga**	**2.65**	**249**	P	**Pn**	**07 17 48.5**	**-0.2**
JAG				*e*S	**Sn**	**07 18 22.1**	**+0.6**
MJAR	**Matsushiro Arr**	**3.56**	**257**	Pn	**Pn**	**07 18 02.9**	**+1.5**
	2.8nm,0.3s,baz=33,slow=32,SNR=10						
MJAR				LR	LR	07 19 21.9	
	comp=Z,101nm,18.7s,baz=95,slow=38						
MAJO	**Matsushiro**	**3.57**	**257**	*e*Pn	**Pn**	**07 18 04.6**	**+3.3**
MAJO				*e*Sn	**Sb**	**07 18 48.4**	**-4.2**
MAT	**Matsushiro**	**3.57**	**257**	P	**Pn**	**07 18 03.9**	**+2.6**
MAT				S	**Sb**	**07 18 50.5**	**-2.0**
ERM	**Erimo**	**4.63**	**6**	*e*Pn	**Pn**	**07 18 14.8**	**-1.0**
ERM				*e*Sn	**Sn**	**07 19 15.2**	**+5.1**
JHJ	**Hachijo jima 2**	**4.83**	**208**	LR	LR	07 19 40.0	
	comp=Z,65nm,18.2s,baz=282,slow=33						
ASAJ	**Asahikawa**	**6.70**	**0**	Pn	**Pn**	**07 18 43.5**	**-0.9**
	2.4nm,0.3s,baz=240,slow=8.2,SNR=5.0						
ASAJ				Sn	**Sn**	**07 19 58.2**	**-3.1**
	1.3nm,0.3s,baz=131,slow=20,SNR=2.7						
ASAJ				LR	LR	07 21 36.0	
	comp=Z,140nm,18.3s,baz=237,slow=40						
ASAJ	**Asahikawa**	**6.70**	**0**	*e*Pn	**Pn**	**07 18 44.0**	**-0.4**
ASAJ				*e*Sn	**Sn**	**07 20 00.0**	**-1.2**
JNU	**Nakatsue**	**10.44**	**249**	LR	LR	07 24 06.4	
	comp=Z,159nm,18.8s,baz=94,slow=40						
USRK	**Ussuriysk Ar.**	**10.47**	**314**	Pn	Pn	07 19 41.5	+5.4
	0.4nm,0.3s,baz=119,slow=14,SNR=11						
USRK				LR	LR	07 23 14.5	
	comp=Z,228nm,18.3s,baz=126,slow=35						
KSRS	**Korea Array**	**11.62**	**275**	Pn	**Pn**	**07 19 54.6**	**+2.9**
	0.3nm,0.3s,baz=102,slow=12,SNR=2.9						
KSRS				LR	LR	07 23 51.3	
	comp=Z,145nm,18.1s,baz=65,slow=35						
KSAR	**Wonju Array Be**	**11.65**	**275**	Pn	**Pn**	**07 19 54.6**	**+2.5**
SEY	**Seymchan**	**26.26**	**10**	P	**P**	**07 22 42.6**	**+1.4**
	2.9nm,0.5s,baz=192,slow=10,SNR=7.5						
H11N2	**WAKE ISLAND Hy**	**27.59**	**123**	T	T	07 51 34.9	
	baz=315,slow=75,SNR=205						
H11N1	**WAKE ISLAND Hy**	**27.60**	**123**	T	T	07 51 35.4	
	baz=315,slow=75,SNR=166						
H11N3	**WAKE ISLAND Hy**	**27.61**	**123**	T	T	07 51 33.9	
	baz=315,slow=75,SNR=202						
SONM	**Songino Array**	**28.32**	**303**	P	**P**	**07 23 00.5**	**+0.4**
	1.0nm,0.7s,baz=97,slow=8.3,SNR=6.0						
SONM				LR	LR	07 34 29.3	
	comp=Z,44nm,18.2s,baz=86,slow=37						
H11S1	**WAKE ISLAND Hy**	**28.33**	**125**	T	T	07 52 32.8	
	baz=317,slow=76,SNR=140						
H11S3	**WAKE ISLAND Hy**	**28.33**	**125**	T	T	07 52 31.6	
	baz=317,slow=76,SNR=131						
H11S2	**WAKE ISLAND Hy**	**28.35**	**125**	T	T	07 52 31.8	
	baz=317,slow=76,SNR=105						
ZALV	**Zalesovo Beam**	**42.32**	**312**	P	**P**	**07 24 59.9**	**-0.1**
	0.8nm,0.4s,baz=101,slow=7.7,SNR=3.6						
ZALV				LR	LR	07 42 46.9	
	comp=Z,45nm,18.6s,baz=68,slow=36						
CMAR	**Chiang Mai Arr**	**42.45**	**256**	LR	LR	07 44 16.1	
	comp=Z,32nm,18.1s,baz=190,slow=38						
NRIK	**Noril'sk**	**43.30**	**335**	LR	LR	07 45 14.1	
	comp=Z,59nm,19.1s,baz=114,slow=39						
MKAR	**Makanchi Array**	**44.67**	**302**	P	**P**	**07 25 19.9**	**+0.8**
	0.6nm,0.6s,baz=89,slow=9.8,SNR=5.9						
MKAR				LR	LR	07 43 43.4	
	comp=Z,40nm,20.0s,baz=96,slow=36						
KURK	**Kurchatov**	**46.40**	**308**	*e*P	**P**	**07 25 35.2**	**+2.6**
	7.1nm,0.6s						
ILAR	**Eielson Array**	**48.70**	**33**	P	**P**	**07 25 49.8**	**-0.6**
	1.1nm,0.6s,baz=258,slow=5.9,SNR=18						
TKM2	**Tokmak 2**	**50.23**	**298**	*e*P	**P**	**07 26 03.5**	**+0.9**
INK	**Inuvik**	**53.65**	**27**	P	**P**	**07 26 26.5**	**-0.9**
	1.1nm,0.8s,baz=300,slow=4.2,SNR=6.6						
FITZ	**Fitzroy Crossi**	**57.46**	**199**	*e*P	**P**	**07 26 55.1**	**-0.3**
	8.1nm,1.1s						
WRAB	**Tennant Creek**	**57.55**	**189**	*e*P	**P**	**07 26 54.3**	**-1.7**
	4.7nm,0.8s						
WRA	**Warramunga Arr**	**57.56**	**189**	P	**P**	**07 26 54.5**	**-1.6**
	3.4nm,0.7s,baz=8.9,slow=7.3,SNR=18						
ASAR	**Alice Springs**	**61.29**	**189**	P	**P**	**07 27 20.4**	**-1.4**
	1.6nm,0.7s,baz=17,slow=9.2,SNR=16						
YKA	**Yellowknife Ar**	**63.04**	**31**	P	**P**	**07 27 32.9**	**-0.2**
	0.5nm,0.7s,baz=301,slow=6.0,SNR=5.0						
ARCES	**ARCESS Array B**	**63.96**	**340**	LR	LR	08 00 02.3	
	comp=Z,37nm,18.3s,baz=26,slow=40						
FINES	**FINESS Array B**	**68.89**	**333**	P	**P**	**07 28 10.7**	**-0.1**
	2.3nm,0.9s,baz=36,slow=10,SNR=5.0						
FINES				LR	LR	08 02 03.4	
	comp=Z,60nm,18.2s,baz=323,slow=39						
NVAR	**Mina Array Bea**	**74.05**	**54**	P	**P**	**07 28 44.0**	**+1.3**
	0.5nm,0.6s,baz=286,slow=7.6,SNR=4.3						
NB2	**NORSAR Subarra**	**74.18**	**338**	P	**P**	**07 28 43.4**	**+0.6**
	comp=Z,0.7nm,0.7s,baz=38,slow=5.9						
NOA	**NORSAR Array B**	**74.18**	**338**	P	**P**	**07 28 43.6**	**+0.8**
	comp=Z,0.9nm,0.8s,baz=39,slow=5.8,SNR=4.3						
NOA				LR	LR	08 07 26.6	
	comp=Z,20nm,18.1s,baz=30,slow=41						
AKASG	**Malin Array Be**	**74.54**	**323**	LR	LR	08 02 12.5	
	comp=Z,31nm,21.9s,baz=80,slow=36						
PDAR	**Pinedale Array**	**76.77**	**46**	P	**P**	**07 28 57.6**	**-0.6**
	comp=Z,0.5nm,0.5s,baz=252,slow=2.1,SNR=7.0						
PPT	**Papeete**	**84.01**	**117**	LR	LR	08 02 47.1	
	comp=Z,42nm,20.9s,baz=326,slow=33						
TXAR	**Lajitas Array**	**89.19**	**53**	P	**P**	**07 30 02.0**	**-0.5**
	comp=Z,0.3nm,0.5s,baz=310,slow=3.0,SNR=5.4						
LPAZ	**La Paz**	**145.74**	**60**	PKPbc	**PKPdf**	**07 36 45.5**	**-0.8**
	comp=Z,1.4nm,0.9s,baz=24,slow=4.9,SNR=5.0						

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*IDC **16** 07:21:11.6±0.8, 34.°74S×110.°99W, h0km, mb4.0/5, mb1 4.2/5, mb1mx4.0/24, mbtmp3.9/5, MS3.9/13, Ms1 3.9/13, ms1mx3.8/23, Error ellipse: s-maj=32.1km s-min=26.9km az=152.0*
*GCMT **16** 07:21:12.0±0.3, 35.°40S×111.°06W, h20km±1km, MW4.9/71, Moment Tensor Solution. s26,c32; s71,c93; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr=0.61±.13; Mθθ=0.40±.12; Mφφ=1.01±.10; Mrθ=0.47±.21; Mrφ=-2.31±.08; Mθφ=0.28±.18; Best double couple: M=2.50300×10^16 NP1:φs=100.00000°, δ=78.00000°, λ=-166.00000°. NP2: φs=7.00000°, δ=77.00000°, λ=-12.00000°. Principal axes: T 2.7220, Plg1.0000°, Azm233.0000°; N -0.4360, Plg72.0000°, Azm141.0000°; P -2.2840, Plg18.0000°, Azm324.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
ISC 16 07:21:13.4±0.9, 34.°9S±0.°2×110.°9W±0.°2, h10km, n29, σ1s81/11, mb4.0/5, MS3.9/13, Southern East Pacific Rise

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RKT	**Rikitea**	**24.08**	**293**	*e*LQ	LQ	07 31 13.9	
	323nm,29.5s						
RKT				*e*LR	LR	07 32 18.1	
	170nm,27.0s						
RKT	**Rikitea**	**24.08**	**293**	*e*T	T	07 50 56.4	
	2.5nm,0.3s						
PLCA	**Paso Flores**	**32.16**	**113**	P	**P**	**07 27 44.3**	**+3.0**
	2.2nm,1.1s,baz=322,slow=12,SNR=2.7						
PLCA				LR	LR	07 36 51.0	
	comp=Z,112nm,20.4s,baz=278,slow=29						
TBI	**Tubuai**	**35.43**	**279**	*e*LR	LR	07 37 30.0	
	278nm,25.0s						
TBI	**Tubuai**	**35.43**	**279**	*e*T	T	08 05 08.3	
	9.8nm,0.3s						
TAOE	**Nuku Hiva Isla**	**37.31**	**307**	*e*LQ	LQ	07 36 51.8	
	282nm,32.0s						
TAOE				*e*LR	LR	07 38 26.8	
	378nm,25.8s						
TIAR	**Tiarei**	**38.32**	**287**	*e*T	T	08 08 44.6	
	3.8nm,0.2s						
PPT2	**Papeete2**	**38.49**	**287**	*e*LR	LR	07 38 45.6	
	80nm,24.2s						
LPAZ	**La Paz**	**42.41**	**75**	P	**P**	**07 29 07.1**	**-2.0**
	1.6nm,0.6s,baz=209,slow=9.8,SNR=2.7						
LPAZ				LR	LR	07 43 35.3	
	comp=Z,103nm,19.2s,baz=236,slow=32						
CPUP	**Villa Florida**	**46.40**	**95**	LR	LR	07 46 24.6	
	comp=Z,126nm,18.3s,baz=250,slow=32						
ROSC	**El Rosal**	**52.42**	**48**	LR	LR	07 48 37.4	
	comp=Z,95nm,21.3s,baz=237,slow=31						
VNDA	**Vanda**	**55.60**	**195**	P	**P**	**07 30 49.6**	**+0.9**
	0.2nm,0.3s,baz=36,slow=3.2,SNR=2.7						
VNDA				LR	LR	07 50 18.6	
	comp=Z,92nm,18.1s,baz=104,slow=31						
AFI	**Afiamalu**	**58.39**	**275**	LR	LR	07 49 37.9	
	comp=Z,94nm,20.4s,baz=126,slow=29						
VNA3	**Neumayer Olymp**	**60.80**	**159**	P	**P**	**07 31 24.1**	**-1.1**
VNA2	**Neumayer--Watz**	**61.61**	**159**	P	**P**	**07 31 28.7**	**-1.9**
	baz=259,slow=5.1						
SNAA	**Sanae**	**62.59**	**160**	P	**P**	**07 31 34.9**	**-2.4**
NVAR	**Mina Array Bea**	**73.33**	**354**	LR	LR	07 58 57.8	
	comp=Z,78nm,18.3s,baz=196,slow=31						
PDAR	**Pinedale Array**	**77.34**	**1**	P	**P**	**07 33 08.8**	**+0.6**
	1.4nm,0.9s,baz=172,slow=5.4,SNR=8.5						
PDAR				LR	LR	08 01 58.2	
	comp=Z,53nm,18.9s,baz=214,slow=32						
HNR	**Honiara**	**84.01**	**263**	LR	LR	08 02 44.8	
	comp=Z,98nm,21.7s,baz=146,slow=30						
STKA	**Stephens Creek**	**84.89**	**135**	LR	LR	08 06 14.5	
	comp=Z,121nm,18.1s,baz=152,slow=32						
ASAR	**Alice Springs**	**95.36**	**236**	P	**P**	**07 34 38.3**	**0.0**
	0.7nm,0.8s,baz=124,slow=4.6,SNR=5.2						
ASAR				LR	LR	08 11 57.4	
	comp=Z,79nm,20.1s,baz=118,slow=32						
SCHQ	**Schefferville**	**97.08**	**24**	LR	LR	08 13 58.8	
	comp=Z,58nm,21.5s,baz=276,slow=33						
WRA	**Warramunga Arr**	**97.51**	**239**	LR	LR	08 15 49.8	
	comp=Z,133nm,18.0s,baz=170,slow=34						
H01W1	**Cape Leeuwin H**	**98.78**	**216**	T	T	09 25 21.1	
	baz=144						
H01W2	**Cape Leeuwin H**	**98.79**	**216**	T	T	09 25 19.8	
	baz=144						
H01W3	**Cape Leeuwin H**	**98.80**	**216**	T	T	09 25 22.4	
	baz=144						
CMAR	**Chiang Mai Arr**	**148.87**	**246**	PKPbc	**PKPbc**	**07 41 01.6**	**-0.3**
	2.1nm,0.7s,baz=173,slow=2.0,SNR=11						
SONM	**Songino Array**	**149.52**	**306**	PKPbc	**PKPdf**	**07 40 59.4**	**+1.2**
	1.1nm,0.3s,baz=46,slow=4.2,SNR=6.2						
BRTR	**Keskin Array B**	**151.50**	**70**	PKPbc	**PKPbc**	**07 41 07.2**	**-0.6**
	0.2nm,0.3s,baz=222,slow=1.9,SNR=2.1						

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*ISCJB **16** 07:25:46.7±2.1, 29.°38S±0.°04×71.°6W±0.°1, h4km±10km, Error ellipse: s-maj=17.0km s-min=6.1km az=11.7*
*SJA **16** 07:25:47.0±1.1, 29.°43S×71.°55W, h14km±16km, ML3.7, MW3.7*
*GUC **16** 07:25:47.8±0.7, 29.°44S×71.°49W, h41km±6km, ML3.8*
ISC 16 07:25:46.5±2.4, 29.°38S±0.°04×71.°6W±0.°1, h6km±16km, n14, σ1s64/18, 3C-1D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LSCH	**La Serena**	**0.61**	**150**	*i*P	**Pb**	**07 25 58.6**	**-0.9**
LSCH				*i* S	**Sb**	**07 26 06.7**	**-1.6**
LCO	**Las Campanas**	**0.86**	**65**	*e*P	**Pb**	**07 26 03.9**	**-0.1**
LCO				*e*S	**Sb**	**07 26 15.9**	**0.0**
LCO				IAML		07 26 16.4	
	comp=Z,4μm,0.3s						
LCO	**Las Campanas**	**0.86**	**65⇑**	*i*P	**Pg**	**07 26 03.8**	**+0.7**
LCO				*i* S	**Sb**	**07 26 15.6**	**-0.3**
LCO				IAML		07 26 16.2	
	comp=N,8μm,0.2s						
TLL	**Tololo Astrono**	**1.04**	**139⇑**	*i*P	**Pg**	**07 26 05.8**	**-0.7**
TLL				*i* S	**Sb**	**07 26 19.4**	**-1.7**
TLL				IAML		07 26 20.8	
	comp=N,4μm,0.4s						
VACH	**Vallenar**	**1.09**	**43⇓**	*i*P	**Pg**	**07 26 07.5**	**+0.2**
VACH				*i* S	**Sg**	**07 26 22.1**	**+0.7**
CPCH	**Copiapo**	**2.29**	**29**	*e*P	**Pn**	**07 26 24.0**	**-0.9**
AGUA	**GUANDACOL**	**2.71**	**93**	*e*P	**Pb**	**07 26 33.1**	**-2.3**
AMOG	**MOGNA**	**3.10**	**121**	*e*P	**Pn**	**07 26 37.8**	**+1.7**
RTLS	**Leoncito**	**3.12**	**141**	*e*P	**Pn**	**07 26 38.8**	**+2.3**
AUSP	**Uspallata**	**3.41**	**147**	*e*P	**Pn**	**07 26 42.3**	**+1.8**
AVFE	**Valle Fertil**	**3.81**	**111**	IAML		07 27 51.0	
	comp=Z,121nm,0.6s						
ASAL	**Salagasta**	**3.98**	**144**	*e*P	**Pn**	**07 26 49.9**	**+1.8**
ARCO	**CERRO ARCO**	**4.14**	**147**	*e*P	**Pn**	**07 26 52.6**	**+2.2**
ARCO				IAML		07 28 03.1	
	comp=Z,83nm,0.9s						
AAGR	**Agrelo**	**4.39**	**148**	*e*P	**Pn**	**07 26 55.8**	**+2.0**

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*ISCJB **16** 07:28:47.4±1.2, 6.°77N±0.°07×73.°07W±0.°09, h156km±8km, Error ellipse: s-maj=15.9km s-min=9.9km az=32.8*
*FUNV **16** 07:28:48.8, 6.°85N×73.°18W, h160km, MW2.6*
*RSNC **16** 07:28:49.8±0.8, 6.°77N×73.°09W, h142km±5km, ML2.5*
ISC 16 07:28:45.5±2.3, 6.°78N±0.°07×73.°17W±0.°10, h169km±13km, n13, σ1s71/22, 2C, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BARC	**Barichara**	**0.18**	**185**	*i* P	**Pn**	**07 29 09.0**	**+0.6**
BARC				*i*		07 29 09.1	
	comp=Z,85nm,0.2s						
BARC				*e*S	**Sn**	**07 29 23.7**	**-2.2**
BRRC	**Barranca, Sant**	**0.63**	**301⇑**	*i*P	**Pn**	**07 29 10.8**	**+1.2**
BRRC				*e*S	**Sn**	**07 29 27.7**	**-0.4**
BRRC				*i*		07 29 28.5	
	comp=Z,83nm,0.1s						
PAMC	**Pamplona, Colo**	**0.73**	**40**	*e*P	**Pn**	**07 29 11.9**	**+1.2**
PAMC				*e*S	**Sn**	**07 29 28.4**	**-1.8**
RUSC	**La Rusia**	**0.88**	**175**	*e*P	**Pn**	**07 29 12.9**	**+1.1**
RUSC				*e*S	**Sn**	**07 29 30.4**	**-1.6**
RUSC				*i*		07 29 32.7	
	comp=Z,38nm,0.3s						
GRMC	**Gramalote, San**	**1.00**	**21**	*e*P	**Pn**	**07 29 14.9**	**+2.7**
GRMC				*e*S	**Sn**	**07 29 34.1**	**+1.2**
GRMC				*i*		07 29 37.2	
	comp=Z,54nm,0.4s						
CBRI	**Barrientos, No**	**1.00**	**21**	*e*P	**Pn**	**07 29 13.5**	**+1.2**
CBRI				*e*S	**Sn**	**07 29 31.6**	**-1.4**
CAPV	**Capacho**	**1.37**	**38⇑**	*e*P	**Pn**	**07 29 16.9**	**+1.3**
CAPV				*e*S	**Sn**	**07 29 38.0**	**-0.7**
OCAC	**Ocana**	**1.46**	**354**	*e*P	**Pn**	**07 29 17.6**	**+1.3**
OCAC				*i*		07 29 44.7	
	comp=Z,35nm,0.2s						
SOCV	**Socops**	**2.74**	**57**	*e*P	**Pn**	**07 29 31.6**	**+1.2**
SOCV				*e*S	**Sn**	**07 30 03.5**	**-1.8**
VIRV	**Villa del Rosa**	**3.78**	**11**	*e*P	**Pn**	**07 29 43.8**	**+0.3**
VIRV				*e*S	**Sn**	**07 30 25.2**	**-3.4**
CURV	**Curarigua**	**4.51**	**44**	*e*P	**Pn**	**07 29 54.6**	**+1.6**
BAUV	**El Baul**	**5.51**	**67**	*e*P	**Pn**	**07 30 07.0**	**+1.1**
MONV	**Montecano**	**6.03**	**31**	*e*P	**Pn**	**07 30 13.9**	**+1.1**

JMA 16 07:29:02.9±0.4, 36.°24N×143.°54E, h48km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**2.42**	**280**	P	Pn	07 29 41.1	+1.1
JHO				*e*S	Sn	07 30 09.0	+0.5
JMM	**Marumori**	**2.73**	**307**	P	Pn	07 29 44.1	-0.1
JMM				S	Sn	07 30 17.5	+1.5
JFT	**Otama**	**2.87**	**297**	P	Pn	07 29 48.8	+2.7
JFT				S	Sn	07 30 22.1	+2.7
JOU	**Okura**	**3.12**	**314**	*e*S	Sn	07 30 27.3	+1.6
JMK	**Ichinoseki**	**3.27**	**326**	P	Pn	07 29 53.2	+1.5
JMK				S	Sn	07 30 30.6	+1.2
JAG	**Ashikaga**	**3.31**	**274**	P	Pn	07 29 53.5	+1.4
JAG				S	Sn	07 30 30.3	+0.1
JOD2	**Odawara 2**	**3.75**	**256**	P	Pn	07 29 59.8	+1.6
JOD2				S	Sn	07 30 42.4	+1.3
JRY	**Ryogami san**	**3.76**	**268**	P	Pn	07 29 59.9	+1.5
JRY				*e*S	Sn	07 30 42.1	+0.7

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*NIED **16** 07:31:00, 38.°40N×142.°20E, h65km, Mw3.8 Best double couple: M=5.09000×10^14 NP1:φ=59.00000°, δ=30.00000°, λ=-37.00000°. NP2:φs=182.00000°, δ=72.00000°, λ=-115.00000°.*
*ISCJB **16** 07:31:46.5±1.5, 38.°39N±0.°06×142.°24E±0.°09, h27km±9km, mb3.6/3, Error ellipse: s-maj=12.5km s-min=9.3km az=9.5*
*IDC **16** 07:31:47.4±2.7, 37.°85N×142.°85E, h0km, mb3.5/3, mb1 3.6/4, mb1mx3.4/27, mbtmp3.4/4, ML2.9/1, Error ellipse: s-maj=71.3km s-min=31.7km az=56.0*
*JMA **16** 07:31:48.0±0.1, 38.°45N×142.°18E, h30km±2km, M3.8*
JMA Felt I J1.
**ISC 16 07:31:44.9±2.2, 38.°40N±0.°05×142.°21E±0.°09, h8km±13km, n11, σ0s65/16, mb3.7/3, Near east co

1μm,0.5s
SHO A A 08 06 51.8
450nm,0.5s
NEM2 Nemuro 2 0.89 282 P **Pn 08 06 44.6 -0.2**
NEM2 eS **Sn 08 06 57.1 +0.6**
YUK Yuzh-Kuril'sk 1.15 318 ⇑iP **Pn 08 06 48.5 +0.1**
YUK AMB AMB 08 06 49.3
20nm,0.2s
YUK AMB AMB 08 06 49.3
40nm,0.2s
YUK *i* S **Sn 08 07 03.0 +0.1**
YUK A A 08 07 07.1
130nm,0.3s
YUK A A 08 07 07.1
430nm,0.3s
JAK Akkeshi 1.65 264 P **Pn 08 06 55.4 +0.1**
JAK *e*S **Sn 08 07 15.3 +0.1**
JNK Nakash 1.67 285 P **Pn 08 06 55.3 -0.2**
JNK *e*S **Sn 08 07 14.9 -0.7**
KUR Kuril'sk 2.15 18 *e*S **Sn 08 07 27.8 +0.3**
KUR A A 08 07 29.3
150nm,0.2s
YSS Yuzh-Sakhalins 4.79 323 *e*P **Pn 08 07 38.8 +0.4**
YSS AMB AMB 08 07 39.0
10.0nm,0.3s

IDC 16 08:11:13.5±46.0, 14°.86S×169°.35W, h0km, mb4.0/3, mb1 4.2/3, mb1mx3.7/48, mbtmp4.0/3, Error ellipse: s-maj=922.9km s-min=203.2km az=79.0, Samoa Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**47.70**	**240**	P	P	08 19 52.5	+0.3
	0.6nm,0.4s,baz=97,slow=12,SNR=3.3						
WRA	**Warramunga Arr**	**53.78**	**256**	P	P	08 20 37.7	-0.5
	0.5nm,0.5s,baz=95,slow=6.7,SNR=13						
ASAR	**Alice Springs**	**54.00**	**251**	P	P	08 20 39.9	+0.1
	4.5nm,0.6s,baz=89,slow=8.1,SNR=75						

*IDC **16** 08:14:54.8±0.9, 37°.42N×20°.45E, h0km, mb3.7/11, mb1 3.8/13, mb1mx3.6/52, mbtmp3.7/13, ML3.2/2, MS2.6/4, Ms1 2.7/4, ms1mx2.2/55, Error ellipse: s-maj=20.9km s-min=16.2km az=117.0*
*ATH **16** 08:14:55.5, 37°.36N×20°.18E, h13km, ML3.4/14, Error ellipse: s-maj=1.6km s-min=0.7km az=54.0*
*CSEM **16** 08:14:55.8±0.3, 37°.35N×20°.18E, h2km, ML3.6, Error ellipse: s-maj=5.9km s-min=3.5km az=51.0*
*THE **16** 08:14:57.6, 37°.41N×20°.30E, h0km±1km, ML3.6/13, Error ellipse: s-maj=1.3km s-min=0.5km az=194.0*
ISC 16 08:14:54.9±1.4, 37°.33N±0°.03×20°.18E±0°.03, h0km±9km, n192, σ1§15/245, mb3.9/11, MS2.8/3, 4C-6D, Ionian Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZKS	**Zakynthos**	**0.60**	**53**	P	**Pg**	**08 15 06.9**	**+0.4**
ZKS				S	**Sg**	**08 15 14.3**	**-0.1**
ZKS	**Zakynthos**	**0.60**	**53**	P	**Pg**	**08 15 07.4**	**+0.9**
ZKS				S	**Sg**	**08 15 14.3**	**-0.1**
ZKS	**Zakynthos**	**0.60**	**53**	P	**Pg**	**08 15 07.4**	**+0.9**
ZKS				S	**Sg**	**08 15 13.8**	**-0.6**
ZKS				AML	AML	08 15 22.5	
	comp=N,35262μm,0.5s						
ZKS				AML	AML	08 15 22.6	
	comp=E,39165μm,0.5s						
VLS	**Valsamata**	**0.91**	**21**	P	**Pg**	**08 15 12.1**	**-0.2**
VLS				S	**Sg**	**08 15 24.7**	**+0.7**
VLS	**Valsamata**	**0.91**	**21**	P	**Pg**	**08 15 12.1**	**-0.2**
VLS				S	**Sg**	**08 15 24.7**	**+0.7**
KFL	**Anninata**	**0.92**	**32**	P	**Pg**	**08 15 12.5**	**0.0**
KFL				S	**Sg**	**08 15 24.1**	**-0.2**
KFL	**Anninata**	**0.92**	**32**	P	**Pg**	**08 15 12.5**	**0.0**
KFL				S	**Sg**	**08 15 24.1**	**-0.2**
KFL	**Anninata**	**0.92**	**32**	P	**Pg**	**08 15 12.2**	**-0.2**
KFL				S	**Sg**	**08 15 24.0**	**-0.4**
AMT	**Artemida-Makis**	**1.23**	**80**	P	**Pg**	**08 15 19.0**	**+0.4**
AMT				S	**Sb**	**08 15 35.8**	**+0.2**
AMT	**Artemida-Makis**	**1.23**	**80**	P	**Pg**	**08 15 19.0**	**+0.4**
AMT				S	**Sb**	**08 15 35.8**	**+0.2**
AMT	**Artemida-Makis**	**1.23**	**80**	P	**Pb**	**08 15 19.3**	**+0.2**
AMT				S	**Sb**	**08 15 36.1**	**+0.5**
AMT				AML	AML	08 15 49.7	
	comp=N,3574μm,0.5s						
AMT				AML	AML	08 15 54.1	
	comp=E,3596μm,0.7s						
RLS	**Riolos of Patr**	**1.25**	**54**	P	**Pg**	**08 15 18.5**	**-0.4**
RLS				S	**Sg**	**08 15 35.5**	**+0.3**
RLS	**Riolos of Patr**	**1.25**	**54**	P	**Pg**	**08 15 18.5**	**-0.4**
RLS				S	**Sg**	**08 15 35.5**	**+0.3**
RLS	**Riolos of Patr**	**1.25**	**54**	S	**Sb**	**08 15 36.5**	**+0.4**
RLS				AML	AML	08 15 42.8	
	comp=E,3299μm,0.9s						
RLS				AML	AML	08 15 43.6	
	comp=N,3052μm,0.5s						
AXS	**Araxos**	**1.28**	**47**	P	**Pg**	**08 15 19.2**	**-0.3**
AXS				S	**Sg**	**08 15 36.5**	**+0.3**
AXS	**Araxos**	**1.28**	**47**	P	**Pg**	**08 15 19.3**	**-0.3**
AXS				S	**Sg**	**08 15 36.5**	**+0.3**
AXS	**Araxos**	**1.28**	**47**	P	**Pg**	**08 15 19.3**	**-0.3**
AXS				S	**Sb**	**08 15 36.6**	**-0.3**
PYL	**PYLOS**	**1.32**	**109**	P	**Pg**	**08 15 20.7**	**+0.4**
PYL				S	**Sn**	**08 15 39.5**	**+0.6**
PYL	**PYLOS**	**1.32**	**109**	P	**Pg**	**08 15 20.7**	**+0.4**
PYL				S	**Sg**	**08 15 37.4**	**0.0**
PYL	**PYLOS**	**1.32**	**109**	P	**Pg**	**08 15 20.1**	**-0.2**
PYL				S	**Sg**	**08 15 37.4**	**0.0**
PYL				AML	AML	08 15 44.8	
	comp=N,2131μm,0.6s						
PYL				AML	AML	08 15 49.9	
	comp=E,1369μm,0.5s						
DRO	**Drossia**	**1.36**	**62**	P	**Pg**	**08 15 21.1**	**0.0**
DRO				S	**Sb**	**08 15 39.1**	**-0.2**
DRO	**Drossia**	**1.36**	**62**	P	**Pg**	**08 15 21.3**	**+0.2**
DRO				S	**Sb**	**08 15 39.1**	**-0.2**
DRO	**Drossia**	**1.36**	**62**	P	**Pg**	**08 15 21.3**	**+0.2**
DRO				S	**Sb**	**08 15 39.4**	**+0.1**
DRO				AML	AML	08 15 50.0	
	comp=N,3877μm,0.7s						
DRO				AML	AML	08 15 53.2	
	comp=E,4156μm,0.7s						
ITM	**Ithomi**	**1.40**	**96**	P	**Pg**	**08 15 21.8**	**0.0**
ITM				S	**Sn**	**08 15 41.1**	**+0.2**
ITM	**Ithomi**	**1.40**	**96**	P	**Pg**	**08 15 21.8**	**0.0**
ITM				S	**Sn**	**08 15 41.1**	**+0.2**
ITM	**Ithomi**	**1.40**	**96**	P	**Pg**	**08 15 22.1**	**+0.3**
ITM				S	**Sn**	**08 15 41.4**	**+0.5**
ITM				AML	AML	08 15 53.4	
	comp=E,1170μm,1.1s						
ITM				AML	AML	08 15 59.3	
	comp=N,1139μm,0.8s						
PDO	**Prodromos**	**1.49**	**32**	P	**Pn**	**08 15 23.7**	**+0.7**
PDO				S	**Sg**	**08 15 43.0**	**+0.1**
PDO	**Prodromos**	**1.49**	**32**	P	**Pn**	**08 15 23.7**	**+0.7**
PDO				S	**Sg**	**08 15 43.0**	**+0.1**
PDO	**Prodromos**	**1.49**	**32**	P	**Pb**	**08 15 24.5**	**+1.0**
LKD2	**Lefkada island**	**1.50**	**14**	P	**Pn**	**08 15 23.4**	**+0.2**
LKD2	**Lefkada island**	**1.50**	**14**	P	**Pn**	**08 15 23.4**	**+0.2**
LKD2				S	**Sg**	**08 15 43.5**	**+0.2**
LKD2	**Lefkada island**	**1.50**	**14**	P	**Pn**	**08 15 23.3**	**+0.1**
LKD2				S	**Sg**	**08 15 43.5**	**+0.2**
LKD2				AML	AML	08 15 49.6	
	comp=N,3296μm,0.6s						
LKD2				AML	AML	08 15 58.5	
	comp=E,3763μm,0.6s						
UPR	**University Cam**	**1.59**	**53**	P	**Pg**	**08 15 26.6**	**+1.2**
UPR	**University Cam**	**1.59**	**53**	P	**Pg**	**08 15 26.6**	**+1.2**
PVO	**Paravola**	**1.67**	**39**	P	**Pn**	**08 15 25.4**	**0.0**
PVO				S	**Sn**	**08 15 46.9**	**-0.6**
PVO	**Paravola**	**1.67**	**39**	P	**Pb**	**08 15 26.6**	**+0.1**
PVO				S	**Sn**	**08 15 46.9**	**-0.6**
PVO	**Paravola**	**1.67**	**39**	P	**Pb**	**08 15 26.6**	**+0.1**
LAKA	**Lakka**	**1.69**	**57**	P	**Pn**	**08 15 25.2**	**-0.5**
LAKA	**Lakka**	**1.69**	**57**	P	**Pn**	**08 15 25.2**	**-0.5**
LAKA	**Lakka**	**1.69**	**57**	P	**Pg**	**08 15 28.0**	**+0.7**
KLV	**Kalavryta, Ach**	**1.72**	**65**	P	**Pn**	**08 15 26.9**	**+0.8**
KLV	**Kalavryta, Ach**	**1.72**	**65**	P	**Pn**	**08 15 26.9**	**+0.8**
KLV	**Kalavryta, Ach**	**1.72**	**65**	P	**Pn**	**08 15 26.6**	**+0.5**
EFP	**Efpalio**	**1.75**	**51**	P	**Pg**	**08 15 28.7**	**+0.2**
EFP	**Efpalio**	**1.75**	**51**	P	**Pg**	**08 15 28.7**	**+0.2**
VLX	**Vlachokerasia**	**1.75**	**88**	P	**Pb**	**08 15 28.5**	**+0.5**
VLX				S	**Sb**	**08 15 50.9**	**+0.3**
VLX	**Vlachokerasia**	**1.75**	**88**	P	**Pb**	**08 15 28.5**	**+0.5**
VLX				S	**Sb**	**08 15 50.9**	**+0.3**
VLX				AML	AML	08 16 09.6	
	comp=E,1275μm,0.6s						
VLX				AML	AML	08 16 10.1	
	comp=N,1696μm,0.7s						
DSL	**Palaion Diasel**	**1.94**	**22**	P	**Pn**	**08 15 29.6**	**+0.5**
DSL				S	**Sn**	**08 15 55.0**	**+0.8**
DSL	**Palaion Diasel**	**1.94**	**22**	P	**Pn**	**08 15 30.3**	**+1.2**
DSL				S	**Sn**	**08 15 55.0**	**+0.8**
DSL	**Palaion Diasel**	**1.94**	**22**	P	**Pn**	**08 15 30.3**	**+1.2**
DSL				S	**Sb**	**08 15 56.4**	**+0.5**
DSL				AML	AML	08 16 13.8	
	comp=N,2202μm,0.9s						
DSL				AML	AML	08 16 16.4	
	comp=E,2382μm,1.3s						
EVR	**Evrytania**	**2.04**	**39**	P	**Pn**	**08 15 31.4**	**+0.8**
EVR	**Evrytania**	**2.04**	**39**	P	**Pn**	**08 15 31.4**	**+0.8**
EVR	**Evrytania**	**2.04**	**39**	P	**Pb**	**08 15 32.5**	**-0.4**
DSF	**Desfina**	**2.15**	**59**	P	**Pn**	**08 15 33.2**	**+1.2**
DSF				S	**Sn**	**08 15 59.6**	**+0.2**
DSF	**Desfina**	**2.15**	**59**	P	**Pn**	**08 15 33.2**	**+1.2**
DSF				S	**Sn**	**08 15 59.6**	**+0.2**
DSF	**Desfina**	**2.15**	**59**	P	**Pn**	**08 15 33.2**	**+1.2**
IGT	**Igoumenitsa**	**2.20**	**3**	P	**Pn**	**08 15 33.9**	**+1.2**
IGT				S	**Sn**	**08 16 02.0**	**+1.3**
IGT	**Igoumenitsa**	**2.20**	**3**	P	**Pn**	**08 15 34.2**	**+1.5**
IGT				S	**Sn**	**08 16 02.0**	**+1.3**
IGT	**Igoumenitsa**	**2.20**	**3**	P	**Pn**	**08 15 34.2**	**+1.5**
SGD	**Sagiada**	**2.28**	**1**	P	**Pn**	**08 15 35.2**	**+1.4**
SGD				S	**Sn**	**08 16 03.6**	**+1.1**
SGD	**Sagiada**	**2.28**	**1**	P	**Pn**	**08 15 35.2**	**+1.4**
SGD				S	**Sn**	**08 16 03.6**	**+1.1**
SGD	**Sagiada**	**2.28**	**1**	P	**Pn**	**08 15 33.8**	**0.0**
VLI	**Veliai**	**2.29**	**105**	P	**Pn**	**08 15 35.6**	**+1.7**
VLI	**Veliai**	**2.29**	**105**	P	**Pn**	**08 15 34.8**	**+0.9**
VLI				S	**Sb**	**08 16 06.6**	**+0.7**
VLI	**Veliai**	**2.29**	**105**	P	**Pn**	**08 15 34.8**	**+0.9**
VLI				S	**Sb**	**08 16 06.6**	**+0.7**
VLI				AML	AML	08 16 34.4	
	comp=N,492μm,0.8s						
VLI				AML	AML	08 16 37.5	
	comp=E,559μm,1.5s						
LTK	**Loutraki**	**2.32**	**72**	P	**Pn**	**08 15 34.8**	**+0.5**
LTK	**Loutraki**	**2.32**	**72**	P	**Pn**	**08 15 34.8**	**+0.5**
LTK				S	**Sn**	**08 16 03.9**	**+0.4**
LTK	**Loutraki**	**2.32**	**72**	P	**Pn**	**08 15 33.8**	**-0.6**
LTK				S	**Sn**	**08 16 03.9**	**+0.4**
JAN	**Janina**	**2.38**	**13**	P	**Pn**	**08 15 36.3**	**+1.1**
AGG	**Agios Georgios**	**2.39**	**44**	P	**Pn**	**08 15 35.9**	**+0.5**
AGG	**Agios Georgios**	**2.39**	**44**	P	**Pn**	**08 15 35.9**	**+0.5**
AGG	**Agios Georgios**	**2.39**	**44**	P	**Pn**	**08 15 35.4**	**+0.1**
KEK	**Kerkira**	**2.40**	**353**	P	**Pn**	**08 15 36.3**	**+0.9**
KEK				S	**Sn**	**08 16 07.6**	**+2.1**
KEK	**Kerkira**	**2.40**	**353**	P	**Pn**	**08 15 36.3**	**+0.9**
KEK				S	**Sn**	**08 16 07.6**	**+2.1**
DID	**Didima**	**2.44**	**85**	P	**Pn**	**08 15 36.9**	**+0.9**
DID	**Didima**	**2.44**	**85**	P	**Pn**	**08 15 36.9**	**+0.9**
DID				S	**Sn**	**08 16 07.9**	**+1.3**
DID	**Didima**	**2.44**	**85**	P	**Pn**	**08 15 36.4**	**+0.3**
DID				S	**Sn**	**08 16 07.9**	**+1.3**
DID				AML	AML	08 16 29.5	
	comp=N,802μm,0.8s						
DID				AML	AML	08 16 32.7	
	comp=E,696μm,0.9s						
KYTH	**Kithira**	**2.52**	**114**	P	**Pn**	**08 15 38.9**	**+1.8**
KYTH	**Kithira**	**2.52**	**114**	P	**Pn**	**08 15 38.9**	**+1.8**
KYTH	**Kithira**	**2.52**	**114**	P	**Pb**	**08 15 39.6**	**-1.4**
LKR	**Lokris**	**2.59**	**59**	P	**Pn**	**08 15 38.5**	**+0.5**
LKR	**Lokris**	**2.59**	**59**	P	**Pn**	**08 15 38.5**	**+0.5**
THL	**Klokotos Trika**	**2.66**	**32**	P	**Pn**	**08 15 40.0**	**+1.1**
THL	**Klokotos Trika**	**2.66**	**32**	P	**Pn**	**08 15 40.0**	**+1.1**
KPRO	**Kipourio**	**2.78**	**19**	P	**Pn**	**08 15 41.8**	**+1.1**
KPRO	**Kipourio**	**2.78**	**19**	P	**Pn**	**08 15 41.8**	**+1.1**
KPRO	**Kipourio**	**2.78**	**19**	P	**Pn**	**08 15 42.6**	**+1.9**
ANKY	**Antikythira Is**	**2.91**	**119**	P	**Pn**	**08 15 44.1**	**+1.7**
ANKY				S	**Sn**	**08 16 20.1**	**+2.1**
ANKY	**Antikythira Is**	**2.91**	**119**	P	**Pn**	**08 15 44.1**	**+1.7**
ANKY				S	**Sn**	**08 16 20.1**	**+2.1**
ANKY				AML	AML	08 16 35.2	
	comp=N,261μm,0.6s						
ANKY				AML	AML	08 16 43.9	
	comp=E,348μm,1.1s						
VLY	**Voula,Athens**	**2.92**	**79**	P	**Pn**	**08 15 44.3**	**+1.7**
VLY	**Voula,Athens**	**2.92**	**79**	P	**Pn**	**08 15 44.3**	**+1.7**
PENT	**Pentalofos**	**2.96**	**14**	P	**Pn**	**08 15 44.5**	**+1.3**
PENT	**Pentalofos**	**2.96**	**14**	P	**Pn**	**08 15 44.5**	**+1.3**
PENT	**Pentalofos**	**2.96**	**14**	P	**Pn**	**08 15 44.8**	**+1.6**
FYTO	**Fytoko, Volos**	**3.00**	**45**	P	**Pn**	**08 15 43.5**	**-0.2**
FYTO	**Fytoko, Volos**	**3.00**	**45**	P	**Pn**	**08 15 43.5**	**-0.2**
NEO	**Neokhori**	**3.10**	**50**	P	**Pn**	**08 15 46.9**	**+1.8**
NEO	**Neokhori**	**3.10**	**50**	P	**Pn**	**08 15 46.9**	**+1.8**
XOR	**Xorichti**	**3.12**	**48**	P	**Pn**	**08 15 45.2**	**-0.2**
XOR	**Xorichti**	**3.12**	**48**	P	**Pn**	**08 15 45.2**	**-0.2**
NEST	**Nestorio**	**3.15**	**12**	P	**Pn**	**08 15 47.4**	**+1.5**
NEST	**Nestorio**	**3.15**	**12**	P	**Pn**	**08 15 47.4**	**+1.5**
NEST	**Nestorio**	**3.15**	**12**	P	**Pn**	**08 15 48.3**	**+2.4**
KZN	**Kozani**	**3.22**	**22**	P	**Pn**	**08 15 47.9**	**+1.1**
KZN	**Kozani**	**3.22**	**22**	P	**Pn**	**08 15 47.9**	**+1.1**
TIP	**Timpagrande**	**3.27**	**305**	P	**Pn**	**08 15 49.6**	**+2.2**
TIP				S	**Sb**	**08 16 31.6**	**-2.5**
TIP	**Timpagrande**	**3.27**	**305**	P	**Pn**	**08 15 49.6**	**+2.2**
TIP	**Timpagrande**	**3.27**	**305**	P	**Pn**	**08 15 49.3**	**+1.9**
LIT	**Litokhoron**	**3.30**	**32**	P	**Pn**	**08 15 47.5**	**-0.4**
LIT	**Litokhoron**	**3.30**	**32**	P	**Pn**	**08 15 47.5**	**-0.4**
MHLO	**Agia Marina, M**	**3.44**	**99**	P	**Pn**	**08 15 47.7**	**-2.0**
MHLO	**Agia Marina, M**	**3.44**	**99**	P	**Pn**	**08 15 47.7**	**-2.0**
SERI	**Serifos**	**3.44**	**92**	P	**Pn**	**08 15 48.5**	**-1.3**
SERI	**Serifos**	**3.44**	**92**	P	**Pn**	**08 15 48.5**	**-1.3**
AOS	**Alonnisos**	**3.44**	**57**	P	**Pn**	**08 15 48.4**	**-1.4**
AOS	**Alonnisos**	**3.44**	**57**	P	**Pn**	**08 15 48.4**	**-1.4**
FNA	**Florina**	**3.57**	**15**	P	**Pn**	**08 15 52.5**	**+0.9**
FNA	**Florina**	**3.57**	**15**	P	**Pn**	**08 15 52.5**	**+0.9**
FNA	**Florina**	**3.57**	**15**	P	**Pn**	**08 15 52.5**	**+0.9**
IMMV	**Iera Moni Meta**	**3.59**	**120**	P	**Pn**	**08 15 52.1**	**+0.3**
IMMV				S	**Sn**	**08 16 37.5**	**+2.6**
IMMV	**Iera Moni Meta**	**3.59**	**120**	P	**Pn**	**08 15 52.1**	**+0.3**
IMMV				S	**Sn**	**08 16 37.5**	**+2.6**
IMMV				AML	AML	08 16 49.2	
	comp=N,152μm,0.5s						
IMMV				AML	AML	08 16 50.3	
	comp=E,194μm,0.6s						
VAM	**Vamos**	**3.77**	**119**	P	**Pn**	**08 15 54.2**	**-0.1**
PAIG	**Paliouri**	**3.77**	**46**	P	**Pn**	**08 15 54.2**	**-0.1**
PAIG	**Paliouri**	**3.77**	**46**	P	**Pn**	**08 15 54.2**	**-0.1**
BIA	**Bitola**	**3.79**	**13**	*i* Pn	**Pn**	**08 15 56.2**	**+1.5**
BIA	**Bitola**	**3.79**	**13**	*i* Pn	**Pn**	**08 15 56.1**	**+1.5**
OHR	**Ohrid**	**3.81**	**7**	*i* Pn	**Pn**	**08 15 56.2**	**+1.4**
OHR	**Ohrid**	**3.81**	**7**	*i* Pn	**Pn**	**08 15 56.2**	**+1.4**
PLG	**Polygyros**	**3.97**	**39**	P	**Pn**	**08 15 54.4**	**-2.6**
PLG	**Polygyros**	**3.97**	**39**	P	**Pn**	**08 15 54.4**	**-2.6**
HORT	**Hortiatis**	**3.98**	**34**	P	**Pn**	**08 15 56.7**	**-0.5**
HORT	**Hortiatis**	**3.98**	**34**	P	**Pn**	**08 15 56.7**	**-0.5**
GRG	**Griva**	**4.01**	**25**	P	**Pn**	**08 15 56.1**	**-1.5**
GRG	**Griva**	**4.01**	**25**	P	**Pn**	**08 15 56.1**	**-1.5**
GVD	**Gavdhos**	**4.02**	**127**	P	**Pn**	**08 15 57.8**	**0.0**
GVD	**Gavdhos**	**4.02**	**127**	P	**Pn**	**08 15 57.8**	**0.0**
NOCI	**Noci**	**4.22**	**326**	P	**Pn**	**08 15 59.6**	**-0.8**
NOCI	**Noci**	**4.22**	**326**	P	**Pn**	**08 15 59.6**	**-0.8**
OUR	**Ouranopolis**	**4.22**	**44**	P	**Pn**	**08 15 59.5**	**-0.9**
OUR	**Ouranopolis**	**4.22**	**44**	P	**Pn**	**08 15 59.5**	**-0.9**
SOH	**Sokhos**	**4.27**	**34**	P	**Pn**	**08 16 02.1**	**+0.9**
SOH	**Sokhos**	**4.27**	**34**	P	**Pn**	**08 16 02.1**	**+0.9**
SOH	**Sokhos**	**4.27**	**34**	P	**Pn**	**08 16 01.1**	**-0.1**
APE	**Apeiranthos**	**4.28**	**92**	P	**Pn**	**08 16 01.6**	**+0.3**
APE	**Apeiranthos**	**4.28**	**92**	P	**Pn**	**08 16 01.6**	**+0.3**
IDI	**Anoyia**	**4.32**	**117**	Pn	**Pn**	**08 16 01.9**	**0.0**
	comp=E,0.4nm,0.3s,baz=312,slow=12,SNR=3.3						
IDI				Sn	**Sn**	**08 16 48.2**	**-4.7**
	comp=E,3.1nm,0.3s,baz=313,slow=17,SNR=3.3						
IDI				LR	LR	08 17 30.5	
	comp=E,15nm,20.2s,baz=0.5,slow=37						
IDI	**Anoyia**	**4.32**	**117**	P	**Pn**	**08 16 02.4**	**+0.6**
IDI				S	**Sn**	**08 16 51.9**	**-1.0**
IDI	**Anoyia**	**4.32**	**117**	P	**Pn**	**08 16 02.4**	**+0.6**
IDI				S	**Sn**	**08 16 51.9**	**-1.0**
IDI				AML	AML	08 17 05.0	
	comp=E,69μm,0.3s						
IDI				AML	AML	08 17 07.4	
	comp=N,97μm,0.6s						
CUC	**Castrocucco**	**4.33**	**309**	P	**Pn**	**08 16 02.8**	**+0.8**
CUC	**Castrocucco**	**4.33**	**309**	P	**Pn**	**08 16 02.9**	**+0.8**
KNT	**Kendrikon**	**4.37**	**28**	P	**Pn**	**08 16 00.9**	**-1.6**
KNT	**Kendrikon**	**4.37**	**28**	P	**Pn**	**08 16 00.9**	**-1.6**
VAY	**Valandovo**	**4.39**	**24**	*i* Pn	**Pn**	**08 16 03.4**	**+0.5**
VAY	**Valandovo**	**4.39**	**24**	*i* Pn	**Pn**	**08 16 03.3**	**+0.5**
SKO	**Skopje**	**4.74**	**11**	*i* Pn	**Pn**	**08 16 08.0**	**+0.4**
SKO	**Skopje**	**4.74**	**11**	*i* Pn	**Pn**	**08 16 07.9**	**+0.4**
CHOS	**Chios island**	**4.77**	**75**	P	Pn	08 16 12.0	+3.9
CHOS	**Chios island**	**4.77**	**75**	P	Pn	08 16 12.0	+4.0
LAST	**Lasithi**	**4.80**	**115**	P	**Pn**	**08 16 09.4**	**+0.9**
LAST	**Lasithi**	**4.80**	**115**	P	**Pn**	**08 16 09.4**	**+0.9**
NVR	**Nevrokopi**	**4.92**	**34**	P	**Pn**	**08 16 11.3**	**+1.1**
ZKR	**Zakros**	**5.36**	**113**	P	**Pn**	**08 16 18.8**	**+2.7**
ZKR	**Zakros**	**5.36**	**113**	P	**Pn**	**08 16 18.8**	**+2.7**
BARS	**Barje**	**5.62**	**12**	*e*Pn	**Pn**	**08 16 18.6**	**-1.1**
BOVS	**Bovan**	**6.40**	**10**	*e*Pn	**Pn**	**08 16 29.6**	**-0.8**
BBLS	**Lazići**	**6.55**	**355**	*e*Pn	**Pn**	**08 16 32.8**	**+0.2**
DIVS	**Divibare**	**6.76**	**359**	*e*Pn	**Pn**	**08 16 34.7**	**-0.8**
TEKS	**Tekeris**	**7.23**	**356**	*e*Pn	**Pn**	**08 16 40.8**	**-1.0**
MDVR	**Moldovita**	**7.53**	**8** ⇑*i*P	**Pg**	**08 17 17.9**	**-1.3**
BLY	**Banja Luka**	**7.75**	**344** ⇑*i*P	**Pg**	**08 17 22.4**	**-0.9**
MLR	**Muntele Rosu**	**9.23**	**26** Pn	**Pn**	**08 17 10.0**	**+0.7**
	comp=N,0.1nm,0.3s,baz=248,slow=11,SNR=16						
MLR	**Muntele Rosu**	**9.23**	**26** ⇓*i*P	**Pn**	**08 17 11.5**	**+2.2**
MLR	**Muntele Rosu**	**9.23**	**26** ⇓*i*P	**Pn**	**08 17 11.5**	**+2.2**
TIRR	**Tirgusor**	**9.46**	**39** ⇑*i*P	Pn	08 17 16.1	+3.8
DOPR	**Dopca**	**9.47**	**23** ⇑*i*P	Pn	08 17 21.6	+9.1
PLOR	**Plostina**	**9.79**	**28** ⇓*i*P	**Pn**	**08 17 18.7**	**+1.7**
PLOR	**Plostina**	**9.79**	**28** ⇓*i*P	**Pn**	**08 17 18.7**	**+1.7**
VRI	**Vrincioaia**	**9.83**	**28** ⇓*i*P	**Pn**	**08 17 19.8**	**+2.3**
VRI	**Vrincioaia**	**9.83**	**28** ⇓*i*P	**Pn**	**08 17 19.8**	**+2.3**
HFS	**Hagfors**	**23.20**	**352** P	**P**	**08 20 02.0**	**-1.0**
	comp=N,2.6nm,0.7s,baz=146,slow=11,SNR=6.2						
HFS				LR	LR	08 30 45.5	
	comp=N,30nm,19.1s,baz=282,slow=41						
EKA	**Eskdalemuir Ar**	**23.97**	**326** P	**P**	**08 20 11.3**	**+0.5**
	comp=N,1.1nm,0.6s,baz=114,slow=8.3,SNR=3.6						
NB2	**NORSAR Subarra**	**24.40**	**349** P	**P**	**08 20 13.1**	**-1.6**
	comp=Z,2.1nm,1.0s,baz=156,slow=9.3						
NB2	**NORSAR Subarra**	**24.40**	**349** P	**P**	**08 20 13.1**	**-1.6**
	comp=Z,2.1nm,1.0s,SNR=7.3						
NOA	**NORSAR Array B**	**24.40**	**349** P	**P**	**08 20 14.2**	**-0.5**
	comp=Z,1.0nm,0.7s,baz=162,slow=8.9,SNR=5.0						
NOA				LR	LR	08 30 46.5	
	comp=Z,8.6nm,19.4s,baz=240,slow=39						
FINES	**FINESS Array B**	**24.42**	**7** P	**P**	**08 20 13.1**	**-1.8**
	comp=Z,2.1nm,0.6s,baz=175,slow=9.6,SNR=6.2						
TORD	**Torodi Ar. Bea**	**29.20**	**219** P	**P**	**08 21 00.3**	**+2.1**
	comp=Z,2.4nm,0.7s,baz=30,slow=9.1,SNR=22						
ARCES	**ARCESS Array B**	**32.39**	**3** P	**P**	**08 21 24.4**	**-1.5**
	comp=Z,1.4nm,0.8s,baz=200,slow=13,SNR=3.8						
DBIC	**Dimbokro**	**38.09**	**223** P	**P**	**08 22 16.9**	**+1.4**
	comp=Z,2.5nm,0.8s,baz=24,slow=12,SNR=3.9						
KURBB	**Kurchatov Arra**	**42.95**	**53** P	**P**	**08 22 53.1**	**-2.3**
	comp=Z,0.4nm,0.6s,baz=286,slow=8.7,SNR=3.4						
MKAR	**Makanchi Array**	**45.98**	**58** P	**P**	**08 23 17.6**	**-2.1**
	comp=Z,0.2nm,0.3s,baz=276,slow=7.1,SNR=2.5						
MKAR				LR	LR	08 47 13.0	
	comp=Z,38nm,20.3s,baz=38,slow=42						
ZALV	**Zalesovo Beam**	**46.46**	**47** P	**P**	08 23 20.2	-3.1	
	comp=Z,0.7nm,0.4s,baz=294,slow=7.3,SNR=2.8						
YKA	**Yellowknife Ar**	**74.09**	**340** P	**P**	**08 26 32.8**	**+0.4**
	comp=Z,0.1nm,0.7s,baz=35,slow=5.5,SNR=3.7						

*IDC **16** 08:19:52.6±0.6, 37°.03N×143°.67E, h0km, mb4.0/14, mb1 4.1/20, mb1mx4.0/54, mbtmp4.0/20, ML3.8/6, MS3.0/

ZALV	Zalesovo Beam	43.06 312	P		P	08 27 54.7	+0.6
	2.0nm,0.7s,baz=99,slow=6.3,SNR=4.0						
MKAR	Makanchi Array	45.46 302	P		P	08 28 14.6	+1.1
	1.5nm,0.5s,baz=86,slow=9.9,SNR=6.3						
KURK	Kurchatov	47.17 308	P		P	08 28 28.2	+1.5
KURBB	Kurchatov Arra	47.24 308	P		P	08 28 28.2	+0.9
	3.5nm,0.6s,baz=83,slow=7.7,SNR=36						
ILAR	Eielson Array	48.51 32	P		P	08 28 37.3	+0.4
	0.5nm,0.8s,baz=268,slow=6.9,SNR=5.9						
TKM2	Tokmak 2	51.03 299	*eP*		P	08 28 57.7	+1.0
	6.9nm,0.8s						
INK	Inuvik	53.52 27	P		P	08 29 14.0	-0.5
	1.1nm,1.0s,baz=349,slow=5.2,SNR=3.1						
WRAB	Tennant Creek	57.43 190	*eP*		P	08 29 42.0	-1.1
	7.8nm,0.7s						
WRA	Warramunga Arr	57.44 190	P		P	08 29 42.1	-1.1
	10nm,0.7s,baz=8.4,slow=7.1,SNR=102						
FITZ	Fitzroy Crossi	57.48 200	*eP*		P	08 29 43.5	0.0
	3.3nm,0.7s						
AKTO	Aktyubinsk	59.83 312	P		P	08 30 00.7	+1.1
	0.9nm,0.5s,baz=65,slow=16,SNR=3.5						
ASAR	Alice Springs	61.16 190	P		P	08 30 08.2	-0.7
	3.0nm,0.6s,baz=10,slow=9.1,SNR=41						
MBWA	Marble Bar	62.17 205	*eP*		P	08 30 17.7	+2.0
	16nm,0.1s						
YKA	Yellowknife Ar	62.87 31	P		P	08 30 20.1	+0.2
	0.2nm,0.7s,baz=300,slow=6.3,SNR=3.3						
STKA	Stephens Creek	68.69 182	P		P	08 30 57.5	-0.2
	2.0nm,0.6s,baz=358,slow=8.3,SNR=8.5						
FINES	FINESS Array B	69.48 333	P		P	08 31 03.5	+1.2
	1.7nm,0.7s,baz=50,slow=10,SNR=4.4						
FINES			LR		LR	09 04 43.1	
	comp=Z,43nm,19.5s,baz=35,slow=39						
SUMG	Summit	70.56 1	*eP*		P	08 31 12.3	+3.0
	0.6nm,0.5s						
NVAR	Mina Array Bea	73.58 54	P		P	08 31 29.0	+1.2
	0.3nm,0.5s,baz=301,slow=7.0,SNR=2.6						
NOA	NORSAR Array B	74.71 338	P		P	08 31 34.7	+1.0
	0.9nm,0.8s,baz=37,slow=5.8,SNR=3.8						
NOA			LR		LR	09 10 24.7	
	comp=Z,13nm,18.5s,baz=60,slow=40						
PDAR	Pinedale Array	76.39 46	P		P	08 31 43.6	-0.3
	0.4nm,0.7s,baz=263,slow=7.2,SNR=4.5						
LPAZ	La Paz	145.19 62	PKPbc		PKPbc	08 39 31.5	-1.1
	1.0nm,0.6s,baz=8.2,slow=4.0,SNR=6.1						
LVC	Limon Verde	148.56 72	*e*PKPdf		PKPdf	08 39 37.3	-0.9
LCO	Las Campanas	150.34 84	*e*PKPdf		PKPdf	08 39 38.7	-2.0
LCO			*e*PKPbc		PKPbc	08 39 45.9	-0.1
LCO			*e*PKPab		PKPab	08 39 51.3	-1.1

ISCJB ***16*** *08:30:00.5±0.8, 37°.18N±0°.04×141°.56E±0°.07, h44km±7km, mb3.9/13, MS2.9/1, Error ellipse: s-maj=9.8km s-min=5.8km az=12.9*

NIED ***16*** *08:30:00, 37°.30N×141°.40E, h56km, Mw4.0 Best double couple: M0:9.61000×10¹⁴ NP1:φs:199.00000°, δ:24.00000°, λ:85.00000°. NP2:φs:24.00000°, δ:66.00000°, λ:92.00000°.*

JMA ***16*** *08:30:03.0±0.1, 37°.26N×141°.35E, h49km±1km, M3.9*

JMA Felt II J1.

IDC ***16*** *08:30:04.1±0.8, 37°.06N×141°.48E, h62km±7km, mb3.6/13, mb1 3.8/17, mb1mx3.6/52, mbtmp4.0/17, MS2.8/5, Ms1 2.8/5, ms1mx2.6/40, Error ellipse: s-maj=11.7km s-min=9.7km az=129.0*

ISC 16 08:30:02.0±0.8, 37°.22N±0°.04×141°.55E±0°.07, h36km±2km, n35, σ1§29/36, mb3.9/13, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	0.56	286	P	Pn	08 30 12.9	-0.7
JFK				S	Sn	08 30 19.6	-2.0
ONAJ	Iwakimizuishiy	0.61	259	P	Pn	08 30 13.8	-0.5
ONAJ				S	Sn	08 30 21.1	-1.8
JMM	Marumori	0.89	317	P	Pn	08 30 17.3	-0.6
JMM				S	Sn	08 30 27.3	-2.3
JHO	Hitachi	0.99	233	P	Pn	08 30 18.8	-0.6
JHO				S	Sn	08 30 30.2	-1.9
JFT	Otama	1.01	288	P	Pn	08 30 19.5	-0.2
JFT				S	Sn	08 30 31.0	-1.7
JIO	Ouri	1.25	353	P	Pn	08 30 22.4	-0.5
JIO				S	Sn	08 30 37.4	-1.0
JOU	Okura	1.34	329	P	Pn	08 30 24.5	+0.2
MJAR	Matsushiro Arr	2.76	257	P	Pn	08 30 44.0	+0.3
	11nm,0.3s,baz=86,slow=16,SNR=42						
MJAR				S	Sn	08 31 16.7	+0.9
	9.9nm,0.3s,baz=80,slow=30,SNR=5.5						
MJAR				LR	LR	08 32 03.4	
	comp=Z,157nm,20.2s,baz=85,slow=45						
MAT	Matsushiro	2.76	257	P	Pn	08 30 44.4	+0.6
MAT				S	Sn	08 31 17.7	+1.8
JHJ	Hachijo jima 2	4.34	200	P	Pn	08 31 06.7	+1.4
	16nm,0.3s,baz=318,slow=20,SNR=17						
JHJ				S	Sn	08 31 52.3	-2.3
	20nm,0.3s,baz=120,slow=20,SNR=5.0						
ASAJ	Asahikawa	6.94	6	LR	LR	08 35 10.1	
	comp=Z,41nm,18.3s,baz=5.5,slow=43						
JNU	Nakatsue	9.64	248	LR	LR	08 36 33.5	
	comp=Z,46nm,19.0s,baz=118,slow=41						
USRK	Ussuriysk Ar.	10.06	317	P	Pn	08 32 27.8	+3.9
	0.5nm,0.3s,baz=138,slow=14,SNR=13						
JCJ	Chichijima	10.11	177	P	Pn	08 32 24.2	-0.4
	3.4nm,0.3s,baz=302,slow=19,SNR=3.9						
JCJ				S	Sn	08 34 09.5	-7.1
	4.7nm,0.3s,baz=287,slow=19,SNR=4.0						
KSRS	Korea Array	10.86	275	P	Pn	08 32 39.5	+4.8
	baz=84,slow=14,SNR=5.8						
KSRS				LR	LR	08 36 25.8	
	comp=Z,54nm,18.9s,baz=83,slow=35						
SONM	Songino Array	27.77	304	P	P	08 35 46.5	-1.0
	1.9nm,0.6s,baz=98,slow=8.9,SNR=7.4						
H11N2	WAKE ISLAND Hy 28.15	121		T	T	09 06 04.3	
	baz=314,slow=75,SNR=27						
H11N1	WAKE ISLAND Hy 28.16	121		T	T	09 06 04.3	
	baz=314,slow=75,SNR=52						
H11N3	WAKE ISLAND Hy 28.17	121		T	T	09 06 05.2	
	baz=314,slow=75,SNR=28						
CMAR	Chiang Mai Arr	41.65	255	LR	LR	08 56 22.2	
	comp=Z,18nm,20.3s,baz=355,slow=38						
ZALV	Zalesovo Beam	41.87	312	P	P	08 37 48.5	+0.1
	5.4nm,0.8s,baz=96,slow=6.4,SNR=15						
MKAR	Makanchi Array	44.11	302	P	P	08 38 05.8	-0.9
	0.8nm,0.6s,baz=83,slow=10,SNR=6.3						
MKAR				pP	sP	08 38 23.4	+1.8
	0.4nm,0.3s,baz=92,slow=10,SNR=3.0						
KURBB	Kurchatov Arra	45.98	308	P	P	08 38 20.1	-1.3
	3.4nm,0.6s,baz=83,slow=8.1,SNR=30						
KURBB				pP	sP	08 38 37.0	+0.7
	2.7nm,0.6s,baz=84,slow=8.0,SNR=6.9						
ILAR	Eielson Array	49.28	32	P	P	08 38 47.9	+1.0
	0.9nm,0.8s,baz=265,slow=6.1,SNR=10						
INK	Inuvik	54.18	27	P	P	08 39 24.5	+1.3
	0.7nm,0.8s,baz=304,slow=3.6,SNR=3.0						
WRA	Warramunga Arr	57.26	188	P	P	08 39 43.5	-2.4
	0.8nm,0.8s,baz=5.8,slow=7.2,SNR=6.8						
AKTO	Aktyubinsk	58.63	312	P	P	08 39 54.7	-0.6
	1.8nm,0.7s,baz=91,slow=5.7,SNR=7.0						
ASAR	Alice Springs	60.98	188	P	P	08 40 11.2	-0.5
	0.5nm,0.9s,baz=342,slow=8.8,SNR=3.6						
YKA	Yellowknife Ar	63.60	30	P	P	08 40 29.5	+0.8
	0.2nm,0.7s,baz=302,slow=6.1,SNR=4.1						
ARCES	ARCESS Array B	63.87	339	P	P	08 40 30.0	-0.4
	2.1nm,1.0s,baz=55,slow=11,SNR=4.2						
KBZ	Khabaz	70.87	311	P	P	08 41 14.6	-0.5
	1.4nm,0.7s,baz=234,slow=7.0,SNR=3.6						
NVAR	Mina Array Bea	74.79	53	pP	pP	08 41 55.1	+5.2
	0.8nm,0.7s,baz=282,slow=6.8,SNR=4.8						
PDAR	Pinedale Array	77.46	46	pP	pP	08 42 09.8	+4.7
	0.3nm,0.6s,baz=253,slow=2.5,SNR=2.9						
TXAR	Lajitas Array	89.92	52	P	P	08 42 56.4	-1.4
	0.2nm,0.5s,baz=275,slow=3.3,SNR=4.3						
LPAZ	La Paz	146.51	60	PKPbc	PKPdf	08 49 39.5	+0.4
	0.6nm,0.8s,baz=11,slow=5.2,SNR=2.7						
LPAZ				pPKPbc	pPKPbc	08 49 56.0	+3.7
	0.7nm,0.6s,baz=30,slow=2.4,SNR=2.0						

MEX 16 08:35:24.9±0.5, 16°.87N×100°.27W, h2km±3km, MD3.6, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CAIG	El Cayaco	0.17	359	*e*P	Pg	08 35 28.1	-0.2
CAIG				*e*S	Sg	08 35 30.7	+0.1
ACP2	Acapulco	0.36	90	*i*P	Pg	08 35 31.9	0.0
ACP2				*e*S	Sg	08 35 36.8	+0.2
ACX	Acapulco	0.39	90	*e*P	Pg	08 35 28.4	-4.0
ACX				*i*S	Sg	08 35 33.9	-3.6
MEIG	Mezcala	1.22	30	*i*P	Pg	08 35 44.9	-3.3
MEIG				*e*S	Sg	08 36 00.5	-3.5
ARIG	Puente Sto Nin	1.40	357	*e*P	Pn	08 35 47.9	-3.6
ARIG				*e*S	Sg	08 36 05.6	-4.4
PLIG	Platanillo	1.68	26	*e*P	Pn	08 35 52.0	-3.4
PLIG				*i*S	Sn	08 36 13.5	-3.9
TLIG	Tlapa	1.76	67	*e*P	Pn	08 35 53.0	-3.5
TLIG				*i*S	Sn	08 36 14.6	-5.0

IDC ***16*** *08:41:14.3±1.5, 8°.27N×103°.12W, h0km, mb3.3/5, mb1 3.8/5, mb1mx3.7/26, mbtmp3.4/5, MS3.6/14, Ms1 3.6/14, ms1mx3.5/21, Error ellipse: s-maj=71.0km s-min=27.0km az=66.0*

ISCJB ***16*** *08:41:15.5±2.5, 8°.3N±0°.4×103°.2W±0°.6, h19km, mb3.4/4, MS3.5/13, Error ellipse: s-maj=104.7km s-min=20.5km az=150.2*

ISC 16 08:41:17.3±1.6, 8°.3N±0°.3×103°.1W±0°.5, h19km, n23, σ0§52/6, mb3.6/4, MS3.4/13, Northern East Pacific Rise

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TEIG	Tepich	18.59	49	LR	LR	08 51 59.0	
	comp=Z,137nm,20.6s,baz=39,slow=35						
TXAR	Lajitas Array	20.94	359	P	P	08 45 58.9	-0.4
	0.7nm,0.8s,baz=184,slow=11,SNR=4.8						
TXAR				LR	LR	08 53 28.8	
	comp=Z,317nm,18.5s,baz=0.0,slow=35						
ANMO	Albuquerque	26.71	354	LR	LR	08 55 57.5	
	comp=Z,114nm,19.9s,baz=170,slow=33						
ROSC	El Rosal	28.76	95	LR	LR	08 56 05.9	
	comp=Z,84nm,19.5s,baz=215,slow=31						
ATAH	Atahualpa	28.99	121	LR	LR	08 56 36.3	
	comp=Z,219nm,20.5s,baz=313,slow=32						
TKL	Tuckaleechee C	32.45	30	LR	LR	09 01 50.5	
	comp=Z,79nm,21.8s,baz=204,slow=38						
NNA	Nana	32.96	127	LR	LR	08 58 02.8	
	comp=Z,81nm,19.7s,baz=296,slow=31						
NVAR	Mina Array Bea	33.00	338	LR	LR	08 58 57.8	
	comp=Z,63nm,19.7s,baz=153,slow=32						
PDAR	Pinedale Array	34.81	352	P	P	08 48 07.2	+0.1
	0.7nm,1.0s,baz=178,slow=5.4,SNR=4.5						
SJG	San Juan	37.18	71	LR	LR	09 02 32.0	
	comp=Z,51nm,18.5s,baz=255,slow=34						
YBH	Yreka Blue Hor	37.56	336	LR	LR	09 01 17.4	
	comp=Z,62nm,19.3s,baz=168,slow=32						
TAOE	Nuku Hiva Isla	40.68	246	*e*LR	LR	08 59 41.5	
	142nm,25.5s						
ULM	Lac du Bonnet	42.25	7	LR	LR	09 06 30.3	
	comp=Z,82nm,18.6s,baz=237,slow=36						
LPAZ	La Paz	42.34	125	P	P	08 49 11.2	-0.1
	0.8nm,0.7s,baz=304,slow=7.4,SNR=3.7						
LPAZ				LR	LR	09 04 21.3	
	comp=Z,85nm,21.9s,baz=282,slow=33						
RKT	Rikitea	44.15	224	*e*LR	LR	09 01 26.4	
	254nm,31.5s						
RKT	Rikitea	44.15	224	*e*T	T	09 35 51.1	
	4.2nm,0.3s						
PMOR	Pomariorio Ree	50.10	243	*e*T	T	09 43 10.4	
	1.7nm,0.3s						
PPT	Papeete	52.64	241	LR	LR	09 07 51.7	
	comp=Z,63nm,18.0s,baz=301,slow=30						
PPT2	Papeete2	52.65	241	*e*LR	LR	09 05 16.8	
	128nm,26.0s						
SCHQ	Schefferville	54.64	25	LR	LR	09 16 02.5	
	comp=Z,72nm,19.0s,baz=306,slow=38						
YKA	Yellowknife Ar	54.75	353	P	P	08 50 46.1	+0.7
	0.1nm,0.6s,baz=164,slow=7.7,SNR=4.0						
ILAR	Eielson Array	64.18	341	P	P	08 51 50.0	-0.5
	0.3nm,0.6s,baz=150,slow=4.6,SNR=5.4						
WRA	Warramunga Arr	123.37	252	PKP	PKPdf	09 00 14.2	+0.1
	0.6nm,0.9s,baz=87,slow=2.8,SNR=3.4						

IDC 16 08:49:58.6±10.0, 20°.26S×167°.63E, h40km±10km, mb3.7/3, mb1 3.9/4, mb1mx3.5/31, mbtmp3.9/4, ML3.4/1, MS3.3/4, Ms1 3.3/4, ms1mx2.8/38, Error ellipse: s-maj=169.8km s-min=36.2km az=90.0, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	2.12	211	Pn	Pn	08 50 29.3	-2.3
	11nm,0.3s,baz=110,slow=12,SNR=169						
DZM				Sn	Sn	08 50 56.1	-0.7
	47nm,0.3s,baz=62,slow=21,SNR=7.9						
DZM				LR	LR	08 51 19.5	
	comp=Z,298nm,19.9s,baz=12,slow=38						
STKA	Stephens Creek	26.02	238	P	P	08 55 29.5	+1.5
	2.0nm,0.9s,baz=80,slow=12,SNR=3.7						
STKA				pP	pP	08 55 39.9	+1.0
	2.1nm,0.7s,baz=48,slow=7.6,SNR=3.8						
RAR	Rarotonga	30.47	98	LR	LR	09 05 18.9	
	comp=Z,73nm,21.5s,baz=128,slow=30						
WRA	Warramunga Arr	31.24	265	P	P	08 56 14.2	-0.5
	0.9nm,0.9s,baz=90,slow=8.4,SNR=3.7						
WRA				pP	pP	08 56 25.6	-0.1
	0.5nm,0.5s,baz=90,slow=8.4,SNR=2.5						
ASAR	Alice Springs	31.42	258	P	P	08 56 16.0	-0.3
	2.1nm,0.9s,baz=86,slow=8.6,SNR=15						
ASAR				pP	pP	08 56 27.2	0.0
	2.5nm,0.7s,baz=88,slow=8.9,SNR=11						
FITZ	Fitzroy Crossi	39.64	266	LR	LR	09 12 33.7	
	comp=Z,56nm,18.1s,slow=34						
YBH	Yreka Blue Hor	89.08	45	LR	LR	09 33 12.6	
	comp=Z,20nm,21.3s,baz=224,slow=29						

MEX ***16*** *08:54:19.3±0.4, 13°.78N×91°.62W, h15km, MD4.0*

IDC ***16*** *08:54:23.3±6.6, 16°.04N×91°.28W, h0km, mb3.7/3, mb1 3.7/5, mb1mx3.5/39, mbtmp3.4/5, ML3.1/1, MS4.3/2, Ms1 4.3/2, ms1mx2.7/43, Error ellipse: s-maj=129.6km s-min=21.8km az=178.0*

ISC 16 08:54:17.4±2.0, 15°.0N±0°.2×91°.1W±0°.1, h10km, n12, σ1§78/11, mb3.7/3, Mexico-Guatemala border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THIG		1.10	264	*e*P	Pn	08 54 39.0	+0.1
THIG				*i*S	Sn	08 54 54.1	0.0
CCIG	Comitan	1.59	323	*i*P	Pg	08 54 57.5	+10
CCIG				*i*S	Sg	08 55 26.3	+18
PCIG		2.12	289	*e*P	Pb	08 54 55.8	-0.3
PCIG				*e*S	Sg	08 55 25.2	-0.6
CMIG	Matias Romero	4.15	300	Pn	Pn	08 55 19.9	-1.0
	1.5nm,0.3s,baz=84,slow=22,SNR=15						
CMIG				Pg	Pb	08 55 28.3	-2.3
	2.3nm,0.3s,baz=117,slow=12,SNR=16						
CMIG				Lg	Lg	08 56 17.6	
	4.3nm,0.3s,baz=74,slow=13,SNR=4.7						
VHO	Vista Hermosa	5.76	292	*e*P	Pn	08 55 45.5	+2.3
VHO				*i*S	Sn	08 56 52.3	+2.8
PNIG	Pinotepa	6.87	282	*i*P	Pn	08 55 56.6	-1.7
TXAR	Lajitas Array	18.35	323	P	Pn	08 58 27.6	-4.6
	baz=152,slow=10,SNR=2.0						
SDV	Santo Domingo	20.95	105	LR	LR	09 09 24.4	
	comp=Z,356nm,19.1s,baz=68,slow=42						
NVAR	Mina Array Bea	33.43	319	P	P	09 00 58.2	+1.5
	0.7nm,0.8s,baz=134,slow=7.7,SNR=5.8						
SCHQ	Schefferville	43.98	20	P	P	09 02 24.3	-0.5
	2.5nm,0.8s,baz=225,slow=7.1,SNR=2.8						
YKA	Yellowknife Ar	50.24	346	P	P	09 03 12.9	-0.5
	0.2nm,0.6s,baz=149,slow=7.2,SNR=8.5						
RAO	Raoul Island	94.46	241	LR	LR	09 41 37.0	
	comp=Z,289nm,21.5s,baz=2.5,slow=30						

IDC ***16*** *09:03:28.4±1.4, 36°.88N×142°.45E, h0km, mb3.9/6, mb1 4.1/10, mb1mx3.8/49, mbtmp4.1/10, ML3.6/4, MS2.6/2, Ms1 2.6/2, ms1mx2.2/60, Error ellipse: s-maj=44.0km s-min=18.8km az=74.0*

ISCJB ***16*** *09:03:41.0±0.7, 36°.53N±0°.05×141°.24E±0°.08, h88km±6km, mb3.9/6, Error ellipse: s-maj=11.4km s-min=8.3km az=9.4*

JMA ***16*** *09:03:45.4±0.1, 36°.51N×140°.99E, h53km±1km, M3.4*

ISC 16 09:03:39.8±1.1, 36°.42N±0°.05×141°.35E±0°.09, h59km±10km, n19, σ2§22/26, mb4.1/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	Hitachi	0.66	287	P	Pn	09 03 55.3	+1.8
JHO				S	Sn	09 04 02.2	-1.4
ONAJ	Iwakimizuishiy	0.81	327	P	Pn	09 03 57.8	+2.3
ONAJ				S	Sn	09 04 06.8	-0.2
JYT	Yasato	0.96	259	P	Pn	09 03 59.3	+2.1
JYT				S	Sn	09 04 09.1	-1.0
JFK	Kawauchi	1.02	338	P	Pn	09 04 00.9	+2.8
JFK				S	Sn	09 04 12.1	+0.4
JFT	Otama	1.36	324	P	Pn	09 04 05.9	+3.2
JFT				S	Sn	09 04 20.6	+0.8
JAG	Ashikaga	1.53	271	P	Pn	09 04 06.7	+1.8
JAG				S	Sn	09 04 22.4	-1.4
JFY	Yanaizu	1.65	307	P	Pn	09 04 08.8	+2.3
JFY				S	Sn	09 04 26.5	-0.2
MJAR	Matsushiro Arr	2.54	274	Pn	Pn	09 04 21.2	+2.6
	7.5nm,0.3s,baz=77,slow=18,SNR=52						
MJAR				Sn	Sn	09 04 48.8	+0.5
	3.4nm,0.3s,baz=90,slow=20,SNR=6.3						
MAT	Matsushiro	2.54	274	P	Pn	09 04 21.5	+2.9
MAT				S	Sn	09 04 48.0	-0.4
JHJ	Hachijo jima 2	3.54	202	Pn	Pn	09 04 37.6	+5.4
	11nm,0.3s,baz=324,slow=22,SNR=28						
JHJ				Sn	Sn	09 05 17.1	+4.2
	13nm,0.3s,baz=108,slow=19,SNR=3.9						
ASAJ	Asahikawa	7.75 7		Pn	Pn	09 05 10.7	-19
	3.0nm,0.3s,baz=205,slow=9.9,SNR=7.8						
ASAJ				LR	LR	09 08 12.1	
	comp=Z,50nm,19.1s,baz=190,slow=39						
JCJ	Chichijima	9.32	175	Pn	Pn	09 05 47.9	-3.6
	1.4nm,0.3s,baz=270,slow=20,SNR=2.4						
KLR	Kul'dur	14.60	334	Pn	Pn	09 06 55.5	-7.4
	0.1nm,0.3s,baz=127,slow=16,SNR=5.9						
KLR				LR	LR	09 13 02.1	
	comp=Z,26nm,21.1s,baz=211,slow=39						
MKAR	Makanchi Array	44.41	303	P	P	09 11 44.6	+0.1
	0.1nm,0.4s,baz=78,slow=11,SNR=2.5						
FITZ	Fitzroy Crossi	56.23	198	P	P	09 13 16.6	+2.7
	2.6nm,1.0s,baz=23,slow=7.7,SNR=3.9						
WRA	Warramunga Arr	56.45	188	P	P	09 13 15.7	+0.1
	2.2nm,0.5s,baz=7.7,slow=7.2,SNR=35						
ASAR	Alice Springs	60.17	188	P	P	09 13 41.9	+0.4
	1.0nm,0.6s,baz=7.9,slow=8.0,SNR=17						
STKA	Stephens Creek	67.94	180	P	P	09 14 31.1	-1.1
	1.0nm,0.6s,baz=5.2,slow=11,SNR=3.7						
FINES	FINESS Array B	69.33	332	P	P	09 14 37.7	-2.9
	0.6nm,0.5s,baz=66,slow=14,SNR=2.7						

NIED ***16*** *09:05:00, 37°.30N×141°.50E, h8km, Mw3.7 Best double couple: M0:4.46000×10¹⁴ NP1:φs:25.00000°, δ:44.00000°, λ:-121.00000°. NP2:φs:245.00000°, δ:54.00000°, λ:-63.00000°.*

IDC ***16*** *09:05:56.9±0.8, 37°.31N×141°.56E, h0km, mb3.5/10, mb1 3.8/12, mb1mx3.7/45, mbtmp3.6/12, ML3.8/2, Error ellipse: s-maj=23.2km s-min=18.2km az=116.0*

ISCJB ***16*** *09:05:57.4±1.8, 37°.29N±0°.03×141°.67E±0°.05, h15km±11km, mb3.5/10, Error ellipse: s-maj=6.3km s-min=5.7km az=25.5*

JMA ***16*** *09:05:59.3±0.1, 37°.31N×141°.54E, h32km±2km, M4.1*

JMA Felt II J1.

ISC 16 09:05:56.9±2.0, 37°.31N±0°.04×141°.66E±0°.06, h1km±12km, n27, σ1§40/30, mb3.6/10, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	0.63	275	P	Pg	09 06 09.9	+0.9
JFK				S	Sg	09 06 17.3	+0.1
ONAJ	Iwakimizuishiy	0.72	254	P	Pg	09 06 11.3	+0.6
ONAJ				*e*S	Sg	09 06 20.3	+0.2
JMM	Marumori	0.89	309	P	Pg	09 06 14.2	+0.3
JMM				S	Sg	09 06 24.9	-0.5
JFT	Otama	1.08	282	P	Pb	09 06 17.5	-0.8
JFT				S	Sb	09 06 30.3	-2.6
JHO	Hitachi	1.12	232	P	Pb	09 06 17.4	-1.6
JIO	Ouri	1.17	348	P	Pn	09 06 19.2	-1.2
JIO				S	Sb	09 06 33.2	-2.3
JOU	Okura	1.32	323	P	Pn	09 06 21.9	-0.5
JOU				S	Sb	09 06 38.2	-1.7
MJAR	Matsushiro Arr	2.87	256	Pn	Pn	09 06 43.8	0.0
	8.2nm,0.3s,baz=76,slow=17,SNR=18						
MJAR				Sn	Sn	09 07 20.6	+1.6
	9.1nm,0.3s,baz=204,slow=23,SNR=8.2						
MAT	Matsushiro	2.87	256	P	Pn	09 06 44.0	+0.2
MAT				S	Sn	09 07 19.5	+0.4
JHJ	Hachijo jima 2	4.46	201	Pn	Pn	09 07 05.3	-0.2
	31nm,0.3s,baz=66,slow=4.0,SNR=7.5						
JHJ				Sn	Sn	09 07 55.5	-2.5
	11nm,0.3s,baz=252,slow=19,SNR=3.4						
USRK	Ussuriysk Ar.	10.06	316	Pn	Pn	09 08 26.4	+4.0
	0.1nm,0.3s,baz=104,slow=15,SNR=2.9						
SONM	Songino Array	27.80	303	P	P	09 11 47.1	-0.4
	0.3nm,0.4s,baz=106,slow=11,SNR=2.3						
H11N2	WAKE ISLAND Hy 28.12	122		T	T	09 41 15.8	
	baz=314,slow=75,SNR=247						
H11N1	WAKE ISLAND Hy 28.13	122		T	T	09 41 14.9	
	baz=314,slow=75,SNR=179						
H11N3	WAKE ISLAND Hy 28.14	122		T	T	09 41 21.4	
	baz=314,slow=75,SNR=168						
H11S1	WAKE ISLAND Hy 28.84	124		T	T	09 42 10.6	
	baz=316,slow=76,SNR=206						
H11S3	WAKE ISLAND Hy 28.84	124		T	T	09 42 09.3	
	baz=316,slow=76,SNR=103						
H11S2	WAKE ISLAND Hy 28.86	124		T	T	09 42 10.5	
	baz=316,slow=76,SNR=45						
MKAR	Makanchi Array	44.14	302	P	P	09 14 06.9	0.0
	0.5nm,0.7s,baz=86,slow=11,SNR=3.6						
ILAR	Eielson Array	49.16	32	P

0.2nm,0.5s,baz=354,slow=6.0,SNR=5.0

IDC 16 09:40:11.5±3.5, 6°33S×149°96E, h0km, mb3.2/2, mb1 3.6/3, mb1mx3.3/37, mbtmp3.4/3, ML1.4/1, Error ellipse: s-maj=136.1km s-min=38.3km az=121.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**4.12**	**222**	Pn	Pn	09 41 17.8	+2.0
	1.8nm,0.3s,baz=324,slow=17,SNR=4.2						
PMG				Sn	Sn	09 42 04.8	0.0
	6.0nm,0.3s,baz=250,slow=12,SNR=7.1						
WRA	**Warramunga Arr**	**20.33**	**227**	P	P	09 44 49.1	-0.3
	2.1nm,1.0s,baz=52,slow=11,SNR=8.0						
ASAR	**Alice Springs**	**23.14**	**220**	P	P	09 45 18.4	-1.2
	0.3nm,0.6s,baz=56,slow=8.8,SNR=6.5						
TORD	**Torodi Ar. Bea**	**148.02**	**285**	PKPbc	PKPbc	10 00 00.0	-0.1
	0.2nm,0.5s,baz=63,slow=4.6,SNR=4.1						

MEX 16 09:55:01.4±0.6, 28°92N×113°22W, h10km, MD3.5, Baja California

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SRIG	**Santa Rosalia**	**1.81**	**151**	*i* P	Pn	09 55 29.4	-3.3
SRIG				*i* S	Sn	09 55 51.0	-4.7
HSIG		**1.99**	**87**	*e*P	Pn	09 55 31.4	-3.7
HSIG				*i* S	Sn	09 55 56.4	-3.7

*IDC **16** 09:56:54.3±3.0, 54°19N×87°27E, h0km, mb1 3.2/2, mb1mx3.0/35, mbtmp3.2/2, ML2.9/2, Error ellipse: s-maj=25.7km s-min=16.4km az=66.0*
*NNC **16** 09:57:01.0±7.2, 53°81N×86°91E, h0km, mb3.6, mpv3.2, Error ellipse: s-maj=52.5km s-min=44.5km az=25.0*

ISC 16 09:56:59.2±4.5, 54°3N±0°2×87°0E±0°2, h35km, n7, σ0°71/10, 7C-2D, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**1.34**	**256**	*i*		10 06 30.0	
	baz=82,slow=327,SNR=2.2						
ZALV	**Zalesovo Beam**	**1.34**	**256**	Pg	**Pn**	**09 57 20.9**	**-0.5**
	6.4nm,0.3s,baz=80,slow=16,SNR=21						
ZALV				Lg	Lg	09 57 41.4	
	3.0nm,0.3s,baz=79,slow=32,SNR=5.5						
KURK	**Kurchatov**	**6.26**	**238**	⇑Pn	**Pn**	**09 58 29.3**	**+0.3**
	2.8nm,0.7s						
KURK				⇑Sn	**Sn**	**09 59 39.5**	**+0.3**
	1.7nm,0.5s						
KURK				⇓Lg	Lg	10 00 13.1	
	28nm,1.1s						
KURBB	**Kurchatov Arra**	**6.36**	**238**	Pn	**Pn**	**09 58 30.1**	**-0.2**
	0.2nm,0.3s,baz=56,slow=14,SNR=7.4						
KURBB				Lg	Lg	10 00 18.0	
	0.0nm,0.3s,baz=64,slow=33,SNR=7.9						
KURBB	**Kurchatov Arra**	**6.36**	**238**	⇑Pn	**Pn**	**09 58 31.1**	**+0.8**
	1.5nm,0.3s,baz=58,slow=15						
KURBB				⇑Sn	**Sn**	**09 59 42.0**	**+0.3**
	2.7nm,0.5s						
KURBB				⇑Lg	Lg	10 00 16.9	
	21nm,1.1s,baz=62,slow=34						
MK31	**Makanchi Array**	**8.10**	**204**	⇑Pn	**Pn**	**09 58 54.9**	**+0.7**
	0.2nm,0.3s,baz=0.0,slow=0.1,SNR=5.2						
MK31				⇓Sn	**Sn**	**10 00 23.1**	**-1.3**
	0.2nm,0.3s,baz=32,slow=28,SNR=4.1						
MK31				⇑Lg	Lg	10 01 08.5	
	5.9nm,1.1s,baz=33,slow=27,SNR=4.3						
MKAR	**Makanchi Array**	**8.10**	**204**	Pn	**Pn**	**09 58 54.1**	**0.0**
	0.3nm,0.3s,baz=24,slow=14,SNR=4.7						
MKAR				Sn	**Sn**	**10 00 24.4**	**0.0**
	0.2nm,0.3s,baz=21,slow=25,SNR=3.0						
MKAR				Lg	Lg	10 01 08.9	
	0.3nm,0.3s,baz=30,slow=24,SNR=6.0						

WEL 16 10:04:28.2±0.1, 39°24S×175°42E, h13km, ML3.4/31, 7C-6D, Error ellipse: s-maj=0.7km s-min=0.5km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PKVZ	**Pokaka**	**0.08**	**228**	⇓PG	Pg	10 04 31.5	+0.4
PKVZ				AML	AML	10 04 34.8	
PKVZ				AML	AML	10 04 34.8	
FWVZ	**Far West T-bar**	**0.10**	**100**	PG	Pg	10 04 31.7	+0.2
FWVZ				SG	Sb	10 04 34.8	-0.1
FWVZ				AML	AML	10 04 34.8	
DRZ	**Dome Shelter**	**0.12**	**109**	⇑PG	Pg	10 04 32.0	+0.3
DRZ				AML	AML	10 04 36.9	
DRZ				AML	AML	10 04 38.3	
WHVZ	**Whangaehu Hut**	**0.14**	**109**	⇓PG	Pg	10 04 32.0	+0.1
MTVZ	**Mangateitei**	**0.15**	**166**	⇑PG	Pg	10 04 32.1	0.0
NGZ	**Ngauruhoe**	**0.15**	**66**	PG	Pg	10 04 32.3	+0.2
NGZ				SG	Sb	10 04 35.8	-0.4
NGZ				AML	AML	10 04 36.1	
WNVZ	**Wahianoa**	**0.16**	**123**	⇓PG	Pg	10 04 32.4	+0.2
WNVZ				SG	Sg	10 04 35.3	+0.3
TWVZ	**Taurewa**	**0.17**	**4**	PG	Pg	10 04 32.4	+0.2
TWVZ				AML	AML	10 04 36.0	
WTVZ	**West Tongariro**	**0.18**	**47**	⇓PG	Pg	10 04 32.7	+0.3
WTVZ				AML	AML	10 04 36.7	
WTVZ				AML	AML	10 04 37.4	
TUVZ	**Tukino**	**0.18**	**100**	PG	Pg	10 04 32.9	+0.3
TUVZ				AML	AML	10 04 37.6	
TUVZ				AML	AML	10 04 40.0	
OTVZ	**Oturere**	**0.20**	**69**	⇓PG	Pg	10 04 33.1	+0.2
OTVZ				SG	Sg	10 04 36.5	+0.4
OTVZ				AML	AML	10 04 37.7	
KRVZ	**Karewarewa**	**0.22**	**50**	PG	Pg	10 04 33.2	+0.1
KRVZ				SG	Sg	10 04 36.6	+0.1
KRVZ				AML	AML	10 04 37.4	
MOVZ	**Moawhango**	**0.31**	**124**	PG	Pg	10 04 34.3	-0.4
MOVZ				SG	Sg	10 04 38.5	-0.4
MOVZ				AML	AML	10 04 38.8	
KATZ	**Kakaramea**	**0.34**	**39**	P*	Pg	10 04 35.0	-0.1
KATZ				AML	AML	10 04 41.0	
KATZ				AML	AML	10 04 41.5	
RITZ	**Rihia Road**	**0.43**	**53**	P*	Pg	10 04 36.7	-0.1
RITZ				AML	AML	10 04 48.3	
RITZ				AML	AML	10 04 50.0	
RATZ	**Rangitukua**	**0.46**	**36**	⇑P*	Pg	10 04 37.0	-0.3
RATZ				AML	AML	10 04 45.8	
RATZ				AML	AML	10 04 48.5	
VRZ	**Vera Road**	**0.53**	**282**	⇓P*	Pg	10 04 38.2	-0.4
VRZ				AML	AML	10 04 48.3	
VRZ				AML	AML	10 04 48.4	
BHHZ	**Black Hill Sta**	**0.56**	**117**	P*	Pg	10 04 38.6	-0.6
BHHZ				S*	Sg	10 04 45.7	-0.9
WATZ	**Wairara**	**0.58**	**25**	⇑P*	Pg	10 04 39.1	-0.5
WATZ				AML	AML	10 04 47.6	
WATZ				AML	AML	10 04 50.3	
WAZ	**Wanganui**	**0.62**	**213**	⇑P*	Pg	10 04 39.7	-0.7
WAZ				S*	Sg	10 04 48.0	-0.5
WAZ				AML	AML	10 04 49.2	
HATZ	**Hinemaiaia**	**0.63**	**57**	P*	Pg	10 04 39.7	-0.8
HATZ				S*	Sg	10 04 48.5	-0.2
HATZ				AML	AML	10 04 49.6	
KWHZ	**Kaweka Forest**	**0.80**	**104**	P*	Pg	10 04 43.7	0.0
KUTZ	**Kaahu Road**	**0.81**	**23**	⇑P*	Pg	10 04 42.9	-1.0
LREZ	**Lake Rotokare**	**0.82**	**254**	P*	Pg	10 04 43.5	-0.6
BKZ	**Black Stump Fm**	**0.83**	**85**	P*	Pg	10 04 43.8	-0.7
BKZ				AML	AML	10 04 56.1	
BKZ				AML	AML	10 04 56.9	
KRHZ	**Kereru**	**0.84**	**119**	P*	Pg	10 04 43.9	-0.6
HIZ	**Hauiti**	**0.85**	**328**	⇑P*	Pg	10 04 43.6	-1.1
HIZ				AML	AML	10 04 56.3	
HIZ				AML	AML	10 04 56.9	
MRHZ	**Matea Rd**	**0.87**	**63**	P*	Pg	10 04 44.0	-1.2
PNHZ	**Pukenui**	**0.90**	**139**	P*	Pg	10 04 45.0	-0.7
PNHZ				S*	Sg	10 04 56.5	-1.0
TLZ	**Tolley Road**	**0.91**	**6**	P*	Pg	10 04 44.0	-1.9
TSZ	**Takapari Road**	**0.92**	**153**	P*	Pg	10 04 44.9	-1.1
TSZ				S*	Sg	10 04 56.1	-2.0
TSZ				AML	AML	10 04 58.3	
OHWZ	**Ohakea**	**0.97**	**185**	P*	Pb	10 04 45.9	-1.0
NEZ	**North Egmont**	**1.03**	**268**	P*	Pb	10 04 47.1	-0.8
KHEZ	**Kahui Hut**	**1.09**	**267**	P*	Pb	10 04 48.5	-0.5
PKE	**Pukeiti**	**1.12**	**272**	P*	Pb	10 04 48.6	-0.8
PKE				AML	AML	10 05 05.6	
PKE				AML	AML	10 05 06.6	
POWZ	**Post Office Ro**	**1.18**	**167**	P*	Pn	10 04 49.6	-0.9
DVHZ	**Dannevirke**	**1.21**	**152**	P*	Pn	10 04 50.8	0.0
DVHZ				S*	Sb	10 05 06.5	+0.1
ARHZ	**Aropaoanui**	**1.22**	**92**	P*	Pg	10 04 52.0	+0.3
PRWZ	**Pori Road**	**1.38**	**162**	PN	Pb	10 04 53.7	-0.2
MRZ	**Mangatainoka R**	**1.43**	**175**	PN	Pn	10 04 53.7	-0.1
TOZ	**Tahuroa Road**	**1.50**	**2**	P*	Pn	10 04 52.9	-2.0
TOZ				AML	AML	10 04 54.6	
TOZ				AML	AML	10 04 55.5	
OGWZ	**Otaki Gorge**	**1.59**	**187**	PN	Pn	10 04 56.3	+0.2
OGWZ				SN	Sn	10 05 16.0	-0.5
KIW	**Kapiti Island**	**1.67**	**193**	PN	Pn	10 04 56.5	-0.7
KIW				AML	AML	10 05 20.9	
KIW				AML	AML	10 05 21.1	
CAW	**Cannon Point**	**1.89**	**188**	*e*PN	Pn	10 04 59.7	-0.5
CAW				AML	AML	10 05 02.9	
CAW				AML	AML	10 05 03.3	
TMWZ	**Te Maipa**	**1.90**	**169**	PN	Pb	10 05 03.1	+0.3
MTW	**Mount Morrison**	**1.92**	**178**	*e*PN	Pn	10 04 59.9	-0.7
MTW				AML	AML	10 05 30.3	
DUWZ	**D'Urville Isla**	**1.94**	**216**	*e*PN	Pn	10 04 59.7	-1.3
DUWZ				AML	AML	10 05 27.5	
DUWZ				AML	AML	10 05 27.6	
MKAZ	**Moumakai**	**2.14**	**354**	*e*PN	Pn	10 05 01.3	-2.3
MKAZ				AML	AML	10 05 08.4	
KBAZ	**Karaka Road Bo**	**2.18**	**349**	*e*PN	Pn	10 05 03.2	-1.0
MSWZ	**Moikau Station**	**2.18**	**183**	*e*PN	Pb	10 05 06.9	-0.6
BHW	**Baring Head**	**2.21**	**191**	PN	Pb	10 05 06.7	-1.3
BHW				AML	AML	10 05 07.5	
BHW				AML	AML	10 05 07.9	
AWAZ	**Awhitu Peninsu**	**2.25**	**344**	*e*PN	Pn	10 05 05.3	+0.2
TUWZ	**Tuamarina**	**2.46**	**207**	PN	Pb	10 05 10.7	-1.7
TUWZ				AML	AML	10 05 48.8	
TUWZ				AML	AML	10 05 51.0	
KUZ	**Kuaotunu**	**2.50**	**6**	*e*PN	Pn	10 05 05.8	-2.8
KUZ				AML	AML	10 05 14.0	
QRZ	**Quartz Range**	**2.73**	**234**	AML	AML	10 05 19.3	
QRZ				AML	AML	10 05 35.1	

IDC 16 10:09:32.4±52.0, 22°04S×175°64W, h0km, mb3.6/3, mb1 3.8/3, mb1mx3.5/26, mbtmp3.6/3, Error ellipse: s-maj=978.5km s-min=169.2km az=86.0, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**39.14**	**246**	P	P	10 17 00.9	-1.1
	1.4nm,0.9s,baz=87,slow=7.8,SNR=3.7						
ASAR	**Alice Springs**	**46.33**	**258**	P	P	10 18 00.3	-0.2
	0.2nm,0.5s,baz=101,slow=6.1,SNR=6.1						
WRA	**Warramunga Arr**	**46.58**	**263**	P	P	10 18 03.0	+0.5
	0.4nm,0.4s,baz=99,slow=8.4,SNR=17						

CASC 16 10:35:21.6±1.7, 12°07N×87°73W, h25km±12km, MD3.6, 1C, Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TEL3	**Telica 3**	**1.00**	**60**	*e*P	Pn	10 35 39.3	-0.7
CNGN	**Cerro Negro**	**1.10**	**67**	*e*P	Pn	10 35 40.7	-0.7
CNGN				*e*P	Pn	10 35 41.6	+0.2
CNGN				*e*S	Sb	10 35 57.8	+2.0
COPN	**Copaltepe**	**1.12**	**84**	⇑*e*P	Pn	10 35 41.1	-0.5
COPN				*e*P	Pb	10 35 41.2	-1.1
COPN				*e*S	Sb	10 35 56.9	+0.4
MOMN	**Momotombo**	**1.21**	**74**	*e*P	Pn	10 35 42.3	-0.6
APYN	**Apoyeque**	**1.36**	**83**	*e*P	Pn	10 35 45.2	+0.2
PACA	**Pacayal**	**1.51**	**337**	*e*P	Pn	10 35 47.6	+0.4
PACA				*e*S	Sn	10 36 06.6	+0.4
ESTN	**Estel**	**1.68**	**52**	*e*P	Pn	10 35 49.2	-0.3
LFRS	**El Faro**	**2.02**	**320**	*e*P	Pn	10 35 55.8	+1.6
LFRS				*e*S	Sn	10 36 19.1	+0.4

*GUC **16** 10:35:52.1±0.5, 24°50S×69°09W, h70km, ML3.7*
*SJA **16** 10:36:06.5±1.2, 24°29S×67°56W, h172km±87km, ML1.8, MW2.4*

ISC 16 10:35:46.1±1.6, 24°49S±0°06×68°79W±0°03, h11km±12km, n13, σ1°68/23, 7C-1D, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB14	**IPOC Station P**	**1.48**	**265**	⇑*i*P	**Pb**	**10 36 14.2**	**+0.3**
PB14				*i* S	**Sn**	**10 36 30.9**	**-1.5**
PB14				AML	AML	10 36 37.2	
	comp=N,2μm,0.6s						
ANCH	**Antofagasta**	**1.69**	**298**	⇑*i*P	**Pb**	**10 36 17.3**	**+0.1**
ANCH				*i* S	**Sn**	**10 36 35.9**	**-1.2**
ANCH				AML	AML	10 36 41.9	
	comp=N,1μm,0.3s						
LVC	**Limon Verde**	**1.88**	**357**	*e*S	**Sg**	**10 36 47.4**	**+0.8**
PB10	**IPOC Station P**	**1.89**	**301**	⇑*i*P	**Pb**	**10 36 20.0**	**-0.6**
PB10				*i* S	**Sn**	**10 36 39.6**	**-2.4**
PB10				AML	AML	10 36 48.0	
	comp=N,2μm,0.5s						
PB06	**IPOC Station P**	**1.92**	**338**	⇑*i*P	**Pg**	**10 36 22.4**	**-0.6**
PB06				*i* S	**Sb**	**10 36 45.9**	**+0.6**
PB04	**IPOC Station P**	**2.49**	**330**	⇓*i*P	**Pn**	**10 36 28.6**	**+1.9**
PB04				*e*S	**Sb**	**10 37 00.9**	**-0.7**
PB04				AML	AML	10 37 07.6	
	comp=E,351nm,0.3s						
PB09	**IPOC Station P**	**2.72**	**351**	⇑*i*P	**Pb**	**10 36 34.1**	**-0.8**
PB09				*i* S	**Sn**	**10 36 59.2**	**-3.6**
PB09				AML	AML	10 37 02.4	
	comp=E,801nm,0.3s						
PB07	**IPOC Station P**	**2.93**	**340**	⇑*i*P	**Pn**	**10 36 35.0**	**+2.2**
PB07				*i* S	**Sn**	**10 37 07.9**	**-0.2**
PB07				AML	AML	10 37 28.2	
	comp=E,216nm,0.2s						
SLA	**San Lorenzo**	**3.00**	**95**	*e*P	**Pg**	**10 36 42.9**	**-0.7**
HJA	**Humahuaca**	**3.35**	**68**	*e*P	**Pg**	**10 36 48.1**	**-2.2**
HJA				*e*S	**Sn**	**10 37 17.9**	**-0.8**
HJA				IAML		10 37 25.0	
	comp=Z,5.4nm,1.8s						
AZAP	**Zapla**	**3.40**	**86**	*e*P	**Pb**	**10 36 47.8**	**+1.2**
AZAP				*e*S	**Sn**	**10 37 17.4**	**-2.5**
AZAP				IAML		10 37 18.4	
	comp=Z,2.5nm,0.5s						
PB01	**IPOC Station P**	**3.49**	**349**	⇑*i*P	**Pn**	**10 36 42.8**	**+2.3**
PB01				*i* S	**Sn**	**10 37 22.7**	**+0.9**
PB01				AML	AML	10 37 33.2	
	comp=E,179nm,0.2s						
YJA	**Yavi**	**3.79**	**53**	*e*P	**Pb**	**10 36 53.8**	**+0.5**

*NIED **16** 10:55:00, 39°00N×142°40E, h29km, Mw3.5 Best double couple: M0=2.28000×10^14 NP1:φs=239.00000°, δ29.00000°, λ-116.00000°. NP2:φs=88.00000°, δ64.00000°, λ-76.00000°.*
*JMA **16** 10:55:32.6±0.1, 39°00N×142°45E, h32km±2km, M3.8*
JMA Felt I J1.
*IDC **16** 10:55:34.9±3.4, 38°94N×142°42E, h38km±31km, mb3.5/6, mb1 3.6/9, mb1mx3.4/47, mbtmp3.7/9, ML3.5/3, MS2.3/1, Ms1 2.3/1, ms1mx2.0/44, Error ellipse: s-maj=29.0km s-min=17.5km az=110.0*

ISC 16 10:55:31.0±2.0, 38°97N±0°05×142°41E±0°08, h9km±12km, n17, σ0°86/24, mb3.8/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.59**	**281**	P	**Pn**	**10 55 44.8**	**-0.8**
OFUJ				S	**Sb**	**10 55 53.2**	**+1.3**
MIYJ	**Miyakonagasawa**	**0.76**	**323**	P	**Pb**	**10 55 46.6**	**+0.2**
MIYJ				S	**Sg**	**10 55 56.4**	**+0.7**
JMK	**Ichinoseki**	**0.93**	**269**	P	**Pn**	**10 55 50.0**	**-0.2**
JMK				S	**Sb**	**10 56 02.2**	**+0.5**
JIO	**Ouri**	**0.98**	**239**	P	**Pn**	**10 55 50.3**	**-0.6**
JIO				S	**Sg**	**10 56 02.1**	**-0.4**
JOM	**Ohasama**	**1.00**	**300**	P	**Pn**	**10 55 51.0**	**-0.3**
JOM				S	**Sb**	**10 56 04.3**	**+0.4**
JTH	**Tanohata**	**1.06**	**336**	P	**Pg**	**10 55 50.9**	**-0.5**
JTH				*e*S	**Sg**	**10 56 05.2**	**+0.1**
JKZ	**Kuzumaki**	**1.32**	**321**	P	**Pn**	**10 55 55.6**	**0.0**
JKZ				*e*S	**Sb**	**10 56 12.2**	**-0.7**
MJAR	**Matsushiro Arr**	**4.12**	**235**	Pn	**Pn**	**10 56 36.8**	**+2.7**
	2.4nm,0.3s,baz=34,slow=13,SNR=23						
MAT	**Matsushiro**	**4.12**	**235**	P	Pn	10 56 37.9	+3.8
ASAJ	**Asahikawa**	**5.14**	**1**	Pn	**Pn**	**10 56 49.5**	**+1.3**
	1.4nm,0.3s,baz=199,slow=17,SNR=12						
ASAJ				Sn	**Sn**	**10 57 47.7**	**+0.1**
	0.7nm,0.3s,baz=176,slow=19,SNR=2.4						
ASAJ				LR	LR	10 58 54.0	
	comp=Z,34nm,21.1s,baz=152,slow=38						
JHJ	**Hachijo jima 2**	**6.21**	**201**	Pn	**Pn**	**10 57 02.2**	**-0.7**
	5.9nm,0.3s,baz=252,slow=20,SNR=3.4						
MKAR	**Makanchi Array**	**43.79**	**301**	P	**P**	**11 03 36.9**	**-0.1**
	0.7nm,0.6s,baz=79,slow=10.0,SNR=5.7						
KURBB	**Kurchatov Arra**	**45.46**	**307**	P	**P**	**11 03 49.6**	**-0.5**
	1.9nm,0.4s,baz=81,slow=8.3,SNR=17						
ILAR	**Eielson Array**	**47.44**	**33**	P	**P**	**11 04 05.5**	**-0.1**
	0.5nm,0.6s,baz=275,slow=6.8,SNR=6.8						
INK	**Inuvik**	**52.31**	**28**	P	**P**	**11 04 43.0**	**+0.6**
	0.5nm,0.4s,baz=317,slow=5.6,SNR=4.3						
WRA	**Warramunga Arr**	**59.09**	**189**	P	**P**	**11 05 31.0**	**-0.6**
	0.3nm,0.4s,baz=7.8,slow=7.7,SNR=10						
YKA	**Yellowknife Ar**	**61.74**	**31**	P	**P**	**11 05 49.0**	**-0.3**
	0.1nm,0.5s,baz=300,slow=6.1,SNR=3.3						

*IDC **16** 10:58:28.8±0.6, 22°35S×68°21W, h100km±6km, mb3.9/11, mb1 4.1/14, mb1mx3.9/30, mbtmp4.2/14, MS2.5/1, Ms1 2.5/1, ms1mx2.4/25, Error ellipse: s-maj=17.0km s-min=15.0km az=178.0*
*ISCJB **16** 10:58:30.0±0.3, 22°48S±0°05×68°55W±0°05, h125km±3km, mb4.1/19, Error ellipse: s-maj=9.2km s-min=5.8km az=43.8*
*GUC **16** 10:58:30.8±0.5, 22°44S×68°58W, h115km±6km, ML4.6*
*SJA **16** 10:58:30.9±1.0, 22°49S×68°46W, h107km±23km, ML2.8, MW3.6*
*NEIC **16** 10:58:30.0, 22°44S×68°58W, h115km, mb4.2/10, After GUC.*
NEIC Felt [III] at Calama and [II] at Oficina Maria Elena, Sierra Gorda and Tocopilla.

ISC 16 10:58:30.5±0.7, 22°48S±0°05×68°49W±0°07, h117km±6km, n47, σ1°04/52, mb4.2/19, 4C-2D, Northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LVC	**Limon Verde**	**0.41**	**251**	*e*P	**Pn**	**10 58 48.1**	**0.0**
LVC				*e*S	**Sn**	**10 59 00.7**	**-0.6**
LVC	**Limon Verde**	**0.41**	**251**	P	**Pn**	**10 58 48.1**	**0.0**
	30μm,0.3s,baz=79,slow=6.0						
LVC				S	**Sn**	**10 59 00.8**	**-0.6**
	88μm,0.3s,baz=107,slow=19,SNR=173						
PB09	**IPOC Station P**	**0.97**	**314**	⇑*i*P	**Pn**	**10 58 52.8**	**+0.6**
PB09				*i* S	**Sn**	**10 59 08.8**	**+0.2**
PB09				AML	AML	10 59 11.4	
	comp=E,26μm,0.5s						
PB06	**IPOC Station P**	**1.03**	**257**	⇑*i*P	**Pn**	**10 58 52.6**	**-0.1**
PB06				*e*S	**Sn**	**10 59 09.2**	**-0.3**
PB06				AML	AML	10 59 12.5	
	comp=E,12μm,0.4s						
PB07	**IPOC Station P**	**1.50**	**300**	⇑*i*P	**Pn**	**10 58 57.9**	**0.0**
PB07				*i* S	**Sn**	**10 59 18.2**	**-0.5**
PB07				AML	AML	10 59 18.9	
	comp=N,36μm,0.4s						
PB04	**IPOC Station P**	**1.54**	**275**	⇑*i*P	**Pn**	**10 58 58.2**	**-0.2**
PB04				*i* S	**Sn**	**10 59 18.9**	**-0.8**
PB04				AML	AML	10 59 21.9	
	comp=E,11μm,0.2s						
PB01	**IPOC Station P**	**1.70**	**327**	⇓*i*P	**Pn**	**10 59 00.3**	**0.0**
PB01				*i* S	**Sn**	**10 59 22.5**	**-0.4**
PB01				AML	AML	10 59 23.4	
	comp=E,5μm,0.3s						
PB08	**IPOC Station P**	**2.41**	**345**	⇓*i*P	**Pn**	**10 59 09.8**	**+0.5**
PB08				*e*S	**Sn**	**10 59 40.0**	**+0.8**
PB08				AML	AML	10 59 42.8	
	comp=E,733nm,0.2s						
YJA	**Yavi**	**2.77**	**84**	*e*P	**Pn**	**10 59 15.8**	**+1.7**
YJA				IAML		10 59 46.4	
	comp=Z,20nm,0.4s						
HJA	**Humahuaca**	**2.93**	**105**	*e*P	**Pn**	**10 59 18.1**	**+1.9**
SLA	**San Lorenzo**	**3.53**	**130**	*e*P	**Pn**	**10 59 26.0**	**+2.1**
AZAP	**Zapla**	**3.59**	**120**	*e*P	**Pn**	**10 59 25.6**	**+0.9**
AZAP				IAML		11 00 13.9	
	comp=Z,21nm,0.6s						
ASTB	**Santa Barbara**	**3.99**	**112**	*e*P	**Pn**	**10 59 30.9**	**+0.9**
FSA	**Cafayete**	**4.28**	**148**	*e*P	**Pn**	**10 59 35.3**	**+1.4**
LPAZ	**La Paz**	**6.17**	**3**	P	**Pn**	**11 00 00.8**	**+1.1**
	comp=Z,3.4nm,0.3s,baz=204,slow=3.3,SNR=106						
LCO	**Las Campanas**	**6.80**	**197**	*e*Pn	Pn	11 00 03.6	-4.5
	comp=Z,80nm,0.8s						
SIV	**San Ignacio**	**9.52**	**49**	P	Pn	11 00 40.4	-4.2
	comp=Z,14nm,0.3s,baz=244,slow=10,SNR=150						
SIV				S	Sn	11 02 19.6	-10
	comp=Z,1.1nm,0.3s,baz=317,slow=23,SNR=6.5						
CPUP	**Villa Florida**	**10.87**	**113**	P	**Pn**	**11 01 00.6**	**-2.1**
	comp=Z,0.3nm,0.3s,baz=292,slow=12,SNR=6.8						
CPUP				LR	LR	11 04 31.7	
	comp=Z,28nm,20.9s,baz=288,slow=34						
NNA	**Nana**	**13.13**	**321**	P	**P**	**11 01 38.1**	**-0.2**
	comp=Z,0.8nm,0.3s,baz=103,slow=14,SNR=3.5						
PLCA	**Paso Flores**	**18.28**	**185**	P	**P**	**11 02 36.5**	**+1.3**
	comp=Z,0.1nm,0.3s,baz=38,slow=16,SNR=3.3						
PTGA	**Pitinga**	**23.15**	**22**	P	**P**	**11 03 24.0**	**-2.8**
	comp=Z,5.8nm,0.3s,baz=198,slow=13,SNR=17						
RCBR	**Riachuelo**	**35.54**	**67**	P	P	11 05 12.6	-4.0
	comp=Z,2.7nm,0.6s,baz=225,slow=7.1,SNR=3.0						
JCT	**Junction City**	**60.64**	**329**	*e*P	**P**	**11 08 29.0**	**-0.1**
	comp=Z,8.1nm,0.7s						
TXAR	**Lajitas Array**	**61.65**	**325**	P	**P**	**11 08 36.5**	**+0.4**
	comp=Z,0.6nm,0.6s,baz=152,slow=8.4,SNR=11						
MSTX	**Muleshoe**	**64.93**	**329**	*e*P	**P**	**11 08 57.6**	**0.0**
	comp=Z,8.5nm,1.1s						
ANMO	**Albuquerque**	**67.53**	**327**	P	**P**	**11 09 15.6**	**+1.2**
	comp=Z,3.1nm,0.7s,baz=126,slow=6.1,SNR=21						
ANMO	**Albuquerque**	**67.53**	**327**	*e*P	**P**	**11 09 15.0**	**+0.7**
	comp=Z,3.9nm,0.9s						
**D

HUIG				*e*S	Sn	11 09 19.2	-2.7
PANG	**Puerto Angel**	**1.53**	**277**	*e*P	Pn	11 09 09.9	-1.6
PANG				*i* S	Sn	11 09 27.3	-2.8
PCIG		**1.63**	**83**	*e*P	Pn	11 09 11.0	-1.9
PCIG				*e*S	Sn	11 09 30.3	-2.4
PCIG		**1.63**	**83**	*e*P	Pn	11 09 11.0	-1.9
PCIG				*e*S	Sn	11 09 30.3	-2.4
VHO	**Vista Hermosa**	**2.36**	**312**	*e*P	Pn	11 09 22.0	-1.1
VHO				*i* S	Sn	11 09 48.7	-2.2
VHO	**Vista Hermosa**	**2.36**	**312**	*e*P	Pn	11 09 22.0	-1.1
VHO				*i* S	Sn	11 09 48.7	-2.2
CCIG	**Comitan**	**2.77**	**73**	*e*P	Pn	11 09 27.3	-1.4
CCIG	**Comitan**	**2.77**	**73**	*e*P	Pn	11 09 27.3	-1.4
PNIG	**Pinotepa**	**3.23**	**286**	*e*P	Pn	11 09 33.6	-1.3
PNIG				*i* S	Sn	11 10 09.9	-2.4
PNIG	**Pinotepa**	**3.23**	**286**	*e*P	Pn	11 09 33.6	-1.3
PNIG				*i* S	Sn	11 10 09.9	-2.4

MEX 16 11:08:58.6±0.4, 16°.74N×99°.72W, h14km±2km, MD3.6, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ACX	**Acapulco**	**0.18**	**313**	*i* P	Pg	11 09 00.5	-2.5
ACX				*e*S	Sg	11 09 03.7	-2.2
ACP2	**Acapulco**	**0.21**	**309**	*i* P	Pg	11 09 02.7	-0.6
ACP2				*e*S	Sg	11 09 06.4	-0.1
CAIG	**El Cayaco**	**0.61**	**300**	*e*P	Pg	11 09 08.8	-1.7
CAIG				*e*S	Sg	11 09 16.6	-2.0
MEIG	**Mezcala**	**1.18**	**5**	*i* P	Pn	11 09 16.8	-3.9
MEIG				*i* S	Sb	11 09 31.4	-4.5
PNIG	**Pinotepa**	**1.57**	**103**	*i* P	Pn	11 09 22.1	-3.8
PNIG				*i* P	Pb	11 09 22.4	-5.0
PNIG				*i* S	Sn	11 09 41.4	-4.7
ARIG	**Puente Sto Nin**	**1.64**	**339**	*e*P	Pn	11 09 23.5	-3.5
ARIG				*i* S	Sn	11 09 42.6	-5.3
YAIG	**Yautepec**	**2.20**	**16**	*i* P	Pn	11 09 32.1	-2.7
YAIG				*i* S	Sn	11 09 57.5	-4.3

IDC 16 11:14:17.4±1.5, 38°.93N×143°.88E, h0km, mb3.4/2, mb1 3.6/4, mb1mx3.3/51, mbtmp3.4/4, ML3.0/2, MS2.9/1, Ms1 2.9/1, ms1mx2.2/31, Error ellipse: s-maj=51.8km s-min=26.1km az=113.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**5.09**	**244**	Pn	Pn	11 15 36.5	+1.5
	0.4nm,0.3s,baz=62,slow=11,SNR=13						
MAT	**Matsushiro**	**5.09**	**244**	P	Pn	11 15 36.6	+1.6
ASAJ	**Asahikawa**	**5.27**	**350**	Pn	Pn	11 15 35.3	-2.1
	0.4nm,0.3s,baz=173,slow=11,SNR=4.7						
SONM	**Songino Array**	**28.42**	**301**	LR	LR	11 31 11.3	
	comp=Z,23nm,18.2s,baz=120,slow=36						
ILAR	**Eielson Array**	**46.84**	**33**	P	P	11 22 49.6	+0.9
	0.3nm,0.7s,baz=250,slow=7.2,SNR=4.1						
WRA	**Warramunga Arr**	**59.24**	**190**	P	P	11 24 20.0	-0.7
	0.5nm,0.9s,baz=11,slow=7.0,SNR=3.1						

*ISCJB **16** 11:27:08.9±0.3, 8°.83S±0°.04×119°.56E±0°.03, h150km, mb4.1/8, Error ellipse: s-maj=6.1km s-min=4.0km az=24.8*
*NEIC **16** 11:27:09.1±0.6, 8°.75S×119°.48E, h132km±7km, mb4.4/2, Error ellipse: s-maj=9.9km s-min=6.3km az=223.0*
*IDC **16** 11:27:10.3±2.3, 8°.68S×119°.56E, h140km±18km, mb3.8/8, mb1 3.9/11, mb1mx3.6/45, mbtmp4.3/11, MS2.8/1, Ms1 2.8/1, ms1mx2.3/36, Error ellipse: s-maj=52.2km s-min=12.9km az=60.0*
*DJA **16** 11:27:11.3±0.2, 9°S±2°×12°0E±°, h105km±4km, M4.7/23, mb4.9/22, mB5.3/14, MLv4.8/23, Mw(mB)4.7/14*
ISC 16 11:27:09.8±0.5, 8°.88S±0°.06×119°.58E±0°.05, h150km, n45, σ1§87/51, mb4.3/8, Flores region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WSI	**Waingapu**	**1.06**	**138**	P	**Pn**	**11 27 33.5**	**-1.6**
WSI				S	**Sn**	**11 27 51.4**	**-3.0**
BASI	**Baing, Sumba**	**1.66**	**144**	P	**Pn**	**11 27 41.0**	**-0.1**
BASI				S	**Sn**	**11 28 03.8**	**-1.3**
PLAI	**Plampang**	**1.78**	**271**	P	**Pn**	**11 27 41.6**	**-0.8**
PLAI				S	**Sn**	**11 28 04.7**	**-2.8**
MMRI	**Maumere**	**2.64**	**85**	P	**Pn**	**11 27 51.5**	**-1.2**
MMRI	**Maumere**	**2.64**	**85**	*e*Pn	**Pn**	**11 27 51.9**	**-0.8**
TWSI	**Taliwang, Sumb**	**2.67**	**273**	P	**Pn**	**11 27 52.3**	**-0.7**
TWSI				S	**Sn**	**11 28 24.7**	**-1.7**
BSSI	**Bau Bau, Buton**	**2.86**	**18**	P	**Pn**	**11 27 52.7**	**-2.8**
KAPI	**Kappang**	**3.84**	**3**	P	**Pn**	**11 28 06.6**	**-1.5**
	15nm,0.3s,baz=190,slow=8.7,SNR=116						
DNP	**Denpasar**	**4.32**	**272**	P	**Pn**	**11 28 15.0**	**+0.7**
SRBI	**Singaraja**	**4.39**	**280**	P	**Pn**	**11 28 15.0**	**-0.2**
SOEI	**Soe**	**4.71**	**101**	P	**Pn**	**11 28 20.1**	**+0.6**
SOEI	**Soe**	**4.71**	**101**	*e*Pn	**Pn**	**11 28 19.7**	**+0.2**
SPSI	**Sidrap Palu**	**4.88**	**2**	P	**Pn**	**11 28 20.9**	**-0.8**
JAGI	**Jajag, Banyuwa**	**5.38**	**274**	P	**Pn**	**11 28 26.8**	**-1.5**
	208nm,0.7s,6μm0.9nm						
JAGI	**Jajag, Banyuwa**	**5.38**	**274**	*e*Pn	**Pn**	**11 28 26.4**	**-1.9**
	139nm,0.5s						
ABJI	**Asem Bagus**	**5.40**	**281**	P	**Pn**	**11 28 29.1**	**+0.6**
	345nm,0.7s,3μm1.2nm						
KDI	**Kendari**	**5.75**	**32**	P	**Pn**	**11 28 33.5**	**+0.3**
	93nm,1.1s,746nm0.3nm						
TTSI	**Tana Toraja**	**5.80**	**2**	P	**Pn**	**11 28 34.4**	**+0.5**
	242nm,1.0s,3μm1.0nm						
GMJI	**Gumukmas**	**6.10**	**275**	P	**Pn**	**11 28 37.9**	**+0.1**
	90nm,0.9s,2μm0.4nm						
BBKI	**Banjar Baru**	**7.15**	**319**	P	**Pn**	**11 28 53.7**	**+1.8**
	34nm,0.9s,3μm0.3nm						
PWJI	**Pagerwojo**	**7.74**	**276**	P	**Pn**	**11 29 00.1**	**+0.3**
	56nm,0.5s,2μm0.3nm						
NGJI	**Ngawi**	**8.18**	**280**	P	Pn	11 29 16.1	+10
PCJI	**Pacitan**	**8.34**	**274**	P	**Pn**	**11 29 08.2**	**+0.4**
	134nm,0.9s,2μm						
MRSI	**Marisa**	**9.59**	**14**	P	**Pn**	**11 29 24.0**	**-0.4**
	28nm,1.0s						
FITZ	**Fitzroy Crossi**	**10.90**	**148**	P	**Pn**	**11 29 42.9**	**+1.2**
	1.5nm,0.3s,baz=341,slow=9.5,SNR=32						
FITZ				S	**Sn**	**11 31 36.6**	**-5.6**
	4.0nm,0.3s,baz=104,slow=18,SNR=12						
FITZ				LR	LR	11 33 50.5	
	comp=Z,53nm,21.2s,baz=325,slow=36						
CISI	**Cisompet, Garu**	**11.72**	**276**	P	**Pn**	**11 29 53.1**	**+0.5**
	80nm,0.6s,5μm						
CISI	**Cisompet, Garu**	**11.72**	**276**	*e*Pn	**Pn**	**11 29 49.7**	**-2.8**
	57nm,0.6s						
LEM	**Lembang**	**12.02**	**279**	P	**P**	**11 30 00.3**	**-2.9**
	8.6nm,0.3s,baz=66,slow=11,SNR=14						
LEM	**Lembang**	**12.02**	**279**	P	**P**	**11 30 00.1**	**-3.1**
	736nm,0.8s,15μm						
MBWA	**Marble Bar**	**12.21**	**179**	*e*Pn	**Pn**	**11 30 00.6**	**+1.7**
	177nm,1.1s						
CBJI	**Citeko**	**12.85**	**280**	P	**Pn**	**11 30 05.4**	**-1.8**
	705nm,0.8s						
CGJI	**Cibinong**	**13.94**	**278**	P	**P**	**11 30 25.9**	**+1.5**
KASI	**Kota Agung**	**15.33**	**282**	P	**P**	**11 30 39.5**	**-0.3**
	84nm,0.7s,1μm						
WRA	**Warramunga Arr**	**18.02**	**129**	P	**Pn**	**11 31 11.5**	**+0.5**
	1.3nm,0.3s,baz=300,slow=13,SNR=72						
WRA				S	**S**	**11 34 24.5**	**-3.9**
	1.2nm,0.3s,baz=301,slow=23,SNR=12						
WRAB	**Tennant Creek**	**18.02**	**129**	*e*P	**Pn**	**11 31 11.7**	**+0.7**
	12nm,0.8s						
ASAR	**Alice Springs**	**20.10**	**139**	P	Pn	11 31 35.2	-0.2
	3.1nm,0.5s,baz=322,slow=11,SNR=75						
ASAR				S	**S**	**11 35 10.0**	**+0.2**
	2.7nm,0.8s,baz=315,slow=19,SNR=6.8						
ASAR				ScP	**ScP**	**11 39 06.8**	**+3.1**
	0.7nm,0.4s,baz=325,slow=2.3,SNR=5.7						
COEN	**Coen**	**23.66**	**104**	*e*P	**P**	**11 32 10.0**	**+2.2**
	17nm,0.8s						
STKA	**Stephens Creek**	**30.69**	**141**	P	**P**	**11 33 14.6**	**+4.1**
	1.1nm,0.4s,baz=339,slow=8.1,SNR=4.7						
CMAR	**Chiang Mai Arr**	**33.95**	**323**	P	**P**	**11 33 39.4**	**+0.4**
	0.4nm,0.4s,baz=160,slow=7.5,SNR=3.3						
ENH	**Enshi**	**40.12**	**346**	*e*P	**P**	**11 34 30.2**	**-0.8**
SONM	**Songino Array**	**57.66**	**350**	P	**P**	**11 36 45.2**	**+0.7**
	2.3nm,0.6s,baz=168,slow=7.9,SNR=12						
MKAR	**Makanchi Array**	**64.61**	**333**	P	**P**	**11 37 31.8**	**+0.5**
	2.5nm,0.6s,baz=141,slow=7.0,SNR=25						
ZALV	**Zalesovo Beam**	**69.13**	**339**	P	**P**	**11 37 59.2**	**-0.4**
	4.2nm,0.5s,baz=142,slow=4.9,SNR=12						
SEY	**Seymchan**	**75.90**	**15**	P	**P**	**11 38 40.4**	**+0.9**
	1.4nm,0.6s,baz=242,slow=3.6,SNR=6.4						
TIXI	**Tiksi**	**80.59**	**3**	P	**P**	**11 39 04.3**	**-0.8**
	1.5nm,0.3s,baz=184,slow=3.3,SNR=5.2						

MEX 16 11:30:30.5±0.4, 16°.96N×100°.38W, h22km±4km, MD3.9, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CAIG	**El Cayaco**	**0.14**	**51**	*i* P	Pb	11 30 34.0	-2.0
CAIG				*i* S	Sb	11 30 37.1	-2.8
ACP2	**Acapulco**	**0.48**	**100**	*i* P	Pb	11 30 39.1	-1.2
ACP2				*e*S	Sb	11 30 45.2	-1.7
ACX	**Acapulco**	**0.51**	**100**	*e*P	Pb	11 30 37.8	-3.0
ACX				*i* S	Sb	11 30 43.8	-4.0
MEIG	**Mezcala**	**1.21**	**37**	*e*P	Pn	11 30 49.1	-3.0
MEIG				*e*S	Sb	11 31 03.6	-4.3
ARIG	**Puente Sto Nin**	**1.32**	**1**	*e*P	Pn	11 30 51.1	-2.6
ARIG				*e*S	Sn	11 31 06.0	-4.5
YAIG	**Yautepec**	**2.27**	**33**	*i* P	Pn	11 31 04.5	-2.4
YAIG				*i* S	Sn	11 31 31.3	-3.0

*ISCJB **16** 11:32:20.9±0.8, 54°.76N±0°.07×160°.18W±0°.07, h61km±5km, mb4.0/15, Error ellipse: s-maj=13.3km s-min=4.3km az=157.2*
*NEIC **16** 11:32:21.1, 54°.70N×160°.32W, h18km, ML3.8(AEIC), After AEIC.*
*IDC **16** 11:32:23.4±6.1, 54°.88N×160°.46W, h59km±54km, mb3.6/13, mb1 3.8/15, mb1mx3.5/49, mbtmp3.9/15, ML4.3/2, MS3.1/6, Ms1 3.1/6, ms1mx2.7/46, Error ellipse: s-maj=27.0km s-min=18.3km az=177.0*
ISC 16 11:32:21.9±1.4, 54°.74N±0°.10×160°.21W±0°.07, h51km±11km, n68, σ1§18/66, mb4.0/15, MS3.2/3, Alaska Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SDPT	**Sand Point**	**0.63**	**346**	P	**Pn**	**11 32 34.0**	**-0.8**
SDPT				S	**Sn**	**11 32 43.1**	**-1.0**
DOL	**Dolgoi Island**	**1.04**	**294**	P	**Pn**	**11 32 39.0**	**-1.2**
PVV	**Pavlof Volcano**	**1.11**	**306**	P	**Pn**	**11 32 40.7**	**-0.4**
PS1A	**Pavlof South-1**	**1.12**	**309**	P	**Pn**	**11 32 41.1**	**-0.2**
PS1A				S	**Sn**	**11 32 56.6**	**+1.0**
PS4A	**Pavlof South-4**	**1.13**	**303**	P	**Pn**	**11 32 41.0**	**-0.3**
PN6	**Pavlof North-6**	**1.22**	**307**	P	**Pn**	**11 32 43.3**	**+0.7**
PN6				S	**Sn**	**11 32 58.5**	**+0.5**
DTNA	**Dutton South F**	**1.25**	**290**	P	**Pn**	**11 32 42.2**	**-0.8**
DT1	**Dutton Round H**	**1.25**	**288**	P	**Pn**	**11 32 41.9**	**-1.1**
VNWF	**Veniaminof 8**	**1.47**	**14**	P	**Pn**	**11 32 47.7**	**+1.7**
BALA	**Baldy Mountain**	**1.56**	**288**	P	**Pn**	**11 32 47.8**	**+0.6**
VNHG	**Veniaminof 1**	**1.60**	**21**	P	**Pn**	**11 32 49.5**	**+1.6**
VNNF	**Veniaminof 3**	**1.63**	**18**	P	**Pn**	**11 32 50.3**	**+2.0**
FALS	**False Pass**	**1.86**	**275**	P	**Pn**	**11 32 50.5**	**-0.8**
FALS				S	**Sn**	**11 33 13.9**	**+0.3**
CHGN	**Chignik**	**1.87**	**32**	P	**Pn**	**11 32 52.4**	**+1.0**
SSLN	**Shishaldin Nor**	**2.19**	**274**	P	**Pn**	**11 32 56.4**	**+0.5**
SSLS	**Shishaldin Sou**	**2.20**	**271**	P	**Pn**	**11 32 55.8**	**-0.2**
SSLS				S	**Sn**	**11 33 23.8**	**+1.8**
SSLW	**Shishaldin Wes**	**2.27**	**273**	P	**Pn**	**11 32 57.0**	**+0.1**
ANNE	**Aniakchak Nort**	**2.50**	**28**	P	**Pn**	**11 33 00.9**	**+0.9**
WESN	**West Dahl Nort**	**2.55**	**268**	P	**Pn**	**11 33 01.0**	**+0.3**
WEBT	**Westdahl Beart**	**2.64**	**269**	P	**Pn**	**11 33 02.4**	**+0.3**
PLK1	**Peulik 1**	**3.67**	**32**	P	**Pn**	**11 33 17.4**	**+1.3**
PLK3	**Peulik 3**	**3.69**	**35**	P	**Pn**	**11 33 17.8**	**+1.4**
MTBL	**Makushin Table**	**3.86**	**261**	P	**Pn**	**11 33 18.5**	**-0.3**
OHAK	**Old Harbor**	**4.62**	**55**	*e*Pn	**Pn**	**11 33 28.3**	**-0.7**
KDAK	**Kodiak Island**	**5.23**	**51**	P	Pn	11 33 51.7	+14
	5.6nm,0.3s,baz=200,slow=5.4,SNR=89						
KDAK				S	Sn	11 34 50.7	+14
	5.0nm,0.3s,baz=179,slow=23,SNR=5.5						
KDAK	**Kodiak Island**	**5.23**	**51**	*e*Pn	**Pn**	**11 33 36.8**	**-0.7**
	50nm,0.8s						
KDAK				P		11 33 51.8	
KDAK				S	Sn	11 34 50.7	+14
RC01	**Rabbit Creek A**	**8.46**	**37**	*e*Pn	**Pn**	**11 34 21.1**	**-0.5**
	16nm,0.3s						
PMR	**Palmer**	**9.02**	**36**	*e*Pn	**Pn**	**11 34 28.0**	**-1.2**
	6.1nm,0.5s						
PPLA	**Purkeypile**	**9.17**	**24**	*e*Pn	**Pn**	**11 34 34.9**	**+3.4**
	13nm,0.6s						
SML	**Sawmill**	**9.44**	**37**	*e*Pn	**Pn**	**11 34 34.6**	**-0.5**
	1.8nm,0.6s						
DIV	**Divide**	**9.98**	**44**	Pn	**Pn**	**11 34 41.4**	**-1.1**
	10nm,0.3s						
KTH	**Kantishna Hill**	**10.03**	**25**	*e*Pn	**Pn**	**11 34 45.0**	**+1.7**
	12nm,0.8s						
TRF	**Throfare Moun**	**10.11**	**26**	*e*Pn	**Pn**	**11 34 43.6**	**-0.7**
	10nm,0.7s						
BMRM	**Bremner River**	**10.38**	**47**	*e*Pn	**Pn**	**11 34 47.1**	**-0.9**
	14nm,0.4s						
BPAW	**Bear Paw Mtn.**	**10.49**	**23**	*e*Pn	**Pn**	**11 34 50.1**	**+0.7**
	1.1nm,0.6s						
MCK	**McKinley**	**10.69**	**28**	*e*Pn	**Pn**	**11 34 53.0**	**+0.8**
	5.8nm,0.8s						
PAX	**Paxson**	**11.21**	**37**	*e*Pn	**Pn**	**11 34 57.9**	**-1.5**
	8.6nm,0.4s						
TNA	**Tin City**	**11.51**	**344**	*e*Pn	**Pn**	**11 35 03.7**	**+0.5**
	9.5nm,0.9s						
ILAR	**Eielson Array**	**12.06**	**28**	P	**Pn**	**11 35 07.2**	**-3.7**
	0.7nm,0.3s,baz=218,slow=14,SNR=24						
ILAR				LR	LR	11 40 15.3	
	comp=Z,80nm,19.4s,baz=255,slow=39						
DOT	**Dot Lake**	**12.14**	**36**	*e*Pn	**Pn**	**11 35 11.2**	**-0.7**
	14nm,0.5s						
EGAK	**Eagle**	**13.84**	**36**	*e*Pn	**Pn**	**11 35 34.2**	**-0.9**
	4.4nm,0.5s						
SKAG	**Skagway**	**14.28**	**61**	*e*Pn	**Pn**	**11 35 42.4**	**+1.4**
	5.3nm,0.4s						
DLBC	**Dease Lake**	**16.95**	**65**	P	**P**	**11 36 18.6**	**+2.0**
	0.5nm,0.3s,baz=242,slow=8.6,SNR=12						
DLBC				LR	LR	11 42 12.0	
	comp=Z,55nm,19.1s,baz=267,slow=35						
INK	**Inuvik**	**18.39**	**32**	P	**P**	**11 36 31.0**	**-1.2**
	0.7nm,0.3s,baz=221,slow=12,SNR=34						
INK				LR	LR	11 44 23.9	
	comp=Z,54nm,18.5s,baz=272,slow=39						
YKA	**Yellowknife Ar**	**24.51**	**53**	P	**P**	**11 37 37.0**	**+1.0**
	1.0nm,0.7s,baz=265,slow=8.2,SNR=23						
YKA				PcP	**PcP**	**11 41 13.5**	**+0.7**
	0.1nm,0.3s,baz=276,slow=1.9,SNR=5.9						
PETK	**Petropavlovsk-**	**24.58**	**284**	P	**P**	**11 37 36.4**	**-0.3**
	4.7nm,0.4s,baz=80,slow=14,SNR=7.4						
H11N2	**WAKE ISLAND Hy**	**42.94**	**229**	T	T	12 26 14.7	
	baz=28,slow=76,SNR=41						
H11N3	**WAKE ISLAND Hy**	**42.94**	**229**	T	T	12 26 12.4	
	baz=28,slow=76,SNR=37						
H11N1	**WAKE ISLAND Hy**	**42.95**	**229**	T	T	12 26 16.4	
	baz=28,slow=76,SNR=34						
H11S1	**WAKE ISLAND Hy**	**44.10**	**228**	T	T	12 27 42.1	
	baz=27,slow=76,SNR=13						
H11S2	**WAKE ISLAND Hy**	**44.12**	**228**	T	T	12 27 53.0	
	baz=27,slow=76,SNR=10						
H11S3	**WAKE ISLAND Hy**	**44.12**	**228**	T	T	12 27 44.0	
	baz=27,slow=76,SNR=7.9						
DAG	**Danmarks Havn**	**46.52**	**11**	*i* P	**P**	**11 40 43.5**	**+0.1**
	5.3nm,0.7s						
NRIK	**Noril'sk**	**46.86**	**333**	LR	LR	12 02 19.9	
	comp=Z,24nm,19.0s,baz=58,slow=38						
SPITS	**Spitsbergen Ar**	**47.33**	**1**	P	**P**	**11 40 50.4**	**+0.6**
	3.7nm,0.8s,baz=349,slow=4.7,SNR=7.3						
SPITS				LR	LR	12 01 46.0	
	comp=Z,17nm,18.0s,baz=220,slow=37						
TXAR	**Lajitas Array**	**47.45**	**99**	P	**P**	**11 40 53.1**	**+1.7**
	0.3nm,0.7s,baz=316,slow=6.9,SNR=5.0						
TXAR				PcP	**PcP**	**11 42 22.1**	**+1.0**
	0.1nm,0.6s,baz=238,slow=0.6,SNR=3.6						
SFJD	**Kangerlussuaq**	**47.73**	**30**	*i* P	**P**	**11 40 53.4**	**+0.4**
	3.7nm,0.7s						
KSRS	**Korea Array**	**50.44**	**281**	P	**P**	**11 41 13.4**	**-0.6**
	0.5nm,0.5s,baz=39,slow=8.1,SNR=4.5						
KSAR	**Wonju Array Be**	**50.47**	**281**	P	**P**	**11 41 13.4**	**-0.9**
ARCES	**ARCESS Array B**	**55.97**	**358**	P	**P**	**11 41 53.5**	**-0.8**
	0.9nm,0.6s,baz=24,slow=9.3,SNR=5.3						
ZALV	**Zalesovo Beam**	**59.18**	**321**	LR	LR	12 08 44.1	
	comp=Z,22nm,18.2s,baz=70,slow=37						
FINES	**FINESS Array B**	**64.06**	**357**	P	**P**	**11 42 48.7**	**-1.1**
	1.9nm,0.7s,baz=18,slow=8.0,SNR=7.8						
NOA	**NORSAR Array B**	**64.37**	**5**	P	**P**	**11 42 52.8**	**+0.9**
	1.4nm,0.9s,baz=354,slow=6.5,SNR=3.2						
MKAR	**Makanchi Array**	**65.92**	**318**	P	**P**	**11 43 01.0**	**-1.2**
	0.1nm,0.3s,baz=15,slow=6.1,SNR=2.4						
AKASG	**Malin Array Be**	**74.64**	**354**	P	**P**	**11 43 54.8**	**-0.5**
	1.8nm,0.3s,baz=8.8,slow=5.9,SNR=7.7						
CMAR	**Chiang Mai Arr**	**81.21**	**289**	P	**P**	**11 44 32.5**	**+0.2**
	0.7nm,0.6s,baz=14,slow=5.6,SNR=5.0						
BRTR	**Keskin Array B**	**85.16**	**349**	P	**P**	**11 44 51.1**	**-1.4**
	0.3nm,0.5s,baz=330,slow=8.3,SNR=2.5						
ASAR	**Alice Springs**	**96.20**	**237**	P	**P**	**11 45 43.8**	**-0.4**
	0.3nm,0.8s,baz=24,slow=7.1,SNR=3.3						

*ISCJB **16** 11:47:02.0±0.8, 6°.83N±0°.06×73°.08W±0°.05, h154km±7km, Error ellipse: s-maj=11.8km s-min=5.7km az=139.4*
*FUNV **16** 11:47:03.3, 6°.89N×73°.08W, h168km, MW2.5*
*RSNC **16** 11:47:04.5±0.8, 6°.83N×73°.13W, h140km±5km, ML2.6*
ISC 16 11:47:01.3±1.6, 6°.84N±0°.06×73°.06W±0°.06, h161km±9km, n16, σ1§38/27, 1D, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BARC	**Barichara**	**0.27**	**206**	*e*P	**Pn**	**11 47 23.6**	**+0.2**
BARC				*e*S	**Sn**	**11 47 37.9**	**-2.4**
BARC				*i*		11 47 42.0	
	comp=Z,96nm,0.5s						
PAMC	**Pamplona, Colo**	**0.61**	**36**	*e*P	**Pn**	**11 47 26.1**	**+1.0**
PAMC				*e*S	**Sn**	**11 47 42.8**	**-0.4**
BRRC	**Barranca, Sant**	**0.70**	**293**	⇓*i* P	**Pn**	**11 47 25.2**	**+0.3**
BRRC				*e*S	**Sn**	**11 47 41.6**	**-1.4**
BRRC				*i*		11 47 43.2	
	comp=Z,112nm,0.1s						
GRMC	**Gramalote, San**	**0.91**	**16**	*i* P	**Pn**	**11 47 29.0**	**+2.4**
GRMC				*i*		11 47 30.3	
	comp=Z,57nm,0.2s						
GRMC				*e*S	**Sn**	**11 47 47.4**	**+1.3**
CBRI	**Barrientos, No**	**0.91**	**17**	*e*P	**Pn**	**11 47 27.8**	**+1.1**
RUSC	**La Rusia**	**0.94**	**181**	*e*P	**Pn**	**11 47 27.8**	**+0.5**
RUSC				*e*S	**Sn**	**11 47 46.1**	**-1.0**
RUSC				*i*		11 47 48.4	
	comp=Z,49nm,0.2s						
CAPV	**Capacho**	**1.26**	**36**	*e*P	**Pn**	**11 47 31.2**	**+1.5**
CAPV				*e*S	**Sn**	**11 47 52.0**	**+0.5**
OCAC	**Ocana**	**1.41**	**350**	*e*P	**Pn**	**11 47 31.4**	**+0.4**
OCAC				*e*S	**Sn**	**11 47 53.3**	**-0.7**
OCAC				*i*		11 47 57.0	
	comp=Z,44nm,0.2s						
NORC	**Norcasia**	**2.20**	**235**	*e*P	**Pn**	**11 47 39.8**	**+0.4**
NORC				*e*S	**Sn**	**11 48 07.6**	**-1.3**
HELC	**Santa Helena**	**2.53**	**255**	*e*P	**Pn**	**11 47 44.8**	**+1.0**
HELC				*e*S	**Sn**	**11 48 16.3**	**-0.2**
HELC				*i*		11 48 22.7	
	comp=Z,49nm,0.5s						
SOCV	**Socops**	**2.62**	**57**	*e*P	**Pn**	**11 47 45.5**	**+1.0**
SOCV				*e*S	**Sn**	**11 48 16.8**	**-1.0**
DBBC	**Dabeiba**	**3.13**	**273**	*e*P	**Pn**	**11 47 51.8**	**+1.0**
TOLC	**Tolima**	**3.17**	**225**	*e*P	**Pn**	**11 47 53.4**	**+1.8**
VIRV	**Villa del Rosa**	**3.70**	**10**	*e*P	**Pn**	**11 47 58.3**	**+0.3**
VIRV				*e*S	**Sn**	**11 48 38.9**	**-3.3**
CURV	**Curarigua**	**4.40**	**44**	*e*P	**Pn**	**11 48 08.3**	**+1.1**
BAUV	**El Baul**	**5.40**	**67**	*e*P	**Pn**	**11 48 19.9**	**-0.3**

*ISCJB **16** 11:56:40.6±1.0, 6°.9S±0°.2×154°.7E±0°.1, h41km, mb3.7/7, MS3.1/1, Error ellipse: s-maj=37.4km s-min=10.4km az=149.5*
*IDC **16** 11:56:47.2±5.6, 6°.98S×154°.52E, h90km±47km, mb3.5/7, mb1 3.8/8, mb1mx3.6/36, mbtmp3.9/8, MS3.1/3, Ms1 3.1/3, ms1mx2.7/30, Error ellipse: s-maj=45.7km s-min=27.1km az=126.0*
ISC 16 11:56:41.9±1.2, 6°.9S±0°.3×154°.8E±0°.2, h41km, n11, σ1§56/10, mb3.7/7, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	**Honiara**	**5.72**	**116**	LR	LR	12 00 29.7	
	comp=Z,144nm,19.9s,baz=226,slow=38						
PMG	**Port Moresby**	**7.92**	**251**	P	**Pn**	**11 58 36.4**	**+1.9**
	1.0nm,0.3s,baz=186,slow=18,SNR=3.0						
PMG				S	**Sn**	**12 00 02.7**	**-0.2**
	1.2nm,0.3s,baz=63,slow=18,SNR=3.6						
PMG				LR	LR	12 01 16.4	
	comp=Z,99nm,20.0s,baz=360,slow=35						
WRA	**Warramunga Arr**	**23.67**	**235**	P	**P**	**12 01 47.9**	**-2.0**
	1.5nm,0.7s,baz=59,slow=9.7,SNR=7

s-min=11.3km az=27.3

ISC 16 12:13:31.1±1.1, 38°.55N±0°.09×144°.8E±0°.2, h29km, n12, σ1°73/10, mb3.7/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**5.57**	**251**	Pn	**Pn**	**12 14 52.0**	**0.0**
	3.5nm,0.3s,baz=79,slow=27,SNR=28						
MJAR				LR	LR	12 16 53.1	
	comp=Z,51nm,21.9s,baz=95,slow=37						
MAT	**Matsushiro**	**5.57**	**251**	P	**Pn**	**12 14 53.1**	**+1.0**
ASAJ	**Asahikawa**	**5.79**	**344**	Pn	**Pn**	**12 14 55.5**	**+0.5**
	1.1nm,0.3s,baz=213,slow=12,SNR=12						
ASAJ				Sn	**Sn**	**12 15 57.4**	**-3.0**
	1.1nm,0.3s,baz=180,slow=20,SNR=3.2						
JHJ	**Hachijo jima 2**	**6.75**	**218**	Pn	**Pn**	**12 15 06.4**	**-1.9**
	4.8nm,0.3s,baz=109,slow=18,SNR=3.9						
KSRS	**Korea Array**	**13.32**	**270**	LR	LR	12 21 03.0	
	comp=Z,30nm,19.5s,baz=77,slow=34						
KLR	**Kul'dur**	**14.18**	**323**	LR	LR	12 23 37.6	
	comp=Z,33nm,18.3s,baz=172,slow=43						
SEY	**Seymchan**	**24.85**	**8**	P	**P**	**12 18 52.7**	**+2.0**
	0.9nm,0.5s,baz=188,slow=8.8,SNR=4.5						
ILAR	**Eielson Array**	**46.79**	**33**	LR	LR	12 44 01.5	
	comp=Z,17nm,19.9s,baz=220,slow=39						
KURBB	**Kurchatov Arra**	**47.16**	**307**	P	**P**	**12 22 02.0**	**+1.2**
	1.0nm,0.6s,baz=82,slow=8.2,SNR=5.3						
WRA	**Warramunga Arr**	**59.00**	**191**	P	**P**	**12 23 27.7**	**-0.4**
	1.3nm,0.7s,baz=12,slow=7.1,SNR=9.4						
YKA	**Yellowknife Ar**	**61.16**	**31**	P	**P**	**12 23 43.4**	**+0.9**
	0.1nm,0.7s,baz=297,slow=6.2,SNR=2.9						
ASAR	**Alice Springs**	**62.72**	**191**	P	**P**	**12 23 52.9**	**-0.5**
	0.5nm,0.7s,baz=13,slow=8.3,SNR=7.1						

JMA 16 12:13:40.3±0.1, 38°.44N×142°.16E, h24km±1km, M2.9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.64**	**272**	P	Pb	12 13 52.5	-0.3
JIO				S	Sb	12 14 00.9	-0.4
OFUJ	**Ofunato**	**0.75**	**329**	P	Pb	12 13 54.4	-0.2
OFUJ				S	Sb	12 14 04.4	0.0
JMK	**Ichinoseki**	**0.90**	**305**	P	Pb	12 13 56.7	-0.5
JMK				S	Sb	12 14 09.1	+0.4
JOU	**Okura**	**1.18**	**267**	P	Pn	12 14 01.5	+0.2
JOU				S	Sn	12 14 15.8	-0.8
JOM	**Ohasama**	**1.23**	**327**	P	Pn	12 14 02.2	+0.1
JOM				S	Sb	12 14 18.2	-0.2
MAT	**Matsushiro**	**3.67**	**240**	*e*S	Sb	12 15 31.8	+3.3

*NIED **16** 12:14:00,37°.60N×141°.80E, h20km, Mw3.7 Best double couple: M0=4.35000×10^14 NP1:φs=206.00000°, δ37.00000°, λ-151.00000° NP2:φs=92.00000°, δ73.00000°, λ-57.00000°.*

JMA 16 12:14:02.4±0.1, 37°.57N×141°.80E, h19km±2km, M3.8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.76**	**255**	P	Pb	12 14 16.9	-0.2
JFK				S	Sb	12 14 27.2	+0.1
JMM	**Marumori**	**0.85**	**291**	P	Pb	12 14 18.3	-0.3
JMM				S	Sb	12 14 29.1	-0.5
ONAJ	**Iwakimizuishiy**	**0.93**	**240**	P	Pb	12 14 19.3	-0.6
JIO	**Ouri**	**0.95**	**338**	P	Pb	12 14 20.0	-0.3
JIO				S	Sb	12 14 31.0	-1.5
JFT	**Otama**	**1.16**	**268**	P	Pn	12 14 23.7	0.0
JFT				S	Sb	12 14 38.8	+0.2
JOU	**Okura**	**1.20**	**312**	P	Pb	12 14 24.4	-0.1
JOU				S	Sb	12 14 39.4	-0.2
JYS	**Shiratake**	**1.52**	**296**	P	Pb	12 14 29.8	-0.2
JYS				S	Sb	12 14 49.3	+0.5

*IDC **16** 12:17:15.7±0.8, 38°.87N×97°.09E, h0km, mb3.7/10, mb1 3.9/14, mb1mx3.7/45, mbtmp3.8/14, ML3.3/4, MS2.9/6, Ms1 2.9/6, ms1mx2.6/41, Error ellipse: s-maj=26.2km s-min=14.3km az=53.0*

*ISCJB **16** 12:17:18.2±0.6, 38°.8N±0°.1×96°.7E±0°.2, h33km, mb3.7/9, MS2.9/3, Error ellipse: s-maj=22.6km s-min=10.4km az=143.8*

ISC 16 12:17:20.4±0.8, 39°.0N±0°.1×96°.9E±0°.1, h35km, n16, σ1°74/15, mb3.7/9, MS2.9/3, Qinghai

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SONM	**Songino Array**	**11.24**	**35**	Pn	**Pn**	**12 19 56.9**	**-1.6**
	0.5nm,0.3s,baz=216,slow=15,SNR=12						
SONM				Lg	Lg	12 23 04.9	
	0.1nm,0.3s,baz=214,slow=33,SNR=4.6						
SONM				LR	LR	12 24 50.9	
	comp=Z,52nm,20.4s,baz=208,slow=40						
MKAR	**Makanchi Array**	**13.21**	**311**	Pn	**Pn**	**12 20 24.2**	**-1.2**
	0.2nm,0.3s,baz=122,slow=14,SNR=5.3						
MKAR				Sn	**Sn**	**12 22 47.9**	**-3.1**
	0.0nm,0.3s,baz=96,slow=28,SNR=2.2						
MKAR				Lg	Lg	12 24 20.1	
	0.1nm,0.3s,baz=118,slow=31,SNR=2.7						
MKAR				LR	LR	12 26 08.6	
	comp=Z,22nm,19.6s,baz=8.5,slow=40						
TLY	**Talaya**	**13.56**	**18**	LR	LR	12 25 58.1	
	comp=Z,43nm,20.4s,baz=214,slow=38						
ZALV	**Zalesovo Beam**	**17.07**	**335**	Pn	**P**	**12 21 18.8**	**+1.3**
	0.2nm,0.3s,baz=146,slow=10,SNR=8.9						
KURBB	**Kurchatov Arra**	**17.39**	**318**	Pn	**Pn**	**12 21 18.6**	**-1.6**
	0.1nm,0.3s,baz=123,slow=12,SNR=4.1						
CMAR	**Chiang Mai Arr**	**20.53**	**174**	P	**P**	**12 21 54.1**	**-1.6**
	1.7nm,0.7s,baz=354,slow=9.9,SNR=10						
CMAR				LR	LR	12 29 52.7	
	comp=Z,63nm,18.8s,baz=164,slow=37						
BVAR	**Borovoye Array**	**22.96**	**316**	P	**P**	**12 22 23.0**	**+1.6**
	1.1nm,0.9s,baz=92,slow=10,SNR=5.1						
KSRS	**Korea Array**	**24.41**	**84**	P	**P**	**12 22 35.2**	**-0.2**
	2.6nm,0.7s,baz=282,slow=8.9,SNR=15						
KSRS				LR	LR	12 32 53.3	
	comp=Z,32nm,19.0s,baz=256,slow=39						
MJAR	**Matsushiro Arr**	**32.59**	**81**	LR	LR	12 37 02.9	
	comp=Z,24nm,18.5s,baz=110,slow=37						
ARCES	**ARCESS Array B**	**47.61**	**333**	P	**P**	**12 25 54.0**	**+1.6**
	1.6nm,0.9s,baz=88,slow=9.1,SNR=2.4						
ILAR	**Eielson Array**	**65.27**	**25**	P	**P**	**12 27 58.2**	**0.0**
	0.4nm,0.8s,baz=300,slow=4.9,SNR=7.0						
WRA	**Warramunga Arr**	**68.32**	**142**	P	**P**	**12 28 17.2**	**-0.9**
	0.5nm,0.6s,baz=341,slow=6.2,SNR=6.5						
ASAR	**Alice Springs**	**71.32**	**144**	P	**P**	**12 28 36.1**	**-0.3**
	0.5nm,0.7s,baz=335,slow=6.2,SNR=8.8						
ESDC	**Sonseca Array**	**73.41**	**308**	P	**P**	**12 28 51.9**	**+2.9**
	0.2nm,0.3s,baz=51,slow=5.6,SNR=3.2						
YKA	**Yellowknife Ar**	**75.75**	**14**	P	**P**	**12 29 03.3**	**+1.3**
	0.7nm,0.9s,baz=330,slow=5.4,SNR=8.9						
STKA	**Stephens Creek**	**81.85**	**143**	P	**P**	**12 29 35.5**	**-0.3**
	1.7nm,0.8s,baz=354,slow=7.7,SNR=3.1						

IDC 16 12:27:29.7±2.6, 54°.12N×86°.47E, h0km, mb1 3.3/2, mb1mx3.0/38, mbtmp3.3/2, ML3.0/2, Error ellipse: s-maj=21.0km s-min=13.3km az=56.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**0.99**	**261**	*i*		12 34 30.0	
	baz=82,slow=328,SNR=1.1						
ZALV	**Zalesovo Beam**	**0.99**	**261**	Pg	Pg	12 27 47.4	-1.3
	1.4nm,0.3s,baz=77,slow=17,SNR=12						
ZALV				Lg	Lg	12 28 02.5	
	1.7nm,0.3s,baz=77,slow=29,SNR=8.3						
ZALV				Rg	Rg	12 28 08.1	
	2.9nm,0.3s,baz=78,slow=29,SNR=19						
KURBB	**Kurchatov Arra**	**5.99**	**237**	Pn	Pn	12 29 01.0	+1.5
	0.2nm,0.3s,baz=54,slow=13,SNR=8.2						
KURBB				Lg	Lg	12 30 40.5	
	0.0nm,0.3s,baz=57,slow=31,SNR=2.3						
MKAR	**Makanchi Array**	**7.81**	**202**	Pn	Pn	12 29 25.1	+0.7
	0.4nm,0.3s,baz=21,slow=13,SNR=8.3						

IDC 16 12:34:34.6±10.0, 20°.16S×167°.93E, h0km, mb3.9/3, mb1 4.0/4, mb1mx3.6/37, mbtmp3.8/4, ML3.2/1, Error ellipse: s-maj=177.8km s-min=42.4km az=96.0, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.35**	**216**	Pn	Pn	12 35 14.1	-0.6
	5.4nm,0.3s,baz=61,slow=9.1,SNR=52						
DZM				Sn	Sn	12 35 45.1	+0.8
	8.3nm,0.3s,baz=270,slow=20,SNR=5.8						
STKA	**Stephens Creek**	**26.31**	**238**	P	P	12 40 13.2	+1.0
	3.9nm,1.1s,baz=74,slow=7.8,SNR=6.4						
WRA	**Warramunga Arr**	**31.53**	**265**	P	P	12 40 58.0	-0.8
	0.3nm,0.4s,baz=95,slow=8.5,SNR=8.2						
ASAR	**Alice Springs**	**31.72**	**257**	P	P	12 41 00.5	0.0
	1.8nm,0.7s,baz=88,slow=8.8,SNR=35						

MAN 16 12:45:27,8°.74N×122°.50E, h31km, mb4.2, ML3.0, MS2.8, 1C-1D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DCPH	**Dipolog City**	**0.86**	**100**	*e*P	Pn	12 45 42.7	-0.2
DCPH				*i* S	Sb	12 45 54.8	+0.3
IPIL	**Ipil**	**0.95**	**176**	*e*P	Pn	12 45 44.3	+0.1
IPIL				*e*S	Sn	12 45 56.1	-0.5
PAGZ	**Pagadian**	**1.24**	**135**	*e*P	Pn	12 45 48.8	+0.5
PAGZ				*e*S	Sn	12 46 04.6	+0.6
GUIM	**Jordan**	**1.88**	**3**	*e*P	Pn	12 45 57.7	+0.7
GUIM				*e*S	Sn	12 46 21.0	+1.3
CGP	**Cagayan de Oro**	**2.19**	**97**	*e*P	Pb	12 46 08.1	+2.2
CGP				*e*S	Sn	12 46 27.6	+0.3
CUYO	**Cuyo Island**	**2.56**	**325**	*e*P	Pn	12 46 07.0	+0.7
CUYO				*e*S	Sn	12 46 34.8	-1.6
BUKP	**Musuan**	**2.67**	**108**	*e*P	Pb	12 46 11.2	-3.0
ENPP	**El Nido**	**3.90**	**309**	*e*P	Pn	12 46 25.4	+0.6
ENPP				*e*S	Sn	12 47 07.2	-2.4
SJMP	**San Jose**	**3.94**	**340**	*e*P	Pn	12 46 26.1	+0.7

IDC 16 13:02:15.2±999.0, 30°.64N×79°.67W, h0km, Error ellipse: s-maj=1232.0km s-min=283.5km az=155.0, Off east coast of United States

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I10CA	**LAC DU BONNET**	**23.07**	**332**	*i*		15 21 00.0	
	baz=139,slow=321,SNR=0.9						
I56US	**NEWPORT INFRAS**	**33.44**	**312**	*i*		16 29 20.0	
	baz=108,slow=318,SNR=3.4						
I18DK	**QAANAAQ INFRAS**	**47.16**	**3**	*i*		17 55 00.0	
	baz=189,slow=331,SNR=0.7						
I53US	**FAIRBANKS INFR**	**53.47**	**330**	*i*		18 25 50.0	
	baz=100,slow=320,SNR=0.4						

*NSSC **16** 13:18:19.6±2.0, 33°.89N×35°.56E, h4km±10km, ML2.3*

*CSEM **16** 13:18:22.8±0.3, 33°.81N×35°.73E, h5km, ML3.1, Error ellipse: s-maj=7.0km s-min=5.0km az=85.0*

*GRAL **16** 13:18:23.5±0.3, 33°.79N×35°.77E, h6km±7km, MD3.1*

ISC 16 13:18:21.2±1.1, 33°.83N±0°.03×35°.65E±0°.06, h25km±8km, n22, σ1°24/37, Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BHL	**Bhannes**	**0.07**	**3**	*e*P	**Pb**	**13 18 26.4**	**+0.5**
BHL	**Bhannes**	**0.07**	**3**	*e*P	**Pb**	**13 18 26.4**	**+0.5**
BEYL	**Beirut**	**0.14**	**287**	*e*P	**Pb**	**13 18 27.9**	**+1.8**
BEYL	**Beirut**	**0.14**	**287**	*e*P	**Pb**	**13 18 28.0**	**+1.8**
DQRL	**Deir Qamar**	**0.14**	**208**	*e*P	**Pb**	**13 18 27.0**	**+0.6**
DQRL				*e*S	**Sb**	**13 18 29.6**	**-0.3**
DQRL	**Deir Qamar**	**0.14**	**208**	*e*P	**Pb**	**13 18 27.0**	**+0.6**
DQRL				*e*S	**Sb**	**13 18 29.6**	**-0.3**
RCY	**Rachaya**	**0.37**	**155**	*e*P	**Pb**	**13 18 28.9**	**-0.4**
RCY				*e*S	**Sb**	**13 18 33.1**	**-1.9**
RCY	**Rachaya**	**0.37**	**155**	*e*P	**Pb**	**13 18 29.0**	**-0.4**
RCY				*e*S	**Sb**	**13 18 33.1**	**-1.9**
HWQ	**Hawqa**	**0.51**	**29**	*e*P	**Pb**	**13 18 32.6**	**+0.9**
HWQ	**Hawqa**	**0.51**	**29**	*e*P	**Pb**	**13 18 32.6**	**+0.9**
QASN	**Qassioun**	**0.60**	**120**	*i* P	**Pn**	**13 18 34.4**	**+0.1**
QASN				*e*S	**Sn**	**13 18 42.1**	**-1.2**
QASN				AML	AML	13 18 45.0	
	comp=N,391nm,0.3s						
QASN				AML	AML	13 18 47.1	
	comp=E,226nm,0.4s						
QASN	**Qassioun**	**0.60**	**120**	*i* P	**Pn**	**13 18 34.4**	**+0.1**
QASN				*e*S	**Sn**	**13 18 42.1**	**-1.2**
	comp=E,226nm,0.4s						
FKH	**Fakeheh**	**0.75**	**57**	*e*P	**Pb**	**13 18 36.1**	**+0.3**
TCHB	**Talchebab**	**1.19**	**167**	*i* P	**Pb**	**13 18 43.5**	**+0.3**
TCHB				*e*S	**Sb**	**13 19 00.1**	**+2.0**
TCHB				AML	AML	13 19 05.1	
	comp=N,89nm,0.6s						
TCHB				AML	AML	13 19 15.6	
	comp=E,50nm,0.4s						
TCHB	**Talchebab**	**1.19**	**167**	*i* P	**Pb**	**13 18 43.5**	**+0.3**
TCHB				*e*S	**Sb**	**13 19 00.1**	**+2.0**
	comp=E,50nm,0.4s						
BIDA	**Albida**	**1.30**	**25**	*i* P	**Pn**	**13 18 42.1**	**-1.8**
BIDA				*e*S	**Sb**	**13 19 01.5**	**0.0**
BIDA				AML	AML	13 19 05.8	
	comp=N,289nm,0.3s						
BIDA				AML	AML	13 19 10.9	
	comp=E,124nm,0.4s						
BIDA	**Albida**	**1.30**	**25**	*i* P	**Pn**	**13 18 42.2**	**-1.8**
BIDA				*e*S	**Sb**	**13 19 01.5**	**0.0**
	comp=E,124nm,0.4s						
RABH	**Abou Rabah**	**1.42**	**65**	*i* P	**Pb**	**13 18 48.0**	**+0.9**
RABH				*e*S	**Sb**	**13 19 06.5**	**+1.6**
RABH				AML	AML	13 19 17.3	
	comp=N,52nm,0.5s						
RABH				AML	AML	13 19 18.7	
	comp=E,27nm,0.4s						
SALA	**Sala**	**1.44**	**141**	*i* P	**Pb**	**13 18 48.1**	**+0.6**
SALA				*e*S	**Sb**	**13 19 07.1**	**+1.7**
SALA				AML	AML	13 19 13.8	
	comp=E,5.9nm,0.4s						
SALA				AML	AML	13 19 15.0	
	comp=N,56nm,0.4s						
SALA	**Sala**	**1.44**	**141**	*i* P	**Pb**	**13 18 48.1**	**+0.6**
SALA				*e*S	**Sb**	**13 19 07.1**	**+1.7**
	comp=N,56nm,0.4s						
ZALF	**Zalf**	**1.68**	**122**	*i* P	**Pb**	**13 18 52.4**	**+0.9**
ZALF				*e*S	**Sb**	**13 19 13.7**	**+1.6**
ZALF				AML	AML	13 19 18.0	
	comp=E,43nm,0.5s						
ZALF				AML	AML	13 19 22.1	
	comp=N,52nm,0.5s						
ZALF	**Zalf**	**1.68**	**122**	*i* P	**Pb**	**13 18 52.3**	**+0.9**
ZALF				*e*S	**Sb**	**13 19 13.7**	**+1.6**
	comp=N,52nm,0.5s						

*IDC **16** 13:56:09.5±1.1, 36°.25N×142°.37E, h0km, mb3.5/5, mb1 3.6/8, mb1mx3.5/37, mbtmp3.5/8, ML3.4/3, MS2.2/1, Ms1 2.2/1, ms1mx2.0/32, Error ellipse: s-maj=26.8km s-min=20.6km az=94.0*

*ISCJB **16** 13:56:10.8±0.8, 36°.32N±0°.05×142°.19E±0°.08, h19km, mb3.5/5, Error ellipse: s-maj=9.6km s-min=6.5km az=164.3*

*JMA **16** 13:56:12.5±0.3, 36°.38N×142°.17E, h66km, M3.4*

ISC 16 13:56:11.9±1.1, 36°.41N±0°.05×142°.16E±0°.08, h19km, n16, σ1°21/18, mb3.7/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**1.29**	**303**	P	**Pb**	**13 56 35.0**	**-0.6**
JHO	**Hitachi**	**1.29**	**279**	P	**Pb**	**13 56 34.7**	**-0.9**
JHO				*e*S	**Sb**	**13 56 51.5**	**-0.4**
JFK	**Kawauchi**	**1.40**	**313**	P	**Pn**	**13 56 36.3**	**-0.2**
JMM	**Marumori**	**1.82**	**324**	P	**Pn**	**13 56 42.0**	**-0.1**
JMM				S	**Sn**	**13 57 02.4**	**-2.2**
JFT	**Otama**	**1.83**	**308**	P	**Pb**	**13 56 43.7**	**-1.1**
JFY	**Yanaizu**	**2.20**	**298**	*e*S	**Sn**	**13 57 14.0**	**-0.2**
JOU	**Okura**	**2.29**	**329**	P	**Pb**	**13 56 50.6**	**-2.0**
JOU				*e*S	**Sn**	**13 57 17.4**	**+1.1**
MJAR	**Matsushiro Arr**	**3.18**	**274**	Pn	**Pn**	**13 57 02.2**	**+1.3**
	6.2nm,0.3s,baz=93,slow=9.5,SNR=50						
MJAR				LR	LR	13 58 09.2	
	comp=Z,37nm,19.4s,baz=95,slow=36						
MAT	**Matsushiro**	**3.19**	**274**	P	**Pn**	**13 57 02.5**	**+1.5**
JHJ	**Hachijo jima 2**	**3.82**	**211**	Pn	**Pn**	**13 57 09.2**	**-0.5**
	9.7nm,0.3s,baz=53,slow=20,SNR=9.3						
JHJ				Sn	**Sn**	**13 57 53.0**	**-1.1**
	5.1nm,0.3s,baz=90,slow=20,SNR=2.3						
KSRS	**Korea Array**	**11.44**	**279**	Pn	Pn	13 58 58.2	+4.0
	0.1nm,0.3s,baz=102,slow=14,SNR=3.1						
ZALV	**Zalesovo Beam**	**42.77**	**313**	P	**P**	**14 04 09.6**	**+1.6**
	1.4nm,0.9s,baz=79,slow=8.5,SNR=3.4						
MKAR	**Makanchi Array**	**44.96**	**303**	P	P	14 04 28.9	+3.3
	0.9nm,0.7s,baz=77,slow=7.1,SNR=5.1						
WRA	**Warramunga Arr**	**56.53**	**189**	P	**P**	**14 05 52.9**	**-0.2**
	0.3nm,0.4s,baz=7.8,slow=7.7,SNR=11						
ASAR	**Alice Springs**	**60.26**	**189**	P	**P**	**14 06 18.6**	**-0.4**
	0.4nm,0.8s,baz=9.5,slow=8.2,SNR=5.0						
YKA	**Yellowknife Ar**	**64.05**	**30**	P	**P**	**14 06 45.0**	**+1.0**
	0.1nm,0.5s,baz=311,slow=7.2,SNR=3.0						

*IDC **16** 14:00:26.3±1.9, 37°.15N×141°.63E, h0km, mb3.4/2, mb1 3.6/5, mb1mx3.3/36, mbtmp3.6/5, ML2.9/3, Error ellipse: s-maj=43.5km s-min=23.3km az=89.0*

*ISCJB **16** 14:00:27.1±1.0, 37°.27N±0°.03×141°.52E±0°.06, h21km±6km, mb3.4/2, Error ellipse: s-maj=8.8km s-min=4.8km az=15.7*

*JMA **16** 14:00:30.1±0.1, 37°.31N×141°.32E, h36km±1km, M3.4*

JMA Felt I J1.

ISC 16 14:00:26.7±1.8, 37°.28N±0°.04×141°.47E±0°.07, h4km±11km, n15, σ0°93/27, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.48**	**280**	P	**Pb**	**14 00 38.6**	**+0.9**
JFK				S	**Sb**	**14 00 44.4**	**-0.7**
ONAJ	**Iwakimizuishiy**	**0.56**	**251**	P	**Pb**	**14 00 40.0**	**+0.9**
ONAJ				S	**Sb**	**14 00 46.8**	**-0.8**
JMM	**Marumori**	**0.79**	**317**	P	**Pb**	**14 00 43.2**	**+0.2**
JMM				S	**Sg**	**14 00 52.5**	**+0.4**
JFT	**Otama**	**0.93**	**285**	P	**Pb**	**14 00 45.8**	**+0.4**
JFT				S	**Sg**	**14 00 56.7**	**+0.1**
JHO	**Hitachi**	**0.98**	**227**	P	**Pg**	**14 00 45.9**	**+0.3**
JHO				S	**Sg**	**14 00 57.5**	**-0.8**
JIO	**Ouri**	**1.17**	**355**	P	**Pb**	**14 00 49.5**	**0.0**
JIO				S	**Sg**	**14 01 03.2**	**-1.1**
JOU	**Okura**	**1.25**	**330**	P	**Pn**	**14 00 51.1**	**+0.1**
JOU				S	**Sg**	**14 01 06.1**	**-0.9**
JFY	**Yanaizu**	**1.41**	**276**	P	**Pn**	**14 00 52.8**	**-0.3**
JFY				S	**Sb**	**14 01 10.2**	**-1.7**
JYS	**Shiratake**	**1.45**	**310**	P	**Pb**	**14 00 54.0**	**-0.3**
JYS				S	**Sb**	**14 01 11.8**	**-1.3**
MJAR	**Matsushiro Arr**	**2.71**	**255**	Pn	**Pn**	**14 01 11.7**	**+0.6**
	3.5nm,0.3s,baz=78,slow=16,SNR=30						
MAT	**Matsushiro**	**2.72**	**255**	P	**Pn**	**14 01 11.8**	**+0.7**
MAT				S	**Sn**	**14 01 44.2**	**-0.2**
JHJ	**Hachijo jima 2**	**4.38**	**199**	Pn	**Pn**	**14 01 32.4**	**-1.5**
	2.2nm,0.3s,baz=81,slow=19,SNR=2.7						
JHJ				Sn	**Sn**	**14 02 24.4**	**-1.0**
	6.1nm,0.3s,baz=73,slow=19,SNR=2.9						
ASAJ	**Asahikawa**	**6.88**	**7**	Pn	**Pn**	**14 02 09.2**	**+1.0**
	0.2nm,0.3s,baz=241,slow=19,SNR=2.6						
ASAJ				Sn	**Sn**	**14 03 26.9**	**-0.1**
	0.1nm,0.3s,baz=319,slow=20,SNR=1.9						
MKAR	**Makanchi Array**	**44.02**	**302**	P	**P**	**14 08 37.2**	**+1.9**
	0.1nm,0.2s,baz=86,slow=8.8,SNR=2.9						
WRA	**Warramunga Arr**	**57.31**	**188**	P	**P**	**14 10 15.2**	**-0.5**
	0.4nm,0.6s,baz=6.4,slow=7.4,SNR=3.8						

SCB 16 14:21:32.7±0.4, 21°.60S×66°.69W, h216km, MI3.5/1, 4C-2D, Error ellipse: s-maj=11.3km s-min=4.6km az=21.0, Southern Bolivia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MOCB	**Mochara**	**1.04**	**71**	*e*Pn	Pn	14 22 08.4	+3.4
MOCB				*i*Sn	S	14 22 33.4	+3.5
	237nm,0.5s						
BBOJ	**La Paz, Jacaqu**	**4.81**	**343**	*e*Pn	Pn	14 22 51.3	+5.6
BBOE	**La Paz, Chanca**	**4.91**	**345**	*i*Pn	Pn	14 22 53.1	+6.1
BBOD	**La Paz, Gloria**	**5.25**	**340**	*i*Pn	Pn	14 22 57.2	+5.9
LPAZ	**La Paz**	**5.45**	**345**	*e*Pn	Pn	14 22 59.4	+5.5
BBOB	**La Paz, Bander**	**5.60**	**346**	*i*Pn	Pn	14 23 01.4	+5.8
SIV	**San Ignacio**	**7.71**	**45**	*e*Pn	Pn	14 23 29.1	+6.8
SIV				*e*Sn	S	14 24 54.9	+5.1

IDC 16 14:28:40.5±2.1, 6°.10S×130°.29E, h0km, mb4.3/1, mb1 4.0/4, mb1mx3.6/34, mbtmp3.8/4, ML3.6/3, Error ellipse: s-maj=92.1km s-min=26.9km az=77.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**12.76**	**200**	Pn	Pn	14 31 43.0	-0.4
	0.2nm,0.3s,baz=36,slow=10,SNR=6.5						
FITZ				Sn	Sn	14 33 50.0	-16
	0.3nm,0.3s,baz=212,slow=16,SNR=5.1						
WRA	**Warramunga Arr**	**14.31**	**164**	Pn	Pn	14 32 04.4	-0.1
	0.4nm,0.3s,baz=348,slow=13,SNR=18						
WRA				Sn	Sn	14 34 29.2	-15
	0.5nm,0.3s,baz=338,slow=24,SNR=7.6						
ASAR	**Alice Springs**	**17.81**	**169**	P	Pn	14 32 50.1	+0.2
	0.2nm,0.3s,baz=349,slow=11,SNR=21						
ASAR				S	Sn	14 35 53.4	-16
	0.1nm,0.3s,baz=348,slow=26,SNR=4.2						
MKAR	**Makanchi Array**	**67.64**	**326**	P	P	14 39 39.4	0.0
	1.2nm,0.4s,baz=129,slow=7.7,SNR=23						

*ISK **16** 14:45:30.7, 37°.20N×28°.15E, h5km, MD2.6*

*DDA **16** 14:45:31.1, 37°.23N×28°.18E, h7km, Md2.6*

*CSEM **16** 14:45:31.7±0.2, 37°.23N×28°.18E, h2km, MD2.6, Error ellipse: s-maj=3.6km s-min=3.3km az=14.0*

ISC 16 14:45:31.4±1.1, 37°.22N±0°.02×28°.14E±0°.02, h6km±10km, n32, σ1°00/49, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.14**	**126**	PG	**Pg**	**14 45 33.2**	**-1.2**
YER	**Yerkesik**	**0.14**	**126**	*i* Pg	**Pg**	**14 45 33.2**	**-1.2**
AYDN	**Tasoluk**	**0.48

*KRNET **16** 14:47:07.2±0.1, 39°.65N×71°.92E, h15km, mb2.7*
*NNC **16** 14:47:08.8±2.6, 39°.63N×72°.07E, h0km, mb3.3, mpv2.9, Error ellipse: s-maj=27.3km s-min=14.5km az=129.0*
*SOME **16** 14:47:12.5, 40°.07N×71°.72E, h0km*
ISC 16 14:47:06.1±1.7, 39°.64N±0°.07×71°.95E±0°.04, h6km±13km, n23, σ1§18/42, 20C-10D, Tajikistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BTK	**Batken**	**0.96**	**296**	⇑*eP*	**Pn**	**14 47 26.2**	**-0.1**
BTK	baz=296			⇑*eS*	**Sb**	**14 47 39.3**	**+1.0**
OHH	**Osh**	**1.09**	**36**	⇑*eP*	**Pb**	**14 47 28.2**	**+0.8**
OHH	baz=37			⇑*iS*	**Sn**	**14 47 44.6**	**+1.1**
ARSB	**Arslanbob**	**1.85**	**25**	⇓*eP*	**Pg**	**14 47 42.4**	**+0.8**
ARSB	baz=25			⇓*iS*	**Sg**	**14 48 08.1**	**+2.4**
DZET	**Dzherino**	**2.56**	**252**	⇓Pn	**Pb**	**14 47 52.6**	**0.0**
DZET	5.6nm,0.3s 43nm,0.5s			⇑Lg	Lg	14 48 30.0	
AML	**Almayashu**	**2.82**	**28**	⇑*iP*	**Pb**	**14 47 58.4**	**+1.4**
AML	baz=28			⇑*iS*	**Sb**	**14 48 33.3**	**+1.4**
ARLS	**Aral**	**2.86**	**38**	⇓*eP*	**Pb**	**14 47 57.1**	**-0.5**
ARLS	baz=39			⇓*eS*	**Sb**	**14 48 33.1**	**+0.2**
MNAS	**Manas**	**2.87**	**8**	⇑Pg	**Pb**	**14 47 57.7**	**-0.2**
MNAS	1.0nm,0.3s 6.8nm,0.5s			⇑Lg	Lg	14 48 36.6	
IUG	**Iuzhnay**	**2.89**	**330**	*eP*	**Pb**	**14 47 58.7**	**+0.6**
IUG	3.4nm,0.3s 14nm,0.5s			*eS*	**Sb**	**14 48 33.3**	**-0.5**
UCH	**Uchtor**	**3.23**	**36**	⇑*iP*	**Pb**	**14 48 04.7**	**+0.5**
UCH	baz=36			⇑*iS*	**Sb**	**14 48 44.1**	**+0.1**
MRKS	**Merke**	**3.25**	**17**	*eP*	**Pb**	**14 48 05.6**	**+1.4**
MRKS	11nm,0.8s 9.1nm,0.6s			*eS*	**Sb**	**14 48 43.9**	**-0.1**
EKS2	**Erkin-Say**	**3.32**	**24**	⇑*iP*	**Pb**	**14 48 05.3**	**-0.1**
EKS2	baz=24			⇑*iS*	**Sb**	**14 48 45.4**	**-0.7**
KZA	**Kyzart**	**3.49**	**45**	⇑*iP*	**Pb**	**14 48 08.6**	**0.0**
KZA	baz=45			⇑*iS*	**Sb**	**14 48 51.3**	**-0.1**
AAK	**Ala-Archa**	**3.55**	**32**	⇓*iP*	**Pb**	**14 48 08.8**	**-0.7**
AAK	baz=32			⇓*iS*	**Sb**	**14 48 51.5**	**-1.4**
AAK	**Ala-Archa**	**3.55**	**32**	⇑Pg	**Pb**	**14 48 12.1**	**+2.6**
AAK	1.6nm,0.4s 8.6nm,0.5s			⇓Lg	Lg	14 48 55.7	
BRLS	**Borolday**	**3.57**	**332**	*eP*	**Pb**	**14 48 10.1**	**+0.3**
BRLS	0.5nm,0.4s 3.6nm,0.3s			*eS*	**Sb**	**14 48 51.3**	**-2.1**
KK31	**Karatay Array**	**3.62**	**343**	⇓Pn	**Pb**	**14 48 08.5**	**-2.0**
KK31	0.7nm,0.5s,baz=152,slow=12,SNR=11 2.0nm,0.5s,baz=162,slow=14,SNR=5.7			⇑Pg	**Pg**	**14 48 16.6**	**+1.1**
KK31	0.5nm,0.2s			⇑Sn	**Sb**	**14 48 53.0**	**-1.8**
KK31	2.9nm,0.5s,baz=156,slow=28,SNR=3.7			⇑Lg	Lg	14 49 05.3	
TKM2	**Tokmak 2**	**4.28**	**39**	⇓Pn	Pb	14 48 17.5	-4.3
TKM2	1.0nm,0.4s 4.0nm,0.6s			⇑Lg	Lg	14 49 24.4	
DGS	**Degeres**	**4.60**	**37**	*eP*	**Pg**	**14 48 35.1**	**+0.8**
DGS	2.8nm,0.5s 9.4nm,0.2s			*eS*	**Sg**	**14 49 33.7**	**-0.2**
IZV	**Izvestkoviy**	**4.88**	**45**	*eP*	**Pg**	**14 48 39.4**	**-0.2**
IZV	3.0nm,0.4s 2.1nm,0.6s			*eS*	**Sg**	**14 49 42.1**	**-0.7**
TNSS	**Tian-Shan**	**5.07**	**46**	*eP*	**Pg**	**14 48 43.3**	**+0.1**
TNSS	1.9nm,0.5s 3.1nm,0.7s			*eS*	**Sg**	**14 49 47.6**	**-1.2**
MDOK	**Medeo**	**5.20**	**46**	*eP*	**Pg**	**14 48 45.8**	**+0.1**
MDOK	1.7nm,0.5s 4.7nm,0.7s			*eS*	**Sg**	**14 49 52.1**	**-1.0**
CHKK	**Chushkaly**	**5.67**	**40**	*eP*	**Pg**	**14 48 54.2**	**-0.4**
CHKK	1.0nm,0.2s 3.0nm,0.5s			*eS*	**Sg**	**14 50 06.8**	**-1.1**
ARXS	**Arharly**	**6.33**	**42**	*eP*	**Pg**	**14 49 06.7**	**-0.6**
ARXS	1.4nm,0.5s 4.3nm,0.7s			*eS*	**Sg**	**14 50 26.3**	**-3.0**

*IDC **16** 15:03:33.9±1.7, 35°.66N×141°.35E, h0km, mb3.5/4, mb1 3.5/7, mb1mx3.3/49, mbtmp3.5/7, ML3.2/3, MS2.6/4, Ms1 2.6/4, ms1mx2.3/42, Error ellipse: s-maj=45.2km s-min=20.4km az=75.0*
*ISCJB **16** 15:03:37.0±0.8, 35°.67N±0°.05×141°.25E±0°.09, h33km, mb3.5/4, MS2.5/1, Error ellipse: s-maj=10.4km s-min=6.4km az=167.2*
*JMA **16** 15:03:39.2±0.1, 35°.66N×141°.02E, h35km±1km, M3.1*
ISC 16 15:03:38.6±1.1, 35°.68N±0°.06×141°.18E±0°.07, h33km, n23, σ0§95/19, mb3.5/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.26**	**275**	P	**Pn**	**15 03 45.3**	**-0.7**
CHOJ				S	**Sn**	**15 03 49.6**	**-0.8**
JYT	**Yasato**	**0.97**	**305**	P	**Pn**	**15 03 55.0**	**-0.9**
BSO4	**Boso 4**	**0.97**	**225**	P	**Pn**	**15 03 55.0**	**-0.9**
BSO3	**Boso 3**	**1.03**	**212**	P	**Pn**	**15 03 55.6**	**-0.9**
BSO1	**Boso 1**	**1.04**	**189**	P	**Pn**	**15 03 55.8**	**-0.5**
JHO	**Hitachi**	**1.05**	**332**	P	**Pn**	**15 03 57.0**	**-0.1**
JAG	**Ashikaga**	**1.58**	**298**	P	**Pn**	**15 04 04.0**	**-0.4**
MJAR	**Matsushiro Arr**	**2.55**	**291**	Pn	**Pn**	**15 04 18.5**	**+0.8**
MAT	**Matsushiro**	**2.56**	**291**	P	**Pn**	**15 04 19.9**	**+2.2**
MAT				*eS*	**Sn**	**15 04 47.7**	**0.0**
JHJ	**Hachijo jima 2**	**2.80**	**205**	Pn	**Pn**	**15 04 20.7**	**-0.5**
JHJ	13nm,0.3s,baz=315,slow=22,SNR=18 27nm,0.3s,baz=62,slow=22,SNR=9.1			Sn	**Sn**	**15 04 53.2**	**-0.5**
JHJ	comp=Z,59nm,19.6s,baz=68,slow=43			LR	LR	15 05 36.2	
ASAJ	**Asahikawa**	**8.50**	**7**	Pn	**Pn**	**15 05 38.9**	**-0.4**
ASAJ	0.4nm,0.3s,baz=240,slow=14,SNR=4.6 0.2nm,0.3s,baz=246,slow=19,SNR=2.0			Sn	**Sn**	**15 07 12.4**	**-1.5**
ASAJ	comp=Z,42nm,19.0s,baz=126,slow=39			LR	LR	15 09 07.1	
JNU	**Nakatsue**	**8.89**	**256**	LR	LR	15 09 36.0	
PETK	**Petropavlovsk-**	**20.96**	**29**	LR	LR	15 17 49.5	
H11N2	comp=Z,19nm,18.7s,baz=150,slow=41 **WAKE ISLAND Hy**	**27.65**	**118**	T	T	15 38 32.1	
H11N1	baz=310,slow=75,SNR=35 **WAKE ISLAND Hy**	**27.65**	**118**	T	T	15 38 32.2	
H11N3	baz=310,slow=75,SNR=27 **WAKE ISLAND Hy**	**27.66**	**118**	T	T	15 38 33.4	
H11S1	baz=310,slow=75,SNR=35 **WAKE ISLAND Hy**	**28.31**	**120**	T	T	15 39 15.9	
H11S3	baz=312,slow=76,SNR=84 **WAKE ISLAND Hy**	**28.31**	**120**	T	T	15 39 15.8	
H11S2	baz=312,slow=76,SNR=59 **WAKE ISLAND Hy**	**28.33**	**120**	T	T	15 39 16.9	
ZALV	baz=312,slow=76,SNR=42 **Zalesovo Beam**	**42.70**	**313**	P	**P**	**15 11 33.1**	**+0.9**
MKAR	0.5nm,0.4s,baz=79,slow=7.5,SNR=2.8 **Makanchi Array**	**44.69**	**303**	P	**P**	**15 11 48.8**	**+0.5**
WRA	0.3nm,0.3s,baz=76,slow=8.8,SNR=5.0 **Warramunga Arr**	**55.70**	**188**	P	**P**	**15 13 12.8**	**+1.0**
	0.2nm,0.5s,baz=5.4,slow=8.1,SNR=5.8						
ASAR	**Alice Springs**	**59.42**	**188**	P	**P**	**15 13 37.6**	**-0.4**
	0.3nm,0.9s,baz=20,slow=11,SNR=4.2						

*IDC **16** 15:07:03.7±0.5, 17°.82N×77°.99W, h0km, mb4.2/16, mb1 4.5/21, mb1mx4.3/41, mbtmp4.3/21, ML4.4/5, MS3.5/15, Ms1 3.5/15, ms1mx3.3/44, Error ellipse: s-maj=20.3km s-min=11.6km az=59.0*
*ISCJB **16** 15:07:06.5±0.6, 17°.85N±0°.02×77°.82W±0°.03, h31km±4km, mb4.6/77, MS3.6/14, Error ellipse: s-maj=4.7km s-min=2.9km az=143.1*
*NEIC **16** 15:07:07.4±1.2, 17°.91N×77°.92W, h28km±9km, mb4.7/72, Error ellipse: s-maj=6.0km s-min=4.4km az=222.0*
NEIC Felt [IV] at Mandeville, May Pen, Montego Bay and Savanna la Mar; [III] at Half Way Tree and Kingston; [II] at Constant Spring, Mona and Spanish Town. Felt throughout Jamaica.
*JSN **16** 15:07:08.1±0.7, 17°.82N×77°.86W, h21km±5km, MD5.0*
ISC 16 15:07:07.8±1.0, 17°.91N±0°.05×77°.93W±0°.05, h29km±7km, n367, σ1§67/356, mb4.6/77, MS3.5/14, 1D, Jamaica region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MCJ	**Malvern**	**0.23**	**85**	⇓*iP*	**Pb**	**15 07 13.0**	**-1.4**
CVJ	**Coleyville**	**0.49**	**49**	*iP*	**Pb**	**15 07 17.6**	**-0.5**
MTDJ	**Mount Denham**	**0.49**	**49**	*ePg*	**Pb**	**15 07 17.5**	**-0.6**
BBJ	**Bamboo Saint A**	**0.79**	**53**	*iP*	**Pn**	**15 07 22.5**	**-0.5**
BNJ	**Bonny Gate**	**1.01**	**66**	*iP*	**Pn**	**15 07 25.1**	**-1.0**
STH	**Stony Hill**	**1.08**	**81**	*iP*	**Pn**	**15 07 25.3**	**-1.7**
STH				*iS*	**Sb**	**15 07 39.0**	**-2.6**
YHJ	**Yallahs**	**1.36**	**90**	*iP*	**Pn**	**15 07 30.2**	**-0.7**
GTBY	**Guantanamo Bay**	**3.34**	**53**	*ePn*	**Pn**	**15 07 56.5**	**-1.6**
PAPH	**Port-au-Prince**	**5.38**	**83**	*ePn*	**Pn**	**15 08 27.9**	**+1.8**
SDDR	**Presa de Saban**	**6.39**	**79**	*ePn*	**Pn**	**15 08 39.2**	**-0.9**
BANI	**BANI**	**7.21**	**85**	*ePn*	**Pn**	**15 08 51.3**	**-0.1**
GRTK	**Grand Turk**	**7.33**	**60**	*ePn*	**Pn**	**15 08 52.0**	**-0.9**
SJCC	**San Jacinto, C**	**8.40**	**161**	*eP*	**Pn**	**15 09 06.6**	**-1.0**
URIC	**Uribia, Colomb**	**8.42**	**136**	*eP*	**Pn**	**15 09 03.7**	**-4.3**
BCIP	**Isla Barro Col**	**8.88**	**192**	*ePn*	**Pn**	**15 09 10.8**	**-3.5**
CAPC	**Capurgana**	**9.23**	**176**	*eP*	**Pn**	**15 09 15.7**	**-3.4**
MOTC	**Monteria, Cord**	**9.34**	**166**	*eP*	**Pn**	**15 09 17.4**	**-3.1**
TGUH	**Tegucigalpa,Un**	**9.77**	**248**	*ePn*	**Pn**	**15 09 28.1**	**+1.7**
TEIG	**Tepich**	**10.06**	**285**	Pn	**Pn**	**15 09 30.7**	**+0.3**
TEIG	14nm,0.3s,baz=267,slow=24,SNR=97 2.5nm,0.3s,baz=180,slow=20,SNR=3.5			Sn	**Sn**	**15 11 17.8**	**-4.4**
JTS	**JuntasAbangare**	**10.18**	**223**	*eP*	**Pn**	**15 09 33.4**	**+1.2**
OCAC	13nm,0.9s **Ocana**	**10.60**	**154**	*eP*	**Pn**	**15 09 37.2**	**-0.8**
DWPF	**Disney Wildern**	**10.66**	**343**	*ePn*	**Pn**	**15 09 36.8**	**-1.7**
CELP	**Cerrillos**	**10.80**	**87**	*ePn*	**Pn**	**15 09 38.2**	**-2.4**
DBBC	**Dabeiba**	**10.95**	**171**	*eP*	**Pn**	**15 09 41.1**	**-1.6**
SJG	**San Juan**	**11.21**	**87**	Pn	**Pn**	**15 09 48.2**	**+2.1**
SJG	2.7nm,0.3s,baz=344,slow=21,SNR=2.6 baz=81,slow=19,SNR=2.0			Sn	**Sn**	**15 11 54.4**	**+4.0**
SJG	comp=Z,612nm,20.2s,baz=286,slow=38			LR	LR	15 14 15.2	
GRMC	**Gramalote, San**	**11.29**	**153**	*eP*	**Pn**	**15 09 44.0**	**-3.4**
CBRI	**Barrientos, No**	**11.29**	**153**	*eP*	**Pn**	**15 09 45.1**	**-2.4**
SDV	**Santo Domingo**	**11.43**	**141**	Pn	**Pn**	**15 09 47.2**	**-2.1**
SDV	6.6nm,0.3s,baz=336,slow=7.5,SNR=6.1 3.1nm,0.3s,baz=0.0,slow=19,SNR=2.3			Sn	**Sn**	**15 11 58.8**	**+2.6**
CBYP	**Canovanas**	**11.48**	**86**	*ePn*	**Pn**	**15 09 48.7**	**-1.2**
HUMP	**Col San Antoni**	**11.49**	**87**	*ePn*	**Pn**	**15 09 48.4**	**-1.6**
BRRC	**Barranca, Sant**	**11.49**	**159**	*eP*	**Pn**	**15 09 49.0**	**-1.0**
PAMC	**Pamplona, Colo**	**11.67**	**153**	*eP*	**Pn**	**15 09 50.7**	**-2.2**
MTP	**Monte Pirata**	**11.78**	**87**	*ePn*	**Pn**	**15 09 51.6**	**-2.2**
BTLC	**Betulia, Santa**	**11.83**	**157**	*eP*	**Pn**	**15 09 54.1**	**-0.7**
HELC	**Santa Helena**	**11.88**	**168**	*eP*	**Pn**	**15 09 55.3**	**-0.4**
BARC	**Barichara**	**12.16**	**157**	*eP*	**Pn**	**15 09 58.1**	**-1.3**
CDVI	**St. Croix**	**12.53**	**89**	*ePn*	**Pn**	**15 10 06.0**	**+1.7**
RUSC	**La Rusia**	**12.84**	**158**	*eP*	**Pn**	**15 10 08.8**	**-0.1**
GUYC	**Guyana, Colomb**	**12.85**	**169**	*eP*	**Pn**	**15 10 10.0**	**+1.0**
ROSC	**El Rosal**	**13.46**	**164**	Pn	**Pn**	**15 10 18.9**	**+1.7**
ROSC	1.8nm,0.3s,baz=47,slow=21,SNR=3.0 1.2nm,0.3s,baz=221,slow=19,SNR=2.7			Sn	**Sn**	**15 12 46.9**	**+0.8**
ROSC	comp=Z,103nm,21.9s,baz=268,slow=38			LR	LR	15 15 30.8	
TOLC	**Tolima**	**13.48**	**169**	*eP*	**Pn**	**15 10 17.7**	**+0.1**
VILC	**Villavicencio,**	**14.32**	**163**	*eP*	**Pn**	**15 10 26.1**	**-2.7**
TIGA	**Tifton**	**14.42**	**340**	P	**Pn**	**15 10 29.3**	**-0.7**
TIGA	baz=158 **Tifton**	**14.42**	**340**	*ePn*	**Pn**	**15 10 29.8**	**-0.2**
SJAC	50nm,0.8s **San Juan de Ar**	**15.06**	**165**	*eP*	**Pn**	**15 10 37.7**	**-1.1**
CMIG	**Matias Romero**	**16.20**	**270**	Pn	**Pn**	**15 10 54.0**	**+0.5**
GOGA	0.3nm,0.3s,baz=78,slow=7.7,SNR=11 **Godfrey**	**16.22**	**343**	*ePn*	**Pn**	**15 10 53.0**	**-0.6**
446A	20nm,0.8s **Poplarville**	**16.51**	**323**	P	**Pn**	**15 10 56.2**	**-1.1**
545A	baz=138 **Edgard**	**16.65**	**319**	P	**Pn**	**15 10 59.0**	**0.0**
LRAL	baz=134 **Lakeview Retre**	**17.13**	**333**	*ePn*	**Pn**	**15 11 05.7**	**+0.5**
345A	18nm,0.8s **Thompson Farm,**	**17.28**	**323**	P	**Pn**	**15 11 07.4**	**+0.5**
147A	baz=138 **Livingston**	**17.41**	**330**	P	**Pn**	**15 11 08.8**	**+0.2**
KMSC	baz=145 **Kings Mountain**	**17.43**	**351**	P	**Pn**	**15 11 08.7**	**-0.2**
OTAV	baz=169 **Otavalo**	**17.57**	**182**	*eP*	**Pn**	**15 11 11.7**	**+0.6**
Z48A	17nm,1.0s **Northport**	**17.67**	**333**	P	**Pn**	**15 11 12.1**	**+0.3**
245A	baz=148,SNR=9.7 **Little AP, Sta**	**17.74**	**325**	P	**P**	**15 11 14.4**	**+1.1**
Z47A	baz=140 **Carrollton**	**17.75**	**331**	P	**P**	**15 11 14.1**	**+0.8**
146A	baz=147 **Union**	**17.77**	**328**	P	**P**	**15 11 14.0**	**+0.4**
344A	baz=143 **Westbrook Farm**	**17.79**	**322**	P	**P**	**15 11 14.9**	**+1.1**
Z46A	baz=136 **Louisville**	**18.16**	**329**	P	**P**	**15 11 19.1**	**+1.2**
Y47A	baz=144 **UCPARC, Winfie**	**18.24**	**333**	P	**P**	**15 11 19.2**	**+0.4**
TKL	baz=148,SNR=7.8 **Tuckaleechee C**	**18.43**	**345**	P	**Pn**	**15 11 22.5**	**+1.4**
TKL	4.0nm,0.3s,baz=162,slow=15,SNR=18 comp=Z,271nm,18.0s,baz=128,slow=38			LR	LR	15 18 50.8	
CPCT	**Cooper Cave**	**18.43**	**343**	*eP*	**Pn**	**15 11 21.9**	**+0.7**
SWET	9.3nm,0.7s **Sewanee**	**18.65**	**339**	*eP*	**P**	**15 11 23.9**	**+0.5**
Y46A	6.6nm,0.9s **Houston**	**18.68**	**330**	P	**Pn**	**15 11 25.2**	**+1.0**
441A	baz=146,SNR=24 **DeRidder**	**18.86**	**315**	P	**Pn**	**15 11 28.5**	**+2.1**
Y45A	baz=129 **Yeager Farm, C**	**19.00**	**329**	P	**Pn**	**15 11 29.3**	**+1.3**
341A	baz=144 **Kurthwood**	**19.22**	**317**	P	**Pn**	**15 11 31.7**	**+0.9**
PLAL	baz=131 **Pickwick Lake**	**19.26**	**334**	*eP*	**P**	**15 11 30.2**	**+0.2**
VWCC	**Virginia Weste**	**19.35**	**355**	*eP*	**P**	**15 11 29.1**	**-1.9**
BLA	**Blacksburg**	**19.36**	**354**	*eP*	**P**	**15 11 29.3**	**-1.8**
OXF	26nm,0.9s **Oxford**	**19.46**	**330**	*eP*	**P**	**15 11 31.1**	**-1.1**
Z42A	74nm,0.9s **Norrel Spur, H**	**19.82**	**323**	P	**Pn**	**15 11 39.0**	**+1.2**
141A	baz=137 **Papa Simpson,**	**19.91**	**320**	P	**P**	**15 11 38.1**	**+1.0**
439A	baz=134 **Center Grove,**	**19.97**	**313**	P	**P**	**15 11 39.1**	**+1.3**
240A	baz=126 **Hunter Patters**	**20.07**	**318**	P	**P**	**15 11 39.6**	**+0.8**
339A	baz=131 **Huntington**	**20.14**	**315**	P	**P**	**15 11 41.2**	**+1.5**
WVT	baz=128 **Waverly**	**20.16**	**336**	*eP*	**P**	**15 11 40.7**	**+0.9**
936A	21nm,0.8s **North Padre Is**	**20.22**	**301**	P	Pn	15 11 44.3	+1.8
HKT	baz=114 **Hockley**	**20.26**	**310**	*eP*	**P**	**15 11 39.8**	**-1.1**
Z41A	49nm,1.2s **Richland Creek**	**20.30**	**322**	P	Pn	15 11 44.2	+0.7
140A	baz=135 **Cam and Jess,**	**20.34**	**319**	P	Pn	15 11 44.2	+0.1
637A	baz=132 **Eagle Lake**	**20.36**	**308**	P	Pn	15 11 45.2	+0.9
	baz=120						
438A	**Sam Houston St**	**20.44**	**312**	P	Pn	15 11 45.7	+0.6
NATX	baz=125 **Nacogdoches**	**20.48**	**315**	P	Pn	15 11 46.4	+0.8
NATX	baz=128 **Nacogdoches**	**20.48**	**315**	*eP*	**P**	**15 11 44.6**	**+1.3**
035Z	138nm,1.5s **Hargill**	**20.48**	**298**	P	Pn	15 11 47.4	+1.7
239A	baz=110 **Gary**	**20.51**	**316**	P	Pn	15 11 46.7	+0.7
Z40A	baz=129 **Long Farm, Mag**	**20.66**	**321**	P	Pn	15 11 47.9	+0.2
338A	baz=134 **Crockett**	**20.68**	**314**	P	Pn	15 11 48.6	+0.7
537A	baz=126 **Green Hill Far**	**20.68**	**309**	P	Pn	15 11 48.8	+0.8
736A	baz=122 **Circle Diamond**	**20.69**	**306**	P	Pn	15 11 49.3	+1.2
636A	baz=118 **Smothers Creek**	**20.93**	**307**	P	**P**	**15 11 51.5**	**+3.2**
835A	baz=119 **Beeville**	**20.99**	**303**	P	**P**	**15 11 52.7**	**+3.8**
337A	baz=115 **Centerville**	**21.05**	**313**	P	**P**	**15 11 52.7**	**+3.2**
X40A	baz=125 **Basin Creek Fa**	**21.21**	**324**	P	**P**	**15 11 53.7**	**+2.5**
034A	baz=138 **Hebbronville**	**21.21**	**299**	P	**P**	**15 11 53.9**	**+2.7**
536A	baz=111,SNR=16 **Bastrop**	**21.23**	**308**	P	**P**	**15 11 54.8**	**+3.3**
934A	baz=121 **Benavides**	**21.27**	**301**	P	**P**	**15 11 54.4**	**+2.5**
138A	baz=113,SNR=5.6 **Matatall Enter**	**21.32**	**317**	P	**P**	**15 11 55.3**	**+2.9**
436A	baz=130 **Wall Ranch, Ga**	**21.40**	**310**	P	**P**	**15 11 55.6**	**+2.3**
237A	baz=122 **Washetta, Mont**	**21.40**	**314**	P	**P**	**15 11 55.4**	**+2.1**
W41B	baz=127 **Gary Mavity, V**	**21.40**	**326**	P	**P**	**15 11 55.3**	**+2.1**
SDMD	baz=140 **Soldier's Deli**	**21.45**	**2**	*eP*	**P**	**15 11 54.3**	**+0.6**
WHAR	9.5nm,0.7s **Wooly Hollow**	**21.51**	**326**	*eP*	**P**	**15 11 54.8**	**+0.4**
WCI	27nm,0.9s **Wyandotte Cave**	**21.53**	**342**	*eP*	**P**	**15 11 54.2**	**-0.4**
X301	29nm,0.8s **Greenbrier Sit**	**21.53**	**326**	*eP*	**P**	**15 11 55.3**	**+0.7**
MIAR	44nm,0.9s **Mount Ida**	**21.67**	**323**	P	**P**	**15 11 57.4**	**+1.3**
MIAR	baz=136,SNR=8.2 **Mount Ida**	**21.67**	**323**	*eP*	**P**	**15 11 56.7**	**+0.6**
137A	38nm,1.0s **Heron Place, G**	**21.72**	**316**	P	**P**	**15 11 58.7**	**+2.0**
USIN	baz=128 **University of**	**21.73**	**339**	*eP*	**P**	**15 11 56.3**	**-0.4**
336A	42nm,0.7s **Riesel**	**21.77**	**312**	P	**P**	**15 11 59.3**	**+2.1**
PBMO	baz=124 **Poplar Bluff**	**21.80**	**332**	*eP*	**P**	**15 11 57.8**	**+0.3**
734A	28nm,1.0s **La Parita Cree**	**21.81**	**304**	P	**P**	**15 12 00.3**	**+2.6**
W40A	baz=116 **Ferguson Farm,**	**21.86**	**325**	P	**P**	**15 11 60.0**	**+1.9**
634A	baz=138 **China Grove, S**	**21.88**	**305**	P	**P**	**15 12 01.5**	**+3.1**
236A	baz=117 **Katherine and**	**21.89**	**313**	P	**P**	**15 12 00.5**	**+1.9**
933A	baz=126 **Laredo**	**21.90**	**300**	P	**P**	**15 12 01.5**	**+2.8**
X39A	baz=112,SNR=7.4 **Fountain Ranch**	**21.96**	**322**	P	**P**	**15 12 01.7**	**+2.4**
435B	baz=135 **Jarrell**	**21.98**	**309**	P	**P**	**15 12 01.6**	**+2.1**
Z37A	baz=121 **Pogue Cattle C**	**22.01**	**317**	P	**P**	**15 12 01.4**	**+1.6**
SIUC	baz=130 **Southern Illin**	**22.08**	**336**	*eP*	**P**	**15 12 01.8**	**+1.3**
136A	48nm,0.7s **Ennis**	**22.17**	**314**	P	**P**	**15 12 03.5**	**+2.0**
V40A	baz=126 **Witts Springs**	**22.19**	**326**	P	**P**	**15 12 02.8**	**+1.1**
W39A	baz=140,SNR=10 **Magazine**	**22.26**	**324**	P	**P**	**15 12 03.8**	**+1.4**
833A	baz=137 **Chaparral WMA,**	**22.27**	**302**	P	**P**	**15 12 04.0**	**+1.3**
534A	baz=113,SNR=6.8 **Blanco**	**22.28**	**307**	P	**P**	**15 12 04.2**	**+1.4**
X38A	baz=118,SNR=5.2 **Whitesboro**	**22.49**	**321**	P	**P**	**15 12 06.7**	**+1.8**
434A	baz=134,SNR=9.0 **Burnet**	**22.50**	**309**	P	**P**	**15 12 06.9**	**+1.8**
Y37A	baz=120 **Hugo**	**22.51**	**319**	P	**P**	**15 12 06.6**	**+1.4**
WHTX	baz=131 **Lake Whitney,**	**22.54**	**312**	*eP*	**P**	**15 12 05.8**	**+0.4**
633A	173nm,1.4s **Saathoff Ranch**	**22.56**	**305**	P	**P**	**15 12 07.2**	**+1.4**
OLIL	baz=116,SNR=5.8 **Olney**	**22.57**	**339**	*eP*	**P**	**15 12 05.3**	**-0.4**
W38A	34nm,0.7s **Poteau**	**22.59**	**322**	P	**P**	**15 12 07.6**	**+1.6**
Z36A	baz=135,SNR=6.8 **Blue Ridge**	**22.59**	**316**	P	**P**	**15 12 07.0**	**+1.0**
U40A	baz=128 **Yellville**	**22.62**	**327**	P	**P**	**15 12 07.3**	**+0.9**
V39A	baz=140,SNR=5.6 **Pettigrew**	**22.65**	**325**	P	**P**	**15 12 07.7**	**+1.0**
832A	baz=138 **Faith Ranch, C**	**22.72**	**301**	P	**P**	**15 12 09.2**	**+1.7**
533A	baz=112 **Kerrville**	**22.73**	**306**	P	**P**	**15 12 09.1**	**+1.5**
334A	baz=118 **Lometa**	**22.74**	**310**	P	**P**	**15 12 09.3**	**+1.6**
X37A	baz=121,SNR=8.2 **Clayton**	**22.76**	**320**	P	**P**	**15 12 09.5**	**+1.7**
234A	baz=133 **Clairette**	**23.03**	**311**	P	**P**	**15 12 12.2**	**+1.6**
T40A	baz=123 **Mansfield**	**23.07**	**329**	P	**P**	**15 12 11.9**	**+0.8**
433A	baz=142 **Art**	**23.09**	**308**	P	**P**	**15 12 12.6**	**+1.3**
V38A	baz=119,SNR=14 **Canehill**	**23.09**	**324**	P	**P**	**15 12 12.2**	**+1.0**
HHAR	baz=137 **Hobbs**	**23.14**	**325**	*eP*	**P**	**15 12 12.6**	**+0.9**
Z35A	21nm,0.9s **Perchaven, San**	**23.17**	**315**	P	**P**	**15 12 13.3**	**+1.3**
W37B	baz=127 **Quinton**	**23.17**	**321**	P	**P**	**15 12 13.0**	**+0.9**
X36A	baz=133 **Centrahoma**	**23.36**	**319**	P	**P**	**15 12 15.1**	**+1.2**
Y35A	baz=131 **Marietta**	**23.37**	**317**	P	**P**	**15 12 15.3**	**+1.2**
T39A	baz=128 **Clever**	**23.41**	**328**	P	**P**	**15 12 15.4**	**+1.1**
S40A	baz=140,SNR=11 **Lebanon**	**23.42**	**330**	P	**P**	**15 12 15.3**	**+0.8**
U38A	baz=143,SNR=9.8 **Gravette**	**23.50**	**325**	P	**P**	**15 12 16.2**	**+1.0**
JCT	baz=138 **Junction City**	**23.50**	**306**	P	**P**	**15 12 16.9**	**+1.5**
JCT	baz=117 **Junction City**	**23.50**	**306**	*eP*	**P**	**15 12 16.5**	**+1.1**
V37A	37nm,1.1s **Hulbert**	**23.52**	**323**	P	**P**	**15 12 16.1**	**+0.7**
233A	baz=135 **Rising Star**	**23.58**	**311**	P	**P**	**15 12 17.4**	**+1.3**
X35A	baz=122,SNR=6.0 **Drake**	**23.64**	**318**	P	**P**	**15 12 17.5**	**+0.9**
SFIN	baz=129 **Lafayette**	**23.75**	**342**	P	**P**	**15 12 18.2**	**+0.5**
SFIN	baz=158 **Lafayette**	**23.75**	**342**	*eP*	**P**	**15 12 18.7**	**+1.0**
R40A	28nm,0.9s **Maddies Statio**	**23.87**	**331**	P	**P**	**15 12 20.0**	**+1.2**
U37A	baz=144,SNR=8.7 **Salina**	**23.88**	**324**	P	**P**	**15 12 19.5**	**+0.6**
Y34A	baz=136 **Reagan Ranch,**	**23.88**	**316**	P	**P**	**15 12 20.7**	**+1.7**
T38A	baz=127,SNR=5.1 **Diamond**	**23.89**	**326**	P	**P**	**15 12 20.1**	**+1.1**
S39A	baz=139,SNR=5.1 **Bolivar**	**23.89**	**329**	P	**P**	**15 12 19.8**	**+0.7**
133A	baz=142,SNR=

TUL1	Leonard	23.92 322	eP	P	P	15 12 18.6 -0.6
W35A	Tecumseh	24.06 319	P	P	P	15 12 21.5 +0.8
	baz=131					
S38A	Stockton	24.14 328	P	P	P	15 12 23.0 +1.7
	baz=140,SNR=5.8					
Z33A	Whitaker Ranch	24.17 313	P	P	P	15 12 22.9 +1.3
	baz=124					
R39A	Chumby, Stover	24.25 330	P	P	P	15 12 23.4 +1.2
	baz=143,SNR=8.8					
T37A	Cheneyville 18	24.29 325	P	P	P	15 12 23.6 +0.9
	baz=138					
X34A	Smith Ranch, M	24.32 317	P	P	P	15 12 24.4 +1.4
	baz=128,SNR=5.9					
Q40A	Laux Farm, Aux	24.36 332	P	P	P	15 12 24.9 +1.6
	baz=146					
V35A	Meyer Ranch, C	24.44 320	P	P	P	15 12 25.4 +1.3
	baz=132					
R38A	Fenwick Farm,	24.57 329	P	P	P	15 12 26.2 +1.0
	baz=141					
W34A	Bridge Creek,	24.68 318	P	P	P	15 12 26.9 +0.6
	baz=129					
S37A	Fort Scott	24.71 327	P	P	P	15 12 27.9 +1.4
	baz=139					
T36A	Boggs Farm, Ca	24.77 324	P	P	P	15 12 28.9 +1.8
	baz=136,SNR=7.0					
U35A	Pawnee	24.79 322	P	P	P	15 12 28.5 +1.3
	baz=133					
P40A	Paris	24.79 333	P	P	P	15 12 28.3 +1.1
	baz=146,SNR=5.8					
Q39A	Willow Grove F	24.80 331	P	P	P	15 12 28.6 +1.3
	baz=144,SNR=8.5					
ATAH	Atahualpa	24.89 181	LR	LR		15 23 34.5
	comp=Z,62nm,19.3s,baz=19,slow=40					
V34A	Guthrie	24.90 320	P	P	P	15 12 29.1 +0.8
	baz=131					
V34A	Guthrie	24.90 320	eP	P	P	15 12 28.8 +0.5
	43nm,1.0s					
WMOK	Wichita Mounta	25.02 316	P	P	P	15 12 30.7 +1.3
	baz=127					
WMOK	Wichita Mounta	25.02 316	eP	P	P	15 12 29.1 -0.3
	12nm,0.9s					
T35A	Sooner Cattle	25.03 323	P	P	P	15 12 30.2 +0.7
	baz=134					
Q38A	Cooks Store, C	25.04 330	P	P	P	15 12 30.8 +1.3
	baz=143,SNR=6.5					
W33A	Caddo, Fort Co	25.07 317	P	P	P	15 12 31.2 +1.4
	baz=128					
S36A	Lake Cedric, C	25.09 325	P	P	P	15 12 31.3 +1.3
	baz=137					
R37A	Teagarden Farm	25.13 327	P	P	P	15 12 30.7 +0.4
	baz=139,SNR=10					
X32A	Elmer	25.18 315	P	P	P	15 12 32.4 +1.6
	baz=126					
O40A	La Belle	25.21 334	P	P	P	15 12 32.1 +1.1
	baz=148					
U34A	Anderson Ranch	25.31 321	P	P	P	15 12 32.9 +0.9
	baz=132					
U34A	Anderson Ranch	25.31 321	eP	P	P	15 12 32.6 +0.7
	163nm,1.9s					
V33A	Lossen Ranch,	25.37 319	P	P	P	15 12 33.7 +1.1
	baz=130					
S35A	Otter Creek Ra	25.46 324	P	P	P	15 12 34.3 +1.0
	baz=136					
R36A	Gordon, Harris	25.49 326	P	P	P	15 12 34.2 +0.7
	baz=138					
T34A	McClaskey Farm	25.50 322	P	P	P	15 12 34.8 +1.2
	baz=133					
P38A	Dawn	25.52 331	P	P	P	15 12 34.6 +0.7
	baz=144,SNR=8.1					
W32A	Sentinel	25.56 316	P	P	P	15 12 35.8 +1.6
	baz=127					
PTGA	Pitinga	25.60 134	P	P	P	15 12 35.8 +1.1
	7.5nm,0.7s,baz=326,slow=13,SNR=16					
PTGA			LR	LR		15 23 42.8
	comp=Z,156nm,20.0s,baz=323,slow=39					
PTGA	Pitinga	25.60 134	eP	P	P	15 12 35.1 +0.3
	30nm,0.8s					
O39A	Kirksville	25.60 333	P	P	P	15 12 36.2 +1.6
	baz=146					
V32A	Arapaho	25.79 318	P	P	P	15 12 38.5 +2.1
	baz=128					
R35A	Emporia Munici	25.86 326	P	P	P	15 12 38.9 +1.9
	baz=137					
P37A	Lathrop	25.88 330	P	P	P	15 12 38.4 +1.3
	baz=142					
O38A	Galt	25.90 332	P	P	P	15 12 38.8 +1.6
	baz=144					
S34A	Willow Spring	25.92 323	P	P	P	15 12 39.6 +2.1
	baz=134					
Q36A	Arnold C. Orve	25.95 328	P	P	P	15 12 39.8 +2.1
	baz=139					
N39A	Derby Farms, D	26.11 334	P	P	P	15 12 40.9 +1.8
	baz=147					
TXAR	Lajitas Array	26.12 301	P	P	P	15 12 40.9 +1.4
	7.3nm,0.8s,baz=121,slow=8.9,SNR=94					
TX31	Lajitas Ar. Si	26.12 301	eP	P	P	15 12 39.0 -0.6
Q35A	Mercer Eighty,	26.17 327	P	P	P	15 12 41.1 +1.4
	baz=138					
O37A	Wolven Farm, M	26.24 331	P	P	P	15 12 41.5 +1.2
	baz=143					
P36A	Good Intent, A	26.32 329	P	P	P	15 12 42.3 +1.2
	baz=140					
N38A	Joes South For	26.34 333	P	P	P	15 12 41.9 +0.7
	baz=146					
S33A	Kaszmaul Farm,	26.36 322	P	P	P	15 12 42.9 +1.4
	baz=133					
R34A	Isabella, Hill	26.42 324	P	P	P	15 12 43.1 +1.1
	baz=135					
O36A	Bolckow	26.60 330	P	P	P	15 12 43.8 +0.2
	baz=142					
T32A	Huddler Ranch,	26.64 320	P	P	P	15 12 44.7 +0.7
	baz=131					
KSU1	Kansas State U	26.65 326	eP	P	P	15 12 43.4 -0.6
	22nm,0.7s					
P35A	Duane Minner,	26.66 328	P	P	P	15 12 44.6 +0.5
	baz=139					
N37A	Lee Faris, Mou	26.74 332	P	P	P	15 12 45.7 +0.8
	baz=144					
SADO	Sadowa	26.80 358	LR	LR		15 22 47.1
	comp=Z,72nm,18.6s,baz=174,slow=35					
M38A	Pleasantville	26.84 334	P	P	P	15 12 46.8 +1.0
	baz=146,SNR=5.6					
AMTX	Amarillo	27.07 313	P	P	P	15 12 49.2 +1.2
	baz=123					
AMTX	Amarillo	27.07 313	eP	P	P	15 12 48.3 +0.3
	63nm,1.6s					
P34A	Walnut Farm, R	27.09 327	P	P	P	15 12 48.9 +0.9
	baz=138					
Q33A	Connelly Farm,	27.23 325	P	P	P	15 12 50.8 +1.5
	baz=135					
L38A	Oak Wood Farm,	27.35 335	P	P	P	15 12 50.5 +0.1
	baz=148					
MSTX	Muleshoe	27.37 311	P	P	P	15 12 51.5 +0.8
	baz=120,SNR=8.7					
MSTX	Muleshoe	27.37 311	eP	P	P	15 12 51.3 +0.6
	58nm,1.1s					
O34A	Beatrice	27.49 328	P	P	P	15 12 52.4 +0.8
	baz=138					
MNTX	Cornudas Mount	28.36 304	P	P	P	15 13 01.1 +1.6
	baz=112					
MNTX	Cornudas Mount	28.36 304	eP	P	P	15 13 00.7 +1.2
	3.4nm,0.8s					
NNA	Nana	29.72 178	LR	LR		15 27 23.3
	comp=Z,70nm,19.4s,baz=352,slow=41					
K32A	Verdigre	29.99 330	P	P	P	15 13 14.5 +0.7
	baz=139					
T25A	Trinidad	30.14 315	P	P	P	15 13 16.9 +1.3
	baz=122					
T25A	Trinidad	30.14 315	eP	P	P	15 13 16.7 +1.2
	26nm,1.3s					
ECSD	EROS Data Cent	30.19 332	P	P	P	15 13 16.3 +0.7
	baz=143					
ECSD	EROS Data Cent	30.19 332	eP	P	P	15 13 15.6 0.0
	9.7nm,1.0s					
H35A	Sunnyside Ranc	30.24 336	P	P	P	15 13 16.6 +0.6
	baz=147					
BNM	Barren Site	30.30 308	eP	P	P	15 13 16.4 -0.5
SAML	Samuel	30.40 150	eP	P	P	15 13 16.6 -1.0
	12nm,0.8s					
ANMO	Albuquerque	30.52 309	P	P	P	15 13 21.1 +2.3
	baz=116					
ANMO	Albuquerque	30.52 309	eP	P	P	15 13 19.6 +0.7
	4.9nm,1.1s					
121A	Cookes Peak, D	30.56 304	P	P	P	15 13 21.3 +2.1
	baz=111					
F36A	Milaca	30.74 338	P	P	P	15 13 21.6 +1.2
	baz=150					
LAZ	Ladron	30.79 308	eP	P	P	15 13 19.1 -2.2
SDCO	Great Sand Dun	31.20 315	P	P	P	15 13 26.7 +1.7
	baz=122					
SDCO	Great Sand Dun	31.20 315	eP	P	P	15 13 25.8 +0.8
	4.7nm,1.0s					
319A	Douglas	31.37 301	eP	P	P	15 13 28.4 +2.0
	9.5nm,0.9s					
C39A	Grand Marais	31.46 344	P	P	P	15 13 28.0 +1.3
	baz=157					
D37A	Cotton	31.52 341	P	P	P	15 13 28.7 +1.4
	baz=153					
C38A	Sawbill Land.	31.68 343	P	P	P	15 13 30.0 +1.4
	baz=155					
EYMN	Ely	31.95 343	P	P	P	15 13 32.3 +1.3
	baz=155					
EYMN	Ely	31.95 343	eP	P	P	15 13 29.6 -1.4
	7.4nm,0.9s					
S22A	4UR Ranch, Cre	32.11 314	P	P	P	15 13 34.8 +1.9
	baz=120					
S22A	4UR Ranch, Cre	32.11 314	eP	P	P	15 13 32.2 -0.7
	9.1nm,1.2s					
C36A	Pine Crest Far	32.18 341	P	P	P	15 13 34.5 +1.4
	baz=153					
ISCO	Idaho Springs	32.39 318	P	P	P	15 13 37.2 +1.8
	baz=124					
ISCO	Idaho Springs	32.39 318	eP	P	P	15 13 33.6 -1.8
	10nm,1.3s					
F31A	Hecla	32.59 333	P	P	P	15 13 38.2 +1.5
	baz=142					
TUC	Tucson	32.88 302	P	P	P	15 13 41.6 +2.1
	baz=108					
B35A	Bob, Littlefor	32.99 341	P	P	P	15 13 41.3 +1.2
	baz=152					
PV05	Paradox Valley	33.84 313	eP	P	P	15 13 45.2 -2.8
I25A	Rochford	33.90 326	P	P	P	15 13 49.4 +1.0
	baz=132					
G27A	Dupree	33.92 329	P	P	P	15 13 49.3 +1.0
	baz=136					
PV10	Paradox Valley	33.94 313	eP	P	P	15 13 46.5 -2.3
A33A	Warroad	34.04 339	P	P	P	15 13 50.2 +0.9
	baz=149					
X16A	Lo Mia Camp, P	34.08 305	eP	P	P	15 13 48.3 -1.8
	10nm,1.0s					
E28A	Huff	34.22 332	P	P	P	15 13 52.0 +1.1
	baz=139					
A32A	Rocking H Ranc	34.40 338	P	P	P	15 13 53.6 +1.2
	baz=148					
214A	Organ Pipe Nat	34.42 301	P	P	P	15 13 55.2 +2.3
	baz=106					
WUAZ	Wupatki	34.43 307	P	P	P	15 13 55.5 +2.5
	baz=112					
WUAZ	Wupatki	34.43 307	eP	P	P	15 13 51.6 -1.4
	30nm,1.1s					
D27A	Center	35.00 332	P	P	P	15 13 59.1 +1.5
	baz=138					
Y14A	Wickenburg	35.15 304	eP	P	P	15 13 57.0 -2.1
	83nm,1.3s					
SRU	San Rafael Swe	35.31 314	eP	P	P	15 13 57.0 -3.6
	17nm,0.9s					
LPAZ	La Paz	35.32 164	P	P	P	15 14 01.5 +0.2
	0.7nm,0.5s,baz=1.6,slow=9.0,SNR=2.9					
LPAZ			LR	LR		15 30 23.9
	comp=Z,90nm,20.0s,baz=318,slow=40					
ULM	Lac du Bonnet	35.33 340	P	P	P	15 14 00.1 -0.3
	3.8nm,0.8s,baz=165,slow=11,SNR=3.7					
ULM			LR	LR		15 28 56.3
	comp=Z,173nm,19.2s,baz=94,slow=37					
P17A	Butcher Ranch,	35.62 314	eP	P	P	15 14 00.7 -2.6
	31nm,1.2s					
Q16A	Castle Valley	35.67 313	eP	P	P	15 14 01.4 -2.3
	11nm,1.2s					
PDMCI	Parker Dam,Lak	36.16 304	P	P	P	15 14 10.1 +2.3
	baz=108					
Y12C	Blythe	36.30 303	P	P	P	15 14 11.6 +2.6
	baz=107					
GLA	Glamis	36.35 302	P	P	P	15 14 12.1 +2.6
	baz=105					
GLA	Glamis	36.35 302	eP	P	P	15 14 08.2 -1.3
	18nm,0.9s					
LCMT	Little Creek M	36.38 309	eP	P	P	15 14 10.4 +0.6
	7.1nm,1.1s					
PDAR	Pinedale Array	36.51 320	P	P	P	15 14 11.3 +0.4
	0.5nm,0.5s,baz=110,slow=8.9,SNR=7.0					
PDAR			LR	LR		15 30 56.6
	comp=Z,51nm,18.1s,baz=128,slow=39					
BW06	Boulder Array	36.51 320	P	P	P	15 14 11.7 +0.8
	baz=123					
NLU	North Lily Min	36.76 314	eP	P	P	15 14 13.0 0.0
	12nm,1.2s					
IRM	Iron Mountain	36.91 303	P	P	P	15 14 16.5 +2.3
	baz=106					
BC3	Big Chuckawall	37.02 302	P	P	P	15 14 17.4 +2.2
	baz=106					
SWSC	Sam W. Stewart	37.12 301	P	P	P	15 14 18.5 +2.5
	baz=104					
HWUT	Hardware Ranch	37.19 317	eP	P	P	15 14 15.1 -1.5
	5.0nm,0.8s					
DUG	Dugway, Tooele	37.37 314	P	P	P	15 14 20.8 +2.7
	baz=116					
DUG	Dugway, Tooele	37.37 314	eP	P	P	15 14 16.7 -1.4
	40nm,1.3s					
PSUT	Pine Spring	37.41 311	eP	P	P	15 14 17.3 -1.3
	8.9nm,0.8s					
GMRC	Granite Mounta	37.50 304	P	P	P	15 14 21.2 +1.9
	baz=107					
SIV	San Ignacio	37.55 153	P	P	P	15 14 18.6 -1.1
	2.3nm,0.7s,baz=347,slow=8.8,SNR=5.3					
MONP2	Monument Peak	37.61 301	P	P	P	15 14 22.9 +2.5
	baz=104					
REDW	Red Top Meadow	37.63 320	eP	P	P	15 14 18.3 -2.1
	8.8nm,1.0s					
RLMT	Red Lodge	37.67 323	P	P	P	15 14 22.0 +1.4
	baz=126					
MOOW	Moose Ponds	37.77 320	eP	P	P	15 14 21.4 -0.2
	4.6nm,0.7s					
TPFO	Pinon Flats	37.81 302	P	P	P	15 14 24.2 +2.2
	baz=105					
SCHQ	Schefferville	37.83 10	LR	LR		15 30 44.2
	comp=Z,52nm,19.1s,baz=110,slow=38					
BGU	Big Grassy Mou	37.84 315	eP	P	P	15 14 22.6 +0.4
	27nm,1.3s					
FXWY	Fox Creek	37.88 320	eP	P	P	15 14 21.4 -1.2
	3.8nm,0.8s					
TUQ	Turquoise Moun	37.90 305	P	P	P	15 14 24.6 +1.9
	baz=108					
IMW	Indian Meadow	37.97 320	eP	P	P	15 14 22.8 -0.5
	3.2nm,0.7s					
HEC	Hector,Ludlow	38.05 304	P	P	P	15 14 26.0 +2.2
	baz=106					
109C	Camp Elliot, M	38.17 301	P	P	P	15 14 27.2 +2.4
	baz=103					
MURC	Murrieta	38.41 302	P	P	P	15 14 29.5 +2.5
	baz=104					
GSC	Goldstone, Bar	38.55 305	P	P	P	15 14 30.3 +2.3
	baz=106					
R11A	Troy Canyon, C	38.60 310	P	P	P	15 14 30.7 +2.1
	baz=111					
R11A	Troy Canyon, C	38.60 310	eP	P	P	15 14 30.3 +1.7
	4.2nm,1.2s					
TPNV	Topopah Spring	38.62 307	P	P	P	15 14 31.6 +2.8
	baz=109					
ELK	Elko	39.28 313	eP	P	P	15 14 34.0 -0.3
	9.8nm,1.0s					
LRMC	Laurel Mtn Rad	39.28 304	P	P	P	15 14 36.6 +2.3
	baz=106					
BOZ	Bozeman (W)	39.34 322	eP	P	P	15 14 31.9 -2.7
	4.2nm,0.7s					
EDW2	Edwards Air Fo	39.37 303	P	P	P	15 14 37.3 +2.3
	baz=105					
GRAC	Grapevine Rang	39.48 307	P	P	P	15 14 38.3 +2.5
	baz=108					
ISA	Isabella, Lake	39.96 304	P	P	P	15 14 42.1 +2.2
	baz=106					
HLID	Hailey	39.97 318	P	P	P	15 14 41.6 +1.6
	baz=118					
NVAR	Mina Array Bea	40.64 309	P	P	P	15 14 46.9 +1.3
	3.5nm,0.7s,baz=115,slow=8.8,SNR=27					
LVC	Limon Verde	41.22 167	P	P	P	15 14 49.8 -0.8
	8.8nm,0.6s,baz=312,slow=7.7,SNR=3.6					
WVOR	Wild Horse Val	42.29 314	eP	P	P	15 14 59.5 +0.5
	7.1nm,0.8s					
BSMT	Bassoo Peak	42.35 323	eP	P	P	15 14 56.2 -3.3
MOD	Modoc Plateau	43.25 313	eP	P	P	15 15 03.8 -3.0
	15nm,1.3s					
O03D	Paynes Creek	43.79 310	P	P	P	15 15 12.7 +1.5
	baz=108					
J05D	Fort Rock, OR	44.38 314	P	P	P	15 15 16.9 +1.1
	baz=111					
I04A	Tendick Farm,	45.36 315	P	P	P	15 15 24.7 +1.2
	baz=110					
I03D	Drain, OR	45.97 314	P	P	P	15 15 29.9 +1.6
	baz=109					
CPUP	Villa Florida	48.31 155	LR	LR		15 37 37.0
	comp=Z,68nm,21.0s,baz=346,slow=38					
YKA	Yellowknife Ar	51.30 339	P	P	P	15 16 09.0 0.0
	1.3nm,0.8s,baz=131,slow=8.7,SNR=33					
DLBC	Dease Lake	55.42 330	eP	P	P	15 16 37.2 -2.3
PLCA	Paso Flores	58.74 173	P	P	P	15 17 03.4 +0.3
	1.2nm,0.8s,baz=54,slow=20,SNR=2.1					
BMRM	Bremner River	63.21 330	eP	P	P	15 17 33.5 +0.2
MENT	Mentasta	63.24 332	eP	P	P	15 17 33.1 -0.2
	4.4nm,0.9s					
DOT	Dot Lake	63.55 333	eP	P	P	15 17 35.9 +0.5
DIV	Divide	63.80 330	eP	P	P	15 17 36.9 -0.2
	9.7nm,1.0s					
KLU	Klutina	63.94 330	eP	P	P	15 17 39.2 +1.2
	6.6nm,0.9s					
PAX	Paxson	64.02 332	eP	P	P	15 17 39.2 +0.6
	5.4nm,0.8s					
IL1	Eielson Array	65.00 334	eP	P	P	15 17 44.7 -0.1
ILAR	Eielson Array	65.00 334	P	P	P	15 17 45.1 +0.3
	1.8nm,0.8s,baz=107,slow=4.4,SNR=20					
ILAR			LR	LR		15 48 08.6
	comp=Z,85nm,19.0s,baz=134,slow=38					
RND	Reindeer	65.61 332	eP	P	P	15 17 50.0 +1.1
	20nm,0.9s					
TRF	Thorofare Moun	66.26 332	eP	P	P	15 17 53.8 +0.6
	47nm,2.0s					
KTH	Kantishna Hill	66.55 332	eP	P	P	15 17 55.4 +0.4
	8.5nm,1.0s					
BPAW	Bear Paw Mtn.	66.65 333	eP	P	P	15 17 56.0 +0.5
	7.6nm,1.0s					
COLD	Coldfoot	66.78 336	eP	P	P	15 17 55.0 -1.2
	1.9nm,0.8s					
DBIC	Dimbokro	71.90 89	LR	LR		15 46 44.6
	comp=Z,22nm,20.8s,baz=234,slow=33					
NB2	NORSAR Subarra	74.10 30	P	P	P	15 18 42.4 +1.3
	comp=Z,1.3nm,0.7s,baz=283,slow=6.2					
NOA	NORSAR Array B	74.10 30	P	P	P	15 18 43.2 +2.1
	comp=Z,0.6nm,0.7s,baz=318,slow=21,SNR=2.8					
NOA			LR	LR		15 48 15.9
	comp=Z,16nm,20.1s,baz=285,slow=33					
GERES	GERESS Array B	77.79 43	P	P	P	15 19 03.6 +1.2
	comp=Z,0.2nm,0.2s,baz=267,slow=4.9,SNR=2.2					
ARCES	ARCESS Array B	77.98 20	P	P	P	15 19 04.5 +1.6
	comp=Z,1.5nm,0.9s,baz=297,slow=5.3,SNR=5.6					
FINES	FINESS Array B	80.95 28	P	P	P	15 19 20.2 +0.9
	comp=Z,0.8nm,0.8s,baz=257,slow=3.7,SNR=3.2					
TIXI	Tiksi	88.82 352	eP	P	P	15 19 58.5 -0.1
	comp=Z,2.5nm,0.9s					
SEY	Seymchan	90.37 339	P	P	P	15 20 06.2 +0.2
	comp=Z,3.6nm,0.3s,baz=175,slow=0.5,SNR=31					
WMQ	Urumqi	117.18 12	PKP	PKPdf		15 25 48.3 -2.2
WMQ			LR	LR		
	comp=N,74nm,17.0s					
WMQ			LR	LR		
	comp=E,97nm,17.0s					
WMQ			LR	LR		
	comp=Z,88nm,19.4s					
HHC	Hu-ho-hao-te	120.89 352	ePKP	PKPdf		15 25 55.4 -2.4
HHC			PP	PP		15 27 30.0 +4.8
HHC			SKS	SKSdf		15 33 01.1 -6.9
HHC			SKKS	SKKSac		15 34 20.5 -3.9
HHC	Hu-ho-hao-te	120.89 352	SS	SS		15 43 55.5 +1.6
HHC			AMB	AMB		
	comp=Z,100nm,7.2s					
HHC			LR	LR		
	comp=N,100nm,20.7s					
HHC			LR	LR		
	comp=E,120nm,20.8s					
HHC			LR	LR		
	comp=Z,110nm,19.6s					
CD2	Chengdu	131.44 358	PKP	PKPdf		15 26 15.3 -2.8
WRA	Warramunga Arr	149.44 261	PKPbc	PKPbc		15 26 53.9 -1.1
	comp=Z,1.1nm,0.8s,baz=42,slow=1.2,SNR=6.0					
ASAR	Alice Springs	149.74 254	PKPbc	PKPbc		15 26 54.4 -1.3
	comp=Z,1.3nm,0.9s,baz=93,slow=2.4,SNR=12					

*GRAL **16** 15:11:52.9±0.3, 34°.44N×36°.82E, h2km±6km, MD3.0*
*NSSC **16** 15:11:53.9±1.4, 34°.48N×36°.78E, h1km±5km, ML2.1*
*ISCJB **16** 15:11:54.1±1.2, 34°.45N±0°.02×36°.70E±0°.07, h3km±8km, Error ellipse: s-maj=10.1km s-min=4.1km az=2.0*
*CSEM **16** 15:11:54.7±0.2, 34°.44N×36°.61E, h8km, ML2.1, Error ellipse: s-maj=6.2km s-min=2.9km az=90.0*

ISC 16 15:11:53.6±1.3, 34°.45N±0°.02×36°.73E±0°.05, h6km±11km, n21, σ0=66/34, Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FKH	Fakeheh	0.33	233	eP	Pg	15 11 60.0	-0.1
FKH				eS	Sg	15 12 05.3	+0.9
BIDA	Albida	0.66	330	i P	Pg	15 12 06.6	+0.4
BIDA				eS	Sb	15 12 16.6	-0.3
BIDA				AML	AML	15 12 25.2	
	comp=N,214nm,0.3s						
BIDA				AML	AML	15 12 29.6	
	comp=E,150nm,0.7s						
BIDA	Albida	0.66	330	i P	Pg	15 12 06.6	+0.4
BIDA				eS	Sb	15 12 16.6	-0.3
	comp=E,150nm,0.7s						
HWQ	Hawqa	0.67	256	eP	Pg	15 12 06.3	-0.1
HWQ	Hawqa	0.67	256	eP	Pg	15 12 06.3	-0.1
BHL	Bhannes	1.04	239	eP	Pg	15 12 12.9	-0.6
BHL	Bhannes	1.04	239	eP	Pg	15 12 12.9	-0.6
WRDH	Warideh	1.09	346	i P	Pn	15 12 15.3	0.0
WRDH	Warideh	1.09	346	i P	Pn	15 12 15.4	0.0
DQRL	Deir Qamar	1.21	233	eP	Pn	15 12 15.6	-1.5
DQRL				eS	Sb	15 12 32.4	-0.4
DQRL	Deir Qamar	1.21	233	eP	Pn	15 12 15.6	-1.5
BRBR	Barbar	1.22	212	i P	Pb	15 12 18.0	+1.0
BRBR				eS	Sn	15 12 35.9	+1.8
BRBR				AML	AML	15 12 41.5	
	comp=E,29nm,0.7s						
BRBR				AML	AML	15 12 44.3	
	comp=N,44nm,0.6s						
BRBR	Barbar	1.22	212	i P	Pb	15 12 18.0	+1.0
ARNB	Al Arnab	1.54	337	i P	Pb	15 12 22.1	-0.5
ARNB				eS	Sb	15 12 42.5	+0.1
ARNB				AML	AML	15 12 46.3	
	comp=E,104nm,0.5s						
ARNB				AML	AML	15 12 47.3	
	comp=N,65nm,0.3s						
ARNB	Al Arnab	1.54	337	i P	Pb	15 12 22.1	-0.5
ARNB				eS	Sb	15 12 42.5	+0.1
	comp=N,65nm,0.3s						
ZALF	Zalf	1.60	161	i P	Pb	15 12 23.2	-0.3
ZALF				eS	Sg	15 12 45.1	+0.2
ZALF				AML	AML	15 12 46.2	
	comp=N,32nm,0.6s						
ZALF				AML	AML	15 12 47.8	
	comp=E,23nm,0.3s						
ZALF	Zalf	1.60	161	i P	Pb	15 12 23.2	-0.3
ZALF				eS	Sg	15 12 45.2	+0.2
	comp=E,23nm,0.3s						
BTCH	Batrach	1.60	352	i P	Pb	15 12 23.6	0.0
BTCH				eS	Sb	15 12 43.9	-0.2
BTCH				AML	AML	15 12 50.6	
	comp=N,48nm,0.2s						
BTCH				AML	AML	15 12 51.2	
	comp=E,96nm,0.3s						
BTCH	Batrach	1.60	352	i P	Pb	15 12 23.6	0.0
BTCH				eS	Sb	15 12 43.9	-0.2
	comp=E,96nm,0.3s						
SALA	Sala	1.73	180	i P	Pb	15 12 25.6	-0.2
SALA				eS	Sb	15 12 48.3	+0.5
SALA				AML	AML	15 12 53.6	
	comp=N,24nm,0.7s						
SALA				AML	AML	15 12 55.9	
	comp=E,4.4nm,0.3s						
SALA	Sala	1.73	180	i P	Pb	15 12 25.6	-0.2
SALA				eS	Sb	15 12 48.3	+0.5
	comp=E,4.0nm,0.3s						

IDC 16 15:32:28.6±416.0, 47°.36N×48°.37E, h0km, Error ellipse: s-maj=164.5km s-min=135.9km az=26.0, Western Kazakhstan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I31KZ	AKTYUBINSK INF	7.07	61	i		16 16 30.0	
	baz=248,slow=328,SNR=2.7						
I43RU	DUBNA INFRASONI	11.61	328	i		16 42 10.0	

baz=140,slow=315,SNR=0.5
I26DE FREYUNG INFRAS23.08 287 *i* 17 54 50.0
baz=82,slow=334,SNR=0.3

NIED **16** *15:53:00,37.°40N×141.°40E,h38km,Mw4.7 Best double couple: M0=1.09000×10^16 NP1:φs=90.00000°,δ=6.00000°, λ=-35.00000°. NP2:φs=215.00000°,δ=87.00000°, λ=-95.00000°.*
MOS **16** *15:53:31.2±1.0,37.°43N×141.°32E,h33km,mb5.2/69,Error ellipse: s-maj=6.8km s-min=4.2km az=108.3*
JMA **16** *15:53:32.7±0.1,37.°38N×141.°30E,h35km±1km,M4.6*
JMA Felt IV J1.
ISCJB **16** *15:53:32.4±0.4,37.°37N±0.°02×141.°26E±0.°03,h43km±2km, mb4.8/160,MS4.1/42,Error ellipse: s-maj=4.3km s-min=3.1km az=40.4*
NEIC **16** *15:53:34.6±0.5,37.°43N×141.°15E,h47km±4km,mb4.8/82, Error ellipse: s-maj=4.9km s-min=3.1km az=142.0*
NEIC Recorded [4 JMA] in Fukushima.
IDC **16** *15:53:34.1±1.7,37.°41N×141.°21E,h42km±15km,mb4.5/29, mb1 4.6/37,mb1mx4.5/51,mbtmp4.7/37,ML3.9/8,MS3.9/25, Ms1 3.9/25,ms1mx3.7/46,Error ellipse: s-maj=12.8km s-min=10.2km az=109.0*
ISC 16 15:53:31.6±0.5,37.°35N±0.°03×141.°34E±0.°03,h31km±2km, h31km:pP-P,n402,σ1°83/453,mb4.9/163,MS4.1/43, 21C-29D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.37**	**273**	P		**Pn**	**15 53 40.7**	**-0.2**
JFK				S		**Sn**	**15 53 46.4**	**-0.7**
ONAJ	**Iwakimizuishiy**	**0.50**	**241**	P		**Pn**	**15 53 42.9**	**+0.3**
ONAJ				S		**Sn**	**15 53 49.8**	**-0.4**
JMM	**Marumori**	**0.68**	**320**	P		**Pn**	**15 53 44.9**	**-0.2**
JMM				S		**Sn**	**15 53 53.5**	**-1.1**
JFT	**Otama**	**0.82**	**282**	P		**Pn**	**15 53 47.9**	**+0.9**
JFT				S		**Sn**	**15 53 58.5**	**+0.4**
JHO	**Hitachi**	**0.96**	**220**	P		**Pn**	**15 53 48.9**	**0.0**
JHO				S		**Sn**	**15 54 01.2**	**-0.3**
JIO	**Ouri**	**1.11**	**0**	P		**Pn**	**15 53 51.3**	**+0.3**
JIO				S		**Sn**	**15 54 04.3**	**-0.9**
JOU	**Okura**	**1.15**	**332**	P		**Pb**	**15 53 52.2**	**-0.7**
JOU				S		**Sb**	**15 54 07.1**	**-0.4**
JFY	**Yanaizu**	**1.30**	**273**	P		**Pb**	**15 53 54.8**	**-0.7**
JFY				S		**Sb**	**15 54 11.3**	**-0.6**
JYS	**Shirataka**	**1.33**	**311**	P		**Pb**	**15 53 55.2**	**-0.8**
JYS				S		**Sb**	**15 54 12.7**	**-0.1**
MJAR	**Matsushiro Arr**	**2.63**	**253**	P		**Pn**	**15 54 14.3**	**+2.3**
	48nm,0.3s,baz=78,slow=16,SNR=199							
MJAR				LR		LR	15 55 33.9	
	comp=Z,3μm,18.2s,baz=70,slow=47							
MAJO	**Matsushiro**	**2.63**	**253**	*e*P		**Pn**	**15 54 14.2**	**+2.2**
MAJO	**Matsushiro**	**2.63**	**253**	*e*Pn		**Pn**	**15 54 14.2**	**+2.2**
MAT	**Matsushiro**	**2.63**	**253**	P		**Pn**	**15 54 14.3**	**+2.3**
MAT				*e*S		**Sb**	**15 54 47.0**	**-3.0**
INU	**Inuyama**	**4.02**	**242**	*e*Pn		**Pn**	**15 54 33.4**	**+2.4**
JHJ	**Hachijo jima 2**	**4.41**	**197**	P		**Pn**	**15 54 37.9**	**+1.5**
	65nm,0.3s,baz=330,slow=23,SNR=75							
JHJ				S		**Sn**	**15 55 27.6**	**+1.0**
	239nm,0.3s,baz=5.7,slow=23,SNR=8.5							
JHJ2	**Mitsune**	**4.41**	**197**	*e*Pn		**Pn**	**15 54 37.8**	**+1.5**
ERM	**Erimo**	**4.87**	**16⇑**	*e*P		**Pn**	**15 54 43.1**	**+0.4**
ERM	**Erimo**	**4.87**	**16**	*e*Pn		**Pn**	**15 54 43.0**	**+0.3**
ASAJ	**Asahikawa**	**6.83**	**8**	P		**Pn**	**15 55 09.7**	**+0.1**
	8.9nm,0.3s,baz=216,slow=9.1,SNR=90							
ASAJ				S		**Sn**	**15 56 28.1**	**+1.8**
	6.4nm,0.3s,baz=67,slow=27,SNR=3.3							
ASAJ				LR		LR	15 58 47.7	
	comp=Z,234nm,18.0s,baz=160,slow=46							
YUK	**Yuzh-Kuril'sk**	**7.51**	**26**	*e*P		**Pn**	**15 55 17.6**	**-1.3**
YUK				*e*S		**Sn**	**15 56 36.9**	**-6.1**
YUK				pmax		pmax		
	comp=Z,174nm,0.5s							
YUK				pmax		pmax		
	comp=E,53nm,0.3s							
YUK				pmax		pmax		
	comp=N,130nm,0.6s							
SHO	**Shikotan**	**7.74**	**31**	*e*P		**Pn**	**15 55 19.9**	**-2.1**
SHO				*e*S		**Sn**	**15 56 41.0**	**-7.6**
SHO				pmax		pmax		
	comp=Z,55nm,0.5s							
VLA	**Vladivostok**	**9.24**	**312***c*	*i*P		**Pn**	**15 55 46.7**	**+4.0**
KUR	**Kuril'sk**	**9.28**	**30**	*e*P		**Pn**	**15 55 43.4**	**+0.2**
KUR				*e*S		**Sn**	**15 57 21.3**	**-5.2**
KUR				pmax		pmax		
	comp=Z,33nm,0.8s							
KUR				smax		smax		
	comp=N,20nm,0.5s							
KUR				smax		smax		
	comp=E,87nm,0.5s							
MSHR	**Mys Shultsa**	**9.40**	**307**	P		**Pn**	**15 55 49.0**	**+4.2**
JNU	**Nakatsue**	**9.54**	**247**	P		**Pn**	**15 55 48.9**	**+2.1**
	comp=E,0.5nm,0.3s,baz=42,slow=12,SNR=9.8							
JNU				LR		LR	15 59 56.0	
	comp=E,788nm,18.8s,baz=100,slow=40							
JNU	**Nakatsue**	**9.54**	**247**	*e*Pn		**Pn**	**15 55 47.6**	**+0.8**
YSS	**Yuzh-Sakhalins**	**9.66**	**6⇑**	*e*P		**Pn**	**15 55 47.5**	**-0.8**
YSS				*e*S		**Sn**	**15 57 35.7**	**0.0**
YSS				pmax		pmax		
	comp=Z,10.0nm,0.9s							
YSS				MLR		MLR		
	comp=Z,400nm,17.0s							
YSS				MLR		MLR		
	comp=N,200nm,18.0s							
YSS				MLR		MLR		
	comp=E,400nm,15.0s							
USRK	**Ussuriysk Ar.**	**9.85**	**317**	P		**Pn**	**15 55 52.5**	**+1.4**
	comp=E,2.2nm,0.3s,baz=133,slow=13,SNR=57							
USRK				LR		LR	15 59 27.7	
	comp=E,1μm,19.1s,baz=137,slow=36							
CBIJ	**Chichi jima**	**10.25**	**176**	P		**Pn**	**15 55 55.2**	**-1.3**
CBIJ				S		**Sn**	**15 57 42.8**	**-7.5**
JCJ	**Chichijima**	**10.25**	**176**	P		**Pn**	**15 55 55.2**	**-1.3**
	comp=E,20nm,0.3s,baz=32,slow=4.2,SNR=11							
JCJ				S		**Sn**	**15 57 42.8**	**-7.5**
	comp=E,18nm,0.3s,baz=246,slow=23,SNR=6.0							
JCJ				LR		LR	16 00 06.4	
	comp=E,472nm,21.8s,baz=70,slow=38							
KSRS	**Korea Array**	**10.68**	**275**	P		**Pn**	**15 56 04.3**	**+2.0**
	comp=E,0.6nm,0.3s,baz=89,slow=14,SNR=56							
KSRS				LR		LR	16 00 04.9	
	comp=E,795nm,18.1s,baz=86,slow=37							
KS01	**Wonju Array Si**	**10.70**	**275**	*e*Pn		**Pn**	**15 56 03.7**	**+1.1**
KS15	**Wonju Array Si**	**10.71**	**275**	*e*Pn		**Pn**	**15 56 06.4**	**+3.6**
KSAR	**Wonju Array Be**	**10.71**	**275**	P		**Pn**	**15 56 04.3**	**+1.5**
KSAR	**Wonju Array Be**	**10.71**	**275**	P		**Pn**	**15 56 04.3**	**+1.5**
TJN	**Taejon**	**11.24**	**269⇑**	*e*P		Pn	15 56 15.1	+5.0
MDJ	**Mudanjiang**	**11.46**	**313**	P		**Pn**	**15 56 16.3**	**+3.2**
MDJ				S		**Sn**	**15 58 23.0**	**+3.0**
MDJ				PcP		**PcP**	**16 02 03.4**	**-0.9**
MDJ				ScP		**ScP**	**16 05 38.1**	**+3.5**
MDJ	**Mudanjiang**	**11.46**	**313**	ScS		ScS	16 09 08.9	-1.1
MDJ				pmax		pmax		
	comp=Z,70nm,0.8s							
MDJ				pmax		pmax		
	comp=Z,130nm,3.5s							
MDJ				LR		LR		
	comp=N,410nm,16.8s							
MDJ				LR		LR		
	comp=E,440nm,22.6s							
MDJ				LR		LR		
	comp=Z,750nm,18.1s							
MDJ	**Mudanjiang**	**11.46**	**313**	*e*Pn		Pn	15 56 18.6	+5.5
HABR	**Khabarovsk**	**12.03**	**340**	*de*P		**Pn**	**15 56 18.8**	**-2.0**
HABR				*e*S		**Sn**	**15 58 31.2**	**-2.7**
HABR				pmax		pmax		
	comp=Z,8.0nm,0.8s							
HABR				MLR		MLR		
	comp=Z,169nm,12.0s							
TYV	**Tymovskoe**	**13.55**	**4**	*e*P		**Pn**	**15 56 41.8**	**+0.3**
TYV				pmax		pmax		
	comp=E,22nm,0.8s							
TYV				pmax		pmax		
	comp=Z,44nm,0.8s							
TYV				MLR		MLR		
	comp=N,500nm,18.0s							
TYV				MLR		MLR		
	comp=Z,600nm,18.0s							
CN2	**Changchun**	**13.68**	**303**	*e*P		**Pn**	**15 56 45.1**	**+1.7**
CN2				*e*S		**Sn**	**15 59 12.3**	**-1.9**
CN2				pmax		pmax		
	comp=Z,10.0nm,0.5s							
CN2				pmax		pmax		
	comp=Z,100nm,3.0s							
CN2				LR		LR		
	comp=N,400nm,18.0s							
CN2				LR		LR		
	comp=E,700nm,18.0s							
CN2				LR		LR		
	comp=Z,600nm,18.0s							
KLR	**Kul'dur**	**13.76**	**333**	P		**Pn**	**15 56 45.8**	**+1.3**
	comp=Z,0.5nm,0.3s,baz=150,slow=9.2,SNR=8.5							
KLR				LR		LR	16 01 53.1	
	comp=Z,588nm,19.5s,baz=162,slow=36							
SNY	**Shenyang**	**14.40**	**294**	⇑P		**P**	**15 56 59.5**	**-0.3**
SNY				S		**S**	**15 59 52.8**	**+1.7**
SNY				pmax		pmax		
	comp=Z,16nm,0.6s							
SNY				pmax		pmax		
	comp=Z,360nm,3.5s							
SNY				LR		LR		
	comp=N,510nm,14.5s							
SNY				LR		LR		
	comp=E,1μm,17.8s							
SNY				LR		LR		
	comp=Z,1μm,17.2s							
DL2	**Dalian**	**15.59**	**282**	P		**P**	**15 57 10.9**	**-2.1**
DL2				S		**Sn**	**16 00 01.9**	**+1.1**
DL2				pmax		pmax		
	comp=Z,25nm,0.9s							
DL2				LR		LR		
	comp=N,230nm,15.5s							
DL2				LR		LR		
	comp=E,470nm,20.8s							
DL2				LR		LR		
	comp=Z,670nm,17.5s							
NKL	**Nikolayevsk**	**15.81**	**359**	*e*P		**P**	**15 57 15.0**	**-0.3**
NKL				pmax		pmax		
	comp=Z,13nm,1.0s							
NKL				MLR		MLR		
	comp=N,400nm,14.0s							
NKL				MLR		MLR		
	comp=Z,500nm,14.0s							
NJ2	**Nanjing**	**19.21**	**261**	*e*P		**P**	**15 57 52.8**	**-0.2**
NJ2				S		**Sn**	**16 01 26.9**	**-1.6**
NJ2				pmax		pmax		
	comp=Z,24nm,0.5s							
NJ2				LR		LR		
	comp=N,250nm,16.3s							
NJ2				LR		LR		
	comp=E,290nm,15.2s							
NJ2				LR		LR		
	comp=Z,230nm,17.3s							
TIA	**Tai'an**	**19.42**	**274**	⇓P		**P**	**15 57 54.8**	**-0.5**
TIA				S		**Sn**	**16 01 37.3**	**+3.7**
TIA				pmax		pmax		
	comp=Z,30nm,1.0s							
TIA				LR		LR		
	comp=N,300nm,16.0s							
TIA				LR		LR		
	comp=E,370nm,17.0s							
TIA				LR		LR		
	comp=Z,570nm,19.0s							
PETK	**Petropavlovsk-**	**19.45**	**31**	P		**Pn**	**15 57 57.0**	**+0.3**
	comp=Z,0.4nm,0.3s,baz=186,slow=8.8,SNR=6.1							
BJI	**Beijing**	**19.81**	**286**	P		**P**	**15 57 58.3**	**-1.2**
BJI				S		**S**	**16 01 36.8**	**-4.1**
BJI				pmax		pmax		
	comp=Z,16nm,1.7s							
BJI				pmax		pmax		
	comp=Z,190nm,4.6s							
BJI				LR		LR		
	comp=N,130nm,14.8s							
BJI				LR		LR		
	comp=E,190nm,12.6s							
BJI				LR		LR		
	comp=Z,220nm,24.9s							
BJT	**Baijiatuau**	**19.81**	**286**	*e*P		**P**	**15 57 58.4**	**-1.1**
BJT				pmax		pmax		
	comp=Z,18nm,0.6s							
BJT	**Baijiatuau**	**19.81**	**286**	*e*P		**P**	**15 57 58.4**	**-1.1**
	comp=Z,18nm,0.6s							
CLNS	**Chul'man**	**22.37**	**336**	*e*P		**P**	**15 58 24.8**	**-2.2**
CLNS				pmax		pmax		
	comp=Z,10.0nm,1.1s							
CLNS				pmax		pmax		
	comp=N,14nm,0.9s							
CLNS				pmax		pmax		
	comp=E,12nm,0.9s							
MA2	**Magadan**	**23.06**	**12**	P		**P**	**15 58 34.3**	**+0.1**
	comp=E,55nm,0.8s,baz=224,slow=8.3,SNR=24							
MA2				LR		LR	16 09 16.6	
	comp=E,112nm,18.2s,baz=182,slow=41							
MA2	**Magadan**	**23.06**	**12**	*e*P		**P**	**15 58 34.0**	**-0.2**
	comp=E,230nm,0.8s							
HHC	**Hu-ho-hao-te**	**23.32**	**288**	*e*P		**P**	**15 58 37.3**	**+0.2**
HHC				sP		sP	15 58 57.3	+7.9
HHC				PP		**PnPn**	**15 59 13.4**	**+10**
HHC				S		**S**	**16 02 44.0**	**-3.7**
HHC				pmax		pmax		
	comp=Z,34nm,0.8s							
HHC				pmax		pmax		
	comp=Z,210nm,4.6s							
HHC				LR		LR		
	comp=N,1μm,11.8s							
HHC				LR		LR		
	comp=E,1μm,13.8s							
HHC				LR		LR		
	comp=Z,1μm,11.8s							
WHN	**Wuhan**	**23.35**	**261**	⇑P		**P**	**15 58 37.3**	**0.0**
WHN				S		**S**	**16 02 41.4**	**-6.6**
WHN				LR		LR		
	comp=Z,900nm,18.7s							
GUMO	**Guam**	**23.87**	**171**	LR		LR	16 09 41.7	
	comp=Z,52nm,18.7s,baz=25,slow=40							
CIT	**Chita**	**24.41**	**316**	*e*P		**P**	**15 58 43.4**	**-3.8**
CIT				*e*			15 58 58.6	
YAK	**Yakutsk**	**25.75**	**347**	P		**P**	**15 58 58.9**	**-0.2**
	comp=Z,4.0nm,0.4s,baz=156,slow=22,SNR=19							
YAK				LR		LR	16 09 23.4	
	comp=Z,390nm,19.4s,baz=156,slow=37							
YAK	**Yakutsk**	**25.75**	**347***c*	*i*P		**P**	**15 58 58.6**	**-0.5**
YAK				*e**PP		**sP**	**15 59 10.6**	**-1.2**
YAK				*e*			15 59 36.5	
YAK				*e*			16 02 25.9	
YAK				*e*S		**S**	**16 03 22.4**	**-3.5**
YAK				*e*SS		**SnSn**	**16 04 21.9**	**-0.4**
YAK				*e*			16 09 53.2	
YAK				pmax		pmax		
	comp=Z,30nm,0.8s							
YAK				pmax		pmax		
	comp=N,11nm,0.9s							
YAK				pmax		pmax		
	comp=E,4.0nm,0.9s							
YAK				pmax		pmax		
	comp=Z,17nm,0.8s							
YAK				pmax		pmax		
	comp=N,13nm,0.9s							
YAK				pmax		pmax		
	comp=E,37nm,2.3s							
YAK				smax		smax		
	comp=N,24nm,1.9s							
YAK				smax		smax		
	comp=E,19nm,1.6s							
YAK	**Yakutsk**	**25.75**	**347**	*e*P		**P**	**15 58 58.2**	**-0.9**
	comp=E,53nm,0.7s							
XAN	**Xi'an**	**26.46**	**273**	P		**P**	**15 59 05.1**	**-0.9**
XAN				pP		sP	15 59 16.5	-2.1
XAN				sP		pP	15 59 22.1	+7.2
XAN				PP		**PnPn**	**15 59 47.4**	**+0.9**
XAN				S		**S**	**16 03 31.3**	**-6.6**
XAN				sS		sS	16 03 50.6	-2.1
XAN				SS		**SnSn**	**16 04 40.1**	**-0.2**
XAN				pmax		pmax		
	comp=Z,15nm,0.8s							
XAN				pmax		pmax		
	comp=Z,39nm,3.6s							
XAN				LR		LR		
	comp=N,160nm,15.8s							
XAN				LR		LR		
	comp=E,190nm,14.6s							
XAN				LR		LR		
	comp=Z,230nm,16.7s							
SEY	**Seymchan**	**26.50**	**11**	P		**P**	**15 59 07.3**	**+1.4**
	comp=Z,41nm,0.9s,baz=192,slow=7.6,SNR=72							
ULN	**Ulaanbaatar**	**27.13**	**304**	*e*P		**P**	**15 59 10.9**	**-1.1**
ULN				pmax		pmax		
	comp=Z,12nm,0.8s							
ULN	**Ulaanbaatar**	**27.13**	**304**	*e*P		**P**	**15 59 10.9**	**-1.1**
	comp=Z,12nm,0.8s							
ENH	**Enshi**	**27.30**	**264**	*e*P		**P**	**15 59 13.0**	**-0.5**
	comp=Z,34nm,1.2s							
SONA1	**Songino Array**	**27.56**	**304**	*e*P		**P**	**15 59 14.7**	**-1.1**
SONM	**Songino Array**	**27.56**	**303**	P		**P**	**15 59 15.7**	**-0.1**
	comp=Z,22nm,0.7s,baz=102,slow=9.1,SNR=20							
SONM				LR		LR	16 10 19.9	
	comp=Z,232nm,21.5s,baz=152,slow=37							
H11N2	**WAKE ISLAND Hy**	**28.36**	**121**	T		T	16 28 51.2	
	baz=314,slow=75,SNR=262							
H11N1	**WAKE ISLAND Hy**	**28.37**	**121**	T		T	16 28 53.6	
	baz=314,slow=75,SNR=569							
H11N3	**WAKE ISLAND Hy**	**28.38**	**121**	T		T	16 28 56.6	
	baz=314,slow=75,SNR=164							
H11S1	**WAKE ISLAND Hy**	**29.08**	**123**	T		T	16 29 47.1	
	baz=316,slow=76,SNR=1041							
H11S3	**WAKE ISLAND Hy**	**29.08**	**123**	T		T	16 29 45.7	
	baz=316,slow=76,SNR=801							
H11S2	**WAKE ISLAND Hy**	**29.09**	**123**	T		T	16 29 48.4	
	baz=316,slow=76,SNR=940							
LZH	**Lanzhou**	**29.96**	**279**	*e*P		**P**	**15 59 40.8**	**+3.5**
LZH				pP		sP	15 59 52.1	+2.1
LZH				sP		pP	15 59 58.4	+12
LZH				*e*S		**S**	**16 04 30.0**	**-3.1**
LZH				sS		sS	16 04 53.1	+5.2
LZH				SS		**SnSn**	**16 06 12.0**	**+6.3**
LZH				pmax		pmax		
	comp=Z,29nm,1.0s							
LZH				pmax		pmax		
	comp=Z,94nm,4.2s							
LZH				LR		LR		
	comp=N,220nm,14.8s							
LZH				LR		LR		
	comp=E,440nm,14.0s							
LZH				LR		LR		
	comp=Z,560nm,17.0s							
ZAK	**Zakamensk**	**30.03**	**308**	*e*P		**P**	**15 59 35.7**	**-2.0**
ZAK				pmax		pmax		
	comp=Z,8.0nm,1.1s							
TLY	**Talaya**	**30.08**	**311**	LR		LR	16 12 19.4	
	comp=Z,373nm,18.2s,baz=82,slow=38							
TLY	**Talaya**	**30.08**	**311**	*e*P		**P**	**15 59 39.4**	**+1.4**
TLY				pmax		pmax		
	comp=Z,10.0nm,0.9s							
TLY				MLR		MLR		
	comp=Z,295nm,15.0s							
GYA	**Guiyang**	**31.22**	**260⇑**	*i*P		**P**	**15 59 46.3**	**-2.1**
GYA				pP		sP	16 00 01.3	+0.2
GYA				PP		**PnPn**	**16 00 51.8**	**+1.0**
GYA				PcP		**PcP**	**16 02 44.4**	**+1.7**
GYA				S		**S**	**16 04 50.0**	**-2.9**
GYA				sS		sS	16 05 10.8	+3.1
GYA				ScP		**ScP**	**16 06 22.3**	**-1.0**
GYA	**Guiyang**	**31.22**	**260**	ScS		ScS	16 10 18.8	-2.1
GYA				pmax		pmax		
	comp=Z,20nm,0.9s							
GYA				pmax		pmax		
	comp=Z,120nm,4.9s							
GYA				LR		LR		
	comp=N,510nm,17.8s							
GYA				LR		LR		
	comp=E,460nm,18.0s							
GYA				LR		LR		
	comp=Z,470nm,18.2s							
CD2	**Chengdu**	**31.61**	**270**	P		**P**	**15 59 50.6**	**-1.2**
CD2				pmax		pmax		
	comp=Z,20nm,0.5s							
MOY	**Mondy**	**31.69**	**310**	*e*P		**P**	**15 59 52.7**	**+0.4**
GTA	**Gaotai**	**32.42**	**287**	*e*P		**P**	**15 59 58.4**	**-0.4**
GTA				pP		sP	16 00 09.4	-2.2
GTA				sP		pP	16 00 14.6	+6.8
GTA				PcP		**PcP**	**16 02 47.1**	**+1.4**
GTA				S		**S**	**16 05 08.1**	**-3.3**
GTA				sS		sS	16 05 27.3	+1.1
GTA				SS		**SnSn**	**16 07 04.0**	**-1.3**
GTA				pmax		pmax		
	comp=Z,9.0nm,0.9s							
GTA				pmax		pmax		
	comp=Z,51nm,5.5s							
GTA				LR		LR		
	comp=N,140nm,17.1s							
GTA				LR		LR		
	comp=E,160nm,20.0s							
GTA				LR		LR		
	comp=Z,240nm,20.4s							
QIZ	**Qiongzhong**	**33.01**	**245**	P		**P**	**16 00 04.5**	**+0.5**
QIZ				S		**S**	**16 05 19.6**	**-1.0**
QIZ				LR		LR		
	comp=N,65nm,14.3s							
QIZ				LR		LR		
	comp=E,63nm,16.3s							
BILL	**Bilibino**	**33.74**	**17⇑**	*e*P		**P**	**16 00 09.2**	**-0.7**
BILL				*e*			16 01 26.6	
BILL				pmax		pmax		
	comp=Z,4.0nm,1.1s							
BILL				MLR		MLR		
	comp=Z,59nm,15.0s							
KMI	**Kunming**	**34.95**	**261**	P		**P**	**16 00 21.9**	**+0.8**
KMI				pP		sP	16 00 33.9	0.0
KMI				sP		pP	16 00 38.9	+8.7
KMI				PP		**PP**	**16 01 40.0**	**-0.6**
KMI				S		**S**	**16 05 47.0**	**-4.1**
KMI				sS		sS	16 06 08.0	+2.0
KMI				SS		**SnSn**	**16 08 02.6**	**-4.7**
KMI				pmax		pmax		
	comp=Z,35nm,1.0s							
KMI				pmax		pmax		
	comp=Z,76nm,5.8s							
KMI				LR		LR		
	comp=N,160nm,14.5s							
KMI				LR		LR		
	comp=E,240nm,18.2s							
KMI				LR		LR		
	comp=Z,300nm,19.5s							
TIXI	**Tiksi**	**34.97**	**353**	P		**P**	**16 00 20.1**	**-0.4**
	comp=Z,3.4nm,0.6s,baz=141,slow=6.8,SNR=19							
TIXI	**Tiksi**	**34.97**	**353⇓**	*e*P		**P**	**16 00 19.1**	**-1.4**
TIXI				pmax		pmax		
	comp=Z,9.0nm,1.3s							
TIXI				MLR		MLR		
	comp=Z,215nm,15.0s							
TIXI	**Tiksi**	**34.97**	**353**	*e*P		**P**	**16 00 19.4**	**-1.1**
	comp=Z,14nm,1.4s							
KRAR	**Krasnoyarsk**	**37.20**	**316⇑**	*i*P		**P**	**16 00 40.3**	**+0.6**
KRAR				pmax		pmax		
	comp=Z,20nm,0.7s							
MYLDM	**Lahad Datu**	**38.22**	**219**	*e*P		**P**	**16 00 51.5**	**+2.8**
	comp=Z,22nm,0.9s							
CRAI	**Chiangrai**	**39.40**	**256**	P		**P**	**16 00 59.3**	**+0.6**
	comp=Z,89nm,0.9s,comp=Z,72μm							
CMAI	**Chiengmai2**	**40.59**	**257**	P		**P**	**16 01 09.5**	**+0.7**
	comp=Z,89nm,1.3s,comp=Z,4μm							
TNA	**Tin City**	**40.61**	**30**	*e*P		**P**	**16 01 10.9**	**+2.8**
	comp=Z,18nm,0.9s							
WMQ	**Urumqi**	**40.65**	**297**	P		**P**	**16 01 09.8**	**+0.9**
WMQ				pP		sP	16 01 20.3	-1.4
WMQ				sP		pP	16 01 26.1	+8.1
WMQ				S		**S**	**16 07 11.3**	**-5.4**
WMQ				SS		**SS**	**16 10 15.9**	**-1.5**
WMQ				ScS		**ScS**	**16 11 06.8**	**-5.2**
WMQ				pmax		pmax		
	comp=Z,14nm,0.8s							
WMQ				pmax		pmax		
	comp=Z,20nm,3.6s							
WMQ				LR		LR		
	comp=N,47nm,8.8s							
WMQ				LR		LR		
	comp=E,97nm,15.8s							
WMQ				LR		LR		
	comp=Z,75nm,26.6s							
MRSI	**Marisa**	**40.83**	**211**	P		**P**	**16 01 12.7**	**+2.2**
	comp=Z,18nm,1.2s							
PBKT	**Sadao Pong**	**41.11**	**251**	P		**P**	**16 01 13.6**	**+0.8**
	comp=Z,13nm,0.9s							
CMMT	**Chiang Mai**	**41.31**	**255**	P		P	16 01 19.6	+5.1
	comp=Z,6.1nm,0.8s							
CHTO	**Chiang Mai**	**41.31**	**255**	P		P	16 01 19.7	+5.2
	comp=Z,27nm,0.8s							
CHTO	**Chiang Mai**	**41.31**	**255**	*e*P		**P**	**16 01 14.2**	**-0.3**
CHTO				pmax		pmax		
	comp=Z,3.0nm,0.7s							
CHTO	**Chiang Mai**	**41.31**	**255**	*e*P		**P**	**16 01 14.2**	**-0.3**
	comp=Z,3.3nm,0.7s							
CMAR	**Chiang Mai Arr**	**41.52**

CMAR PcP **PcP** **16 03 15.1 +1.6**
comp=Z,1.5nm,0.7s,baz=27,slow=1.9,SNR=8.5
CMAR LR LR 16 19 43.5
comp=Z,93nm,19.4s,baz=38,slow=38
ZALV Zalesovo Beam 41.66 312 P **P** **16 01 17.2 +0.3**
comp=Z,52nm,0.8s,baz=87,slow=6.6,SNR=160
ZALV PcP **PcP** **16 03 14.3 +1.1**
comp=Z,1.9nm,0.5s,baz=90,slow=3.1,SNR=3.3
ZALV LR LR 16 19 17.9
comp=Z,272nm,18.7s,baz=70,slow=37
LSA Lhasa 42.12 275 *e*P **P** **16 01 22.4 +0.8**
LSA pmax pmax
comp=Z,17nm,1.0s
LSA Lhasa 42.12 275 *e*P **P** **16 01 22.4 +0.8**
comp=Z,17nm,1.0s
CHBT CHBT 42.55 245 P **P** **16 01 25.9 +1.3**
comp=Z,20nm,1.0s
NVS Novosibirsk 42.58 313⇑ *i*P **P** **16 01 24.7 +0.3**
NVS pmax pmax
comp=Z,47nm,1.0s
NVS pmax pmax
comp=N,6.0nm,0.7s
NVS pmax pmax
comp=E,40nm,1.2s
NRIK Noril'sk 42.96 335 P **P** **16 01 26.9 -0.4**
comp=E,3.6nm,0.7s,baz=97,slow=8.9,SNR=9.8
NRIK LR LR 16 20 17.6
comp=E,174nm,18.4s,baz=114,slow=37
SHL Shillong 43.35 269 *e*P **P** **16 01 32.0 +0.7**
SBUM Sibu 43.84 225 *e*P **P** **16 01 35.1 +0.1**
comp=E,9.1nm,1.3s
MK01 Makanchi Array 43.90 302 *e*P **P** **16 01 35.1 -0.2**
MK31 Makanchi Array 43.90 302 *e*P **P** **16 01 35.4 +0.1**
MK31 Makanchi Array 43.90 302 *e*P **P** **16 01 35.4 +0.1**
MKAR Makanchi Array 43.90 302 P **P** **16 01 35.5 +0.2**
comp=E,33nm,0.7s,baz=88,slow=9.8,SNR=315
MKAR LR LR 16 20 27.7
comp=E,77nm,19.6s,baz=54,slow=37
MKAR Makanchi Array 43.90 302 *e*P **P** **16 01 35.4 +0.1**
MAKZ Makanchi 44.11 302 *e*P **P** **16 01 37.0 0.0**
MAKZ pmax pmax
comp=Z,37nm,0.8s
MAKZ Makanchi 44.11 302 *e*P **P** **16 01 37.0 0.0**
comp=Z,37nm,0.8s
KURK Kurchatov 45.69 308 P **P** **16 01 49.9 +0.5**
KURK pmax pmax
comp=Z,50nm,0.8s
KURK Kurchatov 45.69 308 *e*P **P** **16 01 49.2 -0.2**
comp=Z,81nm,0.8s
KURBB Kurchatov Arra 45.76 308 P **P** **16 01 49.9 -0.1**
comp=Z,50nm,0.8s,baz=83,slow=8.6,SNR=284
STKI Sintang 46.23 224 P **P** **16 01 55.5 +1.5**
comp=Z,11nm,1.0s,comp=Z,3μm
PDGK Podgornoye 46.58 298 P **P** **16 01 56.9 +0.4**
PDGK pmax pmax
comp=Z,34nm,1.1s
KAPI Kappang 46.70 210 *e*P **P** **16 01 59.3 +1.7**
comp=Z,11nm,0.8s
CAST Castle Rocks 47.00 34 *e*P **P** **16 02 01.8 +2.2**
comp=Z,5.5nm,0.7s
BPAW Bear Paw Mtn. 47.50 33 *e*P **P** **16 02 05.5 +2.0**
comp=Z,5.4nm,1.0s
KTH Kantishna Hill 47.52 34 *e*P **P** **16 02 07.3 +3.6**
comp=Z,13nm,1.0s
KKN Kakani 47.60 276 *e*P **P** **16 02 05.4 +0.5**
comp=Z,26nm,0.7s
PKIN Phulchoki 47.60 275 *e*P **P** **16 02 05.0 0.0**
comp=Z,17nm,0.6s
MLY Manley 47.62 32 *e*P **P** **16 02 06.7 +2.4**
comp=Z,7.2nm,0.7s
SURT Suratani 47.66 245 P **P** **16 02 07.3 +2.1**
comp=Z,5.3nm,0.9s
TRF Thorofare Moun 47.81 34 *e*P **P** **16 02 08.0 +2.0**
comp=Z,7.1nm,0.8s
COLD Coldfoot 47.91 29 *e*P **P** **16 02 08.6 +2.1**
comp=Z,4.9nm,0.9s
GKN Gorkha 48.01 276 *e*P **P** **16 02 08.3 +0.2**
comp=Z,122nm,1.2s
RC01 Rabbit Creek A 48.15 37 *e*P **P** **16 02 10.0 +1.5**
BWN Browne 48.16 33 *e*P **P** **16 02 08.8 +0.3**
comp=Z,26nm,0.8s
PMR Palmer 48.41 37 *e*P **P** **16 02 11.3 +0.8**
PMR pmax pmax
comp=Z,8.0nm,0.8s
PMR Palmer 48.41 37 *e*P **P** **16 02 11.3 +0.8**
comp=Z,8.5nm,0.8s
RND Reindeer 48.45 34 *e*P **P** **16 02 11.7 +0.8**
RND pmax pmax
comp=Z,8.0nm,0.8s
RND Reindeer 48.45 34 *e*P **P** **16 02 11.7 +0.8**
comp=Z,8.4nm,0.8s
PKDT Phuket 48.72 244 P **P** **16 02 15.7 +2.3**
comp=Z,38nm,0.8s
WRH Wood River Hil 48.76 33 *e*P **P** **16 02 15.2 +2.1**
comp=Z,4.6nm,0.8s
SML Sawmill 48.78 36 *e*P **P** **16 02 14.8 +1.5**
SML pmax pmax
comp=Z,3.0nm,0.7s
SML Sawmill 48.78 36 *e*P **P** **16 02 14.8 +1.5**
comp=Z,3.4nm,0.7s
CCB Clear Creek Bu 48.87 33 *e*P **P** **16 02 15.9 +1.9**
comp=Z,3.0nm,0.7s
KULM Kulim 48.92 239 *e*P **P** **16 02 15.5 +0.6**
comp=Z,15nm,1.1s
KOLN Koldanda 48.94 276 *e*P **P** **16 02 15.7 +0.5**
comp=Z,19nm,0.7s
SCM Sheep Creek Mo 49.25 36 *e*P **P** **16 02 18.9 +1.9**
SCM pmax pmax
comp=Z,54nm,1.7s
SCM Sheep Creek Mo 49.25 36 *e*P **P** **16 02 18.9 +1.9**
comp=Z,54nm,1.7s
HDA Harding Lake 49.25 33 *e*P **P** **16 02 17.8 +0.9**
comp=Z,7.1nm,0.7s
ILAR Eielson Array 49.26 32 P **P** **16 02 18.4 +1.4**
comp=Z,3.3nm,0.7s,baz=265,slow=5.8,SNR=35
PYUN Piuthan 49.27 277 *e*P **P** **16 02 18.4 +0.6**
comp=Z,57nm,0.6s
TKM2 Tokmak 2 49.43 298 *e*P **P** **16 02 19.3 +0.4**
TKM2 pmax pmax
comp=Z,18nm,0.7s
TKM2 Tokmak 2 49.43 298 *e*P **P** **16 02 19.3 +0.4**
comp=Z,18nm,0.7s
FYU Fort Yukon 49.87 30 *e*P **P** **16 02 24.2 +2.7**
comp=Z,10.0nm,0.8s
KLU Klutina 49.95 37 *e*P **P** **16 02 24.2 +1.9**
comp=Z,11nm,0.7s
FRU Bishkek 50.14 298 *e*P **P** **16 02 24.0 -0.1**
OTUK Ortayu 50.20 306 P **P** **16 02 24.2 -0.2**
OTUK pmax pmax
comp=Z,22nm,0.9s
KSH Kashi 50.23 294 P P 16 02 29.8 +5.0
KSH *ep*P sP 16 02 42.5 +4.7
KSH *es*P pP 16 02 47.5 +13
KSH PcS **PcS** **16 07 43.1 +2.3**
KSH S **S** **16 09 39.9 +4.8**
KSH Kashi 50.23 294 SS **SS** **16 13 11.4 +3.0**
KSH pmax pmax
comp=Z,89nm,4.7s
KSH LR LR
comp=N,320nm,15.2s
KSH LR LR
comp=E,120nm,8.8s
KSH LR LR
comp=Z,460nm,18.5s
AAK Ala-Archa 50.29 298 P **P** **16 02 25.7 +0.4**
comp=Z,6.6nm,0.6s,baz=123,slow=7.0,SNR=17
AAK Ala-Archa 50.29 298⇓ *i*P **P** **16 02 26.1 +0.8**
AAK pmax pmax
comp=Z,17nm,0.7s
AAK Ala-Archa 50.29 298 *e*P **P** **16 02 25.4 0.0**
comp=Z,7.4nm,0.6s
BVAR Borovoye Array 50.32 312 P **P** **16 02 25.4 +0.2**
comp=Z,5.4nm,0.5s,baz=75,slow=8.2,SNR=46
BVAR PcP **PcP** **16 03 44.4 +0.9**
comp=Z,3.3nm,0.5s,baz=87,slow=3.4,SNR=4.1
BRVK Borovoye 50.38 312 *c i*P **P** **16 02 25.8 +0.2**
BRVK pmax pmax
comp=Z,12nm,1.0s
BRVK Borovoye 50.38 312 *e*P **P** **16 02 25.7 +0.2**
comp=Z,15nm,0.8s
DOT Dot Lake 50.58 34 *e*P **P** **16 02 27.7 +0.7**
comp=Z,9.6nm,0.7s
BMRM Bremner River 50.65 37 *e*P **P** **16 02 29.8 +2.2**
comp=Z,17nm,0.8s
EKS2 Erkin-Say 50.78 298 *e*P **P** **16 02 29.1 +0.1**
EKS2 pmax pmax
comp=Z,7.0nm,0.7s
EKS2 Erkin-Say 50.78 298 *e*P **P** **16 02 29.1 +0.1**
comp=Z,6.8nm,0.7s
MENT Mentasta 50.81 35 *e*P **P** **16 02 31.4 +2.6**
comp=Z,12nm,0.9s
ZRNK Zerenda 51.15 312 *e*P **P** **16 02 31.5 0.0**
ZRNK pmax pmax
comp=Z,16nm,0.8s
ZRNK Zerenda 51.15 312 *e*P **P** **16 02 31.5 0.0**
comp=Z,16nm,0.8s
EGAK Eagle 51.71 32 *e*P **P** **16 02 36.7 +1.3**
comp=Z,3.4nm,0.7s
BALM Baldy 51.73 37 *e*P **P** **16 02 37.5 +1.7**
BALM pmax pmax
comp=Z,6.0nm,0.8s
BALM Baldy 51.73 37 *e*P **P** **16 02 37.5 +1.7**
comp=Z,6.0nm,0.8s
MNAS Manas 51.73 299 P **P** **16 02 37.7 +1.5**
MNAS pmax pmax
comp=Z,30nm,0.8s
PSI Prapat 51.90 239 *e*P **P** **16 02 37.7 0.0**
PSI pmax pmax
comp=Z,12nm,0.8s
PSI Prapat 51.90 239 *e*P **P** **16 02 37.7 0.0**
comp=Z,12nm,0.8s
KKAR Karatay Array 52.92 300 *e*P **P** **16 02 44.5 -0.3**
KKAR Karatay Array 52.92 300 *e*P **P** **16 02 44.5 -0.3**
GSI Gunungsitoli 53.91 239 P **P** **16 02 53.8 +1.5**
GSI Gunungsitoli 53.91 239 *e*P **P** **16 02 52.8 +0.4**
comp=Z,51nm,0.6s
INK Inuvik 54.14 27 P **P** **16 02 55.2 +1.9**
comp=Z,2.5nm,0.5s,baz=300,slow=7.5,SNR=30
INK Inuvik 54.14 27 *e*P **P** **16 02 54.6 +1.4**
comp=Z,7.4nm,0.8s
SVE Sverdlovsk 54.88 318⇓ *e*P **P** **16 02 59.5 +0.7**
SVE pmax pmax
comp=Z,43nm,0.9s
SVE MLR MLR
comp=Z,355nm,18.0s
DZET Dzherino 55.66 296 P **P** **16 03 05.4 +0.5**
DZET pmax pmax
comp=Z,29nm,0.7s
ARU Arti 56.09 318 *c i*P **P** **16 03 07.7 +0.2**
ARU 16 04 06.9
ARU 16 05 10.1
ARU S **S** **16 10 55.7 +1.6**
ARU SS **SS** **16 14 41.1 +1.1**
ARU pmax pmax
comp=Z,53nm,1.2s
ARU MLR MLR
comp=Z,258nm,19.0s
ARU Arti 56.09 318 *e*P **P** **16 03 07.4 -0.1**
comp=Z,44nm,1.0s
WRAB Tennant Creek 57.35 188 *e*P **P** **16 03 17.2 +0.3**
WRAB pmax pmax
comp=Z,13nm,0.9s
WRAB Tennant Creek 57.35 188 *e*P **P** **16 03 17.2 +0.3**
comp=Z,13nm,0.9s
WRA Warramunga Arr 57.36 188 P **P** **16 03 17.4 +0.4**
comp=Z,5.1nm,0.6s,baz=7.0,slow=7.5,SNR=46
WRA LR LR 16 27 50.4
comp=Z,40nm,18.2s,baz=175,slow=36
ABKAR Akbulak array 57.69 310 *e*P **P** **16 03 18.6 -0.4**
HYB Hyderabad 58.15 268 *i*P **P** **16 03 23.0 +0.3**
DLBC Dease Lake 58.42 38 *e*P **P** **16 03 25.0 +0.9**
comp=Z,7.7nm,0.9s
ASAR Alice Springs 61.09 188 P **P** **16 03 43.5 +0.8**
comp=Z,3.4nm,0.8s,baz=14,slow=12,SNR=44
ASAR Alice Springs 61.09 188 P **P** **16 03 43.5 +0.8**
ASAR pmax pmax
comp=Z,4.0nm,0.8s
MBWA Marble Bar 61.65 203 *e*P **P** **16 03 47.4 +1.0**
LVZ Lovozero 61.80 336⇓ *e*P **P** **16 03 46.9 -0.1**
LVZ pmax pmax
comp=Z,17nm,0.8s
RES Resolute Bay 62.31 14 *e*P **P** **16 03 50.7 +0.4**
RES pmax pmax
comp=Z,10.0nm,1.2s
RES Resolute Bay 62.31 14 *e*P **P** **16 03 50.7 +0.4**
comp=Z,9.8nm,1.2s
TMCR Tamitsa 62.44 331 *e*P **P** **16 03 51.4 +0.1**
TMCR pmax pmax
comp=Z,20nm,0.8s
KLMR Klimovskoe 63.46 328 *e*P **P** **16 03 57.3 -0.8**
KLMR *e**PP **pP** **16 04 07.6 -0.1**
KLMR 16 04 34.7
KLMR pmax pmax
comp=Z,26nm,0.8s
YKA Yellowknife Ar 63.57 30 P **P** **16 03 59.9 +1.1**
comp=Z,1.2nm,0.6s,baz=303,slow=6.6,SNR=17
YKA Yellowknife Ar 63.57 30 P **P** **16 04 00.0 +1.1**
GEYT Alibeck 63.63 299 P **P** **16 04 00.3 +0.5**
comp=Z,19nm,0.8s,baz=29,slow=3.4,SNR=37
GEYT LR LR 16 35 08.7
comp=Z,51nm,18.1s,baz=95,slow=39
DZM Mont Dzumac 63.66 154 LR LR 16 28 48.7
comp=Z,123nm,20.2s,baz=39,slow=33
ARCES ARCESS Array B 63.68 339 P **P** **16 04 00.3 +0.8**
comp=Z,13nm,0.7s,baz=63,slow=8.1,SNR=64
ARCES LR LR 16 37 49.7
comp=Z,51nm,18.4s,baz=55,slow=42
DAG Danmarks Havn 65.46 355⇑ *i*P **P** **16 04 11.3 +0.3**
comp=Z,14nm,0.9s
DAG Danmarks Havn 65.46 355⇑ *i*P **P** **16 04 11.3 +0.3**
DAG pmax pmax
comp=Z,12nm,0.9s
JOF Joensuu 65.66 332 P **P** **16 04 12.7 +0.2**
JOF pmax pmax
comp=Z,17nm,1.1s
VRH Novokhopyorsk 67.31 318 *e*P **P** **16 04 23.0 -0.2**
VRH *e**SP **pP** **16 04 32.6 -0.2**
VRH pmax pmax
comp=Z,50nm,0.9s
VRH MLR MLR
comp=Z,2μm,44.0s
AFI Afiamalu 67.38 130 LR LR 16 28 40.8
comp=Z,101nm,19.3s,baz=224,slow=31
OBN Obninsk 67.81 323 *c i*P **P** **16 04 26.4 +0.1**
OBN *e* 16 07 00.4
OBN *e*PPP PPP 16 08 38.8
OBN *e*S **S** **16 13 13.6 -8.5**
OBN pmax pmax
comp=Z,34nm,0.8s
OBN MLR MLR
comp=Z,117nm,18.0s
OBN Obninsk 67.81 323 *e*P **P** **16 04 26.0 -0.2**
comp=Z,31nm,0.8s
LPSR Galich'ya Gora 68.03 320 *e*P **P** **16 04 27.7 0.0**
LPSR *e**SP **pP** **16 04 37.8 +0.5**
LPSR pmax pmax
comp=Z,50nm,0.9s
LPSR MLR MLR
comp=Z,240nm,21.0s
FINES FINESS Array B 68.51 332 P **P** **16 04 30.9 +0.3**
comp=Z,30nm,0.7s,baz=55,slow=7.7,SNR=105
FINES LR LR 16 36 47.7
comp=Z,210nm,18.5s,baz=36,slow=38
VSR Storozhevoye 68.66 319 *e*P **P** **16 04 31.7 0.0**
VSR *e**SP **pP** **16 04 41.6 +0.3**
VSR pmax pmax
comp=Z,30nm,0.6s
VSR MLR MLR
comp=Z,340nm,17.0s
VAF Ylistaro 68.69 335 P **P** **16 04 32.4 +0.7**
VAF pmax pmax
comp=Z,27nm,1.0s
STKA Stephens Creek 68.87 180 P **P** **16 04 34.7 +1.7**
comp=Z,5.9nm,0.7s,baz=349,slow=5.7,SNR=20
GOF Gofitskoye 69.84 312⇑ *e*P **P** **16 04 40.1 +1.0**
GOF pmax pmax
comp=Z,50nm,0.6s
VSU Vasula 70.16 329⇑ *e*P **P** **16 04 41.3 +0.5**
VSU pmax pmax
comp=Z,81nm,0.8s
DGRG David-gareji 70.36 307 P **P** **16 04 42.6 +0.1**
DGRG David-gareji 70.36 307 P **P** **16 04 42.6 +0.1**
SUMG Summit 70.37 360 *i*P **P** **16 04 43.6 +1.2**
comp=Z,6.2nm,0.8s
SUMG Summit 70.37 360 *e*P **P** **16 04 43.6 +1.2**
SUMG pmax pmax
comp=Z,6.0nm,0.8s
SUMG Summit 70.37 360 *e*P **P** **16 04 43.5 +1.0**
comp=Z,12nm,1.1s
GUDG Gudauri 70.38 309 P **P** **16 04 44.5 +1.7**
ZEI Tsey 70.56 309 *e*P **P** **16 04 42.6 -1.2**
ZEI pmax pmax
comp=Z,28nm,0.7s
KBZ Khabaz 70.66 311 P **P** **16 04 45.2 +1.1**
comp=Z,22nm,0.9s,baz=58,slow=3.4,SNR=48
KBZ LR LR 16 40 23.2
comp=Z,115nm,18.8s,baz=59,slow=40
KIV Kislovodsk 70.66 311 *i*P **P** **16 04 45.1 +0.8**
SNR=13
KIV Kislovodsk 70.66 311 *e*P **P** **16 04 45.1 +0.8**
KIV pmax pmax
comp=Z,87nm,1.1s
KIV MLR MLR
comp=Z,102nm,18.0s
KIV Kislovodsk 70.66 311 *e*P **P** **16 04 44.9 +0.6**
comp=Z,58nm,0.8s
ONI Oni 70.94 309 P **P** **16 04 47.3 +1.3**
ONI Oni 70.94 309 P **P** **16 04 47.3 +1.3**
NEY Neytrino 71.03 310⇓ *e*P **P** **16 04 47.8 +1.2**
NEY pmax pmax
comp=Z,2.0nm,0.8s
BANOM Banah 71.05 288 *i*P **P** **16 04 47.7 +0.8**
SNR=7.3
GNI Garni 71.47 307 P **P** **16 04 50.5 +1.1**
AKH Akhalkalaki 71.57 308⇓ *i*P **P** **16 04 51.4 +1.4**
UOSS Minazif 71.66 288 *e*P **P** **16 04 50.8 +0.2**
comp=Z,1.6nm,0.7s
HATD Hatta, Dubai 71.78 288 *i*P **P** **16 04 51.9 +0.7**
SNR=11
ASHO Ashiyiah 71.91 287 *i*P **P** **16 04 52.5 +0.4**
SNR=9.1
NAZ Nazwa, Dubai 72.05 288 P **P** **16 04 53.0 +0.2**
FAQ Al Faqa, Dubai 72.23 288 P **P** **16 04 54.0 0.0**
NACGM Naroch 72.43 327 *e* **P** **16 04 54.0 -0.6**
ANN Anapa 73.27 314 *e*P **P** **16 04 57.2 -2.6**
ANN *e**PP **pP** **16 05 07.9 -1.6**
ANN *e*S **S** **16 14 18.9 -7.2**
ANN pmax pmax
comp=Z,36nm,1.2s
MFID Camas Ranch 73.46 48 *e*P **P** **16 05 03.5 +2.4**
comp=Z,2.8nm,0.8s
NC405 NORSAR Array S 73.66 337 *e*P **P** **16 05 02.4 +0.5**
NC303 NORSAR Array S 73.69 337 *e*P **P** **16 05 02.1 +0.2**
FCC Fort Churchill 73.75 27 *e*P **P** **16 05 03.2 +0.9**
FCC pmax pmax
comp=Z,6.0nm,0.8s
FCC Fort Churchill 73.75 27 *e*P **P** **16 05 03.2 +0.9**
comp=Z,6.0nm,0.8s
NC204 NORSAR Array S 73.83 338 *e*P **P** **16 05 03.4 +0.5**
NB201 NORSAR Array S 73.84 337 *e*P **P** **16 05 03.3 +0.4**
NB2 NORSAR Subarra 73.88 337 P **P** **16 05 03.6 +0.4**
comp=Z,21nm,0.7s,baz=39,slow=6.2
NB2 NORSAR Subarra 73.88 337 P **P** **16 05 03.6 +0.4**
baz=39,slow=6.2
NB2 NORSAR Subarra 73.88 337 P **P** **16 05 03.5 +0.4**
NB2 pmax pmax
comp=Z,18nm,0.7s
NOA NORSAR Array B 73.88 337 P **P** **16 05 03.6 +0.4**
comp=Z,19nm,0.7s,baz=38,slow=5.9,SNR=82
NOA LR LR 16 40 53.7
comp=Z,116nm,19.0s,baz=320,slow=38
LRM Limekiln Ridge 73.97 44 *e*P **P** **16 05 03.5 -0.7**
NBO02 NORSAR Array S 73.98 337 *e*P **P** **16 05 04.0 +0.3**
AKASG Malin Array Be 74.02 322 P **P** **16 05 04.1 +0.1**
comp=Z,17nm,0.6s,baz=46,slow=6.2,SNR=66
AKASG LR LR 16 39 46.7
comp=Z,94nm,21.9s,baz=55,slow=38
AKASG Malin Array Be 74.02 322 *i*P **P** **16 05 04.0 0.0**
AKASG pmax pmax
comp=Z,18nm,0.6s
NBO00 NORSAR Array S 74.02 337 *e*P **P** **16 05 04.2 +0.3**
KIEV Kiev 74.03 322 *e*P **P** **16 05 03.9 -0.2**
KIEV pmax pmax
comp=Z,26nm,0.7s
KIEV Kiev 74.03 322 *e*P **P** **16 05 03.9 -0.2**
comp=Z,26nm,0.7s
EGMT Eagleton 74.08 41 *e*P **P** **16 05 05.9 +1.3**
comp=Z,9.6nm,0.9s
NAO01 NORSAR Array S 74.13 337 *e*P **P** **16 05 04.7 +0.2**
HLID Hailey 74.20 47 *e*P **P** **16 05 07.6 +2.0**
comp=Z,2.5nm,0.9s
SUW Suwalki 74.59 327 *e*P **P** **16 05 08.0 +0.7**
SUW Suwalki 74.59 327 *e*P **P** **16 05 08.0 +0.7**
NVAR Mina Array Bea 74.85 53 P **P** **16 05 11.6 +2.1**
comp=Z,1.4nm,0.7s,baz=288,slow=6.0,SNR=12
SIM Simferopol' 75.06 315 *e*P **P** **16 05 11.2 +0.9**
H17A Grant Village 75.89 45 *e*P **P** **16 05 16.9 +1.6**
comp=Z,7.7nm,0.9s
IMW Indian Meadow 76.00 45 *e*P **P** **16 05 17.9 +1.9**
comp=Z,4.3nm,0.8s
SORM Soroca 76.11 321⇓ *i*P **P** **16 05 16.2 0.0**
MOOW Moose Ponds 76.20 45 *e*P **P** **16 05 19.0 +1.9**
comp=Z,3.2nm,0.9s
R11A Troy Canyon, C 76.62 52 *e*P **P** **16 05 21.6 +2.1**
comp=Z,6.0nm,1.4s
TPNV Topopah Spring 77.04 53 *e*P **P** **16 05 23.1 +1.2**
TPNV pmax pmax
comp=Z,6.0nm,1.0s
TPNV Topopah Spring 77.04 53 *e*P **P** **16 05 23.1 +1.2**
comp=Z,6.1nm,1.0s
BEL Belsk 77.15 327 *e*P **P** **16 05 23.5 +1.5**
BEL Belsk 77.15 327 *e*P **P** **16 05 23.5 +1.5**
DUG Dugway, Tooele 77.19 49 *e*P **P** **16 05 24.4 +1.7**
DUG pmax pmax
comp=Z,5.0nm,1.0s
DUG Dugway, Tooele 77.19 49 *e*P **P** **16 05 24.4 +1.7**
comp=Z,4.8nm,1.0s
BW06 Boulder Array 77.49 45 *e*P **P** **16 05 25.6 +1.2**
comp=Z,7.2nm,1.5s
PDAR Pinedale Array 77.49 45 P **P** **16 05 25.9 +1.5**
comp=Z,1.7nm,0.7s,baz=278,slow=1.8,SNR=16
PSUT Pine Spring 77.58 51 *e*P **P** **16 05 26.1 +1.1**
comp=Z,3.8nm,0.8s
KWP Kalwaria Pacla 77.84 324 *e*P **P** **16 05 27.1 +1.2**
KWP Kalwaria Pacla 77.84 324⇓ *i*P **P** **16 05 27.6 +1.7**
KWP Kalwaria Pacla 77.84 324 *e*P **P** **16 05 27.1 +1.2**
SHPR Sheep Range 78.00 53 *e*P **P** **16 05 28.4 +1.1**
comp=Z,3.4nm,0.8s
BURAR Bucovina Array 78.03 322⇓ *i*P **P** **16 05 28.2 +1.1**
BURAR Bucovina Array 78.03 322 P **P** **16 05 28.2 +1.1**
TESR Tescani 78.06 320⇓ *i*P **P** **16 05 28.1 +0.9**
CFR Carcaliu 78.17 318⇓ *i*P **P** **16 05 28.6 +0.8**
VRI Vrincioaia 78.45 320⇓ *i*P **P** **16 05 31.4 +2.0**
VRI Vrincioaia 78.45 320 P **P** **16 05 31.0 +1.6**
VRI pmax pmax
comp=Z,133nm,1.4s
KOLS Kolonicke sedl 78.53 324 *e*P **P** **16 05 30.7 +0.9**
KOLS *e* 16 05 40.7
KOLS pmax pmax
comp=Z,9.0nm,1.0s
KOLS Kolonicke sedl 78.53 324 *e*P **P** **16 05 30.7 +0.9**
KOLS *e* 16 05 40.7
BRTR Keskin Array B 78.60 311 P **P** **16 05 31.1 +0.6**
comp=Z,3.8nm,0.7s,baz=97,slow=4.2,SNR=31
STHS Stebnicka Huta 78.67 325 *e*P **P** **16 05 31.9 +1.4**
STHS *e* 16 05 41.9
STHS pmax pmax
comp=Z,10.0nm,0.9s
STHS Stebnicka Huta 78.67 325 *e*P **P** **16 05 31.9 +1.4**
STHS *e* 16 05 41.9
UZH Uzhgorod 78.74 324 *e*P **P** **16 05 31.2 +0.3**
UZH *e* 16 05 39.6
OJC Ojcow 78.75 326 *e*P **P** **16 05 31.8 +0.9**
OJC Ojcow 78.75 326 *e*P **P** **16 05 31.6 +0.7**
OJC pmax pmax
comp=Z,24nm,0.9s
OJC Ojcow 78.75 326 *e*P **P** **16 05 31.6 +0.7**
comp=Z,24nm,0.9s
ARCR ARCALIA 78.82 322⇓ *i*P **P** **16 05 33.5 +2.1**
LCMT Little Creek M 78.90 52 *e*P **P** **16 05 33.0 +0.8**
comp=Z,8.7nm,1.4s
CRVS Cervenica-Dubn 78.94 324 *e*P **P** **16 05 33.0 +1.0**
CRVS Cervenica-Dubn 78.94 324 *e*P **P** **16 05 33.0 +1.0**
TRPA Tarpa 78.97 323 *e*P **P** **16 05 33.7 +1.5**
ISR Istrita 79.05 319⇓ *i*P **P** **16 05 34.4 +1.6**
DOPR Dopca 79.07 320⇓ *i*P **P** **16 05 34.7 +1.9**
NIE Niedzica 79.10 325 *e*P **P** **16 05 34.2 +1.3**
NIE Niedzica 79.10 325 *e*P **P** **16 05 34.2 +1.3**
MLR Muntele Rosu 79.11 320⇓ *i*P **P** **16 05 34.1 +0.9**
MLR Muntele Rosu 79.11 320 *e*P **P** **16 05 33.4 +0.2**
MLR pmax pmax
comp=Z,9.0nm,0.9s
MLR Muntele Rosu 79.11 320 *e*P **P** **16 05 33.4 +0.2**
comp=Z,8.9nm,0.9s
VOIR 79.61 320⇓ *i*P **P** **16 05 37.8 +2.0**
VOIR 79.61 320 P **P** **16 05 37.4 +1.6**
LANS Liptovska Anna 79.67 325 *e*P **P** **16 05 37.5 +1.5**
LANS Liptovska Anna 79.67 325 *e*P **P** **16 05 37.5 +1.5**

KECS	**Kecovo**	**79.69**	**325**	*eP*	**P**	**16 05 37.1 +1.0**
KECS				pmax	pmax	
	comp=Z,3.0nm,1.0s					
KECS	**Kecovo**	**79.69**	**325**	*eP*	**P**	**16 05 37.1 +1.0**
OKC	**Ostrava-Krasne**	**79.76**	**327**	*eP*	**P**	**16 05 37.4 +1.0**
OKC				*ep*P	**sP**	**16 05 48.1 -1.7**
OKC				*ex*	x	16 05 51.8
OKC				AMS	AMS	16 49 30.0
	comp=Z,300nm,18.7s					
OKC	**Ostrava-Krasne**	**79.76**	**327**	*eP*	**P**	**16 05 37.4 +1.0**
OKC				*e*		16 05 48.1
OKC				*e*		16 05 51.8
OKC				MLR	MLR	
	comp=Z,300nm,18.7s					
KSP	**Ksiaz**	**79.81**	**328**	*eP*	**P**	**16 05 37.7 +1.0**
KSP	**Ksiaz**	**79.81**	**328**	*eP*	**P**	**16 05 37.7 +1.0**
DRGR		**79.83**	**322**	⇓*iP*	**P**	**16 05 38.4 +1.4**
ARR	**Arges**	**79.87**	**320**	⇓*iP*	**P**	**16 05 40.0 +2.8**
MORC	**Moravsky Berou**	**80.06**	**327**	⇓*iP*	**P**	**16 05 39.6 +1.4**
MORC	**Moravsky Berou**	**80.06**	**327**	*eP*	**P**	**16 05 38.8 +0.6**
MORC				pmax	pmax	
	comp=Z,62nm,0.9s					
MORC	**Moravsky Berou**	**80.06**	**327**	*eP*	**P**	**16 05 38.8 +0.6**
	comp=Z,62nm,0.9s					
DPC	**Dobruska-Polom**	**80.16**	**328**	*eP*	**P**	**16 05 39.9 +1.2**
DPC				*ep*P	**sP**	**16 05 50.6 -1.4**
DPC	**Dobruska-Polom**	**80.16**	**328**	*eP*	**P**	**16 05 39.9 +1.2**
DPC				*e*		16 05 50.6
UPC	**Upice**	**80.18**	**328**	*eP*	**P**	**16 05 39.7 +1.0**
UPC				*ep*P	**sP**	**16 05 50.5 -1.5**
UPC	**Upice**	**80.18**	**328**	*eP*	**P**	**16 05 39.7 +1.0**
UPC				*e*		16 05 50.5
PSZ	**Piszkesteto**	**80.37**	**324**	⇓*iP*	**P**	**16 05 41.4 +1.5**
PSZ	**Piszkesteto**	**80.37**	**324**	⇑*eP*	**P**	**16 05 41.1 +1.2**
PSZ	**Piszkesteto**	**80.37**	**324**	*eP*	**P**	**16 05 40.6 +0.7**
PSZ				pmax	pmax	
	comp=Z,21nm,1.0s					
PSZ	**Piszkesteto**	**80.37**	**324**	*eP*	**P**	**16 05 40.6 +0.7**
	comp=Z,21nm,1.0s					
VYHS	**Vyhne**	**80.44**	**325**	*eP*	**P**	**16 05 41.2 +1.1**
VYHS				*e*		16 05 51.6
VYHS				pmax	pmax	
	comp=Z,6.0nm,1.0s					
VYHS	**Vyhne**	**80.44**	**325**	*eP*	**P**	**16 05 41.2 +1.1**
VYHS				*e*		16 05 51.6
BRG	**Berggiesshubel**	**80.75**	**329**	*eP*	**P**	**16 05 42.6 +0.8**
	comp=Z,14nm,1.1s					
BRG				*e*		16 05 52.8
	comp=Z,8.0nm,1.0s					
	comp=N,107nm,13.5s					
	comp=E,83nm,17.8s					
	comp=Z,182nm,13.5s					
BRG	**Berggiesshubel**	**80.75**	**329**	*eP*	**P**	**16 05 42.6 +0.8**
	comp=Z,14nm,1.1s					
BRG				*e*		16 05 52.8
	comp=Z,8.0nm,1.0s					
	comp=N,107nm,13.5s					
	comp=E,83nm,17.8s					
	comp=Z,182nm,13.5s					
BRG	**Berggiesshubel**	**80.75**	**329**	*eP*	**P**	**16 05 42.6 +0.8**
BRG				*e*		16 05 52.8
BRG				pmax	pmax	
	comp=Z,14nm,1.1s					
BRG				MLR	MLR	
	comp=N,107nm,13.5s					
BRG				MLR	MLR	
	comp=E,83nm,17.8s					
BRG				MLR	MLR	
	comp=Z,182nm,13.5s					
PVCC	**Panska Ves**	**80.76**	**329**	*eP*	**P**	**16 05 43.2 +1.4**
PVCC				*ep*P	**sP**	**16 05 53.7 -1.5**
PVCC				*ex*	x	16 05 57.0
PVCC				AMS	AMS	16 44 20.0
	comp=Z,200nm,12.9s					
PVCC	**Panska Ves**	**80.76**	**329**	*eP*	**P**	**16 05 43.2 +1.4**
PVCC				*e*		16 05 53.7
PVCC				*e*		16 05 57.0
PVCC				MLR	MLR	
	comp=Z,200nm,12.9s					
PV05	**Paradox Valley**	**80.77**	**49**	*eP*	**P**	**16 05 44.6 +2.2**
CLL	**Collm**	**80.80**	**330**	⇑*iP*	**P**	**16 05 42.5 +0.5**
	comp=Z,22nm,0.9s					
CLL				*i*		16 05 45.2
CLL				*i*		16 05 52.8
CLL				*i*		16 05 56.0
CLL				LmV		16 45 00.0
	comp=Z,100nm,18.2s					
CLL	**Collm**	**80.80**	**330**	⇑*iP*	**P**	**16 05 42.5 +0.5**
CLL				*i*		16 05 52.8
CLL				pmax	pmax	
	comp=Z,5.0nm,0.9s					
CLL	**Collm**	**80.80**	**330**	*eP*	**P**	**16 05 42.2 +0.2**
	comp=Z,18nm,0.9s					
VRAC	**Vranov**	**80.83**	**327**	⇓*iP*	**P**	**16 05 43.8 +1.6**
GOPC	**GO Pecny, Ondr**	**81.14**	**328**	*eP*	**P**	**16 05 44.8 +0.9**
GOPC				*ep*P	**sP**	**16 05 55.5 -1.7**
GOPC				*ex*	x	16 05 59.1
GOPC	**GO Pecny, Ondr**	**81.14**	**328**	*eP*	**P**	**16 05 44.8 +0.9**
GOPC				*e*		16 05 55.5
GOPC				*e*		16 05 59.1
PRU	**Pruhonice**	**81.19**	**328**	*eP*	**P**	**16 05 45.1 +1.0**
PRU				*ep*P	**sP**	**16 05 55.7 -1.7**
PRU				*ex*	x	16 05 59.3
PRU				AMS	AMS	16 44 50.0
	comp=Z,200nm,11.1s					
PRU	**Pruhonice**	**81.19**	**328**	*eP*	**P**	**16 05 45.1 +1.0**
PRU				*e*		16 05 55.7
PRU				*e*		16 05 59.3
PRU				MLR	MLR	
	comp=Z,200nm,11.1s					
BZS	**Buzias**	**81.20**	**322**	⇓*iP*	**P**	**16 05 45.1 +0.8**
MDVR	**Moldovita**	**81.75**	**321**	⇓*iP*	**P**	**16 05 48.0 +0.7**
CSS	**Mathiatis**	**81.82**	**308**	*eP*	**P**	**16 05 48.1 +0.3**
	comp=Z,3.7nm,0.8s					
NKC	**Novy Kostel**	**81.85**	**330**	*eP*	**P**	**16 05 48.2 +0.5**
NKC				*ep*P	**sP**	**16 05 59.1 -1.9**
NKC				AMS	AMS	16 45 30.0
	comp=Z,200nm,15.4s					
NKC	**Novy Kostel**	**81.85**	**330**	*eP*	**P**	**16 05 48.2 +0.5**
NKC				*e*		16 05 59.1
NKC				MLR	MLR	
	comp=Z,200nm,15.4s					
CONA	**Conrad Observa**	**82.19**	**326**	*i* P	**P**	**16 05 50.7 +1.2**
	comp=Z,13nm,1.1s					
KHC	**Kasperske Hory**	**82.25**	**328**	*eP*	**P**	**16 05 50.7 +0.9**
KHC				*ep*P	**sP**	**16 06 01.4 -1.7**
KHC				AMS	AMS	16 45 20.0
	comp=Z,200nm,16.2s					
KHC	**Kasperske Hory**	**82.25**	**328**	*eP*	**P**	**16 05 50.2 +0.4**
KHC				pmax	pmax	
	comp=Z,6.0nm,1.0s					
KHC	**Kasperske Hory**	**82.25**	**328**	*eP*	**P**	**16 05 50.2 +0.4**
	comp=Z,6.1nm,1.0s					
S22A	**4UR Ranch, Cre**	**82.34**	**48**	*eP*	**P**	**16 05 53.3 +2.5**
	comp=Z,2.8nm,0.8s					
GERES	**GERESS Array B**	**82.42**	**328**	P	**P**	**16 05 51.2 +0.5**
	comp=Z,3.5nm,0.7s,baz=36,slow=5.0,SNR=22					
WET	**Wettzell**	**82.53**	**329**	P	**P**	**16 05 52.6 +1.4**
WET				pmax	pmax	
	comp=Z,12nm,1.1s					
GRF	**Grafenberg Arr**	**82.77**	**330**	P	**P**	**16 05 54.3 +1.8**
GRF				pmax	pmax	
	comp=Z,31nm,1.1s					
ARSA	**Arzberg**	**82.85**	**326**	*i* P	**P**	**16 05 53.7 +0.7**
	comp=Z,6.1nm,1.1s					
MOA	**Molln**	**82.94**	**327**	*i* PcP	**P**	**16 05 55.2 +1.8**
	comp=Z,6.0nm,1.1s					
PERS	**Pernice**	**83.50**	**326**	*i* P	**P**	**16 05 57.2 +0.9**
PERS				*i*		16 06 07.6
SOKA	**Soboth**	**83.50**	**326**	*i* P	**P**	**16 05 57.0 +0.6**
	comp=Z,19nm,1.0s					
KBA	**Koelnbreinsper**	**83.94**	**327**	*i* PcP	**P**	**16 06 00.2 +1.5**
	comp=Z,7.2nm,0.8s					
KBA	**Koelnbreinsper**	**83.94**	**327**	P	**P**	**16 06 00.7 +2.0**
KBA				pmax	pmax	
	comp=Z,12nm,0.8s					
BOJS	**Bojanci**	**84.30**	**325**	*i* P	**P**	**16 06 01.1 +0.8**
BOJS				*e*		16 06 11.3
PMOR	**Pomariorio Ree**	**84.36**	**114**	*eT*	T	17 38 33.5
	comp=Z,23nm,0.2s					
ANMO	**Albuquerque**	**84.43**	**50**	*eP*	**P**	**16 06 03.1 +1.6**
ANMO				pmax	pmax	
	comp=Z,3.0nm,1.0s					
ANMO	**Albuquerque**	**84.43**	**50**	*eP*	**P**	**16 06 03.1 +1.6**
	comp=Z,3.4nm,1.0s					
JAVS	**Javornik**	**84.54**	**326**	*i* P	**P**	**16 06 01.4 -0.3**
JAVS				*i*		16 06 11.8
MOTA	**Moosalm**	**84.67**	**329**	*i* P	**P**	**16 06 02.7 +0.2**
	comp=Z,14nm,1.2s					
RETA	**Reutte**	**84.70**	**329**	*i* PcP	**P**	**16 06 03.0 +0.6**
	comp=Z,13nm,0.8s					
PPT2	**Papeete2**	**84.84**	**117**	*e*LR	LR	16 32 45.4
	comp=Z,182nm,25.0s					
BFO	**Black Forest**	**85.00**	**331**	*i* P	**P**	**16 06 04.7 +0.8**
BFO	**Black Forest**	**85.00**	**331**	*eP*	**P**	**16 06 04.1 +0.2**
	comp=Z,17nm,1.0s					
KARP	**Karpathos**	**85.21**	**312**	*eP*	**P**	**16 06 05.2 -0.1**
	comp=Z,10.0nm,0.9s					
DAVA	**Damuels**	**85.22**	**329**	*i* PcP	**P**	**16 06 05.5 +0.3**
	comp=Z,18nm,1.0s					
FUORN	**Ofenpass-Fuorn**	**85.60**	**329**	*eP*	**P**	**16 06 07.6 +0.4**
	comp=Z,19nm,0.7s					
SANT	**Santorini**	**85.65**	**313**	⇓*iP*	**P**	**16 06 07.5 +0.1**
SANT	**Santorini**	**85.65**	**313**	*eP*	**P**	**16 06 05.9 -1.4**
	comp=Z,26nm,1.2s					
MEH	**Mehetia**	**86.11**	**116**	*eT*	T	17 40 45.7
	comp=Z,25nm,0.3s					
TAOE	**Nuku Hiva Isla**	**86.30**	**104**	*e*LR	LR	16 33 22.2
	comp=Z,161nm,23.2s					
LAST	**Lasithi**	**86.47**	**312**	⇓*iP*	**P**	**16 06 12.7 +1.2**
LAST	**Lasithi**	**86.47**	**312**	*eP*	**P**	**16 06 09.9 -1.6**
	comp=Z,28nm,0.9s					
IDI	**Anoyia**	**86.73**	**313**	⇓*iP*	**P**	**16 06 11.8 -1.0**
IDI	**Anoyia**	**86.73**	**313**	*eP*	**P**	**16 06 11.4 -1.4**
	comp=Z,13nm,0.8s					
TBI	**Tubuai**	**88.74**	**121**	*e*LR	LR	16 34 26.8
	comp=Z,198nm,27.8s					
TBI	**Tubuai**	**88.74**	**121**	*eT*	T	17 44 05.5
	comp=Z,37nm,0.3s					
TXAR	**Lajitas Array**	**89.98**	**52**	P	**P**	**16 06 30.0 +1.7**
	comp=Z,1.9nm,0.8s,baz=301,slow=2.7,SNR=13					
SNAA	**Sanae**	**141.03**	**197**	PKP	PKPpre	16 12 53.5
VNA2	**Neumayer--Watz**	**142.60**	**196**	PKP	**PKPdf**	**16 12 58.1 -2.2**
	baz=135,slow=2.4					
VNA3	**Neumayer Olymp**	**142.85**	**195**	PKP	**PKPdf**	**16 12 57.7 -3.1**
LPAZ	**La Paz**	**146.59**	**59**	PKPbc	**PKPab**	**16 13 12.4 +0.2**
	comp=Z,4.0nm,0.7s,baz=311,slow=2.5,SNR=17					

CASC 16 16:06:54.7±2.3, 8°.55N×82°.74W, h30km±14km, MD3.7, 1C-1D, Panama-Costa Rica border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BRU2	**Volcan**	**0.25**	**11**	⇓*iP*	Pb	16 07 01.2	-0.5
BRU2				*e*S	Sn	16 07 07.0	-0.5
TBS2		**0.26**	**18**	⇑*iP*	Pn	16 07 02.4	-0.2
TBS2				*e*S	Sn	16 07 08.2	+0.5
BRU	**Baru**	**0.31**	**34**	*i* P	Pb	16 07 02.9	+0.1
URSC	**Urasca**	**1.64**	**321**	*eP*	Pn	16 07 21.2	-0.5
URSC				*e*S	Sn	16 07 42.4	+0.5
QCR	**Quepos**	**1.66**	**302**	*eP*	Pn	16 07 20.7	-1.1
CGA2	**Cerro Gallo 2**	**2.24**	**311**	*eP*	Pb	16 07 32.7	-2.0

*IDC **16** 16:12:22.9±1.0, 8°.11N×103°.34W, h0km, mb3.9/8, mb1 4.3/10, mb1mx4.1/33, mbtmp4.0/10, ML3.8/2, MS4.2/22, Ms1 4.2/22, ms1mx4.1/30, Error ellipse: s-maj=33.7km s-min=21.3km az=79.0*

*NEIC **16** 16:12:25.2±0.4, 8°.18N×103°.35W, h10km, mb4.6/56, Error ellipse: s-maj=9.2km s-min=6.0km az=47.0*

*GCMT **16** 16:12:25.2±0.3, 8°.41N×103°.39W, h12km, MW5.0/86, Moment Tensor Solution. s39,c48; s86,c129; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-0.85±.09; $M_{\theta\theta}$1.84±.09; $M_{\phi\phi}$-0.99±.10; $M_{r\theta}$-0.83±.24; $M_{\theta\phi}$-3.28±.07; $M_{\phi r}$-0.52±.26; Best double couple: $M_0$3.74300×10^{16} NP1:ϕ_s80.00000°, δ80.00000°, λ-163.00000°. NP2: ϕ_s347.00000°, δ73.00000°, λ-10.00000°. Principal axes: T 4.0300, Plg5.0000°, Azm213.0000°; N -0.5790, Plg70.0000°, Azm109.0000°; P -3.4560, Plg19.0000°, Azm304.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

*ISCJB **16** 16:12:27.4±0.6, 8°.30N±0°.06×103°.25W±0°.05, h33km, mb4.6/60, MS4.2/20 Error ellipse: s-maj=9.6km s-min=6.8km az=32.8*

ISC 16 16:12:28.8±0.7, 8°.25N±0°.09×103°.3W±0°.1, h35km, n236, σ0:86/214, mb4.6/60, MS4.3/20, Northern East Pacific Rise

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TLIG	**Tlapa**	**10.34**	**26**	*e*Pn	**Pn**	**16 14 56.0**	**+1.1**
CMIG	**Matias Romero**	**12.03**	**42**	Pn	**Pn**	**16 15 17.3**	**-0.6**
	0.6nm,0.3s,baz=222,slow=8.2,SNR=4.9						
CMIG				LR	LR	16 18 49.2	
	comp=Z,3μm,21.4s,baz=168,slow=32						
CCIG	**Comitan**	**13.52**	**53**	*e*Pn	**Pn**	**16 15 38.5**	**0.0**
TGUH	**Tegucigalpa,Un**	**16.75**	**68**	*e*Pn	**Pn**	**16 16 21.0**	**+0.1**
	29nm,0.6s						
LPIG	**La Paz**	**17.13**	**338**	LR	LR	16 21 21.9	
	comp=Z,1μm,19.0s,baz=170,slow=31						
HPIG		**18.72**	**353**	*e*P	**Pn**	**16 16 45.4**	**0.0**
	34nm,1.5s						
035Z	**Hargill**	**18.79**	**15**	P	**P**	**16 16 45.8**	**+0.6**
	baz=196						
TEIG	**Tepich**	**18.79**	**49**	P	**P**	**16 16 45.7**	**+0.3**
	0.3nm,0.3s,baz=170,slow=14,SNR=7.2						
TEIG				LR	LR	16 23 13.5	
	comp=Z,682nm,19.9s,baz=180,slow=34						
TEIG	**Tepich**	**18.79**	**49**	*e*P	**Pn**	**16 16 46.2**	**+0.2**
	46nm,1.5s						
034A	**Hebbronville**	**19.22**	**13**	P	**P**	**16 16 50.7**	**+0.7**
	baz=194,SNR=9.1						
035A	**Encino**	**19.23**	**14**	P	**Pn**	**16 16 51.1**	**-0.2**
	baz=196						
933A	**Laredo**	**19.63**	**11**	P	**Pn**	**16 16 55.9**	**-0.2**
	baz=192						
934A	**Benavides**	**19.77**	**13**	P	**P**	**16 16 56.8**	**+0.8**
	baz=194						
832A	**Faith Ranch, C**	**20.18**	**9**	P	**P**	**16 17 01.1**	**+0.7**
	baz=190,SNR=5.3						
834A	**Tilden**	**20.27**	**12**	P	**P**	**16 17 02.5**	**+1.1**
	baz=194						
833A	**Chaparral WMA,**	**20.31**	**10**	P	**P**	**16 17 02.8**	**+1.0**
	baz=191						
835A	**Beeville**	**20.59**	**14**	P	**P**	**16 17 05.1**	**+0.2**
	baz=196						
733A	**Divot King Ran**	**20.71**	**10**	P	**P**	**16 17 06.5**	**+0.3**
	baz=191						
TXAR	**Lajitas Array**	**20.98**	**359**	P	**P**	**16 17 09.5**	**+0.3**
	3.3nm,0.9s,baz=185,slow=10.0,SNR=19						
TXAR				LR	LR	16 24 42.3	
	comp=Z,2μm,18.5s,baz=0.0,slow=35						
735A	**Kenedy**	**21.14**	**13**	P	**P**	**16 17 11.2**	**+0.3**
	baz=195						
737A	**Port Lavaca**	**21.41**	**17**	P	**P**	**16 17 13.5**	**-0.2**
	baz=199						
736A	**Circle Diamond**	**21.42**	**15**	P	**P**	**16 17 13.4**	**-0.4**
	baz=197						
633A	**Saathoff Ranch**	**21.45**	**10**	P	**P**	**16 17 14.3**	**+0.1**
	baz=191,SNR=7.7						
634A	**China Grove, S**	**21.53**	**12**	P	**P**	**16 17 14.9**	**-0.1**
	baz=194						
635A	**Leesville**	**21.66**	**13**	P	**P**	**16 17 16.8**	**+0.4**
	baz=195						
636A	**Smothers Creek**	**21.92**	**15**	P	**P**	**16 17 19.2**	**0.0**
	baz=197,SNR=8.0						
637A	**Eagle Lake**	**22.07**	**16**	P	**P**	**16 17 20.4**	**-0.4**
	baz=199						
533A	**Kerrville**	**22.07**	**10**	P	**P**	**16 17 20.6**	**-0.3**
	baz=191,SNR=5.6						
534A	**Blanco**	**22.14**	**11**	P	**P**	**16 17 21.1**	**-0.4**
	baz=193,SNR=6.8						
535A	**Dale**	**22.32**	**13**	P	**P**	**16 17 23.4**	**-0.2**
	baz=195						
JCT	**Junction City**	**22.36**	**8**	P	**P**	**16 17 23.7**	**-0.3**
	baz=189,SNR=7.4						
JCT	**Junction City**	**22.36**	**8**	*e*P	**P**	**16 17 23.6**	**-0.3**
	39nm,1.4s						
537A	**Green Hill Far**	**22.68**	**16**	P	**P**	**16 17 27.0**	**-0.4**
	baz=198						
HKT	**Hockley**	**22.70**	**17**	*e*P	**P**	**16 17 28.4**	**+1.0**
	76nm,1.6s						
433A	**Art**	**22.73**	**9**	P	**P**	**16 17 27.9**	**-0.1**
	baz=191,SNR=19						
434A	**Burnet**	**22.94**	**11**	P	**P**	**16 17 29.7**	**-0.4**
	baz=193,SNR=8.9						
435B	**Jarrell**	**23.05**	**13**	P	**P**	**16 17 30.6**	**-0.6**
	baz=195						
436A	**Wall Ranch, Ga**	**23.22**	**14**	P	**P**	**16 17 32.9**	**0.0**
	baz=196						
BCIP	**Isla Barro Col**	**23.22**	**86**	*e*P	**P**	**16 17 32.3**	**-0.7**
	69nm,1.4s						
333A	**Richland Sprin**	**23.31**	**9**	P	**P**	**16 17 33.6**	**-0.2**
	baz=191						
MNTX	**Cornudas Mount**	**23.41**	**356**	P	**P**	**16 17 35.3**	**+0.5**
	baz=175,SNR=14						
MNTX	**Cornudas Mount**	**23.41**	**356**	*e*P	**P**	**16 17 34.7**	**-0.1**
	26nm,1.4s						
334A	**Lometa**	**23.45**	**11**	P	**P**	**16 17 35.3**	**+0.1**
	baz=193						
438A	**Sam Houston St**	**23.55**	**17**	P	**P**	**16 17 36.7**	**+0.6**
	baz=200						
335A	**Moody**	**23.56**	**13**	P	**P**	**16 17 36.8**	**+0.6**
	baz=195						
319A	**Douglas**	**23.67**	**347**	*e*P	**P**	**16 17 37.9**	**+0.4**
	20nm,1.4s						
541A	**Lake Charles**	**23.68**	**22**	P	**P**	**16 17 35.6**	**-1.8**
	baz=206						
337A	**Centerville**	**23.97**	**16**	P	**P**	**16 17 40.2**	**+0.1**
	baz=198						
233A	**Rising Star**	**24.00**	**9**	P	**P**	**16 17 40.3**	**-0.2**
	baz=191						
236A	**Katherine and**	**24.46**	**14**	P	**P**	**16 17 44.6**	**+0.1**
	baz=196						
ABTX	**Abilene, Hawle**	**24.49**	**7**	P	**P**	**16 17 44.4**	**-0.5**
	baz=189						
ABTX	**Abilene, Hawle**	**24.49**	**7**	*e*P	**P**	**16 17 44.3**	**-0.6**
	58nm,1.4s						
121A	**Cookes Peak, D**	**24.52**	**351**	P	**P**	**16 17 45.1**	**-0.2**
	baz=169						
133A	**Hamilton Ranch**	**24.58**	**9**	P	**P**	**16 17 45.5**	**-0.2**
	baz=190						
TUC	**Tucson**	**24.93**	**345**	P	**P**	**16 17 49.5**	**+0.5**
	baz=162						
TUC	**Tucson**	**24.93**	**345**	*e*P	**P**	**16 17 49.1**	**+0.2**
	26nm,1.4s						
239A	**Gary**	**25.04**	**18**	P	**P**	**16 17 50.0**	**+0.2**
	baz=201						
Z33A	**Whitaker Ranch**	**25.27**	**9**	P	**P**	**16 17 51.8**	**-0.1**
	baz=191						
Z34A	**Collier Ranch,**	**25.49**	**11**	P	**P**	**16 17 54.3**	**+0.4**
	baz=192						
Z35A	**Perchaven, San**	**25.58**	**12**	P	**P**	**16 17 54.0**	**-0.7**
	baz=194						
MSTX	**Muleshoe**	**25.60**	**1**	P	**P**	**16 17 54.9**	**-0.1**
	baz=181						
BNM	**Barren Site**	**25.96**	**354**	*e*P	**P**	**16 17 58.4**	**0.0**
Y33A	**Hilltop Ranch,**	**26.00**	**9**	P	**P**	**16 17 58.3**	**-0.2**
	baz=191						
OTAV	**Otavalo**	**26.02**	**107**	*e*P	**P**	**16 18 00.3**	**+0.9**
	26nm,1.1s						
141A	**Papa Simpson,**	**26.09**	**20**	P	**P**	**16 17 59.3**	**0.0**
	baz=204						
Y34A	**Reagan Ranch,**	**26.09**	**11**	P	**P**	**16 17 59.8**	**+0.4**
	baz=193						
LAZ	**Ladron**	**26.26**	**353**	*e*P	**P**	**16 18 01.3**	**+0.1**
AMTX	**Amarillo**	**26.55**	**3**	P	**P**	**16 18 03.6**	**0.0**
	baz=184						
AMTX	**Amarillo**	**26.55**	**3**	*e*P	**P**	**16 18 04.0**	**+0.4**
	18nm,1.3s						
Y37A	**Hugo**	**26.57**	**14**	P	**P**	**16 18 03.4**	**-0.2**
	baz=197						
X35A	**Drake**	**26.67**	**12**	P	**P**	**16 18 04.3**	**-0.3**
	baz=194						
WMOK	**Wichita Mounta**	**26.69**	**8**	P	**P**	**16 18 04.2**	**-0.6**
	baz=190						
X34A	**Smith Ranch, M**	**26.70**	**10**	P	**P**	**16 18 04.8**	**-0.1**
	baz=192						
Z41A	**Richland Creek**	**26.71**	**20**	P	**P**	**16 18 05.2**	**+0.2**
	baz=204						
ANMO	**Albuquerque**	**26.73**	**354**	P	**P**	**16 18 06.5**	**+1.2**
	0.8nm,0.5s,baz=168,slow=7.8,SNR=5.7						
ANMO				LR	LR	16 28 50.7	
	comp=Z,527nm,18.4s,baz=178,slow=37						
ANMO	**Albuquerque**	**26.73**	**354**	P	**P**	**16 18 05.2**	**-0.2**
	baz=173						
ANMO	**Albuquerque**	**26.73**	**354**	*e*P	**P**	**16 18 06.4**	**+1.0**
	10nm,1.6s						
245A	**Little AP, Sta**	**26.75**	**26**	P	**P**	**16 18 04.3**	**-1.0**
	baz=211						
347A	**Saraland**	**26.83**	**29**	P	**P**	**16 18 04.7**	**-1.4**
	baz=214						
GLA	**Glamis**	**26.89**	**338**	P	**P**	**16 18 05.5**	**-1.1**
	baz=154						
W32A	**Sentinel**	**27.00**	**7**	P	**P**	**16 18 07.1**	**-0.5**
	baz=189						
Z42A	**Norrel Spur, H**	**27.03**	**21**	P	**P**	**16 18 07.0**	**-0.8**
	baz=205						
W33A	**Caddo, Fort Co**	**27.14**	**9**	P	**P**	**16 18 08.8**	**-0.1**
	baz=191						
X37A	**Clayton**	**27.21**	**14**	P	**P**	**16 18 08.5**	**-0.9**
	baz=197						
W35A	**Tecumseh**	**27.42**	**12**	P	**P**	**16 18 10.0**	**-1.3**
	baz=194						
X38A	**Whitesboro**	**27.42**	**15**	P	**P**	**16 18 10.1**	**-1.2**
	baz=198						
X39A	**Fountain Ranch**	**27.47**	**17**	P	**P**	**16 18 10.7**	**-1.1**
	baz=200						
W36A	**Wetumka**	**27.54**	**13**	P	**P**	**16 18 11.1**	**-1.3**
	baz=195						
V32A	**Arapaho**	**27.62**	**7**	P	**P**	**16 18 13.1**	**-0.1**
	baz=189						
BC3	**Big Chuckawall**	**27.66**	**338**	P	**P**	**16 18 13.0**	**-0.6**
	baz=154						
MIAR	**Mount Ida**	**27.66**	**17**	P	**P**	**16 18 13.2**	**-0.2**
	baz=201						
MIAR	**Mount Ida**	**27.66**	**17**	*e*P	**P**	**16 18 12.9**	**-0.6**
	14nm,1.1s						
W37B	**Quinton**	**27.72**	**14**	P	**P**	**16 18 13.6**	**-0.4**
	baz=197						
PDMCI	**Parker Dam,Lak**	**27.78**	**340**	P	**P**	**16 18 14.1**	**-0.4**
	baz=157						
V33A	**Lossen Ranch,**	**27.82**	**9**	P	**P**	**16 18 15.3**	**+0.3**
	baz=191						
W38A	**Poteau**	**27.89**	**16**	P	**P**	**16 18 15.7**	**+0.2**
	baz=199						
V34A	**Guthrie**	**27.96**	**10**	*e*P	**P**	**16 18 16.6**	**+0.4**
	35nm,1.5s						
IRM	**Iron Mountain**	**27.99**	**339**	P	**P**	**16 18 17.4**	**+0.8**
	baz=155						
PFO	**Pinyon Flats O**	**28.01**	**336**	LR	LR	16 27 23.5	
	comp=Z,343nm,18.0s,baz=138,slow=32						
BELC	**Belle Mtn. Jos**	**28.17**	**337**	P	**P**	**16 18 18.4**	**+0.2**
	baz=153						
W39A	**Magazine**	**28.20**	**17**	P	**P**	**16 18 18.7**	**+0.4**
	baz=200						
V37A	**Hulbert**	**28.50**	**14**	P	**P**	**16 18 20.7**	**-0.3**
	baz=197						
W41B	**Gary Mavity, V**	**28.65**	**19**	P	**P**	**16 18 22.2**	**-0.1**

SMCO	Snowmass	30.97	354	eP	P	16 18 44.8 +1.5
	15nm,1.4s					
Q33A	Connelly Farm,	31.01	8	P	P	16 18 42.9 -0.2
	baz=191					
ISCO	Idaho Springs	31.48	357	eP	P	16 18 49.1 +1.5
	3.9nm,1.1s					
TMUT	Trail Mountain	31.72	348	eP	P	16 18 49.8 0.0
	20nm,1.7s					
R11A	Troy Canyon, C	31.95	342	P	P	16 18 51.3 -0.3
	baz=157					
Q39A	Willow Grove F	32.04	15	P	P	16 18 52.8 +0.6
	baz=200					
O20A	White River Ci	32.05	353	P	P	16 18 52.8 +0.3
	baz=171					
O20A	White River Ci	32.05	353	eP	P	16 18 54.0 +1.4
	23nm,1.1s					
CPCT	Cooper Cave	32.07	30	eP	P	16 18 52.0 -0.6
	5.5nm,1.0s					
O34A	Beatrice	32.34	9	P	P	16 18 55.3 +0.4
	baz=192					
MPU	Maple Canyon	32.49	348	eP	P	16 18 58.3 +1.9
	22nm,1.3s					
NLU	North Lily Min	32.53	347	eP	P	16 18 58.6 +1.9
	11nm,1.4s					
N23A	Red Feather La	32.59	356	P	P	16 18 57.7 +0.3
	baz=175					
N23A	Red Feather La	32.59	356	eP	P	16 18 59.6 +2.2
	6.6nm,1.1s					
P40A	Paris	32.74	16	P	P	16 18 58.7 +0.3
	baz=201					
DUG	Dugway, Tooele	32.92	347	P	P	16 19 00.4 +0.3
	baz=163					
DUG	Dugway, Tooele	32.92	347	eP	P	16 19 01.6 +1.5
	11nm,1.3s					
NVAR	Mina Array Bea	32.95	338	P	P	16 19 01.5 +1.1
	0.2nm,0.4s,baz=178,slow=9.0,SNR=4.4					
PHWY	Pilot Hill	32.97	357	eP	P	16 19 01.9 +1.2
	11nm,1.3s					
JLU	Jordanelle	33.02	349	eP	P	16 19 02.5 +1.3
	16nm,1.5s					
O40A	La Belle	33.34	16	P	P	16 19 04.0 +0.5
	baz=201					
KMSC	Kings Mountain	33.49	34	P	P	16 19 05.6 +0.6
	baz=222					
TCUT	Toone Canyon	33.51	349	eP	P	16 19 05.4 +0.1
	15nm,0.9s					
BGU	Big Grassy Mou	33.67	347	eP	P	16 19 06.6 -0.1
	8.1nm,1.2s					
HWUT	Hardware Ranch	34.02	349	eP	P	16 19 11.0 +1.3
	7.0nm,1.0s					
M38A	Pleasantville	34.23	14	P	P	16 19 11.9 +0.6
	baz=198					
L35A	Bielow Farm, R	34.41	10	P	P	16 19 13.4 +0.5
	baz=194					
HVU	Hansel Valley	34.43	347	eP	P	16 19 14.9 +1.7
	6.4nm,0.9s					
BW06	Boulder Array	34.82	352	P	P	16 19 17.2 +0.5
	baz=169,SNR=8.4					
BW06	Boulder Array	34.82	352	eP	P	16 19 16.4 -0.3
	21nm,1.5s					
PDAR	Pinedale Array	34.82	352	P	P	16 19 17.6 +1.0
	6.2nm,1.0s,baz=163,slow=7.7,SNR=25					
PDAR				LR	LR	16 31 57.9
	comp=Z,158nm,21.1s,baz=190,slow=34					
J26A	Sides Ranch, S	34.92	0	P	P	16 19 18.3 +1.0
	baz=180					
AHID	Auburn Hatcher	35.05	350	eP	P	16 19 18.8 +0.2
	7.6nm,0.8s					
J30A	Dallas	35.10	5	P	P	16 19 19.2 +0.4
	baz=187					
K37A	Belmond	35.42	12	P	P	16 19 21.3 -0.3
	baz=197					
I25A	Rochford	35.63	359	P	P	16 19 23.9 +0.3
	baz=179					
I28A	Midland	35.66	3	P	P	16 19 24.2 +0.5
	baz=184					
I29A	Vivian Onida	35.73	4	P	P	16 19 24.7 +0.5
	baz=185					
RSSD	Black Hills	35.74	359	P	P	16 19 24.7 +0.1
	baz=179					
LOHW	Long Hollow	35.80	351	eP	P	16 19 26.0 +1.0
	9.5nm,1.3s					
ECSD	EROS Data Cent	35.83	8	P	P	16 19 25.4 +0.4
	baz=191					
FXWY	Fox Creek	35.89	350	eP	P	16 19 26.9 +1.0
	3.1nm,1.0s					
MOOW	Moose Ponds	35.95	351	eP	P	16 19 26.7 +0.3
	10nm,1.5s					
J37A	Redenius Farm,	35.95	12	P	P	16 19 26.4 +0.2
	baz=197					
IMW	Indian Meadow	36.13	351	eP	P	16 19 28.8 +0.8
	9.4nm,1.4s					
FLWY	Flagg Ranch	36.27	351	eP	P	16 19 30.1 +1.0
	18nm,1.3s					
HLID	Hailey	36.49	346	P	P	16 19 32.2 +1.2
	baz=162					
HLID	Hailey	36.49	346	eP	P	16 19 32.4 +1.4
	7.4nm,1.3s					
H17A	Grant Village	36.56	351	eP	P	16 19 31.6 0.0
	0.9nm,0.4s					
MFID	Camas Ranch	36.70	345	eP	P	16 19 33.1 +0.4
	6.9nm,1.3s					
RLMT	Red Lodge	37.09	353	P	P	16 19 36.1 0.0
	baz=170					
M04C	Macdoel	37.20	337	P	P	16 19 36.8 -0.2
	baz=149					
G33A	Ortonville	37.28	8	P	P	16 19 37.7 +0.3
	baz=191					
MCMT	McKenzie Canyo	37.37	349	eP	P	16 19 39.4 +0.9
LRM	Limekiln Ridge	38.26	350	eP	P	16 19 45.3 -0.6
J05D	Fort Rock, OR	38.27	339	P	P	16 19 46.7 +0.7
	baz=151					
F36A	Milaca	38.41	11	P	P	16 19 47.1 +0.1
	baz=196					
MSO	Missoula	39.50	349	P	P	16 19 56.5 +0.3
	baz=163					
COWI	Conover	39.63	15	eP	P	16 19 56.0 -1.2
	23nm,1.5s					
H04A	Detroit Lake	39.83	339	eP	P	16 19 59.3 +0.4
	28nm,1.4s					
D37A	Cotton	39.87	12	P	P	16 19 59.2 +0.1
	baz=197					
EGMT	Eagleton	40.01	353	P	P	16 20 00.1 -0.3
	baz=170					
EGMT	Eagleton	40.01	353	eP	P	16 20 01.1 +0.7
	22nm,1.4s					
SWMT	Swartz Lake	40.17	349	eP	P	16 20 02.2 +0.4
C36A	Pine Crest Far	40.36	11	P	P	16 20 02.5 -0.7
	baz=196					
TAOE	Nuku Hiva Isla	40.45	246	eLR	LR	16 30 50.8
	677nm,25.6s					
TAOE	Nuku Hiva Isla	40.45	246	eT	T	17 02 40.8
	43nm,0.2s					
C37A	Embarrass	40.46	12	P	P	16 20 03.9 -0.1
	baz=197					
C38A	Sawbill Land.	40.64	12	P	P	16 20 04.0 -1.5
	baz=198					
A29A	Manning Farm,	40.68	4	P	P	16 20 05.1 -0.7
	baz=186					
B34A	Aery, Baudette	40.76	9	P	P	16 20 06.0 -0.5
	baz=193					
B35A	Bob, Littlefor	40.79	10	P	P	16 20 05.5 -1.2
	baz=195					
EYMN	Ely	40.81	12	P	P	16 20 05.3 -1.6
	baz=198					
EYMN	Ely	40.81	12	eP	P	16 20 05.6 -1.3
A33A	Warroad	41.10	8	P	P	16 20 08.2 -1.1
	baz=192					
NEW	Newport	41.56	346	P	P	16 20 12.1 -1.0
	baz=159					
NEW	Newport	41.56	346	eP	P	16 20 12.8 -0.3
	8.9nm,0.9s					
ULM	Lac du Bonnet	42.32	7	P	P	16 20 19.4 +0.2
	5.0nm,0.8s,baz=192,slow=8.1,SNR=4.0					
ULM				LR	LR	16 37 44.7
	comp=Z,343nm,20.0s,baz=230,slow=36					
ULM	Lac du Bonnet	42.32	7	eP	P	16 20 18.9 -0.3
LPAZ	La Paz	42.50	125	P	P	16 20 23.2 +1.3
	10nm,1.1s,baz=304,slow=7.3,SNR=16					
LPAZ	La Paz	42.50	125	eP	P	16 20 23.8 +1.9
	22nm,1.4s					
PB11	IPOC Station P	43.27	130	eP	P	16 20 29.5 +1.9
	16nm,1.0s					
SAML	Samuel	43.47	112	eP	P	16 20 28.9 -0.1
	17nm,1.3s					
RKT	Rikitea	43.95	224	eLR	LR	16 32 36.6
	997nm,28.2s,baz=43					
RKT	Rikitea	43.95	224	eT	T	17 07 10.0
	7.7nm,0.3s					
PTGA	Pitinga	44.11	100	LR	LR	16 37 12.1
	comp=Z,349nm,18.1s,baz=282,slow=34					
SIV	San Ignacio	48.26	120	LR	LR	16 39 35.5
	comp=Z,414nm,21.7s,baz=326,slow=34					
BBB	Bella Bella	48.28	340	LR	LR	16 39 34.6
	comp=Z,121nm,20.8s,baz=117,slow=34					
PMOR	Pomarlorio Ree	49.87	243	eT	T	17 14 27.6
	2.5nm,0.2s					
PPT	Papeete	52.41	240	LR	LR	16 38 26.4
	comp=Z,240nm,18.3s,baz=88,slow=30					
PPT2	Papeete2	52.42	240	eLR	LR	16 36 27.4
	719nm,25.5s,baz=50					
YKA	Yellowknife Ar	54.77	354	P	P	16 21 53.4 -1.3
	1.0nm,0.7s,baz=164,slow=7.2,SNR=13					
TBI	Tubuai	54.97	234	eLR	LR	16 37 41.8
	730nm,27.0s,baz=54					
CPUP	Villa Florida	56.33	129	P	P	16 22 05.7 -0.9
	2.4nm,0.9s,baz=298,slow=7.7,SNR=5.5					
PLCA	Paso Flores	57.33	151	LR	LR	16 41 25.1
	comp=Z,210nm,18.0s,baz=8.0,slow=30					
DOT	Dot Lake	62.47	341	P	P	16 22 48.6 +0.1
	9.0nm,0.9s					
INK	Inuvik	63.23	348	LR	LR	16 51 20.8
	comp=Z,194nm,18.4s,baz=142,slow=37					
RND	Reindeer	63.94	339	eP	P	16 22 57.2 -1.1
	20nm,1.4s					
ILAR	Eielson Array	64.14	341	P	P	16 22 58.7 -0.8
	1.2nm,0.8s,baz=154,slow=5.0,SNR=7.9					
COLD	Coldfoot	66.76	342	eP	P	16 23 16.1 -0.3
	10nm,1.5s					
PETK	Petropavlovsk-	88.83	323	LR	LR	16 58 12.0
	comp=Z,35nm,19.8s,baz=86,slow=31					
ESDC	Sonseca Array	91.91	50	LR	LR	17 00 46.5
	comp=Z,89nm,21.8s,baz=260,slow=32					
NOA	NORSAR Array B	94.32	26	LR	LR	17 06 41.2
	comp=Z,112nm,21.7s,baz=285,slow=34					
ARCES	ARCESS Array B	94.86	16	LR	LR	17 08 52.5
	comp=Z,119nm,21.5s,baz=307,slow=36					
DBIC	Dimbokro	97.36	82	LR	LR	17 06 50.5
	comp=Z,58nm,20.4s,baz=288,slow=34					
VNDA	Vanda	99.05	193	LR	LR	17 00 58.4
	comp=Z,160nm,21.7s,baz=38,slow=30					
KIS	Kishinev	110.52	33	LRM	MLR	16 41 55.0
	500nm,17.0s					
HHC	Hu-ho-hao-te	121.54	329	ePKP	PKPdf	16 31 20.4 +1.1
HHC				PP	PP	16 32 54.8 +4.2
HHC				SKS	SKSdf	16 38 32.0 +3.0
HHC	Hu-ho-hao-te	121.54	329	SS	SS	16 49 31.3 +8.1
HHC				AMB	AMB	
	comp=Z,100nm,7.2s					
HHC				LR	LR	
	comp=N,110nm,19.4s					
HHC				LR	LR	
	comp=E,87nm,19.2s					
HHC				LR	LR	
	comp=Z,93nm,20.6s					
WRA	Warramunga Arr	123.14	252	PKP	PKPdf	16 31 22.6 -0.1
	comp=Z,0.8nm,0.9s,baz=86,slow=2.7,SNR=2.6					
ASAR	Alice Springs	123.25	247	PKP	PKPdf	16 31 22.5 -0.4
	comp=Z,0.7nm,1.0s,baz=59,slow=1.5,SNR=3.4					
MKAR	Makanchi Array	124.97	355	PKP	PKPdf	16 31 23.7 -1.9
	comp=Z,0.2nm,0.2s,baz=34,slow=2.9,SNR=3.5					
GTA	Gaotai	127.95	337	ePKP	PKPdf	16 31 28.8 -2.9
CD2	Chengdu	133.21	328	PKP	PKPdf	16 31 40.3 -1.5
CMAR	Chiang Mai Arr	145.56	321	PKPbc	PKPab	16 32 04.6 -0.2
	comp=Z,2.7nm,1.0s,baz=18,slow=2.2,SNR=18					

GCMT 16 16:17:04.0±0.4, 20°.63S×11°.37W, h28km±1km, MW5.0/76, Moment Tensor Solution. s23,c23; s76,c93; Duration: 0 Moment tensor: Scale 10^{16}Nm; Mrr=2.60±.26; Mθθ0.03±.16; Mφφ2.57±.17; Mrθ2.24±.28; Mθφ0.66±.13; Mφr-0.58±.21; **Best double couple:** M=3.36000×10^{16} **NP1:**φs=346.00000°,δ53.00000°, λ-130.00000°. **NP2:**φs=221.00000°,δ52.00000°, λ-49.00000°. **Principal axes:** T 2.7310, Plg1.0000°, Azm103.0000°; N 1.2550, Plg31.0000°, Azm13.0000°; P -3.9900, Plg59.0000°, Azm194.0000°; **nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s. Southern Mid-Atlantic Ridge**

NNC 16 16:18:34.8±5.2, 36°.63N×67°.85E, h30km±31km, mb3.9, mpv3.7, 9C-2D Error ellipse: s-maj=44.1km s-min=28.3km az=130.0, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	Dzherino	2.30	19	⇑Pn	Pn	16 19 12.1	+1.3
	18nm,0.3s						
DZET				⇑Lg	Lg	16 19 48.4	
	103nm,0.4s						
KK31	Karatay Array	6.78	17	⇑Pn	Pn	16 20 11.8	-0.4
	0.6nm,0.3s,baz=180,slow=7.6,SNR=14						
KK31				⇑Sn	Sn	16 21 28.3	-0.1
	1.9nm,0.3s,baz=224,slow=44,SNR=4.3						
MNAS	Manas	6.86	30	⇑Pn	Pn	16 20 11.3	-2.2
	2.3nm,0.3s						
MNAS				⇑Sn	Sn	16 21 32.3	+1.6
	2.0nm,0.4s						
AAK	Ala-Archa	7.88	39	⇑Pn	Pn	16 20 25.1	-2.4
	3.6nm,0.5s						
AAK				⇓Sn	Sn	16 21 56.5	+0.7
	3.0nm,0.6s						
AB31	Akbulak array	13.87	338	⇑P	Pn	16 21 46.3	-2.9
	0.3nm,0.3s,baz=159,slow=13,SNR=4.3						
AB31				⇑S	Sn	16 24 20.6	-1.5
	0.6nm,0.4s,baz=162,slow=24,SNR=5.0						
AKTO	Aktyubinsk	15.51	336	⇓P	P	16 22 15.0	-0.4
	0.6nm,0.6s						

*IDC **16** 16:26:01.7±0.9, 8°.41N×103°.30W, h0km, mb3.9/8, mb1 4.3/8, mb1mx4.0/41, mbtmp4.0/8, MS3.7/11, Ms1 3.7/11, ms1mx3.5/31, Error ellipse: s-maj=46.6km s-min=17.9km az=65.0*
*NEIC **16** 16:26:03.1±0.7, 8°.32N×103°.42W, h10km, mb4.3/7, Error ellipse: s-maj=27.3km s-min=11.5km az=65.0*
*ISCJB **16** 16:26:04.3±1.4, 8°.3N±0°.2×103°.5W±0°.3, h33km, mb4.1/14, MS3.6/9, Error ellipse: s-maj=46.3km s-min=11.9km az=147.8*
ISC 16 16:26:06.8±1.1, 8°.4N±0°.2×103°.4W±0°.3, h35km, n33, σ1§14/20, **mb4.2**/14, **MS3.7**/9, **Northern East Pacific Rise**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMIG	Matias Romero	11.96	43	LR	LR	16 32 25.4	
	comp=Z,727nm,21.1s,baz=198,slow=32						
LPIG	La Paz	16.98	338	LR	LR	16 34 57.8	
	comp=Z,328nm,19.6s,baz=204,slow=32						
TXAR	Lajitas Array	20.84	359	P	P	16 30 46.5	+0.8
	2.0nm,0.8s,baz=183,slow=13,SNR=16						
TXAR				LR	LR	16 38 18.6	
	comp=Z,312nm,18.5s,baz=0.0,slow=35						
JCT	Junction City	22.23	8	eP	P	16 31 01.4	+0.8
	12nm,0.7s						
ABTX	Abilene, Hawle	24.36	8	eP	P	16 31 21.9	+0.2
	15nm,1.0s						
TUC	Tucson	24.78	345	eP	P	16 31 26.4	+0.9
	3.1nm,0.8s						
OTAV	Otavalo	26.11	107	eP	P	16 31 39.1	+0.8
	13nm,1.4s						
ANMO	Albuquerque	26.58	354	LR	LR	16 40 46.7	
	comp=Z,126nm,18.4s,baz=168,slow=33						
PFO	Pinyon Flats O	27.86	336	LR	LR	16 42 09.0	
	comp=Z,82nm,18.0s,baz=132,slow=35						
ATAH	Atahualpa	29.29	121	LR	LR	16 41 26.7	
	comp=Z,282nm,19.0s,baz=276,slow=32						
TKL	Tuckaleechee C	32.52	31	LR	LR	16 46 41.1	
	comp=Z,92nm,20.6s,baz=224,slow=38						
NVAR	Mina Array Bea	32.80	338	LR	LR	16 42 41.0	
	comp=Z,76nm,20.5s,baz=118,slow=30						
HWUT	Hardware Ranch	33.87	349	eP	P	16 32 47.5	+1.1
	4.2nm,1.0s						
BW06	Boulder Array	34.67	352	eP	P	16 32 53.3	0.0
	3.0nm,0.8s						
PDAR	Pinedale Array	34.67	352	P	P	16 32 54.1	+0.8
	2.8nm,0.8s,baz=157,slow=8.0,SNR=17						
LOHW	Long Hollow	35.65	351	eP	P	16 33 02.7	+0.9
	3.7nm,1.0s						
HLID	Hailey	36.34	346	eP	P	16 33 08.8	+1.1
TAOE	Nuku Hiva Isla	40.45	246	eLR	LR	16 44 29.7	
	118nm,24.6s						

NEW	Newport	41.41	346	P	P	16 33 50.7 +0.9
	2.0nm,0.5s,baz=298,slow=20,SNR=2.6					
ULM	Lac du Bonnet	42.19	7	P	P	16 33 55.5 -0.7
	3.8nm,0.8s,baz=184,slow=7.2,SNR=4.6					
LPAZ	La Paz	42.63	125	P	P	16 34 00.8 -0.1
	2.9nm,0.9s,baz=332,slow=8.7,SNR=11					
RKT	Rikitea	44.01	224	eT	T	17 20 48.6
	4.6nm,0.3s					
PPT	Papeete	52.43	240	LR	LR	16 52 22.6
	comp=Z,69nm,21.0s,baz=158,slow=30					
PPT2	Papeete2	52.44	240	eLR	LR	16 50 06.7
	154nm,25.2s					
YKA	Yellowknife Ar	54.62	354	P	P	16 35 30.4 -1.3
	0.4nm,0.8s,baz=164,slow=7.4,SNR=6.4					
CPUP	Villa Florida	56.46	129	P	P	16 35 45.4 -0.2
	1.6nm,0.8s,baz=321,slow=13,SNR=2.7					
ILAR	Eielson Array	63.99	341	P	P	16 36 35.6 -0.9
	0.7nm,0.8s,baz=157,slow=5.0,SNR=9.3					
PETK	Petropavlovsk-	88.68	323	LR	LR	17 12 51.2
	comp=Z,31nm,19.4s,baz=75,slow=32					
VNDA	Vanda	99.17	193	LR	LR	17 14 44.4
	comp=Z,63nm,19.5s,baz=326,slow=30					
WRA	Warramunga Arr	123.13	252	PKP	PKPdf	16 45 00.5 -0.2
	0.3nm,0.7s,baz=93,slow=3.2,SNR=2.8					
ASAR	Alice Springs	123.26	247	PKP	PKPdf	16 45 03.6 +2.7
	0.4nm,0.9s,baz=66,slow=2.2,SNR=3.9					
MKAR	Makanchi Array	124.83	355	PKP	PKPdf	16 45 01.1 -2.2
	0.2nm,0.2s,baz=56,slow=3.1,SNR=4.1					
CMAR	Chiang Mai Arr	145.41	321	PKPbc	PKPbc	16 45 42.1 +0.1
	1.0nm,0.9s,baz=351,slow=1.9,SNR=6.3					

*IDC **16** 16:31:34.6±1.5, 35°.53N×141°.42E, h0km, mb3.6/7, mb1 3.7/9, mb1mx3.5/56, mbtmp3.6/9, ML3.2/2, MS3.0/4, Ms1 3.0/4, ms1mx2.6/41, Error ellipse: s-maj=48.9km s-min=18.8km az=75.0*
*ISCJB **16** 16:31:38.3±0.9, 35°.49N±0°.05×141°.3E±0°.1, h33km, mb3.6/7, MS3.7/2, Error ellipse: s-maj=13.1km s-min=6.8km az=170.2*
*JMA **16** 16:31:41.0±0.1, 35°.50N×141°.01E, h35km±1km, M2.8*
ISC 16 16:31:40.4±1.1, 35°.47N±0°.06×141°.1E±0°.1, h33km, n25, σ0§88/19, **mb3.6**/7, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	0.30	321	P	Pb	16 31 48.0	-0.1
CHOJ				S	Sb	16 31 52.9	-0.5
KTR	Katsuura	0.71	243	P	Pn	16 31 54.1	0.0
BSO4	Boso 4	0.78	232	P	Pn	16 31 55.2	+0.2
BSO1	Boso 1	0.82	187	P	Pn	16 31 55.8	+0.6
BSO3	Boso 3	0.82	216	P	Pn	16 31 55.7	+0.3
JYT	Yasato	1.05	316	P	Pn	16 31 58.5	-0.3
MJAR	Matsushiro Arr	2.57	295	Pn	Pn	16 32 21.4	+1.7
	3.7nm,0.3s,baz=100,slow=8.1,SNR=38						
MAT	Matsushiro	2.57	295	P	Pn	16 32 21.5	+1.7
MAT				eS	Sn	16 32 48.5	-1.4
JHJ	Hachijo jima 2	2.58	205	Pn	Pn	16 32 19.1	-0.8
	9.6nm,0.3s,baz=289,slow=23,SNR=10						
JHJ				Sn	Sn	16 32 51.0	+0.8
	8.2nm,0.3s,baz=246,slow=19,SNR=4.4						
JHJ				LR	LR	16 33 36.9	
	comp=Z,83nm,19.3s,baz=5.5,slow=44						
JNU	Nakatsue	8.77	257	LR	LR	16 36 49.8	
	comp=Z,16nm,21.6s,baz=126,slow=35						
H11N2	WAKE ISLAND Hy	27.61	118	T	T	17 06 33.8	
	baz=310,slow=76,SNR=11						
H11N1	WAKE ISLAND Hy	27.62	118	T	T	17 06 34.6	
	baz=310,slow=76,SNR=12						
H11N3	WAKE ISLAND Hy	27.63	118	T	T	17 06 32.5	
	baz=310,slow=76,SNR=10						
H11S1	WAKE ISLAND Hy	28.27	120	T	T	17 07 15.3	
	baz=312,slow=76,SNR=42						
H11S3	WAKE ISLAND Hy	28.27	120	T	T	17 07 15.3	
	baz=312,slow=76,SNR=44						
H11S2	WAKE ISLAND Hy	28.28	120	T	T	17 07 18.4	
	baz=312,slow=76,SNR=30						
ZALV	Zalesovo Beam	42.79	314	P	P	16 39 34.5	-0.2
	0.5nm,0.5s,baz=95,slow=7.2,SNR=2.9						
MKAR	Makanchi Array	44.74	303	P	P	16 39 51.2	+0.7
	0.2nm,0.3s,baz=82,slow=8.8,SNR=4.6						
KURBB	Kurchatov Arra	46.77	309	P	P	16 40 06.4	-0.1
	0.3nm,0.3s,baz=79,slow=7.4,SNR=4.9						
WRA	Warramunga Arr	55.48	188	P	P	16 41 12.3	+0.3
	1.0nm,0.7s,baz=7.3,slow=7.7,SNR=8.5						
ASAR	Alice Springs	59.21	188	P	P	16 41 38.0	-0.3
	0.4nm,0.8s,baz=16,slow=9.9,SNR=3.7						
FINES	FINESS Array B	70.08	332	P	P	16 42 49.5	+0.8
	1.4nm,1.0s,baz=43,slow=6.3,SNR=2.7						
AKASG	Malin Array Be	75.37	322	P	P	16 43 19.4	-1.0
	0.2nm,0.4s,baz=55,slow=6.9,SNR=2.3						
PDAR	Pinedale Array	78.95	45	LR	LR	17 17 12.4	
	comp=Z,26nm,19.4s,baz=112,slow=35						
LPIG	La Paz	90.19	60	LR	LR	17 18 40.2	
	comp=Z,36nm,19.2s,baz=166,slow=31						

IDC 16 16:48:44.9±1.7, 8°.91S×124°.50E, h0km, mb3.3/1, mb1 3.8/4, mb1mx3.5/26, mbtmp3.6/4, ML3.8/3, Error ellipse: s-maj=115.5km s-min=26.4km az=65.0, Timor region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	Fitzroy Crossi	9.21	173	Pn	Pn	16 50 59.0	-0.1
	1.3nm,0.3s,baz=358,slow=9.9,SNR=43						
FITZ				Sn	Sn	16 52 31.3	-12
	1.9nm,0.3s,baz=131,slow=15,SNR=13						
WRA	Warramunga Arr	14.53	140	Pn	Pn	16 52 12.3	+0.4
	0.3nm,0.3s,baz=319,slow=14,SNR=15						
WRA				Sn	Sn	16 54 41.6	-12
	0.6nm,0.3s,baz=57,slow=17,SNR=9.8						
ASAR	Alice Springs	17.22	150	P	Pn	16 52 46.8	-0.2
	0.2nm,0.3s,baz=324,slow=12,SNR=20						
ASAR				S	Sn	16 55 46.0	-13
	0.1nm,0.3s,baz=326,slow=23,SNR=4.7						
MKAR	Makanchi Array	66.97	330	P	P	16 59 39.5	0.0
	0.1nm,0.4s,baz=126,slow=7.3,SNR=2.5						

*NSSC **16** 16:49:12.5±1.3, 33°.77N×35°.66E, h4km±5km, ML1.6*
*ISCJB **16** 16:49:13.7±0.6, 33°.77N±0°.03×35°.74E±0°.05, h7km±5km, Error ellipse: s-maj=6.8km s-min=4.2km az=9.7*
*CSEM **16** 16:49:13.2±0.2, 33°.77N×35°.72E, h8km, ML2.7, Error ellipse: s-maj=4.7km s-min=2.7km az=99.0*
*GRAL **16** 16:49:14.3±0.3, 33°.79N×35°.78E, h0km±62km, MD2.7*
ISC 16 16:49:13.1±0.9, 33°.77N±0°.02×35°.73E±0°.03, h16km±7km, n23, σ0§40/41, **Jordan-Syria region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BHL	Bhannes	0.15	334	eP	Pg	16 49 17.0	-0.1
BHL	Bhannes	0.15	334	eP	Pg	16 49 17.0	-0.1
DQRL	Deir Qamar	0.15	244	eP	Pb	16 49 17.7	+0.1
DQRL				eS	Sb	16 49 20.3	-0.3
DQRL	Deir Qamar	0.15	244	eP	Pb	16 49 17.7	+0.1
DQRL				eS	Sb	16 49 20.3	-0.3
RCY	Rachaya	0.29	162	eP	Pg	16 49 19.6	+0.3
RCY				eS	Sg	16 49 23.6	0.0
BRBR	Barbar	0.40	153	eP	Pg	16 49 21.4	0.0
BRBR				eS	Sg	16 49 27.2	+0.2
BRBR				AML	AML	16 49 30.5	
	comp=E,46nm,0.5s						
BRBR

TCHB	**Talchebab**	**1.12 170**	*e*P	**Pb**	**16 49 34.0**	**-0.1**
TCHB			*e*S	**Sn**	**16 49 49.2**	**0.0**
TCHB			AML	AML	16 49 54.2	
	comp=N,43nm,0.4s					
TCHB			AML	AML	16 49 60.0	
	comp=E,20nm,0.4s					
TCHB	**Talchebab**	**1.12 170**	*e*P	**Pb**	**16 49 34.0**	**-0.1**
TCHB			*e*S	**Sn**	**16 49 49.2**	**0.0**
	comp=E,20nm,0.4s					
SALA	**Sala**	**1.35 141**	*e*P	**Pb**	**16 49 38.1**	**0.0**
SALA			*e*S	**Sg**	**16 49 57.1**	**+0.3**
SALA			AML	AML	16 50 04.4	
	comp=E,1.6nm,0.4s					
SALA			AML	AML	16 50 08.9	
	comp=N,14nm,0.4s					
SALA	**Sala**	**1.35 141**	*e*P	**Pb**	**16 49 38.1**	**0.0**
SALA			*e*S	**Sg**	**16 49 57.1**	**+0.3**
	comp=N,14nm,0.4s					
ROOS	**tl_alroos**	**1.35 73**	*e*P	**Pg**	**16 49 39.0**	**-0.2**
ROOS			*e*S	**Sg**	**16 49 56.5**	**-0.4**
ROOS			AML	AML	16 50 06.6	
	comp=N,18nm,0.4s					
ROOS			AML	AML	16 50 13.4	
	comp=E,19nm,0.6s					
ROOS	**tl_alroos**	**1.35 73**	*e*P	**Pg**	**16 49 39.0**	**-0.2**
ROOS			*e*S	**Sg**	**16 49 56.5**	**-0.4**
	comp=E,19nm,0.6s					
RABH	**Abou Rabah**	**1.39 61**	*e*P	**Pb**	**16 49 38.8**	**0.0**
RABH			*e*S	**Sg**	**16 49 58.9**	**+0.9**
RABH			AML	AML	16 50 12.7	
	comp=E,10nm,0.7s					
RABH			AML	AML	16 50 13.4	
	comp=N,11nm,0.5s					
RABH	**Abou Rabah**	**1.39 61**	*e*P	**Pb**	**16 49 38.8**	**0.0**
RABH			*e*S	**Sg**	**16 49 58.9**	**+0.9**
	comp=N,11nm,0.5s					
ZALF	**Zalf**	**1.59 122**	*e*P	**Pb**	**16 49 41.9**	**-0.2**
ZALF			*e*S	**Sg**	**16 50 03.3**	**-1.0**
ZALF			AML	AML	16 50 10.5	
	comp=Z,7.8nm,0.7s					
ZALF			AML	AML	16 50 11.1	
	comp=N,9.4nm,0.4s					
ZALF	**Zalf**	**1.59 122**	*e*P	**Pb**	**16 49 41.9**	**-0.2**
ZALF			*e*S	**Sg**	**16 50 03.3**	**-1.0**
	comp=N,9.0nm,0.4s					

IDC 16 17:07:26.0±1.4, 18°.99S×173°.16W, h0km, mb3.9/3, mb1 4.3/5, mb1mx3.8/46, mbtmp4.3/5, ML4.2/2, Error ellipse: s-maj=38.7km s-min=26.6km az=135.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**5.22**	**15**	Pn	Pn	17 08 45.6	+0.2
	18nm,0.3s,baz=208,slow=21,SNR=24						
AFI				Sn	Sn	17 09 40.2	-6.2
	12nm,0.3s,baz=17,slow=19,SNR=3.8						
RAR	**Rarotonga**	**12.77**	**102**	Pn	Pn	17 10 26.8	-2.1
	6.0nm,0.3s,baz=254,slow=7.2,SNR=11						
RAR				Sn	Sn	17 12 35.4	-16
	0.7nm,0.3s,baz=189,slow=19,SNR=2.4						
URZ	**Urewera**	**20.99**	**202**	P		17 12 11.6	+0.7
	9.7nm,0.7s,baz=209,slow=0.9,SNR=8.6						
URZ				S	S	17 15 51.0	-15
	12nm,1.0s,baz=114,slow=20,SNR=3.6						
ASAR	**Alice Springs**	**49.31**	**255**	P	P	17 16 16.9	-0.3
	0.9nm,0.8s,baz=88,slow=8.5,SNR=13						
WRA	**Warramunga Arr**	**49.34**	**260**	P	P	17 16 16.9	-0.6
	0.5nm,0.5s,baz=96,slow=8.0,SNR=9.8						
GERES	**GERESS Array B**	**149.70**	**351**	PKPbc	PKPbc	17 27 18.2	+0.3
	0.4nm,0.3s,baz=35,slow=3.6,SNR=4.9						

IDC 16 17:16:16.7±2.0, 6°.65S×129°.85E, h0km, mb3.7/1, mb1 3.7/4, mb1mx3.4/38, mbtmp3.5/4, ML3.6/3, Error ellipse: s-maj=79.3km s-min=27.5km az=77.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**12.10**	**199**	Pn	Pn	17 19 11.8	+1.4
	0.2nm,0.3s,baz=9.5,slow=7.3,SNR=16						
FITZ				Sn	Sn	17 21 14.8	-11
	0.1nm,0.3s,baz=94,slow=19,SNR=4.1						
WRA	**Warramunga Arr**	**13.91**	**162**	Pn	Pn	17 19 34.6	-0.6
	0.3nm,0.3s,baz=340,slow=13,SNR=17						
WRA				Sn	Sn	17 21 56.3	-14
	0.3nm,0.3s,baz=337,slow=22,SNR=5.7						
ASAR	**Alice Springs**	**17.36**	**167**	P	Pn	17 20 19.8	-0.7
	0.2nm,0.3s,baz=350,slow=10,SNR=14						
ASAR				S	Sn	17 23 23.2	-11
	0.1nm,0.3s,baz=344,slow=24,SNR=3.8						
MKAR	**Makanchi Array**	**67.86**	**327**	P	P	17 27 16.9	0.0
	0.3nm,0.4s,baz=117,slow=7.5,SNR=8.2						

JMA 16 17:18:28.3±0.2, 37°.27N×141°.63E, h45km±3km, M2.3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.61**	**279**	P	Pn	17 18 40.6	-0.1
JFK				S	Sn	17 18 49.3	-0.3
ONAJ	**Iwakimizuishiy**	**0.69**	**256**	P	Pn	17 18 41.6	-0.1
ONAJ				S	Sn	17 18 50.9	-0.5
JMM	**Marumori**	**0.89**	**312**	P	Pn	17 18 44.4	0.0
JMM				S	Sn	17 18 55.8	-0.5
JFT	**Otama**	**1.06**	**284**	P	Pn	17 18 47.8	+1.1
JFT				S	Sn	17 19 01.4	+1.0
JHO	**Hitachi**	**1.07**	**233**	P	Pn	17 18 46.6	-0.3
JIO	**Ouri**	**1.20**	**349**	P	Pn	17 18 48.7	0.0
JIO				S	Sn	17 19 03.1	-0.7

NIED ***16*** *17:19:00, 37°.80N×141°.90E, h8km, Mw3.5 Best double couple: M₀2.17000×10¹⁴ NP1:ϕs114.00000°, δ38.00000°, λ-59.00000°. NP2:ϕs256.00000°, δ58.00000°, λ-112.00000°.*

ISCJB ***16*** *17:19:52.8±1.6, 37°.82N±0°.05×142°.07E±0°.09, h20km±10km, mb3.9/3, MS3.3/1, Error ellipse: s-maj=12.6km s-min=6.8km az=18.2*

IDC ***16*** *17:19:52.4±1.4, 37°.87N×141°.83E, h0km, mb3.8/3, mb1 3.7/6, mb1mx3.4/60, mbtmp3.7/6, ML2.9/3, MS3.3/1, Ms1 3.5/1, ms1mx2.4/36, Error ellipse: s-maj=50.8km s-min=19.8km az=95.0*

JMA ***16*** *17:19:55.4±0.1, 37°.85N×141°.94E, h28km±2km, M3.9*

ISC 16 17:19:53.9±2.6, 37°.85N±0°.06×141°.9E±0°.1, h16km±14km, n17, σ0s99/24, mb4.0/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.75**	**324**	P	**Pn**	**17 20 09.8**	**0.0**
JIO				S	**Sg**	**17 20 19.4**	**+0.9**
JMM	**Marumori**	**0.88**	**271**	P	**Pn**	**17 20 11.8**	**+0.2**
JMM				S	**Sg**	**17 20 23.4**	**+0.7**
JFK	**Kawauchi**	**0.95**	**240**	P	**Pn**	**17 20 12.7**	**+0.1**
JOU	**Okura**	**1.11**	**298**	P	**Pg**	**17 20 16.0**	**+0.6**
JOU				S	**Sg**	**17 20 30.5**	**+0.6**
JMK	**Ichinoseki**	**1.23**	**334**	P	**Pg**	**17 20 16.9**	**-0.7**
JMK				S	**Sg**	**17 20 33.0**	**-0.6**
JFT	**Otama**	**1.29**	**256**	P	**Pg**	**17 20 18.8**	**0.0**
JFT				S	**Sg**	**17 20 35.6**	**0.0**
JOM	**Ohasama**	**1.69**	**344**	P	**Pb**	**17 20 23.7**	**-0.9**
JFY	**Yanaizu**	**1.81**	**257**	P	**Pb**	**17 20 26.4**	**-0.2**
JRG	**Rokugo**	**1.84**	**328**	P	**Pb**	**17 20 26.5**	**-0.7**
MJAR	**Matsushiro Arr**	**3.23**	**247**	Pn	**Pn**	**17 20 43.0**	**-0.9**
	0.4nm,0.3s,baz=101,slow=14,SNR=3.6						
MAT	**Matsushiro**	**3.23**	**247**	P	**Pn**	**17 20 43.9**	**0.0**
MAT				*e*S	**Sb**	**17 21 28.7**	**-1.3**
JHJ	**Hachijo jima 2**	**5.03**	**201**	Pn	**Pn**	**17 21 08.1**	**-0.5**
	3.6nm,0.3s,baz=277,slow=19,SNR=2.5						
JHJ				Sn	**Sn**	**17 22 03.8**	**-2.6**
	6.7nm,0.3s,baz=287,slow=16,SNR=4.4						
ASAJ	**Asahikawa**	**6.28**	**5**	Pn	**Pn**	**17 21 25.2**	**-0.7**
	0.3nm,0.3s,baz=288,slow=13,SNR=6.2						
ASAJ				Sn	**Sn**	**17 22 36.9**	**-0.3**
	0.4nm,0.3s,baz=41,slow=19,SNR=1.9						
CMAR	**Chiang Mai Arr**	**42.09**	**255**	LR	LR	17 47 37.3	
	comp=Z,35nm,18.1s,baz=320,slow=40						
WRA	**Warramunga Arr**	**57.92**	**188**	P	**P**	**17 29 46.3**	**+1.0**
	1.1nm,0.5s,baz=5.6,slow=7.1,SNR=24						
ASAR	**Alice Springs**	**61.65**	**188**	P	**P**	**17 30 12.3**	**+1.5**
	0.3nm,0.7s,baz=15,slow=8.1,SNR=5.7						
FINES	**FINESS Array B**	**68.28**	**332**	P	**P**	**17 30 55.1**	**+1.5**
	1.0nm,0.8s,baz=39,slow=9.0,SNR=2.0						

KRSC 16 17:24:08.1±1.7, 50°.30N×156°.96E, h43km±20km, ML3.5, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**0.66**	**306**	*i* P	Pn	17 24 20.9	-0.1
SKR				*i* S	Sn	17 24 29.9	-0.5
PAU	**Pauzhetka**	**1.17**	**355**	*e*P	Pn	17 24 29.4	+1.4
PAU				*i* S	Sn	17 24 44.7	+1.9
ASAK	**Asacha**	**2.17**	**15**	*e*P	Pn	17 24 45.1	+3.4
MTVR	**Mutnovka**	**2.32**	**19**	S	Sn	17 25 15.3	+4.2
RUS	**Russkaya**	**2.35**	**24**	*e*P	Pn	17 24 46.0	+2.0
RUS				*e*S	Sn	17 25 14.1	+2.5
KRMR	**Karymshinskiy**	**2.64**	**16**	P	Pn	17 24 52.1	+4.1
DALK	**Dalny**	**2.95**	**21**	*e*P	Pn	17 24 55.6	+3.2
DALK				*e*S	Sn	17 25 29.8	+3.3
UGLR	**Uglovaya**	**3.13**	**21**	*e*P	Pn	17 24 59.6	+4.6
AVH	**Avacha**	**3.17**	**20**	*e*P	Pn	17 25 00.2	+4.8
SMAR	**Somma**	**3.18**	**20**	P	Pn	17 25 00.4	+4.7
KRER	**Koryakskii**	**3.21**	**20**	*e*P	Pn	17 24 59.8	+3.7
SDLR	**Sedlovina**	**3.21**	**21**	*e*P	Pn	17 24 58.9	+2.8
SDLR				S	Sn	17 25 37.2	+4.1
SPN	**Mys Shipunski**	**3.39**	**33**	*e*P	Pn	17 25 01.2	+2.9
GNL	**Ganaly**	**3.45**	**10**	*e*P	Pn	17 25 03.8	+4.4
MKZ	**Mys Kozlova**	**5.16**	**33**	P	Pn	17 25 25.5	+2.8

ISCJB ***16*** *17:28:39.3±0.7, 18°.3S±0°.1×169°.1E±0°.1, h201km, mb4.2/17, Error ellipse: s-maj=21.5km s-min=9.0km az=35.3*

IDC ***16*** *17:28:43.7±2.0, 18°.69S×169°.24E, h244km±21km, mb3.9/12, mb1 4.1/13, mb1mx3.8/30, mbtmp4.5/13, Error ellipse: s-maj=27.4km s-min=16.5km az=152.0*

NEIC ***16*** *17:28:43.6±1.7, 18°.73S×169°.28E, h246km±17km, mb4.6/4, Error ellipse: s-maj=26.8km s-min=13.7km az=156.0*

ISC 16 17:28:39.9±0.9, 18°.4S±0°.2×169°.3E±0°.2, h201km, n22, σ1s32/21, mb4.3/16, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**4.49**	**216**	P	Pn	17 29 50.2	+2.2
	10nm,0.3s,baz=69,slow=19,SNR=23						
DZM				S	**S**	**17 30 43.9**	**+2.8**
	2.3nm,0.3s,baz=174,slow=16,SNR=5.4						
CTA	**Charters Tower**	**21.79**	**262**	P	**P**	**17 33 15.8**	**-0.3**
	4.9nm,0.5s,baz=83,slow=12,SNR=13						
CTAO	**Charters Tower**	**21.79**	**262**	*e*P	**P**	**17 33 16.3**	**+0.2**
PMG	**Port Moresby**	**23.23**	**290**	P	**P**	**17 33 30.6**	**+1.2**
	16nm,0.9s,baz=68,slow=11,SNR=3.0						
STKA	**Stephens Creek**	**28.31**	**236**	P	**P**	**17 34 14.3**	**-0.5**
	11nm,0.7s,baz=76,slow=9.0,SNR=33						
WRAB	**Tennant Creek**	**32.98**	**262**	*e*P	**P**	**17 34 54.7**	**-1.3**
	3.3nm,0.6s						
WRA	**Warramunga Arr**	**32.99**	**262**	P	**P**	**17 34 54.5**	**-1.6**
	4.2nm,0.5s,baz=98,slow=6.8,SNR=52						
ASAR	**Alice Springs**	**33.36**	**255**	P	**P**	**17 34 58.4**	**-1.0**
	34nm,0.5s,baz=82,slow=8.8,SNR=791						
MBWA	**Marble Bar**	**46.54**	**258**	*e*P	**P**	**17 36 47.1**	**-0.6**
	44nm,0.6s						
NWAO	**Narrogin (SRO)**	**48.61**	**242**	*e*P	**P**	**17 37 01.8**	**-1.7**
	38nm,1.0s						
MJAR	**Matsushiro Arr**	**62.04**	**332**	P	**P**	**17 38 39.9**	**+0.8**
	0.9nm,0.6s,baz=145,slow=8.7,SNR=3.9						
USRK	**Ussuriysk Ar.**	**71.03**	**333**	P	**P**	**17 39 36.0**	**+0.3**
	1.9nm,0.8s,baz=99,slow=8.9,SNR=4.0						
PETK	**Petropavlovsk-**	**71.93**	**353**	P	**P**	**17 39 42.5**	**+1.5**
	9.1nm,0.7s,baz=132,slow=6.1,SNR=14						
CMAR	**Chiang Mai Arr**	**78.19**	**294**	P	**P**	**17 40 18.6**	**+1.0**
	0.5nm,0.7s,baz=132,slow=4.4,SNR=5.0						
BILL	**Bilibino**	**86.24**	**359**	*e*P	**P**	**17 40 58.3**	**+0.1**
	5.2nm,0.8s						
YBH	**Yreka Blue Hor**	**86.70**	**44**	P	**P**	**17 41 02.1**	**+0.9**
	3.2nm,0.8s,baz=314,slow=1.2,SNR=6.4						
ILAR	**Eielson Array**	**89.45**	**17**	P	**P**	**17 41 11.8**	**-1.6**
	1.2nm,0.5s,baz=238,slow=4.9,SNR=17						
TXAR	**Lajitas Array**	**96.36**	**61**	P	**P**	**17 41 46.3**	**+0.1**
	0.5nm,0.6s,baz=222,slow=5.0,SNR=7.4						
YKA	**Yellowknife Ar**	**99.93**	**27**	P	**Pdif**	**17 42 02.1**	**+0.8**
	0.9nm,0.7s,baz=255,slow=4.9,SNR=5.2						
MKAR	**Makanchi Array**	**101.17**	**316**	P	**Pdif**	**17 42 08.7**	**+1.4**
	0.1nm,0.3s,baz=90,slow=6.0,SNR=2.6						
ARCES	**ARCESS Array B**	**124.29**	**345**	PKP	**PKPdf**	**17 47 12.2**	**-1.9**
	1.8nm,0.7s,baz=75,slow=1.4,SNR=7.6						
GERES	**GERESS Array B**	**143.78**	**332**	PKP	PKPab	17 47 48.2	-0.3
	1.0nm,0.8s,baz=95,slow=2.9,SNR=6.5						

IDC 16 17:34:23.2±6.3, 4°.39S×126°.04E, h446km±87km, mb2.9/3, mb1 3.1/4, mb1mx2.8/26, mbtmp3.8/4, Error ellipse: s-maj=110.8km s-min=23.6km az=55.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**17.45**	**153**	P	P	17 37 60.0	-0.5
	0.7nm,0.3s,baz=329,slow=10,SNR=20						
ASAR	**Alice Springs**	**20.62**	**159**	P	P	17 38 30.8	+0.2
	1.0nm,0.5s,baz=339,slow=10,SNR=21						
CMAR	**Chiang Mai Arr**	**35.05**	**311**	P	P	17 40 37.1	-0.2
	0.8nm,0.6s,baz=133,slow=6.8,SNR=7.1						
MKAR	**Makanchi Array**	**63.91**	**328**	P	P	17 44 11.1	0.0
	0.4nm,0.4s,baz=119,slow=7.3,SNR=8.7						

MAN 16 17:56:25, 16°.47N×122°.68E, h29km, mb4.4, ML3.2, MS3.2, 1C-2D, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BALP	**Baler**	**1.28**	**236**	*e*P	Pn	17 56 46.5	-0.4
BALP				*e*S	Sn	17 57 03.4	+0.2
CVP	**Callao Caves**	**1.48**	**326**	*e*P	Pn	17 56 49.8	+0.1
PCPH	**Palayan**	**1.77**	**240**	↑*e*P	Pn	17 56 54.7	+1.0
PCPH				*e*S	Sn	17 57 15.9	+0.7
APYP	**Conner**	**1.95**	**316**	*e*P	Pn	17 56 56.5	+0.3
APYP				*e*S	Sn	17 57 20.8	+1.0
BCPH	**Baguio City Da**	**2.01**	**268**	↓*e*P	Pb	17 57 00.5	-0.6
BCPH				*e*S	Sn	17 57 21.4	-0.1
ABRA	**Dolores**	**2.22**	**302**	*e*P	Pn	17 57 00.4	+0.5
ABRA				*e*S	Sn	17 57 24.8	-1.5
GQP	**Guinayangan**	**2.56**	**185**	↓*e*P	Sn	17 57 38.0	+3.4
BOLP	**Bolinao**	**2.66**	**269**	*e*P	Pn	17 57 08.6	+2.7

NIED ***16*** *18:05:00, 36°.50N×137°.70E, h11km, Mw4.6 Best double couple: M₀1.02000×10¹⁶ NP1:ϕs182.00000°, δ81.00000°, λ-8.00000°. NP2:ϕs274.00000°, δ82.00000°, λ-171.00000°.*

ISCJB ***16*** *18:05:03.0±0.5, 36°.47N±0°.03×137°.64E±0°.03, h8km±3km, mb3.9/23, MS3.8/32, Error ellipse: s-maj=5.6km s-min=3.8km az=172.2*

JMA ***16*** *18:05:02.8±0.1, 36°.48N×137°.64E, h2km±2km, M4.5 Broadband fault plane solution: P waves. NP1: ϕs181.00000°, δ84.00000°, λ6.00000°. NP2:ϕs91.00000°, δ84.00000°, λ174.00000°. Principal axes: T Plg9.0000°, Azm46.0000°; N Plg81.0000°, Azm226.0000°; P Plg0.0000°, Azm316.0000°;*

JMA Felt II J1.

NEIC ***16*** *18:05:03.8±1.3, 36°.46N×137°.64E, h3km±9km, mb4.2/4 Error ellipse: s-maj=8.5km s-min=7.2km az=151.0*

NEIC Recorded [2 JMA] in Gifu and Nagano.

IDC ***16*** *18:05:03.1±0.6, 36°.39N×137°.67E, h0km, mb3.9/18, mb1 4.1/22, mb1mx4.0/41, mbtmp3.9/22, ML3.6/3, MS3.8/37, Ms1 3.8/37, ms1mx3.8/47, Error ellipse: s-maj=15.6km s-min=6.8km az=166.0*

ISC 16 18:05:03.7±1.2, 36°.48N±0°.04×137°.63E±0°.02, h2km±8km, n61, σ1s02/52, mb4.1/23, MS3.8/32, 3C-3D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTT	**Ttatey**	**0.27**	**297**	↓P	**Pg**	**18 05 08.8**	**-0.1**
JTT				*e*S	**Sg**	**18 05 13.1**	**+0.6**
JGN	**Niukaw**	**0.36**	**225**	↑P	**Pg**	**18 05 10.0**	**-0.7**
JGN				S	**Sg**	**18 05 15.2**	**-0.2**
JNG	**Nsakai**	**0.38**	**101**	↓P	**Pg**	**18 05 10.5**	**-0.6**
JNG				*i* S	**Sg**	**18 05 15.8**	**-0.3**
MAJO	**Matsushiro**	**0.47**	**82**	*e*Pg	**Pg**	**18 05 11.7**	**-1.0**
MAT	**Matsushiro**	**0.47**	**82**	P	**Pg**	**18 05 11.8**	**-0.9**
MAT				S	**Sg**	**18 05 18.1**	**-0.6**
MAT	**Matsushiro**	**0.47**	**82**	P	**Pg**	**18 05 11.9**	**-0.8**
MAT				S	**Sg**	**18 05 18.2**	**-0.5**
MJAR	**Matsushiro Arr**	**0.47**	**82**	Pg	**Pg**	**18 05 12.5**	**-0.2**
	483nm,0.3s,baz=267,slow=18,SNR=1383						
MJAR				Lg	Lg	18 05 18.8	
	2μm,0.3s,baz=268,slow=40,SNR=124						
JSZ	**Suzu**	**0.99**	**347**	↓P	**Pg**	**18 05 21.6**	**-1.1**
JSZ				S	**Sb**	**18 05 36.4**	**-0.6**
JKG	**Kaga**	**1.07**	**259**	↑P	**Pg**	**18 05 23.5**	**-0.7**
JKG				S	**Sg**	**18 05 38.2**	**+0.1**
JGM	**Miyama**	**1.08**	**224**	↑P	**Pg**	**18 05 23.4**	**-0.9**
JHJ	**Hachijo jima 2**	**3.79**	**152**	Pn	**Pn**	**18 06 05.4**	**+2.3**
	18nm,0.3s,baz=165,slow=18,SNR=6.2						
JHJ2	**Mitsune**	**3.81**	**151**	*e*P	**Pn**	**18 06 04.5**	**+1.2**
JNU	**Nakatsue**	**6.49**	**241**	Pn	**Pn**	**18 06 41.2**	**+1.0**
	1.3nm,0.3s,baz=81,slow=2.7,SNR=14						
JNU				Lg	Lg	18 08 28.0	
	0.7nm,0.3s,baz=134,slow=22,SNR=3.9						
JNU				LR	LR	18 09 13.7	
	comp=Z,1μm,18.5s,baz=84,slow=39						
KSRS	**Korea Array**	**7.83**	**280**	Pn	**Pn**	**18 06 59.9**	**+1.2**
	0.8nm,0.3s,baz=94,slow=14,SNR=19						
KSRS				Sn	**Sn**	**18 08 26.6**	**-1.3**
	0.6nm,0.3s,baz=89,slow=24,SNR=6.9						
KSRS				LR	LR	18 09 45.1	
	comp=Z,818nm,19.9s,baz=96,slow=36						
KSAR	**Wonju Array Be**	**7.86**	**280**	Pn	**Pn**	**18 06 59.9**	**+0.8**
KSAR				Sn	**Sn**	**18 08 26.6**	**-2.0**
ASAJ	**Asahikawa**	**8.52**	**25**	Pn	**Pn**	**18 07 09.8**	**+1.9**
	0.7nm,0.3s,baz=211,slow=12,SNR=8.1						
ASAJ				LR	LR	18 10 33.5	
	comp=Z,280nm,21.1s,baz=279,slow=38						
USRK	**Ussuriysk Ar.**	**8.83**	**333**	Pn	**Pn**	**18 07 14.3**	**+2.0**
	0.2nm,0.3s,baz=158,slow=17,SNR=4.1						
USRK				LR	LR	18 10 20.6	
	comp=Z,845nm,18.4s,baz=137,slow=36						
JCJ	**Chichijima**	**10.12**	**156**	LR	LR	18 10 58.6	
	comp=Z,707nm,21.1s,baz=40,slow=36						
MDJ	**Mudanjiang**	**10.17**	**326**	*e*P	**Pn**	**18 07 31.0**	**+0.4**
KLR	**Kul'dur**	**13.45**	**343**	Pn	Pn	18 08 19.5	+4.1
	0.1nm,0.3s,baz=138,slow=12,SNR=10.0						
KLR				LR	LR	18 13 17.0	
	comp=Z,563nm,19.2s,baz=159,slow=36						
PETK	**Petropavlovsk-**	**21.77**	**34**	P	**P**	**18 09 57.6**	**+1.1**
	5.5nm,1.0s,baz=174,slow=7.0,SNR=3.8						
PETK				LR	LR	18 20 05.8	
	comp=Z,151nm,19.1s,baz=222,slow=41						
GUMO	**Guam**	**23.70**	**162**	LR	LR	18 18 15.8	
	comp=Z,245nm,19.6s,baz=7.0,slow=34						
ENH	**Enshi**	**24.26**	**263**	*e*P	**P**	**18 10 22.1**	**-0.1**
MA2	**Magadan**	**24.63**	**16**	P	**P**	**18 10 26.6**	**+1.3**
	7.1nm,0.8s,baz=141,slow=23,SNR=2.5						
MA2				LR	LR	18 20 32.5	
	comp=Z,167nm,18.8s,baz=234,slow=38						
ULN	**Ulaanbaatar**	**25.19**	**306**	*e*P	**P**	**18 10 31.4**	**+0.7**
	5.6nm,1.3s						
SONM	**Songino Array**	**25.61**	**306**	LR	LR	18 20 57.6	
	comp=Z,492nm,19.6s,baz=112,slow=37						
YAK	**Yakutsk**	**26.05**	**351**	P	**P**	**18 10 37.9**	**-0.2**
	17nm,0.4s,baz=182,slow=0.8,SNR=2.6						
YAK				LR	LR	18 20 44.4	
	comp=Z,363nm,18.3s,baz=166,slow=36						
TLY	**Talaya**	**28.44**	**313**	LR	LR	18 22 45.3	
	comp=Z,161nm,21.1s,baz=106,slow=37						
DAV	**Davao City (W)**	**31.28**	**204**	LR	LR	18 21 54.4	
	comp=Z,118nm,22.0s,baz=24,slow=32						
TIXI	**Tiksi**	**35.53**	**355**	*e*P	**P**	**18 11 59.9**	**-1.7**
	6.1nm,1.3s						
CMAR	**Chiang Mai Arr**	**38.43**	**253**	P	**P**	**18 12 27.8**	**+0.9**
	0.4nm,0.7s,baz=43,slow=8.1,SNR=4.3						
CMAR				LR	LR	18 29 10.4	
	comp=Z,146nm,19.0s,baz=47,slow=38						
ZALV	**Zalesovo Beam**	**40.05**	**313**	P	**P**	**18 12 39.3**	**-0.8**
	0.2nm,0.3s,baz=350,slow=6.0,SNR=3.4						
ZALV				LR	LR	18 29 15.4	
	comp=Z,79nm,19.5s,baz=70,slow=36						
MKAR	**Makanchi Array**	**41.84**	**302**	P	**P**	**18 12 54.4**	**-0.5**
	0.6nm,0.8s,baz=94,slow=8.6,SNR=7.2						
MKAR				LR	LR	18 30 50.0	
	comp=Z,266nm,18.3s,baz=93,slow=37						
NRIK	**Noril'sk**	**42.52**	**336**	LR	LR	18 31 31.7	
	comp=Z,422nm,19.6s,baz=116,slow=37						
KURK	**Kurchatov**	**43.88**	**308**	*e*P	**P**	**18 13 10.1**	**-1.3**
	7.2nm,0.9s						
KAPI	**Kappang**	**44.54**	**206**	LR	LR	18 31 41.6	
	comp=Z,46nm,21.6s,baz=37,slow=36						
AAK	**Ala-Archa**	**48.07**	**298**	LR	LR	18 34 27.0	
	comp=Z,172nm,20.5s,baz=123,slow=37						
HNR	**Honiara**	**50.26**	**151**	LR	LR	18 33 08.5	
	comp=Z,60nm,20.3s,baz=287,slow=34						
ILAR	**Eielson Array**	**51.58**	**32**	P	**P**	**18 14 12.6**	**+1.7**
	0.6nm,1.0s,baz=292,slow=7.1,SNR=5.2						
ILAR				LR	LR	18 39 27.9	
	comp=Z,54nm,18.6s,baz=289,slow=40						
ABKAR	**Akbulak array**	**55.96**	**309**	*e*P	**P**	**18 14 42.4**	**-0.8**
	1.5nm,0.6s						
WRA	**Warramunga Arr**	**56.20**	**184**	P	**P**	**18 14 43.6**	**-1.6**
	1.7nm,0.7s,baz=357,slow=7.4,SNR=18						
INK	**Inuvik**	**56.25**	**27**	P	**P**	**18 14 44.7**	**-0.3**
	2.0nm,0.9s,baz=280,slow=7.0,SNR=4.7						
AKTO	**Aktyubinsk**	**56.77**	**311**	LR	LR	18

az=11.8
*JMA **16** 18:12:34.0±0.2,38°.18N×142°.46E,h35km±3km,M3.8*
JMA Felt I J1.
*IDC **16** 18:12:35.5±0.6,38°.04N×142°.44E,h38km±4km,mb3.7/18, mb1 3.9/20,mb1mx3.7/56,mbtmp4.0/20,ML3.5/2,MS2.9/3, Ms1 2.9/3,ms1mx2.6/39,Error ellipse: s-maj=15.1km s-min=12.3km az=92.0*

ISC 16 18:12:33.9±0.6,38°.10N±0°.04×142°.41E±0°.05,h26km±3km, n45,σ0§75/52,mb4.0/19,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.91**	**293**	P	**Pb**	**18 12 50.6**	**-0.4**
JIO				S	**Sb**	**18 13 02.2**	**-0.4**
OFUJ	**Ofunato**	**1.14**	**329**	P	**Pn**	**18 12 53.1**	**-1.0**
OFUJ				S	**Sn**	**18 13 06.5**	**-2.4**
JMK	**Ichinoseki**	**1.26**	**313**	P	**Pn**	**18 12 55.6**	**-0.2**
JMK				*e*S	**Sn**	**18 13 11.7**	**-0.2**
JMM	**Marumori**	**1.30**	**260**	P	**Pn**	**18 12 56.5**	**+0.1**
JMM				S	**Sn**	**18 13 13.2**	**+0.3**
JOU	**Okura**	**1.40**	**281**	P	**Pb**	**18 12 58.9**	**-0.5**
JOU				*e*S	**Sb**	**18 13 16.9**	**+0.1**
JFK	**Kawauchi**	**1.42**	**239**	P	**Pn**	**18 12 58.2**	**+0.1**
JFK				S	**Sn**	**18 13 15.8**	**-0.2**
JOM	**Ohasama**	**1.62**	**328**	P	**Pn**	**18 13 00.7**	**-0.1**
JOM				*e*S	**Sn**	**18 13 20.2**	**-0.7**
JFT	**Otama**	**1.74**	**251**	P	**Pb**	**18 13 04.0**	**-1.2**
JYK	**Kaneyama**	**1.80**	**297**	P	**Pn**	**18 13 04.3**	**+1.0**
JYS	**Shiratake**	**1.85**	**274**	*e*S	**Sb**	**18 13 29.3**	**-0.5**
JRG	**Rokugo**	**1.90**	**313**	P	**Pn**	**18 13 05.7**	**+1.1**
MJAR	**Matsushiro Arr**	**3.69**	**246**	Pn	Pn	18 13 33.6	+4.3
	1.7nm,0.3s,baz=74,slow=13,SNR=17						
MJAR				LR	LR	18 15 06.0	
	comp=Z,110nm,18.0s,baz=100,slow=41						
JHJ	**Hachijo jima 2**	**5.41**	**204**	Pn	**Pn**	**18 13 53.8**	**+0.9**
	8.3nm,0.3s,baz=159,slow=24,SNR=8.8						
JHJ				Sn	**Sn**	**18 14 54.8**	**+0.4**
	12nm,0.3s,baz=79,slow=21,SNR=5.6						
JHJ				LR	LR	18 15 45.3	
	comp=Z,81nm,18.3s,baz=106,slow=35						
ASAJ	**Asahikawa**	**6.01**	**1**	Pn	**Pn**	**18 14 01.7**	**+0.6**
	0.8nm,0.3s,baz=215,slow=19,SNR=7.6						
ASAJ				Sn	**Sn**	**18 15 09.5**	**+0.5**
	1.0nm,0.3s,baz=236,slow=34,SNR=3.0						
USRK	**Ussuriysk Ar.**	**9.94**	**311**	Pn	Pn	18 15 01.5	+6.5
	0.2nm,0.3s,baz=115,slow=14,SNR=4.5						
JNU	**Nakatsue**	**10.62**	**246**	LR	LR	18 19 46.5	
	comp=Z,104nm,19.2s,baz=122,slow=41						
KSRS	**Korea Array**	**11.49**	**271**	Pn	Pn	18 15 23.6	+7.5
	baz=77,slow=14,SNR=2.7						
KLR	**Kul'dur**	**13.52**	**329**	Pn	**P**	**18 15 52.5**	**-0.2**
	0.2nm,0.3s,baz=153,slow=16,SNR=2.8						
PETK	**Petropavlovsk-**	**18.37**	**30**	P	Pn	18 16 54.5	+8.0
	0.1nm,0.3s,baz=233,slow=11,SNR=3.8						
MA2	**Magadan**	**22.15**	**11**	P	**P**	**18 17 29.0**	**+1.6**
	2.3nm,0.6s,baz=205,slow=13,SNR=2.8						
YAK	**Yakutsk**	**25.21**	**346**	P	**P**	**18 17 56.9**	**-0.2**
	9.9nm,0.4s,baz=257,slow=1.1,SNR=2.1						
SEY	**Seymchan**	**25.59**	**11**	P	**P**	**18 18 01.9**	**+1.3**
	2.8nm,0.8s,baz=229,slow=3.9,SNR=6.3						
SEY				pP	**sP**	**18 18 12.3**	**+0.9**
	3.1nm,0.6s,baz=204,slow=7.3,SNR=4.6						
H11N2	**WAKE ISLAND Hy**	**28.05**	**124**	T	T	18 47 49.8	
	baz=287						
H11N1	**WAKE ISLAND Hy**	**28.06**	**124**	T	T	18 47 46.9	
	baz=287						
H11N3	**WAKE ISLAND Hy**	**28.07**	**124**	T	T	18 47 58.5	
	baz=287						
H11S1	**WAKE ISLAND Hy**	**28.81**	**126**	T	T	18 48 57.2	
	baz=317						
H11S3	**WAKE ISLAND Hy**	**28.81**	**126**	T	T	18 48 49.6	
	baz=317						
H11S2	**WAKE ISLAND Hy**	**28.82**	**126**	T	T	18 48 39.1	
	baz=317						
ZALV	**Zalesovo Beam**	**41.79**	**312**	P	**P**	**18 20 21.2**	**+0.2**
	1.3nm,0.5s,baz=77,slow=9.3,SNR=6.6						
MKAR	**Makanchi Array**	**44.23**	**301**	P	**P**	**18 20 41.2**	**+0.3**
	0.7nm,0.6s,baz=88,slow=9.4,SNR=11						
MKAR				pP	**sP**	**18 20 51.9**	**0.0**
	0.8nm,0.8s,baz=93,slow=8.5,SNR=4.3						
KURBB	**Kurchatov Arra**	**45.98**	**307**	P	**P**	**18 20 54.7**	**+0.1**
	4.1nm,0.5s,baz=81,slow=8.0,SNR=68						
KURBB				pP	**sP**	**18 21 06.4**	**+0.8**
	2.0nm,0.6s,baz=81,slow=8.0,SNR=8.3						
ILAR	**Eielson Array**	**48.17**	**33**	P	**P**	**18 21 11.0**	**-0.5**
	0.6nm,0.7s,baz=263,slow=6.6,SNR=6.3						
HNR	**Honiara**	**50.05**	**157**	P	**P**	**18 21 24.6**	**-1.8**
	36nm,0.5s,baz=310,slow=2.0,SNR=2.4						
BVAR	**Borovoye Array**	**50.45**	**312**	P	**P**	**18 21 29.1**	**0.0**
	1.2nm,0.5s,baz=72,slow=8.3,SNR=6.9						
BVAR				pP	**sP**	**18 21 40.9**	**+0.8**
	0.7nm,0.5s,baz=206,slow=40,SNR=2.5						
BVAR				PcP	**PcP**	**18 22 47.4**	**+0.3**
	0.7nm,0.5s,baz=90,slow=3.1,SNR=3.7						
INK	**Inuvik**	**53.08**	**28**	P	**P**	**18 21 49.1**	**+0.7**
	0.6nm,0.5s,baz=304,slow=7.8,SNR=3.5						
WRA	**Warramunga Arr**	**58.23**	**189**	P	**P**	**18 22 25.6**	**-0.4**
	1.7nm,0.7s,baz=5.1,slow=7.4,SNR=9.8						
WRA				pP	**sP**	**18 22 36.3**	**-0.8**
	1.4nm,0.7s,baz=5.1,slow=7.1,SNR=5.1						
AKTO	**Aktyubinsk**	**58.55**	**312**	P	**P**	**18 22 28.5**	**+0.5**
	0.8nm,0.6s,baz=75,slow=14,SNR=3.2						
YKA	**Yellowknife Ar**	**62.49**	**31**	P	**P**	**18 22 54.3**	**-0.3**
	0.4nm,0.6s,baz=304,slow=6.7,SNR=8.5						
YKA				pP	**sP**	**18 23 05.6**	**-0.2**
	0.2nm,0.7s,baz=290,slow=6.1,SNR=3.4						
ARCES	**ARCESS Array B**	**63.28**	**339**	P	**P**	**18 22 59.6**	**-0.2**
	3.5nm,0.9s,baz=46,slow=6.4,SNR=3.6						
FINES	**FINESS Array B**	**68.24**	**332**	P	**P**	**18 23 31.7**	**-0.2**
	1.1nm,0.6s,baz=37,slow=9.8,SNR=6.2						
FINES				pP	**sP**	**18 23 42.9**	**-0.3**
	1.0nm,0.6s,baz=52,slow=3.1,SNR=2.1						
KBZ	**Khabaz**	**70.81**	**311**	P	**P**	**18 23 49.2**	**+1.2**
	0.8nm,0.5s,baz=48,slow=14,SNR=3.1						
NOA	**NORSAR Array B**	**73.51**	**338**	P	**P**	**18 24 04.2**	**+0.3**
	0.6nm,0.7s,baz=27,slow=8.6,SNR=3.0						
PDAR	**Pinedale Array**	**76.35**	**46**	P	**P**	**18 24 20.9**	**-0.1**
	0.3nm,0.7s,baz=198,slow=3.9,SNR=4.0						
PDAR				pP	**PcP**	**18 24 32.7**	**-0.1**
	0.3nm,0.5s,baz=243,slow=1.7,SNR=4.0						
TXAR	**Lajitas Array**	**88.84**	**53**	P	**P**	**18 25 25.9**	**-0.1**
	0.2nm,0.6s,baz=318,slow=1.7,SNR=3.7						
LPAZ	**La Paz**	**145.47**	**59**	PKPbc	**PKPab**	**18 32 11.1**	**+0.1**
	0.5nm,0.4s,baz=298,slow=3.3,SNR=2.8						
LPAZ				pPKPbc	pPKPbc	18 32 23.3	+3.8
	0.6nm,0.6s,baz=12,slow=12,SNR=2.5						

*ISCJB **16** 18:17:53.1±2.3,6°.4S±0°.2×148°.0E±0°.4,h51km,mb3.6/4, Error ellipse: s-maj=51.2km s-min=21.8km az=0.3*
*IDC **16** 18:17:54.2±6.5,6°.46S×148°.02E,h40km±54km,mb3.6/4, mb1 3.7/6,mb1mx3.4/46,mbtmp3.7/6,ML3.5/1,MS2.3/1, Ms1 2.3/1,ms1mx2.2/21,Error ellipse: s-maj=61.3km s-min=39.5km az=94.0*

ISC 16 18:17:55.3±2.4,6°.5S±0°.2×147°.9E±0°.4,h51km,n7,σ0§50/7, mb3.5/4,Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**3.02**	**194**	P	**Pn**	**18 18 40.9**	**+0.2**
	5.1nm,0.3s,baz=60,slow=6.6,SNR=15						
PMG				S	Sn	18 19 21.5	+5.9
	5.1nm,0.3s,baz=31,slow=19,SNR=4.8						
PMG				LR	LR	18 19 49.0	
	comp=Z,55nm,21.8s,baz=48,slow=38						
WRA	**Warramunga Arr**	**18.80**	**223**	P	**Pn**	**18 22 11.7**	**0.0**
	0.2nm,0.3s,baz=51,slow=11,SNR=8.1						
ASAR	**Alice Springs**	**21.77**	**217**	P	**P**	**18 22 42.5**	**-0.5**
	0.6nm,0.5s,baz=51,slow=9.2,SNR=36						
FITZ	**Fitzroy Crossi**	**24.61**	**240**	P	**P**	**18 23 11.4**	**+0.3**
	3.5nm,0.4s,baz=48,slow=8.3,SNR=34						
STKA	**Stephens Creek**	**25.97**	**192**	P	**P**	**18 23 23.1**	**-0.2**
	1.1nm,0.4s,baz=326,slow=18,SNR=4.1						
MKAR	**Makanchi Array**	**78.43**	**320**	P	**P**	**18 29 50.5**	**-0.3**
	0.1nm,0.4s,baz=89,slow=8.5,SNR=3.7						
TORD	**Torodi Ar. Bea**	**146.08**	**284**	PKPbc	**PKPab**	**18 37 32.1**	**+0.7**
	0.4nm,0.4s,baz=73,slow=4.9,SNR=7.8						

*BKK **16** 18:19:27.0±1.2,23°.N±6°.×9°.8E±1°.9,h10km,M4.4/7, mb3.8/2,mB4.0/1,MLv4.7/7,Mw(mB)3.0/1*
*IDC **16** 18:19:38.3±1.4,22°.29N×98°.91E,h0km,mb3.5/3, mb1 3.6/4,mb1mx3.3/53,mbtmp3.4/4,ML3.5/1,Error ellipse: s-maj=37.0km s-min=18.3km az=79.0*

ISC 16 18:19:39.9±1.4,22°.23N±0°.07×98°.9E±0°.1,h10km,n11, σ1§95/19,mb3.6/3,Myanmar-China border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAI	**Chiengmai2**	**2.29**	**178**	P	**Pn**	**18 20 17.5**	**-0.4**
CMAI				S	**Sn**	**18 20 47.9**	**+1.7**
CRAI	**Chiangrai**	**2.39**	**146**	P	**Pn**	**18 20 20.0**	**+0.8**
CRAI				S	**Sb**	**18 20 52.7**	**-0.1**
CHTO	**Chiang Mai**	**3.40**	**180**	P	**Pn**	**18 20 33.0**	**0.0**
CHTO				S	**Sb**	**18 21 24.8**	**+3.2**
CMMT	**Chiang Mai**	**3.40**	**180**	P	**Pn**	**18 20 33.0**	**0.0**
CMMT				S	**Sb**	**18 21 24.7**	**+3.0**
LAMP	**Lampang**	**3.74**	**170**	P	**Pn**	**18 20 38.6**	**+0.8**
LAMP				S	**Sg**	**18 21 37.3**	**-2.9**
CMAR	**Chiang Mai Arr**	**3.75**	**180**	Pn	**Pn**	**18 20 37.6**	**-0.2**
	0.9nm,0.3s,baz=353,slow=13,SNR=16						
CMAR				Pg	**Pg**	**18 20 49.9**	**-2.0**
	6.0nm,0.3s,baz=346,slow=17,SNR=46						
CMAR				Lg	Lg	18 21 40.1	
	17nm,0.3s,baz=353,slow=28,SNR=14						
UTTA	**Uttaradit**	**4.71**	**161**	P	**Pn**	**18 20 51.7**	**+0.6**
	6.6nm,0.8s,122nm0.1nm						
UTTA				S	**Sg**	**18 22 13.0**	**+1.8**
	6.6nm,0.8s,122nm0.1nm						
PBKT	**Sadao Pong**	**5.94**	**161**	P	**Pn**	**18 21 10.3**	**+2.3**
PBKT				S	**Sg**	**18 22 46.8**	**-4.0**
MKAR	**Makanchi Array**	**27.97**	**335**	P	**P**	**18 25 30.5**	**-0.2**
	0.1nm,0.4s,baz=161,slow=11,SNR=3.5						
WRA	**Warramunga Arr**	**54.33**	**138**	P	**P**	**18 29 06.8**	**-0.1**
	0.6nm,0.7s,baz=329,slow=7.7,SNR=4.9						
ASAR	**Alice Springs**	**56.90**	**141**	P	**P**	**18 29 25.4**	**+0.1**
	0.5nm,0.9s,baz=331,slow=8.5,SNR=4.3						

*THR **16** 18:24:56.4±0.8,28°.36N×58°.81E,h14km±8km,ML3.6*
*CSEM **16** 18:24:57.9±0.7,28°.56N×58°.82E,h2km,ML4.0,Error ellipse: s-maj=16.8km s-min=12.3km az=160.0*

TEH 16 18:25:00.3,28°.59N×58°.91E,h18km,ML4.0,Southern Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHMN	**Cheshme madani**	**1.74**	**317**	*e*Pn	Pn	18 25 29.1	-0.9
CHMN	**Cheshme madani**	**1.74**	**317**	*e*Pn	Pn	18 25 29.1	-0.9
ZHSF	**Zahedan**	**1.93**	**58**	*e*Pg	Pb	18 25 34.9	-0.1
ZHSF	**Zahedan**	**1.93**	**58**	*e*Pn	Pb	18 25 34.7	-0.3
NGRK	**Negar Kerman**	**2.18**	**299**	*e*Pn	Pn	18 25 36.4	+0.4
NGRK	**Negar Kerman**	**2.18**	**299**	*e*Pn	Pn	18 25 36.4	+0.4
KRBR	**Kerman**	**2.33**	**307**	*e*Pn	Pn	18 25 37.8	-0.3
KRBR				*e*Sg	Sb	18 26 12.2	+1.5
KRBR				AML	AML	18 26 20.0	
	comp=N,352nm,0.4s						
KRBR				AML	AML	18 26 27.0	
	comp=E,327nm,0.7s						
KRBR	**Kerman**	**2.33**	**307**	*e*Pn	Pn	18 25 37.8	-0.3
KRBR				*e*Sg	Sb	18 26 12.2	+1.5
TVBK	**TV Kerman**	**2.34**	**307**	*e*Pn	Pb	18 25 41.8	-0.3
TVBK	**TV Kerman**	**2.34**	**307**	*e*Pn	Pb	18 25 41.8	-0.3
BNDS	**Bandar-Abbas**	**2.69**	**245**	*e*Pn	Pn	18 25 39.4	-3.5
BNDS				*e*Sg	Sn	18 26 15.2	0.0
BNDS				AML	AML	18 26 21.7	
	comp=N,333nm,0.6s						
BNDS				AML	AML	18 26 31.6	
	comp=E,288nm,0.4s						
BNDS	**Bandar-Abbas**	**2.69**	**245**	*e*Pn	Pn	18 25 39.4	-3.5
BNDS				*e*Sg	Sn	18 26 15.1	-0.1
KHGB	**Koh Gabri**	**2.77**	**311**	*e*Pn	Pn	18 25 44.1	+0.1
KHGB				*e*Sg	Sg	18 26 26.8	-2.6
KHGB	**Koh Gabri**	**2.77**	**311**	*e*Pn	Pn	18 25 44.1	+0.1
KHGB				*e*Sg	Sg	18 26 26.8	-2.6
IKOO	**Kooshah**	**3.83**	**1**	*e*Pn	Pn	18 25 57.6	-1.0
IKOO				*e*Sg	Sg	18 26 59.7	-3.5
IKOO				*e*AMB	AMB	18 27 10.1	
	comp=Z,3μm,0.2s						
IKOO	**Kooshah**	**3.83**	**1**	*e*Pn	Pn	18 25 57.6	-1.0
IKOO				*e*Sg	Sg	18 26 59.7	-3.5
IDAH	**Dahanechah**	**4.22**	**11**	*e*Pn	Pn	18 26 03.4	-0.6
IDAH				*e*AMB	AMB	18 27 23.1	
	comp=Z,562nm,0.2s						
IDAH	**Dahanechah**	**4.22**	**11**	*e*Pn	Pn	18 26 03.4	-0.6
ITEG	**Tejag**	**4.30**	**358**	*e*Pn	Pn	18 26 04.4	-0.6
ITEG				*e*AMB	AMB	18 27 31.4	
	comp=Z,2μm,0.4s						
ITEG	**Tejag**	**4.30**	**358**	*e*Pn	Pn	18 26 04.4	-0.6
IMON	**Monand**	**4.64**	**8**	*e*Pn	Pn	18 26 09.9	+0.2
IMON				*e*AMB	AMB	18 27 50.9	
	comp=E,3μm,0.3s						
IMON	**Monand**	**4.64**	**8**	*e*Pn	Pn	18 26 09.9	+0.2

*CASC **16** 18:55:01.8±2.2,11°.51N×87°.49W,h4km±16km,MD3.9, ML3.5*
*ISCJB **16** 18:55:02.5±0.9,11°.37N±0°.07×87°.42W±0°.06,h37km, mb3.7/5,MS3.3/1,Error ellipse: s-maj=10.4km s-min=7.5km az=23.3*
*IDC **16** 18:55:06.6±5.1,11°.71N×87°.14W,h51km±50km,mb3.5/5, mb1 3.8/6,mb1mx3.5/37,mbtmp3.8/6,ML3.6/1,MS3.3/1, Ms1 3.3/1,ms1mx2.5/30,Error ellipse: s-maj=68.9km s-min=25.0km az=57.0*

ISC 16 18:55:04.5±1.1,11°.4N±0°.1×87°.41W±0°.06,h37km,n18, σ1§46/22,mb3.8/5,Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CNGN	**Cerro Negro**	**1.26**	**34**	*e*P	**Pn**	**18 55 23.8**	**-1.9**
CNGN				*e*S	**Sn**	**18 55 43.3**	**+1.9**
CNGN				AML	AML	18 55 50.7	
	comp=N,857nm,0.6s						
CRIN	**San Cristobal**	**1.30**	**16**	*e*P	**Pn**	**18 55 25.4**	**-0.8**
MGAN	**Managua**	**1.34**	**58**	*e*P	**Pn**	**18 55 24.3**	**-2.3**
MGAN				*e*S	**Sn**	**18 55 46.8**	**+3.6**
CNCH	**Conchagua**	**1.87**	**347**	*e*P	**Pn**	**18 55 33.1**	**-0.9**
CNCH				*e*S	**Sn**	**18 55 57.2**	**+0.7**
ESTN	**Estel**	**1.94**	**32**	*e*P	**Pn**	**18 55 34.7**	**-0.3**
VSM	**San Miguel**	**2.15**	**337**	*e*P	**Pn**	**18 55 37.8**	**-0.2**
PACA	**Pacayal**	**2.20**	**336**	*e*P	**Pn**	**18 55 38.0**	**-0.6**
TECA	**Tecapa**	**2.30**	**333**	*e*P	**Pn**	**18 55 39.4**	**-0.6**
TECA				*e*S	**Sn**	**18 56 07.4**	**+0.2**
LFRS	**El Faro**	**2.70**	**324**	*e*P	**Pn**	**18 55 45.1**	**-0.4**
SBLS	**San Blas**	**3.21**	**318**	*e*P	**Pn**	**18 55 52.9**	**+0.3**
SBLS				*e*S	**Sn**	**18 56 30.4**	**+0.6**
CMIG	**Matias Romero**	**9.16**	**309**	P	**Pn**	**18 57 16.6**	**+2.4**
	comp=N,0.6nm,0.3s,baz=112,slow=10,SNR=6.3						
TXAR	**Lajitas Array**	**23.38**	**322**	P	**P**	**19 00 11.0**	**+1.0**
	comp=N,0.9nm,0.7s,baz=136,slow=9.9,SNR=10						
TKL	**Tuckaleechee C**	**24.33**	**7**	P	**P**	**19 00 17.8**	**-1.0**
	comp=N,4.2nm,0.6s,baz=188,slow=11,SNR=4.4						
PDAR	**Pinedale Array**	**36.67**	**332**	P	**P**	**19 02 08.0**	**0.0**
	comp=N,0.4nm,0.6s,baz=118,slow=10,SNR=4.1						
SIV	**San Ignacio**	**37.72**	**136**	P	**P**	**19 02 17.5**	**+0.7**
	comp=N,1.6nm,0.6s,baz=326,slow=10,SNR=3.5						
RCBR	**Riachuelo**	**54.05**	**106**	LR	LR	19 28 02.1	
	comp=N,26nm,19.0s,baz=306,slow=37						
YKA	**Yellowknife Ar**	**54.59**	**345**	P	**P**	**19 04 27.1**	**-1.8**
	comp=N,0.6nm,0.7s,baz=141,slow=7.3,SNR=15						
CMAR	**Chiang Mai Arr**	**149.64**	**348**	PKPbc	**PKPbc**	**19 14 51.0**	**-0.1**
	comp=N,0.8nm,0.8s,baz=348,slow=4.1,SNR=7.9						

*DDA **16** 19:00:01.6,37°.03N×27°.97E,h7km,Md2.7*
*CSEM **16** 19:00:02.1±0.2,37°.03N×27°.95E,h10km,MD2.7,Error ellipse: s-maj=5.7km s-min=3.8km az=132.0*

ATH 16 19:00:03.9,36°.81N×26°.32E,h24km±3km,ML1.7/2,Error ellipse: s-maj=3.9km s-min=1.2km az=10.0, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
APE	**Apeiranthos**	**0.68**	**292**	P	Pb	19 00 17.5	+0.3
APE	**Apeiranthos**	**0.68**	**292**	P	Pb	19 00 17.5	+0.3
NISR	**Nisiros**	**0.68**	**107**	P	Pb	19 00 17.5	+0.4
NISR				S	Sn	19 00 27.2	-0.6
NISR	**Nisiros**	**0.68**	**107**	P	Pb	19 00 17.5	+0.3
NISR				S	Sn	19 00 27.2	-0.6
NISR				AML	AML	19 00 31.7	
	comp=E,286μm,0.2s						
NISR				AML	AML	19 00 32.4	
	comp=N,103μm,0.2s						
SMG	**Samos**	**0.99**	**25**	P	Pb	19 00 22.9	+0.6
SMG				S	Sn	19 00 36.5	+1.1
SMG	**Samos**	**0.99**	**25**	P	Pb	19 00 22.9	+0.5
SMG				S	Sn	19 00 36.5	+1.0
SMG				AML	AML	19 00 42.9	
	comp=E,73μm,0.3s						
SMG				AML	AML	19 00 44.1	
	comp=N,82μm,0.5s						
DGB	**˜zmir**	**1.32**	**20**	*i* P	Pn	19 00 25.5	-1.3
DGB				*i* S	Sb	19 00 46.3	+1.9
KARP	**Karpathos**	**1.44**	**151**	P	Pb	19 00 30.3	+0.3
KARP				S	Sb	19 00 50.9	+3.1
KARP	**Karpathos**	**1.44**	**151**	P	Pb	19 00 30.3	+0.3
KARP				S	Sb	19 00 50.9	+3.0

JMA 16 19:10:16.5±0.1,39°.07N×142°.40E,h36km±1km,M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.57**	**271**	P	Pn	19 10 28.0	-0.2
OFUJ				S	Sn	19 10 36.0	-0.3
MIYJ	**Miyakonagasawa**	**0.68**	**319**	P	Pn	19 10 29.5	-0.1
MIYJ				S	Sn	19 10 38.8	-0.1
JMK	**Ichinoseki**	**0.93**	**263**	P	Pn	19 10 33.2	+0.2
JMK				S	Sn	19 10 45.3	+0.3
JOM	**Ohasama**	**0.95**	**295**	P	Pn	19 10 33.8	+0.5
JOM				S	Sn	19 10 46.5	+0.9
JTH	**Tanohata**	**0.96**	**335**	P	Pn	19 10 33.7	+0.2
JIO	**Ouri**	**1.03**	**234**	P	Pn	19 10 33.9	-0.4
JKZ	**Kuzumaki**	**1.23**	**318**	P	Pn	19 10 38.3	+1.1
JKZ				S	Sn	19 10 54.5	+1.9
JANG	**Nango**	**1.47**	**333**	P	Pn	19 10 41.3	+0.9

*ISCJB **16** 19:10:22.8±0.2,37°.15N±0°.03×142°.45E±0°.03,h9km, mb4.7/112,MS4.2/33,Error ellipse: s-maj=4.0km s-min=3.0km az=158.2*
*JMA **16** 19:10:22.2±0.4,37°.14N×142°.50E,h8km,M4.7*
*NEIC **16** 19:10:25.5±2.2,37°.11N×142°.41E,h17km±14km,mb4.8/50, Error ellipse: s-maj=6.2km s-min=4.4km az=128.0*
*IDC **16** 19:10:27.9±3.7,37°.13N×142°.35E,h32km±27km,mb4.3/27, mb1 4.4/34,mb1mx4.4/54,mbtmp4.5/34,ML4.0/6,MS3.9/17, Ms1 3.9/17,ms1mx3.6/46,Error ellipse: s-maj=13.9km s-min=11.0km az=119.0*
*MOS **16** 19:10:27.2±1.1,37°.38N×142°.38E,h32km,mb4.8/59,Error ellipse: s-maj=7.3km s-min=4.9km az=104.4*

ISC 16 19:10:23.7±0.3,37°.13N±0°.04×142°.52E±0°.04,h9km,n254, σ1§99/264,mb4.7/112,MS4.2/33,2C-10D,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.33**	**281**	P	**Pn**	**19 10 46.5**	**-2.0**
JFK				*e*S	**Sg**	**19 11 04.8**	**-1.7**
ONAJ	**Iwakimizuishiy**	**1.37**	**270**	P	**Pn**	**19 10 47.3**	**-1.8**
JMM	**Marumori**	**1.56**	**299**	P	**Pn**	**19 10 49.8**	**-1.7**
JMM				S	**Sb**	**19 11 10.8**	**-1.7**
JIO	**Ouri**	**1.62**	**325**	*e*S	**Sn**	**19 11 11.6**	**-1.7**
JHO	**Hitachi**	**1.64**	**252**	P	**Pn**	**19 10 50.8**	**-1.9**
JFT	**Otama**	**1.78**	**283**	P	**Pn**	**19 10 52.6**	**-2.0**
JFT				*e*S	**Sb**	**19 11 16.6**	**-2.3**
JOU	**Okura**	**1.92**	**311**	S	**Sn**	**19 11 18.4**	**-2.5**
CHOJ	**Chosi**	**1.95**	**224**	P	**Pb**	**19 10 57.1**	**-2.2**
MJAR	**Matsushiro Arr**	**3.50**	**262**	Pn	**Pn**	**19 11 18.9**	**+0.5**
	19nm,0.3s,baz=84,slow=16,SNR=81						
MJAR				Sn	**Sb**	**19 12 04.5**	**-4.0**
	20nm,0.3s,baz=88,slow=14,SNR=4.6						
MJAR				LR	LR	19 12 44.9	
	comp=Z,2μm,20.1s,baz=85,slow=41						
MAJO	**Matsushiro**	**3.50**	**262**	*e*P	**Pn**	**19 11 19.5**	**+1.1**
MAJO	**Matsushiro**	**3.50**	**262**	*e*P	**Pn**	**19 11 19.5**	**+1.1**
MAT	**Matsushiro**	**3.50**	**262**	P	**Pn**	**19 11 19.7**	**+1.3**
MAT				*e*S	**Sn**	**19 12 01.5**	**+1.5**
JHJ2	**Mitsune**	**4.57**	**210**	*e*P	**Pn**	**19 11 32.2**	**-0.8**
JHJ	**Hachijo jima 2**	**4.58**	**210**	Pn	**Pn**	**19 11 32.0**	**-1.1**
	86nm,0.3s,baz=82,slow=18,SNR=55						
JHJ				Sn	**Sn**	**19 12 24.0**	**-2.5**
	103nm,0.3s,baz=249,slow=24,SNR=5.6						
ERM	**Erimo**	**4.91**	**6**	*e*P	**Pn**	**19 11 37.2**	**-0.4**
ERM	**Erimo**	**4.91**	**6**	*e*P	**Pn**	**19 11 37.5**	**-0.1**
ASAJ	**Asahikawa**	**6.98**	**0**	Pn	**Pn**	**19 12 07.7**	**+1.6**
	4.7nm,0.3s,baz=208,slow=18,SNR=15						
ASAJ				Sn	**Sn**	**19 13 27.1**	**+1.5**
	4.7nm,0.3s,baz=172,slow=32,SNR=3.7						
ASAJ	**Asahikawa**	**6.98**	**0**	P	**Pn**	**19 12 07.7**	**+1.6**
ASAJ						19 13 27.1	
ASAJ				pmax	pmax		
	comp

HABR MLR MLR
comp=Z,337nm,13.0s
TYV Tymovskoe 13.73 0 *e*P **Pn 19 13 37.8 -0.7**
TYV pmax pmax
comp=Z,13nm,0.8s
TYV MLR MLR
comp=N,1μm,16.0s
TYV MLR MLR
comp=Z,1μm,16.0s
KLR Kul'dur 14.40 331 Pn **Pn 19 13 48.5 +0.8**
comp=Z,0.3nm,0.3s,baz=135,slow=15,SNR=7.6
KLR Kul'dur 14.40 331 P **Pn 19 13 48.0 +0.3**
SNY Shenyang 15.35 294 ⇑P **P 19 14 05.3 +0.1**
SNY S **S 19 17 07.4 +0.4**
SNY pmax pmax
comp=Z,110nm,1.2s
SNY pmax pmax
comp=Z,240nm,1.7s
SNY LR LR
comp=N,1μm,16.1s
SNY LR LR
comp=E,580nm,16.7s
SNY LR LR
comp=Z,750nm,16.7s
NKL Nikolayevsk 16.08 356 *e*P **P 19 14 15.0 +1.9**
NKL pmax pmax
comp=Z,17nm,1.0s
NKL MLR MLR
comp=N,600nm,16.0s
NKL MLR MLR
comp=E,500nm,16.0s
NKL MLR MLR
comp=Z,900nm,16.0s
DL2 Dalian 16.56 283 P P 19 14 25.3 +6.7
DL2 S **S 19 17 37.4 +5.7**
DL2 pmax pmax
comp=Z,32nm,0.9s
DL2 pmax pmax
comp=Z,170nm,4.8s
DL2 LR LR
comp=N,500nm,11.1s
DL2 LR LR
comp=E,400nm,11.7s
DL2 LR LR
comp=Z,600nm,12.8s
SSE Sheshan 18.64 257 P **Pn 19 14 42.4 +0.5**
SSE S **Sn 19 18 07.4 -3.1**
SSE pmax pmax
comp=Z,38nm,1.0s
SSE pmax pmax
comp=Z,81nm,4.3s
SSE LR LR
comp=N,630nm,18.6s
SSE LR LR
comp=E,420nm,18.6s
SSE LR LR
comp=Z,460nm,15.2s
PETK Petropavlovsk- 19.18 29 P **Pn 19 14 47.8 -0.5**
comp=Z,0.1nm,0.3s,baz=194,slow=9.8,SNR=2.7
PETK LR LR 19 22 57.5
comp=Z,270nm,18.7s,baz=216,slow=39
PET Petropavlovsk 19.49 30 *e*P **Pn 19 14 52.3 +0.3**
PET *e*S **S 19 18 29.7 -1.1**
PET pmax pmax
comp=Z,100nm,6.1s
PET pmax pmax
comp=Z,22nm,1.3s
PET MLR MLR
comp=Z,300nm,16.0s
PET MLR MLR
comp=Z,300nm,16.0s
NJ2 Nanjing 20.11 262 *e*P Pn 19 15 02.9 +3.4
NJ2 S Sn 19 18 55.1 +9.2
NJ2 LR LR
comp=N,680nm,19.5s
NJ2 LR LR
comp=E,340nm,16.3s
NJ2 LR LR
comp=Z,380nm,13.0s
TIA Tai'an 20.38 275 *e*P **P 19 14 59.3 -1.3**
TIA S Sn 19 18 57.4 +5.1
TIA pmax pmax
comp=Z,30nm,1.0s
TIA LR LR
comp=N,380nm,12.0s
TIA LR LR
comp=E,820nm,16.0s
TIA LR LR
comp=Z,810nm,16.0s
BJI Beijing 20.77 286 P Pn 19 15 06.6 -0.6
BJI Beijing 20.77 286 P Pn 19 15 06.8 -0.4
BJI S Sn 19 19 03.4 +1.7
BJI pmax pmax
comp=Z,17nm,1.6s
BJI pmax pmax
comp=Z,18nm,1.8s
BJI pmax pmax
comp=Z,120nm,3.6s
BJI LR LR
comp=N,570nm,12.8s
BJI LR LR
comp=E,270nm,14.6s
BJI LR LR
comp=Z,230nm,20.6s
MA2 Magadan 23.09 11 P **P 19 15 30.9 +1.5**
comp=Z,12nm,0.6s,baz=235,slow=8.7,SNR=6.1
TWG Pinlang 23.34 238 *e*P **P 19 15 33.0 +0.6**
comp=Z,101nm,0.9s
WHN Wuhan 24.25 263 *e*P **P 19 15 40.1 -0.9**
CIT Chita 25.23 315 *e*P **P 19 15 49.8 +0.1**
CIT *e* 19 16 32.5
CIT pmax pmax
comp=Z,94nm,1.6s
YAK Yakutsk 26.18 346 P **P 19 15 58.5 +0.3**
comp=Z,2.4nm,0.4s,baz=339,slow=15,SNR=3.5
YAK Yakutsk 26.18 346 *e*P **P 19 15 58.2 0.0**
YAK *e**PP sP 19 16 10.8 +8.7
YAK *e* 19 16 37.7
YAK *e* 19 19 21.4
YAK *e*SS **S 19 20 25.6 -4.3**
YAK *e*SS **SnSn 19 21 29.0 +0.6**
YAK pmax pmax
comp=Z,12nm,0.8s
YAK pmax pmax
comp=Z,32nm,2.2s
YAK pmax pmax
comp=N,20nm,2.2s
YAK pmax pmax
comp=E,15nm,2.5s
YAK smax smax
comp=N,57nm,3.0s
YAK smax smax
comp=E,68nm,3.5s
YAK MLR MLR
comp=Z,241nm,15.0s
YAK MLR MLR
comp=N,275nm,16.0s
YAK MLR MLR
comp=E,208nm,16.0s
YAK Yakutsk 26.18 346 *e*P **P 19 15 56.4 -1.8**
comp=E,23nm,0.8s
SEY Seymchan 26.54 10 P **P 19 16 03.5 +2.1**
comp=E,15nm,0.8s,baz=191,slow=7.1,SNR=24
XAN Xi'an 27.41 274 P **P 19 16 14.6 +4.9**
XAN pP sP 19 16 21.8 +8.2
XAN sP pP 19 16 25.3 +13
XAN PP **PnPn 19 16 59.1 +5.3**
XAN S **S 19 20 46.8 -3.3**
XAN sS sS 19 20 58.6 +4.0
XAN SS **SnSn 19 21 58.6 -0.6**
XAN pmax pmax
comp=Z,10.0nm,0.9s
XAN pmax pmax
comp=Z,41nm,3.7s
XAN LR LR
comp=N,270nm,17.5s
XAN LR LR
comp=E,240nm,15.1s
XAN LR LR
comp=Z,280nm,16.0s
H11N2 WAKE ISLAND Hy 27.45 122 T T 19 45 07.1
baz=315,slow=75,SNR=765
H11N1 WAKE ISLAND Hy 27.45 122 T T 19 45 06.6
baz=315,slow=75,SNR=461
H11N3 WAKE ISLAND Hy 27.46 122 T T 19 45 05.5
baz=315,slow=75,SNR=515

BOD Bodaibo 27.93 327 *e*P **P 19 16 12.1 -1.9**
BOD pmax pmax
comp=Z,10.0nm,1.2s
ULN Ulaanbaatar 28.03 304 *e*P **P 19 16 15.2 0.0**
ULN pmax pmax
comp=Z,13nm,1.1s
ULN Ulaanbaatar 28.03 304 *e*P **P 19 16 15.2 0.0**
comp=Z,13nm,1.1s
H11S1 WAKE ISLAND Hy 28.18 125 T T 19 45 57.6
baz=317,slow=76,SNR=488
H11S3 WAKE ISLAND Hy 28.18 125 T T 19 45 59.9
baz=317,slow=76,SNR=422
H11S2 WAKE ISLAND Hy 28.19 125 T T 19 45 59.5
baz=317,slow=76,SNR=345
ENH Enshi 28.22 266 *e*P **P 19 16 16.1 -0.8**
comp=Z,71nm,1.0s
SONM Songino Array 28.47 304 P **P 19 16 19.4 +0.4**
comp=Z,9.8nm,0.8s,baz=109,slow=9.9,SNR=10
SONM LR LR 19 27 42.3
comp=Z,105nm,19.5s,baz=46,slow=36
ZAK Zakamensk 30.91 308 *e*P **P 19 16 40.0 -0.6**
ZAK pmax pmax
comp=Z,12nm,1.3s
TLY Talaya 30.94 311 *e*P **P 19 16 41.4 +0.6**
TLY *e*S **S 19 21 45.2 +0.1**
TLY pmax pmax
comp=Z,14nm,1.4s
TLY MLR MLR
comp=Z,197nm,14.0s
TLY Talaya 30.94 311 *e*P **P 19 16 40.9 +0.1**
comp=Z,13nm,1.3s
MOY Mondy 32.55 310 *e*P P 19 16 59.2 +4.1
MOY pmax pmax
comp=Z,18nm,2.5s
GTA Gaotai 33.38 287 *e*P **P 19 17 02.4 -0.1**
GTA pP sP 19 17 09.3 +3.0
GTA sP pP 19 17 12.0 +6.8
GTA PcP **PcP 19 19 45.3 +1.3**
GTA S **S 19 22 23.8 +0.2**
GTA sS sS 19 22 36.5 +8.4
GTA SS **SnSn 19 24 30.1 +5.8**
GTA pmax pmax
comp=Z,2.0nm,0.8s
GTA pmax pmax
comp=Z,62nm,5.9s
GTA LR LR
comp=N,430nm,18.1s
GTA LR LR
comp=E,160nm,19.0s
GTA LR LR
comp=Z,220nm,15.7s
BILL Bilibino 33.69 16 *c e*P **P 19 17 05.6 +0.9**
BILL *e* 19 18 19.2
BILL pmax pmax
comp=Z,10.0nm,1.2s
BILL MLR MLR
comp=Z,146nm,16.0s
BILL Bilibino 33.69 16 *e*P **P 19 17 05.3 +0.6**
comp=Z,18nm,1.3s
TIXI Tiksi 35.31 353 P **P 19 17 18.4 -0.2**
comp=Z,1.7nm,0.6s,baz=152,slow=5.7,SNR=9.2
TIXI Tiksi 35.31 353 ⇓*e*P **P 19 17 17.9 -0.7**
TIXI pmax pmax
comp=Z,4.0nm,1.2s
CRAI Chiangrai 40.26 257 P **P 19 18 02.3 +1.2**
comp=Z,66nm,1.2s
MRSI Marisa 41.13 212 P **P 19 18 09.6 +1.4**
comp=Z,49nm,1.2s,comp=Z,2μm
CMAI Chiengmai2 41.46 258 P **P 19 18 13.9 +2.7**
comp=Z,168nm,0.7s,comp=Z,9μm
UTTA Uttaradit 41.54 254 P P 19 18 18.0 +6.4
comp=Z,2.7nm,0.9s
PBKT Sadao Pong 41.93 252 P **P 19 18 16.4 +1.6**
comp=Z,8.4nm,1.0s
CMMT Chiang Mai 42.17 257 P **P 19 18 17.5 +0.7**
comp=Z,6.0nm,1.4s
CHTO Chiang Mai 42.17 257 P **P 19 18 17.5 +0.7**
comp=Z,27nm,1.6s
CHTO Chiang Mai 42.17 257 *e*P **P 19 18 16.3 -0.5**
CHTO pmax pmax
comp=Z,6.0nm,1.0s
CHTO Chiang Mai 42.17 257 *e*P **P 19 18 16.3 -0.5**
comp=Z,6.2nm,1.0s
CMAR Chiang Mai Arr 42.37 256 P **P 19 18 18.5 +0.1**
comp=Z,2.0nm,0.8s,baz=45,slow=6.3,SNR=18
CMAR LR LR 19 38 36.7
comp=Z,143nm,18.1s,baz=43,slow=40
CMAR Chiang Mai Arr 42.37 256 *i* P **P 19 18 18.8 +0.3**
CMAR pmax pmax
comp=Z,2.0nm,0.8s
ZALV Zalesovo Beam 42.50 312 P **P 19 18 19.0 -0.1**
comp=Z,6.8nm,0.8s,baz=89,slow=6.5,SNR=27
ZALV PcP **PcP 19 20 11.7 0.0**
comp=Z,3.1nm,0.7s,baz=88,slow=2.1,SNR=3.8
LSA Lhasa 43.08 276 *e*P **P 19 18 25.4 +0.8**
LSA pmax pmax
comp=Z,29nm,1.3s
LSA Lhasa 43.08 276 *e*P **P 19 18 25.4 +0.8**
comp=Z,29nm,1.3s
PCI Palu 43.29 214 P **P 19 18 25.2 -0.6**
comp=Z,43nm,1.2s
CHBT CHBT 43.32 247 P **P 19 18 27.6 +1.5**
comp=Z,14nm,1.4s
NVS Novosibirsk 43.41 314 *e*P **P 19 18 26.0 -0.4**
NRIK Noril'sk 43.55 335 LR LR 19 37 26.1
comp=Z,268nm,19.0s,baz=111,slow=37
MKAR Makanchi Array 44.82 302 P **P 19 18 37.5 -0.3**
comp=Z,4.3nm,0.7s,baz=88,slow=9.4,SNR=38
MKAR LR LR 19 38 29.9
comp=Z,81nm,18.8s,baz=90,slow=38
MKAR Makanchi Array 44.82 302 *i* P **P 19 18 38.0 +0.1**
MKAR pmax pmax
comp=Z,4.0nm,0.7s
SPSI Sidrap Palu 46.05 212 P **P 19 18 48.1 +0.3**
comp=Z,13nm,0.9s,comp=Z,13nm,0.9s
KSM Kuching 46.26 228 *e*P **P 19 18 50.9 +1.3**
comp=Z,9.7nm,0.8s
KDAK Kodiak Island 46.44 42 *i* P **P 19 18 51.5 +1.0**
KURK Kurchatov 46.57 308 *e*P **P 19 18 51.2 -0.4**
KURK pmax pmax
comp=Z,73nm,0.9s
KURK Kurchatov 46.57 308 *e*P **P 19 18 51.2 -0.4**
comp=Z,73nm,0.9s
PPLA Purkeypile 46.59 35 *e*P **P 19 18 53.7 +1.9**
comp=Z,39nm,1.4s
KAPI Kappang 47.00 212 *e*P **P 19 18 55.8 +0.6**
comp=Z,18nm,0.9s
BPAW Bear Paw Mtn. 47.16 33 *e*P **P 19 18 58.0 +1.9**
comp=Z,1.4nm,1.0s
KTH Kantishna Hill 47.18 34 *e*P **P 19 18 58.0 +1.7**
comp=Z,22nm,1.1s
TRF Thorofare Moun 47.46 34 *e*P **P 19 19 01.1 +2.4**
comp=Z,7.1nm,1.0s
PDGK Podgornoye 47.51 298 P **P 19 18 59.1 0.0**
PDGK pmax pmax
comp=Z,18nm,1.1s
SML Sawmill 48.40 36 *e*P **P 19 19 05.7 -0.1**
SML pmax pmax
comp=Z,6.0nm,1.0s
SML Sawmill 48.40 36 *e*P **P 19 19 05.7 -0.1**
comp=Z,5.5nm,1.0s
TRTT Trang 48.53 244 P **P 19 19 09.3 +2.0**
comp=Z,32nm,0.9s
KKN Kakani 48.55 276 *e*P **P 19 19 07.4 -0.2**
comp=Z,42nm,1.1s
PKIN Phulchoki 48.55 276 *e*P **P 19 19 08.4 +0.7**
comp=Z,12nm,0.9s
ILAR Eielson Array 48.95 32 P **P 19 19 10.0 +0.1**
comp=Z,6.6nm,0.8s,baz=265,slow=5.8,SNR=48
ILAR LR LR 19 40 28.0
comp=Z,50nm,20.3s,baz=242,slow=37
ILAR Eielson Array 48.95 32 P **P 19 19 10.0 +0.1**
ILAR pmax pmax
comp=Z,7.0nm,0.8s
ILAR MLR MLR
comp=Z,50nm,20.3s
ILAR Eielson Array 48.95 32 P **P 19 19 10.0 +0.1**
GKN Gorkha 48.97 277 *e*P **P 19 19 10.5 -0.2**
comp=Z,90nm,1.1s
PAX Paxson 49.66 35 *e*P **P 19 19 15.0 -0.5**
PAX pmax pmax
comp=Z,5.0nm,1.0s
PAX Paxson 49.66 35 *e*P **P 19 19 15.0 -0.5**
comp=Z,5.3nm,1.0s
SOEI Soe 49.68 204 P **P 19 19 13.4 -2.7**
comp=Z,60nm,1.1s
SOEI Soe 49.68 204 *e*P **P 19 19 15.3 -0.8**

comp=Z,52nm,1.0s
KOLN Koldanda 49.89 277 *e*P **P 19 19 17.6 -0.3**
comp=Z,20nm,0.9s
PYUN Piuthan 50.23 278 *e*P **P 19 19 20.7 +0.3**
comp=Z,102nm,1.1s
DOT Dot Lake 50.24 34 *e*P **P 19 19 20.6 +0.9**
comp=Z,17nm,0.9s
BMRM Bremner River 50.25 37 *e*P **P 19 19 21.6 +1.7**
comp=Z,16nm,0.9s
TKM2 Tokmak 2 50.36 299 *e*P **P 19 19 21.7 +0.5**
TKM2 pmax pmax
comp=Z,3.0nm,0.8s
TKM2 Tokmak 2 50.36 299 *e*P **P 19 19 21.7 +0.5**
comp=Z,3.2nm,0.8s
FRU Bishkek 51.07 299 *e*P P 19 19 34.0 +7.6
OTUK Ortayu 51.09 306 P **P 19 19 26.3 -0.1**
OTUK pmax pmax
comp=Z,15nm,1.1s
BVAR Borovoye Array 51.16 312 P **P 19 19 26.7 -0.1**
comp=Z,2.4nm,0.8s,baz=79,slow=7.7,SNR=16
KSH Kashi 51.17 294 P P 19 19 31.4 +4.1
KSH *e*pP pP 19 20 10.9 +41
KSH *e*sP sP 19 20 30.8 +60
KSH *e*PcP **PcP 19 20 47.3 +4.6**
KSH *e*PP PP 19 21 30.3 +6.4
KSH PcS **PcS 19 24 43.3 +2.8**
KSH S S 19 26 29.4 -16
KSH pmax pmax
comp=Z,78nm,4.8s
KSH LR LR
comp=N,170nm,11.1s
KSH LR LR
comp=E,170nm,10.1s
KSH LR LR
comp=Z,320nm,14.5s
BRVK Borovoye 51.22 312 ⇓*e*P **P 19 19 27.1 -0.2**
BRVK pmax pmax
comp=Z,8.0nm,1.0s
BRVK Borovoye 51.22 312 *e*P **P 19 19 27.2 0.0**
comp=Z,5.7nm,0.9s
AAK Ala-Archa 51.22 299 *e*P **P 19 19 27.3 -0.4**
AAK pmax pmax
comp=Z,8.0nm,1.0s
AAK Ala-Archa 51.22 299 *e*P **P 19 19 27.3 -0.4**
comp=Z,8.4nm,1.0s
EKS2 Erkin-Say 51.72 299 *e*P **P 19 19 30.9 -0.4**
EKS2 pmax pmax
comp=Z,4.0nm,0.9s
EKS2 Erkin-Say 51.72 299 *e*P **P 19 19 30.9 -0.4**
comp=Z,4.2nm,0.9s
PSI Prapat 52.60 240 P P 19 19 42.3 +4.1
MNAS Manas 52.66 299 P **P 19 19 38.9 +0.5**
MNAS pmax pmax
comp=Z,12nm,0.9s
KKAR Karatay Array 53.84 300 *e*P **P 19 19 46.9 0.0**
KKAR pmax pmax
comp=Z,12nm,0.9s
KKAR Karatay Array 53.84 300 *e*P **P 19 19 46.9 0.0**
comp=Z,12nm,0.9s
GSI Gunungsitoli 54.61 240 *e*P **P 19 19 51.9 -0.8**
comp=Z,68nm,1.1s
SVE Sverdlovsk 55.66 319 ⇓*i*P **P 19 20 00.7 +0.9**
SVE pmax pmax
comp=Z,25nm,1.0s
SVE MLR MLR
comp=Z,160nm,15.0s
DZET Dzherino 56.60 296 P **P 19 20 07.2 +0.2**
DZET pmax pmax
comp=Z,15nm,1.0s
ARU Arti 56.87 319 *d i*P **P 19 20 08.4 -0.1**
ARU 19 21 06.3
ARU 19 22 11.1
ARU S **S 19 28 00.3 -1.7**
ARU SS **SS 19 31 39.8 -10**
ARU Arti 56.87 319 *e*P **P 19 20 08.3 -0.2**
comp=Z,17nm,1.0s
FITZ Fitzroy Crossi 57.19 199 P **P 19 20 11.0 -0.1**
comp=Z,3.4nm,0.7s,baz=7.3,slow=6.4,SNR=8.6
WRAB Tennant Creek 57.27 189 *e*P **P 19 20 11.0 -0.6**
WRAB pmax pmax
comp=Z,23nm,1.0s
WRAB Tennant Creek 57.27 189 *e*P **P 19 20 11.0 -0.6**
comp=Z,23nm,1.0s
WRA Warramunga Arr 57.28 189 P **P 19 20 11.2 -0.5**
comp=Z,13nm,0.7s,baz=7.1,slow=7.4,SNR=78
WRA Warramunga Arr 57.28 189 *i* P **P 19 20 11.1 -0.6**
WRA pmax pmax
comp=Z,13nm,0.7s
ABKAR Akbulak array 58.55 310 *e*P **P 19 20 20.1 -0.3**
comp=Z,5.4nm,0.8s
HYB Hyderabad 59.09 269 *i* P **P 19 20 24.0 -0.6**
BBB Bella Bella 61.38 45 LR LR 19 41 53.6
comp=Z,20nm,19.8s,baz=278,slow=31
YKA Yellowknife Ar 63.28 30 P **P 19 20 53.3 +1.0**
comp=Z,1.6nm,0.8s,baz=300,slow=6.4,SNR=19
KLMR Klimovskoe 64.15 328 *e*P **P 19 20 56.7 -1.4**
KLMR pmax pmax
comp=Z,9.0nm,0.9s
ARCES ARCESS Array B 64.22 340 P **P 19 20 58.8 +0.4**
comp=Z,2.6nm,0.8s,baz=56,slow=8.1,SNR=3.4
ARCES LR LR 19 53 15.7
comp=Z,87nm,20.4s,baz=47,slow=40
GEYT Alibeck 64.56 299 P **P 19 21 01.2 0.0**
comp=Z,3.2nm,0.8s,baz=35,slow=3.6,SNR=14
VRH Novokhopyorsk 68.10 318 *e*P **P 19 21 22.6 -1.0**
VRH pmax pmax
comp=Z,20nm,1.0s
VRH MLR MLR
comp=Z,140nm,13.0s
OBN Obninsk 68.55 324 ⇓*e*P **P 19 21 24.8 -1.5**
OBN *e* 19 23 55.7
OBN *e*S S 19 30 17.0 -11
OBN pmax pmax
comp=Z,12nm,1.7s
OBN MLR MLR
comp=Z,228nm,16.0s
LPSR Galich'ya Gora 68.79 321 *e*P **P 19 21 27.8 -0.1**
LPSR pmax pmax
comp=Z,10.0nm,1.0s
LPSR MLR MLR
comp=Z,110nm,13.0s
FINES FINESS Array B 69.14 333 P **P 19 21 29.8 -0.2**
comp=Z,12nm,0.8s,baz=60,slow=7.5,SNR=35
FINES LR LR 19 55 43.5
comp=Z,149nm,18.3s,baz=46,slow=39
FINES FINESS Array B 69.14 333 *i* P **P 19 21 30.2 +0.3**
FINES pmax pmax
comp=Z,12nm,0.8s
VSR Storozhevoye 69.44 319 *e*P **P 19 21 31.4 -0.6**
VSR pmax pmax
comp=Z,10.0nm,0.9s
VSR MLR MLR
comp=Z,140nm,13.0s
SUMG Summit 70.59 0 *e*P **P 19 21 39.9 +0.7**
SUMG pmax pmax
comp=Z,6.0nm,0.8s
SUMG Summit 70.59 0 *e*P **P 19 21 39.9 +0.7**
comp=Z,6.4nm,0.8s
VSU Vasula 70.82 330 ⇓*e*P **P 19 21 40.2 -0.1**
VSU pmax pmax
comp=Z,37nm,0.9s
ZEI Tsey 71.42 310 *e*P **P 19 21 43.2 -1.3**
ZEI pmax pmax
comp=Z,12nm,1.0s
KBZ Khabaz 71.51 311 P **P 19 21 45.5 +0.7**
comp=Z,7.1nm,0.9s,baz=44,slow=2.7,SNR=16
KIV Kislovodsk 71.51 311 *e*P **P 19 21 45.9 +1.0**
KIV pmax pmax
comp=Z,21nm,0.9s
KIV MLR MLR
comp=Z,128nm,18.0s
KIV Kislovodsk 71.51 311 *e*P **P 19 21 45.5 +0.6**
comp=Z,22nm,1.0s
WVOR Wild Horse Val 71.76 50 *e*P **P 19 21 45.5 -1.0**
WVOR pmax pmax
comp=Z,6.0nm,1.2s
WVOR Wild Horse Val 71.76 50 *e*P **P 19 21 45.5 -1.0**
comp=Z,5.7nm,1.2s
NEY Neytrino 71.88 311 P **P 19 21 49.0 +1.7**
NEY pmax pmax
comp=Z,1.0nm,1.0s
MFID Camas Ranch 72.91 48 *e*P **P 19 21 53.6 +0.3**
comp=Z,4.5nm,1.1s
CMB Columbia Colle 73.10 55 *e*P **P 19 21 56.3 +1.8**
CMB pmax pmax
comp=Z,72nm,1.2s

CMB	Columbia Colle	73.10	55	eP	P	19 21 56.3	+1.8
	comp=Z,72nm,1.2s						
FCC	Fort Churchill	73.52	27	eP	P	19 21 56.5	+0.1
FCC				pmax	pmax		
	comp=Z,22nm,1.2s						
FCC	Fort Churchill	73.52	27	eP	P	19 21 56.5	+0.1
	comp=Z,22nm,1.2s						
HLID	Hailey	73.66	48	eP	P	19 21 60.0	+2.1
	comp=Z,6.0nm,1.1s						
ANN	Anapa	74.10	314	eP	P	19 21 55.8	-4.3
ANN				e*PP	sP	19 22 06.7	+2.6
ANN				e		19 22 12.7	
ANN				e		19 24 42.3	
ANN				ePPP	PPP	19 26 28.1	
ANN				eS	SKiKP	19 31 23.1	-5.1
ANN				pmax	pmax		
	comp=Z,12nm,1.3s						
NVAR	Mina Array Bea	74.23	54	P	P	19 22 03.2	+1.9
	comp=Z,4.7nm,0.9s,baz=286,slow=6.4,SNR=23						
NB2	NORSAR Subarra	74.44	338	P	P	19 22 01.7	-0.2
	comp=Z,7.4nm,1.0s,baz=38,slow=5.9						
NB2	NORSAR Subarra	74.44	338	P	P	19 22 00.9	-1.0
NB2				pmax	pmax		
	comp=Z,6.0nm,1.0s						
NOA	NORSAR Array B	74.44	338	P	P	19 22 02.0	+0.1
	comp=Z,4.1nm,0.8s,baz=39,slow=5.8,SNR=13						
NOA				LR	LR	19 59 36.0	
	comp=Z,96nm,19.7s,baz=25,slow=40						
AKASG	Malin Array Be	74.76	323	P	P	19 22 03.6	-0.3
	comp=Z,5.2nm,0.6s,baz=46,slow=6.0,SNR=23						
AKASG				LR	LR	19 59 43.1	
	comp=Z,106nm,18.8s,baz=60,slow=40						
H17A	Grant Village	75.38	45	eP	P	19 22 11.3	+3.3
	comp=Z,23nm,1.2s						
IMW	Indian Meadow	75.48	46	eP	P	19 22 11.3	+2.8
	comp=Z,10nm,0.8s						
MOOW	Moose Ponds	75.68	46	eP	P	19 22 10.7	+1.0
	comp=Z,22nm,1.6s						
LOHW	Long Hollow	75.85	46	eP	P	19 22 12.9	+2.4
	comp=Z,1.4nm,0.7s						
R11A	Troy Canyon, C	76.01	52	eP	P	19 22 13.6	+2.0
	comp=Z,14nm,1.3s						
HWUT	Hardware Ranch	76.52	48	eP	P	19 22 15.9	+1.5
	comp=Z,17nm,1.4s						
DUG	Dugway, Tooele	76.63	50	eP	P	19 22 16.7	+1.8
DUG				pmax	pmax		
	comp=Z,10.0nm,0.9s						
DUG	Dugway, Tooele	76.63	50	eP	P	19 22 16.7	+1.8
	comp=Z,9.6nm,0.9s						
BW06	Boulder Array	76.97	46	eP	P	19 22 18.3	+1.3
	comp=Z,5.2nm,1.0s						
PDAR	Pinedale Array	76.97	46	P	P	19 22 18.1	+1.1
	comp=Z,1.9nm,0.8s,baz=279,slow=2.4,SNR=14						
PFO	Pinyon Flats O	78.25	57	P	P	19 22 26.4	+2.3
	comp=Z,2.2nm,0.6s,baz=140,slow=13,SNR=2.2						
KWP	Kalwaria Pacla	78.56	325	eP	P	19 22 26.7	+1.3
KWP	Kalwaria Pacla	78.56	325	eP	P	19 22 26.7	+1.3
ULM	Lac du Bonnet	78.94	34	P	P	19 22 28.8	+1.3
	comp=Z,1.3nm,0.4s,baz=334,slow=6.9,SNR=2.5						
RSSD	Black Hills	79.17	42	eP	P	19 22 30.2	+1.1
RSSD				pmax	pmax		
	comp=Z,2.0nm,0.7s						
RSSD	Black Hills	79.17	42	eP	P	19 22 30.2	+1.1
	comp=Z,2.3nm,0.7s						
KOLS	Kolonicke sedl	79.26	325	eP	P	19 22 29.9	+0.6
KOLS				pmax	pmax		
	comp=Z,4.0nm,1.1s						
KOLS	Kolonicke sedl	79.26	325	eP	P	19 22 29.9	+0.6
STHS	Stebnicka Huta	79.39	325	eP	P	19 22 31.2	+1.2
STHS				pmax	pmax		
	comp=Z,4.0nm,0.9s						
STHS	Stebnicka Huta	79.39	325	eP	P	19 22 31.2	+1.2
BRTR	Keskin Array B	79.45	312	P	P	19 22 31.0	+0.4
	comp=Z,1.6nm,1.0s,baz=101,slow=3.9,SNR=11						
BRTR	Keskin Array B	79.45	312	i P	P	19 22 31.2	+0.6
BRTR				pmax	pmax		
	comp=Z,2.0nm,1.0s						
OJC	Ojcow	79.45	327	eP	P	19 22 31.2	+0.9
OJC	Ojcow	79.45	327	eP	P	19 22 31.2	+0.9
CRVS	Cervenica-Dubn	79.66	325	eP	P	19 22 32.1	+0.7
CRVS	Cervenica-Dubn	79.66	325	eP	P	19 22 32.1	+0.7
NIE	Niedzica	79.81	326	eP	P	19 22 33.5	+1.2
NIE	Niedzica	79.81	326	eP	P	19 22 33.5	+1.2
LANS	Liptovska Anna	80.38	326	eP	P	19 22 36.8	+1.4
LANS	Liptovska Anna	80.38	326	eP	P	19 22 36.8	+1.4
KECS	Kecovo	80.41	325	eP	P	19 22 37.9	+2.4
KECS				pmax	pmax		
	comp=Z,2.0nm,1.2s						
KECS	Kecovo	80.41	325	eP	P	19 22 37.9	+2.4
KSP	Ksiaz	80.48	329	eP	P	19 22 36.9	+1.1
KSP	Ksiaz	80.48	329	eP	P	19 22 36.9	+1.1
DPC	Dobruska-Polom	80.84	328	eP	P	19 22 39.0	+1.2
DPC				epP	PcP	19 22 44.2	-0.2
DPC				esP	sP	19 22 47.0	+5.1
DPC				AMS	AMS	20 01 00.0	
	comp=Z,100nm,12.9s						
DPC	Dobruska-Polom	80.84	328	eP	P	19 22 39.0	+1.2
DPC				e		19 22 47.0	
DPC				MLR	MLR		
	comp=Z,100nm,12.9s						
MVCO	Mesa Verde	81.12	50	P	P	19 22 40.9	+1.1
	comp=Z,6.7nm,0.8s						
VYHS	Vyhne	81.15	326	eP	P	19 22 40.4	+1.0
VYHS				pmax	pmax		
	comp=Z,2.0nm,0.9s						
VYHS	Vyhne	81.15	326	eP	P	19 22 40.4	+1.0
BRG	Berggiesshubel	81.42	330	e(P)	P	19 22 51.4	+11
	comp=Z,7.4nm,1.5s						
BRG	Berggiesshubel	81.42	330	e(P)	P	19 22 51.4	+11
	comp=Z,7.4nm,1.5s						
BRG	Berggiesshubel	81.42	330	eP	P	19 22 51.4	+11
BRG				pmax	pmax		
	comp=Z,7.0nm,1.5s						
CLL	Collm	81.45	331	i P	P	19 22 40.6	-0.4
	comp=Z,12nm,1.5s						
CLL				i		19 22 51.7	
CLL				LmH		19 56 00.0	
	comp=N,200nm,19.6s						
CLL				LmH		19 56 00.0	
	comp=E,200nm,20.5s						
CLL	Collm	81.45	331	i P	P	19 22 40.6	-0.4
CLL				i		19 22 51.7	
CLL				pmax	pmax		
	comp=Z,22nm,1.5s						
URZ	Urewera	81.53	153	P	P	19 22 44.1	+2.8
	comp=Z,13nm,0.9s,baz=146,slow=20,SNR=3.0						
GOPC	GO Pecny, Ondr	81.82	329	AMS	AMS	20 02 00.0	
	comp=Z,200nm,14.5s						
PRU	Pruhonice	81.86	329	eP	P	19 22 44.1	+0.9
PRU				AMS	AMS	20 02 10.0	
	comp=Z,200nm,12.5s						
PRU	Pruhonice	81.86	329	eP	P	19 22 44.1	+0.9
PRU				MLR	MLR		
	comp=Z,200nm,12.5s						
TREC	Trest	82.00	328	AMS	AMS	20 04 50.0	
	comp=Z,200nm,16.6s						
NKC	Novy Kostel	82.51	330	AMS	AMS	20 04 50.0	
	comp=Z,200nm,15.1s						
KHC	Kasperske Hory	82.92	329	eP	P	19 22 49.5	+0.7
KHC				epP	PcP	19 22 56.8	+3.2
KHC				AMS	AMS	20 05 10.0	
	comp=Z,200nm,17.8s						
KHC	Kasperske Hory	82.92	329	eP	P	19 22 49.5	+0.7
KHC				e		19 22 56.8	
KHC				MLR	MLR		
	comp=Z,200nm,17.8s						
KHC	Kasperske Hory	82.92	329	eP	P	19 22 49.5	+0.7
	comp=Z,1.2nm,0.8s						
GERES	GERESS Array B	83.09	329	P	P	19 22 49.6	-0.2
	comp=Z,1.1nm,0.7s,baz=35,slow=4.9,SNR=9.1						
RPZ	Rata Peaks	84.53	160	LR	LR	19 54 37.9	
	comp=Z,262nm,21.7s,baz=187,slow=31						
121A	Cookes Peak, D	84.60	53	eP	P	19 22 59.8	+1.9
	comp=Z,14nm,0.9s						
BFO	Black Forest	85.65	331	i P	P	19 23 03.8	+1.2
WMOK	Wichita Mounta	88.58	46	eP	P	19 23 18.1	+1.0
WMOK				pmax	pmax		
	comp=Z,10.0nm,1.4s						
WMOK	Wichita Mounta	88.58	46	eP	P	19 23 18.1	+1.0
	comp=Z,9.8nm,1.4s						
TXAR	Lajitas Array	89.36	53	P	P	19 23 21.8	+0.8
	comp=Z,1.4nm,0.6s,baz=299,slow=3.4,SNR=24						
TXAR	Lajitas Array	89.36	53	P	P	19 23 21.8	+0.8
TXAR				pmax	pmax		
	comp=Z,2.0nm,0.8s						
JCT	Junction City	90.99	50	eP	P	19 23 29.0	+0.5
JCT	Junction City	90.99	50	eP	P	19 23 29.0	+0.5
MIAR	Mount Ida	91.65	43	eP	P	19 23 31.2	-0.2
MIAR				pmax	pmax		
	comp=Z,17nm,1.5s						
MIAR	Mount Ida	91.65	43	eP	P	19 23 31.2	-0.2
	comp=Z,17nm,1.5s						
ESDC	Sonseca Array	97.59	335	LR	LR	20 13 21.8	
	comp=Z,77nm,18.6s,baz=30,slow=39						
TORD	Torodi Ar. Bea	117.89	316	PKP	PKPdf	19 29 10.5	-0.7
	comp=Z,0.6nm,0.8s,baz=76,slow=0.6,SNR=3.3						
QSPA	South Pole Qui	126.87	180	ePKPdf	PKPdf	19 29 27.6	+0.7
LPAZ	La Paz	145.88	61	PKPbc	PKPab	19 30 04.7	-0.4
	comp=Z,4.6nm,0.8s,baz=339,slow=3.7,SNR=14						
LCO	Las Campanas	151.12	83	ePKPbc	PKPbc	19 30 17.7	0.0

MAN 16 19:12:36, 17°.91N×120°.46E, h_{22km}, mb3.9, ML2.7, MS2.4, 1D, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SIPP	Brgy, Tapao	0.02	6	⇓eP	Pb	19 12 40.6	+0.8
SIPP				eS	Sb	19 12 45.9	+3.5
ABRA	Dolores	0.35	136	eP	Pn	19 12 45.0	-0.8
ABRA				eS	Sn	19 12 53.8	+1.6
APYP	Conner	0.75	93	eP	Pb	19 12 50.6	+0.2
APYP				eS	Sn	19 13 07.0	+5.0
CAUP	Cauayan	1.62	126	eP	Pb	19 13 05.0	-0.2

*IDC **16** 19:14:03.2±0.4, 20°.48S×168°.42E, $h0^{km}$, mb5.0/27, mb1 5.1/29, mb1mx5.0/38, mbtmp5.0/29, ML5.1/2, MS4.1/12, Ms1 4.1/12, ms1mx4.0/27, Error ellipse: s-maj=14.0km s-min=12.3km az=128.0*

*NEIC **16** 19:14:05.0±0.1, 20°.39S×168°.33E, $h10^{km}$, mb5.4/100, Error ellipse: s-maj=5.0km s-min=3.9km az=154.0*

*GCMT **16** 19:14:05.0±0.2, 20°.36S×168°.27E, $h13^{km}$, MW5.1/97, Moment Tensor Solution. s74,c107; s97,c172; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-5.45±.16; $M_{\theta\theta}$1.06±.11; $M_{\phi\phi}$4.39±.12; $M_{r\theta}$-0.28±.28; $M_{\theta\phi}$1.99±.08; $M_{\phi r}$0.58±.26; Best double couple: $M_0$5.42200×10^{16} NP1:ϕ_s200.00000°, δ47.00000°, λ-97.00000°. NP2: ϕ_s30.00000°, δ43.00000°, λ-83.00000°. Principal axes: T 5.3350, Plg2.0000°, Azm295.0000°; N 0.1740, Plg5.0000°, Azm205.0000°; P -5.5090, Plg85.0000°, Azm48.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

*ISCJB **16** 19:14:06.1±0.1, 20°.41S±0°.03×168°.31E±0°.02, $h26^{km}$, mb5.2/158, MS4.3/24 Error ellipse: s-maj=4.4km s-min=3.1km az=157.4*

*MOS **16** 19:14:06.7±1.3, 20°.44S×168°.34E, $h33^{km}$, mb5.4/65, Error ellipse: s-maj=17.9km s-min=11.2km az=163.6*

*BJI **16** 19:14:06.6, 19°.99S×168°.31E, $h19^{km}$, mb5.0/45, mB5.2/32, Ms4.8/23, Ms7 4.4/25*

ISC 16 19:14:07.4±0.2, 20°.45S±0°.05×168°.33E±0°.05, $h26^{km}$, n581, σ1§14/577, mb5.3/158, MS4.3/25, 19C-33D, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	2.38	227	Pn	Pn	19 14 43.4	-1.5
	118nm,0.3s,baz=104,slow=8.9,SNR=685						
DZM				Sn	Sn	19 15 11.7	-1.6
	406nm,0.3s,baz=323,slow=21,SNR=21						
MSVF	Nonsavu	9.58	75	eP	Pn	19 16 26.4	+2.6
MSVF	Nonsavu	9.58	75	ePn	Pn	19 16 26.4	+2.6
HNR	Honiara	13.62	322	Pn	Pn	19 17 19.0	+0.1
	32nm,0.3s,baz=203,slow=5.9,SNR=13						
HNR				Sn	Sn	19 19 49.7	+0.2
	11nm,0.3s,baz=188,slow=13,SNR=3.5						
HNR	Honiara	13.62	322	eP	Pn	19 17 19.0	+0.1
HNR	Honiara	13.62	322	ePn	Pn	19 17 17.8	-1.1
HNR				Sn	Sn	19 19 49.7	+0.2
EIDS	Eidsvold	16.62	250	eP	Pn	19 17 59.0	+0.3
	20nm,1.0s						
ARMA	Armidale	18.03	233	P	P	19 18 18.2	+1.5
	baz=18,SNR=44						
ARMA	Armidale	18.03	233	ePn	P	19 18 19.0	+2.3
	30nm,0.9s						
RMQ	Roma	18.92	248	P	Pn	19 18 29.1	+2.0
	baz=19,SNR=16						
URZ	Urewera	19.31	159	P	Pn	19 18 32.9	+1.3
	1.0nm,0.3s,baz=9.1,slow=7.2,SNR=7.2						
URZ				LR	LR	19 24 22.6	
	comp=Z,600nm,19.1s,baz=346,slow=32						
URZ	Urewera	19.31	159	eP	Pn	19 18 31.8	+0.1
	290nm,1.7s						
MGCD	Mangrove Creek	19.90	227	P	Pn	19 18 40.3	+1.5
	baz=20,SNR=7.4						
BKZ	Black Stump Fm	19.93	161	eP	Pn	19 18 39.1	0.0
	93nm,1.4s						
AFI	Afiamalu	20.08	74	P	Pn	19 18 40.2	-0.9
	16nm,0.5s,baz=51,slow=5.9,SNR=3.0						
CTA	Charters Tower	20.71	267	P	Pn	19 18 48.2	-0.1
	52nm,0.9s,baz=89,slow=14,SNR=24						
CTAO	Charters Tower	20.71	267	eP	Pn	19 18 48.0	-0.4
CTAO				pmax	pmax		
	comp=Z,52nm,0.8s						
CTAO	Charters Tower	20.71	267	eP	Pn	19 18 48.0	-0.4
	comp=Z,52nm,0.8s						
THZ	Tophouse	21.60	171	eP	P	19 18 56.3	+0.9
	comp=Z,68nm,0.9s						
CNB	Canberra Magne	22.31	224	P	P	19 19 04.5	+1.5
	baz=22,SNR=15						
YNG	Young	22.38	228	P	P	19 19 06.0	+2.1
	baz=22,SNR=14						
LTZ	Lake Taylor	22.51	172	eP	P	19 19 04.4	-0.7
	comp=Z,256nm,1.7s						
CAN	Canberra	22.55	225	eP	P	19 19 06.6	+1.0
CAN				pmax	pmax		
	comp=Z,142nm,1.2s						
CAN	Canberra	22.55	225	eP	P	19 19 06.6	+1.0
	comp=Z,142nm,1.2s						
RABL	Rabaul	22.55	314	eP	P	19 19 04.1	-1.7
	comp=Z,167nm,1.0s						
MTSU	Mount Surprise	22.77	272	P	P	19 19 09.6	+1.4
	baz=23,SNR=32						
QLP	Quilpie	22.90	250	P	P	19 19 10.1	+0.8
	baz=23,SNR=44						
OXZ	Oxford	23.02	173	eP	P	19 19 11.4	+1.0
	comp=Z,276nm,1.9s						
CMSA	Cobar Meteorol	23.10	237	P	P	19 19 12.3	+0.9
	baz=23,SNR=58						
PMG	Port Moresby	23.18	295	P	P	19 19 13.0	+0.7
	comp=Z,31nm,0.8s,baz=77,slow=3.5,SNR=6.6						
PMG				LR	LR	19 27 30.0	
	comp=Z,965nm,18.3s,baz=130,slow=35						
PMG	Port Moresby	23.18	295	⇑eP	P	19 19 12.3	0.0
PMG				pmax	pmax		
	comp=Z,331nm,1.5s						
PMG	Port Moresby	23.18	295	eP	P	19 19 12.0	-0.3
	comp=Z,242nm,1.8s						
RPZ	Rata Peaks	23.31	175	P	P	19 19 13.4	+0.1
	comp=Z,25nm,0.7s,baz=317,slow=0.8,SNR=9.1						
RPZ				LR	LR	19 28 09.3	
	comp=Z,2μm,18.1s,baz=344,slow=36						
MILA	Mila	23.51	221	P	P	19 19 17.1	+1.7
	baz=24,SNR=12						
COEN	Coen	24.86	281	P	P	19 19 25.4	-2.7
	baz=25,SNR=3.9						
COEN	Coen	24.86	281	eP	P	19 19 25.4	-2.7
	comp=Z,32nm,0.8s						
TOO	Toolangi	26.16	224	P	P	19 19 41.1	+1.4
	baz=26,SNR=19						
TOO	Toolangi	26.16	224	P	P	19 19 41.7	+2.0
TOO				pmax	pmax		
	comp=Z,52nm,1.4s						
STKA	Stephens Creek	26.48	239	P	P	19 19 43.8	+1.2
	comp=Z,37nm,0.6s,baz=83,slow=10,SNR=148						
STKA				PcP	PcP	19 23 08.0	+0.6
	comp=Z,6.0nm,0.7s,baz=61,slow=5.4,SNR=3.8						
STKA	Stephens Creek	26.48	239	P	P	19 19 43.5	+0.9
	baz=26,SNR=33						
QIS	Mount Isa	26.89	265	P	P	19 19 46.7	+0.2
	baz=27,SNR=3.8						
MOO	Moorlands	28.24	214	P	P	19 19 59.9	+1.7
	baz=28,SNR=5.7						
ARPS	Mount Arapiles	28.24	229	P	P	19 19 59.7	+1.3
	baz=28,SNR=17						
HTT	Hallett	29.12	238	P	P	19 20 07.2	+0.9
	baz=29,SNR=24						
RAR	Rarotonga	29.80	97	LR	LR	19 29 43.7	
	comp=Z,360nm,21.7s,baz=274,slow=32						
BBOO	Buckleboo	31.23	240	P	P	19 20 25.5	+0.6
	baz=31,SNR=32						
BBOO	Buckleboo	31.23	240	eP	P	19 20 24.7	-0.3
	comp=Z,40nm,0.7s						
WRA	Warramunga Arr	31.87	265	P	P	19 20 29.4	-1.2
	comp=Z,3.2nm,0.5s,baz=92,slow=8.5,SNR=18						
WRA				PcP	PcP	19 23 19.6	-1.5
	comp=Z,9.0nm,1.1s,baz=95,slow=2.6,SNR=6.4						
WRA				PKiKP	PKiKP	19 30 48.4	-1.5
	comp=Z,1.3nm,0.7s,baz=329,slow=0.2,SNR=7.9						
ASAR	Alice Springs	32.02	258	P	P	19 20 31.4	-0.6
	comp=Z,33nm,0.7s,baz=86,slow=9.0,SNR=334						
ASAR				PcP	PcP	19 23 21.1	-0.4
	comp=Z,6.0nm,0.9s,baz=91,slow=3.4,SNR=6.4						
ASAR				PKiKP	PKiKP	19 30 48.6	-1.4
	comp=Z,0.6nm,0.6s,baz=110,slow=1.2,SNR=6.2						
GENI	Genyem	32.70	299	P	P	19 20 39.4	+1.4
	comp=Z,85nm,1.2s						
MTN	Manton Dam	36.36	276	P	P	19 21 09.8	+0.1
	baz=36,SNR=4.5						
WRKA	Warakurna	37.11	255	P	P	19 21 15.5	-0.5
	baz=37,SNR=5.0						
TBI	Tubuai	39.17	102	eLR	LR	19 32 25.4	
	comp=Z,1μm,30.5s,baz=255						
FAKI	Fak Fak	39.24	292	P	P	19 21 36.6	+2.6
	comp=Z,51nm,0.9s						
PPT2	Papeete2	39.82	93	eP	P	19 21 39.1	+0.2
	comp=Z,56nm,1.0s						
PPT2				eS	S	19 27 42.9	+0.8
	comp=Z,275nm,26.0s						
PPT2				eLR	LR	19 32 41.7	
	comp=Z,2μm,28.8s,baz=253						
PPT	Papeete	39.83	93	P	P	19 21 37.8	-1.1
	comp=Z,38nm,0.6s,baz=49,slow=22,SNR=4.5						
PPT				LR	LR	19 34 22.5	
	comp=Z,349nm,20.4s,baz=290,slow=31						
TIAR	Tiarei	40.05	93	eP	P	19 21 39.6	-1.1
	comp=Z,17nm,0.8s						
FITZ	Fitzroy Crossi	40.28	266	P	P	19 21 42.6	-0.1
	comp=Z,14nm,0.7s,baz=106,slow=6.7,SNR=20						
FITZ	Fitzroy Crossi	40.28	266	P	P	19 21 43.0	+0.4
	baz=40,SNR=13						
FITZ	Fitzroy Crossi	40.28	266	eP	P	19 21 42.8	+0.1
	comp=Z,42nm,0.8s						
KMBL	Kambalda	42.89	246	P	P	19 22 03.8	-0.1
	baz=43,SNR=5.4						
PALU	Palau	43.25	306	P	P	19 22 07.4	+0.5
	baz=43,SNR=7.1						
NLAI	Namlea	43.64	288	P	P	19 22 10.6	+0.5
	comp=Z,58nm,1.3s,comp=Z,763nm						
SANI	Sanana	45.17	288	P	P	19 22 28.8	+6.5
MBWA	Marble Bar	45.29	260	eP	P	19 22 23.2	0.0
	comp=Z,181nm,1.0s						
KLBR	Kellerberrin	46.42	245	P	P	19 22 31.8	-0.3
	baz=46,SNR=6.6						
NWAO	Narrogin (SRO)	46.90	244	P	P	19 22 35.7	-0.2
	baz=47,SNR=8.5						
NWAO	Narrogin (SRO)	46.90	244	eP	P	19 22 35.5	-0.4
NWAO				pmax	pmax		
	comp=Z,66nm,1.0s						
NWAO	Narrogin (SRO)	46.90	244	eP	P	19 22 35.5	-0.4
	comp=Z,66nm,1.0s						
RKGY	Rocky Gully	47.20	241	P	P	19 22 38.2	+0.1
	baz=47,SNR=6.6						
BLDU	Ballidu	47.31	247	P	P	19 22 38.6	-0.5
	baz=47,SNR=7.4						
MORW	Morawa	47.93	249	P	P	19 22 43.7	-0.1
	baz=48,SNR=6.0						
LUWI	Luwuk	48.49	288	P	P	19 22 46.2	-2.1
	comp=Z,92nm,1.2s,comp=Z,1μm						
LUWI	Luwuk	48.49	288	eP	P	19 22 47.3	-1.1
	comp=Z,67nm,0.8s						
KAPI	Kappang	49.59	281	eP	P	19 22 56.1	-0.7
	comp=Z,35nm,1.1s						
MRSI	Marisa	49.91	289	P	P	19 23 08.1	+8.9
	comp=Z,23nm,1.2s,comp=Z,2μm						
MRSI	Marisa	49.91	289	P	P	19 22 57.0	-2.2
	comp=Z,23nm,1.2s,comp=Z,2μm						
GIRL	Giralia	50.13	257	P	P	19 22 58.3	-2.6
	baz=50,SNR=3.5						
TTSI	Tana Toraja	50.30	284	P	P	19 23 13.5	+11
TWSI	Taliwang, Sumb	50.94	275	P	P	19 23 08.2	+1.2
	comp=Z,34nm,1.2s						
TAOE	Nuku Hiva Isla	50.97	85	eLR	LR	19 38 13.6	
	comp=Z,1μm,29.8s,baz=241						
PCI	Palu	51.18	286	P	P	19 23 11.2	+2.3
	comp=Z,135nm,1.1s,comp=Z,2μm						
RKT	Rikitea	52.44	104	eS	S	19 30 43.9	+0.9
	comp=Z,255nm,31.5s						
RKT				eLR	LR	19 38 31.0	
	comp=Z,606nm,33.0s,baz=260						
SRBI	Singaraja	52.71	275	P	P	19 23 21.4	+1.2
	comp=Z,44nm,1.4s						
JAGI	Jajag, Banyuwa	53.57	275	P	P	19 23 26.8	+0.2
	comp=Z,43nm,1.3s						
JAGI	Jajag, Banyuwa	53.57	275	eP	P	19 23 26.1	-0.5
	comp=Z,73nm,1.3s						
ABJI	Asem Bagus	53.72	275	P	P	19 23 28.8	+1.1
	comp=Z,45nm,1.1s						
MYLDM	Lahad Datu	55.16	292	⇑P	P	19 23 38.7	+0.6
TSM	Tawau	55.28	291	⇓P	P	19 23 39.3	+0.3
SDKM	Sandakan	56.51	292	⇑P	P	19 23 48.5	+0.6
VNDA	Vanda	57.20	182	P	P	19 23 50.9	-0.9
	comp=Z,5.9nm,0.8s,baz=359,slow=8.1,SNR=38						
VNDA				PcP	PcP	19 24 46.6	+0.6
	comp=Z,3.3nm,1.0s,baz=323,slow=5.2,SNR=3.2						
VNDA				LR	LR	19 46 27.0	
	comp=Z,95nm,18.0s,baz=7.5,slow=34						
SBA	Scott Base	57.45	180	eP	P	19 23 54.4	+0.9
SBA				pmax	pmax		
	comp=Z,66nm,1.2s						
SBA	Scott Base	57.45	180	eP	P	19 23 54.4	+0.9
	comp=Z,66nm,1.2s						
KKM	Kota Kinabalu	57.56	292	P	P	19 23 55.8	+0.4
	comp=Z,41nm,0.9s						
CASY	Casey	58.68	204	eP	P	19 24 01.5	-0.8
	comp=Z,19nm,0.8s						
SBUM	Sibu	59.49	286	⇑P	P	19 24 08.9	+0.1
SBUM	Sibu	59.49	286	eP	P	19 24 09.9	+1.1
	comp=Z,17nm,1.1s						
CISI	Cisompet, Garu	59.80	273	eP	P	19 24 09.8	-1.2
	comp=Z,81nm,1.1s						
KSM	Kuching	60.81	284	⇓P	P	19 24 17.8	0.0
KSM	Kuching	60.81	284	eP	P	19 24 18.0	+0.2
	comp=Z,41nm,0.8s						
MJAR	Matsushiro Arr	63.43	333

comp=Z,48nm,1.1s
USRK Ussuriysk Ar. 72.42 333 P **P** **19 25 32.0 +0.8**
comp=Z,19nm,0.9s,baz=139,slow=4.2,SNR=22
USRK LR LR 19 59 28.8
comp=Z,67nm,18.6s,baz=158,slow=38
GSI Gunungsitoli 72.47 278 *e*P **P** **19 25 31.7 -0.6**
comp=Z,78nm,1.1s
CHBT CHBT 72.78 291 P **P** **19 25 35.6 +1.6**
comp=Z,31nm,1.3s
TRTT Trang 73.06 285 P **P** **19 25 36.7 +1.0**
comp=Z,30nm,1.2s,comp=Z,2µm
SKNT Sakolnakorn 73.28 296 P **P** **19 25 38.2 +1.2**
comp=Z,43nm,0.9s
PET Petropavlovsk 73.64 354 *e*P **pP** **19 25 51.2 +4.6**
PET pmax pmax
comp=Z,34nm,0.5s
PET MLR MLR
comp=Z,200nm,20.0s
MDJ Mudanjiang 73.78 332 P **P** **19 25 40.1 +0.8**
MDJ pP pP 19 25 46.6 -1.0
MDJ sP sP 19 25 49.3 -1.4
MDJ PP **PP** **19 28 22.9 -1.5**
MDJ S **SKiKP** **19 35 06.9 -0.3**
MDJ SS **SS** **19 39 53.1 -0.5**
MDJ pmax pmax
comp=Z,23nm,1.1s
MDJ LR LR
comp=Z,97nm,23.4s
MDJ LR LR
comp=Z,83nm,25.3s
MDJ LR LR
comp=Z,140nm,22.6s
MDJ Mudanjiang 73.78 332 *e*P **P** **19 25 40.2 +0.9**
comp=Z,32nm,1.3s
PETK Petropavlovsk- 73.83 353 P **P** **19 25 39.7 +0.3**
comp=Z,16nm,0.8s,baz=126,slow=7.2,SNR=15
PETK LR LR 19 51 49.5
comp=Z,198nm,21.6s,baz=163,slow=31
KHON Khomkaen 73.97 295 P **P** **19 25 43.2 +2.2**
comp=Z,8.1nm,0.9s,comp=Z,2µm
PATY Pattaya 74.14 291 P P 19 25 55.6 +14
HABR Khabarovsk 74.78 338 *c e*P **P** **19 25 43.8 -1.2**
HABR *e**PP **pP** **19 25 54.0 +0.6**
HABR *e* 19 25 57.5
HABR *e* 19 28 30.9
HABR *e*S **S** **19 35 18.3 -1.6**
HABR *e* 19 35 52.5
HABR *e*SS **SS** **19 40 07.0 -1.6**
HABR pmax pmax
comp=E,35nm,2.1s
HABR pmax pmax
comp=N,22nm,2.1s
HABR pmax pmax
comp=Z,55nm,2.1s
HABR MLR MLR
comp=Z,121nm,18.0s
CN2 Changchun 75.05 329 *e*P **P** **19 25 47.4 +0.7**
CN2 *e*S **S** **19 35 26.8 +3.7**
CN2 pmax pmax
comp=Z,10.0nm,0.7s
CN2 LR LR
comp=Z,100nm,20.0s
CN2 LR LR
comp=Z,100nm,20.0s
CN2 LR LR
comp=Z,100nm,26.0s
PBKT Sadao Pong 75.65 294 P **P** **19 25 52.0 +1.3**
comp=Z,15nm,0.9s
ENH Enshi 75.79 310 *e*P **P** **19 25 51.2 -0.1**
comp=Z,37nm,1.1s
GYA Guiyang 75.81 306 ⇑ *i*P **P** **19 25 53.3 +1.6**
GYA pP sP 19 26 02.0 -1.0
GYA PP **PP** **19 28 45.4 +3.2**
GYA S **S** **19 35 32.8 +0.2**
GYA SKS **SKSac** **19 35 56.9 -3.9**
GYA SS **SS** **19 40 27.0 +1.7**
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,140nm,6.8s
GYA LR LR
comp=Z,580nm,20.0s
GYA LR LR
comp=Z,520nm,20.4s
GYA LR LR
comp=Z,550nm,20.2s
SRDT SRDT 76.28 291 P **P** **19 25 56.2 +1.8**
comp=Z,85nm,1.2s
UTTA Uttaradit 76.53 295 P **P** **19 25 57.6 +1.8**
comp=Z,4.1nm,1.0s,comp=Z,46nm
KLR Kul'dur 76.62 336 ⇓ *i*P **P** **19 25 55.4 -0.2**
MAW Mawson 76.99 202 P **P** **19 25 58.1 +0.6**
comp=Z,25nm,0.8s,baz=118,slow=6.7,SNR=38
MAW Mawson 76.99 202 P **P** **19 25 58.3 +0.8**
baz=77,SNR=24
NKL Nikolayevsk 77.11 343 *e*P **PcP** **19 26 10.5 +1.6**
LAMP Lampang 77.67 295 P **P** **19 26 03.9 +1.8**
comp=Z,16nm,0.9s,comp=Z,117nm
CRAI Chiangrai 77.81 297 P **P** **19 26 04.1 +1.2**
comp=Z,588nm,1.6s
KMI Kunming 78.19 303 P **P** **19 26 06.8 +1.6**
KMI pP PcP 19 26 15.4 +0.8
KMI sP sP 19 26 18.8 +2.2
KMI PP **PP** **19 29 05.3 +3.0**
KMI S **S** **19 35 58.4 -0.3**
KMI sS sS 19 36 12.8 +0.3
KMI SS **SS** **19 41 03.4 +1.9**
KMI pmax pmax
comp=Z,28nm,1.2s
KMI pmax pmax
comp=Z,160nm,4.7s
KMI LR LR
comp=Z,110nm,12.2s
KMI LR LR
comp=Z,120nm,13.0s
KMI LR LR
comp=Z,160nm,18.7s
CM01 Chiang Mai Arr 78.19 295 *e*P **P** **19 26 05.8 +0.8**
CM31 Chiang Mai Arr 78.22 295 *e*P **P** **19 26 06.9 +1.7**
CMAR Chiang Mai Arr 78.22 295 P **P** **19 26 06.5 +1.3**
comp=Z,16nm,0.8s,baz=134,slow=4.3,SNR=96
CMAR Chiang Mai Arr 78.22 295 P **P** **19 26 06.5 +1.3**
CMAR pmax pmax
comp=Z,15nm,0.8s
XAN Xi'an 78.30 313 P **P** **19 26 06.1 +0.7**
XAN pmax pmax
comp=Z,10.0nm,0.9s
CMMT Chiang Mai 78.38 295 P **P** **19 26 07.3 +1.2**
comp=Z,37nm,0.9s,comp=Z,481nm
CHTO Chiang Mai 78.38 295 P **P** **19 26 07.3 +1.2**
comp=Z,164nm,1.0s,comp=Z,1µm
CHTO Chiang Mai 78.38 295 *e*P **P** **19 26 07.4 +1.3**
CHTO pmax pmax
comp=Z,28nm,0.8s
CHTO Chiang Mai 78.38 295 *e*P **P** **19 26 07.4 +1.3**
comp=Z,28nm,0.8s
CMAI Chiengmai2 78.79 296 P **P** **19 26 09.8 +1.3**
comp=Z,71nm,0.7s
CD2 Chengdu 80.30 308 P **P** **19 26 15.8 -0.6**
CD2 sP sP 19 26 28.0 +0.2
CD2 PP **PP** **19 29 18.4 -1.2**
CD2 S **S** **19 36 20.1 -0.5**
CD2 sS SKKSac 19 36 35.3 +0.6
CD2 SS **SS** **19 41 32.8 +0.2**
CD2 pmax pmax
comp=Z,20nm,0.5s
CD2 pmax pmax
comp=Z,140nm,6.5s
CD2 LR LR
comp=Z,260nm,17.8s
CD2 LR LR
comp=Z,210nm,11.9s
HHC Hu-ho-hao-te 80.58 320 *e*P **P** **19 26 19.4 +1.6**
HHC pP pP 19 26 27.3 +1.1
HHC pmax pmax
comp=Z,31nm,1.3s
HHC pmax pmax
comp=Z,130nm,7.3s
HHC LR LR
comp=Z,1µm,17.1s
HHC LR LR
comp=Z,1µm,16.9s
HHC LR LR
comp=Z,1µm,17.1s
MA2 Magadan 81.02 351 P **P** **19 26 19.3 -0.2**
comp=Z,12nm,0.9s,baz=193,slow=20,SNR=3.9

LZH Lanzhou 82.91 313 *e*P **P** **19 26 32.9 +2.7**
LZH pP sP 19 26 40.5 -1.1
LZH sP pP 19 26 43.5 +4.9
LZH pmax pmax
comp=Z,19nm,1.0s
SYO Syowa Base 83.53 196 ⇑ *e*P **P** **19 26 31.2 -1.5**
SYO Syowa Base 83.53 196 ⇓ *e*pP **P** **19 26 36.0 +3.3**
SEY Seymchan 84.05 353 ⇑ *i*P **P** **19 26 34.9 -0.3**
KDAK Kodiak Island 84.46 20 P P 19 26 53.1 +16
comp=Z,18nm,0.7s,baz=214,slow=1.8,SNR=6.5
KDAK Kodiak Island 84.46 20 *i*P **P** **19 26 38.0 +0.6**
PMSA Palmer Station 86.07 160 P **P** **19 26 45.8 +0.3**
comp=Z,46nm,0.9s,baz=269,slow=3.9,SNR=3.9
SHL Shillong 87.17 298 *e*P **P** **19 26 53.0 +1.2**
SAO San Andreas Ge 87.26 49 *e*P **P** **19 26 50.8 -1.1**
SAO pmax pmax
comp=Z,21nm,0.9s
SAO San Andreas Ge 87.26 49 *e*P **P** **19 26 50.8 -1.1**
comp=Z,21nm,0.9s
SCZ2 Santa Cruz Isl 87.31 52 P **P** **19 26 52.6 +0.4**
baz=243
ULN Ulaanbaatar 87.32 324 *e*P **P** **19 26 52.5 +0.4**
ULN *e**PP **sP** **19 27 04.5 +0.9**
ULN pmax pmax
comp=Z,21nm,1.2s
ULN Ulaanbaatar 87.32 324 *e*P **P** **19 26 52.5 +0.4**
comp=Z,21nm,1.2s
ULN *e*pP **sP** **19 27 04.5 +0.9**
GTA Gaotai 87.34 314 *e*P **P** **19 26 52.8 +0.5**
GTA pP pP 19 27 01.4 +0.7
GTA sP sP 19 27 04.8 +1.0
GTA S **S** **19 37 31.3 0.0**
GTA pmax pmax
comp=Z,5.0nm,1.0s
GTA pmax pmax
comp=Z,89nm,6.9s
GTA LR LR
comp=Z,93nm,15.7s
GTA LR LR
comp=Z,100nm,17.1s
GTA LR LR
comp=Z,79nm,17.1s
KMRM Mail Ridge 87.37 45 *e*P **P** **19 26 53.1 +0.7**
comp=Z,76nm,1.0s
PKM Mcpherson Peak 87.58 51 P **P** **19 26 53.6 0.0**
baz=243
KHMM Horse Mountain 87.67 45 *e*P **P** **19 26 55.0 +1.1**
comp=Z,45nm,0.9s
SONM Songino Array 87.67 323 P **P** **19 26 53.8 0.0**
comp=Z,6.4nm,0.8s,baz=180,slow=1.5,SNR=7.3
SONM LR LR 20 05 57.5
comp=Z,90nm,20.2s,baz=74,slow=36
YAK Yakutsk 87.77 343 *e*P **P** **19 26 53.8 +0.2**
YAK pmax pmax
comp=Z,19nm,0.9s
YAK pmax pmax
comp=N,7.0nm,1.4s
SNAA Sanae 87.92 183 P **P** **19 26 53.8 -0.8**
SNAA Sanae 87.92 183 *c i*P **P** **19 26 52.9 -1.6**
SNAA Sanae 87.92 183 *e*P **P** **19 26 53.6 -0.9**
comp=N,30nm,1.0s
BILL Bilibino 88.24 359 *d i*P **P** **19 26 55.4 -0.4**
BILL *e* 19 30 21.3
BILL *e*S **SKSac** **19 37 17.3 -5.0**
BILL pmax pmax
comp=Z,34nm,1.0s
BILL MLR MLR
comp=Z,117nm,18.0s
WDC Whiskeytown Da 88.32 45 *e*P **P** **19 26 57.3 +0.5**
WDC pmax pmax
comp=Z,49nm,1.4s
WDC Whiskeytown Da 88.32 45 *e*P **P** **19 26 57.3 +0.5**
comp=Z,49nm,1.4s
L02D Cave Junction, 88.39 44 P **P** **19 26 57.6 +0.5**
baz=240
N02D Trinity Center 88.40 45 P **P** **19 26 57.9 +0.6**
baz=241,SNR=18
ARVC Arvin 88.41 52 P **P** **19 26 57.8 +0.5**
baz=244
M02C Callahan 88.50 45 P **P** **19 26 58.3 +0.5**
baz=241,SNR=21
ORV Oroville 88.53 47 *e*P **P** **19 26 58.2 +0.4**
ORV pmax pmax
comp=Z,42nm,1.4s
ORV Oroville 88.53 47 *e*P **P** **19 26 58.2 +0.4**
comp=Z,42nm,1.4s
VES Vestal, Richgr 88.54 51 P **P** **19 26 57.9 0.0**
baz=244
VNA3 Neumayer Olymp 88.54 181 P **P** **19 26 56.6 -0.8**
MWC Mount Wilson 88.58 53 *e*P **P** **19 26 57.6 -0.8**
MWC *e**PP **sP** **19 27 10.1 +0.2**
MWC pmax pmax
comp=Z,101nm,1.9s
MWC Mount Wilson 88.58 53 *e*P **P** **19 26 57.6 -0.8**
comp=Z,101nm,1.9s
MWC *e*pP **sP** **19 27 10.1 +0.2**
CMB Columbia Colle 88.60 48 *e*P **P** **19 26 57.9 -0.4**
CMB *e**PP **sP** **19 27 09.7 0.0**
CMB pmax pmax
comp=Z,24nm,0.9s
CMB Columbia Colle 88.60 48 *e*P **P** **19 26 57.9 -0.4**
comp=Z,24nm,0.9s
CMB *e*pP **sP** **19 27 09.7 0.0**
AFDM Forest Hills D 88.61 47 *e*P **P** **19 26 58.2 0.0**
comp=Z,35nm,1.1s
O03D Paynes Creek 88.68 46 P **P** **19 26 58.1 -0.5**
baz=242,SNR=18
109C Camp Elliot, M 88.73 54 P **P** **19 26 58.6 -0.2**
baz=245
YBH Yreka Blue Hor 88.76 44 P **P** **19 26 59.3 +0.3**
comp=Z,20nm,0.7s,baz=344,slow=0.3,SNR=51
YBH Yreka Blue Hor 88.76 44 *e*P **P** **19 26 59.3 +0.3**
comp=Z,23nm,0.8s
VNA2 Neumayer--Watz 88.82 181 P **P** **19 26 58.1 -0.6**
baz=179,slow=4.5
ISA Isabella, Lake 88.91 51 P **P** **19 26 59.5 -0.3**
baz=244,SNR=8.0
ISA Isabella, Lake 88.91 51 *e*P **P** **19 26 59.7 -0.1**
ISA pmax pmax
comp=Z,30nm,0.9s
ISA Isabella, Lake 88.91 51 *e*P **P** **19 26 59.7 -0.1**
comp=Z,30nm,0.9s
EDW2 Edwards Air Fo 88.92 52 P **P** **19 26 59.7 -0.2**
baz=244,SNR=9.3
MURC Murrieta 88.96 54 P **P** **19 26 59.9 -0.2**
baz=245
HUMO Hull Mountain 89.03 43 *e*P **P** **19 27 01.0 +0.9**
comp=Z,36nm,0.9s
VNA1 Neumayer--Stat 89.11 181 P **P** **19 26 59.3 -0.8**
CAST Castle Rocks 89.15 17 *e*P **P** **19 26 58.1 -2.1**
comp=Z,12nm,0.3s
MONP2 Monument Peak 89.25 54 P **P** **19 27 01.3 -0.3**
baz=245,SNR=9.7
I03D Drain, OR 89.31 42 P **P** **19 27 01.8 +0.5**
baz=241
M04C Macdoel 89.36 45 P **P** **19 27 02.0 +0.2**
baz=242,SNR=6.8
IKP In-Ko-Pah, Jac 89.39 55 P **P** **19 27 02.0 -0.1**
baz=245,SNR=7.0
LRMC Laurel Mtn Rad 89.41 52 P **P** **19 27 02.7 +0.5**
baz=244
WAKR Walker 89.48 48 *e*P **P** **19 27 02.8 +0.2**
MLAC Mammoth, Mammo 89.51 49 P **P** **19 27 03.1 +0.3**
baz=244
PFO Pinyon Flats O 89.52 54 P **P** **19 27 02.5 -0.3**
comp=Z,9.5nm,0.9s,baz=272,slow=3.1,SNR=8.4
PFO Pinyon Flats O 89.52 54 *e*P **P** **19 27 02.9 +0.1**
PFO pmax pmax
comp=Z,16nm,1.1s
PFO Pinyon Flats O 89.52 54 *e*P **P** **19 27 02.9 +0.1**
comp=Z,16nm,1.1s
TPFO Pinon Flats 89.52 54 P **P** **19 27 02.6 -0.2**
baz=245,SNR=5.4
TIN Tinemaha, Big 89.69 50 P **P** **19 27 03.3 -0.2**
baz=244
SWSC Sam W. Stewart 89.75 55 P **P** **19 27 03.7 0.0**
baz=245
K04D Chiloquin, OR 89.81 44 P **P** **19 27 04.0 +0.1**
baz=242
DAC Darwin (Calif) 89.81 51 *e*P **P** **19 27 00.0 -4.2**
DAC pmax pmax
comp=Z,16nm,0.9s
DAC Darwin (Calif) 89.81 51 *e*P **P** **19 27 00.0 -4.2**
comp=Z,16nm,0.9s
I04A Tendick Farm, 89.95 43 P **P** **19 27 04.3 -0.1**
baz=241

GSC Goldstone, Bar 89.98 52 P **P** **19 27 04.5 -0.4**
baz=245,SNR=5.8
GSC Goldstone, Bar 89.98 52 *e*P **P** **19 27 04.4 -0.4**
GSC *e**PP **sP** **19 27 17.2 +0.9**
GSC pmax pmax
comp=Z,12nm,1.1s
GSC Goldstone, Bar 89.98 52 *e*P **P** **19 27 04.4 -0.4**
comp=Z,12nm,1.1s
GSC *e*pP **sP** **19 27 17.2 +0.9**
BELC Belle Mtn. Jos 90.03 54 P **P** **19 27 05.0 -0.2**
baz=245,SNR=8.3
RND Reindeer 90.03 18 *e*P **P** **19 27 02.8 -1.6**
RND pmax pmax
comp=Z,22nm,1.8s
RND Reindeer 90.03 18 *e*P **P** **19 27 02.8 -1.6**
comp=Z,22nm,1.8s
BOD Bodaibo 90.04 334 *e*P **P** **19 27 02.8 -1.6**
BOD pmax pmax
comp=Z,10.0nm,1.4s
PAHR Pah Rah Range 90.06 47 *e*P **P** **19 27 05.1 -0.1**
comp=Z,28nm,1.0s
G03D McMinnville, O 90.10 41 P **P** **19 27 05.3 +0.3**
baz=241
HEC Hector,Ludlow 90.13 53 P **P** **19 27 04.9 -0.7**
baz=245,SNR=5.9
NVAR Mina Array Bea 90.24 49 P **P** **19 27 05.8 -0.4**
comp=Z,17nm,0.8s,baz=227,slow=8.4,SNR=104
GRAC Grapevine Rang 90.29 50 P **P** **19 27 06.3 +0.1**
baz=244,SNR=9.3
BC3 Big Chuckawall 90.30 54 P **P** **19 27 06.3 -0.2**
baz=246,SNR=9.9
K05A Summer Lake 90.42 44 *e*P **P** **19 27 05.6 -1.3**
comp=Z,42nm,0.9s
FURC Furnace Creek, 90.43 51 P **P** **19 27 06.6 -0.2**
baz=245,SNR=8.3
MOD Modoc Plateau 90.43 45 *e*P **P** **19 27 06.9 0.0**
comp=Z,29nm,0.9s
J05D Fort Rock, OR 90.46 43 P **P** **19 27 07.1 +0.1**
baz=242,SNR=40
H04A Detroit Lake 90.52 42 *e*P **P** **19 27 07.0 0.0**
comp=Z,34nm,0.9s
GLA Glamis 90.53 55 P **P** **19 27 07.7 +0.3**
baz=246,SNR=8.7
GLA Glamis 90.53 55 *e*P **P** **19 27 08.2 +0.8**
GLA pmax pmax
comp=Z,36nm,1.0s
GLA Glamis 90.53 55 *e*P **P** **19 27 08.2 +0.8**
comp=Z,36nm,1.0s
E03A Lebam 90.58 40 *e*P **P** **19 27 07.9 +0.7**
comp=Z,74nm,0.9s
GMRC Granite Mounta 90.61 53 P **P** **19 27 07.5 -0.4**
baz=245,SNR=11
SHOC Shoshone, Teco 90.62 52 P **P** **19 27 07.4 -0.4**
baz=245
F04D Rainier, OR 90.68 40 P **P** **19 27 07.8 +0.1**
baz=241
TUQ Turquoise Moun 90.69 52 P **P** **19 27 08.0 -0.2**
baz=245,SNR=10.0
IRM Iron Mountain 90.74 54 P **P** **19 27 08.4 0.0**
baz=246,SNR=12
ZAK Zakamensk 90.78 325 *e*P **P** **19 27 07.9 -0.3**
ZAK pmax pmax
comp=Z,7.0nm,1.7s
NLWA Neilton Lookou 90.81 39 *e*P **P** **19 27 09.0 +0.7**
comp=Z,43nm,1.0s
SLBS Sierra La Lagu 90.86 65 *e*P **P** **19 27 10.2 +1.0**
comp=Z,15nm,0.9s
I05D Terrebonne, OR 90.89 43 P **P** **19 27 08.9 +0.1**
baz=242
F04A Amboy 90.97 41 *e*P **P** **19 27 09.3 +0.3**
comp=Z,39nm,0.9s
Y12C Blythe 91.05 54 P **P** **19 27 09.6 -0.1**
baz=246,SNR=9.7
Y12C Blythe 91.05 54 *e*P **P** **19 27 10.2 +0.5**
comp=Z,21nm,0.9s
WRH Wood River Hil 91.07 17 *e*P **P** **19 27 08.5 -0.6**
comp=Z,13nm,1.4s
TPNV Topopah Spring 91.08 51 P **P** **19 27 09.8 -0.2**
baz=245,SNR=39
TPNV Topopah Spring 91.08 51 *e*P **P** **19 27 10.0 0.0**
TPNV pmax pmax
comp=Z,41nm,1.1s
TPNV Topopah Spring 91.08 51 *e*P **P** **19 27 10.0 0.0**
comp=Z,41nm,1.1s
LDFC Landfair 91.15 53 *e*P **P** **19 27 11.0 +0.7**
comp=Z,33nm,0.7s
113A Mohawk Valley, 91.24 55 *e*P **P** **19 27 10.9 +0.3**
comp=Z,31nm,1.5s
TLY Talaya 91.27 326 *e*P **P** **19 27 10.9 +0.6**
TLY *e* 19 27 23.9
TLY pmax pmax
comp=Z,5.0nm,0.7s
TLY Talaya 91.27 326 *e*P **P** **19 27 09.9 -0.4**
comp=Z,5.9nm,0.8s
CCB Clear Creek Bu 91.28 17 *e*P **P** **19 27 08.5 -1.6**
comp=Z,8.8nm,0.7s
G05D Wamic, OR 91.32 42 P **P** **19 27 10.9 +0.2**
baz=242
PDMCI Parker Dam,Lak 91.56 54 P **P** **19 27 12.0 -0.1**
baz=246,SNR=11
ILAR Eielson Array 91.64 18 P **P** **19 27 09.5 -2.3**
comp=Z,2.3nm,0.7s,baz=238,slow=5.3,SNR=18
DOT Dot Lake 91.64 19 *e*P **P** **19 27 10.9 -1.0**
comp=Z,21nm,1.3s
214A Organ Pipe Nat 91.66 57 P **P** **19 27 12.5 -0.1**
baz=247,SNR=6.4
SHPR Sheep Range 91.69 52 *e*P **P** **19 27 13.3 +0.4**
comp=Z,14nm,1.0s
LON Longmire 91.73 40 *e*P **P** **19 27 12.5 -0.2**
LON pmax pmax
comp=Z,35nm,1.6s
LON Longmire 91.73 40 *e*P **P** **19 27 12.4 -0.2**
comp=Z,35nm,1.6s
WVOR Wild Horse Val 91.77 45 *e*P **P** **19 27 13.1 0.0**
WVOR pmax pmax
comp=Z,35nm,1.2s
WVOR Wild Horse Val 91.77 45 *e*P **P** **19 27 13.1 0.0**
comp=Z,35nm,1.2s
D05A Enumclaw 91.83 40 *e*P **P** **19 27 14.4 +1.3**
comp=Z,145nm,1.7s
W13A Hualapai Mount 92.07 53 *e*P **P** **19 27 15.0 +0.2**
comp=Z,9.7nm,0.9s
R11A Troy Canyon, C 92.14 50 P **P** **19 27 14.0 -1.0**
baz=246,SNR=10
R11A Troy Canyon, C 92.14 50 *e*P **P** **19 27 14.3 -0.6**
comp=Z,3.8nm,0.8s
A04D Lummi Island 92.14 38 P **P** **19 27 14.8 +0.5**
baz=241
B05A Bryant 92.28 39 P **P** **19 27 15.2 +0.2**
baz=242
Y14A Wickenburg 92.28 55 *e*P **P** **19 27 15.7 +0.1**
comp=Z,32nm,0.8s
COLD Coldfoot 92.66 15 *e*P **P** **19 27 16.6 +0.2**
comp=Z,5.6nm,1.0s
MOY Mondy 92.68 325 *e*P pP 19 27 30.8 +5.3
G08A Pilot Rock 92.83 42 *e*P **P** **19 27 17.9 0.0**
comp=Z,10nm,0.8s
PKIN Phulchoki 93.30 298 *e*P **P** **19 27 20.3 -0.3**
comp=Z,7.8nm,0.7s
LCMT Little Creek M 93.31 52 *e*P **P** **19 27 20.5 +0.2**
comp=Z,11nm,1.1s
EGAK Eagle 93.34 19 *e*P **P** **19 27 19.5 -0.1**
comp=Z,6.3nm,0.8s
ELK Elko 93.37 48 *e*P **P** **19 27 20.5 -0.1**
ELK pmax pmax
comp=Z,5.0nm,1.0s
ELK Elko 93.37 48 *e*P **P** **19 27 20.5 -0.1**
comp=Z,5.2nm,1.0s
TUC Tucson 93.38 57 P **P** **19 27 20.9 +0.2**
baz=248
TUC Tucson 93.38 57 *e*P **P** **19 27 20.4 -0.3**
TUC pmax pmax
comp=Z,14nm,1.2s
TUC Tucson 93.38 57 *e*P **P** **19 27 20.4 -0.3**
comp=Z,14nm,1.2s
PSUT Pine Spring 93.46 50 *e*P **P** **19 27 20.7 -0.3**
comp=Z,4.6nm,0.7s
KKN Kakani 93.47 298 *e*P **P** **19 27 21.3 -0.1**
comp=Z,24nm,0.7s
X16A Lo Mia Camp, P 93.66 55 *e*P **P** **19 27 22.6 +0.5**
comp=Z,14nm,1.1s
U15A North Rim 93.78 53 *e*P **P** **19 27 23.1 +0.5**
comp=Z,19nm,1.3s
B08A Colville Reser 93.96 40 *e*P **P** **19 27 22.9 +0.1**
comp=Z,33nm,1.9s
MFID Camas Ranch 94.06 45 *e*P **P** **19 27 23.4 -0.2**
comp=Z,9.1nm,1.0s
GKN Gorkha 94.08 298 *e*P **P** **19 27 23.6 -0.5**

comp=Z,24nm,0.8s
WUAZ Wupatki 94.13 54 P **P 19 27 24.0 -0.2**
baz=248
319A Douglas 94.23 58 *eP* **P 19 27 25.1 +0.4**
comp=Z,14nm,1.1s
DUG Dugway, Tooele 94.85 49 P **P 19 27 26.7 -0.7**
baz=247
DUG Dugway, Tooele 94.85 49 *eP* **P 19 27 27.0 -0.3**
DUG pmax pmax
comp=Z,13nm,1.6s
DUG Dugway, Tooele 94.85 49 *eP* **P 19 27 26.9 -0.3**
comp=Z,12nm,1.6s
KOLN Koldanda 94.85 298 *eP* **P 19 27 27.0 -0.7**
comp=Z,11nm,0.7s
HLID Hailey 95.06 45 P **P 19 27 27.9 -0.4**
baz=247
HLID Hailey 95.06 45 *eP* **P 19 27 28.1 -0.1**
comp=Z,3.9nm,0.8s
W18A Petrified Fore 95.23 55 P **P 19 27 28.8 -0.4**
baz=249
NEW Newport 95.25 40 P **P 19 27 29.1 +0.3**
comp=Z,1.7nm,0.5s,baz=214,slow=3.6,SNR=2.1
NEW Newport 95.25 40 P **P 19 27 29.1 +0.3**
baz=245
NLU North Lily Min 95.28 49 *eP* **P 19 27 29.3 -0.1**
comp=Z,2.6nm,1.0s
PYUN Piuthan 95.47 298 *eP* **P 19 27 29.9 -0.6**
HVU Hansel Valley 95.48 48 *eP* **P 19 27 29.7 -0.5**
HVU pmax pmax
comp=Z,7.0nm,0.8s
HVU Hansel Valley 95.48 48 *eP* **P 19 27 29.7 -0.5**
comp=Z,6.6nm,0.8s
SPUT South Promonto 95.53 48 *eP* **P 19 27 30.6 +0.2**
comp=Z,3.8nm,0.8s
Q16A Castle Valley 95.54 51 *eP* **P 19 27 31.6 +1.0**
comp=Z,5.5nm,1.0s
TMUT Trail Mountain 95.66 50 *eP* **P 19 27 31.9 +0.6**
comp=Z,5.6nm,0.9s
TIXI Tiksi 95.75 348⇑ *iP* **P 19 27 29.4 -1.0**
TIXI pmax pmax
comp=Z,4.0nm,1.3s
TIXI Tiksi 95.75 348 *eP* **P 19 27 29.4 -1.0**
comp=Z,2.1nm,0.8s
121A Cookes Peak, D 95.83 58 P **P 19 27 32.4 +0.4**
baz=250
TCUT Toone Canyon 96.19 49 *eP* **P 19 27 34.1 +0.6**
comp=Z,26nm,1.1s
HWUT Hardware Ranch 96.26 48 *eP* **P 19 27 33.0 -0.8**
comp=Z,3.0nm,0.7s
FXWY Fox Creek 97.37 46 *eP* **P 19 27 38.8 0.0**
comp=Z,8.6nm,1.6s
WMQ Urumqi 97.42 314 *eP* Pdif 19 27 40.5 +1.6
WMQ LR LR
comp=Z,31nm,18.8s
WMQ LR LR
comp=Z,52nm,22.6s
WMQ LR LR
comp=Z,40nm,24.4s
MNTX Cornudas Mount 97.47 59 P **P 19 27 38.6 -0.6**
baz=251
ANMO Albuquerque 97.69 56 P **P 19 27 39.8 -0.7**
comp=Z,0.7nm,0.5s,baz=263,slow=8.1,SNR=3.0
ANMO Albuquerque 97.69 56 P **P 19 27 39.5 -0.9**
baz=250
BOZ Bozeman (W) 97.69 44 P **P 19 27 40.1 -0.1**
baz=249
BOZ Bozeman (W) 97.69 44 *eP* Pdif 19 27 41.2 +1.0
BOZ pmax pmax
comp=Z,10.0nm,0.6s
BOZ Bozeman (W) 97.69 44 *eP* Pdif 19 27 41.1 +1.0
comp=Z,10nm,0.6s
INK Inuvik 97.96 19 P **P 19 27 39.2 -1.3**
comp=Z,2.6nm,1.0s,baz=296,slow=4.8,SNR=3.6
BW06 Boulder Array 98.06 47 P **P 19 27 40.8 -1.1**
baz=250
BW06 Boulder Array 98.06 47 *eP* **P 19 27 40.9 -1.1**
comp=Z,4.3nm,0.9s
PDAR Pinedale Array 98.06 47 P **P 19 27 41.0 -1.0**
comp=Z,1.0nm,0.7s,baz=270,slow=3.6,SNR=12
TXAR Lajitas Array 98.09 62 P **P 19 27 41.5 -0.8**
comp=Z,0.4nm,0.6s,baz=236,slow=4.1,SNR=5.8
PLCA Paso Flores 98.19 139 LR LR 20 05 44.3
comp=Z,35nm,18.7s,baz=253,slow=32
N23A Red Feather La 100.00 50 Pdiff **Pdif 19 27 50.3 -0.4**
baz=252
733A Divot King Ran 101.55 64 Pdiff **Pdif 19 27 57.5 -0.1**
baz=253
MKAR Makanchi Array 102.00 316 P **Pdif 19 27 59.5 +0.4**
comp=Z,0.7nm,0.7s,baz=98,slow=5.8,SNR=6.3
MKAR PP **PP 19 32 11.7 +0.7**
comp=Z,0.4nm,0.8s,baz=95,slow=7.3,SNR=2.8
MKAR PKKPbc **PKKPbc 19 44 02.1 -2.7**
comp=Z,0.8nm,0.9s,baz=299,slow=3.7,SNR=6.6
MKAR PKKPab PKKPdf 19 44 24.4 +12
comp=Z,0.8nm,0.7s,baz=288,slow=4.1,SNR=7.0
YKA Yellowknife Ar 102.13 28 P **Pdif 19 27 58.6 -0.7**
comp=Z,0.8nm,0.6s,baz=253,slow=4.7,SNR=20
YKA PP **PP 19 32 10.3 -1.2**
comp=Z,0.1nm,0.4s,baz=172,slow=4.3,SNR=4.8
YKA PKKPab PKKPdf 19 44 23.8 +12
comp=Z,0.1nm,0.3s,baz=61,slow=4.9,SNR=4.5
YKB5 Yellowknife Ar 102.13 28 *e*Pdif **Pdif 19 27 59.1 -0.1**
ZALV Zalesovo Beam 102.56 323 P **Pdif 19 28 01.8 +0.4**
comp=Z,0.5nm,0.5s,baz=123,slow=5.3,SNR=3.5
F25A Bowman 103.20 46 Pdiff **Pdif 19 28 04.8 +0.3**
baz=254
535A Dale 103.36 63 Pdiff **Pdif 19 28 05.5 0.0**
baz=254
Y33A Hilltop Ranch, 103.58 59 Pdiff **Pdif 19 28 06.5 0.0**
baz=254
T33A Patterson Ranc 104.68 56 Pdiff **Pdif 19 28 11.9 +0.6**
baz=255
X35A Drake 105.00 59 PKiKP **PKiKP 19 32 27.8 +0.2**
baz=255
N31A Bailey Ranch, 105.07 52 PKiKP **PKiKP 19 32 27.6 +0.1**
baz=256
J30A Dallas 105.28 49 PKiKP **PKiKP 19 32 27.8 -0.1**
baz=256
V38A Canehill 107.39 58 PKiKP **PKiKP 19 32 32.0 0.0**
baz=257
U38A Gravette 107.54 57 PKiKP **PKiKP 19 32 32.1 -0.1**
baz=257
BRVK Borovoye 110.86 320⇑ *i*PKIKP **PKiKP 19 32 37.7 -0.2**
ABKAR Abkulak array 117.14 316 *e*PKPdif **PKPdif 19 32 49.8 -0.2**
ARU Arti 117.71 324 *i* PKIKP **PKPdif 19 32 50.2 -0.7**
ARU 19 34 01.9
ARU 19 39 59.6
ARU SS SS 19 50 08.5 -6.5
ARU Arti 117.71 324 *e*PKPdif **PKPdif 19 32 50.8 -0.1**
GEYT Alibeck 117.95 303 PKP **PKPdif 19 32 52.3 +0.2**
comp=Z,2.8nm,0.7s,baz=219,slow=1.9,SNR=11
SUR Sutherland 118.96 211 PKP **PKPdif 19 32 54.4 -0.1**
comp=Z,0.4nm,0.9s,baz=358,slow=2.8,SNR=4.1
BOSA Boshof 119.58 217 PKP **PKPdif 19 32 55.5 -0.2**
comp=Z,2.1nm,0.6s,baz=162,slow=1.4,SNR=5.8
FRB Frobisher Bay 122.62 26 PKP **PKPdif 19 32 58.8 -1.3**
comp=Z,2.5nm,0.4s,baz=170,slow=12,SNR=3.8
APA Apatity 125.09 341⇑ *i*PKIKP **PKPdif 19 33 04.6 -0.2**
APA MLR MLR
comp=Z,300nm,22.0s
ARCES ARCESS Array B 126.01 345 PKP **PKPdif 19 33 06.2 -0.3**
comp=Z,5.3nm,0.6s,baz=71,slow=1.5,SNR=26
KLMR Klimovskoe 126.20 332 *e*PKIKP **PKPdif 19 33 03.0 -4.1**
KLMR *e* 19 33 17.6
KLMR pmax pmax
comp=Z,20nm,1.0s
KMBO Kilima Mbogo 127.53 252 *e*PKIKP **PKPdif 19 33 13.1 +1.7**
KMBO Kilima Mbogo 127.53 252 *e*PKPdif **PKPdif 19 33 13.1 +1.7**
PTGA Pitinga 128.28 108 *e*PKPdif **PKPdif 19 33 11.9 -0.6**
VRH Novokhopyorsk 128.45 320 *e*PKIKP **PKPdif 19 33 11.3 -0.3**
VRH pmax pmax
comp=Z,10.0nm,1.1s
ZEI Tsey 128.71 309 *i* PKIKP **PKPdif 19 33 12.5 -0.2**
ZEI pmax pmax
comp=Z,11nm,0.8s
HUMP Col San Antoni 129.01 83 *e*PKPdif **PKPdif 19 33 12.3 -1.4**
KBZ Khabaz 129.30 310 PKP **PKPdif 19 33 15.1 +1.6**
comp=Z,1.0nm,0.6s,baz=128,slow=4.9,SNR=3.8
KIV Kislovodsk 129.41 311 *i* PKIKP **PKPdif 19 33 13.6 -0.3**
KIV pmax pmax
comp=Z,8.0nm,1.0s
KIV MLR MLR
comp=Z,60nm,21.0s
KIV Kislovodsk 129.41 311 *e*PKPdif **PKPdif 19 33 14.7 +0.8**
NEY Neytrino 129.50 310⇑ *i*PKIKP **PKPdif 19 33 14.3 +0.1**
LPSR Galich'ya Gora 129.66 322 *e*PKIKP **PKPdif 19 33 14.0 +0.1**
LPSR pmax pmax
comp=Z,20nm,1.0s
VSR Storozhevoye 129.98 320 *e*PKIKP **PKPdif 19 33 14.2 -0.4**
VSR pmax pmax
comp=Z,20nm,2.0s
OBN Obninsk 130.02 326⇑ *e*PKIKP **PKPdif 19 33 13.6 -0.9**
OBN *e* 19 35 31.9
OBN pmax pmax
comp=Z,29nm,1.9s
TSUM Tsumeb 131.27 218 PKP **PKPdif 19 33 18.7 +0.5**
comp=Z,0.4nm,0.4s,baz=157,slow=5.7,SNR=3.5
FINES FINESS Array B 131.37 337 PKP **PKPdif 19 33 16.7 -0.2**
comp=Z,4.1nm,0.9s,baz=119,slow=18,SNR=6.1
ANN Anapa 132.92 313 *i* PKIKP **PKPdif 19 33 19.5 -0.8**
ANN *e* 19 35 45.1
ANN *e*PPP PPP 19 38 37.0
ANN pmax pmax
comp=Z,18nm,1.6s
AKASG Malin Array Be 135.96 323 PKP **PKPdif 19 33 25.6 -0.2**
comp=Z,0.9nm,0.4s,baz=60,slow=2.6,SNR=9.7
AKASG Malin Array Be 135.96 323 PKIKP **PKPdif 19 33 25.7 -0.2**
AKASG pmax pmax
comp=Z,2.0nm,0.5s
NB2 NORSAR Subarra 136.38 344 PKPdif **PKPdif 19 33 27.5 +1.1**
comp=Z,1.4nm,0.8s,baz=31,slow=1.9
NOA NORSAR Array B 136.38 344 PKP **PKPdif 19 33 26.2 -0.1**
comp=Z,2.0nm,0.8s,baz=32,slow=2.0,SNR=7.5
BRTR Keskin Array B 136.86 307 PKP **PKPdif 19 33 28.3 +0.2**
comp=Z,4.0nm,1.0s,baz=116,slow=2.9,SNR=14
SORM Soroca 137.64 320⇓ *i*P **PKPdif 19 33 27.6 -1.4**
SORM Soroca 137.64 320⇓PKIKP **PKPdif 19 33 27.6 -1.4**
CFR Carcaliu 139.03 316⇓ *i*P **PKPdif 19 33 34.4 +2.7**
CFR Carcaliu 139.03 316⇓PKIKP **PKPdif 19 33 34.4 +2.7**
BUR08 Bucovina Ar. S 139.74 321 *e*PKPdif **PKPdif 19 33 35.0 +1.9**
KWP Kalwaria Pacla 140.09 325 *e*PKP **PKPdif 19 33 33.9 +0.3**
KWP Kalwaria Pacla 140.09 325⇓ *i*P **PKPdif 19 33 34.8 +1.3**
KWP Kalwaria Pacla 140.09 325 *e*PKIKP **PKPdif 19 33 33.9 +0.3**
MLR Muntele Rosu 140.30 318⇑ *i*P **PKPdif 19 33 33.9 -0.3**
MLR Muntele Rosu 140.30 318⇑PKIKP **PKPdif 19 33 33.9 -0.3**
MLR Muntele Rosu 140.30 318 *e*PKPdif **PKPdif 19 33 34.1 -0.1**
KOLS Kolonicke sedl 140.72 324 *e*PKIKP **PKPdif 19 33 35.7 +1.0**
KOLS *e* 19 33 47.6
KOLS Kolonicke sedl 140.72 324 *e*PKP **PKPdif 19 33 35.7 +1.0**
KOLS *e* 19 33 47.6
UZH Uzhgorod 140.88 324 *e*PKIKP **PKPdif 19 33 33.4 -1.6**
STHS Stebnicka Huta 141.00 326 *e*PKIKP **PKPdif 19 33 36.1 +0.9**
STHS Stebnicka Huta 141.00 326 *e*PKP **PKPdif 19 33 36.1 +0.9**
ARR Arges 141.18 318⇓ *i*P **PKPdif 19 33 37.2 +1.5**
CRVS Cervenica-Dubn 141.18 325 *e*PKIKP **PKPdif 19 33 34.9 -0.6**
CRVS Cervenica-Dubn 141.18 325 *e*PKP **PKPdif 19 33 34.9 -0.6**
OJC Ojcow 141.26 328 *e*PKP **PKPdif 19 33 35.9 +0.3**
OJC Ojcow 141.26 328 *e*PKIKP **PKPdif 19 33 35.9 +0.3**
OJC Ojcow 141.26 328 *e*PKPdif **PKPdif 19 33 36.4 +0.8**
NIE Niedzica 141.49 326 *e*PKP **PKPdif 19 33 36.9 +0.8**
NIE Niedzica 141.49 326 *e*PKIKP **PKPdif 19 33 36.9 +0.8**
LANS Liptovska Anna 142.09 326 *e*PKIKP **PKPdif 19 33 37.9 +0.7**
LANS Liptovska Anna 142.09 326 *e*PKP **PKPdif 19 33 37.9 +0.7**
GZR Gura Zlata 142.31 319⇓ *i*P **PKPdif 19 33 38.1 +0.4**
GZR Gura Zlata 142.31 319⇓PKIKP **PKPdif 19 33 38.1 +0.4**
KSP Ksiaz 142.53 331 *e*PKP **PKPdif 19 33 35.5 -2.4**
KSP Ksiaz 142.53 331 *e*PKIKP **PKPdif 19 33 35.5 -2.4**
SMTH Samothraki Isl 142.60 311 P **PKPdif 19 33 34.0 -4.3**
PSZ Piszkesteto 142.60 325⇓ *i*P **PKPdif 19 33 35.0 -3.2**
PSZ Piszkesteto 142.60 325⇓PKIKP **PKPdif 19 33 35.0 -3.2**
PSZ Piszkesteto 142.60 325 *e*PKPdif **PKPdif 19 33 37.8 -0.3**
MORC Moravsky Berou 142.66 329⇓ *i*P **PKPdif 19 33 38.8 +0.6**
MORC Moravsky Berou 142.66 329 *e*PKIKP **PKPdif 19 33 38.0 -0.2**
MORC Moravsky Berou 142.66 329 *e*PKPdif **PKPdif 19 33 38.0 -0.2**
RZN Rozhen 142.71 313 *e*P **PKPdif 19 33 33.0 -5.7**
KARP Karpathos 142.82 302 *e*PKPpre PKPpre 19 33 35.0
VYHS Vyhne 142.82 326 *e*PKIKP **PKPdif 19 33 35.3 -3.2**
VYHS Vyhne 142.82 326 *e*PKP **PKPdif 19 33 35.3 -3.2**
KRLC Kraliky 142.83 329 *e*PKP **PKPdif 19 33 36.2 -2.3**
KRLC Kraliky 142.83 329 *e*PKIKP **PKPdif 19 33 36.2 -2.3**
DPC Dobruska-Polom 142.86 330 *e*PKP **PKPdif 19 33 35.8 -2.7**
DPC *ex* x 19 33 50.2
DPC Dobruska-Polom 142.86 330 *e*PKIKP **PKPdif 19 33 35.8 -2.7**
DPC *e* 19 33 50.2
BZS Buzias 142.90 320⇓ *i*P **PKPdif 19 33 34.5 -4.2**
BZS Buzias 142.90 320⇓PKIKP **PKPdif 19 33 34.5 -4.2**
MDVR Moldovita 143.27 319⇓ *i*P PKPbc 19 33 37.5 +1.0
MMB Musomiste 143.42 313 *e*P PKPbc 19 33 37.0 0.0
NVR Nevrokopi 143.43 313 *e*P PKPbc 19 33 36.9 -0.1
VRAC Vranov 143.44 329⇓ *i*P PKPbc 19 33 37.8 +1.1
VRAC Vranov 143.44 329⇓PKIKP PKPbc 19 33 37.8 +1.1
PVCC Panska Ves 143.53 332 *e*PKP **PKPdif 19 33 38.7 -0.9**
PVCC *ep*PKP **PKiKP 19 33 43.9 +0.9**
PVCC AMS AMS 20 46 50.0
PVCC Panska Ves 143.53 332 *e*PKIKP **PKPdif 19 33 38.7 -0.9**
PVCC *e* 19 33 43.9
BRG Berggiesshubel 143.56 333 *e*PKP PKPbc 19 33 37.2 +0.1
comp=Z,22nm,1.4s
BRG Berggiesshubel 143.56 333 *e*PKP PKPbc 19 33 37.2 +0.1
comp=Z,22nm,1.4s
BRG Berggiesshubel 143.56 333 *e*PKIKP PKPbc 19 33 37.2 +0.2
BRG pmax pmax
comp=Z,22nm,1.4s
CLL Collm 143.63 334⇓ *i*PKPdif PKPbc 19 33 37.0 -0.2
comp=Z,17nm,1.3s
CLL *e* 19 33 50.0
CLL Collm 143.63 334⇓ *i*PKIKP PKPbc 19 33 37.0 -0.2
CLL *e* 19 33 50.0
CLL pmax pmax
comp=Z,12nm,1.3s
CLL Collm 143.63 334 *e*PKPpre PKPpre 19 33 37.2
ZKR Zakros 143.67 302 P PKPab 19 33 37.4 +0.3
SRS Serrai 143.71 313 P PKPab 19 33 36.8 -0.3
OUR Ouranopolis 143.75 311 P PKPab 19 33 36.8 -0.4
KKB Krupnik 143.75 314 *e*P PKPbc 19 33 39.0 +1.1
GOPC GO Pecny, Ondr 143.87 331 *e*PKP PKPbc 19 33 38.7 +0.7
GOPC *ep*PKP **PKiKP 19 33 44.3 +0.5**
GOPC *ex* x 19 33 52.6
GOPC GO Pecny, Ondr 143.87 331 *e*PKIKP PKPbc 19 33 38.7 +0.7
GOPC *e* 19 33 44.3
GOPC *e* 19 33 52.6
PRU Pruhonice 143.93 331 *e*PKP PKPbc 19 33 38.8 +0.6
PRU *ep*PKP **PKiKP 19 33 44.3 +0.5**
PRU Pruhonice 143.93 331 *e*PKIKP PKPbc 19 33 38.8 +0.6
PRU *e* 19 33 44.3
SANT Santorini 143.95 304⇓ *i*P PKPbc 19 33 38.7 0.0
SANT Santorini 143.95 304 *e*PKPpre PKPpre 19 33 37.2
PAIG Paliouri 144.11 311 P **PKPab 19 33 37.4 -1.2**
NPS Neapolis 144.11 302 P PKPbc 19 33 39.6 +0.4
KNT Kendrikon 144.17 313 P **PKPab 19 33 38.4 -0.4**
LAST Lasithi 144.25 302⇑ *i*P PKPbc 19 33 40.3 +0.6
LAST Lasithi 144.25 302 P PKPbc 19 33 39.9 +0.2
LAST Lasithi 144.25 302 *e*PKPdif PKPbc 19 33 39.7 0.0
VAY Valandovo 144.33 313 P **PKPab 19 33 39.4 +0.1**
VAY Valandovo 144.33 313 *i* PKP PKPbc 19 33 39.6 -0.1
RCBR Riachuelo 144.66 135 *e*PKPdif **PKPab 19 33 40.6 -0.8**
XOR Xorichti 144.67 310 P **PKPab 19 33 39.7 -1.0**
NKC Novy Kostel 144.68 333 *e*PKP PKPbc 19 33 41.1 +0.6
NKC *ex* x 19 33 53.4
NKC Novy Kostel 144.68 333 *e*PKIKP PKPbc 19 33 41.1 +0.6
NKC *e* 19 33 53.4
DIVS Divibare 144.68 319 P PKPbc 19 33 41.2 +0.4
IDI Anoyia 144.68 303⇓ *i*P **PKPab 19 33 40.8 -0.1**
IDI Anoyia 144.68 303 P **PKPab 19 33 40.8 -0.1**
IDI Anoyia 144.68 303 *e*PKPdif **PKPab 19 33 40.1 -0.8**
CONA Conrad Observa 144.72 327 *i* PKPdif **PKPdif 19 33 41.6 -0.3**
comp=Z,58nm,1.2s,SNR=32
SKO Skopje 144.80 315 P PKPbc 19 33 41.3 +0.1
SKO Skopje 144.80 315 *i* PKP **PKPdif 19 33 42.2 +0.1**
SIVA Sivas 144.81 302⇓ *i*P **PKPdif 19 33 42.1 -0.2**
SIVA Sivas 144.81 302 P PKPbc 19 33 41.8 +0.4
SMIA Simia 144.84 309 P **PKPab 19 33 39.7 -1.7**
LIT Litokhoron 144.89 312 P **PKPab 19 33 40.9 -0.6**
KHC Kasperske Hory 144.98 331 *e*PKP **PKPdif 19 33 42.1 -0.2**
KHC *ex* x 19 33 54.4
KHC AMS AMS 20 50 50.0
comp=Z,100nm,14.1s
KHC Kasperske Hory 144.98 331 *e*PKIKP **PKPab 19 33 41.4 -0.2**
KHC Kasperske Hory 144.98 331 *e*PKPdif **PKPab 19 33 41.4 -0.2**
LKR Lokris 145.08 309 P **PKPbc 19 33 40.3 -1.9**
GERES GERESS Array B 145.13 330 PKPbc **PKPab 19 33 42.4 +0.1**
comp=Z,8.3nm,0.9s,baz=46,slow=3.9,SNR=48
VAM Vamos 145.19 303 P **PKPdif 19 33 43.1 +0.1**
BIA Bitola 145.31 314 *i* PKP **PKPbc 19 33 42.7 -0.2**
KZN Kozani 145.31 312 P **PKPbc 19 33 42.0 -1.0**
LTK Loutraki 145.32 308 P **PKPbc 19 33 41.5 -1.5**
ARSA Arzberg 145.33 327 *i* PKPdif **PKPdif 19 33 43.3 +0.3**
comp=Z,35nm,1.2s,SNR=15
IMMV Iera Moni Meta 145.35 303 P **PKPbc 19 33 43.2 +0.1**
FNA Florina 145.37 313 P **PKPbc 19 33 42.2 -0.9**
AGG Agios Georgios 145.42 310 P **PKPbc 19 33 42.1 -1.2**
AGG Agios Georgios 145.42 310 *e*PKIKP **PKPbc 19 33 42.7 -0.6**
AGG Agios Georgios 145.42 310 *e*PKPbc **PKPbc 19 33 42.7 -0.6**
DSF Desfina 145.51 309 P **PKPdif 19 33 42.2 -1.3**
MOA Molln 145.56 329 *i* PKPab **PKPab 19 33 44.0 +0.3**
comp=Z,66nm,1.1s,SNR=35
OHR Ohrid 145.62 314 *i* PKP **PKPab 19 33 44.4 +0.2**
KPRO Kipourio 145.74 312 P **PKPdif 19 33 43.1 -0.8**
VLI Veliai 145.78 306 P **PKPdif 19 33 42.1 -1.9**
EVR Evrytania 145.84 310 P **PKPdif 19 33 41.6 -2.5**
SERG Sergoula 145.85 309 P **PKPdif 19 33 44.4 +0.3**
ANX Ano Chora 145.88 309 P **PKPbc 19 33 45.1 +0.2**
KLV Kalavryta, Ach 145.92 308 P **PKPbc 19 33 44.7 -0.2**
PERS Pernice 145.95 326 *i* PKPdif **PKPdif 19 33 44.3 +0.3**
PERS *i* 19 33 57.8
SOKA Soboth 145.96 326 *i* PKPab **PKPbc 19 33 44.8 0.0**
comp=Z,51nm,1.6s,SNR=14
LAKA Lakka 145.97 309 P **PKPbc 19 33 45.3 +0.2**
VLX Vlachokerasia 145.99 307 P **PKPbc 19 33 45.1 -0.1**
BLY Banja Luka 145.99 322⇓ *i*P **PKPab 19 33 45.5 +0.1**
PDG Podgorica 146.00 317⇑ *i*P **PKPbc 19 33 44.8 -0.1**
PDG Podgorica 146.00 317 P **PKPbc 19 33 45.0 +0.1**
TIR Tirane 146.13 315⇓ *i*P **PKPab 19 33 45.9 -0.1**
TIR Tirane 146.13 315⇓PKP2 **PKPab 19 33 45.9 -0.1**
TIR Tirane 146.13 315 *e*PKPdif **PKPab 19 33 45.9 -0.1**
PVO Paravola 146.16 310 P **PKPab 19 33 46.0 -0.2**
JAN Janina 146.22 312 P **PKPab 19 33 46.2 -0.3**
DSL Palaion Diasel 146.26 311 P **PKPbc 19 33 45.8 -0.1**
DRO Drossia 146.28 308 P **PKPab 19 33 47.5 +0.8**
OBKA Obir 146.33 327 *i* PKPab **PKPbc 19 33 45.7 -0.2**
comp=Z,16nm,1.1s
PDO Prodromos 146.41 310 P **PKPab 19 33 46.8 -0.4**
AMT Artemida-Makis 146.43 308 P **PKPdif 19 33 45.6 +0.5**
AXS Araxos 146.43 309 P **PKPab 19 33 46.9 -0.4**
KBA Koelnbreinsper 146.54 328 *i* PKPab **PKPbc 19 33 46.1 -0.5**
comp=Z,19nm,1.1s,SNR=7.5
BOJS Bojanci 146.61 325 *i* PKPdif **PKPbc 19 33 47.2 +0.5**
BOJS *i* 19 33 59.6
PYL PYLOS 146.63 307 P **PKPdif 19 33 45.4 0.0**
IGT Igoumenitsa 146.63 312 P **PKPdif 19 33 46.1 +0.7**
MYKA Terra Mystica 146.71 328 *i* PKPbc **PKPbc 19 33 46.5 -0.5**
comp=Z,8.3nm,0.8s
LKD2 Lefkada island 146.71 310 P **PKPbc 19 33 47.5 +0.3**
BEBN Eben Emael 146.77 340 PKP **PKPbc 19 33 46.4 -0.5**
CWF Charnwood Fore 146.79 348 *e*PKPdif **PKPbc 19 33 46.7 -0.2**
MEM Membach 146.82 339 PKP **PKPbc 19 33 47.5 +0.4**
KFL Anninata 146.89 309 P **PKPbc 19 33 47.7 0.0**
JAVS Javornik 146.99 326 *i* PKPdif **PKPdif 19 33 45.5 -0.3**
JAVS *i* 19 34 00.2
STU Stuttgart 147.16 334 *e*PKP2 **PKPbc 19 33 48.7 +0.6**
STU Stuttgart 147.16 334 *e*PKPbc **PKPbc 19 33 48.7 +0.6**
ABTA Abfaltersbach 147.19 329 *i* PKPbc **PKPbc 19 33 47.8 -0.6**
comp=Z,29nm,1.2s,SNR=5.9
WATA Walderalm 147.21 330 *i* pPKPdif **PKPbc 19 33 48.2 -0.3**
comp=Z,37nm,1.2s,SNR=8.3
BCLA Clavier 147.22 340 PKP **PKPbc 19 33 47.8 -0.4**
WTTA Wattenberg 147.23 330 *i* pPKPdif **PKPbc 19 33 48.8 +0.1**
comp=Z,50nm,1.5s,SNR=9.2
MOTA Moosalm 147.42 331 *i* pPKPdif **PKPbc 19 33 49.0 -0.1**
comp=Z,37nm,1.0s,SNR=8.2
SNF Seneffe 147.46 341 PKP **PKPbc 19 33 49.5 +0.6**
RETA Reutte 147.47 331 *i* pPKPdif **PKPbc 19 33 49.3 +0.1**
comp=Z,18nm,1.0s,SNR=5.4
LANF Langenberg 147.54 336 PKP **PKPbc 19 33 49.9 +0.7**
WLF Walferdange 147.57 338 PKP **PKPab 19 33 50.5 -0.9**
WLF Walferdange 147.57 338 *e*PKP2 **PKPbc 19 33 50.2 +1.0**
WLF Walferdange 147.57 338 *e*PKPbc **PKPbc 19 33 50.2 +1.0**
DOU Dourbes 147.72 340 PKP **PKPbc 19 33 50.0 +0.4**
FETA Feichten 147.83 331 *i* pPKPdif **PKPbc 19 33 50.2 -0.1**
comp=Z,52nm,1.2s,SNR=11
STR Strasbourg 147.88 335 PKP **PKPbc 19 33 50.9 +0.8**
DAVA Damuels 148.01 332 *i* sPKPdif **PKPbc 19 33 50.8 +0.1**
comp=Z,37nm,1.0s,SNR=12
MENF Mencas 148.03 343 PKP **PKPbc 19 33 51.5 +1.1**
WLS Welschbruch 148.17 336 PKP **PKPbc 19 33 51.0 0.0**
FUORN Ofenpass-Fuorn 148.34 331 *e*PKPdif **PKPdif 19 33 48.8 +0.5**
ECH Echery 148.41 336 PKP **PKPbc 19 33 51.6 0.0**
MOF Molkenrain 148.72 335 PKP **PKPbc 19 33 52.3 -0.1**
TUE Stuetta 148.87 331 *e*PKPbc **PKPbc 19 33 53.1 +0.1**
LOMF Lomont 149.25 335 PKP **PKPbc 19 33 54.2 -0.4**
TIP Timpagrande 149.26 314⇓ *i*P **PKPbc 19 33 54.9 +0.8**
TIP Timpagrande 149.26 314 *e*PKPbc **PKPbc 19 33 54.8 +0.7**
AQU L'Aquila 149.62 322 *e*PKP2 **PKPbc 19 33 56.1 +1.2**
AQU L'Aquila 149.62 322 *e*PKPbc **PKPbc 19 33 56.1 +1.2**
OG01 Vacheresse 150.13 334 PKP **PKPbc 19 33 56.6 +0.6**
RSL Roselend 150.67 333 PKP **PKPbc 19 33 57.5 +0.1**
PLDF La Plantade 151.62 337 PKP **PKPbc 19 33 59.8 +0.3**
AGO Saint Agoulin 151.72 338 PKP **PKPbc 19 33 59.9 +0.3**
LUCF Luceram 151.75 330 PKP **PKPbc 19 33 59.6 -0.3**
MVIF Mont Vial 151.84 330 PKP **PKPbc 19 33 59.8 -0.4**
SSB Saint Sauveur 151.85 335 PKP **PKPbc 19 34 00.2 +0.2**
SSB Saint Sauveur 151.85 335 *e*PKIKP **PKPbc 19 34 00.2 +0.2**
SSB Saint Sauveur 151.85 335 *e*PKPbc **PKPbc 19 34 00.2 +0.2**
REVF Revere 151.86 330 PKP **PKPbc 19 33 59.6 -0.5**
PYM Petit Puy Mans 152.02 338 PKP **PKPbc 19 34 00.7 +0.3**
CALN Calern 152.07 330 PKP **PKPbc 19 33 59.8 -0.9**
OG26 St.-Nazaire-De 152.12 334 PKP **PKPbc 19 34 01.1 +0.4**
LBL Lubilhac 152.38 337 PKP **PKPbc 19 34 01.8 +0.6**
KEST Kesra 156.08 314 PKPbc PKPdf 19 34 11.5 +12
comp=Z,5.4nm,0.9s,baz=201,slow=6.3,SNR=3.9
ESDC Sonseca Array 159.73 343 PKPab **PKPab 19 34 43.3 +0.4**
comp=Z,0.5nm,0.6s,baz=14,slow=3.2,SNR=6.1
DBIC Dimbokro 164.79 207 PKP **PKPdf 19 34 09.5 -0.5**
comp=Z,5.2nm,1.0s,baz=146,slow=8.8,SNR=3.7
DBIC PKPab **PKPab 19 35 05.1 -0.5**
comp=Z,6.1nm,1.0s,baz=124,slow=6.8,SNR=6.0
TORD Torodi Ar. Bea 165.29 242 PKP **PKPdf 19 34 09.9 -0.4**
comp=Z,8.1nm,1.0s,baz=6.6,slow=0.7,SNR=34
TORD PKPab **PKPab 19 35 07.5 -0.5**
comp=Z,2.3nm,0.7s,baz=103,slow=3.9,SNR=9.0

IDC ***16*** *19:18:19.4±0.6,20°.47S×168°.29E,h0km,mb4.7/21, mb1 4.8/24,mb1mx4.8/38,mbtmp4.7/24,ML3.9/2,MS4.5/10, Ms1 4.5/10,ms1mx4.1/29,Error ellipse: s-maj=17.8km s-min=14.1km az=136.0*

NEIC ***16*** *19:18:20.6±0.3,20°.43S×168°.35E,h10km,mb5.5/25,Error ellipse: s-maj=8.2km s-min=6.7km az=155.0*

GCMT ***16*** *19:18:20.6±0.2,20°.42S×168°.28E,h17km,MW5.1/91, Moment Tensor Solution. s52,c59; s91,c139; Duration: 0 Moment tensor: Scale 10¹⁶Nm; Mrr~5.17±.22; Mθθ0.98±.14; Mφφ4.19±.15; Mrθ0.32±.38; Mθφ-1.95±.09; Mφr-1.21±.35; Best double couple: Mo5.29000×10¹⁶ NP1:φs337.00000°,δ52.00000°,λ-87.00000°. NP2: φs152.00000°,δ38.00000°,λ-94.00000°. Principal axes: T 5.2560, Plg7.0000°, Azm65.0000°; N 0.0710, Plg2.0000°, Azm155.0000°; P -5.3250, Plg83.0000°, Azm265.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

MOS ***16*** *19:18:21.8±1.8,20°.25S×168°.36E,h33km,mb5.5/25 Error ellipse: s-maj=46.5km s-min=17.2km az=169.5*

ISCJB ***16*** *19:18:23.0±0.2,20°.47S±0°.04×168°.31E±0°.04,h37km, mb5.1/78,MS4.5/10,Error ellipse: s-maj=6.7km s-min=4.2km az=153.5*

ISC 16 19:18:23.6±0.4,20°.43S±0°.06×168°.31E±0°.05,h31km±2km, h31km:pP-P,n309,σ1$35/294,mb5.2/76,MS4.4/11,4C-7D, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.39**	**226**	Pn	**Pn**		**19 18 58.5**	**-2.2**
34nm,0.3s,baz=95,slow=10.0,SNR=12								
DZM				Sn	**Sn**		**19 19 26.9**	**-2.0**
108nm,0.3s,baz=330,slow=23,SNR=9.9								

baz=19,SNR=12
URZ Urewera 19.34 159 P **Pn 19 22 47.5 -0.1**
0.3nm,0.3s,baz=136,slow=11,SNR=3.1
URZ Urewera 19.34 159 *e*PcP **Pn 19 22 50.0 +2.4**
AFI Afiamalu 20.09 74 LR LR 19 29 44.1
comp=Z,767nm,18.7s,baz=241,slow=34
CTA Charters Tower 20.69 267 P Pn 19 23 02.6 -1.2
74nm,1.1s,baz=94,slow=14,SNR=9.8
CTA LR LR 19 30 04.1
comp=Z,1µm,21.9s,baz=94,slow=34
CTAO Charters Tower 20.69 267 *e*P Pn 19 23 03.5 -0.3
CTAO pmax pmax
comp=Z,555nm,1.1s
CTAO Charters Tower 20.69 267 *e*P Pn 19 23 03.5 -0.3
comp=Z,555nm,1.1s
CNB Canberra Magne 22.31 224 P **P 19 23 21.3 +2.7**
baz=22,SNR=8.5
YNG Young 22.38 228 P **P 19 23 20.5 +1.1**
baz=22,SNR=6.3
RABL Rabaul 22.53 314 *e*Sn **P 19 23 22.1 +1.1**
CAN Canberra 22.55 225 *e*P **P 19 23 23.6 +2.4**
CAN *e**PP **sP 19 23 34.8 +1.1**
CAN Canberra 22.55 225 *e*P **P 19 23 23.6 +2.4**
CAN *e*pP **sP 19 23 34.8 +1.1**
CAN Canberra 22.55 225 *e*Sn sP 19 23 35.3 +1.6
MTSU Mount Surprise 22.76 272 P **P 19 23 24.5 +1.0**
baz=23,SNR=18
QLP Quilpie 22.89 250 P **P 19 23 25.7 +0.8**
baz=23,SNR=14
OXZ Oxford 23.04 173 *e*Sn sP 19 23 37.6 -1.1
CMSA Cobar Meteorol 23.10 237 P **P 19 23 27.9 +1.0**
baz=23,SNR=26
PMG Port Moresby 23.16 295 P **P 19 23 28.3 +0.7**
comp=Z,37nm,0.9s,baz=65,slow=17,SNR=4.0
PMG Port Moresby 23.16 295⇓ *i*P **P 19 23 27.9 +0.3**
PMG pmax pmax
comp=Z,298nm,1.2s
COEN Coen 24.84 281 P **P 19 23 44.4 +1.0**
baz=25,SNR=8.7
COEN Coen 24.84 281 *e*S **P 19 23 44.5 +1.0**
TOO Toolangi 26.16 224 P **P 19 23 56.6 +1.3**
baz=26,SNR=6.9
STKA Stephens Creek 26.48 239 P **P 19 23 59.0 +0.9**
comp=Z,28nm,0.7s,baz=78,slow=9.1,SNR=34
STKA LR LR 19 33 53.5
comp=Z,1µm,18.9s,baz=64,slow=35
STKA Stephens Creek 26.48 239 P **P 19 23 59.1 +1.0**
baz=26,SNR=37
QIS Mount Isa 26.87 265 P **P 19 24 01.5 -0.4**
baz=27,SNR=4.3
ARPS Mount Arapiles 28.24 229 P **P 19 24 15.0 +1.1**
baz=28,SNR=7.3
HTT Hallett 29.11 237 P **P 19 24 22.5 +0.7**
baz=29,SNR=14
BBOO Buckleboo 31.23 240 P **P 19 24 40.6 +0.2**
baz=31,SNR=18
WRAB Tennant Creek 31.85 265⇓ *i*P **P 19 24 44.4 -1.6**
WRAB pmax pmax
comp=Z,47nm,1.1s
WRAB Tennant Creek 31.85 265 *e*P **P 19 24 44.8 -1.2**
WRA Warramunga Arr 31.86 265 P **P 19 24 44.8 -1.3**
comp=Z,9.3nm,0.9s,baz=93,slow=9.2,SNR=12
ASAR Alice Springs 32.01 258 P **P 19 24 46.7 -0.7**
comp=Z,64nm,0.8s,baz=83,slow=9.1,SNR=94
ASAR LR LR 19 37 55.3
comp=Z,2µm,18.2s,baz=90,slow=37
GENI Genyem 32.67 299 P **P 19 24 54.4 +1.1**
comp=Z,118nm,1.4s,comp=Z,2µm
GENI Genyem 32.67 299 P **P 19 24 55.8 +2.5**
MTN Manton Dam 36.34 276 P **P 19 25 25.6 +0.6**
baz=36,SNR=3.6
WRKA Warakurna 37.09 255 P **P 19 25 30.9 -0.5**
baz=37,SNR=17
TBI Tubuai 39.20 102 *e*LR LR 19 36 45.5
comp=Z,624nm,28.8s
PPT2 Papeete2 39.84 93 *e*P **P 19 25 52.8 -1.8**
comp=Z,50nm,1.1s
PPT2 Papeete2 39.84 93 *e*LR LR 19 37 05.6
comp=Z,1µm,29.2s
PPT Papeete 39.85 93 P **P 19 25 52.8 -1.8**
comp=Z,38nm,0.8s,baz=249,slow=17,SNR=3.4
TIAR Tiarei 40.06 93 *e*P **P 19 25 54.7 -1.7**
comp=Z,26nm,0.8s
FITZ Fitzroy Crossi 40.27 266 P **P 19 25 57.9 -0.1**
comp=Z,18nm,0.8s,baz=113,slow=8.0,SNR=17
FITZ Fitzroy Crossi 40.27 266 P **P 19 25 58.1 +0.1**
baz=40,SNR=14
FITZ Fitzroy Crossi 40.27 266 *e*P **P 19 25 58.0 -0.1**
comp=Z,14nm,0.9s
FITZ *e*pP **pP 19 26 08.4 +1.1**
PALU Palau 43.22 306 P **P 19 26 22.9 +0.7**
baz=43,SNR=4.1
NLAI Namlea 43.62 288 P **P 19 26 26.7 +1.2**
comp=Z,74nm,1.6s,comp=Z,1µm
SANI Sanana 45.14 288 P **P 19 26 40.2 +2.5**
comp=Z,143nm,1.2s,comp=Z,1µm
MMRI Maumere 45.96 278 *e*P **P 19 26 43.6 -0.6**
comp=Z,15nm,0.6s
KLBR Kellerberrin 46.42 245 P **P 19 26 47.1 -0.4**
baz=46,SNR=4.3
NWAO Narrogin (SRO) 46.90 244 P **P 19 26 51.0 -0.3**
baz=47,SNR=7.4
MORW Morawa 47.92 249 P **P 19 26 59.1 -0.3**
baz=48,SNR=4.1
LUWI Luwuk 48.46 288 P **P 19 27 05.3 +1.7**
comp=Z,110nm,1.2s,comp=Z,2µm
LUWI Luwuk 48.46 288 *e*P **P 19 27 04.1 +0.5**
comp=Z,106nm,1.3s
KAPI Kappang 49.57 281 *e*P **P 19 27 12.6 +0.5**
comp=Z,105nm,1.5s
MRSI Marisa 49.89 289 P **P 19 27 15.3 +0.7**
comp=Z,20nm,1.2s
SPSI Sidrap Palu 49.96 282 P **P 19 27 11.3 -3.8**
TTSI Tana Toraja 50.28 284 P **P 19 27 19.7 +2.2**
comp=Z,33nm,1.4s,comp=Z,516nm
TAOE Nuku Hiva Isla 50.99 85 *e*P **P 19 27 21.0 -2.0**
comp=Z,72nm,1.0s
TAOE *e*S **S 19 34 39.1 +0.7**
comp=Z,229nm,26.0s
TAOE *e*LR LR 19 42 17.2
comp=Z,784nm,29.3s
PCI Palu 51.16 286 P **P 19 27 26.5 +2.3**
comp=Z,153nm,1.5s,comp=Z,2µm
RKT Rikitea 52.46 104 *e*LR LR 19 42 49.0
comp=Z,339nm,33.0s
JAGI Jajag, Banyuwa 53.55 275 *e*P **P 19 27 41.1 -0.8**
comp=Z,152nm,1.5s
VNDA Vanda 57.22 182 P **P 19 28 08.0 +0.6**
comp=Z,1.1nm,0.8s,baz=7.2,slow=10.0,SNR=3.7
SBA Scott Base 57.47 180 *e*P **P 19 28 09.5 +0.3**
SBA Scott Base 57.47 180 *e*P **P 19 28 09.5 +0.3**
KKM Kota Kinabalu 57.54 292 *e*P **P 19 28 10.1 -0.6**
comp=Z,124nm,1.5s
CISI Cisompet, Garu 59.78 273 *e*P **P 19 28 25.2 -1.1**
comp=Z,130nm,1.4s
KSM Kuching 60.79 284 *e*P **P 19 28 33.4 +0.2**
comp=Z,46nm,0.9s
KSM *e*pP **sP 19 28 44.0 -2.5**
CBJI Citeko 61.06 274 P **P 19 28 34.3 -0.7**
comp=Z,309nm,0.9s
CGJI Cibinong 62.08 273 P **P 19 28 41.5 -0.4**
comp=Z,120nm,1.0s,comp=Z,1µm
MJAR Matsushiro Arr 63.40 333 P **P 19 28 49.7 -0.4**
comp=Z,10nm,1.1s,baz=166,slow=7.1,SNR=14
MAJO Matsushiro 63.40 333 *e*P **P 19 28 49.8 -0.4**
MAJO pmax pmax
comp=Z,6.0nm,0.8s
MAJO Matsushiro 63.40 333 *e*P **P 19 28 49.8 -0.4**
comp=Z,5.8nm,0.8s
KASI Kota Agung 63.56 274 P **P 19 28 51.5 -0.3**
comp=Z,83nm,1.0s
TPUB Ta-pu 63.63 311 *e*P **P 19 28 51.2 -0.8**
comp=Z,27nm,0.9s
ASAJ Asahikawa 68.41 340 P **P 19 29 23.9 +1.7**
comp=Z,15nm,1.1s,baz=254,slow=14,SNR=3.6
TJN Taejon 68.48 325⇓ *e*P **P 19 29 22.8 0.0**
BKNI Bangkinang 68.87 279 P **P 19 29 27.0 +1.2**
comp=Z,111nm,0.8s,comp=Z,1µm
BKNI Bangkinang 68.87 279 *e*P **P 19 29 26.3 +0.5**
comp=Z,23nm,0.6s
KSRS Korea Array 69.00 326 P **P 19 29 26.8 +0.8**
comp=Z,1.8nm,0.7s,baz=149,slow=6.9,SNR=12
KSAR Wonju Array Be 69.01 326 P **P 19 29 26.8 +0.7**
KSAR Wonju Array Be 69.01 326 P **P 19 29 26.8 +0.7**
MNSI Mandailing Nat 70.40 278 P **P 19 29 35.0 -0.2**
comp=Z,34nm,0.9s
YSS Yuzh-Sakhalins 70.92 342⇓ *i*P **P 19 29 38.9 +1.3**
YSS *e* 19 29 51.3
YSS pmax pmax
comp=Z,20nm,1.2s
KULM Kulim 71.14 283 *e*P **P 19 29 39.9 +0.2**
comp=Z,45nm,1.5s
KULM *e*pP **pP 19 29 50.6 +1.0**
SKLT Songkhla 71.92 285 P **P 19 29 46.1 +1.7**
comp=Z,32nm,1.3s,comp=Z,562nm
USRK Ussuriysk Ar. 72.40 333 P **P 19 29 47.5 +0.9**
comp=Z,17nm,1.0s,baz=144,slow=4.2,SNR=18
GSI Gunungsitoli 72.45 278 P **P 19 29 48.9 +1.3**
comp=Z,61nm,1.1s
GSI Gunungsitoli 72.45 278 *e*P **P 19 29 48.2 +0.5**
comp=Z,48nm,1.1s
WHN Wuhan 72.51 313 *e*P **P 19 29 48.3 +0.8**
CHBT CHBT 72.76 291 P **P 19 29 50.9 +1.5**
comp=Z,28nm,1.4s
TRTT Trang 73.03 285 P **P 19 29 52.1 +1.0**
comp=Z,30nm,1.3s,comp=Z,2µm
SKNT Sakolnakorn 73.25 296 P **P 19 29 53.6 +1.3**
comp=Z,42nm,2.4s
DL2 Dalian 73.44 324 P **P 19 29 53.4 +0.5**
DL2 S **S 19 39 15.3 -4.9**
DL2 pmax pmax
comp=Z,36nm,0.9s
DL2 pmax pmax
comp=Z,120nm,5.0s
DL2 LR LR
comp=N,290nm,17.2s
DL2 LR LR
comp=Z,230nm,35.5s
MDJ Mudanjiang 73.75 332 *e*P **P 19 29 55.4 +0.7**
comp=Z,47nm,1.4s
PETK Petropavlovsk- 73.80 353 P **P 19 29 55.8 +1.1**
comp=Z,13nm,0.9s,baz=116,slow=6.8,SNR=6.7
SURT Suratani 74.30 286 P **P 19 30 00.0 +1.5**
comp=Z,8.3nm,2.0s,comp=Z,205nm
PBKT Sadao Pong 75.63 294 P **P 19 30 07.5 +1.4**
comp=Z,35nm,1.3s
ENH Enshi 75.76 310 *e*P **P 19 30 06.7 0.0**
comp=Z,48nm,1.4s
UTTA Uttaradit 76.51 295 P **P 19 30 12.7 +1.6**
comp=Z,4.0nm,1.3s,comp=Z,51nm
KLR Kul'dur 76.60 336⇑ *e*P **P 19 30 10.7 -0.2**
MAW Mawson 77.01 202 P **P 19 30 13.5 +0.5**
comp=Z,7.4nm,0.8s,baz=116,slow=7.8,SNR=9.9
MAW LR LR 20 00 51.0
comp=Z,178nm,18.8s,baz=64,slow=33
MAW Mawson 77.01 202 P **P 19 30 13.6 +0.5**
baz=77,SNR=6.7
NKL Nikolayevsk 77.09 343 *e*P **P 19 30 13.0 -0.5**
NKL pmax pmax
comp=Z,30nm,1.0s
NKL pmax pmax
comp=Z,350nm,4.0s
LAMP Lampang 77.64 295 P **P 19 30 19.3 +1.9**
comp=Z,14nm,0.9s,comp=Z,112nm
CRAI Chiangrai 77.78 297 P **P 19 30 19.5 +1.3**
comp=Z,499nm,0.7s
CMAR Chiang Mai Arr 78.20 295 P **P 19 30 22.1 +1.6**
comp=Z,12nm,0.9s,baz=134,slow=4.3,SNR=42
CMMT Chiang Mai 78.35 295 P **P 19 30 22.7 +1.3**
comp=Z,35nm,1.4s,comp=Z,483nm
CHTO Chiang Mai 78.35 295 P **P 19 30 22.7 +1.3**
comp=Z,158nm,1.5s,comp=Z,2µm
CHTO Chiang Mai 78.35 295 *e*P **P 19 30 22.7 +1.3**
CHTO pmax pmax
comp=Z,26nm,0.9s
CHTO Chiang Mai 78.35 295 *e*P **P 19 30 22.7 +1.3**
comp=Z,26nm,0.9s
CMAI Chiengmai2 78.77 296 P **P 19 30 25.3 +1.4**
comp=Z,24nm,1.4s
LZH Lanzhou 82.88 313 *e*P **P 19 30 48.1 +2.6**
LZH pP sP 19 30 59.4 +0.3
LZH sP pP 19 31 04.3 +8.8
LZH pmax pmax
comp=Z,31nm,1.2s
SYO Syowa Base 83.55 196⇑ *e*P **P 19 30 46.2 -2.0**
SYO Syowa Base 83.55 196⇓ *e*sP sP 19 30 57.4 -4.5
SEY Seymchan 84.03 353⇑ *e*P **P 19 30 50.1 -0.4**
SHL Shillong 87.14 298 *ex* **P 19 31 09.0 +1.8**
ULN Ulaanbaatar 87.30 324 *e*P **P 19 31 06.8 -0.6**
ULN pmax pmax
comp=Z,56nm,1.8s
ULN Ulaanbaatar 87.30 324 *e*P **P 19 31 06.8 -0.6**
comp=Z,56nm,1.8s
ULN Ulaanbaatar 87.30 324 *e*pP pP 19 31 18.4 +1.0
GTA Gaotai 87.31 314 P **P 19 31 08.5 +0.9**
GTA pP sP 19 31 19.5 -1.8
GTA sP pP 19 31 24.9 +7.2
GTA pmax pmax
comp=Z,7.0nm,1.4s
SONM Songino Array 87.64 323 P **P 19 31 09.8 +0.8**
comp=Z,1.4nm,0.5s,baz=167,slow=7.2,SNR=5.9
YAK Yakutsk 87.74 343 *e*P **P 19 31 09.1 +0.2**
YAK pmax pmax
comp=Z,15nm,1.1s
YAK pmax pmax
comp=N,8.0nm,1.4s
SNAA Sanae 87.94 183 *e*P **P 19 31 08.5 -1.6**
SNAA Sanae 87.94 183 *e*P **P 19 31 08.5 -1.6**
SNAA Sanae 87.94 183 *e*pP pP 19 31 20.0 -0.2
BILL Bilibino 88.22 359 *d i*P **P 19 31 11.0 -0.1**
BILL *e* 19 34 37.1
BILL *e*PPP PPP 19 36 34.1
BILL *e*S **S 19 41 53.1 0.0**
BILL pmax pmax
comp=Z,30nm,1.2s
BILL MLR MLR
comp=Z,97nm,19.0s
BILL Bilibino 88.22 359 *e*P **P 19 31 11.3 +0.2**
comp=Z,44nm,1.4s
BILL *e*pP **sP 19 31 22.4 -2.4**
N02D Trinity Center 88.40 45 P **P 19 31 13.5 +0.9**
baz=241
M02C Callahan 88.50 45 P **P 19 31 13.8 +0.6**
baz=241
CMB Columbia Colle 88.60 48 *e*P **P 19 31 13.3 -0.4**
CMB *e**PP **sP 19 31 25.0 -2.4**
CMB pmax pmax
comp=Z,14nm,0.8s
CMB Columbia Colle 88.60 48 *e*P **P 19 31 13.3 -0.4**
comp=Z,14nm,0.8s
CMB *e*pP **sP 19 31 25.0 -2.4**
O03D Paynes Creek 88.68 46 P **P 19 31 13.9 -0.1**
baz=242
YBH Yreka Blue Hor 88.76 44 P **P 19 31 14.8 +0.4**
comp=Z,3.8nm,0.8s,baz=229,slow=1.6,SNR=7.9
YBH Yreka Blue Hor 88.76 44 *e*P **P 19 31 14.0 -0.4**
YBH *e**PP **sP 19 31 26.3 -1.8**
YBH pmax pmax
comp=Z,5.0nm,0.9s
YBH Yreka Blue Hor 88.76 44 *e*P **P 19 31 14.0 -0.4**
comp=Z,5.5nm,0.9s
YBH *e*pP **sP 19 31 26.3 -1.8**
EDW2 Edwards Air Fo 88.92 52 P **P 19 31 15.6 +0.3**
baz=244
HUMO Hull Mountain 89.02 43 *e*P **P 19 31 15.7 +0.2**
comp=Z,69nm,1.1s
HUMO *e*pP **sP 19 31 27.4 -1.8**
MONP2 Monument Peak 89.25 54 P **P 19 31 17.0 0.0**
baz=245
M04C Macdoel 89.36 45 P **P 19 31 16.9 -0.4**
baz=242
LSA Lhasa 89.41 302 *e*P **P 19 31 18.6 +0.4**
LSA pmax pmax
comp=Z,3.0nm,0.6s
LSA Lhasa 89.41 302 *e*P **P 19 31 18.6 +0.4**
comp=Z,3.4nm,0.6s
PFO Pinyon Flats O 89.52 54 P **P 19 31 18.5 +0.3**
comp=Z,2.3nm,0.8s,baz=171,slow=4.8,SNR=2.6
TPFO Pinon Flats 89.53 54 P **P 19 31 18.6 +0.3**
baz=245
I04A Tendick Farm, 89.94 43 P **P 19 31 19.7 -0.2**
baz=241
BOD Bodaibo 90.02 334 *e*P **P 19 31 17.2 -2.5**
BOD pmax pmax
comp=Z,9.0nm,1.6s
BELC Belle Mtn. Jos 90.03 54 P **P 19 31 20.6 0.0**
baz=245
NVAR Mina Array Bea 90.24 49 P **P 19 31 21.5 -0.1**
comp=Z,4.3nm,0.8s,baz=227,slow=8.6,SNR=25
NVAR LR LR 20 03 12.3
comp=Z,248nm,21.9s,baz=264,slow=30
BC3 Big Chuckawall 90.31 54 P **P 19 31 21.3 -0.6**
baz=246
FURC Furnace Creek, 90.43 51 P **P 19 31 22.8 +0.6**
baz=245
J05D Fort Rock, OR 90.46 43 P **P 19 31 22.6 +0.2**
baz=242
GLA Glamis 90.54 55 P **P 19 31 23.8 +0.9**
baz=246
IRM Iron Mountain 90.74 54 P **P 19 31 24.4 +0.6**
baz=246
ZAK Zakamensk 90.75 325 *e*P **P 19 31 21.3 -2.2**
ZAK pmax pmax
comp=Z,10.0nm,1.5s
I05D Terrebonne, OR 90.88 43 P **P 19 31 25.2 +1.0**
baz=242
TPNV Topopah Spring 91.08 51 P **P 19 31 26.2 +0.7**
baz=245
TLY Talaya 91.24 326 *e*P **P 19 31 26.0 +0.3**
TLY pmax pmax
comp=Z,12nm,1.5s
PDMCI Parker Dam,Lak 91.56 54 P **P 19 31 28.1 +0.6**
baz=246
ILAR Eielson Array 91.62 18 P **P 19 31 28.6 +1.5**
comp=Z,1.0nm,0.8s,baz=234,slow=6.0,SNR=7.6
ILAR LR LR 20 08 39.5
comp=Z,236nm,18.6s,baz=219,slow=33
WVOR Wild Horse Val 91.77 45 *e*P **P 19 31 28.5 0.0**
WVOR pmax pmax
comp=Z,5.0nm,1.0s
WVOR Wild Horse Val 91.77 45 *e*P **P 19 31 28.5 0.0**
comp=Z,5.5nm,1.0s
R11A Troy Canyon, C 92.14 50 P **P 19 31 31.0 +0.6**
baz=246
R11A Troy Canyon, C 92.14 50 *e*P **P 19 31 30.8 +0.4**
comp=Z,2.2nm,0.9s
TIXI Tiksi 95.72 348⇑ *e*P **P 19 31 43.8 -2.0**
TIXI pmax pmax
comp=Z,3.0nm,1.5s
PDAR Pinedale Array 98.06 47 P Pdif 19 31 59.7 +2.3
comp=Z,0.1nm,0.4s,baz=235,slow=3.2,SNR=2.7
PDAR LR LR 20 12 14.5
comp=Z,104nm,18.7s,baz=252,slow=33
TXAR Lajitas Array 98.10 62 P Pdif 19 31 59.5 +1.8
comp=Z,0.4nm,0.8s,baz=245,slow=5.0,SNR=5.0
TXAR LR LR 20 10 21.3
comp=Z,194nm,18.7s,baz=0.0,slow=32
MKAR Makanchi Array 101.97 316 P **Pdif 19 32 16.2 +1.7**
comp=Z,1.0nm,0.9s,baz=96,slow=7.4,SNR=4.0
MKAR PP **PP 19 36 25.3 -1.0**
comp=Z,0.5nm,0.8s,baz=122,slow=9.1,SNR=4.8
MKAR Makanchi Array 101.97 316 *i* P **Pdif 19 32 17.0 +2.6**
MKAR pmax pmax
comp=Z,1.0nm,0.9s
YKA Yellowknife Ar 102.12 28 P **Pdif 19 32 15.0 +0.3**
comp=Z,0.2nm,0.5s,baz=252,slow=5.4,SNR=4.8
ZALV Zalesovo Beam 102.53 323 P **Pdif 19 32 17.5 +0.8**
comp=Z,0.3nm,0.4s,baz=112,slow=3.4,SNR=2.5
ARU Arti 117.68 324 *i* PKIKP **PKPdf 19 37 06.0 -0.3**
ARU 19 38 18.4
ARU 19 44 15.5
ARU SS SS 19 54 21.0 -8.6
GEYT Alibeck 117.93 303 PKP **PKPdf 19 37 07.8 +0.4**
comp=Z,1.3nm,0.7s,baz=251,slow=7.7,SNR=4.3
ARCES ARCESS Array B 125.98 345 PKP **PKPdf 19 37 21.6 -0.3**
comp=Z,1.9nm,0.8s,baz=71,slow=5.3,SNR=3.9
KLMR Klimovskoe 126.17 332 *e*PKIKP **PKPdf 19 37 20.0 -2.4**
KLMR *e* 19 37 32.7
KLMR pmax pmax
comp=Z,11nm,1.4s
VRH Novokhopyorsk 128.42 320 *e*PKIKP **PKPdf 19 37 27.1 +0.1**
VRH pmax pmax
comp=Z,7.0nm,1.3s
KIV Kislovodsk 129.38 311 *e*PKIKP **PKPdf 19 37 29.6 +0.4**
KIV pmax pmax
comp=Z,3.0nm,1.0s
NEY Neytrino 129.47 310 *i* PKIKP **PKPdf 19 37 29.0 -0.5**
LPSR Galich'ya Gora 129.64 322 *e*PKIKP **PKPdf 19 37 29.9 +0.6**
LPSR pmax pmax
comp=Z,10.0nm,1.1s
VSR Storozhevoye 129.95 320 *e*PKIKP **PKPdf 19 37 29.9 0.0**
VSR pmax pmax
comp=Z,7.0nm,1.2s
OBN Obninsk 130.00 326⇓ *e*PKIKP **PKPdf 19 37 28.9 -1.0**
OBN *e* 19 39 45.6
OBN *e*PPP PPP 19 42 26.0
OBN *e*SS SS 19 57 02.4 -2.6
OBN pmax pmax
comp=Z,12nm,0.8s
AKASG Malin Array Be 135.93 323 PKP **PKPdf 19 37 40.8 -0.4**
comp=Z,0.8nm,0.5s,baz=58,slow=1.8,SNR=4.7
AKASG Malin Array Be 135.93 323 *i* PKIKP **PKPdf 19 37 42.9 +1.7**
AKASG pmax pmax
comp=Z,1.0nm,0.5s
BRTR Keskin Array B 136.83 307 PKP **PKPdf 19 37 43.8 +0.3**
comp=Z,1.1nm,0.9s,baz=134,slow=3.6,SNR=4.5
LANS Liptovska Anna 142.06 326 *e*PKIKP **PKPdf 19 37 52.8 +0.2**
LANS Liptovska Anna 142.06 326 *e*PKP **PKPdf 19 37 52.8 +0.2**
PRK Paraskevi 142.45 308 P **PKPdf 19 37 55.3 +1.8**
RZN Rozhen 142.68 313 *i* P **PKPdf 19 37 50.0 -4.1**
VYHS Vyhne 142.79 326 *e*PKIKP **PKPdf 19 37 51.4 -2.4**
VYHS Vyhne 142.79 326 *e*PKP **PKPdf 19 37 51.4 -2.4**
MMB Musomiste 143.40 313 *i* P PKPbc 19 37 53.0 +0.6
NVR Nevrokopi 143.40 313 P PKPab 19 37 51.7 +0.4
PVCC Panska Ves 143.51 332 *e*PKP PKPbc 19 37 52.5 +0.2
PVCC Panska Ves 143.51 332 *e*PKIKP PKPbc 19 37 52.5 +0.2
BRG Berggiesshubel 143.53 333 *e*PKP PKPbc 19 37 52.7 +0.3
comp=Z,19nm,1.5s
BRG Berggiesshubel 143.53 333 *e*PKP PKPbc 19 37 52.7 +0.3
comp=Z,19nm,1.5s
BRG Berggiesshubel 143.53 333 *e*PKIKP PKPbc 19 37 52.7 +0.3
BRG pmax pmax
comp=Z,19nm,1.5s
CLL Collm 143.61 334 *i* PKPdf PKPbc 19 37 52.3 -0.3
comp=Z,17nm,1.5s
CLL *i* 19 38 03.8
CLL Collm 143.61 334 *i* PKIKP PKPbc 19 37 52.3 -0.3
CLL *i* 19 38 03.8
CLL pmax pmax
comp=Z,17nm,1.5s
SRS Serrai 143.68 313 P PKPab 19 37 52.5 +0.1
OUR Ouranopolis 143.72 311 P PKPab 19 37 52.5 0.0
KKB Krupnik 143.72 314 *i* P PKPbc 19 37 54.0 +0.7
PRU Pruhonice 143.91 331 *e*PKP PKPbc 19 37 54.1 +0.6
PRU Pruhonice 143.91 331 *e*PKIKP PKPbc 19 37 54.1 +0.6
SOH Sokhos 143.97 312 P PKPab 19 37 53.7 +0.2
PLG Polygyros 144.08 311 P PKPbc 19 37 54.3 -0.1
PAIG Paliouri 144.09 311 P **PKPab 19 37 52.2 -1.7**
KNT Kendrikon 144.14 313 P **PKPab 19 37 53.7 -0.4**
LAST Lasithi 144.22 302 P PKPbc 19 37 54.9 -0.2
AOS Alonnisos 144.22 309 P **PKPab 19 37 47.1 -7.3**
HORT Hortiatis 144.23 312 P **PKPab 19 37 54.3 -0.3**
VAY Valandovo 144.30 313 P **PKPab 19 37 54.3 -0.4**
VAY Valandovo 144.30 313 *i* PKP PKPbc 19 37 55.0 0.0
GRG Griva 144.57 313 P **PKPdf 19 37 58.5 +1.3**
PTL Penteli 144.62 308 P **PKPab 19 37 54.3 -1.7**
XOR Xorichti 144.65 310 P **PKPab 19 37 54.9 -1.2**
NKC Novy Kostel 144.65 333 *e*PKP **PKPdf 19 37 56.6 -0.4**
NKC *ex* x 19 38 07.7
NKC *ex* x 19 38 11.8
NKC Novy Kostel 144.65 333 *e*PKIKP **PKPdf 19 37 56.6 -0.4**
NKC *e* 19 38 07.7
DIVS Divibare 144.65 319 P PKPbc 19 37 56.7 +0.5
IDI Anoyia 144.65 303 P **PKPdf 19 37 57.3 -0.3**
IDI Anoyia 144.65 303 *e*PKPdf **PKPab 19 37 54.6 -1.7**
CONA Conrad Observa 144.69 327 *i* PKPdf **PKPdf 19 37 56.9 -0.3**
comp=Z,43nm,1.4s,SNR=16
VLY Voula,Athens 144.74 307 P **PKPab 19 37 54.9 -1.5**
SKO Skopje 144.77 315 P PKPbc 19 37 56.7 +0.2
SKO Skopje 144.77 315 *i* PKP **PKPdf 19 37 57.5 0.0**
SIVA Sivas 144.78 302 P PKPbc 19 37 56.9 +0.1
LIT Litokhoron 144.86 312 P **PKPab 19 37 56.0 -0.8**
KHC Kasperske Hory 144.96 331 *e*PKP **PKPdf 19 37 57.7 +0.1**
KHC *ex* x 19 38 07.1
KHC *ex* x 19 38 13.8
KHC Kasperske Hory 144.96 331 *e*PKIKP PKPbc 19 37 57.3 +0.4
KHC *e* 19 38 08.5
KHC Kasperske Hory 144.96 331 *e*PKPdf **PKPdf 19 37 57.3 -0.3**
KHC *ep*PKPdf **pPKPdf 19 38 08.5 +0.5**
LKR Lokris 145.05 309 P **PKPbc 19 37 56.7 -0.8**
GERES GERESS Array B 145.10 330 PKPbc **PKPdf 19 37 58.0 0.0**
comp=Z,3.0nm,0.9s,baz=58,slow=3.3,SNR=18
VAM Vamos 145.17 303 P **PKPdf 19 37 58.3 -0.1**
WET Wettzell 145.26 331 PKIKP **PKPdf 19 37 58.4 +0.2**
DID Didima 145.27 307 P **PKPbc 19 37 56.8 -1.5**
KZN Kozani 145.28 312 P **PKPbc 19 37 57.3 -1.0**
LTK Loutraki 145.30 308 P **PKPbc 19 37 56.7 -1.6**

ARSA	Arzberg	145.31 327	*i* PKPab	PKPdf	19 37 58.7	+0.4
	comp=Z,34nm,1.6s,SNR=12					
IMMV	Iera Moni Meta	145.32 303	P	PKPbc	19 37 58.5	0.0
FNA	Florina	145.34 313	P	PKPbc	19 37 56.7	-1.8
AGG	Agios Georgios	145.40 310	P	PKPbc	19 37 57.5	-1.2
GVD	Gavdhos	145.41 302	P	PKPab	19 37 59.1	+0.1
THL	Klokotos Trika	145.41 311	P	PKPbc	19 37 56.7	-1.9
DSF	Desfina	145.48 309	P	PKPdf	19 37 57.9	-1.0
MOA	Molln	145.53 329	*i* PKPab	PKPab	19 37 59.5	+0.4
	comp=Z,46nm,1.3s,SNR=15					
OHR	Ohrid	145.59 314	*i* PKP	PKPab	19 37 59.4	-0.1
KPRO	Kipourio	145.71 312	P	PKPdf	19 37 56.1	-3.2
NEST	Nestorio	145.73 313	P	PKPbc	19 37 59.7	0.0
ANKY	Antikythira Is	145.74 304	P	PKPbc	19 37 59.7	-0.1
VLI	Veliai	145.76 306	P	PKPdf	19 37 57.9	-1.4
EVR	Evrytania	145.81 310	P	PKPdf	19 37 59.1	-0.4
SERG	Sergoula	145.82 309	P	PKPdf	19 37 59.7	+0.2
ANX	Ano Chora	145.85 309	P	PKPab	19 38 00.5	-0.2
KLV	Kalavryta, Ach	145.89 308	P	PKPbc	19 38 00.1	-0.2
PERS	Pernice	145.92 326	*i* PKPdf	PKPdf	19 37 59.5	+0.1
SOKA	Soboth	145.94 326	*i* PKPab	PKPbc	19 38 00.4	+0.2
	comp=Z,24nm,1.4s,SNR=9.1					
LAKA	Lakka	145.94 309	P	PKPab	19 38 00.7	-0.2
VLX	Vlachokerasia	145.96 307	P	PKPbc	19 38 00.3	-0.3
PVO	Paravola	146.13 310	P	PKPab	19 38 01.5	-0.1
DSL	Palaion Diasel	146.24 311	P	PKPbc	19 38 00.9	-0.3
DRO	Drossia	146.25 308	P	PKPab	19 38 02.1	0.0
ITM	Ithomi	146.36 307	P	PKPdf	19 37 59.1	-1.3
PDO	Prodromos	146.39 310	P	PKPbc	19 38 02.0	+0.3
AMT	Artemida-Makis	146.40 308	P	PKPdf	19 38 00.0	-0.5
KBA	Koelnbreinsper	146.52 328	*i* PKPbc	PKPbc	19 38 01.5	-0.5
	comp=Z,9.9nm,1.4s					
BOJS	Bojanci	146.58 325	*e*PKPdf	PKPab	19 38 02.7	-0.4
MYKA	Terra Mystica	146.68 328	*i* PKPab	PKPbc	19 38 01.9	-0.4
	comp=Z,6.7nm,1.0s					
LKD2	Lefkada island	146.69 310	P	PKPbc	19 38 02.1	-0.5
BEBN	Eben Emael	146.74 340	PKP	PKPab	19 38 03.1	-0.3
MEM	Membach	146.79 339	PKP	PKPbc	19 38 02.7	+0.2
MEM			APKP	pPKPdf	19 38 14.3	+3.3
JAVS	Javornik	146.96 326	*i* PKPdf	PKPbc	19 38 02.6	-0.6
VLS	Valsamata	146.98 309	P	PKPdf	19 37 51.9	-9.5
STU	Stuttgart	147.13 334	*e*PKP2	PKPab	19 38 04.3	-0.8
STU	Stuttgart	147.13 334	*e*PKPbc	PKPab	19 38 04.3	-0.8
UCC	Uccle	147.16 341	PKP	PKPbc	19 38 02.5	-1.0
ABTA	Abfaltersbach	147.16 329	*i* PKPab	PKPbc	19 38 03.2	-0.5
	comp=Z,16nm,1.6s					
WATA	Walderalm	147.18 330	*i* PKPab	PKPbc	19 38 03.7	-0.2
	comp=Z,15nm,1.0s,SNR=6.2					
BCLA	Clavier	147.19 340	PKP	PKPbc	19 38 03.1	-0.4
WTTA	Wattenberg	147.21 330	*i* PKPab	PKPbc	19 38 04.2	+0.2
	comp=Z,31nm,1.5s,SNR=5.5					
MOTA	Moosalm	147.39 331	*i* PKPab	PKPbc	19 38 04.4	-0.1
	comp=Z,14nm,1.0s,SNR=7.2					
SNF	Seneffe	147.43 341	PKP	PKPbc	19 38 04.8	+0.6
RETA	Reutte	147.44 331	*i* PKPab	PKPbc	19 38 04.5	+0.1
	comp=Z,11nm,1.3s					
LANF	Langenberg	147.51 336	PKP	PKPbc	19 38 05.2	+0.7
WLF	Walferdange	147.55 338	PKP	PKPab	19 38 05.9	-0.8
WLF			APKP	pPKPdf	19 38 17.5	+5.2
WLF	Walferdange	147.55 338	*e*PKP2	PKPbc	19 38 05.4	+0.8
WLF	Walferdange	147.55 338	*e*PKPbc	PKPbc	19 38 05.4	+0.8
DOU	Dourbes	147.70 340	PKP	PKPbc	19 38 05.6	+0.6
DOU			APKP	pPKPdf	19 38 17.5	+5.0
FETA	Feichten	147.80 331	*i* PKiKP	PKPbc	19 38 05.9	+0.3
	comp=Z,19nm,1.2s,SNR=7.4					
BFO	Black Forest	147.83 335	*e*PKP2	PKPbc	19 38 05.3	-0.2
BFO	Black Forest	147.83 335	*e*PKPbc	PKPbc	19 38 05.3	-0.2
STR	Strasbourg	147.85 335	PKP	PKPbc	19 38 06.5	+1.1
DAVA	Damuels	147.99 332	*i* PKiKP	PKPbc	19 38 06.1	0.0
	comp=Z,13nm,1.1s					
WLS	Welschbruch	148.15 336	PKP	PKPbc	19 38 06.3	0.0
ECH	Echery	148.38 336	PKP	PKPbc	19 38 06.9	0.0
MOF	Molkenrain	148.69 335	PKP	PKPbc	19 38 07.8	0.0
TUE	Stuetta	148.84 331	*e*PKPbc	PKPbc	19 38 08.1	-0.3
LOMF	Lomont	149.22 335	PKP	PKPbc	19 38 08.7	-0.4
TIP	Timpagrande	149.23 314	*e*PKPbc	PKPbc	19 38 09.5	0.0
OG01	Vacheresse	150.10 334	PKP	PKPbc	19 38 11.3	-0.1
PLDF	La Plantade	151.59 337	PKP	PKPbc	19 38 14.5	-0.3
AGO	Saint Agoulin	151.69 338	PKP	PKPbc	19 38 15.2	+0.2
PYM	Petit Puy Mans	152.00 338	PKP	PKPbc	19 38 16.6	+0.8
LBL	Lubilhac	152.35 337	PKP	PKPbc	19 38 17.2	+0.6
TORD	Torodi Ar. Bea	165.28 243	PKP	PKPdf	19 38 25.4	-0.3
	comp=Z,2.3nm,1.0s,baz=353,slow=0.5,SNR=9.0					
TORD			PKPab	PKPab	19 39 22.7	-0.7
	comp=Z,0.9nm,0.7s,baz=100,slow=4.6,SNR=3.8					

TAP 16 19:30:14.0, 21°.18N×122°.24E, h160km±1km, ML3.5, D, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LAY	Lan-yu	1.07	323	*e*P	Pn	19 30 41.3	+1.0
	baz=323						
LAY				*e*S	Sn	19 31 00.5	-0.1
	baz=323						
TSEB	Hengchuen, Pin	1.44	300	*e*P	Pn	19 30 44.6	+0.9
	baz=295						
TSEB				*e*S	Sn	19 31 07.7	+1.1
	baz=295						
TWK1	Hengchun	1.54	300	*e*P	Pn	19 30 45.0	+0.3
	baz=295						
TWK1				*e*S	Sn	19 31 07.8	-0.5
	baz=295						
HEN	Hengchun	1.62	301	*e*P	Pn	19 30 46.2	+0.6
	baz=301						
HEN				*e*S	Sn	19 31 08.9	-1.0
	baz=301						
EAST	Anshuo	1.76	313	P	Pn	19 30 47.1	-0.1
	baz=313						
EAST				*e*S	Sn	19 31 11.3	-1.4
	baz=313						
ECL	Taimali	1.85	320	P	Pn	19 30 47.6	-0.4
	baz=315						
ECL				S	Sn	19 31 12.3	-2.0
	baz=315						
CHKT	Chengkung	2.08	337	*e*P	Pn	19 30 49.1	-1.5
	baz=340						
CHKT				*e*S	Sn	19 31 17.8	-1.1
	baz=340						
SSD	Sandimen	2.16	317	*e*P	Pn	19 30 51.9	+0.3
	baz=316						
SSD				*e*S	Sn	19 31 17.5	-3.1
	baz=316						
ELDTW	Lidau	2.30	331	*e*P	Pn	19 30 55.0	+1.7
	baz=331						
ELDTW				*e*S	Sn	19 31 24.8	+1.1
	baz=331						
TWF1	Yuli	2.33	338	*e*P	Pn	19 30 56.5	+2.9
	baz=341						
TWF1				*e*S	Sn	19 31 24.0	-0.3
	baz=341						
STYT	Tauyuan	2.41	325	*e*P	Pn	19 30 55.6	+1.1
	baz=330						
STYT				*e*S	Sn	19 31 25.6	-0.4
	baz=330						
CHN1	Nanshi	2.55	322	*e*P	Pn	19 30 56.6	+0.3
	baz=322						
CHN1				*e*S	Sn	19 31 27.5	-1.5
	baz=322						
WTP	Ta-pu	2.55	324	P	Pn	19 30 56.6	+0.4
	baz=316						
WTP				*e*S	Sn	19 31 27.8	-1.2
	baz=316						
YUS	Yu-Shan	2.59	333	*e*P	Pn	19 30 58.1	+0.9
	baz=334						
TWK	Hsinying	2.64	322	*e*S	Sn	19 31 30.0	-0.9
	baz=315						
CHN4	Tsaushan	2.65	325	*e*P	Pn	19 30 57.6	+0.2
	baz=318						
CHN4				S	Sn	19 31 30.2	-0.8
	baz=318						
ALS	Alishan	2.67	330	*e*P	Pn	19 30 59.1	+1.1
	baz=321						
CHN5	Tsauling	2.81	329	*e*P	Pn	19 30 59.9	+0.4
	baz=329						
CHN5				*e*S	Sn	19 31 32.5	-2.3
	baz=329						

TAP 16 19:31:19.8, 23°.13N×121°.54E, h40km, ML2.6, D, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHKT	Chengkung	0.16	260	P	Pn	19 31 27.2	+0.4
	baz=259						
CHKT				S	Sn	19 31 32.2	+0.6
	baz=259						
TWF1	Yuli	0.32	315	P	Pn	19 31 28.6	+0.3
	baz=315						
TWF1				*e*S	Sn	19 31 35.0	+0.8
	baz=315						
ELDTW	Lidau	0.48	277	*e*P	Pn	19 31 30.7	+0.2
	baz=277						
ELDTW				*e*S	Sn	19 31 36.5	-1.5
	baz=277						
TWG	Pinlang	0.53	235	*e*P	Pn	19 31 31.3	+0.4
	baz=234						
TWG				*e*S	Sn	19 31 39.1	+0.3
	baz=234						
YUS	Yu-Shan	0.65	304	*e*P	Pn	19 31 32.7	-0.4
	baz=303						
YUS				*e*S	Sn	19 31 42.3	-0.1
	baz=303						
YUS	Yu-Shan	0.65	304	*e*S	Pn	19 31 32.4	-0.6
	baz=334						
ESL	Shilin	0.69	352	*e*P	Pn	19 31 33.6	+0.4
	baz=352						
ESL				*e*S	Sn	19 31 43.8	+1.1
	baz=352						
ALS	Alishan	0.78	300	*e*P	Pn	19 31 32.7	-1.8
	baz=299						
ALS				*e*S	Sn	19 31 46.0	+0.8
	baz=299						
ALS	Alishan	0.78	300	*e*S	Pn	19 31 33.0	-1.6
	baz=321						

*IDC **16** 19:34:38.9±1.7, 20°.53S×168°.31E, h0km, mb4.1/5, mb1 4.3/6, mb1mx4.0/29, mbtmp4.1/6, ML3.6/1, MS3.2/2, Ms1 3.2/2, ms1mx2.8/30, Error ellipse: s-maj=65.4km s-min=22.4km az=141.0*

ISC 16 19:34:42.6±1.7, 20°.6S±0°.3×168°.3E±0°.3, h26km, n8, σ1§28/8, mb4.0/5, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	2.30	230	Pn	Pn	19 35 18.1	-0.8
	15nm,0.3s,baz=114,slow=9.5,SNR=61						
DZM				Sn	Sn	19 35 46.8	+0.4
	36nm,0.3s,baz=340,slow=22,SNR=7.8						
DZM				LR	LR	19 35 47.2	
	comp=Z,395nm,21.3s,baz=45,slow=30						
STKA	Stephens Creek	26.42	239	P	P	19 40 18.9	+1.6
	3.2nm,0.7s,baz=77,slow=11,SNR=11						
WRA	Warramunga Arr	31.87	265	P	P	19 41 04.5	-1.4
	0.5nm,0.4s,baz=92,slow=8.5,SNR=9.1						
ASAR	Alice Springs	32.00	258	P	P	19 41 06.6	-0.4
	5.9nm,0.7s,baz=86,slow=9.1,SNR=88						
GUMO	Guam	41.07	324	LR	LR	19 58 53.9	
	comp=Z,37nm,18.2s,baz=224,slow=36						
CMAR	Chiang Mai Arr	78.30	295	P	P	19 46 42.2	+1.4
	1.0nm,0.7s,baz=133,slow=4.3,SNR=5.4						
NVAR	Mina Array Bea	90.33	49	P	P	19 47 41.6	-0.1
	0.4nm,0.7s,baz=227,slow=7.3,SNR=3.4						
GERES	GERESS Array B	145.27	330	PKPbc	PKPbc	19 54 16.9	-0.9
	0.2nm,0.3s,baz=322,slow=6.2,SNR=2.9						

*IDC **16** 19:38:46.3±1.3, 16°.44N×98°.45W, h0km, mb3.6/5, mb1 3.9/9, mb1mx3.8/35, mbtmp3.6/9, ML3.6/4, MS3.5/7, Ms1 3.6/7, ms1mx3.2/37, Error ellipse: s-maj=25.9km s-min=15.9km az=22.0*

*ISCJB **16** 19:38:47.4±0.9, 16°.38N±0°.04×98°.47W±0°.04, h23km±6km, mb3.6/5, MS3.9/2, Error ellipse: s-maj=8.2km s-min=5.4km az=31.3*

*NEIC **16** 19:38:49.3, 16°.40N×98°.46W, h3km, MD4.3(MEX), After MEX.*

*MEX **16** 19:38:49.3±0.6, 16°.40N×98°.46W, h3km±7km, MD4.3*

ISC 16 19:38:47.7±1.2, 16°.43N±0°.05×98°.49W±0°.04, h12km±8km, n34, σ0§84/52, mb3.5/5, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PNIG	Pinotepa	0.35	96	*i* P	Pg	19 38 55.4	+0.6
PNIG				*i* S	Sg	19 38 59.5	+0.1
PNIG	Pinotepa	0.35	96	*i* P	Pg	19 38 55.4	+0.6
PNIG				*i* S	Sg	19 38 59.5	+0.1
TLIG	Tlapa	1.13	356	*i* P	Pg	19 39 08.3	-1.2
TLIG				*e*S	Sg	19 39 23.2	-1.1
VHO	Vista Hermosa	1.80	69	*e*P	Pn	19 39 18.0	-0.8
VHO				*e*S	Sn	19 39 40.1	-1.6
VHO	Vista Hermosa	1.80	69	*e*P	Pn	19 39 18.0	-0.8
VHO				*e*S	Sn	19 39 40.1	-1.6
CAIG	El Cayaco	1.81	290	*e*P	Pn	19 39 17.9	-1.0
CAIG				*e*S	Sn	19 39 40.9	-0.9
CAIG	El Cayaco	1.81	290	*e*P	Pn	19 39 17.9	-1.0
CAIG				*e*S	Sn	19 39 40.9	-0.9
MEIG	Mezcala	1.84	324	*e*P	Pn	19 39 19.2	-0.1
MEIG				*i* S	Sn	19 39 42.8	+0.2
MEIG	Mezcala	1.84	324	*e*P	Pn	19 39 19.2	-0.1
MEIG				*i* S	Sn	19 39 42.8	+0.2
PLIG	Platanillo	2.18	334	*e*P	Pn	19 39 24.4	+0.4
PLIG				*i* S	Sn	19 39 50.2	-0.8
PLIG	Platanillo	2.18	334	*e*P	Pn	19 39 24.4	+0.4
PLIG				*i* S	Sn	19 39 50.2	-0.8
TPIG	Tehuac#an	2.25	28	*e*P	Pn	19 39 24.0	-1.1
TPIG				*i* S	Sn	19 39 52.7	-0.2
TPIG	Tehuac#an	2.25	28	*e*P	Pn	19 39 24.0	-1.1
TPIG				*i* S	Sn	19 39 52.7	-0.2
HUIG	Huatulco	2.38	106	*e*P	Pn	19 39 25.3	-1.4
HUIG	Huatulco	2.38	106	*e*P	Pn	19 39 25.3	-1.4
YAIG	Yautepec	2.48	347	*e*P	Pn	19 39 28.9	+0.7
YAIG				*i* S	Sn	19 39 59.1	+0.5
YAIG	Yautepec	2.48	347	*e*P	Pn	19 39 28.9	+0.7
YAIG				*i* S	Sn	19 39 59.1	+0.5
ARIG	Puente Sto Nin	2.56	316	*e*P	Pn	19 39 29.8	+0.6
ARIG				*i* S	Sn	19 40 00.3	+0.1
PPM	Popocatepetl	2.63	357	*e*P	Pn	19 39 31.3	+0.8
PPM				*i* S	Sn	19 40 02.1	-0.5
PPM	Popocatepetl	2.63	357	*e*P	Pn	19 39 31.3	+0.8
PPM				*i* S	Sn	19 40 02.1	-0.5
UNM	Universidad Na	2.96	347	*i* P	Pn	19 39 34.3	-0.6
UNM				*e*S	Sn	19 40 11.0	+0.5
UNM	Universidad Na	2.96	347	*i* P	Pn	19 39 34.3	-0.6
UNM				*e*S	Sn	19 40 11.0	+0.5
CMIG	Matias Romero	3.52	79	Pn	Pn	19 39 40.6	-1.6
	7.8nm,0.3s,baz=254,slow=13,SNR=82						
CMIG				Pg	Pb	19 39 49.9	-0.1
	20nm,0.3s,baz=262,slow=13,SNR=39						
CMIG				Lg	Lg	19 40 37.6	
	62nm,0.3s,baz=164,slow=8.3,SNR=6.8						
CMIG				LR	LR	19 41 24.0	
	comp=Z,301nm,20.1s,baz=282,slow=45						
TEIG	Tepich	10.41	67	Pn	Pn	19 41 15.9	-1.0
	1.3nm,0.3s,baz=269,slow=23,SNR=7.2						
TEIG				Sn	Sn	19 43 07.2	-6.3
	0.5nm,0.3s,baz=86,slow=24,SNR=3.3						
TEIG				LR	LR	19 46 01.7	
	comp=Z,103nm,20.2s,baz=27,slow=42						
LPIG	La Paz	13.46	306	LR	LR	19 46 40.1	
	comp=Z,212nm,19.0s,baz=182,slow=35						
TXAR	Lajitas Array	13.70	341	Pn	Pn	19 42 03.2	+1.1
	0.0nm,0.3s,baz=124,slow=36,SNR=2.7						
TXAR				Lg	Lg	19 46 02.1	
	baz=10,slow=24,SNR=3.7						
TXAR				LR	LR	19 47 53.7	
	comp=Z,245nm,18.4s,baz=0.0,slow=40						
ANMO	Albuquerque	19.77	340	P	P	19 43 18.8	+0.7
	0.1nm,0.3s,baz=118,slow=7.2,SNR=3.5						
ANMO				LR	LR	19 51 30.1	
	comp=Z,258nm,18.3s,baz=162,slow=39						
PDAR	Pinedale Array	27.91	342	P	P	19 44 38.3	+0.3
	0.4nm,0.7s,baz=130,slow=8.0,SNR=3.1						
NVAR	Mina Array Bea	27.98	325	P	P	19 44 38.2	-0.5
	1.1nm,0.8s,baz=150,slow=11,SNR=7.5						
YKA	Yellowknife Ar	47.39	350	P	P	19 47 21.4	-0.2
	0.3nm,0.9s,baz=300,slow=12,SNR=4.1						
ILAR	Eielson Array	58.19	338	P	P	19 48 42.6	+1.0
	0.5nm,1.0s,baz=170,slow=5.5,SNR=4.0						
CPUP	Villa Florida	58.37	136	LR	LR	20 12 10.8	
	comp=Z,68nm,21.2s,baz=228,slow=34						
PLCA	Paso Flores	62.51	156	P	P	19 49 12.0	+0.6
	2.6nm,0.9s,baz=354,slow=7.2,SNR=5.0						
HFS	Hagfors	86.44	28	LR	LR	20 30 08.2	
	comp=Z,68nm,19.8s,slow=36						

JMA 16 19:42:56.1±0.2, 35°.69N×140°.95E, h11km±1km, M2.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	0.07	280	P	Pg	19 42 58.4	-0.1
CHOJ				S	Sg	19 43 00.3	0.0
JCN	Nagara	0.67	246	P	Pb	19 43 09.9	+0.1
JYT	Yasato	0.81	311	P	Pg	19 43 11.3	-0.5
JYT				S	Sg	19 43 22.2	-0.3
JHO	Hitachi	0.97	342	P	Pg	19 43 14.7	-0.1

IDC 16 19:55:41.7±2.0, 20°.47S×168°.37E, h0km, mb4.0/3, mb1 4.2/4, mb1mx3.7/33, mbtmp4.0/4, ML3.4/1, Error ellipse: s-maj=110.9km s-min=29.8km az=145.0, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	2.40	228	Pn	Pn	19 56 21.3	-1.0
	8.9nm,0.3s,baz=98,slow=9.4,SNR=226						
DZM				Sn	Sn	19 56 50.1	-2.4
	18nm,0.3s,baz=304,slow=23,SNR=8.0						
STKA	Stephens Creek	26.50	239	P	P	20 01 22.1	+1.1
	2.6nm,1.0s,baz=122,slow=13,SNR=2.9						
ASAR	Alice Springs	32.05	258	P	P	20 02 10.2	-0.3
	1.5nm,0.7s,baz=85,slow=8.7,SNR=18						
ASAR				pP		20 02 20.6	
	2.4nm,0.7s,baz=87,slow=9.0,SNR=12						
NVAR	Mina Array Bea	90.23	49	P	P	20 08 44.5	-0.2
	0.5nm,0.7s,baz=222,slow=8.3,SNR=4.6						

*ISCJB **16** 20:12:40.0±0.7, 73°.41N±0°.04×8°.1E±0°.3, h11km, mb3.2/4, Error ellipse: s-maj=10.7km s-min=5.9km az=167.0*

*IDC **16** 20:12:40.8±1.0, 73°.36N×7°.61E, h0km, mb3.2/4, mb1 3.5/9, mb1mx3.3/52, mbtmp3.4/9, ML3.3/5, Error ellipse: s-maj=20.7km s-min=11.2km az=65.0*

*CSEM **16** 20:12:42.2±0.3, 73°.41N×7°.86E, h20km, ML3.3, Error ellipse: s-maj=9.9km s-min=3.5km az=87.0*

*NAO **16** 20:12:42.9±9.2, 73°.37N×7°.61E, h24km±81km, ML3.3*

*BER **16** 20:12:43.5±3.8, 73°.39N×7°.90E, h15km±58km, MD2.2, ML3.3(NAO)*

ISC 16 20:12:42.3±0.9, 73°.49N±0°.06×8°.20E±0°.10, h11km, n43, σ1§21/49, mb3.2/4, Greenland Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BJO1	Bjornoya	3.16	66	Pn	Pn	20 13 32.6	+0.8
BJO	Bjornoya	3.21	66	Pn	Pn	20 13 32.6	+0.1
BJO	Bjornoya	3.21	66	Pn	Pn	20 13 32.6	+0.1
	SNR=55						
HSPB	Hornsund (broa	4.00	24	Pn	Pn	20 13 43.7	+0.4
HSPB	Hornsund (broa	4.00	24	Pn	Pn	20 13 43.7	+0.4
	SNR=55						
HSP	Hornsund	4.00	24	Pn	Pn	20 13 43.7	+0.3
SPA0	Spitsbergen Ar	5.12	19	Pn	Pn	20 13 59.7	+1.0
	baz=197,slow=12						
SPA0				Sn	Sn	20 14 56.5	-1.1
	baz=186,slow=18						
SPA0	Spitsbergen Ar	5.12	19	Pn	Pn	20 13 59.7	+1.0
	baz=197,slow=12						
SPA0				Sn	Sn	20 14 56.5	-1.1
	baz=186,slow=18						
SPA0	Spitsbergen Ar	5.12	19	Pn	Pn	20 13 59.7	+1.0
	baz=197,slow=12,SNR=55						
SPA0				Sn	Sn	20 14 56.5	-1.1
	baz=186,slow=17,SNR=55						
SPITS	Spitsbergen Ar	5.12	19	Pn	Pn	20 13 59.8	+1.0
	baz=196,slow=17,SNR=82						
SPITS				Sn	Sn	20 14 56.7	-0.9
	baz=219,slow=30,SNR=1.8						
TRO	Tromso	5.15	133	*e*P	Pn	20 13 59.8	+0.7
TRO	Tromso	5.15	133	*e*P	Pn	20 13 59.8	+0.7
	SNR=53						
HOPEN	Hopen	5.30	47	Pn	Pn	20 14 02.2	+1.0
HOPEN	Hopen	5.30	47	Pn	Pn	20 14 02.2	+1.0
HOPEN				*e*S	Sn	20 14 59.4	-2.7
HOPEN	Hopen	5.30	47	Pn	Pn	20 14 02.2	+1.0
	SNR=55						
KBS	Kingsbay	5.54	8	Pn	Pn	20 14 04.8	+0.3
KBS	Kingsbay	5.54	8	Pn	Pn	20 14 04.8	+0.3
KBS	Kingsbay	5.54	8	Pn	Pn	20 14 04.8	+0.3
	SNR=55						
KBS	Kingsbay	5.54	8	*i* P	Pn	20 14 05.3	+0.8
LOF	Lofoten	5.66	159	*e*P	Pn	20 14 04.9	-1.2
LOF	Lofoten	5.66	159	*e*P	Pn	20 14 04.9	-1.2
	SNR=53						
ARA0	ARCESS Array S	6.76	117	Pn	Pn	20 14 21.7	+0.5
	baz=311,slow=11						
ARA0	ARCESS Array S	6.76	117	Pn	Pn	20 14 21.7	+0.5
	baz=311,slow=11						
ARA0	ARCESS Array S	6.76	117	Pn	Pn	20 14 21.7	+0.5
	baz=311,slow=11,SNR=55						
ARCES	ARCESS Array B	6.76	117	Pn	Pn	20 14 22.1	+0.8
	0.8nm,0.3s,baz=321,slow=11,SNR=25						
ARCES				Sn	Sn	20 15 38.7	+0.6
	0.3nm,0.3s,baz=311,slow=21,SNR=2.7						
APA0	Apatity Array	10.07	113	Pn	Pn	20 15 06.0	-0.6
	baz=309,slow=16						
APA0	Apatity Array	10.07	113	Pn	Pn	20 15 06.0	-0.6
	baz=309,slow=16						
APA0	Apatity Array	10.07	113	Pn	Pn	20 15 06.0	-0.6
	baz=309,slow=14,SNR=55						
NB2	NORSAR Subarra	12.56	173	Pn	Pn	20 15 38.2	-2.4
NB2	NORSAR Subarra	12.56	173	Pn	Pn	20 15 38.2	-2.4
NB2	NORSAR Subarra	12.56	173	Pn	Pn	20 15 38.2	-2.4
	SNR=55						
NOA	NORSAR Array B	12.56	173	Pn	Pn	20 15 39.0	-1.6
	0.2nm,0.3s,baz=356,slow=13,SNR=3.0						
HFS	Hagfors	13.58	168	Pn	Pn	20 15 52.9	-1.5
	baz=333,slow=14						
HFS	Hagfors	13.58	168	Pn	Pn	20 15 52.9	-1.5
	0.1nm,0.3s,baz=334,slow=13,SNR=4.4						
HFS	Hagfors	13.58	168	Pn	Pn	20 15 52.9	-1.5
	baz=333,slow=14						
FIA0	FINESS Array S	13.80	142	Pn	Pn	20 15 56.2	-1.2
	baz=336,slow=14						
FIA0	FINESS Array S	13.80	142	Pn	Pn	20 15 56.2	-1.2
	baz=336,slow=14						
FIA0	FINESS Array S	13.80	142	Pn	Pn	20 15 56.2	-1.2
	baz=336,slow=13,SNR=55						
FIN

WRA	**Warramunga Arr**	**31.30 265**	P		P	20 24 48.2	-0.8
1.8nm,0.9s,baz=94,slow=8.3,SNR=4.8							
ASAR	**Alice Springs**	**31.49 257**	P		P	20 24 50.7	0.0
1.6nm,0.7s,baz=85,slow=8.9,SNR=14							
FITZ	**Fitzroy Crossi**	**39.71 266**	P		P	20 26 01.2	0.0
2.3nm,1.1s,baz=114,slow=20,SNR=2.8							
CMAR	**Chiang Mai Arr**	**77.59 295**	P		P	20 30 25.1	-0.2
0.4nm,0.4s,baz=138,slow=11,SNR=3.8							

NIED ***16*** *20:23:00, 36.°60N×141.°00E, h17km, Mw3.5 Best double couple: M0 1.75000×10^14 NP1:φs146.00000°, δ73.00000°, λ-167.00000°. NP2:φs52.00000°, δ78.00000°, λ-17.00000°.*

JMA 16 20:23:46.8±0.1, 36.°62N×141.°03E, h33km±1km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.37**	**269**	P	Pb	20 23 55.1	-0.4
ONAJ	**Iwakimizuishiy**	**0.52**	**339**	P	Pb	20 23 57.1	-0.6
ONAJ				eS	Sb	20 24 04.7	-0.5
JFK	**Kawauchi**	**0.76**	**351**	P	Pn	20 24 00.4	-0.8
JYT	**Yasato**	**0.78**	**240**	P	Pn	20 24 01.2	-0.3
JYT				S	Sn	20 24 11.2	-0.8
JSB	**Shiboa**	**0.96**	**292**	P	Pb	20 24 05.1	+0.2
JFT	**Otama**	**1.05**	**328**	P	Pb	20 24 06.2	-0.4
JFT				S	Sb	20 24 19.6	-0.5
MAT	**Matsuhiro**	**2.27**	**269**	P	Pn	20 24 24.2	+2.1
MAT				S	Sb	20 24 53.2	-1.7

IDC 16 20:27:57.8±3.2, 7.°38S×123.°00E, h553km±44km, mb3.0/5, mb1 2.8/8, mb1mx2.7/44, mbtmp3.7/8, Error ellipse: s-maj=50.4km s-min=18.2km az=75.0, Flores Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**10.97**	**167**	P	P	20 30 25.3	-0.4
0.1nm,0.3s,baz=14,slow=8.6,SNR=11							
WRA	**Warramunga Arr**	**16.64**	**140**	P	P	20 31 22.4	-0.9
0.1nm,0.3s,baz=308,slow=12,SNR=5.6							
ASAR	**Alice Springs**	**19.29**	**148**	P	P	20 31 47.6	+0.3
0.1nm,0.3s,baz=323,slow=8.4,SNR=7.7							
STKA	**Stephens Creek**	**29.91**	**147**	P	P	20 33 21.9	+0.5
1.4nm,0.7s,baz=313,slow=10.0,SNR=4.3							
USRK	**Ussuriysk Ar.**	**51.97**	**8**	P	P	20 36 15.2	-0.7
0.9nm,0.4s,baz=194,slow=6.3,SNR=3.8							
MKAR	**Makanchi Array**	**64.92**	**330**	P	P	20 37 43.5	+0.4
0.3nm,0.4s,baz=134,slow=7.1,SNR=6.4							
VNDA	**Vanda**	**72.99**	**172**	P	P	20 38 30.2	-0.9
0.6nm,0.8s,baz=324,slow=14,SNR=3.6							
SEY	**Seymchan**	**73.62**	**14**	P	P	20 38 35.2	+0.4
1.0nm,0.5s,baz=86,slow=23,SNR=3.3							

NIED ***16*** *20:31:00, 36.°00N×140.°10E, h65km, Mw3.8 Best double couple: M0 5.71000×10^14 NP1:φs223.00000°, δ46.00000°, λ59.00000°. NP2:φs84.00000°, δ52.00000°, λ119.00000°.*
ISCJB ***16*** *20:31:35.6±0.5, 35.°92N±0.°03×140.°16E±0.°06, h69km±4km, mb3.8/8, Error ellipse: s-maj=7.7km s-min=5.0km az=177.9*
IDC ***16*** *20:31:35.1±1.3, 35.°97N×140.°29E, h45km±16km, mb3.5/7, mb1 3.7/12, mb1mx3.5/66, mbtmp3.8/12, ML3.7/2, MS3.3/3, Ms1 3.3/3, ms1mx2.6/46, Error ellipse: s-maj=14.3km s-min=8.1km az=64.0*
JMA ***16*** *20:31:37.2±0.1, 35.°97N×140.°08E, h63km±1km, M3.7 Broadband fault plane solution: P waves. NP1: φs211.00000°, δ68.00000°, λ68.00000°. NP2:φs77.00000°, δ31.00000°, λ132.00000°. Principal axes: T Plg61.0000°, Azm88.0000°; N Plg20.0000°, Azm219.0000°; P Plg20.0000°, Azm317.0000°;*
JMA Felt I J1.

ISC 16 20:31:36.7±0.7, 35.°93N±0.°04×140.°14E±0.°05, h64km±7km, n34, σ0.°68/35, mb3.8/8, 5C-2D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JYT	**Yasato**	**0.30**	**9**	⇑P	**Pn**	**20 31 47.5**	**+0.2**
JYT				S	**Sn**	**20 31 55.1**	**+0.2**
JAG	**Ashikaga**	**0.74**	**312**	⇑P	**Pn**	**20 31 51.7**	**0.0**
JAG				S	**Sn**	**20 32 02.1**	**-0.7**
JRY	**Ryogami san**	**1.01**	**276**	⇑P	**Pn**	**20 31 55.1**	**+0.1**
JRY				S	**Sn**	**20 32 08.3**	**-0.3**
JOD2	**Odawara 2**	**1.08**	**233**	⇑P	**Pn**	**20 31 55.9**	**-0.1**
JOD2				S	**Sn**	**20 32 09.8**	**-0.5**
JKT	**Katashina**	**1.10**	**320**	⇓P	**Pn**	**20 31 56.1**	**-0.3**
JKT				S	**Sn**	**20 32 10.7**	**-0.3**
BSO3	**Boso 3**	**1.16**	**165**	P	**Pn**	**20 31 57.4**	**+0.6**
JIM2	**Oshima 3**	**1.34**	**206**	P	**Pn**	**20 31 58.9**	**-0.5**
JIM2				S	**Sn**	**20 32 15.7**	**-0.6**
JYN	**Shimob**	**1.36**	**252**	⇑P	**Pn**	**20 32 00.1**	**+0.3**
JYN				S	**Sn**	**20 32 17.4**	**+0.4**
JFY	**Yanaizu**	**1.52**	**347**	⇓P	**Pn**	**20 32 02.0**	**+0.2**
JFY				S	**Sn**	**20 32 21.2**	**+0.6**
MJAR	**Matsushiro Arr**	**1.68**	**292**	P	**Pn**	**20 32 03.8**	**-0.1**
32nm,0.3s,baz=101,slow=8.5,SNR=260							
MJAR				S	**Sn**	**20 32 24.2**	**-0.2**
38nm,0.3s,baz=160,slow=37,SNR=24							
MAT	**Matsushiro**	**1.68**	**292**	P	**Pn**	**20 32 04.4**	**+0.5**
MAT				S	**Sn**	**20 32 24.4**	**-0.1**
JHJ	**Hachijo jima 2**	**2.81**	**186**	P	**Pn**	**20 32 19.6**	**+0.3**
114nm,0.3s,baz=94,slow=23,SNR=71							
JHJ				S	**Sn**	**20 32 51.6**	**-0.5**
97nm,0.3s,baz=8.2,slow=23,SNR=7.3							
ASAJ	**Asahikawa**	**8.39**	**12**	P	**Pn**	**20 33 34.1**	**-1.5**
1.3nm,0.3s,baz=220,slow=11,SNR=15							
ASAJ				S	Sn	20 35 02.7	-6.1
0.4nm,0.3s,baz=57,slow=30,SNR=2.6							
JCJ	**Chichijima**	**8.97**	**168**	P	**Pn**	**20 33 42.1**	**-1.5**
7.9nm,0.3s,baz=284,slow=22,SNR=3.2							
JCJ				S	Sn	20 35 15.5	-7.6
3.9nm,0.3s,baz=290,slow=21,SNR=3.1							
KSRS	**Korea Array**	**9.93**	**282**	P	Pn	20 33 59.7	+3.1
0.2nm,0.3s,baz=96,slow=14,SNR=3.3							
USRK	**Ussuriysk Ar.**	**10.35**	**325**	P	**Pn**	**20 34 01.4**	**-1.0**
0.0nm,0.3s,baz=140,slow=14,SNR=2.2							
KLR	**Kul'dur**	**14.65**	**338**	P	**Pn**	**20 35 00.6**	**+0.3**
0.2nm,0.3s,baz=165,slow=16,SNR=2.7							
PETK	**Petropavlovsk-**	**21.16**	**30**	LR	LR	20 44 01.5	
comp=Z,30nm,18.8s,baz=241,slow=35							
H11N2	**WAKE ISLAND Hy**	**28.51**	**117**	T	T	21 07 27.8	
baz=308,slow=75,SNR=21							
H11N1	**WAKE ISLAND Hy**	**28.52**	**117**	T	T	21 07 13.0	
baz=308,slow=75,SNR=21							
H11N3	**WAKE ISLAND Hy**	**28.53**	**117**	T	T	21 07 29.2	
baz=308,slow=75,SNR=14							
H11S1	**WAKE ISLAND Hy**	**29.17**	**119**	T	T	21 08 32.9	
baz=314,slow=76,SNR=12							
H11S3	**WAKE ISLAND Hy**	**29.17**	**119**	T	T	21 08 32.8	
baz=314,slow=76,SNR=7.2							
H11S2	**WAKE ISLAND Hy**	**29.18**	**119**	T	T	21 08 33.2	
baz=314,slow=76,SNR=5.8							
ZALV	**Zalesovo Beam**	**41.91**	**313**	P	**P**	**20 39 20.0**	**-0.7**
0.6nm,0.4s,baz=99,slow=6.3,SNR=3.8							
MKAR	**Makanchi Array**	**43.84**	**303**	P	**P**	**20 39 36.1**	**-0.4**
0.2nm,0.4s,baz=85,slow=10,SNR=3.4							
KAPI	**Kappang**	**44.99**	**209**	P	**P**	**20 39 47.5**	**+1.7**
3.1nm,0.6s,baz=11,slow=5.2,SNR=3.3							
KDAK	**Kodiak Island**	**48.61**	**41**	P	P	20 40 26.1	+13
14nm,0.8s,baz=69,slow=6.3,SNR=3.2							
ILAR	**Eielson Array**	**50.98**	**32**	P	**P**	**20 40 31.6**	**+0.1**
1.2nm,0.7s,baz=273,slow=6.6,SNR=12							
WRA	**Warramunga Arr**	**55.83**	**187**	pP	**pP**	**20 41 25.6**	**+1.3**
0.6nm,0.4s,baz=2.1,slow=7.5,SNR=2.7							
WRA				LR	LR	21 04 07.7	
comp=Z,61nm,21.9s,baz=135,slow=35							
INK	**Inuvik**	**55.84**	**27**	P	**P**	**20 41 07.3**	**+0.3**
0.6nm,0.7s,baz=285,slow=9.0,SNR=4.0							
YKA	**Yellowknife Ar**	**65.28**	**30**	P	**P**	**20 42 11.0**	**-0.4**
0.1nm,0.6s,baz=310,slow=7.4,SNR=2.7							
KVAR	**Kislovodsk Arr**	**70.84**	**311**	LR	LR	21 18 56.5	
comp=Z,31nm,18.3s,slow=40							
TXAR	**Lajitas Array**	**91.61**	**52**	P	**P**	**20 44 37.6**	**+0.5**
0.3nm,0.6s,baz=316,slow=3.8,SNR=3.1							

NEIC ***16*** *20:35:09.1, 17.°06N×94.°78W, h168km, MD4.3(MEX), After MEX.*
MEX ***16*** *20:35:09.1±0.9, 17.°06N×94.°78W, h168km±14km, MD4.3*
ISCJB ***16*** *20:35:10.8±0.5, 16.°96N±0.°05×94.°93W±0.°04, h116km, Error ellipse: s-maj=6.8km s-min=5.0km az=1.3*

ISC 16 20:35:11.5±0.9, 17.°01N±0.°07×94.°87W±0.°05, h116km, n35, σ1.°61/44, Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HUIG	**Huatulco**	**1.72**	**224**	*eP*	**Pn**	**20 35 41.0**	**-0.3**
HUIG	**Huatulco**	**1.72**	**224**	*eP*	**Pn**	**20 35 41.0**	**-0.3**
VHO	**Vista Hermosa**	**1.78**	**272**	*eP*	**Pn**	**20 35 43.0**	**+0.8**
VHO				*eS*	**Sn**	**20 36 09.5**	**+3.8**
VHO	**Vista Hermosa**	**1.78**	**272**	*eP*	**Pn**	**20 35 43.0**	**+0.8**
VHO				*eS*	**Sn**	**20 36 09.5**	**+3.8**
PCIG		**2.05**	**129**	*i P*	**Pn**	**20 35 44.4**	**-1.0**
PCIG				*eS*	**Sn**	**20 36 11.3**	**0.0**
PCIG		**2.05**	**129**	*i P*	**Pn**	**20 35 44.4**	**-1.0**
PCIG				*eS*	**Sn**	**20 36 11.3**	**0.0**
TPIG	**Tehuac#an**	**2.76**	**301**	*i P*	**Pn**	**20 35 53.8**	**-0.8**
TPIG				*i S*	**Sn**	**20 36 27.5**	**-0.3**
TPIG	**Tehuac#an**	**2.76**	**301**	*i P*	**Pn**	**20 35 53.8**	**-0.8**
TPIG				*i S*	**Sn**	**20 36 27.5**	**-0.3**
PNIG	**Pinotepa**	**3.18**	**259**	*eP*	**Pn**	**20 35 58.6**	**-1.4**
PNIG				*eS*	**Sn**	**20 36 38.1**	**+0.5**
PNIG	**Pinotepa**	**3.18**	**259**	*eP*	**Pn**	**20 35 58.6**	**-1.4**
PNIG				*eS*	**Sn**	**20 36 38.1**	**+0.5**
MEIG	**Mezcala**	**4.62**	**282**	*eP*	**Pn**	**20 36 18.5**	**-0.9**
MEIG				*i S*	**Sn**	**20 37 11.5**	**-0.7**
MEIG	**Mezcala**	**4.62**	**282**	*eP*	**Pn**	**20 36 18.5**	**-0.9**
MEIG				*i S*	**Sn**	**20 37 11.5**	**-0.7**
PLIG	**Platanillo**	**4.62**	**288**	*eP*	**Pn**	**20 36 18.6**	**-0.8**
PLIG				*i S*	**Sn**	**20 37 11.2**	**-1.0**
PLIG	**Platanillo**	**4.62**	**288**	*eP*	**Pn**	**20 36 18.6**	**-0.8**
PLIG				*i S*	**Sn**	**20 37 11.2**	**-1.0**
CAIG	**El Cayaco**	**5.17**	**271**	*eP*	**Pn**	**20 36 24.9**	**-1.6**
CAIG				*i S*	**Sn**	**20 37 24.4**	**-0.7**
CAIG	**El Cayaco**	**5.17**	**271**	*eP*	**Pn**	**20 36 24.9**	**-1.6**
CAIG				*i S*	**Sn**	**20 37 24.4**	**-0.7**
833A	**Chaparral WMA,**	**12.01**	**340**	P	**Pn**	**20 37 59.3**	**+0.4**
baz=158							
633A	**Saathoff Ranch**	**13.00**	**343**	P	Pn	20 38 07.5	-4.4
baz=161							
534A	**Blanco**	**13.37**	**346**	P	Pn	20 38 13.4	-3.3
baz=165,SNR=8.4							
434A	**Burnet**	**14.09**	**348**	P	Pn	20 38 19.4	-6.5
baz=166							
433A	**Art**	**14.21**	**345**	P	Pn	20 38 20.9	-6.6
baz=163							
334A	**Lometa**	**14.58**	**348**	P	**Pn**	**20 38 32.4**	**+0.3**
baz=167							
Y35A	**Marietta**	**16.93**	**354**	P	**Pn**	**20 39 02.5**	**+1.1**
baz=173,SNR=5.7							
X35A	**Drake**	**17.42**	**354**	P	**Pn**	**20 39 08.4**	**+1.2**
baz=173							
X39A	**Fountain Ranch**	**17.44**	**2**	P	**P**	**20 39 07.6**	**+0.6**
baz=182,SNR=5.3							
X37A	**Clayton**	**17.51**	**359**	P	**P**	**20 39 07.9**	**+0.1**
baz=178,SNR=5.8							
X38A	**Whitesboro**	**17.58**	**0**	P	**Pn**	**20 39 11.1**	**+1.9**
baz=180,SNR=9.2							
X34A	**Smith Ranch, M**	**17.72**	**352**	P	**Pn**	**20 39 12.5**	**+1.7**
baz=170							
W38A	**Poteau**	**17.99**	**1**	P	**Pn**	**20 39 15.8**	**+1.8**
baz=181							
W37B	**Quinton**	**18.06**	**359**	P	**Pn**	**20 39 17.1**	**+2.2**
baz=178							
W36A	**Wetumka**	**18.09**	**356**	P	**Pn**	**20 39 18.4**	**+3.1**
baz=176							
W39A	**Magazine**	**18.14**	**3**	P	**Pn**	**20 39 18.1**	**+2.3**
baz=183,SNR=7.7							
W35A	**Tecumseh**	**18.16**	**355**	P	**Pn**	**20 39 18.9**	**+2.8**
baz=174							
MSTX	**Muleshoe**	**18.32**	**339**	P	P	20 39 12.0	-4.7
baz=155,SNR=5.4							
AMTX	**Amarillo**	**18.81**	**342**	P	**P**	**20 39 18.2**	**-3.9**
baz=159							

IDC 16 20:35:45.1±1.8, 3.°92N×127.°35E, h0km, mb3.6/5, mb1 3.8/5, mb1mx3.5/45, mbtmp3.7/5, Error ellipse: s-maj=101.2km s-min=24.2km az=69.0, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**21.95**	**184**	P	P	20 40 41.2	+0.7
2.0nm,0.8s,baz=317,slow=8.1,SNR=3.2							
WRA	**Warramunga Arr**	**24.69**	**164**	P	P	20 41 06.9	-1.2
2.1nm,0.8s,baz=343,slow=10,SNR=12							
ASAR	**Alice Springs**	**28.16**	**167**	P	P	20 41 39.9	+0.5
0.2nm,0.3s,baz=342,slow=8.8,SNR=7.6							
STKA	**Stephens Creek**	**38.10**	**160**	P	P	20 43 06.0	+0.2
0.7nm,0.3s,baz=322,slow=7.5,SNR=4.0							
MKAR	**Makanchi Array**	**57.75**	**325**	P	P	20 45 37.9	-0.1
0.3nm,0.3s,baz=119,slow=9.0,SNR=5.7							

MEX 16 20:43:27.1±0.6, 18.°39N×100.°44W, h44km±5km, MD3.8, Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ARIG	**Puente Sto Nin**	**0.14**	**142**	*eP*	Pn	20 43 32.8	-1.7
ARIG				*eS*	Sn	20 43 38.1	-1.5
PLIG	**Platanillo**	**0.89**	**90**	*eP*	Pn	20 43 41.6	-1.6
PLIG				*eS*	Sn	20 43 53.4	-1.7
MEIG	**Mezcala**	**0.90**	**121**	*eP*	Pn	20 43 41.8	-1.7
MEIG				*eS*	Sn	20 43 53.7	-1.7
ZIIG	**Zihuatanejo**	**1.25**	**232**	*eP*	Pn	20 43 47.2	-0.9
ZIIG				*eS*	Sn	20 44 02.3	-1.5
CAIG	**El Cayaco**	**1.34**	**173**	*i P*	Pn	20 43 47.5	-2.0
CAIG				*i S*	Sn	20 44 03.7	-2.4
YAIG	**Yautepec**	**1.38**	**70**	*i P*	Pn	20 43 49.2	-0.9
YAIG				*i S*	Sn	20 44 04.4	-2.9

IDC 16 20:47:34.5±1.4, 39.°40N×110.°48E, h0km, mb3.6/4, mb1 3.8/6, mb1mx3.4/49, mbtmp3.7/6, ML3.6/2, Error ellipse: s-maj=30.2km s-min=23.3km az=83.0, Western Nei Mongol

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SONM	**Songino Array**	**8.94**	**342**	Pn	Pn	20 49 44.6	-0.3
0.6nm,0.3s,baz=168,slow=15,SNR=3.8							
SONM				Lg	Lg	20 52 19.5	
0.7nm,0.3s,baz=156,slow=33,SNR=2.5							
KSRS	**Korea Array**	**13.81**	**93**	Pn	Pn	20 50 53.2	+1.7
0.4nm,0.3s,baz=285,slow=14,SNR=4.4							
MKAR	**Makanchi Array**	**21.79**	**299**	P	P	20 52 28.2	+0.2
2.2nm,0.9s,baz=98,slow=12,SNR=16							
CMAR	**Chiang Mai Arr**	**23.14**	**209**	P	P	20 52 42.3	-0.1
2.4nm,0.8s,baz=12,slow=9.8,SNR=23							
KURBB	**Kurchatov Arra**	**25.03**	**307**	P	P	20 53 00.2	+0.2
3.3nm,1.2s,baz=107,slow=9.4,SNR=8.9							
YKA	**Yellowknife Ar**	**72.19**	**20**	P	P	20 59 00.2	-0.5
0.5nm,0.8s,baz=324,slow=5.9,SNR=5.9							

NIED ***16*** *21:14:00, 38.°10N×141.°80E, h59km, Mw4.1 Best double couple: M0 1.86000×10^15 NP1:φs33.00000°, δ33.00000°, λ111.00000°. NP2:φs189.00000°, δ59.00000°, λ77.00000°.*
ISCJB ***16*** *21:14:04.7±0.5, 38.°13N±0.°03×141.°81E±0.°05, h61km±3km, mb4.2/32, Error ellipse: s-maj=7.5km s-min=4.1km az=27.4*
IDC ***16*** *21:14:04.6±1.7, 38.°13N×141.°70E, h43km±16km, mb3.9/21, mb1 4.1/24, mb1mx4.0/42, mbtmp4.1/24, ML3.7/3, MS3.0/8, Ms1 3.0/8, ms1mx2.7/47, Error ellipse: s-maj=16.7km s-min=9.4km az=105.0*
NEIC ***16*** *21:14:05.9±0.6, 38.°20N×141.°76E, h54km±5km, mb4.5/12, Error ellipse: s-maj=7.4km s-min=4.9km az=125.0*
NEIC Recorded [2 JMA] in Iwate and Miyagi.
JMA ***16*** *21:14:05.8±0.1, 38.°16N×141.°75E, h55km±1km, M4.2*
JMA Felt II J1.

ISC 16 21:14:05.2±1.1, 38.°12N±0.°04×141.°79E±0.°07, h51km±9km, n95, σ1.°13/99, mb4.3/32, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.48**	**314**	P	**Pn**	**21 14 16.7**	**+0.5**
JIO				S	**Sn**	**21 14 24.4**	**+0.2**
JMM	**Marumori**	**0.82**	**252**	P	**Pn**	**21 14 20.9**	**+0.3**
JMM				S	**Sn**	**21 14 31.9**	**0.0**
JOU	**Okura**	**0.92**	**286**	P	**Pn**	**21 14 22.0**	**+0.2**
JOU				S	**Sn**	**21 14 34.3**	**+0.2**
JMK	**Ichinoseki**	**0.94**	**332**	P	**Pn**	**21 14 22.5**	**+0.4**
JMK				S	**Sn**	**21 14 34.5**	**0.0**
OFUJ	**Ofunato**	**0.96**	**355**	P	**Pn**	**21 14 22.6**	**+0.2**
OFUJ				S	**Sn**	**21 14 34.7**	**-0.4**
JFK	**Kawauchi**	**1.04**	**224**	P	**Pn**	**21 14 24.3**	**+0.7**
JFK				S	**Sn**	**21 14 38.0**	**+0.8**
JFT	**Otama**	**1.30**	**243**	P	**Pn**	**21 14 28.1**	**+1.1**
JFT				S	**Sn**	**21 14 44.5**	**+1.3**
JYS	**Shirataka**	**1.36**	**275**	P	**Pn**	**21 14 28.5**	**+0.7**
JYS				S	**Sn**	**21 14 46.0**	**+1.3**
JYK	**Kaneyama**	**1.37**	**306**	P	**Pn**	**21 14 28.4**	**+0.4**
JYK				S	**Sn**	**21 14 46.1**	**+1.1**
JOM	**Ohasama**	**1.40**	**344**	P	**Pn**	**21 14 29.0**	**+0.6**
JOM				S	**Sn**	**21 14 46.6**	**+0.8**
JRG	**Rokugo**	**1.56**	**325**	P	**Pn**	**21 14 31.3**	**+0.8**
JYA	**Atsumi**	**1.69**	**287**	P	**Pn**	**21 14 33.0**	**+0.6**
JYA				S	**Sn**	**21 14 55.1**	**+2.2**
MJAR	**Matsushiro Arr**	**3.26**	**242**	P	**Pn**	**21 14 55.6**	**+1.8**
7.7nm,0.3s,baz=63,slow=11,SNR=77							
MJAR				LR	LR	21 16 30.4	
comp=Z,234nm,20.4s,baz=60,slow=46							
MAJO	**Matsushiro**	**3.26**	**242**	*e*Pn	**Pn**	**21 14 56.3**	**+2.5**
MAJO				*e*Sn	**Sn**	**21 15 30.9**	**-0.5**
ERM	**Erimo**	**4.03**	**15**	*e*Pn	**Pn**	**21 15 03.7**	**-0.6**
ERM				*e*Sn	**Sn**	**21 15 52.8**	**+2.6**
INU	**Inuyama**	**4.73**	**236**	*e*Pn	**Pn**	**21 15 16.8**	**+2.8**
JHJ2	**Mitsune**	**5.25**	**198**	*e*Pn	**Pn**	**21 15 22.5**	**+1.4**
JHJ2				*e*Sn	**Sn**	**21 16 16.8**	**-3.6**
JHJ	**Hachijo jima 2**	**5.25**	**199**	P	**Pn**	**21 15 21.6**	**+0.5**
16nm,0.3s,baz=322,slow=22,SNR=36							
JHJ				S	**Sn**	**21 16 18.7**	**-1.7**
28nm,0.3s,baz=127,slow=22,SNR=4.6							
JHJ				LR	LR	21 17 42.7	
comp=Z,64nm,19.1s,baz=282,slow=42							
ASAJ	**Asahikawa**	**6.02**	**6**	P	**Pn**	**21 15 31.1**	**-0.6**
1.9nm,0.3s,baz=215,slow=20,SNR=7.5							
ASAJ				S	**Sn**	**21 16 38.0**	**-1.2**
0.5nm,0.3s,baz=79,slow=21,SNR=2.7							
ASAJ				LR	LR	21 17 56.8	
comp=Z,61nm,20.4s,baz=140,slow=39							
ASAJ	**Asahikawa**	**6.02**	**6**	*e*Pn	**Pn**	**21 15 29.0**	**-2.6**
ASAJ				*e*Sn	**Sn**	**21 16 38.0**	**-1.2**
USRK	**Ussuriysk Ar.**	**9.56**	**313**	P	**Pn**	**21 16 21.6**	**+1.6**
1.5nm,0.3s,baz=122,slow=15,SNR=28							
JNU	**Nakatsue**	**10.18**	**244**	P	**Pn**	**21 16 31.6**	**+2.9**
0.2nm,0.3s,baz=175,slow=8.5,SNR=2.4							
JNU				LR	LR	21 20 41.9	
comp=Z,130nm,21.2s,baz=114,slow=39							
JNU	**Nakatsue**	**10.18**	**244**	*e*Pn	**Pn**	**21 16 27.6**	**-1.1**
KSRS	**Korea Array**	**10.99**	**271**	P	Pn	21 16 44.0	+4.3
0.5nm,0.3s,baz=86,slow=13,SNR=8.7							
KSRS				LR	LR	21 20 29.4	
comp=Z,81nm,21.8s,baz=82,slow=35							
KS15	**Wonju Array Si**	**11.02**	**271**	*e*Pn	Pn	21 16 44.0	+3.8
KSAR	**Wonju Array Be**	**11.02**	**271**	P	Pn	21 16 44.0	+3.8
INCN	**Inchon**	**12.01**	**272**	*e*Pn	Pn	21 16 50.0	-3.6
KLR	**Kul'dur**	**13.25**	**330**	P	**Pn**	**21 17 09.8**	**-0.6**
0.1nm,0.3s,baz=178,slow=13,SNR=2.1							
KLR				LR	LR	21 22 05.2	
comp=Z,42nm,20.7s,baz=136,slow=36							
PETK	**Petropavlovsk-**	**18.60**	**31**	LR	LR	21 25 13.6	
comp=Z,45nm,19.0s,baz=145,slow=36							
BJT	**Baijiatuau**	**19.96**	**283**	*e*P	**P**	**21 18 29.1**	**-4.0**
11nm,0.4s							
MA2	**Magadan**	**22.23**	**12**	P	**P**	**21 18 57.5**	**+0.3**
3.6nm,0.3s,baz=248,slow=11,SNR=3.2							
SEY	**Seymchan**	**25.67**	**11**	P	**P**	**21 19 31.0**	**+1.1**
3.9nm,0.6s,baz=191,slow=7.6,SNR=9.5							
ENH	**Enshi**	**27.73**	**263**	*e*P	**P**	**21 19 48.2**	**-0.7**
11nm,0.6s							
H11N2	**WAKE ISLAND Hy**	**28.47**	**123**	T	T	21 50 13.3	
baz=316,slow=76,SNR=542							
H11N1	**WAKE ISLAND Hy**	**28.48**	**123**	T	T	21 50 16.8	
baz=316,slow=76,SNR=532							
H11N3	**WAKE ISLAND Hy**	**28.49**	**123**	T	T	21 50 16.7	
baz=316,slow=76,SNR=593							
H11S1	**WAKE ISLAND Hy**	**29.22**	**125**	T	T	21 51 12.9	
baz=318,slow=76,SNR=244							
H11S3	**WAKE ISLAND Hy**	**29.22**	**125**	T	T	21 51 13.0	
baz=318,slow=76,SNR=331							
H11S2	**WAKE ISLAND Hy**	**29.24**	**125**	T	T	21 51 12.5	
baz=318,slow=76,SNR=198							
ZAA1	**Zalesovo Array**	**41.41**	**311**	*e*P	**P**	**21 21 46.4**	**0.0**
ZAA0	**Zalesovo Array**	**41.41**	**311**	*e*P	**P**	**21 21 46.0**	**-0.3**
ZALV	**Zalesovo Beam**	**41.41**	**311**	P	**P**	**21 21 46.4**	**0.0**
1.7nm,0.5s,baz=88,slow=6.9,SNR=8.3							
CM31	**Chiang Mai Arr**	**42.06**	**254**	*e*P	**P**	**21 21 52.9**	**+0.8**
CMAR	**Chiang Mai Arr**	**42.06**	**254**	P	**P**	**21 21 52.9**	**+0.8**
0.3nm,0.6s,baz=90,slow=14,SNR=3.4							
LSA	**Lhasa**	**42.41**	**274**	*e*P	P	21 22 00.0	+4.6
2.5nm,0.6s							
MK01	**Makanchi Array**	**43.80**	**301**	*e*P	**P**	**21 22 05.3**	**-0.6**
MK31	**Makanchi

ULM	**Lac du Bonnet**	**78.43**	**34**	P		**P**	**21 25 59.8**	**-0.6**
	comp=Z,1.7nm,0.4s,baz=343,slow=4.4,SNR=2.6							
ULM				LR		LR	22 02 49.6	
	comp=Z,21nm,18.6s,baz=358,slow=37							
GERES	**GERESS Array B**	**81.94**	**328**	P		**P**	**21 26 18.5**	**-0.9**
	comp=Z,0.3nm,0.5s,baz=46,slow=5.8,SNR=3.5							
LTX	**Lajitas**	**89.22**	**53**	*eP*		**P**	**21 26 56.5**	**+0.6**
TXAR	**Lajitas Array**	**89.22**	**53**	P		**P**	**21 26 56.5**	**+0.6**
	comp=Z,1.2nm,0.7s,baz=290,slow=3.5,SNR=10							
LPAZ	**La Paz**	**145.88**	**59**	PKPbc		**PKPdf**	**21 33 40.0**	**+0.5**
	comp=Z,2.8nm,0.5s,baz=318,slow=4.9,SNR=16							

*ISCJB **16** 21:25:54.9±0.8, 30.°15S±0.°07×179.°7W±0.°1, h300km, mb3.0/3, Error ellipse: s-maj=16.3km s-min=7.9km az=19.3*

*IDC **16** 21:25:55.4±0.8, 30.°17S×179.°46W, h306km±13km, mb2.8/3, mb1 3.1/4, mb1mx3.0/19, mbtmp3.8/4, Error ellipse: s-maj=38.3km s-min=17.9km az=124.0*

ISC 16 21:25:54.7±0.9, 30.°24S±0.°09×179.°5W±0.°2, h300km, n16, σ1§80/20, mb2.8/3, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.69**	**55**	P	**Pn**	**21 26 38.1**	**-1.1**
	105nm,0.3s,baz=10,slow=22,SNR=3.6						
RAO				S	**S**	**21 27 16.0**	**+1.4**
	62nm,0.3s,baz=56,slow=19,SNR=3.0						
MXZ	**Matakaoa Point**	**7.53**	**193**	*e*PN	Pn	21 27 47.6	+5.2
MXZ				SN	**S**	**21 29 09.6**	**0.0**
HAZ	**Te Kaha**	**7.83**	**196**	PN	**Pn**	**21 27 49.5**	**+3.5**
HAZ				SN	**S**	**21 29 14.9**	**-1.4**
PKGZ	**Pakihiroa**	**7.89**	**194**	PN	**Pn**	**21 27 49.2**	**+2.3**
MWZ	**Matawai**	**8.44**	**196**	PN	**Pn**	**21 27 54.5**	**+0.9**
URZ	**Urewera**	**8.48**	**198**	P	**Pn**	**21 27 56.4**	**+2.4**
	7.0nm,0.3s,baz=280,slow=5.0,SNR=28						
URZ				S	**S**	**21 29 32.4**	**+1.5**
	6.1nm,0.3s,baz=242,slow=22,SNR=13						
URZ	**Urewera**	**8.48**	**198**	PN	**Pn**	**21 27 56.2**	**+2.2**
URZ				SN	**S**	**21 29 28.0**	**-2.8**
RIGZ	**Rimuhau**	**8.74**	**194**	*e*PN	**P**	**21 28 01.7**	**-0.6**
KNZ	**Kokohu**	**9.06**	**194**	PN	**Pn**	**21 28 01.4**	**+0.2**
TCW	**Tory Channel**	**12.05**	**203**	*e*PN	**Pn**	**21 28 35.0**	**-2.7**
STKA	**Stephens Creek**	**33.25**	**257**	P	**P**	**21 32 05.4**	**+1.0**
	1.3nm,0.9s,baz=80,slow=17,SNR=3.2						
ASAR	**Alice Springs**	**41.82**	**267**	P	**P**	**21 33 16.4**	**+0.5**
	0.1nm,0.3s,baz=112,slow=7.5,SNR=3.1						
WRA	**Warramunga Arr**	**42.79**	**273**	P	**P**	**21 33 23.9**	**+0.1**
	0.4nm,0.6s,baz=111,slow=7.9,SNR=7.5						
FINES	**FINESS Array B**	**144.54**	**339**	PKP	**PKPab**	**21 44 53.5**	**-0.7**
	2.9nm,0.4s,baz=51,slow=4.0,SNR=40						
NB2	**NORSAR Subarra**	**148.38**	**350**	PKP	**PKPbc**	**21 45 04.3**	**-0.9**
	comp=Z,0.5nm,0.5s,baz=16,slow=2.6						
NOA	**NORSAR Array B**	**148.38**	**350**	PKPbc	**PKPbc**	**21 45 05.0**	**-0.2**
	comp=Z,1.0nm,0.7s,baz=18,slow=4.2,SNR=4.0						

IDC 16 21:40:41.4±10.0, 20.°37S×167.°59E, h0km, mb4.0/3, mb1 4.1/3, mb1mx3.7/35, mbtmp4.0/3, Error ellipse: s-maj=180.8km s-min=38.8km az=92.0, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.00**	**212**	Pn	Pn	21 41 15.4	-1.2
	8.4nm,0.3s,baz=100,slow=10.0,SNR=95						
DZM				Sn	Sn	21 41 43.0	+0.7
	9.5nm,0.3s,baz=113,slow=20,SNR=8.3						
STKA	**Stephens Creek**	**25.93**	**239**	P	P	21 46 16.4	+1.0
	1.3nm,0.7s,baz=49,slow=11,SNR=4.2						
WRA	**Warramunga Arr**	**31.18**	**265**	P	P	21 47 02.0	-0.5
	0.3nm,0.4s,baz=92,slow=8.5,SNR=9.4						
ASAR	**Alice Springs**	**31.36**	**258**	P	P	21 47 04.3	+0.3
	3.5nm,0.7s,baz=84,slow=9.0,SNR=38						

*NIED **16** 21:51:00, 36.°70N×142.°30E, h23km, Mw3.7 Best double couple: M0=4.53000×10^14 NP1:φs=204.00000°, δ22.00000°, λ87.00000°. NP2:φs=28.00000°, δ68.00000°, λ91.00000°.*

*ISCJB **16** 21:51:57.0±0.7, 36.°70N±0.°04×142.°36E±0.°07, h19km, mb3.5/3, Error ellipse: s-maj=7.7km s-min=5.4km az=173.5*

*IDC **16** 21:51:56.6±1.3, 36.°64N×142.°23E, h0km, mb3.4/3, mb1 3.7/6, mb1mx3.4/44, mbtmp3.6/6, ML3.7/3, MS2.8/6, Ms1 2.8/6, ms1mx2.6/35, Error ellipse: s-maj=35.1km s-min=20.8km az=113.0*

*JMA **16** 21:51:57.3±0.3, 36.°74N×142.°29E, h16km, M3.8*

ISC 16 21:51:58.9±0.9, 36.°75N±0.°04×142.°12E±0.°06, h19km, n28, σ1§15/24, mb3.4/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**1.11**	**289**	P	**Pg**	**21 52 19.5**	**-1.0**
ONAJ				S	**Sg**	**21 52 36.6**	**+1.5**
JFK	**Kawauchi**	**1.17**	**302**	P	**Pg**	**21 52 20.2**	**-1.3**
JFK				*e*S	**Sg**	**21 52 37.7**	**+0.9**
JHO	**Hitachi**	**1.25**	**264**	P	**Pg**	**21 52 22.1**	**-1.0**
CHOJ	**Chosi**	**1.46**	**224**	P	**Pb**	**21 52 25.1**	**-0.4**
JMM	**Marumori**	**1.53**	**317**	P	**Pb**	**21 52 25.6**	**-1.1**
JFT	**Otama**	**1.61**	**299**	P	**Pb**	**21 52 27.7**	**-0.4**
JIO	**Ouri**	**1.80**	**341**	P	**Pb**	**21 52 29.7**	**-1.6**
JIO				*e*S	**Sb**	**21 52 52.6**	**-0.9**
JOU	**Okura**	**1.98**	**325**	P	**Pb**	**21 52 33.4**	**-0.9**
JOU				*e*S	**Sb**	**21 52 59.2**	**+0.6**
JFY	**Yanaizu**	**2.04**	**289**	P	**Pb**	**21 52 34.2**	**-1.1**
JAG	**Ashikaga**	**2.17**	**262**	P	**Pb**	**21 52 35.4**	**-2.1**
BSO1	**Boso 1**	**2.29**	**204**	P	**Pn**	**21 52 36.2**	**+1.0**
MJAR	**Matsushiro Arr**	**3.15**	**267**	**Pn**	**Pn**	**21 52 49.4**	**+1.9**
	8.7nm,0.3s,baz=338,slow=9.5,SNR=71						
MJAR				Sn	**Sb**	**21 53 32.3**	**+0.1**
	2.8nm,0.3s,baz=84,slow=16,SNR=5.3						
MJAR				LR	LR	21 54 19.3	
	comp=Z,114nm,18.7s,baz=125,slow=44						
MAT	**Matsushiro**	**3.15**	**267**	P	Pb	21 52 50.4	-3.9
MAT				*e*S	**Sb**	**21 53 31.2**	**-1.1**
JHJ	**Hachijo jima 2**	**4.10**	**209**	Pn	**Pn**	**21 53 00.3**	**-0.2**
	5.5nm,0.3s,baz=352,slow=19,SNR=11						
JHJ				Sn	**Sn**	**21 53 47.7**	**-0.3**
	27nm,0.3s,baz=236,slow=22,SNR=7.1						
ASAJ	**Asahikawa**	**7.36**	**3**	Pn	**Pn**	**21 53 46.0**	**+0.7**
	1.7nm,0.3s,baz=213,slow=9.2,SNR=9.0						
ASAJ				LR	LR	21 57 03.1	
	comp=Z,60nm,19.9s,baz=121,slow=41						
JNU	**Nakatsue**	**9.91**	**252**	LR	LR	21 58 32.2	
	comp=Z,34nm,19.5s,baz=294,slow=40						
USRK	**Ussuriysk Ar.**	**10.71**	**317**	Pn	Pn	21 54 40.0	+8.8
	0.1nm,0.3s,baz=141,slow=9.3,SNR=4.0						
USRK				LR	LR	21 58 42.3	
	comp=Z,85nm,19.2s,baz=240,slow=37						
KSRS	**Korea Array**	**11.36**	**278**	Pn	Pn	21 54 47.5	+7.4
	0.2nm,0.3s,baz=90,slow=14,SNR=4.2						
KSRS				LR	LR	21 58 48.9	
	comp=Z,61nm,18.6s,baz=108,slow=36						
KLR	**Kul'dur**	**14.57**	**332**	LR	LR	22 01 19.8	
	comp=Z,44nm,19.8s,baz=112,slow=38						
H11N2	**WAKE ISLAND Hy**	**27.52**	**121**	T	T	22 26 22.4	
	baz=313,slow=75,SNR=9.8						
H11N1	**WAKE ISLAND Hy**	**27.53**	**121**	T	T	22 26 22.4	
	baz=313,slow=75,SNR=7.6						
H11N3	**WAKE ISLAND Hy**	**27.54**	**121**	T	T	22 26 23.5	
	baz=313,slow=75,SNR=7.7						
H11S1	**WAKE ISLAND Hy**	**28.24**	**123**	T	T	22 27 16.6	
	baz=318,slow=74,SNR=4.7						
H11S3	**WAKE ISLAND Hy**	**28.24**	**123**	T	T	22 27 15.8	
	baz=318,slow=74,SNR=3.9						
H11S2	**WAKE ISLAND Hy**	**28.25**	**123**	T	T	22 27 17.3	
	baz=318						
MKAR	**Makanchi Array**	**44.74**	**302**	P	**P**	**22 00 12.0**	**+1.0**
	0.3nm,0.3s,baz=88,slow=9.6,SNR=3.7						
ILAR	**Eielson Array**	**49.43**	**32**	P	**P**	**22 00 48.6**	**+1.3**
	0.3nm,0.7s,baz=263,slow=6.3,SNR=2.5						
WRA	**Warramunga Arr**	**56.87**	**189**	P	**P**	**22 01 42.1**	**-0.3**
	0.4nm,1.0s,baz=5.5,slow=7.3,SNR=2.4						

PGC 16 21:56:43.3±1.9, 50.°51N×130.°30W, h10km, ML2.9/14, Mw3.5/14, 204km west of Pt. Hardy, Bc Vancouver Island, Canada Region, Vancouver Island region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HOLB	**Holberg**	**1.39**	**84**	Pn	Pn	21 57 06.5	-2.1
HOLB				Sn	Sb	21 57 22.9	-4.1
BPBC	**Brooks Peninsu**	**1.66**	**101**	Pn	Pn	21 57 09.8	-2.6
PHC	**Port Hardy**	**1.84**	**83**	Pn	Pn	21 57 13.1	-1.7
PHC				Sn	Sn	21 57 33.7	-4.3
MAYB	**Maynard**	**2.00**	**92**	Pn	Pn	21 57 15.3	-1.9
FHRB	**Fair Harbour**	**2.09**	**101**	Pn	Pn	21 57 16.0	-2.3
EDB	**Eliza Dome**	**2.14**	**106**	Pn	Pn	21 57 16.9	-2.0
BBB	**Bella Bella**	**2.16**	**38**	Pn	Pn	21 57 17.8	-1.5
BBB				Sn	Sn	21 57 42.0	-4.2
TLCB	**Telegraph Cove**	**2.21**	**88**	Pn	Pn	21 57 18.7	-1.3
TLCB				Sn	Sn	21 57 43.7	-3.6
BNB	**Barry Inlet**	**2.26**	**337**	Pn	Pn	21 57 18.5	-2.2
WOSB	**Woss**	**2.41**	**97**	Pn	Pn	21 57 21.5	-1.4
NCRB	**Newcastle Ridg**	**2.71**	**91**	Pn	Pn	21 57 25.5	-1.5
CBB	**Campbell River**	**3.20**	**97**	Pn	Pn	21 57 32.6	-1.0
BTB	**Buttle Lake**	**3.25**	**107**	Pn	Pn	21 57 32.9	-1.6
TXB	**Texada**	**3.86**	**100**	Pn	Pn	21 57 41.5	-1.2
MGB	**Mount Grey**	**3.94**	**110**	Pn	Pn	21 57 42.2	-1.6
SHB	**Sechelt**	**4.24**	**100**	Pn	Pn	21 57 47.0	-0.9
PFB	**Port Renfrew**	**4.28**	**115**	Pn	Pn	21 57 47.5	-1.0
UBRB	**Upper Baezaeko**	**4.54**	**56**	Pn	Pn	21 57 52.2	+0.2

*IDC **16** 22:04:32.1±1.3, 20.°66S×168.°41E, h0km, mb4.2/9, mb1 4.4/10, mb1mx4.1/52, mbtmp4.2/10, ML3.8/1, Error ellipse: s-maj=54.6km s-min=17.5km az=149.0*

*NEIC **16** 22:04:33.9±0.5, 20.°60S×168.°31E, h10km, mb4.9/5, Error ellipse: s-maj=24.4km s-min=7.8km az=151.0*

*ISCJB **16** 22:04:35.1±0.6, 20.°5S±0.°1×168.°2E±0.°1, h26km, mb4.9/17, Error ellipse: s-maj=22.7km s-min=7.6km az=140.5*

ISC 16 22:04:36.3±0.9, 20.°6S±0.°2×168.°3E±0.°2, h26km, n30, σ0§97/31, mb4.9/17, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.28**	**230**	Pn	**Pn**	**22 05 11.6**	**-0.7**
	23nm,0.3s,baz=53,slow=18,SNR=81						
DZM				Sn	**Sn**	**22 05 39.9**	**+0.3**
	24nm,0.3s,baz=89,slow=20,SNR=6.4						
CTA	**Charters Tower**	**20.71**	**268**	P	**P**	**22 09 15.7**	**+1.0**
	1.9nm,0.4s,baz=79,slow=16,SNR=2.9						
STKA	**Stephens Creek**	**26.40**	**239**	P	**P**	**22 10 12.0**	**+1.2**
	3.8nm,0.7s,baz=71,slow=11,SNR=12						
STKA	**Stephens Creek**	**26.40**	**239**	*e*P	**P**	**22 10 12.0**	**+1.2**
BBOO	**Buckleboo**	**31.16**	**240**	*e*P	**P**	**22 10 52.9**	**-0.3**
	55nm,1.6s						
WRAB	**Tennant Creek**	**31.85**	**265**	*e*P	**P**	**22 10 58.3**	**-1.0**
	28nm,1.7s						
WR1	**Warramunga Arr**	**31.86**	**265**	*e*P	**P**	**22 10 58.3**	**-1.2**
WRA	**Warramunga Arr**	**31.86**	**265**	P	**P**	**22 10 58.3**	**-1.2**
	1.0nm,0.5s,baz=91,slow=8.5,SNR=27						
AS01	**Alice Springs**	**31.95**	**258**	*e*P	**P**	**22 10 59.7**	**-0.5**
AS31	**Alice Springs**	**31.99**	**258**	*e*P	**P**	**22 11 00.6**	**0.0**
	4.6nm,0.6s						
ASAR	**Alice Springs**	**31.99**	**258**	P	**P**	**22 11 00.6**	**0.0**
	10nm,0.7s,baz=84,slow=9.0,SNR=94						
FITZ	**Fitzroy Crossi**	**40.27**	**266**	P	**P**	**22 12 11.5**	**+0.1**
	3.0nm,0.7s,baz=103,slow=11,SNR=3.0						
FITZ	**Fitzroy Crossi**	**40.27**	**266**	*e*P	**P**	**22 12 11.5**	**+0.1**
	24nm,1.6s						
HON	**Honolulu**	**53.10**	**40**	*e*P	**P**	**22 13 50.8**	**-1.0**
	601nm,1.8s						
JNU	**Nakatsue**	**64.30**	**326**	*e*P	**P**	**22 15 08.8**	**-0.8**
	10.0nm,0.9s						
MNAI	**Manna**	**65.44**	**275**	*e*P	**P**	**22 15 16.6**	**-0.9**
	216nm,1.0s						
CM31	**Chiang Mai Arr**	**78.30**	**295**	*e*P	**P**	**22 16 35.6**	**+1.1**
CMAR	**Chiang Mai Arr**	**78.30**	**295**	P	**P**	**22 16 35.6**	**+1.1**
	1.7nm,1.0s,baz=138,slow=4.4,SNR=12						
YBH	**Yreka Blue Hor**	**88.88**	**44**	P	**P**	**22 17 27.5**	**-0.9**
	2.8nm,0.8s,baz=123,slow=0.6,SNR=5.3						
YBH	**Yreka Blue Hor**	**88.88**	**44**	*e*P	**P**	**22 17 27.5**	**-0.9**
	32nm,2.0s						
NV01	**Mina Array Sit**	**90.35**	**49**	*e*P	**P**	**22 17 34.9**	**-0.6**
NVAR	**Mina Array Bea**	**90.35**	**49**	P	**P**	**22 17 34.9**	**-0.6**
	1.6nm,0.7s,baz=225,slow=8.0,SNR=7.8						
Y12C	**Blythe**	**91.14**	**54**	*e*P	**P**	**22 17 40.5**	**+1.5**
	33nm,0.6s						
MENT	**Mentasta**	**91.39**	**20**	*e*P	**P**	**22 17 40.1**	**+0.5**
	103nm,0.2s						
ILAR	**Eielson Array**	**91.79**	**18**	P	**P**	**22 17 43.0**	**+1.7**
	0.2nm,0.4s,baz=235,slow=5.6,SNR=4.3						
ILB	**Eielson Array**	**91.79**	**18**	*e*P	**P**	**22 17 43.0**	**+1.7**
U15A	**North Rim**	**93.88**	**53**	*e*P	**P**	**22 17 52.6**	**+0.6**
	5.3nm,0.8s						
GERES	**GERESS Array B**	**145.28**	**330**	PKPbc	**PKPbc**	**22 24 10.5**	**-0.9**
	0.8nm,0.8s,baz=46,slow=8.4,SNR=7.3						
FUORN	**Ofenpass-Fuorn**	**148.49**	**330**	*e*PKPbc	**PKPbc**	**22 24 21.9**	**+0.9**
TORD	**Torodi Ar. Bea**	**165.22**	**242**	PKP	**PKPdf**	**22 24 39.4**	**+0.2**
	0.6nm,1.0s,baz=90,slow=1.4,SNR=2.7						

IDC 16 22:09:03.4±10.0, 20.°35S×167.°76E, h0km, mb4.0/3, mb1 4.1/4, mb1mx3.7/52, mbtmp3.9/4, ML3.0/1, MS3.3/1, Ms1 3.3/1, ms1mx2.6/30, Error ellipse: s-maj=179.2km s-min=41.4km az=96.0, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.11**	**215**	Pn	Pn	22 09 39.2	-0.8
	5.4nm,0.3s,baz=90,slow=20,SNR=6.8						
DZM				Sn	Sn	22 10 07.6	+0.5
	29nm,0.3s,baz=312,slow=23,SNR=7.8						
STKA	**Stephens Creek**	**26.08**	**239**	P	P	22 14 38.9	+0.1
	1.8nm,0.7s,baz=65,slow=11,SNR=4.1						
STKA	**Stephens Creek**	**26.08**	**239**	*e*S	P	22 14 39.0	+0.1
WRA	**Warramunga Arr**	**31.35**	**265**	P	P	22 15 25.6	-0.4
	0.4nm,0.5s,baz=92,slow=8.4,SNR=6.6						
ASAR	**Alice Springs**	**31.52**	**258**	P	P	22 15 28.1	+0.6
	3.3nm,0.7s,baz=85,slow=8.9,SNR=17						
GUMO	**Guam**	**40.55**	**324**	LR	LR	22 30 37.1	
	comp=Z,39nm,20.0s,baz=89,slow=32						

*IDC **16** 22:12:41.7±5.7, 13.°84N×91.°43W, h0km, mb3.9/4, mb1 4.0/6, mb1mx3.6/51, mbtmp3.7/6, ML3.8/2, MS2.9/2, Ms1 2.9/2, ms1mx2.5/35, Error ellipse: s-maj=101.6km s-min=37.3km az=7.0*

*MEX **16** 22:12:42.7±0.3, 15.°70N×90.°52W, h16km±999km, MD4.1*

ISC 16 22:12:44.4±2.3, 13.°4N±0.°2×91.°9W±0.°1, h37km, n8, σ3§17/10, mb3.9/4, Near coast of Guatemala

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG			**2.60**	**330**	*e*P	**Pn**	**22 13 21.3**	**-2.6**
PCIG					*i* S	**Sn**	**22 13 51.5**	**-2.8**
CMIG	**Matias Romero**		**4.65**	**322**	Pn	**Pn**	**22 13 51.1**	**-0.9**
	1.2nm,0.3s,baz=141,slow=11,SNR=6.2						
CMIG					Sn	**Sn**	**22 14 50.5**	**+5.7**
	2.1nm,0.3s,baz=254,slow=20,SNR=3.5						
TEIG	**Tepich**		**7.58**	**27**	Pn	**Pn**	**22 14 33.8**	**+1.4**
	2.3nm,0.3s,baz=268,slow=23,SNR=15						
TEIG					LR	LR	22 17 50.8	
	comp=Z,65nm,18.2s,baz=128,slow=44						
TXAR	**Lajitas Array**		**19.23**	**327**	P	**Pn**	**22 17 06.7**	**-0.1**
	0.2nm,0.3s,baz=158,slow=13,SNR=3.3						
TKL	**Tuckaleechee C**		**23.30**	**17**	P	**P**	**22 17 46.1**	**-2.8**
	2.5nm,0.6s,baz=200,slow=4.8,SNR=4.1						
TKL					LR	LR	22 28 57.9	
	comp=Z,35nm,18.3s,baz=28,slow=43						
NVAR	**Mina Array Bea**		**34.18**	**322**	P	**P**	**22 19 29.5**	**+3.0**
	0.5nm,0.6s,baz=126,slow=9.0,SNR=3.2						
SCHQ	**Schefferville**		**45.71**	**20**	P	**P**	**22 21 00.0**	**-1.6**
	2.5nm,0.7s,baz=209,slow=7.1,SNR=4.2						
YKA	**Yellowknife Ar**		**51.60**	**347**	P	**P**	**22 21 47.1**	**+0.4**
	0.8nm,0.6s,baz=147,slow=7.6,SNR=21						

IDC 16 22:13:17.2±3.1, 18.°55N×119.°70E, h0km, mb3.6/4, mb1 3.7/4, mb1mx3.4/57, mbtmp3.6/4, Error ellipse: s-maj=337.8km s-min=21.4km az=61.0, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**40.86**	**159**	P	P	22 21 00.1	-1.0
	0.7nm,0.9s,baz=338,slow=8.9,SNR=3.6						
MKAR	**Makanchi Array**	**41.62**	**321**	P	P	22 21 07.5	+0.4
	0.6nm,0.8s,baz=113,slow=6.6,SNR=4.9						
ASAR	**Alice Springs**	**44.19**	**161**	P	P	22 21 28.9	+0.7
	0.4nm,0.5s,baz=338,slow=6.8,SNR=10						
KURBB	**Kurchatov Arra**	**45.68**	**324**	P	P	22 21 39.1	-0.6
	0.9nm,0.8s,baz=124,slow=8.1,SNR=7.3						

*NIED **16** 22:14:00.41.°60N×142.°10E, h53km, Mw4.2 Best double couple: M0=2.45000×10^15 NP1:φs=199.00000°, δ21.00000°, λ90.00000°. NP2:φs=19.00000°, δ69.00000°, λ90.00000°.*

*MOS **16** 22:14:20.7±1.1, 41.°63N×142.°07E, h55km, mb4.4/20, Error ellipse: s-maj=10.8km s-min=7.7km az=81.8*

*ISCJB **16** 22:14:21.2±0.3, 41.°57N±0.°03×142.°11E±0.°04, h69km±3km, mb4.1/33, Error ellipse: s-maj=6.6km s-min=3.8km az=135.8*

*JMA **16** 22:14:21.7±0.1, 41.°55N×142.°07E, h64km±3km, M4.2 Broadband fault plane solution: P waves. NP1: φs=21.00000°, δ81.00000°, λ101.00000°. NP2: φs=151.00000°, δ14.00000°, λ41.00000°. Principal axes: T Plg53.0000°, Azm304.0000°; N Plg11.0000°, Azm200.0000°; P Plg35.0000°, Azm102.0000°;*

JMA Felt II J1.

*IDC **16** 22:14:22.9±1.7, 41.°57N×142.°06E, h68km±14km, mb3.7/21, mb1 3.9/25, mb1mx3.7/61, mbtmp4.0/25, MS3.1/18, Ms1 3.1/18, ms1mx3.0/50 Error ellipse: s-maj=15.7km s-min=11.2km az=119.0*

*NEIC **16** 22:14:23.3±0.6, 41.°62N×142.°15E, h70km±7km, mb4.5/7, Error ellipse: s-maj=12.1km s-min=6.7km az=135.0*

NEIC Recorded [2 JMA] in Aomori, Honshu.

ISC 16 22:14:21.9±0.8, 41.°54N±0.°05×142.°15E±0.°04, h60km±7km, n104, σ1§23/103, mb4.3/33, 3C-11D, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JOT	**Ohata**	**0.84**	**260**	⇓P	**Pn**	**22 14 37.3**	**-0.6**
JOT				*e*S	**Sn**	**22 14 48.9**	**-0.8**
JNBK	**Urakawa-nobuka**	**0.87**	**31**	⇑P	**Pn**	**22 14 38.1**	**-0.1**
JNBK				*e*S	**Sn**	**22 14 52.0**	**+1.8**
ERM	**Erimo**	**0.89**	**57**	*d iP*	**Pn**	**22 14 39.1**	**+0.6**
ERM				pmax	pmax		
	comp=Z,1μm,0.8s						
ERM	**Erimo**	**0.89**	**57**	*e*Pn	**Pn**	**22 14 39.3**	**+0.8**
ERM				*e*Sn	**Sn**	**22 14 47.5**	**-3.2**
JEM	**Erimo**	**0.89**	**57**	⇑P	**Pn**	**22 14 39.0**	**+0.5**
JKB	**Kayabe**	**0.91**	**293**	⇓P	**Pn**	**22 14 37.7**	**-1.0**
JTM	**Tenmabayashi**	**1.11**	**228**	⇓P	**Pn**	**22 14 41.3**	**-0.1**
JNB	**Noboribetsu**	**1.25**	**319**	⇓P	**Pn**	**22 14 42.2**	**-1.0**
JBT2	**Biratori 2**	**1.25**	**7**	⇓P	**Pn**	**22 14 43.5**	**+0.3**
JANG	**Nango**	**1.26**	**203**	P	**Pn**	**22 14 43.2**	**-0.2**
JSR	**Shiriuchi**	**1.30**	**270**	⇓P	**Pn**	**22 14 43.3**	**-0.6**
JCH	**Churui**	**1.40**	**40**	P	**Pn**	**22 14 46.4**	**+1.1**
JEW	**Eniwo**	**1.40**	**338**	⇓P	**Pn**	**22 14 45.2**	**-0.1**
JEW				*e*S	**Sn**	**22 15 02.3**	**-0.5**
JYM2	**Yakumo 2**	**1.45**	**294**	⇓P	**Pn**	**22 14 45.7**	**-0.2**
JOSM	**Okushiri--Mats**	**2.08**	**286**	⇓P	**Pn**	**22 14 53.3**	**-1.0**
ASAJ	**Asahikawa**	**2.60**	**7**	P	**Pn**	**22 15 03.0**	**+1.5**
	comp=Z,14nm,0.3s,baz=212,slow=16,SNR=67						
ASAJ				S	**Sn**	**22 15 32.6**	**+0.7**
	comp=Z,12nm,0.3s,baz=124,slow=26,SNR=12						
ASAJ				LR	LR	22 16 24.0	
	comp=Z,284nm,21.1s,baz=265,slow=47						
ASAJ	**Asahikawa**	**2.60**	**7**	*e*Pn	**Pn**	**22 15 02.7**	**+1.3**
YUK	**Yuzh-Kuril'sk**	**3.70**	**46**	*e*P	**Pn**	**22 15 16.8**	**+0.3**
YUK				*i* S	**Sn**	**22 15 58.1**	**-0.7**
YUK				pmax	pmax		
	comp=N,166nm,0.5s						
YUK				pmax	pmax		
	comp=Z,280nm,0.5s						
YUK				pmax	pmax		
	comp=E,167nm,0.7s						
SHO	**Shikotan**	**4.16**	**54**	*e*P	**Pn**	**22 15 21.7**	**-1.1**
SHO				*i* S	**Sn**	**22 16 06.6**	**-3.5**
SHO				pmax	pmax		
	comp=Z,139nm,0.5s						
SHO				pmax	pmax		
	comp=E,80nm,0.6s						
SHO				pmax	pmax		
	comp=N,56nm,0.2s						
YSS	**Yuzh-Sakhalins**	**5.43**	**4**	*e*P	**Pn**	**22 15 40.7**	**+0.5**
KUR	**Kuril'sk**	**5.56**	**46**	*e*P	**Pn**	**22 15 43.0**	**+1.0**
KUR				*e*S	**Sn**	**22 16 44.7**	**+0.1**
KUR				pmax	pmax		
	comp=Z,43nm,0.3s						
MJB9	**Matsu-Tunnel**	**5.86**	**213**	*e*Pn	**Pn**	**22 15 48.6**	**+2.5**
MAJO	**Matsushiro**	**5.86**	**213**	*e*P	**Pn**	**22 15 48.6**	**+2.5**
MAJO	**Matsushiro**	**5.86**	**213**	*e*Pn	**Pn**	**22 15 48.6**	**+2.5**
MAT	**Matsushiro**	**5.86**	**213**	P	**Pn**	**22 15 48.4**	**+2.3**
MAT				*e*S	**Sn**	**22 16 53.5**	**+1.6**
MJAR	**Matsushiro Arr**	**5.86**	**213**	P	**Pn**	**22 15 48.0**	**+1.9**
	comp=Z,1.4nm,0.3s,baz=72,slow=14,SNR=8.3						
MJAR				LR	LR	22 17 47.3	
	comp=Z,47nm,21.2s,baz=25,slow=35						
USRK

comp=Z,10.0nm,0.6s
ZAA0 Zalesovo Array 39.43 308 *e*P **P 22 21 45.5 -0.2**
ZALV Zalesovo Beam 39.43 308 P **P 22 21 44.5 -1.2**
comp=Z,1.4nm,0.3s,baz=91,slow=7.5,SNR=12
ZALV LR LR 22 38 40.3
comp=Z,28nm,19.1s,baz=68,slow=37
NRIK Noril'sk 39.47 333 LR LR 22 38 54.8
comp=Z,58nm,21.1s,baz=102,slow=37
WMQ Urumqi 39.49 292 *e*P **P 22 21 46.3 -0.2**
WMQ LR LR
comp=N,12nm,17.2s
WMQ LR LR
comp=E,2.0nm,18.6s
WMQ LR LR
comp=Z,16nm,23.0s
MK01 Makanchi Array 42.36 298 *e*P **P 22 22 09.4 -0.5**
MK31 Makanchi Array 42.36 298 *e*P **P 22 22 09.8 -0.1**
MK31 Makanchi Array 42.36 298 *e*P **P 22 22 09.8 -0.1**
MKAR Makanchi Array 42.36 298 P **P 22 22 09.5 -0.4**
comp=Z,3.2nm,0.9s,baz=79,slow=8.8,SNR=13
MKAR PcP **PcP 22 24 02.2 -0.1**
comp=Z,0.4nm,0.3s,baz=73,slow=2.2,SNR=4.0
MKAR LR LR 22 39 15.0
comp=Z,19nm,20.4s,baz=172,slow=35
MKAR Makanchi Array 42.36 298 P **P 22 22 09.5 -0.4**
MKAR 22 24 02.2
MKAR pmax pmax
comp=Z,1.0nm,0.6s
MKAR MLR MLR
comp=Z,19nm,20.4s
MKAR Makanchi Array 42.36 298 *e*P **P 22 22 09.8 -0.1**
MAKZ Makanchi 42.56 298 *e*P **P 22 22 11.9 +0.3**
MAKZ pmax pmax
comp=Z,6.0nm,1.0s
MAKZ Makanchi 42.56 298 *e*P **P 22 22 11.9 +0.3**
comp=Z,5.7nm,1.0s
CMAR Chiang Mai Arr 43.34 251 P **P 22 22 18.4 +0.2**
comp=Z,1.1nm,0.3s,baz=48,slow=8.6,SNR=5.7
CMAR LR LR 22 39 59.9
comp=Z,28nm,18.4s,baz=185,slow=36
KURK Kurchatov 43.73 305 P **P 22 22 21.0 +0.1**
KURK pmax pmax
comp=Z,2.0nm,0.3s
KURK Kurchatov 43.73 305 *e*P **P 22 22 20.4 -0.5**
comp=Z,6.6nm,1.0s
KURBB Kurchatov Arra 43.80 304 P **P 22 22 21.0 -0.5**
comp=Z,1.7nm,0.3s,baz=78,slow=8.7,SNR=24
IL1 Eielson Array 45.43 35 *e*P **P 22 22 34.5 +0.2**
ILAR Eielson Array 45.43 35 P **P 22 22 35.0 +0.7**
comp=Z,2.3nm,0.9s,baz=269,slow=6.6,SNR=13
ILAR Eielson Array 45.43 35 P **P 22 22 35.0 +0.7**
ILAR pmax pmax
comp=Z,2.0nm,1.0s
ILB Eielson Array 45.43 35 *e*P **P 22 22 33.7 -0.5**
KKN Kakani 47.94 272 *e*P **P 22 22 55.0 +0.3**
comp=Z,7.2nm,0.5s
PKIN Phulchoki 47.97 272 *e*P **P 22 22 54.2 -0.7**
comp=Z,2.7nm,0.3s
BVAR Borovoye Array 48.06 310 P **P 22 22 55.0 0.0**
comp=Z,2.2nm,0.3s,baz=76,slow=8.9,SNR=27
BVAR Borovoye Array 48.06 310 P **P 22 22 55.0 0.0**
BVAR pmax pmax
comp=Z,2.0nm,0.3s
BRVK Borovoye 48.11 310⇓*e*P **P 22 22 55.4 +0.1**
BRVK pmax pmax
comp=Z,7.0nm,2.5s
TKM2 Tokmak 2 48.12 295 *e*P **P 22 22 56.1 +0.3**
TKM2 pmax pmax
comp=Z,6.0nm,1.0s
TKM2 Tokmak 2 48.12 295 *e*P **P 22 22 56.1 +0.3**
comp=Z,6.2nm,1.0s
GKN Gorkha 48.31 273 *e*P **P 22 22 58.3 +0.8**
comp=Z,6.1nm,0.4s
ZRNK Zerenda 48.88 310 *e*P **P 22 23 01.5 +0.2**
ZRNK pmax pmax
comp=Z,3.0nm,0.8s
ZRNK Zerenda 48.88 310 *e*P **P 22 23 01.5 +0.2**
comp=Z,2.9nm,0.8s
KOLN Koldanda 49.21 273 *e*P **P 22 23 04.6 +0.2**
comp=Z,5.9nm,0.5s
PYUN Piuthan 49.50 274 *e*P **P 22 23 08.4 +1.8**
comp=Z,9.6nm,0.3s
INK Inuvik 50.15 29 P **P 22 23 11.3 +0.7**
comp=Z,2.1nm,0.7s,baz=272,slow=8.7,SNR=8.4
ABKAR Akbulak array 55.55 308 *e*P **P 22 23 50.8 0.0**
AKTO Aktyubinsk 56.16 310 P **P 22 23 56.2 +1.1**
comp=Z,0.7nm,0.4s,baz=70,slow=14,SNR=4.2
YKA Yellowknife Ar 59.65 32 P **P 22 24 19.6 +0.2**
comp=Z,0.3nm,0.7s,baz=306,slow=5.9,SNR=4.7
ARCES ARCESS Array B 60.00 339 P **P 22 24 22.4 +0.8**
comp=Z,2.9nm,0.9s,baz=58,slow=7.5,SNR=4.1
WRA Warramunga Arr 61.59 188 P **P 22 24 32.0 -1.0**
comp=Z,1.1nm,0.3s,baz=7.4,slow=7.0,SNR=30
GEYT Alibeck 62.22 297 P **P 22 24 35.7 -1.6**
comp=Z,1.3nm,0.5s,baz=46,slow=4.3,SNR=4.0
FINES FINESS Array B 65.12 332 P **P 22 24 55.3 -0.5**
comp=Z,0.9nm,0.3s,baz=29,slow=9.9,SNR=18
FINES LR LR 22 55 13.7
comp=Z,59nm,18.9s,baz=17,slow=38
ASAR Alice Springs 65.32 188 P **P 22 24 58.0 +0.5**
comp=Z,1.2nm,0.8s,baz=10,slow=5.4,SNR=7.3
KIV Kislovodsk 68.42 310 *e*P **P 22 25 18.2 +0.9**
KIV pmax pmax
comp=Z,11nm,1.1s
KIV Kislovodsk 68.42 310 *e*P **P 22 25 18.2 +0.9**
comp=Z,11nm,1.1s
KBZ Khabaz 68.44 310 P **P 22 25 17.6 +0.4**
comp=Z,1.2nm,0.6s,baz=59,slow=3.5,SNR=4.1
NB2 NORSAR Subarra 70.26 337 P **P 22 25 27.6 -0.7**
comp=Z,0.5nm,0.3s,baz=36,slow=6.5
NOA NORSAR Array B 70.26 337 P **P 22 25 27.4 -0.9**
comp=Z,1.1nm,0.7s,baz=38,slow=6.1,SNR=8.6
NOA LR LR 22 59 06.5
comp=Z,20nm,21.7s,baz=110,slow=38
DLMT Dillon 70.77 46 *e*P **P 22 25 33.1 +1.3**
comp=Z,7.6nm,0.6s
AKASG Malin Array Be 71.10 322 P **P 22 25 32.2 -1.3**
comp=Z,0.5nm,0.3s,baz=45,slow=6.0,SNR=4.7
AKASG Malin Array Be 71.10 322 *ce*P **P 22 25 34.5 +1.0**
NVAR Mina Array Bea 71.87 55 P **P 22 25 39.8 +1.1**
comp=Z,0.2nm,0.4s,baz=278,slow=2.6,SNR=2.8
PDAR Pinedale Array 74.13 47 P **P 22 25 52.6 +0.6**
comp=Z,0.3nm,0.7s,baz=287,slow=4.2,SNR=3.3
P18A Preston Nutter 75.86 49 *e*P **P 22 26 01.6 -0.5**
comp=Z,4.9nm,0.7s
BRTR Keskin Array B 76.31 311 P **P 22 26 04.4 0.0**
comp=Z,0.5nm,0.8s,baz=24,slow=3.4,SNR=3.9
BRTR LR LR 23 07 04.0
comp=Z,8.8nm,18.4s,baz=55,slow=42
GERES GERESS Array B 79.19 328 LR LR 23 02 47.3
comp=Z,11nm,21.7s,baz=328,slow=37
PPT Papeete 86.16 117 LR LR 22 58 28.1
comp=Z,58nm,21.1s,baz=248,slow=31

IDC ***16*** *22:15:12.0±1.1, 52°.23N×169°.76E, h0km, mb3.8/8, mb1 4.0/8, mb1mx3.6/61, mbtmp3.8/8, Error ellipse: s-maj=32.8km s-min=20.4km az=162.0*
ISCJB ***16*** *22:15:16.3±0.7, 52°.27N±0°.07×170°.03E±0°.08, h33km, mb3.8/9, Error ellipse: s-maj=10.1km s-min=7.1km az=15.9*
KRSC ***16*** *22:15:19.9±1.5, 52°.35N×169°.04E, h8km±42km, ML4.1*
MOS ***16*** *22:15:19.9±2.3, 52°.35N×169°.04E, h7km, mb4.1/7, Error ellipse: s-maj=16.5km s-min=9.6km az=41.1*
ISC 16 22:15:17.5±0.9, 52°.13N±0°.08×169°.86E±0°.07, h35km, n42, σ2§24/54, mb3.8/9, South of Aleutian Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKI	**Bering**	**3.85**	**325**	P	**Pn**	**22 16 14.9**	**+0.8**
BKI				S	**Sn**	**22 16 58.1**	**0.0**
BKI	**Bering**	**3.85**	**325**	P	**Pn**	**22 16 14.9**	**+0.8**
BKI				S	**Sn**	**22 16 58.1**	**0.0**
MKZ	**Mys Kozlova**	**5.44**	**300**	*e*P	**Pn**	**22 16 36.7**	**+0.7**
MKZ				*e*S	**Sn**	**22 17 34.7**	**-2.6**
MKZ	**Mys Kozlova**	**5.44**	**300**	P	**Pn**	**22 16 36.7**	**+0.7**
MKZ				S	**Sn**	**22 17 34.7**	**-2.6**
KBG	**Krutoberegovo**	**5.89**	**317**	S	**Sn**	**22 17 48.4**	**+0.1**
SPN	**Mys Shipunski**	**6.07**	**283**	*e*P	**Pn**	**22 16 46.6**	**+2.0**
SPN				S	**Sn**	**22 17 51.5**	**-1.3**
SPN	**Mys Shipunski**	**6.07**	**283**	P	**Pn**	**22 16 46.6**	**+2.0**
SPN				S	**Sn**	**22 17 51.5**	**-1.3**
NLC	**Nalytchevo**	**6.48**	**283**	S	**Sn**	**22 18 01.5**	**-1.4**
SMKR	**Semkarok**	**6.62**	**316**	P	**Pn**	**22 16 55.3**	**+3.0**
SMKR				S	**Sn**	**22 18 05.9**	**-0.7**
SMKR	**Semkarok**	**6.62**	**316**	P	**Pn**	**22 16 55.3**	**+3.0**
SMKR				S	**Sn**	**22 18 05.9**	**-0.7**
BDR	**Baidarnaya**	**6.73**	**315**	P	**Pn**	**22 16 56.8**	**+3.0**
KMNR	**Kamenistaya**	**6.74**	**306**	P	**Pn**	**22 16 56.9**	**+3.0**
KMNR	**Kamenistaya**	**6.74**	**306**	P	**Pn**	**22 16 56.9**	**+3.0**
SDLR	**Sedlovina**	**6.77**	**284**	*e*P	**Pn**	**22 16 56.4**	**+2.0**
SDLR	**Sedlovina**	**6.77**	**284**	P	**Pn**	**22 16 56.4**	**+2.0**
UGLR	**Uglovaya**	**6.80**	**283**	*e*P	**Pn**	**22 16 57.8**	**+3.0**
SRKR	**Sorokina**	**6.80**	**315**	P	**Pn**	**22 16 57.7**	**+3.0**
SRKR	**Sorokina**	**6.80**	**315**	P	**Pn**	**22 16 57.7**	**+3.0**
SMAR	**Somma**	**6.82**	**284**	*e*P	**Pn**	**22 16 57.8**	**+2.7**
SMAR	**Somma**	**6.82**	**284**	P	**Pn**	**22 16 57.8**	**+2.7**
KRER	**Koryakskii**	**6.85**	**284**	*e*P	**Pn**	**22 16 57.8**	**+2.2**
AVH	**Avacha**	**6.85**	**284**	*e*P	**Pn**	**22 16 58.1**	**+2.6**
AVH	**Avacha**	**6.85**	**284**	P	**Pn**	**22 16 58.1**	**+2.6**
RUS	**Russkaya**	**6.97**	**277**	*e*P	**Pn**	**22 16 59.7**	**+2.7**
RUS				S	**Sn**	**22 18 12.1**	**-2.8**
RUS	**Russkaya**	**6.97**	**277**	P	**Pn**	**22 16 59.7**	**+2.7**
RUS				S	**Sn**	**22 18 12.1**	**-2.8**
MTVR	**Mutnovka**	**7.17**	**277**	P	**Pn**	**22 17 03.0**	**+3.1**
KRMR	**Karymshinskiy**	**7.20**	**280**	*e*P	**Pn**	**22 17 03.0**	**+2.9**
KRMR				S	**Sn**	**22 18 19.7**	**-0.9**
KRMR	**Karymshinskiy**	**7.20**	**280**	P	**Pn**	**22 17 03.0**	**+2.9**
KRMR				S	**Sn**	**22 18 19.7**	**-0.9**
ASAK	**Asacha**	**7.35**	**277**	*e*P	**Pn**	**22 17 05.4**	**+3.1**
GNL	**Ganaly**	**7.38**	**287**	*e*P	**Pn**	**22 17 05.8**	**+3.1**
GNL	**Ganaly**	**7.38**	**287**	P	**Pn**	**22 17 05.8**	**+3.1**
PETK	**Petropavlovsk-**	**7.47**	**282**	Pn	**Pn**	**22 17 06.8**	**+3.0**
	3.6nm,0.3s,baz=94,slow=19,SNR=37						
PETK				Sn	**Sn**	**22 18 25.5**	**-1.8**
	0.6nm,0.3s,baz=182,slow=14,SNR=2.7						
KDAK	**Kodiak Island**	**22.08**	**60**	P	P	22 20 21.4	+12
	12nm,0.9s,baz=248,slow=7.0,SNR=7.0						
ILAR	**Eielson Array**	**25.33**	**43**	P	**P**	**22 20 39.1**	**-1.5**
	1.6nm,0.6s,baz=250,slow=7.9,SNR=18						
INK	**Inuvik**	**31.01**	**37**	P	**P**	**22 21 31.2**	**-0.1**
	1.0nm,0.6s,baz=275,slow=8.1,SNR=8.5						
YKA	**Yellowknife Ar**	**39.75**	**45**	P	**P**	**22 22 45.8**	**-0.4**
	0.5nm,0.6s,baz=290,slow=7.9,SNR=6.8						
ZALV	**Zalesovo Beam**	**48.19**	**308**	P	**P**	**22 23 51.9**	**-2.1**
	1.2nm,0.7s,baz=54,slow=5.9,SNR=3.5						
KURK	**Kurchatov**	**53.18**	**307**	P	**P**	**22 24 32.7**	**+1.1**
KURBB	**Kurchatov Arra**	**53.28**	**307**	P	**P**	**22 24 32.7**	**+0.3**
	0.6nm,0.8s,baz=52,slow=6.5,SNR=3.1						
BVAR	**Borovoye Array**	**55.51**	**314**	P	**P**	**22 24 46.4**	**-2.2**
	0.9nm,0.7s,baz=54,slow=7.3,SNR=2.8						
TXAR	**Lajitas Array**	**65.36**	**73**	P	**P**	**22 25 56.2**	**-0.1**
	0.4nm,0.5s,baz=308,slow=4.9,SNR=8.0						
WRA	**Warramunga Arr**	**78.17**	**214**	P	**P**	**22 27 13.4**	**+0.4**
	0.7nm,0.8s,baz=28,slow=6.3,SNR=3.6						

ISCJB ***16*** *22:18:21.1±0.2, 10°.76N±0°.02×62°.49W±0°.02, h104km±1km, mb4.2/30, Error ellipse: s-maj=3.8km s-min=2.4km az=136.2*
IDC ***16*** *22:18:22.7±0.5, 10°.86N×62°.56W, h101km±4km, mb3.9/24, mb1 4.0/25, mb1mx3.9/46, mbtmp4.2/25, MS3.2/2, Ms1 3.2/2, ms1mx2.6/36, Error ellipse: s-maj=12.9km s-min=8.7km az=94.0*
TRN ***16*** *22:18:23.8, 10°.78N×62°.30W, h103km, MD4.6*
TRN Felt MMI II and III in north-west Trinidad.
FUNV ***16*** *22:18:23.0, 10°.66N×62°.33W, h96km, MW3.7*
NEIC ***16*** *22:18:24.1, 10°.78N×62°.29W, h102km, mb4.7/6, MD4.6(TRN), After TRN.*
NEIC Felt at Carenage and Cascade, Trinidad.
ISC 16 22:18:22.1±0.4, 10°.73N±0°.03×62°.51W±0°.03, h99km±4km, n300, σ1§60/352, mb4.2/30, 18C-11D, Near coast of Venezuela

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUNV	**Guanoco**	**0.71**	**217**⇓	*e*P	**Pn**	**22 18 41.1**	**+1.7**
GUNV				*e*S	**Sn**	**22 18 53.6**	**+1.1**
CRUV	**Carupano**	**0.72**	**266**⇓	*e*P	**Pn**	**22 18 40.9**	**+1.4**
CRUV				*e*S	**Sn**	**22 18 54.0**	**+1.4**
TCE	**Chacachacare**	**0.74**	**92**	*e*P	**Pn**	**22 18 40.1**	**+0.3**
TCE				*e*S	**Sn**	**22 18 52.3**	**-0.9**
TCE	**Chacachacare**	**0.74**	**92**	*e*Pn	**Pn**	**22 18 40.1**	**+0.3**
TCE				*e*S	**Sn**	**22 18 52.3**	**-0.9**
ALNG	**Atlantic LNG**	**0.97**	**124**	*e*P	**Pn**	**22 18 43.6**	**+1.4**
ALNG	**Atlantic LNG**	**0.97**	**124**	*e*P	**Pn**	**22 18 43.6**	**+1.4**
BUAY	**Buenos Aires**	**1.02**	**127**	*e*P	**Pn**	**22 18 44.0**	**+1.4**
BUAY	**Buenos Aires**	**1.02**	**127**	*e*P	**Pn**	**22 18 44.7**	**+2.1**
TRN	**Trinidad (W)**	**1.09**	**94**⇑	*i*P	**Pn**	**22 18 43.6**	**+0.2**
TRN				*e*S	**Sn**	**22 18 56.9**	**-2.6**
TRN	**Trinidad (W)**	**1.09**	**94**⇑	*i*Pn	**Pn**	**22 18 43.6**	**+0.2**
TRN				*e*S	**Sn**	**22 18 56.9**	**-2.6**
TPP	**Pointe-a-Pierr**	**1.12**	**111**⇑	*i*P	**Pn**	**22 18 44.5**	**+0.8**
TPP				*e*S	**Sn**	**22 18 58.0**	**-2.0**
TPP	**Pointe-a-Pierr**	**1.12**	**111**⇑	*i*Pn	**Pn**	**22 18 44.5**	**+0.8**
TPP				*e*S	**Sn**	**22 18 58.0**	**-2.0**
SIPA	**Siparia**	**1.15**	**120**	*e*P	**Pn**	**22 18 45.3**	**+1.2**
SIPA	**Siparia**	**1.15**	**120**	*e*P	**Pn**	**22 18 45.3**	**+1.2**
TBH	**Brigand Hill**	**1.44**	**100**⇑	*e*P	**Pn**	**22 18 47.8**	**+0.2**
TBH	**Brigand Hill**	**1.44**	**100**⇑	*e*Pn	**Pn**	**22 18 47.8**	**+0.2**
GRGR	**Grenville**	**1.63**	**31**	*e*P	**Pn**	**22 18 49.6**	**-0.3**
GRGR				*e*S	**Sn**	**22 19 09.2**	**-1.8**
GRGR	**Grenville**	**1.63**	**31**	*e*Pn	**Pn**	**22 18 49.5**	**-0.3**
GRGR				*e*Sn	**Sn**	**22 19 07.5**	**-3.5**
GRW	**Mount Saint Ca**	**1.65**	**30**	*e*P	**Pn**	**22 18 51.0**	**+0.7**
GRW	**Mount Saint Ca**	**1.65**	**30**	*e*Pn	**Pn**	**22 18 51.0**	**+0.7**
GRHS	**Sauteurs**	**1.71**	**30**	*e*P	**Pn**	**22 18 51.6**	**+0.6**
GRHS				*e*S	**Sn**	**22 19 11.8**	**-1.1**
GRHS	**Sauteurs**	**1.71**	**30**	*e*P	**Pn**	**22 18 51.6**	**+0.6**
GRHS				*e*S	**Sn**	**22 19 11.8**	**-1.1**
GRSS	**Sisters**	**1.79**	**29**	*e*P	**Pn**	**22 18 53.0**	**+1.1**
GRSS				*e*S	**Sn**	**22 19 13.3**	**-1.4**
GRSS	**Sisters**	**1.79**	**29**	*e*P	**Pn**	**22 18 53.0**	**+1.1**
GRSS				*e*S	**Sn**	**22 19 13.3**	**-1.4**
BOT	**Bacolet**	**1.81**	**76**⇑	*i*P	**Pn**	**22 18 52.0**	**-0.2**
BOT				*e*S	**Sn**	**22 19 12.8**	**-2.4**
BOT	**Bacolet**	**1.81**	**76**⇑	*i*Pn	**Pn**	**22 18 52.0**	**-0.2**
BOT				*e*S	**Sn**	**22 19 12.8**	**-2.4**
ORIV	**Oritupano**	**1.87**	**208**⇓	*e*P	**Pn**	**22 18 54.3**	**+1.3**
ORIV				*e*S	**Sn**	**22 19 16.1**	**-0.4**
TOSP	**Speyside**	**2.02**	**74**⇑	*e*P	**Pn**	**22 18 54.8**	**0.0**
TOSP				*e*S	**Sn**	**22 19 16.0**	**-3.9**
TOSP	**Speyside**	**2.02**	**74**⇑	*i*Pn	**Pn**	**22 18 53.2**	**-1.6**
TOSP				*e*S	**Sn**	**22 19 16.0**	**-3.9**
FCV	**Fort Charlotte**	**2.71**	**27**	*e*P	**Pn**	**22 19 03.8**	**-0.3**
FCV	**Fort Charlotte**	**2.71**	**27**	*e*Pn	**Pn**	**22 19 03.8**	**-0.3**
SVB	**Belmont**	**2.81**	**26**	*e*P	**Pn**	**22 19 05.4**	**+0.1**
SVB				*e*S	**Sn**	**22 19 36.9**	**-1.8**
SVB	**Belmont**	**2.81**	**26**	*e*Pn	**Pn**	**22 19 04.9**	**-0.5**
SVB				*e*Sn	**Sn**	**22 19 34.4**	**-4.2**
SVB				*e*S	**Sn**	**22 19 36.9**	**-1.8**
SVV	**Soufriere Volc**	**2.87**	**26**	*e*P	**Pn**	**22 19 06.4**	**+0.3**
SVV				*e*S	**Sn**	**22 19 37.4**	**-2.6**
SVV	**Soufriere Volc**	**2.87**	**26**	*e*P	**Pn**	**22 19 06.4**	**+0.3**
SVV				*e*S	**Sn**	**22 19 37.4**	**-2.6**
GURV	**El Guri**	**3.00**	**191**⇓	*e*P	**Pn**	**22 19 08.0**	**+0.1**
GURV				*e*S	**Sn**	**22 19 40.2**	**-3.1**
CUPV	**Cœpira**	**3.29**	**259**⇑	*e*P	**Pn**	**22 19 13.6**	**+1.8**
CUPV				*e*S	**Sn**	**22 19 51.3**	**+1.0**
MCLT	**Moule a Chique**	**3.34**	**27**	*e*P	**Pn**	**22 19 12.1**	**-0.3**
MCLT				*e*S	**Sn**	**22 19 48.7**	**-2.5**
MCLT	**Moule a Chique**	**3.34**	**27**	*e*Pn	**Pn**	**22 19 12.1**	**-0.3**
MCLT				*e*S	**Sn**	**22 19 48.7**	**-2.5**
SLW	**Petit Monier**	**3.61**	**25**	*e*P	**Pn**	**22 19 16.6**	**+0.5**
BIRV	**Birongo**	**3.71**	**266**⇑	*e*P	**Pn**	**22 19 20.0**	**+2.7**
BIRV				*e*S	**Sn**	**22 20 01.3**	**+1.3**
BBGH	**Gun Hill**	**3.75**	**50**	*e*P	**Pn**	**22 19 18.0**	**0.0**
BBGH	**Gun Hill**	**3.75**	**50**	*e*Pn	**Pn**	**22 19 15.1**	**-2.9**
BBGH				*e*Sn	**Sn**	**22 19 56.0**	**-5.3**
BBSP	**Saint Philip**	**3.81**	**51**	*e*P	**Pn**	**22 19 17.4**	**-1.3**
MERV	**Las Mercedes**	**4.01**	**249**	*e*P	**Pn**	**22 19 22.6**	**+1.2**
MERV				*e*S	**Sn**	**22 20 07.6**	**+0.2**
BIM	**Bigot**	**4.02**	**20**	*e*P	**Pn**	**22 19 21.5**	**-0.1**
BIM				*e*S	**Sn**	**22 20 05.0**	**-2.6**
H05S1	**Guadeloupe/Mar**	**4.02**	**24**	P	**Pn**	**22 19 21.3**	**-0.3**
H05S1				S	**Sn**	**22 20 06.1**	**-1.5**
TRMF	**Trois Ilets**	**4.04**	**20**	*e*P	**Pn**	**22 19 22.1**	**+0.2**
ZAM	**Aeronautique**	**4.08**	**21**	*e*P	**Pn**	**22 19 22.4**	**0.0**
LPMF	**Morne Lapointe**	**4.11**	**21**	*e*P	**Pn**	**22 19 23.1**	**+0.3**
MVM	**Montagne Vaucl**	**4.12**	**22**⇑	*e*P	**Pn**	**22 19 23.0**	**+0.1**
FDF	**Fort de France**	**4.20**	**18**⇓	*i*P	**Pn**	**22 19 23.8**	**-0.1**
FDF				*e*S	**Sn**	**22 20 08.2**	**-3.8**
FDF	**Fort de France**	**4.20**	**18**	*e*Pn	**Pn**	**22 19 23.7**	**-0.3**
FDF				*e*Sn	**Sn**	**22 20 06.4**	**-5.6**
PML	**Morne Lenard**	**4.23**	**18**⇓	*e*P	**Pn**	**22 19 24.6**	**+0.1**
FUNV	**FUNVISIS**	**4.24**	**267**	*e*P	**Pn**	**22 19 26.4**	**+1.8**
FUNV				*e*S	**Sn**	**22 20 13.8**	**+0.7**
GBMF	**Grand Be**	**4.25**	**18**⇓	*e*P	**Pn**	**22 19 24.7**	**0.0**
PCM	**Pelee Case Pet**	**4.25**	**17**⇓	*e*P	**Pn**	**22 19 24.8**	**0.0**
PCM	**Pelee Case Pet**	**4.25**	**17**⇓	*e*P	**Pn**	**22 19 24.8**	**0.0**
CXM	**Morne La Croix**	**4.26**	**18**	*e*P	**Pn**	**22 19 25.0**	**0.0**
BAMF	**Morne Balai**	**4.27**	**18**⇓	*e*P	**Pn**	**22 19 25.1**	**0.0**
BBL	**Barber's Block**	**4.88**	**12**	*e*P	**Pn**	**22 19 33.2**	**+0.1**
BBL	**Barber's Block**	**4.88**	**12**	*e*P	**Pn**	**22 19 33.2**	**+0.1**
DWS	**Wesley**	**4.95**	**14**	*e*P	**Pn**	**22 19 35.6**	**+1.4**
DWS	**Wesley**	**4.95**	**14**	*e*S	**Sn**	**22 20 26.6**	**-3.6**
DWS	**Wesley**	**4.95**	**14**	*e*Pn	**Pn**	**22 19 35.6**	**+1.4**
LUEV	**Luepa**	**4.96**	**168**⇓	*e*P	**Pn**	**22 19 32.5**	**-2.0**
TURV	**Turiamo**	**5.25**	**267**	*e*P	**Pn**	**22 19 39.2**	**+1.0**
TURV				*e*S	**Sn**	**22 20 36.2**	**-1.2**
MGG	**Marie-Galante**	**5.29**	**13**	*e*P	**Pn**	**22 19 39.7**	**+0.9**
MGG	**Marie-Galante**	**5.29**	**13**	*e*Pn	**Pn**	**22 19 39.7**	**+0.9**
GDHS	**Morne Mazeau,**	**5.56**	**7**	*e*Pn	**Pn**	**22 19 42.5**	**0.0**
GDHS				*e*Sn	**Sn**	**22 20 42.4**	**-2.7**
DEG	**La Desirade**	**5.73**	**14**	*e*P	**Pn**	**22 19 45.2**	**+0.4**
DEG	**La Desirade**	**5.73**	**14**	*e*Pn	**Pn**	**22 19 45.2**	**+0.4**
H05N1	**Guadeloupe/Mar**	**5.73**	**14**	P	**Pn**	**22 19 45.9**	**+1.1**
	SNR=88						
H05N1				S	**Sn**	**22 20 46.8**	**-2.5**
BAUV	**El Baul**	**5.73**	**252**⇑	*e*P	**Pn**	**22 19 44.8**	**0.0**
BAUV				*e*S	**Sn**	**22 20 46.3**	**-3.0**
MAPV	**Macapo**	**5.92**	**262**⇑	*e*P	**Pn**	**22 19 48.0**	**+0.6**
MAPV				*e*S	**Sn**	**22 20 52.3**	**-1.7**
MLYT	**Lee's Yard**	**5.96**	**3**	*e*P	**Pn**	**22 19 49.7**	**+1.7**
MLYT	**Lee's Yard**	**5.96**	**3**	*e*S	**Sn**	**22 20 52.1**	**-2.8**
TEPV	**Terepaima**	**6.62**	**264**⇑	*e*P	**Pn**	**22 19 57.2**	**+0.3**
TEPV				*e*S	**Sn**	**22 21 08.5**	**-2.4**
SEUS	**St. Eustatius**	**6.74**	**356**	*e*Pn	Pn	22 19 53.0	-5.5
ANWB	**Willy Bob**	**6.94**	**6**	*e*Pn	**Pn**	**22 20 02.7**	**+1.6**
SANV	**Sanarito**	**7.03**	**261**⇑	*e*P	**Pn**	**22 20 03.1**	**+0.6**
SANV				*e*S	**Sn**	**22 21 17.6**	**-3.4**
SIQV	**Siquisique**	**7.17**	**270**	*e*P	**Pn**	**22 20 05.2**	**+0.8**
SMRT	**St. Maarten**	**7.30**	**356**	*e*Pn	**Pn**	**22 20 08.3**	**+2.2**
CDVI	**St. Croix**	**7.32**	**343**	*e*Pn	**Pn**	**22 20 07.2**	**+0.9**
CURV	**Curarigua**	**7.37**	**265**	*e*P	**Pn**	**22 20 08.0**	**+0.9**
ELOV	**Elorza**	**7.82**	**242**	*e*P	**Pn**	**22 20 12.8**	**-0.4**
ELOV				*e*S	**Sn**	**22 21 33.6**	**-6.7**
MTP	**Monte Pirata**	**7.90**	**338**	*e*Pn	**Pn**	**22 20 11.3**	**-2.9**
STVI	**Saint Thomas**	**7.94**	**343**	*e*Pn	**Pn**	**22 20 15.9**	**+1.1**
DABV	**Dabajuro**	**7.99**	**272**	*e*P	**Pn**	**22 20 16.0**	**+0.5**
HUMP	**Col San Antoni**	**8.05**	**337**	*e*Pn	**Pn**	**22 20 16.6**	**+0.3**
HUMP				*e*Sn	**Sn**	**22 21 39.3**	**-6.3**
SJG	**San Juan**	**8.14**	**335**	P	**Pn**	**22 20 18.3**	**+0.8**
	1.0nm,0.3s,baz=300,slow=20,SNR=3.0						
SJG				S	**Sn**	**22 21 43.2**	**-4.7**
	4.1nm,0.3s,baz=357,slow=2.6,SNR=8.3						
SJG	**San Juan**	**8.14**	**335**	*e*P	**Pn**	**22 20 18.3**	**+0.8**
CBYP	**Canovanas**	**8.17**	**337**	*e*Pn	Pn	22 20 10.5	-7.5
CBYP				*e*Sn	**Sn**	**22 21 42.7**	**-6.0**
SDV	**Santo Domingo**	**8.21**	**258**	S	**Sn**	**22 21 46.3**	**-3.7**
	12nm,0.3s,baz=0.7,slow=12,SNR=18						
SDV	**Santo Domingo**	**8.21**	**258**	Pn	Pn	22 20 13.2	-5.6
SDV				*e*Sn	**Sn**	**22 21 44.8**	**-5.2**
CELP	**Cerrillos**	**8.30**	**332**	*e*Pn	**Pn**	**22 20 19.6**	**-0.1**
SOCV	**Socops**	**8.58**	**254**⇑	*e*P	**Pn**	**22 20 22.7**	**-0.9**
SOCV				*e*S	**Sn**	**22 21 52.2**	**-6.6**
LRS	**Lares**	**8.61**	**331**	*e*Pn	**Pn**	**22 20 26.2**	**+2.3**
MPR	**Mayaguez**	**8.69**	**329**	*e*Pn	**Pn**	**22 20 22.1**	**-2.8**
AGP	**Aguadilla**	**8.85**	**330**	*e*Pn	**Pn**	**22 20 28.7**	**+1.5**
VIGV	**El Vigia**	**8.93**	**259**	*e*P	**Pn**	**22 20 28.3**	**0.0**
CAPV	**Capacho**	**10.09**	**254**	*e*P	**Pn**	**22 20 42.7**	**-1.6**
SDD	**Santo Domingo**	**10.50**	**318**	*e*Pn	**Pn**	**22 20 45.2**	**-4.5**
CBRI	**Barrientos, No**	**10.59**	**254**	*e*P	**Pn**	**22 20 48.7**	**-2.4**
GRMC	**Gramalote, San**	**10.59**	**254**	*e*P	**Pn**	**22 20 48.9**	**-2.2**
PAMC

U40A	Yellville	37.46 318	P	P	22 25 26.5	+0.4
	baz=125					
Q42A	Golden Eagle	37.58 323	P	P	22 25 27.3	+0.2
	baz=131					
V39A	Pettigrew	37.69 317	P	P	22 25 28.2	+0.1
	baz=124,SNR=8.5					
T40A	Mansfield	37.70 319	P	P	22 25 28.7	+0.5
	baz=126					
034A	Hebbronville	37.71 301	P	P	22 25 29.5	+1.2
	baz=108,SNR=5.5					
W38A	Poteau	37.88 315	P	P	22 25 29.7	+0.1
	baz=122					
X38A	Whitesboro	37.88 314	P	P	22 25 29.4	-0.3
	baz=121					
S40A	Lebanon	37.96 320	P	P	22 25 30.4	+0.1
	baz=127					
435B	Jarrell	38.15 307	P	P	22 25 32.3	+0.3
	baz=114					
T39A	Clever	38.19 318	P	P	22 25 32.3	+0.1
	baz=125					
V38A	Canehill	38.22 316	P	P	22 25 32.2	-0.3
	baz=123					
R40A	Maddies Statio	38.24 321	P	P	22 25 32.3	-0.2
	baz=128					
S39A	Bolivar	38.54 319	P	P	22 25 34.8	-0.3
	baz=126,SNR=11					
W37B	Quinton	38.55 314	P	P	22 25 35.3	0.0
	baz=121					
Q40A	Laux Farm, Aux	38.55 322	P	P	22 25 35.2	0.0
	baz=129					
WHTX	Lake Whitney,	38.56 309	P	P	22 25 35.5	+0.1
	baz=115					
534A	Blanco	38.57 305	P	P	22 25 35.6	+0.1
	baz=112					
434A	Burnet	38.70 306	P	P	22 25 36.6	-0.1
	baz=113					
833A	Chaparral WMA,	38.71 302	P	P	22 25 37.4	+0.7
	baz=109					
R39A	Chumby, Stover	38.73 320	P	P	22 25 36.5	-0.2
	baz=127					
V37A	Hulbert	38.74 316	P	P	22 25 36.8	0.0
	baz=122					
733A	Divot King Ran	38.76 303	P	P	22 25 38.3	+1.2
	baz=110					
T38A	Diamond	38.80 318	P	P	22 25 37.2	-0.1
	baz=124					
P40A	Paris	38.88 323	P	P	22 25 37.8	-0.1
	baz=129,SNR=7.1					
S38A	Stockton	38.88 319	P	P	22 25 37.9	-0.1
	baz=125					
X36A	Centrahoma	38.92 313	P	P	22 25 38.4	0.0
	baz=119					
633A	Saathoff Ranch	38.92 304	P	P	22 25 38.6	+0.1
	baz=111					
U37A	Salina	39.00 316	P	P	22 25 38.6	-0.4
	baz=122					
533A	Kerrville	39.03 305	P	P	22 25 40.2	+0.8
	baz=112					
Y35A	Marietta	39.10 312	P	P	22 25 40.4	+0.5
	baz=118					
Q39A	Willow Grove F	39.14 321	P	P	22 25 39.5	-0.6
	baz=128					
O40A	La Belle	39.15 323	P	P	22 25 40.3	+0.1
	baz=130					
832A	Faith Ranch, C	39.18 302	P	P	22 25 41.5	+0.8
	baz=109					
TUL1	Leonard	39.20 315	P	P	22 25 40.2	-0.5
	baz=121					
R38A	Fenwick Farm,	39.20 319	P	P	22 25 40.2	-0.5
	baz=126					
V36A	Jenks	39.24 315	P	P	22 25 41.0	-0.1
	baz=121					
T37A	Cheneyville 18	39.26 317	P	P	22 25 41.4	+0.3
	baz=124					
X35A	Drake	39.28 312	P	P	22 25 41.2	-0.3
	baz=118					
433A	Art	39.33 306	P	P	22 25 41.7	-0.2
	baz=112,SNR=7.7					
U36A	Oologah	39.41 316	P	P	22 25 42.6	+0.2
	baz=122					
333A	Richland Sprin	39.47 307	P	P	22 25 42.8	-0.2
	baz=113,SNR=8.1					
Q38A	Cooks Store, C	39.48 321	P	P	22 25 42.7	-0.2
	baz=127					
S37A	Fort Scott	39.55 318	P	P	22 25 43.5	-0.1
	baz=124					
W35A	Tecumseh	39.58 313	P	P	22 25 43.4	-0.5
	baz=119					
Y34A	Reagan Ranch,	39.65 311	P	P	22 25 44.4	-0.1
	baz=117					
233A	Rising Star	39.68 308	P	P	22 25 44.9	+0.1
	baz=114					
JCT	Junction City	39.80 305	P	P	22 25 46.1	+0.3
	baz=111					
T36A	Boggs Farm, Ca	39.87 317	P	P	22 25 46.1	-0.2
	baz=122					
R37A	Teagarden Farm	39.87 319	P	P	22 25 45.9	-0.3
	baz=125					
133A	Hamilton Ranch	39.94 309	P	P	22 25 46.8	-0.1
	baz=114					
N39A	Derby Farms, D	40.01 324	P	P	22 25 47.3	0.0
	baz=130					
X34A	Smith Ranch, M	40.01 312	P	P	22 25 47.2	-0.2
	baz=118,SNR=9.0					
S36A	Lake Cedric, C	40.04 318	P	P	22 25 47.2	-0.4
	baz=123					
U35A	Pawnee	40.09 315	P	P	22 25 47.6	-0.4
	baz=121					
Z33A	Whitaker Ranch	40.11 310	P	P	22 25 47.9	-0.3
	baz=115					
T35A	Sooner Cattle	40.22 316	P	P	22 25 48.8	-0.3
	baz=122					
W34A	Bridge Creek,	40.26 313	P	P	22 25 49.0	-0.5
	baz=118					
P37A	Lathrop	40.31 321	P	P	22 25 49.2	-0.7
	baz=126					
X33A	Lawton	40.47 312	P	P	22 25 51.5	+0.3
	baz=117					
S35A	Otter Creek Ra	40.50 317	P	P	22 25 51.2	-0.2
	baz=122					
ABTX	Abilene, Hawle	40.50 308	P	P	22 25 52.0	+0.4
	baz=114					
O37A	Wolven Farm, M	40.54 322	P	P	22 25 51.4	-0.3
	baz=127					
U34A	Anderson Ranch	40.68 315	P	P	22 25 53.1	+0.1
	baz=120					
T34A	McClaskey Farm	40.74 316	P	P	22 25 53.3	-0.1
	baz=121					
M38A	Pleasantville	40.75 324	P	P	22 25 53.2	-0.3
	baz=130					
WMOK	Wichita Mounta	40.76 312	P	P	22 25 53.5	-0.2
	baz=117					
R35A	Emporia Munici	40.77 318	P	P	22 25 53.5	-0.1
	baz=123					
P36A	Good Intent, A	40.87 320	P	P	22 25 54.0	-0.4
	baz=126					
V33A	Lossen Ranch,	40.91 313	P	P	22 25 54.6	-0.2
	baz=118					
Q35A	Mercer Eighty,	40.96 319	P	P	22 25 54.4	-0.8
	baz=124					
L38A	Oak Wood Farm,	41.09 325	P	P	22 25 56.1	0.0
	baz=130					
W32A	Sentinel	41.28 312	P	P	22 25 57.6	-0.3
	baz=117					
K38A	Parkersburg	41.31 326	P	P	22 25 58.4	+0.3
	baz=131					
T33A	Patterson Ranc	41.50 315	P	P	22 25 59.3	-0.4
	baz=120					
S33A	Kaszmaul Farm,	41.59 316	P	P	22 25 59.9	-0.5
	baz=120,SNR=5.4					
J38A	Wedel Dairy, R	41.60 327	P	P	22 26 00.3	0.0
	baz=132					
U32A	Winter Ranch,	41.69 314	P	P	22 26 01.3	+0.1
	baz=118					
N35A	Tabor	41.87 322	P	P	22 26 02.3	-0.3
	baz=126					
K37A	Belmond	41.87 325	P	P	22 26 02.8	+0.2
	baz=130					
I38A	Scanlan Farm,	42.01 328	P	P	22 26 03.2	-0.5
	baz=133					
T32A	Huddler Ranch,	42.02 315	P	P	22 26 03.9	0.0
	baz=119					
Q33A	Connelly Farm,	42.21 318	P	P	22 26 05.4	0.0
	baz=122					
LTX	Lajitas	42.59 302	*e*P	P	22 26 08.0	-0.7
TXAR	Lajitas Array	42.59 302	P	P	22 26 08.0	-0.7
	0.6nm,0.4s,baz=106,slow=6.7,SNR=16					
TXAR			PcP	PcP	22 27 59.5	+0.1
	2.3nm,0.8s,baz=111,slow=5.1,SNR=12					
TX31	Lajitas Ar. Si	42.59 302	*e*P	P	22 26 09.6	+0.8
J36A	Seneca 1, Swea	42.63 325	P	P	22 26 09.2	+0.5
	baz=130					
MSTX	Muleshoe	43.44 309	P	P	22 26 15.5	-0.1
	baz=112					
C39A	Grand Marais	43.66 333	P	P	22 26 16.8	-0.1
	baz=138					
C38A	Sawbill Land.	44.10 332	P	P	22 26 20.0	-0.5
	baz=137					
SCHQ	Schefferville	44.12 356	P	P	22 26 20.3	-0.3
	1.5nm,0.6s,baz=186,slow=7.2,SNR=5.7					
ECSD	EROS Data Cent	44.17 324	P	P	22 26 21.0	-0.2
	baz=128					
E36A	McGregor	44.19 330	P	P	22 26 21.0	-0.2
	baz=134					
D37A	Cotton	44.23 331	P	P	22 26 21.6	0.0
	baz=135,SNR=6.5					
EYMN	Ely	44.37 332	P	P	22 26 22.4	-0.2
	baz=137					
C37A	Embarrass	44.53 332	P	P	22 26 24.0	+0.1
	baz=136					
D36A	Goodland	44.60 330	P	P	22 26 23.8	-0.7
	baz=134					
C36A	Pine Crest Far	44.86 331	P	P	22 26 25.6	-0.9
	baz=135					
G33A	Ortonville	44.98 326	P	P	22 26 27.2	-0.3
	baz=129					
C35A	Jirik Farms, M	45.37 330	P	P	22 26 30.1	-0.4
	baz=134,SNR=6.0					
B35A	Bob, Littlefor	45.71 331	P	P	22 26 32.5	-0.7
	baz=134					
D33A	AnnSam, Waubun	45.92 329	P	P	22 26 34.3	-0.6
	baz=131					
B34A	Aery, Baudette	46.23 331	P	P	22 26 36.5	-0.9
	baz=133					
ANMO	Albuquerque	46.63 308	P	P	22 26 41.8	+0.9
	1.2nm,0.6s,baz=337,slow=19,SNR=3.3					
A33A	Warroad	46.90 331	P	P	22 26 42.1	-0.4
	baz=133					
D30A	Buchanan	47.43 327	P	P	22 26 46.5	-0.2
	baz=128					
ISCO	Idaho Springs	47.88 315	P	P	22 26 50.3	-0.4
	baz=115					
ULM	Lac du Bonnet	48.03 332	P	P	22 26 49.8	-1.5
	4.2nm,0.6s,baz=97,slow=6.5,SNR=4.7					
G27A	Dupree	48.22 323	P	P	22 26 52.8	-0.1
	baz=123					
D28A	Regan	48.47 326	P	P	22 26 54.3	-0.5
	baz=126					
A29A	Manning Farm,	48.81 328	P	P	22 26 56.6	-0.7
	baz=128					
K22A	Casper	49.74 318	P	P	22 27 04.5	-0.2
	baz=116					
DGMT	Dagmar	51.21 325	P	P	22 27 15.2	-0.3
	baz=123					
H10N3	ASCENSION HYDR	51.22 109	T	T	23 22 44.9	
	baz=292,slow=75,SNR=41					
H10N2	ASCENSION HYDR	51.23 109	T	T	23 22 43.5	
	baz=292,slow=75,SNR=47					
H10N1	ASCENSION HYDR	51.24 109	T	T	23 22 43.0	
	baz=292,slow=75,SNR=39					
H10S3	ASCENSION HYDR	51.46 111	T	T	23 23 08.1	
	baz=294,slow=75,SNR=43					
H10S1	ASCENSION HYDR	51.47 111	T	T	23 23 02.1	
	baz=294,slow=75,SNR=43					
H10S2	ASCENSION HYDR	51.48 111	T	T	23 23 08.1	
	baz=294,slow=75,SNR=39					
PLCA	Paso Flores	51.74 188	P	P	22 27 20.4	+0.9
	6.1nm,0.8s,baz=29,slow=6.7,SNR=15					
PLCA			PcP	PcP	22 28 32.9	+1.3
	1.7nm,0.6s,baz=31,slow=5.8,SNR=5.3					
PD31	Pinedale Array	51.81 317	*e*P	P	22 27 17.9	-2.5
PDAR	Pinedale Array	51.81 317	P	P	22 27 19.6	-0.7
	2.1nm,0.6s,baz=110,slow=9.1,SNR=22					
BW06	Boulder Array	51.81 317	P	P	22 27 19.4	-0.9
	baz=114,SNR=5.8					
BW06	Boulder Array	51.81 317	*e*P	P	22 27 19.9	-0.4
RLMT	Red Lodge	52.61 320	P	P	22 27 25.3	-0.8
	baz=116					
IKP	In-Ko-Pah, Jac	53.75 303	P	P	22 27 34.9	+0.3
	baz=101					
NVAR	Mina Array Bea	56.74 309	P	P	22 27 56.0	-0.2
	0.3nm,0.5s,baz=100,slow=8.3,SNR=3.6					
NVAR			PcP	PcP	22 28 51.1	0.0
	0.6nm,0.7s,baz=122,slow=4.4,SNR=3.3					
DBIC	Dimbokro	57.07 89	P	P	22 27 59.0	+0.4
	2.9nm,0.9s,baz=269,slow=12,SNR=3.5					
WALA	Waterton Lakes	57.14 322	*e*P	P	22 27 58.1	-0.5
	8.8nm,0.6s					
NEW	Newport	58.81 320	P	P	22 28 08.9	-1.3
	baz=110					
ESDC	Sonseca Array	59.11 50	P	P	22 28 12.9	+0.4
	0.8nm,0.8s,baz=272,slow=8.0,SNR=4.7					
ESDC			pP	pP	22 28 38.2	+1.4
	0.8nm,0.7s,baz=245,slow=7.1,SNR=3.2					
TORD	Torodi Ar. Bea	62.72 81	P	P	22 28 37.5	+0.3
	0.8nm,0.4s,baz=289,slow=7.0,SNR=33					
SUMG	Summit	63.47 8	*i* P	P	22 28 41.8	+0.1
	5.8nm,0.8s					
YKA	Yellowknife Ar	63.63 336	P	P	22 28 41.0	-1.5
	0.7nm,0.6s,baz=108,slow=7.4,SNR=12					
DLBC	Dease Lake	69.21 329	P	P	22 29 18.4	+0.2
	4.3nm,1.2s,baz=312,slow=3.2,SNR=3.7					
NB2	NORSAR Subarra	72.81 29	P	P	22 29 40.8	+1.0
	comp=Z,0.8nm,0.6s,baz=264,slow=6.5					
NOA	NORSAR Array B	72.81 29	P	P	22 29 40.9	+1.0
	comp=Z,1.2nm,0.7s,baz=264,slow=6.1,SNR=6.0					
NOA			pP	pP	22 30 06.0	+1.0
	comp=Z,2.0nm,0.8s,baz=262,slow=6.0,SNR=5.9					
GERES	GERESS Array B	72.93 42	P	P	22 29 41.1	+0.2
	comp=Z,0.5nm,0.7s,baz=263,slow=7.9,SNR=4.1					
GERES			pP	pP	22 30 05.6	-0.5
	comp=Z,0.7nm,0.8s,baz=261,slow=6.6,SNR=3.4					
INK	Inuvik	73.11 338	P	P	22 29 39.4	-2.0
	comp=Z,2.5nm,1.1s,baz=123,slow=14,SNR=3.2					
ILAR	Eielson Array	77.97 334	P	P	22 30 08.2	-1.1
	comp=Z,1.1nm,0.7s,baz=90,slow=5.2,SNR=11					
ARCES	ARCESS Array B	79.33 21	P	P	22 30 17.3	+0.6
	comp=Z,6.3nm,1.1s,baz=260,slow=5.4,SNR=3.1					
FINES	FINESS Array B	79.99 29	P	P	22 30 20.7	+0.4
	comp=Z,2.5nm,0.9s,baz=267,slow=3.5,SNR=13					
FINES			pP	pP	22 30 45.7	-0.2
	comp=Z,3.5nm,0.8s,baz=262,slow=5.2,SNR=4.4					
BR231	Keskin MP Arra	87.23 50	*e*P	P	22 30 56.4	-1.5
BRTR	Keskin Array B	87.91 50	P	P	22 31 02.0	+0.8
	comp=Z,1.0nm,0.7s,baz=269,slow=2.9,SNR=7.4					
BRTR			pP	pP	22 31 27.4	+0.2
	comp=Z,0.8nm,0.6s,baz=305,slow=4.4,SNR=3.5					
CMAR	Chiang Mai Arr	145.71 32	PKPbc	PKPbc	22 37 50.3	-0.2
	comp=Z,0.8nm,0.6s,baz=314,slow=4.3,SNR=7.0					
CMAR			pPKPbc	pPKPbc	22 38 15.9	-1.4
	comp=Z,1.4nm,0.8s,baz=322,slow=4.6,SNR=5.0					
STKA	Stephens Creek	149.36 223	PKPbc	PKPbc	22 37 59.8	-0.4
	comp=Z,5.1nm,1.0s,baz=172,slow=3.0,SNR=3.0					
ASAR	Alice Springs	159.75 228	PKPab	PKPab	22 38 47.9	-1.6
	comp=Z,0.4nm,0.7s,baz=123,slow=3.4,SNR=3.4					
WRA	Warramunga Arr	161.36 239	PKPab	PKPab	22 38 55.3	-1.4
	comp=Z,1.0nm,0.7s,baz=105,slow=4.3,SNR=5.5					

ISCJB ***16*** *22:38:52.2±0.9, 25°.7S±0°.2×179°.8E±0°.2, h493km, mb3.6/8, Error ellipse: s-maj=34.4km s-min=21.4km az=157.9*
IDC ***16*** *22:38:53.7±7.2, 25°.62S×179°.82E, h501km±73km, mb3.2/8, mb1 3.5/8, mb1mx3.2/32, mbtmp4.0/8, Error ellipse: s-maj=33.8km s-min=23.8km az=90.0*
ISC 16 22:38:53.1±0.8, 25.7S±0°.2×179.8E±0°.2, h493km, n14, σ0s87/14, mb3.6/8, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
ASAR	Alice Springs	41.60	263	P		P		22 45 58.1	+0.7
	4.0nm,1.1s,baz=90,slow=7.1,SNR=12								
ASAR				PcP		PcP		22 47 43.7	+0.5
	0.4nm,0.6s,baz=107,slow=3.2,SNR=3.8								
WRA	Warramunga Arr	42.14	268	P		P		22 46 01.6	-0.1
	2.7nm,0.7s,baz=104,slow=7.9,SNR=10								
MJAR	Matsushiro Arr	73.25	326	P		P		22 49 32.0	-1.6
	1.3nm,0.7s,baz=168,slow=5.9,SNR=4.9								
MAW	Mawson	76.04	201	P		P		22 49 47.6	-1.2
	1.5nm,0.8s,baz=103,slow=4.7,SNR=3.5								
KSRS	Korea Array	79.48	320	P		P		22 50 07.4	-0.4
	1.2nm,0.6s,baz=133,slow=5.3,SNR=6.2								
NVAR	Mina Array Bea	86.14	44	P		P		22 50 41.9	+0.2
	0.6nm,0.7s,baz=226,slow=6.1,SNR=3.8								
CMAR	Chiang Mai Arr	89.97	290	P		P		22 51 00.9	+1.2
	0.6nm,0.3s,baz=156,slow=3.3,SNR=4.8								
TXAR	Lajitas Array	91.51	58	P		P		22 51 07.3	+0.5
	0.3nm,0.8s,baz=232,slow=5.6,SNR=4.0								
ARCES	ARCESS Array B	133.57	348	PKP		PKPdf		22 57 12.1	-0.2
	2.0nm,0.8s,baz=41,slow=4.8,SNR=3.7								
NB2	NORSAR Subarra	143.79	351	PKP		PKPab		22 57 28.4	-1.6
	comp=Z,4.2nm,0.7s,baz=20,slow=3.7								
NOA	NORSAR Array B	143.79	351	PKP		PKPab		22 57 28.7	-1.2
	comp=Z,3.8nm,0.8s,baz=22,slow=3.8,SNR=16								
AKASG	Malin Array Ne	146.34	326	PKPbc		PKPdf		22 57 36.4	+0.7
	comp=Z,0.5nm,0.4s,baz=43,slow=4.4,SNR=4.7								
BRTR	Keskin Array B	148.46	305	PKPbc		PKPbc		22 57 43.5	-0.6
	comp=Z,0.5nm,0.5s,baz=139,slow=2.8,SNR=5.8								
TORD	Torodi Ar. Bea	167.42	189	PKP		PKPdf		22 58 02.2	-0.7
	comp=Z,0.5nm,1.1s,baz=267,slow=1.3,SNR=2.4								
TORD				PKPab		PKPab		22 59 12.1	+0.8
	comp=Z,0.7nm,0.9s,baz=158,slow=5.4,SNR=3.3								

ISCJB ***16*** *22:44:19.8±1.1, 11°.23S±0°.09×78°.6W±0°.1, h47km, mb3.3/4, Error ellipse: s-maj=19.3km s-min=7.7km az=142.8*
IDC ***16*** *22:44:23.9±3.4, 11°.07S×78°.30W, h67km±28km, mb3.0/4, mb1 3.4/6, mb1mx3.3/34, mbtmp3.4/6, ML3.3/2, Error ellipse: s-maj=54.0km s-min=10.7km az=61.0*
ISC 16 22:44:21.9±1.0, 11°.2S±0°.1×78°.5W±0°.1, h47km, n9, σ1s05/11, mb3.3/4, Off coast of Peru

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
NNA	Nana	1.81	116	P			Pn	22 44 50.3	-0.4
	56nm,0.3s,baz=328,slow=14,SNR=1.8								
NNA				S			Sn	22 45 12.5	-0.1
	59nm,0.3s,baz=137,slow=19,SNR=2.4								
ATAH	Atahualpa	4.03	2	P			Pn	22 45 21.6	+0.1
	6.9nm,0.3s,baz=202,slow=8.4,SNR=14								
ATAH				S			Sn	22 46 08.0	+0.4
	5.6nm,0.3s,baz=45,slow=11,SNR=4.1								
LPAZ	La Paz	11.28	118	P			Pn	22 47 02.5	+1.4
	0.0nm,0.3s,baz=279,slow=18,SNR=2.1								
TXAR	Lajitas Array	47.03	330	P		P		22 52 49.6	+0.6
	0.2nm,0.6s,baz=155,slow=11,SNR=2.4								
NVAR	Mina Array Bea	61.78	325	P		P		22 54 36.2	0.0
	0.3nm,0.6s,baz=129,slow=8.5,SNR=2.3								
YKA	Yellowknife Ar	78.61	344	P		P		22 56 16.8	-1.6
	0.1nm,0.6s,baz=140,slow=6.0,SNR=4.5								
TORD	Torodi Ar. Bea	83.16	75	P		P		22 56 42.4	-1.3
	0.4nm,0.9s,baz=274,slow=5.8,SNR=4.1								
WRA	Warramunga Arr	135.25	226	PKP		PKPdf		23 03 38.8	+1.4
	0.5nm,0.8s,baz=126,slow=2.3,SNR=4.7								
KSRS	Korea Array	144.69	322	PKP		PKPab		23 03 52.7	+0.1
	0.3nm,0.3s,baz=68,slow=2.5,SNR=4.2								

ISCJB ***16*** *22:48:19.9±0.7, 20°.09S±0°.03×69°.3W±0°.1, h114km±6km, mb3.1/2, Error ellipse: s-maj=16.3km s-min=5.1km az=171.5*
GUC ***16*** *22:48:20.0±0.8, 20°.09S×69°.20W, h103km±4km, ML3.4*
IDC ***16*** *22:48:20.9±1.6, 20°.19S×68°.79W, h126km±19km, mb3.1/2, mb1 3.4/4, mb1mx3.1/24, mbtmp3.6/4, Error ellipse: s-maj=56.2km s-min=18.0km az=93.0*
ISC 16 22:48:19.6±1.0, 20°.08S±0°.04×69°.23W±0°.10, h111km±7km, n13, σ0s96/23, 5C-4D, Northern Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
PB08	IPOC Station P	0.09	127	↓*i* P			Pn	22 48 35.1	-0.3
PB08				*i* S			Sn	22 48 46.4	-0.8
PB08				IAML				22 48 48.7	
	comp=N,2μm,0.2s								
PB11	IPOC Station P	0.51	309	↓*i* P			Pn	22 48 36.7	-0.1
PB11				*i* S			Sn	22 48 49.9	+0.2
PSGC	Pisagua	0.97	300	↓*i* P			Pn	22 48 40.9	+0.3
PSGC				*i* S			Sn	22 48 57.0	+0.5
PSGC				IAML				22 48 58.0	
	comp=N,676nm,0.3s								
PB01	IPOC Station P	0.98	194	↑*i* P			Pn	22 48 41.3	+0.5
PB01				*i* S			Sn	22 48 57.5	+0.7
PB01				IAML				22 48 58.4	
	comp=N,2μm,0.2s								
MNMC	Minye Minye	1.01	340	↑*i* P			Pn	22 48 41.8	+0.5
MNMC				*i* S			Sn	22 48 58.3	+0.7
MNMC				IAML				22 49 00.0	
	comp=E,2μm,0.5s								
PB09	IPOC Station P	1.70	180	↑*i* P			Pn	22 48 49.8	+0.6
PB09				*i* S			Sn	22 49 12.8	+1.2
PB09				IAML				22 49 14.9	
	comp=E,643nm,0.3s								
PB07	IPOC Station P	1.74	200	↓*i* P			Pn	22 48 50.2	+0.6
PB07				*i* S			Sn	22 49 13.2	+0.8
PB07				IAML				22 49 17.8	
	comp=E,259nm,0.3s								
PB13	IPOC Station P	1.76	352	↑*i* P			Pn	22 48 51.0	+0.8
PB13				*e*S			Sn	22 49 14.8	+1.4
PB12	IPOC Station P	1.79	325	↑*i* P			Pn	22 48 50.0	-0.1
PB12				*i* S			Sn	22 49 13.4	0.0
LVC	Limon Verde	2.53	173	P			Pn	22 49 00.8	+1.0
	comp=E,184nm,0.3s,baz=1.6,slow=8.6,SNR=68								
LVC				S			Sn	22 49 30.7	+0.1
	comp=E,318nm,0.3s,baz=36,slow=19,SNR=11								
LPAZ	La Paz	3.92	16	P			Pn	22 49 20.1	+1.6
	comp=E,2.3nm,0.3s,baz=189,slow=7.1,SNR=59								
TORD	Torodi Ar. Bea	77.17	71	P			P	22 59 59.4	-2.3
	comp=E,0.1nm,0.5s,baz=256,slow=7.2,SNR=3.7								
YKA	Yellowknife Ar	89.76	341	P			P	23 01 05.5	+0.5
	comp=E,0.2nm,0.7s,baz=130,slow=4.6,SNR=5.3								

NIED ***16*** *23:11:00, 37°.00N×142°.30E, h14km, Mw3.4 Best double couple: M0 1.61000×10^14 NP1:φs45.00000°, δ34.00000°, λ-84.00000°. NP2:φs217.00000°, δ57.00000°, λ-94.00000°.*
IDC ***16*** *23:11:53.8±2.2, 36°.56N×142°.67E, h0km, mb3.5/3, mb1 3.6/5, mb1mx3.4/49, mbtmp3.5/5, ML2.7/2, Error ellipse: s-maj=51.6km s-min=27.2km az=57.0*
JMA ***16*** *23:11:54.9±0.2, 37°.01N×142°.31E, h5km±2km, M3.6*
ISC 16 23:11:51.9±2.0, 36°.98N±0°.09×142°.4E±0°.1, h9km, n18, σ0s97/12, mb3.7/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	1.30	288	P			Pg	23 12 17.9	+1.1
JFK				*e*S			Sb	23 12 33.9	+0.6
ONAJ	Iwakimizuishiy	1.31	276	P			Pg	23 12 17.6	+0.6
JHO	Hitachi	1.53	257	P			Pg	23 12 21.7	+0.4
JMM	Marumori	1.57	305	P			Pb	23 12 21.6	+0.4
JFT	Otama	1.75	289	P			Pg	23 12 25.5	0.0
JOU	Okura	1.97	315	P			Pg	23 12 28.7	-1.0
MJAR	Matsushiro Arr	3.41	264	Pn			Pb	23 12 51.2	-1.3
	1.7nm,0.3s,baz=89,slow=15,SNR=12								
MJAR				Sn			Sb	23 13 32.8	-1.4
	1.0nm,0.3s,baz=78,slow=33,SNR=3.6								
MAT	Matsushiro	3.41	264	P			Pb	23 12 51.7	-0.9
MAT				*e*S			Sn	23 13 26.8	+0.8
USRK	Ussuriysk Ar.	10.72	316	Pn

*JMA **16** 23:14:23.9±0.1, 37°.41N×141°.31E, h33km±1km, M3.7*
JMA Felt I J1.
ISC 16 23:14:21.7±1.8, 37°.40N±0°.05×141°.48E±0°.08, h25km±11km, n26, σ0°.87/27, mb3.7/8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.48**	**266**	P	**Pb**	**23 14 32.1**	**+0.5**
JFK				S	**Sb**	**23 14 37.7**	**-0.7**
ONAJ	**Iwakimizuishiy**	**0.62**	**241**	P	**Pb**	**23 14 34.3**	**+0.3**
ONAJ				eS	**Sb**	**23 14 41.4**	**-0.9**
JMM	**Marumori**	**0.71**	**311**	P	**Pb**	**23 14 35.7**	**+0.2**
JFT	**Otama**	**0.92**	**278**	P	**Pn**	**23 14 39.1**	**+0.1**
JFT				S	**Sb**	**23 14 49.5**	**-1.2**
JIO	**Ouri**	**1.05**	**354**	P	**Pb**	**23 14 42.0**	**+0.7**
JIO				S	**Sn**	**23 14 54.6**	**-0.1**
JHO	**Hitachi**	**1.07**	**223**	P	**Pn**	**23 14 40.8**	**-0.3**
JOU	**Okura**	**1.16**	**326**	P	**Pb**	**23 14 43.4**	**+0.4**
JOU				S	**Sn**	**23 14 57.4**	**+0.1**
JYS	**Shirataka**	**1.39**	**307**	P	**Pn**	**23 14 46.2**	**+0.8**
JYS				S	**Sn**	**23 15 02.7**	**-0.2**
JFY	**Yanaizu**	**1.41**	**271**	P	**Pn**	**23 14 46.3**	**+0.5**
JFY				S	**Sn**	**23 15 02.7**	**-0.9**
MJAR	**Matsushiro Arr**	**2.76**	**253**	Pn	**Pn**	**23 15 05.6**	**+1.4**
	1.2nm,0.3s,baz=60,slow=10,SNR=5.5						
MAT	**Matsushiro**	**2.76**	**253**	P	**Pn**	**23 15 06.1**	**+1.8**
MAT				eS	**Sn**	**23 15 39.0**	**+2.2**
KLR	**Kul'dur**	**13.77**	**332**	LR	LR	23 22 52.0	
	comp=Z,43nm,18.4s,baz=126,slow=37						
H11N2	**WAKE ISLAND Hy 28.29**	**121**		T	T	23 50 20.0	
	baz=314,slow=75,SNR=40						
H11N1	**WAKE ISLAND Hy 28.30**	**121**		T	T	23 50 20.7	
	baz=314,slow=75,SNR=46						
H11N3	**WAKE ISLAND Hy 28.31**	**121**		T	T	23 50 21.4	
	baz=314,slow=75,SNR=44						
H11S1	**WAKE ISLAND Hy 29.02**	**124**		T	T	23 51 14.2	
	baz=316,slow=76,SNR=38						
H11S3	**WAKE ISLAND Hy 29.02**	**124**		T	T	23 51 32.2	
	baz=316,slow=76,SNR=30						
H11S2	**WAKE ISLAND Hy 29.03**	**124**		T	T	23 51 20.9	
	baz=316,slow=76,SNR=35						
ZALV	**Zalesovo Beam**	**41.70**	**312**	P	**P**	**23 22 08.1**	**0.0**
	0.8nm,0.5s,baz=96,slow=6.0,SNR=4.1						
MKAR	**Makanchi Array**	**43.97**	**302**	P	**P**	**23 22 27.0**	**+0.4**
	0.8nm,0.6s,baz=85,slow=9.7,SNR=6.2						
KURBB	**Kurchatov Arra**	**45.82**	**308**	P	**P**	**23 22 41.1**	**-0.2**
	0.4nm,0.4s,baz=83,slow=8.5,SNR=6.9						
WRA	**Warramunga Arr**	**57.43**	**188**	P	**P**	**23 24 08.1**	**-0.2**
	0.4nm,0.8s,baz=358,slow=7.5,SNR=3.2						
GEYT	**Alibeck**	**63.70**	**299**	P	**P**	**23 24 50.2**	**-0.9**
	0.8nm,0.5s,baz=72,slow=11,SNR=2.7						
FINES	**FINESS Array B**	**68.51**	**332**	P	**P**	**23 25 21.7**	**+0.2**
	1.7nm,0.9s,baz=39,slow=9.0,SNR=7.2						
NOA	**NORSAR Array B**	**73.87**	**337**	P	**P**	**23 25 54.3**	**+0.3**
	0.4nm,0.6s,baz=37,slow=6.1,SNR=2.8						
AKASG	**Malin Array Be**	**74.04**	**322**	P	**P**	**23 25 54.6**	**-0.5**
	0.4nm,0.4s,baz=46,slow=6.3,SNR=4.5						

MEX 16 23:30:52.9±0.4, 17°.15N×100°.23W, h36km±6km, MD3.6, Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CAIG	**El Cayaco**	**0.11**	**200**	eP	Pn	23 30 57.8	-7.2
CAIG				eS	Sn	23 31 01.6	-15
ACP2	**Acapulco**	**0.43**	**130**	i P	Pn	23 31 00.8	-1.6
ACP2				eS	Sn	23 31 07.5	-1.7
ACX	**Acapulco**	**0.45**	**129**	eP	Pn	23 30 58.0	-4.7
ACX				eS	Sn	23 31 04.9	-4.8
MEIG	**Mezcala**	**0.96**	**37**	i P	Pn	23 31 07.9	-2.1
MEIG				i S	Sn	23 31 20.0	-2.5
ARIG	**Puente Sto Nin**	**1.13**	**354**	eP	Pn	23 31 10.6	-1.6
ARIG				eS	Sn	23 31 24.6	-1.8
ZIIG	**Zihuatanejo**	**1.27**	**291**	eP	Pn	23 31 12.2	-1.8
ZIIG				eS	Sn	23 31 27.6	-2.2
PLIG	**Platanillo**	**1.41**	**29**	eP	Pn	23 31 15.3	-0.9
PLIG				i S	Sn	23 31 31.4	-2.1
TLIG	**Tlapa**	**1.64**	**75**	eP	Pn	23 31 18.1	-1.2
TLIG				i S	Sn	23 31 37.7	-1.4

*IDC **16** 23:35:41.9±1.4, 35°.20N×141°.72E, h0km, mb3.4/3, mb1 3.5/5, mb1mx3.4/34, mbtmp3.4/5, ML3.1/2, MS2.7/3, Ms1 2.7/3, ms1mx2.5/20, Error ellipse: s-maj=32.7km s-min=22.5km az=111.0*
*ISCJB **16** 23:35:44.1±1.0, 35°.23N±0°.05×141°.77E±0°.08, h25km, mb3.4/3, MS3.0/1, Error ellipse: s-maj=9.5km s-min=7.6km az=175.8*
*JMA **16** 23:35:46.0±0.4, 35°.34N×141°.65E, h32km, M2.7*
ISC 16 23:35:45.9±1.2, 35°.26N±0°.06×141°.61E±0°.09, h25km, n17, σ1°.22/14, mb3.5/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.75**	**306**	P	**Pb**	**23 36 00.7**	**+0.3**
CHOJ				S	**Sb**	**23 36 09.8**	**-0.5**
BSO1	**Boso 1**	**0.80**	**221**	P	**Pn**	**23 36 01.8**	**+0.7**
BSO1				eX		23 36 13.1	
BSO3	**Boso 3**	**1.01**	**243**	P	**Pn**	**23 36 04.8**	**+0.5**
BSO3				S	**Sb**	**23 36 17.7**	**+0.3**
JCN	**Nagara**	**1.16**	**278**	P	**Pb**	**23 36 07.6**	**+0.3**
JHJ	**Hachijo jima 2**	**2.62**	**216**	Pn	**Pn**	**23 36 26.8**	**+0.2**
	11nm,0.3s,baz=241,slow=19,SNR=4.3						
JHJ				Sn	**Sn**	**23 36 58.3**	**+0.7**
	6.4nm,0.3s,baz=73,slow=19,SNR=2.8						
JHJ				LR	LR	23 37 26.6	
	comp=Z,94nm,18.4s,baz=234,slow=40						
MJAR	**Matsushiro Arr**	**3.04**	**296**	Pn	**Pn**	**23 36 34.0**	**+1.5**
	2.1nm,0.3s,baz=95,slow=13,SNR=13						
MAT	**Matsushiro**	**3.04**	**296**	P	**Pn**	**23 36 34.1**	**+1.6**
MAT				eS	**Sb**	**23 37 13.2**	**-2.9**
ASAJ	**Asahikawa**	**8.88**	**5**	LR	LR	23 41 04.4	
	comp=Z,28nm,18.2s,baz=140,slow=36						
H11N2	**WAKE ISLAND Hy 27.14**	**118**		T	T	00 09 47.0	
	baz=311,slow=75,SNR=20						
H11N1	**WAKE ISLAND Hy 27.15**	**118**		T	T	00 09 48.1	
	baz=311,slow=75,SNR=19						
H11N3	**WAKE ISLAND Hy 27.16**	**118**		T	T	00 09 53.2	
	baz=311,slow=75,SNR=26						
H11S1	**WAKE ISLAND Hy 27.80**	**120**		T	T	00 10 37.9	
	baz=312,slow=75,SNR=21						
H11S3	**WAKE ISLAND Hy 27.80**	**120**		T	T	00 10 35.4	
	baz=312,slow=75,SNR=18						
H11S2	**WAKE ISLAND Hy 27.81**	**120**		T	T	00 10 35.8	
	baz=312,slow=75,SNR=13						
MKAR	**Makanchi Array**	**45.21**	**304**	P	**P**	**23 44 00.4**	**-0.5**
	0.2nm,0.4s,baz=77,slow=7.6,SNR=3.4						
MKAR				LR	LR	00 02 28.3	
	comp=Z,18nm,18.5s,baz=124,slow=35						
ILAR	**Eielson Array**	**50.91**	**32**	P	**P**	**23 44 44.9**	**+0.2**
	0.4nm,0.7s,baz=287,slow=6.5,SNR=3.8						
WRA	**Warramunga Arr**	**55.33**	**188**	P	**P**	**23 45 16.7**	**-0.9**
	0.2nm,0.4s,baz=4.8,slow=7.4,SNR=3.4						

MAN 16 23:43:41.7°.93N×125°.06E, h34km, mb4.2, ML3.0, MS2.7, 1C-1D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BUKP	**Musuan**	**0.05**	**182**	eP	Pb	23 43 46.8	0.0
BUKP				eS	Sb	23 43 50.1	-0.6
CGP	**Cagayan de Oro**	**0.64**	**325**	⇑i P	Pb	23 43 55.3	+1.3
CGP				i S	Sb	23 44 04.0	+1.3
KCP	**Kidapawan**	**0.91**	**178**	⇓eP	Pb	23 43 58.6	+0.2
KCP				i S	Sb	23 44 10.2	-0.1

*BJI **17** 00:14:55.7, 9°.20S×112°.60E, h28km, mb5.3/79, mB5.5/52, Ms5.3/89, Ms7 5.2/83*
*IDC **17** 00:14:56.3±2.1, 9°.16S×112°.62E, h21km±12km, mb5.3/29, mb1 5.3/30, mb1mx5.3/32, mbtmp5.4/30, ML5.1/1, MS5.1/28, Ms1 5.1/28, ms1mx4.9/37, Error ellipse: s-maj=12.3km s-min=8.5km az=73.0*
*NEIC **17** 00:14:57.6±0.1, 9°.20S×112°.59E, h28km, mb5.7/94, ME5.2, MS5.2/185, MW5.6, MW5.7, Error ellipse: s-maj=5.0km s-min=3.5km az=217.0, Moment Tensor Solution. s35 Moment tensor: Scale 10^{17}Nm; M_{rr}-2.99; $M_{\theta\theta}$2.59; $M_{\phi\phi}$0.40; $M_{r\theta}$0.41; $M_{\theta\phi}$-0.40; $M_{\phi r}$0.11; Best double couple: $M_0$2.90000×10^{17} NP1:ϕ_s103.00000°, δ41.00000°, λ-85.00000°. NP2:ϕ_b277.00000°, δ49.00000°, λ-94.00000°. Principal axes: T 2.6900, Plg4.0000°, Azm10.0000°; N 0.3400, Plg3.0000°, Azm280.0000°; P -3.0300, Plg85.0000°, Azm151.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from CMT mechanism.*
NEIC Felt [IV] at Blitar and Karangkates; [III] at Malang; [II] at Surabaya and Yogyakarta. Also felt at Banyuwangi, Batu, Jember, Kepanjen and Pare. Felt [IV] at Denpasar and [II] at Kuta, Bali. Also felt at Ubud.
*MOS **17** 00:14:57.4±0.9, 9°.15S×112°.60E, h48km, mb5.8/72, MS5.1/41 Error ellipse: s-maj=9.2km s-min=6.2km az=105.7*
*GCMT **17** 00:14:57.7±0.1, 9°.53S×112°.69E, h41km, MW5.7/125, Moment Tensor Solution. s120,c226; s125,c343; Duration: 1s6 Moment tensor: Scale 10^{17}Nm; M_{rr}-3.50±.04; $M_{\theta\theta}$3.75±.03; $M_{\phi\phi}$-0.24±.04; $M_{r\theta}$0.54±.03; $M_{\theta\phi}$-0.97±.03; $M_{\phi r}$0.77±.04; Best double couple: $M_0$3.87000×10^{17} NP1:ϕ_s269.00000°, δ50.00000°, λ-110.00000°. NP2:ϕ_b117.00000°, δ44.00000°, λ-68.00000°. Principal axes: T 3.9900, Plg3.0000°, Azm12.0000°; N -0.2340, Plg15.0000°, Azm282.0000°; P -3.7490, Plg75.0000°, Azm113.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*
*DJA **17** 00:14:57.4±0.3, 10°S±3°×11°3E±°, h10km, M6.1/25, mb6.3/16, mb6.3/16, MLv6.3/25, Mw(mB)6.0/16, Mwp5.8/5*
*NEIC **17** 00:14:58.0±0.0, 9°.58S×113°.01E, h32km, Moment Tensor Solution. s22 Moment tensor: Scale 10^{17}Nm; M_{rr}-3.70; $M_{\theta\theta}$3.60; $M_{\phi\phi}$0.10; $M_{r\theta}$-1.80; $M_{\theta\phi}$-0.70; $M_{\phi r}$3.10; Best double couple: $M_0$5.00000×10^{17} NP1:ϕ_s129.00000°, δ67.00000°, λ-67.00000°. NP2:ϕ_b262.00000°, δ31.00000°, λ-132.00000°. Principal axes: T 4.6000, Plg19.0000°, Azm203.0000°; N 1.0000, Plg20.0000°, Azm300.0000°; P -5.6000, Plg61.0000°, Azm73.0000°;*
*ISCJB **17** 00:15:00.1±0.3, 9°.21S±0°.02×112°.65E±0°.02, h66km±3km, mb5.4/172 Error ellipse: s-maj=4.0km s-min=2.9km az=19.1*
*KLM **17** 00:15:01.7, 9°.40S×112°.54E, h71km, mb5.6, ML6.2, MS6.5*
ISC 17 00:15:00.3±0.4, 9°.15S±0°.03×112°.59E±0°.03, h53km±2km, h53km:pP-P, n1386, σ1°.67/1373, mb5.5/194, MS5.2/251, 23C-71D, South of Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GMJI	**Gumukmas**	**1.21**	**44**	P	**Pn**	**00 15 22.5**	**+1.5**
PCJI	**Pacitan**	**1.69**	**304**	P	**Pn**	**00 15 28.7**	**+1.3**
PCJI				S	**Sn**	**00 15 51.2**	**+3.3**
JAGI	**Jajag, Banyuwa**	**1.69**	**67**	P	**Pn**	**00 15 28.8**	**+1.3**
JAGI				S	**Sn**	**00 15 54.2**	**+6.2**
JAGI	**Jajag, Banyuwa**	**1.69**	**67**	ePn	**Pn**	**00 15 28.2**	**+0.8**
JAGI				eSn	**Sn**	**00 15 50.4**	**+2.4**
NGJI	**Ngawi**	**2.09**	**328**	P	**Pn**	**00 15 36.4**	**+3.4**
ABJI	**Asem Bagus**	**2.11**	**51**	P	**Pn**	**00 15 36.3**	**+3.0**
UGM	**Wanagama**	**2.38**	**301**	P	**Pn**	**00 15 39.1**	**+2.1**
UGM	**Wanagama**	**2.38**	**301**	ePn	**Pn**	**00 15 38.4**	**+1.4**
UGM				eSn	**Sn**	**00 16 08.4**	**+3.3**
TBJI	**Tambak Boyo**	**2.43**	**342**	P	**Pn**	**00 15 42.0**	**+4.4**
SRBI	**Singaraja**	**2.80**	**68**	P	**Pn**	**00 15 44.7**	**+2.0**
TWSI	**Taliwang, Sumb**	**4.26**	**85**	P	**Pn**	**00 16 03.8**	**+1.0**
CMJI	**Cimerak**	**4.31**	**288**	P	**Pn**	**00 16 03.7**	**+0.3**
CISI	**Cisompet, Garu**	**4.98**	**288**	ePn	**Pn**	**00 16 12.2**	**-0.5**
JCJI	**Jatiwangi**	**5.03**	**301**	P	**Pn**	**00 16 14.5**	**+1.3**
	2μm,0.8s,42μm56μm38nm						
PLAI	**Plampang**	**5.14**	**87**	P	**Pn**	**00 16 16.1**	**+1.4**
	8μm,0.8s,61μm66nm						
LEM	**Lembang**	**5.43**	**295**	Pn	Pn	00 16 27.9	+8.9
	56nm,0.3s,baz=60,slow=7.4,SNR=54						
LEM				Sn	Sn	00 17 35.0	+15
	92nm,0.3s,baz=2.1,slow=23,SNR=6.2						
LEM				LR	LR	00 18 50.2	
	comp=Z,26μm,19.0s,baz=92,slow=43						
LEM	**Lembang**	**5.43**	**295**	P	Pn	00 16 28.0	+9.0
LEM				pmax	pmax		
	comp=Z,56nm,0.3s						
LEM				MLR	MLR		
	comp=Z,26μm,19.0s						
CNJI	**Cibinong**	**5.70**	**288**	P	**Pn**	**00 16 24.3**	**+1.8**
	comp=Z,2μm,1.0s,comp=Z,26μmcomp=Z,35nm						
SKJI	**Sukabumi**	**6.34**	**289**	P	Pn	00 16 36.8	+5.5
XMIS	**Christmas Isla**	**6.96**	**258**	ePn	**Pn**	**00 16 36.2**	**-3.7**
XMIS				eSn	Sn	00 17 43.7	-14
SBJI	**Serang**	**7.07**	**295**	P	Pn	00 16 46.7	+5.4
CGJI	**Cibinong**	**7.28**	**290**	P	**Pn**	**00 16 45.8**	**+1.7**
	comp=Z,2μm,0.7s,comp=Z,41μmcomp=Z,11nm						
WSI	**Waingapu**	**7.62**	**95**	P	**Pn**	**00 16 50.0**	**+1.1**
	comp=Z,6μm,0.7s,comp=Z,58μmcomp=Z,37μmcomp=Z,60nm						
BASI	**Baing, Sumba**	**7.95**	**98**	P	**Pn**	**00 16 54.8**	**+1.5**
BLSI	**Bandar Lampung**	**8.19**	**297**	P	**Pn**	**00 17 00.9**	**+4.2**
KAPI	**Kappang**	**8.21**	**60**	Pn	**Pn**	**00 16 58.7**	**+1.8**
	comp=Z,30nm,0.3s,baz=192,slow=8.8,SNR=54						
KAPI				Sn	**Sn**	**00 18 36.9**	**+8.6**
	comp=Z,23nm,0.3s,baz=248,slow=21,SNR=6.7						
KAPI				LR	LR	00 20 30.8	
	comp=Z,20μm,21.9s,baz=239,slow=41						
KAPI	**Kappang**	**8.21**	**60**	ePn	**Pn**	**00 16 58.7**	**+1.8**
KAPI				eSn	**Sn**	**00 18 24.8**	**-3.5**
BSSI	**Bau Bau, Buton**	**8.38**	**70**	P	**Pn**	**00 17 01.4**	**+2.1**
	comp=Z,2μm,1.3s,comp=Z,14μmcomp=Z,6.5nm						
KASI	**Kota Agung**	**8.79**	**294**	P	**Pn**	**00 17 06.7**	**+1.8**
	comp=Z,585nm,0.9s,comp=Z,8μmcomp=Z,3.5nm						
TTSI	**Tana Toraja**	**9.40**	**50**	P	Pn	00 17 18.1	+4.9
	comp=Z,896nm,1.1s,comp=Z,8μm						
MMRI	**Maumere**	**9.55**	**88**	P	**Pn**	**00 17 13.2**	**-2.1**
	comp=Z,1μm,0.7s,comp=Z,14μmcomp=Z,24μm						
MMRI	**Maumere**	**9.55**	**88**	ePn	**Pn**	**00 17 13.1**	**-2.2**
MMRI				eSn	**Sn**	**00 18 56.9**	**-4.3**
PMBI	**Palembang**	**9.93**	**308**	P	Pn	00 17 32.3	+12
MNAI	**Manna**	**10.68**	**296**	P	**Pn**	**00 17 31.6**	**+0.9**
	comp=Z,3μm,0.6s,comp=Z,33μm						
MNAI	**Manna**	**10.68**	**296**	ePn	**Pn**	**00 17 31.2**	**+0.5**
MNAI				eSn	**Sn**	**00 19 24.6**	**-4.4**
KSM	**Kuching**	**10.79**	**348**	⇓P	**Pn**	**00 17 37.0**	**+4.8**
KSM	**Kuching**	**10.79**	**348**	ePn	**Pn**	**00 17 36.2**	**+4.0**
PCI	**Palu**	**10.91**	**42**	P	Pn	00 17 39.3	+5.4
KDI	**Kendari**	**11.22**	**63**	P	Pn	00 17 43.3	+5.2
SBUM	**Sibu**	**11.53**	**358**	⇑P	Pn	00 17 48.6	+6.3
SBUM	**Sibu**	**11.53**	**358**	ePn	Pn	00 17 47.7	+5.4
SOEI	**Soe**	**11.54**	**94**	P	**Pn**	**00 17 42.2**	**-0.4**
	comp=Z,1μm,1.0s,comp=Z,13μm						
SOEI	**Soe**	**11.54**	**94**	ePn	**Pn**	**00 17 41.0**	**-1.6**
SOEI				eSn	**Sn**	**00 19 48.0**	**-2.0**
BTM	**Bintulu**	**12.28**	**2**	⇓P	**P**	**00 18 00.9**	**-2.3**
LUWI	**Luwuk**	**12.95**	**52**	P	**P**	**00 18 09.3**	**-1.4**
LUWI	**Luwuk**	**12.95**	**52**	ePn	**P**	**00 18 08.3**	**-2.4**
MRSI	**Marisa**	**13.35**	**45**	P	**P**	**00 18 12.7**	**-2.5**
GIRL	**Giralia**	**13.51**	**173**	P	Pn	00 18 01.6	-7.8
	baz=13,SNR=84						
MBWA	**Marble Bar**	**13.78**	**151**	Pn	**Pn**	**00 18 11.6**	**-1.5**
	SNR=7.1						
MBWA	**Marble Bar**	**13.78**	**151**	P	**Pn**	**00 18 11.6**	**-1.5**
	SNR=7.1						
MYKOM	**Kota Tinggi**	**13.92**	**321**	⇑P	**P**	**00 18 21.9**	**+0.3**
MYKOM	**Kota Tinggi**	**13.92**	**321**	ePn	**Pn**	**00 18 15.4**	**+0.4**
TSM	**Tawau**	**14.35**	**22**	⇓P	**P**	**00 18 24.4**	**-2.0**
KGM	**Kluang**	**14.43**	**320**	⇓P	**P**	**00 18 27.8**	**+0.6**
BKNI	**Bangkinang**	**14.86**	**309**	ePn	**Pn**	**00 18 26.5**	**-0.9**
SDKM	**Sandakan**	**15.39**	**18**	⇑P	**P**	**00 18 38.7**	**+0.7**
MYLDM	**Lahad Datu**	**15.40**	**23**	⇑P	**P**	**00 18 41.1**	**+3.1**
MYLDM	**Lahad Datu**	**15.40**	**23**	ePn	**Pn**	**00 18 33.5**	**-0.9**
	comp=Z,653nm,1.1s						
FITZ	**Fitzroy Crossi**	**15.49**	**126**	Pn	**Pn**	**00 18 31.0**	**-4.4**
	comp=Z,6.3nm,0.3s,baz=295,slow=6.5,SNR=71						
FITZ				Sn	Sn	00 21 12.5	-14
	comp=Z,13nm,0.3s,baz=86,slow=9.5,SNR=3.5						
FITZ				LR	LR	00 24 46.2	
	comp=Z,8μm,20.0s,baz=309,slow=38						
FITZ	**Fitzroy Crossi**	**15.49**	**126**	P	**Pn**	**00 18 30.0**	**-5.4**
	baz=15,SNR=140						
FITZ	**Fitzroy Crossi**	**15.49**	**126**	ePn	**Pn**	**00 18 31.0**	**-4.4**
	comp=Z,153nm,0.9s						
FITZ				eSn	Sn	00 21 12.5	-14
KKM	**Kota Kinabalu**	**15.52**	**14**	⇑P	**P**	**00 18 39.1**	**-0.3**
KKM	**Kota Kinabalu**	**15.52**	**14**	ePn	**Pn**	**00 18 37.5**	**+1.5**
	comp=Z,772nm,1.7s						
KDM	**Kudat**	**16.51**	**15**	⇓P	**P**	**00 18 51.9**	**+1.6**
KTGM	**Kuala Trenggan**	**17.19**	**326**	⇑P	**P**	**00 18 59.9**	**+2.0**
PSI	**Prapat**	**18.07**	**310**	eP	**P**	**00 19 05.0**	**-2.7**
PSI				pmax	pmax		
	comp=Z,120nm,1.3s						
PSI	**Prapat**	**18.07**	**310**	ePn	**P**	**00 19 05.0**	**-2.7**
	comp=Z,117nm,1.3s						
GSI	**Gunungsitoli**	**18.21**	**304**	ePn	**P**	**00 19 06.0**	**-3.1**
	comp=Z,76nm,0.6s						
SAUI	**Saumlaki**	**18.54**	**88**	eP	**P**	**00 19 11.6**	**-1.2**
	comp=Z,1μm,0.7s						
SAUI				eSn	**Sn**	**00 22 40.3**	**+0.2**
MTN	**Manton Dam**	**18.57**	**103**	P	**P**	**00 19 11.8**	**-1.3**
	baz=18,SNR=44						
MTN	**Manton Dam**	**18.57**	**103**	eP	**P**	**00 19 12.1**	**-1.0**
	comp=Z,404nm,0.9s						
MTN				eSn	Sn	00 22 29.4	-11
KULM	**Kulim**	**18.64**	**320**	⇓P	**Pn**	**00 19 15.7**	**+1.1**
KULM	**Kulim**	**18.64**	**320**	eP	**Pn**	**00 19 16.5**	**+1.9**
	comp=Z,56nm,1.0s						
IPIL	**Ipil**	**19.54**	**31**	eP	**P**	**00 19 23.9**	**+0.2**
KDU	**Kakadu**	**19.84**	**102**	P	**P**	**00 19 25.2**	**-1.8**
	baz=20,SNR=16						
CTBH	**Cotabato--PC H**	**19.98**	**36**	⇑iP	**Pn**	**00 19 30.9**	**+0.2**
SKLT	**Songkhla**	**20.12**	**323**	P	Pn	00 19 33.2	+0.9
	comp=Z,42nm,0.8s,comp=Z,1μm						
SWI	**Sorong**	**20.33**	**67**	P	**P**	**00 19 32.5**	**+0.2**
SWI				pmax	pmax		
	comp=Z,728nm,0.9s						
SIJI	**Sorong**	**20.33**	**67**	P	**P**	**00 19 33.1**	**+0.8**
	comp=Z,42nm,0.4s,baz=357,slow=7.3,SNR=13						
SIJI				S	**S**	**00 23 15.2**	**-2.3**
	comp=Z,67nm,0.3s,baz=90,slow=20,SNR=3.2						
FAKI	**Fak Fak**	**20.50**	**74**	eP	**P**	**00 19 31.9**	**-2.3**
	comp=Z,625nm,0.7s						
FAKI				LR	LR		
	comp=Z,6μm,19.0s						
DAV	**Davao City (W)**	**20.67**	**39**	P	Pn	00 19 39.1	+0.4
	comp=Z,86nm,0.3s,baz=90,slow=10,SNR=2.8						
DAV				LR	LR	00 28 20.3	
	comp=Z,6μm,21.3s,baz=244,slow=39						
DAV	**Davao City (W)**	**20.67**	**39**	⇑iP	sP	00 19 53.8	-1.0
DAV	**Davao City (W)**	**20.67**	**39**	eP	Pn	00 19 39.1	+0.4
	comp=Z,451nm,1.1s						
BUKP	**Musuan**	**20.99**	**37**	eP	Pn	00 19 41.3	-1.3
MATI	**Mati**	**21.00**	**41**	eP	**P**	**00 19 43.5**	**+3.9**
LHMI	**Lhok Sumawe**	**21.14**	**312**	PFAKE		00 19 50.0	+8.9
LHMI				LR	LR		
	comp=Z,8μm,20.0s						
TRTT	**Trang**	**21.21**	**322**	P	**P**	**00 19 45.1**	**+3.4**
	comp=Z,88nm,0.9s,comp=Z,2μm						
SNPH	**Sibulan**	**21.21**	**30**	eP	**P**	**00 19 46.2**	**+4.4**
ENPP	**El Nido**	**21.33**	**19**	eP	**P**	**00 19 44.3**	**+1.2**
CUYO	**Cuyo Island**	**21.56**	**23**	eP	**P**	**00 19 47.0**	**+1.4**
JAP	**San Jose, Anti**	**21.85**	**25**	⇓eP	**P**	**00 19 51.4**	**+2.9**
PKDT	**Phuket**	**22.09**	**320**	P	**P**	**00 19 56.1**	**+4.8**
	comp=Z,73nm,0.7s,comp=Z,2μm						
BUSP	**Coron**	**22.33**	**20**	eP	**P**	**00 19 56.5**	**+2.7**
LLP	**Lapu-Lapu**	**22.41**	**31**	eP	**P**	**00 19 55.9**	**+1.3**
SURT	**Suratani**	**22.63**	**322**	P	**P**	**00 19 58.1**	**+1.1**
	comp=Z,43nm,1.2s,comp=Z,846nm						
SJMP	**San Jose**	**23.08**	**22**	eP	**P**	**00 20 02.8**	**+1.2**
OTRP	**Odiongan**	**23.34**	**24**	eP	**P**	**00 20 06.0**	**+1.9**
OCLP	**Ormoc**	**23.36**	**31**	eP	**P**	**00 20 05.2**	**+0.9**
WRA	**Warramunga Arr**	**23.60**	**119**	P	**P**	**00 20 04.2**	**-2.4**
	comp=Z,200nm,0.9s,baz=294,slow=11,SNR=365						
WRA				PcP	**PcP**	**00 23 50.0**	**-0.5**
	comp=Z,22nm,0.7s,baz=297,slow=1.5,SNR=6.5						
WRA				S	**S**	**00 24 21.5**	**+4.2**
	comp=Z,8.0nm,0.5s,baz=282,slow=24,SNR=3.9						
WRA				LR	LR	00 29 32.3	
	comp=Z,8μm,21.5s,baz=290,slow=37						
WR1	**Warramunga Arr**	**23.60**	**119**	eP	**P**	**00 20 04.2**	**-2.4**
WR1				ePcP	**PcP**	**00 23 50.0**	**-0.5**
WR1				eS	**S**	**00 24 21.5**	**+4.2**
WRAB	**Tennant Creek**	**23.61**	**119**	c iP	**P**	**00 20 04.5**	**-2.2**
WRAB				pmax	pmax		
	comp=Z,624nm,1.0s						
WRAB	**Tennant Creek**	**23.61**	**119**	eP	**P**	**00 20 05.0**	**-1.6**
	comp=Z,424nm,1.3s						
WRAB				LR	LR		
	comp=Z,9μm,22.0s						
PLP	**Palo**	**23.64**	**32**	⇑i P	**P**	**00 20 09.2**	**+2.1**
CHBT	**CHBT**	**24.02**	**335**	P	**P**	**00 20 12.7**	**+2.2**
	comp=Z,54nm,1.0s,comp=Z,5μm						
NWAO	**Narrogin (SRO)**	**24.05**	**170**	P	**P**	**00 20 08.4**	**-2.2**
	comp=Z,45nm,0.8s,baz

	comp=Z,7μm,19.1s,baz=168,slow=39					
CMMT	**Chiang Mai**	**30.87 334**	P	**P**	**00 21 12.9 +1.1**	
	comp=Z,23nm,0.8s,comp=Z,624nm					
CHTO	**Chiang Mai**	**30.87 334**	P	**P**	**00 21 13.1 +1.2**	
	comp=Z,70nm,0.8s,comp=Z,2μm					
CHTO	**Chiang Mai**	**30.87 334**	*e*P	**P**	**00 21 11.5 -0.3**	
CHTO			pmax	pmax		
	comp=Z,26nm,1.0s					
CHTO	**Chiang Mai**	**30.87 334**	P	**P**	**00 21 13.4 +1.6**	
	SNR=11					
CHTO	**Chiang Mai**	**30.87 334**	P	**P**	**00 21 13.4 +1.6**	
	SNR=11					
CHTO	**Chiang Mai**	**30.87 334**	*e*P	**P**	**00 21 11.5 -0.3**	
	comp=Z,26nm,0.9s					
CHTO			LR	LR		
	comp=Z,6μm,20.0s					
CMAI	**Chiengmai2**	**31.82 335**	P	**P**	**00 21 21.7 +1.3**	
	comp=Z,62nm,1.2s,comp=Z,2μm					
BBOO	**Buckleboo**	**32.01 141**	*e*P	**P**	**00 21 20.2 -1.6**	
	comp=Z,299nm,1.2s					
BBOO			LR	LR		
	comp=Z,14μm,21.0s					
GZH	**Guangzhou**	**32.04 1**	P	P	00 21 28.4 +6.3	
GZH			PP	**PP**	**00 22 42.4 +7.0**	
GZH			S	S	00 26 43.9 +14	
TWG	**Pinlang**	**32.84 15**	*e*P	**P**	**00 21 28.2 -0.8**	
	comp=Z,81nm,0.9s					
TPUB	**Ta-pu**	**33.19 14**	*e*P	**P**	**00 21 32.4 +0.2**	
	comp=Z,46nm,0.8s					
TPUB			LR	LR		
	comp=Z,2μm,21.0s					
YULB	**Yu-li**	**33.44 15**	*e*P	**P**	**00 21 37.0 +2.7**	
	comp=Z,59nm,1.3s					
YULB			LR	LR		
	comp=Z,2μm,20.0s					
SSLB	**Suanglung**	**33.74 14**	*e*P	**P**	**00 21 39.5 +2.5**	
	comp=Z,38nm,0.8s					
SSLB			LR	LR		
	comp=Z,3μm,22.0s					
PMG	**Port Moresby**	**34.11 93**	*e*P	**P**	**00 21 40.5 +0.2**	
PMG			pmax	pmax		
	comp=Z,110nm,1.0s					
PMG	**Port Moresby**	**34.11 93**	*e*P	**P**	**00 21 40.5 +0.2**	
	comp=Z,111nm,1.0s					
PMG			LR	LR		
	comp=Z,3μm,21.0s					
CTAO	**Charters Tower**	**34.27 112**	*e*P	**P**	**00 21 41.8 +0.1**	
CTAO			pmax	pmax		
	comp=Z,310nm,1.2s					
CTAO	**Charters Tower**	**34.27 112**	*e*P	**P**	**00 21 41.8 +0.1**	
	comp=Z,313nm,1.2s					
CTAO			LR	LR		
	comp=Z,8μm,20.0s					
QZH	**Quanzhou**	**34.38 10**	P	**P**	**00 21 41.3 -1.2**	
QZH			S	**S**	**00 26 59.4 -7.3**	
QZH			LR	LR		
	comp=Z,2μm,11.8s					
QZH			LR	LR		
	comp=Z,1μm,11.0s					
QZH			LR	LR		
	comp=Z,7μm,25.6s					
YHNB	**Yeheng**	**34.69 14**	*e*P	**P**	**00 21 47.9 +2.6**	
	comp=Z,104nm,1.2s					
YOJ	**Yonaguni jima**	**34.92 17**	PFAKE		00 22 00.0 +13	
YOJ			LR	LR		
	comp=Z,1μm,18.0s					
STKA	**Stephens Creek**	**35.14 134**	P	**P**	**00 21 48.0 -1.1**	
	comp=Z,104nm,0.7s,baz=305,slow=9.1,SNR=142					
STKA			LR	LR	00 36 46.0	
	comp=Z,12μm,20.8s,baz=299,slow=37					
STKA	**Stephens Creek**	**35.14 134**	P	**P**	**00 21 48.0 -1.1**	
STKA			pmax	pmax		
	comp=Z,104nm,0.7s					
STKA			MLR	MLR		
	comp=Z,12μm,20.8s					
STKA	**Stephens Creek**	**35.14 134**	*e*P	**P**	**00 21 48.0 -1.1**	
	comp=Z,55nm,1.1s					
STKA			LR	LR		
	comp=Z,2μm,21.0s					
MANU	**Manus Island**	**35.30 81**	*e*P	**P**	**00 21 50.6 0.0**	
	comp=Z,484nm,1.7s					
MANU			LR	LR		
	comp=Z,2μm,22.0s					
KMI	**Kunming**	**35.39 344**	P	**P**	**00 21 54.3 +2.9**	
KMI			pP	pP	00 22 04.1 -1.1	
KMI			sP	sP	00 22 07.8 -3.7	
KMI			PP	**PP**	**00 23 16.9 +4.2**	
KMI			S	**S**	**00 27 27.8 +5.2**	
KMI			SS	**SnSn**	**00 29 48.3 +2.4**	
KMI			pmax	pmax		
	comp=Z,26nm,1.1s					
KMI			pmax	pmax		
	comp=Z,540nm,7.1s					
KMI			LR	LR		
	comp=Z,3μm,17.1s					
KMI			LR	LR		
	comp=Z,5μm,17.1s					
KMI			LR	LR		
	comp=Z,4μm,17.4s					
PALK	**Pallekele**	**35.72 296**	LR	LR	00 37 32.6	
	comp=Z,4μm,19.7s,baz=115,slow=38					
PALK	**Pallekele**	**35.72 296**	*i*P	**P**	**00 21 55.0 +0.8**	
	SNR=14					
PALK	**Pallekele**	**35.72 296**	*e*P	**P**	**00 21 54.8 +0.6**	
PALK			pmax	pmax		
	comp=Z,66nm,1.0s					
PALK	**Pallekele**	**35.72 296**	*e*P	**P**	**00 21 54.8 +0.6**	
	comp=Z,66nm,1.0s					
PALK			LR	LR		
	comp=Z,3μm,20.0s					
GYA	**Guiyang**	**35.86 351** ⇑	*i*P	**P**	**00 21 56.9 +1.6**	
GYA			pP	pP	00 22 08.3 -0.8	
GYA			PP	**PP**	**00 23 21.0 +3.3**	
GYA			PcP	**PcP**	**00 24 23.8 +1.9**	
GYA			S	**S**	**00 27 35.0 +5.4**	
GYA			ScP	**ScP**	**00 28 06.9 +3.2**	
GYA			SS	**SnSn**	**00 29 57.8 +0.8**	
GYA			ScS	**ScS**	**00 32 11.4 +2.2**	
GYA			pmax	pmax		
	comp=Z,30nm,0.8s					
GYA			pmax	pmax		
	comp=Z,160nm,5.8s					
GYA			LR	LR		
	comp=Z,3μm,17.2s					
GYA			LR	LR		
	comp=Z,2μm,17.4s					
GYA			LR	LR		
	comp=Z,3μm,18.0s					
JOW	**Kunigami**	**38.87 23**	*e*P	**P**	**00 22 21.9 +1.2**	
	comp=Z,148nm,1.2s					
GUMO	**Guam**	**39.20 55**	P	**P**	**00 22 23.2 -0.5**	
	comp=Z,85nm,0.4s,baz=3.2,slow=23,SNR=5.4					
GUMO	**Guam**	**39.20 55**	*e*P	**P**	**00 22 24.0 +0.4**	
GUMO			pmax	pmax		
	comp=Z,460nm,1.3s					
GUMO	**Guam**	**39.20 55**	*e*P	**P**	**00 22 24.0 +0.4**	
ENH	**Enshi**	**39.30 356**	*e*P	**P**	**00 22 25.1 +0.8**	
	comp=Z,40nm,0.7s					
CHLP	**Challavanipeta**	**39.34 314**	*e*P	**P**	**00 22 24.3 -0.4**	
CHLP			IAmb	IAmb	00 22 25.6	
	comp=Z,48nm,0.8s					
CHLP			*e*S	**S**	**00 28 18.8 -3.6**	
CHLP			IVMs_BB	IVMs_BB	00 40 16.1	
	comp=Z,1μm,22.0s					
VIS	**Vishakhapatnam**	**39.35 313**	*e*P	**P**	**00 22 24.9 +0.2**	
BWNR	**Bhubaneshwar**	**39.38 318**	*e*P	**P**	**00 22 24.8 -0.2**	
BWNR			IAmb	IAmb	00 22 24.8	
	comp=Z,284nm,2.0s					
WHN	**Wuhan**	**39.50 2** ⇑	P	**P**	**00 22 27.8 +2.0**	
WHN			S	**S**	**00 28 26.3 +1.9**	
WHN			LR	LR		
	comp=Z,8μm,20.0s					
WHN			LR	LR		
	comp=Z,1μm,17.8s					
WHN			LR	LR		
	comp=Z,10μm,21.4s					
TRD	**Trivandrum**	**39.59 295**	*e*P	**P**	**00 22 25.1 -1.8**	
RABL	**Rabaul**	**39.59 86**	PFAKE		00 22 40.0 +13	
RABL			LR	LR		
	comp=Z,2μm,22.0s					
H08S2	**Diego Garcia H**	**39.68 269**	P	**P**	**00 22 28.6 +1.2**	
	baz=55,slow=9.8,SNR=5.2					
H08S2			T	T	01 04 36.7	
	baz=95,slow=75,SNR=77					
H08S3	**Diego Garcia H**	**39.69 269**	P	**P**	**00 22 28.0 +0.5**	
	baz=55,slow=9.8,SNR=5.6					
H08S3			T	T	01 04 35.5	
	baz=95,slow=75,SNR=77					
H08S1	**Diego Carcia H**	**39.70 269**	P	**P**	**00 22 28.6 +1.7**	
	baz=55,slow=9.8,SNR=9.9					
H08S1			T	T	01 04 35.0	
	baz=95,slow=75,SNR=82					
DGAR	**Diego Garcia**	**39.74 269** ⇓	*e*P	**P**	**00 22 29.3 +1.1**	
DGAR	**Diego Garcia**	**39.74 269**	PFAKE		00 22 40.0 +12	
DGAR			LR	LR		
	comp=Z,4μm,21.0s					
SKHT	**Srikalahasti**	**39.77 304**	*e*P	**P**	**00 22 27.6 -0.8**	
SKHT			IAmb	IAmb	00 22 28.8	
	comp=Z,105nm,1.3s					
SKHT			*e*S	**S**	**00 28 25.9 -3.1**	
SKHT			IVMs_BB	IVMs_BB	00 36 08.3	
	comp=Z,1μm,22.2s					
SHL	**Shillong**	**39.96 330**	*e*P	**P**	**00 22 29.3 -0.7**	
EIDS	**Eidsvold**	**39.96 119**	*e*P	**P**	**00 22 30.5 +0.6**	
	comp=Z,162nm,1.1s					
EIDS			LR	LR		
	comp=Z,7μm,21.0s					
PVM	**Polavaram**	**40.31 311**	*e*P	**P**	**00 22 32.3 -0.4**	
PVM			IAmb	IAmb	00 22 33.7	
	comp=Z,52nm,0.9s					
PVM			*e*S	**S**	**00 28 34.6 -2.3**	
PVM			IVMs_BB	IVMs_BB	00 37 07.2	
	comp=Z,1μm,31.2s					
CD2	**Chengdu**	**40.72 348**	P	**P**	**00 22 36.5 +0.5**	
CD2			sP	pP	00 22 45.3 -4.7	
CD2			PP	**PnPn**	**00 24 17.8 +2.5**	
CD2			S	**S**	**00 28 43.4 +0.6**	
CD2			sS	sS	00 29 00.1 -6.2	
CD2			pmax	pmax		
	comp=Z,140nm,0.9s					
CD2			pmax	pmax		
	comp=Z,310nm,6.7s					
CD2			LR	LR		
	comp=Z,4μm,17.8s					
CD2			LR	LR		
	comp=Z,4μm,27.3s					
ADKI	**Addanki**	**40.74 307**	*e*P	**P**	**00 22 36.2 -0.2**	
ADKI			IAmb	IAmb	00 22 38.3	
	comp=Z,23nm,0.7s					
ADKI			*e*PcP	**PcP**	**00 24 38.6 +1.5**	
ADKI			*e*S	**S**	**00 28 39.7 -3.7**	
ADKI			IVMs_BB	IVMs_BB	00 38 52.4	
	comp=Z,1μm,20.7s					
SSE	**Sheshan**	**40.85 11**	P	**P**	**00 22 38.8 +1.8**	
SSE			S	**S**	**00 28 44.8 +0.2**	
SSE			pmax	pmax		
	comp=Z,51nm,0.8s					
SSE			pmax	pmax		
	comp=Z,710nm,8.1s					
SSE			LR	LR		
	comp=Z,860nm,32.8s					
SSE			LR	LR		
	comp=Z,930nm,32.8s					
SSE			LR	LR		
	comp=Z,1μm,28.9s					
RCLA	**Racherla**	**41.33 306**	*e*P	**P**	**00 22 40.1 -1.1**	
RCLA			IAmb	IAmb	00 22 42.5	
	comp=Z,41nm,0.8s					
RCLA			*e*S	**S**	**00 28 47.2 -4.9**	
RCLA			IVMs_BB	IVMs_BB	00 41 24.5	
	comp=Z,1μm,22.6s					
NJ2	**Nanjing**	**41.40 8**	*e*P	**P**	**00 22 43.3 +1.8**	
NJ2			pP	**pP**	**00 22 53.3 -2.2**	
NJ2			S	**S**	**00 28 52.8 +0.1**	
NJ2			pmax	pmax		
	comp=Z,33nm,0.7s					
NJ2			pmax	pmax		
	comp=Z,890nm,7.0s					
NJ2			LR	LR		
	comp=Z,2μm,19.5s					
NJ2			LR	LR		
	comp=Z,1μm,22.8s					
NJ2			LR	LR		
	comp=Z,2μm,22.8s					
NJS	**Nagarjunasagar**	**41.67 308**	*e*P	**P**	**00 22 42.9 -1.1**	
NJS			IAmb	IAmb	00 22 44.3	
	comp=Z,36nm,1.0s					
NJS			*e*S	**S**	**00 28 54.2 -3.0**	
NJS			IVMs_BB	IVMs_BB	00 41 19.1	
	comp=Z,810nm,18.3s					
SRLM	**Srisailam**	**41.74 307**	*e*P	**P**	**00 22 43.5 -1.1**	
SRLM			IAmb	IAmb	00 22 44.8	
	comp=Z,34nm,1.0s					
SRLM			*e*S	**S**	**00 28 55.1 -3.2**	
SRLM			IVMs_BB	IVMs_BB	00 41 29.6	
	comp=Z,912nm,22.3s					
BOK	**Bokaro**	**41.87 322**	*e*P	**P**	**00 22 46.1 +0.6**	
BOK			IAmb	IAmb	00 22 46.9	
	comp=Z,36nm,1.1s					
ARMA	**Armidale**	**42.09 126**	*e*P	**P**	**00 22 48.5 +1.0**	
	comp=Z,65nm,0.9s					
CAN	**Canberra**	**42.20 134**	*e*P	**P**	**00 22 48.8 +0.5**	
CAN			pmax	pmax		
	comp=Z,170nm,1.4s					
CAN	**Canberra**	**42.20 134**	*e*P	**P**	**00 22 48.8 +0.5**	
	comp=Z,170nm,1.4s					
CAN			LR	LR		
	comp=Z,8μm,20.0s					
URV	**Uravakonda**	**42.42 304**	*e*P	P	00 22 44.9 -5.3	
HYB	**Hyderabad**	**42.76 308**	*i*P	**P**	**00 22 52.0 -0.9**	
HYB			*e*S	**S**	**00 29 14.0 +0.7**	
HYB	**Hyderabad**	**42.76 308**	*e*P	**P**	**00 22 51.5 -1.4**	
HYB			IAmb	IAmb	00 22 52.9	
	comp=Z,45nm,0.9s					
HYBB	**Hyderabad (bro**	**42.76 308**	*e*P	**P**	**00 22 51.8 -1.1**	
HYBB			IAmb	IAmb	00 22 53.7	
	comp=Z,42nm,0.7s					
HYBB			*e*S	**S**	**00 29 09.9 -3.4**	
HYBB			IVMs_BB	IVMs_BB	00 40 03.4	
	comp=Z,779nm,18.3s					
RPR	**Rampur**	**43.04 310**	*e*P	**P**	**00 22 54.3 -0.8**	
RPR			IAmb	IAmb	00 22 55.5	
	comp=Z,74nm,0.9s					
RPR			*e*S	**S**	**00 29 13.1 -4.2**	
RPR			IVMs_BB	IVMs_BB	00 38 41.4	
	comp=Z,1μm,25.9s					
XAN	**Xi'an**	**43.09 356**	P	**P**	**00 22 55.6 +0.3**	
XAN			pP	pP	00 23 05.4 -4.0	
XAN			sP	sP	00 23 09.4 -6.2	
XAN			PP	**PP**	**00 24 37.1 +0.7**	
XAN			S	**S**	**00 29 14.9 -2.8**	
XAN			sS	sS	00 29 30.9 -10	
XAN			pmax	pmax		
	comp=Z,44nm,0.6s					
XAN			LR	LR		
	comp=Z,3μm,20.5s					
XAN			LR	LR		
	comp=Z,2μm,17.4s					
XAN			LR	LR		
	comp=Z,4μm,18.4s					
LSA	**Lhasa**	**43.79 333**	*e*P	**P**	**00 23 02.7 +1.1**	
LSA			pmax	pmax		
	comp=Z,92nm,1.0s					
LSA	**Lhasa**	**43.79 333**	*e*P	**P**	**00 23 02.7 +1.1**	
	comp=Z,92nm,1.0s					
SRSP	**Sriramsagar**	**43.80 310**	*e*P	**P**	**00 23 00.1 -1.2**	
SRSP			IAmb	IAmb	00 23 01.4	
	comp=Z,96nm,0.9s					
SRSP			*e*S	**S**	**00 29 23.5 -5.0**	
SRSP			IVMs_BB	IVMs_BB	00 38 59.1	
	comp=Z,1μm,28.0s					
NGP	**Nagpur**	**44.63 313**	*e*P	**P**	**00 23 06.8 -1.1**	
NGP			IAmb	IAmb	00 23 08.3	
	comp=Z,69nm,0.7s					
KLRI	**Killari**	**44.65 307**	*e*P	**P**	**00 23 07.2 -0.9**	
KLRI			IAmb	IAmb	00 23 08.2	
	comp=Z,87nm,0.8s					
KLRI			*e*S	**S**	**00 29 37.4 -3.6**	
KLRI			IVMs_BB	IVMs_BB	00 40 34.3	
	comp=Z,1μm,23.1s					
GUN	**Gumba**	**45.00 326**	*e*P	**P**	**00 23 11.0 -0.1**	
	comp=Z,172nm,0.6s					
PKIN	**Phulchoki**	**45.02 325**	*e*P	**P**	**00 23 11.4 +0.2**	
	comp=Z,37nm,0.6s					
DMN	**Daman**	**45.20 325**	*e*P	**P**	**00 23 12.2 -0.4**	
KKN	**Kakani**	**45.24 325**	*e*P	**P**	**00 23 12.4 -0.5**	
	comp=Z,90nm,0.7s					
TAU	**Tasmania Unive**	**45.30 144**	PFAKE		00 23 20.0 +7.1	
TAU			LR	LR		
	comp=Z,4μm,20.0s					
TIA	**Tai'an**	**45.32 5** ⇓	P	**P**	**00 23 12.9 -0.2**	
TIA			S	**S**	**00 29 44.9 -5.1**	
TIA			pmax	pmax		
	comp=Z,30nm,0.8s					
TIA			LR	LR		
	comp=Z,2μm,25.0s					
TIA			LR	LR		
	comp=Z,920nm,19.0s					
TIA			LR	LR		
	comp=Z,3μm,21.8s					
JNU	**Nakatsue**	**45.50 22**	P	**P**	**00 23 14.2 -0.4**	
	comp=Z,21nm,1.0s,baz=183,slow=6.1,SNR=11					
JNU			LR	LR	00 43 06.2	
	comp=Z,860nm,20.8s,baz=178,slow=37					
JNU	**Nakatsue**	**45.50 22**	*e*P	**P**	**00 23 14.2 -0.4**	
	comp=Z,130nm,1.4s					
JNU			LR	LR		
	comp=Z,2μm,22.0s					
GOA	**Goa**	**45.54 302**	*e*P	**P**	**00 23 15.1 0.0**	
GOA			IAmb	IAmb	00 23 16.2	
	comp=Z,120nm,0.3s					
LZH	**Lanzhou**	**45.74 350** ⇑	P	**P**	**00 23 18.4 +1.8**	
LZH			pP	pP	00 23 30.3 -0.5	
LZH			PP	**PP**	**00 25 05.0 +0.3**	
LZH			S	**S**	**00 29 59.3 +2.9**	
LZH			sS	sS	00 30 17.0 -3.2	
LZH			SS	**ScS**	**00 33 14.0 +5.8**	
LZH			pmax	pmax		
	comp=Z,69nm,1.0s					
LZH			pmax	pmax		
	comp=Z,280nm,4.0s					
LZH			LR	LR		
	comp=Z,2μm,15.0s					
LZH			LR	LR		
	comp=Z,2μm,16.6s					
LZH			LR	LR		
	comp=Z,3μm,16.8s					
GKN	**Gorkha**	**45.77 325**	*e*P	**P**	**00 23 16.5 -0.5**	
	comp=Z,39nm,0.3s					
CBIJ	**Chichi jima**	**46.06 38**	*e*P	**P**	**00 23 18.1 -1.0**	
	comp=Z,300nm,0.8s					
JCJ	**Chichijima**	**46.06 38**	P	**P**	**00 23 18.1 -1.0**	
	comp=Z,107nm,0.4s,baz=288,slow=22,SNR=12					
KOLN	**Koldanda**	**46.20 323**	*e*P	**P**	**00 23 19.8 -0.6**	
	comp=Z,124nm,0.5s					
TIY	**Taiyuan**	**46.61 360**	*e*P	**P**	**00 23 23.5 +0.1**	
TIY			S	**S**	**00 30 05.1 -3.6**	
TIY			pmax	pmax		
	comp=Z,23nm,0.5s					
TIY			pmax	pmax		
	comp=Z,490nm,6.3s					
TIY			LR	LR		
	comp=Z,2μm,17.6s					
TIY			LR	LR		
	comp=Z,650nm,12.9s					
TIY			LR	LR		
	comp=Z,1μm,17.9s					
HNR	**Honiara**	**46.71 94**	*e*P	**P**	**00 23 24.0 -0.5**	
HNR	**Honiara**	**46.71 94**	*e*P	**P**	**00 23 24.6 +0.2**	
HNR			pmax	pmax		
	comp=Z,510nm,1.0s					
HNR	**Honiara**	**46.71 94**	*e*P	**P**	**00 23 24.6 +0.2**	
	comp=Z,511nm,0.9s					
PYUN	**Piuthan**	**46.80 323**	*e*P	**P**	**00 23 24.5 -0.7**	
	comp=Z,92nm,0.6s					
POO	**Poona**	**47.09 306**	*e*P	**P**	**00 23 25.2 -2.1**	
BHPL	**Bhopal**	**47.11 314**	*e*P	**P**	**00 23 26.4 -1.1**	
BHPL			IAmb	IAmb	00 23 27.1	
	comp=Z,314nm,1.4s					
TJN	**Taejon**	**47.37 16**	*d i*P	**P**	**00 23 29.4 +0.3**	
PATS	**Pohnpei**	**48.25 72**	*e*P	**P**	**00 23 35.8 -0.7**	
	comp=Z,326nm,1.4s					
KS15	**Wonju Array Si**	**48.51 16**	*e*P	**P**	**00 23 39.0 +1.1**	
KSAR	**Wonju Array Be**	**48.51 16**	P	**P**	**00 23 39.1 +1.1**	
KSAR	**Wonju Array Be**	**48.51 16**	P	**P**	**00 23 39.0 +1.1**	
KSRS	**Korea Array**	**48.53 16**	P	**P**	**00 23 39.0 +0.9**	
	comp=Z,46nm,1.1s,baz=200,slow=7.5,SNR=84					
KSRS			LR	LR	00 44 50.1	
	comp=Z,678nm,21.1s,baz=215,slow=37					
DL2	**Dalian**	**48.54 9**	P	**P**	**00 23 38.1 -0.1**	
DL2			S	**S**	**00 30 39.4 +3.6**	
DL2			pmax	pmax		
	comp=Z,59nm,0.8s					
DL2			pmax	pmax		
	comp=Z,700nm,7.9s					
DL2			LR	LR		
	comp=Z,2μm,19.4s					
DL2			LR	LR		
	comp=Z,900nm,20.6s					
DL2			LR	LR		
	comp=Z,3μm,20.0s					
KS01	**Wonju Array Si**	**48.55 16**	*e*P	**P**	**00 23 37.7 -0.5**	
BJT	**Baijiatuau**	**49.03 4**	*e*P	**P**	**00 23 42.4 +0.5**	
BJT			pmax	pmax		
	comp=Z,47nm,0.8s					
BJT			MLR	MLR		
	comp=Z,3μm,21.0s					
BJT	**Baijiatuau**	**49.03 4**	*e*P	**P**	**00 23 42.4 +0.5**	
	comp=Z,46nm,0.8s					
BJT			LR	LR		
	comp=Z,3μm,21.0s					
BJI	**Beijing**	**49.05 4**	P	**P**	**00 23 42.3 +0.3**	
BJI			PP	**PP**	**00 25 32.1 -4.1**	
BJI			S	**S**	**00 30 41.1 -1.8**	
BJI			pmax	pmax		
	comp=Z,54nm,0.9s					
BJI			LR	LR		
	comp=Z,2μm,21.4s					
BJI			LR	LR		
	comp=Z,950nm,19.3s					
BJI			LR	LR		
	comp=Z,3μm,24.6s					
BTO	**Baotou**	**49.56 357**	*e*P	**P**	**00 23 46.1 0.0**	
GTA	**Gaotai**	**49.75 347** ⇓	P	**P**	**00 23 48.6 +1.0**	
GTA			pP	pP	00 23 58.4 -3.5	
GTA			sP	sP	00 24 02.3 -5.7	
GTA			PP	**PP**	**00 25 44.6 +1.9**	
GTA			ScP	**ScP**	**00 29 00.1 +0.9**	
GTA			S	**S**	**00 30 54.6 +1.6**	
GTA			sS	sS	00 31 10.1 -7.0	
GTA			ScS	**ScS**	**00 33 34.3 -0.3**	
GTA			SS	**SS**	**00 34 24.4 -2.0**	
GTA			pmax	pmax		
	comp=Z,20nm,1.0s					
GTA			pmax	pmax		
	comp=Z,280nm,6.2s					
GTA			LR	LR		
	comp=Z,2μm,17.1s					
GTA			LR	LR		
	comp=Z,2μm,19.5s					
GTA			LR	LR		
	comp=Z,2μm,26.1s					
HHC	**Hu-ho-hao-te**	**49.76 359**	*e*P	**P**	**00 23 48.4 +0.8**	
HHC			S	**S**	**00 30 54.5 +1.4**	
HHC			sS	sS	00 31 15.3 -1.8	
HHC			pmax	pmax		
	comp=Z,28nm,1.0s					
HHC			pmax	pmax		
	comp=Z,240nm,6.2s					
HHC			LR	LR		
	comp=Z,3μm,15.9s					
HHC			LR	LR		
	comp=Z,3μm,16.1s					
HHC			LR	LR		
	comp=Z,4μm,15.7s					
INU	**Inuyama**	**49.91 26**	*e*P	**P**	**00 23 48.1 -0.6**	
	comp=Z,144nm,1.0s					
DDI	**Dehra Dun**	**51.39 321**	*e*P	**P**	**00 23 59.7 -0.3**	
MAJO	**Matsushiro**	**51.44 26**	*e*P	**P**	**00 23 59.1 -1.1**	
MAJO			pmax	pmax		
	comp=Z,120nm,1.0s					
MAJO	**Matsushiro**	**51.44 26**	*e*P	**P**	**00 23 59.1 -1.1**	
	comp=Z,123nm,1.0s					
MAT	**Matsushiro**	**51.44 26**	P	**P**	**00 23 59.1 -1.1**	
MAT			S	**S**	**00 31 08.6 -7.7**	
MJAR	**Matsushiro Arr**	**51.44 26**	P	**P**	**00 23 59.2 -0.9**	
	comp=Z,105nm,1.0s,baz=200,slow=7.7,SNR=79					
MJAR			LR	LR	00 46 25.7	
	comp=Z,683nm,20.9s,baz=210,slow=37					
MJAR	**Matsushiro Arr**	**51.44 26**	P	**P**	**00 23 59.3 -0.9**	
MJAR			pmax	pmax		
	comp=Z,104nm,1.0s					
MJAR			MLR	MLR		
	comp=Z,683nm,20.9s					
SNY	**Shenyang**	**51.72 10** ⇓	P	**P**	**00 24 01.8 -0.4**	
SNY			PP	**PP**	**00 26 00.0 -0.4**	
SNY			S	**S**	**00 31 12.8 -7.1**	

SNY				pmax	pmax		
	comp=Z,74nm,1.4s						
SNY				LR	LR		
	comp=Z,1μm,22.0s						
SNY				LR	LR		
	comp=Z,850nm,28.6s						
SNY				LR	LR		
	comp=Z,2μm,24.6s						
SMLA	**Simla**	**52.50**	**321**	*e*P	**P**	**00 24 06.1**	**-2.1**
BHJ	**Bhuj**	**52.92**	**308**	*e*P	**P**	**00 24 12.5**	**+1.0**
BHJ				IAmb	IAmb	00 24 13.4	
	comp=Z,23nm,0.6s						
DHRM	**DHARAMSHALA**	**53.80**	**322**	*e*P	**P**	**00 24 16.1**	**-2.0**
DHRM				IAmb	IAmb	00 24 17.5	
	comp=Z,104nm,1.1s						
CN2	**Changchun**	**53.98**	**11**	*e*P	**P**	**00 24 18.3**	**-0.5**
CN2				*es*P	pP	00 24 32.3	-1.0
CN2				*e*S	**S**	**00 31 43.8**	**-6.9**
CN2				pmax	pmax		
	comp=Z,70nm,1.0s						
CN2				LR	LR		
	comp=Z,900nm,23.0s						
CN2				LR	LR		
	comp=Z,700nm,23.0s						
CN2				LR	LR		
	comp=Z,2μm,26.0s						
MRIV	**Mauritius Mete**	**54.20**	**252**	*e*P	**P**	**00 24 21.4**	**+0.4**
MSHR	**Mys Shultsa**	**54.20**	**17***d i*P		**P**	**00 24 20.6**	**+0.1**
VLA	**Vladivostok**	**54.91**	**17***de*P		**P**	**00 24 26.0**	**+0.4**
VLA				pmax	pmax		
	comp=Z,124nm,1.5s						
MDJ	**Mudanjiang**	**55.68**	**15**	P	**P**	**00 24 31.1**	**0.0**
MDJ				pP	pP	00 24 37.8	-7.8
MDJ				sP	sP	00 24 44.6	-7.1
MDJ				S	**S**	**00 32 10.6**	**-2.9**
MDJ				sS	sS	00 32 31.1	-6.8
MDJ				ScS	**ScS**	**00 34 10.8**	**-4.8**
MDJ				pmax	pmax		
	comp=Z,93nm,1.1s						
MDJ				LR	LR		
	comp=Z,550nm,21.6s						
MDJ				LR	LR		
	comp=Z,910nm,26.2s						
MDJ				LR	LR		
	comp=Z,810nm,26.2s						
MDJ	**Mudanjiang**	**55.68**	**15**	*e*P	**P**	**00 24 31.3**	**+0.2**
	comp=Z,84nm,0.8s						
MDJ				LR	LR		
	comp=Z,1μm,21.0s						
RER	**Riviere de l'E**	**55.89**	**251**	*e*P	**P**	**00 24 33.6**	**+0.4**
	comp=Z,118nm,0.9s						
USRK	**Ussuriysk Ar.**	**55.93**	**17**	P	**P**	**00 24 33.0**	**0.0**
	comp=Z,94nm,0.8s,baz=197,slow=5.3,SNR=166						
USRK				LR	LR	00 49 57.4	
	comp=Z,476nm,21.5s,baz=203,slow=38						
ULN	**Ulaanbaatar**	**56.97**	**356**	*e*P	**P**	**00 24 39.9**	**-0.6**
ULN				pmax	pmax		
	comp=Z,33nm,0.9s						
ULN	**Ulaanbaatar**	**56.97**	**356**	P	**P**	**00 24 41.0**	**+0.5**
	SNR=23						
ULN	**Ulaanbaatar**	**56.97**	**356**	P	**P**	**00 24 41.0**	**+0.5**
	SNR=23						
ULN	**Ulaanbaatar**	**56.97**	**356**	*e*P	**P**	**00 24 39.9**	**-0.6**
	comp=Z,33nm,0.9s						
SONA0	**Songino Array**	**57.00**	**355**	*e*P	**P**	**00 24 40.8**	**+0.1**
SONM	**Songino Array**	**57.00**	**355**	P	**P**	**00 24 40.8**	**+0.1**
	comp=Z,16nm,0.6s,baz=173,slow=8.6,SNR=30						
SONM				LR	LR	00 51 58.5	
	comp=Z,3μm,19.5s,baz=185,slow=39						
CASY	**Casey**	**57.07**	**181**	*e*P	**P**	**00 24 38.8**	**-1.9**
	comp=Z,39nm,1.3s						
CASY				LR	LR		
	comp=Z,4μm,22.0s						
WMQ	**Urumqi**	**57.36**	**339**⇓	*i*P	**P**	**00 24 43.6**	**+0.4**
WMQ				pP	pP	00 24 50.0	-7.8
WMQ				sP	sP	00 24 55.0	-8.9
WMQ				S	**S**	**00 32 36.3**	**+0.3**
WMQ				sS	sS	00 32 51.0	-9.4
WMQ				ScS	**ScS**	**00 34 27.3**	**-0.7**
WMQ				SS	**SS**	**00 36 31.4**	**+5.0**
WMQ				pmax	pmax		
	comp=Z,8.0nm,1.6s						
WMQ				pmax	pmax		
	comp=Z,160nm,3.6s						
WMQ				LR	LR		
	comp=Z,320nm,22.2s						
WMQ				LR	LR		
	comp=Z,400nm,24.8s						
WMQ				LR	LR		
	comp=Z,580nm,32.2s						
ERM	**Erimo**	**58.11**	**27***c i*P		**P**	**00 24 48.3**	**-0.1**
ERM				pmax	pmax		
	comp=Z,202nm,1.2s						
ERM	**Erimo**	**58.11**	**27**	*e*P	**P**	**00 24 48.6**	**+0.2**
	comp=Z,175nm,1.1s						
HIA	**Hailar**	**58.50**	**5**	*e*P	**P**	**00 24 50.9**	**-0.1**
HIA				pmax	pmax		
	comp=Z,102nm,1.7s						
HIA	**Hailar**	**58.50**	**5**	*e*P	**P**	**00 24 50.9**	**-0.1**
	comp=Z,102nm,1.7s						
MIR	**Mirnyy**	**58.86**	**189**	*i* P	**P**	**00 24 50.0**	**-3.3**
MIR				pmax	pmax		
	comp=Z,6.0nm,1.5s						
DCZ	**Deep Cove**	**59.00**	**138**	*e*P	**P**	**00 24 53.1**	**-1.5**
	comp=Z,126nm,1.1s						
KSH	**Kashi**	**59.14**	**327**	P	**P**	**00 24 54.3**	**-1.5**
KSH				*ep*P	pP	00 25 04.8	-5.6
KSH				*es*P	sP	00 25 08.3	-8.2
KSH				*e*PP	**PP**	**00 27 05.8**	**-1.3**
KSH				PcS	**PcS**	**00 29 44.3**	**-1.6**
KSH				S	**S**	**00 32 54.1**	**-5.3**
KSH				pmax	pmax		
	comp=Z,22nm,0.8s						
KSH				LR	LR		
	comp=Z,790nm,16.0s						
KSH				LR	LR		
	comp=Z,1μm,19.1s						
KSH				LR	LR		
	comp=Z,1μm,20.5s						
ASAJ	**Asahikawa**	**59.58**	**25**	P	**P**	**00 24 57.0**	**-1.5**
	comp=Z,35nm,0.8s,baz=247,slow=14,SNR=20						
ASAJ	**Asahikawa**	**59.58**	**25**	P	**P**	**00 24 57.1**	**-1.5**
ASAJ				pmax	pmax		
	comp=Z,78nm,0.8s						
ASAJ	**Asahikawa**	**59.58**	**25**	*e*P	**P**	**00 24 57.0**	**-1.5**
	comp=Z,89nm,0.8s						
ASAJ				LR	LR		
	comp=Z,800nm,20.0s						
MLZ	**Mavora Lakes**	**59.60**	**138**	*e*P	**P**	**00 24 59.3**	**+0.5**
	comp=Z,139nm,1.2s						
ZAK	**Zakamensk**	**59.83**	**353**	*e*P	**P**	**00 24 59.1**	**-1.2**
ZAK				*e*		00 34 45.8	
ZAK				pmax	pmax		
	comp=Z,24nm,1.2s						
KBL	**Kabul**	**59.89**	**319**	*e*P	**P**	**00 24 59.8**	**-1.4**
KBL	**Kabul**	**59.89**	**319**	*e*P	**P**	**00 24 59.8**	**-1.4**
	comp=Z,97nm,1.4s						
KBL				LR	LR		
	comp=Z,1μm,18.0s						
WKZ	**Wanaka**	**60.03**	**137**	PFAKE		00 25 10.0	+8.2
WKZ				LR	LR		
	comp=Z,11μm,20.0s						
KLR	**Kul'dur**	**60.52**	**14**	P	**P**	**00 25 04.3**	**-0.5**
	comp=Z,15nm,0.5s,baz=215,slow=5.1,SNR=68						
LBZ	**Lake Benmore**	**60.69**	**136**	PFAKE		00 25 20.0	+14
LBZ				LR	LR		
	comp=Z,10μm,22.0s						
HABR	**Khabarovsk**	**60.70**	**17***de*P		**P**	**00 25 03.7**	**-2.4**
HABR				*e**SP	pP	00 25 12.5	-8.3
HABR				*e*		00 25 47.2	
HABR				*e*		00 27 17.7	
HABR				*e*S	**S**	**00 33 20.7**	**+1.9**
HABR				*e**SS	sS	00 33 31.2	-12
HABR				*e*		00 34 53.5	
HABR				*e*SS	**SS**	**00 37 20.8**	**+2.2**
HABR				pmax	pmax		
	comp=E,25nm,1.5s						
HABR				pmax	pmax		
	comp=Z,76nm,1.5s						
HABR				pmax	pmax		
	comp=N,10.0nm,0.8s						
HABR				MLR	MLR		
	comp=Z,224nm,18.0s						
YUK	**Yuzh-Kuril'sk**	**60.92**	**27**	*e*P	P	00 25 01.8	-5.9
YUK				*e*		00 25 46.2	
YUK				*e*		00 27 23.3	
YUK				*e*S	**S**	**00 33 19.2**	**-2.6**
YUK				*e*SS	**SS**	**00 37 26.0**	**+3.9**
YUK				pmax	pmax		
	comp=Z,805nm,2.2s						
YUK				pmax	pmax		
	comp=Z,461nm,1.1s						
CIT	**Chita**	**60.93**	**1**	*e*P	**P**	**00 25 07.0**	**-0.7**
CIT				*e*		00 25 19.0	
CIT				*e*		00 25 50.7	
CIT				pmax	pmax		
	comp=Z,225nm,1.7s						
TARA	**Tarawa**	**61.00**	**83**	PFAKE		00 25 20.0	+11
TARA				LR	LR		
	comp=Z,2μm,22.0s						
TLY	**Talaya**	**61.07**	**354***d i*P		**P**	**00 25 09.2**	**+0.6**
TLY				*e*S	**S**	**00 33 24.9**	**+1.3**
TLY				*e*		00 34 56.2	
TLY				pmax	pmax		
	comp=Z,43nm,1.3s						
TLY				MLR	MLR		
	comp=Z,2μm,18.0s						
TLY	**Talaya**	**61.07**	**354**	*e*P	**P**	**00 25 09.5**	**+0.8**
	comp=Z,59nm,1.4s						
TLY				LR	LR		
	comp=Z,2μm,18.0s						
RPZ	**Rata Peaks**	**61.10**	**135**	*e*P	**P**	**00 25 09.3**	**+0.2**
	comp=Z,215nm,1.1s						
RPZ				LR	LR		
	comp=Z,10μm,20.0s						
MOY	**Mondy**	**61.39**	**352**	*e*P	**P**	**00 25 11.3**	**+0.4**
MOY				pmax	pmax		
	comp=Z,84nm,3.2s						
IRK	**Irkutsk**	**61.56**	**354**	*e*P	**P**	**00 25 11.8**	**-0.1**
IRK				*e*		00 25 35.0	
IRK				pmax	pmax		
	comp=Z,117nm,1.9s						
OXZ	**Oxford**	**61.69**	**134**	*e*P	**P**	**00 25 13.1**	**+0.1**
	comp=Z,52nm,0.7s						
TKM2	**Tokmak 2**	**61.82**	**330**	*e*P	**P**	**00 25 13.6**	**-0.5**
TKM2	**Tokmak 2**	**61.82**	**330**	*e*P	**P**	**00 25 13.6**	**-0.5**
	comp=Z,52nm,0.9s						
MK01	**Makanchi Array**	**61.88**	**337**	*e*P	**P**	**00 25 13.5**	**-0.7**
MK31	**Makanchi Array**	**61.90**	**337**	*e*P	**P**	**00 25 14.0**	**-0.3**
MK31	**Makanchi Array**	**61.90**	**337**	*e*P	**P**	**00 25 14.0**	**-0.3**
MK32	**Makanchi Array**	**61.90**	**337**	*e*P	**P**	**00 25 13.5**	**-0.8**
MK32				⇑*e*		00 54 25.6	
MKAR	**Makanchi Array**	**61.90**	**337**	P	**P**	**00 25 13.5**	**-0.8**
	comp=Z,26nm,0.7s,baz=148,slow=7.4,SNR=188						
MKAR				PKPPKP	**P'P'df**	**00 54 25.6**	**+3.7**
	comp=Z,0.8nm,0.9s,baz=229,slow=4.6,SNR=4.3						
MKAR				PKP2bc		00 54 35.1	
	comp=Z,1.2nm,1.0s,baz=324,slow=6.0,SNR=4.8						
MKAR				LR	LR	00 56 19.1	
	comp=Z,1μm,18.7s,baz=148,slow=40						
MKAR	**Makanchi Array**	**61.90**	**337**	*e*P	**P**	**00 25 14.0**	**-0.4**
THZ	**Tophouse**	**61.93**	**133**	*e*P	**P**	**00 25 15.6**	**+0.8**
	comp=Z,200nm,1.2s						
YSS	**Yuzh-Sakhalins**	**61.98**	**23***κe*P		**P**	**00 25 15.1**	**+0.3**
YSS				*e**SP	**pP**	**00 25 30.2**	**+0.7**
YSS				*e*		00 27 33.1	
YSS				*e*S	**S**	**00 33 34.3**	**-0.9**
YSS				pmax	pmax		
	comp=Z,110nm,1.0s						
YSS				pmax	pmax		
	comp=Z,400nm,2.0s						
YSS				MLR	MLR		
	comp=Z,800nm,20.0s						
MAKZ	**Makanchi**	**62.03**	**337**	*e*P	**P**	**00 25 14.6**	**-0.6**
MAKZ				pmax	pmax		
	comp=Z,26nm,1.1s						
MAKZ	**Makanchi**	**62.03**	**337**	*e*P	**P**	**00 25 14.6**	**-0.6**
	comp=Z,26nm,1.1s						
AAK	**Ala-Archa**	**62.17**	**329**	*e*P	**P**	**00 25 16.7**	**+0.3**
AAK	**Ala-Archa**	**62.17**	**329**	*e*P	**P**	**00 25 16.7**	**+0.3**
	comp=Z,41nm,0.9s						
AAK				LR	LR		
	comp=Z,2μm,18.0s						
SMDO	**Samad**	**62.22**	**302**	P	**P**	**00 25 16.8**	**-0.3**
	SNR=9.4						
FRU	**Bishkek**	**62.25**	**329**⇓	*i*P	**P**	**00 25 16.0**	**-0.8**
FRU				pmax	pmax		
	comp=Z,140nm,2.0s						
FRU				MLR	MLR		
	comp=E,1μm,23.0s						
FRU				MLR	MLR		
	comp=Z,2μm,23.0s						
BIDO	**Bidbid**	**62.34**	**303**	P	**P**	**00 25 18.2**	**+0.5**
	SNR=12						
BIDO	**Bidbid**	**62.34**	**303**	P	**P**	**00 25 18.2**	**+0.5**
	SNR=12						
EKS2	**Erkin-Say**	**62.55**	**329**	*e*P	**P**	**00 25 19.3**	**+0.4**
EKS2	**Erkin-Say**	**62.55**	**329**	*e*P	**P**	**00 25 19.3**	**+0.4**
	comp=Z,72nm,1.0s						
EKS2				LR	LR		
	comp=Z,2μm,21.0s						
HIZ	**Hauiti**	**62.72**	**129**	PFAKE		00 25 30.0	+10
HIZ				LR	LR		
	comp=Z,4μm,20.0s						
SNZO	**South Karori**	**63.14**	**132**	PFAKE		00 25 40.0	+17
SNZO				LR	LR		
	comp=Z,5μm,19.0s						
MSVF	**Nonsavu**	**63.98**	**105**	*e*P	**P**	**00 25 29.1**	**+0.3**
MSVF	**Nonsavu**	**63.98**	**105**	*e*P	**P**	**00 25 29.1**	**+0.3**
	comp=Z,210nm,1.4s						
BKZ	**Black Stump Fm**	**64.09**	**129**	*e*P	**P**	**00 25 29.0**	**-0.1**
	comp=Z,207nm,1.1s						
BKZ				LR	LR		
	comp=Z,4μm,21.0s						
BFZ	**Birch Farm**	**64.17**	**131**	*e*P	**P**	**00 25 30.3**	**+0.7**
	comp=Z,285nm,1.5s						
BFZ				LR	LR		
	comp=Z,8μm,20.0s						
URZ	**Urewera**	**64.42**	**128**	*e*P	**P**	**00 25 30.8**	**-0.5**
	comp=Z,52nm,1.0s						
URZ				LR	LR		
	comp=Z,4μm,19.0s						
UOSS	**Minazif**	**64.53**	**303**	*e*P	**P**	**00 25 31.5**	**-0.7**
	comp=Z,4.4nm,0.9s						
UOSS				LR	LR		
	comp=Z,700nm,21.0s						
HATD	**Hatta, Dubai**	**64.54**	**303**	*i* P	**P**	**00 25 32.0**	**-0.3**
	SNR=26						
ASHO	**Ashiyiah**	**64.54**	**303**	*i* P	**P**	**00 25 32.0**	**-0.3**
	SNR=15						
ASHO				*i* P	**P**	**00 25 32.7**	**+0.4**
	SNR=29						
ASHO	**Ashiyiah**	**64.54**	**303**	P	**P**	**00 25 32.7**	**+0.4**
	SNR=16						
KKAR	**Karatay Array**	**64.58**	**327**	*e*P	**P**	**00 25 31.1**	**-1.1**
KKAR	**Karatay Array**	**64.58**	**327**	*e*P	**P**	**00 25 31.1**	**-1.1**
BANOM	**Banah**	**64.86**	**304**	*i* P	**P**	**00 25 33.7**	**-0.6**
	SNR=15						
FAQ	**Al Faqa, Dubai**	**64.96**	**303**	*i* P	**P**	**00 25 34.7**	**-0.3**
	SNR=24						
NAZ	**Nazwa, Dubai**	**65.00**	**303**	*i* P	**P**	**00 25 34.9**	**-0.3**
	SNR=16						
TYV	**Tymovskoe**	**65.20**	**20**	*e*P	**P**	**00 25 37.5**	**+1.5**
TYV				*e*S	**S**	**00 34 16.0**	**+0.9**
TYV				pmax	pmax		
	comp=E,52nm,1.4s						
TYV				pmax	pmax		
	comp=Z,79nm,1.4s						
TYV				pmax	pmax		
	comp=Z,900nm,6.0s						
TYV				smax	smax		
	comp=E,1μm,10.0s						
MXZ	**Matakaoa Point**	**65.26**	**127**	PFAKE		00 25 50.0	+13
MXZ				LR	LR		
	comp=Z,3μm,20.0s						
KURK	**Kurchatov**	**66.50**	**337**	*e*P	**P**	**00 25 43.9**	**-0.4**
KURK	**Kurchatov**	**66.50**	**337**	*e*P	**P**	**00 25 43.9**	**-0.4**
	comp=Z,38nm,0.7s						
KURK				LR	LR		
	comp=Z,1μm,22.0s						
NKL	**Nikolayevsk**	**66.51**	**18**	*e*P	**P**	**00 25 43.0**	**-1.3**
NKL				*e*		00 26 03.0	
NKL				*e*		00 34 28.0	
NKL				*e*		00 35 28.0	
NKL				pmax	pmax		
	comp=N,20nm,0.7s						
NKL				pmax	pmax		
	comp=Z,48nm,0.7s						
NKL				pmax	pmax		
	comp=Z,300nm,2.5s						
NKL				MLR	MLR		
	comp=N,350nm,15.0s						
NKL				MLR	MLR		
	comp=E,500nm,15.0s						
NKL				MLR	MLR		
	comp=Z,1μm,15.0s						
CLNS	**Chul'man**	**66.53**	**7**	*e*P	**P**	**00 25 44.3**	**-0.2**
CLNS				pmax	pmax		
	comp=Z,20nm,1.0s						
CLNS				pmax	pmax		
	comp=N,40nm,1.3s						
CLNS				pmax	pmax		
	comp=E,15nm,0.9s						
BOD	**Bodaibo**	**66.74**	**1**⇓	*i*P	**P**	**00 25 45.0**	**-0.7**
BOD				pmax	pmax		
	comp=Z,51nm,1.5s						
KRAR	**Krasnoyarsk**	**66.96**	**348**⇑	*i*P	**P**	**00 25 47.4**	**+0.3**
KRAR				pmax	pmax		
	comp=Z,104nm,1.7s						
MAW	**Mawson**	**67.01**	**199**	P	**P**	**00 25 46.5**	**-0.9**
	comp=Z,25nm,0.8s,baz=47,slow=7.8,SNR=42						
MAW				LR	LR	00 49 18.3	
	comp=Z,3μm,21.0s,baz=60,slow=31						
MAW				PKP2bc		00 54 18.3	
	comp=Z,2.1nm,0.7s,baz=250,slow=13,SNR=5.7						
MAW	**Mawson**	**67.01**	**199**	*e*P	**P**	**00 25 46.5**	**-0.9**
	comp=Z,8.2nm,0.9s						
MAW				⇑*e*		00 54 18.3	
MAW				LR	LR		
	comp=Z,600nm,20.0s						
ZAA0	**Zalesovo Array**	**67.10**	**343**	*e*P	**P**	**00 25 47.2**	**-0.9**
ZALV	**Zalesovo Beam**	**67.10**	**343**	P	**P**	**00 25 47.1**	**-0.9**
	comp=Z,44nm,0.6s,baz=154,slow=4.4,SNR=183						
ZALV				PKP2bc		00 54 15.2	
	comp=Z,2.8nm,1.1s,baz=291,slow=4.1,SNR=7.7						
ZALV				LR	LR	00 57 35.0	
	comp=Z,820nm,18.2s,baz=125,slow=38						
ZAA1	**Zalesovo Array**	**67.11**	**343**	*e*P	**P**	**00 25 47.1**	**-1.0**
ZAA1				⇑*e*		00 54 15.2	
NVS	**Novosibirsk**	**68.34**	**342**⇓	*i*P	**P**	**00 25 54.8**	**-1.1**
NVS				*e*S	**S**	**00 34 49.2**	**-3.7**
NVS				*e*PS	**PnS**	**00 35 14.5**	**-8.8**
NVS				pmax	pmax		
	comp=Z,55nm,1.6s						
NVS				pmax	pmax		
	comp=N,36nm,1.7s						
NVS				pmax	pmax		
	comp=E,23nm,1.4s						
NVS				smax	smax		
	comp=E,28nm,1.6s						
GEYT	**Alibeck**	**69.08**	**316**	P	**P**	**00 26 01.0**	**+0.1**
	comp=E,14nm,0.6s,baz=144,slow=5.3,SNR=47						
GEYT				PKP2bc		00 54 10.8	
	comp=E,1.0nm,0.4s,baz=272,slow=8.5,SNR=7.0						
SKR	**Severo-Kuril's**	**70.51**	**28**	*e*P	P	00 26 20.0	+11
SKR				*e*		00 35 12.0	
BVAR	**Borovoye Array**	**71.58**	**335**	P	**P**	**00 26 15.3**	**-0.5**
	comp=E,12nm,0.7s,baz=141,slow=8.4,SNR=60						
DAMY	**Dhamar**	**71.60**	**289**	*e*P	**P**	**00 26 18.7**	**+1.6**
	comp=E,73nm,0.9s						
DAMY				LR	LR		
	comp=Z,700nm,21.0s						
BRVK	**Borovoye**	**71.65**	**335***ce*P		**P**	**00 26 15.3**	**-0.9**
BRVK				pmax	pmax		
	comp=Z,43nm,2.5s						
BRVK	**Borovoye**	**71.65**	**335**	*e*P	**P**	**00 26 15.8**	**-0.4**
	comp=Z,20nm,1.0s						
BRVK				LR	LR		
	comp=Z,2μm,22.0s						
ZRNK	**Zerenda**	**72.12**	**334**	*e*P	**P**	**00 26 18.4**	**-0.7**
ZRNK	**Zerenda**	**72.12**	**334**	*e*P	**P**	**00 26 18.4**	**-0.7**
	comp=Z,21nm,0.7s						
ZRNK				LR	LR		
	comp=Z,2μm,22.0s						
YAK	**Yakutsk**	**72.20**	**8***d i*P		**P**	**00 26 18.9**	**-0.4**
YAK				*e*		00 26 35.6	
YAK				*e**PP	**sP**	**00 26 42.2**	**+1.9**
YAK				*e*		00 28 57.7	
YAK				*e*S	**S**	**00 35 31.0**	**-6.6**
YAK				*e*		00 36 12.9	
YAK				*e**SS	**SKSac**	**00 36 15.9**	**-2.9**
YAK				*e*SS	**SS**	**00 40 09.7**	**-6.7**
YAK				pmax	pmax		
	comp=Z,144nm,0.9s						
YAK				pmax	pmax		
	comp=N,62nm,1.2s						
YAK				pmax	pmax		
	comp=E,29nm,1.1s						
YAK				pmax	pmax		
	comp=Z,28nm,1.4s						
YAK				pmax	pmax		
	comp=N,49nm,2.2s						
YAK				pmax	pmax		
	comp=E,26nm,1.4s						
YAK				smax	smax		
	comp=E,297nm,4.9s						
YAK				smax	smax		
	comp=N,808nm,6.3s						
YAK				MLR	MLR		
	comp=Z,736nm,21.0s						
YAK				MLR	MLR		
	comp=E,418nm,22.0s						
YAK				MLR	MLR		
	comp=N,442nm,22.0s						
YAK	**Yakutsk**	**72.20**	**8**	*e*P	**P**	**00 26 19.0**	**-0.3**
	comp=N,190nm,0.9s						
VNDA	**Vanda**	**72.88**	**170**	P	**P**	**00 26 22.5**	**-0.7**
	comp=N,20nm,0.9s,baz=307,slow=6.0,SNR=84						
VNDA				LR	LR	00 55 06.5	
	comp=N,4μm,21.6s,baz=342,slow=33						
PEA0	**Petropavlovsk-**	**72.89**	**27**	*e*P	**P**	**00 26 23.6**	**-0.1**
PEA0B	**Petropavlovsk-**	**72.89**	**27**	*e*P	**P**	**00 26 23.5**	**-0.2**
	comp=N,98nm,1.0s						
PEA0B				LR	LR		
	comp=Z,500nm,19.0s						
PETK	**Petropavlovsk-**	**72.89**	**27**	P	**P**	**00 26 23.6**	**-0.1**
	comp=Z,26nm,0.5s,baz=226,slow=0.6,SNR=68						
PETK				LR	LR	00 59 08.0	
	comp=Z,292nm,21.2s,baz=246,slow=36						
PEA1	**Petropavlovsk-**	**72.90**	**27**	*e*P	**P**	**00 26 23.6**	**-0.1**
PET	**Petropavlovsk**	**73.26**	**27**	*e*P	**P**	**00 26 24.9**	**-0.9**
PET				*e*S	**S**	**00 35 49.3**	**-0.8**
PET				pmax	pmax		
	comp=Z,80nm,1.6s						
PET				pmax	pmax		
	comp=Z,400nm,19.9s						
PET				pmax	pmax		
	comp=Z,500nm,15.5s						
PET	**Petropavlovsk**	**73.26**	**27**	*e*P	**P**	**00 26 25.3**	**-0.5**
	comp=Z,58nm,1.1s						
PET				LR	LR		
	comp=Z,400nm,21.0s						
SBA	**Scott Base**	**73.93**	**170**	*e*P	**P**	**00 26 29.2**	**-0.2**
SBA	**Scott Base**	**73.93**	**170**	*e*P	**P**	**00 26 29.2**	**-0.2**
	comp=Z,45nm,1.1s						
SBA				LR	LR		
	comp=Z,3μm,21.0s						
AFI	**Afiamalu**	**74.00**	**102**	LR	LR	01 00 40.9	
	comp=Z,561nm,18.4s,baz=256,slow=37						
AFI	**Afiamalu**	**74.00**	**102**	*e*P	**P**	**00 26 33.2**	**+2.1**
AFI	**Afiamalu**	**74.00**	**102**	*e*P	**P**	**00 26 33.2**	**+2.1**
	comp=Z,238nm,1.4s						
ABKAR	**Akbulak array**	**74.14**	**327**	*e*P	**P**	**00 26 30.6**	**-0.5**
KMBO	**Kilima Mbogo**	**75.34**	**271**	*e*P	**P**	**00 26 40.0**	**+0.9**
KMBO	**Kilima Mbogo**	**75.34**	**271**	P	**P**	**00 26 40.8**	**+1.7**
	SNR=7.7						
KMBO	**Kilima Mbogo**	**75.34**	**271**	*e*P	**P**	**00 26 40.0**	**+0.9**
	comp=Z,27nm,1.0s						
KMBO				LR	LR		
	comp=Z,3μm,22.0s						
SYO	**Syowa Base**	**75.44**	**201**⇑	*i*X	**P**	**00 26 35.0**	**-3.3**
FURI	**Furi**	**75.75**	**282**	P	**P**	**00 26 44.5**	**+3.0**
FURI				S	**pP**	**00 26 56.6**	**0.0**
FURI	**Furi**	**75.75**	**282**	*e*P	**P**	**00 26 44.7**	**+3.2**
	comp=Z,170nm,1.4s						
FURI				LR	LR		
	comp=Z,3μm,22.0s						
AKTO	**Aktyubinsk**	**75.84**	**327**	P	**P**	**00 26 41.0**	**+0.1**
	comp=Z,24nm,0.6s,baz=118,slow=3.8,SNR=100						
AKTO	**Aktyubinsk**	**75.84**	**327**	P	**P**	**00 26 41.0**	**+0.1**
AKTO				pmax	pmax		
	comp=Z,24nm,0.6s						
SEY	**Seymchan**	**78.08**	**17**⇓	*i*P	**P**	**00 26 52.5**	**-0.6**
SVE	**Sverdlovsk**	**78.31**	**334***c i*P		**P**	**00 26 54.8**	**+0.3**
SVE				*e*S	**S**	**00 36 43.7**	**-1.9**
SVE				pmax	pmax		
	comp=Z,81nm,0.8s						
**

ARU 00 29 54.1
ARU PPP PPP 00 31 42.2
ARU S **S** **00 36 58.1 +5.2**
ARU SS **SS** **00 41 58.2 -1.5**
ARU pmax pmax
comp=Z,122nm,1.7s
ARU MLR MLR
comp=Z,2μm,23.0s
ARU Arti 78.99 333 *e*P **P** **00 26 56.8 -1.6**
comp=Z,153nm,1.5s
ARU LR LR
comp=Z,2μm,22.0s
CUKT Cukurca 79.20 311 *e*P **P** **00 26 59.6 -0.4**
HAKT HAKKARI 79.23 311 *i* P **P** **00 27 00.5 +0.1**
GNI Garni 79.40 314 *e*P **P** **00 27 01.8 +0.6**
GNI pmax pmax
comp=Z,123nm,1.1s
GNI MLR MLR
comp=Z,700nm,21.0s
GNI Garni 79.40 314 *e*P **P** **00 27 01.8 +0.6**
comp=Z,122nm,1.1s
GNI LR LR
comp=Z,700nm,21.0s
DGRG David-gareji 79.44 315 P **P** **00 27 02.6 +1.4**
DGRG David-gareji 79.44 315 P **P** **00 27 02.5 +1.4**
CLDR Caldiran 79.63 313 *e*P **P** **00 27 00.1 -2.4**
DYDN Diyadin 79.94 313 *i* P **P** **00 27 05.2 +1.1**
TBLG Delisi 79.98 315 *e*P **P** **00 27 04.8 +0.7**
TBLG Delisi 79.98 315 P **P** **00 27 04.8 +0.7**
TBLG Delisi 79.98 315 P **P** **00 27 04.8 +0.7**
NRIK Noril'sk 80.22 351 P **P** **00 27 04.6 -0.1**
comp=Z,19nm,0.8s,baz=145,slow=5.1,SNR=49
NRIK LR LR 01 07 23.7
comp=Z,2μm,18.2s,baz=156,slow=39
EAK Akyaka 80.40 314 *i* P **P** **00 27 07.9 +1.3**
GUDG Gudauri 80.44 316 P **P** **00 27 08.7 +1.9**
BGD Bogdanovka 80.61 314 P **P** **00 27 08.4 +0.6**
SMY Shemya 80.73 33 *e*P **P** **00 27 07.4 -0.4**
SMY Shemya 80.73 33 *e*P **P** **00 27 07.4 -0.4**
comp=Z,104nm,1.0s
AKH Akhalkalaki 80.74 315⇓*i*P **P** **00 27 09.6 +1.2**
KARS Kars 80.75 314 *e*P **P** **00 27 09.9 +1.4**
QSPA South Pole Qui 80.85 180 *e*P **P** **00 27 07.7 -0.8**
EATA Eleskirt 80.91 313 *i* P **P** **00 27 10.7 +1.1**
ZEI Tsey 80.95 316 *e*P **P** **00 27 10.5 +1.0**
ZEI *e*S **S** **00 37 10.8 -3.8**
ZEI pmax pmax
comp=Z,157nm,0.7s
ZEI pmax pmax
comp=E,145nm,0.7s
ZEI pmax pmax
comp=N,173nm,0.9s
ZEI MLR MLR
comp=Z,1μm,20.0s
MZRK Al-Mazaregh 80.98 309 *i* P **P** **00 27 10.8 +1.3**
EKAR Karacoban 81.02 312 *i* P **P** **00 27 12.0 +2.0**
BTMN Batman 81.16 311 *i* P **P** **00 27 11.0 +0.4**
ONI Oni 81.19 316 P **P** **00 27 11.6 +1.0**
ONI Oni 81.19 316 P **P** **00 27 11.6 +1.0**
SENK Senkaya-Erzuru 81.25 313 *e*P **P** **00 27 12.5 +1.4**
SVAN Silvan-Diyarba 81.30 311 *e*P **P** **00 27 11.0 -0.2**
EPOS Posof 81.31 314 *i* P **P** **00 27 12.8 +1.4**
TIXI Tiksi 81.35 5*d*iP **P** **00 27 09.7 -1.0**
TIXI pmax pmax
comp=Z,92nm,1.0s
TIXI MLR MLR
comp=Z,1μm,23.0s
TIXI Tiksi 81.35 5 *e*P **P** **00 27 09.7 -1.0**
comp=Z,69nm,0.8s
TIXI LR LR
comp=Z,1μm,18.0s
HOMI Horasan 81.40 313 *i* P **P** **00 27 13.3 +1.3**
SFNV Sufian 81.58 309 *i* P **P** **00 27 12.8 0.0**
MAZI Mazidag 81.64 310 *e*P **P** **00 27 13.9 +0.7**
DAGI Agillar 81.74 314 *i* P **P** **00 27 14.3 +0.7**
EZM Erzurum 81.75 313 *e*P **P** **00 27 15.4 +1.5**
ARTV Artvin 81.77 314 *i* P **P** **00 27 14.2 +0.3**
DDEM Demirkent 81.79 314 *i* P **P** **00 27 15.0 +1.1**
DBAD Bademkaya 81.88 314 *i* P **P** **00 27 15.5 +1.2**
NEY Neytrino 81.92 316*d*iP **P** **00 27 15.8 +1.2**
NEY pmax pmax
comp=Z,24nm,0.9s
ECAT Cat-ERZURUM 81.93 312 *i* P **P** **00 27 16.6 +1.9**
BNGB Bing¨ll 81.95 312 *e*P **P** **00 27 15.9 +1.1**
KBZ Khabaz 81.97 317 P **P** **00 27 15.3 +0.8**
comp=Z,67nm,0.9s,baz=111,slow=3.7,SNR=121
DYBB Diyarbakir 82.03 310 *e*P **P** **00 27 16.4 +1.3**
CHVG Ch'k'valeri 82.18 315⇓*i*P **P** **00 27 17.0 +1.3**
CHVG Ch'k'valeri 82.18 315 P **P** **00 27 15.8 +0.1**
KIV Kislovodsk 82.19 317 *i* P **P** **00 27 16.5 +0.6**
SNR=31
KIV Kislovodsk 82.19 317 *e*P **P** **00 27 16.3 +0.4**
KIV *e*S **S** **00 37 32.3 +5.1**
KIV pmax pmax
comp=Z,93nm,3.3s
KIV pmax pmax
comp=Z,81nm,1.1s
KIV MLR MLR
comp=Z,465nm,19.0s
KIV Kislovodsk 82.19 317 *e*P **P** **00 27 16.4 +0.4**
comp=Z,70nm,0.9s
KIV LR LR
comp=Z,500nm,22.0s
YEDI Yedisu-Bingol 82.19 312 *e*P **P** **00 27 17.3 +1.2**
LSZ Lusaka 82.28 256 *e*P **P** **00 27 17.2 +0.2**
LSZ pmax pmax
comp=Z,34nm,0.8s
LSZ MLR MLR
comp=Z,700nm,20.0s
LSZ Lusaka 82.28 256 *e*P **P** **00 27 17.2 +0.2**
comp=Z,34nm,0.8s
LSZ LR LR
comp=Z,700nm,20.0s
GOF Gofitskoye 82.35 318⇓*i*P **P** **00 27 17.2 +0.7**
GOF pmax pmax
comp=Z,52nm,0.7s
KOPT Kop Dagi 82.41 313 *i* P **P** **00 27 19.1 +1.7**
SVRC Sivrice-ELAZID 82.78 311 *e*P **P** **00 27 20.2 +0.9**
BAYT Ayd¨–ntepe-Bay 82.79 313 *e*P **P** **00 27 20.5 +1.3**
URFA Urfa 82.87 310 *e*P **P** **00 27 21.0 +1.4**
PTK Pertek 82.88 311 *e*P **P** **00 27 20.7 +1.0**
ELZG Elazig 83.06 311 *i* P **P** **00 27 21.9 +1.2**
SALA Sala 83.19 305 *i* P **P** **00 27 21.7 +0.2**
KTUT Trabzon 83.25 313 *e*P **P** **00 27 21.4 +0.1**
GUMT Gumushane 83.29 313 *e*P **P** **00 27 22.4 +0.6**
BOSA Boshof 83.36 242 P **P** **00 27 22.9 +0.5**
comp=Z,35nm,0.9s,baz=103,slow=5.6,SNR=48
BOSA LR LR 00 57 47.8
comp=Z,3μm,20.8s,baz=100,slow=31
BOSA Boshof 83.36 242 *e*P **P** **00 27 22.9 +0.5**
comp=Z,60nm,1.0s
KELT Kelkit 83.36 312 *i* P **P** **00 27 22.8 +0.6**
LBTB Lobatse 83.49 246 *e*P **P** **00 27 23.7 +0.6**
LBTB pmax pmax
comp=Z,49nm,0.9s
LBTB Lobatse 83.49 246 *e*P **P** **00 27 23.7 +0.6**
comp=Z,49nm,0.9s
ILIC ilic-Erzincan 83.66 312 *e*P **P** **00 27 25.2 +1.6**
KEMA Kemaliye 83.66 311 *i* P **P** **00 27 25.1 +1.5**
MARH Ras Al Marh 83.75 306 *i* P **P** **00 27 25.9 +1.4**
AKCD Akcadag 83.80 310 *i* P **P** **00 27 25.4 +1.0**
GZT Gaziantep 83.81 309 *i* P **P** **00 27 25.6 +1.1**
HAWK Haweek 83.94 306 *i* P **P** **00 27 26.2 +1.1**
ESPY Espiye-Giresun 83.97 313 *e*P **P** **00 27 25.8 +0.7**
GAZ Gaziantep 84.02 309 *e*P **P** **00 27 26.8 +1.3**
SOC Sochi 84.10 316 *e*P **P** **00 27 23.5 -2.1**
SOC *e**SP **PcP** **00 27 32.4 +3.0**
SOC *e* 00 30 38.6
SOC *e*PPP PPP 00 32 32.5
SOC *e*S **S** **00 37 44.5 -1.7**
SOC *e*SS **SS** **00 43 18.9 +2.7**
SOC *e*SSS SSS 00 46 48.2
SOC pmax pmax
comp=Z,64nm,0.6s
SOC MLR MLR
comp=Z,613nm,18.0s
RCY Rachaya 84.13 305 *e*P **P** **00 27 27.7 +1.6**
BIDA Albida 84.13 307 *i* P **P** **00 27 26.3 +0.2**
WRDH Warideh 84.19 307 *i* P **P** **00 27 26.7 +0.3**
DARE Darende-Malaty 84.21 310 *e*P **P** **00 27 27.9 +1.4**
HWQ Hawqa 84.24 306 *e*P **P** **00 27 28.0 +1.3**
DRWC Darouich 84.29 308 *i* P **P** **00 27 27.4 +0.6**
HCB Kahramanmara¯ 84.30 309 *i* P **P** **00 27 27.5 +0.7**

GRSN GIRESUNGRSN 84.31 313 *i* P **P** **00 27 27.0 +0.2**
CUZAR Zara_SIVAS 84.37 312 *i* P **P** **00 27 28.8 +1.5**
BHL Bhannes 84.38 306 *e*P **P** **00 27 28.4 +1.0**
CUGUR Gurin_S¨VAS 84.41 311 *i* P **P** **00 27 28.9 +1.4**
CUKAN kangal_SIVAS 84.43 311 *i* P **P** **00 27 28.9 +1.3**
KAMA Osmaniye 84.44 309 *i* P **P** **00 27 28.6 +0.9**
TAHT Tahtakopru-Hat 84.60 308 *e*P **P** **00 27 29.7 +1.4**
KMZ Kasempa 84.78 257 *i* P P 00 27 36.2 +6.4
KMZ *i* 00 27 37.3
baz=43,slow=16
KMZ *i* S pP 00 27 44.2 -1.0
RSDY Resadiye-TOKAT 84.84 312 *e*P **P** **00 27 31.0 +1.5**
CUALT Altinyayla-SIV 84.95 311 *i* P **P** **00 27 31.5 +1.3**
SVSK Karacayir 84.95 312 *e*P **P** **00 27 31.5 +1.6**
NVL N'lazarevskaya 84.95 199 *e*P **P** **00 27 30.0 +0.6**
NVL *e*S **S** **00 37 52.1 -1.8**
NVL *e*SS **SS** **00 43 32.7 +5.7**
NVL *e*SSS SSS 00 46 55.9
NVL pmax pmax
comp=Z,3.0nm,1.3s
CEYT Ceyhan 85.11 309 *e*P **P** **00 27 32.2 +1.4**
VRH Novokhopyorsk 85.36 323 *e*P **P** **00 27 31.3 -0.5**
VRH *e*S S 00 37 48.4 -10
VRH pmax pmax
comp=Z,100nm,1.0s
VRH MLR MLR
comp=Z,1μm,23.0s
CUSAR Sarkisla-SIVAS 85.37 311 *i* P **P** **00 27 33.4 +1.1**
BNN Bunyan 85.52 310 *e*P **P** **00 27 33.9 +0.8**
KARA Karaisali 85.71 309 *e*P **P** **00 27 34.8 +1.0**
BILL Bilibino 85.78 18*d*iP **P** **00 27 32.7 -0.8**
BILL pmax pmax
comp=Z,24nm,1.7s
BILL MLR MLR
comp=Z,591nm,20.0s
BILL Bilibino 85.78 18 *e*P **P** **00 27 33.1 -0.4**
comp=Z,14nm,1.0s
DED Mersin 85.83 308 *i* P **P** **00 27 35.0 +0.5**
KVT Kavak 85.97 313 *e*P **P** **00 27 36.3 +1.2**
MERS Mersin 86.02 308 *e*P **P** **00 27 35.6 +0.1**
ANN Anapa 86.03 316*d*iP **P** **00 27 34.8 -0.4**
ANN *e*S **S** **00 37 58.4 -6.9**
ANN pmax pmax
comp=Z,60nm,0.9s
HAVZ Havza 86.20 312 *i* P **P** **00 27 38.4 +2.2**
AVNS Nevsehir-Avano 86.26 310 *i* P **P** **00 27 37.5 +0.8**
NIG Nigde 86.26 309 *e*P **P** **00 27 38.5 +1.6**
KERG Konya-Eregli 86.46 309 *i* P **P** **00 27 38.2 +0.5**
CSS Mathiatis 86.50 306 *e*P **P** **00 27 38.6 +0.8**
comp=Z,23nm,1.2s
CSS LR LR
comp=Z,400nm,21.0s
COAL Corum-Alaca 86.53 312 *i* P **P** **00 27 38.8 +0.9**
SUR Sutherland 86.66 238 *e*P **P** **00 27 40.3 +1.3**
comp=Z,43nm,1.1s
SUR LR LR
comp=Z,2μm,21.0s
DIKM Dikmen 86.69 313 *e*P **P** **00 27 38.0 -0.6**
CORM Corum 86.77 311 *e*P **P** **00 27 40.3 +1.1**
CDAG Cicekdag 86.82 311 *i* P **P** **00 27 40.0 +0.6**
SNOP Sinop 86.82 313 *e*P **P** **00 27 40.1 +0.9**
VSR Storozhevoye 86.88 323 *e*P **P** **00 27 38.4 -0.9**
VSR *e*S **SKSac** **00 37 56.0 -5.7**
VSR pmax pmax
comp=Z,210nm,0.8s
VSR MLR MLR
comp=Z,830nm,23.0s
BOYT Boyabat 86.89 313 *i* P **P** **00 27 40.2 +0.6**
AKSY AKSARAY - Alti 87.04 310 *i* P **P** **00 27 40.9 +0.4**
BR101 Keskin Array S 87.39 311 *e*P **P** **00 27 42.0 -0.3**
BR101 *e*PKKPdf **PKKPbc** **00 45 32.9 -0.5**
BR131 Keskin Array S 87.39 311 *e*P **P** **00 27 42.0 -0.2**
BRTR Keskin Array B 87.39 311 P **P** **00 27 42.0 -0.2**
comp=Z,39nm,0.8s,baz=132,slow=6.2,SNR=230
BRTR PKKPbc **PKKPbc** **00 45 32.9 -0.5**
comp=Z,0.8nm,0.9s,baz=297,slow=1.1,SNR=3.9
BRTR LR LR 01 11 10.4
comp=Z,518nm,20.6s,baz=100,slow=39
BRTR Keskin Array B 87.39 311 P **P** **00 27 42.0 -0.2**
BRTR pmax pmax
comp=Z,39nm,0.8s
TOS Tosya 87.43 312 *e*P **P** **00 27 43.6 +1.3**
LPSR Galich'ya Gora 87.46 324 *e*P **P** **00 27 41.8 -0.2**
LPSR *e*S **S** **00 38 15.0 -3.8**
LPSR pmax pmax
comp=Z,190nm,0.8s
ILGA Ilgaz 87.66 312 *i* P **P** **00 27 44.2 +0.7**
BZK Bozkurt 87.67 313 *e*P **P** **00 27 44.4 +1.1**
ELDT Eldivan 87.74 311 *i* P **P** **00 27 44.4 +0.5**
BBAL Bala 87.74 310 *i* P **P** **00 27 44.0 +0.2**
KMER Konya-Meram 87.90 309 *i* P **P** **00 27 45.0 +0.3**
ANTO Ankara 88.06 311 *e*P **P** **00 27 45.8 +0.5**
ANTO pmax pmax
comp=Z,150nm,1.8s
ANTO MLR MLR
comp=Z,700nm,21.0s
ANTO Ankara 88.06 311 *e*P **P** **00 27 45.8 +0.5**
comp=Z,150nm,1.8s
ANTO LR LR
comp=Z,700nm,21.0s
BR231 Keskin MP Arra 88.07 311 *e*P **P** **00 27 46.2 +0.8**
KDHN Kadinhani 88.27 309 *i* P **P** **00 27 45.9 -0.4**
SIM Simferopol' 88.34 316*de*P **P** **00 27 46.5 +0.1**
SIM *e*S **S** **00 38 26.0 -1.6**
SIM pmax pmax
comp=Z,40nm,1.0s
SIM pmax pmax
comp=Z,80nm,7.5s
BCAM Yenicaga 88.82 312 *i* P **P** **00 27 49.0 0.0**
BTIN Bart¨–n 88.87 312 *i* P **P** **00 27 49.6 +0.6**
AUMIH MIHALICIK 89.04 310 *i* P **P** **00 27 50.5 +0.4**
SNAA Sanae 89.10 197 P **P** **00 27 49.5 -0.2**
SNAA Sanae 89.10 197 *e*P **P** **00 27 49.3 -0.3**
SNAA pmax pmax
comp=Z,57nm,0.9s
SNAA MLR MLR
comp=Z,2μm,19.0s
SNAA Sanae 89.10 197 *e*P **P** **00 27 49.3 -0.3**
comp=Z,57nm,0.9s
SNAA LR LR
comp=Z,2μm,19.0s
MOS Moscow 89.16 327 *e*P **P** **00 27 49.7 -0.3**
MOS *e* 00 31 15.9
MOS *e* 00 38 13.1
MOS *e*S **S** **00 38 30.9 -3.9**
MOS pmax pmax
comp=Z,400nm,1.8s
MOS pmax pmax
comp=Z,140nm,1.0s
BOLV Bolvadin 89.20 309 *i* P **P** **00 27 51.1 +0.3**
KORT Korkueli 89.31 308 *i* P **P** **00 27 51.6 +0.2**
ISP Isparta 89.34 308 PFAKE 00 28 00.0 +8.6
ISP LR LR
comp=Z,700nm,21.0s
OBN Obninsk 89.55 326*d*iP **P** **00 27 52.0 +0.2**
OBN *i**SP **pP** **00 28 02.3 -5.0**
OBN pmax pmax
comp=Z,257nm,1.7s
OBN MLR MLR
comp=Z,1μm,29.0s
OBN Obninsk 89.55 326 *e*P **P** **00 27 51.8 -0.1**
comp=Z,113nm,0.8s
OBN LR LR
comp=Z,1μm,22.0s
BTAS Taskesti 89.56 311 *i* P **P** **00 27 52.6 +0.2**
AUKIR K¨–rka- Seyitg 89.64 310 *i* P **P** **00 27 53.2 +0.4**
AKAS Kas 89.74 307 *i* P **P** **00 27 52.8 -0.5**
BORA Eskisehir 89.82 310 *i* P **P** **00 27 53.8 +0.2**
KLMR Klimovskoe 89.83 332 *e*P **P** **00 27 50.3 -2.7**
KLMR pmax pmax
comp=Z,65nm,0.9s
GOLH Golhisar 89.97 308 *i* P **P** **00 27 54.9 +0.5**
VNA2 Neumayer--Watz 90.75 197 P **P** **00 27 57.5 +0.2**
baz=95,slow=3.7
DEMI Demirci 90.97 309 *i* P **P** **00 27 59.3 +0.3**
BUY Buyukada 91.02 311 *i* P **P** **00 27 58.8 -0.2**
VNA1 Neumayer--Stat 91.14 197 P **P** **00 27 59.4 +0.4**
VNA3 Neumayer Olymp 91.21 196 P **P** **00 27 59.4 0.0**
AYDN Tasoluk 91.36 308 *i* P **P** **00 28 01.9 +1.1**
TMCR Tamitsa 91.53 335 *e*P **P** **00 28 00.2 -0.6**
TMCR pmax pmax
comp=Z,48nm,0.6s
KARP Karpathos 91.56 306 *e*P **P** **00 28 02.2 +0.5**
comp=Z,24nm,0.9s

KARP LR LR
comp=Z,200nm,21.0s
TSUM Tsumeb 91.70 250 *e*P **P** **00 28 04.5 +1.6**
comp=Z,17nm,1.0s
TSUM LR LR
comp=Z,1μm,21.0s
GAMB Gambell 91.90 26 *e*P **P** **00 28 04.6 +2.0**
comp=Z,53nm,1.1s
TIRR Tirgusor 92.20 315⇓*i*P **P** **00 28 04.2 -0.2**
TIRR Tirgusor 92.20 315 ⇓P **P** **00 28 04.2 -0.2**
TIRR Tirgusor 92.20 315 PFAKE 00 28 20.0 +16
TIRR LR LR
comp=Z,500nm,22.0s
KIS Kishinev 92.39 317 *e*P **P** **00 28 05.0 -0.3**
KIS Kishinev 92.39 317 *e*PP PP 00 32 05.0 +18
KIS *e*SKS **SKSac** **00 38 30.0 -4.2**
KIS *e*S **S** **00 39 00.0 -4.7**
KIS Kishinev 92.39 317 *e*PS PS 00 40 20.0 -2.6
KIS *e*LR LR 01 01 04.0
comp=Z,900nm,24.0s
KIS Kishinev 92.39 317 *e*P **P** **00 28 05.0 -0.3**
KIS *e* 00 38 30.0
KIS *e*S **S** **00 39 00.0 -4.7**
KIS *e*PS **PS** **00 40 20.0 -2.6**
KIS MLR MLR
comp=Z,700nm,22.0s
KIS MLR MLR
comp=Z,900nm,24.0s
CFR Carcaliu 92.53 315⇓*i*P **P** **00 28 05.6 -0.3**
CFR Carcaliu 92.53 315 ⇓P **P** **00 28 05.6 -0.3**
HARR Harsova 92.58 315⇓*i*P **P** **00 28 06.9 +0.7**
HARR Harsova 92.58 315 ⇓P **P** **00 28 06.9 +0.7**
AKASG Malin Array Be 92.83 321 P **P** **00 28 06.3 -0.9**
comp=Z,15nm,0.8s,baz=82,slow=4.8,SNR=53
AKASG LR LR 01 14 46.2
comp=Z,672nm,22.0s,baz=80,slow=39
AKBB Malin Array Si 92.83 321 *e*P **P** **00 28 06.3 -0.9**
AKBB Malin Array Si 92.83 321 *e*P **P** **00 28 06.3 -0.9**
KIEV Kiev 92.84 321 *e*P **P** **00 28 05.7 -1.5**
KIEV pmax pmax
comp=Z,19nm,0.8s
KIEV MLR MLR
comp=Z,1μm,22.0s
KIEV Kiev 92.84 321 *e*P **P** **00 28 05.7 -1.5**
comp=Z,19nm,0.8s
KIEV LR LR
comp=Z,1μm,22.0s
LAST Lasithi 92.85 305⇓*i*P **P** **00 28 08.2 +0.4**
LAST Lasithi 92.85 305 *e*P **P** **00 28 08.0 +0.3**
comp=Z,11nm,0.8s
LAST LR LR
comp=Z,900nm,22.0s
SORM Soroca 92.91 318⇓*i*P **P** **00 28 06.6 -1.0**
SORM Soroca 92.91 318 ⇓P **P** **00 28 06.6 -1.0**
SANT Santorini 93.06 306 PFAKE 00 28 20.0 +11
SANT LR LR
comp=Z,400nm,21.0s
IDI Anoyia 93.35 305 PFAKE 00 28 20.0 +10
IDI LR LR
comp=Z,700nm,22.0s
SIVA Sivas 93.37 305⇓*i*P **P** **00 28 10.7 +0.7**
GRER 93.37 315⇓*i*P **P** **00 28 12.0 +2.2**
VRI Vrincioaia 93.62 316⇓*i*P **P** **00 28 11.2 +0.2**
VRI Vrincioaia 93.62 316 ⇓P **P** **00 28 11.2 +0.2**
TBI Tubuai 93.63 114 *e*LR LR 00 58 24.9
comp=Z,2μm,24.8s
PLOR Plostina 93.67 316⇓*i*P **P** **00 28 11.4 +0.1**
PLOR Plostina 93.67 316 ⇓P **P** **00 28 11.4 +0.1**
SULR 93.76 314⇓*i*P **P** **00 28 12.3 +0.7**
TESR Tescani 93.78 316⇓*i*P **P** **00 28 11.5 -0.2**
KDZ Kurdzhali 93.90 311 *i* P **P** **00 28 14.0 +1.6**
LVZ Lovozero 93.90 338 PFAKE 00 28 20.0 +8.2
LVZ LR LR
comp=Z,1μm,18.0s
MLR Muntele Rosu 94.11 315⇓*i*P **P** **00 28 12.8 -0.6**
MLR Muntele Rosu 94.11 315 *e*P **P** **00 28 13.2 -0.2**
MLR pmax pmax
comp=Z,26nm,1.1s
MLR MLR MLR
comp=Z,1μm,22.0s
MLR Muntele Rosu 94.11 315 *e*P **P** **00 28 13.2 -0.2**
comp=Z,26nm,1.1s
MLR LR LR
comp=Z,1μm,22.0s
PRAR RASCA 94.20 317⇓*i*P **P** **00 28 13.2 -0.4**
APA Apatity 94.28 338 *e*P **P** **00 28 18.2 +4.7**
MICGM Minsk 94.31 324 *e*P **P** **00 28 14.0 +0.1**
MICGM *e*SKS **SKSac** **00 38 46.0 +1.6**
MICGM *e*S **S** **00 39 20.0 -1.3**
MICGM *e*LR LR 01 09 43.0
MNK Minsk 94.31 324 *e*P **P** **00 28 14.0 +0.1**
MNK *e* 00 38 46.0
MNK *e*S **S** **00 39 20.0 -1.3**
RZN Rozhen 94.43 311 *i* P **P** **00 28 15.0 0.0**
DOPR Dopca 94.56 316⇓*i*P **P** **00 28 14.7 -0.6**
HUMR Humele 94.64 314⇓*i*P **P** **00 28 15.2 -0.5**
PPT2 Papeete2 94.64 109 *e*SP SP 00 40 40.8 -0.8
comp=Z,542nm,28.0s
PPT2 Papeete2 94.64 109 *e*LR LR 00 58 55.5
comp=Z,3μm,23.8s
PPT Papeete 94.65 109 LR LR 01 07 02.8
comp=Z,1μm,21.3s,baz=258,slow=33
VOIR 94.72 315⇓*i*P **P** **00 28 15.8 -0.3**
VOIR 94.72 315 ⇓P **P** **00 28 15.8 -0.3**
BURAR Bucovina Array 94.91 317⇓*i*P **P** **00 28 17.1 +0.1**
BURAR Bucovina Array 94.91 317 ⇓P **P** **00 28 17.1 +0.1**
BUR08 Bucovina Ar. S 94.93 317 *e*P **P** **00 28 17.5 +0.4**
ARR Arges 95.00 315⇓*i*P **P** **00 28 16.6 -0.8**
NACGM Naroch 95.00 325 *e* **P** **00 28 17.0 -0.1**
NACGM *e*LQ LQ 01 07 52.0
NACGM *e*LR LR 01 14 34.0
MMB Musomiste 95.15 311 *i* P **P** **00 28 18.0 -0.1**
VSU Vasula 95.56 328*d*iP **P** **00 28 19.1 -0.4**
VSU pmax pmax
comp=Z,100nm,0.6s
LOT Lotru 95.61 315⇑*i*P **P** **00 28 20.8 +0.5**
KKB Krupnik 95.66 311 *i* P **P** **00 28 20.0 -0.4**
SDPT Sand Point 95.71 35 *e*P **P** **00 28 20.1 -0.1**
comp=Z,178nm,1.0s
AGG Agios Georgios 95.88 308 PFAKE 00 28 30.0 +8.5
AGG LR LR
comp=Z,2μm,21.0s
DEV Deva 96.27 315⇓*i*P **P** **00 28 23.5 +0.4**
DEV Deva 96.27 315 ⇓P **P** **00 28 23.5 +0.4**
FIA0 FINESS Array S 96.29 331 *e*P **P** **00 28 22.4 -0.4**
FIA0 FINESS Array S 96.29 331 *e*P **P** **00 28 22.4 -0.4**
FINES FINESS Array B 96.29 331 P **P** **00 28 22.4 -0.4**
comp=Z,7.5nm,0.7s,baz=111,slow=5.7,SNR=34
FINES LR LR 01 17 10.7
comp=Z,689nm,20.9s,baz=99,slow=39
DRGR 96.50 316⇓*i*P **P** **00 28 23.5 -0.7**
DRGR 96.50 316 ⇓P **P** **00 28 23.5 -0.7**
KWP Kalwaria Pacla 96.81 319 *e*P **P** **00 28 25.2 -0.3**
KWP *e*PP **PP** **00 32 19.5 -1.6**
KWP LMZ LR 01 16 48.8
comp=Z,900nm,25.8s
KWP Kalwaria Pacla 96.81 319⇓*i*P **P** **00 28 25.3 -0.2**
KWP Kalwaria Pacla 96.81 319 ⇓P **P** **00 28 25.3 -0.2**
SUW Suwalki 96.98 324 *e*P **P** **00 28 25.4 -0.6**
SUW LMZ LR 01 12 08.2
comp=Z,1μm,27.9s
SUW Suwalki 96.98 324 *e*P **P** **00 28 25.4 -0.6**
KEV Kevo 96.98 340 PFAKE 00 28 40.0 +14
KEV LR LR
comp=Z,1μm,20.0s
MDVR Moldovita 96.98 314⇓*i*P **P** **00 28 26.1 -0.3**
KOLS Kolonicke sedl 97.03 318 *e*P Pdif 00 28 27.0 +0.5
KOLS *e* 00 28 42.5
KOLS *e* 00 39 01.4
KOLS pmax pmax
comp=Z,17nm,1.2s
KOLS Kolonicke sedl 97.03 318 *e*P Pdif 00 28 27.0 +0.5
KOLS *e* 00 28 42.5
KOLS *e* 00 39 01.4
BZS Buzias 97.14 315⇓*i*P **P** **00 28 26.5 -0.5**
BZS Buzias 97.14 315 ⇓P **P** **00 28 26.5 -0.5**
OHR Ohrid 97.28 310 *e*P Pdif 00 28 33.1 +5.2
ARA0 ARCESS Array S 97.48 339 *e*P **P** **00 28 27.1 -0.9**
ARCES ARCESS Array B 97.48 339 P **P** **00 28 27.1 -0.9**
comp=Z,5.4nm,0.8s,baz=77,slow=5.4,SNR=8.9
ARCES LR LR 01 17 35.2
comp=Z,946nm,21.9s,baz=100,slow=39
ARE0 ARCESS Array S 97.48 339 *e*P **P** **00 28 28.0 0.0**

ARE0				IAmb	IAmb	00 28 30.4		
	comp=Z,58nm,1.6s							
ARE0				eSKSac	SKSac	00 39 00.5	-0.1	
ARE0				eSS	SS	00 46 31.5	+3.4	
CRVS	Cervenica-Dubn	97.56	318	eP	P	00 28 28.1	-0.8	
CRVS				e		00 32 21.3		
CRVS	Cervenica-Dubn	97.56	318	eP	P	00 28 28.1	-0.8	
CRVS				ePP	PP	00 32 21.2	-5.7	
STHS	Stebnicka Huta	97.74	319	eP	Pdif	00 28 30.1	+0.4	
STHS				e		00 28 42.9		
STHS				pmax	pmax			
	comp=Z,6.0nm,1.0s							
STHS	Stebnicka Huta	97.74	319	eP	Pdif	00 28 30.1	+0.4	
STHS				e		00 28 42.9		
TIR	Tirane	98.00	311	PFAKE		00 28 40.0	+8.9	
TIR				LR	LR			
	comp=Z,600nm,22.0s							
KECS	Kecovo	98.16	318	eP	Pdif	00 28 31.7	+0.1	
KECS				e		00 28 47.2		
KECS				pmax	pmax			
	comp=Z,3.0nm,0.9s							
KECS	Kecovo	98.16	318	eP	Pdif	00 28 31.7	+0.1	
KECS				e		00 28 47.1		
BEL	Belsk	98.23	321	ePdiff	Pdif	00 28 32.7	+0.9	
BEL				LMZ	LR	01 15 14.1		
	comp=Z,1μm,26.6s							
BEL	Belsk	98.23	321	eP	Pdif	00 28 32.7	+0.9	
HOPEN	Hopen	98.26	346	ePdif	Pdif	00 28 32.7	+1.3	
HOPEN				ePP	PP	00 32 31.5	0.0	
NIE	Niedzica	98.36	319	ePdiff	Pdif	00 28 32.5	0.0	
NIE				ePP	PP	00 32 31.5	-1.5	
NIE				LMZ	LR	01 18 03.1		
	comp=Z,900nm,25.1s							
NIE	Niedzica	98.36	319	eP	Pdif	00 28 32.5	0.0	
NIE				e		00 32 31.5		
PSZ	Piszkesteto	98.52	317	PFAKE		00 28 50.0	+17	
PSZ				LR	LR			
	comp=Z,700nm,21.0s							
TT01	Tatalina	98.71	28	eP	Pdif	00 28 34.2	+0.6	
TTA	Tatalina	98.71	28	eP	Pdif	00 28 34.4	+0.6	
TTA				pmax	pmax			
	comp=Z,17nm,1.0s							
TTA	Tatalina	98.71	28	eP	Pdif	00 28 34.4	+0.6	
	comp=Z,17nm,1.0s							
OJC	Ojcow	98.74	320	ePdiff	Pdif	00 28 34.9	+0.7	
OJC				ePP	PP	00 32 34.7	-1.2	
OJC				LMZ	LR	01 15 32.3		
	comp=Z,1μm,27.1s							
OJC	Ojcow	98.74	320	eP	Pdif	00 28 34.9	+0.8	
OJC				e		00 32 34.7		
SVW2	Sparrevohn	98.82	29	PFAKE		00 28 50.0	+16	
SVW2				LR	LR			
	comp=Z,200nm,21.0s							
LANS	Liptovska Anna	98.88	318	eP	Pdif	00 28 36.5	+1.6	
LANS	Liptovska Anna	98.88	318	eP	Pdif	00 28 36.5	+1.6	
VYHS	Vyhne	99.26	318	eP	Pdif	00 28 35.9	-0.6	
VYHS				e		00 39 12.8		
VYHS	Vyhne	99.26	318	eP	Pdif	00 28 35.9	-0.6	
VYHS				e		00 39 12.8		
BJO	Bjornoya	99.66	344	eSKSac	SKSac	00 39 14.0	+2.7	
OKC	Ostrava-Krasne	99.78	319	ePP	PP	00 32 44.8	+1.0	
OKC				eSKS	SKSac	00 39 15.2	+2.3	
OKC				ex	x	00 41 26.0		
OKC				AMS	AMS	01 17 10.0		
	comp=Z,800nm,23.4s							
TRO	Tromso	99.79	339	eSKSac	SKSac	00 39 12.8	+0.7	
MORC	Moravsky Berou	100.17	319	||/P	Pdif	00 28 40.6	0.0	
MORC	Moravsky Berou	100.17	319	eP	Pdif	00 28 41.1	+0.5	
MORC				MLR	MLR			
	comp=Z,2μm,21.0s							
MORC	Moravsky Berou	100.17	319	ePdif	Pdif	00 28 41.1	+0.5	
MORC				LR	LR			
	comp=Z,2μm,21.0s							
SPA0	Spitsbergen Ar	100.17	348	eSKSac	SKSac	00 39 14.0	+0.2	
SPA0				eSS	SS	00 47 01.8	-3.6	
TIP	Timpagrande	100.21	308	PFAKE		00 28 50.0	+9.0	
TIP				LR	LR			
	comp=Z,300nm,20.0s							
HSPB	Hornsund (broa	100.44	347	ePdif	Pdif	00 28 40.0	-1.2	
HSPB				IAmb	IAmb	00 28 48.3		
	comp=Z,106nm,2.2s							
HSPB				ePP	PP	00 32 50.6	+2.5	
PPLA	Purkeypile	100.46	28	ePdif	Pdif	00 28 42.7	+1.0	
CAST	Castle Rocks	100.50	27	ePdif	Pdif	00 28 42.8	+1.1	
SPU	Mount Spurr	100.53	29	ePdif	Pdif	00 28 41.6	-0.3	
KRLC	Kraliky	100.67	319	ePDIFF	Pdif	00 28 43.5	+0.7	
KRLC				ex	x	00 28 48.8		
KRLC	Kraliky	100.67	319	eP	Pdif	00 28 43.5	+0.7	
KBS	Kingsbay	100.97	349	ePdif	Pdif	00 28 45.0	+1.6	
KBS				ePP	PP	00 32 53.2	+1.2	
KBS				eSKSac	SKSac	00 39 18.2	+0.6	
KBS				eSS	SS	00 47 15.4	-1.0	
KBS	Kingsbay	100.97	349	PFAKE		00 29 00.0	+17	
KBS				LR	LR			
	comp=Z,1μm,19.0s							
DPC	Dobruska-Polom	100.97	320	ePDIFF	Pdif	00 28 45.0	+0.9	
DPC				epP	pP	00 28 50.4	-9.4	
DPC				ePP	PP	00 32 45.5	-7.4	
DPC				AMS	AMS	01 17 50.0		
	comp=Z,1μm,24.6s							
BPAW	Bear Paw Mtn.	100.98	26	ePdif	Pdif	00 28 44.4	+0.6	
CUC	Castrocucco	100.98	309	PFAKE		00 29 00.0	+16	
CUC				LR	LR			
	comp=Z,300nm,21.0s							
KSP	Ksiaz	101.00	320	ePdiff	Pdif	00 28 44.8	+0.6	
KSP				LMZ	LR	01 18 41.3		
	comp=Z,1μm,23.0s							
KSP	Ksiaz	101.00	320	eP	Pdif	00 28 44.8	+0.6	
MLY	Manley	101.05	25	ePdif	Pdif	00 28 45.1	+0.9	
MLY				LR	LR			
	comp=Z,300nm,22.0s							
COLD	Coldfoot	101.17	23	ePdif	Pdif	00 28 46.0	+1.5	
UPC	Upice	101.17	320	eSKS	SKSac	00 39 16.7	-3.0	
UPC				eSP	SP	00 41 48.4	-2.4	
UPC				ex	x	00 47 08.1		
UPC				AMS	AMS	01 18 40.0		
	comp=Z,1μm,23.3s							
TRF	Thorofare Moun	101.31	27	ePdif	Pdif	00 28 45.8	+0.3	
TREC	Trest	101.50	318	ePP	PP	00 33 00.6	+3.8	
TREC				AMS	AMS	01 17 50.0		
	comp=Z,1μm,24.8s							
RC01	Rabbit Creek A	101.66	29	PFAKE		00 29 00.0	+13	
RC01				LR	LR			
	comp=Z,400nm,21.0s							
LOF	Lofoten	101.81	338	ePdif	Pdif	00 28 47.8	+0.5	
LOF				IAmb	IAmb	00 28 54.1		
	comp=Z,94nm,1.7s							
LOF				eSKSac	SKSac	00 39 26.0	+4.1	
MCK	McKinley	101.90	27	eP	Pdif	00 28 48.7	+0.8	
MCK	McKinley	101.90	27	ePdif	Pdif	00 28 48.7	+0.8	
GOPC	GO Pecny, Ondr	101.95	319	ePP	PP	00 32 55.9	-4.4	
GOPC				eSKS		00 39 20.5		
GOPC				ex	x	00 41 51.7		
GOPC				ex	x	00 47 19.3		
GOPC				AMS	AMS	01 18 40.0		
	comp=Z,1μm,23.5s							
RND	Reindeer	101.96	27	eP	Pdif	00 28 48.1	-0.1	
RND	Reindeer	101.96	27	ePdif	Pdif	00 28 48.1	-0.1	
PVCC	Panska Ves	102.09	320	AMS	AMS	01 17 40.0		
	comp=Z,900nm,24.0s							
PRU	Pruhonice	102.11	319	ePP	PP	00 32 56.5	-4.9	
PRU				eSKS		00 39 22.6		
PRU				ex	x	00 47 16.9		
PRU				AMS	AMS	01 18 40.0		
	comp=Z,900nm,24.6s							
CCB	Clear Creek Bu	102.33	26	ePdif	Pdif	00 28 50.2	+0.5	
BRG	Berggiesshubel	102.49	320	eP	Pdif	00 28 51.2	+0.4	
	comp=Z,6.3nm,1.4s							
BRG				e		00 28 58.0		
	comp=Z,3.3nm,0.9s							
BRG				PP	PP	00 32 53.0	-11	
BRG				SS	SS	00 47 12.0	-27	
BRG	Berggiesshubel	102.49	320	eP	Pdif	00 28 51.2	+0.4	
BRG				pmax	pmax			
	comp=Z,6.0nm,1.4s							
TRI	Trieste	102.64	315	PFAKE		00 29 00.0	+8.4	
TRI				LR	LR			
	comp=Z,500nm,21.0s							
GERES	GERESS Array B	102.67	318	P	Pdif	00 28 50.9	-0.9	
	comp=Z,0.6nm,0.6s,baz=108,slow=4.3,SNR=7.2							
GERES				PP	PKiKP	00 33 17.4	+4.9	
	comp=Z,1.0nm,0.7s,baz=90,slow=5.3,SNR=4.0							
GERES				PKKPbc	PKKPbc	00 44 52.0	-0.8	
	comp=Z,0.8nm,0.8s,baz=268,slow=3.9,SNR=4.4							
ILAR	Eielson Array	102.71	26	P	Pdif	00 28 50.0	-1.5	
	comp=Z,0.8nm,0.7s,baz=271,slow=4.2,SNR=9.3							
ILAR				PP	PP	00 33 04.3	-1.1	
	comp=Z,2.2nm,1.0s,baz=285,slow=7.1,SNR=7.1							
ILAR				PKKPbc	PKKPbc	00 44 50.5	-2.6	
	comp=Z,1.2nm,0.8s,baz=99,slow=1.4,SNR=5.2							
ILB	Eielson Array	102.71	26	ePdif	Pdif	00 28 50.0	-1.5	
ILB				ePP	PP	00 33 04.3	-1.1	
ILB				ePKKPbc	PKKPbc	00 44 50.5	-2.6	
HDA	Harding Lake	102.72	26	PFAKE		00 29 00.0	+8.5	
HDA				LR	LR			
	comp=Z,300nm,21.0s							
KHC	Kasperske Hory	102.75	318	ePP	PP	00 32 58.0	-8.3	
KHC				eSKS		00 39 26.9		
KHC				ex	x	00 47 31.5		
KHC				AMS	AMS	01 18 40.0		
	comp=Z,1μm,27.1s							
KHC	Kasperske Hory	102.75	318	PFAKE		00 29 00.0	+8.0	
KHC				LR	LR			
	comp=Z,200nm,20.0s							
RGN	Rugen	102.77	324	PFAKE		00 29 00.0	+8.1	
RGN				LR	LR			
	comp=Z,1μm,22.0s							
AQU	L'Aquila	102.88	311	PFAKE		00 29 00.0	+7.2	
AQU				LR	LR			
	comp=Z,500nm,21.0s							
CLL	Collm	103.07	321	ePdif	Pdif	00 28 52.0	-1.3	
CLL				e		00 29 06.0		
CLL				ePP	PP	00 33 06.0	-2.5	
CLL				e		00 33 45.0		
CLL				eSKSac	SKSac	00 39 29.0	+0.4	
CLL				eSdif	Sdif	00 40 39.0	+3.3	
CLL				ePS	PS	00 42 09.0	-9.1	
CLL				eSS	SS	00 47 40.0	-6.7	
CLL				e		00 49 00.0		
CLL				e		00 53 06.0		
CLL				eSSSS		00 55 36.0		
CLL	Collm	103.07	321	eP	Pdif	00 28 52.0	-1.3	
CLL				e		00 39 29.0		
CLL				eS	Sdif	00 40 39.0	+3.3	
CLL	Collm	103.07	321	PFAKE		00 29 10.0	+17	
CLL				LR	LR			
	comp=Z,500nm,21.0s							
NC602	NORSAR Array S	103.33	330	ePdif	Pdif	00 28 53.6	-0.7	
NC602				ePP	PP	00 33 10.3	+0.2	
NC602				eSKSac	SKSac	00 39 31.6	+2.1	
NC602				eSS	SS	00 47 55.0	+5.3	
NKC	Novy Kostel	103.46	319	ePP	PP	00 33 09.4	-2.1	
NKC				AMS	AMS	01 20 10.0		
	comp=Z,800nm,20.0s							
NB2	NORSAR Subarra	103.46	331	PKP	Pdif	00 28 54.7	-0.2	
	comp=Z,1.1nm,0.7s,baz=33,slow=3.2							
NB2	NORSAR Subarra	103.46	331	P	Pdif	00 28 54.4	-0.5	
	comp=Z,6.1nm,1.0s,baz=86,slow=4.4							
NB2	NORSAR Subarra	103.46	331	P	Pdif	00 28 54.4	-0.5	
	baz=86,slow=4.4							
NB200	NORSAR Array S	103.46	331	ePdif	Pdif	00 28 54.2	-0.7	
NB200				ePP	PKiKP	00 33 13.2	-0.3	
NOA	NORSAR Array B	103.46	331	Pdiff	Pdif	00 28 54.2	-0.7	
	comp=Z,2.8nm,0.9s,baz=80,slow=4.5,SNR=7.3							
NOA				PP	PKiKP	00 33 13.2	-0.3	
	comp=Z,1.2nm,0.8s,baz=100,slow=7.0,SNR=4.3							
PAX	Paxson	103.52	27	PFAKE		00 29 10.0	+15	
PAX				LR	LR			
	comp=Z,400nm,22.0s							
DOT	Dot Lake	104.07	27	ePdif	Pdif	00 28 58.4	+0.9	
BMRM	Bremner River	104.16	29	ePdif	Pdif	00 28 59.2	+1.1	
MENT	Mentasta	104.32	27	PFAKE		00 29 10.0	+11	
MENT				LR	LR			
	comp=Z,400nm,22.0s							
KONO	Kongsberg	104.41	329	PFAKE		00 29 10.0	+11	
KONO				LR	LR			
	comp=Z,900nm,21.0s							
FUORN	Ofenpass-Fuorn	105.05	316	PFAKE		00 33 30.0		
FUORN				LR	LR			
	comp=Z,900nm,22.0s							
VLC	Villacollemand	105.06	313	PFAKE		00 33 30.0		
VLC				LR	LR			
	comp=Z,400nm,21.0s							
HOMB	Homborsund	105.13	328	ePdif	Pdif	00 29 01.5	-0.8	
HOMB				IAmb	IAmb	00 29 02.0		
	comp=Z,21nm,1.2s							
HOMB				ePP	PP	00 33 23.3	-0.3	
HOMB				eSKSac	SKSac	00 39 40.4	+2.7	
BALM	Baldy	105.24	29	eP	Pdif	00 29 04.4	+1.5	
BALM				e		00 33 25.5		
BALM				MLR	MLR			
	comp=Z,400nm,22.0s							
BALM	Baldy	105.24	29	ePdif	Pdif	00 29 04.4	+1.5	
BALM				ePP	PP	00 33 25.5	+1.0	
BALM				LR	LR			
	comp=Z,400nm,22.0s							
AKN	Aaknes	105.31	332	ePP	PP	00 33 27.8	+3.0	
TAOE	Nuku Hiva Isla	105.39	102	eLR	LR	01 03 56.8		
	comp=Z,834nm,23.5s							
STU	Stuttgart	105.65	318	PFAKE		00 33 30.0		
STU				LR	LR			
	comp=Z,400nm,20.0s							
TUE	Stuetta	105.69	316	PFAKE		00 33 30.0		
TUE				LR	LR			
	comp=Z,900nm,21.0s							
KEST	Kesra	106.01	305	PFAKE		00 33 30.0		
KEST				LR	LR			
	comp=Z,600nm,21.0s							
BLS5	Blasjo	106.02	329	ePdif	Pdif	00 29 06.2	-0.1	
BLS5				IAmb	IAmb	00 29 17.9		
	comp=Z,103nm,1.9s							
BLS5				ePP	PP	00 33 28.3	-1.9	
DAWY	Dawson	106.03	26	PFAKE		00 33 30.0		
DAWY				LR	LR			
	comp=Z,300nm,21.0s							
BFO	Black Forest	106.25	318	PFAKE		00 33 30.0		
BFO				LR	LR			
	comp=Z,500nm,20.0s							
FOO	Floro	106.32	332	eSKSac	SKSac	00 39 47.0	+4.1	
RKT	Rikitea	106.58	117	eLR	LR	01 04 26.0		
	comp=Z,2μm,22.8s							
SENIN	Lac Senin/Sane	107.11	316	PFAKE		00 33 30.0		
SENIN				LR	LR			
	comp=Z,500nm,20.0s							
INK	Inuvik	107.18	21	eP	Pdif	00 29 11.8	+0.6	
INK	Inuvik	107.18	21	ePdif	Pdif	00 29 11.8	+0.6	
WLF	Walferdange	107.55	319	PFAKE		00 33 30.0		
WLF				LR	LR			
	comp=Z,600nm,20.0s							
BNI	Bardonecchia	107.65	314	PFAKE		00 33 30.0		
BNI				LR	LR			
	comp=Z,800nm,22.0s							
SSB	Saint Sauveur	109.14	315	PFAKE		00 33 40.0		
SSB				LR	LR			
	comp=Z,500nm,21.0s							
TAM	Tamanrasset	109.16	291	PFAKE		00 33 40.0		
TAM				LR	LR			
	comp=Z,500nm,21.0s							
RES	Resolute Bay	112.65	8	PFAKE		00 33 40.0		
RES				LR	LR			
	comp=Z,600nm,20.0s							
ES19	SONSECA Array	116.12	310	ePKPdf	PKPdf	00 33 38.5	+0.5	
ESDC	Sonseca Array	116.17	310	PKP	PKPdf	00 33 38.4	+0.3	
	comp=Z,1.7nm,0.7s,baz=39,slow=2.7,SNR=9.1							
ESLA	Sonseca Array	116.17	310	PFAKE		00 33 50.0	+12	
ESLA				LR	LR			
	comp=Z,500nm,22.0s							
PAB	San Pablo	116.49	310	PFAKE		00 33 50.0	+11	
PAB				LR	LR			
	comp=Z,400nm,21.0s							
YKW3	Yellowknife Ar	116.79	22	ePKPdf	PKPdf	00 33 37.8	-0.6	
YKA	Yellowknife Ar	116.83	22	Pdiff	Pdif	00 29 55.6	+1.3	
	comp=Z,0.2nm,0.6s,baz=310,slow=4.7,SNR=3.0							
YKA				PKP	PKPdf	00 33 38.1	-0.4	
	comp=Z,4.3nm,0.6s,baz=315,slow=1.8,SNR=73							
YKB5	Yellowknife Ar	116.83	22	ePdif	Pdif	00 29 55.6	+1.3	
YKB5				ePKPdf	PKPdf	00 33 38.1	-0.4	
PBRG	Braganca	117.81	313	eLR	LR	01 15 45.9		
	comp=Z,362nm,22.0s							
KIC	Kosan Boka	117.90	272	ePKIKP	PKPdf	00 33 41.9	-0.2	
	comp=Z,16nm,0.7s							
DBIC	Dimbokro	118.05	273	PKP	PKPdf	00 33 41.8	-0.5	
	comp=Z,6.5nm,0.5s,baz=97,slow=2.1,SNR=21							
MVO	Moncorvo	118.16	312	eLR	LR	01 16 15.1		
	comp=Z,390nm,22.0s							
LIC	Lamto	118.17	272	ePKIKP	PKPdf	00 33 42.4	-0.2	
	comp=Z,41nm,1.2s							
TIC	Toumodi	118.21	273	ePKIKP	PKPdf	00 33 41.7	-1.0	
POLO	Lamas de Olo	118.68	312	ePKPdf	PKPdf	00 33 44.0	+1.1	
POLO	Lamas de Olo	118.68	312	eLR	LR	01 17 20.7		
	comp=Z,187nm,20.0s							
MTE	Manteigas	118.72	311	eLR	LR	01 15 31.4		
	comp=Z,428nm,22.0s							
MTE	Manteigas	118.72	311	PFAKE		00 34 00.0	+17	
MTE				LR	LR			
	comp=Z,400nm,22.0s							
PBAR	Barrancos	118.81	309	ePKPdf	PKPdf	00 33 43.3	+0.2	
PMRV	Marv??o	118.82	310	eLR	LR	01 18 19.1		
	comp=Z,420nm,20.0s							
PGAV	Gavieira, Arco	118.88	313	ePKPdf	PKPdf	00 33 42.8	-0.5	
EFI	East Falkland	118.89	187	PFAKE		00 33 50.0	+7.1	
EFI				LR	LR			
	comp=Z,2μm,21.0s							
PESTR	Estremoz	119.09	309	eLR	LR	01 14 47.6		
	comp=Z,368nm,20.0s							
PVAQ	Vaqueiros	119.49	308	ePKPdf	PKPdf	00 33 45.7	+1.2	
PVAQ	Vaqueiros	119.49	308	eLR	LR	01 14 40.3		
	comp=Z,524nm,20.0s							
PMTG	Montargil	119.53	310	eLR	LR	01 14 47.6		
	comp=Z,266nm,22.0s							
PCVE	Castro Verde	119.70	308	eLR	LR	01 15 24.1		
	comp=Z,333nm,22.0s							
B05A	Bryant	119.93	39	P	PKPdf	00 33 45.9	+0.9	
	baz=292							
PNCL	Nicolau / Gran	119.97	309	ePKPdf	PKPdf	00 33 46.2	+0.9	
PNCL	Nicolau / Gran	119.97	309	eLR	LR	01 14 47.6		
	comp=Z,461nm,20.0s							
B06A	Marblemount	120.21	39	PFAKE		00 34 00.0	+15	
B06A				LR	LR			
	comp=Z,400nm,21.0s							
G03D	McMinnville, O	120.23	43	P	PKPdf	00 33 45.8	+0.2	
	baz=289							
PMAFR	Mafra	120.36	310	ePKPdf	PKPdf	00 33 45.9	-0.2	
PMAFR	Mafra	120.36	310	eLR	LR	01 14 40.3		
	comp=Z,417nm,20.0s							
PFVI	Vila Bisbo	120.42	308	eLR	LR	01 14 47.6		
	comp=Z,387nm,18.0s							
ERK	Elk Rock	120.47	41	P	PKPdf	00 33 47.9	+1.6	
TDL	Tradedollar La	120.54	41	P	PKPdf	00 33 47.9	+1.5	
F04A	Amboy	120.55	42	ePKPdf	PKPdf	00 33 47.5	+1.3	
I03D	Drain, OR	120.66	44	P	PKPdf	00 33 47.5	+1.0	
	baz=288,SNR=5.2							
LON	Longmire	120.66	41	ePKIKP	PKPdf	00 33 47.6	+1.1	
LON	Longmire	120.66	41	ePKPdf	PKPdf	00 33 47.5	+1.1	
L02D	Cave Junction,	120.94	46	P	PKPdf	00 33 48.2	+1.1	
	baz=287							
SFJD	Kangerlussuaq	121.12	352	PFAKE		00 34 00.0	+13	
SFJD				LR	LR			
	comp=Z,900nm,20.0s							
TWW	Teanaway	121.12	40	P	PKPdf	00 33 49.0	+1.6	
H04A	Detroit Lake	121.13	43	ePKPdf	PKPdf	00 33 48.4	+1.0	
H04A				LR	LR			
	comp=Z,400nm,21.0s							
KHMM	Horse Mountain	121.21	48	ePKPdf	PKPdf	00 33 49.8	+2.0	
HUMO	Hull Mountain	121.26	45	ePKPdf	PKPdf	00 33 49.1	+1.3	
I04A	Tendick Farm,	121.27	44	P	PKPdf	00 33 48.3	+0.5	
	baz=289,SNR=5.7							
G05D	Wamic, OR	121.52	42	P	PKPdf	00 33 49.3	+1.1	
	baz=291							
B08A	Colville Reser	121.59	38	ePKPdf	PKPdf	00 33 48.7	+0.4	
M02C	Callahan	121.70	47	P	PKPdf	00 33 50.0	+1.3	
	baz=287,SNR=8.6							
YBH	Yreka Blue Hor	121.70	46	ePKIKP	PKPdf	00 33 50.3	+1.6	
YBH	Yreka Blue Hor	121.70	46	ePKPdf	PKPdf	00 33 50.3	+1.6	
I05D	Terrebonne, OR	121.82	43	P	PKPdf	00 33 49.8	+0.9	
	baz=290							
N02D	Trinity Center	121.93	47	P	PKPdf	00 33 50.1	+0.9	
	baz=287							
K04D	Chiloquin, OR	122.10	45	P	PKPdf	00 33 50.3	+0.8	
	baz=289							
WDC	Whiskeytown Da	122.16	48	ePKIKP	PKPdf	00 33 50.5	+1.0	
WDC				MLR	MLR			
	comp=Z,600nm,22.0s							
WDC	Whiskeytown Da	122.16	48	ePKPdf	PKPdf	00 33 50.5	+1.0	
WDC				LR	LR			
	comp=Z,600nm,22.0s							
J05D	Fort Rock, OR	122.25	44	P	PKPdf	00 33 50.9	+1.1	
	baz=290,SNR=12							
M04C	Macdoel	122.31	46	P	PKPdf	00 33 50.7	+0.8	
	baz=288,SNR=9.3							
K05A	Summer Lake	122.67	45	ePKPdf	PKPdf	00 33 52.0	+1.3	
O03D	Paynes Creek	122.79	48	P	PKPdf	00 33 51.3	+0.4	
	baz=287							
NEW	Newport	122.97	37	P	PKPdf	00 33 51.7	+0.8	
	baz=296							
NEW	Newport	122.97	37	ePKIKP	PKPdf	00 33 51.8	+0.9	
NEW	Newport	122.97	37	ePKPdf	PKPdf	00 33 51.8	+0.9	
G08A	Pilot Rock	123.05	41	ePKPdf	PKPdf	00 33 52.9	+1.6	
MOD	Modoc Plateau	123.36	45	ePKPdf	PKPdf	00 33 53.5	+1.6	
AFDM	Forest Hills D	123.80	49	ePKPdf	PKPdf	00 33 53.7	+1.0	
F10A	Beach Ranch, E	123.89	40	ePKPdf	PKPdf	00 33 54.0	+1.2	
F10A				LR	LR			
	comp=Z,400nm,22.0s							
BMO	Blue Mountains	124.30	41	ePKIKP	PKPdf	00 33 54.3	+0.7	
BMO				MLR	MLR			
	comp=Z,300nm,22.0s							
BMO	Blue Mountains	124.30	41	ePKPdf	PKPdf	00 33 54.2	+0.7	
BMO				LR	LR			
	comp=Z,300nm,22.0s							
WVOR	Wild Horse Val	124.33	44	ePKIKP	PKPdf	00 33 55.0	+1.2	
WVOR	Wild Horse Val	124.33	44	ePKPdf	PKPdf	00 33 55.0	+1.2	
WALA	Waterton Lakes	124.48	35	ePKPdf	PKPdf	00 33 55.0	+1.1	
CMB	Columbia Colle	124.50	50	ePKIKP	PKPdf	00 33 54.9	+0.7	
CMB				MLR	MLR			
	comp=Z,400nm,20.0s							
CMB	Columbia Colle	124.50	50	ePKPdf	PKPdf	00 33 54.9	+0.7	
CMB				LR	LR			
	comp=Z,400nm,20.0s							
BSMT	Bassoo Peak	124.55	37	ePKPdf	PKPdf	00 33 54.7	+0.6	
PAHR	Pah Rah Range	124.73	48	ePKPdf	PKPdf	00 33 55.8	+1.2	
PAHR				LR	LR			
	comp=Z,400nm,21.0s							
WAKR	Walker	125.07	49	ePKPdf	PKPdf	00 33 57.4

DAC	Darwin (Calif)	127.16	51	ePKPdf	PKPdf	00 34 00.2 +0.7
MCMT	McKenzie Canyo	127.16	40	ePKPdf	PKPdf	00 34 00.8 +1.5
DECC	Green Verdugo	127.16	54	P	PKPdf	00 34 00.6 +1.3
	baz=286					
EDW2	Edwards Air Fo	127.26	53	P	PKPdf	00 34 01.2 +1.7
	baz=287					
PASC	Pasadena Art C	127.30	54	ePKPdf	PKPdf	00 34 01.5 +1.9
CIS	Catalina Islan	127.33	55	P	PKPdf	00 34 00.9 +1.3
	baz=285					
SCI2	San Clemente I	127.33	55	P	PKPdf	00 34 01.1 +1.4
	baz=285					
LRMC	Laurel Mtn Rad	127.33	52	P	PKPdf	00 34 01.5 +1.8
	baz=287					
ELK	Elko	127.33	45	ePKIKP	PKPdf	00 34 01.3 +1.6
ELK				MLR	MLR	
	comp=Z,300nm,21.0s					
ELK	Elko	127.33	45	ePKPdf	PKPdf	00 34 01.3 +1.6
ELK				LR	LR	
	comp=Z,300nm,21.0s					
EGMT	Eagleton	127.37	35	P	PKPdf	00 34 00.5 +1.1
	baz=303					
EGMT	Eagleton	127.37	35	ePKPdf	PKPdf	00 34 00.7 +1.3
MWC	Mount Wilson	127.39	54	ePKIKP	PKPdf	00 34 01.7 +1.7
MWC	Mount Wilson	127.39	54	ePKPdf	PKPdf	00 34 01.7 +1.7
BOZ	Bozeman (W)	127.52	38	P	PKPdf	00 34 01.2 +1.3
	baz=300					
BOZ	Bozeman (W)	127.52	38	ePKIKP	PKPdf	00 34 01.1 +1.3
BOZ	Bozeman (W)	127.52	38	ePKPdf	PKPdf	00 34 01.1 +1.3
FURC	Furnace Creek,	127.66	51	P	PKPdf	00 34 02.0 +1.9
	baz=289					
BFSC	Mount Baldy Ra	127.70	54	P	PKPdf	00 34 01.8 +1.3
	baz=286					
TPNV	Topopah Spring	127.97	50	P	PKPdf	00 34 02.6 +1.6
	baz=290					
TPNV	Topopah Spring	127.97	50	ePKIKP	PKPdf	00 34 02.2 +1.2
TPNV	Topopah Spring	127.97	50	ePKPdf	PKPdf	00 34 02.1 +1.2
R11A	Troy Canyon, C	127.98	48	P	PKPdf	00 34 02.6 +1.6
	baz=291					
R11A	Troy Canyon, C	127.98	48	ePKPdf	PKPdf	00 34 02.6 +1.6
R11A				LR	LR	
	comp=Z,500nm,22.0s					
QLMT	Earthquake Lak	128.04	39	ePKPdf	PKPdf	00 34 03.1 +2.2
RRX	Edison Barstow	128.04	53	P	PKPdf	00 34 02.6 +1.7
	baz=287					
GSC	Goldstone, Bar	128.06	52	P	PKPdf	00 34 02.5 +1.4
	baz=288					
GSC	Goldstone, Bar	128.06	52	ePKIKP	PKPdf	00 34 03.0 +1.9
GSC	Goldstone, Bar	128.06	52	ePKPdf	PKPdf	00 34 03.0 +1.9
PMOZ	Porto Moniz, M	128.12	305	eLR	LR	01 18 04.5
	comp=Z,353nm,20.0s					
MURC	Murrieta	128.25	54	P	PKPdf	00 34 02.8 +1.3
	baz=286					
BBRC	Big Bear Solar	128.28	53	P	PKPdf	00 34 03.1 +1.3
	baz=287					
SHOC	Shoshone, Teco	128.29	51	P	PKPdf	00 34 03.1 +1.7
	baz=289					
YMR	Madison River	128.41	39	PFAKE		00 34 10.0 +8.3
YMR				LR	LR	
	comp=Z,400nm,19.0s					
HEC	Hector,Ludlow	128.58	52	P	PKPdf	00 34 03.7 +1.6
	baz=288					
HVU	Hansel Valley	128.59	43	ePKIKP	PKPdf	00 34 03.8 +1.8
HVU				MLR	MLR	
	comp=Z,300nm,20.0s					
HVU	Hansel Valley	128.59	43	ePKPdf	PKPdf	00 34 03.8 +1.8
HVU				LR	LR	
	comp=Z,300nm,20.0s					
YFT	Old Faithful	128.60	39	PFAKE		00 34 10.0 +8.0
YFT				LR	LR	
	comp=Z,600nm,21.0s					
GCMT	Greycliff	128.62	37	ePKPdf	PKPdf	00 34 03.6 +1.6
TUQ	Turquoise Moun	128.71	52	P	PKPdf	00 34 03.7 +1.4
	baz=289					
BGU	Big Grassy Mou	128.78	44	ePKPdf	PKPdf	00 34 04.1 +1.7
BGU				LR	LR	
	comp=Z,400nm,21.0s					
H17A	Grant Village	128.79	39	P	PKPdf	00 34 04.2 +1.7
	baz=300					
H17A	Grant Village	128.79	39	ePKPdf	PKPdf	00 34 04.8 +2.4
H17A				LR	LR	
	comp=Z,400nm,20.0s					
IMW	Indian Meadow	128.81	40	ePKPdf	PKPdf	00 34 04.5 +1.9
IMW				LR	LR	
	comp=Z,500nm,22.0s					
PFO	Pinyon Flats O	128.84	54	P	PKPdf	00 34 04.1 +1.4
	baz=287					
PFO	Pinyon Flats O	128.84	54	ePKIKP	PKPdf	00 34 04.7 +2.0
PFO	Pinyon Flats O	128.84	54	ePKPdf	PKPdf	00 34 04.7 +2.0
TPFO	Pinon Flats	128.84	54	P	PKPdf	00 34 04.2 +1.5
	baz=287					
FLWY	Flagg Ranch	128.87	39	ePKPdf	PKPdf	00 34 05.2 +2.7
FLWY				LR	LR	
	comp=Z,500nm,22.0s					
FXWY	Fox Creek	128.88	40	ePKPdf	PKPdf	00 34 03.8 +1.2
FXWY				LR	LR	
	comp=Z,400nm,22.0s					
BAR	Barrett	128.93	55	ePKPdf	PKPdf	00 34 05.2 +2.5
SHPR	Sheep Range	128.94	50	ePKPdf	PKPdf	00 34 05.3 +2.5
MOOW	Moose Ponds	129.00	40	ePKPdf	PKPdf	00 34 04.4 +1.6
MOOW				LR	LR	
	comp=Z,500nm,22.0s					
SPUT	South Promonto	129.02	43	ePKPdf	PKPdf	00 34 05.1 +2.3
SPUT				LR	LR	
	comp=Z,400nm,20.0s					
MONP2	Monument Peak	129.07	55	P	PKPdf	00 34 04.8 +1.6
	baz=286					
BELC	Belle Mtn. Jos	129.09	53	P	PKPdf	00 34 04.6 +1.4
	baz=287					
GMRC	Granite Mounta	129.12	52	P	PKPdf	00 34 05.0 +1.8
	baz=288					
REDW	Red Top Meadow	129.12	40	ePKPdf	PKPdf	00 34 04.4 +1.3
REDW				LR	LR	
	comp=Z,400nm,22.0s					
SNOW	Snow King Moun	129.13	40	ePKPdf	PKPdf	00 34 05.1 +2.0
SNOW				LR	LR	
	comp=Z,500nm,22.0s					
LOHW	Long Hollow	129.16	40	ePKPdf	PKPdf	00 34 04.8 +1.7
LOHW				LR	LR	
	comp=Z,400nm,22.0s					
PSUT	Pine Spring	129.17	47	ePKPdf	PKPdf	00 34 05.1 +1.8
PSUT				LR	LR	
	comp=Z,400nm,22.0s					
RLMT	Red Lodge	129.22	38	P	PKPdf	00 34 04.5 +1.4
	baz=302					
RLMT	Red Lodge	129.22	38	ePKPdf	PKPdf	00 34 05.0 +1.8
DUG	Dugway, Tooele	129.24	45	P	PKPdf	00 34 04.7 +1.4
	baz=295					
DUG	Dugway, Tooele	129.24	45	ePKIKP	PKPdf	00 34 05.1 +1.8
DUG	Dugway, Tooele	129.24	45	ePKPdf	PKPdf	00 34 05.1 +1.8
AHID	Auburn Hatcher	129.25	41	ePKPdf	PKPdf	00 34 04.8 +1.5
IKP	In-Ko-Pah, Jac	129.39	55	P	PKPdf	00 34 05.5 +1.9
	baz=286					
HWUT	Hardware Ranch	129.48	43	ePKPdf	PKPdf	00 34 05.2 +1.5
SWSC	Sam W. Stewart	129.56	55	P	PKPdf	00 34 05.7 +1.8
	baz=287					
BC3	Big Chuckawall	129.63	54	P	PKPdf	00 34 05.7 +1.6
	baz=288					
IRM	Iron Mountain	129.72	53	P	PKPdf	00 34 05.9 +1.7
	baz=288					
TCUT	Toone Canyon	129.80	43	ePKPdf	PKPdf	00 34 06.0 +1.5
NLU	North Lily Min	129.86	45	ePKPdf	PKPdf	00 34 06.5 +2.0
JLU	Jordanelle	130.01	44	PFAKE		00 34 20.0 +15
JLU				LR	LR	
	comp=Z,400nm,22.0s					
LAO	LASA Array	130.11	34	P	PKPdf	00 34 05.9 +1.3
	baz=306					
LAO	LASA Array	130.11	34	ePKPdf	PKPdf	00 34 06.2 +1.5
LCMT	Little Creek M	130.19	49	ePKPdf	PKPdf	00 34 07.3 +2.2
BW06	Boulder Array	130.24	40	P	PKPdf	00 34 05.7 +0.5
	baz=300					
BW06	Boulder Array	130.24	40	ePKPdf	PKPdf	00 34 05.5 +0.3
BW06				ePKPdf	PKiKP	00 34 06.2 +0.2
BW06				LR	LR	
	comp=Z,500nm,21.0s					
PD31	Pinedale Array	130.24	40	ePKPdf	PKPdf	00 34 06.2 +1.0
PD31				eSKPbc	SKPbc	00 37 24.1 +0.1
PDAR	Pinedale Array	130.24	40	PKP	PKPdf	00 34 06.2 +1.0
	comp=Z,2.5nm,0.5s,baz=124,slow=0.7,SNR=25					
PDAR				SKPbc	SKPbc	00 37 24.1 +0.1
	comp=Z,1.9nm,0.8s,baz=209,slow=1.6,SNR=4.1					
PLCA	Paso Flores	130.29	177	PKhKP	PKPpre	00 33 56.6
	comp=Z,2.3nm,1.0s,baz=252,slow=2.9,SNR=4.0					
PLCA				PKP	PKiKP	00 34 05.7 -0.3
	comp=Z,6.6nm,1.1s,baz=232,slow=4.3,SNR=5.5					
GLA	Glamis	130.31	54	P	PKPdf	00 34 06.9 +1.6
	baz=288					
Y12C	Blythe	130.34	53	P	PKPdf	00 34 06.8 +1.4
	baz=288					
Y12C	Blythe	130.34	53	ePKPdf	PKPdf	00 34 08.3 +3.0
Y12C				LR	LR	
	comp=Z,500nm,22.0s					
MSU	Marysvale	130.39	46	ePKIKP	PKPdf	00 34 07.8 +2.2
MSU	Marysvale	130.39	46	ePKPdf	PKPdf	00 34 07.8 +2.2
W13A	Hualapai Mount	130.39	51	ePKPdf	PKPdf	00 34 07.8 +2.1
W13A				eSKPbc	SKPbc	00 37 26.2 +1.5
PDMCI	Parker Dam,Lak	130.46	52	P	PKPdf	00 34 06.6 +1.1
	baz=289					
KNB	Kanab	130.51	49	ePKIKP	PKPdf	00 34 09.0 +3.2
KNB	Kanab	130.51	49	ePKPdf	PKPdf	00 34 09.0 +3.2
TMUT	Trail Mountain	130.75	45	ePKPdf	PKPdf	00 34 08.2 +1.9
TMUT				LR	LR	
	comp=Z,400nm,21.0s					
B25A	Knox Farm, Ray	130.76	31	P	PKPdf	00 34 07.0 +1.3
	baz=310					
A26A	Wade Farm, Ken	130.91	30	P	PKPdf	00 34 07.1 +1.1
	baz=312					
Q16A	Castle Valley	130.93	46	ePKPdf	PKPdf	00 34 07.1 +0.5
Q16A				eSKPbc	SKPab	00 37 30.8 +4.0
P17A	Butcher Ranch,	130.99	45	PFAKE		00 34 20.0 +13
P17A				LR	LR	
	comp=Z,300nm,22.0s					
C25A	Freed Ranch, W	131.07	32	P	PKPdf	00 34 06.8 +0.5
	baz=310					
U15A	North Rim	131.12	49	ePKPdf	PKPdf	00 34 09.6 +2.4
U15A				eSKPbc	SKPab	00 37 32.4 +4.6
A27A	Ledoux Ranch,	131.26	29	P	PKPdf	00 34 07.7 +1.1
	baz=313					
P18A	Preston Nutter	131.27	44	PFAKE		00 34 20.0 +13
P18A				LR	LR	
	comp=Z,300nm,20.0s					
SRU	San Rafael Swe	131.30	45	ePKIKP	PKPdf	00 34 09.4 +2.1
SRU	San Rafael Swe	131.30	45	ePKPdf	PKPdf	00 34 09.4 +2.1
D25A	Fairfield	131.40	32	P	PKPdf	00 34 08.4 +1.4
	baz=310					
Y14A	Wickenburg	131.47	52	ePKPdf	PKPdf	00 34 09.2 +1.7
Y14A				eSKPbc	SKPab	00 37 30.1 +1.1
C26A	Wahner Farm, P	131.59	31	P	PKPdf	00 34 08.7 +1.4
	baz=311					
B27A	Peters Farms,	131.62	30	P	PKPdf	00 34 08.0 +0.6
	baz=313					
A28A	Rude Farm, Bot	131.76	29	P	PKPdf	00 34 08.3 +0.7
	baz=314					
E25A	Miller Ranch,	131.77	33	P	PKPdf	00 34 08.0 +0.3
	baz=309					
B28A	Dugan Ranch, T	132.03	29	P	PKPdf	00 34 09.1 +1.0
	baz=314					
F25A	Bowman	132.10	34	P	PKPdf	00 34 09.3 +0.9
	baz=308					
WUAZ	Wupatki	132.16	50	P	PKPdf	00 34 10.3 +1.3
	baz=292					
WUAZ	Wupatki	132.16	50	ePKPdf	PKPdf	00 34 10.5 +1.5
WUAZ				eSKPbc	SKPab	00 37 34.3 +2.3
WUAZ				LR	LR	
	comp=Z,500nm,22.0s					
K22A	Casper	132.21	39	P	PKPdf	00 34 09.1 +0.3
	baz=303					
K22A	Casper	132.21	39	ePKPdf	PKPdf	00 34 09.5 +0.7
A29A	Manning Farm,	132.23	28	P	PKPdf	00 34 08.8 +0.3
	baz=315					
214A	Organ Pipe Nat	132.26	55	P	PKPdf	00 34 10.2 +1.1
	baz=288					
O20A	White River Ci	132.39	43	P	PKPdf	00 34 10.5 +1.2
	baz=299					
O20A	White River Ci	132.39	43	ePKPdf	PKPdf	00 34 10.1 +0.8
O20A				eSKPbc	SKPab	00 37 36.6 +3.6
O20A				LR	LR	
	comp=Z,400nm,20.0s					
C28A	Hausauer Farms	132.52	30	P	PKPdf	00 34 10.1 +1.0
	baz=313					
PV09	Paradox Valley	132.55	45	ePKPdf	PKPdf	00 34 11.8 +2.0
F26A	Lodgepole	132.57	33	P	PKPdf	00 34 09.9 +0.6
	baz=309					
G25A	Newell	132.57	34	P	PKPdf	00 34 09.6 +0.3
	baz=308					
A30A	Hoffart Farm,	132.65	27	P	PKPdf	00 34 10.2 +0.9
	baz=316					
ULM	Lac du Bonnet	132.72	25	PKP	PKPdf	00 34 09.7 +0.4
	comp=Z,7.3nm,0.8s,baz=353,slow=4.1,SNR=7.4					
ULM				SKPbc	SKPab	00 37 34.2 +0.5
	comp=Z,8.2nm,0.8s,baz=293,slow=5.0,SNR=5.2					
ULM	Lac du Bonnet	132.72	25	ePKPdf	PKPdf	00 34 09.7 +0.4
ULM				eSKPbc	SKPab	00 37 36.9 +3.2
TRQA	Tornquist	132.77	186	ePKPdf	PKPdf	00 34 10.6 +0.6
D28A	Regan	132.79	31	P	PKPdf	00 34 10.0 +0.4
	baz=313					
MDND	Maddock	132.81	29	P	PKPdf	00 34 09.9 +0.3
	baz=314					
MDND	Maddock	132.81	29	PFAKE		00 34 20.0 +10
MDND				LR	LR	
	comp=Z,400nm,20.0s					
RSSD	Black Hills	132.87	36	P	PKPdf	00 34 10.1 -0.1
	baz=307					
RSSD	Black Hills	132.87	36	ePKIKP	PKPdf	00 34 10.6 +0.5
RSSD	Black Hills	132.87	36	ePKPdf	PKPdf	00 34 10.6 +0.5
G26A	Maurine	132.96	34	P	PKPdf	00 34 10.2 +0.1
	baz=309					
B30A	Myrvik Farm, E	132.99	28	P	PKPdf	00 34 10.2 +0.3
	baz=316					
I25A	Rochford	133.11	36	P	PKPdf	00 34 11.0 +0.5
	baz=307					
PV01	Paradox Valley	133.11	45	ePKPdf	PKPdf	00 34 12.5 +1.7
E28A	Huff	133.14	31	P	PKPdf	00 34 10.5 +0.2
	baz=312					
G27A	Dupree	133.27	33	P	PKPdf	00 34 11.1 +0.5
	baz=310					
H26A	Fairpoint	133.29	35	P	PKPdf	00 34 11.0 +0.3
	baz=308					
N23A	Red Feather La	133.52	41	ePKPdf	PKPdf	00 34 14.6 +3.0
W18A	Petrified Fore	133.55	50	P	PKPdf	00 34 13.0 +1.4
	baz=294					
MVCO	Mesa Verde	133.57	46	P	PKPdf	00 34 12.7 +1.0
	baz=296					
MVCO	Mesa Verde	133.57	46	ePKPdf	PKPdf	00 34 13.7 +2.0
H27A	Howes	133.67	34	P	PKPdf	00 34 11.8 +0.4
	baz=309					
SMCO	Snowmass	133.72	43	ePKPdf	PKPdf	00 34 12.7 +0.6
TUC	Tucson	133.77	54	P	PKPdf	00 34 13.2 +1.2
	baz=290					
TUC	Tucson	133.77	54	ePKIKP	PKPdf	00 34 13.9 +1.9
TUC	Tucson	133.77	54	ePKPdf	PKPdf	00 34 13.9 +1.9
TUC				eSKPbc	SKPab	00 37 41.1 +2.0
J26A	Sides Ranch, S	133.91	36	P	PKPdf	00 34 12.5 +0.6
	baz=307					
F29A	Eureka	134.09	31	P	PKPdf	00 34 12.3 +0.3
	baz=313					
E30A	Jud	134.09	30	P	PKPdf	00 34 12.2 +0.1
	baz=314					
D31A	Mcclaflin, Tow	134.28	29	P	PKPdf	00 34 11.9 -0.5
	baz=316					
ISCO	Idaho Springs	134.31	42	P	PKPdf	00 34 13.1 0.0
	baz=302					
ISCO	Idaho Springs	134.31	42	ePKIKP	PKPdf	00 34 14.4 +1.3
ISCO	Idaho Springs	134.31	42	ePKPdf	PKPdf	00 34 14.4 +1.3
SCHQ	Schefferville	134.43	360	PKP	PKPdf	00 34 12.4 0.0
	comp=Z,9.0nm,0.7s,baz=351,slow=1.9,SNR=16					
SCHQ				PP	PP	00 36 44.5 +0.4
	comp=Z,3.1nm,0.7s,baz=354,slow=4.4,SNR=3.6					
SCHQ	Schefferville	134.43	360	ePKPdf	PKPdf	00 34 12.4 0.0
SCHQ				ePP	PP	00 36 44.5 +0.4
SCHQ				LR	LR	
	comp=Z,1μm,22.0s					
F30A	Leola	134.49	31	P	PKPdf	00 34 12.8 -0.1
	baz=314					
S22A	4UR Ranch, Cre	134.51	45	ePKPdf	PKPdf	00 34 10.9 -2.6
S22A				LR	LR	
	comp=Z,400nm,20.0s					
I28A	Midland	134.57	34	P	PKPdf	00 34 13.4 +0.4
	baz=310					
B34A	Aery, Baudette	134.59	25	P	PKPdf	00 34 13.2 +0.3
	baz=321					
C33A	Trail	134.66	27	P	PKPdf	00 34 12.8 -0.3
	baz=319					
HSIG		134.68	58	PFAKE		00 34 30.0 +16
HSIG				LR	LR	
	comp=Z,400nm,21.0s					
G30A	Faulkton	134.92	32	P	PKPdf	00 34 13.9 +0.2
	baz=313					
I29A	Vivian Onida	135.03	34	P	PKPdf	00 34 14.1 +0.1
	baz=311					
Q24A	Divide	135.05	42	P	PKPdf	00 34 14.5 0.0
	baz=301					
B35A	Bob, Littlefor	135.07	25	P	PKPdf	00 34 13.9 0.0
	baz=322					
D33A	AnnSam, Waubun	135.09	27	P	PKPdf	00 34 14.2 +0.3
	baz=318					
C34A	RKJ Ranch, Bem	135.12	26	P	PKPdf	00 34 14.3 +0.3
	baz=320					
319A	Douglas	135.30	54	ePKPdf	PKPdf	00 34 17.1 +2.2
319A				LR	LR	
	comp=Z,500nm,20.0s					
D34A	Park Rapids	135.42	27	P	PKPdf	00 34 14.6 +0.1
	baz=319					
SDCO	Great Sand Dun	135.43	44	ePKPdf	PKPdf	00 34 16.9 +1.7
SUSD	Miller	135.48	32	P	PKPdf	00 34 15.0 +0.3
	baz=313					
C35A	Jirik Farms, M	135.48	26	P	PKPdf	00 34 14.7 +0.1
	baz=321					
E33A	Westby DABS, E	135.49	28	P	PKPdf	00 34 15.0 +0.3
	baz=318					
I30A	Oacoma	135.58	33	P	PKPdf	00 34 15.2 +0.3
	baz=312					
LAZ	Ladron	135.79	49	ePKPdf	PKPdf	00 34 17.8 +1.9
F33A	5 Mile Ranch,	135.84	29	P	PKPdf	00 34 15.6 +0.3
	baz=317					
E34A	Wadena	135.87	28	P	PKPdf	00 34 15.3 0.0
	baz=319					
C36A	Pine Crest Far	135.91	25	P	PKPdf	00 34 15.6 +0.2
	baz=322					
D35A	Remer	135.93	26	P	PKPdf	00 34 15.7 +0.2
	baz=320					
J30A	Dallas	135.94	34	P	PKPdf	00 34 15.3 -0.4
	baz=311					
ANMO	Albuquerque	136.06	48	ePKIKP	PKPpre	00 34 09.2
ANMO	Albuquerque	136.06	48	ePKPpre	PKPpre	00 34 09.2
Y22D	IRIS PASSCAL I	136.09	50	PFAKE		00 34 30.0 +14
Y22D				LR	LR	
	comp=Z,600nm,21.0s					
E35A	Pequot Lakes	136.18	27	P	PKPdf	00 34 16.2 +0.3
	baz=320					
C37A	Embarrass	136.20	24	P	PKPdf	00 34 16.5 +0.5
	baz=323					
H32A	Carlson Farm,	136.23	31	P	PKPdf	00 34 16.7 +0.5
	baz=314					
D36A	Goodland	136.24	25	P	PKPdf	00 34 16.8 +0.8
	baz=322					
BNM	Barren Site	136.28	49	ePKPdf	PKPdf	00 34 19.6 +2.8
K30A	Basset	136.29	35	P	PKPdf	00 34 16.5 +0.2
	baz=310					
EYMN	Ely	136.30	23	P	PKPdf	00 34 16.7 +0.5
	baz=324					
EYMN	Ely	136.30	23	ePKPdf	PKPdf	00 34 16.2 +0.1
H33A	Prehn Over Nor	136.45	30	P	PKPdf	00 34 16.4 -0.1
	baz=316					
T25A	Trinidad	136.48	44	ePKPdf	PKPdf	00 34 19.2 +2.2
D37A	Cotton	136.56	25	P	PKPdf	00 34 16.9 +0.2
	baz=323					
C38A	Sawbill Land.	136.58	23	P	PKPdf	00 34 16.7 +0.1
	baz=324					
E36A	McGregor	136.71	26	P	PKPdf	00 34 17.4 +0.5
	baz=321					
K31A	O'Neill	136.81	34	P	PKPdf	00 34 17.4 +0.1
	baz=311					
C39A	Grand Marais	136.93	22	P	PKPdf	00 34 17.5 +0.2
	baz=326					
E37A	Wrenshall	137.04	25	P	PKPdf	00 34 18.1 +0.6
	baz=322					
F36A	Milaca	137.10	27	P	PKPdf	00 34 18.0 +0.3
	baz=320					
ECSD	EROS Data Cent	137.19	31	P	PKPdf	00 34 18.3 +0.4
	baz=315					
ECSD	EROS Data Cent	137.19	31	ePKPdf	PKPdf	00 34 16.5 -1.5
H35A	Sunnyside Ranc	137.38	29	P	PKPdf	00 34 18.9 +0.6
	baz=318					
G36A	St. Michael	137.48	28	P	PKPdf	00 34 19.0 +0.6
	baz=320					
SPMN	Marine on St.	137.92	27	P	PKPdf	00 34 19.7 +0.5
	baz=321					
SPMN	Marine on St.	137.92	27	ePKPdf	PKPdf	00 34 20.0 +0.8
SPMN				LR	LR	
	comp=Z,400nm,21.0s					
BGNE	Belgrade	137.94	35	P	PKPdf	00 34 20.7 +1.3
	baz=311					
BGNE	Belgrade	137.94	35	PFAKE		00 34 30.0 +11
BGNE				LR	LR	
	comp=Z,500nm,20.0s					
MNTX	Cornudas Mount	138.26	52	P	PKPdf	00 34 21.5 +1.2
	baz=294					
H37A	Dierke Farm, C	138.36	28	P	PKPdf	00 34 20.2 +0.2
	baz=320					
ASAL	Salagasta	138.47	178	eP	PKPdf	00 34 20.6 -0.1
I37A	Lemond, Waseca	138.57	29	P	PKPdf	00 34 21.1 +0.6
	baz=319					
J36A	Seneca 1, Swea	138.63	30	P	PKPdf	00 34 20.8 +0.2
	baz=318					
CBKS	Cedar Bluff	138.63	39	P	PKPdf	00 34 21.4 +0.6
	baz=307					
COWI	Conover	138.74	23	ePKPdf	PKPdf	00 34 21.7 +1.0
P32A	Huiting Farm,	138.83	37	P	PKPdf	00 34 21.1 0.0
	baz=309					
L35A	Bielow Farm, R	138.89	32	P	PKPdf	00 34 21.5 +0.4
	baz=315					
J37A	Redenius Farm,	139.03	29	P	PKPdf	00 34 21.6 +0.3
	baz=318					
I38A	Scanlan Farm,	139.05	28	P	PKPdf	00 34 21.2 -0.1
	baz=321					
K36A	Gilmore City	139.08	31	P	PKPdf	00 34 21.7 +0.3
	baz=317					
O33A	Hebron	139.14	36	P	PKPdf	00 34 21.4 -0.2
	baz=311					
MSTX	Muleshoe	139.21	47	P	PKPdf	00 34 22.2 +0.1
	baz=299					
Q32A	Meitler Ranch,	139.25	38	P	PKPdf	00 34 21.9 +0.1
	baz=309					
M35A	Neola	139.26	33	P	PKPdf	00 34 21.4 -0.4
	baz=314					
L36A	Harm Buss Farm	139.36	32	P	PKPdf	00 34 21.9 0.0
	baz=316					
K37A	Belmond	139.39	30	P	PKPdf	00 34 21.7 -0.3
	baz=318					
P33A	Williams Farm,	139.49	37	P	PKPdf	00 34 22.3 0.0
	baz=310					
R32A	Long Quarter,	139.51	39	P	PKPdf	00 34 22.6 +0.2
	baz=308					
N35A	Tabor	139.71	34	P	PKPdf	00 34 22.3 -0.3
	baz=314					
K38A	Parkersburg	139.90	29	P	PKPdf	00 34 23.0 +0.1
	baz=319					
P34A	Walnut Farm, R	139.93	36	P	PKPdf	00 34 22.8 -0.2
	baz=311					
R33A	Olander Ranch,	140.03	39	P	PKPdf	00 34 23.3 0.0
	baz=309					
N36A	Muff Farm, Cla	140.11	33	P	PKPdf	00 34 23.7 +0.3
	baz=315					
T32A	Huddler Ranch,	140.12	41	P	PKPdf	00 34 23.7 +0.2
	baz=306					
Q34A	Chapman	140.27	37	P	PKPdf	00 34 24.0 +0.3
	baz=310					
KSU1	Kansas State U	140.35	36	P	PKPdf	00 34 24.2 +0.4
	baz=311					
KSU1	Kansas State U	140.35	36	ePKPpre	PKPpre	00 34 19.9
P35A	Duane Minner,	140.41	36	P	PKPdf	00 34 23.9

LMQ LR LR
comp=Z,900nm,22.0s
V34A Guthrie 141.83 41 *e*PKPdf **PKPdf 00 34 28.6 +2.0**
LCO Las Campanas 141.93 175 *e*P PKPdf 00 34 40.9 +14
W34A Bridge Creek, 142.02 42 PFAKE 00 34 40.0 +13
W34A LR LR
comp=Z,600nm,22.0s
ABTX Abilene, Hawle 142.15 47 *e*PKPpre PKPpre 00 34 24.3
ABTX LR LR
comp=Z,600nm,19.0s
VCA Vinchina 142.33 179 *e*P PKPpre 00 34 22.4
TRQ Mont Tremblant 142.55 8 *e*PKPpre PKPpre 00 34 24.7
CYA Choya 142.60 182 *e*P **PKPdf 00 34 27.0 -1.3**
TUL1 Leonard 142.89 40 *e*PKPpre PKPpre 00 34 25.6
TUL1 LR LR
comp=Z,500nm,22.0s
SADO Sadowa 143.09 14 *e*PKPpre PKPpre 00 34 26.0
SADO LR LR
comp=Z,800nm,21.0s
JCT Junction City 143.09 50 *e*PKIKP PKPbc 00 34 26.3 +0.3
JCT Junction City 143.09 50 *e*PKPpre PKPpre 00 34 26.2
HDIL Hopedale 143.17 28 *e*PKPpre PKPpre 00 34 26.1
X36A Centrahoma 143.35 42 P PKPbc 00 34 26.3 -0.2
baz=307
R40A Maddies Statio 143.37 34 P PKPab 00 34 25.8 +0.5
baz=316
CPUP Villa Florida 143.40 195 PKhKP PKPpre 00 34 26.2
comp=Z,9.6nm,0.7s,baz=242,slow=1.3,SNR=22
U38A Gravette 143.42 38 P PKPab 00 34 26.0 +0.4
baz=311
Z35A Perchaven, San 143.46 44 P PKPbc 00 34 26.9 0.0
baz=304
433A Art 143.49 49 P PKPbc 00 34 27.2 +0.1
baz=299
234A Clairette 143.56 47 P PKPbc 00 34 27.7 +0.5
baz=302
W37B Quinton 143.60 40 P PKPbc 00 34 27.3 +0.1
baz=309
T39A Clever 143.63 36 P PKPbc 00 34 27.0 -0.3
baz=313
ZAIG Zacatecas 143.70 64 *e*PKPdf **PKPdf 00 34 29.9 -0.8**
S40A Lebanon 143.73 35 P PKPbc 00 34 27.3 -0.2
baz=315
135A Vickery Place, 143.78 46 P PKPbc 00 34 28.6 +0.8
baz=303
V38A Canehill 143.79 39 P PKPab 00 34 27.3 +0.2
baz=311
Y36A Durant 143.79 43 P PKPbc 00 34 28.0 +0.2
baz=306
HHAR Hobbs 143.80 38 *e*PKPpre PKPpre 00 34 26.9
HHAR LR LR
comp=Z,500nm,22.0s
Q42A Golden Eagle 143.83 31 P PKPbc 00 34 27.8 +0.1
baz=319
334A Lometa 143.84 48 P PKPbc 00 34 28.2 +0.2
baz=301
533A Kerrville 143.86 50 P PKPbc 00 34 28.4 +0.2
baz=299
832A Faith Ranch, C 143.94 54 P PKPbc 00 34 29.2 +0.7
baz=296
PKME Peaks-Kenny Pk 143.98 2 *e*PKPdf **PKPdf 00 34 29.1 -1.0**
X37A Clayton 143.98 41 P PKPbc 00 34 28.4 +0.1
baz=308
T40A Mansfield 144.04 35 P **PKPab 00 34 28.2 +0.2**
baz=315
633A Saathoff Ranch 144.04 51 P PKPbc 00 34 29.6 +0.9
baz=298
FRNY Flat Rock 144.04 7 *e*PKPdf PKPbc 00 34 28.6 +0.4
FRNY LR LR
comp=Z,800nm,20.0s
WHTX Lake Whitney, 144.06 46 P PKPbc 00 34 29.4 +0.8
baz=303
WHTX Lake Whitney, 144.06 46 *e*PKPdf **PKPdf 00 34 30.1 -0.6**
WHTX LR LR
comp=Z,500nm,20.0s
Z36A Blue Ridge 144.06 44 P PKPbc 00 34 29.1 +0.4
baz=305
434A Burnet 144.08 49 P PKPbc 00 34 29.2 +0.4
baz=300
LONY Lake Ozonia 144.12 9 *e*PKPdf PKPbc 00 34 29.4 +0.9
Y37A Hugo 144.19 42 P PKPbc 00 34 29.4 +0.3
baz=307
SLM Saint Louis 144.19 31 *e*PKIKP PKPbc 00 34 28.7 -0.2
SLM Saint Louis 144.19 31 *e*PKPdf PKPbc 00 34 28.7 -0.1
AHML Horco Molle 144.23 183 *e*P **PKPab 00 34 29.0 0.0**
W38A Poteau 144.23 40 P PKPbc 00 34 29.4 +0.3
baz=310
V39A Pettigrew 144.27 38 P **PKPab 00 34 28.9 0.0**
baz=312
X38A Whitesboro 144.28 41 P PKPbc 00 34 29.9 +0.6
baz=309
733A Divot King Ran 144.29 53 P **PKPdf 00 34 30.8 -0.3**
baz=297
SFIN Lafayette 144.31 26 P PKPbc 00 34 29.5 +0.3
baz=325
SFIN Lafayette 144.31 26 *e*PKPdf PKPbc 00 34 29.5 +0.3
SFIN LR LR
comp=Z,800nm,21.0s
534A Blanco 144.31 50 P PKPbc 00 34 30.3 +0.7
baz=299
833A Chaparral WMA, 144.38 53 P **PKPdf 00 34 30.9 -0.4**
baz=296
U40A Yellville 144.39 37 P PKPbc 00 34 29.6 0.0
baz=313
136A Ennis 144.45 45 P **PKPdf 00 34 31.0 -0.3**
baz=304
335A Moody 144.45 47 P PKPbc 00 34 30.6 +0.7
baz=302
T41A Mountain View 144.54 35 P PKPbc 00 34 30.0 0.0
baz=316
EMMW East Machias 144.57 0 *e*PKPdf **PKPdf 00 34 30.7 -0.4**
435B Jarrell 144.60 48 P **PKPdf 00 34 31.4 -0.2**
baz=301
W39A Magazine 144.60 39 P PKPbc 00 34 30.3 0.0
baz=311
Z37A Pogue Cattle C 144.65 43 P **PKPdf 00 34 31.4 -0.2**
baz=306
WVL Waterville 144.66 3 *e*PKPdf PKPbc 00 34 30.6 +0.5
WVL LR LR
comp=Z,1μm,20.0s
236A Katherine and 144.71 46 P **PKPdf 00 34 31.9 +0.2**
baz=304
634A China Grove, S 144.72 51 P **PKPdf 00 34 31.9 0.0**
baz=298
V40A Witts Springs 144.79 37 P PKPbc 00 34 31.0 0.0
baz=313
933A Laredo 144.79 54 P **PKPdf 00 34 32.7 +0.6**
baz=295
NCB Newcomb 144.81 9 *e*PKPdf **PKPdf 00 34 31.2 -0.4**
734A La Parita Cree 144.81 52 P **PKPdf 00 34 32.7 +0.7**
baz=298
Y38A Idabel 144.81 41 P PKPbc 00 34 31.1 +0.1
baz=308
336A Riesel 144.82 47 P **PKPdf 00 34 32.1 +0.2**
baz=303
LBNH Lisbon 144.82 6 *e*PKIKP **PKPdf 00 34 31.6 0.0**
LBNH Lisbon 144.82 6 *e*PKPdf **PKPdf 00 34 31.6 0.0**
X39A Fountain Ranch 144.84 40 P **PKPdf 00 34 31.9 0.0**
baz=310
BUF Buffalo 144.89 15 *e*PKPbc **PKPdf 00 34 32.0 +0.2**
137A Heron Place, G 144.91 44 P **PKPdf 00 34 32.6 +0.5**
baz=305
MDV Middlebury 144.92 7 *e*PKPbc **PKPdf 00 34 31.4 -0.3**
FSA Cafayete 144.93 182 *e*P PKPbc 00 34 31.8 0.0
535A Dale 144.99 49 P **PKPdf 00 34 33.0 +0.7**
baz=300
W40A Ferguson Farm, 145.05 38 P **PKPdf 00 34 32.2 0.0**
baz=312
Z38A Mt. Pleasant 145.05 43 P **PKPdf 00 34 32.6 +0.3**
baz=307
834A Tilden 145.14 53 P **PKPdf 00 34 34.1 +1.5**
baz=297
635A Leesville 145.15 51 P **PKPdf 00 34 33.7 +1.1**
baz=299
MIAR Mount Ida 145.16 40 P **PKPdf 00 34 32.8 +0.3**
baz=310
MIAR Mount Ida 145.16 40 *e*PKIKP **PKPab 00 34 32.2 0.0**
MIAR Mount Ida 145.16 40 *e*PKPbc **PKPab 00 34 32.2 0.0**
OLIL Olney 145.18 29 *e*PKPbc **PKPdf 00 34 32.4 0.0**
OLIL LR LR
comp=Z,600nm,22.0s
436A Wall Ranch, Ga 145.18 48 P **PKPdf 00 34 33.8 +1.2**
baz=302
Y39A Lockesburg 145.21 41 P **PKPdf 00 34 33.0 +0.4**
baz=309
237A Washetta, Mont 145.22 45 P **PKPdf 00 34 33.9 +1.3**
baz=305

RCBR Riachuelo 145.25 246 PKPbc **PKPdf 00 34 33.4 +0.2**
comp=Z,88nm,0.8s,baz=117,slow=3.6,SNR=7.8
RCBR Riachuelo 145.25 246 *e*PKPbc **PKPdf 00 34 33.9 +0.6**
RCBR LR LR
comp=Z,1μm,22.0s
MMNY Mt. Morris Dam 145.30 14 *e*PKPbc **PKPdf 00 34 33.3 +0.8**
HNH Hanover 145.31 6 *e*PKPbc **PKPdf 00 34 33.3 +0.9**
138A Matatall Enter 145.33 44 P **PKPab 00 34 34.4 +1.5**
baz=306
ERPA Erie 145.34 17 *e*PKPdf **PKPab 00 34 33.5 +0.9**
536A Bastrop 145.34 49 P **PKPab 00 34 34.2 +1.2**
baz=301
735A Kenedy 145.38 51 P **PKPab 00 34 34.9 +1.7**
baz=298
934A Benavides 145.40 54 P **PKPab 00 34 35.5 +2.3**
baz=296
X201 Greenbrier Sit 145.41 37 *e*PKPdf **PKPbc 00 34 32.5 -0.3**
X201 LR LR
comp=Z,600nm,18.0s
SIUC Southern Illin 145.41 31 *e*PKPdf **PKPab 00 34 33.1 +0.2**
X301 Greenbrier Sit 145.42 38 *e*PKPdf **PKPbc 00 34 32.6 -0.3**
X301 LR LR
comp=Z,500nm,20.0s
WHAR Wooly Hollow 145.46 37 *e*PKPdf **PKPdf 00 34 32.7 -0.2**
WHAR LR LR
comp=Z,500nm,20.0s
ACCN Adirondack Com 145.46 8 *e*PKPdf **PKPab 00 34 33.7 +0.8**
PBMO Poplar Bluff 145.47 34 *e*PKPdf **PKPdf 00 34 32.9 0.0**
034A Hebbronville 145.50 55 P **PKPab 00 34 35.5 +1.8**
baz=295
337A Centerville 145.55 46 P **PKPab 00 34 35.3 +1.6**
baz=304
BLO Bloomington 145.55 27 *e*PKIKP **PKPbc 00 34 33.3 +0.1**
BLO Bloomington 145.55 27 *e*PKPdf **PKPbc 00 34 33.3 +0.1**
W41B Gary Mavity, V 145.56 37 P **PKPbc 00 34 33.5 +0.1**
baz=313
Z39A Irene McRaven, 145.59 42 P **PKPab 00 34 34.9 +1.1**
baz=308
437A Phantom Ranch, 145.63 47 P **PKPab 00 34 34.8 +0.8**
baz=303
835A Beeville 145.63 52 P **PKPab 00 34 36.0 +1.9**
baz=298
636A Smothers Creek 145.65 50 P **PKPab 00 34 35.6 +1.5**
baz=300
X40A Basin Creek Fa 145.66 39 P **PKPab 00 34 34.1 +0.1**
baz=311
Y40A Okolona 145.69 40 P **PKPab 00 34 34.3 +0.2**
baz=310
238A Jacksonville 145.69 44 P **PKPab 00 34 35.4 +1.2**
baz=306
MOIG Morelia 145.72 68 PFAKE 00 34 50.0 +15
MOIG LR LR
comp=Z,800nm,20.0s
ALLY Alegheny Colle 145.73 17 *e*PKPdf **PKPbc 00 34 33.8 +0.1**
UALR University of 145.77 38 *e*PKPdf **PKPab 00 34 34.3 -0.1**
UALR LR LR
comp=Z,500nm,20.0s
139A Bunkhouse Ranc 145.79 43 P **PKPab 00 34 35.1 +0.6**
baz=307
X41A Kaden, Bauxite 145.85 39 P **PKPab 00 34 34.6 -0.1**
baz=312
537A Green Hill Far 145.90 48 P **PKPab 00 34 35.8 +0.8**
baz=302
736A Circle Diamond 145.90 51 P **PKPab 00 34 36.3 +1.2**
baz=299
PARMO Parma 145.92 33 *e*PKPdf **PKPab 00 34 35.3 +0.3**
338A Crockett 145.93 46 P **PKPab 00 34 36.2 +1.1**
baz=304
USIN University of 145.99 29 *e*PKPdf **PKPab 00 34 35.5 +0.4**
M54A Oil Creek Stat 146.00 17 P **PKPbc 00 34 34.8 +0.2**
baz=338
WLAR White Oak Lake 146.00 40 *e*PKPdf **PKPab 00 34 35.4 +0.1**
035A Encino 146.02 55 P **PKPab 00 34 36.7 +1.1**
baz=296
ACSO Alum Creek Sta 146.08 22 *e*PKPdf **PKPbc 00 34 34.6 -0.2**
Z40A Long Farm, Mag 146.09 41 P **PKPab 00 34 36.2 +0.5**
baz=309
TRY Troy 146.10 8 *e*PKPdf **PKPab 00 34 35.7 +0.3**
239A Gary 146.13 44 P **PKPab 00 34 36.5 +0.6**
baz=306
438A Sam Houston St 146.15 47 P **PKPab 00 34 36.5 +0.5**
baz=304
NATX Nacogdoches 146.15 44 P **PKPab 00 34 36.6 +0.7**
baz=306
NATX Nacogdoches 146.15 44 *e*PKPdf **PKPbc 00 34 35.4 +0.1**
Y41A Eaglette Beard 146.20 40 P **PKPab 00 34 36.2 +0.1**
baz=311
637A Eagle Lake 146.22 49 P **PKPab 00 34 37.9 +1.6**
baz=301
035Z Hargill 146.25 55 P **PKPab 00 34 37.5 +1.0**
baz=295
SLA San Lorenzo 146.29 183 *e*P **PKPbc 00 34 35.6 -0.5**
HKT Hockley 146.32 48 *e*PKP2 **PKPab 00 34 36.5 -0.1**
HKT MLR MLR
comp=Z,500nm,20.0s
HKT Hockley 146.32 48 *e*PKPdf **PKPab 00 34 36.5 -0.1**
HKT LR LR
comp=Z,500nm,20.0s
140A Cam and Jess, 146.36 42 P **PKPab 00 34 37.4 +0.6**
baz=308
N54A Moraine State 146.41 17 P **PKPab 00 34 36.5 -0.2**
baz=337
WCI Wyandotte Cave 146.42 27 *e*PKP2 **PKPdf 00 34 35.0 +0.4**
WCI Wyandotte Cave 146.42 27 *e*PKPdf **PKPdf 00 34 35.0 +0.4**
538A Harpers Horsep 146.43 47 P **PKPab 00 34 37.4 +0.3**
baz=303
339A Huntington 146.47 45 P **PKPab 00 34 37.7 +0.5**
baz=305
737A Port Lavaca 146.48 50 P **PKPab 00 34 38.5 +1.2**
baz=300
Z41A Richland Creek 146.48 41 P **PKPab 00 34 37.2 +0.1**
baz=310
HRV Adam Dziewonsk 146.57 6 *e*PKP2 **PKPab 00 34 36.8 -0.4**
HRV Adam Dziewonsk 146.57 6 *e*PKPdf **PKPab 00 34 36.8 -0.4**
240A Hunter Patters 146.60 43 P **PKPab 00 34 38.1 +0.4**
baz=307
439A Center Grove, 146.63 46 P **PKPab 00 34 38.6 +0.7**
baz=304
HALT Halls 146.70 34 PFAKE 00 34 50.0 +12
HALT LR LR
comp=Z,524μm,20.0s
QUA2 Belchertown 146.71 7 *e*PKPdf **PKPab 00 34 37.2 -0.6**
WES Weston 146.72 5 PFAKE 00 34 50.0 +12
WES LR LR
comp=Z,1μm,20.0s
Y42A Garnett, Star 146.74 39 P **PKPab 00 34 37.9 -0.3**
baz=312
AZAP Zapla 146.75 184 *e*P **PKPdf 00 34 36.1 +0.3**
141A Papa Simpson, 146.82 42 P **PKPab 00 34 38.2 -0.4**
baz=309
340A Bronson 146.89 44 P **PKPab 00 34 38.4 -0.4**
baz=306
638A Rosharon 146.89 49 P **PKPbc 00 34 37.9 +0.5**
baz=302
ASTB Santa Barbara 146.98 185 *e*P **PKPbc 00 34 38.7 +0.6**
Z42A Norrel Spur, H 147.01 40 P **PKPab 00 34 38.6 -0.6**
baz=311
738A Farr-Stevens R 147.04 50 P **PKPab 00 34 39.4 0.0**
baz=301
539A Cross D Ranch, 147.05 47 P **PKPab 00 34 39.9 +0.5**
baz=304
ALOL LOMAS DE OLMED 147.07 186 *e*P **PKPbc 00 34 38.6 +0.5**
BRYW Bryant College 147.16 6 *e*PKPdf **PKPab 00 34 38.8 -0.7**
241A Mo Tay, Goldon 147.18 42 P **PKPab 00 34 39.8 -0.1**
baz=308
Y43A Makayla and Ka 147.21 38 P **PKPab 00 34 39.3 -0.7**
baz=313
440A Kirbyville 147.23 45 P **PKPab 00 34 40.3 +0.1**
baz=305
X44A Crenshaw 147.27 36 P **PKPbc 00 34 38.8 +0.5**
baz=315
SSPA Standing Stone 147.29 15 *e*PKPdf **PKPdf 00 34 36.7 +0.8**
SSPA LR LR
comp=Z,700nm,20.0s
WVT Waverly 147.34 32 *e*PKP2 **PKPdf 00 34 36.0 -0.1**
WVT MLR MLR
comp=Z,700nm,22.0s
WVT Waverly 147.34 32 *e*PKPdf **PKPdf 00 34 36.0 -0.1**
WVT LR LR
comp=Z,700nm,22.0s
PB10 IPOC Station P 147.40 175 *e*PKPbc **PKPab 00 34 40.2 -0.7**
341A Kurthwood 147.43 44 P **PKPab 00 34 40.5 -0.4**
baz=307
O56A Blue Knob Stat 147.46 16 P **PKPbc 00 34 39.4 +0.6**
baz=339
142A Monroe 147.48 41 P **PKPab 00 34 40.5 -0.6**
baz=310
Z43A Armstrong Fami 147.49 39 P **PKPbc 00 34 39.8 +0.8**
baz=312
N59A State Game Lan 147.50 12 P **PKPbc 00 34 39.6 +0.7**
baz=345
540A Vidor 147.52 46 P **PKPab 00 34 41.1 -0.3**
baz=305
ODNJ Ogdensburg 147.56 10 *e*PKPdf **PKPbc 00 34 37.9 -1.1**
YLE Yale 147.59 8 PFAKE 00 34 50.0 +8.8
YLE LR LR
comp=Z,800nm,19.0s
Y44A Strider, Charl 147.61 37 P **PKPbc 00 34 40.3 +1.0**
baz=314
UNM Universidad Na 147.65 68 PFAKE 00 34 50.0 +7.5
UNM LR LR
comp=Z,500nm,21.0s
242A Grayson 147.66 42 P **PKPab 00 34 40.7 -1.1**
baz=310
OXF Oxford 147.69 35 *e*PKP2 **PKPdf 00 34 37.2 +0.5**
OXF Oxford 147.69 35 *e*PKPdf **PKPdf 00 34 37.2 +0.5**
143A Socs Landing, 147.73 40 P **PKPab 00 34 40.9 -1.2**
baz=311
PAL Palisades 147.75 9 *e*PKP2 **PKPbc 00 34 40.1 +0.6**
PAL Palisades 147.75 9 *e*PKPbc **PKPbc 00 34 40.1 +0.6**
441A DeRidder 147.76 45 P **PKPab 00 34 41.8 -0.5**
baz=306
HJA Humahuaca 147.78 183 *e*P **PKPbc 00 34 40.2 -0.5**
LUPA Lehigh Univers 147.89 11 *e*PKPbc **PKPbc 00 34 40.7 +0.8**
Z44A Pea Ridge, Bel 147.95 38 P **PKPbc 00 34 41.2 +0.9**
baz=313
BRNJ Basking Ridge 147.96 10 *e*PKPbc **PKPbc 00 34 40.4 +0.3**
Y45A Yeager Farm, C 148.07 36 P **PKPbc 00 34 41.6 +1.0**
baz=315
PLAL Pickwick Lake 148.08 33 *e*PKPdf **PKPdf 00 34 37.5 +0.2**
243A Waterproof 148.21 41 P **PKPbc 00 34 41.9 +0.9**
baz=310
MVL Millersville 148.26 13 *e*PKPdf **PKPbc 00 34 39.3 -1.6**
442A Mamou 148.31 44 P **PKPab 00 34 43.0 -1.5**
baz=307
Z45A Winona 148.33 37 P **PKPbc 00 34 42.2 +0.9**
baz=315
144A Alexander Plac 148.39 39 P **PKPbc 00 34 42.3 +0.8**
baz=313
LVC Limon Verde 148.41 177 *e*P **PKPbc 00 34 43.4 +1.1**
LVC Limon Verde 148.41 177 PKPbc **PKPbc 00 34 43.5 +1.3**
comp=Z,130nm,0.7s,baz=236,slow=1.2,SNR=38
LVC Limon Verde 148.41 177 *e*PKPdf **PKPbc 00 34 40.9 -1.4**
LVC *e*PKPbc **PKPbc 00 34 43.5 +1.3**
Y46A Houston 148.46 36 P **PKPbc 00 34 42.1 +0.5**
baz=316
343A Vidalia 148.51 42 P **PKPbc 00 34 43.0 +1.3**
baz=309
542A Morse 148.58 45 P **PKPab 00 34 44.5 -1.0**
baz=306
TLIG Tlapa 148.59 71 *e*PKPdf **PKPbc 00 34 41.2 -1.3**
TLIG LR LR
comp=Z,600nm,22.0s
PB04 IPOC Station P 148.60 175 *e*PKPbc **PKPbc 00 34 43.3 +0.7**
VBMS Vicksburg 148.61 40 P **PKPbc 00 34 42.9 +0.9**
baz=312
VBMS Vicksburg 148.61 40 *e*PKPbc **PKPbc 00 34 43.2 +1.1**
244A Avery, Jackson 148.62 40 P **PKPbc 00 34 43.1 +1.0**
baz=312
SDMD Soldier's Deli 148.71 14 *e*PKPbc **PKPbc 00 34 42.8 +0.7**
145A Houston Renfro 148.72 38 P **PKPbc 00 34 43.2 +0.9**
baz=313
443A Delano Plantat 148.72 43 P **PKPbc 00 34 44.0 +1.7**
baz=308
YJA Yavi 148.82 183 *e*P **PKPbc 00 34 42.2 -1.2**
Z46A Louisville 148.90 37 P **PKPbc 00 34 43.7 +1.0**
baz=316
344A Westbrook Farm 148.98 41 P **PKPbc 00 34 44.5 +1.5**
baz=311
Y47A UCPARC, Winfie 149.01 34 P **PKPbc 00 34 43.2 +0.2**
baz=318
SWET Sewanee 149.02 30 *e*PKPdf **PKPdf 00 34 39.4 +0.4**
SWET LR LR
comp=Z,200nm,21.0s
543A St. Martinvill 149.08 44 P **PKPbc 00 34 44.9 +1.6**
baz=307
245A Little AP, Sta 149.13 39 P **PKPbc 00 34 44.1 +0.7**
baz=313
146A Union 149.22 37 P **PKPbc 00 34 44.6 +1.0**
baz=315
Z47A Carrollton 149.40 36 P **PKPbc 00 34 44.4 +0.4**
baz=317
444A Pine Grove 149.44 42 P **PKPbc 00 34 45.6 +1.4**
baz=310
CPCT Cooper Cave 149.51 28 *e*PKPdf **PKPdf 00 34 40.9 +1.1**
345A Thompson Farm, 149.53 40 P **PKPbc 00 34 45.6 +1.2**
baz=312
544A White Castle 149.54 44 P **PKPbc 00 34 46.4 +2.0**
baz=308
Z48A Northport 149.56 35 P **PKPbc 00 34 44.8 +0.4**
baz=318
246A Jackson Lee, B 149.61 38 P **PKPbc 00 34 45.5 +1.0**
baz=314
147A Livingston 149.66 36 P **PKPbc 00 34 45.0 +0.4**
baz=316
BLA Blacksburg 149.68 21 *e*PKP2 **PKPbc 00 34 44.8 +0.2**
BLA Blacksburg 149.68 21 *e*PKPbc **PKPbc 00 34 44.8 +0.2**
TKL Tuckaleechee C 149.68 27 PKP **PKPdf 00 34 40.7 +0.7**
comp=Z,84nm,0.9s,baz=170,slow=1.7,SNR=8.2
TKL PKPbc **PKiKP 00 34 45.2 -0.4**
comp=Z,45nm,0.5s,baz=175,slow=3.9,SNR=55
TKL Tuckaleechee C 149.68 27 *e*PKPdf **PKPdf 00 34 40.7 +0.7**
TKL *e*PKPbc **PKiKP 00 34 45.2 -0.4**
TKL LR LR
comp=Z,800nm,21.0s
445A Amite 149.70 42 P **PKPbc 00 34 46.0 +1.2**
baz=310
CBN Corbin Frederi 149.71 16 *e*PKPdf **PKPdf 00 34 41.3 +1.4**
VWCC Virginia Weste 149.80 20 *e*PKPbc **PKPbc 00 34 45.0 +0.1**
346A Big Creek Wild 149.83 40 P **PKPbc 00 34 46.1 +1.0**
baz=312
247A Quitman 149.90 38 P **PKPbc 00 34 46.4 +1.1**
baz=315
PB01 IPOC Station P 149.93 176 *e*PKPdf **PKPdf 00 34 42.0 +1.1**
545A Edgard 150.04 43 P **PKPbc 00 34 47.2 +1.6**
baz=309
LRAL Lakeview Retre 150.13 34 *e*PKPdf **PKPdf 00 34 41.4 +0.7**
446A Poplarville 150.29 40 P **PKPbc 00 34 47.2 +1.0**
baz=312
645A Chauvin 150.33 44 P **PKPbc 00 34 47.8 +1.4**
baz=308
248A Dixon Mills 150.39 37 P **PKPbc 00 34 47.2 +0.7**
baz=316
347A Saraland 150.40 39 P **PKPbc 00 34 47.6 +1.1**
baz=314
348A Jackson 150.78 38 P **PKPbc 00 34 48.3 +0.9**
baz=315
448A Bay Minette 151.14 38 P **PKPbc 00 34 48.2 0.0**
baz=314
KMSC Kings Mountain 151.16 24 P **PKPbc 00 34 48.7 +0.5**
baz=331
KMSC Kings Mountain 151.16 24 *e*PKPdf **PKPdf 00 34 43.8 +1.5**
KMSC LR LR
comp=Z,900nm,22.0s
PB11 IPOC Station P 151.19 176 *e*PKPdf **PKPdf 00 34 43.6 +0.7**
BRAL Brewton 151.47 37 *e*PKPbc **PKPbc 00 34 50.0 +1.0**
GOGA Godfrey 151.68 29 *e*PKIKP **PKPdf 00 34 44.2 +1.1**
GOGA Godfrey 151.68 29 *e*PKPdf **PKPdf 00 34 44.2 +1.1**
JSC Jenkinsville 151.94 25 *e*PKIKP **PKPdf 00 34 44.8 +1.4**
JSC Jenkinsville 151.94 25 *e*PKPdf **PKPdf 00 34 44.8 +1.4**
CMIG Matias Romero 152.13 71 PKP **PKPdf 00 34 45.6 +1.4**
comp=Z,7.5nm,0.8s,baz=289,slow=2.4,SNR=14
CMIG PKPbc **PKiKP 00 34 51.7 +0.5**
comp=Z,29nm,0.9s,baz=287,slow=3.0,SNR=34
TIGA Tifton 153.20 32 *e*PKPbc **PKPbc 00 34 53.8 +1.0**
SIV San Ignacio 154.25 194 PKP **PKPdf 00 34 48.5 +1.1**
comp=Z,2.9nm,0.6s,baz=205,slow=2.3,SNR=9.4
SIV PKPbc **PKiKP 00 34 55.6 0.0**
comp=Z,7.9nm,0.7s,baz=165,slow=1.7,SNR=12
SIV PKPab **PKPab 00 35 09.7 +0.3**
comp=Z,11nm,0.9s,baz=177,slow=4.0,SNR=7.1
SIV PP **PP 00 38 43.2 +0.4**
comp=Z,4.5nm,0.9s,baz=220,slow=6.1,SNR=5.7
LPAZ La Paz 154.72 178 *e*P **PKPdf 00 34 50.1 +1.3**
LPAZ La Paz 154.72 178 PKP **PKPdf 00 34 49.9 +1.1**
comp=Z,8.6nm,1.0s,baz=70,slow=0.8,SNR=24
LPAZ PKPbc **PKiKP 00 34 58.3 +1.0**
comp=Z,6.8nm,0.8s,baz=196,slow=7.6,SNR=9.6
LPAZ PKPab **PKPab 00 35 12.4 +0.3**
comp=Z,9.9nm,0.7s,baz=183,slow=8.7,SNR=8.7
CCIG Comitan 154.88 71 *e*PKPab **PKPab 00 35 13.6 +1.1**
PAYG Puerto Ayora 155.22 112 PFAKE 00 35 00.0 +11

PAYG LR LR
comp=Z,700nm,22.0s
DWPF Disney Wildern 156.97 33 PFAKE 00 35 00.0 +9.4
DWPF LR LR
comp=Z,900nm,20.0s
TEIG Tepich 157.04 59 PKP **PKPdf 00 34 50.9 0.0**
comp=Z,5.4nm,0.9s,baz=89,slow=24,SNR=4.2
TEIG PKPab **PKPab 00 35 22.2 +0.8**
comp=Z,6.5nm,0.7s,baz=269,slow=23,SNR=8.3
TEIG Tepich 157.04 59 *e*PKPdf **PKPdf 00 34 50.9 0.0**
TEIG *e*PKPab **PKPab 00 35 22.2 +0.8**
TEIG LR LR
comp=Z,500nm,21.0s
TGUH Tegucigalpa,Un 159.95 74 PFAKE 00 35 10.0 +15
TGUH LR LR
comp=Z,700nm,22.0s
ATAH Atahualpa 160.47 146 PKP **PKPdf 00 34 55.5 -0.3**
comp=Z,12nm,1.0s,baz=163,slow=12,SNR=8.5
SAML Samuel 161.54 193 *e*PKPdf **PKPdf 00 34 57.1 +0.8**
OTAV Otavalo 165.89 128 *e*PKPdf **PKPdf 00 35 02.2 +1.2**
OTAV Otavalo 165.89 128 *e*P **PKPdf 00 35 01.8 +0.8**
MTDJ Mount Denham 166.66 46 *e*PKPdf **PKPdf 00 35 01.0 +0.1**
PTGA Pitinga 167.70 217 PKP **PKPdf 00 35 02.3 +0.5**
comp=Z,7.1nm,0.8s,baz=304,slow=2.0,SNR=12
PTGA PKPab **PKPab 00 36 07.2 -0.9**
comp=Z,5.3nm,0.7s,baz=171,slow=2.9,SNR=6.6
SDDR Presa de Saban 169.53 21 *e*PKPab **PKPab 00 36 16.7 +0.7**
PRAC Prado 170.82 126 *e*PKPdf **PKPdf 00 35 03.7 -0.1**
SJG San Juan 171.00 352 PKP **PKPdf 00 35 03.2 -0.4**
comp=Z,4.2nm,0.2s,baz=284,slow=7.7,SNR=3.6
CELP Cerrillos 171.09 355 *e*PKPab **PKPab 00 36 22.3 -0.4**
CXM Morne La Croix 171.69 313 *e*P **PKPdf 00 35 06.0 +1.8**
FDF Fort de France 171.73 313 *e*P **PKPdf 00 35 04.7 +0.6**
FDF Fort de France 171.73 313 *e*PKIKP **PKPdf 00 35 03.3 -0.8**
FDF Fort de France 171.73 313 *e*PKPdf **PKPdf 00 35 03.3 -0.8**
ZAM Aeronautique 171.75 311 *e*P **PKPdf 00 35 05.3 +1.2**
BIM Bigot 171.81 311 *e*P **PKPdf 00 35 02.3 -1.9**
MOTC Monteria, Cord 171.84 92 *e*P **PKPdf 00 35 03.6 -0.5**
ROSC El Rosal 171.92 122 PKP **PKPdf 00 35 04.9 +0.2**
comp=Z,4.8nm,0.6s,baz=70,slow=8.0,SNR=13
ROSC PKPab **PKPab 00 36 27.8 +0.3**
comp=Z,2.3nm,0.4s,baz=77,slow=13,SNR=3.7
SJCC San Jacinto, C 172.30 84 *e*P **PKPdf 00 35 03.5 -0.9**
RUSC La Rusia 173.51 120 *e*P **PKPdf 00 35 04.6 -0.9**
BARC Barichara 173.75 114 *e*P **PKPdf 00 35 04.6 -0.7**
GIRC Giron, Santand 173.92 109 *e*P **PKPdf 00 35 03.6 -1.6**
GRMC Gramalote, San 174.48 105 *e*P **PKPdf 00 35 04.6 -0.8**
CBRI Barrientos, No 174.49 105 *e*P **PKPdf 00 35 04.6 -0.8**
SDV Santo Domingo 176.81 94 PKP **PKPdf 00 35 05.2 -0.8**
comp=Z,17nm,0.4s,baz=345,slow=2.7,SNR=4.1
SDV PKPab **PKPab 00 36 50.8 +1.7**
comp=Z,32nm,0.3s,baz=28,slow=3.1,SNR=3.1

CSEM ***17*** *00:24:51.1,36.41N×25.41E,h3km,ML0.8/3*
THE 17 00:24:51.1,36.41N×25.41E,h3km±1km,ML0.8/3,Error ellipse: s-maj=1.0km s-min=0.3km az=139.0, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THR3	**Thira Island,**	**0.01**	**249**	P	Pg	00 24 51.8	+0.2
THR3	**Thira Island,**	**0.01**	**249**	P	Pg	00 24 51.8	+0.2
THR7	**Fira-Santorini**	**0.02**	**53**	P	Pg	00 24 52.0	+0.3
THR7	**Fira-Santorini**	**0.02**	**53**	P	Pg	00 24 52.0	+0.3
THT1	**Athinios (Pele**	**0.03**	**153**	P	Pg	00 24 51.9	+0.1
THT1				S	Sg	00 24 52.7	+0.4
THT1	**Athinios (Pele**	**0.03**	**153**	P	Pg	00 24 51.9	+0.1
THT1				S	Sg	00 24 52.7	+0.4
THR2	**Thira island,**	**0.04**	**28**	P	Pg	00 24 52.1	+0.1
THR2	**Thira island,**	**0.04**	**28**	P	Pg	00 24 52.1	+0.1
THR5	**Thira Island,**	**0.05**	**275**	P	Pg	00 24 52.4	+0.2
THR5	**Thira Island,**	**0.05**	**275**	P	Pg	00 24 52.4	+0.2
SANT	**Santorini**	**0.06**	**138**	P	Pg	00 24 52.5	+0.2
SANT				S	Sg	00 24 53.7	+0.6
SANT	**Santorini**	**0.06**	**138**	P	Pg	00 24 52.5	+0.2
SANT				S	Sg	00 24 53.7	+0.6
CMBO	**Columbo, Santo**	**0.06**	**354**	P	Pg	00 24 52.7	+0.4
CMBO				S	Sg	00 24 53.6	+0.4
CMBO	**Columbo, Santo**	**0.06**	**354**	P	Pg	00 24 52.7	+0.4
CMBO				S	Sg	00 24 53.6	+0.4
THR6	**Thira Island,**	**0.06**	**192**	P	Pg	00 24 52.7	+0.4
THR6	**Thira Island,**	**0.06**	**192**	P	Pg	00 24 52.7	+0.4

ISCJB ***17*** *00:30:38.3±0.2,36.56N±0.02×71.24E±0.02,h227km±2km, mb4.9/218,Error ellipse: s-maj=3.1km s-min=2.0km az=29.1*
MOS ***17*** *00:30:38.4±0.9,36.58N×71.25E,h230km,mb4.9/75,Error ellipse: s-maj=5.2km s-min=3.3km az=118.9*
NEIC ***17*** *00:30:39.6±0.5,36.59N×71.20E,h227km±4km,mb4.9/83, Error ellipse: s-maj=3.7km s-min=2.7km az=186.0*
IDC ***17*** *00:30:40.8±0.3,36.58N×71.23E,h240km±2km,mb4.4/39, mb1 4.5/46,mb1mx4.5/50,mbtmp5.0/46,Error ellipse: s-maj=7.7km s-min=5.6km az=177.0*
NNC ***17*** *00:30:45.8±1.8,37.23N×71.22E,h213km±13km,mb4.3, mpv5.3,Error ellipse: s-maj=19.1km s-min=9.5km az=155.0*
ISC 17 00:30:40.2±0.2,36.58N±0.03×71.22E±0.03,h237km±1km, h237km:pP-P,n734,σ1.49/895,mb4.9/241,75C-50D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KBL	**Kabul**	**2.70**	**222**	*e*PN	**Pn**	**00 31 26.9**	**-2.0**
KBL				*e*S	**S**	**00 32 02.7**	**-4.5**
KBL	**Kabul**	**2.70**	**222**	*e*Pn	**Pn**	**00 31 26.9**	**-2.0**
KBL				*e*S	**S**	**00 32 02.7**	**-4.5**
CEP	**Cherat**	**2.81**	**168**	P	**Pn**	**00 31 29.6**	**-0.4**
DZET	**Dzherino**	**2.92**	**320**	⇓P	**Pn**	**00 31 29.3**	**-1.8**
DZET	1μm,0.3s			⇓S	**S**	**00 32 05.3**	**-6.0**
	6μm,0.5s						
DZET	**Dzherino**	**2.92**	**320**	PN	**Pn**	**00 31 29.3**	**-1.8**
DZET				pmax	pmax		
	comp=Z,1μm,0.3s						
CHCP	**Chirah Chowk**	**3.36**	**150**	⇑P	**Pn**	**00 31 36.0**	**-0.1**
THW	**Thamme Wali**	**3.80**	**173**	P	**Pn**	**00 31 40.6**	**-0.6**
KSH	**Kashi**	**4.76**	**51**	⇑*i*Pn	Pn	00 31 47.1	-5.6
KSH				*es*P		00 32 32.5	
KSH				Sn	S	00 32 36.3	-14
KSH				pmax	pmax		
	comp=Z,1μm,0.4s						
KSH				smax	smax		
	comp=N,4μm,0.7s						
KSH				smax	smax		
	comp=E,4μm,1.0s						
SARP	**Sargodha**	**4.80**	**165**	P	**Pn**	**00 31 52.1**	**-1.1**
MNAS	**Manas**	**5.98**	**9**	⇓P	**Pn**	**00 32 06.6**	**-1.4**
	comp=E,244nm,0.5s						
MNAS				⇑S	S	00 33 08.6	-9.4
	comp=E,3μm,1.2s						
MNAS	**Manas**	**5.98**	**9**	PN	**Pn**	**00 32 06.6**	**-1.4**
MNAS				pmax	pmax		
	comp=Z,244nm,0.5s						
DHRM	**DHARAMSHALA**	**6.02**	**134**	*e*P	**Pn**	**00 32 08.0**	**-0.7**
DHRM				*e*S	**S**	**00 33 15.2**	**-3.9**
JWA	**Jwalamukhi**	**6.33**	**137**	*e*P	**Pn**	**00 32 10.0**	**-2.2**
JWA				*e*S	**S**	**00 33 21.0**	**-4.6**
EKS2	**Erkin-Say**	**6.39**	**17**	*e*PN	**Pn**	**00 32 12.1**	**-0.9**
EKS2	**Erkin-Say**	**6.39**	**17**	*e*Pn	**Pn**	**00 32 12.1**	**-0.9**
EKS2				*e*S	**S**	**00 33 20.1**	**-7.0**
KK31	**Karatay Array**	**6.54**	**355**	⇓P	**Pn**	**00 32 13.3**	**-1.5**
	comp=Z,80nm,0.4s,baz=184,slow=12,SNR=2594						
KK31				⇑S	S	00 33 18.1	-12
	comp=Z,375nm,0.5s,baz=189,slow=27,SNR=12						
KKAR	**Karatay Array**	**6.54**	**355**	*e*PN	**Pn**	**00 32 13.4**	**-1.4**
KKAR	**Karatay Array**	**6.54**	**355**	*e*Pn	**Pn**	**00 32 13.4**	**-1.4**
KKAR				*e*S	**S**	**00 33 22.7**	**-7.7**
AAK	**Ala-Archa**	**6.55**	**22**	P	**Pn**	**00 32 14.5**	**-0.6**
	comp=Z,70nm,0.3s,baz=182,slow=4.7,SNR=179						
AAK				S	**S**	**00 33 28.8**	**-2.2**
	comp=Z,40nm,0.3s,baz=121,slow=22,SNR=10						
AAK	**Ala-Archa**	**6.55**	**22**	⇑P	**Pn**	**00 32 14.4**	**-0.8**
	comp=Z,151nm,0.5s						
AAK				⇓S	**S**	**00 33 25.0**	**-6.1**
	comp=Z,225nm,0.8s						
AAK	**Ala-Archa**	**6.55**	**22**	*e*Pn	**Pn**	**00 32 14.5**	**-0.6**
AAK				*e*S	S	00 33 22.3	-8.8
AAK				*e*S	S	00 33 28.8	-2.2
FRU	**Bishkek**	**6.77**	**22**	⇑*i*PN	**Pn**	**00 32 16.0**	**-1.8**
FRU				*i*		00 33 34.0	
FRU				pmax	pmax		
	comp=Z,180nm,1.6s						
FRU				smax	smax		
	comp=N,2μm,1.9s						
TKM2	**Tokmak 2**	**7.17**	**27**	⇑P	**Pn**	**00 32 22.2**	**-0.9**
	comp=N,245nm,0.7s						
TKM2				⇑S	S	00 33 35.8	-10
	comp=N,276nm,1.2s						
TKM2	**Tokmak 2**	**7.17**	**27**	*e*PN	**Pn**	**00 32 22.3**	**-0.8**
TKM2	**Tokmak 2**	**7.17**	**27**	*e*Pn	**Pn**	**00 32 22.3**	**-0.8**
SMLA	**Simla**	**7.35**	**136**	*e*P	**Pn**	**00 32 24.2**	**-0.9**
SMLA				*e*S	**S**	**00 33 41.8**	**-7.5**
SMLA				IAML		00 33 46.6	
	comp=N,2μm,0.7s						
SMLA				IAML		00 33 47.8	
	comp=E,2μm,1.7s						
KNDC	**Almaty**	**7.96**	**32**	⇑P	**Pn**	**00 32 32.9**	**-0.1**
	comp=E,203nm,0.8s						
KNDC				⇑S	S	00 33 54.6	-9.0
	comp=E,237nm,1.0s						
AAA	**Alma-Ata**	**8.00**	**32**	*i* PN	Pn	00 32 47.1	+14
AAA				pmax	pmax		
	comp=Z,112nm,0.6s						
DDI	**Dehra Dun**	**8.46**	**136**	*e*P	**Pn**	**00 32 37.5**	**-1.9**
DDI				*e*P	**Pn**	**00 32 38.9**	**-0.5**
DDI				*e*S	**S**	**00 34 08.8**	**-6.5**
DDI				IAML		00 34 19.4	
	comp=N,1μm,0.8s						
DDI				IAML		00 34 19.6	
	comp=E,819nm,0.6s						
JOSI	**Joshimath**	**9.19**	**128**	*e*P	**Pn**	**00 32 48.2**	**-0.6**
JOSI				*e*S	**S**	**00 34 27.8**	**-4.9**
PDGK	**Podgornoye**	**9.25**	**41**	⇑P	**Pn**	**00 32 47.9**	**-1.4**
	comp=E,37nm,0.9s						
PDGK				⇓S	**S**	**00 34 26.0**	**-7.6**
	comp=E,196nm,1.3s						
PDGK	**Podgornoye**	**9.25**	**41**	P	**Pn**	**00 32 47.9**	**-1.4**
PDGK				S	**S**	**00 34 26.0**	**-7.6**
PDGK				pmax	pmax		
	comp=Z,37nm,0.9s						
PDGK				smax	smax		
	comp=N,196nm,1.3s						
KHET	**Khetri**	**9.32**	**154**	*e*P	**Pn**	**00 32 47.8**	**-2.7**
AYAN	**Aya Nagar**	**9.48**	**147**	*ex*	Pn	00 32 46.4	-6.0
KUDL	**Kundal**	**9.51**	**151**	*e*P	**Pn**	**00 32 50.6**	**-2.2**
KUDL				*e*S	S	00 34 31.1	-8.9
KUDL				IAML		00 34 36.0	
	comp=E,240nm,0.4s						
KUDL				IAML		00 34 36.5	
	comp=N,127nm,0.6s						
SONA	**Sohna**	**9.67**	**148**	*e*P	**Pn**	**00 32 52.8**	**-1.9**
SONA				*e*S	S	00 34 34.0	-10
SONA				IAML		00 34 34.9	
	comp=N,253nm,0.9s						
SONA				IAML		00 34 35.2	
	comp=E,660nm,1.6s						
GEYT	**Alibeck**	**10.53**	**281**	P	**Pn**	**00 33 02.8**	**-2.9**
	comp=E,9.1nm,0.3s,baz=109,slow=11,SNR=50						
GEYT				S	**S**	**00 34 58.9**	**-4.8**
	comp=E,11nm,0.3s,baz=85,slow=18,SNR=4.8						
OTUK	**Ortayu**	**11.69**	**4**	⇑P	**Pn**	**00 33 18.8**	**-1.2**
	comp=E,42nm,0.8s						
OTUK	**Ortayu**	**11.69**	**4**	P	**Pn**	**00 33 18.8**	**-1.2**
OTUK				pmax	pmax		
	comp=Z,42nm,0.8s						
MAKZ	**Makanchi**	**12.99**	**35**	⇑P	**Pn**	**00 33 34.3**	**-1.9**
MAKZ	**Makanchi**	**12.99**	**35**	*e*P	**Pn**	**00 33 35.1**	**-1.2**
MAKZ				*e*S	**S**	**00 35 59.9**	**-0.3**
MAKZ	**Makanchi**	**12.99**	**35**	*e*Pn	**Pn**	**00 33 35.1**	**-1.2**
MAKZ				*e*S	**S**	**00 35 59.9**	**-0.3**
PYUN	**Piuthan**	**13.05**	**127**	*e*P	**Pn**	**00 33 35.7**	**-1.7**
	comp=Z,405nm,0.4s						
MK01	**Makanchi Array**	**13.11**	**36**	*e*Pn	**Pn**	**00 33 36.1**	**-1.6**
MK31	**Makanchi Array**	**13.12**	**36**	⇑P	**Pn**	**00 33 36.7**	**-1.2**
	comp=Z,13nm,0.6s,baz=217,slow=11,SNR=177						
MK31	**Makanchi Array**	**13.12**	**36**	*e*P	**Pn**	**00 33 36.9**	**-1.0**
MK31	**Makanchi Array**	**13.12**	**36**	*e*Pn	**Pn**	**00 33 36.9**	**-1.0**
MK32	**Makanchi Array**	**13.12**	**36**	*e*Pn	**Pn**	**00 33 36.6**	**-1.3**
MKAR	**Makanchi Array**	**13.12**	**36**	P	**Pn**	**00 33 36.6**	**-1.3**
	comp=Z,2.5nm,0.3s,baz=216,slow=14,SNR=69						
MKAR	**Makanchi Array**	**13.12**	**36**	*e*Pn	**Pn**	**00 33 36.9**	**-1.0**
BHJ	**Bhuj**	**13.35**	**186**	*e*P	**Pn**	**00 33 38.1**	**-2.8**
KOLN	**Koldanda**	**13.67**	**126**	*e*P	**Pn**	**00 33 43.7**	**-1.2**
	comp=Z,190nm,0.5s						
GKN	**Gorkha**	**14.20**	**123**	*e*P	**Pn**	**00 33 50.2**	**-1.2**
	comp=Z,652nm,0.4s						
GKN				*e*S	**S**	**00 36 20.3**	**-8.3**
BHPL	**Bhopal**	**14.33**	**156**	*e*P	**Pn**	**00 33 51.5**	**-1.4**
WMQ	**Urumqi**	**14.51**	**55**	⇑*i*P	**Pn**	**00 33 55.0**	**+0.1**
WMQ				pP	pP	00 34 55.5	
WMQ				S	**S**	**00 36 32.8**	**-2.5**
WMQ				pmax	pmax		
	comp=Z,42nm,0.8s						
WMQ				pmax	pmax		
	comp=Z,49nm,3.8s						
WMQ				smax	smax		
	comp=N,27nm,1.0s						
WMQ				smax	smax		
	comp=E,23nm,1.0s						
WMQ	**Urumqi**	**14.51**	**55**	PcP	**PcP**	**00 38 53.0**	**+1.6**
WMQ				LR	LR		
	comp=N,490nm,21.6s						
WMQ				LR	LR		
	comp=E,370nm,18.0s						
WMQ				LR	LR		
	comp=Z,170nm,27.4s						
DMN	**Daman**	**14.77**	**123**	*e*P	**Pn**	**00 33 57.8**	**-0.6**
	comp=Z,701nm,0.7s						
KKN	**Kakani**	**14.77**	**122**	*e*P	**Pn**	**00 33 57.5**	**-0.9**
	comp=Z,704nm,0.6s						
KKN				*e*S	**S**	**00 36 34.3**	**-7.6**
PKIN	**Phulchoki**	**14.98**	**123**	*e*P	**P**	**00 34 00.2**	**-0.7**
	comp=Z,262nm,0.4s						
PKIN				*e*S	**S**	**00 36 39.8**	**-7.0**
KURBB	**Kurchatov Arra**	**14.99**	**18**	P	**P**	**00 33 59.3**	**-1.1**
	comp=Z,1.6nm,0.3s,baz=208,slow=10,SNR=28						
KURBB				sP	sP	00 34 59.9	
	comp=Z,0.1nm,0.3s,baz=210,slow=12,SNR=2.5						
KURBB	**Kurchatov Arra**	**14.99**	**18**	⇑P	**P**	**00 33 58.5**	**-1.9**
	comp=Z,39nm,0.6s						
KURK	**Kurchatov**	**15.10**	**18**	⇑P	**P**	**00 33 59.8**	**-1.8**
	comp=Z,41nm,0.9s						
KURK	**Kurchatov**	**15.10**	**18**	P	**P**	**00 33 59.3**	**-2.3**
KURK				pmax	pmax		
	comp=Z,2.0nm,0.3s						
KURK	**Kurchatov**	**15.10**	**18**	*e*P	**P**	**00 34 00.2**	**-1.4**
AB31	**Akbulak array**	**15.10**	**331**	P	**P**	**00 34 00.0**	**-1.7**
	comp=Z,39nm,0.5s,baz=135,slow=13,SNR=602						
AB31				⇓S	**S**	**00 36 45.2**	**-3.3**
	comp=Z,102nm,0.9s,baz=155,slow=24,SNR=5.7						
AB31	**Akbulak array**	**15.10**	**331**	P	**P**	**00 34 00.0**	**-1.7**
AB31				S	**S**	**00 36 45.2**	**-3.3**
AB31				pmax	pmax		
	comp=Z,39nm,0.5s						
AB31				smax	smax		
	comp=N,102nm,1.0s						
ABKAR	**Akbulak array**	**15.10**	**331**	*e*P	**P**	**00 34 00.0**	**-1.7**
ABKAR				*e*S	**S**	**00 36 45.1**	**-3.4**
GUN	**Gumba**	**15.10**	**121**	*e*P	**P**	**00 34 01.8**	**-0.5**
ZRNK	**Zerenda**	**16.45**	**355**	⇑P	**P**	**00 34 16.9**	**+0.4**
	comp=N,40nm,0.6s						
ZRNK	**Zerenda**	**16.45**	**355**	*e*P	**P**	**00 34 17.2**	**+0.8**
ZRNK				pmax	pmax		
	comp=Z,47nm,0.7s						
ZRNK	**Zerenda**	**16.45**	**355**	*e*P	**P**	**00 34 17.2**	**+0.8**
	comp=Z,47nm,0.7s						
BVA0	**Borovoye Array**	**16.46**	**358**	P	**P**	**00 34 17.2**	**+0.7**
	comp=Z,37nm,0.5s,baz=167,slow=6.9,SNR=227						
BVA0	**Borovoye Array**	**16.46**	**358**	P	**P**	**00 34 17.2**	**+0.7**
BVA0				pmax	pmax		
	comp=Z,37nm,0.5s						
BVAR	**Borovoye Array**	**16.46**	**358**	P	**P**	**00 34 17.1**	**+0.6**
	comp=Z,28nm,0.3s,baz=157,slow=11,SNR=89						
BVAR				sP	**sP**	**00 35 18.2**	**-6.0**
	baz=181,slow=13,SNR=2.0						
BRVK	**Borovoye**	**16.49**	**358**	⇓P	**P**	**00 34 16.9**	**0.0**
	comp=Z,91nm,0.6s						
BRVK	**Borovoye**	**16.49**	**358**	*c i*P	**P**	**00 34 17.4**	**+0.5**
BRVK				pmax	pmax		
	comp=Z,54nm,0.6s						
BRVK	**Borovoye**	**16.49**	**358**	*e*P	**P**	**00 34 17.8**	**+0.9**
	comp=Z,76nm,0.6s						
BANOM	**Banah**	**16.58**	**234**	*i* P	**P**	**00 34 17.7**	**-0.5**
	SNR=20						
BANOM	**Banah**	**16.58**	**234**	P	**Pn**	**00 34 20.7**	**+0.9**
	SNR=11						
BANOM	**Banah**	**16.58**	**234**	P	**Pn**	**00 34 20.7**	**+0.9**
	SNR=11						
AKTO	**Aktyubinsk**	**16.80**	**330**	P	**Pn**	**00 34 21.1**	**+0.7**
	comp=Z,29nm,0.3s,baz=137,slow=10,SNR=253						
AKTO	**Aktyubinsk**	**16.80**	**330**	⇑P	**P**	**00 34 20.4**	**0.0**
	comp=Z,276nm,1.0s						
AKTO				⇑S	**S**	**00 37 22.0**	**-1.3**
	comp=Z,91nm,0.8s						
WSAR	**Wadi Sarin**	**17.18**	**223**	P	**Pn**	**00 34 25.8**	**-1.0**
	comp=Z,6.3nm,0.3s,baz=57,slow=4.5,SNR=75						
UOSS	**Minazif**	**17.32**	**232**	*e*P	**P**	**00 34 24.3**	**-2.0**
	comp=Z,5.4nm,0.8s						
HATD	**Hatta, Dubai**	**17.45**	**232**	*i* P	**P**	**00 34 27.7**	**-0.1**
	SNR=15						
ASHO	**Ashiyiah**	**17.60**	**232**	*i* P	**P**	**00 34 29.7**	**+0.3**
	SNR=85						
ASHO	**Ashiyiah**	**17.60**	**232**	P	**P**	**00 34 29.7**	**+0.3**
	SNR=17						
ASHO	**Ashiyiah**	**17.60**	**232**	P	**P**	**00 34 29.7**	**+0.3**
	SNR=17						
NAZ	**Nazwa, Dubai**	**17.64**	**233**	*i* P	**P**	**00 34 29.4**	**-0.3**
	SNR=15						
FAQ	**Al Faqa, Dubai**	**17.86**	**233**	*i* P	**P**	**00 34 31.7**	**-0.4**
	SNR=7.7						
BOK	**Bokaro**	**17.95**	**131**	*e*P	**P**	**00 34 34.1**	**+1.1**
LSA	**Lhasa**	**18.03**	**107**	*e*P	**Pn**	**00 34 37.5**	**+0.3**
LSA				pmax	pmax		
	comp=Z,141nm,0.8s						
LSA	**Lhasa**	**18.03**	**107**	*e*P	**Pn**	**00 34 37.5**	**+0.3**
	comp=Z,141nm,0.8s						
LSA				*e*ScP	**ScP**	**00 42 10.0**	**0.0**
POO	**Poona**	**18.13**	**172**	*e*P	**Pn**	**00 34 36.8**	**-1.2**
POO				IAmb	IAmb	00 34 37.2	
	comp=Z,41nm,0.6s						
ZALV	**Zalesovo Beam**	**19.77**	**24**	P	**P**	**00 34 52.0**	**-0.3**
	comp=Z,12nm,0.3s,baz=214,slow=11,SNR=83						
ZALV				sP	**sP**	**00 36 01.2**	**+0.3**
	comp=Z,0.4nm,0.3s,baz=224,slow=10,SNR=3.2						
ZAA1	**Zalesovo Array**	**19.77**	**24**	*e*P	**P**	**00 34 52.0**	**-0.4**
ZAA1				*es*P	**sP**	**00 36 01.2**	**+0.3**
NVS	**Novosibirsk**	**20.05**	**21**	*e*P	**P**	**00 34 55.1**	**-0.1**
NVS				*e*		00 38 25.1	
HYB	**Hyderabad**	**20.16**	**159**	*i* P	**P**	**00 34 56.0**	**-0.9**
HYB	**Hyderabad**	**20.16**	**159**	*e*P	**P**	**00 34 57.0**	**+0.1**
DGRG	**David-gareji**	**20.63**	**292**	P	**P**	**00 35 02.5**	**+0.7**
DGRG	**David-gareji**	**20.63**	**292**	P	**P**	**00 35 02.4**	**+0.7**
SHL	**Shillong**	**20.78**	**116**	*e*P	**P**	**00 35 04.0**	**+0.3**
GNI	**Garni**	**21.04**	**288**	P	**P**	**00 35 07.6**	**+1.5**
	comp=Z,59nm,0.9s,baz=165,slow=19,SNR=32						
TBLG	**Delisi**	**21.13**	**292**	P	**P**	**00 35 06.7**	**-0.2**
TBLG	**Delisi**	**21.13**	**292**	P	**P**	**00 35 06.7**	**-0.2**
GUDG	**Gudauri**	**21.40**	**294**	P	**P**	**00 35 12.9**	**+3.1**
SVE	**Sverdlovsk**	**21.47**	**344**	⇓*e*P	**P**	**00 35 10.2**	**+0.3**
SVE				pmax	pmax		
	comp=Z,66nm,0.9s						
ARU	**Arti**	**21.62**	**341**	P	**P**	**00 35 11.8**	**+0.4**
	comp=Z,59nm,0.6s,baz=136,slow=5.4,SNR=73						
ARU				sP	**sP**	**00 36 21.7**	**+0.7**
	comp=Z,105nm,1.1s,baz=118,slow=6.0,SNR=3.1						
ARU	**Arti**	**21.62**	**341**	*c i*P	**P**	**00 35 11.6**	**+0.2**
ARU				S	**S**	**00 38 56.5**	**+2.6**
ARU				pmax	pmax		
	comp=Z,158nm,1.2s						
ARU	**Arti**	**21.62**	**341**	*e*P	**P**	**00 35 11.8**	**+0.4**
	comp=Z,107nm,0.9s						
ARU				*es*P	**sP**	**00 36 21.6**	**+0.7**
VIS	**Vishakhapatnam**	**21.62**	**147**	*e*P	**P**	**00 35 12.5**	**+0.8**
VIS				IAmb	IAmb	00 35 14.1	
	comp=Z,52nm,0.8s						
ZEI	**Tsey**	**21.87**	**295**	*e*P	**P**	**00 35 14.5**	**+0.4**
ZEI				pmax	pmax		
	comp=Z,96nm,0.6s						
BGD	**Bogdanovka**	**21.95**	**291**	P	**P**	**00 35 15.8**	**+0.9**
AKH	**Akhalkalaki**	**22.04**	**291**	⇑*i*P	**P**	**00 35 18.2**	**+2.5**
AKH	**Akhalkalaki**	**22.04**	**291**	P	**P**	**00 35 17.1**	**+1.4**
AKH	**Akhalkalaki**	**22.04**	**291**	P	**P**	**00 35 17.1**	**+1.4**
ONI	**Oni**	**22.17**	**294**	P	**P**	**00 35 17.4**	**+0.6**
ONI	**Oni**	**22.17**	**294**	P	**P**	**00 35 17.4**	**+0.6**
EPOS	**Posof**	**22.62**	**291**	*i* P	**P**	**00 35 23.2**	**+2.3**
GTA	**Gaotai**	**22.67**	**74**	⇓P	**P**	**00 35 23.5**	**+2.0**
GTA				pP	pP	00 36 03.1	+0.5
GTA				sP	sP	00 36 31.8	-0.8
GTA				S	**S**	**00 39 10.9**	**-0.7**
GTA	**Gaotai**	**22.67**	**74**	ScS	ScS	00 46 04.3	-2.1
GTA				pmax	pmax		
	comp=Z,49nm,0.8s						
GTA				pmax	pmax		
	comp=Z,490nm,7.1s						
GTA				LR	LR		
	comp=N,1μm,19.0s						
GTA				LR	LR		
	comp=E,2μm,18.5s						
GTA				LR	LR		
	comp=Z,2μm,20.4s						
KBZ	**Khabaz**	**22.72**	**297**	P	**P**	**00 35 21.9**	**+0.2**
	comp=Z,22nm,0.7s,baz=118,slow=7.7,SNR=28						
EATA	**Eleskirt**	**22.77**	**287**	*i* P	**P**	**00 35 24.7**	**+2.2**
NEY	**Neytrino**	**22.78**	**296**	*c e*P	**P**	**00 35 24.3**	**+1.8**
NEY				pmax	pmax		
	comp=Z,11nm,0.8s						
GOF	**Gofitskoye**	**22.86**	**301**	⇑*i*P	**P**	**00 35 24.6**	**+1.7**
KVAR	**Kislovodsk Arr**	**22.90**	**298**	P	**P**	**00 35 23.9**	**+0.5**
	comp=Z,22nm,0.6s,baz=257,slow=1.0,SNR=24						
KIV	**Kislovodsk**	**22.91**	**298**	*i* P	**P**	**00 35 24.1**	**+0.6**
	SNR=18						
KIV	**Kislovodsk

VSR pmax pmax
comp=Z,50nm,1.4s
CUALT Altinyayla-SIV 27.22 286 *i* P **P 00 36 04.3 +1.9**
HCB Kahramanmara¯ 27.34 282 *i* P **P 00 36 04.5 +1.1**
TLY Talaya 27.46 46 *i* P **P 00 36 05.6 +1.4**
comp=Z,5.0nm,0.6s,baz=246,slow=11,SNR=4.8
TLY Talaya 27.46 46 ⇓ *i* P **P 00 36 06.3 +2.1**
TLY pmax pmax
comp=Z,6.0nm,0.7s
CD2 Chengdu 27.56 92 ⇓P **P 00 36 05.0 -0.4**
CD2 pP pP 00 36 51.9 -0.3
CD2 PP **PP 00 37 12.4 -0.3**
CD2 sP sP 00 37 19.8 -0.1
CD2 S **S 00 40 29.3 +0.4**
CD2 sS sS 00 41 54.5 +1.0
CD2 SS **SS 00 42 36.8 -0.3**
CD2 pmax pmax
comp=Z,100nm,1.1s
CD2 pmax pmax
comp=Z,2μm,11.7s
DRWC Darouich 27.66 281 *e*P **P 00 36 07.8 +1.6**
RABH Abou Rabah 27.69 276 *e*P **P 00 36 08.5 +2.0**
ROOS tl_alroos 27.69 275 *e*P **P 00 36 09.2 +2.7**
LPSR Galich'ya Gora 27.72 316 *e*P **P 00 36 06.7 +0.2**
LPSR pmax pmax
comp=Z,60nm,0.8s
HAVZ Havza 27.90 290 *i* P **P 00 36 11.0 +2.8**
BTCH Batrach 27.93 279 *e*P **P 00 36 10.6 +1.9**
ZALF Zalf 28.00 273 *e*P **P 00 36 11.1 +1.9**
WRDH Warideh 28.08 278 *e*P **P 00 36 11.2 +1.3**
SONA0 Songino Array 28.14 55 *e*P **P 00 36 12.1 +1.6**
SONA0 *e*pP **pP 00 36 59.6 +2.1**
SONA0 *e*sP **sP 00 37 24.8 -0.4**
SONM Songino Array 28.14 55 P **P 00 36 12.1 +1.6**
comp=Z,11nm,0.8s,baz=254,slow=10.0,SNR=30
SONM pP **pP 00 36 59.6 +2.1**
comp=Z,7.9nm,0.9s,baz=261,slow=9.6,SNR=5.4
SONM sP **sP 00 37 24.8 -0.4**
comp=Z,6.9nm,0.8s,baz=276,slow=12,SNR=3.1
SONA1 Songino Array 28.15 55 *e*P **P 00 36 12.0 +1.4**
SONA1 *e*ScP **ScP 00 42 34.9 -1.2**
BIDA Albida 28.26 277 *e*P **P 00 36 13.0 +1.4**
HAWK Haweek 28.31 276 *e*P **P 00 36 13.7 +1.6**
MARH Ras Al Marh 28.38 275 *e*P **P 00 36 14.7 +1.8**
BOYT Boyabat 28.50 291 *i* P **P 00 36 14.9 +1.4**
COAL Corum-Alaca 28.50 289 *i* P **P 00 36 14.2 +0.5**
SALA Sala 28.54 272 *e*P **P 00 36 15.9 +1.6**
ASF Jabal al Asfar 28.57 271 P **P 00 36 16.2 +1.8**
comp=Z,8.1nm,0.8s,baz=32,slow=6.4,SNR=12
ULN Ulaanbaatar 28.59 55 *e*P **P 00 36 15.0 +0.6**
ULN *e**PP **pP 00 37 03.4 +1.9**
ULN pmax pmax
comp=Z,11nm,0.8s
ULN Ulaanbaatar 28.59 55 *e*P **P 00 36 15.0 +0.6**
comp=Z,11nm,0.8s
ULN *e*pP **pP 00 37 03.4 +1.9**
TOTH TOTAH 28.60 274 *e*P **P 00 36 15.7 +1.1**
AVNS Nevsehir-Avano 28.75 286 *i* P **P 00 36 17.3 +1.3**
KMI Kunming 29.24 104 P **P 00 36 22.0 +1.4**
KMI pmax pmax
comp=Z,29nm,0.6s
KMI pmax pmax
comp=Z,2μm,19.6s
CMAI Chiengmai2 29.44 117 P **P 00 36 22.3 0.0**
comp=Z,100nm,0.8s
KERG Konya-Eregli 29.52 283 *i* P **P 00 36 24.0 +1.2**
MMAI Mount Meron Ar 29.52 274 P **P 00 36 23.9 +1.2**
comp=Z,9.3nm,0.6s,baz=64,slow=7.5,SNR=23
BR101 Keskin Array S 29.58 288 *e*P **P 00 36 23.9 +0.6**
BR101 *e*pP **pP 00 37 11.5 +1.0**
BR131 Keskin Array S 29.58 288 *e*P **P 00 36 24.1 +0.8**
BRTR Keskin Array B 29.58 288 P **P 00 36 23.9 +0.6**
comp=Z,24nm,0.6s,baz=101,slow=9.5,SNR=118
BRTR pP **pP 00 37 11.5 +1.0**
comp=Z,3.6nm,0.6s,baz=111,slow=8.5,SNR=2.4
ELDT Eldivan 29.67 289 *i* P **P 00 36 25.1 +1.0**
MOS Moscow 29.71 321 *e*P **P 00 36 23.6 -0.4**
MOS *e* 00 37 07.8
MOS *e* 00 39 24.7
MOS pmax pmax
comp=Z,97nm,0.8s
MOS pmax pmax
comp=Z,100nm,1.0s
OBN Obninsk 29.99 319*c* *i* P **P 00 36 26.8 +0.3**
OBN pmax pmax
comp=Z,66nm,0.5s
OBN Obninsk 29.99 319 *e*P **P 00 36 26.3 -0.1**
comp=Z,98nm,0.8s
OBN *e*PP **PP 00 37 40.1 +0.8**
BBAL Bala 30.00 287 *i* P **P 00 36 27.5 +0.6**
PHNC Paralimni 30.09 278 P **P 00 36 27.8 +0.2**
CHTO Chiang Mai 30.10 119 P **P 00 36 29.0 +1.1**
comp=Z,153nm,0.7s
CHTO Chiang Mai 30.10 119 *e*P **P 00 36 28.4 +0.5**
CHTO pmax pmax
comp=Z,19nm,0.6s
CHTO Chiang Mai 30.10 119 P **P 00 36 29.0 +1.1**
SNR=8.0
CHTO Chiang Mai 30.10 119 P **P 00 36 29.0 +1.1**
SNR=8.0
CHTO Chiang Mai 30.10 119 *e*P **P 00 36 28.4 +0.5**
comp=Z,19nm,0.6s
CMMT Chiang Mai 30.10 119 P **P 00 36 29.0 +1.1**
comp=Z,34nm,0.7s
KKUL Konya-Kulu 30.20 287 *i* P **P 00 36 30.0 +1.3**
ANTO Ankara 30.21 288 *e*P **P 00 36 30.1 +1.4**
ANTO pmax pmax
comp=Z,24nm,0.8s
ANTO Ankara 30.21 288 *e*P **P 00 36 30.1 +1.4**
comp=Z,24nm,0.8s
CRAI Chiangrai 30.22 115 P **P 00 36 29.8 +0.9**
comp=Z,1μm,0.8s,comp=Z,86μm
BR231 Keskin MP Arra 30.23 288 *e*P **P 00 36 30.7 +1.8**
CM31 Chiang Mai Arr 30.34 119 *e*P **P 00 36 30.8 +0.8**
CM31 *e*ScP **ScP 00 42 41.9 -1.5**
CMAR Chiang Mai Arr 30.34 119 P **P 00 36 30.8 +0.8**
comp=Z,32nm,0.8s,baz=303,slow=8.3,SNR=132
CMAR ScP **ScP 00 42 41.9 -1.5**
comp=Z,2.2nm,0.9s,baz=295,slow=4.9,SNR=8.1
CM01 Chiang Mai Arr 30.37 119 *e*P **P 00 36 30.7 +0.5**
CM01 *e*ScP **ScP 00 42 41.7 -1.8**
PALK Pallekele 30.43 161 P **P 00 36 31.6 +0.8**
comp=Z,15nm,0.6s,baz=288,slow=7.3,SNR=21
PALK Pallekele 30.43 161 *i* P **P 00 36 31.6 +0.8**
SNR=7.9
PALK Pallekele 30.43 161 *i* P **P 00 36 32.3 +1.5**
PALK Pallekele 30.43 161 *e*P **P 00 36 31.6 +0.8**
comp=Z,19nm,0.6s
ERMK Ermenek 30.61 282 *i* P **P 00 36 33.3 +0.8**
CSS Mathiatis 30.66 278 *e*P **P 00 36 32.4 -0.2**
comp=Z,4.5nm,1.0s
XAN Xi'an 30.74 83 P **P 00 36 34.6 +1.1**
XAN pmax pmax
comp=Z,69nm,0.7s
XAN pmax pmax
comp=Z,900nm,12.5s
LAMP Lampang 30.78 118 P **P 00 36 34.6 +0.7**
comp=Z,19nm,0.9s,comp=Z,147nm
KDHN Kadinhani 30.91 286 *i* P **P 00 36 35.5 +0.6**
EIL Elat 31.01 268 P **P 00 36 36.7 +0.9**
comp=Z,29nm,1.0s,baz=42,slow=6.2,SNR=12
SZAC Souni 31.07 278 P **P 00 36 37.3 +1.1**
ALFC Alefka 31.19 279 P **P 00 36 37.8 +0.4**
AUMIH MIHALICIK 31.21 288 *i* P **P 00 36 38.5 +0.9**
AKMC Akamas 31.44 279 P **P 00 36 39.6 +0.1**
KLMR Klimovskoe 31.50 331 *e*P **P 00 36 38.7 -0.9**
KLMR *e**PP **pP 00 37 25.1 -2.0**
KLMR *e* 00 37 52.5
KLMR pmax pmax
comp=Z,67nm,0.9s
HHC Hu-ho-hao-te 31.57 70 *e*P **P 00 36 42.3 +1.6**
HHC pmax pmax
comp=Z,30nm,0.8s
HHC pmax pmax
comp=Z,230nm,4.9s
GYA Guiyang 31.70 98 ⇓ *i*P **P 00 36 42.9 +0.9**
GYA pP pP 00 37 31.0 +1.5
GYA sP PP 00 37 58.4 -0.3
GYA PcP **PcP 00 39 29.3 +1.7**
GYA S **S 00 41 34.8 +1.0**
GYA ScP **ScP 00 42 48.0 0.0**
GYA sS sS 00 42 59.5 +0.5
GYA PcS **PcS 00 43 12.0 -0.7**
GYA Guiyang 31.70 98 ScS ScS 00 46 44.3 -2.6

GYA pmax pmax
comp=Z,60nm,0.8s
UTTA Uttaradit 31.95 118 P **P 00 36 45.0 +0.9**
comp=Z,52nm,0.7s,comp=Z,396nm
ENH Enshi 32.40 90 *e*P **P 00 36 49.6 +1.7**
comp=Z,55nm,0.9s
TLCR 32.88 299 ⇑ *i*P **P 00 36 52.0 +0.2**
KIS Kishinev 32.92 302 ⇑ *i*P **P 00 36 53.0 +0.8**
comp=Z,200nm,1.0s
KIS Kishinev 32.92 302 ⇑ *e*P **P 00 36 53.0 +0.8**
KIS *e* 00 37 40.0
KIS *e* 00 38 10.0
KIS pmax pmax
comp=Z,200nm,1.0s
KHAL Karahalli 32.97 286 *i* P **P 00 36 53.3 +0.5**
PBKT Sadao Pong 33.03 119 P **P 00 36 54.7 +1.3**
comp=Z,81nm,1.2s,comp=Z,5μm
AKASG Malin Array Be 33.03 309 P **P 00 36 53.1 0.0**
comp=Z,29nm,0.4s,baz=81,slow=7.5,SNR=96
AKASG pP **pP 00 37 40.9 0.0**
comp=Z,6.0nm,0.6s,baz=84,slow=7.6,SNR=2.3
AKASG sP **sP 00 38 08.9 +0.7**
comp=Z,7.1nm,0.7s,baz=83,slow=7.9,SNR=2.1
AKASG ScP **ScP 00 42 49.9 -2.1**
comp=Z,1.1nm,0.5s,baz=68,slow=4.7,SNR=5.3
AKBB Malin Array Si 33.03 309 *e*P **P 00 36 53.1 0.0**
AKBB *e**PP **pP 00 37 40.9 +0.1**
AKBB *e**SP **sP 00 38 08.9 +0.7**
AKBB Malin Array Si 33.03 309 *e*P **P 00 36 53.1 0.0**
AKBB *e*pP **pP 00 37 40.9 +0.1**
AKBB *e*sP **sP 00 38 08.9 +0.7**
AKBB *e*ScP **ScP 00 42 49.9 -2.1**
KIEV Kiev 33.04 309 *e*P **P 00 36 53.2 0.0**
KIEV pmax pmax
comp=Z,41nm,0.7s
KIEV Kiev 33.04 309 *e*P **P 00 36 53.1 0.0**
comp=Z,41nm,0.7s
MANR Mangalia 33.06 296 ⇓ *i*P **P 00 36 54.5 +1.0**
GOLH Golhisar 33.13 284 *i* P **P 00 36 54.5 +0.3**
SORM Soroca 33.31 304 ⇓ *i*P **P 00 36 55.7 +0.2**
SRDT SRDT 33.32 124 P **P 00 36 57.4 +1.4**
comp=Z,250nm,1.1s
CFR Carcaliu 33.36 299 ⇓ *i*P **P 00 36 56.8 +0.8**
KULA Kula-Manisa 33.58 286 P **P 00 36 58.4 +0.3**
KULA Kula-Manisa 33.58 286 P **P 00 36 58.4 +0.3**
NRIK Noril'sk 34.02 10 P **P 00 37 02.9 +1.6**
comp=Z,19nm,0.5s,baz=198,slow=5.9,SNR=36
NRIK pP **pP 00 37 51.1 +1.9**
comp=Z,14nm,1.1s,baz=182,slow=4.8,SNR=2.8
NRIK sP **sP 00 38 16.6 0.0**
comp=Z,12nm,0.9s,baz=189,slow=5.9,SNR=3.1
TMCR Tamitsa 34.05 335 *e*P **P 00 37 02.2 +0.5**
TMCR pmax pmax
comp=Z,85nm,0.7s
ODBI Odobesti 34.11 300 ⇑ *i*P pP 00 37 54.3 +3.9
GRER 34.17 299 ⇑ *i*P **P 00 37 05.3 +2.3**
VRI Vrincioaia 34.34 300 ⇑ *i*P **P 00 37 05.6 +1.1**
VRI Vrincioaia 34.34 300 P **P 00 37 06.7 +2.2**
VRI pmax pmax
comp=Z,206nm,1.0s
PLOR Plostina 34.40 300 ⇑ *i*P **P 00 37 07.2 +2.2**
TESR Tescani 34.40 301 ⇓ *i*P **P 00 37 05.9 +1.0**
ARG Arkhangelos 34.48 283 P **P 00 37 05.0 -0.7**
ARG Arkhangelos 34.48 283 P **P 00 37 05.0 -0.7**
ARG Arkhangelos 34.48 283 P **P 00 37 05.0 -0.7**
ISR Istrita 34.48 298 ⇓ *i*P **P 00 37 07.7 +2.0**
KHON Khomkaen 34.50 117 P **P 00 37 07.1 +1.0**
comp=Z,50nm,0.8s,comp=Z,1μm
PRAR RASCA 34.70 302 ⇓ *i*P **P 00 37 08.4 +0.9**
SULR 34.70 298 ⇑ *i*P **P 00 37 09.3 +1.8**
SECR 34.83 298 ⇓ *i*P **P 00 37 10.5 +1.9**
MLR Muntele Rosu 34.90 299 ⇓ *i*P **P 00 37 11.1 +1.7**
MLR Muntele Rosu 34.90 299 *e*P **P 00 37 11.3 +1.9**
MLR pmax pmax
comp=Z,95nm,0.8s
MLR Muntele Rosu 34.90 299 *e*P **P 00 37 11.3 +1.9**
comp=Z,95nm,0.8s
BODT Bodrum 34.92 284 P **P 00 37 08.9 -0.6**
BODT Bodrum 34.92 284 P **P 00 37 08.9 -0.6**
SKNT Sakolnakorn 34.92 115 P **P 00 37 10.3 +0.6**
comp=Z,150nm,1.0s
PUL Pulkovo 34.95 325 ⇓ *i*P **P 00 37 10.5 +1.1**
PUL pmax pmax
comp=Z,111nm,1.1s
SMG Samos 35.15 286 P **P 00 37 11.4 -0.1**
SMG Samos 35.15 286 P **P 00 37 11.4 -0.1**
EZN Ezine 35.15 289 P **P 00 37 12.0 +0.6**
EZN Ezine 35.15 289 P **P 00 37 12.0 +0.6**
EZN Ezine 35.15 289 P **P 00 37 12.0 +0.6**
BJI Beijing 35.16 70 P **P 00 37 13.6 +2.1**
BJI pmax pmax
comp=Z,28nm,0.7s
BOD Bodaibo 35.18 39 *e*P **P 00 37 10.8 -0.6**
BOD *e* 00 37 59.0
BOD *e*S **ScS 00 47 00.3 -3.6**
BOD pmax pmax
comp=Z,9.0nm,1.1s
DOPR Dopca 35.28 300 ⇓ *i*P **P 00 37 14.1 +1.7**
NACGM Naroch 35.28 316 *e*P **P 00 37 13.0 +0.7**
BURAR Bucovina Array 35.39 303 ⇓ *i*P **P 00 37 14.7 +1.2**
BURAR Bucovina Array 35.39 303 P **P 00 37 14.6 +1.1**
IDID Didziasalis 35.40 316 *e*P **P 00 37 13.2 -0.1**
IDID IAmb IAmb 00 37 15.2
comp=Z,17nm,0.7s
KARP Karpathos 35.40 282 P **P 00 37 13.2 -0.4**
KARP Karpathos 35.40 282 *e*P **P 00 37 13.6 0.0**
comp=Z,105nm,0.8s
BUR08 Bucovina Ar. S 35.40 303 *e*P **P 00 37 14.6 +1.0**
PATY Pattaya 35.52 124 P **P 00 37 16.5 +1.8**
comp=Z,11nm,0.8s,comp=Z,3μm
VOIR 35.53 299 ⇓ *i*P **P 00 37 16.0 +1.3**
KDZ Kurdzhali 35.57 293 *e*P **P 00 37 16.0 +1.0**
ATD Arta Tunnel 35.71 233 P **P 00 37 18.2 +1.8**
comp=Z,42nm,0.9s,baz=24,slow=4.2,SNR=16
IZAR Zarasai 35.77 317 *e*P **P 00 37 16.4 -0.1**
IZAR IAmb IAmb 00 37 18.5
comp=Z,25nm,0.8s
ISAL Salakas 35.80 317 *e*P **P 00 37 16.6 -0.1**
ISAL IAmb IAmb 00 37 18.8
comp=Z,14nm,0.8s
ARR Arges 35.83 299 ⇓ *i*P **P 00 37 18.5 +1.3**
MDB Medias 35.97 300 ⇓ *i*P **P 00 37 21.5 +3.2**
ARCR ARCALIA 35.98 302 ⇓ *i*P **P 00 37 20.5 +2.2**
RZN Rozhen 36.09 293 *i* P **P 00 37 21.0 +1.4**
WHN Wuhan 36.21 87 ⇓P **P 00 37 22.0 +1.5**
VSU Vasula 36.23 321*c* *i*P **P 00 37 20.4 +0.1**
VSU pmax pmax
comp=Z,189nm,0.8s
LVV L'vov 36.26 307 *e*P **P 00 37 21.2 +0.5**
LVV *e* 00 38 36.0
ZKR Zakros 36.26 281 P **P 00 37 20.9 0.0**
ZKR Zakros 36.26 281 P **P 00 37 20.9 0.0**
APE Apeiranthos 36.30 285 ⇓ *i*P **P 00 37 21.9 +0.6**
APE Apeiranthos 36.30 285 P **P 00 37 20.7 -0.6**
APE Apeiranthos 36.30 285*c* *i*P **P 00 37 21.4 +0.1**
APE pmax pmax
comp=Z,75nm,0.7s
APE Apeiranthos 36.30 285 P **P 00 37 20.7 -0.6**
PGB Panagyurishte 36.39 294 *i* P **P 00 37 24.0 +2.0**
LOT Lotru 36.43 299 ⇓ *i*P **P 00 37 23.5 +1.2**
CJR Cluj-Napoca 36.50 301 ⇓ *i*P **P 00 37 24.9 +2.1**
SANT Santorini 36.53 284 ⇑ *i*P **P 00 37 22.4 -0.8**
SANT Santorini 36.53 284 *e*P **P 00 37 22.5 -0.8**
comp=Z,54nm,0.8s
BMR Baia Mare 36.56 303 ⇓ *i*P **P 00 37 24.9 +1.7**
CHBT CHBT 36.63 122 P **P 00 37 25.3 +1.2**
comp=Z,44nm,1.0s
NPS Neapolis 36.69 282 P **P 00 37 24.3 -0.3**
NPS Neapolis 36.69 282 P **P 00 37 24.3 -0.3**
NPS Neapolis 36.69 282 P **P 00 37 24.3 -0.3**
NVR Nevrokopi 36.77 292 P **P 00 37 24.9 -0.3**
NVR Nevrokopi 36.77 292 P **P 00 37 24.9 -0.3**
LAST Lasithi 36.83 282 ⇓ *i*P **P 00 37 26.2 +0.4**
LAST Lasithi 36.83 282 P **P 00 37 24.9 -0.9**
LAST Lasithi 36.83 282 *e*P **P 00 37 26.0 +0.3**
comp=Z,166nm,1.1s
MMB Musomiste 36.84 293 *i* P **P 00 37 26.0 +0.3**
DEV Deva 37.01 300 ⇓ *i*P **P 00 37 29.2 +2.1**
DRGR 37.11 301 ⇓ *i*P **P 00 37 29.5 +1.5**
KWP Kalwaria Pacla 37.11 306 *e*P **P 00 37 28.6 +0.8**
KWP Kalwaria Pacla 37.11 306 ⇓ *i*P **P 00 37 29.6 +1.7**
KWP Kalwaria Pacla 37.11 306 *e*P **P 00 37 28.6 +0.8**
SURT Suratani 37.18 131 P **P 00 37 30.0 +1.2**

comp=Z,23nm,1.0s
SUW Suwalki 37.19 313 *e*P **P 00 37 28.4 -0.1**
SUW Suwalki 37.19 313 *e*P **P 00 37 28.4 -0.1**
TRPA Tarpa 37.20 304 ⇑ *e*P **P 00 37 29.7 +1.1**
PLG Polygyros 37.24 291 P **P 00 37 28.8 -0.3**
PLG Polygyros 37.24 291 P **P 00 37 28.8 -0.3**
PLG Polygyros 37.24 291 P **P 00 37 28.8 -0.3**
IDI Anoyia 37.26 282 P **P 00 37 28.9 -0.4**
comp=Z,29nm,0.4s,baz=56,slow=9.2,SNR=101
IDI Anoyia 37.26 282 ⇓ *i*P **P 00 37 29.0 -0.4**
IDI Anoyia 37.26 282 P **P 00 37 27.9 -1.5**
IDI Anoyia 37.26 282 *e*P **P 00 37 28.9 -0.4**
comp=Z,42nm,0.6s
KKB Krupnik 37.27 293 *i* P **P 00 37 30.0 +0.6**
UZH Uzhgorod 37.36 304 ⇓ *i*P **P 00 37 30.1 +0.1**
PTL Penteli 37.37 287 P **P 00 37 30.2 -0.1**
PTL Penteli 37.37 287 P **P 00 37 30.2 -0.1**
KOLS Kolonicke sedl 37.38 305 *e*P **P 00 37 31.3 +1.2**
KOLS pmax pmax
comp=Z,19nm,0.9s
KOLS Kolonicke sedl 37.38 305 *e*P **P 00 37 31.3 +1.2**
KOLS *e*PP **PnPn 00 39 03.6 -1.0**
SIVA Sivas 37.39 282 ⇑ *i*P **P 00 37 30.5 +0.1**
SIVA Sivas 37.39 282 P **P 00 37 29.5 -0.9**
SIVA Sivas 37.39 282 P **P 00 37 29.5 -0.9**
LVZ Lovozero 37.45 338 ⇑ *e*P **P 00 37 30.9 +0.4**
LVZ pmax pmax
comp=Z,62nm,0.8s
LVZ Lovozero 37.45 338 *e*P **P 00 37 30.5 -0.1**
comp=Z,56nm,0.8s
FIA1 FINESS Array S 37.52 326 *e*P **P 00 37 31.4 +0.3**
FIA0 FINESS Array S 37.52 326 *e*P **P 00 37 31.6 +0.5**
FIA0 *e**PP **pP 00 38 20.3 +0.6**
FIA0 *e**SP **sP 00 38 46.8 -0.1**
FIA0 *e* 00 39 01.3
FIA0 FINESS Array S 37.52 326 *e*P **P 00 37 31.6 +0.5**
FIA0 *e*pP **pP 00 38 20.3 +0.6**
FIA0 *e*sP **sP 00 38 46.8 -0.1**
FIA0 *e*PP **PP 00 39 01.2 -0.7**
FINES FINESS Array B 37.52 326 P **P 00 37 31.6 +0.5**
comp=Z,104nm,0.9s,baz=119,slow=10.0,SNR=295
FINES pP **pP 00 38 20.3 +0.6**
comp=Z,13nm,0.8s,baz=108,slow=12,SNR=2.8
FINES sP **sP 00 38 46.8 -0.1**
comp=Z,8.2nm,0.7s,baz=131,slow=7.6,SNR=2.2
FINES PP **PP 00 39 01.2 -0.7**
comp=Z,12nm,0.7s,baz=115,slow=13,SNR=4.1
FINES FINESS Array B 37.52 326 P **P 00 37 31.6 +0.5**
FINES *PP **pP 00 38 20.3 +0.6**
FINES *SP **sP 00 38 46.8 -0.1**
FINES 00 39 01.3
FINES pmax pmax
comp=Z,105nm,0.9s
FINES pmax pmax
comp=Z,12nm,0.7s
XOR Xorichti 37.62 289 P **P 00 37 31.1 -1.2**
XOR Xorichti 37.62 289 P **P 00 37 31.1 -1.2**
VAY Valandovo 37.74 293 *i* P **P 00 37 34.0 +0.8**
VAM Vamos 37.77 283 P **P 00 37 32.2 -1.3**
VAM Vamos 37.77 283 P **P 00 37 32.2 -1.3**
VAM Vamos 37.77 283 P **P 00 37 32.2 -1.3**
CRVS Cervenica-Dubn 37.91 305 *e*P **P 00 37 35.1 +0.5**
CRVS *e* 00 39 10.7
CRVS Cervenica-Dubn 37.91 305 *e*P **P 00 37 35.1 +0.5**
CRVS *e*PP **PnPn 00 39 10.7 -0.1**
IMMV Iera Moni Meta 37.92 283 P **P 00 37 34.9 0.0**
BZS Buzias 37.93 300 ⇓ *i*P **P 00 37 36.1 +1.3**
MDVR Moldovita 37.93 298 ⇑ *i*P **P 00 37 37.6 +2.8**
STHS Stebnicka Huta 38.06 306 *e*P **P 00 37 36.6 +0.8**
STHS pmax pmax
comp=Z,15nm,0.7s
STHS Stebnicka Huta 38.06 306 *e*P **P 00 37 36.6 +0.8**
BANR Banloc 38.28 299 ⇓ *i*P **P 00 37 39.7 +2.0**
AGG Agios Georgios 38.34 289 *e*P **P 00 37 38.3 0.0**
AGG pmax pmax
comp=Z,200nm,1.6s
AGG Agios Georgios 38.34 289 *e*P **P 00 37 38.3 0.0**
comp=Z,200nm,1.6s
BEL Belsk 38.42 310 *e*P **P 00 37 40.0 +1.2**
BEL Belsk 38.42 310 *e*P **P 00 37 39.9 +1.2**
THL Klokotos Trika 38.47 290 P **P 00 37 35.7 -3.6**
SKO Skopje 38.47 294 *i* P **P 00 37 40.0 +0.6**
KECS Kecovo 38.56 304 *e*P **P 00 37 41.9 +1.9**
KECS pmax pmax
comp=Z,9.0nm,0.7s
KECS Kecovo 38.56 304 *e*P **P 00 37 41.9 +1.9**
KECS *e*PP **PnPn 00 39 17.0 -1.4**
TRTT Trang 38.61 131 P **P 00 37 41.6 +0.9**
comp=Z,43nm,0.6s
NIE Niedzica 38.67 306 *e*P **P 00 37 42.3 +1.4**
NIE Niedzica 38.67 306 *e*P **P 00 37 42.3 +1.4**
BIA Bitola 38.71 292 *i* P **P 00 37 42.0 +0.5**
FNA Florina 38.72 292 P **P 00 37 41.5 0.0**
EVR Evrytania 38.76 289 P **P 00 37 41.1 -0.8**
EVR Evrytania 38.76 289 P **P 00 37 41.1 -0.8**
KPRO Kipourio 38.88 291 P **P 00 37 43.4 +0.5**
PSZ Piszkesteto 38.98 303 ⇓ *i*P **P 00 37 45.4 +1.9**
PSZ Piszkesteto 38.98 303 ⇓ *e*P **P 00 37 45.2 +1.7**
PSZ Piszkesteto 38.98 303 *e*P **P 00 37 44.8 +1.3**
PSZ pmax pmax
comp=Z,20nm,0.7s
PSZ Piszkesteto 38.98 303 *e*P **P 00 37 44.8 +1.3**
comp=Z,20nm,0.7s
KLNR Kaliningrad 38.99 314 *i* P **P 00 37 44.4 +1.0**
KLNR pmax pmax
comp=Z,260nm,2.0s
OJC Ojcow 39.00 307 *e*P **P 00 37 43.8 +0.2**
OJC Ojcow 39.00 307 *e*P **P 00 37 43.8 +0.2**
OJC Ojcow 39.00 307 *e*P **P 00 37 43.3 -0.3**
comp=Z,33nm,0.6s
PENT Pentalofos 39.01 291 P **P 00 37 43.2 -0.7**
NEST Nestorio 39.03 291 P **P 00 37 44.5 +0.4**
PVO Paravola 39.04 288 P **P 00 37 44.1 0.0**
LHMI Lhok Sumawe 39.11 137 P **P 00 37 43.7 -1.2**
comp=Z,62nm,0.6s
LANS Liptovska Anna 39.22 305 *e*P **P 00 37 47.5 +2.0**
LANS Liptovska Anna 39.22 305 *e*P **P 00 37 47.4 +2.0**
LANS *e*PP **PP 00 39 16.5 -4.2**
DSL Palaion Diasel 39.26 289 P **P 00 37 45.6 -0.3**
DSL Palaion Diasel 39.26 289 P **P 00 37 45.6 -0.3**
NJ2 Nanjing 39.29 82 *e*P **P 00 37 48.0 +1.8**
NJ2 pmax pmax
comp=Z,37nm,0.5s
PDO Prodromos 39.31 289 P **P 00 37 45.9 -0.4**
BUD Budapest 39.59 303 ⇑ *e*P **P 00 37 48.5 0.0**
BUD Budapest 39.59 303 P **P 00 37 49.0 +0.5**
VYHS Vyhne 39.66 304 *e*P **P 00 37 50.1 +1.0**
VYHS pmax pmax
comp=Z,22nm,1.5s
VYHS Vyhne 39.66 304 *e*P **P 00 37 50.1 +1.0**
VYHS *e*PP **PP 00 39 22.7 -2.7**
LKD2 Lefkada island 39.66 289 P **P 00 37 48.5 -0.8**
LKD2 Lefkada island 39.66 289 P **P 00 37 48.5 -0.8**
OKC Ostrava-Krasne 40.07 306 *e*P **P 00 37 53.5 +1.1**
OKC *e*PP **PP 00 39 30.4 +0.7**
OKC Ostrava-Krasne 40.07 306 *e*P **P 00 37 53.5 +1.1**
OKC *e* 00 39 30.4
CSKK Cs¯‡kako 40.11 303 ⇓ *e*P **P 00 37 54.0 +1.2**
MORC Moravsky Berou 40.46 306 ⇓ *i*P **P 00 37 59.1 +3.4**
MORC Moravsky Berou 40.46 306 *e*P **P 00 37 56.9 +1.2**
MORC pmax pmax
comp=Z,135nm,0.6s
MORC Moravsky Berou 40.46 306 *e*P **P 00 37 56.9 +1.2**
comp=Z,135nm,0.6s
SMOL Smolenice 40.59 304 *e*P **P 00 37 58.2 +1.5**
SMOL Smolenice 40.59 304 *e*P **P 00 37 58.1 +1.4**
KEV Kevo 40.80 338 *e*P **P 00 37 58.8 +0.8**
KEV pmax pmax
comp=Z,27nm,0.7s
KEV Kevo 40.80 338 *e*P **P 00 37 58.8 +0.8**
comp=Z,27nm,0.7s
KRLC Kraliky 40.94 307 *e*P **P 00 38 00.2 +0.6**
KRLC *e*x x 00 38 03.8
KRLC *e*pP **pP 00 38 49.8 +0.9**
KRLC *e*PP **PP 00 39 40.8 +1.7**
KRLC Kraliky 40.94 307 *e*P **P 00 38 00.2 +0.6**
KRLC *e**PP **pP 00 38 49.8 +0.9**
KRLC *e* 00 39 40.8
VRAC Vranov 41.10 306 ⇓ *i*P **P 00 38 02.4 +1.6**
BLY Banja Luka 41.14 299 ⇓ *i*P **P 00 38 02.4 +1.2**
ARA0 ARCESS Array S 41.14 338 *e*P **P 00 38 01.8 +0.9**
ARA0 *e*pP **pP 00 38 50.9 +0.6**

ARA0 *es*P **sP** **00 39 16.7 -0.6**
ARCES ARCESS Array B 41.14 338 P **P** **00 38 01.8 +0.9**
comp=Z,60nm,0.7s,baz=114,slow=8.4,SNR=213
ARCES pP **pP** **00 38 50.9 +0.6**
comp=Z,12nm,0.8s,baz=105,slow=9.2,SNR=3.2
ARCES sP **sP** **00 39 16.7 -0.6**
comp=Z,18nm,1.0s,baz=110,slow=9.7,SNR=2.8
ARE0 ARCESS Array S 41.14 337 *e*P **P** **00 38 01.9 +1.0**
KULM Kulim 41.20 132 *e*P **P** **00 38 03.0 +1.1**
comp=Z,47nm,1.5s
HEF Hetta 41.21 336 *e*P **P** **00 38 02.1 +0.6**
DPC Dobruska-Polom 41.23 307 *e*P **P** **00 38 03.2 +1.3**
DPC *ep*P **pP** **00 38 51.2 -0.1**
DPC *es*P **sP** **00 39 18.9 +0.6**
DPC *e*PP **PP** **00 39 42.9 +0.7**
DPC Dobruska-Polom 41.23 307 *e*SKS sP 00 39 19.0 +0.7
KSP Ksiaz 41.23 308 *e*P **P** **00 38 02.4 +0.6**
KSP Ksiaz 41.23 308 *e*P **P** **00 38 02.4 +0.6**
SOP Sopron 41.24 303|| *e*P **P** **00 38 03.3 +1.4**
SOP Sopron 41.24 303 P **P** **00 38 02.8 +0.9**
UPC Upice 41.42 308 *e*P **P** **00 38 04.3 +0.9**
UPC *ep*P **pP** **00 38 53.6 +0.7**
UPC *es*P **sP** **00 39 20.8 +1.0**
UPC *e*PP **PP** **00 39 45.6 +1.4**
UPC Upice 41.42 308 *e*P **P** **00 38 04.3 +0.9**
UPC *e**PP **pP** **00 38 53.6 +0.7**
UPC *e**SP **sP** **00 39 20.8 +1.0**
UPC *e* 00 39 45.6
KOGS Kog 41.57 301 *i*P **P** **00 38 04.5 -0.2**
KTK1 Kautokeino 41.62 336 *e*P **P** **00 38 05.3 +0.5**
KTK1 IAmb IAmb 00 38 05.5
comp=Z,55nm,0.5s
KTK1 *ep*P **pP** **00 38 55.0 +0.8**
CONA Conrad Observa 41.68 304 *i*P **P** **00 38 06.4 +0.7**
comp=Z,66nm,0.9s,SNR=34
TREC Trest 41.82 306 *e*P **P** **00 38 07.6 +0.9**
TREC *ep*P **pP** **00 38 57.3 +1.0**
TREC Trest 41.82 306 *e*P **P** **00 38 07.6 +0.9**
TREC *e**PP **pP** **00 38 57.3 +1.0**
ARSA Arzberg 41.98 303 *i*P **P** **00 38 08.6 +0.6**
comp=Z,13nm,0.8s,SNR=9.1
BSD Bornholm Skovb 42.08 314 *i*P **P** **00 38 08.3 -0.3**
comp=Z,21nm,0.7s
BSD Bornholm Skovb 42.08 314 *i*P **P** **00 38 08.3 -0.3**
BSD pmax pmax
comp=Z,21nm,0.7s
PSI Prapat 42.21 136 *e*P **P** **00 38 09.9 -0.4**
PSI pmax pmax
comp=Z,28nm,0.9s
PSI Prapat 42.21 136 *e*P **P** **00 38 09.9 -0.4**
comp=Z,28nm,0.9s
HAMF Hammerfest 42.22 339 *e*P **P** **00 38 10.7 +1.2**
HAMF IAmb IAmb 00 38 11.3
comp=Z,92nm,0.7s
GOPC GO Pecny, Ondr 42.23 307 *e*P **P** **00 38 10.7 +0.7**
GOPC *ep*P **pP** **00 39 00.3 +0.6**
GOPC GO Pecny, Ondr 42.23 307 *e*P **P** **00 38 10.7 +0.7**
GOPC *e**PP **pP** **00 39 00.3 +0.6**
BISS Bistriski jare 42.32 302 *i*P **P** **00 38 11.8 +1.1**
PERS Pernice 42.33 302 *i*P **P** **00 38 11.4 +0.5**
PERS *i*pP **pP** **00 39 03.6 +3.1**
PVCC Panska Ves 42.34 308 *e*P **P** **00 38 11.6 +0.8**
PVCC *ex* x 00 38 17.5
PVCC *e*PP **PP** **00 39 55.5 +1.5**
PVCC Panska Ves 42.34 308 *e*P **P** **00 38 11.6 +0.8**
PVCC *e* 00 39 55.5
SOKA Soboth 42.38 302 *i*P **P** **00 38 12.1 +0.8**
comp=Z,49nm,0.5s,SNR=42
PRU Pruhonice 42.39 307 *e*P **P** **00 38 12.1 +0.9**
PRU *ep*P **pP** **00 39 01.4 +0.5**
PRU *es*P **sP** **00 39 28.8 +1.0**
PRU *e*PP **PP** **00 39 51.9 -2.6**
PRU Pruhonice 42.39 307 *e*P **P** **00 38 12.1 +0.9**
PRU *e**PP **pP** **00 39 01.4 +0.5**
PRU *e**SP **sP** **00 39 28.8 +1.0**
PRU *e* 00 39 51.9
TIP Timpagrande 42.52 291|| *i*P **P** **00 38 12.5 -0.1**
TIP Timpagrande 42.52 291 *e*P **P** **00 38 12.0 -0.5**
comp=Z,70nm,1.3s
BRG Berggiesshubel 42.71 308 *i*P **P** **00 38 15.2 +1.4**
comp=Z,59nm,0.8s
BRG *ep*P **pP** **00 39 03.5 -0.1**
comp=Z,12nm,1.0s
BRG sP **sP** **00 39 30.0 -0.5**
BRG PP **PP** **00 39 57.8 -0.1**
comp=Z,13nm,1.1s
BRG Berggiesshubel 42.71 308 *i*P **P** **00 38 15.2 +1.4**
BRG *e**PP **pP** **00 39 03.5 -0.1**
BRG *SP **sP** **00 39 30.0 -0.5**
BRG 00 39 57.8
BRG pmax pmax
comp=Z,59nm,0.9s
OBKA Obir 42.73 302 *i*P **P** **00 38 14.7 +0.6**
comp=Z,14nm,0.6s,SNR=8.7
GSI Gunungsitoli 42.73 139 P **P** **00 38 15.0 +0.6**
comp=Z,233nm,0.8s,comp=Z,3μm
GSI Gunungsitoli 42.73 139 *e*P **P** **00 38 16.0 +1.6**
comp=Z,151nm,0.6s
MOA Molln 42.76 304 *i*P **P** **00 38 14.3 +0.1**
comp=Z,50nm,0.9s,SNR=22
NVLJ Novalja 42.80 299 P **P** **00 38 14.4 -0.1**
LJU Ljubljana 42.81 301 *e*P **P** **00 38 15.4 +0.7**
MOZS Mozjanca 42.83 301 *e*P **P** **00 38 16.1 +1.2**
GERES GERESS Array B 43.03 305 P **P** **00 38 17.4 +1.0**
comp=Z,4.3nm,0.5s,baz=69,slow=7.7,SNR=50
GERES PP **PP** **00 40 00.1 -1.3**
comp=Z,5.6nm,0.9s,baz=81,slow=8.2,SNR=5.8
CUC Castrocucco 43.03 292 *e*P **P** **00 38 17.5 +0.9**
comp=Z,50nm,0.7s
KHC Kasperske Hory 43.08 306 *e*P **P** **00 38 17.2 +0.4**
KHC *ex* x 00 38 20.9
KHC *ep*P **pP** **00 39 07.4 +0.7**
KHC *e*PP **PP** **00 39 59.4 -2.6**
KHC Kasperske Hory 43.08 306 *e*P **P** **00 38 17.2 +0.4**
KHC *e**PP **pP** **00 39 07.4 +0.7**
KHC *e* 00 39 59.4
KHC Kasperske Hory 43.08 306 *e*P **P** **00 38 17.2 +0.4**
comp=Z,9.5nm,1.1s
TRO Tromso 43.27 336 *e*P **P** **00 38 18.4 +0.5**
TRO IAmb IAmb 00 38 20.0
comp=Z,28nm,1.0s
TRO IAMs_20 IAMs_20 01 17 58.8
comp=Z,2μm,20.8s
CLL Collm 43.28 309⇑ *i*P **P** **00 38 18.4 +0.1**
comp=Z,35nm,0.9s
CLL *ep*P **pP** **00 39 07.0 -1.2**
CLL *es*P **sP** **00 39 34.0 -1.1**
CLL *e*PP **PP** **00 40 06.0 +2.1**
CLL *e*PPP PPP 00 40 45.0
CLL Collm 43.28 309⇑ *i*P **P** **00 38 18.4 +0.1**
CLL *e**PP **pP** **00 39 07.0 -1.2**
CLL *e**SP **sP** **00 39 34.0 -1.1**
CLL pmax pmax
comp=Z,35nm,0.9s
CLL Collm 43.28 309 *e*P **P** **00 38 18.8 +0.4**
comp=Z,28nm,0.9s
CADS Cadrg 43.33 301 *i*P **P** **00 38 19.0 +0.2**
MYKA Terra Mystica 43.34 302 *i*P **P** **00 38 19.5 +0.6**
comp=Z,16nm,0.6s,SNR=6.3
TRI Trieste 43.39 301 *e*P **P** **00 38 19.8 +0.6**
TRI pmax pmax
comp=Z,28nm,0.7s
TRI Trieste 43.39 301 *e*P **P** **00 38 19.8 +0.6**
comp=Z,28nm,0.7s
KBA Koelnbreinsper 43.48 303 *i*P **P** **00 38 20.6 +0.4**
comp=Z,19nm,0.5s,SNR=14
KBA Koelnbreinsper 43.48 303 P **P** **00 38 21.1 +0.9**
NKC Novy Kostel 43.71 307 *e*P **P** **00 38 22.7 +0.9**
NKC *ep*P **pP** **00 39 11.3 -0.5**
NKC *e*PP **PP** **00 40 07.1 -1.5**
NKC Novy Kostel 43.71 307 *e*P **P** **00 38 22.7 +0.9**
NKC *e**PP **pP** **00 39 11.3 -0.5**
NKC *e* 00 40 07.1
STEI Steigen 43.98 333 *e*P **P** **00 38 24.4 +0.8**
STEI IAmb IAmb 00 38 24.5
comp=Z,24nm,0.6s
ABTA Abfaltersbach 44.09 302 *i*P **P** **00 38 24.5 -0.4**
comp=Z,12nm,0.6s,SNR=12
MDJ Mudanjiang 44.21 61 P **P** **00 38 24.4 -1.4**
MDJ sP sP 00 39 37.3 -5.4
MDJ ScP **ScP** **00 43 35.5 +0.6**
MDJ S **S** **00 44 37.8 -3.0**
MDJ pmax pmax
comp=Z,5.0nm,0.5s
MDJ pmax pmax
comp=Z,140nm,3.0s
MNSI Mandailing Nat 44.24 137 P **P** **00 38 25.6 -0.7**
comp=Z,100nm,0.9s,comp=Z,1μm
AQU L'Aquila 44.27 296 *e*P **P** **00 38 27.4 +1.0**
AQU pmax pmax
comp=Z,21nm,0.7s
AQU L'Aquila 44.27 296 *e*P **P** **00 38 27.4 +1.0**
comp=Z,21nm,0.7s
SSLB Suanglung 44.39 92 *e*P **P** **00 38 30.1 +2.5**
comp=Z,21nm,0.8s
NB2 NORSAR Subarra 44.42 323 P **P** **00 38 27.0 -0.4**
comp=Z,29nm,0.5s,baz=97,slow=7.9
NB2 NORSAR Subarra 44.42 323 P **P** **00 38 27.0 -0.4**
baz=97,slow=7.9
NB2 NORSAR Subarra 44.42 323 P **P** **00 38 27.0 -0.4**
NB2 pmax pmax
comp=Z,26nm,0.5s
NB200 NORSAR Array S 44.42 323 *e*P **P** **00 38 26.9 -0.4**
NB200 *ep*P **pP** **00 39 17.6 +0.2**
NB200 *es*P **sP** **00 39 44.0 -0.3**
NB200 *e*PP **PP** **00 40 14.6 -1.3**
NOA NORSAR Array B 44.42 323 P **P** **00 38 26.9 -0.4**
comp=Z,31nm,0.5s,baz=97,slow=7.7,SNR=194
NOA pP **pP** **00 39 17.7 +0.2**
comp=Z,11nm,0.9s,baz=96,slow=8.1,SNR=2.9
NOA sP **sP** **00 39 44.0 -0.3**
comp=Z,6.5nm,0.8s,baz=96,slow=8.1,SNR=2.4
NOA PP **PP** **00 40 14.6 -1.3**
comp=Z,10nm,0.8s,baz=96,slow=9.7,SNR=5.0
NOA NORSAR Array B 44.42 323 P **P** **00 38 26.9 -0.4**
NOA *PP **pP** **00 39 17.7 +0.2**
NOA *SP **sP** **00 39 44.0 -0.3**
NOA 00 40 14.6
NOA pmax pmax
comp=Z,32nm,0.5s
NOA pmax pmax
comp=Z,10.0nm,0.8s
STOK Stokkvaagen 44.43 331 *e*P **P** **00 38 27.7 +0.5**
STOK IAmb IAmb 00 38 34.9
comp=N,10nm,0.8s
NSS Namsos 44.52 328 *e*P **P** **00 38 28.3 +0.3**
NSS IAmb IAmb 00 38 28.5
comp=Z,20nm,0.8s
GRF Grafenberg Arr 44.55 307 P **P** **00 38 30.4 +1.9**
OSL Oslo 44.58 321 *e*P **P** **00 38 28.9 +0.4**
OSL IAmb IAmb 00 38 30.3
comp=Z,32nm,0.8s
WTTA Wattenberg 44.60 303 *i*P **P** **00 38 28.8 -0.3**
comp=Z,35nm,0.9s,SNR=13
WATA Walderalm 44.63 303 *i*P **P** **00 38 29.1 -0.2**
comp=Z,19nm,0.5s,SNR=12
LOF Lofoten 44.65 333 *e*P **P** **00 38 28.8 -0.2**
LOF IAmb IAmb 00 38 29.9
comp=Z,29nm,0.8s
KS01 Wonju Array Si 44.66 71 *e*P **P** **00 38 29.2 -0.2**
KS01 *ep*P **pP** **00 39 21.5 +1.9**
KS01 *e*ScP **ScP** **00 43 35.0 -1.9**
KS15 Wonju Array Si 44.66 71 *e*P **P** **00 38 30.4 +0.9**
KS15 *ep*P **pP** **00 39 21.6 +2.0**
KS15 *e*ScP **ScP** **00 43 34.7 -2.2**
KSAR Wonju Array Be 44.66 71 P **P** **00 38 30.4 +0.9**
KSAR Wonju Array Be 44.66 71 P **P** **00 38 30.4 +0.9**
KSRS Korea Array 44.69 71 P **P** **00 38 30.4 +0.8**
comp=Z,5.6nm,0.9s,baz=279,slow=7.0,SNR=21
KSRS pP **pP** **00 39 21.6 +1.8**
comp=Z,3.6nm,0.9s,baz=286,slow=7.9,SNR=3.5
KSRS ScP **ScP** **00 43 34.7 -2.3**
comp=Z,0.6nm,0.3s,baz=285,slow=3.4,SNR=4.9
VAE Valguarnera 44.76 289 P **P** **00 38 32.5 +2.2**
comp=Z,28nm,0.8s,baz=122,slow=1.6,SNR=11
MOTA Moosalm 44.95 303 *i*P **P** **00 38 31.5 -0.3**
comp=Z,32nm,0.7s,SNR=34
KLR Kul'dur 44.95 54 P **P** **00 38 32.5 +0.9**
comp=Z,5.5nm,0.6s,baz=281,slow=8.6,SNR=17
KLR pP **pP** **00 39 23.1 +1.3**
comp=Z,2.9nm,0.7s,baz=275,slow=8.2,SNR=3.0
KLR sP **sP** **00 39 49.5 +0.9**
comp=Z,3.5nm,0.8s,baz=295,slow=6.0,SNR=2.5
HOPEN Hopen 44.97 346 *e*P **P** **00 38 33.4 +2.1**
HOPEN IAmb IAmb 00 38 33.6
comp=Z,42nm,0.8s
HOPEN IAMs_20 IAMs_20 01 21 16.3
comp=Z,2μm,20.8s
KONO Kongsberg 45.14 321 *e*P **P** **00 38 32.8 -0.1**
KONO IAmb IAmb 00 38 34.0
comp=Z,41nm,1.0s
KONO *i* 00 42 22.1
KONO Kongsberg 45.14 321 *e*P **P** **00 38 32.7 -0.1**
KONO pmax pmax
comp=Z,38nm,1.0s
KONO Kongsberg 45.14 321 *e*P **P** **00 38 32.7 -0.1**
comp=Z,38nm,1.0s
RETA Reutte 45.15 304 *i*P **P** **00 38 33.2 -0.1**
comp=Z,13nm,0.5s,SNR=6.9
BJO Bjornoya 45.20 343 *e*P **P** **00 38 34.3 +1.1**
BJO IAmb IAmb 00 38 35.0
comp=Z,75nm,0.9s
FETA Feichten 45.25 303 *i*P **P** **00 38 33.5 -0.7**
comp=Z,20nm,0.5s,SNR=16
MUD Monsted U'grnd 45.33 316 *i*P **P** **00 38 35.8 +1.4**
MUD Monsted U'grnd 45.33 316 *i*P **P** **00 38 35.8 +1.4**
BKNI Bangkinang 45.44 136 P **P** **00 38 36.9 +1.1**
comp=Z,156nm,0.8s,comp=Z,2μm
BKNI Bangkinang 45.44 136 *e*P **P** **00 38 35.9 +0.1**
comp=Z,124nm,0.9s
FUORN Ofenpass-Fuorn 45.63 303 *e*P **P** **00 38 37.5 +0.2**
comp=Z,24nm,0.7s
TIXI Tiksi 45.63 22 *i*P **P** **00 38 36.9 +0.3**
TIXI pmax pmax
comp=Z,12nm,0.7s
TIXI Tiksi 45.63 22 *e*P **P** **00 38 36.2 -0.3**
comp=Z,18nm,1.0s
CLTB Caltabellotta 45.64 290 *e*P **P** **00 38 37.0 -0.2**
comp=Z,46nm,0.7s
HOMB Homborsund 45.68 319 *e*P **P** **00 38 37.8 +0.7**
HOMB IAmb IAmb 00 38 38.4
comp=Z,26nm,1.0s
PPI Padang Panjang 45.73 137 P **P** **00 38 38.9 +0.9**
comp=Z,89nm,0.9s
DAVA Damuels 45.78 304 *i*P **P** **00 38 38.5 +0.2**
comp=Z,97nm,0.5s,SNR=71
DAVOX Davos/Dischmat 45.87 303 P **P** **00 38 39.0 0.0**
comp=Z,42nm,0.6s,baz=114,slow=4.0,SNR=67
MYKOM Kota Tinggi 45.89 131 *e*P **P** **00 38 40.4 +1.1**
comp=Z,52nm,1.0s
USRK Ussuriysk Ar. 45.98 61 P **P** **00 38 40.1 +0.4**
comp=Z,2.6nm,0.7s,baz=284,slow=7.7,SNR=5.3
STU Stuttgart 45.99 306 *e*P **P** **00 38 40.3 +0.6**
STU pmax pmax
comp=Z,46nm,0.9s
STU Stuttgart 45.99 306 *e*P **P** **00 38 40.3 +0.6**
comp=Z,46nm,0.9s
VLC Villacollemand 46.03 299 *e*P **P** **00 38 40.8 +0.6**
comp=Z,52nm,1.5s
PDSI Padang 46.14 137 P **P** **00 38 41.6 +0.3**
comp=Z,68nm,1.0s
VLA Vladivostok 46.14 62⇑ *e*P **P** **00 38 40.1 -0.9**
VLA *PP **pP** **00 39 29.2 -2.3**
VLA *e* 00 40 12.0
VLA *e* 00 40 31.6
VLA pmax pmax
comp=Z,38nm,1.3s
TUE Stuetta 46.28 303 *e*P **P** **00 38 42.2 -0.1**
comp=Z,21nm,0.7s
SNART Snartemo 46.36 319 *e*P **P** **00 38 43.1 +0.7**
SNART IAmb IAmb 00 38 44.6
comp=Z,15nm,0.7s
AKN Aaknes 46.51 324 *e*P **P** **00 38 43.5 -0.1**
AKN IAMs_20 IAMs_20 01 14 55.3
comp=Z,1μm,31.0s
BFO Black Forest 46.63 305 *e*P **P** **00 38 45.2 +0.5**
BFO pmax pmax
comp=Z,23nm,1.1s
BFO Black Forest 46.63 305 *e*P **P** **00 38 45.2 +0.5**
comp=Z,23nm,1.1s
ODD1 Odda 46.64 321 *e*P **P** **00 38 45.6 +0.9**
ODD1 IAmb IAmb 00 38 47.1
comp=Z,13nm,0.6s
BLS5 Blasjo 46.73 321 *e*P **P** **00 38 46.1 +0.8**
BLS5 IAmb IAmb 00 38 47.4
comp=Z,19nm,0.8s
BLS5 *i* 00 42 37.3
BLS5 IAMs_20 IAMs_20 01 20 04.7
comp=Z,2μm,23.3s
LANF Langenberg 46.87 306⇑ *e*P **P** **00 38 47.6 +1.1**
LANF Langenberg 46.87 306 P **P** **00 38 48.0 +1.5**
HYA Hoyanger 46.87 323 *e*P **P** **00 38 47.1 +0.8**
HYA IAmb IAmb 00 38 49.8
comp=Z,13nm,0.9s
HSPB Hornsund (broa 47.11 345 *e*P **P** **00 38 49.5 +1.5**
HSPB IAmb IAmb 00 38 50.7
comp=Z,44nm,1.0s
HSPB IAMs_20 IAMs_20 01 20 18.2
comp=Z,2μm,20.6s
STAV Stavanger 47.13 320 *e* 00 33 39.2
STAV IAMs_20 IAMs_20 01 21 05.2
comp=Z,2μm,25.4s
WLS Welschbruch 47.26 305⇑ *e*P **P** **00 38 49.8 +0.2**
BER Bergen 47.29 322 *e*P **P** **00 38 50.2 +0.6**
BER IAmb IAmb 00 38 51.0
comp=Z,25nm,0.7s
ASK Askoy 47.35 322 *e*P **P** **00 38 50.2 +0.2**
ASK IAmb IAmb 00 38 51.0
comp=Z,29nm,1.0s
ASK *ep*P **pP** **00 39 40.8 -0.1**
ECH Echery 47.42 305⇑ *e*P **P** **00 38 51.1 +0.3**
FOO Floro 47.42 324 *e*P **P** **00 38 51.1 +0.6**
FOO IAmb IAmb 00 38 52.1
comp=Z,17nm,0.9s
FOO *ep*P **pP** **00 39 41.7 +0.3**
FOO IAMs_20 IAMs_20 01 20 38.0
comp=Z,2μm,26.0s
SPA0 Spitsbergen Ar 47.46 347 *e*P **P** **00 38 52.1 +1.4**
SPA0 IAmb IAmb 00 38 53.3
comp=Z,41nm,0.9s
MOF Molkenrain 47.51 305⇑ *e*P **P** **00 38 51.7 +0.1**
SUE Sulen 47.56 323 *i* 00 42 46.0
SENIN Lac Senin/Sane 47.69 303 *e*P **P** **00 38 53.2 0.0**
comp=Z,58nm,0.6s
HINF Hinteralfeld 47.70 305 *e*P **P** **00 38 52.1 -0.9**
HINF pmax pmax
comp=Z,30nm,0.7s
MEM Membach 47.75 309 P **P** **00 38 54.4 +1.1**
comp=Z,24nm,1.1s
LOMF Lomont 47.81 304⇑ *e*P **P** **00 38 53.6 -0.3**
WLF Walferdange 47.82 307 P **P** **00 38 55.4 +1.6**
comp=Z,41nm,1.1s
WLF Walferdange 47.82 307 *e*P **P** **00 38 55.2 +1.4**
WLF pmax pmax
comp=Z,63nm,0.9s
WLF Walferdange 47.82 307 *e*P **P** **00 38 55.2 +1.4**
comp=Z,63nm,0.9s
BEBN Eben Emael 47.93 309 P **P** **00 38 55.4 +0.8**
VSL Villasalto 47.95 293 *e*P **P** **00 38 54.8 -0.2**
comp=Z,106nm,1.9s
OG01 Vacheresse 48.12 303⇑ *e*P **P** **00 38 56.7 +0.4**
LUCF Luceram 48.23 300 *e*P **P** **00 38 57.6 +0.5**
BCLA Clavier 48.23 308 P **P** **00 38 57.9 +1.0**
comp=Z,14nm,1.3s
REVF Revere 48.25 299⇑ *e*P **P** **00 38 57.4 +0.1**
LPG La Plagne 48.26 302 *e*P **P** **00 38 57.9 +0.3**
LPG pmax pmax
comp=Z,33nm,0.6s
LPL La Plagne 48.27 302 *e*P **P** **00 38 57.1 -0.5**
LPL pmax pmax
comp=Z,40nm,0.6s
RSL Roselend 48.30 302⇑ *e*P **P** **00 38 58.1 +0.4**
MVIF Mont Vial 48.36 300⇑ *e*P **P** **00 38 58.6 +0.4**
JNU Nakatsue 48.40 76 P **P** **00 38 58.0 -0.5**
comp=Z,5.6nm,0.7s,baz=62,slow=7.0,SNR=3.8
JNU pP **pP** **00 39 51.5 +1.9**
comp=Z,12nm,0.9s,baz=124,slow=2.8,SNR=4.2
CABF La Chapelle 48.46 303 *e*P **P** **00 38 59.3 +0.4**
CABF pmax pmax
comp=Z,37nm,0.6s
KBS Kingsbay 48.58 347 *e*P **P** **00 39 00.3 +1.2**
KBS IAmb IAmb 00 39 01.6
comp=Z,39nm,0.6s
KBS IAMs_20 IAMs_20 01 23 57.5
comp=Z,1μm,20.5s
KBS Kingsbay 48.58 347 *e*P **P** **00 39 00.4 +1.2**
KBS pmax pmax
comp=Z,40nm,0.8s
KBS Kingsbay 48.58 347 *e*P **P** **00 39 00.4 +1.2**
comp=Z,40nm,0.8s
CALN Calern 48.58 299⇑ *e*P **P** **00 39 00.1 +0.2**
DOU Dourbes 48.73 308 P **P** **00 39 01.9 +1.2**
comp=Z,27nm,1.4s
GDM Grand'Maison 48.76 301⇑ *e*P **P** **00 39 01.3 0.0**
SNF Seneffe 48.85 309 P **P** **00 39 02.8 +1.2**
BAIF Baives 48.98 308 *e*P **P** **00 39 02.8 +0.1**
BAIF pmax pmax
comp=Z,55nm,0.9s
GRN Grenoble 49.01 302⇑ *e*P **P** **00 39 03.4 +0.4**
KMBO Kilima Mbogo 49.01 228 *e*P **P** **00 39 04.9 +1.3**
KMBO pmax pmax
comp=Z,13nm,0.8s
KMBO Kilima Mbogo 49.01 228 *e*P **P** **00 39 04.9 +1.3**
comp=Z,13nm,0.8s
KEST Kesra 49.18 289 P **P** **00 39 05.3 +0.8**
comp=Z,50nm,0.6s,baz=18,slow=1.2,SNR=190
KEST Kesra 49.18 289 *e*P **P** **00 39 05.3 +0.8**
comp=Z,55nm,0.6s
OG26 St.-Nazaire-De 49.48 301⇑ *e*P **P** **00 39 07.1 +0.5**
SSB Saint Sauveur 49.82 302 *e*P **P** **00 39 09.5 +0.4**
SSB pmax pmax
comp=Z,40nm,0.6s
SSB Saint Sauveur 49.82 302 *e*P **P** **00 39 09.5 +0.4**
comp=Z,40nm,0.6s
NKL Nikolayevsk 49.93 47 *e*P **P** **00 39 10.0 +0.3**
NKL pmax pmax
comp=Z,33nm,0.9s
KSM Kuching 50.23 125 *e*P **P** **00 39 13.2 +0.7**
comp=Z,32nm,1.0s
AVF Avril sur Loir 50.25 304 *e*P **P** **00 39 11.3 -0.9**
AVF pmax pmax
comp=Z,55nm,0.7s
PLDF La Plantade 50.27 303 *e*P **P** **00 39 12.9 +0.4**
AGO Saint Agoulin 50.58 303⇑ *e*P **P** **00 39 15.3 +0.5**
LBL Lubilhac 50.72 302 *e*P **P** **00 39 16.5 +0.7**
PYM Petit Puy Mans 50.74 303⇑ *e*P **P** **00 39 16.5 +0.5**
SBUM Sibu 50.79 122 *e*P **P** **00 39 18.1 +1.5**
comp=Z,26nm,0.9s
KKM Kota Kinabalu 51.08 115 *e*P **P** **00 39 20.8 +1.8**
comp=Z,62nm,1.0s
LWLI Liwa 51.52 136 P **P** **00 39 21.5 -0.7**
comp=Z,80nm,0.6s,comp=Z,8μm
CAF Calviac 51.61 302 *e*P **P** **00 39 22.0 -0.4**
CAF pmax pmax
comp=Z,34nm,0.8s
SJAF Saint Jean de 51.75 299⇑ *e*P **P** **00 39 23.2 -0.3**
KASI Kota Agung 52.18 136 P **P** **00 39 25.2 -1.7**
comp=Z,54nm,0.8s
EDI Edinburgh 52.25 317 *e*P **P** **00 39 27.0 +0.1**
FLN La Foliniere 52.26 307 *e*P **P** **00 39 26.0 -1.1**
FLN pmax pmax
comp=Z,38nm,0.8s
ESK Eskdalemuir 52.38 316 *i*P **P** **00 39 29.2 +1.3**
VALF Valcebollere 52.39 299⇑ *e*P **P** **00 39 28.6 +0.3**
JMIC Jan Mayen 52.58 336 *e* 00 42 53.0
GRR Gorron 52.60 307 *e*P **P** **00 39 28.5 -1.1**
GRR pmax pmax
comp=Z,64nm,1.0s
MJAR Matsushiro Arr 52.76 69 P **P** **00 39 30.9 -0.1**
comp=Z,3.7nm,1.0s,baz=288,slow=8.7,SNR=7.6
MJAR pP **pP** **00 40 25.0 +2.1**
comp=Z,3.2nm,0.8s,baz=290,slow=8.8,SNR=3.3
MYLDM Lahad Datu 53.34 114 *e*P **P** **00 39 38.1 +2.7**
comp=Z,43nm,1.1s
LABF Labassere 53.54 300⇑ *e*P **P** **00 39 35.9 -0.7**
VIEF Viey 53.63 300⇑ *e*P **P** **00 39 37.5 +0.2**
REYF Montagne du Re 53.86 301⇑ *e*P **P** **00 39 38.5 -0.4**
SEY Seymchan 54.25 34|| *i*P **P** **00 39 41.7 +0.4**
LARF Larrau 54.28 301⇑ *e*P **P** **00 39 42.4 +0.5**
DAG Danmarks Havn 54.70 344⇑ *i*P **P** **00 39 45.1 +0.7**
comp=Z,40nm,0.8s
DAG Danmarks Havn 54.70 344⇑ *i*P **P** **00 39 45.1 +0.7**
DAG pmax pmax
comp=Z,30nm,0.8s
SCO Scoresbysund 57.05 336 *i*P **P** **00 40 01.8 +0.8**
SCO Scoresbysund 57.05 336 *i*P **P** **00 40 01.8 +0.8**
ES19 SONSECA Array 57.52 298 *e*P **P** **00 40 04.8 -0.1**
ESDC Sonseca Array 57.58 298 P **P** **00 40 05.2 -0.1**
comp=Z,21nm,0.7s,baz=60,slow=7.3,SNR=156
ESDC pP **pP** **00 40 58.4 +0.2**
comp=Z,5.7nm,0.9s,baz=66,slow=7.6,SNR=3.5
ESLA Sonseca Array 57.58 298 *e*P **P** **00 40 05.2 -0.1**
comp=Z,34nm,0.8s
TAM Tamanrasset 57.71 276 *e*P **P** **00 40 05.9 -0.6**

TAM pmax pmax
comp=Z,14nm,0.8s
TAM Tamanrasset 57.71 276 *e*P **P 00 40 05.9 -0.6**
comp=Z,14nm,0.8s
PAB San Pablo 57.90 298 *e*P **P 00 40 07.9 +0.3**
PAB pmax pmax
comp=Z,54nm,1.4s
PAB San Pablo 57.90 298 *e*P **P 00 40 07.9 +0.3**
comp=Z,54nm,1.4s
BILL Bilibino 58.46 26 *i* P **P 00 40 11.9 +1.0**
BILL pmax pmax
comp=Z,3.0nm,0.6s
PCI Palu 58.48 118 P **P 00 40 16.4 +4.6**
PBRG Braganca 58.70 301 *e*P **P 00 40 13.1 +0.1**
comp=Z,30nm,1.4s
PBRG *e*pP **pP 00 41 08.7 +2.6**
MRSI Marisa 59.03 115 P **P 00 40 16.6 +1.0**
comp=Z,102nm,0.9s,comp=Z,1μm
MVO Moncorvo 59.15 301 *e*P **P 00 40 16.4 +0.3**
comp=Z,54nm,1.0s
MVO Moncorvo 59.15 301 *e*PP PP 00 42 25.3 -4.1
PVRL Vila Real 59.58 301 *e*P **P 00 40 19.1 +0.1**
comp=Z,24nm,1.4s
POLO Lamas de Olo 59.59 301 *e*P **P 00 40 19.4 +0.2**
comp=Z,18nm,1.3s
PCAB Cabril 59.62 301 *e*P **P 00 40 19.8 +0.5**
comp=Z,49nm,1.0s
PGAV Gavieira, Arco 59.68 302 *e*P **P 00 40 20.4 +0.6**
comp=Z,44nm,0.7s
MTE Manteigas 59.81 300 *e*P **P 00 40 21.3 +0.6**
comp=Z,74nm,1.0s
MTE Manteigas 59.81 300 *e*P **P 00 40 21.3 +0.6**
comp=Z,55nm,0.9s
TTSI Tana Toraja 59.98 120 P **P 00 40 24.2 +2.2**
comp=Z,45nm,0.9s
PMRV Marv??o 60.10 299 *e*P **P 00 40 22.6 0.0**
comp=Z,32nm,1.2s
PBAR Barrancos 60.38 297 *e*P **P 00 40 24.7 +0.3**
comp=Z,107nm,1.0s
PBAR *e*pP **pP 00 41 16.5 -1.3**
PESTR Estremoz 60.48 298 *e*P **P 00 40 25.2 +0.1**
comp=Z,42nm,1.2s
SPSI Sidrap Palu 60.60 121 P **P 00 40 27.3 +1.1**
comp=Z,21nm,0.9s
PCAS Casmilo, Conde 60.62 300 *e*P **P 00 40 26.4 +0.3**
PTOM Tomar 60.74 299 *e*P **P 00 40 27.4 +0.5**
PMTG Montargil 60.84 299 *e*P **P 00 40 27.6 0.0**
EVO Evora 60.92 298 *e*P **P 00 40 28.5 +0.4**
comp=Z,62nm,1.3s
PBEJ Beja 61.03 298 *e*P **P 00 40 29.3 +0.4**
comp=Z,51nm,1.1s
PBEJ *e*pP **pP 00 41 20.1 -2.2**
SUMG Summit 61.05 341⇑ *i*P **P 00 40 30.2 +1.3**
comp=Z,46nm,0.9s
SUMG Summit 61.05 341⇑ *i*P **P 00 40 30.2 +1.3**
SUMG pmax pmax
comp=Z,46nm,0.9s
SUMG Summit 61.05 341 *e*P **P 00 40 30.0 +1.1**
comp=Z,48nm,0.9s
PVAQ Vaqueiros 61.19 297 *e*P **P 00 40 30.1 +0.2**
comp=Z,108nm,1.4s
PVAQ Vaqueiros 61.19 297 *e*PP PP 00 42 48.9 +1.5
KAPI Kappang 61.35 122 *e*P **P 00 40 30.8 -0.4**
comp=Z,16nm,1.0s
MESJ Messejana 61.36 298 *e*P **P 00 40 30.5 -0.5**
MESJ AMb AMB 00 40 32.5
comp=Z,94nm,0.9s
MESJ Messejana 61.36 298 *e*P **P 00 40 31.6 +0.5**
comp=Z,93nm,1.2s
MESJ Messejana 61.36 298 *e*PP PP 00 42 51.2 +2.3
MESJ Messejana 61.36 298 *e*P **P 00 40 30.5 -0.5**
MESJ pmax pmax
comp=Z,94nm,0.9s
PBDV Barranco-do-Ve 61.41 297 *e*P **P 00 40 31.8 +0.3**
comp=Z,119nm,1.1s
PNCL Nicolau / Gran 61.47 298 *e*P **P 00 40 32.7 +1.0**
PMAFR Mafra 61.64 299 *e*P **P 00 40 33.9 +1.0**
PMAFR *e*pP **pP 00 41 24.9 -1.6**
PTEO Sao Teotonio 61.85 297 *e*P **P 00 40 34.9 +0.6**
comp=Z,121nm,1.6s
BSSI Bau Bau, Buton 62.67 122 P **P 00 40 40.7 +0.7**
comp=Z,54nm,0.9s
SANI Sanana 63.70 114 P **P 00 40 49.8 +3.0**
comp=Z,35nm,0.8s,comp=Z,2μm
LSZ Lusaka 65.64 226 *e*P **P 00 40 59.3 0.0**
LSZ pmax pmax
comp=Z,18nm,0.7s
LSZ Lusaka 65.64 226 *e*P **P 00 40 59.3 0.0**
comp=Z,18nm,0.7s
ILULI Ilulissat 66.39 341⇑ *i*P **P 00 41 03.9 +0.7**
comp=Z,48nm,0.8s
ILULI Ilulissat 66.39 341⇑ *i*P **P 00 41 03.9 +0.7**
ILULI pmax pmax
comp=Z,48nm,0.8s
SFJD Kangerlussuaq 67.75 339 P **P 00 41 12.0 +0.2**
comp=Z,7.6nm,0.5s,baz=34,slow=7.8,SNR=7.7
SFJD Kangerlussuaq 67.75 339⇑ *i*P **P 00 41 11.9 +0.2**
comp=Z,15nm,0.9s
SFJD Kangerlussuaq 67.75 339 P **P 00 41 12.0 +0.2**
SFJD pmax pmax
comp=Z,8.0nm,0.5s
SOEI Soe 67.84 122 P P 00 41 21.2 +7.9
COLD Coldfoot 71.85 16 *e*P **P 00 41 37.8 +1.0**
COLD *e*pP **pP 00 42 34.1 +2.1**
MLY Manley 73.55 17 *e*P **P 00 41 47.9 +1.1**
MLY *e*pP **pP 00 42 44.2 +1.9**
INK Inuvik 73.80 9 *e*P **P 00 41 49.0 +0.9**
INK pmax pmax
comp=Z,27nm,1.4s
INK Inuvik 73.80 9 *e*P **P 00 41 49.0 +0.9**
comp=Z,27nm,1.4s
BPAW Bear Paw Mtn. 74.27 18 *e*P **P 00 41 51.4 +0.4**
BPAW *e*pP **pP 00 42 48.1 +1.6**
CAST Castle Rocks 74.55 19 *e*P **P 00 41 53.5 +0.9**
CAST *e*pP **pP 00 42 50.2 +1.9**
CCB Clear Creek Bu 74.56 16 *e*P **P 00 41 52.8 +0.3**
comp=Z,22nm,1.9s
IL1 Eielson Array 74.66 16 *e*P **P 00 41 53.0 -0.1**
ILAR Eielson Array 74.66 16 P **P 00 41 53.0 -0.1**
comp=Z,1.8nm,0.8s,baz=321,slow=4.5,SNR=11
ILAR pP **pP 00 42 49.4 +0.6**
comp=Z,2.6nm,0.9s,baz=303,slow=4.1,SNR=4.6
ILAR sP **sP 00 43 15.2 +1.1**
comp=Z,1.3nm,0.8s,baz=322,slow=3.9,SNR=1.9
ILB Eielson Array 74.66 16 *e*P **P 00 41 53.0 -0.1**
ILB *e*pP **pP 00 42 49.4 +0.6**
ILB *e*sP **sP 00 43 15.2 +1.1**
KTH Kantishna Hill 74.74 18 *e*P **P 00 41 54.7 +1.0**
comp=Z,27nm,1.2s
FITZ Fitzroy Crossi 74.80 127 *e*P **P 00 41 55.0 +0.5**
comp=Z,20nm,1.0s
LBTB Lobatse 74.86 222 *e*P **P 00 41 55.3 +0.4**
LBTB pmax pmax
comp=Z,63nm,1.5s
LBTB Lobatse 74.86 222 *e*P **P 00 41 55.3 +0.4**
comp=Z,63nm,1.5s
DBIC Dimbokro 74.88 267 P **P 00 41 53.8 -1.4**
comp=Z,24nm,0.6s,baz=32,slow=6.9,SNR=63
DBIC Dimbokro 74.88 267 *e*P **P 00 41 53.8 -1.4**
comp=Z,29nm,0.7s
KIC Kosan Boka 74.97 267 *e*P **P 00 41 54.3 -1.5**
comp=Z,80nm,0.7s
TIC Toumodi 75.03 267 *e*P **P 00 41 54.6 -1.5**
MCK McKinley 75.07 17 *e*P **P 00 41 56.3 +0.7**
MCK pmax pmax
comp=Z,22nm,1.6s
MCK McKinley 75.07 17 *e*P **P 00 41 56.3 +0.7**
comp=Z,22nm,1.6s
TSUM Tsumeb 75.11 232 *e*P **P 00 41 56.7 +0.2**
comp=Z,12nm,0.8s
LIC Lamto 75.28 267 *e*P **P 00 41 56.0 -1.5**
comp=Z,48nm,0.7s
EGAK Eagle 75.83 14 *e*P **P 00 41 59.8 0.0**
comp=Z,24nm,1.8s
DOT Dot Lake 76.25 15 *e*P **P 00 42 02.8 +0.6**
comp=Z,47nm,1.7s
PAX Paxson 76.53 16 *e*P **P 00 42 04.6 +0.7**
PAX pmax pmax
comp=Z,16nm,1.3s
PAX Paxson 76.53 16 *e*P **P 00 42 04.6 +0.7**
comp=Z,16nm,1.3s
DAWY Dawson 76.81 13 *e*P **P 00 42 06.1 +0.7**
DAWY *e*pP **pP 00 43 02.8 +1.5**
BOSA Boshof 77.92 220 P **P 00 42 11.5 -0.5**
comp=Z,6.5nm,0.6s,baz=22,slow=2.9,SNR=19
BOSA pP **pP 00 43 10.0 +1.8**
comp=Z,4.7nm,0.8s,baz=32,slow=5.9,SNR=2.7
BOSA Boshof 77.92 220 *e*P **P 00 42 11.5 -0.5**
comp=Z,13nm,1.0s
BOSA *e*pP **pP 00 43 10.0 +1.8**
BALM Baldy 78.94 16 *e*P **P 00 42 18.6 +1.4**
BALM pmax pmax
comp=Z,5.0nm,0.7s
BALM Baldy 78.94 16 *e*P **P 00 42 18.6 +1.4**
comp=Z,5.4nm,0.7s
YKW3 Yellowknife Ar 81.09 3 *e*P **P 00 42 28.9 +0.4**
comp=Z,12nm,1.1s
YKW3 *e*pP **pP 00 43 25.1 0.0**
YKA Yellowknife Ar 81.16 3 P **P 00 42 29.4 +0.5**
comp=Z,5.2nm,0.5s,baz=351,slow=5.4,SNR=96
YKA pP **pP 00 43 26.5 +1.0**
comp=Z,3.9nm,0.7s,baz=350,slow=5.5,SNR=4.5
YKA sP **sP 00 43 51.5 +0.9**
comp=Z,2.8nm,0.7s,baz=349,slow=5.4,SNR=2.5
YKB5 Yellowknife Ar 81.16 3 *e*P **P 00 42 29.4 +0.5**
YKB5 *e*pP **pP 00 43 26.5 +1.0**
YKB5 *e*sP **sP 00 43 51.5 +0.9**
WR1 Warramunga Arr 81.88 122 *e*P **P 00 42 32.4 -0.9**
WRA Warramunga Arr 81.88 122 P **P 00 42 32.4 -0.9**
comp=Z,13nm,0.8s,baz=324,slow=5.0,SNR=64
SCHQ Schefferville 82.09 337 P **P 00 42 34.4 +0.5**
comp=Z,7.3nm,0.7s,baz=32,slow=6.4,SNR=7.7
SCHQ Schefferville 82.09 337 *e*P **P 00 42 34.4 +0.5**
comp=Z,45nm,1.8s
AS31 Alice Springs 84.15 125 *e*P **P 00 42 44.1 -0.8**
comp=Z,4.4nm,0.6s
ASAR Alice Springs 84.15 125 P **P 00 42 44.1 -0.8**
comp=Z,14nm,0.7s,baz=311,slow=4.9,SNR=96
AS01 Alice Springs 84.18 125 *e*P **P 00 42 43.3 -1.7**
FCC Fort Churchill 84.23 352 *e*P **P 00 42 45.0 +0.3**
FCC pmax pmax
comp=Z,21nm,1.4s
FCC Fort Churchill 84.23 352 *e*P **P 00 42 45.0 +0.3**
comp=Z,21nm,1.4s
ULM Lac du Bonnet 92.80 352 P **P 00 43 25.7 +0.2**
comp=Z,4.4nm,0.7s,baz=350,slow=5.8,SNR=3.8
EYMN Ely 94.44 348 *e*P **P 00 43 33.5 +0.3**
comp=Z,9.3nm,0.9s
STKA Stephens Creek 94.69 126 P **P 00 43 34.8 +0.5**
comp=Z,0.7nm,0.4s,baz=331,slow=9.1,SNR=2.9
STKA Stephens Creek 94.69 126 *e*P **P 00 43 34.8 +0.5**
comp=Z,6.9nm,1.8s
BOZ Bozeman (W) 98.11 2 *e*P **P 00 43 49.5 -0.5**
BOZ pmax pmax
comp=Z,3.0nm,0.8s
BOZ Bozeman (W) 98.11 2 *e*P **P 00 43 49.5 -0.5**
comp=Z,2.7nm,0.8s
LTX Lajitas 114.26 355 *e*PKIKP PKPdf 00 48 51.6 -0.2
LTX Lajitas 114.26 355 *e*PKiKP **PKiKP 00 48 51.6 -0.2**
TXAR Lajitas Array 114.26 355 PKP PKPdf 00 48 51.6 -0.2
comp=Z,0.2nm,0.6s,baz=224,slow=2.5,SNR=3.3
TEIG Tepich 120.27 338 PKP **PKPdf 00 49 04.4 +0.9**
comp=Z,2.4nm,0.8s,baz=357,slow=2.1,SNR=2.7
PTGA Pitinga 122.52 297 PKP **PKPdf 00 49 07.2 -0.7**
comp=Z,1.1nm,0.3s,baz=63,slow=2.0,SNR=4.3
CMIG Matias Romero 125.03 344 PKP **PKPdf 00 49 11.9 -0.8**
comp=Z,1.2nm,0.5s,baz=211,slow=5.9,SNR=3.4
CPUP Villa Florida 135.39 268 PKP **PKPdf 00 49 30.9 -1.0**
comp=Z,1.5nm,0.7s,baz=327,slow=2.6,SNR=5.1
CPUP pPKP **pPKPdf 00 50 33.9 +1.2**
comp=Z,1.1nm,0.6s,baz=60,slow=8.7,SNR=2.3
LCO Las Campanas 147.28 272 *e*PKPdf **PKPdf 00 49 53.7 +0.3**
PLCA Paso Flores 150.02 250 PKPbc **PKPbc 00 50 02.2 -0.2**
comp=Z,8.4nm,0.9s,baz=160,slow=0.7,SNR=15
PLCA pPKPbc **pPKPbc 00 51 02.5 -0.2**
comp=Z,4.2nm,1.0s,baz=80,slow=2.5,SNR=2.8

NEIC ***17*** *00:41:56.7, 43.°59S×172.°52E, h8km, ML4.1(WEL), After WEL.*
WEL 17 00:41:56.8±0.1, 43.°60S×172.°52E, h7km, ML3.9/21, 1C-4D, Error ellipse: s-maj=0.6km s-min=0.4km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRLZ	**Canterbury Las**	**0.08**	**72**	⇑PG	Pg	00 41 58.6	-0.1
CRLZ				SG	Sg	00 41 59.8	-0.2
CRLZ				AML	AML	00 42 00.2	
CRLZ				AML	AML	00 42 00.2	
CRLZ				AML	AML	00 42 00.3	
CRLZ	**Canterbury Las**	**0.08**	**72**	*e*Pg	Pg	00 41 58.6	0.0
CRLZ				*e*Sg	Sg	00 41 59.9	-0.1
MQZ	**McQueen's Vall**	**0.14**	**138**	⇓PG	Pg	00 41 59.8	+0.1
MQZ				SG	Sg	00 42 02.1	+0.3
MQZ				AML	AML	00 42 02.3	
MQZ				AML	AML	00 42 02.4	
MQZ	**McQueen's Vall**	**0.14**	**138**	*e*Pg	Pg	00 41 59.8	+0.1
OXZ	**Oxford**	**0.45**	**308**	⇓PG	Pg	00 42 05.1	-0.2
OXZ	**Oxford**	**0.45**	**308**	*e*Pg	Pg	00 42 05.3	-0.1
LTZ	**Lake Taylor**	**0.84**	**347**	⇓P*	Pg	00 42 13.0	+0.2
LTZ				S*	Sg	00 42 24.4	+0.7
LTZ				AML	AML	00 42 25.2	
LTZ	**Lake Taylor**	**0.84**	**347**	*e*Pg	Pg	00 42 13.0	+0.2
LTZ				*e*Sg	Sb	00 42 25.2	0.0
LTZ				*e*Sn	Sn	00 42 27.2	-0.4
RPZ	**Rata Peaks**	**1.07**	**263**	⇓P*	Pg	00 42 16.5	-0.8
RPZ				AML	AML	00 42 42.7	
RPZ				AML	AML	00 42 46.5	
RPZ	**Rata Peaks**	**1.07**	**263**	*e*Pg	Pg	00 42 17.1	-0.2
INZ	**Inchbonnie**	**1.18**	**318**	P*	Pg	00 42 18.1	-1.2
KHZ	**Kahutara**	**1.40**	**33**	PN	Pn	00 42 20.6	-2.1
KHZ	**Kahutara**	**1.40**	**33**	*e*Pn	Pn	00 42 20.6	-2.1
WVZ	**Waitaha Valley**	**1.40**	**291**	PN	Pn	00 42 21.5	-1.2
WVZ				AML	AML	00 42 48.5	
WVZ				AML	AML	00 42 50.0	
THZ	**Tophouse**	**1.86**	**9**	PN	Pn	00 42 27.3	-1.7
THZ				AML	AML	00 43 01.9	
THZ				AML	AML	00 43 06.8	
THZ	**Tophouse**	**1.86**	**9**	*e*Pn	Pn	00 42 27.7	-1.3
LBZ	**Lake Benmore**	**1.86**	**244**	PN	Pn	00 42 27.9	-1.2
LBZ				AML	AML	00 43 01.6	
LBZ				AML	AML	00 43 07.1	
LBZ				AML	AML	00 43 07.1	
DSZ	**Denniston Nort**	**1.93**	**344**	AML	AML	00 43 03.4	
DSZ				AML	AML	00 43 03.4	
DSZ				AML	AML	00 43 03.4	
DSZ				AML	AML	00 43 03.4	
FOZ	**Fox Glacier**	**1.97**	**271**	PN	Pn	00 42 30.7	+0.1
FOZ				AML	AML	00 43 04.9	
FOZ				AML	AML	00 43 04.9	
FOZ				AML	AML	00 43 15.5	
FOZ				AML	AML	00 43 15.5	
FOZ	**Fox Glacier**	**1.97**	**271**	*e*Pn	Pb	00 42 33.2	+0.3
ODZ	**Otahua Downs**	**1.98**	**222**	PN	Pn	00 42 28.9	-1.8
ODZ				AML	AML	00 43 08.1	
ODZ				AML	AML	00 43 08.1	
ODZ				AML	AML	00 43 09.0	
ODZ				AML	AML	00 43 09.0	
ODZ	**Otahua Downs**	**1.98**	**222**	*e*Pn	Pn	00 42 28.0	-1.7
BSWZ	**Blackbirch Sta**	**2.13**	**28**	*e*PN	Pn	00 42 30.9	-1.9
BSWZ				AML	AML	00 43 00.3	
BSWZ				AML	AML	00 43 02.6	
NNZ	**Nelson**	**2.46**	**15**	AML	AML	00 43 27.4	
NNZ				AML	AML	00 43 34.3	
TCW	**Tory Channel**	**2.72**	**29**	*e*PN	Pn	00 42 38.9	-2.0
TCW				AML	AML	00 43 30.2	
TCW	**Tory Channel**	**2.72**	**29**	*e*Pn	Pn	00 42 38.9	-1.9
TCW				*e*Lg	Lg	00 43 30.2	
JCZ	**Jackson Bay**	**2.74**	**259**	*e*PN	Pn	00 42 40.2	-1.1
JCZ				AML	AML	00 43 30.9	
JCZ				AML	AML	00 43 35.5	
QRZ	**Quartz Range**	**2.77**	**0**	AML	AML	00 43 27.9	
QRZ				AML	AML	00 43 27.9	
QRZ				AML	AML	00 43 30.2	
QRZ				AML	AML	00 43 30.2	
BHW	**Baring Head**	**2.79**	**39**	*e*Sn	Sn	00 43 12.6	-3.3
WKZ	**Wanaka**	**2.80**	**243**	*e*PN	Pn	00 42 40.8	-1.3
WKZ				AML	AML	00 43 34.6	
WKZ				AML	AML	00 43 37.9	
WKZ	**Wanaka**	**2.80**	**243**	*e*Pn	Pn	00 42 40.9	-1.2
WKZ				*e*Pg	Pg	00 42 49.5	-0.9
EAZ	**Earnscleugh**	**2.82**	**234**	*e*PN	Pn	00 42 40.4	-1.9
EAZ				AML	AML	00 43 29.4	
EAZ				AML	AML	00 43 40.5	
EAZ				AML	AML	00 43 43.0	
EAZ				AML	AML	00 43 43.0	
PLWZ	**Palliser**	**2.86**	**46**	*e*PN	Pn	00 42 39.8	-3.1
CAW	**Cannon Point**	**3.12**	**38**	*e*PN	Pn	00 42 43.3	-3.1
CAW				AML	AML	00 43 29.0	
CAW	**Cannon Point**	**3.12**	**38**	*e*Pn	Pn	00 42 43.5	-2.9
TUZ	**Tuapeka**	**3.13**	**220**	*e*PN	Pn	00 42 44.8	-1.7
TUZ				AML	AML	00 43 43.1	
TUZ				AML	AML	00 43 43.1	
TUZ				AML	AML	00 43 46.1	
TUZ				AML	AML	00 43 46.1	
MLZ	**Mavora Lakes**	**3.61**	**239**	*e*PN	Pn	00 42 50.9	-2.3
MLZ	**Mavora Lakes**	**3.61**	**239**	*e*Pn	Pn	00 42 52.1	-1.1
MLZ				*e*Pg	Pg	00 43 03.6	-2.4
SYZ	**Scrubby Hill**	**3.79**	**218**	AML	AML	00 44 09.0	
SYZ				AML	AML	00 44 13.9	
DCZ	**Deep Cove**	**4.27**	**242**	*e*Pg	Pg	00 43 16.4	-2.0
HIZ	**Hauiti**	**5.38**	**20**	*e*PN	Pn	00 43 16.4	-1.0
HIZ				AML	AML	00 43 51.5	
HIZ				AML	AML	00 45 49.6	
HIZ	**Hauiti**	**5.38**	**20**	*e*Pn	Pn	00 43 16.9	-0.5

ISN ***17*** *00:43:18.5±0.3, 31.°43N×48.°56E, h4km±9km, ML2.7*
CSEM ***17*** *00:43:26.5±0.3, 31.°73N×48.°21E, h2km, ML2.7, Error ellipse: s-maj=9.2km s-min=6.6km az=5.0*
TEH 17 00:43:29.5, 31.°79N×48.°34E, h10km, ML3.1, Western Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHGR	**Shooshtar-Gavs**	**0.51**	**51**	*e*Pg	Pg	00 43 37.4	-2.0
IKMR	**Kamar-syah**	**1.72**	**1**	*e*Pn	Pn	00 43 59.6	+0.1
IKMR				*e*AMB	AMB	00 44 00.1	
	comp=Z,99nm,0.1s						
IKMR				*e*Sg	Sb	00 44 23.8	+0.9
IKMR	**Kamar-syah**	**1.72**	**1**	*e*Pn	Pn	00 43 59.6	+0.1
IKMR				*e*Sg	Sb	00 44 23.8	+0.9
IKFM	**Kafar-mosalman**	**1.78**	**347**	*e*Pn	Pn	00 43 59.0	-1.3
IKFM				*e*AMB	AMB	00 44 30.4	
	comp=Z,99nm,0.2s						
IKFM	**Kafar-mosalman**	**1.78**	**347**	*e*Pn	Pn	00 43 59.0	-1.3
NSR	**Nassriya**	**2.03**	**248**	*e*Pg	Pn	00 44 03.5	-0.3
	SNR=9.0						
NSR				*e*Sg	Sg	00 44 35.0	+0.2
	SNR=9.0						
IPIR	**Pirpir**	**2.34**	**67**	*e*Sg	Sb	00 44 42.1	+1.0
IPIR				*e*Pn	Pn	00 44 08.3	-0.1
IPIR				*e*AMB	AMB	00 44 50.5	
	comp=Z,838nm,0.3s						
KHMZ	**Khomeyn**	**2.38**	**35**	*e*Pn	Pn	00 44 08.4	-0.3
KHMZ				*e*Sg	Sb	00 44 40.9	-1.1
IBZA	**Bozab**	**2.70**	**352**	*e*Pn	Pn	00 44 12.4	-0.9
IBZA				*e*AMB	AMB	00 45 02.8	
	comp=Z,318nm,0.2s						
IBZA	**Bozab**	**2.70**	**352**	*e*Pn	Pn	00 44 12.4	-0.9
ASAO	**Ashtian**	**3.09**	**27**	*e*Pn	Pn	00 44 18.2	-0.4
IKLH	**Kolahrood**	**3.13**	**60**	*e*Pn	Pn	00 44 19.1	-0.1
IKLH				*e*AMB	AMB	00 44 20.8	
	comp=Z,723nm,0.1s						
IKLH	**Kolahrood**	**3.13**	**60**	*e*Pn	Pn	00 44 19.1	-0.1
IGAR	**Gharneh**	**3.21**	**78**	*e*Pn	Pn	00 44 19.6	-0.6
IGAR				*e*AMB	AMB	00 44 21.5	
	comp=Z,339nm,0.1s						
QAM	**Ghamsar**	**3.27**	**52**	*e*Pn	Pn	00 44 21.4	+0.4
QAM				*e*AMB	AMB	00 44 24.2	
	comp=Z,637nm,0.1s						
ILIN	**Lien**	**3.32**	**340**	*e*Pn	Pn	00 44 21.1	-0.7
ILIN				*e*AMB	AMB	00 44 34.9	
	comp=N,256nm,0.2s						
ILIN	**Lien**	**3.32**	**340**	*e*Pn	Pn	00 44 21.1	-0.7
SNGE	**Sanandaj**	**3.39**	**346**	*e*Pn	Pn	00 44 22.2	-0.5
IRAM	**Ramesheh**	**3.44**	**89**	*e*Pn	Pn	00 44 23.2	-0.3
IRAM				*e*AMB	AMB	00 44 27.2	
	comp=Z,166nm,0.1s						
IRAM	**Ramesheh**	**3.44**	**89**	*e*Pn	Pn	00 44 23.2	-0.3
IZEF	**Zefreh**	**3.56**	**71**	*e*Pn	Pn	00 44 24.6	-0.4
IZEF				*e*AMB	AMB	00 44 26.0	
	comp=Z,280nm,0.1s						
IZEF	**Zefreh**	**3.56**	**71**	*e*Pn	Pn	00 44 24.6	-0.4
IKAZ	**Kazeroun**	**3.62**	**123**	*e*Pn	Pn	00 44 25.8	-0.2
IKAZ				*e*AMB	AMB	00 45 13.0	
	comp=Z,428nm,0.1s						
IKAZ	**Kazeroun**	**3.62**	**123**	*e*Pn	Pn	00 44 25.8	-0.2
BHD	**Baghdad**	**3.65**	**295**	*e*Pn	Pn	00 44 21.0	-5.1
	SNR=3.0						
BHD				*i* Sn	Sn	00 45 04.5	-4.7
	SNR=3.0						

IDC ***17*** *00:56:04.5±1.4, 35.°78N×140.°97E, h0km, mb3.5/4, mb1 3.7/5, mb1mx3.5/39, mbtmp3.5/5, ML3.2/1, Error ellipse: s-maj=31.8km s-min=25.2km az=40.0*
ISCJB ***17*** *00:56:07.6±1.1, 35.°86N±0.°05×141.°01E±0.°08, h32km±6km, mb3.5/4, Error ellipse: s-maj=11.1km s-min=7.7km az=155.4*
JMA ***17*** *00:56:08.4±0.1, 35.°85N×140.°95E, h32km±1km, M3.3*
JMA Felt I J1.
ISC 17 00:56:08.6±1.2, 35.°85N±0.°05×140.°94E±0.°09, h28km±7km, n14, σ1°12/17, mb3.5/4, 1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.16**	**205**	⇓P	**Pb**	**00 56 14.3**	**0.0**
CHOJ				S	**Sb**	**00 56 18.3**	**+0.2**
JYT	**Yasato**	**0.71**	**302**	P	**Pb**	**00 56 21.7**	**-0.8**
JYT				S	**Sb**	**00 56 31.5**	**-0.5**
JHO	**Hitachi**	**0.82**	**338**	P	**Pb**	**00 56 23.5**	**-0.8**
JHO				S	**Sb**	**00 56 34.5**	**-0.5**
BSO3	**Boso 3**	**1.10**	**199**	P	**Pb**	**00 56 27.4**	**-1.5**
JAG	**Ashikaga**	**1.33**	**296**	P	**Pn**	**00 56 30.8**	**-0.6**
JAG				*e*S	**Sn**	**00 56 46.8**	**-1.4**
MJAR	**Matsushiro Arr**	**2.31**	**288**	Pn	**Pn**	**00 56 45.6**	**+0.7**
	5.4nm,0.3s,baz=104,slow=9.3,SNR=27						
MJAR				Sn	**Sn**	**00 57 12.9**	**+0.5**
	4.3nm,0.3s,baz=295,slow=23,SNR=8.6						
MAT	**Matsushiro**	**2.32**	**288**	P	**Pn**	**00 56 45.8**	**+0.9**
MAT				*e*S	**Sn**	**00 57 15.2**	**+2.7**
H11S3	**WAKE ISLAND Hy**	**28.56**	**120**	T	T	01 31 44.0	
	baz=312,slow=75,SNR=7.7						
H11S1	**WAKE ISLAND Hy**	**28.56**	**120**	T	T	01 31 51.3	
	baz=312,slow=75,SNR=13						
H11S2	**WAKE ISLAND Hy**	**28.58**	**120**	T	T	01 31 51.6	
	baz=312,slow=75,SNR=8.8						
ZALV	**Zalesovo Beam**	**42.44**	**313**	P	**P**	**01 04 00.7**	**0.0**
	0.3nm,0.3s,baz=107,slow=8.0,SNR=2.5						
MKAR	**Makanchi Array**	**44.43**	**303**	P	**P**	**01 04 17.3**	**+0.4**
	0.7nm,0.9s,baz=92,slow=4.5,SNR=3.2						
ILAR	**Eielson Array**	**50.70**	**32**	P	**P**	**01 05 05.9**	**+0.6**
	0.3nm,0.8s,baz=276,slow=6.5,SNR=5.6						
WRA	**Warramunga Arr**	**55.84**	**188**	P	**P**	**01 05 43.1**	**-0.4**
	0.8nm,0.9s,baz=2.7,slow=7.2,SNR=4.6						

BER ***17*** *00:57:01.4±1.9, 80.°69N×5.°89W, h0km±224km, MD2.5, ML1.3*
ISC 17 00:56:59.6±4.1, 80.°7N±0.°3×5.°8W±0.°1, h10km, n4, σ1°44/7, North of Svalbard

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KBS	**Kingsbay**	**3.60**	**110**	*e*P	**Pn**	**00 57 56.6**	**+1.3**
KBS				*e*S	**Sn**	**00 58 36.5**	**-1.4**
KBS				IAML		00 58 43.7	
	comp=Z,2.0nm,0.4s						
DAG	**Danmarks Havn**	**4.66**	**219**	*i* P	**Pb**	**00 58 20.1**	**-1.3**
DAG				*i* S	**Sb**	**00 59 18.8**	**+1.4**
SPA0	**Spitsbergen Ar**	**4.76**	**111**	*e*P	**Pn**	**00 58 12.5**	**+1.2**
SPA0				*e*S	**Sn**	**00 59 06.2**	**-0.3**
HOPEN	**Hopen**	**7.29**	**109**	*e*P	**Pn**	**00 58 46.0**	**+0.1**

ISCJB ***17*** *01:01:32.6±0.5, 13.°21N±0.°04×89.°63W±0.°04, h64km±4km, mb4.2/33, Error ellipse: s-maj=9.3km s-min=3.2km az=40.2*
CASC ***17*** *01:01:33.7±5.9, 13.°24N×89.°60W, h55km±47km, MD4.5, ML4.2*
NEIC ***17*** *01:01:35.3±0.8, 13.°34N×89.°51W, h70km±8km, mb4.4/33, MD4.4(SNET), Error ellipse: s-maj=11.7km s-min=6.2km az=220.0*
NEIC Felt [III] at San Salvador. Also felt at El Rosario, Ilopango, La Herradura and Zaragoza.
IDC ***17*** *01:01:35.5±3.

mb1 3.9/12, mb1mx3.7/34, mbtmp4.0/12, ML4.2/1, MS4.1/2, Ms1 4.1/2, ms1mx3.4/27, Error ellipse: s-maj=35.7km s-min=13.5km az=56.0

ISC 17 01:01:33.4±0.9, 13°.24N±0°.06×89°.61W±0°.05, h62km±7km, n98, σ1°81/120, mb4.3/33, 3C, El Salvador

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
COLS	**Colinas**	**0.52**	**35**	*eP*	**Pn**	**01 01 45.3**	**-0.6**
SNET	**Serv Nac Est T**	**0.58**	**39**	*eP*	**Pn**	**01 01 46.0**	**-0.5**
SNET				*eS*	**Sn**	**01 01 56.0**	**-0.1**
SNET				AML	AML	01 02 00.7	
	comp=Z,16μm,0.4s						
SNET				AML	AML	01 02 00.7	
	comp=Z,16μm,0.4s						
AIES	**Las Flores**	**0.58**	**68**	*eP*	**Pn**	**01 01 45.9**	**-0.5**
AIES				*eS*	**Sn**	**01 01 55.8**	**-0.1**
AIES				AML	AML	01 01 56.8	
	comp=Z,24μm,0.5s						
BOQS	**Boqueron**	**0.59**	**33**	*eP*	**Pn**	**01 01 46.4**	**-0.4**
SBLS	**San Blas**	**0.60**	**358**	⇑*iP*	**Pn**	**01 01 46.2**	**-0.7**
MONT	**Ecomontaæa**	**0.62**	**356**	*eP*	**Pn**	**01 01 46.3**	**-0.8**
SNJE	**San Jose**	**0.63**	**0**	*eP*	**Pn**	**01 01 46.4**	**-0.8**
LFRS	**El Faro**	**0.66**	**54**	*eP*	**Pn**	**01 01 46.9**	**-0.5**
LFU	**La Fuente**	**0.70**	**43**	*eP*	**Pn**	**01 01 48.0**	**+0.1**
LBRS	**Las Brisas**	**0.74**	**48**	*eP*	**Pn**	**01 01 48.6**	**+0.2**
SNVI	**San Vicente**	**0.83**	**63**	*eP*	**Pn**	**01 01 49.4**	**-0.2**
SNVI				*eS*	**Sn**	**01 02 02.8**	**+1.3**
TECA	**Tecapa**	**1.10**	**76**	*eP*	**Pn**	**01 01 52.6**	**-0.5**
PACA	**Pacayal**	**1.27**	**79**	*eP*	**Pn**	**01 01 55.2**	**0.0**
LCY	**Lacayo**	**1.29**	**82**	*eP*	**Pn**	**01 01 55.8**	**+0.4**
VSM	**San Miguel**	**1.31**	**81**	*eP*	**Pn**	**01 01 56.0**	**+0.1**
CAHU	**Cacacuatique**	**1.46**	**68**	*eP*	**Pn**	**01 01 58.1**	**+0.3**
CNCH	**Conchagua**	**1.73**	**88**	*eP*	**Pn**	**01 02 01.5**	**+0.2**
MRL	**Marmol**	**1.82**	**357**	*eP*	**Pn**	**01 02 03.5**	**+0.8**
TGUH	**Tegucigalpa,Un**	**2.41**	**70**	*eP*	**Pn**	**01 02 10.8**	**+0.3**
TGUH				*eP*	**Pn**	**01 02 11.2**	**+0.7**
TGUH	**Tegucigalpa,Un**	**2.41**	**70**	*ePn*	**Pn**	**01 02 11.1**	**+0.7**
CRIN	**San Cristobal**	**2.55**	**102**	*eP*	**Pn**	**01 02 12.6**	**+0.1**
CRIN				*eS*	**Sn**	**01 02 43.4**	**+1.1**
TEL3	**Telica 3**	**2.77**	**103**	*eP*	**Pn**	**01 02 14.8**	**-0.6**
TEL3				*eS*	**Sn**	**01 02 49.7**	**+1.9**
TELN	**Telica**	**2.78**	**103**	*eP*	**Pn**	**01 02 14.8**	**-0.8**
TELN				*eS*	**Sn**	**01 02 47.8**	**-0.2**
CNGN	**Cerro Negro**	**2.93**	**104**	*eP*	**Pn**	**01 02 16.6**	**-1.0**
CNGN				*eS*	**Sn**	**01 02 52.5**	**+0.9**
CNGN				*eS*	**Sn**	**01 02 53.3**	**+1.6**
CNGN				*eS*	**Sn**	**01 02 53.6**	**+1.9**
ESTN	**Estel**	**3.16**	**92**	*eP*	**Pn**	**01 02 21.0**	**+0.3**
ESTN				*eS*	**Sn**	**01 02 59.1**	**+1.9**
MGAN	**Managua**	**3.45**	**108**	*eP*	**Pn**	**01 02 25.3**	**+0.6**
MGAN				*eS*	**Sn**	**01 03 02.5**	**-1.9**
CCIG	**Comitan**	**3.89**	**321**	*ePn*	**Pn**	**01 02 31.9**	**+1.0**
CCIG				*eSn*	**Sn**	**01 03 21.2**	**+5.7**
JTS	**JuntasAbangare**	**5.42**	**122**	*eP*	**Pn**	**01 02 52.6**	**+1.0**
JTS				*eS*	Sn	01 04 09.8	+17
JTS	**JuntasAbangare**	**5.42**	**122**	*ePn*	**Pn**	**01 02 52.8**	**+1.1**
JTS				*eS*	**Sn**	**01 03 54.9**	**+2.2**
JCR	**Jicaral**	**5.54**	**127**	*eP*	**Pn**	**01 02 54.5**	**+1.1**
CGA2	**Cerro Gallo 2**	**5.97**	**122**	*eP*	**Pn**	**01 03 00.9**	**+1.6**
CGA2				*eS*	**Sn**	**01 04 02.7**	**-3.7**
HDC	**Heredia**	**6.27**	**120**	*ePn*	**Pn**	**01 03 04.3**	**+0.9**
HDC				*eSn*	**Sn**	**01 04 18.0**	**+4.3**
CMIG	**Matias Romero**	**6.38**	**308**	P	**Pn**	**01 03 05.5**	**+0.7**
	comp=Z,5.3nm,0.3s,baz=100,slow=11,SNR=43						
CMIG				S	**Sn**	**01 04 17.4**	**+1.2**
	comp=Z,6.5nm,0.3s,baz=255,slow=23,SNR=7.4						
QCR	**Quepos**	**6.54**	**125**	⇑*eP*	**Pn**	**01 03 09.4**	**+2.3**
QCR				*eS*	**Sn**	**01 04 20.8**	**+0.4**
URSC	**Urasca**	**6.64**	**120**	⇑*eP*	**Pn**	**01 03 10.5**	**+2.0**
URSC				*eS*	**Sn**	**01 04 25.0**	**+2.1**
TEIG	**Tepich**	**7.07**	**10**	P	**Pn**	**01 03 15.6**	**+1.4**
	comp=Z,10nm,0.3s,baz=269,slow=23,SNR=135						
TEIG	**Tepich**	**7.07**	**10**	*eP*	**Pn**	**01 03 16.1**	**+1.9**
TEIG	**Tepich**	**7.07**	**10**	*ePn*	**Pn**	**01 03 15.7**	**+1.4**
TEIG				*eS*	Sn	01 04 46.6	+13
BRU2	**Volcan**	**8.10**	**122**	*eP*	**Pn**	**01 03 30.2**	**+1.7**
BRU2				*eS*	**Sn**	**01 04 57.9**	**-0.8**
TBS2		**8.12**	**122**	*eP*	**Pn**	**01 03 30.6**	**+1.7**
TBS2				*eS*	**Sn**	**01 04 56.9**	**-2.5**
TLIG	**Tlapa**	**9.65**	**298**	*ePn*	**Pn**	**01 03 52.0**	**+2.3**
TLIG				*eSn*	**Sn**	**01 05 31.9**	**-4.9**
MTDJ	**Mount Denham**	**12.63**	**65**	*ePn*	**Pn**	**01 04 27.9**	**-2.5**
GTBY	**Guantanamo Bay**	**15.40**	**62**	*ePn*	**Pn**	**01 05 05.5**	**-1.5**
	comp=Z,34nm,1.1s						
ZAIG	**Zacatecas**	**15.54**	**309**	*ePn*	**P**	**01 05 11.9**	**-0.3**
	comp=Z,8.2nm,1.0s						
OTAV	**Otavalo**	**17.00**	**139**	*ePn*	Pn	01 05 19.8	-7.8
	comp=Z,8.8nm,1.1s						
ROSC	**El Rosal**	**17.24**	**118**	*ePn*	**Pn**	**01 05 25.2**	**-5.2**
	comp=Z,4.4nm,0.6s						
HKT	**Hockley**	**17.60**	**342**	*eP*	**P**	**01 05 36.7**	**+2.1**
	comp=Z,4.4nm,0.9s						
VBMS	**Vicksburg**	**18.91**	**358**	*eP*	**Pn**	**01 05 52.4**	**+2.1**
	comp=Z,40nm,0.8s						
SDV	**Santo Domingo**	**19.11**	**101**	P	**Pn**	**01 05 54.0**	**+1.0**
	comp=Z,4.0nm,0.3s,baz=341,slow=5.7,SNR=3.1						
GRTK	**Grand Turk**	**19.44**	**62**	*eP*	**P**	**01 05 51.0**	**-3.9**
	comp=Z,169nm,1.6s						
JCT	**Junction City**	**19.57**	**333**	*eP*	**P**	**01 05 57.4**	**+1.1**
	comp=Z,11nm,0.9s						
SDD	**Santo Domingo**	**19.64**	**72**	*eP*	**P**	**01 05 51.0**	**-6.1**
	comp=Z,215nm,0.8s						
WHTX	**Lake Whitney,**	**20.01**	**340**	*eP*	**P**	**01 06 01.3**	**+0.2**
	comp=Z,20nm,0.8s						
WLAR	**White Oak Lake**	**20.61**	**352**	*eP*	Pn	01 06 12.4	+2.1
	comp=Z,25nm,0.9s						
TX31	**Lajitas Ar. Si**	**20.66**	**323**	*eP*	**P**	**01 06 09.6**	**+1.3**
TXAR	**Lajitas Array**	**20.66**	**323**	P	Pn	01 06 10.1	-0.9
	comp=Z,5.0nm,0.8s,baz=144,slow=11,SNR=34						
TXAR				PcP	**PcP**	**01 10 17.2**	**+0.7**
	comp=Z,0.5nm,0.8s,baz=123,slow=4.6,SNR=3.5						
CCAR	**Cane Creek**	**20.68**	**355**	*eP*	Pn	01 06 11.3	+0.1
	comp=Z,28nm,1.0s						
OXF	**Oxford**	**21.18**	**0**	*eP*	**P**	**01 06 16.3**	**+2.6**
	comp=Z,27nm,0.8s						
ABTX	**Abilene, Hawle**	**21.37**	**336**	*eP*	**P**	**01 06 15.3**	**-0.4**
	comp=Z,8.4nm,0.9s						
MIAR	**Mount Ida**	**21.52**	**351**	*eP*	**P**	**01 06 19.4**	**+2.1**
	comp=Z,29nm,1.3s						
UALR	**University of**	**21.59**	**354**	*eP*	**P**	**01 06 20.3**	**+2.3**
	comp=Z,44nm,1.4s						
X301	**Greenbrier Sit**	**22.05**	**354**	*eP*	**P**	**01 06 24.9**	**+1.9**
	comp=Z,39nm,1.8s						
WHAR	**Wooly Hollow**	**22.09**	**354**	*eP*	**P**	**01 06 24.6**	**+1.2**
	comp=Z,22nm,1.4s						
SWET	**Sewanee**	**22.14**	**8**	*eP*	**P**	**01 06 24.1**	**+0.2**
	comp=Z,3.0nm,0.8s						
LPIG	**La Paz**	**22.36**	**302**	LR	LR	01 14 18.0	
	comp=Z,157nm,20.5s,baz=76,slow=34						
TKL	**Tuckaleechee C**	**22.94**	**12**	P	**P**	**01 06 33.0**	**+0.6**
	comp=Z,3.2nm,0.8s,baz=186,slow=14,SNR=3.2						
TKL	**Tuckaleechee C**	**22.94**	**12**	*eP*	**P**	**01 06 33.3**	**+0.9**
WMOK	**Wichita Mounta**	**22.96**	**340**	*eP*	**P**	**01 06 31.6**	**-1.1**
	comp=Z,11nm,1.1s						
W34A	**Bridge Creek,**	**23.11**	**343**	*eP*	**P**	**01 06 33.8**	**-0.4**
	comp=Z,14nm,0.8s						
TUL1	**Leonard**	**23.25**	**347**	*eP*	**P**	**01 06 36.8**	**+1.3**
	comp=Z,11nm,0.9s						
HHAR	**Hobbs**	**23.28**	**351**	*eP*	**P**	**01 06 35.5**	**-0.2**
	comp=Z,29nm,1.4s						
MNTX	**Cornudas Mount**	**23.40**	**324**	*eP*	**P**	**01 06 36.1**	**-0.9**
	comp=Z,3.8nm,1.0s						
PBMO	**Poplar Bluff**	**23.45**	**358**	*eP*	**P**	**01 06 37.7**	**+0.4**
	comp=Z,22nm,1.4s						
AMTX	**Amarillo**	**24.16**	**335**	*eP*	**P**	**01 06 43.5**	**-0.5**
	comp=Z,10nm,1.1s						
SIUC	**Southern Illin**	**24.38**	**1**	*eP*	**P**	**01 06 45.2**	**-0.5**
	comp=Z,23nm,0.9s						
W13A	**Hualapai Mount**	**30.90**	**319**	*eP*	**P**	**01 07 43.6**	**-0.9**
	comp=Z,7.1nm,1.5s						
COWI	**Conover**	**32.76**	**1**	*eP*	**P**	**01 08 00.2**	**-0.1**
	comp=Z,8.6nm,1.0s						
PDAR	**Pinedale Array**	**34.11**	**333**	P	**P**	**01 08 14.0**	**+1.5**
	comp=Z,0.2nm,0.4s,baz=119,slow=7.4,SNR=3.1						
PDAR				PcP	**PcP**	**01 10 48.8**	**+0.1**
	comp=Z,0.3nm,0.5s,baz=145,slow=3.6,SNR=4.5						
REDW	**Red Top Meadow**	**35.16**	**333**	*eP*	**P**	**01 08 22.1**	**+0.7**
	comp=Z,9.9nm,1.4s						
SNOW	**Snow King Moun**	**35.19**	**333**	*eP*	**P**	**01 08 22.5**	**+0.7**
	comp=Z,4.9nm,0.8s						
LOHW	**Long Hollow**	**35.24**	**333**	*eP*	**P**	**01 08 23.3**	**+1.1**
	comp=Z,15nm,1.9s						
NV01	**Mina Array Sit**	**35.74**	**320**	*eP*	**P**	**01 08 29.1**	**+2.6**
NV01				*ePcP*	**PcP**	**01 10 53.6**	**+0.1**
NVAR	**Mina Array Bea**	**35.74**	**320**	P	**P**	**01 08 28.4**	**+1.9**
	comp=Z,3.5nm,0.9s,baz=136,slow=9.3,SNR=20						
NVAR				PcP	**PcP**	**01 10 54.7**	**+1.2**
	comp=Z,2.0nm,0.8s,baz=148,slow=3.6,SNR=8.8						
RLMT	**Red Lodge**	**35.91**	**336**	*eP*	**P**	**01 08 28.1**	**+0.2**
	comp=Z,6.3nm,1.4s						
LPAZ	**La Paz**	**36.21**	**143**	P	**P**	**01 08 35.4**	**+4.2**
	comp=Z,1.1nm,1.0s,baz=291,slow=8.6,SNR=3.3						
MCMT	**McKenzie Canyo**	**37.20**	**332**	*eP*	**P**	**01 08 41.6**	**+2.7**
SIV	**San Ignacio**	**40.49**	**135**	P	**P**	**01 09 08.5**	**+2.0**
	comp=Z,2.0nm,0.7s,baz=324,slow=11,SNR=6.5						
SIV				PcP	**PcP**	**01 11 08.9**	**+0.7**
	comp=Z,2.4nm,0.9s,baz=352,slow=0.7,SNR=3.5						
SCHQ	**Schefferville**	**45.17**	**18**	P	**P**	**01 09 42.0**	**-1.9**
	comp=Z,1.5nm,0.3s,baz=217,slow=6.4,SNR=15						
CPUP	**Villa Florida**	**50.32**	**141**	P	**P**	**01 10 25.8**	**+1.7**
	comp=Z,2.0nm,1.0s,baz=19,slow=14,SNR=2.9						
CPUP				LR	LR	01 34 35.2	
	comp=Z,560nm,20.9s,baz=164,slow=39						
YKA	**Yellowknife Ar**	**52.32**	**346**	P	**P**	**01 10 37.6**	**-0.8**
	comp=Z,1.5nm,0.8s,baz=143,slow=7.8,SNR=18						
YKW3	**Yellowknife Ar**	**52.38**	**346**	*eP*	**P**	**01 10 37.7**	**-1.2**
	comp=Z,2.3nm,0.9s						
INK	**Inuvik**	**61.84**	**343**	P	**P**	**01 11 45.1**	**-0.5**
	comp=Z,0.8nm,0.8s,baz=130,slow=9.6,SNR=3.4						
ILAR	**Eielson Array**	**64.46**	**336**	P	**P**	**01 12 02.9**	**-0.1**
	comp=Z,0.6nm,0.9s,baz=136,slow=5.7,SNR=4.6						
ARCES	**ARCESS Array B**	**86.12**	**19**	P	**P**	**01 14 05.9**	**-1.4**
	comp=Z,2.6nm,0.9s,baz=292,slow=4.8,SNR=3.7						
CD2	**Chengdu**	**134.27**	**344**	PKP	**PKPdf**	**01 20 40.5**	**-4.4**
WRA	**Warramunga Arr**	**137.45**	**255**	PKP	**PKPdf**	**01 20 51.8**	**+0.8**
	comp=Z,0.7nm,0.6s,baz=98,slow=1.8,SNR=4.5						
ASAR	**Alice Springs**	**137.59**	**249**	PKP	**PKPdf**	**01 20 51.7**	**+0.6**
	comp=Z,0.4nm,0.7s,baz=180,slow=1.9,SNR=3.4						
CMAR	**Chiang Mai Arr**	**147.40**	**345**	PKPbc	**PKPbc**	**01 21 11.3**	**+0.2**
	comp=Z,2.2nm,0.7s,baz=336,slow=4.0,SNR=14						

ISCJB 17 01:03:03.5±0.8, 37°.76N±0°.03×141°.05E±0°.06, h12km±5km, mb3.7/4, MS4.0/1, Error ellipse: s-maj=7.5km s-min=4.6km az=7.0
JMA 17 01:03:03.7, 37°.76N×141°.02E, h18km, M4.0
JMA Felt III J1.
IDC 17 01:03:05.5±1.0, 37°.27N×141°.16E, h0km, mb3.6/4, mb1 3.9/7, mb1mx3.5/38, mbtmp3.6/7, ML2.9/3, MS4.0/1, Ms1 4.0/1, ms1mx2.9/46, Error ellipse: s-maj=29.9km s-min=21.7km az=129.0

ISC 17 01:03:03.6±1.2, 37°.76N±0°.03×141°.06E±0°.05, h12km±7km, n23, σ1°40/23, mb3.8/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JMM	**Marumori**	**0.23**	**296**	P	**Pb**	**01 03 08.6**	**-1.2**
JMM				S	**Sb**	**01 03 11.9**	**0.0**
JFK	**Kawauchi**	**0.42**	**200**	P	**Pg**	**01 03 11.9**	**0.0**
JFK				S	**Sg**	**01 03 17.7**	**+0.1**
JFT	**Otama**	**0.62**	**247**	P	**Pg**	**01 03 15.4**	**-0.3**
JFT				S	**Sg**	**01 03 23.3**	**-0.6**
JOU	**Okura**	**0.68**	**333**	P	**Pb**	**01 03 16.5**	**-0.8**
JOU				S	**Sb**	**01 03 25.3**	**-1.4**
ONAJ	**Iwakimizuishiy**	**0.69**	**198**	P	**Pb**	**01 03 16.6**	**-1.0**
ONAJ				S	**Sb**	**01 03 25.8**	**-1.3**
JIO	**Ouri**	**0.73**	**18**	P	**Pb**	**01 03 17.3**	**-0.9**
JIO				S	**Sb**	**01 03 26.9**	**-1.2**
JYS	**Shiratake**	**0.91**	**300**	P	**Pb**	**01 03 20.3**	**-1.0**
JYS				S	**Sb**	**01 03 32.0**	**-1.3**
JFY	**Yanaizu**	**1.13**	**252**	P	**Pb**	**01 03 24.0**	**-1.1**
JFY				S	**Sb**	**01 03 38.4**	**-1.4**
MJAR	**Matsushiro Arr**	**2.58**	**243**	P	**Pb**	**01 03 48.3**	**-1.6**
	5.4nm,0.3s,baz=51,slow=12,SNR=29						
MJAR				Sn	**Sb**	**01 04 22.6**	**+1.0**
	10nm,0.3s,baz=99,slow=24,SNR=9.5						
MAT	**Matsushiro**	**2.58**	**243**	P	**Pb**	**01 03 48.4**	**-1.5**
MAT				*eS*	**Sb**	**01 04 21.1**	**-0.5**
USRK	**Ussuriysk Ar.**	**9.40**	**316**	Pn	Pn	01 05 28.0	+9.3
	0.2nm,0.3s,baz=103,slow=14,SNR=4.2						
KSRS	**Korea Array**	**10.43**	**272**	Pn	**Pn**	**01 05 36.4**	**+3.5**
	0.3nm,0.3s,baz=83,slow=14,SNR=3.9						
H11N2	**WAKE ISLAND Hy**	**28.77**	**121**	T	T	01 39 02.5	
	baz=315,slow=75,SNR=42						
H11N1	**WAKE ISLAND Hy**	**28.77**	**121**	T	T	01 39 03.1	
	baz=315,slow=75,SNR=65						
H11N3	**WAKE ISLAND Hy**	**28.78**	**121**	T	T	01 39 03.8	
	baz=315,slow=75,SNR=48						
H11S1	**WAKE ISLAND Hy**	**29.49**	**123**	T	T	01 39 57.8	
	baz=316,slow=76,SNR=53						
H11S3	**WAKE ISLAND Hy**	**29.50**	**124**	T	T	01 39 58.0	
	baz=316,slow=76,SNR=82						
H11S2	**WAKE ISLAND Hy**	**29.51**	**124**	T	T	01 39 59.0	
	baz=316,slow=76,SNR=35						
ILAR	**Eielson Array**	**49.03**	**33**	P	P	01 11 54.9	+4.9
	0.9nm,0.7s,baz=273,slow=6.4,SNR=9.4						
BVAR	**Borovoye Array**	**49.88**	**312**	LR	LR	01 34 08.1	
	comp=Z,130nm,18.7s,baz=255,slow=37						
WRA	**Warramunga Arr**	**57.74**	**187**	P	**P**	**01 12 53.0**	**-1.4**
	0.5nm,0.3s,baz=0.7,slow=7.5,SNR=4.7						
ASAR	**Alice Springs**	**61.47**	**187**	P	**P**	**01 13 21.4**	**+1.3**
	0.3nm,0.5s,baz=21,slow=8.0,SNR=3.5						
PDAR	**Pinedale Array**	**77.36**	**45**	P	P	01 15 05.7	+7.2
	0.2nm,0.6s,baz=267,slow=4.5,SNR=2.8						

JMA 17 01:48:19.3±0.3, 37°.40N×142°.48E, h6km±4km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.28**	**269**	P	Pn	01 48 43.4	-0.4
ONAJ	**Iwakimizuishiy**	**1.38**	**258**	P	Pn	01 48 44.7	-0.4
JIO	**Ouri**	**1.38**	**320**	*eS*	Sg	01 49 04.0	+0.3
JMM	**Marumori**	**1.42**	**290**	P	Pn	01 48 45.4	-0.2
JFT	**Otama**	**1.71**	**275**	*eS*	Sb	01 49 12.6	-0.3
JOU	**Okura**	**1.73**	**304**	P	Pn	01 48 50.4	+0.5

NNC 17 01:59:03.5±5.8, 36°.82N×70°.76E, h0km, mb4.0, mpv3.7, 4C-4D, Error ellipse: s-maj=47.0km s-min=24.7km az=1.0, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**2.50**	**323**	⇑Pn	Pn	01 59 45.3	-0.3
	62nm,0.4s						
DZET				⇓Sn	Sn	02 00 18.6	+1.7
	82nm,0.4s						
MNAS	**Manas**	**5.82**	**13**	⇓Pn	Pn	02 00 31.0	-0.1
	1.3nm,0.4s						
MNAS				⇑Sn	Sn	02 01 39.9	+1.3
	6.0nm,0.5s						
KK31	**Karatay Array**	**6.28**	**358**	Pn	Pn	02 00 36.5	-0.8
	0.4nm,0.2s,baz=176,slow=12,SNR=23						
KK31				⇑Sn	Sn	02 01 47.0	-2.8
	3.1nm,0.7s,baz=188,slow=22,SNR=4.5						
AAK	**Ala-Archa**	**6.48**	**25**	⇑Pn	Pn	02 00 40.8	+0.6
	3.9nm,0.3s						
AAK				⇓Sn	Sn	02 01 57.7	+2.8
	8.5nm,0.9s						
TKM2	**Tokmak 2**	**7.14**	**30**	⇓Pn	Pn	02 00 48.8	-0.5
	4.3nm,0.8s						

IDC 17 02:11:12.3±3.2, 63°.88N×149°.17W, h0km, mb1 3.4/2, mb1mx3.1/33, mbtmp3.2/2, ML2.9/2, Error ellipse: s-maj=29.8km s-min=14.8km az=44.0, Central Alaska

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I53US	**FAIRBANKS INFR**	**1.15**	**29**	*i*		02 17 50.0	
	baz=208,slow=311,SNR=2.0						
ILAR	**Eielson Array**	**1.34**	**47**	Pg	Pg	02 11 37.7	-0.2
	16nm,0.3s,baz=228,slow=16,SNR=128						
ILAR				Lg	Lg	02 11 55.5	
	12nm,0.3s,baz=231,slow=27,SNR=22						
INK	**Inuvik**	**7.74**	**48**	Pn	Pn	02 13 07.0	+1.0
	0.4nm,0.3s,baz=238,slow=15,SNR=25						
YKA	**Yellowknife Ar**	**15.54**	**79**	Pn	Pn	02 14 50.1	-2.4
	0.0nm,0.3s,baz=290,slow=13,SNR=3.0						

NNC 17 02:32:41.2±0.4, 42°.92N×74°.86E, h0km, mb3.5, mpv3.4, Error ellipse: s-maj=5.0km s-min=1.2km az=157.0
KRNET 17 02:32:41.8±0.1, 42°.87N×74°.89E, h20km, mb3.6
ISCJB 17 02:32:42.1±0.4, 42°.88N±0°.02×74°.88E±0°.02, h11km±3km, Error ellipse: s-maj=3.6km s-min=2.5km az=161.9
SOME 17 02:32:42.1, 42°.83N×74°.90E, h15km

ISC 17 02:32:42.0±0.9, 42°.84N±0°.02×74°.90E±0°.02, h14km±7km, n36, σ0°82/64, 29C-25D, Kyrgyzstan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KBK	**Karagaybulak**	**0.18**	**169**	⇓*iP*	**Pb**	**02 32 47.1**	**-0.3**
	baz=168						
KBK				⇓*iS*	**Sb**	**02 32 51.0**	**+0.1**
	baz=168						
CHMS	**Chumysh**	**0.19**	**326**	⇓*iP*	**Pg**	**02 32 46.3**	**-0.2**
	baz=323						
CHMS				⇓*iS*	**Sg**	**02 32 49.5**	**0.0**
	baz=323						
FRU1	**Bishkek**	**0.20**	**262**	⇑*iP*	**Pb**	**02 32 46.8**	**-0.7**
	baz=253						
FRU1				⇑*iS*	**Sb**	**02 32 50.4**	**-0.8**
	baz=253						
AAK	**Ala-Archa**	**0.36**	**236**	⇑*iP*	**Pg**	**02 32 49.3**	**-0.1**
	baz=231						
AAK				⇑*iS*	**Sg**	**02 32 54.5**	**+0.1**
	baz=231						
AAK	**Ala-Archa**	**0.36**	**236**	⇑P	**Pg**	**02 32 49.2**	**-0.2**
	319nm,0.2s						
AAK				⇑S	**Sg**	**02 32 54.4**	**+0.1**
	1μm,0.4s						
TKM2	**Tokmak 2**	**0.52**	**81**	⇑*iP*	**Pg**	**02 32 51.9**	**-0.4**
	baz=84						
TKM2				⇑*iS*	**Sg**	**02 32 59.4**	**+0.1**
	baz=84						
TKM2	**Tokmak 2**	**0.52**	**81**	⇑P	**Pg**	**02 32 51.8**	**-0.6**
	57nm,0.2s						
TKM2				⇑S	**Sg**	**02 32 59.3**	**+0.1**
	890nm,0.4s						
USP	**Ospenovka**	**0.52**	**326**	⇓*iP*	**Pg**	**02 32 51.5**	**-0.8**
	baz=325						
USP				⇓*iS*	**Sg**	**02 32 58.3**	**-0.9**
	baz=325						
UCH	**Uchtor**	**0.67**	**205**	⇓*iP*	**Pg**	**02 32 55.0**	**-0.2**
	baz=203						
UCH				⇓*iS*	**Sb**	**02 33 05.0**	**-0.2**
	baz=203						
KZA	**Kyzart**	**0.80**	**161**	⇓*iP*	**Pb**	**02 32 57.7**	**-0.3**
	baz=161						
KZA				⇓*iS*	**Sb**	**02 33 09.3**	**+0.4**
	baz=161						
KST	**Kastek**	**0.81**	**75**	*eP*	**Pg**	**02 32 57.2**	**-0.5**
	74nm,0.2s						
KST				*eS*	**Sg**	**02 33 08.3**	**0.0**
	902nm,0.3s						
BOOM	**Boomskoye usch**	**0.84**	**114**	⇑*iP*	**Pg**	**02 32 58.1**	**-0.3**
	baz=116						
BOOM				⇑*iS*	**Sb**	**02 33 10.0**	**+0.2**
	baz=116						
EKS2	**Erkin-Say**	**0.84**	**258**	⇑*iP*	**Pg**	**02 32 57.9**	**-0.5**
	baz=257						
EKS2				⇑*iS*	**Sb**	**02 33 09.5**	**-0.4**
	baz=257						
ARLS	**Aral**	**1.07**	**204**	⇓*iP*	**Pb**	**02 33 01.8**	**-0.6**
	baz=203						
ARLS				⇓*iS*	**Sg**	**02 33 16.3**	**-0.2**
	baz=203						
AML	**Almayashu**	**1.14**	**232**	⇑*iP*	**Pb**	**02 33 03.2**	**-0.5**
	baz=231						
AML				⇑*iS*	**Sb**	**02 33 18.2**	**-0.3**
	baz=231						
ULHL	**Ulahol**	**1.16**	**120**	⇑*iP*	**Pb**	**02 33 03.6**	**-0.3**
	baz=122						
ULHL				⇑*iS*	**Sg**	**02 33 19.2**	**-0.2**
	baz=122						
MTBS	**Maitube**	**1.16**	**75**	*eP*	**Pb**	**02 33 03.4**	**-0.6**
	120nm,0.3s						
MTBS				*eS*	**Sb**	**02 33 18.4**	**-0.4**
	197nm,0.3s						
MRKS	**Merke**	**1.23**	**266**	*eP*	**Pn**	**02 33 04.6**	**-0.4**
	171nm,0.2s						
MRKS				*eS*	**Sb**	**02 33 20.4**	**-0.7**
	365nm,0.4s						
IZV	**Izvestkoviy**	**1.27**	**80**	*eP*	**Pn**	**02 33 05.4**	**-0.2**
	304nm,0.2s						
IZV				*eS*	**Sb**	**02 33 22.1**	**-0.2**
	255nm,0.2s						
KUU	**Kurty**	**

KHMZ eSg Sn 02 57 53.6 +1.2
IGHG Ghaleghazi 2.93 330 ePn Pn 02 57 29.5 -1.0
IGHG eAMB AMB 02 58 22.5
comp=N,1μm,0.2s
IGHG Ghaleghazi 2.93 330 ePn Pn 02 57 29.5 -1.0
IVIS Veis 3.00 336 ePn Pn 02 57 31.0 -0.3
IVIS eAMB AMB 02 58 18.8
comp=Z,393nm,0.2s
IVIS Veis 3.00 336 ePn Pn 02 57 31.0 -0.3
ASAO Ashtian 3.09 27 ePn Pn 02 57 31.6 -1.1
IKLH Kolahrood 3.13 60 ePn Pn 02 57 32.8 -0.4
IKLH eAMB AMB 02 57 37.3
comp=Z,778nm,0.2s
IKLH Kolahrood 3.13 60 ePn Pn 02 57 32.8 -0.4
IGAR Gharneh 3.20 78 ePn Pn 02 57 33.7 -0.5
IGAR eAMB AMB 02 57 35.0
comp=Z,382nm,0.1s
QAM Ghamsar 3.27 52 ePn Pn 02 57 35.6 +0.5
QAM eAMB AMB 02 57 38.6
comp=Z,775nm,0.1s
SNGE Sanandaj 3.39 346 ePn Pn 02 57 36.1 -0.7
IRAM Ramesheh 3.44 89 ePn Pn 02 57 36.9 -0.6
IRAM eAMB AMB 02 57 40.8
comp=Z,185nm,0.1s
IRAM Ramesheh 3.44 89 ePn Pn 02 57 36.9 -0.6
IZEF Zefreh 3.55 71 eAMB AMB 02 57 39.7
comp=Z,268nm,0.1s
BHD Baghdad 3.65 295 ePn Pn 02 57 38.0 -2.2
SNR=3.0
BHD iSn Sn 02 58 19.5 -4.1
SNR=3.0
IRAZ Razeghan 3.84 20⇑ePn Pn 02 57 42.4 -0.5
IRAZ eAMB AMB 02 57 59.7
comp=Z,418nm,0.2s
IRAZ Razeghan 3.84 20⇑ePn Pn 02 57 42.4 -0.5
NASN Na'in 3.92 74 ePn Pn 02 57 43.5 -0.6

CASC 17 02:57:44.7±1.6, 8°58N×83°81W, h16km±11km, MD3.6, 1C-1D, Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
QCR	**Quepos**	**0.91**	**337**	⇓iP	Pb	02 58 01.4	-0.6
QCR				eS	Sg	02 58 14.5	+0.2
BRU2	**Volcan**	**1.13**	**79**	eP	Pb	02 58 05.0	-0.8
BRU2				eS	Sg	02 58 21.7	+0.4
TBS2		**1.16**	**79**	eP	Pn	02 58 06.2	-0.2
TBS2				eS	Sb	02 58 21.4	0.0
URSC	**Urasca**	**1.25**	**1**⇑	iP	Pn	02 58 06.3	-1.3
URSC				eS	Sb	02 58 23.6	-0.2
CGA2	**Cerro Gallo 2**	**1.56**	**336**	eP	Pn	02 58 12.2	+0.3
CGA2				eS	Sb	02 58 32.6	-0.4

NEIC 17 03:13:27.1, 17°28N×101°24W, h12km, MD4.0(MEX), After MEX.

MEX 17 03:13:27.1±0.5, 17°28N×101°24W, h12km±2km, MD4.0, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZIIG	**Zihuatanejo**	**0.39**	**327**	eP	Pg	03 13 34.4	-0.5
ZIIG				eS	Sg	03 13 40.1	0.0
ZIIG	**Zihuatanejo**	**0.39**	**327**	eP	Pg	03 13 34.4	-0.5
ZIIG				eS	Sg	03 13 40.1	0.0
CAIG	**El Cayaco**	**0.96**	**104**	eP	Pg	03 13 42.4	-3.2
CAIG				iS	Sg	03 13 53.7	-4.5
CAIG	**El Cayaco**	**0.96**	**104**	eP	Pg	03 13 42.4	-3.2
CAIG				iS	Sg	03 13 53.7	-4.5
ARIG	**Puente Sto Nin**	**1.31**	**40**	eP	Pn	03 13 47.6	-3.8
ARIG				eS	Sb	03 14 03.6	-5.1
MEIG	**Mezcala**	**1.68**	**67**	eP	Pn	03 13 53.8	-2.6
MEIG				iS	Sn	03 14 13.1	-4.9
MEIG	**Mezcala**	**1.68**	**67**	eP	Pn	03 13 53.8	-2.6
MEIG				iS	Sn	03 14 13.1	-4.9
PLIG	**Platanillo**	**2.00**	**56**	eP	Pn	03 13 58.1	-2.7
PLIG				iS	Sn	03 14 20.4	-5.4
PLIG	**Platanillo**	**2.00**	**56**	eP	Pn	03 13 58.1	-2.7
PLIG				iS	Sn	03 14 20.4	-5.4
NATX	**Nacogdoches**	**15.61**	**21**	ePn	Pn	03 17 05.9	-1.2

NNC 17 03:17:23.4±2.3, 36°77N×70°82E, h162km±29km, mb2.5, mpv3.6, 5C-4D, Error ellipse: s-maj=24.7km s-min=17.6km az=129.0, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**2.57**	**323**	⇓P	Pn	03 18 06.0	0.0
	6.2nm,0.4s						
DZET				⇓S	Sn	03 18 39.5	+0.4
	87nm,0.5s						
MNAS	**Manas**	**5.85**	**12**	⇑P	Pn	03 18 48.4	+0.1
	3.8nm,0.7s						
MNAS				⇑S	Sn	03 19 55.7	+0.8
	8.6nm,0.6s						
KK31	**Karatay Array**	**6.33**	**358**	⇓P	Pn	03 18 55.5	+1.0
	3.6nm,0.3s,baz=180,slow=13,SNR=50						
KK31				⇑S	Sn	03 20 06.6	+0.6
	6.6nm,0.6s,baz=185,slow=24,SNR=13						
TKM2	**Tokmak 2**	**7.15**	**29**	⇓P	Pn	03 19 04.2	-1.4
	2.5nm,0.6s						
AB31	**Akbulak array**	**14.77**	**331**	⇑P	P	03 20 45.9	-0.2
	0.1nm,0.3s,baz=138,slow=13,SNR=9.5						
AB31				⇑S	Sn	03 23 26.0	-2.5
	0.4nm,0.4s,baz=154,slow=23,SNR=3.8						

NEIC 17 03:31:15.3, 14°26N×93°19W, h16km, MD4.1(MEX), After MEX.

MEX 17 03:31:14.6±0.8, 14°25N×93°20W, h13km±102km, MD4.1, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THIG		**1.11**	**54**	eP	Pb	03 31 31.6	-4.1
THIG				iS	Sb	03 31 46.1	-4.0
THIG		**1.11**	**54**	eP	Pb	03 31 31.6	-4.1
THIG				iS	Sb	03 31 46.1	-4.0
PCIG		**1.45**	**359**	eP	Pn	03 31 36.8	-3.7
PCIG				eS	Sn	03 31 54.3	-5.1
PCIG		**1.45**	**359**	eP	Pn	03 31 36.8	-3.7
PCIG				eS	Sn	03 31 54.3	-5.1
CCIG	**Comitan**	**2.26**	**27**	eP	Pn	03 31 50.3	-1.6
CCIG				eS	Sn	03 32 16.4	-3.4
CCIG	**Comitan**	**2.26**	**27**	eP	Pn	03 31 50.3	-1.6
CCIG				eS	Sn	03 32 16.4	-3.4
TEIG	**Tepich**	**7.58**	**38**	ePn	Pn	03 33 02.2	-2.6
TEIG				eS	Sn	03 34 24.5	-6.0

IDC 17 03:56:41.9±74.0, 18°25S×175°32E, h0km, mb3.8/3, mb1 4.0/3, mb1mx3.6/25, mbtmp3.8/3, Error ellipse: s-maj=1294.0km s-min=151.1km az=76.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**33.28**	**239**	P	P	04 03 21.5	+0.2
	1.5nm,0.6s,baz=61,slow=12,SNR=3.4						
WRA	**Warramunga Arr**	**38.70**	**261**	P	P	04 04 07.4	-0.5
	0.2nm,0.4s,baz=95,slow=8.4,SNR=6.1						
ASAR	**Alice Springs**	**38.95**	**255**	P	P	04 04 10.1	0.0
	1.3nm,0.6s,baz=87,slow=9.0,SNR=13						

MAN 17 04:21:25, 17°95N×120°70E, h31km, mb3.8, ML2.6, MS2.2, 1C, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SIPP	**Brgy, Tapao**	**0.23**	**263**⇑	eP	Pn	04 21 33.5	+1.3
SIPP				eS	Sn	04 21 39.0	+2.0
ABRA	**Dolores**	**0.30**	**177**	eP	Pn	04 21 34.2	+0.9
ABRA				eS	Sn	04 21 40.2	+1.5
APYP	**Conner**	**0.53**	**100**	eP	Pn	04 21 37.0	+0.6
APYP				eS	Sn	04 21 45.4	+1.1

CSEM 17 04:23:07.8±0.2, 36°25N×28°04E, h2km, ML2.4, Error ellipse: s-maj=5.1km s-min=4.0km az=160.0
ISK 17 04:23:07.1, 36°27N×28°06E, h5km, MD2.7
THE 17 04:23:07.7, 36°26N×28°08E, h10km, ML2.4/3, Error ellipse: s-maj=0.9km s-min=0.4km az=156.0
DDA 17 04:23:08.6, 36°33N×28°03E, h7km, Md2.8

ISC 17 04:23:07.8±1.0, 36°28N±0°02×28°04E±0°02, h4km±8km, n33, σ1°21/57, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ARG	**Arkhangelos**	**0.09**	**131**	P	**Pg**	**04 23 09.8**	**0.0**
ARG				S	**Sg**	**04 23 11.9**	**+0.8**
ARG	**Arkhangelos**	**0.09**	**131**	P	**Pg**	**04 23 09.8**	**0.0**
ARG				S	**Sg**	**04 23 11.9**	**+0.8**
DALY	**Dalyan (Mu¨la**	**0.73**	**42**	ePG	**Pg**	**04 23 21.7**	**-0.2**
DALY				eSG	**Sg**	**04 23 32.1**	**+0.7**
DALY	**Dalyan (Mu¨la**	**0.73**	**42**	ePg	**Pg**	**04 23 21.7**	**-0.2**
DALY				eSg	**Sg**	**04 23 32.1**	**+0.7**
TURN	**Turunc**	**0.75**	**37**	iP	Pg	04 23 16.6	-5.6
TURN				iS	**Sg**	**04 23 25.0**	**-7.0**
NIS1	**Nisyros Isl.**	**0.77**	**295**	P	**Pg**	**04 23 23.1**	**+0.6**
NIS1				S	**Sb**	**04 23 35.0**	**+0.5**
NIS1	**Nisyros Isl.**	**0.77**	**295**	P	**Pg**	**04 23 23.1**	**+0.6**
NIS1				S	**Sb**	**04 23 35.0**	**+0.5**
YER	**Yerkesik**	**0.88**	**13**	ePG	**Pg**	**04 23 24.4**	**-0.2**
YER				eSG	**Sb**	**04 23 37.2**	**-0.6**
YER	**Yerkesik**	**0.88**	**13**	ePg	**Pg**	**04 23 24.5**	**-0.2**
YER				eSg	**Sb**	**04 23 37.2**	**-0.6**
FETY	**Fethiye**	**0.92**	**67**	ePG	**Pg**	**04 23 24.9**	**-0.5**
FETY				eSG	**Sb**	**04 23 37.9**	**-0.9**
FETY	**Fethiye**	**0.92**	**67**	P	**Pg**	**04 23 24.1**	**-1.3**
FETY				S	**Sg**	**04 23 37.5**	**+0.2**
FETY	**Fethiye**	**0.92**	**67**	P	**Pg**	**04 23 24.1**	**-1.3**
FETY	**Fethiye**	**0.92**	**67**	ePg	**Pg**	**04 23 24.9**	**-0.5**
FETY				S	**Sg**	**04 23 37.5**	**+0.2**
BDRM	**Kayabasi**	**0.92**	**329**	P	**Pg**	**04 23 25.4**	**-0.1**
BDRM				S	**Sb**	**04 23 39.0**	**+0.1**
BDRM	**Kayabasi**	**0.92**	**329**	iP	**Pg**	**04 23 25.4**	**-0.1**
BDRM				iS	**Sb**	**04 23 39.0**	**+0.1**
BODT	**Bodrum**	**0.98**	**323**	ePG	**Pg**	**04 23 26.8**	**+0.2**
BODT				eSG	**Sb**	**04 23 40.7**	**+0.1**
BODT	**Bodrum**	**0.98**	**323**	P	**Pg**	**04 23 26.2**	**-0.4**
BODT				S	**Sb**	**04 23 40.7**	**+0.1**
BODT	**Bodrum**	**0.98**	**323**	P	**Pg**	**04 23 26.2**	**-0.4**
BODT	**Bodrum**	**0.98**	**323**	ePg	**Pg**	**04 23 26.8**	**+0.2**
BODT				S	**Sb**	**04 23 40.7**	**+0.1**
KARP	**Karpathos**	**1.02**	**225**	ePG	**Pg**	**04 23 26.9**	**-0.4**
KARP	**Karpathos**	**1.02**	**225**	P	**Pg**	**04 23 26.6**	**-0.8**
KARP				S	**Sb**	**04 23 41.2**	**-0.6**
KARP	**Karpathos**	**1.02**	**225**	P	**Pg**	**04 23 26.6**	**-0.8**
KARP	**Karpathos**	**1.02**	**225**	ePg	**Pg**	**04 23 27.0**	**-0.4**
KARP				S	**Sb**	**04 23 41.2**	**-0.6**
AKAS	**Kas**	**1.27**	**92**	P	**Pn**	**04 23 32.2**	**-0.2**
AKAS				S	**Sn**	**04 23 51.8**	**+1.9**
AKAS	**Kas**	**1.27**	**92**	iP	**Pn**	**04 23 32.2**	**-0.2**
AKAS				iS	**Sn**	**04 23 51.8**	**+1.9**
AYDN	**Tasoluk**	**1.39**	**355**	P	**Pn**	**04 23 33.4**	**-0.6**
AYDN				S	**Sg**	**04 23 52.9**	**+0.5**
AYDN	**Tasoluk**	**1.39**	**355**	iP	**Pn**	**04 23 33.4**	**-0.6**
AYDN				iS	**Sg**	**04 23 52.9**	**+0.5**
GOLH	**Golhisar**	**1.55**	**51**	P	**Pg**	**04 23 37.9**	**+0.3**
GOLH				S	**Sg**	**04 23 59.1**	**+1.3**
GOLH	**Golhisar**	**1.55**	**51**	iP	**Pg**	**04 23 37.9**	**+0.3**
GOLH				iS	**Sg**	**04 23 59.1**	**+1.3**
DNZL	**Cakiroluk**	**1.62**	**29**	P	**Pg**	**04 23 40.6**	**+1.6**
DNZL	**Cakiroluk**	**1.62**	**29**	iP	**Pg**	**04 23 40.6**	**+1.6**
AYDB	**Zeytinkoy-Aydi**	**1.67**	**356**	ePN	**Pb**	**04 23 38.6**	**-0.6**
AYDB	**Zeytinkoy-Aydi**	**1.67**	**356**	ePn	**Pb**	**04 23 38.6**	**-0.6**

ISK 17 04:24:41.8, 35°70N×28°54E, h6km, MD2.5, Eastern Mediterranean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FETY	**Fethiye**	**1.03**	**25**	ePG	Pb	04 25 02.1	0.0
FETY				eSG	Sb	04 25 16.4	+0.5
DALY	**Dalyan (Mu¨la**	**1.12**	**4**	ePN	Pn	04 25 04.0	-0.1
KARP	**Karpathos**	**1.14**	**263**	ePN	Pb	04 25 04.1	+0.2
KARP				eSN	Sn	04 25 20.0	-0.2

TIR 17 04:31:57.8, 41°51N×20°54E, h7km, ML2.6
SKO 17 04:31:58.7, 41°48N×20°50E, h10km, M1.5, ML2.0
CSEM 17 04:31:59.4±0.3, 41°50N×20°50E, h5km, ML1.9, Error ellipse: s-maj=5.3km s-min=4.5km az=50.0
BEO 17 04:32:00.2±0.4, 41°50N×20°51E, h4km±4km, M1.9/7

ISC 17 04:31:58.9±1.2, 41°48N±0°03×20°48E±0°02, h3km±11km, n22, σ0°60/43, 4C, Albania

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OHR	**Ohrid**	**0.44**	**146**⇑	iPg	**Pg**	**04 32 07.5**	**+0.1**
OHR				iSg	**Sb**	**04 32 15.2**	**-1.2**
OHR				eLg	Lg	04 32 16.1	
	comp=N,138nm,0.4s						
OHR				eLg	Lg	04 32 16.9	
	comp=E,74nm,0.4s						
OHR	**Ohrid**	**0.44**	**146**⇑	iPg	**Pg**	**04 32 07.5**	**+0.1**
OHR				iSg	**Sb**	**04 32 15.2**	**-1.2**
OHR				eLg	Lg	04 32 16.9	
	comp=E,74nm,0.4s						
TIR	**Tirane**	**0.48**	**254**	iPG	**Pg**	**04 32 08.4**	**+0.4**
TIR				iSG	**Sb**	**04 32 16.7**	**-0.7**
TIR	**Tirane**	**0.48**	**254**	ePg	**Pg**	**04 32 08.6**	**+0.5**
TIR				eSg	**Sb**	**04 32 16.7**	**-0.7**
TIR	**Tirane**	**0.48**	**254**	ePg	**Pg**	**04 32 08.6**	**+0.5**
TIR				eSg	**Sb**	**04 32 16.7**	**-0.7**
BIA	**Bitola**	**0.79**	**125**⇑	iPg	**Pg**	**04 32 14.0**	**-0.1**
BIA				iSg	**Sb**	**04 32 25.9**	**-0.5**
BIA				eLg	Lg	04 32 26.5	
	comp=N,29nm,0.5s						
BIA				eLg	Lg	04 32 27.5	
	comp=E,32nm,0.4s						
BIA	**Bitola**	**0.79**	**125**⇑	iPg	**Pg**	**04 32 13.9**	**-0.1**
BIA				iSg	**Sb**	**04 32 25.9**	**-0.5**
BIA				eLg	Lg	04 32 27.4	
	comp=E,32nm,0.4s						
SKO	**Skopje**	**0.87**	**55**	iPg	**Pg**	**04 32 15.6**	**-0.1**
SKO				iSg	**Sb**	**04 32 28.7**	**-0.2**
SKO				eLg	Lg	04 32 30.5	
	comp=E,5.7nm,0.3s						
SKO				eLg	Lg	04 32 30.6	
	comp=N,16nm,0.3s						
SKO	**Skopje**	**0.87**	**55**	ePg	**Pg**	**04 32 15.5**	**-0.1**
SKO				eSg	**Sb**	**04 32 28.8**	**0.0**
SKO	**Skopje**	**0.87**	**55**	iPg	**Pg**	**04 32 15.5**	**-0.1**
SKO				iSg	**Sb**	**04 32 28.6**	**-0.2**
SKO				eLg	Lg	04 32 30.6	
	comp=N,16nm,0.3s						
PDG	**Podgorica**	**1.31**	**317**	ePg	**Pg**	**04 32 23.9**	**-0.2**
PDG				eSg	**Sn**	**04 32 42.9**	**+0.7**
PDG	**Podgorica**	**1.31**	**317**	ePg	**Pg**	**04 32 23.9**	**-0.2**
PDG				eSg	**Sn**	**04 32 42.9**	**+0.7**
VAY	**Valandovo**	**1.58**	**95**	iPn	**Pb**	**04 32 28.3**	**-0.5**
VAY				iSn	**Sg**	**04 32 51.2**	**+1.4**
VAY				eLg	Lg	04 32 53.1	
	comp=E,9.1nm,0.5s						
VAY				eLg	Lg	04 32 53.2	
	comp=N,24nm,0.8s						
VAY	**Valandovo**	**1.58**	**95**	ePn	**Pb**	**04 32 28.4**	**-0.5**
VAY				eSg	**Sg**	**04 32 49.7**	**-0.1**
VAY	**Valandovo**	**1.58**	**95**	iPn	**Pb**	**04 32 28.3**	**-0.5**
VAY				eSg	**Sg**	**04 32 49.7**	**-0.1**
VAY				iSn	**Sg**	**04 32 51.1**	**+1.4**
VAY				eLg	Lg	04 32 53.1	
	comp=N,24nm,0.8s						
BARS	**Barje**	**1.67**	**36**	ePg	**Pn**	**04 32 29.2**	**+0.2**
BARS				eSg	**Sb**	**04 32 51.3**	**-0.4**
BARS	**Barje**	**1.67**	**36**	ePg	**Pn**	**04 32 29.2**	**+0.2**
BARS				eSg	**Sb**	**04 32 51.3**	**-0.4**
SELS	**Selova**	**1.80**	**15**	ePg	**Pb**	**04 32 32.7**	**+0.1**
SELS				eSg	**Sn**	**04 32 55.1**	**+0.7**
IVAS	**Ivanjica**	**2.11**	**354**	ePn	**Pb**	**04 32 37.0**	**-0.8**
IVAS				eSg	**Sg**	**04 33 06.4**	**-0.3**
IVAS	**Ivanjica**	**2.11**	**354**	ePn	**Pb**	**04 32 37.0**	**-0.8**
IVAS				eSg	**Sg**	**04 33 06.4**	**-0.3**
KUBS	**Kucevo**	**3.06**	**16**	ePn	**Pn**	**04 32 48.7**	**+0.5**
KUBS	**Kucevo**	**3.06**	**16**	ePn	**Pn**	**04 32 48.7**	**+0.5**

NIED 17 04:37:00, 37°60N×141°90E, h14km, Mw3.4 Best double couple: M0 1.40000×10^14 NP1:φs309.00000°, δ25.00000°, λ-106.00000°. NP2:φs147.00000°, δ66.00000°, λ-83.00000°.

JMA 17 04:37:42.9±0.1, 37°62N×141°92E, h26km±3km, M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.87**	**253**	P	Pb	04 37 59.1	-0.3
JFK				S	Sb	04 38 10.6	0.0
JMM	**Marumori**	**0.93**	**286**	P	Pn	04 37 59.9	-0.3
JMM				S	Sb	04 38 11.3	-0.9
JIO	**Ouri**	**0.95**	**332**	P	Pn	04 38 00.1	-0.4
ONAJ	**Iwakimizuishiy**	**1.03**	**240**	P	Pn	04 38 01.5	-0.2
JOU	**Okura**	**1.24**	**307**	P	Pb	04 38 05.3	-0.4
JOU				S	Sn	04 38 20.5	0.0
JFT	**Otama**	**1.26**	**266**	P	Pb	04 38 05.7	-0.3
JFT				S	Sb	04 38 22.2	+0.3
JHO	**Hitachi**	**1.48**	**227**	P	Pn	04 38 07.5	-0.3
MAT	**Matsushiro**	**3.16**	**251**	P	Pn	04 38 34.5	+3.6
MAT				eS	Sb	04 39 13.2	-3.2

NIED 17 04:54:00, 39°30N×142°20E, h47km, Mw4.1 Best double couple: M0 1.68000×10^15 NP1:φs185.00000°, δ22.00000°, λ73.00000°. NP2:φs24.00000°, δ69.00000°, λ97.00000°.
IDC 17 04:54:43.6±1.4, 39°62N×142°14E, h0km, mb3.8/11, mb1 4.0/12, mb1mx3.8/45, mbtmp3.8/12, ML3.7/1, MS3.2/12, Ms1 3.2/12, ms1mx3.0/53, Error ellipse: s-maj=37.7km s-min=20.4km az=159.0
ISCJB 17 04:54:47.7±0.8, 39°29N±0°04×142°23E±0°09, h52km±4km, mb4.0/16, MS3.3/9, Error ellipse: s-maj=11.7km s-min=5.3km az=19.2
JMA 17 04:54:48.0±0.1, 39°27N×142°25E, h42km±1km, M3.9
JMA Felt II J1.
NEIC 17 04:54:50.4±0.8, 39°47N×142°17E, h56km±6km, mb4.6/4, Error ellipse: s-maj=12.2km s-min=7.1km az=130.0
NEIC Recorded [2 JMA] in Iwate and Miyagi.

ISC 17 04:54:48.5±1.3, 39°30N±0°05×142°27E±0°08, h43km±10km, n45, σ1°80/43, mb4.1/16, MS3.4/9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**0.44**	**309**	P	**Pn**	**04 54 58.0**	**-0.6**
MIYJ				S	**Sn**	**04 55 05.1**	**-0.7**
OFUJ	**Ofunato**	**0.51**	**245**	P	**Pn**	**04 54 58.7**	**-0.8**
OFUJ				S	**Sn**	**04 55 06.0**	**-1.3**
JTH	**Tanohata**	**0.71**	**334**	P	**Pn**	**04 55 01.7**	**-0.5**
JTH				S	**Sn**	**04 55 11.9**	**-0.1**
JOM	**Ohasama**	**0.77**	**283**	P	**Pn**	**04 55 02.5**	**-0.5**
JOM				S	**Sn**	**04 55 13.0**	**-0.5**
JMK	**Ichinoseki**	**0.88**	**247**	P	**Pn**	**04 55 03.7**	**-0.8**
JMK				eS	**Sn**	**04 55 14.9**	**-1.2**
JKZ	**Kuzumaki**	**0.99**	**314**	P	**Pn**	**04 55 06.0**	**-0.1**
JKZ				eS	**Sn**	**04 55 19.1**	**+0.1**
JIO	**Ouri**	**1.11**	**221**	P	**Pn**	**04 55 06.4**	**-1.1**
JIO				eS	**Sn**	**04 55 19.6**	**-2.0**
JANG	**Nango**	**1.22**	**332**	P	**Pn**	**04 55 08.8**	**-0.3**
JANG				eS	**Sn**	**04 55 25.0**	**+0.6**
JRG	**Rokugo**	**1.27**	**275**	P	**Pn**	**04 55 09.5**	**-0.2**
ERM	**Erimo**	**2.80**	**14**	ePn	**Pn**	**04 55 30.1**	**-0.6**
ERM				eS	**Sn**	**04 56 05.5**	**+2.3**
MAJO	**Matsushiro**	**4.23**	**231**	ePn	**Pn**	**04 55 52.5**	**+2.1**
MAT	**Matsushiro**	**4.23**	**231**	P	**Pn**	**04 55 53.0**	**+2.6**
MAT				eS	**Sn**	**04 56 45.4**	**+6.9**
MJAR	**Matsushiro Arr**	**4.23**	**231**	Pn	**Pn**	**04 55 52.9**	**+2.5**
	4.1nm,0.3s,baz=35,slow=12,SNR=59						
MJAR				LR	LR	04 57 37.4	
	comp=Z,129nm,19.9s,baz=50,slow=40						
USRK	**Ussuriysk Ar.**	**9.11**	**306**	Pn	**Pn**	**04 57 01.8**	**+4.5**
	0.3nm,0.3s,baz=115,slow=13,SNR=9.2						
USRK				LR	LR	05 00 21.5	
	comp=Z,139nm,18.5s,baz=139,slow=38						
KSRS	**Korea Array**	**11.41**	**265**	Pn	**Pn**	**04 57 31.5**	**+2.7**
	0.4nm,0.3s,baz=81,slow=14,SNR=5.7						
KSRS				LR	LR	05 01 29.2	
	comp=Z,74nm,19.1s,baz=98,slow=36						
KSAR	**Wonju Array Be**	**11.44**	**265**	Pn	**Pn**	**04 57 31.5**	**+2.3**
KLR	**Kul'dur**	**12.45**	**326**	Pn	**Pn**	**04 57 42.8**	**-0.2**
	0.2nm,0.3s,baz=124,slow=9.1,SNR=3.5						
MA2	**Magadan**	**21.00**	**12**	LR	LR	05 07 34.2	
	comp=Z,23nm,19.0s,baz=322,slow=37						
SONM	**Songino Array**	**27.15**	**300**	P	**P**	**05 00 27.0**	**-0.8**
	0.4nm,0.5s,baz=86,slow=7.4,SNR=3.1						
SONM				LR	LR	05 11 24.8	
	comp=Z,52nm,20.1s,baz=96,slow=37						
H11N2	**WAKE ISLAND Hy**	**28.82**	**125**	T	T	05 31 09.8	
	baz=318,slow=75,SNR=626						
H11N1	**WAKE ISLAND Hy**	**28.83**	**126**	T	T	05 31 09.6	
	baz=318,slow=75,SNR=462						
H11N3	**WAKE ISLAND Hy**	**28.84**	**125**	T	T	05 31 11.1	
	baz=318,slow=75,SNR=387						
TLY	**Talaya**	**29.42**	**308**	LR	LR	05 13 07.6	
	comp=Z,47nm,18.0s,baz=147,slow=38						
H11S1	**WAKE ISLAND Hy**	**29.61**	**127**	T	T	05 32 04.7	
	baz=319,slow=76,SNR=106						
H11S3	**WAKE ISLAND Hy**	**29.63**	**127**	T	T	05 32 04.9	
	baz=319,slow=76,SNR=108						
H11S2	**WAKE ISLAND Hy**	**29.63**	**127**	T	T	05 32 05.9	
	baz=319,slow=76,SNR=96						
ZALV	**Zalesovo Beam**	**40.92**	**310**	P	**P**	**05 02 25.4**	**-1.1**
	2.4nm,0.5s,baz=113,slow=7.1,SNR=4.6						
NRIK	**Noril'sk**	**41.51**	**334**	LR	LR	05 20 43.9	
	comp=Z,59nm,19.1s,baz=101,slow=38						
CMAR	**Chiang Mai Arr**	**42.75**	**254**	P	**P**	**05 02 41.7**	**-0.1**
	0.4nm,0.4s,baz=47,slow=5.3,SNR=4.2						
MKAR	**Makanchi Array**	**43.52**	**300**	P	**P**	**05 02 46.6**	**-1.2**
	1.6nm,0.8s,baz=82,slow=9.0,SNR=11						
KURK	**Kurchatov**	**45.10**	**306**	eP	**P**	**05 02 59.0**	**-1.2**
	11nm,0.8s						
ILAR	**Eielson Array**	**47.23**	**33**	P	**P**	**05 03 16.5**	**-0.3**
	0.6nm,0.7s,baz=277,slow=6.3,SNR=8.6						
TKM2	**Tokmak 2**	**49.17**	**297**	eP	**P**	**05 03 31.7**	**-0.7**
	6.2nm,1.0s						
KKAR	**Karatay Array**	**52.59**	**299**	eP	**P**	**05 03 57.1**	**-0.8**
	1.4nm,0.6s						
ARU	**Arti**	**55.12**	**318**	eP	**P**	**05 04 15.7**	**-0.4**
	4.1nm,0.4s						
ABKAR	**Akbulak array**	**57.01**	**309**	P	**P**	**05 04 29.0**	**-0.7**
	2.6nm,0.5s						
FINES	**FINESS Array B**	**67.13**	**332**	P	**P**	**05 05 36.3**	**-1.0**
	2.0nm,0.7s,baz=36,slow=7.1,SNR=4.9						
FINES				LR	LR	05 36 38.6	
	comp=Z,30nm,18.1s,baz=156,slow=38						
KBZ	**Khabaz**	**69.94**	**310**	P	**P**	**05 05 55.5**	**+0.3**
	1.3nm,0.5s,baz=69,slow=7.3,SNR=4.2						
KBZ				LR	LR	05 39 15.1	
	comp=Z,22nm,19.7s,baz=281,slow=38						
NOA	**

0.5nm,0.3s,baz=144,slow=7.4,SNR=4.5
MKAR Makanchi Array 67.33 327 P P 05 07 32.1 -0.3
2.3nm,0.6s,baz=118,slow=8.2,SNR=17

JMA 17 04:57:33.2, 36.86N×140.66E, h11km±1km, M3.5, 2C-4D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.26**	**196**	⇓P	Pg	04 57 38.4	-0.1
JHO				S	Sg	04 57 42.1	0.0
ONAJ	**Iwakimizuishiy**	**0.27**	**25**	⇓P	Pg	04 57 38.7	0.0
ONAJ				S	Sg	04 57 42.7	+0.3
JFK	**Kawauchi**	**0.53**	**19**	⇓P	Pg	04 57 43.3	-0.3
JFK				S	Sg	04 57 50.7	0.0
JSB	**Shiboa**	**0.60**	**281**	⇑P	Pb	04 57 45.5	-0.3
JSB				S	Sb	04 57 54.2	-0.1
JFT	**Otama**	**0.71**	**339**	⇑P	Pg	04 57 46.8	-0.1
JFT				S	Sg	04 57 56.2	0.0
JYT	**Yasato**	**0.73**	**211**	P	Pg	04 57 46.9	-0.5
JYT				S	Sg	04 57 56.9	-0.1
JFY	**Yanaizu**	**0.94**	**306**	P	Pg	04 57 50.8	-0.5
JFY				S	Sg	04 58 03.2	-0.3
JMM	**Marumori**	**1.01**	**6**	P	Pg	04 57 51.7	-1.0
JMM				S	Sg	04 58 05.0	-0.8
JAG	**Ashikaga**	**1.06**	**246**	⇓P	Pb	04 57 52.7	-0.9
MAT	**Matsushiro**	**2.00**	**262**	P	Pn	04 58 07.8	+0.9
MAT				S	Sb	04 58 34.8	+0.4

IDC 17 05:22:13.7±1.8, 17.20S×178.01W, h0km, mb3.9/6, mb1 4.2/6, mb1mx3.8/41, mbtmp3.8/6, Error ellipse: s-maj=141.6km s-min=21.3km az=152.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**39.31**	**241**	P	P	05 29 44.9	+0.2
	0.7nm,0.3s,baz=77,slow=12,SNR=2.9						
WRA	**Warramunga Arr**	**45.14**	**259**	P	P	05 30 32.4	0.0
	0.8nm,0.5s,baz=96,slow=7.2,SNR=21						
ASAR	**Alice Springs**	**45.36**	**254**	P	P	05 30 33.8	-0.4
	2.9nm,0.5s,baz=86,slow=8.9,SNR=37						
NVAR	**Mina Array Bea**	**78.65**	**44**	P	P	05 34 18.2	+0.2
	0.5nm,0.8s,baz=226,slow=7.3,SNR=3.4						
TXAR	**Lajitas Array**	**85.29**	**58**	P	P	05 34 52.9	-0.2
	0.5nm,0.7s,baz=222,slow=5.0,SNR=7.4						
YKA	**Yellowknife Ar**	**93.53**	**25**	P	P	05 35 31.0	-0.1
	0.1nm,0.8s,baz=241,slow=6.3,SNR=3.4						

IDC 17 05:28:29.3±0.6, 26.90N×143.89E, h0km, mb3.9/13, mb1 4.1/15, mb1mx3.9/58, mbtmp3.9/15, ML4.0/2, MS2.5/1, Ms1 2.5/1, ms1mx2.0/33, Error ellipse: s-maj=19.7km s-min=16.6km az=89.0
NEIC 17 05:28:30.8±0.5, 26.93N×143.86E, h10km, mb4.1/2, Error ellipse: s-maj=12.3km s-min=9.1km az=70.0
ISCJB 17 05:28:32.5±0.6, 26.88N±0.08×143.83E±0.06, h33km, mb3.8/16, Error ellipse: s-maj=11.6km s-min=7.3km az=3.3
ISC 17 05:28:34.6±0.7, 27.0N±0.1×143.76E±0.08, h35km, n26, σ1§05/27, mb3.9/16, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**1.41**	**276**	Pn	**Pn**	**05 28 57.2**	**-0.6**
CBIJ				*e*Pn	Pn	05 28 58.5	+0.6
CBIJ				Sn	**Sn**	**05 29 15.2**	**0.0**
JCJ	**Chichijima**	**1.41**	**276**	Pn	**Pn**	**05 28 57.2**	**-0.6**
JCJ	26nm,0.3s,baz=133,slow=17,SNR=13			Sn	**Sn**	**05 29 15.2**	**-0.1**
	128nm,0.3s,baz=287,slow=19,SNR=28						
MJAR	**Matsushiro Arr**	**10.66**	**335**	Pn	**Pn**	**05 31 02.4**	**-2.5**
	1.7nm,0.3s,baz=166,slow=12,SNR=7.8						
MAJO	**Matsushiro**	**10.66**	**335**	*e*Pn	**Pn**	**05 31 03.6**	**-1.3**
MAT	**Matsushiro**	**10.66**	**335**	P	**Pn**	**05 31 03.7**	**-1.2**
ERM	**Erimo**	**15.04**	**358**	Pn	**Pn**	**05 32 03.6**	**-0.9**
KSRS	**Korea Array**	**16.98**	**312**	P	**P**	**05 32 31.4**	**+0.4**
	0.3nm,0.3s,baz=122,slow=12,SNR=12						
KSRS				LR	LR	05 38 08.4	
	comp=Z,16nm,20.1s,baz=330,slow=34						
KSAR	**Wonju Array Be**	**17.00**	**312**	P	**P**	**05 32 31.4**	**+0.1**
KLR	**Kul'dur**	**24.11**	**340**	P	**P**	**05 33 47.9**	**+1.0**
	1.3nm,0.6s,baz=140,slow=6.5,SNR=7.7						
SONM	**Songino Array**	**35.79**	**316**	P	P	05 35 35.0	+4.4
	0.3nm,0.5s,baz=134,slow=10,SNR=3.6						
WRA	**Warramunga Arr**	**47.50**	**192**	P	**P**	**05 37 04.9**	**-1.5**
	3.2nm,0.9s,baz=13,slow=8.3,SNR=14						
ASAR	**Alice Springs**	**51.22**	**192**	P	**P**	**05 37 34.0**	**-0.8**
	0.4nm,0.6s,baz=14,slow=7.1,SNR=6.7						
MKAR	**Makanchi Array**	**51.65**	**310**	P	**P**	**05 37 39.0**	**+1.1**
	0.9nm,0.5s,baz=89,slow=9.3,SNR=8.0						
ILAR	**Eielson Array**	**57.17**	**29**	P	**P**	**05 38 15.7**	**-2.0**
	0.6nm,0.8s,baz=275,slow=6.0,SNR=5.7						
STKA	**Stephens Creek**	**58.54**	**182**	P	**P**	**05 38 27.8**	**+0.2**
	1.0nm,0.6s,baz=312,slow=10,SNR=2.9						
KKAR	**Karatay Array**	**60.30**	**306**	*e*P	**P**	**05 38 40.4**	**+0.5**
	2.3nm,0.6s						
INK	**Inuvik**	**62.58**	**25**	P	**P**	**05 38 54.8**	**0.0**
	1.2nm,0.9s,baz=288,slow=5.8,SNR=4.4						
ABKAR	**Akbulak array**	**66.20**	**315**	*e*P	**P**	**05 39 18.7**	**0.0**
	0.3nm,0.5s						
YKA	**Yellowknife Ar**	**71.60**	**29**	P	**P**	**05 39 51.8**	**-0.3**
	0.5nm,0.8s,baz=291,slow=6.1,SNR=5.8						
FINES	**FINESS Array B**	**78.69**	**334**	P	**P**	**05 40 34.0**	**+1.0**
	2.4nm,1.1s,baz=99,slow=2.5,SNR=3.4						
KBZ	**Khabaz**	**79.13**	**314**	P	**P**	**05 40 37.9**	**+2.2**
	1.3nm,0.6s,baz=88,slow=2.1,SNR=5.7						
NVAR	**Mina Array Bea**	**79.50**	**52**	P	**P**	**05 40 38.8**	**+0.6**
	0.8nm,0.7s,baz=290,slow=6.1,SNR=6.8						
PDAR	**Pinedale Array**	**83.32**	**45**	P	**P**	**05 40 58.3**	**-0.1**
	0.2nm,0.4s,baz=328,slow=3.3,SNR=3.3						
BRTR	**Keskin Array B**	**87.12**	**314**	P	**P**	**05 41 17.4**	**+0.1**
	0.4nm,0.5s,baz=114,slow=3.6,SNR=3.3						
PLCA	**Paso Flores**	**148.58**	**125**	PKPbc	**PKPbc**	**05 48 18.4**	**+0.4**
	0.8nm,0.7s,baz=319,slow=3.8,SNR=3.2						
LPAZ	**La Paz**	**148.60**	**77**	PKPbc	**PKPbc**	**05 48 19.6**	**+0.2**
	0.9nm,0.5s,baz=1.6,slow=4.2,SNR=6.2						

IDC 17 05:34:46.0±3.6, 6.40S×154.52E, h0km, mb3.9/6, mb1 4.0/6, mb1mx3.8/35, mbtmp3.9/6, Error ellipse: s-maj=116.3km s-min=25.4km az=114.0, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**23.78**	**234**	P	P	05 40 01.4	+0.8
	1.8nm,0.8s,baz=60,slow=9.3,SNR=14						
ASAR	**Alice Springs**	**26.23**	**227**	P	P	05 40 21.1	-1.8
	0.5nm,0.5s,baz=58,slow=9.9,SNR=12						
H11S3	**WAKE ISLAND Hy 27.49**	**26**		T	T	06 08 54.5	
	baz=202,slow=76,SNR=152						
H11S2	**WAKE ISLAND Hy 27.49**	**26**		T	T	06 08 54.5	
	baz=202,slow=76,SNR=149						
H11S1	**WAKE ISLAND Hy 27.51**	**26**		T	T	06 08 55.7	
	baz=202,slow=76,SNR=93						
FITZ	**Fitzroy Crossi**	**30.48**	**245**	P	P	05 41 01.7	+0.8
	1.6nm,0.5s,baz=66,slow=10,SNR=9.3						
SONM	**Songino Array**	**68.58**	**327**	P	P	05 45 51.3	+0.4
	0.6nm,0.6s,baz=140,slow=5.8,SNR=3.4						
MKAR	**Makanchi Array**	**82.65**	**319**	P	P	05 47 11.3	-0.2
	0.7nm,0.6s,baz=94,slow=7.6,SNR=4.4						
ZALV	**Zalesovo Beam**	**83.42**	**326**	P	P	05 47 13.9	-1.4
	0.6nm,0.4s,baz=114,slow=6.5,SNR=1.9						
TORD	**Torodi Ar. Bea**	**152.41**	**286**	PKPbc	PKPbc	05 54 46.6	+1.3
	0.3nm,0.8s,baz=67,slow=1.6,SNR=3.0						

BER 17 05:47:48.9±1.4, 79.07N×5.44E, h10km, MD2.3, ML2.6, 2C, Svalbard region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KBS	**Kingsbay**	**1.26**	**93**	⇑*i*P	Pn	05 48 11.2	-1.3
KBS				*e*S	Sb	05 48 25.8	-2.9
KBS				IAML		05 48 29.6	
	comp=Z,144nm,0.3s						
SPA0	**Spitsbergen Ar**	**2.34**	**107**	⇑*i*P	Pn	05 48 26.4	-1.0
SPA0				*e*S	Sn	05 48 53.6	-2.5
HSPB	**Hornsund (broa**	**2.95**	**130**	*e*P	Pn	05 48 33.7	-2.0
HOPEN	**Hopen**	**4.86**	**112**	*e*P	Pn	05 48 59.3	-2.6

MEX 17 05:47:59.3±0.3, 14.68N×93.24W, h20km±56km, MD3.7, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		**1.02**	**1**	*e*P	Pb	05 48 15.2	-3.1
PCIG				*e*S	Sb	05 48 27.5	-3.7
CCIG	**Comitan**	**1.92**	**34**	*e*P	Pn	05 48 28.4	-2.6
CCIG				*i* S	Sn	05 48 50.6	-4.0

NIED 17 06:04:00, 39.10N×142.40E, h38km, Mw3.8 Best double couple: M0=5.22000×10^14 NP1:φs=39.00000°, δ32.00000°, λ-69.00000°. NP2:φs=195.00000°, δ61.00000°, λ-102.00000°.
ISCJB 17 06:04:30.7±1.1, 39.09N±0.04×142.50E±0.07, h20km±7km, mb3.8/9, Error ellipse: s-maj=9.2km s-min=5.8km az=26.1
IDC 17 06:04:32.2±0.9, 39.56N×142.15E, h0km, mb3.7/9, mb1 3.9/10, mb1mx3.7/58, mbtmp3.7/10, ML3.1/1, MS2.2/2, Ms1 2.2/2, ms1mx2.1/40, Error ellipse: s-maj=29.7km s-min=17.6km az=113.0
JMA 17 06:04:32.2±0.1, 39.09N×142.42E, h31km±1km, M4.0
JMA Felt I J1.
ISC 17 06:04:30.5±2.1, 39.07N±0.05×142.43E±0.07, h11km±12km, n28, σ1§12/27, mb3.9/9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.60**	**272**	P	**Pn**	**06 04 43.8**	**-1.1**
OFUJ				S	**Sb**	**06 04 51.7**	**+0.4**
MIYJ	**Miyakonagasawa**	**0.70**	**317**	P	**Pb**	**06 04 44.9**	**+0.3**
MIYJ				S	**Sb**	**06 04 53.9**	**-0.4**
JMK	**Ichinoseki**	**0.95**	**263**	P	**Pb**	**06 04 49.3**	**+0.5**
JMK				S	**Sg**	**06 05 01.2**	**0.0**
JOM	**Ohasama**	**0.97**	**295**	P	**Pb**	**06 04 49.7**	**+0.3**
JOM				S	**Sb**	**06 05 02.0**	**-0.2**
JTH	**Tanohata**	**0.98**	**333**	P	**Pb**	**06 04 49.1**	**-0.3**
JIO	**Ouri**	**1.05**	**235**	P	**Pn**	**06 04 50.1**	**-0.9**
JIO				S	**Sb**	**06 05 02.5**	**-1.8**
JKZ	**Kuzumaki**	**1.25**	**317**	P	**Pn**	**06 04 53.9**	**-0.1**
JKZ				S	**Sn**	**06 05 09.6**	**-1.2**
JRG	**Rokugo**	**1.44**	**284**	P	**Pn**	**06 04 56.8**	**+0.4**
JRG				*e*S	**Sb**	**06 05 15.5**	**0.0**
JANG	**Nango**	**1.48**	**332**	P	**Pn**	**06 04 57.4**	**+0.3**
JANG				*e*S	**Sn**	**06 05 15.3**	**-1.2**
JOU	**Okura**	**1.55**	**244**	P	**Pb**	**06 04 58.3**	**-0.9**
JOU				*e*S	**Sb**	**06 05 18.1**	**-0.8**
MJAR	**Matsushiro Arr**	**4.19**	**234**	Pn	Pn	06 05 37.2	+2.9
	0.9nm,0.3s,baz=40,slow=11,SNR=23						
MJAR				LR	LR	06 07 04.7	
	comp=Z,18nm,19.1s,baz=80,slow=35						
MAT	**Matsushiro**	**4.19**	**234**	P	Pn	06 05 38.0	+3.7
MAT				*e*S	**Sn**	**06 06 27.2**	**+3.9**
KSRS	**Korea Array**	**11.52**	**267**	LR	LR	06 11 30.6	
	comp=Z,20nm,18.1s,baz=125,slow=37						
MA2	**Magadan**	**21.20**	**12**	P	**P**	**06 09 15.2**	**-0.6**
	12nm,0.9s,baz=263,slow=19,SNR=4.0						
SEY	**Seymchan**	**24.64**	**11**	P	**P**	**06 09 51.9**	**+1.2**
	1.5nm,0.6s,baz=202,slow=12,SNR=6.0						
H11N2	**WAKE ISLAND Hy 28.58**	**125**		T	T	06 40 50.8	
	baz=318,slow=75,SNR=16						
H11N1	**WAKE ISLAND Hy 28.59**	**125**		T	T	06 40 51.3	
	baz=318,slow=75,SNR=42						
H11N3	**WAKE ISLAND Hy 28.60**	**125**		T	T	06 40 51.3	
	baz=318,slow=75,SNR=27						
H11S1	**WAKE ISLAND Hy 29.37**	**127**		T	T	06 41 52.3	
	baz=320,slow=76,SNR=10						
H11S3	**WAKE ISLAND Hy 29.37**	**127**		T	T	06 41 48.9	
	baz=320,slow=76,SNR=12						
H11S2	**WAKE ISLAND Hy 29.38**	**127**		T	T	06 41 50.6	
	baz=320,slow=76,SNR=10						
MKAR	**Makanchi Array**	**43.75**	**300**	P	**P**	**06 12 35.7**	**-0.1**
	0.5nm,0.4s,baz=83,slow=9.5,SNR=6.0						
KURBB	**Kurchatov Arra**	**45.41**	**307**	P	**P**	**06 12 48.3**	**-0.6**
	1.3nm,0.5s,baz=82,slow=8.2,SNR=16						
ILAR	**Eielson Array**	**47.35**	**33**	P	**P**	**06 13 04.6**	**+0.6**
	0.8nm,0.8s,baz=270,slow=6.1,SNR=8.9						
INK	**Inuvik**	**52.22**	**28**	P	**P**	**06 13 41.5**	**+0.6**
	1.5nm,1.1s,baz=317,slow=9.5,SNR=3.0						
WRA	**Warramunga Arr**	**59.19**	**189**	P	P	06 14 39.0	+7.5
	0.7nm,0.6s,baz=6.5,slow=7.2,SNR=6.9						
YKA	**Yellowknife Ar**	**61.65**	**31**	P	**P**	**06 14 47.6**	**-0.3**
	0.2nm,0.8s,baz=307,slow=6.0,SNR=4.0						
ASAR	**Alice Springs**	**62.91**	**189**	P	P	06 15 03.2	+6.4
	0.6nm,0.9s,baz=7.5,slow=7.8,SNR=4.3						

IDC 17 06:05:49.2±10.0, 52.17N×171.54W, h0km, mb3.4/5, mb1 3.7/6, mb1mx3.4/64, mbtmp3.4/6, ML3.4/1, Error ellipse: s-maj=188.2km s-min=51.9km az=78.0
ISCJB 17 06:05:59.7±0.8, 52.19N±0.09×169.6W±0.1, h10km, mb3.3/5, Error ellipse: s-maj=14.9km s-min=6.7km az=142.4
NEIC 17 06:06:00.8, 52.27N×169.66W, h7km, ML3.3(AEIC), After AEIC.
ISC 17 06:06:00.2±1.1, 52.3N±0.1×169.64W±0.08, h10km, n24, σ1§36/24, mb3.4/5, Fox Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NIKH	**Nikolski High**	**0.84**	**34**	P	**Pg**	**06 06 17.1**	**+0.6**
NIKH				S	**Sg**	**06 06 28.3**	**+0.9**
OKWE	**Okmok W'ng Wal**	**1.47**	**35**	P	**Pn**	**06 06 27.5**	**+0.8**
OKWE				S	**Sn**	**06 06 46.3**	**+0.4**
OKTU	**Okmok Mt. Tuli**	**1.47**	**41**	P	**Pn**	**06 06 27.7**	**+0.9**
OKAK	**Okmok**	**1.52**	**30**	P	**Pn**	**06 06 26.1**	**-1.3**
OKER	**Okmok East Rim**	**1.52**	**39**	P	**Pn**	**06 06 28.7**	**+1.2**
MSOM	**Makushin Julie**	**2.24**	**45**	P	**Pn**	**06 06 38.4**	**+1.1**
MGOD	**Makushin Gods**	**2.26**	**47**	P	**Pn**	**06 06 38.4**	**+0.8**
MCIR	**Makushin Cirqu**	**2.36**	**44**	P	**Pn**	**06 06 40.2**	**+1.3**
MTBL	**Makushin Table**	**2.46**	**45**	P	**Pn**	**06 06 41.4**	**+1.0**
UNV	**Unalaska Valle**	**2.46**	**49**	P	**Pn**	**06 06 41.1**	**+0.8**
UNV				S	**Sb**	**06 07 14.5**	**-0.3**
KOFP	**Korovin Flat P**	**2.74**	**272**	P	**Pn**	**06 06 45.6**	**+1.4**
KOWE	**Korovin West**	**2.83**	**274**	P	**Pn**	**06 06 46.6**	**+1.2**
ZRO	**Akutan Zero**	**2.86**	**49**	P	**Pn**	**06 06 47.6**	**+1.9**
AKGG	**Akutan Green G**	**2.92**	**47**	P	**Pn**	**06 06 48.3**	**+1.7**
AKSA	**Akutan Strait**	**3.01**	**50**	P	**Pn**	**06 06 49.7**	**+1.8**
ILAR	**Eielson Array**	**17.12**	**34**	P	**Pn**	**06 09 59.8**	**+0.6**
	0.1nm,0.3s,baz=241,slow=13,SNR=3.7						
DLBC	**Dease Lake**	**23.08**	**59**	P	**P**	**06 11 07.5**	**+1.8**
	1.3nm,0.7s,baz=270,slow=10,SNR=3.9						
INK	**Inuvik**	**23.52**	**33**	P	**P**	**06 11 07.3**	**-2.6**
	0.5nm,0.5s,baz=225,slow=6.2,SNR=4.1						
YKA	**Yellowknife Ar**	**30.43**	**49**	P	**P**	**06 12 10.2**	**-2.1**
	0.1nm,0.4s,baz=273,slow=7.5,SNR=6.9						
H11S1	**WAKE ISLAND Hy 38.47**	**218**		T	T	06 54 22.8	
	baz=23,slow=76,SNR=9.7						
H11S2	**WAKE ISLAND Hy 38.48**	**218**		T	T	06 54 23.9	
	baz=23,slow=76,SNR=9.9						
H11S3	**WAKE ISLAND Hy 38.48**	**218**		T	T	06 54 24.1	
	baz=23,slow=76,SNR=8.4						
PDAR	**Pinedale Array**	**40.59**	**79**	P	**P**	**06 13 39.4**	**-0.6**
	0.4nm,0.5s,baz=311,slow=2.9,SNR=6.6						
TXAR	**Lajitas Array**	**52.92**	**89**	P	**P**	**06 15 16.3**	**-0.2**
	0.4nm,0.6s,baz=303,slow=5.0,SNR=6.4						

IDC 17 06:06:39.7±1.1, 20.16N×122.05E, h0km, mb3.7/7, mb1 3.8/8, mb1mx3.6/58, mbtmp3.7/8, ML3.8/1, Error ellipse: s-maj=50.4km s-min=23.0km az=67.0
ISCJB 17 06:06:42.1±1.0, 20.2N±0.1×122.0E±0.2, h27km, mb3.5/7, Error ellipse: s-maj=32.1km s-min=18.7km az=166.1
ISC 17 06:06:43.7±1.1, 20.2N±0.2×122.1E±0.3, h27km, n11, σ0§64/8, mb3.6/7, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSRS	**Korea Array**	**17.95**	**15**	P	**P**	**06 10 52.0**	**+0.3**
	0.3nm,0.3s,baz=198,slow=13,SNR=8.1						
SONM	**Songino Array**	**30.37**	**339**	P	**P**	**06 12 53.5**	**0.0**
	0.4nm,0.4s,baz=148,slow=14,SNR=2.2						
WRA	**Warramunga Arr**	**41.65**	**163**	P	**P**	**06 14 30.1**	**+0.1**
	0.4nm,0.8s,baz=345,slow=8.7,SNR=7.4						
MKAR	**Makanchi Array**	**41.83**	**319**	P	**P**	**06 14 32.2**	**+0.9**
	1.0nm,0.8s,baz=109,slow=10,SNR=6.1						
H11S3	**WAKE ISLAND Hy 42.03**	**84**		T	T	06 59 28.7	
	baz=281,slow=75,SNR=30						
H11S1	**WAKE ISLAND Hy 42.05**	**84**		T	T	06 59 29.3	
	baz=281,slow=75,SNR=23						
H11S2	**WAKE ISLAND Hy 42.05**	**84**		T	T	06 59 30.4	
	baz=281,slow=75,SNR=31						
ZALV	**Zalesovo Beam**	**44.06**	**329**	P	**P**	**06 14 48.9**	**-0.3**
	0.8nm,0.4s,baz=125,slow=7.2,SNR=1.8						
KURBB	**Kurchatov Arra**	**45.73**	**322**	P	**P**	**06 15 03.0**	**+0.5**
	0.7nm,0.7s,baz=121,slow=7.6,SNR=6.5						
AKASG	**Malin Array Be**	**76.41**	**319**	P	**P**	**06 18 29.9**	**-0.9**
	0.5nm,0.6s,baz=60,slow=5.8,SNR=3.7						
YKA	**Yellowknife Ar**	**86.32**	**23**	P	**P**	**06 19 23.0**	**0.0**
	0.2nm,0.5s,baz=305,slow=4.8,SNR=7.8						

IDC 17 06:16:29.6±13.0, 21.41S×178.71W, h524km±161km, mb3.0/3, mb1 3.3/4, mb1mx2.9/25, mbtmp4.0/4, Error ellipse: s-maj=84.1km s-min=35.8km az=16.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**17.18**	**191**	P	P	06 20 00.8	-0.2
	1.2nm,0.3s,baz=70,slow=12,SNR=6.7						
ASAR	**Alice Springs**	**43.67**	**258**	P	P	06 23 48.4	+0.2
	1.6nm,0.5s,baz=95,slow=7.9,SNR=17						
WRA	**Warramunga Arr**	**43.82**	**263**	P	P	06 23 49.0	-0.4
	1.4nm,0.7s,baz=96,slow=7.7,SNR=41						
ILAR	**Eielson Array**	**89.34**	**13**	P	P	06 28 30.2	+0.7
	0.1nm,0.3s,baz=220,slow=5.7,SNR=3.3						
AKASG	**Malin Array Be**	**143.47**	**330**	PKP	PKPab	06 35 02.5	-0.2
	0.7nm,0.4s,baz=47,slow=4.3,SNR=4.4						

WEL 17 06:27:58.6±0.4, 39.21S×174.78E, h212km±4km, ML3.5/8, 1C-2D, Error ellipse: s-maj=4.2km s-min=3.0km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PKVZ	**Pokaka**	**0.45**	**101**	PN	Pn	06 28 27.0	+0.1
PKVZ				SN	S	06 28 49.1	+0.1
WAZ	**Wanganui**	**0.57**	**164**	*e*PN	Pn	06 28 27.8	+0.6
BHHZ	**Black Hill Sta**	**1.03**	**106**	PN	Pn	06 28 29.6	-0.2
KRHZ	**Kereru**	**1.30**	**110**	PN	Pn	06 28 31.8	+0.1
KRHZ				SN	S	06 28 57.1	-0.2
BKZ	**Black Stump Fm**	**1.33**	**89**	⇓PN	Pn	06 28 31.4	-0.6
BKZ				SN	S	06 28 56.3	-1.4
BKZ				AML	AML	06 29 16.3	
WPHZ	**Waipukurau**	**1.54**	**124**	SN	S	06 29 01.0	+0.2
MRZ	**Mangatainoka R**	**1.57**	**157**	PN	Pn	06 28 33.8	-0.1
NMHZ	**Naumai**	**1.58**	**87**	PN	Pn	06 28 34.3	+0.2
PRWZ	**Pori Road**	**1.63**	**146**	SN	S	06 29 02.5	+0.4
OGWZ	**Otaki Gorge**	**1.63**	**170**	PN	Pn	06 28 34.1	-0.3
KIW	**Kapiti Island**	**1.65**	**177**	AML	AML	06 28 25.2	
KIW				PN	Pn	06 28 34.6	0.0
KIW				AML	AML	06 29 14.7	
ARHZ	**Aropaoanui**	**1.72**	**93**	PN	Pn	06 28 35.2	0.0
DUWZ	**D'Urville Isla**	**1.72**	**202**	⇑PN	Pn	06 28 35.1	-0.1
KAHZ	**Kahuranaki**	**1.72**	**110**	PN	Pn	06 28 35.7	+0.4
HOWZ	**Holdsworth Sta**	**1.78**	**162**	PN	Pn	06 28 35.5	-0.3
TIWZ	**Tintock**	**1.78**	**152**	AML	AML	06 29 07.1	
TIWZ				AML	AML	06 29 07.3	
ANWZ	**Angora Road**	**1.81**	**134**	SN	S	06 29 05.2	+0.2
CKHZ	**Cape Kidnapper**	**1.83**	**105**	PN	Pn	06 28 36.6	+0.3
BFZ	**Birch Farm**	**1.85**	**143**	SN	S	06 29 05.3	-0.6
CAW	**Cannon Point**	**1.91**	**174**	PN	Pn	06 28 36.8	-0.2
CAW				AML	AML	06 29 07.4	
CAW				AML	AML	06 29 10.0	
TCW	**Tory Channel**	**2.04**	**191**	PN	Pn	06 28 38.3	0.0
URZ	**Urewera**	**2.05**	**63**	⇓PN	Pn	06 28 36.2	-2.2
TMWZ	**Te Maipa**	**2.08**	**156**	SN	S	06 29 09.4	-0.5
PAWZ	**Paruwai Farm**	**2.23**	**167**	PN	Pn	06 28 39.7	-0.5
MSWZ	**Moikau Station**	**2.23**	**171**	PN	Pn	06 28 39.7	-0.6
NNZ	**Nelson**	**2.27**	**208**	PN	Pn	06 28 40.0	-0.7
TUWZ	**Tuamarina**	**2.31**	**196**	PN	Pn	06 28 40.7	-0.3
MWZ	**Matawai**	**2.32**	**69**	PN	Pn	06 28 39.3	-2.0
QRZ	**Quartz Range**	**2.37**	**226**	PN	Pn	06 28 40.3	-1.4
PLWZ	**Palliser**	**2.38**	**171**	PN	Pn	06 28 41.2	-0.7
BSWZ	**Blackbirch Sta**	**2.60**	**195**	PN	Pn	06 28 44.0	-0.1
THZ	**Tophouse**	**2.92**	**209**	PN	Pn	06 28 46.8	-1.2
KHZ	**Kahutara**	**3.34**	**196**	PN	Pn	06 28 51.7	-1.0

IDC 17 06:43:60.0±2.9, 30.12S×138.61E, h0km, mb1 3.2/3, mb1mx3.1/32, mbtmp2.9/3, ML2.8/3, Error ellipse: s-maj=78.5km s-min=14.9km az=46.0, South Australia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**3.10**	**125**	Pn	Pn	06 44 49.9	-0.4
	0.4nm,0.3s,baz=300,slow=14,SNR=5.4						
STKA				Pg	Pb	06 44 57.1	+1.1
	1.6nm,0.3s,baz=303,slow=18,SNR=16						
STKA				Sn	Sn	06 45 27.6	-0.4
	2.9nm,0.3s,baz=229,slow=17,SNR=6.9						
STKA				Lg	Lg	06 45 38.5	
	4.9nm,0.3s,baz=10,slow=23,SNR=5.6						
ASAR	**Alice Springs**	**7.68**	**326**	Pn

JAG	Ashikaga	2.21 263	P	Pn	Pn	06 47 47.5 +0.9
BSO1	Boso 1	2.30 205	P	Pn	Pn	06 47 46.9 -0.4
BSO1			S	Sn	Sn	06 48 15.5 +0.7
JMK	Ichinoseki	2.33 341	P	Pn	Pn	06 47 49.0 +0.7
JYK	Kaneyama	2.61 327	P	Pn	Pn	06 47 53.2 +1.2
MJAR	Matsushiro Arr	3.20 268	Pn	Pn	Pn	06 48 02.4 +2.2
	8.5nm,0.3s,baz=75,slow=14,SNR=32					
MAT	Matsushiro	3.20 268	P	Pn	Pn	06 48 02.6 +2.4
MAT			eS	Sb	Sb	06 48 43.6 -2.1
MKAR	Makanchi Array	44.79 302	P	P	P	06 55 23.8 +0.4
	0.3nm,0.5s,baz=85,slow=9.2,SNR=4.2					
ILAR	Eielson Array	49.41 32	P	P	P	06 55 58.8 -0.4
	0.3nm,0.6s,baz=260,slow=6.8,SNR=5.4					
WRA	Warramunga Arr	56.86 189	P	P	P	06 57 03.0 +8.6
	0.3nm,0.5s,baz=1.2,slow=7.6,SNR=8.3					
YKA	Yellowknife Ar	63.75 30	P	P	P	06 57 41.5 +0.4
	0.1nm,0.7s,baz=292,slow=6.6,SNR=2.6					

NIED ***17*** *06:52:00,35.°70N×141.°50E,h5km,Mw4.2 Best double couple: M₀2.39000×10¹⁵ NP1:φs293.00000°,δ4.00000°, λ-153.00000°. NP2:φs175.00000°,δ88.00000°, λ-87.00000°.*
IDC ***17*** *06:52:34.5±0.7,35.°61N×141.°54E,h0km,mb3.8/15, mb1 4.0/19,mb1mx3.8/66,mbtmp3.8/19,ML3.7/2,MS3.1/7, Ms1 3.2/7,ms1mx2.8/50,Error ellipse: s-maj=19.1km s-min=17.3km az=75.0*
ISCJB ***17*** *06:52:36.3±0.5,35.°64N±0.°05×141.°64E±0.°05,h25km, mb3.8/16,MS3.6/3,Error ellipse: s-maj=7.8km s-min=5.6km az=4.9*
JMA ***17*** *06:52:37.3±0.2,35.°70N×141.°49E,h11km±2km,M3.8*
NEIC ***17*** *06:52:39.4±0.5,35.°64N×141.°57E,h35km,mb4.2/1,Error ellipse: s-maj=12.0km s-min=9.7km az=87.0*

ISC 17 06:52:38.2±0.6,35.°68N±0.°07×141.°51E±0.°06,h25km,n44, σ1§44/38,mb3.9/16,MS3.5/3,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	0.53 272		P	Pb	06 52 47.4	-1.5
CHOJ				S	Sb	06 52 54.1	-2.0
JCN	Nagara	1.10 256		P	Pb	06 53 00.9	+2.4
JCN				S	Sb	06 53 15.1	+2.7
BSO4	Boso 4	1.18 234		P	Pb	06 52 59.3	-0.6
JYT	Yasato	1.20 297		P	Pn	06 52 59.1	-0.2
JYT				eS	Sn	06 53 14.5	-0.3
JHO	Hitachi	1.20 321		P	Pn	06 52 58.9	-0.5
BSO3	Boso 3	1.20 223		P	Pn	06 52 58.9	-0.3
JAG	Ashikaga	1.82 295		P	Pn	06 53 08.0	0.0
MJAR	Matsushiro Arr	2.80 289		Pn	Pn	06 53 22.7	+1.2
	6.3nm,0.3s,baz=98,slow=8.8,SNR=32						
MJAR				LR	LR	06 54 00.9	
	comp=Z,46nm,21.1s,baz=115,slow=31						
MAJO	Matsushiro	2.81 289		ePn	Pn	06 53 23.3	+1.7
MAT	Matsushiro	2.81 289		P	Pn	06 53 23.1	+1.6
MAT				eS	Sb	06 53 58.4	-3.2
JHJ	Hachijo jima 2	2.93 210		LR	LR	06 54 41.2	
	comp=Z,218nm,18.0s,baz=78,slow=44						
ERM	Erimo	6.45 11		ePn	Pn	06 54 10.2	-1.3
ASAJ	Asahikawa	8.46 5		Pn	Pn	06 54 37.3	-1.9
	1.4nm,0.3s,baz=160,slow=17,SNR=2.3						
CBIJ	Chichi jima	8.58 176		Pn	Pn	06 54 38.2	-2.6
JCJ	Chichijima	8.58 176		Pn	Pn	06 54 38.2	-2.6
	10nm,0.3s,baz=73,slow=23,SNR=4.6						
JNU	Nakatsue	9.15 257		LR	LR	06 58 17.5	
	comp=Z,68nm,20.7s,baz=115,slow=38						
KSRS	Korea Array	11.07 283		LR	LR	06 59 35.8	
	comp=Z,133nm,20.7s,baz=108,slow=38						
USRK	Ussuriysk Ar.	11.20 322		Pn	Pn	06 55 18.6	+1.9
	0.1nm,0.3s,baz=126,slow=14,SNR=2.6						
H11N2	WAKE ISLAND Hy 27.41 119			T	T	07 27 01.7	
	baz=311,slow=75,SNR=49						
H11N1	WAKE ISLAND Hy 27.42 119			T	T	07 27 02.8	
	baz=311,slow=75,SNR=46						
H11N3	WAKE ISLAND Hy 27.43 119			T	T	07 27 00.6	
	baz=311,slow=75,SNR=58						
H11S1	WAKE ISLAND Hy 28.08 121			T	T	07 27 53.2	
	baz=313,slow=75,SNR=48						
H11S3	WAKE ISLAND Hy 28.08 121			T	T	07 27 52.0	
	baz=313,slow=75,SNR=44						
H11S2	WAKE ISLAND Hy 28.10 121			T	T	07 27 52.6	
	baz=313,slow=75,SNR=44						
CMAR	Chiang Mai Arr	41.24 257		LR	LR	07 19 17.0	
	comp=Z,63nm,18.4s,baz=300,slow=39						
ZALV	Zalesovo Beam	42.89 313		P	P	07 00 34.9	+0.5
	1.2nm,0.4s,baz=102,slow=12,SNR=3.6						
MKAR	Makanchi Array	44.91 303		P	P	07 00 51.3	+0.5
	0.8nm,0.6s,baz=86,slow=9.7,SNR=9.3						
KURK	Kurchatov	46.83 309		P	P	07 01 06.2	+0.4
KURK				eP	P	07 01 07.2	+1.4
KURBB	Kurchatov Arra	46.90 309		P	P	07 01 06.2	-0.1
	1.0nm,0.5s,baz=88,slow=7.8,SNR=7.0						
ILAR	Eielson Array	50.60 32		P	P	07 01 35.2	+0.6
	1.3nm,0.8s,baz=263,slow=6.2,SNR=17						
BVAR	Borovoye Array	51.54 313		P	P	07 01 43.9	+2.0
	0.5nm,0.4s,baz=64,slow=7.0,SNR=3.0						
LEM	Lembang	52.95 224		LR	LR	07 23 15.4	
	comp=Z,42nm,21.6s,baz=116,slow=35						
INK	Inuvik	55.55 27		P	P	07 02 12.2	+1.2
	1.0nm,0.8s,baz=318,slow=7.1,SNR=4.1						
WRAB	Tennant Creek	55.73 188		eP	P	07 02 11.7	-1.1
	1.6nm,0.7s						
WRA	Warramunga Arr	55.74 188		P	P	07 02 12.4	-0.4
	0.9nm,0.6s,baz=4.7,slow=7.4,SNR=9.7						
ASAR	Alice Springs	59.46 188		P	P	07 02 38.8	-0.3
	0.6nm,0.8s,baz=14,slow=15,SNR=3.8						
YKA	Yellowknife Ar	64.94 30		P	P	07 03 15.7	+0.4
	0.5nm,0.8s,baz=298,slow=6.6,SNR=6.4						
AKASG	Malin Array Be	75.41 323		P	P	07 04 19.4	-0.2
	0.9nm,0.5s,baz=47,slow=6.1,SNR=6.0						
AKASG				LR	LR	07 39 42.0	
	comp=Z,40nm,19.5s,baz=25,slow=38						
NOA	NORSAR Array B	75.46 337		P	P	07 04 19.9	+0.1
	0.4nm,0.5s,baz=54,slow=6.7,SNR=2.8						
NVAR	Mina Array Bea	75.74 53		P	P	07 04 22.8	+0.7
	0.6nm,0.7s,baz=291,slow=6.2,SNR=3.5						
PDAR	Pinedale Array	78.56 45		P	P	07 04 38.2	+0.4
	0.3nm,0.6s,baz=252,slow=0.5,SNR=3.8						
GERES	GERESS Array B	83.90 328		P	P	07 05 05.5	-0.4
	0.5nm,0.6s,baz=46,slow=7.6,SNR=3.9						
TXAR	Lajitas Array	90.88 52		P	P	07 05 41.2	+1.1
	0.4nm,0.8s,baz=289,slow=3.9,SNR=6.0						
LPAZ	La Paz	11.07 62		PKPbc	PKPbc	07 12 21.1	+0.3
	0.5nm,0.6s,baz=304,slow=3.6,SNR=3.8						

IDC 17 06:56:43.2±2.8,53.°33N×87.°48E,h0km,mb1 2.5/2, mb1mx2.5/63,mbtmp2.5/2,ML2.5/1,Error ellipse: s-maj=27.2km s-min=16.7km az=62.0,Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	ZALESOVO INFRA	1.70 292		i		07 07 25.2	
	baz=109,slow=333,SNR=4.0						
ZALV	Zalesovo Beam	1.70 292		Pn	Pn	06 57 13.5	-0.7
	0.8nm,0.3s,baz=114,slow=14,SNR=5.3						
ZALV				Lg	Lg	06 57 37.0	
	1.6nm,0.3s,baz=111,slow=28,SNR=8.5						
KURBB	Kurchatov Arra	6.16 247		Pn	Pn	06 58 16.5	+1.1
	baz=60,slow=15						
KURBB				Lg	Lg	06 59 57.2	
	0.0nm,0.3s,baz=60,slow=33,SNR=4.2						
MKAR	Makanchi Array	7.35 209		Pn	Pn	06 58 32.6	+0.8
	0.1nm,0.3s,baz=28,slow=13,SNR=5.0						

IDC ***17*** *07:02:44.2±0.9,20.°25N×91.°39E,h0km,mb3.9/14, mb1 4.0/15,mb1mx3.8/53,mbtmp3.8/15,ML3.7/1,MS3.3/13, Ms1 3.4/13,ms1mx3.1/52,Error ellipse: s-maj=40.0km s-min=17.3km az=49.0*
NEIC ***17*** *07:02:45.7±0.5,20.°18N×91.°30E,h10km,mb4.7/5,Error ellipse: s-maj=13.8km s-min=8.2km az=49.0*
ISCJB ***17*** *07:02:47.7±0.4,20.°39N±0.°04×91.°26E±0.°05,h33km, mb4.1/19,MS3.4/11,Error ellipse: s-maj=6.3km s-min=5.0km az=2.2*

ISC 17 07:02:49.3±0.6,20.°31N±0.°06×91.°30E±0.°05,h35km,n57, σ2§09/56,mb4.0/19,MS3.4/11,1D,Bay of Bengal

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHL	Shillong	5.26	6	ePN	Pn	07 04 05.0	-0.6
SHL				i SN	Sn	07 05 00.5	-4.6
CHLP	Challavanipeta	7.07 257		ePn	Pn	07 04 31.6	+1.3
CHLP				IAmb	IAmb	07 04 34.6	
	comp=Z,26nm,0.4s						
CHLP						07 05 44.5	
CHTO	Chiang Mai	7.36 100		ePn	Pn	07 04 32.0	-2.3
	comp=Z,8.0nm,0.7s						
CMAR	Chiang Mai Arr	7.45 103		Pn	Pn	07 04 32.1	-3.4
	comp=Z,0.3nm,0.3s,baz=281,slow=13,SNR=4.8						
CMAR				LR	LR	07 08 19.6	
	comp=Z,99nm,18.6s,baz=254,slow=46						
VIS	Vishakhapatnam	7.97 252		i P	Pn	07 04 43.7	+1.1
VIS				i S	Sn	07 06 06.2	-5.4
VIS				i S	Sn	07 06 06.2	-5.4
PKIN	Phulchoki	9.03 324		ePn	Pn	07 04 57.3	-0.1
PKIN	Phulchoki	9.03 324		ePn	Pn	07 04 57.5	+0.1
PKIN				eSn	Sn	07 06 35.6	-2.3
	comp=Z,35nm,0.3s						
GUN	Gumba	9.04 328		ePn	Pn	07 04 58.2	+0.5
GUN				eSn	Sn	07 06 36.4	-2.0
	comp=Z,39nm,0.3s						
DMN	Daman	9.21 323		ePn	Pn	07 05 00.3	+0.4
DMN				eSn	Sn	07 06 40.5	-2.0
KKN	Kakani	9.26 325		ePn	Pn	07 05 01.6	+1.1
KKN				eSn	Sn	07 06 41.1	-2.4
	comp=Z,18nm,0.2s						
LSA	Lhasa	9.35 359		ePn	Pn	07 05 02.8	+0.8
	comp=Z,9.8nm,0.5s						
LSA				eSn	Sn	07 06 46.1	-0.1
PVM	Polavaram	9.66 253		ePn	Pn	07 05 06.4	+0.6
PVM				IAmb	IAmb	07 05 08.1	
	comp=Z,5.0nm,0.7s						
PVM						07 06 47.9	
GKN	Gorkha	9.78 323		ePn	Pn	07 05 08.1	+0.5
GKN				eSn	Sn	07 06 53.5	-2.8
	comp=Z,31nm,0.3s						
KOLN	Koldanda	10.23 318		ePn	Pn	07 05 15.1	+1.3
KOLN				eSn	Sn	07 07 03.8	-3.6
	comp=Z,37nm,0.3s						
PYUN	Piuthan	10.84 317		ePn	Pn	07 05 22.3	+0.1
PYUN				eSn	Sn	07 07 18.0	-4.5
	comp=Z,73nm,0.6s						
RPR	Rampur	11.41 265		ePn	Pn	07 05 31.0	+1.2
RPR				IAmb	IAmb	07 05 32.8	
	comp=Z,17nm,0.7s						
NJS	Nagarjunasagar	11.98 254		ePn	Pn	07 05 39.3	+1.7
NJS				IAmb	IAmb	07 05 40.6	
	comp=Z,7.4nm,0.7s						
NJS						07 07 18.5	
SRSP	Sriramsagar	12.29 266		ePn	Pn	07 05 42.2	+0.3
SRSP				IAmb	IAmb	07 05 46.0	
	comp=Z,12nm,0.6s						
SRSP						07 07 38.6	
HYB	Hyderabad	12.40 259		i P	Pn	07 05 45.0	+1.5
HYB				eS	Sn	07 08 05.0	+4.5
HYBB	Hyderabad (bro	12.40 259		ePn	Pn	07 05 43.6	+0.1
HYBB				IAmb	IAmb	07 05 46.9	
	comp=Z,17nm,0.6s						
HYBB						07 07 57.1	
SRLM	Srisailam	12.51 252		ePn	Pn	07 05 45.7	+0.8
SRLM				IAmb	IAmb	07 05 47.5	
	comp=Z,5.7nm,0.6s						
SRLM						07 07 53.7	
RCLA	Racherla	12.70 250		ePn	Pn	07 05 48.1	+0.6
RCLA				IAmb	IAmb	07 05 58.2	
	comp=Z,10nm,0.9s						
RCLA						07 07 52.1	
SKHT	Srikalahasti	12.86 241				07 08 02.8	
KLRI	Killari	14.07 263		ePn	Pn	07 06 05.8	-0.4
KLRI				IAmb	IAmb	07 06 09.2	
	comp=Z,31nm,0.6s						
KLRI						07 08 26.9	
PALK	Pallekele	16.54 220		Pn	Pn	07 06 34.0	-4.7
	comp=Z,0.1nm,0.3s,baz=100,slow=12,SNR=2.3						
PALK				Sn	Sn	07 09 26.0	-15
	comp=Z,0.6nm,0.3s,baz=116,slow=13,SNR=4.9						
PALK				LR	LR	07 14 28.4	
	comp=Z,40nm,18.4s,baz=116,slow=43						
AAK	Ala-Archa	26.37 331		LR	LR	07 20 18.9	
	comp=Z,88nm,18.1s,baz=129,slow=40						
MKAR	Makanchi Array	27.42 346		P	P	07 08 32.6	+0.9
	comp=Z,1.1nm,0.7s,baz=156,slow=9.3,SNR=9.0						
KURBB	Kurchatov Arra	31.89 345		P	P	07 09 12.2	+1.1
	comp=Z,2.6nm,0.8s,baz=166,slow=8.6,SNR=16						
KURK	Kurchatov	31.95 345		eP	P	07 09 12.2	+0.5
	comp=Z,7.2nm,0.8s						
SMRI	Semarang	33.07 143		eP	P	07 09 22.7	+0.8
	comp=Z,17nm,0.4s						
H08S3	Diego Garcia H	33.37 216		T	T	07 44 31.4	
	baz=34,slow=76,SNR=7.7						
H08S2	Diego Garcia H	33.38 216		T	T	07 44 31.4	
	baz=34,slow=76,SNR=8.3						
H08S1	Diego Carcia H	33.39 216		T	T	07 44 32.0	
	baz=34,slow=76,SNR=7.3						
ZALV	Zalesovo Beam	33.95 353		P	P	07 09 29.6	+0.5
	comp=Z,1.7nm,0.5s,baz=198,slow=9.3,SNR=3.8						
KSRS	Korea Array	36.06 54		LR	LR	07 26 06.3	
	comp=Z,32nm,18.8s,baz=224,slow=39						
JAGI	Jajag, Banyuwa	36.38 140		eP	P	07 09 52.3	+1.9
	comp=Z,28nm,1.0s						
BVAR	Borovoye Array	36.43 339		P	P	07 09 52.0	+1.5
	comp=Z,0.7nm,0.6s,baz=120,slow=10,SNR=4.3						
ABKAR	Akbulak array	38.20 327		eP	P	07 10 07.0	+1.5
	comp=Z,3.6nm,0.8s						
AKTO	Aktyubinsk	39.91 327		P	P	07 10 20.9	+1.0
	comp=Z,2.2nm,0.7s,baz=115,slow=7.0,SNR=6.3						
MJAR	Matsushiro Arr	43.87 58		LR	LR	07 31 27.4	
	comp=Z,32nm,19.5s,baz=235,slow=39						
BRTR	Keskin Array B	52.64 305		P	P	07 12 01.4	+1.2
	comp=Z,1.1nm,0.7s,baz=127,slow=9.1,SNR=5.9						
AKASG	Malin Array Be	56.92 318		P	P	07 12 31.0	+0.1
	comp=Z,0.3nm,0.4s,baz=91,slow=5.8,SNR=4.0						
WRA	Warramunga Arr	58.10 131		P	P	07 12 39.2	-0.4
	comp=Z,1.2nm,1.1s,baz=316,slow=7.5,SNR=3.8						
WRAB	Tennant Creek	58.11 131		eP	P	07 12 39.2	-0.3
	comp=Z,7.2nm,1.3s						
PETK	Petropavlovsk-	59.88 40		LR	LR	07 41 32.2	
	comp=Z,26nm,19.2s,baz=86,slow=39						
ASAR	Alice Springs	60.28 134		P	P	07 12 54.5	-0.1
	comp=Z,0.3nm,0.6s,baz=308,slow=6.4,SNR=4.7						
FINES	FINESS Array B	60.55 330		P	P	07 12 56.4	+0.5
	comp=Z,2.3nm,0.7s,baz=97,slow=7.9,SNR=5.1						
FINES				LR	LR	07 40 39.8	
	comp=Z,45nm,18.1s,baz=136,slow=38						
HFS	Hagfors	66.45 328		LR	LR	07 45 39.7	
	comp=Z,39nm,18.9s,baz=39						
GERES	GERESS Array B	66.91 315		P	P	07 13 39.0	+0.8
	comp=Z,0.9nm,0.6s,baz=71,slow=8.6,SNR=5.4						
NOA	NORSAR Array B	67.66 329		P	P	07 13 42.3	-0.3
	comp=Z,0.8nm,0.9s,baz=107,slow=7.1,SNR=3.0						
NOA				LR	LR	07 44 59.2	
	comp=Z,19nm,19.2s,baz=145,slow=37						
DAVOX	Davos/Dischmat	69.70 314		LR	LR	07 52 15.9	
	comp=Z,21nm,18.9s,baz=5.5,slow=43						
JMIC	Jan Mayen	74.12 340		LR	LR	07 50 56.6	
	comp=Z,16nm,18.5s,baz=86,slow=39						
BOSA	Boshof	80.17 235		LR	LR	07 47 11.7	
	comp=Z,30nm,20.7s,baz=188,slow=33						
BORG	Borgarnes	80.98 336		LR	LR	07 53 11.9	
	comp=Z,38nm,18.9s,baz=39,slow=37						
ESDC	Sonseca Array	81.20 309		P	P	07 15 02.9	+1.1
	comp=Z,0.3nm,0.3s,baz=52,slow=5.9,SNR=5.3						
TORD	Torodi Ar. Bea	85.17 282		P	P	07 15 24.0	+1.4
	comp=Z,0.9nm,1.0s,baz=70,slow=4.9,SNR=3.7						
SYO	Syowa Base	96.45 197		eP	P	07 16 14.8	+0.6

ISCJB ***17*** *07:05:23.9±0.7,36.°24S±0.°05×72.°70W±0.°09,h58km,Error ellipse: s-maj=11.7km s-min=5.5km az=26.8*
GUC ***17*** *07:05:24.0±0.5,36.°36S×72.°67W,h72km±3km,ML3.7*

ISC 17 07:05:24.5±1.4,36.°28S±0.°07×72.°68W±0.°10,h58km,n16, σ1§43/13,Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
COCH	Cobquecura	0.17 329		eP	Pn	07 05 34.9	+1.4
COCH				eS	Sn	07 05 43.0	+3.0
COCH				IAML		07 05 43.8	
	comp=N,7μm,0.1s						
CCHI	Chillan	0.59 124		eP	Pn	07 05 37.1	-0.1
CCHI				eS	Sn	07 05 46.8	+0.3
CCHI				IAML		07 05 48.2	
	comp=N,8μm,0.6s						
CCSP	San Pedro de C	0.66 211		eP	Pn	07 05 37.7	-0.5
CCSP				eS	Sn	07 05 47.8	-0.4
CCSP				IAML		07 05 48.9	
	comp=N,5μm,0.4s						
TALC	Talca	1.22 45		eP	Pn	07 05 45.9	+0.5
TALC				eS	Sn	07 06 02.0	+1.1
ROC1	El Roble	3.57 23		eP	Pn	07 06 18.0	+0.4
ROC1				eS	Sn	07 06 55.6	-3.0
AAGR	Agrelo	4.50 46		eP	Pn	07 06 32.1	+1.9
ARCO	CERRO ARCO	4.62 43		eP	Pn	07 06 33.4	+1.6
ARCO				eS	Sn	07 07 24.3	0.0
ARCO				IAML		07 07 49.1	
	comp=Z,8.7nm,4.5s						
ASAL	Salagasta	4.86 42		eP	Pn	07 06 36.8	+1.6
AUSP	Uspallata	4.88 35		eP	Pn	07 06 37.0	+1.4
RTLS	Leoncito	5.28 33		eP	Pn	07 06 42.8	+1.7
RTCV	Cerro Valdivia	5.58 39		eP	Pn	07 06 45.3	+0.3
RTLL	Cerro Villicun	6.05 37		eP	Pn	07 06 51.7	+0.3
ACAN	Cantantal	6.05 50		eP	Pn	07 06 51.7	+0.3
AMOG	MOGNA	6.37 34		eP	Pn	07 06 55.5	-0.3
AVFE	Valle Fertil	7.10 39		IAML		07 08 24.6	
	comp=Z,5.5nm,0.7s						
AGUA	GUANDACOL	7.63 29		eP	Pn	07 07 12.4	-0.8

IDC ***17*** *07:08:28.6±5.2,19.°35S×177.°49W,h534km±52km,mb3.3/7, mb1 3.5/9,mb1mx3.2/37,mbtmp4.2/9,Error ellipse: s-maj=37.6km s-min=22.1km az=43.0*
ISCJB ***17*** *07:08:29.5±1.1,19.°5S±0.°2×177.°6W±0.°2,h550km,mb3.7/7, Error ellipse: s-maj=24.1km s-min=20.9km az=169.8*

ISC 17 07:08:30.2±1.1,19.°4S±0.°2×177.°6W±0.°2,h550km,n10, σ1§17/13,mb3.7/7,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	15.16 257		P	P	07 11 42.6	+1.1
	0.6nm,0.3s,baz=79,slow=19,SNR=5.1						
URZ	Urewera	19.39 193		P	P	07 12 18.7	-1.8
	2.1nm,0.3s,baz=96,slow=9.2,SNR=12						
STKA	Stephens Creek	38.62 243		P	P	07 15 07.5	+0.8
	2.4nm,0.5s,baz=86,slow=12,SNR=9.3						
WRA	Warramunga Arr	45.13 261		P	P	07 15 58.0	-0.2
	2.5nm,0.3s,baz=98,slow=7.6,SNR=106						
WRA				PcP	PcP	07 17 26.4	-0.7
	0.5nm,0.9s,baz=96,slow=3.5,SNR=4.6						
ASAR	Alice Springs	45.15 256		P	P	07 15 58.5	+0.2
	3.7nm,0.4s,baz=85,slow=8.3,SNR=62						
ASAR				PcP	PcP	07 17 26.6	-0.4
	1.0nm,0.6s,baz=105,slow=3.8,SNR=6.3						
ASAR				S	S	07 21 56.2	-1.9
	1.0nm,0.8s,baz=88,slow=16,SNR=7.0						
VNDA	Vanda	59.07 185		P	P	07 17 38.5	+1.3
	0.7nm,0.7s,baz=27,slow=3.1,SNR=5.5						
MAW	Mawson	82.76 200		P	P	07 19 56.4	+0.1
	2.0nm,0.8s,baz=123,slow=7.4,SNR=4.4						
PDAR	Pinedale Array	87.88 43		P	P	07 20 21.3	-0.4
	0.2nm,0.5s,baz=202,slow=6.1,SNR=2.3						
CMAR	Chiang Mai Arr	90.08 289		P	P	07 20 33.3	+1.1
	0.6nm,0.6s,baz=116,slow=2.1,SNR=5.2						
BRTR	Keskin Array B	146.33 314		PKPbc	PKPbc	07 27 09.0	-1.0
	0.7nm,0.5s,baz=136,slow=4.2,SNR=3.8						

IDC 17 07:21:32.8±2.4,2.°18S×125.°49E,h0km,mb3.2/2, mb1 3.3/3,mb1mx3.2/36,mbtmp3.1/3,ML3.4/1,Error ellipse: s-maj=379.1km s-min=26.0km az=64.0,Ceram Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	19.66 155		P	P	07 26 03.0	-0.5
	0.1nm,0.3s,baz=330,slow=13,SNR=6.0						
ASAR	Alice Springs	22.86 160		P	P	07 26 38.5	+0.4
	0.2nm,0.5s,baz=342,slow=12,SNR=4.4						
MKAR	Makanchi Array	61.77 328		P	P	07 31 53.3	-0.1
	0.5nm,0.9s,baz=120,slow=8.7,SNR=3.3						

IDC 17 07:29:35.7±5.4,16.°28S×172.°92W,h0km,mb3.4/3, mb1 3.7/3,mb1mx3.4/29,mbtmp3.4/3,Error ellipse: s-maj=395.5km s-min=34.7km az=150.0,Samoa Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	50.10 257		P	P	07 38 33.1	0.0
	0.2nm,0.4s,baz=94,slow=7.1,SNR=5.1						
ASAR	Alice Springs	50.29 253		P	P	07 38 34.1	-0.3
	0.3nm,0.5s,baz=92,slow=8.2,SNR=4.9						
NVAR	Mina Array Bea	74.67 42		P	P	07 41 17.5	0.0
	0.1nm,0.5s,baz=220,slow=5.4,SNR=2.7						

IDC 17 07:31:59.0±7.6,18.°72S×176.°68W,h0km,mb3.5/2, mb1 3.7/2,mb1mx3.4/27,mbtmp3.5/2,Error ellipse: s-maj=311.6km s-min=121.7km az=152.0,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	46.10 260		P	P	07 40 25.4	0.0
	0.2nm,0.3s,baz=97,slow=7.8,SNR=9.3						
ASAR	Alice Springs	46.16 255		P	P	07 40 25.6	-0.2
	0.4nm,0.6s,baz=92,slow=7.4,SNR=5.9						
AKASG	Malin Array Be	142.03 333		PKP	PKPdf	07 51 31.9	-1.0
	0.5nm,0.5s,baz=44,slow=4.1,SNR=3.6						

IDC ***17*** *07:41:05.7±8.4,4.°14S×101.°25E,h0km,mb3.5/3, mb1 3.7/3,mb1mx3.4/54,mbtmp3.5/3,Error ellipse: s-maj=397.9km s-min=29.4km az=49.0*
DJA ***17*** *07:41:22.5±0.7,4.°5S±6.°×10.°2E±.°,h36km±8km,M4.4/9, mB5.4/1,mb5.0/1,MLv4.1/9,Mw(mB)4.8/1*

ISC 17 07:41:09.8±1.6,4.°2S±0.°1×101.°2E±0.°1,h34km,n16, σ1§33/12,mb3.7/3,Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MASI	Maura Aman, Be	1.50 44		P	Pn	07 41 34.2	-0.1
MNAI	Manna	1.75 94		P	Pb	07 41 42.5	+1.2
PPSI	Pulau Pagai	1.89 321		P	Pb	07 41 56.4	+13
LWLI	Liwa	2.95 105		P	Pb	07 42 00.0	-1.7
PDSI

BSO4	Boso 4	1.01 208	P	Pb	07 49 19.1	+0.2
BSO3	Boso 3	1.14 197	P	Pn	07 49 18.6	-1.5
BSO1	Boso 1	1.24 177	P	Pn	07 49 19.1	-2.2
JAG	Ashikaga	1.29 295	⇑P	Pn	07 49 22.1	-0.5
JAG			S	Sn	07 49 38.3	-0.8
MJAR	Matsushiro Arr	2.28 287	Pn	Pn	07 49 36.5	+0.4
	5.4nm,0.3s,baz=104,slow=9.3,SNR=39					
MJAR			LR	LR	07 50 06.9	
	comp=Z,22nm,20.2s,baz=110,slow=30					
MAT	Matsushiro	2.28 287	P	Pn	07 49 37.1	+0.9
MAT			eS	Sb	07 50 06.4	-2.0
JHJ	Hachijo jima 2	2.92 199	Pn	Pn	07 49 45.9	+1.0
	15nm,0.3s,baz=59,slow=12,SNR=3.2					
ASAJ	Asahikawa	8.32 8	Pn	Pn	07 50 58.0	-1.0
	2.5nm,0.3s,baz=249,slow=13,SNR=6.9					
JNU	Nakatsue	8.73 254	LR	LR	07 54 51.7	
	comp=Z,64nm,19.4s,baz=146,slow=40					
H11N2	WAKE ISLAND Hy 27.94 118		T	T	08 23 45.0	
	baz=311,slow=75,SNR=27					
H11N1	WAKE ISLAND Hy 27.95 118		T	T	08 23 46.1	
	baz=311,slow=75,SNR=50					
H11N3	WAKE ISLAND Hy 27.96 118		T	T	08 23 45.6	
	baz=311,slow=75,SNR=35					
H11S1	WAKE ISLAND Hy 28.61 120		T	T	08 24 35.6	
	baz=312,slow=75,SNR=71					
H11S3	WAKE ISLAND Hy 28.61 120		T	T	08 24 32.4	
	baz=312,slow=75,SNR=68					
H11S2	WAKE ISLAND Hy 28.62 120		T	T	08 24 34.5	
	baz=312,slow=75,SNR=63					
MKAR	Makanchi Array	44.39 303	P	P	07 57 08.3	-0.2
	0.4nm,0.6s,baz=96,slow=7.7,SNR=3.9					
KURBB	Kurchatov Arra	46.39 309	P	P	07 57 24.9	+0.7
	0.7nm,0.4s,baz=82,slow=7.6,SNR=5.7					
ILAR	Eielson Array	50.68 32	P	P	07 57 57.4	+0.4
	0.6nm,0.9s,baz=280,slow=8.3,SNR=5.8					
BVAR	Borovoye Array	51.05 313	P	P	07 58 02.8	+2.8
	0.5nm,0.5s,baz=75,slow=8.6,SNR=3.6					
INK	Inuvik	55.59 27	P	P	07 58 34.1	+1.0
	1.2nm,1.0s,baz=342,slow=7.8,SNR=5.3					
WRA	Warramunga Arr	55.88 187	P	P	07 58 34.8	-0.9
	0.7nm,0.8s,baz=2.0,slow=7.5,SNR=8.3					
ASAR	Alice Springs	59.60 187	P	P	07 59 02.8	+0.9
	0.4nm,0.8s,baz=6.3,slow=9.3,SNR=2.9					
YKA	Yellowknife Ar	65.00 30	P	P	07 59 35.9	-1.7
	0.1nm,0.7s,baz=303,slow=7.3,SNR=3.5					
TXAR	Lajitas Array	91.14 52	P	P	08 02 03.3	+0.2
	0.1nm,0.7s,baz=309,slow=8.7,SNR=2.8					

IDC 17 08:02:25.6±2.5, 18°.80S×177°.66W, h0km, mb3.6/3, mb1 4.0/3, mb1mx3.6/35, mbtmp3.6/3, Error ellipse: s-maj=273.1km s-min=31.1km az=160.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	45.17	260	P	P	08 10 44.6	0.0
	0.5nm,0.3s,baz=97,slow=7.6,SNR=26						
ASAR	Alice Springs	45.24	255	P	P	08 10 44.9	-0.3
	0.6nm,0.5s,baz=90,slow=7.9,SNR=8.2						
TXAR	Lajitas Array	85.87	57	P	P	08 15 07.8	0.0
	0.2nm,0.7s,baz=226,slow=5.9,SNR=3.2						

MEX 17 08:02:56.4±0.4, 15°.04N×93°.39W, h66km±13km, MD3.6, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		0.68	14	eP	Pn	08 03 09.3	-1.5
PCIG				eS	Sn	08 03 19.7	-1.6
CCIG	Comitan	1.72	44	eP	Pn	08 03 22.7	-1.7
CCIG				eS	Sn	08 03 44.0	-1.6

IDC 17 08:16:09.9±7.2, 15°.77S×173°.54W, h120km±159km, mb3.3/3, mb1 3.5/4, mb1mx3.2/46, mbtmp3.8/4, ML4.0/1, Error ellipse: s-maj=260.4km s-min=86.4km az=116.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	Afiamalu	2.51	43	P	Pn	08 16 50.1	+0.1
	30nm,0.3s,baz=234,slow=8.7,SNR=56						
AFI				S	Sn	08 17 21.3	+0.6
	53nm,0.3s,baz=246,slow=20,SNR=9.1						
STKA	Stephens Creek	43.74 240	P	P	08 24 03.0	-0.6
	0.6nm,0.3s,baz=72,slow=6.7,SNR=3.1						
WRA	Warramunga Arr	49.63 257	P	P	08 24 49.5	-0.2
	0.3nm,0.7s,baz=92,slow=6.9,SNR=5.8						
ASAR	Alice Springs	49.87 252	P	P	08 24 51.5	+0.1
	0.7nm,0.5s,baz=88,slow=8.3,SNR=15						

ISK 17 08:18:43.2, 39°.05N×27°.45E, h5km, ML2.4
ISCJB 17 08:18:44.7±0.8, 39°.10N±0°.03×27°.53E±0°.04, h6km±6km, Error ellipse: s-maj=5.7km s-min=5.6km az=25.9
DDA 17 08:18:44.4, 39°.10N×27°.52E, h7km, Md2.7
CSEM 17 08:18:44.5±0.3, 39°.06N×27°.50E, h8km, MD2.7, Error ellipse: s-maj=7.4km s-min=5.5km az=62.0
ISC 17 08:18:44.3±1.3, 39°.09N±0°.03×27°.52E±0°.03, h10km±11km, n25, σ0°.47/37, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKS	Akhisar	0.31	133	ePG	Pg	08 18 50.7	+0.1
AKS				eSG	Sb	08 18 56.4	-0.7
AKS	Akhisar	0.31	133	ePg	Pg	08 18 50.7	+0.1
AKS				eSg	Sb	08 18 56.4	-0.7
AKHS	Akhisar	0.31	133	P	Pg	08 18 51.1	+0.5
AKHS	Akhisar	0.31	133	i P	Pg	08 18 51.1	+0.5
BALY	Balya	0.65	7	P	Pg	08 18 57.1	+0.1
BALY	Balya	0.65	7	i P	Pg	08 18 57.1	+0.1
DURS	Dursunbey	0.90	55	P	Pg	08 19 01.2	-0.5
DURS	Dursunbey	0.90	55	i P	Pg	08 19 01.2	-0.5
DEMI	Demirci	0.93	93	P	Pb	08 19 02.7	+0.1
DEMI				S	Sb	08 19 15.3	+0.3
DEMI	Demirci	0.93	93	i P	Pb	08 19 02.7	+0.1
DEMI				i S	Sb	08 19 15.3	+0.3
MANT	Manisa	1.01	126	P	Pb	08 19 04.2	+0.2
MANT				S	Sn	08 19 18.8	-0.2
MANT	Manisa	1.01	126	i P	Pb	08 19 04.2	+0.2
MANT				i S	Sn	08 19 18.8	-0.2
URLA	Izmir	1.03	225	P	Pg	08 19 03.9	-0.2
URLA	Izmir	1.03	225	i P	Pg	08 19 03.9	-0.2
URLA				i S	Sn	08 19 20.2	+1.0
KULA	Kula-Manisa	1.06	123	ePN	Pg	08 19 04.3	-0.4
KULA				eSN	Sn	08 19 21.1	+1.0
KULA	Kula-Manisa	1.06	123	ePn	Pg	08 19 04.3	-0.4
KULA				eSn	Sn	08 19 21.1	+1.0
DGB	˜zmir	1.15	206	i P	Pb	08 19 06.4	+0.1
DGB				i S	Sn	08 19 22.8	+0.5
AYDB	Zeytinkoy-Aydi	1.18	166	ePN	Pb	08 19 06.2	-0.7
AYDB				eSN	Sn	08 19 23.4	+0.3
AYDB	Zeytinkoy-Aydi	1.18	166	ePn	Pb	08 19 06.2	-0.7
AYDB				eSn	Sn	08 19 23.4	+0.3
MRMT	Marmara Adasi	1.51	2	ePN	Pg	08 19 13.2	-0.2
MRMT	Marmara Adasi	1.51	2	ePn	Pg	08 19 13.2	-0.2
GELI	Tayfur-Gelibol	1.54	329	ePN	Pb	08 19 12.7	-0.1
GELI	Tayfur-Gelibol	1.54	329	ePn	Pb	08 19 12.7	-0.1
MDNY	Mudanya-Bursa	1.65	39	ePN	Pg	08 19 15.9	-0.2
MDNY	Mudanya-Bursa	1.65	39	ePn	Pg	08 19 15.9	-0.2

MOS 17 08:21:27.7±1.5, 51°.23N×158°.82E, h56km, mb4.2/1, Error ellipse: s-maj=21.5km s-min=6.7km az=89.9
KRSC 17 08:21:30.9±1.8, 51°.64N×158°.80E, h65km±21km, ML4.0
ISCJB 17 08:21:33.2±0.8, 51°.63N±0°.05×158°.75E±0°.09, h42km±22km, Error ellipse: s-maj=10.7km s-min=5.7km az=36.2
ISC 17 08:21:32.6±1.7, 51°.62N±0°.05×158°.75E±0°.05, h26km±13km, n37, σ0°.73/67, Near east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RUS	Russkaya	0.82	350	i P	Pb	08 21 48.3	0.0
RUS				i S	Sb	08 21 58.9	-0.1
RUS	Russkaya	0.82	350	PN	Pb	08 21 48.3	0.0
RUS				S	Sb	08 21 58.9	-0.1
ASAK	Asacha	0.93	326	i P	Pb	08 21 50.1	0.0
ASAK				eS	Sb	08 22 01.7	-0.3
MTVR	Mutnovka	0.93	338	i P	Pb	08 21 50.0	-0.2
MTVR				i S	Sb	08 22 01.5	-0.7
GRL	Gorelyy	1.02	336	eP	Pb	08 21 51.8	+0.1
GRL				eS	Sb	08 22 04.6	-0.1
GRL	Gorelyy	1.02	336	PN	Pb	08 21 51.8	+0.1
GRL				S	Sb	08 22 04.6	-0.1
PAU	Pauzhetka	1.22	263	i P	Pn	08 21 54.2	+0.2
PAU				eS	Sn	08 22 09.9	+0.2
PAU	Pauzhetka	1.22	263	PN	Pn	08 21 54.2	+0.2
PAU				S	Sn	08 22 09.9	+0.2
KRMR	Karymshinskiy	1.27	343	i P	Pn	08 21 54.9	+0.2
KRMR				i S	Sn	08 22 10.4	-0.4
KRMR	Karymshinskiy	1.27	343	PN	Pn	08 21 54.9	+0.2
KRMR				S	Sn	08 22 10.4	-0.4
PET	Petropavlovsk	1.40	358	eP	Pn	08 21 56.6	+0.1
PET				eS	Sn	08 22 13.5	-0.7
PET	Petropavlovsk	1.40	358	ePN	Pn	08 21 56.4	-0.1
PET				eS	Sn	08 22 13.2	-1.0
PET				pmax	pmax		
	comp=Z,157nm,0.2s						
PET				pmax	pmax		
	comp=Z,200nm,0.2s						
PET				smax	smax		
	comp=E,600nm,0.5s						
PET				smax	smax		
	comp=E,663nm,0.8s						
PET				smax	smax		
	comp=N,800nm,0.6s						
PET				smax	smax		
	comp=N,1μm,0.5s						
UGLR	Uglovaya	1.59	2	eP	Pn	08 21 59.5	+0.3
UGLR				S	Sn	08 22 18.8	-0.2
APC	Apacha	1.63	324	eP	Pn	08 21 59.8	+0.2
APC				eS	Sn	08 22 19.4	-0.4
APC	Apacha	1.63	324	PN	Pn	08 21 59.8	+0.2
APC				S	Sn	08 22 19.4	-0.4
SMAR	Somma	1.64	1	eP	Pn	08 22 00.4	+0.4
SMAR				eS	Sn	08 22 20.4	0.0
SMAR	Somma	1.64	1	PN	Pn	08 22 00.4	+0.4
SMAR				S	Sn	08 22 20.4	0.0
AVH	Avacha	1.65	360	eP	Pn	08 22 00.5	+0.6
AVH				eS	Sn	08 22 20.8	+0.5
AVH	Avacha	1.65	360	PN	Pn	08 22 00.5	+0.6
AVH				S	Sn	08 22 20.8	+0.5
SDLR	Sedlovina	1.66	3	eP	Pn	08 21 59.8	-0.4
SDLR				S	Sn	08 22 19.3	-1.4
SDLR	Sedlovina	1.66	3	PN	Pn	08 21 59.8	-0.4
SDLR				S	Sn	08 22 19.3	-1.4
SPN	Mys Shipunski	1.67	27	eP	Pn	08 22 01.0	+0.8
SPN				eS	Sn	08 22 21.1	+0.3
SPN	Mys Shipunski	1.67	27	PN	Pn	08 22 01.0	+0.8
SPN				S	Sn	08 22 21.1	+0.3
KOK	Koryaka	1.67	358	eP	Pn	08 22 01.4	+1.1
KOK				eS	Sn	08 22 21.3	+0.3
KOK	Koryaka	1.67	358	PN	Pn	08 22 01.4	+1.1
KOK				S	Sn	08 22 21.3	+0.3
KRER	Koryakskii	1.68	360	eP	Pn	08 22 00.9	+0.3
KRER				eS	Sn	08 22 21.1	-0.3
KRX	Arik	1.74	358	eP	Pn	08 22 01.8	+0.5
KRX				eS	Sn	08 22 22.3	-0.4
SKR	Severo-Kuril's	1.91	241	eP	Pn	08 22 03.6	+0.2
SKR				eS	Sn	08 22 25.9	-0.7
SKR	Severo-Kuril's	1.91	241	ePN	Pn	08 21 55.0	-8.4
SKR				eS	Sn	08 22 17.0	-10
SKR				pmax	pmax		
	comp=Z,50nm,0.5s						
SKR				smax	smax		
	comp=N,200nm,0.5s						
SKR				smax	smax		
	comp=E,510nm,0.4s						
GNL	Ganaly	2.13	347	eP	Pn	08 22 07.4	+0.7
GNL				eS	Sn	08 22 32.1	-0.3
GNL	Ganaly	2.13	347	PN	Pn	08 22 07.4	+0.7
GNL				S	Sn	08 22 32.1	-0.3
MKZ	Mys Kozlova	3.44	30	eP	Pn	08 22 24.7	+0.2
MKZ				eS	Sn	08 23 01.2	-3.3
MKZ	Mys Kozlova	3.44	30	PN	Pn	08 22 24.7	+0.2
KMNR	Kamenistaya	4.23	11	P	Pn	08 22 37.4	+1.9
KMNR	Kamenistaya	4.23	11	PN	Pn	08 22 37.4	+1.9
BKI	Bering	5.61	47	P	Pn	08 22 54.9	+0.6
BKI				eS	Sn	08 23 51.5	-6.4
BKI	Bering	5.61	47	PN	Pn	08 22 54.9	+0.6

IDC 17 08:21:42.4±1.1, 35°.25N×142°.38E, h0km, mb3.8/8, mb1 3.9/11, mb1mx3.6/64, mbtmp3.7/11, ML3.6/2, MS2.8/3, Ms1 2.8/3, ms1mx2.4/49, Error ellipse: s-maj=26.1km s-min=23.7km az=82.0
JMA 17 08:21:44.2±0.3, 35°.39N×142°.44E, h60km, M3.2
ISCJB 17 08:21:46.0±0.7, 35°.39N±0°.05×142°.33E±0°.06, h35km, mb3.8/8, MS3.2/1, Error ellipse: s-maj=8.4km s-min=5.8km az=149.0
ISC 17 08:21:48.0±0.9, 35°.37N±0°.07×142°.32E±0°.08, h35km, n24, σ1°.30/28, mb3.8/8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	1.23	286	P	Pn	08 22 07.3	-1.5
CHOJ				eS	Sn	08 22 23.5	-0.7
BSO1	Boso 1	1.31	237	P	Pn	08 22 07.4	-2.0
BSO1				eS	Sn	08 22 25.3	-0.1
BSO2	Boso 2	1.42	245	eS	Sn	08 22 29.2	+0.7
BSO3	Boso 3	1.59	250	P	Pn	08 22 12.4	-1.0
JAG	Ashikaga	2.55	295	P	Pn	08 22 25.3	-1.6
JOD2	Odawara 2	2.64	269	P	Pn	08 22 26.5	-1.7
JOD2				S	Sn	08 22 58.2	-0.8
JFT	Otama	2.67	324	P	Pn	08 22 27.3	-1.3
JFT				eS	Sn	08 22 57.4	-2.3
JRY	Ryogami san	2.85	284	P	Pn	08 22 30.7	-0.4
JHJ	Hachijo jima 2	3.08	224	LR	LR	08 23 59.1	
	comp=Z,48nm,19.3s,baz=74,slow=46						
JYN	Shimob	3.08	273	P	Pn	08 22 32.8	-1.5
JYN				eS	Sn	08 23 09.3	-0.7
MJAR	Matsushiro Arr	3.53	290	Pn	Pn	08 22 40.6	+0.2
	2.4nm,0.3s,baz=95,slow=9.3,SNR=17						
MJAR				LR	LR	08 24 20.5	
	comp=Z,135nm,18.2s,baz=85,slow=44						
MAT	Matsushiro	3.53	290	P	Pn	08 22 40.7	+0.3
MAT				eS	Sn	08 23 24.1	+3.1
MAT	Matsushiro	3.53	290	P	Pn	08 22 41.1	+0.7
ASAJ	Asahikawa	8.74	1	Pn	Pn	08 23 50.7	-1.1
	1.1nm,0.3s,baz=189,slow=18,SNR=4.0						
USRK	Ussuriysk Ar.	11.86	321	Pn	Pn	08 24 36.4	+1.9
	0.2nm,0.3s,baz=123,slow=16,SNR=2.7						
SEY	Seymchan	28.29	10	P	P	08 27 38.8	+0.9
	1.6nm,0.6s,baz=206,slow=15,SNR=4.8						
KAPI	Kappang	45.43	212	LR	LR	08 47 19.3	
	comp=Z,29nm,20.3s,baz=155,slow=34						
MKAR	Makanchi Array	45.63	304	P	P	08 30 05.1	+0.2
	0.3nm,0.6s,baz=72,slow=7.7,SNR=2.3						
KURBB	Kurchatov Arra	47.61	309	P	P	08 30 20.2	-0.1
	2.5nm,0.8s,baz=86,slow=8.5,SNR=15						
ILAR	Eielson Array	50.51	32	P	P	08 30 42.1	-0.3
	0.7nm,0.8s,baz=266,slow=6.2,SNR=8.1						
WRA	Warramunga Arr	55.53	189	P	P	08 31 18.5	-1.3
	1.1nm,0.7s,baz=8.7,slow=7.1,SNR=3.9						
NOA	NORSAR Array B	76.00	338	P	P	08 33 31.4	+0.2
	0.4nm,0.7s,baz=48,slow=4.8,SNR=2.9						
AKASG	Malin Array Be	76.06	323	P	P	08 33 31.7	0.0
	0.3nm,0.3s,baz=47,slow=6.8,SNR=3.9						
TXAR	Lajitas Array	90.55	53	P	P	08 34 47.8	+1.0
	0.8nm,0.9s,baz=336,slow=2.7,SNR=6.8						

IDC 17 08:23:00.2±1.6, 36°.30N×141°.27E, h0km, mb3.6/5, mb1 3.7/6, mb1mx3.4/62, mbtmp3.6/6, ML3.1/1, MS3.3/2, Ms1 3.4/2, ms1mx2.6/49, Error ellipse: s-maj=36.3km s-min=31.4km az=35.0
ISCJB 17 08:23:02.2±0.9, 36°.05N±0°.06×141°.19E±0°.08, h31km, mb3.6/5, MS3.6/3, Error ellipse: s-maj=9.7km s-min=9.3km az=158.6
JMA 17 08:23:02.5±0.1, 36°.01N×141°.16E, h36km±2km, M3.3
ISC 17 08:23:03.6±1.2, 36°.06N±0°.07×141°.07E±0°.09, h31km, n18, σ1°.22/11, mb3.7/5, MS3.2/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	0.39	206	P	Pb	08 23 11.4	-1.0
CHOJ				S	Sb	08 23 17.7	-0.6
JHO	Hitachi	0.68	324	P	Pn	08 23 16.6	-0.6
JYT	Yasato	0.73	284	P	Pb	08 23 17.4	-0.4
JYT				S	Sn	08 23 27.8	+0.1
MJAR	Matsushiro Arr	2.36	283	Pn	Pn	08 23 41.8	+1.6
	4.3nm,0.3s,baz=99,slow=10,SNR=9.4						
MAT	Matsushiro	2.36	283	P	Pn	08 23 41.4	+1.2
MAT				eS	Sb	08 24 12.0	-2.1
H11N2	WAKE ISLAND Hy 27.91 119		T	T	08 57 54.3		
	baz=313						
H11N1	WAKE ISLAND Hy 27.91 119		T	T	08 57 55.4		
	baz=313						
H11N3	WAKE ISLAND Hy 27.92 119		T	T	08 57 52.0		
	baz=313						
SONM	Songino Array	28.11	306	P	P	08 28 53.2	+0.5
	1.9nm,0.7s,baz=92,slow=11,SNR=4.0						
SONM				LR	LR	08 40 17.6	
	comp=Z,66nm,19.5s,baz=256,slow=37						
H11S1	WAKE ISLAND Hy 28.58 121		T	T	08 58 45.1		
	baz=314,slow=76,SNR=17						
H11S3	WAKE ISLAND Hy 28.58 121		T	T	08 58 44.5		
	baz=314,slow=76,SNR=15						
H11S2	WAKE ISLAND Hy 28.60 121		T	T	08 58 46.2		
	baz=314,slow=76,SNR=10						
CMAR	Chiang Mai Arr	40.98	256	LR	LR	08 47 07.6	
	comp=Z,33nm,19.6s,baz=276,slow=35						
MKAR	Makanchi Array	44.41	303	P	P	08 31 12.8	+1.5
	0.5nm,0.6s,baz=84,slow=9.9,SNR=4.1						
KURBB	Kurchatov Arra	46.39	309	P	P	08 31 27.9	+1.0
	0.9nm,0.5s,baz=83,slow=7.5,SNR=5.0						
WRA	Warramunga Arr	56.05	188	P	P	08 32 42.7	+3.1
	0.6nm,0.7s,baz=6.1,slow=7.7,SNR=2.8						
DZM	Mont Dzumac	62.60	153	LR	LR	09 00 25.9	
	comp=Z,210nm,18.9s,baz=213,slow=36						
YKA	Yellowknife Ar	64.79	30	P	P	08 33 38.5	-0.4
	0.1nm,0.7s,baz=304,slow=7.4,SNR=2.7						

IDC 17 08:23:13.3±2.9, 6°.26S×129°.98E, h116km±39km, mb3.2/1, mb1 3.5/5, mb1mx3.2/53, mbtmp3.9/5, Error ellipse: s-maj=73.5km s-min=21.3km az=89.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SIJI	Sorong	5.51	14	P	Pn	08 24 33.3	+0.2
	12nm,0.3s,baz=181,slow=23,SNR=2.5						
SIJI				S	Sn	08 25 29.3	-6.1
	22nm,0.3s,baz=271,slow=23,SNR=8.0						
FITZ	Fitzroy Crossi	12.51	199	P	Pn	08 26 07.5	+0.2
	0.6nm,0.3s,baz=24,slow=12,SNR=20						
FITZ				S	Sn	08 28 17.6	-7.4
	1.2nm,0.3s,baz=72,slow=18,SNR=6.8						
WRA	Warramunga Arr	14.24	163	P	Pn	08 26 28.1	-1.7
	0.5nm,0.3s,baz=346,slow=13,SNR=28						
WRA				S	Sn	08 28 54.6	-12
	0.8nm,0.3s,baz=337,slow=23,SNR=8.6						
ASAR	Alice Springs	17.71	168	P	Pn	08 27 13.1	+0.4
	0.2nm,0.3s,baz=342,slow=8.5,SNR=11						
ASAR				S	S	08 30 20.9	-9.3
	0.2nm,0.3s,baz=1.6,slow=27,SNR=6.2						
MKAR	Makanchi Array	67.60	327	P	P	08 33 57.5	-0.1
	0.2nm,0.3s,baz=107,slow=6.1,SNR=4.7						

IDC 17 08:27:51.6±1.5, 35°.21N×142°.39E, h0km, mb3.6/3, mb1 3.7/5, mb1mx3.4/71, mbtmp3.5/5, ML2.9/2, Error ellipse: s-maj=36.7km s-min=24.4km az=121.0
JMA 17 08:27:53.6±0.4, 35°.41N×142°.43E, h43km, M3.0
ISCJB 17 08:27:54.6±0.9, 35°.37N±0°.04×142°.34E±0°.09, h35km, mb3.7/3, Error ellipse: s-maj=10.3km s-min=5.2km az=14.5
ISC 17 08:27:56.2±1.2, 35°.37N±0°.05×142°.34E±0°.09, h35km, n16, σ0°.94/22, mb3.8/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	1.25	286	P	Pn	08 28 16.7	-0.5
BSO1	Boso 1	1.33	238	P	Pn	08 28 16.9	-0.8
BSO1				eS	Sn	08 28 35.0	+1.1
BSO3	Boso 3	1.60	250	P	Pn	08 28 22.0	+0.2
JAG	Ashikaga	2.57	295	P	Pn	08 28 35.0	-0.4
JOD2	Odawara 2	2.66	269	P	Pn	08 28 36.1	-0.5
JOD2				eS	Sn	08 29 06.5	-1.2
JFT	Otama	2.69	324	P	Pn	08 28 36.7	-0.3
JFT				S	Sn	08 29 07.4	-0.9
JMM	Marumori	2.79	334	P	Pn	08 28 37.8	-0.5
JMM				S	Sn	08 29 09.1	-1.6
JRY	Ryogami san	2.87	284	P	Pn	08 28 40.4	+0.9
JHJ2	Mitsune	3.07	224	P	Pn	08 28 41.3	-0.9
JHJ2				eS	Sn	08 29 17.0	-0.7
JHJ	Hachijo jima 2	3.08	224	Pn	Pn	08 28 41.5	-0.9
	6.7nm,0.3s,baz=263,slow=22,SNR=7.4						
JHJ				Sn	Sn	08 29 17.4	-0.7
	23nm,0.3s,baz=68,slow=21,SNR=6.9						
JYN	Shimob	3.10	274	P	Pn	08 28 42.5	-0.2
MJAR	Matsushiro Arr	3.55	290	Pn	Pn	08 28 49.4	+0.5
	0.5nm,0.3s,baz=110,slow=7.1,SNR=2.6						
JMK	Ichinoseki	3.69	346	P	Pn	08 28 49.8	-0.9
KURBB	Kurchatov Arra	47.63	309	P	P	08 36 29.4	+0.8
	0.7nm,0.6s,baz=87,slow=8.1,SNR=3.6						
ILAR	Eielson Array	50.51	32	P	P	08 36 52.3	+1.8
	0.4nm,0.7s,baz=267,slow=7.2,SNR=5.2						
WRA	Warramunga Arr	55.53	189	P	P	08 37 27.0	-0.9
	0.8nm,0.9s,baz=7.0,slow=7.4,SNR=4.1						

ISN 17 08:33:36.0±0.9, 31°.42N×49°.93E, h0km±197km, ML3.3
IDC 17 08:33:38.7±3.0, 31°.60N×49°.18E, h0km, mb3.8/5, mb1 3.9/7, mb1mx3.5/61, mbtmp3.9/7, ML3.8/2, Error ellipse: s-maj=67.8km s-min=29.6km az=137.0
ISCJB 17 08:33:41.4±0.6, 31°.35N±0°.05×49°.59E±0°.04, h25km, mb3.9/5, Error ellipse: s-maj=7.8km s-min=4.8km az=2.5
CSEM 17 08:33:41.2±0.3, 31°.39N×49°.61E, h10km, ML3.3, Error ellipse: s-maj=7.3km s-min=4.8km az=18.0
TEH 17 08:33:42.5, 31°.44N×49°.67E, h13km, ML3.4
ISC 17 08:33:41.3±0.8, 31°.34N±0°.05×49°.59E±0°.04, h25km, n38, σ1°.57/44, mb3.9/5, Western Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHGR	Shooshtar-Gavs	1.02	319	ePg	Pn	08 34 00.0	0.0
SHGR				eSg	Sn	08 34 14.5	+1.0
IPIR	Pirpir	1.74	39	ePn	Pn	08 34 10.4	+0.2
IPIR				eAMB	AMB	08 34 37.9	
	comp=Z,4μm,0.2s						
IPIR	Pirpir	1.74	39	ePn	Pn	08 34 10.4	+0.2
IGAR	Gharneh	2.34	62	ePn	Pn	08 34 19.9	+

ISRV	Sarvestan	3.62	122	ePn	Pn	08 34 38.0	+1.9
IRAZ	Razeghan	4.06	4	ePn	Pn	08 34 42.9	+0.8
IRAZ				eAMB	AMB	08 35 47.4	
	comp=Z,744nm,0.4s						
IRAZ	Razeghan	4.06	4	ePn	Pn	08 34 42.9	+0.8
IVRN	Varamin	4.06	26	ePn	Pn	08 34 42.3	+0.3
IVRN				eAMB	AMB	08 34 59.0	
	comp=Z,452nm,0.3s						
IVRN	Varamin	4.06	26	ePn	Pn	08 34 42.3	+0.3
IDMV	Damavand	4.70	25	ePn	Pn	08 34 50.2	-0.7
IDMV				eAMB	AMB	08 36 34.1	
	comp=Z,370nm,0.4s						
IDMV	Damavand	4.70	25	ePn	Pn	08 34 50.2	-0.7
BHD	Baghdad	4.81	295	ePn	Pn	08 34 54.0	+1.9
	SNR=3.0						
BHD				i Sn	Sn	08 35 48.0	+0.9
	SNR=3.0						
GEYT	Alibeck	9.62	45	Pn	Pn	08 36 01.0	+2.8
	comp=Z,1.5nm,0.3s,baz=236,slow=11,SNR=9.1						
ASF	Jabal al Asfar	10.84	278	Lg	Lg	08 38 56.7	
	comp=Z,3.0nm,0.3s,baz=295,slow=12,SNR=11						
BRTR	Keskin Array B	15.43	307	Pn	P	08 37 21.6	-0.2
	comp=Z,0.1nm,0.3s,baz=132,slow=9.0,SNR=6.8						
AKTO	Aktyubinsk	20.09	16	Pn	P	08 38 14.2	+1.3
	comp=Z,0.2nm,0.3s,baz=194,slow=12,SNR=3.7						
FINES	FINESS Array B	33.81	340	P	P	08 40 19.2	-1.9
	comp=Z,1.0nm,0.5s,baz=134,slow=9.2,SNR=6.5						
HFS	Hagfors	37.34	331	P	P	08 40 49.7	-1.8
	comp=Z,0.8nm,0.4s,baz=90,slow=10,SNR=3.7						
TORD	Torodi Ar. Bea	47.48	259	P	P	08 42 13.8	-0.7
	comp=Z,1.3nm,1.0s,baz=50,slow=6.5,SNR=6.3						
SPITS	Spitsbergen Ar	49.15	351	P	P	08 42 25.0	-1.6
	comp=Z,3.1nm,0.8s,baz=150,slow=9.9,SNR=7.3						
YKA	Yellowknife Ar	85.63	353	P	P	08 46 15.8	-1.6
	comp=Z,0.1nm,0.7s,baz=11,slow=6.2,SNR=3.2						

NIED ***17*** *08:49:00,39.9°N×142.3°E,h44km,Mw3.9 Best double couple: M₀7.86000×10¹⁴ NP1:φs195.00000°,δ23.00000°, λ83.00000°. NP2:φs22.00000°,δ68.00000°,λ93.00000°.*
ISCJB ***17*** *08:49:15.9±0.8,39.93N±0.03×142.3E±0.1,h53km±6km, mb3.7/10,MS3.1/3,Error ellipse: s-maj=13.6km s-min=5.8km az=176.0*
JMA ***17*** *08:49:16.3±0.1,39.94N×142.32E,h42km±1km,M3.5*
IDC ***17*** *08:49:19.4±2.6,39.91N×142.32E,h72km±23km,mb3.4/10, mb1 3.5/13,mb1mx3.3/59,mbtmp3.7/13,MS2.8/9, Ms1 2.8/9,ms1mx2.6/45,Error ellipse: s-maj=26.3km s-min=17.5km az=92.0*

ISC 17 08:49:17.2±1.1,39.90N±0.04×142.21E±0.08,h45km±8km, n38,σ1§60/35,mb3.9/10,MS3.2/3,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	Tanohata	0.27	279	P	Pn	08 49 25.4	-0.2
JTH				S	Sn	08 49 31.5	0.0
MIYJ	Miyakonagasawa	0.44	223	P	Pn	08 49 27.3	-0.1
MIYJ				i S	Sn	08 49 34.9	+0.3
JKZ	Kuzumaki	0.68	278	P	Pn	08 49 30.9	+0.4
JKZ				S	Sn	08 49 41.2	+1.1
JANG	Nango	0.71	312	P	Pn	08 49 30.1	-0.8
JANG				S	Sn	08 49 40.0	-0.8
JOM	Ohasama	0.82	239	P	Pn	08 49 32.8	+0.4
JOM				eS	Sn	08 49 44.3	+0.9
OFUJ	Ofunato	0.91	207	P	Pn	08 49 33.8	+0.2
JMK	Ichinoseki	1.21	219	P	Pn	08 49 38.3	+0.6
JAH	Hinai	1.24	284	P	Pn	08 49 38.7	+0.7
JTM	Tenmabayashi	1.24	316	P	Pn	08 49 38.2	+0.1
JTM				eS	Sn	08 49 53.5	-0.2
JRG	Rokugo	1.31	248	P	Pn	08 49 40.5	+1.5
JIO	Ouri	1.59	205	P	Pn	08 49 44.0	+1.2
JIO				S	Sn	08 50 03.1	+1.1
JOT	Ohata	1.73	330	P	Pn	08 49 44.7	0.0
JOT				S	Sn	08 50 06.1	+0.6
ASAJ	Asahikawa	4.23	4	P	Pn	08 50 20.1	+1.1
	0.6nm,0.3s,baz=232,slow=19,SNR=2.1						
ASAJ				S	Sn	08 51 12.3	+5.3
	1.0nm,0.3s,baz=252,slow=19,SNR=3.5						
ASAJ				LR	LR	08 52 20.5	
	comp=Z,94nm,20.5s,baz=132,slow=43						
MAT	Matsushiro	4.59	225	P	Pn	08 50 27.6	+3.5
MJAR	Matsushiro Arr	4.59	224	P	Pn	08 50 27.4	+3.3
	1.3nm,0.3s,baz=33,slow=13,SNR=26						
MJAR				LR	LR	08 52 31.4	
	comp=Z,67nm,21.0s,baz=30,slow=41						
USRK	Ussuriysk Ar.	8.73	303	P	Pn	08 51 24.6	+3.8
	0.2nm,0.3s,baz=106,slow=15,SNR=7.4						
USRK				LR	LR	08 55 12.6	
	comp=Z,32nm,19.7s,baz=154,slow=40						
JNU	Nakatsue	11.34	237	LR	LR	08 56 58.2	
	comp=Z,37nm,18.5s,baz=299,slow=40						
KSRS	Korea Array	11.43	262	P	Pn	08 52 05.0	+7.3
	0.2nm,0.3s,baz=74,slow=13,SNR=2.7						
KSRS				LR	LR	08 56 11.4	
	comp=Z,32nm,18.2s,baz=120,slow=36						
KLR	Kul'dur	11.93	325	LR	LR	08 56 44.1	
	comp=Z,43nm,20.2s,baz=128,slow=37						
SONM	Songino Array	26.82	299	LR	LR	09 06 12.5	
	comp=Z,60nm,18.1s,baz=277,slow=38						
TLY	Talaya	29.02	307	LR	LR	09 08 23.3	
	comp=Z,24nm,18.5s,baz=60,slow=39						
H11N2	WAKE ISLAND Hy 29.21	126		T	T	09 25 54.7	
	baz=318,slow=75,SNR=90						
H11N1	WAKE ISLAND Hy 29.22	126		T	T	09 25 57.0	
	baz=318,slow=75,SNR=104						
H11N3	WAKE ISLAND Hy 29.23	126		T	T	09 25 53.0	
	baz=318,slow=75,SNR=81						
H11S1	WAKE ISLAND Hy 30.01	128		T	T	09 26 55.7	
	baz=320,slow=76,SNR=23						
H11S3	WAKE ISLAND Hy 30.02	128		T	T	09 26 57.4	
	baz=320,slow=76,SNR=12						
H11S2	WAKE ISLAND Hy 30.03	128		T	T	09 26 56.2	
	baz=320,slow=76,SNR=12						
ZALV	Zalesovo Beam	40.50	310	P	P	08 56 51.1	-0.2
	0.6nm,0.4s,baz=110,slow=6.7,SNR=2.8						
MKAR	Makanchi Array	43.19	300	P	P	08 57 13.2	-0.2
	0.6nm,0.6s,baz=83,slow=8.7,SNR=3.6						
KURBB	Kurchatov Arra	44.78	306	P	P	08 57 25.8	-0.3
	1.9nm,0.7s,baz=80,slow=8.4,SNR=6.2						
ILAR	Eielson Array	46.76	34	P	P	08 57 40.8	-0.7
	0.4nm,0.7s,baz=277,slow=7.2,SNR=3.6						
AKTO	Aktyubinsk	57.25	311	P	P	08 58 60.0	+0.2
	0.7nm,0.6s,baz=70,slow=11,SNR=4.2						
WRA	Warramunga Arr	59.98	189	P	P	08 59 18.2	-0.8
	1.1nm,0.8s,baz=4.9,slow=6.9,SNR=6.4						
YKA	Yellowknife Ar	61.03	31	P	P	08 59 24.8	-0.9
	0.1nm,0.6s,baz=301,slow=5.9,SNR=2.9						
ASAR	Alice Springs	63.70	188	P	P	08 59 43.7	-0.3
	1.2nm,1.1s,baz=13,slow=8.7,SNR=4.5						
FINES	FINESS Array B	66.58	332	P	P	09 00 01.4	-0.7
	1.3nm,0.7s,baz=44,slow=10,SNR=3.2						
KVAR	Kislovodsk Arr	69.51	311	LR	LR	09 36 04.7	
	comp=Z,16nm,19.8s,slow=40						
AKASG	Malin Array Be	72.42	322	P	P	09 00 37.6	-0.8
	0.8nm,0.5s,baz=48,slow=5.7,SNR=4.5						

IDC 17 08:49:34.2±2.1,9.62S×124.38E,h0km,mb3.7/1, mb1 3.7/3,mb1mx3.4/45,mbtmp3.5/3,ML3.3/2,MS4.4/1, Ms1 4.4/1,ms1mx2.7/39,Error ellipse: s-maj=222.8km s-min=33.2km az=55.0,Timor region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	14.06	138	Pn	Pn	08 52 54.9	0.0
	0.2nm,0.3s,baz=319,slow=14,SNR=8.3						
WRA				Sn	Sn	08 55 21.4	-10
	0.2nm,0.3s,baz=310,slow=25,SNR=5.2						
ASAR	Alice Springs	16.67	148	Pn	Pn	08 53 29.4	0.0
	0.1nm,0.3s,baz=318,slow=11,SNR=6.6						
ASAR				Sn	Sn	08 56 26.1	-9.2
	0.1nm,0.3s,baz=320,slow=23,SNR=5.1						
KSRS	Korea Array	46.95	4	LR	LR	09 20 35.0	
	comp=Z,397nm,19.6s,baz=343,slow=40						
MKAR	Makanchi Array	67.53	330	P	P	09 00 32.4	0.0
	0.5nm,0.6s,baz=134,slow=6.7,SNR=4.7						

IDC ***17*** *08:50:42.4±2.3,53.47N×87.72E,h0km,mb1 3.4/3, mb1mx3.1/59,mbtmp3.4/3,ML3.2/3,Error ellipse: s-maj=20.9km s-min=12.8km az=63.0*
NNC ***17*** *08:50:46.5±1.3,53.41N×87.14E,h0km,mb3.8,mpv3.4, Error ellipse: s-maj=10.2km s-min=8.2km az=16.0*

ISC 17 08:50:46.5±3.6,53.6N±0.1×87.6E±0.2,h35km,n8, σ0§66/13,6C-2D,Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	ZALESOVO INFRA	1.68	284	i		09 02 20.0	
	baz=101,slow=331,SNR=7.7						
ZALV	Zalesovo Beam	1.68	284	Pn	Pn	08 51 12.7	-0.8
	8.7nm,0.3s,baz=102,slow=14,SNR=44						
ZALV				Lg	Lg	08 51 37.5	
	9.0nm,0.3s,baz=103,slow=26,SNR=20						
KURK	Kurchatov	6.21	246	⇑Pn	Pn	08 52 14.9	-0.7
	2.9nm,0.5s						
KURK				⇓Sn	Sn	08 53 24.5	-0.8
	3.8nm,0.9s						
KURK				⇑Lg	Lg	08 53 54.1	
	17nm,0.7s						
KURBB	Kurchatov Arra	6.31	246	Pn	Pn	08 52 17.2	+0.3
	0.3nm,0.3s,baz=61,slow=14,SNR=13						
KURBB				Sn	Sn	08 53 27.9	+0.2
	0.0nm,0.3s,baz=62,slow=26,SNR=2.9						
KURBB				Lg	Lg	08 54 03.9	
	0.1nm,0.3s,baz=63,slow=33,SNR=8.8						
KURBB	Kurchatov Arra	6.31	246	⇑Pn	Pn	08 52 16.5	-0.5
	2.9nm,0.4s						
KURBB				⇑Sn	Sn	08 53 27.0	-0.7
	4.5nm,0.6s						
KURBB				⇑Lg	Lg	08 53 58.1	
	13nm,0.6s						
MK31	Makanchi Array	7.58	209	Pn	Pn	08 52 34.8	+0.3
	0.3nm,0.3s,baz=27,slow=11,SNR=11						
MK31				⇑Sn	Sn	08 53 59.5	+0.4
	0.5nm,0.5s						
MK31				⇓Lg	Lg	08 54 38.2	
	1.7nm,0.6s,baz=32,slow=29,SNR=6.3						
MKAR	Makanchi Array	7.58	209	Pn	Pn	08 52 34.5	0.0
	0.5nm,0.3s,baz=32,slow=14,SNR=15						
MKAR				Sn	Sn	08 53 59.2	+0.1
	0.2nm,0.3s,baz=31,slow=24,SNR=6.2						
MKAR				Lg	Lg	08 54 40.9	
	0.2nm,0.3s,baz=26,slow=30,SNR=6.7						
BVAR	Borovoye Array	10.31	274	Pn	Pn	08 53 12.7	+1.0
	0.3nm,0.3s,baz=80,slow=14,SNR=3.0						
BVAR				Sn	Sn	08 55 06.8	+0.8
	0.3nm,0.3s,baz=78,slow=22,SNR=4.6						

NIED ***17*** *08:58:00,37.90N×144.30E,h11km,Mw3.5 Best double couple: M₀2.32000×10¹⁴ NP1:φs6.00000°,δ25.00000°, λ-87.00000°. NP2:φs182.00000°,δ65.00000°, λ-91.00000°.*
IDC ***17*** *08:58:39.6±2.4,37.32N×144.96E,h0km,mb3.3/2, mb1 3.8/4,mb1mx3.5/48,mbtmp3.7/4,ML3.7/2,MS2.5/2, Ms1 2.5/2,ms1mx2.2/33,Error ellipse: s-maj=98.5km s-min=26.4km az=143.0*
ISCJB ***17*** *08:58:45.1±0.8,37.94N±0.04×144.40E±0.06,h33km, mb3.3/2,Error ellipse: s-maj=6.8km s-min=6.0km az=37.1*
JMA ***17*** *08:58:45.5±0.2,37.88N×144.35E,h41km,M3.6*

ISC 17 08:58:45.5±1.3,37.83N±0.06×144.44E±0.08,h35km,n23, σ1§72/37,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	2.50	301	P	Pn	08 59 23.9	+0.2
OFUJ				eS	Sn	08 59 52.2	-0.8
JIO	Ouri	2.51	285	P	Pn	08 59 24.1	+0.3
JIO				eS	Sn	08 59 52.2	-1.0
JMK	Ichinoseki	2.76	295	P	Pn	08 59 27.9	+0.6
JMK				S	Sn	08 59 59.6	+0.2
JFK	Kawauchi	2.87	262	P	Pn	08 59 28.3	-0.4
JFK				eS	Sn	09 00 01.4	-0.6
JMM	Marumori	2.88	272	P	Pn	08 59 29.4	+0.5
JMM				S	Sn	09 00 01.8	-0.6
JTH	Tanohata	2.91	317	P	Pn	08 59 29.5	+0.2
JTH				S	Sn	09 00 02.3	-0.7
JOM	Ohasama	2.96	305	P	Pn	08 59 30.4	+0.5
JOM				eS	Sn	09 00 03.9	-0.3
JOU	Okura	3.02	281	P	Pn	08 59 31.9	+1.0
JFT	Otama	3.27	266	P	Pn	08 59 35.7	+1.5
JRG	Rokugo	3.36	299	P	Pn	08 59 36.6	+1.1
JRG				S	Sn	09 00 15.2	+1.0
JYK	Kaneyama	3.38	290	P	Pn	08 59 36.9	+1.1
JYK				eS	Sn	09 00 14.7	0.0
JANG	Nango	3.41	319	P	Pn	08 59 36.4	+0.3
JANG				eS	Sn	09 00 13.9	-1.4
JTM	Tenmabayashi	3.94	320	eS	Sn	09 00 26.7	-1.7
JNBK	Urakawa-nobuka	4.63	344	P	Pn	08 59 53.4	+0.5
JNBK				S	Sn	09 00 44.1	-1.2
JRY	Ryogami san	4.79	249	P	Pn	08 59 55.5	+0.3
JRY				eS	Sn	09 00 48.0	-1.4
JKB	Kayabe	4.82	328	P	Pn	08 59 56.1	+0.5
JKB				S	Sn	09 00 48.0	-2.2
JCH	Churui	4.85	351	P	Pn	08 59 55.1	-0.8
JCH				eS	Sn	09 00 46.2	-4.6
MJAR	Matsushiro Arr	5.14	257	Pn	Pn	09 00 01.6	+1.7
	3.0nm,0.3s,baz=81,slow=14,SNR=44						
MJAR				LR	LR	09 02 21.6	
	comp=Z,39nm,18.3s,baz=90,slow=41						
MAT	Matsushiro	5.14	257	P	Pn	09 00 01.9	+2.0
MAT				eS	Sn	09 00 51.9	-6.1
JHJ	Hachijo jima 2	6.04	220	Pn	Pn	09 00 09.4	-3.0
	4.3nm,0.3s,baz=90,slow=20,SNR=3.1						
KSRS	Korea Array	13.10	273	LR	LR	09 06 37.9	
	comp=Z,24nm,21.3s,baz=230,slow=35						
ILAR	Eielson Array	47.53	33	P	P	09 07 18.3	+1.4
	0.2nm,0.6s,baz=252,slow=6.0,SNR=5.1						
YKA	Yellowknife Ar	61.90	31	P	P	09 09 01.4	+0.4
	0.2nm,0.7s,baz=291,slow=7.7,SNR=4.1						

DDA ***17*** *08:59:07.2,39.97N×31.47E,h11km,Ml2.9*
CSEM ***17*** *08:59:08.0±0.2,40.00N×31.46E,h2km,ML2.9,Error ellipse: s-maj=5.1km s-min=3.7km az=58.0*
ISK ***17*** *08:59:08.0,40.04N×31.47E,h4km,ML2.6*

ISC 17 08:59:07.8±0.9,39.98N±0.02×31.43E±0.03,h6km±8km, n63,σ0§72/75,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AUMIH	MIHALICIK	0.12	158	P	Pg	08 59 10.2	-0.2
AUMIH				S	Sg	08 59 12.4	+0.3
AUMIH	MIHALICIK	0.12	158	i P	Pg	08 59 10.2	-0.2
AUMIH				i S	Sg	08 59 12.4	+0.3
MDUB	Mudurnu	0.52	341	ePG	Pg	08 59 17.9	0.0
MDUB				eSG	Sg	08 59 25.3	+0.5
MDUB	Mudurnu	0.52	341	ePg	Pg	08 59 17.9	0.0
MDUB				eSg	Sg	08 59 25.3	+0.5
AUSIV	SIVRIHISAR	0.55	171	P	Pg	08 59 18.0	-0.3
AUSIV	SIVRIHISAR	0.55	171	i P	Pg	08 59 17.9	-0.3
ESKT	Eskisehir	0.64	224	i P	Pg	08 59 19.7	-0.4
SEYT	Eskypehyr	0.64	224	P	Pg	08 59 19.7	-0.4
BTAS	Taskesti	0.68	331	P	Pg	08 59 20.9	+0.1
BTAS				S	Sb	08 59 30.9	-0.8
BTAS	Taskesti	0.68	331	i P	Pg	08 59 20.9	+0.1
BTAS				i S	Sb	08 59 30.9	-0.8
BORA	Eskisehir	0.75	263	P	Pg	08 59 21.3	-1.0
BORA	Eskisehir	0.75	263	i P	Pg	08 59 21.3	-1.0
GULT	Gulveren	0.83	303	ePG	Pb	08 59 24.7	0.0
GULT				eSG	Sb	08 59 36.8	+0.6
GULT	Gulveren	0.83	303	ePg	Pb	08 59 24.7	0.0
GULT				eSg	Sb	08 59 36.8	+0.6
GPA	Golpazari	0.91	290	ePG	Pb	08 59 26.1	+0.1
GPA	Golpazari	0.91	290	ePg	Pb	08 59 26.2	+0.1
BCAM	Yenicaga	0.97	30	P	Pg	08 59 25.5	-1.0
BCAM	Yenicaga	0.97	30	i P	Pg	08 59 25.5	-1.0
SAHE	Sakarya_HENDEK	0.98	334	P	Pg	08 59 26.5	-0.1
SAHE				S	Sb	08 59 40.6	+0.3
SAHE	Sakarya_HENDEK	0.98	334	i P	Pg	08 59 26.5	-0.1
SAHE				i S	Sb	08 59 40.6	+0.3
SPNC	Sapanca-Adapaz	1.11	310	ePN	Pb	08 59 29.6	+0.2
SPNC				eSN	Sn	08 59 45.0	-0.5
SPNC	Sapanca-Adapaz	1.11	310	ePn	Pb	08 59 29.6	+0.2
SPNC				eSn	Sn	08 59 45.0	-0.5
KIZT	Kizilcal	1.15	162	ePN	Pn	08 59 31.4	+0.8
KIZT	Kizilcal	1.15	162	ePn	Pn	08 59 31.4	+0.8
CAVI	Cavuskoy	1.23	281	ePN	Pn	08 59 32.0	+0.4
CAVI	Cavuskoy	1.23	281	ePn	Pn	08 59 32.0	+0.4
KDZE	Karadeniz Ereo	1.33	1	ePN	Pn	08 59 32.8	-0.2
KDZE	Karadeniz Ereo	1.33	1	ePn	Pn	08 59 32.8	-0.2
ADVT	Abdulvahap	1.37	290	ePN	Pg	08 59 35.2	+1.1
ADVT	Abdulvahap	1.37	290	ePn	Pg	08 59 35.2	+1.1
AFSR	Af´ar-Bala (A	1.38	112	ePN	Pg	08 59 34.6	+0.4
AFSR	Af´ar-Bala (A	1.38	112	ePn	Pg	08 59 34.6	+0.4
KKUL	Konya-Kulu	1.41	124	P	Pg	08 59 35.5	+0.7
KKUL	Konya-Kulu	1.41	124	i P	Pg	08 59 35.5	+0.7
KAND	Kocaeli-Kandir	1.46	320	P	Pg	08 59 35.8	0.0
KAND	Kocaeli-Kandir	1.46	320	i P	Pg	08 59 35.8	0.0
IZI	Iznik	1.54	284	ePN	Pg	08 59 37.2	-0.1
IZI	Iznik	1.54	284	ePn	Pg	08 59 37.2	-0.1
KDHN	Kadinhani	1.55	160	P	Pn	08 59 36.1	0.0
KDHN	Kadinhani	1.55	160	i P	Pn	08 59 36.1	0.0
SAFT	Safranbolu	1.58	37	ePN	Pn	08 59 36.2	-0.2
SAFT	Safranbolu	1.58	37	ePn	Pn	08 59 36.2	-0.2
TVSB	Tavsanli	1.60	251	ePN	Pg	08 59 38.2	-0.4
TVSB	Tavsanli	1.60	251	ePn	Pg	08 59 38.2	-0.4
GDZ	Gediz	1.75	240	P	Pb	08 59 40.1	-0.2
GDZ	Gediz	1.75	240	i P	Pb	08 59 40.1	-0.2
SILT	Sile	1.79	311	ePN	Pn	08 59 40.2	+0.9
SILT	Sile	1.79	311	ePn	Pn	08 59 40.2	+0.9
LADK	Ladik-KONYA	1.92	157	ePN	Pb	08 59 43.3	0.0
LADK	Ladik-KONYA	1.92	157	ePn	Pb	08 59 43.3	0.0
ORLT	Orhaneli	1.94	273	ePN	Pb	08 59 43.6	-0.1
ORLT	Orhaneli	1.94	273	ePn	Pb	08 59 43.6	-0.1
BAGO	Egridir - ISPA	2.05	194	i P	Pb	08 59 44.6	-0.9
ARMT	Armutlu	2.05	287	ePN	Pb	08 59 44.5	-0.9
ARMT	Armutlu	2.05	287	ePn	Pb	08 59 44.5	-0.9
DURS	Dursunbey	2.31	262	P	Pn	08 59 46.5	+0.1
DURS	Dursunbey	2.31	262	i P	Pn	08 59 46.5	+0.1
KCTX	Karacabey (Bur	2.37	278	ePN	Pb	08 59 49.7	-1.2
KCTX	Karacabey (Bur	2.37	278	ePn	Pb	08 59 49.7	-1.2
KULA	Kula-Manisa	2.60	237	ePN	Pb	08 59 53.1	-1.7
KULA	Kula-Manisa	2.60	237	ePn	Pb	08 59 53.1	-1.7
BALB	Balikesir	2.75	264	ePN	Pn	08 59 54.7	+2.2
BALB	Balikesir	2.75	264	ePn	Pn	08 59 54.7	+2.2

ISCJB ***17*** *09:01:50.2±0.4,15.88S±0.06×173.97W±0.07,h115km, mb4.3/16,Error ellipse: s-maj=11.3km s-min=6.2km az=44.1*
IDC ***17*** *09:01:51.4±2.5,15.92S×173.99W,h110km±23km, mb3.8/11,mb1 4.1/12,mb1mx3.9/29,mbtmp4.2/12,MS2.1/1, Ms1 2.1/1,ms1mx2.0/34,Error ellipse: s-maj=27.9km s-min=13.7km az=131.0*
NEIC ***17*** *09:01:52.6±0.9,15.91S×173.93W,h125km±8km,mb4.6/4, Error ellipse: s-maj=15.5km s-min=7.2km az=140.0*

ISC 17 09:01:51.7±0.5,15.93S±0.08×173.89W±0.09,h115km, n34,σ0§85/36,mb4.5/16,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	Afiamalu	2.86	46	P	Pn	09 02 37.2	+1.0
	123nm,0.3s,baz=172,slow=1.6,SNR=162						
AFI				S	Sn	09 03 09.0	-1.3
	298nm,0.3s,baz=19,slow=24,SNR=10						
AFI				LR	LR	09 03 10.2	
	comp=Z,33nm,21.7s,baz=270,slow=27						
NIUE	Niue	4.91	130	P	Pn	09 03 04.5	+1.1
	baz=4.9,SNR=27						
MSVF	Nonsavu	7.92	256	ePn	Pn	09 03 45.9	+1.6
	26nm,1.0s						
RAO	Raoul Island	13.77	195	S	Sn	09 07 32.9	-1.0
	95nm,0.3s,baz=41,slow=20,SNR=3.8						
URZ	Urewera	23.62	198	P	P	09 06 50.8	-1.4
	7.2nm,0.4s,baz=22,slow=15,SNR=12						
CNB	Canberra Magne	38.06	233	P	P	09 08 58.3	-0.9
	baz=38						
CMSA	Cobar Meteorol	39.88	240	P	P	09 09 13.4	-1.0
	baz=40,SNR=7.2						
QLP	Quilpie	40.28	248	P	P	09 09 18.4	+0.6
	baz=40,SNR=4.0						
COEN	Coen	41.48	267	P	P	09 09 28.9	+1.1
	baz=41,SNR=4.7						
STKA	Stephens Creek	43.37	240	P	P	09 09 42.1	-0.7
	8.9nm,0.9s,baz=42,slow=8.1,SNR=12						
STKA	Stephens Creek	43.37	240	P	P	09 09 42.5	-0.4
	baz=43,SNR=9.0						
HTT	Hallett	45.87	239	P	P	09 10 02.2	-0.5
	baz=46,SNR=4.2						
BBOO	Buckleboo	48.14	240	P	P	09 10 19.5	-0.8
	baz=48,SNR=8.6						
BBOO	Buckleboo	48.14	240	eP	P	09 10 19.6	-0.7
	6.0nm,0.6s						
WRAB	Tennant Creek	49.26	257	eP	P	09 10 28.8	-0.3
	4.5nm,0.6s						
WRA	Warramunga Arr	49.27	257	P	P	09 10 28.6	-0.6
	5.4nm,0.8s,baz=92,slow=7.2,SNR=18						
WRA				PcP	PcP	09 11 51.3	+0.8
	0.8nm,0.7s,baz=89,slow=3.7,SNR=3.6						
ASAR	Alice Springs	49.50	252	P	P	09 10 29.6	-1.3
	19nm,0.6s,baz=84,slow=8.4,SNR=109						
WRKA	Warakurna	54.57	250	P	P	09 11 07.4	-1.1
	baz=54,SNR=11						
KNRA	Kununurra	55.02	262	P	P	09 11 11.7	-0.1
	baz=55						
MBWA	Marble Bar	62.76	254	eP	P	09 12 04.8	-0.5
	33nm,0.6s						
VNDA	Vanda	62.81	186	P	P	09 12 05.9	+1.3
	1.7nm,0.9s,baz=5.3,slow=7.3,SNR=7.4						
KLBR	Kellerberrin	63.58	242	P	P	09 12 09.6	-0.9
	baz=64,SNR=6.2						
QSPA	South Pole Qui	74.12	180	eP	P	09 13 16.1	+0.8
	10.0nm,0.7s						
HUMO	Hull Mountain	74.71	36	eP	P	09 13 18.4

CCHI	**Chillan**	**0.47**	**57**	*e*P		**Pn**	**09 24 51.4**	**-0.7**
CCHI				*e*S		**Sn**	**09 24 59.1**	**-1.1**
CCHI				IAML			09 25 00.8	
	comp=N,13μm,0.4s							
COCH	**Cobquecura**	**0.75**	**346**	*e*P		**Pn**	**09 24 55.7**	**+0.3**
COCH				*e*S		**Sn**	**09 25 06.8**	**+0.8**
COCH				IAML			09 25 09.5	
	comp=N,9μm,0.3s							
TALC	**Talca**	**1.64**	**28**	*e*P		**Pn**	**09 25 07.0**	**-0.2**
TALC				*e*S		**Sn**	**09 25 27.1**	**-0.2**
CHPI	**Pichilemu**	**2.51**	**11**	*e*P		**Pn**	**09 25 19.0**	**0.0**
CHPI				*e*S		**Sn**	**09 25 48.6**	**+0.2**
VLCH	**Valdivia**	**2.99**	**190**	*e*P		**Pn**	**09 25 25.8**	**+0.3**
VLCH				*e*S		**Sn**	**09 25 59.8**	**-0.4**
SJCH	**San Jose de Ma**	**3.69**	**30**	*e*P		**Pn**	**09 25 35.4**	**+0.1**
ROC1	**El Roble**	**4.08**	**19**	*e*P		**Pn**	**09 25 40.9**	**+0.1**
ROC1				*e*S		**Sn**	**09 26 26.7**	**-0.7**
ROCH	**El Roble**	**4.08**	**19**	*e*P		**Pn**	**09 25 41.1**	**+0.2**
ROCH				*e*S		**Sn**	**09 26 27.2**	**-0.3**
PLCA	**Paso Flores**	**4.17**	**158**	Pn		**Pn**	**09 25 42.8**	**+0.9**
	comp=N,1.5nm,0.3s,baz=355,slow=13,SNR=49							
PLCA				Lg		Lg	09 26 42.0	
	comp=N,2.0nm,0.3s,baz=294,slow=20,SNR=3.2							
PLCA	**Paso Flores**	**4.17**	**158**	*e*P		**Pn**	**09 25 41.8**	**-0.1**
PLCA				*e*S		**Sn**	**09 26 28.2**	**-1.2**
AAGR	**Agrelo**	**4.86**	**40**	*e*P		**Pn**	**09 25 55.5**	**+4.2**
ARCO	**CERRO ARCO**	**5.00**	**38**	*e*P		**Pn**	**09 25 54.6**	**+1.2**
ASAL	**Salagasta**	**5.25**	**37**	*e*P		**Pn**	**09 25 58.6**	**+1.9**
AUSP	**Uspallata**	**5.32**	**30**	*e*P		**Pn**	**09 25 58.6**	**+0.9**
RTLS	**Leoncito**	**5.73**	**29**	*e*P		**Pn**	**09 26 04.4**	**+1.0**
ACAN	**Cantantal**	**6.37**	**46**	*e*P		**Pn**	**09 26 15.5**	**+3.5**
AMOG	**MOGNA**	**6.81**	**31**	*e*P		**Pn**	**09 26 17.0**	**-1.0**
MRA	**San Martin**	**7.17**	**54**	*e*P		**Pn**	**09 26 24.8**	**+1.7**
AVFE	**Valle Fertil**	**7.50**	**36**	IAML			09 27 57.5	
	comp=Z,40nm,0.9s							
AGUA	**GUANDACOL**	**8.11**	**26**	*e*P		**Pn**	**09 26 36.2**	**+0.3**
LPAZ	**La Paz**	**20.87**	**12**	P		Pn	09 29 24.1	+2.4
	comp=Z,0.9nm,0.8s,baz=184,slow=5.9,SNR=5.0							
SIV	**San Ignacio**	**23.16**	**29**	LR		LR	09 38 55.9	
	comp=Z,80nm,21.0s,baz=147,slow=38							
TXAR	**Lajitas Array**	**72.03**	**332**	P		P	09 36 15.4	+17
	comp=Z,0.2nm,0.5s,baz=158,slow=10,SNR=5.1							
TORD	**Torodi Ar. Bea**	**85.59**	**70**	P		**P**	**09 37 11.8**	**-1.4**
	comp=Z,0.4nm,0.8s,baz=225,slow=3.9,SNR=2.8							
NVAR	**Mina Array Bea**	**85.99**	**326**	P		P	09 37 31.5	+17
	comp=Z,0.2nm,0.5s,baz=153,slow=5.9,SNR=4.2							

IDC 17 09:25:14.7±9.4, 19°.94N×144°.22E, h415km±106km, mb2.9/6, mb1 3.0/6, mb1mx2.7/55, mbtmp3.6/6, Error ellipse: s-maj=53.1km s-min=23.4km az=76.0, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSRS	**Korea Array**	**22.50**	**324**	P	P	09 29 40.8	+0.1
	0.8nm,0.5s,baz=151,slow=9.9,SNR=3.8						
WRA	**Warramunga Arr**	**40.80**	**194**	P	P	09 32 18.1	-0.1
	0.4nm,0.9s,baz=12,slow=8.5,SNR=3.9						
MKAR	**Makanchi Array**	**56.60**	**313**	P	P	09 34 16.8	+0.5
	0.3nm,0.4s,baz=90,slow=8.6,SNR=3.0						
KURBB	**Kurchatov Arra**	**59.46**	**318**	P	P	09 34 35.2	-0.6
	0.9nm,0.5s,baz=94,slow=7.3,SNR=9.3						
BVAR	**Borovoye Array**	**64.63**	**320**	P	P	09 35 10.2	+0.5
	1.4nm,0.4s,baz=89,slow=7.0,SNR=5.5						
YKA	**Yellowknife Ar**	**77.55**	**28**	P	P	09 36 25.8	-0.1
	0.1nm,0.6s,baz=286,slow=5.1,SNR=3.1						

DDA 17 09:28:44.6, 37°.19N×28°.19E, h7km, Md2.6
ISCJB 17 09:28:45.1±0.7, 37°.18N±0°.04×28°.22E±0°.06, h15km±7km, Error ellipse: s-maj=8.0km s-min=6.7km az=149.8
CSEM 17 09:28:45.3±0.5, 37°.16N×28°.22E, h5km, MD2.4, Error ellipse: s-maj=8.9km s-min=7.9km az=121.0
ISK 17 09:28:45.1, 37°.15N×28°.19E, h4km, MD2.4
ISC 17 09:28:44.7±1.0, 37°.18N±0°.05×28°.21E±0°.04, h12km±7km, n11, σ0°.40/20, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.08**	**128**	*e*PG	**Pg**	**09 28 47.2**	**-0.1**
YER	**Yerkesik**	**0.08**	**128**	*e*Pg	**Pg**	**09 28 47.2**	**-0.1**
TURN	**Turunc**	**0.44**	**134**	*i* P	**Pg**	**09 28 52.9**	**-0.5**
TURN				*i* S	**Sb**	**09 29 02.0**	**+0.9**
AYDN	**Tasoluk**	**0.55**	**331**	P	**Pg**	**09 28 55.4**	**0.0**
AYDN				S	**Sg**	**09 29 02.7**	**0.0**
AYDN	**Tasoluk**	**0.55**	**331**	*i* P	**Pg**	**09 28 55.4**	**0.0**
AYDN				*i* S	**Sg**	**09 29 02.7**	**0.0**
BDRM	**Kayabasi**	**0.62**	**259**	P	**Pg**	**09 28 56.5**	**-0.4**
BDRM				S	**Sb**	**09 29 06.6**	**+0.3**
BDRM	**Kayabasi**	**0.62**	**259**	*i* P	**Pg**	**09 28 56.5**	**-0.4**
BDRM				*i* S	**Sb**	**09 29 06.6**	**+0.3**
BODT	**Bodrum**	**0.73**	**261**	*e*PG	**Pb**	**09 28 59.7**	**+0.3**
BODT				*e*SG	**Sb**	**09 29 09.8**	**+0.4**
BODT	**Bodrum**	**0.73**	**261**	*e*Pg	**Pb**	**09 28 59.7**	**+0.3**
BODT				*e*Sg	**Sb**	**09 29 09.8**	**+0.4**
AYDB	**Zeytinkoy-Aydi**	**0.80**	**342**	*e*PG	**Pn**	**09 29 01.7**	**-0.4**
AYDB				*e*SG	**Sn**	**09 29 13.8**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**0.80**	**342**	*e*Pg	**Pn**	**09 29 01.7**	**-0.4**
AYDB				*e*Sg	**Sn**	**09 29 13.8**	**-0.3**

NIED 17 09:40:00, 39°.10N×143°.20E, h5km, Mw3.4 Best double couple: M0 1.51000×10^14 NP1:φs 194.00000°, δ78.00000°, λ-9.00000°. NP2:φs 286.00000°, δ81.00000°, λ-168.00000°.
JMA 17 09:40:06.2±0.2, 39°.05N×143°.25E, h7km±2km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**1.23**	**296**	P	Pb	09 40 29.0	-0.7
MIYJ				S	Sg	09 40 44.6	-1.1
OFUJ	**Ofunato**	**1.23**	**272**	P	Pb	09 40 29.2	-0.6
OFUJ				*e*S	Sg	09 40 45.8	0.0
JOM	**Ohasama**	**1.58**	**286**	P	Pn	09 40 34.5	-0.1
JOM				S	Sb	09 40 55.7	-0.1
JMK	**Ichinoseki**	**1.58**	**267**	P	Pn	09 40 34.9	+0.2
JMK				*e*S	Sn	09 40 55.3	-0.1
JIO	**Ouri**	**1.60**	**249**	P	Pn	09 40 34.7	-0.2
JKZ	**Kuzumaki**	**1.75**	**303**	P	Pn	09 40 37.2	+0.1
JKZ				S	Sn	09 41 00.2	+0.5
JANG	**Nango**	**1.88**	**315**	P	Pn	09 40 38.8	0.0
JANG				*e*S	Sn	09 41 03.2	+0.4
JRG	**Rokugo**	**2.06**	**280**	P	Pb	09 40 43.3	-0.6
JOU	**Okura**	**2.13**	**252**	P	Pb	09 40 44.0	-1.2
JMM	**Marumori**	**2.26**	**239**	P	Pn	09 40 44.7	+0.7
MAT	**Matsushiro**	**4.71**	**239**	P	Pn	09 41 20.7	+3.0

IDC 17 09:40:15.2±2.1, 6°.03S×147°.86E, h0km, mb4.1/4, mb1 4.2/6, mb1mx3.8/43, mbtmp4.1/6, ML4.1/1, MS2.2/1, Ms1 2.2/1, ms1mx1.9/32, Error ellipse: s-maj=60.2km s-min=24.4km az=96.0
NEIC 17 09:40:20.0±1.1, 6°.06S×147°.91E, h35km, mb4.5/3, Error ellipse: s-maj=25.2km s-min=14.9km az=89.0
ISC 17 09:40:22.7±1.6, 6°.1S±0°.1×147°.9E±0°.3, h60km, n12, σ1°.62/14, mb4.2/6, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**3.33**	**193**	Pn	**Pn**	**09 41 11.4**	**-1.0**
	26nm,0.3s,baz=12,slow=9.3,SNR=30						
PMG				Sn	**Sn**	**09 41 48.4**	**-2.3**
	13nm,0.3s,baz=36,slow=23,SNR=6.3						
PMG				LR	LR	09 42 12.7	
	comp=Z,36nm,18.5s,baz=8.0,slow=34						
PMG	**Port Moresby**	**3.33**	**193**	*e*Pn	**Pn**	**09 41 11.7**	**-0.8**
PMG				*e*Sn	**Sn**	**09 41 55.1**	**+4.3**
WRAB	**Tennant Creek**	**19.01**	**223**	*e*P	**P**	**09 44 39.0**	**-0.8**
	2.6nm,0.6s						
WRA	**Warramunga Arr**	**19.02**	**223**	P	**P**	**09 44 39.0**	**-1.0**
	0.7nm,0.3s,baz=49,slow=11,SNR=41						
ASAR	**Alice Springs**	**22.02**	**216**	P	**P**	**09 45 11.9**	**-0.5**
	1.8nm,0.3s,baz=54,slow=8.8,SNR=54						
FITZ	**Fitzroy Crossi**	**24.76**	**239**	P	**P**	**09 45 39.4**	**+0.4**
	21nm,0.5s,baz=62,slow=7.7,SNR=78						
FITZ	**Fitzroy Crossi**	**24.76**	**239**	*e*P	**P**	**09 45 39.3**	**+0.3**
	20nm,0.6s						
STKA	**Stephens Creek**	**26.28**	**192**	P	**P**	**09 45 53.4**	**+0.8**
	1.8nm,0.5s,baz=359,slow=7.9,SNR=6.6						
MBWA	**Marble Bar**	**31.09**	**239**	*e*P	**P**	**09 46 35.1**	**-0.5**
	16nm,0.4s						
MKAR	**Makanchi Array**	**78.17**	**320**	P	**P**	**09 52 16.3**	**+0.6**
	0.2nm,0.3s,baz=97,slow=6.8,SNR=3.9						
QSPA	**South Pole Qui**	**83.83**	**180**	*e*P	**P**	**09 52 45.4**	**-0.3**
	2.1nm,0.4s						
TORD	**Torodi Ar. Bea**	**145.99**	**284**	PKPbc	**PKPdf**	**09 59 56.1**	**+0.1**
	0.5nm,0.5s,baz=67,slow=3.8,SNR=18						

IDC 17 09:45:06.1±0.9, 9°.68S×124°.06E, h0km, mb4.1/9, mb1 4.2/10, mb1mx3.9/35, mbtmp4.1/10, ML4.3/1, MS3.4/7, Ms1 3.4/7, ms1mx3.0/36, Error ellipse: s-maj=45.9km s-min=19.8km az=72.0
ISCJB 17 09:45:08.0±0.5, 9°.95S±0°.04×124°.28E±0°.07, h38km±6km, mb4.2/11, MS3.2/2, Error ellipse: s-maj=12.1km s-min=6.0km az=157.8
NEIC 17 09:45:07.4±0.5, 9°.78S×124°.36E, h10km, mb4.6/1, Error ellipse: s-maj=22.2km s-min=9.4km az=66.0
DJA 17 09:45:09.5±0.4, 10°.S±3°.×12°.4E±°, h10km, M4.4/8, mB4.8/2, mb4.6/8, MLv4.3/8, Mw(mB)4.1/2
ISC 17 09:45:09.3±0.9, 9°.89S±0°.06×124°.32E±0°.06, h27km±6km, n34, σ2°.39/36, mb4.2/11, Timor region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SOEI	**Soe**	**0.14**	**337**	P	**Pb**	**09 45 14.7**	**-0.1**
SOEI				S	**Sb**	**09 45 18.6**	**+0.2**
MMRI	**Maumere**	**2.41**	**301**	P	**Pn**	**09 45 47.0**	**0.0**
MMRI	**Maumere**	**2.41**	**301**	*e*P	**Pn**	**09 45 46.9**	**0.0**
	451nm,0.8s						
WSI	**Waingapu**	**3.97**	**273**	P	**Pb**	**09 46 21.6**	**+2.9**
BSSI	**Bau Bau, Buton**	**5.32**	**314**	P	**Pn**	**09 46 28.7**	**+1.7**
	63nm,0.7s,0.2nm						
KDI	**Kendari**	**6.13**	**344**	P	**Pn**	**09 46 39.1**	**+0.9**
	24nm,0.9s,0.1nm						
PLAI	**Plampang**	**6.55**	**279**	P	**Pn**	**09 46 43.1**	**-0.8**
	78nm,0.8s,0.3nm						
PLAI				S	**Sn**	**09 47 51.8**	**-6.0**
	78nm,0.8s,0.3nm						
KAPI	**Kappang**	**6.63**	**317**	Pn	**Pn**	**09 46 47.0**	**+1.9**
	2.9nm,0.3s,baz=147,slow=13,SNR=5.5						
KAPI				LR	LR	09 49 16.8	
	comp=Z,536nm,20.5s,baz=163,slow=40						
TWSI	**Taliwang, Sumb**	**7.43**	**278**	P	**Pn**	**09 46 54.6**	**-1.5**
	35nm,0.6s,933nm0.1nm						
SANI	**Sanana**	**7.96**	**12**	P	**Pn**	**09 47 06.1**	**+2.7**
	60nm,0.8s						
TTSI	**Tana Toraja**	**8.14**	**326**	P	**Pn**	**09 47 01.8**	**-4.0**
FITZ	**Fitzroy Crossi**	**8.26**	**171**	Pn	**Pn**	**09 47 09.0**	**+1.5**
	2.6nm,0.3s,baz=2.6,slow=11,SNR=15						
FITZ				Sn	**Sn**	**09 48 39.1**	**-0.9**
	2.8nm,0.3s,baz=284,slow=13,SNR=4.5						
FITZ				LR	LR	09 51 01.5	
	comp=Z,235nm,18.9s,baz=346,slow=42						
MBWA	**Marble Bar**	**12.04**	**201**	*e*Pn	**Pn**	**09 47 59.1**	**-0.2**
WRA	**Warramunga Arr**	**13.90**	**137**	Pn	**Pn**	**09 48 24.6**	**-0.2**
	0.7nm,0.3s,baz=321,slow=15,SNR=15						
WRA				Sn	**Sn**	**09 50 52.6**	**-5.7**
	1.2nm,0.3s,baz=309,slow=26,SNR=8.4						
WRAB	**Tennant Creek**	**13.91**	**137**	*e*Pn	**Pn**	**09 48 25.1**	**+0.3**
ASAR	**Alice Springs**	**16.48**	**147**	Pn	**Pn**	**09 48 59.1**	**+0.3**
	0.6nm,0.3s,baz=322,slow=12,SNR=23						
ASAR				Sn	**Sn**	**09 51 56.1**	**-4.8**
	0.5nm,0.3s,baz=307,slow=20,SNR=6.7						
ASAR				LR	LR	09 56 05.1	
	comp=Z,133nm,18.9s,baz=320,slow=39						
LEM	**Lembang**	**16.81**	**279**	LR	LR	09 56 14.9	
	comp=Z,214nm,18.3s,baz=44,slow=40						
DAV	**Davao City (W)**	**16.89**	**4**	LR	LR	09 55 53.6	
	comp=Z,70nm,21.2s,baz=301,slow=39						
PMG	**Port Moresby**	**22.52**	**91**	LR	LR	10 00 24.3	
	comp=Z,114nm,18.4s,baz=235,slow=40						
STKA	**Stephens Creek**	**27.11**	**146**	P	**P**	**09 50 53.2**	**+3.1**
	1.9nm,0.7s,baz=320,slow=7.9,SNR=3.4						
CMAR	**Chiang Mai Arr**	**37.69**	**318**	P	**P**	**09 52 21.1**	**-1.7**
	1.2nm,0.6s,baz=140,slow=5.7,SNR=6.9						
KSAR	**Wonju Array Be**	**47.20**	**4**	P	**P**	**09 53 39.8**	**0.0**
KSRS	**Korea Array**	**47.21**	**4**	P	**P**	**09 53 39.7**	**-0.1**
	0.5nm,0.5s,baz=181,slow=10,SNR=3.6						
KSRS				LR	LR	10 14 11.8	
	comp=Z,19nm,22.0s,baz=186,slow=37						
USRK	**Ussuriysk Ar.**	**54.28**	**7**	P	**P**	**09 54 32.6**	**-0.4**
	1.9nm,0.7s,baz=201,slow=5.3,SNR=6.7						
KLR	**Kul'dur**	**59.23**	**6**	P	**P**	**09 55 07.0**	**-1.2**
	0.8nm,0.4s,baz=198,slow=8.1,SNR=5.2						
SONM	**Songino Array**	**59.63**	**346**	P	**P**	**09 55 10.3**	**-0.8**
	1.4nm,0.6s,baz=171,slow=8.5,SNR=3.7						
MKAR	**Makanchi Array**	**67.74**	**330**	P	**P**	**09 56 03.2**	**-1.3**
	2.5nm,0.7s,baz=133,slow=7.5,SNR=19						
SBA	**Scott Base**	**71.29**	**171**	*e*P	**P**	**09 56 27.9**	**+1.9**
	4.8nm,1.0s						
ZALV	**Zalesovo Beam**	**71.83**	**337**	P	**P**	**09 56 28.1**	**-1.4**
	1.6nm,0.3s,baz=157,slow=4.1,SNR=3.8						
SEY	**Seymchan**	**75.76**	**13**	P	**P**	**09 56 52.3**	**0.0**
	1.4nm,0.7s,baz=228,slow=5.2,SNR=5.7						
SNAA	**Sanae**	**91.52**	**195**	*e*P	**P**	**09 58 15.8**	**+2.6**
	13nm,0.4s						
TORD	**Torodi Ar. Bea**	**123.79**	**279**	PKP	**PKPdf**	**10 04 06.6**	**+0.8**
	0.6nm,0.6s,baz=95,slow=1.9,SNR=6.1						
TXAR	**Lajitas Array**	**131.22**	**60**	PKP	**PKPdf**	**10 04 23.0**	**+3.2**
	0.2nm,0.8s,baz=270,slow=0.9,SNR=3.3						
LPAZ	**La Paz**	**151.22**	**155**	PKPbc	**PKPbc**	**10 05 04.7**	**+2.6**
	0.5nm,0.6s,baz=225,slow=1.4,SNR=2.9						

IDC 17 09:54:32.9±2.0, 9°.72S×124°.37E, h0km, mb3.6/1, mb1 3.7/4, mb1mx3.5/32, mbtmp3.5/4, ML3.5/3, Error ellipse: s-maj=110.0km s-min=29.0km az=64.0, Timor region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**8.42**	**172**	Pn	Pn	09 56 36.6	+0.4
	0.9nm,0.3s,baz=348,slow=9.1,SNR=12						
FITZ				Sn	Sn	09 58 06.3	-5.8
	1.3nm,0.3s,baz=316,slow=19,SNR=8.4						
WRA	**Warramunga Arr**	**14.00**	**138**	Pn	Pn	09 57 53.2	+0.6
	0.1nm,0.3s,baz=317,slow=14,SNR=8.0						
WRA				Sn	Sn	10 00 20.6	-8.2
	0.3nm,0.3s,baz=309,slow=24,SNR=8.5						
ASAR	**Alice Springs**	**16.59**	**148**	Pn	Pn	09 58 25.9	-1.1
	0.2nm,0.3s,baz=319,slow=10,SNR=8.3						
ASAR				Sn	Sn	10 01 23.7	-8.4
	0.1nm,0.3s,baz=314,slow=22,SNR=7.1						
MKAR	**Makanchi Array**	**67.61**	**330**	P	P	10 05 31.6	0.0
	0.4nm,0.7s,baz=142,slow=7.3,SNR=2.1						

MEX 17 09:55:41.6±0.8, 13°.85N×91°.80W, h20km±633km, MD3.8, Near coast of Guatemala

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THIG		**1.15**	**337**	*e*P	Pn	09 55 59.9	-2.6
THIG				*i* S	Sb	09 56 12.9	-4.2
PCIG		**2.30**	**324**	*e*P	Pn	09 56 16.3	-2.1
PCIG				*e*S	Sn	09 56 42.2	-3.9

DJA 17 10:12:52.5±1.1, 4°.N±11°.×12°.8E±°, h165km±22km, M4.8/8, mb4.4/8, mB5.2/4, MLv5.0/7, Mw(mB)4.5/4
NEIC 17 10:13:01.5±0.4, 2°.96N×126°.93E, h10km, mb4.6/10, Error ellipse: s-maj=18.9km s-min=7.3km az=68.0
IDC 17 10:13:09.4±6.7, 2°.93N×126°.89E, h75km±65km, mb3.9/13, mb1 4.0/13, mb1mx3.7/36, mbtmp4.2/13, MS3.6/2, Ms1 3.6/2, ms1mx2.6/39, Error ellipse: s-maj=36.6km s-min=13.4km az=78.0
ISC 17 10:13:06.0±0.6, 2°.87N±0°.07×127°.0E±0°.1, h44km, n40, σ1°.36/32, mb4.3/21, 1D, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SGSI	**Sangihe**	**1.68**	**299**	P	**Pn**	**10 13 34.8**	**+1.9**
LBMI	**Labuha**	**3.52**	**172**	P	Pn	10 14 04.6	+6.3
GSPH	**General Santos**	**3.79**	**327**	*e*P	**Sn**	**10 14 43.6**	**-1.9**
MATI	**Mati**	**4.12**	**350**	*e*P	**Pn**	**10 14 08.3**	**+1.9**
MATI				*e*S	**Sn**	**10 14 55.4**	**+2.0**
SANI	**Sanana**	**4.99**	**192**	P	Pn	10 14 25.6	+7.1
	45nm,1.0s,4μm0.5nm						
CTBH	**Cotabato--PC H**	**5.12**	**328**	*i* P	**Pn**	**10 14 22.4**	**+2.2**
BUKP	**Musuan**	**5.33**	**339**	*e*P	**Pn**	**10 14 22.4**	**-0.9**
BUKP				*e*S	**Sn**	**10 15 27.0**	**+3.5**
MRSI	**Marisa**	**5.58**	**245**	P	Pn	10 14 33.2	+6.6
	408nm,0.6s,4μm1.4nm						
SWI	**Sorong**	**5.65**	**131**	P	Pn	10 14 19.8	-7.7
	51nm,0.9s,0.2nm						
LUWI	**Luwuk**	**5.74**	**227**	P	Pn	10 14 36.5	+7.7
	78nm,0.8s,0.6nm						
NLAI	**Namlea**	**6.07**	**179**	P	Pn	10 14 39.0	+5.7
	41nm,0.6s,2μm0.3nm						
FAKI	**Fak Fak**	**7.79**	**138**	P	Pn	10 14 50.3	-6.6
	41nm,1.4s						
TTSI	**Tana Toraja**	**9.27**	**231**	P	Pn	10 15 23.7	+6.4
FITZ	**Fitzroy Crossi**	**20.88**	**184**	P	**P**	**10 17 45.6**	**+1.0**
	2.0nm,1.0s,baz=34,slow=11,SNR=2.1						
FITZ	**Fitzroy Crossi**	**20.88**	**184**	*e*P	**P**	**10 17 45.3**	**+0.6**
	2.2nm,0.5s						
WRAB	**Tennant Creek**	**23.79**	**163**	*e*P	**P**	**10 18 16.3**	**+1.4**
	5.3nm,0.5s						
WRA	**Warramunga Arr**	**23.79**	**163**	P	**P**	**10 18 16.1**	**+1.2**
	4.0nm,0.8s,baz=344,slow=10.0,SNR=50						
ASAR	**Alice Springs**	**27.22**	**166**	P	**P**	**10 18 47.5**	**+1.5**
	0.6nm,0.5s,baz=351,slow=7.7,SNR=14						
CMAR	**Chiang Mai Arr**	**31.54**	**301**	P	**P**	**10 19 24.1**	**-0.4**
	1.1nm,0.4s,baz=113,slow=7.3,SNR=4.5						
CHTO	**Chiang Mai**	**31.70**	**302**	*e*P	**P**	**10 19 24.1**	**-1.6**
	1.5nm,0.5s						
KSAR	**Wonju Array Be**	**34.41**	**1**	P	**P**	**10 19 49.2**	**0.0**
KSRS	**Korea Array**	**34.43**	**1**	P	**P**	**10 19 49.2**	**-0.1**
	2.1nm,0.6s,baz=174,slow=9.5,SNR=13						
HNR	**Honiara**	**35.03**	**111**	*e*P	**P**	**10 19 54.1**	**-0.8**
	11nm,0.3s						
STKA	**Stephens Creek**	**37.24**	**159**	P	**P**	**10 20 14.7**	**+1.2**
	5.1nm,0.7s,baz=336,slow=8.4,SNR=13						
BJT	**Baijiatuau**	**38.26**	**347**	*e*P	**P**	**10 20 22.8**	**+0.7**
	16nm,0.5s						
USRK	**Ussuriysk Ar.**	**41.39**	**5**	P	**P**	**10 20 47.8**	**-0.2**
	2.8nm,0.7s,baz=178,slow=5.8,SNR=7.8						
KLR	**Kul'dur**	**46.37**	**4**	P	**P**	**10 21 27.7**	**-0.1**
	1.4nm,0.5s,baz=185,slow=6.6,SNR=7.6						
ULN	**Ulaanbaatar**	**48.01**	**342**	*e*P	**P**	**10 21 41.6**	**+0.6**
	4.4nm,0.8s						
SONM	**Songino Array**	**48.19**	**341**	P	**P**	**10 21 41.8**	**-0.4**
	1.9nm,0.5s,baz=161,slow=9.3,SNR=7.2						
MKAR	**Makanchi Array**	**58.41**	**325**	P	**P**	**10 22 56.6**	**-0.7**
	1.9nm,0.4s,baz=117,slow=7.8,SNR=19						
YAK	**Yakutsk**	**59.05**	**1**	LR	LR	10 49 25.6	
	comp=Z,35nm,21.8s,baz=44,slow=37						
ZALV	**Zalesovo Beam**	**61.47**	**333**	P	**P**	**10 23 16.8**	**-1.3**
	1.8nm,0.3s,baz=131,slow=7.7,SNR=4.6						
KURK	**Kurchatov**	**62.60**	**328**	*e*P	**P**	**10 23 25.3**	**-0.4**
	6.5nm,0.4s						
BRVK	**Borovoye**	**68.25**	**327**	*e*P	**P**	**10 24 01.1**	**-1.1**
	7.0nm,1.0s						
ABKAR	**Akbulak array**	**72.98**	**321**	*e*P	**P**	**10 24 29.9**	**-1.2**
	1.1nm,0.3s						
ARU	**Arti**	**75.80**	**328**	*e*P	**P**	**10 24 46.7**	**-0.6**
	4.1nm,0.5s						
BRTR	**Keskin Array B**	**90.77**	**310**	P	**P**	**10 26 04.3**	**-0.7**
	0.5nm,0.5s,baz=116,slow=5.6,SNR=4.5						
ARCES	**ARCESS Array B**	**91.34**	**340**	P	**P**	**10 26 05.3**	**-1.6**
	3.5nm,0.8s,baz=80,slow=5.6,SNR=6.0						
BBB	**Bella Bella**	**96.82**	**37**	LR	LR	11 03 26.9	
	comp=Z,39nm,19.6s,baz=37,slow=31						
TORD	**Torodi Ar. Bea**	**123.44**	**288**	PKP	**PKPdf**	**10 31 59.0**	**-0.5**
	0.2nm,0.5s,baz=52,slow=1.8,SNR=4.8						

NIED 17 10:14:00, 37°.40N×142°.20E, h14km, Mw3.5 Best double couple: M0 1.80000×10^14 NP1:φs 42.00000°, δ45.00000°, λ-124.00000°. NP2:φs 265.00000°, δ54.00000°, λ-61.00000°.
JMA 17 10:14:25.3±0.2, 37°.39N×142°.18E, h10km±2km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.04**	**269**	P	Pg	10 14 44.9	-0.4
JFK				S	Sg	10 14 58.6	-0.2
ONAJ	**Iwakimizuishiy**	**1.14**	**256**	P	Pb	10 14 46.2	-0.9
ONAJ				*e*S	Sb	10 15 01.0	-1.0
JMM	**Marumori**	**1.20**	**294**	P	Pb	10 14 47.3	-0.8
JMM				S	Sb	10 15 03.2	-0.5
JIO	**Ouri**	**1.25**	**329**	P	Pn	10 14 47.9	-0.9
JFT	**Otama**	**1.47**	**276**	P	Pn	10 14 52.2	+0.3
JFT				S	Sn	10 15 11.3	+0.1
JHO	**Hitachi**	**1.51**	**239**	P	Pn	10 14 52.3	-0.1
JHO				*e*S	Sn	10 15 12.2	+0.2
JOU	**

KIZT	**Kizilcal**	**1.18 135**	*e*PN	**Pg**	**10 32 27.4**	**-1.6**
KIZT	**Kizilcal**	**1.18 135**	*e*Pn	**Pg**	**10 32 27.4**	**-1.6**
GDZ	**Gediz**	**1.20 239**	P	**Pn**	**10 32 30.4**	**+0.1**
GDZ			S	**Sn**	**10 32 47.2**	**0.0**
GDZ	**Gediz**	**1.20 239**	*i* P	**Pn**	**10 32 30.4**	**+0.1**
GDZ			*i* S	**Sn**	**10 32 47.2**	**0.0**
IGD	**Bursa**	**1.35 294**	*i* P	**Pg**	**10 32 31.2**	**-1.0**
IGD			*i* S	**Sb**	**10 32 50.6**	**+0.6**
ARMT	**Armutlu**	**1.72 300**	*e*PN	**Pn**	**10 32 36.5**	**-0.7**
ARMT	**Armutlu**	**1.72 300**	*e*Pn	**Pn**	**10 32 36.5**	**-0.7**
DURS	**Dursunbey**	**1.81 267**	P	**Pb**	**10 32 39.8**	**-0.3**
DURS	**Dursunbey**	**1.81 267**	*i* P	**Pb**	**10 32 39.8**	**-0.3**
DURS			*i* S	**Sg**	**10 33 04.2**	**-0.2**

NNC 17 10:35:20.7±2.6, 37.°47N×71.°34E, h0km, mb3.7, mpv3.3, 2C-5D, Error ellipse: s-maj=21.5km s-min=10.1km az=165.0, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**2.39**	**305**	⇑Pn	Pn	10 36 00.7	-0.5
	5.4nm,0.3s						
DZET				⇓Sn	Sn	10 36 32.4	+1.2
	26nm,0.3s						
MNAS	**Manas**	**5.09**	**10**	⇑Pn	Pn	10 36 39.2	+0.8
	1.5nm,0.4s						
MNAS				⇓Sn	Sn	10 37 39.2	+1.3
	4.7nm,0.7s						
KK31	**Karatay Array**	**5.66**	**354**	⇓Pn	Pn	10 36 47.0	+0.8
	0.7nm,0.2s,baz=183,slow=14,SNR=45						
KK31				⇓Sn	Sn	10 37 52.2	+0.4
	0.6nm,0.4s,baz=184,slow=23,SNR=4.6						
TKM2	**Tokmak 2**	**6.34**	**30**	⇓Pn	Pn	10 36 55.4	-0.3
	1.9nm,0.5s						

IDC ***17*** *10:35:24.8±0.5, 15.°60S×175.°09W, h0km, mb4.6/30, mb1 4.7/31, mb1mx4.6/51, mbtmp4.6/31, ML4.3/1, MS5.3/31, Ms1 5.3/31, ms1mx5.2/37, Error ellipse: s-maj=18.2km s-min=11.9km az=142.0*

ISCJB ***17*** *10:35:25.5±0.1, 15.°65S±0.°05×175.°21W±0.°03, h10km, mb5.1/165, MS5.4/212, Error ellipse: s-maj=6.9km s-min=3.3km az=157.2*

GCMT ***17*** *10:35:26.9±0.1, 15.°51S×175.°00W, h12km, MW5.7/135, Moment Tensor Solution. s112,c217; s135,c374; Duration: 1s7 Moment tensor: Scale 10^17^Nm; Mrr-0.69±.03; Mθθ2.71±.04; Mφφ-2.02±.03; Mrθ0.82±.09; Mθφ3.33±.03; Mφr-0.71±.08; Best double couple: M0*4.25400×10^17^ *NP1:φs286.00000°, δ81.00000°, λ-15.00000°. NP2:φs19.00000°, δ75.0000°, λ-171.00000°. Principal axes: T 4.4620, Plg5.0000°, Azm333.0000°; N -0.4200, Plg72.0000°, Azm78.0000°; P -4.0450, Plg17.0000°, Azm242.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*

NEIC ***17*** *10:35:27.0±0.1, 15.°65S×175.°22W, h10km, mb5.3/114, MS5.4/156, MW5.6, MW5.7 Error ellipse: s-maj=6.9km s-min=3.5km az=152.0, Moment Tensor Solution. s24 Moment tensor: Scale 1017Nm; Mrr-0.72; Mθθ2.48; Mφφ-1.76; Mrθ0.37; Mθφ2.36; Mφr0.39; Best double couple: M0*3.30000×10^17^ *NP1:φs111.00000°, δ81.00000°, λ1.00000°. NP2:φs21.00000°, δ89.00000°, λ171.00000°. Principal axes: T 3.5900, Plg7.0000°, Azm336.0000°; N -0.7600, Plg81.0000°, Azm197.0000°; P -2.8300, Plg6.0000°, Azm66.0000°;*

BJI ***17*** *10:35:29.2, 15.°26S×174.°97W, h28km, mb5.0/41, mB5.4/39, Ms5.6/51, Ms7 5.4/46*

MOS ***17*** *10:35:29.4±1.2, 15.°52S×175.°30W, h33km, mb5.4/38, MS5.5/27, Error ellipse: s-maj=10.0km s-min=8.0km az=53.1*

NEIC ***17*** *10:35:32.8±0.0, 15.°45S×175.°24W, h15km, Moment Tensor Solution. s15 Moment tensor: Scale 10^17^Nm; Mrr-0.50; Mθθ2.90; Mφφ-2.30; Mrθ1.50; Mθφ2.70; Mφr-0.50; Best double couple: M0*4.00000×10^17^ *NP1:φs291.00000°, δ87.00000°, λ-23.00000°. NP2:φs22.00000°, δ66.00000°, λ-177.00000°. Principal axes: T 4.3000, Plg14.0000°, Azm339.0000°; N -0.5000, Plg65.0000°, Azm104.0000°; P -3.8000, Plg18.0000°, Azm244.0000°;*

ISC 17 10:35:27.3±0.3, 15.°55S±0.°05×175.°17W±0.°05, h10km, n784, σ1s55/664, mb5.2/166, MS5.4/213, 31C-13D, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**3.67**	**64**	Pn	Pn	10 36 17.2	-7.0
	26nm,0.3s,baz=187,slow=3.3,SNR=53						
AFI				LR	LR	10 37 33.9	
	comp=Z,41μm,21.8s,baz=211,slow=36						
NIUE	**Niue**	**6.12**	**126**	P	Pn	10 36 51.8	-6.0
	baz=5.9,SNR=18						
MSVF	**Nonsavu**	**6.85**	**251**	*e*P	**Pn**	**10 37 08.0**	**+0.1**
MSVF	**Nonsavu**	**6.85**	**251**	*e*Pn	**Pn**	**10 37 08.0**	**+0.1**
FUNA	**Funafuti**	**8.89**	**321**	*e*Pn	**Pn**	**10 37 39.1**	**+3.2**
RAO	**Raoul Island**	**13.87**	**190**	LR	LR	10 43 13.1	
	comp=Z,15μm,18.4s,baz=14,slow=34						
RAR	**Rarotonga**	**15.66**	**113**	LR	LR	10 43 41.2	
	comp=Z,2μm,21.1s,baz=291,slow=32						
DZM	**Mont Dzumac**	**18.56**	**247**	P	**P**	**10 39 44.5**	**-0.1**
	0.9nm,0.3s,baz=77,slow=11,SNR=23						
DZM				LR	LR	10 45 44.3	
	comp=Z,16μm,20.2s,baz=70,slow=33						
TARA	**Tarawa**	**20.51**	**324**	*e*P	**P**	**10 40 04.5**	**-1.3**
	282nm,1.4s						
TARA				LR	LR		
	comp=Z,1μm,20.0s						
URZ	**Urewera**	**23.62**	**195**	P	**P**	**10 40 38.3**	**-0.3**
	comp=Z,30nm,1.1s,baz=45,slow=1.4,SNR=3.9						
PAE	**Paea**	**24.61**	**99**	*e*T	T	11 05 56.8	
	comp=Z,5.7nm,0.3s						
PPT	**Papeete**	**24.61**	**98**	LR	LR	10 47 34.2	
	comp=Z,3μm,21.7s,baz=269,slow=30						
PPT2	**Papeete2**	**24.61**	**98**	*e*LQ	LQ	10 45 38.2	
	comp=Z,35μm,25.8s						
PPT2				*e*LR	LR	10 46 52.5	
	comp=Z,6μm,23.5s,baz=262						
PPT2	**Papeete2**	**24.61**	**98**	*e*T	T	11 05 58.1	
	comp=Z,6.5nm,0.3s						
TIAR	**Tiarei**	**24.83**	**98**	*e*T	T	11 06 12.9	
	comp=Z,5.0nm,0.3s						
HNR	**Honiara**	**25.03**	**281**	P	**P**	**10 40 53.2**	**+1.4**
	comp=Z,15nm,0.2s,baz=217,slow=9.5,SNR=6.3						
HNR				LR	LR	10 49 04.7	
	comp=Z,14μm,20.9s,baz=118,slow=33						
HNR	**Honiara**	**25.03**	**281**	P	**P**	**10 40 51.0**	**-0.8**
HNR	**Honiara**	**25.03**	**281**	*e*P	**P**	**10 40 50.7**	**-1.1**
HNR				pmax	pmax		
	comp=Z,245nm,1.4s						
HNR				MLR	MLR		
	comp=Z,13μm,22.0s						
HNR	**Honiara**	**25.03**	**281**	*e*P	**P**	**10 40 50.7**	**-1.1**
	comp=Z,245nm,1.4s						
HNR				LR	LR		
	comp=Z,13μm,22.0s						
TBI	**Tubuai**	**25.43**	**112**	*e*LQ	LQ	10 46 01.5	
	comp=Z,31μm,27.5s						
TBI				*e*LR	LR	10 47 12.2	
	comp=Z,3μm,25.0s						
TBI	**Tubuai**	**25.43**	**112**	*e*T	T	11 06 58.2	
	comp=Z,16nm,0.2s						
PMOR	**Pomariorio Ree**	**26.32**	**92**	*e*T	T	11 08 04.2	
	comp=Z,5.1nm,0.3s						
SNZO	**South Karori**	**27.13**	**197**	PFAKE		10 41 20.0	+10
SNZO				LR	LR		
	comp=Z,5μm,19.0s						
RPZ	**Rata Peaks**	**30.43**	**200**	LR	LR	10 53 52.5	
	comp=Z,8μm,20.0s,baz=43,slow=36						
JOHN	**Johnston Islan**	**32.56**	**10**	PFAKE		10 42 10.0	+11
JOHN				LR	LR		
	comp=Z,484nm,21.0s						
EIDS	**Eidsvold**	**33.01**	**247**	P	**P**	**10 42 03.9**	**+1.1**
	baz=33,SNR=4.1						
EIDS	**Eidsvold**	**33.01**	**247**	*e*P	P	10 42 08.6	+5.7
	comp=Z,25nm,1.1s						
ARMA	**Armidale**	**33.81**	**238**	P	**P**	**10 42 10.5**	**+0.6**
	baz=34,SNR=4.4						
ARMA	**Armidale**	**33.81**	**238**	*e*P	**P**	**10 42 08.9**	**-1.0**
	comp=Z,37nm,1.3s						
TAOE	**Nuku Hiva Isla**	**34.84**	**83**	*e*S	**S**	**10 47 45.7**	**-4.5**
	comp=Z,634nm,28.8s						
TAOE				*e*LR	LR	10 51 20.8	
	comp=Z,12μm,26.7s,baz=256						
TAOE	**Nuku Hiva Isla**	**34.84**	**83**	*e*T	T	11 18 43.5	
	comp=Z,97nm,0.2s						
RMQ	**Roma**	**35.27**	**246**	P	**P**	**10 42 21.8**	**-0.7**
	baz=36,SNR=7.6						
CTA	**Charters Tower**	**36.94**	**257**	LR	LR	10 56 11.3	
	comp=Z,4μm,19.4s,baz=82,slow=34						
CTAO	**Charters Tower**	**36.94**	**257**	PFAKE		10 42 50.0	+13
CTAO				LR	LR		
	comp=Z,6μm,19.0s						
PMG	**Port Moresby**	**37.24**	**275**	P	**P**	**10 42 38.9**	**-0.5**
	comp=Z,33nm,0.9s,baz=99,slow=8.7,SNR=5.2						
PMG				LR	LR	10 54 23.1	
	comp=Z,5μm,21.7s,baz=74,slow=30						
PMG	**Port Moresby**	**37.24**	**275**	*de*P	**P**	**10 42 40.1**	**+0.7**
PMG				pmax	pmax		
	comp=Z,258nm,1.2s						
PMG	**Port Moresby**	**37.24**	**275**	*e*P	**P**	**10 42 39.2**	**-0.2**
	comp=Z,196nm,1.6s						
PMG				LR	LR		
	comp=Z,4μm,20.0s						
CNB	**Canberra Magne**	**37.31**	**232**	P	**P**	**10 42 39.3**	**-0.6**
	baz=38,SNR=5.5						
CAN	**Canberra**	**37.59**	**232**	PFAKE		10 42 50.0	+7.8
CAN				LR	LR		
	comp=Z,4μm,19.0s						
H11S2	**WAKE ISLAND Hy**	**38.24**	**332**	T	T	11 23 32.0	
	baz=149,slow=75,SNR=126						
H11S3	**WAKE ISLAND Hy**	**38.26**	**331**	T	T	11 23 41.1	
	baz=149,slow=75,SNR=32						
H11S1	**WAKE ISLAND Hy**	**38.26**	**332**	T	T	11 23 41.5	
	baz=149,slow=75,SNR=42						
RKT	**Rikitea**	**38.58**	**108**	*e*S	**S**	**10 48 48.1**	**+1.2**
	comp=Z,1μm,28.1s						
RKT				*e*LQ	LQ	10 51 41.7	
	comp=Z,4μm,26.0s						
RKT				*e*LR	LR	10 53 21.3	
	comp=Z,2μm,22.8s,baz=284						
RKT	**Rikitea**	**38.58**	**108**	*e*T	T	11 23 20.5	
	comp=Z,11nm,0.3s						
MTSU	**Mount Surprise**	**38.81**	**260**	P	**P**	**10 42 51.7**	**-1.0**
	baz=39,SNR=5.5						
CMSA	**Cobar Meteorol**	**39.01**	**239**	P	**P**	**10 42 53.2**	**-1.0**
	baz=39,SNR=12						
H11N3	**WAKE ISLAND Hy**	**39.23**	**333**	T	T	11 24 46.0	
	baz=151,slow=76,SNR=64						
H11N1	**WAKE ISLAND Hy**	**39.23**	**333**	T	T	11 24 43.5	
	baz=151,slow=76,SNR=156						
H11N2	**WAKE ISLAND Hy**	**39.24**	**333**	T	T	11 24 44.6	
	baz=151,slow=76,SNR=78						
QLP	**Quilpie**	**39.29**	**247**	P	**P**	**10 42 55.8**	**-0.8**
	baz=40,SNR=11						
POHA	**Pohakuloa**	**40.05**	**29**	PFAKE		10 43 20.0	+17
POHA				LR	LR		
	comp=Z,2μm,19.0s						
COEN	**Coen**	**40.27**	**267**	*e*P	**P**	**10 43 04.5**	**-0.4**
	comp=Z,117nm,1.5s						
TOO	**Toolangi**	**41.05**	**230**	P	**P**	**10 43 09.8**	**-1.3**
	baz=41,SNR=14						
TOO	**Toolangi**	**41.05**	**230**	P	**P**	**10 43 10.2**	**-0.9**
TOO				pmax	pmax		
	comp=Z,91nm,1.4s						
TAU	**Tasmania Unive**	**42.06**	**222**	PFAKE		10 43 30.0	+11
TAU				LR	LR		
	comp=Z,8μm,20.0s						
STKA	**Stephens Creek**	**42.48**	**240**	P	**P**	**10 43 22.2**	**-0.7**
	comp=Z,13nm,0.8s,baz=81,slow=7.5,SNR=16						
STKA				LR	LR	10 58 56.4	
	comp=Z,5μm,21.4s,baz=84,slow=33						
STKA	**Stephens Creek**	**42.48**	**240**	P	**P**	**10 43 22.2**	**-0.7**
	baz=43,SNR=4.0						
STKA	**Stephens Creek**	**42.48**	**240**	*e*P	**P**	**10 43 22.2**	**-0.7**
	comp=Z,19nm,1.2s						
ARPS	**Mount Arapiles**	**43.54**	**233**	P	**P**	**10 43 30.9**	**-0.4**
	baz=44,SNR=4.8						
HTT	**Hallett**	**45.01**	**238**	P	**P**	**10 43 42.9**	**-0.4**
	baz=45,SNR=7.1						
JAY	**Jayapura**	**45.34**	**282**	LR	LR	11 00 18.6	
	comp=Z,119nm,22.0s,baz=14,slow=33						
BBOO	**Buckleboo**	**47.26**	**240**	P	**P**	**10 43 60.0**	**-1.0**
	baz=48,SNR=4.9						
BBOO	**Buckleboo**	**47.26**	**240**	*e*P	**P**	**10 43 59.6**	**-1.3**
	comp=Z,84nm,1.2s						
WB2	**Warramunga Arr**	**48.13**	**257**	*e*P	**P**	**10 44 06.5**	**-1.4**
	comp=Z,140nm,1.4s						
WRAB	**Tennant Creek**	**48.14**	**257**	*c i*P	**P**	**10 44 06.3**	**-1.6**
WRAB				pmax	pmax		
	comp=Z,304nm,1.7s						
WRAB	**Tennant Creek**	**48.14**	**257**	*e*P	**P**	**10 44 06.4**	**-1.6**
	comp=Z,146nm,1.5s						
WRAB				LR	LR		
	comp=Z,4μm,20.0s						
WR1	**Warramunga Arr**	**48.15**	**257**	*e*P	**P**	**10 44 06.5**	**-1.5**
	comp=Z,278nm,1.8s						
WRA	**Warramunga Arr**	**48.15**	**257**	P	**P**	**10 44 06.5**	**-1.5**
	comp=Z,24nm,1.1s,baz=91,slow=7.5,SNR=63						
WRA				LR	LR	11 02 26.3	
	comp=Z,4μm,21.4s,baz=55,slow=34						
AS01	**Alice Springs**	**48.40**	**252**	*e*P	**P**	**10 44 08.0**	**-2.0**
AS31	**Alice Springs**	**48.44**	**252**	*e*P	**P**	**10 44 09.1**	**-1.2**
	comp=Z,19nm,1.4s						
ASAR	**Alice Springs**	**48.44**	**252**	P	**P**	**10 44 09.0**	**-1.2**
	comp=Z,7.3nm,0.7s,baz=86,slow=8.0,SNR=84						
ASAR				LR	LR	11 02 47.3	
	comp=Z,9μm,21.2s,baz=86,slow=34						
GUMO	**Guam**	**48.99**	**304**	LR	LR	11 02 09.5	
	comp=Z,2μm,18.5s,baz=102,slow=33						
GUMO	**Guam**	**48.99**	**304**	PFAKE		10 44 30.0	+16
GUMO				LR	LR		
	comp=Z,2μm,19.0s						
MTN	**Manton Dam**	**52.02**	**266**	P	**P**	**10 44 36.4**	**-1.1**
	baz=52,SNR=7.4						
MTN	**Manton Dam**	**52.02**	**266**	*e*P	**P**	**10 44 36.3**	**-1.2**
	comp=Z,68nm,1.4s						
WRKA	**Warakurna**	**53.54**	**250**	P	**P**	**10 44 48.1**	**-0.6**
	baz=54,SNR=11						
SWI	**Sorong**	**54.81**	**280**	P	**P**	**10 44 58.9**	**+0.9**
	comp=Z,84nm,1.0s,comp=Z,1μm						
FITZ	**Fitzroy Crossi**	**56.51**	**258**	P	**P**	**10 45 09.6**	**-0.6**
	comp=Z,6.3nm,0.9s,baz=94,slow=9.3,SNR=7.5						
FITZ				LR	LR	11 07 10.5	
	comp=Z,4μm,22.0s,baz=96,slow=34						
FITZ	**Fitzroy Crossi**	**56.51**	**258**	P	**P**	**10 45 10.6**	**+0.4**
	baz=57,SNR=4.3						
FITZ	**Fitzroy Crossi**	**56.51**	**258**	*e*P	**P**	**10 45 09.4**	**-0.7**
	comp=Z,80nm,1.5s						
JCJ	**Chichijima**	**59.24**	**315**	LR	LR	11 06 52.1	
	comp=Z,5μm,20.5s,baz=128,slow=32						
MMRI	**Maumere**	**61.41**	**269**	P	P	10 45 50.7	+6.4
MMRI	**Maumere**	**61.41**	**269**	*e*P	**P**	**10 45 42.2**	**-2.1**
	comp=Z,141nm,1.3s						
MBWA	**Marble Bar**	**61.68**	**254**	PFAKE		10 46 00.0	+14
MBWA				LR	LR		
	comp=Z,4μm,19.0s						
DAV	**Davao City (W)**	**62.83**	**287**	PFAKE		10 46 10.0	+16
DAV				LR	LR		
	comp=Z,1μm,22.0s						
LUWI	**Luwuk**	**62.84**	**277**	*e*P	**P**	**10 45 54.0**	**+0.1**
	comp=Z,146nm,1.3s						
SBA	**Scott Base**	**62.97**	**184**	*e*P	**P**	**10 45 54.2**	**+0.5**
SBA				pmax	pmax		
	comp=Z,24nm,0.9s						
SBA				MLR	MLR		
	comp=Z,2μm,21.0s						
SBA	**Scott Base**	**62.97**	**184**	*e*P	**P**	**10 45 54.2**	**+0.5**
	comp=Z,24nm,0.9s						
SBA				LR	LR		
	comp=Z,2μm,21.0s						
NWAO	**Narrogin (SRO)**	**63.06**	**241**	LR	LR	11 11 25.7	
	comp=Z,4μm,21.4s,baz=323,slow=34						
NWAO	**Narrogin (SRO)**	**63.06**	**241**	PFAKE		10 46 10.0	+15
NWAO				LR	LR		
	comp=Z,5μm,22.0s						
VNDA	**Vanda**	**63.06**	**185**	P	**P**	**10 45 53.6**	**-0.7**
	comp=Z,7.9nm,0.9s,baz=10,slow=6.6,SNR=19						
VNDA				LR	LR	11 06 28.2	
	comp=Z,828nm,21.6s,baz=29,slow=30						
VNDA	**Vanda**	**63.06**	**185**	*e*P	**P**	**10 45 53.6**	**-0.7**
VNDA				pmax	pmax		
	comp=Z,33nm,1.4s						
VNDA	**Vanda**	**63.06**	**185**	*e*P	**P**	**10 45 53.6**	**-0.7**
	comp=Z,33nm,1.4s						
MRSI	**Marisa**	**64.08**	**278**	P	**P**	**10 46 03.2**	**+1.1**
	comp=Z,32nm,1.1s,comp=Z,1μm						
KAPI	**Kappang**	**64.67**	**272**	P	**P**	**10 46 05.5**	**-0.5**
	comp=Z,2.5nm,0.3s,baz=190,slow=5.3,SNR=4.3						
KAPI	**Kappang**	**64.67**	**272**	*e*P	**P**	**10 46 05.5**	**-0.5**
	comp=Z,80nm,1.8s						
KAPI				LR	LR		
	comp=Z,1μm,22.0s						
TTSI	**Tana Toraja**	**65.12**	**274**	P	**P**	**10 46 10.8**	**+1.9**
	comp=Z,23nm,2.0s						
PLAI	**Plampang**	**65.67**	**267**	P	**P**	**10 46 11.4**	**-1.0**
	comp=Z,72nm,1.5s,comp=Z,997nm						
MJAR	**Matsushiro Arr**	**67.96**	**321**	P	**P**	**10 46 25.8**	**-0.8**
	comp=Z,1.1nm,0.7s,baz=151,slow=2.8,SNR=3.2						
MJAR				LR	LR	11 10 38.0	
	comp=Z,2μm,21.9s,baz=115,slow=31						
MAJO	**Matsushiro**	**67.96**	**321**	PFAKE		10 46 40.0	+13
MAJO				LR	LR		
	comp=Z,3μm,22.0s						
MYLDM	**Lahad Datu**	**68.80**	**282**	*e*P	**P**	**10 46 33.5**	**+1.2**
	comp=Z,83nm,1.3s						
ERM	**Erimo**	**68.97**	**328**	PFAKE		10 46 40.0	+7.3
ERM				LR	LR		
	comp=Z,3μm,19.0s						
YUK	**Yuzh-Kuril'sk**	**69.14**	**331**	*e*P	**P**	**10 46 31.3**	**-2.5**
YUK				*e*		10 46 53.8	
YUK				*e*		10 49 06.1	
YUK				*e*PPP	PPP	10 50 45.0	
YUK				*e*S	**S**	**10 55 35.4**	**-4.0**
YUK				*e*SS	**SS**	**11 00 02.2**	**-3.9**
YUK				pmax	pmax		
	comp=Z,421nm,1.2s						
YUK				pmax	pmax		
	comp=E,476nm,1.3s						
YUK				pmax	pmax		
	comp=N,411nm,1.4s						
KUR	**Kuril'sk**	**69.16**	**333**	*e*P	**P**	**10 46 31.9**	**-1.9**
KUR				*e*S	**S**	**10 55 42.1**	**+2.5**
JAGI	**Jajag, Banyuwa**	**69.24**	**267**	*e*P	**P**	**10 46 33.4**	**-1.7**
	comp=N,134nm,1.5s						
CASY	**Casey**	**69.56**	**205**	*e*P	**P**	**10 46 35.1**	**-1.0**
	comp=N,68nm,1.6s						
CASY				LR	LR		
	comp=Z,266nm,21.0s						
JNU	**Nakatsue**	**70.66**	**314**	LR	LR	11 11 41.1	
	comp=Z,1μm,21.7s,baz=131,slow=31						
JNU	**Nakatsue**	**70.66**	**314**	*e*P	**P**	**10 46 43.9**	**+0.4**
	comp=Z,45nm,1.3s						
KKM	**Kota Kinabalu**	**71.23**	**282**	*e*P	**P**	**10 46 47.1**	**-0.3**
	comp=Z,58nm,1.4s						
KKM				LR	LR		
	comp=Z,951nm,21.0s						
PET	**Petropavlovsk**	**71.93**	**344**	*c i*P	**P**	**10 46 49.6**	**-0.9**
PET				*e*S	**S**	**10 56 08.6**	**-2.9**
PET				pmax	pmax		
	comp=Z,200nm,15.6s						
PET	**Petropavlovsk**	**71.93**	**344**	PFAKE		10 47 00.0	+9.5
PET				LR	LR		
	comp=Z,3μm,22.0s						
PCJI	**Pacitan**	**72.16**	**266**	P	**P**	**10 46 54.6**	**+1.7**
	comp=Z,208nm,1.1s						
PEA0	**Petropavlovsk-**	**72.26**	**343**	*e*P	**P**	**10 46 56.0**	**+3.4**
PETK	**Petropavlovsk-**	**72.26**	**343**	P	**P**	**10 46 52.0**	**-0.6**
	comp=Z,9.9nm,0.8s,baz=134,slow=11,SNR=5.9						
PETK				LR	LR	11 12 32.1	
	comp=Z,3μm,22.0s,baz=152,slow=31						
PETK	**Petropavlovsk-**	**72.26**	**343**	P	**P**	**10 46 52.0**	**-0.6**
PEA1	**Petropavlovsk-**	**72.27**	**343**	*e*P	**P**	**10 46 52.0**	**-0.7**
YSS	**Yuzh-Sakhalins**	**72.78**	**331**	*ce*P	**P**	**10 46 56.1**	**+0.3**
YSS				*e**SP	**PcP**	**10 47 15.7**	**+2.7**
YSS				*e*		10 49 33.0	
YSS				*e*S	**S**	**10 56 19.0**	**-2.5**
YSS				*e*		10 56 54.0	
YSS				*e*SS	**SS**	**11 01 04.0**	**+2.1**
YSS				pmax	pmax		
	comp=Z,200nm,3.0s						
ARVC	**Arvin**	**73.42**	**45**	P	**P**	**10 47 01.0**	**+1.0**
	baz=237						
MWC	**Mount Wilson**	**73.47**	**47**	*e*P	**P**	**10 47 00.8**	**+0.3**
MWC				pmax	pmax		
	comp=Z,14nm,0.8s						
MWC	**Mount Wilson**	**73.47**	**47**	*e*P	**P**	**10 47 00.8**	**+0.3**
	comp=Z,14nm,0.8s						
VES	**Vestal, Richgr**	**73.64**	**45**	P	**P**	**10 47 01.6**	**+0.5**
	baz=236						
YHNB	**Yeheng**	**73.66**	**302**	PFAKE		10 47 10.0	+8.4
YHNB				LR	LR		
	comp=Z,2μm,20.0s						
TATO	**Taipei**	**73.70**	**302**	PFAKE		10 47 10.0	+8.3
TATO				LR	LR		
	comp=Z,1μm,20.0s						
MURC	**Murrieta**	**73.75**	**47**	P	**P**	**10 47 02.8**	**+0.9**
	baz=238						
EDW2	**Edwards Air Fo**	**73.87**	**46**	P	**P**	**10 47 03.5**	**+0.8**
	baz=237						
SBUM	**Sibu**	**73.95**	**277**	⇓P	**P**	**10 47 03.8**	**+0.4**
ISA	**Isabella, Lake**	**73.96**	**45**	P	**P**	**10 47 04.9**	**+1.7**
	baz=237						
ISA	**Isabella, Lake**	**73.96**	**45**	*e*P	**P**	**10 47 04.9**	**+1.7**
ISA				pmax	pmax		
	comp=Z,22nm,1.1s						
ISA	**Isabella, Lake**	**73.96**	**45**	*e*P	**P**	**10 47 04.9**	**+1.7**
	comp=Z,22nm,1.1s						
CMB	**Columbia Colle**	**74.01**	**42**	*e*P	**P**	**10 47 03.6**	**+0.2**
CMB				pmax	pmax		
	comp=Z,21nm,1.2s						
CMB	**Columbia Colle**	**74.01**	**42**	*e*P	**P**	**10 47 03.6**	**+0.2**
	comp=Z,21nm,1.2s						
WDC	**Whiskeytown Da**	**74.16**	**39**	*e*P	**P**	**10 47 05.3**	**+1.2**
WDC				pmax	pmax		
	comp=Z,72nm,1.9s						
WDC	**Whiskeytown Da**	**74.16**	**39**	*e*P	**P**	**10 47 05.3**	**+1.2**
	comp=Z,72nm,1.9s						
AFDM	**Forest Hills D**	**74.17**	**41**	*e*P	**P**	**10 47 04.9**	**+0.7**
	comp=Z,18nm,1.3s						
PFO	**Pinyon Flats O**	**74.28**	**48**	P	**P**	**10 47 04.9**	**-0.2**
	comp=Z,3.9nm,0.7s,baz=256,slow=3.2,SNR=4.6						
PFO	**Pinyon Flats O**	**74.28**	**48**	P	**P**	**10 47 06.8**	**+1.6**
	baz=239						
PFO	**Pinyon Flats O**	**74.28**	**48**	*e*P	**P**	**10 47 04.9**	**-0.2**
PFO				pmax	pmax		
	comp=Z,18nm,1.2s						
PFO				MLR	MLR		
	comp=Z,3μm,21.0s						
PFO	**Pinyon Flats O**	**74.28**	**48**	*e*P	**P**	**10 47 04.9**	**-0.2**
	comp=Z,18nm,1.2s						
PFO				LR	LR		
	comp=Z,3μm,21.0s						
TPFO	**Pinon Flats**	**74.28**	**48**	P	**P**	**10 47 06.5**	**+1.3**
	baz=239						
N02D	**Trinity Center**	**74.30**	**39**	P	**P**	**10 47 06.6**	**+1.6**
	baz=232						
O03D	**Pa

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     baz=233
KDAK Kodiak Island      75.42 12  PFAKE                10 47 20.0 +9.1
KDAK                              LR    LR
     comp=Z,2μm,22.0s
GRAC Grapevine Rang     75.43 44  P     P             10 47 12.4 +0.8
     baz=237
GMRC Granite Mounta     75.45 47  P     P             10 47 12.0 +0.1
     baz=239
FURC Furnace Creek,     75.49 45  P     P             10 47 12.0 +0.1
     baz=238
IRM  Iron Mountain      75.50 48  P     P             10 47 12.2 +0.1
     baz=240
KSM  Kuching            75.50 276 ⇓P    P             10 47 13.0 +0.5
KSM  Kuching            75.50 276 PFAKE               10 47 20.0 +7.5
KSM                               LR    LR
     comp=Z,596nm,22.0s
NV01 Mina Array Sit     75.59 43  eP    P             10 47 12.5 -0.3
NVAR Mina Array Bea     75.59 43  P     P             10 47 12.5 -0.3
     comp=Z,9.5nm,1.0s,baz=226,slow=9.3,SNR=30
NVAR                              LR    LR            11 14 59.4
     comp=Z,2μm,18.6s,baz=240,slow=31
PAHR Pah Rah Range      75.61 41  eP    P             10 47 13.3 +0.5
     comp=Z,24nm,1.4s
NV11 Mina Array Sit     75.69 43  eP    P             10 47 13.6 +0.4
     comp=Z,27nm,1.1s
TYV  Tymovskoe          75.72 334 eP    P             10 47 12.0 -0.9
TYV                               pmax  pmax
     comp=Z,200nm,2.0s
TYV                               pmax  pmax
     comp=Z,500nm,5.0s
Y12C Blythe             75.74 49  P     P             10 47 13.8 +0.4
     baz=240
113A Mohawk Valley,     75.81 50  eP    P             10 47 14.3 +0.5
     comp=Z,27nm,1.4s
LEM  Lembang            75.92 267 P     P             10 47 20.4 +5.4
     comp=Z,11nm,0.4s,baz=227,slow=4.1,SNR=8.1
INCN Inchon             75.95 316 PFAKE               10 47 30.0 +15
INCN                              LR    LR
     comp=Z,2μm,20.0s
QZH  Quanzhou           76.06 301 ⇑iP   P             10 47 24.0 +8.6
QZH                               S     S             10 56 58.5 -0.7
QZH  Quanzhou           76.06 301 ScS   ScS           10 57 34.8 +4.2
QZH                               pmax  pmax
     comp=Z,860nm,3.7s
QZH                               LR    LR
     comp=N,2μm,18.7s
QZH                               LR    LR
     comp=E,3μm,23.5s
QZH                               LR    LR
     comp=Z,6μm,40.8s
TPNV Topopah Spring     76.16 45  P     P             10 47 16.1 +0.1
     baz=238
TPNV Topopah Spring     76.16 45  eP    P             10 47 16.1 +0.1
TPNV                              pmax  pmax
     comp=Z,32nm,1.4s
TPNV Topopah Spring     76.16 45  eP    P             10 47 16.1 +0.1
     comp=Z,32nm,1.4s
MOD  Modoc Plateau      76.30 39  eP    P             10 47 17.4 +0.8
     comp=Z,23nm,1.4s
K05A Summer Lake        76.43 38  eP    P             10 47 18.9 +1.5
     comp=Z,56nm,1.4s
USRK Ussuriysk Ar.      76.48 324 P     P             10 47 17.5 +0.1
     comp=Z,1.0nm,0.6s,baz=247,slow=1.1,SNR=3.9
USRK                              LR    LR            11 14 53.2
     comp=Z,6μm,21.6s,baz=113,slow=31
J05D Fort Rock, OR      76.56 37  P     P             10 47 18.4 +0.3
     baz=233,SNR=7.6
MIR  Mirnyy             76.59 204 eP    P             10 47 20.0 +2.3
MIR                               pmax  pmax
     comp=Z,4.0nm,1.0s
SHPR Sheep Range        76.68 46  eP    P             10 47 18.9 -0.1
     comp=Z,28nm,1.4s
SSE  Sheshan            76.69 308 eP    P             10 47 17.5 -1.3
SSE                               S     S             10 57 02.0 -3.9
SSE                               pmax  pmax
     comp=Z,49nm,0.7s
SSE                               pmax  pmax
     comp=Z,62nm,5.2s
SSE                               LR    LR
     comp=Z,990nm,32.9s
SSE                               LR    LR
     comp=Z,1μm,32.8s
SSE                               LR    LR
     comp=Z,2μm,27.2s
H04A Detroit Lake       76.86 36  eP    P             10 47 20.0 +0.4
     comp=Z,22nm,1.1s
W13A Hualapai Mount     76.87 48  eP    P             10 47 20.1 +0.1
     comp=Z,17nm,1.2s
Y14A Wickenburg         76.93 49  eP    P             10 47 20.6 +0.3
     comp=Z,51nm,1.0s
I05D Terrebonne, OR     77.14 36  P     P             10 47 21.2 +0.1
     baz=233,SNR=5.6
R11A Troy Canyon, C     77.35 44  P     P             10 47 22.9 +0.3
     baz=238
HABR Khabarovsk         77.56 329 ceP   P             10 47 22.2 -1.1
HABR                              e                   10 47 32.4
HABR                              e*SP  PcP           10 47 36.5 +2.9
HABR                              e                   10 50 16.9
HABR                              ePPP  PPP           10 52 04.2
HABR                              eS    S             10 57 11.0 -3.7
HABR                              e*SS  sS            10 57 28.2 +8.1
HABR                              e                   10 57 37.0
HABR                              eSS   SS            11 02 10.9 -3.6
HABR                              eSSS  SSS           11 05 35.3
HABR                              pmax  pmax
     comp=N,13nm,2.0s
HABR                              pmax  pmax
     comp=Z,43nm,2.0s
HABR                              pmax  pmax
     comp=E,14nm,1.4s
HABR                              MLR   MLR
     comp=Z,1μm,20.0s
WVOR Wild Horse Val     77.62 39  eP    P             10 47 23.6 -0.4
WVOR                              pmax  pmax
     comp=Z,21nm,1.4s
WVOR                              MLR   MLR
     comp=Z,2μm,19.0s
WVOR Wild Horse Val     77.62 39  eP    P             10 47 23.6 -0.4
     comp=Z,21nm,1.4s
WVOR                              LR    LR
     comp=Z,2μm,19.0s
NLWA Neilton Lookou     77.64 33  PFAKE               10 47 40.0 +16
NLWA                              LR    LR
     comp=Z,931nm,20.0s
TUC  Tucson             77.81 51  P     P             10 47 25.3 +0.1
     baz=243
TUC  Tucson             77.81 51  eP    P             10 47 25.1 -0.1
TUC                               pmax  pmax
     comp=Z,43nm,1.7s
TUC                               MLR   MLR
     comp=Z,3μm,21.0s
TUC  Tucson             77.81 51  eP    P             10 47 25.1 -0.1
     comp=Z,43nm,1.7s
TUC                               LR    LR
     comp=Z,3μm,21.0s
MDJ  Mudanjiang         78.11 323 P     P             10 47 27.3 +0.8
MDJ                               pP    PcP           10 47 38.8 +2.7
MDJ                               sP    sP            10 47 44.5 +13
MDJ                               S     S             10 57 25.9 +5.1
MDJ                               pmax  pmax
     comp=Z,4.0nm,0.7s
MDJ                               LR    LR
     comp=Z,1μm,28.1s
MDJ                               LR    LR
     comp=Z,3μm,27.4s
MDJ                               LR    LR
     comp=Z,4μm,28.1s
MDJ  Mudanjiang         78.11 323 PFAKE               10 47 40.0 +13
MDJ                               LR    LR
     comp=Z,4μm,21.0s
LCMT Little Creek M     78.27 46  eP    P             10 47 27.9 +0.1
     comp=Z,21nm,1.4s
X16A Lo Mia Camp, P     78.30 49  eP    P             10 47 28.2 +0.2
     comp=Z,25nm,1.3s
LON  Longmire           78.34 34  eP    P             10 47 29.4 +1.6
LON                               pmax  pmax
     comp=Z,39nm,1.8s
LON  Longmire           78.34 34  eP    P             10 47 29.4 +1.6
     comp=Z,39nm,1.8s
D05A Enumclaw           78.51 34  eP    P             10 47 30.5 +1.8
     comp=Z,105nm,1.4s
319A Douglas            78.54 53  eP    P             10 47 29.4 0.0
     comp=Z,26nm,1.3s
KNB  Kanab              78.56 46  eP    P             10 47 29.4 0.0
KNB                               pmax  pmax
     comp=Z,50nm,1.4s
KNB  Kanab              78.56 46  eP    P             10 47 29.4 0.0
     comp=Z,50nm,1.4s
PSUT Pine Spring        78.61 45  eP    P             10 47 30.1 +0.4
     comp=Z,9.7nm,1.0s
U15A North Rim          78.65 47  eP    P             10 47 30.2 +0.2
     comp=Z,55nm,1.5s
PGC  Sidney             78.66 32  eP    P             10 47 31.2 +1.8
     comp=Z,47nm,1.4s
WUAZ Wupatki            78.87 48  P     P             10 47 31.7 +0.5
     baz=242
WUAZ Wupatki            78.87 48  PFAKE               10 47 40.0 +8.9
WUAZ                              LR    LR
     comp=Z,2μm,20.0s
NJ2  Nanjing            78.90 308 eP    P             10 47 33.6 +2.5
NJ2                               S     S             10 57 31.9 +2.1
NJ2                               SS    SS            11 02 33.8 -1.5
NJ2                               pmax  pmax
     comp=Z,19nm,0.6s
NJ2                               LR    LR
     comp=Z,780nm,18.4s
NJ2                               LR    LR
     comp=Z,1μm,19.5s
NJ2                               LR    LR
     comp=Z,2μm,22.8s
G08A Pilot Rock         79.07 37  eP    P             10 47 33.2 +1.3
     comp=Z,19nm,1.2s
B05A Bryant             79.12 33  P     P             10 47 33.3 +1.4
     baz=232
HAWA Hanford            79.38 36  PFAKE               10 47 50.0 +17
HAWA                              LR    LR
     comp=Z,931nm,20.0s
X18A Snowflake          79.44 50  eP    P             10 47 34.9 +0.6
     comp=Z,18nm,1.3s
MTPU Mount Pierson      79.50 46  eP    P             10 47 35.3 +0.5
     comp=Z,38nm,1.5s
KLR  Kul'dur            79.72 328 P     P             10 47 35.0 -0.3
     comp=Z,1.4nm,1.0s,baz=332,slow=4.7,SNR=3.9
KLR  Kul'dur            79.72 328 eP    P             10 47 35.0 -0.3
MSU  Marysvale          79.74 45  eP    P             10 47 36.0 +0.1
MSU  Marysvale          79.74 45  eP    P             10 47 36.0 +0.1
BMO  Blue Mountains     79.78 38  eP    P             10 47 36.8 +1.0
     comp=Z,28nm,1.6s
BMO                               LR    LR
     comp=Z,751nm,19.0s
MA2  Magadan            79.80 343 PFAKE               10 47 50.0 +15
MA2                               LR    LR
     comp=Z,4μm,21.0s
MFID Camas Ranch        79.88 40  eP    P             10 47 37.5 +1.1
     comp=Z,26nm,1.5s
DIV  Divide             79.94 14  eP    P             10 47 35.2 -1.0
     comp=Z,54nm,1.6s
DL2  Dalian             80.07 315 eP    P             10 47 43.3 +5.9
DL2                               S     S             10 57 47.8 +5.9
DL2                               pmax  pmax
     comp=Z,66nm,1.1s
DL2                               pmax  pmax
     comp=Z,210nm,3.7s
DL2                               LR    LR
     comp=Z,840nm,19.2s
DL2                               LR    LR
     comp=Z,1μm,20.7s
DL2                               LR    LR
     comp=Z,2μm,20.8s
CN2  Changchun          80.11 321 eP    P             10 47 36.1 -1.4
CN2                               eS    S             10 57 46.3 +4.1
CN2                               pmax  pmax
     comp=Z,10.0nm,0.5s
CN2                               pmax  pmax
     comp=Z,200nm,5.0s
CN2                               LR    LR
     comp=Z,900nm,23.0s
CN2                               LR    LR
     comp=Z,1μm,23.0s
CN2                               LR    LR
     comp=Z,2μm,24.0s
WRAK Wrangell Islan     80.13 23  PFAKE               10 47 50.0 +13
WRAK                              LR    LR
     comp=Z,908nm,19.0s
DUG  Dugway, Tooele     80.14 44  eP    P             10 47 39.1 +1.1
DUG                               pmax  pmax
     comp=Z,12nm,1.1s
DUG                               MLR   MLR
     comp=Z,2μm,19.0s
DUG  Dugway, Tooele     80.14 44  eP    P             10 47 39.1 +1.1
     comp=Z,12nm,1.1s
DUG                               LR    LR
     comp=Z,2μm,19.0s
KLU  Klutina            80.23 14  eP    P             10 47 38.7 +0.9
     comp=Z,40nm,1.6s
CRQM Cirque             80.26 15  eP    P             10 47 38.5 +0.3
Q16A Castle Valley      80.62 45  eP    P             10 47 39.1 -1.6
     comp=Z,28nm,1.7s
B08A Colville Reser     80.65 34  eP    P             10 47 40.9 +0.5
     comp=Z,22nm,1.3s
BALM Baldy              80.70 16  eP    P             10 47 39.9 -0.5
BALM                              pmax  pmax
     comp=Z,28nm,1.4s
BALM Baldy              80.70 16  eP    P             10 47 39.9 -0.5
     comp=Z,28nm,1.4s
CAST Castle Rocks       80.74 10  eP    P             10 47 39.4 -1.1
     comp=Z,16nm,1.3s
TMUT Trail Mountain     80.78 45  eP    P             10 47 42.3 +0.7
     comp=Z,22nm,1.3s
HLID Hailey             80.83 40  P     P             10 47 41.7 +0.1
     baz=238,SNR=10
HLID Hailey             80.83 40  eP    P             10 47 41.6 0.0
     comp=Z,15nm,1.2s
HLID                              LR    LR
     comp=Z,857nm,22.0s
MPU  Maple Canyon       80.84 44  eP    P             10 47 41.8 0.0
     comp=Z,18nm,1.6s
P17A Butcher Ranch,     81.18 45  eP    P             10 47 44.1 +0.5
     comp=Z,23nm,1.4s
JLU  Jordanelle         81.25 44  eP    P             10 47 44.9 +0.9
     comp=Z,16nm,1.5s
QIZ  Qiongzhong         81.38 292 P     P             10 47 47.0 +2.2
QIZ                               S     S             10 57 59.9 +3.5
QIZ                               SS    SS            11 03 16.6 +3.7
QIZ                               LR    LR
     comp=Z,470nm,20.1s
QIZ                               LR    LR
     comp=Z,160nm,19.6s
LAZ  Ladron             81.47 51  eP    P             10 47 45.7 +0.4
Y22D IRIS PASSCAL I     81.50 51  P     P             10 47 45.4 0.0
     baz=245
TCUT Toone Canyon       81.52 43  eP    P             10 47 45.9 +0.4
     comp=Z,150nm,1.7s
BPAW Bear Paw Mtn.      81.56 10  eP    P             10 47 45.7 +0.9
     comp=Z,22nm,1.6s
P18A Preston Nutter     81.59 45  eP    P             10 47 46.2 +0.2
     comp=Z,16nm,1.4s
PAX  Paxson             81.63 13  eP    P             10 47 46.0 +0.7
PAX                               pmax  pmax
     comp=Z,41nm,1.7s
PAX  Paxson             81.63 13  eP    P             10 47 46.0 +0.7
     comp=Z,41nm,1.7s
HWUT Hardware Ranch     81.66 43  PFAKE               10 48 00.0 +14
HWUT                              LR    LR
     comp=Z,2μm,20.0s
MNTX Cornudas Mount     81.69 54  P     P             10 47 46.1 -0.2
     baz=246
MNTX Cornudas Mount     81.69 54  eP    P             10 47 45.8 -0.5
     comp=Z,32nm,1.5s
MVCO Mesa Verde         81.70 48  P     P             10 47 46.5 0.0
     baz=243
MVCO Mesa Verde         81.70 48  eP    P             10 47 45.5 -1.0
MVCO                              LR    LR
     comp=Z,2μm,20.0s
BNM  Barren Site        81.75 51  eP    P             10 47 46.9 +0.1
WHN  Wuhan              81.77 305 P     P             10 47 41.1 -5.5
WHN  Wuhan              81.77 305 S     S             10 57 55.8 -4.2
WHN                               LR    LR
     comp=N,2μm,20.0s
WHN                               LR    LR
     comp=E,2μm,14.6s
WHN                               LR    LR
     comp=Z,5μm,33.2s
MYKOM Kota Tinggi       81.79 274 ⇓P    P             10 47 47.7 +0.5
NEW  Newport            81.80 35  P     P             10 47 46.2 -0.3
     baz=236
NEW  Newport            81.80 35  PFAKE               10 48 00.0 +14
NEW                               LR    LR
     comp=Z,840nm,20.0s
LPM  Los Pinos Moun     81.81 51  eP    P             10 47 47.0 0.0
PV09 Paradox Valley     81.84 46  eP    P             10 47 48.8 +1.5
TX31 Lajitas Ar. Si     82.12 57  eP    P             10 47 48.9 +0.2
LTX  Lajitas            82.12 57  eP    P             10 47 47.7 -1.0
LTX  Lajitas            82.12 57  eP    P             10 47 47.6 -1.0
TXAR Lajitas Array      82.12 57  P     P             10 47 47.6 -1.0
     comp=Z,8.8nm,1.2s,baz=212,slow=4.4,SNR=20
TXAR                              LR    LR            11 18 29.5
     comp=Z,1μm,18.3s,baz=0.0,slow=32
ANMO Albuquerque        82.21 51  P     P             10 47 47.5 -1.6
     comp=Z,16nm,1.2s,baz=226,slow=4.0,SNR=23
ANMO Albuquerque        82.21 51  P     P             10 47 48.7 -0.4
     baz=245
ANMO Albuquerque        82.21 51  PFAKE               10 48 00.0 +11
ANMO                              LR    LR
     comp=Z,2μm,20.0s
SEY  Seymchan           82.23 346 P     P             10 47 47.1 -1.2
     comp=Z,5.5nm,0.9s,baz=144,slow=4.2
SEY  Seymchan           82.23 346⇑eP    P             10 47 46.2 -2.1
KGM  Kluang             82.36 274 ⇑P    P             10 47 50.3 +0.2
WRH  Wood River Hil     82.43 11  eP    P             10 47 48.6 -0.7
     comp=Z,76nm,1.4s
MLY  Manley             82.46 10  eP    P             10 47 49.5 0.0
     comp=Z,22nm,1.4s
DLBC Dease Lake         82.47 22  P     P             10 47 49.3 -0.5
     comp=Z,2.1nm,1.0s,baz=237,slow=6.3,SNR=5.7
DLBC Dease Lake         82.47 22  eP    P             10 47 50.1 +0.3
     comp=Z,35nm,1.8s
AHID Auburn Hatcher     82.52 42  PFAKE               10 48 00.0 +9.4
AHID                              LR    LR
     comp=Z,935nm,20.0s
CCB  Clear Creek Bu     82.64 12  eP    P             10 47 49.0 -1.4
     comp=Z,114nm,1.8s
MSO  Missoula           82.83 37  P     P             10 47 51.5 -0.5
     baz=238
COLA College            82.83 11  eP    P             10 47 50.7 -0.7
COLA                              pmax  pmax
     comp=Z,138nm,1.9s
COLA                              MLR   MLR
     comp=Z,2μm,20.0s
COLA College            82.83 11  eP    P             10 47 50.7 -0.7
     comp=Z,138nm,1.9s
COLA                              LR    LR
     comp=Z,2μm,20.0s
DLMT Dillon             82.87 39  eP    P             10 47 53.3 +0.9
     comp=Z,66nm,1.9s
BSMT Bassoo Peak        82.88 36  eP    P             10 47 53.0 +0.6
IL1  Eielson Array      82.93 12  eP    P             10 47 50.3 -1.6
ILAR Eielson Array      82.93 12  P     P             10 47 50.9 -1.1
     comp=Z,4.7nm,1.2s,baz=221,slow=6.3,SNR=15
ILAR                              LR    LR            11 17 41.8
     comp=Z,960nm,21.9s,baz=216,slow=31
ILB  Eielson Array      82.93 12  eP    P             10 47 51.5 -0.5
SNOW Snow King Moun     83.08 41  eP    P             10 47 53.2 -0.4
     comp=Z,31nm,1.3s
S22A 4UR Ranch, Cre     83.13 48  P     P             10 47 54.2 +0.2
     baz=244
S22A 4UR Ranch, Cre     83.13 48  eP    P             10 47 54.6 +0.6
     comp=Z,42nm,1.4s
SWMT Swartz Lake        83.15 37  eP    P             10 47 54.1 +0.5
O20A White River Ci     83.19 45  P     P             10 47 54.3 +0.1
     baz=243,SNR=7.2
O20A White River Ci     83.19 45  eP    P             10 47 53.4 -0.8
     comp=Z,37nm,1.5s
FLWY Flagg Ranch        83.42 41  eP    P             10 47 55.4 +0.2
     comp=Z,43nm,1.3s
YFT  Old Faithful       83.51 41  eP    P             10 47 57.8 +2.1
     comp=Z,29nm,1.6s
BW06 Boulder Array      83.52 42  P     P             10 47 55.3 -0.5
     baz=242,SNR=12
BW06 Boulder Array      83.52 42  eP    P             10 47 55.3 -0.5
     comp=Z,28nm,1.5s
BW06                              LR    LR
     comp=Z,1μm,19.0s
PD31 Pinedale Array     83.52 42  eP    P             10 47 54.9 -0.9
PDAR Pinedale Array     83.52 42  P     P             10 47 54.6 -1.2
     comp=Z,6.4nm,1.0s,baz=219,slow=3.2,SNR=27
PDAR                              LR    LR            11 20 39.0
     comp=Z,1μm,18.6s,baz=248,slow=32
YMR  Madison River      83.53 40  eP    P             10 47 56.7 +0.9
     comp=Z,61nm,1.5s
BOZ  Bozeman (W)        83.61 39  P     P             10 47 55.8 -0.3
     baz=240
BOZ  Bozeman (W)        83.61 39  eP    P             10 47 56.1 0.0
BOZ                               pmax  pmax
     comp=Z,32nm,1.5s
BOZ                               MLR   MLR
     comp=Z,1μm,22.0s
BOZ  Bozeman (W)        83.61 39  eP    P             10 47 56.1 0.0
     comp=Z,32nm,1.5s
BOZ                               LR    LR
     comp=Z,1μm,22.0s
H17A Grant Village      83.64 41  P     P             10 47 57.2 +0.7
     baz=241,SNR=6.7
H17A Grant Village      83.64 41  eP    P             10 47 57.4 +0.9
     comp=Z,23nm,1.4s
LKWY Lake               83.84 41  eP    P             10 47 58.5 +1.1
LKWY                              pmax  pmax
     comp=Z,36nm,1.5s
LKWY                              MLR   MLR
     comp=Z,1μm,19.0s
LKWY Lake               83.84 41  eP    P             10 47 58.5 +1.1
     comp=Z,36nm,1.5s
LKWY                              LR    LR
     comp=Z,1μm,19.0s
HRY  Holter Researc     84.01 38  eP    P             10 47 59.3 +1.1
WALA Waterton Lakes     84.02 35  eP    P             10 47 58.5 +0.5
     comp=Z,45nm,1.8s
SDCO Great Sand Dun     84.08 48  P     P             10 47 58.6 -0.3
     baz=245
SDCO Great Sand Dun     84.08 48  eP    P             10 47 59.9 +1.0
     comp=Z,20nm,1.5s
SDCO                              LR    LR
     comp=Z,2μm,20.0s
EGAK Eagle              84.17 14  PFAKE               10 48 10.0 +12
EGAK                              LR    LR
     comp=Z,2μm,21.0s
BJT  Baijiatuau         84.33 314 eP    P             10 47 58.2 -1.5
BJT                               pmax  pmax
     comp=Z,94nm,1.5s
BJT                               MLR   MLR
     comp=Z,1μm,19.0s
BJT  Baijiatuau         84.33 314 eP    P             10 47 58.1 -1.5
     comp=Z,94nm,1.5s
BJT                               LR    LR
     comp=Z,1μm,19.0s
BJI  Beijing            84.34 314 P     P             10 48 00.1 +0.4
BJI                               PP    PP            10 51 15.8 +1.0
BJI                               S     S             10 58 25.4 -0.3
BJI                               SS    SS            11 03 51.3 -4.7
BJI                               pmax  pmax
     comp=Z,16nm,1.3s
BJI                               LR    LR
     comp=Z,930nm,18.3s
BJI                               LR    LR
     comp=Z,1μm,20.1s
BJI                               LR    LR
     comp=Z,2μm,25.4s
BILL Bilibino           84.44 353 ciP   P             10 47 58.6 -1.0
BILL                              e                   10 51 11.3
BILL                              iS    S             10 58 25.8 +0.2
BILL                              eSS   SS            11 03 50.3 -6.1
BILL                              pmax  pmax
     comp=Z,40nm,2.0s
BILL Bilibino           84.44 353 PFAKE               10 48 10.0 +10
BILL                              LR    LR
     comp=Z,4μm,20.0s
COLD Coldfoot           84.56 10  eP    P             10 48 00.0 -0.2
     comp=Z,31nm,1.2s
MSTX Muleshoe           84.60 53  P     P             10 48 00.7 -0.7
     baz=247
MSTX Muleshoe           84.60 53  eP    P             10 48 01.0 -0.4
     comp=Z,48nm,1.4s
T25A Trinidad           84.63 49  P     P             10 48 00.6 -1.0
     baz=246
T25A Trinidad           84.63 49  eP    P             10 48 01.2 -0.3
     comp=Z,21nm,1.5s
PMSA Palmer Station     84.73 156 PFAKE               10 48 10.0 +8.7
PMSA                              LR    LR
     comp=Z,3μm,20.0s
832A Faith Ranch, C     84.75 59  P     P             10 48 01.1 -1.0
     baz=249,SNR=5.2
RLMT Red Lodge          84.81 40  P     P             10 48 02.4 +0.1
     baz=242,SNR=10
RLMT Red Lodge          84.81 40  PFAKE               10 48 10.0 +7.7
RLMT                              LR    LR
     comp=Z,728nm,20.0s
Q24A Divide             84.84 47  P     P             10 48 02.2 -0.5
     baz=245
ISCO Idaho Springs      84.87 46  P     P             10 48 02.5 -0.4
     baz=245
ISCO Idaho Springs      84.87 46  PFAKE               10 48 10.0 +7.2
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ISCO				LR	LR		
	comp=Z,1μm,19.0s						
GCMT	**Greycliff**	**84.88**	**40**	*e*P	**P**	**10 48 01.1**	**-1.5**
PAYG	**Puerto Ayora**	**84.89**	**89**	PFAKE		10 48 10.0	+6.8
PAYG				LR	LR		
	comp=Z,758nm,19.0s						
COCO	**West Island**	**84.90**	**259**	PFAKE		10 48 10.0	+6.9
COCO				LR	LR		
	comp=Z,2μm,19.0s						
933A	**Laredo**	**85.09**	**60**	P	**P**	**10 48 03.3**	**-0.6**
	baz=250						
N23A	**Red Feather La**	**85.10**	**45**	P	**P**	**10 48 03.9**	**0.0**
	baz=245,SNR=5.1						
N23A	**Red Feather La**	**85.10**	**45**	*e*P	**P**	**10 48 04.9**	**+1.0**
	comp=Z,30nm,1.4s						
IPM	**Ipoh**	**85.23**	**276**	*e*P	**P**	**10 48 05.3**	**+0.4**
	comp=Z,98nm,1.7s						
833A	**Chaparral WMA,**	**85.24**	**59**	P	**P**	**10 48 03.8**	**-0.8**
	baz=250						
034A	**Hebbronville**	**85.40**	**60**	P	**P**	**10 48 05.0**	**-0.3**
	baz=250						
733A	**Divot King Ran**	**85.46**	**59**	P	**P**	**10 48 05.0**	**-0.6**
	baz=250						
K22A	**Casper**	**85.47**	**44**	P	**P**	**10 48 04.9**	**-0.7**
	baz=244						
K22A	**Casper**	**85.47**	**44**	*e*P	**P**	**10 48 06.8**	**+1.2**
	comp=Z,66nm,1.8s						
ENH	**Enshi**	**85.56**	**303**	*e*P	**P**	**10 48 07.0**	**+0.8**
	comp=Z,66nm,1.6s						
ENH				LR	LR		
	comp=Z,1μm,20.0s						
MNSI	**Mandailing Nat**	**85.63**	**272**	P	P	10 48 20.2	+13
JCT	**Junction City**	**85.66**	**57**	P	**P**	**10 48 05.8**	**-0.9**
	baz=249						
JCT	**Junction City**	**85.66**	**57**	PFAKE		10 48 20.0	+13
JCT				LR	LR		
	comp=Z,951nm,20.0s						
035Z	**Hargill**	**85.71**	**61**	P	**P**	**10 48 06.2**	**-0.7**
	baz=250						
934A	**Benavides**	**85.72**	**60**	P	**P**	**10 48 07.0**	**+0.1**
	baz=250						
AMTX	**Amarillo**	**85.78**	**52**	P	**P**	**10 48 06.8**	**-0.5**
	baz=248						
633A	**Saathoff Ranch**	**85.81**	**58**	P	**P**	**10 48 06.9**	**-0.5**
	baz=250,SNR=12						
KULM	**Kulim**	**85.81**	**277**	*e*P	**P**	**10 48 06.3**	**-1.4**
	comp=Z,54nm,1.5s						
KULM				LR	LR		
	comp=Z,845nm,20.0s						
035A	**Encino**	**85.84**	**61**	P	**P**	**10 48 07.6**	**0.0**
	baz=250						
834A	**Tilden**	**85.87**	**59**	P	**P**	**10 48 07.5**	**-0.2**
	baz=250,SNR=6.6						
EGMT	**Eagleton**	**85.89**	**38**	P	**P**	**10 48 07.4**	**0.0**
	baz=241						
EGMT	**Eagleton**	**85.89**	**38**	PFAKE		10 48 20.0	+13
EGMT				LR	LR		
	comp=Z,687nm,19.0s						
SKNT	**Sakolnakorn**	**86.02**	**289**	P	**P**	**10 48 10.5**	**+1.8**
	comp=Z,36nm,1.5s						
TIY	**Taiyuan**	**86.05**	**311**	*e*P	**P**	**10 48 09.6**	**+1.1**
TIY				S	**S**	**10 58 45.8**	**+2.9**
TIY				pmax	pmax		
	comp=Z,240nm,5.7s						
TIY				LR	LR		
	comp=Z,870nm,17.3s						
TIY				LR	LR		
	comp=Z,2μm,22.9s						
TIY				LR	LR		
	comp=Z,2μm,19.7s						
734A	**La Parita Cree**	**86.11**	**59**	P	**P**	**10 48 08.7**	**-0.1**
	baz=250						
533A	**Kerrville**	**86.14**	**58**	P	**P**	**10 48 08.0**	**-1.0**
	baz=250,SNR=7.7						
HIA	**Hailar**	**86.29**	**323**	PFAKE		10 48 20.0	+11
HIA				LR	LR		
	comp=Z,4μm,20.0s						
433A	**Art**	**86.33**	**57**	P	**P**	**10 48 08.8**	**-1.1**
	baz=250,SNR=10						
SKLT	**Songkhla**	**86.36**	**278**	P	P	10 48 15.9	+5.5
	comp=Z,42nm,1.2s,comp=Z,751nm						
835A	**Beeville**	**86.52**	**60**	P	**P**	**10 48 09.5**	**-1.4**
	baz=250						
ABTX	**Abilene, Hawle**	**86.54**	**55**	P	**P**	**10 48 10.2**	**-0.8**
	baz=249,SNR=7.5						
ABTX	**Abilene, Hawle**	**86.54**	**55**	*e*P	**P**	**10 48 10.5**	**-0.5**
	comp=Z,54nm,1.3s						
534A	**Blanco**	**86.58**	**58**	P	**P**	**10 48 10.4**	**-0.8**
	baz=250,SNR=10						
GYA	**Guiyang**	**86.61**	**298**	P	**P**	**10 48 12.3**	**+0.8**
GYA				pP	sP	10 48 25.4	+9.3
GYA				PP	**PP**	**10 51 37.0**	**+3.3**
GYA				SKS	**SKSac**	**10 58 32.6**	**-6.2**
GYA				S	**SKKSac**	**10 58 45.5**	**-1.5**
GYA				sS	ScS	10 59 06.8	+10
GYA				SS	**SS**	**11 04 30.0**	**-0.3**
GYA				pmax	pmax		
	comp=Z,20nm,1.0s						
GYA				pmax	pmax		
	comp=Z,120nm,5.6s						
GYA				LR	LR		
	comp=Z,510nm,19.2s						
GYA				LR	LR		
	comp=Z,470nm,20.4s						
GYA				LR	LR		
	comp=Z,500nm,20.0s						
333A	**Richland Sprin**	**86.61**	**56**	P	**P**	**10 48 10.2**	**-1.1**
	baz=250,SNR=5.7						
KSCO	**Kaye Shedlock'**	**86.66**	**48**	P	**P**	**10 48 11.0**	**-0.5**
	baz=247						
735A	**Kenedy**	**86.73**	**59**	P	**P**	**10 48 11.0**	**-0.9**
	baz=250						
PSI	**Prapat**	**86.80**	**274**	*e*P	**P**	**10 48 12.1**	**-0.7**
PSI				pmax	pmax		
	comp=Z,62nm,1.6s						
PSI	**Prapat**	**86.80**	**274**	*e*P	**P**	**10 48 12.1**	**-0.7**
	comp=Z,62nm,1.6s						
233A	**Rising Star**	**86.92**	**56**	P	**P**	**10 48 11.9**	**-1.0**
	baz=250						
635A	**Leesville**	**86.94**	**59**	P	**P**	**10 48 12.5**	**-0.4**
	baz=250						
434A	**Burnet**	**87.01**	**57**	P	**P**	**10 48 12.2**	**-1.2**
	baz=250,SNR=8.2						
MAW	**Mawson**	**87.10**	**199**	P	**P**	**10 48 11.0**	**-2.0**
	comp=Z,6.1nm,1.2s,baz=108,slow=20,SNR=3.8						
MAW				LR	LR	11 25 19.9	
	comp=Z,1μm,18.1s,baz=113,slow=34						
MAW	**Mawson**	**87.10**	**199**	*e*P	**P**	**10 48 11.9**	**-1.1**
MAW				pmax	pmax		
	comp=Z,7.0nm,1.4s						
MAW	**Mawson**	**87.10**	**199**	*e*P	**P**	**10 48 11.9**	**-1.1**
	comp=Z,7.1nm,1.4s						
133A	**Hamilton Ranch**	**87.11**	**55**	P	**P**	**10 48 12.9**	**-0.8**
	baz=250						
334A	**Lometa**	**87.21**	**57**	P	**P**	**10 48 13.3**	**-1.0**
	baz=250,SNR=10						
535A	**Dale**	**87.32**	**58**	P	**P**	**10 48 14.2**	**-0.5**
	baz=250						
XAN	**Xi'an**	**87.34**	**306**	P	**P**	**10 48 14.8**	**0.0**
XAN				pP	sP	10 48 28.3	+8.9
XAN				sP	pP	10 48 33.4	+15
XAN				S	**S**	**10 58 58.1**	**+2.5**
XAN				pmax	pmax		
	comp=Z,12nm,1.0s						
XAN				LR	LR		
	comp=Z,760nm,22.1s						
XAN				LR	LR		
	comp=Z,1μm,22.1s						
XAN				LR	LR		
	comp=Z,1μm,21.2s						
736A	**Circle Diamond**	**87.38**	**59**	P	**P**	**10 48 15.1**	**0.0**
	baz=251						
LAO	**LASA Array**	**87.41**	**40**	P	**P**	**10 48 14.8**	**-0.2**
	baz=244						
LAO	**LASA Array**	**87.41**	**40**	PFAKE		10 48 30.0	+15
LAO				LR	LR		
	comp=Z,752nm,21.0s						
TRTT	**Trang**	**87.43**	**279**	P	**P**	**10 48 19.9**	**+4.3**
	comp=Z,25nm,1.9s,comp=Z,620nm						
X32A	**Elmer**	**87.46**	**53**	P	**P**	**10 48 14.5**	**-0.9**
	baz=249						
Z33A	**Whitaker Ranch**	**87.47**	**55**	P	**P**	**10 48 14.6**	**-0.8**
	baz=250						
234A	**Clairette**	**87.52**	**56**	P	**P**	**10 48 15.1**	**-0.6**
	baz=250,SNR=5.7						
435B	**Jarrell**	**87.56**	**57**	P	**P**	**10 48 15.4**	**-0.5**
	baz=250						
636A	**Smothers Creek**	**87.56**	**59**	P	**P**	**10 48 15.2**	**-0.7**
	baz=251						
RSSD	**Black Hills**	**87.73**	**43**	P	**P**	**10 48 16.0**	**-0.7**
	baz=246						
RSSD	**Black Hills**	**87.73**	**43**	*e*P	**P**	**10 48 16.6**	**-0.1**
RSSD				pmax	pmax		
	comp=Z,14nm,1.3s						
RSSD	**Black Hills**	**87.73**	**43**	*e*P	**P**	**10 48 16.6**	**-0.1**
	comp=Z,14nm,1.3s						
W32A	**Sentinel**	**87.73**	**53**	P	**P**	**10 48 15.6**	**-1.1**
	baz=249						
536A	**Bastrop**	**87.75**	**58**	P	**P**	**10 48 16.4**	**-0.4**
	baz=251						
Y33A	**Hilltop Ranch,**	**87.82**	**54**	P	**P**	**10 48 16.0**	**-1.2**
	baz=250						
OGNE	**Ogallala**	**87.83**	**47**	PFAKE		10 48 30.0	+13
OGNE				LR	LR		
	comp=Z,2μm,22.0s						
335A	**Moody**	**87.85**	**57**	P	**P**	**10 48 16.4**	**-0.9**
	baz=250						
HHC	**Hu-ho-hao-te**	**87.88**	**313**	*e*P	**P**	**10 48 17.6**	**+0.2**
HHC				PP	**PP**	**10 51 49.5**	**+5.8**
HHC				S	**S**	**10 58 59.3**	**-1.3**
HHC				pmax	pmax		
	comp=Z,36nm,1.3s						
HHC				pmax	pmax		
	comp=Z,210nm,7.5s						
HHC				LR	LR		
	comp=Z,790nm,17.2s						
HHC				LR	LR		
	comp=Z,780nm,17.6s						
HHC				LR	LR		
	comp=Z,1μm,17.2s						
I25A	**Rochford**	**87.89**	**43**	P	**P**	**10 48 16.7**	**-0.7**
	baz=246						
WMOK	**Wichita Mounta**	**87.96**	**53**	PFAKE		10 48 30.0	+12
WMOK				LR	LR		
	comp=Z,2μm,19.0s						
J26A	**Sides Ranch, S**	**88.04**	**44**	P	**P**	**10 48 17.4**	**-0.6**
	baz=246						
WHTX	**Lake Whitney,**	**88.06**	**56**	P	**P**	**10 48 17.5**	**-0.8**
	baz=250						
V32A	**Arapaho**	**88.10**	**52**	P	**P**	**10 48 17.7**	**-0.8**
	baz=249						
637A	**Eagle Lake**	**88.14**	**59**	P	**P**	**10 48 18.1**	**-0.6**
	baz=251						
Z34A	**Collier Ranch,**	**88.16**	**55**	P	**P**	**10 48 18.2**	**-0.6**
	baz=250						
436A	**Wall Ranch, Ga**	**88.19**	**58**	P	**P**	**10 48 18.1**	**-0.8**
	baz=251						
H25A	**Fruitdale**	**88.22**	**43**	P	**P**	**10 48 18.0**	**-0.8**
	baz=246						
135A	**Vickery Place,**	**88.29**	**56**	P	**P**	**10 48 17.9**	**-1.5**
	baz=250						
537A	**Green Hill Far**	**88.36**	**58**	P	**P**	**10 48 18.8**	**-1.0**
	baz=251						
YAK	**Yakutsk**	**88.58**	**337**	*e*P	**P**	**10 48 21.1**	**+1.1**
YAK				pmax	pmax		
	comp=Z,8.0nm,0.9s						
YAK	**Yakutsk**	**88.58**	**337**	PFAKE		10 48 30.0	+10
YAK				LR	LR		
	comp=Z,1μm,22.0s						
CBKS	**Cedar Bluff**	**88.68**	**49**	P	**P**	**10 48 20.8**	**-0.3**
	baz=249						
CBKS	**Cedar Bluff**	**88.68**	**49**	PFAKE		10 48 30.0	+8.9
CBKS				LR	LR		
	comp=Z,1μm,20.0s						
236A	**Katherine and**	**88.81**	**56**	P	**P**	**10 48 21.3**	**-0.5**
	baz=251						
INK	**Inuvik**	**88.83**	**14**	P	**P**	**10 48 19.8**	**-1.2**
	comp=Z,1.3nm,0.9s,baz=213,slow=2.9,SNR=6.1						
INK	**Inuvik**	**88.83**	**14**	*e*P	**P**	**10 48 21.1**	**+0.1**
INK	**Inuvik**	**88.83**	**14**	*e*P	**P**	**10 48 21.1**	**+0.1**
638A	**Rosharon**	**88.86**	**59**	P	**P**	**10 48 21.7**	**-0.4**
	baz=251						
R32A	**Long Quarter,**	**89.29**	**50**	P	**P**	**10 48 24.0**	**0.0**
	baz=250						
DGMT	**Dagmar**	**89.41**	**39**	P	**P**	**10 48 24.4**	**+0.1**
	baz=246						
DGMT	**Dagmar**	**89.41**	**39**	*e*P	**P**	**10 48 25.8**	**+1.4**
DGMT				LR	LR		
	comp=Z,1μm,20.0s						
D25A	**Fairfield**	**89.42**	**40**	P	**P**	**10 48 24.5**	**+0.1**
	baz=246						
U34A	**Anderson Ranch**	**89.49**	**52**	P	**P**	**10 48 24.8**	**-0.1**
	baz=250						
S33A	**Kaszmaul Farm,**	**89.53**	**51**	P	**P**	**10 48 24.7**	**-0.5**
	baz=250						
KMI	**Kunming**	**89.55**	**296**	P	**P**	**10 48 26.3**	**+0.5**
KMI				pP	sP	10 48 39.8	+10
KMI				sP	pP	10 48 44.6	+15
KMI				PP	**PP**	**10 52 01.1**	**+3.5**
KMI				S	**S**	**10 59 12.3**	**-5.0**
KMI				sS	sS	10 59 33.1	+10
KMI				SS	**SS**	**11 05 13.8**	**+0.3**
KMI				pmax	pmax		
	comp=Z,19nm,0.5s						
KMI				pmax	pmax		
	comp=Z,170nm,3.9s						
KMI				LR	LR		
	comp=Z,590nm,20.0s						
KMI				LR	LR		
	comp=Z,1μm,22.0s						
KMI				LR	LR		
	comp=Z,2μm,23.7s						
W35A	**Tecumseh**	**89.57**	**53**	P	**P**	**10 48 25.3**	**-0.1**
	baz=251						
I28A	**Midland**	**89.58**	**44**	P	**P**	**10 48 25.5**	**+0.3**
	baz=248						
Q32A	**Meitler Ranch,**	**89.60**	**49**	P	**P**	**10 48 25.1**	**-0.3**
	baz=250						
G27A	**Dupree**	**89.61**	**42**	P	**P**	**10 48 25.3**	**-0.1**
	baz=247						
Y36A	**Durant**	**89.62**	**55**	P	**P**	**10 48 25.1**	**-0.5**
	baz=251						
137A	**Heron Place, G**	**89.62**	**56**	P	**P**	**10 48 25.2**	**-0.4**
	baz=251						
X36A	**Centrahoma**	**89.78**	**54**	P	**P**	**10 48 26.4**	**0.0**
	baz=251						
R33A	**Olander Ranch,**	**89.79**	**50**	P	**P**	**10 48 26.4**	**0.0**
	baz=250						
T34A	**McClaskey Farm**	**89.95**	**52**	P	**P**	**10 48 27.3**	**+0.2**
	baz=250						
Q33A	**Connelly Farm,**	**90.14**	**49**	P	**P**	**10 48 28.5**	**+0.6**
	baz=250						
NATX	**Nacogdoches**	**90.24**	**57**	PFAKE		10 48 40.0	+11
NATX				LR	LR		
	comp=Z,1μm,20.0s						
E27A	**Carson**	**90.24**	**42**	P	**P**	**10 48 29.1**	**+0.8**
	baz=248						
T35A	**Sooner Cattle**	**90.43**	**52**	P	**P**	**10 48 29.2**	**-0.2**
	baz=251						
CD2	**Chengdu**	**90.43**	**302**	P	**P**	**10 48 29.5**	**0.0**
CD2				pP	sP	10 48 42.6	+8.5
CD2				PP	**PP**	**10 52 04.5**	**+0.3**
CD2				SKS	**SKSac**	**10 58 56.8**	**-4.6**
CD2				S	**S**	**10 59 21.8**	**-3.1**
CD2				SS	**SS**	**11 05 24.8**	**-1.0**
CD2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
CD2				pmax	pmax		
	comp=Z,110nm,5.7s						
CD2				LR	LR		
	comp=Z,1μm,19.6s						
CD2				LR	LR		
	comp=Z,2μm,18.6s						
J30A	**Dallas**	**90.47**	**45**	P	**P**	**10 48 30.1**	**+0.7**
	baz=249						
TUL1	**Leonard**	**90.65**	**53**	P	**P**	**10 48 30.8**	**+0.4**
	baz=251						
PLCA	**Paso Flores**	**90.67**	**133**	P	**P**	**10 48 28.5**	**-2.1**
	comp=Z,1.8nm,1.0s,baz=299,slow=6.2,SNR=3.0						
PLCA				LR	LR	11 22 40.1	
	comp=Z,2μm,18.7s,baz=261,slow=31						
O33A	**Hebron**	**90.68**	**49**	P	**P**	**10 48 30.9**	**+0.5**
	baz=250						
K31A	**O'Neill**	**90.73**	**46**	P	**P**	**10 48 30.9**	**+0.3**
	baz=250						
S35A	**Otter Creek Ra**	**90.82**	**51**	P	**P**	**10 48 31.2**	**+0.1**
	baz=251						
YKA	**Yellowknife Ar**	**90.92**	**24**	P	**P**	**10 48 30.0**	**-0.9**
	comp=Z,1.3nm,1.1s,baz=239,slow=4.2,SNR=13						
YKA	**Yellowknife Ar**	**90.92**	**24**	P	**P**	**10 48 30.0**	**-0.9**
YKB5	**Yellowknife Ar**	**90.92**	**24**	*e*P	**P**	**10 48 31.4**	**+0.5**
YKW3	**Yellowknife Ar**	**90.95**	**24**	*e*P	**P**	**10 48 31.9**	**+0.8**
	comp=Z,13nm,1.5s						
T36A	**Boggs Farm, Ca**	**90.95**	**52**	P	**P**	**10 48 31.7**	**0.0**
	baz=251						
X38A	**Whitesboro**	**91.01**	**54**	P	**P**	**10 48 31.7**	**-0.4**
	baz=252						
CM01	**Chiang Mai Arr**	**91.02**	**289**	*e*P	**P**	**10 48 31.9**	**-0.5**
CMAR	**Chiang Mai Arr**	**91.04**	**289**	P	**P**	**10 48 32.2**	**-0.3**
	comp=Z,0.9nm,0.5s,baz=88,slow=2.3,SNR=5.3						
CMAR				LR	LR	11 24 11.8	
	comp=Z,632nm,21.7s,baz=106,slow=32						
KSU1	**Kansas State U**	**91.07**	**50**	PFAKE		10 48 40.0	+7.8
KSU1				LR	LR		
	comp=Z,2μm,20.0s						
CHTO	**Chiang Mai**	**91.14**	**289**	P	P	10 48 38.6	+5.6
	comp=Z,66nm,1.3s						
CHTO	**Chiang Mai**	**91.14**	**289**	*e*P	**P**	**10 48 33.0**	**0.0**
CHTO				pmax	pmax		
	comp=Z,40nm,1.6s						
CHTO				MLR	MLR		
	comp=Z,1μm,22.0s						
CHTO	**Chiang Mai**	**91.14**	**289**	*e*P	**P**	**10 48 33.0**	**0.0**
	comp=Z,40nm,1.6s						
CHTO				LR	LR		
	comp=Z,1μm,22.0s						
F29A	**Eureka**	**91.14**	**43**	P	**P**	**10 48 32.6**	**+0.2**
	baz=249						
CMAI	**Chiengmai2**	**91.35**	**290**	P	P	10 48 43.8	+10
	comp=Z,14nm,1.5s,comp=Z,557nm						
W38A	**Poteau**	**91.37**	**54**	P	**P**	**10 48 33.6**	**-0.1**
	baz=252						
S36A	**Lake Cedric, C**	**91.38**	**51**	P	**P**	**10 48 34.2**	**+0.5**
	baz=251						
A27A	**Ledoux Ranch,**	**91.40**	**39**	P	**P**	**10 48 34.4**	**+0.8**
	baz=248						
T37A	**Cheneyville 18**	**91.70**	**52**	P	**P**	**10 48 35.4**	**+0.2**
	baz=252						
V38A	**Canehill**	**91.70**	**53**	P	**P**	**10 48 35.5**	**+0.3**
	baz=252						
U38A	**Gravette**	**91.90**	**53**	P	**P**	**10 48 35.8**	**-0.4**
	baz=252						
LZH	**Lanzhou**	**91.94**	**307**	*e*P	**P**	**10 48 40.3**	**+3.7**
LZH				pP	sP	10 48 48.1	+7.0
LZH				sP	pP	10 48 52.0	+12
LZH				*e*S	**S**	**10 59 33.0**	**-5.6**
LZH				sS	sS	10 59 52.0	+7.8
LZH				SS	**SS**	**11 05 48.1**	**+0.6**
LZH				pmax	pmax		
	comp=Z,31nm,1.2s						
LZH				pmax	pmax		
	comp=Z,78nm,5.1s						
LZH				LR	LR		
	comp=Z,680nm,17.4s						
LZH				LR	LR		
	comp=Z,1μm,18.2s						
LZH				LR	LR		
	comp=Z,1μm,18.0s						
MIAR	**Mount Ida**	**91.95**	**55**	P	**P**	**10 48 36.4**	**0.0**
	baz=252						
MIAR	**Mount Ida**	**91.95**	**55**	PFAKE		10 48 50.0	+14
MIAR				LR	LR		
	comp=Z,1μm,22.0s						
S37A	**Fort Scott**	**91.97**	**51**	P	**P**	**10 48 36.0**	**-0.4**
	baz=252						
W39A	**Magazine**	**91.99**	**54**	P	**P**	**10 48 36.3**	**-0.2**
	baz=252						
I32A	**Karley and Nic**	**92.09**	**45**	P	**P**	**10 48 36.8**	**0.0**
	baz=250						
SYO	**Syowa Base**	**92.11**	**192‖**	*e*X	P	10 48 32.0	-4.5
SYO	**Syowa Base**	**92.11**	**192‖**	*e*PcP	**P**	**10 48 37.0**	**+0.5**
T38A	**Diamond**	**92.15**	**52**	P	**P**	**10 48 37.4**	**0.0**
	baz=252						
L34A	**Svendsen Farm,**	**92.17**	**47**	P	**P**	**10 48 37.8**	**+0.5**
	baz=251						
F31A	**Hecla**	**92.18**	**43**	P	**P**	**10 48 37.9**	**+0.7**
	baz=250						
V39A	**Pettigrew**	**92.29**	**54**	P	**P**	**10 48 38.2**	**+0.2**
	baz=252						
TEIG	**Tepich**	**92.44**	**70**	PFAKE		10 48 50.0	+11
TEIG				LR	LR		
	comp=Z,415nm,21.0s						
G32A	**Webster**	**92.48**	**44**	P	**P**	**10 48 39.0**	**+0.3**
	baz=250						
Y41A	**Eaglette Beard**	**92.52**	**56**	P	**P**	**10 48 39.0**	**-0.1**
	baz=253						
ECSD	**EROS Data Cent**	**92.57**	**45**	P	**P**	**10 48 39.2**	**0.0**
	baz=251						
ECSD	**EROS Data Cent**	**92.57**	**45**	*e*P	**P**	**10 48 39.6**	**+0.5**
	comp=Z,14nm,1.4s						
ECSD				LR	LR		
	comp=Z,2μm,21.0s						
S38A	**Stockton**	**92.62**	**52**	P	**P**	**10 48 39.5**	**+0.1**
	baz=252						
A29A	**Manning Farm,**	**92.62**	**40**	P	**P**	**10 48 39.7**	**+0.5**
	baz=249						
E31A	**Nome**	**92.66**	**42**	P	**P**	**10 48 39.7**	**+0.3**
	baz=250						
C30A	**Mose, Pekin**	**92.67**	**41**	P	**P**	**10 48 39.9**	**+0.5**
	baz=250						
R38A	**Fenwick Farm,**	**92.79**	**51**	P	**P**	**10 48 39.9**	**-0.3**
	baz=252						
H33A	**Prehn Over Nor**	**92.80**	**44**	P	**P**	**10 48 40.3**	**+0.2**
	baz=251						
SNAA	**Sanae**	**92.84**	**178**	P	**P**	**10 48 38.2**	**-1.8**
SNAA	**Sanae**	**92.84**	**178**	*i* P	**P**	**10 48 39.4**	**-0.6**
SNAA	**Sanae**	**92.84**	**178**	*e*P	**P**	**10 48 38.0**	**-2.0**
T39A	**Clever**	**92.84**	**52**	P	**P**	**10 48 40.9**	**+0.4**
	baz=253						
VNA3	**Neumayer Olymp**	**92.86**	**175**	P	**P**	**10 48 38.3**	**-1.7**
P37A	**Lathrop**	**92.88**	**50**	P	**P**	**10 48 40.8**	**+0.1**
	baz=252						
V40A	**Witts Springs**	**92.92**	**54**	P	**P**	**10 48 40.7**	**-0.2**
	baz=253						
JTS	**JuntasAbangare**	**92.92**	**80**	PFAKE		10 48 50.0	+8.6
JTS				LR	LR		
	comp=Z,2μm,20.0s						
B30A	**Myrvik Farm, E**	**93.02**	**40**	P	**P**	**10 48 41.7**	**+0.6**
	baz=250						
U40A	**Yellville**	**93.05**	**53**	P	**P**	**10 48 41.7**	**+0.2**
	baz=253						
S39A	**Bolivar**	**93.08**	**52**	P	**P**	**10 48 41.6**	**0.0**
	baz=253						
W41B	**Gary Mavity, V**	**93.18**	**55**	P	**P**	**10 48 42.0**	**0.0**
	baz=253						
BOD	**Bodaibo**	**93.19**	**330**	*e*P	P	10 48 33.9	-7.7
A30A	**Hoffart Farm,**	**93.21**	**40**	P	**P**	**10 48 42.5**	**+0.6**
	baz=250						
O37A	**Wolven Farm, M**	**93.21**	**49**	P	**P**	**10 48 42.4**	**+0.3**
	baz=252						
Q38A	**Cooks Store, C**	**93.24**	**51**	P	**P**	**10 48 42.5**	**+0.2**
	baz=253						
VNA2	**Neumayer--Watz**	**93.33**	**176**	P	**P**	**10 48 40.7**	**-1.5**
	baz=156,slow=3.6						
ULN	**Ulaanbaatar**	**93.41**	**319**	*e*P	**P**	**10 48 44.7**	**+1.6**
ULN				pmax	pmax		
	comp=Z,26nm,1.7s						
ULN				MLR	MLR		
	comp=Z,1μm,21.0s						
ULN	**Ulaanbaatar**	**93.41**	**319**	*e*P	**P**	**10 48 44.7**	**+1.6**
	comp=Z,26nm,1.7s						
ULN				LR	LR		
	comp=Z,1μm,21.0s						
B31A	**Greenbush Farm**	**93.44**	**41**	P	**P**	**10 48 43.7**	**+0.7**
	baz=250						
F33A	**5 Mile Ranch,**	**93.47**	**43**	P	**P**	**10 48 43.2**	**0.0**
	baz=251						
R39A	**Chumby, Stover**	**93.48**	**51**	P	**P**	**10 48 43.1**	**-0.3**
	baz=253						
P38A	**Dawn**	**93.50**	**50**	P	**P**	**10 48 43.6**	**+0.1**
	baz=253						
T40A	**Mansfield**	**93.54**	**53**	P	**P**	**10 48 44.0**	**+0.2**
	baz=253						
VNA1	**Neumayer--Stat**	**93.54**	**176**	P	**P**	**10 48 41.8**	**-1.3**
M37A	**Trindle Farm,**	**93.64**	**48**	P	**P**	**10 48 44.8**	**+0.7**
	baz=252						
S40A	**Lebanon**	**93.68**	**52**	P	**P**	**10 48 44.4**	**0.0**
	baz=253						
O38A	**Galt**	**93.69**	**49**	P	**P**	**10 48 45.2**	**+0.9**
	baz=253						
EFI	**East Falkland**	**93.73**	**146**	PFAKE		10 48 50.0	+5.6
EFI				LR	LR		
	comp=Z,2μm,22.0s						
K36A	**Gilmore City**	**93.73**	**47**	P	**P**	**10 48 44.7**	**+0.2**

comp=Z,0.6nm,0.4s,baz=132,slow=2.1,SNR=3.6
SONM LR LR 11 26 02.2

comp=Z,1μm,21.3s,baz=108,slow=32
J36A Seneca 1, Swea 94.02 46 P **P 10 48 45.9 +0.1**
baz=252
P39B Salisbury 94.03 50 P **P 10 48 45.9 0.0**
baz=253
R40A Maddies Statio 94.05 52 P **P 10 48 46.1 0.0**
baz=253
L37A Phoenix Point, 94.07 48 P **P 10 48 46.1 +0.1**
baz=253
T41A Mountain View 94.09 53 P **P 10 48 46.1 -0.2**
baz=254
B32A Ashes, Strandq 94.13 41 P **P 10 48 46.3 +0.2**
baz=251
M38A Pleasantville 94.27 48 P **P 10 48 47.1 +0.2**
baz=253
A32A Rocking H Ranc 94.32 40 P **P 10 48 47.5 +0.5**
baz=251
K37A Belmond 94.34 47 P **P 10 48 47.3 +0.1**
baz=253
SCIA State Center 94.39 48 PFAKE 10 49 00.0 +12
SCIA LR LR

comp=Z,2μm,20.0s
Q40A Laux Farm, Aux 94.40 51 P **P 10 48 47.4 -0.2**
baz=254
C33A Trail 94.42 42 P **P 10 48 48.0 +0.5**
baz=252
E34A Wadena 94.42 43 P **P 10 48 47.8 +0.2**
baz=252
J37A Redenius Farm, 94.56 46 P **P 10 48 48.0 -0.3**
baz=253
P40A Paris 94.57 50 P **P 10 48 47.8 -0.6**
baz=254
D34A Park Rapids 94.58 42 P **P 10 48 48.0 -0.3**
baz=252
N39A Derby Farms, D 94.61 49 P **P 10 48 48.2 -0.4**
baz=254
F35A Swanville 94.62 44 P **P 10 48 48.8 +0.3**
baz=252
L38A Oak Wood Farm, 94.64 48 P **P 10 48 48.8 +0.2**
baz=253
TIXI Tiksi 94.69 345 *de*P **P 10 48 47.7 -0.5**
TIXI pmax pmax

comp=Z,12nm,2.6s
TIXI MLR MLR

comp=Z,918nm,18.0s
TIXI Tiksi 94.69 345 PFAKE 10 49 00.0 +12
TIXI LR LR

comp=Z,2μm,22.0s
LCO Las Campanas 94.73 122 PFAKE 10 49 00.0 +10
LCO LR LR

comp=Z,860nm,21.0s
O40A La Belle 94.86 50 P **P 10 48 49.7 0.0**
baz=254
I37A Lemond, Waseca 94.87 46 P **P 10 48 50.3 +0.6**
baz=253
A33A Warroad 95.02 41 P **P 10 48 50.1 -0.1**
baz=252
ULM Lac du Bonnet 95.12 39 P **P 10 48 49.3 -1.4**
comp=Z,1.0nm,0.3s,baz=226,slow=6.7,SNR=4.7
ULM LR LR 11 28 30.3

comp=Z,993nm,18.0s,baz=257,slow=34
ULM Lac du Bonnet 95.12 39 *e*P **P 10 48 50.7 0.0**
ULM Lac du Bonnet 95.12 39 *e*P **P 10 48 50.7 0.0**
J38A Wedel Dairy, R 95.32 47 P **P 10 48 51.8 0.0**
baz=254
F36A Milaca 95.32 44 P **P 10 48 51.3 -0.4**
baz=253
D35A Remer 95.32 43 P **P 10 48 51.5 -0.2**
baz=253
Y46A Houston 95.53 57 P **P 10 48 53.0 +0.2**
baz=255
Q42A Golden Eagle 95.53 51 P **P 10 48 53.4 +0.6**
baz=254
C35A Jirik Farms, M 95.55 42 P **P 10 48 52.4 -0.3**
baz=253
I38A Scanlan Farm, 95.62 46 P **P 10 48 53.0 -0.1**
baz=254
SPMN Marine on St. 95.62 45 P **P 10 48 53.1 0.0**
baz=254
SPMN Marine on St. 95.62 45 *e*P **P 10 48 53.9 +0.8**
comp=Z,16nm,1.3s
E36A McGregor 95.69 43 P **P 10 48 53.1 -0.2**
baz=254
B35A Bob, Littlefor 95.91 42 P **P 10 48 53.9 -0.4**
baz=253
D36A Goodland 95.93 43 P **P 10 48 54.1 -0.4**
baz=254
GTA Gaotai 95.94 309 *e*P **P 10 48 56.8 +2.0**
GTA pP sP 10 49 10.4 +11
GTA PP **PP 10 52 50.8 +3.4**
GTA SKS **SKSac 10 59 27.9 -3.7**
GTA S **S 11 00 07.8 -5.8**
GTA SS **SS 11 06 43.0 -1.5**
GTA pmax pmax

comp=Z,4.0nm,1.1s
GTA pmax pmax

comp=Z,38nm,6.9s
GTA LR LR

comp=Z,750nm,20.4s
GTA LR LR

comp=Z,2μm,22.8s
GTA LR LR

comp=Z,3μm,24.2s
C36A Pine Crest Far 96.31 42 P **P 10 48 56.0 -0.1**
baz=254
BRAL Brewton 96.32 60 PFAKE 10 49 10.0 +13
BRAL LR LR

comp=Z,673nm,20.0s
D37A Cotton 96.41 43 P **P 10 48 57.0 +0.4**
baz=254
OTAV Otavalo 96.54 92 PFAKE 10 49 10.0 +11
OTAV LR LR

comp=Z,981nm,20.0s
ZAK Zakamensk 96.54 320 *e*P **P 10 48 55.3 -2.0**
ZAK pmax pmax

comp=Z,3.0nm,1.4s
TLY Talaya 96.69 322 PFAKE 10 49 10.0 +12
TLY LR LR

comp=Z,2μm,21.0s
JFWS Jewell Farm 96.78 47 PFAKE 10 49 10.0 +12
JFWS LR LR

comp=Z,2μm,20.0s
HDIL Hopedale 96.88 50 PFAKE 10 49 10.0 +11
HDIL LR LR

comp=Z,1μm,19.0s
EYMN Ely 97.23 42 P **P 10 49 00.0 -0.3**
baz=255
EYMN Ely 97.23 42 PFAKE 10 49 10.0 +10
EYMN LR LR

comp=Z,1μm,21.0s
C38A Sawbill Land. 97.31 43 P **P 10 49 00.4 -0.3**
baz=255
BCIP Isla Barro Col 97.51 83 PFAKE 10 49 10.0 +7.6
BCIP LR LR

comp=Z,789nm,22.0s
TRQA Tornquist 97.82 133 PFAKE 10 49 10.0 +6.6
TRQA LR LR

comp=Z,1μm,21.0s
COWI Conover 98.33 45 *e*P **P 10 49 05.6 +0.3**
comp=Z,17nm,1.4s
COWI LR LR

comp=Z,2μm,20.0s
LVC Limon Verde 98.49 116 PFAKE 10 49 20.0 +13
LVC LR LR

comp=Z,2μm,19.0s
GOGA Godfrey 99.79 58 PFAKE 10 49 20.0 +7.9
GOGA LR LR

comp=Z,1μm,22.0s
LSA Lhasa 100.67 298 PFAKE 10 49 30.0 +13
LSA LR LR

comp=Z,943nm,22.0s
AAM Ann Arbor 101.39 49 PFAKE 10 49 30.0 +11
AAM LR LR

comp=Z,978nm,21.0s
ACSO Alum Creek Sta 101.51 51 PFAKE 10 49 30.0 +10
ACSO LR LR

comp=Z,2μm,20.0s
MTDJ Mount Denham 101.81 74 PFAKE 10 49 30.0 +8.5
MTDJ LR LR

comp=Z,927nm,22.0s
KMSC Kings Mountain 101.86 57 P **Pdif 10 49 20.9 -0.4**
baz=259
HOPE Hope Point 102.05 157 PFAKE 10 49 30.0 +8.2
HOPE LR LR

comp=Z,918nm,20.0s
NHSC New Hope 102.43 59 PFAKE 10 49 40.0 +16
NHSC LR LR

comp=Z,993nm,21.0s
BLA Blacksburg 102.95 55 PFAKE 10 49 40.0 +14
BLA LR LR

comp=Z,1μm,20.0s
GTBY Guantanamo Bay 104.40 73 PFAKE 10 49 40.0 +7.1
GTBY LR LR

comp=Z,853nm,20.0s
O56A Blue Knob Stat 104.85 52 P **PKiKP 10 53 49.0 -0.8**
baz=262
CBN Corbin Frederi 105.49 54 PFAKE 10 54 00.0
CBN LR LR

comp=Z,2μm,20.0s
WMQ Urumqi 105.69 312 *e*Pdif **Pdif 10 49 40.8 +2.6**
WMQ PP **PP 10 54 03.0 +2.0**
WMQ S **Sdif 11 01 29.0 -6.3**
WMQ SS **SKKPbc 11 09 02.0 +1.5**
WMQ LR LR

comp=Z,330nm,20.0s
WMQ LR LR

comp=Z,260nm,24.0s
WMQ LR LR

comp=Z,370nm,36.0s
SDV Santo Domingo 106.26 85 PFAKE 10 54 00.0
SDV LR LR

comp=Z,670nm,22.0s
SDDR Presa de Saban 107.76 75 PFAKE 10 54 10.0
SDDR LR LR

comp=Z,3μm,21.0s
LONY Lake Ozonia 108.24 48 PFAKE 10 54 10.0
LONY LR LR

comp=Z,1μm,19.0s
GRTK Grand Turk 108.35 72 PFAKE 10 54 10.0
GRTK LR LR

comp=Z,789nm,22.0s
SAML Samuel 108.39 105 PFAKE 10 54 10.0
SAML LR LR

comp=Z,833nm,19.0s
DGAR Diego Garcia 109.25 256 PFAKE 10 54 10.0
DGAR LR LR

comp=Z,2μm,21.0s
MK32 Makanchi Array 109.71 315 *e*PKiKP **PKiKP 10 53 58.5 -0.1**
MKAR Makanchi Array 109.71 315 PKiKP **PKiKP 10 53 58.5 -0.1**
comp=Z,1.0nm,0.8s,baz=90,slow=1.2,SNR=6.6
PKME Peaks-Kenny Pk 112.02 47 PFAKE 10 54 10.0
PKME LR LR

comp=Z,1μm,21.0s
KURK Kurchatov 112.13 319 PFAKE 10 54 10.0
KURK LR LR

comp=Z,4μm,20.0s
SJG San Juan 112.40 77 PFAKE 10 54 20.0
SJG LR LR

comp=Z,695nm,20.0s
KSH Kashi 114.19 307 *e*PKP PKPdf 10 54 08.1 +0.6
KSH *es*PKP 10 54 22.9
KSH *e*PP **PP 10 55 08.9 +6.2**
KSH PKS **PKSdf 10 57 43.8 -0.5**
KSH SKS **SKSdf 11 01 14.9 -5.1**
KSH SKKS **SKKSac 11 02 00.6 -4.1**
KSH SS **SS 11 10 53.0 -1.2**
KSH AMB AMB

comp=Z,40nm,5.4s
KSH LR LR

comp=Z,800nm,18.6s
KSH LR LR

comp=Z,450nm,15.9s
KSH LR LR

comp=Z,1μm,20.3s
TKM2 Tokmak 2 114.45 310 PFAKE 10 54 20.0 +12
TKM2 LR LR

comp=Z,1μm,22.0s
FRU Bishkek 115.18 310 *e*PKIKP **PKPdf 10 54 16.0 +6.8**
FRU *e* 10 55 16.0
AAK Ala-Archa 115.27 310 PFAKE 10 54 20.0 +10
AAK LR LR

comp=Z,1μm,22.0s
BBSR BB Station 115.30 61 PFAKE 10 54 20.0 +10
BBSR LR LR

comp=Z,742nm,21.0s
GRGR Grenville 115.58 84 PFAKE 10 54 20.0 +9.3
GRGR LR LR

comp=Z,401nm,22.0s
EKS2 Erkin-Say 115.80 310 PFAKE 10 54 20.0 +10
EKS2 LR LR

comp=Z,998nm,22.0s
SPB Sao Paulo 115.80 126 PFAKE 10 54 20.0 +9.1
SPB LR LR

comp=Z,2μm,22.0s
ANWB Willy Bob 116.43 78 PFAKE 10 54 20.0 +7.8
ANWB LR LR

comp=Z,697nm,21.0s
KBS Kingsbay 116.50 358 PFAKE 10 54 20.0 +9.3
KBS LR LR

comp=Z,702nm,19.0s
FDF Fort de France 116.55 81 PFAKE 10 54 20.0 +7.5
FDF LR LR

comp=Z,531nm,20.0s
BRVK Borovoye 117.00 322 *i* PKIKP **PKPdf 10 54 13.7 +1.4**
BRVK pmax pmax

comp=Z,4.0nm,1.0s
BRVK Borovoye 117.00 322 PFAKE 10 54 20.0 +7.7
BRVK LR LR

comp=Z,2μm,20.0s
SFJD Kangerlussuaq 117.37 21 PFAKE 10 54 20.0 +7.4
SFJD LR LR

comp=Z,1μm,19.0s
BBGH Gun Hill 117.78 83 PFAKE 10 54 30.0 +15
BBGH LR LR

comp=Z,2μm,21.0s
ZRNK Zerenda 117.78 322 *e*PKIKP **PKPdf 10 54 13.1 -0.7**
ZRNK Zerenda 117.78 322 *e*PKPdf **PKPdf 10 54 13.1 -0.7**
RER Riviere de l'E 118.14 235 PFAKE 10 54 30.0 +14
RER LR LR

comp=Z,1μm,20.0s
ARU Arti 122.56 328 *i* PKIKP **PKPdf 10 54 24.2 +1.3**
ARU 10 55 59.0
ARU 11 01 33.2
ARU SP SP 11 05 45.3 -7.5
ARU PS **PS 11 05 55.5 +0.3**
ARU MLR MLR

comp=Z,3μm,22.0s
ARU Arti 122.56 328 PFAKE 10 54 30.0 +7.1
ARU LR LR

comp=Z,3μm,21.0s
KEV Kevo 124.08 351 PFAKE 10 54 40.0 +15
KEV LR LR

comp=Z,2μm,22.0s
LVZ Lovozero 124.27 347 PFAKE 10 54 40.0 +14
LVZ LR LR

comp=Z,1μm,21.0s
KLMR Klimovskoe 128.33 339 *e*PKIKP **PKPdf 10 54 32.1 -1.7**
KLMR pmax pmax

comp=Z,22nm,1.4s
SUR Sutherland 129.94 198 PFAKE 10 54 50.0 +12
SUR LR LR

comp=Z,2μm,20.0s
OBN Obninsk 133.55 335 ⇓ *e*PKIKP **PKPdf 10 54 45.7 +1.9**
OBN *e* 10 57 08.2
OBN *e*PS **PS 11 07 27.7 -3.1**
OBN *e*SS SS 11 14 59.8 +3.1
OBN pmax pmax

comp=Z,10.0nm,0.9s
OBN MLR MLR

comp=Z,1μm,19.0s
OBN Obninsk 133.55 335 PFAKE 10 55 00.0 +16
OBN LR LR

comp=Z,1μm,20.0s
VSU Vasula 134.16 344 *e*PKIKP **PKPdf 10 54 45.3 +0.5**
VSU pmax pmax

comp=Z,41nm,1.2s
RCBR Riachuelo 134.41 115 PFAKE 10 55 00.0 +13
RCBR LR LR

comp=Z,1μm,21.0s
KONO Kongsberg 135.83 357 PFAKE 10 55 00.0 +12
KONO LR LR

comp=Z,948nm,20.0s
ZEI Tsey 136.98 317 *i* PKIKP **PKPdf 10 54 52.9 +2.0**
ZEI pmax pmax

comp=Z,6.0nm,1.1s
KIV Kislovodsk 137.21 319 *i* PKIKP **PKPdf 10 54 52.9 +1.7**
KIV pmax pmax

comp=Z,5.0nm,0.8s
KIV MLR MLR

comp=Z,1μm,21.0s
KIV Kislovodsk 137.21 319 PFAKE 10 55 00.0 +8.8
KIV LR LR

comp=Z,1μm,22.0s
GNI Garni 137.54 313 PFAKE 10 55 00.0 +8.0
GNI LR LR

comp=Z,1μm,21.0s
SOC Sochi 139.25 320 *i* PKHKP PKPpre 10 54 46.5
SOC MLR MLR

comp=Z,2μm,22.0s
KIEV Kiev 139.81 336 PFAKE 10 55 10.0 +14
KIEV LR LR

comp=Z,1μm,22.0s
ESK Eskdalemuir 139.83 7 PFAKE 10 55 10.0 +15
ESK LR LR

comp=Z,863nm,20.0s
LSZ Lusaka 141.65 218 PFAKE 10 55 10.0 +10
LSZ LR LR

comp=Z,1μm,22.0s
KIS Kishinev 142.84 333 *e*PKP PKPdf 10 55 11.0 +10
KIS Kishinev 142.84 333 *e*PP PP 10 58 04.0 -5.4
KIS LRM MLR 11 56 54.0

comp=Z,1μm,20.0s
KIS Kishinev 142.84 333 *e*PKIKP PKPdf 10 55 11.0 +10
KIS MLR MLR

comp=N,1μm,20.0s
KIS MLR MLR

comp=E,800nm,20.0s
KIS MLR MLR

comp=Z,1μm,20.0s
KIS MLR MLR

comp=Z,2μm,22.0s
KWP Kalwaria Pacla 143.02 341 ⇓ *i*P **PKPdf 10 55 01.6 +0.2**
KWP Kalwaria Pacla 143.02 341 ⇓ PKIKP **PKPdf 10 55 01.6 +0.2**
TSUM Tsumeb 143.26 200 PFAKE 10 55 10.0 +7.1
TSUM LR LR

comp=Z,1μm,20.0s
STHS Stebnicka Huta 143.66 342 *e*PKIKP **PKPdf 10 55 09.5 +6.9**
CLL Collm 143.73 351 *e*PKPdf **PKPdf 10 55 04.0 +1.4**
CLL *e* 10 55 06.0
CLL *e* 10 55 27.0
CLL *e* 10 57 37.0
CLL *e*(PP) 10 58 03.0
CLL *e*SS SS 11 16 54.0 -2.3
CLL *e*SSS SSS 11 22 24.0
CLL *e*SSSS 11 27 00.0
CLL Lm MLR 11 55 00.0

comp=Z,1μm,22.0s
CLL Collm 143.73 351 *e*PKIKP **PKPdf 10 55 04.0 +1.4**
CLL MLR MLR

comp=Z,1μm,22.0s
KOLS Kolonicke sedl 143.77 340 *e*PKIKP **PKPdf 10 55 07.8 +5.0**
KOLS Kolonicke sedl 143.77 340 *e* **PKPdf 10 55 07.8 +5.0**
BURAR Bucovina Array 143.85 336 ⇑ *i*P **PKPdf 10 55 06.4 +3.4**
BURAR Bucovina Array 143.85 336 ⇑ PKIKP **PKPdf 10 55 06.5 +3.4**
KMBO Kilima Mbogo 143.92 246 *e*PKIKP **PKPdf 10 55 05.8 +1.4**
KMBO MLR MLR

comp=Z,926nm,19.0s
KMBO Kilima Mbogo 143.92 246 *e*PKPdf **PKPdf 10 55 05.8 +1.4**
KMBO LR LR

comp=Z,926nm,19.0s
UPC Upice 143.98 348 *e*SS SS 11 17 07.3 +8.1
UPC AMS AMS 11 56 50.0

comp=Z,2μm,21.3s
BRG Berggiesshubel 144.01 350 *e*PKP **PKPdf 10 55 09.1 +6.0**
comp=Z,13nm,1.4s
BRG SS SS 11 17 08.0 +8.5
BRG Berggiesshubel 144.01 350 *e*PKIKP **PKPdf 10 55 09.1 +6.0**
BRG pmax pmax

comp=Z,13nm,1.4s
CRVS Cervenica-Dubn 144.05 341 *e*PKIKP PKPbc 10 55 02.2 +1.1
CRVS Cervenica-Dubn 144.05 341 *e*PKP PKPbc 10 55 02.2 +1.1
DPC Dobruska-Polom 144.06 347 *e*PKP PKPab 10 55 00.2 -0.5
DPC *ep*PKP **PKiKP 10 55 09.9 +3.1**
DPC AMS AMS 11 57 20.0

comp=Z,2μm,22.5s
DPC Dobruska-Polom 144.06 347 *e*PKIKP PKPab 10 55 00.2 -0.5
DPC *e* 10 55 09.9
DPC MLR MLR

comp=Z,2μm,22.5s
OKC Ostrava-Krasne 144.13 345 AMS AMS 11 56 00.0
comp=Z,2μm,21.0s
KRLC Kraliky 144.22 347 *e*PKP **PKPab 10 55 00.4 -0.9**
KRLC Kraliky 144.22 347 *e*PKIKP **PKPab 10 55 00.4 -0.9**
PVCC Panska Ves 144.23 349 AMS AMS 11 58 00.0
comp=Z,2μm,21.5s
MORC Moravsky Berou 144.33 346 ⇑ *i*P **PKPab 10 55 01.2 -0.5**
MORC Moravsky Berou 144.33 346 ⇑ PKIKP **PKPab 10 55 01.2 -0.5**
MORC Moravsky Berou 144.33 346 *e*PKPdf PKPbc 10 55 03.4 +1.3
LANS Liptovska Anna 144.41 343 *e*PKIKP **PKPdf 10 55 04.5 +0.6**
LANS Liptovska Anna 144.41 343 *e*PKP **PKPdf 10 55 04.5 +0.6**
PLOR Plostina 144.68 333 ⇑ *i*P **PKPab 10 55 02.0 -1.1**
PLOR Plostina 144.68 333 ⇑ PKIKP **PKPab 10 55 02.0 -1.1**
KECS Kecovo 144.72 342 *e*PKIKP **PKPab 10 55 02.7 -0.4**
KECS Kecovo 144.72 342 *e*PKP **PKPab 10 55 02.7 -0.4**
PRU Pruhonice 144.75 349 *e*SS SS 11 17 15.8 +7.7
PRU AMS AMS 11 59 00.0

comp=Z,2μm,21.7s
GOPC GO Pecny, Ondr 144.78 349 *e*PKP **PKPab 10 55 03.7 +0.4**
GOPC AMS AMS 11 59 00.0

comp=Z,2μm,20.5s
GOPC GO Pecny, Ondr 144.78 349 *e*PKIKP **PKPab 10 55 03.7 +0.4**
GOPC MLR MLR

comp=Z,2μm,20.5s
NKC Novy Kostel 144.86 351 *e*PKP PKPbc 10 55 04.8 +1.1
NKC AMS AMS 11 57 40.0

comp=Z,1μm,21.0s
NKC Novy Kostel 144.86 351 *e*PKIKP PKPbc 10 55 04.8 +1.1
NKC MLR MLR

comp=Z,1μm,21.0s
VRAC Vranov 144.99 347 ⇑ *i*P **PKPab 10 55 03.4 -0.7**
VRAC Vranov 144.99 347 ⇑ PKIKP **PKPab 10 55 03.4 -0.7**
DOPR Dopca 145.12 335 ⇑ *i*P **PKPdf 10 55 06.2 +1.0**
BR101 Keskin Array S 145.18 319 *e*PKPbc **PKPbc 10 55 04.3 -0.9**
BR131 Keskin Array S 145.18 319 *e*PKPbc **PKPbc 10 55 04.6 -0.7**
BRTR Keskin Array B 145.18 319 PKPbc **PKPbc 10 55 04.3 -0.9**
comp=Z,34nm,1.1s,baz=108,slow=2.0,SNR=52
VYHS Vyhne 145.18 344 *e*PKIKP **PKPbc 10 55 03.8 -1.0**
VYHS Vyhne 145.18 344 *e*PKP **PKPbc 10 55 03.8 -1.0**
TREC Trest 145.24 348 AMS AMS 11 58 00.0
comp=Z,2μm,23.0s
MLR Muntele Rosu 145.27 334 ⇑ *i*P **PKPbc 10 55 03.3 -2.0**
MLR Muntele Rosu 145.27 334 ⇑ PKP2 **PKPbc 10 55 03.3 -2.0**
MLR Muntele Rosu 145.27 334 *e*PKPbc **PKPbc 10 55 05.0 -0.3**
PSZ Piszkesteto 145.40 342 ⇑ *i*P **PKPbc 10 55 04.4 -1.2**
PSZ Piszkesteto 145.40 342 ⇑ PKIKP **PKPbc 10 55 04.4 -1.2**
PSZ Piszkesteto 145.40 342 *e*PKPdf **PKPbc 10 55 05.0 -0.6**
PSZ LR LR

comp=Z,2μm,22.0s
DRGR 145.47 338 ⇑ *i*P **PKPbc 10 55 05.3 -0.5**
DRGR 145.47 338 ⇑ PKIKP **PKPbc 10 55 05.3 -0.5**
DOU Dourbes 145.54 0 PKP **PKPbc 10 55 06.6 +0.8**
ANTO Ankara 145.62 320 *e*PKP2 **PKPdf 10 55 06.4 +0.1**
ANTO Ankara 145.62 320 *e*PKPdf **PKPdf 10 55 06.4 +0.1**
ANTO LR LR

comp=Z,9.0nm,21.0s
BR231 Keskin MP Arra 145.64 320 *e*PKPdf **PKPdf 10 55 05.0 -1.4**
VOIR 145.69 334 ⇑ *i*P **PKPdf 10 55 06.7 +0.4**
VOIR 145.69 334 ⇑ PKP2 **PKPdf 10 55 06.7 +0.4**
KHC Kasperske Hory 145.75 350 *e*PKP **PKPdf 10 55 05.8 -0.4**
KHC *ex* x 10 55 15.0
KHC *e*SS SS 11 17 28.9 +9.3
KHC AMS AMS 11 55 50.0

comp=Z,2μm,26.0s
KHC Kasperske Hory 145.75 350 *e*PKP2 **PKPdf 10 55 05.8 -0.4**
KHC MLR MLR

comp=Z,2μm,26.0s
KHC Kasperske Hory 145.75 350 *e*PKPdf **PKPdf 10 55 05.8 -0.4**
KHC *e*PKPbc **PKPbc 10 55 07.0 +0.4**
KHC *e*PKPab **PKPab 10 55 08.2 +1.2**
ARR Arges 145.92 335 ⇓ *i*P **PKPdf 10 55 07.4 +0.7**
WLF Walferdange 145.96 358 PKP **PKPab 10 55 09.2 +1.5**
WLF Walferdange 145.96 358 PFAKE 10 55 20.0 +12
WLF LR LR

comp=Z,2μm,21.0s
GERES GERESS Array B 146.01 349 PKPbc **PKPdf 10 55 06.7 -0.1**
comp=Z,0.6nm,0.3s,baz=46,slow=3.9,SNR=13
GEA0 GERESS Array S 146.01 349 *e*PKPdf **PKPdf 10 55 06.2 -0.6**
GEA0 *e*PKPbc **PKPbc 10 55 07.4 -0.1**
LOT Lotru 146.20 336 ⇑ *i*P PKPab 10 55 18.9 +10
SIRR Siria 146.29 339 ⇑ *i*P **PKPdf 10 55 07.2 0.0**
PRD Provadia 146.36 330 *e*P **PKPdf 10 55 08.5 +1.2**
CONA Conrad Observa 146.45 347 *i* pPKPdf **PKPbc 10 55 09.9 +1.1**
comp=Z,32nm,1.2s,SNR=10

LANF	Langenberg	146.57	356	PKP	PKPbc	10 55 09.5	+0.5
MOA	Molln	146.86	348	*i* PKPab	PKPdf	10 55 09.8	+1.7
comp=Z,27nm,1.4s							
BZS	Buzias	146.87	338⇑	*i*P	PKPdf	10 55 08.8	+0.6
BZS	Buzias	146.87	338	⇑PKP2	PKPdf	10 55 08.8	+0.6
SHEL	Horse Pasture	147.00	161	PFAKE		10 55 20.0	+7.4
SHEL				LR	LR		
comp=Z,519nm,20.0s							
WLS	Welschbruch	147.16	357	PKP	PKPdf	10 55 07.2	-1.4
ARSA	Arzberg	147.16	347	*i* pPKPdf	PKPdf	10 55 10.7	+2.0
comp=Z,23nm,1.4s							
BFO	Black Forest	147.18	356	*e*PKP2	PKPdf	10 55 09.8	+1.1
BFO				MLR	MLR		
comp=Z,596nm,20.0s							
BFO	Black Forest	147.18	356	*e*PKPdf	PKPdf	10 55 09.8	+1.1
BFO				LR	LR		
comp=Z,596nm,20.0s							
ECH	Echery	147.37	357	PKP	PKPbc	10 55 11.6	+0.2
MDVR	Moldovita	147.55	337⇑	*i*P	PKPbc	10 55 12.0	0.0
MOF	Molkenrain	147.73	357	PKP	PKPdf	10 55 12.0	+0.5
KBA	Koelnbreinsper	147.77	349	*i* pPKPdf	PKPdf	10 55 11.7	+1.8
comp=Z,22nm,1.5s							
RETA	Reutte	147.78	352	*i* sPKPdf	PKPbc	10 55 13.2	+0.6
comp=Z,25nm,1.1s							
WATA	Walderalm	147.81	351	*es*PKPdf	PKPbc	10 55 13.0	+0.2
comp=Z,39nm,1.3s							
SOKA	Soboth	147.82	347	*i* pPKPdf	PKPdf	10 55 11.9	+2.1
comp=Z,32nm,1.4s,SNR=10							
MOTA	Moosalm	147.87	352	*i* PKPbc	PKPdf	10 55 11.2	+1.2
comp=Z,15nm,1.1s							
WTTA	Wattenberg	147.88	351	*e*PKiKP	PKPbc	10 55 14.0	+1.0
comp=Z,30nm,1.7s							
CSS	Mathiatis	147.96	312	*e*PKPdf	PKPdf	10 55 13.0	+2.6
CSS				*e*PKPbc	PKPab	10 55 17.1	+1.1
CSS				LR	LR		
comp=Z,190nm,20.0s							
DAVA	Damuels	148.08	353	*e*PKPbc	PKPdf	10 55 11.9	+1.5
comp=Z,50nm,1.7s							
OBKA	Obir	148.08	347	*i* sPKPdf	PKPbc	10 55 13.7	+0.2
comp=Z,15nm,1.2s							
MYKA	Terra Mystica	148.15	348	*i* PKPbc	PKPdf	10 55 11.4	+1.1
comp=Z,12nm,1.0s							
FETA	Feichten	148.24	352	*e*PKiKP	PKPbc	10 55 14.8	+0.9
comp=Z,24nm,1.3s,SNR=5.8							
LOMF	Lomont	148.25	357	PKP	PKPdf	10 55 13.0	+2.5
ISP	Isparta	148.26	319	PFAKE		10 55 20.0	+2.8
ISP				LR	LR		
comp=Z,925nm,21.0s							
PGB	Panagyurishte	148.38	332	*e*P	PKPdf	10 55 13.7	+2.8
KDZ	Kurdzhali	148.49	330	*e*P	PKPdf	10 55 12.4	+1.4
LJU	Ljubljana	148.53	347	*e*PKPbc	PKPdf	10 55 12.8	+1.8
LJU				*e*		10 55 30.3	
FUORN	Ofenpass-Fuorn	148.69	353	*e*PKPbc	PKPdf	10 55 14.2	+2.7
RZN	Rozhen	148.80	331	*e*P	PKPdf	10 55 13.1	+1.4
BOJS	Bojanci	148.87	346	*e*PKPbc	PKPdf	10 55 14.2	+2.8
TUE	Stuetta	148.94	354	*e*PKPbc	PKPbc	10 55 16.5	+0.7
TUE				LR	LR		
comp=Z,1μm,22.0s							
BLY	Banja Luka	149.07	343⇑	*i*P	PKPbc	10 55 17.7	+1.8
SENIN	Lac Senin/Sane	149.21	357	*e*PKPbc	PKPbc	10 55 17.5	+1.0
KKB	Krupnik	149.41	333	*e*P	PKPdf	10 55 14.7	+2.2
PLDF	La Plantade	149.66	2	PKP	PKPdf	10 55 14.5	+1.7
PYM	Petit Puy Mans	149.85	3	PKP	PKPbc	10 55 17.4	-0.5
ASCN	Ascension	149.91	140	PFAKE		10 55 20.0	+1.1
ASCN				LR	LR		
comp=Z,865nm,20.0s							
SKO	Skopje	150.03	335	*i* PKP	PKPbc	10 55 19.0	+0.6
VAY	Valandovo	150.08	333	*i* PKP	PKPdf	10 55 08.4	-5.1
SSB	Saint Sauveur	150.36	0	*e*PKIKP	PKPbc	10 55 19.3	+0.1
SSB				MLR	MLR		
comp=Z,1μm,19.0s							
SSB	Saint Sauveur	150.36	0	*e*PKPbc	PKPbc	10 55 19.3	+0.1
SSB				LR	LR		
comp=Z,1μm,19.0s							
LBL	Lubilhac	150.38	2	PKP	PKPdf	10 55 17.8	+3.8
PDG	Podgorica	150.48	338⇓	*i*P	PKPbc	10 55 20.4	+1.0
BNI	Bardonecchia	150.55	357	PFAKE		10 55 30.0	+3.7
BNI				LR	LR		
comp=Z,1μm,20.0s							
BIA	Bitola	150.86	334	*i* PKP	PKPbc	10 55 21.7	+1.2
OHR	Ohrid	151.01	335	*i* PKP	PKPbc	10 55 20.6	-0.3
VLC	Villacollemand	151.09	352	PFAKE		10 55 30.0	+1.6
VLC				LR	LR		
comp=Z,974nm,21.0s							
TIR	Tirane	151.18	336	PFAKE		10 55 30.0	+1.2
TIR				LR	LR		
comp=Z,2μm,20.0s							
KARP	Karpathos	151.79	319	*e*PKPbc	PKPbc	10 55 22.5	-0.3
KARP				*ep*PKPdf	PKiKP	10 55 25.9	+2.8
AQU	L'Aquila	152.29	346	PFAKE		10 55 30.0	-3.5
AQU				LR	LR		
comp=Z,2μm,21.0s							
SANT	Santorini	152.29	322	PFAKE		10 55 30.0	-3.7
SANT				LR	LR		
comp=Z,446nm,19.0s							
MTE	Manteigas	153.00	21	PFAKE		10 55 30.0	+4.6
MTE				LR	LR		
comp=Z,769nm,19.0s							
LAST	Lasithi	153.09	320⇓	*i*P	PKPbc	10 55 24.7	-1.0
LAST	Lasithi	153.09	320	*e*PKPbc	PKPbc	10 55 24.8	-1.0
CUC	Castrocucco	153.82	341	PFAKE		10 55 30.0	+2.8
CUC				LR	LR		
comp=Z,1μm,22.0s							
TIP	Timpagrande	154.24	338	PFAKE		10 55 30.0	+1.9
TIP				LR	LR		
comp=Z,2μm,22.0s							
PAB	San Pablo	154.78	17	PFAKE		10 55 30.0	+0.7
PAB				LR	LR		
comp=Z,1μm,20.0s							
CEL	Celeste	155.36	339	PFAKE		10 55 30.0	+8.5
CEL				LR	LR		
comp=Z,2μm,22.0s							
VSL	Villasalto	155.81	351	PFAKE		10 55 30.0	+8.0
VSL				LR	LR		
comp=Z,2μm,20.0s							
CLTB	Caltabellotta	156.83	343	PFAKE		10 55 30.0	+6.5
CLTB				LR	LR		
comp=Z,1μm,22.0s							
WDD	Wied Dalam	157.99	339	PFAKE		10 55 40.0	+15
WDD				LR	LR		
comp=Z,2μm,22.0s							
TAM	Tamanrasset	172.76	355	PFAKE		10 55 50.0	+12
TAM				LR	LR		
comp=Z,2μm,22.0s							
TORD	Torodi Ar. Bea	176.14	128	PKP	PKPdf	10 55 37.5	-1.3
comp=Z,2.0nm,1.1s,baz=0.2,slow=0.7,SNR=8.1							
TOA1	Torodi Ar. Sit	176.14	128	*e*PKPdf	PKPdf	10 55 37.5	-1.3

ISCJB ***17*** *11:10:41:11.1±0.5, 33°.84N±0°.08×137°.02E±0°.07, h374km±4km, mb3.3/7, Error ellipse: s-maj=12.9km s-min=8.7km az=161.6*
JMA ***17*** *11:10:41:11.3±0.5, 33°.82N×137°.02E, h375km±5km, M2.9*
IDC ***17*** *10:41:11.4±0.9, 33°.79N×137°.05E, h367km±8km, mb3.0/7, mb1 3.2/12, mb1mx3.0/57, mbtmp3.8/12, Error ellipse: s-maj=16.5km s-min=16.3km az=76.0*
ISC 17 10:41:11.7±0.8, 33°.85N±0°.09×137°.00E±0°.07, h369km±6km, n26, σ1§05/34, mb3.4/7, Near south coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIE	Ise	0.60	336	P	Pn	10 41 59.2	+1.0
JIE				*e*S	S	10 42 35.7	+0.1
JWZ	Kozaga	1.12	254	P	Pn	10 41 59.9	0.0
JWY	Kouya	1.23	288	P	Pn	10 42 01.2	+0.7
JWT	Wachi	1.95	318	P	Pn	10 42 05.0	+0.7
JWT				*e*S	S	10 42 45.5	-1.3
JYN	Shimob	2.08	37	P	Pn	10 42 06.1	+0.8
JAI	Aioi	2.12	269	P	Pn	10 42 05.8	+0.2
JOD2	Odawara 2	2.23	50	P	Pn	10 42 06.8	+0.5
JOD2				*e*S	S	10 42 51.4	+1.1
JHJ	Hachijo jima 2	2.43	107	P	Pn	10 42 07.8	0.0
9.3nm,0.3s,baz=78,slow=21,SNR=4.2							
JHJ2	Mitsune	2.46	106	P	Pn	10 42 09.2	+1.1
JMN	Monobe	2.60	268	P	Pn	10 42 09.6	+0.4
JRY	Ryogami san	2.67	35	P	Pn	10 42 10.7	+1.0
JRY				*e*S	S	10 42 56.2	-0.2
MAT	Matsushiro	2.87	20	P	Pn	10 42 11.9	+0.6
MAT				S	S	10 42 59.3	-0.1
MAT	Matsushiro	2.87	20	P	Pn	10 42 11.9	+0.6
MAT				*e*S	S	10 42 59.1	-0.3
MJAR	Matsushiro Arr	2.87	20	P	Pn	10 42 11.8	+0.6
2.1nm,0.3s,baz=196,slow=9.3,SNR=10.0							
MJAR				S	S	10 42 59.3	-0.1
baz=197,slow=16,SNR=5.4							
JAG	Ashikaga	3.27	37	P	Pn	10 42 14.1	-0.6
JAG				*e*S	S	10 43 02.2	-3.5
BSO1	Boso 1	3.39	75	*e*S	S	10 43 05.5	-1.3
JNU	Nakatsue	5.17	264	P	Pn	10 42 34.3	+0.2
2.7nm,0.3s,baz=104,slow=2.8,SNR=27							
KSRS	Korea Array	8.22	299	P	Pn	10 43 09.8	+1.2
0.8nm,0.3s,baz=116,slow=10,SNR=17							
USRK	Ussuriysk Ar.	11.05	341	P	P	10 43 40.7	-1.0
0.4nm,0.3s,baz=148,slow=11,SNR=7.0							
SONM	Songino Array	26.84	311	P	P	10 46 21.7	+1.8
2.1nm,0.8s,baz=125,slow=10,SNR=4.9							
MKAR	Makanchi Array	42.85	304	P	P	10 48 35.0	0.0
0.8nm,0.5s,baz=86,slow=10,SNR=12							
WRA	Warramunga Arr	53.55	183	P	P	10 49 54.8	-1.1
0.2nm,0.3s,baz=360,slow=7.6,SNR=7.0							
YKA	Yellowknife Ar	68.34	28	P	P	10 51 34.3	+0.5
0.1nm,0.4s,baz=299,slow=5.9,SNR=4.9							
FINES	FINESS Array B	69.92	331	P	P	10 51 43.1	-0.3
0.9nm,0.4s,baz=92,slow=4.4,SNR=11							
NVAR	Mina Array Bea	79.78	51	P	P	10 52 41.5	+1.3
0.5nm,0.7s,baz=286,slow=5.7,SNR=4.4							
PDAR	Pinedale Array	82.46	43	P	P	10 52 53.5	-0.6
0.5nm,0.7s,baz=218,slow=1.7,SNR=4.1							

IDC 17 10:45:53.5±2.3, 6°.77S×154°.85E, h0km, mb3.5/3, mb1 3.9/3, mb1mx3.5/39, mbtmp3.5/3, Error ellipse: s-maj=140.6km s-min=29.2km az=132.0, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	23.82	235	P	P	10 51 08.7	+0.2
1.4nm,0.8s,baz=60,slow=9.9,SNR=5.9							
ASAR	Alice Springs	26.21	228	P	P	10 51 30.2	0.0
0.4nm,0.8s,baz=62,slow=9.7,SNR=3.5							
ILAR	Eielson Array	83.22	22	P	P	10 58 21.4	-0.1
0.2nm,0.4s,baz=245,slow=5.3,SNR=5.2							

IDC ***17*** *10:47:24.2±1.2, 33°.31S×72°.08W, h0km, mb4.2/6, mb1 4.2/10, mb1mx4.0/33, mbtmp4.1/10, ML4.2/4, MS4.1/5, Ms1 4.1/5, ms1mx3.8/25, Error ellipse: s-maj=39.4km s-min=21.3km az=90.0*
SJA ***17*** *10:47:25.8±1.4, 33°.40S×72°.23W, h10km±29km, ML4.5, MW4.4*
GUC ***17*** *10:47:26.7±0.4, 33°.30S×72°.26W, h38km±1km, ML4.4*
NEIC ***17*** *10:47:28.1±0.8, 33°.33S×72°.23W, h35km, mb4.5/2, Error ellipse: s-maj=21.6km s-min=11.4km az=89.0*
NEIC Felt [III] at Constitucion, Navidad, Pichilemu, Quillota, Rancagua and San Antonio; [II] at Linares, Paredones, San Fernando, Santiago and Villa Alemana.
ISC 17 10:47:23.4±1.8, 33°.30S±0°.04×72°.30W±0°.06, h4km±10km, n39, σ2§00/45, mb4.3/8, MS4.1/3, 1D, Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ROC1	El Roble	1.12	74	*e*P	Pn	10 47 47.1	+0.9
ROC1				*e*S	Sn	10 48 02.6	+0.4
ROCH	El Roble	1.13	73	*e*P	Pn	10 47 46.9	+0.7
ROCH				*e*S	Sn	10 48 02.1	-0.2
ROCH				IAML		10 48 07.0	
comp=N,16μm,0.5s							
PEL	Peldehue	1.36	84⇓	*e*P	Pg	10 47 50.1	+0.7
PEL				*e*S	Sg	10 48 07.6	+0.5
PEL				IAML		10 48 11.9	
comp=E,10μm,0.6s							
STL	Santa Lucia	1.39	96	*e*P	Pg	10 47 50.4	+0.4
STL				*e*S	Sg	10 48 08.4	+0.3
FSR	Penalolen	1.49	97	*e*P	Pg	10 47 52.0	0.0
FSR				*e*S	Sg	10 48 11.3	0.0
SJCH	San Jose de Ma	1.66	102	*e*P	Pb	10 47 54.5	-0.1
SJCH				*e*S	Sb	10 48 15.3	-0.7
AUSP	Uspallata	2.67	67	*e*P	Pb	10 48 12.1	0.0
ARCO	CERRO ARCO	2.86	82	*e*P	Pb	10 48 14.6	-0.6
ARCO				IAML		10 48 59.7	
comp=Z,2μm,1.2s							
RTLS	Leoncito	2.94	60	*e*P	Pb	10 48 16.6	-0.1
ASAL	Salagasta	3.00	77	*e*P	Pb	10 48 15.8	-1.5
CCHI	Chillan	3.30	177	*e*P	Pn	10 48 16.7	+0.8
CCHI				*e*S	Sn	10 48 55.2	-0.4
TLL	Tololo Astrono	3.37	23	*e*P	Pn	10 48 18.6	+1.5
TLL				*e*S	Sn	10 48 57.7	0.0
RTCV	Cerro Valdivia	3.48	67	*e*P	Pb	10 48 23.5	-2.1
RTLL	Cerro Villicun	3.79	60	*e*P	Pb	10 48 26.6	-4.3
AMOG	MOGNA	3.99	55	*e*P	Pb	10 48 30.1	-4.3
ACAN	Cantantal	4.42	78	*e*P	Pn	10 48 34.8	+3.5
LCO	Las Campanas	4.49	18	*e*Pn	Pn	10 48 34.1	+1.6
LCO				*e*Sn	Sn	10 49 25.4	0.0
CANA	Caviahue	4.69	168	*e*P	Pn	10 48 38.5	+3.4
AVFE	Valle Fertil	4.88	59	IAML		10 49 52.4	
comp=Z,380nm,1.5s							
PLCA	Paso Flores	7.55	170	Pn	Pn	10 49 15.0	+0.6
comp=Z,1.6nm,0.3s,baz=352,slow=11,SNR=65							
PLCA				Lg	Lg	10 51 16.4	
comp=Z,0.1nm,0.3s,baz=328,slow=11,SNR=3.6							
TRQA	Tornquist	9.64	122	*e*Pn	Pn	10 49 42.3	-0.6
comp=Z,58nm,1.4s							
TRQA				*e*Sn	Sn	10 51 25.1	-6.7
LVC	Limon Verde	11.06	17	Sn	Sn	10 52 20.9	+14
comp=Z,21nm,0.3s,baz=46,slow=14,SNR=3.0							
LVC	Limon Verde	11.06	17	*e*Pn	Pn	10 50 02.3	-0.5
comp=Z,6.7nm,0.7s							
LVC				Sn	Sn	10 52 20.9	+14
CPUP	Villa Florida	14.72	66	Pn	Pn	10 50 53.4	+0.8
comp=Z,0.1nm,0.3s,baz=227,slow=18,SNR=2.6							
CPUP				Sn	Sn	10 53 40.1	+3.9
comp=Z,0.1nm,0.3s,baz=196,slow=12,SNR=2.9							
CPUP				LR	LR	10 56 57.5	
comp=Z,442nm,19.3s,baz=247,slow=39							
LPAZ	La Paz	17.35	14	P	P	10 51 29.4	+0.7
comp=Z,0.3nm,0.3s,baz=202,slow=7.5,SNR=21							
SIV	San Ignacio	20.00	33	P	P	10 51 56.6	-0.6
comp=Z,0.4nm,0.3s,baz=249,slow=0.8,SNR=16							
SIV				LR	LR	11 01 07.3	
comp=Z,394nm,18.4s,baz=246,slow=41							
NNA	Nana	21.62	348	LR	LR	10 58 47.0	
comp=Z,108nm,19.0s,baz=169,slow=32							
PTGA	Pitinga	34.41	22	P	P	10 54 12.3	+0.3
comp=Z,2.7nm,0.7s,baz=165,slow=19,SNR=3.5							
QSPA	South Pole Qui	56.93	180	*e*P	P	10 57 06.9	-2.7
comp=Z,5.8nm,0.8s							
TXAR	Lajitas Array	69.02	331	P	P	10 58 32.7	+2.4
comp=Z,0.3nm,0.7s,baz=148,slow=9.8,SNR=4.2							
MAW	Mawson	73.91	164	P	P	10 59 00.4	+1.2
comp=Z,3.4nm,0.8s,baz=200,slow=3.9,SNR=4.3							
DBIC	Dimbokro	75.16	72	P	P	10 59 07.5	+0.2
comp=Z,1.0nm,0.5s,baz=220,slow=13,SNR=3.5							
WUAZ	Wupatki	77.62	328	*e*P	P	10 59 18.1	-2.9
comp=Z,2.2nm,0.7s							
TSUM	Tsumeb	79.61	106	LR	LR	11 29 00.1	
comp=Z,90nm,20.9s,baz=155,slow=31							
BOSA	Boshof	80.59	118	P	P	10 59 38.1	+0.5
comp=Z,2.8nm,1.0s,baz=245,slow=14,SNR=3.2							
TORD	Torodi Ar. Bea	84.17	70	P	P	10 59 56.9	+0.6
comp=Z,3.3nm,0.8s,baz=257,slow=4.6,SNR=13							
SCHQ	Schefferville	87.90	3	LR	LR	11 38 36.6	
comp=Z,677nm,20.9s,baz=282,slow=35							
ZALV	Zalesovo Beam	153.75	31	PKPbc	PKPbc	11 07 23.4	+0.2
comp=Z,1.0nm,0.4s,baz=262,slow=3.0,SNR=4.3							
MKAR	Makanchi Array	156.46	48	PKPab	PKPab	11 07 49.1	+1.2
comp=Z,1.5nm,0.7s,baz=304,slow=3.9,SNR=12							

IDC 17 10:56:45.8±6.5, 7°.22S×148°.38E, h96km±48km, mb3.4/2, mb1 3.5/4, mb1mx3.2/36, mbtmp3.6/4, Error ellipse: s-maj=95.2km s-min=62.0km az=133.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	Port Moresby	2.49	209	P	Pn	10 57 24.7	+0.1
4.4nm,0.3s,baz=25,slow=17,SNR=3.3							
PMG				S	Sn	10 58 03.5	+9.1
2.0nm,0.3s,baz=354,slow=19,SNR=1.8							
WRA	Warramunga Arr	18.59	226	P	P	11 00 56.2	+0.6
0.1nm,0.3s,baz=53,slow=11,SNR=6.2							
ASAR	Alice Springs	21.47	219	P	P	11 01 27.7	+1.0
1.0nm,0.7s,baz=54,slow=8.6,SNR=5.9							
FITZ	Fitzroy Crossi	24.65	242	P	P	11 01 56.5	-1.2
1.9nm,0.4s,baz=47,slow=8.7,SNR=11							
TORD	Torodi Ar. Bea	146.71	283	PKPbc	PKPbc	11 16 17.1	-0.5
0.6nm,1.1s,baz=101,slow=3.1,SNR=3.3							

ISCJB ***17*** *11:01:52.0±0.4, 9°.94S±0°.04×124°.33E±0°.05, h19km, mb4.6/22, Error ellipse: s-maj=7.9km s-min=4.6km az=141.7*
IDC ***17*** *11:01:52.3±0.7, 9°.76S×124°.05E, h0km, mb4.4/10, mb1 4.6/12, mb1mx4.3/29, mbtmp4.4/12, ML4.7/2, Error ellipse: s-maj=37.2km s-min=16.6km az=70.0*
NEIC ***17*** *11:01:54.1±0.5, 9°.77S×124°.32E, h10km, mb4.6/9, Error ellipse: s-maj=22.7km s-min=8.5km az=62.0*
DJA ***17*** *11:01:57.2±0.4, 10°.5±4°.×12°.4E±°., h10km, M4.6/12, mb4.8/12, mB5.1/8, MLv4.7/11, Mw(mB)4.4/8*
ISC 17 11:01:55.0±0.5, 9°.92S±0°.05×124°.27E±0°.06, h19km, n56, σ1§99/61, mb4.7/22, Timor region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SOEI	Soe	0.17	359	P	Pg	11 02 01.5	+1.8
MMRI	Maumere	2.38	302	P	Pn	11 02 33.2	+0.2
MMRI				S	Sn	11 03 03.1	+1.4
MMRI	Maumere	2.38	302	*e*Pn	Pn	11 02 31.6	-1.5
MMRI				*e*Sg	Sb	11 03 05.6	-0.7
WSI	Waingapu	3.92	273	P	Pn	11 02 56.0	+1.7
WSI				S	Sn	11 03 39.6	-0.2
BSSI	Bau Bau, Buton	5.30	315	P	Pn	11 03 15.8	+2.5
132nm,0.8s,2μm0.4nm							
KDI	Kendari	6.15	344	P	Pn	11 03 27.9	+3.0
46nm,0.9s,0.2nm							
PLAI	Plampang	6.50	279	P	Pn	11 03 29.5	-0.2
182nm,0.7s,2μm0.8nm							
KAPI	Kappang	6.62	317	Pn	Pn	11 03 31.6	+0.2
1.4nm,0.3s,baz=162,slow=11,SNR=11							
KAPI	Kappang	6.62	317	*e*Pn	Pn	11 03 34.4	+3.0
76nm,1.1s							
KAPI				*e*Sn	Sn	11 04 47.5	+1.1
NLAI	Namlea	7.21	23	P	Pn	11 03 44.8	+5.3
61nm,0.9s,0.2nm							
TWSI	Taliwang, Sumb	7.38	279	P	Pn	11 03 41.8	-0.1
61nm,0.8s,1μm0.4nm							
SPSI	Sidrap Palu	7.41	323	P	Pn	11 03 45.2	+2.9
29nm,1.0s,1μm0.1nm							
SANI	Sanana	8.01	12	P	Pn	11 03 58.6	+8.2
146nm,0.7s,1μm							
TTSI	Tana Toraja	8.14	327	P	Pn	11 03 57.4	+5.2
50nm,1.5s,641nm							
FITZ	Fitzroy Crossi	8.24	171	Pn	Pn	11 03 55.3	+1.6
9.1nm,0.3s,baz=7.1,slow=10,SNR=135							
FITZ				Sn	Sn	11 05 24.7	-1.6
4.8nm,0.3s,baz=97,slow=20,SNR=6.4							
FITZ	Fitzroy Crossi	8.24	171	*e*Pn	Pn	11 03 55.3	+1.6
FITZ				*e*Sn	Sn	11 05 26.5	+0.3
LUWI	Luwuk	8.95	350	P	Pn	11 04 07.6	+4.3
LUWI	Luwuk	8.95	350	*e*Pn	Pn	11 04 03.1	-0.2
53nm,0.5s							
SRBI	Singaraja	9.13	281	P	Pn	11 04 07.6	+1.7
WRA	Warramunga Arr	13.92	137	Pn	Pn	11 05 11.5	+0.1
1.2nm,0.3s,baz=303,slow=13,SNR=42							
WRA				Sn	Sn	11 07 40.1	-5.5
3.1nm,0.3s,baz=308,slow=26,SNR=9.4							
ASAR	Alice Springs	16.48	147	Pn	Pn	11 05 46.2	+0.9
1.7nm,0.3s,baz=319,slow=11,SNR=87							
ASAR				Sn	Sn	11 08 43.9	-4.0
1.2nm,0.3s,baz=314,slow=20,SNR=9.8							
KKM	Kota Kinabalu	17.77	333	*e*Pn	P	11 06 03.1	+0.7
29nm,0.6s							
BBOO	Buckleboo	25.24	156	*e*P	P	11 07 24.1	+4.1
3.5nm,0.6s							
STKA	Stephens Creek	27.11	146	P	P	11 07 40.2	+3.3
3.2nm,0.9s,baz=324,slow=5.0,SNR=8.1							
CMAR	Chiang Mai Arr	37.68	318	P	P	11 09 07.5	-1.9
2.1nm,0.4s,baz=144,slow=6.8,SNR=14							
CHTO	Chiang Mai	37.94	319	*e*P	P	11 09 10.5	-1.1
6.2nm,1.1s							
WHN	Wuhan	41.35	347	P	P	11 09 39.3	-0.5
XAN	Xi'an	46.09	342	P	P	11 10 15.9	-2.1
XAN				pmax	pmax		
comp=Z,11nm,0.8s							
XAN				pmax	pmax		
comp=Z,80nm,12.0s							
KSAR	Wonju Array Be	47.23	4	P	P	11 10 25.2	-1.6
KSRS	Korea Array	47.25	4	P	P	11 10 25.2	-1.7
comp=Z,1.3nm,0.6s,baz=181,slow=9.7,SNR=7.8							
MJAR	Matsushiro Arr	48.04	15	P	P	11 10 32.3	-0.9
comp=Z,2.4nm,0.7s,baz=190,slow=8.5,SNR=7.3							
LZH	Lanzhou	49.65	338	*e*P	P	11 10 45.4	-0.3
LZH				pP	pP	11 10 50.8	-1.0
LZH				sP	sP	11 10 53.3	-0.8
LZH				pmax	pmax		
comp=Z,31nm,1.0s							
LSA	Lhasa	50.69	322	*e*P	P	11 10 53.8	-0.3
comp=Z,9.0nm,0.6s							
PKIN	Phulchoki	52.98	316	*e*P	P	11 11 08.7	-2.4
comp=Z,19nm,0.6s							
KKN	Kakani	53.20	316	*e*P	P	11 11 10.5	-2.1
comp=Z,18nm,0.5s							
DMN	Daman	53.20	316	*e*P	P	11 11 10.7	-2.0
comp=Z,6.8nm,0.2s							
GKN	Gorkha	53.77	316	*e*P	P	11 11 13.9	-2.8
comp=Z,16nm,0.5s							
GTA	Gaotai	54.09	337	P	P	11 11 18.0	-0.8
GTA				pP	sP	11 11 29.8	+2.6
GTA				sP	pP	11 11 34.0	+9.2
GTA				pmax	pmax		
comp=Z

HAZ			SN	S	11 25 53.3	+2.1
WCZ	Waipu Caves	6.91 227	PN	P	11 24 34.1	+3.1
PUZ	Puketiti	6.94 195	PN	P	11 24 31.3	0.0
PUZ			SN	S	11 25 56.0	+1.1
TWGZ	Tauwhareparae	7.11 197	PN	P	11 24 34.7	+1.5
OPRZ	Ohinepanea	7.25 206	PN	P	11 24 36.8	+2.1
MKAZ	Moumakai	7.26 217	PN	P	11 24 38.7	+3.8
CNGZ	Carnagh Statio	7.35 195	PN	P	11 24 37.7	+1.9
MWZ	Matawai	7.37 199	PN	Pn	11 24 36.0	+0.3
TKGZ	Te Karaka	7.39 197	*e*PN	P	11 24 37.1	+0.8
EDRZ	Edgecumbe	7.42 204	PN	P	11 24 39.4	+2.8
URZ	Urewera	7.43 202	P	P	11 24 36.5	-0.2
30nm,0.3s,baz=271,slow=4.2,SNR=138						
URZ			S	S	11 26 03.2	-1.7
37nm,0.3s,baz=63,slow=23,SNR=13						
URZ	Urewera	7.43 202	PN	Pn	11 24 35.6	-0.6
URZ			SN	S	11 26 04.2	-0.7
RAGZ	Rawiri	7.56 199	*e*PN	Pn	11 24 37.5	-0.2
RIGZ	Rimuhau	7.66 197	*e*PN	Pn	11 24 38.8	-0.1
UTU	Utuhina	7.68 207	PN	P	11 24 41.7	+2.1
RRRZ	Republican Roa	7.70 205	*e*PN	P	11 24 40.6	+0.7
MUGZ	Murupara	7.74 203	PN	P	11 24 40.1	-0.1
HSRZ	Hossack Road	7.78 206	*e*PN	P	11 24 42.9	+2.2
RTZ	Ruatahuna	7.80 201	PN	Pn	11 24 40.1	-0.4
HRRZ	Handcock Road	7.83 206	PN	P	11 24 42.9	+1.6
PRGZ	Paritu Road	7.84 196	PN	P	11 24 42.1	+0.7
SNGZ	Shannon Statio	7.84 199	*e*PN	Pn	11 24 40.8	-0.1
PRRZ	Plateau Road	7.89 205	*e*PN	P	11 24 44.0	+2.1
ALRZ	Allen Road	7.96 205	PN	P	11 24 43.6	+0.9
KNZ	Kokohu	7.98 197	PN	Pn	11 24 42.3	-0.1
RAHZ	Arahi	8.04 200	PN	P	11 24 43.9	+0.3
MHGZ	Mahia Peninsul	8.05 195	PN	P	11 24 45.5	+1.8
WHHZ	Waihua	8.15 199	*e*PN	P	11 24 45.0	+0.2
MRHZ	Matea Rd	8.18 204	PN	P	11 24 45.8	+0.6
NMHZ	Naumai	8.29 201	*e*PN	Pn	11 24 46.0	-0.2
ARHZ	Aropaoanui	8.39 199	PN	P	11 24 48.1	+0.7
BKZ	Black Stump Fm	8.45 202	*e*PN	Pn	11 24 45.8	-2.1
RITZ	Rihia Road	8.51 206	*e*PN	P	11 24 48.6	-0.2
HIZ	Hauiti	8.53 212	*e*PN	P	11 24 50.9	+2.0
KWHZ	Kaweka Forest	8.71 202	PN	P	11 24 52.0	+1.0
CKHZ	Cape Kidnapper	8.73 198	*e*PN	Pn	11 24 50.6	-0.5
WHVZ	Whangaehu Hut	8.87 206	PN	P	11 24 53.0	-0.1
WNVZ	Wahianoa	8.91 206	PN	P	11 24 53.7	+0.3
KAHZ	Kahuranaki	8.92 199	*e*PN	P	11 24 53.4	0.0
MOVZ	Moawhango	8.92 205	PN	Pn	11 24 52.0	-1.3
KRHZ	Kereru	8.93 201	*e*PN	Pn	11 24 52.9	-0.5
PKVZ	Pokaka	8.97 207	*e*PN	P	11 24 54.3	+0.3
MTVZ	Mangateitei	9.01 206	PN	P	11 24 54.8	+0.4
VRZ	Vera Road	9.07 210	PN	P	11 24 56.5	+1.5
PXZ	Pawanui	9.14 198	*e*PN	Pn	11 24 56.1	+0.4
PNHZ	Pukenui	9.23 202	*e*PN	P	11 24 56.2	-0.6
WPHZ	Waipukurau	9.29 200	PN	Pn	11 24 58.7	+1.1
PRHZ	Porangahau	9.42 199	*e*PN	Pn	11 24 59.5	+0.4
PRHZ			SN	S	11 26 45.0	-1.7
TSZ	Takapari Road	9.43 202	*e*PN	P	11 24 57.1	-1.9
TSZ			SN	S	11 26 44.1	-2.9
WAZ	Wanganui	9.51 207	PN	Pn	11 25 00.6	+0.5
DVHZ	Dannevirke	9.59 201	*e*PN	P	11 24 59.2	-1.6
ANWZ	Angora Road	9.65 199	PN	P	11 25 00.8	-0.6
POWZ	Post Office Ro	9.80 202	*e*PN	P	11 25 03.0	-0.1
PRWZ	Pori Road	9.88 201	*e*PN	P	11 25 03.1	-0.9
BFZ	Birch Farm	9.92 200	*e*PN	P	11 25 04.6	+0.2
MRZ	Mangatainoka R	10.10 202	*e*PN	P	11 25 04.4	-2.0
TIWZ	Tintock	10.11 201	PN	P	11 25 04.7	-1.8
CPWZ	Castlepoint	10.14 199	*e*PN	P	11 25 07.1	+0.3
HOWZ	Holdsworth Sta	10.34 202	*e*PN	P	11 25 08.4	-0.7
OGWZ	Otaki Gorge	10.38 203	*e*PN	P	11 25 07.4	-2.1
TMWZ	Te Maipa	10.41 200	PN	P	11 25 08.9	-1.0
KIW	Kapiti Island	10.51 204	*e*PN	P	11 25 10.5	-0.5
MTW	Mount Morrison	10.58 201	*e*PN	P	11 25 10.3	-1.4
CAW	Cannon Point	10.67 203	*e*PN	P	11 25 10.7	-2.1
TRWZ	Traveller	10.74 200	*e*PN	P	11 25 12.6	-0.9
PAWZ	Paruwai Farm	10.80 201	PN	P	11 25 13.7	-0.5
DUWZ	D'Urville Isla	10.83 208	PN	P	11 25 13.1	-1.4
MSWZ	Moikau Station	10.89 202	PN	P	11 25 15.3	+0.1
WEL	Wellington	10.93 204	*e*PN	P	11 25 15.2	-0.4
BHW	Baring Head	11.01 203	*e*PN	P	11 25 16.0	-0.5
PLWZ	Palliser	11.03 201	PN	P	11 25 16.1	-0.6
TCW	Tory Channel	11.04 206	PN	Pn	11 25 17.6	-0.2
TUWZ	Tuamarina	11.36 206	PN	P	11 25 18.8	-1.6
QRZ	Quartz Range	11.45 212	PN	P	11 25 21.3	-0.1
BSWZ	Blackbirch Sta	11.63 208	PN	P	11 25 23.3	0.0
THZ	Tophouse	12.05 209	PN	P	11 25 26.7	-1.4
KHZ	Kahutara	12.36 205	PN	P	11 25 30.4	-1.0
DSZ	Denniston Nort	12.51 212	PN	Pn	11 25 33.7	-1.2
LTZ	Lake Taylor	13.16 208	*e*PN	P	11 25 40.1	-0.1
INZ	Inchbonnie	13.46 210	PN	P	11 25 43.3	0.0
OXZ	Oxford	13.71 207	PN	P	11 25 45.4	-0.8
RPZ	Rata Peaks	14.43 209	P	P	11 25 55.7	+1.7
1.5nm,0.3s,baz=316,slow=1.5,SNR=12						
RPZ			S	S	11 28 26.1	-1.9
3.8nm,0.3s,baz=123,slow=22,SNR=11						
DZM	Mont Dzumac	15.66 303	P	P	11 26 06.0	-1.7
1.0nm,0.3s,baz=150,slow=17,SNR=7.4						
AFI	Afiamalu	18.75 24	P	P	11 26 40.0	-0.6
6.9nm,0.3s,baz=222,slow=4.6,SNR=9.8						
STKA	Stephens Creek	33.09 259	P	P	11 28 48.3	0.0
4.3nm,0.3s,baz=101,slow=11,SNR=28						
ASAR	Alice Springs	41.86 269	P	P	11 30 00.0	-1.1
3.7nm,0.7s,baz=106,slow=7.2,SNR=58						
WRA	Warramunga Arr	42.94 274	P	P	11 30 08.3	-1.3
3.6nm,0.4s,baz=111,slow=8.1,SNR=88						
NVAR	Mina Array Bea	89.78 43	P	P	11 35 06.0	+3.6
0.9nm,0.7s,baz=222,slow=7.3,SNR=7.9						
KBZ	Khabaz	144.64 303	PKP	PKPdf	11 41 37.7	+0.4
4.0nm,1.1s,baz=221,slow=1.7,SNR=4.9						
FINES	FINESS Array B	145.63 339	PKPbc	PKPab	11 41 40.2	-0.6
6.0nm,0.5s,baz=49,slow=3.9,SNR=39						
NB2	NORSAR Subarra	149.52 350	PKP	PKPbc	11 41 50.7	+0.7
comp=Z,1.0nm,0.5s,baz=15,slow=2.6						
NOA	NORSAR Array B	149.52 350	PKPbc	PKPbc	11 41 50.9	+0.9
comp=Z,1.5nm,0.8s,baz=17,slow=4.6,SNR=6.9						
AKASG	Malin Array Be	151.32 321	PKPbc	PKPbc	11 41 55.2	+0.8
comp=Z,0.7nm,0.5s,baz=62,slow=2.4,SNR=4.7						
BRTR	Keskin Array B	151.98 296	PKPbc	PKPbc	11 41 57.5	+1.0
comp=Z,0.4nm,0.4s,baz=197,slow=4.5,SNR=3.6						

IDC 17 11:56:34.9±2.1, 16°.02S×175°.00W, h0km, mb3.6/6, mb1 4.0/6, mb1mx3.7/35, mbtmp3.6/6, MS3.6/3, Ms1 3.7/3, ms1mx3.3/31, Error ellipse: s-maj=126.1km s-min=24.1km az=151.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**3.75**	**56**	Pn	Pn	11 57 27.7	-6.4
7.6nm,0.3s,baz=9.2,slow=2.8,SNR=13							
AFI				LR	LR	11 58 17.3	
comp=Z,280nm,18.1s,baz=244,slow=27							
DZM	**Mont Dzumac**	**18.54**	**248**	LR	LR	12 06 44.8	
comp=Z,305nm,19.4s,baz=182,slow=33							
H11S2	**WAKE ISLAND Hy**	**38.74**	**332**	T	T	12 44 46.2	
baz=174,slow=74,SNR=6.3							
H11S1	**WAKE ISLAND Hy**	**38.76**	**332**	T	T	12 44 47.8	
baz=156,slow=74,SNR=3.5							
H11N3	**WAKE ISLAND Hy**	**39.72**	**333**	T	T	12 45 59.9	
baz=151,slow=76,SNR=4.9							
H11N1	**WAKE ISLAND Hy**	**39.73**	**333**	T	T	12 45 51.0	
baz=151,slow=76,SNR=7.9							
H11N2	**WAKE ISLAND Hy**	**39.74**	**333**	T	T	12 45 59.6	
baz=151,slow=76,SNR=5.6							
WRA	**Warramunga Arr**	**48.21**	**257**	P	P	12 05 17.7	+0.1
1.1nm,1.0s,baz=94,slow=7.6,SNR=8.1							
ASAR	**Alice Springs**	**48.46**	**252**	P	P	12 05 18.9	-0.7
0.7nm,0.8s,baz=81,slow=8.3,SNR=7.6							
NVAR	**Mina Array Bea**	**75.82**	**43**	P	P	12 08 21.8	-1.5
0.2nm,0.4s,baz=237,slow=8.2,SNR=3.4							
TXAR	**Lajitas Array**	**82.23**	**57**	P	P	12 08 59.7	+1.2
0.1nm,0.5s,baz=184,slow=3.6,SNR=3.9							
ILAR	**Eielson Array**	**83.36**	**12**	P	P	12 09 03.2	-0.2
0.9nm,1.2s,baz=185,slow=4.4,SNR=4.5							
YKA	**Yellowknife Ar**	**91.28**	**24**	P	P	12 09 43.1	+1.3
0.3nm,1.0s,baz=239,slow=4.4,SNR=3.6							
CMAR	**Chiang Mai Arr**	**91.35**	**289**	LR	LR	12 49 26.2	
comp=Z,46nm,18.1s,baz=320,slow=35							
BRTR	**Keskin Array B**	**145.64**	**319**	PKPbc	PKPdf	12 16 15.7	-0.1
3.2nm,1.1s,baz=90,slow=2.5,SNR=8.4							

NIED ***17*** *12:16:00, 38°.80N×143°.90E, h5km, Mw4.2 Best double couple: M0 2.56000×10^15 NP1:φs=209.00000°, δ32.00000°, λ-54.00000°. NP2:φs=348.00000°, δ65.00000°,*

λ-110.00000°.
ISCJB ***17*** *12:16:29.1±1.4, 38°.67N±0°.03×143°.97E±0°.04, h20km±10km, mb4.1/33, MS4.3/1, Error ellipse: s-maj=5.8km s-min=5.1km az=32.8*
NEIC ***17*** *12:16:29.4±0.3, 38°.66N×144°.05E, h10km, mb4.5/13, Error ellipse: s-maj=6.7km s-min=4.9km az=128.0*
JMA ***17*** *12:16:31.6±0.2, 38°.75N×143°.94E, h39km, M4.3*
IDC ***17*** *12:16:34.1±0.5, 38°.67N×143°.89E, h42km±4km, mb3.7/20, mb1 4.0/26, mb1mx3.8/44, mbtmp4.0/26, ML3.8/5, MS3.4/8, Ms1 3.4/8, ms1mx3.1/53, Error ellipse: s-maj=14.0km s-min=11.4km az=120.0*

ISC 17 12:16:32.4±0.5, 38°.68N±0°.04×143°.95E±0°.06, h29km±3km, n67, σ1°.24/88, mb4.0/33, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**1.82**	**283**	P	Pn	12 17 01.2	-0.6
OFUJ				S	Sn	12 17 22.9	-1.0
MIYJ	**Miyakonagasawa**	**1.88**	**299**	P	Pn	12 17 01.6	-1.0
MIYJ				S	Sn	12 17 24.0	-1.4
JMK	**Ichinoseki**	**2.15**	**278**	P	Pn	12 17 06.3	0.0
JMK				*e*S	Sn	12 17 31.7	-0.3
JOM	**Ohasama**	**2.21**	**292**	P	Pn	12 17 06.9	-0.3
JOM				S	Sn	12 17 33.1	-0.5
JANG	**Nango**	**2.53**	**313**	P	Pn	12 17 10.0	-1.5
JANG				*e*S	Sn	12 17 39.5	-1.8
JYK	**Kaneyama**	**2.82**	**276**	P	Pn	12 17 15.7	+0.2
JFT	**Otama**	**3.08**	**249**	P	Pn	12 17 19.4	+0.3
JFT				S	Sn	12 17 55.3	+0.4
ERM	**Erimo**	**3.38**	**350**	*e*Pn	Pn	12 17 21.7	-1.5
ERM				*e*Sn	Sn	12 18 04.1	+1.8
JOT	**Ohata**	**3.50**	**321**	P	Pn	12 17 24.0	-0.8
JOT				S	Sn	12 18 02.1	-3.1
JAW	**Awa shima**	**3.69**	**268**	P	Pn	12 17 28.2	+0.7
JNBK	**Urakawa-nobuka**	**3.71**	**346**	P	Pn	12 17 26.4	-1.3
JCH	**Churui**	**3.95**	**354**	P	Pn	12 17 28.6	-2.4
BSO1	**Boso 1**	**4.68**	**212**	P	Pn	12 17 39.5	-1.1
MJAR	**Matsushiro Arr**	**5.04**	**247**	P	Pn	12 17 46.1	+0.1
6.8nm,0.3s,baz=64,slow=12,SNR=136							
MJAR				LR	LR	12 19 54.1	
comp=Z,320nm,21.7s,baz=85,slow=40							
MAJO	**Matsushiro**	**5.04**	**247**	*e*Pn	Pn	12 17 47.2	+1.2
67nm,0.6s							
MAJO				*e*Sn	Sn	12 18 40.2	-3.0
MAT	**Matsushiro**	**5.04**	**247**	P	Pn	12 17 47.2	+1.2
MAT				*e*S	Sn	12 18 43.7	+0.5
ASAJ	**Asahikawa**	**5.52**	**350**	P	Pn	12 17 52.2	-0.4
8.7nm,0.3s,baz=187,slow=14,SNR=68							
ASAJ				S	Sn	12 18 51.4	-3.7
1.8nm,0.3s,baz=17,slow=28,SNR=3.6							
ASAJ				LR	LR	12 19 50.4	
comp=Z,104nm,19.0s,baz=122,slow=36							
ASAJ	**Asahikawa**	**5.52**	**350**	*e*Pn	Pn	12 17 51.2	-1.4
8.1nm,0.4s							
ASAJ				*e*Sn	Sn	12 18 54.5	-0.6
JHJ2	**Mitsune**	**6.49**	**212**	*e*Pn	Pn	12 18 04.1	-1.9
JHJ2				*e*Sn	Sn	12 19 16.8	-2.3
JHJ	**Hachijo jima 2**	**6.50**	**213**	P	Pn	12 18 03.4	-2.7
23nm,0.3s,baz=301,slow=21,SNR=36							
JHJ				S	Sn	12 19 14.1	-5.2
36nm,0.3s,baz=86,slow=21,SNR=7.3							
USRK	**Ussuriysk Ar.**	**10.53**	**305**	P	Pn	12 19 01.5	+0.2
0.3nm,0.3s,baz=102,slow=12,SNR=11							
USRK				LR	LR	12 23 03.4	
comp=Z,263nm,18.3s,baz=112,slow=37							
JNU	**Nakatsue**	**11.96**	**246**	P	Pn	12 19 19.9	-1.0
0.2nm,0.3s,baz=92,slow=14,SNR=6.5							
JNU				LR	LR	12 24 15.1	
comp=Z,199nm,19.9s,baz=103,slow=39							
MDJ	**Mudanjiang**	**12.26**	**303**	*e*Pn	Pn	12 19 26.9	+2.0
35nm,1.1s							
MDJ				*e*Sn	Sn	12 21 40.4	-0.1
KSRS	**Korea Array**	**12.69**	**269**	P	Pn	12 19 31.2	+0.3
0.2nm,0.3s,baz=82,slow=13,SNR=8.5							
KSRS				LR	LR	12 24 00.6	
comp=Z,121nm,19.3s,baz=28,slow=35							
KSAR	**Wonju Array Be**	**12.73**	**269**	P	Pn	12 19 31.2	-0.2
KLR	**Kul'dur**	**13.71**	**324**	P	Pn	12 19 43.9	-0.7
0.2nm,0.3s,baz=129,slow=13,SNR=5.6							
KLR				LR	LR	12 25 41.7	
comp=Z,199nm,18.3s,baz=320,slow=40							
PETK	**Petropavlovsk-**	**17.26**	**29**	LR	LR	12 26 28.6	
comp=Z,58nm,21.6s,baz=289,slow=34							
SEY	**Seymchan**	**24.81**	**9**	P	P	12 21 52.5	+0.8
1.3nm,0.3s,baz=185,slow=11,SNR=6.9							
ULN	**Ulaanbaatar**	**28.16**	**301**	*e*P	P	12 22 22.8	+0.6
2.4nm,0.6s							
SONM	**Songino Array**	**28.60**	**301**	P	P	12 22 25.3	-0.8
2.2nm,0.8s,baz=72,slow=9.3,SNR=3.2							
ENH	**Enshi**	**29.49**	**264**	*e*P	P	12 22 34.6	+0.5
17nm,0.9s							
BILL	**Bilibino**	**31.89**	**16**	*e*P	P	12 22 54.8	+0.1
6.8nm,1.1s							
ZALV	**Zalesovo Beam**	**42.32**	**311**	P	P	12 24 23.1	-0.3
0.6nm,0.3s,baz=90,slow=8.6,SNR=3.0							
NRIK	**Noril'sk**	**42.63**	**334**	P	P	12 24 25.8	+0.1
0.7nm,0.4s,baz=85,slow=7.3,SNR=3.6							
CHTO	**Chiang Mai**	**43.64**	**256**	*e*P	P	12 24 35.6	+1.2
5.3nm,0.8s							
CMAR	**Chiang Mai Arr**	**43.85**	**256**	P	P	12 24 36.2	0.0
1.1nm,0.4s,baz=42,slow=6.6,SNR=9.0							
MKAR	**Makanchi Array**	**44.97**	**301**	P	P	12 24 45.2	+0.4
1.7nm,0.7s,baz=85,slow=8.9,SNR=14							
KURK	**Kurchatov**	**46.52**	**307**	*e*P	P	12 24 57.1	+0.2
15nm,0.9s							
ILAR	**Eielson Array**	**47.02**	**33**	P	P	12 25 00.9	+0.2
1.0nm,0.7s,baz=262,slow=6.7,SNR=9.8							
ILAR				pP	sP	12 25 13.1	0.0
1.5nm,0.7s,baz=263,slow=6.6,SNR=9.0							
TKM2	**Tokmak 2**	**50.62**	**298**	*e*P	P	12 25 30.0	+1.1
5.4nm,0.8s							
BVAR	**Borovoye Array**	**50.96**	**312**	P	P	12 25 30.9	-0.1
1.3nm,0.8s,baz=64,slow=6.8,SNR=6.7							
BVAR				PcP	PcP	12 26 46.7	-0.2
1.4nm,0.6s,baz=75,slow=7.8,SNR=3.8							
BVAR				pPcP		12 27 00.6	
1.4nm,0.5s,baz=101,slow=1.5,SNR=4.1							
INK	**Inuvik**	**52.00**	**28**	P	P	12 25 38.9	+0.4
0.5nm,0.6s,baz=295,slow=7.3,SNR=5.8							
ARU	**Arti**	**56.46**	**318**	*e*P	P	12 26 11.7	+0.5
10nm,1.1s							
ABKAR	**Akbulak array**	**58.41**	**310**	*e*P	P	12 26 25.4	+0.3
1.2nm,0.6s							
WRAB	**Tennant Creek**	**59.00**	**191**	*e*P	P	12 26 28.6	-0.8
4.9nm,0.8s							
WRA	**Warramunga Arr**	**59.01**	**191**	P	P	12 26 28.9	-0.6
3.6nm,0.8s,baz=9.5,slow=7.2,SNR=22							
WRA				pP	sP	12 26 41.5	-0.5
3.3nm,0.8s,baz=10.0,slow=7.3,SNR=8.2							
FITZ	**Fitzroy Crossi**	**59.04**	**200**	*e*P	P	12 26 30.2	+0.5
3.4nm,0.8s							
YKA	**Yellowknife Ar**	**61.37**	**31**	P	P	12 26 45.5	+0.3
0.3nm,1.0s,baz=222,slow=10.0,SNR=3.3							
YKA				pP	sP	12 26 57.7	0.0
0.6nm,1.0s,baz=292,slow=7.1,SNR=5.9							
ASAR	**Alice Springs**	**62.73**	**190**	P	P	12 26 54.5	-0.3
0.9nm,0.7s,baz=0.9,slow=5.8,SNR=11							
ASAR				pP	sP	12 27 07.3	0.0
1.2nm,0.8s,baz=7.2,slow=6.6,SNR=6.8							
GEYT	**Alibeck**	**64.79**	**299**	P	P	12 27 08.3	0.0
0.8nm,0.3s,baz=120,slow=8.5,SNR=3.1							
FINES	**FINESS Array B**	**68.28**	**333**	P	P	12 27 29.9	-0.3
2.1nm,0.8s,baz=56,slow=12,SNR=4.5							
FINES				pP	sP	12 27 42.5	-0.3
2.9nm,0.8s,baz=54,slow=9.7,SNR=2.9							
KBZ	**Khabaz**	**71.34**	**311**	P	P	12 27 50.2	+1.0
4.4nm,0.8s,baz=15,slow=1.2,SNR=10							
FCC	**Fort Churchill**	**71.62**	**28**	*e*P	P	12 27 51.0	+0.3
6.5nm,1.1s							
HLID	**Hailey**	**71.78**	**49**	*e*P	P	12 27 50.6	-1.7
0.6nm,0.8s							
NVAR	**Mina Array Bea**	**72.39**	**55**	P	P	12 27 56.2	+0.2
0.3nm,0.4s,baz=302,slow=8.4,SNR=5.4							
NVAR				pP	sP	12 28 09.0	+0.3
0.3nm,0.4s,baz=274,slow=6.6,SNR=2.5							
NB2	**NORSAR Subarra**	**73.42**	**338**	P	P	12 28 01.5	0.0
comp=Z,1.2nm,0.7s,baz=40,slow=5.9							
NOA	**NORSAR Array B**	**73.42**	**338**	P	P	12 28 01.6	+0.1
comp=Z,2.4nm,0.8s,baz=38,slow=5.9,SNR=6.8							
NOA				pP	sP	12 28 14.5	+0.3
comp=Z,2.3nm,0.7s,baz=38,slow=6.0,SNR=6.1							
AKASG	**Malin Array Be**	**74.20**	**323**	P	P	12 28 05.0	-1.2
comp=Z,0.7nm,0.4s,baz=47,slow=6.7,SNR=5.4							
WUAZ	**Wupatki**	**78.56**	**54**	*e*P	P	12 28 31.3	-0.1
comp=Z,0.7nm,0.4s							
BRTR	**Keskin Array B**	**79.24**	**313**	P	P	12 28 35.2	+0.1
comp=Z,0.3nm,0.3s,baz=301,slow=9.9,SNR=3.6							
CLL	**Collm**	**80.64**	**331**	*e*(P)	P	12 28 44.0	+1.8
ASF	**Jabal al Asfar**	**82.23**	**305**	LR	LR	13 08 25.6	
comp=Z,139nm,19.8s,baz=70,slow=38							
TXAR	**Lajitas Array**	**87.53**	**54**	P	P	12 29 17.5	-0.3
comp=Z,0.3nm,0.6s,baz=291,slow=2.0,SNR=4.6							
TXAR				pP	sP	12 29 30.9	+0.2
comp=Z,0.4nm,0.6s,baz=267,slow=2.7,SNR=5.4							
LPAZ	**La Paz**	**144.13**	**61**	PKP	PKPdf	12 36 06.4	-0.1
comp=Z,0.6nm,0.7s,baz=192,slow=14,SNR=2.6							
VNA2	**Neumayer--Watz**	**144.46**	**196**	PKP	PKPbc	12 36 03.3	0.0
baz=118,slow=2.6							
VNA3	**Neumayer Olymp**	**144.67**	**194**	PKP	PKPab	12 36 03.4	-0.4
VNA1	**Neumayer--Stat**	**144.85**	**196**	PKP	PKPab	12 36 04.3	-0.1

ISK ***17*** *12:30:31.4, 40°.54N×37°.31E, h5km, ML2.5*
ISCJB ***17*** *12:30:32.4±0.4, 40°.54N±0°.03×37°.31E±0°.03, h0km, Error ellipse: s-maj=4.0km s-min=3.0km az=21.0*
DDA ***17*** *12:30:32.1, 40°.45N×37°.32E, h3km, Md2.8, Suspected Mining explosion.*
CSEM ***17*** *12:30:32.6±0.3, 40°.52N×37°.31E, h2km, ML2.5, Error ellipse: s-maj=6.4km s-min=4.7km az=13.0, Suspected Mining explosion.*

ISC 17 12:30:32.7±0.8, 40°.48N±0°.02×37°.29E±0°.02, h0km, n41, σ0°.95/68, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RSDY	**Resadiye-TOKAT**	**0.09**	**158**	*e*PG	Pg	12 30 34.4	+0.1
RSDY				*e*SG	Sg	12 30 37.5	+2.1
RSDY	**Resadiye-TOKAT**	**0.09**	**158**	*e*Pg	Pg	12 30 34.4	+0.1
RSDY				*e*Sg	Sg	12 30 37.5	+2.1
ERBA	**Erbaa**	**0.45**	**297**	P	Pg	12 30 41.4	0.0
ERBA				S	Sb	12 30 50.7	-0.3
ERBA	**Erbaa**	**0.45**	**297**	*i* P	Pg	12 30 41.4	0.0
ERBA				*i* S	Sb	12 30 50.7	-0.3
TOKT	**Tokat**	**0.59**	**255**	*e*PG	Pb	12 30 44.9	-1.0
TOKT				*e*SG	Sb	12 30 54.4	-0.4
TOKT	**Tokat**	**0.59**	**255**	*e*Pg	Pb	12 30 44.9	-1.0
TOKT				*e*Sg	Sb	12 30 54.4	-0.4
SVSK	**Karacayir**	**0.60**	**202**	*e*PG	Pb	12 30 45.6	-0.5
SVSK	**Karacayir**	**0.60**	**202**	*e*Pg	Pb	12 30 45.6	-0.5
CUZAR	**Zara_SIVAS**	**0.69**	**148**	P	Pg	12 30 44.9	-1.1
CUZAR				S	Sb	12 30 57.8	-0.1
CUZAR	**Zara_SIVAS**	**0.69**	**148**	*i* P	Pg	12 30 44.9	-1.1
CUZAR				*i* S	Sb	12 30 57.8	-0.1
SUSE	**Susehri**	**0.75**	**111**	P	Pg	12 30 47.0	0.0
SUSE				S	Sb	12 30 59.8	+0.3
SUSE	**Susehri**	**0.75**	**111**	*i* P	Pg	12 30 47.0	0.0
SUSE				*i* S	Sb	12 30 59.8	+0.3
GRSN	**GIRESUNGRSN**	**0.87**	**59**	P	Pg	12 30 48.9	-0.5
GRSN				S	Sb	12 31 03.2	+0.3
GRSN	**GIRESUNGRSN**	**0.87**	**59**	*i* P	Pg	12 30 48.9	-0.5
GRSN				*i* S	Sb	12 31 03.2	+0.3
KVT	**Kavak**	**1.12**	**303**	*e*PN	Pg	12 30 53.7	-0.4
KVT				*e*SN	Sb	12 31 10.0	-0.1
KVT	**Kavak**	**1.12**	**303**	*e*Pn	Pg	12 30 53.7	-0.4
KVT				*e*Sn	Sb	12 31 10.0	-0.1
CUKAN	**kangal_SIVAS**	**1.17**	**173**	*i* P	Pg	12 30 54.7	-0.3
CUKAN				*i* S	Sn	12 31 14.1	+1.0
ESPY	**Espiye-Giresun**	**1.18**	**68**	*e*PN	Pg	12 30 54.8	-0.5
ESPY	**Espiye-Giresun**	**1.18**	**68**	*e*Pn	Pg	12 30 54.8	-0.5
CUALT

MNBS Baschi 3.30 286 *eP* **Pb 12 38 22.5 -2.1**
6.9nm,0.6s
MNBS *eS* **Sb 12 39 05.2 +0.2**
161nm,0.5s
MK31 Makanchi Array 3.57 354 ⇑Pn **Pb 12 38 25.3 -3.8**
0.4nm,0.2s,baz=184,slow=14,SNR=21
MK31 ⇓Pg **Pg 12 38 34.8 +0.5**
6.0nm,0.4s,baz=176,slow=16,SNR=5.5
MK31 ⇑Lg Lg 12 39 27.0
15nm,0.7s,baz=176,slow=24,SNR=7.9
MKAR Makanchi Array 3.57 354 Pn **Pb 12 38 25.7 -3.5**
1.5nm,0.3s,baz=177,slow=14,SNR=25
MKAR Pg **Pg 12 38 35.5 +1.1**
5.4nm,0.3s,baz=174,slow=16,SNR=39
MKAR Sn **Sb 12 39 14.1 +1.5**
2.7nm,0.3s,baz=190,slow=25,SNR=4.5
MKAR Lg Lg 12 39 29.8
4.1nm,0.3s,baz=173,slow=23,SNR=11
MAKZ Makanchi 3.62 351 ⇑Pn **Pb 12 38 25.8 -4.1**
1.5nm,0.3s
MAKZ ⇑Pg **Pg 12 38 36.2 +1.0**
4.6nm,0.5s
MAKZ ⇑Lg Lg 12 39 27.7
5.7nm,0.6s
ARXS Arharly 3.74 287 *eP* **Pb 12 38 30.6 -1.4**
16nm,0.4s
ARXS *eS* **Sb 12 39 19.5 +2.2**
62nm,0.5s
KNDC Almaty 4.27 272 ⇑Lg Lg 12 39 38.3
39nm,0.6s
TKM2 Tokmak 2 5.29 269 ⇑Pn **Pn 12 38 46.2 +1.1**
1.2nm,0.5s
TKM2 ⇓Pg **Pb 12 38 58.8 +0.3**
3.9nm,0.7s
TKM2 ⇑Lg Lg 12 40 07.4
14nm,0.6s
AAK Ala-Archa 6.13 267 ⇑Pg **Pb 12 39 14.8 +2.0**
3.0nm,0.7s
AAK ⇑Lg Lg 12 40 36.4
4.4nm,0.7s
MNAS Manas 7.61 268 ⇓Lg Lg 12 41 21.9
3.7nm,0.8s
KURBB Kurchatov Arra 7.94 340 ⇑Pn Pn 12 39 23.7 +2.4
1.8nm,0.8s
KURBB ⇑Sn **Sn 12 40 54.2 +3.0**
4.4nm,0.6s
KURBB ⇓Lg Lg 12 41 42.2
11nm,0.7s
KURK Kurchatov 8.01 341 ⇓Pn **Pn 12 39 23.9 +1.7**
3.8nm,0.7s
KURK ⇑Sn **Sn 12 40 55.5 +2.8**
6.2nm,0.7s
KURK ⇑Lg Lg 12 41 42.9
8.3nm,0.7s
OTUK Ortayu 8.86 308 ⇑Lg Lg 12 42 07.8
5.4nm,0.8s
KK31 Karatay Array 8.99 273 ⇑Pg Pg 12 40 08.0 -10
1.4nm,0.8s,baz=83,slow=16,SNR=4.2
KK31 ⇓Lg Lg 12 42 06.7
2.6nm,0.8s,baz=80,slow=27,SNR=4.7
ZALV Zalesovo Beam 10.80 6 Pn Pn 12 40 02.7 +2.3
0.3nm,0.3s,baz=183,slow=13,SNR=2.6
ARCES ARCESS Array B 38.94 332 P **P 12 44 51.0 -0.4**
7.1nm,1.1s,baz=101,slow=9.3,SNR=4.0

IDC ***17*** *12:41:54.7±1.1,26°.85N×143°.74E,h0km,mb3.5/6, mb1 3.9/11,mb1mx3.7/43,mbtmp3.8/11,ML3.9/4,Error ellipse: s-maj=26.4km s-min=17.5km az=83.0*
JMA ***17*** *12:42:00.2,27°.40N×143°.45E,h5km,M5.0*
ISC 17 12:42:00.2±1.1,27°.04N±0°.08×143°.6E±0°.1,h35km,n23, σ_1**1§29/33,mb3.4/6,Bonin Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**1.30**	**273**	P	**Pn**	**12 42 22.3**	**+0.4**
CBIJ				S	**Sn**	**12 42 38.1**	**+0.1**
JCJ	**Chichijima**	**1.30**	**273**	Pn	**Pn**	**12 42 22.0**	**+0.1**
102nm,0.3s,baz=94,slow=23,SNR=111							
JCJ				Sn	**Sn**	**12 42 37.2**	**-0.8**
1μm,0.3s,baz=319,slow=19,SNR=35							
JHJ2	**Mitsune**	**6.90**	**332**	S	**Sn**	**12 44 54.8**	**-1.3**
JHJ	**Hachijo jima 2**	**6.92**	**332**	Pn	**Pn**	**12 43 38.9**	**-0.3**
5.2nm,0.3s,baz=260,slow=23,SNR=11							
JHJ				Sn	**Sn**	**12 44 55.5**	**-1.2**
26nm,0.3s,baz=253,slow=21,SNR=8.6							
BSO1	**Boso 1**	**7.93**	**344**	P	**Pn**	**12 43 52.3**	**-0.2**
BSO1				*eS*	**Sn**	**12 45 18.4**	**-2.3**
BSO3	**Boso 3**	**8.19**	**342**	P	**Pn**	**12 43 56.3**	**-0.1**
BSO3				S	**Sn**	**12 45 25.8**	**-1.7**
BSO4	**Boso 4**	**8.42**	**341**	P	**Pn**	**12 44 01.1**	**+1.5**
JOD2	**Odawara 2**	**9.08**	**336**	P	**Pn**	**12 44 09.1**	**+0.3**
JOD2				*eS*	**Sn**	**12 45 49.0**	**-0.7**
JHU	**Hanno**	**9.54**	**338**	P	**Pn**	**12 44 16.0**	**+0.9**
JHU				S	**Sn**	**12 45 57.8**	**-3.3**
JRY	**Ryogami san**	**9.82**	**337**	P	**Pn**	**12 44 20.3**	**+1.3**
JRY				*eS*	**Sn**	**12 46 06.4**	**-1.6**
JHO	**Hitachi**	**9.89**	**345**	P	**Pn**	**12 44 19.8**	**-0.1**
JAG	**Ashikaga**	**10.01**	**340**	P	**Pn**	**12 44 22.1**	**+0.5**
MJAR	**Matsushiro Arr**	**10.54**	**335**	Pn	**Pn**	**12 44 29.0**	**+0.2**
3.2nm,0.3s,baz=163,slow=11,SNR=28							
MJAR				Sn	**Sn**	**12 46 24.9**	**-0.7**
1.5nm,0.3s,baz=189,slow=20,SNR=8.3							
MAT	**Matsushiro**	**10.54**	**335**	P	**Pn**	**12 44 30.1**	**+1.3**
MAT				S	**Sn**	**12 46 24.8**	**-0.8**
KSRS	**Korea Array**	**16.85**	**312**	Pn	**P**	**12 45 55.9**	**+0.8**
0.3nm,0.3s,baz=115,slow=11,SNR=9.4							
ASAJ	**Asahikawa**	**17.06**	**357**	P	**Pn**	**12 45 55.6**	**-0.3**
0.7nm,0.3s,baz=230,slow=5.3,SNR=6.2							
USRK	**Ussuriysk Ar.**	**19.53**	**334**	P	**P**	**12 46 25.2**	**+0.6**
0.2nm,0.3s,baz=195,slow=9.9,SNR=4.8							
KLR	**Kul'dur**	**23.99**	**341**	P	**P**	**12 47 13.2**	**+1.7**
0.5nm,0.5s,baz=162,slow=13,SNR=2.5							
CMAR	**Chiang Mai Arr**	**41.92**	**268**	P	**P**	**12 49 48.2**	**+0.5**
0.3nm,0.3s,baz=46,slow=5.2,SNR=2.8							
WRA	**Warramunga Arr**	**47.56**	**192**	P	**P**	**12 50 30.8**	**-1.7**
1.9nm,0.5s,baz=12,slow=8.7,SNR=10							
ASAR	**Alice Springs**	**51.28**	**191**	P	**P**	**12 50 58.4**	**-2.5**
0.3nm,0.6s,baz=15,slow=7.6,SNR=7.8							
MKAR	**Makanchi Array**	**51.51**	**310**	P	**P**	**12 51 03.3**	**+0.8**
0.2nm,0.3s,baz=81,slow=11,SNR=3.2							
YKA	**Yellowknife Ar**	**71.57**	**29**	P	**P**	**12 53 18.9**	**+1.4**
0.2nm,0.6s,baz=294,slow=5.9,SNR=3.2							

SJA ***17*** *12:44:06.2±0.6,23°.78S×64°.12W,h590km,ML5.1,MW4.6*
SCB ***17*** *12:44:06.0±0.3,22°.41S×63°.87W,h555km,Ml4.7/3,Error ellipse: s-maj=10.1km s-min=7.2km az=22.0*
ISCJB ***17*** *12:44:09.9±0.2,23°.40S±0°.03×63°.64W±0°.03,h540km±2km, mb4.8/238,Error ellipse: s-maj=5.0km s-min=3.8km az=142.4*
NEIC ***17*** *12:44:10.2±0.3,23°.49S×63°.59W,h532km±3km,mb4.8/193, MD4.6(SJA),Error ellipse: s-maj=5.1km s-min=3.5km az=60.0*
NEIC Felt at Salta.
GCMT ***17*** *12:44:10.2±0.5,23°.73S×63°.40W,h556km±3km,MW5.4/54, Moment Tensor Solution. s54,c68; Duration: 1§2 Moment tensor: Scale* 10^{17}*Nm; Mrr-1.11±.06; Mθθ0.07±.09; Mφφ1.03±.11; Mrθ-0.30±.10; Mφθ-0.57±.10; Mφr0.87±.10; Best double couple: M0*1.51400×10^{17} *NP1:*ϕ_s*330.00000°,δ27.00000°,λ-98.00000°. Principal axes: T 1.6060, Plg19.0000°, Azm246.0000°; N -0.1910, Plg4.0000°, Azm337.0000°; P -1.4230, Plg71.0000°, Azm78.0000°; nsta1 refers to body waves, cutoff=40s.*
MOS ***17*** *12:44:10.3±1.0,23°.44S×63°.59W,h540km,mb4.8/52 Error ellipse: s-maj=12.9km s-min=6.7km az=111.6*
IDC ***17*** *12:44:11.1±0.4,23°.50S×63°.67W,h544km±4km,mb4.4/23, mb1 4.5/29,mb1mx4.4/36,mbtmp5.3/29,Error ellipse: s-maj=10.2km s-min=7.3km az=60.0*
ISC 17 12:44:10.8±0.3,23°.52S±0°.04×63°.71W±0°.05,h545km**±3**km**, h545**km**:pP-P,n928,**σ_1**1§14/1004,mb4.8/238,11C-7D,Salta Province**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASTB	**Santa Barbara**	**0.80**	**238**	*eP*	**P**	**12 45 17.4**	**+1.1**
AZAP	**Zapla**	**1.42**	**240**	*eP*	**P**	**12 45 18.4**	**+0.3**
AZAP				IAML		12 45 18.6	
comp=Z,1μm,1.0s							
HJA	**Humahuaca**	**1.59**	**281**	*eP*	**P**	**12 45 20.4**	**+1.5**
HJA				IAML		12 45 20.7	
comp=Z,2μm,1.0s							
SLA	**San Lorenzo**	**2.03**	**234**	*eP*	**P**	**12 45 20.2**	**-0.1**
SLA				IAML		12 45 20.6	
comp=Z,585nm,1.8s							
SLA				*eS*	**S**	**12 46 15.0**	**-1.9**
YJA	**Yavi**	**2.13**	**309**	*eP*	**P**	**12 45 22.9**	**+1.6**
YJA				IAML		12 45 23.2	
comp=Z,573nm,1.0s							
MOCB	**Mochara**	**2.88**	**321**	*ePn*	**P**	**12 45 23.9**	**-1.5**
MOCB				*eSn*	**S**	**12 46 21.2**	**-4.6**
comp=Z,2μm,1.1s							
FSA	**Cafayete**	**3.30**	**218**	*eP*	**P**	**12 45 26.9**	**-0.6**
FSA				IAML		12 45 27.2	
comp=Z,566nm,0.8s							
AHML	**Horco Molle**	**3.57**	**204**	*eP*	**P**	**12 45 28.8**	**-0.4**
AHML				IAML		12 45 29.2	
comp=Z,630nm,0.9s							
LVC	**Limon Verde**	**4.87**	**280**	P	**P**	**12 45 39.2**	**-0.6**
comp=Z,4μm,0.3s,baz=107,slow=5.8,SNR=1252							
LVC				S	**S**	**12 46 48.8**	**-3.4**
comp=Z,3μm,0.3s,baz=32,slow=3.2,SNR=8.4							
LVC	**Limon Verde**	**4.87**	**280**	*eP*	**P**	**12 45 37.7**	**-2.0**
CYA	**Choya**	**5.25**	**201**	*eP*	**P**	**12 45 41.3**	**-1.1**
CYA				IAML		12 45 42.5	
comp=Z,383nm,0.7s							
PB09	**IPOC Station P**	**5.39**	**288**	*eP*	**P**	**12 45 43.8**	**-0.2**
PB09				*eS*	**S**	**12 46 56.9**	**-3.1**
PB06	**IPOC Station P**	**5.45**	**277**	*eP*	**P**	**12 45 43.8**	**-0.7**
PB06				*eS*	**S**	**12 46 57.6**	**-3.4**
PB01	**IPOC Station P**	**5.89**	**294**	*eP*	**P**	**12 45 48.2**	**-0.2**
PB01				*eS*	**S**	**12 47 07.6**	**-0.4**
PB07	**IPOC Station P**	**5.98**	**286**	*eP*	**P**	**12 45 48.8**	**-0.5**
PB07				*eS*	**S**	**12 47 06.8**	**-2.9**
PB04	**IPOC Station P**	**6.05**	**280**	*eP*	**P**	**12 45 49.1**	**-0.8**
PB04				*eS*	**S**	**12 47 08.4**	**-2.5**
PB04	**IPOC Station P**	**6.05**	**280**	*eP*	**P**	**12 45 49.5**	**-0.5**
PB04				*eS*	**S**	**12 47 09.8**	**-1.0**
PB08	**IPOC Station P**	**6.07**	**303**	*eP*	**P**	**12 45 50.8**	**+0.4**
PB08				*eS*	**S**	**12 47 09.6**	**-2.0**
PB10	**IPOC Station P**	**6.28**	**269**	*eP*	**P**	**12 45 51.8**	**0.0**
PB10				*eS*	**S**	**12 47 13.3**	**-1.1**
CPUP	**Villa Florida**	**6.43**	**117**	P	**P**	**12 45 53.1**	**-0.1**
comp=Z,17nm,0.3s,baz=301,slow=11,SNR=1021							
CPUP	**Villa Florida**	**6.43**	**117**	*eP*	**P**	**12 45 53.6**	**+0.4**
CPUP				*eS*	**S**	**12 47 17.6**	**+0.6**
CPUP	**Villa Florida**	**6.43**	**117**	*eP*	**P**	**12 45 53.6**	**+0.4**
CPUP				*eS*	**S**	**12 47 17.6**	**+0.6**
PB11	**IPOC Station P**	**6.67**	**303**	*eP*	**P**	**12 45 55.6**	**-0.2**
MNMC	**Minye Minye**	**7.01**	**307**	*eP*	**P**	**12 45 59.4**	**+0.2**
MNMC				*eS*	**S**	**12 47 25.9**	**-1.7**
BBOJ	**La Paz, Jacaqu**	**7.75**	**326**	⇑/*ePn*	**P**	**12 46 08.2**	**+1.5**
BBOE	**La Paz, Chanca**	**7.79**	**328**	⇑/*ePn*	**P**	**12 46 08.3**	**+1.3**
SIV	**San Ignacio**	**7.89**	**19**	P	**P**	**12 46 08.2**	**+0.7**
comp=Z,7.4nm,0.3s,baz=212,slow=10,SNR=137							
SIV				S	**S**	**12 47 41.4**	**-1.7**
comp=Z,1.4nm,0.3s,baz=264,slow=7.0,SNR=6.3							
SIV	**San Ignacio**	**7.89**	**19**	⇑/*ePn*	**P**	**12 46 08.2**	**+0.7**
BBOD	**La Paz, Gloria**	**8.24**	**325**	⇑/*ePn*	**P**	**12 46 12.7**	**+1.1**
BBOD				⇑/*eSn*	**S**	**12 47 45.9**	**-4.5**
comp=Z,179nm,0.6s							
LPAZ	**La Paz**	**8.31**	**329**	P	**P**	**12 46 13.1**	**+0.7**
comp=Z,82nm,0.3s,baz=116,slow=5.2,SNR=1608							
LPAZ				S	**S**	**12 47 50.4**	**-1.4**
comp=Z,7.7nm,0.3s,baz=251,slow=20,SNR=8.8							
LPAZ				ScP	**ScP**	**12 54 23.8**	**+0.5**
comp=Z,0.1nm,0.3s,baz=34,slow=6.1,SNR=3.7							
LPAZ	**La Paz**	**8.31**	**329**	⇑/*ePn*	**P**	**12 46 13.0**	**+0.7**
LPAZ				*eSn*	**S**	**12 47 45.5**	**-6.2**
LPAZ	**La Paz**	**8.31**	**329**	*eP*	**P**	**12 46 13.2**	**+0.9**
LPAZ				*eS*	**S**	**12 47 50.5**	**-1.2**
LCO	**Las Campanas**	**8.32**	**227**	*eP*	**P**	**12 46 11.5**	**-0.4**
LCO				*eS*	**S**	**12 47 50.6**	**-0.5**
BBOB	**La Paz, Bander**	**8.44**	**330**	⇑/*ePn*	**P**	**12 46 14.1**	**+0.6**
BBOB				⇑/*eSn*	**S**	**12 47 48.1**	**-5.8**
comp=Z,148nm,0.5s							
ROC1	**El Roble**	**11.40**	**213**	*eP*	**P**	**12 46 42.2**	**-1.2**
ROC1				*eS*	**S**	**12 48 46.5**	**-2.3**
SAML	**Samuel**	**14.50**	**2**	*eP*	**P**	**12 47 14.3**	**-1.1**
TRQA	**Tornquist**	**14.56**	**175**	*eP*	**P**	**12 47 12.0**	**-3.8**
SPB	**Sao Paulo**	**14.93**	**94**	*eP*	**P**	**12 47 18.1**	**-1.6**
NNA	**Nana**	**16.95**	**310**	P	**P**	**12 47 40.2**	**+0.6**
comp=Z,8.2nm,0.3s,baz=136,slow=8.4,SNR=25							
NNA	**Nana**	**16.95**	**310**	*eP*	**P**	**12 47 40.4**	**+0.8**
NNA	**Nana**	**16.95**	**310**	*eP*	**P**	**12 47 40.6**	**+1.0**
PLCA	**Paso Flores**	**18.10**	**197**	P	**P**	**12 47 48.6**	**-1.2**
comp=Z,1.6nm,0.3s,baz=45,slow=12,SNR=52							
PLCA				PcP	**PcP**	**12 51 55.0**	**+0.7**
comp=Z,0.2nm,0.3s,baz=72,slow=3.1,SNR=6.1							
PLCA				ScP	**ScP**	**12 54 38.9**	**+0.6**
comp=Z,0.1nm,0.3s,baz=12,slow=9.4,SNR=2.9							
PLCA	**Paso Flores**	**18.10**	**197**	*eP*	**P**	**12 47 48.3**	**-1.5**
PLCA				pmax	pmax		
comp=Z,13nm,0.6s							
PLCA	**Paso Flores**	**18.10**	**197**	*eP*	**P**	**12 47 48.3**	**-1.5**
comp=Z,13nm,0.6s							
ATAH	**Atahualpa**	**21.55**	**317**	P	**P**	**12 48 21.2**	**-0.6**
comp=Z,11nm,0.7s,baz=152,slow=8.2,SNR=5.7							
PTGA	**Pitinga**	**22.95**	**10**	P	**P**	**12 48 33.0**	**-0.8**
comp=Z,35nm,0.5s,baz=198,slow=11,SNR=66							
PTGA	**Pitinga**	**22.95**	**10**	*eP*	**P**	**12 48 33.4**	**-0.4**
comp=Z,52nm,0.8s							
FLOC	**Florencia**	**27.53**	**333**	*eP*	**P**	**12 49 12.8**	**-1.5**
OTAV	**Otavalo**	**27.62**	**327**	*eP*	**P**	**12 49 17.1**	**+1.5**
comp=Z,6.9nm,0.6s							
OTAV	**Otavalo**	**27.62**	**327**	*eP*	**P**	**12 49 16.2**	**+0.6**
CRUC	**La Cruz**	**28.07**	**331**	*eP*	**P**	**12 49 20.0**	**+0.5**
SJAC	**San Juan de Ar**	**28.44**	**338**	*eP*	**P**	**12 49 21.0**	**-1.4**
EFI	**East Falkland**	**28.44**	**173**	*eP*	**P**	**12 49 20.7**	**-1.1**
EFI				pmax	pmax		
comp=Z,29nm,1.1s							
EFI	**East Falkland**	**28.44**	**173**	*eP*	**P**	**12 49 21.1**	**-0.7**
comp=Z,112nm,1.6s							
POPC	**Popayan, Colom**	**28.82**	**332**	*eP*	**P**	**12 49 26.3**	**+0.5**
VILC	**Villavicencio,**	**29.14**	**339**	*eP*	**P**	**12 49 27.4**	**-1.1**
PRAC	**Prado**	**29.18**	**337**	*eP*	**P**	**12 49 28.0**	**-0.8**
comp=Z,32nm,0.6s							
PRAC	**Prado**	**29.18**	**337**	*eP*	**P**	**12 49 26.3**	**-2.4**
GRGC	**Isla de Gorgon**	**29.89**	**330**	*eP*	**P**	**12 49 33.2**	**-1.6**
ROSC	**El Rosal**	**30.03**	**338**	P	**P**	**12 49 36.3**	**-0.1**
comp=Z,25nm,0.5s,baz=203,slow=6.1,SNR=11							
ROSC	**El Rosal**	**30.03**	**338**	*eP*	**P**	**12 49 37.2**	**+0.8**
comp=Z,20nm,0.6s							
ROSC	**El Rosal**	**30.03**	**338**	*eP*	**P**	**12 49 36.7**	**+0.2**
TOLC	**Tolima**	**30.14**	**336**	*eP*	**P**	**12 49 34.8**	**-2.6**
RUSC	**La Rusia**	**30.63**	**341**	*eP*	**P**	**12 49 41.0**	**-0.8**
comp=Z,32nm,0.6s							
RUSC				*eS*	**S**	**12 54 04.4**	**-2.1**
RUSC	**La Rusia**	**30.63**	**341**	*eP*	**P**	**12 49 40.3**	**-1.5**
GUYC	**Guyana, Colomb**	**30.76**	**337**	*eP*	**P**	**12 49 41.3**	**-1.5**
NORC	**Norcasia**	**30.89**	**338**	*eP*	**P**	**12 49 40.6**	**-2.9**
BARC	**Barichara**	**31.33**	**342**	*eP*	**P**	**12 49 43.8**	**-3.6**
USHA	**Ushuaia**	**31.47**	**185**	P	**P**	**12 49 47.0**	**-0.8**
comp=Z,61nm,0.6s,baz=357,slow=8.2,SNR=11							
BTLC	**Betulia, Santa**	**31.66**	**342**	*eP*	**P**	**12 49 47.0**	**-3.3**
HELC	**Santa Helena**	**31.71**	**337**	*eP*	**P**	**12 49 48.6**	**-2.2**
comp=Z,204nm,0.6s							
HELC	**Santa Helena**	**31.71**	**337**	*eP*	**P**	**12 49 47.0**	**-3.8**
GIRC	**Giron, Santand**	**31.79**	**342**	*eP*	**P**	**12 49 47.5**	**-3.8**
PAMC	**Pamplona, Colo**	**31.91**	**343**	*eP*	**P**	**12 49 51.4**	**-1.3**
BRRC	**Barranca, Sant**	**31.97**	**341**	*eP*	**P**	**12 49 48.6**	**-4.1**
RCBR	**Riachuelo**	**32.03**	**61**	P	**P**	**12 49 52.7**	**-0.6**
comp=Z,40nm,0.7s,baz=228,slow=11,SNR=35							
RCBR	**Riachuelo**	**32.03**	**61**	*eP*	**P**	**12 49 53.9**	**+0.6**
CBRI	**Barrientos, No**	**32.29**	**343**	*eP*	**P**	**12 49 52.8**	**-2.7**
GRMC	**Gramalote, San**	**32.30**	**343**	*eP*	**P**	**12 49 55.0**	**-0.6**
DBBC	**Dabeiba**	**32.72**	**337**	*eP*	**P**	**12 49 57.8**	**-1.2**
SDV	**Santo Domingo**	**32.91**	**347**	P	**P**	**12 49 60.0**	**-0.8**
comp=Z,59nm,0.3s,baz=190,slow=5.3,SNR=11							
SDV	**Santo Domingo**	**32.91**	**347**	*eP*	**P**	**12 49 59.4**	**-1.5**
OCAC	**Ocana**	**32.93**	**342**	*eP*	P	12 49 55.0	-6.0
MOTC	**Monteria, Cord**	**34.16**	**339**	*eP*	**P**	**12 50 08.7**	**-2.4**
CAPC	**Capurgana**	**34.63**	**336**	*eP*	**P**	**12 50 13.0**	**-2.1**
SJCC	**San Jacinto, C**	**35.06**	**340**	*eP*	**P**	**12 50 17.2**	**-1.5**
GRGR	**Grenville**	**35.49**	**3**	*eP*	**P**	**12 50 22.1**	**-0.1**
GRGR	**Grenville**	**35.49**	**3**	*eP*	**P**	**12 50 22.1**	**-0.1**
comp=Z,234nm,0.4s							
URIC	**Uribia, Colomb**	**35.93**	**346**	*eP*	**P**	**12 50 21.5**	**-4.4**
SVB	**Belmont**	**36.65**	**4**	*eP*	**P**	**12 50 31.0**	**-0.8**
comp=Z,135nm,0.4s							
MCLT	**Moule a Chique**	**37.10**	**4**	*eP*	**P**	**12 50 34.3**	**-1.1**
MVM	**Montagne Vaucl**	**37.94**	**4**	*eP*	**P**	**12 50 41.9**	**-0.5**
FDF	**Fort de France**	**38.10**	**4**	*eP*	**P**	**12 50 42.9**	**-0.8**
FDF	**Fort de France**	**38.10**	**4**	*eP*	**P**	**12 50 42.8**	**-0.9**
FDF				pmax	pmax		
comp=Z,92nm,0.9s							
FDF	**Fort de France**	**38.10**	**4**	*eP*	**P**	**12 50 42.8**	**-0.9**
comp=Z,92nm,0.9s							
CXM	**Morne La Croix**	**38.18**	**4**	*eP*	**P**	**12 50 43.6**	**-0.8**
BAMF	**Morne Balai**	**38.19**	**4**	*eP*	**P**	**12 50 44.0**	**-0.4**
JTS	**JuntasAbangare**	**39.51**	**326**	*eP*	**P**	**12 50 56.9**	**+1.8**
JTS				pmax	pmax		
comp=Z,42nm,1.0s							
JTS	**JuntasAbangare**	**39.51**	**326**	*eP*	**P**	**12 50 56.9**	**+1.8**
comp=Z,42nm,1.0s							
ANWB	**Willy Bob**	**40.98**	**3**	*eP*	**P**	**12 51 04.6**	**-2.1**
comp=Z,153nm,0.6s							
CELP	**Cerrillos**	**41.44**	**356**	*eP*	**P**	**12 51 08.8**	**-1.5**
SJG	**San Juan**	**41.45**	**356**	P	**P**	**12 51 08.5**	**-1.9**
comp=Z,40nm,0.5s,baz=139,slow=4.1,SNR=18							
SJG	**San Juan**	**41.45**	**356**	*eP*	**P**	**12 51 09.2**	**-1.2**
SJG	**San Juan**	**41.45**	**356**	*eP*	**P**	**12 51 09.2**	**-1.2**
HUMP	**Col San Antoni**	**41.46**	**357**	*eP*	**P**	**12 51 09.9**	**-0.6**
comp=Z,43nm,0.8s							
CBYP	**Canovanas**	**41.59**	**357**	*eP*	**P**	**12 51 10.1**	**-1.5**
comp=Z,104nm,1.0s							
MPR	**Mayaguez**	**41.61**	**355**	*eP*	**P**	**12 51 10.2**	**-1.5**
comp=Z,76nm,0.7s							
STVI	**Saint Thomas**	**41.64**	**358**	*eP*	**P**	**12 51 10.7**	**-1.2**
comp=Z,23nm,0.7s							
LRS	**Lares**	**41.67**	**356**	*eP*	**P**	**12 51 09.6**	**-2.6**
AGP	**Aguadilla**	**41.81**	**355**	*eP*	**P**	**12 51 11.6**	**-1.6**
comp=Z,197nm,0.4s							
BANI	**BANI**	**42.16**	**351**	*eP*	**P**	**12 51 15.7**	**-0.5**
SDDR	**Presa de Saban**	**42.89**	**349**	*eP*	**P**	**12 51 20.9**	**-0.9**
comp=Z,35nm,1.0s							
MTDJ	**Mount Denham**	**43.63**	**341**	*eP*	**P**	**12 51 27.1**	**-0.6**
comp=Z,32nm,0.8s							
TGUH	**Tegucigalpa,Un**	**43.89**	**326**	*eP*	**P**	**12 51 29.9**	**+0.4**
comp=Z,42nm,0.7s							
GTBY	**Guantanamo Bay**	**44.59**	**345**	*eP*	**P**	**12 51 33.7**	**-1.2**
comp=Z,64nm,0.6s							
GRTK	**Grand Turk**	**45.34**	**350**	*eP*	**P**	**12 51 40.0**	**-0.6**
comp=Z,148nm,1.2s							
CCIG	**Comitan**	**48.34**	**322**	*eP*	**P**	**12 52 03.4**	**-0.1**
comp=Z,39nm,0.7s							
TEIG	**Tepich**	**49.64**	**329**	*eP*	**P**	**12 52 12.6**	**-0.3**
comp=Z,30nm,0.9s							
CMIG	**Matias Romero**	**50.56**	**320**	P	**P**	**12 52 19.2**	**-0.5**
comp=Z,14nm,0.7s,baz=97,slow=6.5,SNR=29							
VNA3	**Neumayer Olymp**	**56.64**	**162**	P	**P**	**12 53 02.3**	**+0.4**
VNA1	**Neumayer--Stat**	**56.79**	**161**	P	**P**	**12 53 03.9**	**+1.0**
VNA2	**Neumayer--Watz**	**57.17**	**161**	P	**P**	**12 53 06.1**	**+0.5**
baz=293,slow=8.3							
SNAA	**Sanae**	**58.81**	**161**	P	**P**	**12 53 16.8**	**+0.1**
SNAA	**Sanae**	**58.81**	**161**	*dP*	**P**	**12 53 16.7**	**0.0**
SNAA	**Sanae**	**58.81**	**161**	*eP*	**P**	**12 53 16.4**	**-0.4**
comp=Z,29nm,1.0s							
ZAIG	**Zacatecas**	**59.53**	**318**	*eP*	**P**	**12 53 24.1**	**+1.5**
comp=Z,20nm,1.0s							
GOGA	**Godfrey**	**59.66**	**341**	*eP*	**P**	**12 53 22.6**	**-0.2**
GOGA				pmax	pmax		
comp=Z,13nm,0.8s							
GOGA	**Godfrey**	**59.66**	**341**	*eP*	**P**	**12 53 22.6**	**-0.2**
comp=Z,13nm,0.8s							
JSC	**Jenkinsville**	**59.86**	**343**	*eP*	**P**	**12 53 24.4**	**+0.3**
JSC				pmax	pmax		
comp=Z,24nm,0.8s							
JSC	**Jenkinsville**	**59.86**	**343**	*eP*	**P**	**12 53 24.4**	**+0.3**
comp=Z,24nm,0.8s							
936A	**North Padre Is**	**60.14**	**325**	P	**P**	**12 53 27.6**	**+1.5**
baz=144							
035A	**Encino**	**60.17**	**324**	P	**P**	**12 53 27.7**	**+1.3**
baz=143							
541A	**Lake Charles**	**60.33**	**331**	P	**P**	**12 53 28.5**	**+1.2**
baz=149							
LRAL	**Lakeview Retre**	**60.47**	**338**	*eP*	**P**	**12 53 27.5**	**-0.7**
comp=Z,23nm,1.1s							
344A	**Westbrook Farm**	**60.48**	**334**	P	**P**	**12 53 29.1**	**+0.9**
baz=151							
034A	**Hebbronville**	**60.59**	**324**	P	**P**	**12 53 29.7**	**+0.6**
baz=143,SNR=12							
245A	**Little AP, Sta**	**60.65**	**335**	P	**P**	**12 53 29.6**	**+0.2**
baz=152							
KMSC	**Kings Mountain**	**60.69**	**343**	P	**P**	**12 53 29.4**	**-0.2**
baz=161,SNR=8.1							
KMSC	**Kings Mountain**	**60.69**	**343**	*eP*	**P**	**12 53 29.9**	**+0.3**
comp=Z,28nm,0.9s							
146A	**Union**	**60.86**	**336**	P	**P**	**12 53 31.1**	**+0.3**
baz=153							
934A	**Benavides**

240A	Hunter Patters baz=149	62.27 331	P	P	12 53 40.8	+0.8
VWCC	Virginia Weste	62.35 345	eP	P	12 53 40.8	+0.4
141A	Papa Simpson, baz=150	62.38 332	P	P	12 53 41.6	+0.9
535A	Dale baz=145	62.39 327	P	P	12 53 41.1	+0.3
338A	Crockett baz=147,SNR=12	62.40 330	P	P	12 53 42.2	+1.3
239A	Gary baz=148	62.57 331	P	P	12 53 42.9	+0.9
PLAL	Pickwick Lake comp=Z,28nm,1.0s	62.61 338	eP	P	12 53 41.2	-0.9
436A	Wall Ranch, Ga baz=146	62.62 328	P	P	12 53 42.7	+0.5
337A	Centerville baz=147,SNR=6.2	62.63 329	P	P	12 53 43.8	+1.4
140A	Cam and Jess, baz=149	62.70 332	P	P	12 53 43.4	+0.6
633A	Saathoff Ranch baz=143,SNR=9.1	62.75 325	P	P	12 53 43.5	+0.3
534A	Blanco baz=144,SNR=7.4	62.85 326	P	P	12 53 43.5	-0.3
238A	Jacksonville baz=148	62.85 330	P	P	12 53 44.3	+0.5
435B	Jarrell baz=145	63.01 327	P	P	12 53 44.9	+0.1
336A	Riesel baz=146,SNR=14	63.15 328	P	P	12 53 46.2	+0.5
Z40A	Long Farm, Mag baz=149,SNR=11	63.16 332	P	P	12 53 46.5	+0.9
237A	Washetta, Mont baz=147	63.17 330	P	P	12 53 46.7	+0.9
533A	Kerrville baz=144,SNR=8.2	63.17 326	P	P	12 53 46.1	+0.2
NVL NVL	N'lazarevskaya comp=Z,7.0nm,1.4s	63.23 159	eP pmax	P pmax	12 53 47.2	+1.6
335A	Moody baz=145,SNR=12	63.34 328	P	P	12 53 47.4	+0.5
Y41A	Eaglette Beard baz=150	63.36 333	P	P	12 53 46.9	-0.1
434A	Burnet baz=144,SNR=18	63.38 327	P	P	12 53 47.2	0.0
138A	Matatall Enter baz=148,SNR=13	63.39 331	P	P	12 53 48.3	+1.1
Z39A	Irene McRaven, baz=149	63.48 332	P	P	12 53 48.6	+0.9
236A	Katherine and baz=146,SNR=5.4	63.50 329	P	P	12 53 48.5	+0.6
WVT WVT	Waverly comp=Z,44nm,0.9s	63.56 338	eP pmax	P pmax	12 53 47.2	-1.0
WVT	Waverly comp=Z,44nm,0.9s	63.56 338	eP	P	12 53 47.2	-1.0
137A	Heron Place, G baz=147,SNR=12	63.64 330	P	P	12 53 49.9	+1.2
433A	Art baz=144,SNR=63	63.75 326	P	P	12 53 49.8	+0.2
Y40A	Okolona baz=150	63.76 333	P	P	12 53 50.1	+0.6
334A	Lometa baz=145,SNR=25	63.78 327	P	P	12 53 50.1	+0.3
Z38A	Mt. Pleasant baz=148,SNR=6.1	63.84 331	P	P	12 53 51.0	+0.9
JCT	Junction City baz=143,SNR=15	63.89 326	P	P	12 53 50.8	+0.3
JCT JCT	Junction City comp=Z,39nm,0.8s	63.89 326	eP pmax	P pmax	12 53 50.9	+0.4
JCT	Junction City comp=Z,39nm,0.8s	63.89 326	eP	P	12 53 50.9	+0.4
136A	Ennis baz=146	63.90 329	P	P	12 53 50.8	+0.4
WHTX	Lake Whitney, baz=145,SNR=6.5	63.94 328	P	P	12 53 51.0	+0.3
WHTX	Lake Whitney, comp=Z,26nm,0.8s	63.94 328	eP	P	12 53 51.0	+0.3
X40A	Basin Creek Fa baz=150	63.98 333	P	P	12 53 50.7	-0.2
Y39A	Lockesburg baz=149,SNR=5.2	64.04 332	P	P	12 53 51.5	+0.3
Z37A	Pogue Cattle C baz=147,SNR=5.3	64.08 330	P	P	12 53 52.4	+0.8
333A	Richland Sprin baz=144,SNR=42	64.15 327	P	P	12 53 52.3	+0.2
GLAT	Glass	64.19 337	eP	P	12 53 52.1	-0.1
234A	Clairette baz=145,SNR=5.5	64.28 328	P	P	12 53 53.1	+0.2
MVL	Millersville comp=Z,15nm,0.8s	64.28 349	eP	P	12 53 53.5	+0.8
Y38A	Idabel baz=148	64.30 332	P	P	12 53 52.8	-0.1
MIAR	Mount Ida baz=150,SNR=12	64.34 333	P	P	12 53 52.9	-0.2
MIAR MIAR	Mount Ida comp=Z,24nm,1.0s	64.34 333	eP pmax	P pmax	12 53 53.0	-0.2
MIAR	Mount Ida comp=Z,24nm,1.0s	64.34 333	eP	P	12 53 53.0	-0.2
W41B	Gary Mavity, V baz=151,SNR=5.3	64.34 334	P	P	12 53 52.5	-0.6
135A	Vickery Place, baz=146,SNR=7.1	64.38 329	P	P	12 53 54.1	+0.6
LIC	Lamto comp=Z,50nm,0.9s	64.44 70	eP	P	12 53 53.6	-0.7
WHAR	Wooly Hollow comp=Z,17nm,1.0s	64.46 334	eP	P	12 53 53.7	-0.2
X301	Greenbrier Sit comp=Z,12nm,0.8s	64.46 334	eP	P	12 53 53.9	0.0
X201	Greenbrier Sit comp=Z,12nm,0.8s	64.49 334	eP	P	12 53 54.0	-0.1
HPIG	comp=Z,24nm,0.9s	64.49 319	eP	P	12 53 55.4	+0.8
Z36A	Blue Ridge baz=147,SNR=8.8	64.52 330	P	P	12 53 54.9	+0.6
X39A	Fountain Ranch baz=149,SNR=26	64.53 332	P	P	12 53 54.7	+0.3
TIC	Toumodi	64.65 70	eP	P	12 53 54.9	-0.7
233A	Rising Star baz=144,SNR=11	64.67 327	P	P	12 53 55.3	-0.1
W40A	Ferguson Farm, baz=150,SNR=11	64.69 334	P	P	12 53 55.6	+0.2
Y37A	Hugo baz=148,SNR=23	64.74 331	P	P	12 53 56.8	+1.1
KIC	Kosan Boka comp=Z,116nm,0.8s	64.75 70	eP	P	12 53 55.8	-0.5
DBIC	Dimbokro comp=Z,46nm,0.8s,baz=220,slow=3.5,SNR=51	64.80 70	P	P	12 53 56.3	-0.3
DBIC	comp=Z,8.1nm,0.8s,baz=216,slow=7.5,SNR=3.5		pP	pP	12 55 47.5	+1.0
DBIC DBIC	Dimbokro comp=Z,76nm,0.9s	64.80 70	eP pmax	P pmax	12 53 56.3	-0.3
DBIC	Dimbokro comp=Z,76nm,0.9s	64.80 70	eP	P	12 53 56.3	-0.3
Z35A	Perchaven, San baz=146,SNR=6.6	64.95 329	P	P	12 53 57.5	+0.4
O56A	Blue Knob Stat baz=165,SNR=9.1	64.95 347	P	P	12 53 57.6	+0.6
Y36A	Durant baz=147	64.97 330	P	P	12 53 57.5	+0.3
X38A	Whitesboro baz=148,SNR=28	64.98 332	P	P	12 53 57.8	+0.6
WCI WCI	Wyandotte Cave comp=Z,24nm,0.6s	64.98 341	eP pmax	P pmax	12 53 56.4	-0.8
WCI	Wyandotte Cave comp=Z,24nm,0.6s	64.98 341	eP	P	12 53 56.4	-0.8
W39A	Magazine baz=150,SNR=18	64.98 333	P	P	12 53 57.5	+0.2
PBMO	Poplar Bluff comp=Z,84nm,1.1s	65.06 337	eP	P	12 53 57.2	-0.5
N59A	State Game Lan baz=168	65.08 350	P	P	12 53 58.1	+0.3
LTX	Lajitas	65.11 322	eP	P	12 53 58.6	+0.3
LTX	Lajitas	65.11 322	eP	P	12 53 58.6	+0.3
TX31	Lajitas Ar. Si	65.11 322	eP	P	12 53 58.5	+0.2
TXAR	Lajitas Array comp=Z,7.9nm,0.6s,baz=149,slow=8.2,SNR=142	65.11 322	P	P	12 53 58.6	+0.3
V40A	Witts Springs baz=150,SNR=14	65.12 334	P	P	12 53 57.6	-0.6
X37A	Clayton baz=148,SNR=19	65.14 331	P	P	12 53 58.6	+0.4
133A	Hamilton Ranch baz=144,SNR=12	65.15 328	P	P	12 53 58.5	0.0
SSPA	Standing Stone comp=Z,27nm,0.8s	65.18 348	eP	P	12 53 58.9	+0.6
W38A	Poteau baz=149,SNR=23	65.19 332	P	P	12 53 59.2	+0.7
Z34A	Collier Ranch, baz=145,SNR=6.2	65.29 329	P	P	12 53 59.6	+0.3
Y35A	Marietta baz=146,SNR=6.5	65.32 330	P	P	12 53 59.7	+0.3
SIUC	Southern Illin comp=Z,24nm,1.0s	65.47 338	eP	P	12 53 59.3	-0.9
V39A	Pettigrew baz=150,SNR=36	65.48 334	P	P	12 54 00.2	-0.2
ABTX	Abilene, Hawle baz=144,SNR=5.2	65.53 327	P	P	12 54 00.6	-0.2
ABTX	Abilene, Hawle comp=Z,39nm,1.3s	65.53 327	eP	P	12 54 00.9	+0.1
X36A	Centrahoma baz=147,SNR=22	65.56 331	P	P	12 54 00.8	-0.1
U40A	Yellville baz=151,SNR=19	65.61 334	P	P	12 54 00.7	-0.5
Z33A	Whitaker Ranch baz=145,SNR=15	65.63 328	P	P	12 54 01.8	+0.4
W37B	Quinton baz=148,SNR=20	65.64 332	P	P	12 54 01.7	+0.4
Y34A	Reagan Ranch, baz=146,SNR=18	65.70 329	P	P	12 54 01.9	+0.1
X35A	Drake baz=146,SNR=18	65.70 330	P	P	12 54 01.5	-0.3
T41A	Mountain View baz=152,SNR=25	65.79 336	P	P	12 54 01.5	-0.8
V38A	Canehill baz=149,SNR=33	65.82 333	P	P	12 54 02.3	-0.2
N54A	Moraine State baz=164,SNR=8.0	65.91 347	P	P	12 54 03.4	+0.4
BLO BLO	Bloomington comp=Z,38nm,0.8s	65.92 341	eP pmax	P pmax	12 54 02.5	-0.5
BLO	Bloomington comp=Z,38nm,0.8s	65.92 341	eP	P	12 54 02.5	-0.5
ACSO	Alum Creek Sta comp=Z,53nm,0.8s	65.92 344	eP	P	12 54 02.9	-0.1
HHAR	Hobbs comp=Z,36nm,0.8s	65.98 334	eP	P	12 54 03.9	+0.4
W36A	Wetumka baz=147,SNR=32	65.98 331	P	P	12 54 03.3	-0.2
V37A	Hulbert baz=148,SNR=19	66.14 332	P	P	12 54 04.5	+0.1
Y33A	Hilltop Ranch, baz=145	66.15 329	P	P	12 54 04.5	-0.1
T40A	Mansfield baz=151,SNR=15	66.17 335	P	P	12 54 04.2	-0.5
X34A	Smith Ranch, M baz=146,SNR=7.7	66.27 330	P	P	12 54 05.4	+0.2
W35A	Tecumseh baz=147,SNR=5.3	66.28 331	P	P	12 54 04.9	-0.5
U38A	Gravette baz=149,SNR=12	66.30 333	P	P	12 54 05.0	-0.5
M54A	Oil Creek Stat baz=164,SNR=8.3	66.37 347	P	P	12 54 05.7	-0.1
T39A	Clever baz=150,SNR=16	66.40 334	P	P	12 54 05.7	-0.4
V36A	Jenks baz=148,SNR=11	66.41 332	P	P	12 54 06.1	0.0
TUL1	Leonard baz=148,SNR=5.5	66.44 332	P	P	12 54 06.3	0.0
TUL1	Leonard comp=Z,32nm,0.9s	66.44 332	eP	P	12 54 06.5	+0.2
X33A	Lawton baz=145	66.53 329	P	P	12 54 06.5	-0.4
S40A	Lebanon baz=151,SNR=29	66.56 335	P	P	12 54 06.7	-0.4
TRY	Troy comp=Z,95nm,1.0s	66.56 352	eP	P	12 54 07.8	+1.0
U37A	Salina baz=149,SNR=29	66.58 333	P	P	12 54 07.4	+0.2
ALLY	Alegheny Colle comp=Z,52nm,0.8s	66.61 347	eP	P	12 54 08.0	+0.7
QSPA	South Pole Qui	66.68 180	eP	P	12 54 08.1	+0.5
W34A	Bridge Creek, baz=146	66.76 330	P	P	12 54 08.4	0.0
W34A	Bridge Creek, comp=Z,30nm,0.9s	66.76 330	eP	P	12 54 08.5	+0.1
T38A	Diamond baz=149,SNR=51	66.78 334	P	P	12 54 08.4	0.0
V35A	Meyer Ranch, C baz=147,SNR=23	66.78 331	P	P	12 54 08.5	+0.1
X32A	Elmer baz=144	66.80 328	P	P	12 54 08.2	-0.4
WMOK	Wichita Mounta baz=145,SNR=8.8	66.82 329	P	P	12 54 08.2	-0.5
WMOK WMOK	Wichita Mounta comp=Z,16nm,0.8s	66.82 329	eP pmax	P pmax	12 54 08.7	0.0
WMOK	Wichita Mounta comp=Z,16nm,0.8s	66.82 329	eP	P	12 54 08.7	0.0
U36A	Oologah baz=148	66.83 332	P	P	12 54 08.6	-0.1
S39A	Bolivar baz=150,SNR=54	66.95 335	P	P	12 54 09.3	-0.2
W33A	Caddo, Fort Co baz=145,SNR=54	67.01 330	P	P	12 54 10.7	+0.8
ERPA	Erie comp=Z,86nm,0.7s	67.02 347	eP	P	12 54 10.2	+0.5
R40A	Maddies Statio baz=152,SNR=22	67.08 336	P	P	12 54 09.3	-0.9
T37A	Cheneyville 18 baz=149,SNR=50	67.11 333	P	P	12 54 10.4	0.0
S38A	Stockton baz=150,SNR=34	67.13 334	P	P	12 54 10.3	-0.2
V34A	Guthrie baz=146,SNR=7.2	67.14 331	P	P	12 54 10.6	-0.1
V34A	Guthrie comp=Z,47nm,0.9s	67.14 331	eP	P	12 54 11.0	+0.4
SFIN	Lafayette baz=157,SNR=10	67.20 341	P	P	12 54 09.6	-1.3
SFIN	Lafayette comp=Z,43nm,0.6s	67.20 341	eP	P	12 54 10.0	-0.9
U35A	Pawnee baz=147,SNR=16	67.24 332	P	P	12 54 11.5	+0.2
W32A	Sentinel baz=145,SNR=14	67.36 329	P	P	12 54 12.2	+0.2
HNH	Hanover comp=Z,89nm,1.1s	67.36 353	eP	P	12 54 12.8	+1.1
R39A	Chumby, Stover baz=151,SNR=22	67.39 335	P	P	12 54 11.7	-0.4
CLNB	Carlsbad	67.45 324	eP	P	12 54 13.9	+1.1
T36A	Boggs Farm, Ca baz=148,SNR=20	67.45 333	P	P	12 54 12.5	0.0
V33A	Lossen Ranch, baz=146,SNR=10.0	67.48 330	P	P	12 54 12.9	+0.2
T35A	Sooner Cattle baz=147,SNR=7.2	67.60 332	P	P	12 54 13.5	+0.1
R38A	Fenwick Farm, baz=150,SNR=46	67.61 335	P	P	12 54 13.2	-0.3
S37A	Fort Scott baz=149,SNR=19	67.61 334	P	P	12 54 13.3	-0.2
Q40A	Laux Farm, Aux baz=152,SNR=14	67.62 336	P	P	12 54 12.7	-0.8
U34A	Anderson Ranch baz=146,SNR=11	67.65 331	P	P	12 54 13.9	+0.1
U34A	Anderson Ranch comp=Z,61nm,0.6s	67.65 331	eP	P	12 54 14.2	+0.4
V32A	Arapaho baz=145	67.75 329	P	P	12 54 14.4	0.0
MNTX	Cornudas Mount baz=139,SNR=37	67.86 322	P	P	12 54 14.7	-0.5
MNTX	Cornudas Mount comp=Z,21nm,0.9s	67.86 322	eP	P	12 54 14.7	-0.5
S36A	Lake Cedric, C baz=148,SNR=7.9	67.90 333	P	P	12 54 15.2	-0.1
U33A	Lingo Farm, Me baz=146	67.91 331	P	P	12 54 15.0	-0.3
T34A	McClaskey Farm baz=147,SNR=11	67.99 332	P	P	12 54 16.1	+0.3
Q39A	Willow Grove F baz=151,SNR=19	68.00 336	P	P	12 54 15.2	-0.6
HDIL	Hopedale baz=155,SNR=5.4	68.05 339	P	P	12 54 15.1	-1.0
HDIL	Hopedale comp=Z,79nm,0.9s	68.05 339	eP	P	12 54 15.5	-0.6
P40A	Paris baz=152,SNR=16	68.08 337	P	P	12 54 15.5	-0.8
R37A	Teagarden Farm baz=149,SNR=7.7	68.09 334	P	P	12 54 15.8	-0.6
S35A	Otter Creek Ra baz=148,SNR=11	68.17 333	P	P	12 54 16.9	+0.1
Q38A	Cooks Store, C baz=150,SNR=20	68.17 335	P	P	12 54 16.5	-0.3
MSTX	Muleshoe baz=142,SNR=14	68.19 326	P	P	12 54 17.5	+0.2
MSTX	Muleshoe comp=Z,117nm,0.9s	68.19 326	eP	P	12 54 17.7	+0.5
U32A	Winter Ranch, baz=145	68.27 330	P	P	12 54 17.8	+0.3
P39B	Salisbury baz=151,SNR=16	68.31 336	P	P	12 54 17.0	-0.7
AMTX	Amarillo baz=143	68.35 327	P	P	12 54 17.7	-0.4
AMTX	Amarillo comp=Z,33nm,0.8s	68.35 327	eP	P	12 54 16.4	-1.7
R36A	Gordon, Harris baz=149,SNR=7.7	68.37 334	P	P	12 54 17.8	-0.3
Q37A	Longview Farm, baz=150,SNR=5.3	68.42 335	P	P	12 54 18.0	-0.4
T33A	Patterson Ranc baz=146,SNR=20	68.50 331	P	P	12 54 19.5	+0.5
S34A	Willow Spring baz=147	68.52 332	P	P	12 54 19.1	+0.1
LONY	Lake Ozonia comp=Z,43nm,1.1s	68.53 352	eP	P	12 54 19.3	+0.3
O40A	La Belle baz=152,SNR=20	68.54 337	P	P	12 54 18.5	-0.6
FRNY	Flat Rock comp=Z,82nm,1.8s	68.62 352	eP	P	12 54 20.1	+0.7
PKME	Peaks-Kenny Pk comp=Z,131nm,1.7s	68.64 356	eP	P	12 54 20.0	+0.5
R35A	Emporia Munici baz=148	68.66 333	P	P	12 54 19.9	0.0
P38A	Dawn baz=151,SNR=21	68.72 336	P	P	12 54 19.7	-0.5
S33A	Kaszmaul Farm, baz=146,SNR=8.8	68.82 331	P	P	12 54 21.1	+0.3
Q36A	Arnold C. Orve baz=149	68.90 334	P	P	12 54 21.2	-0.1
O39A	Kirksville baz=152,SNR=5.2	68.90 337	P	P	12 54 20.5	-0.8
P37A	Lathrop baz=150,SNR=6.3	69.00 335	P	P	12 54 21.2	-0.7
Q35A	Mercer Eighty, baz=148	69.05 333	P	P	12 54 21.7	-0.5
R34A	Isabella, Hill baz=147,SNR=13	69.08 332	P	P	12 54 22.3	-0.1
O38A	Galt baz=151,SNR=15	69.13 336	P	P	12 54 22.0	-0.6
S32A	Newby Ranch, P baz=146,SNR=5.3	69.32 331	P	P	12 54 24.6	+0.7
P36A	Good Intent, A baz=149,SNR=5.2	69.36 334	P	P	12 54 23.2	-0.8
SADO	Sadowa comp=Z,46nm,1.4s	69.41 348	eP	P	12 54 24.1	-0.1
O37A	Wolven Farm, M baz=150,SNR=10	69.42 336	P	P	12 54 23.8	-0.6
N39A	Derby Farms, D baz=152,SNR=15	69.44 337	P	P	12 54 23.6	-0.8
Q34A	Chapman baz=148,SNR=5.4	69.47 333	P	P	12 54 24.2	-0.6
KSU1	Kansas State U baz=148,SNR=6.6	69.49 333	P	P	12 54 24.2	-0.6
KSU1	Kansas State U comp=Z,46nm,0.8s	69.49 333	eP	P	12 54 24.9	+0.1
P35A	Duane Minner, baz=148,SNR=6.8	69.61 334	P	P	12 54 24.8	-0.8
N38A	Joes South For baz=151	69.63 336	P	P	12 54 24.8	-0.8
O36A	Bolckow baz=150,SNR=9.4	69.70 335	P	P	12 54 25.2	-0.9
R32A	Long Quarter, baz=146	69.82 331	P	P	12 54 27.0	+0.2
121A	Cookes Peak, D baz=137,SNR=13	69.84 321	P	P	12 54 28.6	+1.3
319A	Douglas comp=Z,35nm,0.8s	69.88 319	eP	P	12 54 29.1	+1.6
Q33A	Connelly Farm, baz=147,SNR=6.9	69.92 332	P	P	12 54 27.5	+0.1
P34A	Walnut Farm, R baz=148,SNR=20	69.95 333	P	P	12 54 27.6	0.0
N37A	Lee Faris, Mou baz=150	69.96 336	P	P	12 54 27.0	-0.5
TRQ	Mont Tremblant	70.11 352	eP	P	12 54 28.6	+0.2
M38A	Pleasantville baz=151,SNR=15	70.16 337	P	P	12 54 27.9	-0.9
Q32A	Meitler Ranch, baz=146,SNR=16	70.22 332	P	P	12 54 29.3	+0.1
P33A	Williams Farm, baz=147	70.22 333	P	P	12 54 29.3	+0.1
N36A	Muff Farm, Cla baz=150	70.29 335	P	P	12 54 29.4	-0.2
BNM	Barren Site	70.38 323	eP	P	12 54 31.8	+1.2
O34A	Beatrice baz=148	70.44 334	P	P	12 54 30.1	-0.4
M37A	Trindle Farm, baz=150,SNR=7.6	70.46 336	P	P	12 54 30.2	-0.3
JFWS JFWS	Jewell Farm comp=Z,56nm,0.8s	70.48 340	eP pmax	P pmax	12 54 30.4	-0.2
JFWS	Jewell Farm comp=Z,56nm,0.8s	70.48 340	eP	P	12 54 30.4	-0.2
LPM	Los Pinos Moun	70.50 323	eP	P	12 54 32.4	+1.2
CBKS	Cedar Bluff baz=145,SNR=22	70.60 331	P	P	12 54 32.2	+0.7
CBKS CBKS	Cedar Bluff comp=Z,112nm,0.7s	70.60 331	eP pmax	P pmax	12 54 32.4	+0.9
CBKS	Cedar Bluff comp=Z,112nm,0.7s	70.60 331	eP	P	12 54 32.4	+0.9
N35A	Tabor baz=149,SNR=5.5	70.60 335	P	P	12 54 30.8	-0.5
L38A	Oak Wood Farm, baz=152,SNR=5.7	70.71 337	P	P	12 54 31.2	-0.8
O33A	Hebron baz=147,SNR=6.1	70.71 333	P	P	12 54 32.0	-0.1
P32A	Huiting Farm, baz=146,SNR=6.0	70.76 332	P	P	12 54 32.1	-0.3
M36A	Felix, Anita baz=150,SNR=13	70.78 336	P	P	12 54 31.9	-0.5
LAZ	Ladron	70.85 323	eP	P	12 54 34.9	+1.7
ANMO	Albuquerque baz=139	70.89 324	P	P	12 54 34.4	+0.9
ANMO	Albuquerque	70.89 324	eP	P	12 54 34.5	+1.1
ANMO	Albuquerque comp=Z,25nm,1.0s	70.89 324	eP	P	12 54 34.6	+1.1
N34A	Lincoln baz=148,SNR=10.0	70.92 334	P	P	12 54 32.5	-0.7
L37A	Phoenix Point, baz=151	70.98 337	P	P	12 54 33.4	-0.1
K38A	Parkersburg baz=152	71.09 338	P	P	12 54 34.0	-0.2
M35A	Neola baz=149,SNR=5.0	71.14 335	P	P	12 54 34.2	-0.3
O32A	Brockman Farm, baz=147,SNR=6.5	71.16 333	P	P	12 54 34.7	0.0
L36A	Harm Buss Farm baz=150,SNR=9.4	71.29 336	P	P	12 54 34.9	-0.5
TUC	Tucson baz=135	71.44 319	P	P	12 54 37.4	+0.8
TUC TUC	Tucson comp=Z,44nm,1.9s	71.44 319	eP pmax	P pmax	12 54 37.8	+1.2
TUC	Tucson comp=Z,44nm,1.9s	71.44 319	eP	P	12 54 37.8	+1.2
T25A	Trinidad baz=141,SNR=18	71.49 327	P	P	12 54 38.1	+1.1
T25A	Trinidad comp=Z,27nm,0.9s	71.49 327	eP	P	12 54 38.3	+1.4
K37A	Belmond baz=151,SNR=5.8	71.50 337	P	P	12 54 35.7	-0.9
M34A	Aspy Farms, Fr baz=148	71.51 335	P	P	12 54 36.3	-0.5
O31A	Woolen Ranch, baz=146	71.52 332	P	P	12 54 36.7	-0.1
J38A	Wedel Dairy, R baz=152,SNR=6.2	71.58 338	P	P	12 54 36.2	-0.9
N32A	Stulken Farm, baz=147	71.58 333	P	P	12 54 36.7	-0.5
L35A	Bielow Farm, R baz=149,SNR=15	71.63 336	P	P	12 54 36.9	-0.5
K36A	Gilmore City baz=150,SNR=7.6	71.68 337	P	P	12 54 37.1	-0.6
M33A	Taylor Creek F baz=148	71.81 334	P	P	12 54 37.6	-0.9
L34A	Svendsen Farm, baz=149,SNR=5.5	71.83 335	P	P	12 54 38.0	-0.5
N31A	Bailey Ranch, baz=146	71.91 333	P	P	12 54 39.3	+0.2
J37A	Redenius Farm, baz=151	71.94 338	P	P	12 54 39.7	+0.5
K35A	Storm Lake baz=150	72.04 336	P	P	12 54 39.3	-0.4

BGNE	Belgrade	72.06 333	P	P	12 54 39.8	-0.2
	baz=147,SNR=9.1					
BGNE	Belgrade	72.06 333	eP	P	12 54 40.1	+0.2
	comp=Z,176nm,0.9s					
KSCO	Kaye Shedlock'	72.08 329	P	P	12 54 40.8	+0.6
	baz=143					
KSCO	Kaye Shedlock'	72.08 329	eP	P	12 54 41.9	+1.6
	comp=Z,113nm,1.2s					
I38A	Scanlan Farm,	72.17 339	P	P	12 54 39.9	-0.6
	baz=152,SNR=8.1					
J36A	Seneca 1, Swea	72.24 337	P	P	12 54 40.2	-0.7
	baz=151,SNR=8.0					
K34A	Le Mars	72.33 336	P	P	12 54 40.8	-0.7
	baz=149					
M31A	Lambtecht Ranc	72.35 333	P	P	12 54 42.1	+0.4
	baz=146					
214A	Organ Pipe Nat	72.43 318	P	P	12 54 43.6	+1.3
	baz=133,SNR=6.6					
SDCO	Great Sand Dun	72.50 326	P	P	12 54 44.1	+1.2
	baz=140,SNR=18					
SDCO	Great Sand Dun	72.50 326	eP	P	12 54 43.3	+0.4
	comp=Z,21nm,0.8s					
I37A	Lemond, Waseca	72.51 338	P	P	12 54 42.2	-0.3
	baz=152,SNR=10					
X18A	Snowflake	72.53 321	eP	P	12 54 44.6	+1.6
	comp=Z,24nm,1.0s					
J35A	Milford	72.59 336	P	P	12 54 42.4	-0.5
	baz=150					
K33A	Hardington	72.61 335	P	P	12 54 42.9	-0.2
	baz=148					
DRLN	Deer Lake	72.66 4	eP	P	12 54 43.4	+0.2
	comp=Z,48nm,0.9s					
I36A	Fitzsimmons Fa	72.73 338	P	P	12 54 43.4	-0.2
	baz=151					
J34A	George	72.79 336	P	P	12 54 43.7	-0.4
	baz=149					
W18A	Petrified Fore	72.83 322	P	P	12 54 45.9	+1.2
	baz=136,SNR=9.8					
W18A	Petrified Fore	72.83 322	eP	P	12 54 46.1	+1.3
	comp=Z,39nm,1.1s					
H37A	Dierke Farm, C	72.85 339	P	P	12 54 44.0	-0.3
	baz=152					
SYO	Syowa Base	72.90 158	eP	P	12 54 43.0	-1.3
SYO	Syowa Base	72.90 158	ePcP	PcP	12 54 54.0	-3.8
I35A	Creekview Farm	72.93 337	P	P	12 54 44.2	-0.6
	baz=150,SNR=8.0					
L31A	Butterfield Fa	72.99 333	P	P	12 54 45.3	0.0
	baz=146,SNR=6.7					
COWI	Conover	73.03 342	eP	P	12 54 45.5	+0.1
	comp=Z,13nm,0.7s					
K32A	Verdigre	73.04 334	P	P	12 54 45.7	+0.1
	baz=147					
H36A	Jessenland, He	73.19 338	P	P	12 54 46.0	-0.2
	baz=151					
S22A	4UR Ranch, Cre	73.19 326	P	P	12 54 47.8	+0.9
	baz=139,SNR=8.3					
S22A	4UR Ranch, Cre	73.19 326	eP	P	12 54 48.4	+1.5
	comp=Z,10nm,0.8s					
Q24A	Divide	73.27 327	P	P	12 54 48.5	+1.3
	baz=141,SNR=35					
Q24A	Divide	73.27 327	eP	P	12 54 48.7	+1.4
	comp=Z,47nm,0.8s					
X16A	Lo Mia Camp, P	73.31 320	eP	P	12 54 49.1	+1.6
	comp=Z,33nm,1.1s					
K31A	O'Neill	73.33 334	P	P	12 54 47.2	0.0
	baz=147					
OGNE	Ogallala	73.36 331	P	P	12 54 48.3	+0.8
	baz=144,SNR=7.7					
OGNE	Ogallala	73.36 331	eP	P	12 54 48.8	+1.3
	comp=Z,65nm,0.8s					
SPMN	Marine on St.	73.38 339	P	P	12 54 47.4	0.0
	baz=152					
SPMN	Marine on St.	73.38 339	eP	P	12 54 46.9	-0.5
	comp=Z,67nm,1.3s					
SUR	Sutherland	73.41 118	P	P	12 54 48.1	-0.1
	comp=Z,0.9nm,0.8s,baz=232,slow=6.2,SNR=18					
SUR	Sutherland	73.41 118	eP	P	12 54 48.2	-0.1
	comp=Z,60nm,1.5s					
ECSD	EROS Data Cent	73.43 336	P	P	12 54 47.3	-0.4
	baz=149,SNR=18					
ECSD	EROS Data Cent	73.43 336	eP	P	12 54 47.5	-0.2
	comp=Z,38nm,1.1s					
113A	Mohawk Valley,	73.58 318	eP	P	12 54 50.1	+1.4
	comp=Z,15nm,0.9s					
J32A	Parkston	73.59 335	P	P	12 54 48.2	-0.5
	baz=148					
TORD	Torodi Ar. Bea	73.60 67	P	P	12 54 48.7	-0.6
	comp=Z,53nm,0.8s,baz=251,slow=5.5,SNR=274					
TORD			pP	pP	12 56 45.0	+1.9
	comp=Z,11nm,0.9s,baz=245,slow=6.0,SNR=7.4					
TORD			S	S	13 03 33.9	-2.3
	comp=Z,1.7nm,1.0s,baz=241,slow=12,SNR=5.0					
TOA1	Torodi Ar. Sit	73.60 67	eP	P	12 54 48.7	-0.6
TOA1			epP	pP	12 56 45.0	+2.0
TOA1			eS	S	13 03 33.9	-2.3
H35A	Sunnyside Ranc	73.61 337	P	P	12 54 48.1	-0.6
	baz=150,SNR=5.4					
MVCO	Mesa Verde	73.67 324	P	P	12 54 50.7	+1.1
	baz=138,SNR=9.0					
MVCO	Mesa Verde	73.67 324	eP	P	12 54 50.9	+1.4
	comp=Z,20nm,0.8s					
G36A	St. Michael	73.70 338	P	P	12 54 49.6	+0.4
	baz=151					
K30A	Basset	73.72 333	P	P	12 54 49.6	+0.2
	baz=146					
I33A	Coleman	73.76 336	P	P	12 54 49.4	-0.2
	baz=148					
Y14A	Wickenburg	73.91 319	eP	P	12 54 52.1	+1.4
	comp=Z,87nm,0.9s					
H34A	Spellman Lake,	73.92 337	P	P	12 54 50.0	-0.5
	baz=150,SNR=5.7					
I32A	Karley and Nic	74.00 335	P	P	12 54 50.7	-0.2
	baz=148					
WUAZ	Wupatki	74.05 321	P	P	12 54 53.0	+1.3
	baz=135,SNR=17					
WUAZ	Wupatki	74.05 321	eP	P	12 54 53.4	+1.8
	comp=Z,25nm,0.9s					
ISCO	Idaho Springs	74.14 328	P	P	12 54 53.3	+1.1
	baz=140,SNR=55					
ISCO	Idaho Springs	74.14 328	eP	P	12 54 53.6	+1.4
ISCO			pmax	pmax		
	comp=Z,31nm,0.7s					
ISCO	Idaho Springs	74.14 328	eP	P	12 54 53.6	+1.4
	comp=Z,31nm,0.7s					
F36A	Milaca	74.18 339	P	P	12 54 51.2	-0.6
	baz=152,SNR=17					
J30A	Dallas	74.21 334	P	P	12 54 52.0	-0.2
	baz=146					
H33A	Prehn Over Nor	74.28 336	P	P	12 54 52.3	-0.3
	baz=149,SNR=14					
G34A	Benson	74.36 337	P	P	12 54 52.7	-0.3
	baz=150					
H32A	Carlson Farm,	74.39 336	P	P	12 54 52.8	-0.4
	baz=148,SNR=8.2					
PV01	Paradox Valley	74.39 325	eP	P	12 54 55.1	+1.5
I31A	Royce, Wessing	74.42 335	P	P	12 54 52.9	-0.4
	baz=147					
GLA	Glamis	74.42 317	P	P	12 54 54.8	+1.2
	baz=132,SNR=8.7					
GLA	Glamis	74.42 317	eP	P	12 54 55.1	+1.4
GLA			pmax	pmax		
	comp=Z,24nm,1.0s					
GLA	Glamis	74.42 317	eP	P	12 54 55.1	+1.4
	comp=Z,24nm,1.0s					
E37A	Wrenshall	74.44 340	P	P	12 54 53.1	-0.2
	baz=153					
F35A	Swanville	74.53 338	P	P	12 54 53.6	-0.3
	baz=151					
G33A	Ortonville	74.61 337	P	P	12 54 54.1	-0.3
	baz=149					
PV05	Paradox Valley	74.63 324	eP	P	12 54 56.1	+1.2
E36A	McGregor	74.67 339	P	P	12 54 54.2	-0.5
	baz=152,SNR=14					
I30A	Oacoma	74.67 334	P	P	12 54 54.4	-0.4
	baz=146,SNR=5.8					
SBA	Scott Base	74.69 190	P	P	12 54 55.9	+1.5
SBA			pmax	pmax		
	comp=Z,17nm,2.2s					
Y12C	Blythe	74.70 318	P	P	12 54 56.6	+1.4
	baz=132,SNR=9.7					
Y12C	Blythe	74.70 318	eP	P	12 54 57.0	+1.9
	comp=Z,24nm,0.9s					
H31A	Wolsey	74.77 335	P	P	12 54 55.4	+0.1
	baz=147					
PV10	Paradox Valley	74.82 325	eP	P	12 54 56.9	+0.9
PDMCI	Parker Dam,Lak	74.84 319	P	P	12 54 56.5	+0.6
	baz=133					
TSUM	Tsumeb	74.87 105	P	P	12 54 56.3	-0.3
	comp=Z,41nm,0.9s,baz=240,slow=5.8,SNR=40					
C39A	Grand Marais	74.88 342	P	P	12 54 55.4	-0.4
	baz=155,SNR=44					
SUSD	Miller	74.93 335	P	P	12 54 55.9	-0.3
	baz=147					
PV09	Paradox Valley	74.96 325	eP	P	12 54 58.6	+1.7
SWSC	Sam W. Stewart	74.96 317	P	P	12 54 57.4	+0.8
	baz=131					
IKP	In-Ko-Pah, Jac	74.96 316	P	P	12 54 58.0	+1.3
	baz=131,SNR=5.1					
D37A	Cotton	74.97 340	P	P	12 54 56.1	-0.2
	baz=153,SNR=11					
E35A	Pequot Lakes	75.08 339	P	P	12 54 56.4	-0.5
	baz=151					
F33A	5 Mile Ranch,	75.11 337	P	P	12 54 56.7	-0.4
	baz=149					
I29A	Vivian Onida	75.12 334	P	P	12 54 56.6	-0.7
	baz=146,SNR=5.6					
C38A	Sawbill Land.	75.12 341	P	P	12 54 56.3	-0.9
	baz=154,SNR=19					
N23A	Red Feather La	75.14 328	P	P	12 54 59.0	+1.2
	baz=140,SNR=20					
N23A	Red Feather La	75.14 328	eP	P	12 54 59.1	+1.3
	comp=Z,28nm,0.6s					
BC3	Big Chuckawall	75.22 317	P	P	12 54 59.2	+1.0
	baz=132,SNR=8.9					
U15A	North Rim	75.22 321	eP	P	12 55 00.2	+1.9
	comp=Z,26nm,0.9s					
D36A	Goodland	75.22 340	P	P	12 54 57.6	-0.1
	baz=152					
PHWY	Pilot Hill	75.22 329	eP	P	12 54 59.6	+1.3
	comp=Z,42nm,1.3s					
W13A	Hualapai Mount	75.23 319	eP	P	12 55 00.1	+1.7
	comp=Z,15nm,0.8s					
G31A	Conde	75.30 336	P	P	12 54 57.7	-0.5
	baz=148					
E34A	Wadena	75.30 338	P	P	12 54 58.2	0.0
	baz=150					
MONP2	Monument Peak	75.32 316	P	P	12 54 60.0	+1.1
	baz=131					
BAR	Barrett	75.34 316	eP	P	12 54 59.9	+1.1
	comp=Z,19nm,0.8s					
IRM	Iron Mountain	75.36 318	P	P	12 55 00.2	+1.3
	baz=132,SNR=13					
EYMN	Ely	75.39 341	P	P	12 54 58.0	-0.6
	baz=154,SNR=17					
EYMN	Ely	75.39 341	eP	P	12 54 58.3	-0.4
	comp=Z,51nm,1.5s					
C37A	Embarrass	75.41 341	P	P	12 54 58.2	-0.5
	baz=153,SNR=9.3					
D35A	Remer	75.42 339	P	P	12 54 58.8	-0.1
	baz=151,SNR=8.9					
I28A	Midland	75.46 333	P	P	12 54 59.2	0.0
	baz=145					
G30A	Faribault	75.57 335	P	P	12 54 59.1	-0.6
	baz=147					
H29A	Onida	75.58 334	P	P	12 54 59.8	0.0
	baz=146					
E33A	Westby DABS, E	75.58 338	P	P	12 54 59.2	-0.5
	baz=150					
C36A	Pine Crest Far	75.63 340	P	P	12 54 59.7	-0.3
	baz=152,SNR=13					
VNDA	Vanda	75.67 189	P	P	12 55 00.5	+0.6
	comp=Z,7.5nm,0.8s,baz=136,slow=3.8,SNR=32					
VNDA			pP	pP	12 56 56.0	+1.6
	comp=Z,7.9nm,0.9s,baz=136,slow=3.5,SNR=9.9					
O20A	White River Ci	75.71 326	P	P	12 55 02.0	+1.1
	baz=138,SNR=24					
O20A	White River Ci	75.71 326	eP	P	12 55 02.4	+1.5
	comp=Z,50nm,0.9s					
J26A	Sides Ranch, S	75.72 331	P	P	12 55 01.6	+0.9
	baz=143,SNR=6.9					
BELC	Belle Mtn. Jos	75.78 317	P	P	12 55 02.3	+1.0
	baz=132,SNR=7.3					
D34A	Park Rapids	75.81 338	P	P	12 55 00.5	-0.5
	baz=150					
TPFO	Pinon Flats	75.81 317	P	P	12 55 02.7	+1.2
	baz=131,SNR=6.0					
PFO	Pinyon Flats O	75.82 317	P	P	12 55 02.4	+0.9
	baz=131					
PFO	Pinyon Flats O	75.82 317	eP	P	12 55 03.1	+1.6
PFO			pmax	pmax		
	comp=Z,15nm,1.0s					
PFO	Pinyon Flats O	75.82 317	eP	P	12 55 03.1	+1.6
	comp=Z,15nm,1.0s					
F31A	Hecla	75.85 336	P	P	12 55 00.9	-0.4
	baz=148,SNR=8.0					
KNB	Kanab	75.93 321	eP	P	12 55 04.2	+2.0
KNB			pmax	pmax		
	comp=Z,63nm,0.9s					
KNB	Kanab	75.93 321	eP	P	12 55 04.2	+2.0
	comp=Z,63nm,0.9s					
C35A	Jirik Farms, M	75.94 339	P	P	12 55 01.2	-0.5
	baz=152,SNR=20					
E32A	Braaten, Kindr	76.03 337	P	P	12 55 01.8	-0.4
	baz=149					
D33A	AnnSam, Waubun	76.08 338	P	P	12 55 01.9	-0.5
	baz=150					
GMRC	Granite Mounta	76.09 318	P	P	12 55 04.5	+1.5
	baz=132,SNR=40					
F30A	Leola	76.12 335	P	P	12 55 03.5	+0.7
	baz=147					
SRU	San Rafael Swe	76.15 324	eP	P	12 55 04.5	+1.2
SRU			pmax	pmax		
	comp=Z,45nm,0.8s					
SRU	San Rafael Swe	76.15 324	eP	P	12 55 04.5	+1.2
	comp=Z,45nm,0.8s					
LCMT	Little Creek M	76.17 321	eP	P	12 55 04.8	+1.4
	comp=Z,16nm,0.8s					
C34A	RKJ Ranch, Bem	76.20 339	P	P	12 55 03.4	+0.2
	baz=151					
MURC	Murrieta	76.27 316	P	P	12 55 04.9	+0.9
	baz=131					
MTPU	Mount Pierson	76.29 323	eP	P	12 55 05.8	+1.5
	comp=Z,22nm,0.8s					
E31A	Nome	76.30 336	P	P	12 55 04.1	+0.4
	baz=148					
Q16A	Castle Valley	76.36 324	eP	P	12 55 06.2	+1.7
	comp=Z,18nm,0.9s					
P18A	Preston Nutter	76.37 325	eP	P	12 55 06.3	+1.6
	comp=Z,42nm,0.8s					
F29A	Eureka	76.43 335	P	P	12 55 04.4	0.0
	baz=146					
B35A	Bob, Littlefor	76.44 340	P	P	12 55 04.0	-0.5
	baz=152,SNR=13					
D32A	Dogwood Acres,	76.48 337	P	P	12 55 04.1	-0.5
	baz=149					
P17A	Butcher Ranch,	76.53 324	eP	P	12 55 06.6	+1.3
	comp=Z,37nm,0.9s					
HEC	Hector,Ludlow	76.54 318	P	P	12 55 06.7	+1.3
	baz=131,SNR=11					
I25A	Rochford	76.57 332	P	P	12 55 06.2	+0.7
	baz=143,SNR=22					
C33A	Trail	76.59 338	P	P	12 55 05.2	0.0
	baz=150					
MSU	Marysvale	76.62 323	eP	P	12 55 07.7	+1.7
MSU	Marysvale	76.62 323	eP	P	12 55 07.7	+1.7
E30A	Jud	76.63 336	P	P	12 55 05.4	-0.1
	baz=147					
TMUT	Trail Mountain	76.65 324	eP	P	12 55 07.5	+1.3
	comp=Z,18nm,0.8s					
D31A	Mcclaflin, Tow	76.66 337	P	P	12 55 06.0	+0.3
	baz=148					
TUQ	Turquoise Moun	76.69 318	P	P	12 55 07.3	+1.0
	baz=132					
K22A	Casper	76.77 329	P	P	12 55 07.8	+1.2
	baz=140					
K22A	Casper	76.77 329	eP	P	12 55 08.0	+1.4
	comp=Z,17nm,0.8s					
RSSD	Black Hills	76.78 331	P	P	12 55 07.4	+0.7
	baz=142					
RSSD	Black Hills	76.78 331	eP	P	12 55 07.4	+0.7
RSSD			pmax	pmax		
	comp=Z,19nm,1.0s					
RSSD	Black Hills	76.78 331	eP	P	12 55 07.4	+0.7
	comp=Z,19nm,1.0s					
B34A	Aery, Baudette	76.85 339	P	P	12 55 06.4	-0.3
	baz=151,SNR=8.0					
G27A	Dupree	76.89 333	P	P	12 55 07.3	+0.2
	baz=144,SNR=6.5					
SHPR	Sheep Range	76.95 320	eP	P	12 55 08.5	+0.8
	comp=Z,20nm,0.9s					
B33A	Robert and Kas	76.97 339	P	P	12 55 07.5	+0.2
	baz=150					
BFSC	Mount Baldy Ra	76.98 317	P	P	12 55 08.0	+0.1
	baz=130					
H25A	Fruitdale	76.99 332	P	P	12 55 08.8	+1.2
	baz=143					
D30A	Buchanan	77.09 336	P	P	12 55 08.2	+0.2
	baz=147,SNR=7.4					
G26A	Maurine	77.10 333	P	P	12 55 08.0	-0.2
	baz=144,SNR=7.5					
GSC	Goldstone, Bar	77.14 318	P	P	12 55 09.7	+1.0
	baz=131					
GSC	Goldstone, Bar	77.14 318	eP	P	12 55 10.2	+1.5
GSC			pmax	pmax		
	comp=Z,23nm,1.0s					
GSC	Goldstone, Bar	77.14 318	eP	P	12 55 10.2	+1.5
	comp=Z,23nm,1.0s					
SHOC	Shoshone, Teco	77.21 319	P	P	12 55 09.8	+0.8
	baz=132					
MWC	Mount Wilson	77.22 316	eP	P	12 55 10.7	+1.4
MWC			pmax	pmax		
	comp=Z,21nm,1.0s					
MWC	Mount Wilson	77.22 316	eP	P	12 55 10.7	+1.4
	comp=Z,21nm,1.0s					
PASC	Pasadena Art C	77.27 316	eP	P	12 55 10.8	+1.4
	comp=Z,32nm,1.0s					
C31A	Landman Farms,	77.30 337	P	P	12 55 09.2	0.0
	baz=148					
G25A	Newell	77.37 332	P	P	12 55 10.2	+0.6
	baz=143					
E28A	Huff	77.38 335	P	P	12 55 10.3	+0.7
	baz=146					
MPU	Maple Canyon	77.39 324	eP	P	12 55 11.6	+1.5
	comp=Z,24nm,0.8s					
B32A	Ashes, Strandq	77.39 338	P	P	12 55 09.6	0.0
	baz=149,SNR=11					
DECC	Green Verdugo	77.42 316	P	P	12 55 11.1	+0.9
	baz=130					
C30A	Mose, Pekin	77.49 337	P	P	12 55 10.7	+0.5
	baz=148					
PSUT	Pine Spring	77.58 322	eP	P	12 55 12.8	+1.6
	comp=Z,28nm,0.8s					
F26A	Lodgepole	77.58 333	P	P	12 55 10.8	0.0
	baz=144,SNR=6.6					
NLU	North Lily Min	77.59 324	eP	P	12 55 12.7	+1.5
	comp=Z,16nm,0.9s					
E27A	Carson	77.60 334	P	P	12 55 11.3	+0.4
	baz=145					
EDW2	Edwards Air Fo	77.61 317	P	P	12 55 11.8	+0.6
	baz=130,SNR=6.7					
JLU	Jordanelle	77.72 325	eP	P	12 55 13.1	+1.2
	comp=Z,31nm,0.7s					
BLG	Laguna Peak, P	77.79 316	P	P	12 55 12.2	+0.1
	baz=129					
LRMC	Laurel Mtn Rad	77.80 318	P	P	12 55 13.4	+1.1
	baz=131,SNR=5.1					
A32A	Rocking H Ranc	77.83 339	P	P	12 55 12.5	+0.6
	baz=149					
D28A	Regan	77.84 335	P	P	12 55 12.8	+0.7
	baz=146					
TPNV	Topopah Spring	77.89 319	P	P	12 55 14.2	+1.4
	baz=132,SNR=16					
TPNV	Topopah Spring	77.89 319	eP	P	12 55 14.4	+1.6
TPNV			pmax	pmax		
	comp=Z,26nm,1.0s					
TPNV	Topopah Spring	77.89 319	eP	P	12 55 14.4	+1.6
	comp=Z,26nm,1.0s					
OSI	Osito Audit: C	77.89 316	P	P	12 55 13.4	+0.6
	baz=130					
FURC	Furnace Creek,	77.94 319	P	P	12 55 14.2	+1.4
	baz=131,SNR=10					
F25A	Bowman	77.97 333	P	P	12 55 13.8	+0.9
	baz=143					
MDND	Maddock	78.02 336	P	P	12 55 13.7	+0.7
	baz=147,SNR=7.6					
MDND	Maddock	78.02 336	eP	P	12 55 14.0	+0.9
	comp=Z,136nm,1.0s					
B30A	Myrvik Farm, E	78.06 337	P	P	12 55 13.5	+0.2
	baz=148,SNR=13					
TCUT	Toone Canyon	78.06 325	eP	P	12 55 15.1	+1.3
	comp=Z,41nm,0.7s					
A31A	Linda, St. Vin	78.08 338	P	P	12 55 12.9	-0.4
	baz=149					
SCHQ	Schefferville	78.08 358	P	P	12 55 13.2	0.0
	comp=Z,15nm,0.7s,baz=179,slow=5.0,SNR=9.7					
SCHQ	Schefferville	78.08 358	eP	P	12 55 13.1	0.0
	comp=Z,20nm,0.8s					
D27A	Center	78.14 335	P	P	12 55 14.2	+0.4
	baz=145					
DUG	Dugway, Tooele	78.16 324	P	P	12 55 15.3	+1.2
	baz=135,SNR=14					
DUG	Dugway, Tooele	78.16 324	eP	P	12 55 15.8	+1.6
DUG			pmax	pmax		
	comp=Z,22nm,0.9s					
DUG	Dugway, Tooele	78.16 324	eP	P	12 55 15.8	+1.6
	comp=Z,22nm,0.9s					
BOSA	Boshof	78.25 116	P	P	12 55 14.1	-1.0
	comp=Z,21nm,0.7s,baz=255,slow=4.0,SNR=35					
DAC	Darwin (Calif)	78.26 318	eP	P	12 55 16.0	+1.1
DAC			pmax	pmax		
	comp=Z,19nm,0.9s					
DAC	Darwin (Calif)	78.26 318	eP	P	12 55 16.0	+1.1
	comp=Z,19nm,0.9s					
BW06	Boulder Array	78.33 327	P	P	12 55 15.6	+0.5
	baz=138,SNR=24					
BW06	Boulder Array	78.33 327	eP	P	12 55 15.6	+0.5
PD31	Pinedale Array	78.33 327	eP	P	12 55 15.7	+0.6
PDAR	Pinedale Array	78.33 327	P	P	12 55 15.6	+0.5
	comp=Z,12nm,0.7s,baz=125,slow=7.5,SNR=111					
E25A	Miller Ranch,	78.41 333	P	P	12 55 16.3	+1.1
	baz=143					
ISA	Isabella, Lake	78.41 317	P	P	12 55 16.8	+1.3
	baz=130					
ISA	Isabella, Lake	78.41 317	eP	P	12 55 17.2	+1.7
ISA			pmax	pmax		
	comp=Z,15nm,0.8s					
ISA	Isabella, Lake	78.41 317	eP	P	12 55 17.1	+1.7
	comp=Z,15nm,0.8s					
SBC	Santa Barbara	78.42 316	P	P	12 55 16.2	+0.7
	baz=129					
D26A	Manning	78.44 334	P	P	12 55 16.5	+1.1
	baz=144					
R11A	Troy Canyon, C	78.44 321	P	P	12 55 17.1	+1.3
	baz=132,SNR=37					
R11A	Troy Canyon, C	78.44 321	eP	P	12 55 17.3	+1.5
	comp=Z,14nm,0.8s					
A30A	Hoffart Farm,	78.47 338	P	P	12 55 16.1	+0.6
	baz=148					
HWUT	Hardware Ranch	78.50 325	eP	P	12 55 16.9	+0.9
	comp=Z,24nm,0.8s					
GRAC	Grapevine Rang	78.59 319	P	P	12 55 17.5	+1.1
	baz=131,SNR=5.9					
C27A	Sayler Ranch,	78.63 335	P	P	12 55 17.5	+1.2
	baz=145					
PKM	Mcpherson Peak	78.76 316	P	P	12 55 19.0	+1.4
	baz=129					
ULM	Lac du Bonnet	78.78 340	P	P	12 55 16.9	-0.1
	comp=Z,16nm,0.5s,baz=154,slow=6.8,SNR=15					
ULM	Lac du Bonnet	78.78 340	eP	P	12 55 16.8	-0.2
ULM			pmax	pmax		
	comp=Z,23nm,0.8s					
ULM	Lac du Bonnet	78.78 340	eP	P	12 55 16.8	-0.2
	comp=Z,23nm,0.8s					
A29A	Manning Farm,	78.78 337	P	P	12 55 17.2	+0.1
	baz=147,SNR=17					
BGU	Big Grassy Mou	78.79 324	eP	P	12 55 18.6	+1.1
	comp=Z,40nm,1.1s					
B28A	Dugan Ranch, T	78.80 336	P	P	12 55 17.7	+0.4
	baz=146,SNR=6.4					
D25A	Fairfield	78.89 334	P	P	12 55 18.7	+0.9
	baz=143,SNR=12					
VES	Vestal, Richgr	78.90 317	P	P	12 55 18.9	+0.9
	baz=130,SNR=9.2					
C26A	Wahner Farm, P	78.95 335	P	P	12 55 19.1	+1.0
	baz=144					
B27A	Peters Farms,	79.10 336	P	P	12 55 19.4	+0.6
	baz=145					
A28A	Rude Farm, Bot	79.15 336	P	P	12 55 20.0	+0.9
	baz=146					
HVU	Hansel Valley	79.26 325	eP	P	12 55 20.7	+0.7
HVU			pmax	pmax		
	comp=Z,15nm,0.8s					
HVU	Hansel Valley	79.26 325	eP	P	12 55 20.7	+0.7
	comp=Z,15nm,0.8s					
RCTC	Rector, Farmer	79.30 317	P	P	12 55 20.6	+0.5
	baz=130					
REDW	Red Top Meadow	79.41 327	eP	P	12 55 21.6	+0.8
	comp=Z,16nm,0.9s					
SNOW	Snow King Moun	79.43 327	eP	P	12 55 22.1	+1.2
	comp=Z,9.9nm,0.8s					
LOHW	Long Hollow	79.47 327	eP	P	12 55 21.5	+0.4
	comp=Z,16nm,0.8s					
A27A	Ledoux Ranch,	79.55 336	P	P	12 55 22.2	+1.1
	baz=145					

MOOW **Moose Ponds** 79.63 327 *eP* P 12 55 22.6 +0.6
comp=Z,12nm,0.9s
LAO **LASA Array** 79.75 332 P P 12 55 22.7 +0.4
baz=141,SNR=14
LAO **LASA Array** 79.75 332 *eP* P 12 55 22.9 +0.5
comp=Z,24nm,0.8s
PTEO **Sao Teotonio** 79.76 41 *eP* P 12 55 22.8 +0.3
comp=Z,88nm,1.9s
A26A **Wade Farm, Ken** 79.80 335 P P 12 55 23.0 +0.5
baz=145
LBTB **Lobatse** 79.81 113 *eP* P 12 55 23.0 -0.3
LBTB pmax pmax
comp=Z,22nm,0.8s
LBTB **Lobatse** 79.81 113 *eP* P 12 55 23.0 -0.3
comp=Z,22nm,0.8s
IMW **Indian Meadow** 79.84 327 *eP* P 12 55 24.1 +0.9
comp=Z,28nm,0.8s
FLWY **Flagg Ranch** 79.86 328 *eP* P 12 55 24.3 +1.1
comp=Z,21nm,0.7s
ELK **Elko** 79.87 323 *eP* P 12 55 24.3 +1.0
ELK pmax pmax
comp=Z,17nm,0.9s
ELK **Elko** 79.87 323 *eP* P 12 55 24.3 +1.0
comp=Z,17nm,0.9s
MLAC **Mammoth, Mammo** 79.90 319 P P 12 55 24.4 +0.8
baz=130
RLMT **Red Lodge** 79.93 329 P P 12 55 24.1 +0.6
baz=138,SNR=13
NV11 **Mina Array Sit** 80.00 320 *eP* P 12 55 25.0 +1.0
comp=Z,32nm,1.5s
H17A **Grant Village** 80.02 328 P P 12 55 25.0 +1.0
baz=137,SNR=13
H17A **Grant Village** 80.02 328 *eP* P 12 55 25.6 +1.5
comp=Z,8.7nm,0.6s
PBDV **Barranco-do-Ve** 80.05 42 *eP* P 12 55 24.4 +0.3
LKWY **Lake** 80.06 328 *eP* P 12 55 26.3 +2.0
LKWY pmax pmax
comp=Z,11nm,0.8s
LKWY **Lake** 80.06 328 *eP* P 12 55 26.3 +2.0
comp=Z,11nm,0.8s
NV01 **Mina Array Sit** 80.09 319 *eP* P 12 55 25.4 +0.8
NVAR **Mina Array Bea** 80.09 319 P P 12 55 25.4 +0.8
comp=Z,8.0nm,0.9s,baz=146,slow=5.5,SNR=37
YFT **Old Faithful** 80.19 328 *eP* P 12 55 27.0 +2.1
comp=Z,11nm,0.8s
PCVE **Castro Verde** 80.23 42 *eP* P 12 55 26.1 +1.1
PNCL **Nicolau / Gran** 80.24 41 *eP* P 12 55 25.4 +0.4
comp=Z,41nm,2.3s
MESJ **Messejana** 80.26 41 *eP* P 12 55 25.6 +0.6
MESJ **Messejana** 80.26 41 *eP* P 12 55 25.3 +0.2
DGMT **Dagmar** 80.30 334 P P 12 55 26.1 +1.0
baz=143,SNR=9.8
DGMT **Dagmar** 80.30 334 *eP* P 12 55 26.4 +1.2
comp=Z,72nm,0.6s
YMR **Madison River** 80.41 328 *eP* P 12 55 27.7 +1.6
comp=Z,27nm,0.8s
PBEJ **Beja** 80.59 41 *eP* P 12 55 26.6 -0.2
GCMT **Greycliff** 80.62 329 *eP* P 12 55 27.6 +0.6
QLMT **Earthquake Lak** 80.76 328 *eP* P 12 55 29.4 +1.6
WAKR **Walker** 80.82 319 *eP* P 12 55 30.1 +1.8
MAW **Mawson** 80.97 162 P P 12 55 28.7 +0.4
comp=Z,20nm,0.7s,baz=218,slow=6.1,SNR=34
MAW pP **pP** 12 57 26.0 +1.0
comp=Z,7.8nm,0.9s,baz=244,slow=9.2,SNR=7.1
MAW **Mawson** 80.97 162 *eP* P 12 55 28.7 +0.4
MAW pmax pmax
comp=Z,5.0nm,0.8s
MAW **Mawson** 80.97 162 *eP* P 12 55 28.7 +0.4
comp=Z,5.2nm,0.8s
PMTG **Montargil** 81.04 40 *eP* P 12 55 29.9 +0.8
comp=Z,49nm,2.1s
CMB **Columbia Colle** 81.10 318 *eP* P 12 55 29.7 +0.1
CMB pmax pmax
comp=Z,15nm,1.5s
CMB **Columbia Colle** 81.10 318 *eP* P 12 55 29.7 +0.1
comp=Z,15nm,1.5s
PBAR **Barrancos** 81.19 42 *eP* P 12 55 29.9 0.0
PTOM **Tomar** 81.28 40 *eP* P 12 55 31.1 +0.7
comp=Z,44nm,1.1s
PESTR **Estremoz** 81.29 41 *eP* P 12 55 30.5 0.0
comp=Z,25nm,1.5s
HLID **Hailey** 81.37 325 P P 12 55 32.3 +1.4
baz=134,SNR=47
HLID **Hailey** 81.37 325 *eP* P 12 55 32.4 +1.4
comp=Z,31nm,0.8s
BOZ **Bozeman (W)** 81.45 328 P P 12 55 31.3 0.0
baz=136,SNR=9.6
BOZ **Bozeman (W)** 81.45 328 *eP* P 12 55 31.8 +0.5
BOZ pmax pmax
comp=Z,7.0nm,1.0s
BOZ **Bozeman (W)** 81.45 328 *eP* P 12 55 31.8 +0.5
comp=Z,7.1nm,1.0s
MCMT **McKenzie Canyo** 81.46 327 *eP* P 12 55 32.6 +1.2
TAM **Tamanrasset** 81.52 61 *eP* P 12 55 32.7 +0.5
TAM pmax pmax
comp=Z,47nm,1.1s
TAM **Tamanrasset** 81.52 61 *eP* P 12 55 32.7 +0.5
comp=Z,47nm,1.1s
PAHR **Pah Rah Range** 81.56 320 *eP* P 12 55 33.5 +1.5
comp=Z,14nm,0.9s
DLMT **Dillon** 81.72 328 *eP* P 12 55 33.8 +1.1
comp=Z,17nm,1.0s
LRM **Limekiln Ridge** 81.97 328 *eP* P 12 55 34.7 +0.6
MFID **Camas Ranch** 82.01 324 *eP* P 12 55 35.4 +1.3
comp=Z,14nm,0.8s
AFDM **Forest Hills D** 82.03 319 *eP* P 12 55 34.9 +0.6
comp=Z,9.5nm,0.9s
MTE **Manteigas** 82.30 40 *eP* P 12 55 36.2 +0.6
comp=Z,59nm,1.4s
MTE **Manteigas** 82.30 40 *eP* P 12 55 36.4 +0.8
comp=Z,36nm,1.0s
HRY **Holter Researc** 82.32 329 *eP* P 12 55 36.7 +1.1
EGMT **Eagleton** 82.32 331 P P 12 55 35.5 -0.1
baz=138,SNR=6.5
EGMT **Eagleton** 82.32 331 *eP* P 12 55 35.8 +0.2
comp=Z,14nm,0.8s
ORV **Oroville** 82.73 319 *eP* P 12 55 39.6 +1.9
ORV pmax pmax
comp=Z,30nm,1.1s
ORV **Oroville** 82.73 319 *eP* P 12 55 39.6 +1.9
comp=Z,30nm,1.1s
PVRL **Vila Real** 82.76 39 *eP* P 12 55 38.5 +0.6
comp=Z,76nm,1.1s
POLO **Lamas de Olo** 82.77 39 *eP* P 12 55 38.3 +0.3
comp=Z,31nm,1.5s
PCAB **Cabril** 82.86 39 *eP* P 12 55 38.8 +0.4
comp=Z,53nm,1.3s
PGAV **Gavieira, Arco** 82.88 38 *eP* P 12 55 38.3 -0.3
comp=Z,47nm,1.4s
MVO **Moncorvo** 83.08 39 *eP* P 12 55 39.7 +0.1
comp=Z,87nm,1.3s
CHMT **Chamberlain Mo** 83.14 328 *eP* P 12 55 40.5 +0.6
O03D **Paynes Creek** 83.37 319 P P 12 55 41.3 +0.2
baz=128
MSO **Missoula** 83.42 328 P P 12 55 42.1 +1.0
baz=135
MSO **Missoula** 83.42 328 *eP* P 12 55 42.0 +0.8
comp=Z,4.1nm,0.7s
MOD **Modoc Plateau** 83.50 321 *eP* P 12 55 42.6 +0.9
comp=Z,17nm,1.3s
PBRG **Braganca** 83.66 39 *eP* P 12 55 42.2 -0.2
comp=Z,73nm,1.3s
PAB **San Pablo** 83.69 42 *eP* P 12 55 43.0 +0.4
PAB pmax pmax
comp=Z,49nm,1.0s
PAB **San Pablo** 83.69 42 *eP* P 12 55 43.0 +0.4
comp=Z,49nm,1.0s
BMO **Blue Mountains** 83.77 325 *eP* P 12 55 43.6 +0.7
comp=Z,16nm,1.0s
SWMT **Swartz Lake** 83.92 328 *eP* P 12 55 44.3 +0.7
WDC **Whiskeytown Da** 83.99 319 *eP* P 12 55 43.8 -0.2
WDC pmax pmax
comp=Z,10.0nm,0.8s
WDC **Whiskeytown Da** 83.99 319 *eP* P 12 55 43.8 -0.2
comp=Z,9.6nm,0.8s
ESDC **Sonseca Array** 84.00 42 P P 12 55 44.7 +0.6
comp=Z,18nm,0.9s,baz=238,slow=4.5,SNR=60
ESDC pP **pP** 12 57 42.8 +0.9
comp=Z,1.9nm,0.8s,baz=240,slow=5.4,SNR=4.3
ESLA **Sonseca Array** 84.00 42 *eP* P 12 55 45.0 +0.9
comp=Z,30nm,1.0s
ES19 **SONSECA Array** 84.06 42 *eP* P 12 55 44.6 +0.2
JTMT **Jette** 84.23 328 *eP* P 12 55 45.6 +0.5
M04C **Macdoel** 84.31 320 P P 12 55 45.9 +0.2
baz=128,SNR=12
N02D **Trinity Center** 84.33 319 P P 12 55 46.0 +0.3
baz=128,SNR=5.9

K05A **Summer Lake** 84.36 322 *eP* P 12 55 47.3 +1.3
comp=Z,34nm,0.8s
BLMT **Blacktail Moun** 84.45 329 *eP* P 12 55 47.0 +0.7
F10A **Beach Ranch, E** 84.48 326 *eP* P 12 55 46.9 +0.5
comp=Z,19nm,0.9s
BSMT **Bassoo Peak** 84.54 328 *eP* P 12 55 47.3 +0.5
M02C **Callahan** 84.67 320 P P 12 55 47.5 +0.1
baz=128,SNR=6.1
K04D **Chiloquin, OR** 84.79 321 P P 12 55 48.6 +0.6
baz=129
YBH **Yreka Blue Hor** 84.80 320 *eP* P 12 55 47.6 -0.4
YBH pmax pmax
comp=Z,11nm,0.8s
YBH **Yreka Blue Hor** 84.80 320 *eP* P 12 55 47.6 -0.4
comp=Z,11nm,0.8s
KHMM **Horse Mountain** 84.89 319 *eP* P 12 55 49.7 +1.1
comp=Z,18nm,0.9s
J05D **Fort Rock, OR** 84.91 322 P P 12 55 49.2 +0.6
baz=129,SNR=14
G08A **Pilot Rock** 84.94 324 *eP* P 12 55 49.4 +0.7
comp=Z,8.6nm,0.7s
WALA **Waterton Lakes** 84.97 330 *eP* P 12 55 49.0 +0.2
comp=Z,11nm,0.8s
JCC **Jacoby Creek,** 85.03 319 *eP* P 12 55 49.9 +0.9
comp=Z,32nm,0.9s
KTRM **Thompson Ridge** 85.30 320 *eP* P 12 55 51.6 +1.1
HUMO **Hull Mountain** 85.48 320 *eP* P 12 55 51.3 +0.1
comp=Z,7.3nm,0.6s
L02D **Cave Junction,** 85.58 320 P P 12 55 52.5 +0.8
baz=127,SNR=6.7
I05D **Terrebonne, OR** 85.63 323 P P 12 55 52.7 +0.7
baz=129,SNR=6.1
LSZ **Lusaka** 85.73 105 *eP* P 12 55 54.6 +1.4
LSZ pmax pmax
comp=Z,53nm,1.2s
LSZ **Lusaka** 85.73 105 *eP* P 12 55 54.6 +1.4
comp=Z,53nm,1.2s
G06A **Carlson Farm,** 85.81 324 *eP* P 12 55 54.4 +1.7
comp=Z,28nm,1.3s
I04A **Tendick Farm,** 85.89 322 P P 12 55 53.0 -0.2
baz=128
HAWA **Hanford** 85.96 325 *eP* P 12 55 54.2 +0.9
comp=Z,25nm,0.9s
NEW **Newport** 85.97 327 P P 12 55 52.8 -0.6
baz=132,SNR=6.3
NEW **Newport** 85.97 327 *eP* P 12 55 53.2 -0.2
NEW pmax pmax
comp=Z,11nm,1.1s
NEW **Newport** 85.97 327 *eP* P 12 55 53.2 -0.2
comp=Z,11nm,1.1s
G05D **Wamic, OR** 86.18 323 P P 12 55 55.5 +1.0
baz=129
C09A **Chrisman Ranch** 86.23 327 *eP* P 12 55 55.3 +0.6
comp=Z,60nm,0.6s
H04A **Detroit Lake** 86.31 322 *eP* P 12 55 55.5 +0.4
comp=Z,45nm,1.8s
I03D **Drain, OR** 86.37 321 P P 12 55 55.8 +0.5
baz=128
WTV **Waterville** 87.02 326 *eP* P 12 55 59.0 +0.6
B08A **Colville Reser** 87.13 327 *eP* P 12 55 59.0 0.0
comp=Z,22nm,1.4s
ETW **Entiat** 87.16 326 *eP* P 12 55 59.7 +0.5
F04A **Amboy** 87.22 323 *eP* P 12 55 59.9 +0.5
comp=Z,28nm,1.3s
G03D **McMinnville, O** 87.24 322 P P 12 56 01.3 +1.9
baz=128
LON **Longmire** 87.40 324 *eP* P 12 56 00.4 +0.1
LON pmax pmax
comp=Z,11nm,1.4s
LON **Longmire** 87.40 324 *eP* P 12 56 00.3 +0.1
comp=Z,11nm,1.4s
D05A **Enumclaw** 87.77 325 *eP* P 12 56 02.2 +0.3
comp=Z,26nm,1.1s
JCW **Jim Creek** 88.36 325 *eP* P 12 56 04.3 -0.3
B05A **Bryant** 88.49 325 P P 12 56 04.7 -0.5
baz=128,SNR=8.4
EPF **Esparros** 88.59 41 *eP* P 12 56 06.0 +0.1
EPF pmax pmax
comp=Z,5.0nm,0.7s
LFF **La Frestale** 89.90 40 *eP* P 12 56 11.6 -0.2
LFF pmax pmax
comp=Z,15nm,0.8s
MFF **Saint Martin d** 90.33 38 *eP* P 12 56 13.4 -0.4
MFF pmax pmax
comp=Z,17nm,1.0s
CASY **Casey** 90.38 178 *eP* P 12 56 15.2 +1.5
comp=Z,28nm,0.9s
CAF **Calviac** 90.67 40 *eP* P 12 56 15.2 -0.3
CAF pmax pmax
comp=Z,8.0nm,0.8s
KEST **Kesra** 90.75 51 P P 12 56 17.0 +0.8
comp=Z,8.9nm,0.9s,baz=277,slow=1.8,SNR=9.4
KEST **Kesra** 90.75 51 *eP* P 12 56 17.0 +0.8
comp=Z,13nm,0.9s
SFJD **Kangerlussuaq** 90.78 5 *eP* P 12 56 16.3 +1.0
SFJD pmax pmax
comp=Z,19nm,1.1s
SFJD **Kangerlussuaq** 90.78 5 *eP* P 12 56 16.3 +1.0
comp=Z,19nm,1.1s
GRR **Gorron** 90.96 36 *eP* P 12 56 15.6 -1.0
GRR pmax pmax
comp=Z,17nm,1.0s
FLN **La Foliniere** 91.38 36 *eP* P 12 56 17.8 -0.8
FLN pmax pmax
comp=Z,41nm,1.4s
LDF **La Druitiere** 91.47 36 *eP* P 12 56 18.2 -0.8
LDF pmax pmax
comp=Z,20nm,1.2s
SSB **Saint Sauveur** 92.35 41 *eP* P 12 56 23.8 +0.6
SSB pmax pmax
comp=Z,14nm,1.0s
SSB **Saint Sauveur** 92.35 41 *eP* P 12 56 23.8 +0.6
comp=Z,14nm,1.0s
AVF **Avril sur Loir** 92.44 39 *eP* P 12 56 23.5 0.0
AVF pmax pmax
comp=Z,17nm,1.3s
LPL **La Plagne** 93.80 42 *eP* P 12 56 30.5 +0.5
LPL pmax pmax
comp=Z,14nm,1.0s
LPG **La Plagne** 93.80 42 *eP* P 12 56 30.7 +0.6
LPG pmax pmax
comp=Z,15nm,1.0s
CABF **La Chapelle** 93.96 40 *eP* P 12 56 31.3 +0.7
CABF pmax pmax
comp=Z,14nm,1.2s
YKA **Yellowknife Ar** 94.74 339 P P 12 56 33.6 0.0
comp=Z,4.5nm,0.7s,baz=128,slow=4.5,SNR=123
YKA pP **pP** 12 58 34.7 +0.9
comp=Z,1.4nm,0.9s,baz=124,slow=4.4,SNR=8.8
YKA PKiKP **PKiKP** 13 01 11.8 -0.3
comp=Z,0.2nm,0.7s,baz=153,slow=1.5,SNR=4.4
YKA PKKPbc **PKKPdf** 13 13 27.8 -1.8
comp=Z,0.2nm,0.6s,baz=330,slow=3.6,SNR=4.9
YKB5 **Yellowknife Ar** 94.74 339 *eP* P 12 56 33.2 -0.4
YKW3 **Yellowknife Ar** 94.79 339 *eP* P 12 56 33.5 -0.3
comp=Z,7.4nm,0.9s
TUE **Stuetta** 95.85 42 *eP* P 12 56 39.7 +0.4
comp=Z,8.9nm,1.0s
BFO **Black Forest** 96.13 40 *i P* P 12 56 40.8 +0.5
DAVOX **Davos/Dischmat** 96.32 42 P P 12 56 40.5 -0.9
comp=Z,5.7nm,0.7s,baz=239,slow=4.5
FUORN **Ofenpass-Fuorn** 96.48 42 *eP* P 12 56 42.8 +0.6
comp=Z,8.9nm,0.9s
DLBC **Dease Lake** 98.25 331 *e*Pdif P 12 56 50.8 +1.1
comp=Z,5.5nm,1.0s
CLL **Collm** 100.17 38 ⇓ *i*Pdif **Pdif** 12 56 58.9 +0.7
comp=Z,6.0nm,1.0s
CLL **Collm** 100.17 38 ⇓ *i P* **Pdif** 12 56 58.9 +0.7
CLL pmax pmax
comp=Z,6.0nm,1.0s
INK **Inuvik** 104.51 339 Pdiff **Pdif** 12 57 16.5 -0.5
comp=Z,0.9nm,0.6s,baz=21,slow=4.5,SNR=5.0
ILAR **Eielson Array** 108.17 333 PP PP 13 02 11.2 0.0
comp=Z,1.8nm,1.2s,baz=127,slow=6.2,SNR=5.4
BR101 **Keskin Array S** 110.07 55 *e*PKiKP **PKiKP** 13 01 39.2 -1.8
BRTR **Keskin Array B** 110.07 55 PKiKP **PKiKP** 13 01 39.2 -1.8
comp=Z,1.4nm,0.8s,baz=183,slow=2.2,SNR=7.0
OBN **Obninsk** 114.77 39 ⇓ *e*PKiKP PKPdf 13 01 47.9 -1.3
OBN *e*SS SS 13 18 20.2 +8.9
OBN pmax pmax
comp=Z,9.0nm,0.7s
LPSR **Galich'ya Gora** 115.91 41 *e*PKIKP **PKPdf** 13 01 50.4 -1.1
LPSR pmax pmax
comp=Z,10.0nm,0.7s
VSR **Storozhevoye** 115.93 43 *e*PKIKP **PKPdf** 13 01 51.0 -0.6
VSR pmax pmax
comp=Z,10.0nm,1.4s

KLMR **Klimovskoe** 116.67 32 *e*PKIKP **PKPdf** 13 01 51.2 -1.5
KIV **Kislovodsk** 117.49 51 *e*PKIKP **PKPdf** 13 01 54.8 -0.2
KIV pmax pmax
comp=Z,24nm,1.1s
VRH **Novokhopyorsk** 117.53 43 *e*PKIKP **PKPdf** 13 01 53.6 -1.0
VRH pmax pmax
comp=Z,10.0nm,0.9s
KBZ **Khabaz** 117.62 52 PKP **PKPdf** 13 01 55.0 0.0
comp=Z,9.0nm,0.9s,baz=214,slow=4.6,SNR=14
ZEI **Tsey** 118.23 53 *e*PKIKP **PKPdf** 13 01 56.2 -0.4
ZEI pmax pmax
comp=Z,15nm,0.9s
BILL **Bilibino** 126.14 339 ⇓ *i*PKIKP **PKPdf** 13 02 11.2 +0.5
BILL *e* 13 04 09.3
BILL pmax pmax
comp=Z,6.0nm,0.9s
BILL **Bilibino** 126.14 339 *e*PKPdf **PKPdf** 13 02 11.3 +0.5
ARU **Arti** 127.03 36 PKP **PKPdf** 13 02 13.1 +0.4
comp=Z,6.9nm,0.7s,baz=139,slow=0.6,SNR=13
ARU **Arti** 127.03 36 *i* PKIKP **PKPdf** 13 02 12.1 -0.6
ARU 13 04 20.7
ARU 13 08 31.5
ARU SS SS 13 20 42.9 -2.9
ARU **Arti** 127.03 36 *e*PKPdf **PKPdf** 13 02 13.8 +1.0
AKTO **Aktyubinsk** 127.86 44 PKP **PKPdf** 13 02 15.4 +0.9
comp=Z,7.0nm,0.8s,baz=309,slow=2.3,SNR=18
GEYT **Alibeck** 128.74 59 PKP **PKPdf** 13 02 17.2 +0.6
comp=Z,2.3nm,0.7s,baz=258,slow=7.4,SNR=6.5
ABKAR **Akbulak array** 129.28 45 *e*PKPdf **PKPdf** 13 02 18.2 +0.9
AS01 **Alice Springs** 130.06 201 *e*PKPdf **PKPdf** 13 02 19.2 -0.5
ASAR **Alice Springs** 130.07 201 PKP **PKPdf** 13 02 19.3 -0.4
comp=Z,7.2nm,0.7s,baz=149,slow=2.3,SNR=45
ASAR SKPbc **SKPbc** 13 04 51.4 -0.6
comp=Z,1.6nm,0.7s,baz=148,slow=3.5,SNR=16
AS31 **Alice Springs** 130.07 201 *e*PKPdf **PKPdf** 13 02 19.4 -0.3
NRIK **Noril'sk** 131.05 13 PKP **PKPdf** 13 02 21.3 +1.3
comp=Z,2.2nm,0.4s,baz=30,slow=2.0,SNR=6.6
TIXI **Tiksi** 131.31 355 PKP **PKPdf** 13 02 20.5 +0.1
comp=Z,4.7nm,0.8s,baz=16,slow=1.6,SNR=8.5
TIXI SKPbc **SKPbc** 13 04 54.4 -0.5
comp=Z,8.8nm,0.7s,baz=35,slow=3.3,SNR=30
TIXI **Tiksi** 131.31 355 *i* PKIKP **PKPdf** 13 02 20.6 +0.1
TIXI pmax pmax
comp=Z,7.0nm,0.8s
WB2 **Warramunga Arr** 133.34 204 *e*PKPdf **PKPdf** 13 02 26.8 +0.9
WR1 **Warramunga Arr** 133.35 204 *e*PKPdf **PKPdf** 13 02 25.4 -0.6
WR1 *e*PP **PP** 13 05 03.0 +3.3
WRA **Warramunga Arr** 133.35 204 PKhKP PKPpre 13 02 09.1
comp=Z,0.3nm,0.5s,baz=159,slow=2.3,SNR=5.8
WRA PKP **PKPdf** 13 02 25.4 -0.6
comp=Z,5.9nm,0.7s,baz=158,slow=1.7,SNR=22
WRA SKPbc **SKPbc** 13 05 03.0 -0.5
comp=Z,6.0nm,1.0s,baz=151,slow=3.1,SNR=13
WRAB **Tennant Creek** 133.35 204 *e*PKIKP **PKPdf** 13 02 26.6 +0.6
WRAB **Tennant Creek** 133.35 204 *e*PKPdf **PKPdf** 13 02 26.6 +0.6
SEY **Seymchan** 133.80 338 PKP **PKPdf** 13 02 25.6 +0.2
comp=Z,8.0nm,0.7s,baz=95,slow=2.5,SNR=27
SEY SKPbc **SKPbc** 13 05 04.2 +0.7
comp=Z,1.4nm,0.6s,baz=90,slow=4.8,SNR=4.3
SEY **Seymchan** 133.80 338 *c i*PKIKP **PKPdf** 13 02 26.9 +1.5
ZRNK **Zerenda** 133.85 38 *e*PKIKP **PKPdf** 13 02 27.0 +1.2
ZRNK **Zerenda** 133.85 38 *e*PKPdf **PKPdf** 13 02 27.0 +1.2
BRVK **Borovoye** 134.53 38 *c i*PKIKP **PKPdf** 13 02 28.3 +1.3
BRVK pmax pmax
comp=Z,6.0nm,0.7s
BRVK **Borovoye** 134.53 38 *e*PKPdf **PKPdf** 13 02 27.3 +0.3
BVAR **Borovoye Array** 134.60 38 PKP **PKPdf** 13 02 28.2 +1.1
comp=Z,4.0nm,0.7s,baz=298,slow=3.2,SNR=26
BVAR SKPbc **SKPab** 13 05 08.3 -2.5
comp=Z,2.2nm,0.7s,baz=305,slow=3.1,SNR=7.7
PEA1 **Petropavlovsk-** 137.02 324 *e*PKPdf **PKPdf** 13 02 31.9 +0.3
PETK **Petropavlovsk-** 137.02 324 PKP **PKPdf** 13 02 31.9 +0.3
comp=Z,11nm,0.9s,baz=108,slow=4.8,SNR=5.7
KURBB **Kurchatov Arra** 140.19 38 PKhKP PKPpre 13 02 30.0
comp=Z,2.8nm,0.8s,baz=296,slow=2.9,SNR=9.9
KURBB PKP **PKPdf** 13 02 37.9 +0.4
comp=Z,6.3nm,0.7s,baz=298,slow=2.7,SNR=24
KURBB SKPbc **SKPbc** 13 05 22.3 -0.1
comp=Z,1.5nm,0.5s,baz=295,slow=3.3,SNR=7.3
KURK **Kurchatov** 140.20 37 *e*PKHKP PKPpre 13 02 30.0
KURK **Kurchatov** 140.20 37 *e*PKPpre PKPpre 13 02 30.0
KURK *e*PKPpre PKPpre 13 02 32.7
KURK *e*PKPdf **PKPdf** 13 02 37.9 +0.4
NVS **Novosibirsk** 140.24 30 *e*PKIKP **PKPdf** 13 02 38.3 +0.8
YAK **Yakutsk** 140.44 350 *e*PKIKP **PKPdf** 13 02 37.6 0.0
YAK pmax pmax
comp=Z,16nm,0.9s
YAK pmax pmax
comp=N,2.0nm,1.2s
YAK pmax pmax
comp=E,3.0nm,1.3s
AAK **Ala-Archa** 140.61 51 PKP **PKPdf** 13 02 37.9 -0.8
comp=E,2.5nm,0.4s,baz=264,slow=4.1,SNR=6.8
TKM2 **Tokmak 2** 141.31 50 *e*PKHKP PKPpre 13 02 36.3
TKM2 **Tokmak 2** 141.31 50 *e*PKPpre PKPpre 13 02 36.2
ZAA1 **Zalesovo Array** 141.52 30 *e*PKPpre PKPpre 13 02 35.7
ZAA1 *e*PKPdf **PKPdf** 13 02 40.1 +0.3
ZAA1 *e*pPKPdf pPKPdf 13 04 48.4 +0.8
ZAA0 **Zalesovo Array** 141.52 30 *e*PKPpre PKPpre 13 02 35.6
ZAA0 *e*PKPpre PKPpre 13 02 36.0
ZALV **Zalesovo Beam** 141.52 30 PKhKP PKPpre 13 02 35.7
comp=E,8.8nm,0.8s,baz=292,slow=4.1,SNR=19
ZALV PKP **PKPdf** 13 02 40.1 +0.3
comp=E,6.8nm,0.4s,baz=279,slow=2.6,SNR=27
ZALV pPKP pPKPdf 13 04 48.4 +0.8
comp=E,2.8nm,0.8s,baz=252,slow=2.3,SNR=4.0
ZALV SKPbc **SKPbc** 13 05 24.4 -1.4
comp=E,4.6nm,0.5s,baz=274,slow=3.0,SNR=7.7
KSH **Kashi** 142.46 55 PKP **PKPdf** 13 02 38.6 -3.5
KSH *e*SPKP 13 05 37.6
KSH *e*PP **PP** 13 05 49.4 -7.6
KSH PKS **PKSdf** 13 06 13.0 -4.9
KSH SKKS 13 11 44.3
MAKZ **Makanchi** 144.02 41 *e*PKIKP **PKPdf** 13 02 44.2 -0.3
MAKZ **Makanchi** 144.02 41 *e*PKPbc **PKPdf** 13 02 44.2 -0.3
HYB **Hyderabad** 144.21 93 *i* PKP PKPbc 13 02 45.0 -0.3
MK31 **Makanchi Array** 144.21 41 *e*PKIKP **PKPab** 13 02 44.8 -0.1
MK31 **Makanchi Array** 144.21 41 *e*PKPbc **PKPab** 13 02 44.8 -0.1
MK32 **Makanchi Array** 144.21 41 *e*PKPbc **PKPab** 13 02 44.8 0.0
MK32 *e*pPKPdf **pPKPdf** 13 04 51.4 -1.3
MKAR **Makanchi Array** 144.21 41 PKP **PKPab** 13 02 44.8 0.0
comp=E,18nm,0.7s,baz=300,slow=3.1,SNR=173
MKAR pPKP **pPKPdf** 13 04 51.4 -1.3
comp=E,3.2nm,0.9s,baz=262,slow=2.5,SNR=4.5
MKAR SKPbc **SKiKP** 13 05 33.1 -0.1
comp=E,5.9nm,0.7s,baz=319,slow=2.5,SNR=10
MKAR SKKPbc **SKKPab** 13 13 38.4 -0.5
comp=E,1.1nm,0.9s,baz=100,slow=5.3,SNR=5.9
MK01 **Makanchi Array** 144.23 41 *e*PKPbc **PKPab** 13 02 44.9 -0.1
NDI **New Delhi** 144.65 73 *e*P **PKPab** 13 02 49.8 +2.8
NKL **Nikolayevsk** 145.11 334 *e*PKP2 **PKPab** 13 02 48.0 0.0
NKL pmax pmax
comp=Z,86nm,1.0s
BOD **Bodaibo** 145.70 2 *e*PKIKP **PKPdf** 13 02 46.4 -0.5
BOD pmax pmax
comp=Z,48nm,0.9s
TYV **Tymovskoe** 145.91 330 *e*PKIKP **PKPbc** 13 02 49.0 -0.3
TYV pmax pmax
comp=N,22nm,1.0s
TYV pmax pmax
comp=Z,70nm,1.0s
SOEI **Soe** 146.02 194 *e*PKPdf **PKPdf** 13 02 48.0 -1.1
SOEI *e*PKPbc **PKPab** 13 02 52.0 -0.7
MMRI **Maumere** 147.51 191 *e*PKPbc **PKPbc** 13 02 55.2 +0.4
CISI **Cisompet, Garu** 148.02 164 *e*PKPbc **PKPbc** 13 02 56.3 +0.2
WMQ **Urumqi** 149.00 42 ⇓ *i*PKPbc **PKPbc** 13 02 58.8 +1.1
WMQ pPKP **pPKPdf** 13 05 07.0 +6.0
WMQ PP **PP** 13 06 42.1 +7.5
WMQ SKS **SKSdf** 13 09 08.3 -1.3
WMQ AMB AMB
comp=Z,27nm,11.8s
WMQ LR LR
comp=Z,18nm,25.8s
MOY **Mondy** 149.53 19 *e*PKP2 **PKPbc** 13 03 00.1 +1.3
MOY pmax pmax
comp=Z,96nm,1.7s
ASAJ **Asahikawa** 150.22 320 PKPbc **PKPbc** 13 03 00.4 -0.1
comp=Z,43nm,1.0s,baz=266,slow=11,SNR=24
TLY **Talaya** 150.25 16 PKPbc **PKPbc** 13 03 01.1 +0.7
comp=Z,4.0nm,0.6s,baz=324,slow=2.6,SNR=5.1
TLY **Talaya** 150.25 16 *e*PKIKP **PKPdf** 13 02 57.1 +2.5
TLY *e* 13 03 10.0
TLY **Talaya** 150.25 16 *e*PKPdf **PKPdf** 13 02 57.1 +2.5
TLY *e*PKPbc **PKPbc** 13 03 01.1 +0.7

TLY				*e*PKPbc	**PKPbc**	**13 03 01.2**	**+0.9**
TLY				*e*PKPab	**PKPab**	**13 03 10.0**	**+1.0**
HABR	**Khabarovsk**	**150.99**	**334**	*e*PKIKP	**PKPdf**	**13 02 54.8**	**-0.9**
HABR				*e*		13 05 01.9	
HABR				*e*		13 06 46.4	
HABR				*e*		13 09 11.2	
HABR				*e*PPP	PPP	13 10 16.5	
HABR				pmax	pmax		
	comp=E,24nm,2.0s						
HABR				pmax	pmax		
	comp=N,15nm,2.0s						
HABR				pmax	pmax		
	comp=Z,20nm,2.0s						
ZAK	**Zakamensk**	**151.33**	**17**	*e*PKIKP	**PKPdf**	**13 02 55.5**	**-0.9**
ZAK				pmax	pmax		
	comp=Z,11nm,1.1s						
ZAK				pmax	pmax		
	comp=Z,7.0nm,1.3s						
GSI	**Gunungsitoli**	**151.42**	**138**	*e*PKPbc	**PKPbc**	**13 03 05.0**	**+0.8**
KAPI	**Kappang**	**151.44**	**187**	*e*PKPbc	**PKPbc**	**13 03 05.2**	**+1.0**
KLR	**Kul'dur**	**151.59**	**338**	PKP	**PKPdf**	**13 02 56.7**	**0.0**
	comp=Z,4.8nm,1.0s,baz=326,slow=3.5,SNR=9.2						
KLR				PKPbc	**PKiKP**	**13 03 03.5**	**-0.3**
	comp=Z,21nm,0.8s,baz=58,slow=2.9,SNR=44						
PSI	**Prapat**	**153.42**	**138**	*e*PKIKP	**PKPdf**	**13 03 00.1**	**-0.5**
PSI				*e*		13 03 07.9	
PSI				*e*		13 03 23.8	
PSI	**Prapat**	**153.42**	**138**	*e*PKPdf	**PKPdf**	**13 03 00.1**	**-0.5**
PSI				*e*PKPbc	**PKPbc**	**13 03 07.9**	**-0.7**
PSI				*e*PKPab	**PKPab**	**13 03 23.8**	**+0.3**
SONA1	**Songino Array**	**154.48**	**16**	*e*PKPdf	**PKPdf**	**13 03 01.4**	**+0.4**
SONA1				*e*PKPbc	**PKPbc**	**13 03 10.2**	**+0.3**
SONA1				*e*PKPab	**PKPab**	**13 03 27.9**	**+0.7**
SONA0	**Songino Array**	**154.49**	**16**	*e*PKPdf	**PKPdf**	**13 03 01.8**	**+0.7**
SONA0				*e*PKPbc	**PKPbc**	**13 03 10.4**	**+0.5**
SONA0				*e*PKPab	**PKPab**	**13 03 27.8**	**+0.6**
SONM	**Songino Array**	**154.49**	**16**	PKP	**PKPdf**	**13 03 01.8**	**+0.7**
	comp=Z,2.9nm,0.9s,baz=346,slow=0.6,SNR=7.7						
SONM				PKPbc	**PKPbc**	**13 03 10.4**	**+0.5**
	comp=Z,5.0nm,0.7s,baz=284,slow=1.2,SNR=12						
SONM				PKPab	**PKPab**	**13 03 27.8**	**+0.6**
	comp=Z,8.3nm,0.8s,baz=331,slow=4.4,SNR=12						
ULN	**Ulaanbaatar**	**154.62**	**15**	*e*PKIKP	**PKPdf**	**13 03 01.6**	**+0.4**
ULN	**Ulaanbaatar**	**154.62**	**15**	*e*PKPdf	**PKPdf**	**13 03 01.6**	**+0.4**
ULN				*e*PKPab	**PKPab**	**13 03 28.9**	**+1.1**
USRK	**Ussuriysk Ar.**	**155.68**	**332**	PKP	**PKPdf**	**13 03 02.8**	**+0.3**
	comp=Z,3.0nm,0.8s,baz=222,slow=2.6,SNR=7.6						
USRK				PKPab	**PKPab**	**13 03 33.0**	**+0.7**
	comp=Z,2.6nm,0.7s,baz=34,slow=4.1,SNR=4.7						
MJAR	**Matsushiro Arr**	**157.07**	**309**	PKP	**PKPdf**	**13 03 04.2**	**-0.5**
	comp=Z,1.6nm,0.9s,baz=254,slow=0.9,SNR=4.0						
MJAR				PKPab	**PKPab**	**13 03 38.5**	**-0.2**
	comp=Z,3.5nm,0.9s,baz=46,slow=2.9,SNR=7.4						
GTA	**Gaotai**	**158.88**	**38**	*e*PKP	**PKPdf**	**13 03 07.3**	**+0.4**
GTA				PKPab	**PKPab**	**13 03 47.4**	**+0.8**
GTA				pPKP	pPKPdf	13 05 01.8	-14
GTA				sPKP		13 05 50.0	
GTA				PP	**PP**	**13 07 31.6**	**+2.4**
GTA				SKS	**SKSdf**	**13 09 25.8**	**+4.6**
KS01	**Wonju Array Si**	**162.89**	**327**	*e*PKPdf	**PKPdf**	**13 03 11.2**	**+0.2**
KS01				*e*PKPab	**PKPab**	**13 04 04.3**	**+0.3**
KSRS	**Korea Array**	**162.89**	**327**	PKP	**PKPdf**	**13 03 11.5**	**+0.6**
	comp=Z,1.6nm,0.7s,baz=308,slow=1.1,SNR=11						
KSRS				PKPab	**PKPab**	**13 04 04.9**	**+0.9**
	comp=Z,5.4nm,0.9s,baz=42,slow=4.2,SNR=13						
CM31	**Chiang Mai Arr**	**163.04**	**104**	*e*PKPab	**PKPab**	**13 04 05.3**	**0.0**
CMAR	**Chiang Mai Arr**	**163.04**	**104**	PKP	**PKPdf**	**13 03 12.2**	**+0.6**
	comp=Z,3.8nm,0.8s,baz=260,slow=2.7,SNR=21						
CMAR				PKPab	**PKPab**	**13 04 04.8**	**-0.5**
	comp=Z,4.1nm,0.8s,baz=251,slow=5.3,SNR=15						
CM01	**Chiang Mai Arr**	**163.04**	**104**	*e*PKPdf	**PKPdf**	**13 03 12.1**	**+0.5**
CM01				*e*PKPab	**PKPab**	**13 04 04.5**	**-0.8**
CHTO	**Chiang Mai**	**163.16**	**103**	*e*PKIKP	**PKPdf**	**13 03 12.0**	**+0.2**
CHTO				*e*		13 04 05.1	
CHTO	**Chiang Mai**	**163.16**	**103**	*e*PKPdf	**PKPdf**	**13 03 12.0**	**+0.2**
CHTO				*e*PKPab	**PKPab**	**13 04 05.1**	**-0.8**
LZH	**Lanzhou**	**163.49**	**38**	*e*PKP	**PKPdf**	**13 03 12.5**	**+0.7**
LZH				PKP	**PKPab**	**13 04 08.8**	**+1.9**
LZH				pPKP	**pPKPdf**	**13 05 22.0**	**+1.5**
LZH				sPKP		13 06 11.1	
LZH				PP	PP	13 07 00.0	-54
CD2	**Chengdu**	**166.65**	**54**	PKP	**PKPdf**	**13 03 13.4**	**-1.0**
GYA	**Guiyang**	**170.79**	**70**	*e*PKPbc	**PKPdf**	**13 03 15.3**	**-2.0**
GYA				PKPab	**PKPab**	**13 04 39.0**	**-0.6**
GYA				pPKP	**pPKPdf**	**13 05 24.5**	**-1.8**
GYA				sPKP		13 06 17.6	
GYA				PKS	**PKSdf**	**13 06 46.3**	**-3.6**
GYA				PP	**PP**	**13 08 30.0**	**-1.5**
GYA				AMB	AMB		
	comp=Z,110nm,8.4s						

*ISK **17** 12:45:02.4, 37.°30N×28.°22E, h13km, MD2.8*
*ISCJB **17** 12:45:03.4±0.4, 37.°23N±0.°03×28.°17E±0.°03, h0km, Error ellipse: s-maj=4.7km s-min=2.8km az=43.8*
*DDA **17** 12:45:03.3, 37.°24N×28.°20E, h7km, Md2.6, Suspected Mining explosion.*
*CSEM **17** 12:45:03.4±0.2, 37.°25N×28.°18E, h1km, MD2.8, Error ellipse: s-maj=5.0km s-min=3.4km az=43.0, Suspected Mining explosion.*
ISC 17 12:45:02.9±0.8, 37.°27N±0.°02×28.°10E±0.°03, h0km, n27, σ1§01/48, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.20**	**133**	*e*PG	**Pg**	**12 45 06.2**	**-0.4**
YER				*e*SG	**Sg**	**12 45 09.9**	**+0.7**
YER	**Yerkesik**	**0.20**	**133**	*e*Pg	**Pg**	**12 45 06.2**	**-0.4**
YER				*e*Sg	**Sg**	**12 45 09.9**	**+0.7**
AYDN	**Tasoluk**	**0.43**	**336**	P	**Pb**	**12 45 12.8**	**-0.7**
AYDN				S	**Sb**	**12 45 19.9**	**-0.7**
AYDN	**Tasoluk**	**0.43**	**336**	*i* P	**Pb**	**12 45 12.8**	**-0.7**
AYDN				*i* S	**Sb**	**12 45 19.9**	**-0.7**
TURN	**Turunc**	**0.56**	**134**	*i* P	**Pg**	**12 45 11.9**	**-1.8**
TURN				*i* S	**Sg**	**12 45 19.9**	**-1.0**
BDRM	**Kayabasi**	**0.56**	**249**	P	**Pb**	**12 45 15.4**	**-0.3**
BDRM				S	**Sb**	**12 45 25.0**	**+0.7**
BDRM	**Kayabasi**	**0.56**	**249**	*i* P	**Pb**	**12 45 15.3**	**-0.3**
BDRM				*i* S	**Sb**	**12 45 25.0**	**+0.7**
DALY	**Dalyan (Mu¨la**	**0.63**	**135**	*e*PG	**Pg**	**12 45 14.5**	**-0.5**
DALY				*e*SG	**Sg**	**12 45 23.3**	**+0.2**
DALY	**Dalyan (Mu¨la**	**0.63**	**135**	*e*Pg	**Pg**	**12 45 14.5**	**-0.5**
DALY				*e*Sg	**Sg**	**12 45 23.3**	**+0.2**
BODT	**Bodrum**	**0.67**	**252**	*e*PG	**Pb**	**12 45 17.5**	**0.0**
BODT	**Bodrum**	**0.67**	**252**	*e*Pg	**Pb**	**12 45 17.5**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**0.70**	**346**	*e*PG	**Pg**	**12 45 16.4**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**0.70**	**346**	*e*Pg	**Pg**	**12 45 16.4**	**0.0**
GCAM	**G?zelcaml?**	**0.82**	**302**	P	**Pb**	**12 45 20.4**	**+0.4**
GCAM				S	**Sn**	**12 45 34.1**	**-0.4**
GCAM	**G?zelcaml?**	**0.82**	**302**	*i* P	**Pb**	**12 45 20.4**	**+0.4**
GCAM				*i* S	**Sn**	**12 45 34.1**	**-0.4**
NIS1	**Nisyros Isl.**	**0.99**	**228**	*e*PN	**Pn**	**12 45 23.8**	**-0.4**
NIS1	**Nisyros Isl.**	**0.99**	**228**	*e*Pn	**Pn**	**12 45 23.8**	**-0.4**
FETY	**Fethiye**	**1.01**	**129**	*e*PG	**Pg**	**12 45 21.4**	**-0.8**
FETY				*e*SG	**Sg**	**12 45 35.0**	**-0.3**
FETY	**Fethiye**	**1.01**	**129**	*e*Pg	**Pg**	**12 45 21.4**	**-0.8**
FETY				*e*Sg	**Sg**	**12 45 35.0**	**-0.3**
GOLH	**Golhisar**	**1.16**	**91**	P	**Pg**	**12 45 23.9**	**-1.3**
GOLH				S	**Sn**	**12 45 45.0**	**+1.8**
GOLH	**Golhisar**	**1.16**	**91**	*i* P	**Pg**	**12 45 23.9**	**-1.3**
GOLH				*i* S	**Sn**	**12 45 45.0**	**+1.8**
MANT	**Manisa**	**1.27**	**16**	P	**Pn**	**12 45 28.2**	**0.0**
MANT				S	**Sn**	**12 45 46.4**	**+0.3**
MANT	**Manisa**	**1.27**	**16**	*i* P	**Pn**	**12 45 28.2**	**0.0**
MANT				*i* S	**Sn**	**12 45 46.4**	**+0.3**
AKAS	**Kas**	**1.59**	**130**	P	**Pb**	**12 45 32.8**	**-0.4**
AKAS				S	**Sg**	**12 45 57.4**	**+3.4**
AKAS	**Kas**	**1.59**	**130**	*i* P	**Pb**	**12 45 32.8**	**-0.4**
AKAS				*i* S	**Sg**	**12 45 57.4**	**+3.4**
KARP	**Karpathos**	**1.88**	**204**	*e*PN	**Pn**	**12 45 36.4**	**0.0**
KARP				*e*SN	**Sn**	**12 46 00.6**	**-0.2**
KARP	**Karpathos**	**1.88**	**204**	*e*Pn	**Pn**	**12 45 36.4**	**0.0**
KARP				*e*Sn	**Sn**	**12 46 00.6**	**-0.2**

*SOME **17** 13:15:12.8, 43.°18N×82.°82E, h15km*
*NNC **17** 13:15:13.3±2.6, 42.°87N×82.°56E, h0km, mb2.9, mpv2.4, Error ellipse: s-maj=24.9km s-min=9.5km az=148.0*
ISC 17 13:15:15.9±2.7, 42.°9N±0.°1×82.°42E±0.°09, h16km±17km, n11, σ1§64/20, 1C-4D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KTMS	**Ketmen**	**1.61**	**290**	*e*P	**Pg**	**13 15 46.5**	**-0.4**
	8.5nm,0.4s						
KTMS				*e*S	**Sg**	**13 16 10.7**	**+2.9**
	20nm,0.3s						
SHLS	**Shalkode**	**1.88**	**278**	*e*P	**Pg**	**13 15 51.5**	**-0.5**
	6.0nm,0.1s						
SHLS				*e*S	**Sg**	**13 16 19.6**	**+3.1**
	61nm,0.4s						
PDGK	**Podgornoye**	**2.19**	**282**	⇓Pg	**Pb**	**13 15 54.7**	**-0.5**
	0.8nm,0.3s						
PDGK				⇓Lg	Lg	13 16 27.8	
	16nm,0.5s						
DJR	**Jarkent**	**2.38**	**308**	*e*P	**Pb**	**13 15 58.8**	**+0.2**
	3.2nm,0.2s						
DJR				*e*S	**Sg**	**13 16 31.3**	**-1.3**
	11nm,0.2s						
UZB	**Uzymbulak**	**2.50**	**277**	*e*P	**Pg**	**13 16 01.9**	**-2.1**
	1.0nm,0.2s						
UZB				*e*S	**Sg**	**13 16 37.1**	**+0.7**
	8.8nm,0.2s						
KPKS	**Kokpek**	**2.79**	**283**	*e*P	**Pb**	**13 16 05.9**	**+0.4**
	5.5nm,0.1s						
KPKS				*e*S	**Sg**	**13 16 44.6**	**-1.0**
	23nm,0.5s						
SATY	**Saty**	**2.95**	**274**	*e*P	**Pg**	**13 16 11.2**	**-1.3**
	7.4nm,0.1s						
SATY				*e*S	**Sg**	**13 16 53.0**	**+2.2**
	13nm,0.1s						
MNBS	**Baschi**	**3.15**	**293**	*e*P	**Pb**	**13 16 09.7**	**-1.9**
	0.7nm,0.3s						
MNBS				*e*S	**Sb**	**13 16 50.7**	**+0.8**
	14nm,0.6s						
KAPS	**Kapalarasan**	**3.24**	**318**	*e*P	**Pb**	**13 16 11.0**	**-2.2**
	1.1nm,0.2s						
KAPS				*e*S	**Sb**	**13 16 52.9**	**+0.4**
	6.4nm,0.5s						
MK31	**Makanchi Array**	**3.89**	**359**	Pn	**Pn**	**13 16 15.4**	**+0.4**
	0.1nm,0.2s,baz=175,slow=15,SNR=7.0						
MK31				Pg	**Pb**	**13 16 24.9**	**+0.7**
	0.7nm,0.4s,baz=172,slow=16,SNR=8.3						
MK31				⇑Lg	Lg	13 17 18.5	
	0.6nm,0.5s,baz=174,slow=25,SNR=6.1						
MAKZ	**Makanchi**	**3.91**	**356**	⇓Pn	**Pn**	**13 16 15.8**	**+0.4**
	0.6nm,0.4s						
MAKZ				⇓Lg	Lg	13 17 17.1	
	0.9nm,0.7s						

WEL 17 13:17:55.0±0.1, 43.°55S×172.°19E, h9km±1km, ML3.6/14, 2C-3D, Error ellipse: s-maj=0.9km s-min=0.8km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OXZ	**Oxford**	**0.24**	**334**	⇓PG	Pg	13 17 59.4	-0.5
OXZ				SG	Sg	13 18 02.7	-0.5
CRLZ	**Canterbury Las**	**0.32**	**95**	⇑PG	Pg	13 18 01.5	+0.2
CRLZ				SG	Sg	13 18 06.3	+0.8
CRLZ				AML	AML	13 18 06.7	
MQZ	**McQueen's Vall**	**0.38**	**115**	⇓PG	Pg	13 18 02.5	+0.1
MQZ				SG	Sg	13 18 08.1	+0.8
MQZ				AML	AML	13 18 08.8	
MQZ				AML	AML	13 18 08.9	
LTZ	**Lake Taylor**	**0.77**	**5**	⇓P*	Pg	13 18 09.6	-0.1
LTZ				S*	Sg	13 18 19.8	+0.1
LTZ				AML	AML	13 18 21.6	
RPZ	**Rata Peaks**	**0.84**	**258**	⇑P*	Pg	13 18 10.9	-0.3
RPZ				AML	AML	13 18 24.6	
RPZ				AML	AML	13 18 27.9	
INZ	**Inchbonnie**	**0.98**	**326**	*e*P*	Pg	13 18 12.7	-1.2
WVZ	**Waitaha Valley**	**1.16**	**294**	P*	Pb	13 18 16.0	-1.1
WVZ				AML	AML	13 18 33.7	
WVZ				AML	AML	13 18 34.8	
KHZ	**Kahutara**	**1.50**	**42**	PN	Pn	13 18 20.4	-1.6
KHZ				SN	Sn	13 18 39.6	-2.1
LBZ	**Lake Benmore**	**1.67**	**239**	PN	Pn	13 18 23.3	-1.1
LBZ				AML	AML	13 18 48.9	
LBZ				AML	AML	13 18 52.4	
LBZ				AML	AML	13 18 56.7	
LBZ				AML	AML	13 18 56.7	
FOZ	**Fox Glacier**	**1.72**	**270**	PN	Pn	13 18 25.2	+0.1
DSZ	**Denniston Nort**	**1.82**	**351**	*e*PN	Pn	13 18 25.8	-0.7
DSZ				AML	AML	13 18 54.3	
DSZ				AML	AML	13 18 54.5	
THZ	**Tophouse**	**1.86**	**17**	PN	Pn	13 18 25.5	-1.6
THZ				AML	AML	13 18 58.6	
THZ				AML	AML	13 19 05.7	
ODZ	**Otahua Downs**	**1.86**	**216**	PN	Pn	13 18 25.5	-1.6
ODZ				AML	AML	13 18 54.2	
ODZ				AML	AML	13 18 54.2	
ODZ				AML	AML	13 18 55.3	
ODZ				AML	AML	13 19 01.9	
NNZ	**Nelson**	**2.49**	**21**	*e*PN	Pn	13 18 34.6	-1.1
JCZ	**Jackson Bay**	**2.52**	**257**	PN	Pn	13 18 35.0	-1.1
JCZ				AML	AML	13 19 26.4	
JCZ				AML	AML	13 19 41.8	
WKZ	**Wanaka**	**2.61**	**240**	*e*PN	Pn	13 18 35.4	-2.0
WKZ				AML	AML	13 18 45.8	
WKZ				AML	AML	13 19 25.1	
EAZ	**Earnscleugh**	**2.66**	**230**	PN	Pn	13 18 36.4	-1.7
EAZ				AML	AML	13 19 21.8	
EAZ				AML	AML	13 19 24.7	
QRZ	**Quartz Range**	**2.73**	**5**	AML	AML	13 20 44.1	
TUZ	**Tuapeka**	**3.02**	**216**	PN	Pn	13 18 41.4	-1.4
TUZ				AML	AML	13 19 31.5	
TUZ				AML	AML	13 19 36.4	

*JMA **17** 13:31:42.5±0.1, 24.°47N×122.°57E, h97km±2km, M2.1*
*ISCJB **17** 13:31:43.2±0.6, 24.°58N±0.°04×122.°61E±0.°02, h88km±6km, Error ellipse: s-maj=6.4km s-min=2.8km az=177.7*
*TAP **17** 13:31:43.2, 24.°60N×122.°63E, h82km±1km, ML3.3, D*
ISC 17 13:31:43.6±1.5, 24.°57N±0.°05×122.°60E±0.°03, h87km±10km, n40, σ0§79/71, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JYNG	**Yonagunijimaku**	**0.33**	**110**	P	**Pn**	**13 31 57.2**	**+0.4**
JYNG				S	**Sn**	**13 32 07.9**	**+1.2**
YOJ	**Yonaguni jima**	**0.39**	**106**	P	**Pn**	**13 31 57.5**	**+0.3**
YOJ				S	**Sn**	**13 32 07.6**	**+0.3**
EGS		**0.67**	**295**	*e*P	**Pn**	**13 31 59.1**	**-0.4**
	baz=291						
TWC	**Suao**	**0.69**	**274**	P	**Pn**	**13 31 59.3**	**-0.4**
	baz=270						
TWC				*e*S	**Sn**	**13 32 11.4**	**-0.3**
	baz=270						
TWB1	**Santiao Chiao**	**0.71**	**308**	P	**Pn**	**13 31 59.4**	**-0.6**
	baz=305						
TWB1				*e*S	**Sn**	**13 32 11.4**	**-0.7**
	baz=305						
ENA	**Nanau**	**0.80**	**260**	*e*P	**Pn**	**13 32 00.9**	**0.0**
	baz=257						
ENA				*e*S	**Sn**	**13 32 14.5**	**+0.8**
	baz=257						
TWE	**Neicheng**	**0.87**	**280**	*e*P	**Pn**	**13 32 01.4**	**-0.1**
	baz=277						
TWE				*e*S	**Sn**	**13 32 15.1**	**+0.1**
	baz=277						
NWF	**Wu-fen Shan**	**0.90**	**304**	*e*P	**Pn**	**13 32 01.8**	**-0.2**
	baz=301						
NWF				*e*S	**Sn**	**13 32 15.8**	**0.0**
	baz=301						
ENTT	**Nioudou**	**0.95**	**275**	*e*P	**Pn**	**13 32 02.9**	**+0.4**
	baz=272						
TWA	**Mucha**	**1.01**	**294**	*e*S	**Sn**	**13 32 17.0**	**-1.0**
	baz=291						
TWD	**Chiawan**	**1.04**	**242**	*e*P	**Pn**	**13 32 03.1**	**-0.4**
	baz=241						
TWD				*e*S	**Sn**	**13 32 18.4**	**0.0**
	baz=241						
IRIF	**Iriomote-Funau**	**1.05**	**102**	P	**Pn**	**13 32 03.8**	**+0.1**
IRIF				S	**Sn**	**13 32 19.0**	**+0.3**
HWA	**Hwalien**	**1.08**	**237**	*e*P	**Pn**	**13 32 03.9**	**-0.2**
	baz=236						
NNS	**Nan Shan**	**1.13**	**264**	P	**Pn**	**13 32 04.7**	**0.0**
	baz=261						
NNS				*e*S	**Sn**	**13 32 20.6**	**0.0**
	baz=261						
NSK	**Sanguang**	**1.14**	**276**	P	**Pn**	**13 32 04.7**	**0.0**
	baz=273						
NSK				*e*S	**Sn**	**13 32 20.3**	**-0.4**
	baz=273						
TWS1	**Kuangyinshan**	**1.20**	**297**	*e*P	**Pn**	**13 32 05.7**	**+0.2**
	baz=294						
TWS1				*e*S	**Sn**	**13 32 21.1**	**-0.8**
	baz=294						
HATJ	**Hateruma jima**	**1.21**	**115**	S	**Sn**	**13 32 22.5**	**+0.4**
WHF	**Hehuan Shan**	**1.29**	**251**	*e*P	**Pn**	**13 32 06.9**	**-0.1**
	baz=249						
WHF				*e*S	**Sn**	**13 32 24.1**	**-0.5**
	baz=249						
ESL	**Shilin**	**1.30**	**235**	*e*P	**Pn**	**13 32 06.1**	**-0.6**
	baz=234						
ESL				*e*S	**Sn**	**13 32 23.1**	**-1.1**
	baz=234						
JKRS	**Kuro-shima**	**1.32**	**104**	P	**Pn**	**13 32 07.0**	**0.0**
JKRS				S	**Sn**	**13 32 25.3**	**+0.7**
TWT	**Tachien**	**1.34**	**257**	*e*P	**Pn**	**13 32 07.8**	**+0.5**
	baz=255						
TWT				*e*S	**Sn**	**13 32 25.1**	**-0.1**
	baz=255						
NCU	**National Centr**	**1.35**	**288**	*e*S	**Sn**	**13 32 25.3**	**+0.2**
	baz=285						
JIJ	**Ishigaki jima**	**1.42**	**98**	P	**Pn**	**13 32 07.9**	**-0.2**
JIJ				S	**Sn**	**13 32 26.3**	**-0.4**
NSTT	**Nanjuang**	**1.46**	**273**	*e*P	**Pn**	**13 32 09.0**	**+0.3**
	baz=271						
NSTT				*e*S	**Sn**	**13 32 27.0**	**-0.6**
	baz=271						
JISG	**Ishigakijimahi**	**1.56**	**89**	P	**Pn**	**13 32 09.7**	**-0.2**
JISG				S	**Sn**	**13 32 29.6**	**-0.2**
TWQ1	**Liyutan**	**1.68**	**263**	*e*P	**Pn**	**13 32 12.0**	**+0.5**
	baz=261						
TWQ1				*e*S	**Sn**	**13 32 32.2**	**-0.6**
	baz=261						
NSY	**Sanyi**	**1.69**	**265**	*e*P	**Pn**	**13 32 11.8**	**+0.2**
	baz=263						
NSY				*e*S	**Sn**	**13 32 33.2**	**+0.3**
	baz=263						
SMLT	**Sun Moon Lake**	**1.70**	**247**	*e*P	**Pn**	**13 32 12.9**	**+1.0**
	baz=245						
SMLT				*e*S	**Sn**	**13 32 35.2**	**+2.0**
	baz=245						
TWF1	**Yuli**	**1.70**	**225**	*e*P	**Pn**	**13 32 11.2**	**-0.6**
	baz=224						
TWF1				*e*S	**Sn**	**13 32 31.2**	**-2.0**
	baz=224						
TYC	**Yuchr**	**1.73**	**248**	*e*P	**Pn**	**13 32 12.9**	**+0.8**
	baz=246						
TYC				*e*S	**Sn**	**13 32 33.9**	**+0.2**
	baz=246						
CHKT	**Chengkung**	**1.85**	**218**	*e*P	**Pn**	**13 32 12.8**	**-0.9**
	baz=217						
CHKT				*e*S	**Sn**	**13 32 35.0**	**-1.7**
	baz=217						
JTJ	**Tarama**	**1.91**	**87**	S	**Sn**	**13 32 38.3**	**+0.2**
ALS	**Alishan**	**1.95**	**238**	*e*P	**Pn**	**13 32 16.0**	**+0.6**
	baz=236						
ALS				*e*S	**Sn**	**13 32 40.3**	**+0.8**
	baz=236						
ELDTW	**Lidau**	**2.00**	**227**	*e*P	**Pn**	**13 32 15.1**	**-0.7**
	baz=226						
CHN5	**Tsauling**	**2.01**	**242**	*e*P	**Pn**	**13 32 16.6**	**+0.7**
	baz=240						
CHN5				*e*S	**Sn**	**13 32 41.9**	**+1.4**
	baz=240						
CHN4	**Tsaushan**	**2.20**	**237**	*e*P	**Pn**	**13 32 19.3**	**+0.9**
	baz=236						
CHN4				*e*S	**Sn**	**13 32 46.5**	**+1.5**
	baz=236						
TWG	**Pinlang**	**2.23**	**219**	*e*P	**Pn**	**13 32 17.8**	**-1.1**
	baz=218						
TWG				*e*S	**Sn**	**13 32 44.0**	**-1.8**
	baz=218						
WTP	**Ta-pu**	**2.25**	**235**	*e*P	**Pn**	**13 32 20.1**	**+1.0**
	baz=233						
WTP				*e*S	**Sn**	**13 32 47.8**	**+1.7**
	baz=233						
CHN1	**Nanshi**	**2.34**	**235**	*e*P	**Pn**	**13 32 21.1**	**+0.8**
	baz=233						
CHN1				*e*S	**Sn**	**13 32 49.0**	**+0.6**
	baz=233						
JIRB	**Irabujima**	**2.35**	**83**	S	**Sn**	**13 32 47.5**	**-1.0**

*NIED **17** 13:31:00, 38.°00N×143.°90E, h5km, Mw4.3 Best double couple: M0=3.58000×10^15 NP1:φs=329.00000°, δ38.00000°, λ-169.00000°. NP2:φs=230.00000°, δ83.00000°, λ-52.00000°.*
*NEIC **17** 13:31:47.6±3.2, 37.°92N×143.°91E, h10km±20km, mb4.6/11, Error ellipse: s-maj=9.9km s-min=5.6km az=111.0*
*JMA **17** 13:31:48.9±0.2, 38.°01N×143.°85E, h41km, M4.7*
*IDC **17** 13:31:51.6±0.5, 37.°88N×143.°92E, h38km±4km, mb3.8/17, mb1 4.0/21, mb1mx3.8/59, mbtmp4.1/21, ML3.6/4, MS3.4/20, Ms1 3.5/20, ms1mx3.3/46, Error ellipse: s-maj=14.6km s-min=10.8km az=108.0*
ISC 17 13:31:49.9±0.5, 37.°92N±0.°04×143.°97E±0.°05, h28km±2km, n93, σ2§28/107, mb4.3/37, MS3.4/21, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.14**	**285**	P	**Pn**	**13 32 21.7**	**-2.0**
JIO				*e*S	**Sn**	**13 32 44.8**	**-4.5**
OFUJ	**Ofunato**	**2.15**	**303**	P	**Pn**	**13 32 21.5**	**-2.4**
OFUJ				S	**Sn**	**13 32 46.5**	**-3.2**
JMK	**Ichinoseki**	**2.40**	**296**	P	**Pn**	**13 32 25.3**	**-2.0**
JMM	**Marumori**	**2.52**	**270**	P	**Pn**	**13 32 27.2**	**-1.8**
JMM				S	**Sn**	**13 32 54.7**	**-4.0**
JOM	**Ohasama**	**2.61**	**307**	P	**Pn**	**13 32 28.3**	**-2.0**
JOM				S	**Sn**	**13 32 57.8**	**-3.3**
JFT	**Otama**	**2.91**	**263**	P	**Pn**	**13 32 33.5**	**-0.9**
JFT				S	**Sn**	**13 33 05.8**	**-2.7**
JYK	**Kaneyama**	**3.01**	**291**	P	**Pn**	**13 32 34.4**	**-1.4**
JYK	

comp=E,230nm,18.1s
MDJ LR LR
comp=Z,250nm,21.0s
KSRS Korea Array 12.73 273 Pn **Pn 13 34 48.7 -0.3**
comp=Z,0.3nm,0.3s,baz=86,slow=13,SNR=18
KSAR Wonju Array Be 12.76 273 Pn **Pn 13 34 48.7 -0.7**
KLR Kul'dur 14.34 326 Pn **Pn 13 35 08.2 -2.8**
comp=Z,0.5nm,0.3s,baz=140,slow=12,SNR=15
KLR LR LR 13 40 37.3
comp=Z,164nm,20.8s,baz=141,slow=37
PETK Petropavlovsk- 17.93 28 LR LR 13 43 49.0
comp=Z,45nm,19.9s,baz=216,slow=40
BJI Beijing 21.68 284 P **P 13 36 35.9 -2.5**
BJI S **S 13 40 34.3 -2.7**
BJI pmax pmax
comp=Z,7.0nm,0.8s
BJI LR LR
comp=N,140nm,10.7s
BJI LR LR
comp=E,140nm,9.8s
BJI LR LR
comp=Z,100nm,24.2s
MA2 Magadan 22.11 9 P **P 13 36 43.2 +0.3**
comp=Z,4.6nm,0.6s,baz=230,slow=10,SNR=7.4
MA2 LR LR 13 45 25.3
comp=Z,52nm,20.2s,baz=192,slow=37
GUMO Guam 24.24 178 LR LR 13 45 29.5
comp=Z,34nm,21.7s,baz=34,slow=34
HHC Hu-ho-hao-te 25.14 287 *e*P **P 13 37 12.8 0.0**
HHC PP **PnPn 13 37 56.0 +9.0**
HHC S **S 13 41 35.8 -0.2**
HHC pmax pmax
comp=Z,29nm,0.8s
HHC pmax pmax
comp=Z,140nm,4.1s
HHC LR LR
comp=N,520nm,12.4s
HHC LR LR
comp=E,710nm,13.4s
HHC LR LR
comp=Z,880nm,12.8s
WHN Wuhan 25.50 262 P **P 13 37 15.1 -0.8**
WHN S **S 13 41 47.6 +6.0**
WHN LR LR
comp=N,850nm,20.0s
WHN LR LR
comp=E,1μm,20.4s
WHN LR LR
comp=Z,520nm,13.8s
SEY Seymchan 25.57 9 P **P 13 37 17.1 +0.9**
comp=Z,4.0nm,0.9s,baz=209,slow=7.9,SNR=9.2
YAK Yakutsk 25.71 344 LR LR 13 48 31.9
comp=Z,63nm,18.0s,baz=152,slow=39
H11N2 WAKE ISLAND Hy 26.93 126 T T 14 05 48.2
baz=318,slow=76,SNR=6.5
H11N1 WAKE ISLAND Hy 26.94 126 T T 14 05 31.1
baz=318,slow=76,SNR=9.3
H11N3 WAKE ISLAND Hy 26.95 126 T T 14 05 49.3
baz=318,slow=76,SNR=6.2
XAN Xi'an 28.53 273 P **P 13 37 46.5 +3.3**
XAN pmax pmax
comp=Z,5.0nm,0.7s
XAN pmax pmax
comp=Z,38nm,5.4s
ULN Ulaanbaatar 28.58 302 *e*P **P 13 37 43.0 -0.7**
comp=Z,6.9nm,0.8s
SONA1 Songino Array 29.01 302 *e*P **P 13 37 47.8 +0.3**
SONM Songino Array 29.01 302 P **P 13 37 47.9 +0.4**
comp=Z,2.7nm,0.6s,baz=105,slow=10,SNR=8.1
SONM LR LR 13 49 53.2
comp=Z,75nm,19.6s,baz=162,slow=37
LZH Lanzhou 31.93 279 *e*P **P 13 38 12.3 -1.1**
LZH pP pP 13 38 19.8 -1.7
LZH sP sP 13 38 23.3 -1.6
LZH pmax pmax
comp=Z,19nm,1.0s
BILL Bilibino 32.62 15 *e*P **P 13 38 20.2 +1.3**
comp=Z,7.7nm,1.5s
CD2 Chengdu 33.71 270 P **P 13 38 27.4 -1.4**
CD2 pmax pmax
comp=Z,10.0nm,0.6s
GTA Gaotai 34.26 287 *e*P **P 13 38 34.4 +0.8**
GTA pP pP 13 38 42.6 +0.8
GTA sP sP 13 38 46.4 +1.2
GTA S **S 13 44 00.0 +1.0**
GTA sS sS 13 44 11.8 -0.7
GTA SS **SnSn 13 46 10.9 +2.1**
GTA pmax pmax
comp=Z,3.0nm,1.4s
GTA pmax pmax
comp=Z,49nm,5.7s
GTA LR LR
comp=N,100nm,16.6s
GTA LR LR
comp=E,140nm,13.8s
GTA LR LR
comp=Z,200nm,16.6s
DAV Davao City (W) 34.95 213 LR LR 13 53 49.3
comp=Z,24nm,18.5s,baz=46,slow=38
KMI Kunming 37.10 262 P **P 13 38 58.8 +0.5**
KMI pmax pmax
comp=Z,10.0nm,0.7s
KMI pmax pmax
comp=Z,100nm,5.7s
WMQ Urumqi 42.27 296 *e*P **P 13 39 42.6 +1.7**
WMQ S **S 13 46 02.9 +3.1**
WMQ pmax pmax
comp=Z,4.0nm,0.6s
WMQ pmax pmax
comp=Z,36nm,5.0s
WMQ LR LR
comp=N,37nm,11.8s
WMQ LR LR
comp=E,31nm,24.6s
WMQ LR LR
comp=Z,19nm,24.4s
ZAA0 Zalesovo Array 42.84 312 *e*P **P 13 39 44.6 -0.6**
ZALV Zalesovo Beam 42.84 312 P **P 13 39 45.6 +0.3**
comp=Z,0.8nm,0.4s,baz=108,slow=9.8,SNR=3.6
ZALV LR LR 13 58 15.1
comp=Z,80nm,19.2s,baz=70,slow=37
NRIK Noril'sk 43.34 334 LR LR 13 58 59.0
comp=Z,161nm,19.2s,baz=107,slow=38
CMAR Chiang Mai Arr 43.69 256 P **P 13 39 52.7 +0.1**
comp=Z,0.4nm,0.5s,baz=52,slow=5.6,SNR=4.4
CMAR LR LR 13 59 31.8
comp=Z,37nm,18.1s,baz=105,slow=38
MKAR Makanchi Array 45.38 302 P **P 13 40 06.1 +0.2**
comp=Z,1.2nm,0.5s,baz=85,slow=9.3,SNR=13
MKAR LR LR 13 59 33.4
comp=Z,48nm,20.9s,baz=90,slow=37
MKAR Makanchi Array 45.38 302 *e*P **P 13 40 05.9 +0.1**
MAKZ Makanchi 45.59 302 *e*P **P 13 40 05.7 -1.7**
comp=Z,7.6nm,0.9s
KURK Kurchatov 47.00 308 *e*P **P 13 40 18.4 0.0**
comp=Z,13nm,0.5s
KURBB Kurchatov Arra 47.07 308 P **P 13 40 18.9 -0.1**
comp=Z,2.0nm,0.4s,baz=81,slow=7.9,SNR=20
ILAR Eielson Array 47.66 33 P **P 13 40 23.8 +0.4**
comp=Z,2.0nm,0.8s,baz=264,slow=6.3,SNR=23
ILAR pP **sP 13 40 34.1 -1.0**
comp=Z,1.6nm,0.8s,baz=265,slow=6.4,SNR=8.8
ILB Eielson Array 47.66 33 *e*P **P 13 40 24.2 +0.9**
IL1 Eielson Array 47.66 33 *e*P **P 13 40 23.8 +0.4**
KKN Kakani 49.62 276 *e*P pP 13 40 44.7 -2.9
PKIN Phulchoki 49.62 276 *e*P pP 13 40 46.8 -1.0
GKN Gorkha 50.02 277 *e*P **P 13 40 45.6 +3.4**
KOLN Koldanda 50.95 277 *e*P pP 13 40 55.9 -1.8
TKM2 Tokmak 2 51.00 299 *e*P **P 13 40 46.2 -3.3**
comp=Z,5.8nm,0.8s
PYUN Piuthan 51.27 278 *e*P pP 13 40 58.6 -1.6
ZRNK Zerenda 52.32 312 *e*P **P 13 40 57.4 -1.5**
comp=Z,12nm,1.6s
INK Inuvik 52.67 28 P **P 13 41 01.6 +0.4**
comp=Z,0.8nm,0.4s,baz=262,slow=5.0,SNR=11
INK LR LR 14 06 04.0
comp=Z,30nm,19.7s,baz=260,slow=39
INK Inuvik 52.67 28 *e*P **P 13 41 02.2 +1.0**
comp=Z,3.2nm,1.1s
ARU Arti 57.05 319 *e*P **P 13 41 33.2 0.0**
comp=Z,7.0nm,0.8s
WRAB Tennant Creek 58.25 191 *e*P **P 13 41 41.8 -0.1**
comp=Z,15nm,0.8s
WB2 Warramunga Arr 58.26 191 *e*P **P 13 41 41.6 -0.3**
comp=Z,17nm,0.8s
WRA Warramunga Arr 58.26 191 P **P 13 41 41.9 -0.1**
comp=Z,13nm,0.7s,baz=11,slow=7.3,SNR=78
WRA pP **sP 13 41 53.6 -0.2**
comp=Z,8.6nm,0.8s,baz=11,slow=7.3,SNR=13
FITZ Fitzroy Crossi 58.33 201 P **P 13 41 42.5 0.0**
comp=Z,1.7nm,0.8s,baz=287,slow=4.8,SNR=7.5
ABKAR Akbulak array 58.92 310 *e*P **P 13 41 46.5 +0.1**
AS01 Alice Springs 61.97 190 *e*P **P 13 42 07.5 +0.1**
AS31 Alice Springs 61.98 190 *e*P **P 13 42 07.5 0.0**
comp=Z,1.8nm,0.5s
ASAR Alice Springs 61.98 190 P **P 13 42 07.8 +0.3**
comp=Z,3.0nm,0.5s,baz=3.8,slow=6.5,SNR=39
YKA Yellowknife Ar 62.01 31 P **P 13 42 08.3 +1.0**
comp=Z,0.6nm,0.7s,baz=301,slow=6.7,SNR=7.0
ARCES ARCESS Array B 63.88 340 LR LR 14 14 45.6
comp=Z,44nm,18.2s,baz=66,slow=40
GEYT Alibeck 65.18 300 pP **pP 13 42 40.0 +2.7**
comp=Z,1.4nm,0.4s,baz=52,slow=9.6,SNR=2.5
GEYT LR LR 14 12 43.1
comp=Z,47nm,20.4s,baz=230,slow=38
AFI Afiamalu 66.17 132 LR LR 14 07 39.9
comp=Z,70nm,19.0s,baz=138,slow=32
FINES FINESS Array B 68.97 333 P **P 13 42 52.5 +0.3**
comp=Z,1.0nm,0.7s,baz=41,slow=16,SNR=3.5
FINES pP **sP 13 43 04.6 +0.5**
comp=Z,1.8nm,0.6s,baz=34,slow=12,SNR=2.6
FINES LR LR 14 15 27.8
comp=Z,62nm,18.6s,baz=60,slow=38
STKA Stephens Creek 69.47 182 P **P 13 42 55.1 -0.5**
comp=Z,1.9nm,0.9s,baz=337,slow=12,SNR=4.5
STKA pP **sP 13 43 07.0 -0.5**
comp=Z,2.7nm,0.8s,baz=80,slow=8.3,SNR=4.4
NVAR Mina Array Bea 72.82 55 P **P 13 43 16.7 +0.4**
comp=Z,0.8nm,1.0s,baz=263,slow=6.3,SNR=3.4
NVAR pP **sP 13 43 28.6 +0.3**
comp=Z,0.8nm,0.8s,baz=276,slow=7.7,SNR=4.2
NB2 NORSAR Subarra 74.14 338 P sP 13 43 35.2 -0.3
comp=Z,0.7nm,0.7s,baz=37,slow=6.2
NOA NORSAR Array B 74.14 338 P **P 13 43 25.3 +1.9**
comp=Z,10nm,0.3s,baz=36,slow=6.0,SNR=2.5
NOA pP **sP 13 43 36.0 +0.6**
comp=Z,1.1nm,0.8s,baz=38,slow=6.1,SNR=3.6
NOA LR LR 14 21 15.2
comp=Z,51nm,19.0s,baz=5.0,slow=40
AKASG Malin Array Be 74.83 323 P **P 13 43 28.1 +0.5**
comp=Z,0.7nm,0.5s,baz=48,slow=6.5,SNR=3.6
AKASG pP **sP 13 43 39.6 0.0**
comp=Z,0.8nm,0.4s,baz=45,slow=6.1,SNR=3.9
PDAR Pinedale Array 75.59 47 P **P 13 43 33.5 +1.1**
comp=Z,0.5nm,0.6s,baz=253,slow=1.7,SNR=4.0
BRTR Keskin Array B 79.77 313 LR LR 14 22 54.0
comp=Z,17nm,19.2s,baz=46,slow=38
CLL Collm 81.32 331 *e*P **P 13 44 02.0 -1.6**

MEX 17 13:36:18.6±0.5, 18°.18N×103°.45W, h5km, MD3.5, Near coast of Michoacan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MMIG	**Aquila**	**0.15**	**40**	*e*P	Pg	13 36 21.0	-0.6
MMIG				*e*S	Sg	13 36 23.7	+0.1
R15V		**1.11**	**333**	*e*P	Pg	13 36 36.9	-3.1
R15V				*e*S	Sg	13 36 51.2	-3.2
EZ5V		**1.31**	**354**	*e*P	Pg	13 36 40.3	-3.4
EZ5V				*e*S	Sg	13 36 56.2	-4.5
ARIG	**Puente Sto Nin**	**2.95**	**87**	*i* P	Pn	13 37 04.0	-2.1
ARIG				*i* S	Sn	13 37 38.8	-3.1

*ISCJB **17** 13:40:59.3±0.5, 36°.26N±0°.04×140°.57E±0°.06, h60km±4km, mb3.9/14, Error ellipse: s-maj=8.0km s-min=6.4km az=29.0*
*IDC **17** 13:41:00.9±2.0, 36°.29N×140°.63E, h57km±17km, mb3.7/14, mb1 3.8/19, mb1mx3.6/53, mbtmp3.9/19, ML3.6/4, MS3.1/2, Ms1 3.1/2, ms1mx2.6/36, Error ellipse: s-maj=16.2km s-min=12.4km az=76.0*
*NIED **17** 13:41:00, 36°.30N×140°.50E, h59km, Mw4.1 Best double couple: $M_0$1.45000×10^15^ NP1:ϕ_s224.00000°, δ21.00000°, λ132.00000°. NP2:ϕ_s0.00000°, δ75.00000°, λ76.00000°.*
*JMA **17** 13:41:01.0±0.1, 36°.27N×140°.46E, h52km±1km, M4.0 Broadband fault plane solution: P waves. NP1: ϕ_s357.00000°, δ66.00000°, λ76.00000°. NP2: ϕ_s209.00000°, δ28.00000°, λ119.00000°. Principal axes: T Plg66.0000°, Azm242.0000°; N Plg13.0000°, Azm3.0000°; P Plg20.0000°, Azm98.0000°;*
JMA Felt III J1.

ISC 17 13:41:00.7±0.8, 36°.28N±0°.05×140°.54E±0°.06, h54km±7km, n35, σ0°82/35, mb3.9/14, 1C-4D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JYT	**Yasato**	**0.29**	**259**	⇓P	**Pn**	**13 41 09.9**	**-0.2**
JYT				S	**Sn**	**13 41 16.0**	**-0.8**
JHO	**Hitachi**	**0.33**	**4**	⇓P	**Pn**	**13 41 10.8**	**+0.3**
JHO				*i* S	**Sn**	**13 41 17.5**	**0.0**
JAG	**Ashikaga**	**0.89**	**279**	⇓P	**Pn**	**13 41 16.6**	**-0.5**
JAG				S	**Sn**	**13 41 27.6**	**-1.5**
JFK	**Kawauchi**	**1.11**	**14**	⇑P	**Pn**	**13 41 20.0**	**-0.1**
JFK				S	**Sn**	**13 41 35.2**	**+0.7**
JKT	**Katashina**	**1.15**	**295**	⇓P	**Pn**	**13 41 20.5**	**-0.1**
JKT				S	**Sn**	**13 41 34.8**	**-0.6**
MJAR	**Matsushiro Arr**	**1.90**	**278**	P	**Pn**	**13 41 29.9**	**-0.8**
MJAR	71nm,0.3s,baz=90,slow=16,SNR=304			S	**Sn**	**13 41 55.7**	**+2.2**
	31nm,0.3s,baz=101,slow=25,SNR=5.6						
MAT	**Matsushiro**	**1.90**	**278**	P	**Pn**	**13 41 30.4**	**-0.3**
MAT				*e*S	**Sn**	**13 41 54.4**	**+0.8**
JHJ	**Hachijo jima 2**	**3.22**	**191**	P	**Pn**	**13 41 49.9**	**+1.1**
	19nm,0.3s,baz=317,slow=17,SNR=24						
JHJ				S	**Sn**	**13 42 25.2**	**-0.7**
	62nm,0.3s,baz=148,slow=23,SNR=9.0						
ASAJ	**Asahikawa**	**7.98**	**11**	P	**Pn**	**13 42 52.9**	**-1.0**
	1.6nm,0.3s,baz=224,slow=9.8,SNR=16						
JNU	**Nakatsue**	**8.56**	**251**	P	**Pn**	**13 43 03.7**	**+1.7**
	0.3nm,0.3s,baz=26,slow=8.0,SNR=6.0						
JCJ	**Chichijima**	**9.27**	**171**	S	Sn	13 44 44.5	-10
	3.1nm,0.3s,baz=270,slow=20,SNR=2.3						
JCJ				LR	LR	13 46 31.3	
	comp=Z,204nm,18.1s,baz=108,slow=36						
KSRS	**Korea Array**	**10.18**	**280**	P	**Pn**	**13 43 24.6**	**+0.5**
	0.3nm,0.3s,baz=97,slow=14,SNR=8.9						
USRK	**Ussuriysk Ar.**	**10.25**	**323**	P	**Pn**	**13 43 25.3**	**+0.2**
	0.2nm,0.3s,baz=122,slow=14,SNR=2.6						
PETK	**Petropavlovsk-**	**20.69**	**30**	LR	LR	13 54 12.7	
	comp=Z,31nm,21.1s,baz=136,slow=38						
SONM	**Songino Array**	**27.63**	**305**	P	**P**	**13 46 42.9**	**-0.3**
	1.0nm,0.7s,baz=82,slow=10,SNR=3.1						
H11N2	**WAKE ISLAND Hy**	**28.39**	**118**	T	T	14 17 00.1	
	baz=313,slow=75,SNR=16						
H11N1	**WAKE ISLAND Hy**	**28.40**	**118**	T	T	14 16 59.4	
	baz=313,slow=75,SNR=23						
H11N3	**WAKE ISLAND Hy**	**28.41**	**118**	T	T	14 16 59.4	
	baz=313,slow=75,SNR=16						
H11S1	**WAKE ISLAND Hy**	**29.06**	**121**	T	T	14 17 48.4	
	baz=314,slow=75,SNR=37						
H11S3	**WAKE ISLAND Hy**	**29.06**	**121**	T	T	14 17 41.2	
	baz=314,slow=75,SNR=21						
H11S2	**WAKE ISLAND Hy**	**29.08**	**121**	T	T	14 17 42.0	
	baz=314,slow=75,SNR=19						
TIXI	**Tiksi**	**35.95**	**354**	P	**P**	**13 47 55.0**	**-0.7**
	0.3nm,0.3s,baz=133,slow=6.1,SNR=4.4						
ZALV	**Zalesovo Beam**	**41.91**	**313**	P	**P**	**13 48 45.8**	**+0.1**
	3.5nm,0.6s,baz=96,slow=7.3,SNR=11						
MKAR	**Makanchi Array**	**43.93**	**303**	P	**P**	**13 49 02.1**	**-0.1**
	2.0nm,0.8s,baz=92,slow=9.7,SNR=15						
ILAR	**Eielson Array**	**50.50**	**32**	P	**P**	**13 49 52.8**	**-0.2**
	0.5nm,0.8s,baz=271,slow=5.5,SNR=4.2						
INK	**Inuvik**	**55.37**	**27**	P	**P**	**13 50 30.0**	**+1.2**
	0.4nm,0.5s,baz=328,slow=8.5,SNR=4.7						
FITZ	**Fitzroy Crossi**	**55.90**	**197**	P	**P**	**13 50 33.7**	**+0.6**
	1.5nm,0.5s,baz=13,slow=8.4,SNR=5.8						
WRA	**Warramunga Arr**	**56.23**	**197**	P	**P**	**13 50 35.1**	**-0.3**
	1.0nm,0.4s,baz=2.3,slow=7.6,SNR=11						
ASAR	**Alice Springs**	**59.95**	**187**	P	**P**	**13 51 00.7**	**-0.8**
	0.4nm,0.4s,baz=18,slow=9.8,SNR=4.7						
STKA	**Stephens Creek**	**67.81**	**179**	P	**P**	**13 51 52.5**	**-0.4**
	1.5nm,0.7s,baz=326,slow=13,SNR=2.7						
KBZ	**Khabaz**	**70.86**	**310**	P	**P**	**13 52 12.3**	**+0.5**
	1.1nm,0.5s,baz=179,slow=15,SNR=4.2						
AKASG	**Malin Array Be**	**74.46**	**322**	P	**P**	**13 52 32.4**	**-0.6**
	0.8nm,0.4s,baz=46,slow=6.5,SNR=4.7						
NOA	**NORSAR Array B**	**74.60**	**337**	P	**P**	**13 52 33.5**	**-0.3**
	0.9nm,0.7s,baz=40,slow=5.8,SNR=3.3						
BRTR	**Keskin Array B**	**78.82**	**311**	P	**P**	**13 52 58.5**	**+0.5**
	0.7nm,0.8s,baz=73,slow=4.3,SNR=4.2						
TORD	**Torodi Ar. Bea**	**117.35**	**314**	PKP	**PKPdf**	**13 59 40.8**	**+0.1**
	0.3nm,0.6s,baz=53,slow=1.3,SNR=2.7						

*ISCJB **17** 13:41:02.4±0.4, 8°.22S±0°.04×119°.90E±0°.05, h201km, mb3.5/3, Error ellipse: s-maj=7.4km s-min=5.0km az=150.2*
*IDC **17** 13:41:04.6±1.4, 7°.99S×120°.25E, h214km±15km, mb3.3/4, mb1 3.5/7, mb1mx3.1/45, mbtmp3.9/7, Error ellipse: s-maj=41.0km s-min=10.7km az=56.0*
*DJA **17** 13:41:05.0±0.6, 8°.S±4°.×12°.0E±°., h164km±12km, M3.9/9, MLv3.9/9*

ISC 17 13:41:03.2±0.8, 8°.23S±0°.05×119°.94E±0°.06, h201km, n18, σ0°96/25, mb3.6/3, Flores region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WSI	**Waingapu**	**1.47**	**166**	P	**Pn**	**13 41 36.2**	**-0.6**
WSI				S	**S**	**13 42 01.3**	**-1.3**
BASI	**Baing, Sumba**	**2.07**	**162**	P	**Pn**	**13 41 42.7**	**+0.1**
BASI				S	**S**	**13 42 12.6**	**-0.2**
BSSI	**Bau Bau, Buton**	**2.14**	**15**	P	**Pn**	**13 41 42.1**	**-1.3**
PLAI	**Plampang**	**2.22**	**254**	P	**Pn**	**13 41 44.0**	**-0.1**
PLAI				S	**S**	**13 42 14.3**	**-1.0**
MMRI	**Maumere**	**2.31**	**100**	P	**Pn**	**13 41 44.4**	**-0.7**
TWSI	**Taliwang, Sumb**	**3.07**	**260**	P	**Pn**	**13 41 53.6**	**-0.1**
KAPI	**Kappang**	**3.20**	**357**	P	**Pn**	**13 41 55.2**	**-0.1**
	6.0nm,0.3s,baz=192,slow=7.8,SNR=30						
KAPI				S	**S**	**13 42 35.0**	**-0.5**
	1.0nm,0.3s,baz=260,slow=17,SNR=6.2						
SPSI	**Sidrap Palu**	**4.24**	**358**	P	**Pn**	**13 42 08.4**	**+0.3**
SOEI	**Soe**	**4.54**	**110**	P	**Pn**	**13 42 12.5**	**+0.6**
SRBI	**Singaraja**	**4.68**	**271**	P	**Pn**	**13 42 13.9**	**+0.3**
TTSI	**Tana Toraja**	**5.15**	**359**	P	**Pn**	**13 42 19.9**	**+0.3**
GMJI	**Gumukmas**	**6.43**	**269**	P	**Pn**	**13 42 35.1**	**-1.0**
FITZ	**Fitzroy Crossi**	**11.27**	**151**	P	**Pn**	**13 43 39.1**	**+0.3**
	0.3nm,0.3s,baz=347,slow=11,SNR=9.5						
FITZ				S	**S**	**13 45 43.0**	**-1.7**
	0.8nm,0.3s,baz=179,slow=21,SNR=6.9						
WRA	**Warramunga Arr**	**18.16**	**131**	P	**P**	**13 45 00.7**	**-0.2**
	0.9nm,0.3s,baz=308,slow=11,SNR=80						
WRA				S	**S**	**13 48 18.1**	**-0.4**
	0.3nm,0.3s,baz=308,slow=24,SNR=6.5						
ASAR	**Alice Springs**	**20.36**	**141**	P	**P**	**13 45 25.6**	**+1.0**
	1.4nm,0.4s,baz=315,slow=8.7,SNR=15						
ASAR				S	**S**	**13 49 00.5**	**-1.1**
	0.6nm,0.5s,baz=326,slow=24,SNR=4.5						
STKA	**Stephens Creek**	**30.97**	**142**	P	**P**	**13 47 02.9**	**+1.1**
	2.6nm,0.7s,baz=320,slow=10,SNR=9.6						
MKAR	**Makanchi Array**	**64.21**	**332**	P	**P**	**13 51 15.2**	**-1.4**
	0.2nm,0.4s,baz=140,slow=7.4,SNR=3.5						
VNDA	**Vanda**	**72.60**	**171**	P	**P**	**13 52 10.3**	**+2.2**
	0.6nm,0.5s,baz=307,slow=4.8,SNR=5.7						

*CSEM **17** 13:43:34.1, 41°.44N×44°.50E, h0km, ML1.1*

TIF 17 13:43:34.1, 41°.44N×44°.50E, h0km±2km, Western Caucasus

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KZR	**Kazreti**	**0.08**	**229**	P	Pg	13 43 36.3	+0.6
KZR				S	Sg	13 43 37.6	+0.9
KZR	**Kazreti**	**0.08**	**229**	P	Pg	13 43 36.3	+0.6
KZR				S	Sg	13 43 37.6	+0.9
TBLG	**Delisi**	**0.35**	**31**	P	Pn	13 43 45.2	-1.3
TBLG				S	Sb	13 43 51.5	+2.2
TBLG	**Delisi**	**0.35**	**31**	P	Pn	13 43 45.2	-1.3
TBLG				S	Sb	13 43 51.5	+2.2
DGRG	**David-gareji**	**0.66**	**88**	P	Pn	13 43 49.9	-0.9
DGRG	**David-gareji**	**0.66**	**88**	P	Pn	13 43 49.9	-0.9

*KRNET **17** 13:43:36.8±0.1, 40°.34N×77°.62E, mb2.6*
*SOME **17** 13:43:36.4, 40°.35N×77°.68E, h5km*

ISC 17 13:43:35.3±2.8, 40°.3N±0°.1×77°.66E±0°.04, h5km±14km, n22, σ1°69/44, 12C-6D, Kyrgyzstan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NRN	**Naryn**	**1.68**	**312**	⇓*i*P	**Pb**	**13 44 07.9**	**+0.9**
	baz=311						
NRN				⇓*i*S	**Sg**	**13 44 30.8**	**+1.4**
	baz=311						
KDJ	**Kajisay**	**1.85**	**349**	⇑*e*P	**Pb**	**13 44 10.7**	**+1.0**
	baz=350						
KDJ				⇑*i*S	**Sg**	**13 44 35.5**	**+0.7**
	baz=350						
ULHL	**Ulahol**	**2.21**	**331**	⇓*i*P	**Pg**	**13 44 17.6**	**0.0**
	baz=331						
ULHL				⇓*i*S	**Sg**	**13 44 46.6**	**+0.4**
	baz=331						
PRZ	**Przheval'sk**	**2.24**	**14**	⇑*e*P	**Pb**	**13 44 17.8**	**+1.5**
	baz=15						
PRZ				⇑*i*S	**Sg**	**13 44 47.1**	**-0.1**
	baz=15						
BOOM	**Boomskoye usch**	**2.53**	**330**	⇑*e*P	**Pb**	**13 44 20.8**	**-0.5**
	baz=330						
BOOM				⇑*e*S	**Sb**	**13 44 53.6**	**+0.8**
	baz=330						
KZA	**Kyzart**	**2.53**	**315**	⇑*i*P	**Pb**	**13 44 22.0**	**+0.5**
	baz=315						
KZA				⇑*i*S	**Sb**	**13 44 55.1**	**+2.0**
	baz=315						
TNSS	**Tian-Shan**	**2.78**	**349**	*e*P	**Pb**	**13 44 27.4**	**+1.7**
	37nm,0.8s						
TNSS				*e*S	**Sg**	**13 45 04.3**	**-0.2**
	19nm,0.8s						
SATY	**Saty**	**2.80**	**11**	*e*P	**Pn**	**13 44 21.3**	**+0.4**
	4.5nm,0.1s						
SATY				*e*S	**Sn**	**13 44 52.8**	**-2.3**
	9.9nm,0.1s						
IZV	**Izvestkoviy**	**2.83**	**344**	*e*P	**Pb**	**13 44 28.6**	**+2.1**
	7.7nm,0.5s						
IZV				*e*S	**Sg**	**13 45 05.9**	**-0.3**
	26nm,0.6s						
KST	**Kastek**	**3.01**	**336**	*e*P	**Pb**	**13 44 30.8**	**+1.3**
	1.8nm,0.7s						
KST				*e*S	**Sg**	**13 45 09.7**	**-2.2**
	13nm,0.7s						
UZB	**Uzynbulak**	**3.01**	**19**	*e*P	**Pb**	**13 44 31.4**	**+1.9**
	1.9nm,0.4s						
UZB				*e*S	**Sg**	**13 45 11.2**	**-0.8**
	6.0nm,0.4s						
TKM2	**Tokmak 2**	**3.03**	**330**	⇑*i*P	**Pb**	**13 44 29.6**	**-0.2**
	baz=330						
TKM2				⇑*i*S	**Sb**	**13 45 07.9**	**+0.7**
	baz=330						
UCH	**Uchtor**	**3.04**	**310**	⇑*i*P	**Pb**	**13 44 28.9**	**-1.4**
	baz=310						
UCH				⇑*i*S	**Sb**	**13 45 06.4**	**-1.5**
	baz=310						
KPKS	**Kokpek**	**3.24**	**13**	*e*P	**Pb**	**13 44 35.8**	**+2.4**
	2.4nm,0.0s						
KPKS				*e*S	**Sg**	**13 45 18.8**	**-0.6**
	19nm,0.4s						
DGS	**Degeres**	**3.25**	**335**	*e*P	**Pb**	**13 44 35.5**	**+1.9**
	2.9nm,0.6s						
DGS				*e*S	**Sg**	**13 45 18.2**	**-1.5**
	8.9nm,0.6s						
SHLS	**Shalkode**	**3.29**	**30**	*e*P	**Pb**	**13 44 36.3**	**+2.0**
	5.8nm,0.3s						
SHLS				*e*S	**Sg**	**13 45 19.7**	**-1.3**
	9.1nm,0.5s						
PDGK	**Podgornoye**	**3.31**	**24**	⇓*e*P	**Pb**	**13 44 32.9**	**-1.5**
	baz=24						
PDGK				⇓*i*S	**Sb**	**13 45 13.6**	**-1.3**
	baz=24						
CHKK	**Chushkaly**	**3.59**	**352**	*e*P	**Pb**	**13 44 41.4**	**+2.2**
	4.4nm,0.6s						
CHKK				*e*S	**Sg**	**13 45 28.5**	**-2.0**
	10nm,0.3s						
KUU	**Kurty**	**3.71**	**345**	*e*P	**Pb**	**13 44 43.4**	**+2.1**
	1.2nm,0.1s						
KUU				*e*S	**Sg**	**13 45 31.1**	**-3.3**
	7.1nm,0.6s						
KTMS	**Ketmen**	**3.72**	**32**	*e*P	**Pb**	**13 44 43.5**	**+1.9**
	0.9nm,0.5s						
KTMS				*e*S	**Sg**	**13 45 31.7**	**-3.1**
	4.9nm,0.6s						
MNBS	**Baschi**	**3.80**	**8**	*e*P	**Pb**	**13 44 43.1**	**+0.1**
	1.1nm,0.6s						
MNBS				*e*S	**Sb**	**13 45 31.1**	**+1.7**
	8.7nm,0.6s						
ARXS	**Arharly**	**3.90**	**2**	*e*P	**Pb**	**13 44 47.3**	**+2.7**

2.3nm,0.5s
ARXS eS **Sg** **13 45 38.5 -2.0**
14nm,0.6s

TIF 17 13:43:44.3, 41.°44N×44.°48E, h0km±1km, Western Caucasus

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KZR	**Kazreti**	**0.07**	**221**	P	Pg	13 43 46.6	+0.8
KZR				S	Sg	13 43 47.4	+0.7
TBLG	**Delisi**	**0.35**	**33**	P	Pb	13 43 53.8	+0.3
TBLG				S	Sb	13 44 00.1	+0.4
DGRG	**David-gareji**	**0.67**	**89**	P	Pb	13 44 00.0	+1.1
DGRG				S	Sn	13 44 10.8	-1.6
DGRG	**David-gareji**	**0.67**	**89**	S	Pb	13 44 00.2	+1.3
DGRG	**David-gareji**	**0.67**	**89**	S	Pb	13 44 00.2	+1.3
BGD	**Bogdanovka**	**0.69**	**256**	P	Pg	13 43 57.8	+0.3
BGD				S	Sg	13 44 07.2	+0.9
BGD	**Bogdanovka**	**0.69**	**256**	P	Pg	13 43 57.8	+0.3
BGD				S	Sg	13 44 07.2	+0.8

NIED ***17*** *13:54:00, 39.°70N×143.°70E, h26km, Mw3.7 Best double couple: M0=4.34000×10^14 NP1:φ=213.00000°, δ=34.00000°, λ=91.00000°. NP2:φ=31.00000°, δ=56.00000°, λ=89.00000°.*
IDC ***17*** *13:54:54.0±1.6, 39.°57N×143.°61E, h0km, mb3.6/4, mb1 3.7/8, mb1mx3.4/53, mbtmp3.7/8, ML3.5/3, MS2.9/2, Ms1 2.9/2, ms1mx2.4/33, Error ellipse: s-maj=38.6km s-min=20.5km az=94.0*
JMA ***17*** *13:54:55.0±0.1, 39.°67N×143.°65E, h34km, M4.0*
ISC 17 13:54:53.1±2.5, 39.°59N±0.°06×143.°62E±0.°08, h3km±14km, n20, σ2°28/25, mb3.7/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**1.39**	**270**	P	**Pg**	**13 55 19.3**	**-0.5**
MIYJ				eS	**Sg**	**13 55 37.0**	**-0.8**
JTH	**Tanohata**	**1.40**	**285**	P	**Pn**	**13 55 18.9**	**-0.6**
JTH				eS	**Sg**	**13 55 37.2**	**-0.8**
OFUJ	**Ofunato**	**1.60**	**252**	P	**Pn**	**13 55 22.5**	**+0.3**
OFUJ				eS	**Sn**	**13 55 42.0**	**-1.4**
JANG	**Nango**	**1.80**	**297**	P	**Pn**	**13 55 24.4**	**-0.6**
JANG				eS	**Sn**	**13 55 45.7**	**-2.7**
JOM	**Ohasama**	**1.81**	**267**	P	**Pn**	**13 55 25.6**	**+0.5**
JOM				eS	**Sn**	**13 55 47.4**	**-1.1**
JOU	**Okura**	**2.61**	**243**	eS	**Sn**	**13 56 08.0**	**-0.4**
JYK	**Kaneyama**	**2.62**	**256**	P	**Pn**	**13 55 37.7**	**+1.4**
JOT	**Ohata**	**2.66**	**313**	P	**Pn**	**13 55 37.0**	**+0.2**
JCH	**Churui**	**3.03**	**356**	eS	**Sn**	**13 56 15.9**	**-2.8**
ASAJ	**Asahikawa**	**4.59**	**351**	Pn	**Pn**	**13 56 05.1**	**+1.7**
	0.9nm,0.3s,baz=200,slow=16,SNR=13						
MJAR	**Matsushiro Arr**	**5.24**	**236**	Pn	**Pn**	**13 56 14.4**	**+2.0**
	2.1nm,0.3s,baz=55,slow=13,SNR=9.5						
MAT	**Matsushiro**	**5.24**	**236**	P	**Pn**	**13 56 14.6**	**+2.2**
MAT				eS	**Sn**	**13 57 14.3**	**+0.9**
JHJ	**Hachijo jima 2**	**7.16**	**207**	Pn	**Pn**	**13 56 39.5**	**+0.8**
	9.1nm,0.3s,baz=335,slow=22,SNR=5.6						
JHJ				Sn	**Sn**	**13 57 53.0**	**-7.6**
	6.9nm,0.3s,baz=42,slow=15,SNR=4.2						
USRK	**Ussuriysk Ar.**	**9.82**	**302**	Pn	**Pn**	**13 57 18.1**	**+3.0**
	0.2nm,0.3s,baz=82,slow=13,SNR=3.5						
JNU	**Nakatsue**	**12.13**	**242**	LR	LR	14 02 44.5	
	comp=Z,52nm,18.3s,baz=86,slow=39						
KLR	**Kul'dur**	**12.83**	**323**	LR	LR	14 02 50.8	
	comp=Z,43nm,18.2s,baz=123,slow=37						
SEY	**Seymchan**	**23.96**	**10**	P	**P**	**14 00 10.5**	**+2.1**
	1.6nm,0.7s,baz=74,slow=23,SNR=7.2						
ZALV	**Zalesovo Beam**	**41.53**	**310**	P	**P**	**14 02 41.7**	**+0.2**
	1.0nm,0.6s,baz=75,slow=11,SNR=3.6						
MKAR	**Makanchi Array**	**44.28**	**300**	P	**P**	**14 03 04.8**	**+0.8**
	0.7nm,0.7s,baz=79,slow=11,SNR=6.3						
WRA	**Warramunga Arr**	**59.85**	**190**	P	**P**	**14 05 01.2**	**+1.2**
	0.2nm,0.5s,baz=7.7,slow=7.0,SNR=4.1						

MOS ***17*** *13:57:42.9±0.9, 25.°41S×177.°07W, h52km, mb5.2/18, Error ellipse: s-maj=13.9km s-min=10.5km az=77.0*
IDC ***17*** *13:57:46.6±2.0, 25.°41S×176.°96W, h75km±17km, mb4.2/17, mb1 4.5/18, mb1mx4.4/28, mbtmp4.6/18, MS3.6/21, Ms1 3.6/21, ms1mx3.6/26, Error ellipse: s-maj=16.5km s-min=13.2km az=119.0*
ISCJB ***17*** *13:57:47.2±0.2, 26.°06S±0.°03×176.°86W±0.°05, h100km, mb4.8/76, Error ellipse: s-maj=7.4km s-min=3.0km az=26.6*
NEIC ***17*** *13:57:47.8±1.6, 25.°55S×177.°04W, h88km±14km, mb4.9/53, Error ellipse: s-maj=12.8km s-min=6.7km az=155.0*
ISC 17 13:57:49.4±0.3, 25.°67S±0.°05×177.°04W±0.°08, h100km, n283, σ1°78/254, mb4.8/76, 4C-2D, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**3.65**	**192**	P	**Pn**	**13 58 43.4**	**-0.4**
	202nm,0.3s,baz=242,slow=24,SNR=14						
RAO				S	**Sn**	**13 59 30.4**	**+4.4**
	958nm,0.3s,baz=292,slow=23,SNR=11						
RAO				LR	LR	13 59 52.2	
	comp=Z,363nm,18.6s,baz=358,slow=32						
RAO	**Raoul Island**	**3.65**	**192**	eP	**Pn**	**13 58 42.2**	**-1.7**
RAO				S	**Sn**	**13 59 30.4**	**+4.4**
RAO	**Raoul Island**	**3.65**	**192**	ePn	**Pn**	**13 58 42.2**	**-1.7**
RAO				S	**Sn**	**13 59 30.4**	**+4.4**
MSVF	**Nonsavu**	**9.12**	**329**	eP	**Pn**	**13 59 57.6**	**-0.8**
MSVF	**Nonsavu**	**9.12**	**329**	ePn	**Pn**	**13 59 57.6**	**-0.8**
NIUE	**Niue**	**9.29**	**46**	P	Pn	13 59 48.8	-12
	baz=8.5,SNR=16						
AFI	**Afiamalu**	**12.70**	**24**	P	Pn	14 00 33.7	-13
	24nm,0.3s,baz=212,slow=2.3,SNR=72						
AFI				S	Sn	14 02 42.4	-24
	23nm,0.3s,baz=250,slow=23,SNR=6.2						
AFI	**Afiamalu**	**12.70**	**24**	eP	Pn	14 00 32.5	-14
AFI	**Afiamalu**	**12.70**	**24**	ePn	Pn	14 00 32.5	-14
AFI				S	Sn	14 02 42.4	-24
WMGZ	**Waiomatatini S**	**12.71**	**197**	PN	Pn	14 00 38.1	-8.3
WMGZ				SN	**Sn**	**14 02 58.9**	**-7.2**
PUZ	**Puketiti**	**12.99**	**197**	ePN	Pn	14 00 45.8	-4.3
PUZ				SN	Sn	14 03 03.0	-10
TWGZ	**Tauwhareparae**	**13.16**	**197**	SN	Sn	14 03 07.5	-10
TKGZ	**Te Karaka**	**13.44**	**198**	SN	Sn	14 03 15.5	-8.4
URZ	**Urewera**	**13.49**	**200**	P	**P**	**14 01 00.1**	**-2.1**
	4.9nm,0.3s,baz=5.9,slow=3.1,SNR=20						
URZ				S	Sn	14 03 15.4	-10
	11nm,0.3s,baz=139,slow=21,SNR=11						
URZ				LR	LR	14 05 00.3	
	comp=Z,68nm,21.5s,baz=34,slow=32						
URZ	**Urewera**	**13.49**	**200**	ePn	Pn	14 00 49.9	-6.7
URZ				S	Sn	14 03 15.4	-10
URZ	**Urewera**	**13.49**	**200**	ePN	Pn	14 00 46.3	-10
URZ				SN	Sn	14 03 13.1	-12
KNZ	**Kokohu**	**14.04**	**197**	SN	Sn	14 03 25.7	-12
NMHZ	**Naumai**	**14.35**	**200**	SN	Sn	14 03 37.5	-8.5
BKZ	**Black Stump Fm**	**14.51**	**200**	ePn	Pn	14 01 03.7	-6.2
BKZ	**Black Stump Fm**	**14.51**	**200**	ePN	Pn	14 01 01.6	-8.4
BHHZ	**Black Hill Sta**	**14.95**	**201**	SN	Sn	14 03 48.7	-12
PXZ	**Pawanui**	**15.20**	**198**	SN	Sn	14 03 51.0	-15
DZM	**Mont Dzumac**	**15.53**	**280**	LR	LR	14 05 47.0	
	comp=Z,170nm,19.2s,baz=54,slow=31						
DVHZ	**Dannevirke**	**15.65**	**200**	SN	Sn	14 04 03.1	-14
ANWZ	**Angora Road**	**15.71**	**199**	SN	Sn	14 04 04.1	-15
BFZ	**Birch Farm**	**15.98**	**199**	ePn	**Pn**	**14 01 25.8**	**-2.5**
	72nm,1.0s						
BFZ	**Birch Farm**	**15.98**	**199**	ePN	**Pn**	**14 01 23.3**	**-5.0**
BFZ				SN	Sn	14 04 08.2	-17
MRZ	**Mangatainoka R**	**16.16**	**201**	SN	Sn	14 04 12.1	-18
TIWZ	**Tintock**	**16.17**	**200**	SN	Sn	14 04 15.4	-15
HOWZ	**Holdsworth Sta**	**16.40**	**200**	SN	Sn	14 04 17.1	-18
OGWZ	**Otaki Gorge**	**16.44**	**201**	ePN	**Pn**	**14 01 28.5**	**-5.5**
RAR	**Rarotonga**	**16.45**	**78**	LR	LR	14 06 50.3	
	comp=Z,100nm,19.7s,baz=281,slow=33						
TRWZ	**Traveller**	**16.80**	**199**	SN	Sn	14 04 28.4	-17
SNZO	**South Karori**	**17.03**	**202**	ePn	**Pn**	**14 01 39.0**	**-2.3**
	589nm,1.8s						
TCW	**Tory Channel**	**17.09**	**203**	SN	Sn	14 04 35.2	-17
TUWZ	**Tuamarina**	**17.40**	**203**	SN	Sn	14 04 42.1	-17
NNZ	**Nelson**	**17.42**	**205**	PN	**P**	**14 01 42.4**	**-3.4**
NNZ				SN	Sn	14 04 44.0	-16
THZ	**Tophouse**	**18.07**	**205**	eP	**P**	**14 01 50.4**	**-2.6**
	86nm,1.3s						
THZ	**Tophouse**	**18.07**	**205**	PN	**P**	**14 01 49.2**	**-3.9**
THZ				SN	S	14 05 00.1	-15
KHZ	**Kahutara**	**18.41**	**203**	eP	**P**	**14 01 52.8**	**-3.9**
	64nm,1.0s						
KHZ	**Kahutara**	**18.41**	**203**	SN	S	14 05 04.3	-17
OXZ	**Oxford**	**19.75**	**204**	SN	S	14 05 34.2	-14
MQZ	**McQueen's Vall**	**19.86**	**202**	SN	S	14 05 34.0	-16
RPZ	**Rata Peaks**	**20.45**	**205**	S	S	14 05 50.6	-12
	14nm,0.6s,baz=16,slow=21,SNR=7.5						
RPZ				LR	LR	14 09 42.0	
	comp=Z,524nm,21.1s,baz=47,slow=34						
TBI	**Tubuai**	**25.18**	**91**	eLR	LR	14 09 11.1	
	275nm,30.2s						
TBI	**Tubuai**	**25.18**	**91**	eT	T	14 28 35.2	
	39nm,0.2s						
PAE	**Paea**	**26.70**	**78**	eT	T	14 30 24.0	
	19nm,0.3s						
PPT2	**Papeete2**	**26.73**	**78**	eLR	LR	14 09 48.7	
	365nm,29.2s						
PPT	**Papeete**	**26.73**	**78**	LR	LR	14 11 43.6	
	comp=Z,88nm,19.5s,baz=264,slow=32						
HNR	**Honiara**	**27.17**	**302**	LR	LR	14 13 07.9	
	comp=Z,86nm,18.6s,baz=117,slow=34						
MEH	**Mehetia**	**27.96**	**80**	eT	T	14 32 01.5	
	54nm,0.2s						
ARMA	**Armidale**	**28.00**	**253**	P	**P**	**14 03 34.9**	**+3.8**
	baz=29,SNR=4.7						
MGCD	**Mangrove Creek**	**28.66**	**247**	P	**P**	**14 03 40.5**	**+3.8**
	baz=29,SNR=6.9						
RMQ	**Roma**	**30.68**	**261**	P	**P**	**14 03 56.7**	**+1.9**
	baz=31,SNR=26						
YNG	**Young**	**31.03**	**246**	P	**P**	**14 04 00.8**	**+3.0**
	baz=32,SNR=9.1						
CMSA	**Cobar Meteorol**	**33.13**	**251**	P	**P**	**14 04 18.5**	**+2.4**
	baz=34,SNR=11						
TOO	**Toolangi**	**33.83**	**240**	P	**P**	**14 04 24.4**	**+2.2**
	baz=34,SNR=5.3						
QLP	**Quilpie**	**34.70**	**260**	P	**P**	**14 04 31.6**	**+1.9**
	baz=35,SNR=18						
MTSU	**Mount Surprise**	**36.53**	**274**	P	**P**	**14 04 46.8**	**+1.2**
	baz=37,SNR=9.6						
STKA	**Stephens Creek**	**36.62**	**250**	P	**P**	**14 04 47.7**	**+1.5**
	6.3nm,0.5s,baz=97,slow=13,SNR=41						
STKA				PcP	**PcP**	**14 07 08.7**	**+1.4**
	4.1nm,1.0s,baz=30,slow=8.1,SNR=3.5						
STKA	**Stephens Creek**	**36.62**	**250**	P	**P**	**14 04 48.1**	**+2.0**
	baz=37,SNR=36						
STKA	**Stephens Creek**	**36.62**	**250**	eP	**P**	**14 04 47.9**	**+1.7**
PMG	**Port Moresby**	**37.62**	**289**	i P	**P**	**14 04 52.5**	**-2.2**
PMG				pmax	pmax		
	comp=Z,96nm,1.1s						
TAOE	**Nuku Hiva Isla**	**38.82**	**71**	eLR	LR	14 15 22.7	
	comp=Z,169nm,26.6s						
HTT	**Hallett**	**38.85**	**248**	P	**P**	**14 05 05.8**	**+0.7**
	baz=40,SNR=12						
AS01	**Alice Springs**	**44.38**	**262**	eP	**P**	**14 05 49.4**	**-0.9**
AS31	**Alice Springs**	**44.42**	**262**	eP	**P**	**14 05 50.1**	**-0.5**
	comp=Z,2.0nm,0.6s						
ASAR	**Alice Springs**	**44.42**	**262**	P	**P**	**14 05 51.1**	**+0.5**
	comp=Z,7.7nm,0.8s,baz=95,slow=6.8,SNR=58						
ASAR				PcP	**PcP**	**14 07 33.6**	**+0.9**
	comp=Z,6.1nm,0.8s,baz=109,slow=4.0,SNR=14						
ASAR				ScP	**ScP**	**14 11 19.2**	**+3.4**
	comp=Z,1.6nm,1.0s,baz=130,slow=3.7,SNR=5.7						
ASAR				S	**S**	**14 12 15.3**	**-2.8**
	comp=Z,0.7nm,0.9s,baz=106,slow=16,SNR=4.2						
ASAR				LR	LR	14 22 42.1	
	comp=Z,76nm,18.3s,baz=112,slow=34						
WRAB	**Tennant Creek**	**44.98**	**267**	i P	**P**	**14 05 54.7**	**-0.3**
WRAB				pmax	pmax		
	comp=Z,15nm,1.0s						
WRA	**Warramunga Arr**	**44.99**	**267**	P	**P**	**14 05 54.3**	**-0.8**
	comp=Z,3.6nm,0.5s,baz=100,slow=6.8,SNR=42						
WRA				PcP	**PcP**	**14 07 35.6**	**+1.0**
	comp=Z,9.8nm,0.8s,baz=100,slow=3.5,SNR=21						
WRA				ScP	**ScP**	**14 11 22.1**	**+4.0**
	comp=Z,4.2nm,1.0s,baz=100,slow=4.5,SNR=10						
WRKA	**Warakurna**	**49.10**	**258**	P	**P**	**14 06 26.5**	**-0.6**
	baz=50,SNR=36						
SBA	**Scott Base**	**52.80**	**184**	eP	**P**	**14 06 57.5**	**+3.7**
SBA				pmax	pmax		
	comp=Z,31nm,1.0s						
SBA	**Scott Base**	**52.80**	**184**	eP	**P**	**14 06 57.5**	**+3.7**
	comp=Z,31nm,1.0s						
VNDA	**Vanda**	**52.87**	**186**	P	**P**	**14 06 55.3**	**+0.9**
	comp=Z,5.3nm,0.7s,baz=7.0,slow=6.9,SNR=36						
VNDA				LR	LR	14 29 21.0	
	comp=Z,53nm,19.0s,baz=9.5,slow=36						
VNDA	**Vanda**	**52.87**	**186**	eP	**P**	**14 06 57.4**	**+3.0**
VNDA				pmax	pmax		
	comp=Z,10.0nm,1.1s						
VNDA	**Vanda**	**52.87**	**186**	eP	**P**	**14 06 57.4**	**+3.0**
	comp=Z,10nm,1.1s						
FITZ	**Fitzroy Crossi**	**53.38**	**266**	P	**P**	**14 07 00.1**	**+1.0**
	baz=54,SNR=5.9						
KLBR	**Kellerberrin**	**56.80**	**248**	P	**P**	**14 07 23.6**	**+0.1**
	baz=57,SNR=6.8						
BLDU	**Balldu**	**57.88**	**249**	P	**P**	**14 07 30.7**	**-0.4**
	baz=58,SNR=5.3						
MORW	**Morawa**	**58.81**	**250**	P	**P**	**14 07 38.6**	**+1.1**
	baz=59,SNR=4.9						
CASY	**Casey**	**59.72**	**207**	eP	**P**	**14 07 44.0**	**+0.8**
	comp=Z,24nm,0.8s						
GIRL	**Giralia**	**62.13**	**257**	P	**P**	**14 08 02.1**	**+1.8**
	baz=63,SNR=4.5						
MJAR	**Matsushiro Arr**	**74.89**	**324**	P	**P**	**14 09 18.3**	**-1.0**
	comp=Z,1.3nm,0.5s,baz=166,slow=6.2,SNR=6.4						
MJAR				LR	LR	14 36 54.0	
	comp=Z,38nm,21.8s,baz=220,slow=31						
PMSA	**Palmer Station**	**76.22**	**156**	LR	LR	14 35 20.8	
	comp=Z,104nm,21.8s,baz=242,slow=30						
MAW	**Mawson**	**77.02**	**200**	P	**P**	**14 09 33.2**	**+2.2**
	comp=Z,26nm,0.8s,baz=129,slow=7.7,SNR=33						
MAW				LR	LR	14 42 23.1	
	comp=Z,61nm,18.7s,baz=63,slow=35						
MAW	**Mawson**	**77.02**	**200**	P	**P**	**14 09 33.1**	**+2.2**
	baz=78,SNR=22						
MAW	**Mawson**	**77.02**	**200**	eP	**P**	**14 09 32.6**	**+1.7**
MAW				pmax	pmax		
	comp=Z,8.0nm,1.0s						
MAW	**Mawson**	**77.02**	**200**	eP	**P**	**14 09 32.6**	**+1.7**
	comp=Z,7.7nm,1.0s						
H06S1	**SOCORRO T**	**77.93**	**62**	T	T	15 34 33.5	
	SNR=13						
H06E1	**SOCORRO T-PHAS**	**77.98**	**62**	T	T	15 34 26.3	
	SNR=7.1						
USHA	**Ushuaia**	**79.35**	**146**	LR	LR	14 36 17.6	
	comp=Z,510nm,21.9s,baz=276,slow=29						
KSRS	**Korea Array**	**81.34**	**319**	P	**P**	**14 09 55.2**	**+0.4**
	comp=Z,1.9nm,0.9s,baz=148,slow=5.5,SNR=5.4						
KSRS				LR	LR	14 42 45.1	
	comp=Z,17nm,19.0s,baz=124,slow=33						
KSAR	**Wonju Array Be**	**81.35**	**319**	P	**P**	**14 09 55.3**	**+0.3**
KSAR	**Wonju Array Be**	**81.35**	**319**	P	**P**	**14 09 55.2**	**+0.3**
KS01	**Wonju Array Si**	**81.37**	**319**	eP	**P**	**14 09 54.4**	**-0.7**
PETK	**Petropavlovsk-**	**81.47**	**345**	P	**P**	**14 09 52.6**	**-2.6**
	comp=Z,8.2nm,1.0s,baz=129,slow=12,SNR=3.8						
PETK				LR	LR	14 39 19.2	
	comp=Z,33nm,21.9s,baz=133,slow=31						
SYO	**Syowa Base**	**81.89**	**193**	eP	**P**	**14 09 57.1**	**-0.3**
SYO	**Syowa Base**	**81.89**	**193**	eP	**PcP**	**14 10 03.4**	**+0.7**
SNAA	**Sanae**	**82.84**	**178**	P	**P**	**14 10 03.1**	**+0.8**
SNAA	**Sanae**	**82.84**	**178**	c i P	**P**	**14 10 02.8**	**+0.4**
SNAA	**Sanae**	**82.84**	**178**	eP	**P**	**14 10 02.5**	**+0.2**
	comp=Z,19nm,0.9s						
BKNI	**Bangkinang**	**82.86**	**274**	eP	**P**	**14 10 02.8**	**-0.6**
	comp=Z,63nm,0.6s						
VNA3	**Neumayer Olymp**	**82.94**	**176**	P	**P**	**14 10 03.5**	**+0.6**
WDC	**Whiskeytown Da**	**83.11**	**39**	eP	**P**	**14 10 03.4**	**-0.7**
WDC				pmax	pmax		
	comp=Z,14nm,1.2s						
WDC	**Whiskeytown Da**	**83.11**	**39**	eP	**P**	**14 10 03.4**	**-0.7**
	comp=Z,14nm,1.2s						
VNA2	**Neumayer--Watz**	**83.39**	**177**	P	**P**	**14 10 06.2**	**+1.1**
	baz=173,slow=3.4						
VNA1	**Neumayer--Stat**	**83.61**	**176**	P	**P**	**14 10 07.1**	**+0.9**
NVL	**N'lazarevskaya**	**83.62**	**183**	eP	**P**	**14 10 03.3**	**-3.0**
NVL				pmax	pmax		
	comp=Z,1.0nm,1.3s						
USRK	**Ussuriysk Ar.**	**83.72**	**326**	P	**P**	**14 10 07.8**	**+0.7**
	comp=Z,6.6nm,0.8s,baz=137,slow=2.6,SNR=12						
USRK				LR	LR	14 41 20.9	
	comp=Z,46nm,21.2s,baz=140,slow=31						
YBH	**Yreka Blue Hor**	**83.79**	**38**	P	**P**	**14 10 07.7**	**0.0**
	comp=Z,3.3nm,0.8s,baz=186,slow=20,SNR=8.3						
YBH	**Yreka Blue Hor**	**83.79**	**38**	eP	**P**	**14 10 06.9**	**-0.7**
YBH				pmax	pmax		
	comp=Z,28nm,1.8s						
YBH	**Yreka Blue Hor**	**83.79**	**38**	eP	**P**	**14 10 06.9**	**-0.7**
	comp=Z,28nm,1.8s						
TYV	**Tymovskoe**	**84.10**	**336**	eP	**P**	**14 10 09.0**	**+0.2**
LDFC	**Landfair**	**84.16**	**47**	eP	**P**	**14 10 09.8**	**+0.1**
	comp=Z,43nm,1.4s						
NV01	**Mina Array Sit**	**84.19**	**42**	eP	**P**	**14 10 09.2**	**-0.7**
NVAR	**Mina Array Bea**	**84.19**	**42**	P	**P**	**14 10 09.9**	**0.0**
	comp=Z,5.5nm,1.0s,baz=220,slow=8.4,SNR=21						
NVAR				LR	LR	14 42 44.2	
	comp=Z,36nm,18.4s,baz=222,slow=32						
HUMO	**Hull Mountain**	**84.25**	**37**	eP	**P**	**14 10 09.9**	**+0.1**
	comp=Z,22nm,1.5s						
PAHR	**Pah Rah Range**	**84.36**	**41**	eP	**P**	**14 10 09.7**	**-1.0**
	comp=Z,11nm,1.2s						
W13A	**Hualapai Mount**	**84.98**	**47**	eP	**P**	**14 10 12.3**	**-1.6**
	comp=Z,9.5nm,1.3s						
SHPR	**Sheep Range**	**84.98**	**46**	eP	**P**	**14 10 13.5**	**-0.4**
	comp=Z,11nm,1.3s						
PLCA	**Paso Flores**	**85.10**	**133**	P	**P**	**14 10 15.6**	**+1.1**
	comp=Z,4.3nm,0.8s,baz=257,slow=4.7,SNR=11						
PLCA				LR	LR	14 41 06.6	
	comp=Z,36nm,18.5s,baz=277,slow=30						
PLCA	**Paso Flores**	**85.10**	**133**	eP	**P**	**14 10 15.4**	**+0.9**
PLCA				pmax	pmax		
	comp=Z,48nm,1.9s						
PLCA	**Paso Flores**	**85.10**	**133**	eP	**P**	**14 10 15.4**	**+0.9**
	comp=Z,48nm,1.9s						
MDJ	**Mudanjiang**	**85.24**	**325**	P	**P**	**14 10 15.3**	**+0.6**
MDJ				pP	pP	14 10 32.3	-8.6
MDJ				sP	sP	14 10 39.0	-13
MDJ	**Mudanjiang**	**85.24**	**325**	S	**S**	**14 20 41.8**	**+5.1**
MDJ	**Mudanjiang**	**85.24**	**325**	ScS	**ScS**	**14 20 49.6**	**+3.2**
MDJ				pmax	pmax		
	comp=Z,8.0nm,1.1s						
MDJ				pmax	pmax		
	comp=Z,21nm,3.4s						
MOD	**Modoc Plateau**	**85.25**	**39**	eP	**P**	**14 10 14.8**	**-0.3**
	comp=Z,11nm,1.1s						
HABR	**Khabarovsk**	**85.36**	**330**	eP	**P**	**14 10 14.5**	**-0.7**
HABR				e*PP	pP	14 10 31.3	-10
HABR				e*SP	sP	14 10 38.2	-14
HABR				e		14 13 32.7	
HABR				eS	**S**	**14 20 33.2**	**-4.4**
HABR				eSS	**SS**	**14 26 16.7**	**+1.4**
HABR				eSSS	SSS	14 29 49.3	
HABR				pmax	pmax		
	comp=Z,12nm,1.3s						
HABR				pmax	pmax		
	comp=N,10.0nm,1.3s						
HABR				pmax	pmax		
	comp=E,22nm,1.3s						
HABR				MLR	MLR		
	comp=Z,44nm,19.0s						
K05A	**Summer Lake**	**85.46**	**38**	eP	**P**	**14 10 15.9**	**-0.2**
	comp=Z,21nm,1.1s						
TUC	**Tucson**	**85.50**	**51**	eP	**P**	**14 10 16.5**	**+0.1**
TUC				pmax	pmax		
	comp=Z,6.0nm,0.8s						
TUC	**Tucson**	**85.50**	**51**	eP	**P**	**14 10 16.4**	**+0.1**
	comp=Z,5.5nm,0.8s						
319A	**Douglas**	**86.05**	**53**	eP	**P**	**14 10 19.0**	**-0.2**
	comp=Z,11nm,1.0s						
X16A	**Lo Mia Camp, P**	**86.23**	**49**	eP	**P**	**14 10 19.5**	**-0.6**
	comp=Z,9.0nm,0.9s						
EFI	**East Falkland**	**86.28**	**147**	eP	**P**	**14 10 20.1**	**+0.2**
EFI				pmax	pmax		
	comp=Z,28nm,1.0s						
GSI	**Gunungsitoli**	**86.40**	**273**	eP	**P**	**14 10 22.7**	**+1.5**
	comp=Z,30nm,0.7s						
LCMT	**Little Creek M**	**86.52**	**46**	eP	**P**	**14 10 21.3**	**-0.2**
	comp=Z,6.6nm,1.3s						
WVOR	**Wild Horse Val**	**86.54**	**39**	eP	**P**	**14 10 21.0**	**-0.3**
WVOR				pmax	pmax		
	comp=Z,9.0nm,1.3s						
WVOR	**Wild Horse Val**	**86.54**	**39**	eP	**P**	**14 10 21.0**	**-0.3**
	comp=Z,8.6nm,1.3s						
KNB	**Kanab**	**86.80**	**46**	eP	**P**	**14 10 22.8**	**-0.1**
KNB				pmax	pmax		
	comp=Z,21nm,1.5s						
KNB	**Kanab**	**86.80**	**46**	eP	**P**	**14 10 22.8**	**-0.1**
	comp=Z,21nm,1.5s						
U15A	**North Rim**	**86.80**	**47**	eP	**P**	**14 10 23.2**	**+0.2**
	comp=Z,10nm,1.0s						
WUAZ	**Wupatki**	**86.89**	**48**	eP	**P**	**14 10 23.1**	**-0.2**
	comp=Z,8.2nm,1.1s						
PSUT	**Pine Spring**	**87.02**	**44**	eP	**P**	**14 10 23.2**	**-0.7**
	comp=Z,4.3nm,1.1s						
X18A	**Snowflake**	**87.31**	**50**	eP	**P**	**14 10 25.2**	**-0.1**
	comp=Z,7.8nm,0.9s						
KLR	**Kul'dur**	**87.41**	**329**	eP	**P**	**14 10 24.9**	**-0.3**
MSU	**Marysvale**	**88.08**	**45**	eP	**P**	**14 10 29.3**	**+0.3**
MSU	**Marysvale**	**88.08**	**45**	eP	**P**	**14 10 29.3**	**+0.3**
MNTX	**Cornudas Mount**	**89.04**	**54**	eP	**P**	**14 10 33.0**	**-0.4**
	comp=Z,19nm,1.8s						
TX31	**Laj

comp=Z,98nm,5.0s
BOZ Bozeman (W) 92.50 40 *e*P **P 14 10 48.5 -0.8**
BOZ pmax pmax
comp=Z,7.0nm,0.8s
BOZ Bozeman (W) 92.50 40 *e*P **P 14 10 48.5 -0.8**
comp=Z,7.1nm,0.8s
LKWY Lake 92.61 41 *e*P **P 14 10 51.5 +1.5**
LKWY pmax pmax
comp=Z,4.0nm,0.9s
LKWY Lake 92.61 41 *e*P **P 14 10 51.5 +1.5**
comp=Z,4.3nm,0.9s
CM01 Chiang Mai Arr 92.63 289 *e*P **P 14 10 52.4 +2.0**
CMAR Chiang Mai Arr 92.66 289 P **P 14 10 51.8 +1.3**
comp=Z,2.2nm,0.7s,baz=135,slow=3.7,SNR=13
CMAR LR LR 14 52 01.7
comp=Z,16nm,19.1s,baz=320,slow=35
CMAR Chiang Mai Arr 92.66 289 *i* P **P 14 10 53.0 +2.5**
CMAR pmax pmax
comp=Z,2.0nm,0.7s
CHTO Chiang Mai 92.81 289 *e*P **P 14 10 52.7 +1.5**
CHTO pmax pmax
comp=Z,4.0nm,0.7s
CHTO Chiang Mai 92.81 289 *e*P **P 14 10 52.7 +1.5**
comp=Z,3.7nm,0.7s
ILAR Eielson Array 93.15 12 P **P 14 10 50.4 -1.3**
comp=Z,0.6nm,0.8s,baz=223,slow=6.5,SNR=5.1
HHC Hu-ho-hao-te 93.58 314 *e*P **P 14 10 56.3 +1.9**
HHC pmax pmax
comp=Z,33nm,1.4s
HHC pmax pmax
comp=Z,150nm,7.7s
BILL Bilibino 94.25 354⇓ *e*P **P 14 10 56.3 -0.3**
BILL *e* 14 11 17.0
BILL *e*S **SKSac 14 21 31.9 +10**
BILL pmax pmax
comp=Z,2.0nm,0.9s
BILL Bilibino 94.25 354 *e*P **P 14 10 55.4 -1.3**
comp=Z,3.3nm,0.9s
CD2 Chengdu 94.30 302 P **P 14 10 57.0 -0.9**
CD2 pmax pmax
comp=Z,6.0nm,0.5s
RSSD Black Hills 96.25 44 *e*P **P 14 11 05.4 -1.3**
RSSD pmax pmax
comp=Z,4.0nm,0.8s
RSSD Black Hills 96.25 44 *e*P **P 14 11 05.4 -1.3**
comp=Z,4.1nm,0.8s
LZH Lanzhou 96.59 307 *e*P P 14 11 12.8 +4.5
LZH pP pP 14 11 29.4 -5.3
LZH sP sP 14 11 38.3 -7.0
LZH pmax pmax
comp=Z,35nm,1.0s
YAK Yakutsk 97.22 338 *e*P **P 14 11 09.1 -1.1**
YAK pmax pmax
comp=Z,12nm,0.9s
LPAZ La Paz 99.25 113 LR LR 14 48 24.4
comp=Z,43nm,19.0s,baz=265,slow=31
ZALV Zalesovo Beam 115.03 320 PKP PKPdf 14 16 16.4 -1.9
comp=Z,0.7nm,0.3s,baz=197,slow=3.9,SNR=3.8
MK01 Makanchi Array 115.32 312 *e*PKIKP **PKPdf 14 16 17.7 -1.5**
MK31 Makanchi Array 115.33 312 *e*PKIKP **PKPdf 14 16 17.6 -1.6**
MK31 Makanchi Array 115.33 312 *e*PKPdf **PKPdf 14 16 17.6 -1.6**
MKAR Makanchi Array 115.33 312 PKP **PKPdf 14 16 18.2 -1.0**
comp=Z,1.5nm,0.6s,baz=190,slow=0.3,SNR=16
MKAR PKKPbc **PKKPbc 14 26 54.4 -0.3**
comp=Z,0.7nm,0.6s,baz=281,slow=2.9,SNR=7.0
MKAR Makanchi Array 115.33 312 *e*PKIKP **PKPdf 14 16 17.7 -1.5**
MKAR 14 26 54.4
MKAR Makanchi Array 115.33 312 *e*PKPdf **PKPdf 14 16 17.6 -1.5**
MKAR PKKPbc **PKKPbc 14 26 54.4 -0.3**
MAKZ Makanchi 115.55 312 *e*PKIKP **PKPdf 14 16 18.3 -1.3**
MAKZ Makanchi 115.55 312 *e*PKPdf **PKPdf 14 16 18.2 -1.3**
KURK Kurchatov 118.34 316 *e*PKIKP **PKPdf 14 16 23.6 -1.2**
KURK Kurchatov 118.34 316 *e*PKPdf **PKPdf 14 16 23.6 -1.2**
KKAR Karatay Array 123.08 306 *e*PKIKP **PKPdf 14 16 33.3 -0.9**
KKAR Karatay Array 123.08 306 *e*PKPdf **PKPdf 14 16 33.3 -0.9**
KKAR *e*PKPdf **PkIKP 14 16 34.0 -0.4**
BVAR Borovoye Array 123.55 318 PKP **PKPdf 14 16 32.3 -2.5**
comp=Z,1.8nm,0.5s,baz=107,slow=1.5,SNR=11
BRVK Borovoye 123.61 318 *e*PKIKP **PKPdf 14 16 34.0 -0.9**
ZRNK Zerenda 124.39 318 *e*PKIKP **PKPdf 14 16 35.1 -1.3**
ZRNK Zerenda 124.39 318 *e*PKPdf **PKPdf 14 16 35.1 -1.3**
ARU Arti 129.91 323 *i* PKIKP **PKPdf 14 16 46.4 -0.4**
ARU 14 18 55.5
GEYT Alibeck 132.18 299 PKP **PKPdf 14 16 52.6 +0.8**
comp=Z,3.6nm,0.8s,baz=48,slow=2.2,SNR=5.5
ARCES ARCESS Array B 134.15 349 PKP **PKPdf 14 16 53.4 -1.1**
comp=Z,2.1nm,0.7s,baz=270,slow=1.2,SNR=9.1
FINES FINESS Array B 140.96 343 PKP **PKPdf 14 17 07.1 0.0**
comp=Z,2.1nm,0.9s,baz=107,slow=2.0,SNR=4.7
H10S3 ASCENSION HYDR 141.54 151 T T 16 53 57.8
baz=203,slow=75,SNR=8.1
H10S2 ASCENSION HYDR 141.55 151 T T 16 54 01.3
baz=203,slow=75,SNR=8.3
H10S1 ASCENSION HYDR 141.56 151 T T 16 53 53.9
baz=203,slow=75,SNR=12
OBN Obninsk 141.67 329 *e*PKIKP **PKPdf 14 17 07.9 -0.7**
OBN pmax pmax
comp=Z,4.0nm,0.8s
OBN MLR MLR
comp=Z,29nm,17.0s
ZEI Tsey 142.51 308 *i* PKIKP **PKPdf 14 17 13.0 +2.1**
ZEI pmax pmax
comp=Z,9.0nm,0.9s
H10N3 ASCENSION HYDR 142.61 151 T T 16 55 11.8
baz=202,slow=75,SNR=18
H10N1 ASCENSION HYDR 142.61 151 T T 16 55 13.0
baz=202,slow=75,SNR=16
H10N2 ASCENSION HYDR 142.62 151 T T 16 55 24.2
baz=202,slow=75,SNR=19
KBZ Khabaz 142.98 309 PKP **PKPdf 14 17 10.8 -0.5**
comp=Z,1.1nm,0.6s,baz=158,slow=4.3,SNR=3.2
KIV Kislovodsk 143.06 310 *e*PKIKP **PKPdf 14 17 11.9 +0.3**
KIV pmax pmax
comp=Z,5.0nm,1.1s
NC303 NORSAR Array S 144.00 353 *e*PKPpre PKPpre 14 17 10.1
NB201 NORSAR Array S 144.18 353 *e*PKPdf PKPbc 14 17 11.0 -0.4
NB2 NORSAR Subarra 144.20 353 PKP **PKPab 14 17 09.9 -1.1**
comp=Z,7.8nm,0.7s,baz=11,slow=3.5
NOA NORSAR Array B 144.20 353 PKP **PKPab 14 17 10.5 -0.5**
comp=Z,2.7nm,0.7s,baz=11,slow=2.3,SNR=20
NAO01 NORSAR Array S 144.43 353 *e*PKPdf **PKPab 14 17 11.2 -0.6**
KONO Kongsberg 145.73 354 *e*PKIKP **PKPbc 14 17 15.6 -0.6**
KONO Kongsberg 145.73 354 *e*PKP **PKPbc 14 17 15.6 -0.6**
AKASG Malin Array Be 147.90 328 PKPbc **PKPdf 14 17 20.4 +0.9**
comp=Z,5.1nm,0.7s,baz=43,slow=3.9,SNR=12
KIEV Kiev 147.92 328 *e*PKIKP **PKPdf 14 17 20.6 +1.0**
KIEV pmax pmax
comp=Z,5.0nm,1.0s
KIEV Kiev 147.92 328 *e*PKPbc **PKPbc 14 17 21.8 -0.9**
KIEV *e*PKPdf **PkIKP 14 17 22.2 -2.3**
AK11 Malin Array Si 147.95 328 *e*PKPbc **PKPbc 14 17 21.7 -1.1**
BEL Belsk 150.57 337 *e*PKP **PKPbc 14 17 29.6 +0.3**
BEL Belsk 150.57 337 *e*PKIKP **PKPbc 14 17 29.6 +0.3**
BR131 Keskin Array S 150.79 306 *e*PKPbc **PKPbc 14 17 30.0 -0.4**
BRTR Keskin Array B 150.79 306 PKP **PKPdf 14 17 22.8 -2.0**
comp=Z,0.4nm,0.4s,baz=62,slow=2.9,SNR=3.6
BRTR PKPbc **PKPbc 14 17 29.1 -1.3**
comp=Z,10nm,0.9s,baz=134,slow=3.6,SNR=35
ANTO Ankara 151.35 307 *e*PKIKP **PKPbc 14 17 31.7 +0.1**
ANTO Ankara 151.35 307 *e*PKPbc **PKPbc 14 17 31.7 +0.1**
BR231 Keskin MP Arra 151.38 307 *e*PKPbc **PKPbc 14 17 30.9 -0.8**
KWP Kalwaria Pacla 151.60 332 *e*PKP **PKPbc 14 17 32.0 +0.2**
KWP Kalwaria Pacla 151.60 332 *e*PKIKP **PKPbc 14 17 32.0 +0.2**
BUR08 Bucovina Ar. S 151.92 327 *e*PKPbc **PKPbc 14 17 33.1 +0.4**
OJC Ojcow 152.26 336 *e*PKP **PKPbc 14 17 33.0 -0.2**
OJC Ojcow 152.26 336 *e*PKIKP **PKPbc 14 17 32.8 -0.5**
OJC Ojcow 152.26 336 *e*PKPbc **PKPbc 14 17 32.8 -0.5**
KOLS Kolonicke sedl 152.32 332 *e*PKIKP **PKPbc 14 17 33.7 +0.3**
KOLS *e* 14 17 45.0
KOLS Kolonicke sedl 152.32 332 *e*PKP **PKPbc 14 17 33.7 +0.3**
KOLS *e* 14 17 45.0
STHS Stebnicka Huta 152.36 334 *e*PKIKP **PKPbc 14 17 34.0 +0.5**
STHS Stebnicka Huta 152.36 334 *e*PKP **PKPbc 14 17 34.0 +0.5**
CRVS Cervenica-Dubn 152.68 333 *e*PKIKP **PKPbc 14 17 34.6 +0.4**
CRVS Cervenica-Dubn 152.68 333 *e*PKP **PKPbc 14 17 34.6 +0.4**
NIE Niedzica 152.73 335 *e*PKP **PKPbc 14 17 34.9 +0.5**
NIE Niedzica 152.73 335 *e*PKIKP **PKPbc 14 17 34.9 +0.5**
KSP Ksiaz 152.86 341 *e*PKP **PKPbc 14 17 34.8 +0.2**
KSP Ksiaz 152.86 341 *e*PKIKP **PKPbc 14 17 34.8 +0.2**
CLL Collm 153.28 346 *i* PKPdf **PKPdf 14 17 27.5 -0.4**
comp=Z,4.0nm,0.8s
CLL ⇑*i*PKPbc **PKiKP 14 17 35.1 -0.5**
comp=Z,9.0nm,0.8s
CLL *e* 14 17 43.0
CLL *e*PKPab **PKPab 14 17 47.0 -0.6**
CLL Collm 153.28 346⇑ *i*PKIKP **PKPdf 14 17 27.5 -0.4**
CLL *e* 14 17 47.0
CLL pmax pmax
comp=Z,4.0nm,0.8s
KECS Kecovo 153.41 333 *e*PKIKP **PKPbc 14 17 36.1 +0.3**
KECS *e* 14 17 49.6
KECS Kecovo 153.41 333 *e*PKP **PKPbc 14 17 36.1 +0.3**
KECS *e* 14 17 49.6
BRG Berggiesshubel 153.46 344 *e*PKP **PKPbc 14 17 35.8 -0.1**
comp=Z,4.5nm,0.6s
BRG Berggiesshubel 153.46 344 *e*PKIKP **PKPbc 14 17 35.8 -0.1**
BRG pmax pmax
comp=Z,5.0nm,0.6s
VYHS Vyhne 154.04 335 *e*PKIKP **PKPbc 14 17 37.6 +0.4**
VYHS *e* 14 17 51.3
VYHS Vyhne 154.04 335 *e*PKP **PKPbc 14 17 37.6 +0.4**
VYHS *e* 14 17 51.2
PSZ Piszkesteto 154.10 333 *e*PKP2 **PKPab 14 17 51.8 +0.4**
PSZ Piszkesteto 154.10 333 *e*PKPab **PKPab 14 17 51.8 +0.4**
KHC Kasperske Hory 155.16 343 *e*PKPAB **PKPab 14 17 56.4 +0.6**
KHC *e*pPKP **pPKPab 14 18 16.8 -5.6**
KHC Kasperske Hory 155.16 343 *e*PKP2 **PKPab 14 17 56.4 +0.6**
GERES GERESS Array B 155.39 343 PKPab **PKPab 14 17 58.0 +1.1**
comp=Z,1.2nm,0.9s,baz=27,slow=3.6,SNR=4.3
TOA0 Torodi Ar. Sit 167.48 174 *e*PKPdf **PKPdf 14 17 43.5 -1.0**
TOA0 *e*PKPab **PKPab 14 18 51.1 +0.9**
TORD Torodi Ar. Bea 167.48 174 PKP **PKPdf 14 17 44.0 -0.5**
comp=Z,1.5nm,0.9s,baz=219,slow=1.0,SNR=7.6
TORD PKPab **PKPab 14 18 51.3 +1.0**
comp=Z,6.4nm,0.8s,baz=195,slow=4.1,SNR=26
TORD PP **PP 14 22 42.5 +5.1**
comp=Z,0.8nm,1.1s,baz=208,slow=6.3,SNR=3.5

*ISCJB **17** 14:07:06.1±0.6,30°.87S±0°.05×179°.9W±0°.1, h377km, mb3.3/3, Error ellipse: s-maj=16.2km s-min=5.8km az=17.6*
*IDC **17** 14:07:06.2±0.7,30°.88S×179°.78W, h369km±8km, mb3.2/3, mb1 3.4/4, mb1mx3.2/23, mbtmp4.1/4, Error ellipse: s-maj=27.1km s-min=14.3km az=130.0*
ISC 17 14:07:06.6±0.7,**30°.94S**±0°.08×**179°.8W**±0°.1,**h377**km,**n41,** σ1**f78**/52,**mb3.4/3,Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**2.36**	**45**	P	**Pn**	**14 08 02.1**	**-0.8**
	151nm,0.3s,baz=104,slow=8.9,SNR=24						
RAO				S	**S**	**14 08 45.9**	**-2.4**
	182nm,0.3s,baz=78,slow=24,SNR=8.1						
WMGZ	**Waiomatatini S**	**7.01**	**191**	*e*PN	**P**	**14 08 53.5**	**+2.9**
WMGZ				SN	**S**	**14 10 15.4**	**+1.6**
HAZ	**Te Kaha**	**7.08**	**196**	PN	**P**	**14 08 53.1**	**+1.7**
HAZ				SN	**S**	**14 10 15.5**	**+0.4**
PUZ	**Puketiti**	**7.29**	**192**	PN	**P**	**14 08 57.2**	**+3.5**
MWZ	**Matawai**	**7.69**	**196**	*e*PN	**Pn**	**14 08 57.3**	**-0.1**
MWZ				SN	**S**	**14 10 26.5**	**-1.6**
TKGZ	**Te Karaka**	**7.72**	**194**	*e*PN	**Pn**	**14 08 57.3**	**-0.4**
TKGZ				SN	**S**	**14 10 27.3**	**-1.3**
URZ	**Urewera**	**7.72**	**198**	P	**P**	**14 08 59.3**	**+0.6**
	9.7nm,0.3s,baz=270,slow=4.3,SNR=48						
URZ				S	**S**	**14 10 29.4**	**+0.6**
	11nm,0.3s,baz=80,slow=23,SNR=39						
URZ	**Urewera**	**7.72**	**198**	PN	**Pn**	**14 08 57.7**	**-0.1**
URZ				SN	**S**	**14 10 26.6**	**-2.2**
RIGZ	**Rimuhau**	**8.00**	**194**	PN	**P**	**14 09 03.3**	**+1.5**
RTZ	**Ruatahuna**	**8.09**	**198**	*e*PN	**P**	**14 09 06.0**	**+2.4**
SNGZ	**Shannon Statio**	**8.16**	**196**	PN	**P**	**14 09 05.2**	**+0.9**
SNGZ				SN	**S**	**14 10 37.4**	**-0.8**
NMHZ	**Naumai**	**8.59**	**198**	*e*PN	**P**	**14 09 09.6**	**+0.5**
BKZ	**Black Stump Fm**	**8.74**	**199**	PN	**Pn**	**14 09 10.1**	**+0.4**
BKZ				SN	**S**	**14 10 51.0**	**+0.3**
KRHZ	**Kereru**	**9.22**	**199**	PN	**P**	**14 09 17.2**	**+1.1**
KAHZ	**Kahuranaki**	**9.23**	**196**	*e*PN	**P**	**14 09 15.8**	**-0.4**
PXZ	**Pawanui**	**9.46**	**196**	*e*PN	**Pn**	**14 09 17.9**	**-0.1**
PNHZ	**Pukenui**	**9.52**	**199**	PN	**P**	**14 09 20.2**	**+0.8**
PRHZ	**Porangahau**	**9.74**	**196**	*e*PN	**P**	**14 09 24.0**	**+2.2**
ANWZ	**Angora Road**	**9.96**	**197**	*e*PN	**P**	**14 09 26.8**	**+2.6**
BFZ	**Birch Farm**	**10.23**	**197**	*e*PN	**P**	**14 09 28.7**	**+1.4**
BFZ				SN	**S**	**14 11 18.4**	**-3.8**
MRZ	**Mangatainoka R**	**10.39**	**200**	*e*PN	**P**	**14 09 29.8**	**+0.8**
MRZ				SN	**S**	**14 11 21.7**	**-3.9**
TIWZ	**Tintock**	**10.41**	**198**	SN	**S**	**14 11 23.8**	**-2.3**
OGWZ	**Otaki Gorge**	**10.65**	**201**	PN	**Pn**	**14 09 33.1**	**+1.1**
DUWZ	**D'Urville Isla**	**11.06**	**205**	SN	**S**	**14 11 37.3**	**-2.7**
TCW	**Tory Channel**	**11.30**	**203**	SN	**S**	**14 11 41.2**	**-3.6**
TUWZ	**Tuamarina**	**11.61**	**204**	*e*PN	**Pn**	**14 09 43.1**	**-0.2**
NNZ	**Nelson**	**11.63**	**206**	SN	**S**	**14 11 46.9**	**-4.9**
KHZ	**Kahutara**	**12.62**	**203**	PN	**Pn**	**14 09 55.4**	**+0.4**
STKA	**Stephens Creek**	**32.82**	**258**	P	**P**	**14 13 08.0**	**+1.5**
	1.5nm,0.7s,baz=122,slow=23,SNR=3.0						
ASAR	**Alice Springs**	**41.51**	**268**	P	**P**	**14 14 18.1**	**-0.8**
	0.6nm,0.4s,baz=106,slow=7.4,SNR=10						
WRA	**Warramunga Arr**	**42.55**	**274**	P	**P**	**14 14 28.1**	**+1.0**
	1.0nm,0.3s,baz=111,slow=8.1,SNR=21						
MKAR	**Makanchi Array**	**116.91**	**310**	PKP	**PKPdf**	**14 25 06.2**	**-0.5**
	0.4nm,0.5s,baz=114,slow=1.5,SNR=4.1						
BVAR	**Borovoye Array**	**125.69**	**316**	PKP	**PKPdf**	**14 25 23.2**	**-0.1**
	1.3nm,0.7s,baz=92,slow=3.4,SNR=7.7						
ARCES	**ARCESS Array B**	**138.77**	**347**	PKP	**PKPdf**	**14 25 48.9**	**+1.5**
	4.0nm,0.9s,baz=61,slow=2.5,SNR=5.7						
KBZ	**Khabaz**	**144.09**	**303**	PKP	**PKPdf**	**14 25 57.1**	**-0.5**
	2.1nm,0.6s,baz=252,slow=0.4,SNR=5.9						
FINES	**FINESS Array B**	**145.09**	**338**	PKPbc	**PKPab**	**14 25 59.5**	**-0.3**
	15nm,0.8s,baz=59,slow=5.1,SNR=27						
NB2	**NORSAR Subarra**	**149.02**	**350**	PKP	**PKPbc**	**14 26 10.3**	**+0.3**
	comp=Z,2.5nm,0.9s,baz=17,slow=2.6						
NOA	**NORSAR Array B**	**149.02**	**350**	PKPbc	**PKPbc**	**14 26 09.9**	**-0.1**
	comp=Z,2.1nm,0.7s,baz=17,slow=4.3,SNR=6.4						
AKASG	**Malin Array Be**	**150.75**	**321**	PKPbc	**PKPbc**	**14 26 14.9**	**+0.6**
	comp=Z,4.1nm,0.8s,baz=55,slow=2.2,SNR=8.5						
BRTR	**Keskin Array B**	**151.45**	**297**	PKPbc	**PKPbc**	**14 26 16.3**	**-0.3**
	comp=Z,1.7nm,0.5s,baz=133,slow=4.6,SNR=10						
TORD	**Torodi Ar. Bea**	**162.24**	**185**	PKPab	**PKPab**	**14 27 13.4**	**+0.2**
	comp=Z,0.9nm,0.9s,baz=194,slow=6.0,SNR=3.5						

*SJA **17** 14:31:45.3±0.8,41°.01S×72°.05W, h156km±55km, ML3.5, MW4.7*
*IDC **17** 14:31:47.2±1.4,40°.70S×72°.27W, h0km, mb4.0/6, mb1 4.2/8, mb1mx4.1/20, mbtmp4.1/8, ML4.6/2, MS2.9/1, Ms1 2.9/1, ms1mx2.7/25, Error ellipse: s-maj=36.8km s-min=14.8km az=13.0*
*ISCJB **17** 14:31:48.3±0.6,40°.43S±0°.05×72°.15W±0°.09, h10km, mb4.0/7, MS2.7/1, Error ellipse: s-maj=10.3km s-min=6.5km az=163.9*
*GUC **17** 14:31:49.1±0.5,40°.35S×71°.58W, h138km±6km, ML4.6*
*NEIC **17** 14:31:54.7±0.9,40°.42S×71°.80W, h45km±8km, mb4.2/4, MD4.6(SJA), Error ellipse: s-maj=14.0km s-min=7.8km az=86.0*
NEIC Felt [III] at Poblacion Lago Ranco, Puyehue and Rio Bueno.
ISC 17 14:31:48.9±0.8,**40°.53S**±0°.07×**72°.22W**±0°.07,**h10**km,**n30,** σ1**f71**/33,**mb4.0/7,1C,Central Chile**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VLCH	**Valdivia**	**1.07**	**312**		IAML	14 32 32.8	
	comp=N,11μm,0.8s						
PLCA	**Paso Flores**	**1.28**	**100**	*e*P	**Pg**	**14 32 12.3**	**-1.3**
PLCA					IAML	14 32 17.9	
	comp=Z,468nm,0.4s						
PLCA				*e*S	**Sg**	**14 32 33.2**	**+3.0**
PLCA	**Paso Flores**	**1.28**	**100**	Pg	**Pg**	**14 32 12.1**	**-1.4**
	comp=Z,106nm,0.3s,baz=294,slow=11,SNR=2267						
PLCA				Lg	Lg	14 32 29.7	
	comp=Z,70nm,0.3s,baz=227,slow=14,SNR=9.1						
PLCA	**Paso Flores**	**1.28**	**100**⇑	*i*P	**Pg**	**14 32 12.2**	**-1.4**
PLCA				*e*S	**Sg**	**14 32 29.4**	**-0.9**
CANA	**Caviahue**	**2.79**	**19**	*e*P	**Pn**	**14 32 37.0**	**+3.3**
CANA					IAML	14 32 46.8	
	comp=Z,106nm,0.7s						
CANA				*e*S	**Sb**	**14 33 14.3**	**+1.1**
CCHI	**Chillan**	**3.92**	**2**	*e*P	**Pn**	**14 32 46.7**	**-2.5**
CCHI				*e*S	**Sn**	**14 33 29.9**	**-5.3**
CCHI					IAML	14 34 05.8	
	comp=N,406nm,1.2s						
COYC	**Coyhaique**	**5.04**	**179**	*e*P	Pn	14 33 06.3	+1.7
CHRN	**Cochrane**	**6.72**	**182**	*e*Pn	Pn	14 33 32.1	+4.5
ROC1	**El Roble**	**7.60**	**8**	*e*P	**Pn**	**14 33 40.3**	**+0.3**
ROC1				*e*S	**Sn**	**14 35 05.0**	**-1.2**
ROC1	**El Roble**	**7.60**	**8**	*e*Pn	**Pn**	**14 33 40.8**	**+0.8**
TRQA	**Tornquist**	**8.31**	**76**	*e*Pn	**Pn**	**14 33 47.8**	**-1.7**
LVC	**Limon Verde**	**18.08**	**10**	P	**P**	**14 36 02.0**	**+1.0**
	comp=N,8.4nm,0.3s,baz=197,slow=8.8,SNR=4.9						
LVC	**Limon Verde**	**18.08**	**10**	*e*P	**Pn**	**14 36 00.4**	**-0.2**
	comp=N,11nm,1.1s						
CPUP	**Villa Florida**	**18.80**	**46**	P	**Pn**	**14 36 11.7**	**+2.7**
	comp=N,0.2nm,0.3s,baz=208,slow=6.1,SNR=6.1						
PB11	**IPOC Station P**	**20.82**	**7**	*e*P	**P**	**14 36 31.6**	**+0.9**
	comp=N,27nm,0.9s						
LPAZ	**La Paz**	**24.41**	**10**	P	**P**	**14 37 09.3**	**+1.0**
	comp=N,2.7nm,0.8s,baz=149,slow=7.2,SNR=9.2						
LPAZ	**La Paz**	**24.41**	**10**	*e*P	**P**	**14 37 09.1**	**+0.8**
	comp=N,3.9nm,0.8s						
SIV	**San Ignacio**	**26.30**	**25**	P	**P**	**14 37 24.8**	**+0.1**
	comp=N,2.8nm,0.8s,baz=225,slow=19,SNR=3.0						
SIV				LR	LR	14 50 21.6	
	comp=N,22nm,18.8s,baz=180,slow=42						
SNAA	**Sanae**	**45.65**	**156**	*e*P	**P**	**14 40 09.8**	**+0.6**
	comp=N,5.8nm,1.0s						
TXAR	**Lajitas Array**	**75.39**	**332**	P	**P**	**14 43 33.6**	**+0.9**
	comp=N,0.3nm,0.8s,baz=156,slow=9.6,SNR=3.8						
DBIC	**Dimbokro**	**77.48**	**70**	P	**P**	**14 43 45.2**	**+0.4**
	comp=N,4.5nm,0.8s,baz=185,slow=4.7,SNR=4.3						
TORD	**Torodi Ar. Bea**	**86.59**	**70**	P	**P**	**14 44 31.5**	**-1.2**
	comp=N,0.8nm,0.9s,baz=210,slow=3.9,SNR=3.6						
PDAR	**Pinedale Array**	**89.52**	**333**	P	**P**	**14 44 47.5**	**+1.1**
	comp=N,0.8nm,1.0s,baz=180,slow=1.2,SNR=4.5						
ARU	**Arti**	**144.57**	**47**	*e*PKPdf	**PKPdf**	**14 51 25.5**	**+0.7**
SEY	**Seymchan**	**145.48**	**325**	PKPbc	**PKPab**	**14 51 26.4**	**-0.1**
	comp=N,2.8nm,1.0s,baz=86,slow=3.6,SNR=3.7						
ABKAR	**Akbulak array**	**145.51**	**59**	*e*PKP	**PKPab**	**14 51 26.9**	**-0.1**
TIXI	**Tiksi**	**147.06**	**348**	*e*PKPbc	**PKPab**	**14 51 30.4**	**-1.9**
ZALV	**Zalesovo Beam**	**159.55**	**41**	PKP	**PKPdf**	**14 51 46.7**	**-0.3**
	comp=N,0.4nm,0.4s,baz=222,slow=1.9,SNR=2.9						
MKAR	**Makanchi Array**	**160.57**	**63**	PKP	**PKPdf**	**14 51 47.4**	**-1.1**
	comp=N,0.7nm,0.9s,baz=242,slow=5.2,SNR=4.3						
MKAR				PKPab	**PKPab**	**14 52 30.4**	**+0.3**
	comp=N,0.3nm,0.6s,baz=253,slow=3.7,SNR=4.0						
CD2	**Chengdu**	**169.86**	**160**	PKP	**PKPdf**	**14 51 56.8**	**-0.1**

*IDC **17** 14:38:17.0±2.0, 7°.96S×105°.28E, h0km, mb3.3/3, mb1 3.5/3, mb1mx3.3/29, mbtmp3.3/3, ML4.6/1, Error ellipse: s-maj=53.4km s-min=27.7km az=47.0*
*DJA **17** 14:38:20.9±0.5, 6°.5S±4°.×10°.6E±°.°, h10km, M4.2/11, mB5.1/1, mb4.5/1, MLv4.0/11, Mw(mB)4.4/1*
*ISCJB **17** 14:38:23.6±1.4, 7°.7S±0°.1×106°.0E±0°.1, h33km, mb3.1/3, Error ellipse: s-maj=19.6km s-min=9.9km az=42.5*
ISC 17 14:38:24.5±1.4,**7°.7S**±0°.1×**106°.0E**±0°.1,**h35**km,**n14,** σ1**f23**/11,**mb2.9/3,Jawa**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKJI	**Sukabumi**	**0.90**	**41**	P	**Pn**	**14 38 40.5**	**-0.2**
CGJI	**Cibinong**	**1.11**	**346**	P	**Pn**	**14 38 43.6**	**0.0**
CNJI	**Cibinong**	**1.21**	**72**	P	**Pn**	**14 38 44.6**	**-0.4**
CBJI	**Citeko**	**1.54**	**35**	P	Pn	14 38 46.8	-2.7
SBJI	**Serang**	**1.57**	**6**	P	**Pn**	**14 38 51.0**	**+1.0**
CISI	**Cisompet, Garu**	**1.84**	**86**	P	**Pn**	**14 38 53.2**	**-0.5**
LEM	**Lembang**	**1.85**	**62**	Pn	Pn	14 39 01.5	+7.6
	124nm,0.3s,baz=311,slow=3.9,SNR=32						
LEM				Sn	Sn	14 39 25.6	+9.4
	26nm,0.3s,baz=310,slow=23,SNR=6.7						
LEM	**Lembang**	**1.85**	**62**	P	Pn	14 39 01.5	+7.6
CMJI	**Cimerak**	**2.46**	**92**	P	**Pn**	**14 39 01.7**	**-0.5**
KASI	**Kota Agung**	**2.60**	**326**	P	**Pn**	**14 39 04.6**	**+0.4**
UWJI	**Ujung Watu**	**5.10**	**76**	P	**Pn**	**14 39 40.0**	**+1.4**
WRA	**Warramunga Arr**	**30.06**	**117**	P	**P**	**14 44 31.7**	**+1.0**
	0.1nm,0.5s,baz=290,slow=11,SNR=3.0						
ASAR	**Alice Springs**	**31.14**	**124**	P	**P**	**14 44 41.8**	**+1.6**
	0.1nm,0.4s,baz=306,slow=8.2,SNR=10						
MKAR	**Makanchi Array**	**58.20**	**341**	P	**P**	**14 48 13.0**	**-2.2**
	0.2nm,0.4s,baz=139,slow=9.2,SNR=6.2						

*ISK **17** 14:58:21.8, 40°.71N×29°.22E, h6km, MD2.8*
*ISCJB **17** 14:58:22.0±0.4, 40°.72N±0°.02×29°.22E±0°.03, h0km±4km, Error ellipse: s-maj=3.4km s-min=3.0km az=43.8*
*DDA **17** 14:58:22.1, 40°.70N×29°.24E, h11km, Md2.5*
*CSEM **17** 14:58:22.4±0.1, 40°.72N×29°.22E, h5km, MD2.5, Error ellipse: s-maj=2.6km s-min=2.3km az=177.0*
ISC 17 14:58:22.6±1.0,**40°.71N**±0°.02×**29°.23E**±0°.02,**h5**km±9km, **n60,** σ0**f42**/90,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GEMT	**Gemlik**	**0.27**	**186**	*e*PG	**Pg**	**14 58 27.7**	**-0.2**
GEMT	**Gemlik**	**0.27**	**186**	*e*Pg	**Pg**	**14 58 27.7**	**-0.2**
ARMT	**Armutlu**	**0.31**	**243**	*e*PG	**Pg**	**14 58 28.7**	**0.0**
ARMT	**Armutlu**	**0.31**	**243**	*e*Pg	**Pg**	**14 58 28.7**	**0.0**
HRT	**Hereke**	**0.35**	**71**	*e*PG	**Pg**	**14 58 29.6**	**0.0**
HRT				*e*SG	**Sg**	**14 58 34.2**	**-0.1**
HRT	**Hereke**	**0.35**	**71**	*e*Pg	**Pg**	**14 58 29.6**	**0.0**
HRT				*e*Sg	**Sg**	**14 58 34.2**	**-0.1**
ISK	**Istanbul-Kandi**	**0.38**	**341**	*e*PG	**Pg**	**14 58 29.8**	**-0.2**
ISK				*e*SG	**Sg**	**14 58 35.3**	**+0.2**
ISK	**Istanbul-Kandi**	**0.38**	**341**	*e*Pg	**Pg**	**14 58 29.8**	**-0.2**
ISK				*e*Sg	**Sg**	**14 58 35.3**	**+0.2**
MDNY	**Mudanya-Bursa**	**0.42**	**218**	*e*PG	**Pg**	**14 58 30.6**	**-0

RKY	Sarkoy-Tekirda	1.56 270	*e*Pn	Pn	14 58 50.6	-0.4
BALY	Balya	1.56 232	P	Pn	14 58 51.4	+0.3
BALY	Balya	1.56 232	*i* P	Pn	14 58 51.4	+0.3
GDZ	Gediz	1.63 173	P	Pg	14 58 54.0	+0.2
GDZ			S	Sn	14 59 13.2	-0.2
GDZ	Gediz	1.63 173	*i* P	Pg	14 58 54.0	+0.2
GDZ			*i* S	Sn	14 59 13.2	-0.2
DEMI	Demirci	1.71 193	P	Pb	14 58 54.8	+0.3
DEMI			S	Sg	14 59 17.5	+0.1
DEMI	Demirci	1.71 193	*i* P	Pb	14 58 54.8	+0.3
DEMI			*i* S	Sg	14 59 17.5	+0.1
LPK	Lapseki	1.91 261	*e*PN	Pn	14 58 55.5	-0.2
LPK	Lapseki	1.91 261	*e*Pn	Pn	14 58 55.5	-0.2
EDRB	Edirne	2.19 302	*e*PN	Pn	14 58 59.7	0.0
MANT	Manisa	2.27 193	*i* P	Pb	14 59 04.7	+0.4
MANT			*i* S	Sb	14 59 33.8	+1.1

DDA ***17*** *15:04:08.6, 41°.40N×35°.85E, h22km, Md2.6*
ISK ***17*** *15:04:08.6, 41°.37N×35°.87E, h4km, MD2.8*
CSEM ***17*** *15:04:09.6±0.2, 41°.37N×35°.86E, h5km, MD2.6, Error ellipse: s-maj=5.1km s-min=2.8km az=30.0*
ISC 17 15:04:09.7±0.9, 41°.38N±0°.03×35°.87E±0°.02, h15km±8km, n43, σ0§91/73, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SAMS	**Samsun-Alacam**	**0.24**	**95**	P	**Pb**	**15 04 14.7**	**-1.1**
SAMS				S	**Sg**	**15 04 20.2**	**+1.6**
SAMS	**Samsun-Alacam**	**0.24**	**95**	*i* P	**Pb**	**15 04 14.7**	**-1.1**
SAMS				*i* S	**Sg**	**15 04 20.2**	**+1.6**
HAVZ	**Havza**	**0.33**	**200**	P	**Pg**	**15 04 15.8**	**-0.7**
HAVZ				S	**Sg**	**15 04 21.0**	**-0.1**
HAVZ	**Havza**	**0.33**	**200**	*i* P	**Pg**	**15 04 15.8**	**-0.7**
HAVZ				*i* S	**Sg**	**15 04 21.0**	**-0.1**
KVT	**Kavak**	**0.33**	**155**	*e*PG	**Pg**	**15 04 15.4**	**-1.2**
KVT	**Kavak**	**0.33**	**155**	*e*Pg	**Pg**	**15 04 15.4**	**-1.2**
DIKM	**Dikmen**	**0.53**	**301**	*e*PG	**Pb**	**15 04 19.7**	**-1.1**
DIKM				*e*SG	**Sg**	**15 04 28.0**	**+0.7**
DIKM	**Dikmen**	**0.53**	**301**	*e*Pg	**Pb**	**15 04 19.7**	**-1.1**
DIKM				*e*Sg	**Sg**	**15 04 28.0**	**+0.7**
BOYT	**Boyabat**	**0.72**	**273**	P	**Pb**	**15 04 22.6**	**-1.5**
BOYT				S	**Sg**	**15 04 35.0**	**+1.5**
BOYT	**Boyabat**	**0.72**	**273**	*i* P	**Pb**	**15 04 22.6**	**-1.5**
BOYT				*i* S	**Sg**	**15 04 35.0**	**+1.5**
SNOP	**Sinop**	**0.81**	**323**	*e*PG	**Pb**	**15 04 25.0**	**-0.5**
SNOP				*e*SG	**Sg**	**15 04 36.8**	**+0.8**
SNOP	**Sinop**	**0.81**	**323**	*e*Pg	**Pb**	**15 04 25.0**	**-0.5**
SNOP				*e*Sg	**Sg**	**15 04 36.8**	**+0.8**
BYBT	**Boyabat**	**0.83**	**276**	*e*PG	**Pb**	**15 04 25.0**	**-0.8**
BYBT	**Boyabat**	**0.83**	**276**	*e*Pg	**Pb**	**15 04 25.0**	**-0.8**
ERBA	**Erbaa**	**0.97**	**136**	P	**Pb**	**15 04 27.1**	**-1.2**
ERBA				S	**Sb**	**15 04 40.6**	**-0.3**
ERBA	**Erbaa**	**0.97**	**136**	*i* P	**Pb**	**15 04 27.1**	**-1.2**
ERBA				*i* S	**Sb**	**15 04 40.6**	**-0.3**
TOKA	**Tokat**	**1.15**	**156**	P	**Pb**	**15 04 31.7**	**+0.3**
TOKA				S	**Sg**	**15 04 48.5**	**+1.4**
TOKA	**Tokat**	**1.15**	**156**	*i* P	**Pb**	**15 04 31.7**	**+0.3**
TOKA				*i* S	**Sg**	**15 04 48.5**	**+1.4**
TOKT	**Tokat**	**1.18**	**154**	*e*PN	**Pn**	**15 04 31.7**	**0.0**
TOKT	**Tokat**	**1.18**	**154**	*e*Pn	**Pn**	**15 04 31.7**	**0.0**
COAL	**Corum-Alaca**	**1.31**	**211**	P	**Pn**	**15 04 32.8**	**-0.8**
COAL				S	**Sg**	**15 04 52.3**	**+0.4**
COAL	**Corum-Alaca**	**1.31**	**211**	*i* P	**Pn**	**15 04 32.8**	**-0.8**
COAL				*i* S	**Sg**	**15 04 52.3**	**+0.4**
RSDY	**Resadiye-TOKAT**	**1.48**	**131**	*e*PN	**Pn**	**15 04 36.4**	**+0.5**
RSDY	**Resadiye-TOKAT**	**1.48**	**131**	*e*Pn	**Pn**	**15 04 36.4**	**+0.5**
BZK	**Bozkurt**	**1.51**	**293**	*e*PN	**Pb**	**15 04 37.6**	**+0.1**
BZK				*e*SN	**Sg**	**15 04 58.0**	**-0.4**
BZK	**Bozkurt**	**1.51**	**293**	*e*Pn	**Pb**	**15 04 37.6**	**+0.1**
BZK				*e*Sn	**Sg**	**15 04 58.0**	**-0.4**
ORDU	**Ordu-Boztepe**	**1.55**	**104**	P	**Pn**	**15 04 37.4**	**+0.5**
ORDU				S	**Sg**	**15 04 59.2**	**-0.6**
ORDU	**Ordu-Boztepe**	**1.55**	**104**	*i* P	**Pn**	**15 04 37.4**	**+0.5**
ORDU				*i* S	**Sg**	**15 04 59.2**	**-0.6**
ILGA	**Ilgaz**	**1.65**	**259**	P	**Pb**	**15 04 39.4**	**-0.6**
ILGA				S	**Sg**	**15 05 03.8**	**+0.8**
ILGA	**Ilgaz**	**1.65**	**259**	*i* P	**Pb**	**15 04 39.4**	**-0.6**
ILGA				*i* S	**Sg**	**15 05 03.8**	**+0.8**
SVSK	**Karacayir**	**1.70**	**149**	*e*PN	**Pb**	**15 04 40.1**	**-0.5**
SVSK	**Karacayir**	**1.70**	**149**	*e*Pn	**Pb**	**15 04 40.1**	**-0.5**
GRSN	**GIRESUNGRSN**	**1.87**	**103**	P	**Pn**	**15 04 42.3**	**+1.0**
GRSN				S	**Sb**	**15 05 06.7**	**-0.1**
GRSN	**GIRESUNGRSN**	**1.87**	**103**	*i* P	**Pn**	**15 04 42.3**	**+1.0**
GRSN				*i* S	**Sb**	**15 05 06.7**	**-0.1**
CUSAR	**Sarkisla-SIVAS**	**1.98**	**171**	P	**Pn**	**15 04 44.3**	**+1.4**
CUSAR				S	**Sb**	**15 05 11.0**	**+0.9**
CUSAR	**Sarkisla-SIVAS**	**1.98**	**171**	*i* P	**Pn**	**15 04 44.3**	**+1.4**
CUSAR				*i* S	**Sb**	**15 05 11.0**	**+0.9**
ELDT	**Eldivan**	**2.05**	**245**	P	**Pn**	**15 04 44.5**	**+0.7**
ELDT	**Eldivan**	**2.05**	**245**	*i* P	**Pn**	**15 04 44.5**	**+0.7**
ELDT				*i* S	**Sg**	**15 05 14.9**	**-0.8**
CDAG	**Cicekdag**	**2.09**	**213**	P	**Pn**	**15 04 45.5**	**+1.1**
CDAG	**Cicekdag**	**2.09**	**213**	*i* P	**Pn**	**15 04 45.5**	**+1.1**
CDAG				*i* S	**Sg**	**15 05 17.4**	**+0.4**
SUSE	**Susehri**	**2.13**	**123**	P	**Pb**	**15 04 47.3**	**-0.8**
SUSE	**Susehri**	**2.13**	**123**	*i* P	**Pb**	**15 04 47.3**	**-0.8**
SUSE				*i* S	**Sb**	**15 05 16.1**	**+1.8**
KELT	**Kelkit**	**2.85**	**114**	*i* P	**Pb**	**15 04 59.5**	**-0.9**
KELT				*i* S	**Sb**	**15 05 35.8**	**+0.5**

CSEM 17 15:06:48.4±0.2, 48°.89N×21°.05E, h1km, ML1.8, 3D, Error ellipse: s-maj=6.8km s-min=3.9km az=161.0, Suspected Mining explosion., Hungary

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRVS	**Cervenica-Dubn**	**0.27**	**87**	*e*Pg	Pg	15 06 52.8	-0.9
CRVS				*e*Sg	Sg	15 06 56.7	-0.5
CRVS	**Cervenica-Dubn**	**0.27**	**87**	*e*PG	Pg	15 06 52.8	-0.9
CRVS				*e*SG	Sg	15 06 56.7	-0.5
STHS	**Stebnicka Huta**	**0.54**	**14**	*e*Pg	Pg	15 06 59.0	+0.2
STHS				*e*Sg	Sg	15 07 07.0	+1.2
STHS	**Stebnicka Huta**	**0.54**	**14**	*e*PG	Pg	15 06 59.0	+0.2
STHS				*e*SG	Sg	15 07 07.0	+1.2
STHS				*e*LG	Lg	15 07 07.2	
KECS	**Kecovo**	**0.55**	**223**	*e*Pg	Pg	15 06 59.5	+0.6
KECS				*e*Sg	Sg	15 07 07.1	+1.0
KECS	**Kecovo**	**0.55**	**223**	*e*PG	Pg	15 06 59.5	+0.6
KECS				*e*SG	Sg	15 07 07.1	+1.0
KOLS	**Kolonicke sedl**	**0.81**	**87**	*e*Pg	Pg	15 07 04.5	+0.6
KOLS				*e*Sg	Sb	15 07 16.2	-0.5
KOLS	**Kolonicke sedl**	**0.81**	**87**	*e*PG	Pg	15 07 04.5	+0.6
KOLS				*e*SG	Sb	15 07 16.2	-0.5
KOLS				*e*LG	Lg	15 07 24.3	
LANS	**Liptovska Anna**	**1.07**	**285**	*e*Pg	Pg	15 07 08.5	-0.4
LANS				*e*Sg	Sb	15 07 24.8	+0.5
LANS	**Liptovska Anna**	**1.07**	**285**	*e*PG	Pg	15 07 08.5	-0.4
LANS				*e*SG	Sb	15 07 24.8	+0.5
PSZ	**Piszkesteto**	**1.24**	**219**	⇓*e*Pn	Pn	15 07 13.4	+0.5
PSZ				⇓*e*PP	Sn	15 07 31.1	+0.8
PSZ	**Piszkesteto**	**1.24**	**219**	⇓*e*Pn	Pn	15 07 13.4	+0.5
VYHS	**Vyhne**	**1.52**	**256**	*e*Pg	Pn	15 07 16.8	+0.1
VYHS				*e*Sn	Sb	15 07 36.9	-0.2
VYHS	**Vyhne**	**1.52**	**256**	*e*PG	Pn	15 07 16.8	+0.1
VYHS				*e*SG	Sb	15 07 36.9	-0.2
VYHS				*e*LG	Lg	15 07 42.5	

ISCJB ***17*** *15:20:05.8±0.7, 39°.19N±0°.04×123°.17W±0°.09, h7km, Error ellipse: s-maj=10.6km s-min=4.8km az=160.7*
NEIC ***17*** *15:20:06.8, 39°.23N×123°.18W, h9km, MW3.7(BRK), After NCEDC.*
NEIC Felt [III] at Potter Valley, Redwood Valley and Ukiah; [II] at Upper Lake and Willits. Also felt at Albion, Boonville, Lakeport, McKinleyville, Point Arena, Rohnert Park and Sacramento.
ISC 17 15:20:05.1±1.1, 39°.27N±0°.03×123°.21W±0°.07, h7km, n26, σ1§22/26, Near coast of northern California

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HOPS	**Hopland Field**	**0.29**	**159**	*e*Pg	**Pb**	**15 20 12.3**	**-0.3**
GASB	**Alder Springs**	**0.54**	**44**	*e*Pg	**Pn**	**15 20 18.4**	**-1.0**
NSHM	**Saint Helena R**	**0.88**	**148**	*e*Pg	**Pb**	**15 20 22.7**	**+0.1**
KMRM	**Mail Ridge**	**1.03**	**338**	*e*Pg	**Pn**	**15 20 27.0**	**+0.9**
MCCM	**Marconi Confer**	**1.15**	**167**	*e*Pg	**Pg**	**15 20 26.3**	**-0.8**
ORV	**Oroville**	**1.35**	**77**	*e*Pn	**Pn**	**15 20 30.0**	**-0.4**
WDC	**Whiskeytown Da**	**1.41**	**21**	*e*Pn	**Pg**	**15 20 32.7**	**+0.6**
O03D	**Paynes Creek**	**1.49**	**46**	P	**Pg**	**15 20 33.5**	**-0.2**
	baz=225,SNR=29						
KHMM	**Horse Mountain**	**1.66**	**346**	*e*Pn	**Pb**	**15 20 35.9**	**-0.1**
JCC	**Jacoby Creek,**	**1.67**	**338**	*e*Pn	**Pb**	**15 20 36.0**	**-0.3**
N02D	**Trinity Center**	**1.75**	**13**	P	**Pg**	**15 20 38.4**	**-0.2**
	baz=192,SNR=48						
AFDM	**Forest Hills D**	**1.77**	**100**	*e*Pn	**Pn**	**15 20 35.7**	**-0.4**
M02C	**Callahan**	**2.14**	**7**	Pb	**Pg**	**15 20 47.3**	**+1.2**
	baz=187,SNR=30						
YBH	**Yreka Blue Hor**	**2.49**	**9**	*e*Pn	**Pb**	**15 20 49.0**	**-1.3**
CMB	**Columbia Colle**	**2.53**	**118**	*e*Pn	**Pn**	**15 20 47.1**	**+0.5**
M04C	**Macdoel**	**2.72**	**22**	Pb	**Pg**	**15 20 56.6**	**-0.6**
	baz=202,SNR=14						
SAO	**San Andreas Ge**	**2.86**	**150**	*e*Pn	**Pn**	**15 20 50.8**	**-0.2**
PAHR	**Pah Rah Range**	**2.99**	**80**	*e*Pn	**Pn**	**15 20 55.4**	**+2.4**
WAKR	**Walker**	**3.04**	**103**	*e*Pn	**Pn**	**15 20 56.1**	**+2.4**
HUMO	**Hull Mountain**	**3.34**	**3**	*e*Pn	**Pb**	**15 21 02.2**	**-2.5**
MOD	**Modoc Plateau**	**3.44**	**39**	*e*Pn	**Pn**	**15 21 00.4**	**+1.2**
K05A	**Summer Lake**	**3.87**	**26**	*e*Pn	**Pn**	**15 21 06.5**	**+1.3**
NV01	**Mina Array Sit**	**3.92**	**101**	*e*Pn	**Pn**	**15 21 05.9**	**0.0**
NV11	**Mina Array Sit**	**4.03**	**100**	*e*Pn	**Pn**	**15 21 07.8**	**+0.5**
WVOR	**Wild Horse Val**	**4.69**	**46**	*e*Pn	**Pn**	**15 21 16.6**	**+0.1**
R11A	**Troy Canyon, C**	**6.02**	**96**	*e*Pn	**Pn**	**15 21 37.3**	**+2.5**
	2.8nm,0.9s						

SJA ***17*** *15:21:06.0±1.5, 32°.09S×71°.48W, h10km±42km, ML2.9, MW3.1*
GUC ***17*** *15:21:07.6±0.5, 32°.12S×71°.37W, h40km±3km, ML2.7*
ISC 17 15:21:04.3±2.8, 32°.18S±0°.08×71°.9W±0°.2, h17km, n15, σ1§12/17, 1C, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ROC1	**El Roble**	**1.06**	**138**	*e*P	**Pg**	**15 21 25.0**	**0.0**
ROC1				*e*S	**Sb**	**15 21 37.9**	**-0.2**
ROCH	**El Roble**	**1.06**	**138**	*e*P	**Pg**	**15 21 25.0**	**0.0**
ROCH				*i* S	**Sb**	**15 21 37.9**	**-0.2**
ROCH				IAML		15 21 38.3	
	comp=N,500nm,0.4s						
PEL	**Peldehue**	**1.38**	**134**	⇑*i* P	**Pn**	**15 21 28.9**	**+0.1**
PEL				*i* S	**Sn**	**15 21 44.6**	**-2.1**
PEL				IAML		15 21 46.9	
	comp=N,255nm,0.2s						
ANTU	**Antumapu**	**1.73**	**144**	*e*S	**Sn**	**15 21 54.5**	**-0.7**
AUSP	**Uspallata**	**2.10**	**92**	*e*P	**Pn**	**15 21 39.2**	**+0.3**
TLL	**Tololo Astrono**	**2.20**	**24**	*e*P	**Pn**	**15 21 40.4**	**+0.1**
TLL				IAML		15 22 10.3	
	comp=N,110nm,0.6s						
RTLS	**Leoncito**	**2.21**	**81**	*e*P	**Pn**	**15 21 40.6**	**+0.2**
ARCO	**CERRO ARCO**	**2.56**	**106**	*e*P	**Pn**	**15 21 47.1**	**+2.0**
ARCO				IAML		15 22 21.1	
	comp=Z,40nm,0.9s						
ASAL	**Salagasta**	**2.59**	**100**	*e*P	**Pn**	**15 21 46.9**	**+1.4**
AAGR	**Agrelo**	**2.71**	**110**	*e*P	**Pn**	**15 21 49.2**	**+2.0**
RTCV	**Cerro Valdivia**	**2.84**	**84**	*e*P	**Pn**	**15 21 49.6**	**+0.7**
RTLL	**Cerro Villicun**	**3.00**	**74**	*e*P	**Pn**	**15 21 50.8**	**-0.4**
AMOG	**MOGNA**	**3.13**	**68**	*e*P	**Pn**	**15 21 53.3**	**+0.4**
AGUA	**GUANDACOL**	**3.95**	**48**	*e*P	**Pn**	**15 22 05.4**	**+1.2**
VCA	**Vinchina**	**4.66**	**43**	IAML		15 23 33.3	
	comp=Z,24nm,4.8s						

NIED ***17*** *15:23:00, 36°.90N×140°.60E, h5km, Mw3.7 Best double couple: Mo=4.11000×10^14 NP1:φs=37.00000°, δ=45.00000°, λ=-62.00000°. NP2:φs=180.00000°, δ=52.00000°, λ=-115.00000°.*
IDC ***17*** *15:23:41.5±0.8, 36°.90N×140°.75E, h0km, mb3.8/9, mb1 3.9/16, mb1mx3.7/43, mbtmp3.8/16, ML3.2/6, MS2.6/5, Ms1 2.6/5, ms1mx2.4/59, Error ellipse: s-maj=18.9km s-min=14.2km az=114.0*
ISCJB ***17*** *15:23:42.4±0.6, 36°.91N±0°.03×140°.76E±0°.05, h18km±4km, mb3.8/13, Error ellipse: s-maj=6.9km s-min=4.2km az=31.1*
JMA ***17*** *15:23:42.9, 36°.92N×140°.64E, h5km±1km, M3.7 Broadband fault plane solution: P waves. NP1: φs=173.00000°, δ=56.00000°, λ=-101.00000°. NP2: φs=12.00000°, δ=35.00000°, λ=-75.00000°. Principal axes: T Plg=11.0000°, Azm=271.0000°; N Plg=9.0000°, Azm=179.0000°; P Plg=76.0000°, Azm=51.0000°;*
JMA Felt I J1.
NEIC ***17*** *15:23:47.0±0.9, 36°.91N×140°.65E, h41km±8km, mb4.2/4 Error ellipse: s-maj=11.5km s-min=6.2km az=126.0*
ISC 17 15:23:43.1±1.1, 36°.90N±0°.03×140°.69E±0°.04, h10km±7km, n38, σ0§93/41, mb4.0/13, 5C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.21**	**23**	⇑P	**Pg**	**15 23 47.4**	**-0.2**
ONAJ				S	**Sg**	**15 23 50.8**	**+0.2**
JHO	**Hitachi**	**0.31**	**199**	⇑P	**Pg**	**15 23 48.9**	**-0.4**
JFK	**Kawauchi**	**0.48**	**17**	⇓P	**Pg**	**15 23 52.2**	**-0.3**
JFK				S	**Sg**	**15 23 58.9**	**0.0**
JSB	**Shiboa**	**0.62**	**276**	⇑P	**Pg**	**15 23 54.9**	**-0.2**
JSB				S	**Sg**	**15 24 03.3**	**0.0**
JFT	**Otama**	**0.68**	**335**	⇑P	**Pg**	**15 23 55.5**	**-0.7**
JFT				S	**Sg**	**15 24 04.5**	**-0.5**
JYT	**Yasato**	**0.79**	**211**	⇑P	**Pg**	**15 23 57.5**	**-0.7**
JYT				S	**Sg**	**15 24 08.3**	**-0.1**
MJAR	**Matsushiro Arr**	**2.03**	**260**	Pn	**Pn**	**15 24 17.4**	**0.0**
	38nm,0.3s,baz=82,slow=15,SNR=142						
MJAR				Sn	**Sn**	**15 24 43.7**	**+0.9**
	33nm,0.3s,baz=79,slow=28,SNR=20						
MJAR				LR	LR	15 25 20.2	
	comp=Z,133nm,21.1s,baz=95,slow=48						
MAJO	**Matsushiro**	**2.03**	**260**	*e*Pn	**Pn**	**15 24 17.9**	**+0.5**
MAJO				*e*Sn	**Sb**	**15 24 44.8**	**-0.7**
MAT	**Matsushiro**	**2.03**	**260**	P	**Pn**	**15 24 17.6**	**+0.2**
MAT				S	**Sn**	**15 24 43.5**	**+0.6**
JHJ	**Hachijo jima 2**	**3.85**	**191**	Pn	**Pn**	**15 24 43.1**	**+0.7**
	5.3nm,0.3s,baz=148,slow=22,SNR=7.5						
JHJ				Sn	**Sn**	**15 25 29.8**	**+2.0**
	5.3nm,0.3s,baz=59,slow=19,SNR=3.5						
ERM	**Erimo**	**5.45**	**20**	*e*Pn	**Pn**	**15 25 06.1**	**+1.7**
ASAJ	**Asahikawa**	**7.35**	**11**	Pn	**Pn**	**15 25 31.0**	**+0.5**
	1.2nm,0.3s,baz=223,slow=9.4,SNR=12						
ASAJ				LR	LR	15 28 04.0	
	comp=Z,17nm,18.6s,baz=146,slow=36						
JNU	**Nakatsue**	**8.89**	**248**	Pn	**Pn**	**15 25 53.2**	**+1.5**
	0.1nm,0.3s,baz=43,slow=12,SNR=4.6						
JNU				LR	LR	15 29 35.8	
	comp=Z,44nm,18.2s,baz=121,slow=40						
USRK	**Ussuriysk Ar.**	**9.84**	**320**	Pn	**Pn**	**15 26 06.0**	**+1.3**
	0.1nm,0.3s,baz=126,slow=13,SNR=5.8						
KSRS	**Korea Array**	**10.21**	**277**	Pn	**Pn**	**15 26 11.4**	**+1.8**
	0.1nm,0.3s,baz=95,slow=13,SNR=2.8						
KSRS				LR	LR	15 30 04.4	
	comp=Z,55nm,18.1s,baz=71,slow=37						
KSAR	**Wonju Array Be**	**10.24**	**277**	Pn	**Pn**	**15 26 11.4**	**+1.3**
KLR	**Kul'dur**	**13.93**	**335**	Pn	**Pn**	**15 27 02.5**	**+2.0**
	0.1nm,0.3s,baz=198,slow=20,SNR=1.7						
KLR				LR	LR	15 31 26.8	
	comp=Z,21nm,19.8s,baz=158,slow=33						
MA2	**Magadan**	**23.61**	**13**	P	**P**	**15 28 53.3**	**-0.7**
	3.2nm,0.6s,baz=213,slow=11,SNR=4.6						
MA2	**Magadan**	**23.61**	**13**	*e*P	**P**	**15 28 53.1**	**-0.8**
SEY	**Seymchan**	**27.03**	**12**	P	**P**	**15 29 25.8**	**+0.6**
	4.2nm,1.2s,baz=192,slow=12,SNR=3.9						
H11N2	**WAKE ISLAND Hy**	**28.58**	**120**	T	T	15 59 25.8	
	baz=313,slow=75,SNR=66						
H11N1	**WAKE ISLAND Hy**	**28.59**	**120**	T	T	15 59 26.4	
	baz=313,slow=75,SNR=70						
H11N3	**WAKE ISLAND Hy**	**28.60**	**120**	T	T	15 59 27.2	
	baz=313,slow=75,SNR=73						
H11S1	**WAKE ISLAND Hy**	**29.28**	**122**	T	T	16 00 18.4	
	baz=314,slow=76,SNR=147						
H11S3	**WAKE ISLAND Hy**	**29.28**	**122**	T	T	16 00 18.7	
	baz=314,slow=76,SNR=110						
H11S2	**WAKE ISLAND Hy**	**29.29**	**122**	T	T	16 00 19.7	
	baz=314,slow=76,SNR=74						
ZALV	**Zalesovo Beam**	**41.58**	**312**	P	**P**	**15 31 30.2**	**-0.6**
	0.5nm,0.4s,baz=108,slow=4.7,SNR=3.3						
MKAR	**Makanchi Array**	**43.70**	**302**	P	**P**	**15 31 47.7**	**-0.6**
	0.2nm,0.4s,baz=88,slow=11,SNR=3.3						
KURK	**Kurchatov**	**45.56**	**308**	*e*P	**P**	**15 32 01.7**	**-1.3**
	3.8nm,0.9s						
ILAR	**Eielson Array**	**49.91**	**32**	P	**P**	**15 32 36.2**	**-0.4**
	0.5nm,1.0s,baz=270,slow=8.4,SNR=4.6						
BRVK	**Borovoye**	**50.29**	**312**	*e*P	**P**	**15 32 39.4**	**-0.2**
	1.5nm,0.7s						
WRAB	**Tennant Creek**	**56.85**	**187**	*e*P	**P**	**15 33 27.2**	**-0.8**
	4.7nm,1.1s						
WRA	**Warramunga Arr**	**56.86**	**187**	P	**P**	**15 33 28.0**	**0.0**
	2.1nm,0.7s,baz=5.2,slow=7.5,SNR=9.6						
ABKAR	**Akbulak array**	**57.58**	**310**	*e*P	**P**	**15 33 31.9**	**-1.1**
	0.2nm,0.4s						
ASAR	**Alice Springs**	**60.58**	**187**	P	**P**	**15 33 53.0**	**-0.9**
	1.0nm,0.8s,baz=28,slow=6.6,SNR=7.3						
YKA	**Yellowknife Ar**	**64.21**	**30**	P	**P**	**15 34 16.7**	**-1.1**
	0.5nm,0.9s,baz=303,slow=7.1,SNR=3.8						
TXAR	**Lajitas Array**	**90.66**	**52**	P	**P**	**15 36 46.6**	**+0.2**
	0.3nm,0.7s,baz=298,slow=2.7,SNR=4.6						
LPAZ	**La Paz**	**147.25**	**59**	PKPbc	**PKPbc**	**15 43 28.4**	**+0.4**
	1.2nm,0.6s,baz=348,slow=4.1,SNR=6.5						

IDC ***17*** *15:26:45.2±3.5, 13°.39N×91°.38W, h0km, mb3.8/1, mb1 3.9/4, mb1mx3.5/39, mbtmp3.6/4, ML3.6/3, Error ellipse: s-maj=64.0km s-min=51.2km az=6.0*
MEX ***17*** *15:27:02.4±0.7, 14°.09N×91°.42W, h11km±371km, MD4.0*
ISC 17 15:26:51.6±2.0, 13°.7N±0°.2×91°.4W±0°.1, h28km, n7, σ1§32/10, Near coast of Guatemala

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		**2.66**	**319**	*e*P	**Pb**	**15 27 38.0**	**-0.4**
PCIG				*e*S	**Sn**	**15 28 06.4**	**+2.6**
CCIG	**Comitan**	**2.66**	**344**	*i* P	**Pb**	**15 27 36.9**	**-1.7**
CCIG				*e*S	**Sn**	**15 28 04.3**	**+0.2**
CMIG	**Matias Romero**	**4.76**	**315**	Pn	**Pn**	**15 28 01.4**	**0.0**
	1.1nm,0.3s,baz=49,slow=18,SNR=8.7						
CMIG				Sn	**Sn**	**15 28 55.2**	**-0.5**
	1.5nm,0.3s,baz=81,slow=15,SNR=3.8						
TEIG	**Tepich**	**7.13**	**24**	Pn	**Pn**	**15 28 35.2**	**+1.1**
	2.0nm,0.3s,baz=269,slow=23,SNR=16						
TXAR	**Lajitas Array**	**19.26**	**326**	P	**P**	**15 31 13.7**	**-0.4**
	0.1nm,0.3s,baz=151,slow=12,SNR=5.5						
NVAR	**Mina Array Bea**	**34.27**	**321**	P	**P**	**15 33 36.1**	**+0.5**
	0.8nm,0.6s,baz=131,slow=8.3,SNR=8.3						
CMAR	**Chiang Mai Arr**	**146.45**	**342**	PKPbc	**PKPdf**	**15 46 29.1**	**-0.6**
	0.8nm,0.8s,baz=342,slow=3.8,SNR=5.0						

IDC ***17*** *15:42:23.1±1.8, 2°.79N×83°.89W, h0km, mb3.7/4, mb1 4.0/4, mb1mx3.6/30, mbtmp3.7/4, MS3.3/3, Ms1 3.3/3, ms1mx2.8/30, Error ellipse: s-maj=93.1km s-min=26.9km az=52.0*
ISC 17 15:42:22.9±3.2, 3°.4N±0°.1×83°.3W±0°.3, h10km, n11, σ0§71/6, mb3.7/4, Off coast of central America

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GRGC	**Isla de Gorgon**	**5.09**	**94**	*e*P	Pn	15 43 36.6	-2.6
OTAV	**Otavalo**	**5.72**	**123**	*e*P	**Pn**	**15 43 47.6**	**-0.8**
MALC	**Bahia Malaga**	**5.93**	**84**	*e*P	**Pn**	**15 43 50.8**	**-0.1**
CRUC	**La Cruz**	**6.54**	**106**	*e*P	**Pn**	**15 43 59.6**	**0.0**
BCIP	**Isla Barro Col**	**6.67**	**30**	*e*P	**Pn**	**15 44 00.6**	**-0.5**
CAPC	**Capurgana**	**7.85**	**48**	*e*P	**Pn**	**15 44 17.2**	**-0.1**
CMIG	**Matias Romero**	**17.78**	**321**	LR	LR	15 51 57.1	
	comp=Z,98nm,19.1s,baz=155,slow=32						
LPAZ	**La Paz**	**24.60**	**143**	P	**P**	**15 47 45.0**	**+0.8**
	2.7nm,0.5s,baz=322,slow=6.4,SNR=9.1						
LPAZ				LR	LR	15 57 29.1	
	comp=Z,37nm,18.1s,baz=328,slow=37						
NVAR	**Mina Array Bea**	**47.31**	**322**	P	P	15 51 00.8	+3.6
	0.7nm,0.8s,baz=134,slow=8.5,SNR=3.6						
NVAR				LR	LR	16 09 19.2	
	comp=Z,42nm,20.0s,baz=176,slow=34						
YKA	**Yellowknife Ar**	**63.41**	**344**	P	P	15 52 55.2	+2.8
	0.4nm,0.9s,baz=143,slow=

MK31	**Makanchi Array**	**4.94**	**5**	Pn	**Pn**	**16 01 45.4**	**-0.2**
	0.3nm,0.2s,baz=193,slow=14,SNR=9.7						
MK31				⇑Pg	**Pb**	**16 01 58.1**	**+0.2**
	0.1nm,0.2s,baz=183,slow=15,SNR=4.4						
MK31				⇑Sn	**Sn**	**16 02 42.0**	**-0.7**
	0.5nm,0.2s,baz=283,slow=19,SNR=5.5						
MK31				⇓Lg	Lg	16 03 04.4	
	2.3nm,0.6s,baz=191,slow=30,SNR=7.7						

*ISCJB **17** 16:00:43.0±0.7, 23°.57N±0°.06×70°.59E±0°.04, h15km, Error ellipse: s-maj=8.3km s-min=5.4km az=0.9*
*NDI **17** 16:00:45.2±1.6, 23°.44N×70°.48E, h15km, ML3.6*
ISC 17 16:00:43.2±1.0, 23°.73N±0°.07×70°.50E±0°.06, h15km, n17, σ1§90/22, Southern India

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BHJ	**Bhuj**	**0.91**	**239**	*e*P	**Pb**	**16 00 59.9**	**-0.8**
BHJ				*e*S	**Sb**	**16 01 11.9**	**-0.8**
BHJ				IAML		16 01 12.1	
	comp=E,5μm,0.0s						
BHJ				IAML		16 01 12.2	
	comp=N,8μm,0.2s						
BHPL	**Bhopal**	**6.38**	**93**	*e*P	**Pn**	**16 02 20.2**	**+3.5**
BHPL				*e*S	**Sn**	**16 03 26.3**	**-3.0**
BHPL				IAML		16 04 02.8	
	comp=N,47nm,0.2s						
BHPL				IAML		16 04 04.5	
	comp=E,38nm,0.5s						
NDI	**New Delhi**	**7.79**	**49**	*e*x	**Sb**	**16 04 28.0**	**-2.6**
SMLA	**Simla**	**9.45**	**37**	*e*S	**Sn**	**16 04 44.3**	**-0.4**
SMLA				IAML		16 05 53.6	
	comp=N,27nm,0.4s						
SMLA				IAML		16 05 53.9	
	comp=E,43nm,0.3s						
RPR	**Rampur**	**9.52**	**119**	*e*Pn	**Pn**	**16 03 00.9**	**+1.0**
RPR				*e*		16 04 38.9	
RPR				*e*Sn	**Sn**	**16 04 48.2**	**+1.4**
HYBB	**Hyderabad (bro**	**9.81**	**128**	*e*Pn	**Pn**	**16 03 04.3**	**+0.4**
HYBB				*e*Sn	**Sn**	**16 04 54.1**	**+0.2**
HYBB				IVMs_BB	IVMs_BB	16 05 53.0	
	comp=Z,175nm,3.8s						
HYB	**Hyderabad**	**9.81**	**128**	*i* P	**Sn**	**16 04 52.0**	**-2.0**
HYB	**Hyderabad**	**9.81**	**128**	*e*S	Sn	16 04 42.6	-11
HYB				IAML		16 04 52.8	
	comp=E,3.7nm,0.2s						
HYB				IAML		16 04 53.2	
	comp=N,3.1nm,0.1s						
DHRM	**DHARAMSHALA**	**9.91**	**30**	*e*x	Pn	16 03 12.7	+7.3
DHRM				*e*S	**Sn**	**16 04 55.5**	**-1.0**
DHRM				IAML		16 05 47.3	
	comp=N,38nm,0.3s						
DHRM				IAML		16 05 47.5	
	comp=E,38nm,0.4s						
NJS	**Nagarjunasagar**	**10.92**	**129**	*e*Pn	**Pn**	**16 03 19.2**	**+0.1**
NJS				IAmb	IAmb	16 03 19.8	
	comp=Z,6.1nm,0.7s						
NJS				*e*		16 05 14.0	
NJS				*e*Sn	**Sn**	**16 05 21.6**	**+0.4**
NJS				IAMs_20	IAMs_20	16 07 40.5	
	comp=Z,118nm,7.3s						
NJS				IVMs_BB	IVMs_BB	16 07 41.3	
	comp=Z,226nm,3.9s						
ADKI	**Addanki**	**11.87**	**130**	*e*Pn	**Pn**	**16 03 31.9**	**-0.2**
ADKI				*e*		16 05 36.6	
ADKI				*e*Sn	**Sn**	**16 05 44.1**	**-0.2**
ADKI				IAMs_20	IAMs_20	16 06 21.3	
	comp=Z,172nm,7.4s						
ADKI				IVMs_BB	IVMs_BB	16 08 24.1	
	comp=Z,185nm,4.7s						
PYUN	**Piuthan**	**12.05**	**66**	*e*P	**Pn**	**16 03 38.0**	**+3.3**
	comp=Z,6.3nm,0.3s						
KOLN	**Koldanda**	**12.47**	**68**	*e*P	**Pn**	**16 03 43.2**	**+2.8**
	comp=Z,4.3nm,0.3s						
SKHT	**Srikalahasti**	**13.22**	**137**	Sn	**Sn**	**16 06 14.9**	**-2.3**
GKN	**Gorkha**	**13.42**	**69**	*e*P	**Pn**	**16 03 55.0**	**+1.7**
	comp=Z,3.4nm,0.3s						
KKN	**Kakani**	**13.91**	**70**	*e*P	**Pn**	**16 04 01.5**	**+1.3**
	comp=Z,4.9nm,0.3s						
PKIN	**Phulchoki**	**13.97**	**71**	*e*P	**Pn**	**16 04 02.3**	**+1.4**
	comp=Z,5.9nm,0.3s						

*ISCJB **17** 16:28:40.3±1.0, 14°.4S±0°.2×170°.0E±0°.2, h614km, mb3.7/10, Error ellipse: s-maj=30.4km s-min=14.2km az=31.1*
*IDC **17** 16:28:41.7±1.7, 14°.50S×169°.95E, h615km±19km, mb3.2/10, mb1 3.3/11, mb1mx3.0/51, mbtmp4.1/11, Error ellipse: s-maj=34.3km s-min=13.7km az=131.0*
ISC 17 16:28:41.5±1.1, 14°.5S±0°.2×170°.0E±0°.2, h614km, n12, σ1§05/14, mb3.6/9, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**8.23**	**204**	P	**P**	**16 30 43.8**	**+0.2**
	0.5nm,0.3s,baz=60,slow=20,SNR=4.2						
CTA	**Charters Tower**	**23.31**	**253**	P	**P**	**16 33 05.3**	**+1.1**
	5.1nm,0.8s,baz=63,slow=16,SNR=3.7						
STKA	**Stephens Creek**	**31.16**	**231**	P	**P**	**16 34 12.6**	**+0.3**
	2.0nm,0.4s,baz=65,slow=9.0,SNR=31						
WRA	**Warramunga Arr**	**34.43**	**256**	P	**P**	**16 34 39.5**	**-0.5**
	0.8nm,0.5s,baz=86,slow=8.6,SNR=4.3						
WRA				ScP	**ScP**	**16 39 46.3**	**+1.1**
	0.8nm,0.7s,baz=90,slow=3.1,SNR=4.8						
ASAR	**Alice Springs**	**35.21**	**249**	P	**P**	**16 34 46.2**	**-0.2**
	1.4nm,0.4s,baz=76,slow=9.7,SNR=77						
ASAR				S	**S**	**16 39 35.9**	**-2.2**
	0.6nm,0.9s,baz=84,slow=14,SNR=4.2						
ASAR				ScP	**ScP**	**16 39 48.5**	**+0.5**
	1.7nm,0.7s,baz=89,slow=3.8,SNR=24						
MJAR	**Matsushiro Arr**	**58.97**	**330**	P	**P**	**16 37 43.0**	**-0.6**
	1.7nm,0.7s,baz=156,slow=7.4,SNR=5.6						
PETK	**Petropavlovsk-**	**68.17**	**352**	P	**P**	**16 38 41.7**	**0.0**
	2.7nm,0.6s,baz=114,slow=5.2,SNR=6.6						
KLR	**Kul'dur**	**71.90**	**335**	P	**P**	**16 39 05.0**	**+1.2**
	1.2nm,0.6s,baz=160,slow=5.7,SNR=4.8						
CMAR	**Chiang Mai Arr**	**77.27**	**293**	P	**P**	**16 39 35.4**	**+0.9**
	1.6nm,0.9s,baz=121,slow=4.0,SNR=9.6						
SEY	**Seymchan**	**78.41**	**352**	P	**P**	**16 39 39.1**	**-0.4**
	baz=87,slow=17						
NVAR	**Mina Array Bea**	**85.15**	**48**	P	**P**	**16 40 13.4**	**-1.2**
	0.6nm,0.6s,baz=223,slow=7.6,SNR=4.0						
MKAR	**Makanchi Array**	**98.87**	**316**	P	Pdif	16 41 16.6	-0.4
	0.2nm,0.3s,baz=93,slow=5.8,SNR=2.7						

IDC 17 16:39:37.3±3.5, 2°.80N×128°.77E, h231km±31km, mb3.2/7, mb1 3.3/7, mb1mx3.0/47, mbtmp3.7/7, Error ellipse: s-maj=56.2km s-min=12.2km az=66.0, Halmahera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**21.00**	**188**	P	P	16 44 02.0	-1.3
	0.8nm,0.3s,baz=8.2,slow=13,SNR=4.0						
WRA	**Warramunga Arr**	**23.25**	**167**	P	P	16 44 25.4	+1.0
	0.4nm,0.3s,baz=343,slow=9.8,SNR=16						
ASAR	**Alice Springs**	**26.78**	**170**	P	P	16 44 56.0	-0.3
	0.5nm,0.5s,baz=352,slow=7.3,SNR=29						
ASAR				ScP	ScP	16 51 30.5	-0.8
	0.4nm,0.8s,baz=341,slow=3.3,SNR=4.7						
CMAR	**Chiang Mai Arr**	**33.10**	**300**	P	P	16 45 53.0	+1.1
	0.6nm,0.7s,baz=126,slow=7.4,SNR=5.3						
STKA	**Stephens Creek**	**36.58**	**162**	P	P	16 46 21.6	+0.2
	0.9nm,0.5s,baz=322,slow=8.9,SNR=9.3						
MKAR	**Makanchi Array**	**59.48**	**325**	P	P	16 49 16.4	+0.2
	0.6nm,0.4s,baz=120,slow=8.7,SNR=10						
ZALV	**Zalesovo Beam**	**62.34**	**332**	P	P	16 49 34.1	-1.1
	0.5nm,0.3s,baz=130,slow=5.8,SNR=2.5						

*IDC **17** 17:14:59.5±1.8, 38°.12N×142°.73E, h0km, mb3.4/3, mb1 3.6/6, mb1mx3.4/45, mbtmp3.5/6, ML3.4/3, MS2.4/2, Ms1 2.4/2, ms1mx2.1/27, Error ellipse: s-maj=46.7km s-min=24.7km az=84.0*
*NIED **17** 17:15:00, 38°.40N×142°.10E, h38km, Mw3.5 Best double couple: M0:1.79000×10^14 NP1:ϕs=154.00000°, δ8.00000°, λ127.00000°. NP2:ϕs=297.00000°, δ83.00000°, λ85.00000°.*
*JMA **17** 17:15:04.6±0.1, 38°.39N×142°.07E, h42km±1km, M3.5*
ISC 17 17:15:02.9±1.9, 38°.33N±0°.05×142°.18E±0°.09, h28km±14km, n18, σ1§29/24, mb3.6/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.66**	**281**	P	**Pb**	**17 15 16.4**	**+0.5**
JIO				S	**Sb**	**17 15 24.4**	**-0.3**
OFUJ	**Ofunato**	**0.85**	**332**	P	**Pb**	**17 15 18.9**	**-0.2**
OFUJ				S	**Sb**	**17 15 29.0**	**-1.1**
JMK	**Ichinoseki**	**0.97**	**310**	P	**Pn**	**17 15 20.8**	**+0.1**
JMK				S	**Sb**	**17 15 32.0**	**-1.6**
JMM	**Marumori**	**1.19**	**248**	P	**Pn**	**17 15 23.5**	**-0.1**
JMM				S	**Sn**	**17 15 37.7**	**-1.1**
JOU	**Okura**	**1.19**	**272**	P	**Pn**	**17 15 24.1**	**+0.4**
JOU				S	**Sn**	**17 15 38.3**	**-0.7**
JFK	**Kawauchi**	**1.41**	**227**	P	**Pn**	**17 15 26.8**	**+0.1**
JYK	**Kaneyama**	**1.54**	**293**	P	**Pn**	**17 15 29.1**	**+0.6**
JFT	**Otama**	**1.66**	**242**	P	**Pn**	**17 15 31.1**	**+0.9**
JFT				S	**Sn**	**17 15 50.8**	**+0.1**
JYS	**Shiratake**	**1.67**	**267**	P	**Pn**	**17 15 31.1**	**+0.9**
JKZ	**Kuzumaki**	**1.78**	**339**	P	**Pn**	**17 15 32.9**	**+1.0**
MJAR	**Matsushiro Arr**	**3.63**	**242**	Pn	**Pn**	**17 16 00.2**	**+3.0**
	2.1nm,0.3s,baz=67,slow=9.2,SNR=17						
MJAR				LR	LR	17 17 47.0	
	comp=Z,49nm,19.9s,baz=70,slow=43						
MAT	**Matsushiro**	**3.63**	**242**	P	Pn	17 16 01.3	+4.1
MAT				S	**Sb**	**17 16 51.5**	**+1.7**
JHJ	**Hachijo jima 2**	**5.55**	**201**	Pn	**Pn**	**17 16 22.8**	**-0.8**
	10nm,0.3s,baz=330,slow=24,SNR=8.7						
JHJ				Sn	**Sn**	**17 17 23.4**	**-3.2**
	5.1nm,0.3s,baz=254,slow=20,SNR=2.9						
ASAJ	**Asahikawa**	**5.79**	**3**	Pn	**Pn**	**17 16 28.2**	**+1.2**
	0.7nm,0.3s,baz=212,slow=15,SNR=9.8						
ASAJ				Sn	**Sn**	**17 17 33.1**	**+0.7**
	0.5nm,0.3s,baz=101,slow=16,SNR=2.2						
JNU	**Nakatsue**	**10.55**	**244**	LR	LR	17 21 21.5	
	comp=Z,25nm,20.6s,baz=297,slow=35						
MKAR	**Makanchi Array**	**43.96**	**301**	P	P	17 23 12.5	+5.1
	0.1nm,0.5s,baz=88,slow=8.0,SNR=2.1						
WRA	**Warramunga Arr**	**58.43**	**189**	P	**P**	**17 24 55.9**	**-0.2**
	0.5nm,0.4s,baz=5.5,slow=7.3,SNR=5.5						
ASAR	**Alice Springs**	**62.15**	**189**	P	**P**	**17 25 21.6**	**0.0**
	0.4nm,0.7s,baz=6.8,slow=7.0,SNR=4.9						

*ISCJB **17** 17:47:40.1±0.2, 5°.49S±0°.03×128°.75E±0°.05, h300km, mb4.0/27, Error ellipse: s-maj=6.7km s-min=4.1km az=158.6*
*NEIC **17** 17:47:41.6±0.5, 5°.47S×128°.75E, h302km±6km, mb4.5/21, Error ellipse: s-maj=7.7km s-min=4.9km az=51.0*
*IDC **17** 17:47:42.3±4.0, 5°.48S×128°.67E, h308km±45km, mb3.5/9, mb1 3.6/11, mb1mx3.5/25, mbtmp4.2/11, Error ellipse: s-maj=27.9km s-min=14.1km az=66.0*
*DJA **17** 17:47:42.4±0.3, 5°.5S±5°.×12°.9E±°, h291km±8km, M4.6/9, mb4.7/7, mB4.9/5, MLv4.7/9, Mw(mB)4.2/5*
ISC 17 17:47:40.7±0.4, 5°.49S±0°.05×128°.88E±0°.06, h300km, n68, σ1§90/77, mb4.2/27, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BNDI	**Bandanaira**	**1.40**	**47**	P	**Pn**	**17 48 23.8**	**+0.5**
MSAI	**Masohi**	**2.13**	**1**	P	**Pn**	**17 48 28.7**	**+0.1**
NLAI	**Namlea**	**2.86**	**321**	P	**Pn**	**17 48 36.4**	**+1.3**
SAUI	**Saumlaki**	**3.45**	**136**	P	**Pn**	**17 48 43.4**	**+2.3**
SAUI	**Saumlaki**	**3.45**	**136**	*e*Pn	**Pn**	**17 48 42.8**	**+1.8**
SAUI				*e*S	**S**	**17 49 23.3**	**-6.0**
FAKI	**Fak Fak**	**4.22**	**53**	P	**Pn**	**17 48 50.8**	**+1.4**
FAKI	**Fak Fak**	**4.22**	**53**	*e*Pn	**Pn**	**17 48 51.0**	**+1.6**
FAKI				*e*S	**S**	**17 49 38.5**	**-5.9**
SANI	**Sanana**	**4.47**	**320**	P	**Pn**	**17 48 54.2**	**+1.9**
LBMI	**Labuha**	**5.01**	**344**	P	**Pn**	**17 48 59.4**	**+0.9**
	194nm,0.6s,2μm0.7nm						
SWI	**Sorong**	**5.17**	**27**	P	**Pn**	**17 49 01.0**	**+0.7**
	28nm,0.6s,1μm1.1nm						
SOEI	**Soe**	**6.24**	**227**	*e*Pn	**Pn**	**17 49 14.0**	**+1.0**
SOEI				*e*S	**S**	**17 50 22.5**	**-5.0**
LUWI	**Luwuk**	**7.53**	**306**	*e*Pn	**Pn**	**17 49 29.6**	**+0.9**
MTN	**Manton Dam**	**7.64**	**163**	*e*Pn	**Pn**	**17 49 30.6**	**+0.7**
MTN				*e*S	**S**	**17 50 51.6**	**-6.7**
MRSI	**Marisa**	**9.12**	**310**	P	**Pn**	**17 49 48.8**	**+0.6**
	25nm,0.7s,2μm						
PCI	**Palu**	**10.11**	**296**	P	**Pn**	**17 50 02.3**	**+1.9**
	57nm,0.9s,523nm						
FITZ	**Fitzroy Crossi**	**12.93**	**194**	P	**Pn**	**17 50 33.6**	**-1.0**
	0.9nm,0.3s,baz=32,slow=9.7,SNR=26						
FITZ	**Fitzroy Crossi**	**12.93**	**194**	*e*Pn	**Pn**	**17 50 33.7**	**-0.9**
JAGI	**Jajag, Banyuwa**	**14.92**	**258**	*e*P	**P**	**17 50 57.0**	**-0.1**
WRAB	**Tennant Creek**	**15.31**	**160**	*e*P	**P**	**17 51 02.8**	**+1.5**
	44nm,0.4s						
WRA	**Warramunga Arr**	**15.32**	**160**	P	**P**	**17 51 02.7**	**+1.3**
	9.3nm,0.3s,baz=344,slow=12,SNR=214						
WRA				S	**S**	**17 53 50.3**	**+2.4**
	0.3nm,0.3s,baz=350,slow=24,SNR=3.5						
WB2	**Warramunga Arr**	**15.32**	**160**	*e*P	**P**	**17 51 02.9**	**+1.5**
	34nm,0.6s						
WB2				*e*S	**S**	**17 53 47.2**	**-0.8**
COEN	**Coen**	**16.40**	**122**	*e*P	**P**	**17 51 15.9**	**+2.7**
	48nm,0.6s						
SMRI	**Semarang**	**18.40**	**264**	*e*P	**P**	**17 51 33.5**	**-1.3**
	83nm,1.3s						
SBUM	**Sibu**	**18.42**	**295**	*e*P	**P**	**17 51 35.1**	**0.0**
	14nm,1.3s						
AS31	**Alice Springs**	**18.71**	**166**	*e*P	**P**	**17 51 39.4**	**+1.3**
	15nm,0.3s						
ASAR	**Alice Springs**	**18.71**	**166**	P	**P**	**17 51 39.9**	**+1.8**
	5.2nm,0.3s,baz=344,slow=12,SNR=388						
ASAR				S	**S**	**17 54 54.4**	**-0.7**
	0.6nm,0.3s,baz=343,slow=19,SNR=16						
AS01	**Alice Springs**	**18.72**	**165**	*e*P	**P**	**17 51 38.9**	**+0.7**
KSM	**Kuching**	**19.80**	**290**	*e*P	**P**	**17 51 48.3**	**-1.4**
	7.1nm,0.9s						
CISI	**Cisompet, Garu**	**21.03**	**263**	*e*P	**P**	**17 52 02.4**	**+0.2**
	118nm,1.6s						
CTA	**Charters Tower**	**22.27**	**132**	P	**P**	**17 52 16.6**	**+3.3**
	2.9nm,0.5s,baz=304,slow=13,SNR=4.9						
CTAO	**Charters Tower**	**22.27**	**132**	*e*P	**P**	**17 52 16.5**	**+3.2**
	78nm,1.8s						
BBOO	**Buckleboo**	**28.00**	**167**	*e*P	**P**	**17 53 05.5**	**+0.9**
	55nm,1.6s						
STKA	**Stephens Creek**	**28.82**	**157**	P	**P**	**17 53 13.5**	**+1.6**
	2.5nm,0.4s,baz=342,slow=8.6,SNR=11						
STKA	**Stephens Creek**	**28.82**	**157**	*e*P	**P**	**17 53 13.4**	**+1.5**
	1.9nm,1.2s						
KULM	**Kulim**	**30.16**	**290**	*e*P	**P**	**17 53 22.8**	**-1.1**
	9.2nm,1.1s						
GSI	**Gunungsitoli**	**31.99**	**281**	*e*P	**P**	**17 53 38.8**	**-1.1**
	8.4nm,0.9s						
CAN	**Canberra**	**35.01**	**151**	*e*P	**P**	**17 54 08.2**	**+2.7**
	57nm,1.8s						
CMAR	**Chiang Mai Arr**	**37.92**	**310**	P	**P**	**17 54 30.1**	**-0.1**
	1.3nm,0.7s,baz=135,slow=7.1,SNR=9.9						
CHTO	**Chiang Mai**	**38.13**	**310**	*e*P	**P**	**17 54 31.7**	**-0.2**
	2.5nm,0.6s						
MJAR	**Matsushiro Arr**	**42.71**	**11**	P	**P**	**17 55 08.4**	**-0.6**
	1.0nm,0.7s,baz=184,slow=8.8,SNR=4.6						
KSRS	**Korea Array**	**42.73**	**359**	P	**P**	**17 55 10.0**	**+1.0**
	0.6nm,0.6s,baz=177,slow=9.3,SNR=4.7						
CD2	**Chengdu**	**43.44**	**328**	P	**P**	**17 55 15.3**	**+0.4**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
LZH	**Lanzhou**	**47.56**	**332**	*e*P	**P**	**17 55 44.3**	**-2.7**
LZH				pP	pP	17 56 46.6	-2.9
LZH				sP	PcP	17 57 18.3	+6.5
LZH				pmax	pmax		
	comp=Z,17nm,1.0s						
HHC	**Hu-ho-hao-te**	**48.77**	**343**	*e*P	**P**	**17 55 59.0**	**+2.9**
HHC				pmax	pmax		
	comp=Z,21nm,1.0s						
HHC				pmax	pmax		
	comp=Z,89nm,6.9s						
USRK	**Ussuriysk Ar.**	**49.54**	**3**	P	**P**	**17 56 02.5**	**+0.9**
	comp=Z,1.4nm,0.5s,baz=191,slow=7.7,SNR=5.4						
MDJ	**Mudanjiang**	**49.88**	**1**	P	**P**	**17 56 05.3**	**+1.1**
MDJ				pmax	pmax		
	comp=Z,3.0nm,0.8s						
MDJ				pmax	pmax		
	comp=Z,34nm,4.7s						
LSA	**Lhasa**	**50.35**	**316**	*e*P	**P**	**17 56 08.6**	**0.0**
	comp=Z,2.2nm,0.8s						
GTA	**Gaotai**	**52.12**	**332**	*e*P	**P**	**17 56 21.8**	**+0.7**
GTA				pP	pP	17 57 23.3	-1.5
GTA				sP	sP	17 57 55.0	-3.1
GTA				pmax	pmax		
	comp=Z,3.0nm,0.8s						
PKIN	**Phulchoki**	**53.32**	**310**	*e*P	**P**	**17 56 29.4**	**-0.8**
	comp=Z,1.6nm,0.3s						
KKN	**Kakani**	**53.52**	**311**	*e*P	**P**	**17 56 30.7**	**-0.8**
	comp=Z,2.9nm,0.3s						
GKN	**Gorkha**	**54.12**	**310**	*e*P	**P**	**17 56 35.1**	**-0.7**
	comp=Z,9.4nm,0.3s						
KOLN	**Koldanda**	**54.79**	**310**	*e*P	**P**	**17 56 40.0**	**-0.7**
	comp=Z,6.5nm,0.5s						
PYUN	**Piuthan**	**55.42**	**310**	*e*P	**P**	**17 56 44.8**	**-0.3**
	comp=Z,19nm,0.7s						
ULN	**Ulaanbaatar**	**56.50**	**343**	*e*P	**P**	**17 56 51.8**	**-0.5**
	comp=Z,3.4nm,1.2s						
SONM	**Songino Array**	**56.67**	**342**	P	**P**	**17 56 54.5**	**+1.1**
	comp=Z,1.5nm,0.7s,baz=165,slow=8.3,SNR=5.4						
SONA1	**Songino Array**	**56.68**	**342**	*e*P	**P**	**17 56 55.1**	**+1.5**
WMQ	**Urumqi**	**61.53**	**327**	P	**P**	**17 57 27.9**	**+1.3**
WMQ				pmax	pmax		
	comp=Z,3.0nm,0.8s						
WMQ				pmax	pmax		
	comp=Z,17nm,4.2s						
MK01	**Makanchi Array**	**66.34**	**327**	*e*P	**P**	**17 57 57.8**	**+0.1**
MK01				*e*PcP	**PcP**	**17 58 24.8**	**-0.2**
MK31	**Makanchi Array**	**66.36**	**327**	*e*P	**P**	**17 57 58.0**	**+0.2**
MK31				*e*PcP	**PcP**	**17 58 25.0**	**-0.1**
MKAR	**Makanchi Array**	**66.36**	**327**	P	**P**	**17 57 58.0**	**+0.2**
	comp=Z,4.0nm,0.4s,baz=115,slow=8.4,SNR=60						
MAKZ	**Makanchi**	**66.54**	**327**	*e*P	**P**	**17 57 59.2**	**+0.2**
	comp=Z,7.8nm,1.4s						
YAK	**Yakutsk**	**67.33**	**0**	*e*P	**P**	**17 58 04.1**	**+0.7**
	comp=Z,9.4nm,0.7s						
ZAA0	**Zalesovo Array**	**69.75**	**334**	*e*P	**P**	**17 58 18.1**	**-0.5**
ZALV	**Zalesovo Beam**	**69.75**	**334**	P	**P**	**17 58 18.1**	**-0.4**
	comp=Z,2.0nm,0.5s,baz=120,slow=6.4,SNR=11						
KURK	**Kurchatov**	**70.66**	**329**	*e*P	**P**	**17 58 23.9**	**-0.1**
	comp=Z,5.0nm,0.8s						
TIXI	**Tiksi**	**76.99**	**360**	*e*P	**P**	**17 58 59.7**	**-0.5**
	comp=Z,2.7nm,0.6s						
ARCES	**ARCESS Array B**	**99.78**	**340**	P	**Pdif**	**18 00 49.5**	**-1.1**
	comp=Z,3.6nm,0.9s,baz=56,slow=5.5,SNR=3.2						
TORD	**Torodi Ar. Bea**	**127.42**	**282**	PKP	**PKPdf**	**18 06 10.7**	**-0.3**
	comp=Z,0.2nm,0.6s,baz=55,slow=2.3,SNR=2.5						

*ISCJB **17** 18:07:42.1±1.4, 19°.5N±0°.2×78°.4W±0°.2, h33km, mb2.9/1, Error ellipse: s-maj=38.5km s-min=11.9km az=141.8*
*JSN **17** 18:07:44.6±0.5, 19°.37N×78°.13W, h7km±7km, MD3.9*
*IDC **17** 18:07:57.6±7.5, 18°.16N×81°.65W, h0km, mb2.6/1, mb1 3.2/1, mb1mx3.0/25, mbtmp2.6/1, Error ellipse: s-maj=400.1km s-min=62.0km az=47.0*
ISC 17 18:07:44.9±1.6, 19°.4N±0°.2×78°.2W±0°.2, h35km, n8, σ2§22/9, 1C-2D, Cuba region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CVJ	**Coleyville**	**1.36**	**153**	*i* P	**Pn**	**18 08 06.5**	**-0.9**
BBJ	**Bamboo Saint A**	**1.36**	**141**	⇓*i*P	**Pn**	**18 08 07.2**	**-0.3**
MCJ	**Malvern**	**1.58**	**163**	⇑*i*P	**Pn**	**18 08 10.3**	**-0.2**
MCJ				*i* S	**Sn**	**18 08 29.4**	**-0.4**
STH	**Stony Hill**	**1.88**	**136**	⇓*i*P	**Pn**	**18 08 14.1**	**-0.5**
PCJ	**Portland Cotta**	**1.95**	**150**	*e*P	**Pn**	**18 08 15.6**	**+0.1**
TXAR	**Lajitas Array**	**25.17**	**298**	P	**P**	**18 13 04.1**	**-3.1**
	0.3nm,0.8s,baz=118,slow=9.3,SNR=2.3						
WRA	**Warramunga Arr**	**149.40**	**264**	PKPbc	**PKPab**	**18 27 39.5**	**+3.7**
	0.4nm,0.8s,baz=84,slow=3.4,SNR=3.8						
ASAR	**Alice Springs**	**149.90**	**256**	PKPbc	**PKPab**	**18 27 40.1**	**+2.3**
	0.4nm,0.7s,baz=112,slow=3.0,SNR=4.7						

JMA 17 18:17:13.6±0.2, 38°.82N×144°.07E, h20km, M3.3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**1.91**	**294**	P	Pn	18 17 45.8	+0.9
MIYJ				*e*S	Sn	18 18 09.1	+0.8
JTH	**Tanohata**	**2.04**	**304**	P	Pn	18 17 47.6	+0.8
JTH				*e*S	Sn	18 18 13.1	+1.4
JRG	**Rokugo**	**2.73**	**283**	P	Pn	18 17 58.5	+2.2
JMM	**Marumori**	**2.75**	**251**	P	Pn	18 17 57.6	+1.1
JAH	**Hinai**	**2.99**	**298**	P	Pn	18 18 01.5	+1.7
MAT	**Matsushiro**	**5.18**	**246**	P	Pn	18 18 33.4	+3.5
MAT				*e*S	Sn	18 19 25.6	-3.5

*IDC **17** 18:33:45.1±1.9, 6°.77S×128°.68E, h0km, mb3.9/1, mb1 3.8/3, mb1mx3.4/48, mbtmp3.7/3, ML3.7/2, Error ellipse: s-maj=115.3km s-min=30.7km az=67.0*
*ISCJB **17** 18:33:56.6±0.5, 6°.78S±0°.04×129°.99E±0°.06, h150km, mb4.0/3, Error ellipse: s-maj=8.8km s-min=5.6km az=165.9*
*NEIC **17** 18:33:58.4±1.1, 6°.69S×129°.72E, h151km±15km, mb4.2/6, Error ellipse: s-maj=16.4km s-min=11.6km az=76.0*
ISC 17 18:33:57.9±0.8, 6°.71S±0°.07×129°.88E±0°.07, h150km, n22, σ2§24/25, mb4.0/3, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SAUI	**Saumlaki**	**1.90**	**132**	*e*Pn	**Pn**	**18 34 35.9**	**+4.0**
SAUI				*e*Sn	**Sn**	**18 34 52.7**	**-5.3**
FAKI	**Fak Fak**	**4.45**	**

JKZ				S		Sn	18 35 33.4	+0.1
JOM	**Ohasama**	**0.50**	**236**	⇓P		**Pn**	**18 35 25.7**	**+0.2**
JOM				S		**Sn**	**18 35 34.2**	**+0.1**
JANG	**Nango**	**0.66**	**339**	⇓P		**Pn**	**18 35 27.3**	**-0.1**
JANG				S		**Sn**	**18 35 36.9**	**-0.5**
OFUJ	**Ofunato**	**0.68**	**190**	⇑P		**Pn**	**18 35 27.7**	**+0.1**
OFUJ				S		**Sn**	**18 35 37.8**	**0.0**
MJAR	**Matsushiro Arr**	**4.29**	**223**	Pn		Pn	18 36 19.4	+3.0
	0.5nm,0.3s,baz=32,slow=14,SNR=5.5							
ASAJ	**Asahikawa**	**4.40**	**7**	Pn		**Pn**	**18 36 18.5**	**+0.7**
	0.4nm,0.3s,baz=218,slow=16,SNR=6.5							
ASAJ				Sn		Sn	18 37 13.4	+5.7
	0.6nm,0.3s,baz=240,slow=18,SNR=3.3							
JHJ	**Hachijo jima 2**	**6.82**	**195**	Pn		Pn	18 36 58.5	+7.5
	3.4nm,0.3s,baz=34,slow=12,SNR=2.8							
JHJ				Sn		Sn	18 38 17.3	+10
	4.7nm,0.3s,baz=49,slow=16,SNR=3.5							
JHJ				LR		LR	18 39 46.7	
	comp=Z,78nm,21.8s,baz=94,slow=39							
KLR	**Kul'dur**	**11.88**	**326**	LR		LR	18 41 43.7	
	comp=Z,10nm,20.0s,baz=138,slow=35							
ZALV	**Zalesovo Beam**	**40.37**	**310**	P		**P**	**18 42 45.1**	**-0.2**
	1.6nm,0.6s,baz=94,slow=8.3,SNR=6.4							
MKAR	**Makanchi Array**	**43.00**	**300**	P		**P**	**18 43 06.6**	**-0.4**
	0.6nm,0.6s,baz=86,slow=10,SNR=7.1							
ASAR	**Alice Springs**	**63.52**	**188**	P		P	18 45 46.8	+9.1
	1.6nm,1.2s,baz=8.9,slow=6.6,SNR=3.1							

IDC 17 18:35:36.1±3.0, 30°.31S×177°.75W, h0km, mb4.1/3, mb1 4.3/3, mb1mx3.8/36, mbtmp4.1/3, Error ellipse: s-maj=64.9km s-min=21.6km az=109.0, Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.06**	**352**	Pn	Pn	18 35 59.0	+0.8
	68nm,0.3s,baz=72,slow=20,SNR=4.1						
RAO				Sn	Sn	18 36 13.6	-0.1
	245nm,0.3s,baz=94,slow=13,SNR=8.7						
STKA	**Stephens Creek**	**34.71**	**257**	P	P	18 42 29.2	+1.4
	3.6nm,0.8s,baz=95,slow=8.1,SNR=6.7						
ASAR	**Alice Springs**	**43.33**	**267**	P	P	18 43 39.3	-0.9
	0.6nm,0.5s,baz=106,slow=7.3,SNR=7.9						
WRA	**Warramunga Arr**	**44.31**	**272**	P	P	18 43 47.3	-0.8
	1.5nm,0.4s,baz=111,slow=8.0,SNR=8.3						
FINES	**FINESS Array B**	**145.13**	**340**	PKPbc	PKPbc	18 55 13.2	-1.1
	1.5nm,0.4s,baz=43,slow=3.0,SNR=10						

*CSEM **17** 18:39:15.6±0.1, 40°.97N×32°.64E, h2km, MD3.1, Error ellipse: s-maj=3.6km s-min=2.7km az=177.0*
*ISK **17** 18:39:15.2, 40°.95N×32°.63E, h6km, MD3.1*
*DDA **17** 18:39:15.0, 40°.94N×32°.65E, h12km, Ml3.3*

ISC 17 18:39:15.0±1.1, 40°.95N±0°.02×32°.63E±0°.02, h4km±10km, n55, σ0°66/92, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SAFT	**Safranbolu**	**0.29**	**8**	*e*PG	**Pg**	**18 39 21.1**	**+0.4**
SAFT	**Safranbolu**	**0.29**	**8**	*e*Pg	**Pg**	**18 39 21.1**	**+0.4**
BCAM	**Yenicaga**	**0.45**	**253**	P	**Pg**	**18 39 23.6**	**-0.1**
BCAM				S	**Sb**	**18 39 31.5**	**-1.2**
BCAM	**Yenicaga**	**0.45**	**253**	*i* P	**Pg**	**18 39 23.6**	**-0.1**
BCAM				*i* S	**Sb**	**18 39 31.5**	**-1.2**
BTIN	**Bart¨–n**	**0.75**	**337**	P	**Pg**	**18 39 29.4**	**+0.1**
BTIN				S	**Sb**	**18 39 41.0**	**-0.1**
BTIN	**Bart¨–n**	**0.75**	**337**	*i* P	**Pg**	**18 39 29.4**	**+0.1**
BTIN				*i* S	**Sb**	**18 39 41.0**	**-0.1**
ELDT	**Eldivan**	**0.76**	**127**	P	**Pg**	**18 39 29.3**	**-0.2**
ELDT				S	**Sg**	**18 39 40.1**	**+0.8**
ELDT	**Eldivan**	**0.76**	**127**	*i* P	**Pg**	**18 39 29.3**	**-0.2**
ELDT				*i* S	**Sg**	**18 39 40.1**	**+0.8**
CANT	**Cankiri**	**0.82**	**114**	*e*PG	**Pb**	**18 39 31.6**	**-0.2**
CANT				*e*SG	**Sb**	**18 39 43.3**	**0.0**
ILGA	**Ilgaz**	**0.83**	**82**	P	**Pg**	**18 39 31.0**	**+0.2**
ILGA				S	**Sb**	**18 39 42.7**	**-0.9**
ILGA	**Ilgaz**	**0.83**	**82**	*i* P	**Pg**	**18 39 31.0**	**+0.2**
ILGA				*i* S	**Sb**	**18 39 42.6**	**-0.9**
KDZE	**Karadeniz Ereo**	**0.97**	**292**	*e*PG	**Pg**	**18 39 33.2**	**-0.4**
KDZE				*e*SG	**Sb**	**18 39 48.0**	**+0.4**
KDZE	**Karadeniz Ereo**	**0.97**	**292**	*e*Pg	**Pg**	**18 39 33.2**	**-0.4**
KDZE				*e*Sg	**Sb**	**18 39 48.0**	**+0.4**
TOS	**Tosya**	**1.05**	**85**	*e*PG	**Pb**	**18 39 35.9**	**+0.1**
TOS	**Tosya**	**1.05**	**85**	*e*Pg	**Pb**	**18 39 35.9**	**+0.1**
KAST	**KASTAMONU**	**1.12**	**61**	P	**Pg**	**18 39 36.1**	**-0.3**
KAST				S	**Sg**	**18 39 48.3**	**-2.6**
KAST	**KASTAMONU**	**1.12**	**61**	*i* P	**Pg**	**18 39 36.1**	**-0.3**
KAST				*i* S	**Sg**	**18 39 48.3**	**-2.6**
MDUB	**Mudurnu**	**1.19**	**247**	*e*PN	**Pn**	**18 39 38.4**	**-0.1**
MDUB				*e*SN	**Sn**	**18 39 55.3**	**+0.1**
MDUB	**Mudurnu**	**1.19**	**247**	*e*Pn	**Pn**	**18 39 38.4**	**-0.1**
MDUB				*e*Sn	**Sn**	**18 39 55.3**	**+0.1**
SAHE	**Sakarya_HENDEK**	**1.35**	**267**	P	**Pb**	**18 39 40.8**	**-0.1**
SAHE				S	**Sn**	**18 39 59.3**	**+0.2**
SAHE	**Sakarya_HENDEK**	**1.35**	**267**	*i* P	**Pb**	**18 39 40.8**	**-0.1**
SAHE				*i* S	**Sn**	**18 39 59.3**	**+0.2**
BZK	**Bozkurt**	**1.44**	**45**	*e*PN	**Pg**	**18 39 43.0**	**+0.4**
BZK				*e*SN	**Sg**	**18 40 02.7**	**+1.4**
BZK	**Bozkurt**	**1.44**	**45**	*e*Pn	**Pg**	**18 39 43.0**	**+0.4**
BZK				*e*Sn	**Sg**	**18 40 02.7**	**+1.4**
BBAL	**Bala**	**1.45**	**165**	P	**Pg**	**18 39 43.0**	**+0.2**
BBAL				S	**Sn**	**18 40 02.5**	**+0.8**
BBAL	**Bala**	**1.45**	**165**	*i* P	**Pg**	**18 39 43.0**	**+0.2**
BBAL				*i* S	**Sn**	**18 40 02.5**	**+0.8**
AFSR	**Af¨ar-Bala (A**	**1.54**	**167**	PN	**Pb**	**18 39 43.9**	**-0.1**
AFSR				*e*SN	**Sg**	**18 40 04.6**	**+0.3**
AFSR	**Af¨ar-Bala (A**	**1.54**	**167**	*i* Pn	**Pb**	**18 39 43.9**	**-0.1**
AFSR				*e*Sn	**Sg**	**18 40 04.6**	**+0.3**
BYBT	**Boyabat**	**1.69**	**71**	*e*PN	**Pn**	**18 39 45.8**	**+0.5**
BYBT	**Boyabat**	**1.69**	**71**	*e*Pn	**Pn**	**18 39 45.8**	**+0.5**
GULT	**Gulveren**	**1.69**	**253**	*e*PN	**Pb**	**18 39 46.1**	**-0.6**
GULT	**Gulveren**	**1.69**	**253**	*e*Pn	**Pb**	**18 39 46.1**	**-0.6**
CORM	**Corum**	**1.70**	**116**	*e*PN	**Pn**	**18 39 45.5**	**-0.1**
CORM	**Corum**	**1.70**	**116**	*e*Pn	**Pn**	**18 39 45.5**	**-0.1**
SVRH	**Sivrihisar-ESK**	**1.72**	**210**	*e*PN	**Pb**	**18 39 46.7**	**-0.5**
SVRH	**Sivrihisar-ESK**	**1.72**	**210**	*e*Pn	**Pb**	**18 39 46.7**	**-0.5**
BOYT	**Boyabat**	**1.78**	**74**	P	**Pb**	**18 39 48.1**	**0.0**
BOYT				S	**Sb**	**18 40 10.7**	**-0.1**
BOYT	**Boyabat**	**1.78**	**74**	*i* P	**Pb**	**18 39 48.1**	**0.0**
BOYT				*i* S	**Sb**	**18 40 10.7**	**-0.1**
KAMT	**Kaman**	**1.78**	**152**	*e*PN	**Pb**	**18 39 48.3**	**+0.1**
KAMT	**Kaman**	**1.78**	**152**	*e*Pn	**Pb**	**18 39 48.3**	**+0.1**
KKUL	**Konya-Kulu**	**1.79**	**173**	P	**Pg**	**18 39 49.0**	**-0.2**
KKUL				S	**Sg**	**18 40 13.9**	**+1.5**
KKUL	**Konya-Kulu**	**1.79**	**173**	*i* P	**Pg**	**18 39 49.0**	**-0.2**
KKUL				*i* S	**Sg**	**18 40 13.9**	**+1.5**
KAND	**Kocaeli-Kandir**	**1.85**	**275**	P	**Pg**	**18 39 50.1**	**-0.4**
KAND				S	**Sb**	**18 40 12.6**	**-0.3**
KAND	**Kocaeli-Kandir**	**1.85**	**275**	*i* P	**Pg**	**18 39 50.1**	**-0.4**
KAND				*i* S	**Sb**	**18 40 12.6**	**-0.3**
CDAG	**Cicekdag**	**1.88**	**134**	P	**Pb**	**18 39 49.1**	**-0.8**
CDAG				S	**Sg**	**18 40 14.9**	**-0.3**
CDAG	**Cicekdag**	**1.88**	**134**	*i* P	**Pb**	**18 39 49.1**	**-0.8**
CDAG				*i* S	**Sg**	**18 40 14.9**	**-0.3**
COAL	**Corum-Alaca**	**1.92**	**110**	P	**Pb**	**18 39 50.0**	**-0.6**
COAL				S	**Sg**	**18 40 16.0**	**-0.6**
COAL	**Corum-Alaca**	**1.92**	**110**	*i* P	**Pb**	**18 39 50.0**	**-0.6**
COAL				*i* S	**Sg**	**18 40 16.0**	**-0.6**
ESKT	**Eskisehir**	**1.98**	**224**	*i* P	**Pb**	**18 39 51.4**	**-0.2**
ESKT				*i* S	**Sg**	**18 40 18.7**	**+0.3**
SEYT	**Eskypehyr**	**1.98**	**224**	P	**Pb**	**18 39 51.4**	**-0.2**
SEYT				S	**Sg**	**18 40 18.7**	**+0.3**
BORA	**Eskisehir**	**1.98**	**238**	P	**Pb**	**18 39 50.9**	**-0.7**
BORA				S	**Sg**	**18 40 19.2**	**+0.7**
BORA	**Eskisehir**	**1.98**	**238**	*i* P	**Pb**	**18 39 50.9**	**-0.7**
BORA				*i* S	**Sg**	**18 40 19.2**	**+0.7**
DIKM	**Dikmen**	**2.10**	**70**	*e*PN	**Pn**	**18 39 51.3**	**+0.4**
DIKM	**Dikmen**	**2.10**	**70**	*e*Pn	**Pn**	**18 39 51.3**	**+0.4**
KIZT	**Kizilcal**	**2.15**	**196**	*e*PN	**Pn**	**18 39 52.0**	**+0.3**
KIZT	**Kizilcal**	**2.15**	**196**	*e*Pn	**Pn**	**18 39 52.0**	**+0.3**

MAN 17 18:44:57, 19°.05N×121°.18E, h13km, mb4.8, ML3.7, MS3.8, 1D, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SGCP	**Mt. Cagua**	**1.15**	**134**	*e*P	Pb	18 45 17.8	-0.9
SGCP				*e*S	Sn	18 45 35.3	+0.9
APYP	**Conner**	**1.18**	**177**	*e*P	Pn	18 45 17.9	-1.4
APYP				*e*S	Sn	18 45 35.9	+0.6
SIPP	**Brgy, Tapao**	**1.32**	**212**	⇓*i*P	Pn	18 45 21.0	-0.1
SIPP				*e*S	Sg	18 45 41.1	+1.7
ABRA	**Dolores**	**1.46**	**198**	*e*P	Pn	18 45 21.6	-1.6
ABRA				*e*S	Sg	18 45 45.8	+1.6
CVP	**Callao Caves**	**1.47**	**156**	*e*P	Pn	18 45 23.0	-0.3
CAUP	**Cauayan**	**2.18**	**164**	*e*P	Pb	18 45 36.2	-0.2
CAUP				*e*S	Sg	18 46 09.2	+2.0
BALP	**Baler**	**3.31**	**173**	*e*P	Pn	18 45 50.0	+1.4

IDC 17 18:51:19.0±2.0, 20°.43S×167°.90E, h0km, mb3.7/3, mb1 4.0/4, mb1mx3.6/34, mbtmp3.7/4, ML3.3/1, MS3.1/1, Ms1 3.1/1, ms1mx2.6/23, Error ellipse: s-maj=62.2km s-min=26.9km az=138.0, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.12**	**220**	Pn	Pn	18 51 55.5	-0.4
	9.8nm,0.3s,baz=97,slow=7.0,SNR=176						
DZM				Sn	Sn	18 52 23.0	-0.1
	28nm,0.3s,baz=280,slow=20,SNR=12						
HNR	**Honiara**	**13.36**	**324**	LR	LR	18 58 30.8	
	comp=Z,74nm,20.3s,baz=166,slow=32						
WRA	**Warramunga Arr**	**31.47**	**265**	P	P	18 57 42.6	-0.1
	0.6nm,1.0s,baz=92,slow=8.2,SNR=2.5						
ASAR	**Alice Springs**	**31.63**	**258**	P	P	18 57 44.5	+0.4
	0.9nm,0.8s,baz=79,slow=8.2,SNR=9.9						
NVAR	**Mina Array Bea**	**90.53**	**49**	P	P	19 04 23.3	-0.1
	0.3nm,0.3s,baz=216,slow=7.3,SNR=4.1						

*IDC **17** 18:56:02.3±37.0, 19°.05S×170°.15E, h0km, mb4.0/4, mb1 4.2/4, mb1mx3.7/29, mbtmp4.0/4, Error ellipse: s-maj=639.2km s-min=109.9km az=79.0*
*ISCJB **17** 18:56:07.5±1.6, 18°.9S±0°.3×169°.8E±0°.2, h33km, mb4.7/9, Error ellipse: s-maj=48.0km s-min=22.4km az=143.5*
*NEIC **17** 18:56:09.4±1.1, 18°.90S×169°.82E, h35km, mb4.9/5, Error ellipse: s-maj=33.0km s-min=15.3km az=144.0*

ISC 17 18:56:09.4±1.8, 18°.9S±0°.3×169°.9E±0°.3, h35km, n13, σ0°41/13, mb4.6/9, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**28.51**	**238**	P	**P**	**19 02 01.5**	**-0.2**
	1.9nm,0.8s,baz=75,slow=12,SNR=4.5						
STKA	**Stephens Creek**	**28.51**	**238**	*e*P	**P**	**19 02 01.9**	**+0.3**
	3.9nm,1.6s						
WR1	**Warramunga Arr**	**33.47**	**262**	*e*P	**P**	**19 02 44.7**	**-0.8**
	34nm,1.8s						
WRA	**Warramunga Arr**	**33.47**	**262**	P	**P**	**19 02 44.7**	**-0.8**
	0.3nm,0.4s,baz=98,slow=8.3,SNR=8.1						
AS01	**Alice Springs**	**33.73**	**256**	*e*P	**P**	**19 02 47.6**	**-0.1**
AS31	**Alice Springs**	**33.77**	**256**	*e*P	**P**	**19 02 48.1**	**0.0**
	3.0nm,0.4s						
ASAR	**Alice Springs**	**33.77**	**256**	P	**P**	**19 02 48.3**	**+0.2**
	4.6nm,0.6s,baz=80,slow=9.1,SNR=85						
FAKI	**Fak Fak**	**40.06**	**289**	*e*P	**P**	**19 03 41.7**	**+0.1**
	88nm,1.4s						
FITZ	**Fitzroy Crossi**	**41.85**	**264**	P	**P**	**19 03 56.8**	**+0.4**
	2.4nm,1.0s,baz=100,slow=10,SNR=5.0						
FITZ	**Fitzroy Crossi**	**41.85**	**264**	*e*P	**P**	**19 03 56.4**	**0.0**
	20nm,1.6s						
MBWA	**Marble Bar**	**46.98**	**258**	*e*P	**P**	**19 04 37.3**	**-0.2**
	49nm,1.9s						
YOJ	**Yonaguni jima**	**62.78**	**312**	*e*P	**P**	**19 06 31.6**	**+0.1**
	317nm,1.7s						
ALST	**Alston**	**88.58**	**40**	*e*P	**P**	**19 08 58.5**	**-0.1**

KRSC 17 19:02:52.2±0.9, 52°.60N×159°.75E, h41km±13km, ML3.8, Off east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SPN	**Mys Shipunski**	**0.53**	**18**	*i* P	Pn	19 03 04.8	+1.4
SPN				*i* S	Sn	19 03 12.7	+1.5
NLC	**Nalytchevo**	**0.62**	**337**	*i* P	Pn	19 03 05.8	+1.2
NLC				*i* S	Sn	19 03 14.8	+1.3
RUS	**Russkaya**	**0.77**	**258**	*i* P	Pn	19 03 07.7	+1.0
RUS				*i* S	Sn	19 03 17.9	+0.8
PET	**Petropavlovsk**	**0.79**	**303**	*i* P	Pn	19 03 07.8	+0.9
PET				*i* S	Sn	19 03 17.7	+0.2
UGLR	**Uglovaya**	**0.83**	**318**	*i* P	Pn	19 03 09.0	+1.4
UGLR				*e*S	Sn	19 03 20.0	+1.3
SDLR	**Sedlovina**	**0.86**	**323**	*i* P	Pn	19 03 09.1	+1.1
SDLR				*e*S	Sn	19 03 20.5	+1.1
SMAR	**Somma**	**0.88**	**320**	*i* P	Pn	19 03 09.3	+1.0
AVH	**Avacha**	**0.91**	**318**	*i* P	Pn	19 03 10.1	+1.5
AVH				*e*S	Sn	19 03 21.8	+1.3
KRER	**Koryakskii**	**0.93**	**320**	*i* P	Pn	19 03 10.4	+1.4
KRER				*e*S	Sn	19 03 22.2	+0.9
MTVR	**Mutnovka**	**0.96**	**264**	*i* P	Pn	19 03 10.8	+1.4
MTVR				*e*S	Sn	19 03 23.1	+1.1
KOK	**Koryaka**	**0.97**	**316**	*e*P	Pn	19 03 11.0	+1.6
KRX	**Arik**	**1.01**	**319**	*i* P	Pn	19 03 11.3	+1.2
KRMR	**Karymshinskiy**	**1.01**	**284**	*i* P	Pn	19 03 10.9	+1.0
KRMR				*e*S	Sn	19 03 23.6	+0.7
GRL	**Gorelyy**	**1.02**	**268**	P	Pn	19 03 12.3	+2.1
ASAK	**Asacha**	**1.15**	**260**	*i* P	Pn	19 03 13.9	+2.0
ASAK				*e*S	Sn	19 03 28.4	+1.9
KII	**Karymskiy**	**1.45**	**353**	*e*P	Pn	19 03 17.7	+1.7
KII				*e*S	Sn	19 03 35.4	+1.5
GNL	**Ganaly**	**1.54**	**316**	*i* P	Pn	19 03 19.5	+2.1
GNL				*e*S	Sn	19 03 38.3	+2.0
APC	**Apacha**	**1.61**	**283**	*i* P	Pn	19 03 20.4	+2.3
APC				*e*S	Sn	19 03 39.7	+2.1
MKZ	**Mys Kozlova**	**2.29**	**30**	*i* P	Pn	19 03 28.8	+1.4
MKZ				*e*S	Sn	19 03 54.1	-0.2
SKR	**Severo-Kuril's**	**2.97**	**231**	P	Pn	19 03 39.9	+3.1
SKR				*e*S	Sn	19 04 14.1	+3.0
ZLN	**Zelenaya**	**3.48**	**10**	P	Pn	19 03 48.7	+4.8
SMKR	**Semkarok**	**4.11**	**13**	P	Pn	19 03 57.6	+5.0

*IDC **17** 19:03:05.2±7.8, 32°.29S×179°.63E, h291km±218km, mb3.4/3, mb1 3.6/4, mb1mx3.2/22, mbtmp4.1/4, Error ellipse: s-maj=350.5km s-min=81.4km az=118.0*

ISC 17 19:03:09.9±2.7, 32°.9S±0°.1×179°.9E±0°.3, h372km, n30, σ1°21/39, mb3.4/3, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MXZ	**Matakaoa Point**	**4.85**	**195**	PN	**Pn**	**19 04 29.9**	**+1.1**
WMGZ	**Waiomatatini S**	**5.08**	**194**	PN	**Pn**	**19 04 30.3**	**-1.0**
HAZ	**Te Kaha**	**5.17**	**199**	PN	**Pn**	**19 04 31.1**	**-1.1**
HAZ				SN	**S**	**19 05 39.9**	**+0.9**
TWGZ	**Tauwhareparae**	**5.51**	**196**	*e*PN	**Pn**	**19 04 35.3**	**-1.1**
TWGZ				SN	**S**	**19 05 48.3**	**+2.3**
MWZ	**Matawai**	**5.78**	**199**	PN	**Pn**	**19 04 37.8**	**-1.1**
MWZ				SN	**S**	**19 05 51.9**	**+0.6**
TKGZ	**Te Karaka**	**5.79**	**196**	PN	**Pn**	**19 04 37.6**	**-1.5**
TKGZ				SN	**S**	**19 05 52.1**	**+0.5**
URZ	**Urewera**	**5.83**	**202**	P	**Pn**	**19 04 38.3**	**-1.2**
	3.0nm,0.3s,baz=267,slow=4.4,SNR=33						
URZ				S	**S**	**19 05 52.1**	**-0.2**
	2.1nm,0.3s,baz=169,slow=16,SNR=5.7						
URZ	**Urewera**	**5.83**	**202**	*e*PN	**Pn**	**19 04 37.9**	**-1.6**
URZ				SN	**S**	**19 05 52.8**	**+0.4**
RAGZ	**Rawiri**	**5.96**	**199**	PN	**Pn**	**19 04 40.0**	**-1.0**
RTZ	**Ruatahuna**	**6.20**	**202**	PN	**Pn**	**19 04 42.3**	**-1.4**
ARHZ	**Aropaoanui**	**6.79**	**200**	PN	**Pn**	**19 04 49.2**	**-1.1**
ARHZ				SN	**S**	**19 06 13.6**	**+1.5**
BKZ	**Black Stump Fm**	**6.86**	**203**	PN	**Pn**	**19 04 49.9**	**-1.2**
KWHZ	**Kaweka Forest**	**7.11**	**202**	*e*PN	**Pn**	**19 04 52.9**	**-1.2**
BHHZ	**Black Hill Sta**	**7.29**	**204**	*e*PN	**Pn**	**19 04 55.5**	**-0.7**
KRHZ	**Kereru**	**7.33**	**202**	PN	**Pn**	**19 04 55.8**	**-0.7**
PNHZ	**Pukenui**	**7.63**	**202**	PN	**Pn**	**19 04 57.4**	**-2.6**
WPHZ	**Waipukurau**	**7.69**	**200**	SN	**S**	**19 06 33.6**	**+2.4**
DVHZ	**Dannevirke**	**7.99**	**201**	PN	**Pn**	**19 05 04.0**	**-0.2**
ANWZ	**Angora Road**	**8.05**	**199**	PN	**P**	**19 05 06.2**	**-0.4**
BFZ	**Birch Farm**	**8.32**	**200**	PN	**P**	**19 05 09.7**	**+0.1**
BFZ				SN	**S**	**19 06 44.3**	**-0.4**
MRZ	**Mangatainoka R**	**8.51**	**203**	PN	**Pn**	**19 05 09.5**	**-0.7**
MRZ				SN	**S**	**19 06 46.7**	**-2.0**
HOWZ	**Holdsworth Sta**	**8.74**	**203**	PN	**Pn**	**19 05 12.7**	**-0.3**
OGWZ	**Otaki Gorge**	**8.78**	**204**	PN	**Pn**	**19 05 13.3**	**-0.1**
MTW	**Mount Morrison**	**8.98**	**202**	PN	**P**	**19 05 16.7**	**-0.3**
TCW	**Tory Channel**	**9.45**	**207**	PN	**Pn**	**19 05 20.3**	**-1.0**
TUWZ	**Tuamarina**	**9.77**	**207**	PN	**P**	**19 05 25.2**	**-0.4**
NNZ	**Nelson**	**9.82**	**210**	PN	**Pn**	**19 05 24.9**	**-0.7**
STKA	**Stephens Creek**	**32.27**	**261**	P	**P**	**19 09 07.4**	**+2.0**
	1.4nm,0.8s,baz=96,slow=8.9,SNR=4.0						
ASAR	**Alice Springs**	**41.28**	**271**	P	**P**	**19 10 20.3**	**-0.4**
	0.6nm,0.3s,baz=108,slow=7.6,SNR=17						
WRA	**Warramunga Arr**	**42.50**	**276**	P	**P**	**19 10 29.4**	**-1.0**
	2.3nm,0.3s,baz=117,slow=8.1,SNR=63						

MEX 17 19:07:19.5±0.6, 15°.69N×93°.77W, h16km±731km, MD3.8, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CCIG	**Comitan**	**1.68**	**69**	*e*P	Pn	19 07 45.0	-3.5
CCIG				*i* S	Sn	19 08 04.7	-5.0

*IDC **17** 19:15:42.3±2.3, 2°.07N×127°.58E, h0km, mb3.8/3, mb1 4.0/3, mb1mx3.5/23, mbtmp3.8/3, Error ellipse: s-maj=180.5km s-min=24.9km az=67.0*
*NEIC **17** 19:15:46.7±0.6, 1°.95N×127°.45E, h35km, mb4.3/8, Error ellipse: s-maj=17.6km s-min=8.9km az=60.0*
*ISCJB **17** 19:15:53.5±0.6, 1°.67N±0°.07×126°.93E±0°.08, h112km, mb4.2/11, Error ellipse: s-maj=11.4km s-min=10.0km az=167.3*

ISC 17 19:15:55.0±1.0, 1°.7N±0°.1×127°.0E±0°.1, h112km, n16, σ1°28/15, mb4.2/11, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LUWI	**Luwuk**	**4.98**	**237**	*e*Pn	**Pn**	**19 17 07.9**	**+0.3**
LUWI				*e*Sn	**Sn**	**19 18 03.1**	**-1.0**
MYLDM	**Lahad Datu**	**9.13**	**293**	*e*Pn	Pn	19 17 58.7	-5.2
FITZ	**Fitzroy Crossi**	**19.70**	**184**	*e*P	**P**	**19 20 15.6**	**-0.1**
	15nm,1.5s						
WRAB	**Tennant Creek**	**22.67**	**162**	*e*P	**P**	**19 20 46.2**	**-0.9**
	18nm,1.5s						
WRA	**Warramunga Arr**	**22.68**	**162**	P	**P**	**19 20 46.0**	**-1.2**
	2.9nm,0.3s,baz=342,slow=10,SNR=31						
WR1	**Warramunga Arr**	**22.68**	**162**	*e*P	**P**	**19 20 46.0**	**-1.2**
	21nm,1.6s						
WB2	**Warramunga Arr**	**22.68**	**162**	*e*P	**P**	**19 20 46.4**	**-0.9**
	27nm,1.7s						
ASAR	**Alice Springs**	**26.08**	**165**	P	**P**	**19 21 20.9**	**+2.5**
	0.4nm,0.5s,baz=346,slow=9.7,SNR=12						
BBOO	**Buckleboo**	**35.37**	**167**	*e*P	**P**	**19 22 39.9**	**-0.1**
	63nm,1.7s						
STKA	**Stephens Creek**	**36.15**	**159**	*e*P	**P**	**19 22 46.3**	**-0.3**
	6.0nm,1.9s						
TLY	**Talaya**	**53.54**	**342**	*e*P	**P**	**19 25 02.6**	**-1.5**
	2.7nm,0.9s						
MSVF	**Nonsavu**	**53.88**	**113**	*e*P	P	19 25 03.0	-4.2
	84nm,1.9s						
MK01	**Makanchi Array**	**59.34**	**326**	*e*P	**P**	**19 25 46.6**	**+1.2**
MK32	**Makanchi Array**	**59.36**	**326**	*e*P	**P**	**19 25 46.7**	**+1.2**
MKAR	**Makanchi Array**	**59.36**	**326**	P	**P**	**19 25 46.7**	**+1.2**
	0.2nm,0.3s,baz=118,slow=7.9,SNR=6.5						
MAKZ	**Makanchi**	**59.55**	**326**	*e*P	**P**	**19 25 47.7**	**+0.9**
	2.6nm,1.4s						

IDC 17 19:28:11.1±2.2, 6°.88S×129°.20E, h0km, mb3.3/1, mb1 3.3/3, mb1mx3.2/34, mbtmp3.2/3, ML3.1/2, Error ellipse: s-maj=152.5km s-min=31.6km az=68.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**13.90**	**159**	Pn	Pn	19 31 29.8	+0.2
	0.1nm,0.3s,baz=342,slow=12,SNR=5.8						
WRA				Sn	Sn	19 33 51.9	-13
	0.5nm,0.3s,baz=325,slow=26,SNR=10						
ASAR	**Alice Springs**	**17.29**	**165**	P	Pn	19 32 13.8	-0.2
	0.1nm,0.3s,baz=345,slow=11,SNR=7.9						
ASAR				S	Sn	19 35 10.3	-17
	0.1nm,0.

JCJ	Chichijima	9.76 173	Pn	Pn	19 36 48.5	-0.6
USRK	Ussuriysk Ar.	9.96 321	Pn	Pn	19 36 51.9	0.0
0.1nm,0.3s,baz=127,slow=11,SNR=2.3						
KSRS	Korea Array	10.29 277	LR	LR	19 40 37.3	
comp=Z,49nm,20.6s,baz=88,slow=36						
KS01	Wonju Array Si	10.31 278	*e*Pn	Pn	19 36 55.5	-1.2
MDJ	Mudanjiang	11.52 316	*e*Pn	Pn	19 37 09.2	-4.1
KLR	Kul'dur	14.05 335	LR	LR	19 42 41.1	
comp=Z,23nm,19.7s,baz=148,slow=35						
SEY	Seymchan	27.11 12	P	P	19 40 12.9	+1.4
2.6nm,0.8s,baz=206,slow=4.5,SNR=6.0						
SONA0	Songino Array	27.49 304	*e*P	P	19 40 15.5	+0.2
1.6nm,1.0s						
SONM	Songino Array	27.49 304	P	P	19 40 15.5	+0.2
0.8nm,0.4s,baz=83,slow=12,SNR=3.6						
H11N2	WAKE ISLAND Hy 28.48 120		T	T	20 10 13.7	
baz=313,slow=75,SNR=293						
H11N1	WAKE ISLAND Hy 28.48 120		T	T	20 10 12.6	
baz=313,slow=75,SNR=307						
H11N3	WAKE ISLAND Hy 28.49 120		T	T	20 10 13.0	
baz=313,slow=75,SNR=290						
H11S1	WAKE ISLAND Hy 29.17 122		T	T	20 11 02.8	
baz=314,slow=76,SNR=303						
H11S3	WAKE ISLAND Hy 29.17 122		T	T	20 11 02.8	
baz=314,slow=76,SNR=219						
H11S2	WAKE ISLAND Hy 29.19 122		T	T	20 11 03.8	
baz=314,slow=76,SNR=183						
TIXI	Tiksi	35.46 354	*e*P	P	19 41 24.3	-0.5
1.0nm,0.5s						
NIKH	Nikolski High	38.31 49	*e*P	P	19 41 48.0	-1.4
86nm,1.2s						
CMAR	Chiang Mai Arr	40.95 255	LR	LR	19 59 59.7	
comp=Z,13nm,18.0s,baz=285,slow=38						
ZAA1	Zalesovo Array	41.69 313	*e*P	P	19 42 17.1	-0.3
ZAA1			*e*PcP	PcP	19 44 13.9	0.0
ZALV	Zalesovo Beam	41.69 313	P	P	19 42 17.1	-0.3
1.0nm,0.6s,baz=91,slow=6.2,SNR=3.4						
ZALV			PcP	PcP	19 44 13.9	0.0
0.9nm,0.5s,baz=123,slow=2.5,SNR=4.6						
NRIK	Noril'sk	43.26 335	LR	LR	20 02 32.5	
comp=Z,27nm,19.2s,baz=37,slow=39						
MK01	Makanchi Array	43.80 302	*e*P	P	19 42 34.9	+0.1
MK31	Makanchi Array	43.81 302	*e*P	P	19 42 33.8	-0.9
MK32	Makanchi Array	43.81 302	*e*P	P	19 42 34.9	+0.1
MK32			*e*PcP	PcP	19 44 21.3	+0.1
MKAR	Makanchi Array	43.81 302	P	P	19 42 34.9	+0.1
0.4nm,0.6s,baz=82,slow=10.0,SNR=5.8						
MKAR			PcP	PcP	19 44 21.3	+0.1
0.7nm,0.7s,baz=76,slow=5.1,SNR=4.4						
MKAR	Makanchi Array	43.81 302	*e*P	P	19 42 34.2	-0.5
MKAR			PcP	PcP	19 44 21.3	+0.1
KURK	Kurchatov	45.67 308	*e*P	P	19 42 49.1	-0.4
7.0nm,1.3s						
ZRNK	Zerenda	51.18 312	*e*P	P	19 43 31.7	-0.3
2.2nm,0.8s						
RAGM	Ragged Mountai	51.39 38	*e*P	P	19 43 33.6	+0.1
23nm,1.1s						
WR1	Warramunga Arr	56.77 187	*e*P	P	19 44 12.9	-0.1
36nm,1.9s						
WRA	Warramunga Arr	56.77 187	P	P	19 44 12.9	-0.1
2.1nm,0.7s,baz=4.6,slow=7.4,SNR=22						
ASAR	Alice Springs	60.50 187	P	P	19 44 39.5	+0.6
0.7nm,0.7s,baz=9.1,slow=5.7,SNR=8.0						
YKA	Yellowknife Ar	64.26 30	P	P	19 45 04.5	+0.8
0.3nm,0.7s,baz=302,slow=7.1,SNR=3.7						
FIA0	FINESS Array S	68.78 332	*e*P	P	19 45 32.5	-0.1
FINES	FINESS Array B	68.78 332	P	P	19 45 32.5	-0.1
2.0nm,0.7s,baz=155,slow=24,SNR=3.5						
AKASG	Malin Array Be	74.16 322	P	P	19 46 05.7	+0.3
0.5nm,0.5s,baz=46,slow=4.1,SNR=4.7						
LPAZ	La Paz	147.25 59	PKPbc	PKPbc	19 54 14.1	+0.4
0.7nm,0.6s,baz=10,slow=6.9,SNR=3.0						

CSEM ***17*** *19:41:42.3, 42°.63N×45°.94E, h0km, ML1.7*

TIF 17 19:41:42.3, 42°.63N×45°.94E, h27km±1km, Eastern Caucasus

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DUS	Dusheti	1.06	240	P	Pb	19 42 06.6	+4.5
DUS				S	Sb	19 42 23.2	+7.5
DUS	Dusheti	1.06	240	P	Pb	19 42 06.6	+4.5
DUS				S	Sb	19 42 23.3	+7.6
GUDG	Gudauri	1.10	262	P	Pb	19 42 06.3	+3.5
GUDG				S	Sb	19 42 23.2	+6.5
GUDG	Gudauri	1.10	262	P	Pb	19 42 06.3	+3.6
GUDG				S	Sb	19 42 23.2	+6.5
DGRG	David-gareji	1.25	200	P	Pb	19 42 07.0	+1.7
DGRG				S	Sb	19 42 27.1	+6.1
DGRG	David-gareji	1.25	200	P	Pb	19 42 07.0	+1.7
DGRG				S	Sb	19 42 27.1	+6.1
TBLG	Delisi	1.27	225	P	Pb	19 42 05.5	0.0
TBLG				S	Sb	19 42 25.7	+4.3
ONI	Oni	1.84	270	P	Pb	19 42 16.1	+0.8
ONI				S	Sb	19 42 43.2	+5.3

TIF 17 19:42:31.8, 41°.37N×43°.99E, h14km±3km, Turkey-Georgia-Armenia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BGD	Bogdanovka	0.31	251	P	Pg	19 42 38.2	-0.2
BGD				S	Sg	19 42 42.6	-0.3
BGD	Bogdanovka	0.31	251	P	Pg	19 42 38.2	-0.2
BGD				S	Sg	19 42 42.7	-0.2
AKH	Akhalkalaki	0.38	276	P	Pg	19 42 39.5	0.0
AKH				S	Sg	19 42 45.0	+0.2
AKH	Akhalkalaki	0.38	276	P	Pg	19 42 39.5	0.0
AKH				S	Sg	19 42 45.1	+0.4
TBLG	Delisi	0.67	57	P	Pb	19 42 45.9	+0.7
TBLG				S	Sb	19 42 55.1	+0.8
TBLG	Delisi	0.67	57	P	Pb	19 42 45.9	+0.7
TBLG				S	Sb	19 42 55.1	+0.8
DGRG	David-gareji	1.04	85	P	Pn	19 42 52.1	+0.1
DGRG				S	Sn	19 43 06.2	-0.2

ISCJB ***17*** *19:44:05.3±0.7, 7°.40N±0°.05×126°.22E±0°.05, h10km, mb3.4/4, Error ellipse: s-maj=7.8km s-min=6.9km az=146.5*

IDC ***17*** *19:44:05.2±1.3, 7°.38N×126°.29E, h0km, mb3.5/4, mb1 3.7/4, mb1mx3.5/30, mbtmp3.5/4, Error ellipse: s-maj=22.5km s-min=11.9km az=158.0*

ISC 17 19:44:06.5±0.9, 7°.46N±0°.04×126°.15E±0°.05, h10km, n13, σ2°.92/19, mb3.5/4, 3C-2D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MATI	Mati	0.53	168	*e*P	Pn	19 44 17.3	-2.7
MATI				*e*S	Sb	19 44 28.4	+3.0
DAV	Davao City (W)	0.69	235	Pg	Pb	19 44 19.1	-1.5
207nm,0.3s,baz=6.5,slow=3.9,SNR=16							
DAV				Lg	Lg	19 44 31.4	
126nm,0.3s,baz=270,slow=20,SNR=17							
DMPH	Davao City--Mi	0.74	239⇑	*e*P	Pn	19 44 23.8	+0.7
DMPH				*e*S	Sn	19 44 37.6	+3.3
BIPH	Bislig	0.75	16⇑	*i*P	Pn	19 44 21.9	-1.2
BIPH				*i*S	Sn	19 44 34.7	+0.2
KCP	Kidapawan	1.15	247⇓	*e*P	Pn	19 44 24.7	-3.9
KCP				*i*S	Sn	19 44 45.0	+0.6
BUKP	Musuan	1.16	291	*e*P	Pn	19 44 26.1	-2.7
BUKP				*e*S	Sn	19 44 45.0	+0.4
CGP	Cagayan de Oro	1.75	304⇓	*e*P	Pn	19 44 36.2	-0.7
CGP				*e*S	Sb	19 45 00.8	+0.1
GSPH	General Santos	1.81	221	*e*P	Pn	19 44 35.9	-2.0
CTBH	Cotabato--PC H	1.91	263⇑	*i*P	Pn	19 44 38.2	-0.8
WRA	Warramunga Arr	28.40	164	P	P	19 50 00.7	-0.6
1.0nm,1.1s,baz=344,slow=10,SNR=2.8							
ASAR	Alice Springs	31.85	166	P	P	19 50 31.1	-0.8
0.3nm,0.5s,baz=351,slow=7.8,SNR=7.4							
SONM	Songino Array	43.60	341	P	P	19 52 13.2	+2.1
0.3nm,0.4s,baz=128,slow=9.5,SNR=3.9							
MKAR	Makanchi Array	54.20	324	P	P	19 53 32.9	+0.6
0.1nm,0.3s,baz=135,slow=7.9,SNR=4.0							

MEX 17 20:02:32.6±0.8, 16°.90N×99°.57W, h15km±4km, MD3.8, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ACX	Acapulco	0.28	263	*i*P	Pn	20 02 43.1	+0.9
ACX				*e*S	Sn	20 02 48.2	+0.1
ACP2	Acapulco	0.30	265	*e*P	Pg	20 02 38.4	-0.6
ACP2				*e*S	Sg	20 02 43.7	+0.3
CAIG	El Cayaco	0.68	282	*i*P	Pg	20 02 43.2	-2.8
CAIG				*e*S	Sg	20 02 52.6	-2.4
MEIG	Mezcala	1.02	357	*i*P	Pb	20 02 48.3	-3.7
MEIG				*e*S	Sb	20 03 00.7	-4.6
TLIG	Tlapa	1.16	55	*e*P	Pn	20 02 50.9	-3.5
TLIG				*e*S	Sb	20 03 05.5	-3.9
PNIG	Pinotepa	1.47	110	*e*P	Pn	20 02 55.0	-3.7
PLIG	Platanillo	1.48	2	*e*P	Pn	20 02 55.5	-3.4
PLIG				*e*S	Sn	20 03 13.5	-4.6
ARIG	Puente Sto Nin	1.56	332	*e*P	Pn	20 02 56.5	-3.4
ARIG				*e*S	Sn	20 03 15.0	-4.8

ISCJB ***17*** *20:08:19.4±0.5, 30°.78N±0°.04×105°.78W±0°.04, h10km, Error ellipse: s-maj=5.9km s-min=4.4km az=169.3*

NEIC ***17*** *20:08:20.0±0.6, 30°.75N×105°.74W, h10km, ML4.1, MD4.2(MEX), Error ellipse: s-maj=8.4km s-min=6.8km az=192.0*

MEX ***17*** *20:08:22.2±1.1, 30°.81N×105°.63W, h10km, MD4.2*

ISC 17 20:08:18.9±0.8, 30°.79N±0°.04×105°.77W±0°.03, h10km, n50, σ2°.03/51, Texas-Mexico border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MNTX	Cornudas Mount	0.97	20	*e*Pg	Pg	20 08 37.0	-0.5
MNTX				*e*Sn	Sb	20 08 50.4	-0.3
GDL2	Guadalupe Moun	1.85	40	*e*Pn	Pg	20 08 53.3	-1.1
GDL2				*e*Sn	Sg	20 09 18.3	-0.2
CGIG		1.95	258	*e*P	Pb	20 08 54.7	+0.1
CGIG				*e*S	Sb	20 09 19.0	-0.1
CLNB	Carlsbad	2.19	47	*e*Pn	Pb	20 08 57.2	-1.5
CLNB				*e*Pg	Pn	20 08 57.7	+2.3
CLNB				*e*Sn	Sg	20 09 28.9	-0.3
TX31	Lajitas Ar. Si	2.33	128	*e*Pn	Pn	20 08 57.5	+0.1
TX31				*e*Pg	Pb	20 09 01.2	+0.2
TX31				*e*Sn	Sb	20 09 30.8	+0.9
TX31				*e*Sn	Sg	20 09 31.9	-1.8
121A	Cookes Peak, D	2.44	316	*e*P	Pn	20 09 00.0	+1.0
121A				*e*S	Sn	20 09 30.6	+1.5
CPRX	Cap Rock	2.76	35	*e*Pn	Pn	20 08 59.6	-3.7
CPRX				*e*Lg	Lg	20 09 43.1	
319A	Douglas	3.07	282	*e*P	Pn	20 09 08.6	+1.1
319A				*e*S	Sn	20 09 46.9	+2.5
319A	Douglas	3.07	282	*e*Pn	Pn	20 09 09.0	+1.5
Y22D	IRIS PASSCAL I	3.42	344	*e*Pn	Pb	20 09 19.1	-0.6
BNM	Barren Site	3.43	348	*e*Pn	Pn	20 09 13.9	+1.3
LPM	Los Pinos Moun	3.59	349	*e*Pn	Pn	20 09 16.6	+1.8
LAZ	Ladron	3.79	343	*e*Pn	Pn	20 09 18.2	+0.7
HPIG		3.84	179	*e*Pn	Pn	20 09 19.3	+1.0
MSTX	Muleshoe	4.06	38	*e*Pn	Pn	20 09 23.9	+2.7
ANMO	Albuquerque	4.19	352	*e*P	Pn	20 09 22.9	-0.1
ANMO	Albuquerque	4.19	352	*e*Pn	Pn	20 09 25.1	+2.1
TUC	Tucson	4.54	291	*e*Pn	Pn	20 09 29.1	+1.3
HSIG		4.83	250	*e*P	Pn	20 09 34.1	+2.5
HSIG		4.83	250	*e*Pn	Pn	20 09 34.1	+2.5
X18A	Snowflake	5.13	318	*e*Pn	Pn	20 09 37.8	+1.8
JCT	Junction City	5.15	92	*e*Pn	Pn	20 09 36.5	+0.4
AMTX	Amarillo	5.34	39	*e*Pn	Pn	20 09 45.1	+6.3
ABTX	Abilene, Hawle	5.53	69	*e*Pn	Pn	20 09 41.8	+0.4
X16A	Lo Mia Camp, P	6.00	309	*e*Pn	Pn	20 09 48.7	+0.8
T25A	Trinidad	6.44	10	*e*Pn	Pn	20 09 59.0	+5.1
WUAZ	Wupatki	6.66	317	*e*Pn	Pn	20 09 56.2	-0.7
MVCO	Mesa Verde	6.79	341	*e*Pn	Pn	20 10 05.7	+6.8
Y14A	Wickenburg	6.88	299	*e*Pn	Pn	20 10 01.5	+1.6
SDCO	Great Sand Dun	6.95	2	*e*Pn	Pb	20 10 10.3	-10
S22A	4UR Ranch, Cre	7.00	353	*e*Pn	Pb	20 10 11.8	-8.9
WMOK	Wichita Mounta	7.08	54	*e*Pn	Pn	20 10 01.4	-1.2
113A	Mohawk Valley,	7.09	288	*e*Pn	Pn	20 10 03.1	+0.4
113A				*e*Sg	Sg	20 12 03.2	-3.3
U15A	North Rim	7.82	318	*e*Pn	Pn	20 10 12.9	-0.1
Y12C	Blythe	7.98	294	*e*Pn	Pn	20 10 12.2	-2.7
R19A	Curley Farm, L	8.02	340	*e*Pn	Pn	20 10 19.9	+4.2
R19A				*e*Sn	Sn	20 11 47.8	+1.3
R19A				*e*Lg	Lg	20 12 45.4	
GLA	Glamis	8.02	289	*e*Pn	Pn	20 10 12.3	-3.3
PV10	Paradox Valley	8.04	341	*e*Pn	Pn	20 10 20.0	+4.0
PV09	Paradox Valley	8.18	341	*e*Pn	Pn	20 10 20.8	+2.9
SMCO	Snowmass	8.43	354	*e*Pn	Pn	20 10 27.9	+6.5
MTPU	Mount Pierson	8.97	326	*e*Pn	Pn	20 10 31.7	+2.9
SRU	San Rafael Swe	9.17	336	*e*Pn	Pn	20 10 32.8	+1.3
MSU	Marysvale	9.34	327	*e*Pn	Pn	20 10 39.2	+5.5
DCM	Dugout Coal Mi	9.72	337	*e*Sn	Sn	20 12 40.2	+12
TUL1	Leonard	9.78	56	*e*Pn	Pn	20 10 45.5	+5.9
TPNV	Topopah Spring	10.66	308	*e*Pn	Pn	20 10 46.4	-5.3
RCWM	Renegade Canyo	11.18	301	*e*Pn	Pn	20 10 54.9	-4.0
RCWM				*e*Lg	Lg	20 14 18.1	
BW06	Boulder Array	12.33	347	*e*Pn	Pn	20 11 18.6	+3.9
PD31	Pinedale Array	12.33	347	*e*Pn	Pn	20 11 20.6	+5.9
HSO	Harness Mounta	18.72	318	*e*PcP	PcP	20 17 07.3	+1.8

IDC 17 20:35:55.9±17.0, 17°.39S×179°.02W, h591km±168km, mb3.4/3, mb1 3.6/3, mb1mx2.8/43, mbtmp4.5/3, Error ellipse: s-maj=130.7km s-min=81.2km az=105.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	Stephens Creek	38.37	240	P	P	20 42 28.0	+0.1
2.2nm,0.6s,baz=76,slow=9.3,SNR=9.5							
WRA	Warramunga Arr	44.15	259	P	P	20 43 13.1	-0.5
1.5nm,0.5s,baz=96,slow=8.0,SNR=31							
ASAR	Alice Springs	44.37	254	P	P	20 43 15.3	0.0
10nm,0.4s,baz=89,slow=8.1,SNR=191							
ASAR				PcP	PcP	20 44 45.8	-0.4
0.4nm,0.4s,baz=108,slow=4.1,SNR=5.1							
BRTR	Keskin Array B	144.01	315	PKP	PKPbc	20 54 24.4	-0.5
0.7nm,0.7s,baz=101,slow=3.7,SNR=5.7							
GERES	GERESS Array B	146.96	345	PKPbc	PKPbc	20 54 32.5	-0.5
0.5nm,0.5s,baz=36,slow=3.0,SNR=6.6							

NIED ***17*** *20:37:00, 37°.60N×144°.40E, h5km, Mw3.7 Best double couple: M0=4.03000×10^14 NP1:φs=50.00000°, δ=31.00000°, λ=-90.00000°. NP2:φs=230.00000°, δ=59.00000°, λ=-90.00000°.*

IDC ***17*** *20:37:13.3±0.8, 37°.38N×144°.61E, h0km, mb3.8/10, mb1 4.0/13, mb1mx3.7/56, mbtmp3.9/13, ML3.9/3, MS2.7/5, Ms1 2.7/5, ms1mx2.4/55, Error ellipse: s-maj=24.2km s-min=17.8km az=109.0*

ISCJB ***17*** *20:37:16.8±0.4, 37°.48N±0°.04×144°.47E±0°.04, h33km, mb4.3/20, MS2.8/2, Error ellipse: s-maj=6.1km s-min=4.0km az=0.1*

JMA ***17*** *20:37:18.0±0.2, 37°.62N×144°.40E, h40km, M4.3*

NEIC ***17*** *20:37:18.5±0.4, 37°.40N×144°.58E, h35km, mb4.6/9, Error ellipse: s-maj=10.4km s-min=6.4km az=145.0*

ISC 17 20:37:18.8±0.6, 37°.48N±0°.05×144°.49E±0°.07, h35km, n69, σ1°.99/71, mb4.2/20, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	2.66	292	P	Pn	20 37 58.5	-0.6
JIO				S	Sn	20 38 28.5	-1.7
OFUJ	Ofunato	2.73	307	P	Pn	20 37 59.2	-0.9
OFUJ				S	Sn	20 38 30.0	-1.9
JFK	Kawauchi	2.88	269	P	Pn	20 38 01.7	-0.4
JFK				*e*S	Sn	20 38 34.5	-1.0
JMM	Marumori	2.96	279	P	Pn	20 38 02.4	-0.7
JMM				S	Sn	20 38 36.3	-1.1
MIYJ	Miyakonagasawa	2.96	316	P	Pn	20 38 01.8	-1.4
MIYJ				S	Sn	20 38 34.4	-3.1
JMK	Ichinoseki	2.96	301	P	Pn	20 38 02.7	-0.5
JMK				S	Sn	20 38 36.1	-1.4
JOU	Okura	3.15	287	P	Pn	20 38 06.0	+0.2
JOU				S	Sn	20 38 41.3	-0.9
JTH	Tanohata	3.20	321	P	Pn	20 38 05.3	-1.2
JOM	Ohasama	3.20	309	P	Pn	20 38 06.0	-0.5
JOM				S	Sn	20 38 42.0	-1.4
JFT	Otama	3.30	272	P	Pn	20 38 08.3	+0.4
JFT				S	Sn	20 38 45.5	-0.4
JYK	Kaneyama	3.55	295	P	Pn	20 38 11.5	+0.1
ERM	Erimo	4.64	348	*e*Pn	Pn	20 38 25.0	-1.3
ERM				*e*Sn	Sn	20 39 10.7	-8.3
MJAR	Matsushiro Arr	5.11	261	Pn	Pn	20 38 33.3	+0.5
3.9nm,0.3s,baz=49,slow=12,SNR=31							
MJAR				LR	LR	20 41 15.0	
comp=Z,31nm,18.7s,baz=110,slow=47							
MAJO	Matsushiro	5.11	261	*e*Pn	Pn	20 38 33.9	+1.1
MAT	Matsushiro	5.11	261	P	Pn	20 38 33.6	+0.8
MAT				S	Sn	20 39 32.0	+1.4
MJB9	Matsu-Tunnel	5.11	261	*e*Pn	Pn	20 38 34.0	+1.1
JHJ2	Mitsune	5.79	223	*e*Pn	Pn	20 38 39.5	-2.7
JHJ2				*e*Sn	Sn	20 39 39.9	-7.5
JHJ	Hachijo jima 2	5.81	223	Pn	Pn	20 38 38.9	-3.5
19nm,0.3s,baz=58,slow=24,SNR=9.0							
JHJ				Sn	Sn	20 39 41.9	-5.9
35nm,0.3s,baz=245,slow=24,SNR=7.8							
INU	Inuyama	6.39	253	*e*Pn	Pn	20 38 52.2	+1.9
INU				*e*SnS	ScS	20 52 48.1	-0.3
ASAJ	Asahikawa	6.78	348	Pn	Pn	20 38 54.8	-0.9
1.9nm,0.3s,baz=206,slow=14,SNR=10							
ASAJ				Sn	Sn	20 40 06.4	-5.3
1.8nm,0.3s,baz=336,slow=33,SNR=3.8							
ASAJ	Asahikawa	6.78	348	*e*Pn	Pn	20 38 54.8	-0.9
ASAJ				*e*Sn	Sn	20 40 05.8	-5.9
CBIJ	Chichi jima	10.54	191	*e*Pn	Pn	20 39 41.6	-5.7
CBIJ				*e*Sn	Sn	20 41 29.1	-15
JCJ	Chichijima	10.54	191	Pn	Pn	20 39 41.3	-5.9
2.9nm,0.3s,baz=275,slow=18,SNR=3.6							
JCJ				Sn	Sn	20 41 29.2	-15
3.4nm,0.3s,baz=207,slow=18,SNR=3.2							
JNU	Nakatsue	11.94	253	*e*Pn	Pn	20 40 04.5	-1.9
KSRS	Korea Array	13.16	275	LR	LR	20 45 47.7	
comp=Z,26nm,18.1s,baz=334,slow=39							
KS01	Wonju Array Si	13.18	275	*e*Pn	Pn	20 40 26.1	+2.8
KS15	Wonju Array Si	13.19	275	*e*Pn	Pn	20 40 23.4	-0.1
KLR	Kul'dur	14.93	326	LR	LR	20 45 45.4	
comp=Z,42nm,20.1s,baz=127,slow=34							
H11N2	WAKE ISLAND Hy 26.35	126		T	T	21 10 10.4	
baz=317,slow=75,SNR=11							
H11N1	WAKE ISLAND Hy 26.36	126		T	T	21 10 16.2	
baz=317,slow=75,SNR=5.3							
H11N3	WAKE ISLAND Hy 26.36	126		T	T	21 10 18.5	
baz=317,slow=75,SNR=8.8							
H11S1	WAKE ISLAND Hy 27.12	128		T	T	21 11 05.2	
baz=317,slow=74							
H11S3	WAKE ISLAND Hy 27.12	128		T	T	21 11 06.8	
baz=317,slow=74							
H11S2	WAKE ISLAND Hy 27.14	128		T	T	21 11 15.9	
baz=317							
ENH	Enshi	29.81	266	*e*P	P	20 43 25.5	+3.0
5.4nm,0.6s							
TLY	Talaya	31.91	310	LR	LR	20 55 35.8	
comp=Z,20nm,20.6s,baz=178,slow=34							
ZAA0	Zalesovo Array	43.43	312	*e*P	P	20 45 17.3	-0.6
ZALV	Zalesovo Beam	43.43	312	PcP	PcP	20 47 06.2	+0.5
0.7nm,0.4s,baz=106,slow=5.1,SNR=3.6							
SPU	Mount Spurr	45.39	38	*e*P	P	20 45 35.0	+1.4
PPLA	Purkeypile	45.40	35	*e*P	P	20 45 35.3	+1.6
42nm,1.8s							
CAST	Castle Rocks	45.48	34	*e*P	P	20 45 35.3	+1.1
21nm,2.0s							
MK01	Makanchi Array	45.95	302	*e*P	P	20 45 39.3	+1.1
MK31	Makanchi Array	45.95	302	*e*P	P	20 45 39.4	+1.2
MK32	Makanchi Array	45.95	302	*e*P	P	20 45 39.4	+1.2
MKAR	Makanchi Array	45.95	302	P	P	20 45 39.4	+1.2
0.7nm,0.6s,baz=87,slow=10.0,SNR=9.6							
MAKZ	Makanchi	46.16	302	*e*P	P	20 45 39.6	-0.3
5.0nm,1.6s							
MLY	Manley	46.17	32	*e*P	P	20 45 40.9	+1.2
2.8nm,1.0s							
RC01	Rabbit Creek A	46.52	38	*e*P	P	20 45 42.0	-0.3
18nm,1.2s							
KURK	Kurchatov	47.58	308	*e*P	P	20 45 52.3	+1.5
KURBB	Kurchatov Arra	47.66	308	P	P	20 45 52.3	+0.9
1.1nm,0.4s,baz=81,slow=7.8,SNR=13							
KSM	Kuching	47.67	229	*e*P	P	20 45 52.8	+0.9
5.7nm,0.9s							
IL1	Eielson Array	47.80	33	*e*P	P	20 45 51.4	-0.9
ILAR	Eielson Array	47.80	33	P	P	20 45 52.5	+0.2
0.9nm,0.7s,baz=267,slow=6.6,SNR=10							
ILB	Eielson Array	47.80	33	*e*P	P	20 45 51.4	-0.9
HNR	Honiara	48.86	160	*e*P	P	20 45 57.9	-3.1
164nm,1.1s							
INK	Inuvik	52.87	28	*e*P	P	20 46 29.9	-0.6
6.5nm,1.4s							
WR1	Warramunga Arr	57.91	191	*e*P	P	20 47 06.5	-0.9
12nm,1.3s							
WRA	Warramunga Arr	57.91	191	P	P	20 47 06.5	-0.9
1.3nm,0.5s,baz=11,slow=7.1,SNR=12							
ABKAR	Akbulak array	59.51	311	*e*P	P	20 47 18.7	+0.5
ASAR	Alice Springs	61.63	191	P	P	20 47 32.4	-0.5
0.6nm,0.8s,baz=7.8,slow=7.4,SNR=4.5							
YKA	Yellowknife Ar	62.18	31	P	P	20 47 36.1	0.0
0.2nm,0.7s,baz=285,slow=6.0,SNR=4.3							
YKB5	Yellowknife Ar	62.18	31	*e*P	P	20 47 36.1	-0.1
FIA0	FINESS Array S	69.54	333	*e*P	P	20 48 23.8	+0.2
FINES	FINESS Array B	69.54	333	P	P	20 48 23.7	+0.2
1.5nm,0.8s,baz=151,slow=13,SNR=3.3							
NB200	NORSAR Array S	74.70	338	*e*P	P	20 48 55.3	+0.8
NOA	NORSAR Array B	74.70	338	P	P	20 48 55.3	+0.

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ULN	**Ulaanbaatar**	**27.49**	**300**	*eP*	**P**	**20 51 19.6**	**+1.0**
SONA0	**Songino Array**	**27.93**	**300**	*eP*	**P**	**20 51 23.0**	**+0.5**
	5.5nm,1.6s						
SONM	**Songino Array**	**27.93**	**300**	P	**P**	**20 51 23.0**	**+0.5**
	0.9nm,0.5s,baz=96,slow=9.9,SNR=4.1						
H11N2	**WAKE ISLAND Hy**	**28.08**	**127**	T	T	21 20 33.5	
	baz=319,slow=74,SNR=14						
H11N1	**WAKE ISLAND Hy**	**28.09**	**127**	T	T	21 20 38.4	
	baz=319,slow=74,SNR=11						
H11N3	**WAKE ISLAND Hy**	**28.10**	**127**	T	T	21 20 43.8	
	baz=319,slow=74,SNR=10						
H11S1	**WAKE ISLAND Hy**	**28.89**	**129**	T	T	21 21 39.7	
	baz=321,slow=76,SNR=6.2						
H11S3	**WAKE ISLAND Hy**	**28.89**	**129**	T	T	21 21 37.1	
	baz=321,slow=76,SNR=4.3						
H11S2	**WAKE ISLAND Hy**	**28.91**	**129**	T	T	21 21 41.4	
	baz=321,slow=76,SNR=4.4						
MANU	**Manus Island**	**41.20**	**174**	*eP*	**P**	**20 53 17.1**	**+0.1**
CHGN	**Chignik**	**41.36**	**46**	*eP*	**P**	**20 53 17.9**	**+0.1**
ZAA1	**Zalesovo Array**	**41.63**	**311**	*eP*	**P**	**20 53 20.6**	**+0.6**
ZALV	**Zalesovo Beam**	**41.63**	**311**	P	**P**	**20 53 20.6**	**+0.6**
	0.5nm,0.3s,baz=190,slow=22,SNR=2.9						
MK32	**Makanchi Array**	**44.30**	**301**	*eP*	**P**	**20 53 42.4**	**+0.5**
MKAR	**Makanchi Array**	**44.30**	**301**	P	**P**	**20 53 42.4**	**+0.5**
	0.2nm,0.3s,baz=81,slow=7.6,SNR=4.1						
MAKZ	**Makanchi**	**44.51**	**301**	*eP*	**P**	**20 53 41.9**	**-1.6**
PPLA	**Purkeypile**	**44.52**	**36**	*eP*	**P**	**20 53 45.8**	**+2.2**
CAST	**Castle Rocks**	**44.58**	**35**	*eP*	**P**	**20 53 45.1**	**+1.3**
KURK	**Kurchatov**	**45.83**	**307**	*eP*	**P**	**20 53 54.6**	**+0.7**
KURBB	**Kurchatov Arra**	**45.91**	**307**	P	**P**	**20 53 54.6**	**+0.1**
	1.0nm,0.5s,baz=81,slow=8.4,SNR=16						
HDA	**Harding Lake**	**46.84**	**34**	*eP*	**P**	**20 54 01.9**	**+0.3**
IL1	**Eielson Array**	**46.85**	**33**	*eP*	**P**	**20 54 02.0**	**+0.2**
ILAR	**Eielson Array**	**46.85**	**33**	P	**P**	**20 54 02.4**	**+0.6**
	1.1nm,0.7s,baz=260,slow=6.4,SNR=11						
ILB	**Eielson Array**	**46.85**	**33**	*eP*	**P**	**20 54 02.0**	**+0.2**
TKM2	**Tokmak 2**	**49.97**	**297**	*eP*	**P**	**20 54 25.6**	**-0.8**
ZRNK	**Zerenda**	**51.10**	**312**	*eP*	**P**	**20 54 34.3**	**-0.2**
INK	**Inuvik**	**51.77**	**28**	P	**P**	**20 54 39.8**	**+0.6**
	1.5nm,0.8s,baz=235,slow=4.2,SNR=3.9						
INK	**Inuvik**	**51.77**	**28**	*eP*	**P**	**20 54 40.1**	**+0.9**
	2.6nm,1.0s						
UWE	**Uwekahuna**	**55.97**	**92**	*eP*	**P**	**20 55 12.2**	**+1.3**
ABKAR	**Akbulak array**	**57.73**	**310**	*eP*	**P**	**20 55 22.2**	**-0.5**
WR1	**Warramunga Arr**	**59.43**	**190**	*eP*	**P**	**20 55 32.9**	**-2.0**
	16nm,1.4s						
WRA	**Warramunga Arr**	**59.43**	**190**	P	**P**	**20 55 32.9**	**-2.0**
	0.3nm,0.4s,baz=8.8,slow=7.0,SNR=2.5						
YKB5	**Yellowknife Ar**	**61.17**	**31**	*eP*	**P**	**20 55 45.5**	**-0.8**
PGC	**Sidney**	**63.74**	**48**	*eP*	**P**	**20 56 03.9**	**+0.2**
OBN	**Obninsk**	**67.28**	**323**	LR	LR	21 30 28.3	
	comp=Z,25nm,18.7s,baz=90,slow=40						
NB200	**NORSAR Array S**	**72.77**	**338**	*eP*	**P**	**20 56 59.6**	**-0.5**
NOA	**NORSAR Array B**	**72.77**	**338**	P	**P**	**20 56 59.6**	**-0.5**
	0.7nm,0.6s,baz=38,slow=5.8,SNR=3.4						
GERES	**GERESS Array B**	**81.66**	**329**	P	**P**	**20 57 50.3**	**0.0**
	0.4nm,0.5s,baz=46,slow=7.0,SNR=3.8						

IDC 17 20:46:59.8±4.6, 29°.90S×178°.66W, h0km, mb4.2/2, mb1 4.5/2, mb1mx3.8/33, mbtmp4.2/2, Error ellipse: s-maj=210.1km s-min=72.6km az=165.0, Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**42.57**	**267**	P	P	20 54 57.1	-0.6
	1.0nm,0.5s,baz=105,slow=7.4,SNR=16						
WRA	**Warramunga Arr**	**43.51**	**272**	P	P	20 55 05.7	+0.4
	3.0nm,0.4s,baz=112,slow=8.0,SNR=54						
FINES	**FINESS Array B**	**144.48**	**340**	PKP	PKPbc	21 06 36.7	+0.7
	2.1nm,0.7s,baz=31,slow=3.6,SNR=9.8						

NIED ***17*** *20:54:00, 36°.40N×142°.40E, h11km, Mw3.9 Best double couple: M0 9.04000×10^14 NP1:φs 9.00000°, δ26.00000°, λ-56.00000°. NP2:φs 153.00000°, δ69.00000°, λ-105.00000°.*
ISCJB ***17*** *20:54:16.9±0.3, 36°.25N±0°.04×142°.58E±0°.04, h15km, mb4.2/35, MS3.2/6, Error ellipse: s-maj=5.7km s-min=4.4km az=146.4*
IDC ***17*** *20:54:16.1±0.6, 36°.26N×142°.65E, h0km, mb4.0/16, mb1 4.1/23, mb1mx4.0/46, mbtmp4.0/23, ML3.7/5, MS3.1/8, Ms1 3.1/8, ms1mx2.8/49, Error ellipse: s-maj=16.9km s-min=13.9km az=129.0*
JMA ***17*** *20:54:20.4±0.2, 36°.38N×142°.37E, h77km, M3.7*
NEIC ***17*** *20:54:21.6±0.4, 36°.31N×142°.55E, h35km, mb4.3/13, Error ellipse: s-maj=8.1km s-min=6.6km az=152.0*

ISC 17 20:54:18.3±0.5, 36°.29N±0°.05×142°.63E±0°.06, h15km, n89, σ1 82/89, mb4.2/35, MS3.3/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.55**	**249**	P	**Pn**	**20 54 44.5**	**-0.8**
CHOJ				*eS*	**Sn**	**20 55 02.6**	**-2.6**
ONAJ	**Iwakimizuishiy**	**1.68**	**299**	P	**Pn**	**20 54 45.3**	**-2.0**
JHO	**Hitachi**	**1.69**	**282**	P	**Pn**	**20 54 45.4**	**-1.9**
JFK	**Kawauchi**	**1.78**	**308**	*eS*	**Sn**	**20 55 06.3**	**-4.5**
BSO1	**Boso 1**	**2.12**	**220**	P	**Pn**	**20 54 53.4**	**+0.8**
JMM	**Marumori**	**2.16**	**318**	P	**Pn**	**20 54 52.0**	**-1.7**
BSO3	**Boso 3**	**2.28**	**230**	P	**Pn**	**20 54 55.4**	**+0.3**
MJAR	**Matsushiro Arr**	**3.58**	**275**	Pn	**Pn**	**20 55 12.3**	**-0.9**
	4.9nm,0.3s,baz=100,slow=8.9,SNR=64						
MJAR				LR	LR	20 56 20.2	
	comp=Z,20nm,20.5s,baz=115,slow=35						
MAJO	**Matsushiro**	**3.58**	**275**	*ePn*	**Pn**	**20 55 13.3**	**0.0**
MAT	**Matsushiro**	**3.58**	**275**	P	**Pn**	**20 55 12.6**	**-0.7**
MAT				*eS*	**Sn**	**20 55 54.4**	**-0.9**
MJB9	**Matsu-Tunnel**	**3.58**	**275**	*ePn*	**Pn**	**20 55 13.1**	**-0.2**
JHJ2	**Mitsune**	**3.92**	**217**	*ePn*	**Pn**	**20 55 18.1**	**+0.1**
JHJ2				*eSn*	**Sn**	**20 55 59.6**	**-4.2**
JHJ	**Hachijo jima 2**	**3.93**	**217**	Pn	**Pn**	**20 55 17.3**	**-0.8**
	33nm,0.3s,baz=318,slow=22,SNR=15						
JHJ				Sn	**Sn**	**20 56 00.8**	**-3.2**
	88nm,0.3s,baz=243,slow=21,SNR=11						
INU	**Inuyama**	**4.66**	**260**	*ePn*	**Pn**	**20 55 29.1**	**+1.0**
ERM	**Erimo**	**5.74**	**4**	*ePn*	**Pn**	**20 55 40.2**	**-2.6**
ERM				*eSn*	**Sn**	**20 56 41.5**	**-6.9**
ASAJ	**Asahikawa**	**7.82**	**360**	Pn	**Pn**	**20 56 09.9**	**-1.6**
	1.3nm,0.3s,baz=202,slow=16,SNR=11						
ASAJ				Sn	**Sn**	**20 57 37.1**	**-2.7**
	0.5nm,0.3s,baz=18,slow=29,SNR=2.7						
ASAJ	**Asahikawa**	**7.82**	**360**	*ePn*	**Pn**	**20 56 09.0**	**-2.5**
ASAJ				*eSn*	**Sn**	**20 57 37.1**	**-2.7**
CBIJ	**Chichi jima**	**9.17**	**183**	*ePn*	**Pn**	**20 56 28.8**	**-1.3**
CBIJ				*eSn*	Sn	20 58 01.2	-12
JCJ	**Chichijima**	**9.17**	**183**	Pn	**Pn**	**20 56 27.5**	**-2.5**
	9.8nm,0.3s,baz=264,slow=24,SNR=9.4						
JCJ				Sn	**Sn**	**20 58 05.3**	**-7.7**
JNU	**Nakatsue**	**10.18**	**255**	Pn	**Pn**	**20 56 43.9**	**0.0**
	0.3nm,0.3s,baz=88,slow=8.9,SNR=3.6						
JNU				LR	LR	21 01 19.2	
	comp=Z,77nm,20.2s,baz=127,slow=42						
JNU	**Nakatsue**	**10.18**	**255**	*ePn*	**Pn**	**20 56 44.3**	**+0.5**
USRK	**Ussuriysk Ar.**	**11.33**	**317**	Pn	**Pn**	**20 56 59.4**	**-0.2**
	0.3nm,0.3s,baz=103,slow=15,SNR=5.7						
KSRS	**Korea Array**	**11.84**	**280**	Pn	**Pn**	**20 57 07.7**	**+1.1**
	0.3nm,0.3s,baz=94,slow=15,SNR=7.9						
KSRS				LR	LR	21 02 13.3	
	comp=Z,39nm,18.4s,baz=92,slow=40						
KS01	**Wonju Array Si**	**11.87**	**280**	*ePn*	**Pn**	**20 57 04.8**	**-2.2**
KSAR	**Wonju Array Be**	**11.87**	**280**	Pn	**Pn**	**20 57 07.7**	**+0.6**
MDJ	**Mudanjiang**	**12.94**	**314**	P	**Pn**	**20 57 22.8**	**+1.2**
MDJ				pmax	pmax		
	comp=Z,3.0nm,0.6s						
MDJ				pmax	pmax		
	comp=Z,30nm,3.3s						
PETK	**Petropavlovsk-**	**19.87**	**27**	LR	LR	21 09 27.8	
	comp=Z,21nm,18.1s,baz=173,slow=46						
MA2	**Magadan**	**23.90**	**10**	LR	LR	21 09 42.0	
	comp=Z,31nm,18.7s,baz=296,slow=39						
HHC	**Hu-ho-hao-te**	**24.64**	**290**	*eP*	**P**	**20 59 39.9**	**+1.5**
HHC				pmax	pmax		
	comp=Z,21nm,0.8s						
HHC				pmax	pmax		
	comp=Z,74nm,4.7s						
H11N2	**WAKE ISLAND Hy**	**26.92**	**121**	T	T	21 28 38.0	
	baz=310,slow=74						
H11N1	**WAKE ISLAND Hy**	**26.93**	**121**	T	T	21 28 26.4	
	baz=310,slow=74						
H11N3	**WAKE ISLAND Hy**	**26.94**	**121**	T	T	21 28 29.6	
	baz=310						
SEY	**Seymchan**	**27.35**	**10**	P	**P**	**21 00 03.0**	**+0.6**
	comp=Z,0.6nm,0.2s,baz=197,slow=13,SNR=3.6						
XAN	**Xi'an**	**27.57**	**275**	P	**P**	**21 00 04.3**	**-0.5**
XAN				pmax	pmax		
	comp=Z,5.0nm,0.9s						
XAN				pmax	pmax		
	comp=Z,36nm,4.8s						
H11S1	**WAKE ISLAND Hy**	**27.63**	**123**	T	T	21 29 07.1	
	baz=314,slow=75,SNR=7.3						
H11S3	**WAKE ISLAND Hy**	**27.63**	**123**	T	T	21 29 10.9	
	baz=314,slow=75,SNR=6.2						
H11S2	**WAKE ISLAND Hy**	**27.65**	**123**	T	T	21 29 20.4	
	baz=314,slow=75,SNR=5.9						
ENH	**Enshi**	**28.26**	**267**	*eP*	**P**	**21 00 11.0**	**0.0**
	comp=Z,11nm,0.8s						
ULN	**Ulaanbaatar**	**28.59**	**305**	*eP*	**P**	**21 00 14.8**	**+0.9**
	comp=Z,3.7nm,1.0s						
SONA1	**Songino Array**	**29.01**	**305**	*eP*	**P**	**21 00 18.7**	**+1.1**
SONA0	**Songino Array**	**29.02**	**305**	*eP*	**P**	**21 00 18.6**	**+0.9**
	comp=Z,3.6nm,0.9s						
SONM	**Songino Array**	**29.02**	**305**	P	**P**	**21 00 18.6**	**+0.9**
	comp=Z,2.1nm,0.8s,baz=102,slow=9.4,SNR=7.4						
TGY	**Tagaytay City**	**29.42**	**227**	LR	LR	21 09 53.7	
	comp=Z,64nm,21.7s,baz=21,slow=32						
LZH	**Lanzhou**	**31.17**	**281**	*eP*	**P**	**21 00 35.0**	**-1.8**
LZH				pP	pP	21 00 38.8	-2.6
LZH				sP	sP	21 00 40.4	-2.9
LZH				pmax	pmax		
	comp=Z,16nm,1.0s						
CD2	**Chengdu**	**32.67**	**272**	P	**P**	**21 00 49.9**	**0.0**
CD2				pmax	pmax		
	comp=Z,3.0nm,0.6s						
GTA	**Gaotai**	**33.72**	**288**	*eP*	**P**	**21 00 59.8**	**+0.6**
GTA				pP	sP	21 01 10.3	+4.6
GTA				sP	pP	21 01 14.3	+11
GTA				pmax	pmax		
	comp=Z,5.0nm,1.1s						
BILL	**Bilibino**	**34.48**	**15**	*eP*	**P**	**21 01 04.9**	**-0.3**
	comp=Z,6.7nm,1.4s						
KWAJ	**Kwajalein Atol**	**35.57**	**134**	*eP*	**P**	**21 01 18.1**	**+3.0**
	comp=Z,118nm,0.8s						
WMQ	**Urumqi**	**42.05**	**298**	*eP*	**P**	**21 02 10.8**	**+1.4**
WMQ				pmax	pmax		
	comp=Z,4.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,15nm,4.6s						
WMQ				LR	LR		
	comp=N,90nm,13.0s						
WMQ				LR	LR		
	comp=E,35nm,6.0s						
WMQ				LR	LR		
	comp=Z,10.0nm,17.4s						
CHTO	**Chiang Mai**	**42.07**	**258**	*eP*	**P**	**21 02 11.0**	**+1.3**
	comp=Z,9.1nm,1.8s						
CMAR	**Chiang Mai Arr**	**42.27**	**257**	P	**P**	**21 02 11.4**	**+0.1**
	comp=Z,0.7nm,0.8s,baz=46,slow=6.5,SNR=6.2						
ZAA0	**Zalesovo Array**	**43.14**	**313**	*eP*	**P**	**21 02 17.6**	**-0.4**
ZAA0				*ePcP*	**PcP**	**21 04 06.9**	**-0.5**
ZAA1	**Zalesovo Array**	**43.14**	**313**	*eP*	**P**	**21 02 17.7**	**-0.3**
ZAA1				*ePcP*	**PcP**	**21 04 07.2**	**-0.2**
ZALV	**Zalesovo Beam**	**43.14**	**313**	P	**P**	**21 02 17.7**	**-0.3**
	comp=Z,0.8nm,0.5s,baz=91,slow=7.2,SNR=4.3						
ZALV				PcP	**PcP**	**21 04 07.2**	**-0.2**
	comp=Z,0.8nm,0.6s,baz=64,slow=3.4,SNR=3.5						
CHGN	**Chignik**	**43.83**	**44**	*eP*	**P**	**21 02 26.8**	**+3.4**
MK01	**Makanchi Array**	**45.34**	**303**	*eP*	**P**	**21 02 36.1**	**+0.3**
MK31	**Makanchi Array**	**45.35**	**303**	*eP*	**P**	**21 02 36.2**	**+0.5**
MK32	**Makanchi Array**	**45.35**	**303**	*eP*	**P**	**21 02 36.3**	**+0.5**
MKAR	**Makanchi Array**	**45.35**	**303**	P	**P**	**21 02 36.3**	**+0.5**
	comp=Z,1.8nm,0.7s,baz=88,slow=10,SNR=13						
MAKZ	**Makanchi**	**45.56**	**303**	*eP*	**P**	**21 02 39.4**	**+2.0**
	comp=Z,3.4nm,0.9s						
KURK	**Kurchatov**	**47.16**	**309**	*eP*	**P**	**21 02 49.5**	**-0.4**
	comp=Z,5.0nm,1.0s						
MLY	**Manley**	**47.97**	**32**	*eP*	**P**	**21 02 57.3**	**+1.2**
	comp=Z,4.6nm,1.0s						
IL1	**Eielson Array**	**49.60**	**32**	*eP*	**P**	**21 03 08.5**	**-0.1**
ILAR	**Eielson Array**	**49.60**	**32**	P	**P**	**21 03 08.0**	**-0.6**
	comp=Z,2.0nm,0.9s,baz=271,slow=6.0,SNR=14						
ILB	**Eielson Array**	**49.60**	**32**	*eP*	**P**	**21 03 08.6**	**0.0**
AAK	**Ala-Archa**	**51.71**	**299**	LR	LR	21 28 07.8	
	comp=Z,24nm,18.7s,baz=56,slow=39						
ZRNK	**Zerenda**	**52.63**	**313**	*eP*	**P**	**21 03 30.8**	**-0.7**
	comp=Z,2.9nm,1.0s						
KKAR	**Karatay Array**	**54.35**	**301**	*eP*	**P**	**21 03 45.6**	**+1.4**
INK	**Inuvik**	**54.61**	**27**	P	**P**	**21 03 46.1**	**+0.4**
	comp=Z,1.6nm,0.7s,baz=321,slow=6.7,SNR=6.4						
INK	**Inuvik**	**54.61**	**27**	*eP*	**P**	**21 03 46.5**	**+0.8**
	comp=Z,1.9nm,0.8s						
WR1	**Warramunga Arr**	**56.47**	**189**	*eP*	**P**	**21 03 59.5**	**-0.1**
	comp=Z,10nm,1.1s						
WRA	**Warramunga Arr**	**56.47**	**189**	P	**P**	**21 03 59.5**	**-0.1**
	comp=Z,1.6nm,0.8s,baz=7.6,slow=7.1,SNR=10						
AS31	**Alice Springs**	**60.19**	**189**	*eP*	**P**	**21 04 25.4**	**-0.2**
	comp=Z,1.0nm,0.8s						
ASAR	**Alice Springs**	**60.20**	**189**	P	**P**	**21 04 25.8**	**+0.1**
	comp=Z,1.0nm,0.9s,baz=6.9,slow=6.4,SNR=6.0						
YKA	**Yellowknife Ar**	**63.96**	**30**	P	**P**	**21 04 50.3**	**-0.1**
	comp=Z,1.1nm,0.7s,baz=302,slow=6.9,SNR=13						
AFI	**Afiamalu**	**65.90**	**131**	LR	LR	21 32 08.9	
	comp=Z,32nm,18.1s,baz=64,slow=34						
FIA0	**FINESS Array S**	**69.93**	**333**	*eP*	**P**	**21 05 28.9**	**+0.5**
FINES	**FINESS Array B**	**69.93**	**333**	P	**P**	**21 05 28.9**	**+0.5**
	comp=Z,1.6nm,0.7s,baz=323,slow=2.9,SNR=3.4						
FINES				LR	LR	21 37 08.6	
	comp=Z,36nm,20.1s,baz=309,slow=37						
KBZ	**Khabaz**	**72.13**	**311**	P	**P**	**21 05 43.0**	**+0.8**
	comp=Z,1.5nm,0.7s,baz=37,slow=4.6,SNR=4.9						
NV01	**Mina Array Sit**	**74.65**	**54**	*eP*	**P**	**21 05 58.7**	**+1.3**
NVAR	**Mina Array Bea**	**74.65**	**54**	P	**P**	**21 05 58.4**	**+1.0**
	comp=Z,1.8nm,0.7s,baz=284,slow=5.8,SNR=7.6						
SRU	**San Rafael Swe**	**79.16**	**49**	*eP*	**P**	**21 06 20.1**	**-2.7**
	comp=Z,9.5nm,0.8s						
BR101	**Keskin Array S**	**80.08**	**312**	*eP*	**P**	**21 06 28.4**	**+0.7**
BRTR	**Keskin Array B**	**80.08**	**312**	P	**P**	**21 06 28.4**	**+0.7**
	comp=Z,0.6nm,0.8s,baz=108,slow=4.0,SNR=4.7						
GERES	**GERESS Array B**	**83.86**	**329**	P	**P**	**21 06 46.9**	**-0.5**
	comp=Z,0.3nm,0.5s,baz=41,slow=5.4,SNR=4.4						
TX31	**Lajitas Ar. Si**	**89.79**	**53**	*eP*	**P**	**21 07 17.1**	**+0.4**
LTX	**Lajitas**	**89.79**	**53**	*eP*	**P**	**21 07 17.5**	**+0.9**
TXAR	**Lajitas Array**	**89.79**	**53**	P	**P**	**21 07 17.5**	**+0.9**
	comp=Z,0.9nm,0.7s,baz=306,slow=3.4,SNR=13						
LPAZ	**La Paz**	**146.20**	**62**	PKPbc	**PKPdf**	**21 13 59.0**	**+0.8**
	comp=Z,1.7nm,0.5s,baz=311,slow=3.8,SNR=8.9						

ISCJB ***17*** *21:16:44.8±0.2, 35°.86N±0°.02×24°.56E±0°.02, h84km±3km, mb3.4/3, Error ellipse: s-maj=2.9km s-min=1.8km az=25.1*
HLW ***17*** *21:16:45.0, 35°.79N×24°.84E, h33km±24km, Ml3.3*
IDC ***17*** *21:16:45.8±1.0, 35°.39N×24°.66E, h93km±7km, mb3.1/3, mb1 3.3/8, mb1mx3.1/49, mbtmp3.5/8, Error ellipse: s-maj=24.3km s-min=17.0km az=7.0*
ATH ***17*** *21:16:45.5, 35°.90N×24°.55E, h67km±2km, ML3.2/37, Error ellipse: s-maj=2.8km s-min=0.6km az=181.0*
CSEM ***17*** *21:16:46.2±0.1, 35°.82N×24°.53E, h60km, ML3.2, Error ellipse: s-maj=3.3km s-min=2.1km az=34.0*
ISK ***17*** *21:16:46.4, 35°.92N×24°.48E, h64km, MD3.4*
THE ***17*** *21:16:47.0, 35°.90N×24°.55E, h60km±1km, ML3.5/36, Error ellipse: s-maj=1.9km s-min=0.3km az=174.0*
DDA ***17*** *21:17:01.3, 36°.88N×25°.75E, h25km, Md3.8*

ISC 17 21:16:45.9±0.7, 35°.87N±0°.02×24°.55E±0°.02, h68km±5km, n293, σ1 23/461, mb3.6/3, Crete

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VAM	**Vamos**	**0.54**	**211**	P	**Pn**	**21 16 59.6**	**+0.6**
VAM				S	**Sn**	**21 17 08.9**	**+0.4**
VAM	**Vamos**	**0.54**	**211**	P	**Pn**	**21 16 59.6**	**+0.6**
VAM				S	**Sn**	**21 17 09.1**	**+0.6**
IMMV	**Iera Moni Meta**	**0.61**	**229**	P	**Pn**	**21 17 00.3**	**+0.6**
IMMV				S	**Sn**	**21 17 10.4**	**+0.5**
IMMV	**Iera Moni Meta**	**0.61**	**229**	P	**Pn**	**21 17 00.5**	**+0.8**
IMMV				S	**Sn**	**21 17 10.7**	**+0.8**
IMMV	**Iera Moni Meta**	**0.61**	**229**	P	**Pn**	**21 17 00.5**	**+0.8**
IMMV				S	**Sn**	**21 17 10.7**	**+0.8**
IMMV				AML	AML	21 17 13.1	
	comp=E,3672μm,0.3s						
IMMV				AML	AML	21 17 16.8	
	comp=N,4350μm,0.3s						
IDI	**Anoyia**	**0.64**	**154**	LR	LR	21 16 43.9	
	comp=N,6.1nm,18.1s,baz=338,slow=8.7						
IDI				P	**Pn**	**21 17 00.5**	**+0.4**
	comp=N,92nm,0.3s,baz=260,slow=6.3,SNR=1939						
IDI				S	**Sn**	**21 17 10.8**	**+0.2**
	comp=N,423nm,0.3s,baz=300,slow=20,SNR=107						
IDI	**Anoyia**	**0.64**	**154**	P	**Pn**	**21 17 00.4**	**+0.2**
IDI				S	**Sn**	**21 17 10.3**	**-0.3**
IDI	**Anoyia**	**0.64**	**154**	P	**Pn**	**21 17 00.6**	**+0.4**
IDI				S	**Sn**	**21 17 10.3**	**-0.3**
IDI	**Anoyia**	**0.64**	**154**	P	**Pn**	**21 17 00.6**	**+0.4**
IDI				S	**Sn**	**21 17 10.3**	**-0.3**
IDI				AML	AML	21 17 10.9	
	comp=E,8990μm,0.2s						
IDI				AML	AML	21 17 11.4	
	comp=N,9191μm,0.2s						
IACM	**Heraklion**	**0.71**	**142**	P	**Pn**	**21 17 00.7**	**0.0**
IACM				S	**Sn**	**21 17 11.9**	**+0.3**
IACM	**Heraklion**	**0.71**	**142**	P	**Pn**	**21 17 01.4**	**+0.6**
IACM				S	**Sn**	**21 17 11.9**	**+0.3**
IACM	**Heraklion**	**0.71**	**142**	P	**Pn**	**21 17 01.4**	**+0.6**
IACM				S	**Sn**	**21 17 13.7**	**+2.0**
IACM				AML	AML	21 17 19.1	
	comp=E,16667μm,0.3s						
IACM				AML	AML	21 17 23.2	
	comp=N,16910μm,0.6s						
MHLO	**Agia Marina, M**	**0.83**	**352**	P	**Pn**	**21 17 02.3**	**+0.1**
MHLO				S	**Sn**	**21 17 13.4**	**-0.8**
MHLO	**Agia Marina, M**	**0.83**	**352**	P	**Pn**	**21 17 02.8**	**+0.6**
MHLO				S	**Sn**	**21 17 14.0**	**-0.2**
MHLO	**Agia Marina, M**	**0.83**	**352**	P	**Pn**	**21 17 02.8**	**+0.6**
MHLO				S	**Sn**	**21 17 14.0**	**-0.2**
MHLO				AML	AML	21 17 14.8	
	comp=E,10282μm,0.2s						
MHLO				AML	AML	21 17 15.6	
	comp=N,7810μm,0.3s						
THR6	**Thira Island,**	**0.84**	**55**	P	**Pn**	**21 17 03.0**	**+0.6**
THR6	**Thira Island,**	**0.84**	**55**	P	**Pn**	**21 17 03.0**	**+0.6**
THR5	**Thira Island,**	**0.85**	**50**	*ePG*	**Pn**	**21 17 03.9**	**+1.5**
THR5	**Thira Island,**	**0.85**	**50**	P	**Pn**	**21 17 02.6**	**+0.1**
THR5	**Thira Island,**	**0.85**	**50**	P	**Pn**	**21 17 02.6**	**+0.1**
THR5	**Thira Island,**	**0.85**	**50**	*ePg*	**Pn**	**21 17 03.9**	**+1.5**
SIVA	**Sivas**	**0.88**	**166**	P	**Pn**	**21 17 03.6**	**+0.8**
SIVA				S	**Sn**	**21 17 16.5**	**+1.3**
SIVA	**Sivas**	**0.88**	**166**	P	**Pn**	**21 17 03.6**	**+0.8**
SIVA				S	**Sn**	**21 17 16.5**	**+1.3**
SIVA	**Sivas**	**0.88**	**166**	P	**Pn**	**21 17 03.9**	**+1.1**
SIVA				S	**Sn**	**21 17 16.8**	**+1.5**
SIVA				AML	AML	21 17 22.1	
	comp=E,15379μm,0.5s						
SIVA				AML	AML	21 17 24.2	
	comp=N,7770μm,0.6s						
THR3	**Thira Island,**	**0.88**	**52**	P	**Pn**	**21 17 03.3**	**+0.5**
THR3	**Thira Island,**	**0.88**	**52**	P	**Pn**	**21 17 03.3**	**+0.5**
THT1	**Athinios (Pele**	**0.88**	**54**	P	**Pn**	**21 17 03.2**	**+0.4**
THT1				S	**Sn**	**21 17 15.4**	**0.0**
THT1	**Athinios (Pele**	**0.88**	**54**	P	**Pn**	**21 17 03.2**	**+0.4**
SANT	**Santorini**	**0.89**	**56**	P	**Pn**	**21 17 03.5**	**+0.5**
SANT				S	**Sn**	**21 17 15.8**	**+0.1**
SANT	**Santorini**	**0.89**	**56**	P	**Pn**	**21 17 03.5**	**+0.5**
SANT				S	**Sn**	**21 17 17.4**	**+1.7**
SANT	**Santorini**	**0.89**	**56**	P	**Pn**	**21 17 04.0**	**+1.0**
SANT				AML	AML	21 17 16.6	
	comp=N,9774μm,0.4s						
SANT				S	**Sn**	**21 17 17.4**	**+1.7**
SANT				AML	AML	21 17 19.4	
	comp=E,6482μm,0.2s						
THR7	**Fira-Santorini**	**0.90**	**52**	P	**Pn**	**21 17 03.7**	**+0.6**
THR7	**Fira-Santorini**	**0.90**	**52**	P	**Pn**	**21 17 03.7**	**+0.6**
CMBO	**Columbo, Santo**	**0.92**	**49**	P	**Pn**	**21 17 03.7**	**+0.4**
CMBO				S	**Sn**	**21 17 16.0**	**-0.2**
CMBO	**Columbo, Santo**	**0.92**	**49**	P	**Pn**	**21 17 03.7**	**+0.4**
CMBO				S	**Sn**	**21 17 17.7**	**+1.5**
CMBO	**Columbo, Santo**	**0.92**	**49**	P

comp=N,860μm,0.3s
VLY Voula,Athens 2.07 343 P Pn 21 17 18.9 +0.4
VLY S Sn 21 17 43.4 +0.1
VLY Voula,Athens 2.07 343 P Pn 21 17 18.9 +0.4
VLY S Sn 21 17 44.3 +1.1
VLY Voula,Athens 2.07 343 P Pn 21 17 18.6 +0.1
VLY S Sn 21 17 44.4 +1.1
VLY AML AML 21 17 51.1
comp=E,296μm,0.4s
VLY AML AML 21 17 52.7
comp=N,331μm,0.3s
KARP Karpathos 2.15 98 ePN Pn 21 17 21.8 +2.2
KARP Karpathos 2.15 98 P Pn 21 17 19.8 +0.2
KARP S Sn 21 17 45.7 +0.3
KARP Karpathos 2.15 98 P Pn 21 17 19.4 -0.3
KARP Karpathos 2.15 98 ePn Pn 21 17 21.8 +2.2
KARP S Sn 21 17 45.7 +0.3
KARP Karpathos 2.15 98 P Pn 21 17 19.4 -0.3
KARP S Sn 21 17 46.6 +1.3
KARP AML AML 21 17 51.1
comp=N,2885μm,0.5s
KARP AML AML 21 17 51.3
comp=E,1903μm,0.2s
KARY Karystos 2.16 358 P Pn 21 17 20.1 +0.4
KARY S Sn 21 17 44.9 -0.6
KARY Karystos 2.16 358 P Pn 21 17 20.1 +0.4
KARY S Sn 21 17 44.9 -0.6
ATH Athens Observa 2.20 343 P Pn 21 17 20.9 +0.7
ATH S Sn 21 17 46.3 -0.1
ATH Athens Observa 2.20 343 P Pn 21 17 20.9 +0.7
ATH S Sn 21 17 46.3 -0.1
NISR Nisiros 2.22 70 P Pn 21 17 21.2 +0.8
NISR S Sn 21 17 47.1 +0.3
NISR Nisiros 2.22 70 P Pn 21 17 21.2 +0.8
NISR S Sn 21 17 47.1 +0.3
PTL Penteli 2.24 346 P Pn 21 17 21.5 +0.6
PTL S Sn 21 17 46.9 -0.6
PTL Penteli 2.24 346 P Pn 21 17 21.5 +0.6
PTL Penteli 2.24 346 P Pn 21 17 21.7 +0.9
PTL S Sn 21 17 45.5 -2.0
PTL AML AML 21 17 48.3
comp=N,390μm,0.4s
PTL AML AML 21 17 51.7
comp=E,264μm,0.6s
NIS1 Nisyros Isl. 2.25 70 ePN Pn 21 17 23.5 +2.6
NIS1 Nisyros Isl. 2.25 70 P Pn 21 17 21.6 +0.7
NIS1 Nisyros Isl. 2.25 70 P Pn 21 17 21.6 +0.7
NIS1 Nisyros Isl. 2.25 70 ePn Pn 21 17 23.5 +2.6
VLX Vlachokerasia 2.30 311 P Pn 21 17 22.2 +0.6
VLX S Sn 21 17 49.2 +0.2
VLX Vlachokerasia 2.30 311 P Pn 21 17 22.2 +0.6
VLX S Sn 21 17 49.2 +0.2
VLX Vlachokerasia 2.30 311 P Pn 21 17 22.3 +0.6
VLX S Sn 21 17 48.3 -0.6
VLX AML AML 21 17 54.9
comp=E,726μm,0.6s
VLX AML AML 21 17 58.4
comp=N,524μm,0.6s
TRIP Tripoli 2.47 313 P Pn 21 17 25.7 +1.8
TRIP Tripoli 2.47 313 P Pn 21 17 25.7 +1.8
ITM Ithomi 2.48 303 P Pn 21 17 25.2 +1.1
ITM S Sn 21 17 55.0 +1.7
ITM Ithomi 2.48 303 P Pn 21 17 25.2 +1.1
ITM S Sn 21 17 55.0 +1.7
ITM Ithomi 2.48 303 P Pn 21 17 25.5 +1.4
ITM S Sn 21 17 55.5 +2.2
ITM AML AML 21 18 06.2
comp=N,194μm,0.2s
ITM AML AML 21 18 06.4
comp=E,246μm,0.5s
PYL PYLOS 2.48 295 P Pn 21 17 24.0 -0.1
PYL S Sn 21 17 54.2 +0.9
PYL PYLOS 2.48 295 P Pn 21 17 24.0 -0.1
PYL S Sn 21 17 54.2 +0.9
PYL PYLOS 2.48 295 P Pn 21 17 23.2 -0.9
PYL S Sn 21 17 54.9 +1.6
PYL AML AML 21 18 09.2
comp=N,245μm,0.5s
PYL AML AML 21 18 10.3
comp=E,228μm,0.4s
LTK Loutraki 2.49 330 P Pn 21 17 24.9 +0.7
LTK S Sn 21 17 54.6 +1.0
LTK Loutraki 2.49 330 P Pn 21 17 24.9 +0.7
LTK S Sn 21 17 54.6 +1.0
LTK Loutraki 2.49 330 P Pn 21 17 25.1 +0.8
LTK S Sn 21 17 53.6 0.0
LTK AML AML 21 17 56.7
comp=N,315μm,0.3s
LTK AML AML 21 17 59.9
comp=E,414μm,0.3s
BODT Bodrum 2.53 61 ePN Pn 21 17 26.5 +1.8
BODT Bodrum 2.53 61 P Pn 21 17 25.3 +0.6
BODT Bodrum 2.53 61 P Pn 21 17 25.3 +0.6
BODT Bodrum 2.53 61 ePn Pn 21 17 26.5 +1.8
SMG Samos 2.60 44 P Pn 21 17 25.8 +0.1
SMG S Sn 21 17 56.8 +0.6
SMG Samos 2.60 44 P Pn 21 17 25.8 +0.1
SMG S Sn 21 17 56.8 +0.6
SMG Samos 2.60 44 P Pn 21 17 25.2 -0.5
SMG S Sn 21 17 58.9 +2.8
SMG AML AML 21 18 09.9
comp=N,132μm,0.3s
SMG AML AML 21 18 11.6
comp=E,179μm,0.5s
BDRM Kayabasi 2.62 62 P Pn 21 17 26.4 +0.4
BDRM S Sn 21 17 56.1 -0.7
BDRM Kayabasi 2.62 62 i P Pn 21 17 26.4 +0.4
BDRM i S Sn 21 17 56.1 -0.7
CHOS Chios island 2.79 25 ePN Pn 21 17 30.6 +2.3
CHOS Chios island 2.79 25 P Pn 21 17 28.4 +0.1
CHOS S Sn 21 18 01.6 +0.8
CHOS Chios island 2.79 25 P Pn 21 17 28.4 +0.1
CHOS Chios island 2.79 25 ePn Pn 21 17 30.6 +2.3
CHOS S Sn 21 18 01.6 +0.8
CHOS Chios island 2.79 25 P Pn 21 17 27.6 -0.7
AMT Artemida-Makis 2.82 307 P Pn 21 17 30.0 +1.3
AMT S Sn 21 18 02.8 +1.3
AMT Artemida-Makis 2.82 307 P Pn 21 17 30.0 +1.3
AMT S Sn 21 18 02.8 +1.3
AMT Artemida-Makis 2.82 307 P Pn 21 17 30.3 +1.7
AMT S Sn 21 18 03.6 +2.1
AMT AML AML 21 18 10.6
comp=N,277μm,0.4s
AMT AML AML 21 18 11.2
comp=E,297μm,0.7s
GCAM G?zelcaml? 2.83 49 P Pn 21 17 29.4 +0.6
GCAM S Sn 21 18 01.2 -0.5
GCAM G?zelcaml? 2.83 49 i P Pn 21 17 29.4 +0.6
GCAM i S Sn 21 18 01.2 -0.5
ZEY ¨zmir 2.84 33 i P Pn 21 17 28.2 -0.6
ZEY i S Sn 21 18 00.4 -1.5
DGB ¨zmir 2.87 40 i P Pn 21 17 29.2 -0.1
DGB i S Sn 21 18 00.7 -2.1
KLV Kalavryta, Ach 2.90 319 P Pn 21 17 30.3 +0.5
KLV S Sn 21 18 03.4 -0.1
KLV Kalavryta, Ach 2.90 319 P Pn 21 17 30.3 +0.5
KLV S Sn 21 18 03.4 -0.1
KLV Kalavryta, Ach 2.90 319 P Pn 21 17 30.3 +0.5
KLV S Sn 21 18 03.2 -0.3
KLV AML AML 21 18 08.4
comp=E,168μm,0.5s
KLV AML AML 21 18 09.1
comp=N,206μm,0.4s
ARG Arkhangelos 2.92 82 P Pn 21 17 31.1 +1.1
ARG S Sn 21 18 04.3 +0.3
ARG Arkhangelos 2.92 82 P Pn 21 17 31.1 +1.1
ARG S Sn 21 18 03.5 -0.5
URLA Izmir 2.98 33 P Pn 21 17 30.3 -0.5
URLA S Sn 21 18 04.8 -0.6
URLA Izmir 2.98 33 i P Pn 21 17 30.3 -0.5
URLA i S Sn 21 18 04.8 -0.6
DSF Desfina 3.01 328 P Pn 21 17 31.7 +0.5
DSF S Sn 21 18 06.1 0.0
DSF Desfina 3.01 328 P Pn 21 17 31.7 +0.5
DSF S Sn 21 18 06.7 +0.5
DSF Desfina 3.01 328 P Pn 21 17 31.3 +0.1
DSF S Sn 21 18 06.7 +0.5
DSF AML AML 21 18 15.2
comp=E,198μm,0.4s
DSF AML AML 21 18 15.4
comp=N,160μm,0.2s
LKR Lokris 3.04 337 P Pn 21 17 32.6 +1.0
LKR S Sn 21 18 06.6 -0.2
LKR Lokris 3.04 337 P Pn 21 17 32.6 +1.0
LKR S Sn 21 18 08.8 +2.0
LKR Lokris 3.04 337 P Pn 21 17 32.8 +1.2
LKR S Sn 21 18 08.8 +2.0
LKR AML AML 21 18 08.9
comp=E,263μm,0.3s
LKR AML AML 21 18 10.0
comp=N,287μm,0.2s
DRO Drossia 3.08 313 P Pn 21 17 32.4 +0.2
DRO S Sn 21 18 08.4 +0.5
DRO Drossia 3.08 313 P Pn 21 17 32.4 +0.2
DRO S Sn 21 18 08.4 +0.5
DRO Drossia 3.08 313 P Pn 21 17 35.0 +2.8
DRO S Sn 21 18 10.0 +2.1
DRO AML AML 21 18 18.0
comp=N,368μm,0.3s
DRO AML AML 21 18 21.2
comp=E,445μm,0.6s
LAKA Lakka 3.13 320 P Pn 21 17 33.2 +0.3
LAKA S Sn 21 18 10.0 +0.8
LAKA Lakka 3.13 320 P Pn 21 17 33.2 +0.3
LAKA S Sn 21 18 10.0 +0.8
LAKA Lakka 3.13 320 P Pn 21 17 33.0 +0.1
LAKA S Sn 21 18 07.9 -1.3
LAKA AML AML 21 18 14.5
comp=N,141μm,0.6s
LAKA AML AML 21 18 15.9
comp=E,125μm,0.4s
SMIA Simia 3.19 341 P Pn 21 17 34.8 +1.1
SMIA S Sn 21 18 10.9 +0.4
SMIA Simia 3.19 341 P Pn 21 17 34.8 +1.1
SMIA S Sn 21 18 11.4 +0.9
SMIA Simia 3.19 341 P Pn 21 17 35.4 +1.7
SMIA S Sn 21 18 11.4 +0.9
SMIA AML AML 21 18 13.9
comp=E,206μm,0.7s
SMIA AML AML 21 18 24.4
comp=N,209μm,0.7s
AYDN Tasoluk 3.22 55 P Pn 21 17 35.3 +1.2
AYDN S Sn 21 18 10.3 -1.1
AYDN Tasoluk 3.22 55 i P Pn 21 17 35.3 +1.2
AYDN i S Sn 21 18 10.3 -1.1
SERG Sergoula 3.23 323 P Pn 21 17 34.3 +0.1
SERG S Sn 21 18 12.7 +1.3
SERG Sergoula 3.23 323 P Pn 21 17 34.3 +0.1
YER Yerkesik 3.27 66 ePN Pn 21 17 37.8 +3.0
YER Yerkesik 3.27 66 P Pn 21 17 36.3 +1.5
YER Yerkesik 3.27 66 P Pn 21 17 36.3 +1.5
YER Yerkesik 3.27 66 ePn Pn 21 17 37.8 +3.0
RLS Riolos of Patr 3.29 312 S Sn 21 18 15.1 +2.0
RLS Riolos of Patr 3.29 312 S Sn 21 18 15.1 +2.0
RLS AML AML 21 18 21.3
comp=N,105μm,0.2s
RLS AML AML 21 18 25.6
comp=E,107μm,0.6s
EFP Efpalio 3.31 321 P Pn 21 17 35.7 +0.4
EFP S Sn 21 18 15.0 +1.5
EFP Efpalio 3.31 321 P Pn 21 17 35.7 +0.4
EFP S Sn 21 18 15.0 +1.5
EFP AML AML 21 18 20.2
comp=E,178μm,0.4s
EFP AML AML 21 18 23.7
comp=N,265μm,0.5s
AOS Alonnisos 3.34 351 ePN Pn 21 17 37.4 +1.7
AOS Alonnisos 3.34 351 P Pn 21 17 36.3 +0.6
AOS Alonnisos 3.34 351 P Pn 21 17 36.1 +0.4
AOS Alonnisos 3.34 351 ePn Pn 21 17 37.4 +1.7
AOS Alonnisos 3.34 351 P Pn 21 17 36.1 +0.4
AYDB Zeytinkoy-Aydi 3.39 51 ePN Pn 21 17 38.4 +1.9
AYDB Zeytinkoy-Aydi 3.39 51 ePn Pn 21 17 38.4 +1.9
TURN Turunc 3.42 72 i P Pn 21 17 34.1 -2.8
TURN i S Sn 21 18 07.9 -8.4
AXS Araxos 3.44 313 P Pn 21 17 39.9 +2.8
DALY Dalyan (Mu¨la 3.45 73 ePN Pn 21 17 40.0 +2.8
DALY Dalyan (Mu¨la 3.45 73 ePn Pn 21 17 40.0 +2.8
SIGR SIGRI 3.50 17 ePN Pn 21 17 39.8 +2.0
SIGR SIGRI 3.50 17 P Pn 21 17 37.7 -0.1
SIGR S Sn 21 18 17.8 -0.2
SIGR SIGRI 3.50 17 P Pn 21 17 37.7 -0.1
SIGR SIGRI 3.50 17 ePn Pn 21 17 39.8 +2.0
SIGR S Sn 21 18 17.8 -0.2
NEO Neokhori 3.59 343 P Pn 21 17 40.3 +1.1
NEO S Sn 21 18 20.8 +0.5
NEO Neokhori 3.59 343 P Pn 21 17 40.3 +1.1
NEO S Sn 21 18 20.8 +0.5
AGG Agios Georgios 3.61 331 ePN Pn 21 17 40.7 +1.3
AGG Agios Georgios 3.61 331 P Pn 21 17 40.5 +1.1
AGG S Sn 21 18 21.2 +0.4
AGG Agios Georgios 3.61 331 P Pn 21 17 40.5 +1.1
AGG Agios Georgios 3.61 331 ePn Pn 21 17 40.7 +1.3
AGG S Sn 21 18 21.2 +0.4
AGG Agios Georgios 3.61 331 P Pn 21 17 40.7 +1.3
AGG S Sn 21 18 22.3 +1.5
AGG AML AML 21 18 29.4
comp=E,214μm,0.4s
AGG AML AML 21 18 37.1
comp=N,152μm,0.6s
PRK Paraskevi 3.64 22 P Pn 21 17 39.7 -0.1
PRK S Sn 21 18 21.6 +0.1
PRK Paraskevi 3.64 22 P Pn 21 17 39.7 -0.1
PRK S Sn 21 18 21.6 +0.1
PVO Paravola 3.65 320 P Pn 21 17 41.0 +1.0
PVO Paravola 3.65 320 P Pn 21 17 41.0 +1.0
PVO Paravola 3.65 320 P Pn 21 17 41.6 +1.6
XOR Xorichti 3.65 343 P Pn 21 17 40.9 +0.9
XOR S Sn 21 18 22.3 +0.4
XOR Xorichti 3.65 343 P Pn 21 17 40.9 +0.9
XOR S Sn 21 18 22.3 +0.4
FETY Fethiye 3.75 77 ePN Pn 21 17 44.0 +2.8
FETY Fethiye 3.75 77 eSN Sn 21 18 27.0 +2.8
FETY Fethiye 3.75 77 P Pn 21 17 42.7 +1.4
FETY Fethiye 3.75 77 P Pn 21 17 42.7 +1.4
FETY Fethiye 3.75 77 ePn Pn 21 17 44.1 +2.8
FETY eSn Sn 21 18 27.0 +2.8
KFL Anninata 3.75 308 P Pn 21 17 41.5 +0.2
KFL S Sn 21 18 25.6 +1.4
KFL Anninata 3.75 308 P Pn 21 17 41.5 +0.2
KFL S Sn 21 18 25.6 +1.4
KFL Anninata 3.75 308 P Pn 21 17 43.2 +1.9
KFL S Sn 21 18 22.9 -1.3
FYTO Fytoko, Volos 3.76 341 P Pn 21 17 42.7 +1.3
FYTO Fytoko, Volos 3.76 341 P Pn 21 17 42.7 +1.3
PDO Prodromos 3.82 316 P Pn 21 17 43.6 +1.3
PDO S Sn 21 18 26.2 +0.2
PDO Prodromos 3.82 316 P Pn 21 17 43.6 +1.3
PDO S Sn 21 18 27.7 +1.7
PDO Prodromos 3.82 316 P Pn 21 17 45.7 +3.4
PDO S Sn 21 18 27.7 +1.7
PDO AML AML 21 18 40.6
comp=E,130μm,0.3s
PDO AML AML 21 18 40.8
comp=N,147μm,0.3s
VLS Valsamata 3.92 307 P Pn 21 17 43.8 +0.2
VLS S Sn 21 18 28.9 +0.6
VLS Valsamata 3.92 307 P Pn 21 17 43.8 +0.2
VLS S Sn 21 18 28.9 +0.6
DNZL Cakiroluk 4.04 62 P Pn 21 17 48.2 +2.7
DNZL S Sn 21 18 31.0 -0.7
DNZL Cakiroluk 4.04 62 i P Pn 21 17 48.2 +2.7
DNZL i S Sn 21 18 31.0 -0.7
KSL Kastellorizon 4.09 85 P Pn 21 17 46.8 +0.8
KSL S Sn 21 18 33.4 +0.7
KSL Kastellorizon 4.09 85 P Pn 21 17 45.9 -0.1
KSL S Sn 21 18 33.4 +0.7
KSL Kastellorizon 4.09 85 P Pn 21 17 45.9 -0.1
KSL S Sn 21 18 33.9 +1.2
KSL AML AML 21 18 37.0
comp=E,133μm,0.4s
KSL AML AML 21 18 40.0
comp=N,122μm,0.4s
PAIG Paliouri 4.11 351 P Pn 21 17 46.6 +0.4
PAIG S Sn 21 18 33.7 +0.7
PAIG Paliouri 4.11 351 P Pn 21 17 46.6 +0.4
PAIG S Sn 21 18 33.7 +0.7
AKAS Kas 4.12 83 P Pn 21 17 47.4 +1.0
AKAS S Sn 21 18 31.9 -1.5
AKAS Kas 4.12 83 i P Pn 21 17 47.4 +1.0
AKAS i S Sn 21 18 31.9 -1.5
GLHS Glhisar (BURDU 4.19 71 ePN Pn 21 17 51.6 +4.1
GLHS Glhisar (BURDU 4.19 71 ePn Pn 21 17 51.6 +4.1
THL Klokotos Trika 4.20 332 P Pn 21 17 48.1 +0.7
THL S Sn 21 18 35.7 +0.5
THL Klokotos Trika 4.20 332 P Pn 21 17 47.5 +0.1
THL S Sn 21 18 36.3 +1.1
LKD2 Lefkada island 4.25 314 P Pn 21 17 48.7 +0.5
LKD2 S Sn 21 18 37.4 +0.8
LKD2 Lefkada island 4.25 314 P Pn 21 17 48.7 +0.5
LKD2 S Sn 21 18 37.4 +0.8
LKD2 Lefkada island 4.25 314 P Pn 21 17 47.8 -0.4
LKD2 S Sn 21 18 35.4 -1.2
LKD2 AML AML 21 18 42.2
comp=N,83μm,0.3s
LKD2 AML AML 21 18 44.0
comp=E,133μm,0.3s
DSL Palaion Diasel 4.26 321 P Pn 21 17 49.5 +1.2
DSL S Sn 21 18 36.9 +0.1
DSL Palaion Diasel 4.26 321 P Pn 21 17 49.1 +0.8
DSL S Sn 21 18 36.9 +0.1
DSL Palaion Diasel 4.26 321 P Pn 21 17 49.1 +0.8
DSL S Sn 21 18 36.9 +0.1
DSL AML AML 21 18 42.8
comp=N,98μm,0.4s
DSL AML AML 21 18 54.4
comp=E,141μm,0.5s
GOLH Golhisar 4.26 70 P Pn 21 17 50.4 +2.0
GOLH S Sn 21 18 36.7 -0.3
GOLH Golhisar 4.26 70 i P Pn 21 17 50.4 +2.0
GOLH i S Sn 21 18 36.7 -0.3
SLUM Salum 4.40 173 P Pn 21 17 48.4 -1.9
baz=175
SLUM Salum 4.40 173 P Pn 21 17 48.4 -1.9
OUR Ouranopolis 4.48 354 P Pn 21 17 51.6 +0.3
OUR Ouranopolis 4.48 354 P Pn 21 17 51.6 +0.3
LIT Litokhoron 4.53 340 P Pn 21 17 52.6 +0.6
LIT S Sn 21 18 44.6 +1.3
LIT Litokhoron 4.53 340 P Pn 21 17 52.6 +0.6
LIT S Sn 21 18 44.6 +1.3
PLG Polygyros 4.58 349 P Pn 21 17 53.5 +0.8
PLG Polygyros 4.58 349 P Pn 21 17 53.5 +0.8
SMTH Samothraki Isl 4.66 9 P Pn 21 17 54.1 +0.3
SMTH Samothraki Isl 4.66 9 P Pn 21 17 54.1 +0.3
KHAL Karahalli 4.68 56 P Pn 21 17 56.3 +2.2
KHAL S Sn 21 18 52.0 +4.9
KHAL Karahalli 4.68 56 i P Pn 21 17 56.3 +2.2
KHAL i S Sn 21 18 52.0 +4.9
JAN Janina 4.78 323 P Pn 21 17 55.9 +0.5
JAN S Sn 21 18 50.0 +0.5
JAN Janina 4.78 323 P Pn 21 17 55.9 +0.5
JAN S Sn 21 18 50.0 +0.5
KPRO Kipourio 4.79 329 P Pn 21 17 56.0 +0.4
KPRO S Sn 21 18 50.8 +0.9
KPRO Kipourio 4.79 329 P Pn 21 17 56.0 +0.4
KPRO S Sn 21 18 50.8 +0.9
KORT Korkueli 4.81 75 P Pn 21 17 57.9 +1.9
KORT S Sn 21 18 52.2 +1.6
KORT Korkueli 4.81 75 i P Pn 21 17 57.9 +1.9
KORT i S Sn 21 18 52.2 +1.6
HORT Hortiatis 4.86 347 P Pn 21 17 57.4 +0.9
HORT S Sn 21 18 52.1 +0.6
HORT Hortiatis 4.86 347 P Pn 21 17 57.4 +0.9
HORT S Sn 21 18 52.1 +0.6
SOH Sokhos 5.03 350 P Pn 21 18 00.1 +1.2
SOH Sokhos 5.03 350 P Pn 21 18 00.1 +1.2
SGD Sagiada 5.06 319 P Pn 21 17 58.7 -0.6
SGD Sagiada 5.06 319 P Pn 21 17 58.7 -0.6
PENT Pentalofos 5.09 329 P Pn 21 18 00.2 +0.5
PENT S Sn 21 18 57.4 +0.2
PENT Pentalofos 5.09 329 P Pn 21 18 00.2 +0.5
PENT S Sn 21 18 57.4 +0.2
HMAT Matruh 5.22 155 P Pn 21 17 59.0 -2.4
baz=157
HMAT AMP 21 18 00.0
comp=E,30μm,0.2s,logA/T=5.2,baz=157
HMAT S Sn 21 18 52.0 -8.3
baz=157
HMAT Matruh 5.22 155 P Pn 21 17 59.0 -2.4
SRS Serrai 5.29 352 P Pn 21 18 03.1 +0.7
SRS S Sn 21 19 03.0 +0.9
SRS Serrai 5.29 352 P Pn 21 18 03.1 +0.7
SRS S Sn 21 19 03.0 +0.9
NEST Nestorio 5.31 330 P Pn 21 18 02.9 +0.2
NEST S Sn 21 19 02.8 +0.2
NEST Nestorio 5.31 330 P Pn 21 18 02.9 +0.2
NEST S Sn 21 19 02.8 +0.2
GRG Griva 5.35 342 P Pn 21 18 03.8 +0.6
GRG Griva 5.35 342 P Pn 21 18 03.8 +0.6
KEK Kerkira 5.37 317 P Pn 21 18 02.4 -1.1
KEK Kerkira 5.37 317 P Pn 21 18 02.4 -1.1
KNT Kendrikon 5.44 347 P Pn 21 18 06.1 +1.7
KNT Kendrikon 5.44 347 P Pn 21 18 06.1 +1.7
NVR Nevrokopi 5.50 355 P Pn 21 18 06.2 +0.9
NVR Nevrokopi 5.50 355 P Pn 21 18 06.2 +0.9
GAZI Gazipasa 6.31 84 P Pn 21 18 14.9 -1.4
GAZI Gazipasa 6.31 84 i P Pn 21 18 14.9 -1.4
GAZI i S Sn 21 19 17.7 -9.3
SWA2 6.65 173 P Pn 21 18 19.3 -1.7
baz=175
SWA2 AMP 21 19 00.0
comp=N,40μm,0.2s,logA/T=5.2,baz=175
SWA2 S Sn 21 19 28.0 -7.4
baz=175
SWA2 6.65 173 P Pn 21 18 19.3 -1.7
ERMK Ermenek 6.80 81 P Pn 21 18 22.9 -0.4
ERMK S Sn 21 19 37.3 -2.2
ERMK Ermenek 6.80 81 i P Pn 21 18 22.9 -0.4
ERMK i S Sn 21 19 37.3 -2.2
TAR1 Taranto 7.37 311 ePn Pn 21 18 29.2 -1.5
HNAT Natroun 8.05 139 P Pn 21 18 37.2 -2.9
baz=140
HNAT Natroun 8.05 139 P Pn 21 18 37.2 -2.9
BRTR Keskin Array B 8.16 59 P Pn 21 18 44.6 +2.9
comp=N,0.3nm,0.3s,baz=230,slow=14,SNR=11
KOT Kottamia 8.52 132 P Pn 21 18 43.7 -2.9
baz=132
KOT S Sn 21 20 10.8 -10
baz=132
KOT Kottamia 8.52 132 P Pn 21 18 43.7 -2.9
HSAF As Saff 8.58 135 P Pn 21 18 44.7 -2.7
baz=135
HSAF As Saff 8.58 135 P Pn 21 18 44.7 -2.7
GLL Jalalah 8.70 134 P Pn 21 18 46.1 -3.0
baz=135
GLL Jalalah 8.70 134 P Pn 21 18 46.1 -3.0
RSH 9.10 120 P Pn 21 18 51.5 -3.0
baz=120
RSH 9.10 120 P Pn 21 18 51.5 -3.0
MMAI Mount Meron Ar 9.41 104 P Pn 21 18 56.0 -2.8
comp=N,0.9nm,0.3s,baz=306,slow=12,SNR=5.5
MMAI S Sn 21 20 36.8 -6.3
comp=N,2.9nm,0.3s,baz=306,slow=18,SNR=4.4
HNKL Nakhl 9.90 124 P Pn 21 19 02.9 -2.5
baz=124
HNKL Nakhl 9.90 124 P Pn 21 19 02.9 -2.5
EIL Elat 10.72 122 P Pn 21 19 13.0 -3.6
comp=N,0.3nm,0.3s,baz=26,slow=17,SNR=5.2
EIL S Sn 21 21 05.0 -10
comp=N,0.7nm,0.3s,baz=36,slow=4.2,SNR=5.8
UDBI Udbina 10.94 325 ePn Pn 21 19 17.5 -2.1
UDBI Sn Sn 21 21 10.4 -10
NVLJ Novalja 11.40 323 ePn Pn 21 19 21.6 -4.2
NVLJ Sn Sn 21 21 18.1 -13
GERES GERESS Array B 15.22 332 P P 21 20 19.8 -0.6
comp=N,0.1nm,0.3s,baz=151,slow=14,SNR=2.4
KBZ Khabaz 16.12 55 P P 21 20 31.2 +1.0
comp=N,0.2nm,0.3s,baz=257,slow=10,SNR=4.7
ESDC Sonseca Array 22.81 288 P P 21 21 42.5 -0.7
comp=N,0.2nm,0.4s,baz=85,slow=9.5,SNR=4.5
KURBB Kurchatov Arra 41.07 52 P P 21 24 21.3 -1.4
comp=N,0.7nm,0.4s,baz=272,slow=8.4,SNR=7.6
MKAR Makanchi Array 43.81 57 P P 21 24 43.7 -1.3
comp=N,0.6nm,0.6s,baz=281,slow=6.3,SNR=7.7

IDC 17 21:23:49.8±1.8, 16.70S×178.07W, h0km, mb4.2/4, mb1 4.5/4, mb1mx3.8/30, mbtmp4.2/4, Error ellipse: s-maj=150.7km s-min=31.6km az=155.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**39.50**	**240**	P	P	21 31 22.6	+0.3
	2.2nm,0.5s,baz=79,slow=8.6,SNR=7.7						
WRA	**Warramunga Arr**	**45.18**	**258**	P	P	21 32 08.8	-0.1

2.6nm,0.7s,baz=94,slow=7.5,SNR=66
ASAR Alice Springs 45.44 253 P P 21 32 10.3 -0.5
8.4nm,0.6s,baz=86,slow=8.6,SNR=112
TXAR Lajitas Array 85.08 58 P P 21 36 28.1 0.0
0.3nm,0.6s,baz=218,slow=7.9,SNR=4.0

IDC 17 21:25:47.5±53.0, 17°.21S×179°.31E, h0km, mb4.3/3, mb1 4.5/3, mb1mx3.8/31, mbtmp4.3/3, Error ellipse: s-maj=963.5km s-min=143.5km az=77.0, Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**37.08**	**240**	P	P	21 32 59.9	+0.3
	1.7nm,0.5s,baz=72,slow=8.0,SNR=5.7						
WRA	**Warramunga Arr**	**42.62**	**259**	P	P	21 33 45.9	-0.1
	1.1nm,0.3s,baz=95,slow=7.5,SNR=26						
ASAR	**Alice Springs**	**42.89**	**254**	P	P	21 33 47.5	-0.5
	5.7nm,0.5s,baz=86,slow=8.8,SNR=39						

IDC 17 21:29:34.2±56.0, 17°.14S×177°.59W, h0km, mb3.8/3, mb1 4.0/3, mb1mx3.6/27, mbtmp3.8/3, MS3.6/2, Ms1 3.6/2, ms1mx2.9/38, Error ellipse: s-maj=1040.0km s-min=156.3km az=79.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**17.31**	**106**	LR	LR	21 39 29.3	
	comp=Z,58nm,19.7s,baz=52,slow=34						
STKA	**Stephens Creek**	**39.69**	**241**	P	P	21 37 09.0	+0.6
	0.9nm,0.6s,baz=82,slow=7.1,SNR=3.0						
WRA	**Warramunga Arr**	**45.55**	**259**	P	P	21 37 55.6	-0.6
	0.3nm,0.3s,baz=97,slow=7.6,SNR=9.8						
ASAR	**Alice Springs**	**45.76**	**253**	P	P	21 37 57.5	-0.4
	1.1nm,0.5s,baz=91,slow=8.0,SNR=15						
NNA	**Nana**	**96.55**	**105**	LR	LR	22 17 31.3	
	comp=Z,82nm,19.0s,baz=292,slow=30						

*ATH **17** 21:46:55.5, 36°.23N×28°.16E, h20km±3km, ML2.0/2, Error ellipse: s-maj=6.2km s-min=2.5km az=83.0*
*DDA **17** 21:46:55.9, 36°.26N×28°.01E, h7km, Md2.8*
*ISCJB **17** 21:46:57.0±0.7, 36°.25N±0°.05×28°.03E±0°.07, h8km±8km, Error ellipse: s-maj=9.6km s-min=7.0km az=28.2*
*CSEM **17** 21:46:56.5±0.2, 36°.27N×28°.05E, h8km, ML2.0, Error ellipse: s-maj=4.8km s-min=4.7km az=135.0*

ISC 17 21:46:56.5±1.2, 36°.29N±0°.03×27°.99E±0°.04, h2km±11km, n14, σ1§96/25, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ARG	**Arkhangelos**	**0.13**	**123**	P	**Pg**	**21 46 59.3**	**+0.4**
ARG				S	**Sg**	**21 47 01.2**	**+0.6**
NIS1	**Nisyros lsl.**	**0.73**	**296**	P	**Pg**	**21 47 11.2**	**+0.8**
NIS1	**Nisyros lsl.**	**0.73**	**296**	P	**Pg**	**21 47 11.2**	**+0.8**
NIS1				S	**Sn**	**21 47 25.8**	**+0.2**
NIS1				AML	AML	21 47 29.6	
	comp=N,343μm,0.4s						
NIS1				AML	AML	21 47 31.2	
	comp=E,320μm,0.5s						
TURN	**Turunc**	**0.76**	**40**	*i* P	Pg	21 47 06.0	-5.1
TURN				*i* S	**Sg**	**21 47 14.4**	**-6.6**
BDRM	**Kayabasi**	**0.89**	**331**	P	**Pg**	**21 47 13.7**	**+0.1**
BDRM				S	**Sb**	**21 47 27.3**	**+0.2**
BDRM	**Kayabasi**	**0.89**	**331**	*i* P	**Pg**	**21 47 13.7**	**+0.1**
BDRM				*i* S	**Sb**	**21 47 27.3**	**+0.2**
KARP	**Karpathos**	**1.00**	**223**	P	**Pb**	**21 47 16.5**	**-0.1**
KARP				S	**Sb**	**21 47 29.4**	**-0.8**
KARP	**Karpathos**	**1.00**	**223**	P	**Pb**	**21 47 16.5**	**-0.1**
KARP				S	**Sb**	**21 47 29.4**	**-0.8**
KARP				AML	AML	21 47 34.7	
	comp=N,81μm,0.4s						
KARP				AML	AML	21 47 35.8	
	comp=E,87μm,0.4s						
AKAS	**Kas**	**1.30**	**92**	P	**Pn**	**21 47 20.5**	**-1.4**
AKAS	**Kas**	**1.30**	**92**	*i* P	**Pn**	**21 47 20.5**	**-1.4**
AKAS				*i* S	**Sn**	**21 47 43.5**	**+3.5**
AYDN	**Tasoluk**	**1.38**	**356**	P	**Pb**	**21 47 22.8**	**-0.2**
AYDN				S	**Sg**	**21 47 42.4**	**+1.7**
AYDN	**Tasoluk**	**1.38**	**356**	*i* P	**Pb**	**21 47 22.8**	**-0.2**
AYDN				*i* S	**Sg**	**21 47 42.4**	**+1.7**
GOLH	**Golhisar**	**1.58**	**53**	P	**Pn**	**21 47 24.4**	**-1.2**
GOLH				S	**Sg**	**21 47 49.2**	**+2.1**
GOLH	**Golhisar**	**1.58**	**53**	*i* P	**Pn**	**21 47 24.4**	**-1.2**
GOLH				*i* S	**Sg**	**21 47 49.2**	**+2.1**

KRSC 17 21:53:50.6±2.0, 50°.72N×157°.49E, h112km±28km, ML3.9, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**0.88**	**268**	*i* P	Pn	21 54 11.5	+0.8
SKR				*i* S	Sn	21 54 26.1	+0.2
ASAK	**Asacha**	**1.69**	**9**	*e*P	Pn	21 54 22.3	+2.4
ASAK				*e*S	Sn	21 54 44.8	+2.6
MTVR	**Mutnovka**	**1.82**	**13**	*e*P	Pn	21 54 23.9	+2.3
MTVR				*e*S	Sn	21 54 48.1	+2.9
RUS	**Russkaya**	**1.83**	**20**	*e*P	Pn	21 54 23.6	+2.0
RUS				*i* S	Sn	21 54 47.3	+2.1
KRMR	**Karymshinskiy**	**2.15**	**10**	*i* P	Pn	21 54 27.8	+2.2
KRMR				*i* S	Sn	21 54 54.9	+2.5
APC	**Apacha**	**2.22**	**355**	*e*P	Pn	21 54 27.0	+0.5
APC				*e*S	Sn	21 54 53.5	-0.5
PET	**Petropavlovsk**	**2.42**	**17**	*e*S	Sn	21 55 00.6	+2.1
UGLR	**Uglovaya**	**2.63**	**18**	*e*P	Pn	21 54 34.5	+2.6
UGLR				*e*S	Sn	21 55 06.2	+2.6
AVH	**Avacha**	**2.67**	**16**	*e*P	Pn	21 54 35.0	+2.7
AVH				*e*S	Sn	21 55 06.2	+1.8
KOK	**Koryaka**	**2.68**	**15**	*i* P	Pn	21 54 35.4	+2.9
KOK				S	Sn	21 55 07.1	+2.5
SMAR	**Somma**	**2.68**	**17**	*e*P	Pn	21 54 34.9	+2.3
KRER	**Koryakskii**	**2.71**	**16**	*e*P	Pn	21 54 35.4	+2.4
KRER				*e*S	Sn	21 55 07.7	+2.2
SDLR	**Sedlovina**	**2.71**	**18**	*e*P	Pn	21 54 34.8	+1.9
SDLR				S	Sn	21 55 06.3	+0.9
NLC	**Nalytchevo**	**2.71**	**24**	*e*P	Pn	21 54 33.8	+1.0
NLC				*e*S	Sn	21 55 04.4	-0.9
KRX	**Arik**	**2.74**	**15**	P	Pn	21 54 35.9	+2.5
KRX				S	Sn	21 55 08.9	+2.6
SPN	**Mys Shipunski**	**2.85**	**32**	*e*P	Pn	21 54 37.0	+2.3
SPN				*e*S	Sn	21 55 09.6	+0.9
GNL	**Ganaly**	**3.00**	**5**	*e*P	Pn	21 54 37.8	+1.1
MKZ	**Mys Kozlova**	**4.63**	**32**	*e*P	Pn	21 54 59.5	+1.1
MKZ				*e*S	Sn	21 55 48.9	-2.2

*IDC **17** 21:54:10.6±9.2, 36°.53N×71°.16E, h254km±82km, mb2.9/4, mb1 3.1/6, mb1mx2.8/35, mbtmp3.6/6, Error ellipse: s-maj=61.3km s-min=23.2km az=32.0*
*ISCJB **17** 21:54:11.5±0.7, 36°.77N±0°.05×71°.08E±0°.09, h250km, mb3.1/4, Error ellipse: s-maj=10.5km s-min=5.9km az=153.3*
*NNC **17** 21:54:16.8±2.4, 37°.03N×71°.20E, h230km, mb2.4, mpv3.1, Error ellipse: s-maj=22.4km s-min=11.6km az=162.0*

ISC 17 21:54:11.7±0.9, 36°.73N±0°.09×71°.19E±0°.09, h250km, n19, σ1§51/21, mb3.2/4, 6C-5D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**2.79**	**319**	⇑P	**Pn**	**21 55 04.0**	**+2.0**
	5.6nm,0.4s						
DZET				⇑S	**S**	**21 55 40.6**	**-1.3**
	139nm,0.6s						
MNAS	**Manas**	**5.84**	**10**	⇓P	**Pn**	**21 55 39.6**	**+1.7**
	1.8nm,0.7s						
MNAS				⇑S	**S**	**21 56 45.6**	**-1.2**
	5.8nm,0.6s						
KK31	**Karatay Array**	**6.39**	**356**	⇓P	**Pn**	**21 55 45.9**	**+1.3**
	0.5nm,0.3s,baz=168,slow=11,SNR=21						
KK31				⇓S	**S**	**21 56 55.6**	**-3.4**
	3.2nm,0.7s,baz=171,slow=22,SNR=9.2						
TKM2	**Tokmak 2**	**7.05**	**27**	⇑P	**Pn**	**21 55 55.3**	**+2.1**
	1.5nm,0.7s						
TKM2				⇑S	**S**	**21 57 13.8**	**-0.8**
	2.9nm,0.8s						
MK31	**Makanchi Array**	**13.02**	**36**	P	**Pn**	**21 57 08.3**	**+0.5**
	3.1nm,1.1s,baz=225,slow=14,SNR=11						
MKAR	**Makanchi Array**	**13.02**	**36**	P	**Pn**	**21 57 08.7**	**+1.0**
	0.2nm,0.3s,baz=215,slow=12,SNR=12						
PYUN	**Piuthan**	**13.16**	**127**	*e*P	**P**	**21 57 11.0**	**-0.5**
	6.7nm,0.3s						
KOLN	**Koldanda**	**13.78**	**127**	*e*P	**P**	**21 57 18.4**	**+0.1**
	2.8nm,0.3s						
GKN	**Gorkha**	**14.30**	**124**	*e*P	**P**	**21 57 25.3**	**+1.2**
	7.0nm,0.4s						
KURBB	**Kurchatov Arra**	**14.86**	**19**	⇑P	**P**	**21 57 30.1**	**+0.4**
	1.4nm,0.5s						
KKN	**Kakani**	**14.87**	**123**	*e*P	Pn	21 57 33.8	+3.1
	8.1nm,0.5s						
AB31	**Akbulak array**	**14.96**	**330**	⇓P	**P**	**21 57 31.7**	**+0.8**
	0.8nm,0.5s,baz=143,slow=12,SNR=15						
PKIN	**Phulchoki**	**15.09**	**123**	*e*P	Pn	21 57 36.6	+3.3
	2.6nm,0.3s						
AKTO	**Aktyubinsk**	**16.66**	**329**	⇓P	**P**	**21 57 50.8**	**+1.3**
	5.4nm,0.6s						
ZALV	**Zalesovo Beam**	**19.64**	**24**	P	**P**	**21 58 22.1**	**+0.5**
	0.4nm,0.3s,baz=218,slow=12,SNR=5.5						
FINES	**FINESS Array B**	**37.38**	**326**	P	**P**	**22 01 00.7**	**+0.4**
	1.0nm,0.8s,baz=109,slow=12,SNR=3.1						
NOA	**NORSAR Array B**	**44.29**	**323**	P	**P**	**22 01 55.2**	**-1.3**
	1.1nm,1.0s,baz=104,slow=7.2,SNR=2.4						
YKA	**Yellowknife Ar**	**81.01**	**3**	P	**P**	**22 05 57.8**	**-0.4**
	0.2nm,0.4s,baz=353,slow=5.4,SNR=5.3						
WRA	**Warramunga Arr**	**81.99**	**122**	P	**P**	**22 06 01.9**	**-2.0**
	0.2nm,0.7s,baz=333,slow=5.4,SNR=3.7						

*IDC **17** 22:07:13.3±0.8, 26°.58N×143°.78E, h0km, mb3.9/14, mb1 4.1/16, mb1mx3.9/51, mbtmp3.9/16, ML3.5/2, Error ellipse: s-maj=21.2km s-min=17.4km az=77.0*
*NEIC **17** 22:07:14.7±0.2, 26°.60N×143°.80E, h10km, mb4.6/11, Error ellipse: s-maj=6.4km s-min=4.7km az=75.0*
*ISCJB **17** 22:07:15.8±0.4, 26°.57N±0°.05×143°.81E±0°.06, h31km, mb4.3/28, Error ellipse: s-maj=8.8km s-min=6.2km az=40.7*

ISC 17 22:07:17.9±0.6, 26°.62N±0°.09×143°.76E±0°.08, h31km, n50, σ1§01/51, mb4.2/28, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**1.48**	**289**	*e*Pn	**Pn**	**22 07 42.1**	**-0.4**
CBIJ				*e*Sn	**Sn**	**22 08 00.4**	**-0.4**
JCJ	**Chichijima**	**1.48**	**289**	Pn	**Pn**	**22 07 42.1**	**-0.4**
	29nm,0.3s,baz=352,slow=14,SNR=28						
JCJ				Sn	**Sn**	**22 08 00.4**	**-0.4**
	baz=90,slow=20						
JCJ				LR	LR	22 08 16.3	
	comp=Z,244nm,18.8s,baz=82,slow=42						
MJAR	**Matsushiro Arr**	**10.96**	**336**	Pn	**Pn**	**22 09 49.6**	**-3.1**
	1.2nm,0.3s,baz=151,slow=11,SNR=4.0						
MAJO	**Matsushiro**	**10.97**	**336**	*e*Pn	Pn	22 09 49.0	-3.7
MJB9	**Matsu-Tunnel**	**10.97**	**336**	*e*Pn	**Pn**	**22 09 50.4**	**-2.3**
KSRS	**Korea Array**	**17.21**	**313**	Pn	**P**	**22 11 19.8**	**+2.5**
	0.3nm,0.3s,baz=121,slow=12,SNR=4.6						
KSAR	**Wonju Array Be**	**17.23**	**313**	Pn	**P**	**22 11 19.8**	**+2.3**
KS01	**Wonju Array Si**	**17.24**	**313**	*e*Pn	**Pn**	**22 11 15.4**	**-1.0**
USRK	**Ussuriysk Ar.**	**19.96**	**335**	Pn	**Pn**	**22 11 50.8**	**+1.5**
	0.3nm,0.3s,baz=144,slow=12,SNR=5.6						
KLR	**Kul'dur**	**24.42**	**341**	P	**P**	**22 12 35.6**	**+2.0**
	1.9nm,0.6s,baz=153,slow=7.9,SNR=8.7						
ULN	**Ulaanbaatar**	**35.64**	**316**	*e*P	**P**	**22 14 13.1**	**0.0**
	5.8nm,1.4s						
SONA0	**Songino Array**	**36.03**	**316**	*e*P	**P**	**22 14 17.2**	**+0.7**
	1.6nm,0.9s						
SONA1	**Songino Array**	**36.03**	**316**	*e*P	**P**	**22 14 16.6**	**+0.1**
SONM	**Songino Array**	**36.03**	**316**	P	**P**	**22 14 17.2**	**+0.7**
	1.3nm,0.8s,baz=108,slow=9.5,SNR=5.0						
CMAR	**Chiang Mai Arr**	**42.01**	**268**	P	**P**	**22 15 07.2**	**+0.5**
	0.6nm,0.6s,baz=82,slow=6.6,SNR=4.4						
JOHN	**Johnston Islan**	**44.30**	**93**	*e*P	**P**	**22 15 24.5**	**-0.7**
	179nm,1.0s						
WRAB	**Tennant Creek**	**47.17**	**192**	*e*P	**P**	**22 15 47.7**	**0.0**
	14nm,1.2s						
WB2	**Warramunga Arr**	**47.17**	**192**	*e*P	**P**	**22 15 48.0**	**+0.2**
	19nm,1.4s						
WR1	**Warramunga Arr**	**47.18**	**192**	*e*P	**P**	**22 15 47.7**	**0.0**
	23nm,1.5s						
WRA	**Warramunga Arr**	**47.18**	**192**	P	**P**	**22 15 47.7**	**0.0**
	2.8nm,0.7s,baz=13,slow=8.2,SNR=18						
FITZ	**Fitzroy Crossi**	**47.81**	**204**	*e*P	**P**	**22 15 53.6**	**+0.9**
	8.8nm,1.0s						
PSI	**Prapat**	**49.03**	**249**	*e*P	**P**	**22 16 02.0**	**-0.4**
	6.2nm,1.1s						
ZALV	**Zalesovo Beam**	**50.77**	**319**	P	**P**	**22 16 14.5**	**-0.5**
	0.5nm,0.4s,baz=112,slow=6.4,SNR=3.2						
ZAA1	**Zalesovo Array**	**50.77**	**319**	*e*P	**P**	**22 16 14.5**	**-0.5**
AS01	**Alice Springs**	**50.88**	**192**	*e*P	**P**	**22 16 14.4**	**+0.3**
AS31	**Alice Springs**	**50.89**	**192**	*e*P	**P**	**22 16 15.5**	**-0.7**
	1.6nm,1.1s						
ASAR	**Alice Springs**	**50.89**	**192**	P	**P**	**22 16 15.5**	**-0.7**
	0.4nm,0.8s,baz=0.3,slow=6.2,SNR=6.8						
GSI	**Gunungsitoli**	**50.97**	**248**	*e*P	**P**	**22 16 16.4**	**-0.6**
	30nm,1.5s						
MK01	**Makanchi Array**	**51.85**	**310**	*e*P	**P**	**22 16 23.9**	**+0.6**
MK31	**Makanchi Array**	**51.86**	**310**	*e*P	**P**	**22 16 24.1**	**+0.8**
MK32	**Makanchi Array**	**51.86**	**310**	*e*P	**P**	**22 16 23.6**	**+0.3**
MKAR	**Makanchi Array**	**51.86**	**310**	P	**P**	**22 16 23.6**	**+0.3**
	1.3nm,0.5s,baz=88,slow=8.9,SNR=12						
MKAR	**Makanchi Array**	**51.86**	**310**	*e*P	**P**	**22 16 24.1**	**+0.8**
MAKZ	**Makanchi**	**52.08**	**310**	*e*P	**P**	**22 16 25.7**	**+0.7**
	5.3nm,1.4s						
KURK	**Kurchatov**	**54.32**	**315**	*e*P	**P**	**22 16 41.2**	**-0.1**
	8.7nm,1.4s						
KURBB	**Kurchatov Arra**	**54.38**	**315**	P	**P**	**22 16 41.6**	**-0.1**
	1.3nm,0.5s,baz=89,slow=8.1,SNR=14						
ILAR	**Eielson Array**	**57.46**	**28**	P	**P**	**22 17 03.2**	**-0.4**
	0.7nm,0.9s,baz=270,slow=6.0,SNR=5.4						
ILB	**Eielson Array**	**57.46**	**28**	*e*P	**P**	**22 17 03.2**	**-0.4**
RAGM	**Ragged Mountai**	**58.17**	**34**	*e*P	**P**	**22 17 08.1**	**-0.6**
	20nm,1.1s						
STKA	**Stephens Creek**	**58.20**	**182**	*e*P	**P**	**22 17 08.6**	**-0.5**
	10nm,1.9s						
BVAR	**Borovoye Array**	**59.34**	**318**	P	**P**	**22 17 16.6**	**-0.3**
	0.6nm,0.4s,baz=104,slow=5.3,SNR=5.6						
KKAR	**Karatay Array**	**60.50**	**306**	*e*P	**P**	**22 17 25.8**	**+0.7**
INK	**Inuvik**	**62.88**	**24**	P	**P**	**22 17 42.3**	**+1.7**
	1.4nm,0.8s,baz=263,slow=7.3,SNR=3.7						
INK	**Inuvik**	**62.88**	**24**	*e*P	**P**	**22 17 42.3**	**+1.7**
	12nm,1.7s						
YKA	**Yellowknife Ar**	**71.89**	**29**	P	**P**	**22 18 37.4**	**-0.3**
	0.5nm,0.7s,baz=292,slow=6.1,SNR=5.5						
YKB5	**Yellowknife Ar**	**71.89**	**29**	*e*P	**P**	**22 18 37.4**	**-0.3**
FIA0	**FINESS Array S**	**78.99**	**334**	*e*P	**P**	**22 19 18.7**	**+0.2**
FINES	**FINESS Array B**	**78.99**	**334**	P	**P**	**22 19 18.7**	**+0.2**
	1.4nm,0.8s,baz=76,slow=5.9,SNR=5.4						
KBZ	**Khabaz**	**79.36**	**314**	P	**P**	**22 19 20.8**	**-0.1**
	2.7nm,0.9s,baz=48,slow=2.7,SNR=3.7						
LPAZ	**La Paz**	**148.67**	**77**	PKPbc	**PKPbc**	**22 27 03.8**	**+0.3**
	1.5nm,0.6s,baz=306,slow=2.2,SNR=8.0						

*NIED **17** 22:15:00, 37°.50N×143°.50E, h20km, Mw4.4 Best double couple: M0:5.27000×10^15 NP1:φs=309.00000°, δ67.00000°, λ-173.00000°. NP2:φs=217.00000°, δ84.00000°, λ-23.00000°.*
*IDC **17** 22:15:56.0±0.7, 37°.42N×143°.67E, h0km, mb4.1/14, mb1 4.4/20, mb1mx4.1/65, mbtmp4.3/20, ML4.4/5, MS3.5/21, Ms1 3.5/21, ms1mx3.3/52, Error ellipse: s-maj=19.4km s-min=13.8km az=118.0*
*JMA **17** 22:15:59.0±0.2, 37°.54N×143°.46E, h47km, M4.9*
*ISCJB **17** 22:16:01.1±0.5, 37°.47N±0°.03×143°.32E±0°.04, h33km, mb4.6/44, MS3.6/21, Error ellipse: s-maj=5.0km s-min=4.0km az=8.2*
*NEIC **17** 22:16:07.2±1.0, 36°.56N×142°.98E, h26km±7km, mb4.8/11, Error ellipse: s-maj=12.8km s-min=7.0km az=157.0*

ISC 17 22:15:59.0±2.0, 37°.53N±0°.04×143°.48E±0°.05, h15km±12km, n153, σ2§34/106, mb4.7/46, MS3.6/22, 4C-6D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.92**	**300**	P	**Pn**	**22 16 30.3**	**-0.8**
JIO				S	**Sn**	**22 16 52.6**	**-2.4**
JFK	**Kawauchi**	**2.08**	**266**	P	**Pn**	**22 16 32.2**	**-1.1**
JFK				*e*S	**Sn**	**22 16 56.8**	**-2.2**
OFUJ	**Ofunato**	**2.10**	**318**	P	**Pn**	**22 16 32.3**	**-1.4**
JMM	**Marumori**	**2.15**	**280**	P	**Pn**	**22 16 33.3**	**-1.1**
JMM				*e*S	**Sn**	**22 16 58.4**	**-2.4**
ONAJ	**Iwakimizuishiy**	**2.18**	**260**	P	**Pn**	**22 16 33.6**	**-1.1**
ONAJ				*e*S	**Sn**	**22 16 58.8**	**-2.7**
JMK	**Ichinoseki**	**2.28**	**309**	P	**Pn**	**22 16 35.1**	**-0.9**
JMK				S	**Sn**	**22 17 02.0**	**-1.8**
JOU	**Okura**	**2.38**	**292**	P	**Pn**	**22 16 37.2**	**-0.2**
JOU				*e*S	**Sn**	**22 17 04.4**	**-1.9**
MIYJ	**Miyakonagasawa**	**2.42**	**328**	P	**Pn**	**22 16 36.2**	**-1.9**
MIYJ				S	**Sn**	**22 17 04.0**	**-3.5**
JFT	**Otama**	**2.50**	**271**	P	**Pn**	**22 16 39.0**	**-0.1**
JFT				*e*S	**Sn**	**22 17 07.7**	**-1.6**
JHO	**Hitachi**	**2.50**	**249**	P	**Pn**	**22 16 37.7**	**-1.4**
JOM	**Ohasama**	**2.59**	**319**	P	**Pn**	**22 16 39.5**	**-0.9**
JOM				S	**Sn**	**22 17 09.5**	**-2.1**
CHOJ	**Ch'osi**	**2.78**	**230**	P	**Pn**	**22 16 42.0**	**-1.0**
CHOJ				*e*S	**Sn**	**22 17 12.2**	**-4.1**
JYS	**Shiratake**	**2.79**	**285**	P	**Pn**	**22 16 43.0**	**-0.1**
JYK	**Kaneyama**	**2.82**	**300**	P	**Pn**	**22 16 43.3**	**-0.2**
JYK				*e*S	**Sn**	**22 17 15.3**	**-2.0**
JANG	**Nango**	**3.23**	**332**	P	**Pn**	**22 16 48.0**	**-1.1**
JANG				S	**Sn**	**22 17 24.0**	**-3.4**
JNS	**Sasagawa**	**3.31**	**276**	P	**Pn**	**22 16 50.3**	**0.0**
JAG	**Ashikaga**	**3.40**	**252**	P	**Pn**	**22 16 50.9**	**-0.6**
JAG				S	**Sn**	**22 17 29.8**	**-1.9**
JAW	**Awa shima**	**3.47**	**287**	P	**Pn**	**22 16 52.8**	**+0.4**
JAW				S	**Sn**	**22 17 31.1**	**-2.1**
BSO1	**Boso 1**	**3.51**	**216**	P	**Pn**	**22 16 51.2**	**-1.3**
BSO1				S	**Sn**	**22 17 32.0**	**-1.5**
JOG2	**Oga 2**	**3.74**	**311**	*e*S	**Sn**	**22 17 38.2**	**-1.8**
JRY	**Ryogami san**	**3.97**	**249**	P	**Pn**	**22 16 58.7**	**-0.7**
JRY				S	**Sn**	**22 17 42.2**	**-3.5**
JOD2	**Odawara 2**	**4.20**	**239**	P	**Pn**	**22 17 01.5**	**-1.0**
JOT	**Ohata**	**4.29**	**335**	P	**Pn**	**22 17 03.1**	**-0.5**
MJAR	**Matsushiro Arr**	**4.33**	**258**	Pn	**Pn**	**22 17 04.8**	**+0.5**
	42nm,0.3s,baz=87,slow=15,SNR=413						
MJAR				Sn	**Sn**	**22 17 55.0**	**+0.5**
	7.2nm,0.3s,baz=87,slow=8.5,SNR=3.7						
MAJO	**Matsushiro**	**4.33**	**258**	*e*Pn	**Pn**	**22 17 05.1**	**+0.8**
MAT	**Matsushiro**	**4.33**	**258**	P	**Pn**	**22 17 05.0**	**+0.7**
MAT				S	**Sn**	**22 17 54.0**	**-0.5**
MJB9	**Matsu-Tunnel**	**4.33**	**259**	*e*Pn	**Pn**	**22 17 05.6**	**+1.3**
JKB	**Kayabe**	**4.75**	**337**	P	**Pn**	**22 17 09.3**	**-0.7**
JCH	**Churui**	**5.08**	**359**	P	**Pn**	**22 17 12.0**	**-2.6**
JHJ2	**Mitsune**	**5.32**	**215**	*e*Pn	**Pn**	**22 17 15.9**	**-2.0**
JHJ2				*e*Sn	**Sn**	**22 18 17.1**	**-1.9**
JHJ	**Hachijo jima 2**	**5.33**	**216**	Pn	**Pn**	**22 17 16.1**	**-2.0**
	52nm,0.3s,baz=336,slow=18,SNR=51						
JHJ				Sn	**Sn**	**22 18 12.0**	**-7.2**
	100nm,0.3s,baz=124,slow=23,SNR=10						
INU	**Inuyama**	**5.64**	**249**	*e*Pn	**Pn**	**22 17 23.2**	**+0.9**
ASAJ	**Asahikawa**	**6.62**	**354**	Pn	**Pn**	**22 17 34.4**	**-1.3**
	23nm,0.3s,baz=204,slow=10,SNR=57						
ASAJ				Sn	**Sn**	**22 18 44.2**	**-6.7**
	5.7nm,0.3s,baz=267,slow=30,SNR=6.0						
CBIJ	**Chichi jima**	**10.46**	**186**	*e*Pn	Pn	22 18 22.5	-5.9
JCJ	**Chichijima**	**10.46**	**186**	Pn	Pn	22 18 22.1	-6.2
	20nm,0.3s,baz=280,slow=22,SNR=22						
JCJ				LR	LR	22 22 53.6	
	comp=Z,89nm,21.3s,baz=3.5,slow=40						
USRK	**Ussuriysk Ar.**	**10.95**	**311**	Pn	**Pn**	**22 18 36.1**	**+1.0**
	0.9nm,0.3s,baz=120,slow=14,SNR=20						
USRK				LR	LR	22 22 43.5	
	comp=Z,304nm,18.7s,baz=117,slow=37						
JNU	**Nakatsue**	**11.19**	**251**	Pn	**Pn**	**22 18 37.5**	**-0.9**
	0.5nm,0.3s,baz=52,slow=11,SNR=9.4						
JNU				LR	LR	22 23 21.4	
	comp=Z,180nm,18.2s,baz=115,slow=39						
KSRS	**Korea Array**	**12.36**	**274**	Pn	**Pn**	**22 18 56.7**	**+2.4**
	0.9nm,0.3s,baz=88,slow=14,SNR=34						
KSRS				LR	LR	22 23 33.9	
	comp=Z,182nm,18.1s,baz=76,slow=36						
KS01	**Wonju Array Si**	**12.38**	**275**	*e*Pn	**Pn**	**22 18 56.4**	**+1.8**
KS15	**Wonju Array Si**	**12.39**	**274**	*e*Pn	**Pn**	**22 18 56.7**	**+1.9**
KSAR	**Wonju Array Be**	**12.39**	**274**	Pn	**Pn**	**22 18 56.7**	**+1.9**
MDJ	**Mudanjiang**	**12.64**	**308**	P	Pn	22 19 04.5	+6.4
MDJ				S	**Sn**	**22 21 22.5**	**+3.9**
MDJ				ScP	**ScP**	**22 28 12.1**	**+4.0**
MDJ				pmax	pmax		
	comp=Z,6.0nm,1.1s						
MDJ				pmax	pmax		
	comp=Z,33nm,3.6s						
MDJ				LR	LR		
	comp=N,480nm,16.6s						
MDJ				LR	LR		
	comp=E,320nm,18.1s						
MDJ				LR	LR		
	comp=Z,230nm,18.1s						
KLR	**Kul'dur**	**14.46**	**328**	Pn	**Pn**	**22 19 20.8**	**-2.1**
	comp=Z,0.8nm,0.3s,baz=134,slow=12,SNR=22						
KLR				LR	LR	22 25 16.1	
	comp=Z,337nm,18.0s,baz=144,slow=38						
PETK	**Petropavlovsk-**	**

ENH	**Enshi**	**29.01 266**	*e*P	**P**		**22 21 60.0**	**+1.6**
	comp=Z,35nm,1.0s						
TLY	**Talaya**	**31.27 310**	LR	LR		22 35 17.9	
	comp=Z,128nm,18.4s,baz=126,slow=37						
GYA	**Guiyang**	**32.92 261**	*e*P	**P**		**22 22 35.6**	**+2.6**
GYA			pmax	pmax			
	comp=Z,10.0nm,0.9s						
CD2	**Chengdu**	**33.31 271**	P	**P**		**22 22 38.4**	**+2.1**
CD2			pmax	pmax			
	comp=Z,5.0nm,0.7s						
GTA	**Gaotai**	**33.99 287**	*e*P	**P**		**22 22 42.9**	**+0.7**
GTA			pP	sP		22 22 53.6	+5.1
GTA			sP	pP		22 22 57.5	+11
GTA			S	**S**		**22 28 02.3**	**-4.7**
GTA			sS	sS		22 28 18.3	+3.9
GTA			SS	**SnSn**		**22 30 07.4**	**-6.0**
GTA			pmax	pmax			
	comp=Z,9.0nm,1.2s						
GTA			pmax	pmax			
	comp=Z,68nm,4.8s						
GTA			LR	LR			
	comp=N,410nm,17.6s						
GTA			LR	LR			
	comp=E,250nm,17.1s						
GTA			LR	LR			
	comp=Z,220nm,16.6s						
TIXI	**Tiksi**	**35.02 352**	P	**P**		**22 22 49.1**	**-1.3**
	comp=Z,0.6nm,0.3s,baz=137,slow=5.9,SNR=3.4						
KMI	**Kunming**	**36.66 262**	P	**P**		**22 23 08.1**	**+2.7**
KMI			pmax	pmax			
	comp=Z,8.0nm,0.8s						
KMI			pmax	pmax			
	comp=Z,59nm,6.1s						
WMQ	**Urumqi**	**42.09 297**	*e*P	P		22 23 58.3	+8.0
WMQ			S	**S**		**22 30 10.9**	**+1.6**
WMQ			LR	LR			
	comp=N,140nm,18.4s						
WMQ			LR	LR			
	comp=E,54nm,13.6s						
WMQ			LR	LR			
	comp=Z,30nm,18.0s						
ZALV	**Zalesovo Beam**	**42.80 312**	P	**P**		**22 23 56.0**	**0.0**
	comp=Z,6.1nm,0.6s,baz=88,slow=15,SNR=3.7						
ZALV			LR	LR		22 42 42.8	
	comp=Z,109nm,18.1s,baz=68,slow=37						
CM31	**Chiang Mai Arr**	**43.21 256**	*e*P	**P**		**22 24 00.0**	**+0.3**
CMAR	**Chiang Mai Arr**	**43.21 256**	P	**P**		**22 24 00.0**	**+0.3**
	comp=Z,2.3nm,0.8s,baz=46,slow=6.7,SNR=13						
CMAR			LR	LR		22 42 59.2	
	comp=Z,49nm,19.1s,baz=205,slow=38						
CMAR	**Chiang Mai Arr**	**43.21 256**	P	**P**		**22 24 00.0**	**+0.3**
CMAR			pmax	pmax			
	comp=Z,2.0nm,0.8s						
CMAR			MLR	MLR			
	comp=Z,49nm,19.1s						
CMAR	**Chiang Mai Arr**	**43.21 256**	P	**P**		**22 24 00.0**	**+0.3**
NRIK	**Noril'sk**	**43.52 335**	LR	LR		22 43 29.4	
	comp=Z,110nm,18.7s,baz=112,slow=38						
MKAR	**Makanchi Array**	**45.25 302**	LR	LR		22 44 52.2	
	comp=Z,46nm,18.1s,baz=85,slow=38						
PPLA	**Purkeypile**	**45.82 35**	*e*P	P		22 24 34.7	+15
	comp=Z,47nm,1.5s						
CAST	**Castle Rocks**	**45.89 34**	*e*P	P		22 24 35.0	+14
	comp=Z,8.5nm,1.0s						
KTH	**Kantishna Hill**	**46.42 34**	*e*P	P		22 24 38.9	+14
	comp=Z,18nm,1.1s						
MLY	**Manley**	**46.56 32**	*e*P	P		22 24 40.0	+14
	comp=Z,21nm,1.4s						
BWN	**Browne**	**47.08 33**	*e*P	P		22 24 45.2	+15
	comp=Z,91nm,1.5s						
RND	**Reindeer**	**47.34 34**	*e*P	P		22 24 45.1	+13
	comp=Z,15nm,1.1s						
SCM	**Sheep Creek Mo**	**48.09 37**	*e*P	P		22 24 51.7	+14
	comp=Z,32nm,1.3s						
IL1	**Eielson Array**	**48.20 33**	*e*P	P		22 24 51.0	+12
ILAR	**Eielson Array**	**48.20 33**	P	**P**		**22 24 37.5**	**-1.0**
	comp=Z,1.8nm,0.8s,baz=266,slow=6.5,SNR=19						
KLU	**Klutina**	**48.79 37**	*e*P	P		22 24 57.0	+14
	comp=Z,22nm,1.3s						
FYU	**Fort Yukon**	**48.86 30**	*e*P	P		22 24 58.3	+15
	comp=Z,37nm,1.6s						
DIV	**Divide**	**48.89 37**	*e*P	P		22 24 57.5	+14
	comp=Z,31nm,1.3s						
KKN	**Kakani**	**49.27 276**	*e*P	P		22 24 53.6	+6.1
	comp=Z,17nm,0.6s						
PKIN	**Phulchoki**	**49.27 276**	*e*P	P		22 24 53.7	+6.1
	comp=Z,8.1nm,0.5s						
GKN	**Gorkha**	**49.68 277**	*e*P	P		22 24 56.5	+5.9
	comp=Z,24nm,0.7s						
BALM	**Baldy**	**50.55 37**	*e*P	P		22 25 09.4	+13
	comp=Z,20nm,1.6s						
KOLN	**Koldanda**	**50.60 277**	*e*P	P		22 25 04.1	+6.5
	comp=Z,7.6nm,0.5s						
PYUN	**Piuthan**	**50.93 278**	*e*P	P		22 25 06.5	+6.4
	comp=Z,15nm,0.4s						
KSH	**Kashi**	**51.70 294**	*e*P	P		22 25 13.3	+7.6
KSH			*es*P	sP		22 25 31.8	+20
KSH			S	**S**		**22 32 28.9**	**+2.1**
KSH			pmax	pmax			
	comp=Z,160nm,6.8s						
KSH			LR	LR			
	comp=N,88nm,5.3s						
KSH			LR	LR			
	comp=E,77nm,8.7s						
INK	**Inuvik**	**53.20 27**	P	**P**		**22 25 15.7**	**-0.3**
	comp=E,1.1nm,0.9s,baz=304,slow=6.9,SNR=4.1						
LEM	**Lembang**	**55.37 225**	LR	LR		22 48 41.9	
	comp=E,64nm,19.8s,baz=52,slow=36						
AS01	**Alice Springs**	**61.52 190**	*e*P	**P**		**22 26 13.6**	**-1.8**
ASAR	**Alice Springs**	**61.53 190**	P	**P**		**22 26 13.8**	**-1.7**
	comp=E,5.9nm,0.8s,baz=10,slow=6.8,SNR=49						
YKA	**Yellowknife Ar**	**62.55 31**	P	**P**		**22 26 20.7**	**-1.1**
	comp=E,0.6nm,0.8s,baz=303,slow=6.4,SNR=5.9						
ARCES	**ARCESS Array B**	**64.11 340**	P	**P**		**22 26 34.0**	**+1.9**
	comp=E,1.5nm,0.7s,baz=71,slow=11,SNR=2.5						
ARCES			LR	LR		22 56 32.4	
	comp=E,33nm,20.6s,baz=59,slow=38						
GEYT	**Alibeck**	**65.03 300**	LR	LR		22 54 49.3	
	comp=E,43nm,19.4s,baz=65,slow=36						
DAG	**Danmarks Havn**	**65.42 356**	*i* P	P		22 26 52.1	+12
	comp=E,6.5nm,1.1s						
STKA	**Stephens Creek**	**69.07 182**	P	**P**		**22 27 03.1**	**-1.0**
	comp=E,4.1nm,0.7s,baz=337,slow=9.1,SNR=9.0						
STKA			LR	LR		22 56 20.5	
	comp=E,39nm,21.0s,baz=29,slow=35						
FINES	**FINESS Array B**	**69.14 333**	P	**P**		**22 27 05.0**	**+0.8**
	comp=E,4.8nm,0.9s,baz=64,slow=9.4,SNR=5.3						
SUMG	**Summit**	**70.19 1**	*i* P	**P**		**22 27 12.2**	**+1.1**
KIV	**Kislovodsk**	**71.82 312**	*e*P	P		22 27 26.1	+5.0
	comp=E,34nm,1.7s						
NV01	**Mina Array Sit**	**73.37 54**	*e*P	P		22 27 43.7	+13
NB2	**NORSAR Subarra**	**74.36 338**	P	**P**		**22 27 34.2**	**-1.6**
	comp=Z,3.4nm,0.8s,baz=40,slow=6.2						
MOOW	**Moose Ponds**	**74.86 46**	*e*P	P		22 27 53.2	+14
	comp=Z,8.0nm,1.5s						
DUG	**Dugway, Tooele**	**75.78 50**	*e*P	P		22 27 56.5	+12
TCUT	**Toone Canyon**	**76.07 49**	*e*P	P		22 28 00.0	+14
	comp=Z,17nm,0.8s						
BW06	**Boulder Array**	**76.14 47**	*e*P	P		22 27 59.1	+13
PDAR	**Pinedale Array**	**76.14 47**	P	**P**		**22 27 46.0**	**-0.7**
	comp=Z,0.3nm,0.5s,baz=210,slow=1.2,SNR=4.5						
PFO	**Pinyon Flats O**	**77.39 57**	LR	LR		22 54 36.5	
	comp=Z,33nm,20.8s,baz=118,slow=30						
KWP	**Kalwaria Pacla**	**78.68 325**	⇓*i*P	P		22 28 14.3	+14
BURAR	**Bucovina Array**	**78.93 323**	⇑*i*P	P		22 28 14.7	+13
CFR	**Carcaliu**	**79.16 319**	⇑*i*P	P		22 28 15.7	+13
113A	**Mohawk Valley,**	**79.70 57**	*e*P	P		22 28 19.2	+13
	comp=Z,11nm,0.6s						
BRTR	**Keskin Array B**	**79.75 313**	LR	LR		23 07 38.6	
	comp=Z,26nm,18.2s,baz=42,slow=39						
DOPR	**Dopca**	**80.00 321**	⇓*i*P	P		22 28 19.1	+11
VOIR		**80.55 321**	⇑*i*P	P		22 28 25.9	+15
ARR	**Arges**	**80.80 321**	⇓*i*P	P		22 28 24.9	+13
MORC	**Moravsky Berou**	**80.83 328**	⇑*i*P	P		22 28 26.5	+14
DPC	**Dobruska-Polom**	**80.90 329**	*e*P	P		22 28 19.3	+6.8
DPC			*e*PCP	**PcP**		**22 28 26.6**	**+7.6**
KRLC	**Kraliky**	**80.92 328**	*e*P	P		22 28 26.3	+14
VYHS	**Vyhne**	**81.24 326**	*e*P	P		22 28 28.4	+14
BRG	**Berggiesshubel**	**81.45 330**	*e*P	P		22 28 29.0	+14
	comp=Z,4.0nm,0.9s						
CLL	**Collm**	**81.48 331**	*e*P	**P**		**22 28 18.0**	**+2.6**
CLL			*i*			22 28 28.1	
	comp=Z,11nm,1.1s						
CLL			*i*			22 28 34.6	
CLL			Lm	MLR		23 07 00.0	
	comp=Z,100nm,19.6s						
VRAC	**Vranov**	**81.59 328**	⇓*i*P	P		22 28 30.7	+15
PRU	**Pruhonice**	**81.91 330**	*e*P	P		22 28 31.3	+14
TREC	**Trest**	**82.06 329**	*e*P	P		22 28 31.6	+13
CONA	**Conrad Observa**	**82.96 328**	*e*PcP	PcP		22 28 36.7	+8.5
	comp=Z,6.5nm,1.1s						
KHC	**Kasperske Hory**	**82.97 329**	*e*P	P		22 28 30.1	+6.7
KHC			*e*PCP	PcP		22 28 36.6	+8.5
GERES	**GERESS Array B**	**83.15 329**	P	**P**		**22 28 26.6**	**+2.3**
	comp=Z,0.3nm,0.5s,baz=46,slow=7.0,SNR=3.8						
GEA0	**GERESS Array S**	**83.15 329**	*e*P	P		22 28 35.6	+11
ARSA	**Arzberg**	**83.63 327**	*i* PcP	PcP		22 28 40.7	+10
	comp=Z,4.7nm,1.1s						
MOA	**Molln**	**83.70 328**	*i* PcP	PcP		22 28 40.6	+9.4
	comp=Z,4.1nm,1.1s						
SOKA	**Soboth**	**84.29 327**	*i* PcP	PcP		22 28 44.0	+10
	comp=Z,11nm,1.2s						
OBKA	**Obir**	**84.63 327**	*i* PcP	PcP		22 28 44.4	+8.9
	comp=Z,4.2nm,0.9s						
RPZ	**Rata Peaks**	**84.65 160**	LR	LR		23 04 18.7	
	comp=Z,226nm,18.2s,baz=252,slow=34						
KBA	**Koelnbreinsper**	**84.69 328**	*i* pP	pP		22 28 48.6	+11
	comp=Z,7.7nm,1.2s						
MYKA	**Terra Mystica**	**84.92 328**	*i* pP	pP		22 28 51.0	+13
	comp=Z,1.9nm,0.4s						
WATA	**Walderalm**	**85.21 329**	*i* pP	pP		22 28 49.1	+9.3
	comp=Z,2.9nm,0.7s						
MOTA	**Moosalm**	**85.39 330**	*i* sP	P		22 28 56.6	+21
	comp=Z,2.1nm,0.4s						
RETA	**Reutte**	**85.42 330**	*i* PcP	PcP		22 28 49.2	+10
	comp=Z,11nm,1.0s						
BFO	**Black Forest**	**85.66 332**	*e*P	P		22 28 48.2	+11
	comp=Z,13nm,1.0s						
FETA	**Feichten**	**85.81 330**	*i* pP	pP		22 28 51.5	+8.7
	comp=Z,6.4nm,0.9s						
DAVA	**Damuels**	**85.93 330**	*i* PcP	PcP		22 28 51.6	+10
	comp=Z,15nm,1.0s						
SAML	**Samuel**	**142.72 47**	*e*pPKPdf	pPKPdf		22 35 48.8	+12

IDC ***17*** *22:18:14.3±0.8, 42°.10N×82°.33E, h0km, mb4.0/14, mb1 4.2/20, mb1mx4.0/60, mbtmp4.0/20, ML3.6/6, MS3.1/6, Ms1 3.1/6, ms1mx2.7/50, Error ellipse: s-maj=14.2km s-min=13.0km az=15.0*

BJI ***17*** *22:18:15.1, 41°.98N×82°.29E, h8km, mb3.9/7, mB4.4/4, ML4.2/11, Ms3.8/3, Ms7 3.6/3*

SOME ***17*** *22:18:15.3, 41°.92N×82°.25E, h15km, MS3.8*

MOS ***17*** *22:18:16.6±1.2, 41°.98N×82°.34E, h33km, mb4.2/11, Error ellipse: s-maj=8.9km s-min=5.3km az=112.1*

NNC ***17*** *22:18:17.5±1.1, 42°.13N×82°.17E, h0km, mb4.5, mpv4.3, Error ellipse: s-maj=9.0km s-min=5.1km az=138.0*

NEIC ***17*** *22:18:22.0±0.9, 42°.21N×82°.24E, h55km±7km, mb4.2/6, Error ellipse: s-maj=10.2km s-min=6.2km az=157.0*

ISC 17 22:18:15.6±0.4,**41°.87N**±0°.04×**82°.30E**±0°.03,**h13**km,**n133,** σ1**95**/172,**mb4.1**/20,**MS3.1**/3,**32C-10D,Southern Xinjiang**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KTMS	**Ketmen**	**2.13**	**318**	*e*P	**Pb**	**22 18 53.1**	**-1.1**
	682nm,0.5s						
KTMS				*e*S	**Sb**	**22 19 20.6**	**0.0**
	3μm,0.5s						
SHLS	**Shalkode**	**2.20**	**307**	*e*P	**Pb**	**22 18 55.2**	**-0.2**
	1μm,0.5s						
SHLS				*e*S	**Sb**	**22 19 24.3**	**+1.6**
	6μm,0.4s						
PDGK	**Podgornoye**	**2.54**	**306**	⇑Pg	**Pn**	**22 18 58.9**	**+2.5**
	478nm,0.6s						
PDGK				⇑Lg	Lg	22 19 31.6	
	1μm,0.6s						
PDGK	**Podgornoye**	**2.54**	**306**	PN	**Pn**	**22 18 58.9**	**+2.5**
PDGK				pmax	pmax		
	comp=Z,479nm,0.6s						
UZB	**Uzynbulak**	**2.74**	**299**	*e*P	**Pb**	**22 19 04.6**	**+0.1**
	comp=Z,145nm,0.3s						
UZB				*e*S	**Sb**	**22 19 40.2**	**+2.1**
	comp=Z,2μm,0.4s						
DJR	**Jarkent**	**3.07**	**324**	*e*P	**Pb**	**22 19 10.1**	**-0.1**
	comp=Z,279nm,0.6s						
DJR				*e*S	**Sb**	**22 19 49.5**	**+1.9**
	comp=Z,701nm,0.5s						
KPKS	**Kokpek**	**3.11**	**302**	*e*P	**Pb**	**22 19 09.6**	**-1.1**
	comp=Z,675nm,0.4s						
KPKS				*e*S	**Sb**	**22 19 48.8**	**+0.2**
	comp=Z,3μm,0.4s						
SATY	**Saty**	**3.12**	**294**	*e*P	**Pb**	**22 19 11.0**	**0.0**
	comp=Z,582nm,0.5s						
SATY				*e*S	**Sb**	**22 19 51.4**	**+2.5**
	comp=Z,2μm,0.4s						
ZHN	**Zhinishke**	**3.14**	**296**	*e*P	**Pb**	**22 19 11.8**	**+0.5**
	comp=Z,143nm,0.4s						
ZHN				*e*S	**Sb**	**22 19 52.8**	**+3.2**
	comp=Z,2μm,0.3s						
MNBS	**Baschi**	**3.62**	**309**	*e*P	**Pb**	**22 19 16.0**	**-3.4**
	comp=Z,190nm,0.5s						
MNBS				*e*S	**Sb**	**22 19 59.8**	**-3.4**
	comp=Z,1μm,0.5s						
KAPS	**Kapalarasan**	**4.03**	**329**	*e*P	**Pb**	**22 19 27.0**	**+0.6**
	comp=Z,201nm,0.5s						
KAPS				*e*S	**Sb**	**22 20 18.6**	**+3.6**
	comp=Z,298nm,0.5s						
ARXS	**Arharly**	**4.03**	**307**	*e*P	**Pb**	**22 19 25.7**	**-0.8**
	comp=Z,260nm,0.7s						
ARXS				*e*S	**Sb**	**22 20 16.4**	**+1.3**
	comp=Z,676nm,0.5s						
KOTS	**Kotyrbulak**	**4.07**	**291**	*e*P	**Pb**	**22 19 24.7**	**-2.4**
KOTS				*e*S	**Sb**	**22 20 14.7**	**-1.6**
TNSS	**Tian-Shan**	**4.13**	**288**	*e*P	**Pb**	**22 19 26.8**	**-1.7**
	comp=Z,187nm,0.5s						
TNSS				*e*S	**Sb**	**22 20 18.2**	**-0.2**
	comp=Z,517nm,1.0s						
AAA	**Alma-Ata**	**4.20**	**291**	*e*P	**Pb**	**22 19 29.3**	**+0.1**
	comp=Z,373nm,0.6s						
AAA				*e*S	**Sb**	**22 20 22.9**	**+3.1**
	comp=Z,671nm,0.7s						
AAA	**Alma-Ata**	**4.20**	**291**	*i* PN	**Pb**	**22 19 31.6**	**+2.4**
AAA				*e*S	**Sb**	**22 20 20.8**	**+1.0**
AAA				pmax	pmax		
	comp=Z,370nm,0.6s						
AAA				smax	smax		
	comp=N,656nm,0.6s						
CHKK	**Chushkaly**	**4.38**	**299**	*e*P	**Pb**	**22 19 33.4**	**+1.0**
	comp=N,104nm,0.5s						
CHKK				*e*S	**Sb**	**22 20 29.2**	**+4.1**
	comp=N,500nm,0.3s						
WMQ	**Urumqi**	**4.42**	**62**	Pg	**Pb**	**22 19 33.6**	**+0.6**
WMQ				smax	smax		
	comp=N,300nm,0.4s						
WMQ				smax	smax		
	comp=N,270nm,0.5s						
WMQ	**Urumqi**	**4.42**	**62**	PN	**Pb**	**22 19 33.6**	**+0.6**
WMQ	**Urumqi**	**4.42**	**62**	Pg	**Pb**	**22 19 33.6**	**+0.6**
KUU	**Kurty**	**4.83**	**297**	*e*P	**Pb**	**22 19 41.9**	**+2.0**
	comp=N,166nm,0.7s						
KUU				*e*S	**Sb**	**22 20 44.6**	**+6.7**
	comp=N,339nm,0.6s						
MK01	**Makanchi Array**	**4.90**	**360**	*e*Pn	**Pn**	**22 19 29.7**	**+0.8**
MK31	**Makanchi Array**	**4.92**	**360**	⇑Pn	**Pn**	**22 19 30.4**	**+1.2**
	comp=N,6.3nm,0.3s,baz=182,slow=13,SNR=190						
MK31				Pg	**Pb**	**22 19 42.9**	**+1.3**
	comp=N,58nm,0.6s,baz=174,slow=14,SNR=21						
MK31				⇑Sn	**Sn**	**22 20 25.3**	**-0.7**
	comp=N,122nm,0.8s						
MK31				⇓Lg	Lg	22 20 44.8	
	comp=N,167nm,0.7s,baz=166,slow=32,SNR=5.2						
MK31	**Makanchi Array**	**4.92**	**360**	*e*PN	**Pn**	**22 19 30.3**	**+1.1**
MK31	**Makanchi Array**	**4.92**	**360**	*e*Pn	**Pn**	**22 19 30.3**	**+1.1**
MK32	**Makanchi Array**	**4.92**	**360**	*e*Pn	**Pn**	**22 19 30.0**	**+0.8**
MKAR	**Makanchi Array**	**4.92**	**360**	Pn	**Pn**	**22 19 30.0**	**+0.8**
	comp=N,6.0nm,0.3s,baz=187,slow=13,SNR=98						
MKAR				Pg	**Pb**	**22 19 42.5**	**+0.9**
	comp=N,8.9nm,0.3s,baz=183,slow=15,SNR=28						
MKAR				Lg	Lg	22 20 45.3	
	comp=N,24nm,0.3s,baz=187,slow=32,SNR=8.6						
MKAR				LR	LR	22 20 57.7	
	comp=N,83nm,18.6s,baz=224,slow=35						
MAKZ	**Makanchi**	**4.94**	**357**	⇑Pn	**Pn**	**22 19 30.4**	**+0.9**
	comp=N,59nm,0.8s						
MAKZ				⇑Sn	**Sn**	**22 20 24.9**	**-1.7**
	comp=N,68nm,0.6s						
MAKZ				⇑Lg	Lg	22 20 46.4	
	comp=N,179nm,1.1s						
MAKZ	**Makanchi**	**4.94**	**357**	*e*PN	**Pn**	**22 19 30.7**	**+1.2**
MAKZ	**Makanchi**	**4.94**	**357**	*e*Pn	**Pn**	**22 19 30.7**	**+1.2**
MAKZ				*e*Sn	Sn	22 20 13.9	-13
DGS	**Degeres**	**5.01**	**288**	*e*P	**Pb**	**22 19 40.3**	**-3.0**
	comp=N,57nm,0.5s						
DGS				*e*S	**Sb**	**22 20 41.0**	**-2.4**
	comp=N,99nm,0.5s						
TKM2	**Tokmak 2**	**5.08**	**284**	⇑Pn	**Pn**	**22 19 33.1**	**+1.6**
	comp=N,48nm,0.7s						
TKM2				⇑Lg	Lg	22 20 52.2	
	comp=N,513nm,1.3s						
TKM2	**Tokmak 2**	**5.08**	**284**	*e*PN	**Pn**	**22 19 33.7**	**+2.2**
TKM2	**Tokmak 2**	**5.08**	**284**	*e*Pn	**Pn**	**22 19 33.7**	**+2.2**
TKM2				*e*S	**Sn**	**22 20 24.6**	**-5.5**
KSH	**Kashi**	**5.35**	**246**	Pn	**Pb**	**22 19 45.1**	**-3.9**
KSH				Sn	**Sb**	**22 20 48.8**	**-4.4**
KSH				smax	smax		
	comp=N,260nm,0.8s						
KSH				smax	smax		
	comp=N,190nm,0.8s						
FRU	**Bishkek**	**5.78**	**282**	*e*PN	Pn	22 19 48.0	+7.0
FRU				*i*		22 20 04.5	
FRU				*e*		22 21 14.0	
FRU				*i*		22 21 38.0	
FRU				pmax	pmax		
	comp=Z,160nm,1.8s						
FRU				smax	smax		
	comp=E,680nm,1.7s						
AAK	**Ala-Archa**	**5.84**	**280**	Pn	**Pn**	**22 19 45.4**	**+3.4**
	comp=E,2.2nm,0.3s,baz=52,slow=16,SNR=8.6						
AAK				Pg	**Pb**	**22 20 01.1**	**+3.7**
	comp=E,4.3nm,0.3s,baz=117,slow=12,SNR=7.3						
AAK				Lg	Lg	22 21 19.3	
	comp=E,13nm,0.3s,baz=351,slow=19,SNR=10.0						
AAK	**Ala-Archa**	**5.84**	**280**	⇑Pn	**Pn**	**22 19 44.5**	**+2.5**
	comp=E,8.5nm,0.8s						
AAK				⇑Pg	**Pb**	**22 20 00.5**	**+3.1**
	comp=E,58nm,1.0s						
AAK				⇓Lg	Lg	22 21 19.3	
	comp=E,108nm,0.7s						
EKS2	**Erkin-Say**	**6.38**	**280**	*e*PN	**Pn**	**22 19 52.8**	**+3.5**
EKS2				*e*S	**Sb**	**22 21 25.5**	**+2.9**
EKS2	**Erkin-Say**	**6.38**	**280**	*e*Pn	**Pn**	**22 19 52.8**	**+3.5**
EKS2				*e*S	**Sb**	**22 21 25.4**	**+2.9**
MNAS	**Manas**	**7.30**	**278**	⇑Pn	**Pn**	**22 20 04.3**	**+2.2**
	comp=E,3.6nm,0.6s						
MNAS				⇑Pg	Pb	22 20 27.4	+5.2
	comp=E,16nm,0.7s						
MNAS				⇓Lg	Lg	22 22 05.3	
	comp=E,66nm,1.0s						
MNAS	**Manas**	**7.30**	**278**	P	**Pn**	**22 20 04.3**	**+2.2**
MNAS				pmax	pmax		
	comp=Z,4.0nm,0.6s						
KK31	**Karatay Array**	**8.80**	**282**	Pn	**Pn**	**22 20 24.5**	**+2.1**
	comp=Z,6.8nm,1.4s,baz=95,slow=13,SNR=10						
KK31				⇓Pg	Pg	22 20 53.4	-11
	comp=Z,6.0nm,0.6s,baz=81,slow=14,SNR=2.5						
KK31				⇑Lg	Lg	22 22 51.8	
	comp=Z,12nm,0.5s,baz=90,slow=28,SNR=4.2						
KK31	**Karatay Array**	**8.80**	**282**	P	**Pn**	**22 20 24.5**	**+2.1**
KK31				pmax	pmax		
	comp=Z,7.0nm,1.4s						
KKAR	**Karatay Array**	**8.80**	**282**	*e*P	**Pn**	**22 20 23.7**	**+1.2**
KKAR	**Karatay Array**	**8.80**	**282**	*e*Pn	**Pn**	**22 20 23.7**	**+1.2**
KURBB	**Kurchatov Arra**	**9.14**	**345**	Pn	**Pn**	**22 20 25.6**	**-1.4**
	comp=Z,0.3nm,0.3s,baz=168,slow=13,SNR=24						
KURBB				Sn	**Sn**	**22 22 09.8**	**+0.2**
	comp=Z,0.6nm,0.3s,baz=156,slow=23,SNR=4.9						
KURBB				Lg	Lg	22 22 59.1	
	comp=Z,0.6nm,0.3s,baz=160,slow=30,SNR=4.3						
KURBB	**Kurchatov Arra**	**9.14**	**345**	⇑Pn	**Pn**	**22 20 26.1**	**-0.9**
	comp=Z,36nm,1.2s						
KURBB				⇑Sn	**Sn**	**22 22 09.8**	**+0.2**
	comp=Z,103nm,0.7s						
KURBB				⇑Lg	Lg	22 22 59.5	
	comp=Z,165nm,0.8s						
KURK	**Kurchatov**	**9.21**	**345**	⇓Pn	**Pn**	**22 20 26.5**	**-1.5**
	comp=Z,58nm,0.8s						
KURK				⇑Sn	**Sn**	**22 22 08.6**	**-2.7**
	comp=Z,140nm,0.7s						
KURK				⇓Lg	Lg	22 22 59.3	
	comp=Z,157nm,0.9s						
KURK	**Kurchatov**	**9.21**	**345**	*e*P	**Pn**	**22 20 26.7**	**-1.3**
KURK				*e*		22 22 09.8	
KURK	**Kurchatov**	**9.21**	**345**	*e*Pn	**Pn**	**22 20 26.7**	**-1.3**
KURK				*e*Sn	**Sn**	**22 22 09.8**	**-1.6**
OTUK	**Ortayu**	**9.50**	**316**	⇓Pn	**Pn**	**22 20 32.0**	**0.0**
	comp=Z,6.7nm,0.6s						
OTUK				⇓Sn	**Sn**	**22 22 17.5**	**-1.1**
	comp=Z,23nm,1.0s						
OTUK				⇑Lg	Lg	22 23 11.5	
	comp=Z,101nm,1.1s						
OTUK	**Ortayu**	**9.50**	**316**	P	**Pn**	**22 20 32.0**	**0.0**
OTUK				S	**Sn**	**22 22 17.5**	**-1.1**
OTUK				pmax	pmax		
	comp=Z,7.0nm,0.6s						
OTUK				smax	smax		
	comp=N,23nm,1.0s						
CHCP	**Chirah Chowk**	**10.87**	**224**	P	**Pn**	**22 20 52.4**	**+1.5**
CEP	**Cherat**	**11.48**	**229**	P	**Pn**	**22 21 00.9**	**+1.6**
CEP				S	**Sn**	**22 23 06.0**	**-1.5**
ZAA0	**Zalesovo Array**	**12.20**	**7**	*e*Pn	**Pn**	**22 21 07.0**	**-1.9**
ZAA0				*e*Sn	Sn	22 23 08.1	-17
ZALV	**Zalesovo Beam**	**12.20**	**7**	Pn	**Pn**	**22 21 06.6**	**-2.3**
	comp=N,1.1nm,0.3s,baz=187,slow=14,SNR=17						
ZALV				Sn	**Sn**	**22 23

comp=N,36nm,1.2s
CHKZ Chkalovo 14.16 330 P **Pn 22 21 36.2 +0.5**
ZRNK Zerenda 14.25 326 ⇓Pn **Pn 22 21 35.9 -1.1**
comp=N,6.7nm,0.6s
ZRNK ⇑Lg Lg 22 25 42.3
comp=N,20nm,1.0s
ZRNK Zerenda 14.25 326 *e*P **Pn 22 21 35.5 -1.5**
ZRNK Zerenda 14.25 326 *e*Pn **Pn 22 21 35.5 -1.5**
KKN Kakani 14.26 169 *e*P **P 22 21 46.7 +2.1**
comp=N,5.1nm,0.5s
PKIN Phulchoki 14.48 169 *e*P **P 22 21 48.1 +0.9**
comp=N,8.2nm,0.6s
ZAK Zakamensk 16.81 52 *e*P **Pn 22 22 08.4 -2.2**
ZAK pmax pmax
comp=Z,4.0nm,0.9s
AB31 Akbulak array 17.27 303 ⇑Pn **Pn 22 22 14.3 -2.0**
comp=Z,1.7nm,0.5s,baz=101,slow=10,SNR=35
AB31 Akbulak array 17.27 303 P **Pn 22 22 14.3 -2.0**
AB31 pmax pmax
comp=Z,2.0nm,0.5s
ABKAR Akbulak array 17.27 303 Pn **Pn 22 22 14.3 -1.9**
comp=Z,4.2nm,0.6s
TLY Talaya 17.55 49 *e*P **P 22 22 20.6 -0.2**
TLY pmax pmax
comp=Z,6.0nm,0.9s
TLY Talaya 17.55 49 *e*P **Pn 22 22 19.8 +0.1**
comp=Z,6.0nm,0.8s
LZH Lanzhou 17.70 102 *e*P **P 22 22 26.1 +3.4**
LZH pmax pmax
comp=Z,19nm,1.0s
LZH pmax pmax
comp=Z,89nm,4.5s
LZH LR LR
comp=Z,420nm,15.7s
LZH LR LR
comp=Z,230nm,16.2s
LZH LR LR
comp=Z,170nm,14.8s
SHL Shillong 18.09 151 *e*P **P 22 22 28.0 +0.9**
AKTO Aktyubinsk 18.81 305 P **P 22 22 34.4 -0.4**
comp=Z,0.3nm,0.3s,baz=101,slow=12,SNR=7.4
AKTO LR LR 22 30 12.1
comp=Z,65nm,20.0s,baz=113,slow=38
AKTO Aktyubinsk 18.81 305 ⇑Pn **P 22 22 33.4 -1.3**
comp=Z,5.6nm,0.9s
AKTO ⇑Sn **Sn 22 26 06.7 +1.2**
comp=Z,2.9nm,0.7s
GEYT Alibeck 18.95 266 P **Pn 22 22 37.8 +0.8**
comp=Z,0.2nm,0.3s,baz=77,slow=6.7,SNR=4.5
SVE Sverdlovsk 20.44 324 *e*P **P 22 22 51.9 -0.5**
ARU Arti 21.14 322 P **P 22 22 59.4 -0.6**
comp=Z,25nm,0.6s,baz=118,slow=5.7,SNR=69
ARU LR LR 22 30 45.7
comp=Z,40nm,18.6s,baz=126,slow=36
ARU Arti 21.14 322 *c i*P **P 22 22 59.3 -0.6**
ARU 22 23 30.3
ARU S **S 22 26 48.9 -5.7**
ARU SS Sn 22 27 08.0 +6.7
ARU pmax pmax
comp=Z,31nm,0.7s
KLMR Klimovskoe 31.99 321 *e*P **P 22 24 39.5 -1.6**
KLMR pmax pmax
comp=Z,8.0nm,0.9s
OBN Obninsk 32.46 310 *e*P **P 22 24 46.2 +0.9**
OBN pmax pmax
comp=Z,4.0nm,0.6s
PALK Pallekele 34.48 183 LR LR 22 38 38.6
comp=Z,34nm,18.2s,baz=116,slow=35
KLR Kul'dur 34.87 61 P **P 22 25 05.9 -0.5**
comp=Z,0.9nm,0.7s,baz=292,slow=9.7,SNR=3.6
BR101 Keskin Array S 36.51 283 *e*P **P 22 25 21.8 +1.1**
BRTR Keskin Array B 36.51 283 P **P 22 25 21.8 +1.1**
comp=Z,0.7nm,0.5s,baz=92,slow=8.7,SNR=6.0
BRTR Keskin Array B 36.51 283 *e*P **P 22 25 22.4 +1.7**
BRTR pmax pmax
comp=Z,1.0nm,0.5s
TIXI Tiksi 37.50 22 P **P 22 25 27.4 -1.1**
comp=Z,2.4nm,0.8s,baz=267,slow=7.5,SNR=5.6
TIXI Tiksi 37.50 22 *e*P **P 22 25 26.4 -2.1**
TIXI pmax pmax
comp=Z,3.0nm,0.9s
FIA0 FINESS Array S 38.49 320 *e*P **P 22 25 36.4 -0.6**
FIA0 FINESS Array S 38.49 320 *e*P **P 22 25 36.4 -0.6**
FINES FINESS Array B 38.49 320 P **P 22 25 36.4 -0.6**
comp=Z,2.1nm,0.7s,baz=116,slow=8.9,SNR=4.5
FINES FINESS Array B 38.49 320 *e*P **P 22 25 37.5 +0.5**
FINES pmax pmax
comp=Z,2.0nm,0.7s
ARA0 ARCESS Array S 39.98 333 *e*P **P 22 25 49.1 -0.2**
ARCES ARCESS Array B 39.98 333 P **P 22 25 49.1 -0.2**
comp=Z,3.0nm,0.6s,baz=92,slow=8.5,SNR=15
NB2 NORSAR Subarra 45.68 320 P **P 22 26 35.0 -0.8**
comp=Z,1.6nm,0.7s,baz=81,slow=7.9
NB200 NORSAR Array S 45.68 320 *e*P **P 22 26 34.9 -0.8**
NOA NORSAR Array B 45.68 320 P **P 22 26 34.9 -0.8**
comp=Z,1.3nm,0.6s,baz=81,slow=8.0,SNR=4.5
NOA NORSAR Array B 45.68 320 *e*P **P 22 26 35.2 -0.5**
NOA pmax pmax
comp=Z,1.0nm,0.6s
CLL Collm 46.89 306 *i*P **P 22 26 45.3 0.0**
CLL Collm 46.89 306 *i*P **P 22 26 45.3 0.0**
GERES GERESS Array B 47.22 303 P **P 22 26 47.0 -1.0**
comp=Z,0.5nm,0.6s,baz=60,slow=7.9,SNR=5.9
BILL Bilibino 49.79 29 *i*P **P 22 27 05.7 -1.7**
BILL pmax pmax
comp=Z,1.0nm,0.9s
PETK Petropavlovsk- 49.91 50 LR LR 22 49 45.6
comp=Z,46nm,18.3s,baz=220,slow=38
ESDC Sonseca Array 62.59 300 P **P 22 28 38.5 -0.9**
comp=Z,0.6nm,0.5s,baz=53,slow=6.9,SNR=8.0
COLD Coldfoot 64.18 20 *e*P **P 22 28 48.8 -0.6**
comp=Z,2.2nm,0.7s
INK Inuvik 66.91 14 P **P 22 29 06.4 -0.5**
comp=Z,1.9nm,0.6s,baz=334,slow=8.1,SNR=7.1
INK Inuvik 66.91 14 *e*P **P 22 29 06.4 -0.5**
comp=Z,7.4nm,1.3s
IL1 Eielson Array 66.95 21 *e*P **P 22 29 06.2 -1.1**
ILAR Eielson Array 66.95 21 P **P 22 29 05.8 -1.5**
comp=Z,1.3nm,0.8s,baz=327,slow=5.1,SNR=9.8
ILAR Eielson Array 66.95 21 *e*P **P 22 29 06.2 -1.1**
ILAR pmax pmax
comp=Z,1.0nm,0.8s
ILB Eielson Array 66.95 21 *e*P **P 22 29 05.8 -1.5**
YKA Yellowknife Ar 75.10 8 P **P 22 29 55.1 -1.6**
comp=Z,1.3nm,0.7s,baz=341,slow=5.7,SNR=14
YKB5 Yellowknife Ar 75.10 8 *e*P **P 22 29 55.1 -1.6**
WR1 Warramunga Arr 78.07 131 *e*P **P 22 30 17.1 +3.0**
comp=Z,49nm,2.0s
WRA Warramunga Arr 78.07 131 P **P 22 30 17.1 +3.0**
comp=Z,0.8nm,0.6s,baz=329,slow=5.4,SNR=7.8
WRA Warramunga Arr 78.07 131 *i*P P 22 30 18.7 +4.6
WRA pmax pmax
comp=Z,1.0nm,0.6s
AS31 Alice Springs 80.80 133 *e*P **P 22 30 30.8 +1.9**
comp=Z,3.3nm,1.5s
ASAR Alice Springs 80.80 133 P **P 22 30 30.8 +1.9**
comp=Z,0.5nm,0.6s,baz=324,slow=5.4,SNR=5.5

IDC 17 22:19:22.6±4.8, 23°.60N×108°.85W, h0km, mb3.5/1, mb1 4.1/4, mb1mx3.7/47, mbtmp3.7/4, ML3.8/3, MS3.3/11, Ms1 3.3/11, ms1mx3.1/28, Error ellipse: s-maj=74.4km s-min=18.5km az=178.0, Gulf of California

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LPIG	**La Paz**	**1.43**	**291**	Pg	Pn	22 19 47.9	-1.9
LPIG	106nm,0.3s,baz=122,slow=2.7,SNR=43			Lg	Lg	22 20 08.0	
	160nm,0.3s,baz=331,slow=20,SNR=8.1						
TXAR	**Lajitas Array**	**7.36**	**38**	Pn	Pn	22 21 10.5	-1.0
TXAR	0.7nm,0.3s,baz=215,slow=13,SNR=21			Sn	Sn	22 22 29.8	-6.0
	1.4nm,0.3s,baz=222,slow=23,SNR=8.3						
TXAR	0.5nm,0.3s,baz=221,slow=27,SNR=3.7			Lg	Lg	22 23 09.2	
TXAR	comp=Z,108nm,21.9s,baz=0.0,slow=35			LR	LR	22 23 41.2	
PFO	**Pinyon Flats O**	**12.00**	**328**	LR	LR	22 26 03.3	
	comp=Z,87nm,20.5s,baz=129,slow=33						
NVAR	**Mina Array Bea**	**16.84**	**334**	Pn	P	22 23 22.8	+0.5
NVAR	0.1nm,0.3s,baz=154,slow=13,SNR=7.2			LR	LR	22 29 22.7	
	comp=Z,103nm,19.3s,baz=174,slow=36						
ELK	**Elko**	**17.92**	**344**	LR	LR	22 29 36.6	
	comp=Z,130nm,21.2s,baz=134,slow=34						
PDAR	**Pinedale Array**	**19.13**	**358**	P	Pn	22 23 48.0	-0.2
	0.1nm,0.3s,baz=165,slow=12,SNR=19						
PDAR				LR	LR	22 31 20.1	
	comp=Z,110nm,19.0s,baz=186,slow=38						
YBH	**Yreka Blue Hor**	**21.47**	**331**	LR	LR	22 32 59.4	
	comp=Z,69nm,18.6s,baz=162,slow=38						
TKL	**Tuckaleechee C**	**24.81**	**55**	LR	LR	22 35 18.9	
	comp=Z,132nm,19.0s,baz=261,slow=38						
NEW	**Newport**	**25.48**	**347**	LR	LR	22 35 55.2	
	comp=Z,48nm,19.9s,baz=182,slow=39						
ROSC	**El Rosal**	**38.14**	**114**	LR	LR	22 44 51.7	
	comp=Z,62nm,19.8s,baz=100,slow=40						
ILAR	**Eielson Array**	**47.99**	**339**	P	P	22 28 04.2	+1.3
	0.6nm,0.8s,baz=157,slow=5.5,SNR=4.7						
ILAR				LR	LR	22 50 47.2	
	comp=Z,7.0nm,19.9s,baz=178,slow=39						
PPT	**Papeete**	**57.06**	**228**	LR	LR	22 47 24.9	
	comp=Z,88nm,18.6s,baz=19,slow=30						

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*IDC **17** 22:23:27.1±5.8, 36°.65N×71°.36E, h158km±32km, mb3.4/5, mb1 3.5/9, mb1mx3.1/57, mbtmp3.9/9, Error ellipse: s-maj=65.7km s-min=23.4km az=153.0*
*NNC **17** 22:23:31.6±7.4, 37°.08N×71°.54E, h0km, mb4.2, mpv3.8, Error ellipse: s-maj=59.7km s-min=27.2km az=164.0*
ISC 17 22:23:21.6±0.8, 36°.45N±0°.06×71°.59E±0°.07, h106km, n19, σ2s13/22, mb3.7/5, 4C-3D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**3.21**	**318**	⇑Pn	Pn	22 24 16.1	+5.7
	27nm,0.4s						
DZET				⇓Sn	**Sn**	**22 24 53.3**	**+5.2**
	341nm,0.4s						
KSH	**Kashi**	**4.62**	**47**	Pn	Pn	22 24 33.8	+4.5
KSH				Sn	**Sn**	**22 25 21.3**	**-0.6**
KSH				smax	smax		
	comp=N,140nm,0.9s						
KSH				smax	smax		
	comp=E,130nm,0.2s						
MNAS	**Manas**	**6.07**	**6**	⇑Pn	Pn	22 24 54.8	+5.9
	comp=E,3.2nm,0.3s						
MNAS				⇓Sn	**Sn**	**22 25 58.3**	**+1.3**
	comp=E,7.8nm,0.4s						
AAK	**Ala-Archa**	**6.57**	**19**	P	Pn	22 25 02.0	+6.3
	comp=E,2.3nm,0.3s,baz=148,slow=5.5,SNR=5.8						
AAK				S	**Sn**	**22 26 11.6**	**+2.4**
	comp=E,1.4nm,0.3s,baz=134,slow=22,SNR=6.6						
AAK	**Ala-Archa**	**6.57**	**19**	⇑Pn	Pn	22 25 02.6	+6.9
AAK				⇓Sn	**Sn**	**22 26 13.0**	**+3.8**
	comp=E,7.8nm,0.8s						
KK31	**Karatay Array**	**6.69**	**353**	Pn	Pn	22 25 01.8	+4.5
	comp=E,3.1nm,0.3s,baz=177,slow=12,SNR=71						
KK31				⇑Sn	**Sn**	**22 26 11.5**	**-0.5**
	comp=E,5.5nm,0.5s,baz=182,slow=23,SNR=5.2						
GEYT	**Alibeck**	**10.85**	**282**	P	**Pn**	**22 25 54.2**	**+0.5**
	comp=E,0.5nm,0.3s,baz=90,slow=9.5,SNR=7.4						
PYUN	**Piuthan**	**12.74**	**128**	*e*P	**P**	**22 26 25.8**	**-0.2**
PYUN				*e*S	**Sn**	**22 28 41.0**	**+1.7**
KOLN	**Koldanda**	**13.35**	**127**	*e*P	**P**	**22 26 34.0**	**+1.2**
KOLN				*e*S	**Sn**	**22 28 55.7**	**+1.5**
GKN	**Gorkha**	**13.88**	**124**	*e*P	**P**	**22 26 41.0**	**+2.4**
GKN				*e*S	**Sn**	**22 29 06.6**	**-0.3**
KKN	**Kakani**	**14.45**	**123**	*e*P	**P**	**22 26 48.0**	**+3.0**
PKIN	**Phulchoki**	**14.67**	**123**	*e*P	P	22 26 51.5	+4.0
PKIN				*e*S	**Sn**	**22 29 25.5**	**-0.6**
BVAR	**Borovoye Array**	**16.59**	**357**	P	**Pn**	**22 27 09.1**	**+1.5**
	comp=E,0.2nm,0.3s,baz=169,slow=9.2,SNR=5.1						
ZALV	**Zalesovo Beam**	**19.76**	**24**	P	**P**	**22 27 43.6**	**+0.6**
	comp=E,0.6nm,0.3s,baz=214,slow=11,SNR=7.0						
FINES	**FINESS Array B**	**37.79**	**326**	P	**P**	**22 30 25.6**	**-1.5**
	comp=E,0.4nm,0.3s,baz=131,slow=8.2,SNR=4.0						
ARCES	**ARCESS Array B**	**41.37**	**337**	P	**P**	**22 30 55.6**	**-1.1**
	comp=E,2.6nm,0.8s,baz=122,slow=8.6,SNR=5.8						
NOA	**NORSAR Array B**	**44.70**	**323**	P	**P**	**22 31 21.7**	**-2.1**
	comp=E,0.4nm,0.5s,baz=96,slow=7.8,SNR=3.5						
INK	**Inuvik**	**73.87**	**9**	P	**P**	**22 34 43.1**	**-1.2**
	comp=E,0.7nm,0.6s,baz=329,slow=6.0,SNR=4.8						
YKA	**Yellowknife Ar**	**81.27**	**3**	P	**P**	**22 35 23.8**	**-1.8**
	comp=E,0.3nm,0.5s,baz=351,slow=5.2,SNR=7.1						

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*CSEM **17** 22:24:50.2, 43°.42N×12°.32E, h9km, MD2.0/16*
ROM 17 22:24:50.2±0.1, 43°.42N×12°.32E, h9km, Md2.0/16, Ml1.5/13, Error ellipse: s-maj=0.7km s-min=0.6km az=40.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ATVO	**AVT- Monte Val**	**0.07**	**124**	Pg	Pg	22 24 52.9	+0.5
ATVO				Sg	Sg	22 24 54.5	+0.6
	175nm,0.3s						
ATVO	**AVT- Monte Val**	**0.07**	**124**	Pg	Pg	22 24 52.9	+0.5
ATVO				Sg	Sg	22 24 54.5	+0.6
	175nm,0.3s						
BADI	**Badiali**	**0.10**	**327**	Pg	Pg	22 24 53.3	+0.5
BADI				Sg	Sg	22 24 55.4	+0.8
	557nm,0.1s						
BADI	**Badiali**	**0.10**	**327**	Pg	Pg	22 24 53.3	+0.5
BADI				Sg	Sg	22 24 55.4	+0.8
	557nm,0.1s						
ATPC	**Poggio Castell**	**0.11**	**59**	Pg	Pg	22 24 53.6	+0.7
ATPC				Sg	Sg	22 24 55.8	+1.0
	292nm,0.4s						
ATPC	**Poggio Castell**	**0.11**	**59**	Pg	Pg	22 24 53.6	+0.7
ATPC				Sg	Sg	22 24 55.8	+1.0
	292nm,0.4s						
PIEI	**Pieia**	**0.19**	**54**	Pg	Pg	22 24 54.8	+0.6
PIEI				Sg	Sg	22 24 58.2	+1.3
	77nm,0.1s						
PIEI	**Pieia**	**0.19**	**54**	Pg	Pg	22 24 54.8	+0.6
PIEI				Sg	Sg	22 24 58.2	+1.3
	77nm,0.1s						
MURB	**Monte Urbino**	**0.22**	**137**	Pg	Pg	22 24 55.4	+0.7
MURB				Sg	Sg	22 24 59.1	+1.4
	219nm,0.2s						
MURB	**Monte Urbino**	**0.22**	**137**	Pg	Pg	22 24 55.4	+0.7
MURB				Sg	Sg	22 24 59.1	+1.4
	219nm,0.2s						
ATTE	**AVT- Monte Tez**	**0.23**	**174**	Pg	Pg	22 24 55.5	+0.7
ATTE				Sg	Sg	22 24 59.2	+1.3
	33nm,0.2s						
ATTE	**AVT- Monte Tez**	**0.23**	**174**	Pg	Pg	22 24 55.5	+0.7
ATTE				Sg	Sg	22 24 59.2	+1.3
	33nm,0.2s						
PARC	**Parchiule**	**0.23**	**345**	Pg	Pg	22 24 55.7	+0.7
PARC				Sg	Sg	22 24 59.7	+1.5
	84nm,0.2s						
PARC	**Parchiule**	**0.23**	**345**	Pg	Pg	22 24 55.7	+0.7
PARC				Sg	Sg	22 24 59.7	+1.5
	84nm,0.2s						
CAFI	**Castiglion Fio**	**0.28**	**250**	Pg	Pg	22 24 56.5	+0.8
CAFI				Sg	Sb	22 25 01.0	-1.2
	18nm,0.1s						
CAFI	**Castiglion Fio**	**0.28**	**250**	Pg	Pg	22 24 56.5	+0.8
CAFI				Sg	Sb	22 25 01.0	-1.2
	18nm,0.1s						
FRON	**Frontone**	**0.31**	**72**	Pg	Pg	22 24 56.9	+0.6
FRON				Sg	Sb	22 25 01.9	-1.2
	46nm,0.1s						
FRON	**Frontone**	**0.31**	**72**	Pg	Pg	22 24 56.9	+0.6
FRON				Sg	Sb	22 25 01.9	-1.2
	46nm,0.1s						
CRE	**Caprese Michel**	**0.34**	**306**	Pg	Pg	22 24 57.5	+0.6
CRE				Sg	Sb	22 25 02.8	-1.1
	18nm,0.2s						
CRE	**Caprese Michel**	**0.34**	**306**	Pg	Pg	22 24 57.5	+0.6
CRE				Sg	Sb	22 25 02.8	-1.1
	18nm,0.2s						
SSFR	**Montelago di S**	**0.34**	**88**	Pg	Pg	22 24 57.4	+0.6
SSFR				Sg	Sb	22 25 02.9	-1.0
	48nm,0.1s						
SSFR	**Montelago di S**	**0.34**	**88**	Pg	Pg	22 24 57.4	+0.6
SSFR				Sg	Sb	22 25 02.9	-1.0
	48nm,0.1s						
FSSB	**Fossombrone**	**0.43**	**51**	Pg	Pg	22 24 59.1	+0.6
FSSB				Sg	Sb	22 25 06.1	-0.4
	29nm,0.3s						
FSSB	**Fossombrone**	**0.43**	**51**	Pg	Pg	22 24 59.1	+0.6
FSSB				Sg	Sb	22 25 06.1	-0.4
	29nm,0.3s						
ARVD	**Arcevia**	**0.46**	**80**	Pg	Pg	22 24 59.5	+0.4
ARVD				Sg	Sb	22 25 06.8	-0.6
	11nm,0.3s						
MGAB	**Montegabbione**	**0.53**	**197**	Pg	Pg	22 25 01.1	+0.6
MGAB				Sg	Sb	22 25 09.6	+0.1
	18nm,0.2s						
MGAB	**Montegabbione**	**0.53**	**197**	Pg	Pg	22 25 01.1	+0.6
MGAB				Sg	Sb	22 25 09.6	+0.1
	18nm,0.2s						
ASQU	**Asqua**	**0.54**	**314**	Pg	Pg	22 25 01.1	+0.4
ASQU				Sg	Sb	22 25 10.0	+0.2
ASQU	**Asqua**	**0.54**	**314**	Pg	Pg	22 25 01.1	+0.4
ASQU				Sg	Sb	22 25 10.0	+0.2
CESI	**CESI - Serrava**	**0.60**	**134**	Pg	Pb	22 25 02.3	-0.5
CESI				Sg	Sb	22 25 11.3	-0.1
CESI	**CESI - Serrava**	**0.60**	**134**	Pg	Pb	22 25 02.3	-0.5
CESI				Sg	Sb	22 25 11.3	-0.1

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*IDC **17** 22:25:32.2±0.9, 37°.36N×143°.66E, h0km, mb3.7/9, mb1 4.0/14, mb1mx3.7/58, mbtmp3.9/14, ML4.3/4, MS2.9/5, Ms1 2.9/5, ms1mx2.6/49, Error ellipse: s-maj=23.9km s-min=16.5km az=107.0*
*JMA **17** 22:25:35.8±0.2, 37°.52N×143°.45E, h45km, M4.2*
*NEIC **17** 22:25:37.5±0.5, 37°.47N×143°.61E, h35km, mb4.4/4, Error ellipse: s-maj=10.1km s-min=6.8km az=139.0*
ISC 17 22:25:34.7±4.3, 37°.49N±0°.05×143°.52E±0°.07, h16km±28km, n51, σ2s01/55, mb4.0/14, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.97**	**300**	P	**Pn**	**22 26 06.9**	**-0.4**
JIO				S	**Sn**	**22 26 29.2**	**-2.4**
JFK	**Kawauchi**	**2.11**	**267**	P	**Pn**	**22 26 08.8**	**-0.5**
OFUJ	**Ofunato**	**2.15**	**318**	P	**Pn**	**22 26 09.1**	**-0.8**
OFUJ				S	**Sn**	**22 26 33.4**	**-2.8**
JMM	**Marumori**	**2.20**	**281**	P	**Pn**	**22 26 09.9**	**-0.6**
JMM				S	**Sn**	**22 26 35.1**	**-2.2**
ONAJ	**Iwakimizuishiy**	**2.21**	**261**	P	**Pn**	**22 26 10.3**	**-0.4**
ONAJ				S	**Sn**	**22 26 35.8**	**-1.8**
JMK	**Ichinoseki**	**2.33**	**309**	S	**Sn**	**22 26 38.6**	**-1.8**
JOU	**Okura**	**2.42**	**292**	P	**Pn**	**22 26 13.9**	**+0.3**
JOU				S	**Sn**	**22 26 41.4**	**-1.5**
JFT	**Otama**	**2.53**	**272**	P	**Pn**	**22 26 15.7**	**+0.6**
JFT				*e*S	**Sn**	**22 26 44.7**	**-0.9**
JOM	**Ohasama**	**2.64**	**319**	P	**Pn**	**22 26 16.3**	**-0.3**
JOM				S	**Sn**	**22 26 46.2**	**-2.0**
CHOJ	**Chosi**	**2.79**	**231**	P	**Pn**	**22 26 18.7**	**+0.1**
JYK	**Kaneyama**	**2.87**	**301**	P	**Pn**	**22 26 20.0**	**+0.3**
JYK				S	**Sn**	**22 26 53.5**	**-0.4**
MJAR	**Matsushiro Arr**	**4.36**	**259**	Pn	**Pn**	**22 26 41.9**	**+1.7**
	7.6nm,0.3s,baz=85,slow=15,SNR=70						
MJAR				Sn	**Sn**	**22 27 30.7**	**+0.1**
	0.8nm,0.3s,baz=78,slow=23,SNR=2.3						
MJAR				LR	LR	22 28 50.7	
	comp=Z,88nm,21.6s,baz=85,slow=45						
MAJO	**Matsushiro**	**4.36**	**259**	*e*Pn	**Pn**	**22 26 42.5**	**+2.3**
MAT	**Matsushiro**	**4.36**	**259**	P	**Pn**	**22 26 41.8**	**+1.6**
MAT				S	**Sn**	**22 27 29.4**	**-1.2**
MJB9	**Matsu-Tunnel**	**4.36**	**259**	*e*Pn	**Pn**	**22 26 42.5**	**+2.3**
ERM	**Erimo**	**4.53**	**357**	*e*Pn	**Pn**	**22 26 41.4**	**-1.1**
JHJ	**Hachijo jima 2**	**5.33**	**216**	Pn	**Pn**	**22 26 52.5**	**-1.0**
	11nm,0.3s,baz=66,slow=23,SNR=12						
JHJ				Sn	**Sn**	**22 27 48.4**	**-6.1**
	35nm,0.3s,baz=289,slow=20,SNR=9.6						
INU	**Inuyama**	**5.67**	**250**	*e*Pn	**Pn**	**22 27 01.0**	**+2.9**
ASAJ	**Asahikawa**	**6.65**	**354**	Pn	**Pn**	**22 27 11.7**	**0.0**
	9.0nm,0.3s,baz=205,slow=9.5,SNR=25						
ASAJ				Sn	**Sn**	**22 28 20.8**	**-6.4**
	0.6nm,0.3s,baz=342,slow=19,SNR=2.1						
ASAJ				LR	LR	22 29 47.0	
	comp=Z,103nm,20.8s,baz=256,slow=38						
CBIJ	**Chichi jima**	**10.43**	**187**	*e*Pn	**Pn**	**22 27 59.5**	**-4.0**
CBIJ				*e*Sn	Sn	22 29 48.5	-12
JCJ	**Chichijima**	**10.43**	**187**	Pn	**Pn**	**22 27 59.5**	**-4.0**
	5.5nm,0.3s,baz=83,slow=21,SNR=8.1						
JCJ				Sn	Sn	22 29 48.5	-12
	4.4nm,0.3s,baz=252,slow=20,SNR=3.7						
USRK	**Ussuriysk Ar.**	**11.00**	**311**	LR	LR	22 32 29.5	
	comp=Z,70nm,19.8s,baz=155,slow=37						
JNU	**Nakatsue**	**11.21**	**251**	LR	LR	22 32 57.6	
	comp=Z,56nm,19.7s,baz=122,slow=40						
KSRS	**Korea Array**	**12.40**	**275**	Pn	**Pn**	**22 28 32.5**	**+2.1**
	baz=85,slow=15,SNR=7.3						
KS15	**Wonju Array Si**	**12.43**	**275**	*e*Pn	**Pn**	**22 28 32.5**	**+1.6**
KSAR	**Wonju Array Be**	**12.43**	**275**	Pn	**Pn**	**22 28 32.5**	**+1.6**
KLR	**Kul'dur**	**14.50**	**328**	Pn	**Pn**	**22 28 57.6**	**-1.5**
	0.3nm,0.3s,baz=129,slow=12,SNR=15						
KLR				LR	LR	22 34 52.4	
	comp=Z,69nm,18.1s,baz=134,slow=38						
SEY	**Seymchan**	**26.04**	**9**	P	**P**	**22 31 07.7**	**+0.9**
	0.9nm,0.2s,baz=179,slow=6.0,SNR=5.5						
H11N2	**WAKE ISLAND Hy**	**26.98**	**125**	T	T	22 59 33.1	
	baz=317,slow=75,SNR=7.6						
H11N1	**WAKE ISLAND Hy**	**26.99**	**125**	T	T	22 59 36.5	
	baz=317,slow=75,SNR=6.1						
H11N3	**WAKE ISLAND Hy**	**27.00**	**125**	T	T	22 59 33.7	
	baz=317,slow=75,SNR=7.3						
H11S1	**WAKE ISLAND Hy**	**27.74**	**127**	T	T	23 00 33.9	
	baz=319,slow=76,SNR=5.1						
H11S3	**WAKE ISLAND Hy**	**27.74**	**127**	T	T	23 00 36.8	
	baz=319,slow=76,SNR=4.9						
H11S2	**WAKE ISLAND Hy**	**27.75**	**127**	T	T	23 00 35.1	
	baz=319,slow=76,SNR=5.8						
SONA0	**Songino Array**	**28.94**	**303**	*e*P	**P**	**22 31 35.1**	**+2.0**
	8.4nm,1.7s						
SONM	**Songino Array**	**28.94**	**303**	P	**P**	**22 31 35.1**	**+2.0**
	0.9nm,0.7s,baz=108,slow=9.3,SNR=2.4						
CM31	**Chiang Mai Arr**	**43.24**	**257**	*e*P	**P**	**22 33 35.7**	**+0.3**
CMAR	**Chiang Mai Arr**	**43.24**	**257**	P	**P**	**22 33 35.7**	**+0.3**
	0.5nm,0.3s,baz=42,slow=7.3,SNR=3.4						
MK32	**Makanchi Array**	**45.30**	**302**	*e*P	**P**	**22 33 53.0**	**+1.4**
MKAR	**Makanchi Array**	**45.30**	**302**	P	**P**	**22 33 53.0**	**+1.4**
	0.2nm,0.4s,baz=75,slow=7.6,SNR=2.7						
KURK	**Kurchatov**	**46.97**	**308**	*e*P	**P**	**22 34 05.4**	**+0.8**
	16nm,2.0s						
KURBB	**Kurchatov Arra**	**47.05**	**308**	P	**P**	**22 34 05.4**	**+0.2**
	1.0nm,0.8s,baz=82,slow=8.1,SNR=8.7						
ILAR	**Eielson Array**	**48.20**	**33**	P	**P**	**22 34 14.1**	**+0.1**
	0.4nm,0.7s,baz=257,slow=6.1,SNR=4.3						
ILB	**Eielson Array**	**48.20**	**33**	*e*P	**P**	**22 34 14.1**	**+0.1**
WR1	**Warramunga Arr**	**57.78**	**190**	*e*P	**P**	**22 35 24.3**	**-0.7**
	25nm,1.7s						
WRA	**Warramunga Arr**	**57.78**	**190**	P	**P**	**22 35 24.3**	**-0.7**
	1.1nm,0.6s,baz=7.5,slow=6.9,SNR=8.2						
AS31	**Alice Springs**	**61.50**	**190**	*e*P	**P**	**22 35 50.3**	**-0.4**
	1.3nm,1.0s						
ASAR	**Alice Springs**	**61.50**	**190**	P	**P**	**22 35 50.3**	**-0.4**
	0.4nm,0.6s,baz=350,slow=4.7,SNR=3.1						
YKB5	**Yellowknife Ar**	**62.56

H11S2 WAKE ISLAND Hy 32.75 50 T T 23 18 02.7
baz=232,slow=75,SNR=12
H11S1 WAKE ISLAND Hy 32.76 50 T T 23 18 07.7
baz=232,slow=75,SNR=11
CMAR Chiang Mai Arr 46.15 298 P **P** **22 45 16.0 +0.3**
0.2nm,0.3s,baz=120,slow=8.2,SNR=5.5
MKAR Makanchi Array 70.82 322 P **P** **22 48 08.3 +1.0**
1.8nm,0.7s,baz=110,slow=7.5,SNR=21
ZALV Zalesovo Beam 72.71 329 P **P** **22 48 18.4 -0.1**
0.7nm,0.5s,baz=106,slow=9.1,SNR=3.5
KURK Kurchatov 74.66 324 *e*P **P** **22 48 29.7 -0.3**
2.4nm,0.5s
ILAR Eielson Array 84.57 24 P **P** **22 49 22.8 -0.8**
1.4nm,0.7s,baz=252,slow=4.9,SNR=9.5
ABKAR Akbulak array 85.83 320 *e*P **P** **22 49 30.1 -0.1**
0.5nm,0.4s
LPAZ La Paz 145.88 124 PKPbc **PKPab** **22 56 32.9 +0.7**
2.4nm,0.9s,baz=303,slow=0.4,SNR=11
CPUP Villa Florida 146.52 149 PKPbc **PKPab** **22 56 33.8 +0.2**
2.9nm,1.0s,baz=146,slow=1.3,SNR=5.2

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*VIE **17** 22:50:59.0±0.2, 47°.36N×13°.70E, h10km, mb1.2/5, ML1.7/12, Error ellipse: s-maj=1.9km s-min=1.3km az=149.0*
*PRU **17** 22:51:00.2, 47°.40N×13°.69E, h0km, Near Schladming*
CSEM 17 22:50:58.9±0.1, 47°.38N×13°.69E, h10km, ML2.2/12, Error ellipse: s-maj=2.7km s-min=2.2km az=111.0, Austria

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KBA	**Koelnbreinsper**	**0.38**	**218**	Pg	Pg	22 51 06.9	+0.4
	1.6nm,0.1s						
KBA				Sg	Sg	22 51 12.4	+0.8
	3.3nm,0.1s						
MOA	**Molln**	**0.61**	**40**	Pg	Pb	22 51 11.5	-0.2
	0.8nm,0.1s						
MOA				Sg	Sb	22 51 20.3	0.0
	1.3nm,0.1s						
MYKA	**Terra Mystica**	**0.75**	**182**	Pg	Pg	22 51 13.6	+0.2
	0.6nm,0.1s						
MYKA				Sg	Sg	22 51 22.9	-0.4
	6.5nm,0.2s						
ABTA	**Abfaltersbach**	**1.02**	**232**	Sg	Sb	22 51 32.7	+0.4
	0.7nm,0.1s						
OBKA	**Obir**	**1.05**	**146**	Pg	Pb	22 51 19.3	0.0
	1.1nm,0.2s						
OBKA				Sg	Sg	22 51 32.1	-0.8
	4.2nm,0.2s						
SOKA	**Soboth**	**1.16**	**127**	Pg	Pb	22 51 20.6	-0.5
	0.4nm,0.1s						
SOKA				Sg	Sb	22 51 36.0	-0.2
	0.8nm,0.2s						
ARSA	**Arzberg**	**1.25**	**95**	Sg	Sb	22 51 39.0	+0.1
	0.8nm,0.2s						
WTTA	**Wattenberg**	**1.40**	**266**	Pg	Pg	22 51 26.1	+0.3
	1.6nm,0.2s						
WTTA				Sg	Sg	22 51 45.3	+1.3
	3.1nm,0.3s						
CONA	**Conrad Observa**	**1.57**	**69**	Pg	Pg	22 51 29.9	+0.9
	0.3nm,0.1s						
KHC	**Kasperske Hory**	**1.75**	**358**	*e*PG	Pg	22 51 32.6	+0.1
KHC				*e*SG	Sb	22 51 53.4	+0.2
	comp=Z,4.3nm,0.3s						
KHC	**Kasperske Hory**	**1.75**	**358**	Pg	Pg	22 51 32.6	+0.1
KHC				Sg	Sb	22 51 53.4	+0.2
	4.3nm,0.3s						
MOTA	**Moosalm**	**1.76**	**270**	Pg	Pg	22 51 32.3	-0.3
	0.2nm,0.1s						
GOPC	**GO Pecny, Ondr**	**2.64**	**16**	*e*SG	Sg	22 52 23.5	-0.1
GOPC	**GO Pecny, Ondr**	**2.64**	**16**	Sg	Sg	22 52 23.5	-0.1
PRU	**Pruhonice**	**2.67**	**12**	*e*SG	Sg	22 52 23.8	-0.8
	comp=Z,2.2nm,0.3s						
PRU	**Pruhonice**	**2.67**	**12**	Sg	Sg	22 52 23.8	-0.8
	2.2nm,0.3s						
NKC	**Novy Kostel**	**2.97**	**344**	*e*SG	Sg	22 52 33.7	-0.5
	comp=Z,2.9nm,0.3s						
NKC	**Novy Kostel**	**2.97**	**344**	Sg	Sg	22 52 33.7	-0.5
	2.9nm,0.3s						
PVCC	**Panska Ves**	**3.20**	**10**	*e*SG	Sg	22 52 41.4	-0.3
	comp=Z,3.2nm,0.2s						
PVCC	**Panska Ves**	**3.20**	**10**	Sg	Sg	22 52 41.4	-0.3
	3.2nm,0.2s						
DPC	**Dobruska-Polom**	**3.44**	**29**	*e*SG	Sg	22 52 48.9	-0.5
DPC	**Dobruska-Polom**	**3.44**	**29**	Sg	Sg	22 52 48.9	-0.5
BRG	**Berggiesshubel**	**3.50**	**3**	SG	Sg	22 52 51.9	+0.7
	1.1nm,0.4s						

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*NIED **17** 22:53:00, 36°.20N×141°.00E, h17km, Mw3.3 Best double couple: M0=8.90000×10^13 NP1:φ=233.00000°, δ=50.00000°, λ=-152.00000°. NP2:φ=124.00000°, δ=69.00000°, λ=-44.00000°.*
JMA 17 22:53:40.1±0.1, 36°.22N×141°.01E, h36km±1km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.53**	**318**	P	Pn	22 53 50.8	-0.4
JHO				S	Sn	22 53 58.6	-0.3
CHOJ	**Chosi**	**0.53**	**193**	P	Pn	22 53 50.9	-0.3
JYT	**Yasato**	**0.66**	**271**	P	Pn	22 53 53.2	+0.2
JYT				S	Sn	22 54 01.9	-0.2
ONAJ	**Iwakimizuishiy**	**0.90**	**349**	P	Pn	22 53 56.0	-0.2
JFK	**Kawauchi**	**1.15**	**355**	P	Pn	22 53 59.5	-0.2
MAT	**Matsushiro**	**2.29**	**279**	P	Pn	22 54 16.8	+1.5
MAT				S	Sn	22 54 45.4	+3.2

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*IDC **17** 22:54:28.3±0.5, 25°.46N×142°.72E, h0km, mb4.4/26, mb1 4.6/28, mb1mx4.4/47, mbtmp4.4/28, ML3.8/2, MS3.5/14, Ms1 3.6/14, ms1mx3.4/36, Error ellipse: s-maj=17.6km s-min=13.0km az=83.0*
*ISCJB **17** 22:54:32.7±0.9, 25°.51N±0°.04×142°.68E±0°.05, h39km±7km, mb4.6/89, MS3.8/22, Error ellipse: s-maj=7.1km s-min=6.5km az=11.7*
*MOS **17** 22:54:32.4±0.9, 25°.53N×142°.70E, h37km, mb4.8/48, Error ellipse: s-maj=12.8km s-min=5.6km az=116.3*
*NEIC **17** 22:54:35.2±1.1, 25°.54N×142°.65E, h46km±9km, mb4.8/33, Error ellipse: s-maj=6.9km s-min=5.7km az=114.0*
ISC 17 22:54:35.5±1.0, 25°.55N±0°.05×142°.71E±0°.06, h47km±8km, n225, σ1$49/245, mb4.7/95, MS3.7/24, 21C-12D, Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**1.61**	**343**	*e*Pn	**Pn**	**22 55 01.2**	**-0.3**
CBIJ				*e*Sn	**Sn**	**22 55 26.1**	**+5.0**
JCJ	**Chichijima**	**1.61**	**343**	Pn	**Pn**	**22 55 01.2**	**-0.3**
JCJ				Sn	**Sn**	**22 55 26.1**	**+5.0**
JHJ	**Hachijo jima 2**	**7.96**	**342**	LR	LR	22 59 22.3	
	comp=Z,432nm,19.5s,baz=138,slow=37						
MJAR	**Matsushiro Arr**	**11.61**	**342**	Pn	**Pn**	**22 57 17.4**	**-1.3**
	0.7nm,0.3s,baz=150,slow=12,SNR=6.7						
MJAR				Sn	**Sn**	**22 59 19.9**	**-7.0**
	0.6nm,0.3s,baz=238,slow=20,SNR=4.1						
MJAR				LR	LR	23 01 55.5	
	comp=Z,221nm,18.1s,baz=180,slow=38						
MAT	**Matsushiro**	**11.62**	**342**	P	**Pn**	**22 57 17.3**	**-1.4**
JNU	**Nakatsue**	**12.78**	**309**	LR	LR	23 02 12.7	
	comp=Z,98nm,19.1s,baz=124,slow=36						
ERM	**Erimo**	**16.43**	**1**	*e*P	**P**	**22 58 26.3**	**+1.5**
KSRS	**Korea Array**	**17.29**	**317**	Pn	**Pn**	**22 58 33.9**	**+0.4**
	0.2nm,0.3s,baz=127,slow=12,SNR=12						
KSRS				LR	LR	23 05 11.4	
	comp=Z,311nm,18.2s,baz=125,slow=37						
KS15	**Wonju Array Si**	**17.30**	**317**	*e*Pn	**Pn**	**22 58 33.9**	**+0.2**
KSAR	**Wonju Array Be**	**17.30**	**317**	P	**Pn**	**22 58 33.9**	**+0.2**
KSAR	**Wonju Array Be**	**17.30**	**317**	Pn	**Pn**	**22 58 33.9**	**+0.2**
KUR	**Kuril'sk**	**20.08**	**11**	*e*P	**P**	**22 59 05.1**	**+0.2**
KUR				*i* S	**S**	**23 02 43.3**	**-4.5**
USRK	**Ussuriysk Ar.**	**20.55**	**338**	P	**P**	**22 59 08.8**	**-1.1**
	11nm,0.7s,baz=144,slow=11,SNR=13						
USRK				LR	LR	23 06 40.8	
	comp=Z,98nm,20.2s,baz=131,slow=36						
MDJ	**Mudanjiang**	**21.79**	**334**	P	**P**	**22 59 23.8**	**+0.5**
MDJ				sP	sP	22 59 39.1	-1.5
MDJ				S	**S**	**23 03 22.0**	**+0.3**
MDJ				sS	sS	23 03 37.0	-2.8
MDJ				pmax	pmax		
	comp=Z,5.0nm,0.6s						
MDJ				pmax	pmax		
	comp=Z,4.0nm,2.5s						
MDJ				LR	LR		
	comp=N,130nm,17.8s						
MDJ				LR	LR		
	comp=E,190nm,17.7s						
MDJ				LR	LR		
	comp=Z,330nm,16.7s						
MDJ	**Mudanjiang**	**21.79**	**334**	*e*P	**P**	**22 59 26.9**	**+3.6**
	comp=Z,19nm,0.9s						
KLR	**Kul'dur**	**25.14**	**343**	P	**P**	**22 59 57.0**	**+1.0**
	comp=Z,27nm,0.8s,baz=149,slow=8.0,SNR=93						
KLR				LR	LR	23 10 07.1	
	comp=Z,139nm,18.0s,baz=152,slow=37						
WHN	**Wuhan**	**25.48**	**288**	P	**P**	**23 00 04.8**	**+5.5**
WHN				S	S	23 04 46.3	+23
WHN				LR	LR		
	comp=N,470nm,14.0s						
WHN				LR	LR		
	comp=E,300nm,9.8s						
WHN				LR	LR		
	comp=Z,400nm,17.2s						
BJI	**Beijing**	**26.45**	**310**	P	**P**	**23 00 08.3**	**+0.3**
BJI				S	**S**	**23 04 39.6**	**+1.2**
BJI				pmax	pmax		
	comp=Z,7.0nm,0.8s						
BJI				pmax	pmax		
	comp=Z,80nm,3.4s						
BJI				LR	LR		
	comp=N,140nm,13.8s						
BJI				LR	LR		
	comp=E,110nm,9.2s						
BJI				LR	LR		
	comp=Z,93nm,19.1s						
ENH	**Enshi**	**29.67**	**287**	*e*P	**P**	**23 00 37.0**	**+0.1**
	comp=Z,9.2nm,0.8s						
PETK	**Petropavlovsk-**	**29.74**	**18**	LR	LR	23 15 16.2	
	comp=Z,23nm,18.8s,baz=195,slow=42						
HHC	**Hu-ho-hao-te**	**30.00**	**308**	*e*P	**P**	**23 00 40.8**	**+1.0**
HHC				pP	pP	23 00 53.6	+1.3
HHC				PP	**PnPn**	**23 01 42.0**	**+4.1**
HHC				S	**S**	**23 05 35.8**	**+1.1**
HHC				pmax	pmax		
	comp=Z,29nm,0.9s						
HHC				pmax	pmax		
	comp=Z,230nm,4.9s						
HHC				LR	LR		
	comp=N,1μm,12.4s						
HHC				LR	LR		
	comp=E,1μm,13.3s						
HHC				LR	LR		
	comp=Z,1μm,13.1s						
XAN	**Xi'an**	**30.41**	**294**	P	**P**	**23 00 42.6**	**-0.8**
XAN				pmax	pmax		
	comp=Z,13nm,1.0s						
XAN				pmax	pmax		
	comp=Z,32nm,7.2s						
MRSI	**Marisa**	**31.99**	**222**	P	**P**	**23 00 57.6**	**+0.2**
GYA	**Guiyang**	**32.34**	**280**	P	**P**	**23 01 01.0**	**+0.4**
GYA				pP	pP	23 01 13.6	+0.5
GYA				PP	**PnPn**	**23 02 10.4**	**+2.0**
GYA				PcP	**PcP**	**23 03 48.9**	**+1.2**
GYA				S	**S**	**23 06 10.3**	**-1.2**
GYA				sS	sS	23 06 32.0	-0.5
GYA				ScP	**ScP**	**23 07 28.3**	**+0.7**
GYA	**Guiyang**	**32.34**	**280**	ScS	ScS	23 11 25.5	-1.6
GYA				pmax	pmax		
	comp=Z,20nm,0.8s						
GYA				pmax	pmax		
	comp=Z,120nm,5.0s						
GYA				LR	LR		
	comp=N,540nm,17.0s						
GYA				LR	LR		
	comp=E,490nm,17.4s						
GYA				LR	LR		
	comp=Z,520nm,17.6s						
CD2	**Chengdu**	**34.61**	**288**	P	**P**	**23 01 18.4**	**-1.8**
CD2				pP	pP	23 01 30.8	-1.9
CD2				PP	**PnPn**	**23 02 37.3**	**+0.5**
CD2				PcP	**PcP**	**23 03 52.4**	**-1.5**
CD2				S	**S**	**23 06 44.3**	**-2.1**
CD2				sS	sS	23 07 05.8	-1.7
CD2				SS	**SS**	**23 09 16.0**	**-1.8**
CD2				pmax	pmax		
	comp=Z,40nm,0.5s						
CD2				pmax	pmax		
	comp=Z,50nm,5.6s						
CD2				LR	LR		
	comp=N,230nm,14.3s						
CD2				LR	LR		
	comp=Z,270nm,14.9s						
LZH	**Lanzhou**	**34.79**	**297**	*e*P	**P**	**23 01 21.8**	**0.0**
LZH				pP	pP	23 01 33.9	-0.5
LZH				sP	sP	23 01 38.8	-1.2
LZH				pmax	pmax		
	comp=Z,41nm,1.1s						
LZH				pmax	pmax		
	comp=Z,78nm,4.0s						
LZH				LR	LR		
	comp=N,130nm,11.8s						
LZH				LR	LR		
	comp=E,190nm,16.3s						
LZH				LR	LR		
	comp=Z,170nm,12.0s						
PMG	**Port Moresby**	**35.01**	**172**	*ce*P	**P**	**23 01 23.6**	**-0.1**
ULN	**Ulaanbaatar**	**35.77**	**318**	*e*P	**P**	**23 01 28.8**	**-1.3**
ULN				pmax	pmax		
	comp=Z,3.0nm,0.7s						
ULN	**Ulaanbaatar**	**35.77**	**318**	*e*P	**P**	**23 01 28.8**	**-1.3**
	comp=Z,3.2nm,0.7s						
KMI	**Kunming**	**36.03**	**278**	P	**P**	**23 01 34.3**	**+1.6**
KMI				pP	pP	23 01 48.0	+2.7
KMI				pmax	pmax		
	comp=Z,8.0nm,1.0s						
KMI				pmax	pmax		
	comp=Z,43nm,5.5s						
KMI				LR	LR		
	comp=N,130nm,15.2s						
KMI				LR	LR		
	comp=E,87nm,22.3s						
KMI				LR	LR		
	comp=Z,83nm,20.3s						
SONA0	**Songino Array**	**36.16**	**317**	*e*P	**P**	**23 01 31.9**	**-1.6**
	comp=Z,2.4nm,0.7s						
SONA1	**Songino Array**	**36.16**	**317**	*e*P	**P**	**23 01 32.0**	**-1.4**
SONM	**Songino Array**	**36.16**	**317**	P	**P**	**23 01 31.9**	**-1.6**
	comp=Z,1.7nm,0.5s,baz=128,slow=8.5,SNR=8.8						
SONM				LR	LR	23 16 44.2	
	comp=Z,88nm,19.6s,baz=99,slow=37						
SPSI	**Sidrap Palu**	**36.82**	**220**	P	**P**	**23 01 38.8**	**-0.4**
	comp=Z,30nm,0.8s						
YAK	**Yakutsk**	**37.52**	**350**	LR	LR	23 17 33.8	
	comp=Z,62nm,18.9s,baz=225,slow=37						
KAPI	**Kappang**	**37.68**	**219**	*e*P	**P**	**23 01 46.9**	**+0.5**
	comp=Z,15nm,0.9s						
SEY	**Seymchan**	**37.93**	**7**	P	**P**	**23 01 48.9**	**+0.9**
	comp=Z,4.1nm,0.8s,baz=178,slow=5.9,SNR=14						
BOD	**Bodaibo**	**38.15**	**335**	*e*P	**P**	**23 01 49.4**	**-0.6**
BOD				pmax	pmax		
	comp=Z,8.0nm,1.4s						
GTA	**Gaotai**	**38.38**	**302**	*e*P	**P**	**23 01 52.9**	**+0.6**
GTA				pP	pP	23 02 05.6	+0.6
GTA				sP	sP	23 02 11.3	+0.7
GTA				S	**S**	**23 07 44.6**	**+0.7**
GTA				sS	sS	23 08 05.3	+0.1
GTA				SS	**SnSn**	**23 10 25.3**	**-7.4**
GTA				pmax	pmax		
	comp=Z,5.0nm,0.9s						
GTA				pmax	pmax		
	comp=Z,39nm,5.9s						
GTA				LR	LR		
	comp=N,190nm,17.1s						
GTA				LR	LR		
	comp=E,230nm,15.2s						
GTA				LR	LR		
	comp=Z,100nm,15.2s						
ZAK	**Zakamensk**	**39.08**	**320**	*e*P	**P**	**23 01 57.3**	**-0.8**
ZAK				pmax	pmax		
	comp=Z,3.0nm,1.0s						
TLY	**Talaya**	**39.44**	**322**	*e*P	**P**	**23 02 02.0**	**+1.1**
TLY				pmax	pmax		
	comp=Z,4.0nm,1.2s						
TLY				MLR	MLR		
	comp=Z,188nm,17.0s						
CHTO	**Chiang Mai**	**40.93**	**270**	*e*P	**P**	**23 02 14.5**	**+0.8**
CHTO				pmax	pmax		
	comp=Z,6.0nm,1.0s						
CHTO	**Chiang Mai**	**40.93**	**270**	*e*P	**P**	**23 02 14.5**	**+0.8**
	comp=Z,6.0nm,1.0s						
CM01	**Chiang Mai Arr**	**41.04**	**269**	*e*P	**P**	**23 02 15.6**	**+1.1**
CM31	**Chiang Mai Arr**	**41.04**	**269**	*e*P	**P**	**23 02 15.4**	**+0.8**
CMAR	**Chiang Mai Arr**	**41.04**	**269**	P	**P**	**23 02 15.4**	**+0.8**
	comp=Z,3.5nm,0.8s,baz=61,slow=8.2,SNR=19						
CMAR				LR	LR	23 20 01.6	
	comp=Z,27nm,18.0s,baz=100,slow=37						
BILL	**Bilibino**	**44.86**	**12**	*i*P	**P**	**23 02 45.5**	**+0.7**
BILL				*e*		23 04 36.3	
BILL				*e*S	S	23 09 33.8	+15
BILL				pmax	pmax		
	comp=Z,7.0nm,1.0s						
BILL				MLR	MLR		
	comp=Z,56nm,19.0s						
BILL	**Bilibino**	**44.86**	**12**	*e*P	**P**	**23 02 45.2**	**+0.5**
	comp=Z,24nm,1.7s						
IPM	**Ipoh**	**45.10**	**249**	*e*P	**P**	**23 02 47.8**	**+0.4**
	comp=Z,9.3nm,0.8s						
SHL	**Shillong**	**45.61**	**282**	*e*P	**P**	**23 02 51.0**	**-0.6**
WRAB	**Tennant Creek**	**45.93**	**191**	*ce*P	**P**	**23 02 55.0**	**+1.2**
WRAB				pmax	pmax		
	comp=Z,50nm,1.0s						
WRAB	**Tennant Creek**	**45.93**	**191**	*e*P	**P**	**23 02 53.7**	**-0.1**
	comp=Z,14nm,0.7s						
WB2	**Warramunga Arr**	**45.94**	**191**	*e*P	**P**	**23 02 53.8**	**-0.1**
	comp=Z,16nm,0.6s						
WR1	**Warramunga Arr**	**45.95**	**191**	*e*P	**P**	**23 02 52.2**	**-1.7**
	comp=Z,15nm,0.6s						
WRA	**Warramunga Arr**	**45.95**	**191**	P	**P**	**23 02 52.2**	**-1.7**
	comp=Z,6.7nm,0.6s,baz=12,slow=8.6,SNR=33						
WRA	**Warramunga Arr**	**45.95**	**191**	*ce*P	**P**	**23 02 52.4**	**-1.5**
WRA				pmax	pmax		
	comp=Z,7.0nm,0.6s						
FITZ	**Fitzroy Crossi**	**46.46**	**203**	*e*P	**P**	**23 02 57.2**	**-0.7**
	comp=Z,6.1nm,0.8s						
TIXI	**Tiksi**	**46.79**	**354**	P	**P**	**23 02 59.9**	**0.0**
	comp=Z,0.9nm,0.3s,baz=148,slow=9.0,SNR=4.9						
TIXI	**Tiksi**	**46.79**	**354**	*e*P	**P**	**23 02 59.1**	**-0.8**
TIXI				pmax	pmax		
	comp=Z,7.0nm,2.5s						
WMQ	**Urumqi**	**47.87**	**307**	P	**P**	**23 03 09.9**	**+1.1**
WMQ				pP	pP	23 03 22.3	+0.5
WMQ				sP	sP	23 03 29.4	+2.1
WMQ				pmax	pmax		
	comp=Z,4.0nm,1.2s						
WMQ				pmax	pmax		
	comp=Z,42nm,5.0s						
WMQ				LR	LR		
	comp=N,83nm,6.4s						
WMQ				LR	LR		
	comp=E,58nm,9.6s						
WMQ				LR	LR		
	comp=Z,29nm,22.6s						
AS31	**Alice Springs**	**49.66**	**191**	*e*P	**P**	**23 03 21.1**	**-1.5**
	comp=Z,2.8nm,1.4s						
ASAR	**Alice Springs**	**49.66**	**191**	P	**P**	**23 03 21.1**	**-1.5**
	comp=Z,0.8nm,0.6s,baz=16,slow=8.2,SNR=7.8						
ASAR				LR	LR	23 24 24.4	
	comp=Z,66nm,18.3s,baz=78,slow=36						
PKIN	**Phulchoki**	**50.91**	**286**	*e*P	**P**	**23 03 32.6**	**+0.1**
	comp=Z,8.1nm,0.6s						
ZAA0	**Zalesovo Array**	**50.96**	**320**	*e*P	**P**	**23 03 31.2**	**-1.0**
ZAA1	**Zalesovo Array**	**50.96**	**320**	*e*P	**P**	**23 03 31.2**	**-1.0**
ZAA1				*e*PcP	**PcP**	**23 04 47.8**	**-0.1**
ZALV	**Zalesovo Beam**	**50.96**	**320**	P	**P**	**23 03 31.2**	**-1.0**
	comp=Z,1.9nm,0.5s,baz=104,slow=7.1,SNR=9.2						
ZALV				PcP	**PcP**	**23 04 47.8**	**-0.1**
	comp=Z,3.6nm,0.7s,baz=114,slow=3.0,SNR=9.5						
ZALV				LR	LR	23 25 46.7	
	comp=Z,67nm,18.6s,baz=70,slow=37						
KKN	**Kakani**	**50.97**	**286**	*e*P	**P**	**23 03 32.6**	**-0.3**
	comp=Z,14nm,0.7s						
GKN	**Gorkha**	**51.48**	**286**	*e*P	**P**	**23 03 36.5**	**-0.2**
MK01	**Makanchi Array**	**51.82**	**311**	*e*P	**P**	**23 03 37.7**	**-1.1**
MK31	**Makanchi Array**	**51.83**	**311**	*e*P	**P**	**23 03 38.1**	**-0.7**
MK31	**Makanchi Array**	**51.83**	**311**	*e*P	**P**	**23 03 38.1**	**-0.7**
MK32	**Makanchi Array**	**51.83**	**311**	*e*P	**P**	**23 03 37.7**	**-1.1**
MK32				*e*PcP	**PcP**	**23 04 50.8**	**-0.5**
MKAR	**Makanchi Array**	**51.83**	**311**	P	**P**	**23 03 37.7**	**-1.1**
	comp=Z,2.2nm,0.6s,baz=91,slow=8.9,SNR=24						
MKAR				PcP	**PcP**	**23 04 50.8**	**-0.5**
	comp=Z,2.5nm,0.7s,baz=84,slow=5.8,SNR=8.9						
MKAR				LR	LR	23 27 01.5	
	comp=Z,91nm,18.6s,baz=94,slow=38						
MKAR	**Makanchi Array**	**51.83**	**311**	*ce*P	**P**	**23 03 38.9**	**+0.1**
MKAR				pmax	pmax		
	comp=Z,2.0nm,0.6s						
MKAR	**Makanchi Array**	**51.83**	**311**	*e*P	**P**	**23 03 38.1**	**-0.7**
NVS	**Novosibirsk**	**52.03**	**321**	*e*P	**P**	**23 03 40.2**	**+0.1**
NVS				pmax	pmax		
	comp=Z,14nm,1.8s						
MAKZ	**Makanchi**	**52.04**	**311**	*e*P	**P**	**23 03 40.8**	**+0.4**
MAKZ				pmax	pmax		
	comp=Z,4.0nm,0.9s						
MAKZ	**Makanchi**	**52.04**	**311**	*e*P	**P**	**23 03 40.8**	**+0.4**
	comp=Z,3.9nm,0.9s						
KOLN	**Koldanda**	**52.43**	**286**	*e*P	**P**	**23 03 44.0**	**+0.2**
	comp=Z,11nm,0.7s						
PYUN	**Piuthan**	**52.89**	**287**	*e*P	**P**	**23 03 47.3**	**+0.1**
PDGK	**Podgornoye**	**53.83**	**306**	P	**P**	**23 03 54.3**	**+0.8**
PDGK				pmax	pmax		
	comp=Z,7.0nm,0.9s						
NRIK	**Noril'sk**	**54.25**	**339**	P	**P**	**23 03 56.8**	**+0.5**
	comp=Z,13nm,0.8s,baz=114,slow=10,SNR=31						
NRIK				LR	LR	23 28 08.7	
	comp=Z,154nm,18.4s,baz=124,slow=37						
KURK	**Kurchatov**	**54.41**	**315**	*e*P	**P**	**23 03 57.5**	**-0.2**
KURK				pmax	pmax		
	comp=Z,13nm,0.7s						
KURK	**Kurchatov**	**54.41**	**315**	*e*P	**P**	**23 03 57.5**	**-0.2**
	comp=Z,13nm,0.7s						
CAST	**Castle Rocks**	**56.40**	**29**	*e*P	**P**	**23 04 12.7**	**+0.9**
	comp=Z,7.1nm,0.8s						
KSH	**Kashi**	**56.78**	**302**	*e*P	**P**	**23 04 19.4**	**+4.3**
KSH				*es*P	sP	23 04 37.4	+3.6
KSH				S	**S**	**23 12 08.5**	**+3.6**
KSH				ScS	**ScS**	**23 14 01.3**	**+0.7**
KSH				pmax	pmax		
	comp=Z,96nm,4.8s						
STKA	**Stephens Creek**	**57.11**	**181**	P	**P**	**23 04 16.8**	**-0.4**
	comp=Z,5.1nm,0.9s,baz=360,slow=7.7,SNR=5.0						
STKA	**Stephens Creek**	**57.11**	**181**	*e*P	**P**	**23 04 16.8**	**-0.4**
	comp=Z,2.2nm,1.0s						
RND	**Reindeer**	**57.83**	**30**	*e*P	**P**	**23 04 21.9**	**-0.1**
RND				pmax	pmax		
	comp=Z,29nm,1.7s						
RND	**Reindeer**	**57.83**	**30**	*e*P	**P**	**23 04 21.9**	**-0.1**
	comp=Z,29nm,1.7s						
COLD	**Coldfoot**	**57.86**	**25**	*e*P	**P**	**23 04 22.5**	**+0.5**
	comp=Z,12nm,1.6s						
OTUK	**Ortayu**	**58.54**	**312**	P	**P**	**23 04 27.7**	**+0.5**
OTUK				pmax	pmax		
	comp=Z,5.0nm,1.3s						
IL1	**Eielson Array**	**58.84**	**28**	*e*P	**P**	**23 04 27.5**	**-1.5**
ILAR	**Eielson Array**	**58.84**	**28**	P	**P**	**23 04 28.0**	**-1.0**
	comp=Z,2.3nm,0.7s,baz=258,slow=5.8,SNR=22						
ILAR	**Eielson Array**	**58.84**	**28**	P	**P**	**23 04 28.0**	**-1.0**
ILAR				pmax	pmax		
	comp=Z,2.0nm,0.7s						
ILB	**Eielson Array**	**58.84**	**28**	*e*P	**P**	**23 04 28.0**	**-1.0**
BRVK	**Borovoye**	**59.56**	**318**	*e*P	**P**	**23 04 33.9**	**-0.2**
BRVK				pmax	pmax		
	comp=Z,18nm,0.7s						
BRVK	**Borovoye**	**59.56**	**318**	*e*P	**P**	**23 04 33.4**	**-0.7**
	comp=Z,18nm,0.7s						
BMRM	**Bremner River**	**

SVE Sverdlovsk 64.73 323 *eP* **P 23 05 09.0 +0.3**
SVE pmax pmax
comp=Z,19nm,0.9s
ARU Arti 65.93 323 *c iP* **P 23 05 16.2 -0.2**
ARU 23 07 38.6
ARU S **S 23 14 01.0 +0.8**
ARU pmax pmax
comp=Z,21nm,0.7s
ARU Arti 65.93 323 *eP* **P 23 05 16.1 -0.4**
comp=Z,22nm,0.8s
ABKAR Akbulak array 66.51 315 *eP* **P 23 05 19.9 -0.4**
GEYT Alibeck 70.74 303 P **P 23 05 46.5 -0.4**
comp=Z,3.6nm,1.0s,baz=28,slow=6.5,SNR=8.1
YKW3 Yellowknife Ar 73.24 28 *eP* **P 23 06 01.2 -0.2**
comp=Z,2.6nm,0.9s
YKA Yellowknife Ar 73.28 28 P **P 23 06 01.1 -0.5**
comp=Z,1.9nm,0.7s,baz=292,slow=5.8,SNR=17
YKB5 Yellowknife Ar 73.28 28 *eP* **P 23 06 01.4 -0.1**
KLMR Klimovskoe 74.15 330 *eP* **P 23 06 05.6 -1.1**
KLMR pmax pmax
comp=Z,9.0nm,1.1s
ARA0 ARCESS Array S 75.15 341 *eP* **P 23 06 13.2 +0.8**
ARCES ARCESS Array B 75.15 341 P **P 23 06 13.2 +0.8**
comp=Z,4.4nm,0.8s,baz=55,slow=5.0,SNR=8.3
JOF Joensuu 76.67 334 P **P 23 06 22.8 +1.6**
JOF pmax pmax
comp=Z,19nm,0.9s
VRH Novokhopyorsk 76.99 321 *eP* **P 23 06 23.0 -0.2**
VRH pmax pmax
comp=Z,20nm,1.6s
K05A Summer Lake 77.54 49 *eP* **P 23 06 29.3 +2.6**
comp=Z,14nm,1.3s
LPSR Galich'ya Gora 77.95 323 *eP* **P 23 06 27.7 -0.8**
LPSR pmax pmax
comp=Z,8.0nm,0.8s
OBN Obninsk 78.06 326 *eP* **P 23 06 29.0 -0.1**
OBN pmax pmax
comp=Z,4.0nm,0.7s
OBN MLR MLR
comp=Z,157nm,17.0s
VSR Storozhevoye 78.44 321 *eP* **P 23 06 30.7 -0.5**
VSR pmax pmax
comp=Z,9.0nm,0.7s
SUF Sumiainen 78.78 335 P **P 23 06 35.2 +2.3**
SUF pmax pmax
comp=Z,18nm,1.0s
ZEI Tsey 79.13 312 *eP* **P 23 06 34.6 -0.9**
ZEI pmax pmax
comp=Z,14nm,0.8s
KBZ Khabaz 79.40 313 P **P 23 06 37.3 +0.6**
comp=Z,9.9nm,0.8s,baz=90,slow=3.0,SNR=33
KIV Kislovodsk 79.45 314 *eP* **P 23 06 37.7 +0.6**
KIV pmax pmax
comp=Z,10.0nm,1.0s
KIV MLR MLR
comp=Z,59nm,18.0s
KIV Kislovodsk 79.45 314 *eP* **P 23 06 38.4 +1.3**
comp=Z,8.9nm,0.9s
FIA1 FINESS Array S 79.53 334 *eP* **P 23 06 37.0 -0.1**
FIA0 FINESS Array S 79.54 334 *eP* **P 23 06 36.8 -0.2**
FIA0 FINESS Array S 79.54 334 *eP* **P 23 06 36.8 -0.2**
FINES FINESS Array B 79.54 334 P **P 23 06 36.8 -0.2**
comp=Z,5.3nm,0.5s,baz=76,slow=4.9,SNR=56
FINES FINESS Array B 79.54 334 *ceP* **P 23 06 37.0 0.0**
FINES pmax pmax
comp=Z,5.0nm,0.5s
GNI Garni 79.66 309 *eP* **P 23 06 35.2 -3.2**
GNI pmax pmax
comp=Z,17nm,1.4s
GNI Garni 79.66 309 *eP* **P 23 06 35.2 -3.2**
comp=Z,17nm,1.4s
VAF Ylistaro 79.88 336 P **P 23 06 41.3 +2.4**
VAF pmax pmax
comp=Z,19nm,0.8s
NV01 Mina Array Sit 81.10 52 *eP* **P 23 06 46.5 +0.3**
NVAR Mina Array Bea 81.10 52 P **P 23 06 46.5 +0.3**
comp=Z,0.4nm,0.3s,baz=278,slow=8.0,SNR=3.6
RLMT Red Lodge 83.97 43 *eP* **P 23 07 02.3 +1.2**
comp=Z,25nm,1.9s
AKASG Malin Array Be 84.14 324 P **P 23 07 00.7 -0.8**
comp=Z,3.1nm,0.5s,baz=51,slow=5.4,SNR=20
AKASG Malin Array Be 84.14 324 *ceP* **P 23 07 01.2 -0.3**
AKASG pmax pmax
comp=Z,3.0nm,0.5s
KIEV Kiev 84.15 324 *eP* **P 23 07 00.4 -1.1**
KIEV pmax pmax
comp=Z,7.0nm,0.8s
KIEV Kiev 84.15 324 *eP* **P 23 07 00.7 -0.9**
comp=Z,9.3nm,0.9s
AK11 Malin Array Si 84.18 324 *eP* **P 23 07 01.4 -0.3**
HWUT Hardware Ranch 84.25 47 *eP* **P 23 07 03.4 +0.8**
comp=Z,20nm,1.9s
BW06 Boulder Array 84.98 45 *eP* **P 23 07 06.1 -0.1**
PD31 Pinedale Array 84.98 45 *eP* **P 23 07 05.7 -0.5**
PDAR Pinedale Array 84.98 45 P **P 23 07 05.7 -0.5**
comp=Z,1.0nm,1.0s,baz=302,slow=1.4,SNR=4.7
NC405 NORSAR Array S 85.00 338 *eP* **P 23 07 05.5 -0.1**
NB201 NORSAR Array S 85.18 339 *eP* **P 23 07 06.2 -0.3**
NC204 NORSAR Array S 85.19 339 *eP* **P 23 07 07.2 +0.6**
NB2 NORSAR Subarra 85.22 339 P **P 23 07 06.0 -0.8**
comp=Z,4.3nm,0.7s,baz=49,slow=4.6
NB2 NORSAR Subarra 85.22 339 P **P 23 07 06.0 -0.8**
baz=49,slow=4.6
NB2 NORSAR Subarra 85.22 339 P **P 23 07 06.0 -0.8**
NB2 pmax pmax
comp=Z,4.0nm,0.7s
NB200 NORSAR Array S 85.22 339 *eP* **P 23 07 06.0 -0.8**
NOA NORSAR Array B 85.22 339 P **P 23 07 06.0 -0.8**
comp=Z,4.6nm,0.7s,baz=47,slow=4.7,SNR=17
BR101 Keskin Array S 87.39 313 *eP* **P 23 07 16.7 -1.4**
BR131 Keskin Array S 87.40 313 *eP* **P 23 07 17.8 -0.3**
BRTR Keskin Array B 87.40 313 P **P 23 07 16.7 -1.4**
comp=Z,1.6nm,0.7s,baz=85,slow=2.8,SNR=12
BRTR Keskin Array B 87.40 313 *ceP* **P 23 07 17.3 -0.8**
BRTR pmax pmax
comp=Z,2.0nm,0.7s
CFR Carcaliu 87.85 320 ⇑*iP* **P 23 07 19.0 -0.9**
CFR Carcaliu 87.85 320 ⇑P **P 23 07 19.0 -0.9**
BR231 Keskin MP Arra 87.90 314 *eP* **P 23 07 18.0 -2.5**
TESR Tescani 87.93 322 ⇓*iP* **P 23 07 20.0 -0.3**
BUR08 Bucovina Ar. S 88.06 323 *eP* **P 23 07 21.1 0.0**
BURAR Bucovina Array 88.07 323 ⇓*iP* **P 23 07 20.7 -0.4**
BURAR Bucovina Array 88.07 323 ⇓P **P 23 07 20.7 -0.4**
KWP Kalwaria Pacla 88.16 326 ⇑*iP* **P 23 07 21.3 0.0**
KWP Kalwaria Pacla 88.16 326 ⇑P **P 23 07 21.3 0.0**
MLR Muntele Rosu 88.93 321 ⇑*iP* **P 23 07 23.2 -2.0**
MLR Muntele Rosu 88.93 321 ⇑P **P 23 07 23.2 -2.0**
DOPR Dopca 88.96 322 ⇓*iP* **P 23 07 25.2 0.0**
STHS Stebnicka Huta 89.03 326 *eP* **P 23 07 25.9 +0.4**
STHS pmax pmax
comp=Z,2.0nm,0.8s
STHS Stebnicka Huta 89.03 326 *eP* **P 23 07 25.9 +0.4**
CRVS Cervenica-Dubn 89.25 326 *eP* **P 23 07 26.0 -0.5**
CRVS Cervenica-Dubn 89.25 326 *eP* **P 23 07 26.0 -0.5**
VOIR 89.46 321 ⇓*iP* **P 23 07 30.7 +3.0**
VOIR 89.46 321 ⇓P **P 23 07 30.7 +3.0**
ARR Arges 89.74 322 ⇓*iP* **P 23 07 29.4 +0.5**
DRGR 89.92 323 ⇑*iP* **P 23 07 27.5 -2.2**
DRGR 89.92 323 ⇑P **P 23 07 27.6 -2.2**
KECS Kecovo 90.01 326 *eP* **P 23 07 30.3 +0.2**
KECS pmax pmax
comp=Z,2.0nm,0.8s
KECS Kecovo 90.01 326 *eP* **P 23 07 30.3 +0.2**
OKC Ostrava-Krasne 90.28 328 *eP* **P 23 07 31.2 -0.1**
OKC Ostrava-Krasne 90.28 328 *eP* **P 23 07 31.2 -0.1**
MORC Moravsky Berou 90.61 328 ⇓*iP* **P 23 07 30.6 -2.3**
MORC Moravsky Berou 90.61 328 ⇓P **P 23 07 30.7 -2.2**
PSZ Piszkesteto 90.68 326 ⇑*iP* **P 23 07 33.8 +0.5**
PSZ Piszkesteto 90.68 326 ⇑P **P 23 07 33.8 +0.5**
DPC Dobruska-Polom 90.80 329 *eP* **P 23 07 33.7 0.0**
DPC *ex* x 23 07 40.7
DPC Dobruska-Polom 90.80 329 *eP* **P 23 07 33.7 0.0**
DPC *e* 23 07 40.7
VYHS Vyhne 90.84 326 *eP* **P 23 07 34.1 +0.2**
VYHS pmax pmax
comp=Z,3.0nm,0.8s
VYHS Vyhne 90.84 326 *eP* **P 23 07 34.1 +0.2**
ANMO Albuquerque 91.11 50 *eP* **P 23 07 36.3 +0.6**
ANMO Albuquerque 91.11 50 *eP* **P 23 07 36.3 +0.6**
BZS Buzias 91.25 323 ⇑*iP* **P 23 07 38.6 +2.7**
BZS Buzias 91.25 323 ⇑P **P 23 07 38.6 +2.7**
VRAC Vranov 91.39 328 ⇓*iP* **P 23 07 36.6 +0.2**
VRAC Vranov 91.39 328 ⇓P **P 23 07 36.6 +0.2**
CLL Collm 91.62 331 *eP* **P 23 07 37.0 -0.4**
comp=Z,22nm,1.9s
CLL Collm 91.62 331 *e*P **P 23 07 37.0 -0.4**
CLL pmax pmax
comp=Z,22nm,1.9s
CONA Conrad Observa 92.69 327 *i* PcP **P 23 07 42.8 +0.3**
comp=Z,3.1nm,0.8s
KHC Kasperske Hory 92.92 329 *eP* **P 23 07 43.4 -0.2**
KHC *ex* x 23 07 50.7
KHC Kasperske Hory 92.92 329 *e*P **P 23 07 43.4 -0.2**
KHC *e* 23 07 50.7
GERES GERESS Array B 93.07 329 P **P 23 07 43.4 -1.0**
comp=Z,0.9nm,0.7s,baz=33,slow=3.2,SNR=7.6
GEA0 GERESS Array S 93.08 329 *eP* **P 23 07 43.4 -0.9**
SOKA Soboth 93.96 327 *i* PcP **P 23 07 48.1 -0.4**
comp=Z,3.1nm,0.9s
OBKA Obir 94.32 327 *i* P **P 23 07 46.2 -3.9**
comp=Z,4.6nm,1.1s
KBA Koelnbreinsper 94.50 328 *i* PcP **P 23 07 51.0 -0.1**
comp=Z,3.1nm,1.1s
MYKA Terra Mystica 94.68 328 *i* PcP **P 23 07 50.5 -1.2**
comp=Z,1.4nm,0.4s
ABTA Abfaltersbach 95.13 328 *i* P **P 23 07 51.0 -2.9**
comp=Z,3.8nm,1.2s
FETA Feichten 95.77 329 *i* PcP **P 23 07 55.6 -1.3**
comp=Z,2.2nm,0.8s
DAVA Damuels 95.96 330 *i* PcP **P 23 07 58.2 +0.5**
comp=Z,3.3nm,1.1s
LTX Lajitas 96.14 54 *eP* **P 23 07 59.4 +0.6**
LTX Lajitas 96.14 54 *eP* **P 23 07 59.4 +0.6**
TX31 Lajitas Ar. Si 96.14 54 *eP* **P 23 07 59.1 +0.3**
TXAR Lajitas Array 96.14 54 P **P 23 07 59.4 +0.6**
comp=Z,1.4nm,1.1s,baz=306,slow=3.0,SNR=6.1
PTGA Pitinga 147.02 45 *e*PKPdf **PKPbc 23 14 13.6 -0.4**
PLCA Paso Flores 148.52 127 PKPbc **PKPbc 23 14 17.0 -0.3**
comp=Z,4.1nm,0.9s,baz=249,slow=4.3,SNR=6.9
PB11 IPOC Station P 149.63 86 *e*PKPdf **PKPdf 23 14 18.1 +2.0**
LPAZ La Paz 149.82 78 PKPbc **PKPbc 23 14 22.0 +0.2**
comp=Z,5.0nm,0.6s,baz=328,slow=1.4,SNR=19

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*IDC **17** 22:54:57.1±20.0, 24.°12S×179.°15E, h412km±212km, mb3.3/3, mb1 3.5/4, mb1mx3.1/38, mbtmp4.2/4, Error ellipse: s-maj=174.0km s-min=42.0km az=18.0*

ISC 17 22:55:07.9±1.8, 25.°1S±0.°3, 179.°1E±0.°3, h545km, n8, σ1§19/8, mb3.9/3, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**13.26**	**187**	P		**P**	**22 58 00.7**	**+1.5**
1.7nm,0.3s,baz=354,slow=14,SNR=4.0								
URZ				S		**S**	**23 00 18.4**	**-1.9**
0.7nm,0.3s,baz=225,slow=24,SNR=3.8								
STKA	**Stephens Creek**	**33.53**	**250**	P		**P**	**23 01 03.4**	**+0.6**
1.5nm,0.4s,baz=91,slow=9.2,SNR=6.0								
ASAR	**Alice Springs**	**41.04**	**262**	P		**P**	**23 02 04.2**	**-0.1**
1.1nm,0.6s,baz=96,slow=8.5,SNR=9.8								
WRA	**Warramunga Arr**	**41.52**	**268**	P		**P**	**23 02 07.4**	**-0.7**
1.9nm,0.5s,baz=104,slow=7.8,SNR=18								
FINES	**FINESS Array B**	**139.28**	**340**	PKhKP		PKPpre	23 13 27.7	
1.0nm,0.8s,baz=37,slow=0.7,SNR=3.4								
NB2	**NORSAR Subarra**	**143.10**	**350**	PKP		**PKPdf**	**23 13 38.9**	**-0.5**
comp=Z,1.2nm,0.5s,baz=23,slow=3.4								
NOA	**NORSAR Array B**	**143.10**	**350**	PKP		**PKPdf**	**23 13 39.0**	**-0.4**
comp=Z,2.2nm,0.7s,baz=12,slow=4.1,SNR=9.2								
AKASG	**Malin Array Be**	**145.49**	**326**	PKP		**PKPab**	**23 13 46.1**	**-0.4**
comp=Z,0.8nm,0.4s,baz=43,slow=3.6,SNR=5.1								

MAN 17 23:00:01, 13.°13N×120.°77E, h45km, mb4.1, ML2.9, MS2.6, Mindoro

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*NIED **17** 23:04:00, 35.°60N×140.°90E, h11km, Mw4.0 Best double couple: M0:1.17000×10^15 NP1:ϕs=356.00000°, δ37.00000°, λ-85.00000°. NP2:ϕs=169.00000°, δ53.00000°, λ-94.00000°.*
*ISCJB **17** 23:04:06.6±1.0, 35.°64N±0.°04×141.°06E±0.°07, h12km±5km, mb3.7/8, Error ellipse: s-maj=9.2km s-min=5.8km az=171.0*
*IDC **17** 23:04:06.4±0.9, 35.°54N×140.°94E, h0km, mb3.7/8, mb1 3.9/9, mb1mx3.7/35, mbtmp3.7/9, ML3.2/1, Error ellipse: s-maj=24.5km s-min=20.6km az=85.0*
*JMA **17** 23:04:07.9±0.1, 35.°63N×140.°93E, h16km±1km, M3.8*
JMA Felt I J1.

ISC 17 23:04:08.2±1.0, 35.°61N±0.°03×140.°92E±0.°06, h11km±6km, n24, σ0§77/24, mb3.8/8, 2C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.11**	**331**	⇓P		**Pg**	**23 04 11.1**	**+0.1**
CHOJ				*e*S		**Sg**	**23 04 13.6**	**+0.6**
JCN	**Nagara**	**0.62**	**252**	⇑P		**Pb**	**23 04 20.8**	**-0.2**
KTR	**Katsuura**	**0.68**	**227**	P		**Pg**	**23 04 20.8**	**-0.5**
KTR				*i* S		**Sb**	**23 04 31.5**	**+0.2**
BSO4	**Boso 4**	**0.78**	**218**	P		**Pb**	**23 04 23.7**	**0.0**
JYT	**Yasato**	**0.85**	**316**	P		**Pg**	**23 04 23.7**	**-1.0**
JYT				S		**Sg**	**23 04 34.7**	**-1.1**
BSO3	**Boso 3**	**0.87**	**203**	P		**Pb**	**23 04 25.1**	**-0.1**
BSO1	**Boso 1**	**0.96**	**177**	⇑P		**Pg**	**23 04 25.4**	**-1.1**
BSO1				S		**Sg**	**23 04 38.6**	**-0.3**
JHO	**Hitachi**	**1.04**	**344**	P		**Pg**	**23 04 26.4**	**-1.8**
MJAR	**Matsushiro Arr**	**2.39**	**294**	Pn		**Pn**	**23 04 47.8**	**+0.6**
5.3nm,0.3s,baz=95,slow=14,SNR=41								
MJAR				Sn		**Sb**	**23 05 20.8**	**+0.1**
7.8nm,0.3s,baz=203,slow=26,SNR=6.6								
MAT	**Matsushiro**	**2.39**	**294**	P		**Pn**	**23 04 46.9**	**-0.4**
MAT				S		**Sb**	**23 05 21.0**	**+0.3**
H11N2	**WAKE ISLAND Hy**	**27.80**	**118**	T		T	23 39 01.4	
baz=310,slow=75,SNR=37								
H11N1	**WAKE ISLAND Hy**	**27.81**	**118**	T		T	23 39 06.9	
baz=310,slow=75,SNR=46								
H11N3	**WAKE ISLAND Hy**	**27.82**	**118**	T		T	23 38 59.5	
baz=310,slow=75,SNR=12								
SONM	**Songino Array**	**28.28**	**306**	P		**P**	**23 10 02.9**	**+1.4**
0.4nm,0.6s,baz=115,slow=8.6,SNR=2.3								
H11S1	**WAKE ISLAND Hy**	**28.46**	**120**	T		T	23 39 47.2	
baz=312,slow=76,SNR=160								
H11S3	**WAKE ISLAND Hy**	**28.46**	**120**	T		T	23 39 44.4	
baz=312,slow=76,SNR=165								
H11S2	**WAKE ISLAND Hy**	**28.47**	**120**	T		T	23 39 47.5	
baz=312,slow=76,SNR=131								
ZALV	**Zalesovo Beam**	**42.59**	**314**	P		**P**	**23 12 03.8**	**-0.2**
1.5nm,0.8s,baz=100,slow=6.0,SNR=5.9								
MKAR	**Makanchi Array**	**44.55**	**303**	P		**P**	**23 12 19.8**	**-0.2**
1.3nm,0.7s,baz=89,slow=8.9,SNR=10								
ILAR	**Eielson Array**	**50.91**	**32**	P		**P**	**23 13 09.8**	**+0.8**
0.8nm,0.8s,baz=269,slow=6.5,SNR=7.4								
WRA	**Warramunga Arr**	**55.60**	**188**	P		**P**	**23 13 42.9**	**-1.0**
3.3nm,0.9s,baz=8.6,slow=7.9,SNR=17								
INK	**Inuvik**	**55.83**	**27**	P		**P**	**23 13 45.4**	**+0.4**
0.9nm,0.9s,baz=301,slow=4.9,SNR=3.8								
ASAR	**Alice Springs**	**59.33**	**187**	P		**P**	**23 14 10.4**	**+0.2**
0.5nm,0.7s,baz=8.0,slow=16,SNR=4.4								
YKA	**Yellowknife Ar**	**65.24**	**30**	P		**P**	**23 14 49.4**	**+0.1**
0.5nm,0.7s,baz=294,slow=6.2,SNR=5.5								

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*IDC **17** 23:16:36.3±0.5, 25.°42N×142.°78E, h0km, mb4.5/26, mb1 4.7/28, mb1mx4.6/38, mbtmp4.5/28, ML3.8/2, MS3.6/25, Ms1 3.6/25, ms1mx3.5/37, Error ellipse: s-maj=17.8km s-min=12.8km az=80.0*
*MOS **17** 23:16:40.1±1.0, 25.°47N×142.°68E, h33km, mb5.0/54, Error ellipse: s-maj=11.7km s-min=5.5km az=117.1*
*ISCJB **17** 23:16:42.8±0.9, 25.°47N±0.°04×142.°64E±0.°04, h54km±7km, mb4.7/105, MS3.8/35, Error ellipse: s-maj=6.6km s-min=6.3km az=142.5*
*NEIC **17** 23:16:45.3±0.7, 25.°48N×142.°58E, h61km±6km, mb4.9/43, Error ellipse: s-maj=6.8km s-min=6.1km az=86.0*

ISC 17 23:16:43.7±0.7, 25.°46N±0.°05×142.°59E±0.°06, h45km±5km, n268, σ1§49/287, mb4.8/113, MS3.8/35, 20C-14D, Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**1.67**	**348**	*e*Pn		**Pn**	**23 17 09.9**	**-0.5**
CBIJ				*e*Sn		**Sn**	**23 17 36.1**	**+5.4**
JCJ	**Chichijima**	**1.67**	**348**	Pn		**Pn**	**23 17 09.9**	**-0.5**
209nm,0.3s,baz=188,slow=4.3,SNR=161								
JCJ				Sn		**Sn**	**23 17 34.5**	**+3.8**
123nm,0.3s,baz=245,slow=22,SNR=12								
JHJ	**Hachijo jima 2**	**8.01**	**343**	LR		LR	23 21 30.7	
comp=Z,422nm,20.4s,baz=168,slow=36								
INU	**Inuyama**	**10.96**	**335**	*e*Pn		**Pn**	**23 19 20.8**	**+2.9**
MJAR	**Matsushiro Arr**	**11.66**	**342**	Pn		**Pn**	**23 19 26.6**	**-1.0**
0.5nm,0.3s,baz=152,slow=11,SNR=7.9								
MAJO	**Matsushiro**	**11.67**	**342**	*e*P		**Pn**	**23 19 23.7**	**-3.8**
MAJO	**Matsushiro**	**11.67**	**342**	*e*Pn		**Pn**	**23 19 23.7**	**-3.8**
JNU	**Nakatsue**	**12.75**	**309**	Pn		**Pn**	**23 19 44.9**	**+2.6**
0.1nm,0.3s,baz=109,slow=6.0,SNR=3.7								
JNU				LR		LR	23 23 10.5	
comp=Z,74nm,20.0s,baz=125,slow=30								
ERM	**Erimo**	**16.52**	**1**	*e*P		**P**	**23 20 34.1**	**0.0**
TJN	**Taejon**	**16.98**	**313**	⇑*e*P		**P**	**23 20 41.7**	**+2.4**
KSRS	**Korea Array**	**17.28**	**317**	P		**P**	**23 20 42.4**	**-0.2**
0.3nm,0.3s,baz=127,slow=12,SNR=13								
KSRS				LR		LR	23 27 28.9	
comp=Z,389nm,18.0s,baz=132,slow=37								
KS15	**Wonju Array Si**	**17.30**	**317**	*e*Pn		**P**	**23 20 42.4**	**-0.4**
KSAR	**Wonju Array Be**	**17.30**	**317**	P		**P**	**23 20 42.4**	**-0.4**
KSAR	**Wonju Array Be**	**17.30**	**317**	P		**P**	**23 20 42.4**	**-0.4**
KS01	**Wonju Array Si**	**17.31**	**317**	*e*Pn		**P**	**23 20 44.5**	**+1.6**
ASAJ	**Asahikawa**	**18.61**	**0**	LR		LR	23 28 37.2	
comp=Z,91nm,21.6s,baz=173,slow=39								
SSLB	**Suanglung**	**19.74**	**270**	*e*P		**P**	**23 21 08.0**	**-1.8**
28nm,1.0s								
USRK	**Ussuriysk Ar.**	**20.59**	**338**	P		**P**	**23 21 18.6**	**-0.2**
14nm,0.8s,baz=138,slow=10,SNR=15								
USRK				LR		LR	23 28 28.6	
comp=Z,84nm,20.1s,baz=150,slow=34								
MDJ	**Mudanjiang**	**21.82**	**334**	P		**P**	**23 21 31.8**	**-0.2**
MDJ				pP		pP	23 21 41.0	-1.9
MDJ				S		**S**	**23 25 30.4**	**-0.4**
MDJ				sS		Sn	23 25 44.8	+2.6
MDJ				pmax		pmax		
comp=Z,4.0nm,0.6s								
MDJ				pmax		pmax		
comp=Z,24nm,4.1s								
MDJ				LR		LR		
comp=N,190nm,17.8s								
MDJ				LR		LR		
comp=E,210nm,17.4s								
MDJ				LR		LR		
comp=Z,350nm,18.1s								
MDJ	**Mudanjiang**	**21.82**	**334**	*e*P		**P**	**23 21 34.1**	**+2.0**
comp=Z,26nm,1.0s								
SNY	**Shenyang**	**22.66**	**321**	⇑P		**P**	**23 21 40.5**	**-0.5**
SNY				pmax		pmax		
comp=Z,12nm,0.6s								
HABR	**Khabarovsk**	**23.72**	**347**	*e*P		**P**	**23 21 50.2**	**-1.2**
HABR				*e*PP		**pP**	**23 22 02.8**	**-0.3**
HABR				*e*			23 22 20.4	
HABR				*e*			23 25 31.7	
HABR				*e*S		**S**	**23 26 03.9**	**+0.6**
HABR				*e*SS		**SnSn**	**23 26 48.2**	**+3.7**
HABR				*e*			23 32 52.8	
HABR				pmax		pmax		
comp=N,68nm,1.5s								
HABR				pmax		pmax		
comp=E,35nm,1.5s								
HABR				pmax		pmax		
comp=Z,166nm,1.5s								
HABR				MLR		MLR		
comp=Z,83nm,14.0s								
TIA	**Tai'an**	**24.28**	**302**	⇓P		**P**	**23 21 55.9**	**-0.9**
TIA				S		S	23 26 31.6	+19
TIA				pmax		pmax		
comp=Z,30nm,0.7s								
TIA				LR		LR		
comp=N,250nm,16.7s								
TIA				LR		LR		
comp=E,350nm,17.4s								
TIA				LR		LR		
comp=Z,240nm,16.0s								
DAV	**Davao City (W)**	**24.46**	**225**	LR		LR	23 29 59.0	
comp=Z,150nm,19.7s,baz=25,slow=33								
KLR	**Kul'dur**	**25.19**	**343**	P		**P**	**23 22 05.3**	**+0.5**
comp=Z,30nm,0.9s,baz=142,slow=8.6,SNR=92								
KLR				LR		LR	23 32 24.1	
comp=Z,179nm,18.1s,baz=152,slow=38								
BJI	**Beijing**	**26.42**	**310**	P		**P**	**23 22 15.8**	**-0.3**
BJI				S		**S**	**23 26 45.5**	**-1.1**
BJI				pmax		pmax		
comp=Z,7.0nm,1.6s								
BJI				LR		LR		
comp=N,210nm,16.2s								
BJI				LR		LR		
comp=E,130nm,15.4s								
BJI				LR		LR		
comp=Z,110nm,17.7s								
ENH	**Enshi**	**29.59**	**287**	*e*P		**P**	**23 22 45.1**	**+0.5**
comp=Z,19nm,0.9s								
PETK	**Petropavlovsk-**	**29.86**	**18**	LR		LR	23 37 05.6	
comp=Z,27nm,18.9s,baz=199,slow=41								
HHC	**Hu-ho-hao-te**	**29.97**	**309**	*e*P		**P**	**23 22 48.4**	**+0.4**
HHC				sP		sP	23 23 08.6	+3.3
HHC				S		**S**	**23 27 39.8**	**-3.0**
HHC				pmax		pmax		
comp=Z,28nm,0.9s								
HHC				pmax		pmax		
comp=Z,160nm,4.9s								
HHC				LR		LR		
comp=N,1μm,12.4s								
HHC				LR		LR		
comp=E,1μm,13.1s								
HHC				LR		LR		
comp=Z,1μm,13.8s								
XAN	**Xi'an**	**30.34**	**294**	P		**P**	**23 22 51.3**	**0.0**
XAN				pmax		pmax		
comp=Z,13nm,1.0s								
XAN				pmax		pmax		
comp=Z,33nm,6.4s								
MRSI	**Marisa**	**31.85**	**222**	P		**P**	**23 23 05.6**	**+1.1**
comp=Z,29nm,0.9s,comp=Z,3μm								
GYA	**Guiyang**	**32.25**	**280**	P		**P**	**23 23 09.3**	**+1.1**
GYA				pP		pP	23 23 21.0	+0.8
GYA				PP		**PnPn**	**23 24 16.8**	**+1.3**
GYA				PcP		**PcP**	**23 25 56.6**	**+0.7**
GYA				S		**S**	**23 28 17.3**	**-1.4**
GYA				sS		sS	23 28 38.1	-0.7
GYA				ScP		**ScP**	**23 29 36.6**	**+0.6**
GYA	**Guiyang**	**32.25**	**280**	ScS		ScS	23 33 33.3	-2.0
GYA				pmax		pmax		
comp=Z,20nm,0.8s								
GYA				pmax		pmax		
comp=Z,120nm,5.0s								
GYA				LR		LR		
comp=N,520nm,17.2s								
GYA				LR		LR		
comp=E,460nm,17.6s								
GYA				LR		LR		
comp=Z,510nm,17.8s								
LUWI	**Luwuk**	**32.58**	**219**	*e*P		**P**	**23 23 09.3**	**-1.7**
comp=Z,40nm,1.0s								
CD2	**Chengdu**	**34.53**	**288**	P		**P**	**23 23 25.8**	**-2.1**
CD2				sP		sP	23 23 43.5	-1.9
CD2				PP		**PnPn**	**23 24 44.3**	**+0.2**
CD2				S		**S**	**23 28 51.3**	**-2.5**
CD2				sS		sS	23 29 12.1	-1.9
CD2				SS		**SS**	**23 31 22.4**	**-2.2**
CD2				pmax		pmax		
comp=Z,60nm,0.9s								
CD2				pmax		pmax		
comp=Z,120nm,5.7s								
CD2				LR		LR		
comp=N,220nm,19.0s								
CD2				LR		LR		
comp=E,190nm,16.6s								
MA2	**Magadan**	**34.57**	**7**	LR		LR	23 38 45.9	
comp=Z,23nm,20.1s,baz=92,slow=38								
LZH	**Lanzhou**	**34.73**	**297**	*e*P		**P**	**23 23 30.1**	**+0.4**
LZH				pP		pP	23 23 43.8	+2.0
LZH				sP		sP	23 23 48.8	+1.6
LZH				*e*S		**S**	**23 28 54.4**	**-2.6**
LZH				sS		sS	23 29 14.3	-2.9
LZH				SS		**SnSn**	**23 31 09.0**	**-3.9**
LZH				pmax		pmax		
comp=Z,38nm,1.0s								
LZH				pmax		pmax		
comp=Z,130nm,4.0s								
LZH				LR		LR		
comp=N,210nm,14.4s								
LZH				LR		LR		
comp=E,140

comp=Z,6.0nm,1.0s
ULN Ulaanbaatar 35.76 318 *e*P **P 23 23 37.4 -1.0**
comp=Z,6.0nm,1.0s
KMI Kunming 35.94 278 P **P 23 23 42.3 +2.0**
KMI pP sP 23 23 55.6 -2.1
KMI sP pP 23 24 04.3 +12
KMI S **S 23 29 18.1 +2.3**
KMI pmax pmax
comp=Z,8.0nm,1.0s
KMI pmax pmax
comp=Z,55nm,6.9s
KMI LR LR
comp=N,88nm,14.2s
KMI LR LR
comp=E,120nm,11.7s
KMI LR LR
comp=Z,110nm,25.9s
SONA0 Songino Array 36.15 318 *e*P **P 23 23 40.2 -1.5**
comp=Z,3.9nm,1.0s
SONA1 Songino Array 36.15 318 *e*P **P 23 23 40.6 -1.2**
SONM Songino Array 36.15 318 P **P 23 23 40.2 -1.5**
comp=Z,2.2nm,0.7s,baz=127,slow=7.6,SNR=11
SONM LR LR 23 38 10.9
comp=Z,102nm,20.5s,baz=101,slow=36
SPSI Sidrap Palu 36.69 220 P **P 23 23 47.0 +0.6**
comp=Z,35nm,0.9s
SKNT Sakolnakorn 36.86 265 P P 23 23 52.9 +4.9
comp=Z,8.9nm,1.4s
SEY Seymchan 38.03 7 P **P 23 23 57.2 -0.1**
comp=Z,7.5nm,0.8s,baz=192,slow=11,SNR=14
BOD Bodaibo 38.19 336 *e*P **P 23 23 57.9 -0.8**
BOD pmax pmax
comp=Z,9.0nm,0.9s
GTA Gaotai 38.33 302 *e*P **P 23 24 01.0 +0.6**
GTA pP pP 23 24 13.6 +1.1
GTA sP sP 23 24 18.8 +0.9
GTA PcP **PcP 23 26 14.9 +1.4**
GTA S **S 23 29 51.3 -0.5**
GTA sS sS 23 30 11.5 -0.7
GTA SS **SnSn 23 32 31.4 -8.5**
GTA pmax pmax
comp=Z,4.0nm,0.9s
GTA pmax pmax
comp=Z,52nm,5.7s
GTA LR LR
comp=N,110nm,15.7s
GTA LR LR
comp=E,120nm,15.2s
GTA LR LR
comp=Z,190nm,14.3s
HNR Honiara 38.58 152 *e*pP pP 23 24 18.9 +4.2
ZAK Zakamensk 39.08 320 *e*P **P 23 24 04.5 -1.9**
ZAK pmax pmax
comp=Z,5.0nm,1.0s
CRAI Chiangrai 39.13 271 P **P 23 24 10.1 +3.0**
comp=Z,206nm,0.8s,comp=Z,71μm
TLY Talaya 39.44 322 P **P 23 24 09.7 +0.4**
comp=Z,3.6nm,0.6s,baz=211,slow=5.3,SNR=6.2
TLY LR LR 23 40 44.5
comp=Z,91nm,19.6s,baz=114,slow=37
TLY Talaya 39.44 322 *e*P **P 23 24 12.2 +2.9**
TLY pmax pmax
comp=Z,1.0nm,0.4s
TLY MLR MLR
comp=Z,160nm,14.0s
UTTA Uttaradit 39.70 267 P **P 23 24 14.7 +2.9**
comp=Z,3.5nm,0.9s
PBKT Sadao Pong 39.71 265 P **P 23 24 14.9 +3.0**
comp=Z,10nm,1.1s
CMAI Chiengmai2 40.41 271 P P 23 24 27.7 +10
comp=Z,11nm,1.0s
CMMT Chiang Mai 40.82 270 P **P 23 24 23.3 +2.1**
comp=Z,11nm,1.0s
CHTO Chiang Mai 40.82 270 P **P 23 24 23.3 +2.1**
comp=Z,32nm,0.9s
CHTO Chiang Mai 40.82 270 *e*P **P 23 24 22.6 +1.4**
CHTO pmax pmax
comp=Z,11nm,1.0s
CHTO Chiang Mai 40.82 270 *e*P **P 23 24 22.6 +1.4**
comp=Z,11nm,1.0s
CM01 Chiang Mai Arr 40.93 269 *e*P **P 23 24 24.0 +2.0**
CM31 Chiang Mai Arr 40.93 269 *e*P **P 23 24 22.9 +0.9**
CMAR Chiang Mai Arr 40.93 269 P **P 23 24 22.9 +0.9**
comp=Z,4.2nm,0.9s,baz=62,slow=8.1,SNR=21
CMAR LR LR 23 41 05.4
comp=Z,36nm,19.6s,baz=70,slow=36
CMAR Chiang Mai Arr 40.93 269 *ce*P **P 23 24 24.3 +2.2**
CMAR pmax pmax
comp=Z,5.0nm,0.7s
MYKOM Kota Tinggi 44.10 244 *e*P **P 23 24 49.4 +1.6**
comp=Z,15nm,1.0s
BILL Bilibino 44.97 12 ⇓*i*P **P 23 24 53.7 -0.3**
BILL *e* 23 26 41.8
BILL pmax pmax
comp=Z,8.0nm,1.0s
BILL MLR MLR
comp=Z,54nm,16.0s
SHL Shillong 45.52 282 *e*P **P 23 25 00.0 +0.7**
WRAB Tennant Creek 45.83 191 *e*P **P 23 25 01.4 0.0**
WRAB pmax pmax
comp=Z,31nm,0.6s
WRAB Tennant Creek 45.83 191 *e*P **P 23 25 02.0 +0.7**
comp=Z,20nm,0.8s
WB2 Warramunga Arr 45.84 191 *e*P **P 23 25 02.1 +0.7**
comp=Z,19nm,0.8s
WR1 Warramunga Arr 45.84 191 *e*P **P 23 25 00.3 -1.2**
comp=Z,22nm,0.7s
WRA Warramunga Arr 45.84 191 P **P 23 25 00.3 -1.2**
comp=Z,13nm,0.6s,baz=12,slow=8.6,SNR=56
FITZ Fitzroy Crossi 46.34 203 *e*P **P 23 25 05.3 0.0**
comp=Z,9.5nm,0.8s
TIXI Tiksi 46.87 354 P **P 23 25 08.2 -0.8**
comp=Z,1.5nm,0.6s,baz=150,slow=7.9,SNR=4.5
TIXI Tiksi 46.87 354 *e*P **P 23 25 08.7 -0.2**
TIXI pmax pmax
comp=Z,2.0nm,1.0s
TIXI Tiksi 46.87 354 *e*P **P 23 25 12.9 +3.9**
PSI Prapat 47.63 249 *e*P **P 23 25 17.2 +1.4**
PSI pmax pmax
comp=Z,14nm,0.8s
PSI Prapat 47.63 249 *e*P **P 23 25 17.2 +1.4**
comp=Z,14nm,0.8s
WMQ Urumqi 47.83 307 P **P 23 25 17.0 0.0**
WMQ pP pP 23 25 29.8 +0.3
WMQ sP sP 23 25 39.0 +4.3
WMQ pmax pmax
comp=Z,6.0nm,0.6s
WMQ pmax pmax
comp=Z,81nm,4.6s
WMQ LR LR
comp=N,61nm,13.6s
WMQ LR LR
comp=E,50nm,18.6s
WMQ LR LR
comp=Z,38nm,21.2s
PPI Padang Panjang 48.21 244 P P 23 25 30.3 +10
AS01 Alice Springs 49.55 190 *e*P **P 23 25 30.2 0.0**
AS31 Alice Springs 49.55 190 *e*P **P 23 25 29.0 -1.3**
comp=Z,1.4nm,0.6s
ASAR Alice Springs 49.55 190 P **P 23 25 29.0 -1.3**
comp=Z,1.5nm,0.9s,baz=16,slow=12,SNR=8.0
PKIN Phulchoki 50.83 286 *e*P **P 23 25 42.0 +1.7**
comp=Z,6.7nm,0.6s
KKN Kakani 50.88 286 *e*P **P 23 25 41.2 +0.5**
comp=Z,39nm,0.9s
ZAA0 Zalesovo Array 50.96 320 *e*P **P 23 25 40.4 -0.1**
ZALV Zalesovo Beam 50.96 320 P **P 23 25 39.4 -1.2**
comp=Z,2.6nm,0.7s,baz=94,slow=6.1,SNR=11
ZALV PcP **PcP 23 26 55.6 -0.7**
comp=Z,4.7nm,0.8s,baz=110,slow=3.6,SNR=7.3
ZALV LR LR 23 47 55.2
comp=Z,68nm,18.5s,baz=70,slow=37
ZALV Zalesovo Beam 50.96 320 *i*P **P 23 25 40.4 -0.2**
ZALV pmax pmax
comp=Z,3.0nm,0.7s
ZAA1 Zalesovo Array 50.96 320 *e*P **P 23 25 39.4 -1.2**
ZAA1 *e*PcP **PcP 23 26 55.6 -0.7**
GKN Gorkha 51.40 286 *e*P **P 23 25 44.9 +0.4**
comp=Z,60nm,1.1s
MK01 Makanchi Array 51.79 311 *e*P **P 23 25 46.2 -0.8**
MK31 Makanchi Array 51.80 311 *e*P **P 23 25 46.7 -0.3**
MK31 Makanchi Array 51.80 311 *e*P **P 23 25 46.7 -0.3**
MK32 Makanchi Array 51.80 311 *e*P **P 23 25 46.4 -0.7**
MK32 *e*PcP **PcP 23 26 59.3 -0.4**
MKAR Makanchi Array 51.80 311 P **P 23 25 46.4 -0.7**
comp=Z,2.8nm,0.7s,baz=93,slow=8.6,SNR=24
MKAR PcP **PcP 23 26 59.3 -0.4**
comp=Z,2.8nm,0.7s,baz=81,slow=6.1,SNR=6.1
MKAR LR LR 23 49 19.4
comp=Z,80nm,18.7s,baz=90,slow=38
MKAR Makanchi Array 51.80 311 *e*P **P 23 25 46.7 -0.3**
MAKZ Makanchi 52.02 311 *e*P **P 23 25 48.0 -0.6**
MAKZ pmax pmax
comp=Z,5.0nm,1.0s
MAKZ Makanchi 52.02 311 *e*P **P 23 25 48.0 -0.6**
comp=Z,4.9nm,1.0s
KOLN Koldanda 52.35 286 *e*P **P 23 25 52.2 +0.6**
comp=Z,16nm,0.7s
PYUN Piuthan 52.81 287 *e*P **P 23 25 55.7 +0.7**
comp=Z,89nm,1.0s
PDGK Podgornoye 53.79 306 P **P 23 26 02.6 +0.9**
PDGK pmax pmax
comp=Z,9.0nm,0.9s
NRIK Noril'sk 54.30 339 P **P 23 26 05.0 +0.1**
comp=Z,14nm,0.8s,baz=112,slow=8.8,SNR=39
KURK Kurchatov 54.39 315 *e*P **P 23 26 05.1 -0.9**
KURK pmax pmax
comp=Z,21nm,1.1s
KURK Kurchatov 54.39 315 *e*P **P 23 26 05.1 -0.9**
comp=Z,21nm,1.1s
CAST Castle Rocks 56.53 29 *e*P **P 23 26 20.8 -0.4**
comp=Z,10nm,1.0s
KSH Kashi 56.73 302 P **P 23 26 27.0 +3.8**
KSH *es*P sP 23 26 45.3 +4.2
KSH PcS **PcS 23 31 21.3 +1.6**
KSH S **S 23 34 16.3 +3.4**
KSH ScS **ScS 23 36 09.0 0.0**
KSH pmax pmax
comp=Z,65nm,4.3s
STKA Stephens Creek 57.02 181 P **P 23 26 24.0 -0.9**
comp=Z,5.4nm,0.9s,baz=336,slow=10.0,SNR=6.5
STKA Stephens Creek 57.02 181 *e*P **P 23 26 24.0 -0.9**
comp=Z,8.9nm,1.8s
BPAW Bear Paw Mtn. 57.12 29 *e*P **P 23 26 26.2 +0.9**
comp=Z,8.6nm,1.2s
NDI New Delhi 57.64 289 *e*P P 23 26 24.0 -5.6
RND Reindeer 57.96 30 *e*P **P 23 26 30.1 -1.3**
RND pmax pmax
comp=Z,7.0nm,0.9s
RND Reindeer 57.96 30 *e*P **P 23 26 30.1 -1.3**
comp=Z,6.9nm,0.9s
COLD Coldfoot 57.99 25 *e*P **P 23 26 31.6 +0.3**
comp=Z,6.1nm,0.9s
SCM Sheep Creek Mo 58.50 32 *e*P **P 23 26 34.6 -0.6**
SCM pmax pmax
comp=Z,25nm,1.1s
SCM Sheep Creek Mo 58.50 32 *e*P **P 23 26 34.6 -0.6**
comp=Z,25nm,1.1s
OTUK Ortayu 58.52 312 P **P 23 26 36.0 +0.5**
OTUK pmax pmax
comp=Z,7.0nm,1.1s
IL1 Eielson Array 58.97 28 *e*P **P 23 26 35.9 -2.4**
ILAR Eielson Array 58.97 28 P **P 23 26 35.9 -2.4**
comp=Z,3.3nm,0.9s,baz=252,slow=5.4,SNR=13
ILB Eielson Array 58.97 28 *e*P **P 23 26 35.9 -2.4**
KLU Klutina 59.15 32 *e*P **P 23 26 38.9 -0.8**
comp=Z,15nm,1.2s
PAX Paxson 59.45 30 *e*P **P 23 26 43.2 +1.5**
PAX pmax pmax
comp=Z,10.0nm,1.2s
PAX Paxson 59.45 30 *e*P **P 23 26 43.2 +1.5**
comp=Z,10.0nm,1.2s
BRVK Borovoye 59.55 318 *ce*P **P 23 26 42.4 -0.1**
BRVK pmax pmax
comp=Z,20nm,0.7s
BRVK Borovoye 59.55 318 *e*P **P 23 26 42.2 -0.3**
comp=Z,20nm,0.8s
BMRM Bremner River 59.77 33 *e*P **P 23 26 45.0 +1.1**
comp=Z,24nm,1.3s
FYU Fort Yukon 59.84 26 *e*P **P 23 26 46.3 +2.1**
comp=Z,13nm,1.2s
DOT Dot Lake 60.12 30 *e*P **P 23 26 45.9 -0.3**
comp=Z,18nm,1.0s
ZRNK Zerenda 60.33 318 *e*P **P 23 26 47.2 -0.6**
ZRNK pmax pmax
comp=Z,14nm,0.8s
ZRNK Zerenda 60.33 318 *e*P **P 23 26 47.2 -0.6**
comp=Z,14nm,0.8s
KKAR Karatay Array 60.34 307 *e*P **P 23 26 48.2 +0.1**
KKAR Karatay Array 60.34 307 *e*P **P 23 26 48.2 +0.1**
DZET Dzherino 62.33 302 P **P 23 27 02.5 +0.8**
DZET pmax pmax
comp=Z,10.0nm,1.1s
KBL Kabul 63.08 297 *e*P **P 23 27 07.2 +0.3**
KBL pmax pmax
comp=Z,20nm,0.8s
KBL Kabul 63.08 297 *e*P **P 23 27 07.2 +0.3**
comp=Z,20nm,0.8s
INK Inuvik 64.36 24 P **P 23 27 13.2 -1.3**
comp=Z,7.4nm,1.0s,baz=275,slow=7.5,SNR=6.2
INK Inuvik 64.36 24 *e*P **P 23 27 13.2 -1.3**
comp=Z,9.8nm,1.1s
SVE Sverdlovsk 64.74 323 *e*P **P 23 27 16.3 -0.9**
SVE pmax pmax
comp=Z,22nm,0.9s
ARU Arti 65.94 323 *c i*P **P 23 27 24.4 -0.5**
ARU 23 27 56.6
ARU S **S 23 36 10.2 +1.3**
ARU SS **SS 23 40 18.5 -5.5**
ARU pmax pmax
comp=Z,30nm,1.0s
ARU Arti 65.94 323 *e*P **P 23 27 24.1 -0.8**
comp=Z,22nm,0.8s
ABKAR Akbulak array 66.50 315 *e*P **P 23 27 28.4 -0.2**
GEYT Alibeck 70.69 303 P **P 23 27 55.4 +0.2**
comp=Z,4.1nm,0.9s,baz=46,slow=4.3,SNR=11
GEYT LR LR 00 02 15.7
comp=Z,52nm,18.3s,baz=135,slow=39
YKA Yellowknife Ar 73.41 28 P **P 23 28 09.3 -1.5**
comp=Z,3.6nm,0.9s,baz=292,slow=5.6,SNR=19
YKB5 Yellowknife Ar 73.41 28 *e*P **P 23 28 09.3 -1.5**
KLMR Klimovskoe 74.17 330 *e*P **P 23 28 13.8 -1.5**
KLMR pmax pmax
comp=Z,9.0nm,1.3s
ARA0 ARCESS Array S 75.20 341 *e*P **P 23 28 20.7 -0.4**
ARCES ARCESS Array B 75.20 341 P **P 23 28 20.7 -0.4**
comp=Z,8.4nm,0.9s,baz=34,slow=7.3,SNR=7.6
ARCES LR LR 00 06 07.0
comp=Z,105nm,18.1s,baz=66,slow=40
H04A Detroit Lake 76.06 47 *e*P **P 23 28 28.1 +1.5**
comp=Z,28nm,1.8s
VRH Novokhopyorsk 76.99 321 *e*P **P 23 28 31.1 -0.5**
VRH pmax pmax
comp=Z,10.0nm,0.7s
K05A Summer Lake 77.68 49 *e*P **P 23 28 37.4 +1.4**
comp=Z,16nm,1.2s
LPSR Galich'ya Gora 77.96 323 *e*P **P 23 28 37.4 +0.4**
LPSR pmax pmax
comp=Z,7.0nm,0.7s
OBN Obninsk 78.08 326 *e*P **P 23 28 38.3 +0.7**
OBN *e* 23 31 33.9
OBN pmax pmax
comp=Z,28nm,2.5s
OBN MLR MLR
comp=Z,193nm,17.0s
VSR Storozhevoye 78.44 321 *e*P **P 23 28 39.2 -0.5**
VSR pmax pmax
comp=Z,7.0nm,0.6s
GOF Gofitskoye 78.73 315 ⇑*e*P **P 23 28 41.3 -0.2**
ZEI Tsey 79.11 312 *e*P **P 23 28 42.9 -0.9**
ZEI pmax pmax
comp=Z,11nm,0.7s
KBZ Khabaz 79.39 313 P **P 23 28 45.6 +0.6**
comp=Z,12nm,0.8s,baz=103,slow=3.1,SNR=30
KIV Kislovodsk 79.43 314 *e*P **P 23 28 45.9 +0.5**
KIV pmax pmax
comp=Z,8.0nm,1.0s
KIV MLR MLR
comp=Z,69nm,18.0s
KIV Kislovodsk 79.43 314 *e*P **P 23 28 47.8 +2.3**
comp=Z,8.8nm,1.0s
WALA Waterton Lakes 79.44 41 *e*P **P 23 28 46.5 +1.0**
comp=Z,7.0nm,1.0s
FIA1 FINESS Array S 79.57 334 *e*P **P 23 28 45.2 -0.5**
FIA0 FINESS Array S 79.57 334 *e*P **P 23 28 45.3 -0.4**
FIA0 FINESS Array S 79.57 334 *e*P **P 23 28 45.3 -0.4**
FINES FINESS Array B 79.57 334 P **P 23 28 45.3 -0.4**
comp=Z,7.7nm,0.5s,baz=69,slow=4.8,SNR=52
FINES LR LR 00 07 03.3
comp=Z,51nm,18.4s,baz=53,slow=38
FINES FINESS Array B 79.57 334 *ce*P **P 23 28 45.5 -0.2**
FINES pmax pmax
comp=Z,8.0nm,0.5s
NEY Neytrino 79.70 313 *e*P **P 23 28 47.1 +0.1**
JTMT Jette 79.81 42 *e*P **P 23 28 49.4 +1.9**
YBMT Yellow Bay 79.92 42 *e*P **P 23 28 49.3 +1.3**
MFID Camas Ranch 80.77 46 *e*P **P 23 28 53.3 +0.6**
comp=Z,5.6nm,1.1s
NV01 Mina Array Sit 81.24 52 *e*P **P 23 28 53.5 -1.9**
NVAR Mina Array Bea 81.24 52 P **P 23 28 53.5 -1.9**
comp=Z,4.1nm,1.0s,baz=282,slow=4.5,SNR=7.2
NVAR LR LR 00 01 31.9
comp=Z,55nm,18.5s,baz=265,slow=33
SUMG Summit 82.22 0 *i*P **P 23 29 00.9 +0.8**
comp=Z,10.0nm,1.1s
SUMG Summit 82.22 0 *e*P **P 23 29 02.6 +2.5**
SUMG pmax pmax
comp=Z,26nm,1.7s
SUMG Summit 82.22 0 *e*P **P 23 29 02.6 +2.5**
comp=Z,26nm,1.7s
ANN Anapa 82.42 316 *e*P **P 23 28 59.1 -2.0**
ANN *e**PP **pP 23 29 13.9 -0.6**
ANN pmax pmax
comp=Z,26nm,1.3s
AKASG Malin Array Be 84.15 324 P **P 23 29 09.2 -0.8**
comp=Z,5.7nm,0.6s,baz=50,slow=5.4,SNR=24
AKASG LR LR 00 09 33.2
comp=Z,112nm,18.2s,baz=45,slow=38
AKBB Malin Array Si 84.15 324 *e*P **P 23 29 09.2 -0.8**
AKBB Malin Array Si 84.15 324 *e*P **P 23 29 09.2 -0.8**
KIEV Kiev 84.16 324 *e*P **P 23 29 08.6 -1.4**
KIEV pmax pmax
comp=Z,10.0nm,0.9s
KIEV Kiev 84.16 324 *e*P **P 23 29 09.5 -0.5**
comp=Z,11nm,0.9s
AK11 Malin Array Si 84.19 324 *e*P **P 23 29 09.2 -1.0**
SIM Simferopol' 84.40 317 *e*P **P 23 29 09.9 -1.5**
SIM pmax pmax
comp=Z,10.0nm,0.8s
PDAR Pinedale Array 85.12 45 LR LR 23 59 28.5
comp=Z,44nm,22.0s,baz=270,slow=30
SUW Suwalki 85.23 329 *e*P **P 23 29 14.5 -0.8**
SUW Suwalki 85.23 329 *e*P **P 23 29 14.5 -0.8**
NB2 NORSAR Subarra 85.26 339 P P 23 29 20.9 +5.5
comp=Z,2.4nm,0.8s,baz=46,slow=5.1
NB200 NORSAR Array S 85.26 339 *e*P **P 23 29 14.4 -1.0**
NOA NORSAR Array B 85.26 339 P **P 23 29 14.4 -1.0**
comp=Z,4.7nm,0.7s,baz=48,slow=4.7,SNR=15
NOA LR LR 00 09 57.7
comp=Z,32nm,18.1s,baz=45,slow=38
SRU San Rafael Swe 86.31 48 *e*P **P 23 29 20.6 -0.7**
SRU pmax pmax
comp=Z,5.0nm,0.9s
SRU San Rafael Swe 86.31 48 *e*P **P 23 29 20.6 -0.7**
comp=Z,5.1nm,0.9s
BR101 Keskin Array S 87.38 313 *e*P **P 23 29 25.6 -0.8**
BR131 Keskin Array S 87.38 313 *e*P **P 23 29 26.1 -0.3**
BRTR Keskin Array B 87.38 313 P **P 23 29 25.6 -0.8**
comp=Z,1.5nm,0.7s,baz=85,slow=3.9,SNR=12
BRTR LR LR 00 12 34.7
comp=Z,34nm,18.3s,baz=56,slow=38
CFR Carcaliu 87.84 320 ⇑*i*P **P 23 29 27.5 -0.8**
CFR Carcaliu 87.84 320 ⇑P **P 23 29 27.5 -0.8**
BR231 Keskin MP Arra 87.88 314 *e*P **P 23 29 25.3 -3.5**
TESR Tescani 87.93 322 ⇑*i*P **P 23 29 28.1 -0.6**
BUR08 Bucovina Ar. S 88.06 323 *e*P **P 23 29 29.3 -0.2**
BURAR Bucovina Array 88.07 323 ⇓*i*P **P 23 29 29.0 -0.5**
BURAR Bucovina Array 88.07 323 ⇓P **P 23 29 29.0 -0.5**
KWP Kalwaria Pacla 88.17 326 *e*P **P 23 29 29.2 -0.6**
KWP Kalwaria Pacla 88.17 326 ⇑*i*P **P 23 29 30.1 +0.3**
KWP Kalwaria Pacla 88.17 326 ⇑P **P 23 29 30.1 +0.3**
VRI Vrincioaia 88.26 321 ⇑*i*P **P 23 29 31.0 +0.7**
VRI Vrincioaia 88.26 321 ⇑P **P 23 29 31.0 +0.7**
PLOR Plostina 88.31 321 ⇑*i*P **P 23 29 30.8 +0.2**
PLOR Plostina 88.31 321 ⇑P **P 23 29 30.8 +0.2**
ULM Lac du Bonnet 88.61 33 LR LR 00 08 41.1
comp=Z,44nm,20.1s,baz=316,slow=35
DOPR Dopca 88.96 322 ⇓*i*P **P 23 29 33.8 +0.2**
STHS Stebnicka Huta 89.04 326 *e*P **P 23 29 34.4 +0.4**
STHS pmax pmax
comp=Z,3.0nm,0.9s
STHS Stebnicka Huta 89.04 326 *e*P **P 23 29 34.4 +0.4**
OJC Ojcow 89.25 327 *e*P **P 23 29 32.4 -2.4**
OJC Ojcow 89.25 327 *e*P **P 23 29 32.4 -2.4**
CRVS Cervenica-Dubn 89.26 326 *e*P **P 23 29 35.5 +0.5**
CRVS Cervenica-Dubn 89.26 326 *e*P **P 23 29 35.5 +0.5**
VOIR 89.47 321 ⇓*i*P **P 23 29 36.9 +0.8**
VOIR 89.47 321 ⇓P **P 23 29 36.9 +0.8**
NIE Niedzica 89.52 326 *e*P **P 23 29 35.5 -0.7**
NIE Niedzica 89.52 326 *e*P **P 23 29 35.5 -0.7**
ARR Arges 89.74 321 ⇓*i*P **P 23 29 37.6 +0.2**
DRGR 89.93 323 ⇑*i*P **P 23 29 37.7 -0.5**
DRGR 89.93 323 ⇑P **P 23 29 37.7 -0.5**
KECS Kecovo 90.03 326 *e*P **P 23 29 37.7 -0.8**
KECS pmax pmax
comp=Z,4.0nm,1.3s
KECS Kecovo 90.03 326 *e*P **P 23 29 37.7 -0.8**
MORC Moravsky Berou 90.63 328 ⇓*i*P **P 23 29 40.8 -0.6**
MORC Moravsky Berou 90.63 328 *e*P **P 23 29 41.0 -0.4**
MORC pmax pmax
comp=Z,28nm,1.4s
MORC Moravsky Berou 90.63 328 *e*P **P 23 29 41.0 -0.4**
comp=Z,28nm,1.4s
PSZ Piszkesteto 90.69 326 ⇑*i*P **P 23 29 42.0 +0.2**
PSZ Piszkesteto 90.69 326 ⇑P **P 23 29 42.0 +0.2**
PSZ Piszkesteto 90.69 326 *e*P **P 23 29 42.0 +0.2**
comp=Z,8.6nm,0.9s
DPC Dobruska-Polom 90.82 329 *e*P **P 23 29 41.9 -0.4**
DPC *ex* x 23 29 51.1
DPC Dobruska-Polom 90.82 329 *e*P **P 23 29 41.9 -0.4**
DPC *e* 23 29 51.1
VYHS Vyhne 90.85 326 *e*P **P 23 29 42.1 -0.3**
VYHS pmax pmax
comp=Z,5.0nm,1.1s
VYHS Vyhne 90.85 326 *e*P **P 23 29 42.1 -0.3**
ANMO Albuquerque 91.25 50 *e*P **P 23 29 45.7 +0.9**
ANMO pmax pmax
comp=Z,4.0nm,1.1s
ANMO Albuquerque 91.25 50 *e*P **P 23 29 45.7 +0.9**
comp=Z,4.1nm,1.1s
BZS Buzias 91.26 323 ⇓*i*P **P 23 29 43.5 -0.8**
BZS Buzias 91.26 323 ⇓P **P 23 29 43.5 -0.8**
VRAC Vranov 91.40 328 ⇓*i*P **P 23 29 44.9 -0.1**
VRAC Vranov 91.40 328 ⇓P **P 23 29 44.9 -0.1**
BRG Berggiesshubel 91.54 330 *e*PKP **P 23 29 44.6 -0.9**
comp=Z,4.8nm,1.2s
BRG Berggiesshubel 91.54 330 *e*P **P 23 29 44.6 -0.9**
CLL Collm 91.65 331 *e*P **P 23 29 45.0 -1.0**
CLL *e*pP **pP 23 29 58.0 -1.5**
CLL Collm 91.65 331 *e*P **P 23 29 45.0 -1.0**
CLL *e**PP **pP 23 29 58.0 -1.5**
MDVR Moldovita 91.73 322 ⇓*i*P **P 23 29 44.7 -1.9**
CONA Conrad Observa 92.70 327 *i* PcP **P 23 29 51.1 +0.1**
comp=Z,3.2nm,0.8s
KHC Kasperske Hory 92.94 329 *e*P **P 23 29 51.2 -0.9**
KHC Kasperske Hory 92.94 329 *e*P **P 23 29 51.2 -0.9**
GERES GERESS Array B 93.09 329 P **P 23 29 52.0 -0.9**
comp=Z,0.9nm,0.6s,baz=35,slow=4.9,SNR=10
GERES LR LR 00 12 51.1
comp=Z,13nm,20.5s,baz=24,slow=36
GERES GERESS Array B 93.09 329 P **P 23 29 52.0 -0.9**
GERES pmax pmax
comp=Z,1.0nm,0.6s
GERES MLR MLR
comp=Z,13nm,20.5s
GEA0 GERESS Array S 93.10 329 *e*P **P 23 29 51.7 -1.2**
ARSA Arzberg 93.34 327 *i* PcP **P 23 29 54.2 +0.2**
comp=Z,3.0nm,1.0s
MOA Molln 93.53 328 *i* P **P 23 29 50.6 -4.2**
comp=Z,4.9nm,1.8s
SOKA Soboth 93.97 327 *i* PcP **P 23 29 56.0 -1.0**
comp=Z,2.6nm,0.9s
OBKA Obir 94.33 327 *i* PcP **P 23 29 58.3 -0.3**
comp=Z,3.3nm,1.1s
KBA Koelnbreinsper 94.52 328 *i* PcP **P 23 29 59.1 -0.4**
comp=Z,3.0nm,0.7s
ABTA Abfaltersbach 95.15 328 *i* PcP **P 23 30 03.2 +0.8**
comp=Z,3.5nm,0.9s
FETA Feichten 95.79 329 *i* PcP **P 23 30 04.2 -1.2**
comp=Z,3.2nm,1.1s
DAVA Damuels 95.98 330 *i* PcP **P 23 30 05.1 -1.1**
comp=Z,3.2nm,0.8s
TX31 Lajitas Ar. Si 96.28 54 *e*P **P 23 30 07.6 -0.3**
LTX Lajitas 96.29 54 *e*P **P 23 30 07.3 -0.6**
LTX Lajitas 96.29 54 *e*P **P 23 30 07.2 -0.6**
TXAR Lajitas Array 96.29 54 P **P 23 30 07.2 -0.6**

comp=Z,1.2nm,0.9s,baz=5.0,slow=2.9,SNR=7.7
TXAR LR LR 00 08 32.0
comp=Z,30nm,19.7s,baz=0.0,slow=32
PTGA Pitinga 147.16 45 *e*PKPdf **PKPab 23 36 24.4 -0.1**
PLCA Paso Flores 148.56 127 PKPbc **PKPbc 23 36 25.1 -0.8**
comp=Z,7.1nm,0.9s,baz=267,slow=5.3,SNR=9.6
PB11 IPOC Station P 149.75 86 *e*PKPbc **PKPbc 23 36 30.2 +0.7**
LPAZ La Paz 149.94 78 PKPbc **PKPbc 23 36 30.1 -0.6**
comp=Z,5.8nm,0.7s,baz=303,slow=3.2,SNR=17
PB01 IPOC Station P 150.25 88 *e*PKPbc **PKPbc 23 36 30.4 -0.2**
SAML Samuel 150.50 61 *e*PKPbc **PKPbc 23 36 32.6 +1.3**
LVC Limon Verde 151.13 91 *e*PKPbc **PKPbc 23 36 35.2 +2.2**

NIED ***17*** *23:36:00.39˚.20N×142˚.40E, h29km, Mw3.7 Best double couple: M0:4.62000×10^14 NP1:φ=324.00000°, δ=36.00000°, λ=-123.00000°. NP2:φ=182.00000°, δ=60.00000°, λ=-68.00000°.*
JMA ***17*** *23:36:13.9±0.1, 39˚.23N×142˚.38E, h31km±1km, M4.0*
JMA Felt I J1.
IDC ***17*** *23:36:19.4±2.5, 39˚.19N×142˚.17E, h76km±24km, mb3.3/7, mb1 3.5/10, mb1mx3.3/43, mbtmp3.6/10, MS2.5/2, Ms1 2.5/2, ms1mx2.3/25, Error ellipse: s-maj=28.0km s-min=14.2km az=110.0*
ISC 17 23:36:12.9±1.9, 39˚.23N±0˚.04×142˚.41E±0˚.07, h16km±11km, n27, σ1=50/28, mb3.6/7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**0.58**	**308**	P	**Pg**	**23 36 24.8**	**+0.4**
MIYJ				S	**Sg**	**23 36 32.3**	**+0.2**
OFUJ	**Ofunato**	**0.60**	**256**	P	**Pb**	**23 36 25.1**	**+0.1**
OFUJ				S	**Sb**	**23 36 32.9**	**-0.3**
JTH	**Tanohata**	**0.83**	**329**	P	**Pb**	**23 36 28.7**	**-0.3**
JTH				*e*S	**Sb**	**23 36 39.8**	**-0.1**
JOM	**Ohasama**	**0.90**	**286**	P	**Pb**	**23 36 30.1**	**-0.1**
JOM				S	**Sb**	**23 36 41.7**	**-0.3**
JMK	**Ichinoseki**	**0.97**	**254**	P	**Pb**	**23 36 30.8**	**-0.5**
JMK				S	**Sb**	**23 36 43.0**	**-0.8**
JKZ	**Kuzumaki**	**1.13**	**313**	P	**Pn**	**23 36 33.8**	**-0.3**
JKZ				S	**Sb**	**23 36 48.1**	**-0.5**
JIO	**Ouri**	**1.13**	**228**	P	**Pb**	**23 36 32.8**	**-1.3**
JIO				S	**Sb**	**23 36 46.7**	**-1.9**
JANG	**Nango**	**1.34**	**329**	P	**Pn**	**23 36 36.6**	**-0.4**
JANG				S	**Sn**	**23 36 53.5**	**-1.0**
JRG	**Rokugo**	**1.39**	**278**	P	**Pn**	**23 36 37.9**	**+0.2**
MAT	**Matsushiro**	**4.27**	**232**	P	**Pn**	**23 37 18.6**	**+1.3**
MAT				S	**Sn**	**23 38 10.8**	**+4.0**
MJAR	**Matsushiro Arr**	**4.27**	**232**	P	**Pn**	**23 37 19.3**	**+2.0**
	1.9nm,0.3s,baz=41,slow=11,SNR=31						
MJAR				LR	LR	23 39 19.7	
	comp=Z,85nm,18.3s,baz=90,slow=44						
ASAJ	**Asahikawa**	**4.89**	**2**	P	Pb	23 37 33.0	-5.1
	1.2nm,0.3s,baz=260,slow=11,SNR=2.7						
ASAJ				S	**Sn**	**23 38 25.9**	**+3.9**
	1.2nm,0.3s,baz=90,slow=19,SNR=2.9						
USRK	**Ussuriysk Ar.**	**9.24**	**306**	P	Pn	23 38 29.0	+3.6
	0.2nm,0.3s,baz=119,slow=15,SNR=2.9						
GUMO	**Guam**	**25.63**	**174**	LR	LR	23 55 52.7	
	comp=Z,7.3nm,18.0s,baz=82,slow=46						
H11N2	**WAKE ISLAND Hy 28.68**	**126**		T	T	00 12 38.8	
	baz=318,slow=75,SNR=130						
H11N1	**WAKE ISLAND Hy 28.69**	**126**		T	T	00 12 39.5	
	baz=318,slow=75,SNR=112						
H11N3	**WAKE ISLAND Hy 28.70**	**126**		T	T	00 12 40.2	
	baz=318,slow=75,SNR=110						
H11S1	**WAKE ISLAND Hy 29.48**	**128**		T	T	00 13 38.8	
	baz=319,slow=76,SNR=39						
H11S3	**WAKE ISLAND Hy 29.48**	**128**		T	T	00 13 37.4	
	baz=319,slow=76,SNR=43						
H11S2	**WAKE ISLAND Hy 29.49**	**128**		T	T	00 13 40.8	
	baz=319,slow=76,SNR=34						
ZALV	**Zalesovo Beam**	**41.06**	**311**	P	**P**	**23 43 54.1**	**-1.2**
	0.4nm,0.3s,baz=93,slow=10,SNR=2.4						
MKAR	**Makanchi Array**	**43.66**	**300**	P	**P**	**23 44 15.1**	**-1.6**
	0.7nm,0.8s,baz=78,slow=10,SNR=3.6						
ILAR	**Eielson Array**	**47.23**	**33**	P	**P**	**23 44 45.4**	**+0.7**
	0.6nm,0.6s,baz=256,slow=5.6,SNR=8.0						
WRA	**Warramunga Arr**	**59.34**	**189**	P	**P**	**23 46 12.7**	**-1.5**
	1.3nm,0.4s,baz=6.4,slow=7.0,SNR=23						
YKA	**Yellowknife Ar**	**61.52**	**31**	P	**P**	**23 46 29.2**	**+0.6**
	0.1nm,0.6s,baz=299,slow=6.5,SNR=3.1						
ASAR	**Alice Springs**	**63.07**	**189**	P	**P**	**23 46 38.4**	**-1.0**
	0.7nm,0.8s,baz=10,slow=5.7,SNR=4.9						
PDAR	**Pinedale Array**	**75.58**	**46**	P	**P**	**23 47 57.0**	**-0.1**
	0.3nm,0.5s,baz=302,slow=2.7,SNR=3.9						

ISCJB ***17*** *23:50:45.5±0.7, 10˚.89S±0˚.07×73˚.81W±0˚.04, h100km, mb3.4/3, Error ellipse: s-maj=10.0km s-min=6.2km az=1.9*
IDC ***17*** *23:50:49.6±1.9, 10˚.93S×74˚.06W, h126km±20km, mb3.2/3, mb1 3.6/7, mb1mx3.4/27, mbtmp3.8/7, Error ellipse: s-maj=22.1km s-min=14.7km az=48.0*
ISC 17 23:50:47.7±0.7, 10˚.83S±0˚.08×73˚.79W±0˚.06, h100km, n8, σ2=89/14, mb3.5/3, Central Peru

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NNA	**Nana**	**3.21**	**249**	P	**Pn**	**23 51 35.7**	**-0.6**
	71nm,0.3s,baz=66,slow=10,SNR=98						
NNA				S	**Sn**	**23 52 10.3**	**-3.6**
	100nm,0.3s,baz=260,slow=20,SNR=16						
ATAH	**Atahualpa**	**5.85**	**308**	P	**Pn**	**23 52 13.1**	**+0.7**
	2.3nm,0.3s,baz=140,slow=16,SNR=11						
ATAH				S	**Sn**	**23 53 18.1**	**-0.2**
	4.1nm,0.3s,baz=78,slow=19,SNR=3.9						
LPAZ	**La Paz**	**7.72**	**135**	P	**Pn**	**23 52 41.6**	**+3.6**
	0.3nm,0.3s,baz=320,slow=11,SNR=14						
SIV	**San Ignacio**	**13.39**	**114**	P	**Pn**	**23 53 56.1**	**+2.3**
	0.4nm,0.3s,baz=294,slow=12,SNR=7.5						
SIV				S	**Sn**	**23 56 19.1**	**-2.1**
	0.4nm,0.3s,baz=20,slow=4.9,SNR=3.7						
PTGA	**Pitinga**	**17.00**	**55**	P	**P**	**23 54 39.9**	**+0.1**
	1.7nm,0.3s,baz=235,slow=16,SNR=16						
PTGA				S	**Sn**	**23 57 43.3**	**-5.4**
	0.2nm,0.3s,baz=143,slow=20,SNR=3.0						
PLCA	**Paso Flores**	**29.92**	**175**	P	**P**	**23 56 45.8**	**-0.5**
	1.8nm,0.9s,baz=357,slow=11,SNR=3.6						
TXAR	**Lajitas Array**	**49.25**	**325**	P	**P**	**23 59 25.4**	**-1.1**
	0.3nm,0.5s,baz=148,slow=8.8,SNR=5.5						
TXAR				pP	**pP**	**23 59 53.0**	**+2.7**
	0.9nm,0.7s,baz=148,slow=8.5,SNR=8.0						
TXAR				sP	**sP**	**00 00 05.4**	**+3.9**
	0.5nm,0.6s,baz=151,slow=8.1,SNR=4.5						
YKA	**Yellowknife Ar**	**79.64**	**342**	P	**P**	**00 02 41.9**	**-1.8**
	0.1nm,0.4s,baz=140,slow=6.4,SNR=4.4						

DDA ***18*** *00:01:23.8, 37˚.54N×36˚.13E, h18km, MI3.5*
ISK ***18*** *00:01:24.4, 37˚.56N×36˚.08E, h10km, MD3.0*
CSEM ***18*** *00:01:25.4±0.2, 37˚.54N×36˚.07E, h10km, MD3.0, Error ellipse: s-maj=4.8km s-min=4.0km az=144.0*
ISC 18 00:01:24.2±1.1, 37˚.56N±0˚.02×36˚.11E±0˚.02, h3km±10km, n62, σ1=07/104, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKO	**Adana**	**0.54**	**259**	*i* P	**Pg**	**00 01 34.6**	**+0.1**
AKO				*i* S	**Sg**	**00 01 42.8**	**+1.2**
KAMA	**Osmaniye**	**0.58**	**130**	*i* P	**Pg**	**00 01 34.7**	**-0.7**
KAMA				*i* S	**Sg**	**00 01 42.8**	**-0.1**
CEYT	**Ceyhan**	**0.62**	**208**	*e*PG	**Pg**	**00 01 36.6**	**+0.4**
CEYT	**Ceyhan**	**0.62**	**208**	*e*Pg	**Pg**	**00 01 36.6**	**+0.4**
HCB	**Kahramanmara¯**	**0.67**	**109**	*i* P	**Pg**	**00 01 36.4**	**-0.7**
HCB				*i* S	**Sg**	**00 01 45.0**	**-0.7**
KARA	**Karaisali**	**0.90**	**251**	*e*PG	**Pg**	**00 01 41.1**	**-0.2**
KARA				*e*SG	**Sb**	**00 01 54.3**	**-0.4**
KARA	**Karaisali**	**0.90**	**251**	*e*Pg	**Pg**	**00 01 41.1**	**-0.2**
KARA				*e*Sg	**Sb**	**00 01 54.3**	**-0.4**
KUZU	**Kuzuini**	**1.10**	**135**	P	**Pg**	**00 01 45.1**	**-0.2**
KUZU				S	**Sb**	**00 02 00.5**	**-0.1**
KUZU	**Kuzuini**	**1.10**	**135**	*i* P	**Pg**	**00 01 45.1**	**-0.2**
KUZU				*i* S	**Sb**	**00 02 00.5**	**-0.1**
KRTS	**Karatas**	**1.15**	**211**	*e*PN	**Pg**	**00 01 46.5**	**+0.2**
KRTS	**Karatas**	**1.15**	**211**	*e*Pn	**Pg**	**00 01 46.5**	**+0.2**
GZT	**Gaziantep**	**1.17**	**100**	*i* P	**Pg**	**00 01 46.0**	**-0.7**
GZT				*i* S	**Sn**	**00 02 03.7**	**-0.5**
TAHT	**Tahtakopru-Hat**	**1.19**	**177**	*e*PN	**Pn**	**00 01 47.7**	**0.0**
TAHT				*e*SN	**Sn**	**00 02 04.4**	**+0.1**
TAHT	**Tahtakopru-Hat**	**1.19**	**177**	*e*Pn	**Pn**	**00 01 47.7**	**0.0**
TAHT				*e*Sn	**Sn**	**00 02 04.4**	**+0.1**
DED	**Mersin**	**1.21**	**241**	*i* P	**Pg**	**00 01 46.8**	**-0.5**
DED				*i* S	**Sn**	**00 02 05.7**	**+0.8**
BNN	**Bunyan**	**1.30**	**351**	*e*PN	**Pb**	**00 01 48.9**	**-0.5**
BNN				*e*SN	**Sn**	**00 02 06.8**	**-0.5**
BNN	**Bunyan**	**1.30**	**351**	*e*Pn	**Pb**	**00 01 48.9**	**-0.5**
BNN				*e*Sn	**Sn**	**00 02 06.8**	**-0.5**
MERS	**Mersin**	**1.45**	**242**	*e*PN	**Pn**	**00 01 50.8**	**-0.5**
MERS				*e*SN	**Sb**	**00 02 10.4**	**-0.2**
MERS	**Mersin**	**1.45**	**242**	*e*Pn	**Pn**	**00 01 50.8**	**-0.5**
MERS				*e*Sn	**Sb**	**00 02 10.4**	**-0.2**
CUGUR	**Gurin_S¯VAS**	**1.48**	**38**	P	**Pg**	**00 01 53.0**	**+0.5**
CUGUR				S	**Sn**	**00 02 12.9**	**+1.3**
CUGUR	**Gurin_S¯VAS**	**1.48**	**38**	*i* P	**Pg**	**00 01 53.0**	**+0.5**
CUGUR				*i* S	**Sn**	**00 02 12.9**	**+1.3**
DARE	**Darende-Malaty**	**1.48**	**47**	*e*PN	**Pb**	**00 01 51.7**	**-0.6**
DARE				*e*SN	**Sn**	**00 02 11.8**	**+0.3**
DARE	**Darende-Malaty**	**1.48**	**47**	*e*Pn	**Pb**	**00 01 51.7**	**-0.6**
DARE				*e*Sn	**Sn**	**00 02 11.9**	**+0.3**
YAYL	**Yayladag**	**1.53**	**180**	P	**Pn**	**00 01 52.6**	**+0.1**
YAYL				S	**Sg**	**00 02 14.4**	**+1.1**
YAYL	**Yayladag**	**1.53**	**180**	*i* P	**Pn**	**00 01 52.6**	**+0.1**
YAYL				*i* S	**Sg**	**00 02 14.4**	**+1.1**
KERG	**Konya-Eregli**	**1.59**	**265**	P	**Pn**	**00 01 53.0**	**-0.3**
KERG				S	**Sg**	**00 02 16.1**	**+0.8**
KERG	**Konya-Eregli**	**1.59**	**265**	*i* P	**Pn**	**00 01 53.0**	**-0.3**
KERG				*i* S	**Sg**	**00 02 16.1**	**+0.8**
AVNS	**Nevsehir-Avano**	**1.59**	**322**	P	**Pb**	**00 01 53.5**	**-0.8**
AVNS				S	**Sn**	**00 02 13.6**	**-0.9**
AVNS	**Nevsehir-Avano**	**1.59**	**322**	*i* P	**Pb**	**00 01 53.5**	**-0.8**
AVNS				*i* S	**Sn**	**00 02 13.6**	**-0.9**
AKCD	**Akcadag**	**1.61**	**62**	P	**Pn**	**00 01 53.0**	**-0.6**
AKCD				S	**Sg**	**00 02 15.4**	**-0.4**
AKCD	**Akcadag**	**1.61**	**62**	*i* P	**Pn**	**00 01 53.0**	**-0.6**
AKCD				*i* S	**Sg**	**00 02 15.4**	**-0.4**
GULA	**Gulagac**	**1.68**	**298**	*e*PN	**Pb**	**00 01 55.0**	**-0.7**
GULA	**Gulagac**	**1.68**	**298**	*e*Pn	**Pb**	**00 01 55.0**	**-0.7**
ATAB	**Bozova**	**1.74**	**92**	P	**Pb**	**00 01 56.5**	**-0.2**
ATAB				S	**Sn**	**00 02 16.9**	**-1.0**
ATAB	**Bozova**	**1.74**	**92**	*i* P	**Pb**	**00 01 56.5**	**-0.2**
ATAB				*i* S	**Sn**	**00 02 16.9**	**-1.0**
CUALT	**Altinyayla-SIV**	**1.78**	**16**	P	**Pb**	**00 01 56.6**	**-0.9**
CUALT				S	**Sg**	**00 02 24.0**	**+2.6**
CUALT	**Altinyayla-SIV**	**1.78**	**16**	*i* P	**Pb**	**00 01 56.6**	**-0.9**
CUALT				*i* S	**Sg**	**00 02 24.0**	**+2.6**
CUSAR	**Sarkisla-SIVAS**	**1.85**	**3**	P	**Pb**	**00 01 58.0**	**-0.8**
CUSAR				S	**Sb**	**00 02 22.5**	**0.0**
CUSAR	**Sarkisla-SIVAS**	**1.85**	**3**	*i* P	**Pb**	**00 01 58.0**	**-0.8**
CUSAR				*i* S	**Sb**	**00 02 22.4**	**0.0**
KIZK	**Mersin**	**1.91**	**236**	P	**Pn**	**00 01 57.4**	**-0.2**
KIZK				S	**Sn**	**00 02 22.9**	**+0.7**
KIZK	**Mersin**	**1.91**	**236**	*i* P	**Pn**	**00 01 57.4**	**-0.2**
KIZK				*i* S	**Sn**	**00 02 22.9**	**+0.7**
CUKAN	**kangal_SIVAS**	**2.05**	**31**	*i* P	**Pb**	**00 02 01.7**	**-0.4**
CUKAN				*i* S	**Sg**	**00 02 29.2**	**-0.8**
SURC	**SANLIURFA_SURC**	**2.11**	**108**	P	**Pn**	**00 01 59.6**	**-0.8**
SURC				S	**Sg**	**00 02 31.1**	**-0.9**
SURC	**SANLIURFA_SURC**	**2.11**	**108**	*i* P	**Pn**	**00 01 59.6**	**-0.8**
SURC				*i* S	**Sg**	**00 02 31.1**	**-0.9**
URFA	**Urfa**	**2.16**	**92**	*e*PN	**Pn**	**00 02 02.2**	**+1.1**
URFA	**Urfa**	**2.16**	**92**	*e*Pn	**Pn**	**00 02 02.2**	**+1.1**
SVSK	**Karacayir**	**2.45**	**16**	*e*PN	**Pb**	**00 02 06.5**	**-2.3**
SVSK	**Karacayir**	**2.45**	**16**	*e*Pn	**Pb**	**00 02 06.5**	**-2.3**
ELZG	**Elazig**	**2.45**	**67**	P	**Pb**	**00 02 08.5**	**-0.5**
ELZG				S	**Sn**	**00 02 34.3**	**-1.5**
ELZG	**Elazig**	**2.45**	**67**	*i* P	**Pb**	**00 02 08.5**	**-0.5**
ELZG				*i* S	**Sn**	**00 02 34.3**	**-1.5**
KAMT	**Kaman**	**2.61**	**314**	*e*PN	**Pn**	**00 02 07.5**	**+0.2**
KAMT	**Kaman**	**2.61**	**314**	*e*Pn	**Pn**	**00 02 07.5**	**+0.2**
SVRC	**Sivrice-ELAZID**	**2.65**	**71**	*e*PN	**Pn**	**00 02 09.6**	**+1.6**
SVRC	**Sivrice-ELAZID**	**2.65**	**71**	*e*Pn	**Pn**	**00 02 09.6**	**+1.6**
COAL	**Corum-Alaca**	**2.83**	**342**	P	**Pn**	**00 02 12.4**	**+2.1**
COAL	**Corum-Alaca**	**2.83**	**342**	*i* P	**Pn**	**00 02 12.4**	**+2.1**
COAL				*i* S	**Sg**	**00 02 52.2**	**-2.8**
PTK	**Pertek**	**2.90**	**62**	*e*PN	**Pn**	**00 02 12.4**	**+1.0**
PTK	**Pertek**	**2.90**	**62**	*e*Pn	**Pn**	**00 02 12.4**	**+1.0**
SUSE	**Susehri**	**3.10**	**31**	P	**Pb**	**00 02 17.6**	**-2.5**
SUSE	**Susehri**	**3.10**	**31**	*i* P	**Pb**	**00 02 17.6**	**-2.5**
MARD	**Mardin**	**3.72**	**92**	*i* P	**Pb**	**00 02 32.1**	**+1.5**
BTMN	**Batman**	**4.10**	**84**	*i* P	**Pg**	**00 02 43.5**	**+0.7**
BTMN				*i* S	**Sb**	**00 03 30.6**	**+3.5**

ISCJB ***18*** *00:02:51.5±0.4, 24˚.44N±0˚.02×121˚.97E±0˚.02, h9km±2km, Error ellipse: s-maj=3.4km s-min=2.7km az=138.3*
TAP ***18*** *00:02:51.8, 24˚.44N×121˚.90E, h20km, ML3.1, B*
JMA ***18*** *00:02:51.0±0.1, 24˚.37N×121˚.83E, h40km±2km, M2.3*
ISC 18 00:02:51.3±0.9, 24˚.43N±0˚.02×121˚.94E±0˚.02, h16km±7km, n36, σ0=54/62, 1C-3D, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ENA	**Nanau**	**0.18**	**269**	⇑*i* P	**Pb**	**00 02 56.1**	**-0.2**
	baz=263						
ENA				S	**Sg**	**00 02 58.7**	**0.0**
	baz=263						
TWC	**Suao**	**0.20**	**334**	*i* P	**Pb**	**00 02 56.7**	**+0.2**
	baz=347						
TWC				*i* S	**Sg**	**00 02 59.5**	**+0.3**
	baz=347						
EHP	**Heping Village**	**0.22**	**237**	*e*P	**Pb**	**00 02 57.1**	**+0.2**
	baz=226						
EHP				*e*S	**Sb**	**00 03 01.0**	**+0.3**
	baz=226						
ILA	**Ilan**	**0.38**	**332**	*e*P	**Pg**	**00 02 58.4**	**-0.6**
	baz=334						
ILA				*e*S	**Sb**	**00 03 05.3**	**0.0**
	baz=334						
TWE	**Neicheng**	**0.38**	**319**	⇓*i* P	**Pb**	**00 02 59.5**	**-0.2**
	baz=324						
TWE				S	**Sg**	**00 03 04.2**	**-0.3**
	baz=324						
ENTT	**Nioudou**	**0.40**	**301**	⇓*i* P	**Pg**	**00 02 59.7**	**+0.2**
	baz=304						
ENTT				*i* S	**Sg**	**00 03 05.2**	**+0.1**
	baz=304						
EGS		**0.41**	**359**	*i* P	**Pb**	**00 03 00.5**	**+0.3**
	baz=8.0						
EGS				*e*S	**Sg**	**00 03 05.7**	**+0.3**
	baz=8.0						
TWD	**Chiawan**	**0.47**	**222**	*e*P	**Pg**	**00 03 00.7**	**0.0**
	baz=221						
TWD				S	**Sg**	**00 03 07.4**	**+0.3**
	baz=221						
NNS	**Nan Shan**	**0.52**	**271**	P	**Pg**	**00 03 01.6**	**-0.1**
	baz=270						
NNS				*i* S	**Sg**	**00 03 08.1**	**-0.6**
	baz=270						
HWA	**Hwalien**	**0.55**	**214**	*e*P	**Pb**	**00 03 03.0**	**+0.5**
	baz=215						
TWB1	**Santiao Chiao**	**0.58**	**4**	P	**Pb**	**00 03 03.3**	**+0.3**
	baz=1.0						
TWB1				*i* S	**Sb**	**00 03 10.6**	**-0.4**
	baz=1.0						
NSK	**Sanguang**	**0.59**	**295**	⇓*i* P	**Pg**	**00 03 02.8**	**-0.1**
	baz=296						
NSK				*i* S	**Sg**	**00 03 09.9**	**-0.8**
	baz=296						
TWA	**Mucha**	**0.64**	**329**	*e*P	**Pb**	**00 03 04.6**	**+0.5**
	baz=323						
TWA				*e*S	**Sb**	**00 03 13.0**	**+0.2**
	baz=323						
NWF	**Wu-fen Shan**	**0.65**	**347**	P	**Pb**	**00 03 04.7**	**+0.3**
	baz=341						
NWF				S	**Sb**	**00 03 13.4**	**+0.1**
	baz=341						
TWT	**Tachien**	**0.72**	**256**	*e*P	**Pg**	**00 03 05.4**	**0.0**
	baz=250						
TWT				*e*S	**Sg**	**00 03 15.1**	**+0.1**
	baz=250						
ESL	**Shilin**	**0.77**	**217**	*e*P	**Pg**	**00 03 06.0**	**-0.3**
	baz=222						
TWS1	**Kuangyinshan**	**0.82**	**325**	P	**Pn**	**00 03 08.2**	**+0.1**
	baz=321						
TWS1				S	**Sn**	**00 03 19.5**	**-0.5**
	baz=321						
NSTT	**Nanjuang**	**0.88**	**283**	*e*P	**Pn**	**00 03 09.1**	**+0.1**
	baz=276						
NSTT				*e*S	**Sb**	**00 03 19.2**	**-0.5**
	baz=276						
TWY	**Chenhua**	**0.90**	**340**	*e*P	**Pn**	**00 03 09.2**	**0.0**
	baz=342						
TWY				*e*S	**Sb**	**00 03 20.2**	**0.0**
	baz=342						
JYNG	**Yonagunijimaku**	**0.91**	**89**	P	**Pg**	**00 03 09.1**	**+0.1**
JYNG				S	**Sn**	**00 03 22.0**	**-0.3**
YOJ	**Yonaguni jima**	**0.97**	**88**	P	**Pg**	**00 03 10.1**	**-0.1**
YOJ				*e*S	**Sn**	**00 03 23.9**	**+0.1**
YOJ	**Yonaguni jima**	**0.97**	**88**	*e*P	**Pn**	**00 03 10.9**	**+0.6**
	baz=88						
WDT	**Danda**	**1.00**	**228**	*e*P	**Pg**	**00 03 10.8**	**+0.1**
	baz=227						
WDT				*e*S	**Sg**	**00 03 23.9**	**0.0**
	baz=227						
TWQ1	**Liyutan**	**1.07**	**266**	*e*P	**Pg**	**00 03 13.4**	**+1.5**
	baz=266						
TWQ1				*e*S	**Sg**	**00 03 26.0**	**+0.1**
	baz=266						
SMLT	**Sun Moon Lake**	**1.10**	**240**	*e*P	**Pg**	**00 03 13.4**	**+0.9**
	baz=250						
SMLT				*e*S	**Sn**	**00 03 27.8**	**+0.8**
	baz=250						
TYC	**Yuchr**	**1.12**	**242**	*e*P	**Pb**	**00 03 12.0**	**-0.2**
	baz=241						
TWF1	**Yuli**	**1.23**	**209**	*e*P	**Pn**	**00 03 11.8**	**-2.0**
	baz=221						
ALS	**Alishan**	**1.39**	**229**	*e*P	**Pg**	**00 03 18.4**	**+0.4**
	baz=215						
CHN5	**Tsauling**	**1.42**	**235**	P	**Pg**	**00 03 18.4**	**-0.3**
	baz=236						
CHN5				S	**Sg**	**00 03 38.2**	**+0.9**
	baz=236						
IRIF	**Iriomote-Funau**	**1.63**	**93**	P	**Pn**	**00 03 19.4**	**+0.1**
IRIF				*e*S	**Sn**	**00 03 39.9**	**-0.1**
CHN4	**Tsaushan**	**1.64**	**229**	*e*P	**Pb**	**00 03 21.8**	**+0.7**
	baz=231						
CHN4				*e*S	**Sg**	**00 03 45.5**	**+1.4**
	baz=231						
WTP	**Ta-pu**	**1.69**	**226**	*e*P	**Pb**	**00 03 22.1**	**0.0**
	baz=226						
CHN1	**Nanshi**	**1.79**	**227**	*e*P	**Pb**	**00 03 23.7**	**0.0**
	baz=228						
CHN1				*e*S	**Sg**	**00 03 48.4**	**-0.6**
	baz=228						
JKRS	**Kuro-shima**	**1.90**	**95**	*e*S	**Sn**	**00 03 46.7**	**+0.2**
JIJ	**Ishigaki jima**	**2.01**	**91**	*e*S	**Sn**	**00 03 48.7**	**-0.6**
JISG	**Ishigakijimahi**	**2.16**	**85**	*e*S	**Sn**	**00 03 52.2**	**-0.9**

IDC ***18*** *00:24:57.9±0.8, 37˚.86N×144˚.33E, h0km, mb3.8/11, mb1 4.0/14, mb1mx3.8/43, mbtmp3.8/14, ML3.8/3, MS3.0/10, Ms1 3.0/10, ms1mx2.7/54, Error ellipse: s-maj=23.3km s-min=17.2km az=122.0*
ISCJB ***18*** *00:25:01.3±0.4, 37˚.94N±0˚.05×144˚.13E±0˚.04, h33km, mb4.0/15, MS3.1/4, Error ellipse: s-maj=7.1km s-min=4.3km az=178.3*
JMA ***18*** *00:25:01.0±0.2, 37˚.98N×144˚.08E, h33km, M4.0*
NEIC ***18*** *00:25:03.1±0.3, 37˚.89N×144˚.27E, h35km, mb4.5/5, Error ellipse: s-maj=8.6km s-min=5.7km az=151.0*
ISC 18 00:25:03.5±0.7, 37˚.98N±0˚.07×144˚.15E±0˚.06, h35km, n48, σ1=22/51, mb3.9/15, MS3.1/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.23**	**300**	P	**Pn**	**00 25 36.4**	**-1.6**
OFUJ				*e*S	**Sn**	**00 26 02.9**	**-1.4**
JIO	**Ouri**	**2.25**	**283**	P	**Pn**	**00 25 36.8**	**-1.5**
JIO				S	**Sn**	**00 26 03.1**	**-1.8**
JMK	**Ichinoseki**	**2.49**	**294**	P	**Pn**	**00 25 40.4**	**-1.2**
JMM	**Marumori**	**2.66**	**268**	P	**Pn**	**00 25 42.2**	**-1.6**
JMM				*e*S	**Sn**	**00 26 12.9**	**-1.9**
JFK	**Kawauchi**	**2.67**	**258**	P	**Pn**	**00 25 42.0**	**-2.1**
JFK				S	**Sn**	**00 26 13.0**	**-2.2**
JOM	**Ohasama**	**2.68**	**305**	P	**Pn**	**00 25 43.5**	**-0.7**
JOM				*e*S	**Sn**	**00 26 13.9**	**-1.6**
JOU	**Okura**	**2.77**	**279**	P	**Pn**	**00 25 44.7**	**-0.8**
JOU				S	**Sn**	**00 26 17.1**	**-0.6**
JFT	**Otama**	**3.06**	**262**	P	**Pn**	**00 25 48.6**	**-0.8**
JFT				S	**Sn**	**00 26 23.8**	**-0.9**
JRG	**Rokugo**	**3.09**	**298**	P	**Pn**	**00 25 48.8**	**-1.0**
JRG				*e*S	**Sn**	**00 26 25.2**	**-0.3**
JYK	**Kaneyama**	**3.12**	**289**	P	**Pn**	**00 25 49.2**	**-1.0**
JYK				*e*S	**Sn**	**00 26 25.5**	**-0.7**
MJAR	**Matsushiro Arr**	**4.95**	**255**	Pn	**Pn**	**00 26 15.0**	**-0.5**
	3.1nm,0.3s,baz=78,slow=15,SNR=31						
MJAR				LR	LR	00 28 30.3	
	comp=Z,126nm,20.3s,baz=80,slow=42						
MAJO	**Matsushiro**	**4.95**	**255**	*e*Pn	**Pn**	**00 26 15.9**	**+0.5**
MAT	**Matsushiro**	**4.95**	**255**	P	**Pn**	**00 26 15.0**	**-0.

*ISCJB **18** 00:43:17.2±0.5, 37°.13S±0°.03×73°.80W±0°.06, h33km, mb4.2/9, MS3.4/1, Error ellipse: s-maj=7.4km s-min=4.4km az=5.2*

ISC 18 00:43:19.3±0.7, 37°.12S±0°.05×73°.81W±0°.08, h35km, n47, σ1°29/52, mb4.2/9, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CCSP	**San Pedro de C**	**0.63**	**64**	*i* P	**Pn**	**00 43 29.0**	**-2.6**
CCSP				*i* S	**Sn**	**00 43 39.9**	**-0.5**
COCH	**Cobquecura**	**1.28**	**40**	*i* P	**Pn**	**00 43 38.3**	**-2.3**
CCHI	**Chillan**	**1.48**	**70**	*i* P	**Pn**	**00 43 42.3**	**-1.1**
CCHI				*i* S	**Sn**	**00 44 04.0**	**+2.4**
CCHI				IAML		00 44 16.4	
	comp=E,52μm,0.6s						
TALC	**Talca**	**2.46**	**46**	*i* P	**Pn**	**00 43 55.3**	**-1.6**
TALC				*i* S	**Sn**	**00 44 25.9**	**+0.2**
TALC				IAML		00 44 43.4	
	comp=E,16μm,0.8s						
PLCA	**Paso Flores**	**4.42**	**146**	Pn	**Pn**	**00 44 23.9**	**0.0**
	comp=E,0.8nm,0.3s,baz=335,slow=16,SNR=18						
PLCA				Lg	Lg	00 45 35.7	
	comp=E,3.4nm,0.3s,baz=270,slow=20,SNR=5.5						
PLCA	**Paso Flores**	**4.42**	**146**	*i* P	**Pn**	**00 44 23.4**	**-0.5**
PLCA	**Paso Flores**	**4.42**	**146**	*e*Pn	**Pn**	**00 44 23.9**	**0.0**
PLCA				*e*Sn	**Sn**	**00 45 14.2**	**+0.1**
ROC1	**El Roble**	**4.73**	**30**	*e*P	**Pn**	**00 44 27.0**	**-1.3**
ROC1				*e*S	Sn	00 45 48.0	+26
ROC1	**El Roble**	**4.73**	**30**	*e*Pn	**Pn**	**00 44 26.9**	**-1.4**
ROC1				*e*Sn	**Sn**	**00 45 24.4**	**+2.4**
AAGR	**Agrelo**	**5.73**	**47**	*e*P	**Pn**	**00 44 43.3**	**+1.3**
AUSP	**Uspallata**	**6.09**	**38**	*e*P	**Pn**	**00 44 47.9**	**+0.8**
ASAL	**Salagasta**	**6.09**	**44**	*e*P	**Pn**	**00 44 47.7**	**+0.8**
RTLS	**Leoncito**	**6.48**	**36**	*e*P	**Pn**	**00 44 53.2**	**+0.8**
AMOG	**MOGNA**	**7.58**	**37**	*e*P	**Pn**	**00 45 06.6**	**-0.7**
LCO	**Las Campanas**	**8.49**	**19**	*e*Pn	**Pn**	**00 45 18.1**	**-2.0**
LCO				*e*Sn	**Sn**	**00 46 55.8**	**+1.0**
AGUA	**GUANDACOL**	**8.81**	**32**	*e*P	**Pn**	**00 45 24.2**	**-0.1**
TRQA	**Tornquist**	**9.44**	**99**	*e*Pn	**Pn**	**00 45 34.3**	**+1.6**
TRQA				*e*Sn	**Sn**	**00 47 18.1**	**+0.4**
TCA	**Tanti**	**9.56**	**56**	*e*P	**Pn**	**00 45 32.8**	**-1.7**
TCA				IAML		00 45 44.9	
	comp=Z,5.7nm,0.5s						
VCA	**Vinchina**	**9.59**	**31**	*e*P	**Pn**	**00 45 36.8**	**+1.8**
VCA				IAML		00 46 00.8	
	comp=Z,16nm,0.4s						
CHRN	**Cochrane**	**10.17**	**175**	*e*Pn	**Pn**	**00 45 42.9**	**+0.2**
CYA	**Choya**	**10.96**	**40**	*e*P	Pn	00 45 50.4	-3.3
CYA				IAML		00 46 04.6	
	comp=Z,4.3nm,0.4s						
FSA	**Cafayete**	**12.84**	**33**	*e*P	**Pn**	**00 46 16.8**	**-2.6**
FSA				IAML		00 46 35.5	
	comp=Z,2.2nm,0.8s						
LVC	**Limon Verde**	**15.07**	**18**	Pn	**Pn**	**00 46 49.6**	**-0.3**
	comp=Z,5.5nm,0.3s,baz=184,slow=6.5,SNR=2.7						
LVC	**Limon Verde**	**15.07**	**18**	*e*Pn	**Pn**	**00 46 50.1**	**+0.2**
	comp=Z,6.3nm,0.8s						
CPUP	**Villa Florida**	**17.64**	**57**	Pn	**P**	**00 47 22.6**	**-0.4**
	comp=Z,0.2nm,0.3s,baz=211,slow=12,SNR=4.0						
CPUP				LR	LR	00 55 11.8	
	comp=Z,267nm,18.6s,baz=236,slow=41						
CPUP	**Villa Florida**	**17.64**	**57**	*e*Pn	**P**	**00 47 22.8**	**-0.2**
PB11	**IPOC Station P**	**17.67**	**13**	*e*Pn	**P**	**00 47 25.6**	**+2.1**
	comp=Z,21nm,0.9s						
EFI	**East Falkland**	**18.34**	**148**	*e*P	**P**	**00 47 28.1**	**-2.3**
	comp=Z,267nm,2.0s						
LPAZ	**La Paz**	**21.35**	**15**	P	**P**	**00 48 04.6**	**+0.5**
	comp=Z,4.8nm,0.7s,baz=177,slow=10.0,SNR=13						
SIV	**San Ignacio**	**23.88**	**32**	P	**P**	**00 48 28.4**	**-1.3**
	comp=Z,4.4nm,0.8s,baz=222,slow=12,SNR=16						
SIV				LR	LR	00 58 59.2	
	comp=Z,131nm,19.5s,baz=202,slow=40						
PTGA	**Pitinga**	**38.40**	**23**	P	**P**	**00 50 36.7**	**-0.7**
	comp=Z,2.3nm,0.7s,baz=186,slow=9.2,SNR=4.5						
PTGA	**Pitinga**	**38.40**	**23**	*e*P	**P**	**00 50 37.6**	**+0.2**
	comp=Z,13nm,1.6s						
RUSC	**La Rusia**	**42.79**	**1**	*e*P	**P**	**00 51 13.7**	**-0.5**
	comp=Z,2.1nm,0.8s						
HELC	**Santa Helena**	**43.11**	**358**	*e*P	**P**	**00 51 18.2**	**+1.5**
	comp=Z,17nm,0.8s						
VNA3	**Neumayer Olymp**	**47.05**	**157**	P	**P**	**00 51 48.1**	**+1.1**
VNA2	**Neumayer--Watz**	**47.73**	**156**	P	P	00 51 56.1	+3.9
	baz=313,slow=7.3						
SNAA	**Sanae**	**49.27**	**157**	P	**P**	**00 52 04.7**	**+0.6**
SNAA	**Sanae**	**49.27**	**157**	*e*P	**P**	**00 52 05.0**	**+0.8**
	comp=Z,7.5nm,1.0s						
QSPA	**South Pole Qui**	**53.12**	**180**	*e*P	**P**	**00 52 34.9**	**+1.7**
LTX	**Lajitas**	**71.79**	**333**	*e*P	**P**	**00 54 38.0**	**-0.2**
TXAR	**Lajitas Array**	**71.79**	**333**	P	**P**	**00 54 38.0**	**-0.2**
	comp=Z,0.3nm,0.7s,baz=160,slow=6.3,SNR=4.6						
DBIC	**Dimbokro**	**77.54**	**72**	P	**P**	**00 55 10.2**	**-1.6**
	comp=Z,3.4nm,0.7s,baz=173,slow=8.5,SNR=5.2						
DBIC	**Dimbokro**	**77.54**	**72**	*e*P	**P**	**00 55 10.2**	**-1.6**
	comp=Z,35nm,1.6s						
BOSA	**Boshof**	**79.89**	**118**	P	**P**	**00 55 25.1**	**+0.3**
	comp=Z,2.5nm,0.9s,baz=170,slow=10,SNR=3.4						
LCMT	**Little Creek M**	**82.30**	**329**	*e*PcP	**PcP**	**00 55 42.7**	**+0.3**
MK32	**Makanchi Array**	**159.84**	**54**	*e*PKPab	**PKPab**	**01 03 53.7**	**+0.3**
MKAR	**Makanchi Array**	**159.84**	**54**	PKPab	**PKPab**	**01 03 53.7**	**+0.3**
	comp=Z,0.4nm,0.6s,baz=270,slow=4.3,SNR=2.5						

*IDC **18** 00:49:09.3±2.5, 61°.34N×146°.75W, h0km, mb3.1/1, mb1 3.5/5, mb1mx3.3/47, mbtmp3.2/5, ML3.5/3, Error ellipse: s-maj=36.8km s-min=12.6km az=59.0*
*ISCJB **18** 00:49:13.7±0.2, 61°.56N±0°.02×146°.49W±0°.04, h47km±5km, mb3.0/1, Error ellipse: s-maj=4.1km s-min=2.9km az=32.3*
*NEIC **18** 00:49:15.0, 61°.54N×146°.50W, h36km, ML3.3(AEIC), After AEIC.*
NEIC Felt at Valdez.

ISC 18 00:49:14.3±1.1, 61°.54N±0°.03×146°.50W±0°.03, h29km±10km, n78, σ0°78/89, Southern Alaska

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KLU	**Klutina**	**0.28**	**99**	P	**Pn**	**00 49 22.3**	**-0.2**
KLU				S	**Sn**	**00 49 28.4**	**+0.5**
VLZ	**Valdez**	**0.42**	**169**	P	**Pb**	**00 49 23.6**	**+0.2**
VLZ				S	**Sn**	**00 49 31.1**	**+0.2**
VMT	**TAPS Tl Valdez**	**0.46**	**172**	P	**Pb**	**00 49 24.1**	**0.0**
VMT				S	**Sn**	**00 49 31.6**	**-0.6**
SCM	**Sheep Creek Mo**	**0.49**	**307**	P	**Pb**	**00 49 24.4**	**-0.2**
SCM				S	**Sn**	**00 49 32.5**	**-0.6**
DIV	**Divide**	**0.54**	**139**	P	**Pb**	**00 49 25.1**	**-0.3**
DIV				S	**Sb**	**00 49 33.5**	**+0.5**
PS12	**TAPS Pump St12**	**0.65**	**95**	P	**Pb**	**00 49 26.6**	**-0.7**
PS11	**TAPS Pump St11**	**0.73**	**42**	P	**Pb**	**00 49 28.2**	**-0.3**
SML	**Sawmill**	**0.91**	**288**	P	**Pn**	**00 49 30.1**	**-1.2**
SML				S	**Sn**	**00 49 42.5**	**-0.9**
EYAK	**Cordova Ski Ar**	**1.06**	**159**	P	**Pn**	**00 49 33.2**	**+0.1**
BMRM	**Bremner River**	**1.08**	**121**	P	**Pn**	**00 49 32.4**	**-1.1**
BMRM				S	**Sb**	**00 49 48.3**	**+0.1**
PMR	**Palmer**	**1.26**	**274**	P	**Pn**	**00 49 35.7**	**-0.2**
PTE	**Portage**	**1.40**	**242**	P	**Pn**	**00 49 37.9**	**+0.1**
RAGM	**Ragged Mountai**	**1.46**	**142**	P	**Pn**	**00 49 39.0**	**+0.2**
VRDI	**Verde Repeater**	**1.50**	**101**	P	**Pn**	**00 49 38.9**	**-0.5**
PAX	**Paxson**	**1.52**	**18**	P	**Pn**	**00 49 38.8**	**-0.7**
RC01	**Rabbit Creek A**	**1.62**	**255**	P	**Pn**	**00 49 41.2**	**+0.3**
MCARA	**McCarthy VSAT**	**1.68**	**94**	P	**Pn**	**00 49 41.9**	**+0.2**
BERG	**Berg Lake**	**1.79**	**129**	P	**Pn**	**00 49 42.7**	**-0.4**
NICHA	**Nichawak Mount**	**1.80**	**135**	P	**Pn**	**00 49 43.1**	**-0.2**
MENT	**Mentasta**	**1.92**	**42**	P	**Pn**	**00 49 45.0**	**0.0**
PS10	**TAPS Pump St10**	**1.92**	**10**	P	**Pn**	**00 49 45.6**	**+0.5**
KHIT	**Khitrov Hills**	**1.93**	**123**	P	**Pn**	**00 49 44.7**	**-0.5**
TGL	**Tana Glacier**	**1.95**	**112**	P	**Pn**	**00 49 45.1**	**-0.4**
PTPK	**Patty Peak**	**1.98**	**98**	P	**Pn**	**00 49 46.0**	**+0.1**
CUT	**Chulitna**	**1.98**	**298**	P	**Pn**	**00 49 46.5**	**+0.7**
SUCK	**Suckling Hills**	**1.99**	**137**	P	**Pn**	**00 49 45.4**	**-0.5**
GRIN	**Grindle Hills**	**2.00**	**128**	P	**Pn**	**00 49 46.0**	**-0.1**
SEW	**Seward**	**2.04**	**226**	P	**Pn**	**00 49 46.6**	**0.0**
HUR	**Hurricane**	**2.06**	**316**	P	**Pn**	**00 49 47.1**	**+0.2**
BALM	**Baldy**	**2.07**	**102**	P	**Pn**	**00 49 46.6**	**-0.6**
SLKM	**Skilak Lake**	**2.08**	**242**	P	**Pn**	**00 49 47.5**	**+0.2**
KIAG	**Kiagna River**	**2.10**	**105**	P	**Pn**	**00 49 47.0**	**-0.6**
MID	**Middleton Isla**	**2.12**	**178**	P	**Pn**	**00 49 48.0**	**+0.3**
RND	**Reindeer**	**2.17**	**331**	P	**Pn**	**00 49 48.5**	**0.0**
ISLE	**Juniper Island**	**2.23**	**113**	P	**Pn**	**00 49 48.5**	**-0.9**
KULT	**Kultieth River**	**2.26**	**123**	P	**Pn**	**00 49 49.5**	**-0.2**
BARK	**Barkley Ridge**	**2.26**	**118**	P	**Pn**	**00 49 49.5**	**-0.3**
BARN	**Barnard Glacie**	**2.38**	**99**	P	**Pn**	**00 49 51.6**	**+0.1**
BAGL	**Bagley Icefiel**	**2.39**	**114**	P	**Pn**	**00 49 51.0**	**-0.4**
DOT	**Dot Lake**	**2.40**	**27**	P	**Pn**	**00 49 51.9**	**+0.3**
GRNC	**Granite Creek**	**2.44**	**107**	P	**Pn**	**00 49 52.0**	**-0.4**
MCK	**McKinley**	**2.47**	**334**	P	**Pn**	**00 49 53.0**	**+0.4**
STLK	**Strandline Lak**	**2.56**	**271**	P	**Pn**	**00 49 53.6**	**-0.2**
CTGM	**Chitina Glacie**	**2.56**	**101**	P	**Pn**	**00 49 53.8**	**-0.2**
TRF	**Thorofare Moun**	**2.60**	**319**	P	**Pn**	**00 49 54.9**	**+0.3**
MESA	**MESA**	**2.61**	**119**	P	**Pn**	**00 49 54.2**	**-0.5**
BCA3	**Beaver Creek A**	**2.68**	**53**	P	**Pn**	**00 49 55.3**	**-0.2**
LOGN	**Logan Glacier**	**2.76**	**103**	P	**Pn**	**00 49 56.5**	**-0.2**
SPCR	**Spurr Chakacha**	**2.77**	**265**	P	**Pn**	**00 49 59.2**	**+2.5**
BRLK	**Bradley Lake**	**2.80**	**232**	P	**Pn**	**00 49 57.0**	**-0.1**
RKAV	**Rock Avalanche**	**2.81**	**114**	P	**Pn**	**00 49 57.4**	**+0.1**
CKL	**Chakachamna La**	**2.83**	**266**	P	**Pn**	**00 49 57.0**	**-0.6**
TABL	**Table Mountain**	**2.83**	**111**	P	**Pn**	**00 49 56.9**	**-0.9**
KTH	**Kantishna Hill**	**2.88**	**317**	P	**Pn**	**00 49 58.6**	**+0.4**
HDA	**Harding Lake**	**2.89**	**356**	P	**Pn**	**00 49 58.4**	**+0.1**
SPWE	**Spurr West**	**2.92**	**267**	P	**Pn**	**00 49 59.6**	**+0.7**
BWN	**Browne**	**2.97**	**334**	P	**Pn**	**00 49 59.1**	**-0.3**
PPLA	**Purkeypile**	**2.99**	**300**	P	**Pn**	**00 49 59.8**	**0.0**
PS08	**TAPS Pump Stn8**	**3.02**	**357**	P	**Pn**	**00 50 01.4**	**+1.3**
WRH	**Wood River Hil**	**3.03**	**347**	P	**Pn**	**00 49 59.5**	**-0.8**
CCB	**Clear Creek Bu**	**3.18**	**350**	P	**Pn**	**00 50 01.2**	**-1.0**
CAST	**Castle Rocks**	**3.21**	**309**	P	**Pn**	**00 50 02.4**	**-0.3**
ILAR	**Eielson Array**	**3.25**	**357**	Pn	**Pn**	**00 50 02.0**	**-1.2**
	11nm,0.3s,baz=178,slow=13,SNR=130						
ILAR				Sn	**Sn**	**00 50 43.5**	**+2.6**
	6.7nm,0.3s,baz=180,slow=22,SNR=5.9						
ILAR				Lg	Lg	00 50 51.9	
	7.5nm,0.3s,baz=174,slow=28,SNR=7.8						
BPAW	**Bear Paw Mtn.**	**3.29**	**323**	P	**Pn**	**00 50 03.5**	**-0.4**
COLA	**College**	**3.40**	**350**	P	**Pn**	**00 50 05.5**	**+0.1**
CHUM	**Lake Minchumin**	**3.56**	**314**	P	**Pn**	**00 50 07.1**	**-0.4**
MLY	**Manley**	**3.99**	**333**	P	**Pn**	**00 50 12.6**	**-0.9**
EGAK	**Eagle**	**4.05**	**34**	*e*Pn	**Pn**	**00 50 14.5**	**+0.2**
EGAK				Sn	**Sn**	**00 51 00.1**	**-0.6**
DAWY	**Dawson**	**4.13**	**49**	*e*Pn	**Pn**	**00 50 15.2**	**-0.2**
DAWY				*e*Sn	**Sn**	**00 51 02.1**	**-0.6**
TT01	**Tatalina**	**4.66**	**291**	P	**Pn**	**00 50 21.2**	**-1.4**
TTA	**Tatalina**	**4.66**	**292**	P	**Pn**	**00 50 21.2**	**-1.5**
IM3	**Indian Mountai**	**5.50**	**327**	P	**Pn**	**00 50 33.4**	**-0.7**
COLD	**Coldfoot**	**5.93**	**346**	P	**Pn**	**00 50 41.1**	**+1.1**
BM3	**Burnt Mountain**	**5.96**	**7**	P	**Pn**	**00 50 39.8**	**-0.7**
INK	**Inuvik**	**8.73**	**33**	Pn	**Pn**	**00 51 18.6**	**+0.2**
	0.1nm,0.3s,baz=225,slow=11,SNR=3.6						
INK				Sn	**Sn**	**00 52 58.9**	**+3.4**
	0.1nm,0.3s,baz=196,slow=19,SNR=1.8						
INK				Lg	Lg	00 53 46.8	
	0.1nm,0.3s,baz=299,slow=19,SNR=1.9						
DLBC	**Dease Lake**	**8.82**	**103**	Pn	**Pn**	**00 51 20.2**	**+0.5**
	0.2nm,0.3s,baz=300,slow=14,SNR=2.8						
DLBC				Lg	Lg	00 53 44.4	
	baz=198,slow=19,SNR=2.6						
YKA	**Yellowknife Ar**	**14.92**	**72**	Pn	**Pn**	**00 52 42.4**	**-0.5**
	baz=275,slow=14,SNR=2.1						
TXAR	**Lajitas Array**	**42.73**	**119**	P	**P**	**00 57 08.3**	**-0.4**
	0.2nm,0.6s,baz=332,slow=7.6,SNR=3.6						

*NIED **18** 00:55:00, 36°.20N×141°.30E, h11km, Mw3.3 Best double couple: M0:1.6000×10^14 NP1:φs=170.00000°, δ52.00000°, λ-173.00000°. NP2:φs=76.00000°, δ84.00000°, λ-38.00000°.*

JMA 18 00:55:37.8±0.1, 36°.16N×141°.26E, h47km±2km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.56**	**216**	P	Pn	00 55 49.6	0.0
CHOJ				*e*S	Sn	00 55 58.1	0.0
JHO	**Hitachi**	**0.72**	**309**	P	Pn	00 55 51.8	+0.1
JHO				*e*S	Sn	00 56 01.9	+0.2
JYT	**Yasato**	**0.86**	**275**	P	Pn	00 55 54.0	+0.4
ONAJ	**Iwakimizuishiy**	**1.01**	**339**	P	Pn	00 55 55.4	-0.3
JFK	**Kawauchi**	**1.24**	**346**	P	Pn	00 55 58.8	0.0
JAG	**Ashikaga**	**1.48**	**281**	P	Pn	00 56 02.9	+0.9
MAT	**Matsushiro**	**2.49**	**280**	P	Pn	00 56 17.9	+2.0
MAT				*e*S	Sn	00 56 49.3	+4.2

*ISCJB **18** 01:18:24.8±0.6, 16°.48N±0°.09×46°.8W±0°.1, h13km, mb4.0/15, MS3.4/10, Error ellipse: s-maj=18.2km s-min=13.3km az=8.0*
*IDC **18** 01:18:24.6±1.0, 16°.47N×46°.67W, h0km, mb3.9/7, mb1 4.1/7, mb1mx3.8/37, mbtmp3.9/7, MS3.4/11, Ms1 3.4/11, ms1mx3.2/35, Error ellipse: s-maj=35.9km s-min=20.9km az=107.0*
*NEIC **18** 01:18:26.0±0.5, 16°.47N×46°.72W, h10km, mb4.2/8, Error ellipse: s-maj=14.8km s-min=10.6km az=99.0*

ISC 18 01:18:26.5±0.8, 16°.5N±0°.1×46°.7W±0°.2, h13km, n30, σ0°81/15, mb4.1/15, MS3.3/10, Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H05S1	**Guadeloupe/Mar**	**13.76**	**263**	T	T	01 35 51.4	
	SNR=24						
SJG	**San Juan**	**18.63**	**278**	LR	LR	01 28 33.0	
	comp=Z,194nm,22.0s,baz=92,slow=33						
PTGA	**Pitinga**	**21.50**	**219**	P	**P**	**01 23 17.2**	**+1.9**
	18nm,1.3s,baz=24,slow=12,SNR=8.6						
PTGA				LR	LR	01 30 42.0	
	comp=Z,132nm,20.1s,baz=36,slow=34						
RCBR	**Riachuelo**	**24.59**	**153**	LR	LR	01 30 57.1	
	comp=Z,99nm,19.0s,baz=342,slow=31						
LPAZ	**La Paz**	**38.79**	**214**	P	**P**	**01 25 52.4**	**+0.5**
	2.2nm,0.9s,baz=43,slow=5.0,SNR=7.1						
LPAZ				LR	LR	01 41 19.3	
	comp=Z,39nm,21.1s,baz=18,slow=35						
H10N3	**ASCENSION HYDR**	**39.99**	**125**	T	T	02 08 07.0	
	baz=307,slow=75,SNR=22						
H10N2	**ASCENSION HYDR**	**39.99**	**125**	T	T	02 08 08.4	
	baz=307,slow=75,SNR=22						
H10N1	**ASCENSION HYDR**	**40.01**	**125**	T	T	02 08 13.7	
	baz=307,slow=75,SNR=27						
H10S3	**ASCENSION HYDR**	**40.54**	**126**	T	T	02 08 50.9	
	baz=308,slow=75,SNR=19						
H10S1	**ASCENSION HYDR**	**40.54**	**126**	T	T	02 08 51.2	
	baz=308,slow=75,SNR=15						
H10S2	**ASCENSION HYDR**	**40.56**	**126**	T	T	02 08 52.3	
	baz=308,slow=75,SNR=20						
DBIC	**Dimbokro**	**42.07**	**98**	LR	LR	01 40 36.4	
	comp=Z,55nm,19.5s,baz=240,slow=32						
CPUP	**Villa Florida**	**43.76**	**194**	P	**P**	**01 26 31.2**	**-0.7**
	6.0nm,0.9s,baz=21,slow=6.0,SNR=9.9						
CPUP				LR	LR	01 45 57.7	
	comp=Z,35nm,18.3s,baz=322,slow=38						
LVC	**Limon Verde**	**44.49**	**210**	*e*P	**P**	**01 26 37.6**	**-0.6**
	3.4nm,0.9s						
HKT	**Hockley**	**46.77**	**296**	*e*P	**P**	**01 26 55.0**	**-0.8**
	1.8nm,0.6s						
TAM	**Tamanrasset**	**49.41**	**74**	*e*P	**P**	**01 27 16.7**	**+0.1**
	6.5nm,1.5s						
LCO	**Las Campanas**	**50.79**	**207**	*e*P	**P**	**01 27 26.0**	**-1.0**
	3.7nm,0.5s						
ULM	**Lac du Bonnet**	**51.78**	**322**	LR	LR	01 46 45.1	
	comp=Z,33nm,20.7s,baz=141,slow=33						
TXAR	**Lajitas Array**	**53.55**	**295**	P	**P**	**01 27 47.2**	**-0.3**
	0.3nm,1.0s,baz=118,slow=7.3,SNR=2.5						
TXAR				LR	LR	01 48 07.9	
	comp=Z,24nm,21.3s,baz=0.0,slow=33						
RSSD	**Black Hills**	**55.36**	**313**	*e*P	**P**	**01 28 00.6**	**+0.1**
	1.3nm,0.7s						
GERES	**GERESS Array B**	**58.38**	**42**	LR	LR	01 51 07.5	
	comp=Z,32nm,19.2s,baz=285,slow=34						
PDAR	**Pinedale Array**	**59.14**	**310**	LR	LR	01 50 49.3	
	comp=Z,70nm,22.0s,baz=160,slow=33						
HWUT	**Hardware Ranch**	**60.52**	**309**	*e*P	**P**	**01 28 36.4**	**-0.4**
	1.0nm,0.6s						
H09N1	**TRISTAN DA CUN**	**62.33**	**149**	T	T	02 36 23.5	
	SNR=34						
HLID	**Hailey**	**62.74**	**311**	*e*P	**P**	**01 28 51.8**	**+0.1**
	0.7nm,0.5s						
ELK	**Elko**	**63.26**	**308**	*e*P	**P**	**01 28 55.2**	**-0.1**
	1.7nm,0.9s						
YKA	**Yellowknife Ar**	**65.35**	**332**	P	**P**	**01 29 08.0**	**-0.3**
	0.3nm,0.7s,baz=100,slow=7.1,SNR=5.2						
BRTR	**Keskin Array B**	**72.36**	**53**	P	**P**	**01 29 52.6**	**+0.1**
	1.0nm,0.8s,baz=264,slow=7.0,SNR=7.5						
ILAR	**Eielson Array**	**79.53**	**335**	P	**P**	**01 30 33.9**	**+1.0**
	1.2nm,0.9s,baz=65,slow=5.4,SNR=8.3						
ARU	**Arti**	**84.63**	**33**	LR	LR	02 06 41.9	
	comp=Z,32nm,18.3s,baz=307,slow=34						

WEL 18 01:18:59.8±0.4, 36°.85S×176°.57E, h234km±5km, ML3.8/8, 2C-1D, Error ellipse: s-maj=6.7km s-min=6.5km az=0.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HAZ	**Te Kaha**	**1.32**	**134**	PN	Pn	01 19 35.4	+0.2
URZ	**Urewera**	**1.47**	**163**	⇑PN	Pn	01 19 36.5	+0.3
MXZ	**Matakaoa Point**	**1.56**	**118**	AML	AML	01 19 36.3	
MXZ				PN	Pn	01 19 37.1	+0.1
MXZ				SN	S	01 20 06.2	+0.1
MWZ	**Matawai**	**1.67**	**153**	PN	Pn	01 19 37.9	0.0
MWZ				SN	S	01 20 06.9	-1.0
MWZ				AML	AML	01 20 10.0	
TWGZ	**Tauwhareparae**	**1.73**	**140**	PN	Pn	01 19 39.0	+0.4
TWGZ				SN	S	01 20 09.0	+0.1
WMGZ	**Waiomatatini S**	**1.76**	**124**	⇑PN	Pn	01 19 38.8	+0.2
WMGZ				SN	S	01 20 07.9	-1.3
PUZ	**Puketiti**	**1.81**	**133**	PN	Pn	01 19 39.0	-0.2
RIGZ	**Rimuhau**	**2.08**	**153**	PN	Pn	01 19 41.6	0.0
RAHZ	**Arahi**	**2.10**	**169**	PN	Pn	01 19 42.0	+0.2
NMHZ	**Naumai**	**2.25**	**175**	PN	Pn	01 19 43.9	+0.5
WHHZ	**Waihua**	**2.29**	**167**	PN	Pn	01 19 42.8	-0.8
BKZ	**Black Stump Fm**	**2.31**	**182**	PN	Pn	01 19 43.7	-0.3
BKZ				AML	AML	01 20 19.3	
KNZ	**Kokohu**	**2.34**	**158**	PN	Pn	01 19 43.2	-0.9
OTVZ	**Oturere**	**2.42**	**197**	PN	Pn	01 19 44.3	-0.9
ARHZ	**Aropaoanui**	**2.43**	**172**	PN	Pn	01 19 44.9	-0.2
TUVZ	**Tukino**	**2.52**	**196**	PN	Pn	01 19 46.8	+0.6
KWHZ	**Kaweka Forest**	**2.57**	**183**	PN	Pn	01 19 46.2	-0.5
WNVZ	**Wahianoa**	**2.59**	**197**	⇓PN	Pn	01 19 47.3	+0.3
MCHZ	**McNeill Hill**	**2.59**	**178**	PN	Pn	01 19 46.6	-0.2
MOVZ	**Moawhango**	**2.63**	**194**	PN	Pn	01 19 47.0	-0.3
BHHZ	**Black Hill Sta**	**2.67**	**189**	PN	Pn	01 19 47.2	-0.5
KRHZ	**Kereru**	**2.79**	**183**	PN	Pn	01 19 48.1	-0.9
KAHZ	**Kahuranaki**	**2.95**	**175**	PN	Pn	01 19 49.5	-1.2
PNHZ	**Pukenui**	**3.07**	**185**	PN	Pn	01 19 50.6	-1.5
TSZ	**Takapari Road**	**3.24**	**188**	PN	Pn	01 19 52.6	-1.3
PRHZ	**Porangahau**	**3.41**	**179**	PN	Pn	01 19 54.5	-1.4
DVHZ	**Dannevirke**	**3.46**	**185**	PN	Pn	01 19 54.8	-1.6
POWZ	**Post Office Ro**	**3.59**	**190**	PN	Pn	01 19 56.7	-1.3
ANWZ	**Angora Road**	**3.61**	**181**	PN	Pn	01 19 56.8	-1.3
MRZ	**Mangatainoka R**	**3.88**	**191**	PN	Pn	01 19 59.1	-2.3
TIWZ	**Tintock**	**3.96**	**188**	PN	Pn	01 20 00.7	-1.6
OGWZ	**Otaki Gorge**	**4.11**	**195**	PN	Pn	01 20 01.6	-2.4
HOWZ	**Holdsworth Sta**	**4.13**	**191**	PN	Pn	01 20 02.0	-2.3
KIW	**Kapiti Island**	**4.21**	**197**	PN	Pn	01 20 03.3	-2.0
MTW	**Mount Morrison**	**4.38**	**191**	PN	Pn	01 20 04.9	-2.5
TCW	**Tory Channel**	**4.71**	**202**	PN	Pn	01 20 09.0	-2.3
THZ	**Tophouse**	**5.67**	**209**	PN	Pn	01 20 21.5	-1.9

MEX 18 01:21:01.4±0.5, 14°.25N×92°.59W, h9km±83km, MD4.0, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THIG		**0.72**	**26**	*e*P	Pg	01 21 13.9	-1.5
THIG				*i* S	Sg	01 21 22.9	-1.9
PCIG		**1.57**	**337**	*e*P	Pn	01 21 25.6	-3.8
PCIG				*i* S	Sn	01 21 45.0	-4.8
CCIG	**Comitan**	**2.06**	**12**	*e*P	Pn	01 21 32.5	-4.0
CCIG				*e*S	Sn	01 21 58.3	-4.1

JMA 18 01:33:08.6, 36°.79N×140°.54E, h8km±1km, M2.9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.18**	**173**	P	Pg	01 33 12.4	+0.1
JHO				S	Sg	01 33 15.0	+0.2
ONAJ	**Iwakimizuishiy**	**0.37**	**34**	P	Pg	01 33 16.0	0.0
ONAJ				S	Sg	01 33 21.4	+0.5
JFK

FINES	**FINESS Array B**	**145.36 340**	PKPbc	**PKPbc**	**02 22 35.3**	**-0.2**
	1.6nm,0.3s,baz=54,slow=4.1,SNR=27					
AKASG	**Malin Array Be**	**151.56 323**	PKPbc	**PKPbc**	**02 22 51.9**	**-0.3**
	0.8nm,0.5s,baz=43,slow=3.0,SNR=3.0					
TORD	**Torodi Ar. Bea**	**162.68 178**	PKPab	**PKPab**	**02 23 50.0**	**+0.6**
	0.6nm,1.0s,baz=204,slow=3.2,SNR=2.9					

*IDC **18** 02:04:12.1±2.6, 37.°91N×144.°34E, h0km, mb3.7/3, mb1 3.9/4, mb1mx3.4/48, mbtmp3.7/4, ML3.6/1, MS3.0/1, Ms1 3.1/1, ms1mx2.1/37, Error ellipse: s-maj=69.4km s-min=32.4km az=59.0*
*ISCJB **18** 02:04:15.6±0.9, 37.°94N±0.°05×144.°10E±0.°06, h33km, mb3.8/3, MS3.0/1, Error ellipse: s-maj=7.3km s-min=6.8km az=9.1*
*JMA **18** 02:04:16.8±0.3, 37.°92N×144.°01E, h51km, M4.0*
ISC 18 02:04:16.7±1.3, 37.°97N±0.°06×144.°17E±0.°09, h35km, n18, σ1§50/28, mb3.7/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.25**	**300**	P	**Pn**	**02 04 51.3**	**-0.1**
OFUJ				S	**Sn**	**02 05 17.3**	**-0.7**
JIO	**Ouri**	**2.27**	**283**	P	**Pn**	**02 04 51.6**	**-0.1**
JIO				S	**Sn**	**02 05 16.8**	**-1.7**
JMK	**Ichinoseki**	**2.51**	**294**	P	**Pn**	**02 04 55.6**	**+0.6**
JMK				S	**Sn**	**02 05 23.5**	**-0.9**
JFK	**Kawauchi**	**2.68**	**258**	S	**Sn**	**02 05 26.4**	**-2.2**
JOM	**Ohasama**	**2.70**	**305**	P	**Pn**	**02 04 57.7**	**+0.1**
JOM				*e*S	**Sn**	**02 05 28.5**	**-0.6**
JFT	**Otama**	**3.07**	**263**	P	**Pn**	**02 05 03.0**	**+0.3**
JFT				S	**Sn**	**02 05 37.5**	**-0.7**
JYK	**Kaneyama**	**3.14**	**289**	P	**Pn**	**02 05 04.2**	**+0.6**
JYK				S	**Sn**	**02 05 40.1**	**+0.3**
JANG	**Nango**	**3.16**	**320**	P	**Pn**	**02 05 04.0**	**0.0**
JANG				S	**Sn**	**02 05 38.5**	**-2.0**
JAG	**Ashikaga**	**4.07**	**249**	P	**Pn**	**02 05 16.2**	**-0.2**
JAG				*e*S	**Sn**	**02 06 01.0**	**-1.8**
JKB	**Kayabe**	**4.59**	**329**	P	**Pn**	**02 05 25.1**	**+1.5**
JRY	**Ryogami san**	**4.64**	**247**	P	**Pn**	**02 05 24.0**	**-0.4**
JRY				*e*S	**Sn**	**02 06 12.6**	**-4.5**
JCH	**Churui**	**4.68**	**353**	P	**Pn**	**02 05 24.3**	**-0.5**
JCH				S	**Sn**	**02 06 14.4**	**-3.4**
MJAR	**Matsushiro Arr**	**4.96**	**255**	Pn	**Pn**	**02 05 29.6**	**+0.9**
	2.1nm,0.3s,baz=77,slow=14,SNR=9.8						
MAT	**Matsushiro**	**4.96**	**255**	P	**Pn**	**02 05 29.6**	**+0.9**
MAT				*e*S	**Sn**	**02 06 25.2**	**+0.3**
KURBB	**Kurchatov Arra**	**47.16**	**308**	P	**P**	**02 12 46.9**	**+1.4**
	0.3nm,0.4s,baz=81,slow=8.0,SNR=4.6						
ILAR	**Eielson Array**	**47.53**	**33**	LR	LR	02 34 38.7	
	comp=Z,17nm,20.5s,baz=42,slow=38						
WRA	**Warramunga Arr**	**58.34**	**191**	P	**P**	**02 14 08.4**	**+0.1**
	1.4nm,0.6s,baz=11,slow=7.4,SNR=12						
ASAR	**Alice Springs**	**62.06**	**191**	P	**P**	**02 14 34.5**	**+0.8**
	0.2nm,0.3s,baz=7.5,slow=7.9,SNR=3.1						

*ISCJB **18** 02:18:57.4±0.5, 37.°45N±0.°03×38.°78E±0.°03, h5km±4km, Error ellipse: s-maj=5.1km s-min=3.1km az=161.5*
*CSEM **18** 02:18:57.4±0.3, 37.°43N×38.°79E, h2km, MD2.9, Error ellipse: s-maj=6.1km s-min=4.8km az=148.0*
*ISK **18** 02:18:57.4, 37.°44N×38.°89E, h5km, MD2.9*
*DDA **18** 02:18:57.0, 37.°47N×38.°73E, h7km, Md2.8*
ISC 18 02:18:56.8±0.9, 37.°43N±0.°03×38.°78E±0.°02, h7km±6km, n33, σ0§57/55, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URFA	**Urfa**	**0.03**	**63**	*e*PG	**Pg**	**02 18 58.3**	**0.0**
URFA	**Urfa**	**0.03**	**63**	*e*Pg	**Pg**	**02 18 58.3**	**0.0**
ATAB	**Bozova**	**0.39**	**277**	P	**Pg**	**02 19 04.2**	**-0.2**
ATAB				S	**Sg**	**02 19 09.6**	**0.0**
ATAB	**Bozova**	**0.39**	**277**	*i* P	**Pg**	**02 19 04.2**	**-0.2**
ATAB				*i* S	**Sg**	**02 19 09.6**	**0.0**
SURC	**SANLIURFA_SURC**	**0.56**	**194**	P	**Pb**	**02 19 08.9**	**-0.2**
SURC				S	**Sb**	**02 19 17.6**	**+0.3**
SURC	**SANLIURFA_SURC**	**0.56**	**194**	*i* P	**Pb**	**02 19 08.9**	**-0.2**
SURC				*i* S	**Sb**	**02 19 17.6**	**+0.3**
GZT	**Gaziantep**	**0.97**	**266**	*i* P	**Pg**	**02 19 14.9**	**-0.6**
GZT				*i* S	**Sb**	**02 19 29.8**	**+0.5**
SVRC	**Sivrice-ELAZID**	**1.04**	**23**	*e*PG	**Pb**	**02 19 17.5**	**+0.2**
SVRC				*e*SG	**Sn**	**02 19 32.3**	**-0.6**
SVRC	**Sivrice-ELAZID**	**1.04**	**23**	*e*Pg	**Pb**	**02 19 17.5**	**+0.2**
SVRC				*e*Sg	**Sn**	**02 19 32.3**	**-0.6**
ELZG	**Elazig**	**1.08**	**8**	P	**Pg**	**02 19 17.8**	**+0.2**
ELZG				S	**Sb**	**02 19 32.4**	**0.0**
ELZG	**Elazig**	**1.08**	**8**	*i* P	**Pg**	**02 19 17.8**	**+0.2**
ELZG				*i* S	**Sb**	**02 19 32.4**	**0.0**
AKCD	**Akcadag**	**1.10**	**322**	P	**Pg**	**02 19 17.9**	**-0.1**
AKCD				S	**Sg**	**02 19 31.2**	**-1.2**
AKCD	**Akcadag**	**1.10**	**322**	*i* P	**Pg**	**02 19 17.9**	**-0.1**
AKCD				*i* S	**Sg**	**02 19 31.2**	**-1.2**
DIYA	**Diyarbakir**	**1.17**	**65**	P	**Pg**	**02 19 19.4**	**+0.1**
DIYA				S	**Sn**	**02 19 36.8**	**+0.8**
DIYA	**Diyarbakir**	**1.17**	**65**	*i* P	**Pg**	**02 19 19.4**	**+0.1**
DIYA				*i* S	**Sn**	**02 19 36.9**	**+0.8**
DYBB	**Diyarbakir**	**1.20**	**64**	*e*PN	**Pn**	**02 19 20.7**	**+0.6**
DYBB				*e*SN	**Sn**	**02 19 36.6**	**0.0**
DIY	**Diyarbakir**	**1.24**	**67**	*e*Pn	**Pn**	**02 19 20.7**	**0.0**
DIY				*e*Sn	**Sg**	**02 19 36.6**	**0.0**
MAZI	**Mazidag**	**1.32**	**88**	*e*PN	**Pn**	**02 19 22.0**	**+0.1**
MAZI				*e*SN	**Sg**	**02 19 39.5**	**+0.1**
MAZI	**Mazidag**	**1.32**	**88**	*e*Pn	**Pn**	**02 19 22.0**	**+0.1**
MAZI				*e*Sn	**Sg**	**02 19 39.5**	**+0.1**
HCB	**Kahramanmara¯**	**1.50**	**267**	*i* P	**Pb**	**02 19 25.1**	**+0.1**
HCB				*i* S	**Sn**	**02 19 42.6**	**-1.4**
KUZU	**Kuzuini**	**1.51**	**245**	P	**Pb**	**02 19 25.3**	**0.0**
KUZU				S	**Sg**	**02 19 46.3**	**+0.8**
KUZU	**Kuzuini**	**1.51**	**245**	*i* P	**Pb**	**02 19 25.3**	**0.0**
KUZU				*i* S	**Sg**	**02 19 46.3**	**+0.8**
DARE	**Darende-Malaty**	**1.54**	**318**	*e*PN	**Pg**	**02 19 27.7**	**+1.4**
DARE	**Darende-Malaty**	**1.54**	**318**	*e*Pn	**Pg**	**02 19 27.7**	**+1.4**
PTK	**Pertek**	**1.54**	**18**	*e*PN	**Pg**	**02 19 26.2**	**-0.1**
PTK	**Pertek**	**1.54**	**18**	*e*Pn	**Pg**	**02 19 26.2**	**-0.1**
MARD	**Mardin**	**1.59**	**93**	*i* P	**Pn**	**02 19 24.2**	**-1.4**
MARD				*i* S	**Sg**	**02 19 48.1**	**+0.1**
KAMA	**Osmaniye**	**1.70**	**263**	*i* P	**Pb**	**02 19 28.6**	**+0.1**
KAMA				*i* S	**Sg**	**02 19 51.3**	**-0.3**
ILIC	**ilic-Erzincan**	**2.03**	**355**	*e*PN	**Pb**	**02 19 34.4**	**+0.3**
ILIC	**ilic-Erzincan**	**2.03**	**355**	*e*Pn	**Pb**	**02 19 34.4**	**+0.3**
SVAN	**Silvan-Diyarba**	**2.04**	**69**	*e*PN	**Pb**	**02 19 33.8**	**-0.6**
SVAN	**Silvan-Diyarba**	**2.04**	**69**	*e*Pn	**Pb**	**02 19 33.8**	**-0.6**
TAHT	**Tahtakopru-Hat**	**2.33**	**244**	*e*PN	**Pb**	**02 19 39.8**	**+0.6**

*IDC **18** 02:31:47.8±1.3, 36.°46N×141.°77E, h0km, mb3.6/4, mb1 3.7/5, mb1mx3.4/41, mbtmp3.5/5, ML3.0/1, Error ellipse: s-maj=32.3km s-min=28.7km az=60.0*
*ISCJB **18** 02:31:50.1±1.0, 36.°54N±0.°07×141.°67E±0.°08, h26km, mb3.6/4, Error ellipse: s-maj=9.8km s-min=8.8km az=160.9*
*JMA **18** 02:31:51.1±0.3, 36.°54N×141.°59E, h55km, M3.3*
ISC 18 02:31:52.3±1.1, 36.°51N±0.°08×141.°50E±0.°08, h26km, n9, σ1§18/13, mb3.6/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.76**	**278**	P	**Pb**	**02 32 06.4**	**-0.5**
JHO				*e*S	**Sn**	**02 32 17.7**	**-0.2**
ONAJ	**Iwakimizuishiy**	**0.82**	**317**	P	**Pb**	**02 32 06.8**	**-1.1**
CHOJ	**Chosi**	**0.96**	**213**	P	**Pn**	**02 32 09.8**	**-0.2**
CHOJ				*e*S	**Sn**	**02 32 23.4**	**+0.7**
MJAR	**Matsushiro Arr**	**2.66**	**272**	Pn	**Pn**	**02 32 34.0**	**+0.6**
	2.4nm,0.3s,baz=92,slow=9.3,SNR=26						
MJAR				Sn	**Sb**	**02 33 09.1**	**-2.2**
	2.5nm,0.3s,baz=94,slow=24,SNR=5.3						
MAT	**Matsushiro**	**2.66**	**272**	P	**Pn**	**02 32 34.6**	**+1.2**
MAT				*e*S	**Sn**	**02 33 05.6**	**+0.8**
SONM	**Songino Array**	**28.14**	**305**	P	**P**	**02 37 44.0**	**+1.7**
	1.0nm,0.8s,baz=96,slow=7.6,SNR=5.9						
MKAR	**Makanchi Array**	**44.46**	**303**	P	**P**	**02 40 02.0**	**+0.9**
	0.2nm,0.3s,baz=86,slow=9.1,SNR=3.3						
WRA	**Warramunga Arr**	**56.55**	**188**	P	**P**	**02 41 32.0**	**-0.5**
	0.3nm,0.3s,baz=4.6,slow=7.2,SNR=10						
YKA	**Yellowknife Ar**	**64.23**	**30**	P	**P**	**02 42 23.6**	**-0.9**
	0.4nm,0.8s,baz=301,slow=6.9,SNR=4.8						

*MOS **18** 02:43:19.4±1.2, 14.°00N×144.°73E, h158km, mb4.9/50, Error ellipse: s-maj=8.7km s-min=5.9km az=105.9*
*ISCJB **18** 02:43:19.4±0.5, 13.°92N±0.°03×144.°69E±0.°03, h156km±4km, mb4.8/174, Error ellipse: s-maj=4.9km s-min=4.0km az=178.4*
*IDC **18** 02:43:20.0±0.6, 13.°97N×144.°89E, h154km±4km, mb4.3/23, mb1 4.4/24, mb1mx4.4/29, mbtmp4.7/24, MS4.0/24, Ms1 4.0/24, ms1mx3.7/48, Error ellipse: s-maj=14.8km s-min=8.6km az=80.0*
*NEIC **18** 02:43:21.0±0.6, 13.°93N×144.°74E, h159km±5km, mb4.8/120, Error ellipse: s-maj=4.1km s-min=3.6km az=129.0*
NEIC Felt [IV] at Mangilao and Santa Rita; [III] at Barrigada, Dededo and Hagatna Heights; [II] at Andersen AFB, Apra Harbor, Tamuning and Yigo. Also felt at Agat, Hagatna, Inarajan and Talofofo.
*GCMT **18** 02:43:21.0±0.2, 13.°77N×144.°76E, h156km±1km, MW5.3/96, Moment Tensor Solution. s71,c90; s96,c148; Duration: 1§1 Moment tensor: Scale 10^{17}Nm; M_{rr}-0.11±.02; $M_{\theta\theta}$0.05±.02; $M_{\phi\phi}$0.06±.02; $M_{r\theta}$-0.01±.02; $M_{\theta\phi}$-0.93±.02; $M_{\phi r}$-0.41±.01; Best double couple: $M_0$1.01900×10^{17} NP1:ϕ_s359.00000°, δ86.00000°, λ-24.00000°. NP2:ϕ_s91.00000°, δ66.00000°, λ-176.00000°. Principal axes: T 1.0600, Plg14.0000°, Azm47.0000°; N -0.0800, Plg65.0000°, Azm171.0000°; P -0.9790, Plg20.0000°, Azm312.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*DJA **18** 02:43:22.1±0.4, 14.°N±4.°×14.°5E±.°, h140km±6km, M4.9/13, mb5.1/13, mB5.5/8, MLv4.7/1, Mw(mB)5.0/8*
ISC 18 02:43:20.0±0.3, 13.°93N±0.°04×144.°81E±0.°04, h154km±2km, h154km:pP-P, n446, σ1§27/506, mb4.8/174, 11C-9D, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**0.34**	**170**	P	**Pn**	**02 43 41.7**	**+0.6**
	5μm,0.3s,baz=342,slow=3.2,SNR=1640						
GUMO				S	**Sn**	**02 43 57.4**	**+0.1**
	4μm,0.3s,baz=330,slow=20,SNR=73						
GUMO	**Guam**	**0.34**	**170**	*e*P	**Pn**	**02 43 41.8**	**+0.6**
GUMO				*e*		02 43 55.8	
GUMO	**Guam**	**0.34**	**170**	*e*Pn	**Pn**	**02 43 41.8**	**+0.6**
GUMO				*e*Sn	**Sn**	**02 43 55.8**	**-1.6**
JCJ	**Chichijima**	**13.32**	**350**	P	**Pn**	**02 46 23.8**	**+0.5**
	13nm,0.3s,baz=266,slow=9.5,SNR=8.1						
CBIJ	**Chichi jima**	**13.33**	**350**	*e*Pn	**Pn**	**02 46 25.1**	**+1.8**
PATS	**Pohnpei**	**15.03**	**117**	*e*P	**P**	**02 46 48.0**	**+1.6**
	508nm,0.7s						
PATS				*e*Sn	**Sn**	**02 49 22.9**	**-9.1**
JAY	**Jayapura**	**16.84**	**194**	P	**Pn**	**02 47 08.5**	**+1.5**
	0.1nm,0.3s,baz=333,slow=23,SNR=12						
JAY	**Jayapura**	**16.84**	**194**	P	**Pn**	**02 47 09.1**	**+2.2**
	27nm,1.4s,386nm						
GENI	**Genyem**	**17.05**	**196**	P	**Pn**	**02 47 12.4**	**+3.0**
	122nm,1.2s						
SWI	**Sorong**	**19.91**	**223**	P	**Pn**	**02 47 43.8**	**+0.7**
	99nm,1.0s,3μm						
JOW	**Kunigami**	**20.09**	**312**	*e*P	Pn	02 47 43.9	-1.4
	482nm,1.2s						
FAKI	**Fak Fak**	**20.87**	**218**	P	**P**	**02 47 51.5**	**+1.4**
	158nm,0.6s,2μm						
FAKI	**Fak Fak**	**20.87**	**218**	*e*P	**P**	**02 47 51.1**	**+1.0**
	107nm,0.6s						
H11S3	**WAKE ISLAND Hy**	**21.49**	**75**	T	T	03 09 47.3	
	baz=263,slow=74,SNR=6.9						
H11S1	**WAKE ISLAND Hy**	**21.50**	**75**	T	T	03 09 48.1	
	baz=263,slow=74,SNR=8.1						
H11S2	**WAKE ISLAND Hy**	**21.50**	**75**	T	T	03 09 46.8	
	baz=263,slow=74,SNR=8.5						
H11N1	**WAKE ISLAND Hy**	**21.89**	**72**	T	T	03 11 21.7	
	baz=257,slow=75,SNR=8.8						
H11N2	**WAKE ISLAND Hy**	**21.90**	**72**	T	T	03 11 23.7	
	baz=257,slow=75,SNR=3.8						
H11N3	**WAKE ISLAND Hy**	**21.91**	**72**	T	T	03 11 21.7	
	baz=257,slow=75,SNR=7.9						
INU	**Inuyama**	**22.45**	**343**	*e*P	**P**	**02 48 07.6**	**+1.2**
	16nm,0.7s						
JNU	**Nakatsue**	**22.93**	**329**	P	**P**	**02 48 11.5**	**+0.6**
	32nm,0.6s,baz=114,slow=3.2,SNR=28						
JNU	**Nakatsue**	**22.93**	**329**	*e*P	**P**	**02 48 11.5**	**+0.6**
	228nm,1.5s						
YOJ	**Yonaguni jima**	**23.07**	**300**	*e*P	**P**	**02 48 12.9**	**+0.8**
YOJ				pmax	pmax		
	comp=Z,217nm,1.2s						
YOJ	**Yonaguni jima**	**23.07**	**300**	*e*P	**P**	**02 48 12.9**	**+0.8**
	comp=Z,217nm,1.2s						
TGY	**Tagaytay City**	**23.16**	**273**	P	**P**	**02 48 13.6**	**+0.4**
	comp=Z,158nm,0.3s,baz=124,slow=3.6,SNR=4.3						
MJAR	**Matsushiro Arr**	**23.28**	**346**	P	**P**	**02 48 13.4**	**-0.6**
	comp=Z,7.3nm,0.6s,baz=173,slow=8.3,SNR=21						
MJAR				PcP	**PcP**	**02 51 57.0**	**+0.1**
	comp=Z,3.2nm,0.6s,baz=163,slow=4.1,SNR=4.8						
MJAR				ScP	**ScP**	**02 55 18.8**	**-1.9**
	comp=Z,1.9nm,0.8s,baz=127,slow=3.2,SNR=4.2						
MJAR				LR	LR	02 55 40.7	
	comp=Z,413nm,21.5s,baz=130,slow=32						
MAJO	**Matsushiro**	**23.28**	**346**	*e*P	**P**	**02 48 14.4**	**+0.4**
MAJO				pmax	pmax		
	comp=Z,23nm,0.8s						
MAJO	**Matsushiro**	**23.28**	**346**	*e*P	**P**	**02 48 14.4**	**+0.4**
	comp=Z,23nm,0.8s						
MAT	**Matsushiro**	**23.28**	**346**	P	**P**	**02 48 13.6**	**-0.4**
MAT				S	**S**	**02 52 16.3**	**+1.6**
MJB9	**Matsu-Tunnel**	**23.28**	**346**	*e*P	**P**	**02 48 14.7**	**+0.7**
	comp=Z,5.8nm,0.7s						
PMG	**Port Moresby**	**23.30**	**174**	P	**P**	**02 48 14.6**	**+0.3**
	comp=Z,41nm,1.1s,baz=349,slow=5.2,SNR=3.3						
PMG				LR	LR	02 55 34.8	
	comp=Z,275nm,20.9s,baz=44,slow=32						
PMG	**Port Moresby**	**23.30**	**174**	*e*P	**P**	**02 48 13.6**	**-0.7**
PMG				pmax	pmax		
	comp=Z,173nm,1.1s						
PMG	**Port Moresby**	**23.30**	**174**	*e*P	**P**	**02 48 14.0**	**-0.3**
	comp=Z,63nm,1.2s						
BNDI	**Bandanaira**	**23.56**	**220**	P	pP	02 48 46.4	-0.1
YULB	**Yu-li**	**24.15**	**296**	*e*P	**P**	**02 48 22.4**	**+0.4**
	comp=Z,306nm,1.8s						
TWG	**Pinlang**	**24.17**	**295**	*e*P	**P**	**02 48 21.8**	**-0.5**
	comp=Z,167nm,0.8s						
YHNB	**Yeheng**	**24.52**	**299**	*e*P	**P**	**02 48 21.3**	**-4.2**
	comp=Z,32nm,0.9s						
SSLB	**Suanglung**	**24.58**	**297**	*e*P	**P**	**02 48 25.6**	**-0.3**
	comp=Z,111nm,1.1s						
TPUB	**Ta-pu**	**24.70**	**296**	*e*P	**P**	**02 48 25.4**	**-1.7**
	comp=Z,72nm,1.3s						
LUWI	**Luwuk**	**26.42**	**237**	*e*P	**P**	**02 48 40.2**	**-2.4**
	comp=Z,282nm,1.1s						
QZH	**Quanzhou**	**26.99**	**298**	⇑P	**P**	**02 48 47.9**	**+0.3**
QZH				sP	**sP**	**02 49 36.8**	**-0.8**
QZH				S	**S**	**02 53 10.1**	**-3.7**
QZH				pmax	pmax		
	comp=Z,460nm,3.5s						
QZH				LR	LR		
	comp=N,970nm,17.0s						
QZH				LR	LR		
	comp=E,660nm,12.1s						
QZH				LR	LR		
	comp=Z,540nm,12.3s						
TJN	**Taejon**	**27.27**	**328**	*e*P	**P**	**02 48 49.6**	**-0.4**
MYLDM	**Lahad Datu**	**27.34**	**254**	*e*P	**P**	**02 48 52.5**	**+1.6**
	comp=Z,182nm,1.2s						
MYLDM				*e*ScP	**ScP**	**02 55 35.9**	**+3.2**
COEN	**Coen**	**27.76**	**183**	*e*P	**P**	**02 48 54.8**	**+0.3**
	comp=Z,12nm,0.7s						
KSRS	**Korea Array**	**27.84**	**330**	P	**P**	**02 48 55.2**	**+0.2**
	comp=Z,8.0nm,0.7s,baz=144,slow=9.2,SNR=22						
KSRS				ScP	**ScP**	**02 55 34.4**	**+0.6**
	comp=Z,3.5nm,1.0s,baz=138,slow=3.4,SNR=5.4						
KSRS				LR	LR	02 59 15.9	
	comp=Z,222nm,19.5s,baz=108,slow=34						
KSAR	**Wonju Array Be**	**27.85**	**330**	P	**P**	**02 48 55.2**	**+0.1**
KSAR	**Wonju Array Be**	**27.85**	**330**	P	**P**	**02 48 55.2**	**+0.1**
KSAR				ScP	**ScP**	**02 55 34.4**	**+0.6**
KS01	**Wonju Array Si**	**27.87**	**330**	*e*P	**P**	**02 48 55.6**	**+0.2**
TSM	**Tawau**	**28.24**	**253**	⇑P	**P**	**02 48 58.8**	**0.0**
SDKM	**Sandakan**	**28.41**	**256**	⇑P	**P**	**02 49 00.6**	**+0.2**
KKM	**Kota Kinabalu**	**29.21**	**257**	*e*P	**P**	**02 49 08.0**	**+0.4**
	comp=Z,25nm,1.2s						
SOEI	**Soe**	**31.13**	**222**	*e*P	**P**	**02 49 24.4**	**-0.2**
	comp=Z,37nm,1.0s						
KAPI	**Kappang**	**31.19**	**235**	*e*P	**P**	**02 49 24.1**	**-0.7**
	comp=Z,15nm,1.0s						
MMRI	**Maumere**	**31.70**	**226**	*e*P	**P**	**02 49 28.6**	**-0.8**
USRK	**Ussuriysk Ar.**	**32.09**	**343**	P	**P**	**02 49 33.2**	**+0.7**
	comp=Z,3.1nm,0.6s,baz=164,slow=9.0,SNR=9.7						
USRK				LR	LR	03 01 32.4	
	comp=Z,247nm,20.7s,baz=130,slow=34						
WHN	**Wuhan**	**32.54**	**306**	⇓*i*P	**P**	**02 49 37.6**	**+1.1**
WHN				sP	**PP**	**02 50 47.6**	**-5.6**
WHN				S	**S**	**02 54 42.3**	**+1.8**
WHN				pmax	pmax		
	comp=Z,80nm,0.9s						
WHN				LR	LR		
	comp=N,910nm,14.4s						
WHN				LR	LR		
	comp=E,400nm,14.4s						
WHN				LR	LR		
	comp=Z,430nm,15.0s						
TIA	**Tai'an**	**33.27**	**317**	⇓P	**P**	**02 49 43.5**	**+0.6**
TIA				S	**S**	**02 54 52.3**	**+0.4**
TIA				pmax	pmax		
	comp=Z,30nm,0.7s						
TIA				LR	LR		
	comp=N,440nm,16.9s						
TIA				LR	LR		
	comp=E,280nm,26.9s						
TIA				LR	LR		
	comp=Z,340nm,19.0s						
SNY	**Shenyang**	**33.35**	**331**	⇓P	P	02 49 51.8	+8.4
SNY				sP	sP	02 50 43.5	+10
SNY				pmax	pmax		
	comp=Z,18nm,0.5s						
CTAO	**Charters Tower**	**33.84**	**178**	*e*P	**P**	**02 49 48.8**	**+0.9**
CTAO				pmax	pmax		
	comp=Z,75nm,0.9s						
CTAO	**Charters Tower**	**33.84**	**178**	*e*P	**P**	**02 49 48.8**	**+0.9**
	comp=Z,75nm,0.9s						
CN2	**Changchun**	**34.08**	**335**	*e*P	**P**	**02 49 53.0**	**+3.3**
CN2				*es*P	sP	02 50 46.0	+5.8
CN2				*e*S	**S**	**02 55 06.8**	**+2.8**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.6s						
CN2				pmax	pmax		
	comp=Z,200nm,3.0s						
CN2				LR	LR		
	comp=N,300nm,21.0s						
CN2				LR	LR		
	comp=E,200nm,21.0s						
CN2				LR	LR		
	comp=Z,200nm,18.0s						
SBUM	**Sibu**	**34.16**	**253**	*e*P	**P**	**02 49 50.6**	**-0.2**
	comp=Z,50nm,1.1s						
SBUM				*e*ScP	**ScP**	**02 55 55.8**	**+0.6**
WRAB	**Tennant Creek**	**35.19**	**197**	*de*P	**P**	**02 49 59.1**	**-0.4**
WRAB				pmax	pmax		
	comp=Z,117nm,0.8s						
WRAB	**Tennant Creek**	**35.19**	**197**	*e*P	**P**	**02 49 59.4**	**-0.1**
	comp=Z,45nm,0.8s						
WRAB				*e*ScP	**ScP**	**02 55 58.7**	**-0.1**
WB2	**Warramunga Arr**	**35.20**	**197**	*e*P	**P**	**02 49 59.6**	**0.0**
	comp=Z,49nm,0.8s						
WB2				*e*ScP	**ScP**	**02 55 58.6**	**-0.1**
WRA	**Warramunga Arr**	**35.20**	**197**	P	**P**	**02 49 59.3**	**-0.4**
	comp=Z,34nm,0.8s,baz=21,slow=9.9,SNR=85						
WRA				PcP	**PcP**	**02 52 28.1**	**+0.8**
	comp=Z,6.9nm,1.0s,baz=17,slow=3.3,SNR=5.1						
WRA				ScP	**ScP**	**02 55 57.5**	**-1.3**
	comp=Z,20nm,1.1s,baz=19,slow=4.0,SNR=19						
WRA	**Warramunga Arr**	**35.20**	**197**	*ce*P	**P**	**02 49 59.5**	**-0.2**
WRA				pmax	pmax		
	comp=Z,38nm,0.7s						
BJT	**Baijiatuau**	**36.13**	**321**	*e*P	**P**	**02 50 07.8**	**+0.4**
BJT				pmax	pmax		
	comp=Z,36nm,0.8s						
BJT	**Baijiatuau**	**36.13**	**321**	*e*P	**P**	**02 50 07.8**	**+0.4**
	comp=Z,36nm,0.8s						
BJI	**Beijing**	**36.14**	**321**	P	**P**	**02 50 08.1**	**+0.7**
BJI				S	**S**	**02 55 37.5**	**+1.8**
BJI				pmax	pmax		
	comp=Z,59nm,1.3s						
BJI				pmax	pmax		
	comp=Z,250nm,3.9s						
BJI				LR	LR		
	comp=N,370nm,18.6s						
BJI				LR	LR		
	comp=E,210nm,14.5s						
BJI				LR	LR		
	comp=Z,170nm,18.6s						
KSM	**Kuching**	**36.29**	**253**	*e*P	**P**	**02 50 08.1**	**-0.9**
	comp=Z,65nm,1.0s						
ENH	**Enshi**	**36.36**	**302**	*e*P	**P**	**02 50 10.0**	**+0.6**
	comp=Z,144nm,1.1s						
FITZ	**Fitzroy Crossi**	**37.02**	**211**	*e*P	**P**	**02 50 14.6**	**-0.5**
	comp=Z,14nm,0.8s						
TIY	**Taiyuan**	**37.24**	**315**	*e*P	**P**	**02 50 18.3**	**+1.4**
TIY				sP	**sP**	**02 51 06.1**	**-1.6**
TIY				PP	**PnPn**	**02 51 51.0**	**+3.4**
TIY				S	**S**	**02 55 49.0**	**-3.7**
TIY				sS	sS	02 57 05.0	+14
TIY				pmax	pmax		
	comp=Z,110nm,0.8s						
TIY				LR	LR		
	comp=N,170nm,10.5s						
TIY				LR	LR		
	comp=E,190nm,12.1s						
TIY				LR	LR		
	comp=Z,250nm,14.4s						
GYA	**Guiyang**	**37.76**	**295**	⇓*i*P	**P**	**02 50 22.0**	**+0.5**

CD2 pP pP 02 51 23.3 -0.9
CD2 sP sP 02 51 41.1 -0.5
CD2 PP **PP** **02 52 27.8 -1.1**
CD2 S **S** **02 56 51.9 -1.2**
CD2 sS sS 02 57 51.8 -0.2
CD2 SS **SS** **03 00 02.8 +0.1**
CD2 pmax pmax
comp=Z,90nm,1.1s
CD2 pmax pmax
comp=Z,130nm,4.1s
CHBT CHBT 41.31 274 P **P** **02 50 52.0 +1.2**
comp=Z,47nm,1.0s
KTGM Kuala Trenggan 41.91 262 ⇓P **P** **02 50 56.1 +0.4**
MYKOM Kota Tinggi 42.24 257 ⇑P **P** **02 50 58.6 +0.1**
MYKOM Kota Tinggi 42.24 257 *e*P **P** **02 50 57.3 -1.2**
comp=Z,41nm,0.9s
PBKT Sadao Pong 42.32 279 P **P** **02 50 59.8 +0.8**
comp=Z,35nm,1.0s,comp=Z,980nm
MBWA Marble Bar 42.69 216 *e*P **P** **02 51 01.0 -0.9**
comp=Z,47nm,0.8s
LZH Lanzhou 42.76 309 *e*P **P** **02 51 04.3 +1.7**
LZH pP pP 02 51 40.0 +3.4
LZH sP sP 02 51 58.1 +4.2
LZH PP **PP** **02 52 43.8 -1.1**
LZH PcP **PcP** **02 52 52.0 +0.7**
LZH SS SS 03 00 22.8 -9.2
LZH pmax pmax
comp=Z,220nm,1.4s
LZH pmax pmax
comp=Z,870nm,4.3s
CRAI Chiangrai 42.84 285 P **P** **02 51 04.2 +1.0**
comp=Z,147nm,0.9s,comp=Z,6µm
CMAI Chiengmai2 44.08 284 P **P** **02 51 13.8 +0.4**
comp=Z,16nm,1.1s,comp=Z,852nm
IPM Ipoh 44.16 262 *e*P **P** **02 51 13.8 0.0**
CM01 Chiang Mai Arr 44.17 282 *e*P **P** **02 51 14.2 +0.3**
CMMT Chiang Mai 44.18 283 P **P** **02 51 16.5 +2.5**
comp=Z,7.4nm,0.9s,comp=Z,372nm
CHTO Chiang Mai 44.18 283 P **P** **02 51 16.5 +2.5**
comp=Z,33nm,0.9s
CHTO Chiang Mai 44.18 283 *e*P **P** **02 51 14.4 +0.4**
CHTO pmax pmax
comp=Z,6.0nm,0.9s
CHTO Chiang Mai 44.18 283 *e*P **P** **02 51 14.4 +0.4**
comp=Z,5.6nm,0.9s
CHTO *e*ScP **ScP** **02 56 33.8 -0.1**
CM31 Chiang Mai Arr 44.19 282 *e*P **P** **02 51 15.1 +1.0**
CMAR Chiang Mai Arr 44.19 282 P **P** **02 51 14.3 +0.3**
comp=Z,8.9nm,0.8s,baz=84,slow=6.0,SNR=40
CMAR PcP **PcP** **02 52 57.4 +1.2**
comp=Z,2.7nm,0.5s,baz=83,slow=1.9,SNR=4.4
CMAR ScP **ScP** **02 56 33.5 -0.4**
comp=Z,2.8nm,0.7s,baz=96,slow=2.0,SNR=13
SRDT SRDT 44.25 276 P **P** **02 51 16.6 +2.1**
comp=Z,65nm,1.0s
KULM Kulim 44.31 263 *e*P **P** **02 51 15.4 +0.3**
comp=Z,35nm,1.1s
KULM *e*pP **pP** **02 51 49.3 0.0**
STKA Stephens Creek 45.65 184 P **P** **02 51 25.0 -0.3**
comp=Z,12nm,0.7s,baz=352,slow=9.0,SNR=16
STKA ScP **ScP** **02 56 40.2 +0.8**
comp=Z,1.9nm,0.7s,baz=0.0,slow=6.1,SNR=3.1
STKA LR LR 03 11 11.4
comp=Z,131nm,18.9s,baz=6.7,slow=37
STKA Stephens Creek 45.65 184 *e*P **P** **02 51 25.3 0.0**
STKA pmax pmax
comp=Z,4.0nm,0.9s
STKA Stephens Creek 45.65 184 *e*P **P** **02 51 25.3 0.0**
comp=Z,3.6nm,0.9s
STKA ScP **ScP** **02 56 40.2 +0.8**
ULN Ulaanbaatar 46.07 325 *e*P **P** **02 51 29.7 +1.1**
ULN pmax pmax
comp=Z,28nm,1.2s
ULN Ulaanbaatar 46.07 325 *e*P **P** **02 51 29.7 +1.1**
comp=Z,28nm,1.2s
ULN *e*ScP **ScP** **02 56 41.8 +0.5**
SONM Songino Array 46.42 325 P **P** **02 51 32.3 +1.0**
comp=Z,8.4nm,0.9s,baz=136,slow=5.7,SNR=38
SONM ScP **ScP** **02 56 41.3 -1.4**
comp=Z,4.7nm,0.9s,baz=136,slow=4.1,SNR=12
SONA1 Songino Array 46.42 325 *e*P **P** **02 51 31.6 +0.2**
SONA1 *e*ScP **ScP** **02 56 41.4 -1.4**
PSI Prapat 46.63 261 *e*P **P** **02 51 33.1 -0.3**
PSI pmax pmax
comp=Z,14nm,0.9s
PSI Prapat 46.63 261 *e*P **P** **02 51 33.1 -0.3**
comp=Z,14nm,0.9s
GTA Gaotai 46.91 311 ⇓P **P** **02 51 36.3 +1.0**
GTA pP pP 02 52 11.4 +1.6
GTA sP sP 02 52 30.1 +3.1
GTA PP **PP** **02 53 29.6 +2.4**
GTA ScP **ScP** **02 56 44.4 -0.5**
GTA S **S** **02 58 14.5 -0.2**
GTA sS sS 02 59 17.3 +2.6
GTA ScS **ScS** **03 01 12.8 -1.2**
GTA Gaotai 46.91 311 SS SS 03 01 38.5 -4.8
GTA pmax pmax
comp=Z,65nm,1.1s
GTA pmax pmax
comp=Z,250nm,5.0s
GTA LR LR
comp=N,190nm,17.6s
GTA LR LR
comp=E,210nm,17.1s
GTA LR LR
comp=Z,180nm,19.0s
BBOO Buckleboo 47.23 190 *e*P **P** **02 51 37.6 0.0**
comp=Z,48nm,0.7s
GSI Gunungsitoli 48.35 259 *e*P **P** **02 51 45.1 -1.5**
comp=Z,54nm,1.3s
CAN Canberra 49.14 175 *e*P **P** **02 51 52.7 +0.4**
CAN Canberra 49.14 175 *e*P **P** **02 51 52.7 +0.4**
SEY Seymchan 49.23 5 *e*P **P** **02 51 53.1 +0.6**
YAK Yakutsk 49.24 351 *e*P **P** **02 51 52.5 -0.1**
YAK pmax pmax
comp=Z,20nm,0.9s
ZAK Zakamensk 49.52 326 *e*P **P** **02 51 55.0 -0.1**
ZAK pmax pmax
comp=Z,13nm,1.4s
TLY Talaya 50.04 328 *e*P **P** **02 51 59.9 +1.0**
TLY *e*S **S** **02 58 58.5 +0.5**
TLY *e*SS **SS** **03 02 31.7 -1.2**
TLY pmax pmax
comp=Z,22nm,1.3s
TLY MLR MLR
comp=Z,176nm,18.0s
TLY Talaya 50.04 328 *e*P **P** **02 51 59.5 +0.6**
comp=Z,12nm,0.9s
MOY Mondy 51.43 327 *e*P **P** **02 52 09.8 +0.4**
MOY pmax pmax
comp=Z,30nm,2.2s
LSA Lhasa 51.79 297 *e*P **P** **02 52 13.7 +0.8**
LSA pmax pmax
comp=Z,26nm,0.8s
LSA Lhasa 51.79 297 *e*P **P** **02 52 13.7 +0.8**
comp=Z,26nm,0.8s
KIP Kipapa 54.74 74*c e*P **P** **02 52 36.2 +2.2**
BILL Bilibino 55.84 10*d i*P **P** **02 52 41.6 +0.6**
BILL *i* *PP **pP** **02 53 13.8 -2.9**
BILL *i* 02 53 36.0
BILL pmax pmax
comp=Z,5.0nm,0.9s
BILL Bilibino 55.84 10 *e*P **P** **02 52 40.9 -0.1**
comp=Z,7.4nm,0.9s
PKIN Phulchoki 56.72 294 *e*Pn **P** **02 52 47.7 -0.6**
comp=Z,12nm,0.5s
KKN Kakani 56.83 294 *e*Pn **P** **02 52 48.6 -0.4**
comp=Z,10nm,0.4s
WMQ Urumqi 56.86 313 P **P** **02 52 50.1 +1.3**
WMQ pP pP 02 53 28.8 +4.2
WMQ sP PcP 02 53 44.0 +1.4
WMQ S **S** **03 00 26.5 -4.0**
WMQ sS sS 03 01 40.6 +8.2
WMQ ScS **ScS** **03 02 19.0 -4.0**
WMQ pmax pmax
comp=Z,35nm,0.8s
WMQ pmax pmax
comp=Z,76nm,3.8s
WMQ LR LR
comp=N,96nm,18.2s
WMQ LR LR
comp=E,89nm,17.0s
WMQ LR LR
comp=Z,41nm,19.6s
GKN Gorkha 57.40 294 *e*Pn **P** **02 52 52.7 -0.3**
comp=Z,38nm,0.6s
KOLN Koldanda 58.31 294 *e*Pn **P** **02 52 59.0 -0.4**
comp=Z,33nm,0.8s
TIXI Tiksi 58.49 354 *e*P **P** **02 52 58.9 -0.7**
TIXI pmax pmax
comp=Z,7.0nm,1.5s
TIXI Tiksi 58.49 354 *e*P **P** **02 52 59.0 -0.5**
comp=Z,9.4nm,1.4s
PYUN Piuthan 58.86 295 *e*Pn **P** **02 53 02.7 -0.5**
comp=Z,90nm,1.0s
SDPT Sand Point 58.89 33 *e*P **P** **02 53 01.6 -1.0**
comp=Z,239nm,1.8s
MK01 Makanchi Array 61.19 316 *e*P **P** **02 53 18.6 0.0**
MK31 Makanchi Array 61.20 316 *e*P **P** **02 53 19.6 +1.0**
MK31 Makanchi Array 61.20 316 *e*P **P** **02 53 19.6 +1.0**
MKAR Makanchi Array 61.20 316 P **P** **02 53 19.4 +0.8**
comp=Z,15nm,0.4s,baz=90,slow=8.8,SNR=126
MKAR Makanchi Array 61.20 316*c e*P **P** **02 53 19.3 +0.7**
MKAR pmax pmax
comp=Z,15nm,0.4s
MKAR Makanchi Array 61.20 316 *e*P **P** **02 53 19.6 +1.0**
ZAA0 Zalesovo Array 61.31 324 *e*P **P** **02 53 18.8 -0.4**
ZALV Zalesovo Beam 61.31 324 P **P** **02 53 18.9 -0.3**
comp=Z,2.9nm,0.4s,baz=113,slow=6.7,SNR=11
ZALV ScP **ScP** **02 57 44.9 -2.3**
comp=Z,0.8nm,0.4s,baz=91,slow=5.9,SNR=3.8
MAKZ Makanchi 61.42 316 *e*P **P** **02 53 20.9 +0.8**
MAKZ pmax pmax
comp=Z,32nm,0.6s
MAKZ Makanchi 61.42 316 *e*P **P** **02 53 20.9 +0.8**
comp=Z,32nm,0.6s
NVS Novosibirsk 62.45 325 *e*P **P** **02 53 27.4 +0.7**
NVS pmax pmax
comp=Z,44nm,1.7s
NVS pmax pmax
comp=N,12nm,1.6s
NVS pmax pmax
comp=E,22nm,1.5s
HYB Hyderabad 63.61 283 *i* P **P** **02 53 34.0 -1.1**
KDAK Kodiak Island 63.81 32*c e*P **P** **02 53 35.7 +0.1**
TTA Tatalina 63.87 26 *e*P **P** **02 53 35.8 -0.3**
TTA pmax pmax
comp=Z,9.0nm,0.9s
TTA Tatalina 63.87 26 *e*P **P** **02 53 35.8 -0.3**
comp=Z,8.8nm,0.9s
KURK Kurchatov 64.29 320 *e*P **P** **02 53 38.9 0.0**
KURK pmax pmax
comp=Z,90nm,1.2s
KURK Kurchatov 64.29 320 *e*P **P** **02 53 38.9 0.0**
comp=Z,90nm,1.2s
KURK ⇑*e* 03 22 33.9
KURBB Kurchatov Arra 64.33 320 PKP2bc **P'P'bc** **03 22 33.9 -0.5**
comp=Z,1.3nm,1.1s,baz=284,slow=3.4,SNR=7.6
KSH Kashi 64.99 307 P **P** **02 53 46.8 +2.9**
KSH *e*pP pP 02 54 25.3 +4.8
KSH *e*sP sP 02 54 42.4 +5.2
KSH PcS 02 58 19.8
KSH S **S** **03 02 14.8 +1.0**
KSH ScS **SKSac** **03 03 23.5 -0.7**
KSH Kashi 64.99 307 SS SS 03 06 34.8 +6.4
KSH pmax pmax
comp=Z,13nm,1.1s
KSH pmax pmax
comp=Z,110nm,3.9s
KSH LR LR
comp=N,120nm,7.5s
KSH LR LR
comp=E,86nm,6.4s
TKM2 Tokmak 2 65.45 311 *e*P **P** **02 53 47.5 +0.6**
TKM2 pmax pmax
comp=Z,7.0nm,0.7s
TKM2 Tokmak 2 65.45 311 *e*P **P** **02 53 47.5 +0.6**
comp=Z,7.2nm,0.7s
PPLA Purkeypile 65.51 27 *e*P **P** **02 53 46.6 -0.2**
comp=Z,31nm,0.7s
CAST Castle Rocks 65.72 26 *e*P **P** **02 53 47.8 -0.2**
comp=Z,11nm,0.6s
NRIK Noril'sk 65.79 341 P **P** **02 53 47.6 -0.6**
comp=Z,3.1nm,0.5s,baz=120,slow=8.1,SNR=6.3
NRIK LR LR 03 21 36.5
comp=Z,193nm,21.3s,baz=114,slow=35
AAK Ala-Archa 66.25 311 LR LR 03 23 52.2
comp=Z,71nm,20.3s,baz=76,slow=37
AAK Ala-Archa 66.25 311 *e*P **P** **02 53 52.5 +0.6**
AAK pmax pmax
comp=Z,10.0nm,1.2s
AAK Ala-Archa 66.25 311 *e*P **P** **02 53 52.5 +0.6**
comp=Z,9.7nm,1.2s
KTH Kantishna Hill 66.25 26 *e*P **P** **02 53 51.0 -0.4**
comp=Z,28nm,0.5s
BPAW Bear Paw Mtn. 66.39 26 *e*P **P** **02 53 51.9 -0.4**
comp=Z,14nm,1.2s
PMR Palmer 66.51 28 *e*P **P** **02 53 52.2 -0.8**
PMR pmax pmax
comp=Z,70nm,1.5s
PMR Palmer 66.51 28 *e*P **P** **02 53 52.2 -0.8**
comp=Z,70nm,1.5s
MLY Manley 66.77 25 *e*P **P** **02 53 54.6 -0.1**
comp=Z,11nm,1.2s
EKS2 Erkin-Say 66.78 311 *e*P **P** **02 53 55.8 +0.5**
EKS2 pmax pmax
comp=Z,6.0nm,1.0s
EKS2 Erkin-Say 66.78 311 *e*P **P** **02 53 55.8 +0.5**
comp=Z,5.8nm,1.0s
SML Sawmill 66.94 28 *e*P **P** **02 53 54.8 -1.0**
SML pmax pmax
comp=Z,32nm,1.0s
SML Sawmill 66.94 28 *e*P **P** **02 53 54.8 -1.0**
comp=Z,32nm,1.0s
RND Reindeer 67.11 27 *e*P **P** **02 53 55.7 -1.1**
RND pmax pmax
comp=Z,18nm,0.7s
RND Reindeer 67.11 27 *e*P **P** **02 53 55.7 -1.1**
comp=Z,18nm,0.7s
SCM Sheep Creek Mo 67.41 28 *e*P **P** **02 53 58.5 -0.3**
SCM pmax pmax
comp=Z,26nm,0.5s
SCM Sheep Creek Mo 67.41 28 *e*P **P** **02 53 58.5 -0.3**
comp=Z,26nm,0.5s
COLD Coldfoot 67.66 22 *e*P **P** **02 54 00.4 +0.3**
comp=Z,8.0nm,1.1s
WRH Wood River Hil 67.71 26 *e*P **P** **02 53 59.4 -1.1**
comp=Z,16nm,1.1s
CCB Clear Creek Bu 67.87 25 *e*P **P** **02 54 00.3 -1.2**
comp=Z,6.8nm,1.1s
COLA College 67.91 25 *e*P **P** **02 54 02.5 +0.8**
COLA pmax pmax
comp=Z,4.0nm,0.5s
COLA College 67.91 25 *e*P **P** **02 54 02.5 +0.8**
comp=Z,4.4nm,0.5s
DIV Divide 67.99 29 *e*P **P** **02 54 01.5 -0.9**
comp=Z,28nm,1.4s
KLU Klutina 67.99 29 *e*P **P** **02 54 02.8 +0.3**
comp=Z,12nm,0.6s
ILAR Eielson Array 68.28 25 P **P** **02 54 02.0 -2.1**
comp=Z,6.2nm,0.4s,baz=252,slow=5.7,SNR=134
ILAR pP **pP** **02 54 39.5 -1.6**
comp=Z,1.7nm,0.4s,baz=251,slow=5.5,SNR=2.3
ILAR sP **sP** **02 54 55.7 -2.0**
comp=Z,1.7nm,0.5s,baz=254,slow=5.5,SNR=2.2
ILAR LR LR 03 20 24.7
comp=Z,63nm,21.7s,baz=259,slow=33
PAX Paxson 68.50 27 *e*P **P** **02 54 05.1 -0.5**
PAX pmax pmax
comp=Z,12nm,0.7s
PAX Paxson 68.50 27 *e*P **P** **02 54 05.0 -0.5**
comp=Z,12nm,0.7s
KKAR Karatay Array 69.19 311 *e*P **P** **02 54 10.4 +0.3**
KKAR pmax pmax
comp=Z,8.0nm,0.7s
KKAR Karatay Array 69.19 311 *e*P **P** **02 54 10.4 +0.3**
comp=Z,7.5nm,0.7s
DOT Dot Lake 69.25 27 *e*P **P** **02 54 09.6 -0.5**
comp=Z,24nm,0.9s
BVAR Borovoye Array 69.62 322 LR LR 03 26 52.3
comp=Z,72nm,18.5s,baz=253,slow=38
BRVK Borovoye 69.69 322 *e*P **P** **02 54 12.8 -0.2**
BRVK pmax pmax
comp=Z,21nm,0.6s
BRVK Borovoye 69.69 322 *e*P **P** **02 54 12.8 -0.2**
comp=Z,21nm,0.6s
ZRNK Zerenda 70.45 322 *e*P **P** **02 54 17.3 -0.3**
ZRNK pmax pmax
comp=Z,50nm,1.4s
ZRNK Zerenda 70.45 322 *e*P **P** **02 54 17.3 -0.3**
comp=Z,50nm,1.4s
KBL Kabul 70.60 302 *e*P **P** **02 54 19.1 -0.1**
KBL pmax pmax
comp=Z,13nm,1.0s
KBL Kabul 70.60 302 *e*P **P** **02 54 19.1 -0.1**
comp=Z,13nm,1.0s
EGAK Eagle 70.69 26 *e*P **P** **02 54 18.2 -0.6**
comp=Z,27nm,1.6s
DAWY Dawson 71.36 27 *e*P **P** **02 54 23.1 +0.1**
comp=Z,8.1nm,1.0s
PPT Papeete 71.90 114 LR LR 03 19 48.0
comp=Z,98nm,20.5s,baz=318,slow=30
INK Inuvik 74.07 22 *e*P **P** **02 54 38.3 -0.5**
INK pmax pmax
comp=Z,8.0nm,1.0s
INK Inuvik 74.07 22 *e*P **P** **02 54 38.2 -0.5**
comp=Z,7.7nm,1.0s
DLBC Dease Lake 75.73 33 *e*P **P** **02 54 49.4 +0.7**
comp=Z,7.0nm,0.6s
ABKAR Akbulak array 76.25 318 *e*P **P** **02 54 51.2 -0.4**
ARU Arti 76.45 325*d i*P **P** **02 54 52.4 -0.2**
ARU *PP **pP** **02 55 30.1 -0.3**
ARU S **S** **03 04 26.8 +1.4**
ARU SS **SS** **03 09 20.8 -2.1**
ARU pmax pmax
comp=Z,22nm,1.7s
ARU Arti 76.45 325 *e*P **P** **02 54 52.2 -0.4**
comp=Z,30nm,1.5s
AKTO Aktyubinsk 77.37 319 LR LR 03 31 09.4
comp=Z,48nm,18.1s,baz=77,slow=37
GEYT Alibeck 79.00 306 P **P** **02 55 07.2 0.0**
comp=Z,2.7nm,0.7s,baz=22,slow=1.6,SNR=6.1
GEYT PP **PP** **02 58 08.8 +0.7**
comp=Z,1.6nm,0.4s,baz=61,slow=8.3,SNR=4.2
NLWA Neilton Lookou 80.77 43 *e*P **P** **02 55 17.8 +1.3**
comp=Z,9.8nm,0.9s
G03D McMinnville, O 81.60 46 P **P** **02 55 21.7 +0.9**
baz=281
I03D Drain, OR 81.83 47 P **P** **02 55 23.5 +1.4**
baz=281
MARYW Marymoor Park 81.89 43 *e*P **P** **02 55 23.5 +1.2**
L02D Cave Junction, 81.95 49 P **P** **02 55 23.3 +0.4**
baz=282
KHMM Horse Mountain 82.11 50 *e*P **P** **02 55 26.0 +2.1**
comp=Z,22nm,1.0s
HUMO Hull Mountain 82.33 48 *e*P **P** **02 55 26.5 +1.7**
comp=Z,34nm,1.6s
H04A Detroit Lake 82.45 46 *e*P **P** **02 55 26.3 +0.9**
comp=Z,67nm,1.9s
I04A Tendick Farm, 82.48 47 P **P** **02 55 26.8 +1.2**
baz=282,SNR=6.8
YKA Yellowknife Ar 82.58 27 P **P** **02 55 24.7 -0.9**
comp=Z,2.2nm,0.4s,baz=285,slow=5.2,SNR=51
M02C Callahan 82.66 49 P **P** **02 55 28.0 +1.4**
baz=282,SNR=7.1
YBH Yreka Blue Hor 82.69 49 *e*P **P** **02 55 27.7 +0.9**
YBH pmax pmax
comp=Z,12nm,0.8s
YBH Yreka Blue Hor 82.69 49 *e*P **P** **02 55 27.6 +0.9**
comp=Z,12nm,0.8s
N02D Trinity Center 82.85 50 P **P** **02 55 28.9 +1.3**
baz=282,SNR=5.6
WDC Whiskeytown Da 83.06 50 *e*P **P** **02 55 30.0 +1.4**
WDC pmax pmax
comp=Z,8.0nm,0.9s
WDC Whiskeytown Da 83.06 50 *e*P **P** **02 55 30.0 +1.4**
comp=Z,8.4nm,0.9s
I05D Terrebonne, OR 83.12 46 P **P** **02 55 29.7 +0.8**
baz=283
K04D Chiloquin, OR 83.20 48 P **P** **02 55 30.3 +0.9**
baz=283
M04C Macdoel 83.32 49 P **P** **02 55 31.0 +0.9**
baz=283,SNR=9.5
J05D Fort Rock, OR 83.42 47 P **P** **02 55 31.6 +1.0**
baz=283,SNR=13
B08A Colville Reser 83.56 42 *e*P **P** **02 55 31.2 +0.2**
comp=Z,8.5nm,0.9s
O03D Paynes Creek 83.67 50 P **P** **02 55 32.4 +0.6**
baz=283,SNR=5.7
K05A Summer Lake 83.79 48 *e*P **P** **02 55 33.8 +1.3**
comp=Z,21nm,1.0s
MOD Modoc Plateau 84.41 48 *e*P **P** **02 55 36.1 +0.5**
comp=Z,7.4nm,0.8s
AFDM Forest Hills D 84.60 51 *e*P **P** **02 55 37.7 +1.2**
comp=Z,5.8nm,0.7s
NEW Newport 85.01 42 P **P** **02 55 38.8 +0.5**
baz=285
NEW Newport 85.01 42 *e*P **P** **02 55 38.3 -0.1**
NEW pmax pmax
comp=Z,11nm,1.0s
NEW Newport 85.01 42 *e*P **P** **02 55 38.3 -0.1**
comp=Z,11nm,1.0s
KLMR Klimovskoe 85.22 332 *e*P **P** **02 55 36.9 -2.1**
KLMR pmax pmax
comp=Z,16nm,1.5s
CMB Columbia Colle 85.26 52 *e*P **P** **02 55 41.0 +1.1**
CMB pmax pmax
comp=Z,11nm,0.9s
CMB Columbia Colle 85.26 52 *e*P **P** **02 55 41.0 +1.1**
comp=Z,10nm,0.9s
WVOR Wild Horse Val 85.48 48 *e*P **P** **02 55 41.0 +0.1**
WVOR pmax pmax
comp=Z,11nm,1.1s
WVOR Wild Horse Val 85.48 48 *e*P **P** **02 55 41.0 +0.1**
comp=Z,11nm,1.1s
PAHR Pah Rah Range 85.61 50 *e*P **P** **02 55 42.8 +1.1**
comp=Z,6.8nm,0.9s
BMO Blue Mountains 85.79 45 *e*P **P** **02 55 42.9 +0.5**
BMO pmax pmax
comp=Z,16nm,1.1s
BMO Blue Mountains 85.79 45 *e*P **P** **02 55 42.9 +0.5**
comp=Z,16nm,1.1s
PKM Mcpherson Peak 86.48 55 P **P** **02 55 47.5 +1.4**
baz=284
BSMT Bassoo Peak 86.63 42 *e*P **P** **02 55 47.1 +0.6**
ARCES ARCESS Array B 86.74 342 P **P** **02 55 46.0 -0.4**
comp=Z,2.7nm,0.6s,baz=75,slow=6.9,SNR=16
ARCES PKiKP **PKiKP** **03 00 51.1 -0.4**
comp=Z,1.6nm,0.9s,baz=58,slow=2.2,SNR=5.3
ARCES LR LR 03 37 01.0
comp=Z,107nm,22.0s,baz=66,slow=37
NV01 Mina Array Sit 86.75 51 *e*P **P** **02 55 48.2 +0.8**
NVAR Mina Array Bea 86.75 51 P **P** **02 55 48.4 +1.0**
comp=Z,7.5nm,0.7s,baz=262,slow=6.6,SNR=48
VES Vestal, Richgr 86.81 54 P **P** **02 55 48.0 +0.5**
baz=285
WALA Waterton Lakes 86.83 40 *e*P **P** **02 55 47.9 +0.5**
BLMT Blacktail Moun 86.86 41 *e*P **P** **02 55 48.5 +0.8**
NV11 Mina Array Sit 86.86 51 *e*P **P** **02 55 49.1 +1.3**
YBMT Yellow Bay 87.13 41 *e*P **P** **02 55 49.9 +1.0**
ARVC Arvin 87.20 55 P **P** **02 55 50.2 +0.9**
baz=285
MFID Camas Ranch 87.21 46 *e*P **P** **02 55 50.2 +0.9**
comp=Z,22nm,0.8s
VRH Novokhopyorsk 87.27 322 *e*P **P** **02 55 46.1 -3.2**
VRH pmax pmax
comp=Z,9.0nm,0.9s
MSO Missoula 87.48 42 P **P** **02 55 51.4 +0.8**
baz=288
DAC Darwin (Calif) 87.87 53 *e*P **P** **02 55 52.3 -0.4**
DAC pmax pmax
comp=Z,7.0nm,0.9s
DAC Darwin (Calif) 87.87 53 *e*P **P** **02 55 52.3 -0.4**
comp=Z,6.7nm,0.9s
EDW2 Edwards Air Fo 87.92 55 P **P** **02 55 53.9 +1.0**
baz=286
HLID Hailey 88.15 46 P **P** **02 55 54.9 +1.0**
baz=288
HLID Hailey 88.15 46 *e*P **P** **02 55 54.8 +1.0**
comp=Z,12nm,1.0s
HLID *e*PP **PP** **02 59 20.9 -1.8**
BFSC Mount Baldy Ra 88.36 55 P **P** **02 55 56.0 +1.0**
baz=286
FURC Furnace Creek, 88.38 53 P **P** **02 55 56.1 +1.3**
baz=286
ELK Elko 88.39 48 *e*P **P** **02 55 56.3 +1.2**
ELK *e**PP **pP** **02 56 34.0 0.0**
ELK *e**SP **sP** **02 56 52.3 +2.2**
ELK pmax pmax
comp=Z,13nm,0.8s
ELK Elko 88.39 48 *e*P **P** **02 55 56.3 +1.2**
comp=Z,13nm,0.8s
ELK *e*pP **pP** **02 56 34.0 0.0**
ELK *e*sP **sP** **02 56 52.3 +2.2**
LPSR Galich'ya Gora 88.42 324 *e*P **P** **02 55 52.1 -2.6**
LPSR pmax pmax
comp=Z,10.0nm,0.9s
ZEI Tsey 88.47 314 *e*P **P** **02 55 52.9 -2.5**
ZEI pmax pmax

comp=Z,8.0nm,0.9s
GNI Garni 88.65 311 LR LR 03 39 33.5
comp=Z,35nm,20.3s,baz=31,slow=38
TPNV Topopah Spring 88.72 52 P **P 02 55 57.8 +1.2**
baz=286
TPNV Topopah Spring 88.72 52 *eP* **P 02 55 57.9 +1.2**
TPNV pmax pmax
comp=Z,16nm,0.9s
TPNV Topopah Spring 88.72 52 *eP* **P 02 55 57.9 +1.2**
comp=Z,16nm,0.9s
GSC Goldstone, Bar 88.75 54 P **P 02 55 57.8 +1.0**
baz=286,SNR=5.5
GSC Goldstone, Bar 88.75 54 *eP* **P 02 55 58.2 +1.4**
GSC pmax pmax
comp=Z,14nm,1.0s
GSC Goldstone, Bar 88.75 54 *eP* **P 02 55 58.2 +1.4**
comp=Z,14nm,1.0s
VSR Storozhevoye 88.78 323 *eP* **P 02 55 54.1 -2.3**
VSR pmax pmax
comp=Z,10.0nm,0.6s
LRM Limekiln Ridge 88.78 43 *eP* **P 02 55 57.6 +0.7**
OBN Obninsk 88.78 327 LR LR 03 37 41.5
comp=Z,154nm,21.1s,baz=89,slow=37
OBN Obninsk 88.78 327 *i* P **P 02 55 54.3 -2.0**
OBN *i* *PP **pP 02 56 37.1 +2.0**
OBN *i* S **SKSac 03 06 13.7 +2.5**
OBN pmax pmax
comp=Z,23nm,1.2s
R11A Troy Canyon, C 88.83 51 P **P 02 55 58.0 +0.8**
baz=287
R11A Troy Canyon, C 88.83 51 *eP* **P 02 55 58.3 +1.1**
comp=Z,4.4nm,0.9s
MCMT McKenzie Canyo 88.83 44 *eP* **P 02 55 58.2 +1.1**
KBZ Khabaz 88.88 315 P **P 02 55 57.5 +0.4**
comp=Z,0.9nm,0.5s,baz=39,slow=1.2,SNR=3.8
MURC Murrieta 88.91 56 P **P 02 55 58.2 +0.8**
baz=286
KVAR Kislovodsk Arr 88.95 315 LR LR 03 39 35.9
comp=Z,68nm,20.1s,baz=38,slow=38
KIV Kislovodsk 88.96 315 *eP* **P 02 55 55.9 -1.6**
KIV pmax pmax
comp=Z,5.0nm,1.1s
109C Camp Elliot, M 89.17 56 P **P 02 55 59.2 +0.6**
baz=286
HEC Hector,Ludlow 89.25 54 P **P 02 55 59.6 +0.5**
baz=286
BOZ Bozeman (W) 89.38 43 P **P 02 56 00.0 +0.4**
baz=289
BOZ Bozeman (W) 89.38 43 *eP* **P 02 56 00.4 +0.8**
BOZ *e* 02 59 31.1
BOZ Bozeman (W) 89.38 43 *eP* **P 02 56 00.4 +0.8**
BOZ *e*PP **PP 02 59 31.1 -1.2**
PFO Pinyon Flats O 89.49 56 P **P 02 56 00.8 +0.5**
baz=286
TPFO Pinon Flats 89.50 56 P **P 02 56 01.2 +0.9**
baz=286
SHPR Sheep Range 89.69 53 *eP* **P 02 56 03.0 +1.8**
comp=Z,9.3nm,1.0s
MONP2 Monument Peak 89.73 56 P **P 02 56 02.2 +0.6**
baz=286
BELC Belle Mtn. Jos 89.75 55 P **P 02 56 02.4 +0.9**
baz=287
GMRC Granite Mounta 89.80 54 P **P 02 56 02.7 +1.0**
baz=287,SNR=10
HVU Hansel Valley 89.85 47 *eP* **P 02 56 03.3 +1.4**
HVU pmax pmax
comp=Z,10.0nm,1.0s
HVU Hansel Valley 89.85 47 *eP* **P 02 56 03.3 +1.4**
comp=Z,10nm,1.0s
BGU Big Grassy Mou 89.93 48 *eP* **P 02 56 03.3 +1.0**
comp=Z,3.6nm,1.0s
IKP In-Ko-Pah, Jac 90.05 56 P **P 02 56 03.4 +0.5**
baz=287
PSUT Pine Spring 90.07 50 *eP* **P 02 56 04.3 +1.3**
comp=Z,8.3nm,0.9s
SWSC Sam W. Stewart 90.21 56 P **P 02 56 04.6 +1.0**
baz=287
BC3 Big Chuckawall 90.29 55 P **P 02 56 05.4 +1.4**
baz=287
DUG Dugway, Tooele 90.32 48 P **P 02 56 05.0 +0.8**
baz=289
DUG Dugway, Tooele 90.32 48 *eP* **P 02 56 04.9 +0.8**
DUG *e* 02 59 37.7
DUG pmax pmax
comp=Z,9.0nm,1.0s
DUG Dugway, Tooele 90.32 48 *eP* **P 02 56 04.9 +0.8**
comp=Z,8.6nm,1.0s
DUG *e*PP **PP 02 59 37.7 -2.2**
IRM Iron Mountain 90.39 55 P **P 02 56 05.3 +1.0**
baz=287
IMW Indian Meadow 90.43 44 *eP* **P 02 56 05.6 +1.0**
comp=Z,3.6nm,0.8s
IMW *e*PP **PP 02 59 40.3 -0.6**
FXWY Fox Creek 90.46 45 *eP* **P 02 56 05.8 +1.0**
comp=Z,6.7nm,1.4s
H17A Grant Village 90.50 44 P **P 02 56 07.7 +2.7**
baz=290
H17A Grant Village 90.50 44 *eP* **P 02 56 06.9 +1.9**
FLWY Flagg Ranch 90.53 44 *eP* **P 02 56 05.6 +0.6**
comp=Z,23nm,1.4s
LKWY Lake 90.56 44 *eP* **P 02 56 08.2 +2.9**
LKWY pmax pmax
comp=Z,8.0nm,1.2s
LKWY Lake 90.56 44 *eP* **P 02 56 08.2 +2.9**
comp=Z,8.3nm,1.2s
MOOW Moose Ponds 90.61 45 *eP* **P 02 56 05.6 +0.1**
comp=Z,5.7nm,1.3s
AHID Auburn Hatcher 90.70 46 *eP* **P 02 56 06.9 +1.0**
comp=Z,18nm,1.4s
HWUT Hardware Ranch 90.76 47 *eP* **P 02 56 06.5 +0.4**
comp=Z,9.3nm,1.0s
FINES FINESS Array B 90.83 335 P **P 02 56 03.5 -2.3**
comp=Z,1.6nm,0.4s,baz=64,slow=4.8,SNR=24
FINES LR LR 03 39 25.3
comp=Z,67nm,19.7s,baz=14,slow=37
NLU North Lily Min 90.94 48 *eP* **P 02 56 08.1 +1.1**
comp=Z,3.7nm,0.9s
GLA Glamis 90.96 56 P **P 02 56 08.2 +1.1**
baz=287
Y12C Blythe 91.00 55 P **P 02 56 08.4 +1.3**
baz=288
TCUT Toone Canyon 91.03 47 *eP* **P 02 56 08.5 +1.0**
comp=Z,8.1nm,0.8s
RLMT Red Lodge 91.12 43 P **P 02 56 08.5 +0.7**
baz=291
RLMT Red Lodge 91.12 43 *eP* **P 02 56 08.3 +0.5**
comp=Z,4.3nm,0.9s
PDMCI Parker Dam,Lak 91.14 54 P **P 02 56 09.2 +1.4**
baz=288
JLU Jordanelle 91.17 48 *eP* **P 02 56 09.3 +1.1**
comp=Z,6.1nm,0.9s
KNB Kanab 91.32 51 *eP* **P 02 56 10.7 +1.9**
KNB pmax pmax
comp=Z,11nm,0.9s
KNB Kanab 91.32 51 *eP* **P 02 56 10.7 +1.9**
comp=Z,11nm,0.9s
BW06 Boulder Array 91.77 45 P **P 02 56 10.7 -0.2**
baz=291
BW06 Boulder Array 91.77 45 *eP* **P 02 56 10.6 -0.2**
PD31 Pinedale Array 91.77 45 *eP* **P 02 56 11.1 +0.3**
PDAR Pinedale Array 91.77 45 P **P 02 56 10.8 -0.1**
comp=Z,1.0nm,0.6s,baz=222,slow=1.9,SNR=14
PDAR PP **PP 02 59 50.1 -1.3**
comp=Z,0.1nm,0.4s,baz=288,slow=6.1,SNR=3.9
PDAR LR LR 03 34 20.3
comp=Z,49nm,19.5s,baz=257,slow=33
TMUT Trail Mountain 91.78 49 *eP* **P 02 56 12.7 +1.6**
comp=Z,3.8nm,0.6s
VNDA Vanda 91.81 176 P **P 02 56 11.1 +1.2**
comp=Z,6.2nm,0.9s,baz=317,slow=5.7,SNR=23
VNDA LR LR 03 36 39.7
comp=Z,63nm,18.2s,baz=353,slow=35
VNDA Vanda 91.81 176 *eP* **P 02 56 11.2 +1.4**
VNDA Vanda 91.81 176 *eP* **P 02 56 11.2 +1.4**
113A Mohawk Valley, 91.90 56 *eP* **P 02 56 12.7 +1.4**
U15A North Rim 91.91 52 *eP* **P 02 56 13.3 +1.6**
Q16A Castle Valley 91.94 49 *eP* **P 02 56 13.1 +1.5**
comp=Z,18nm,1.6s
Y14A Wickenburg 92.14 54 *eP* **P 02 56 14.1 +1.6**
SRU San Rafael Swe 92.35 49 *eP* **P 02 56 14.3 +0.8**
SRU pmax pmax
comp=Z,6.0nm,0.8s
SRU San Rafael Swe 92.35 49 *eP* **P 02 56 14.3 +0.8**
comp=Z,5.7nm,0.8s
LAO LASA Array 92.51 41 P **P 02 56 14.6 +0.7**
baz=293,SNR=7.0
LAO LASA Array 92.51 41 *eP* **P 02 56 14.4 +0.5**
comp=Z,16nm,1.1s
WUAZ Wupatki 92.91 52 P **P 02 56 16.9 +0.7**
baz=289
WUAZ Wupatki 92.91 52 *eP* **P 02 56 18.3 +2.1**
comp=Z,13nm,1.1s
214A Organ Pipe Nat 92.92 56 P **P 02 56 17.4 +1.3**
baz=288
214A Organ Pipe Nat 92.92 56 *eP* **P 02 56 16.8 +0.7**
comp=Z,30nm,1.0s
FCC Fort Churchill 93.28 27 *eP* **P 02 56 17.4 +0.3**
FCC pmax pmax
comp=Z,7.0nm,1.0s
FCC Fort Churchill 93.28 27 *eP* **P 02 56 17.4 +0.3**
comp=Z,7.0nm,1.0s
O20A White River Ci 93.64 47 P **P 02 56 20.2 +0.7**
baz=292
PV01 Paradox Valley 94.12 49 *eP* **P 02 56 22.2 +0.4**
SIM Simferopol' 94.31 318 *eP* **P 02 56 21.7 -0.5**
SIM pmax pmax
comp=Z,10.0nm,0.7s
TUC Tucson 94.43 55 P **P 02 56 24.2 +1.0**
baz=290
AKASG Malin Array Be 94.70 325 P **P 02 56 21.4 -2.4**
comp=Z,0.8nm,0.5s,baz=45,slow=4.6,SNR=5.5
AKASG LR LR 03 41 03.0
comp=Z,154nm,21.9s,baz=40,slow=37
AKASG Malin Array Be 94.70 325 *eP* **P 02 56 21.8 -2.0**
AKASG pmax pmax
comp=Z,1.0nm,0.5s
E26A Carlson Angus 94.95 40 P **P 02 56 25.6 +0.4**
baz=296
RSSD Black Hills 94.95 42 P **P 02 56 25.6 +0.1**
baz=295
H25A Fruitdale 95.03 42 P **P 02 56 26.1 +0.5**
baz=295
I25A Rochford 95.20 42 P **P 02 56 26.7 +0.2**
baz=295
G26A Maurine 95.38 41 P **P 02 56 27.6 +0.5**
baz=296
S22A 4UR Ranch, Cre 95.54 49 P **P 02 56 28.7 +0.4**
baz=292
A29A Manning Farm, 95.77 37 P **P 02 56 28.9 +0.2**
baz=299
G27A Dupree 95.77 41 P **P 02 56 28.9 0.0**
baz=296
SDCO Great Sand Dun 96.52 49 P **P 02 56 32.7 -0.1**
baz=293
B30A Myrvik Farm, E 96.52 37 P **P 02 56 31.9 -0.3**
baz=300
NOA NORSAR Array B 96.71 339 P **P 02 56 31.9 -0.9**
comp=Z,0.3nm,0.5s,baz=38,slow=5.1,SNR=3.0
NOA LR LR 03 41 24.0
comp=Z,46nm,21.6s,baz=50,slow=36
BRTR Keskin Array B 96.78 314 P **P 02 56 32.6 -1.1**
comp=Z,0.4nm,0.7s,baz=39,slow=5.7,SNR=3.0
ANMO Albuquerque 96.88 52 P **P 02 56 33.8 -0.6**
baz=292
ULM Lac du Bonnet 96.99 34 LR LR 03 37 54.0
comp=Z,41nm,18.5s,baz=331,slow=34
I29A Vivian Onida 97.42 41 P **P 02 56 36.0 -0.4**
baz=298
MNTX Cornudas Mount 98.94 54 Pdiff Pdif 02 56 43.6 +0.2
baz=292
MAW Mawson 99.72 203 LR LR 03 39 20.0
comp=Z,104nm,21.0s,baz=64,slow=34
STHS Stebnicka Huta 99.75 326 *i* P **Pdif 02 56 46.7 0.0**
STHS Stebnicka Huta 99.75 326 *e*PDIFF **Pdif 02 56 46.7 0.0**
CRVS Cervenica-Dubn 99.93 326 *i* P **Pdif 02 56 46.8 -0.7**
CRVS Cervenica-Dubn 99.93 326 *e*PDIFF **Pdif 02 56 46.8 -0.7**
KECS Kecovo 100.70 326 *e*PDIFF **Pdif 02 56 50.4 -0.5**
TXAR Lajitas Array 101.21 56 P **Pdif 02 56 54.0 +0.3**
comp=Z,0.4nm,0.8s,baz=270,slow=3.6,SNR=4.9
TXAR PP **PP 03 01 03.8 -0.5**
comp=Z,0.5nm,1.0s,baz=297,slow=5.5,SNR=4.0
TXAR PKKPbc **PKKPbc 03 13 04.4 +0.8**
comp=Z,0.3nm,0.8s,baz=116,slow=5.7,SNR=3.6
VYHS Vyhne 101.58 327 *i* P **Pdif 02 56 53.9 -0.9**
VYHS Vyhne 101.58 327 *e*PDIFF **Pdif 02 56 53.9 -0.9**
CLL Collm 102.71 331 *e*PP PP 03 01 13.0 -1.4
CLL *e*SS SS 03 15 42.0 +0.3
CLL *e*SSS SSS 03 19 30.0
CLL LmV 03 47 00.0
comp=Z,100nm,19.8s
GERES GERESS Array B 104.01 329 PKiKP **PKiKP 03 01 22.0 -0.3**
comp=Z,0.3nm,0.5s,baz=93,slow=2.7,SNR=4.0
KMBO Kilima Mbogo 107.31 273 *e*PKP **PKiKP 03 01 30.2 +0.7**
245A Little AP, Sta 110.50 48 PKiKP **PKiKP 03 01 34.0 -0.8**
baz=302
KEST Kesra 115.09 321 PKP **PKPdf 03 01 44.0 +0.5**
comp=Z,2.1nm,0.6s,baz=122,slow=4.6,SNR=7.7
LSZ Lusaka 118.85 260 *e*PKIKP **PKPdf 03 01 52.1 +0.8**
LSZ Lusaka 118.85 260 *e*PKPdf **PKPdf 03 01 52.1 +0.8**
PGAV Gavieira, Arco 119.10 337 *e*PKPdf **PKPdf 03 01 51.0 -0.1**
SNAA Sanae 119.11 191 PKP **PKPdf 03 01 49.7 -0.4**
SNAA Sanae 119.11 191 *e*PKIKP **PKPdf 03 01 49.7 -0.4**
SNAA Sanae 119.11 191 *e*PKPdf **PKPdf 03 01 49.7 -0.4**
ESDC Sonseca Array 119.25 333 PKP **PKPdf 03 01 51.3 -0.1**
comp=Z,0.3nm,0.3s,baz=24,slow=1.8,SNR=7.0
MVO Moncorvo 119.30 336 *e*PKPdf **PKPdf 03 01 52.0 +0.5**
POLO Lamas de Olo 119.42 337 *e*PKPdf **PKPdf 03 01 52.3 +0.6**
PVRL Vila Real 119.48 336 *e*PKPdf **PKPdf 03 01 51.1 -0.7**
PVRL Vila Real 119.48 336 *e*PKPdf **PKPdf 03 01 52.2 +0.4**
PTO Porto 119.94 337 *e*PKPdf **PKPdf 03 01 52.9 +0.3**
MTE Manteigas 120.16 336 *e*PKPdf **PKPdf 03 01 53.8 +0.7**
VNA2 Neumayer--Watz 120.55 190 PKP **PKPdf 03 01 53.3 +0.5**
baz=146,slow=0.6
PCBR Castelo Branco 120.61 335 *e*PKPdf **PKPdf 03 01 53.8 -0.1**
VNA3 Neumayer Olymp 120.65 189 PKP **PKPdf 03 01 52.9 -0.1**
PCAS Casmilo, Conde 120.83 336 *e*PKPdf **PKPdf 03 01 55.2 +0.8**
PMRV Marv??o 120.92 335 *e*PKPdf **PKPdf 03 01 55.0 +0.4**
VNA1 Neumayer--Stat 120.94 190 PKP **PKPdf 03 01 53.8 +0.3**
PTOM Tomar 121.17 336 *e*PKPdf **PKPdf 03 01 55.6 +0.6**
PESTR Estremoz 121.48 335 *e*PKPdf **PKPdf 03 01 55.8 +0.2**
PMTG Montargil 121.57 336 *e*PKPdf **PKPdf 03 01 56.0 +0.2**
PBAR Barrancos 121.83 334 *e*PKPdf **PKPdf 03 01 57.0 +0.7**
EVO Evora 121.94 335 *e*PKPdf **PKPdf 03 01 55.5 -1.0**
PBEJ Beja 122.31 335 *e*PKPdf **PKPdf 03 01 57.5 +0.3**
BOSA Boshof 122.35 245 PKP **PKPdf 03 01 57.3 -0.3**
comp=Z,7.5nm,1.0s,baz=125,slow=1.3,SNR=8.1
PNCL Nicolau / Gran 122.51 335 *e*PKPdf **PKPdf 03 01 58.1 +0.5**
PCVE Castro Verde 122.72 334 *e*PKPdf **PKPdf 03 01 59.0 +1.0**
PMSA Palmer Station 125.49 165 *e*PKPdf **PKPdf 03 02 03.2 +0.8**
TAM Tamanrasset 125.95 312 *e*PKIKP **PKPdf 03 02 05.9 +1.1**
TAM Tamanrasset 125.95 312 *e*PKPdf **PKPdf 03 02 05.8 +1.1**
TSUM Tsumeb 129.30 256 *e*PKPdf **PKPdf 03 02 12.3 +1.1**
TORD Torodi Ar. Bea 134.62 305 PKhKP PKPpre 03 02 05.6
comp=Z,0.9nm,0.7s,baz=40,slow=3.1,SNR=6.4
TORD PKP **PKPdf 03 02 20.9 -0.3**
comp=Z,4.8nm,0.6s,baz=53,slow=1.7,SNR=33
TORD SKPbc **SKPbc 03 05 35.8 -1.4**
comp=Z,2.8nm,0.7s,baz=46,slow=3.4,SNR=12
PLCA Paso Flores 139.22 138 PKP **PKPdf 03 02 29.5 +0.4**
comp=Z,4.4nm,0.8s,baz=249,slow=2.5,SNR=9.2
PLCA SKPbc **SKPbc 03 05 50.7 +0.6**
comp=Z,6.5nm,1.0s,baz=263,slow=3.3,SNR=7.4
NNA Nana 139.40 92 *e*PKIKP **PKPdf 03 02 30.8 +0.7**
NNA Nana 139.40 92 *e*PKPdf **PKPdf 03 02 30.8 +0.7**
DBIC Dimbokro 143.59 302 PKhKP PKPpre 03 02 34.4
comp=Z,6.3nm,0.4s,baz=42,slow=3.6,SNR=36
KIC Kosan Boka 143.67 302 *e*PKP1 PKPab 03 02 34.8 0.0
comp=Z,26nm,0.6s
TIC Toumodi 143.74 302 *e*PKP1 PKPab 03 02 34.8 -0.2
AUSP Uspallata 143.87 126 *i* P **PKPdf 03 02 37.8 -0.2**
LCO Las Campanas 143.87 120 *e*PKPdf **PKPdf 03 02 37.5 -0.6**
AAGR Agrelo 143.96 128 *e*P **PKPdf 03 02 37.5 -0.3**
ARCO CERRO ARCO 143.98 127 *i* P **PKPdf 03 02 37.6 -0.4**
LIC Lamto 143.98 302 *e*PKP1 PKPab 03 02 35.8 -0.2
comp=Z,38nm,0.6s
RTLS Leoncito 144.10 125 *i* P **PKPdf 03 02 38.3 -0.1**
ASAL Salagasta 144.16 127 *i* P **PKPdf 03 02 37.8 -0.4**
RTCV Cerro Valdivia 144.67 126 *i* P **PKPdf 03 02 39.7 +0.6**
AMOG MOGNA 145.05 125 *i* P **PKPdf 03 02 40.8 +1.0**
ACAN Cantantal 145.56 127 *e*P **PKPab 03 02 42.6 +1.1**
AGUA GUANDACOL 145.56 122 *i* P **PKPab 03 02 42.9 +1.3**
AVFE Valle Fertil 145.98 125 *i* P **PKPbc 03 02 42.4 0.0**
VCA Vinchina 146.04 121 *i* P **PKPab 03 02 43.9 +0.3**
TRQA Tornquist 146.21 140 *e*PKPbc **PKPab 03 02 43.3 -0.5**
MRA San Martin 146.62 129 *i* P **PKPab 03 02 45.3 -0.3**
LVC Limon Verde 146.90 110 *e*PKPbc **PKPbc 03 02 45.9 +0.2**
LPAZ La Paz 148.13 98 PKPbc **PKPdf 03 02 46.9 +0.9**
comp=Z,7.9nm,0.7s,baz=347,slow=3.6,SNR=9.5
CPUP Villa Florida 155.88 124 PKP **PKPdf 03 02 56.4 -0.1**
comp=Z,2.4nm,1.0s,baz=213,slow=10,SNR=3.1
CPUP PKPab **PKPab 03 03 25.6 +1.6**
comp=Z,2.7nm,0.7s,baz=268,slow=6.7,SNR=6.5

IDC 18 02:43:48.9±12.0, 36°.63N×141°.96E, h0km, mb3.5/2, mb1 3.4/3, mb1mx3.2/34, mbtmp3.4/3, ML2.9/1, Error ellipse: s-maj=224.4km s-min=73.4km az=140.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**3.02**	**269**	Pn	Pn	02 44 37.7	-0.3
	1.8nm,0.3s,baz=88,slow=9.3,SNR=13						
MAT	**Matsushiro**	**3.02**	**269**	P	Pn	02 44 37.6	-0.4
MAT				*e*S	Sn	02 45 17.7	+2.8
SONM	**Songino Array**	**28.37**	**304**	P	P	02 49 44.7	-0.2
	0.4nm,0.5s,baz=95,slow=10,SNR=2.8						
MKAR	**Makanchi Array**	**44.70**	**303**	P	P	02 52 03.7	0.0
	0.5nm,0.7s,baz=93,slow=7.2,SNR=3.3						

IDC 18 02:55:33.7±1.6, 7°.46S×155°.49E, h0km, mb3.9/5, mb1 4.1/5, mb1mx3.8/20, mbtmp3.8/5, Error ellipse: s-maj=69.8km s-min=26.2km az=134.0, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**23.96**	**237**	P	P	03 00 50.3	+0.2
	2.2nm,0.9s,baz=63,slow=9.2,SNR=4.9						
ASAR	**Alice Springs**	**26.24**	**230**	P	P	03 01 10.9	+0.1
	0.9nm,0.9s,baz=56,slow=10,SNR=3.8						
CMAR	**Chiang Mai Arr**	**61.42**	**296**	P	P	03 05 52.5	+0.1
	0.8nm,0.4s,baz=105,slow=6.6,SNR=3.5						
ILAR	**Eielson Array**	**83.62**	**21**	P	P	03 08 03.5	-0.3
	0.6nm,0.6s,baz=248,slow=5.4,SNR=8.5						
YKA	**Yellowknife Ar**	**96.52**	**28**	P	P	03 09 05.7	+0.8
	0.2nm,0.5s,baz=263,slow=4.4,SNR=7.7						
TORD	**Torodi Ar. Bea**	**153.62**	**285**	PKPbc	PKPbc	03 15 34.7	-0.9
	0.7nm,1.0s,baz=88,slow=2.7,SNR=2.7						

CASC 18 02:56:24.6±3.3, 11°.05N×86°.83W, h0km±28km, MD4.0, ML2.5, 2D, Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MGAN	**Managua**	**1.23**	**27**	⇓*i*P	Pb	02 56 48.6	-0.1
MGAN				AML	AML	02 57 16.2	
	comp=N,46nm,0.7s						
CNGN	**Cerro Negro**	**1.45**	**5**	⇓*i*P	Pn	02 56 51.6	-0.5
CNGN				*e*S	Sn	02 57 12.5	+0.7
CNGN				AML	AML	02 57 22.1	
	comp=N,211nm,0.5s						
TEL3	**Telica 3**	**1.51**	**359**	*e*P	Pn	02 56 53.0	0.0
ESTN	**Estel**	**2.09**	**12**	*e*P	Pn	02 57 00.1	-0.9
ESTN				AML	AML	02 57 39.6	
	comp=N,34nm,0.8s						
URSC	**Urasca**	**3.23**	**112**	*e*P	Pn	02 57 18.9	+2.1

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*IDC **18** 03:02:16.1±0.8, 25°.46N×142°.74E, h0km, mb3.9/11, mb1 4.0/11, mb1mx3.8/35, mbtmp3.9/11, Error ellipse: s-maj=31.5km s-min=17.6km az=90.0*
*ISCJB **18** 03:02:20.1±0.7, 25°.41N±0°.08×142°.6E±0°.2, h38km, mb4.0/15, Error ellipse: s-maj=29.2km s-min=11.4km az=176.6*
*NEIC **18** 03:02:21.5±0.5, 25°.43N×142°.72E, h35km, mb4.2/3, Error ellipse: s-maj=21.8km s-min=9.4km az=86.0*
ISC 18 03:02:21.6±0.8, 25°.4N±0°.1×142°.8E±0°.2, h38km, n17, σ1§17/18, **mb4.1**/15, **Volcano Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**1.81**	**344**	*e*Pn	**Pn**	**03 02 48.6**	**-1.6**
CBIJ				*e*S	**Sn**	**03 03 14.3**	**+2.5**
WRAB	**Tennant Creek**	**45.76**	**191**	*e*P	**P**	**03 10 39.9**	**+0.5**
	1.4nm,0.5s						
WRA	**Warramunga Arr**	**45.77**	**191**	P	**P**	**03 10 40.1**	**+0.6**
	1.3nm,0.4s,baz=9.1,slow=8.6,SNR=23						
FITZ	**Fitzroy Crossi**	**46.30**	**203**	P	**P**	**03 10 44.9**	**+1.2**
	1.5nm,0.8s,baz=22,slow=11,SNR=5.8						
ASAR	**Alice Springs**	**49.48**	**191**	P	**P**	**03 11 08.9**	**+0.5**
	0.2nm,0.5s,baz=20,slow=8.6,SNR=3.4						
MKAR	**Makanchi Array**	**51.98**	**311**	P	**P**	**03 11 26.2**	**-0.9**
	0.3nm,0.3s,baz=84,slow=9.2,SNR=3.0						
KURK	**Kurchatov**	**54.57**	**315**	*e*P	**P**	**03 11 44.9**	**-1.1**
	1.4nm,0.4s						
KURBB	**Kurchatov Arra**	**54.62**	**315**	P	**P**	**03 11 45.4**	**-0.9**
	1.3nm,0.4s,baz=91,slow=7.7,SNR=8.7						
ILAR	**Eielson Array**	**58.99**	**28**	P	**P**	**03 12 16.4**	**-0.8**
	0.4nm,0.8s,baz=246,slow=5.8,SNR=5.7						
BVAR	**Borovoye Array**	**59.67**	**318**	P	**P**	**03 12 21.9**	**-0.1**
	1.5nm,0.4s,baz=84,slow=6.0,SNR=5.1						
ABKAR	**Akbulak array**	**66.68**	**315**	*e*P	**P**	**03 13 08.2**	**-0.3**
	1.2nm,0.6s						
YKA	**Yellowknife Ar**	**73.42**	**28**	P	**P**	**03 13 50.2**	**+0.6**
	0.3nm,0.7s,baz=297,slow=5.9,SNR=3.8						
ARCES	**ARCESS Array B**	**75.34**	**341**	P	**P**	**03 14 02.9**	**+2.2**
	1.1nm,0.5s,baz=61,slow=9.9,SNR=8.0						
FINES	**FINESS Array B**	**79.73**	**334**	P	**P**	**03 14 25.2**	**0.0**
	1.8nm,0.4s,baz=69,slow=4.8,SNR=31						
AKASG	**Malin Array Be**	**84.32**	**324**	P	**P**	**03 14 49.1**	**-0.5**
	0.6nm,0.3s,baz=51,slow=5.1,SNR=5.1						
NOA	**NORSAR Array B**	**85.41**	**339**	P	**P**	**03 14 54.5**	**-0.4**
	0.6nm,0.8s,baz=39,slow=5.1,SNR=4.3						
LPAZ	**La Paz**	**149.81**	**79**	PKPbc	**PKPbc**	**03 22 08.5**	**-0.6**
	1.0nm,0.8s,baz=342,slow=3.2,SNR=3.2						

MEX 18 03:03:38.4±0.3, 14°.94N×93°.33W, h31km±13km, MD3.5, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		**0.77**	**8**	*e*P	Pn	03 03 50.8	-2.3
PCIG				*e*S	Sb	03 04 00.5	-2.9
CCIG	**Comitan**	**1.76**	**41**	*e*P	Pn	03 04 05.0	-2.0
CCIG				*e*S	Sn	03 04 25.9	-2.6

CASC 18 03:05:04.9±6.1, 11°.23N×86°.70W, h0km±21km, MD4.0, ML2.8, Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MGAN	**Managua**	**1.01**	**26**	*e*P	Pb	03 05 25.7	+0.3
MGAN				AML	AML	03 05 51.1	
	comp=N,63nm,0.9s						
CNGN	**Cerro Negro**	**1.26**	**360**	*e*P	Pg	03 05 28.5	-0.6
CNGN				AML	AML	03 05 58.8	
	comp=N,308nm,0.7s						
TEL3	**Telica 3**	**1.34**	**354**	*e*P	Pg	03 05 29.9	-0.8
ESTN	**Estel**	**1.89**	**10**	*e*P	Pn	03 05 37.7	-0.8
JCR	**Jicaral**	**2.08**	**131**	*e*P	Pg	03 05 44.4	-0.3
JCR				*e*S	Sg	03 06 13.8	+2.1
CGA2	**Cerro Gallo 2**	**2.50**	**119**	*e*P	Pn	03 05 44.0	-3.1
CGA2				*e*S	Sn	03 06 14.1	-4.3
URSC	**Urasca**	**3.19**	**115**	*e*P	Pn	03 05 55.6	-0.8

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*ISCJB **18** 03:12:19.4±0.4, 6°.39S±0°.04×130°.18E±0°.07, h146km, mb4.2/19, Error ellipse: s-maj=9.6km s-min=5.2km az=177.4*
*IDC **18** 03:12:21.4±2.5, 6°.31S×129°.89E, h140km±24km, mb3.9/14, mb1 4.0/17, mb1mx3.8/44, mbtmp4.4/17, MS3.5/1, Ms1 3.5/1, ms1mx2.5/33, Error ellipse: s-maj=30.6km s-min=11.4km az=94.0*
*NEIC **18** 03:12:22.1±1.3, 6°.36S×130°.06E, h151km±13km, mb4.3/5, Error ellipse: s-maj=18.1km s-min=7.4km az=91.0*
ISC 18 03:12:21.4±0.5, 6°.37S±0°.05×130°.1E±0°.1, h146km, n31, σ2§19/32, **mb4.1**/19, **Banda Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FAKI	**Fak Fak**	**4.06**	**33**	*e*Pn	**Pn**	**03 13 23.8**	**+1.4**
FAKI				*e*S	**Sn**	**03 14 07.0**	**-2.8**
SIJI	**Sorong**	**5.60**	**12**	P	**Pn**	**03 13 43.4**	**+0.7**
	11nm,0.3s,baz=167,slow=14,SNR=11						
SIJI				S	**Sn**	**03 14 42.2**	**-4.0**
	10nm,0.3s,baz=270,slow=20,SNR=9.4						
FITZ	**Fitzroy Crossi**	**12.43**	**200**	P	**Pn**	**03 15 11.8**	**-1.7**
	3.2nm,0.3s,baz=32,slow=12,SNR=66						
FITZ				S	Sn	03 17 21.1	-10
	5.9nm,0.3s,baz=42,slow=17,SNR=9.5						
FITZ	**Fitzroy Crossi**	**12.43**	**200**	S	Sn	03 17 21.1	-10
FITZ				*e*S	Sn	03 17 21.6	-9.2
WRAB	**Tennant Creek**	**14.11**	**163**	*e*Pn	**Pn**	**03 15 33.9**	**-1.0**

13nm,0.4s
WRAB eS Sn 03 18 01.4 -10
WRA Warramunga Arr 14.11 163 P **Pn** 03 15 33.4 -1.6
1.0nm,0.3s,baz=344,slow=13,SNR=28
WRA S Sn 03 18 00.5 -11
4.0nm,0.3s,baz=343,slow=22,SNR=7.5
COEN Coen 14.94 121 ePn **P** 03 15 50.8 +3.5
COEN eS Sn 03 18 22.5 -8.7
ASAR Alice Springs 17.59 168 P **Pn** 03 16 19.1 +1.5
3.5nm,0.3s,baz=344,slow=9.9,SNR=113
ASAR S **S** 03 19 23.2 -8.8
0.3nm,0.3s,baz=348,slow=25,SNR=4.6
MBWA Marble Bar 17.78 213 eP **P** 03 16 18.9 +0.3
MBWA eS S 03 19 25.6 -10
STKA Stephens Creek 27.57 158 P **P** 03 17 56.5 +1.7
2.7nm,0.7s,baz=332,slow=7.6,SNR=6.6
NWAO Narrogin (SRO) 28.99 203 P **P** 03 18 07.9 +0.5
2.2nm,0.3s,baz=305,slow=12,SNR=3.8
HNR Honiara 29.75 98 LR LR 03 31 01.5
comp=Z,85nm,19.4s,baz=190,slow=37
MAJO Matsushiro 43.37 10 eP **P** 03 20 09.0 -0.3
5.0nm,0.6s
MJAR Matsushiro Arr 43.37 10 P **P** 03 20 08.6 -0.7
2.6nm,0.7s,baz=187,slow=9.8,SNR=10
USRK Ussuriysk Ar. 50.37 2 P **P** 03 21 01.8 -1.7
2.6nm,0.8s,baz=190,slow=5.9,SNR=4.9
RAO Raoul Island 53.98 122 P **P** 03 21 29.9 -0.6
345nm,0.5s
KLR Kul'dur 55.39 1 P **P** 03 21 40.2 0.0
1.5nm,0.7s,baz=162,slow=6.4,SNR=4.3
SONM Songino Array 57.87 341 P **P** 03 21 58.3 +0.3
0.5nm,0.4s,baz=157,slow=4.7,SNR=3.9
PETK Petropavlovsk- 63.71 18 P **P** 03 22 38.3 +1.1
2.1nm,0.6s,baz=161,slow=6.1,SNR=3.6
MKAR Makanchi Array 67.74 327 P **P** 03 23 03.6 +0.4
4.9nm,0.6s,baz=120,slow=8.1,SNR=31
TKM2 Tokmak 2 69.54 320 eP **P** 03 23 15.2 +0.5
2.5nm,0.6s
EKS2 Erkin-Say 70.58 319 eP **P** 03 23 21.5 +0.6
1.5nm,0.5s
ZALV Zalesovo Beam 71.05 334 P **P** 03 23 23.0 -0.3
1.1nm,0.3s,baz=131,slow=4.8,SNR=3.9
SEY Seymchan 71.18 11 P **P** 03 23 25.2 +1.3
2.5nm,0.7s,baz=209,slow=2.3,SNR=11
KURBB Kurchatov Arra 72.01 328 P **P** 03 23 29.2 +0.1
1.6nm,0.5s,baz=126,slow=5.0,SNR=21
KURK Kurchatov 72.02 328 P **P** 03 23 29.2 +0.1
MAW Mawson 75.55 201 P **P** 03 23 50.3 +0.8
2.5nm,0.8s,baz=70,slow=12,SNR=3.8
BVAR Borovoye Array 77.57 328 P **P** 03 24 00.4 -0.7
0.6nm,0.5s,baz=123,slow=5.5,SNR=5.4
TIXI Tiksi 77.87 360 P **P** 03 24 01.6 -0.8
1.3nm,0.4s,baz=191,slow=3.6,SNR=5.3
QSPA South Pole Qui 83.60 180 eP **P** 03 24 33.5 +0.3
3.4nm,0.7s
TORD Torodi Ar. Bea 128.75 282 PKP **PKPdf** 03 31 12.6 +0.1
0.3nm,1.0s,baz=79,slow=2.4,SNR=3.2
TORD SKPbc SKPbc 03 34 15.8
0.2nm,0.6s,baz=72,slow=4.8,SNR=5.5

*ISCJB **18** 03:21:15.6±0.2,4°.21N±0°.03×97°.53E±0°.03,h176km±2km, mb4.3/57, Error ellipse: s-maj=5.7km s-min=3.9km az=144.0*
*IDC **18** 03:21:16.7±0.9,4°.40N×97°.53E,h170km±7km, mb4.0/30, mb1 4.1/30,mb1mx3.9/51,mbtmp4.4/30, Error ellipse: s-maj=16.4km s-min=8.3km az=51.0*
*NEIC **18** 03:21:16.6±0.5,4°.23N×97°.51E,h173km±5km, mb4.6/15, Error ellipse: s-maj=9.4km s-min=5.2km az=59.0*
*KLM **18** 03:21:18.0,4°.22N×97°.62E,h154km, mb4.6, ML4.2, MS5.4*
*DJA **18** 03:21:18.4±0.6,4°N±3°×9°8E±°,h143km±5km, M4.6/6, mB5.3/2, mb4.6/2, MLv4.5/6, Mw(mB)4.7/2*
ISC 18 03:21:16.2±0.5,**4°.25N**±0°.04×**97°.58E**±0°.04,**h170**km±4km, **n141**,σ1§**49**/172,**mb4.3**/57,**8C-11D,Northern Sumatera**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KCSI	**Kotacane, Aceh**	**0.75**	**165**	P	**Pn**	**03 21 40.7**	**-0.4**
KCSI				S	**Sn**	03 21 58.9	**-1.5**
LHMI	**Lhok Sumawe**	**1.16**	**327**	P	**Pn**	**03 21 44.9**	**+0.8**
LHMI				S	**Sn**	03 22 06.0	**+0.3**
LHMI	**Lhok Sumawe**	**1.16**	**327**	ePn	**Pn**	**03 21 45.8**	**+1.6**
LHMI				eS	**Sn**	03 22 06.8	**+1.1**
MLSI	**Meulaboh, Aceh**	**1.18**	**271**	P	**Pn**	**03 21 44.9**	**+0.6**
MLSI				S	**Sn**	03 22 06.1	**+0.3**
TSI	**Tuntungan**	**1.23**	**127**	P	**Pn**	**03 21 44.3**	**-0.5**
TSI				S	**Sn**	03 22 05.5	**-1.3**
PSI	**Prapat**	**1.97**	**137**	ePn	**Pn**	**03 21 54.4**	**+2.0**
PSI				eSn	**Sn**	03 22 21.2	**+0.9**
GSI	**Gunungsitoli**	**2.93**	**180**	P	**Pn**	**03 22 04.1**	**+0.6**
GSI				S	**Sn**	03 22 41.1	**+0.7**
GSI	**Gunungsitoli**	**2.93**	**180**	ePn	**Pn**	**03 22 04.0**	**+0.4**
GSI				eS	**Sn**	03 22 37.4	**-2.9**
KULM	**Kulim**	**3.23**	**71**	↑P	**Pn**	**03 22 08.2**	**+1.0**
KULM	**Kulim**	**3.23**	**71**	ePn	**Pn**	**03 22 07.5**	**+0.3**
KULM				eS	**Sn**	03 22 44.0	**-2.9**
IPM	**Ipoh**	**3.44**	**86**	↓P	**Pn**	**03 22 10.7**	**+0.8**
IPM	**Ipoh**	**3.44**	**86**	ePn	**Pn**	**03 22 10.4**	**+0.5**
IPM				eS	**Sn**	03 22 48.4	**-3.3**
PKDT	**Phuket**	**3.69**	**12**	P	**Pn**	**03 22 12.9**	**-0.2**
MNSI	**Mandailing Nat**	**3.97**	**150**	P	**Pn**	**03 22 18.0**	**+1.4**
MNSI				S	**Sn**	03 23 04.4	**+0.5**
TRTT	**Trang**	**4.13**	**30**	P	**Pn**	**03 22 18.8**	**+0.1**
FRIM	**Kepong**	**4.16**	**104**	↓P	**Pn**	**03 22 19.9**	**+0.8**
SKLT	**Songkhla**	**4.19**	**46**	P	**Pn**	**03 22 19.6**	**+0.2**
SURT	**Suratani**	**4.83**	**14**	P	**Pn**	**03 22 28.0**	**+0.3**
BKNI	**Bangkinang**	**5.21**	**138**	ePn	**Pn**	**03 22 33.6**	**+0.9**
PPI	**Padang Panjang**	**5.46**	**149**	P	**Pn**	**03 22 37.1**	**+1.1**
76nm,1.1s,2μm0.4nm							
KTGM	**Kuala Trenggan**	**5.63**	**79**	↓P	**Pn**	**03 22 38.7**	**+0.4**
PDSI	**Padang**	**5.88**	**151**	P	**Pn**	**03 22 42.6**	**+1.0**
KGM	**Kluang**	**6.14**	**111**	↓P	**Pn**	**03 22 46.4**	**+1.3**
MYKOM	**Kota Tinggi**	**6.72**	**111**	↓P	**Pn**	**03 22 53.7**	**+1.1**
MYKOM	**Kota Tinggi**	**6.72**	**111**	ePn	**Pn**	**03 22 53.2**	**+0.5**
MNAI	**Manna**	**10.10**	**148**	ePn	**Pn**	**03 23 34.9**	**-2.4**
PBKT	**Sadao Pong**	**12.69**	**15**	P	**Pn**	**03 24 13.1**	**+2.4**
95nm,0.8s							
KHON	**Khomkaen**	**13.07**	**23**	P	**P**	**03 24 22.3**	**+2.6**
41nm,0.8s,1μm							
UTTA	**Uttaradit**	**13.72**	**12**	P	**P**	**03 24 26.9**	**0.0**
14nm,0.8s,127nm							
CM01	**Chiang Mai Arr**	**14.15**	**5**	ePn	**P**	**03 24 31.4**	**-0.2**
CM31	**Chiang Mai Arr**	**14.18**	**5**	ePn	**P**	**03 24 32.1**	**0.0**
CMAR	**Chiang Mai Arr**	**14.18**	**5**	P	**P**	**03 24 31.9**	**-0.2**
2.0nm,0.3s,baz=195,slow=13,SNR=46							
CMAR				SCP	**ScP**	**03 32 55.7**	**+2.1**
0.2nm,0.3s,baz=231,slow=3.1,SNR=4.9							
LAMP	**Lampang**	**14.32**	**8**	P	**P**	**03 24 34.9**	**+1.3**
8.7nm,1.0s,132nm							
CMMT	**Chiang Mai**	**14.53**	**5**	P	**P**	**03 24 36.2**	**+0.2**
19nm,1.0s							
CHTO	**Chiang Mai**	**14.53**	**5**	P	**P**	**03 24 36.3**	**+0.3**
86nm,1.0s							
CHTO	**Chiang Mai**	**14.53**	**5**	ePn	**P**	**03 24 36.1**	**+0.2**
SBUM	**Sibu**	**14.72**	**97**	↑P	**P**	**03 24 37.9**	**-0.2**
CISI	**Cisompet, Garu**	**15.55**	**139**	ePn	**Pn**	**03 24 43.9**	**-2.8**
79nm,1.3s							
CMAI	**Chiengmai2**	**15.65**	**5**	P	**P**	**03 24 50.6**	**+2.1**
11nm,1.2s,660nm							
CRAI	**Chiangrai**	**16.11**	**9**	P	**P**	**03 24 55.8**	**+2.4**
135nm,0.9s							
XMIS	**Christmas Isla**	**16.70**	**151**	eP	**P**	**03 24 56.8**	**-3.1**
PALK	**Pallekele**	**17.06**	**281**	P	**Pn**	**03 25 07.2**	**+2.3**
0.4nm,0.3s,baz=111,slow=16,SNR=3.6							
PALK				S	**S**	**03 28 07.6**	**-5.7**
2.6nm,0.3s,baz=198,slow=20,SNR=10							
UGM	**Wanagama**	**17.68**	**133**	eP	**P**	**03 25 11.4**	**+0.6**
360nm,1.5s							
KKM	**Kota Kinabalu**	**18.64**	**84**	↓P	**Pn**	**03 25 24.6**	**+0.9**
KKM	**Kota Kinabalu**	**18.64**	**84**	eP	**P**	**03 25 22.6**	**+1.3**
19nm,0.6s							
KDM	**Kudat**	**19.34**	**81**	↓P	**Pn**	**03 25 31.4**	**-0.3**
SDKM	**Sandakan**	**19.59**	**85**	↓P	**Pn**	**03 25 33.7**	**-1.1**
MYLDM	**Lahad Datu**	**20.87**	**87**	eP	Pn	03 25 48.0	-2.3
39nm,1.3s							
KMI	**Kunming**	**21.34**	**13**	P	**P**	**03 25 52.8**	**+2.5**
KMI				pmax	pmax		
comp=Z,25nm,1.0s							
KMI				pmax	pmax		
comp=Z,62nm,4.5s							
SHL	**Shillong**	**21.89**	**346**	eP	**P**	**03 25 55.0**	**-1.0**
GYA	**Guiyang**	**23.73**	**21**	eP	**P**	**03 26 14.8**	**+1.7**
GYA				pP	pP	03 26 50.0	+4.3
GYA				sP	PP	03 27 11.3	+0.7
GYA				PcP	**PcP**	**03 29 53.4**	**+1.0**
GYA				S	**S**	**03 30 15.5**	**-0.4**
GYA				ScP	**ScP**	**03 33 15.9**	**+0.9**
GYA				pmax	pmax		
comp=Z,10.0nm,0.8s							
KAPI	**Kappang**	**23.98**	**112**	P	**P**	**03 26 17.0**	**+1.7**
comp=Z,5.2nm,0.5s,baz=315,slow=5.7,SNR=4.4							
CD2	**Chengdu**	**27.15**	**12**	P	**P**	**03 26 44.3**	**+0.6**
CD2				pP	pP	03 27 20.3	+1.5
CD2				sP	sP	03 27 40.8	+2.3
CD2				PP	**PP**	**03 27 53.3**	**+4.7**
CD2				S	**S**	**03 31 11.5**	**+1.8**
CD2				sS	sS	03 32 16.3	+4.2
CD2				SS	**ScP**	**03 33 28.8**	**+4.2**
CD2				pmax	pmax		
comp=Z,20nm,0.4s							
CD2				pmax	pmax		
comp=Z,40nm,3.6s							
H08S2	**Diego Garcia H**	**27.68**	**245**	T	T	03 54 50.1	
baz=70,slow=75,SNR=141							
H08S3	**Diego Garcia H**	**27.68**	**245**	T	T	03 55 06.0	
baz=70,slow=75,SNR=123							
H08S1	**Diego Garcia H**	**27.70**	**245**	T	T	03 54 38.6	
baz=70,slow=75,SNR=120							
ENH	**Enshi**	**28.22**	**22**	eP	**P**	**03 26 53.3**	**0.0**
comp=Z,20nm,0.3s							
XAN	**Xi'an**	**31.46**	**18**	P	**P**	**03 27 21.9**	**+0.1**
XAN				pmax	pmax		
comp=Z,44nm,0.6s							
XAN				pmax	pmax		
comp=Z,14nm,3.7s							
GTA	**Gaotai**	**35.06**	**3**	eP	**P**	**03 27 53.6**	**+0.6**
GTA				pP	pP	03 28 29.8	+0.8
GTA				sP	sP	03 28 49.6	+1.2
GTA				PcP	**PcP**	**03 30 21.8**	**+0.7**
GTA				pmax	pmax		
comp=Z,6.0nm,0.9s							
FITZ	**Fitzroy Crossi**	**35.48**	**130**	P	**P**	**03 27 57.5**	**+0.7**
comp=Z,22nm,0.6s,baz=328,slow=6.7,SNR=92							
HHC	**Hu-ho-hao-te**	**38.55**	**17**	eP	**P**	**03 28 23.6**	**+1.1**
HHC				pmax	pmax		
comp=Z,31nm,0.9s							
HHC				pmax	pmax		
comp=Z,110nm,4.3s							
BJI	**Beijing**	**39.39**	**23**	P	**P**	**03 28 30.8**	**+1.5**
BJI				pmax	pmax		
comp=Z,30nm,0.7s							
WMQ	**Urumqi**	**40.36**	**349**	eP	**P**	**03 28 35.9**	**-1.5**
WMQ				S	**S**	**03 34 25.3**	**-7.4**
WMQ				pmax	pmax		
comp=Z,3.0nm,0.6s							
WMQ				pmax	pmax		
comp=Z,67nm,5.4s							
NWAO	**Narrogin (SRO)**	**41.41**	**155**	P	**P**	**03 28 47.8**	**+1.8**
comp=Z,19nm,0.9s,baz=22,slow=19,SNR=5.1							
JNU	**Nakatsue**	**42.30**	**43**	P	**P**	**03 28 53.6**	**+0.3**
comp=Z,5.0nm,0.7s,baz=242,slow=1.0,SNR=6.8							
KSAR	**Wonju Array Be**	**43.12**	**36**	P	**P**	**03 29 00.5**	**+0.6**
KSRS	**Korea Array**	**43.15**	**36**	P	**P**	**03 29 00.5**	**+0.4**
comp=Z,4.2nm,0.5s,baz=224,slow=7.9,SNR=15							
WRA	**Warramunga Arr**	**43.39**	**125**	P	**P**	**03 29 03.1**	**+0.9**
comp=Z,4.7nm,0.6s,baz=303,slow=9.2,SNR=47							
WRA				PcP	**PcP**	**03 30 49.1**	**+1.4**
comp=Z,1.1nm,0.3s,baz=314,slow=2.5,SNR=5.4							
WRA				ScP	**ScP**	**03 34 24.3**	**+1.0**
comp=Z,3.2nm,0.7s,baz=315,slow=3.5,SNR=19							
WRAB	**Tennant Creek**	**43.39**	**125**	eP	**P**	**03 29 03.1**	**+0.8**
comp=Z,5.3nm,0.4s							
WB2	**Warramunga Arr**	**43.40**	**125**	eP	**P**	**03 29 03.6**	**+1.3**
comp=Z,7.9nm,0.6s							
SONM	**Songino Array**	**44.08**	**9**	P	**P**	**03 29 07.1**	**-0.3**
comp=Z,4.7nm,0.5s,baz=239,slow=14,SNR=6.7							
SONM				PcP	**PcP**	**03 30 49.6**	**-0.1**
comp=Z,0.8nm,0.4s,baz=196,slow=5.0,SNR=4.3							
SONM				ScP	**ScP**	**03 34 24.9**	**-0.8**
comp=Z,0.5nm,0.6s,baz=183,slow=5.6,SNR=3.0							
SONA1	**Songino Array**	**44.09**	**9**	eP	**P**	**03 29 07.1**	**-0.5**
ULN	**Ulaanbaatar**	**44.21**	**9**	eP	**P**	**03 29 09.2**	**+0.7**
comp=Z,4.4nm,1.0s							
MK01	**Makanchi Array**	**44.38**	**345**	eP	**P**	**03 29 09.1**	**-0.6**
MKAR	**Makanchi Array**	**44.40**	**345**	P	**P**	**03 29 09.2**	**-0.7**
comp=Z,1.0nm,0.4s,baz=151,slow=8.3,SNR=12							
MKAR				pP	**pP**	**03 29 46.9**	**-0.4**
comp=Z,1.9nm,0.7s,baz=162,slow=8.6,SNR=4.3							
ASAR	**Alice Springs**	**44.98**	**130**	P	**P**	**03 29 16.4**	**+1.5**
comp=Z,3.5nm,0.7s,baz=308,slow=7.8,SNR=26							
ASAR				ScP	**ScP**	**03 34 30.9**	**+1.0**
comp=Z,2.7nm,0.9s,baz=305,slow=4.5,SNR=11							
ASAR				S	**S**	**03 35 38.3**	**-2.4**
comp=Z,0.7nm,0.8s,baz=288,slow=15,SNR=4.7							
AS31	**Alice Springs**	**44.98**	**130**	eP	**P**	**03 29 14.8**	**-0.1**
comp=Z,1.4nm,0.6s							
AS01	**Alice Springs**	**45.02**	**130**	eP	**P**	**03 29 16.2**	**+1.1**
TLY	**Talaya**	**47.54**	**5**	P	**P**	**03 29 35.6**	**+1.3**
comp=Z,2.2nm,0.7s,baz=210,slow=3.9,SNR=3.3							
KURBB	**Kurchatov Arra**	**48.91**	**344**	P	**P**	**03 29 44.5**	**-0.4**
comp=Z,1.5nm,0.5s,baz=163,slow=7.2,SNR=21							
KURBB				pP	**pP**	**03 30 22.3**	**-0.6**
comp=Z,1.1nm,0.7s,baz=164,slow=6.6,SNR=3.0							
KURBB				PcP	**PcP**	**03 31 06.7**	**+0.2**
comp=Z,0.8nm,0.4s,baz=156,slow=3.2,SNR=5.5							
KURK	**Kurchatov**	**48.97**	**344**	P	**P**	**03 29 44.5**	**-0.8**
KURK				pP	**pP**	**03 30 22.3**	**-1.0**
KURK				PcP	**PcP**	**03 31 06.7**	**-0.1**
GEYT	**Alibeck**	**49.16**	**318**	P	**P**	**03 29 46.4**	**-0.7**
comp=Z,3.7nm,0.6s,baz=130,slow=8.5,SNR=6.2							
GEYT				PcP	**PcP**	**03 31 08.8**	**+1.0**
comp=Z,3.8nm,0.6s,baz=151,slow=3.4,SNR=4.6							
USRK	**Ussuriysk Ar.**	**49.99**	**32**	P	**P**	**03 29 53.2**	**+0.1**
comp=Z,2.1nm,0.5s,baz=236,slow=6.5,SNR=6.7							
ZALV	**Zalesovo Beam**	**50.63**	**350**	P	**P**	**03 29 55.7**	**-2.0**
comp=Z,4.7nm,0.4s,baz=168,slow=7.2,SNR=14							
BVAR	**Borovoye Array**	**53.52**	**340**	P	**P**	**03 30 18.1**	**-1.0**
comp=Z,2.0nm,0.5s,baz=142,slow=9.3,SNR=13							
BRVK	**Borovoye**	**53.59**	**340**	eP	**P**	**03 30 18.9**	**-0.7**
comp=Z,2.9nm,0.5s							
ABKAR	**Akbulak array**	**55.03**	**331**	eP	**P**	**03 30 29.1**	**-1.0**
STKA	**Stephens Creek**	**55.15**	**134**	P	**P**	**03 30 32.0**	**+0.7**
comp=Z,2.2nm,0.6s,baz=326,slow=7.9,SNR=5.9							
AKTO	**Aktyubinsk**	**56.75**	**331**	P	**P**	**03 30 41.0**	**-1.3**
comp=Z,0.6nm,0.3s,baz=110,slow=7.1,SNR=4.0							
ARU	**Arti**	**60.55**	**336**	P	**P**	**03 31 07.0**	**-1.4**
comp=Z,2.4nm,0.3s,baz=93,slow=18,SNR=2.4							
KBZ	**Khabaz**	**62.05**	**318**	P	**P**	**03 31 18.7**	**-0.1**
comp=Z,2.4nm,0.8s,baz=123,slow=7.3,SNR=6.5							
NRIK	**Noril'sk**	**65.33**	**356**	P	**P**	**03 31 38.8**	**-1.0**
comp=Z,5.7nm,0.5s,baz=161,slow=5.8,SNR=8.0							
BR131	**Keskin Array S**	**67.37**	**311**	eP	**P**	**03 31 53.0**	**-0.5**
BRTR	**Keskin Array B**	**67.37**	**311**	P	**P**	**03 31 52.5**	**-1.0**
comp=Z,3.0nm,0.6s,baz=126,slow=7.3,SNR=26							
BR231	**Keskin MP Arra**	**68.05**	**311**	eP	**P**	**03 31 53.6**	**-4.0**
TIXI	**Tiksi**	**70.13**	**10**	P	**P**	**03 32 08.2**	**-1.6**
comp=Z,3.6nm,0.4s,baz=207,slow=3.4,SNR=16							
TIXI	**Tiksi**	**70.13**	**10**	eP	**P**	**03 32 08.4**	**-1.3**
comp=Z,4.7nm,0.7s							
KARP	**Karpathos**	**71.63**	**306**	eP	**P**	**03 32 19.9**	**+0.3**
comp=Z,15nm,0.9s							
LAST	**Lasithi**	**72.94**	**305**	eP	**P**	**03 32 27.6**	**+0.2**
comp=Z,28nm,1.5s							
AKASG	**Malin Array Be**	**73.10**	**322**	P	**P**	**03 32 26.2**	**-1.6**
comp=Z,0.9nm,0.4s,baz=88,slow=5.3,SNR=5.7							
IDI	**Anoyia**	**73.44**	**305**	eP	**P**	**03 32 30.9**	**+0.6**
comp=Z,8.0nm,0.7s							
VRI	**Vrincioaia**	**73.67**	**317**	↑↑P	**P**	**03 32 32.0**	**+0.7**
PLOR	**Plostina**	**73.72**	**317**	↓↓P	**P**	**03 32 32.5**	**+0.8**
MLR	**Muntele Rosu**	**74.14**	**316**	↑↑P	**P**	**03 32 35.3**	**+1.1**
VOIR		**74.75**	**316**	↑↑P	**P**	**03 32 37.5**	**-0.2**
BURAR	**Bucovina Array**	**75.01**	**318**	↑↑P	**P**	**03 32 39.7**	**+0.5**
ARR	**Arges**	**75.03**	**316**	↓↓P	**P**	**03 32 38.9**	**-0.4**
DRGR		**76.56**	**317**	↓↓P	**P**	**03 32 48.7**	**+0.7**
FINES	**FINESS Array B**	**77.49**	**332**	P	**P**	**03 32 52.1**	**-0.6**
comp=Z,3.9nm,0.5s,baz=106,slow=6.2,SNR=50							
ARCES	**ARCESS Array B**	**79.81**	**340**	P	**P**	**03 33 05.0**	**-0.3**
comp=Z,1.6nm,0.4s,baz=92,slow=5.5,SNR=34							
BLY	**Banja Luka**	**80.20**	**315**	↑↑P	**P**	**03 33 09.0**	**+1.1**
CONA	**Conrad Observa**	**81.31**	**318**	*i* P	**P**	**03 33 14.1**	**+0.3**
comp=Z,1.2nm,0.7s							
SOKA	**Soboth**	**81.81**	**316**	*i* P	**P**	**03 33 15.1**	**-1.3**
comp=Z,4.1nm,1.1s							
OBKA	**Obir**	**82.14**	**316**	*i* PcP	**PcP**	**03 33 23.5**	**+0.4**
comp=Z,9.1nm,1.5s							
MOA	**Molln**	**82.38**	**318**	*i* PcP	**PcP**	**03 33 22.1**	**-2.0**
comp=Z,1.1nm,0.7s							
MYKA	**Terra Mystica**	**82.77**	**316**	*i* PcP	**PcP**	**03 33 25.4**	**-0.5**
comp=Z,0.9nm,0.5s							
GEA0	**GERESS Array S**	**82.79**	**319**	eP	**P**	**03 33 21.8**	**+0.3**
GERES	**GERESS Array B**	**82.79**	**319**	P	**P**	**03 33 21.6**	**+0.1**
comp=Z,1.0nm,0.3s,baz=108,slow=4.7,SNR=21							
KBA	**Koelnbreinsper**	**82.98**	**317**	*i* P	**P**	**03 33 23.9**	**+1.2**
comp=Z,1.6nm,0.6s							
SYO	**Syowa Base**	**83.01**	**198**	↑↑eX	**P**	**03 33 19.0**	**-3.0**
ABTA	**Abfaltersbach**	**83.55**	**316**	*i* PcP	**PcP**	**03 33 28.0**	**-1.4**
comp=Z,6.0nm,1.4s							
WTTA	**Wattenberg**	**84.15**	**317**	*i* P	**P**	**03 33 27.6**	**-1.0**
comp=Z,6.1nm,1.4s							
MOTA	**Moosalm**	**84.51**	**317**	*i* P	**P**	**03 33 30.8**	**+0.5**
comp=Z,1.0nm,0.5s							
NB2	**NORSAR Subarra**	**84.54**	**331**	P	**P**	**03 33 29.6**	**-0.5**
comp=Z,0.9nm,0.6s,baz=91,slow=5.1							
NOA	**NORSAR Array B**	**84.54**	**331**	P	**P**	**03 33 29.6**	**-0.5**
comp=Z,0.5nm,0.6s,baz=110,slow=2.9,SNR=4.3							
RETA	**Reutte**	**84.74**	**317**	*i* P	**P**	**03 33 31.4**	**-0.1**
comp=Z,2.5nm,0.4s							
FETA	**Feichten**	**84.77**	**317**	*i* P	**P**	**03 33 31.3**	**-0.3**
comp=Z,2.1nm,0.7s							
FUORN	**Ofenpass-Fuorn**	**85.09**	**316**	eP	**P**	**03 33 34.3**	**+0.9**
comp=Z,8.2nm,1.3s							
DAVA	**Damuels**	**85.34**	**317**	*i* P	**P**	**03 33 34.2**	**-0.3**
comp=Z,3.5nm,1.4s							
KEST	**Kesra**	**86.11**	**305**	P	**P**	**03 33 40.1**	**+1.6**
comp=Z,6.6nm,0.8s,baz=339,slow=1.4,SNR=10							
KEST	**Kesra**	**86.11**	**305**	eP	**P**	**03 33 40.2**	**+1.7**
BCLA	**Clavier**	**88.21**	**320**	P	**P**	**03 33 48.6**	**+0.5**
DOU	**Dourbes**	**88.69**	**320**	P	**P**	**03 33 50.4**	**0.0**
comp=Z,9.3nm,2.3s							
TORD	**Torodi Ar. Bea**	**94.76**	**284**	P	**P**	**03 34 20.8**	**+1.5**
comp=Z,0.3nm,0.5s,baz=85,slow=5.3,SNR=9.6							
TORD				pP	**pP**	**03 35 02.4**	**+0.6**
comp=Z,0.3nm,0.6s,baz=95,slow=4.2,SNR=2.2							
ESDC	**Sonseca Array**	**96.15**	**310**	P	**P**	**03 34 25.6**	**+0.4**
comp=Z,0.7nm,0.5s,baz=66,slow=4.0,SNR=7.3							
ULM	**Lac du Bonnet**	**124.48**	**10**	PKP	**PKPdf**	**03 39 55.0**	**-0.3**
comp=Z,3.6nm,0.6s,baz=344,slow=4.5,SNR=4.7							
NVAR	**Mina Array Bea**	**126.09**	**35**	PKP	**PKPdf**	**03 40 00.3**	**+1.2**
comp=Z,0.9nm,0.5s,baz=238,slow=1.8,SNR=8.8							
PDAR	**Pinedale Array**	**127.14**	**25**	PKP	**PKPdf**	**03 40 01.5**	**+0.5**
comp=Z,0.5nm,0.5s,baz=132,slow=2.0,SNR=6.2							
EYMN	**Ely**	**127.41**	**8**	ePKPdf	**PKPdf**	**03 40 01.6**	**+0.6**
TXAR	**Lajitas Array**	**140.87**	**30**	PKP	**PKPdf**	**03 40 24.7**	**-2.1**
comp=Z,0.4nm,0.6s,baz=220,slow=0.8,SNR=10							
TXAR				SKPbc	**SKPbc**	**03 43 47.9**	**+0.1**
comp=Z,0.1nm,0.4s,baz=307,slow=0.7,SNR=5.8							
JCT	**Junction City**	**141.67**	**25**	ePKPdf	**PKPdf**	**03 40 28.4**	**+0.3**

*NIED **18** 03:36:00,30°.90N×141°.90E,h8km,Mw4.1 Best double couple: M0 1.83000×10^15 NP1:φ=44.00000°,δ44.00000°, λ136.00000°. NP2:φ=169.00000°,δ61.00000°,λ56.00000°.*
*IDC **18** 03:36:43.8±0.5,30°.93N×142°.01E,h0km,mb4.2/26, mb1 4.3/32,mb1mx4.2/58,mbtmp4.2/32,ML3.9/5,MS3.2/9, Ms1 3.2/9,ms1mx3.0/39, Error ellipse: s-maj=17.5km s-min=12.6km az=73.0*
*ISCJB **18** 03:36:45.5±0.3,30°.91N±0°.03×141°.97E±0°.06,h24km, mb4.3/37,MS3.3/8, Error ellipse: s-maj=7.7km s-min=3.7km az=165.2*
*JMA **18** 03:36:45.3±0.2,30°.89N×141°.93E,h19km,M4.4*
*NEIC **18** 03:36:46.7±2.5,30°.92N×142°.06E,h19km±15km,mb4.6/8, Error ellipse: s-maj=8.5km s-min=5.8km az=99.0*
ISC 18 03:36:47.4±0.5,**30°.90N**±0°.05×**141°.97E**±0°.07,**h24**km,**n79,** σ1§**23**/90,**mb4.4**/37,**MS3.3**/8,**Southeast of Honshu**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHJ2	**Mitsune**	**2.86**	**321**	ePn	**Pn**	**03 37 30.1**	**-1.4**
JHJ2				eSn	Sn	03 38 00.5	-4.7
JHJ	**Hachijo jima 2**	**2.89**	**321**	Pn	**Pn**	**03 37 31.2**	**-0.6**
23nm,0.3s,baz=62,slow=22,SNR=10							
JHJ				Sn	**Sn**	**03 38 04.6**	**-1.2**

HHC LR LR
comp=E,550nm,12.8s
HHC LR LR
comp=Z,530nm,13.2s
ULN Ulaanbaatar 31.52 313 *e*P **P 03 43 08.6 +0.9**
comp=Z,16nm,1.4s
SONM Songino Array 31.93 312 P **P 03 43 12.0 +0.7**
comp=Z,5.8nm,1.1s,baz=115,slow=7.6,SNR=17
SONM LR LR 03 57 40.7
comp=Z,61nm,18.0s,baz=66,slow=39
LZH Lanzhou 32.07 290 *e*P **P 03 43 12.8 +0.2**
LZH pP pP 03 43 17.4 -2.4
LZH sP sP 03 43 21.0 -1.8
LZH pmax pmax
comp=Z,19nm,1.1s
CD2 Chengdu 32.68 280 P **P 03 43 16.5 -1.4**
CD2 pmax pmax
comp=Z,10.0nm,0.6s
SEY Seymchan 32.73 9 P **P 03 43 18.6 +0.7**
comp=Z,1.3nm,0.6s,baz=213,slow=2.1,SNR=6.5
KMI Kunming 34.98 270 P **P 03 43 38.6 +0.4**
KMI pP pP 03 43 43.3 -2.1
KMI sP sP 03 43 46.1 -2.2
KMI pmax pmax
comp=Z,13nm,0.5s
GTA Gaotai 35.23 296 *e*P **P 03 43 39.5 -0.6**
GTA pP pP 03 43 44.0 -3.3
GTA sP sP 03 43 46.5 -3.8
GTA PcP PcP 03 46 06.1 -4.6
GTA S **S 03 49 11.8 -0.6**
GTA sS sS 03 49 19.1 -5.2
GTA SS **SnSn 03 51 29.3 -1.3**
GTA pmax pmax
comp=Z,5.0nm,0.9s
GTA pmax pmax
comp=Z,34nm,6.9s
GTA LR LR
comp=N,84nm,18.1s
GTA LR LR
comp=E,96nm,16.6s
GTA LR LR
comp=Z,93nm,16.2s
CMAR Chiang Mai Arr 40.78 263 LR LR 04 03 03.6
comp=Z,45nm,18.3s,baz=120,slow=39
TIXI Tiksi 41.42 354 P **P 03 44 30.5 -1.0**
comp=Z,0.8nm,0.4s,baz=154,slow=1.5,SNR=4.5
WMQ Urumqi 44.28 303 *e*P **P 03 44 55.4 +0.2**
WMQ pmax pmax
comp=Z,5.0nm,0.6s
WMQ pmax pmax
comp=Z,43nm,5.6s
WMQ LR LR
comp=Z,11nm,31.8s
ZALV Zalesovo Beam 46.54 317 P **P 03 45 13.1 +0.3**
comp=Z,2.5nm,0.8s,baz=110,slow=7.4,SNR=5.4
MKAR Makanchi Array 47.97 307 P **P 03 45 24.6 +0.4**
comp=Z,3.7nm,0.7s,baz=90,slow=9.3,SNR=23
MKAR LR LR 04 05 16.5
comp=Z,24nm,21.6s,baz=74,slow=36
NRIK Noril'sk 49.06 338 P **P 03 45 32.5 +0.4**
comp=Z,2.3nm,0.5s,baz=83,slow=7.3,SNR=5.7
KURK Kurchatov 50.24 312 P **P 03 45 41.6 +0.2**
KURBB Kurchatov Arra 50.30 312 P **P 03 45 41.6 -0.2**
comp=Z,4.8nm,0.9s,baz=87,slow=7.2,SNR=26
WRAB Tennant Creek 51.07 189 *e*P **P 03 45 48.0 +0.1**
comp=Z,5.5nm,0.4s
WRA Warramunga Arr 51.08 189 P **P 03 45 48.0 0.0**
comp=Z,5.7nm,0.4s,baz=4.3,slow=7.4,SNR=181
KSH Kashi 53.53 299 *e*P P 03 46 11.9 +5.6
KSH *e*pP sP 03 46 18.3 +1.6
KSH *e*ScP **ScP 03 51 12.5 +3.2**
KSH S S 03 53 44.6 +6.5
KSH ScS **ScS 03 55 56.3 +1.8**
KSH pmax pmax
comp=Z,67nm,5.1s
ILAR Eielson Array 54.49 30 P **P 03 46 12.7 -0.1**
comp=Z,1.4nm,0.8s,baz=252,slow=5.5,SNR=13
ASAR Alice Springs 54.81 189 P **P 03 46 15.6 0.0**
comp=Z,2.0nm,0.4s,baz=359,slow=4.8,SNR=39
BVAR Borovoye Array 55.16 316 P **P 03 46 17.9 +0.1**
comp=Z,1.3nm,0.4s,baz=101,slow=7.7,SNR=9.1
KKAR Karatay Array 56.76 304 *e*P **P 03 46 30.1 +0.7**
comp=Z,7.1nm,0.8s
INK Inuvik 59.67 25 P **P 03 46 49.4 +0.1**
comp=Z,2.4nm,0.9s,baz=209,slow=3.1,SNR=4.7
INK Inuvik 59.67 25 P **P 03 46 49.2 -0.1**
comp=Z,0.4nm,0.5s
ARU Arti 61.33 321 P **P 03 47 00.3 -0.5**
comp=Z,2.8nm,0.4s,baz=68,slow=7.2,SNR=5.0
ABKAR Akbulak array 62.34 313 *e*P **P 03 47 08.0 +0.2**
comp=Z,1.9nm,0.5s
STKA Stephens Creek 62.44 180 P **P 03 47 09.2 +0.7**
comp=Z,1.0nm,0.4s,baz=4.5,slow=6.6,SNR=3.8
AKTO Aktyubinsk 63.20 315 P **P 03 47 13.4 -0.1**
comp=Z,2.2nm,0.6s,baz=78,slow=12,SNR=7.3
AKTO LR LR 04 14 45.0
comp=Z,23nm,21.9s,baz=122,slow=36
GEYT Alibeck 67.32 302 P **P 03 47 41.8 +1.4**
comp=Z,1.2nm,0.4s,baz=16,slow=6.8,SNR=3.6
YKA Yellowknife Ar 68.90 29 P **P 03 47 48.9 -1.0**
comp=Z,1.1nm,1.0s,baz=296,slow=5.7,SNR=6.8
FINES FINESS Array B 74.46 333 P **P 03 48 23.6 +0.2**
comp=Z,1.2nm,0.5s,baz=74,slow=8.1,SNR=12
KBZ Khabaz 75.30 312 P **P 03 48 29.2 +0.7**
comp=Z,4.3nm,0.9s,baz=113,slow=5.3,SNR=9.3
NVAR Mina Array Bea 78.33 52 P **P 03 48 45.4 -0.7**
comp=Z,0.7nm,0.7s,baz=312,slow=5.3,SNR=4.7
AKASG Malin Array Be 79.45 323 P **P 03 48 51.1 -0.6**
comp=Z,2.2nm,0.6s,baz=48,slow=6.0,SNR=7.9
HFS Hagfors 79.87 336 P **P 03 48 53.7 0.0**
comp=Z,2.2nm,0.7s,baz=47,slow=4.4,SNR=4.7
NB2 NORSAR Subarra 80.02 338 P **P 03 48 53.3 -1.3**
comp=Z,1.3nm,0.8s,baz=40,slow=5.6
NOA NORSAR Array B 80.02 338 P **P 03 48 53.5 -1.1**
comp=Z,1.5nm,0.7s,baz=42,slow=5.5,SNR=5.3
PDAR Pinedale Array 81.65 45 P **P 03 49 05.2 +1.3**
comp=Z,0.7nm,0.7s,baz=300,slow=2.9,SNR=6.9
BRTR Keskin Array B 83.29 313 P **P 03 49 13.4 +1.0**
comp=Z,3.0nm,1.0s,baz=126,slow=3.4,SNR=15
KWP Kalwaria Pacla 83.39 325 *e*P **P 03 49 14.0 +1.4**
STHS Stebnicka Huta 84.25 326 *e*P **P 03 49 18.2 +1.2**
NIE Niedzica 84.70 326 *e*P **P 03 49 20.0 +0.7**
VYHS Vyhne 86.04 326 *e*P **P 03 49 26.3 +0.3**
CLL Collm 86.64 331 *i*P **P 03 49 28.0 -0.8**
CLL *es*P **sP 03 49 41.0 +1.5**
TXAR Lajitas Array 93.47 53 P **P 03 50 02.6 +1.1**
comp=Z,0.9nm,0.8s,baz=307,slow=2.9,SNR=9.9
TORD Torodi Ar. Bea 121.90 313 PKP **PKPdf 03 55 40.0 -0.3**
comp=Z,0.4nm,0.9s,baz=36,slow=2.5,SNR=4.0
LPAZ La Paz 148.94 69 PKPbc **PKPbc 03 56 35.4 +0.7**
comp=Z,1.7nm,0.8s,baz=229,slow=2.2,SNR=5.0

*ISCJB **18** 04:05:50.5±0.3, 4°.93S±0°.04×151°.39E±0°.05, h129km, mb4.3/56, Error ellipse: s-maj=8.0km s-min=5.1km az=29.9*
*IDC **18** 04:05:51.8±0.8, 4°.97S×151°.44E, h130km±6km, mb4.1/25, mb1 4.3/26, mb1mx4.2/40, mbtmp4.5/26, MS2.9/2, Ms1 2.9/2, ms1mx2.4/27, Error ellipse: s-maj=15.5km s-min=9.7km az=90.0*
*NEIC **18** 04:05:52.8±0.6, 4°.95S×151°.46E, h140km±5km, mb4.5/26, Error ellipse: s-maj=7.0km s-min=5.2km az=107.0*
ISC 18 04:05:51.7±0.3, 5°.00S±0°.05×151°.46E±0°.06, h129km, n93, σ1§28/108, mb4.4/55, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RABL	**Rabaul**	**1.07**	**41**	*e*Pn	**Pn**	**04 06 16.3**	**+1.0**
RABL				*e*Sn	**Sn**	**04 06 33.8**	**+0.6**
MANU	**Manus Island**	**5.03**	**306**	*e*Pn	**Pn**	**04 07 06.7**	**+1.4**
PMG	**Port Moresby**	**6.11**	**224**	P	**Pn**	**04 07 21.4**	**+1.7**
	14nm,0.3s,baz=48,slow=5.0,SNR=16						
PMG				S	**Sn**	**04 08 28.2**	**-0.2**
	25nm,0.3s,baz=86,slow=14,SNR=9.9						
PMG	**Port Moresby**	**6.11**	**224**	*e*Pn	**Pn**	**04 07 21.4**	**+1.7**
PMG				*e*S	**Sn**	**04 08 27.9**	**-0.5**
HNR	**Honiara**	**9.50**	**118**	*e*Pn	**Pn**	**04 08 06.7**	**+1.2**
CTA	**Charters Tower**	**15.83**	**198**	P	**P**	**04 09 30.4**	**+1.8**
	1.6nm,0.3s,baz=21,slow=13,SNR=13						
CTAO	**Charters Tower**	**15.83**	**198**	*e*Pn	**P**	**04 09 30.0**	**+1.4**
WRAB	**Tennant Creek**	**22.30**	**227**	*e*P	**P**	**04 10 38.3**	**-0.5**
	8.9nm,0.5s						
WRAB				*e*PcP	**PcP**	**04 14 26.5**	**-3.4**
WB2	**Warramunga Arr**	**22.31**	**227**	*e*P	**P**	**04 10 38.5**	**-0.4**
	11nm,0.8s						
WRA	**Warramunga Arr**	**22.32**	**227**	P	**P**	**04 10 38.3**	**-0.7**
	4.3nm,0.5s,baz=55,slow=10,SNR=66						
WRA				pP	**pP**	**04 11 02.2**	**-0.8**
	5.3nm,0.6s,baz=49,slow=10,SNR=4.7						
WRA				PcP	**PcP**	**04 14 29.9**	**0.0**
	2.2nm,0.5s,baz=44,slow=2.0,SNR=12						
WRA				ScP	**ScP**	**04 17 54.4**	**-1.4**
	1.5nm,0.6s,baz=50,slow=2.9,SNR=16						
DZM	**Mont Dzumac**	**22.32**	**141**	P	**P**	**04 10 39.5**	**+0.4**
	17nm,0.6s,baz=288,slow=23,SNR=4.5						
AS01	**Alice Springs**	**25.08**	**221**	*e*P	**P**	**04 11 04.7**	**+0.2**
AS31	**Alice Springs**	**25.11**	**221**	*e*P	**P**	**04 11 05.1**	**+0.3**
	2.8nm,0.6s						
ASAR	**Alice Springs**	**25.11**	**221**	P	**P**	**04 11 04.8**	**0.0**
	6.0nm,0.6s,baz=57,slow=8.9,SNR=46						
ASAR				pP	**pP**	**04 11 32.3**	**0.0**
	2.4nm,0.6s,baz=56,slow=8.3,SNR=3.3						
ASAR				PcP	**PcP**	**04 14 36.2**	**+0.3**
	1.3nm,0.7s,baz=57,slow=2.9,SNR=6.0						
ASAR				S	**S**	**04 15 14.8**	**-5.4**
	0.3nm,0.5s,baz=38,slow=17,SNR=3.3						
ASAR				ScP	**ScP**	**04 18 02.1**	**-1.2**
	2.7nm,0.6s,baz=42,slow=2.8,SNR=21						
STKA	**Stephens Creek**	**28.29**	**198**	P	**P**	**04 11 33.4**	**+0.2**
	3.5nm,0.7s,baz=6.7,slow=14,SNR=4.8						
FITZ	**Fitzroy Crossi**	**28.39**	**241**	P	**P**	**04 11 33.3**	**-0.9**
	2.5nm,0.4s,baz=48,slow=8.0,SNR=12						
FITZ				LR	LR	04 23 47.9	
	comp=Z,49nm,18.9s,baz=34,slow=38						
FITZ	**Fitzroy Crossi**	**28.39**	**241**	*e*P	**P**	**04 11 33.6**	**-0.6**
RPZ	**Rata Peaks**	**42.25**	**159**	P	**P**	**04 13 32.9**	**+0.6**
	23nm,0.9s,baz=22,slow=8.4,SNR=3.6						
JNU	**Nakatsue**	**42.65**	**334**	P	**P**	**04 13 36.2**	**+0.6**
	14nm,0.9s,baz=129,slow=4.6,SNR=9.5						
JNU	**Nakatsue**	**42.65**	**334**	*e*P	**P**	**04 13 36.3**	**+0.7**
MJAR	**Matsushiro Arr**	**43.15**	**344**	P	**P**	**04 13 38.0**	**-1.5**
	1.6nm,0.6s,baz=167,slow=8.9,SNR=8.4						
MJAR				LR	LR	04 29 06.9	
	comp=Z,9.1nm,21.7s,baz=125,slow=32						
KSRS	**Korea Array**	**47.59**	**335**	P	**P**	**04 14 15.5**	**+0.9**
	2.9nm,0.8s,baz=144,slow=8.8,SNR=7.0						
KSAR	**Wonju Array Be**	**47.60**	**334**	P	**P**	**04 14 15.5**	**+0.9**
USRK	**Ussuriysk Ar.**	**52.02**	**342**	P	**P**	**04 14 47.7**	**-0.3**
	3.1nm,0.9s,baz=152,slow=8.6,SNR=4.5						
KLR	**Kul'dur**	**56.67**	**345**	P	**P**	**04 15 21.4**	**-0.1**
	4.1nm,0.7s,baz=156,slow=1.8,SNR=15						
CM01	**Chiang Mai Arr**	**56.73**	**296**	*e*P	**P**	**04 15 23.5**	**+1.0**
CMAR	**Chiang Mai Arr**	**56.76**	**296**	P	**P**	**04 15 24.0**	**+1.3**
	1.2nm,0.4s,baz=118,slow=5.2,SNR=11						
CMAR				pP	**pP**	**04 15 53.2**	**-0.1**
	1.2nm,0.7s,baz=120,slow=5.3,SNR=1.6						
CD2	**Chengdu**	**57.86**	**311**	P	**P**	**04 15 30.3**	**0.0**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.6s						
PETK	**Petropavlovsk-**	**58.13**	**4**	P	**P**	**04 15 31.2**	**-0.5**
	comp=Z,5.5nm,0.7s,baz=157,slow=7.4,SNR=8.6						
HHC	**Hu-ho-hao-te**	**58.44**	**325**	*e*P	**P**	**04 15 36.4**	**+2.2**
HHC				pmax	pmax		
	comp=Z,19nm,1.0s						
HHC				pmax	pmax		
	comp=Z,80nm,6.5s						
LZH	**Lanzhou**	**60.45**	**317**	*e*P	**P**	**04 15 51.5**	**+3.3**
LZH				pP	pP	04 16 25.3	+6.1
LZH				PcP	**PcP**	**04 16 31.1**	**-0.7**
LZH				sP	sP	04 16 41.8	+8.5
LZH				PP	**PP**	**04 18 07.6**	**+4.5**
LZH				*e*S	**S**	**04 23 56.8**	**+3.2**
LZH				sS	sS	04 24 56.5	+10
LZH	**Lanzhou**	**60.45**	**317**	SS	SS	04 27 56.3	+2.3
LZH				pmax	pmax		
	comp=Z,39nm,1.1s						
LZH				pmax	pmax		
	comp=Z,140nm,4.6s						
HIA	**Hailar**	**60.68**	**337**	*e*P	**P**	**04 15 48.4**	**-1.0**
	comp=Z,3.2nm,0.3s						
MA2	**Magadan**	**64.38**	**360**	*e*P	**P**	**04 16 12.6**	**-1.0**
	comp=Z,6.1nm,0.3s						
GTA	**Gaotai**	**64.90**	**318**	*e*P	**P**	**04 16 19.8**	**+2.1**
GTA				pP	PcP	04 16 50.1	+0.3
GTA				sP	sP	04 17 06.3	+3.3
GTA				pmax	pmax		
	comp=Z,4.0nm,1.1s						
ULN	**Ulaanbaatar**	**65.47**	**329**	*e*P	**P**	**04 16 20.4**	**-0.7**
	comp=Z,12nm,1.4s						
SONM	**Songino Array**	**65.79**	**328**	P	**P**	**04 16 24.2**	**+1.0**
	comp=Z,4.2nm,0.6s,baz=147,slow=5.0,SNR=26						
SONA1	**Songino Array**	**65.79**	**328**	*e*P	**P**	**04 16 23.7**	**+0.4**
VNDA	**Vanda**	**72.68**	**178**	P	**P**	**04 17 05.8**	**+0.8**
	comp=Z,1.2nm,0.8s,baz=332,slow=2.3,SNR=4.8						
VNDA				pP	**pP**	**04 17 37.3**	**+0.4**
	comp=Z,3.4nm,1.0s,baz=334,slow=8.1,SNR=5.4						
BILL	**Bilibino**	**73.62**	**6**	*e*P	**P**	**04 17 09.7**	**-0.9**
	comp=Z,6.6nm,0.8s						
WMQ	**Urumqi**	**74.99**	**318**	*e*P	**P**	**04 17 18.8**	**-0.3**
WMQ				pmax	pmax		
	comp=Z,4.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,43nm,5.8s						
TIXI	**Tiksi**	**77.93**	**353**	*e*P	**P**	**04 17 32.8**	**-2.2**
	comp=Z,4.9nm,1.2s						
MK01	**Makanchi Array**	**79.59**	**319**	*e*P	**P**	**04 17 44.4**	**-0.3**
MKAR	**Makanchi Array**	**79.60**	**319**	P	**P**	**04 17 44.3**	**-0.4**
	comp=Z,1.3nm,0.5s,baz=99,slow=7.6,SNR=12						
CAST	**Castle Rocks**	**80.20**	**22**	*e*P	**P**	**04 17 47.0**	**-0.5**
	comp=Z,3.1nm,0.6s						
PMR	**Palmer**	**80.42**	**25**	*e*P	**P**	**04 17 47.7**	**-1.0**
	comp=Z,5.6nm,0.9s						
ZALV	**Zalesovo Beam**	**80.58**	**327**	P	**P**	**04 17 48.2**	**-1.6**
	comp=Z,6.5nm,0.7s,baz=117,slow=5.0,SNR=18						
RND	**Reindeer**	**81.44**	**23**	*e*P	**P**	**04 17 53.3**	**-0.9**
	comp=Z,4.5nm,0.6s						
MLY	**Manley**	**81.56**	**21**	*e*P	**P**	**04 17 54.4**	**-0.4**
	comp=Z,7.7nm,0.6s						
MCK	**McKinley**	**81.57**	**23**	*e*P	**P**	**04 17 54.1**	**-0.7**
	comp=Z,4.9nm,0.7s						
CCB	**Clear Creek Bu**	**82.45**	**22**	*e*P	**P**	**04 17 58.1**	**-1.2**
	comp=Z,2.9nm,0.6s						
COLA	**College**	**82.54**	**22**	*e*P	**P**	**04 17 58.5**	**-1.3**
	comp=Z,4.0nm,0.6s						
ILAR	**Eielson Array**	**82.85**	**22**	P	**P**	**04 17 59.6**	**-1.8**
	comp=Z,3.9nm,0.6s,baz=247,slow=5.3,SNR=73						
KURK	**Kurchatov**	**83.11**	**322**	*e*P	**P**	**04 18 02.6**	**-0.5**
TKM2	**Tokmak 2**	**83.11**	**314**	*e*P	**P**	**04 18 03.6**	**0.0**
	comp=Z,5.5nm,0.6s						
KURBB	**Kurchatov Arra**	**83.14**	**322**	P	**P**	**04 18 02.5**	**-0.8**
	comp=Z,3.1nm,0.8s,baz=112,slow=4.2,SNR=26						
DOT	**Dot Lake**	**83.45**	**24**	*e*P	**P**	**04 18 03.9**	**-0.8**
	comp=Z,11nm,0.7s						
AAK	**Ala-Archa**	**83.84**	**314**	*e*P	**P**	**04 18 07.8**	**+0.5**
	comp=Z,5.1nm,0.9s						
FYU	**Fort Yukon**	**84.29**	**21**	*e*P	**P**	**04 18 09.1**	**+0.3**
	comp=Z,33nm,1.7s						
EKS2	**Erkin-Say**	**84.36**	**314**	*e*P	**P**	**04 18 10.3**	**+0.5**
	comp=Z,6.9nm,0.8s						
MAW	**Mawson**	**84.87**	**203**	P	**P**	**04 18 12.0**	**+0.3**
	comp=Z,2.3nm,0.7s,baz=150,slow=14,SNR=4.1						
EGAK	**Eagle**	**85.08**	**23**	*e*P	**P**	**04 18 12.4**	**-0.4**
DAWY	**Dawson**	**85.52**	**24**	*e*P	**P**	**04 18 15.4**	**+0.3**
	comp=Z,2.7nm,0.6s						
NRIK	**Noril'sk**	**85.73**	**341**	P	**P**	**04 18 15.7**	**-0.2**
	comp=Z,3.8nm,0.6s,baz=102,slow=4.8,SNR=4.6						
KKAR	**Karatay Array**	**86.80**	**314**	*e*P	**P**	**04 18 21.4**	**-0.4**
BVAR	**Borovoye Array**	**88.60**	**323**	P	**P**	**04 18 28.6**	**-1.5**
	comp=Z,3.6nm,0.7s,baz=104,slow=6.3,SNR=15						
BRVK	**Borovoye**	**88.67**	**323**	*e*P	**P**	**04 18 28.7**	**-1.7**
	comp=Z,3.7nm,0.9s						
ZRNK	**Zerenda**	**89.42**	**323**	*e*P	**P**	**04 18 32.8**	**-1.1**
	comp=Z,1.9nm,0.8s						
K05A	**Summer Lake**	**91.63**	**47**	*e*P	**P**	**04 18 45.8**	**+1.1**
	comp=Z,7.7nm,0.8s						
NVAR	**Mina Array Bea**	**93.26**	**52**	P	**P**	**04 18 53.4**	**+1.0**
	comp=Z,2.6nm,0.6s,baz=257,slow=5.8,SNR=19						
TPNV	**Topopah Spring**	**94.81**	**53**	*e*P	**P**	**04 18 59.1**	**-0.3**
	comp=Z,5.4nm,0.8s						
SHPR	**Sheep Range**	**95.66**	**54**	*e*P	**P**	**04 19 04.9**	**+1.5**
	comp=Z,3.8nm,1.0s						
YKA	**Yellowknife Ar**	**96.23**	**28**	P	**P**	**04 19 04.8**	**-0.3**
	comp=Z,0.4nm,0.5s,baz=270,slow=5.0,SNR=15						
PDAR	**Pinedale Array**	**99.97**	**48**	P	**Pdif**	**04 19 22.3**	**-0.4**
	comp=Z,1.0nm,0.5s,baz=203,slow=2.6,SNR=14						
ARCES	**ARCESS Array B**	**106.67**	**343**	PKiKP	**PKiKP**	**04 24 00.3**	**-0.9**
	comp=Z,4.0nm,0.9s,baz=86,slow=1.9,SNR=10						
FINES	**FINESS Array B**	**110.68**	**335**	PKiKP	**PKiKP**	**04 24 08.3**	**-0.7**
	comp=Z,2.2nm,0.8s,baz=82,slow=4.2,SNR=6.2						
NOA	**NORSAR Array B**	**116.64**	**340**	PKP	**PKPdf**	**04 24 19.4**	**-1.1**
	comp=Z,1.0nm,0.8s,baz=47,slow=2.2,SNR=3.0						
BOSA	**Boshof**	**118.43**	**234**	PKP	**PKPdf**	**04 24 24.6**	**-0.4**
	comp=Z,2.7nm,1.0s,baz=144,slow=3.0,SNR=3.9						
PLCA	**Paso Flores**	**120.41**	**144**	PKP	**PKPdf**	**04 24 28.3**	**-0.1**
	comp=Z,0.5nm,0.4s,baz=254,slow=2.2,SNR=5.6						
CLL	**Collm**	**122.38**	**330**	*e*PKPdf	**PKPdf**	**04 24 30.0**	**-1.7**
CONA	**Conrad Observa**	**122.87**	**326**	*i* PKiKP	**PKPdf**	**04 24 32.4**	**-0.5**
	comp=Z,2.9nm,0.8s						
KHC	**Kasperske Hory**	**123.42**	**328**	*e*PKPdf	**PKPdf**	**04 24 33.5**	**-0.3**
GERES	**GERESS Array B**	**123.52**	**328**	PKP	**PKPdf**	**04 24 33.4**	**-0.7**
	comp=Z,2.9nm,0.7s,baz=72,slow=2.0,SNR=20						
SOKA	**Soboth**	**124.04**	**325**	*i* PKiKP	**PKPdf**	**04 24 34.3**	**-0.9**
	comp=Z,3.6nm,1.2s						
ABTA	**Abfaltersbach**	**125.42**	**326**	*i* PKPdf	**PKPdf**	**04 24 36.5**	**-1.3**
	comp=Z,4.3nm,1.0s						
MOTA	**Moosalm**	**125.82**	**328**	*i* PKiKP	**PKPdf**	**04 24 38.0**	**-0.6**
	comp=Z,2.8nm,0.5s						
FETA	**Feichten**	**126.22**	**328**	*i* PKiKP	**PKPdf**	**04 24 39.0**	**-0.4**
	comp=Z,5.2nm,0.9s						
DAVA	**Damuels**	**126.50**	**328**	*i* PKiKP	**PKPdf**	**04 24 39.4**	**-0.6**
	comp=Z,4.6nm,0.9s						
LPAZ	**La Paz**	**135.49**	**119**	PKP	**PKPdf**	**04 24 59.1**	**+0.7**
	comp=Z,0.6nm,0.4s,baz=312,slow=3.6,SNR=4.5						
CPUP	**Villa Florida**	**138.19**	**140**	PKP	**PKPdf**	**04 25 03.3**	**+0.9**
	comp=Z,2.7nm,1.0s,baz=214,slow=3.6,SNR=3.3						
PCRV	**Puerto La Cruz**	**143.88**	**80**	PKP	PKPab	04 25 09.9	-0.4
	comp=Z,11nm,0.4s,baz=269,slow=1.3,SNR=9.6						
PTGA	**Pitinga**	**148.10**	**99**	PKPbc	**PKPbc**	**04 25 23.8**	**+0.4**
	comp=Z,10nm,0.6s,baz=281,slow=4.9,SNR=20						
TORD	**Torodi Ar. Bea**	**149.09**	**287**	PKP	**PKPdf**	**04 25 21.0**	**-0.6**
	comp=Z,5.6nm,0.5s,baz=88,slow=2.6,SNR=37						
TORD				PKPbc	**PKPbc**	**04 25 24.7**	**-1.2**
	comp=Z,5.6nm,0.5s,baz=88,slow=2.6,SNR=84						

*ISCJB **18** 04:13:04.0±0.4, 6°.79N±0°.04×73°.04W±0°.03, h159km±3km, mb3.2/3, Error ellipse: s-maj=7.4km s-min=3.4km az=137.7*
*IDC **18** 04:13:05.6±1.4, 6°.77N×72°.96W, h163km±15km, mb3.0/3, mb1 3.5/6, mb1mx3.2/29, mbtmp3.7/6, Error ellipse: s-maj=29.8km s-min=19.3km az=127.0*
*FUNV **18** 04:13:05.4, 6°.83N×73°.13W, h169km, MW3.6*
*RSNC **18** 04:13:06.9±0.6, 6°.77N×73°.13W, h142km±3km, ML3.7*
ISC 18 04:13:04.9±0.8, 6°.82N±0°.05×73°.04W±0°.04, h158km±5km, n41, σ1§24/60, mb3.2/3, 12C-1D, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BTLC	**Betulia, Santa**	**0.24**	**293**	*e*P	**Pn**	**04 13 26.3**	**-0.2**
BTLC				*e*S	**Sn**	**04 13 41.5**	**-1.5**
BARC	**Barichara**	**0.27**	**211**	*e*P	**Pn**	**04 13 26.1**	**-0.6**
BARC				*e*S	**Sn**	**04 13 40.8**	**-2.4**
BARC				*i*		04 13 42.4	
	comp=Z,2μm,0.3s						
PAMC	**Pamplona, Colo**	**0.62**	**34**	*i* P	**Pn**	**04 13 29.0**	**+0.6**
PAMC				*e*S	**Sn**	**04 13 45.5**	**-0.8**
BRRC	**Barranca, Sant**	**0.72**	**293⇑**	*i* P	**Pn**	**04 13 28.0**	**-0.4**
BRRC				*e*S	**Sn**	**04 13 44.2**	**-2.1**
BRRC				*i*		04 13 49.5	
	comp=Z,882nm,0.2s						
CBRI	**Barrientos, No**	**0.92**	**15**	*i* P	**Pn**	**04 13 30.8**	**+0.7**
CBRI				*i*		04 13 51.3	
	comp=Z,892nm,0.8s						
GRMC	**Gramalote, San**	**0.92**	**15**	*i* P	**Pn**	**04 13 32.0**	**+2.0**
GRMC				*e*S	**Sn**	**04 13 51.5**	**+2.2**
GRMC				*i*		04 13 54.0	
	comp=Z,691nm,0.3s						
RUSC	**La Rusia**	**0.92**	**182⇓**	*i* P	**Pn**	**04 13 30.0**	**-0.4**
RUSC				*e*S	**Sn**	**04 13 48.0**	**-2.0**
RUSC				*i*		04 13 49.6	
	comp=Z,598nm,0.5s						
GUEC	**Guerrero, Nort**	**1.01**	**7**	*e*P	**Pn**	**04 13 32.3**	**+1.4**
CAPV	**Capacho**	**1.27**	**35⇑**	*i* P	**Pn**	**04 13 34.2**	**+1.2**
CAPV				*e*S	**Sn**	**04 13 54.9**	**+0.3**
OCAC	**Ocana**	**1.44**	**349**	*e*P	**Pn**	**04 13 34.9**	**+0.3**
OCAC				*e*S	**Sn**	**04 13 56.9**	**-0.6**
OCAC				*i*		04 14 00.7	
	comp=Z,920nm,0.4s						
NORC	**Norcasia**	**2.20**	**236**	*e*P	**Pn**	**04 13 42.2**	**-0.7**
NORC				*e*S	**Sn**	**04 14 10.0**	**-2.3**
ROSC	**El Rosal**	**2.34**	**213**	P	**Pn**	**04 13 46.0**	**+1.0**
	comp=Z,27nm,0.3s,baz=325,slow=4.2,SNR=186						
ROSC				S	**Sn**	**04 14 14.2**	**-1.6**
	comp=Z,35nm,0.3s,baz=98,slow=16,SNR=10						
HELC	**Santa Helena**	**2.55**	**256**	*e*P	**Pn**	**04 13 46.6**	**-0.8**
HELC				*e*S	**Sn**	**04 14 17.8**	**-2.3**
HELC				*i*		04 14 25.4	
	comp=Z,202nm,0.5s						
VIGV	**El Vigia**	**2.61**	**40⇑**	*i* P	**Pn**	**04 13 48.6**	**+0.9**
VIGV				*e*S	**Sn**	**04 14 20.6**	**-0.4**
SOCV	**Socops**	**2.61**	**56⇑**	*i* P	**Pn**	**04 13 48.4**	**+0.6**
SOCV				*e*S	**Sn**	**04 14 20.8**	**-0.2**
VILC	**Villavicencio,**	**2.77**	**194**	*e*P	**Pn**	**04 13 49.4**	**-0.5**
VILC				*e*S	**Sn**	**04 14 24.0**	**-0.7**
VILC				*i*		04 14 32.6	
	comp=Z,202nm,0.5s						
GUYC	**Guyana, Colomb**	**2.82**	**236**	*e*P	**Pn**	**04 13 50.5**	**-0.3**
GUYC				*e*S	**Sn**	**04 14 25.0**	**-1.3**
GUYC				*i*		04 14 30.7	
	comp=Z,314nm,0.5s						
SDV	**Santo Domingo**	**3.15**	**49**	P	**Pn**	**04 13 55.2**	**+0.5**
	comp=Z,28nm,0.3s,baz=230,slow=12,SNR=21						
SDV				S	**Sn**

JAO	Obara	1.62	358	P	Pn	05 02 16.1	+1.2
JWM	Minabe	1.66	278	P	Pn	05 02 15.4	+0.2
JWM				S	S	05 02 53.6	-1.1
JNY	Yasuok	1.76	14	P	Pn	05 02 16.9	+1.1
JIM2	Oshima 3	2.04	58	P	Pn	05 02 18.5	+0.8
JYN	Shimob	2.10	28	P	Pn	05 02 19.1	+1.0
JGM	Miyama	2.11	346	P	Pn	05 02 19.2	+1.1
JOD2	Odawara 2	2.17	42	P	Pn	05 02 19.6	+1.0
JWT	Wachi	2.28	316	P	Pn	05 02 21.0	+1.6
JWT				eS	S	05 03 03.0	+0.7
JAI	Aioi	2.41	274	P	Pn	05 02 20.7	+0.3
JYO	Yokosk	2.49	50	S	S	05 03 07.0	+1.7
JGN	Niukaw	2.57	360	P	Pn	05 02 22.6	+0.9
JRY	Ryogami san	2.69	28	P	Pn	05 02 23.9	+1.2
JRY				eS	S	05 03 09.9	+1.5
JMN	Monobe	2.88	273	P	Pn	05 02 24.8	+0.4
MAT	Matsushiro	2.98	14	P	Pn	05 02 25.5	+0.4
MAT				S	S	05 03 11.8	-1.0
MAT	Matsushiro	2.98	14	P	Pn	05 02 25.7	+0.6
MAT				eS	S	05 03 12.7	-0.1
MJAR	Matsushiro Arr	2.98	14	P	Pn	05 02 25.9	+0.8
	4.0nm,0.3s,baz=190,slow=9.7,SNR=36						
MJAR				S	S	05 03 11.9	-0.9
	0.9nm,0.3s,baz=193,slow=16,SNR=7.4						
BSO1	Boso 1	3.19	71	P	Pn	05 02 25.6	-0.8
BSO1				eS	S	05 03 13.6	-1.7
JAG	Ashikaga	3.27	32	P	Pn	05 02 27.5	-0.3
JAG				S	S	05 03 15.6	-2.1
KSRS	Korea Array	8.55	299	P	P	05 03 27.2	-1.8
	0.3nm,0.3s,baz=109,slow=13,SNR=4.5						
USRK	Ussuriysk Ar.	11.32	340	P	P	05 04 00.3	+0.6
	0.3nm,0.3s,baz=158,slow=9.3,SNR=3.6						
SONM	Songino Array	27.18	311	P	P	05 06 39.0	+0.7
	0.6nm,0.6s,baz=106,slow=11,SNR=3.7						
MKAR	Makanchi Array	43.19	305	P	P	05 08 52.8	-0.4
	0.3nm,0.4s,baz=91,slow=9.4,SNR=3.9						
WRA	Warramunga Arr	53.37	184	P	P	05 10 09.9	-0.5
	0.8nm,0.3s,baz=0.1,slow=7.7,SNR=3.6						
FINES	FINESS Array B	70.22	332	P	P	05 12 01.2	+0.1
	3.0nm,1.0s,baz=60,slow=6.6,SNR=4.5						

*IDC **18** 05:01:34.3±0.3,9.°19S×112.°62E,h0km,mb4.9/32, mb1 5.0/33,mb1mx4.9/39,mbtmp4.9/33,ML4.8/1,MS3.7/25, Ms1 3.7/25,ms1mx3.6/45,Error ellipse: s-maj=12.9km s-min=10.3km az=68.0*

*BJI **18** 05:01:38.7,9.°40S×112.°60E,h50km,mb5.1/57,mB4.9/35, Ms4.6/22,Ms7 4.2/19*

*MOS **18** 05:01:39.0±0.9,9.°15S×112.°65E,h46km,mb5.2/54,Error ellipse: s-maj=9.0km s-min=6.1km az=107.2*

*NEIC **18** 05:01:39.5±0.2,9.°29S×112.°56E,h35km,mb5.1/36,Error ellipse: s-maj=6.2km s-min=4.6km az=206.0*

NEIC Felt at Malang. Also felt at Denpasar and Kuta, Bali.

*DJA **18** 05:01:39.1±0.3,10.°S±3.°×11.°3E±.°,h10km,M5.4/32, mb5.8/17,mB5.8/15,MLv5.6/32,Mw(mB)5.3/15*

*KLM **18** 05:01:41.0,9.°59S×112.°56E,h28km,mb5.1,ML5.3,MS6.3*

*ISCJB **18** 05:01:42.3±0.4,9.°25S±0.°03×112.°61E±0.°02,h79km±3km, mb4.9/103,Error ellipse: s-maj=5.4km s-min=3.4km az=30.0*

ISC 18 05:01:42.6±0.6,9.°28S±0.°04×112.°65E±0.°04,h63km±5km, n466,σ1$50/452,mb5.0/103,18C-14D,South of Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GMJI	Gumukmas	1.27	38	P	Pn	05 02 05.0	+0.7
JAGI	Jajag, Banyuwa	1.69	62	P	Pn	05 02 10.6	+0.7
JAGI	Jajag, Banyuwa	1.69	62	ePn	Pn	05 02 10.6	+0.7
JAGI				eSn	Sn	05 02 32.2	+1.6
PCJI	Pacitan	1.81	306	P	Pn	05 02 10.9	-0.6
ABJI	Asem Bagus	2.15	47	P	Pn	05 02 19.8	+3.6
NGJI	Ngawi	2.23	328	P	Pn	05 02 20.6	+3.4
UGM	Wanagama	2.50	303	P	Pn	05 02 20.7	-0.2
UGM	Wanagama	2.50	303	ePn	Pn	05 02 20.6	-0.2
UGM				eSn	Sn	05 02 49.4	-0.9
TBJI	Tambak Boyo	2.57	342	P	Pn	05 02 23.8	+2.0
DNP	Denpasar	2.60	77	P	Pn	05 02 24.6	+2.3
SRBI	Singaraja	2.80	65	P	Pn	05 02 27.2	+2.2
SMRI	Semarang	3.11	315	P	Pn	05 02 29.8	+0.6
SMRI	Semarang	3.11	315	ePn	Pn	05 02 29.6	+0.3
UWJI	Ujung Watu	3.30	329	P	Pn	05 02 32.7	+0.9
TWSI	Taliwang, Sumb	4.22	83	P	Pn	05 02 46.3	+1.9
CMJI	Cimerak	4.41	289	P	Pn	05 02 45.3	-1.7
CISI	Cisompet, Garu	5.08	289	P	Pn	05 02 54.8	-1.4
	1μm,0.7s,14μm8.4nm						
CISI	Cisompet, Garu	5.08	289	ePn	Pn	05 02 54.9	-1.4
PLAI	Plampang	5.09	85	P	Pn	05 02 57.6	+1.3
	1μm,0.7s,10μm7.3nm						
JCJI	Jatiwangi	5.14	302	P	Pn	05 03 00.6	+3.5
	399nm,1.0s,11μm3.7nm						
LEM	Lembang	5.54	296	Pn	Pn	05 03 09.2	+6.5
	19nm,0.3s,baz=115,slow=9.3,SNR=10						
LEM				Sn	Sn	05 04 11.8	+6.7
	12nm,0.3s,baz=342,slow=19,SNR=2.6						
LEM				LR	LR	05 05 31.8	
	comp=Z,757nm,19.6s,baz=71,slow=43						
LEM	Lembang	5.54	296	P	Pn	05 03 02.6	-0.1
	3μm,1.1s,31μm21nm						
CNJI	Cibinong	5.80	289	P	Pn	05 03 04.9	-1.1
	469nm,0.8s,6μm3.0nm						
BBKI	Banjar Baru	6.17	21	P	Pn	05 03 15.0	+3.8
	815nm,1.1s,2.6nm						
CBJI	Citeko	6.40	296	P	Pn	05 03 18.2	+3.9
SKJI	Sukabumi	6.44	290	P	Pn	05 03 22.4	+7.6
XMIS	Christmas Isla	6.99	260	ePn	Pn	05 03 17.9	-4.5
SBJI	Serang	7.18	295	P	Pn	05 03 34.3	+9.4
CGJI	Cibinong	7.38	291	P	Pn	05 03 27.5	-0.2
	378nm,0.4s,6μm1.4nm						
WSI	Waingapu	7.56	94	P	Pn	05 03 30.2	0.0
	2μm,0.7s,17μm10.0nm						
BASI	Baing, Sumba	7.88	97	P	Pn	05 03 34.6	+0.1
	458nm,0.6s,6μm3.0nm						
KAPI	Kappang	8.22	59	Pn	Pn	05 03 40.3	+1.1
	4.4nm,0.3s,baz=242,slow=12,SNR=20						
KAPI				Sn	Sn	05 05 08.0	-2.8
	1.4nm,0.3s,baz=286,slow=20,SNR=1.8						
KAPI				LR	LR	05 07 12.7	
	comp=Z,753nm,21.5s,baz=252,slow=41						
BSSI	Bau Bau, Buton	8.37	69	P	Pn	05 03 45.2	+3.9
	364nm,0.8s,3μm1.2nm						
MMRI	Maumere	9.50	87	ePn	Pn	05 03 56.2	-0.5
MNAI	Manna	10.79	296	P	Pn	05 04 12.9	-1.4
	465nm,0.7s,5μm						
MNAI	Manna	10.79	296	ePn	Pn	05 04 13.0	-1.4
KSM	Kuching	10.93	348	ePn	Pn	05 04 18.9	+2.6
SOEI	Soe	11.47	93	P	Pn	05 04 23.9	+0.1
	256nm,0.8s,3μm						
SOEI	Soe	11.47	93	ePn	Pn	05 04 24.1	+0.3
SBUM	Sibu	11.66	358	⇓P	Pn	05 04 30.6	+4.4
SBUM	Sibu	11.66	358	ePn	Pn	05 04 29.9	+3.7
BTM	Bintulu	12.40	2	⇑P	Pn	05 04 38.5	+2.1
GIRL	Giralia	13.38	174	P	Pn	05 04 42.8	-6.9
	baz=13,SNR=10						
MBWA	Marble Bar	13.64	151	ePn	Pn	05 04 46.4	-6.9
MYKOM	Kota Tinggi	14.06	321	⇓P	P	05 05 07.9	+3.3
TSM	Tawau	14.45	21	⇑P	P	05 05 14.3	+5.3
KGM	Kluang	14.57	320	⇓P	P	05 05 10.7	+0.4
FITZ	Fitzroy Crossi	15.37	126	Pn	Pn	05 05 11.7	-4.0
	3.1nm,0.3s,baz=317,slow=8.9,SNR=37						
FITZ				Sn	Sn	05 07 50.5	-15
	1.4nm,0.3s,baz=336,slow=20,SNR=5.6						
FITZ				LR	LR	05 11 34.3	
	comp=Z,329nm,20.0s,baz=310,slow=39						
FITZ	Fitzroy Crossi	15.37	126	P	Pn	05 05 11.8	-3.9
	baz=15,SNR=16						
FITZ	Fitzroy Crossi	15.37	126	ePn	Pn	05 05 12.6	-3.1
	24nm,0.8s						
FITZ				Sn	Sn	05 07 50.5	-15
SDKM	Sandakan	15.50	17	⇓P	P	05 05 19.9	-0.8
MYLDM	Lahad Datu	15.50	22	⇓P	P	05 05 22.5	+1.8
MYLDM	Lahad Datu	15.50	22	ePn	P	05 05 22.4	+1.7
	119nm,1.0s						
KKM	Kota Kinabalu	15.63	13	ePn	Pn	05 05 20.3	+1.1
	56nm,1.0s						
MTN	Manton Dam	18.48	103	P	P	05 05 53.7	0.0
	baz=18,SNR=16						
MTN	Manton Dam	18.48	103	eP	P	05 05 53.4	-0.3
	93nm,0.6s						
KDU	Kakadu	19.75	102	P	P	05 06 07.0	-0.5
	baz=20,SNR=6.7						
MORW	Morawa	19.95	171	P	P	05 06 09.0	-0.6
	baz=20,SNR=15						
SWI	Sorong	20.32	67	P	P	05 06 14.5	+0.7
SWI				pmax	pmax		
	comp=Z,174nm,1.3s						
FAKI	Fak Fak	20.48	73	eP	P	05 06 16.0	+0.5
	comp=Z,168nm,0.6s						
TRTT	Trang	21.34	322	P	P	05 06 26.9	+2.2
	comp=Z,20nm,1.0s						
BLDU	Ballidu	21.57	170	P	P	05 06 26.8	-0.2
	baz=22,SNR=8.5						
WRKA	Warakurna	21.63	138	P	P	05 06 27.5	-0.2
	baz=22,SNR=27						
KLBR	Kellerberrin	22.71	169	P	P	05 06 39.2	0.0
	baz=23,SNR=12						
SURT	Suratani	22.77	322	P	P	05 06 39.5	-0.4
	comp=Z,11nm,0.7s,comp=Z,160nm						
WRA	Warramunga Arr	23.49	119	P	P	05 06 46.2	-0.8
	comp=Z,67nm,0.6s,baz=295,slow=11,SNR=485						
WRA				PcP	PcP	05 10 32.2	+0.9
	comp=Z,7.0nm,0.6s,baz=304,slow=1.9,SNR=7.5						
WRA				LR	LR	05 16 25.7	
	comp=Z,144nm,21.6s,baz=145,slow=38						
WRAB	Tennant Creek	23.49	119	dP	P	05 06 46.3	-0.8
WRAB				pmax	pmax		
	comp=Z,208nm,1.0s						
WRAB	Tennant Creek	23.49	119	eP	P	05 06 46.4	-0.6
	comp=Z,67nm,0.6s						
WB2	Warramunga Arr	23.50	119	eP	P	05 06 46.4	-0.8
	comp=Z,60nm,0.6s						
KMBL	Kambalda	23.60	160	P	P	05 06 47.5	-0.4
	baz=24,SNR=9.4						
NWAO	Narrogin (SRO)	23.92	170	P	P	05 06 50.4	-0.4
	comp=Z,6.9nm,0.8s,baz=29,slow=19,SNR=4.2						
NWAO				S	S	05 11 08.2	+5.4
	comp=Z,14nm,1.0s,baz=162,slow=20,SNR=3.0						
NWAO				LR	LR	05 17 06.4	
	comp=Z,247nm,18.3s,baz=218,slow=39						
TGY	Tagaytay City	24.64	20	P	P	05 06 58.9	+1.4
	comp=Z,197nm,0.3s,baz=194,slow=3.7,SNR=5.1						
TGY				LR	LR	05 18 16.2	
	comp=Z,183nm,20.0s,baz=214,slow=41						
AS31	Alice Springs	24.85	128	eP	P	05 06 59.5	0.0
	comp=Z,10nm,0.6s						
ASAR	Alice Springs	24.85	128	P	P	05 06 59.5	0.0
	comp=Z,21nm,0.7s,baz=303,slow=8.5,SNR=164						
ASAR				PcP	PcP	05 10 35.2	+0.9
	comp=Z,7.2nm,0.7s,baz=320,slow=2.1,SNR=9.4						
ASAR				LR	LR	05 16 06.9	
	comp=Z,130nm,20.2s,baz=306,slow=35						
AS01	Alice Springs	24.89	128	eP	P	05 06 59.6	-0.1
PBKT	Sadao Pong	28.16	336	P	P	05 07 29.9	+0.8
	comp=Z,7.8nm,0.6s						
QIS	Mount Isa	28.31	116	P	P	05 07 31.1	+0.5
	baz=28,SNR=13						
JAY	Jayapura	28.69	78	P	P	05 07 33.1	-1.0
	comp=Z,0.6nm,0.6s,baz=270,slow=20,SNR=3.9						
UTTA	Uttaradit	29.39	336	P	P	05 07 40.4	+0.4
	comp=Z,4.9nm,0.5s,comp=Z,71nm						
COEN	Coen	30.25	102	P	P	05 07 48.4	+0.6
	baz=30,SNR=18						
COEN	Coen	30.25	102	eP	P	05 07 47.7	-0.1
	comp=Z,44nm,1.3s						
CM01	Chiang Mai Arr	30.66	334	eP	P	05 07 51.7	+0.4
CM01				ePcP	PcP	05 10 49.8	+1.5
CMAR	Chiang Mai Arr	30.70	334	P	P	05 07 51.6	0.0
	comp=Z,3.7nm,0.7s,baz=166,slow=8.3,SNR=19						
CMAR				PcP	PcP	05 10 50.0	+1.6
	comp=Z,2.2nm,0.7s,baz=188,slow=3.6,SNR=5.3						
CMAR				LR	LR	05 21 32.4	
	comp=Z,189nm,18.3s,baz=168,slow=39						
CMAR	Chiang Mai Arr	30.70	334	cePP	P	05 07 52.0	+0.3
CMAR				pmax	pmax		
	comp=Z,4.0nm,0.6s						
BBOO	Buckleboo	31.88	141	P	P	05 08 01.9	0.0
	baz=32,SNR=11						
BBOO	Buckleboo	31.88	141	eP	P	05 08 02.3	+0.3
	comp=Z,31nm,0.8s						
MTSU	Mount Surprise	31.96	109	P	P	05 08 04.3	+1.4
	baz=32,SNR=20						
CMAI	Chiengmai2	31.96	335	P	P	05 08 04.2	+1.2
	comp=Z,4.5nm,0.7s,comp=Z,424nm						
PMG	Port Moresby	34.05	93	P	P	05 08 21.8	+0.7
	comp=Z,23nm,0.8s,baz=298,slow=9.7,SNR=4.0						
PMG	Port Moresby	34.05	93	dP	P	05 08 21.3	+0.2
PMG				pmax	pmax		
	comp=Z,155nm,1.0s						
HTT	Hallett	34.11	139	P	P	05 08 21.8	+0.3
	baz=34,SNR=7.0						
QLP	Quilpie	34.49	124	P	P	05 08 26.3	+1.5
	baz=34,SNR=4.1						
STKA	Stephens Creek	35.01	134	P	P	05 08 29.6	+0.3
	comp=Z,29nm,0.6s,baz=307,slow=9.2,SNR=45						
STKA				PcP	PcP	05 11 00.8	+0.4
	comp=Z,7.3nm,0.7s,baz=286,slow=6.0,SNR=3.4						
STKA				LR	LR	05 22 52.0	
	comp=Z,307nm,21.9s,baz=329,slow=36						
STKA	Stephens Creek	35.01	134	P	P	05 08 30.1	+0.8
	baz=35,SNR=16						
STKA	Stephens Creek	35.01	134	eP	P	05 08 30.0	+0.8
STKA						05 11 00.8	
STKA				pmax	pmax		
	comp=Z,7.0nm,0.7s						
STKA	Stephens Creek	35.01	134	eP	P	05 08 29.9	+0.7
	comp=Z,6.8nm,0.7s						
STKA				PcP	PcP	05 11 00.8	+0.4
KMI	Kunming	35.53	344	P	P	05 08 36.5	+2.6
KMI				pmax	pmax		
	comp=Z,17nm,0.6s						
KMI				LR	LR		
	comp=Z,120nm,14.4s						
KMI				LR	LR		
	comp=Z,180nm,14.4s						
KMI				LR	LR		
	comp=Z,130nm,17.8s						
PALK	Pallekele	35.82	296	P	P	05 08 35.7	-0.7
	comp=Z,12nm,0.9s,baz=116,slow=8.5,SNR=8.5						
PALK	Pallekele	35.82	296	P	P	05 08 36.9	+0.4
PALK	Pallekele	35.82	296	cePP	P	05 08 37.1	+0.7
PALK	Pallekele	35.82	296	eP	P	05 08 36.4	-0.1
	comp=Z,19nm,1.0s						
GYA	Guiyang	35.99	351	P	P	05 08 41.3	+3.5
GYA				pP	pP	05 08 53.4	0.0
GYA				PP	PP	05 10 04.5	+3.8
GYA				PcP	PcP	05 11 04.3	+0.9
GYA				S	S	05 14 17.0	+4.8
GYA				sS	sS	05 14 40.3	+1.6
GYA				ScP	ScP	05 14 46.8	+2.5
GYA				SS	SnSn	05 16 42.0	-0.1
GYA				pmax	pmax		
	comp=Z,20nm,0.9s						
GYA				pmax	pmax		
	comp=Z,120nm,5.5s						
GYA				LR	LR		
	comp=Z,520nm,17.6s						
GYA				LR	LR		
	comp=Z,480nm,17.8s						
GYA				LR	LR		
	comp=Z,510nm,17.9s						
CMSA	Cobar Meteorol	37.83	131	P	P	05 08 54.6	+1.3
	baz=38,SNR=10						
RMQ	Roma	38.21	121	P	P	05 08 58.6	+2.0
	baz=38,SNR=7.9						
GUMO	Guam	39.23	55	P	P	05 09 04.6	-0.6
	comp=Z,56nm,0.6s,baz=142,slow=18,SNR=3.7						
GUMO	Guam	39.23	55	eP	P	05 09 06.0	+0.8
GUMO				epP	pP	05 09 11.0	-10
ENH	Enshi	39.44	356	eP	P	05 09 06.2	-0.5
	comp=Z,13nm,0.5s						
H08S2	Diego Garcia H	39.73	269	T	T	05 51 17.9	
	baz=95,slow=75,SNR=118						
H08S3	Diego Garcia H	39.74	269	T	T	05 51 19.1	
	baz=95,slow=75,SNR=102						
H08S1	Diego Carcia H	39.75	269	T	T	05 51 19.8	
	baz=95,slow=75,SNR=82						
EIDS	Eidsvold	39.85	119	P	P	05 09 11.7	+1.5
	baz=40,SNR=4.6						
SHL	Shillong	40.10	330	eP	P	05 09 12.0	-0.5
CD2	Chengdu	40.85	348	P	P	05 09 18.1	-0.4
CD2				pP	pP	05 09 31.4	-2.9
CD2				sP	sP	05 09 37.6	-4.0
CD2				PP	PP	05 10 54.0	+0.2
CD2				S	S	05 15 28.4	+3.0
CD2				sS	sS	05 15 51.5	-0.7
CD2				pmax	pmax		
	comp=Z,60nm,0.6s						
CD2				LR	LR		
	comp=Z,160nm,6.5s						
CD2				LR	LR		
	comp=Z,150nm,16.7s						
YNG	Young	41.15	133	P	P	05 09 22.2	+1.4
	baz=41,SNR=9.1						
HYB	Hyderabad	42.88	308	iP	P	05 09 33.0	-2.2
XAN	Xi'an	43.22	355	P	P	05 09 37.1	-0.6
XAN				pmax	pmax		
	comp=Z,10.0nm,0.5s						
LSA	Lhasa	43.93	333	eP	P	05 09 43.7	-0.3
LSA				pmax	pmax		
	comp=Z,13nm,0.6s						
LSA	Lhasa	43.93	333	eP	P	05 09 43.7	-0.3
	comp=Z,12nm,0.6s						
PKIN	Phulchoki	45.15	325	eP	P	05 09 51.9	-1.6
	comp=Z,11nm,0.5s						
KKN	Kakani	45.38	325	eP	P	05 09 54.1	-1.2
	comp=Z,28nm,0.8s						
TIA	Tai'an	45.44	5	eP	P	05 09 54.5	-0.8
TIA				pmax	pmax		
	comp=Z,10.0nm,0.6s						
LZH	Lanzhou	45.87	350	eP	P	05 09 59.9	+0.9
LZH				pP	pP	05 10 10.3	-4.7
LZH				sP	sP	05 10 16.8	-5.4
LZH				PcP	PcP	05 11 37.3	+2.0
LZH				eS	S	05 16 40.3	+1.4
LZH				sS	sS	05 16 59.5	-6.6
LZH				SS	SS	05 20 02.0	-2.6
LZH				pmax	pmax		
	comp=Z,29nm,1.0s						
LZH				pmax	pmax		
	comp=Z,81nm,4.0s						
GKN	Gorkha	45.91	325	eP	P	05 09 58.1	-1.3
	comp=Z,23nm,0.4s						
KOLN	Koldanda	46.33	324	eP	P	05 10 01.4	-1.4
	comp=Z,46nm,0.5s						
HNR	Honiara	46.64	94	eP	P	05 10 05.6	+0.4
HNR				pmax	pmax		
	comp=Z,119nm,0.8s						
HNR	Honiara	46.64	94	eP	P	05 10 05.6	+0.4
	comp=Z,119nm,0.8s						
PYUN	Piuthan	46.94	323	eP	P	05 10 06.1	-1.4
	comp=Z,23nm,0.5s						
TJN	Taejon	47.48	16	⇓iP	P	05 10 11.1	-0.1
KSAR	Wonju Array Be	48.62	16	P	P	05 10 20.6	+0.6
KSAR	Wonju Array Be	48.62	16	P	P	05 10 20.6	+0.6
KSRS	Korea Array	48.64	16	P	P	05 10 20.6	+0.4
	comp=Z,9.6nm,0.8s,baz=202,slow=7.5,SNR=21						
KSRS				LR	LR	05 31 23.2	
	comp=Z,32nm,21.4s,baz=188,slow=37						
KS01	Wonju Array Si	48.65	16	eP	P	05 10 20.9	+0.5
BJT	Baijiatuau	49.15	4	eP	P	05 10 23.7	-0.4
BJT				pmax	pmax		
	comp=Z,18nm,0.5s						
BJT	Baijiatuau	49.15	4	eP	P	05 10 23.7	-0.4
	comp=Z,18nm,0.5s						
BJI	Beijing	49.17	4	P	P	05 10 23.8	-0.5
BJI				pmax	pmax		
	comp=Z,22nm,0.8s						
BJI				pmax	pmax		
	comp=Z,50nm,3.6s						
GTA	Gaotai	49.88	347	eP	P	05 10 30.0	+0.1
GTA				pP	pP	05 10 44.5	-1.6
GTA				sP	sP	05 10 49.5	-3.8
GTA				PcP	PcP	05 11 49.4	-0.2
GTA				S	S	05 17 37.3	+1.8
GTA				sS	sS	05 17 57.8	-5.1
GTA				SS	SS	05 21 07.9	-1.3
GTA				pmax	pmax		
	comp=Z,8.0nm,1.0s						
GTA				pmax	pmax		
	comp=Z,64nm,6.2s						
GTA				LR	LR		
	comp=Z,100nm,21.4s						
GTA				LR	LR		
	comp=Z,140nm,18.5s						
GTA				LR	LR		
	comp=Z,100nm,19.5s						
INU	Inuyama	50.00	26	eP	P	05 10 29.9	-0.8
	comp=Z,30nm,1.0s						
MAT	Matsushiro	51.52	26	P	P	05 10 40.1	-2.0
MAT				eS	S	05 17 52.4	-5.7
MAJO	Matsushiro	51.52	26	eP	P	05 10 40.7	-1.5
MAJO				pmax	pmax		
	comp=Z,29nm,0.9s						
MAJO	Matsushiro	51.52	26	eP	P	05 10 40.7	-1.5
	comp=Z,29nm,0.9s						
MJAR	Matsushiro Arr	51.52	26	P	P	05 10 40.7	-1.5
	comp=Z,23nm,0.9s,baz=200,slow=7.8,SNR=44						
MJAR				PcP	PcP	05 11 56.5	+1.0
	comp=Z,5.4nm,0.8s,baz=203,slow=4.5,SNR=4.5						
MJB9	Matsu-Tunnel	51.52	26	eP	P	05 10 40.7	-1.4
	comp=Z,7.0nm,0.9s						
CN2	Changchun	54.09	11	eP	P	05 11 00.1	-0.8
CN2				pmax	pmax		
	comp=Z,10.0nm,0.7s						
CN2				pmax	pmax		
	comp=Z,200nm,5.0s						
MDJ	Mudanjiang	55.79	15	P	P	05 11 12.6	-0.5
MDJ				pmax	pmax		
	comp=Z,34nm,0.8s						
MDJ				pmax	pmax		
	comp=Z,20nm,3.6s						
MDJ	Mudanjiang	55.79	15	eP	P	05 11 12.9	-0.2
	comp=Z,27nm,0.8s						
USRK	Ussuriysk Ar.	56.04	17	P	P	05 11 14.6	-0.3
	comp=Z,39nm,0.7s,baz=195,slow=5.8,SNR=80						
ULN	Ulaanbaatar	57.10	356	eP	P	05 11 22.4	-0.3
ULN				pmax	pmax		
	comp=Z,6.0nm,0.6s						
ULN	Ulaanbaatar	57.10	356	eP	P	05 11 22.4	-0.3
	comp=Z,6.0nm,0.6s						
SONM	Songino Array	57.13	355	P	P	05 11 22.3	-0.5
	comp=Z,3.7nm,0.5s,baz=171,slow=8.7,SNR=36						
SONM				PcP	PcP	05 12 17.3	+0.4
	comp=Z,5.5nm,0.7s,baz=174,slow=4.3,SNR=5.5						
SONA1	Songino Array	57.14	355	eP	P	05 11 22.5	-0.3
WMQ	Urumqi	57.50	339	P	P	05 11 24.8	-0.6
WMQ				pP	pP	05 11 40.8	-1.2
WMQ				sP	sP	05 11 46.0	-3.1
WMQ				pmax	pmax		
	comp=Z,8.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,31nm,3.8s						
KSH	Kashi	59.27	327	P	P	05 11 36.0	-1.9
KSH				epP	pP	05 11 48.9	-5.7
KSH				esP	sP	05 11 54.3	-7.4
KSH				ePcP	PcP	05 12 26.4	+0.8
KSH				eScP	ScP	05 16 20.5	-0.5
KSH				S	S	05 19 34.5	-7.1
KSH				pmax	pmax		
	comp=Z,9.0nm,0.7s						
KSH				pmax	pmax		
	comp

WSAR Wadi Sarin 61.92 302 P P 05 11 55.6 -0.6
comp=Z,8.4nm,0.6s,baz=97,slow=5.0,SNR=6.6
WSAR LR LR 05 38 48.6
comp=Z,47nm,20.0s,baz=118,slow=36
TKM2 Tokmak 2 61.96 330 *eP* **P 05 11 55.5 -0.8**
TKM2 pmax pmax
comp=Z,14nm,0.8s
TKM2 Tokmak 2 61.96 330 *eP* **P 05 11 55.5 -0.8**
comp=Z,14nm,0.8s
MK01 Makanchi Array 62.02 337 *eP* **P 05 11 55.4 -0.9**
MK31 Makanchi Array 62.04 337 *eP* **P 05 11 55.8 -0.7**
MK31 Makanchi Array 62.04 337 *eP* **P 05 11 55.8 -0.7**
MKAR Makanchi Array 62.04 337 P **P 05 11 55.7 -0.8**
comp=Z,9.0nm,0.4s,baz=149,slow=7.7,SNR=104
MKAR LR LR 05 42 35.7
comp=Z,38nm,18.3s,baz=149,slow=40
MKAR Makanchi Array 62.04 337 *eP* **P 05 11 55.8 -0.7**
MAKZ Makanchi 62.17 337 *eP* **P 05 11 56.3 -1.1**
MAKZ pmax pmax
comp=Z,5.0nm,0.8s
MAKZ Makanchi 62.17 337 *eP* **P 05 11 56.2 -1.1**
comp=Z,5.2nm,0.8s
AAK Ala-Archa 62.30 329 *eP* **P 05 11 58.1 -0.4**
AAK pmax pmax
comp=Z,13nm,1.0s
AAK Ala-Archa 62.30 329 *eP* **P 05 11 58.1 -0.4**
comp=Z,13nm,1.0s
FRU Bishkek 62.39 329 *eP* **P 05 11 56.0 -2.9**
MSVF Nonsavu 63.89 105 *eP* **P 05 12 09.2 -0.3**
MSVF pmax pmax
comp=Z,19nm,0.8s
MSVF Nonsavu 63.89 105 *eP* **P 05 12 09.2 -0.3**
comp=Z,19nm,0.8s
OPO Ambohidratompo 63.92 254 P **P 05 12 11.4 +1.6**
comp=Z,2.0nm,0.7s,baz=85,slow=6.5,SNR=3.4
HATD Hatta, Dubai 64.66 303 P **P 05 12 13.8 -0.5**
ASHO Ashiyiah 64.66 303 *i* P **P 05 12 13.6 -0.7**
SNR=5.5
KKAR Karatay Array 64.72 327 *eP* **P 05 12 13.2 -1.1**
KKAR Karatay Array 64.72 327 *eP* **P 05 12 13.2 -1.1**
BANOM Banah 64.98 304 P **P 05 12 15.7 -0.6**
FAQ Al Faqa, Dubai 65.07 303 *i* P **P 05 12 16.3 -0.6**
SNR=9.7
NAZ Nazwa, Dubai 65.11 303 *i* P **P 05 12 16.4 -0.8**
SNR=6.1
TYV Tymovskoe 65.30 20 *eP* **P 05 12 18.0 +0.2**
TYV pmax pmax
comp=Z,13nm,0.8s
NKL Nikolayevsk 66.61 18 *eP* **P 05 12 25.5 -0.7**
NKL pmax pmax
comp=Z,36nm,0.9s
KURK Kurchatov 66.64 337 *eP* **P 05 12 25.6 -0.9**
KURK pmax pmax
comp=Z,10.0nm,0.8s
KURK Kurchatov 66.64 337 *eP* **P 05 12 25.6 -0.9**
comp=Z,10nm,0.8s
BOD Bodaibo 66.87 1 *eP* **P 05 12 26.9 -0.8**
BOD pmax pmax
comp=Z,14nm,1.3s
MAW Mawson 66.91 199 P **P 05 12 27.8 -0.1**
comp=Z,3.2nm,0.8s,baz=51,slow=9.4,SNR=3.5
MAW LR LR 05 35 26.6
comp=Z,90nm,19.9s,baz=58,slow=30
KRAR Krasnoyarsk 67.10 348⇑ *iP* **P 05 12 28.0 -1.2**
KRAR pmax pmax
comp=Z,34nm,0.7s
ZALV Zalesovo Beam 67.24 343 P **P 05 12 28.8 -1.3**
comp=Z,18nm,0.5s,baz=158,slow=5.0,SNR=56
NVS Novosibirsk 68.48 342 *eP* **P 05 12 36.2 -1.7**
NVS *eS* **S 05 21 30.6 -4.3**
NVS pmax pmax
comp=Z,16nm,1.6s
NVS pmax pmax
comp=N,11nm,1.3s
NVS smax smax
comp=E,7.0nm,1.0s
GEYT Alibeck 69.21 316 P **P 05 12 42.6 -0.3**
comp=E,5.3nm,0.6s,baz=145,slow=5.4,SNR=13
GEYT LR LR 05 44 32.9
comp=E,47nm,20.4s,baz=85,slow=37
DAMY Dhamar 71.70 289 *eP* **P 05 12 59.6 +0.8**
comp=E,22nm,1.0s
BRVK Borovoye 71.79 335 *c iP* **P 05 12 57.5 -0.7**
BRVK pmax pmax
comp=Z,5.0nm,0.8s
ZRNK Zerenda 72.26 334 *eP* **P 05 13 00.1 -1.0**
ZRNK pmax pmax
comp=Z,8.0nm,0.6s
ZRNK Zerenda 72.26 334 *eP* **P 05 13 00.1 -1.0**
comp=Z,7.7nm,0.6s
YAK Yakutsk 72.32 8 *eP* **P 05 12 57.6 -3.6**
YAK *e* 05 13 15.8
YAK pmax pmax
comp=Z,55nm,0.9s
YAK pmax pmax
comp=E,8.0nm,1.2s
YAK pmax pmax
comp=N,18nm,1.1s
VNDA Vanda 72.75 170 P **P 05 13 03.8 +0.1**
comp=N,2.5nm,0.5s,baz=315,slow=5.9,SNR=24
VNDA LR LR 05 41 56.0
comp=N,83nm,21.8s,baz=347,slow=33
VNDA Vanda 72.75 170 *eP* **P 05 13 03.2 -0.5**
comp=N,44nm,2.0s
PEA0 Petropavlovsk- 72.98 27 *eP* **P 05 13 05.2 -0.2**
PETK Petropavlovsk- 72.98 27 P **P 05 13 05.3 -0.1**
comp=N,15nm,0.5s,baz=237,slow=1.6,SNR=29
PETK LR LR 05 48 09.3
comp=N,15nm,19.1s,baz=218,slow=38
PET Petropavlovsk 73.35 27 *i* P **P 05 13 07.3 -0.2**
PET pmax pmax
comp=Z,18nm,0.7s
ABKAR Akbulak array 74.28 327 *eP* **P 05 13 12.6 -0.5**
MA2 Magadan 75.09 19 P **P 05 13 17.1 -0.4**
comp=Z,22nm,0.8s,baz=211,slow=4.8,SNR=13
MA2 LR LR 05 47 20.3
comp=Z,18nm,21.7s,baz=270,slow=37
MA2 Magadan 75.09 19 P **P 05 13 17.1 -0.4**
MA2 *eP* **P 05 13 17.3 -0.2**
SYO Syowa Base 75.34 201⇓ *eP* **P 05 13 17.6 -1.3**
KMBO Kilima Mbogo 75.40 271 *eP* **P 05 13 21.9 +1.3**
KMBO pmax pmax
comp=Z,8.0nm,1.1s
KMBO Kilima Mbogo 75.40 271 *eP* **P 05 13 21.9 +1.3**
comp=Z,8.1nm,1.1s
SEY Seymchan 78.18 17 P **P 05 13 34.9 0.0**
comp=Z,12nm,0.5s,baz=216,slow=3.7,SNR=29
SVE Sverdlovsk 78.45 334⇑ *eP* **P 05 13 36.4 -0.1**
SVE pmax pmax
comp=Z,41nm,0.7s
ARU Arti 79.13 333 *d iP* **P 05 13 39.6 -0.7**
ARU *PP **pP** 05 13 55.9 -1.7
ARU 05 16 34.6
ARU S **S 05 23 35.4 +0.6**
ARU pmax pmax
comp=Z,27nm,1.0s
ARU Arti 79.13 333 *eP* **P 05 13 39.8 -0.5**
comp=Z,49nm,1.3s
GNI Garni 79.53 314 P **P 05 13 42.7 -0.3**
NRIK Noril'sk 80.35 351 P **P 05 13 45.9 -0.8**
comp=Z,5.7nm,0.6s,baz=151,slow=4.3,SNR=11
NRIK LR LR 05 53 56.1
comp=Z,38nm,18.1s,baz=114,slow=39
QSPA South Pole Qui 80.72 180 *eP* **P 05 13 49.1 +0.2**
comp=Z,42nm,1.2s
ZEI Tsey 81.08 316 *eP* **P 05 13 51.1 -0.3**
ZEI pmax pmax
comp=Z,29nm,0.6s
MATP Matopo 81.37 251 P **P 05 13 53.5 +0.2**
comp=Z,5.7nm,0.9s,baz=92,slow=4.8,SNR=9.8
TIXI Tiksi 81.47 5 *d iP* **P 05 13 51.4 -1.1**
TIXI pmax pmax
comp=Z,30nm,0.9s
TIXI Tiksi 81.47 5 *eP* **P 05 13 51.4 -1.1**
comp=Z,28nm,0.9s
NEY Neytrino 82.05 316⇓ *iP* **P 05 13 56.5 +0.1**
NEY pmax pmax
comp=Z,6.0nm,0.9s
KBZ Khabaz 82.10 317 P **P 05 13 56.4 0.0**
comp=Z,22nm,1.0s,baz=120,slow=5.6,SNR=34
LSZ Lusaka 82.30 256 *eP* **P 05 13 58.9 +0.6**
LSZ pmax pmax
comp=Z,4.0nm,0.8s
LSZ Lusaka 82.30 256 *eP* **P 05 13 58.9 +0.6**
comp=Z,4.3nm,0.8s
KIV Kislovodsk 82.33 317 P **P 05 13 57.8 0.0**
KIV pmax pmax
comp=Z,17nm,1.1s
KIV Kislovodsk 82.33 317 *eP* **P 05 13 57.9 +0.1**
comp=Z,21nm,1.0s
BOSA Boshof 83.35 242 P **P 05 14 04.0 +0.5**
comp=Z,6.1nm,0.9s,baz=100,slow=5.8,SNR=8.0
BOSA LR LR 05 44 05.8
comp=Z,91nm,21.5s,baz=93,slow=31
LBTB Lobatse 83.49 246 *eP* **P 05 14 02.5 -1.8**
LBTB Lobatse 83.49 246 *eP* **P 05 14 02.5 -1.8**
SOC Sochi 84.23 316 *eP* **P 05 14 05.2 -2.2**
SOC *e* 05 17 27.0
SOC *e*PPP PPP 05 19 11.6
SOC *e*S **S 05 24 22.5 -5.4**
SOC *e*SS **SS 05 30 01.1 +2.4**
SOC pmax pmax
comp=Z,22nm,0.6s
VRH Novokhopyorsk 85.50 323 *eP* **P 05 14 12.7 -0.9**
VRH pmax pmax
comp=Z,30nm,0.6s
BILL Bilibino 85.88 18⇓ *iP* **P 05 14 13.2 -1.9**
BILL pmax pmax
comp=Z,2.0nm,0.8s
BILL MLR MLR
comp=Z,188nm,23.0s
VSR Storozhevoye 87.02 323 *eP* **P 05 14 20.0 -1.1**
VSR pmax pmax
comp=Z,80nm,0.9s
BR131 Keskin Array S 87.52 311 *eP* **P 05 14 23.4 -0.6**
BRTR Keskin Array B 87.52 311 P **P 05 14 23.7 -0.3**
comp=Z,12nm,0.8s,baz=132,slow=6.5,SNR=63
BRTR LR LR 05 58 12.8
comp=Z,18nm,19.6s,baz=116,slow=39
LPSR Galich'ya Gora 87.60 324 *eP* **P 05 14 23.7 -0.1**
LPSR pmax pmax
comp=Z,50nm,0.7s
BR231 Keskin MP Arra 88.19 311 *eP* **P 05 14 24.3 -2.9**
SNAA Sanae 89.00 197 P **P 05 14 30.9 +0.6**
SNAA Sanae 89.00 197 *eP* **P 05 14 29.3 -1.0**
SNAA Sanae 89.00 197 *eP* **P 05 14 29.3 -1.0**
MOS Moscow 89.30 327 *eP* **P 05 14 29.9 -1.9**
MOS pmax pmax
comp=Z,54nm,0.9s
OBN Obninsk 89.69 326 *i P* **P 05 14 33.3 -0.3**
OBN pmax pmax
comp=Z,33nm,0.9s
OBN MLR MLR
comp=Z,33nm,16.0s
KLMR Klimovskoe 89.96 332 *eP* **P 05 14 30.4 -4.4**
KLMR *e**PP **pP 05 14 48.3 -4.1**
KLMR pmax pmax
comp=Z,20nm,0.9s
VNA2 Neumayer--Watz 90.64 197 P **P 05 14 38.9 +1.0**
baz=87,slow=4.1
TMCR Tamitsa 91.67 335 *eP* **P 05 14 41.5 -1.1**
TMCR pmax pmax
comp=Z,26nm,0.6s
CFR Carcaliu 92.66 315⇑ *iP* **P 05 14 47.6 0.0**
CFR Carcaliu 92.66 315⇑ **P 05 14 47.6 0.0**
AKASG Malin Array Be 92.96 321 P **P 05 14 47.5 -1.4**
comp=Z,2.7nm,0.6s,baz=83,slow=4.7,SNR=17
AKASG Malin Array Be 92.96 321 P **P 05 14 47.5 -1.4**
AKASG pmax pmax
comp=Z,5.0nm,0.8s
KIEV Kiev 92.97 321 *d iP* **P 05 14 47.7 -1.2**
KIEV pmax pmax
comp=Z,7.0nm,0.8s
KIEV Kiev 92.97 321 *eP* **P 05 14 47.8 -1.2**
AK11 Malin Array Si 92.99 321 *eP* **P 05 14 48.5 -0.6**
VRI Vrincioaia 93.75 316⇑ *iP* **P 05 14 53.0 +0.3**
VRI Vrincioaia 93.75 316⇑ **P 05 14 53.0 +0.3**
PLOR Plostina 93.80 316⇑ *iP* P 05 14 48.0 -5.0
PLOR Plostina 93.80 316⇑ P 05 14 48.0 -5.0
TESR Tescani 93.91 316⇑ *iP* **P 05 14 53.4 0.0**
MLR Muntele Rosu 94.23 315⇑ *iP* **P 05 14 54.9 -0.2**
MLR Muntele Rosu 94.23 315⇑ **P 05 14 54.9 -0.2**
MLR Muntele Rosu 94.23 315 *eP* **P 05 14 54.9 -0.2**
BURAR Bucovina Array 95.05 317⇑ *iP* **P 05 14 59.2 +0.5**
BURAR Bucovina Array 95.05 317⇑ **P 05 14 59.2 +0.5**
BUR08 Bucovina Ar. S 95.06 317 *eP* **P 05 14 59.2 +0.4**
SDPT Sand Point 95.78 35 *eP* **P 05 15 00.8 -0.9**
FINES FINESS Array B 96.43 331 P **P 05 15 04.0 -0.6**
comp=Z,2.9nm,0.6s,baz=122,slow=6.4,SNR=12
FINES LR LR 06 06 53.6
comp=Z,30nm,19.1s,baz=130,slow=41
FINES FINESS Array B 96.43 331 *i* P **P 05 15 04.4 -0.2**
FINES pmax pmax
comp=Z,3.0nm,0.6s
ARCES ARCESS Array B 97.62 339 P **P 05 15 09.3 -0.4**
comp=Z,2.8nm,0.8s,baz=73,slow=4.2,SNR=5.7
ARCES LR LR 06 02 52.3
comp=Z,32nm,21.2s,baz=72,slow=38
STHS Stebnicka Huta 97.88 319 *eP* Pdif 05 15 11.8 +0.3
STHS pmax pmax
comp=Z,2.0nm,0.8s
STHS Stebnicka Huta 97.88 319 *eP* Pdif 05 15 11.8 +0.3
TTA Tatalina 98.80 28 *eP* Pdif 05 15 16.1 +0.8
TTA Tatalina 98.80 28 *eP* Pdif 05 15 16.1 +0.8
ILAR Eielson Array 102.80 26 P **Pdif 05 15 31.4 -1.6**
comp=Z,0.4nm,0.7s,baz=259,slow=4.5,SNR=5.0
ILAR PP **PKiKP 05 19 50.6 -2.5**
comp=Z,0.8nm,1.1s,baz=224,slow=5.4,SNR=5.0
TORD Torodi Ar. Bea 112.33 280 PKiKP **PKiKP 05 20 12.3 -0.1**
comp=Z,1.2nm,0.6s,baz=62,slow=2.0,SNR=14
YKA Yellowknife Ar 116.93 22 PKP **PKPdf 05 20 19.9 +0.1**
comp=Z,1.9nm,0.6s,baz=316,slow=1.8,SNR=53
YKA PP **PP 05 21 31.6 +2.4**
comp=Z,0.4nm,0.9s,baz=317,slow=7.1,SNR=3.9
DBIC Dimbokro 118.12 273 PKP **PKPdf 05 20 23.6 +0.1**
comp=Z,2.7nm,0.5s,baz=94,slow=2.0,SNR=7.2
B05A Bryant 119.99 39 P **PKPdf 05 20 27.6 +1.5**
baz=292
I04A Tendick Farm, 121.32 44 P **PKPdf 05 20 29.9 +1.0**
baz=289
M02C Callahan 121.75 47 P **PKPdf 05 20 31.4 +1.6**
baz=287
I05D Terrebonne, OR 121.87 43 P **PKPdf 05 20 31.4 +1.4**
baz=290
N02D Trinity Center 121.97 47 P **PKPdf 05 20 31.9 +1.5**
baz=287
J05D Fort Rock, OR 122.30 44 P **PKPdf 05 20 32.5 +1.6**
baz=290
M04C Macdoel 122.35 46 P **PKPdf 05 20 32.3 +1.2**
baz=288
O03D Paynes Creek 122.83 48 P **PKPdf 05 20 32.5 +0.5**
baz=287
NEW Newport 123.03 37 P **PKPdf 05 20 33.2 +1.1**
baz=296
MSO Missoula 125.61 38 P **PKPdf 05 20 38.0 +0.8**
baz=298
MFID Camas Ranch 125.91 42 *e*PKPdf **PKPdf 05 20 39.5 +1.7**
NVAR Mina Array Bea 125.98 49 PKP **PKPdf 05 20 40.0 +1.7**
comp=Z,2.6nm,0.6s,baz=238,slow=2.4,SNR=18
HLID Hailey 126.78 42 P **PKPdf 05 20 41.9 +2.3**
baz=296
EDW2 Edwards Air Fo 127.29 53 P **PKPdf 05 20 42.6 +2.0**
baz=286
EGMT Eagleton 127.45 35 P **PKPdf 05 20 42.0 +1.4**
baz=303
BOZ Bozeman (W) 127.58 38 P **PKPdf 05 20 42.8 +1.8**
baz=300
BFSC Mount Baldy Ra 127.73 54 P **PKPdf 05 20 43.3 +1.6**
baz=286
TPNV Topopah Spring 128.00 50 P **PKPdf 05 20 44.0 +1.9**
baz=289
R11A Troy Canyon, C 128.02 48 P **PKPdf 05 20 44.2 +2.1**
baz=291
GSC Goldstone, Bar 128.10 52 P **PKPdf 05 20 45.1 +2.8**
baz=288
BELC Belle Mtn. Jos 129.12 53 P **PKPdf 05 20 46.9 +2.6**
baz=287
GMRC Granite Mounta 129.15 52 P **PKPdf 05 20 46.8 +2.5**
baz=288
REDW Red Top Meadow 129.18 40 *e*PKPdf **PKPdf 05 20 45.9 +1.6**
DUG Dugway, Tooele 129.29 45 P **PKPdf 05 20 46.2 +1.8**
baz=295
DUG Dugway, Tooele 129.29 45 *e*PKIKP **PKPdf 05 20 45.9 +1.4**
DUG Dugway, Tooele 129.29 45 *e*PKPdf **PKPdf 05 20 45.9 +1.4**
LAO LASA Array 130.18 34 P **PKPdf 05 20 47.9 +2.0**
baz=306
PDAR Pinedale Array 130.30 40 PKP **PKPdf 05 20 47.8 +1.4**
comp=Z,0.8nm,0.4s,baz=48,slow=2.2,SNR=5.4
WUAZ Wupatki 132.20 50 P **PKPdf 05 20 52.9 +2.8**
baz=292
O20A White River Ci 132.45 43 P **PKPdf 05 20 52.1 +1.5**
baz=299
O20A White River Ci 132.45 43 *e*PKPdf **PKPdf 05 20 52.0 +1.5**
ULM Lac du Bonnet 132.81 25 PKP **PKPdf 05 20 51.0 +0.4**
comp=Z,2.7nm,0.6s,baz=328,slow=5.4,SNR=3.8
RSSD Black Hills 132.94 36 *e*PKIKP **PKPdf 05 20 50.9 -0.4**
RSSD Black Hills 132.94 36 *e*PKPdf **PKPdf 05 20 50.9 -0.4**
G26A Maurine 133.04 34 P **PKPdf 05 20 52.4 +1.1**
baz=309
PV01 Paradox Valley 133.16 45 *e*PKPdf **PKPdf 05 20 52.4 +0.4**
H27A Howes 133.74 34 P **PKPdf 05 20 53.2 +0.6**
baz=309
TUC Tucson 133.80 54 *e*PKIKP **PKPdf 05 20 54.0 +0.9**
TUC Tucson 133.80 54 *e*PKPdf **PKPdf 05 20 54.0 +0.9**
C31A Landman Farms, 133.82 28 P **PKPdf 05 20 53.3 +0.7**
baz=316
A33A Warroad 134.02 26 P **PKPdf 05 20 54.3 +1.4**
baz=320
SCHQ Schefferville 134.56 360 PKP **PKPdf 05 20 54.0 +0.3**
comp=Z,3.6nm,0.8s,baz=286,slow=3.6,SNR=5.8
B34A Aery, Baudette 134.68 25 P **PKPdf 05 20 54.6 +0.4**
baz=321
E33A Westby DABS, E 135.57 28 P **PKPdf 05 20 56.6 +0.7**
baz=318
C35A Jirik Farms, M 135.57 26 P **PKPdf 05 20 56.3 +0.4**
baz=321
C36A Pine Crest Far 136.01 25 P **PKPdf 05 20 58.0 +1.4**
baz=322
ANMO Albuquerque 136.10 48 P **PKPdf 05 20 59.8 +2.3**
baz=296
EYMN Ely 136.40 23 P **PKPdf 05 20 58.0 +0.6**
baz=324
E36A McGregor 136.80 26 P **PKPdf 05 20 59.0 +0.8**
baz=321
C39A Grand Marais 137.03 23 P **PKPdf 05 21 00.1 +1.5**
baz=326
F36A Milaca 137.19 27 P **PKPdf 05 20 59.1 +0.2**
baz=320
ECSD EROS Data Cent 137.27 31 P **PKPdf 05 20 59.4 +0.3**
baz=315
ECSD EROS Data Cent 137.27 31 *e*PKPdf **PKPdf 05 20 59.4 +0.3**
MNTX Cornudas Mount 138.29 52 P **PKPdf 05 21 03.2 +1.8**
baz=294
TXAR Lajitas Array 140.59 55 PKhKP PKPpre 05 20 59.0
comp=Z,2.1nm,0.6s,baz=236,slow=3.1,SNR=35
TXAR Lajitas Array 140.59 55 *i* PKHKP PKPpre 05 20 59.0
TXAR pmax pmax
comp=Z,2.0nm,0.6s
S35A Otter Creek Ra 141.51 38 P PKPpre 05 21 02.2
baz=310
R36A Gordon, Harris 141.58 37 P PKPpre 05 21 01.7
baz=312
P38A Dawn 141.80 33 P PKPpre 05 21 03.0
baz=315
S36A Lake Cedric, C 141.92 37 P PKPpre 05 21 02.4
baz=311
R37A Teagarden Farm 141.98 36 P PKPpre 05 21 02.5
baz=312
P39B Salisbury 142.32 33 P PKPpre 05 21 03.5
baz=316
S37A Fort Scott 142.35 37 P PKPpre 05 21 03.8
baz=312
Q39A Willow Grove F 142.52 34 P PKPpre 05 21 04.5
baz=316
R38A Fenwick Farm, 142.60 35 P PKPpre 05 21 04.1
baz=314
P40A Paris 142.66 32 P PKPpre 05 21 05.0
baz=317
V36A Jenks 142.93 40 P PKPpre 05 21 05.5
baz=309
S38A Stockton 142.98 36 P PKPpre 05 21 05.2
baz=313
R39A Chumby, Stover 143.00 35 P PKPab 05 21 05.7 +0.8
baz=315
Q40A Laux Farm, Aux 143.04 33 P PKPbc 05 21 06.4 -0.3
baz=317
JCT Junction City 143.12 51 P PKPbc 05 21 08.5 +1.3
baz=298
JCT Junction City 143.12 51 *e*PKIKP PKPbc 05 21 08.4 +1.2
JCT Junction City 143.12 51 *e*PKPdf PKPbc 05 21 08.4 +1.2
T38A Diamond 143.15 37 P PKPab 05 21 06.4 +0.8
baz=312
S39A Bolivar 143.27 36 P PKPbc 05 21 07.3 -0.1
baz=314
CPUP Villa Florida 143.29 195 PKhKP PKPpre 05 21 08.3
comp=Z,2.2nm,0.7s,baz=173,slow=1.5,SNR=7.4
333A Richland Sprin 143.33 49 P **PKPdf 05 21 09.3 -1.2**
baz=300
V37A Hulbert 143.38 39 P PKPbc 05 21 07.8 +0.2
baz=310
R40A Maddies Statio 143.44 34 P PKPbc 05 21 07.4 -0.4
baz=316
U38A Gravette 143.49 38 P PKPab 05 21 06.9 -0.1
baz=311
433A Art 143.53 50 P PKPbc 05 21 09.4 +1.1
baz=299
234A Clairette 143.60 47 P PKPbc 05 21 09.7 +1.2
baz=302
W37B Quinton 143.66 41 P PKPbc 05 21 08.8 +0.3
baz=308
T39A Clever 143.70 36 P PKPbc 05 21 08.4 -0.2
baz=313
S40A Lebanon 143.80 35 P PKPbc 05 21 08.7 -0.2
baz=315
V38A Canehill 143.85 39 P PKPbc 05 21 08.9 -0.2
baz=311
Q42A Golden Eagle 143.91 31 P PKPbc 05 21 09.5 +0.4
baz=319
X37A Clayton 144.04 41 P PKPbc 05 21 10.1 +0.5
baz=308
U39A Green Forest 144.07 37 P **PKPab 05 21 09.3 +0.1**
baz=312
633A Saathoff Ranch 144.08 52 P **PKPdf 05 21 11.4 -0.5**
baz=298
WHTX Lake Whitney, 144.10 47 *e*PKPdf PKPbc 05 21 10.7 +0.8
T40A Mansfield 144.11 35 P PKPbc 05 21 09.9 +0.1
baz=314
434A Burnet 144.12 49 P PKPbc 05 21 10.5 +0.5
baz=300
W38A Poteau 144.29 40 P PKPbc 05 21 10.8 +0.4
baz=310
733A Divot King Ran 144.32 53 P **PKPdf 05 21 12.7 +0.4**
baz=297
V39A Pettigrew 144.33 38 P **PKPab 05 21 10.1 -0.1**
baz=312
X38A Whitesboro 144.34 41 P PKPbc 05 21 10.9 +0.3
baz=309
534A Blanco 144.35 50 P PKPbc 05 21 11.3 +0.5
baz=299
SFIN Lafayette 144.40 26 P PKPbc 05 21 10.9 +0.3
baz=325
SFIN Lafayette 144.40 26 *e*PKPdf PKPbc 05 21 10.6 0.0
U40A Yellville 144.46 37 P **PKPab 05 21 10.8 +0.1**
baz=313
136A Ennis 144.50 45 P **PKPdf 05 21 12.3 -0.2**
baz=304
335A Moody 144.50 48 P **PKPdf 05 21 12.2 -0.4**
baz=302
T41A Mountain View 144.61 35 P **PKPab 05 21 11.2 0.0**
baz=315
435B Jarrell 144.64 48 P **PKPdf 05 21 12.8 0.0**
baz=301
W39A Magazine 144.67 39 P PKPbc 05 21 11.7 +0.1
baz=311
Z37A Pogue Cattle C 144.71 43 P **PKPdf 05 21 12.8 0.0**
baz=306
236A Katherine and 144.76 46 P **PKPdf 05 21 13.2 +0.2**
baz=304
933A Laredo 144.81 55 P **PKPdf 05 21 14.2 +1.0**
baz=295
734A La Parita Cree 144.84 52 P **PKPdf 05 21 14.0 +0.8**
baz=298
V40A Witts Springs 144.85 37 P **PKPab 05 21 12.0 -0.2**
baz=313
Y38A Idabel 144.86 42 P PKPbc 05 21 12.5 +0.2
baz=308
336A Riesel 144.87 47 P **PKPdf 05 21 13.3 +0.2**
baz=303
X39A Fountain Ranch 144.90 40 P **PKPdf 05 21 13.2 0.0**
baz=310
535A Dale 145.03 50 P **PKPdf 05 21 14.2 +0.7**
baz=300
W40A Ferguson Farm, 145.11 38 P **PKPdf 05 21 13.4 0.0**
baz=312
834A Tilden 145.17 53 P **PKPdf 05 21 15.5 +1.7**
baz=297
635A Leesville 145.19 51 P **PKPdf 05 21 15.2 +1.4**
baz=299
MIAR Mount Ida 145.22 40 P **PKPdf 05 21 14.1 +0.4**

baz=310
MIAR Mount Ida 145.22 40 *e*PKIKP **PKPdf 05 21 14.1 +0.4**
MIAR Mount Ida 145.22 40 *e*PKPdf **PKPdf 05 21 14.1 +0.4**
436A Wall Ranch, Ga 145.23 48 P **PKPdf 05 21 15.0 +1.3**
baz=302
RCBR Riachuelo 145.25 246 PKPbc **PKPdf 05 21 15.3 +1.0**
comp=Z,22nm,0.9s,baz=100,slow=5.9,SNR=9.2
V41A Mountainview 145.26 37 P **PKPbc 05 21 13.5 0.0**
baz=314
237A Washetta, Mont 145.27 45 P **PKPdf 05 21 15.1 +1.3**
baz=304
Y39A Lockesburg 145.27 41 P **PKPdf 05 21 13.9 +0.1**
baz=309
138A Matatall Enter 145.38 44 P **PKPab 05 21 15.8 +1.6**
baz=306
536A Bastrop 145.39 49 P **PKPab 05 21 15.5 +1.3**
baz=301
735A Kenedy 145.42 52 P **PKPab 05 21 16.4 +2.0**
baz=298
934A Benavides 145.43 54 P **PKPab 05 21 16.8 +2.3**
baz=296
034A Hebbronville 145.52 55 P **PKPab 05 21 17.2 +2.3**
baz=295
337A Centerville 145.59 46 P **PKPab 05 21 16.7 +1.7**
baz=304
W41B Gary Mavity, V 145.62 38 P **PKPbc 05 21 14.7 +0.1**
baz=313
835A Beeville 145.66 52 P **PKPab 05 21 17.5 +2.1**
baz=298
636A Smothers Creek 145.69 50 P **PKPab 05 21 17.4 +2.0**
baz=300
V42A Cord 145.70 36 P **PKPbc 05 21 14.9 0.0**
baz=315
X40A Basin Creek Fa 145.72 39 P **PKPab 05 21 16.5 +1.2**
baz=311
Y40A Okolona 145.75 40 P **PKPab 05 21 16.0 +0.6**
baz=310
736A Circle Diamond 145.94 51 P **PKPab 05 21 18.2 +1.9**
baz=299
537A Green Hill Far 145.94 49 P **PKPab 05 21 17.6 +1.3**
baz=302
338A Crockett 145.98 46 P **PKPab 05 21 17.6 +1.2**
baz=304
035A Encino 146.05 55 P **PKPab 05 21 18.4 +1.6**
baz=296
M54A Oil Creek Stat 146.10 17 P **PKPbc 05 21 16.3 +0.4**
baz=338
ACSO Alum Creek Sta 146.18 22 *e*PKPdf **PKPbc 05 21 16.4 +0.2**
Y41A Eaglette Beard 146.26 40 P **PKPab 05 21 17.5 +0.1**
baz=311
HKT Hockley 146.37 48 *e*PKP2 **PKPbc 05 21 17.4 +0.4**
HKT Hockley 146.37 48 *e*PKPdf **PKPbc 05 21 17.4 +0.4**
WCI Wyandotte Cave 146.51 28 *e*PKP2 **PKPbc 05 21 17.0 -0.3**
WCI Wyandotte Cave 146.51 28 *e*PKPdf **PKPbc 05 21 17.0 -0.3**
N54A Moraine State 146.51 17 P **PKPbc 05 21 17.4 +0.2**
baz=337
241A Mo Tay, Goldon 147.23 43 P **PKPab 05 21 21.1 -0.1**
baz=308
440A Kirbyville 147.28 46 P **PKPab 05 21 21.6 +0.1**
baz=305
Y43A Makayla and Ka 147.28 38 P **PKPab 05 21 20.8 -0.6**
baz=313
SSPA Standing Stone 147.40 15 *e*PKPdf **PKPdf 05 21 18.3 +1.1**
341A Kurthwood 147.48 44 P **PKPab 05 21 22.1 -0.2**
baz=307
O56A Blue Knob Stat 147.56 16 P **PKPbc 05 21 20.6 +0.5**
baz=339
N59A State Game Lan 147.62 12 P **PKPbc 05 21 21.0 +0.8**
baz=344
Y44A Strider, Charl 147.68 37 P **PKPbc 05 21 21.5 +0.9**
baz=314
242A Grayson 147.72 42 P **PKPab 05 21 22.2 -1.0**
baz=309
OXF Oxford 147.76 36 *e*PKP2 **PKPbc 05 21 21.0 +0.2**
OXF Oxford 147.76 36 *e*PKPbc **PKPbc 05 21 21.0 +0.2**
X45A UM Field Stati 147.83 36 P **PKPbc 05 21 21.4 +0.4**
baz=316
Y45A Yeager Farm, C 148.14 37 P **PKPbc 05 21 22.9 +1.0**
baz=315
LVC Limon Verde 148.28 177 PKPbc **PKPab 05 21 24.9 -1.1**
comp=Z,27nm,0.6s,baz=266,slow=2.5,SNR=13
Z45A Winona 148.40 37 P **PKPbc 05 21 23.8 +1.2**
baz=314
Y46A Houston 148.53 36 P **PKPbc 05 21 23.4 +0.5**
baz=316
542A Morse 148.63 45 P **PKPab 05 21 26.3 -0.6**
baz=306
244A Avery, Jackson 148.68 40 P **PKPbc 05 21 24.5 +1.2**
baz=311
Z46A Louisville 148.97 37 P **PKPbc 05 21 25.2 +1.2**
baz=315
344A Westbrook Farm 149.04 41 P **PKPbc 05 21 25.9 +1.6**
baz=311
Y47A UCPARC, Winfie 149.08 35 P **PKPbc 05 21 24.5 +0.2**
baz=318
146A Union 149.29 38 P **PKPbc 05 21 26.0 +1.2**
baz=315
Z47A Carrollton 149.47 36 P **PKPbc 05 21 25.7 +0.5**
baz=317
345A Thompson Farm, 149.58 41 P **PKPbc 05 21 27.0 +1.4**
baz=312
Z48A Northport 149.64 35 P **PKPbc 05 21 26.0 +0.4**
baz=318
247A Quitman 149.97 38 P **PKPbc 05 21 27.7 +1.2**
baz=315
LRAL Lakeview Retre 150.20 35 *e*PKPdf **PKPdf 05 21 22.6 +0.7**
248A Dixon Mills 150.46 37 P **PKPbc 05 21 28.7 +1.0**
baz=316
347A Saraland 150.46 39 P **PKPbc 05 21 28.7 +1.0**
baz=314
KMSC Kings Mountain 151.25 24 P **PKPbc 05 21 30.2 +0.7**
baz=330
KMSC Kings Mountain 151.25 24 *e*PKPdf **PKPdf 05 21 24.9 +1.4**
KMSC *e*PKPbc **PKiKP 05 21 30.0 0.0**
BRAL Brewton 151.53 37 *e*PKPbc **PKPbc 05 21 31.2 +1.0**
GOGA Godfrey 151.76 29 *e*PKIKP **PKPdf 05 21 25.2 +0.9**
GOGA *e* 05 21 39.8
GOGA Godfrey 151.76 29 *e*PKPdf **PKPdf 05 21 25.2 +0.9**
GOGA *e*PKPbc **PKiKP 05 21 31.2 +0.1**
GOGA *e*PKPab **PKPab 05 21 39.8 +0.2**
CMIG Matias Romero 152.12 71 PKPbc **PKPbc 05 21 33.1 +1.1**
comp=Z,2.6nm,0.6s,baz=293,slow=2.8,SNR=8.3
SIV San Ignacio 154.14 194 PKPbc **PKPbc 05 21 36.1 -0.4**
comp=Z,2.5nm,0.8s,baz=158,slow=2.6,SNR=4.2
LPAZ La Paz 154.59 178 PKP **PKPdf 05 21 31.1 +1.5**
comp=Z,2.1nm,1.0s,baz=164,slow=2.7,SNR=5.5
LPAZ PKPbc **PKiKP 05 21 39.1 +1.0**
comp=Z,1.4nm,0.7s,baz=262,slow=8.6,SNR=8.0
OTAV Otavalo 165.76 128 *e*PKPdf **PKPdf 05 21 43.7 +1.7**

NIED ***18*** *05:15:00,38.°20N×141.°80E,h32km,Mw3.7 Best double couple: M₀4.52000×10¹⁴ NP1:ϕ₀70.00000°,δ68.00000°, λ-162.00000°. NP2:ϕ₀333.00000°,δ73.00000°, λ-23.00000°.*

JMA 18 05:15:05.8±0.1,38.°24N×141.°82E,h57km±1km,M3.8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.43**	**300**	P	Pn	05 15 16.8	0.0
JIO				S	Sn	05 15 24.5	-0.2
OFUJ	**Ofunato**	**0.85**	**352**	P	Pn	05 15 21.6	-0.1
OFUJ				S	Sn	05 15 33.1	-0.3
JMK	**Ichinoseki**	**0.85**	**327**	P	Pn	05 15 22.0	+0.2
JMK				S	Sn	05 15 33.6	+0.1
JMM	**Marumori**	**0.89**	**246**	P	Pn	05 15 22.0	-0.3
JMM				S	Sn	05 15 34.0	-0.5
JOU	**Okura**	**0.92**	**278**	P	Pn	05 15 22.9	+0.2
JOU				S	Sn	05 15 35.4	+0.3
JFK	**Kawauchi**	**1.15**	**221**	P	Pn	05 15 25.4	-0.3
JFK				*e*S	Sn	05 15 40.0	-0.6
JOM	**Ohasama**	**1.30**	**342**	P	Pn	05 15 28.1	+0.4
JOM				*e*S	Sn	05 15 44.2	+0.1
JYK	**Kaneyama**	**1.33**	**301**	P	Pn	05 15 28.5	+0.4
JYK				*e*S	Sn	05 15 45.3	+0.5
JFT	**Otama**	**1.38**	**239**	P	Pn	05 15 29.3	+0.5
JFT				S	Sn	05 15 46.4	+0.4
JYS	**Shiratake**	**1.38**	**270**	P	Pn	05 15 29.3	+0.5
JYS				*e*S	Sn	05 15 46.8	+0.7
JRG	**Rokugo**	**1.48**	**322**	P	Pn	05 15 30.8	+0.7

ISCJB ***18*** *05:26:02.9±1.4,37.°23N±0.°05×141.°31E±0.°07,h6km±6km, mb3.5/3,Error ellipse: s-maj=10.2km s-min=7.4km az=17.4*
IDC ***18*** *05:26:02.7±2.0,37.°26N×141.°40E,h0km,mb3.5/3, mb1 3.6/4,mb1mx3.3/58,mbtmp3.4/4,ML3.0/1,Error ellipse: s-maj=41.2km s-min=27.6km az=64.0*
JMA ***18*** *05:26:06.3,37.°24N×141.°11E,h15km±1km,M3.4*
JMA Felt I J1.

ISC 18 05:26:05.2±1.9,37.°22N±0.°04×141.°19E±0.°09,h11km±10km, n17,σ0°49/19,mb3.6/3,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.29**	**300**	P	**Pg**	**05 26 11.3**	**+0.2**
JFK				S	**Sg**	**05 26 14.9**	**-0.1**
ONAJ	**Iwakimizuishiy**	**0.34**	**249**	P	**Pg**	**05 26 12.1**	**+0.2**
ONAJ				S	**Sg**	**05 26 16.2**	**-0.2**
JMM	**Marumori**	**0.72**	**334**	P	**Pg**	**05 26 18.9**	**-0.1**
JMM				S	**Sg**	**05 26 28.2**	**-0.2**
JFT	**Otama**	**0.74**	**294**	P	**Pg**	**05 26 19.5**	**0.0**
JFT				S	**Sg**	**05 26 28.9**	**-0.3**
JHO	**Hitachi**	**0.79**	**219**	P	**Pg**	**05 26 20.4**	**+0.1**
JHO				S	**Sg**	**05 26 30.0**	**-0.6**
JSB	**Shiboa**	**1.05**	**256**	P	**Pg**	**05 26 25.4**	**+0.1**
JSB				S	**Sb**	**05 26 38.9**	**-0.1**
MJAR	**Matsushiro Arr**	**2.48**	**255**	Pn	**Pn**	**05 26 46.4**	**+0.8**
	2.6nm,0.3s,baz=76,slow=16,SNR=22						
MJAR				Sn	**Sb**	**05 27 20.0**	**-0.5**
	5.4nm,0.3s,baz=70,slow=25,SNR=8.9						
MAT	**Matsushiro**	**2.49**	**255**	P	**Pn**	**05 26 46.6**	**+1.0**
MAT				S	**Sb**	**05 27 19.6**	**-0.9**
H11N2	**WAKE ISLAND Hy**	**28.40**	**121**	T	T	06 01 40.7	
	baz=314,slow=75,SNR=21						
H11N1	**WAKE ISLAND Hy**	**28.41**	**121**	T	T	06 01 46.8	
	baz=314,slow=75,SNR=20						
H11N3	**WAKE ISLAND Hy**	**28.41**	**121**	T	T	06 01 46.4	
	baz=314,slow=75,SNR=20						
H11S1	**WAKE ISLAND Hy**	**29.11**	**123**	T	T	06 02 41.3	
	baz=316,slow=76,SNR=7.6						
H11S3	**WAKE ISLAND Hy**	**29.11**	**123**	T	T	06 02 42.8	
	baz=316,slow=76,SNR=4.6						
H11S2	**WAKE ISLAND Hy**	**29.13**	**123**	T	T	06 02 38.3	
	baz=316,slow=76,SNR=3.3						
MKAR	**Makanchi Array**	**43.87**	**302**	P	**P**	**05 34 11.7**	**+0.3**
	0.4nm,0.6s,baz=75,slow=8.8,SNR=3.9						
KURBB	**Kurchatov Arra**	**45.75**	**308**	P	**P**	**05 34 26.1**	**-0.3**
	0.4nm,0.6s,baz=80,slow=7.9,SNR=5.0						
WRA	**Warramunga Arr**	**57.22**	**188**	P	**P**	**05 35 52.1**	**-0.4**
	0.5nm,0.7s,baz=6.4,slow=7.2,SNR=4.5						

ISCJB ***18*** *05:41:13.6±0.7,34.°79N±0.°08×138.°02E±0.°07, h266km±6km,mb2.9/2,Error ellipse: s-maj=12.6km s-min=8.4km az=164.4*
IDC ***18*** *05:41:14.2±1.0,34.°70N×137.°96E,h254km±16km,mb2.9/2, mb1 3.0/3,mb1mx2.6/43,mbtmp3.5/3,Error ellipse: s-maj=32.5km s-min=23.1km az=62.0*
JMA ***18*** *05:41:14.3±0.3,34.°82N×138.°06E,h264km±3km,M3.3*

ISC 18 05:41:14.4±1.0,34.°80N±0.°08×138.°01E±0.°06,h263km±8km, n18,σ0°68/27,Near south coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JKKG	**Kakegawa**	**0.03**	**240**	P	**Pn**	**05 41 48.2**	**+0.2**
JYN	**Shimob**	**0.82**	**32**	P	**Pn**	**05 41 50.4**	**+0.4**
TK02	**Tokai 2**	**0.88**	**194**	P	**Pn**	**05 41 50.9**	**+0.9**
JOD2	**Odawara 2**	**1.00**	**62**	P	**Pn**	**05 41 51.2**	**+0.4**
JIE	**Ise**	**1.15**	**249**	P	**Pn**	**05 41 52.0**	**+0.3**
JIE				*e*S	**S**	**05 42 20.5**	**-0.5**
JGM	**Miyama**	**1.38**	**311**	P	**Pn**	**05 41 53.3**	**+0.2**
JGM				*e*S	**S**	**05 42 23.2**	**-0.6**
JRY	**Ryogami san**	**1.42**	**31**	P	**Pn**	**05 41 54.1**	**+0.8**
JRY				S	**S**	**05 42 24.9**	**+0.7**
MJAR	**Matsushiro Arr**	**1.74**	**5**	P	**Pn**	**05 41 55.9**	**+0.1**
	8.1nm,0.3s,baz=187,slow=9.3,SNR=97						
MJAR				S	**S**	**05 42 28.3**	**-0.3**
	1.0nm,0.3s,baz=195,slow=16,SNR=3.3						
MAT	**Matsushiro**	**1.74**	**5**	P	**Pn**	**05 41 55.9**	**+0.2**
MAT				S	**S**	**05 42 28.5**	**-0.1**
MAT	**Matsushiro**	**1.74**	**5**	P	**Pn**	**05 41 56.0**	**+0.2**
MAT				S	**S**	**05 42 28.5**	**-0.1**
JAG	**Ashikaga**	**2.00**	**36**	P	**Pn**	**05 41 57.5**	**-0.4**
JAG				S	**S**	**05 42 30.3**	**-2.1**
JKG	**Kaga**	**2.01**	**318**	P	**Pn**	**05 41 58.3**	**+0.4**
JWT	**Wachi**	**2.19**	**283**	P	**Pn**	**05 41 59.6**	**0.0**
JWT				S	**S**	**05 42 34.3**	**-1.2**
JWZ	**Kozaga**	**2.29**	**237**	P	**Pn**	**05 42 00.5**	**-0.1**
BSO1	**Boso 1**	**2.45**	**93**	P	**Pn**	**05 42 00.9**	**-0.6**
BSO1				S	**S**	**05 42 38.8**	**-0.1**
JNU	**Nakatsue**	**6.16**	**256**	P	**Pn**	**05 42 44.6**	**-0.2**
	0.3nm,0.3s,baz=64,slow=6.3,SNR=3.6						
MKAR	**Makanchi Array**	**43.01**	**304**	P	**P**	**05 48 48.9**	**+0.8**
	0.2nm,0.4s,baz=83,slow=8.9,SNR=2.5						
WRA	**Warramunga Arr**	**54.55**	**184**	P	**P**	**05 50 15.4**	**-0.3**
	0.7nm,0.8s,baz=0.4,slow=7.5,SNR=13						

IDC ***18*** *06:00:16.8±0.7,54.°26S×119.°96W,h0km,mb4.0/6, mb1 4.3/6,mb1mx4.1/22,mbtmp4.0/6,MS3.8/7,Ms1 3.8/7, ms1mx3.6/15,Error ellipse: s-maj=46.6km s-min=25.7km az=152.0*

ISC 18 06:00:18.2±0.8,54.°3S±0.°3×119.°9W±0.°2,h10km,n25, σ0°93/13,mb3.9/6,MS3.8/7,Southern East Pacific Rise

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RKT	**Rikitea**	**33.12**	**334**	*e*LR	LR	06 15 56.4	
	596nm,27.5s,baz=172						
PLCA	**Paso Flores**	**35.24**	**88**	LR	LR	06 18 22.3	
	comp=Z,96nm,20.4s,baz=200,slow=31						
VNDA	**Vanda**	**35.24**	**202**	LR	LR	06 18 47.2	
	comp=Z,122nm,19.2s,baz=92,slow=32						
TBI	**Tubuai**	**38.00**	**313**	*e*LR	LR	06 18 21.1	
	355nm,27.0s,baz=158						
PPT2	**Papeete2**	**43.18**	**316**	*e*LR	LR	06 20 45.1	
	491nm,26.0s						
PPT	**Papeete**	**43.20**	**316**	LR	LR	06 22 00.4	
	comp=Z,199nm,20.4s,baz=145,slow=30						
TAOE	**Nuku Hiva Isla**	**48.12**	**333**	*e*LR	LR	06 22 56.3	
	324nm,26.8s						
CPUP	**Villa Florida**	**53.15**	**85**	LR	LR	06 28 10.7	
	comp=Z,72nm,18.7s,baz=216,slow=32						
LPAZ	**La Paz**	**54.96**	**67**	P	**P**	**06 09 49.3**	**-0.9**
	3.3nm,1.1s,baz=213,slow=6.6,SNR=7.1						
MAW	**Mawson**	**58.41**	**181**	LR	LR	06 32 38.8	
	comp=Z,59nm,21.5s,baz=230,slow=33						
H01W1	**Cape Leeuwin H**	**79.72**	**223**	T	T	07 41 18.1	
	baz=151,slow=75,SNR=50						
H01W2	**Cape Leeuwin H**	**79.72**	**223**	T	T	07 41 14.7	
	baz=151,slow=75,SNR=54						
H01W3	**Cape Leeuwin H**	**79.73**	**223**	T	T	07 41 15.9	
	baz=151,slow=75,SNR=49						
ASAR	**Alice Springs**	**80.01**	**243**	P	**P**	**06 12 28.4**	**+0.5**
	0.8nm,0.8s,baz=155,slow=5.0,SNR=4.7						
WRA	**Warramunga Arr**	**82.82**	**246**	P	**P**	**06 12 43.3**	**+0.5**
	3.8nm,1.0s,baz=143,slow=4.6,SNR=10.0						
TXAR	**Lajitas Array**	**84.45**	**14**	P	**P**	**06 12 51.2**	**+0.5**
	0.6nm,1.0s,baz=195,slow=6.5,SNR=3.4						
BOSA	**Boshof**	**92.13**	**150**	LR	LR	06 48 26.7	
	comp=Z,76nm,19.6s,baz=194,slow=31						
NVAR	**Mina Array Bea**	**92.36**	**1**	P	**P**	**06 13 28.6**	**0.0**
	0.2nm,0.4s,baz=188,slow=4.9,SNR=2.7						
NVAR				LR	LR	06 46 52.9	
	comp=Z,81nm,18.7s,baz=185,slow=30						
PDAR	**Pinedale Array**	**97.09**	**8**	P	**P**	**06 13 50.3**	**+0.2**
	0.2nm,0.6s,baz=205,slow=3.6,SNR=2.2						
ILAR	**Eielson Array**	**120.53**	**347**	PKP	**PKPdf**	**06 19 09.3**	**+0.8**
	0.4nm,0.8s,baz=174,slow=0.9,SNR=3.1						
TIXI	**Tiksi**	**146.68**	**327**	PKPbc	**PKPbc**	**06 19 58.7**	**+0.2**
	0.8nm,0.4s,baz=81,slow=2.5,SNR=6.9						
SONM	**Songino Array**	**150.63**	**277**	PKPbc	**PKPbc**	**06 20 07.7**	**-2.0**
	0.4nm,0.5s,baz=116,slow=3.4,SNR=3.1						
GERES	**GERESS Array B**	**151.08**	**82**	PKP	**PKPdf**	**06 20 05.2**	**+0.4**
	0.3nm,0.4s,baz=168,slow=5.0,SNR=5.1						
GERES				PKPbc	**PKPbc**	**06 20 10.6**	**0.0**
	1.2nm,0.8s,baz=268,slow=3.5,SNR=9.6						
BRTR	**Keskin Array B**	**157.00**	**118**	PKPab	**PKPab**	**06 20 44.8**	**+1.0**
	1.5nm,0.9s,baz=215,slow=6.5,SNR=7.0						
MKAR	**Makanchi Array**	**164.06**	**251**	PKPab	**PKPab**	**06 21 13.1**	**-1.2**
	0.4nm,0.9s,baz=126,slow=2.5,SNR=3.1						

MEX 18 06:04:51.0±0.5,15.°74N×96.°77W,h17km±24km,MD3.9, Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PANG	**Puerto Angel**	**0.29**	**103**	*e*P	Pg	06 04 56.1	-1.2
PANG				*e*S	Sg	06 05 01.0	-0.6
HUIG	**Huatulco**	**0.64**	**87**	*e*P	Pg	06 05 01.3	-2.2
HUIG				*e*S	Sg	06 05 08.8	-3.2
OXBJ	**Oaxaca**	**1.32**	**2**	*e*P	Pn	06 05 11.6	-3.3
OXBJ				*e*S	Sn	06 05 27.2	-5.2
VHO	**Vista Hermosa**	**1.33**	**1**	*e*P	Pn	06 05 11.4	-3.6
VHO				*e*S	Sn	06 05 27.3	-5.2
PNIG	**Pinotepa**	**1.46**	**297**	*e*P	Pn	06 05 13.5	-3.2
PNIG				*i* S	Sn	06 05 30.3	-5.2
TLIG	**Tlapa**	**2.50**	**317**	*e*P	Pn	06 05 28.4	-2.7
TLIG				*i* S	Sn	06 05 57.0	-4.4
PCIG		**3.42**	**90**	*e*P	Pn	06 05 41.4	-2.2
PCIG				*i* S	Sn	06 06 20.1	-3.6

CSEM ***18*** *06:08:32.1,49.°20N×60.°25E,h0km,mb3.7,Suspected Mining explosion.*
NNC ***18*** *06:08:32.1±0.3,49.°20N×60.°25E,h0km,mb3.7,mpv2.7, Error ellipse: s-maj=5.5km s-min=1.6km az=11.0, Suspected Mining explosion.*

ISC 18 06:08:31.8±3.8,49.°30N±0.°09×60.°3E±0.°2,h0km,n22, σ0°15/44,21C-1D,Western Kazakhstan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AB06	**Akbulak array**	**0.21**	**259**	⇑P	**Pg**	**06 08 35.6**	**-0.3**
AB06				⇑S	**Sg**	**06 08 38.7**	**+0.1**
AB06	**Akbulak array**	**0.21**	**259**	P	**Pg**	**06 08 35.6**	**-0.3**
AB06				S	**Sg**	**06 08 38.7**	**+0.1**
AB07	**Akbulak array**	**0.23**	**254**	⇑P	**Pg**	**06 08 36.1**	**+0.1**
AB07				⇑S	**Sg**	**06 08 39.2**	**+0.2**
AB07	**Akbulak array**	**0.23**	**254**	P	**Pg**	**06 08 36.1**	**+0.1**
AB07				S	**Sg**	**06 08 39.2**	**+0.2**
AB02	**Akbulak array**	**0.23**	**259**	⇑P	**Pg**	**06 08 36.1**	**-0.1**
AB02				⇑S	**Sg**	**06 08 39.1**	**0.0**
AB02	**Akbulak array**	**0.23**	**259**	P	**Pg**	**06 08 36.1**	**-0.1**
AB02				S	**Sg**	**06 08 39.1**	**0.0**
AB05	**Akbulak array**	**0.23**	**262**	⇑P	**Pg**	**06 08 36.0**	**-0.1**
AB05				⇑S	**Sg**	**06 08 39.0**	**-0.1**
AB05	**Akbulak array**	**0.23**	**262**	P	**Pg**	**06 08 36.0**	**-0.1**
AB05				S	**Sg**	**06 08 39.0**	**-0.1**
AB01	**Akbulak array**	**0.23**	**258**	⇑P	**Pg**	**06 08 35.9**	**-0.3**
AB01				⇑S	**Sg**	**06 08 39.2**	**0.0**
AB01	**Akbulak array**	**0.23**	**258**	P	**Pg**	**06 08 35.9**	**-0.3**
AB01				S	**Sg**	**06 08 39.2**	**0.0**
AB31	**Akbulak array**	**0.23**	**258**	⇑P	**Pg**	**06 08 36.4**	**+0.2**
	4.9nm,0.3s,baz=67,slow=17,SNR=5292						
AB31				⇑S	**Sg**	**06 08 39.3**	**+0.1**
	44nm,0.5s,baz=66,slow=35,SNR=4.7						
AB31	**Akbulak array**	**0.23**	**258**	P	**Pg**	**06 08 36.4**	**+0.2**
	4.0nm,0.3s,SNR=1000						
AB31				S	**Sg**	**06 08 39.3**	**+0.1**
	44nm,0.5s,SNR=4.7						
AB03	**Akbulak array**	**0.23**	**257**	⇑P	**Pg**	**06 08 36.1**	**-0.1**
AB03				⇑S	**Sg**	**06 08 39.3**	**+0.1**
AB03	**Akbulak array**	**0.23**	**257**	P	**Pg**	**06 08 36.1**	**-0.1**
AB03				S	**Sg**	**06 08 39.3**	**+0.1**
AB04	**Akbulak array**	**0.23**	**259**	⇑P	**Pg**	**06 08 35.9**	**-0.3**
AB04				⇑S	**Sg**	**06 08 39.4**	**+0.1**
AB04	**Akbulak array**	**0.23**	**259**	P	**Pg**	**06 08 35.9**	**-0.3**
AB04				S	**Sg**	**06 08 39.4**	**+0.1**
AB08	**Akbulak array**	**0.25**	**255**	⇑P	**Pg**	**06 08 36.4**	**-0.1**
AB08				⇑S	**Sg**	**06 08 39.7**	**+0.1**
AB08	**Akbulak array**	**0.25**	**255**	P	**Pg**	**06 08 36.4**	**-0.1**
AB08				S	**Sg**	**06 08 39.7**	**+0.1**
AB09	**Akbulak array**	**0.25**	**260**	⇑P	**Pg**	**06 08 36.4**	**-0.1**
AB09				⇑S	**Sg**	**06 08 39.7**	**0.0**
AB09	**Akbulak array**	**0.25**	**260**	P	**Pg**	**06 08 36.4**	**-0.1**
AB09				S	**Sg**	**06 08 39.7**	**0.0**
AKTO	**Aktyubinsk**	**1.86**	**308**	⇓Pn	**Pb**	**06 09 06.6**	**0.0**
	9.5nm,0.3s						
AKTO				⇑Sn	**Sg**	**06 09 31.5**	**+0.1**
	9.3nm,0.5s						
AKTO	**Aktyubinsk**	**1.86**	**308**	Pn	**Pb**	**06 09 06.6**	**0.0**
	9.5nm,0.3s						
AKTO				Sn	**Sg**	**06 09 31.5**	**+0.1**
	9.3nm,0.5s						

DJA 18 06:11:50.8±0.8,8.°S±12.°×10.°7E±.°,h45km±14km,M3.5/8, MLv3.5/8,Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CISI	**Cisompet, Garu**	**0.48**	**57**	P	Pn	06 12 02.7	+1.1
CNJI	**Cibinong**	**0.58**	**331**	P	Pn	06 12 04.0	+1.2
CNJI				S	Sn	06 12 13.8	+2.5
CMJI	**Cimerak**	**1.03**	**88**	P	Pn	06 12 08.7	-0.1
CMJI				S	Sn	06 12 22.4	+0.3
JCJI	**Jatiwangi**	**1.57**	**33**	P	Pn	06 12 13.7	-2.6
CGJI	**Cibinong**	**2.08**	**305**	P	Pn	06 12 23.1	-0.2
UGM	**Wanagama**	**3.09**	**92**	P	Pn	06 12 36.9	-0.2
PCJI	**Pacitan**	**3.75**	**96**	P	Pn	06 12 46.1	-0.1

IDC 18 06:14:58.2±2.4,30.°18S×138.°54E,h0km,mb1 3.5/4, mb1mx3.3/32,mbtmp3.3/4,ML3.0/4,Error ellipse: s-maj=64.2km s-min=14.1km az=44.0,South Australia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**3.12**	**124**	Pn	Pn	06 15 48.1	-0.5
	0.6nm,0.3s,baz=300,slow=12,SNR=12						
STKA				Pg	Pb	06 15 56.0	+1.5
	2.0nm,0.3s,baz=296,slow=16,SNR=16						
STKA				Sn	Sn	06 16 26.2	-0.3
	3.9nm,0.3s,baz=347,slow=16,SNR=6.6						
STKA				Lg	Lg	06 16 37.2	
	4.3nm,0.3s,baz=2.1,slow=22,SNR=4.8						
ASAR	**Alice Springs**	**7.70**	**326**	Pn	Pn	06 16 51.1	-0.5
	0.2nm,0.3s,baz=151,slow=12,SNR=6.5						
ASAR				Sn	Sn	06 18 20.1	+0.5
	0.3nm,0.3s,baz=154,slow=22,SNR=4.7						
WRA	**Warramunga Arr**	**10.88**	**339**	Pn	Pn	06 17 35.3	+0.1
	0.2nm,0.3s,baz=161,slow=13,SNR=11						
WRA				Sn	Sn	06 19 37.6	-0.2
	0.1nm,0.3s,baz=154,slow=22,SNR=3.4						
FITZ	**Fitzroy Crossi**	**16.81**	**313**	Pn	P	06 18 56.3	-1.0
	0.1nm,0.3s,baz=129,slow=14,SNR=3.3						

MEX 18 06:23:04.7±0.5,14.°97N×92.°75W,h73km±12km,MD3.5, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		**0.86**	**328**	*e*P	Pn	06 23 20.7	-0.9
PCIG				*i* S	Sn	06 23 32.1	-2.0
CCIG	**Comitan**	**1.43**	**24**	*i* P	Pn	06 23 28.4	-0.7
CCIG				*e*S	Sn	06 23 45.2	-2.1

IDC ***18*** *06:26:04.4±0.7,54.°08S×120.°50W,h0km,mb4.1/6, mb1 4.4/6,mb1mx4.1/24,mbtmp4.0/6,MS3.6/5,Ms1 3.6/5, ms1mx3.4/16,Error ellipse: s-maj=45.3km s-min=23.0km az=137.0*

**ISC 18 06:26:05.7±0.7,54.°1S±0.°2×120.°4W

H01W2 Cape Leeuwin H 79.63 223 T T 08 07 00.1
baz=151,slow=75,SNR=28
H01W3 Cape Leeuwin H 79.65 223 T T 08 07 01.0
baz=151,slow=75,SNR=29
ASAR Alice Springs 79.80 244 P **P** **06 38 14.3 +0.1**
1.7nm,1.0s,baz=148,slow=4.2,SNR=7.8
WRA Warramunga Arr 82.61 246 P **P** **06 38 29.7 +0.6**
6.1nm,0.9s,baz=145,slow=4.7,SNR=22
TXAR Lajitas Array 84.37 15 P **P** **06 38 37.7 -0.1**
0.4nm,0.8s,baz=193,slow=8.3,SNR=4.0
NVAR Mina Array Bea 92.20 2 P **P** **06 39 16.8 +1.6**
0.6nm,0.9s,baz=195,slow=6.5,SNR=3.0
BOSA Boshof 92.43 150 LR LR 07 19 40.3
comp=Z,28nm,18.3s,baz=194,slow=35
H11N3 WAKE ISLAND Hy 96.07 295 T T 08 27 39.6
baz=145,slow=76,SNR=5.5
H11N1 WAKE ISLAND Hy 96.08 295 T T 08 27 45.4
baz=145,slow=76,SNR=7.7
H11N2 WAKE ISLAND Hy 96.09 295 T T 08 27 44.4
baz=145,slow=76,SNR=5.0
ILAR Eielson Array 120.30 347 PKP **PKPdf** **06 44 53.9 -1.7**
0.4nm,0.8s,baz=190,slow=2.7,SNR=3.2
CMAR Chiang Mai Arr 133.34 236 PKP **PKPdf** **06 45 20.9 -1.0**
0.9nm,0.3s,baz=188,slow=3.6,SNR=4.9
TIXI Tiksi 146.37 328 PKPbc **PKPbc** **06 45 44.7 -0.4**
3.6nm,0.9s,baz=27,slow=1.5,SNR=7.8
SONM Songino Array 150.31 277 PKPbc **PKPbc** **06 45 54.2 -2.1**
0.6nm,0.6s,baz=90,slow=4.3,SNR=4.2
GERES GERESS Array B 151.37 82 PKP **PKPdf** **06 45 53.5 +0.8**
1.7nm,0.9s,baz=243,slow=2.7,SNR=5.4
GERES PKPbc **PKiKP** **06 46 00.1 +0.9**
0.4nm,0.3s,baz=222,slow=1.3,SNR=6.1
MKAR Makanchi Array 163.82 252 PKPab **PKPab** **06 47 00.4 -0.3**
0.8nm,0.8s,baz=129,slow=3.3,SNR=5.3
KURBB Kurchatov Arra 167.90 261 PKPab **PKPab** **06 47 19.6 +1.0**
0.6nm,0.9s,baz=113,slow=3.2,SNR=4.6

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*JMA **18** 06:31:49.6±0.1,25°.81N×143°.81E,h0km*
*ISCJB **18** 06:31:55.1±0.3,25°.43N±0°.03×142°.68E±0°.05,h40km,*
mb4.6/81,MS3.5/17,Error ellipse: s-maj=6.2km
s-min=4.9km az=171.5
*MOS **18** 06:31:55.0±0.9,25°.35N×142°.69E,h43km,mb4.9/43,Error*
ellipse: s-maj=12.6km s-min=6.0km az=111.6
*IDC **18** 06:31:55.7±4.2,25°.42N×142°.72E,h33km±30km,mb4.2/30,*
mb1 4.4/33,mb1mx4.3/53,mbtmp4.4/33,ML3.6/3,MS3.4/14,
Ms1 3.4/14,ms1mx3.1/51,Error ellipse: s-maj=17.2km
s-min=12.8km az=88.0
*NEIC **18** 06:31:59.4±1.2,25°.41N×142°.63E,h62km±9km,mb4.7/37,*
Error ellipse: s-maj=9.0km s-min=7.2km az=126.0
ISC 18 06:31:56.9±0.5,25°.39N±0°.05×142°.72E±0°.06,h40km,n172,
σ1$63/190,mb4.7/81,MS3.4/17,2C-3D,Volcano Islands
region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**1.76**	**344**	P	**Pn**	**06 32 24.4**	**-0.5**
CBIJ				*e*S	**Sn**	**06 32 49.9**	**+3.8**
CBIJ	**Chichi jima**	**1.76**	**344**	*e*Pn	**Pn**	**06 32 23.7**	**-1.2**
CBIJ				Sn	**Sn**	**06 32 49.0**	**+2.9**
JCJ	**Chichijima**	**1.76**	**344**	Pn	**Pn**	**06 32 24.5**	**-0.4**
	605nm,0.3s,baz=199,slow=2.9,SNR=352						
JCJ				Sn	**Sn**	**06 32 49.0**	**+2.9**
	502nm,0.3s,baz=245,slow=23,SNR=15						
JHJ	**Hachijo jima 2**	**8.11**	**342**	LR	LR	06 37 02.4	
	comp=Z,253nm,18.1s,baz=48,slow=38						
BSO1	**Boso 1**	**9.35**	**351**	S	**Sn**	**06 35 51.2**	**-1.0**
BSO4	**Boso 4**	**9.78**	**348**	P	**Pn**	**06 34 15.6**	**+0.7**
JOD2	**Odawara 2**	**10.32**	**343**	P	**Pn**	**06 34 20.9**	**-1.5**
JHU	**Hanno**	**10.84**	**345**	P	**Pn**	**06 34 26.9**	**-2.5**
JHU				*e*S	**Sn**	**06 36 30.0**	**+0.7**
INU	**Inuyama**	**11.07**	**335**	*e*Pn	**Pn**	**06 34 36.0**	**+3.4**
JRY	**Ryogami san**	**11.09**	**344**	P	**Pn**	**06 34 31.4**	**-1.4**
JRY				S	**Sn**	**06 36 36.6**	**+1.1**
MJAR	**Matsushiro Arr**	**11.77**	**342**	Pn	**Pn**	**06 34 39.6**	**-2.5**
	1.3nm,0.3s,baz=154,slow=11,SNR=5.6						
MJAR				LR	LR	06 39 09.1	
	comp=Z,130nm,18.3s,baz=170,slow=37						
MAJO	**Matsushiro**	**11.77**	**342**	*e*P	**Pn**	**06 34 45.7**	**+3.6**
MAJO	**Matsushiro**	**11.77**	**342**	*e*Pn	**Pn**	**06 34 45.7**	**+3.6**
MJB9	**Matsu-Tunnel**	**11.77**	**342**	*e*Pn	**Pn**	**06 34 45.8**	**+3.6**
JNU	**Nakatsue**	**12.88**	**309**	Pn	**Pn**	**06 34 57.5**	**+0.1**
	0.1nm,0.3s,baz=120,slow=20,SNR=2.3						
JNU				LR	LR	06 39 27.9	
	comp=Z,59nm,21.0s,baz=120,slow=35						
ERM	**Erimo**	**16.58**	**1**	*e*P	**Pn**	**06 35 46.0**	**-0.3**
TJN	**Taejon**	**17.11**	**313**	*i* P	**Pn**	**06 35 53.2**	**+0.2**
KSRS	**Korea Array**	**17.41**	**317**	P	**Pn**	**06 35 55.5**	**-1.1**
	0.4nm,0.3s,baz=127,slow=12,SNR=11						
KSRS				LR	LR	06 42 17.3	
	comp=Z,118nm,19.0s,baz=130,slow=36						
KSAR	**Wonju Array Be**	**17.42**	**317**	P	**Pn**	**06 35 55.5**	**-1.4**
KSAR	**Wonju Array Be**	**17.42**	**317**	P	**Pn**	**06 35 55.5**	**-1.4**
ASAJ	**Asahikawa**	**18.68**	**360**	P	**Pn**	**06 36 13.3**	**+1.2**
	1.2nm,0.3s,baz=152,slow=12,SNR=3.9						
YULB	**Yu-li**	**19.61**	**269**	*e*P	**Pn**	**06 36 28.8**	**+5.2**
	18nm,1.2s						
SSLB	**Suanglung**	**19.85**	**270**	*e*P	**Pn**	**06 36 31.4**	**+5.0**
	13nm,0.8s						
USRK	**Ussuriysk Ar.**	**20.69**	**338**	P	**P**	**06 36 32.5**	**-0.9**
	8.2nm,0.6s,baz=154,slow=10,SNR=16						
MDJ	**Mudanjiang**	**21.93**	**334**	*e*P	**P**	**06 36 49.6**	**+2.8**
	15nm,0.8s						
CN2	**Changchun**	**23.14**	**327**	*e*P	**P**	**06 37 00.6**	**+1.1**
CN2				*es*P	sP	06 37 17.6	+2.8
CN2				*e*S	**S**	**06 41 05.3**	**-2.8**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.6s						
CN2				pmax	pmax		
	comp=Z,200nm,3.0s						
CN2				LR	LR		
	comp=N,200nm,23.0s						
CN2				LR	LR		
	comp=E,100nm,23.0s						
CN2				LR	LR		
	comp=Z,100nm,18.0s						
TIA	**Tai'an**	**24.41**	**302**	⇓P	**P**	**06 37 10.4**	**-1.3**
TIA				pmax	pmax		
	comp=Z,40nm,0.7s						
KLR	**Kul'dur**	**25.29**	**343**	P	**P**	**06 37 19.9**	**+0.6**
	comp=Z,20nm,0.7s,baz=146,slow=8.3,SNR=48						
KLR				LR	LR	06 47 38.4	
	comp=Z,97nm,18.0s,baz=62,slow=37						
KLR	**Kul'dur**	**25.29**	**343**	P	**P**	**06 37 20.0**	**+0.6**
KLR				pmax	pmax		
	comp=Z,20nm,0.7s						
KLR				MLR	MLR		
	comp=Z,97nm,18.0s						
WHN	**Wuhan**	**25.54**	**288**	⇓P	**P**	**06 37 22.8**	**+0.9**
ENH	**Enshi**	**29.72**	**287**	*e*P	**P**	**06 37 59.3**	**-0.1**
HHC	**Hu-ho-hao-te**	**30.11**	**309**	*e*P	**P**	**06 38 03.3**	**+0.5**
HHC				S	**S**	**06 42 58.9**	**0.0**
HHC				pmax	pmax		
	comp=Z,36nm,0.9s						
HHC				pmax	pmax		
	comp=Z,220nm,4.4s						
HHC				LR	LR		
	comp=N,1μm,13.8s						
HHC				LR	LR		
	comp=E,1μm,12.8s						
HHC				LR	LR		
	comp=Z,1μm,13.6s						
XAN	**Xi'an**	**30.48**	**294**	P	**P**	**06 38 05.0**	**-1.1**
XAN				pmax	pmax		
	comp=Z,12nm,0.9s						
XAN				pmax	pmax		
	comp=Z,26nm,5.5s						
GYA	**Guiyang**	**32.38**	**280**	P	**P**	**06 38 23.3**	**+0.3**
GYA				pP	pP	06 38 34.4	+0.4
GYA				PP	**PnPn**	**06 39 31.0**	**+0.5**
GYA				PcP	**PcP**	**06 41 11.0**	**+1.0**
GYA				S	**S**	**06 43 32.6**	**-2.1**
GYA				sS	sS	06 43 54.8	+1.7
GYA				ScP	**ScP**	**06 44 50.0**	**-0.7**
GYA				SS	**SnSn**	**06 45 29.3**	**-0.1**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
GYA				pmax	pmax		
	comp=Z,110nm,5.0s						
GYA				LR	LR		
	comp=N,520nm,17.0s						
GYA				LR	LR		
	comp=E,480nm,17.3s						
GYA				LR	LR		
	comp=Z,510nm,17.6s						
CD2	**Chengdu**	**34.66**	**288**	P	**P**	**06 38 41.6**	**-1.1**
CD2				pmax	pmax		
	comp=Z,60nm,0.5s						
LZH	**Lanzhou**	**34.87**	**297**	*e*P	**P**	**06 38 44.4**	**-0.2**
LZH				pP	pP	06 38 56.0	+0.3
LZH				sP	sP	06 39 01.3	+0.8
LZH				PP	**PP**	**06 40 05.4**	**+1.4**
LZH				*e*S	**S**	**06 44 11.0**	**-2.1**
LZH				sS	sS	06 44 29.3	-2.3
LZH				SS	**SnSn**	**06 46 31.3**	**+1.7**
LZH				pmax	pmax		
	comp=Z,20nm,1.0s						
LZH				pmax	pmax		
	comp=Z,88nm,4.7s						
KMI	**Kunming**	**36.06**	**278**	P	**P**	**06 38 58.0**	**+3.0**
KMI				pmax	pmax		
	comp=Z,15nm,0.7s						
KMI				LR	LR		
	comp=Z,40nm,16.7s						
SONA1	**Songino Array**	**36.28**	**318**	*e*P	**P**	**06 38 56.6**	**+0.1**
SONM	**Songino Array**	**36.28**	**318**	P	**P**	**06 38 54.6**	**-1.9**
	comp=Z,2.2nm,0.5s,baz=129,slow=8.6,SNR=10						
SONM				LR	LR	06 53 47.2	
	comp=Z,51nm,20.4s,baz=124,slow=36						
KAPI	**Kappang**	**37.57**	**220**	*e*P	**P**	**06 39 08.1**	**+0.6**
YAK	**Yakutsk**	**37.67**	**350**	LR	LR	06 54 05.0	
	comp=Z,44nm,19.0s,baz=169,slow=35						
YAK	**Yakutsk**	**37.67**	**350**	*i* P	**P**	**06 39 07.8**	**-0.1**
YAK				pmax	pmax		
	comp=Z,14nm,0.6s						
SEY	**Seymchan**	**38.08**	**7**	⇑*i*P	**P**	**06 39 10.7**	**-0.7**
BOD	**Bodaibo**	**38.30**	**335**	*e*P	**P**	**06 39 12.1**	**-1.2**
BOD				pmax	pmax		
	comp=Z,4.0nm,0.7s						
GTA	**Gaotai**	**38.47**	**302**	*e*P	**P**	**06 39 14.4**	**-0.8**
GTA				pP	pP	06 39 25.8	-0.6
GTA				sP	sP	06 39 29.6	-1.5
GTA				S	**S**	**06 45 06.4**	**-1.5**
GTA				sS	sS	06 45 26.1	-0.4
GTA				SS	**SnSn**	**06 47 46.9**	**-10**
GTA				pmax	pmax		
	comp=Z,3.0nm,1.0s						
GTA				pmax	pmax		
	comp=Z,55nm,5.5s						
GTA				LR	LR		
	comp=N,93nm,15.7s						
GTA				LR	LR		
	comp=E,110nm,14.7s						
GTA				LR	LR		
	comp=Z,81nm,16.6s						
ZAK	**Zakamensk**	**39.21**	**320**	*e*P	**P**	**06 39 19.2**	**-2.0**
ZAK				pmax	pmax		
	comp=Z,3.0nm,1.1s						
TLY	**Talaya**	**39.56**	**322**	LR	LR	06 55 39.6	
	comp=Z,56nm,19.8s,baz=113,slow=36						
TLY	**Talaya**	**39.56**	**322**	*e*P	**P**	**06 39 26.2**	**+2.2**
TLY				pmax	pmax		
	comp=Z,4.0nm,0.6s						
TLY	**Talaya**	**39.56**	**322**	*e*P	**P**	**06 39 26.2**	**+2.2**
	comp=Z,3.7nm,0.6s						
CMAR	**Chiang Mai Arr**	**41.05**	**269**	P	**P**	**06 39 36.9**	**+0.2**
	comp=Z,3.1nm,0.6s,baz=63,slow=8.4,SNR=15						
CMAR				LR	LR	06 57 26.5	
	comp=Z,19nm,18.0s,baz=190,slow=37						
MYKOM	**Kota Tinggi**	**44.18**	**244**	*e*P	**P**	**06 40 04.0**	**+1.8**
	comp=Z,9.4nm,0.7s						
KULM	**Kulim**	**44.95**	**251**	*e*P	**P**	**06 40 09.6**	**+1.3**
	comp=Z,14nm,0.7s						
BILL	**Bilibino**	**45.01**	**12**	*i* P	**P**	**06 40 07.3**	**-0.7**
BILL				*i*		06 41 51.5	
BILL				pmax	pmax		
	comp=Z,5.0nm,1.0s						
BILL	**Bilibino**	**45.01**	**12**	*e*P	**P**	**06 40 08.0**	**0.0**
	comp=Z,3.2nm,0.6s						
WRAB	**Tennant Creek**	**45.78**	**191**	*e*P	**P**	**06 40 13.1**	**-1.6**
WRAB				pmax	pmax		
	comp=Z,24nm,0.9s						
WRAB	**Tennant Creek**	**45.78**	**191**	*e*P	**P**	**06 40 14.5**	**-0.2**
	comp=Z,14nm,0.6s						
WB2	**Warramunga Arr**	**45.79**	**191**	*e*P	**P**	**06 40 14.6**	**-0.2**
	comp=Z,13nm,0.6s						
WRA	**Warramunga Arr**	**45.79**	**191**	P	**P**	**06 40 14.5**	**-0.3**
	comp=Z,8.0nm,0.6s,baz=11,slow=8.5,SNR=52						
FITZ	**Fitzroy Crossi**	**46.32**	**203**	*e*P	**P**	**06 40 19.4**	**+0.5**
	comp=Z,7.1nm,0.9s						
TIXI	**Tiksi**	**46.95**	**354**	P	**P**	**06 40 22.3**	**-0.9**
	comp=Z,0.8nm,0.4s,baz=163,slow=6.4,SNR=2.0						
TIXI	**Tiksi**	**46.95**	**354**	*e*P	**P**	**06 40 26.0**	**+2.8**
TIXI				pmax	pmax		
	comp=Z,4.0nm,0.7s						
TIXI	**Tiksi**	**46.95**	**354**	*e*P	**P**	**06 40 26.0**	**+2.8**
	comp=Z,3.8nm,0.7s						
PSI	**Prapat**	**47.71**	**249**	*e*P	**P**	**06 40 31.2**	**+1.1**
PSI				pmax	pmax		
	comp=Z,18nm,0.6s						
PSI	**Prapat**	**47.71**	**249**	*e*P	**P**	**06 40 31.2**	**+1.1**
	comp=Z,18nm,0.6s						
WMQ	**Urumqi**	**47.97**	**307**	*e*P	**P**	**06 40 32.4**	**+0.7**
WMQ				pP	pP	06 40 43.3	+0.1
WMQ				sP	sP	06 40 50.3	+2.4
WMQ				pmax	pmax		
	comp=Z,3.0nm,0.8s						
WMQ				pmax	pmax		
	comp=Z,43nm,4.4s						
WMQ				LR	LR		
	comp=Z,14nm,26.4s						
ASAR	**Alice Springs**	**49.51**	**191**	P	**P**	**06 40 42.9**	**-0.7**
	comp=Z,0.8nm,0.5s,baz=17,slow=11,SNR=16						
ZAA0	**Zalesovo Array**	**51.09**	**320**	*e*P	**P**	**06 40 54.3**	**-0.9**
ZALV	**Zalesovo Beam**	**51.09**	**320**	P	**P**	**06 40 53.1**	**-2.1**
	comp=Z,2.5nm,0.6s,baz=109,slow=6.6,SNR=4.8						
ZALV				PcP	**PcP**	**06 42 10.3**	**-0.3**
	comp=Z,3.2nm,0.8s,baz=96,slow=2.9,SNR=4.3						
ZALV				LR	LR	07 03 10.5	
	comp=Z,52nm,18.3s,baz=74,slow=37						
ZALV	**Zalesovo Beam**	**51.09**	**320**	*i* P	**P**	**06 40 56.0**	**+0.8**
ZALV				pmax	pmax		
	comp=Z,2.0nm,0.4s						
MK01	**Makanchi Array**	**51.92**	**311**	*e*P	**P**	**06 41 00.4**	**-1.2**
MK31	**Makanchi Array**	**51.93**	**311**	*e*P	**P**	**06 41 00.8**	**-0.9**
MK31	**Makanchi Array**	**51.93**	**311**	*e*P	**P**	**06 41 00.8**	**-0.9**
MKAR	**Makanchi Array**	**51.93**	**311**	P	**P**	**06 41 00.6**	**-1.1**
	comp=Z,2.5nm,0.6s,baz=92,slow=9.1,SNR=26						
MKAR				PcP	**PcP**	**06 42 13.9**	**0.0**
	comp=Z,2.4nm,0.6s,baz=82,slow=6.2,SNR=8.1						
MKAR				LR	LR	07 04 25.0	
	comp=Z,38nm,18.4s,baz=92,slow=38						
MAKZ	**Makanchi**	**52.15**	**311**	*e*P	**P**	**06 41 02.5**	**-0.8**
MAKZ				pmax	pmax		
	comp=Z,9.0nm,1.5s						
MAKZ	**Makanchi**	**52.15**	**311**	*e*P	**P**	**06 41 02.5**	**-0.8**
	comp=Z,9.1nm,1.5s						
NVS	**Novosibirsk**	**52.15**	**321**	*e*P	**P**	**06 41 00.3**	**-2.8**
NRIK	**Noril'sk**	**54.40**	**339**	P	**P**	**06 41 19.6**	**+0.1**
	comp=Z,14nm,0.6s,baz=110,slow=9.5,SNR=28						
KURK	**Kurchatov**	**54.52**	**315**	*e*P	**P**	**06 41 19.6**	**-1.0**
KURK				pmax	pmax		
	comp=Z,10.0nm,0.7s						
KURK	**Kurchatov**	**54.52**	**315**	*e*P	**P**	**06 41 19.6**	**-1.0**
	comp=Z,10nm,0.7s						
CAST	**Castle Rocks**	**56.53**	**29**	*e*P	**P**	**06 41 35.1**	**+0.2**
	comp=Z,5.8nm,0.7s						
TKM2	**Tokmak 2**	**56.79**	**306**	*e*P	**P**	**06 41 38.0**	**+0.6**
TKM2				pmax	pmax		
	comp=Z,2.0nm,0.5s						
TKM2	**Tokmak 2**	**56.79**	**306**	*e*P	**P**	**06 41 38.0**	**+0.6**
	comp=Z,2.4nm,0.5s						
STKA	**Stephens Creek**	**56.96**	**181**	P	**P**	**06 41 37.7**	**-0.5**
	comp=Z,3.0nm,0.7s,baz=11,slow=10,SNR=3.9						
BPAW	**Bear Paw Mtn.**	**57.12**	**29**	*e*P	**P**	**06 41 38.8**	**-0.3**
	comp=Z,2.6nm,1.5s						
TRF	**Thorofare Moun**	**57.33**	**29**	*e*P	**P**	**06 41 41.0**	**+0.2**
	comp=Z,8.1nm,0.8s						
MLY	**Manley**	**57.39**	**28**	*e*P	**P**	**06 41 41.7**	**+0.7**
	comp=Z,10nm,1.6s						
AAK	**Ala-Archa**	**57.63**	**306**	LR	LR	07 06 45.9	
	comp=Z,27nm,18.1s,baz=60,slow=36						
RND	**Reindeer**	**57.96**	**30**	*e*P	**P**	**06 41 44.4**	**-0.7**
RND				pmax	pmax		
	comp=Z,5.0nm,0.8s						
RND	**Reindeer**	**57.96**	**30**	*e*P	**P**	**06 41 44.4**	**-0.7**
	comp=Z,5.2nm,0.8s						
MCK	**McKinley**	**57.97**	**29**	*e*P	**P**	**06 41 44.9**	**-0.2**
MCK				pmax	pmax		
	comp=Z,7.0nm,0.9s						
MCK	**McKinley**	**57.97**	**29**	*e*P	**P**	**06 41 44.9**	**-0.2**
	comp=Z,6.7nm,0.9s						
COLD	**Coldfoot**	**58.00**	**25**	*e*P	**P**	**06 41 46.5**	**+1.3**
	comp=Z,3.2nm,0.8s						
ILAR	**Eielson Array**	**58.98**	**28**	P	**P**	**06 41 50.7**	**-1.3**
	comp=Z,3.1nm,0.7s,baz=260,slow=5.8,SNR=26						
ILB	**Eielson Array**	**58.98**	**28**	*e*P	**P**	**06 41 51.0**	**-1.0**
IL1	**Eielson Array**	**58.98**	**28**	*e*P	**P**	**06 41 50.7**	**-1.4**
BRVK	**Borovoye**	**59.68**	**318**	*e i*P	**P**	**06 41 56.4**	**-0.7**
BRVK				pmax	pmax		
	comp=Z,18nm,0.7s						
BRVK	**Borovoye**	**59.68**	**318**	*e*P	**P**	**06 41 56.7**	**-0.4**
	comp=Z,18nm,0.7s						
DOT	**Dot Lake**	**60.12**	**30**	*e*P	**P**	**06 41 59.7**	**-0.3**
	comp=Z,60nm,2.0s						
ZRNK	**Zerenda**	**60.46**	**318**	*e*P	**P**	**06 42 01.9**	**-0.5**
ZRNK				pmax	pmax		
	comp=Z,12nm,0.8s						
ZRNK	**Zerenda**	**60.46**	**318**	*e*P	**P**	**06 42 01.9**	**-0.5**
	comp=Z,12nm,0.8s						
KKAR	**Karatay Array**	**60.47**	**307**	*e*P	**P**	**06 42 02.3**	**-0.4**
KKAR	**Karatay Array**	**60.47**	**307**	*e*P	**P**	**06 42 02.3**	**-0.4**
PALK	**Pallekele**	**61.66**	**264**	LR	LR	07 07 24.9	
	comp=Z,49nm,19.0s,baz=116,slow=34						
KBL	**Kabul**	**63.22**	**297**	*e*P	**P**	**06 42 22.0**	**+0.4**
KBL				pmax	pmax		
	comp=Z,16nm,0.8s						
KBL	**Kabul**	**63.22**	**297**	*e*P	**P**	**06 42 22.0**	**+0.4**
	comp=Z,16nm,0.8s						
INK	**Inuvik**	**64.38**	**24**	P	**P**	**06 42 27.6**	**-0.7**
	comp=Z,2.2nm,0.6s,baz=302,slow=6.6,SNR=17						
INK	**Inuvik**	**64.38**	**24**	*e*P	**P**	**06 42 28.0**	**-0.3**
INK	**Inuvik**	**64.38**	**24**	*e*P	**P**	**06 42 28.0**	**-0.3**
INK				*ep*P	**pP**	**06 42 35.1**	**-5.1**
ARU	**Arti**	**66.06**	**323**	P	**P**	**06 42 39.3**	**-0.1**
	comp=Z,19nm,0.6s,baz=92,slow=2.2,SNR=33						
ARU	**Arti**	**66.06**	**323**	*d i*P	**P**	**06 42 39.1**	**-0.3**
ARU						06 45 06.2	
ARU				S	**S**	**06 51 28.4**	**+3.8**
ARU				SS	**SS**	**06 55 39.1**	**-0.8**
ARU				pmax	pmax		
	comp=Z,18nm,0.7s						
ARU	**Arti**	**66.06**	**323**	*e*P	**P**	**06 42 39.3**	**-0.1**
	comp=Z,18nm,0.7s						
ABKAR	**Akbulak array**	**66.63**	**315**	*e*P	**P**	**06 42 42.5**	**-0.7**
AKTO	**Aktyubinsk**	**67.59**	**316**	P	**P**	**06 42 48.7**	**-0.6**
	comp=Z,7.6nm,0.7s,baz=86,slow=8.4,SNR=27						
GEYT	**Alibeck**	**70.83**	**304**	P	**P**	**06 43 09.1**	**-0.5**
	comp=Z,2.6nm,0.7s,baz=145,slow=3.6,SNR=5.5						
SPITS	**Spitsbergen Ar**	**72.14**	**350**	P	**P**	**06 43 16.8**	**0.0**
	comp=Z,1.0nm,0.4s,baz=118,slow=7.9,SNR=9.3						
YKA	**Yellowknife Ar**	**73.41**	**28**	P	**P**	**06 43 23.8**	**-0.7**
	comp=Z,1.7nm,0.8s,baz=291,slow=5.7,SNR=19						
YKB5	**Yellowknife Ar**	**73.41**	**28**	*e*P	**P**	**06 43 22.8**	**-1.8**
KLMR	**Klimovskoe**	**74.29**	**330**	*e*P	**P**	**06 43 30.9**	**+1.2**
KLMR				pmax	pmax		
	comp=Z,12nm,1.3s						
ARCES	**ARCESS Array B**	**75.30**	**341**	P	**P**	**06 43 36.0**	**+0.6**
	comp=Z,5.8nm,0.8s,baz=67,slow=9.7,SNR=20						
F04A	**Amboy**	**75.41**	**46**	*e*P	**P**	**06 43 39.2**	**+2.7**
	comp=Z,1.1nm,1.1s						
OBN	**Obninsk**	**78.20**	**326**	*i* P	**P**	**06 43 50.3**	**-1.7**
OBN				pmax	pmax		
	comp=Z,3.0nm,0.9s						
ZEI	**Tsey**	**79.25**	**312**	*e*P	**P**	**06 43 57.6**	**-0.7**
ZEI				pmax	pmax		
	comp=Z,8.0nm,0.5s						
KBZ	**Khabaz**	**79.52**	**313**	P	**P**	**06 44 00.0**	**+0.6**
	comp=Z,6.2nm,0.6s,baz=111,slow=2.9,SNR=17						
KIV	**Kislovodsk**	**79.56**	**314**	*e*P	**P**	**06 43 57.9**	**-2.0**
KIV				pmax	pmax		
	comp=Z,7.0nm,0.9s						
KIV				MLR	MLR		
	comp=Z,37nm,19.0s						
FIA1	**FINESS Array S**	**79.68**	**334**	*e*P	**P**	**06 43 59.6**	**-0.4**
FINES	**FINESS Array B**	**79.68**	**334**	P	**P**	**06 43 59.8**	**-0.2**
	comp=Z,9.4nm,0.5s,baz=61,slow=4.8,SNR=21						
NVAR	**Mina Array Bea**	**81.19**	**52**	P	**P**	**06 44 08.2**	**-0.8**
	comp=Z,0.7nm,0.7s,baz=302,slow=5.3,SNR=5.3						
LRM	**Limekiln Ridge**	**81.78**	**43**	*e*P	**P**	**06 44 12.0**	**+0.1**
YMR	**Madison River**	**83.26**	**44**	*e*P	**P**	**06 44 22.6**	**+3.0**
	comp=Z,4.3nm,0.9s						
RLMT	**Red Lodge**	**84.08**	**43**	*e*P	**P**	**06 44 24.8**	**+1.0**
	comp=Z,11nm,1.7s						
AKASG	**Malin Array Be**	**84.27**	**324**	P	**P**	**06 44 23.6**	**-0.7**
	comp=Z,5.8nm,0.4s,baz=51,slow=5.3,SNR=27						
AKBB	**Malin Array Si**	**84.27**	**324**	*e*P	**P**	**06 44 24.0**	**-0.4**
AKBB				pmax	pmax		
	comp=Z,13nm,0.6s						
AKBB	**Malin Array Si**	**84.27**	**324**	*e*P	**P**	**06 44 24.0**	**-0.4**
	comp=Z,12nm,0.6s						
KIEV	**Kiev**	**84.28**	**324**	*e*P	**P**	**06 44 23.1**	**-1.3**
KIEV				pmax	pmax		
	comp=Z,7.0nm,0.5s						
KIEV	**Kiev**	**84.28**	**324**	*e*P	**P**	**06 44 23.2**	**-1.2**
	comp=Z,11nm,0.5s						
AK11	**Malin Array Si**	**84.31**	**324**	*e*P	**P**	**06 44 23.9**	**-0.6**
JLU	**Jordanelle**	**84.92**	**47**	*e*P	**P**	**06 44 28.7**	**+0.5**
	comp=Z,11nm,1.6s						
PDAR	**Pinedale Array**	**85.08**	**45**	P	**P**	**06 44 28.4**	**-0.6**
	comp=Z,0.4nm,0.8s,baz=274,slow=4.0,SNR=4.1						
NC405	**NORSAR Array S**	**85.14**	**338**	*e*P	**P**	**06 44 28.1**	**-0.5**
HFS	**Hagfors**	**85.17**	**337**	P	**P**	**06 44 27.8**	**-0.9**
	comp=Z,5.5nm,0.6s,baz=64,slow=6.6,SNR=9.7						
NC204	**NORSAR Array S**	**85.34**	**339**	*e*P	**P**	**06 44 29.3**	**-0.3**
NB2	**NORSAR Subarra**	**85.36**	**339**	P	**P**	**06 44 28.6**	**-1.1**
	comp=Z,3.0nm,0.6s,baz=45,slow=4.8						
NB2	**NORSAR Subarra**

LPAZ	**La Paz**	**149.84**	**79**	PKPbc	**PKPbc**	**06 51 44.0**	**-0.1**
	comp=Z,5.8nm,0.9s,baz=342,slow=5.2,SNR=18						
LPAZ	**La Paz**	**149.84**	**79**	*e*PKPbc	**PKPbc**	**06 51 44.3**	**+0.1**
SAML	**Samuel**	**150.44**	**61**	*e*PKPbc	**PKPbc**	**06 51 44.4**	**-0.5**
LVC	**Limon Verde**	**151.01**	**91**	*e*PKPbc	**PKPbc**	**06 51 48.6**	**+2.1**

*ATH **18** 06:32:25.2, 41°.26N×19°.39E, h18km±3km, ML3.0/6, Error ellipse: s-maj=7.3km s-min=1.6km az=326.0*
*ROM **18** 06:32:26.6±0.3, 41°.21N×19°.44E, h10km±2km, Md3.1/11, Ml3.1/10, Error ellipse: s-maj=1.5km s-min=1.1km az=149.0*
*THE **18** 06:32:27.8, 41°.24N×19°.45E, h13km±2km, ML3.0/6, Error ellipse: s-maj=2.1km s-min=0.8km az=268.0*
*ISCJB **18** 06:32:27.7±0.5, 41°.22N±0°.02×19°.43E±0°.02, h20km±4km, Error ellipse: s-maj=2.7km s-min=2.3km az=0.4*
*PDG **18** 06:32:27.4±0.7, 41°.24N×19°.54E, h10km±1km, ML3.2/10, Error ellipse: s-maj=0.7km s-min=1.0km az=0.0*
*CSEM **18** 06:32:28.3±0.1, 41°.22N×19°.44E, h20km, ML3.9/9, Error ellipse: s-maj=2.8km s-min=2.5km az=56.0*
*TIR **18** 06:32:28.2±1.6, 41°.23N×19°.43E, h18km±22km, ML3.3*
*BEO **18** 06:32:30.6±0.3, 41°.49N×19°.99E, h2km±2km, M2.6/1*

ISC 18 06:32:26.9±0.9, 41°.22N±0°.01×19°.49E±0°.01, h16km±7km, n159, σ1°.09/261, 20C-14D, Albania

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TIR	**Tirane**	**0.31**	**65**	*i* PG	**Pg**	**06 32 33.3**	**-0.3**
TIR				*i* SG	**Sb**	**06 32 39.6**	**+0.5**
TIR	**Tirane**	**0.31**	**65**	⇑*i* P	**Pg**	**06 32 33.2**	**-0.3**
TIR				S	**Sb**	**06 32 39.8**	**+0.7**
TIR	**Tirane**	**0.31**	**65**	*e*Pg	**Pg**	**06 32 33.3**	**-0.3**
TIR	**Tirane**	**0.31**	**65**	Pg	**Pg**	**06 32 33.2**	**-0.3**
TIR				Sg	**Sb**	**06 32 39.8**	**+0.7**
	1μm,0.4s						
TIR	**Tirane**	**0.31**	**65**	P	**Pg**	**06 32 33.3**	**-0.3**
TIR				S	**Sg**	**06 32 37.5**	**-0.5**
TIR				Sg	**Sb**	**06 32 39.8**	**+0.7**
	1μm,0.4s						
TIR	**Tirane**	**0.31**	**65**	P	**Pg**	**06 32 33.1**	**-0.4**
TIR				S	**Sg**	**06 32 37.5**	**-0.5**
TIR				AML	AML	06 32 40.2	
	comp=N,6214μm,0.5s						
TIR				AML	AML	06 32 41.3	
	comp=E,5664μm,0.3s						
ULC	**Ulcinj**	**0.77**	**346**	⇓*i* Pg	**Pg**	**06 32 41.6**	**-0.3**
ULC				*e*Sg	**Sn**	**06 32 54.1**	**-0.3**
ULC	**Ulcinj**	**0.77**	**346**	P	**Pg**	**06 32 41.6**	**-0.3**
ULC				*e*Sg	**Sn**	**06 32 54.1**	**-0.3**
DRME	**Dracevica, Mon**	**0.99**	**347**	⇓*i* Pg	**Pb**	**06 32 45.9**	**+0.1**
DRME				*e*Sg	**Sn**	**06 33 01.6**	**+1.6**
DRME	**Dracevica, Mon**	**0.99**	**347**	⇓*i* Pg	**Pb**	**06 32 45.9**	**+0.1**
DRME				*e*Sg	**Sn**	**06 33 01.6**	**+1.6**
OHR	**Ohrid**	**1.00**	**96**	*i* Pg	**Pg**	**06 32 46.3**	**0.0**
OHR				*i* Sg	**Sn**	**06 33 00.1**	**0.0**
OHR	**Ohrid**	**1.00**	**96**	*i* Pg	**Pg**	**06 32 46.2**	**0.0**
OHR				*i* Sg	**Sn**	**06 33 00.1**	**0.0**
BUM	**Brajici-Budva**	**1.17**	**338**	⇓*i* Pg	**Pb**	**06 32 48.9**	**+0.1**
BUM				*e*Sg	**Sg**	**06 33 07.2**	**+2.4**
BUM	**Brajici-Budva**	**1.17**	**338**	⇓*i* Pg	**Pb**	**06 32 48.9**	**+0.1**
BUM				*e*Sg	**Sg**	**06 33 07.2**	**+2.4**
PDG	**Podgorica**	**1.22**	**352**	⇓*i* P	**Pb**	**06 32 49.7**	**0.0**
PDG	**Podgorica**	**1.22**	**352**	S	**Sg**	**06 33 08.5**	**+2.0**
PDG	**Podgorica**	**1.22**	**352**	P	**Pn**	**06 32 49.6**	**+0.2**
PDG				S	**Sg**	**06 33 06.3**	**-0.2**
PDG	**Podgorica**	**1.22**	**352**	*e*Pg	**Pn**	**06 32 49.5**	**+0.2**
PDG				*e*Sg	**Sg**	**06 33 06.5**	**0.0**
PDG	**Podgorica**	**1.22**	**352**	Pg	**Pn**	**06 32 49.6**	**+0.2**
PDG				Sg	**Sn**	**06 33 06.0**	**+0.4**
	comp=E,256nm,0.4s						
PDG	**Podgorica**	**1.22**	**352**	P	**Pn**	**06 32 49.6**	**+0.2**
PDG				Sg	**Sn**	**06 33 06.0**	**+0.4**
	comp=E,256nm,0.4s						
PDG				S	**Sg**	**06 33 06.3**	**-0.2**
TTG	**Podgorica**	**1.22**	**352**	⇑*i* Pg	**Pb**	**06 32 49.7**	**0.0**
TTG				*e*Sg	**Sg**	**06 33 08.6**	**+2.0**
MESG	**Mesagne**	**1.39**	**244**	Pg	**Pn**	**06 32 51.2**	**-0.5**
MESG				Sg	**Sn**	**06 33 09.5**	**-0.2**
	comp=E,351nm,0.3s						
MESG	**Mesagne**	**1.39**	**244**	Pg	**Pn**	**06 32 51.2**	**-0.5**
MESG				Sg	**Sn**	**06 33 09.5**	**-0.2**
	comp=E,351nm,0.3s						
CEME	**Cevo**	**1.39**	**342**	⇑*i* Pg	**Pn**	**06 32 52.2**	**+0.4**
CEME				*e*Sg	**Sg**	**06 33 14.6**	**+2.6**
CEME	**Cevo**	**1.39**	**342**	⇑*i* Pg	**Pn**	**06 32 52.2**	**+0.4**
BIA	**Bitola**	**1.40**	**98**	P	**Pb**	**06 32 52.6**	**-0.2**
BIA				S	**Sg**	**06 33 12.4**	**+0.2**
BIA	**Bitola**	**1.40**	**98**	*i* Pn	**Pb**	**06 32 52.6**	**-0.2**
BIA				*i* Sn	**Sg**	**06 33 12.8**	**+0.6**
BIA	**Bitola**	**1.40**	**98**	P	**Pb**	**06 32 52.6**	**-0.2**
BIA				S	**Sg**	**06 33 12.4**	**+0.2**
PVY	**Plav**	**1.42**	**14**	⇑*i* Pg	**Pg**	**06 32 54.0**	**-0.3**
PVY				*e*Sg	**Sg**	**06 33 15.1**	**+2.3**
PVY	**Plav**	**1.42**	**14**	⇑*i* Pg	**Pg**	**06 32 54.0**	**-0.3**
PVY				*e*Sg	**Sg**	**06 33 15.1**	**+2.3**
NEST	**Nestorio**	**1.43**	**124**	P	**Pb**	**06 32 53.5**	**+0.2**
NEST				S	**Sg**	**06 33 13.1**	**0.0**
NEST	**Nestorio**	**1.43**	**124**	P	**Pb**	**06 32 53.5**	**+0.2**
NEST				S	**Sg**	**06 33 13.1**	**0.0**
NEST	**Nestorio**	**1.43**	**124**	P	**Pg**	**06 32 54.4**	**-0.1**
NEST				S	**Sg**	**06 33 14.4**	**+1.3**
NEST				AML	AML	06 33 16.4	
	comp=E,500μm,0.7s						
NEST				AML	AML	06 33 18.0	
	comp=N,656μm,0.3s						
HCY	**Herceg Novi**	**1.44**	**329**	⇓*i* Pg	**Pn**	**06 32 52.5**	**+0.2**
HCY				*e*Sg	**Sg**	**06 33 15.5**	**+2.2**
HCY	**Herceg Novi**	**1.44**	**329**	*e*Pn	**Pn**	**06 32 52.2**	**-0.1**
HCY	**Herceg Novi**	**1.44**	**329**	⇓*i* Pg	**Pn**	**06 32 52.5**	**+0.2**
FNA	**Florina**	**1.49**	**106**	P	**Pb**	**06 32 54.2**	**-0.2**
FNA				S	**Sg**	**06 33 14.3**	**-0.8**
FNA	**Florina**	**1.49**	**106**	P	**Pb**	**06 32 54.4**	**+0.1**
FNA				S	**Sg**	**06 33 14.3**	**-0.8**
FNA	**Florina**	**1.49**	**106**	P	**Pb**	**06 32 54.4**	**+0.1**
FNA				AML	AML	06 33 16.6	
	comp=N,1473μm,0.5s						
FNA				AML	AML	06 33 17.6	
	comp=E,1520μm,0.3s						
KEK	**Kerkira**	**1.52**	**171**	P	**Pb**	**06 32 54.3**	**-0.5**
KEK				S	**Sb**	**06 33 15.1**	**+1.3**
KEK	**Kerkira**	**1.52**	**171**	Pg	**Pb**	**06 32 54.2**	**-0.5**
KEK				Sg	**Sb**	**06 33 14.7**	**+0.9**
	comp=E,188nm,0.3s						
KEK	**Kerkira**	**1.52**	**171**	P	**Pb**	**06 32 54.3**	**-0.5**
KEK				Sg	**Sb**	**06 33 14.7**	**+0.9**
	comp=E,188nm,0.3s						
KEK				S	**Sb**	**06 33 15.1**	**+1.3**
PEJK	**Peje**	**1.54**	**22**	P	**Pb**	**06 32 55.7**	**+0.5**
PEJK				S	**Sg**	**06 33 17.7**	**+1.1**
NKME	**Niksic**	**1.60**	**346**	⇓*i* Pn	**Pb**	**06 32 55.9**	**-0.2**
NKME				*e*Sn	**Sg**	**06 33 19.9**	**+1.4**
NKME	**Niksic**	**1.60**	**346**	⇓*i* Pn	**Pb**	**06 32 55.9**	**-0.2**
PENT	**Pentalofos**	**1.62**	**129**	P	**Pb**	**06 32 56.2**	**-0.3**
PENT	**Pentalofos**	**1.62**	**129**	P	**Pb**	**06 32 56.2**	**-0.3**
PENT				S	**Sg**	**06 33 18.5**	**-0.6**
PENT	**Pentalofos**	**1.62**	**129**	P	**Pb**	**06 32 56.9**	**+0.4**
PENT				S	**Sg**	**06 33 18.5**	**-0.6**
PENT				AML	AML	06 33 24.5	
	comp=N,546μm,0.5s						
PENT				AML	AML	06 33 25.4	
	comp=E,321μm,0.4s						
NKY	**Niksic**	**1.64**	**347**	⇓*i* Pn	**Pb**	**06 32 56.5**	**-0.3**
NKY				*e*Sn	**Sg**	**06 33 20.5**	**+0.8**
NKY	**Niksic**	**1.64**	**347**	⇓*i* Pn	**Pb**	**06 32 56.5**	**-0.3**
SKO	**Skopje**	**1.65**	**62**	P	**Pb**	**06 32 56.4**	**-0.5**
SKO	**Skopje**	**1.65**	**62**	*i* Pn	**Pb**	**06 32 56.6**	**-0.4**
SKO				*i* Sn	**Sb**	**06 33 18.3**	**+0.8**
SKO	**Skopje**	**1.65**	**62**	*i* Pn	**Pb**	**06 32 56.5**	**-0.5**
SKO				*i* Sn	**Sb**	**06 33 18.3**	**+0.8**
BEY	**Berane**	**1.68**	**10**	P	**Pb**	**06 32 58.0**	**+0.4**
IVA	**Berane**	**1.68**	**10**	⇑*i* Pn	**Pb**	**06 32 58.0**	**+0.4**
IVA				*e*Sn	**Sg**	**06 33 21.8**	**+0.7**
SGD	**Sagiada**	**1.70**	**160**	P	**Pb**	**06 32 57.4**	**-0.4**
	comp=E,440nm,0.2s						
SGD				S	**Sb**	**06 33 19.6**	**+0.6**
SGD	**Sagiada**	**1.70**	**160**	P	**Pb**	**06 32 57.4**	**-0.4**
	comp=E,440nm,0.2s						
SGD				S	**Sb**	**06 33 19.6**	**+0.6**
SGD	**Sagiada**	**1.70**	**160**	P	**Pb**	**06 32 58.4**	**+0.6**
TREB	**Trebinje**	**1.72**	**331**	*e*Pn	**Pn**	**06 32 56.1**	**-0.2**
IGT	**Igoumenitsa**	**1.80**	**159**	P	**Pn**	**06 32 58.4**	**+1.0**
IGT	**Igoumenitsa**	**1.80**	**159**	P	**Pn**	**06 32 58.4**	**+1.0**
IGT				S	**Sb**	**06 33 22.8**	**+0.9**
IGT	**Igoumenitsa**	**1.80**	**159**	P	**Pn**	**06 32 58.2**	**+0.8**
IGT				S	**Sb**	**06 33 22.8**	**+0.9**
IGT				AML	AML	06 33 29.8	
	comp=E,467μm,0.7s						
IGT				AML	AML	06 33 30.8	
	comp=N,425μm,0.3s						
TAR1	**Taranto**	**1.81**	**248**	*e*Pn	**Pg**	**06 33 01.2**	**-0.4**
BRY	**Bratogost**	**1.82**	**338**	⇓*i* Pn	**Pb**	**06 32 59.9**	**-0.1**
BRY				*e*Sn	**Sg**	**06 33 25.8**	**+0.1**
BRY	**Bratogost**	**1.82**	**338**	⇓*i* Pn	**Pb**	**06 32 59.9**	**-0.1**
JAN	**Janina**	**1.88**	**146**	P	**Pb**	**06 32 59.8**	**-1.0**
JAN	**Janina**	**1.88**	**146**	P	**Pb**	**06 32 59.8**	**-1.0**
NOCI	**Noci**	**1.88**	**258**	Pg	**Pn**	**06 32 58.9**	**+0.4**
NOCI				Sg	**Sn**	**06 33 22.4**	**+0.5**
	comp=N,219nm,0.2s						
NOCI	**Noci**	**1.88**	**258**	Pg	**Pn**	**06 32 58.9**	**+0.4**
NOCI				Sg	**Sn**	**06 33 22.4**	**+0.5**
	comp=N,219nm,0.2s						
KPRO	**Kipourio**	**1.91**	**131**	P	**Pn**	**06 33 00.0**	**+1.1**
KPRO				S	**Sb**	**06 33 24.9**	**-0.1**
KPRO	**Kipourio**	**1.91**	**131**	P	**Pn**	**06 33 00.0**	**+1.1**
KPRO				S	**Sb**	**06 33 24.9**	**-0.1**
KPRO	**Kipourio**	**1.91**	**131**	P	**Pb**	**06 33 00.7**	**-0.7**
KPRO				AML	AML	06 33 39.3	
	comp=N,338μm,0.8s						
KPRO				AML	AML	06 33 40.4	
	comp=E,487μm,0.7s						
GJIK	**Gjilan**	**1.91**	**49**	P	**Pb**	**06 33 00.9**	**-0.6**
KZN	**Kozani**	**1.96**	**117**	P	**Pn**	**06 33 00.9**	**+1.3**
KZN				S	**Sb**	**06 33 26.8**	**+0.3**
KZN	**Kozani**	**1.96**	**117**	P	**Pn**	**06 33 00.9**	**+1.3**
KZN				S	**Sb**	**06 33 26.8**	**+0.3**
BAI	**Bari**	**1.97**	**268**	*e*Pn	**Pn**	**06 32 59.8**	**+0.1**
BAI				*e*Sn	**Sn**	**06 33 22.8**	**-1.3**
UPM	**Unac-Piva**	**2.03**	**348**	⇑*i* Pn	**Pb**	**06 33 03.5**	**-0.1**
UPM				*e*Sn	**Sg**	**06 33 30.8**	**-1.5**
UPM	**Unac-Piva**	**2.03**	**348**	*e*Pn	**Pb**	**06 33 03.5**	**-0.3**
PLE	**Pljevlja**	**2.11**	**358**	⇑*i* Pn	**Pb**	**06 33 04.2**	**-0.7**
PLE				*e*Sn	**Sb**	**06 33 32.6**	**+1.6**
PLE	**Pljevlja**	**2.11**	**358**	⇑*i* Pn	**Pb**	**06 33 04.2**	**-0.7**
LTRZ	**Laterza**	**2.11**	**254**	Pg	**Pn**	**06 33 02.1**	**+0.4**
LTRZ				Sg	**Sn**	**06 33 27.9**	**+0.3**
	comp=E,96nm,0.5s						
LTRZ	**Laterza**	**2.11**	**254**	Pg	**Pn**	**06 33 02.1**	**+0.4**
LTRZ				Sg	**Sn**	**06 33 27.9**	**+0.3**
	comp=E,96nm,0.5s						
SG1	**Sgolgore (BA)**	**2.16**	**261**	*e*Pn	**Pg**	**06 33 07.3**	**-1.0**
MATE	**Matera**	**2.18**	**256**	⇑*i* P	**Pn**	**06 33 04.3**	**+1.7**
MATE	**Matera**	**2.18**	**256**	S	**Sb**	**06 33 34.9**	**+2.1**
MATE	**Matera**	**2.18**	**256**	Pg	**Pn**	**06 33 03.2**	**+0.6**
MATE				Sg	**Sn**	**06 33 29.5**	**+0.2**
MATE	**Matera**	**2.18**	**256**	Pg	**Pn**	**06 33 03.2**	**+0.6**
MATE	**Matera**	**2.18**	**256**	⇑*i* P	**Pn**	**06 33 04.3**	**+1.7**
MATE				Sg	**Sn**	**06 33 29.5**	**+0.2**
AMUR	**Altamura**	**2.20**	**263**	Pg	**Pn**	**06 33 03.5**	**+0.6**
AMUR				Sg	**Sn**	**06 33 29.7**	**-0.1**
	comp=E,93nm,0.3s						
AMUR	**Altamura**	**2.20**	**263**	Pg	**Pn**	**06 33 03.5**	**+0.6**
AMUR				Sg	**Sn**	**06 33 29.7**	**-0.1**
	comp=E,93nm,0.3s						
GRG	**Griva**	**2.22**	**96**	P	**Pn**	**06 33 04.2**	**+1.1**
GRG				S	**Sb**	**06 33 32.6**	**-1.3**
GRG	**Griva**	**2.22**	**96**	P	**Pn**	**06 33 04.2**	**+1.1**
GRG				S	**Sb**	**06 33 32.6**	**-1.3**
GRG	**Griva**	**2.22**	**96**	P	**Pn**	**06 33 03.7**	**+0.6**
VAY	**Valandovo**	**2.33**	**86**	*i* Pn	**Pb**	**06 33 08.7**	**+0.2**
VAY	**Valandovo**	**2.33**	**86**	*e*Pg	**Pn**	**06 33 05.2**	**+0.6**
VAY				*e*Sg	**Sn**	**06 33 33.7**	**+0.9**
VAY	**Valandovo**	**2.33**	**86**	*e*Pg	**Pn**	**06 33 05.2**	**+0.6**
VAY	**Valandovo**	**2.33**	**86**	*i* Pn	**Pb**	**06 33 08.6**	**+0.2**
VAY				*e*Sg	**Sn**	**06 33 33.7**	**+0.9**
SELS	**Selova**	**2.34**	**31**	*e*Pn	**Pn**	**06 33 04.2**	**-0.6**
SELS				*e*Sg	**Sn**	**06 33 31.3**	**-1.9**
BARS	**Barje**	**2.36**	**47**	*e*Pn	**Pn**	**06 33 03.0**	**-2.0**
BARS				*e*Sg	**Sn**	**06 33 32.5**	**-1.2**
IVAS	**Ivanjica**	**2.41**	**12**	*e*Pn	**Pn**	**06 33 06.3**	**+0.5**
IVAS				*e*Sg	**Sn**	**06 33 36.6**	**+1.6**
IVAS	**Ivanjica**	**2.41**	**12**	*e*Pn	**Pn**	**06 33 06.3**	**+0.5**
IVAS				*e*Sg	**Sn**	**06 33 36.6**	**+1.6**
DSL	**Palaion Diasel**	**2.42**	**149**	P	**Pn**	**06 33 07.1**	**+1.2**
DSL	**Palaion Diasel**	**2.42**	**149**	P	**Pn**	**06 33 07.1**	**+1.2**
DSL	**Palaion Diasel**	**2.42**	**149**	P	**Pn**	**06 33 07.1**	**+1.2**
CDT	**Castel del Mon**	**2.43**	**268**	*e*Pn	**Pb**	**06 33 09.5**	**-0.8**
CDT				Sn	**Sn**	**06 33 35.9**	**+0.5**
MRVN	**Minervino Murg**	**2.49**	**267**	Pg	**Pn**	**06 33 07.5**	**+0.6**
MRVN				Sg	**Sn**	**06 33 36.1**	**-0.9**
MRVN	**Minervino Murg**	**2.49**	**267**	Pg	**Pn**	**06 33 07.5**	**+0.6**
MRVN				Sg	**Sn**	**06 33 36.1**	**-0.9**
THL	**Klokotos Trika**	**2.54**	**130**	P	**Pn**	**06 33 08.2**	**+0.7**
LKD2	**Lefkada island**	**2.59**	**159**	P	**Pn**	**06 33 08.8**	**+0.6**
LKD2	**Lefkada island**	**2.59**	**159**	P	**Pn**	**06 33 08.8**	**+0.6**
LKD2	**Lefkada island**	**2.59**	**159**	P	**Pn**	**06 33 08.3**	**+0.1**
BBLS	**Lazići**	**2.65**	**359**	*e*Pn	**Pn**	**06 33 10.2**	**+1.1**
BBLS				*e*Sg	**Sb**	**06 33 46.9**	**+0.6**
BBLS	**Lazići**	**2.65**	**359**	*e*Pn	**Pn**	**06 33 10.2**	**+1.1**
PIPA	**Pietrapaola**	**2.68**	**231**	Pg	**Pn**	**06 33 09.6**	**+0.2**
	comp=E,38nm,0.4s						
PIPA	**Pietrapaola**	**2.68**	**231**	Pg	**Pn**	**06 33 09.6**	**+0.2**
	comp=E,38nm,0.4s						
SALB	**San Lorenzo Be**	**2.74**	**242**	Pg	**Pn**	**06 33 10.2**	**-0.2**
SALB				Sg	**Sn**	**06 33 42.6**	**-0.7**
SALB	**San Lorenzo Be**	**2.74**	**242**	Pg	**Pn**	**06 33 10.2**	**-0.2**
SALB				Sg	**Sn**	**06 33 42.6**	**-0.7**
SCHR	**S. Chirico Rap**	**2.79**	**250**	Pg	**Pn**	**06 33 11.8**	**+0.8**
SCHR				Sg	**Sn**	**06 33 44.7**	**+0.4**
GRUS	**Gruza**	**2.82**	**18**	*e*Pn	**Pn**	**06 33 12.4**	**+1.1**
GRUS				*e*Sn	**Sn**	**06 33 42.9**	**-2.1**
GRUS	**Gruza**	**2.82**	**18**	*e*Pn	**Pn**	**06 33 12.4**	**+1.1**
GRUS				*e*Sn	**Sn**	**06 33 42.9**	**-2.1**
HAPS	**Han Pijesak,Bl**	**2.89**	**352**	*e*Pn	**Pn**	**06 33 14.9**	**+2.4**
DIVS	**Divibare**	**2.90**	**7**	*e*Pn	**Pn**	**06 33 13.0**	**+0.4**
DIVS				*e*Sn	**Sn**	**06 33 47.1**	**-0.1**
DIVS	**Divibare**	**2.90**	**7**	*e*Pn	**Pn**	**06 33 13.0**	**+0.4**
DIVS				*e*Sn	**Sn**	**06 33 47.1**	**-0.1**
TIP	**Timpagrande**	**2.92**	**227**	⇑*i* P	**Pn**	**06 33 13.1**	**+0.3**
TIP	**Timpagrande**	**2.92**	**227**	⇑*i* P	**Pn**	**06 33 13.1**	**+0.3**
BOVS	**Bovan**	**2.92**	**33**	*e*Pn	**Pn**	**06 33 12.1**	**-0.6**
BOVS				*e*Sg	**Sn**	**06 33 48.6**	**+1.1**
BOVS	**Bovan**	**2.92**	**33**	*e*Pn	**Pn**	**06 33 12.1**	**-0.6**
BOVS				*e*Sg	**Sn**	**06 33 48.6**	**+1.1**
PDO	**Prodromos**	**2.92**	**153**	P	**Pn**	**06 33 13.0**	**+0.2**
PDO	**Prodromos**	**2.92**	**153**	P	**Pn**	**06 33 13.0**	**+0.2**
SIRI	**Monte Sirino -**	**2.94**	**251**	Pg	**Pn**	**06 33 14.1**	**+1.0**
SIRI				Sg	**Sn**	**06 33 47.6**	**-0.5**
	comp=E,46nm,0.5s						
SIRI	**Monte Sirino -**	**2.94**	**251**	Pg	**Pn**	**06 33 14.1**	**+1.0**
SIRI				Sg	**Sn**	**06 33 47.6**	**-0.5**
	comp=E,46nm,0.5s						
TRUS	**Trudelj**	**3.08**	**12**	*e*Pn	**Pn**	**06 33 16.5**	**+1.6**
TRUS				*e*Sn	**Sn**	**06 33 49.5**	**-1.9**
TRUS	**Trudelj**	**3.08**	**12**	*e*Pn	**Pn**	**06 33 16.5**	**+1.6**
TRUS				*e*Sn	**Sn**	**06 33 49.5**	**-1.9**
AGG	**Agios Georgios**	**3.09**	**134**	P	**Pn**	**06 33 16.8**	**+1.7**
AGG	**Agios Georgios**	**3.09**	**134**	P	**Pn**	**06 33 16.8**	**+1.7**
AGG	**Agios Georgios**	**3.09**	**134**	P	**Pn**	**06 33 15.7**	**+0.5**
ZAPS	**Zavoj**	**3.11**	**48**	*e*Pn	**Pn**	**06 33 13.6**	**-1.8**
ZAPS				*e*Sg	**Sn**	**06 33 54.4**	**+2.1**
ZAPS	**Zavoj**	**3.11**	**48**	*e*Pn	**Pn**	**06 33 13.6**	**-1.8**
ZAPS				*e*Sg	**Sn**	**06 33 54.4**	**+2.1**
MGR	**Morigerati**	**3.18**	**251**	Pg	**Pn**	**06 33 17.0**	**+0.7**
MGR				Sg	**Sn**	**06 33 53.3**	**-0.6**
	comp=E,33nm,0.7s						
MGR	**Morigerati**	**3.18**	**251**	Pg	**Pn**	**06 33 17.0**	**+0.7**
MGR				Sg	**Sn**	**06 33 53.3**	**-0.6**
	comp=E,33nm,0.7s						
ANX	**Ano Chora**	**3.22**	**144**	P	**Pn**	**06 33 18.8**	**+1.8**
ANX	**Ano Chora**	**3.22**	**144**	P	**Pn**	**06 33 18.8**	**+1.8**
KFL	**Anninata**	**3.26**	**162**	P	**Pn**	**06 33 17.8**	**+0.3**
KFL	**Anninata**	**3.26**	**162**	P	**Pn**	**06 33 17.8**	**+0.3**
BLY	**Banja Luka**	**3.91**	**335**	⇑*i* P	**Pn**	**06 33 28.8**	**+2.4**
BLY	**Banja Luka**	**3.91**	**335**	*e*Pn	**Pb**	**06 33 31.4**	**-4.1**
BLY	**Banja Luka**	**3.91**	**335**	⇑*i* P	**Pn**	**06 33 28.8**	**+2.4**
MDVR	**Moldovita**	**3.92**	**24**	⇑*i* P	**Pn**	**06 33 25.6**	**-0.9**
MDVR	**Moldovita**	**3.92**	**24**	⇑*i* P	**Pn**	**06 33 25.6**	**-0.9**
MDVR				S	**Sn**	**06 34 11.2**	**-1.0**
UDBI	**Udbina**	**4.29**	**322**	*e*Pn	**Pn**	**06 33 33.2**	**+1.6**
UDBI				Sn	**Sn**	**06 34 19.4**	**-2.0**
UDBI	**Udbina**	**4.29**	**322**	*e*Pn	**Pn**	**06 33 33.2**	**+1.6**
UDBI				Sn	**Sn**	**06 34 19.4**	**-2.0**
BZS	**Buzias**	**4.66**	**19**	⇑*i* P	**Pn**	**06 33 36.1**	**-0.6**
BZS	**Buzias**	**4.66**	**19**	*e*Pn	**Pn**	**06 33 36.9**	**+0.2**
BZS				*e*Sn	**Sn**	**06 34 25.7**	**-4.7**
BZS	**Buzias**	**4.66**	**19**	⇑*i* P	**Pn**	**06 33 36.1**	**-0.6**
BZS	**Buzias**	**4.66**	**19**	*e*Pn	**Pn**	**06 33 36.9**	**+0.2**
BZS				S	**Sn**	**06 34 28.2**	**-2.2**
NVLJ	**Novalja**	**4.76**	**316**	*e*Pn	**Pn**	**06 33 36.1**	**-1.9**
NVLJ				Sn	**Sn**	**06 34 29.9**	**-2.9**
NVLJ	**Novalja**	**4.76**	**316**	*e*Pn	**Pn**	**06 33 36.1**	**-1.9**
NVLJ				Sn	**Sn**	**06 34 29.9**	**-2.9**
CRES	**Cresnjev**	**5.46**	**329**	*e*Pn	**Pn**	**06 33 47.4**	**-0.2**
CEY	**Cerknica**	**5.83**	**323**	*e*Pn	**Pn**	**06 33 52.9**	**+0.2**

NNC 18 06:37:41.1±4.6, 37°.03N×70°.85E, h0km, mb3.5, mpv3.1, 2C-4D, Error ellipse: s-maj=35.5km s-min=20.3km az=169.0, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZET	**Dzherino**	**2.39**	**319**	⇓Pg	Pb	06 38 24.6	-0.4
	4.8nm,0.3s						
DZET				⇓Lg	Lg	06 38 58.6	
	24nm,0.6s						
MNAS	**Manas**	**5.60**	**13**	⇓Pn	Pn	06 39 06.0	+0.3
	1.0nm,0.5s						
MNAS				⇓Sn	Sn	06 40 12.7	+1.9
	0.8nm,0.3s						
KK31	**Karatay Array**	**6.07**	**358**	⇑Pn	Pn	06 39 12.0	-0.1
	0.7nm,0.4s,baz=181,slow=12,SNR=13						
KK31				⇑Sn	Sn	06 40 22.0	-0.3
	1.0nm,0.5s,baz=180,slow=22,SNR=5.9						

*KRSC **18** 06:48:34.2±1.2, 50°.74N×154°.94E, h480km±17km, ML4.4*
*MOS **18** 06:48:34.1±1.7, 50°.74N×154°.94E, h481km, mb4.3/1, Error ellipse: s-maj=59.5km s-min=18.0km az=61.0*
*IDC **18** 06:48:36.2±3.2, 52°.02N×152°.85E, h417km±21km, mb2.7/3, mb1 3.0/4, mb1mx2.6/58, mbtmp3.4/4, Error ellipse: s-maj=95.4km s-min=23.4km az=179.0*

ISC 18 06:48:37.5±1.3, 52°.5N±0°.2×152°.9E±0°.1, h400km, n25, σ1°.95/29, mb3.1/3, Northwest of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PETK	**Petropavlovsk-**	**2.94**	**77**	P	**Pn**	**06 49 41.8**	**+1.7**
	0.9nm,0.3s,baz=238,slow=3.3,SNR=17						
ASAK	**Asacha**	**3.04**	**91**	*e*P	**Pn**	**06 49 42.2**	**+1.2**
KRMR	**Karymshinskiy**	**3.17**	**83**	*e*P	**Pn**	**06 49 43.7**	**+1.7**
KRMR	**Karymshinskiy**	**3.17**	**83**	PN	**Pn**	**06 49 43.7**	**+1.7**
GNL	**Ganaly**	**3.23**	**67**	*e*P	Pn	06 49 48.0	+5.4
GNL	**

baz=316
LAY Lan-yu 0.80 156 P **Pn 06 51 27.6 -0.7**
baz=154
LAY *e*S **Sn 06 51 39.8 -0.1**
baz=154
TWK Hsinying 0.81 307 P **Pn 06 51 27.9 -0.5**
baz=307
TWK S **Sn 06 51 39.8 -0.5**
baz=307
ALS Alishan 0.82 334⇑ *i*P **Pn 06 51 28.6 -0.2**
baz=335
ALS S **Sn 06 51 41.1 +0.5**
baz=335
CHN3 Shinhua 0.82 292 P **Pn 06 51 29.0 +0.5**
baz=291
CHN3 *e*S **Sn 06 51 42.1 +1.9**
baz=291
KAU Kaohsiung 0.84 256 *e*S **Sn 06 51 42.1 +1.4**
baz=255
HEN Hengchun 0.87 209 *e*S **Sn 06 51 41.9 +0.5**
baz=207
TWP Hsiaoliuchiu 0.88 241 P **Pn 06 51 30.1 +0.9**
baz=240
TWP *e*S **Sn 06 51 43.2 +1.7**
baz=240
TWK1 Hengchun 0.90 204 P **Pn 06 51 29.7 +0.2**
baz=202
TWK1 S **Sn 06 51 42.4 +0.4**
baz=202
TSEB Hengchuen, Pin 0.91 197 S **Sn 06 51 43.4 +1.1**
baz=198
TAI1 Yung-k'ang 0.93 287 S **Sn 06 51 42.9 +0.3**
baz=286
CHN5 Tsauling 0.95 330 P **Pn 06 51 29.6 -0.6**
baz=330
CHN5 S **Sn 06 51 43.6 +0.4**
baz=330
WDT Danda 0.98 357 P **Pn 06 51 31.0 +0.1**
baz=357
WDT S **Sn 06 51 44.4 +0.1**
baz=357
CHN2 Minshiung 1.00 319 *e*S **Sn 06 51 43.6 -0.7**
baz=319
SCLT Jiali 1.00 294 S **Sn 06 51 44.3 0.0**
baz=293
CHY Chiayi 1.01 316 P **Pn 06 51 30.1 -0.8**
baz=316
CHY S **Sn 06 51 43.9 -0.6**
baz=316
ESL Shilin 1.06 12 *e*P **Pn 06 51 32.1 +0.6**
baz=13
ESL *e*S **Sn 06 51 47.5 +1.9**
baz=13
CHN8 Yiju 1.07 302 P **Pn 06 51 31.1 -0.5**
baz=302
CHN8 S **Sn 06 51 45.5 -0.3**
baz=302
WGK Gukeng 1.08 328 *e*P **Pn 06 51 31.2 -0.6**
baz=328
WGK *e*S **Sn 06 51 45.5 -0.6**
baz=328
SMLT Sun Moon Lake 1.14 346 *e*P **Pn 06 51 32.9 +0.2**
baz=347
SMLT *e*S **Sn 06 51 48.0 +0.4**
baz=347
TYC Yuchr 1.17 345 P **Pn 06 51 32.9 0.0**
baz=345
TYC *e*S **Sn 06 51 49.1 +1.0**
baz=345
WNT Mingjian 1.20 337 *e*P **Pn 06 51 31.9 -1.4**
baz=337
WNT *e*S **Sn 06 51 48.5 -0.3**
baz=337
WSF Szhu 1.24 314 *e*S **Sn 06 51 48.7 -1.1**
baz=314
TWD Chiawan 1.35 16 *e*P **Pn 06 51 35.4 0.0**
baz=16
TWD *e*S **Sn 06 51 52.1 -0.3**
baz=16
WHF Hehuan Shan 1.37 3 *e*P **Pn 06 51 36.0 0.0**
baz=3.0
WHF *e*S **Sn 06 51 52.7 -0.8**
baz=3.0
WTCT Ta-ch'eng 1.37 322 *e*S **Sn 06 51 52.6 -0.4**
baz=322
TWT Tachien 1.47 359 *e*P **Pn 06 51 37.6 +0.4**
baz=359
TWT *e*S **Sn 06 51 57.0 +1.3**
baz=359
WDGT Dungji 1.49 289⇑ *e*P **Pn 06 51 35.7 -1.6**
baz=288
WDGT *e*S **Sn 06 51 53.4 -2.4**
baz=288
TWQ1 Liyutan 1.61 346 *e*P **Pn 06 51 40.6 +1.7**
baz=346
TWQ1 *e*S **Sn 06 52 00.2 +1.5**
baz=346
NNS Nan Shan 1.67 6 *e*P **Pn 06 51 41.5 +1.8**
baz=6.0
NNS *e*S **Sn 06 52 01.0 +0.8**
baz=6.0
PNG Penghu 1.70 298 *e*P **Pn 06 51 38.4 -1.7**
baz=297
PNG *e*S **Sn 06 51 58.4 -2.5**
baz=297
ENA Nanau 1.72 17 *e*P **Pn 06 51 40.9 +0.6**
baz=17
ENTT Nioudou 1.89 10 *e*P **Pn 06 51 43.7 +1.1**
baz=11
NSK Sanguang 1.90 5 *e*P **Pn 06 51 44.2 +1.4**
baz=5.0
NSK *e*S **Sn 06 52 05.5 -0.3**
baz=5.0
TWC Suao 1.92 18 *e*P **Pn 06 51 44.1 +1.1**
baz=18
TWC *e*S **Sn 06 52 07.3 +1.1**
baz=18
EGS 2.17 18 *e*P **Pn 06 51 49.1 +2.7**
baz=18
EGS *e*S **Sn 06 52 13.4 +1.2**
baz=18
JYNG Yonagunijimaku 2.32 44 P **Pn 06 51 48.4 0.0**
JYNG *e*S **Sn 06 52 16.1 +0.3**
NWF Wu-fen Shan 2.35 13 *e*P **Pn 06 51 49.8 +0.9**
baz=13
NWF *e*S **Sn 06 52 16.6 -0.2**
baz=13
YOJ Yonaguni jima 2.37 44 P **Pn 06 51 49.3 +0.2**
YOJ S **Sn 06 52 17.0 0.0**
HATJ Hateruma jima 2.72 61 P **Pn 06 51 53.6 -0.2**
HATJ S **Sn 06 52 24.9 -0.7**
IRIF Iriomote-Funau 2.80 56 P **Pn 06 51 55.1 +0.2**
IRIF *e*S **Sn 06 52 27.5 0.0**
JKRS Kuro-shima 2.97 60 P **Pn 06 51 57.5 +0.3**
JKRS *e*S **Sn 06 52 31.4 -0.3**
KNM Kinmen 3.01 303 *e*P **Pn 06 51 57.4 -0.5**
baz=301
KNM *e*S **Sn 06 52 32.6 -0.2**
baz=301
JIJ Ishigaki jima 3.13 59 P **Pn 06 51 59.0 -0.5**
JIJ S **Sn 06 52 34.7 -1.1**
JISG Ishigakijimahi 3.38 57 P **Pn 06 52 02.2 -0.7**
JISG *e*S **Sn 06 52 40.1 -1.7**
JTJ Tarama 3.71 59 P **Pn 06 52 07.5 +0.1**
JTJ S **Sn 06 52 49.6 -0.4**

IDC 18 07:00:44.4±3.1, 54°29N×86°86E, h0km, mb1 2.6/2, mb1mx2.6/50, mbtmp2.6/2, ML2.3/2, Error ellipse: s-maj=24.9km s-min=17.8km az=52.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**1.25 255**		*i*		07 08 51.1	
	baz=75,slow=321,SNR=2.0						
ZALV	**Zalesovo Beam**	**1.25 255**		Pg	Pg	07 01 06.8	-1.4
	1.3nm,0.3s,baz=77,slow=12,SNR=7.3						
ZALV				Lg	Lg	07 01 25.2	
	1.0nm,0.3s,baz=73,slow=29,SNR=8.3						
KURBB	**Kurchatov Arra**	**6.28 238**		Pn	Pn	07 02 18.9	+0.8
	0.0nm,0.3s,baz=53,slow=14,SNR=3.9						
KURBB				Sn	Sn	07 03 30.0	-0.4
	0.0nm,0.3s,baz=64,slow=8.4,SNR=2.0						
KURBB				Lg	Lg	07 04 03.0	
	0.0nm,0.3s,baz=72,slow=5.9,SNR=3.2						
MKAR	**Makanchi Array**	**8.05 203**		Pn	Pn	07 02 43.9	+1.4
	0.1nm,0.3s,baz=22,slow=13,SNR=4.1						
MKAR				Lg	Lg	07 04 53.3	
	0.2nm,0.3s,baz=37,slow=27,SNR=6.8						

ISCJB 18 07:06:05.6±0.5, 39°.94N±0°.02×39°.61E±0°.04, h10km±5km, Error ellipse: s-maj=5.4km s-min=3.8km az=177.9
DDA 18 07:06:05.4, 39°.91N×39°.57E, h7km, Md2.7
ISK 18 07:06:05.2, 39°.95N×39°.60E, h5km, ML2.7
CSEM 18 07:06:05.5±0.2, 39°.93N×39°.61E, h12km, ML2.7, Error ellipse: s-maj=4.2km s-min=3.1km az=94.0
ISC 18 07:06:05.2±1.0, 39°.93N±0°.02×39°.57E±0°.02, h10km±9km, n29, σ1§22/45, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EZC	**Erzincan**	**0.24 222**		*e*Pg	**Pb**	**07 06 13.1**	**+1.4**
KELT	**Kelkit**	**0.32 312**		P	**Pb**	**07 06 13.0**	**-0.1**
KELT				S	**Sg**	**07 06 17.3**	**+1.2**
KELT	**Kelkit**	**0.32 312**		*i* P	**Pb**	**07 06 13.0**	**-0.1**
KELT				*i* S	**Sg**	**07 06 17.3**	**+1.2**
ERZN	**Erzincan**	**0.36 161**		*e*PG	**Pg**	**07 06 13.1**	**+0.6**
ERZN				*e*SG	**Sg**	**07 06 18.6**	**+1.3**
GUMT	**Gumushane**	**0.53 353**		*e*PG	**Pb**	**07 06 16.3**	**-0.4**
GUMT	**Gumushane**	**0.53 353**		*e*Pg	**Pb**	**07 06 16.3**	**-0.4**
BAYT	**Ayd¨–ntepe-Bay**	**0.64 44**		*e*PG	**Pb**	**07 06 17.8**	**-0.7**
BAYT				*e*SG	**Sg**	**07 06 25.8**	**-0.2**
BAYT	**Ayd¨–ntepe-Bay**	**0.64 44**		*e*Pg	**Pb**	**07 06 17.8**	**-0.7**
BAYT				*e*Sg	**Sg**	**07 06 25.8**	**-0.2**
TNCL	**Tunceli-Merkez**	**0.82 181**		P	**Pg**	**07 06 20.8**	**-0.1**
TNCL				S	**Sg**	**07 06 31.6**	**+0.1**
TNCL	**Tunceli-Merkez**	**0.82 181**		*i* P	**Pg**	**07 06 20.8**	**-0.1**
TNCL				*i* S	**Sg**	**07 06 31.6**	**+0.1**
REFA	**Refahiye_ERZ¨**	**0.82 229**		P	**Pg**	**07 06 17.9**	**-3.0**
REFA	**Refahiye_ERZ¨**	**0.82 229**		*i* P	**Pg**	**07 06 17.9**	**-3.0**
REFA				*i* S	**Sg**	**07 06 26.5**	**-5.2**
YEDI	**Yedisu-Bingol**	**0.90 123**		*e*PG	**Pb**	**07 06 22.7**	**-0.3**
YEDI	**Yedisu-Bingol**	**0.90 123**		*e*Pg	**Pb**	**07 06 22.7**	**-0.3**
ILIC	**ilic-Erzincan**	**0.91 238**		*e*PG	**Pg**	**07 06 22.8**	**+0.2**
ILIC	**ilic-Erzincan**	**0.91 238**		*e*Pg	**Pg**	**07 06 22.8**	**+0.2**
MACK	**Trabzon**	**1.02 9**		S	**Sb**	**07 06 38.1**	**-0.4**
MACK	**Trabzon**	**1.02 9**		*i* S	**Sb**	**07 06 38.1**	**-0.4**
PTK	**Pertek**	**1.05 187**		*e*PG	**Pn**	**07 06 26.1**	**+0.1**
PTK				*e*SG	**Sn**	**07 06 40.8**	**0.0**
PTK	**Pertek**	**1.05 187**		*e*Pg	**Pn**	**07 06 26.1**	**+0.1**
PTK				*e*Sg	**Sn**	**07 06 40.8**	**0.0**
KEMA	**Kemaliye**	**1.06 232**		P	**Pn**	**07 06 26.5**	**+0.3**
KEMA				S	**Sb**	**07 06 40.7**	**+1.1**
KEMA	**Kemaliye**	**1.06 232**		*i* P	**Pn**	**07 06 26.5**	**+0.3**
KEMA				*i* S	**Sb**	**07 06 40.7**	**+1.1**
SUSE	**Susehri**	**1.08 285**		P	**Pb**	**07 06 26.5**	**+0.5**
SUSE				S	**Sb**	**07 06 41.5**	**+1.2**
SUSE	**Susehri**	**1.08 285**		*i* P	**Pb**	**07 06 26.6**	**+0.5**
SUSE				*i* S	**Sb**	**07 06 41.5**	**+1.2**
ESPY	**Espiye-Giresun**	**1.17 327**		*e*PN	**Pg**	**07 06 27.9**	**+0.1**
ESPY	**Espiye-Giresun**	**1.17 327**		*e*Pn	**Pg**	**07 06 27.9**	**+0.1**
EZM	**Erzurum**	**1.38 91**		*e*PN	**Pg**	**07 06 31.9**	**+0.2**
GRSN	**GIRESUNGRSN**	**1.40 315**		P	**Pb**	**07 06 31.9**	**+0.5**
GRSN				S	**Sn**	**07 06 48.8**	**-0.5**
GRSN	**GIRESUNGRSN**	**1.40 315**		*i* P	**Pb**	**07 06 31.9**	**+0.5**
GRSN				*i* S	**Sn**	**07 06 48.8**	**-0.5**

ISCJB 18 07:08:28.8±0.6, 59°.69N±0°.05×22°.29E±0°.06, h0km, Error ellipse: s-maj=7.4km s-min=4.0km az=168.9
IDC 18 07:08:29.2±3.1, 59°.54N×22°.38E, h0km, mb1 3.0/3, mb1mx2.8/42, mbtmp2.8/3, ML2.4/3, Error ellipse: s-maj=43.8km s-min=15.4km az=162.0
CSEM 18 07:08:29.4±0.3, 59°.72N×22°.37E, h2km, ML1.6, Error ellipse: s-maj=9.3km s-min=5.5km az=171.0, Mining explosion.
HEL 18 07:08:30.3, 59°.68N×22°.31E, h0km, ML2.2, Explosion
UPP 18 07:08:32.1±0.9, 59°.74N×21°.93E, h0km, ML1.6, Suspected explosion
ISC 18 07:08:27.8±1.0, 59°.65N±0°.05×22°.25E±0°.02, h0km, n42, σ0§97/53, Baltic States-Belarus-Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MEF	**Metsahovi**	**1.22 62**		*e*P	**Pb**	**07 08 51.4**	**-0.4**
MEF				*e*S	**Sg**	**07 09 06.8**	**-0.1**
MEF	**Metsahovi**	**1.22 62**		P	**Pb**	**07 08 51.3**	**-0.4**
MEF				S	**Sg**	**07 09 06.8**	**-0.1**
MTSE	**Matsula**	**1.24 139**		*e*P	**Pn**	**07 08 52.7**	**+0.3**
MTSE	**Matsula**	**1.24 139**		P	**Pn**	**07 08 52.6**	**+0.3**
AAL	**Aland**	**1.25 296**		P	**Pn**	**07 08 52.1**	**-0.4**
AAL				S	**Sb**	**07 09 08.4**	**-0.4**
AAL	**Aland**	**1.25 296**		*e*P	**Pn**	**07 08 52.3**	**-0.2**
AAL				*e*S	**Sn**	**07 09 10.0**	**0.0**
AAL	**Aland**	**1.25 296**		P	**Pn**	**07 08 52.3**	**-0.2**
AAL				S	**Sn**	**07 09 10.0**	**0.0**
RAF	**Rauma**	**1.39 350**		*e*P	**Pb**	**07 08 54.5**	**-0.2**
RAF				*e*S	**Sn**	**07 09 13.3**	**-0.3**
RAF	**Rauma**	**1.39 350**		P	**Pb**	**07 08 54.4**	**-0.2**
RAF				S	**Sn**	**07 09 13.2**	**-0.3**
NRTU	**Norrtaelje**	**1.83 272**		P	**Pb**	**07 09 02.1**	**-0.1**
NRTU				S	**Sg**	**07 09 25.7**	**-1.0**
NRTU	**Norrtaelje**	**1.83 272**		*e*P	**Pb**	**07 09 02.1**	**-0.1**
NRTU				*e*S	**Sg**	**07 09 25.7**	**-1.0**
NRTU	**Norrtaelje**	**1.83 272**		P	**Pb**	**07 09 02.1**	**-0.1**
NRTU				S	**Sg**	**07 09 25.7**	**-1.0**
GRAU	**Graesoe**	**1.98 292**		P	**Pb**	**07 09 03.8**	**-0.9**
GRAU	**Graesoe**	**1.98 292**		*e*P	**Pb**	**07 09 03.8**	**-0.9**
GRAU	**Graesoe**	**1.98 292**		P	**Pb**	**07 09 03.8**	**-0.9**
PVF	**Pernaja**	**2.02 62**		*e*P	**Pb**	**07 09 05.0**	**-0.4**
PVF				MSG		07 09 44.6	
	comp=Z,14nm,0.2s						
PVF	**Pernaja**	**2.02 62**		P	**Pb**	**07 09 04.9**	**-0.4**
FORU	**Forsmark**	**2.17 292**		P	**Pb**	**07 09 07.1**	**-0.8**
FORU	**Forsmark**	**2.17 292**		*e*P	**Pb**	**07 09 07.1**	**-0.8**
FORU	**Forsmark**	**2.17 292**		P	**Pb**	**07 09 07.1**	**-0.8**
FLYU	**Flymyra**	**2.25 284**		P	**Pb**	**07 09 07.9**	**-1.3**
FLYU	**Flymyra**	**2.25 284**		*e*P	**Pb**	**07 09 07.9**	**-1.3**
FLYU	**Flymyra**	**2.25 284**		P	**Pb**	**07 09 07.9**	**-1.3**
NYNU	**Nynaeshamn**	**2.27 255**		P	**Pb**	**07 09 09.3**	**-0.3**
NYNU	**Nynaeshamn**	**2.27 255**		*e*P	**Pb**	**07 09 09.3**	**-0.3**
NYNU	**Nynaeshamn**	**2.27 255**		P	**Pb**	**07 09 09.3**	**-0.3**
FIBU	**Brunna**	**2.49 278**		P	**Pb**	**07 09 13.2**	**-0.1**
BACU	**Backbrunna**	**2.61 277**		P	**Pb**	**07 09 14.9**	**-0.4**
BACU	**Backbrunna**	**2.61 277**		*e*P	**Pb**	**07 09 14.9**	**-0.4**
BACU	**Backbrunna**	**2.61 277**		P	**Pb**	**07 09 14.9**	**-0.4**
FIA0	**FINESS Array S**	**2.61 45**		*e*PB	**Pb**	**07 09 14.6**	**-0.8**
FIA0	**FINESS Array S**	**2.61 45**		Pb	**Pb**	**07 09 14.5**	**-0.8**
FINES	**FINESS Array B**	**2.61 45**		Pn	**Pb**	**07 09 13.9**	**-1.4**
	comp=Z,0.3nm,0.3s,baz=223,slow=13,SNR=17						
FINES				Sn	**Sb**	**07 09 47.3**	**-0.6**
	comp=Z,1.7nm,0.3s,baz=230,slow=25,SNR=24						
IGGU	**Iggoen**	**2.74 299**		P	**Pn**	**07 09 14.7**	**+1.7**
IGGU	**Iggoen**	**2.74 299**		*e*P	**Pn**	**07 09 14.7**	**+1.7**
IGGU	**Iggoen**	**2.74 299**		P	**Pn**	**07 09 14.7**	**+1.7**
KAF	**Kangasniemi**	**3.17 37**		*e*PB	**Pb**	**07 09 23.8**	**-1.0**
KAF	**Kangasniemi**	**3.17 37**		Pb	**Pb**	**07 09 23.8**	**-1.0**
HEMU	**Hemsoen**	**3.65 328**		*e*P	**Pn**	**07 09 28.5**	**+3.0**
HEMU	**Hemsoen**	**3.65 328**		P	**Pn**	**07 09 28.4**	**+3.0**
NOA	**NORSAR Array B**	**5.65 289**		Pn	**Pn**	**07 09 53.8**	**+0.8**
	comp=Z,0.2nm,0.3s,baz=104,slow=13,SNR=2.9						
ARCES	**ARCESS Array B**	**10.02 7**		Pn	**Pn**	**07 10 52.6**	**-0.1**
	comp=Z,0.1nm,0.3s,baz=189,slow=14,SNR=5.7						

ISCJB 18 07:13:38.0±0.4, 59°.66N±0°.03×22°.27E±0°.05, h0km, Error ellipse: s-maj=5.0km s-min=3.8km az=174.9
CSEM 18 07:13:38.8±0.2, 59°.64N×22°.29E, h2km, ML1.9, Error ellipse: s-maj=7.3km s-min=5.3km az=1.0, Mining explosion.
HEL 18 07:13:39.2±0.1, 59°.68N×22°.26E, h0km, ML2.0, ML2.0(UPP), Explosion
UPP 18 07:13:39.1±1.4, 59°.75N×22°.23E, h0km, ML2.0, Suspected explosion
IDC 18 07:13:40.8±2.3, 59°.80N×22°.23E, h0km, mb1 3.1/3, mb1mx3.0/39, mbtmp3.0/3, ML2.4/3, Error ellipse: s-maj=27.7km s-min=11.1km az=166.0
ISC 18 07:13:36.9±0.7, 59°.75N±0°.04×22°.39E±0°.02, h0km, n49, σ1§43/57, Baltic States-Belarus-Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MEF	**Metsahovi**	**1.11 64**		*e*P	**Pn**	**07 14 00.8**	**+1.1**
MEF				*e*S	**Sn**	**07 14 15.9**	**+0.2**
MEF	**Metsahovi**	**1.11 64**		*e*P	**Pn**	**07 14 00.5**	**+0.8**
	SNR=90						
MEF				*e*S	**Sn**	**07 14 15.9**	**+0.2**
	18nm,0.6s,SNR=90						
MTSE	**Matsula**	**1.27 144**		*e*P	**Pg**	**07 14 01.8**	**+0.6**
MTSE	**Matsula**	**1.27 144**		*e*P	**Pg**	**07 14 01.8**	**+0.6**
	SNR=70						
MTSE				*e*S	**Sg**	**07 14 18.2**	**+0.5**
	SNR=70						
AAL	**Aland**	**1.28 291**		P	**Pg**	**07 14 01.4**	**0.0**
AAL				S	**Sg**	**07 14 18.4**	**+0.4**
AAL	**Aland**	**1.28 291**		*e*P	**Pg**	**07 14 01.4**	**0.0**
AAL				*e*S	**Sg**	**07 14 17.7**	**-0.3**
AAL	**Aland**	**1.28 291**		P	**Pg**	**07 14 01.4**	**0.0**
AAL				S	**Sg**	**07 14 18.4**	**+0.4**
RAF	**Rauma**	**1.31 347**		*e*P	**Pn**	**07 14 03.5**	**+1.1**
RAF				*e*S	**Sn**	**07 14 21.7**	**+1.0**
RAF	**Rauma**	**1.31 347**		*e*P	**Pn**	**07 14 03.6**	**+1.1**
	SNR=70						
RAF				*e*S	**Sn**	**07 14 21.9**	**+1.2**
	13nm,0.6s,SNR=70						
NRTU	**Norrtaelje**	**1.91 269**		P	**Pn**	**07 14 11.4**	**+0.8**
NRTU	**Norrtaelje**	**1.91 269**		*e*P	**Pn**	**07 14 11.4**	**+0.8**
NRTU	**Norrtaelje**	**1.91 269**		P	**Pn**	**07 14 11.4**	**+0.8**
PVF	**Pernaja**	**1.91 64**		*e*P	**Pg**	**07 14 14.3**	**+0.8**
PVF				MSG		07 14 43.1	
	comp=Z,13nm,0.1s						
PVF	**Pernaja**	**1.91 64**		P	**Pg**	**07 14 14.3**	**+0.8**
GRAU	**Graesoe**	**2.02 289**		P	**Pn**	**07 14 13.1**	**+0.9**
GRAU	**Graesoe**	**2.02 289**		*e*P	**Pn**	**07 14 13.1**	**+0.9**
GRAU	**Graesoe**	**2.02 289**		P	**Pn**	**07 14 13.1**	**+0.9**
SLIT	**Slitere, Latvi**	**2.13 181**		*e*P	**Pn**	**07 14 12.2**	**-1.4**
	SNR=50						
FORU	**Forsmark**	**2.21 289**		P	**Pn**	**07 14 16.6**	**+1.9**
FORU	**Forsmark**	**2.21 289**		*e*P	**Pn**	**07 14 16.6**	**+1.9**
FORU	**Forsmark**	**2.21 289**		P	**Pn**	**07 14 16.6**	**+1.9**
FLYU	**Flymyra**	**2.30 281**		P	**Pn**	**07 14 17.2**	**+1.2**
FLYU	**Flymyra**	**2.30 281**		*e*P	**Pn**	**07 14 17.2**	**+1.2**
FLYU	**Flymyra**	**2.30 281**		P	**Pn**	**07 14 17.2**	**+1.2**
NYNU	**Nynaeshamn**	**2.37 253**		P	**Pn**	**07 14 18.4**	**+1.5**
NYNU	**Nynaeshamn**	**2.37 253**		*e*P	**Pn**	**07 14 18.4**	**+1.5**
NYNU	**Nynaeshamn**	**2.37 253**		P	**Pn**	**07 14 18.4**	**+1.5**
FIA0	**FINESS Array S**	**2.49 45**		*e*P	**Pb**	**07 14 23.2**	**+0.7**
FIA0				*e*SB	**Sg**	**07 14 56.4**	**-0.4**
FIA0				MSG		07 14 57.4	
	comp=Z,3.5nm,0.1s						
FIA0	**FINESS Array S**	**2.49 45**		P	**Pb**	**07 14 23.1**	**+0.7**
FINES	**FINESS Array B**	**2.49 45**		Pn	**Pb**	**07 14 23.5**	**+1.1**
	comp=Z,0.4nm,0.3s,baz=233,slow=12,SNR=11						
FINES				Sn	**Sg**	**07 14 56.2**	**-0.6**
	comp=Z,2.1nm,0.3s,baz=234,slow=24,SNR=16						
FIBU	**Brunna**	**2.55 276**		P	**Pn**	**07 14 21.7**	**+2.3**
BACU	**Backbrunna**	**2.67 275**		P	**Pn**	**07 14 22.7**	**+1.6**
BACU	**Backbrunna**	**2.67 275**		*e*P	**Pn**	**07 14 22.7**	**+1.6**
BACU	**Backbrunna**	**2.67 275**		P	**Pn**	**07 14 22.7**	**+1.6**
OSTU	**Oestervaala**	**2.69 283**		P	**Pn**	**07 14 22.9**	**+1.6**
OSTU	**Oestervaala**	**2.69 283**		*e*P	**Pn**	**07 14 22.9**	**+1.6**
OSTU	**Oestervaala**	**2.69 283**		P	**Pn**	**07 14 22.9**	**+1.6**
KAF	**Kangasniemi**	**3.04 37**		*e*P	**Pb**	**07 14 31.3**	**-0.7**
KAF	**Kangasniemi**	**3.04 37**		P	**Pb**	**07 14 31.2**	**-0.7**
VAF	**Ylistaro**	**3.31 2**		*e*P	**Pb**	**07 14 34.6**	**-1.8**
FALU	**Falun**	**3.37 286**		P	**Pn**	**07 14 32.2**	**+1.5**
FALU	**Falun**	**3.37 286**		*e*P	**Pn**	**07 14 32.2**	**+1.5**
FALU	**Falun**	**3.37 286**		P	**Pn**	**07 14 32.2**	**+1.5**
SUF	**Sumiainen**	**3.49 30**		*e*P	Pn	07 14 36.3	+4.0
SUF	**Sumiainen**	**3.49 30**		P	Pn	07 14 36.3	+4.0
HEMU	**Hemsoen**	**3.61 326**		*e*P	Pn	07 14 37.5	+3.4
HEMU	**Hemsoen**	**3.61 326**		P	Pn	07 14 37.4	+3.4
NOA	**NORSAR Array B**	**5.69 288**		Pn	**Pn**	**07 15 03.5**	**+0.8**
	comp=Z,0.3nm,0.3s,baz=94,slow=12,SNR=3.6						
NOA				Sn	**Sn**	**07 16 05.5**	**-3.2**
	comp=Z,0.1nm,0.3s,baz=218,slow=3.4,SNR=2.3						
ARCES	**ARCESS Array B**	**9.91 6**		Pn	**Pn**	**07 16 01.4**	**+1.0**
	comp=Z,0.1nm,0.3s,baz=194,slow=14,SNR=6.8						
ARCES				Sn	**Sn**	**07 17 47.1**	**-5.2**
	comp=Z,0.1nm,0.3s,baz=188,slow=24,SNR=3.1						

IDC 18 07:13:59.8±3.3, 59°.48N×22°.52E, h0km, mb1 3.2/3, mb1mx2.9/39, mbtmp3.0/3, ML2.9/2, Error ellipse: s-maj=42.1km s-min=12.1km az=166.0
ISCJB 18 07:14:00.9±1.6, 59°.7N±0°.1×22°.2E±0°.1, h0km, Error ellipse: s-maj=21.4km s-min=6.2km az=168.0
UPP 18 07:14:02.1±1.2, 59°.83N×22°.08E, h0km, ML2.1, Suspected explosion
ISC 18 07:13:58.8±2.3, 59°.7N±0°.2×22°.33E±0°.07, h0km, n8, σ0§94/13, Baltic States-Belarus-Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AAL	**Aland**	**1.28 294**		P	**Pg**	**07 14 22.2**	**-1.1**
AAL				S	**Sg**	**07 14 39.7**	**-0.2**
NRTU	**Norrtaelje**	**1.88 272**		P	**Pb**	**07 14 33.1**	**-0.8**
NRTU				S	**Sb**	**07 14 58.0**	**+0.1**
GRAU	**Graesoe**	**2.02 291**		P	**Pn**	**07 14 35.2**	**+1.2**
GRAU				S	**Sb**	**07 15 02.3**	**+0.4**
FORU	**Forsmark**	**2.20 291**		P	**Pn**	**07 14 37.9**	**+1.4**
FLYU	**Flymyra**	**2.29 283**		P	**Pb**	**07 14 40.0**	**-0.8**
FINES	**FINESS Array B**	**2.56 45**		Pn	**Pb**	**07 14 44.9**	**-0.7**
	0.3nm,0.3s,baz=224,slow=13,SNR=6.0						
FINES				Sn	**Sb**	**07 15 18.2**	**+0.6**
	1.9nm,0.3s,baz=224,slow=25,SNR=9.6						
NOA	**NORSAR Array B**	**5.69 289**		Pn	**Pn**	**07 15 25.4**	**+1.0**
	0.3nm,0.3s,baz=100,slow=13,SNR=3.3						
NOA				Sn	**Sn**	**07 16 31.4**	**+1.0**
	0.4nm,0.3s,baz=86,slow=12,SNR=3.1						
ARCES	**ARCESS Array B**	**9.99 6**		Pn	**Pn**	**07 16 23.0**	**-0.4**
	0.1nm,0.3s,baz=191,slow=13,SNR=6.2						

ISCJB 18 07:19:57.2±1.4, 32°.15N±0°.05×115°.1W±0°.1, h25km±10km, Error ellipse: s-maj=21.7km s-min=5.5km az=161.3
MEX 18 07:19:58.8±0.5, 32°.19N×114°.97W, h18km±121km, MD3.5
ECX 18 07:19:59.2±0.6, 32°.13N×115°.23W, h8km, MD2.4, ML2.6
ISC 18 07:19:56.5±1.3, 32°.15N±0°.04×115°.11W±0°.08, h29km±11km, n10, σ0§33/17, 2C-2D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MBIG	**Mexicali**	**0.27 344**		*i* P	**Pn**	**07 20 04.5**	**0.0**
MBIG				*e*S	**Sb**	**07 20 08.1**	**-0.1**
MBIG	**Mexicali**	**0.27 344**		*e*P	**Pn**	**07 20 04.5**	**0.0**
CPBX	**Cerro Prieto**	**0.31 329**		*e*P	**Pb**	**07 20 04.2**	**+0.1**
CPBX				*e*S	**Sb**	**07 20 09.3**	**0.0**
CPBX				⇑*e*		07 20 10.7	
CPBX				AML	AML	07 20 10.7	
	comp=N,2μm,0.2s						
CPBX				AML	AML	07 20 11.0	
	comp=E,2μm,0.1s						
CPBX				⇓*e*		07 20 11.0	
CPBX				AML	AML	07 20 12.5	
	comp=E,3μm,0.3s						
CPBX				⇓*e*		07 20 12.5	
ECBX	**El Chinero**	**0.68 176**		*e*P	**Pb**	**07 20 09.5**	**-0.4**
ECBX				*e*S	**Sb**	**07 20 19.1**	**+0.1**
IKP	**In-Ko-Pah, Jac**	**0.98 301**		*e*P	**Pb**	**07 20 15.2**	**+0.2**
SPIG	**San Pedro Mart**	**1.14 195**		*e*P	**Pb**	**07 20 17.4**	**-0.5**
SPIG				*e*S	**Sb**	**07 20 32.9**	**+

NEIC ***18*** *07:23:55.7±0.3, 37°.23N×141°.47E, h35km, mb4.6/12, Error ellipse: s-maj=7.8km s-min=5.4km az=135.0*
NEIC Recorded [4 JMA] in Fukushima.
JMA ***18*** *07:23:56.2±0.1, 37°.22N×141°.39E, h48km±1km, M4.2*
JMA Felt IV J1.
IDC ***18*** *07:23:57.6±0.6, 37°.30N×141°.40E, h51km±3km, mb4.1/27, mb1 4.2/35, mb1mx4.1/65, mbtmp4.3/35, MS3.4/19, Ms1 3.4/19, ms1mx3.2/50, Error ellipse: s-maj=13.9km s-min=7.7km az=153.0*

ISC 18 07:23:55.8±0.5, 37°.15N±0°.04×141°.58E±0°.05, h44km±4km, n110, σ1§83/131, mb4.4/50, MS3.5/16, 5C-2D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.60**	**291**	P		**Pn**	**07 24 06.5**	**-1.5**
JFK				S		**Sn**	**07 24 13.6**	**-3.2**
ONAJ	**Iwakimizuishiy**	**0.62**	**266**	P		**Pn**	**07 24 07.2**	**-1.2**
ONAJ				S		**Sn**	**07 24 14.7**	**-2.7**
JMM	**Marumori**	**0.94**	**319**	P		**Pn**	**07 24 11.1**	**-1.6**
JMM				S		**Sn**	**07 24 22.1**	**-2.9**
JHO	**Hitachi**	**0.97**	**236**	P		**Pn**	**07 24 12.0**	**-1.0**
JHO				S		**Sn**	**07 24 23.2**	**-2.5**
JFT	**Otama**	**1.05**	**291**	P		**Pn**	**07 24 13.3**	**-0.8**
JFT				S		**Sn**	**07 24 25.2**	**-2.5**
JIO	**Ouri**	**1.31**	**352**	P		**Pn**	**07 24 16.9**	**-0.8**
JIO				S		**Sn**	**07 24 31.4**	**-2.6**
JOU	**Okura**	**1.41**	**329**	P		**Pn**	**07 24 18.0**	**-1.0**
JFY	**Yanaizu**	**1.51**	**280**	P		**Pn**	**07 24 19.5**	**-0.9**
JYS	**Shirataka**	**1.60**	**312**	P		**Pn**	**07 24 20.9**	**-0.8**
MJAR	**Matsushiro Arr**	**2.77**	**258**	P		**Pn**	**07 24 37.8**	**+0.1**
	31nm,0.3s,baz=73,slow=15,SNR=53							
MJAR				S		**Sn**	**07 25 10.5**	**+0.6**
	50nm,0.3s,baz=80,slow=33,SNR=8.7							
MJAR				LR		LR	07 25 57.0	
	comp=Z,472nm,19.7s,baz=80,slow=45							
MAJO	**Matsushiro**	**2.77**	**258**	*e*P		**Pn**	**07 24 38.1**	**+0.4**
MAJO	**Matsushiro**	**2.77**	**258**	*e*Pn		**Pn**	**07 24 38.1**	**+0.4**
MAT	**Matsushiro**	**2.77**	**258**	P		**Pn**	**07 24 37.9**	**+0.2**
MAT				S		**Sn**	**07 25 09.3**	**-0.6**
JHJ2	**Mitsune**	**4.28**	**200**	*e*Pn		**Pn**	**07 24 60.0**	**+1.5**
JHJ	**Hachijo jima 2**	**4.28**	**201**	P		**Pn**	**07 24 60.0**	**+1.5**
	107nm,0.3s,baz=66,slow=20,SNR=3.1							
JHJ				S		**Sn**	**07 25 47.3**	**+0.1**
	193nm,0.3s,baz=240,slow=23,SNR=7.4							
ERM	**Erimo**	**5.01**	**14**	*i*P		**Pn**	**07 25 08.3**	**-0.1**
ERM				pmax		pmax		
	comp=Z,26nm,0.6s							
ERM	**Erimo**	**5.01**	**14**	*e*Pn		**Pn**	**07 25 08.2**	**-0.1**
ASAJ	**Asahikawa**	**7.00**	**6**	P		**Pn**	**07 25 34.9**	**-0.8**
	comp=Z,12nm,0.3s,baz=237,slow=9.7,SNR=28							
ASAJ				S		**Sn**	**07 26 54.0**	**+0.1**
	comp=Z,3.6nm,0.3s,baz=127,slow=20,SNR=4.2							
YUK	**Yuzh-Kuril'sk**	**7.61**	**24**	*e*P		**Pn**	**07 25 42.5**	**-1.5**
YUK				*e*S		**Sn**	**07 27 02.1**	**-6.7**
YUK				pmax		pmax		
	comp=N,72nm,0.4s							
YUK				pmax		pmax		
	comp=E,75nm,0.4s							
YUK				pmax		pmax		
	comp=Z,99nm,0.4s							
SHO	**Shikotan**	**7.81**	**29**	*e*P		**Pn**	**07 25 46.1**	**-0.7**
SHO				*e*S		**Sn**	**07 27 06.0**	**-7.8**
SHO				pmax		pmax		
	comp=Z,22nm,0.4s							
SHO				pmax		pmax		
	comp=E,15nm,0.2s							
SHO				pmax		pmax		
	comp=N,20nm,0.3s							
KUR	**Kuril'sk**	**9.36**	**28**	P		**Pn**	**07 26 08.2**	**+0.2**
KUR				*e*S		**Sn**	**07 27 44.4**	**-7.4**
VLA	**Vladivostok**	**9.51**	**312**	*e*P		**Pn**	**07 26 11.1**	**+1.0**
VLA				S		**Sn**	**07 27 57.8**	**+2.2**
VLA				pmax		pmax		
	comp=Z,20nm,0.9s							
JNU	**Nakatsue**	**9.64**	**248**	P		**Pn**	**07 26 13.3**	**+1.4**
	comp=Z,0.6nm,0.3s,baz=50,slow=5.2,SNR=8.3							
JNU				LR		LR	07 30 17.0	
	comp=Z,94nm,18.7s,baz=126,slow=40							
CBIJ	**Chichi jima**	**10.04**	**177**	P		**Pn**	**07 26 16.7**	**-0.7**
CBIJ				S		**Sn**	**07 28 02.9**	**-5.8**
JCJ	**Chichijima**	**10.04**	**177**	P		**Pn**	**07 26 16.7**	**-0.7**
	comp=Z,17nm,0.3s,baz=283,slow=20,SNR=15							
JCJ				S		**Sn**	**07 28 02.9**	**-5.8**
	comp=Z,15nm,0.3s,baz=255,slow=20,SNR=4.8							
USRK	**Ussuriysk Ar.**	**10.12**	**317**	P		**Pn**	**07 26 18.4**	**-0.1**
	comp=Z,0.5nm,0.3s,baz=128,slow=13,SNR=6.3							
USRK				LR		LR	07 29 55.3	
	comp=Z,207nm,19.1s,baz=120,slow=36							
KSRS	**Korea Array**	**10.88**	**276**	P		**Pn**	**07 26 30.6**	**+1.7**
	comp=Z,0.7nm,0.3s,baz=90,slow=13,SNR=10							
KSRS				LR		LR	07 30 31.1	
	comp=Z,135nm,18.4s,baz=92,slow=37							
KSAR	**Wonju Array Be**	**10.91**	**276**	P		**Pn**	**07 26 30.6**	**+1.3**
KSAR	**Wonju Array Be**	**10.91**	**276**	P		**Pn**	**07 26 30.6**	**+1.3**
TYV	**Tymovskoe**	**13.73**	**3**	*e*P		**Pn**	**07 27 07.8**	**+0.1**
TYV				pmax		pmax		
	comp=Z,22nm,0.8s							
KLR	**Kul'dur**	**14.02**	**333**	P		**Pn**	**07 27 11.8**	**+0.1**
	comp=Z,0.2nm,0.3s,baz=151,slow=9.5,SNR=3.8							
PETK	**Petropavlovsk-**	**19.52**	**30**	P		**Pn**	**07 28 20.8**	**0.0**
	comp=Z,0.2nm,0.3s,baz=223,slow=9.3,SNR=3.4							
PETK				LR		LR	07 35 52.9	
	comp=Z,27nm,19.1s,baz=200,slow=37							
MA2	**Magadan**	**23.21**	**12**	P		**P**	**07 28 59.2**	**+0.6**
	comp=Z,7.8nm,0.6s,baz=262,slow=9.8,SNR=5.2							
MA2				pP		**pP**	**07 29 11.6**	**+1.9**
	comp=Z,11nm,0.7s,baz=202,slow=6.6,SNR=4.6							
GUMO	**Guam**	**23.65**	**172**	LR		LR	07 36 40.9	
	comp=Z,22nm,21.4s,baz=108,slow=32							
YAK	**Yakutsk**	**25.98**	**347**	*i*P		**P**	**07 29 23.8**	**-0.2**
YAK				pmax		pmax		
	comp=Z,11nm,0.5s							
SEY	**Seymchan**	**26.65**	**11**	P		**P**	**07 29 31.1**	**+1.0**
	comp=Z,1.7nm,0.5s,baz=195,slow=7.7,SNR=15							
SEY	**Seymchan**	**26.65**	**11**	*i*P		**P**	**07 29 32.0**	**+2.0**
ULN	**Ulaanbaatar**	**27.39**	**304**	*e*P		**P**	**07 29 36.8**	**-0.3**
ULN				pmax		pmax		
	comp=Z,4.0nm,0.6s							
ULN	**Ulaanbaatar**	**27.39**	**304**	*e*P		**P**	**07 29 36.8**	**-0.3**
	comp=Z,3.9nm,0.6s							
ENH	**Enshi**	**27.47**	**265**	*e*P		**P**	**07 29 36.6**	**-1.2**
BOD	**Bodaibo**	**27.50**	**328**	*e*P		**P**	**07 29 34.3**	**-3.4**
BOD				pmax		pmax		
	comp=Z,5.0nm,0.8s							
SONM	**Songino Array**	**27.83**	**304**	P		**P**	**07 29 39.8**	**-1.2**
	comp=Z,6.6nm,0.5s,baz=105,slow=9.9,SNR=32							
SONM				LR		LR	07 41 06.7	
	comp=Z,90nm,20.4s,baz=144,slow=37							
H11N2	**WAKE ISLAND Hy 28.10**	**121**		T		T	07 59 31.6	
	baz=314,slow=75,SNR=293							
H11N1	**WAKE ISLAND Hy 28.11**	**121**		T		T	07 59 31.6	
	baz=314,slow=75,SNR=283							
H11N3	**WAKE ISLAND Hy 28.12**	**121**		T		T	07 59 31.6	
	baz=314,slow=75,SNR=295							
H11S1	**WAKE ISLAND Hy 28.82**	**123**		T		T	08 00 24.3	
	baz=315,slow=76,SNR=224							
H11S3	**WAKE ISLAND Hy 28.82**	**123**		T		T	08 00 24.3	
	baz=315,slow=76,SNR=163							
H11S2	**WAKE ISLAND Hy 28.83**	**123**		T		T	08 00 24.3	
	baz=315,slow=76,SNR=128							
ZAK	**Zakamensk**	**30.30**	**308**	*e*P		**P**	**07 30 01.8**	**-1.0**
ZAK				pmax		pmax		
	comp=Z,4.0nm,1.2s							
TLY	**Talaya**	**30.35**	**311**	*e*P		**P**	**07 30 03.4**	**+0.2**
TLY				pmax		pmax		
	comp=Z,2.0nm,0.6s							
TLY				MLR		MLR		
	comp=Z,44nm,14.0s							
BILL	**Bilibino**	**33.88**	**16**	*i*P		**P**	**07 30 32.7**	**-1.1**
BILL				*i*			07 31 49.2	
BILL				*i*			07 33 13.1	
BILL				pmax		pmax		
	comp=Z,3.0nm,1.2s							
TIXI	**Tiksi**	**35.19**	**353**	*e*P		**P**	**07 30 43.8**	**-1.3**
TIXI				pmax		pmax		
	comp=Z,2.0nm,0.8s							
TIXI	**Tiksi**	**35.19**	**353**	P		**P**	**07 30 44.8**	**-0.3**
	comp=Z,4.4nm,0.4s							
CMAR	**Chiang Mai Arr**	**41.65**	**255**	P		**P**	**07 31 40.2**	**+0.2**
	comp=Z,1.7nm,0.6s,baz=50,slow=5.3,SNR=8.3							
CMAR				LR		LR	07 50 53.7	
	comp=Z,30nm,18.0s,baz=255,slow=39							
CMAR	**Chiang Mai Arr**	**41.65**	**255**	*ce*P		**P**	**07 31 40.9**	**+0.9**
CMAR				pmax		pmax		
	comp=Z,2.0nm,0.6s							
ZALV	**Zalesovo Beam**	**41.93**	**312**	P		**P**	**07 31 41.4**	**-0.4**
	comp=Z,18nm,0.7s,baz=94,slow=7.0,SNR=38							
ZALV				PcP		**PcP**	**07 33 36.5**	**-0.1**
	comp=Z,1.1nm,0.5s,baz=90,slow=1.9,SNR=3.5							
NVS	**Novosibirsk**	**42.85**	**314**	*e*P		**P**	**07 31 49.6**	**+0.3**
NRIK	**Noril'sk**	**43.21**	**335**	P		**P**	**07 31 51.9**	**-0.2**
	comp=Z,2.0nm,0.4s,baz=124,slow=11,SNR=3.5							
NRIK				LR		LR	07 52 56.6	
	comp=Z,52nm,19.2s,baz=128,slow=40							
MKAR	**Makanchi Array**	**44.16**	**302**	P		**P**	**07 31 59.6**	**-0.4**
	comp=Z,4.3nm,0.6s,baz=84,slow=13,SNR=18							
MKAR				LR		LR	07 50 31.7	
	comp=Z,32nm,20.6s,baz=69,slow=36							
KURK	**Kurchatov**	**45.96**	**308**	*e*P		**P**	**07 32 13.2**	**-1.0**
KURK	**Kurchatov**	**45.96**	**308**	*e*P		**P**	**07 32 13.2**	**-1.0**
PDGK	**Podgornoye**	**46.84**	**298**	P		**P**	**07 32 20.8**	**-0.4**
PDGK				pmax		pmax		
	comp=Z,6.0nm,0.7s							
KDAK	**Kodiak Island**	**46.92**	**42**	*i*P		**P**	**07 32 22.9**	**+1.3**
BPAW	**Bear Paw Mtn.**	**47.55**	**33**	*e*P		**P**	**07 32 27.1**	**+0.6**
ILAR	**Eielson Array**	**49.33**	**32**	P		**P**	**07 32 41.5**	**+1.3**
	comp=Z,4.4nm,0.6s,baz=268,slow=6.3,SNR=52							
TKM2	**Tokmak 2**	**49.69**	**298**	*e*P		**P**	**07 32 43.4**	**-0.1**
TKM2				pmax		pmax		
	comp=Z,4.0nm,0.4s							
TKM2	**Tokmak 2**	**49.69**	**298**	*e*P		**P**	**07 32 43.4**	**-0.1**
	comp=Z,4.3nm,0.4s							
OTUK	**Ortayu**	**50.46**	**306**	P		**P**	**07 32 48.8**	**-0.2**
OTUK				pmax		pmax		
	comp=Z,13nm,0.8s							
AAK	**Ala-Archa**	**50.55**	**298**	LR		LR	07 55 26.5	
	comp=Z,86nm,19.6s,baz=50,slow=38							
BVAR	**Borovoye Array**	**50.59**	**312**	P		**P**	**07 32 49.3**	**-0.5**
	comp=Z,4.3nm,0.5s,baz=72,slow=8.0,SNR=22							
BVAR				PcP		**PcP**	**07 34 07.3**	**+0.3**
	comp=Z,1.6nm,0.7s,baz=90,slow=4.4,SNR=3.5							
DOT	**Dot Lake**	**50.63**	**34**	P		**P**	**07 32 51.2**	**+1.1**
	comp=Z,5.9nm,0.7s							
BRVK	**Borovoye**	**50.64**	**312**	*i*P		**P**	**07 32 49.7**	**-0.6**
BRVK				pmax		pmax		
	comp=Z,7.0nm,0.7s							
BRVK	**Borovoye**	**50.64**	**312**	*e*P		**P**	**07 32 49.5**	**-0.8**
	comp=Z,9.5nm,0.8s							
EGAK	**Eagle**	**51.77**	**32**	*e*P		**P**	**07 32 59.8**	**+1.3**
	comp=Z,2.5nm,0.6s							
MNAS	**Manas**	**51.99**	**299**	P		**P**	**07 33 00.8**	**+0.1**
MNAS				pmax		pmax		
	comp=Z,10.0nm,0.9s							
KKAR	**Karatay Array**	**53.18**	**300**	*e*P		**P**	**07 33 08.8**	**-0.5**
KKAR				pmax		pmax		
	comp=Z,2.0nm,0.3s							
KKAR	**Karatay Array**	**53.18**	**300**	*e*P		**P**	**07 33 08.8**	**-0.5**
	comp=Z,1.8nm,0.3s							
ARU	**Arti**	**56.36**	**319**	P		**P**	**07 33 31.6**	**-0.5**
	comp=Z,4.3nm,0.3s,baz=82,slow=3.1,SNR=12							
ARU	**Arti**	**56.36**	**319**	*i*P		**P**	**07 33 31.0**	**-1.1**
ARU				S		**S**	**07 41 19.9**	**+0.8**
ARU				SS		**SS**	**07 45 05.1**	**-0.8**
ARU				pmax		pmax		
	comp=Z,18nm,1.2s							
ARU	**Arti**	**56.36**	**319**	*e*P		**P**	**07 33 31.5**	**-0.5**
	comp=Z,8.4nm,0.7s							
ARU				P		**P**	**07 33 31.6**	**-0.5**
ABKAR	**Akbulak array**	**57.96**	**310**	*e*P		**P**	**07 33 42.8**	**-0.7**
	comp=Z,9.3nm,0.5s							
AKTO	**Aktyubinsk**	**58.69**	**312**	P		**P**	**07 33 48.1**	**-0.5**
	comp=Z,3.7nm,0.7s,baz=77,slow=14,SNR=11							
AKTO				LR		LR	07 59 27.1	
	comp=Z,26nm,18.3s,baz=77,slow=36							
SPITS	**Spitsbergen Ar**	**60.43**	**349**	P		**P**	**07 34 00.1**	**-0.1**
	comp=Z,0.7nm,0.5s,baz=88,slow=7.6,SNR=9.1							
YKA	**Yellowknife Ar**	**63.64**	**30**	P		**P**	**07 34 22.8**	**+0.9**
	comp=Z,1.0nm,0.7s,baz=304,slow=6.7,SNR=20							
YKA				pP		**pP**	**07 34 36.7**	**+2.0**
	comp=Z,0.6nm,0.6s,baz=304,slow=6.5,SNR=8.0							
KLMR	**Klimovskoe**	**63.72**	**328**	*e*P		**P**	**07 34 25.9**	**+3.4**
KLMR				pmax		pmax		
	comp=Z,4.0nm,0.6s							
GEYT	**Alibeck**	**63.89**	**299**	P		**P**	**07 34 24.1**	**0.0**
	comp=Z,3.8nm,0.7s,baz=72,slow=4.8,SNR=8.6							
ARCES	**ARCESS Array B**	**63.93**	**339**	P		**P**	**07 34 24.4**	**+0.6**
	comp=Z,1.8nm,0.5s,baz=54,slow=8.2,SNR=14							
ARCES				LR		LR	08 04 27.1	
	comp=Z,37nm,21.4s,baz=65,slow=38							
STKA	**Stephens Creek**	**68.67**	**180**	P		**P**	**07 34 56.0**	**+1.6**
	comp=Z,2.5nm,0.7s,baz=13,slow=6.9,SNR=3.8							
STKA	**Stephens Creek**	**68.67**	**180**	P		**P**	**07 34 56.0**	**+1.6**
STKA				pmax		pmax		
	comp=Z,2.0nm,0.7s							
FINES	**FINESS Array B**	**68.77**	**332**	P		**P**	**07 34 54.5**	**-0.3**
	comp=Z,2.8nm,0.7s,baz=57,slow=6.7,SNR=7.9							
FINES				pP		**pP**	**07 35 08.0**	**+0.3**
	comp=Z,2.2nm,0.6s,baz=59,slow=6.7,SNR=3.1							
FINES				LR		LR	08 07 02.5	
	comp=Z,47nm,18.2s,baz=74,slow=38							
ZEI	**Tsey**	**70.82**	**309**	*e*P		**P**	**07 35 05.7**	**-2.3**
ZEI				pmax		pmax		
	comp=Z,14nm,1.3s							
KBZ	**Khabaz**	**70.92**	**311**	P		**P**	**07 35 07.2**	**-1.1**
	comp=Z,3.2nm,0.9s,baz=2.6,slow=4.9,SNR=5.6							
KIV	**Kislovodsk**	**70.92**	**311**	*e*P		**P**	**07 35 09.6**	**+1.1**
KIV				pmax		pmax		
	comp=Z,8.0nm,0.9s							
KIV				MLR		MLR		
	comp=Z,27nm,17.0s							
HFS	**Hagfors**	**74.03**	**336**	P		**P**	**07 35 26.1**	**-0.4**
	comp=Z,3.2nm,0.8s,baz=52,slow=5.7,SNR=6.5							
HFS				LR		LR	08 10 37.4	
	comp=Z,60nm,19.2s,baz=59,slow=38							
NB2	**NORSAR Subarra**	**74.13**	**337**	P		**P**	**07 35 26.5**	**-0.6**
	comp=Z,0.6nm,0.6s,baz=43,slow=5.9							
NOA	**NORSAR Array B**	**74.13**	**337**	P		**P**	**07 35 25.8**	**-1.4**
	comp=Z,1.3nm,0.7s,baz=39,slow=5.7,SNR=4.5							
NOA				pP		**pP**	**07 35 40.2**	**+0.1**
	comp=Z,2.7nm,0.9s,baz=40,slow=5.9,SNR=5.9							
NOA				LR		LR	08 11 21.4	
	comp=Z,28nm,20.1s,baz=40,slow=38							
DLMT	**Dillon**	**74.17**	**45**	*e*P		**P**	**07 35 29.6**	**+1.8**
	comp=Z,2.1nm,0.8s							
AKASG	**Malin Array Be**	**74.28**	**322**	P		**P**	**07 35 27.6**	**-0.6**
	comp=Z,2.7nm,0.4s,baz=46,slow=5.8,SNR=13							
AKASG				LR		LR	08 09 40.2	
	comp=Z,28nm,20.0s,baz=300,slow=37							
NVAR	**Mina Array Bea**	**74.81**	**53**	P		**P**	**07 35 33.6**	**+1.8**
	comp=Z,0.9nm,0.8s,baz=296,slow=5.1,SNR=6.5							
NVAR				pP		**PcP**	**07 35 48.2**	**+2.6**
	comp=Z,1.4nm,0.8s,baz=285,slow=6.3,SNR=8.8							
H17A	**Grant Village**	**75.89**	**45**	*e*P		**P**	**07 35 40.2**	**+2.3**
	comp=Z,4.5nm,1.0s							
IMW	**Indian Meadow**	**76.00**	**45**	*e*P		**P**	**07 35 39.8**	**+1.3**
	comp=Z,1.5nm,0.7s							
PDAR	**Pinedale Array**	**77.49**	**46**	P		**P**	**07 35 48.5**	**+1.6**
	comp=Z,0.9nm,0.6s,baz=267,slow=2.0,SNR=11							
PDAR				pP		**pP**	**07 36 02.5**	**+2.5**
	comp=Z,0.6nm,0.6s,baz=273,slow=3.6,SNR=4.7							
BRTR	**Keskin Array B**	**78.87**	**312**	P		**P**	**07 35 54.2**	**-0.2**
	comp=Z,0.7nm,0.4s,baz=100,slow=4.0,SNR=3.8							
CLL	**Collm**	**81.06**	**330**	*e*P		**P**	**07 36 06.0**	**+0.1**
	comp=Z,6.0nm,1.1s							
CLL				*i*			07 36 18.6	
CLL	**Collm**	**81.06**	**330**	*e*P		**P**	**07 36 06.0**	**+0.1**
CLL				*i*			07 36 18.6	
CLL				pmax		pmax		
	comp=Z,6.0nm,1.1s							
MMAI	**Mount Meron Ar**	**82.00**	**305**	P		**P**	**07 36 11.9**	**+0.5**
	comp=Z,0.5nm,0.3s,baz=38,slow=9.7,SNR=1.7							
MMAI				LR		LR	08 15 56.6	
	comp=Z,17nm,19.0s,baz=140,slow=38							
GERES	**GERESS Array B**	**82.68**	**328**	P		**P**	**07 36 14.2**	**-0.4**
	comp=Z,0.6nm,0.3s,baz=31,slow=6.2,SNR=7.2							
GERES				pP		**pP**	**07 36 27.7**	**-0.1**
	comp=Z,0.6nm,0.5s,baz=3.8,slow=4.0,SNR=3.3							
GERES				LR		LR	08 14 28.3	
	comp=Z,24nm,18.6s,baz=332,slow=37							
TXAR	**Lajitas Array**	**89.95**	**52**	P		**P**	**07 36 51.9**	**+1.2**
	comp=Z,0.7nm,0.7s,baz=289,slow=3.8,SNR=8.8							
TXAR				pP		**pP**	**07 37 06.5**	**+2.4**
	comp=Z,0.8nm,0.5s,baz=296,slow=2.9,SNR=8.8							
TORD	**Torodi Ar. Bea**	**117.34**	**315**	PKP		**PKPdf**	**07 42 36.3**	**-0.6**
	comp=Z,0.3nm,0.5s,baz=40,slow=1.3,SNR=5.5							
LPAZ	**La Paz**	**146.52**	**60**	PKPbc		**PKPbc**	**07 43 34.5**	**+1.1**
	comp=Z,1.6nm,0.5s,baz=284,slow=2.2,SNR=14							
LPAZ				pPKPbc		pPKPbc	07 43 49.9	+2.8
	comp=Z,1.8nm,0.6s,baz=243,slow=4.9,SNR=5.2							

IDC ***18*** *07:28:11.4±0.7, 4°.23S×152°.56E, h0km, mb4.1/11, mb1 4.3/12, mb1mx4.1/35, mbtmp4.1/12, ML4.8/1, MS3.1/2, Ms1 3.1/2, ms1mx2.6/34, Error ellipse: s-maj=24.2km s-min=18.0km az=100.0*
ISCJB ***18*** *07:28:17.5±0.6, 4°.34S±0°.07×152°.54E±0°.06, h58km, mb4.1/14, MS3.1/2, Error ellipse: s-maj=10.1km s-min=8.5km az=1.4*
NEIC ***18*** *07:28:22.0±1.7, 4°.41S×152°.74E, h89km±15km, mb4.4/3, Error ellipse: s-maj=14.1km s-min=12.4km az=158.0*

ISC 18 07:28:19.1±0.7, 4°.30S±0°.09×152°.54E±0°.09, h58km, n20, σ1§04/21, mb4.0/14, New Britain region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**7.37**	**226**	Pn		Pn	07 30 09.9	+5.8
	1.8nm,0.3s,baz=59,slow=12,SNR=2.9							
PMG				Sn		**Sn**	**07 31 27.2**	**+0.8**
	1.0nm,0.3s,baz=166,slow=14,SNR=2.6							
HNR	**Honiara**	**8.94**	**125**	Pn		**Pn**	**07 30 24.3**	**-1.4**
	11nm,0.3s,baz=348,slow=14,SNR=2.4							
HNR				Sn		**Sn**	**07 32 07.8**	**+2.8**
	13nm,0.3s,baz=246,slow=12,SNR=3.7							
EIDS	**Eidsvold**	**20.99**	**184**	P		**P**	**07 32 57.3**	**-0.5**
	20nm,1.2s							
DZM	**Mont Dzumac**	**22.22**	**144**	P		**P**	**07 33 09.8**	**-1.2**
	14nm,0.8s,baz=323,slow=15,SNR=8.9							
WRAB	**Tennant Creek**	**23.57**	**227**	*e*P		**P**	**07 33 24.6**	**-0.1**
	15nm,0.7s							
WRA	**Warramunga Arr**	**23.59**	**227**	P		**P**	**07 33 24.9**	**0.0**
	12nm,0.7s,baz=53,slow=10.0,SNR=63							
WRA				PcP		**PcP**	**07 37 09.7**	**+0.9**
	1.0nm,0.7s,baz=45,slow=2.0,SNR=5.7							
ARMA	**Armidale**	**25.99**	**182**	*e*P		**P**	**07 33 45.5**	**-1.2**
	14nm,1.4s							
ASAR	**Alice Springs**	**26.35**	**221**	P		**P**	**07 33 50.2**	**+0.2**
	1.1nm,0.5s,baz=55,slow=9.0,SNR=26							
ASAR				PcP		**PcP**	**07 37 15.9**	**+1.1**
	1.0nm,0.7s,baz=63,slow=2.3,SNR=5.0							
STKA	**Stephens Creek**	**29.29**	**199**	P		**P**	**07 34 14.9**	**-1.2**
	1.8nm,0.7s,baz=32,slow=14,SNR=6.1							
FITZ	**Fitzroy Crossi**	**29.68**	**240**	P		**P**	**07 34 19.7**	**+0.1**
	3.1nm,0.7s,baz=40,slow=9.8,SNR=7.9							
MJAR	**Matsushiro Arr**	**42.78**	**343**	LR		LR	07 51 41.6	
	comp=Z,27nm,20.5s,baz=110,slow=33							
PETK	**Petropavlovsk-**	**57.36**	**4**	LR		LR	07 57 18.8	
	comp=Z,19nm,21.1s,baz=128,slow=30							
SONM	**Songino Array**	**65.77**	**328**	P		**P**	**07 38 58.2**	**0.0**
	0.2nm,0.5s,baz=119,slow=8.4,SNR=2.1							
VNDA	**Vanda**	**73.33**	**178**	P		**P**	**07 39 44.9**	**+0.7**
	1.5nm,0.8s,baz=328,slow=6.0,SNR=8.6							
MKAR	**Makanchi Array**	**79.78**	**319**	P		**P**	**07 40 21.1**	**-0.1**
	0.2nm,0.6s,baz=92,slow=5.7,SNR=3.3							
ILAR	**Eielson Array**	**81.80**	**22**	P		**P**	**07 40 30.9**	**-0.7**
	1.2nm,0.8s,baz=251,slow=5.2,SNR=11							
QSPA	**South Pole Qui**	**85.65**	**180**	*e*P		**P**	**07 40 51.1**	**-0.3**
	35nm,1.1s							
BVAR	**Borovoye Array**	**88.69**	**323**	P		**P**	**07 41 06.8**	**+0.6**
	0.6nm,0.6s,baz=108,slow=4.8,SNR=4.5							
YKA	**Yellowknife Ar**	**95.11**	**28**	P		**P**	**07 41 36.0**	**+0.4**
	0.4nm,0.7s,baz=268,slow=4.9,SNR=10							
TORD	**Torodi Ar. Bea**	**149.91**	**289**	PKPbc		**PKPbc**	**07 48 04.5**	**+0.5**
	1.1nm,0.4s,baz=72,slow=2.5,SNR=24							

IDC 18 07:34:29.4±2.1, 4°.71S×153°.21E, h0km, mb4.0/4, mb1 4.2/4, mb1mx3.7/31, mbtmp4.0/4, Error ellipse: s-maj=68.9km s-min=34.3km az=111.0, New Ireland region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**7.60**	**232**	Pn		Pn	07 36 26.3	+4.7
	0.5nm,

1.6nm,0.6s,baz=150,slow=8.5,SNR=16
ZALV Zalesovo Beam 34.17 350 P **P 08 03 02.5 +0.4**
1.1nm,0.4s,baz=172,slow=10,SNR=4.1
BVAR Borovoye Array 37.34 336 P **P 08 03 29.0 -0.4**
0.3nm,0.3s,baz=129,slow=11,SNR=2.7
AKTO Aktyubinsk 41.35 325 P **P 08 04 03.3 +0.5**
1.7nm,0.7s,baz=128,slow=9.3,SNR=6.4
AKTO LR LR 08 22 04.5
comp=Z,44nm,18.9s,baz=71,slow=37
OBN Obninsk 55.09 324 LR LR 08 33 41.1
comp=Z,46nm,18.6s,baz=240,slow=41
WRA Warramunga Arr 56.12 133 P **P 08 05 56.4 0.0**
0.1nm,0.5s,baz=317,slow=7.6,SNR=6.1
ARCES ARCESS Array B 63.57 339 P **P 08 06 46.4 -0.4**
2.4nm,0.9s,baz=72,slow=7.8,SNR=5.9
HFS Hagfors 67.81 328 P **P 08 07 13.6 -0.6**
0.9nm,0.5s,baz=116,slow=6.6,SNR=3.9
ILAR Eielson Array 83.03 22 P **P 08 08 40.3 -1.0**
0.2nm,0.6s,baz=296,slow=4.3,SNR=4.2
TORD Torodi Ar. Bea 87.91 283 P **P 08 09 06.0 -0.5**
0.1nm,0.4s,baz=57,slow=4.9,SNR=3.7
TXAR Lajitas Array 127.49 20 PKP **PKPdf 08 15 22.8 +1.3**
0.1nm,0.5s,baz=180,slow=0.7,SNR=2.2

IDC 18 07:59:49.1±2.6, 52.°45N×35.°41E, h0^{km}, mb3.1/1, mb1 3.7/3, mb1mx3.2/40, mbtmp3.5/3, ML3.0/3, Error ellipse: s-maj=33.5km s-min=13.1km az=120.0, Baltic States-Belarus-Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OBN	**Obninsk**	**2.76**	**14**	Lg	Lg	08 01 15.4	
	9.0nm,0.3s,baz=357,slow=23,SNR=10.0						
AKASG	**Malin Array Be**	**4.23**	**248**	Pn	Pn	08 00 53.1	-1.7
	0.6nm,0.3s,baz=54,slow=12,SNR=2.4						
AKASG				Pg	Pb	08 01 03.2	-1.1
	2.0nm,0.3s,baz=58,slow=16,SNR=10						
AKASG				Sn	Sn	08 01 41.4	-3.4
	1.6nm,0.3s,baz=56,slow=20,SNR=4.5						
AKASG				Lg	Lg	08 01 57.2	
	2.3nm,0.3s,baz=63,slow=29,SNR=4.8						
FINES	**FINESS Array B**	**10.35**	**334**	Pn	Pn	08 02 16.0	-2.6
	0.1nm,0.3s,baz=149,slow=14,SNR=3.0						
FINES				Sn	Sn	08 04 04.6	-11
	0.2nm,0.3s,baz=154,slow=23,SNR=3.2						
I26DE	**FREYUNG INFRAS**	**14.21**	**264**	*i*		09 23 40.0	
	baz=68,slow=325,SNR=3.1						
ARCES	**ARCESS Array B**	**17.76**	**349**	P	Pn	08 03 56.5	-0.9
	0.2nm,0.3s,baz=163,slow=8.9,SNR=7.9						
YKA	**Yellowknife Ar**	**62.98**	**345**	P	P	08 10 15.7	-1.2
	0.1nm,0.5s,baz=13,slow=6.7,SNR=4.7						

*ISCJB **18** 08:03:40.5±0.7, 32.°3N±0.°1×115.°4W±0.°1, h14^{km}±23^{km}, Error ellipse: s-maj=28.1km s-min=5.9km az=42.2*
*ECX **18** 08:03:41.5±0.6, 32.°32N×115.°39W, h4^{km}, MD2.2, ML2.4*
*MEX **18** 08:03:42.5±0.6, 32.°40N×115.°31W, h15^{km}±151^{km}, MD3.1*
ISC 18 08:03:40.1±0.9, 32.°30N±0.°05×115.°41W±0.°05, h12^{km}±11^{km}, n9, σ0°46/15, 2C-3D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CPBX	**Cerro Prieto**	**0.15**	**39**	*e*P	**Pg**	**08 03 43.8**	**+0.2**
CPBX				*e*S	**Sg**	**08 03 46.0**	**-0.1**
CPBX				AML	AML	08 03 47.4	
	comp=N,3μm,0.3s						
CPBX				⇓*e*		08 03 47.4	
CPBX				⇓*e*		08 03 47.4	
CPBX				AML	AML	08 03 47.4	
	comp=E,4μm,0.3s						
CPBX				⇓*e*		08 03 50.6	
CPBX				AML	AML	08 03 50.6	
	comp=E,3μm,0.2s						
MBIG	**Mexicali**	**0.21**	**60**	*e*P	**Pg**	**08 03 45.3**	**+0.7**
MBIG				*i* S	**Sg**	**08 03 46.9**	**-0.8**
DREC	**Desert Rsrch C**	**0.50**	**357**	*e*P	**Pb**	**08 03 50.7**	**-0.1**
ECBX	**El Chinero**	**0.89**	**160**	*e*P	**Pg**	**08 03 57.4**	**+0.2**
ECBX				*e*S	**Sb**	**08 04 09.4**	**+0.4**
ECBX				⇑*e*		08 04 10.3	
ECBX				AML	AML	08 04 10.3	
	comp=E,168nm,0.3s						
ECBX				AML	AML	08 04 10.3	
	comp=N,118nm,0.2s						
ECBX				⇑*e*		08 04 10.3	
CBX	**Cerro Bola**	**1.06**	**271**	*e*P	**Pb**	**08 04 00.7**	**+0.3**
CBX				*e*S	**Sb**	**08 04 14.8**	**+0.5**
TJIG	**Tijuana**	**1.08**	**277**	*e*P	**Pb**	**08 04 00.6**	**0.0**
TJIG				*e*S	**Sg**	**08 04 14.3**	**-0.6**
BAR	**Barrett**	**1.13**	**290**	*e*P	**Pb**	**08 04 01.4**	**-0.1**
SPIG	**San Pedro Mart**	**1.26**	**182**	*e*P	**Pn**	**08 04 03.2**	**-0.5**
SPIG				*e*S	**Sb**	**08 04 20.2**	**+0.2**
SPIG	**San Pedro Mart**	**1.26**	**182**	*e*P	**Pn**	**08 04 03.5**	**-0.2**

*IDC **18** 08:10:06.4±0.7, 15.°45S×175.°46W, h0^{km}, mb4.3/12, mb1 4.6/12, mb1mx4.3/31, mbtmp4.3/12, MS4.5/29, Ms1 4.5/29, ms1mx4.4/39, Error ellipse: s-maj=31.9km s-min=17.5km az=137.0*
*ISCJB **18** 08:10:10.8±0.3, 15.°65S±0.°07×175.°39W±0.°07, h35^{km}, mb4.8/64, MS4.7/41, Error ellipse: s-maj=12.4km s-min=6.5km az=141.0*
*NEIC **18** 08:10:12.6±0.3, 15.°54S×175.°43W, h35^{km}, mb4.9/45, Error ellipse: s-maj=16.3km s-min=7.5km az=141.0*
*GCMT **18** 08:10:17.0±0.1, 15.°52S×175.°11W, h12^{km}, MW5.3/122, Moment Tensor Solution. s86,c130; s122,c221; Duration: 18s Moment tensor: Scale 10^{17}Nm; M_{rr}=0.14±.01; $M_{\theta\theta}$0.90±.01; $M_{\phi\phi}$-0.76±.01; $M_{r\theta}$0.20±.03; $M_{\theta\phi}$0.39±.01; $M_{\phi r}$-0.29±.03; Best double couple: $M_0$0.99400×10^{17} NP1:ϕ_s301.00000°, δ80.00000°, λ-21.00000°. NP2:ϕ_s34.00000°, δ70.00000°, λ-169.00000°. Principal axes: T 1.0080, Plg7.0000°, Azm349.0000°; N -0.0290, Plg67.0000°, Azm96.0000°; P -0.9800, Plg22.0000°, Azm256.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
ISC 18 08:10:11.7±0.4, 15.°69S±0.°09×175.°19W±0.°08, h35^{km}, n183, σ1°83/137, mb4.9/64, MS4.6/42, 4C-4D, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**3.75**	**62**	Pn	Pn	08 11 00.6	-6.6
	23nm,0.3s,baz=31,slow=1.5,SNR=32						
AFI				Sn	**Sn**	**08 11 47.0**	**-3.2**
	12nm,0.3s,baz=36,slow=19,SNR=3.0						
AFI				LR	LR	08 12 17.7	
	comp=Z,7μm,21.7s,baz=234,slow=34						
MSVF	**Nonsavu**	**6.79**	**252**	*e*Pn	**Pn**	**08 11 50.3**	**+1.4**
RAO	**Raoul Island**	**13.73**	**190**	LR	LR	08 17 54.1	
	comp=Z,7μm,19.2s,baz=12,slow=34						
DZM	**Mont Dzumac**	**18.49**	**247**	P	**Pn**	**08 14 24.9**	**-0.4**
	0.5nm,0.3s,baz=80,slow=19,SNR=9.6						
URZ	**Urewera**	**23.48**	**195**	P	**P**	**08 15 16.2**	**-2.0**
	22nm,0.7s,baz=23,slow=6.3,SNR=8.0						
URZ	**Urewera**	**23.48**	**195**	*e*P	**P**	**08 15 19.2**	**+1.0**
	38nm,1.0s						
PAE	**Paea**	**24.61**	**98**	*e*T	T	08 40 44.2	
	2.8nm,0.3s						
PPT	**Papeete**	**24.61**	**98**	LR	LR	08 22 29.4	
	comp=Z,980nm,20.0s,baz=268,slow=30						
PPT2	**Papeete2**	**24.61**	**98**	*e*LQ	LQ	08 20 21.5	
	5μm,25.8s						
PPT2				*e*LR	LR	08 21 24.4	
	3μm,25.5s,baz=264						
PPT2	**Papeete2**	**24.61**	**98**	*e*T	T	08 40 45.4	
	4.0nm,0.3s						
TVO	**Taravao**	**24.92**	**98**	*e*T	T	08 41 08.1	
	2.9nm,0.3s						
TBI	**Tubuai**	**25.39**	**111**	*e*LQ	LQ	08 20 45.0	
	7μm,27.2s						
TBI				*e*LR	LR	08 21 53.3	
	2μm,27.0s						
TBI	**Tubuai**	**25.39**	**111**	*e*T	T	08 41 42.4	
	10.0nm,0.3s						
PMOR	**Pomariorio Ree**	**26.33**	**92**	*e*T	T	08 42 53.3	
	4.3nm,0.3s						
TAOE	**Nuku Hiva Isla**	**34.87**	**83**	*e*S	S	08 22 22.0	-7.4
	207nm,26.8s						
TAOE				*e*LR	LR	08 26 04.2	
	3μm,27.5s,baz=254						
TAOE	**Nuku Hiva Isla**	**34.87**	**83**	*e*T	T	08 53 33.8	
	28nm,0.2s						
H11S2	**WAKE ISLAND Hy**	**38.36**	**332**	T	T	08 58 15.3	
	baz=149,slow=76,SNR=27						
H11S3	**WAKE ISLAND Hy**	**38.38**	**332**	T	T	08 58 15.9	
	baz=149,slow=76,SNR=12						
H11S1	**WAKE ISLAND Hy**	**38.38**	**332**	T	T	08 58 16.5	
	baz=149,slow=76,SNR=16						
RKT	**Rikitea**	**38.55**	**107**	*e*LQ	LQ	08 26 11.3	
	1μm,27.2s						
RKT				*e*LR	LR	08 27 56.9	
	2μm,27.5s,baz=275						
RKT	**Rikitea**	**38.55**	**107**	*e*T	T	08 58 08.6	
	2.6nm,0.3s						
H11N3	**WAKE ISLAND Hy**	**39.35**	**333**	T	T	08 59 28.2	
	baz=152,slow=76,SNR=48						
H11N1	**WAKE ISLAND Hy**	**39.35**	**333**	T	T	08 59 25.3	
	baz=152,slow=76,SNR=80						
H11N2	**WAKE ISLAND Hy**	**39.36**	**333**	T	T	08 59 26.2	
	baz=152,slow=76,SNR=55						
STKA	**Stephens Creek**	**42.40**	**240**	P	**P**	**08 18 01.9**	**-1.1**
	12nm,1.1s,baz=66,slow=7.7,SNR=6.7						
STKA				LR	LR	08 33 45.9	
	comp=Z,757nm,21.0s,baz=76,slow=34						
STKA	**Stephens Creek**	**42.40**	**240**	*e*P	**P**	**08 18 03.1**	**0.0**
	15nm,1.6s						
JAY	**Jayapura**	**45.36**	**282**	LR	LR	08 35 47.1	
	comp=Z,18nm,21.5s,slow=34						
WRAB	**Tennant Creek**	**48.09**	**257**	*e*P	**P**	**08 18 48.3**	**-0.1**
	43nm,1.7s						
WRA	**Warramunga Arr**	**48.10**	**257**	P	**P**	**08 18 46.9**	**-1.6**
	2.9nm,0.8s,baz=90,slow=8.1,SNR=16						
WRA				LR	LR	08 36 54.8	
	comp=Z,949nm,21.8s,baz=110,slow=34						
AS01	**Alice Springs**	**48.34**	**252**	*e*P	**P**	**08 18 48.7**	**-1.6**
AS31	**Alice Springs**	**48.38**	**252**	*e*P	**P**	**08 18 50.0**	**-0.6**
	2.3nm,0.8s						
ASAR	**Alice Springs**	**48.38**	**252**	P	**P**	**08 18 49.6**	**-1.0**
	6.4nm,0.9s,baz=86,slow=7.9,SNR=32						
ASAR				LR	LR	08 37 25.3	
	comp=Z,2μm,21.1s,baz=92,slow=34						
FITZ	**Fitzroy Crossi**	**56.46**	**258**	*e*P	**P**	**08 19 52.0**	**+1.4**
	57nm,1.8s						
JCJ	**Chichijima**	**59.34**	**315**	LR	LR	08 41 31.4	
	comp=Z,749nm,20.5s,baz=126,slow=32						
SBA	**Scott Base**	**62.83**	**184**	*e*P	**P**	**08 20 36.1**	**+2.6**
	31nm,0.9s						
VNDA	**Vanda**	**62.91**	**185**	P	**P**	**08 20 35.5**	**+1.5**
	18nm,1.0s,baz=8.3,slow=6.5,SNR=40						
VNDA				LR	LR	08 44 36.0	
	comp=Z,142nm,19.7s,baz=20,slow=33						
VNDA	**Vanda**	**62.91**	**185**	*e*P	**P**	**08 20 35.5**	**+1.5**
	25nm,1.0s						
MJAR	**Matsushiro Arr**	**68.06**	**321**	LR	LR	08 45 06.5	
	comp=Z,348nm,22.0s,baz=120,slow=31						
CASY	**Casey**	**69.42**	**205**	*e*P	**P**	**08 21 15.6**	**-0.4**
	18nm,1.0s						
PETK	**Petropavlovsk-**	**72.40**	**343**	P	**P**	**08 21 33.5**	**-0.6**
	5.2nm,0.8s,baz=102,slow=6.2,SNR=5.6						
PETK				LR	LR	08 47 11.4	
	comp=Z,672nm,22.0s,baz=148,slow=31						
YBH	**Yreka Blue Hor**	**74.88**	**38**	LR	LR	08 48 41.9	
	comp=Z,294nm,19.4s,baz=238,slow=31						
KSRS	**Korea Array**	**75.17**	**316**	LR	LR	08 51 56.7	
	comp=Z,246nm,19.2s,baz=122,slow=34						
KSM	**Kuching**	**75.50**	**276**	*e*P	**P**	**08 21 53.5**	**+0.4**
NV01	**Mina Array Sit**	**75.71**	**43**	*e*P	**P**	**08 21 54.8**	**+0.8**
NVAR	**Mina Array Bea**	**75.71**	**43**	P	**P**	**08 21 55.0**	**+0.9**
	2.4nm,0.9s,baz=225,slow=9.4,SNR=11						
NVAR				LR	LR	08 48 39.1	
	comp=Z,296nm,19.9s,baz=236,slow=30						
NV11	**Mina Array Sit**	**75.81**	**43**	*e*P	**P**	**08 21 56.5**	**+1.9**
	16nm,1.4s						
LEM	**Lembang**	**75.89**	**267**	LR	LR	08 54 30.0	
	comp=Z,269nm,20.4s,baz=98,slow=35						
USRK	**Ussuriysk Ar.**	**76.59**	**324**	LR	LR	08 49 32.3	
	comp=Z,1μm,21.7s,baz=120,slow=31						
SHPR	**Sheep Range**	**76.80**	**46**	*e*PcP	**PcP**	**08 22 09.8**	**-1.5**
Y14A	**Wickenburg**	**77.04**	**49**	*e*P	**P**	**08 22 03.5**	**+1.9**
	20nm,1.1s						
X16A	**Lo Mia Camp, P**	**78.41**	**49**	*e*P	**P**	**08 22 11.0**	**+1.7**
	7.8nm,1.1s						
PSUT	**Pine Spring**	**78.72**	**45**	*e*P	**P**	**08 22 15.7**	**+4.7**
	4.8nm,1.1s						
BBB	**Bella Bella**	**78.93**	**27**	LR	LR	08 50 05.7	
	comp=Z,250nm,19.7s,baz=252,slow=30						
ELK	**Elko**	**78.95**	**42**	LR	LR	08 51 43.6	
	comp=Z,154nm,18.5s,baz=139,slow=32						
WUAZ	**Wupatki**	**78.97**	**48**	*e*P	**P**	**08 22 13.6**	**+1.3**
TT01	**Tatalina**	**79.77**	**9**	*e*P	**P**	**08 22 16.0**	**+0.1**
TTA	**Tatalina**	**79.80**	**9**	*e*P	**P**	**08 22 16.0**	**0.0**
	24nm,1.4s						
KLR	**Kul'dur**	**79.84**	**328**	LR	LR	09 00 36.7	
	comp=Z,58nm,18.4s,slow=38						
DIV	**Divide**	**80.09**	**14**	*e*P	**P**	**08 22 17.6**	**0.0**
	12nm,0.9s						
CN2	**Changchun**	**80.21**	**321**	*e*P	**P**	**08 22 21.3**	**+2.6**
CN2				*es*P	sP	08 22 39.8	+6.1
CN2				*e*S	**S**	**08 32 21.4**	**+0.1**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.6s						
CN2				pmax	pmax		
	comp=Z,200nm,3.0s						
CN2				LR	LR		
	comp=N,300nm,22.0s						
CN2				LR	LR		
	comp=E,200nm,22.0s						
CN2				LR	LR		
	comp=Z,300nm,22.0s						
BMRM	**Bremner River**	**80.22**	**15**	*e*P	**P**	**08 22 18.6**	**+0.2**
	comp=Z,62nm,1.8s						
TMUT	**Trail Mountain**	**80.89**	**45**	*e*P	P	08 22 28.3	+5.4
	comp=Z,9.4nm,1.2s						
HLID	**Hailey**	**80.95**	**40**	*e*P	P	08 22 28.5	+5.6
	comp=Z,5.0nm,1.1s						
TNA	**Tin City**	**81.20**	**3**	*e*P	**P**	**08 22 24.5**	**+1.1**
	comp=Z,16nm,1.0s						
QIZ	**Qiongzhong**	**81.42**	**292**	P	**P**	**08 22 28.3**	**+2.7**
QIZ	**Qiongzhong**	**81.42**	**292**	S	**SKSac**	**08 32 47.9**	**+4.9**
QIZ				LR	LR		
	comp=N,58nm,25.1s						
QIZ				LR	LR		
	comp=E,130nm,20.0s						
RND	**Reindeer**	**81.46**	**12**	*e*P	**P**	**08 22 25.8**	**+0.8**
	comp=E,21nm,1.4s						
MCK	**McKinley**	**81.74**	**11**	*e*P	**P**	**08 22 26.3**	**-0.1**
	comp=E,27nm,1.5s						
MNTX	**Cornudas Mount**	**81.79**	**54**	*e*P	**P**	**08 22 28.6**	**+1.2**
MNTX				*ep*P	**pP**	**08 22 41.3**	**+2.9**
NEW	**Newport**	**81.93**	**35**	LR	LR	08 50 46.7	
	comp=E,199nm,21.8s,baz=232,slow=30						
TX31	**Lajitas Ar. Si**	**82.21**	**57**	*e*P	**P**	**08 22 29.9**	**+0.1**
TX31				*ep*P	**sP**	**08 22 44.2**	**-0.6**
TXAR	**Lajitas Array**	**82.21**	**57**	P	**P**	**08 22 30.9**	**+1.2**
	comp=E,0.9nm,1.0s,baz=284,slow=5.0,SNR=6.2						
TXAR				LR	LR	08 53 21.9	
	comp=E,152nm,18.1s,baz=0.0,slow=32						
ANMO	**Albuquerque**	**82.32**	**51**	LR	LR	08 52 37.4	
	comp=E,271nm,19.1s,baz=244,slow=31						
ANMO	**Albuquerque**	**82.32**	**51**	*e*P	**P**	**08 22 31.7**	**+1.4**
	comp=E,15nm,1.4s						
MCMT	**McKenzie Canyo**	**82.57**	**39**	*e*P	**P**	**08 22 35.3**	**+3.8**
WRH	**Wood River Hil**	**82.57**	**11**	*e*P	**P**	**08 22 30.6**	**-0.1**
	comp=E,20nm,1.4s						
MLY	**Manley**	**82.60**	**10**	*e*P	**P**	**08 22 30.4**	**-0.5**
	comp=E,8.0nm,1.2s						
DLBC	**Dease Lake**	**82.61**	**22**	LR	LR	08 51 11.1	
	comp=E,621nm,21.3s,baz=227,slow=30						
CCB	**Clear Creek Bu**	**82.78**	**12**	*e*P	**P**	**08 22 31.1**	**-0.7**
	comp=E,42nm,2.0s						
COLA	**College**	**82.98**	**11**	*e*P	**P**	**08 22 32.0**	**-0.8**
	comp=E,29nm,1.5s						
DLMT	**Dillon**	**83.00**	**39**	*e*P	**P**	**08 22 36.2**	**+2.6**
	comp=E,23nm,1.8s						
IL1	**Eielson Array**	**83.08**	**12**	*e*P	**P**	**08 22 32.1**	**-1.2**
ILAR	**Eielson Array**	**83.08**	**12**	P	**P**	**08 22 32.6**	**-0.7**
	comp=E,2.8nm,1.0s,baz=225,slow=5.7,SNR=9.3						
ILAR				LR	LR	08 52 34.2	
	comp=E,345nm,21.6s,baz=214,slow=31						
ILB	**Eielson Array**	**83.08**	**12**	*e*P	**P**	**08 22 33.7**	**+0.4**
REDW	**Red Top Meadow**	**83.09**	**41**	*e*P	**P**	**08 22 35.6**	**+1.4**
	comp=E,14nm,1.4s						
SNOW	**Snow King Moun**	**83.20**	**41**	*e*P	**P**	**08 22 37.0**	**+2.2**
	comp=E,13nm,1.3s						
S22A	**4UR Ranch, Cre**	**83.24**	**48**	*e*P	**P**	**08 22 37.0**	**+1.8**
	comp=E,14nm,1.4s						
IMW	**Indian Meadow**	**83.30**	**41**	*e*P	**P**	**08 22 38.0**	**+2.7**
	comp=E,12nm,1.4s						
FLWY	**Flagg Ranch**	**83.54**	**41**	*e*P	**P**	**08 22 40.5**	**+4.0**
	comp=E,27nm,1.6s						
BW06	**Boulder Array**	**83.64**	**42**	*e*P	**P**	**08 22 35.9**	**-1.2**
	comp=E,5.5nm,1.1s						
PD31	**Pinedale Array**	**83.64**	**42**	*e*P	**P**	**08 22 37.0**	**0.0**
PDAR	**Pinedale Array**	**83.64**	**42**	P	**P**	**08 22 36.8**	**-0.3**
	comp=E,2.0nm,0.8s,baz=209,slow=3.3,SNR=9.2						
PDAR				LR	LR	08 55 14.3	
	comp=E,214nm,18.8s,baz=254,slow=32						
YMR	**Madison River**	**83.66**	**40**	*e*P	**P**	**08 22 40.4**	**+3.4**
	comp=E,28nm,1.5s						
BOZ	**Bozeman (W)**	**83.73**	**39**	*e*P	**P**	**08 22 39.7**	**+2.4**
	comp=E,17nm,1.6s						
SMCO	**Snowmass**	**83.76**	**47**	*e*P	**P**	**08 22 40.0**	**+2.0**
	comp=E,4.7nm,0.9s						
H17A	**Grant Village**	**83.77**	**41**	*e*P	**P**	**08 22 42.3**	**+4.7**
	comp=E,9.9nm,1.4s						
LKWY	**Lake**	**83.96**	**41**	*e*P	**P**	**08 22 42.6**	**+3.9**
	comp=E,7.7nm,1.1s						
DAWY	**Dawson**	**84.14**	**15**	*e*P	**P**	**08 22 38.9**	**+0.1**
	comp=E,20nm,1.5s						
EGAK	**Eagle**	**84.31**	**14**	*e*P	**P**	**08 22 39.7**	**0.0**
	comp=E,11nm,1.4s						
BJI	**Beijing**	**84.43**	**314**	P	**P**	**08 22 41.5**	**+0.8**
BJI	**Beijing**	**84.43**	**314**	S	**S**	**08 33 04.3**	**-0.3**
BJI				pmax	pmax		
	comp=Z,9.0nm,1.3s						
BJI				pmax	pmax		
	comp=Z,80nm,3.5s						
BJI				LR	LR		
	comp=N,220nm,22.1s						
BJI				LR	LR		
	comp=E,230nm,25.1s						
BJI				LR	LR		
	comp=Z,360nm,24.1s						
BILL	**Bilibino**	**84.58**	**353**	*e*P	**P**	**08 22 40.2**	**-0.7**
	comp=Z,7.3nm,1.0s						
COLD	**Coldfoot**	**84.71**	**10**	*e*P	**P**	**08 22 42.2**	**+0.6**
	comp=Z,13nm,1.1s						
RLMT	**Red Lodge**	**84.93**	**40**	*e*P	**P**	**08 22 46.6**	**+3.1**
	comp=Z,10.0nm,1.4s						
ENH	**Enshi**	**85.62**	**303**	*e*P	**P**	**08 22 46.3**	**-0.8**
EGMT	**Eagleton**	**86.01**	**38**	*e*P	**P**	**08 22 49.0**	**+0.4**
GYA	**Guiyang**	**86.66**	**298**	*e*P	**P**	**08 22 52.3**	**-0.1**
GYA				pP	sP	08 23 06.4	-1.1
GYA				PP	**PP**	**08 26 16.8**	**+1.8**
GYA	**Guiyang**	**86.66**	**298**	SKS	**SKSac**	**08 33 11.0**	**-6.0**
GYA	**Guiyang**	**86.66**	**298**	S	**S**	**08 33 32.6**	**+5.1**
GYA	**Guiyang**	**86.66**	**298**	sS	sS	08 33 46.5	+0.6
GYA				pmax	pmax		
	comp=Z,10.0nm,1.0s						
GYA				pmax	pmax		
	comp=Z,110nm,6.2s						
MAW	**Mawson**	**86.96**	**199**	LR	LR	08 57 31.9	
	comp=Z,167nm,22.0s,baz=98,slow=33						
XAN	**Xi'an**	**87.41**	**306**	P	P	08 23 02.6	+6.8
XAN				pP	sP	08 23 16.0	+5.1
XAN				sP	pP	08 23 21.3	+14
XAN				PP	PP	08 26 27.8	+7.0
XAN	**Xi'an**	**87.41**	**306**	SKS	**SKSac**	**08 33 23.0**	**+1.9**
XAN	**Xi'an**	**87.41**	**306**	S	**S**	**08 33 34.9**	**+0.6**
XAN	**Xi'an**	**87.41**	**306**	SS	SS	08 39 20.8	+0.7
XAN				pmax	pmax		
	comp=Z,7.0nm,0.7s						
XAN				pmax	pmax		
	comp=Z,47nm,5.3s						
XAN				LR	LR		
	comp=N,130nm,16.5s						
XAN				LR	LR		
	comp=E,190nm,19.1s						
XAN				LR	LR		
	comp=Z,180nm,19.1s						
LAO	**LASA Array**	**87.54**	**40**	*e*P	P	08 23 01.4	+5.3
	comp=Z,22nm,1.5s						
HHC	**Hu-ho-hao-te**	**87.97**	**313**	*e*P	**P**	**08 22 59.0**	**+0.6**
HHC	**Hu-ho-hao-te**	**87.97**	**313**	S	**S**	**08 33 38.5**	**-1.0**
HHC				pmax	pmax		
	comp=Z,23nm,1.3s						
HHC				pmax	pmax		
	comp=Z,110nm,7.6s						
HHC				LR	LR		
	comp=N,160nm,17.8s						
HHC				LR	LR		
	comp=E,320nm,17.6s						
HHC				LR	LR		
	comp=Z,280nm,17.6s						
KMI	**Kunming**	**89.60**	**296**	P	**P**	**08 23 05.1**	**-1.5**
KMI				sP	sP	08 23 22.0	+0.3
KMI	**Kunming**	**89.60**	**296**	S	**S**	**08 33 51.9**	**-3.9**
KMI	**Kunming**	**89.60**	**296**	sS	sS	08 34 11.6	-2.6
KMI	**Kunming**	**89.60**	**296**	SS	SS	08 39 58.3	+5.5
KMI				pmax	pmax		
	comp=Z,13nm,0.8s						
KMI				pmax	pmax		
	comp=Z,91nm,5.0s						
KMI				LR	LR		
	comp=N,160nm,20.8s						
KMI				LR	LR		
	comp=E,240nm,21.3s						
KMI				LR	LR		
	comp=Z,310nm,23.3s						
CD2	**Chengdu**	**90.50**	**302**	P	**P**	**08 23 09.5**	**-0.9**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
PLCA	**Paso Flores**	**90.59**	**133**	LR	LR	08 55 41.1	
	comp=Z,390nm,21.1s,baz=291,slow=30						
YKA	**Yellowknife Ar**	**91.06**	**24**	P	**P**	**08 23 10.7**	**-1.4**
	comp=Z,0.5nm,0.9s,baz=241,slow=4.5,SNR=7.1						
YKA				LR	LR	09 01 33.8	
	comp=Z,40nm,18.0s,baz=180,slow=34						
YKB5	**Yellowknife Ar**	**91.06**	**24**	*e*P	**P**	**08 23 11.7**	**-0.4**
CMAR	**Chiang Mai Arr**	**91.07**	**289**	P	**P**	**08 23 11.3**	**-2.0**
	comp=Z,1.0nm,0.4s,baz=94,slow=2.8,SNR=3.3						
CMAR				LR	LR	08 59 50.7	
	comp=Z,75nm,21.2s,baz=110,slow=33						
SYO	**Syowa Base**	**91.97**	**192**	⇓*e*X	P	**08 23 13.4**	**-3.0**
LZH	**Lanzhou**	**92.01**	**307**	*e*P	**P**	**08 23 18.6**	**+1.1**
LZH				pP	sP	08 23 32.3	-0.3
LZH				sP	pP	08 23 38.8	+10
LZH	**Lanzhou**	**92.01**	**307**	SKS	**SKSac**

BR131	Keskin Array S	145.27 319	*e*PKPbc	PKPbc	08 29 46.0	-0.1
BRTR	Keskin Array B	145.27 319	PKP	PKPbc	08 29 46.0	-0.1
comp=Z,14nm,0.9s,baz=106,slow=1.8,SNR=50						
VYHS	Vyhne	145.32 344	*e*PKP	PKPbc	08 29 45.4	-0.3
TREC	Trest	145.37 348	AMS	AMS	09 32 10.0	
comp=Z,400nm,17.1s						
MLR	Muntele Rosu	145.39 333 ⇑	*i*P	PKPab	08 29 46.4	+0.1
MLR	Muntele Rosu	145.39 333	*e*PKPbc	PKPab	08 29 46.4	+0.1
DRGR		145.60 338 ⇓	*i*P	PKPbc	08 29 45.9	-0.8
BR231	Keskin MP Arra	145.74 320	*e*PKPdf	PKPdf	08 29 46.7	-0.3
VOIR		145.81 334 ⇑	*i*P	PKPab	08 29 48.0	+0.1
KHC	Kasperske Hory	145.89 350	*e*PKP	PKPbc	08 29 47.8	+0.3
KHC			*ex*	x	08 29 53.8	
KHC			AMS	AMS	09 29 20.0	
comp=Z,400nm,25.4s						
KHC	Kasperske Hory	145.89 350	*e*PKPdf	PKPbc	08 29 47.8	+0.3
ARR	Arges	146.04 335 ⇓	*i*P	PKPab	08 29 48.9	+0.2
WLF	Walferdange	146.10 358	*e*PKPdf	PKPdf	08 29 47.8	+0.6
GEC2	GERESS Array S	146.15 349	*e*PKPdf	PKPbc	08 29 48.3	-0.1
GERES	GERESS Array B	146.15 349	PKPbc	PKPdf	08 29 47.5	+0.1
comp=Z,1.4nm,0.8s,baz=20,slow=4.3,SNR=11						
GEA0	GERESS Array S	146.15 349	*e*PKPdf	PKPdf	08 29 47.3	-0.1
CONA	Conrad Observa	146.59 346	*i*PKPab	PKPbc	08 29 50.3	+0.6
comp=Z,8.3nm,0.9s						
MOA	Molln	147.00 348	*i*PKPab	PKPbc	08 29 50.8	0.0
comp=Z,15nm,1.2s						
BFO	Black Forest	147.33 356	*e*PKPdf	PKPbc	08 29 51.6	-0.1
MDVR	Moldovita	147.68 337 ⇑	*i*P	PKPdf	08 29 50.3	+0.2
KBA	Koelnbreinsper	147.91 349	*i*PKiKP	PKPab	08 29 56.4	+0.3
comp=Z,8.9nm,1.3s						
RETA	Reutte	147.92 352	*i*PKPbc	PKPbc	08 29 53.2	-0.2
comp=Z,12nm,1.0s						
SOKA	Soboth	147.95 347	*i*PKPab	PKPbc	08 29 53.6	+0.1
comp=Z,3.5nm,0.5s						
WATA	Walderalm	147.95 351	*i*PKPab	PKPbc	08 29 53.5	-0.1
comp=Z,3.9nm,0.5s						
MOTA	Moosalm	148.01 352	*i*PKiKP	PKPbc	08 29 54.7	+0.9
comp=Z,8.7nm,1.1s						
WTTA	Wattenberg	148.01 351	*i*PKiKP	PKPbc	08 29 54.1	+0.2
comp=Z,9.8nm,1.1s						
OBKA	Obir	148.22 347	*i*PKPab	PKPab	08 29 57.1	-0.1
comp=Z,0.5nm,0.1s						
DAVA	Damuels	148.22 353	*i*PKiKP	PKPbc	08 29 54.4	0.0
comp=Z,8.3nm,1.0s						
MYKA	Terra Mystica	148.29 348	*i*PKPbc	PKPbc	08 29 53.9	-0.6
comp=Z,6.4nm,1.1s						
ABTA	Abfaltersbach	148.38 350	*i*PKPbc	PKPbc	08 29 54.0	-0.6
comp=Z,3.3nm,0.6s						
FETA	Feichten	148.38 352	*i*PKPbc	PKPdf	08 29 52.2	+0.9
comp=Z,6.7nm,1.5s						
FUORN	Ofenpass-Fuorn	148.83 353	*e*PKPbc	PKPbc	08 29 56.4	+0.4
TUE	Stuetta	149.08 354	*e*PKPdf	PKPbc	08 29 55.6	-1.0
TUE			*e*PKPab	PKPab	08 30 03.0	+2.1
LAST	Lasithi	153.19 320 ⇓	*i*P	PKPbc	08 30 06.2	-0.2
TORD	Torodi Ar. Bea	176.06 130	PKP	PKPdf	08 30 18.3	-0.9
comp=Z,1.0nm,0.9s,baz=240,slow=1.2,SNR=5.4						

DDA 18 08:29:02.5,41°21N×41°93E,h7km,Md2.5,Suspected Mining explosion.,Turkey-Georgia-Armenia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ARTV	Artvin	0.02	183	*i* P	Pg	08 29 03.8	-0.3
ARTV				*i* S	Sg	08 29 05.5	+0.2
DAGI	Agillar	0.13	185	*i* P	Pg	08 29 04.9	-0.5
DAGI				*i* S	Sg	08 29 07.8	+0.4
DDEM	Demirkent	0.34	203	*i* P	Pg	08 29 09.8	+0.5
DDEM				*i* S	Sg	08 29 15.1	+1.3

IDC 18 08:33:00.5±3.9,6°45S×148°12E,h0km,mb3.1/1, mb1 3.3/3,mb1mx3.2/38,mbtmp3.1/3,ML3.0/1,Error ellipse: s-maj=115.8km s-min=44.5km az=105.0,New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	Port Moresby	3.09	198	Pn	Pn	08 33 51.4	+0.8
1.6nm,0.3s,baz=23,slow=7.7,SNR=3.0							
PMG				Sn	Sb	08 34 31.7	-3.0
1.0nm,0.3s,baz=246,slow=20,SNR=2.2							
WRA	Warramunga Arr	18.95	224	P	P	08 37 23.2	-0.2
0.1nm,0.3s,baz=47,slow=11,SNR=4.0							
ASAR	Alice Springs	21.91	217	P	P	08 37 54.5	-1.1
0.5nm,0.5s,baz=52,slow=9.3,SNR=8.5							
TORD	Torodi Ar. Bea	146.28	284	PKPbc	PKPbc	08 52 44.1	-0.1
0.4nm,0.9s,baz=85,slow=4.2,SNR=2.9							

IDC 18 08:57:01.0±4.1,5°45S×153°48E,h0km,mb3.4/3, mb1 3.6/3,mb1mx3.4/38,mbtmp3.4/3,Error ellipse: s-maj=143.2km s-min=38.7km az=113.0,New Ireland region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	23.54	231	P	P	09 02 12.7	-0.4
0.7nm,1.1s,baz=56,slow=10.0,SNR=2.7							
ASAR	Alice Springs	26.14	224	P	P	09 02 37.6	+0.5
0.6nm,1.0s,baz=62,slow=8.5,SNR=3.0							
MKAR	Makanchi Array	81.26	319	P	P	09 09 19.4	+0.3
0.5nm,0.7s,baz=103,slow=5.2,SNR=4.7							
TORD	Torodi Ar. Bea	151.15	287	PKPbc	PKPbc	09 16 56.6	-0.8
0.6nm,0.9s,baz=78,slow=3.3,SNR=2.8							

*ISCJB **18** 09:01:44.9±0.9,36°15N±0°05×142°14E±0°08,h23km, mb3.4/4,Error ellipse: s-maj=9.5km s-min=6.4km az=8.9*
*IDC **18** 09:01:44.6±2.0,36°02N×142°04E,h0km,mb3.4/4, mb1 3.5/6,mb1mx3.3/42,mbtmp3.4/6,ML3.5/2,MS2.3/1, Ms1 2.3/1,ms1mx2.0/27,Error ellipse: s-maj=47.0km s-min=23.1km az=68.0*
*JMA **18** 09:01:46.0±0.3,36°20N×142°08E,h74km±5km,M3.2*
ISC 18 09:01:47.1±1.3,36°18N±0°05×142°1E±0°1,h23km,n18, σ1°25/21,mb3.5/4,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	1.10	245	P	Pn	09 02 06.3	-0.8
CHOJ				*e*S	Sn	09 02 21.5	0.0
JHO	Hitachi	1.29	290	P	Pn	09 02 08.2	-1.6
ONAJ	Iwakimizuishiy	1.38	312	P	Pn	09 02 09.5	-1.6
JFK	Kawauchi	1.53	321	P	Pn	09 02 11.7	-1.4
BSO1	Boso 1	1.77	211	P	Pn	09 02 15.5	-0.3
BSO1				*e*S	Sn	09 02 37.3	0.0
JFT	Otama	1.93	314	P	Pn	09 02 18.0	-0.6
JMM	Marumori	1.97	329	P	Pn	09 02 17.4	-1.7
JAG	Ashikaga	2.13	277	P	Pn	09 02 20.4	-1.0
JRY	Ryogami san	2.58	267	P	Pn	09 02 26.6	-0.9
JOD2	Odawara 2	2.60	250	*e*S	Sn	09 02 57.5	-1.1
MJAR	Matsushiro Arr	3.14	278	Pn	Pn	09 02 34.4	-0.9
3.6nm,0.3s,baz=94,slow=13,SNR=20							
MAT	Matsushiro	3.15	278	P	Pn	09 02 35.6	+0.3
MAT				S	Sn	09 03 12.3	+0.2
JHJ	Hachijo jima 2	3.59	212	Pn	Pn	09 02 40.5	-0.9
17nm,0.3s,baz=90,slow=22,SNR=6.4							
JHJ				Sn	Sn	09 03 20.6	-2.5
27nm,0.3s,baz=288,slow=22,SNR=7.2							
JCJ	Chichijima	9.06	179	LR	LR	09 09 45.9	
comp=Z,17nm,19.6s,baz=96,slow=54							
SONM	Songino Array	28.71	305	P	P	09 07 43.5	+0.9
0.7nm,0.8s,baz=124,slow=4.4,SNR=3.7							
MKAR	Makanchi Array	45.03	303	P	P	09 10 03.0	+2.1
0.5nm,0.6s,baz=95,slow=11,SNR=4.8							
WRA	Warramunga Arr	56.29	189	P	P	09 11 25.0	-1.0
0.3nm,0.8s,baz=4.6,slow=7.5,SNR=2.7							
ASAR	Alice Springs	60.02	189	P	P	09 11 52.3	+0.2
0.3nm,0.9s,baz=10,slow=11,SNR=2.7							

*NIED **18** 09:11:00,38°20N×141°60E,h68km,Mw3.8 Best double couple: M0=5.40000×10^14 NP1:φs=195.00000°,δ=40.00000°, λ=95.00000°. NP2:φs=9.00000°,δ=50.00000°,λ=86.00000°.*
*ISCJB **18** 09:11:19.7±0.7,38°18N±0°04×141°70E±0°08,h66km±5km, mb3.6/9,Error ellipse: s-maj=10.5km s-min=5.7km az=11.4*
*IDC **18** 09:11:21.3±2.8,38°20N×141°70E,h66km±27km,mb3.4/9, mb1 3.6/12,mb1mx3.4/37,mbtmp3.7/12,ML3.1/3,MS2.6/1, Ms1 2.6/1,ms1mx2.3/22,Error ellipse: s-maj=23.9km s-min=16.4km az=86.0*

*JMA **18** 09:11:21.1,38°21N×141°61E,h60km±1km,M3.9*
JMA Felt II J1.
ISC 18 09:11:20.2±1.1,38°16N±0°04×141°74E±0°08,h54km±10km, n30,σ0°85/36,mb3.7/9,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.43	314	P	Pn	09 11 31.5	+0.6
JIO				S	Sn	09 11 38.9	+0.3
JMM	Marumori	0.81	249	P	Pn	09 11 35.6	+0.2
JMM				S	Sn	09 11 46.3	-0.3
JOU	Okura	0.87	284	P	Pn	09 11 36.3	-0.1
JOU				S	Sn	09 11 47.4	-0.8
JMK	Ichinoseki	0.89	333	P	Pn	09 11 36.9	+0.4
JMK				S	Sn	09 11 48.2	-0.4
JFK	Kawauchi	1.05	221	P	Pn	09 11 39.5	+0.8
JFK				S	Sn	09 11 53.1	+0.7
JFT	Otama	1.28	240	P	Pn	09 11 42.6	+0.8
JFT				S	Sn	09 11 58.0	0.0
JYK	Kaneyama	1.32	305	P	Pn	09 11 42.2	-0.1
JYK				S	Sn	09 11 58.5	-0.4
JYS	Shiratake	1.32	273	P	Pn	09 11 42.5	+0.2
JYS				S	Sn	09 11 59.0	+0.1
JOM	Ohasama	1.36	345	P	Pn	09 11 42.8	0.0
JOM				S	Sn	09 11 59.9	+0.2
JRG	Rokugo	1.51	325	P	Pn	09 11 45.3	+0.5
JRG				S	Sn	09 12 03.6	+0.2
JYA	Atsumi	1.65	286	P	Pn	09 11 46.6	-0.2
JYA				S	Sn	09 12 06.6	-0.3
MJAR	Matsushiro Arr	3.25	241	P	Pn	09 12 10.4	+1.8
3.5nm,0.3s,baz=38,slow=12,SNR=36							
MJAR				LR	LR	09 13 36.1	
comp=Z,89nm,20.7s,baz=45,slow=42							
MAT	Matsushiro	3.25	241	P	Pn	09 12 10.5	+1.9
MAT				S	Sn	09 12 52.2	+6.1
JHJ	Hachijo jima 2	5.28	198	P	Pn	09 12 37.0	+0.6
4.8nm,0.3s,baz=72,slow=9.6,SNR=3.3							
JHJ				S	Sn	09 13 34.1	-1.8
14nm,0.3s,baz=242,slow=21,SNR=5.9							
USRK	Ussuriysk Ar.	9.51	312	P	Pn	09 13 35.1	+0.8
0.4nm,0.3s,baz=120,slow=14,SNR=4.7							
SONM	Songino Array	27.39	302	P	P	09 17 00.6	+0.1
0.3nm,0.5s,baz=92,slow=4.6,SNR=2.4							
H11N2	WAKE ISLAND Hy	28.52	123	T	T	09 47 30.0	
baz=316,slow=75,SNR=145							
H11N1	WAKE ISLAND Hy	28.53	123	T	T	09 47 35.0	
baz=316,slow=75,SNR=170							
H11N3	WAKE ISLAND Hy	28.54	123	T	T	09 47 35.6	
baz=316,slow=75,SNR=154							
H11S1	WAKE ISLAND Hy	29.27	125	T	T	09 48 24.4	
baz=318,slow=76,SNR=33							
H11S3	WAKE ISLAND Hy	29.27	125	T	T	09 48 24.4	
baz=318,slow=76,SNR=34							
H11S2	WAKE ISLAND Hy	29.29	125	T	T	09 48 28.3	
baz=318,slow=76,SNR=34							
ZALV	Zalesovo Beam	41.36	311	P	P	09 18 58.8	-1.7
0.6nm,0.4s,baz=101,slow=7.5,SNR=3.0							
MKAR	Makanchi Array	43.75	301	P	P	09 19 19.9	-0.2
0.2nm,0.3s,baz=98,slow=7.4,SNR=2.5							
ILAR	Eielson Array	48.41	33	P	P	09 19 54.5	-1.9
0.3nm,0.6s,baz=270,slow=5.9,SNR=3.9							
INK	Inuvik	53.27	28	P	P	09 20 33.1	+0.3
0.7nm,0.6s,baz=267,slow=3.8,SNR=3.5							
WRA	Warramunga Arr	58.21	188	P	P	09 21 08.4	-0.3
1.2nm,0.5s,baz=5.6,slow=7.2,SNR=31							
ASAR	Alice Springs	61.94	188	P	P	09 21 34.5	+0.2
0.7nm,0.7s,baz=7.6,slow=5.5,SNR=8.5							
PDAR	Pinedale Array	76.69	46	P	P	09 23 06.5	+0.9
0.4nm,0.7s,baz=264,slow=1.5,SNR=4.5							
TXAR	Lajitas Array	89.23	53	P	P	09 24 11.5	+1.0
0.3nm,0.5s,baz=308,slow=2.6,SNR=5.6							

*ISCJB **18** 09:12:03.4±0.7,37°07N±0°03×38°86E±0°03,h6km±5km, Error ellipse: s-maj=4.7km s-min=3.7km az=25.3*
*ISK **18** 09:12:03.6,37°11N×38°82E,h13km,MD3.1*
*CSEM **18** 09:12:03.5±0.2,37°06N×38°86E,h8km,MD2.8,Error ellipse: s-maj=4.0km s-min=3.0km az=47.0*
*DDA **18** 09:12:04.1,37°07N×38°78E,h7km,Md2.8*
ISC 18 09:12:03.5±1.0,37°07N±0°03×38°85E±0°02,h12km±8km, n29,σ0°57/48,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SURC	SANLIURFA_SURC	0.27	224	P	Pg	09 12 09.3	+0.2
SURC	SANLIURFA_SURC	0.27	224	*i* P	Pg	09 12 09.3	+0.2
URFA	Urfa	0.37	357	PG	Pg	09 12 10.9	0.0
URFA				*e*SG	Sg	09 12 15.7	-0.2
URFA	Urfa	0.37	357	*i* Pg	Pg	09 12 10.9	0.0
URFA				*e*Sg	Sg	09 12 15.7	-0.2
ATAB	Bozova	0.59	312	P	Pg	09 12 14.9	-0.2
ATAB				S	Sg	09 12 22.8	-0.1
ATAB	Bozova	0.59	312	*i* P	Pg	09 12 14.8	-0.2
ATAB				*i* S	Sg	09 12 22.8	-0.1
GZT	Gaziantep	1.06	286	*i* P	Pg	09 12 23.2	-0.7
GZT				*i* S	Sn	09 12 39.8	+0.6
MNKR	ALMNKUR	1.18	163	*e*P	Pb	09 12 25.5	-0.3
MNKR				*e*S	Sn	09 12 41.9	+0.1
178nm,0.2s							
SFNV	Sufian	1.21	122	*e*P	Pg	09 12 26.9	+0.2
SFNV				*e*S	Sb	09 12 39.8	-2.1
20nm,0.2s							
GAZ	Gaziantep	1.31	275	*e*PN	Pn	09 12 27.6	-0.1
GAZ				*e*SN	Sg	09 12 45.5	-0.3
GAZ	Gaziantep	1.31	275	*e*Pn	Pn	09 12 27.6	-0.1
GAZ				*e*Sn	Sg	09 12 45.5	-0.3
MAZI	Mazidag	1.33	73	*e*PN	Pb	09 12 28.6	+0.1
MAZI	Mazidag	1.33	73	*e*Pn	Pb	09 12 28.6	+0.1
DYBB	Diyarbakir	1.35	49	*e*PN	Pb	09 12 29.1	+0.2
DYBB				*e*SN	Sg	09 12 47.1	+0.1
SVRC	Sivrice-ELAZID	1.35	15	*e*PN	Pn	09 12 28.4	0.0
SVRC	Sivrice-ELAZID	1.35	15	*e*Pn	Pn	09 12 28.4	0.0
KBSD	Kabsdagh	1.36	93	*e*P	Pg	09 12 29.4	-0.2
KBSD				*e*S	Sb	09 12 46.1	-0.2
22nm,0.2s							
DIY	Diyarbakir	1.37	53	*e*Pn	Pb	09 12 29.1	0.0
DIY				*e*Sn	Sn	09 12 47.2	+0.5
AKCD	Akcadag	1.42	329	P	Pg	09 12 30.9	0.0
AKCD				S	Sg	09 12 49.6	+0.2
AKCD	Akcadag	1.42	329	*i* P	Pg	09 12 30.9	0.0
AKCD				*i* S	Sg	09 12 49.6	+0.2
ELZG	Elazig	1.43	4	P	Pg	09 12 30.7	-0.2
ELZG				S	Sg	09 12 50.6	+1.1
ELZG	Elazig	1.43	4	*i* P	Pg	09 12 30.7	-0.2
ELZG				*i* S	Sg	09 12 50.6	+1.1
KAMA	Osmaniye	1.75	274	*i* P	Pb	09 12 35.1	-0.4
KAMA				*i* S	Sb	09 12 57.2	-0.2
DARE	Darende-Malaty	1.84	325	*e*PN	Pn	09 12 35.8	+0.7
DARE				*e*SN	Sn	09 12 58.3	-0.1
DARE	Darende-Malaty	1.84	325	*e*Pn	Pn	09 12 35.8	+0.7
DARE				*e*Sn	Sn	09 12 58.3	-0.1
PTK	Pertek	1.87	13	*e*PN	Pn	09 12 35.4	-0.1
PTK	Pertek	1.87	13	*e*Pn	Pn	09 12 35.4	-0.1
TAHT	Tahtakopru-Hat	2.25	253	*e*PN	Pn	09 12 42.0	+1.4
TAHT	Tahtakopru-Hat	2.25	253	*e*Pn	Pn	09 12 42.0	+1.4

*WAR **18** 09:12:02.3,51°50N×16°13E,h1km,Mw2.3*
ISC 18 09:12:07.0±1.3,51°26N±0°07×15°99E±0°04,h0km,n14, σ1°37/27,Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	Ksiaz	0.46	155	*e*Pg	Pg	09 12 14.8	-1.1
KSP				*e*Sg	Sb	09 12 24.1	-1.4
UPC	Upice	0.76	179	*e*PG	Pg	09 12 21.0	-0.5
UPC				*e*SG	Sb	09 12 34.1	+0.2
comp=Z,32nm,0.2s							
DPC	Dobruska-Polom	0.94	167	*e*PG	Pg	09 12 23.7	-1.3
DPC				*e*SG	Sb	09 12 38.9	-0.3
comp=Z,13nm,0.2s							
PVCC	Panska Ves	1.16	231	*e*PG	Pg	09 12 28.5	-0.7
PVCC				*e*SG	Sn	09 12 47.3	+0.3
comp=Z,45nm,0.2s							
KRLC	Kraliky	1.29	157	*e*PG	Pg	09 12 29.6	-2.2
KRLC				*e*SG	Sn	09 12 48.7	-1.7
BRG	Berggiesshubel	1.35	254	PG	Pg	09 12 30.6	-2.2
BRG				SG	Sg	09 12 51.2	+1.0
20nm,0.5s							
GOPC	GO Pecny, Ondr	1.55	210	*e*PG	Pn	09 12 35.9	0.0
GOPC				*e*SG	Sn	09 12 59.3	+2.6
comp=Z,6.2nm,0.3s							
PRU	Pruhonice	1.57	216	*e*PG	Pn	09 12 35.6	-0.6
PRU				*e*SG	Sg	09 12 59.4	+1.9
comp=Z,14nm,0.3s							
OKC	Ostrava-Krasne	1.98	135	*e*SG	Sb	09 13 08.1	-1.1
comp=Z,12nm,0.4s							
TREC	Trest	2.00	189	*e*SG	Sg	09 13 13.1	+2.0
comp=Z,9.1nm,0.2s							
NKC	Novy Kostel	2.47	247	*e*PG	Pb	09 12 53.1	+0.8
NKC				*e*SG	Sg	09 13 28.0	+1.6
comp=Z,14nm,0.3s							
KHC	Kasperske Hory	2.64	217	*e*PN	Pn	09 12 49.5	-1.3
KHC				*e*PG	Pb	09 12 54.8	-0.3
KHC				*e*SG	Sg	09 13 32.8	+1.1
comp=Z,2.5nm,0.2s							
OJC	Ojcow	2.64	112	*e*Pg	Pn	09 12 52.3	+1.5
OJC				*e*Sg	Sb	09 13 27.8	-0.2
OJC	Ojcow	2.64	112	*e*Pg	Pn	09 12 52.3	+1.5
OJC				*e*Sg	Sb	09 13 27.8	-0.2

*ISCJB **18** 09:22:05.0±0.6,7°98S±0°06×74°53W±0°06,h151km, mb3.2/2,Error ellipse: s-maj=8.5km s-min=8.1km az=27.2*
*IDC **18** 09:22:06.2±1.9,8°01S×74°61W,h164km±29km,mb3.1/2, mb1 3.3/7,mb1mx3.1/26,mbtmp3.8/7,Error ellipse: s-maj=28.7km s-min=14.5km az=60.0*
ISC 18 09:22:05.7±0.8,7°98S±0°08×74°53W±0°08,h151km,n10, σ0°71/12,Peru-Brazil border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ATAH	Atahualpa	3.92	282	P	Pn	09 23 05.2	-0.2
7.4nm,0.3s,baz=131,slow=7.9,SNR=47							
ATAH				S	Sn	09 23 51.5	-0.1
6.9nm,0.3s,baz=229,slow=23,SNR=17							
NNA	Nana	4.59	210	P	Pn	09 23 15.0	+1.2
1.3nm,0.3s,baz=27,slow=11,SNR=5.8							
NNA				S	Sn	09 24 06.6	-0.2
10nm,0.3s,baz=180,slow=19,SNR=13							
FLOC	Florencia	9.56	353	*e*P	Pn	09 24 19.6	-0.4
CRUC	La Cruz	9.78	346	*e*P	Pn	09 24 23.5	+0.3
LPAZ	La Paz	10.36	143	P	Pn	09 24 30.4	-0.7
0.5nm,0.3s,baz=317,slow=6.6,SNR=17							
SIV	San Ignacio	15.38	122	P	P	09 25 36.6	+0.4
0.5nm,0.3s,baz=304,slow=12,SNR=7.1							
PTGA	Pitinga	16.20	64	P	P	09 25 46.4	+1.2
0.3nm,0.3s,baz=253,slow=19,SNR=5.3							
CPUP	Vila Florida	24.51	140	P	P	09 27 10.5	-0.7
1.8nm,1.0s,baz=309,slow=6.5,SNR=3.1							
TORD	Torodi Ar. Bea	78.55	75	P	P	09 33 50.5	-0.6
0.1nm,0.3s,baz=248,slow=6.1,SNR=2.8							
WRA	Warramunga Arr	140.28	225	PKP	PKPdf	09 41 17.9	+0.3
0.2nm,0.5s,baz=118,slow=1.9,SNR=3.2							

*KRSC **18** 09:36:01.2±1.8,47°41N×157°76E,h8km±28km,ML4.1*
*MOS **18** 09:36:01.1±2.6,47°41N×157°76E,h8km,mb4.2/1,Error ellipse: s-maj=99.9km s-min=11.8km az=85.8*
SKHL 18 09:36:00.2±0.0,47°77N×155°21E,h8km±3km,mb4.2/2, East of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	Severo-Kuril's	2.98	11	*e*S	Sg	09 37 38.9	+3.2
SKR	Severo-Kuril's	2.98	11	*e*P	Pn	09 36 44.6	-3.0
SKR				AMB	AMB	09 36 45.2	
90nm,0.7s							
SKR				*e*S	Sn	09 37 17.9	-5.6
ASAK	Asacha	4.93	20	*e*P	Pn	09 37 19.7	+5.1
MTVR	Mutnovka	5.09	21	*e*P	Pn	09 37 21.0	+4.1
RUS	Russkaya	5.13	23	*e*P	Pn	09 37 20.5	+3.3
RUS				*e*S	Sn	09 38 20.7	+4.2
RUS	Russkaya	5.13	23	PN	Pn	09 37 20.5	+3.3
RUS				S	Sn	09 38 20.7	+4.2
RUS	Russkaya	5.13	23	*e*P	Pn	09 37 20.5	+3.3
RUS				*e*S	Sn	09 38 20.7	+4.2
KRMR	Karymshinskiy	5.40	19	*e*P	Pn	09 37 27.5	+6.6
KRMR				*e*S	Sn	09 38 30.6	+7.4
KRMR	Karymshinskiy	5.40	19	PN	Pn	09 37 27.5	+6.6
KRMR				S	Sn	09 38 30.6	+7.4
PET	Petropavlovsk	5.70	21	*e*P	Pn	09 37 26.7	+1.6
AVH	Avacha	5.94	21	*e*P	Pn	09 37 33.8	+5.3
AVH	Avacha	5.94	21	PN	Pn	09 37 33.8	+5.3
SMAR	Somma	5.96	21	*e*P	Pn	09 37 33.9	+5.1
SMAR	Somma	5.96	21	PN	Pn	09 37 33.9	+5.1
SDLR	Sedlovina	5.99	22	*e*P	Pn	09 37 32.6	+3.4
SDLR	Sedlovina	5.99	22	PN	Pn	09 37 32.6	+3.4
GNL	Ganaly	6.18	15	*e*P	Pn	09 37 39.6	+7.8
GNL	Ganaly	6.18	15	PN	Pn	09 37 39.6	+7.8
MKZ	Mys Kozlova	7.93	29	*e*P	Pn	09 37 57.6	+1.9
MKZ				S	Sn	09 39 24.4	-1.1
MKZ	Mys Kozlova	7.93	29	PN	Pn	09 37 57.6	+1.9
MKZ				S	Sn	09 39 24.4	-1.1
MKZ	Mys Kozlova	7.93	29	*e*P	Pn	09 37 57.6	+1.9
TYV	Tymovskoe	8.77	295	*e*P	Pn	09 38 10.7	+3.6
EKMR	Ekimchan	15.12	299	*e*P	Pn	09 39 33.5	-0.5
EKMR				AMB	AMB	09 39 40.3	
4.0nm,0.7s							

*NIED **18** 09:54:00,39°00N×142°50E,h14km,Mw3.6 Best double couple: M0=2.84000×10^14 NP1:φs=215.00000°,δ=33.00000°, λ=-170.00000°. NP2:φs=117.00000°,δ=85.00000°, λ=-57.00000°.*
*JMA **18** 09:54:16.8±0.1,39°04N×142°47E,h29km±2km,M3.8*
*ISCJB **18** 09:54:17.1±1.2,39°00N±0°04×142°5E±0°1,h42km±12km, mb3.5/7,Error ellipse: s-maj=14.5km s-min=6.1km az=18.3*
*IDC **18** 09:54:19.2±2.8,38°94N×142°56E,h47km±28km,mb3.3/7, mb1 3.5

0.5nm,0.7s,baz=272,slow=6.0,SNR=7.1
INK Inuvik 52.29 28 P **P 10 03 25.6 -0.1**
0.4nm,0.4s,baz=267,slow=13,SNR=3.6
WRA Warramunga Arr 59.10 189 P **P 10 04 14.6 -0.6**
0.5nm,0.4s,baz=6.4,slow=7.1,SNR=11
YKA Yellowknife Ar 61.73 31 P **P 10 04 33.1 +0.5**
0.1nm,0.6s,baz=266,slow=9.4,SNR=3.7
ASAR Alice Springs 62.83 189 P **P 10 04 38.9 -1.5**
0.5nm,0.9s,baz=14,slow=9.7,SNR=5.7

NIED ***18*** *10:13:00,38.20N×144.10E,h5km,Mw3.5 Best double couple: M₀2.21000×10¹⁴ NP1:φ₀183.00000°,δ40.00000°, λ-95.00000°. NP2:φ₀9.00000°,δ50.00000°,λ-86.00000°.*
JMA 18 10:13:42.6±0.2,38.23N×144.12E,h39km,M3.7,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.10**	**295**	P	Pn	10 14 16.6	+1.4
JIO	**Ouri**	**2.19**	**277**	P	Pn	10 14 17.8	+1.4
JIO				S	Sn	10 14 43.7	+1.4
MIYJ	**Miyakonagasawa**	**2.24**	**308**	P	Pn	10 14 18.3	+1.1
MIYJ				*e*S	Sn	10 14 44.6	+1.0
JMK	**Ichinoseki**	**2.38**	**288**	P	Pn	10 14 20.9	+1.8
JMK				*e*S	Sn	10 14 48.8	+1.7
JOM	**Ohasama**	**2.53**	**300**	P	Pn	10 14 23.5	+2.3
JOM				*e*S	Sn	10 14 52.6	+1.8
JYK	**Kaneyama**	**3.03**	**284**	P	Pn	10 14 30.5	+2.5
JYK				*e*S	Sn	10 15 05.7	+2.7
JFT	**Otama**	**3.08**	**258**	P	Pn	10 14 30.9	+2.2
JFT				S	Sn	10 15 06.5	+2.3
JKB	**Kayabe**	**4.35**	**328**	P	Pn	10 14 48.6	+2.4
JCH	**Churui**	**4.42**	**353**	P	Pn	10 14 47.2	+0.2
JCH				*e*S	Sn	10 15 35.4	-1.8
JRY	**Ryogami san**	**4.72**	**244**	P	Pn	10 14 52.5	+1.2
JRY				*e*S	Sn	10 15 43.2	-1.5

NIED ***18*** *10:36:00,35.50N×141.10E,h44km,Mw4.6 Best double couple: M₀7.53000×10¹⁵ NP1:φ₀170.00000°,δ25.00000°, λ66.00000°. NP2:φ₀16.00000°,δ67.00000°,λ101.00000°.*
JMA ***18*** *10:36:32.1±0.1,35.50N×141.12E,h35km±1km,M3.6*
IDC ***18*** *10:36:36.0±2.2,35.44N×140.74E,h60km±21km,mb3.4/14, mb1 3.6/16,mb1mx3.5/51,mbtmp3.7/16,ML3.4/2,MS3.7/23, Ms1 3.7/23,ms1mx3.6/40,Error ellipse: s-maj=23.1km s-min=12.1km az=80.0*
ISC 18 10:36:32.6±0.6,35.52N±0.04×140.95E±0.06,h33km,n52, σ1°51/34,mb3.7/15,MS3.7/19,2C-1D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.20**	**338**	⇓P	**Pb**	**10 36 39.8**	**+0.5**
CHOJ				*e*S	**Sb**	**10 36 45.1**	**+1.4**
JCN	**Nagara**	**0.62**	**261**	P	Pb	10 36 47.5	+2.4
KTR	**Katsuura**	**0.64**	**235**	P	**Pb**	**10 36 46.3**	**+0.9**
BSO4	**Boso 4**	**0.72**	**224**	⇑P	**Pb**	**10 36 47.3**	**+0.5**
BSO3	**Boso 3**	**0.80**	**207**	⇑P	**Pb**	**10 36 47.5**	**-0.4**
BSO1	**Boso 1**	**0.86**	**179**	P	**Pb**	**10 36 47.2**	**-1.6**
JYT	**Yasato**	**0.94**	**319**	P	**Pb**	**10 36 50.7**	**+0.2**
JIM2	**Oshima 3**	**1.48**	**238**	P	**Pn**	**10 36 56.8**	**-0.1**
JAG	**Ashikaga**	**1.52**	**307**	P	**Pb**	**10 36 59.4**	**-0.8**
JOD2	**Odawara 2**	**1.54**	**261**	P	**Pb**	**10 36 59.2**	**-1.4**
MJAR	**Matsushiro Arr**	**2.45**	**296**	P	**Pn**	**10 37 11.0**	**+0.7**
	9.2nm,0.3s,baz=100,slow=7.9,SNR=80						
MJAR				LR	LR	10 38 21.2	
	comp=Z,1μm,20.8s,baz=120,slow=46						
MAT	**Matsushiro**	**2.45**	**296**	P	**Pb**	**10 37 13.1**	**-2.9**
MAT				*e*S	**Sb**	**10 37 46.4**	**+0.6**
JHJ	**Hachijo jima 2**	**2.58**	**202**	P	**Pn**	**10 37 13.3**	**+1.3**
	22nm,0.3s,baz=108,slow=23,SNR=11						
JHJ				S	**Sn**	**10 37 43.2**	**+1.0**
	66nm,0.3s,baz=116,slow=23,SNR=5.7						
JHJ				LR	LR	10 38 27.6	
	comp=Z,499nm,21.2s,baz=310,slow=46						
JCJ	**Chichijima**	**8.46**	**173**	P	**Pn**	**10 38 29.7**	**-3.2**
	8.3nm,0.3s,baz=283,slow=22,SNR=9.4						
JCJ				S	Sn	10 39 59.4	-7.8
	5.2nm,0.3s,baz=287,slow=19,SNR=2.6						
ASAJ	**Asahikawa**	**8.68**	**8**	P	**Pn**	**10 38 34.7**	**-1.1**
	2.1nm,0.3s,baz=248,slow=5.5,SNR=6.2						
ASAJ				S	**Sn**	**10 40 08.7**	**-3.9**
	0.4nm,0.3s,baz=346,slow=14,SNR=1.7						
KSRS	**Korea Array**	**10.67**	**284**	LR	LR	10 43 17.8	
	comp=Z,685nm,20.7s,baz=98,slow=38						
USRK	**Ussuriysk Ar.**	**11.07**	**324**	LR	LR	10 43 19.1	
	comp=Z,408nm,18.6s,baz=125,slow=36						
PETK	**Petropavlovsk-**	**21.19**	**29**	LR	LR	10 49 29.8	
	comp=Z,79nm,21.6s,baz=225,slow=36						
GUMO	**Guam**	**22.11**	**170**	LR	LR	10 48 52.1	
	comp=Z,35nm,21.8s,baz=226,slow=33						
H11N2	**WAKE ISLAND Hy**	**27.73**	**118**	T	T	11 11 18.3	
	baz=311,slow=75,SNR=35						
H11N1	**WAKE ISLAND Hy**	**27.74**	**118**	T	T	11 11 23.0	
	baz=311,slow=75,SNR=29						
H11N3	**WAKE ISLAND Hy**	**27.75**	**118**	T	T	11 11 19.7	
	baz=311,slow=75,SNR=44						
SEY	**Seymchan**	**28.35**	**11**	P	**P**	**10 42 24.3**	**+1.1**
	0.5nm,0.5s,baz=202,slow=19,SNR=2.7						
SONM	**Songino Array**	**28.35**	**306**	P	**P**	**10 42 22.2**	**-1.4**
	0.4nm,0.3s,baz=96,slow=9.0,SNR=4.8						
SONM				LR	LR	10 54 01.9	
	comp=Z,121nm,19.4s,baz=101,slow=37						
H11S1	**WAKE ISLAND Hy**	**28.39**	**120**	T	T	11 12 06.3	
	baz=312,slow=75,SNR=186						
H11S3	**WAKE ISLAND Hy**	**28.39**	**120**	T	T	11 12 14.7	
	baz=312,slow=75,SNR=178						
H11S2	**WAKE ISLAND Hy**	**28.40**	**120**	T	T	11 12 14.8	
	baz=312,slow=75,SNR=115						
CMAR	**Chiang Mai Arr**	**40.77**	**257**	LR	LR	11 01 54.0	
	comp=Z,85nm,18.0s,baz=42,slow=37						
ZALV	**Zalesovo Beam**	**42.67**	**314**	P	**P**	**10 44 25.9**	**-0.1**
	1.2nm,0.4s,baz=100,slow=6.6,SNR=5.5						
ZALV				LR	LR	11 01 46.5	
	comp=Z,46nm,20.2s,baz=66,slow=36						
NRIK	**Noril'sk**	**44.49**	**336**	LR	LR	11 04 18.5	
	comp=Z,117nm,18.8s,baz=108,slow=37						
MKAR	**Makanchi Array**	**44.62**	**303**	P	**P**	**10 44 42.5**	**+0.7**
	0.5nm,0.6s,baz=82,slow=9.0,SNR=6.1						
MKAR				LR	LR	11 03 57.1	
	comp=Z,86nm,19.9s,baz=88,slow=37						
KURBB	**Kurchatov Arra**	**46.65**	**309**	P	**P**	**10 44 58.0**	**+0.3**
	0.7nm,0.3s,baz=86,slow=8.2,SNR=7.6						
HNR	**Honiara**	**48.17**	**154**	LR	LR	11 04 37.9	
	comp=Z,42nm,20.9s,baz=296,slow=35						
AAK	**Ala-Archa**	**50.89**	**299**	LR	LR	11 08 27.8	
	comp=Z,141nm,20.1s,baz=62,slow=38						
ILAR	**Eielson Array**	**50.98**	**32**	P	**P**	**10 45 31.2**	**+0.4**
	0.6nm,0.9s,baz=267,slow=9.6,SNR=4.4						
BVAR	**Borovoye Array**	**51.33**	**313**	P	**P**	**10 45 33.7**	**+0.2**
	0.4nm,0.4s,baz=103,slow=12,SNR=2.5						
WRA	**Warramunga Arr**	**55.51**	**188**	P	**P**	**10 46 03.0**	**-1.5**
	0.6nm,0.3s,baz=6.6,slow=8.1,SNR=21						
ARU	**Arti**	**57.26**	**319**	LR	LR	11 13 28.9	
	comp=Z,55nm,18.1s,baz=162,slow=39						
ASAR	**Alice Springs**	**59.24**	**188**	P	**P**	**10 46 30.1**	**-0.7**
	0.3nm,0.4s,baz=20,slow=12,SNR=8.9						
AKTO	**Aktyubinsk**	**59.42**	**313**	LR	LR	11 12 48.7	
	comp=Z,60nm,20.0s,slow=37						
GEYT	**Alibeck**	**64.25**	**299**	LR	LR	11 17 09.2	
	comp=Z,62nm,18.6s,baz=115,slow=38						
ARCES	**ARCESS Array B**	**65.28**	**340**	P	**P**	**10 47 11.6**	**+0.9**
	1.6nm,0.8s,baz=62,slow=11,SNR=3.0						
ARCES				LR	LR	11 20 00.3	
	comp=Z,79nm,18.2s,baz=58,slow=40						
YKA	**Yellowknife Ar**	**65.31**	**30**	P	**P**	**10 47 12.4**	**+1.4**
	0.4nm,0.9s,baz=302,slow=6.7,SNR=4.6						
FINES	**FINESS Array B**	**69.98**	**332**	P	**P**	**10 47 41.0**	**+0.6**
	1.2nm,0.6s,baz=182,slow=30,SNR=4.2						
FINES				LR	LR	11 19 31.6	
	comp=Z,95nm,18.7s,baz=177,slow=37						
KVAR	**Kislovodsk Arr**	**71.61**	**311**	LR	LR	11 21 14.1	
	comp=Z,58nm,18.1s,slow=37						
GNI	**Garni**	**72.31**	**307**	LR	LR	11 22 09.5	
	comp=Z,49nm,20.8s,baz=52,slow=38						
AKASG	**Malin Array Be**	**75.27**	**322**	LR	LR	11 24 18.4	
	comp=Z,109nm,19.1s,baz=275,slow=38						
NOA	**NORSAR Array B**	**75.44**	**337**	P	**P**	**10 48 12.6**	**-0.4**
	0.5nm,0.6s,baz=290,slow=17,SNR=2.6						
NOA				LR	LR	11 24 34.4	
	comp=Z,79nm,19.1s,baz=25,slow=38						
PDAR	**Pinedale Array**	**79.00**	**45**	P	**P**	**10 48 35.8**	**+2.3**
	0.2nm,0.6s,baz=285,slow=3.5,SNR=3.0						
BRTR	**Keskin Array B**	**79.58**	**312**	LR	LR	11 28 15.4	
	comp=Z,35nm,18.1s,baz=68,slow=39						
TXAR	**Lajitas Array**	**91.34**	**52**	P	**P**	**10 49 37.7**	**+2.3**
	0.7nm,1.1s,baz=250,slow=6.4,SNR=3.4						
LPAZ	**La Paz**	**147.77**	**61**	PKPbc	**PKPab**	**10 56 16.0**	**-1.7**
	0.8nm,0.5s,baz=69,slow=5.7,SNR=3.7						

IDC ***18*** *10:36:54.3±10.0,2.84S×121.86E,h0km,mb3.4/3, mb1 3.6/4,mb1mx3.4/38,mbtmp3.5/4,ML3.4/1,MS2.3/1, Ms1 2.3/1,ms1mx2.2/24,Error ellipse: s-maj=165.0km s-min=33.7km az=167.0*
ISCJB ***18*** *10:36:59.7±0.5,2.78S±0.04×121.58E±0.04,h80km±11km, mb3.3/3,Error ellipse: s-maj=7.7km s-min=6.6km az=40.5*
DJA ***18*** *10:37:00.8±2.7,3°S±4°×12°2E±°,h38km±36km,M3.9/3, MLv3.9/3*
ISC 18 10:37:00.6±1.1,2.79S±0.05×121.58E±0.05,h68km±16km, n11,σ1°14/16,mb3.1/3,Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KDI	**Kendari**	**1.56**	**138**	P	**Pn**	**10 37 26.1**	**-0.3**
KDI				S	**Sn**	**10 37 46.2**	**+0.4**
TTSI	**Tana Toraja**	**1.77**	**262**	P	**Pn**	**10 37 27.7**	**-1.5**
TTSI				S	**Sn**	**10 37 51.1**	**+0.3**
LUWI	**Luwuk**	**2.10**	**35**	P	**Pn**	**10 37 33.8**	**+0.1**
LUWI				S	**Sn**	**10 37 59.1**	**+0.2**
SPSI	**Sidrap Palu**	**2.15**	**237**	P	**Pn**	**10 37 34.0**	**-0.3**
SPSI				S	**Sn**	**10 38 00.2**	**+0.2**
PCI	**Palu**	**2.55**	**317**	P	**Pn**	**10 37 40.1**	**+0.4**
PCI				S	**Sn**	**10 38 10.1**	**+0.4**
KAPI	**Kappang**	**2.87**	**219**	Pn	**Pn**	**10 37 43.6**	**-0.4**
	5.1nm,0.3s,baz=61,slow=6.7,SNR=10						
KAPI				Sn	**Sn**	**10 38 20.2**	**+2.9**
	3.7nm,0.3s,baz=177,slow=18,SNR=6.1						
KAPI				LR	LR	10 38 52.0	
	comp=Z,50nm,18.4s,baz=77,slow=39						
MRSI	**Marisa**	**3.26**	**6**	P	**Pn**	**10 37 49.3**	**-0.1**
LBMI	**Labuha**	**6.29**	**70**	P	Pn	10 38 23.2	-7.7
WRA	**Warramunga Arr**	**21.12**	**145**	P	**P**	**10 41 37.9**	**-2.0**
	0.6nm,0.9s,baz=323,slow=11,SNR=2.8						
ASAR	**Alice Springs**	**23.94**	**151**	P	**P**	**10 42 08.9**	**+0.2**
	0.5nm,0.7s,baz=326,slow=8.2,SNR=8.7						
STKA	**Stephens Creek**	**34.53**	**149**	P	**P**	**10 43 43.0**	**+0.4**
	2.1nm,0.9s,baz=351,slow=8.0,SNR=3.3						

ISK ***18*** *10:53:22.3,39.84N×26.32E,h5km,ML2.4*
THE ***18*** *10:53:22.9,39.82N×26.26E,h1km±1km,ML2.1/6,Error ellipse: s-maj=1.2km s-min=0.4km az=48.0*
DDA ***18*** *10:53:22.3,39.82N×26.30E,h8km,Md2.9*
ISCJB ***18*** *10:53:22.4±0.4,39.84N±0.02×26.27E±0.03,h2km±4km, Error ellipse: s-maj=3.7km s-min=3.2km az=3.0*
CSEM ***18*** *10:53:22.7±0.1,39.84N×26.25E,h5km,ML2.4,Error ellipse: s-maj=3.4km s-min=2.6km az=103.0*
ATH ***18*** *10:53:22.2,39.82N×26.24E,h24km±1km,ML1.9/5,Error ellipse: s-maj=2.6km s-min=0.9km az=264.0*
ISC 18 10:53:22.2±0.8,39.81N±0.02×26.26E±0.02,h8km±5km, n53,σ0°54/85,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EZN	**Ezine**	**0.05**	**78**	PG	**Pg**	**10 53 23.8**	**-0.2**
EZN	**Ezine**	**0.05**	**78**	P	**Pg**	**10 53 23.8**	**-0.2**
EZN				S	**Sg**	**10 53 24.8**	**-0.4**
EZN	**Ezine**	**0.05**	**78**	P	**Pg**	**10 53 23.8**	**-0.2**
EZN				S	**Sg**	**10 53 24.8**	**-0.4**
BOZC	**Bozcaada**	**0.16**	**280**	*i* P	**Pg**	**10 53 26.4**	**+0.8**
BOZC				*i* S	**Sg**	**10 53 29.1**	**+1.2**
PRK	**Paraskevi**	**0.57**	**179**	P	**Pb**	**10 53 34.1**	**-0.3**
PRK				S	**Sb**	**10 53 42.3**	**-0.3**
PRK	**Paraskevi**	**0.57**	**179**	P	**Pb**	**10 53 34.1**	**-0.3**
PRK				S	**Sb**	**10 53 42.3**	**-0.3**
PRK	**Paraskevi**	**0.57**	**179**	P	**Pb**	**10 53 33.9**	**-0.5**
PRK				AML	AML	10 53 42.6	
	comp=E,233μm,0.3s						
PRK				S	**Sb**	**10 53 42.6**	**0.0**
PRK				AML	AML	10 53 47.3	
	comp=N,192μm,0.3s						
GELI	**Tayfur-Gelibol**	**0.61**	**16**	*e*PG	**Pg**	**10 53 33.9**	**-0.1**
GELI	**Tayfur-Gelibol**	**0.61**	**16**	*e*Pg	**Pg**	**10 53 33.9**	**-0.1**
SIGR	**SIGRI**	**0.68**	**207**	*e*PG	**Pb**	**10 53 36.5**	**+0.2**
SIGR	**SIGRI**	**0.68**	**207**	P	**Pb**	**10 53 36.0**	**-0.3**
SIGR				S	**Sb**	**10 53 45.8**	**0.0**
SIGR	**SIGRI**	**0.68**	**207**	P	**Pb**	**10 53 36.0**	**-0.3**
SIGR	**SIGRI**	**0.68**	**207**	*e*Pg	**Pb**	**10 53 36.5**	**+0.2**
SIGR				S	**Sb**	**10 53 45.1**	**-0.7**
SIGR	**SIGRI**	**0.68**	**207**	P	**Pg**	**10 53 33.8**	**-1.4**
SIGR				S	**Sb**	**10 53 45.1**	**-0.7**
SIGR				AML	AML	10 53 47.4	
	comp=E,190μm,0.2s						
SIGR				AML	AML	10 53 49.6	
	comp=N,311μm,0.4s						
LPK	**Lapseki**	**0.68**	**35**	*e*PG	**Pg**	**10 53 35.5**	**+0.2**
LPK	**Lapseki**	**0.68**	**35**	*e*Pg	**Pg**	**10 53 35.5**	**+0.2**
LIA	**Limnos Island**	**0.83**	**276**	P	**Pb**	**10 53 38.7**	**-0.1**
LIA				S	**Sb**	**10 53 50.2**	**0.0**
LIA	**Limnos Island**	**0.83**	**276**	P	**Pb**	**10 53 38.8**	**-0.1**
LIA				S	**Sb**	**10 53 50.0**	**-0.2**
SMTH	**Samothraki Isl**	**0.86**	**320**	P	**Pb**	**10 53 39.2**	**-0.2**
SMTH				S	**Sb**	**10 53 51.7**	**+0.6**
SMTH	**Samothraki Isl**	**0.86**	**320**	P	**Pb**	**10 53 39.2**	**-0.2**
SMTH				S	**Sb**	**10 53 50.9**	**-0.2**
SMTH	**Samothraki Isl**	**0.86**	**320**	P	**Pb**	**10 53 39.3**	**-0.2**
SMTH				S	**Sb**	**10 53 50.9**	**-0.2**
SMTH				AML	AML	10 53 54.5	
	comp=E,153μm,0.1s						
SMTH				AML	AML	10 53 54.8	
	comp=N,247μm,0.2s						
ERIK	**Erikli-Kesan**	**0.88**	**13**	*e*PG	**Pg**	**10 53 38.8**	**-0.3**
ERIK	**Erikli-Kesan**	**0.88**	**13**	*e*Pg	**Pg**	**10 53 38.8**	**-0.3**
ENEZ	**Enez**	**0.92**	**355**	*e*PG	**Pg**	**10 53 39.6**	**-0.4**
ENEZ	**Enez**	**0.92**	**355**	*e*Pg	**Pg**	**10 53 39.6**	**-0.4**
BALY	**Balya**	**1.05**	**94**	P	**Pn**	**10 53 43.5**	**+0.2**
BALY				S	**Sb**	**10 53 57.0**	**+0.3**
BALY	**Balya**	**1.05**	**94**	*i* P	**Pn**	**10 53 43.5**	**+0.2**
BALY				*i* S	**Sb**	**10 53 57.0**	**+0.3**
KESN	**Edirne-Kesan**	**1.06**	**18**	P	**Pn**	**10 53 44.2**	**+0.4**
KESN	**Edirne-Kesan**	**1.06**	**18**	*i* P	**Pn**	**10 53 44.2**	**+0.4**
KNL	**Bal¨–kesir**	**1.08**	**65**	*i* P	**Pg**	**10 53 41.7**	**-1.1**
ALN	**Alexandroupoli**	**1.09**	**352**	*e*PG	**Pb**	**10 53 43.3**	**-0.1**
ALN				*e*SG	**Sn**	**10 53 59.3**	**+0.1**
ALN	**Alexandroupoli**	**1.09**	**352**	P	**Pb**	**10 53 43.5**	**+0.1**
ALN				S	**Sn**	**10 53 58.8**	**-0.4**
ALN	**Alexandroupoli**	**1.09**	**352**	*e*Pg	**Pb**	**10 53 43.3**	**-0.1**
ALN				S	**Sg**	**10 53 57.4**	**0.0**
ALN				*e*Sg	**Sn**	**10 53 59.3**	**+0.1**
ALN	**Alexandroupoli**	**1.09**	**352**	P	**Pn**	**10 53 43.6**	**-0.2**
ALN				S	**Sg**	**10 53 57.4**	**0.0**
ALN				AML	AML	10 53 59.1	
	comp=E,89μm,0.3s						
ALN				AML	AML	10 53 59.9	
	comp=N,97μm,0.5s						
RKY	**Sarkoy-Tekirda**	**1.12**	**39**	*e*PG	**Pg**	**10 53 43.0**	**-0.8**
RKY	**Sarkoy-Tekirda**	**1.12**	**39**	*e*Pg	**Pg**	**10 53 43.0**	**-0.8**
SART	**Tekirdag**	**1.12**	**39**	P	**Pg**	**10 53 43.2**	**-0.6**
SART				S	**Sn**	**10 54 00.2**	**+0.2**
SART	**Tekirdag**	**1.12**	**39**	*i* P	**Pg**	**10 53 43.1**	**-0.6**
SART				*i* S	**Sn**	**10 54 00.2**	**+0.2**
BALB	**Balikesir**	**1.26**	**97**	*e*PN	**Pg**	**10 53 46.5**	**+0.1**
BALB	**Balikesir**	**1.26**	**97**	*e*Pn	**Pg**	**10 53 46.5**	**+0.1**
EDC	**Edincik**	**1.34**	**66**	*e*PN	**Pn**	**10 53 47.3**	**0.0**
EDC				*e*SN	**Sn**	**10 54 05.2**	**-0.1**
EDC	**Edincik**	**1.34**	**66**	*e*Pn	**Pn**	**10 53 47.3**	**0.0**
EDC				*e*Sn	**Sn**	**10 54 05.2**	**-0.1**
CHOS	**Chios island**	**1.43**	**186**	*e*PN	**Pg**	**10 53 49.5**	**-0.2**
CHOS				*e*SN	**Sg**	**10 54 10.5**	**+2.2**
CHOS	**Chios island**	**1.43**	**186**	P	**Pb**	**10 53 49.0**	**-0.3**
CHOS				S	**Sg**	**10 54 09.3**	**+1.0**
CHOS	**Chios island**	**1.43**	**186**	P	**Pb**	**10 53 49.0**	**-0.3**
CHOS	**Chios island**	**1.43**	**186**	*e*Pn	**Pg**	**10 53 49.5**	**-0.2**
CHOS				S	**Sg**	**10 54 08.0**	**-0.3**
CHOS				*e*Sn	**Sg**	**10 54 10.5**	**+2.2**
CHOS	**Chios island**	**1.43**	**186**	P	**Pb**	**10 53 48.9**	**-0.3**
CHOS				S	**Sg**	**10 54 08.0**	**-0.3**
CHOS				AML	AML	10 54 12.1	
	comp=E,107μm,0.4s						
CHOS				AML	AML	10 54 14.0	
	comp=N,84μm,0.5s						
DURS	**Dursunbey**	**1.72**	**96**	P	**Pb**	**10 53 54.3**	**+0.1**
DURS	**Dursunbey**	**1.72**	**96**	*i* P	**Pb**	**10 53 54.3**	**+0.1**
KAVA	**Kavala**	**1.78**	**312**	P	**Pn**	**10 53 53.0**	**-0.2**
KAVA	**Kavala**	**1.78**	**312**	P	**Pn**	**10 53 53.0**	**-0.2**
DEMI	**Demirci**	**2.06**	**111**	P	**Pb**	**10 54 00.0**	**+0.2**
DEMI				S	**Sb**	**10 54 25.9**	**+0.4**
DEMI	**Demirci**	**2.06**	**111**	*i* P	**Pb**	**10 54 00.0**	**+0.2**
DEMI				*i* S	**Sb**	**10 54 25.9**	**+0.4**

ATH ***18*** *10:54:09.7,37.38N×20.24E,h15km±1km,ML2.1/7,Error ellipse: s-maj=2.4km s-min=1.1km az=57.0*
CSEM ***18*** *10:54:10.0±0.4,37.38N×20.24E,h2km,ML2.4,Error ellipse: s-maj=6.9km s-min=4.0km az=66.0*
THE ***18*** *10:54:12.9,37.56N×20.34E,h0km±3km,ML2.4/2,Error ellipse: s-maj=4.3km s-min=1.4km az=238.0*
ISC 18 10:54:10.1±2.0,37.40N±0.05×20.27E±0.07,h13km±12km, n53,σ0°96/74,Ionian Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZKS	**Zakynthos**	**0.51**	**54**	P	**Pg**	**10 54 20.0**	**-0.2**
ZKS				S	**Sg**	**10 54 26.0**	**-1.0**
ZKS	**Zakynthos**	**0.51**	**54**	P	**Pg**	**10 54 20.0**	**-0.2**
ZKS				S	**Sg**	**10 54 27.0**	**0.0**
ZKS	**Zakynthos**	**0.51**	**54**	P	**Pg**	**10 54 20.0**	**-0.2**
ZKS				S	**Sg**	**10 54 27.0**	**0.0**
VLS	**Valsamata**	**0.82**	**18**	P	**Pb**	**10 54 25.0**	**-1.3**
VLS				S	**Sg**	**10 54 34.6**	**-2.2**
VLS	**Valsamata**	**0.82**	**18**	P	**Pb**	**10 54 25.4**	**-0.9**
VLS				S	**Sb**	**10 54 37.8**	**+0.6**
KFL	**Anninata**	**0.82**	**30**	P	**Pb**	**10 54 25.1**	**-1.2**
KFL				S	**Sb**	**10 54 35.1**	**-2.2**
KFL	**Anninata**	**0.82**	**30**	P	**Pb**	**10 54 25.1**	**-1.2**
KFL				S	**Sb**	**10 54 37.4**	**+0.1**
KFL	**Anninata**	**0.82**	**30**	P	**Pb**	**10 54 25.0**	**-1.3**
KFL				S	**Sb**	**10 54 37.4**	**+0.1**
AMT	**Artemida-Makis**	**1.15**	**83**	P	**Pn**	**10 54 31.3**	**-0.7**
AMT				S	**Sg**	**10 54 48.7**	**+1.3**
AMT	**Artemida-Makis**	**1.15**	**83**	P	**Pn**	**10 54 31.3**	**-0.7**
AMT				S	**Sg**	**10 54 48.7**	**+1.3**
AMT				AML	AML	10 55 03.1	
	comp=N,261μm,0.6s						
AMT				AML	AML	10 55 06.3	
	comp=E,216μm,0.5s						
AXS	**Araxos**	**1.19**	**47**	P	**Pg**	**10 54 33.8**	**+0.8**
AXS				S	**Sg**	**10 54 49.2**	**+0.7**
AXS	**Araxos**	**1.19**	**47**	P	**Pg**	**10 54 33.8**	**+0.8**
AXS				S	**Sg**	**10 54 49.2**	**+0.7**
DRO	**Drossia**	**1.27**	**64**	P	**Pg**	**10 54 35.0**	**+0.4**
DRO	**Drossia**	**1.27**	**64**	P	**Pg**	**10 54 35.0**	**+0.4**
DRO				S	**Sg**	**10 54 52.3**	**+1.1**
DRO	**Drossia**	**1.27**	**64**	P	**Pg**	**10 54 34.4**	**-0.2**
DRO				S	**Sg**	**10 54 52.3**	**+1.1**
DRO				AML	AML	10 54 59.9	
	comp=N,202μm,0.5s						
DRO				AML	AML	10 55 03.4	
	comp=E,282μm,0.6s						
PYL	**PYLOS**	**1.28**	**113**	S	**Sg**	**10 54 52.2**	**+0.8**
PYL	**PYLOS**	**1.28**	**113**	S	**Sg**	**10 54 52.2**	**+0.8**
PYL				AML	AML	10 54 55.6	
	comp=Z,39μm,0.4s						
PYL				AML	AML	10 54 57.6	
	comp=N,127μm,0.6s						
ITM	**Ithomi**	**1.34**	**99**	P	**Pb**	**10 54 35.3**	**+0.2**
ITM				S	**Sg**	**10 54 54.0**	**+0.7**
ITM	**Ithomi**	**1.34**	**99**	P	**Pb**	**10 54 35.3**	**+0.2**
ITM				S	**Sg**	**10 54 54.0**	**+0.7**
ITM				AML	AML	10 55 08.6	
	comp=N,72μm,0.4s						
ITM				AML	AML	10 55 10.2	
	comp=E,61μm,0.7s						
PDO	**Prodromos**	**1.40**	**31**	P	**Pb**	**10 54 36.5**	**+0.4**
PDO	**Prodromos**	**1.40**	**31**	P	**Pb**	**10 54 36.5**	**+0.4**
PDO				S	**Sg**	**10 54 56.9**	**+1.6**
PDO	**Prodromos**	**1.40**	**31**	P	**Pg**	**10 54 37.4**	**+0.3**
PDO				S	**Sg**	**10 54 56.9**	**+1.6**
PDO				AML	AML	10 55 05.2	
	comp=E,298μm,0.5s						
PDO				AML	AML	10 55 05.5	
	comp=N,329μm,0.5s						
LKD2	**Lefkada island**	**1.42**	**12**	P	**Pb**	**10 54 36.5**	**-0.1**
LKD2	**Lefkada island**	**1.42**	**12**	P	**Pg**	**10 54 37.3**	**-0.2**
LKD2				S	**Sg**	**10 54 56.8**	**+0.8**
LKD2	**Lefkada island**	**1.42**	**12**	P	**Pg**	**10 54 37.3**	**-0.2**
LKD2				S	**Sg**	**10 54 56.8**	**+0

FETY	Fethiye	1.14	134	ePn	Pn	11 05 21.0 +0.5
FETY				eSn	Sn	11 05 36.1 0.0

*IDC **18** 11:07:19.9±1.0, 37.°95S×73.°24W, h0km, mb4.1/7, mb1 4.2/9, mb1mx4.0/30, mbtmp4.0/9, ML3.8/2, MS3.2/2, Ms1 3.2/2, ms1mx2.9/23, Error ellipse: s-maj=34.4km s-min=17.7km az=57.0*
*GUC **18** 11:07:21.9±0.6, 38.°12S×73.°49W, h15km±6km, ML4.0*
*NEIC **18** 11:07:21.0, 38.°12S×73.°49W, h15km, mb4.5/3, ML4.0(GUC), After GUC.*
*ISCJB **18** 11:07:22.4±1.1, 38.°09S±0.°04×73.°4W±0.°1, h26km±8km, mb4.2/13, MS2.8/1, Error ellipse: s-maj=15.4km s-min=5.7km az=6.9*

ISC 18 11:07:21.3±1.5, 38.°08S±0.°03×73.°52W±0.°07, h12km±9km, n37, σ1°91/44, mb4.2/13, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PSCH	Puerto Saavedr	0.73	172	eP	Pg	11 07 35.1	-0.3
PSCH				eS	Sb	11 07 45.3	-0.5
CCSP	San Pedro de C	1.27	15	eP	Pn	11 07 45.3	+0.4
CCSP				eS	Sg	11 08 03.1	+0.7
CCSP				IAML		11 08 09.7	
	comp=N,3μm,0.5s						
VLCH	Valdivia	1.74	173	eP	Pn	11 07 51.2	-0.1
VLCH				eS	Sn	11 08 13.2	-0.2
CCHI	Chillan	1.87	38	eP	Pb	11 07 54.6	-0.8
CCHI				eS	Sb	11 08 19.2	+0.5
CCHI				IAML		11 08 30.6	
	comp=N,4μm,0.5s						
CANA	Caviahue	1.95	85	iP	Pb	11 07 56.7	-0.2
CANA				iS	Sg	11 08 24.6	+0.6
CANA				IAML		11 08 31.4	
	comp=Z,1μm,0.6s						
COCH	Cobquecura	2.03	17	eP	Pb	11 07 57.0	-1.1
COCH				eS	Sb	11 08 24.2	+1.0
COCH				IAML		11 08 33.1	
	comp=E,2μm,0.6s						
PLCA	Paso Flores	3.51	140	iP	Pn	11 08 18.0	+2.2
PLCA				IAML		11 09 14.0	
	comp=Z,119nm,0.5s						
PLCA	Paso Flores	3.51	140	Pn	Pn	11 08 17.1	+1.4
	comp=Z,2.1nm,0.3s,baz=335,slow=10,SNR=47						
PLCA				Lg	Lg	11 09 10.6	
	comp=Z,24nm,0.3s,baz=258,slow=17,SNR=6.8						
PLCA				LR	LR	11 09 47.8	
	comp=Z,460nm,18.5s,baz=338,slow=43						
ROC1	El Roble	5.48	23	iP	Pn	11 08 43.1	+0.1
AUSP	Uspallata	6.75	31	iP	Pn	11 09 00.4	0.0
RTLS	Leoncito	7.16	30	iP	Pn	11 09 07.0	+0.9
TRQA	Tornquist	9.10	93	ePn	Pn	11 09 32.6	+0.1
	comp=Z,15nm,0.8s						
TRQA				eSg	Sn	11 12 06.6	+52
LVC	Limon Verde	15.92	16	Pn	Pn	11 11 05.5	0.0
	comp=Z,4.4nm,0.3s,baz=236,slow=7.3,SNR=2.5						
CPUP	Villa Florida	17.99	54	P	Pn	11 11 30.2	-1.1
	comp=Z,0.1nm,0.3s,baz=241,slow=19,SNR=2.3						
LPAZ	La Paz	22.22	14	P	P	11 12 19.4	+1.0
	comp=Z,2.6nm,0.7s,baz=172,slow=5.2,SNR=9.6						
LPAZ				LR	LR	11 22 04.2	
	comp=Z,42nm,20.9s,baz=231,slow=40						
SIV	San Ignacio	24.59	30	P	P	11 12 38.9	-2.5
	comp=Z,2.6nm,0.8s,baz=235,slow=7.9,SNR=6.8						
VNA3	Neumayer Olymp	46.08	156	P	P	11 15 46.0	+1.3
VNA2	Neumayer--Watz	46.76	156	P	P	11 15 58.5	+8.4
	baz=290,slow=10						
SDV	Santo Domingo	46.80	4	P	P	11 15 50.9	-0.2
	comp=Z,1.4nm,0.3s,baz=180,slow=13,SNR=3.1						
SNAA	Sanae	48.30	156	P	P	11 16 00.2	-1.8
SNAA	Sanae	48.30	156	eP	P	11 16 03.0	+0.9
	comp=Z,558nm,1.4s						
SNAA				ePcP	PcP	11 17 29.4	+0.7
JCT	Junction City	72.49	336	eP	P	11 18 49.1	+1.4
	comp=Z,2.5nm,0.5s						
TXAR	Lajitas Array	72.75	333	P	P	11 18 50.5	+1.0
	comp=Z,0.8nm,0.8s,baz=155,slow=8.6,SNR=9.8						
WMOK	Wichita Mounta	76.15	339	eP	P	11 19 09.1	+0.1
	comp=Z,1.2nm,0.5s						
DBIC	Dimbokro	77.62	71	P	P	11 19 15.8	-1.9
	comp=Z,4.0nm,0.7s,baz=221,slow=10,SNR=4.0						
SDCO	Great Sand Dun	81.01	335	eP	P	11 19 36.8	+0.8
	comp=Z,0.1nm,0.3s						
ECSD	EROS Data Cent	84.08	343	eP	P	11 19 52.2	+0.7
	comp=Z,3.2nm,0.8s						
NVAR	Mina Array Bea	86.57	326	P	P	11 20 06.1	+1.7
	comp=Z,0.1nm,0.6s,baz=179,slow=4.5,SNR=3.9						
TORD	Torodi Ar. Bea	86.71	71	P	P	11 20 04.8	-0.6
	comp=Z,2.2nm,0.7s,baz=228,slow=4.4,SNR=12						
PDAR	Pinedale Array	86.88	334	P	P	11 20 06.4	+0.6
	comp=Z,0.2nm,0.4s,baz=157,slow=2.9,SNR=3.2						
WRA	Warramunga Arr	116.62	209	PKP	PKPdf	11 26 05.3	-0.5
	comp=Z,0.3nm,0.9s,baz=153,slow=1.7,SNR=3.4						
BRTR	Keskin Array B	124.79	64	PKP	PKPdf	11 26 20.1	-0.8
	comp=Z,0.5nm,0.6s,baz=323,slow=3.6,SNR=3.1						
TIXI	Tiksi	144.46	348	PKP	PKPab	11 26 54.0	-0.6
	comp=Z,4.9nm,0.8s,baz=64,slow=4.0,SNR=21						
TIXI	Tiksi	144.46	348	PKP	PKPab	11 26 54.0	-0.6
TIXI				ePKPdf	PKPbc	11 26 54.4	-0.4
ABKAR	Akbulak array	145.05	56	ePKPdf	PKPdf	11 26 57.9	-0.1
BRVK	Borovoye	150.94	47	ePKPbc	PKPbc	11 27 14.3	+1.1
MKAR	Makanchi Array	160.20	56	PKP	PKPdf	11 27 20.6	+0.4
	comp=Z,0.2nm,0.2s,baz=309,slow=2.8,SNR=3.9						
MKAR				PKPab	PKPab	11 28 00.1	-0.4
	comp=Z,0.1nm,0.3s,baz=268,slow=4.3,SNR=2.5						

*DDA **18** 11:08:44.8, 36.°96N×35.°29E, h7km, Md2.8*
*ISCJB **18** 11:08:45.8±0.4, 37.°03N±0.°03×35.°25E±0.°03, h25km±5km, Error ellipse: s-maj=5.6km s-min=3.9km az=10.0*
*CSEM **18** 11:08:45.5±0.2, 37.°02N×35.°26E, h19km, ML2.3, Error ellipse: s-maj=5.7km s-min=3.7km az=29.0*
*ISK **18** 11:08:45.0, 37.°03N×35.°23E, h20km, ML2.3*

ISC 18 11:08:45.2±0.9, 37.°01N±0.°03×35.°25E±0.°02, h15km±8km, n25, σ0°53/43, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KARA	Karaisali	0.30	328	PG	Pb	11 08 51.8	-0.4
KARA				SG	Sg	11 08 55.8	-0.1
KARA	Karaisali	0.30	328	iPg	Pb	11 08 51.8	-0.4
KARA				iSg	Sg	11 08 55.8	-0.1
DED	Mersin	0.37	263	iP	Pg	11 08 52.8	+0.1
DED				iS	Sg	11 08 58.3	+0.4
CEYT	Ceyhan	0.40	90	ePG	Pb	11 08 54.2	+0.3
CEYT				eSG	Sb	11 09 00.8	+1.1
CEYT	Ceyhan	0.40	90	ePg	Pb	11 08 54.2	+0.3
CEYT				eSg	Sb	11 09 00.8	+1.1
KRTS	Karatas	0.45	167	ePG	Pb	11 08 54.7	0.0
KRTS	Karatas	0.45	167	ePg	Pb	11 08 54.7	0.0
GULE	Gulek	0.47	306	P	Pb	11 08 56.0	+0.7
GULE				S	Sb	11 09 02.5	+0.4
GULE	Gulek	0.47	306	iP	Pb	11 08 56.0	+0.7
GULE				iS	Sb	11 09 02.5	+0.4
AKO	Adana	0.48	19	iP	Pg	11 08 54.6	-0.1
AKO				iS	Sb	11 09 02.1	-0.1
MERS	Mersin	0.60	257	ePG	Pg	11 08 57.1	0.0
MERS				eSG	Sb	11 09 06.5	+0.7
MERS	Mersin	0.60	257	ePg	Pg	11 08 57.1	0.0
MERS				eSg	Sb	11 09 06.5	+0.7
TAHT	Tahtakopru-Hat	0.98	130	ePG	Pg	11 09 04.3	+0.1
TAHT				eSG	Sn	11 09 18.2	+0.3
TAHT	Tahtakopru-Hat	0.98	130	ePg	Pg	11 09 04.3	+0.1
TAHT				eSg	Sn	11 09 18.2	+0.3
KERG	Konya-Eregli	0.99	295	P	Pb	11 09 03.9	-0.2
KERG	Konya-Eregli	0.99	295	iP	Pb	11 09 03.9	-0.2
KERG				iS	Sb	11 09 16.8	-0.2
KIZK	Mersin	1.04	240	P	Pg	11 09 05.4	+0.2
KIZK				S	Sn	11 09 19.7	+0.3
KIZK	Mersin	1.04	240	iP	Pg	11 09 05.4	+0.2
KIZK				iS	Sn	11 09 19.7	+0.3
KAMA	Osmaniye	1.14	81	iP	Pn	11 09 06.4	-0.3
KAMA				iS	Sb	11 09 21.3	-0.1
YAYL	Yayladag	1.19	145	P	Pn	11 09 06.0	-1.4
YAYL				S	Sb	11 09 22.9	+0.1
YAYL	Yayladag	1.19	145	iP	Pn	11 09 06.0	-1.4
YAYL				iS	Sb	11 09 22.9	+0.1
NIG	Nigde	1.21	335	ePN	Pn	11 09 07.5	-0.3
NIG	Nigde	1.21	335	ePn	Pn	11 09 07.5	-0.3
GULA	Gulagac	1.56	329	ePN	Pn	11 09 11.8	-0.6
GULA	Gulagac	1.56	329	ePn	Pn	11 09 11.8	-0.6

CASC 18 11:12:09.4±2.3, 10.°05N×84.°30W, h61km±14km, MD3.5, 2C-2D, Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CGA2	Cerro Gallo 2	0.17	258	↓iP	Pn	11 12 19.9	+0.8
CGA2				eS	Sn	11 12 26.9	+0.8
URSC	Urasca	0.55	113	↑eP	Pn	11 12 22.6	+0.3
URSC				eS	Sn	11 12 33.0	+1.4
QCR	Quepos	0.64	168	↑iP	Pn	11 12 22.4	-0.6
QCR				eS	Sn	11 12 32.4	-0.6
JCR	Jicaral	0.83	256	↓eP	Pn	11 12 25.3	-0.1
JCR				eS	Sn	11 12 38.5	+1.4

*IDC **18** 11:12:23.9±1.3, 34.°85N×142.°86E, h0km, mb3.5/3, mb1 3.8/5, mb1mx3.4/53, mbtmp3.5/5, ML3.6/2, MS3.3/1, Ms1 3.3/1, ms1mx2.2/35, Error ellipse: s-maj=30.1km s-min=26.6km az=150.0*
*JMA **18** 11:12:27.3±0.3, 34.°97N×142.°85E, h54km, M3.4*

ISC 18 11:12:24.5±2.8, 34.°89N±0.°05×142.°80E±0.°07, h8km±16km, n19, σ1°38/29, mb3.5/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	Boso 1	1.52	261	P	Pb	11 12 52.9	+0.3
BSO1				S	Sg	11 13 12.6	-0.6
CHOJ	Chosi	1.78	298	P	Pb	11 12 57.0	-0.4
CHOJ				eS	Sb	11 13 18.9	-1.0
BSO3	Boso 3	1.88	268	P	Pb	11 12 58.9	-0.1
BSO3				eS	Sb	11 13 22.3	-0.3
BSO4	Boso 4	2.02	273	P	Pb	11 13 01.1	-0.4
JIM2	Oshima 3	2.77	267	P	Pn	11 13 09.8	+0.4
JIM2				eS	Sn	11 13 41.7	-1.4
JFK	Kawauchi	2.92	328	P	Pn	11 13 11.0	-0.4
JFK				S	Sn	11 13 43.2	-3.5
JHJ2	Mitsune	3.05	235	S	Sn	11 13 48.3	-1.4
JOD2	Odawara 2	3.06	278	P	Pn	11 13 14.4	+1.1
JOD2				eS	Sn	11 13 49.5	-0.7
JHJ	Hachijo jima 2	3.06	236	Pn	Pn	11 13 13.5	+0.2
	32nm,0.3s,baz=54,slow=21,SNR=14						
JHJ				Sn	Sn	11 13 48.1	-2.1
	28nm,0.3s,baz=235,slow=22,SNR=7.9						
JAG	Ashikaga	3.12	300	P	Pn	11 13 15.6	+1.5
JFT	Otama	3.29	324	P	Pn	11 13 17.2	+0.8
JFT				S	Sn	11 13 54.2	-1.6
JRY	Ryogami san	3.37	291	P	Pn	11 13 19.5	+1.9
JRY				S	Sn	11 13 57.9	+0.1
JYN	Shimob	3.54	281	P	Pn	11 13 21.1	+1.2
MJAR	Matsushiro Arr	4.08	295	Pn	Pn	11 13 28.6	+1.3
	1.9nm,0.3s,baz=106,slow=14,SNR=19						
MJAR				Sn	Sn	11 14 16.4	+1.1
	0.6nm,0.3s,baz=281,slow=36,SNR=3.5						
MAT	Matsushiro	4.08	295	P	Pn	11 13 29.6	+2.3
MAT				S	Sn	11 14 17.3	+2.0
WRA	Warramunga Arr	55.12	190	P	P	11 21 57.8	+0.4
	0.7nm,0.8s,baz=8.0,slow=7.6,SNR=6.2						
FITZ	Fitzroy Crossi	55.17	200	LR	LR	11 41 43.0	
	comp=Z,28nm,21.7s,baz=112,slow=32						
ASAR	Alice Springs	58.85	190	P	P	11 22 23.9	+0.1
	0.3nm,0.7s,baz=1.2,slow=5.8,SNR=5.0						
NVAR	Mina Array Bea	75.37	53	P	P	11 24 09.6	+0.6
	0.3nm,0.7s,baz=283,slow=8.2,SNR=3.3						

MEX 18 11:13:20.0±0.4, 19.°45N×104.°51W, h69km±8km, MD3.6, Near coast of Jalisco

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
R15V		0.57	119	iP	Pn	11 13 31.9	-1.6
R15V				eS	Sn	11 13 41.8	-1.6
EZ5V		0.85	88	eP	Pn	11 13 35.7	-1.3
EZ5V				eS	Sn	11 13 47.7	-1.8
MMIG	Aquila	1.59	136	iP	Pn	11 13 44.9	-1.3
MMIG				eS	Sn	11 14 03.5	-2.5

*NIED **18** 11:16:00, 38.°40N×142.°20E, h32km, Mw3.5 Best double couple: M0:1.93000×10^14 NP1:φs146.00000°, δ39.00000°, λ-24.00000°. NP2:φs255.00000°, δ75.00000°, λ-127.00000°.*
*IDC **18** 11:16:36.9±1.3, 38.°21N×143.°09E, h0km, mb3.7/5, mb1 3.7/8, mb1mx3.5/48, mbtmp3.7/8, ML3.6/2, MS2.6/1, Ms1 2.6/1, ms1mx2.1/39, Error ellipse: s-maj=39.1km s-min=19.3km az=91.0*
*JMA **18** 11:16:41.5±0.1, 38.°41N×142.°13E, h31km±1km, M4.0*
JMA Felt II J1.

ISC 18 11:16:37.5±1.8, 38.°35N±0.°04×142.°19E±0.°06, h6km±12km, n17, σ1°49/24, mb3.7/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.67	279	P	Pn	11 16 53.5	+0.1
JIO				S	Sb	11 17 01.8	+0.9
JMK	Ichinoseki	0.97	309	P	Pn	11 16 57.8	+0.3
JMK				S	Sb	11 17 09.6	0.0
JOU	Okura	1.20	271	P	Pg	11 17 02.0	+1.6
JOU				S	Sn	11 17 17.3	0.0
JMM	Marumori	1.20	247	P	Pg	11 17 01.5	+1.0
JMM				S	Sn	11 17 16.3	-1.0
JOM	Ohasama	1.32	328	P	Pg	11 17 03.1	+0.3
JOM				S	Sb	11 17 19.1	-0.7
JFK	Kawauchi	1.43	227	P	Pg	11 17 04.3	-0.6
JFK				S	Sn	11 17 21.1	-1.9
JYK	Kaneyama	1.54	292	P	Pg	11 17 06.8	-0.2
MJAR	Matsushiro Arr	3.64	242	Pn	Pb	11 17 40.6	-1.7
	baz=63,slow=12,SNR=1.9						
MJAR				Sn	Sb	11 18 27.2	+0.6
	1.1nm,0.3s,baz=76,slow=32,SNR=3.2						
MAT	Matsushiro	3.64	242	P	Pb	11 17 39.5	-2.8
MAT				S	Sn	11 18 21.0	+3.3
JHJ	Hachijo jima 2	5.57	201	Pn	Pn	11 18 02.8	+1.9
	4.2nm,0.3s,baz=40,slow=22,SNR=4.7						
JHJ				Sn	Sn	11 19 02.3	-2.9
	4.7nm,0.3s,baz=38,slow=8.3,SNR=3.3						
ASAJ	Asahikawa	5.77	3	Pn	Pn	11 18 04.0	+0.4
	1.3nm,0.3s,baz=199,slow=17,SNR=12						
ASAJ				Sn	Sn	11 19 09.8	-0.2
	0.0nm,0.3s,baz=95,slow=15,SNR=1.7						
KLR	Kul'dur	13.22	329	LR	LR	11 24 36.3	
	comp=Z,23nm,18.2s,baz=120,slow=35						
SEY	Seymchan	25.39	11	P	P	11 22 05.3	+0.2
	0.7nm,0.5s,baz=196,slow=9.8,SNR=4.1						
ZALV	Zalesovo Beam	41.49	311	P	P	11 24 31.6	+6.5
	0.6nm,0.5s,baz=88,slow=11,SNR=2.8						
MKAR	Makanchi Array	43.95	301	P	P	11 24 51.1	+6.0
	0.8nm,0.7s,baz=90,slow=7.2,SNR=4.2						
WRA	Warramunga Arr	58.45	189	P	P	11 26 34.3	+0.1
	0.6nm,0.7s,baz=7.8,slow=7.7,SNR=9.7						
ASAR	Alice Springs	62.18	189	P	P	11 27 00.3	+0.6
	0.4nm,0.7s,baz=4.1,slow=4.2,SNR=6.1						

JMA 18 11:30:55.5±0.2, 37.°80N×142.°06E, h31km±3km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.86	320	P	Pn	11 31 11.5	0.0
JIO				S	Sn	11 31 22.7	-0.3
JMM	Marumori	1.00	274	P	Pn	11 31 13.4	-0.1
JMM				S	Sn	11 31 26.5	-0.1
JFK	Kawauchi	1.04	246	eS	Sn	11 31 26.8	-0.6
JOU	Okura	1.24	298	eS	Sb	11 31 33.4	-0.5
OFUJ	Ofunato	1.31	347	S	Sn	11 31 33.6	-0.6
JMK	Ichinoseki	1.33	330	S	Sn	11 31 34.2	-0.3
JFT	Otama	1.40	259	S	Sb	11 31 37.8	-0.6
JYS	Shiratake	1.63	286	P	Pn	11 31 22.7	+0.6
MAT	Matsushiro	3.32	249	P	Pn	11 31 41.8	-3.6
MAT				S	Sn	11 32 22.0	-1.8

*NIED **18** 11:48:00, 36.°60N×141.°10E, h50km, Mw4.2 Best double couple: M0:1.92000×10^15 NP1:φs80.00000°, δ2.00000°, λ-51.00000°. NP2:φs221.00000°, δ89.00000°, λ-91.00000°.*
*ISCJB **18** 11:48:26.4±0.5, 36.°60N±0.°03×141.°07E±0.°05, h52km±3km, mb4.2/33, MS3.3/12, Error ellipse: s-maj=7.2km s-min=4.3km az=18.8*
*NEIC **18** 11:48:26.7±0.3, 36.°62N×141.°07E, h35km, mb4.5/10, Error ellipse: s-maj=7.6km s-min=6.2km az=101.0*
NEIC Felt at Noda. Recorded [2 JMA] in Fukushima, Ibaraki, Miyagi and Tochigi.
*JMA **18** 11:48:27.7±0.1, 36.°60N×140.°97E, h48km±1km, M4.2*
JMA Felt II J1.
*IDC **18** 11:48:31.4±1.6, 36.°51N×140.°81E, h79km±15km, mb3.8/20, mb1 4.0/23, mb1mx3.8/45, mbtmp4.1/23, MS3.2/15, Ms1 3.2/15, ms1mx3.0/61, Error ellipse: s-maj=14.8km s-min=8.4km az=70.0*

ISC 18 11:48:27.4±0.9, 36.°61N±0.°04×141.°01E±0.°06, h43km±7km, n73, σ1°46/71, mb4.2/33, MS3.4/12, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	Hitachi	0.35	271	P	Pn	11 48 36.9	+0.5
JHO				S	Sn	11 48 43.1	+0.3
ONAJ	Iwakimizuishiy	0.52	341	P	Pn	11 48 38.8	+0.2
ONAJ				S	Sn	11 48 46.4	-0.1
JYT	Yasato	0.76	240	P	Pn	11 48 41.6	0.0
JYT				S	Sn	11 48 51.4	-0.5
JFK	Kawauchi	0.77	352	P	Pn	11 48 41.8	0.0
JFK				S	Sn	11 48 51.4	-0.8
JFT	Otama	1.05	330	P	Pn	11 48 47.0	+1.3
JFT				S	Sn	11 49 00.4	+1.1
MJAR	Matsushiro Arr	2.25	269	P	Pn	11 49 03.1	+1.0
	53nm,0.3s,baz=76,slow=8.6,SNR=572						
MJAR				S	Sn	11 49 30.1	+1.4
	94nm,0.3s,baz=156,slow=42,SNR=21						
MJAR				LR	LR	11 50 06.9	
	comp=Z,258nm,21.8s,baz=110,slow=46						
MAJO	Matsushiro	2.25	269	ePn	Pn	11 49 03.9	+1.7
MAT	Matsushiro	2.25	269	P	Pn	11 49 03.4	+1.2
MAT				S	Sn	11 49 29.1	+0.3
MJB9	Matsu-Tunnel	2.26	269	ePn	Pn	11 49 04.0	+1.8
INU	Inuyama	3.47	250	ePn	Pn	11 49 21.9	+3.1
JHJ	Hachijo jima 2	3.62	196	P	Pn	11 49 21.9	+1.0
	61nm,0.3s,baz=325,slow=19,SNR=44						
JHJ				S	Sn	11 50 03.7	+1.2
	154nm,0.3s,baz=240,slow=23,SNR=9.8						
JHJ				LR	LR	11 50 57.8	
	comp=Z,121nm,21.9s,baz=82,slow=42						
JHJ2	Mitsune	3.62	196	ePn	Pn	11 49 21.6	+0.7
ERM	Erimo	5.65	17	ePn	Pn	11 49 49.4	+0.6
ERM				eSn	Sn	11 50 53.8	+1.4
ASAJ	Asahikawa	7.60	9	P	Pn	11 50 15.1	-0.4
	5.1nm,0.3s,baz=210,slow=13,SNR=52						
ASAJ				S	Sn	11 51 41.3	+1.1
	2.1nm,0.3s,baz=90,slow=19,SNR=3.8						
JNU	Nakatsue	9.02	250	P	Pn	11 50 40.2	+5.2
	0.5nm,0.3s,baz=43,slow=5.3,SNR=4.7						
JNU				LR	LR	11 54 11.9	
	comp=Z,65nm,18.8s,baz=118,slow=38						
CBIJ	Chichi jima	9.54	174	ePn	Pn	11 50 41.4	-0.7
CBIJ				S	Sn	11 52 18.2	-10
JCJ	Chichijima	9.54	174	P	Pn	11 50 39.0	-3.1
	19nm,0.3s,baz=294,slow=22,SNR=24						
JCJ				S	Sn	11 52 18.2	-10
	baz=290,slow=18						
USRK	Ussuriysk Ar.	10.23	321	P	Pn	11 50 55.2	+3.7
	1.1nm,0.3s,baz=139,slow=13,SNR=17						
USRK				LR	LR	11 54 45.6	
	comp=Z,129nm,18.5s,baz=169,slow=37						
KSRS	Korea Array	10.49	279	P	Pn	11 51 00.6	+5.5
	0.3nm,0.3s,baz=92,slow=14,SNR=9.0						
KSRS				LR	LR	11 54 49.9	
	comp=Z,113nm,20.3s,baz=80,slow=36						
KSAR	Wonju Array Be	10.53	278	P	Pn	11 51 00.6	+5.0
MDJ	Mudanjiang	11.79	316	P	Pn	11 51 13.8	+0.9
MDJ				LR	LR		
	comp=N,63nm,25.6s						
MDJ				LR	LR		
	comp=E,57nm,23.7s						
MDJ				LR	LR		
	comp=Z,120nm,22.9s						
KLR	Kul'dur	14.31	335	P	Pn	11 51 46.1	-1.0
	comp=Z,0.3nm,0.3s,baz=156,slow=8.8,SNR=7.8						
PETK	Petropavlovsk-	20.22	30	LR	LR	12 01 26.9	
	comp=Z,34nm,18.5s,baz=125,slow=38						
HHC	Hu-ho-hao-te	23.30	289	eP	P	11 53 32.3	+0.8
HHC				S	S	11 57 33.5	-7.4
HHC				pmax	pmax		
	comp=Z,33nm,0.9s						
HHC				pmax	pmax		
	comp=Z,240nm,4.4s						
HHC				LR	LR		
	comp=N,620nm,11.9s						
HHC				LR	LR		
	comp=E,640nm,12.3s						
HHC				LR	LR		
	comp=Z,630nm,12.7s						
ENH	Enshi	26.97	266	eP	P	11 54 04.0	-1.0
	comp=Z,8.3nm,0.4s						
SEY	Seymchan	27.27	11	P	P	11 54 10.4	+3.1
	comp=Z,7.7nm,0.8s,baz=203,slow=6.9,SNR=23						
ULN	Ulaanbaatar	27.33	305	eP	P	11 54 08.3	0.0
	comp=Z,5.2nm,1.0s						
SONA1	Songino Array	27.75	305	eP	P	11 54 12.0	0.0
SONM	Songino Array	27.75	305	P	P	11 54 12.3	+0.3
	comp=Z,7.1nm,0.6s,baz=106,slow=9.1,SNR=34						
SONM				LR	LR	12 05 24.7	
	comp=Z,41nm,20.7s,baz=98,slow=37						
H11N2	WAKE ISLAND Hy	28.22	120	T	T	12 23 50.3	
	baz=313,slow=75,SNR=92						
H11N1	WAKE ISLAND Hy	28.22	120	T	T	12 23 53.7	
	baz=313,slow=75,SNR=108						
H11N3	WAKE ISLAND Hy	28.23	120	T	T	12 23 51.7	
	baz=313,slow=75,SNR=93						
H11S1	WAKE ISLAND Hy	28.91	122	T	T	12 24 55.6	
	baz=314,slow=76,SNR=342						
H11S3	WAKE ISLAND Hy	28.91	122	T	T	12 24 50.6	
	baz=314,slow=76,SNR=252						
H11S2	WAKE ISLAND Hy	28.93	122	T	T	12 24 48.2	
	baz=314,slow=76,SNR=190						
CD2	Chengdu	31.35	271	P	P	11 54 42.8	-1.1
CD2				pmax	pmax		
	comp=Z,2.0nm,0.5s						
TIXI	Tiksi	35.67	353	eP	P	11 55 20.2	-0.8
	comp=Z,3.4nm,0.6s						
WMQ	Urumqi	40.74	297	eP	P	11 56 05.9	+1.8
WMQ				pmax	pmax		
	comp=Z,3.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,23nm,4.2s						
WMQ				LR	LR

comp=Z,4.8nm,0.5s,baz=5.2,slow=7.5,SNR=159
ABKAR Akbulak array 57.96 310 *e*P **P 11 58 15.1 -0.2**
AS01 Alice Springs 60.32 187 *e*P **P 11 58 31.8 0.0**
AS31 Alice Springs 60.32 187 *e*P **P 11 58 31.4 -0.4**
comp=Z,1.0nm,0.8s
ASAR Alice Springs 60.32 187 P **P 11 58 31.9 +0.1**
comp=Z,0.9nm,0.5s,baz=17,slow=11,SNR=27
ARCES ARCESS Array B 64.28 339 P **P 11 58 57.6 -0.2**
comp=Z,2.5nm,0.8s,baz=57,slow=8.8,SNR=6.3
ARCES LR LR 12 29 44.8
comp=Z,22nm,18.1s,baz=52,slow=38
YKA Yellowknife Ar 64.34 30 P **P 11 58 58.3 +0.1**
comp=Z,0.2nm,0.6s,baz=305,slow=7.1,SNR=3.8
STKA Stephens Creek 68.13 179 P **P 11 59 21.5 -1.2**
comp=Z,2.0nm,0.6s,baz=8.4,slow=4.9,SNR=9.6
FINES FINESS Array B 69.04 332 P **P 11 59 27.3 -0.9**
comp=Z,1.2nm,0.6s,baz=64,slow=4.4,SNR=6.2
AKASG Malin Array Be 74.43 322 P **P 12 00 00.4 -0.4**
comp=Z,0.8nm,0.4s,baz=43,slow=5.6,SNR=6.0
NB2 NORSAR Subarra 74.45 337 P **P 12 00 01.0 +0.2**
comp=Z,2.2nm,0.8s,baz=40,slow=5.9
NOA NORSAR Array B 74.45 337 P **P 12 00 00.4 -0.4**
comp=Z,2.0nm,0.8s,baz=39,slow=5.9,SNR=4.3
NOA LR LR 12 36 09.3
comp=Z,17nm,18.5s,baz=255,slow=38
NVAR Mina Array Bea 75.51 53 P **P 12 00 09.2 +1.7**
comp=Z,0.7nm,0.6s,baz=303,slow=6.2,SNR=7.8
FLWY Flagg Ranch 76.73 45 *e*P **P 12 00 14.5 +0.1**
comp=Z,12nm,0.9s
PDAR Pinedale Array 78.20 45 P **P 12 00 23.4 +0.7**
comp=Z,0.3nm,0.5s,baz=205,slow=6.6,SNR=3.8
IDI Anoyia 87.04 313 LR LR 12 45 03.1
comp=Z,22nm,18.7s,baz=146,slow=39
TXAR Lajitas Array 90.64 52 P **P 12 01 26.1 +0.4**
comp=Z,0.4nm,0.8s,baz=308,slow=4.1,SNR=5.1
TXAR LR LR 12 37 41.7
comp=Z,32nm,20.4s,baz=0.0,slow=32

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*ISCJB **18** 11:49:37.4±0.5, 63°.22N±0°.03×21°.77E±0°.06, h0km, Error ellipse: s-maj=4.2km s-min=3.7km az=17.4*
*IDC **18** 11:49:41.4±1.0, 63°.07N×21°.63E, h0km, mb1 2.9/3, mb1mx2.9/42, mbtmp2.8/3, ML2.2/3, Error ellipse: s-maj=11.5km s-min=7.8km az=45.0*
*CSEM **18** 11:49:42.9, 63°.15N×21°.76E, h0km, ML1.8, Mining explosion.*
*HEL **18** 11:49:42.9±0.1, 63°.15N×21°.76E, h0km, ML1.8, Explosion*
ISC 18 11:49:39.8±0.8, 63°.18N±0°.03×21°.80E±0°.03, h0km, n29, σ1§12/42, Finland

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
VAF	**Ylistaro**	**0.42**	**108**		PG		**Pb**	**11 49 50.5**	**+0.4**
VAF					SG		**Sb**	**11 49 56.3**	**-0.6**
VAF	**Ylistaro**	**0.42**	**108**		Pg		**Pb**	**11 49 50.4**	**+0.4**
VAF					Sg		**Sb**	**11 49 56.3**	**-0.6**
UMAU	**Umeaa**	**0.87**	**325**		PB		**Pn**	**11 49 59.2**	**-0.1**
UMAU	**Umeaa**	**0.87**	**325**		Pb		**Pn**	**11 49 59.1**	**-0.1**
OUFX	**Oulainen**	**1.76**	**46**		SN		**Sg**	**11 50 38.8**	**+2.6**
OUFX	**Oulainen**	**1.76**	**46**		Sn		**Sg**	**11 50 38.7**	**+2.6**
HEMU	**Hemsoen**	**1.79**	**255**		PG		**Pg**	**11 50 14.8**	**+0.8**
baz=71
HEMU					SG		**Sg**	**11 50 37.6**	**+0.4**
HEMU	**Hemsoen**	**1.79**	**255**		Pg		**Pg**	**11 50 14.8**	**+0.8**
HEMU					Sg		**Sg**	**11 50 37.6**	**+0.4**
SUF	**Sumiainen**	**2.04**	**101**		PG		**Pg**	**11 50 19.5**	**+0.6**
baz=280
SUF					MSG			11 50 43.8	
comp=Z,5.6nm,0.2s
SUF					SG		**Sg**	**11 50 46.8**	**+1.5**
SUF	**Sumiainen**	**2.04**	**101**		Pg		**Pg**	**11 50 19.4**	**+0.6**
SUF					Sg		**Sg**	**11 50 46.8**	**+1.5**
RAF	**Rauma**	**2.16**	**180**		PG		**Pg**	**11 50 21.0**	**-0.2**
RAF					MSG			11 50 46.1	
comp=Z,2.2nm,0.2s
RAF					SG		**Sg**	**11 50 49.8**	**+0.7**
RAF	**Rauma**	**2.16**	**180**		Pg		**Pg**	**11 50 20.9**	**-0.2**
RAF					Sg		**Sg**	**11 50 49.8**	**+0.7**
KAF	**Kangasniemi**	**2.34**	**115**		PG		**Pg**	**11 50 24.4**	**-0.1**
KAF					MSG			11 50 52.1	
comp=Z,5.8nm,0.2s
KAF					SG		**Sg**	**11 50 55.0**	**+0.2**
KAF	**Kangasniemi**	**2.34**	**115**		Pg		**Pg**	**11 50 24.4**	**-0.1**
KAF					Sg		**Sg**	**11 50 55.0**	**+0.2**
OUL	**Oulu**	**2.63**	**41**		SG		**Sg**	**11 51 04.4**	**+0.3**
OUL	**Oulu**	**2.63**	**41**		Sg		**Sg**	**11 51 04.4**	**+0.3**
FIA0	**FINESS Array S**	**2.65**	**129**		PG		**Pg**	**11 50 29.5**	**-1.0**
FIA0					SB		**Sb**	**11 51 01.3**	**+0.3**
FIA0	**FINESS Array S**	**2.65**	**129**		Pg		**Pg**	**11 50 29.5**	**-1.0**
FIA0					Sb		**Sb**	**11 51 01.3**	**+0.3**
FINES	**FINESS Array B**	**2.65**	**129**		Pn		**Pb**	**11 50 28.1**	**+0.1**
comp=Z,0.6nm,0.3s,baz=311,slow=12,SNR=16
FINES					Lg		Lg	11 51 03.0	
comp=Z,1.1nm,0.3s,baz=317,slow=25,SNR=15
TOF	**Tornio**	**3.11**	**19**		SG		**Sg**	**11 51 19.6**	**0.0**
TOF	**Tornio**	**3.11**	**19**		Sg		**Sg**	**11 51 19.6**	**0.0**
MEF	**Metsahovi**	**3.22**	**156**		SB		**Sb**	**11 51 17.1**	**-0.2**
MEF	**Metsahovi**	**3.22**	**156**		Sb		**Sb**	**11 51 17.1**	**-0.2**
RNF	**Rovaniemi**	**3.89**	**26**		PG		**Pg**	**11 50 53.9**	**-0.3**
RNF	**Rovaniemi**	**3.89**	**26**		Pg		**Pg**	**11 50 53.8**	**-0.3**
KU6	**Riekki**	**4.51**	**47**		SG		**Sg**	**11 52 02.0**	**-2.4**
KU6	**Riekki**	**4.51**	**47**		Sg		**Sg**	**11 52 02.0**	**-2.4**
NOA	**NORSAR Array B**	**5.41**	**251**		Pn		**Pn**	**11 50 59.3**	**-2.4**
comp=Z,0.1nm,0.3s,baz=69,slow=14,SNR=2.2
NOA					Lg		Lg	11 52 27.4	
comp=Z,0.3nm,0.3s,baz=60,slow=21,SNR=3.3
ARCES	**ARCESS Array B**	**6.56**	**11**		Pn		**Pn**	**11 51 19.7**	**+2.4**
comp=Z,0.1nm,0.3s,baz=194,slow=14,SNR=6.8
ARCES					Sn		**Sn**	**11 52 31.4**	**-1.3**
comp=Z,0.1nm,0.3s,baz=198,slow=22,SNR=3.0
ARCES					Lg		Lg	11 53 07.6	
comp=Z,0.1nm,0.3s,baz=199,slow=28,SNR=2.9

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*ISK **18** 12:02:31.9, 41°.00N×31°.16E, h14km, ML2.3*
*ISCJB **18** 12:02:32.6±0.7, 40°.98N±0°.05×31°.20E±0°.04, h15km±6km, Error ellipse: s-maj=7.7km s-min=5.0km az=166.7*
*CSEM **18** 12:02:32.3±0.1, 40°.99N×31°.20E, h15km, MD2.6, Error ellipse: s-maj=2.8km s-min=1.9km az=153.0*
*DDA **18** 12:02:32.1, 41°.04N×31°.21E, h7km, Md2.6*
ISC 18 12:02:31.9±1.4, 41°.01N±0°.04×31°.21E±0°.03, h14km±12km, n20, σ0§17/32, Turkey

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
SAHE	**Sakarya_HENDEK**	**0.31**	**240**		P		**Pb**	**12 02 39.0**	**-0.3**
SAHE					S		**Sb**	**12 02 44.6**	**+0.3**
SAHE	**Sakarya_HENDEK**	**0.31**	**240**	*i*	P		**Pb**	**12 02 39.0**	**-0.3**
SAHE				*i*	S		**Sb**	**12 02 44.6**	**+0.3**
KDZE	**Karadeniz Ereo**	**0.35**	**30**	*e*	PG		**Pb**	**12 02 39.9**	**-0.1**
KDZE	**Karadeniz Ereo**	**0.35**	**30**	*e*	Pg		**Pb**	**12 02 39.9**	**-0.1**
MDUB	**Mudurnu**	**0.54**	**181**	*e*	PG		**Pg**	**12 02 42.6**	**+0.1**
MDUB				*e*	SG		**Sb**	**12 02 50.7**	**-0.1**
MDUB	**Mudurnu**	**0.54**	**181**	*e*	Pg		**Pg**	**12 02 42.6**	**+0.1**
MDUB				*e*	Sg		**Sb**	**12 02 50.7**	**-0.1**
BCAM	**Yenicaga**	**0.68**	**106**		P		**Pg**	**12 02 45.1**	**0.0**
BCAM					S		**Sb**	**12 02 55.1**	**+0.2**
BCAM	**Yenicaga**	**0.68**	**106**	*i*	P		**Pg**	**12 02 45.1**	**0.0**
BCAM				*i*	S		**Sb**	**12 02 55.1**	**+0.2**
KAND	**Kocaeli-Kandir**	**0.78**	**277**		P		**Pb**	**12 02 47.1**	**-0.1**
KAND					S		**Sb**	**12 02 57.5**	**-0.1**
KAND	**Kocaeli-Kandir**	**0.78**	**277**	*i*	P		**Pb**	**12 02 47.1**	**-0.1**
KAND				*i*	S		**Sb**	**12 02 57.5**	**-0.1**
GULT	**Gulveren**	**0.78**	**223**	*e*	PG		**Pb**	**12 02 47.2**	**-0.1**
GULT				*e*	SG		**Sb**	**12 02 57.7**	**-0.1**
GULT	**Gulveren**	**0.78**	**223**	*e*	Pg		**Pb**	**12 02 47.2**	**-0.1**
GULT				*e*	Sg		**Sb**	**12 02 57.7**	**-0.1**
BTIN	**Bart¯-n**	**1.00**	**51**		P		**Pn**	**12 02 51.6**	**0.0**
BTIN					S		**Sn**	**12 03 05.7**	**+0.1**
BTIN	**Bart¯-n**	**1.00**	**51**	*i*	P		**Pn**	**12 02 51.6**	**0.0**
BTIN				*i*	S		**Sn**	**12 03 05.7**	**+0.1**
SILT	**Sile**	**1.19**	**278**	*e*	PN		**Pb**	**12 02 54.3**	**-0.1**
SILT	**Sile**	**1.19**	**278**	*e*	Pn		**Pb**	**12 02 54.3**	**-0.1**
CAVI	**Cavuskoy**	**1.31**	**233**		PN		**Pn**	**12 02 55.9**	**0.0**
CAVI	**Cavuskoy**	**1.31**	**233**	*i*	Pn		**Pn**	**12 02 55.9**	**0.0**
IZI	**Iznik**	**1.48**	**244**	*e*	PN		**Pn**	**12 02 58.4**	**+0.1**
IZI	**Iznik**	**1.48**	**244**	*e*	Pn		**Pn**	**12 02 58.4**	**+0.1**

IDC 18 12:10:41.7±3.2, 53°.77N×90°.74E, h0km, mb1 3.1/3, mb1mx3.0/48, mbtmp3.1/3, ML2.7/2, Error ellipse:
s-maj=27.4km s-min=22.3km az=56.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**3.51**	**275**	*i*				12 32 45.5	
baz=92,slow=324,SNR=28
ZALV	**Zalesovo Beam**	**3.51**	**275**		Pn		Pn	12 11 38.0	+0.5
baz=90,slow=15,SNR=2.9
ZALV					Pg		Pb	12 11 44.1	-0.6
0.6nm,0.3s,baz=93,slow=15,SNR=19
ZALV					Lg		Lg	12 12 34.8	
1.3nm,0.3s,baz=97,slow=26,SNR=6.3
KURBB	**Kurchatov Arra**	**8.14**	**252**		Pn		Pn	12 12 40.8	-0.1
0.1nm,0.3s,baz=65,slow=14,SNR=12
KURBB					Sn		Sn	12 14 10.5	-3.1
baz=66,slow=24,SNR=3.9
KURBB					Lg		Lg	12 15 02.4	
0.1nm,0.3s,baz=66,slow=33,SNR=6.3
MKAR	**Makanchi Array**	**8.83**	**221**		Pn		Pn	12 12 51.2	+0.7
0.1nm,0.3s,baz=38,slow=14,SNR=9.8
MKAR					Sn		Sn	12 14 31.0	+0.3
0.1nm,0.3s,baz=33,slow=26,SNR=4.1
MKAR					Lg		Lg	12 15 19.5	
0.1nm,0.3s,baz=20,slow=21,SNR=4.4
SONM	**Songino Array**	**11.54**	**115**		Lg		Lg	12 16 37.0	
0.3nm,0.3s,baz=299,slow=30,SNR=10.0

IDC 18 12:17:36.9±1.7, 1°.86N×126°.99E, h0km, mb3.6/4, mb1 3.7/5, mb1mx3.5/58, mbtmp3.6/5, ML3.1/1, Error ellipse: s-maj=114.3km s-min=21.3km az=70.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**19.88**	**184**		P		Pn	12 22 11.1	-0.4
0.1nm,0.3s,baz=5.7,slow=10,SNR=2.0
WRA	**Warramunga Arr**	**22.84**	**162**		P		P	12 22 40.6	-1.2
0.9nm,0.4s,baz=339,slow=11,SNR=20
ASAR	**Alice Springs**	**26.25**	**166**		P		P	12 23 14.2	+0.3
0.6nm,0.7s,baz=342,slow=11,SNR=14
MKAR	**Makanchi Array**	**59.23**	**326**		P		P	12 27 39.1	-0.9
0.2nm,0.4s,baz=129,slow=8.9,SNR=2.1
KURBB	**Kurchatov Arra**	**63.44**	**328**		P		P	12 28 09.3	+0.9
0.3nm,0.4s,baz=126,slow=6.1,SNR=2.3

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*ISCJB **18** 12:18:54.9±0.2, 23°.79S±0°.03×179°.87E±0°.05, h526km, mb4.4/98, Error ellipse: s-maj=5.8km s-min=3.7km az=22.6*
*IDC **18** 12:18:54.9±1.2, 23°.73S×179°.99W, h518km±12km, mb3.9/28, mb1 4.0/30, mb1mx3.9/47, mbtmp4.7/30, Error ellipse: s-maj=11.5km s-min=10.1km az=110.0*
*NEIC **18** 12:18:56.0±0.5, 23°.83S×179°.90E, h532km±6km, mb4.6/69, Error ellipse: s-maj=6.3km s-min=4.6km az=149.0*
*MOS **18** 12:18:55.2±0.9, 23°.76S×179°.87E, h529km, mb4.7/21, Error ellipse: s-maj=11.9km s-min=10.0km az=65.8*
ISC 18 12:18:55.3±0.3, 23°.85S±0°.05×179°.98W±0°.07, h526km, n277, σ1§24/303, mb4.5/97, 27C-6D, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**5.69**	**162**		P		**P**	**12 20 31.2**	**+1.4**
289nm,0.3s,baz=54,slow=10,SNR=12
RAO					S		**S**	**12 21 42.9**	**-4.2**
106nm,0.3s,baz=270,slow=20,SNR=3.4
RAO	**Raoul Island**	**5.69**	**162**	*e*	P		**P**	**12 20 31.6**	**+1.8**
RAO				*e*	S		**S**	**12 21 46.2**	**-0.9**
RAO	**Raoul Island**	**5.69**	**162**	*e*	P		**P**	**12 20 31.6**	**+1.8**
RAO				*e*	S		**S**	**12 21 46.2**	**-0.9**
MSVF	**Nonsavu**	**6.36**	**343**	*e*	P		**P**	**12 20 36.3**	**-0.1**
MSVF	**Nonsavu**	**6.36**	**343**	*e*	P		**P**	**12 20 36.3**	**-0.1**
AFI	**Afiamalu**	**12.56**	**40**		S		S	12 23 46.0	-9.5
1.8nm,0.3s,baz=49,slow=19,SNR=6.6
DZM	**Mont Dzumac**	**12.63**	**275**		P		**P**	**12 21 40.1**	**-0.6**
1.5nm,0.3s,baz=96,slow=17,SNR=10
MXZ	**Matakaoa Point**	**13.75**	**186**		PN		**P**	**12 21 53.8**	**+1.9**
MXZ					SN		**S**	**12 24 15.7**	**-1.7**
HAZ	**Te Kaha**	**13.99**	**187**		PN		**P**	**12 21 55.1**	**+0.7**
HAZ					SN		**S**	**12 24 20.7**	**-1.5**
URZ	**Urewera**	**14.58**	**189**		P		**P**	**12 22 00.1**	**-0.5**
8.8nm,0.3s,baz=7.0,slow=1.1,SNR=50
URZ					S		**S**	**12 24 30.3**	**-3.1**
3.1nm,0.3s,baz=71,slow=21,SNR=13
URZ	**Urewera**	**14.58**	**189**	*e*	P		**P**	**12 21 59.7**	**-0.8**
URZ					S		**S**	**12 24 30.3**	**-3.1**
URZ	**Urewera**	**14.58**	**189**	*e*	P		**P**	**12 21 58.2**	**-2.4**
URZ					SN		**S**	**12 24 30.6**	**-2.8**
MWZ	**Matawai**	**14.60**	**188**		PN		**P**	**12 22 02.3**	**+1.5**
BKZ	**Black Stump Fm**	**15.56**	**190**	*e*	P		**P**	**12 22 10.4**	**-0.5**
25nm,0.8s
PKVZ	**Pokaka**	**15.90**	**193**		PN		**P**	**12 22 15.1**	**+0.8**
PNHZ	**Pukenui**	**16.34**	**190**		PN		**P**	**12 22 16.3**	**-2.4**
BFZ	**Birch Farm**	**17.08**	**190**	*e*	P		**P**	**12 22 23.6**	**-2.2**
118nm,1.2s
BFZ				*e*	sP		**sP**	**12 24 41.9**	**+5.1**
KHZ	**Kahutara**	**19.29**	**195**	*e*	P		**P**	**12 22 45.6**	**-0.3**
KHZ				*e*	S		**S**	**12 25 50.8**	**-2.5**
RPZ	**Rata Peaks**	**21.14**	**198**		P		**P**	**12 23 04.2**	**+1.4**
4.6nm,0.4s,baz=344,slow=15,SNR=3.8
ARMA	**Armidale**	**26.06**	**249**	*e*	P		**P**	**12 23 47.7**	**+0.8**
14nm,0.8s
EIDS	**Eidsvold**	**26.33**	**261**	*e*	P		**P**	**12 23 49.7**	**+0.5**
26nm,0.6s
CAN	**Canberra**	**29.18**	**240**	*e*	P		**P**	**12 24 13.9**	**-0.2**
CAN					pmax		pmax		
comp=Z,15nm,0.7s
CAN	**Canberra**	**29.18**	**240**	*e*	P		**P**	**12 24 13.9**	**-0.2**
comp=Z,15nm,0.7s
CTA	**Charters Tower**	**31.49**	**270**		P		**P**	**12 24 35.0**	**+0.8**
comp=Z,43nm,0.4s,baz=81,slow=10.0,SNR=101
CTA	**Charters Tower**	**31.49**	**270**		P		**P**	**12 24 35.0**	**+0.8**
PMG	**Port Moresby**	**34.49**	**289**		P		**P**	**12 24 59.4**	**-0.2**
comp=Z,38nm,0.8s,baz=112,slow=8.3,SNR=5.8
STKA	**Stephens Creek**	**34.76**	**248**		P		**P**	**12 25 01.9**	**+0.3**
comp=Z,4.8nm,0.4s,baz=94,slow=11,SNR=38
STKA	**Stephens Creek**	**34.76**	**248**	*e*	P		**P**	**12 25 01.3**	**-0.3**
STKA	**Stephens Creek**	**34.76**	**248**	*e*	P		**P**	**12 25 01.3**	**-0.3**
comp=Z,3.3nm,1.2s
STKA				*e*	sP		**sP**	**12 27 38.5**	**+6.0**
BBOO	**Buckleboo**	**39.48**	**247**	*e*	P		**P**	**12 25 39.2**	**-1.1**
comp=Z,14nm,0.8s
AS01	**Alice Springs**	**42.02**	**261**	*e*	P		**P**	**12 26 00.4**	**-0.4**
AS31	**Alice Springs**	**42.06**	**261**	*e*	P		**P**	**12 26 01.2**	**+0.1**
comp=Z,6.9nm,0.6s
ASAR	**Alice Springs**	**42.06**	**261**		P		**P**	**12 26 01.2**	**+0.1**
comp=Z,11nm,0.4s,baz=96,slow=7.6,SNR=500
ASAR					ScP		**ScP**	**12 30 46.8**	**+2.5**
comp=Z,5.6nm,0.7s,baz=112,slow=4.0,SNR=19
ASAR					S		**S**	**12 31 40.6**	**-1.8**
comp=Z,2.2nm,0.8s,baz=96,slow=14,SNR=10
WB2	**Warramunga Arr**	**42.42**	**266**	*e*	P		**P**	**12 26 03.2**	**-0.7**
comp=Z,28nm,0.5s
WRAB	**Tennant Creek**	**42.42**	**266**	*i*	P		**P**	**12 26 03.5**	**-0.4**
WRAB					pmax		pmax		
comp=Z,29nm,0.8s
WRAB	**Tennant Creek**	**42.42**	**266**	*e*	P		**P**	**12 26 03.1**	**-0.8**
comp=Z,23nm,0.8s
WRA	**Warramunga Arr**	**42.43**	**266**		P		**P**	**12 26 03.5**	**-0.4**
comp=Z,24nm,0.5s,baz=96,slow=8.4,SNR=146
WRA					ScP		**ScP**	**12 30 48.6**	**+2.9**
comp=Z,5.0nm,0.8s,baz=102,slow=3.9,SNR=12
WRA					S		**S**	**12 31 43.5**	**-4.2**
comp=Z,2.9nm,0.9s,baz=100,slow=14,SNR=6.3
JAY	**Jayapura**	**43.51**	**293**		P		**P**	**12 26 12.0**	**-0.6**
comp=Z,0.8nm,0.4s,baz=276,slow=23,SNR=10
JAY	**Jayapura**	**43.51**	**293**		P		**P**	**12 26 12.0**	**-0.6**
FITZ	**Fitzroy Crossi**	**50.85**	**266**		P		**P**	**12 27 08.1**	**+0.4**
comp=Z,8.7nm,0.5s,baz=157,slow=5.9,SNR=9.0
FITZ	**Fitzroy Crossi**	**50.85**	**266**	*e*	P		**P**	**12 27 07.7**	**0.0**
comp=Z,11nm,0.8s
VNDA	**Vanda**	**54.43**	**185**		P		**P**	**12 27 34.0**	**+1.6**
comp=Z,1.8nm,0.7s,baz=352,slow=7.4,SNR=10
VNDA					PcP		**PcP**	**12 28 28.8**	**+0.9**
comp=Z,1.9nm,0.6s,baz=351,slow=3.4,SNR=9.2
VNDA	**Vanda**	**54.43**	**185**	*e*	P		**P**	**12 27 34.5**	**+2.1**
VNDA								12 28 28.8	
VNDA					pmax		pmax		
comp=Z,16nm,1.9s
VNDA	**Vanda**	**54.43**	**185**	*e*	P		**P**	**12 27 34.5**	**+2.1**
comp=Z,16nm,1.9s
VNDA					PcP		**PcP**	**12 28 28.8**	**+0.9**
NWAO	**Narrogin (SRO)**	**55.27**	**246**		P		**P**	**12 27 38.7**	**-0.4**
comp=Z,2.7nm,0.5s,baz=332,slow=7.4,SNR=9.2

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
QSPA	**South Pole Qui**	**66.23**	**180**	*e*	P		**P**	**12 28 51.6**	**+0.8**
comp=Z,71nm,0.8s
MJAR	**Matsushiro Arr**	**71.86**	**326**		P		**P**	**12 29 23.8**	**-1.1**
comp=Z,4.7nm,0.8s,baz=159,slow=5.6,SNR=14
MAJO	**Matsushiro**	**71.87**	**326**	*e*	P		**P**	**12 29 23.8**	**-1.2**
MAJO					pmax		pmax		
comp=Z,24nm,0.4s
MAJO	**Matsushiro**	**71.87**	**326**	*e*	P		**P**	**12 29 23.8**	**-1.2**
comp=Z,24nm,0.4s
MAT	**Matsushiro**	**71.87**	**326**		P		**P**	**12 29 24.1**	**-0.9**
MJB9	**Matsu-Tunnel**	**71.87**	**326**	*e*	P		**P**	**12 29 23.8**	**-1.2**
comp=Z,6.0nm,0.4s
JNU	**Nakatsue**	**73.50**	**319**		P		**P**	**12 29 33.4**	**-1.1**
comp=Z,7.8nm,0.9s,baz=48,slow=7.3,SNR=3.6
ASAJ	**Asahikawa**	**75.83**	**333**		P		**P**	**12 29 46.9**	**-0.4**
comp=Z,10.0nm,0.8s,baz=355,slow=0.8,SNR=7.0
MAW	**Mawson**	**77.80**	**200**		P		**P**	**12 29 57.6**	**-0.1**
comp=Z,8.1nm,0.6s,baz=122,slow=5.3,SNR=17
KSRS	**Korea Array**	**78.22**	**320**		P		**P**	**12 30 00.3**	**-0.1**
comp=Z,2.7nm,0.8s,baz=130,slow=5.5,SNR=7.7
KSAR	**Wonju Array Be**	**78.23**	**320**		P		**P**	**12 30 00.3**	**-0.2**
KSAR	**Wonju Array Be**	**78.23**	**320**		P		**P**	**12 30 00.3**	**-0.2**
PETK	**Petropavlovsk-**	**79.05**	**347**		P		**P**	**12 30 04.2**	**-0.4**
comp=Z,8.1nm,0.6s,baz=112,slow=7.0,SNR=18
USRK	**Ussuriysk Ar.**	**80.73**	**327**		P		**P**	**12 30 14.5**	**+1.0**
comp=Z,4.8nm,0.9s,baz=104,slow=2.7,SNR=5.4
MDJ	**Mudanjiang**	**82.23**	**326**		P		**P**	**12 30 22.4**	**+1.2**
MDJ					pmax		pmax		
comp=Z,10.0nm,0.9s
MDJ					pmax		pmax		
comp=Z,44nm,5.4s
CMB	**Columbia Colle**	**83.15**	**43**	*e*	P		**P**	**12 30 26.3**	**+0.2**
CMB					pmax		pmax		
comp=Z,11nm,0.9s
CMB	**Columbia Colle**	**83.15**	**43**	*e*	P		**P**	**12 30 26.3**	**+0.2**
comp=Z,11nm,0.9s
AFDM	**Forest Hills D**	**83.34**	**42**	*e*	P		**P**	**12 30 27.6**	**+0.6**
comp=Z,11nm,1.0s
WDC	**Whiskeytown Da**	**83.41**	**40**	*e*	P		**P**	**12 30 27.1**	**-0.2**
WDC					pmax		pmax		
comp=Z,14nm,1.1s
WDC	**Whiskeytown Da**	**83.41**	**40**	*e*	P		**P**	**12 30 27.1**	**-0.2**
comp=Z,14nm,1.1s
GSC	**Goldstone, Bar**	**83.88**	**47**	*e*	P		**P**	**12 30 29.5**	**-0.3**
GSC					pmax		pmax		
comp=Z,8.0nm,0.8s
GSC	**Goldstone, Bar**	**83.88**	**47**	*e*	P		**P**	**12 30 29.5**	**-0.3**
comp=Z,8.3nm,0.8s
WAKR	**Walker**	**84.03**	**43**	*e*	P		**P**	**12 30 31.7**	**+1.1**
YBH	**Yreka Blue Hor**	**84.03**	**39**	*e*	P		**P**	**12 30 31.5**	**+1.0**
comp=Z,6.8nm,0.9s,baz=269,slow=2.0,SNR=9.7
YBH	**Yreka Blue Hor**	**84.03**	**39**	*e*	P		**P**	**12 30 31.5**	**+1.0**
YBH					pmax		pmax		
comp=Z,6.0nm,0.8s
YBH	**Yreka Blue Hor**	**84.03**	**39**	*e*	P		**P**	**12 30 31.5**	**+1.0**
comp=Z,5.8nm,0.8s
KLR	**Kul'dur**	**84.50**	**331**		P		**P**	**12 30 32.9**	**+0.4**
comp=Z,2.0nm,0.9s,baz=196,slow=3.4,SNR=5.0
NV01	**Mina Array Bit**	**84.70**	**44**	*e*	P		**P**	**12 30 34.3**	**+0.3**
NVAR	**Mina Array Bea**	**84.70**	**44**		P		**P**	**12 30 34.5**	**+0.5**
comp=Z,3.0nm,0.7s,baz=226,slow=7.9,SNR=22
SNAA	**Sanae**	**84.72**	**179**		PKP		**P**	**12 30 33.0**	**-0.4**
SNAA	**Sanae**	**84.72**	**179**	*e*	P		**P**	**12 30 32.3**	**-1.1**
SNAA					pmax		pmax		
comp=Z,23nm,1.9s
SNAA	**Sanae**	**84.72**	**179**	*e*	P		**P**	**12 30 32.2**	**-1.1**
comp=Z,23nm,1.9s
PAHR	**Pah Rah Range**	**84.78**	**42**	*e*	P		**P**	**12 30 35.1**	**+0.8**
comp=Z,4.1nm,0.8s
VNA3	**Neumayer Olymp**	**84.92**	**177**		PKP		**P**	**12 30 34.0**	**-0.3**
TPNV	**Topopah Spring**	**85.18**	**46**	*e*	P		**P**	**12 30 36.9**	**+0.6**
TPNV					pmax		pmax		
comp=Z,6.0nm,0.8s
TPNV	**Topopah Spring**	**85.18**	**46**	*e*	P		**P**	**12 30 36.9**	**+0.6**
comp=Z,5.9nm,0.8s
VNA2	**Neumayer--Watz**	**85.34**	**178**		PKP		**P**	**12 30 36.3**	**0.0**
baz=184,slow=3.9
MOD	**Modoc Plateau**	**85.55**	**40**	*e*	P		**P**	**12 30 38.6**	**+0.7**
comp=Z,6.2nm,0.8s
VNA1	**Neumayer--Stat**	**85.58**	**177**		PKP		**P**	**12 30 34.7**	**-2.7**
SHPR	**Sheep Range**	**85.66**	**47**	*e*	P		**P**	**12 30 39.5**	**+1.0**
comp=Z,6.0nm,1.2s
K05A	**Summer Lake**	**85.71**	**39**	*e*	P		**P**	**12 30 38.7**	**0.0**
comp=Z,9.9nm,0.8s
Y14A	**Wickenburg**	**85.74**	**50**	*e*	P		**P**	**12 30 40.0**	**+1.2**
W13A	**Hualapai Mount**	**85.75**	**49**	*e*	P		**P**	**12 30 40.4**	**+1.2**
R11A	**Troy Canyon, C**	**86.41**	**45**	*e*	P		**P**	**12 30 42.4**	**+0.3**
comp=Z,3.4nm,1.4s
TUC	**Tucson**	**86.47**	**52**	*e*	P		**P**	**12 30 44.1**	**+1.6**
TUC					pmax		pmax		
comp=Z,12nm,0.8s
TUC	**Tucson**	**86.47**	**52**	*e*	P		**P**	**12 30 44.1**	**+1.6**
comp=Z,12nm,0.8

CAST	Castle Rocks	89.72	12	eP		P	12 30 55.3	-1.4
	comp=Z,9.2nm,0.9s							
F10A	Beach Ranch, E	89.76	38	eP		P	12 30 57.8	+0.3
	comp=Z,6.8nm,0.8s							
TMUT	Trail Mountain	89.79	46	eP		P	12 30 59.3	+1.2
	comp=Z,18nm,0.7s							
HLID	Hailey	90.04	41	eP		P	12 30 59.6	+0.6
	comp=Z,4.9nm,0.8s							
KTH	Kantishna Hill	90.06	13	eP		P	12 30 56.2	-2.2
	comp=Z,7.3nm,0.9s							
TRF	Thorofare Moun	90.10	13	eP		P	12 30 57.9	-0.9
	comp=Z,8.9nm,0.8s							
SRU	San Rafael Swe	90.15	47	eP		P	12 31 00.1	+0.5
SRU				pmax	pmax			
	comp=Z,12nm,0.8s							
SRU	San Rafael Swe	90.15	47	eP		P	12 31 00.1	+0.5
	comp=Z,12nm,0.8s							
MNTX	Cornudas Mount	90.17	55	eP		P	12 31 00.1	+0.5
	comp=Z,5.5nm,1.0s							
P17A	Butcher Ranch,	90.19	46	eP		P	12 31 00.3	+0.6
	comp=Z,10nm,1.1s							
JLU	Jordanelle	90.31	45	eP		P	12 31 00.1	-0.3
	comp=Z,4.6nm,0.9s							
RND	Reindeer	90.36	13	eP		P	12 30 59.4	-0.4
RND				pmax	pmax			
	comp=Z,10.0nm,1.0s							
RND	Reindeer	90.36	13	eP		P	12 30 59.4	-0.4
	comp=Z,10nm,1.0s							
TX31	Lajitas Ar. Si	90.39	58	eP		P	12 31 01.7	+0.9
TXAR	Lajitas Array	90.39	58	P		P	12 31 02.1	+1.3
	comp=Z,4.1nm,0.7s,baz=214,slow=6.6,SNR=63							
HHC	Hu-ho-hao-te	90.39	315	eP		P	12 31 02.3	+1.7
HHC				pmax	pmax			
	comp=Z,22nm,1.3s							
HHC				pmax	pmax			
	comp=Z,64nm,7.7s							
BNM	Barren Site	90.41	53	eP		P	12 31 01.3	+0.4
TCUT	Toone Canyon	90.61	45	eP		P	12 31 01.9	+0.1
	comp=Z,20nm,0.9s							
HWUT	Hardware Ranch	90.77	44	eP		P	12 31 02.8	+0.5
	comp=Z,4.9nm,0.6s							
ANMO	Albuquerque	90.91	52	eP		P	12 31 03.3	0.0
ANMO				pmax	pmax			
	comp=Z,7.0nm,1.2s							
ANMO	Albuquerque	90.91	52	eP		P	12 31 03.3	0.0
	comp=Z,7.5nm,1.2s							
CD2	Chengdu	91.07	303	P		P	12 31 03.5	-0.3
CD2				pmax	pmax			
	comp=Z,1.0nm,0.6s							
MENT	Mentasta	91.14	16	eP		P	12 31 02.8	-0.6
	comp=Z,4.6nm,0.8s							
WRH	Wood River Hil	91.46	13	eP		P	12 31 04.0	-0.7
	comp=Z,20nm,1.8s							
DOT	Dot Lake	91.66	15	eP		P	12 31 05.6	-0.2
	comp=Z,7.5nm,0.8s							
AHID	Auburn Hatcher	91.66	43	eP		P	12 31 07.9	+1.4
	comp=Z,5.1nm,0.7s							
MCMT	McKenzie Canyo	91.68	41	eP		P	12 31 07.1	+0.5
DLBC	Dease Lake	91.84	24	P		P	12 31 06.2	-0.5
	comp=Z,2.3nm,0.9s,baz=156,slow=7.0,SNR=6.6							
COLA	College	91.86	13	eP		P	12 31 06.1	-0.5
COLA				pmax	pmax			
	comp=Z,6.0nm,0.9s							
COLA	College	91.86	13	eP		P	12 31 06.1	-0.5
	comp=Z,5.5nm,0.9s							
ILAR	Eielson Array	91.98	14	P		P	12 31 06.0	-1.2
	comp=Z,1.1nm,0.7s,baz=230,slow=5.8,SNR=9.9							
ILAR	Eielson Array	91.98	14	P		P	12 31 06.0	-1.2
REDW	Red Top Meadow	92.13	43	eP		P	12 31 08.8	+0.2
	comp=Z,6.9nm,1.3s							
BILL	Bilibino	92.18	355	i P		P	12 31 06.2	-1.8
BILL				i *PP		pP	12 33 01.5	-3.0
BILL				i			12 35 00.1	
BILL				pmax	pmax			
	comp=Z,4.0nm,0.9s							
BILL	Bilibino	92.18	355	eP		P	12 31 08.1	+0.1
	comp=Z,4.4nm,0.9s							
IMW	Indian Meadow	92.35	43	eP		P	12 31 09.7	0.0
	comp=Z,2.3nm,0.8s							
LOHW	Long Hollow	92.41	43	eP		P	12 31 10.6	+0.6
	comp=Z,1.8nm,0.8s							
SMCO	Snowmass	92.58	48	eP		P	12 31 11.6	+0.5
	comp=Z,3.6nm,0.8s							
BW06	Boulder Array	92.64	44	eP		P	12 31 11.0	0.0
PD31	Pinedale Array	92.64	44	eP		P	12 31 11.3	+0.3
PDAR	Pinedale Array	92.64	44	P		P	12 31 11.0	-0.1
	comp=Z,2.0nm,0.7s,baz=212,slow=4.1,SNR=18							
YMR	Madison River	92.73	42	eP		P	12 31 13.1	+1.7
	comp=Z,12nm,0.4s							
BOZ	Bozeman (W)	92.84	41	eP		P	12 31 12.2	+0.4
BOZ				pmax	pmax			
	comp=Z,2.0nm,0.8s							
BOZ	Bozeman (W)	92.84	41	eP		P	12 31 12.2	+0.4
	comp=Z,2.4nm,0.8s							
SDCO	Great Sand Dun	92.92	50	eP		P	12 31 13.0	+0.5
	comp=Z,3.4nm,0.9s							
EGAK	Eagle	93.30	16	eP		P	12 31 12.8	-0.4
	comp=Z,4.4nm,0.8s							
INK	Inuvik	97.97	16	P		Pdif	12 31 32.7	-1.5
	comp=Z,2.3nm,0.9s,baz=168,slow=2.6,SNR=6.1							
YKA	Yellowknife Ar	100.31	25	P		Pdif	12 31 45.7	+1.0
	comp=Z,0.1nm,0.5s,baz=243,slow=4.6,SNR=4.2							
ZAA0	Zalesovo Array	111.92	321	ePdif		Pdif	12 32 32.0	-4.6
ZALV	Zalesovo Beam	111.92	321	PKiKP		PKiKP	12 36 29.0	-1.2
	comp=Z,0.7nm,0.4s,baz=162,slow=3.7,SNR=4.3							
MKAR	Makanchi Array	112.13	313	PKiKP		PKiKP	12 36 29.8	-1.0
	comp=Z,1.1nm,0.6s,baz=134,slow=0.4,SNR=13							
MKAR	Makanchi Array	112.13	313	c iPKiKP		PKiKP	12 36 29.7	-1.2
MKAR				pmax	pmax			
	comp=Z,1.0nm,0.6s							
KURK	Kurchatov	115.18	316	ePKiKP		PKPdf	12 36 35.3	-1.2
KURK	Kurchatov	115.18	316	ePKPdf		PKPdf	12 36 35.3	-1.2
KURBB	Kurchatov Arra	115.22	316	PKP		PKPdf	12 36 35.1	-1.5
	comp=Z,2.6nm,0.7s,baz=94,slow=1.8,SNR=25							
KKAR	Karatay Array	119.85	307	ePKiKP		PKPdf	12 36 45.2	-0.6
KKAR	Karatay Array	119.85	307	ePKPdf		PKPdf	12 36 45.2	-0.6
BVAR	Borovoye Array	120.41	319	PKP		PKPdf	12 36 45.8	-0.7
	comp=Z,4.0nm,0.6s,baz=67,slow=1.9,SNR=22							
BRVK	Borovoye	120.48	319	i PKiKP		PKPdf	12 36 46.3	-0.3
BRVK				pmax	pmax			
	comp=Z,5.0nm,1.2s							
BRVK	Borovoye	120.48	319	ePKPdf		PKPdf	12 36 46.1	-0.6
ZRNK	Zerenda	121.25	319	ePKiKP		PKPdf	12 36 47.4	-0.7
ZRNK	Zerenda	121.25	319	ePKPdf		PKPdf	12 36 47.4	-0.7
BOSA	Boshof	122.46	206	PKP		PKPdf	12 36 50.9	-0.6
	comp=Z,1.4nm,0.5s,baz=199,slow=6.1,SNR=4.5							
SPA0	Spitsbergen Ar	125.07	356	ePKPdf		PKPdf	12 36 54.6	-0.2
SPITS	Spitsbergen Ar	125.07	356	PKP		PKPdf	12 36 54.2	-0.6
	comp=Z,15nm,0.9s,baz=151,slow=1.9,SNR=10							
ARU	Arti	126.85	324	PKP		PKPdf	12 36 58.9	+0.1
	comp=Z,6.1nm,0.5s,baz=136,slow=2.1,SNR=9.2							
ARU	Arti	126.85	324	i PKiKP		PKPdf	12 36 58.3	-0.5
ARU							12 39 05.3	
ARU							12 43 18.7	
ARU				SS	SS		12 55 23.2	-7.5
ARU	Arti	126.85	324	ePKPdf		PKPdf	12 36 59.0	+0.2
ABKAR	Akbulak array	127.18	315	ePKPdf		PKPdf	12 36 59.6	0.0
AKTO	Aktyubinsk	128.27	316	PKP		PKPdf	12 37 01.3	-0.4
	comp=Z,3.0nm,0.6s,baz=91,slow=2.7,SNR=12							
GEYT	Alibeck	128.96	300	PKP		PKPdf	12 37 02.7	-0.7
	comp=Z,3.5nm,0.7s,baz=108,slow=3.3,SNR=6.4							
ARCES	ARCESS Array B	131.84	348	PKP		PKPdf	12 37 07.2	-0.7
	comp=Z,5.6nm,0.8s,baz=22,slow=1.4,SNR=16							
FINES	FINESS Array B	138.40	341	PKhKP		PKPpre	12 37 09.7	
	comp=Z,1.1nm,0.5s,baz=36,slow=7.1,SNR=3.9							
FINES				PKP		PKPdf	12 37 21.1	+0.8
	comp=Z,2.3nm,0.6s,baz=112,slow=4.5,SNR=8.9							
FINES				SKP		SKPdf	12 40 05.6	+0.4
	comp=Z,2.7nm,0.8s,baz=60,slow=4.6,SNR=5.3							
OBN	Obninsk	138.74	329	i PKiKP		PKPdf	12 37 17.7	-3.3
OBN				pmax	pmax			
	comp=Z,5.0nm,0.7s							
ZEI	Tsey	139.28	309	i PKiKP		PKPdf	12 37 22.0	-0.8
ZEI				pmax	pmax			
	comp=Z,10.0nm,0.9s							
NEY	Neytrino	140.01	310	i PKiKP		PKPdf	12 37 20.6	-3.4
NB2	NORSAR Subarra	142.03	351	PKP		PKPpre	12 37 22.0	
	comp=Z,2.3nm,0.6s,baz=20,slow=3.0							
NOA	NORSAR Array B	142.03	351	PKhKP		PKPpre	12 37 22.6	
	comp=Z,4.3nm,0.7s,baz=16,slow=4.8,SNR=13							
ANN	Anapa	143.14	314	i PKiKP		PKPab	12 37 26.7	-0.3
ANN				pmax	pmax			
	comp=Z,54nm,1.1s							
AKASG	Malin Array Be	144.94	327	PKP		PKPdf	12 37 31.8	-0.4
	comp=Z,8.5nm,0.6s,baz=42,slow=4.4,SNR=30							
KIEV	Kiev	144.95	327	ePKiKP		PKPdf	12 37 31.8	-0.4
KIEV	Kiev	144.95	327	ePKPdf		PKPdf	12 37 31.8	-0.4
SUW	Suwalki	145.22	336	eP		PKPbc	12 37 33.7	+0.1
SUW	Suwalki	145.22	336	ePKP2		PKPbc	12 37 33.7	+0.1
SIM	Simferopol'	145.24	316	i PKP2		PKPab	12 37 34.8	-0.2
SIM				pmax	pmax			
	comp=Z,23nm,0.8s							
ASF	Jabal al Asfar	146.53	293	PKPbc		PKPbc	12 37 37.9	-0.3
	comp=Z,6.2nm,0.8s,baz=32,slow=1.3,SNR=7.0							
SORM	Soroca	146.97	324	⇑i P		PKPbc	12 37 38.3	-0.3
SORM	Soroca	146.97	324	⇑PKP2		PKPbc	12 37 38.3	-0.3
BRTR	Keskin Array B	147.56	307	PKPbc		PKPbc	12 37 40.3	-0.4
	comp=Z,5.5nm,0.7s,baz=136,slow=3.6,SNR=13							
MMAI	Mount Meron Ar	147.70	294	PKPbc		PKPbc	12 37 42.0	+0.9
	comp=Z,12nm,0.5s,baz=76,slow=5.2,SNR=22							
BEL	Belsk	147.83	336	eP		PKPbc	12 37 41.0	+0.2
BEL	Belsk	147.83	336	ePKP2		PKPbc	12 37 41.0	+0.2
EIL	Elat	148.35	288	PKPbc		PKPbc	12 37 43.5	+0.7
	comp=Z,9.9nm,0.7s,baz=286,slow=10,SNR=10							
KWP	Kalwaria Pacla	148.73	331	eP		PKPbc	12 37 43.1	0.0
KWP	Kalwaria Pacla	148.73	331	⇑i P		PKPbc	12 37 43.5	+0.4
KWP	Kalwaria Pacla	148.73	331	ePKP2		PKPbc	12 37 43.1	0.0
CFR	Carcaliu	148.80	320	⇑i P		PKPbc	12 37 43.5	+0.1
CFR	Carcaliu	148.80	320	⇑PKP2		PKPbc	12 37 43.5	+0.1
TESR	Tescani	148.88	323	⇑i P		PKPbc	12 37 43.5	-0.1
BURAR	Bucovina Array	148.94	326	⇓i P		PKPbc	12 37 45.0	+1.2
BURAR	Bucovina Array	148.94	326	⇓PKP2		PKPbc	12 37 45.0	+1.2
HARR	Harsova	149.19	319	⇑i P		PKPbc	12 37 44.7	+0.3
HARR	Harsova	149.19	319	⇑PKP2		PKPbc	12 37 44.7	+0.3
VRI	Vrincioaia	149.22	322	⇑i P		PKPbc	12 37 44.5	0.0
OJC	Ojcow	149.50	335	eP		PKPbc	12 37 44.8	-0.1
OJC	Ojcow	149.50	335	ePKHKP		PKPbc	12 37 44.8	-0.1
CRVS	Cervenica-Dubn	149.82	331	ePKHKP		PKPbc	12 37 45.7	-0.1
CRVS	Cervenica-Dubn	149.82	331	ePKP		PKPbc	12 37 45.7	-0.1
MLR	Muntele Rosu	149.88	322	PKPbc		PKPbc	12 37 45.9	-0.3
	comp=Z,1.1nm,0.6s,baz=321,slow=2.0,SNR=6.7							
MLR	Muntele Rosu	149.88	322	⇓i P		PKPbc	12 37 46.0	-0.2
DOPR	Dopca	149.90	323	⇑i P		PKPbc	12 37 46.8	+0.7
NIE	Niedzica	149.92	333	eP		PKPbc	12 37 46.5	+0.5
KSP	Ksiaz	150.25	339	eP		PKPbc	12 37 47.1	+0.4
KSP	Ksiaz	150.25	339	ePKIKP		PKPbc	12 37 47.1	+0.4
OKC	Ostrava-Krasne	150.44	336	⇑ePKP		PKPbc	12 37 47.5	+0.3
OKC	Ostrava-Krasne	150.44	336	ePKIKP		PKPbc	12 37 47.5	+0.3
LANS	Liptovska Anna	150.47	334	ePKIKP		PKPbc	12 37 48.5	+1.2
LANS	Liptovska Anna	150.47	334	ePKP		PKPbc	12 37 48.5	+1.2
UPC	Upice	150.63	339	⇑ePKP		PKPbc	12 37 47.9	+0.3
UPC				ePKPAB		PKPab	12 37 57.4	+0.6
UPC	Upice	150.63	339	ePKIKP		PKPbc	12 37 47.9	+0.3
UPC				e			12 37 57.4	
DPC	Dobruska-Polom	150.66	338	⇑ePKP		PKPbc	12 37 48.1	+0.4
DPC				ePKPAB		PKPab	12 37 57.6	+0.6
DPC				epPKP	pPKP		12 39 55.8	
DPC	Dobruska-Polom	150.66	338	ePKIKP		PKPbc	12 37 48.1	+0.4
DPC				e			12 37 57.6	
ARR	Arges	150.69	323	⇑i P		PKPbc	12 37 49.1	+1.1
MORC	Moravsky Berou	150.71	336	⇑i P		PKPbc	12 37 48.2	+0.3
MORC	Moravsky Berou	150.71	336	⇑PKIKP		PKPbc	12 37 48.2	+0.3
KRLC	Kraliky	150.73	338	⇑ePKP		PKPbc	12 37 48.1	+0.2
KRLC				ePKPAB		PKPab	12 37 57.8	+0.5
KRLC	Kraliky	150.73	338	ePKIKP		PKPbc	12 37 48.1	+0.2
KRLC				e			12 37 57.8	
DRGR		150.75	327	⇑i P		PKPbc	12 37 47.9	-0.2
DRGR		150.75	327	⇑PKIKP		PKPbc	12 37 47.9	-0.2
CLL	Collm	150.81	343	⇓i PKPbc		PKPbc	12 37 47.8	-0.2
	comp=Z,29nm,0.8s							
CLL				i PKPab		PKPab	12 37 56.8	-0.7
	comp=Z,9.0nm,0.7s							
CLL				epPKPab		pPKPab	12 39 55.0	-0.8
CLL	Collm	150.81	343	⇓i PKIKP		PKPbc	12 37 47.8	-0.2
CLL				i			12 37 56.8	
CLL				pmax	pmax			
	comp=Z,29nm,0.8s							
CLL				pmax	pmax			
	comp=Z,9.0nm,0.7s							
BRG	Berggiesshubel	150.94	342	ePKP		PKPbc	12 37 48.3	0.0
	comp=Z,18nm,0.6s							
BRG	Berggiesshubel	150.94	342	ePKIKP		PKPbc	12 37 48.3	0.0
BRG				pmax	pmax			
	comp=Z,18nm,0.6s							
PVCC	Panska Ves	151.06	341	⇑ePKP		PKPbc	12 37 48.9	+0.3
PVCC				ePKPAB		PKPab	12 37 59.2	+0.6
PVCC	Panska Ves	151.06	341	ePKIKP		PKPbc	12 37 48.9	+0.3
PVCC				e			12 37 59.2	
VYHS	Vyhne	151.25	334	ePKIKP		PKPbc	12 37 48.9	-0.2
VYHS				e			12 37 59.9	
VYHS	Vyhne	151.25	334	ePKP		PKPbc	12 37 48.9	-0.2
VYHS				e			12 37 59.9	
GOPC	GO Pecny, Ondr	151.53	340	⇑ePKP		PKPbc	12 37 49.6	-0.1
GOPC	GO Pecny, Ondr	151.53	340	ePKIKP		PKPbc	12 37 49.6	-0.1
PRU	Pruhonice	151.55	340	⇑ePKP		PKPbc	12 37 49.8	+0.1
PRU	Pruhonice	151.55	340	ePKIKP		PKPbc	12 37 49.8	+0.1
SIRR	Siria	151.64	327	⇓i P		PKPbc	12 37 50.3	+0.3
NKC	Novy Kostel	151.94	343	⇑ePKP		PKPbc	12 37 50.6	0.0
NKC				ePKPAB		PKPab	12 38 02.6	+0.3
NKC	Novy Kostel	151.94	343	ePKIKP		PKPbc	12 37 50.6	0.0
NKC				e			12 38 02.6	
KHC	Kasperske Hory	152.60	340	ePKPDF		PKPdf	12 37 44.4	-0.2
KHC				⇑ePKP		PKPbc	12 37 52.1	0.0
KHC				ePKPAB		PKPab	12 38 05.5	+0.3
KHC	Kasperske Hory	152.60	340	ePKIKP		PKPdf	12 37 44.4	-0.2
KHC				e			12 38 05.5	
GERES	GERESS Array B	152.81	340	PKPbc		PKPbc	12 37 51.5	-1.1
	comp=Z,1.6nm,0.6s,baz=5.7,slow=2.7,SNR=7.8							
LAST	Lasithi	155.21	303	⇑i P		PKPdf	12 37 52.9	+4.2
IDI	Anoyia	155.62	304	⇑i P		PKPdf	12 37 50.3	+1.1
DBIC	Dimbokro	162.29	164	PKP		PKPdf	12 37 56.7	-0.7
	comp=Z,33nm,1.5s,baz=283,slow=1.6,SNR=3.8							
ESDC	Sonseca Array	163.87	11	PKPab		PKPab	12 38 53.9	-0.5
	comp=Z,0.8nm,0.6s,baz=351,slow=4.7,SNR=9.7							
TORD	Torodi Ar. Bea	169.24	189	PKP		PKPdf	12 38 01.3	-1.6
	comp=Z,2.9nm,1.1s,baz=237,slow=1.1,SNR=8.9							
TORD				PKPab		PKPab	12 39 18.4	-0.1
	comp=Z,2.4nm,0.8s,baz=182,slow=3.8,SNR=13							

ISCJB ***18*** *12:19:10.8±0.4, 24°.48N±0°.02×122°.02E±0°.02, h2km±3km, Error ellipse: s-maj=3.2km s-min=2.3km az=156.1*
TAP ***18*** *12:19:11.6, 24°.49N×121°.94E, h13km, ML3.3, B*
JMA ***18*** *12:19:11.4±0.1, 24°.45N×121°.96E, h13km, M3.0*
ISC 18 12:19:11.4±0.9, 24°.48N±0°.02×121°.97E±0°.02, h18km±2km, n55, σ0°64/83, 7C-11D, Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
TWC	Suao	0.17	320	⇓i P		Pb	12 19 15.3	+0.1
TWC				i S		Sb	12 19 17.2	-0.3
ENA	Nanau	0.21	255	⇑i P		Pb	12 19 16.0	-0.4
EHP	Heping Village	0.27	230	eP		Pb	12 19 17.4	-0.2
EHP				eS		Sb	12 19 21.5	-0.2
ILA	Ilan	0.34	325	P		Pb	12 19 18.8	-0.3
ILA				eS		Sg	12 19 23.5	-0.3
TWE	Neicheng	0.36	311	⇓i P		Pg	12 19 18.8	-0.3
TWE				S		Sg	12 19 23.4	-0.9
EGS		0.36	355	⇓i P		Pg	12 19 19.2	+0.1
EGS				eS		Sg	12 19 23.5	-0.8
ENTT	Nioudou	0.40	293	⇓i P		Pg	12 19 19.4	-0.3
ENTT				eS		Sg	12 19 24.6	-0.6
TWD	Chiawan	0.52	220	⇑i P		Pg	12 19 21.6	-0.4
TWD				S		Sg	12 19 28.3	-0.7
TWB1	Santiao Chiao	0.53	2	⇓i P		Pg	12 19 22.0	0.0
TWB1				eS		Sg	12 19 27.3	-1.8
NNS	Nan Shan	0.54	266	⇑i P		Pg	12 19 21.9	-0.5
NNS				eS		Sg	12 19 29.1	-0.6
NSK	Sanguang	0.59	289	⇓i P		Pb	12 19 23.1	0.0
NSK				S		Sg	12 19 30.1	-1.0
HWA	Hwalien	0.60	213	eP		Pb	12 19 23.7	+0.3
TWA	Mucha	0.61	325	eP		Pb	12 19 23.3	-0.1
NWF	Wu-fen Shan	0.61	344	⇓i P		Pb	12 19 24.0	+0.4
NWF				S		Sb	12 19 32.8	+1.0
TAP	Taipei	0.69	323	eP		Pn	12 19 26.2	-0.2
WHF	Hehuan Shan	0.72	242	⇑i P		Pb	12 19 25.3	-0.4
WHF				S		Sb	12 19 35.1	-0.3
TWT	Tachien	0.76	253	eP		Pg	12 19 26.0	-0.3
TWS1	Kuangyinshan	0.79	321	⇓i P		Pn	12 19 28.1	+0.4
ESL	Shilin	0.82	216	eP		Pb	12 19 26.7	-0.5
ESL				eS		Sg	12 19 38.2	-0.3
TWY	Chenhua	0.86	337	eP		Pn	12 19 28.6	0.0
TWY				eS		Sn	12 19 40.9	+0.2
NCU	National Centr	0.86	305	eP		Pn	12 19 29.1	+0.5
NSTT	Nanjuang	0.89	280	⇑i P		Pn	12 19 29.3	+0.3
NSTT				S		Sg	12 19 40.0	-0.6
JYNG	Yonagunijimaku	0.89	92	P		Pb	12 19 28.3	-0.1
JYNG				S		Sb	12 19 40.3	+0.4
YOJ	Yonaguni jima	0.95	91	P		Pb	12 19 29.3	-0.1
YOJ				S		Sg	12 19 42.8	+0.2
YOJ	Yonaguni jima	0.95	91	⇓i P		Pb	12 19 29.4	0.0
YOJ				eS		Sb	12 19 42.1	+0.5
WDT	Danda	1.05	227	⇑i P		Pn	12 19 31.2	-0.3
WDT				eS		Sg	12 19 45.3	-0.4
TWQ1	Liyutan	1.09	263	⇑P		Pg	12 19 33.1	+0.4
TWQ1				eS		Sg	12 19 48.5	+1.4
NSY	Sanyi	1.10	267	eP		Pg	12 19 33.8	+1.0
EHY	Hungye	1.14	211	eP		Pb	12 19 32.7	+0.1
SMLT	Sun Moon Lake	1.14	239	P		Pg	12 19 33.2	-0.4
SMLT				eS		Sg	12 19 48.6	+0.1
PCYT	Pengchaiyu	1.15	5	eP		Pg	12 19 33.3	-0.3
TYC	Yuchr	1.16	241	⇓P		Pg	12 19 33.7	-0.3
TCU	Taichung	1.22	254	eP		Pg	12 19 36.9	+1.8
TWF1	Yuli	1.28	209	eP		Pb	12 19 35.4	+0.4
WNT	Mingjian	1.32	243	eP		Pg	12 19 37.6	+0.7
YUS	Yu-Shan	1.35	223	eP		Pg	12 19 37.2	-0.5
ALS	Alishan	1.44	228	eP		Pg	12 19 38.8	-0.4
CHN5	Tsauling	1.47	233	⇓i P		Pg	12 19 40.3	+0.5
CHN5				eS		Sg	12 20 00.4	+1.4
CHKT	Chengkung	1.48	202	eP		Pb	12 19 38.0	-0.4
ELDTW	Lidau	1.55	214	eP		Pb	12 19 39.9	+0.2
IRIF	Iriomote-Funau	1.62	95	P		Pn	12 19 38.7	-0.3
IRIF				S		Sn	12 19 59.3	-0.1
CHN4	Tsaushan	1.69	228	eP		Pg	12 19 43.6	-0.3
STYT	Tauyuan	1.72	220	eP		Pb	12 19 43.0	+0.5
HATJ	Hateruma jima	1.73	104	eS		Sb	12 20 04.2	+0.1
WTP	Ta-pu	1.75	225	eP		Pg	12 19 43.9	-1.2
WTP				eS		Sg	12 20 09.2	+1.4
TWK	Hsinying	1.81	228	eP		Pg	12 19 45.9	-0.5
CHN1	Nanshi	1.84	226	eP		Pg	12 19 45.9	-1.1
TWG	Pinlang	1.84	207	eP		Pb	12 19 44.0	-0.7
JKRS	Kuro-shima	1.88	97	P		Pn	12 19 43.0	+0.4
JKRS				eS		Sn	12 20 05.5	-0.4
SGST	Jiashian	1.88	223	eP		Pb	12 19 45.8	+0.5
JIJ	Ishigaki jima	1.99	93	P		Pn	12 19 44.1	0.0
JIJ				eS		Sn	12 20 08.3	-0.3
SSD	Sandimen	2.12	216	eP		Pb	12 19 50.1	+0.8
JISG	Ishigakijimahi	2.14	87	P		Pn	12 19 46.2	0.0
JISG				eS		Sn	12 20 12.1	-0.2
EAST	Anshuo	2.33	206	eP		Pb	12 19 51.8	-1.1
JTJ	Tarama	2.50	86	P		Pn	12 19 52.2	+1.1
JTJ				eS		Sn	12 20 22.2	+1.1

ISCJB ***18*** *12:22:18.1±0.4, 6°.86S±0°.06×125°.0E±0°.1, h543km, mb3.8/14, Error ellipse: s-maj=16.8km s-min=6.6km az=161.1*
IDC ***18*** *12:22:20.2±1.5, 6°.95S×124°.93E, h558km±21km, mb3.4/14, mb1 3.5/17, mb1mx3.3/55, mbtmp4.3/17, Error ellipse: s-maj=28.0km s-min=11.7km az=62.0*
ISC 18 12:22:19.2±0.6, 6°.95S±0°.07×125°.0E±0°.1, h543km, n24, σ0°77/26, mb3.7/14, Banda Sea

| Code | Station Name | Δ

1.7nm,0.7s,baz=134,slow=4.9,SNR=13
SEY Seymchan 72.76 13 P **P 12 32 52.6 +0.5**
2.3nm,0.5s,baz=196,slow=5.0,SNR=13
BVAR Borovoye Array 75.45 329 P **P 12 33 07.0 -0.5**
1.0nm,0.5s,baz=138,slow=7.2,SNR=7.1
TIXI Tiksi 78.48 1 P **P 12 33 22.3 -1.4**
1.9nm,0.5s,baz=16,slow=0.9,SNR=8.5
AKTO Aktyubinsk 81.05 323 P **P 12 33 37.1 -0.6**
1.2nm,0.4s,baz=73,slow=7.7,SNR=4.6

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*CSEM **18** 12:36:09.0, 56°.15N×14°.84E, h0km, ML1.2, Mining explosion.*
UPP 18 12:36:09.0, 56°.15N×14°.84E, h0km, ML1.2, Mining explosion., Sweden

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BLEU	**Blekinge**	**0.56**	**74**	P	Pg	12 36 19.7	-0.1
BLEU				S	Sg	12 36 27.3	+0.2
DEL	**Delary**	**0.63**	**301**	P	Pg	12 36 20.9	-0.2
DEL				S	Sg	12 36 29.6	+0.4
VXJU	**Vaexsjoe**	**0.77**	**4**	P	Pg	12 36 23.5	-0.3
BJUU	**Bjuv**	**1.02**	**266**	P	Pg	12 36 28.0	-0.6
OSKU	**Oskarshamn**	**1.25**	**33**	P	Pg	12 36 32.3	-0.7
GNOU	**Gnosjoe**	**1.29**	**333**	P	Pg	12 36 33.0	-0.7
EKSU	**Eksjoe**	**1.45**	**10**	P	Pn	12 36 35.8	-0.6

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*IDC **18** 12:42:29.9±0.8, 25°.40N×142°.96E, h0km, mb3.7/15, mb1 3.9/15, mb1mx3.7/55, mbtmp3.7/15, Error ellipse: s-maj=28.5km s-min=14.7km az=85.0*
*ISCJB **18** 12:42:33.7±0.7, 25°.37N±0°.07×143°.0E±0°.2, h40km, mb3.8/14, Error ellipse: s-maj=23.8km s-min=9.2km az=167.9*
ISC 18 12:42:35.8±0.9, 25°.4N±0°.1×142°.9E±0°.2, h40km, n16, σ0.9 71/17, mb3.8/14, Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCJ	**Chichijima**	**1.80**	**339**	Pn	**Pn**	**12 43 04.0**	**-0.4**
	58nm,0.3s,baz=91,slow=22,SNR=76						
JCJ				Sn	**Sn**	**12 43 26.6**	**+0.5**
	59nm,0.3s,baz=255,slow=22,SNR=4.6						
USRK	**Ussuriysk Ar.**	**20.75**	**337**	P	**P**	**12 47 12.2**	**-0.8**
	1.2nm,0.7s,baz=126,slow=11,SNR=2.5						
KLR	**Kul'dur**	**25.33**	**343**	P	**P**	**12 47 59.5**	**+0.8**
	0.9nm,0.5s,baz=177,slow=18,SNR=4.6						
SONM	**Songino Array**	**36.38**	**317**	P	**P**	**12 49 35.7**	**-0.6**
	0.4nm,0.5s,baz=126,slow=2.5,SNR=3.1						
WRA	**Warramunga Arr**	**45.83**	**191**	P	**P**	**12 50 54.4**	**+0.3**
	0.8nm,0.3s,baz=9.0,slow=8.6,SNR=11						
FITZ	**Fitzroy Crossi**	**46.39**	**203**	P	**P**	**12 50 58.4**	**0.0**
	0.9nm,0.7s,baz=11,slow=16,SNR=2.4						
ASAR	**Alice Springs**	**49.55**	**191**	P	**P**	**12 51 22.2**	**-0.6**
	0.3nm,0.7s,baz=8.2,slow=6.5,SNR=4.1						
MKAR	**Makanchi Array**	**52.05**	**311**	P	**P**	**12 51 43.4**	**+1.9**
	0.2nm,0.5s,baz=112,slow=8.6,SNR=2.2						
KURBB	**Kurchatov Arra**	**54.68**	**315**	P	**P**	**12 52 00.2**	**-0.5**
	1.5nm,0.6s,baz=93,slow=8.0,SNR=10						
ILAR	**Eielson Array**	**58.89**	**28**	P	**P**	**12 52 29.8**	**-0.6**
	0.7nm,0.8s,baz=247,slow=6.5,SNR=6.8						
BVAR	**Borovoye Array**	**59.72**	**318**	P	**P**	**12 52 36.1**	**-0.2**
	1.1nm,0.5s,baz=94,slow=8.3,SNR=7.4						
INK	**Inuvik**	**64.30**	**24**	P	**P**	**12 53 06.8**	**+0.1**
	1.1nm,0.8s,baz=281,slow=2.8,SNR=4.1						
YKA	**Yellowknife Ar**	**73.33**	**28**	P	**P**	**12 54 03.5**	**+0.6**
	0.4nm,0.7s,baz=287,slow=5.3,SNR=5.3						
FINES	**FINESS Array B**	**79.74**	**334**	P	**P**	**12 54 39.4**	**+0.2**
	1.2nm,0.7s,baz=53,slow=4.5,SNR=3.0						
AKASG	**Malin Array Be**	**84.36**	**324**	P	**P**	**12 55 03.8**	**+0.1**
	0.2nm,0.2s,baz=52,slow=6.0,SNR=2.4						
NOA	**NORSAR Array B**	**85.41**	**339**	P	**P**	**12 55 08.8**	**-0.1**
	0.5nm,0.6s,baz=28,slow=0.9,SNR=2.9						

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*NNC **18** 12:44:17.6±6.4, 54°.20N×88°.27E, h0km, mb4.0, mpv3.7, Error ellipse: s-maj=47.5km s-min=39.9km az=15.0*
*IDC **18** 12:44:55.7±2.0, 54°.24N×85°.97E, h0km, mb1 3.6/3, mb1mx3.1/57, mbtmp3.6/3, ML3.1/3, Error ellipse: s-maj=16.0km s-min=8.9km az=58.0*
ISC 18 12:45:01.8±5.9, 54°.2N±0°.3×85°.6E±0°.3, h35km, n8, σ0.9 97/8, 1C-4D, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**0.56**	**239**	*i*		12 49 43.7	
	baz=67,slow=320,SNR=11						
ZALV	**Zalesovo Beam**	**0.56**	**239**	Pg	Pn	12 45 08.4	-4.8
	1.5nm,0.3s,baz=63,slow=17,SNR=28						
ZALV				Lg	Lg	12 45 21.1	
	7.8nm,0.3s,baz=68,slow=30,SNR=62						
KURK	**Kurchatov**	**5.55**	**233**	⇓Pg	**Pn**	**12 46 21.6**	**-0.1**
	0.9nm,0.5s						
KURK				⇓Lg	Lg	12 47 56.9	
	23nm,0.9s						
KURBB	**Kurchatov Arra**	**5.65**	**233**	Pn	**Pn**	**12 46 24.1**	**+0.9**
	0.2nm,0.3s,baz=52,slow=14,SNR=77						
KURBB				Lg	Lg	12 48 01.0	
	0.1nm,0.3s,baz=55,slow=32,SNR=6.8						
KURBB	**Kurchatov Arra**	**5.65**	**233**	⇓Pg	**Pn**	**12 46 23.9**	**+0.7**
	9.1nm,0.8s						
KURBB				⇑Lg	Lg	12 47 59.2	
	14nm,0.8s						
MK31	**Makanchi Array**	**7.75**	**197**	Pg	**Pn**	**12 46 51.3**	**-0.8**
	2.5nm,0.6s,baz=26,slow=13,SNR=35						
MK31				⇓Lg	Lg	12 48 38.6	
	0.8nm,0.7s,baz=26,slow=26,SNR=3.5						
MKAR	**Makanchi Array**	**7.75**	**197**	Pn	**Pn**	**12 46 51.2**	**-0.8**
	0.6nm,0.3s,baz=25,slow=13,SNR=36						
MKAR				Sn	**Sn**	**12 48 19.3**	**+0.7**
	0.2nm,0.3s,baz=22,slow=27,SNR=4.3						
MKAR				Lg	Lg	12 49 03.8	
	0.1nm,0.3s,baz=28,slow=32,SNR=6.7						
BVAR	**Borovoye Array**	**9.14**	**269**	Pn	**Pn**	**12 47 11.6**	**+0.6**
	0.2nm,0.3s,baz=76,slow=14,SNR=4.2						
BVAR				Sn	**Sn**	**12 48 51.4**	**-1.1**
	0.3nm,0.3s,baz=74,slow=24,SNR=5.2						

DJA 18 12:50:45.3±0.7, 2°N±4°×9°9E±°, h107km±7km, M3.8/6, mb4.6/1, MLv3.4/6, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SBSI	**Sibolga**	**0.36**	**278**	P	Pn	12 51 00.8	-0.2
MNSI	**Mandailing Nat**	**0.77**	**155**	P	Pn	12 51 05.8	+1.8
MNSI				S	Sn	12 51 20.0	+1.9
GSI	**Gunungsitoli**	**1.69**	**263**	P	Pn	12 51 14.2	0.0
TSI	**Tuntungan**	**2.10**	**341**	P	Pn	12 51 19.5	0.0
BKNI	**Bangkinang**	**2.14**	**123**	P	Pn	12 51 19.9	0.0
PPI	**Padang Panjang**	**2.26**	**149**	P	Pn	12 51 21.5	0.0
KCSI	**Kotacane, Aceh**	**2.49**	**324**	P	Pn	12 51 24.5	-0.1
PDSI	**Padang**	**2.69**	**153**	P	Pn	12 51 26.2	-0.9
LHSI	**Lahat**	**6.80**	**141**	P	Pn	12 52 21.5	-1.0

NNC 18 12:51:33.1±1.9, 36°.86N×70°.36E, h189km±33km, mb2.7, mpv3.8, 4C-5D, Error ellipse: s-maj=32.7km s-min=13.3km az=127.0, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**2.29**	**329**	⇑P	Pn	12 52 14.2	+0.2
	24nm,0.5s						
DZET				⇓S	Sn	12 52 46.4	+0.3
	98nm,0.4s						
MNAS	**Manas**	**5.86**	**16**	⇑P	Pn	12 52 58.6	+0.1
	3.8nm,0.4s						
MNAS				⇓S	Sn	12 54 07.0	+1.1
	7.0nm,0.4s						
KK31	**Karatay Array**	**6.24**	**1**	⇓P	Pn	12 53 03.6	+0.3
	2.1nm,0.3s,baz=194,slow=16,SNR=22						
KK31				⇑S	Sn	12 54 15.0	+0.4
	1.1nm,0.3s,baz=192,slow=24,SNR=5.8						
AAK	**Ala-Archa**	**6.59**	**28**	P	Pn	12 53 08.0	0.0
	1.6nm,0.3s						
AAK				⇓S	Sn	12 54 24.0	+0.9
	14nm,0.5s						
TKM2	**Tokmak 2**	**7.27**	**32**	⇑P	Pn	12 53 16.3	-0.6
	7.8nm,0.5s						
TKM2				⇓S	Sn	12 54 38.7	-0.5
	5.5nm,0.8s						

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*NNC **18** 12:57:29.7±3.5, 44°.60N×81°.35E, h0km, mb2.6, mpv2.1, Error ellipse: s-maj=80.3km s-min=8.2km az=120.0*
*SOME **18** 12:57:30.6, 44°.38N×81°.60E, h15km*
ISC 18 12:57:28.0±1.9, 44°.36N±0°.05×81°.73E±0°.08, h5km±17km, n13, σ0.9 69/24, 3C-3D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KTMS	**Ketmen**	**1.35**	**228**	*eP*	**Pg**	**12 57 54.2**	**+0.4**
	6.9nm,0.1s						
KTMS				*eS*	**Sb**	**12 58 11.4**	**0.0**
	15nm,0.2s						
DJR	**Jarkent**	**1.39**	**270**	*eP*	**Pg**	**12 57 54.7**	**0.0**
	11nm,0.3s						
DJR				*eS*	**Sb**	**12 58 11.8**	**-0.9**
	12nm,0.2s						
SHLS	**Shalkode**	**1.79**	**229**	*eP*	**Pg**	**12 58 02.5**	**+0.1**
	4.0nm,0.2s						
SHLS				*eS*	**Sg**	**12 58 25.1**	**-0.6**
	92nm,0.4s						
PDGK	**Podgornoye**	**1.92**	**238**	⇓Pn	**Pb**	**12 58 03.3**	**-0.2**
	1.1nm,0.4s						
PDGK				⇓Sn	**Sb**	**12 58 27.9**	**+0.2**
	8.5nm,0.5s						
KAPS	**Kapalarasan**	**1.93**	**300**	*eP*	**Pb**	**12 58 04.0**	**+0.3**
	2.7nm,0.1s						
KAPS				*eS*	**Sb**	**12 58 27.7**	**-0.4**
	13nm,0.3s						
UZB	**Uzynbulak**	**2.30**	**239**	*eP*	**Pb**	**12 58 09.9**	**-0.2**
	2.0nm,0.1s						
UZB				*eS*	**Sb**	**12 58 39.1**	**+0.1**
	7.3nm,0.3s						
KPKS	**Kokpek**	**2.37**	**249**	*eP*	**Pb**	**12 58 10.6**	**-0.7**
	9.2nm,0.3s						
KPKS				*eS*	**Sb**	**12 58 39.2**	**-1.7**
	38nm,1.0s						
MNBS	**Baschi**	**2.41**	**265**	*eP*	**Pb**	**12 58 11.6**	**-0.4**
	0.9nm,0.3s						
MNBS				*eS*	**Sb**	**12 58 40.8**	**-1.1**
	17nm,0.3s						
MAKZ	**Makanchi**	**2.46**	**4**	⇑Pg	**Pn**	**12 58 09.0**	**+0.1**
	0.5nm,0.3s						
MAKZ				⇑Lg	Lg	12 58 41.4	
	2.6nm,0.6s						
MK31	**Makanchi Array**	**2.47**	**9**	⇓Pg	**Pb**	**12 58 12.7**	**-0.2**
	0.7nm,0.6s,baz=192,slow=17,SNR=30						
MK31				⇑Lg	Lg	12 58 44.1	
	5.0nm,0.6s,baz=184,slow=27,SNR=20						
SATY	**Saty**	**2.73**	**243**	*eP*	**Pb**	**12 58 18.1**	**+0.6**
	3.4nm,0.2s						
SATY				*eS*	**Sb**	**12 58 51.9**	**+0.5**
	17nm,0.2s						
ARXS	**Arharly**	**2.81**	**268**	*eP*	**Pb**	**12 58 19.2**	**+0.6**
	3.7nm,0.3s						
ARXS				*eS*	**Sb**	**12 58 54.2**	**+0.8**
	10nm,0.1s						
CHKK	**Chushkaly**	**3.44**	**264**	*eP*	**Pb**	**12 58 30.1**	**+0.7**
	2.0nm,0.3s						
CHKK				*eS*	**Sb**	**12 59 12.5**	**+1.0**
	6.5nm,0.2s						

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*NIED **18** 12:58:00, 39°.90N×142°.40E, h44km, Mw3.5 Best double couple: M0=2.17000×10^14 NP1:φs=187.00000°, δ35.00000°, λ30.00000°. NP2:φs=72.00000°, δ73.00000°, λ122.00000°.*
JMA 18 12:58:59.4±0.1, 39°.94N×142°.43E, h38km±1km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**0.43**	**270**	P	Pn	12 59 09.2	+0.2
JTH				S	Sn	12 59 16.1	+0.1
MIYJ	**Miyakonagasawa**	**0.59**	**233**	P	Pn	12 59 11.1	-0.4
MIYJ				S	Sn	12 59 19.4	-0.5
JANG	**Nango**	**0.82**	**302**	P	Pn	12 59 14.2	-0.3
JKZ	**Kuzumaki**	**0.85**	**273**	P	Pn	12 59 15.4	+0.6
JKZ				S	Sn	12 59 26.6	+0.5
JOM	**Ohasama**	**0.99**	**242**	P	Pn	12 59 17.1	+0.3
JOM				*eS*	Sn	12 59 30.1	+0.5
OFUJ	**Ofunato**	**1.04**	**215**	P	Pn	12 59 17.6	+0.2
JTM	**Tenmabayashi**	**1.34**	**310**	P	Pn	12 59 22.3	+0.7
JTM				*eS*	Sn	12 59 39.5	+1.4
JMK	**Ichinoseki**	**1.36**	**224**	P	Pn	12 59 22.4	+0.6
JAH	**Hinai**	**1.40**	**281**	P	Pn	12 59 23.3	+1.0

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*MOS **18** 13:10:47.3±1.2, 48°.11N×155°.03E, h17km, mb4.2/1, Error ellipse: s-maj=20.6km s-min=7.2km az=68.9*
*ISCJB **18** 13:10:50.6±0.6, 48°.32N±0°.07×154°.7E±0°.1, h43km, mb3.4/6, Error ellipse: s-maj=13.0km s-min=3.4km az=43.9*
*SKHL **18** 13:10:53.5±0.5, 48°.39N×154°.75E, h85km±5km, mb4.6/6, msh5.3/4*
*KRSC **18** 13:10:54.0±1.8, 48°.50N×156°.46E, h6km±41km, ML4.0*
*IDC **18** 13:10:55.1±3.2, 48°.49N×154°.47E, h75km±29km, mb3.1/6, mb1 3.4/8, mb1mx3.1/57, mbtmp3.5/8, MS2.2/1, Ms1 2.2/1, ms1mx2.0/15, Error ellipse: s-maj=29.7km s-min=20.5km az=130.0*
ISC 18 13:10:51.3±0.9, 48°.29N±0°.09×154°.9E±0°.1, h43km, n55, σ2.9 02/59, mb3.4/6, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**2.53**	**18**	*eP*	**Pn**	**13 11 31.1**	**+1.2**
SKR				*eS*	**Sn**	**13 11 59.6**	**+0.2**
SKR	**Severo-Kuril's**	**2.53**	**18**	*ePN*	**Pn**	**13 11 31.1**	**+1.2**
SKR				*i S*	**Sn**	**13 12 00.2**	**+0.8**
SKR	**Severo-Kuril's**	**2.53**	**18**	*eP*	**Pn**	**13 11 31.0**	**+1.2**
SKR				AMB	AMB	13 11 36.2	
	80nm,0.8s						
SKR				*i S*	**Sn**	**13 11 59.5**	**+0.2**
SKR				A	A	13 12 03.5	
	130nm,0.2s						
SKR				A	A	13 12 03.5	
	90nm,0.2s						
PAU	**Pauzhetka**	**3.42**	**21**	*eP*	**Pn**	**13 11 44.9**	**+2.9**
PAU				*eS*	**Sn**	**13 12 22.5**	**+1.2**
PAU	**Pauzhetka**	**3.42**	**21**	PN	**Pn**	**13 11 44.9**	**+2.9**
PAU	**Pauzhetka**	**3.42**	**21**	*eP*	**Pn**	**13 11 44.2**	**+2.2**
PAU				AMB	AMB	13 11 49.7	
	150nm,1.1s						
PAU				*i S*	**Sn**	**13 12 21.9**	**+0.6**
PAU				A	A	13 12 24.2	
	350nm,0.8s						
ASAK	**Asacha**	**4.53**	**24**	*eP*	**Pn**	**13 11 59.0**	**+1.6**
RUS	**Russkaya**	**4.76**	**28**	*eP*	**Pn**	**13 12 00.4**	**0.0**
RUS				*eS*	**Sn**	**13 12 50.4**	**-3.8**
RUS	**Russkaya**	**4.76**	**28**	PN	**Pn**	**13 12 00.4**	**0.0**
RUS	**Russkaya**	**4.76**	**28**	*eP*	**Pn**	**13 12 00.4**	**0.0**
PETK	**Petropavlovsk-**	**5.15**	**19**	P	**Pn**	**13 12 07.4**	**+1.6**
	0.6nm,0.3s,baz=185,slow=12,SNR=21						
PETK				LR	LR	13 14 25.6	
	comp=Z,25nm,19.1s,baz=184,slow=42						
PET	**Petropavlovsk**	**5.31**	**25**	*e*PN	Pn	13 12 21.1	+13
PET	**Petropavlovsk**	**5.31**	**25**	*i* P	**Pn**	**13 12 10.5**	**+2.5**
PET				AMB	AMB	13 12 15.8	
	10.0nm,0.5s						
PET				*i* S	**Sn**	**13 13 07.7**	**-0.2**
PET				A	A	13 13 10.8	
	60nm,0.4s						
UGLR	**Uglovaya**	**5.53**	**26**	*eP*	**Pn**	**13 12 14.1**	**+3.0**
AVH	**Avacha**	**5.55**	**25**	*eP*	**Pn**	**13 12 13.9**	**+2.5**
AVH	**Avacha**	**5.55**	**25**	PN	**Pn**	**13 12 13.9**	**+2.5**
AVH	**Avacha**	**5.55**	**25**	*i P*	**Pn**	**13 12 13.9**	**+2.5**
SMAR	**Somma**	**5.57**	**25**	*eP*	**Pn**	**13 12 14.2**	**+2.5**
SMAR	**Somma**	**5.57**	**25**	PN	**Pn**	**13 12 14.2**	**+2.5**
KRER	**Koryakskii**	**5.59**	**25**	*eP*	**Pn**	**13 12 14.6**	**+2.6**
SDLR	**Sedlovina**	**5.60**	**25**	*eP*	**Pn**	**13 12 13.2**	**+1.0**
SDLR	**Sedlovina**	**5.60**	**25**	PN	**Pn**	**13 12 13.2**	**+1.0**
KRX	**Arik**	**5.61**	**24**	*eP*	**Pn**	**13 12 14.8**	**+2.5**
KUR	**Kuril'sk**	**5.70**	**240**	*e*PN	**Pn**	**13 12 15.3**	**+1.9**
KUR				pmax	pmax		
	comp=Z,20nm,0.3s						
KUR	**Kuril'sk**	**5.70**	**240**	*eP*	**Pn**	**13 12 15.3**	**+1.9**
KUR				AMB	AMB	13 12 21.8	
	comp=Z,20nm,0.3s						
KUR				*eS*	**Sn**	**13 13 17.0**	**-0.5**
KUR				A	A	13 13 23.0	
	comp=Z,40nm,0.3s						
KUR				A	A	13 13 23.0	
	comp=Z,20nm,0.3s						
GNL	**Ganaly**	**5.75**	**19**	*eP*	**Pn**	**13 12 17.5**	**+3.4**
GNL	**Ganaly**	**5.75**	**19**	PN	**Pn**	**13 12 17.5**	**+3.4**
SPN	**Mys Shipunski**	**5.82**	**32**	*eP*	**Pn**	**13 12 16.3**	**+1.3**
SPN				*eS*	**Sn**	**13 13 15.5**	**-4.9**
SPN	**Mys Shipunski**	**5.82**	**32**	PN	**Pn**	**13 12 16.3**	**+1.3**
SPN	**Mys Shipunski**	**5.82**	**32**	*i* P	**Pn**	**13 12 16.3**	**+1.3**
SHO	**Shikotan**	**7.13**	**235**	*i* PN	**Pn**	**13 12 34.6**	**+1.7**
SHO				pmax	pmax		
	comp=Z,10.0nm,0.3s						
SHO	**Shikotan**	**7.13**	**235**	*i* P	**Pn**	**13 12 34.6**	**+1.7**
SHO				AMB	AMB	13 12 34.7	
	comp=Z,10.0nm,0.3s						
SHO				*eS*	**Sn**	**13 13 50.9**	**-1.6**
YUK	**Yuzh-Kuril'sk**	**7.56**	**239**	*e*PN	**Pn**	**13 12 40.1**	**+1.2**
YUK				pmax	pmax		
	comp=Z,50nm,0.8s						
YUK				pmax	pmax		
	comp=E,39nm,0.4s						
YUK				pmax	pmax		
	comp=N,24nm,0.3s						
YUK	**Yuzh-Kuril'sk**	**7.56**	**239**	*eP*	**Pn**	**13 12 40.6**	**+1.7**
YUK				AMB	AMB	13 12 41.8	
	comp=N,50nm,0.8s						
YUK				AMB	AMB	13 12 41.8	
	comp=N,30nm,0.4s						
YUK				AMB	AMB	13 12 41.8	
	comp=N,40nm,0.4s						
YUK				*eS*	**Sn**	**13 14 02.3**	**-1.0**
TYV	**Tymovskoe**	**8.35**	**293**	*e*PN	**Pn**	**13 12 50.6**	**+1.0**
TYV	**Tymovskoe**	**8.35**	**293**	*eP*	**Pn**	**13 12 50.6**	**+1.0**
UGL	**Uglegorsk**	**8.51**	**280**	*eP*	**Pn**	**13 12 53.3**	**+1.4**
JKA	**Kamikawa-asahi**	**9.48**	**248**	*eP*	**Pn**	**13 13 07.5**	**+2.4**
ASAJ	**Asahikawa**	**9.48**	**248**	P	**Pn**	**13 13 07.5**	**+2.4**
	comp=N,0.5nm,0.3s,baz=78,slow=16,SNR=5.3						
NKL	**Nikolayevsk**	**10.22**	**304**	*eP*	**Pn**	**13 13 15.5**	**+0.2**
EKMR	**Ekimchan**	**14.68**	**297**	*eP*	**Pn**	**13 14 14.5**	**-1.4**
H11N2	**WAKE ISLAND Hy**	**30.11**	**157**	T	T	13 48 41.7	
	baz=345,slow=76,SNR=8.9						
H11N1	**WAKE ISLAND Hy**	**30.12**	**157**	T	T	13 48 39.2	
	baz=345,slow=76,SNR=17						
H11N3	**WAKE ISLAND Hy**	**30.12**	**157**	T	T	13 48 38.3	
	baz=345,slow=76,SNR=10						
H11S1	**WAKE ISLAND Hy**	**31.23**	**158**	T	T	13 50 05.2	
	baz=344,slow=76,SNR=90						
H11S3	**WAKE ISLAND Hy**	**31.24**	**158**	T	T	13 50 06.1	
	baz=344,slow=76,SNR=114						
H11S2	**WAKE ISLAND Hy**	**31.25**	**158**	T	T	13 50 06.6	
	baz=344,slow=76,SNR=114						
MKAR	**Makanchi Array**	**47.30**	**297**	P	**P**	**13 19 17.5**	**-2.8**
	comp=N,0.2nm,0.6s,baz=74,slow=6.2,SNR=3.5						
KURK	**Kurchatov**	**47.51**	**303**	P	**P**	**13 19 19.7**	**-2.2**
KURK	**Kurchatov**	**47.51**	**303**	*eP*	**P**	**13 19 19.7**	**-2.2**
KURBB	**Kurchatov Arra**	**47.61**	**303**	P	**P**	**13 19 19.7**	**-2.8**
	comp=N,0.2nm,0.3s,baz=71,slow=8.6,SNR=4.0						
YKA	**Yellowknife Ar**	**48.98**	**38**	P	**P**	**13 19 34.2**	**+1.3**
	comp=N,0.1nm,0.5s,baz=294,slow=9.4,SNR=3.5						
CMAR	**Chiang Mai Arr**	**53.89**	**257**	P	**P**	**13 20 10.2**	**-0.1**
	comp=N,0.4nm,0.3s,baz=38,slow=8.0,SNR=3.3						
WRA	**Warramunga Arr**	**70.37**	**201**	P	**P**	**13 21 59.7**	**-0.9**
	comp=N,0.3nm,0.6s,baz=18,slow=6.3,SNR=4.6						
ASAR	**Alice Springs**	**74.06**	**200**	P	**P**	**13 22 23.7**	**+1.2**
	comp=N,0.3nm,0.6s,baz=15,slow=5.9,SNR=3.7						

IDC 18 13:12:53.6±412.0, 47°.09N×47°.98E, h0km, Error ellipse: s-maj=164.7km s-min=134.7km az=25.0, Ukraine-Moldova-Southwestern Russia region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I31KZ	**AKTYUBINSK INF**	**7.43**	**60**	*i*		14 00 30.0	
	baz=248,slow=326,SNR=1.4						
I43RU	**DUBNA INFRASONI**	**1.70**	**330**	*i*		14 29 40.0	
	baz=139,slow=321,SNR=0.6						
I26DE	**FREYUNG INFRAS**	**22.90**	**287**	*i*		15 31 30.0	
	baz=80,slow=325,SNR=1.2						
I46RU	**ZALESOVO INFRA**	**24.20**	**60**	*i*		16 00 34.8	
	baz=264,slow=330,SNR=2.7						

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*NIED **18** 13:14:00, 35°.40N×142°.50E, h5km, Mw3.9 Best double couple: M0=8.13000×10^14 NP1:φs=208.00000°, δ24.00000°, λ-99.00000°. NP2:φs=38.00000°, δ66.00000°, λ-86.00000°.*
*IDC **18** 13:14:39.9±0.7, 35°.25N×142°.38E, h0km, mb3.8/16, mb1 3.9/22, mb1mx3.8/55, mbtmp3.9/22, ML3.6/4, MS3.1/8, Ms1 3.1/8, ms1mx2.8/43, Error ellipse: s-maj=19.0km s-min=12.6km az=103.0*
*ISCJB **18** 13:14:40.8±1.3, 35°.31N±0°.04×142°.38E±0°.05, h19km±10km, mb3.9/17, MS3.4/4, Error ellipse: s-maj=7.0km s-min=6.8km az=173.8*
*JMA **18** 13:14:41.4±0.2, 35°.38N×142°.46E, h58km, M3.6*
*NEIC **18** 13:14:44.9±0.6, 35°.30N×142°.32E, h35km, mb4.4/2, Error ellipse: s-maj=14.0km s-min=10.0km az=94.0*
ISC 18 13:14:39.9±1.9, 35°.30N±0°.05×142°.36E±0°.06, h1km±12km, n47, σ1.9 37/51, mb3.8/17, MS3.4/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.29**	**289**	P	**Pg**	**13 15 04.8**	**+0.2**
CHOJ				*eS*	**Sb**	**13 15 21.4**	**-0.6**
BSO1	**Boso 1**	**1.30**	**241**	P	**Pg**	**13 15 04.9**	**0.0**
BSO1				S	**Sn**	**13 15 22.6**	**+0.2**
BSO3	**Boso 3**	**1.59**	**253**	P	**Pb**	**13 15 09.7**	**-0.3**
KTR	**Katsuura**	**1.68**	**266**	P	**Pn**	**13 15 10.7**	**+0.3**
KTR				*eS*	**Sn**	**13 15 31.9**	**-0.6**
BSO4	**Boso 4**	**1.68**	**260**	P	**Pb**	**13 15 11.2**	**-0.4**
JFK	**Kawauchi**	**2.39**	**330**	P	**Pn**	**13 15 18.5**	**-1.7**
JAG	**Ashikaga**	**2.61**	**296**	P	**Pn**	**13 15 22.8**	**-0.5**
JOD2	**Odawara 2**	**2.67**	**270**	P	**Pn**	**13 15 24.0**	**-0.1**
JOD2				*eS*	**Sn**	**13 15 55.9**	**-1.3**
JFT	**Otama**	**2.75**	**324**	P	**Pn**	**13 15 24.5**	**-0.7**
JFT				S	**Sn**	**13 15 55.3**	**-3.8**
JRY	**Ryogami san**	**2.90**	**285**	P	**Pn**	**13 15 27.9**	**+0.6**
JHJ2	**Mitsune**	**3.03**	**225**	P	**Pn**	**13 15 29.1**	**+0.1**
JHJ	**Hachij

MKAR	**Makanchi Array**	**45.70**	**304**	P	**P**	**13 23 02.6**	**+0.2**
	0.5nm,0.7s,baz=92,slow=9.7,SNR=5.3						
MKAR				LR	LR	13 42 18.1	
	comp=Z,25nm,18.5s,baz=84,slow=36						
KURK	**Kurchatov**	**47.61**	**309**	*eP*	**P**	**13 23 16.8**	**-0.5**
	8.4nm,0.7s						
KURBB	**Kurchatov Arra**	**47.68**	**309**	P	**P**	**13 23 17.6**	**-0.2**
	2.6nm,0.7s,baz=86,slow=8.2,SNR=9.0						
ILAR	**Eielson Array**	**50.56**	**32**	P	**P**	**13 23 40.2**	**+0.6**
	1.0nm,0.7s,baz=263,slow=6.3,SNR=12						
AAK	**Ala-Archa**	**52.00**	**300**	LR	LR	13 45 33.9	
	comp=Z,22nm,18.4s,baz=18,slow=36						
BRVK	**Borovoye**	**52.37**	**314**	*eP*	**P**	**13 23 54.4**	**+1.0**
FITZ	**Fitzroy Crossi**	**55.42**	**199**	P	**P**	**13 24 15.5**	**-0.5**
	1.0nm,0.8s,baz=225,slow=17,SNR=3.0						
WRA	**Warramunga Arr**	**55.46**	**189**	P	**P**	**13 24 15.6**	**-0.7**
	1.3nm,0.8s,baz=7.4,slow=7.6,SNR=15						
INK	**Inuvik**	**55.59**	**27**	P	**P**	**13 24 17.3**	**+0.7**
	0.8nm,0.8s,baz=87,slow=3.7,SNR=3.6						
ASAR	**Alice Springs**	**59.19**	**189**	P	**P**	**13 24 42.5**	**0.0**
	0.7nm,1.0s,baz=19,slow=12,SNR=6.3						
YKA	**Yellowknife Ar**	**64.93**	**30**	P	**P**	**13 25 21.5**	**+0.8**
	0.1nm,0.7s,baz=297,slow=5.5,SNR=3.2						
STKA	**Stephens Creek**	**66.82**	**181**	LR	LR	13 59 09.7	
	comp=Z,28nm,18.9s,baz=34,slow=40						
FINES	**FINESS Array B**	**70.70**	**333**	LR	LR	14 01 47.1	
	comp=Z,40nm,18.2s,baz=110,slow=40						
BRTR	**Keskin Array B**	**80.58**	**312**	P	**P**	**13 26 55.0**	**+0.7**
	0.7nm,0.7s,baz=57,slow=5.3,SNR=3.8						
TXAR	**Lajitas Array**	**90.57**	**53**	P	**P**	**13 27 45.0**	**+0.8**
	0.3nm,0.7s,baz=323,slow=1.9,SNR=4.0						

*NSSC **18** 13:17:46.4±1.1, 33°.81N×35°.96E, h1km±5km, ML1.8*
*ISCJB **18** 13:17:47.1±0.6, 33°.80N±0°.03×35°.96E±0°.04, h2km±11km, Error ellipse: s-maj=6.1km s-min=4.5km az=179.4*
*CSEM **18** 13:17:47.1±0.2, 33°.80N×35°.96E, h2km, ML2.8, Error ellipse: s-maj=4.4km s-min=3.4km az=77.0*
*GRAL **18** 13:17:47.6±0.3, 33°.77N×35°.96E, h9km±9km, MD2.8*
ISC 18 13:17:47.2±1.0, 33°.79N±0°.02×35°.97E±0°.03, h11km±10km, n17, σ0§47/30, Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BHL	**Bhannes**	**0.29**	**293**	*eP*	**Pg**	**13 17 53.0**	**-0.1**
BHL	**Bhannes**	**0.29**	**293**	*eP*	**Pg**	**13 17 53.0**	**-0.1**
RCY	**Rachaya**	**0.31**	**201**	*eP*	**Pg**	**13 17 53.2**	**-0.4**
RCY				*eS*	**Sg**	**13 17 57.3**	**-0.5**
DQRL	**Deir Qamar**	**0.35**	**256**	*eP*	**Pg**	**13 17 53.8**	**-0.3**
DQRL	**Deir Qamar**	**0.35**	**256**	*eP*	**Pg**	**13 17 53.8**	**-0.3**
QASN	**Qassioun**	**0.36**	**135**	*eP*	**Pg**	**13 17 54.4**	**0.0**
QASN				*eS*	**Sg**	**13 17 59.6**	**+0.4**
QASN				AML	AML	13 18 06.8	
	comp=N,141nm,0.7s						
QASN	**Qassioun**	**0.36**	**135**	*eP*	**Pg**	**13 17 54.4**	**0.0**
QASN				*eS*	**Sg**	**13 17 59.6**	**+0.4**
	comp=N,141nm,0.7s						
BRBR	**Barbar**	**0.38**	**183**	*eP*	**Pg**	**13 17 54.1**	**-0.7**
BRBR				*eS*	**Sg**	**13 18 00.5**	**+0.7**
BRBR				AML	AML	13 18 02.3	
	comp=N,117nm,0.5s						
BRBR	**Barbar**	**0.38**	**183**	*eP*	**Pg**	**13 17 54.1**	**-0.7**
BRBR				*eS*	**Sg**	**13 18 00.5**	**+0.7**
	comp=N,117nm,0.5s						
MARH	**Ras Al Marh**	**0.48**	**61**	*eP*	**Pg**	**13 17 55.8**	**-1.0**
MARH				*eS*	**Sg**	**13 18 03.8**	**+0.6**
MARH				AML	AML	13 18 13.9	
	comp=N,62nm,0.3s						
MARH	**Ras Al Marh**	**0.48**	**61**	*eP*	**Pg**	**13 17 55.8**	**-1.0**
MARH				*eS*	**Sg**	**13 18 03.8**	**+0.6**
	comp=N,63nm,0.3s						
HWQ	**Hawqa**	**0.49**	**357**	*eP*	**Pg**	**13 17 56.8**	**0.0**
HWQ				*eS*	**Sg**	**13 18 03.6**	**+0.3**
HWQ	**Hawqa**	**0.49**	**357**	*eP*	**Pg**	**13 17 56.8**	**0.0**
HWQ				*eS*	**Sg**	**13 18 03.6**	**+0.3**
TOTH	**TOTAH**	**0.57**	**138**	*eP*	**Pb**	**13 17 59.3**	**0.0**
TOTH				*eS*	**Sb**	**13 18 07.4**	**-0.1**
TOTH				AML	AML	13 18 18.0	
	comp=N,35nm,0.5s						
TOTH	**TOTAH**	**0.57**	**138**	*eP*	**Pb**	**13 17 59.3**	**0.0**
TOTH				*eS*	**Sb**	**13 18 07.4**	**-0.1**
	comp=N,35nm,0.5s						
SALA	**Sala**	**1.25**	**149**	*eP*	**Pg**	**13 18 11.4**	**+0.2**
SALA				*eS*	**Sn**	**13 18 27.8**	**0.0**
SALA				AML	AML	13 18 35.2	
	comp=N,14nm,0.6s						
SALA	**Sala**	**1.25**	**149**	*eP*	**Pg**	**13 18 11.4**	**+0.2**
SALA				*eS*	**Sn**	**13 18 27.8**	**0.0**
	comp=N,14nm,0.6s						

*ISCJB **18** 13:22:00.7±0.7, 40°.03N±0°.04×32°.17E±0°.04, h4km±7km, Error ellipse: s-maj=6.5km s-min=4.9km az=33.8*
*DDA **18** 13:22:00.3, 39°.96N×32°.27E, h7km, Md2.8*
*ISK **18** 13:22:00.9, 40°.02N×32°.16E, h11km, ML2.5*
*CSEM **18** 13:22:00.4±0.2, 39°.99N×32°.21E, h2km, ML2.5, Error ellipse: s-maj=4.8km s-min=4.0km az=178.0*
ISC 18 13:22:00.7±1.2, 39°.97N±0°.03×32°.24E±0°.02, h5km±11km, n29, σ1§15/43, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SVRH	**Sivrihisar-ESK**	**0.76**	**227**	*ePG*	**Pg**	**13 22 15.4**	**+0.1**
SVRH	**Sivrihisar-ESK**	**0.76**	**227**	*ePg*	**Pg**	**13 22 15.4**	**+0.1**
AFSR	**Af´ar-Bala (A**	**0.82**	**129**	*ePG*	**Pn**	**13 22 18.7**	**-0.4**
AFSR				*eSG*	**Sn**	**13 22 32.1**	**+0.3**
AFSR	**Af´ar-Bala (A**	**0.82**	**129**	*ePg*	**Pn**	**13 22 18.7**	**-0.4**
BCAM	**Yenicaga**	**0.86**	**351**	P	**Pg**	**13 22 16.5**	**-0.7**
BCAM	**Yenicaga**	**0.86**	**351**	*i P*	**Pg**	**13 22 16.5**	**-0.7**
BCAM				*i S*	**Sn**	**13 22 34.1**	**+1.5**
MDUB	**Mudurnu**	**0.95**	**302**	*ePG*	**Pg**	**13 22 18.0**	**-0.9**
MDUB				*eSG*	**Sg**	**13 22 30.1**	**-1.0**
MDUB	**Mudurnu**	**0.95**	**302**	*ePg*	**Pg**	**13 22 18.0**	**-0.9**
MDUB				*eSg*	**Sg**	**13 22 30.1**	**-1.0**
KKUL	**Konya-Kulu**	**0.95**	**147**	P	**Pg**	**13 22 18.3**	**-0.7**
KKUL				S	**Sn**	**13 22 35.9**	**+1.0**
KKUL	**Konya-Kulu**	**0.95**	**147**	*i P*	**Pg**	**13 22 18.3**	**-0.7**
KKUL				*i S*	**Sn**	**13 22 35.9**	**+1.0**
ELDT	**Eldivan**	**1.04**	**60**	P	**Pg**	**13 22 20.5**	**-0.3**
ELDT				S	**Sn**	**13 22 36.2**	**-1.1**
ELDT	**Eldivan**	**1.04**	**60**	*i P*	**Pg**	**13 22 20.5**	**-0.3**
ELDT				*i S*	**Sn**	**13 22 36.2**	**-1.1**
KIZT	**Kizilcal**	**1.12**	**195**	*ePN*	**Pn**	**13 22 23.4**	**+0.1**
KIZT	**Kizilcal**	**1.12**	**195**	*ePn*	**Pn**	**13 22 23.4**	**+0.1**
ESKT	**Eskisehir**	**1.17**	**248**	*ePN*	**Pn**	**13 22 23.6**	**-0.2**
ESKT	**Eskisehir**	**1.17**	**248**	*ePn*	**Pn**	**13 22 23.6**	**-0.2**
ESKT	**Eskisehir**	**1.17**	**248**	*i P*	**Pb**	**13 22 22.6**	**-0.8**
ESKT				*i S*	**Sn**	**13 22 42.3**	**+2.0**
SEYT	**Eskypehyr**	**1.17**	**248**	P	**Pb**	**13 22 22.6**	**-0.8**
CANT	**Cankiri**	**1.23**	**58**	*ePN*	**Pg**	**13 22 24.4**	**+0.1**
SAFT	**Safranbolu**	**1.31**	**15**	*ePN*	**Pg**	**13 22 25.7**	**-0.2**
SAFT	**Safranbolu**	**1.31**	**15**	*ePn*	**Pg**	**13 22 25.7**	**-0.2**
SAHE	**Sakarya_HENDEK**	**1.38**	**310**	P	**Pb**	**13 22 26.5**	**-0.6**
SAHE				S	**Sg**	**13 22 47.3**	**+2.2**
SAHE	**Sakarya_HENDEK**	**1.38**	**310**	*i P*	**Pb**	**13 22 26.5**	**-0.6**
SAHE				*i S*	**Sg**	**13 22 47.3**	**+2.2**
ILGA	**Ilgaz**	**1.56**	**46**	P	**Pb**	**13 22 29.5**	**-0.7**
ILGA	**Ilgaz**	**1.56**	**46**	*i P*	**Pb**	**13 22 29.5**	**-0.7**
ILGA				*i S*	**Sg**	**13 22 55.2**	**+4.4**
CDAG	**Cicekdag**	**1.68**	**101**	P	**Pn**	**13 22 30.3**	**-0.5**
CDAG				S	**Sg**	**13 22 55.1**	**+0.6**
CDAG	**Cicekdag**	**1.68**	**101**	*i P*	**Pn**	**13 22 30.3**	**-0.5**
CDAG				*i S*	**Sg**	**13 22 55.1**	**+0.6**
CORM	**Corum**	**1.84**	**83**	*ePN*	**Pb**	**13 22 34.2**	**-0.8**
CORM	**Corum**	**1.84**	**83**	*ePn*	**Pb**	**13 22 34.2**	**-0.8**

*IDC **18** 13:29:31.0±1.3, 25°.47N×141°.88E, h0km, mb3.8/8, mb1 3.9/8, mb1mx3.6/53, mbtmp3.8/8, Error ellipse: s-maj=49.7km s-min=16.8km az=90.0*
*ISCJB **18** 13:29:34.1±0.7, 25°.38N±0°.07×141°.7E±0°.2, h33km, mb4.0/11, Error ellipse: s-maj=23.3km s-min=7.5km az=14.7*
*NEIC **18** 13:29:34.7±6.3, 25°.49N×141°.99E, h25km±45km, mb4.4/3, Error ellipse: s-maj=29.9km s-min=14.5km az=88.0*
ISC 18 13:29:35.7±0.9, 25°.41N±0°.10×141°.9E±0°.2, h35km, n14, σ1§61/16, mb4.1/11, Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**1.70**	**9**	*ePn*	**Pn**	**13 30 01.1**	**-1.8**
CBIJ				*eSn*	**Sn**	**13 30 25.6**	**+2.1**
JCJ	**Chichijima**	**1.70**	**9**	Pn	**Pn**	**13 30 01.4**	**-1.5**
	baz=162,slow=16						
JCJ				Sn	**Sn**	**13 30 25.7**	**+2.3**
	62nm,0.3s,baz=262,slow=22,SNR=20						
KLR	**Kul'dur**	**25.05**	**344**	P	**P**	**13 34 56.5**	**-0.1**
	1.7nm,0.7s,baz=145,slow=7.9,SNR=8.4						
WRAB	**Tennant Creek**	**45.66**	**190**	*eP*	**P**	**13 37 53.9**	**+0.7**
	2.0nm,0.7s						
WRA	**Warramunga Arr**	**45.67**	**190**	P	**P**	**13 37 53.4**	**+0.1**
	1.0nm,0.7s,baz=9.8,slow=8.7,SNR=8.3						
ASAR	**Alice Springs**	**49.40**	**190**	P	**P**	**13 38 24.3**	**+2.1**
	0.2nm,0.8s,baz=7.8,slow=7.5,SNR=4.1						
MKAR	**Makanchi Array**	**51.34**	**311**	P	**P**	**13 38 38.2**	**+1.5**
	0.3nm,0.5s,baz=76,slow=6.1,SNR=3.0						
KURK	**Kurchatov**	**53.97**	**315**	P	**P**	**13 38 55.5**	**-0.5**
KURBB	**Kurchatov Arra**	**54.02**	**315**	P	**P**	**13 38 55.5**	**-0.9**
	1.6nm,0.6s,baz=92,slow=7.8,SNR=14						
BVAR	**Borovoye Array**	**59.10**	**318**	P	**P**	**13 39 33.8**	**+1.3**
	1.6nm,0.5s,baz=95,slow=6.7,SNR=11						
DLBC	**Dease Lake**	**67.74**	**35**	*eP*	**P**	**13 40 31.3**	**+1.6**
	1.7nm,0.5s						
FINES	**FINESS Array B**	**79.33**	**334**	P	**P**	**13 41 36.4**	**-1.2**
	1.3nm,0.6s,baz=56,slow=4.8,SNR=6.2						
AKASG	**Malin Array Be**	**83.81**	**324**	P	**P**	**13 42 01.5**	**+0.1**
	0.3nm,0.4s,baz=46,slow=5.3,SNR=2.1						
RLMT	**Red Lodge**	**84.58**	**42**	*eP*	**P**	**13 42 03.7**	**-2.1**
	3.1nm,0.8s						

*NIED **18** 13:32:00, 36°.90N×140°.70E, h5km, Mw4.0 Best double couple: M0 1.08000×10^15 NP1:φs140.00000°, δ41.00000°, λ-86.00000°. NP2:φs316.00000°, δ49.00000°, λ-93.00000°.*
*IDC **18** 13:32:41.7±0.6, 36°.87N×140°.49E, h0km, mb4.1/24, mb1 4.2/26, mb1mx4.1/54, mbtmp4.1/26, ML3.8/2, MS3.1/8, Ms1 3.1/8, ms1mx2.9/39, Error ellipse: s-maj=18.7km s-min=12.8km az=86.0*
*ISCJB **18** 13:32:42.5±0.6, 36°.91N±0°.03×140°.84E±0°.05, h19km±3km, mb4.3/42, MS3.5/6, Error ellipse: s-maj=6.7km s-min=3.9km az=25.1*
*JMA **18** 13:32:43.3, 36°.93N×140°.70E, h8km±1km, M4.3 Broadband fault plane solution: P waves. NP1: φs286.00000°, δ47.00000°, λ-84.00000°. NP2:φs97.00000°, δ43.00000°, λ-97.00000°. Principal axes: T Plg2.0000°, Azm12.0000°; N Plg5.0000°, Azm102.0000°; P Plg85.0000°, Azm259.0000°;*
JMA Felt II J1.
*NEIC **18** 13:32:47.0±0.7, 36°.93N×140°.67E, h38km±6km, mb4.5/9 Error ellipse: s-maj=8.1km s-min=5.7km az=115.0*
NEIC Recorded [2 JMA] in Fukushima.
ISC 18 13:32:43.0±1.0, 36°.91N±0°.03×140°.72E±0°.05, h10km±6km, n85, σ1§91/93, mb4.3/42, MS3.2/6, 4C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.20**	**17**	⇑P	**Pg**	**13 32 47.2**	**-0.1**
ONAJ				S	**Sg**	**13 32 50.4**	**+0.1**
JHO	**Hitachi**	**0.32**	**203**	⇑P	**Pg**	**13 32 49.8**	**+0.3**
JHO				S	**Sg**	**13 32 54.6**	**+0.8**
JFK	**Kawauchi**	**0.47**	**15**	⇑P	**Pg**	**13 32 52.0**	**-0.3**
JFK				S	**Sg**	**13 32 58.5**	**-0.1**
JSB	**Shiboa**	**0.65**	**275**	⇓P	**Pb**	**13 32 56.3**	**-0.1**
JSB				S	**Sb**	**13 33 05.3**	**-0.2**
JFT	**Otama**	**0.68**	**333**	⇑P	**Pg**	**13 32 56.0**	**-0.3**
JFT				S	**Sb**	**13 33 05.1**	**-1.4**
MJAR	**Matsushiro Arr**	**2.05**	**260**	Pn	**Pn**	**13 33 18.2**	**+0.6**
	58nm,0.3s,baz=81,slow=16,SNR=265						
MJAR				Sn	**Sb**	**13 33 44.4**	**-1.6**
	200nm,0.3s,baz=87,slow=27,SNR=27						
MJAR				LR	LR	13 33 53.8	
	comp=Z,106nm,19.3s,baz=90,slow=39						
MAJO	**Matsushiro**	**2.06**	**260**	*e*Pn	**Pb**	**13 33 19.0**	**-1.5**
MAT	**Matsushiro**	**2.06**	**260**	P	**Pb**	**13 33 18.8**	**-1.6**
MAT				S	**Sb**	**13 33 46.0**	**0.0**
MJB9	**Matsu-Tunnel**	**2.06**	**261**	*e*Pn	**Pb**	**13 33 18.9**	**-1.5**
INU	**Inuyama**	**3.38**	**244**	*e*Pn	**Pn**	**13 33 38.0**	**+2.1**
JHJ	**Hachijo jima 2**	**3.86**	**192**	Pn	**Pn**	**13 33 43.1**	**+0.7**
	11nm,0.3s,baz=315,slow=22,SNR=9.0						
JHJ				Sn	**Sn**	**13 34 28.8**	**+1.0**
	32nm,0.3s,baz=269,slow=23,SNR=6.2						
JHJ				LR	LR	13 35 01.4	
	comp=Z,149nm,18.5s,baz=54,slow=37						
JHJ2	**Mitsune**	**3.86**	**191**	*e*Pn	**Pn**	**13 33 43.3**	**+0.9**
ERM	**Erimo**	**5.43**	**20**	*e*Pn	**Pn**	**13 34 04.5**	**+0.5**
ERM				*e*Sn	**Sn**	**13 35 10.6**	**+4.0**
ASAJ	**Asahikawa**	**7.34**	**11**	Pn	**Pn**	**13 34 31.4**	**+1.2**
	1.8nm,0.3s,baz=200,slow=13,SNR=15						
ASAJ				Sn	**Sn**	**13 35 56.2**	**+2.7**
	0.6nm,0.3s,baz=90,slow=20,SNR=3.6						
ASAJ				LR	LR	13 37 40.1	
	comp=Z,77nm,18.1s,baz=168,slow=40						
ASAJ	**Asahikawa**	**7.34**	**11**	*e*Pn	**Pn**	**13 34 30.4**	**+0.3**
ASAJ				Sn	**Sn**	**13 35 56.2**	**+2.7**
JNU	**Nakatsue**	**8.91**	**248**	Pn	**Pn**	**13 34 55.8**	**+3.9**
	0.2nm,0.3s,baz=54,slow=11,SNR=7.1						
JNU				LR	LR	13 38 30.8	
	comp=Z,117nm,18.4s,baz=116,slow=40						
JNU	**Nakatsue**	**8.91**	**248**	*e*Pn	**Pn**	**13 34 54.0**	**+2.1**
USRK	**Ussuriysk Ar.**	**9.85**	**320**	Pn	Pn	13 35 09.5	+4.8
	0.2nm,0.3s,baz=139,slow=13,SNR=11						
KSRS	**Korea Array**	**10.23**	**277**	Pn	Pn	13 35 15.3	+5.5
	0.3nm,0.3s,baz=92,slow=14,SNR=21						
KSRS				LR	LR	13 38 50.5	
	comp=Z,50nm,20.8s,baz=97,slow=37						
KSAR	**Wonju Array Be**	**10.26**	**277**	Pn	Pn	13 35 15.3	+5.0
KLR	**Kul'dur**	**13.94**	**335**	Pn	**P**	**13 36 06.3**	**-2.4**
	0.1nm,0.3s,baz=132,slow=11,SNR=4.8						
PETK	**Petropavlovsk-**	**20.07**	**31**	LR	LR	13 46 11.8	
	comp=Z,35nm,18.4s,baz=212,slow=40						
HHC	**Hu-ho-hao-te**	**22.99**	**289**	*eP*	**P**	**13 37 47.8**	**-0.1**
HHC				pmax	pmax		
	comp=Z,28nm,0.9s						
HHC				pmax	pmax		
	comp=Z,69nm,4.4s						
MA2	**Magadan**	**23.59**	**13**	P	**P**	**13 37 55.0**	**+1.3**
	comp=Z,6.2nm,0.7s,baz=218,slow=11,SNR=4.3						
SEY	**Seymchan**	**27.02**	**12**	P	**P**	**13 38 26.2**	**+1.3**
	comp=Z,2.5nm,0.9s,baz=192,slow=6.9,SNR=8.4						
SONA1	**Songino Array**	**27.39**	**304**	*eP*	**P**	**13 38 27.7**	**-0.9**
SONM	**Songino Array**	**27.40**	**304**	P	**P**	**13 38 27.6**	**-1.1**
	comp=Z,2.0nm,0.6s,baz=104,slow=9.1,SNR=11						
SONM				PcP	**PcP**	**13 41 47.3**	**0.0**
	comp=Z,0.7nm,0.5s,baz=112,slow=2.3,SNR=4.4						
H11N2	**WAKE ISLAND Hy**	**28.56**	**120**	T	T	14 08 26.4	
	baz=313,slow=75,SNR=48						
H11N1	**WAKE ISLAND Hy**	**28.57**	**120**	T	T	14 08 26.9	
	baz=313,slow=75,SNR=50						
H11N3	**WAKE ISLAND Hy**	**28.58**	**120**	T	T	14 08 27.6	
	baz=313,slow=75,SNR=42						
H11S1	**WAKE ISLAND Hy**	**29.26**	**122**	T	T	14 09 17.1	
	baz=314,slow=76,SNR=133						
H11S3	**WAKE ISLAND Hy**	**29.26**	**122**	T	T	14 09 18.6	
	baz=314,slow=76,SNR=74						
H11S2	**WAKE ISLAND Hy**	**29.28**	**122**	T	T	14 09 20.4	
	baz=314,slow=76,SNR=76						
LZH	**Lanzhou**	**29.54**	**280**	*eP*	**P**	**13 38 50.9**	**+2.9**
LZH				pP	sP	13 39 01.3	+8.9
LZH				sP	pP	13 39 06.3	+15
LZH				PP	**PP**	**13 39 48.1**	**-6.4**
LZH				PcP	**PcP**	**13 41 53.1**	**+0.1**
LZH				*e*S	**S**	**13 43 39.0**	**-3.8**
LZH				sS	sS	13 43 53.1	+5.1
LZH				SS	**SnSn**	**13 45 20.6**	**+10**
LZH				pmax	pmax		
	comp=Z,27nm,1.2s						
LZH				pmax	pmax		
	comp=Z,99nm,4.8s						
LZH				LR	LR		
	comp=N,1μm,14.4s						
LZH				LR	LR		
	comp=E,1μm,14.6s						
LZH				LR	LR		
	comp=Z,1μm,15.3s						
CD2	**Chengdu**	**31.12**	**270**	P	**P**	**13 39 00.9**	**-0.9**
CD2				pmax	pmax		
	comp=Z,4.0nm,0.5s						
GTA	**Gaotai**	**32.07**	**287**	*eP*	**P**	**13 39 11.8**	**+1.6**
GTA				pP	sP	13 39 17.4	+2.8
GTA				sP	pP	13 39 20.1	+6.8
GTA				pmax	pmax		
	comp=Z,3.0nm,0.9s						
DAV	**Davao City (W)**	**32.76**	**209**	*eP*	**P**	**13 39 14.5**	**-1.7**
	comp=Z,403nm,0.4s						
KMI	**Kunming**	**34.40**	**261**	P	**P**	**13 39 34.5**	**+3.8**
KMI				pmax	pmax		
	comp=Z,7.0nm,1.1s						
KMI				LR	LR		
	comp=Z,34nm,21.9s						
TIXI	**Tiksi**	**35.35**	**354**	*eP*	**P**	**13 39 37.1**	**-1.0**
	comp=Z,11nm,2.0s						
WMQ	**Urumqi**	**40.40**	**297**	P	**P**	**13 40 20.6**	**-0.7**
WMQ				pmax	pmax		
	comp=Z,4.0nm,0.8s						
WMQ				pmax	pmax		
	comp=Z,27nm,4.6s						
CMAR	**Chiang Mai Arr**	**40.93**	**255**	PcP	**PcP**	**13 42 26.7**	**+0.5**
	comp=Z,0.4nm,0.4s,baz=45,slow=2.2,SNR=4.7						
CMAR				LR	LR	13 57 40.1	
	comp=Z,20nm,20.4s,baz=105,slow=37						
ZAA0	**Zalesovo Array**	**41.59**	**312**	*eP*	**P**	**13 40 30.4**	**-0.4**
ZALV	**Zalesovo Beam**	**41.59**	**312**	P	**P**	**13 40 31.4**	**+0.6**
	comp=Z,1.9nm,0.5s,baz=87,slow=7.0,SNR=8.1						
ZALV				PcP	**PcP**	**13 42 26.9**	**-0.9**
	comp=Z,0.9nm,0.3s,baz=98,slow=2.1,SNR=5.2						
MK01	**Makanchi Array**	**43.71**	**302**	*eP*	**P**	**13 40 47.9**	**-0.3**
MK31	**Makanchi Array**	**43.72**	**302**	*eP*	**P**	**13 40 48.0**	**-0.2**
MKAR	**Makanchi Array**	**43.72**	**302**	P	**P**	**13 40 48.4**	**+0.2**
	comp=Z,1.0nm,0.6s,baz=87,slow=10,SNR=5.3						
MKAR				PcP	**PcP**	**13 42 34.8**	**-0.3**
	comp=Z,0.9nm,0.7s,baz=83,slow=5.1,SNR=4.5						
MKAR	**Makanchi Array**	**43.72**	**302**	*eP*	**P**	**13 40 48.0**	**-0.3**
MKAR				PcP	**PcP**	**13 42 34.8**	**-0.3**
MAKZ	**Makanchi**	**43.93**	**302**	*eP*	**P**	**13 40 49.3**	**-0.6**
	comp=Z,8.8nm,1.8s						
KSM	**Kuching**	**45.07**	**226**	*eP*	**P**	**13 40 59.9**	**+0.6**
	comp=Z,5.5nm,0.9s						
KURK	**Kurchatov**	**45.57**	**308**	*eP*	**P**	**13 41 02.1**	**-0.8**
	comp=Z,5.1nm,0.7s						
KURBB	**Kurchatov Arra**	**45.64**	**308**	P	**P**	**13 41 03.0**	**-0.4**
	comp=Z,3.3nm,0.6s,baz=82,slow=8.3,SNR=29						
BWN	**Browne**	**48.80**	**33**	*eP*	**P**	**13 41 25.8**	**-2.1**
	comp=Z,44nm,1.0s						
TKM2	**Tokmak 2**	**49.20**	**298**	*eP*	**P**	**13 41 32.0**	**+0.4**
	comp=Z,5.3nm,1.1s						
ILAR	**Eielson Array**	**49.89**	**32**	P	**P**	**13 41 38.2**	**+2.0**
	comp=Z,0.5nm,0.7s,baz=268,slow=6.0,SNR=7.7						
BVAR	**Borovoye Array**	**50.25**	**312**	P	**P**	**13 41 38.9**	**-0.2**
	comp=Z,2.2nm,0.7s,baz=81,slow=9.2,SNR=11						
BVAR				PcP	**PcP**	**13 42 57.7**	**-0.4**
	comp=Z,1.7nm,0.9s,baz=104,slow=6.3,SNR=4.6						
BRVK	**Borovoye**	**50.30**	**312**	*eP*	**P**	**13 41 39.4**	**-0.1**
	comp=Z,6.6nm,1.2s						
ZRNK	**Zerenda**	**51.08**	**312**	*eP*	**P**	**13 41 45.1**	**-0.4**
	comp=Z,3.8nm,0.8s						
ARU	**Arti**	**56.09**	**318**	P	**P**	**13 42 21.9**	**-0.2**
	comp=Z,1.9nm,0.2s,baz=83,slow=3.5,SNR=4.4						
WRA	**Warramunga Arr**	**56.87**	**187**	P	**P**	**13 42 27.6**	**-0.4**
	comp=Z,4.2nm,0.7s,baz=2.8,slow=7.4,SNR=51						
ABKAR	**Akbulak array**	**57.60**	**310**	*eP*	**P**	**13 42 32.2**	**-0.6**
AS01	**Alice Springs**	**60.59**	**187**	*eP*	**P**	**13 42 53.2**	**-0.6**
ASAR	**Alice Springs**	**60.59**	**187**	P	**P**	**13 42 54.0**	**+0.2**
	comp=Z,1.5nm,0.7s,baz=17,slow=7.2,SNR=20						
ARCES	**ARCESS Array B**	**63.92**	**339**	P	**P**	**13 43 15.7**	**0.0**
	comp=Z,3.5nm,0.9s,baz=33,slow=7.3,SNR=5.1						
DAG	**Danmarks Havn**	**65.85**	**355**	*i P*	**P**	**13 43 28.3**	**+0.2**
	comp=Z,4.6nm,0.8s						
AFI	**Afiamalu**	**67.48**	**129**	LR	LR	14 14 16.6	
	comp=Z,21nm,18.4s,baz=92,slow=37						
KULLO	**Kullorsuaq**	**68.15**	**5**	*i P*	**P**	**13 43 38.7**	**-4.0**
STKA	**Stephens Creek**	**68.43**	**179**	P	**P**	**13 43 43.9**	**-1.1**
	comp=Z,0.9nm,0.8s,baz=314,slow=9.6,SNR=2.9						
FINES	**FINESS Array B**	**68.67**	**332**	P	**P**	**13 43 44.7**	**-1.5**
	comp=Z,3.0nm,0.7s,baz=46,slow=11,SNR=7.6						
KBZ	**Khabaz**	**70.56**	**310**	P	**P**	**13 43 57.6**	**-0.6**
	comp=Z,0.9nm,0.4s,baz=347,slow=4.2,SNR=4.1						
SUMG	**Summit**	**70.81**	**360**	*i P*	**P**	**13 44 02.1**	**+2.4**
	comp=Z,10nm,1.0s						
SUMG	**Summit**	**70.81**	**360**	*eP*	**P**	**13 43 59.4**

0.5nm,0.8s,baz=6.9,slow=6.8,SNR=6.4
ASAR Alice Springs 62.11 188 P **P 14 05 34.8 +0.6**
0.5nm,0.7s,baz=7.0,slow=5.8,SNR=6.5

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*DJA **18** 14:09:06.6±1.3,0°S±7°×9°7E±1°2,h10km,M4.1/3,mb4.3/1, MLv4.0/3*
*ISCJB **18** 14:09:14.0±0.9,0°12N±0°06×97°02E±0°08,h22km, mb3.8/6,Error ellipse: s-maj=11.6km s-min=7.5km az=155.7*
*IDC **18** 14:09:13.2±2.6,0°13N×97°02E,h0km,mb3.8/6,mb1 3.9/7, mb1mx3.6/45,mbtmp3.8/7,ML4.3/1,Error ellipse: s-maj=13.9km s-min=18.3km az=59.0*
ISC 18 14:09:15.8±1.1,0°15N±0°08×97°01E±0°10,h22km,n22, σ1ª40/17,mb3.9/6,Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GSI	**Gunungsitoli**	**1.28**	**26**	P	**Pn**	**14 09 37.7**	**-0.7**
GSI				S	**Sb**	**14 09 55.6**	**+0.3**
MNSI	**Mandailing Nat**	**2.65**	**76**	P	**Pn**	**14 09 57.5**	**+0.2**
KCSI	**Kotacane, Aceh**	**3.44**	**13**	P	**Pn**	**14 10 06.4**	**-1.7**
PPI	**Padang Panjang**	**3.44**	**100**	P	**Pn**	**14 10 05.4**	**-2.8**
PPI				S	**Sn**	**14 10 47.4**	**-1.0**
TSI	**Tuntungan**	**3.68**	**25**	P	**Pn**	**14 10 10.9**	**-0.5**
BKNI	**Bangkinang**	**4.04**	**87**	P	**Pn**	**14 10 14.7**	**-1.7**
MLSI	**Meulaboh, Aceh**	**4.13**	**352**	P	**Pn**	**14 10 15.0**	**-2.7**
PPSI	**Pulau Pagai**	**4.17**	**134**	P	Pn	14 10 10.9	-7.3
PPSI				S	Sn	14 10 50.9	-15
CMAR	**Chiang Mai Arr**	**18.29**	**6**	P	**Pn**	**14 13 28.0**	**-0.4**
	0.4nm,0.3s,baz=196,slow=11,SNR=9.5						
H08S2	**Diego Garcia H**	**25.64**	**252**	T	T	14 41 53.9	
	baz=72,slow=75,SNR=23						
H08S3	**Diego Garcia H**	**25.64**	**252**	T	T	14 42 00.9	
	baz=72,slow=75,SNR=23						
H08S1	**Diego Carcia H**	**25.66**	**252**	T	T	14 41 49.4	
	baz=72,slow=75,SNR=26						
FITZ	**Fitzroy Crossi**	**33.49**	**124**	P	**P**	**14 15 54.1**	**+0.3**
	1.5nm,0.9s,baz=315,slow=1.4,SNR=3.1						
H01W3	**Cape Leeuwin H**	**38.35**	**157**	T	T	14 57 32.2	
	baz=332						
H01W2	**Cape Leeuwin H**	**38.37**	**157**	T	T	14 57 56.7	
	baz=332						
H01W1	**Cape Leeuwin H**	**38.37**	**157**	T	T	14 57 34.7	
	baz=332						
WRA	**Warramunga Arr**	**41.66**	**121**	P	**P**	**14 17 03.4**	**+0.4**
	1.4nm,0.6s,baz=302,slow=9.1,SNR=16						
ASAR	**Alice Springs**	**42.93**	**126**	P	**P**	**14 17 14.1**	**+0.7**
	0.4nm,0.6s,baz=296,slow=8.3,SNR=8.0						
MKAR	**Makanchi Array**	**48.21**	**346**	P	**P**	**14 17 55.5**	**+0.7**
	0.2nm,0.5s,baz=142,slow=7.2,SNR=2.8						
STKA	**Stephens Creek**	**52.81**	**131**	P	**P**	**14 18 30.5**	**+0.7**
	1.8nm,0.9s,baz=310,slow=17,SNR=2.7						
ZALV	**Zalesovo Beam**	**54.56**	**351**	P	**P**	**14 18 43.9**	**+1.7**
	0.7nm,0.3s,baz=156,slow=5.7,SNR=3.2						
TXAR	**Lajitas Array**	**144.66**	**32**	PKP	**PKPab**	**14 28 50.1**	**-0.2**
	0.1nm,0.6s,baz=340,slow=4.8,SNR=2.7						

IDC 18 14:18:08.2±1.4,1°88N×126°49E,h0km,mb3.7/5, mb1 3.8/6,mb1mx3.6/52,mbtmp3.7/6,ML3.2/1,MS3.1/1, Ms1 3.1/1,ms1mx2.3/30,Error ellipse: s-maj=113.9km s-min=18.7km az=69.0,Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**19.87**	**182**	P	P	14 22 41.3	+0.2
	0.1nm,0.3s,baz=16,slow=7.4,SNR=2.3						
WRA	**Warramunga Arr**	**23.01**	**161**	P	P	14 23 14.7	-0.2
	1.7nm,0.4s,baz=339,slow=11,SNR=48						
ASAR	**Alice Springs**	**26.39**	**165**	P	P	14 23 46.7	+0.2
	0.3nm,0.4s,baz=348,slow=12,SNR=14						
PETK	**Petropavlovsk-**	**57.23**	**22**	LR	LR	14 51 24.7	
	comp=Z,15nm,20.1s,baz=167,slow=35						
MKAR	**Makanchi Array**	**58.94**	**326**	P	P	14 28 08.7	-0.6
	0.2nm,0.4s,baz=118,slow=8.2,SNR=4.4						
ZALV	**Zalesovo Beam**	**62.13**	**334**	P	P	14 28 30.8	-0.1
	0.8nm,0.3s,baz=141,slow=8.9,SNR=2.9						
KURBB	**Kurchatov Arra**	**63.17**	**328**	P	P	14 28 38.4	+0.5
	0.3nm,0.4s,baz=128,slow=6.0,SNR=4.7						

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*IDC **18** 14:21:49.5±1.6,33°58N×75°27E,h0km,mb3.6/6, mb1 3.7/9,mb1mx3.5/57,mbtmp3.6/9,ML3.3/3,Error ellipse: s-maj=48.3km s-min=19.5km az=68.0*
*ISCJB **18** 14:21:53.2±0.6,33°85N±0°05×75°5E±0°1,h33km,mb3.4/5, Error ellipse: s-maj=15.9km s-min=4.6km az=162.7*
*NDI **18** 14:21:58.5±2.0,33°28N×77°55E,h10km,ML3.0*
*NNC **18** 14:22:05.0±9.7,34°37N×75°14E,h233km±349km,mb2.5, mpv3.5,Error ellipse: s-maj=103.1km s-min=47.5km az=21.0*
ISC 18 14:21:55.4±0.7,33°84N±0°05×75°4E±0°1,h35km,n24, σ2ª32/29,mb3.5/5,2C-4D,Eastern Kashmir

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PONG	**Pong**	**1.94**	**166**	*ex*	**Sn**	**14 22 51.0**	**+2.2**
PONG				*eS*	**Sn**	**14 22 54.0**	**+5.2**
JWA	**Jwalamukhi**	**2.12**	**158**	*eP*	**Pn**	**14 22 28.0**	**-0.3**
JWA				*eS*	**Sn**	**14 22 52.0**	**-1.4**
NDI	**New Delhi**	**5.37**	**163**	*ex*	Sn	14 24 03.0	-11
NDI				*ex*	x	14 24 28.0	
KUDL	**Kundal**	**5.75**	**170**	*eP*	**Pn**	**14 23 17.3**	**-1.0**
KUDL				*eS*	Sn	14 24 11.8	-11
KUDL				IAML		14 24 57.0	
	comp=E,19nm,0.7s						
KUDL				IAML		14 25 00.2	
	comp=N,11nm,0.6s						
KHET	**Khetri**	**5.75**	**176**	*eP*	**Pn**	**14 23 19.5**	**+1.2**
KHET				*eS*	**Sn**	**14 24 17.7**	**-5.4**
KHET				IAML		14 24 54.4	
	comp=E,15nm,0.5s						
KHET				IAML		14 24 54.6	
	comp=N,16nm,0.2s						
SONA	**Sohna**	**5.75**	**165**	*eS*	Sn	14 24 10.0	-13
SONA				IAML		14 24 54.5	
	comp=N,14nm,0.2s						
SONA				IAML		14 24 55.9	
	comp=E,26nm,0.1s						
PYUN	**Piuthan**	**8.68**	**129**	*eP*	**Pn**	**14 23 58.4**	**-0.2**
	comp=E,8.8nm,0.3s						
AAK	**Ala-Archa**	**8.81**	**356**	Pn	**Pn**	**14 24 03.5**	**+3.1**
	comp=E,0.5nm,0.3s,baz=137,slow=8.4,SNR=4.3						
AAK				Sn	**Sn**	**14 25 39.5**	**+1.0**
	comp=E,0.1nm,0.3s,baz=281,slow=10,SNR=1.7						
MNAS	**Manas**	**8.93**	**346**	⇓P	**Pn**	**14 24 02.5**	**+0.5**
	comp=E,1.0nm,0.4s						
MNAS				⇑S	**Sn**	**14 25 38.7**	**-2.7**
	comp=E,2.8nm,0.7s						
TKM2	**Tokmak 2**	**9.07**	**1**	⇓P	**Pn**	**14 24 06.6**	**+2.6**
	comp=E,2.2nm,0.8s						
TKM2				⇓S	**Sn**	**14 25 41.9**	**-3.1**
	comp=E,1.2nm,0.7s						
KK31	**Karatay Array**	**10.01**	**339**	⇓P	**Pn**	**14 24 15.8**	**-0.8**
	comp=E,1.4nm,0.6s,baz=152,slow=12,SNR=8.4						
KK31				⇑S	**Sn**	**14 26 03.8**	**-3.9**
	comp=E,2.0nm,0.5s,baz=158,slow=26,SNR=9.5						
KKN	**Kakani**	**10.42**	**123**	*eP*	**Pn**	**14 24 21.9**	**-0.6**
	comp=E,4.1nm,0.2s						
PKIN	**Phulchoki**	**10.63**	**123**	*eP*	**Pn**	**14 24 23.5**	**-2.0**
	comp=E,5.5nm,0.2s						
GUN	**Gumba**	**10.77**	**120**	*eP*	**Pn**	**14 24 26.8**	**-0.7**
	comp=E,6.2nm,0.2s						
MKAR	**Makanchi Array**	**13.96**	**20**	Pn	**Pn**	**14 25 11.3**	**+0.6**
	comp=E,0.1nm,0.3s,baz=207,slow=14,SNR=2.6						
KURBB	**Kurchatov Arra**	**16.93**	**7**	P	**Pn**	**14 25 47.8**	**-1.6**
	comp=E,0.0nm,0.3s,baz=189,slow=12,SNR=3.6						
BVAR	**Borovoye Array**	**19.51**	**351**	P	**Pn**	**14 26 21.4**	**+0.5**
	comp=E,0.2nm,0.3s,baz=160,slow=9.5,SNR=5.8						
AKTO	**Aktyubinsk**	**20.91**	**328**	P	**P**	**14 26 35.1**	**+0.4**
	comp=E,1.5nm,0.5s,baz=125,slow=14,SNR=4.1						
ZALV	**Zalesovo Beam**	**21.19**	**16**	P	**P**	**14 26 38.6**	**+1.1**
	comp=E,0.9nm,0.4s,baz=208,slow=12,SNR=5.2						
CMAR	**Chiang Mai Arr**	**26.02**	**120**	P	**P**	**14 27 23.6**	**-1.7**
	comp=E,0.4nm,0.3s,baz=317,slow=10,SNR=3.6						
SONM	**Songino Array**	**27.10**	**50**	P	**P**	**14 27 37.9**	**+3.0**
	comp=E,0.4nm,0.4s,baz=226,slow=9.8,SNR=2.4						
WRA	**Warramunga Arr**	**77.53**	**124**	P	**P**	**14 33 47.0**	**-0.8**
	comp=E,0.6nm,0.8s,baz=316,slow=6.7,SNR=6.7						
ASAR	**Alice Springs**	**79.79**	**127**	P	**P**	**14 33 59.1**	**-1.0**
	comp=E,0.4nm,0.9s,baz=315,slow=5.7,SNR=6.0						
LPAZ	**La Paz**	**142.86**	**289**	PKP	**PKPdf**	**14 41 28.1**	**+1.6**
	comp=E,0.5nm,0.4s,baz=222,slow=14,SNR=4.1						

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*IDC **18** 14:23:10.3±4.6,6°58N×126°93E,h68km±37km,mb3.5/8, mb1 3.7/8,mb1mx3.3/52,mbtmp3.8/8,MS3.2/1,Ms1 3.2/1, ms1mx2.4/23,Error ellipse: s-maj=62.1km s-min=13.1km az=62.0*
*MAN **18** 14:23:11.6,6°20N×126°42E,h73km,mb4.7,ML3.6,MS3.7*
*ISCJB **18** 14:23:12.1±0.7,6°31N±0°07×126°44E±0°08,h94km±7km, mb3.7/8,Error ellipse: s-maj=14.0km s-min=10.5km az=148.6*
ISC 18 14:23:13.3±1.1,6°33N±0°09×126°45E±0°08,h89km±9km, n22,σ1ª31/29,mb3.7/8,4C-2D,Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MATI	**Mati**	**0.65**	**342**	*eP*	**Pn**	**14 23 28.4**	**-0.8**
MATI				*eS*	**Sn**	**14 23 41.5**	**+0.5**
DAV	**Davao City (W)**	**1.14**	**310**	P	**Pn**	**14 23 33.6**	**-0.9**
	100nm,0.3s,baz=274,slow=10,SNR=9.5						
DAV				S	**Sn**	**14 23 52.1**	**+1.6**
	155nm,0.3s,baz=292,slow=21,SNR=15						
DMPH	**Davao City--Mi**	**1.20**	**309**	⇑*eP*	**Pn**	**14 23 34.7**	**-0.6**
DMPH				*eS*	**Sn**	**14 23 55.4**	**+3.6**
KCP	**Kidapawan**	**1.51**	**297**	⇓*i*P	**Pn**	**14 23 37.7**	**-1.5**
KCP				*i* S	**Sn**	**14 23 56.5**	**-2.3**
BIPH	**Bislig**	**1.85**	**357**	⇑*i*P	**Pn**	**14 23 43.2**	**-0.3**
BIPH				*i* S	**Sn**	**14 24 05.5**	**-0.9**
BUKP	**Musuan**	**2.07**	**318**	*eP*	**Pn**	**14 23 46.2**	**-0.3**
BUKP				*eS*	**Sn**	**14 24 12.2**	**+0.6**
CTBH	**Cotabato--PC H**	**2.37**	**292**	⇓*i*P	**Pn**	**14 23 48.5**	**-1.7**
CGP	**Cagayan de Oro**	**2.74**	**321**	⇑*eP*	**Pn**	**14 23 55.4**	**0.0**
CGP				*eS*	**Sn**	**14 24 28.1**	**+0.5**
PAGZ	**Pagadian**	**3.40**	**297**	*eP*	**Pn**	**14 24 03.8**	**-0.4**
IPIL	**Ipil**	**4.12**	**291**	*eP*	**Pn**	**14 24 14.6**	**+0.7**
TBP	**Tagbilaran**	**4.21**	**323**	⇑*eP*	**Pn**	**14 24 15.5**	**+0.3**
GUIM	**Jordan**	**5.73**	**318**	*eP*	**Pn**	**14 24 35.6**	**-0.2**
FITZ	**Fitzroy Crossi**	**24.29**	**182**	P	**P**	**14 28 22.9**	**+0.4**
	1.8nm,0.5s,baz=351,slow=6.5,SNR=11						
PMG	**Port Moresby**	**25.89**	**127**	LR	LR	14 39 09.1	
	comp=Z,58nm,20.4s,baz=178,slow=37						
WRA	**Warramunga Arr**	**27.23**	**164**	P	**P**	**14 28 48.9**	**-0.3**
	0.4nm,0.6s,baz=342,slow=10,SNR=8.5						
ASAR	**Alice Springs**	**30.68**	**167**	P	**P**	**14 29 19.9**	**+0.2**
	0.2nm,0.3s,baz=347,slow=7.3,SNR=15						
ASAR				PcP	**PcP**	**14 32 16.1**	**+0.1**
	0.3nm,0.6s,baz=350,slow=2.0,SNR=8.0						
STKA	**Stephens Creek**	**40.65**	**160**	P	**P**	**14 30 45.8**	**+1.0**
	1.5nm,0.6s,baz=335,slow=9.5,SNR=5.9						
MKAR	**Makanchi Array**	**55.29**	**324**	P	**P**	**14 32 35.5**	**-2.1**
	0.4nm,0.5s,baz=116,slow=6.6,SNR=6.5						
KURBB	**Kurchatov Arra**	**59.42**	**327**	P	**P**	**14 33 07.1**	**+0.5**
	0.3nm,0.6s,baz=124,slow=7.9,SNR=3.8						
GEYT	**Alibeck**	**69.07**	**308**	P	**P**	**14 34 11.9**	**+1.9**
	0.7nm,0.3s,baz=80,slow=10,SNR=3.1						
ARCES	**ARCESS Array B**	**87.93**	**340**	P	**P**	**14 35 51.7**	**-1.2**
	2.3nm,0.9s,baz=114,slow=6.3,SNR=2.5						
TORD	**Torodi Ar. Bea**	**121.82**	**290**	PKP	**PKPdf**	**14 41 56.8**	**-1.4**
	0.2nm,0.4s,baz=54,slow=2.4,SNR=3.8						

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*ISCJB **18** 15:07:37.1±1.0,51°49N±0°04×16°06E±0°05,h0km,Error ellipse: s-maj=6.7km s-min=3.5km az=22.9*
*CSEM **18** 15:07:37.8±0.6,51°50N×16°12E,h2km,ML3.2/8,Error ellipse: s-maj=8.4km s-min=5.1km az=17.0*
*WAR **18** 15:07:38.2,51°54N×16°14E,h1km,Mw2.3*
*PRU **18** 15:07:39.2,51°48N×16°10E,h0km*
ISC 18 15:07:40.3±1.5,51°41N±0°07×16°03E±0°04,h0km,n27, σ1ª05/51,Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.59**	**163**	*ePg*	**Pg**	**15 07 51.5**	**-0.1**
KSP				*eSg*	**Sg**	**15 08 00.6**	**+1.4**
KSP	**Ksiaz**	**0.59**	**163**	*ePg*	**Pg**	**15 07 51.5**	**-0.1**
KSP				*eSg*	**Sg**	**15 08 00.6**	**+1.4**
KSP	**Ksiaz**	**0.59**	**163**	*ePg*	**Pg**	**15 07 51.5**	**-0.1**
KSP				*eSg*	**Sg**	**15 08 00.6**	**+1.4**
UPC	**Upice**	**0.90**	**181**	*ePG*	**Pg**	**15 07 58.0**	**+0.4**
UPC				*eSG*	**Sb**	**15 08 11.0**	**-0.4**
	comp=Z,31nm,0.2s						
UPC	**Upice**	**0.90**	**181**	Pg	**Pg**	**15 07 58.0**	**+0.4**
UPC				Sg	**Sb**	**15 08 11.0**	**-0.4**
	31nm,0.2s						
DPC	**Dobruska-Polom**	**1.08**	**170**	*ePG*	**Pg**	**15 08 00.5**	**-0.4**
DPC				*eSG*	**Sb**	**15 08 16.0**	**-0.4**
	comp=Z,10nm,0.3s						
DPC	**Dobruska-Polom**	**1.08**	**170**	Pg	**Pg**	**15 08 00.5**	**-0.4**
DPC				Sg	**Sb**	**15 08 16.0**	**-0.4**
	10nm,0.3s						
PVCC	**Panska Ves**	**1.28**	**227**	*ePG*	**Pg**	**15 08 04.9**	**+0.1**
PVCC				*eSG*	**Sn**	**15 08 24.0**	**+0.8**
	comp=Z,72nm,0.2s						
PVCC	**Panska Ves**	**1.28**	**227**	Pg	**Pg**	**15 08 04.9**	**+0.1**
PVCC				Sg	**Sn**	**15 08 24.0**	**+0.8**
	72nm,0.2s						
KRLC	**Kraliky**	**1.42**	**160**	*ePG*	**Pn**	**15 08 06.1**	**-1.3**
KRLC				*eSG*	**Sg**	**15 08 25.9**	**+0.1**
KRLC	**Kraliky**	**1.42**	**160**	Pg	**Pn**	**15 08 06.1**	**-1.3**
KRLC				Sg	**Sg**	**15 08 25.9**	**+0.1**
BRG	**Berggiesshubel**	**1.42**	**249**	PG	**Pn**	**15 08 07.1**	**-0.3**
BRG				SG	**Sn**	**15 08 27.2**	**+0.5**
	37nm,0.4s						
GOPC	**GO Pecny, Ondr**	**1.69**	**208**	*ePG*	**Pb**	**15 08 11.8**	**-0.5**
GOPC				*eSG*	**Sg**	**15 08 36.0**	**+1.4**
	comp=Z,9.5nm,0.2s						
GOPC	**GO Pecny, Ondr**	**1.69**	**208**	Pg	**Pb**	**15 08 11.8**	**-0.5**
GOPC				Sg	**Sg**	**15 08 36.0**	**+1.4**
	9.5nm,0.2s						
PRU	**Pruhonice**	**1.71**	**214**	*ePG*	**Pb**	**15 08 12.5**	**-0.1**
PRU				*eSG*	**Sg**	**15 08 36.4**	**+1.3**
	comp=Z,13nm,0.3s						
PRU	**Pruhonice**	**1.71**	**214**	Pg	**Pb**	**15 08 12.5**	**-0.1**
PRU				Sg	**Sg**	**15 08 36.4**	**+1.3**
	13nm,0.3s						
MORC	**Moravsky Berou**	**1.90**	**149**	*ePn*	**Pn**	**15 08 11.8**	**-2.2**
MORC				*eSg*	**Sb**	**15 08 39.7**	**-0.4**
CLL	**Collm**	**1.90**	**268**	*ePg*	**Pn**	**15 08 14.0**	**0.0**
CLL				*i*		15 08 18.0	
CLL				*eSg*	**Sg**	**15 08 41.0**	**-0.3**
	comp=Z,11nm,0.4s						
VRAC	**Vranov**	**2.13**	**170**	*ePn*	**Pn**	**15 08 15.6**	**-1.6**
VRAC				*eSg*	**Sb**	**15 08 46.8**	**-0.1**
TREC	**Trest**	**2.14**	**190**	*eSG*	**Sg**	**15 08 49.8**	**+0.6**
	comp=Z,9.3nm,0.2s						
TREC	**Trest**	**2.14**	**190**	Sg	**Sg**	**15 08 49.8**	**+0.6**
	comp=Z,9.3nm,0.2s						
NKC	**Novy Kostel**	**2.56**	**244**	*ePG*	**Pg**	**15 08 29.1**	**-0.2**
NKC				*eSG*	**Sg**	**15 09 03.3**	**+0.9**
	comp=Z,22nm,0.3s						
NKC	**Novy Kostel**	**2.56**	**244**	Pg	**Pg**	**15 08 29.1**	**-0.2**
NKC				Sg	**Sg**	**15 09 03.3**	**+0.9**
	comp=Z,22nm,0.3s						
KHC	**Kasperske Hory**	**2.77**	**216**	*ePN*	**Pn**	**15 08 25.2**	**-0.8**
KHC				*ePG*	**Pb**	**15 08 31.3**	**+0.6**
KHC				*eSN*	**Sn**	**15 08 59.7**	**-0.4**
KHC				*eSG*	**Sg**	**15 09 09.5**	**+0.3**
	comp=Z,3.6nm,0.3s						
KHC	**Kasperske Hory**	**2.77**	**216**	Pn	**Pn**	**15 08 25.2**	**-0.8**
KECS	**Kecovo**	**4.11**	**134**	*eSg*	**Sg**	**15 09 55.4**	**+3.2**
KECS	**Kecovo**	**4.11**	**134**	*eSG*	**Sg**	**15 09 55.4**	**+3.2**

IDC 18 15:28:17.7±446.0,48°79N×43°00E,h0km,Error ellipse: s-maj=186.3km s-min=127.4km az=166.0, Ukraine-Moldova-Southwestern Russia region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I43RU	**DUBNA INFRASON 8.69**	**338**		*i*		16 22 55.0	
	baz=151,slow=318,SNR=0.6						
I31KZ	**AKTYUBINSK INF**	**9.90**	**75**	*i*		16 33 30.0	
	baz=265,slow=318,SNR=3.3						
I26DE	**FREYUNG INFRAS 19.24**	**281**		*i*		17 28 20.0	
	baz=79,slow=326,SNR=0.7						

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*NIED **18** 15:29:00,37°50N×142°60E,h14km,Mw3.4 Best double couple: M0=1.26000×10^14 NP1:φs=33.00000°,δ44.00000°, λ-107.00000°. NP2:φs=236.00000°,δ49.00000°, λ-74.00000°.*
*JMA **18** 15:29:34.1±0.1,37°52N×142°60E,h0km,M3.8*
*IDC **18** 15:29:35.0±1.0,37°41N×142°73E,h0km,mb3.4/4, mb1 3.6/7,mb1mx3.3/56,mbtmp3.4/7,ML3.2/3,MS2.4/2, Ms1 2.4/2,ms1mx2.1/27,Error ellipse: s-maj=43.9km s-min=19.3km az=117.0*
*ISCJB **18** 15:29:35.3±0.7,37°48N±0°05×142°72E±0°06,h21km, mb3.5/4,MS4.3/1,Error ellipse: s-maj=7.0km s-min=6.8km az=142.3*
ISC 18 15:29:37.5±1.0,37°54N±0°05×142°62E±0°07,h21km,n27, σ1ª55/26,mb3.4/4,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.36**	**313**	P	**Pn**	**15 29 59.9**	**-1.3**
JIO				S	**Sb**	**15 30 18.6**	**-0.6**
JFK	**Kawauchi**	**1.40**	**264**	P	**Pn**	**15 30 00.5**	**-1.4**
JMM	**Marumori**	**1.49**	**283**	P	**Pn**	**15 30 01.5**	**-1.5**
JMM				S	**Sb**	**15 30 21.9**	**-1.0**
ONAJ	**Iwakimizuishiy**	**1.52**	**254**	P	**Pn**	**15 30 02.1**	**-1.4**
ONAJ				S	**Sn**	**15 30 22.2**	**-0.4**
JOU	**Okura**	**1.76**	**299**	P	**Pn**	**15 30 06.1**	**-0.6**
JOU				*eS*	**Sb**	**15 30 29.6**	**-1.0**
JMK	**Ichinoseki**	**1.79**	**322**	P	**Pn**	**15 30 07.1**	**-0.1**
JFT	**Otama**	**1.82**	**270**	P	**Pn**	**15 30 07.0**	**-0.6**
JYS	**Shiratake**	**2.14**	**289**	*eS*	**Sn**	**15 30 39.1**	**+1.3**
JOM	**Ohasama**	**2.20**	**332**	P	**Pn**	**15 30 13.0**	**+0.3**
JYK	**Kaneyama**	**2.25**	**308**	P	**Pn**	**15 30 13.6**	**+0.1**
JAG	**Ashikaga**	**2.77**	**247**	P	**Pn**	**15 30 21.2**	**+0.6**
MJAR	**Matsushiro Arr**	**3.67**	**256**	Pn	**Pn**	**15 30 34.9**	**+1.8**
	0.9nm,0.3s,baz=83,slow=14,SNR=6.5						
MAT	**Matsushiro**	**3.67**	**256**	P	**Pn**	**15 30 36.0**	**+3.0**
MAT				*eS*	**Sn**	**15 31 17.7**	**+2.0**
JHJ	**Hachijo jima 2**	**4.98**	**209**	Pn	**Pn**	**15 30 48.9**	**-2.1**
	4.2nm,0.3s,baz=343,slow=23,SNR=10						
JHJ				Sn	**Sn**	**15 31 45.0**	**-3.0**
	9.2nm,0.3s,baz=324,slow=22,SNR=6.0						
ASAJ	**Asahikawa**	**6.57**	**360**	Pn	**Pn**	**15 31 13.1**	**+0.3**
	0.6nm,0.3s,baz=183,slow=14,SNR=10						
ASAJ				Sn	**Sn**	**15 32 24.3**	**-2.8**
	0.2nm,0.3s,baz=0.0,slow=6.1,SNR=1.9						
ASAJ				LR	LR	15 34 12.9	
	comp=Z,33nm,18.2s,baz=158,slow=42						
KSRS	**Korea Array**	**11.68**	**274**	LR	LR	15 36 36.2	
	comp=Z,19nm,19.8s,baz=55,slow=36						
H11N2	**WAKE ISLAND Hy 27.60**	**123**		T	T	16 04 21.1	
	baz=316,slow=75,SNR=16						
H11N1	**WAKE ISLAND Hy 27.60**	**123**		T	T	16 04 20.0	
	baz=316,slow=75,SNR=8.4						
H11N3	**WAKE ISLAND Hy 27.61**	**123**		T	T	16 04 25.4	
	baz=316,slow=75,SNR=13						
H11S1	**WAKE ISLAND Hy 28.34**	**125**		T	T	16 05 12.2	
	baz=317,slow=76,SNR=7.6						
H11S3	**WAKE ISLAND Hy 28.34**	**125**		T	T	16 05 11.6	
	baz=317,slow=76,SNR=7.2						
H11S2	**WAKE ISLAND Hy 28.36**	**125**		T	T	16 05 10.2	
	baz=317,slow=76,SNR=7.5						
ILAR	**Eielson Array**	**48.55**	**33**	P	**P**	**15 38 19.2**	**+0.4**
	0.3nm,0.9s,baz=257,slow=6.3,SNR=2.5						
AAK	**Ala-Archa**	**51.10**	**298**	LR	LR	16 00 24.7	
	comp=Z,312nm,21.2s,baz=244,slow=36						
WRA	**Warramunga Arr**	**57.70**	**189**	P	**P**	**15 39 26.4**	**-0.2**
	0.7nm,0.7s,baz=6.5,slow=7.5,SNR=8.2						
ASAR	**Alice Springs**	**61.43**	**189**	P	**P**	**15 39 52.1**	**-0.1**
	0.3nm,0.9s,baz=8.2,slow=8.9,SNR=4.6						
PDAR	**Pinedale Array**	**76.62**	**46**	P	**P**	**15 41 29.0**	**+2.1**
	0.2nm,0.6s,baz=276,slow=9.0,SNR=2.1						

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*ISCJB **18** 15:29:58.7±0.8,10°92N±0°04×62°27W±0°04, h109km±10km,Error ellipse: s-maj=7.4km s-min=4.8km az=135.4*
*FUNV **18** 15:30:00.2,10°89N×62°16W,h100km,MW3.2*
*TRN **18** 15:30:07.1,11°13N×61°97W,h24km,MD3.0*
ISC 18 15:29:58.3±1.4,10°85N±0°04×62°26W±0°04, h119km±10km,n19,σ2ª31/30,2C,Near coast of Venezuela

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TCE	**Chacachacare**	**0.52**	**107**	*eP*	**Pn**	**15 30 17.5**	**+1.2**
TCE				*eS*	**Sn**	**15 30 24.1**	**-5.8**
TRN	**Trinidad (W)**	**0.86**	**103**	⇑*i*P	**Pn**	**15 30 20.8**	**+1.9**
TRN				*eS*	**Sn**	**15 30 32.8**	**-1.8**
TPP	**Pointe-a-Pierr**	**0.95**	**123**	*eP*	Pn	15 30 25.5	+5.7
TPP				*eS*	**Sn**	**15 30 38.3**	**+2.3**
GUNV	**Guanoco**	**0.96**	**225**	*eP*	**Pn**	**15 30 21.7**	**+1.9**
GUNV				*eS*	**Sn**	**15 30 36.1**	**0.0**
CRUV	**Carupano**	**0.97**	**260**	*eP*	**Pn**	**15 30 20.7**	**+0.8**
CRUV				*eS*	**Sn**	**15 30 35.1**	**-1.3**
TBH	**Brigand Hill**	**1.23**	**107**	*eS*	**Sn**	**15 30 41.5**	**+0.5**
GRGR	**Grenville**	**1.41**	**25**	⇑*eP*	**Pn**	**15 30 26.3**	**+1.7**
GRGR				*eS*	**Sn**	**15 30 41.9**	**-2.8**
GRHS	**Sauteurs**	**1.

KSRS Korea Array 11.87 275 LR LR 15 51 21.9
comp=Z,41nm,19.8s,baz=129,slow=36
H11N2 WAKE ISLAND Hy 27.40 123 T T 16 19 03.9
baz=315,slow=75,SNR=27
H11N1 WAKE ISLAND Hy 27.41 124 T T 16 19 08.7
baz=315,slow=75,SNR=22
H11N3 WAKE ISLAND Hy 27.42 123 T T 16 19 07.9
baz=315,slow=75,SNR=19
H11S1 WAKE ISLAND Hy 28.15 126 T T 16 20 07.7
baz=317,slow=75,SNR=14
H11S3 WAKE ISLAND Hy 28.15 126 T T 16 20 09.3
baz=317,slow=75,SNR=16
H11S2 WAKE ISLAND Hy 28.17 126 T T 16 19 50.9
baz=317,slow=75,SNR=14
SONM Songino Array 28.51 303 P **P** **15 50 07.9 +1.1**
0.9nm,0.7s,baz=105,slow=11,SNR=3.0
MKAR Makanchi Array 44.87 302 P **P** **15 52 26.7 +1.1**
0.3nm,0.4s,baz=97,slow=7.4,SNR=4.9
ILAR Eielson Array 48.52 33 P **P** **15 52 54.4 +0.5**
0.3nm,0.7s,baz=267,slow=6.0,SNR=3.8
ARU Arti 56.80 319 LR LR 16 21 26.6
comp=Z,42nm,18.9s,baz=156,slow=39
WRA Warramunga Arr 57.65 189 P **P** **15 54 01.8 +0.2**
1.7nm,0.7s,baz=7.1,slow=7.4,SNR=12
ASAR Alice Springs 61.38 189 P **P** **15 54 28.2 +1.0**
0.5nm,0.7s,baz=3.9,slow=7.1,SNR=7.5

*IDC **18** 15:52:05.8±1.8, 18°.39S×166°.26E, h0km, mb3.9/5, mb1 4.0/6, mb1mx3.8/25, mbtmp3.8/6, ML3.0/1, Error ellipse: s-maj=33.6km s-min=32.4km az=76.0*
*NEIC **18** 15:52:10.9±2.7, 18°.66S×166°.45E, h49km±31km, mb4.1/1, Error ellipse: s-maj=28.7km s-min=17.4km az=141.0*
ISC 18 15:52:05.1±2.1, 18°.1S±0°.1×167°.0E±0°.3, h35km, n9, σ1°.09/8, mb3.8/6, Vanuatu Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**3.95**	**187**	Pn	**Pn**	**15 53 02.7**	**-0.7**
	1.2nm,0.3s,baz=358,slow=10,SNR=11						
DZM				Sn	**Sn**	**15 53 49.6**	**+1.0**
	3.3nm,0.3s,baz=323,slow=11,SNR=4.2						
HNR	**Honiara**	**11.01**	**321**	Pn	**Pn**	**15 54 40.8**	**+0.5**
FUNA	**Funafuti**	**15.24**	**53**	*eP*n	P	15 55 51.4	+9.1
URZ	**Urewera**	**21.93**	**158**	*eP*	**P**	**15 56 55.5**	**0.0**
	4.0nm,0.5s						
STKA	**Stephens Creek**	**26.68**	**234**	P	**P**	**15 57 41.6**	**+0.6**
	1.9nm,0.8s,baz=48,slow=9.4,SNR=3.2						
WRA	**Warramunga Arr**	**30.88**	**261**	P	**P**	**15 58 16.6**	**-1.9**
	0.7nm,0.7s,baz=92,slow=9.3,SNR=5.4						
ASAR	**Alice Springs**	**31.34**	**254**	P	**P**	**15 58 22.1**	**-0.5**
	1.1nm,0.7s,baz=81,slow=8.4,SNR=13						
FITZ	**Fitzroy Crossi**	**39.23**	**263**	P	**P**	**15 59 30.2**	**-0.2**
	2.2nm,0.8s						
NVAR	**Mina Array Bea**	**89.69**	**49**	P	P	16 05 09.6	+10
	0.2nm,0.5s,baz=254,slow=5.5,SNR=1.8						

*NIED **18** 16:09:00, 39°.90N×143°.40E, h20km, Mw3.9 Best double couple: M0≈6.98000×10^14 NP1:φs=189.00000°, δ23.00000°, λ64.00000°. NP2:φs=37.00000°, δ70.00000°, λ100.00000°.*
*JMA **18** 16:09:19.8±0.3, 39°.86N×143°.38E, h17km±4km, M4.0*
*ISCJB **18** 16:09:20.1±1.7, 39°.74N±0°.04×143°.50E±0°.06, h28km±13km, mb3.8/12, MS3.2/1, Error ellipse: s-maj=8.4km s-min=5.1km az=32.0*
*IDC **18** 16:09:23.4±3.4, 39°.76N×143°.32E, h36km±28km, mb3.7/13, mb1 3.7/17, mb1mx3.5/55, mbtmp3.8/17, ML3.5/4, MS2.9/6, Ms1 2.9/6, ms1mx2.7/37, Error ellipse: s-maj=22.8km s-min=14.9km az=100.0*
ISC 18 16:09:20.3±4.1, 39°.83N±0°.05×143°.34E±0°.08, h12km±25km, n39, σ1°.33/40, mb3.8/12, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.14**	**276**	P	**Pb**	**16 09 41.0**	**-0.9**
JTH				*eS*	**Sb**	**16 09 56.9**	**+0.2**
MIYJ	**Miyakonagasawa**	**1.20**	**258**	P	**Pn**	**16 09 42.5**	**-0.4**
MIYJ				*eS*	**Sb**	**16 09 58.6**	**+0.3**
JANG	**Nango**	**1.50**	**292**	P	**Pn**	**16 09 46.3**	**-0.7**
JOM	**Ohasama**	**1.62**	**258**	P	**Pn**	**16 09 49.2**	**+0.6**
JOM				S	**Sb**	**16 10 10.1**	**-0.3**
JMK	**Ichinoseki**	**1.86**	**243**	P	**Pn**	**16 09 52.1**	**+0.2**
JMK				*eS*	**Sb**	**16 10 16.3**	**-1.1**
JTM	**Tenmabayashi**	**1.98**	**300**	P	**Pn**	**16 09 54.1**	**+0.4**
JIO	**Ouri**	**2.06**	**229**	P	**Pn**	**16 09 54.3**	**-0.5**
JOT	**Ohata**	**2.33**	**312**	P	**Pn**	**16 10 00.4**	**+1.9**
JYK	**Kaneyama**	**2.48**	**249**	P	**Pn**	**16 10 01.2**	**+0.7**
JYK				S	**Sb**	**16 10 35.3**	**0.0**
JNBK	**Urakawa-nobuka**	**2.49**	**350**	P	**Pn**	**16 10 01.9**	**+1.2**
JNBK				*eS*	**Sn**	**16 10 32.6**	**+1.6**
JKB	**Kayabe**	**2.70**	**320**	P	**Pn**	**16 10 06.0**	**+2.5**
JKB				*eS*	**Sb**	**16 10 40.5**	**-1.1**
JCH	**Churui**	**2.79**	**0**	P	**Pn**	**16 10 04.9**	**+0.2**
JCH				S	**Sn**	**16 10 38.1**	**-0.1**
ASAJ	**Asahikawa**	**4.32**	**353**	Pn	**Pn**	**16 10 26.7**	**+0.9**
	2.2nm,0.3s,baz=191,slow=10.0,SNR=35						
ASAJ				Sn	**Sn**	**16 11 12.3**	**-3.9**
	0.5nm,0.3s,baz=240,slow=20,SNR=2.4						
MAT	**Matsushiro**	**5.20**	**233**	P	**Pn**	**16 10 39.4**	**+1.4**
MAT				S	**Sn**	**16 11 41.2**	**+3.3**
MJAR	**Matsushiro Arr**	**5.20**	**233**	Pn	**Pn**	**16 10 39.7**	**+1.7**
	1.4nm,0.3s,baz=35,slow=13,SNR=17						
JHJ	**Hachijo jima 2**	**7.28**	**204**	Pn	**Pn**	**16 11 05.2**	**-1.2**
	9.8nm,0.3s,baz=9.6,slow=22,SNR=9.3						
JHJ				Sn	Sn	16 12 14.8	-14
	2.4nm,0.3s,baz=270,slow=20,SNR=1.4						
JHJ				LR	LR	16 14 09.0	
	comp=Z,24nm,20.9s,baz=88,slow=40						
USRK	**Ussuriysk Ar.**	**9.51**	**301**	Pn	Pn	16 11 42.0	+5.0
	0.5nm,0.3s,baz=90,slow=14,SNR=8.2						
USRK				LR	LR	16 15 08.4	
	comp=Z,79nm,18.2s,baz=25,slow=36						
JNU	**Nakatsue**	**12.05**	**240**	LR	LR	16 17 08.8	
	comp=Z,91nm,18.1s,baz=135,slow=39						
KSRS	**Korea Array**	**12.28**	**264**	LR	LR	16 16 41.2	
	comp=Z,65nm,18.4s,baz=60,slow=36						
KLR	**Kul'dur**	**12.51**	**323**	Pn	**Pn**	**16 12 18.6**	**+0.6**
	0.1nm,0.3s,baz=156,slow=20,SNR=2.5						
KLR				LR	LR	16 17 18.9	
	comp=Z,50nm,20.7s,baz=122,slow=38						
MA2	**Magadan**	**20.32**	**11**	P	**P**	**16 13 57.3**	**+1.3**
	4.5nm,0.5s,baz=217,slow=13,SNR=6.1						
SEY	**Seymchan**	**23.77**	**10**	P	**P**	**16 14 32.6**	**+0.2**
	2.0nm,0.6s,baz=162,slow=12,SNR=10						
SONM	**Songino Array**	**27.61**	**299**	P	**P**	**16 15 06.7**	**-0.9**
	0.7nm,0.5s,baz=98,slow=8.9,SNR=3.2						
H11N2	**WAKE ISLAND Hy 28.47 128**			T	T	16 45 23.0	
	baz=320,slow=76,SNR=29						
H11N1	**WAKE ISLAND Hy 28.48 128**			T	T	16 45 13.4	
	baz=320,slow=76,SNR=28						
H11N3	**WAKE ISLAND Hy 28.49 128**			T	T	16 45 20.0	
	baz=320,slow=76,SNR=32						
H11S1	**WAKE ISLAND Hy 29.29 130**			T	T	16 46 15.2	
	baz=322,slow=76,SNR=7.0						
H11S3	**WAKE ISLAND Hy 29.30 130**			T	T	16 46 16.3	
	baz=322,slow=76,SNR=7.9						
H11S2	**WAKE ISLAND Hy 29.31 130**			T	T	16 46 19.5	
	baz=322,slow=76,SNR=8.1						
ZALV	**Zalesovo Beam**	**41.21**	**310**	P	**P**	**16 17 05.1**	**+0.4**
	2.5nm,0.4s,baz=94,slow=8.1,SNR=9.9						
MKAR	**Makanchi Array**	**43.97**	**300**	P	**P**	**16 17 27.6**	**+0.3**
	0.9nm,0.6s,baz=83,slow=9.9,SNR=9.7						
MKAR				LR	LR	16 36 52.4	
	comp=Z,26nm,19.0s,baz=26,slow=38						
KURBB	**Kurchatov Arra**	**45.53**	**306**	P	**P**	**16 17 39.5**	**0.0**
	1.6nm,0.5s,baz=80,slow=8.6,SNR=13						
ILAR	**Eielson Array**	**46.33**	**34**	P	**P**	**16 17 45.8**	**+0.1**
	0.5nm,0.8s,baz=242,slow=5.5,SNR=4.6						
BVAR	**Borovoye Array**	**49.85**	**111**	P	**P**	**16 18 13.2**	**+0.1**
	1.3nm,0.5s,baz=71,slow=11,SNR=9.0						
INK	**Inuvik**	**51.22**	**28**	P	**P**	**16 18 24.4**	**+1.3**
	0.5nm,0.4s,baz=270,slow=6.1,SNR=5.6						
WRA	**Warramunga Arr**	**60.05**	**190**	P	**P**	**16 19 25.8**	**-1.3**
	0.6nm,0.9s,baz=5.9,slow=6.8,SNR=5.1						
ASAR	**Alice Springs**	**63.77**	**190**	P	**P**	**16 19 51.3**	**-0.8**
	0.3nm,0.7s,baz=10,slow=5.7,SNR=4.9						
FINES	**FINESS Array B**	**67.05**	**332**	P	**P**	**16 20 13.1**	**+0.2**
	1.9nm,0.7s,baz=47,slow=8.4,SNR=5.2						
NOA	**NORSAR Array B**	**72.19**	**338**	P	**P**	**16 20 42.9**	**-1.8**
	0.7nm,0.7s,baz=48,slow=5.7,SNR=3.1						

*NIED **18** 16:38:00, 40°.20N×144°.30E, h5km, Mw3.9 Best double couple: M0≈8.14000×10^14 NP1:φs=5.00000°, δ27.00000°, λ-83.00000°. NP2:φs=177.00000°, δ63.00000°, λ-94.00000°.*
*IDC **18** 16:38:16.1±0.7, 40°.06N×144°.49E, h0km, mb3.7/13, mb1 3.9/17, mb1mx3.8/38, mbtmp3.8/17, ML3.5/3, MS2.8/6, Ms1 2.8/6, ms1mx2.6/50, Error ellipse: s-maj=20.2km s-min=15.1km az=113.0*
*ISCJB **18** 16:38:19.5±0.5, 40°.17N±0°.03×144°.37E±0°.04, h34km, mb3.8/14, Error ellipse: s-maj=5.4km s-min=3.5km az=35.3*
*JMA **18** 16:38:19.7±0.2, 40°.18N×144°.32E, h42km, M3.8*
ISC 18 16:38:21.2±0.7, 40°.16N±0°.05×144°.44E±0°.06, h34km, n37, σ1°.57/51, mb3.8/14, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.99**	**264**	P	**Pn**	**16 38 50.5**	**-1.9**
MIYJ	**Miyakonagasawa**	**2.10**	**255**	P	**Pn**	**16 38 52.4**	**-1.5**
MIYJ				*eS*	**Sn**	**16 39 16.2**	**-2.6**
JANG	**Nango**	**2.25**	**276**	P	**Pn**	**16 38 54.5**	**-1.4**
JANG				S	**Sn**	**16 39 19.6**	**-2.9**
JNBK	**Urakawa-nobuka**	**2.47**	**330**	P	**Pn**	**16 38 58.8**	**-0.2**
JNBK				S	**Sn**	**16 39 28.9**	**+1.0**
JOM	**Ohasama**	**2.52**	**255**	P	**Pn**	**16 38 58.9**	**-0.8**
JOM				*eS*	**Sn**	**16 39 27.2**	**-2.0**
JCH	**Churui**	**2.58**	**342**	P	**Pn**	**16 38 59.5**	**-1.0**
JCH				S	**Sn**	**16 39 29.4**	**-1.3**
JMK	**Ichinoseki**	**2.77**	**245**	P	**Pn**	**16 39 01.9**	**-1.2**
JAK	**Akkeshi**	**2.84**	**4**	P	**Pn**	**16 39 02.7**	**-1.4**
JAK				*eS*	**Sn**	**16 39 35.8**	**-1.2**
JOT	**Ohata**	**2.85**	**296**	P	**Pn**	**16 39 03.5**	**-0.7**
JOT				*eS*	**Sn**	**16 39 35.5**	**-1.8**
JKB	**Kayabe**	**3.10**	**305**	P	**Pn**	**16 39 07.3**	**-0.3**
JKB				S	**Sn**	**16 39 42.1**	**-1.4**
JAR	**Ashorobuto**	**3.17**	**351**	P	**Pn**	**16 39 07.3**	**-1.4**
JAR				*eS*	**Sn**	**16 39 43.1**	**-2.2**
NEM2	**Nemuro 2**	**3.35**	**17**	P	**Pn**	**16 39 08.8**	**-2.2**
NEM2				S	**Sn**	**16 39 45.8**	**-3.7**
JYK	**Kaneyama**	**3.39**	**250**	P	**Pn**	**16 39 11.0**	**-0.7**
JYK				*eS*	**Sn**	**16 39 49.6**	**-1.1**
JEW	**Eniwo**	**3.49**	**321**	P	**Pn**	**16 39 13.6**	**+0.6**
JEW				S	**Sn**	**16 39 54.0**	**+0.8**
JTKR	**Abashiri--Toko**	**3.83**	**354**	P	**Pn**	**16 39 17.3**	**-0.3**
JTKR				S	**Sn**	**16 40 00.2**	**-1.2**
ASAJ	**Asahikawa**	**4.18**	**342**	Pn	**Pn**	**16 39 22.3**	**-0.3**
	1.8nm,0.3s,baz=202,slow=12,SNR=19						
ASAJ				Sn	**Sn**	**16 40 06.4**	**-3.8**
	1.5nm,0.3s,baz=154,slow=16,SNR=3.9						
MJAR	**Matsushiro Arr**	**6.08**	**236**	Pn	**Pn**	**16 39 47.9**	**-0.8**
	0.9nm,0.3s,baz=39,slow=13,SNR=8.6						
MJAR				Sn	**Sn**	**16 40 55.7**	**-1.5**
	baz=76,slow=10,SNR=2.2						
MJAR				LR	LR	16 42 23.8	
	comp=Z,98nm,19.1s,baz=60,slow=41						
MAT	**Matsushiro**	**6.08**	**236**	P	**Pn**	**16 39 48.4**	**-0.3**
MAT				*eS*	**Sn**	**16 40 58.6**	**+1.4**
JHJ	**Hachijo jima 2**	**7.96**	**209**	Pn	**Pn**	**16 40 10.4**	**-4.0**
	2.6nm,0.3s,baz=313,slow=22,SNR=2.6						
JHJ				Sn	Sn	16 41 31.6	-12
	6.5nm,0.3s,baz=66,slow=22,SNR=4.9						
JHJ				LR	LR	16 43 30.5	
	comp=Z,14nm,18.4s,baz=92,slow=40						
USRK	**Ussuriysk Ar.**	**10.08**	**298**	Pn	**Pn**	**16 40 43.6**	**+0.1**
	0.2nm,0.3s,baz=174,slow=28,SNR=3.5						
USRK				LR	LR	16 44 30.0	
	comp=Z,64nm,20.1s,baz=87,slow=37						
KLR	**Kul'dur**	**12.78**	**319**	LR	LR	16 46 01.9	
	comp=Z,58nm,19.8s,baz=154,slow=36						
JNU	**Nakatsue**	**12.95**	**241**	LR	LR	16 46 20.6	
	comp=Z,58nm,20.3s,baz=288,slow=38						
KSRS	**Korea Array**	**13.16**	**263**	LR	LR	16 46 10.5	
	comp=Z,61nm,18.1s,baz=66,slow=36						
SEY	**Seymchan**	**23.30**	**9**	P	**P**	**16 43 24.9**	**-0.7**
	3.2nm,0.7s,baz=199,slow=8.7,SNR=14						
ZALV	**Zalesovo Beam**	**41.65**	**310**	P	**P**	**16 46 06.8**	**+0.9**
	0.5nm,0.4s,baz=86,slow=7.9,SNR=2.6						
ZALV				PcP	**PcP**	**16 48 03.0**	**+0.8**
	0.8nm,0.5s,baz=100,slow=2.9,SNR=4.0						
MKAR	**Makanchi Array**	**44.54**	**300**	P	**P**	**16 46 30.2**	**+0.7**
	0.2nm,0.4s,baz=85,slow=11,SNR=3.6						
ILAR	**Eielson Array**	**45.58**	**34**	P	**P**	**16 46 36.5**	**-1.0**
	0.4nm,0.7s,baz=263,slow=7.2,SNR=4.2						
INK	**Inuvik**	**50.52**	**28**	P	**P**	**16 47 16.9**	**+1.3**
	0.8nm,0.5s,baz=318,slow=6.0,SNR=8.1						
YKA	**Yellowknife Ar**	**59.91**	**32**	P	**P**	**16 48 24.3**	**+1.0**
	5.3nm,1.0s,baz=298,slow=6.3,SNR=4.1						
WRA	**Warramunga Arr**	**60.53**	**191**	P	**P**	**16 48 26.9**	**-1.1**
	0.8nm,0.7s,baz=6.9,slow=6.8,SNR=9.0						
ASAR	**Alice Springs**	**64.25**	**191**	P	**P**	**16 48 52.5**	**-0.3**
	0.6nm,0.7s,baz=17,slow=7.5,SNR=9.8						
FINES	**FINESS Array B**	**67.14**	**333**	P	**P**	**16 49 11.3**	**+0.2**
	1.8nm,0.8s,baz=207,slow=2.1,SNR=4.0						
NVAR	**Mina Array Bea**	**71.24**	**55**	P	**P**	**16 49 38.3**	**+1.1**
	0.7nm,0.7s,baz=282,slow=7.4,SNR=4.6						
NOA	**NORSAR Array B**	**72.19**	**338**	P	**P**	**16 49 43.3**	**+1.0**
	0.6nm,0.7s,baz=40,slow=5.8,SNR=3.3						
AKASG	**Malin Array Be**	**73.25**	**323**	P	**P**	**16 49 49.4**	**+0.8**
	0.7nm,0.5s,baz=49,slow=5.9,SNR=4.1						
PDAR	**Pinedale Array**	**73.80**	**47**	P	**P**	**16 49 52.6**	**+0.2**
	0.3nm,0.7s,baz=264,slow=2.7,SNR=3.1						
TXAR	**Lajitas Array**	**86.36**	**54**	P	**P**	**16 51 00.8**	**+0.6**
	0.4nm,0.7s,baz=310,slow=5.6,SNR=4.8						

*IDC **18** 16:44:41.7±1.1, 26°.87N×143°.71E, h0km, mb3.7/4, mb1 3.9/6, mb1mx3.6/37, mbtmp3.8/6, ML3.8/2, Error ellipse: s-maj=28.2km s-min=20.2km az=75.0*
ISC 18 16:44:47.1±1.1, 26°.8N±0°.2×143°.6E±0°.1, h35km, n8, σ0°.78/7, mb3.6/4, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCJ	**Chichijima**	**1.27**	**283**	Pn	**Pn**	**16 45 09.1**	**+0.7**
	6.4nm,0.3s,baz=192,slow=20,SNR=26						
JCJ				Sn	**Sn**	**16 45 23.2**	**-1.0**
	30nm,0.3s,baz=286,slow=20,SNR=14						
JHJ	**Hachijo jima 2**	**7.09**	**333**	Pn	Pn	16 46 24.6	-3.8
	3.6nm,0.3s,baz=65,slow=19,SNR=3.7						
JHJ				Sn	Sn	16 47 37.9	-10
	2.5nm,0.3s,baz=55,slow=19,SNR=2.7						
MJAR	**Matsushiro Arr**	**10.72**	**336**	Pn	Pn	16 47 14.4	-3.8
	1.1nm,0.3s,baz=160,slow=12,SNR=9.5						
WRA	**Warramunga Arr**	**47.33**	**192**	P	**P**	**16 53 17.7**	**+0.1**
	2.5nm,0.7s,baz=10,slow=8.3,SNR=26						
ASAR	**Alice Springs**	**51.05**	**191**	P	**P**	**16 53 46.0**	**0.0**
	0.4nm,0.6s,baz=8.4,slow=5.6,SNR=13						
MKAR	**Makanchi Array**	**51.61**	**310**	P	**P**	**16 53 50.5**	**+0.4**
	0.3nm,0.5s,baz=92,slow=8.2,SNR=4.7						
ILAR	**Eielson Array**	**57.37**	**28**	P	**P**	**16 54 31.5**	**-0.1**
	0.4nm,0.9s,baz=263,slow=4.9,SNR=4.3						
LPAZ	**La Paz**	**148.79**	**77**	PKPbc	**PKPbc**	**17 04 31.6**	**-0.8**
	1.3nm,0.9s,baz=228,slow=4.9,SNR=4.4						

*NIED **18** 16:56:00, 39°.50N×143°.90E, h17km, Mw4.2 Best double couple: M0≈2.54000×10^15 NP1:φs=198.00000°, δ35.00000°, λ84.00000°. NP2:φs=25.00000°, δ55.00000°, λ94.00000°.*
*JMA **18** 16:56:48.8±0.2, 39°.50N×143°.88E, h4km, M4.9*
*ISCJB **18** 16:56:50.4±0.4, 39°.39N±0°.03×143°.81E±0°.04, h11km, mb4.2/30, MS3.4/3, Error ellipse: s-maj=5.2km s-min=4.2km az=136.2*
*IDC **18** 16:56:51.6±0.6, 39°.43N×143°.59E, h0km, mb4.0/21, mb1 4.2/29, mb1mx4.1/47, mbtmp4.1/29, ML3.5/8, MS3.4/9, Ms1 3.4/9, ms1mx3.0/54, Error ellipse: s-maj=15.2km s-min=12.0km az=124.0*
*NEIC **18** 16:56:57.0±0.4, 39°.48N×143°.53E, h35km, mb4.6/10, Error ellipse: s-maj=7.7km s-min=4.9km az=124.0*
ISC 18 16:56:53.5±0.6, 39°.50N±0°.05×143°.61E±0°.05, h11km, n76, σ0°.89/73, mb4.2/30, MS3.5/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**1.39**	**274**	P	**Pn**	**16 57 17.9**	**-0.9**
MIYJ				*eS*	**Sn**	**16 57 37.6**	**+0.5**
JTH	**Tanohata**	**1.42**	**288**	P	**Pn**	**16 57 18.1**	**-1.1**
JTH				*eS*	**Sg**	**16 57 39.2**	**+0.1**
OFUJ	**Ofunato**	**1.57**	**255**	P	**Pn**	**16 57 20.5**	**-0.7**
JOM	**Ohasama**	**1.80**	**270**	P	**Pn**	**16 57 24.2**	**-0.2**
JKZ	**Kuzumaki**	**1.82**	**286**	S	**Sg**	**16 57 51.5**	**-0.6**
JANG	**Nango**	**1.83**	**299**	P	**Pn**	**16 57 23.5**	**-1.4**
JMK	**Ichinoseki**	**1.94**	**254**	P	**Pn**	**16 57 26.0**	**-0.3**
JIO	**Ouri**	**2.05**	**240**	P	**Pn**	**16 57 27.0**	**-0.9**
JRG	**Rokugo**	**2.31**	**268**	P	**Pn**	**16 57 31.5**	**+0.1**
JRG				*eS*	**Sb**	**16 58 03.2**	**-0.4**
JTM	**Tenmabayashi**	**2.33**	**304**	P	**Pn**	**16 57 31.2**	**-0.6**
JAH	**Hinai**	**2.39**	**288**	P	**Pn**	**16 57 32.7**	**+0.1**
JAH				*eS*	**Sb**	**16 58 06.5**	**+0.5**
ERM	**Erimo**	**2.53**	**352**	*eP*n	**Pn**	**16 57 34.5**	**0.0**
JOU	**Okura**	**2.56**	**245**	P	**Pn**	**16 57 34.8**	**-0.2**
JYK	**Kaneyama**	**2.59**	**258**	P	**Pn**	**16 57 35.6**	**+0.2**
JMM	**Marumori**	**2.75**	**234**	P	**Pn**	**16 57 36.5**	**-0.9**
JFK	**Kawauchi**	**3.03**	**226**	P	**Pn**	**16 57 39.9**	**-1.5**
ASAJ	**Asahikawa**	**4.67**	**351**	Pn	**Pn**	**16 58 04.8**	**+0.9**
	2.6nm,0.3s,baz=193,slow=11,SNR=34						
ASAJ				Sn	**Sn**	**16 58 58.4**	**+0.3**
MAJO	**Matsushiro**	**5.19**	**237**	*eP*n	**Pn**	**16 58 12.3**	**+1.2**
	132nm,0.6s						
MAT	**Matsushiro**	**5.19**	**237**	P	**Pn**	**16 58 12.2**	**+1.1**
MAT				S	**Sn**	**16 59 14.1**	**+3.2**
MJAR	**Matsushiro Arr**	**5.19**	**237**	Pn	**Pn**	**16 58 10.9**	**-0.2**
	6.2nm,0.3s,baz=42,slow=12,SNR=155						
MJAR				Sn	**Sn**	**16 59 12.4**	**+1.5**
	baz=36,slow=17,SNR=2.1						
MJAR				LR	LR	17 00 25.3	
	comp=Z,244nm,19.8s,baz=75,slow=42						
JHJ2	**Mitsune**	**7.07**	**207**	*eP*n	**Pn**	**16 58 35.2**	**-1.8**
JHJ	**Hachijo jima 2**	**7.08**	**207**	Pn	**Pn**	**16 58 34.7**	**-2.3**
	14nm,0.3s,baz=306,slow=23,SNR=12						
JHJ				Sn	Sn	16 59 49.0	-8.4
	22nm,0.3s,baz=75,slow=20,SNR=4.5						
USRK	**Ussuriysk Ar.**	**9.86**	**302**	Pn	**Pn**	**16 59 16.5**	**+1.4**
	0.5nm,0.3s,baz=88,slow=13,SNR=23						
USRK				LR	LR	17 02 53.6	
	comp=Z,126nm,20.2s,baz=106,slow=37						
MDJ	**Mudanjiang**	**11.60**	**301**	*eP*n	**Pn**	**16 59 39.0**	**0.0**
	6.2nm,0.7s						
JNU	**Nakatsue**	**12.08**	**242**	Pn	**Pn**	**16 59 45.4**	**-0.2**
	0.1nm,0.3s,baz=74,slow=10,SNR=5.1						
JNU				LR	LR	17 04 52.0	
	comp=Z,337nm,18.3s,baz=106,slow=40						
CBIJ	**Chichi jima**	**12.43**	**186**	Pn	Pn	16 59 47.0	-3.4
CBIJ				Sn	Sn	17 01 52.8	-16
JCJ	**Chichijima**	**12.43**	**186**	Pn	Pn	16 59 47.0	-3.4
	1.5nm,0.3s,baz=263,slow=17,SNR=2.7						
JCJ				Sn	Sn	17 01 52.8	-16
	2.3nm,0.3s,baz=291,slow=22,SNR=2.6						
KSRS	**Korea Array**	**12.47**	**266**	Pn	**Pn**	**16 59 52.0**	**+1.2**
	0.2nm,0.3s,baz=76,slow=14,SNR=8.4						
KSRS				LR	LR	17 04 18.9	
	comp=Z,165nm,18.5s,baz=78,slow=36						
KSAR	**Wonju Array Be**	**12.50**	**265**	Pn	**Pn**	**16 59 52.0**	**+0.8**
KLR	**Kul'dur**	**12.89**	**323**	Pn	**Pn**	**16 59 55.5**	**-1.0**
	0.1nm,0.3s,baz=132,slow=14,SNR=8.3						
KLR				LR	LR	17 05 02.9	
	comp=Z,183nm,19.1s,baz=122,slow=38						
PETK	**Petropavlovsk-**	**16.69**	**31**	LR	LR	17 08 33.7	
	comp=Z,44nm,18.4s,baz=208,slow=42						
MA2	**Magadan**	**20.60**	**10**	P	**P**	**17 01 33.3**	**+1.0**
	8.3nm,0.7s,baz=215,slow=10,SNR=11						
MA2	**Magadan**	**20.60**	**10**	*eP*	**P**	**17 01 33.2**	**+0.9**
	34nm,0.8s						
SEY	**Seymchan**	**24.05**	**10**	P	**P**	**17 02 08.7**	**+0.3**
	3.1nm,0.7s,baz=194,slow=9.4,SNR=18						
YAK	**Yakutsk**	**24.11**	**344**	P	**P**	**17 02 07.5**	**-1.4**
	0.6nm,0.3s,baz=144,slow=19,SNR=5.2						
YAK				LR	LR	17 11 30.9	
	comp=Z,54nm,18.8s,baz=134,slow=36						
YAK	**Yakutsk**	**24.11**	**344**	*eP*	**P**	**17 02 07.7**	**-1.2**
ULN	**Ulaanbaatar**	**27.52**	**300**	*eP*	**P**	**17 02 40.1**	**0.0**
	9.7nm,1.1s						
SONM	**Songino Array**	**27.96**	**300**	P	**P**	**17 02 44.5**	**+0.5**
	2.1nm,0.6s,baz=104,slow=9.3,SNR=11						
SONM				LR	LR	17 14 26.2	
	comp=Z,121nm,19.8s,baz=84,slow=38						
H11N2	**WAKE ISLAND Hy 28.11 128**			T	T	17 32 16.0	
	baz=318,slow=76						
H11N1	**WAKE ISLAND Hy 28.11 128**			T	T	17 32 16.0	
	baz=318,slow=76						
H11N3	**WAKE ISLAND Hy 28.12 128**			T	T	17 32 16.0	
	baz=318,slow=76						
H11S1	**WAKE ISLAND Hy 28.92 130**			T	T	17 33 16.5	
	baz=317,slow=74						
H11S3	**WAK

*GCMT **18** 17:15:56.1±0.4,39.°59N×144.°41E,h16km±1km,MW4.8/63, Moment Tensor Solution. s11,c11; s63,c97; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-1.46±.17; $M_{\theta\theta}$-0.18±.10; $M_{\phi\phi}$1.64±.11; $M_{r\theta}$-1.11±.35; $M_{\theta\phi}$-0.74±.06; $M_{r\phi}$1.10±.27; Best double couple: $M_0$2.31800×10^{16} NP1:ϕ_S142.00000°,δ68.00000°,λ-109.00000°. NP2: ϕ_S3.00000°,δ29.00000°,λ-52.00000°. Principal axes: T 2.4310, Plg21.0000°, Azm245.0000°; N -0.2290, Plg17.0000°, Azm149.0000°; P -2.2050, Plg63.0000°, Azm22.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

*BJI **18** 17:15:56.0,39.°81N×144.°07E,h31km,mb4.8/70,mB4.9/48, Ms4.3/71,Ms7 4.1/67*

ISC 18 17:15:55.0±0.3,39.°70N±0.°03×144.°43E±0.°03,h29km±1km, h29km:pP-P,n882,σ1$40/969,mb5.0/285,MS4.0/22, 21C-21D,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JTH	**Tanohata**	**1.99**	**278**	P	**Pn**	**17 16 24.8**	**-1.9**
MIYJ	**Miyakonagasawa**	**2.02**	**267**	P	**Pn**	**17 16 25.7**	**-1.4**
MIYJ				*e*S	**Sn**	**17 16 48.6**	**-2.8**
JANG	**Nango**	**2.34**	**288**	P	**Pn**	**17 16 29.5**	**-2.0**
JOM	**Ohasama**	**2.44**	**266**	P	**Pn**	**17 16 32.0**	**-0.9**
JOM				S	**Sn**	**17 16 59.5**	**-2.2**
ERM	**Erimo**	**2.51**	**338**	*i* P	**Pn**	**17 16 32.3**	**-1.5**
ERM				pmax	pmax		
	comp=Z,61nm,0.7s						
ERM	**Erimo**	**2.51**	**338**	*e*Pn	**Pn**	**17 16 32.5**	**-1.3**
JMK	**Ichinoseki**	**2.60**	**254**	P	**Pn**	**17 16 33.9**	**-1.2**
JMK				S	**Sn**	**17 17 02.8**	**-2.9**
JNBK	**Urakawa-nobuka**	**2.88**	**334**	*e*S	**Sn**	**17 17 11.7**	**-0.7**
JCH	**Churui**	**3.02**	**345**	P	**Pn**	**17 16 39.2**	**-1.7**
JCH				*e*S	**Sn**	**17 17 12.4**	**-3.7**
JOT	**Ohata**	**3.08**	**304**	P	**Pn**	**17 16 40.5**	**-1.1**
JOT				*e*S	**Sn**	**17 17 14.2**	**-3.3**
JYK	**Kaneyama**	**3.26**	**257**	P	**Pn**	**17 16 43.5**	**-0.6**
JYK				*e*S	**Sn**	**17 17 21.1**	**-0.8**
JAK	**Akkeshi**	**3.30**	**3**	P	**Pn**	**17 16 42.6**	**-2.1**
JAK				S	**Sn**	**17 17 19.5**	**-3.4**
JKB	**Kayabe**	**3.38**	**311**	P	**Pn**	**17 16 44.9**	**-0.9**
JKB				S	**Sn**	**17 17 22.3**	**-2.7**
NEM2	**Nemuro 2**	**3.79**	**15**	P	**Pn**	**17 16 48.6**	**-2.8**
NEM2				S	**Sn**	**17 17 29.5**	**-5.5**
JTKR	**Abashiri--Toko**	**4.29**	**355**	P	**Pn**	**17 16 56.7**	**-1.5**
JTKR				S	**Sn**	**17 17 43.4**	**-3.8**
JOSM	**Okushiri--Mats**	**4.45**	**304**	P	**Pn**	**17 16 59.5**	**-1.0**
YUK	**Yuzh-Kuril'sk**	**4.46**	**13**	*i* P	**Pn**	**17 16 59.0**	**-1.6**
YUK				*i* S	**Sn**	**17 17 45.9**	**-5.6**
YUK				pmax	pmax		
	comp=N,76nm,0.2s						
YUK				pmax	pmax		
	comp=E,146nm,0.2s						
YUK				pmax	pmax		
	comp=Z,369nm,0.2s						
YUK				MLR	MLR		
	comp=Z,1μm,15.0s						
YUK				MLR	MLR		
	comp=E,1μm,10.0s						
YUK				MLR	MLR		
	comp=N,1μm,13.0s						
JHR	**Hokuryu**	**4.52**	**334**	P	**Pn**	**17 17 02.7**	**+1.2**
JHR				*e*S	**Sn**	**17 17 54.2**	**+1.2**
SHO	**Shikotan**	**4.54**	**22**	*i* P	**Pn**	**17 16 58.3**	**-3.4**
SHO				*i* S	**Sn**	**17 17 47.4**	**-6.0**
SHO				pmax	pmax		
	comp=Z,491nm,0.6s						
SHO				pmax	pmax		
	comp=N,268nm,0.4s						
SHO				pmax	pmax		
	comp=E,284nm,0.5s						
ASAJ	**Asahikawa**	**4.62**	**343**	Pn	**Pn**	**17 17 02.8**	**0.0**
	comp=E,9.4nm,0.3s,baz=200,slow=15,SNR=62						
ASAJ				Sn	**Sn**	**17 17 52.8**	**-2.8**
	comp=E,18nm,0.3s,baz=336,slow=18,SNR=9.5						
ASAJ				LR	LR	17 19 24.3	
	comp=E,904nm,18.5s,baz=148,slow=45						
MAJO	**Matsushiro**	**5.83**	**239**	*e*P	**Pn**	**17 17 19.4**	**-0.2**
MAJO	**Matsushiro**	**5.83**	**239**	*e*Pn	**Pn**	**17 17 19.4**	**-0.2**
MAT	**Matsushiro**	**5.83**	**239**	P	**Pn**	**17 17 19.2**	**-0.4**
MAT				*e*S	**Sn**	**17 18 23.6**	**-1.9**
MJAR	**Matsushiro Arr**	**5.83**	**239**	Pn	**Pn**	**17 17 19.2**	**-0.4**
	comp=E,25nm,0.3s,baz=54,slow=12,SNR=458						
MJAR				Sn	**Sn**	**17 18 27.4**	**+1.9**
	baz=336,slow=24,SNR=2.3						
MJAR				LR	LR	17 19 51.3	
	comp=E,1μm,19.6s,baz=60,slow=42						
MJB9	**Matsu-Tunnel**	**5.83**	**239**	*e*Pn	**Pn**	**17 17 19.3**	**-0.2**
KUR	**Kuril'sk**	**6.08**	**24**	*ce*P	**Pn**	**17 17 20.9**	**-2.0**
KUR				*i* S	**Sn**	**17 18 25.4**	**-6.1**
KUR				pmax	pmax		
	comp=Z,345nm,2.7s						
KUR				pmax	pmax		
	comp=E,63nm,0.5s						
KUR				pmax	pmax		
	comp=Z,165nm,0.5s						
KUR				pmax	pmax		
	comp=N,59nm,0.5s						
KUR				smax	smax		
	comp=E,214nm,0.7s						
KUR				smax	smax		
	comp=N,167nm,0.4s						
KUR				smax	smax		
	comp=N,663nm,2.7s						
KUR				smax	smax		
	comp=E,357nm,2.7s						
INU	**Inuyama**	**7.32**	**236**	*e*Pn	**Pn**	**17 17 38.9**	**-1.0**
YSS	**Yuzh-Sakhalins**	**7.35**	**351**	⇑*i*P	**Pn**	**17 17 39.7**	**-0.6**
YSS				*e*S	**Sn**	**17 18 55.0**	**-7.7**
YSS				pmax	pmax		
	comp=Z,30nm,0.7s						
YSS				MLR	MLR		
	comp=Z,900nm,14.0s						
YSS				MLR	MLR		
	comp=N,1μm,13.0s						
JHJ2	**Mitsune**	**7.55**	**211**	*e*Pn	**Pn**	**17 17 38.5**	**-4.7**
JHJ	**Hachijo jima 2**	**7.56**	**211**	Pn	**Pn**	**17 17 39.0**	**-4.3**
	comp=N,32nm,0.3s,baz=338,slow=22,SNR=28						
JHJ				Sn	Sn	17 18 58.2	-10
	comp=N,50nm,0.3s,baz=44,slow=23,SNR=8.7						
UGL	**Uglegorsk**	**9.53**	**351**	*e*P	Pn	17 18 20.0	+10
UGL				pmax	pmax		
	comp=Z,82nm,0.9s						
UGL				MLR	MLR		
	comp=Z,1μm,16.0s						
UGL				MLR	MLR		
	comp=N,900nm,17.0s						
UGL				MLR	MLR		
	comp=E,400nm,13.0s						
VLA	**Vladivostok**	**10.03**	**294**	*e*P	**Pn**	**17 18 18.1**	**+1.1**
USRK	**Ussuriysk Ar.**	**10.30**	**300**	Pn	**Pn**	**17 18 21.7**	**+1.0**
	comp=E,2.4nm,0.3s,baz=105,slow=14,SNR=54						
USRK				LR	LR	17 22 18.1	
	comp=E,415nm,20.7s,baz=111,slow=37						
TYV	**Tymovskoe**	**11.23**	**354**	*e*P	**Pn**	**17 18 34.8**	**+1.3**
TYV				pmax	pmax		
	comp=Z,44nm,1.0s						
MDJ	**Mudanjiang**	**12.06**	**299**	P	**Pn**	**17 18 45.4**	**+0.6**
MDJ				S	**Sn**	**17 20 57.6**	**-0.6**
MDJ				pmax	pmax		
	comp=Z,59nm,1.0s						
MDJ				pmax	pmax		
	comp=Z,110nm,6.5s						
MDJ				LR	LR		
	comp=Z,630nm,17.8s						
MDJ				LR	LR		
	comp=Z,320nm,20.4s						
MDJ				LR	LR		
	comp=Z,630nm,15.8s						
MDJ	**Mudanjiang**	**12.06**	**299**	*e*Pn	**Pn**	**17 18 44.9**	**+0.1**
CBIJ	**Chichi jima**	**12.71**	**189**	Pn	Pn	17 18 46.6	-7.1
CBIJ				Sn	Sn	17 20 57.7	-17
JCJ	**Chichijima**	**12.71**	**189**	Pn	Pn	17 18 46.6	-7.1
	comp=Z,8.0nm,0.3s,baz=1.5,slow=20,SNR=18						
JCJ				Sn	Sn	17 20 57.7	-17
	comp=Z,11nm,0.3s,baz=300,slow=23,SNR=6.6						
JNU	**Nakatsue**	**12.73**	**243**	Pn	**Pn**	**17 18 51.5**	**-2.7**
	comp=Z,1.1nm,0.3s,baz=37,slow=16,SNR=19						
JNU				LR	LR	17 24 11.4	
	comp=Z,837nm,19.9s,baz=61,slow=38						
KSRS	**Korea Array**	**13.12**	**265**	Pn	**Pn**	**17 18 59.4**	**+0.2**
	comp=Z,1.0nm,0.3s,baz=70,slow=14,SNR=21						
KSRS				LR	LR	17 24 21.3	
	comp=Z,388nm,18.3s,baz=68,slow=39						
KLR	**Kul'dur**	**13.13**	**321**	Pn	**Pn**	**17 18 58.5**	**-1.0**
	comp=Z,0.2nm,0.3s,baz=125,slow=11,SNR=21						
KLR				LR	LR	17 24 37.4	
	comp=Z,375nm,19.1s,baz=140,slow=40						
KS01	**Wonju Array Si**	**13.13**	**266**	*e*Pn	**Pn**	**17 18 59.5**	**0.0**
KS15	**Wonju Array Si**	**13.15**	**265**	*e*Pn	**Pn**	**17 19 01.6**	**+1.9**
KSAR	**Wonju Array Be**	**13.15**	**265**	P	**Pn**	**17 18 59.4**	**-0.3**
KSAR	**Wonju Array Be**	**13.15**	**265**	Pn	**Pn**	**17 18 59.4**	**-0.3**
TJN	**Taejon**	**13.86**	**262**	*c i* P	**Pn**	**17 19 08.2**	**-1.2**
CN2	**Changchun**	**14.75**	**292**	*e*P	**Pn**	**17 19 20.8**	**-0.7**
CN2				*es*P	P	17 19 35.9	+8.7
CN2				*e*S	**Sn**	**17 22 02.0**	**-1.9**
CN2				pmax	pmax		
	comp=Z,10.0nm,1.1s						
CN2				LR	LR		
	comp=Z,300nm,17.0s						
CN2				LR	LR		
	comp=Z,400nm,17.0s						
CN2				LR	LR		
	comp=Z,500nm,18.0s						
SNY	**Shenyang**	**15.94**	**284**	⇓P	**Pn**	**17 19 36.1**	**-1.1**
SNY				pP	**pP**	**17 19 44.6**	**-3.6**
SNY				S	**Sn**	**17 22 34.8**	**+1.9**
SNY				pmax	pmax		
	comp=Z,21nm,1.3s						
SNY				pmax	pmax		
	comp=Z,190nm,12.0s						
SNY				LR	LR		
	comp=Z,240nm,15.7s						
SNY				LR	LR		
	comp=Z,570nm,15.7s						
SNY				LR	LR		
	comp=Z,740nm,16.5s						
PEA0	**Petropavlovsk-**	**16.20**	**30**	*e*Pn	**P**	**17 19 43.7**	**+0.5**
PEA0B	**Petropavlovsk-**	**16.20**	**30**	*e*Pn	**P**	**17 19 43.2**	**0.0**
	comp=Z,64nm,1.1s						
PETK	**Petropavlovsk-**	**16.20**	**30**	Pn	**Pn**	**17 19 39.0**	**-1.3**
	comp=Z,0.2nm,0.3s,baz=198,slow=10,SNR=5.4						
PETK				LR	LR	17 25 24.9	
	comp=Z,68nm,21.5s,baz=222,slow=35						
PET	**Petropavlovsk**	**16.51**	**31**	*e*P	**P**	**17 19 46.5**	**-0.1**
PET				pmax	pmax		
	comp=Z,72nm,1.2s						
PET	**Petropavlovsk**	**16.51**	**31**	*e*Pn	**P**	**17 19 46.5**	**-0.1**
	comp=Z,72nm,1.2s						
HIA	**Hailar**	**19.97**	**307**	*e*P	**P**	**17 20 23.5**	**-1.3**
HIA				pmax	pmax		
	comp=Z,23nm,0.7s						
HIA	**Hailar**	**19.97**	**307**	*e*P	**P**	**17 20 23.5**	**-1.3**
	comp=Z,23nm,0.7s						
MA2	**Magadan**	**20.30**	**9**	P	**P**	**17 20 29.0**	**+0.8**
	comp=Z,34nm,0.7s,baz=219,slow=9.6,SNR=48						
MA2				LR	LR	17 29 38.9	
	comp=Z,105nm,18.1s,baz=214,slow=41						
MA2	**Magadan**	**20.30**	**9**	P	**P**	**17 20 29.0**	**+0.8**
MA2				pmax	pmax		
	comp=Z,34nm,0.7s						
MA2				MLR	MLR		
	comp=Z,105nm,18.1s						
MA2	**Magadan**	**20.30**	**9**	*e*P	**P**	**17 20 29.0**	**+0.8**
	comp=Z,152nm,0.8s						
CLNS	**Chul'man**	**21.39**	**330**	*e*P	**P**	**17 20 41.3**	**+1.2**
CLNS				pmax	pmax		
	comp=Z,18nm,1.1s						
CLNS				pmax	pmax		
	comp=N,27nm,1.2s						
CLNS				pmax	pmax		
	comp=E,16nm,0.9s						
CLNS				MLR	MLR		
	comp=Z,320nm,14.0s						
CLNS				MLR	MLR		
	comp=N,456nm,15.0s						
CLNS				MLR	MLR		
	comp=E,219nm,16.0s						
BJI	**Beijing**	**21.66**	**280**	P	**P**	**17 20 42.1**	**-1.0**
BJI				S	**S**	**17 24 40.1**	**-1.2**
BJI				pmax	pmax		
	comp=E,18nm,1.3s						
BJI				pmax	pmax		
	comp=E,88nm,3.8s						
BJI				LR	LR		
	comp=E,220nm,12.8s						
BJI				LR	LR		
	comp=E,440nm,16.3s						
BJI				LR	LR		
	comp=E,280nm,24.6s						
BJT	**Baijiatuau**	**21.67**	**280**	*e*P	**P**	**17 20 41.7**	**-1.5**
BJT				pmax	pmax		
	comp=Z,46nm,1.0s						
BJT	**Baijiatuau**	**21.67**	**280**	*e*P	**P**	**17 20 41.7**	**-1.5**
	comp=Z,46nm,1.0s						
TIA	**Tai'an**	**21.78**	**269**	⇓P	**P**	**17 20 42.4**	**-2.0**
TIA				pmax	pmax		
	comp=Z,40nm,1.0s						
TIA				LR	LR		
	comp=Z,180nm,10.9s						
TIA				LR	LR		
	comp=Z,790nm,14.3s						
TIA				LR	LR		
	comp=Z,950nm,13.7s						
NJ2	**Nanjing**	**22.04**	**258**	*e*P	**P**	**17 20 44.8**	**-2.4**
NJ2				S	**S**	**17 24 42.8**	**-6.0**
NJ2				pmax	pmax		
	comp=Z,21nm,1.0s						
NJ2				pmax	pmax		
	comp=Z,130nm,5.5s						
NJ2				LR	LR		
	comp=Z,610nm,15.7s						
NJ2				LR	LR		
	comp=Z,390nm,19.0s						
NJ2				LR	LR		
	comp=Z,380nm,17.4s						
SEY	**Seymchan**	**23.75**	**9**	P	**P**	**17 21 04.5**	**0.0**
	comp=Z,28nm,0.9s,baz=186,slow=7.7,SNR=71						
YAK	**Yakutsk**	**24.10**	**343**	P	**P**	**17 21 06.4**	**-1.4**
	comp=Z,1.6nm,0.5s,baz=330,slow=20,SNR=7.9						
YAK	**Yakutsk**	**24.10**	**343**	*e*P	**P**	**17 21 06.2**	**-1.6**
YAK				*e*		17 24 49.5	
YAK				*e*S	**S**	**17 25 17.4**	**-6.0**
YAK				*es*S	**SnSn**	**17 26 15.4**	**+10**
YAK				pmax	pmax		
	comp=N,18nm,1.3s						
YAK				pmax	pmax		
	comp=Z,35nm,0.9s						
YAK				pmax	pmax		
	comp=E,9.0nm,1.1s						
YAK				smax	smax		
	comp=E,83nm,2.3s						
YAK				smax	smax		
	comp=N,110nm,2.4s						
YAK	**Yakutsk**	**24.10**	**343**	*e*P	**P**	**17 21 06.4**	**-1.4**
	comp=N,70nm,0.9s						
TATO	**Taipei**	**24.23**	**240**	*e*P	**P**	**17 21 08.2**	**-1.0**
	comp=N,178nm,1.6s						
YHNB	**Yeheng**	**24.51**	**239**	*e*P	**P**	**17 21 10.8**	**-1.2**
	comp=N,20nm,0.8s						
CIT	**Chita**	**24.58**	**310**	*e*P	**P**	**17 21 12.5**	**+0.1**
CIT				*e*		17 21 20.3	
CIT				*e*		17 21 59.5	
CIT				*e*		17 25 36.2	
CIT				pmax	pmax		
	comp=Z,139nm,1.6s						
TIY	**Taiyuan**	**24.98**	**276**	*e*P	**P**	**17 21 17.8**	**+1.6**
TIY				pP	**sP**	**17 21 29.5**	**+1.3**
TIY				pmax	pmax		
	comp=Z,130nm,6.2s						
TIY				LR	LR		
	comp=Z,330nm,16.1s						
TIY				LR	LR		
	comp=Z,180nm,11.9s						
TIY				LR	LR		
	comp=Z,330nm,10.8s						
HHC	**Hu-ho-hao-te**	**25.03**	**283**	*e*P	**P**	**17 21 18.8**	**+2.2**
HHC				pP	sP	17 21 30.5	+1.9
HHC				PP	**PnPn**	**17 21 49.4**	**-1.0**
HHC				S	**S**	**17 25 32.0**	**-6.9**
HHC				SS	**SnSn**	**17 26 29.8**	**+1.0**
HHC				pmax	pmax		
	comp=Z,38nm,0.8s						
HHC				pmax	pmax		
	comp=Z,150nm,4.4s						
HHC				LR	LR		
	comp=Z,480nm,13.5s						
HHC				LR	LR		
	comp=Z,450nm,13.0s						
HHC				LR	LR		
	comp=Z,520nm,13.2s						
SSLB	**Suanglung**	**25.39**	**238**	*e*P	**P**	**17 21 19.2**	**-0.7**
	comp=Z,20nm,0.8s						
YULB	**Yu-li**	**25.45**	**237**	*e*P	**P**	**17 21 19.4**	**-0.9**
	comp=Z,16nm,0.8s						
TPUB	**Ta-pu**	**25.94**	**238**	*e*P	**P**	**17 21 25.0**	**+0.1**
	comp=Z,32nm,1.0s						
TWG	**Pinlang**	**26.00**	**237**	*e*P	**P**	**17 21 25.1**	**-0.3**
	comp=Z,136nm,0.9s						
WHN	**Wuhan**	**26.15**	**259**	⇑*i*P	**P**	**17 21 27.1**	**+0.4**
WHN				sP	**sP**	**17 21 38.8**	**+0.1**
WHN				S	**S**	**17 25 58.8**	**+2.2**
WHN				LR	LR		
	comp=Z,1μm,16.4s						
WHN				LR	LR		
	comp=Z,1μm,18.2s						
WHN				LR	LR		
	comp=Z,860nm,12.9s						
QZH	**Quanzhou**	**26.21**	**244**	P	P	17 21 20.0	-7.3
QZH				S	**S**	**17 25 51.0**	**-6.6**
BOD	**Bodaibo**	**26.69**	**323**	*e*P	**P**	**17 21 30.9**	**-0.4**
BOD				pmax	pmax		
	comp=Z,21nm,0.9s						
H11N2	**WAKE ISLAND Hy**	**27.73**	**129**	T	T	17 50 41.2	
	baz=318						
H11N1	**WAKE ISLAND Hy**	**27.74**	**129**	T	T	17 50 39.7	
	baz=318						
H11N3	**WAKE ISLAND Hy**	**27.75**	**129**	T	T	17 50 40.8	
	baz=318						
ULN	**Ulaanbaatar**	**27.97**	**299**	*e*P	**P**	**17 21 43.4**	**+0.2**
ULN				pmax	pmax		
	comp=Z,15nm,0.8s						
ULN	**Ulaanbaatar**	**27.97**	**299**	*e*P	**P**	**17 21 43.4**	**+0.2**
	comp=Z,16nm,0.8s						
SONA1	**Songino Array**	**28.41**	**299**	*e*P	**P**	**17 21 47.5**	**+0.5**
SONM	**Songino Array**	**28.41**	**299**	P	**P**	**17 21 47.6**	**+0.6**
	comp=Z,8.2nm,1.0s,baz=84,slow=8.4,SNR=19						
SONM				LR	LR	17 33 51.1	
	comp=Z,302nm,18.3s,baz=104,slow=38						
SONM	**Songino Array**	**28.41**	**299**	P	**P**	**17 21 47.6**	**+0.6**
SONM				pmax	pmax		
	comp=Z,9.0nm,1.0s						
SONM				MLR	MLR		
	comp=Z,302nm,18.3s						
H11S1	**WAKE ISLAND Hy**	**28.57**	**131**	T	T	17 51 45.1	
	baz=323,slow=76,SNR=7.2						
H11S3	**WAKE ISLAND Hy**	**28.57**	**131**	T	T	17 51 43.2	
	baz=323,slow=76,SNR=6.7						
H11S2	**WAKE ISLAND Hy**	**28.59**	**131**	T	T	17 51 43.0	
	baz=323,slow=76,SNR=7.5						
XAN	**Xi'an**	**28.84**	**270**	P	**P**	**17 21 51.3**	**+0.4**
XAN				pP	sP	17 22 03.3	+0.4
XAN				sP	pP	17 22 08.6	+9.3
XAN				pmax	pmax		
	comp=Z,10.0nm,1.1s						
XAN				pmax	pmax		
	comp=Z,67nm,7.1s						
XAN				LR	LR		
	comp=Z,270nm,13.9s						
XAN				LR	LR		
	comp=Z,310nm,13.9s						
XAN				LR	LR		
	comp=Z,270nm,14.1s						
ENH	**Enshi**	**29.98**	**263**	*e*P	**P**	**17 22 01.2**	**+0.2**
	comp=Z,40nm,0.8s						
IRK	**Irkutsk**	**30.20**	**308**	*e*P	**P**	**17 22 02.0**	**-0.7**
IRK				pmax	pmax		
	comp=Z,43nm,1.6s						
TLY	**Talaya**	**30.51**	**307**	*e*P	**P**	**17 22 09.8**	**+4.4**
TLY				pmax	pmax		
	comp=Z,17nm,1.1s						
TLY				MLR	MLR		
	comp=Z,203nm,18.0s						
TLY	**Talaya**	**30.51**	**307**	*e*P	**P**	**17 22 04.4**	**-1.0**
	comp=Z,16nm,0.8s						
ZAK	**Zakamensk**	**30.61**	**304**	*e*P	**P**	**17 22 07.1**	**+0.7**
ZAK				pmax	pmax		
	comp=Z,8.0nm,1.3s						
BILL	**Bilibino**	**30.81**	**16**	*d i*P	**P**	**17 22 07.2**	**-0.7**
BILL				*i*		17 22 15.8	
BILL				*e*		17 23 12.8	
BILL				*i*		17 25 03.6	
BILL				pmax	pmax		
	comp=Z,7.0nm,1.1s						
BILL				MLR	MLR		
	comp=Z,153nm,16.0s						
BILL	**Bilibino**	**30.81**	**16**	*e*P	**P**	**17 22 07.5**	**-0.3**
	comp=Z,13nm,1.1s						
LZH	**Lanzhou**	**32.04**	**277**	*e*P	**P**	**17 22 20.8**	**+1.5**
LZH				pP	sP	17 22 32.8	+1.5
LZH				sP	pP	17 22 38.0	+10
LZH				PP	**PnPn**	**17 23 22.3**	**-2.7**
LZH				*es*S	**S**	**17 27 27.8**	**-1.7**
LZH				sS	sS	17 27 45.0	+1.5
LZH				SS	**SnSn**	**17 29 22.3**	**+2.3**
LZH				pmax	pmax		
	comp=Z,33nm,1.1s						
LZH				pmax	pmax		
	comp=Z,140nm,5.0s						
LZH				LR	LR		
	comp=Z,1μm,16.0s						
LZH				LR	LR		
	comp=Z,1μm,14.1s						
LZH				LR	LR		
	comp=Z,1μm,16.1s						
MOY	**Mondy**	**32.15**	**306**	*e*P	P	17 22 25.6	+5.6
MOY				pmax	pmax		
	comp=Z,19nm,2.8s						
TIXI	**Tiksi**	**32.98**	**351**	P	**P**	**17 22 26.0**	**-0.8**
	comp=Z,1.3nm,0.8s,baz=137,slow=7.2,SNR=9.1						
TIXI	**Tiksi**	**32.98**	**351**	*i* P	**P**	**17 22 26.1**	**-0.7**
TIXI				pmax	pmax		
	comp=Z,3.0nm,1.2s						
TIXI	**Tiksi**	**32.98**	**351**	*e*P	**P**	**17 22 26.0**	**-0.8**
	comp=Z,3.4nm,0.7s						
GYA	**Guiyang**	**34.04**	**259**	⇑*i*P	**P**	**17 22 35.9**	**-0.8**
GYA				pP	sP	17 22 50.4	+1.6
GYA				PP	**PP**	**17 23 52.8**	**-1.2**
GYA				PcP	**PcP**	**17 25 16.0**	**+1.9**
GYA				S	**S**	**17 27 58.3**	**-2.2**
GYA				ScP	**ScP**	**17 28 56.5**	**-0.3**
GYA				SS	**SnSn**	**17 30 06.9**	**-1.7**
GYA				ScS	**ScS**	**17 32 54.3**	**-4.8**
GYA				pmax	pmax		
	comp=Z,30nm,0.9s						
GYA				pmax	pmax		
	comp=Z,130nm,0.8s						
GYA				LR	LR		
	comp=Z,560nm,17.2s						
GYA				LR	LR		
	comp=Z,430nm,17.3s						
GYA				LR	LR		
	comp=Z,540nm,17.6s						
CD2	**Chengdu**	**34.09**	**268**	P	**P**	**17 22 35.9**	**-1.2**
CD2				sP	sP	17 22 53.9	+4.7
CD2				PP	**PP**	**17 23 53.4**	**-1.1**
CD2				S	**S**	**17 27 58.3**	**-2.9**
CD2				pmax	pmax		
	comp=Z,20nm,0.9s						
CD2				pmax	pmax		
	comp=Z,50nm,4.5s						
CD2				LR	LR		
	comp=Z,390nm,14.3s						
CD2				LR	LR		
	comp=Z,340nm,14.3s						
GTA	**Gaotai**	**34.13**	**284**	*e*P	**P**	**17 22 38.5**	**+1.0**
GTA				pP	sP	17 22 50.3	+0.7
GTA				sP	pP	17 22 55.5	+9.5
GTA				PcP	**PcP**	**17 25 15.4**	**+1.2**
GTA				S	**S**	**17 27 59.3**	**-2.5**
GTA				sS	sS	17 28 20.0	+4.1
GTA				SS	**SnSn**	**17 30 08.1**	**-2.5**
GTA				pmax	pmax		
	comp=Z,8.0nm,1.1s						
GTA				pmax	pmax		
	comp=Z,72nm,5.9s						
GTA				LR	LR		
	comp=Z,270nm,18.5s						
GTA				LR	LR		
	comp=Z,370nm,17.1s						
GTA				LR	LR		
	comp=Z,350nm,20.0s						
KRAR	**Krasnoyarsk**	**37.27**	**313**	*e*P	**P**	**17 23 04.0**	**0.0**
KRAR				pmax	pmax		
	comp=Z,13nm,1.3s						
KMI	**Kunming**	**37.73**	**260**	P	**P**	**17 23 09.3**	**+0.8**

KMI pP sP 17 23 20.3 -0.4
KMI sP pP 17 23 25.1 +8.0
KMI S **S** **17 28 57.0 -0.4**
KMI SS **SnSn** **17 31 28.9 -9.3**
KMI pmax pmax
comp=Z,10.0nm,1.6s
KMI pmax pmax
comp=Z,100nm,4.4s
KMI LR LR
comp=Z,260nm,17.5s
KMI LR LR
comp=Z,140nm,21.9s
KMI LR LR
comp=Z,220nm,22.2s
MYLDM Lahad Datu 41.58 221 ⇑P **P** **17 23 43.6 +3.3**
NONG Nongkai 41.62 251 P **P** **17 23 41.9 +1.3**
comp=Z,24nm,1.0s,comp=Z,9µm
SKNT Sakolnakorn 41.72 249 P **P** **17 23 42.6 +1.1**
comp=Z,22nm,1.0s
WMQ Urumqi 41.82 295 P **P** **17 23 44.9 +2.8**
WMQ pP sP 17 23 55.4 +1.1
WMQ S **S** **17 30 03.0 +5.1**
WMQ ScS **ScS** **17 33 46.3 +3.4**
WMQ pmax pmax
comp=Z,8.0nm,1.2s
WMQ pmax pmax
comp=Z,68nm,5.0s
WMQ LR LR
comp=Z,84nm,37.2s
WMQ LR LR
comp=Z,36nm,26.6s
SDKM Sandakan 41.86 223 ⇑P **P** **17 23 44.1 +1.5**
TT01 Tatalina 41.87 36 *e*P **P** **17 23 42.8 +0.6**
TTA Tatalina 41.88 36 *e*P **P** **17 23 43.0 +0.6**
TTA *e**PP **sP** **17 23 55.0 +0.4**
TTA Tatalina 41.88 36 *e*P **P** **17 23 43.0 +0.6**
TTA *ep*P **sP** **17 23 55.0 +0.4**
NRIK Noril'sk 41.89 334 P **P** **17 23 42.0 -0.2**
comp=Z,2.1nm,0.5s,baz=120,slow=5.6,SNR=8.9
ZAA0 Zalesovo Array 41.94 310 *e*P **P** **17 23 42.9 0.0**
ZALV Zalesovo Beam 41.94 310 P **P** **17 23 43.1 +0.3**
comp=Z,5.9nm,0.7s,baz=90,slow=8.0,SNR=26
ZALV PcP **PcP** **17 25 38.4 +0.6**
comp=Z,6.1nm,0.6s,baz=104,slow=2.7,SNR=5.2
ZALV Zalesovo Beam 41.94 310 P **P** **17 23 43.2 +0.3**
ZALV 17 25 38.4
ZALV pmax pmax
comp=Z,8.0nm,0.9s
SVW2 Sparrevohn 41.96 39 *e*P **P** **17 23 43.9 +0.9**
comp=Z,13nm,1.0s
SWI Sorong 42.13 200 P **P** **17 23 44.1 -0.7**
JAY Jayapura 42.15 186 P **P** **17 23 44.1 -0.9**
GENI Genyem 42.27 186 P **P** **17 23 45.7 -0.2**
CRAI Chiangrai 42.33 256 P **P** **17 23 48.0 +1.6**
comp=Z,242nm,1.5s,comp=Z,69µm
TSM Tawau 42.65 221 ⇑P **P** **17 23 50.4 +1.3**
NVS Novosibirsk 42.78 312 *e*P **P** **17 23 48.4 -1.3**
NVS *e* 17 25 35.9
RSO Redoubt South 43.34 40 *e*P **P** **17 23 55.2 +0.8**
KDAK Kodiak Island 43.53 44 *ce*P **P** **17 23 56.2 +0.5**
KDAK Kodiak Island 43.53 44 *e*P **P** **17 23 56.6 +0.9**
comp=Z,35nm,0.8s
PPLA Purkeypile 43.62 36 *e*P **P** **17 23 58.3 +1.7**
comp=Z,47nm,1.6s
SPU Mount Spurr 43.67 39 *e*P **P** **17 23 57.7 +0.8**
CAST Castle Rocks 43.68 36 *e*P **P** **17 23 58.1 +1.2**
comp=Z,14nm,1.0s
UTTA Uttaradit 43.72 253 P **P** **17 23 59.6 +1.9**
comp=Z,6.3nm,0.8s,comp=Z,56nm
CHAI Chaiyaphum 43.86 250 P **P** **17 23 59.9 +1.1**
comp=Z,6.0nm,0.9s,comp=Z,46nm
LAMP Lampang 43.92 255 P **P** **17 24 02.5 +3.2**
comp=Z,6.1nm,0.8s
MRSI Marisa 44.11 213 P **P** **17 24 00.5 -0.3**
PBKT Sadao Pong 44.17 251 P **P** **17 24 03.2 +1.9**
comp=Z,12nm,1.2s
BPAW Bear Paw Mtn. 44.19 35 *e*P **P** **17 24 01.8 +0.8**
comp=Z,5.8nm,1.0s
KTH Kantishna Hill 44.21 35 *e*P **P** **17 24 02.4 +1.3**
comp=Z,22nm,0.9s
CMMT Chiang Mai 44.25 255 P **P** **17 24 05.1 +3.1**
comp=Z,12nm,0.8s
CHTO Chiang Mai 44.25 255 P **P** **17 24 05.2 +3.2**
comp=Z,28nm,1.0s
CHTO Chiang Mai 44.25 255 *e*P **P** **17 24 03.0 +1.0**
CHTO pmax pmax
comp=Z,9.0nm,0.8s
CHTO Chiang Mai 44.25 255 *e*P **P** **17 24 03.0 +1.0**
comp=Z,9.1nm,0.8s
MLY Manley 44.33 33 *e*P **P** **17 24 03.1 +1.0**
comp=Z,13nm,0.9s
LSA Lhasa 44.36 274 *e*P **P** **17 24 07.4 +4.1**
LSA pmax pmax
comp=Z,7.0nm,0.8s
LSA Lhasa 44.36 274 *e*P **P** **17 24 07.4 +4.1**
comp=Z,6.6nm,0.8s
CMAR Chiang Mai Arr 44.47 255 P **P** **17 24 04.3 +0.5**
comp=Z,1.1nm,0.7s,baz=46,slow=6.7,SNR=10
CMAR LR LR 17 43 22.0
comp=Z,83nm,18.5s,baz=66,slow=37
CM01 Chiang Mai Arr 44.48 255 *e*P **P** **17 24 04.5 +0.6**
TRF Thorofare Moun 44.49 36 *e*P **P** **17 24 04.2 +0.6**
comp=Z,13nm,1.0s
COLD Coldfoot 44.66 30 *e*P **P** **17 24 05.8 +1.1**
comp=Z,6.9nm,1.1s
MK01 Makanchi Array 44.77 300 *e*P **P** **17 24 05.9 +0.1**
MK31 Makanchi Array 44.77 300 *e*P **P** **17 24 06.1 +0.2**
MK31 Makanchi Array 44.77 300 *e*P **P** **17 24 06.0 +0.2**
MKAR Makanchi Array 44.77 300 P **P** **17 24 05.9 +0.1**
comp=Z,6.0nm,0.7s,baz=83,slow=9.4,SNR=67
MKAR LR LR 17 43 48.6
comp=Z,161nm,18.1s,baz=82,slow=37
MKAR Makanchi Array 44.77 300 *ce*P **P** **17 24 06.3 +0.5**
MKAR pmax pmax
comp=Z,6.0nm,0.7s
MKAR Makanchi Array 44.77 300 *e*P **P** **17 24 06.0 +0.2**
RC01 Rabbit Creek A 44.80 39 *e*P **P** **17 24 06.4 +0.6**
comp=Z,32nm,1.0s
BWN Browne 44.86 35 *e*P **P** **17 24 08.1 +1.9**
comp=Z,64nm,1.1s
SANI Sanana 44.86 207 P **P** **17 24 04.4 -2.4**
MAKZ Makanchi 44.97 300 *e*P **P** **17 24 07.7 +0.2**
MAKZ pmax pmax
comp=Z,20nm,1.0s
MAKZ Makanchi 44.97 300 *e*P **P** **17 24 07.7 +0.2**
comp=Z,20nm,1.0s
PMR Palmer 45.07 38 *e*P **P** **17 24 07.8 -0.1**
PMR pmax pmax
comp=Z,38nm,1.2s
PMR Palmer 45.07 38 *e*P **P** **17 24 07.8 -0.1**
comp=Z,38nm,1.2s
SRAK Srakaew 45.08 248 P **P** **17 24 07.0 -1.6**
comp=Z,33nm,1.0s
MCK McKinley 45.09 35 *e*P **P** **17 24 08.7 +0.5**
MCK pmax pmax
comp=Z,15nm,1.0s
MCK McKinley 45.09 35 *e*P **P** **17 24 08.7 +0.5**
comp=Z,15nm,1.0s
LUWI Luwuk 45.14 211 P **P** **17 24 08.3 -0.7**
RND Reindeer 45.14 36 *e*P **P** **17 24 08.5 -0.1**
RND pmax pmax
comp=Z,19nm,1.0s
RND Reindeer 45.14 36 *e*P **P** **17 24 08.5 -0.1**
comp=Z,19nm,1.0s
SML Sawmill 45.44 38 *e*P **P** **17 24 11.2 +0.3**
SML pmax pmax
comp=Z,48nm,1.2s
SML Sawmill 45.44 38 *e*P **P** **17 24 11.2 +0.3**
comp=Z,48nm,1.2s
WRH Wood River Hil 45.46 34 *e*P **P** **17 24 11.6 +0.6**
comp=Z,8.7nm,0.8s
CCB Clear Creek Bu 45.58 34 *e*P **P** **17 24 12.4 +0.4**
comp=Z,6.0nm,1.0s
CHBT CHBT 45.73 246 P **P** **17 24 15.3 +1.6**
comp=Z,21nm,1.0s
SHL Shillong 45.83 269 *e*P P 17 24 20.0 +5.3
SCM Sheep Creek Mo 45.91 38 *e*P **P** **17 24 15.5 +0.8**
SCM pmax pmax
comp=Z,36nm,1.0s
SCM Sheep Creek Mo 45.91 38 *e*P **P** **17 24 15.5 +0.8**
comp=Z,36nm,1.0s
IL1 Eielson Array 45.97 34 *e*P **P** **17 24 14.5 -0.5**
ILAR Eielson Array 45.97 34 P **P** **17 24 14.8 -0.2**
comp=Z,11nm,0.8s,baz=262,slow=6.6,SNR=101
ILB Eielson Array 45.97 34 *e*P **P** **17 24 15.2 +0.2**
BNDI Bandanaira 46.00 200 P **P** **17 24 13.1 -2.7**

KURK Kurchatov 46.21 307 *e*P **P** **17 24 17.4 +0.3**
KURK pmax pmax
comp=Z,34nm,0.7s
KURK Kurchatov 46.21 307 *e*P **P** **17 24 17.4 +0.3**
comp=Z,34nm,0.7s
PCI Palu 46.26 215 P **P** **17 24 17.0 -0.9**
comp=Z,22nm,1.4s
FYU Fort Yukon 46.61 31 *e*P **P** **17 24 21.7 +1.7**
comp=Z,44nm,1.5s
KLU Klutina 46.61 38 *e*P **P** **17 24 20.9 +0.7**
comp=Z,36nm,1.0s
PAX Paxson 46.69 36 *e*P **P** **17 24 21.8 +0.9**
PAX pmax pmax
comp=Z,9.0nm,0.8s
PAX Paxson 46.69 36 *e*P **P** **17 24 21.8 +0.9**
comp=Z,9.1nm,0.8s
DIV Divide 46.72 39 *e*P **P** **17 24 22.1 +1.0**
comp=Z,34nm,0.9s
EYAK Cordova Ski Ar 46.79 40 *e*P **P** **17 24 22.7 +1.2**
comp=Z,25nm,0.9s
SBUM Sibu 47.22 227 ⇑P **P** **17 24 26.6 +1.2**
SBUM Sibu 47.22 227 *e*P **P** **17 24 25.6 +0.2**
comp=Z,6.6nm,1.0s
DOT Dot Lake 47.27 35 *e*P **P** **17 24 25.1 -0.2**
comp=Z,18nm,0.6s
BMRM Bremner River 47.30 39 *e*P **P** **17 24 26.7 +1.1**
comp=Z,24nm,1.0s
RAGM Ragged Mountai 47.34 40 *e*P **P** **17 24 27.7 +1.8**
comp=Z,25nm,0.9s
MENT Mentasta 47.49 36 *e*P **P** **17 24 28.0 +1.0**
comp=Z,16nm,0.9s
PDGK Podgornoye 47.67 297 P P 17 24 20.2 -8.4
PDGK pmax pmax
comp=Z,17nm,1.0s
KDI Kendari 47.86 210 P **P** **17 24 28.6 -1.7**
comp=Z,38nm,0.8s
BALM Baldy 48.38 39 *e*P **P** **17 24 34.7 +0.7**
BALM pmax pmax
comp=Z,23nm,0.8s
BALM Baldy 48.38 39 *e*P **P** **17 24 34.7 +0.7**
comp=Z,22nm,0.8s
EGAK Eagle 48.42 33 *e*P **P** **17 24 34.1 0.0**
comp=Z,7.1nm,0.8s
SPSI Sidrap Palu 49.02 213 P **P** **17 24 38.3 -1.0**
KSM Kuching 49.10 228 ⇑P **P** **17 24 41.7 +1.8**
KSM Kuching 49.10 228 *e*P **P** **17 24 41.3 +1.3**
comp=Z,25nm,1.0s
GUN Gumba 49.27 275 *e*P **P** **17 24 42.9 +1.3**
comp=Z,78nm,1.0s
STKI Sintang 49.60 226 P **P** **17 24 44.7 +0.9**
comp=Z,28nm,1.1s
KKN Kakani 49.80 275 *e*P **P** **17 24 46.6 +1.2**
comp=Z,36nm,0.8s
PKIN Phulchoki 49.81 275 *e*P **P** **17 24 46.4 +0.8**
comp=Z,11nm,0.6s
DMN Daman 50.02 275 *e*P **P** **17 24 47.7 +0.5**
comp=Z,7.1nm,0.3s
GKN Gorkha 50.18 276 *e*P **P** **17 24 49.4 +1.1**
comp=Z,100nm,1.5s
TKM2 Tokmak 2 50.48 297 *e*P **P** **17 24 51.5 +1.0**
TKM2 pmax pmax
comp=Z,18nm,0.7s
TKM2 Tokmak 2 50.48 297 *e*P **P** **17 24 51.5 +1.0**
comp=Z,18nm,0.7s
BVAR Borovoye Array 50.57 311 P **P** **17 24 51.3 +0.6**
comp=Z,8.3nm,0.7s,baz=72,slow=9.5,SNR=34
BRVK Borovoye 50.62 311 *d i*P **P** **17 24 51.6 +0.5**
BRVK pmax pmax
comp=Z,35nm,2.5s
BRVK Borovoye 50.62 311 *e*P **P** **17 24 52.0 +0.9**
comp=Z,18nm,0.9s
OTUK Ortayu 50.82 305 P **P** **17 24 53.0 +0.3**
OTUK pmax pmax
comp=Z,11nm,0.9s
INK Inuvik 50.93 28 P **P** **17 24 53.9 +0.7**
comp=Z,7.9nm,0.6s,baz=302,slow=7.1,SNR=44
INK Inuvik 50.93 28 *e*P **P** **17 24 53.8 +0.7**
comp=Z,9.1nm,0.8s
HNR Honiara 50.96 160 P **P** **17 24 52.6 -1.3**
comp=Z,24nm,0.7s,baz=231,slow=16,SNR=1.8
KRAB Krabi 51.09 245 P **P** **17 24 56.9 +1.9**
comp=Z,44nm,0.8s,comp=Z,350nm
FRU Bishkek 51.19 298 *e*P **P** **17 24 55.0 -0.6**
AAK Ala-Archa 51.34 297 *e*P **P** **17 24 57.2 +0.3**
AAK *e**PP **pP** **17 25 06.5 +0.8**
AAK pmax pmax
comp=Z,8.0nm,0.8s
AAK Ala-Archa 51.34 297 *e*P **P** **17 24 57.2 +0.3**
comp=Z,8.0nm,0.8s
AAK *ep*P **pP** **17 25 06.5 +0.8**
ZRNK Zerenda 51.39 311 *e*P **P** **17 24 57.8 +0.9**
ZRNK pmax pmax
comp=Z,21nm,0.8s
ZRNK Zerenda 51.39 311 *e*P **P** **17 24 57.8 +0.9**
comp=Z,20nm,0.8s
PYUN Piuthan 51.40 277 *e*P **P** **17 24 58.7 +1.2**
comp=Z,135nm,1.2s
KSH Kashi 51.52 293 *e*P P 17 25 03.9 +5.7
KSH *ep*P sP 17 25 16.5 +6.0
KSH *e*ScP **ScP** **17 30 08.8 +2.3**
KSH PcS **PcS** **17 30 14.6 +4.6**
KSH S **S** **17 32 20.8 +4.1**
KSH SS **SS** **17 35 56.8 +4.2**
KSH pmax pmax
comp=Z,140nm,6.1s
KSH LR LR
comp=Z,520nm,17.6s
KSH LR LR
comp=Z,160nm,11.7s
KSH LR LR
comp=Z,240nm,13.7s
EKS2 Erkin-Say 51.82 298 *e*P **P** **17 25 00.9 +0.5**
EKS2 pmax pmax
comp=Z,9.0nm,0.8s
EKS2 Erkin-Say 51.82 298 *e*P **P** **17 25 00.9 +0.5**
comp=Z,8.7nm,0.8s
MMRI Maumere 52.31 208 P **P** **17 25 03.5 -0.6**
MMRI Maumere 52.31 208 *e*P **P** **17 25 03.4 -0.6**
comp=Z,40nm,0.9s
IPM Ipoh 52.54 240 ⇓P **P** **17 25 06.7 +0.8**
MNAS Manas 52.76 298 P **P** **17 25 07.9 +0.5**
MNAS pmax pmax
comp=Z,21nm,0.7s
MTN Manton Dam 53.72 196 *e*P **P** **17 25 13.9 -0.5**
comp=Z,34nm,0.7s
MTN *ep*P **sP** **17 25 25.7 -1.0**
KKAR Karatay Array 53.87 299 *e*P **P** **17 25 15.6 +0.2**
KKAR Karatay Array 53.87 299 *e*P **P** **17 25 15.6 +0.2**
TWSI Taliwang, Sumb 54.54 214 P **P** **17 25 20.9 +0.5**
SRBI Singaraja 54.70 216 P **P** **17 25 21.8 +0.2**
SVE Sverdlovsk 54.74 318 *e*P **P** **17 25 22.7 +1.2**
DLBC Dease Lake 55.06 40 P **P** **17 25 25.3 +1.4**
comp=Z,5.5nm,0.8s,baz=299,slow=8.1,SNR=14
DLBC Dease Lake 55.06 40 *e*P **P** **17 25 24.8 +0.9**
comp=Z,10nm,1.0s
DLBC *ep*P **sP** **17 25 36.5 +0.2**
DNP Denpasar 55.23 216 P **P** **17 25 25.7 +0.3**
UWJI Ujung Watu 55.33 222 P **P** **17 25 26.7 +0.5**
ARU Arti 55.95 318 P **P** **17 25 30.7 +0.5**
comp=Z,3.0nm,0.5s,baz=59,slow=5.4,SNR=9.4
ARU Arti 55.95 318 *c i*P **P** **17 25 30.8 +0.6**
ARU 17 26 28.7
ARU 17 27 31.6
ARU S **S** **17 33 19.1 +3.0**
ARU SS **SS** **17 37 05.7 +4.1**
ARU pmax pmax
comp=Z,32nm,1.7s
ARU Arti 55.95 318 *e*P **P** **17 25 30.8 +0.6**
comp=Z,26nm,1.2s
GSI Gunungsitoli 57.19 240 *e*P **P** **17 25 39.6 0.0**
comp=Z,46nm,1.4s
LEM Lembang 57.44 225 P **P** **17 25 43.5 +2.1**
ABKAR Akbulak array 58.05 310 *e*P **P** **17 25 45.6 +0.4**
MNAI Manna 58.11 231 P **P** **17 25 46.0 0.0**
AKTO Aktyubinsk 58.67 312 P **P** **17 25 49.7 +0.2**
comp=Z,9.4nm,0.7s,baz=68,slow=11,SNR=21
PPSI Pulau Pagai 58.67 235 P **P** **17 25 49.9 0.0**
KBL Kabul 58.69 291 *e*P pP 17 26 01.5 +2.4
KBL Kabul 58.69 291 *ep*P pP 17 26 01.5 +2.4
RES Resolute Bay 59.42 15 P **P** **17 25 54.6 +0.4**
comp=Z,14nm,0.6s,baz=310,slow=5.1,SNR=9.9
RES Resolute Bay 59.42 15 *e*P **P** **17 25 54.9 +0.6**
RES *e**PP **sP** **17 26 06.4 -0.3**
RES pmax pmax
comp=Z,14nm,0.7s
RES Resolute Bay 59.42 15 *e*P **P** **17 25 54.9 +0.6**

comp=Z,14nm,0.7s
RES *ep*P **sP** **17 26 06.4 -0.3**
CTA Charters Tower 59.50 178 P **P** **17 25 54.4 -1.1**
comp=Z,7.7nm,0.9s,baz=354,slow=9.2,SNR=3.2
WRAB Tennant Creek 60.06 191 *d i*P **P** **17 25 58.0 -1.3**
WRAB pmax pmax
comp=Z,121nm,1.7s
WRAB Tennant Creek 60.06 191 *e*P **P** **17 25 58.0 -1.3**
comp=Z,29nm,0.9s
WB2 Warramunga Arr 60.07 191 *e*P **P** **17 25 58.1 -1.3**
comp=Z,30nm,0.9s
WRA Warramunga Arr 60.08 191 P **P** **17 25 58.1 -1.3**
comp=Z,24nm,0.8s,baz=8.8,slow=6.9,SNR=178
FITZ Fitzroy Crossi 60.12 201 *e*P **P** **17 25 59.5 -0.2**
comp=Z,14nm,1.0s
YKW3 Yellowknife Ar 60.27 32 *e*P **P** **17 26 00.5 +0.2**
comp=Z,26nm,1.8s
YKW3 *ep*P **sP** **17 26 11.9 -0.8**
YKA Yellowknife Ar 60.30 32 P **P** **17 26 00.6 0.0**
comp=Z,3.1nm,0.7s,baz=302,slow=6.6,SNR=41
TMCR Tamitsa 61.55 331 *e*P **P** **17 26 09.5 +0.6**
TMCR pmax pmax
comp=Z,32nm,1.1s
KLMR Klimovskoe 62.77 328 *e*P **P** **17 26 14.3 -2.9**
KLMR *e**SP **sP** **17 26 28.5 -1.2**
KLMR *e* 17 26 53.1
KLMR pmax pmax
comp=Z,15nm,1.0s
NLWA Neilton Lookou 63.17 50 *e*P **P** **17 26 22.1 +1.9**
comp=Z,22nm,1.1s
NLWA *ep*P **sP** **17 26 33.7 +1.1**
DAG Danmarks Havn 63.31 356 *i*P **P** **17 26 20.5 -0.1**
comp=Z,3.8nm,0.9s
DAG Danmarks Havn 63.31 356 *i*P **P** **17 26 20.5 -0.1**
DAG pmax pmax
comp=Z,3.0nm,0.9s
B05A Bryant 63.76 48 P **P** **17 26 24.9 +0.9**
baz=301
AS01 Alice Springs 63.79 191 *e*P **P** **17 26 23.5 -0.8**
AS31 Alice Springs 63.80 191 *e*P **P** **17 26 23.7 -0.7**
comp=Z,5.5nm,0.8s
ASAR Alice Springs 63.80 191 P **P** **17 26 23.7 -0.7**
comp=Z,16nm,0.8s,baz=13,slow=7.1,SNR=150
GEYT Alibeck 64.62 299 P **P** **17 26 30.1 +0.2**
comp=Z,4.2nm,0.8s,baz=352,slow=3.0,SNR=9.2
LON Longmire 64.71 49 *e*P **P** **17 26 32.0 +1.7**
LON pmax pmax
comp=Z,11nm,1.4s
LON Longmire 64.71 49 *e*P **P** **17 26 32.0 +1.7**
comp=Z,11nm,1.4s
F04A Amboy 64.78 50 *e*P **P** **17 26 31.9 +1.2**
comp=Z,22nm,0.9s
B08A Colville Reser 65.28 47 *e*P **P** **17 26 34.9 +0.9**
comp=Z,20nm,1.4s
I03D Drain, OR 65.40 53 P **P** **17 26 36.3 +1.5**
baz=302
H04A Detroit Lake 65.58 51 *e*P **P** **17 26 37.4 +1.4**
comp=Z,24nm,1.0s
G05D Wamic, OR 65.80 51 P **P** **17 26 38.5 +1.1**
baz=303
I04A Tendick Farm, 65.92 52 P **P** **17 26 39.2 +1.0**
baz=303,SNR=5.5
C09A Chrisman Ranch 66.18 47 *e*P **P** **17 26 40.9 +1.1**
comp=Z,22nm,1.1s
I05D Terrebonne, OR 66.28 51 P **P** **17 26 41.6 +1.1**
baz=303
MOS Moscow 66.51 324 *e*P **P** **17 26 43.2 +1.5**
MOS pmax pmax
comp=Z,50nm,1.5s
NEW Newport 66.57 46 P **P** **17 26 42.6 +0.3**
comp=Z,11nm,1.0s,baz=306,slow=6.1,SNR=10
NEW Newport 66.57 46 P **P** **17 26 42.7 +0.3**
baz=304,SNR=6.9
NEW Newport 66.57 46 *e*P **P** **17 26 42.9 +0.6**
NEW *e**PP **sP** **17 26 55.0 +0.2**
NEW pmax pmax
comp=Z,21nm,1.1s
NEW Newport 66.57 46 *e*P **P** **17 26 42.9 +0.6**
comp=Z,21nm,1.1s
NEW *ep*P **sP** **17 26 55.0 +0.2**
KHMM Horse Mountain 66.67 56 *e*P **P** **17 26 45.3 +2.1**
comp=Z,21nm,1.0s
YBH Yreka Blue Hor 66.85 54 P **P** **17 26 44.5 +0.3**
comp=Z,11nm,1.1s,baz=215,slow=0.8,SNR=6.4
YBH Yreka Blue Hor 66.85 54 *e*P **P** **17 26 45.8 +1.6**
YBH pmax pmax
comp=Z,23nm,1.3s
YBH Yreka Blue Hor 66.85 54 *e*P **P** **17 26 45.8 +1.6**
comp=Z,23nm,1.3s
J05D Fort Rock, OR 66.91 52 P **P** **17 26 46.3 +1.5**
baz=303
M02C Callahan 66.94 55 P **P** **17 26 46.3 +1.4**
baz=303
K04D Chiloquin, OR 66.96 53 P **P** **17 26 45.7 +0.7**
baz=303
VRH Novokhopyorsk 67.19 318 *e*P **P** **17 26 46.0 -0.1**
VRH *e**SP **pP** **17 26 56.3 +1.1**
VRH pmax pmax
comp=Z,20nm,1.5s
N02D Trinity Center 67.27 55 P **P** **17 26 47.9 +1.0**
baz=304
M04C Macdoel 67.37 54 P **P** **17 26 48.6 +1.0**
baz=304,SNR=5.3
OBN Obninsk 67.37 324 P **P** **17 26 46.5 -0.7**
comp=Z,13nm,0.4s,baz=90,slow=4.7,SNR=6.3
OBN Obninsk 67.37 324 *i*P **P** **17 26 46.8 -0.3**
OBN *i* 17 26 57.8
OBN *i* 17 27 13.0
OBN *i* 17 29 16.4
OBN pmax pmax
comp=Z,16nm,1.1s
K05A Summer Lake 67.43 53 *e*P **P** **17 26 49.6 +1.5**
comp=Z,44nm,1.1s
FIA1 FINESS Array S 67.55 333 *e*P **P** **17 26 48.5 +0.3**
FINES FINESS Array B 67.55 333 P **P** **17 26 48.1 0.0**
comp=Z,16nm,0.6s,baz=46,slow=8.2,SNR=44
FINES FINESS Array B 67.55 333 *ce*P **P** **17 26 48.7 +0.5**
FINES pmax pmax
comp=Z,16nm,0.6s
WDC Whiskeytown Da 67.59 55 *e*P **P** **17 26 50.3 +1.5**
WDC pmax pmax
comp=Z,18nm,1.3s
WDC Whiskeytown Da 67.59 55 *e*P **P** **17 26 50.3 +1.5**
comp=Z,18nm,1.3s
LPSR Galich'ya Gora 67.77 321 *e*P **P** **17 26 48.8 -0.9**
LPSR *e**SP **sP** **17 27 00.9 -1.3**
LPSR pmax pmax
comp=Z,10.0nm,0.7s
F10A Beach Ranch, E 67.79 48 *e*P **P** **17 26 51.3 +1.1**
comp=Z,6.5nm,0.9s
WALA Waterton Lakes 67.87 44 *e*P **P** **17 26 51.6 +1.0**
comp=Z,22nm,1.3s
SUMG Summit 68.00 1 *i*P sP 17 27 03.9 0.0
comp=Z,8.3nm,0.6s
SUMG Summit 68.00 1 *e*P **P** **17 26 52.3 +0.9**
SUMG *e**PP **sP** **17 27 04.1 +0.2**
SUMG Summit 68.00 1 *e*P **P** **17 26 52.3 +0.9**
SUMG *ep*P **sP** **17 27 04.1 +0.2**
BSMT Bassoo Peak 68.09 45 *e*P **P** **17 26 53.5 +1.3**
O03D Paynes Creek 68.22 55 P **P** **17 26 53.5 +0.7**
baz=304,SNR=6.8
MOD Modoc Plateau 68.25 53 *e*P **P** **17 26 54.5 +1.3**
comp=Z,14nm,1.2s
BMO Blue Mountains 68.39 49 *e*P **P** **17 26 54.8 +0.9**
comp=Z,5.5nm,0.8s
JTMT Jette 68.43 45 *e*P **P** **17 26 55.2 +1.0**
VSR Storozhevoye 68.48 319 *e*P **P** **17 26 52.5 -1.7**
VSR *e**SP **pP** **17 27 04.5 +1.2**
VSR pmax pmax
comp=Z,8.0nm,0.6s
YBMT Yellow Bay 68.51 45 *e*P **P** **17 26 56.0 +1.4**
SWMT Swartz Lake 68.73 45 *e*P **P** **17 26 56.9 +0.9**
WVOR Wild Horse Val 68.97 52 *e*P **P** **17 26 58.7 +1.1**
WVOR pmax pmax
comp=Z,16nm,1.3s
WVOR Wild Horse Val 68.97 52 *e*P **P** **17 26 58.7 +1.1**
comp=Z,16nm,1.3s
MSO Missoula 69.16 46 P **P** **17 26 59.0 +0.3**
baz=306
MSO Missoula 69.16 46 *e*P **P** **17 26 58.7 0.0**
comp=Z,16nm,1.1s
VSU Vasula 69.34 330 *i*P **P** **17 26 59.5 +0.1**
VSU pmax pmax
comp=Z,70nm,1.2s
CHMT Chamberlain Mo 69.49 46 *e*P **P** **17 27 01.3 +0.4**
AFDM Forest Hills D 69.50 56 *e*P **P** **17 27 02.5 +1.6**

comp=Z,7.6nm,1.1s
GOF Gofitskoye 70.07 312 *ceP* **P 17 27 04.2 0.0**
PAHR Pah Rah Range 70.08 55 *eP* **P 17 27 05.7 +1.2**
comp=Z,16nm,1.0s
MFID Camas Ranch 70.09 50 *eP* **P 17 27 05.8 +1.3**
comp=Z,6.6nm,0.9s
FFC Flin Flon 70.17 34 *eP* **P 17 27 05.0 +0.3**
FFC pmax pmax
comp=Z,17nm,1.0s
FFC Flin Flon 70.17 34 *eP* **P 17 27 05.0 +0.3**
comp=Z,17nm,1.0s
HRY Holter Researc 70.39 45 *eP* **P 17 27 07.5 +1.2**
CMB Columbia Colle 70.41 57 *eP* **P 17 27 07.3 +0.9**
CMB pmax pmax
comp=Z,27nm,1.4s
CMB Columbia Colle 70.41 57 *eP* **P 17 27 07.3 +0.9**
comp=Z,26nm,1.4s
FCC Fort Churchill 70.55 28 *eP* **P 17 27 06.8 0.0**
FCC pmax pmax
comp=Z,26nm,1.3s
FCC Fort Churchill 70.55 28 *eP* **P 17 27 06.8 0.0**
comp=Z,26nm,1.3s
LRM Limekiln Ridge 70.59 46 *eP* **P 17 27 08.4 +0.7**
EGMT Eagleton 70.70 43 P **P 17 27 08.6 +0.4**
baz=308
EGMT Eagleton 70.70 43 *eP* **P 17 27 08.8 +0.7**
comp=Z,20nm,0.8s
GUDG Gudauri 70.78 309 P **P 17 27 11.2 +2.4**
DLMT Dillon 70.78 47 *eP* **P 17 27 10.5 +1.7**
comp=Z,27nm,1.2s
HLID Hailey 70.83 49 P **P 17 27 09.9 +0.8**
baz=307,SNR=8.4
HLID Hailey 70.83 49 *eP* **P 17 27 10.4 +1.3**
comp=Z,7.7nm,0.9s
ZEI Tsey 70.92 310 *eP* **P 17 27 08.9 -0.8**
ZEI pmax pmax
comp=Z,18nm,0.6s
KVAR Kislovodsk Arr 70.93 312 P **P 17 27 09.0 -0.6**
comp=Z,8.9nm,0.9s,baz=135,slow=1.4,SNR=9.6
KIV Kislovodsk 70.94 312 *eP* **P 17 27 08.6 -1.0**
KIV pmax pmax
comp=Z,26nm,0.9s
KIV MLR MLR
comp=Z,184nm,17.0s
KIV Kislovodsk 70.94 312 *eP* **P 17 27 11.3 +1.7**
comp=Z,43nm,1.0s
KBZ Khabaz 70.95 311 P **P 17 27 10.7 +1.1**
comp=Z,9.8nm,0.8s,baz=76,slow=2.9,SNR=30
MCMT McKenzie Canyo 70.97 47 *eP* **P 17 27 10.7 +0.7**
TBLG Delisi 71.06 309 P **P 17 27 11.1 +0.8**
TBLG Delisi 71.06 309 P **P 17 27 11.1 +0.8**
BOZ Bozeman (W) 71.15 46 P **P 17 27 12.0 +1.0**
baz=308,SNR=35
BOZ Bozeman (W) 71.15 46 *eP* **P 17 27 11.9 +0.9**
BOZ pmax pmax
comp=Z,21nm,0.9s
BOZ Bozeman (W) 71.15 46 *eP* **P 17 27 11.9 +0.9**
comp=Z,21nm,0.9s
ONI Oni 71.31 310 P **P 17 27 13.2 +1.4**
ONI Oni 71.31 310 P **P 17 27 13.2 +1.4**
NEY Neytrino 71.34 311 *eP* **P 17 27 11.3 -0.9**
NEY pmax pmax
comp=Z,1.0nm,0.8s
NV01 Mina Array Sit 71.51 55 *eP* **P 17 27 14.2 +0.9**
NVAR Mina Array Bea 71.51 55 P **P 17 27 14.2 +0.9**
comp=Z,8.9nm,0.9s,baz=287,slow=7.1,SNR=38
QLMT Earthquake Lak 71.76 47 *eP* **P 17 27 16.1 +1.3**
BGD Bogdanovka 72.02 309 P **P 17 27 18.3 +1.9**
ELK Elko 72.03 52 *eP* **P 17 27 18.0 +1.5**
ELK pmax pmax
comp=Z,15nm,1.7s
ELK Elko 72.03 52 *eP* **P 17 27 17.9 +1.5**
comp=Z,15nm,1.7s
CHVG Ch'k'valeri 72.03 311 P **P 17 27 17.4 +1.2**
YMR Madison River 72.12 47 *eP* **P 17 27 18.5 +1.6**
comp=Z,13nm,0.9s
GCMT Greycliff 72.14 45 *eP* **P 17 27 18.3 +1.4**
YFT Old Faithful 72.33 47 *eP* **P 17 27 21.1 +2.8**
comp=Z,11nm,0.9s
NC405 NORSAR Array S 72.42 338 *eP* **P 17 27 18.8 +0.7**
LKWY Lake 72.50 46 *eP* **P 17 27 22.6 +3.3**
LKWY pmax pmax
comp=Z,15nm,1.1s
LKWY Lake 72.50 46 *eP* **P 17 27 22.6 +3.3**
comp=Z,15nm,1.1s
H17A Grant Village 72.51 47 P **P 17 27 21.7 +2.4**
baz=309,SNR=17
H17A Grant Village 72.51 47 *eP* **P 17 27 22.0 +2.7**
comp=Z,26nm,0.9s
VES Vestal, Richgr 72.53 58 P **P 17 27 19.6 +0.4**
baz=307
NC204 NORSAR Array S 72.56 339 *eP* **P 17 27 20.1 +1.1**
NB201 NORSAR Array S 72.59 338 *eP* **P 17 27 19.8 +0.6**
IMW Indian Meadow 72.62 47 *eP* **P 17 27 21.6 +1.6**
comp=Z,15nm,0.8s
PKM Mcpherson Peak 72.62 59 P **P 17 27 20.4 +0.4**
baz=307
NB2 NORSAR Subarra 72.62 338 P **P 17 27 19.5 +0.1**
comp=Z,9.7nm,0.8s,baz=38,slow=6.2
NOA NORSAR Array B 72.62 338 P **P 17 27 19.8 +0.4**
comp=Z,7.5nm,0.8s,baz=38,slow=6.0,SNR=28
FLWY Flagg Ranch 72.64 47 *eP* **P 17 27 21.9 +1.9**
comp=Z,51nm,1.8s
NBO02 NORSAR Array S 72.72 338 *eP* **P 17 27 20.1 +0.2**
FXWY Fox Creek 72.73 47 *eP* **P 17 27 22.5 +1.9**
comp=Z,12nm,0.9s
RLMT Red Lodge 72.78 45 P **P 17 27 21.6 +0.7**
baz=309
RLMT Red Lodge 72.78 45 *eP* **P 17 27 21.1 +0.3**
comp=Z,18nm,1.3s
MOOW Moose Ponds 72.82 47 *eP* **P 17 27 22.4 +1.3**
comp=Z,17nm,1.1s
TPAW Teton Pass 72.86 47 *eP* **P 17 27 23.3 +1.9**
comp=Z,31nm,1.4s
HVU Hansel Valley 72.87 50 *eP* **P 17 27 22.9 +1.6**
HVU pmax pmax
comp=Z,14nm,1.0s
HVU Hansel Valley 72.87 50 *eP* **P 17 27 22.9 +1.6**
comp=Z,14nm,1.0s
GRAC Grapevine Rang 72.96 56 P **P 17 27 23.3 +1.5**
baz=307
LOHW Long Hollow 72.98 47 *eP* **P 17 27 23.7 +1.7**
comp=Z,13nm,1.3s
SNOW Snow King Moun 72.99 47 *eP* **P 17 27 24.1 +1.9**
comp=Z,31nm,1.5s
REDW Red Top Meadow 73.00 48 *eP* **P 17 27 23.5 +1.3**
comp=Z,15nm,1.1s
AHID Auburn Hatcher 73.23 48 *eP* **P 17 27 24.2 +0.7**
comp=Z,9.3nm,0.9s
DAC Darwin (Calif) 73.24 57 *eP* **P 17 27 24.6 +0.9**
DAC pmax pmax
comp=Z,5.0nm,0.8s
DAC Darwin (Calif) 73.24 57 *eP* **P 17 27 24.6 +0.9**
comp=Z,5.2nm,0.8s
R11A Troy Canyon, C 73.26 54 P **P 17 27 24.4 +0.7**
baz=308,SNR=23
R11A Troy Canyon, C 73.26 54 *eP* **P 17 27 24.3 +0.6**
comp=Z,17nm,1.3s
LAO LASA Array 73.41 43 P **P 17 27 25.0 +0.7**
baz=311,SNR=5.9
LAO LASA Array 73.41 43 *eP* **P 17 27 25.5 +1.2**
comp=Z,20nm,1.0s
OSI Osito Audit: C 73.50 59 P **P 17 27 26.3 +1.2**
baz=307
FURC Furnace Creek, 73.60 56 P **P 17 27 26.3 +0.8**
baz=308,SNR=7.8
AKASG Malin Array Be 73.62 323 P **P 17 27 25.6 +0.3**
comp=Z,4.0nm,0.5s,baz=47,slow=6.0,SNR=5.6
AKBB Malin Array Si 73.62 323 *eP* **P 17 27 26.0 +0.6**
AKBB pmax pmax
comp=Z,12nm,0.8s
AKBB Malin Array Si 73.62 323 *eP* **P 17 27 25.9 +0.6**
comp=Z,12nm,0.8s
KIEV Kiev 73.63 323 *d iP* **P 17 27 25.4 0.0**
KIEV pmax pmax
comp=Z,7.0nm,0.9s
KIEV Kiev 73.63 323 *eP* **P 17 27 25.6 +0.2**
KIEV *epP* **sP 17 27 37.4 -0.7**
LRMC Laurel Mtn Rad 73.67 57 P **P 17 27 26.6 +0.5**
baz=307
HWUT Hardware Ranch 73.69 49 *eP* **P 17 27 27.4 +1.2**
comp=Z,21nm,1.2s
TPNV Topopah Spring 73.70 55 P **P 17 27 27.0 +0.8**
baz=308,SNR=12
TPNV Topopah Spring 73.70 55 *eP* **P 17 27 27.1 +0.8**
TPNV pmax pmax
comp=Z,24nm,1.4s
TPNV Topopah Spring 73.70 55 *eP* **P 17 27 27.1 +0.8**
comp=Z,24nm,1.4s
EDW2 Edwards Air Fo 73.82 58 P **P 17 27 28.2 +1.3**
baz=307
DUG Dugway, Tooele 73.83 51 P **P 17 27 27.8 +0.8**
baz=309,SNR=6.8
DUG Dugway, Tooele 73.83 51 *eP* **P 17 27 28.1 +1.1**
DUG pmax pmax
comp=Z,19nm,1.3s
DUG Dugway, Tooele 73.83 51 *eP* **P 17 27 28.1 +1.1**
comp=Z,19nm,1.3s
B25A Knox Farm, Ray 73.92 40 P **P 17 27 26.9 -0.4**
baz=312
TCUT Toone Canyon 74.08 50 *eP* **P 17 27 30.1 +1.4**
comp=Z,15nm,0.9s
BW06 Boulder Array 74.11 47 P **P 17 27 29.2 +0.5**
baz=310,SNR=13
BW06 Boulder Array 74.11 47 *eP* **P 17 27 28.4 -0.3**
comp=Z,6.6nm,0.7s
PD31 Pinedale Array 74.11 47 *eP* **P 17 27 28.7 -0.1**
PDAR Pinedale Array 74.11 47 P **P 17 27 29.1 +0.4**
comp=Z,4.8nm,0.6s,baz=268,slow=2.0,SNR=61
PSUT Pine Spring 74.22 53 *eP* **P 17 27 30.4 +0.9**
comp=Z,7.1nm,1.0s
GSC Goldstone, Bar 74.34 57 P **P 17 27 31.0 +1.0**
baz=308
JLU Jordanelle 74.38 50 *eP* **P 17 27 31.9 +1.5**
comp=Z,19nm,1.4s
A27A Ledoux Ranch, 74.40 39 P **P 17 27 30.5 +0.5**
baz=313
NLU North Lily Min 74.42 51 *eP* **P 17 27 31.9 +1.3**
comp=Z,8.1nm,1.1s
NLU *epP* **sP 17 27 43.7 +0.6**
BFSC Mount Baldy Ra 74.43 58 P **P 17 27 31.7 +1.1**
baz=308
D25A Fairfield 74.59 41 P **P 17 27 31.6 +0.4**
baz=312
SCI2 San Clemente I 74.61 60 P **P 17 27 33.9 +2.4**
baz=308
SHPR Sheep Range 74.66 55 *eP* **P 17 27 33.2 +1.3**
comp=Z,15nm,1.2s
A28A Rude Farm, Bot 74.89 38 P **P 17 27 33.4 +0.5**
baz=314
E25A Miller Ranch, 74.99 41 P **P 17 27 34.5 +1.0**
baz=312
MURC Murrieta 75.13 59 P **P 17 27 35.6 +1.1**
baz=308
MSU Marysvale 75.26 52 *eP* **P 17 27 36.5 +1.0**
MSU *e*PP* **PcP 17 27 49.1 +0.3**
MSU Marysvale 75.26 52 *eP* **P 17 27 36.5 +1.0**
MSU *epP* **PcP 17 27 49.1 +0.3**
F25A Bowman 75.35 42 P **P 17 27 35.8 +0.1**
baz=312
TMUT Trail Mountain 75.35 51 *eP* **P 17 27 37.4 +1.4**
comp=Z,22nm,1.6s
A29A Manning Farm, 75.38 38 P **P 17 27 36.0 +0.4**
baz=314,SNR=8.0
GMRC Granite Mounta 75.40 57 P **P 17 27 37.0 +0.8**
baz=308,SNR=5.6
E26A Carlson Angus 75.49 41 P **P 17 27 37.0 +0.6**
baz=313
P17A Butcher Ranch, 75.52 51 *eP* **P 17 27 38.4 +1.5**
comp=Z,21nm,1.0s
D27A Center 75.52 40 P **P 17 27 37.5 +0.9**
baz=313
LCMT Little Creek M 75.55 54 *eP* **P 17 27 38.4 +1.3**
comp=Z,15nm,0.9s
MTPU Mount Pierson 75.56 52 *eP* **P 17 27 38.9 +1.6**
comp=Z,9.3nm,0.8s
TPFO Pinon Flats 75.61 58 P **P 17 27 38.2 +0.8**
baz=308
Q16A Castle Valley 75.61 51 *eP* **P 17 27 39.0 +1.6**
comp=Z,15nm,1.2s
BELC Belle Mtn. Jos 75.67 58 P **P 17 27 38.3 +0.6**
baz=308
P18A Preston Nutter 75.72 50 *eP* **P 17 27 39.5 +1.4**
comp=Z,11nm,1.1s
A30A Hoffart Farm, 75.80 37 P **P 17 27 38.7 +0.6**
baz=315
F26A Lodgepole 75.81 42 P **P 17 27 38.4 +0.1**
baz=313
KNB Kanab 75.81 54 *eP* **P 17 27 40.5 +1.9**
KNB pmax pmax
comp=Z,13nm,1.0s
KNB Kanab 75.81 54 *eP* **P 17 27 40.5 +1.9**
comp=Z,13nm,1.0s
SORM Soroca 75.81 322 *‖iP* **P 17 27 38.3 +0.2**
G25A Newell 75.86 42 P **P 17 27 38.4 -0.2**
baz=313
SRU San Rafael Swe 75.88 51 *eP* **P 17 27 39.9 +1.0**
SRU pmax pmax
comp=Z,19nm,0.8s
SRU San Rafael Swe 75.88 51 *eP* **P 17 27 39.9 +1.0**
comp=Z,19nm,0.8s
K22A Casper 75.89 46 P **P 17 27 39.2 +0.3**
baz=311,SNR=6.5
K22A Casper 75.89 46 *eP* **P 17 27 39.7 +0.7**
comp=Z,22nm,1.1s
ULM Lac du Bonnet 75.97 35 P **P 17 27 38.5 -0.5**
comp=Z,9.4nm,0.8s,baz=309,slow=6.2,SNR=7.5
ULM Lac du Bonnet 75.97 35 *eP* **P 17 27 38.9 -0.1**
ULM pmax pmax
comp=Z,17nm,1.1s
ULM Lac du Bonnet 75.97 35 *eP* **P 17 27 38.9 -0.1**
comp=Z,17nm,1.1s
IRM Iron Mountain 76.12 57 P **P 17 27 40.7 +0.5**
baz=309
B30A Myrvik Farm, E 76.13 38 P **P 17 27 40.3 +0.3**
baz=315
H25A Fruitdale 76.16 43 P **P 17 27 40.8 +0.6**
baz=313
BSD Bornholm Skovb 76.19 333 *i* P **P 17 27 40.5 +0.4**
comp=Z,16nm,0.9s
BSD Bornholm Skovb 76.19 333 *eP* **P 17 27 40.5 +0.4**
BSD pmax pmax
comp=Z,16nm,0.9s
G26A Maurine 76.22 42 P **P 17 27 40.6 0.0**
baz=313,SNR=7.2
BC3 Big Chuckawall 76.23 58 P **P 17 27 41.8 +0.9**
baz=309
RSSD Black Hills 76.26 44 P **P 17 27 41.5 +0.4**
baz=312
RSSD Black Hills 76.26 44 *eP* **P 17 27 41.1 0.0**
RSSD pmax pmax
comp=Z,11nm,0.9s
RSSD Black Hills 76.26 44 *eP* **P 17 27 41.1 0.0**
comp=Z,11nm,0.9s
W13A Hualapai Mount 76.34 56 *eP* **P 17 27 42.7 +1.0**
comp=Z,20nm,1.9s
IKP In-Ko-Pah, Jac 76.43 59 P **P 17 27 43.3 +1.3**
baz=309
I25A Rochford 76.49 44 P **P 17 27 42.4 +0.1**
baz=313,SNR=7.9
G27A Dupree 76.51 42 P **P 17 27 42.3 +0.1**
baz=314
U15A North Rim 76.51 54 *eP* **P 17 27 44.2 +1.5**
comp=Z,16nm,1.0s
U15A *epP* **PcP 17 27 53.9 -0.4**
O20A White River Ci 76.56 49 P **P 17 27 43.2 +0.3**
baz=311
O20A White River Ci 76.56 49 *eP* **P 17 27 43.7 +0.8**
comp=Z,23nm,1.3s
H26A Fairpoint 76.59 43 P **P 17 27 43.0 +0.3**
baz=313
PDMCI Parker Dam,Lak 76.68 56 P **P 17 27 43.8 +0.5**
baz=309
D30A Buchanan 76.88 39 P **P 17 27 44.1 -0.1**
baz=315
H27A Howes 76.94 42 P **P 17 27 44.9 +0.2**
baz=314,SNR=6.0
GLA Glamis 77.02 58 P **P 17 27 46.4 +1.1**
baz=309
PV09 Paradox Valley 77.11 51 *eP* **P 17 27 47.4 +1.4**
A33A Warroad 77.14 36 P **P 17 27 45.3 -0.3**
baz=317
E30A Jud 77.23 39 P **P 17 27 45.9 -0.4**
baz=315
F29A Eureka 77.25 40 P **P 17 27 46.7 +0.3**
baz=315
KWP Kalwaria Pacla 77.32 325 *eP* **P 17 27 48.1 +1.4**
KWP Kalwaria Pacla 77.32 325 *‖iP* **P 17 27 48.2 +1.6**
KWP Kalwaria Pacla 77.32 325 *eP* **P 17 27 48.1 +1.4**
J26A Sides Ranch, S 77.32 44 P **P 17 27 47.3 +0.5**
baz=313
N23A Red Feather La 77.38 47 P **P 17 27 48.6 +1.1**
baz=312
N23A Red Feather La 77.38 47 *eP* **P 17 27 49.0 +1.5**
comp=Z,18nm,0.9s
PV05 Paradox Valley 77.40 51 *eP* **P 17 27 48.8 +1.2**
GIRR Girov 77.53 322 *‖iP* **P 17 27 48.8 +0.9**
Y14A Wickenburg 77.64 56 *eP* **P 17 27 50.0 +1.2**
comp=Z,39nm,1.1s
BUR08 Bucovina Ar. S 77.65 323 *eP* **P 17 27 49.2 +0.6**
BURAR Bucovina Array 77.66 323 *‖iP* **P 17 27 49.7 +1.0**
WUAZ Wupatki 77.66 54 P **P 17 27 50.3 +1.2**
baz=310
E31A Nome 77.69 39 P **P 17 27 48.9 +0.1**
baz=316
TESR Tescani 77.78 321 *⇑iP* **P 17 27 50.2 +0.9**
B34A Aery, Baudette 77.80 36 P **P 17 27 49.1 -0.2**
baz=318
I28A Midland 77.85 42 P **P 17 27 49.9 +0.2**
baz=314,SNR=13
SMCO Snowmass 77.93 49 *eP* **P 17 27 52.0 +1.2**
comp=Z,13nm,1.2s
CFR Carcaliu 77.99 320 *‖iP* **P 17 27 51.2 +0.8**
KOLS Kolonicke sedl 78.03 325 *eP* **P 17 27 51.6 +1.0**
KOLS pmax pmax
comp=Z,5.0nm,0.9s
KOLS Kolonicke sedl 78.03 325 *eP* **P 17 27 51.6 +1.0**
KOLS *e* 17 39 14.0
KOLS *e* 17 39 17.2
G30A Faulkton 78.09 40 P **P 17 27 51.0 -0.1**
baz=315,SNR=6.5
STHS Stebnicka Huta 78.11 326 *eP* **P 17 27 52.6 +1.5**
STHS *e* 17 28 04.7
STHS pmax pmax
comp=Z,6.0nm,1.1s
STHS Stebnicka Huta 78.11 326 *eP* **P 17 27 52.6 +1.5**
STHS *e* 17 28 04.7
STHS *e* 17 39 17.1
STHS *e* 17 39 21.4
OJC Ojcow 78.12 327 *eP* **P 17 27 52.2 +1.1**
OJC Ojcow 78.12 327 *eP* **P 17 27 52.2 +1.1**
OJC Ojcow 78.12 327 *eP* **P 17 27 52.4 +1.3**
comp=Z,17nm,0.9s
VRI Vrincioaia 78.20 321 *‖iP* **P 17 27 53.5 +1.9**
UZH Uzhgorod 78.24 325 *‖iP* **P 17 27 52.0 +0.2**
UZH *i* 17 28 00.7
PLOR Plostina 78.25 321 *⇑iP* P 17 28 00.3 +8.4
I29A Vivian Onida 78.28 42 P **P 17 27 52.7 +0.5**
baz=315
ISCO Idaho Springs 78.30 48 P **P 17 27 53.5 +0.8**
baz=312
ISCO Idaho Springs 78.30 48 *eP* **P 17 27 54.1 +1.4**
ISCO pmax pmax
comp=Z,37nm,1.9s
ISCO Idaho Springs 78.30 48 *eP* **P 17 27 54.1 +1.4**
comp=Z,38nm,1.9s
B35A Bob, Littlefor 78.31 35 P **P 17 27 52.2 0.0**
baz=318
MVCO Mesa Verde 78.33 51 P **P 17 27 53.5 +0.7**
baz=311,SNR=8.4
MVCO Mesa Verde 78.33 51 *eP* **P 17 27 53.8 +1.0**
comp=Z,13nm,0.9s
X16A Lo Mia Camp, P 78.33 55 *eP* **P 17 27 54.4 +1.6**
comp=Z,12nm,1.1s
CRVS Cervenica-Dubn 78.41 326 *eP* **P 17 27 54.0 +1.3**
CRVS *e* 17 28 05.6
CRVS Cervenica-Dubn 78.41 326 *eP* **P 17 27 54.0 +1.3**
CRVS *e* 17 28 05.6
CRVS *e* 17 39 17.5
NIE Niedzica 78.52 327 *eP* **P 17 27 54.7 +1.4**
NIE Niedzica 78.52 327 *eP* **P 17 27 54.7 +1.4**
D34A Park Rapids 78.58 37 P **P 17 27 53.8 0.0**
baz=317
E33A Westby DABS, E 78.63 38 P **P 17 27 53.9 -0.1**
baz=317
SUSD Miller 78.67 41 P **P 17 27 54.6 +0.3**
baz=315
C35A Jirik Farms, M 78.69 36 P **P 17 27 53.7 -0.6**
baz=318,SNR=8.5
DOPR Dopca 78.78 322 *‖iP* **P 17 27 57.5 +2.7**
BR131 Keskin Array S 78.83 313 *eP* **P 17 27 56.2 +0.8**
BRTR Keskin Array B 78.83 313 P **P 17 27 55.9 +0.5**
comp=Z,1.2nm,0.6s,baz=101,slow=5.1,SNR=8.1
W18A Petrified Fore 78.94 53 P **P 17 27 57.1 +1.0**
baz=311
S22A 4UR Ranch, Cre 78.97 50 P **P 17 27 57.9 +1.5**
baz=312,SNR=14
S22A 4UR Ranch, Cre 78.97 50 *eP* **P 17 27 57.7 +1.3**
comp=Z,11nm,0.9s
214A Organ Pipe Nat 79.03 58 P **P 17 27 57.7 +1.2**
baz=310
LANS Liptovska Anna 79.07 327 *eP* **P 17 27 58.3 +1.9**
LANS *e* 17 28 10.0
LANS Liptovska Anna 79.07 327 *eP* **P 17 27 58.3 +1.9**
LANS *e* 17 28 10.0
LANS *e* 17 39 19.6
LANS *e* 17 39 24.6
Q24A Divide 79.13 48 P **P 17 27 57.8 +0.6**
baz=313,SNR=5.9
Q24A Divide 79.13 48 *eP* **P 17 27 58.3 +1.0**
comp=Z,5.9nm,0.8s
KECS Kecovo 79.15 326 *eP* **P 17 28 00.7 +3.9**
KECS pmax pmax
comp=Z,4.0nm,1.5s
KECS Kecovo 79.15 326 *eP* **P 17 28 00.7 +3.9**
KECS *e* 17 39 19.7
KECS *e* 17 39 25.3
C36A Pine Crest Far 79.16 35 P **P 17 27 56.6 -0.3**
baz=319,SNR=7.8
J30A Dallas 79.19 42 P **P 17 27 57.5 +0.4**
baz=315
BR231 Keskin MP Arra 79.24 313 *eP* **P 17 27 56.9 -0.6**
VOIR 79.32 321 *‖iP* **P 17 27 59.4 +1.5**
MORC Moravsky Berou 79.39 328 *⇑iP* **P 17 27 59.5 +1.4**
MORC Moravsky Berou 79.39 328 *eP* **P 17 27 59.5 +1.4**
MORC *e*PP* **sP 17 28 10.9 +0.1**
MORC pmax pmax
comp=Z,40nm,0.8s
MORC Moravsky Berou 79.39 328 *eP* **P 17 27 59.5 +1.4**
comp=Z,40nm,0.8s
MORC *epP* **sP 17 28 10.9 +0.1**
H32A Carlson Farm, 79.39 40 P **P 17 27 58.2 0.0**
baz=316
UPC Upice 79.43 329 *eP* **P 17 27 59.6 +1.3**
UPC Upice 79.43 329 *eP* **P 17 27 59.6 +1.3**
DPC Dobruska-Polom 79.43 329 *eP* **P 17 27 59.8 +1.5**
DPC *epP* **sP 17 28 11.4 +0.4**
DPC Dobruska-Polom 79.43 329 *eP* **P 17 27 59.8 +1.5**
DPC *e*PP* **sP 17 28 11.4 +0.4**
D36A Goodland 79.45 36 P **P 17 27 58.1 -0.4**
baz=319
KRLC Kraliky 79.46 329 *eP* **P 17 27 59.8 +1.3**
KRLC *epP* **sP 17 28 11.3 +0.1**
KRLC Kraliky 79.46 329 *eP* **P 17 27 59.8 +1.3**
KRLC *e*PP* **sP 17 28 11.3 +0.1**
C37A Embarrass 79.47 35 P **P 17 27 58.6 +0.1**
baz=319
OGNE Ogallala 79.51 45 P **P 17 27 58.8 -0.3**
baz=314,SNR=5.6
OGNE Ogallala 79.51 45 *eP* **P 17 27 59.9 +0.8**
comp=Z,39nm,1.0s
ARR Arges 79.57 322 *‖iP* **P 17 28 01.9 +2.6**
K30A Basset 79.59 42 P **P 17 27 59.9 +0.5**
baz=315
H33A Prehn Over Nor 79.60 39 P **P 17 27 59.6 +0.2**
baz=317,SNR=7.4
J31A Geddes 79.60 41 P **P 17 27 60.0 +0.6**
baz=316
EYMN Ely 79.61 34 P **P 17 27 59.1 -0.2**
baz=320,SNR=11
EYMN Ely 79.61 34 *eP* **P 17 27 59.1 -0.2**
comp=Z,20nm,1.1s
SDCO Great Sand Dun 79.75 49 P **P 17 28 01.6 +0.9**
baz=313
D37A Cotton 79.79 35 P **P 17 27 59.9 -0.4**
baz=319
PSZ Piszkesteto 79.83 326 *⇑iP* **P 17 28 00.9 +0.3**
PSZ Piszkesteto 79.83 326 *eP* **P 17 28 01.0 +0.3**
PSZ pmax pmax
comp=Z,8.0nm,0.9s
PSZ Piszkesteto 79.83 326 *eP* **P 17 28 01.0 +0.4**
comp=Z,7.7nm,0.9s
VYHS Vyhne 79.84 327 *eP* **P 17 28 02.0 +1.4**
VYHS *e* 17 28 13.4
VYHS pmax pmax
comp=Z,12nm,1.8s
VYHS Vyhne 79.84 327 *eP* **P 17 28 02.0 +1.4**
VYHS *e* 17 28 13.4
VYHS *e* 17 39 21.1

VYHS e 17 39 27.8
C38A Sawbill Land. 79.88 35 P **P** **17 28 00.5 -0.3**
baz=320,SNR=16
E36A McGregor 79.90 36 P **P** **17 28 00.7 -0.2**
baz=319,SNR=5.5
BRG Berggiesshubel 79.93 331 eP **P** **17 28 01.6 +0.6**
comp=Z,5.9nm,1.0s
BRG e 17 28 13.1
comp=Z,7.1nm,0.8s
BRG Berggiesshubel 79.93 331 eP **P** **17 28 01.6 +0.6**
BRG e 17 28 13.1
BRG pmax pmax
comp=Z,6.0nm,1.0s
CLL Collm 79.93 331 ⇓iP **P** **17 28 01.3 +0.3**
comp=Z,12nm,0.9s
CLL i 17 28 03.7
comp=Z,11nm,0.9s
CLL i 17 28 12.9
comp=Z,13nm,0.7s
CLL Collm 79.93 331 ⇓iP **P** **17 28 01.3 +0.3**
CLL i 17 28 12.9
CLL pmax pmax
comp=Z,12nm,0.9s
CLL Collm 79.93 331 eP **P** **17 28 01.3 +0.3**
CLL epP **sP** **17 28 13.1 -0.5**
PVCC Panska Ves 79.97 330 eP **P** **17 28 02.6 +1.4**
PVCC epP **sP** **17 28 14.2 +0.3**
PVCC Panska Ves 79.97 330 eP **P** **17 28 02.6 +1.4**
PVCC e*PP **sP** **17 28 14.2 +0.3**
K31A O'Neill 80.07 42 P **P** **17 28 02.5 +0.5**
baz=316
TUC Tucson 80.11 56 P **P** **17 28 03.3 +0.9**
baz=311
TUC Tucson 80.11 56 eP **P** **17 28 03.5 +1.1**
TUC pmax pmax
comp=Z,5.0nm,0.9s
TUC Tucson 80.11 56 eP **P** **17 28 03.5 +1.1**
comp=Z,4.6nm,0.9s
VRAC Vranov 80.14 328 P **P** **17 28 02.9 +0.7**
comp=Z,7.1nm,0.8s,baz=48,slow=3.6,SNR=7.9
VRAC Vranov 80.14 328 ⇑iP **P** **17 28 03.2 +1.0**
F36A Milaca 80.27 37 P **P** **17 28 02.8 -0.1**
baz=319
C39A Grand Marais 80.30 34 P **P** **17 28 02.6 -0.5**
baz=320
L31A Butterfield Fa 80.35 42 P **P** **17 28 03.5 0.0**
baz=316,SNR=8.4
ECSD EROS Data Cent 80.35 40 P **P** **17 28 02.6 -0.8**
baz=317,SNR=12
ECSD EROS Data Cent 80.35 40 eP **P** **17 28 03.5 0.0**
ECSD epP **sP** **17 28 15.0 -1.1**
GOPC GO Pecny, Ondr 80.38 330 eP **P** **17 28 04.5 +1.0**
GOPC epP **sP** **17 28 16.5 +0.4**
GOPC GO Pecny, Ondr 80.38 330 eP **P** **17 28 04.5 +1.0**
GOPC e*PP **sP** **17 28 16.5 +0.4**
PRU Pruhonice 80.41 330 eP **P** **17 28 04.7 +1.1**
PRU ex x 17 28 07.2
PRU epP **sP** **17 28 16.4 +0.1**
PRU Pruhonice 80.41 330 eP **P** **17 28 04.7 +1.1**
PRU e*PP **sP** **17 28 16.4 +0.1**
H35A Sunnyside Ranc 80.52 38 P **P** **17 28 04.9 +0.6**
baz=318
TREC Trest 80.59 329 epP pP 17 28 17.7 +3.8
T25A Trinidad 80.80 49 P **P** **17 28 06.2 0.0**
baz=313,SNR=12
T25A Trinidad 80.80 49 eP **P** **17 28 07.0 +0.8**
comp=Z,20nm,1.0s
M31A Lambtecht Ranc 80.87 43 P **P** **17 28 05.8 -0.5**
baz=316
MOX Moxa 80.98 332 P **P** **17 28 09.9 +3.2**
MOX pmax pmax
comp=Z,18nm,2.2s
NKC Novy Kostel 81.01 331 eP **P** **17 28 07.7 +0.9**
NKC Novy Kostel 81.01 331 eP **P** **17 28 07.7 +0.9**
LAZ Ladron 81.02 53 eP **P** **17 28 09.0 +1.6**
H36A Jessenland, He 81.04 38 P **P** **17 28 07.9 +0.8**
baz=318
I35A Creekview Farm 81.06 39 P **P** **17 28 07.2 0.0**
baz=318
ANMO Albuquerque 81.07 52 P **P** **17 28 08.9 +1.3**
baz=313
ANMO Albuquerque 81.07 52 eP **P** **17 28 09.2 +1.5**
ANMO pmax pmax
comp=Z,13nm,1.0s
ANMO Albuquerque 81.07 52 eP **P** **17 28 09.2 +1.5**
comp=Z,13nm,1.0s
N31A Bailey Ranch, 81.25 43 P **P** **17 28 08.0 -0.3**
baz=316
BGNE Belgrade 81.26 42 P **P** **17 28 08.6 +0.3**
baz=316
BGNE Belgrade 81.26 42 eP **P** **17 28 08.6 +0.3**
comp=Z,57nm,0.9s
J35A Milford 81.32 40 P **P** **17 28 08.5 -0.1**
baz=318
Y22D IRIS PASSCAL I 81.37 53 P **P** **17 28 09.9 +0.7**
baz=312
EKA Eskdalemuir Ar 81.38 342 P **P** **17 28 09.4 +0.8**
comp=Z,1.0nm,0.5s,baz=34,slow=5.2,SNR=4.7
K34A Le Mars 81.38 40 P **P** **17 28 08.8 -0.1**
baz=317
LPM Los Pinos Moun 81.39 52 eP **P** **17 28 10.7 +1.3**
MDVR Moldovita 81.39 323 ⇓iP **P** **17 28 09.1 +0.1**
I36A Fitzsimmons Fa 81.41 38 P **P** **17 28 09.3 +0.2**
baz=318
KHC Kasperske Hory 81.48 330 eP **P** **17 28 10.3 +0.9**
KHC ePCP **PcP** **17 28 12.9 -2.4**
KHC epP **sP** **17 28 22.1 +0.1**
KHC epP **pP** **17 28 25.8 +7.2**
KHC Kasperske Hory 81.48 330 eP **P** **17 28 09.3 -0.1**
KHC e*PP **sP** **17 28 22.4 +0.4**
KHC Kasperske Hory 81.48 330 eP **P** **17 28 09.2 -0.1**
KHC epP **sP** **17 28 22.4 +0.4**
BNM Barren Site 81.50 52 eP **P** **17 28 10.8 +0.8**
H37A Dierke Farm, C 81.51 37 P **P** **17 28 09.9 +0.3**
baz=319
CONA Conrad Observa 81.53 328 iP **P** **17 28 10.9 +1.2**
comp=Z,8.1nm,1.0s
O31A Woolen Ranch, 81.54 44 P **P** **17 28 09.8 0.0**
baz=316
M33A Taylor Creek F 81.63 42 P **P** **17 28 10.0 -0.3**
baz=317
GEC2 GERESS Array S 81.66 330 eP **P** **17 28 11.2 +0.8**
GEC2 pmax pmax
comp=Z,4.0nm,0.6s
GEC2 GERESS Array S 81.66 330 eP **P** **17 28 11.2 +0.8**
comp=Z,3.6nm,0.6s
GERES GERESS Array B 81.66 330 P **P** **17 28 10.8 +0.4**
comp=Z,1.8nm,0.5s,baz=31,slow=6.2,SNR=21
GEA0 GERESS Array S 81.67 330 eP **P** **17 28 10.8 +0.4**
319A Douglas 81.69 56 eP **P** **17 28 12.2 +1.3**
comp=Z,16nm,0.9s
I37A Lemond, Waseca 81.71 38 P **P** **17 28 11.2 +0.6**
baz=319,SNR=5.7
WET Wettzell 81.73 330 P **P** **17 28 12.1 +1.4**
WET pmax pmax
comp=Z,14nm,1.0s
L34A Svendsen Farm, 81.76 41 P **P** **17 28 11.3 +0.3**
baz=317
K35A Storm Lake 81.78 40 P **P** **17 28 11.1 0.0**
baz=318
121A Cookes Peak, D 81.87 54 P **P** **17 28 12.9 +1.0**
baz=312
O32A Brockman Farm, 82.02 43 P **P** **17 28 12.3 -0.1**
baz=316
COWI Conover 82.06 34 eP **P** **17 28 12.5 +0.1**
comp=Z,11nm,1.1s
SCHQ Schefferville 82.10 18 P **P** **17 28 12.7 +0.2**
comp=Z,4.1nm,0.8s,baz=253,slow=7.8,SNR=3.7
J37A Redenius Farm, 82.17 39 P **P** **17 28 13.1 +0.1**
baz=319,SNR=5.0
I38A Scanlan Farm, 82.19 38 P **P** **17 28 13.1 -0.1**
baz=320
ARSA Arzberg 82.20 328 iP **P** **17 28 14.0 +0.8**
comp=Z,4.1nm,0.9s
K36A Gilmore City 82.23 40 P **P** **17 28 13.5 +0.1**
baz=318
MOA Molln 82.24 329 P **P** **17 28 13.4 0.0**
comp=Z,4.8nm,1.4s
CBKS Cedar Bluff 82.27 45 P **P** **17 28 13.3 -0.5**
baz=316
P32A Huiting Farm, 82.30 44 P **P** **17 28 13.4 -0.5**
baz=316,SNR=7.1
M35A Neola 82.48 41 P **P** **17 28 14.4 -0.3**
baz=318
O33A Hebron 82.52 43 P **P** **17 28 14.9 -0.1**
baz=317
L36A Harm Buss Farm 82.52 40 P **P** **17 28 14.8 -0.1**
baz=318,SNR=5.5
N34A Lincoln 82.53 42 P **P** **17 28 14.5 -0.5**
baz=317
K37A Belmond 82.53 39 P **P** **17 28 14.7 -0.3**
baz=319,SNR=6.0
J38A Wedel Dairy, R 82.67 38 P **P** **17 28 15.4 -0.3**
baz=320
Q32A Meitler Ranch, 82.78 44 P **P** **17 28 16.1 -0.2**
baz=316
PERS Pernice 82.86 328 iP **P** **17 28 17.4 +0.7**
SOKA Soboth 82.86 328 iP **P** **17 28 17.5 +0.8**
comp=Z,13nm,1.2s
O34A Beatrice 82.91 43 P **P** **17 28 16.3 -0.7**
baz=317
P33A Williams Farm, 82.92 44 P **P** **17 28 17.1 0.0**
baz=317
M36A Felix, Anita 82.94 41 P **P** **17 28 17.0 -0.1**
baz=318
N35A Tabor 82.95 41 P **P** **17 28 17.3 +0.1**
baz=318
L37A Phoenix Point, 82.96 40 P **P** **17 28 17.3 +0.1**
baz=319
MEM Membach 82.96 335 P **P** **17 28 17.7 +0.7**
comp=Z,8.2nm,1.2s
MEM AP **sP** **17 28 29.9 +0.2**
Q33A Connelly Farm, 83.17 44 P **P** **17 28 18.0 -0.4**
baz=317,SNR=7.6
OBKA Obir 83.20 328 iP **P** **17 28 18.9 +0.5**
comp=Z,4.5nm,0.8s
KBA Koelnbreinsper 83.23 329 iP **P** **17 28 19.2 +0.4**
comp=Z,8.3nm,1.5s
P34A Walnut Farm, R 83.30 43 P **P** **17 28 18.4 -0.7**
baz=317,SNR=8.6
N36A Muff Farm, Cla 83.33 41 P **P** **17 28 19.7 +0.6**
baz=318
L38A Oak Wood Farm, 83.33 39 P **P** **17 28 19.0 -0.1**
baz=319
M37A Trindle Farm, 83.35 40 P **P** **17 28 19.8 +0.5**
baz=319
BCLA Clavier 83.35 335 P **P** **17 28 19.7 +0.7**
BCLA AP **sP** **17 28 31.1 -0.6**
MYKA Terra Mystica 83.47 328 iP **P** **17 28 19.8 -0.1**
comp=Z,11nm,1.3s
R33A Olander Ranch, 83.58 45 P **P** **17 28 20.3 -0.2**
baz=317
VISS Visnje 83.65 327 iP **P** **17 28 20.7 0.0**
Q34A Chapman 83.70 44 P **P** **17 28 21.2 +0.1**
baz=317
BOJS Bojanci 83.71 327 iP **P** **17 28 21.3 +0.3**
P35A Duane Minner, 83.74 43 P **P** **17 28 21.1 -0.2**
baz=318
KSU1 Kansas State U 83.74 43 P **P** **17 28 21.3 0.0**
baz=317
KSU1 Kansas State U 83.74 43 eP **P** **17 28 21.4 +0.1**
comp=Z,14nm,0.6s
WTTA Wattenberg 83.75 330 iPcP **PcP** **17 28 24.6 -0.9**
comp=Z,4.4nm,0.6s
N37A Lee Faris, Mou 83.75 41 P **P** **17 28 21.3 -0.1**
baz=319,SNR=6.3
M38A Pleasantville 83.76 40 P **P** **17 28 21.2 -0.1**
baz=319,SNR=6.3
ABTA Abfaltersbach 83.83 329 iP **P** **17 28 22.2 +0.5**
comp=Z,4.1nm,1.0s
O36A Bolckow 83.84 42 P **P** **17 28 21.9 +0.1**
baz=318
DOU Dourbes 83.86 335 P **P** **17 28 21.3 -0.3**
T32A Huddler Ranch, 83.88 46 P **P** **17 28 22.2 +0.1**
baz=316
MOTA Moosalm 83.89 330 iPcP **P** **17 28 22.8 +0.7**
comp=Z,8.3nm,0.8s
JAVS Javornik 83.89 328 iP **P** **17 28 20.8 -1.2**
RETA Reutte 83.90 330 iPcP **P** **17 28 23.0 +0.9**
comp=Z,8.6nm,0.8s
MNTX Cornudas Mount 83.93 54 P **P** **17 28 23.0 +0.6**
baz=313
MSTX Muleshoe 83.95 50 P **P** **17 28 22.8 +0.2**
baz=314,SNR=7.0
MSTX Muleshoe 83.95 50 eP **P** **17 28 23.4 +0.8**
comp=Z,22nm,1.0s
AMTX Amarillo 83.95 49 P **P** **17 28 23.4 +0.9**
baz=315
AMTX Amarillo 83.95 49 eP **P** **17 28 23.8 +1.2**
comp=Z,28nm,1.0s
R34A Isabella, Hill 83.99 44 P **P** **17 28 23.0 +0.4**
baz=317
JFWS Jewell Farm 84.03 37 eP **P** **17 28 22.2 -0.5**
JFWS pmax pmax
comp=Z,6.0nm,0.7s
JFWS Jewell Farm 84.03 37 eP **P** **17 28 22.2 -0.5**
comp=Z,6.0nm,0.7s
P36A Good Intent, A 84.09 42 P **P** **17 28 22.8 -0.2**
baz=318
S33A Kaszmaul Farm, 84.09 45 P **P** **17 28 22.8 -0.3**
baz=317
BFO Black Forest 84.10 332 eP **P** **17 28 23.8 +0.9**
BFO pmax pmax
comp=Z,20nm,1.5s
BFO Black Forest 84.10 332 eP **P** **17 28 23.8 +0.9**
comp=Z,20nm,1.5s
N38A Joes South For 84.22 40 P **P** **17 28 24.0 +0.3**
baz=319,SNR=5.4
Q35A Mercer Eighty, 84.22 43 P **P** **17 28 23.8 +0.1**
baz=318
O37A Wolven Farm, M 84.23 41 P **P** **17 28 24.1 +0.3**
baz=319
FETA Feichten 84.30 330 iPcP **P** **17 28 24.8 +0.6**
comp=Z,5.5nm,0.8s
T33A Patterson Ranc 84.33 46 P **P** **17 28 24.4 +0.1**
baz=317
PDG Podgorica 84.34 323 ⇓iP **P** **17 28 24.1 -0.1**
CDF Champ du Feu 84.40 333 eP **P** **17 28 24.6 0.0**
CDF pmax pmax
comp=Z,9.0nm,1.0s
DAVA Damuels 84.40 331 iPcP **P** **17 28 25.3 +0.6**
comp=Z,12nm,0.9s
U32A Winter Ranch, 84.42 46 P **P** **17 28 25.7 +0.9**
baz=316
Q36A Arnold C. Orve 84.45 43 P **P** **17 28 25.1 +0.2**
baz=318
S34A Willow Spring 84.50 44 P **P** **17 28 25.8 +0.6**
baz=317
N39A Derby Farms, D 84.51 40 P **P** **17 28 25.1 -0.1**
baz=320,SNR=10
R35A Emporia Munici 84.53 44 P **P** **17 28 25.5 +0.2**
baz=318,SNR=5.7
P37A Lathrop 84.56 42 P **P** **17 28 25.4 0.0**
baz=319
O38A Galt 84.60 41 P **P** **17 28 26.1 +0.4**
baz=320
FUORN Ofenpass-Fuorn 84.81 330 eP **P** **17 28 28.1 +1.2**
comp=Z,23nm,0.6s
DAVOX Davos/Dischmat 84.83 331 P **P** **17 28 27.5 +0.6**
comp=Z,5.7nm,0.8s,baz=325,slow=1.2,SNR=6.2
V32A Arapaho 84.87 47 P **P** **17 28 27.8 +0.7**
baz=316,SNR=6.2
R36A Gordon, Harris 84.90 43 P **P** **17 28 27.3 +0.1**
baz=318,SNR=10
S35A Otter Creek Ra 84.94 44 P **P** **17 28 27.5 +0.1**
baz=318,SNR=12
P38A Dawn 84.95 41 P **P** **17 28 27.5 +0.1**
baz=319,SNR=10
T34A McClaskey Farm 84.95 45 P **P** **17 28 27.5 +0.1**
baz=317,SNR=9.2
O39A Kirksville 84.97 40 P **P** **17 28 28.0 +0.5**
baz=320
Q37A Longview Farm, 85.04 42 P **P** **17 28 27.5 -0.4**
baz=319
W32A Sentinel 85.18 48 P **P** **17 28 29.3 +0.6**
baz=316,SNR=5.9
U34A Anderson Ranch 85.19 46 P **P** **17 28 29.2 +0.5**
baz=317,SNR=5.4
U34A Anderson Ranch 85.19 46 eP **P** **17 28 29.7 +1.0**
comp=Z,36nm,0.8s
V33A Lossen Ranch, 85.22 46 P **P** **17 28 29.1 +0.3**
baz=317
R37A Teagarden Farm 85.26 43 P **P** **17 28 28.7 -0.3**
baz=318,SNR=7.5
TUE Stuetta 85.28 331 eP **P** **17 28 30.0 +0.7**
TUE epP **sP** **17 28 41.9 0.0**
S36A Lake Cedric, C 85.30 44 P **P** **17 28 29.4 +0.2**
baz=318,SNR=9.1
T35A Sooner Cattle 85.40 45 P **P** **17 28 29.5 -0.2**
baz=318,SNR=6.7
O40A La Belle 85.40 40 P **P** **17 28 29.8 +0.2**
baz=320
Q38A Cooks Store, C 85.40 42 P **P** **17 28 29.4 -0.2**
baz=319,SNR=8.0
P39B Salisbury 85.44 41 P **P** **17 28 30.1 +0.2**
baz=320,SNR=7.3
W33A Caddo, Fort Co 85.60 47 P **P** **17 28 31.8 +1.1**
baz=317
T36A Boggs Farm, Ca 85.63 44 P **P** **17 28 31.1 +0.3**
baz=318,SNR=7.0
V34A Guthrie 85.64 46 P **P** **17 28 31.2 +0.3**
baz=317,SNR=5.7
V34A Guthrie 85.64 46 eP **P** **17 28 31.5 +0.6**
comp=Z,38nm,0.9s
X32A Elmer 85.66 48 P **P** **17 28 31.5 +0.4**
baz=316,SNR=6.4
Q39A Willow Grove F 85.67 41 P **P** **17 28 31.2 +0.2**
baz=320,SNR=11
S37A Fort Scott 85.67 43 P **P** **17 28 31.0 0.0**
baz=318,SNR=13
U35A Pawnee 85.68 45 P **P** **17 28 31.3 +0.2**
baz=318
WMOK Wichita Mounta 85.72 47 P **P** **17 28 31.5 +0.1**
baz=316,SNR=8.8
WMOK Wichita Mounta 85.72 47 eP **P** **17 28 31.5 +0.1**
WMOK pmax pmax
comp=Z,21nm,1.2s
WMOK Wichita Mounta 85.72 47 eP **P** **17 28 31.5 +0.1**
comp=Z,21nm,1.2s
P40A Paris 85.77 40 P **P** **17 28 31.6 +0.2**
baz=320,SNR=11
R38A Fenwick Farm, 85.84 42 P **P** **17 28 31.1 -0.7**
baz=319,SNR=7.8
W34A Bridge Creek, 85.93 47 P **P** **17 28 32.6 +0.2**
baz=317
W34A Bridge Creek, 85.93 47 eP **P** **17 28 33.6 +1.2**
comp=Z,24nm,0.8s
V35A Meyer Ranch, C 86.07 46 P **P** **17 28 33.0 0.0**
baz=318
T37A Cheneyville 18 86.10 44 P **P** **17 28 33.2 0.0**
baz=318,SNR=8.4
SENIN Lac Senin/Sane 86.14 332 eP **P** **17 28 34.1 +0.6**
comp=Z,30nm,1.9s
Q40A Laux Farm, Aux 86.16 41 P **P** **17 28 33.4 -0.1**
baz=320,SNR=9.3
R39A Chumby, Stover 86.19 42 P **P** **17 28 33.3 -0.3**
baz=320,SNR=15
U36A Oologah 86.21 45 P **P** **17 28 33.4 -0.3**
baz=318
S38A Stockton 86.25 43 P **P** **17 28 33.5 -0.4**
baz=319
HDIL Hopedale 86.31 38 P **P** **17 28 34.1 -0.1**
baz=322
Y33A Hilltop Ranch, 86.34 48 P **P** **17 28 34.4 0.0**
baz=317,SNR=7.4
X34A Smith Ranch, M 86.36 47 P **P** **17 28 35.1 +0.6**
baz=317,SNR=6.5
W35A Tecumseh 86.49 46 P **P** **17 28 35.3 +0.1**
baz=318
T38A Diamond 86.50 43 P **P** **17 28 35.0 -0.2**
baz=319,SNR=14
S39A Bolivar 86.51 42 P **P** **17 28 34.7 -0.5**
baz=319,SNR=11
U37A Salina 86.53 44 P **P** **17 28 35.5 +0.1**
baz=318,SNR=5.5
TUL1 Leonard 86.53 45 P **P** **17 28 35.5 +0.2**
baz=318
V36A Jenks 86.54 45 P **P** **17 28 35.6 +0.2**
baz=318
R40A Maddies Statio 86.60 41 P **P** **17 28 35.5 -0.1**
baz=320,SNR=13
ABTX Abilene, Hawle 86.75 49 P **P** **17 28 37.3 +0.9**
baz=316
ABTX Abilene, Hawle 86.75 49 eP **P** **17 28 37.4 +0.9**
comp=Z,20nm,0.9s
Z33A Whitaker Ranch 86.78 48 P **P** **17 28 36.8 +0.2**
baz=317
W36A Wetumka 86.86 46 P **P** **17 28 37.0 0.0**
baz=318
Y34A Reagan Ranch, 86.87 47 P **P** **17 28 37.3 +0.2**
baz=317
U38A Gravette 86.90 44 P **P** **17 28 37.1 0.0**
baz=319
V37A Hulbert 86.91 45 P **P** **17 28 37.2 +0.1**
baz=318,SNR=5.8
T39A Clever 86.99 43 P **P** **17 28 37.6 0.0**
baz=319
X35A Drake 86.99 47 P **P** **17 28 37.5 -0.1**
baz=317
Q42A Golden Eagle 86.99 40 P **P** **17 28 37.5 0.0**
baz=321
S40A Lebanon 87.01 42 P **P** **17 28 37.3 -0.4**
baz=320,SNR=8.8
GRR Gorron 87.05 338 eP **P** **17 28 37.7 +0.1**
GRR pmax pmax
comp=Z,32nm,1.2s
LPL La Plagne 87.06 332 eP **P** **17 28 38.2 +0.2**
LPL pmax pmax
comp=Z,9.0nm,1.0s
LPG La Plagne 87.07 332 eP **P** **17 28 38.4 +0.2**
LPG pmax pmax
comp=Z,9.0nm,1.0s
AVF Avril sur Loir 87.14 334 eP **P** **17 28 38.3 +0.2**
AVF pmax pmax
comp=Z,27nm,1.2s
133A Hamilton Ranch 87.18 49 P **P** **17 28 38.9 +0.3**
baz=316
Z34A Collier Ranch, 87.21 48 P **P** **17 28 38.8 +0.1**
baz=317
X36A Centrahoma 87.21 46 P **P** **17 28 38.7 0.0**
baz=318,SNR=6.1
HHAR Hobbs 87.25 44 eP **P** **17 28 39.0 +0.2**
comp=Z,5.5nm,0.8s
W37B Quinton 87.30 45 P **P** **17 28 38.9 -0.2**
baz=318
V38A Canehill 87.32 44 P **P** **17 28 38.8 -0.4**
baz=319,SNR=6.9
Y35A Marietta 87.32 47 P **P** **17 28 39.8 +0.6**
baz=317
U39A Green Forest 87.42 43 P **P** **17 28 39.9 +0.2**
baz=319
SFIN Lafayette 87.48 37 P **P** **17 28 39.8 -0.1**
baz=323
SFIN Lafayette 87.48 37 eP **P** **17 28 40.1 +0.3**
comp=Z,20nm,0.8s
Z35A Perchaven, San 87.62 48 P **P** **17 28 41.1 +0.5**
baz=317
233A Rising Star 87.62 49 P **P** **17 28 41.2 +0.5**
baz=316
TRQ Mont Tremblant 87.62 26 eP **P** **17 28 40.1 -0.3**
134A White-Moore Ra 87.69 49 P **P** **17 28 41.5 +0.5**
baz=317
V39A Pettigrew 87.74 44 P **P** **17 28 40.9 -0.3**
baz=319,SNR=6.1
Y36A Durant 87.75 47 P **P** **17 28 41.4 +0.2**
baz=318
U40A Yellville 87.77 43 P **P** **17 28 40.9 -0.4**
baz=320,SNR=15
T41A Mountain View 87.81 42 P **P** **17 28 40.8 -0.7**
baz=320,SNR=11
W38A Poteau 87.85 45 P **P** **17 28 41.9 +0.2**
baz=319
TCF Toulx Ste Croi 87.96 335 eP **P** **17 28 42.4 +0.3**
TCF pmax pmax
comp=Z,22nm,1.5s
333A Richland Sprin 88.07 50 P **P** **17 28 43.0 +0.2**
baz=316
234A Clairette 88.07 49 P **P** **17 28 43.3 +0.5**
baz=317,SNR=5.1
Z36A Blue Ridge 88.12 47 P **P** **17 28 43.4 +0.4**
baz=318
W39A Magazine 88.15 44 P **P** **17 28 43.3 +0.2**
baz=319
JCT Junction City 88.19 51 P **P** **17 28 44.1 +0.6**
baz=316
JCT Junction City 88.19 51 eP **P** **17 28 43.8 +0.3**
JCT pmax pmax
comp=Z,20nm,1.4s
JCT Junction City 88.19 51 eP **P** **17 28 43.8 +0.3**
comp=Z,20nm,1.4s
OLIL Olney 88.31 38 eP **P** **17 28 44.7 +0.9**
comp=Z,230nm,0.8s
VIVF Saint-Julien-l 88.38 333 eP **P** **17 28 44.4 +0.3**
VIVF pmax pmax
comp=Z,13nm,1.4s
433A Art 88.42 50 P **P** **17 28 44.8 +0.3**
baz=316
334A Lometa 88.50 50 P **P** **17 28 45.2 +0.3**
baz=317
W40A Ferguson Farm, 88.54 44 P **P** **17 28 45.2 +0.3**
baz=320
V41A Mountainview 88.57 43 P **P** **17 28 45.1 0.0**

baz=320
SIUC Southern Illin 88.57 40 *e*P **P 17 28 46.0 +0.9**
comp=Z,46nm,0.9s
PBMO Poplar Bluff 88.69 41 *e*P **P 17 28 46.4 +0.8**
comp=Z,39nm,1.1s
MIAR Mount Ida 88.75 44 P **P 17 28 46.1 +0.1**
baz=319,SNR=9.9
MIAR Mount Ida 88.75 44 *e*P **P 17 28 46.5 +0.5**
MIAR *e**PP **sP 17 28 58.2 -0.6**
MIAR Mount Ida 88.75 44 *e*P **P 17 28 46.5 +0.5**
MIAR *e*pP **sP 17 28 58.1 -0.6**
X201 Greenbrier Sit 88.84 43 *e*P **P 17 28 46.7 +0.3**
comp=Z,17nm,1.0s
434A Burnet 88.86 50 P **P 17 28 46.8 +0.2**
baz=317
WHAR Wooly Hollow 88.88 43 *e*P **P 17 28 47.0 +0.4**
comp=Z,21nm,0.9s
WHAR *e*pP **sP 17 28 58.8 -0.5**
Y39A Lockesburg 88.93 45 P **P 17 28 47.1 +0.3**
baz=319
Z38A Mt. Pleasant 88.95 46 P **P 17 28 47.0 0.0**
baz=318
W41B Gary Mavity, V 88.99 43 P **P 17 28 46.8 -0.2**
baz=320
X40A Basin Creek Fa 89.20 44 P **P 17 28 48.5 +0.4**
baz=320
CAF Calviac 89.21 334 *e*P **P 17 28 48.8 +0.8**
CAF pmax pmax
comp=Z,18nm,1.3s
435B Jarrell 89.28 49 P **P 17 28 49.2 +0.7**
baz=317
633A Saathoff Ranch 89.30 51 P **P 17 28 49.1 +0.4**
baz=316
534A Blanco 89.31 51 P **P 17 28 49.3 +0.6**
baz=317
ACSO Alum Creek Sta 89.45 34 *e*P **P 17 28 49.7 +0.5**
comp=Z,33nm,0.9s
ACSO *e*pP **sP 17 29 01.6 -0.2**
WCI Wyandotte Cave 89.57 38 *e*P **P 17 28 50.6 +0.8**
WCI pmax pmax
comp=Z,17nm,0.9s
WCI Wyandotte Cave 89.57 38 *e*P **P 17 28 50.6 +0.8**
comp=Z,17nm,0.9s
832A Faith Ranch, C 89.66 53 P **P 17 28 50.9 +0.6**
baz=316
436A Wall Ranch, Ga 89.76 49 P **P 17 28 51.4 +0.6**
baz=318
M54A Oil Creek Stat 89.78 32 P **P 17 28 51.4 +0.7**
baz=328
Z40A Long Farm, Mag 89.82 45 P **P 17 28 52.1 +1.1**
baz=319
535A Dale 89.84 50 P **P 17 28 51.6 +0.4**
baz=317
N54A Moraine State 90.10 32 P **P 17 28 52.6 +0.4**
baz=328
536A Bastrop 90.11 50 P **P 17 28 53.6 +1.2**
baz=318
WVT Waverly 90.50 40 *e*P **P 17 28 54.5 +0.4**
WVT *e**PP **sP 17 29 06.6 -0.3**
WVT pmax pmax
comp=Z,10.0nm,0.8s
WVT Waverly 90.50 40 *e*P **P 17 28 54.5 +0.4**
comp=Z,9.9nm,0.8s
WVT *e*pP **sP 17 29 06.6 -0.3**
636A Smothers Creek 90.55 50 P **P 17 28 55.9 +1.5**
baz=318
933A Laredo 90.57 53 P **P 17 28 56.0 +1.4**
baz=316
835A Beeville 90.96 51 P **P 17 28 57.5 +1.1**
baz=317
O56A Blue Knob Stat 91.27 31 P **P 17 28 58.1 +0.4**
baz=328
034A Hebbronville 91.33 53 P **P 17 28 59.7 +1.5**
baz=317
Y45A Yeager Farm, C 91.41 42 P **P 17 28 59.1 +0.7**
baz=322
Z45A Winona 91.72 43 P **P 17 29 00.6 +0.7**
baz=321
Y46A Houston 91.75 42 P **P 17 29 00.9 +0.9**
baz=322
N59A State Game Lan 91.80 29 P **P 17 29 00.3 +0.2**
baz=330
SWET Sewanee 92.16 39 *e*P **P 17 29 02.0 +0.1**
comp=Z,4.7nm,0.8s
244A Avery, Jackson 92.22 44 P **P 17 29 02.9 +0.7**
baz=321
TKL Tuckaleechee C 92.84 37 *e*P **P 17 29 05.5 +0.5**
TKL pmax pmax
comp=Z,10.0nm,0.8s
TKL Tuckaleechee C 92.84 37 *e*P **P 17 29 05.5 +0.5**
comp=Z,9.8nm,0.8s
KMSC Kings Mountain 94.39 36 P **P 17 29 12.0 -0.2**
baz=326
CASY Casey 108.83 194 *e*Pdif **Pdif 17 30 13.9 -1.8**
TORD Torodi Ar. Bea 117.02 319 PKP **PKPdf 17 34 35.5 -2.0**
comp=Z,0.4nm,0.7s,baz=29,slow=3.3,SNR=2.4
TORD PP **PP 17 35 46.5 +0.3**
comp=Z,0.9nm,1.0s,baz=16,slow=6.2,SNR=4.3
SYO Syowa Base 131.66 208‖ *e*pPdiff pPdif 17 32 10.0 +3.5
LPAZ La Paz 143.30 60 PKP **PKPdf 17 35 26.6 -1.0**
comp=Z,2.5nm,1.0s,baz=288,slow=5.6,SNR=6.7
LPAZ La Paz 143.30 60 *e*PKPdf **PKPdf 17 35 27.6 -0.1**
SNAA Sanae 143.99 197 PKP PKPab 17 35 23.5 -0.4
SNAA Sanae 143.99 197 *e*PKIKP PKPab 17 35 23.6 -0.3
SNAA Sanae 143.99 197 *e*PKPdf PKPab 17 35 23.6 -0.3
PB11 IPOC Station P 144.65 66 *e*PKPdf **PKPdf 17 35 28.8 -0.5**
VNA2 Neumayer--Watz 145.53 196 PKP **PKPdf 17 35 28.7 -0.4**
baz=119,slow=2.5
PB01 IPOC Station P 145.60 67 *e*PKPdf **PKPab 17 35 31.3 -0.1**
VNA3 Neumayer Olymp 145.74 195 PKP **PKPdf 17 35 29.0 -0.4**
VNA1 Neumayer--Stat 145.93 196 PKP **PKPdf 17 35 29.9 +0.1**
LVC Limon Verde 147.01 69 *e*PKPdf **PKPbc 17 35 34.9 -0.7**
LCO Las Campanas 149.27 81 *e*PKPbc **PKPbc 17 35 41.6 +0.3**

KRSC 18 17:20:15.1±1.1, 54°.04N×165°.91E, h17km±31km, ML4.0, Komandorsky Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKI	**Bering**	**1.16**	**2**	*e*P	Pn	17 20 35.1	-1.6
BKI				*e*S	Sb	17 20 51.2	-0.4
NLC	**Nalytchevo**	**4.01**	**260**	*e*P	Pn	17 21 19.4	+3.7
NLC				*e*S	Sn	17 22 06.8	+4.5
SDLR	**Sedlovina**	**4.25**	**262**	*e*P	Pn	17 21 23.7	+4.5
UGLR	**Uglovaya**	**4.30**	**262**	*e*P	Pn	17 21 24.4	+4.5
SMAR	**Somma**	**4.30**	**262**	*e*P	Pn	17 21 24.5	+4.5
KRER	**Koryakskii**	**4.32**	**263**	*e*P	Pn	17 21 25.0	+4.7
AVH	**Avacha**	**4.34**	**263**	*e*P	Pn	17 21 25.1	+4.7
KRX	**Arik**	**4.37**	**264**	*e*P	Pn	17 21 25.4	+4.5
PET	**Petropavlovsk**	**4.45**	**260**	*e*P	Pn	17 21 26.0	+4.2
PET				*e*S	Sn	17 22 17.0	+3.9
ESO	**Esso**	**4.56**	**297**	*e*P	Pn	17 21 28.2	+4.8
ESO				*e*S	Sn	17 22 21.7	+5.7
RUS	**Russkaya**	**4.73**	**253**	*e*P	Pn	17 21 28.9	+3.3
RUS				*e*S	Sn	17 22 25.0	+5.0
GNL	**Ganaly**	**4.73**	**269**	*e*P	Pn	17 21 31.5	+5.7
KRMR	**Karymshinskiy**	**4.81**	**259**	*e*P	Pn	17 21 31.2	+4.5
KRMR				*e*S	Sn	17 22 27.3	+5.3
MTVR	**Mutnovka**	**4.90**	**255**	*e*P	Pn	17 21 31.9	+3.8
MTVR				*e*S	Sn	17 22 28.6	+4.2
ASAK	**Asacha**	**5.09**	**254**	*e*P	Pn	17 21 34.5	+3.8
APC	**Apacha**	**5.35**	**261**	*e*P	Pn	17 21 39.6	+5.5

ISCJB ***18*** *17:20:23.5±0.4, 20°.45S±0°.07×177°.6W±0°.1, h450km, mb4.3/27, Error ellipse: s-maj=13.9km s-min=8.2km az=28.7*
IDC ***18*** *17:20:24.9±1.4, 20°.39S×177°.66W, h451km±13km, mb3.8/18, mb1 3.9/21, mb1mx3.8/39, mbtmp4.6/21, Error ellipse: s-maj=15.7km s-min=10.8km az=119.0*
NEIC ***18*** *17:20:25.6±0.8, 20°.42S×177°.59W, h464km±8km, mb4.6/9, Error ellipse: s-maj=13.2km s-min=8.3km az=129.0*
ISC 18 17:20:24.1±0.4, 20°.48S±0°.08×177°.55W±0°.09, h450km, n108,σ1°33/133, mb4.3/27, 18C-15D, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSVF	**Nonsavu**	**4.98**	**303**	*e*P	**P**	**17 21 51.8**	**+3.4**
AFI	**Afiamalu**	**8.55**	**41**	P	**P**	**17 22 25.0**	**-0.6**
	6.7nm,0.3s,baz=82,slow=24,SNR=9.0						
AFI				S	**S**	**17 23 58.8**	**-6.6**
	3.9nm,0.3s,baz=72,slow=17,SNR=4.2						
DZM	**Mont Dzumac**	**15.01**	**261**	P	**P**	**17 23 35.8**	**+0.3**
	1.4nm,0.3s,baz=81,slow=17,SNR=11						
URZ	**Urewera**	**18.31**	**193**	P	**P**	**17 24 10.4**	**+0.7**
	3.2nm,0.3s,baz=263,slow=1.6,SNR=11						
URZ				S	**S**	**17 27 08.8**	**-5.7**
	1.6nm,0.3s,baz=322,slow=23,SNR=7.2						
CTA	**Charters Tower**	**33.91**	**264**	P	**P**	**17 26 28.2**	**-0.1**
	9.5nm,0.6s,baz=94,slow=10.0,SNR=14						
STKA	**Stephens Creek**	**38.18**	**244**	P	**P**	**17 27 03.9**	**+0.2**
	6.4nm,0.8s,baz=92,slow=11,SNR=11						
ASAR	**Alice Springs**	**44.34**	**257**	P	**P**	**17 27 57.3**	**-0.4**
	10nm,0.9s,baz=87,slow=8.8,SNR=28						
ASAR				PcP	**PcP**	**17 29 29.6**	**-0.3**
	5.6nm,0.7s,baz=105,slow=3.7,SNR=12						
ASAR				ScP	**ScP**	**17 32 39.8**	**+0.8**
	1.4nm,0.9s,baz=94,slow=3.8,SNR=6.0						
ASAR				S	**S**	**17 33 56.2**	**-5.9**
	2.0nm,0.8s,baz=95,slow=15,SNR=8.4						
WRA	**Warramunga Arr**	**45.02**	**262**	P	**P**	**17 27 57.4**	**-1.0**
	2.7nm,0.4s,baz=96,slow=7.5,SNR=23						
WRA				PcP	**PcP**	**17 29 30.5**	**+0.2**
	5.3nm,0.9s,baz=90,slow=3.8,SNR=7.0						
WRA				ScP	**ScP**	**17 32 40.0**	**+0.7**
	1.1nm,0.8s,baz=92,slow=4.4,SNR=4.9						
WRA				S	**S**	**17 33 56.8**	**-6.7**
	1.5nm,0.9s,baz=96,slow=12,SNR=4.7						
VNDA	**Vanda**	**57.97**	**185**	P	**P**	**17 29 34.0**	**+2.4**
	2.1nm,0.8s,baz=358,slow=7.5,SNR=13						
QSPA	**South Pole Qui**	**69.59**	**180**	*e*P	**P**	**17 30 48.1**	**+1.5**
	82nm,0.8s						
MJAR	**Matsushiro Arr**	**70.45**	**323**	P	**P**	**17 30 51.8**	**-0.2**
	3.1nm,0.5s,baz=165,slow=6.4,SNR=12						
KSM	**Kuching**	**73.83**	**278**	*e*P	**P**	**17 31 12.1**	**-0.1**
	5.0nm,0.7s						
ASAJ	**Asahikawa**	**73.91**	**331**	P	**P**	**17 31 13.3**	**+1.3**
	6.2nm,0.7s,baz=202,slow=3.1,SNR=6.4						
UNV	**Unalaska Valle**	**74.63**	**7**	*e*P	**P**	**17 31 14.8**	**-1.0**
PETK	**Petropavlovsk-**	**76.36**	**345**	P	**P**	**17 31 26.3**	**+0.7**
	14nm,0.9s,baz=116,slow=6.7,SNR=8.3						
USRK	**Ussuriysk Ar.**	**79.19**	**326**	P	**P**	**17 31 42.4**	**+1.3**
	4.9nm,0.9s,baz=111,slow=5.6,SNR=7.3						
MAW	**Mawson**	**81.72**	**200**	P	**P**	**17 31 54.9**	**+0.8**
	3.2nm,0.7s,baz=144,slow=7.6,SNR=4.5						
MA2	**Magadan**	**83.88**	**344**	P	**P**	**17 32 04.8**	**-0.1**
	5.3nm,0.8s,baz=201,slow=3.3,SNR=5.4						
PPLA	**Purkeypile**	**85.48**	**11**	*e*P	**P**	**17 32 12.6**	**-0.3**
TRF	**Thorofare Moun**	**86.34**	**12**	*e*P	**P**	**17 32 16.6**	**-0.5**
	7.0nm,0.7s						
ENH	**Enshi**	**86.38**	**304**	*e*P	**P**	**17 32 18.4**	**+0.5**
	32nm,1.5s						
SEY	**Seymchan**	**86.45**	**347**	P	**P**	**17 32 17.2**	**-0.1**
	17nm,0.9s,baz=142,slow=5.3,SNR=50						
TXAR	**Lajitas Array**	**86.69**	**57**	P	**P**	**17 32 21.1**	**+1.6**
	0.7nm,0.8s,baz=210,slow=7.2,SNR=4.3						
SYO	**Syowa Base**	**86.84**	**193**‖	*e*P	**P**	**17 32 17.2**	**-2.1**
MCK	**McKinley**	**86.86**	**12**	*e*P	**P**	**17 32 19.3**	**-0.1**
	11nm,0.9s						
COLA	**College**	**88.10**	**12**	*e*P	**P**	**17 32 24.9**	**-0.2**
	24nm,1.3s						
ILAR	**Eielson Array**	**88.20**	**13**	P	**P**	**17 32 25.2**	**-0.4**
	2.7nm,0.6s,baz=219,slow=5.8,SNR=20						
PDAR	**Pinedale Array**	**88.66**	**43**	P	**P**	**17 32 29.4**	**+0.9**
	0.3nm,0.5s,baz=224,slow=6.2,SNR=3.7						
BILL	**Bilibino**	**89.06**	**354**	*e*P	**P**	**17 32 29.4**	**-0.1**
	9.0nm,1.1s						
EGAK	**Eagle**	**89.48**	**15**	*e*P	**P**	**17 32 32.1**	**+0.6**
	12nm,1.0s						
COLD	**Coldfoot**	**89.78**	**10**	*e*P	**P**	**17 32 33.9**	**+1.0**
	8.6nm,1.1s						
CMAR	**Chiang Mai Arr**	**90.51**	**289**	P	**P**	**17 32 38.9**	**+1.5**
	4.6nm,1.0s,baz=114,slow=3.2,SNR=26						
YAK	**Yakutsk**	**92.25**	**338**	P	**P**	**17 32 43.8**	**-0.5**
	1.4nm,0.5s,baz=83,slow=12,SNR=4.2						
INK	**Inuvik**	**94.15**	**15**	P	**P**	**17 32 53.1**	**+0.2**
	4.8nm,1.1s,baz=211,slow=2.4,SNR=6.2						
INK	**Inuvik**	**94.15**	**15**	*e*P	**P**	**17 32 53.5**	**+0.5**
ZALV	**Zalesovo Beam**	**110.74**	**321**	PKiKP	**PKiKP**	**17 38 03.4**	**-1.1**
	1.8nm,0.6s,baz=122,slow=1.7,SNR=10.0						
MKAR	**Makanchi Array**	**111.49**	**313**	PKiKP	**PKiKP**	**17 38 05.2**	**-1.0**
	1.7nm,0.6s,baz=65,slow=1.7,SNR=26						
MKAR				SKP		17 40 57.1	
	0.3nm,0.8s,baz=83,slow=3.8,SNR=4.0						
KURK	**Kurchatov**	**114.27**	**317**	*e*P	PKPdf	17 38 09.9	-1.4
KKAR	**Karatay Array**	**119.56**	**309**	*e*P	**PKPdf**	**17 38 20.9**	**-0.9**
ABKAR	**Akbulak array**	**126.36**	**317**	*e*P	**PKPdf**	**17 38 34.3**	**-0.4**
ARCES	**ARCESS Array B**	**128.98**	**350**	PKP	**PKPdf**	**17 38 39.1**	**0.0**
	3.0nm,0.8s,baz=80,slow=1.4,SNR=7.4						
GEYT	**Albeck**	**129.13**	**303**	PKP	**PKPdf**	**17 38 40.4**	**+0.1**
	2.6nm,0.6s,baz=270,slow=1.5,SNR=9.3						
GEYT				SKPbc	SKPab	17 41 18.5	-0.1
	2.2nm,0.7s,baz=88,slow=4.5,SNR=3.6						
FINES	**FINESS Array B**	**135.87**	**344**	PKP	**PKPdf**	**17 38 50.8**	**-1.4**
	1.4nm,0.4s,baz=110,slow=4.3,SNR=9.2						
NB2	**NORSAR Subarra**	**139.01**	**354**	PKP	PKPpre	17 38 49.2	
	comp=Z,0.8nm,0.7s,baz=18,slow=4.0						
NOA	**NORSAR Array B**	**139.01**	**354**	PKhKP	PKPpre	17 38 48.6	
	comp=Z,0.3nm,0.5s,baz=26,slow=4.0,SNR=5.3						
NOA				SKPbc	**SKPbc**	**17 41 50.2**	**-0.1**
	comp=Z,1.1nm,0.9s,baz=8.8,slow=4.1,SNR=3.8						
HFS	**Hagfors**	**139.59**	**351**	PKhKP	PKPpre	17 38 50.8	
	comp=Z,3.7nm,0.4s,baz=58,slow=3.6,SNR=22						
AKASG	**Malin Array Be**	**143.20**	**331**	PKhKP	PKPpre	17 39 02.5	
	comp=Z,18nm,0.6s,baz=42,slow=4.6,SNR=61						
BSD	**Bornholm Skovb**	**144.16**	**348**	‖ *e*P	PKPbc	17 39 06.1	-0.5
	comp=Z,42nm,0.8s						
EKA	**Eskdalemuir Ar**	**144.95**	**6**	PKP	**PKPab**	**17 39 09.9**	**+0.2**
	comp=Z,3.4nm,0.6s,baz=346,slow=2.8,SNR=9.4						
SORM	**Soroca**	**145.41**	**329**	‖ *e*P	**PKPdf**	**17 39 10.4**	**+0.7**
MILM	**Milestii Mici**	**146.01**	**327**	‖ *e*P	**PKPbc**	**17 39 12.0**	**-0.5**
BRTR	**Keskin Array B**	**147.14**	**313**	PKPbc	**PKPdf**	**17 39 13.7**	**+0.5**
	comp=Z,9.5nm,0.8s,baz=158,slow=0.7,SNR=45						
ASF	**Jabal al Asfar**	**147.14**	**298**	PKPbc	**PKPbc**	**17 39 16.2**	**-0.1**
	comp=Z,14nm,0.8s,baz=33,slow=0.7,SNR=20						
BURAR	**Bucovina Array**	**147.25**	**331**	‖ *e*P	**PKPbc**	**17 39 16.7**	**+0.6**
TESR	**Tescani**	**147.37**	**328**	‖ *e*P	**PKPbc**	**17 39 16.4**	**+0.1**
CFR	**Carcaliu**	**147.51**	**325**	‖ *e*P	**PKPbc**	**17 39 17.1**	**+0.5**
VRI	**Vrincioaia**	**147.78**	**327**	‖ *e*P	**PKPbc**	**17 39 17.3**	**-0.1**
PLOR	**Plostina**	**147.83**	**327**	‖ *e*P	**PKPbc**	**17 39 17.3**	**-0.3**
OKC	**Ostrava-Krasne**	**148.16**	**341**	‖ *e*PKP	**PKPbc**	**17 39 18.6**	**+0.4**
OKC				*e*PKPAB	**PKPab**	**17 39 23.3**	**+0.6**
MMAI	**Mount Meron Ar**	**148.17**	**300**	PKPbc	**PKPbc**	**17 39 19.3**	**+0.4**
	comp=Z,10nm,0.4s,baz=77,slow=5.2,SNR=31						
UPC	**Upice**	**148.18**	**344**	‖ *e*PKP	**PKPbc**	**17 39 18.9**	**+0.7**
DPC	**Dobruska-Polom**	**148.23**	**343**	*e*PKPDF	**PKPdf**	**17 39 15.2**	**+0.7**
DPC				‖ *e*PKP	**PKPbc**	**17 39 19.2**	**+0.8**
DPC				*e*PKPAB	**PKPab**	**17 39 24.4**	**+1.4**
KRLC	**Kraliky**	**148.35**	**342**	‖ *e*PKP	**PKPbc**	**17 39 19.2**	**+0.5**
DOPR	**Dopca**	**148.37**	**329**	‖ *e*P	**PKPbc**	**17 39 19.7**	**+0.8**
ISR	**Istrita**	**148.39**	**327**	‖ *e*P	**PKPbc**	**17 39 19.4**	**+0.4**
MORC	**Moravsky Berou**	**148.40**	**341**	‖ *e*P	**PKPbc**	**17 39 19.2**	**+0.3**
MLR	**Muntele Rosu**	**148.44**	**328**	PKPbc	**PKPbc**	**17 39 18.8**	**-0.4**
	comp=Z,2.8nm,0.8s,baz=324,slow=4.1,SNR=18						
MLR	**Muntele Rosu**	**148.44**	**328**	‖ *e*P	**PKPbc**	**17 39 19.1**	**-0.1**
PVCC	**Panska Ves**	**148.52**	**345**	‖ *e*PKP	**PKPbc**	**17 39 19.8**	**+0.7**
SECR		**148.69**	**327**	‖ *e*P	**PKPbc**	**17 39 20.0**	**+0.3**
VOIR		**148.92**	**328**	‖ *e*P	**PKPbc**	**17 39 21.5**	**+1.2**
DRGR		**148.99**	**332**	‖ *e*P	**PKPbc**	**17 39 20.1**	**-0.4**
PRU	**Pruhonice**	**149.03**	**345**	‖ *e*PKP	**PKPbc**	**17 39 20.7**	**+0.4**
GOPC	**GO Pecny, Ondr**	**149.04**	**344**	‖ *e*PKP	**PKPbc**	**17 39 20.9**	**+0.5**
VRAC	**Vranov**	**149.10**	**342**	PKPbc	**PKPbc**	**17 39 20.4**	**-0.2**
	comp=Z,7.8nm,0.8s,baz=53,slow=1.8,SNR=12						
VRAC				PKPab	**PKPab**	**17 39 27.5**	**+0.9**
	comp=Z,7.2nm,0.6s,baz=29,slow=4.9,SNR=8.1						
VRAC	**Vranov**	**149.10**	**342**	‖ *e*P	**PKPbc**	**17 39 21.0**	**+0.4**
ARR	**Arges**	**149.17**	**329**	‖ *e*P	**PKPbc**	**17 39 22.5**	**+1.6**
PSZ	**Piszkesteto**	**149.21**	**337**	‖ *e*P	**PKPbc**	**17 39 21.3**	**+0.3**
CSS	**Mathiatis**	**149.24**	**304**	*e*PKPbc	**PKPbc**	**17 39 21.2**	**-0.2**
EIL	**Elat**	**149.26**	**294**	PKPbc	**PKPbc**	**17 39 21.6**	**+0.1**
	comp=Z,19nm,0.8s,baz=350,slow=3.2,SNR=17						
NKC	**Novy Kostel**	**149.27**	**347**	‖ *e*PKP	**PKPbc**	**17 39 21.5**	**+0.5**
NKC				*e*PKPAB	**PKPab**	**17 39 28.2**	**+0.9**
TREC	**Trest**	**149.42**	**343**	‖ *e*PKP	**PKPbc**	**17 39 21.7**	**+0.3**
TREC				*e*PKPAB	**PKPab**	**17 39 28.6**	**+0.7**
SMOL	**Smolenice**	**149.55**	**340**	*e*	**PKPbc**	**17 39 23.0**	**+1.3**
HUMR	**Humele**	**149.60**	**327**	‖ *e*P	**PKPbc**	**17 39 22.0**	**+0.1**
SIRR	**Siria**	**149.85**	**333**	‖ *e*P	**PKPbc**	**17 39 23.0**	**+0.5**
KHC	**Kasperske Hory**	**150.06**	**345**	*e*PKPDF	**PKPdf**	**17 39 17.6**	**+0.2**
KHC				‖ *e*PKP	**PKPbc**	**17 39 23.4**	**+0.5**
KHC				*e*PKPAB	**PKPab**	**17 39 31.3**	**+0.7**
KHC	**Kasperske Hory**	**150.06**	**345**	*e*PKPbc	**PKPbc**	**17 39 23.0**	**+0.1**
GERES	**GERESS Array B**	**150.29**	**345**	PKP	**PKPdf**	**17 39 18.2**	**+0.3**
	comp=Z,0.8nm,0.8s,baz=8.5,slow=2.7,SNR=6.2						
GERES				PKPbc	**PKPbc**	**17 39 23.9**	**+0.3**
	comp=Z,10nm,0.9s,baz=45,slow=2.1,SNR=51						
GERES				PKPab	**PKPab**	**17 39 31.8**	**+0.2**
	comp=Z,1.2nm,0.5s,baz=30,slow=4.7,SNR=5.1						
BZS	**Buzias**	**150.38**	**332**	‖ *e*P	**PKPbc**	**17 39 23.7**	**0.0**
CONA	**Conrad Observa**	**150.55**	**342**	*i* PKPbc	**PKPbc**	**17 39 23.8**	**-0.4**
	comp=Z,10nm,0.6s						
CONA				*i* PKPab	**PKPab**	**17 39 33.9**	**+1.1**
	comp=Z,7.5nm,0.8s						
WLF	**Walferdange**	**150.73**	**355**	*e*PKPbc	**PKPbc**	**17 39 25.3**	**+0.9**
MDVR	**Moldovita**	**150.99**	**331**	‖ *i* P	**PKPbc**	**17 39 25.2**	**0.0**
MOA	**Molln**	**151.07**	**343**	*i* PKPbc	**PKPbc**	**17 39 24.6**	**-0.6**
	comp=Z,4.5nm,0.6s						
MOA				*i* PKPab	**PKPab**	**17 39 36.0**	**+1.2**
	comp=Z,12nm,1.2s						
ARSA	**Arzberg**	**151.26**	**341**	*i* PKiKP	**PKPbc**	**17 39 25.9**	**+0.2**
	comp=Z,5.4nm,0.9s						
SOKA	**Soboth**	**151.92**	**341**	*i* PKiKP	**PKPbc**	**17 39 27.3**	**0.0**
	comp=Z,8.3nm,1.0s						
SOKA				*i* PKPab	**PKPab**	**17 39 39.2**	**+0.6**
KBA	**Koelnbreinsper**	**152.02**	**344**	*i* PKiKP	**PKPbc**	**17 39 27.6**	**-0.1**
	comp=Z,8.0nm,1.2s						
WATA	**Walderalm**	**152.20**	**347**	*i* PKiKP	**PKPbc**	**17 39 28.3**	**+0.3**
	comp=Z,3.8nm,0.7s						
OBKA	**Obir**	**152.22**	**342**	*i* PKiKP	**PKPbc**	**17 39 28.1**	**+0.1**
	comp=Z,3.7nm,0.7s						
RETA	**Reutte**	**152.23**	**348**	*i* PKPbc	**PKPbc**	**17 39 27.4**	**-0.5**
	comp=Z,4.1nm,1.0s						
RETA				*i* PKPab	**PKPab**	**17 39 40.3**	**+0.6**
	comp=Z,10nm,1.1s						
WTTA	**Wattenberg**	**152.26**	**346**	*i* PKiKP	**PKPbc**	**17 39 28.5**	**+0.3**
	comp=Z,7.8nm,0.8s						
MOTA	**Moosalm**	**152.29**	**347**	*i* PKiKP	**PKPbc**	**17 39 28.4**	**+0.2**
	comp=Z,6.8nm,0.8s						
MOTA				*i* PKPab	**PKPab**	**17 39 40.7**	**+0.5**
MYKA	**Terra Mystica**	**152.36**	**343**	*i* PKPbc	**PKPbc**	**17 39 27.3**	**-1.0**
	comp=Z,3.7nm,0.5s						
ABTA	**Abfaltersbach**	**152.54**	**345**	*i* PKPdf	**PKPdf**	**17 39 21.1**	**-0.1**
	comp=Z,9.4nm,1.3s						
ABTA				*i* PKPbc	**PKPbc**	**17 39 28.2**	**-0.4**
	comp=Z,14nm,1.0s						
ABTA				*i* PKPab	**PKPab**	**17 39 41.2**	**+0.1**
	comp=Z,10nm,1.0s						
DAVA	**Damuels**	**152.59**	**349**	*i* PKiKP	**PKiKP**	**17 39 29.6**	**+0.6**
	comp=Z,12nm,1.3s						
FETA	**Feichten**	**152.68**	**348**	*i* PKPdf	**PKPdf**	**17 39 21.4**	**-0.1**
	comp=Z,5.6nm,0.9s						
FETA				*i* PKiKP	**PKiKP**	**17 39 29.4**	**+0.2**
	comp=Z,6.5nm,0.9s						
FETA				*i* PKPab	**PKPab**	**17 39 43.1**	**+1.3**
DAVOX	**Davos/Dischmat**	**153.07**	**349**	PKP	**PKPdf**	**17 39 21.9**	**-0.3**
	comp=Z,2.7nm,0.8s,baz=326,slow=22,SNR=3.1						
DAVOX				PKPbc	**PKPbc**	**17 39 30.1**	**+0.1**
	comp=Z,4.1nm,0.5s,baz=354,slow=3.8,SNR=7.2						
DAVOX				PKPab	**PKPab**	**17 39 43.9**	**+0.4**
	comp=Z,1.4nm,0.3s,baz=4.2,slow=5.8,SNR=3.8						
ESDC	**Sonseca Array**	**160.09**	**15**	PKPab	**PKPab**	**17 40 13.5**	**-0.4**
	comp=Z,0.2nm,0.3s,baz=336,slow=2.8,SNR=4.4						
TORD	**Torodi Ar. Bea**	**172.67**	**174**	PKP	**PKPdf**	**17 39 40.3**	**-1.1**
	comp=Z,2.4nm,1.0s,baz=239,slow=0.2,SNR=9.6						
TORD				PKPab	**PKPab**	**17 41 10.2**	**+0.4**
	comp=Z,1.0nm,0.8s,baz=180,slow=4.5,SNR=5.2						

DDA ***18*** *17:24:50.6, 39°.76N×39°.48E, h7km, Md2.9*
ISK ***18*** *17:24:50.2, 39°.81N×39°.55E, h5km, MD3.1*
ISCJB ***18*** *17:24:51.3±0.4, 39°.81N±0°.03×39°.54E±0°.04, h9km±5km, Error ellipse: s-maj=5.3km s-min=4.4km az=175.9*
CSEM ***18*** *17:24:51.2±0.3, 39°.82N×39°.52E, h2km, MD3.1, Error ellipse: s-maj=6.1km s-min=5.9km az=150.0*
ISC 18 17:24:51.0±0.9, 39°.78N±0°.03×39°.50E±0°.03, h12km±7km, n33,σ0°46/48, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EZC	**Erzincan**	**0.12**	**254**	*e*Pg	**Pb**	**17 24 56.4**	**+1.2**
EUZM	**Uzumlu**	**0.17**	**116**	P	**Pg**	**17 24 54.6**	**-0.4**
EUZM				S	**Sg**	**17 24 57.7**	**0.0**
EUZM	**Uzumlu**	**0.17**	**116**	*i* P	**Pg**	**17 24 54.6**	**-0.4**
EUZM				*i* S	**Sg**	**17 24 57.7**	**0.0**
ERZN	**Erzincan**	**0.26**	**138**	*e*PG	**Pg**	**17 24 56.4**	**-0.1**
ERZN				*e*SG	**Sg**	**17 25 01.0**	**+0.8**
KELT	**Kelkit**	**0.41**	**333**	P	**Pg**	**17 24 58.9**	**-0.3**
KELT	**Kelkit**	**0.41**	**333**	*i*

42C-58D, Off east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
KBG	**Krutoberegovo**	**1.06**	**321**	*e*P		**Pn**	**17 42 54.5**	**-1.9**
KBG				*e*S		**Sb**	**17 43 08.8**	**-1.4**
BKI	**Bering**	**1.20**	**100**	*i* P		**Pn**	**17 42 55.7**	**-2.5**
BKI				*i* S		**Sn**	**17 43 10.5**	**-3.2**
BKI	**Bering**	**1.20**	**100**	PN		**Pn**	**17 42 55.7**	**-2.5**
BKI				S		**Sn**	**17 43 10.5**	**-3.2**
SMKR	**Semkarok**	**1.79**	**311**	*i* P		**Pn**	**17 43 06.2**	**-0.2**
SMKR	**Semkarok**	**1.79**	**311**	PN		**Pn**	**17 43 06.2**	**-0.2**
ZLN	**Zelenaya**	**1.85**	**290**	*e*P		**Pn**	**17 43 07.6**	**+0.3**
ZLN	**Zelenaya**	**1.85**	**290**	PN		**Pn**	**17 43 07.6**	**+0.3**
BDR	**Baidarnaya**	**1.90**	**308**	*i* P		**Pn**	**17 43 08.0**	**+0.1**
CIRR	**Tsirk**	**1.91**	**292**	*i* P		**Pn**	**17 43 08.3**	**+0.1**
CIRR	**Tsirk**	**1.91**	**292**	PN		**Pn**	**17 43 08.3**	**+0.1**
LGNR	**Loginova**	**1.93**	**291**	*i* P		**Pn**	**17 43 09.0**	**+0.4**
LGNR	**Loginova**	**1.93**	**291**	PN		**Pn**	**17 43 09.0**	**+0.4**
SRKR	**Sorokina**	**1.96**	**310**	*e*P		**Pn**	**17 43 09.0**	**+0.2**
SRKR	**Sorokina**	**1.96**	**310**	PN		**Pn**	**17 43 09.0**	**+0.2**
BZMR	**Bezymyannaya**	**2.00**	**286**	*i* P		**Pn**	**17 43 09.7**	**+0.3**
BZWR	**Bezymyannyi-We**	**2.00**	**287**	*e*P		**Pn**	**17 43 10.8**	**+1.4**
KLY	**Klyuchi**	**2.04**	**297**	*i* P		**Pn**	**17 43 08.3**	**-1.4**
KRSR	**Krestovskiy**	**2.04**	**294**	*e*P		**Pn**	**17 43 09.6**	**-0.3**
KRSR	**Krestovskiy**	**2.04**	**294**	PN		**Pn**	**17 43 09.6**	**-0.3**
KIRR	**Kirishev**	**2.08**	**286**	*i* P		**Pn**	**17 43 11.2**	**+0.6**
KZV	**Kizimen**	**2.10**	**263**	*i* P		**Pn**	**17 43 11.6**	**+0.9**
KMNR	**Kamenistaya**	**2.11**	**280**	*i* P		**Pn**	**17 43 12.0**	**+1.2**
KMNR	**Kamenistaya**	**2.11**	**280**	PN		**Pn**	**17 43 12.0**	**+1.2**
KPT	**Kopyto**	**2.15**	**286**	*e*P		**Pn**	**17 43 12.3**	**+0.9**
KPT	**Kopyto**	**2.15**	**286**	PN		**Pn**	**17 43 12.3**	**+0.9**
TUMR	**Tumrok**	**2.15**	**267**	*e*P		**Pn**	**17 43 12.4**	**+0.9**
TUMR	**Tumrok**	**2.15**	**267**	PN		**Pn**	**17 43 12.4**	**+0.9**
KOZ	**Kozyrevsk**	**2.37**	**287**	*i* P		**Pn**	**17 43 15.4**	**+1.1**
KOZ	**Kozyrevsk**	**2.37**	**287**	PN		**Pn**	**17 43 15.4**	**+1.1**
KII	**Karymskiy**	**2.94**	**243**	*e*P		**Pn**	**17 43 22.7**	**+0.4**
KII	**Karymskiy**	**2.94**	**243**	PN		**Pn**	**17 43 22.7**	**+0.4**
ESO	**Esso**	**2.99**	**282**	*i* P		**Pn**	**17 43 23.4**	**+0.5**
ESO				*e*S		**Sn**	**17 44 00.7**	**+2.8**
ESO	**Esso**	**2.99**	**282**	PN		**Pn**	**17 43 23.4**	**+0.5**
ESO				S		**Sn**	**17 44 00.7**	**+2.8**
NLC	**Nalytchevo**	**3.51**	**232**	*e*P		**Pn**	**17 43 29.5**	**-0.4**
NLC				*e*S		**Sn**	**17 44 08.9**	**-1.7**
NLC	**Nalytchevo**	**3.51**	**232**	PN		**Pn**	**17 43 29.5**	**-0.4**
NLC				S		**Sn**	**17 44 08.9**	**-1.7**
SDLR	**Sedlovina**	**3.65**	**236**	*i* P		**Pn**	**17 43 32.6**	**+0.6**
SDLR				*e*S		**Sn**	**17 44 13.7**	**-0.6**
SDLR	**Sedlovina**	**3.65**	**236**	PN		**Pn**	**17 43 32.6**	**+0.6**
SDLR				S		**Sn**	**17 44 13.7**	**-0.6**
KRER	**Koryakskii**	**3.70**	**237**	*e*P		**Pn**	**17 43 33.6**	**+0.8**
KRER				*e*S		**Sn**	**17 44 15.9**	**+0.3**
SMAR	**Somma**	**3.70**	**236**	*i* P		**Pn**	**17 43 33.3**	**+0.5**
SMAR				*i* S		**Sn**	**17 44 14.7**	**-1.0**
SMAR	**Somma**	**3.70**	**236**	PN		**Pn**	**17 43 33.3**	**+0.5**
SMAR				S		**Sn**	**17 44 14.7**	**-1.0**
KRX	**Arik**	**3.71**	**238**	*e*P		**Pn**	**17 43 33.6**	**+0.7**
UGLR	**Uglovaya**	**3.72**	**235**	*e*P		**Pn**	**17 43 33.6**	**+0.6**
AVH	**Avacha**	**3.73**	**236**	*e*P		**Pn**	**17 43 33.9**	**+0.8**
AVH				*e*S		**Sn**	**17 44 15.8**	**-0.4**
AVH	**Avacha**	**3.73**	**236**	PN		**Pn**	**17 43 33.9**	**+0.8**
AVH				S		**Sn**	**17 44 15.8**	**-0.4**
KOK	**Koryaka**	**3.76**	**237**	*e*P		**Pn**	**17 43 35.0**	**+1.5**
KOK	**Koryaka**	**3.76**	**237**	PN		**Pn**	**17 43 35.0**	**+1.5**
OSSR	**Ossora**	**3.85**	**353**	*e*P		**Pn**	**17 43 34.3**	**-0.3**
OSSR				*e*S		**Sn**	**17 44 16.7**	**-2.3**
GNL	**Ganaly**	**3.89**	**246**	*i* P		**Pn**	**17 43 36.5**	**+1.2**
GNL	**Ganaly**	**3.89**	**246**	PN		**Pn**	**17 43 36.5**	**+1.2**
INSR	**Institute**	**3.92**	**235**	*e*P		**Pn**	**17 43 34.9**	**-0.6**
INSR				*e*S		**Sn**	**17 44 19.0**	**-1.6**
PET	**Petropavlovsk**	**3.92**	**234**	*i* P		**Pn**	**17 43 36.0**	**+0.4**
PET				*e*S		**Sn**	**17 44 18.7**	**-2.0**
PET	**Petropavlovsk**	**3.92**	**234**	‖*i*PN		**Pn**	**17 43 35.9**	**+0.4**
PET				*e*S		**Sn**	**17 44 20.1**	**-0.6**
PET				pmax	pmax			
	comp=Z,2μm,2.8s							
PET				pmax	pmax			
	comp=Z,2μm,7.5s							
PET				pmax	pmax			
	comp=Z,677nm,0.6s							
PET				smax	smax			
	comp=N,2μm,0.7s							
PET				smax	smax			
	comp=E,3μm,1.1s							
PET				MLR	MLR			
	comp=Z,32μm,10.0s							
PET				MLR	MLR			
	comp=Z,26μm,11.0s							
PET	**Petropavlovsk**	**3.92**	**234**	*e*Pn		**Pn**	**17 43 35.8**	**+0.2**
PALN	**Palana**	**4.24**	**331**	*e*P		**Pn**	**17 43 40.3**	**+0.3**
KRMR	**Karymshinskiy**	**4.29**	**235**	*i* P		**Pn**	**17 43 41.2**	**+0.6**
KRMR				*i* S		**Sn**	**17 44 29.2**	**-0.6**
KRMR	**Karymshinskiy**	**4.29**	**235**	PN		**Pn**	**17 43 41.2**	**+0.6**
KRMR				S		**Sn**	**17 44 29.2**	**-0.6**
PEA0	**Petropavlovsk-**	**4.32**	**240**	*e*Pn		**Pn**	**17 43 41.6**	**+0.5**
PEA0B	**Petropavlovsk-**	**4.32**	**240**	*e*Pn		**Pn**	**17 43 42.0**	**+0.8**
PETK	**Petropavlovsk-**	**4.32**	**240**	Pn		**Pn**	**17 43 41.5**	**+0.3**
	comp=Z,26nm,0.3s,baz=77,slow=17,SNR=558							
PETK				Sn		**Sn**	**17 44 33.9**	**+3.1**
	comp=Z,88nm,0.3s,baz=356,slow=9.5,SNR=4.7							
PETK				LR	LR		17 45 41.5	
	comp=Z,13μm,19.5s,baz=94,slow=44							
RUS	**Russkaya**	**4.38**	**229**	*i* P		**Pn**	**17 43 41.5**	**-0.5**
RUS				*e*S		**Sn**	**17 44 29.2**	**-3.0**
RUS	**Russkaya**	**4.38**	**229**	PN		**Pn**	**17 43 41.5**	**-0.5**
MTVR	**Mutnovka**	**4.49**	**231**	*e*P		**Pn**	**17 43 43.9**	**+0.3**
GRL	**Gorelyy**	**4.50**	**232**	*e*P		**Pn**	**17 43 45.8**	**+2.2**
GRL	**Gorelyy**	**4.50**	**232**	PN		**Pn**	**17 43 45.8**	**+2.2**
ASAK	**Asacha**	**4.69**	**232**	*e*P		**Pn**	**17 43 47.0**	**+0.7**
APC	**Apacha**	**4.70**	**240**	*e*P		**Pn**	**17 43 46.6**	**+0.3**
APC	**Apacha**	**4.70**	**240**	PN		**Pn**	**17 43 46.6**	**+0.3**
TILK	**Tilichiki**	**5.16**	**12**	*e*P		**Pn**	**17 43 52.3**	**-0.3**
PAU	**Pauzhetka**	**5.81**	**230**	*e*P		**Pn**	**17 44 02.5**	**+0.9**
PAU	**Pauzhetka**	**5.81**	**230**	PN		**Pn**	**17 44 02.5**	**+0.9**
SMY	**Shemya**	**6.58**	**110**	*e*PN		**Pn**	**17 44 11.4**	**-0.7**
SMY	**Shemya**	**6.58**	**110**	*e*Pn		**Pn**	**17 44 11.4**	**-0.7**
SKR	**Severo-Kuril's**	**6.69**	**228**	*i* P		**Pn**	**17 44 13.9**	**+0.3**
SKR				*e*S		**Sn**	**17 45 25.8**	**-3.1**
SKR	**Severo-Kuril's**	**6.69**	**228**	*e*PN		Pn	17 44 05.9	-7.7
SKR				pmax	pmax			
	comp=Z,430nm,0.6s							
SKR				MLR	MLR			
	comp=N,16μm,12.0s							
SKR				MLR	MLR			
	comp=E,16μm,12.0s							
SKR				MLR	MLR			
	comp=Z,10μm,12.0s							
KMSK	**Kamenskaya**	**7.15**	**9**	*i* P		**Pn**	**17 44 21.0**	**+1.1**
MA2	**Magadan**	**8.20**	**306**	Pn		**Pn**	**17 44 35.3**	**+1.0**
	comp=Z,0.9nm,0.3s,baz=125,slow=11,SNR=18							
MA2				LR	LR		17 48 18.3	
	comp=Z,7μm,20.0s,baz=128,slow=43							
MA2	**Magadan**	**8.20**	**306**	*e*P		**Pn**	**17 44 35.7**	**+1.4**
	comp=Z,137nm,0.8s							
SEY	**Seymchan**	**9.55**	**327**	Pn		**Pn**	**17 44 53.6**	**+0.9**
	comp=Z,0.5nm,0.3s,baz=147,slow=14,SNR=14							
SEY				LR	LR		17 49 00.8	
	comp=Z,13μm,20.8s,baz=128,slow=41							
OKH	**Okha**	**12.34**	**270**	*e*PN		**Pn**	**17 45 32.0**	**+1.1**
OKH				*e*S		Sn	17 47 57.8	+10
OKH				pmax	pmax			
	comp=Z,3μm,11.0s							
OKH				smax	smax			
	comp=E,5μm,14.0s							
OKH				smax	smax			
	comp=Z,12μm,16.0s							
BILL	**Bilibino**	**12.70**	**4**	*d i*PN		**Pn**	**17 45 38.0**	**+2.3**
BILL				pmax	pmax			
	comp=Z,46nm,1.2s							
BILL				MLR	MLR			
	comp=Z,6μm,16.0s							
BILL	**Bilibino**	**12.70**	**4**	*e*Pn		**Pn**	**17 45 37.8**	**+2.1**
TYV	**Tymovskoe**	**13.53**	**259**	*e*P		**Pn**	**17 45 50.5**	**+3.3**
TYV				*e*S		**Sn**	**17 48 23.0**	**+6.3**
TYV				pmax	pmax			
	comp=Z,200nm,1.2s							
TYV				pmax	pmax			
	comp=Z,4μm,5.0s							
TYV				smax	smax			
	comp=E,2μm,12.0s							
TYV				MLR	MLR			
	comp=E,14μm,16.0s							
TYV				MLR	MLR			
	comp=Z,11μm,16.0s							
NKL	**Nikolayevsk**	**13.74**	**270**	*e*P		**Pn**	**17 45 53.0**	**+2.9**
NKL				pmax	pmax			
	comp=E,2μm,6.0s							
NKL				pmax	pmax			
	comp=Z,2μm,6.0s							
NKL				pmax	pmax			
	comp=N,110nm,1.0s							
NKL				pmax	pmax			
	comp=E,130nm,1.0s							
NKL				pmax	pmax			
	comp=Z,260nm,1.0s							
NKL				MLR	MLR			
	comp=N,800nm,16.0s							
NKL				MLR	MLR			
	comp=Z,10μm,17.0s							
KUR	**Kuril'sk**	**14.43**	**232**	*e*P		**Pn**	**17 45 57.0**	**-2.5**
KUR				S		**Sn**	**17 48 33.4**	**-5.1**
KUR				pmax	pmax			
	comp=Z,59nm,1.0s							
KUR				MLR	MLR			
	comp=N,2μm,16.0s							
KUR				MLR	MLR			
	comp=E,2μm,16.0s							
KUR				MLR	MLR			
	comp=Z,2μm,16.0s							
UGL	**Uglegorsk**	**14.78**	**254**	*e*P		**P**	**17 46 08.0**	**-2.0**
UGL				pmax	pmax			
	comp=Z,220nm,1.2s							
UGL				pmax	pmax			
	comp=Z,1μm,5.0s							
UGL				MLR	MLR			
	comp=Z,11μm,15.0s							
UGL				MLR	MLR			
	comp=N,4μm,12.0s							
UGL				MLR	MLR			
	comp=E,10μm,16.0s							
GAMB	**Gambell**	**14.81**	**46**	*e*Pn		**Pn**	**17 46 05.1**	**+0.5**
YSS	**Yuzh-Sakhalins**	**15.70**	**246**	*b i*P		**Pn**	**17 46 17.0**	**+0.7**
YSS				*e*S		**Sn**	**17 49 10.0**	**+0.7**
YSS				pmax	pmax			
	comp=Z,60nm,1.0s							
YSS				pmax	pmax			
	comp=Z,1μm,9.0s							
YSS				MLR	MLR			
	comp=N,7μm,13.0s							
YSS				MLR	MLR			
	comp=Z,9μm,13.0s							
YSS				MLR	MLR			
	comp=E,6μm,14.0s							
SHO	**Shikotan**	**15.96**	**231**	*i* P		**Pn**	**17 46 13.1**	**-6.6**
SHO				*i* S		**Sn**	**17 49 21.9**	**+6.2**
SHO				pmax	pmax			
	comp=N,82nm,0.6s							
SHO				pmax	pmax			
	comp=E,129nm,0.6s							
SHO				pmax	pmax			
	comp=Z,155nm,0.6s							
NIKH	**Nikolski High**	**16.08**	**88**	*e*Pn		**Pn**	**17 46 21.3**	**0.0**
	comp=Z,327nm,1.1s							
YUK	**Yuzh-Kuril'sk**	**16.26**	**233**	*i* P		**Pn**	**17 46 21.0**	**-2.6**
YUK				MLR	MLR			
	comp=N,4μm,19.0s							
YUK				MLR	MLR			
	comp=Z,4μm,19.0s							
YUK				MLR	MLR			
	comp=E,3μm,12.0s							
TNA	**Tin City**	**17.01**	**42**	*e*Pn		**P**	**17 46 34.1**	**-0.5**
	comp=E,168nm,1.3s							
UNV	**Unalaska Valle**	**17.14**	**83**	*e*Pn		**P**	**17 46 36.1**	**-0.1**
	comp=E,248nm,1.0s							
AKUT	**Akutan**	**17.47**	**82**	*e*Pn		**Pn**	**17 46 38.3**	**-0.4**
	comp=E,715nm,1.4s							
ASAJ	**Asahikawa**	**17.74**	**239**	P		**Pn**	**17 46 40.6**	**-1.6**
	comp=E,7.0nm,0.3s,baz=28,slow=6.1,SNR=47							
ASAJ				S		**Sn**	**17 49 57.4**	**-1.7**
	comp=E,0.5nm,0.3s,baz=217,slow=20,SNR=1.9							
ASAJ	**Asahikawa**	**17.74**	**239**	*e*Pn		**Pn**	**17 46 38.8**	**-3.4**
	comp=E,166nm,0.8s							
ASAJ				S		**Sn**	**17 49 57.4**	**-1.7**
FALS	**False Pass**	**18.59**	**78**	*e*P		**P**	**17 46 49.6**	**-2.5**
	comp=E,161nm,0.6s							
YAK	**Yakutsk**	**18.77**	**305**	P		**P**	**17 46 52.7**	**-1.3**
	comp=E,0.0nm,0.3s,baz=278,slow=23,SNR=72							
YAK				S		**Sn**	**17 50 21.5**	**-2.0**
	comp=E,0.0nm,0.3s,baz=218,slow=19,SNR=2.4							
YAK				LR	LR		17 54 36.6	
	comp=E,3μm,18.0s,baz=104,slow=39							
YAK	**Yakutsk**	**18.77**	**305**	*ce*P		**P**	**17 46 52.0**	**-2.0**
YAK				*e*S		**Sn**	**17 50 16.7**	**-6.9**
YAK				pmax	pmax			
	comp=Z,156nm,1.4s							
YAK				pmax	pmax			
	comp=E,227nm,1.5s							
YAK				pmax	pmax			
	comp=N,73nm,1.5s							
YAK				smax	smax			
	comp=E,164nm,1.9s							
YAK				smax	smax			
	comp=N,199nm,2.7s							
YAK				MLR	MLR			
	comp=E,3μm,19.0s							
YAK				MLR	MLR			
	comp=Z,4μm,20.0s							
YAK				MLR	MLR			
	comp=N,2μm,17.0s							
YAK	**Yakutsk**	**18.77**	**305**	*e*P		**P**	**17 46 51.9**	**-2.1**
	comp=N,240nm,1.1s							
YAK				S		**Sn**	**17 50 21.6**	**-2.0**
ERM	**Erimo**	**19.08**	**234**	*i* P		**P**	**17 46 54.8**	**-2.7**
ERM				pmax	pmax			
	comp=Z,77nm,1.2s							
ERM	**Erimo**	**19.08**	**234**	*e*P		**P**	**17 46 55.3**	**-2.2**
	comp=Z,134nm,0.4s							
SDPT	**Sand Point**	**20.09**	**75**	*e*P		**P**	**17 47 05.8**	**-2.7**
	comp=Z,288nm,1.1s							
KLR	**Kul'dur**	**20.48**	**266**	P		**P**	**17 47 12.2**	**-0.5**
	comp=Z,11nm,0.6s,baz=65,slow=9.9,SNR=21							
KLR				S		**S**	**17 51 00.1**	**-0.5**
	comp=Z,2.2nm,0.8s,baz=258,slow=20,SNR=6.6							
KLR				LR	LR		17 56 24.2	
	comp=Z,8μm,18.1s,baz=64,slow=41							
CHGN	**Chignik**	**20.99**	**72**	*e*P		**P**	**17 47 16.3**	**-1.8**
TT01	**Tatalina**	**21.53**	**53**	*e*P		**P**	**17 47 24.1**	**+0.1**
TTA	**Tatalina**	**21.54**	**53**	*e*P		**P**	**17 47 24.1**	**0.0**
TTA				pmax	pmax			
	comp=Z,419nm,1.5s							
TTA	**Tatalina**	**21.54**	**53**	*e*P		**P**	**17 47 24.1**	**0.0**
	comp=Z,419nm,1.5s							
CLNS	**Chul'man**	**21.59**	**290**	*e*P		**P**	**17 47 25.0**	**+0.3**
CLNS				pmax	pmax			
	comp=Z,38nm,1.1s							
CLNS				pmax	pmax			
	comp=E,41nm,1.1s							
CLNS				pmax	pmax			
	comp=N,35nm,1.0s							
CLNS				MLR	MLR			
	comp=Z,4μm,14.0s							
CLNS				MLR	MLR			
	comp=N,4μm,13.0s							
CLNS				MLR	MLR			
	comp=E,3μm,11.0s							
SVW2	**Sparrevohn**	**21.76**	**58**	*e*P		**P**	**17 47 26.1**	**-0.4**
	comp=E,53nm,1.0s							
TIXI	**Tiksi**	**22.00**	**331**	P		**P**	**17 47 28.2**	**-0.7**
	comp=E,37nm,0.8s,baz=123,slow=14,SNR=147							
TIXI				PcP	**PcP**		**17 51 26.3**	**+0.2**
	comp=E,6.1nm,0.6s,baz=101,slow=2.0,SNR=5.4							
TIXI				LR	LR		17 56 36.0	
	comp=E,2μm,21.3s,baz=136,slow=38							
TIXI	**Tiksi**	**22.00**	**331**	*c i*P		**P**	**17 47 29.0**	**+0.1**
TIXI				pmax	pmax			
	comp=Z,46nm,1.0s							
TIXI	**Tiksi**	**22.00**	**331**	*e*P		**P**	**17 47 28.8**	**-0.1**
	comp=Z,882nm,1.7s							
TIXI				PcP	**PcP**		**17 51 26.3**	**+0.2**
RSO	**Redoubt South**	**23.20**	**60**	*e*P		**P**	**17 47 42.1**	**+0.2**
USRK	**Ussuriysk Ar.**	**23.25**	**254**	P		**P**	**17 47 39.4**	**-2.9**
	comp=Z,3.5nm,0.5s,baz=46,slow=13,SNR=15							
USRK				PcP	**PcP**		**17 51 29.5**	**+0.3**
	comp=Z,10nm,1.1s,baz=5.7,slow=1.4,SNR=4.6							
USRK				LR	LR		17 57 03.8	
	comp=Z,3μm,18.8s,baz=46,slow=38							
PPLA	**Purkeypile**	**23.29**	**53**	*e*P		**P**	**17 47 41.0**	**-1.7**
	comp=Z,899nm,1.6s							
CAST	**Castle Rocks**	**23.32**	**52**	*e*P		**P**	**17 47 42.4**	**-0.5**
	comp=Z,479nm,1.7s							
SPU	**Mount Spurr**	**23.46**	**58**	*e*P		**P**	**17 47 44.1**	**-0.2**
OHAK	**Old Harbor**	**23.51**	**68**	*e*P		**P**	**17 47 42.2**	**-2.5**
	comp=Z,265nm,1.4s							
KDAK	**Kodiak Island**	**23.75**	**66**	*e*P		**P**	**17 47 46.1**	**-0.9**
KDAK				pmax	pmax			
	comp=Z,121nm,1.2s							
KDAK				MLR	MLR			
	comp=Z,4μm,20.0s							
KDAK	**Kodiak Island**	**23.75**	**66**	*e*P		**P**	**17 47 46.1**	**-0.9**
	comp=Z,121nm,1.2s							
KDAK				LR	LR			
	comp=Z,4μm,20.0s							
BPAW	**Bear Paw Mtn.**	**23.81**	**50**	*e*P		**P**	**17 47 46.7**	**-0.9**
	comp=Z,340nm,1.3s							
KTH	**Kantishna Hill**	**23.84**	**52**	*e*P		**P**	**17 47 47.4**	**-0.6**
	comp=Z,553nm,1.6s							
HOM	**Homer**	**23.86**	**61**	*e*P		**P**	**17 47 47.7**	**-0.4**
	comp=Z,468nm,0.9s							
MLY	**Manley**	**23.93**	**48**	*e*P		**P**	**17 47 48.2**	**-0.6**
	comp=Z,294nm,1.4s							
VLA	**Vladivostok**	**24.02**	**253**	*de*P		**P**	**17 47 47.0**	**-2.7**
VLA				*e**SP		**sP**	**17 48 00.5**	**+0.6**
VLA				*e*			17 51 29.1	
VLA				*e*S		**S**	**17 52 01.6**	**-3.5**
VLA				pmax	pmax			
	comp=Z,25nm,1.5s							
TRF	**Thorofare Moun**	**24.13**	**52**	*e*P		**P**	**17 47 49.9**	**-0.9**
	comp=Z,366nm,1.0s							
BRLK	**Bradley Lake**	**24.23**	**61**	*e*P		**P**	**17 47 49.8**	**-1.8**
	comp=Z,158nm,1.1s							
COLD	**Coldfoot**	**24.31**	**43**	*e*P		**P**	**17 47 51.3**	**-0.9**
	comp=Z,106nm,1.0s							
MDJ	**Mudanjiang**	**24.31**	**258**	P		**P**	**17 47 52.3**	**-0.1**
MDJ				pP	pP		17 47 55.0	-4.6
MDJ				sP	sP		17 47 56.8	-5.9
MDJ				PcP	**PcP**		**17 51 32.6**	**+1.1**
MDJ				S	**S**		**17 52 08.1**	**-1.7**
MDJ				ScP	**ScP**		**17 55 11.1**	**+2.9**
MDJ				PcS	**PcS**		**17 55 12.3**	**+1.1**
MDJ				ScS	**ScS**		**17 58 57.8**	**+2.3**
MDJ				pmax	pmax			
	comp=Z,180nm,4.3s							
MDJ				LR	LR			
	comp=Z,5μm,17.9s							
MDJ				LR	LR			
	comp=Z,4μm,16.6s							
MDJ				LR	LR			
	comp=Z,9μm,14.5s							
MDJ	**Mudanjiang**	**24.31**	**258**	*e*P		**P**	**17 47 50.8**	**-1.6**
	comp=Z,149nm,1.8s							
MDJ				LR	LR			
	comp=Z,3μm,20.0s							
BWN	**Browne**	**24.48**	**50**	*e*P		**P**	**17 47 54.4**	**+0.7**
	comp=Z,302nm,0.9s							
RC01	**Rabbit Creek A**	**24.59**	**58**	*e*P		**P**	**17 47 53.8**	**-1.0**
	comp=Z,56nm,1.0s							
MCK	**McKinley**	**24.72**	**51**	*e*P		**P**	**17 47 55.1**	**-0.9**
MCK				pmax	pmax			
	comp=Z,267nm,1.3s							
MCK	**McKinley**	**24.72**	**51**	*e*P		**P**	**17 47 55.1**	**-0.9**
	comp=Z,267nm,1.3s							
RND	**Reindeer**	**24.78**	**52**	*e*P		**P**	**17 47 55.4**	**-1.2**
RND				pmax	pmax			
	comp=Z,556nm,1.7s							
RND	**Reindeer**	**24.78**	**52**	*e*P		**P**	**17 47 55.4**	**-1.2**
	comp=Z,556nm,1.7s							
PMR	**Palmer**	**24.81**	**56**	*e*P		**P**	**17 47 55.6**	**-1.2**
PMR				pmax	pmax			
	comp=Z,29nm,0.8s							
PMR	**Palmer**	**24.81**	**56**	*e*P		**P**	**17 47 55.6**	**-1.2**
	comp=Z,30nm,0.8s							
SEW	**Seward**	**24.88**	**60**	*e*P		**P**	**17 47 55.8**	**-1.6**
	comp=Z,115nm,0.8s							
WRH	**Wood River Hil**	**25.07**	**49**	*e*P		**P**	**17 47 58.2**	**-0.8**
	comp=Z,506nm,1.3s							
COLA	**College**	**25.16**	**49**	*e*P		**P**	**17 47 59.5**	**-0.4**
COLA				pmax	pmax			
	comp=Z,159nm,1.2s							
COLA				MLR	MLR			
	comp=Z,2μm,20.0s							
COLA	**College**	**25.16**	**49**	*e*P		**P**	**17 47 59.5**	**-0.4**
	comp=Z,159nm,1.2s							
COLA				LR	LR			
	comp=Z,2μm,20.0s							
SML	**Sawmill**	**25.16**	**56**	*e*P		**P**	**17 47 59.1**	**-0.9**
SML				pmax	pmax			
	comp=Z,227nm,1.1s							
SML	**Sawmill**	**25.16**	**56**	*e*P		**P**	**17 47 59.1**	**-0.9**
	comp=Z,227nm,1.1s							
CCB	**Clear Creek Bu**	**25.19**	**49**	*e*P		**P**	**17 47 59.1**	**-1.0**
	comp=Z,373nm,1.3s							
IL1	**Eielson Array**	**25.58**	**49**	*e*P		**P**	**17 48 01.9**	**-1.8**
ILAR	**Eielson Array**	**25.58**	**49**	P		**P**	**17 48 02.9**	**-0.8**
	comp=Z,40nm,0.9s,baz=264,slow=8.4,SNR=275							
ILAR				PcP	**PcP**		**17 51 33.6**	**-0.3**
	comp=Z,6.8nm,1.1s,baz=270,slow=2.7,SNR=4.9							
ILAR				LR	LR		17 58 35.4	
	comp=Z,3μm,18.1s,baz=270,slow=38							
ILB	**Eielson Array**	**25.58**	**49**	*e*P		**P**	**17 48 02.6**	**-1.0**
SCM	**Sheep Creek Mo**	**25.63**	**56**	*e*P		**P**	**17 48 01.7**	**-2.6**
SCM				pmax	pmax			
	comp=Z,209nm,0.7s							
SCM	**Sheep Creek Mo**	**25.63**	**56**	*e*P		**P**	**17 48 01.7**	**-2.6**
	comp=Z,209nm,0.7s							
MJB9	**Matsu-Tunnel**	**25.75**	**234**	*e*P		**P**	**17 48 06.1**	**+0.6**
	comp=Z,149nm,1.6s							
**MA

RAGM	Ragged Mountai	27.16	58	eP	P	17 48 17.9 -0.1
	comp=Z,68nm,0.8s					
INU	Inuyama	27.28	234	eP	P	17 48 19.8 +0.5
	comp=Z,137nm,1.3s					
HIA	Hailar	27.30	276	PFAKE		17 48 30.0 +11
HIA				LR	LR	
	comp=Z,4μm,19.0s					
EGAK	Eagle	28.02	48	eP	P	17 48 23.4 -2.3
	comp=Z,148nm,1.2s					
EGAK				LR	LR	
	comp=Z,2μm,20.0s					
BALM	Baldy	28.13	56	eP	P	17 48 26.4 -0.4
BALM				pmax	pmax	
	comp=Z,48nm,1.0s					
BALM	Baldy	28.13	56	eP	P	17 48 26.4 -0.4
	comp=Z,48nm,1.0s					
DAWY	Dawson	28.88	50	eP	P	17 48 32.6 -0.8
	comp=Z,66nm,1.2s					
CIT	Chita	29.46	285	eP	P	17 48 39.8 +1.2
CIT				e		17 49 01.6
CIT				e		17 49 30.4
CIT				e		17 49 51.4
CIT				e		17 51 44.3
CIT				pmax	pmax	
	comp=Z,95nm,2.9s					
SNY	Shenyang	29.47	260	P	P	17 48 48.3 +10
SNY				S	S	17 53 39.6 +8.2
SNY				pmax	pmax	
	comp=Z,32nm,1.8s					
SNY				pmax	pmax	
	comp=Z,250nm,3.5s					
SNY				LR	LR	
	comp=N,5μm,14.8s					
SNY				LR	LR	
	comp=E,8μm,16.7s					
SNY				LR	LR	
	comp=Z,14μm,16.1s					
KS01	Wonju Array Si	30.17	249	eP	P	17 48 44.8 -0.2
KS01				ePcP	PcP	17 51 46.1 +0.5
KSRS	Korea Array	30.17	249	P	P	17 48 44.1 -0.8
	comp=Z,8.5nm,1.0s,baz=42,slow=8.1,SNR=16					
KSRS				PcP	PcP	17 51 46.4 +0.8
	comp=Z,11nm,1.1s,baz=13,slow=2.2,SNR=9.6					
KSRS				S	S	17 53 46.8 +4.4
	comp=Z,1.5nm,0.8s,baz=0.0,slow=25,SNR=3.0					
KSAR	Wonju Array Be	30.20	249	P	P	17 48 44.1 -1.1
KSAR						17 51 46.4
KSAR				S	S	17 53 46.8 +3.9
KSAR	Wonju Array Be	30.20	249	P	P	17 48 44.1 -1.1
KSAR				PcP	PcP	17 51 46.4 +0.7
KSAR				S	S	17 53 46.8 +3.9
MIDW	Midway	30.37	146	PFAKE		17 49 00.0 +13
MIDW				LR	LR	
	comp=Z,1μm,19.0s					
INK	Inuvik	30.64	40	P	P	17 48 48.6 -0.2
	comp=Z,19nm,0.6s,baz=288,slow=7.5,SNR=77					
INK				PcP	PcP	17 51 45.4 -0.8
	comp=Z,8.3nm,0.9s,baz=306,slow=5.6,SNR=4.3					
INK	Inuvik	30.64	40	eP	P	17 48 48.5 -0.3
	comp=Z,565nm,2.0s					
INK				PcP	PcP	17 51 45.4 -0.8
INCN	Inchon	30.83	250	PFAKE		17 49 00.0 +9.1
INCN				LR	LR	
	comp=Z,2μm,19.0s					
SKAG	Skagway	31.93	57	eP	P	17 49 00.8 +0.5
	comp=Z,166nm,1.4s					
JNU	Nakatsue	32.02	240	P	P	17 49 01.2 -0.2
	comp=Z,14nm,0.8s,baz=21,slow=6.0,SNR=14					
JNU				PcP	PcP	17 51 50.5 -0.2
	comp=Z,7.1nm,1.1s,baz=316,slow=1.0,SNR=3.1					
JNU				S	S	17 54 12.4 +0.8
	comp=Z,3.9nm,0.9s,baz=282,slow=19,SNR=2.3					
JNU	Nakatsue	32.02	240	eP	P	17 49 01.8 +0.4
	comp=Z,36nm,1.0s					
JNU				PcP	PcP	17 51 50.5 -0.2
JNU				S	S	17 54 12.4 +0.8
IRK	Irkutsk	34.40	290	eP	P	17 49 19.4 -2.5
IRK				e		17 51 55.6
IRK				e		17 54 52.6
IRK				pmax	pmax	
	comp=Z,78nm,3.0s					
WRAK	Wrangell Islan	34.59	61	eP	P	17 49 25.0 +1.6
	comp=Z,106nm,1.1s					
WRAK				LR	LR	
	comp=Z,3μm,19.0s					
BJI	Beijing	34.84	264	P	P	17 49 25.8 +0.1
BJI				S	S	17 54 56.5 +1.5
BJI				pmax	pmax	
	comp=Z,120nm,4.2s					
BJI				LR	LR	
	comp=Z,7μm,15.6s					
BJI				LR	LR	
	comp=Z,4μm,17.5s					
BJI				LR	LR	
	comp=Z,7μm,16.4s					
BJT	Baijiatuau	34.85	264	PFAKE		17 49 40.0 +14
BJT				LR	LR	
	comp=Z,5μm,19.0s					
DLBC	Dease Lake	34.87	57	eP	P	17 49 27.2 +1.2
	comp=Z,77nm,1.0s					
TLY	Talaya	35.02	290	P	P	17 49 25.8 -1.4
	comp=Z,1.8nm,0.4s,baz=16,slow=9.4,SNR=2.4					
TLY				PcP	PcP	17 51 58.9 +0.1
	comp=Z,3.0nm,0.4s,baz=122,slow=1.7,SNR=3.2					
TLY				LR	LR	18 03 13.0
	comp=Z,6μm,20.5s,baz=44,slow=36					
TLY	Talaya	35.02	290c	iP	P	17 49 23.8 -3.5
TLY				e		17 50 52.0
TLY				ePPP	PPP	17 51 06.5
TLY				eS	S	17 54 55.8 -1.8
TLY				pmax	pmax	
	comp=Z,39nm,2.3s					
TLY				MLR	MLR	
	comp=Z,4μm,18.0s					
ULN	Ulaanbaatar	35.18	282	eP	P	17 49 27.9 -1.0
ULN				pmax	pmax	
	comp=Z,18nm,1.1s					
ULN				MLR	MLR	
	comp=Z,2μm,21.0s					
ULN	Ulaanbaatar	35.18	282	eP	P	17 49 27.9 -1.0
	comp=Z,18nm,1.1s					
ULN				LR	LR	
	comp=Z,2μm,21.0s					
NRIK	Noril'sk	35.32	323	P	P	17 49 27.9 -1.7
	comp=Z,4.1nm,0.8s,baz=77,slow=10,SNR=8.4					
NRIK				LR	LR	18 03 44.4
	comp=Z,2μm,21.7s,baz=75,slow=36					
SONA1	Songino Array	35.56	282	eP	P	17 49 30.9 -1.2
SONM	Songino Array	35.57	282	P	P	17 49 30.4 -1.7
	comp=Z,4.2nm,0.4s,baz=62,slow=7.8,SNR=22					
SONM				PcP	PcP	17 52 01.2 +0.6
	comp=Z,2.8nm,0.8s,baz=162,slow=1.4,SNR=3.9					
SONM				LR	LR	18 06 01.6
	comp=Z,3μm,18.0s,baz=57,slow=40					
H11N2	WAKE ISLAND Hy	35.72	175	T	T	18 27 40.2
	baz=359,slow=76,SNR=393					
H11N3	WAKE ISLAND Hy	35.73	175	T	T	18 27 38.5
	baz=359,slow=76,SNR=399					
H11N1	WAKE ISLAND Hy	35.74	175	T	T	18 27 40.8
	baz=359,slow=76,SNR=551					
ZAK	Zakamensk	35.89	288	eP	P	17 49 33.9 -0.9
ZAK				e		17 52 00.9
ZAK				pmax	pmax	
	comp=Z,19nm,1.3s					
MOY	Mondy	36.44	291	eP	P	17 49 39.5 -0.1
MOY				pmax	pmax	
	comp=Z,84nm,2.9s					
HHC	Hu-ho-hao-te	36.92	269	eP	P	17 49 45.1 +1.3
HHC				PP	PnPn	17 51 11.3 +3.2
HHC				S	S	17 55 27.5 +0.4
HHC				SS	SnSn	17 57 56.9 -3.2
HHC				pmax	pmax	
	comp=Z,200nm,5.0s					
HHC				LR	LR	
	comp=Z,3μm,14.5s					
HHC				LR	LR	
	comp=Z,3μm,14.3s					
HHC				LR	LR	
	comp=Z,5μm,13.9s					
H11S1	WAKE ISLAND Hy	36.93	176	T	T	18 29 04.6
	baz=359,slow=76					
H11S3	WAKE ISLAND Hy	36.94	176	T	T	18 29 14.8
	baz=359,slow=76					
H11S2	WAKE ISLAND Hy	36.94	176	T	T	18 29 07.4
	baz=359,slow=76					
BTO	Baotou	37.96	270	eP	P	17 49 55.4 +2.8
KRAR	Krasnoyarsk	38.38	301	eP	P	17 49 55.3 -0.5
KRAR				pmax	pmax	
	comp=Z,6.0nm,0.8s					
JOW	Kunigami	38.48	237	eP	P	17 49 57.2 +0.2
	comp=Z,259nm,1.1s					
TIY	Taiyuan	38.55	265	eP	P	17 50 00.3 +2.7
TIY				S	S	17 55 48.8 -3.1
TIY				pmax	pmax	
	comp=Z,140nm,6.7s					
TIY				LR	LR	
	comp=Z,3μm,12.9s					
TIY				LR	LR	
	comp=Z,2μm,12.0s					
TIY				LR	LR	
	comp=Z,4μm,14.3s					
SSE	Sheshan	38.61	249	eP	P	17 49 57.5 -0.4
SSE				S	S	17 55 55.0 +2.4
SSE				pmax	pmax	
	comp=Z,46nm,0.7s					
SSE				LR	LR	
	comp=Z,670nm,15.0s					
SSE				LR	LR	
	comp=Z,1μm,15.0s					
SSE				LR	LR	
	comp=Z,2μm,15.9s					
NJ2	Nanjing	39.12	252	eP	P	17 50 02.5 +0.3
NJ2				S	S	17 56 03.9 +3.6
NJ2				pmax	pmax	
	comp=Z,13nm,0.5s					
NJ2				LR	LR	
	comp=Z,3μm,17.3s					
NJ2				LR	LR	
	comp=Z,3μm,15.2s					
NJ2				LR	LR	
	comp=Z,1μm,19.5s					
YKW3	Yellowknife Ar	39.88	46	eP	P	17 50 07.2 -1.1
	comp=Z,128nm,1.7s					
YKA	Yellowknife Ar	39.92	46	P	P	17 50 08.1 -0.5
	comp=Z,9.2nm,0.6s,baz=299,slow=8.1,SNR=89					
YKA				PcP	PcP	17 52 13.9 +0.4
	comp=Z,7.5nm,0.8s,baz=297,slow=3.1,SNR=11					
YKA				LR	LR	18 07 50.0
	comp=Z,222nm,19.0s,baz=0.0,slow=38					
YKB5	Yellowknife Ar	39.92	46	eP	P	17 50 07.1 -1.4
YKB5				eScS	ScS	18 00 13.0 -0.3
RES	Resolute Bay	40.29	24	eP	P	17 50 11.8 +0.3
RES				pmax	pmax	
	comp=Z,43nm,1.0s					
RES	Resolute Bay	40.29	24	eP	P	17 50 11.8 +0.3
	comp=Z,43nm,1.0s					
XAN	Xi'an	43.17	264	P	P	17 50 35.8 +0.2
XAN				pP	pP	17 50 41.8 -1.2
XAN				sP	sP	17 50 44.6 -1.4
XAN				PP	PP	17 52 19.5 +3.6
XAN				S	S	17 57 04.8 +4.2
XAN				sS	sS	17 57 14.9 +2.1
XAN				LR	LR	
	comp=Z,4μm,20.3s					
XAN				LR	LR	
	comp=Z,5μm,20.3s					
XAN				LR	LR	
	comp=Z,3μm,16.1s					
PGC	Sidney	43.30	67	eP	P	17 50 37.1 +0.7
	comp=Z,190nm,1.7s					
TATO	Taipei	43.38	243	PFAKE		17 50 50.0 +13
TATO				LR	LR	
	comp=Z,2μm,19.0s					
ZAA0	Zalesovo Array	43.40	302	eP	P	17 50 35.6 -1.6
ZAA0				ePP	PcP	17 52 22.8 -2.3
ZALV	Zalesovo Beam	43.40	302	P	P	17 50 35.6 -1.5
	comp=Z,2.0nm,0.8s,baz=54,slow=7.5,SNR=8.0					
ZALV				PP	PcP	17 52 22.4 -2.7
	comp=Z,10nm,1.0s,baz=44,slow=10,SNR=7.8					
ZALV				LR	LR	18 09 22.6
	comp=Z,1μm,21.6s,baz=46,slow=37					
NVS	Novosibirsk	43.64	304	eP	P	17 50 38.2 -0.8
NVS				i		17 52 27.0
NVS				eS	S	17 57 00.8 -6.0
NVS				pmax	pmax	
	comp=Z,31nm,0.9s					
NVS				pmax	pmax	
	comp=E,43nm,1.2s					
NVS				smax	smax	
	comp=E,49nm,1.9s					
A04D	Lummi Island	43.64	67	P	P	17 50 39.6 +0.4
	baz=308					
YHNB	Yeheng	43.69	243	PFAKE		17 50 50.0 +10
YHNB				LR	LR	
	comp=Z,2μm,19.0s					
NLWA	Neilton Lookou	43.85	69	eP	P	17 50 42.1 +1.1
	comp=Z,108nm,1.0s					
NLWA				LR	LR	
	comp=Z,2μm,21.0s					
KIP	Kipapa	44.24	125	eP	P	17 50 43.2 -1.0
KIP	Kipapa	44.24	125	eP	P	17 50 46.2 +1.9
	comp=Z,414nm,1.7s					
B05A	Bryant	44.24	67	P	P	17 50 44.0 0.0
	baz=308,SNR=9.8					
GUMO	Guam	44.30	207	LR	LR	18 13 21.9
	comp=Z,381nm,18.2s,baz=24,slow=42					
B06A	Marblemount	44.41	66	eP	P	17 50 45.7 +0.4
	comp=Z,98nm,1.1s					
E03A	Lebam	44.54	70	eP	P	17 50 46.8 +0.4
	comp=Z,198nm,1.1s					
GTA	Gaotai	44.56	277	eP	P	17 50 45.0 -1.8
GTA				pP	pP	17 50 49.5 -4.8
GTA				sP	sP	17 50 52.0 -5.3
GTA				PcP	PcP	17 52 29.3 -0.2
GTA				PP	PP	17 52 30.3 -0.5
GTA				PcS	PcS	17 56 21.8 -1.3
GTA				ScP	ScP	17 56 23.3 +3.5
GTA				S	S	17 57 16.8 -4.2
GTA				ScS	ScS	18 00 41.8 -1.1
GTA				pmax	pmax	
	comp=Z,100nm,6.7s					
GTA				LR	LR	
	comp=Z,4μm,20.9s					
GTA				LR	LR	
	comp=Z,3μm,18.5s					
GTA				LR	LR	
	comp=Z,4μm,16.6s					
LZH	Lanzhou	44.58	270	eP	P	17 50 46.8 -0.3
LZH				pP	pP	17 50 52.5 -2.1
LZH				sP	sP	17 50 55.8 -1.7
LZH				PP	PP	17 52 31.4 +0.3
LZH				eS	S	17 57 20.6 -0.8
LZH				sS	sS	17 57 33.3 -0.4
LZH				pmax	pmax	
	comp=Z,40nm,1.5s					
LZH				pmax	pmax	
	comp=Z,210nm,7.0s					
LZH				LR	LR	
	comp=Z,6μm,13.6s					
LZH				LR	LR	
	comp=Z,5μm,13.9s					
LZH				LR	LR	
	comp=Z,9μm,14.6s					
SSLB	Suanglung	44.63	243	eP	P	17 50 49.9 +2.5
	comp=Z,68nm,1.5s					
YULB	Yu-li	44.79	242	eP	P	17 50 48.5 -0.1
	comp=Z,38nm,1.1s					
KBS	Kingsbay	44.85	353	eP	P	17 50 50.0 +1.5
KBS				eS	S	17 57 26.8 +2.8
KBS				IAMs_20	IAMs_20	18 09 45.8
	comp=Z,493nm,18.3s					
KBS	Kingsbay	44.85	353	eP	P	17 50 50.3 +1.8
KBS				pmax	pmax	
	comp=Z,73nm,1.0s					
KBS				MLR	MLR	
	comp=Z,458nm,20.0s					
KBS	Kingsbay	44.85	353	eP	P	17 50 50.3 +1.8
	comp=Z,73nm,1.0s					
KBS				LR	LR	
	comp=Z,458nm,20.0s					
QZH	Quanzhou	44.90	246⇑	iP	P	17 50 46.8 -2.6
QZH				S	S	17 57 19.3 -6.4
QZH				LR	LR	
	comp=Z,2μm,15.4s					
QZH				LR	LR	
	comp=Z,3μm,14.6s					
QZH				LR	LR	
	comp=Z,4μm,17.4s					
F03A	Seaside	44.94	70	eP	P	17 50 50.6 +1.0
	comp=Z,146nm,1.1s					
D05A	Enumclaw	44.98	68	eP	P	17 50 51.1 +1.2
	comp=Z,183nm,1.4s					
C06D	Leavenworth	45.09	67	P	P	17 50 51.2 +0.4
	baz=309					
F04D	Rainier, OR	45.13	70	P	P	17 50 51.9 +0.8
	baz=310					
SPA0	Spitsbergen Ar	45.18	351	eP	P	17 50 51.8 +0.7
SPA0				IAmb	IAmb	17 51 07.1
	comp=Z,732nm,1.4s					
SPA0				ePP	PP	17 52 36.6 +0.1
SPA0				eS	S	17 57 29.6 +0.8
SPA0				eSS	SS	18 00 56.1 +5.3
SPA0	Spitsbergen Ar	45.18	351	eP	P	17 50 51.6 +0.5
SPITS	Spitsbergen Ar	45.18	351	P	P	17 50 51.8 +0.7
	comp=Z,109nm,0.9s,baz=123,slow=9.2,SNR=69					
TPUB	Ta-pu	45.20	243	eP	P	17 50 52.0 +0.1
	comp=Z,129nm,1.3s					
OBSR	Observation Ro	45.25	68	eP	P	17 50 53.0 +0.7
LON	Longmire	45.35	69	eP	P	17 50 53.2 +0.3
LON				pmax	pmax	
	comp=Z,27nm,1.1s					
LON	Longmire	45.35	69	eP	P	17 50 53.2 +0.3
	comp=Z,27nm,1.1s					
TWG	Pinlang	45.38	242	eP	P	17 50 54.6 +1.3
	comp=Z,346nm,1.4s					
F04A	Amboy	45.55	70	eP	P	17 50 54.8 +0.4
	comp=Z,99nm,1.2s					
G03D	McMinnville, O	45.56	71	P	P	17 50 55.1 +0.6
	baz=310					
B08A	Colville Reser	45.63	65	eP	P	17 50 55.2 +0.1
	comp=Z,103nm,1.1s					
ENH	Enshi	45.65	260	eP	P	17 50 52.3 -3.2
	comp=Z,17nm,0.6s					
ENH				LR	LR	
	comp=Z,3μm,20.0s					
HOPEN	Hopen	45.74	348	eP	P	17 50 55.7 +0.2
HOPEN				IAmb	IAmb	17 51 08.6
	comp=Z,76nm,1.4s					
HOPEN				ePP	PP	17 52 42.2 -0.2
HOPEN				eS	S	17 57 36.6 -0.2
HOPEN				IAMs_20	IAMs_20	18 10 41.6
	comp=Z,1μm,18.6s					
COR	Corvallis	45.94	72	eP	P	17 50 58.8 +1.3
COR				pmax	pmax	
	comp=Z,89nm,0.8s					
COR	Corvallis	45.94	72	eP	P	17 50 58.8 +1.3
	comp=Z,89nm,0.8s					
HSPB	Hornsund (broa	46.33	351	eP	P	17 51 01.0 +0.9
HSPB				ePP	PP	17 52 52.2 +3.5
HSPB				eS	S	17 57 44.2 -1.0
HSPB	Hornsund (broa	46.33	351	eP	P	17 51 00.4 +0.3
HSPB				eS	S	17 57 45.8 +0.5
HSPB				MLR	MLR	
	comp=Z,900nm,22.0s					
H04A	Detroit Lake	46.48	71	eP	P	17 51 02.2 +0.4
	comp=Z,80nm,1.1s					
I03D	Drain, OR	46.50	73	P	P	17 51 02.7 +0.8
	baz=312					
C09A	Chrisman Ranch	46.53	65	eP	P	17 51 02.2 +0.1
	comp=Z,110nm,1.3s					
G05D	Wamic, OR	46.58	70	P	P	17 51 03.4 +0.8
	baz=311					
HAWA	Hanford	46.78	67	eP	P	17 51 04.4 +0.2
	comp=Z,102nm,1.4s					
HAWA				LR	LR	
	comp=Z,1μm,20.0s					
NEW	Newport	46.83	64	LR	LR	18 12 18.6
	comp=Z,2μm,18.2s,baz=300,slow=38					
NEW	Newport	46.83	64	P	P	17 51 04.3 -0.2
	baz=310,SNR=12					
NEW	Newport	46.83	64	eP	P	17 51 04.5 0.0
NEW				pmax	pmax	
	comp=Z,46nm,1.0s					
NEW	Newport	46.83	64	eP	P	17 51 04.5 0.0
	comp=Z,46nm,1.0s					
I04A	Tendick Farm,	46.95	72	P	P	17 51 05.8 +0.2
	baz=312,SNR=8.8					
I05D	Terrebonne, OR	47.16	71	P	P	17 51 07.6 +0.4
	baz=312					
KULLO	Kullorsuaq	47.40	14⇓	iP	P	17 51 08.6 +0.1
	comp=Z,76nm,0.9s					
KULLO	Kullorsuaq	47.40	14⇓	iP	P	17 51 08.6 +0.1
KULLO				pmax	pmax	
	comp=Z,76nm,0.9s					
E09A	Wood Farm, Sta	47.43	67	eP	P	17 51 09.6 +0.4
	comp=Z,100nm,1.0s					
HUMO	Hull Mountain	47.44	74	eP	P	17 51 10.3 +1.0
	comp=Z,47nm,1.1s					
ZSN	Zaisan	47.63	295	i P	P	17 51 07.8 -3.0
	comp=Z,100nm,1.2s					
ZSN				eS	S	17 57 59.1 -5.5
SEM	Semipalatinsk	47.80	301	i P	P	17 51 11.9 -0.1
SEM				eS	S	17 58 04.5 -2.4
SEM				LRM	MLR	18 13 31.4
	comp=Z,936nm,15.1s					
G08A	Pilot Rock	47.81	68	eP	P	17 51 12.3 0.0
	comp=Z,20nm,0.9s					
J05D	Fort Rock, OR	47.92	72	P	P	17 51 13.7 +0.4
	baz=312,SNR=8.1					
WALA	Waterton Lakes	47.94	61	eP	P	17 51 13.2 0.0
	comp=Z,113nm,0.9s					
WALA				eScP	ScP	17 56 36.8 +3.1
DAG	Danmarks Havn	48.05	1	i P	P	17 51 13.7 +0.2
DAG				i		17 51 26.3
DAG	Danmarks Havn	48.05	1	i P	P	17 51 13.7 +0.2
DAG				i		17 51 26.3
K04D	Chiloquin, OR	48.09	73	P	P	17 51 14.9 +0.4
	baz=313					
YBH	Yreka Blue Hor	48.17	74	LR	LR	18 09 33.4
	comp=Z,970nm,20.9s,baz=312,slow=34					
YBH	Yreka Blue Hor	48.17	74	eP	P	17 51 16.1 +1.0
YBH				pmax	pmax	
	comp=Z,56nm,0.9s					
YBH	Yreka Blue Hor	48.17	74	eP	P	17 51 16.1 +1.0
	comp=Z,56nm,0.9s					
KHMM	Horse Mountain	48.19	76	eP	P	17 51 16.7 +1.4
	comp=Z,118nm,1.4s					
F10A	Beach Ranch, E	48.27	66	eP	P	17 51 15.8 0.0
	comp=Z,46nm,1.0s					
BSMT	Bassoo Peak	48.28	63	eP	P	17 51 16.3 +0.3
WMQ	Urumqi	48.30	290	P	P	17 51 15.5 -0.5
WMQ				pP	pP	17 51 23.3 -0.3
WMQ				sP	sP	17 51 27.8 +1.3
WMQ				PcP	PcP	17 52 41.9 -0.6
WMQ				S	S	17 58 11.9 -2.3
WMQ				sS	sS	17 58 25.3 -1.3
WMQ				pmax	pmax	
	comp=Z,430nm,3.8s					
WMQ				LR	LR	
	comp=Z,5μm,17.2s					
WMQ				LR	LR	
	comp=Z,2μm,20.6s					
WMQ				LR	LR	
	comp=Z,1μm,20.6s					
M02C	Callahan	48.32	75	P	P	17 51 16.9 +0.6
	baz=313,SNR=7.4					
KURK	Kurchatov	48.39	302	eP	P	17 51 14.6 -1.9
KURK				pmax	pmax	
	comp=Z,89nm,0.9s					
KURK				MLR	MLR	
	comp=Z,5μm,21.0s					
KURK	Kurchatov	48.39	302	eP	P	17 51 14.6 -1.9
	comp=Z,89nm,0.9s					
KURK				LR	LR	
	comp=Z,5μm,21.0s					
BLMT	Blacktail Moun	48.40	63	eP	P	17 51 17.1 +0.2
CD2	Chengdu	48.41	265	P	P	17 51 15.8 -1.2
CD2				sP	pP	17 51 23.4 -1.1
CD2				PP	PP	17 53 08.0 -1.5
CD2				S	S	17 58 11.8 -4.2
CD2				sS	sS	17 58 24.6 -3.8
CD2				pmax	pmax	
	comp=Z,20nm,0.6s					
CD2				pmax	pmax	
	comp=Z,50nm,4.5s					
CD2				LR	LR	
	comp=Z,4μm,21.4s					
CD2				LR	LR	
	comp=Z,3μm,15.5s					
K05A	Summer Lake	48.49	72	eP	P	17 51 18.4 +0.7
	comp=Z,120nm,1.2s					
KURBB	Kurchatov Arra	48.49	302	P	P	17 51 15.4 -1.9
	comp=Z,18nm,0.8s,baz=54,slow=7.9,SNR=71					
JTMT	Jette	48.61	63	eP	P	17 51 18.6 +0.2
M04C	Macdoel	48.61	74	P	P	17 51 18.9 +0.4
	baz=313,SNR=10					
KMRM	Mail Ridge	48.65	76	eP	P	17 51 20.3 +1.5
	comp=Z,54nm,0.8s					

YBMT	**Yellow Bay**	**48.67**	**63**	*e*P	**P**	**17 51 19.1**	**+0.2**
SWMT	**Swartz Lake**	**48.91**	**63**	*e*P	**P**	**17 51 20.6**	**-0.1**
BMO	**Blue Mountains**	**48.97**	**68**	*e*P	**P**	**17 51 21.3**	**+0.1**
	comp=Z,56nm,1.3s						
BMO				LR	LR		
	comp=Z,1μm,19.0s						
WDC	**Whiskeytown Da**	**49.05**	**75**	*e*P	**P**	**17 51 22.6**	**+0.8**
WDC				pmax	pmax		
	comp=Z,48nm,0.9s						
WDC	**Whiskeytown Da**	**49.05**	**75**	*e*P	**P**	**17 51 22.6**	**+0.8**
	comp=Z,48nm,0.9s						
MK31	**Makanchi Array**	**49.15**	**296**	*e*P	**P**	**17 51 20.7**	**-1.7**
MK31	**Makanchi Array**	**49.15**	**296**	*e*P	**P**	**17 51 20.7**	**-1.7**
MKAR	**Makanchi Array**	**49.15**	**296**	P	**P**	**17 51 20.8**	**-1.7**
	comp=Z,4.3nm,0.7s,baz=55,slow=7.0,SNR=36						
MKAR				LR	LR	18 13 41.4	
	comp=Z,2μm,18.6s,baz=36,slow=38						
MKAR				PKPPKP	**P'P'df**	**18 22 20.6**	**-6.5**
	comp=Z,1.6nm,1.1s,baz=215,slow=1.8,SNR=5.8						
MK01	**Makanchi Array**	**49.16**	**296**	*e*P	**P**	**17 51 20.2**	**-2.4**
MAKZ	**Makanchi**	**49.30**	**296**	*e*P	**P**	**17 51 21.8**	**-1.8**
MAKZ				pmax	pmax		
	comp=Z,26nm,0.9s						
MAKZ	**Makanchi**	**49.30**	**296**	*e*P	**P**	**17 51 21.8**	**-1.8**
	comp=Z,26nm,0.9s						
MOD	**Modoc Plateau**	**49.37**	**72**	*e*P	**P**	**17 51 24.9**	**+0.5**
	comp=Z,151nm,1.3s						
MSO	**Missoula**	**49.39**	**64**	P	**P**	**17 51 24.0**	**-0.4**
	baz=312,SNR=12						
MSO	**Missoula**	**49.39**	**64**	*e*P	**P**	**17 51 24.4**	**0.0**
	comp=Z,150nm,1.8s						
APYP	**Conner**	**49.49**	**238**	*e*P	**P**	**17 51 27.0**	**+1.7**
O03D	**Paynes Creek**	**49.66**	**75**	P	**P**	**17 51 26.2**	**-0.3**
	baz=314,SNR=12						
CHMT	**Chamberlain Mo**	**49.69**	**63**	*e*P	**P**	**17 51 26.2**	**-0.6**
FFC	**Flin Flon**	**49.79**	**49**	*e*P	**P**	**17 51 26.9**	**-0.3**
FFC				pmax	pmax		
	comp=Z,71nm,1.2s						
FFC				MLR	MLR		
	comp=Z,1μm,19.0s						
FFC	**Flin Flon**	**49.79**	**49**	*e*P	**P**	**17 51 26.9**	**-0.3**
	comp=Z,71nm,1.2s						
FFC				LR	LR		
	comp=Z,1μm,19.0s						
HOPS	**Hopland Field**	**49.86**	**77**	*e*P	**P**	**17 51 28.2**	**+0.3**
WVOR	**Wild Horse Val**	**49.90**	**71**	*e*P	**P**	**17 51 28.6**	**+0.2**
WVOR				pmax	pmax		
	comp=Z,47nm,1.0s						
WVOR				MLR	MLR		
	comp=Z,1μm,19.0s						
WVOR	**Wild Horse Val**	**49.90**	**71**	*e*P	**P**	**17 51 28.6**	**+0.2**
	comp=Z,47nm,1.0s						
WVOR				LR	LR		
	comp=Z,1μm,19.0s						
ABRA	**Dolores**	**49.93**	**239**	*e*P	sP	17 51 43.2	+4.1
GYA	**Guiyang**	**50.17**	**259⇑**	*i*P	**P**	**17 51 30.4**	**-0.2**
GYA				PP	**PP**	**17 53 27.3**	**+1.6**
GYA				ScP	**ScP**	**17 56 45.0**	**+1.5**
GYA				S	**S**	**17 58 40.4**	**-0.5**
GYA				SS	**SS**	**18 02 10.3**	**-3.8**
GYA				pmax	pmax		
	comp=Z,30nm,0.8s						
GYA				pmax	pmax		
	comp=Z,150nm,6.2s						
GYA				LR	LR		
	comp=Z,860nm,19.2s						
GYA				LR	LR		
	comp=Z,730nm,20.3s						
GYA				LR	LR		
	comp=Z,840nm,19.6s						
FCC	**Fort Churchill**	**50.24**	**42**	*e*P	**P**	**17 51 30.0**	**-0.5**
FCC				pmax	pmax		
	comp=Z,69nm,0.6s						
FCC	**Fort Churchill**	**50.24**	**42**	*e*P	**P**	**17 51 30.0**	**-0.5**
	comp=Z,69nm,0.6s						
ORV	**Oroville**	**50.34**	**76**	*e*P	**P**	**17 51 31.6**	**+0.1**
ORV				pmax	pmax		
	comp=Z,45nm,0.9s						
ORV	**Oroville**	**50.34**	**76**	*e*P	**P**	**17 51 31.6**	**+0.1**
	comp=Z,45nm,0.9s						
BVAR	**Borovoye Array**	**50.67**	**309**	P	**P**	**17 51 32.6**	**-1.3**
	comp=Z,4.5nm,0.6s,baz=53,slow=7.8,SNR=22						
BVAR				PcP	**PcP**	**17 52 50.3**	**-0.6**
	comp=Z,2.2nm,0.5s,baz=66,slow=3.1,SNR=2.7						
BVAR				LR	LR	18 15 59.1	
	comp=Z,2μm,18.1s,baz=44,slow=40						
EGMT	**Eagleton**	**50.69**	**60**	P	**P**	**17 51 33.4**	**-0.8**
	baz=313,SNR=13						
EGMT	**Eagleton**	**50.69**	**60**	*e*P	**P**	**17 51 33.9**	**-0.3**
	comp=Z,44nm,0.9s						
EGMT				LR	LR		
	comp=Z,2μm,20.0s						
BRVK	**Borovoye**	**50.70**	**309**	*d i*P	**P**	**17 51 33.9**	**-0.2**
BRVK				pmax	pmax		
	comp=Z,13nm,0.9s						
BRVK	**Borovoye**	**50.70**	**309**	*e*P	**P**	**17 51 32.8**	**-1.3**
	comp=Z,29nm,0.8s						
BRVK				LR	LR		
	comp=Z,2μm,20.0s						
MFID	**Camas Ranch**	**50.73**	**68**	*e*P	**P**	**17 51 34.8**	**+0.2**
	comp=Z,74nm,1.5s						
LRM	**Limekiln Ridge**	**50.84**	**64**	*e*P	**P**	**17 51 35.4**	**-0.1**
HAMF	**Hammerfest**	**51.05**	**344**	*e*P	**P**	**17 51 40.1**	**+3.7**
HAMF				*e*S	**S**	**17 58 53.0**	**+1.2**
HAMF				IAMs_20	IAMs_20	18 16 29.2	
	comp=Z,2μm,18.1s						
AFDM	**Forest Hills D**	**51.05**	**76**	*e*P	**P**	**17 51 37.4**	**+0.4**
	comp=Z,53nm,1.2s						
DLMT	**Dillon**	**51.08**	**64**	*e*P	**P**	**17 51 38.3**	**+1.1**
	comp=Z,63nm,1.3s						
KEV	**Kevo**	**51.28**	**342**	PFAKE		17 51 50.0	+12
KEV				LR	LR		
	comp=Z,1μm,21.0s						
MCMT	**McKenzie Canyo**	**51.31**	**65**	*e*P	**P**	**17 51 38.8**	**-0.3**
SUMG	**Summit**	**51.34**	**8**	*i*P	**P**	**17 51 39.7**	**+0.6**
	comp=Z,126nm,1.2s						
SUMG	**Summit**	**51.34**	**8**	*e*P	**P**	**17 51 38.8**	**-0.3**
SUMG				pmax	pmax		
	comp=Z,245nm,1.3s						
SUMG	**Summit**	**51.34**	**8**	*e*P	**P**	**17 51 38.8**	**-0.3**
	comp=Z,245nm,1.3s						
ZRNK	**Zerenda**	**51.34**	**309**	*e*P	**P**	**17 51 37.7**	**-1.2**
ZRNK				pmax	pmax		
	comp=Z,29nm,0.8s						
ZRNK	**Zerenda**	**51.34**	**309**	*e*P	**P**	**17 51 37.7**	**-1.2**
	comp=Z,29nm,0.8s						
HLID	**Hailey**	**51.37**	**67**	P	**P**	**17 51 39.1**	**-0.4**
	baz=314,SNR=12						
HLID	**Hailey**	**51.37**	**67**	*e*P	**P**	**17 51 39.7**	**+0.2**
	comp=Z,17nm,1.0s						
HLID				LR	LR		
	comp=Z,2μm,20.0s						
BOZ	**Bozeman (W)**	**51.37**	**63**	P	**P**	**17 51 39.4**	**0.0**
	baz=314,SNR=18						
BOZ	**Bozeman (W)**	**51.37**	**63**	*e*P	**P**	**17 51 39.9**	**+0.4**
BOZ				pmax	pmax		
	comp=Z,158nm,1.9s						
BOZ				MLR	MLR		
	comp=Z,1μm,20.0s						
BOZ	**Bozeman (W)**	**51.37**	**63**	*e*P	**P**	**17 51 39.9**	**+0.4**
	comp=Z,158nm,1.9s						
BOZ				LR	LR		
	comp=Z,1μm,20.0s						
LVZ	**Lovozero**	**51.38**	**338**	*e*P	**P**	**17 51 37.1**	**-2.0**
LVZ				pmax	pmax		
	comp=Z,39nm,1.2s						
LVZ	**Lovozero**	**51.38**	**338**	*e*P	**P**	**17 51 37.2**	**-1.9**
	comp=Z,32nm,0.9s						
LVZ				LR	LR		
	comp=Z,1μm,20.0s						
PAHR	**Pah Rah Range**	**51.39**	**74**	*e*P	**P**	**17 51 40.0**	**+0.3**
	comp=Z,58nm,1.0s						
ARA0	**ARCESS Array S**	**51.73**	**343**	*e*P	**P**	**17 51 41.5**	**-0.2**
ARCES	**ARCESS Array B**	**51.73**	**343**	P	**P**	**17 51 41.2**	**-0.4**
	comp=Z,13nm,0.8s,baz=27,slow=8.2,SNR=20						
ARCES				PcP	**PcP**	**17 52 53.9**	**-0.7**
	comp=Z,15nm,1.1s,baz=20,slow=2.9,SNR=2.6						
ARE0	**ARCESS Array S**	**51.73**	**343**	*e*P	**P**	**17 51 41.9**	**+0.2**
ARE0				*e*S	**S**	**17 59 02.6**	**+1.2**
ARE0	**ARCESS Array S**	**51.73**	**343**	*e*P	**P**	**17 51 42.0**	**+0.4**
	comp=Z,64nm,1.1s						
APA	**Apatity**	**51.92**	**338⇑**	*i*P	**P**	**17 51 41.8**	**-1.2**
APA				pmax	pmax		
	comp=Z,54nm,1.4s						
APA				MLR	MLR		
	comp=Z,2μm,16.0s						
CMB	**Columbia Colle**	**52.02**	**76**	*e*P	**P**	**17 51 44.8**	**+0.5**
CMB				pmax	pmax		
	comp=Z,109nm,1.6s						
CMB	**Columbia Colle**	**52.02**	**76**	*e*P	**P**	**17 51 44.8**	**+0.5**
	comp=Z,109nm,1.6s						
QLMT	**Earthquake Lak**	**52.04**	**64**	*e*P	**P**	**17 51 44.9**	**+0.4**
SVE	**Sverdlovsk**	**52.09**	**317**	*e*P	P	17 51 50.5	+6.1
SVE				pmax	pmax		
	comp=Z,33nm,1.4s						
SVE				MLR	MLR		
	comp=Z,3μm,16.0s						
WAKR	**Walker**	**52.22**	**75**	*e*P	**P**	**17 51 46.8**	**+0.9**
GCMT	**Greycliff**	**52.27**	**62**	*e*P	**P**	**17 51 46.8**	**+0.6**
YMR	**Madison River**	**52.39**	**64**	*e*P	**P**	**17 51 48.0**	**+0.9**
	comp=Z,46nm,1.0s						
KTK1	**Kautokeino**	**52.58**	**343**	*e*P	**P**	**17 51 48.2**	**+0.3**
YFT	**Old Faithful**	**52.61**	**64**	*e*P	**P**	**17 51 50.6**	**+1.8**
	comp=Z,44nm,0.9s						
TRO	**Tromso**	**52.68**	**345**	*e*P	**P**	**17 51 48.9**	**+0.3**
TRO				*e*S	**S**	**17 59 16.2**	**+2.0**
TRO				IAMs_20	IAMs_20	18 20 48.7	
	comp=Z,967nm,18.3s						
LKWY	**Lake**	**52.75**	**64**	*e*P	**P**	**17 51 51.6**	**+1.7**
LKWY				pmax	pmax		
	comp=Z,30nm,0.8s						
LKWY				MLR	MLR		
	comp=Z,2μm,19.0s						
LKWY	**Lake**	**52.75**	**64**	*e*P	**P**	**17 51 51.6**	**+1.7**
	comp=Z,30nm,0.8s						
LKWY				LR	LR		
	comp=Z,2μm,19.0s						
H17A	**Grant Village**	**52.78**	**64**	P	**P**	**17 51 51.0**	**+0.9**
	baz=315,SNR=17						
H17A	**Grant Village**	**52.78**	**64**	*e*P	**P**	**17 51 51.8**	**+1.7**
	comp=Z,59nm,1.2s						
SHLS	**Shalkode**	**52.88**	**294**	*i* P	**P**	**17 51 50.0**	**-0.8**
	comp=Z,146nm,1.3s						
SHLS				*e*S	**S**	**17 59 16.0**	**-2.2**
SHLS				LR	LR	18 14 45.0	
	comp=Z,221nm,13.2s						
NV01	**Mina Array Sit**	**52.89**	**74**	*e*P	**P**	**17 51 51.4**	**+0.4**
NVAR	**Mina Array Bea**	**52.89**	**74**	P	**P**	**17 51 51.6**	**+0.7**
	comp=Z,14nm,0.8s,baz=297,slow=7.6,SNR=63						
NVAR				LR	LR	18 11 10.8	
	comp=Z,881nm,20.8s,baz=306,slow=32						
ELK	**Elko**	**52.91**	**70**	LR	LR	18 13 29.4	
	comp=Z,1μm,19.9s,baz=138,slow=35						
ELK	**Elko**	**52.91**	**70**	*e*P	**P**	**17 51 51.9**	**+0.9**
ELK				pmax	pmax		
	comp=Z,24nm,1.1s						
ELK	**Elko**	**52.91**	**70**	*e*P	**P**	**17 51 51.9**	**+0.9**
	comp=Z,24nm,1.1s						
FLWY	**Flagg Ranch**	**52.94**	**64**	*e*P	**P**	**17 51 52.0**	**+0.9**
	comp=Z,268nm,1.8s						
RLMT	**Red Lodge**	**52.94**	**62**	P	**P**	**17 51 51.5**	**+0.3**
	baz=315,SNR=40						
RLMT	**Red Lodge**	**52.94**	**62**	*e*P	**P**	**17 51 51.7**	**+0.5**
	comp=Z,76nm,0.9s						
RLMT				*e*ScP	**ScP**	**17 56 58.3**	**+2.9**
RLMT				LR	LR		
	comp=Z,1μm,20.0s						
IMW	**Indian Meadow**	**52.94**	**65**	*e*P	**P**	**17 51 51.9**	**+0.6**
	comp=Z,72nm,1.3s						
NV11	**Mina Array Sit**	**52.97**	**74**	*e*P	**P**	**17 51 52.3**	**+0.9**
	comp=Z,58nm,1.0s						
PDGK	**Podgornoye**	**52.97**	**295**	P	**P**	**17 51 50.5**	**-0.6**
PDGK				pmax	pmax		
	comp=Z,29nm,1.0s						
ILULI	**Ilulissat**	**53.06**	**15**	*i* P	**P**	**17 51 50.3**	**-1.1**
ILULI	**Ilulissat**	**53.06**	**15**	*i* P	**P**	**17 51 50.3**	**-1.1**
DGMT	**Dagmar**	**53.07**	**56**	P	**P**	**17 51 51.5**	**-0.4**
	baz=315						
DGMT	**Dagmar**	**53.07**	**56**	*e*P	**P**	**17 51 52.2**	**+0.3**
	comp=Z,65nm,1.0s						
DGMT				LR	LR		
	comp=Z,1μm,21.0s						
OTUK	**Ortayu**	**53.08**	**303**	P	**P**	**17 51 51.7**	**-0.2**
OTUK				pmax	pmax		
	comp=Z,35nm,0.8s						
FXWY	**Fox Creek**	**53.08**	**65**	*e*P	**P**	**17 51 52.8**	**+0.5**
	comp=Z,21nm,0.9s						
MOOW	**Moose Ponds**	**53.15**	**65**	*e*P	**P**	**17 51 53.5**	**+0.7**
	comp=Z,39nm,1.4s						
MOOW				*e*ScP	**ScP**	**17 57 00.1**	**+3.7**
ARU	**Arti**	**53.17**	**318**	P	**P**	**17 51 52.2**	**-0.2**
	comp=Z,3.3nm,0.3s,baz=20,slow=4.3,SNR=13						
ARU				LR	LR	18 17 12.3	
	comp=Z,2μm,19.2s,baz=38,slow=39						
ARU	**Arti**	**53.17**	**318**	*d i*P	**P**	**17 51 52.0**	**-0.4**
ARU						17 52 57.9	
ARU				S	**S**	**17 59 23.1**	**+1.8**
ARU				SS	**SS**	**18 03 02.3**	**+2.2**
ARU				pmax	pmax		
	comp=Z,30nm,2.5s						
ARU				MLR	MLR		
	comp=Z,3μm,22.0s						
ARU	**Arti**	**53.17**	**318**	*e*P	**P**	**17 51 52.1**	**-0.3**
	comp=Z,23nm,0.9s						
MLAC	**Mammoth, Mammo**	**53.17**	**75**	P	**P**	**17 51 53.2**	**+0.2**
	baz=316						
TPAW	**Teton Pass**	**53.22**	**65**	*e*P	**P**	**17 51 54.2**	**+0.8**
	comp=Z,161nm,1.9s						
KPKS	**Kolpek**	**53.29**	**295**	*i* P	**P**	**17 51 52.3**	**-1.4**
	comp=Z,159nm,0.8s						
KPKS				*e*S	**S**	**17 59 22.2**	**-1.3**
KPKS				LR	LR	18 15 04.8	
	comp=Z,1μm,13.6s						
LOHW	**Long Hollow**	**53.32**	**65**	*e*P	**P**	**17 51 54.8**	**+0.8**
	comp=Z,45nm,1.3s						
SNOW	**Snow King Moun**	**53.34**	**65**	*e*P	**P**	**17 51 55.4**	**+1.1**
	comp=Z,34nm,1.1s						
LAO	**LASA Array**	**53.35**	**59**	P	**P**	**17 51 54.3**	**+0.3**
	baz=315,SNR=17						
LAO	**LASA Array**	**53.35**	**59**	*e*P	**P**	**17 51 54.3**	**+0.3**
	comp=Z,84nm,0.9s						
LAO				LR	LR		
	comp=Z,2μm,19.0s						
REDW	**Red Top Meadow**	**53.37**	**65**	*e*P	**P**	**17 51 55.1**	**+0.8**
	comp=Z,71nm,1.5s						
KMI	**Kunming**	**53.41**	**262**	P	**P**	**17 51 54.3**	**-0.6**
KMI				pP	pP	17 52 02.5	0.0
KMI				sP	sP	17 52 07.6	+2.2
KMI				PP	**PP**	**17 53 58.8**	**+3.6**
KMI				S	**S**	**17 59 21.8**	**-4.0**
KMI				sS	sS	17 59 34.1	-4.2
KMI				SS	**SS**	**18 03 04.6**	**-1.0**
KMI				pmax	pmax		
	comp=Z,310nm,7.0s						
KMI				LR	LR		
	comp=Z,5μm,19.7s						
KMI				LR	LR		
	comp=Z,3μm,19.7s						
KMI				LR	LR		
	comp=Z,1μm,21.8s						
HVU	**Hansel Valley**	**53.48**	**68**	*e*P	**P**	**17 51 56.2**	**+1.0**
HVU				pmax	pmax		
	comp=Z,54nm,1.4s						
HVU	**Hansel Valley**	**53.48**	**68**	*e*P	**P**	**17 51 56.2**	**+1.0**
	comp=Z,54nm,1.4s						
LUBP	**Lubang**	**53.52**	**237**	*e*P	**P**	**17 51 54.6**	**-0.9**
AHID	**Auburn Hatcher**	**53.66**	**66**	*e*P	**P**	**17 51 57.8**	**+1.3**
	comp=Z,28nm,1.1s						
AHID				LR	LR		
	comp=Z,1μm,19.0s						
TMCR	**Tamitsa**	**53.68**	**334**	*e*P	**P**	**17 51 55.8**	**-0.2**
TMCR				pmax	pmax		
	comp=Z,326nm,1.1s						
B25A	**Knox Farm, Ray**	**53.70**	**56**	P	**P**	**17 51 56.0**	**-0.6**
	baz=315						
SATY	**Saty**	**53.72**	**295**	*i* P	**P**	**17 51 56.4**	**-0.5**
	comp=Z,182nm,0.8s						
A26A	**Wade Farm, Ken**	**53.78**	**55**	P	**P**	**17 51 56.8**	**-0.4**
	baz=315						
TIN	**Tinemaha, Big**	**53.92**	**75**	P	**P**	**17 51 59.7**	**+1.3**
	baz=317						
BGU	**Big Grassy Mou**	**53.96**	**68**	*e*P	**P**	**17 51 59.5**	**+0.9**
	comp=Z,22nm,1.4s						
A27A	**Ledoux Ranch,**	**54.11**	**54**	P	**P**	**17 51 59.9**	**+0.4**
	baz=316						
HWUT	**Hardware Ranch**	**54.24**	**67**	*e*P	**P**	**17 52 01.6**	**+0.8**
	comp=Z,90nm,1.5s						
HWUT				LR	LR		
	comp=Z,1μm,20.0s						
SCO	**Scoresbysund**	**54.31**	**2**	*i* P	**P**	**17 52 01.7**	**+1.1**
SCO	**Scoresbysund**	**54.31**	**2**	*e*P	**P**	**17 52 01.7**	**+1.1**
VES	**Vestal, Richgr**	**54.33**	**77**	P	**P**	**17 52 02.0**	**+0.8**
	baz=317,SNR=5.4						
MDOK	**Medeo**	**54.34**	**296**	*e*P	**P**	**17 51 59.5**	**-1.9**
	comp=Z,69nm,1.4s						
MDOK				*e*S	**S**	**17 59 35.4**	**-2.4**
MDOK				LR	LR	18 15 38.2	
	comp=Z,881nm,16.4s						
QIZ	**Qiongzhong**	**54.36**	**250**	P	**P**	**17 52 03.8**	**+2.2**
QIZ				sP	**sP**	**17 52 16.5**	**+4.3**
QIZ				S	**S**	**17 59 45.5**	**+7.3**
QIZ				LR	LR		
	comp=Z,890nm,14.5s						
QIZ				LR	LR		
	comp=Z,460nm,15.2s						
QIZ	**Qiongzhong**	**54.36**	**250**	*e*P	**P**	**17 52 02.2**	**+0.6**
	comp=Z,187nm,1.6s						
QIZ				LR	LR		
	comp=Z,880nm,21.0s						
TARA	**Tarawa**	**54.41**	**169**	PFAKE		17 52 10.0	+8.1
TARA				LR	LR		
	comp=Z,63nm,19.0s						
D25A	**Fairfield**	**54.42**	**57**	P	**P**	**17 52 02.1**	**+0.3**
	baz=316						
R11A	**Troy Canyon, C**	**54.43**	**72**	P	**P**	**17 52 03.0**	**+0.8**
	baz=316,SNR=14						
R11A	**Troy Canyon, C**	**54.43**	**72**	*e*P	**P**	**17 52 02.7**	**+0.5**
	comp=Z,65nm,1.4s						
GRAC	**Grapevine Rang**	**54.44**	**75**	P	**P**	**17 52 03.4**	**+1.3**
	baz=317,SNR=6.8						
FRB	**Frobisher Bay**	**54.44**	**26**	LR	LR	18 19 04.7	
	comp=Z,936nm,18.0s,baz=314,slow=40						
BW06	**Boulder Array**	**54.46**	**65**	P	**P**	**17 52 02.2**	**-0.2**
	baz=316,SNR=20						
BW06	**Boulder Array**	**54.46**	**65**	*e*P	**P**	**17 52 02.5**	**+0.1**
	comp=Z,36nm,1.0s						
BW06				LR	LR		
	comp=Z,1μm,20.0s						
PD31	**Pinedale Array**	**54.46**	**65**	*e*P	**P**	**17 52 02.5**	**+0.1**
PDAR	**Pinedale Array**	**54.46**	**65**	P	**P**	**17 52 02.4**	**0.0**
	comp=Z,10nm,1.0s,baz=316,slow=3.4,SNR=55						
PDAR				LR	LR	18 14 34.2	
	comp=Z,1μm,20.8s,baz=336,slow=35						
B27A	**Peters Farms,**	**54.50**	**55**	P	**P**	**17 52 02.7**	**+0.4**
	baz=316						
A28A	**Rude Farm, Bot**	**54.59**	**54**	P	**P**	**17 52 03.2**	**+0.2**
	baz=316						
DUG	**Dugway, Tooele**	**54.59**	**69**	P	**P**	**17 52 03.5**	**+0.2**
	baz=316,SNR=17						
DUG	**Dugway, Tooele**	**54.59**	**69**	*e*P	**P**	**17 52 04.1**	**+0.8**
DUG				pmax	pmax		
	comp=Z,39nm,1.0s						
DUG				MLR	MLR		
	comp=Z,932nm,19.0s						
DUG	**Dugway, Tooele**	**54.59**	**69**	*e*P	**P**	**17 52 04.1**	**+0.8**
	comp=Z,39nm,1.0s						
DUG				LR	LR		
	comp=Z,932nm,19.0s						
PKM	**Mcpherson Peak**	**54.62**	**78**	P	**P**	**17 52 04.4**	**+0.8**
	baz=318						
TCUT	**Toone Canyon**	**54.67**	**67**	*e*P	**P**	**17 52 05.2**	**+1.2**
	comp=Z,130nm,1.5s						
ISA	**Isabella, Lake**	**54.80**	**77**	P	**P**	**17 52 05.3**	**+0.6**
	baz=317						
ISA	**Isabella, Lake**	**54.80**	**77**	*e*P	**P**	**17 52 04.9**	**+0.2**
ISA				pmax	pmax		
	comp=Z,53nm,1.1s						
ISA	**Isabella, Lake**	**54.80**	**77**	*e*P	**P**	**17 52 04.9**	**+0.2**
	comp=Z,53nm,1.1s						
LOF	**Lofoten**	**54.81**	**347**	*e*P	**P**	**17 52 04.4**	**+0.2**
LOF				*e*S	**S**	**17 59 45.0**	**+1.9**
DAC	**Darwin (Calif)**	**54.84**	**76**	*e*P	P	17 51 59.8	-5.3
DAC				pmax	pmax		
	comp=Z,115nm,1.5s						
DAC	**Darwin (Calif)**	**54.84**	**76**	*e*P	P	17 51 59.8	-5.4
	comp=Z,114nm,1.5s						
E25A	**Miller Ranch,**	**54.85**	**58**	P	**P**	**17 52 04.6**	**-0.3**
	baz=316,SNR=5.4						
B28A	**Dugan Ranch, T**	**54.88**	**54**	P	**P**	**17 52 05.0**	**0.0**
	baz=316,SNR=5.2						
SBC	**Santa Barbara**	**55.00**	**79**	P	**P**	**17 52 07.5**	**+1.4**
	baz=318						
JLU	**Jordanelle**	**55.02**	**68**	*e*P	**P**	**17 52 07.6**	**+1.1**
	comp=Z,133nm,1.9s						
BUSP	**Coron**	**55.05**	**236**	*e*P	**P**	**17 52 08.0**	**+1.4**
A29A	**Manning Farm,**	**55.06**	**53**	P	**P**	**17 52 06.1**	**-0.2**
	baz=316						
TPNV	**Topopah Spring**	**55.09**	**74**	P	**P**	**17 52 07.0**	**+0.1**
	baz=317,SNR=22						
TPNV	**Topopah Spring**	**55.09**	**74**	*e*P	**P**	**17 52 07.6**	**+0.7**
TPNV				pmax	pmax		
	comp=Z,127nm,1.3s						
TPNV	**Topopah Spring**	**55.09**	**74**	*e*P	**P**	**17 52 07.6**	**+0.7**
	comp=Z,127nm,1.3s						
FURC	**Furnace Creek,**	**55.10**	**75**	P	**P**	**17 52 07.4**	**+0.7**
	baz=317,SNR=16						
GUIM	**Jordan**	**55.16**	**232**	*e*P	**P**	**17 52 07.8**	**+0.4**
NLU	**North Lily Min**	**55.16**	**69**	*e*P	**P**	**17 52 07.9**	**+0.5**
	comp=Z,96nm,1.6s						
SFJD	**Kangerlussuaq**	**55.17**	**16**	LR	LR	18 17 29.4	
	comp=Z,598nm,20.7s,baz=324,slow=38						
SFJD	**Kangerlussuaq**	**55.17**	**16**	*i* P	**P**	**17 52 06.4**	**-0.4**
SFJD	**Kangerlussuaq**	**55.17**	**16**	*i* P	**P**	**17 52 06.4**	**-0.4**
SFJD	**Kangerlussuaq**	**55.17**	**16**	*e*P	**P**	**17 52 06.4**	**-0.4**
	comp=Z,115nm,1.4s						
PSUT	**Pine Spring**	**55.24**	**71**	*e*P	**P**	**17 52 08.7**	**+0.6**
	comp=Z,175nm,1.8s						
F25A	**Bowman**	**55.24**	**58**	P	**P**	**17 52 07.5**	**-0.3**
	baz=316,SNR=5.6						
TKM2	**Tokmak 2**	**55.26**	**297**	*e*P	**P**	**17 52 08.0**	**-0.1**
TKM2				pmax	pmax		
	comp=Z,19nm,0.8s						
TKM2				MLR	MLR		
	comp=Z,1μm,19.0s						
TKM2	**Tokmak 2**	**55.26**	**297**	*e*P	**P**	**17 52 08.0**	**-0.1**
	comp=Z,19nm,0.8s						
TKM2				LR	LR		
	comp=Z,1μm,19.0s						
D27A	**Center**	**55.31**	**56**	P	**P**	**17 52 08.5**	**+0.3**
	baz=316						
E26A	**Carlson Angus**	**55.32**	**57**	P	**P**	**17 52 08.5**	**+0.2**
	baz=316						
LRMC	**Laurel Mtn Rad**	**55.37**	**76**	P	**P**	**17 52 09.2**	**+0.3**
	baz=318,SNR=7.2						
OSI	**Osito Audit: C**	**55.43**	**78**	P	**P**	**17 52 09.9**	**+0.7**
	baz=318						
OSI	**Osito Audit: C**	**55.43**	**78**	*e*P	**P**	**17 52 12.5**	**+3.2**
	comp

GSC	Goldstone, Bar	55.98	76	eP	P	17 52 14.2	+0.9
GSC				pmax	pmax		
comp=Z,76nm,1.0s							
GSC	Goldstone, Bar	55.98	76	eP	P	17 52 14.2	+0.9
comp=Z,76nm,1.0s							
SHPR	Sheep Range	56.01	74	eP	P	17 52 14.7	+1.2
comp=Z,130nm,1.8s							
AAK	Ala-Archa	56.03	297	P	P	17 52 13.2	-0.4
comp=Z,13nm,0.8s,baz=67,slow=5.1,SNR=20							
AAK	Ala-Archa	56.03	297	eP	P	17 52 13.4	-0.2
AAK				pmax	pmax		
comp=Z,70nm,0.9s							
AAK				MLR	MLR		
comp=Z,1μm,20.0s							
AAK	Ala-Archa	56.03	297	eP	P	17 52 13.4	-0.2
comp=Z,70nm,0.9s							
AAK				LR	LR		
comp=Z,1μm,20.0s							
PASC	Pasadena Art C	56.05	78	eP	P	17 52 14.6	+1.0
comp=Z,218nm,1.8s							
MWC	Mount Wilson	56.09	78	eP	P	17 52 14.9	+0.8
MWC				pmax	pmax		
comp=Z,141nm,1.3s							
MWC	Mount Wilson	56.09	78	eP	P	17 52 14.9	+0.8
comp=Z,141nm,1.3s							
E28A	Huff	56.09	56	P	P	17 52 14.2	+0.4
baz=317							
K22A	Casper	56.09	63	P	P	17 52 14.8	+0.8
baz=317							
K22A	Casper	56.09	63	eP	P	17 52 15.2	+1.1
comp=Z,66nm,1.3s							
TMUT	Trail Mountain	56.10	69	eP	P	17 52 15.1	+0.8
comp=Z,158nm,1.8s							
ENPP	El Nido	56.11	236	eP	P	17 52 15.3	+1.0
G26A	Maurine	56.11	58	P	P	17 52 13.7	-0.3
baz=317,SNR=7.6							
H25A	Fruitdale	56.11	59	P	P	17 52 14.5	+0.5
baz=317							
B31A	Greenbush Farm	56.14	53	P	P	17 52 14.0	-0.1
baz=317							
MSU	Marysvale	56.15	70	eP	P	17 52 16.0	+1.4
MSU	Marysvale	56.15	70	eP	P	17 52 16.0	+1.4
MSU				eScP	ScP	17 57 13.2	+3.7
P17A	Butcher Ranch,	56.22	68	eP	P	17 52 15.9	+0.9
comp=Z,187nm,2.0s							
D29A	Pettibone, Tap	56.25	55	P	P	17 52 15.0	+0.1
baz=317							
RSSD	Black Hills	56.26	60	P	P	17 52 15.5	+0.2
baz=317							
RSSD	Black Hills	56.26	60	eP	P	17 52 15.5	+0.2
RSSD				pmax	pmax		
comp=Z,37nm,0.9s							
RSSD	Black Hills	56.26	60	eP	P	17 52 15.5	+0.2
comp=Z,37nm,0.9s							
A32A	Rocking H Ranc	56.30	51	P	P	17 52 15.6	+0.4
baz=318							
BFSC	Mount Baldy Ra	56.30	77	P	P	17 52 16.0	+0.4
baz=318							
JOF	Joensuu	56.35	336	P	P	17 52 15.5	+0.1
JOF				pmax	pmax		
comp=Z,155nm,1.2s							
P18A	Preston Nutter	56.37	68	eP	P	17 52 17.2	+1.0
comp=Z,106nm,1.6s							
EKS2	Erkin-Say	56.37	298	eP	P	17 52 15.4	-0.6
EKS2				pmax	pmax		
comp=Z,68nm,0.9s							
EKS2				MLR	MLR		
comp=Z,2μm,21.0s							
EKS2	Erkin-Say	56.37	298	eP	P	17 52 15.4	-0.6
comp=Z,68nm,0.9s							
EKS2				LR	LR		
comp=Z,2μm,21.0s							
G27A	Dupree	56.37	58	P	P	17 52 15.8	-0.1
baz=317							
TUQ	Turquoise Moun	56.37	75	P	P	17 52 16.9	+0.8
baz=318							
Q16A	Castle Valley	56.39	69	eP	P	17 52 16.9	+0.6
comp=Z,165nm,1.9s							
I25A	Rochford	56.49	60	P	P	17 52 17.0	+0.1
baz=317,SNR=6.8							
MTPU	Mount Pierson	56.49	70	eP	P	17 52 18.4	+1.2
comp=Z,84nm,1.6s							
CIS	Catalina Islan	56.49	79	P	P	17 52 17.1	+0.2
baz=318							
LSA	Lhasa	56.49	275	eP	P	17 52 17.0	-0.5
LSA				pmax	pmax		
comp=Z,36nm,0.8s							
LSA				MLR	MLR		
comp=Z,2μm,20.0s							
LSA	Lhasa	56.49	275	eP	P	17 52 17.0	-0.5
comp=Z,36nm,0.8s							
LSA				LR	LR		
comp=Z,2μm,20.0s							
H26A	Fairpoint	56.52	59	P	P	17 52 17.3	+0.3
baz=317							
BUKP	Musuan	56.52	228	eP	P	17 52 18.7	+1.5
C31A	Landman Farms,	56.57	53	P	P	17 52 16.8	-0.4
baz=318							
STOK	Stokkvaagen	56.58	346	eP	P	17 52 17.1	+0.2
STOK				IAmb	IAmb	17 52 33.1	
comp=N,14nm,0.9s							
HEC	Hector,Ludlow	56.59	76	P	P	17 52 18.0	+0.4
baz=318							
SRU	San Rafael Swe	56.60	68	eP	P	17 52 18.5	+0.8
SRU				pmax	pmax		
comp=Z,236nm,1.8s							
SRU	San Rafael Swe	56.60	68	eP	P	17 52 18.5	+0.8
comp=Z,236nm,1.8s							
D30A	Buchanan	56.60	54	P	P	17 52 17.5	0.0
baz=318							
B32A	Ashes, Strandq	56.66	52	P	P	17 52 17.8	0.0
baz=318							
LCMT	Little Creek M	56.68	72	eP	P	17 52 21.4	+3.1
comp=Z,82nm,1.4s							
A33A	Warroad	56.77	51	P	P	17 52 18.2	-0.3
baz=318,SNR=17							
H27A	Howes	56.85	58	P	P	17 52 19.1	-0.2
baz=317							
MATI	Mati	56.86	226	eP	sP	17 52 35.2	+5.0
KNB	Kanab	56.90	72	eP	P	17 52 21.2	+1.3
KNB				pmax	pmax		
comp=Z,212nm,1.8s							
KNB	Kanab	56.90	72	eP	P	17 52 21.2	+1.3
comp=Z,212nm,1.8s							
GMRC	Granite Mounta	57.00	75	P	P	17 52 20.9	+0.3
baz=318,SNR=11							
MURC	Murrieta	57.03	77	P	P	17 52 21.4	+0.8
baz=318							
DAV	Davao City (W)	57.03	227	P	P	17 52 20.4	-0.4
comp=Z,101nm,0.4s,baz=20,slow=3.5,SNR=4.9							
DAV				LR	LR	18 17 20.5	
comp=Z,290nm,19.7s,baz=17,slow=37							
F29A	Eureka	57.04	56	P	P	17 52 20.7	+0.1
baz=318							
O20A	White River Ci	57.04	66	P	P	17 52 21.0	+0.1
baz=318,SNR=12							
O20A	White River Ci	57.04	66	eP	P	17 52 20.6	-0.3
comp=Z,112nm,1.4s							
C32A	Crookston	57.09	52	P	P	17 52 21.2	+0.3
baz=318							
MNAS	Manas	57.14	298	P	P	17 52 21.8	+0.3
MNAS				pmax	pmax		
comp=Z,29nm,0.8s							
B33A	Robert and Kas	57.18	51	P	P	17 52 21.5	0.0
baz=318							
PAGZ	Pagadian	57.27	230	eP	P	17 52 28.4	+5.9
J26A	Sides Ranch, S	57.33	60	P	P	17 52 22.6	-0.2
baz=318,SNR=5.4							
E31A	Nome	57.41	54	P	P	17 52 22.9	-0.2
baz=318,SNR=8.4							
PFO	Pinyon Flats O	57.43	77	esP	sP	17 52 29.9	-4.3
PFO				LR	LR		
comp=Z,805nm,19.0s							
B34A	Aery, Baudette	57.43	51	P	P	17 52 22.6	-0.6
baz=319,SNR=12							
TPFO	Pinon Flats	57.44	77	P	P	17 52 24.3	+0.6
baz=318							
CTBH	Cotabato--PC H	57.46	229	i P	P	17 52 25.1	+1.3
C33A	Trail	57.48	52	P	P	17 52 23.4	-0.2
baz=318							
KSH	Kashi	57.55	294	P	P	17 52 27.3	+2.9
KSH				esP	sP	17 52 36.0	+1.0
KSH				eP cP	PcP	17 53 20.5	+2.9
KSH				PcS	PcS	17 57 20.4	+1.6
KSH				S	S	18 00 22.3	+1.8
KSH				pmax	pmax		
comp=Z,290nm,5.7s							
KSH				LR	LR		
comp=Z,2μm,17.3s							
KSH				LR	LR		
comp=Z,4μm,16.6s							
KSH				LR	LR		
comp=Z,2μm,21.0s							
109C	Camp Elliot, M	57.61	78	P	P	17 52 25.9	+1.2
baz=319							
U15A	North Rim	57.62	72	eP	P	17 52 26.2	+1.1
comp=Z,62nm,1.4s							
N23A	Red Feather La	57.67	64	P	P	17 52 25.4	0.0
baz=318,SNR=6.6							
N23A	Red Feather La	57.67	64	eP	P	17 52 26.2	+0.8
comp=Z,48nm,1.0s							
N23A				eScP	ScP	17 57 22.4	+6.1
KKAR	Karatay Array	57.67	300	eP	P	17 52 24.5	-0.6
KKAR	Karatay Array	57.67	300	eP	P	17 52 24.5	-0.6
IPIL	Ipil	57.68	231	eP	P	17 52 33.3	+7.9
W13A	Hualapai Mount	57.74	74	eP	P	17 52 26.4	+0.4
comp=Z,37nm,1.3s							
IRM	Iron Mountain	57.75	76	P	P	17 52 25.8	+0.1
baz=318							
H29A	Onida	57.75	57	P	P	17 52 25.9	+0.3
baz=318							
I28A	Midland	57.75	58	P	P	17 52 25.3	-0.3
baz=318,SNR=6.3							
E32A	Braaten, Kindr	57.76	54	P	P	17 52 25.4	-0.2
baz=318							
F31A	Hecla	57.76	55	P	P	17 52 25.6	-0.1
baz=318							
PV09	Paradox Valley	57.78	68	eP	P	17 52 27.4	+1.2
AKTO	Aktyubinsk	57.87	313	P	P	17 52 26.0	-0.3
comp=Z,4.3nm,0.5s,baz=77,slow=8.9,SNR=9.9							
G30A	Faulkton	57.88	56	P	P	17 52 26.5	0.0
baz=318							
D33A	AnnSam, Waubun	57.91	52	P	P	17 52 27.0	+0.3
baz=319							
PV10	Paradox Valley	57.92	68	eP	P	17 52 28.4	+1.2
B35A	Bob, Littlefor	57.93	50	P	P	17 52 26.0	-0.8
baz=319,SNR=25							
C34A	RKJ Ranch, Bem	57.95	52	P	P	17 52 26.5	-0.4
baz=319							
ABKAR	Akbulak array	57.95	311	eP	P	17 52 26.7	-0.2
VAF	Ylistaro	58.07	340	P	P	17 52 28.1	+0.6
VAF				pmax	pmax		
comp=Z,131nm,1.3s							
PV05	Paradox Valley	58.11	68	eP	P	17 52 29.3	+0.8
I29A	Vivian Onida	58.16	58	P	P	17 52 28.5	0.0
baz=318							
PDMCI	Parker Dam,Lak	58.19	75	P	P	17 52 28.9	+0.1
baz=319,SNR=6.4							
D34A	Park Rapids	58.24	52	P	P	17 52 28.3	-0.7
baz=319,SNR=27							
G31A	Conde	58.25	55	P	P	17 52 28.7	-0.4
baz=319							
SWSC	Sam W. Stewart	58.29	77	P	P	17 52 30.0	+0.5
baz=319							
E33A	Westby DABS, E	58.31	53	P	P	17 52 29.6	+0.1
baz=319							
BRLS	Borolday	58.32	300	i P	P	17 52 29.2	-0.3
BRLS				eS	S	18 00 28.2	-2.0
BRLS				LRM	MLR	18 20 06.5	
comp=Z,498nm,12.1s							
C35A	Jirik Farms, M	58.32	51	P	P	17 52 28.4	-1.1
baz=319,SNR=16							
IKP	In-Ko-Pah, Jac	58.34	77	P	P	17 52 31.0	+1.0
baz=319							
Y12C	Blythe	58.40	75	P	P	17 52 31.2	+1.0
baz=319							
Y12C	Blythe	58.40	75	eP	P	17 52 31.6	+1.4
comp=Z,205nm,1.9s							
SMCO	Snowmass	58.41	66	eP	P	17 52 31.2	+0.5
comp=Z,43nm,1.2s							
NSS	Namsos	58.44	346	eP	P	17 52 29.0	-1.0
NSS				IAmb	IAmb	17 52 31.7	
comp=Z,80nm,1.6s							
SUSD	Miller	58.49	56	P	P	17 52 30.8	+0.1
baz=319							
CRAI	Chiangrai	58.60	260	P	P	17 52 32.5	+0.7
comp=Z,151nm,2.6s							
IUG	Iuzhnay	58.62	300	i P	P	17 52 31.1	-0.7
comp=Z,186nm,1.1s							
IUG				i PP	PP	17 54 42.1	+0.9
IUG				eS	S	18 00 33.6	-0.8
IUG				LRM	MLR	18 20 17.0	
comp=Z,506nm,13.5s							
ISCO	Idaho Springs	58.65	64	P	P	17 52 32.9	+0.6
baz=318,SNR=14							
ISCO	Idaho Springs	58.65	64	eP	P	17 52 33.3	+1.0
ISCO				pmax	pmax		
comp=Z,147nm,1.9s							
ISCO				MLR	MLR		
comp=Z,2μm,19.0s							
ISCO	Idaho Springs	58.65	64	eP	P	17 52 33.3	+1.0
comp=Z,147nm,1.9s							
ISCO				LR	LR		
comp=Z,2μm,19.0s							
I30A	Oacoma	58.66	57	P	P	17 52 31.2	-0.8
baz=319,SNR=6.7							
GLA	Glamis	58.75	76	P	P	17 52 33.7	+0.9
baz=319							
GLA	Glamis	58.75	76	eP	P	17 52 33.7	+0.9
GLA				pmax	pmax		
comp=Z,219nm,1.8s							
GLA	Glamis	58.75	76	eP	P	17 52 33.7	+0.9
comp=Z,219nm,1.8s							
D35A	Remer	58.76	51	P	P	17 52 32.2	-0.4
baz=320,SNR=8.4							
C36A	Pine Crest Far	58.78	50	P	P	17 52 32.3	-0.4
baz=320,SNR=14							
WUAZ	Wupatki	58.80	72	P	P	17 52 33.8	+0.6
baz=319							
WUAZ	Wupatki	58.80	72	eP	P	17 52 34.4	+1.2
comp=Z,60nm,1.4s							
WUAZ				LR	LR		
comp=Z,783nm,19.0s							
NONG	Nongkai	58.80	256	P	P	17 52 33.9	+0.7
FIA1	FINESS Array S	58.82	338	eP	P	17 52 32.4	-0.4
FINES	FINESS Array B	58.82	338	P	P	17 52 32.8	0.0
comp=Z,29nm,0.9s,baz=45,slow=8.4,SNR=39							
FINES				LR	LR	18 21 59.1	
comp=Z,868nm,18.1s,baz=28,slow=40							
MANU	Manus Island	58.88	199	eP	P	17 52 34.0	+0.4
comp=Z,157nm,1.6s							
I31A	Royce, Wessing	59.00	57	P	P	17 52 33.9	-0.4
baz=319							
J30A	Dallas	59.07	58	P	P	17 52 34.8	0.0
baz=319							
MVCO	Mesa Verde	59.07	68	P	P	17 52 35.0	-0.2
baz=319							
MVCO	Mesa Verde	59.07	68	eP	P	17 52 34.5	-0.7
comp=Z,27nm,1.0s							
MVCO				LR	LR		
comp=Z,985nm,19.0s							
D36A	Goodland	59.08	51	P	P	17 52 34.1	-0.7
baz=320,SNR=14							
C37A	Embarrass	59.09	50	P	P	17 52 34.0	-0.9
baz=320,SNR=12							
Y14A	Wickenburg	59.09	74	eP	P	17 52 36.0	+0.8
comp=Z,108nm,1.0s							
G33A	Ortonville	59.10	54	P	P	17 52 34.6	-0.4
baz=319							
H32A	Carlson Farm,	59.16	55	P	P	17 52 35.4	0.0
baz=319							
F34A	Alexandria	59.19	53	P	P	17 52 35.6	+0.1
baz=320							
EYMN	Ely	59.22	49	P	P	17 52 35.1	-0.6
baz=320,SNR=44							
EYMN	Ely	59.22	49	eP	P	17 52 35.3	-0.5
comp=Z,111nm,1.4s							
EYMN				LR	LR		
comp=Z,1μm,21.0s							
SKNT	Sakolnakorn	59.22	255	P	P	17 52 36.8	+0.7
comp=Z,137nm,1.3s,comp=Z,3μm							
SHL	Shillong	59.23	271	eS	S	18 00 39.0	-3.9
PUL	Pulkovo	59.34	335	eP	P	17 52 37.0	+0.6
PUL				pmax	pmax		
comp=Z,64nm,0.7s							
H33A	Prehn Over Nor	59.35	55	P	P	17 52 36.7	0.0
baz=319							
D37A	Cotton	59.42	50	P	P	17 52 36.6	-0.6
baz=320,SNR=19							
J31A	Geddes	59.45	57	P	P	17 52 37.2	-0.3
baz=319							
C38A	Sawbill Land.	59.49	49	P	P	17 52 36.9	-0.8
baz=320,SNR=25							
K30A	Basset	59.50	58	P	P	17 52 38.1	+0.2
baz=319							
Q24A	Divide	59.51	65	P	P	17 52 38.3	0.0
baz=319,SNR=8.1							
Q24A	Divide	59.51	65	eP	P	17 52 39.2	+0.9
comp=Z,16nm,0.9s							
E36A	McGregor	59.54	51	P	P	17 52 38.0	0.0
baz=320,SNR=25							
113A	Mohawk Valley,	59.55	76	eP	P	17 52 39.2	+1.0
comp=Z,58nm,1.5s							
S22A	4UR Ranch, Cre	59.55	67	P	P	17 52 39.3	+0.7
baz=319,SNR=17							
S22A	4UR Ranch, Cre	59.55	67	eP	P	17 52 39.7	+1.1
comp=Z,57nm,1.5s							
X16A	Lo Mia Camp, P	59.58	73	eP	P	17 52 40.0	+1.3
comp=Z,25nm,1.0s							
CMAI	Chiengmai2	59.59	261	P	P	17 52 39.8	+1.0
OGNE	Ogallala	59.61	61	P	P	17 52 39.0	+0.3
baz=319							
OGNE	Ogallala	59.61	61	eP	P	17 52 39.6	+0.9
comp=Z,160nm,1.6s							
OGNE				LR	LR		
comp=Z,1μm,19.0s							
E37A	Wrenshall	59.88	51	P	P	17 52 40.5	+0.2
baz=320							
C39A	Grand Marais	59.91	48	P	P	17 52 39.6	-0.9
baz=321,SNR=12							
F36A	Milaca	59.92	52	P	P	17 52 40.3	-0.4
baz=320,SNR=12							
G35A	Watkins	59.98	53	P	P	17 52 41.0	-0.1
baz=320							
W18A	Petrified Fore	59.98	71	P	P	17 52 42.3	+0.9
baz=319							
W18A	Petrified Fore	59.98	71	eP	P	17 52 42.6	+1.1
comp=Z,36nm,1.0s							
BORG	Borgarnes	60.08	3	LR	LR	18 20 02.0	
comp=Z,611nm,18.6s,baz=23,slow=38							
ECSD	EROS Data Cent	60.13	56	P	P	17 52 41.5	-0.6
baz=320,SNR=12							
ECSD	EROS Data Cent	60.13	56	eP	P	17 52 41.8	-0.3
comp=Z,43nm,1.1s							
ECSD				LR	LR		
comp=Z,1μm,22.0s							
RABL	Rabaul	60.21	194	eP	P	17 52 43.6	+0.8
comp=Z,310nm,1.4s							
H35A	Sunnyside Ranc	60.22	54	P	P	17 52 42.4	-0.3
baz=320,SNR=6.1							
SDCO	Great Sand Dun	60.25	66	P	P	17 52 44.2	+0.9
baz=319							
SDCO	Great Sand Dun	60.25	66	eP	P	17 52 44.2	+0.9
comp=Z,16nm,1.0s							
SDCO				LR	LR		
comp=Z,1μm,20.0s							
L31A	Butterfield Fa	60.25	58	P	P	17 52 42.8	-0.1
baz=320,SNR=6.2							
J33A	Davis	60.28	56	P	P	17 52 43.0	-0.1
baz=320							
K32A	Verdigre	60.30	57	P	P	17 52 43.3	0.0
baz=320							
G36A	St. Michael	60.30	53	P	P	17 52 43.0	-0.2
baz=320							
X18A	Snowflake	60.31	71	eP	P	17 52 45.0	+1.3
comp=Z,47nm,1.1s							
KHON	Khomkaen	60.38	255	P	P	17 52 45.3	+1.2
comp=Z,48nm,1.0s,comp=Z,660nm							
LAMP	Lampang	60.39	260	P	P	17 52 43.6	-0.5
comp=Z,26nm,1.1s,comp=Z,239nm							
UTTA	Uttaradit	60.50	258	P	P	17 52 45.5	+0.6
comp=Z,26nm,1.0s,comp=Z,264nm							
CMMT	Chiang Mai	60.54	260	P	P	17 52 45.5	+0.3
comp=Z,62nm,1.3s,comp=Z,1μm							
CHTO	Chiang Mai	60.54	260	P	P	17 52 45.6	+0.4
comp=Z,278nm,1.3s,comp=Z,6μm							
CHTO	Chiang Mai	60.54	260	eP	P	17 52 45.4	+0.2
CHTO				pmax	pmax		
comp=Z,67nm,1.1s							
CHTO				MLR	MLR		
comp=Z,1μm,19.0s							
CHTO	Chiang Mai	60.54	260	P	P	17 52 45.9	+0.7
SNR=24							
CHTO	Chiang Mai	60.54	260	P	P	17 52 45.9	+0.7
SNR=24							
CHTO	Chiang Mai	60.54	260	eP	P	17 52 45.4	+0.2
comp=Z,67nm,1.1s							
CHTO				LR	LR		
comp=Z,1μm,19.0s							
214A	Organ Pipe Nat	60.69	75	P	P	17 52 46.2	+0.1
baz=320,SNR=6.2							
214A	Organ Pipe Nat	60.69	75	eP	P	17 52 46.6	+0.5
comp=Z,207nm,1.1s							
H36A	Jessenland, He	60.73	53	P	P	17 52 46.6	+0.4
baz=320							
SPMN	Marine on St.	60.74	52	P	P	17 52 45.6	-0.6
baz=321,SNR=5.2							
SPMN	Marine on St.	60.74	52	eP	P	17 52 46.2	0.0
comp=Z,48nm,0.7s							
KSCO	Kaye Shedlock'	60.77	63	P	P	17 52 46.8	+0.1
baz=320,SNR=5.8							
KSCO	Kaye Shedlock'	60.77	63	eP	P	17 52 47.4	+0.7
comp=Z,34nm,0.6s							
I35A	Creekview Farm	60.80	54	P	P	17 52 46.7	+0.1
baz=320							
K33A	Hardington	60.81	57	P	P	17 52 46.4	-0.3
baz=320							
M31A	Lambtecht Ranc	60.82	59	P	P	17 52 47.0	+0.1
baz=320							
CM31	Chiang Mai Arr	60.83	260	eP	P	17 52 48.1	+0.9
CMAR	Chiang Mai Arr	60.83	260	P	P	17 52 47.6	+0.5
comp=Z,45nm,1.1s,baz=23,slow=7.4,SNR=55							
CMAR				PKP2bc		18 22 15.4	
comp=Z,1.5nm,0.9s,baz=234,slow=3.3,SNR=7.2							
CMAR				LR	LR	18 22 18.6	
comp=Z,2μm,18.4s,baz=49,slow=39							
CMAR				PKP2ab		18 22 25.6	
comp=Z,1.9nm,1.1s,baz=246,slow=3.1,SNR=5.0							
JAY	Jayapura	60.83	207	P	P	17 52 47.2	+0.1
comp=Z,0.8nm,1.0s,baz=270,slow=20,SNR=5.7							
GUN	Gumba	60.84	278	eP	P	17 52 46.4	-1.2
comp=Z,131nm,0.6s							
CM01	Chiang Mai Arr	60.85	260	eP	P	17 52 46.9	-0.3
MOS	Moscow	60.86	329	eP	P	17 52 46.9	+0.1
MOS				i		17 53 00.0	
MOS				e		17 53 23.5	
MOS				e		17 55 08.8	
MOS				eS	S	18 01 01.4	-1.2
MOS				pmax	pmax		
comp=Z,200nm,1.5s							
MOS				pmax	pmax		
comp=Z,115nm,1.4s							
MOS				MLR	MLR		
comp=Z,2μm,18.0s							
GENI	Genyem	61.04	207	P	P	17 52 49.9	+1.4
comp=Z,79nm,1.5s,comp=Z,2μm							
J35A	Milford	61.07	55	P	P	17 52 48.3	-0.2
baz=320							
I36A	Fitzsimmons Fa	61.12	54	P	P	17 52 48.5	-0.3
baz=321							
BGNE	Belgrade	61.17	58	P	P	17 52 48.8	-0.4
baz=320,SNR=8.5							
BGNE	Belgrade	61.17	58	eP	P	17 52 49.3	+0.1
comp=Z,219nm,1.0s							
K34A	Le Mars	61.17	56	P	P	17 52 48.9	-0.4
baz=320,SNR=5.3							
H37A	Dierke Farm, C	61.18	53	P	P	17 52 49.5	+0.2
baz=321							
CHAI	Chaiyaphum	61.20	256	P	P	17 52 50.2	+0.6
comp=Z,38nm,1.0s,comp=Z,345nm							
PBKT	Sadao Pong	61.22	257	P	P	17 52 50.5	+0.8
comp=Z,83nm,1.8s,comp=Z,2μm							
N31A	Bailey Ranch,	61.22	59	P	P	17 52 49.8	+0.1
baz=320							
T25A	Trinidad	61.27	66	P	P	17 52 50.2	-0.1
baz=320,SNR=9.7							
T25A	Trinidad	61.27	66	eP	P	17 52 50.9	+0.7
comp=Z,29nm,1.1s							
KKN	Kakani	61.27	278	eP	P	17 52 49.7	-0.7
comp=Z,144nm,0.7s							
AKN	Aaknes	61.33	348	eP	P	17 52 50.3	+0.3
AKN				IAmb	IAmb	17 53 04.6	
comp=Z,139nm,1.5s							
VSU	Vasula	61.36	336	eP	P	17 52 49.8	-0.4
VSU				pmax	pmax		
comp=Z,114nm,0.9s							
PKIN	Phulchoki	61.37	278	eP	P	17 52 50.0	-1.1
comp=Z,128nm,0.7s							
I37A	Lemond, Waseca	61.40	53	P	P	17 52 50.3	-0.5
baz=321,SNR=9.4							
GKN	Gorkha	61.47	279	eP	P	17 52 50.8	-0.8
comp=Z,126nm,0.9s							

J36A	Seneca 1, Swea	61.50	54	P	P	17 52 50.9	-0.6
	baz=321,SNR=7.4						
M33A	Taylor Creek F	61.50	58	P	P	17 52 51.1	-0.4
	baz=320						
DMN	Daman	61.51	278	*e*P	P	17 52 51.4	-0.6
	comp=Z,144nm,1.0s						
TUC	Tucson	61.54	74	P	P	17 52 52.9	+1.0
	baz=320						
TUC	Tucson	61.54	74	*e*P	P	17 52 52.7	+0.8
TUC				pmax	pmax		
	comp=Z,18nm,1.1s						
TUC				MLR	MLR		
	comp=Z,522nm,19.0s						
TUC	Tucson	61.54	74	*e*P	P	17 52 52.7	+0.8
	comp=Z,18nm,1.1s						
TUC				LR	LR		
	comp=Z,522nm,19.0s						
K35A	Storm Lake	61.55	55	P	P	17 52 51.1	-0.6
	baz=321						
O31A	Woolen Ranch,	61.55	60	P	P	17 52 51.9	0.0
	baz=320						
N32A	Stulken Farm,	61.59	59	P	P	17 52 52.1	0.0
	baz=320						
L34A	Svendsen Farm,	61.59	57	P	P	17 52 51.6	-0.5
	baz=320						
COWI	Conover	61.67	49	*e*P	P	17 52 52.0	-0.6
	comp=Z,62nm,1.1s						
COWI				LR	LR		
	comp=Z,1μm,22.0s						
NC303	NORSAR Array S	61.68	345	*e*P	P	17 52 53.0	+0.6
OBN	Obninsk	61.71	329	P	P	17 52 52.5	-0.1
	comp=Z,27nm,0.9s,baz=33,slow=2.6,SNR=19						
OBN	Obninsk	61.71	329*c*	*i*P	P	17 52 52.7	+0.1
OBN				*i*		17 53 03.2	
OBN				*i*		17 53 10.8	
OBN				*i*		17 53 34.3	
OBN				*i* S	S	18 01 10.7	-2.6
OBN				pmax	pmax		
	comp=Z,57nm,1.2s						
OBN				MLR	MLR		
	comp=Z,1μm,17.0s						
OBN	Obninsk	61.71	329	*e*P	P	17 52 52.5	-0.1
	comp=Z,349nm,1.2s						
OBN				LR	LR		
	comp=Z,1μm,22.0s						
XMAS	Kiritimati	61.71	135	PFAKE		17 53 10.0	+17
XMAS				LR	LR		
	comp=Z,2.0nm,20.0s						
NC204	NORSAR Array S	61.72	346	*e*P	P	17 52 53.2	+0.6
NC405	NORSAR Array S	61.73	345	*e*P	P	17 52 53.0	+0.2
MYLDM	Lahad Datu	61.83	234	*e*P	P	17 52 55.8	+1.9
	comp=Z,92nm,1.3s						
M34A	Aspy Farms, Fr	61.85	57	P	P	17 52 53.6	-0.2
	baz=321						
NB201	NORSAR Array S	61.86	345	*e*P	P	17 52 53.5	-0.1
ANMO	Albuquerque	61.86	69	LR	LR	18 18 41.4	
	comp=Z,620nm,18.6s,baz=330,slow=35						
ANMO	Albuquerque	61.86	69	P	P	17 52 55.1	+0.8
	baz=320						
ANMO	Albuquerque	61.86	69	*e*P	P	17 52 54.8	+0.6
ANMO				pmax	pmax		
	comp=Z,25nm,1.1s						
ANMO	Albuquerque	61.86	69	*e*P	P	17 52 54.8	+0.6
	comp=Z,25nm,1.1s						
I38A	Scanlan Farm,	61.87	53	P	P	17 52 53.1	-0.8
	baz=321,SNR=5.6						
L35A	Bielow Farm, R	61.88	56	P	P	17 52 54.0	0.0
	baz=321						
NB2	NORSAR Subarra	61.88	345	P	P	17 52 53.6	-0.1
	comp=Z,30nm,0.8s,baz=18,slow=6.9						
NB2	NORSAR Subarra	61.88	345	P	P	17 52 53.6	-0.1
	baz=18,slow=6.9						
NB2	NORSAR Subarra	61.88	345	P	P	17 52 53.6	-0.1
NB2				pmax	pmax		
	comp=Z,25nm,0.9s						
NOA	NORSAR Array B	61.88	345	P	P	17 52 53.7	0.0
	comp=Z,18nm,0.8s,baz=18,slow=6.8,SNR=49						
NOA				PKP2ab		18 22 21.0	
	comp=Z,0.5nm,0.7s,baz=27,slow=17,SNR=3.5						
J37A	Redenius Farm,	61.88	54	P	P	17 52 53.3	-0.7
	baz=321,SNR=13						
LAZ	Ladron	61.91	70	*e*P	P	17 52 55.9	+1.3
NBO02	NORSAR Array S	61.92	346	*e*P	P	17 52 53.3	-0.7
NBO00	NORSAR Array S	61.95	346	*e*P	P	17 52 54.5	+0.4
K36A	Gilmore City	61.98	55	P	P	17 52 53.9	-0.8
	baz=321,SNR=7.7						
O32A	Brockman Farm,	61.99	59	P	P	17 52 53.6	-1.1
	baz=320,SNR=7.4						
N33A	J Bar K, Exete	62.02	58	P	P	17 52 54.2	-0.8
	baz=321						
SDKM	Sandakan	62.02	235	⇑P	P	17 52 56.7	+1.4
NAO01	NORSAR Array S	62.11	345	*e*P	P	17 52 55.1	-0.2
NC602	NORSAR Array S	62.12	345	*e*P	P	17 52 54.8	-0.5
NC602	NORSAR Array S	62.12	345	*e*P	P	17 52 55.6	+0.3
SWI	Sorong	62.13	218	P	P	17 52 56.9	+1.0
	comp=Z,157nm,1.6s,comp=Z,3μm						
SWI	Sorong	62.13	218	P	P	17 52 56.9	+1.0
SWI				pmax	pmax		
	comp=Z,157nm,1.5s						
KKM	Kota Kinabalu	62.13	236	⇓P	P	17 52 57.7	+1.7
KKM	Kota Kinabalu	62.13	236	*e*P	P	17 52 58.0	+1.9
	comp=Z,235nm,1.6s						
KKM				LR	LR		
	comp=Z,356nm,21.0s						
KOLN	Koldanda	62.24	279	*e*P	P	17 52 56.0	-0.8
	comp=Z,89nm,0.6s						
LPM	Los Pinos Moun	62.25	69	*e*P	P	17 52 57.9	+1.0
K37A	Belmond	62.26	54	P	P	17 52 56.2	-0.3
	baz=321						
L36A	Harm Buss Farm	62.30	55	P	P	17 52 56.4	-0.4
	baz=321						
M35A	Neola	62.30	57	P	P	17 52 56.6	-0.2
	baz=321						
P32A	Huiting Farm,	62.32	60	P	P	17 52 56.0	-1.0
	baz=321,SNR=13						
PYUN	Piuthan	62.32	280	*e*P	P	17 52 56.8	-0.6
	comp=Z,287nm,0.9s						
J38A	Wedel Dairy, R	62.37	53	P	P	17 52 56.1	-1.1
	baz=322,SNR=5.8						
CBKS	Cedar Bluff	62.37	61	P	P	17 52 56.9	-0.6
	baz=320,SNR=6.4						
CBKS	Cedar Bluff	62.37	61	*e*P	P	17 52 57.2	-0.2
CBKS				pmax	pmax		
	comp=Z,68nm,0.8s						
CBKS				MLR	MLR		
	comp=Z,1μm,19.0s						
CBKS	Cedar Bluff	62.37	61	*e*P	P	17 52 57.2	-0.2
	comp=Z,68nm,0.8s						
CBKS				LR	LR		
	comp=Z,1μm,19.0s						
BNM	Barren Site	62.38	69	*e*P	P	17 52 58.8	+1.1
N34A	Lincoln	62.40	58	P	P	17 52 57.0	-0.6
	baz=321						
HYA	Hoyanger	62.41	348	*e*P	P	17 52 57.9	+0.7
HYA				IAmb	IAmb	17 53 11.8	
	comp=Z,112nm,1.2s						
O33A	Hebron	62.47	59	P	P	17 52 57.0	-1.0
	baz=321,SNR=9.1						
SCHQ	Schefferville	62.51	30	P	P	17 52 56.9	-1.1
	comp=Z,14nm,0.6s,baz=345,slow=8.1,SNR=10						
SCHQ				LR	LR	18 22 07.6	
	comp=Z,906nm,19.9s,baz=310,slow=38						
SCHQ				PKP2bc		18 22 07.8	
	comp=Z,4.1nm,0.6s,baz=91,slow=4.9,SNR=4.8						
SCHQ	Schefferville	62.51	30	*e*P	P	17 52 57.1	-1.0
	comp=Z,46nm,1.1s						
SCHQ				⇑*e*		18 22 07.8	
UMPA	Umpang Tak	62.69	259	P	P	17 53 02.3	+2.6
L37A	Phoenix Point,	62.71	55	P	P	17 52 59.2	-0.3
	baz=321						
SRAK	Srakaew	62.71	254	P	P	17 52 59.0	-0.8
	comp=Z,328nm,0.8s,comp=Z,4μm						
M36A	Felix, Anita	62.74	56	P	P	17 52 59.9	+0.1
	baz=321						
K38A	Parkersburg	62.75	54	P	P	17 52 59.4	-0.5
	baz=322						
N35A	Tabor	62.80	57	P	P	17 53 00.2	0.0
	baz=321						
O34A	Beatrice	62.82	58	P	P	17 52 59.4	-0.9
	baz=321,SNR=7.8						
Q32A	Meitler Ranch,	62.82	60	P	P	17 52 59.3	-1.1
	baz=321,SNR=7.4						
TSM	Tawau	62.90	234	⇑P	P	17 53 02.9	+1.9
P33A	Williams Farm,	62.91	59	P	P	17 53 00.5	-0.4
	baz=321						
121A	Cookes Peak, D	63.00	71	P	P	17 53 02.9	+1.1
	baz=320,SNR=9.0						
121A	Cookes Peak, D	63.00	71	*e*P	P	17 53 03.1	+1.3
	comp=Z,40nm,1.3s						
L38A	Oak Wood Farm,	63.06	54	P	P	17 53 01.1	-0.8
	baz=322,SNR=12						
319A	Douglas	63.07	73	*e*P	P	17 53 03.2	+1.0
	comp=Z,80nm,1.4s						
M37A	Trindle Farm,	63.13	56	P	P	17 53 02.5	+0.2
	baz=322						
SCIA	State Center	63.13	55	*e*P	P	17 53 02.4	+0.1
	comp=Z,143nm,0.9s						
SCIA				LR	LR		
	comp=Z,683nm,20.0s						
O35A	Humboldt	63.13	58	P	P	17 53 02.4	+0.1
	baz=321						
LPSR	Galich'ya Gora	63.13	326	*e*P	P	17 53 02.0	-0.2
LPSR				*e**SP	sP	17 53 14.5	+1.7
LPSR				*e*S	S	18 01 22.1	-9.3
LPSR				pmax	pmax		
	comp=Z,80nm,1.0s						
LPSR				smax	smax		
	comp=N,420nm,2.7s						
LPSR				MLR	MLR		
	comp=Z,500nm,15.0s						
N36A	Muff Farm, Cla	63.16	57	P	P	17 53 02.6	0.0
	baz=321						
Q33A	Connelly Farm,	63.18	60	P	P	17 53 01.9	-0.8
	baz=321,SNR=26						
R32A	Long Quarter,	63.19	61	P	P	17 53 02.2	-0.6
	baz=321						
P34A	Walnut Farm, R	63.24	59	P	P	17 53 02.5	-0.6
	baz=321,SNR=15						
BER	Bergen	63.28	348	*e*P	P	17 53 03.4	+0.5
VRH	Novokhopyorsk	63.40	323	*e*P	P	17 53 03.4	-0.5
VRH				*e**SP	sP	17 53 16.2	+1.6
VRH				*e*S	S	18 01 21.2	-14
VRH				pmax	pmax		
	comp=Z,40nm,0.6s						
VRH				smax	smax		
	comp=N,500nm,4.3s						
VRH				MLR	MLR		
	comp=Z,2μm,16.0s						
KONO	Kongsberg	63.44	346	*e*P	P	17 53 04.4	+0.3
KONO				IAmb	IAmb	17 53 18.8	
	comp=Z,171nm,1.5s						
KONO	Kongsberg	63.44	346	*e*P	P	17 53 04.5	+0.4
KONO				pmax	pmax		
	comp=Z,128nm,1.4s						
KONO				MLR	MLR		
	comp=Z,950nm,21.0s						
KONO	Kongsberg	63.44	346	*e*P	P	17 53 04.5	+0.4
	comp=Z,128nm,1.4s						
KONO				LR	LR		
	comp=Z,950nm,21.0s						
M38A	Pleasantville	63.52	55	P	P	17 53 04.5	-0.4
	baz=322,SNR=14						
N37A	Lee Faris, Mou	63.56	56	P	P	17 53 04.8	-0.4
	baz=322,SNR=30						
CHBT	CHBT	63.59	253	P	P	17 53 06.6	+1.0
	comp=Z,146nm,1.9s,comp=Z,3μm						
S32A	Newby Ranch, P	63.63	61	P	P	17 53 05.0	-0.8
	baz=321						
R33A	Olander Ranch,	63.64	60	P	P	17 53 04.4	-1.3
	baz=321,SNR=6.9						
P35A	Duane Minner,	63.65	58	P	P	17 53 05.2	-0.7
	baz=321,SNR=11						
Q34A	Chapman	63.67	59	P	P	17 53 05.5	-0.5
	baz=321						
O36A	Bolckow	63.69	57	P	P	17 53 05.2	-0.8
	baz=322,SNR=5.3						
JFWS	Jewell Farm	63.69	52	*e*P	P	17 53 05.2	-0.8
JFWS				pmax	pmax		
	comp=Z,24nm,0.9s						
JFWS				MLR	MLR		
	comp=Z,2μm,19.0s						
JFWS	Jewell Farm	63.69	52	*e*P	P	17 53 05.2	-0.8
	comp=Z,24nm,0.9s						
JFWS				LR	LR		
	comp=Z,2μm,19.0s						
KSU1	Kansas State U	63.70	59	P	P	17 53 04.9	-1.2
	baz=321,SNR=5.2						
KSU1	Kansas State U	63.70	59	*e*P	P	17 53 05.0	-1.1
	comp=Z,55nm,0.8s						
KSU1				LR	LR		
	comp=Z,2μm,19.0s						
IZAR	Zarasai	63.92	335	*e*P	P	17 53 07.9	+0.6
IZAR				IAmb	IAmb	17 53 22.3	
	comp=Z,50nm,0.9s						
P36A	Good Intent, A	63.97	58	P	P	17 53 07.4	-0.6
	baz=322						
N38A	Joes South For	63.99	55	P	P	17 53 07.2	-0.8
	baz=322,SNR=5.6						
R34A	Isabella, Hill	64.01	60	P	P	17 53 07.2	-1.0
	baz=321,SNR=7.9						
SRDT	SRDT	64.05	257	P	P	17 53 09.5	+0.8
	comp=Z,226nm,2.0s,comp=Z,7μm						
O37A	Wolven Farm, M	64.05	56	P	P	17 53 07.8	-0.6
	baz=322,SNR=6.1						
ISAL	Salakas	64.11	335	*e*P	P	17 53 09.2	+0.6
ISAL				IAmb	IAmb	17 53 23.6	
	comp=Z,63nm,1.1s						
Q35A	Mercer Eighty,	64.17	59	P	P	17 53 08.1	-1.2
	baz=322						
S33A	Kaszmaul Farm,	64.18	61	P	P	17 53 08.3	-1.1
	baz=321						
IDID	Didziasalis	64.20	334	*e*P	P	17 53 09.8	+0.6
IDID				IAmb	IAmb	17 53 24.2	
	comp=Z,75nm,1.0s						
VSR	Storozhevoye	64.24	325	*e*P	P	17 53 09.1	-0.4
VSR				*e**SP	sP	17 53 22.1	+1.9
VSR				*e*S	S	18 01 31.6	-14
VSR				pmax	pmax		
	comp=Z,70nm,1.0s						
VSR				smax	smax		
	comp=E,470nm,3.4s						
VSR				MLR	MLR		
	comp=Z,1μm,16.0s						
N39A	Derby Farms, D	64.27	55	P	P	17 53 09.0	-0.8
	baz=322,SNR=12						
Q36A	Arnold C. Orve	64.36	58	P	P	17 53 09.5	-1.0
	baz=322						
O38A	Galt	64.41	56	P	P	17 53 09.7	-1.0
	baz=322,SNR=5.3						
P37A	Lathrop	64.41	57	P	P	17 53 09.7	-1.1
	baz=322,SNR=7.6						
AMTX	Amarillo	64.42	65	P	P	17 53 10.8	-0.2
	baz=321						
AMTX	Amarillo	64.42	65	*e*P	P	17 53 10.9	-0.2
	comp=Z,24nm,0.9s						
T33A	Patterson Ranc	64.46	61	P	P	17 53 10.1	-1.0
	baz=322						
MRSI	Marisa	64.50	228	P	P	17 53 12.5	+0.9
	comp=Z,79nm,1.4s						
R35A	Emporia Munici	64.50	59	P	P	17 53 10.3	-1.1
	baz=322,SNR=6.7						
S34A	Willow Spring	64.54	60	P	P	17 53 10.4	-1.3
	baz=322						
MSTX	Muleshoe	64.56	67	P	P	17 53 11.8	-0.2
	baz=321,SNR=12						
MSTX	Muleshoe	64.56	67	*e*P	P	17 53 12.1	+0.1
	comp=Z,64nm,1.0s						
NACGM	Naroch	64.56	334	*e*	P	17 53 12.0	+0.5
NACGM				*e*LQ	LQ	18 17 26.0	
NACGM				*e*LR	LR	18 19 22.0	
U32A	Winter Ranch,	64.63	62	P	P	17 53 12.3	0.0
	baz=322						
MICGM	Minsk	64.64	333	*e*P	P	17 53 12.0	-0.1
MICGM				*e*PcP	PcP	17 53 44.0	-1.7
MICGM				*e*PP	PP	17 55 36.0	+2.3
MICGM				*e*S	S	18 01 48.0	-2.0
MICGM				*e*LQ	LQ	18 18 14.0	
MICGM				LQM		18 19 20.0	
	comp=E,4.3nm,22.0s						
MICGM				*e*LR	LR	18 21 06.0	
MICGM				LRM	MLR	18 24 46.0	
	comp=Z,2.1nm,14.0s						
MNK	Minsk	64.64	333	*e*P	P	17 53 12.0	-0.1
MNK				*e*		17 53 44.0	
MNK				*e*		17 55 36.0	
MNK				*e*S	S	18 01 48.0	-2.0
MNK				MLR	MLR		
	comp=Z,2μm,14.0s						
HNR	Honiara	64.71	184	PFAKE		17 53 30.0	+17
HNR				LR	LR		
	comp=Z,2μm,20.0s						
O39A	Kirksville	64.74	55	P	P	17 53 12.7	-0.2
	baz=322						
P38A	Dawn	64.77	56	P	P	17 53 12.4	-0.8
	baz=322,SNR=19						
R36A	Gordon, Harris	64.84	59	P	P	17 53 12.4	-1.3
	baz=322,SNR=6.3						
Q37A	Longview Farm,	64.92	58	P	P	17 53 13.2	-1.0
	baz=322						
KBL	Kabul	64.92	295	*e*P	P	17 53 12.7	-1.8
KBL				pmax	pmax		
	comp=Z,41nm,0.8s						
KBL	Kabul	64.92	295	*e*P	P	17 53 12.7	-1.8
	comp=Z,41nm,0.8s						
HOMB	Homborsund	64.93	346	*e*PP	PP	17 55 35.8	-0.2
HOMB				IAMs_20	IAMs_20	18 28 33.7	
	comp=Z,1μm,19.4s						
MNTX	Cornudas Mount	64.93	70	P	P	17 53 14.8	+0.5
	baz=321,SNR=39						
MNTX	Cornudas Mount	64.93	70	*e*P	P	17 53 15.2	+0.9
	comp=Z,66nm,1.1s						
PHET	Kaeng Krachan	64.94	256	P	P	17 53 15.8	+1.3
S35A	Otter Creek Ra	64.95	60	P	P	17 53 13.5	-0.9
	baz=322						
FUNA	Funafuti	64.99	163	PFAKE		17 53 30.0	+15
FUNA				LR	LR		
	comp=Z,10μm,19.0s						
U33A	Lingo Farm, Me	65.03	62	P	P	17 53 14.1	-0.8
	baz=322						
T34A	McClaskey Farm	65.03	61	P	P	17 53 13.5	-1.4
	baz=322,SNR=10						
SNART	Snartemo	65.04	347	*e*P	P	17 53 14.9	+0.4
V32A	Arapaho	65.12	63	P	P	17 53 15.3	-0.3
	baz=322						
O40A	La Belle	65.16	55	P	P	17 53 14.7	-0.9
	baz=323,SNR=7.6						
SANI	Sanana	65.16	223	P	P	17 53 18.8	+2.9
R37A	Teagarden Farm	65.18	58	P	P	17 53 14.4	-1.4
	baz=322						
P39B	Salisbury	65.25	56	P	P	17 53 15.1	-1.1
	baz=323,SNR=15						
Q38A	Cooks Store, C	65.25	57	P	P	17 53 14.9	-1.4
	baz=322,SNR=16						
S36A	Lake Cedric, C	65.27	59	P	P	17 53 15.0	-1.4
	baz=322,SNR=7.5						
U34A	Anderson Ranch	65.32	61	P	P	17 53 15.4	-1.4
	baz=322,SNR=5.2						
U34A	Anderson Ranch	65.32	61	*e*P	P	17 53 16.1	-0.7
	comp=Z,45nm,0.8s						
V33A	Lossen Ranch,	65.42	62	P	P	17 53 16.6	-0.9
	baz=322						
T35A	Sooner Cattle	65.45	60	P	P	17 53 16.7	-1.0
	baz=322						
W32A	Sentinel	65.48	63	P	P	17 53 17.5	-0.4
	baz=322,SNR=15						
Q39A	Willow Grove F	65.49	56	P	P	17 53 17.2	-0.6
	baz=323,SNR=17						
P40A	Paris	65.55	56	P	P	17 53 17.7	-0.4
	baz=323,SNR=21						
S37A	Fort Scott	65.61	59	P	P	17 53 17.4	-1.3
	baz=322,SNR=5.3						
T36A	Boggs Farm, Ca	65.65	60	P	P	17 53 17.9	-1.0
	baz=322						
R38A	Fenwick Farm,	65.72	58	P	P	17 53 17.4	-2.0
	baz=323,SNR=9.6						
U35A	Pawnee	65.77	61	P	P	17 53 19.4	-0.3
	baz=322						
V34A	Guthrie	65.80	62	P	P	17 53 19.0	-0.9
	baz=322,SNR=5.6						
V34A	Guthrie	65.80	62	*e*P	P	17 53 19.4	-0.5
	comp=Z,46nm,0.9s						
W33A	Caddo, Fort Co	65.86	63	P	P	17 53 20.5	+0.2
	baz=322						
Q40A	Laux Farm, Aux	65.96	56	P	P	17 53 20.2	-0.7
	baz=323,SNR=16						
HDIL	Hopedale	66.00	53	P	P	17 53 20.0	-1.1
	baz=324,SNR=9.6						
HDIL	Hopedale	66.00	53	*e*P	P	17 53 20.4	-0.6
	comp=Z,125nm,0.8s						
HDIL				LR	LR		
	comp=Z,2μm,19.0s						
X32A	Elmer	66.01	64	P	P	17 53 20.6	-0.7
	baz=322,SNR=7.5						
WMOK	Wichita Mounta	66.02	63	P	P	17 53 21.1	-0.3
	baz=322,SNR=14						
WMOK	Wichita Mounta	66.02	63	*e*P	P	17 53 21.1	-0.3
WMOK				pmax	pmax		
	comp=Z,101nm,1.0s						
WMOK				MLR	MLR		
	comp=Z,971nm,20.0s						
WMOK	Wichita Mounta	66.02	63	*e*P	P	17 53 21.1	-0.3
	comp=Z,101nm,1.0s						
WMOK				LR	LR		
	comp=Z,971nm,20.0s						
R39A	Chumby, Stover	66.04	57	P	P	17 53 20.4	-1.0
	baz=323,SNR=39						
T37A	Cheneyville 18	66.07	59	P	P	17 53 20.0	-1.7
	baz=322,SNR=8.1						
W34A	Bridge Creek,	66.14	62	P	P	17 53 21.7	-0.4
	baz=322						
W34A	Bridge Creek,	66.14	62	*e*P	P	17 53 22.2	+0.1
W34A				*es*P	pP	17 53 27.5	-2.3
S38A	Stockton	66.16	58	P	P	17 53 20.6	-1.6
	baz=323,SNR=9.3						
V35A	Meyer Ranch, C	66.20	61	P	P	17 53 21.8	-0.7
	baz=322						
SUW	Suwalki	66.24	336	*e*P	P	17 53 22.0	-0.4
SUW				*e*PcP	sP	17 53 35.1	+2.1
SUW				*e*PP	PP	17 55 41.8	-5.9
SUW				LMZ	LR	18 17 34.6	
	comp=Z,800nm,34.1s						
SUW	Suwalki	66.24	336	*e*P	P	17 53 22.0	-0.4
SUW				*e*		17 53 35.1	
U36A	Oologah	66.25	60	P	P	17 53 22.1	-0.6
	baz=322						
X33A	Lawton	66.32	63	P	P	17 53 23.1	-0.1
	baz=322						
KLNR	Kaliningrad	66.35	338	*e*P	P	17 53 22.5	-0.6
KLNR				pmax	pmax		
	comp=Z,77nm,1.1s						
S39A	Bolivar	66.40	58	P	P	17 53 22.1	-1.6
	baz=323,SNR=16						
R40A	Maddies Statio	66.42	56	P	P	17 53 22.9	-0.9
	baz=323,SNR=38						
T38A	Diamond	66.45	59	P	P	17 53 23.0	-1.1
	baz=323,SNR=21						
U37A	Salina	66.54	60	P	P	17 53 23.6	-1.0
	baz=323,SNR=7.8						
TUL1	Leonard	66.60	60	P	P	17 53 24.3	-0.7
	baz=323,SNR=6.7						
TUL1	Leonard	66.60	60	*e*P	P	17 53 24.6	-0.5
	comp=Z,48nm,1.0s						
X34A	Smith Ranch, M	66.61	63	P	P	17 53 25.3	+0.2
	baz=322						
V36A	Jenks	66.62	61	P	P	17 53 24.2	-1.0
	baz=323,SNR=8.1						
PCI	Palu	66.64	229	P	P	17 53 25.6	+0.2
PCI	Palu	66.64	229	P	P	17 53 25.6	+0.2
PCI				pmax	pmax		
	comp=Z,95nm,1.2s						
W35A	Tecumseh	66.66	62	P	P	17 53 24.9	-0.6
	baz=322,SNR=9.3						
Y33A	Hilltop Ranch,	66.67	64	P	P	17 53 25.3	-0.2
	baz=322,SNR=8.6						
Q42A	Golden Eagle	66.75	55	P	P	17 53 25.5	-0.4
	baz=324						
S40A	Lebanon	66.86	57	P	P	17 53 25.5	-1.2
	baz=323,SNR=17						
SADO	Sadowa	66.87	44	*e*P	P	17 53 24.9	-1.7
	comp=Z,33nm,1.1s						
U38A	Gravette	66.88	59	P	P	17 53 25.7	-1.1
	baz=323,SNR=6.1						
T39A	Clever	66.90	58	P	P	17 53 25.6	-1.4
	baz=323,SNR=7.3						
BSD	Bornholm Skovb	66.93	341	*i* P	P	17 53 26.9	+0.2
BSD				*i*		17 53 40.4	
BSD	Bornholm Skovb	66.93	341	*i* P	P	17 53 26.9	+0.2
BSD				*i*		17 53 40.4	
V37A	Hulbert	66.94	60	P	P	17 53 26.5	-0.7
	baz=323,SNR=9.2						
W36A	Wetumka	66.99	61	P	P	17 53 27.1	-0.4
	baz=323,SNR=18						
AAM	Ann Arbor	67.07	48	*e*P	P	17 53 28.0	+0.1
AAM				pmax	pmax		
	comp=Z,179nm,1.3s						
AAM				MLR	MLR		
	comp=Z,957nm,22.0s						
AAM	Ann Arbor	67.07	48	*e*P	P	17 53 28.0	+0.1

SFIN	Lafayette	67.13	52	P		P	17 53 27.4	-0.9
	baz=324							
SFIN	Lafayette	67.13	52	eP		P	17 53 27.3	-1.0
	comp=Z,91nm,1.4s							
Y34A	Reagan Ranch,	67.16	63	P		P	17 53 28.2	-0.4
	baz=322,SNR=12							
Z33A	Whitaker Ranch	67.17	64	P		P	17 53 28.1	-0.6
	baz=322							
SBUM	Sibu	67.18	238	⇓P		P	17 53 30.6	+1.7
SBUM	Sibu	67.18	238	eP		P	17 53 29.5	+0.6
	comp=Z,245nm,1.2s							
X35A	Drake	67.20	62	P		P	17 53 28.0	-0.9
	baz=323,SNR=16							
HHAR	Hobbs	67.22	59	eP		P	17 53 28.1	-0.9
	comp=Z,67nm,0.9s							
ABTX	Abilene, Hawle	67.24	65	P		P	17 53 28.7	-0.4
	baz=322,SNR=10.0							
ABTX	Abilene, Hawle	67.24	65	eP		P	17 53 29.2	+0.1
	comp=Z,85nm,0.9s							
V38A	Canehill	67.32	60	P		P	17 53 28.8	-0.8
	baz=323,SNR=33							
U39A	Green Forest	67.36	59	P		P	17 53 28.9	-1.0
	baz=323,SNR=50							
X36A	Centrahoma	67.38	62	P		P	17 53 29.8	-0.2
	baz=323,SNR=13							
TRQ	Mont Tremblant	67.39	40	eP		P	17 53 28.8	-1.2
W37B	Quinton	67.39	61	P		P	17 53 29.8	-0.2
	baz=323,SNR=24							
Z34A	Collier Ranch,	67.54	64	P		P	17 53 30.3	-0.7
	baz=323,SNR=6.9							
Y35A	Marietta	67.56	63	P		P	17 53 30.7	-0.4
	baz=323,SNR=5.9							
133A	Hamilton Ranch	67.63	65	P		P	17 53 31.0	-0.6
	baz=322,SNR=7.4							
GEYT	Alibeck	67.65	305	P		P	17 53 31.1	-0.6
	comp=Z,9.8nm,0.8s,baz=29,slow=3.4,SNR=14							
GEYT				PKP2bc			18 21 53.9	
	comp=Z,0.9nm,0.6s,baz=103,slow=4.7,SNR=3.7							
GEYT				LR		LR	18 25 18.2	
	comp=Z,2μm,19.6s,baz=65,slow=38							
T41A	Mountain View	67.66	57	P		P	17 53 30.6	-1.2
	baz=324,SNR=37							
U40A	Yellville	67.69	58	P		P	17 53 31.0	-0.9
	baz=323,SNR=26							
TX31	Lajitas Ar. Si	67.70	71	eP		P	17 53 32.1	-0.1
TXAR	Lajitas Array	67.70	71	P		P	17 53 32.6	+0.4
	comp=Z,38nm,0.7s,baz=299,slow=4.5,SNR=436							
TXAR				PKP2bc			18 21 53.1	
	comp=Z,0.5nm,0.9s,baz=110,slow=7.2,SNR=4.3							
AKASG	Malin Array Be	67.71	331	P		P	17 53 31.1	-0.7
	comp=Z,5.6nm,0.4s,baz=29,slow=6.5,SNR=56							
AKASG				PKP2bc			18 21 52.1	
	comp=Z,0.2nm,0.3s,baz=215,slow=3.6,SNR=5.4							
AKASG				LR		LR	18 27 28.4	
	comp=Z,2μm,18.0s,baz=25,slow=40							
AKBB	Malin Array Si	67.71	331	eP		P	17 53 30.5	-1.3
AKBB				pmax		pmax		
	comp=Z,143nm,1.1s							
AKBB	Malin Array Si	67.71	331	eP		P	17 53 30.5	-1.3
	comp=Z,143nm,1.1s							
V39A	Pettigrew	67.72	59	P		P	17 53 31.6	-0.5
	baz=323,SNR=79							
KIEV	Kiev	67.72	331	d iP		P	17 53 31.1	-0.7
KIEV				pmax		pmax		
	comp=Z,29nm,1.0s							
KIEV	Kiev	67.72	331	eP		P	17 53 31.1	-0.7
	comp=Z,169nm,1.2s							
KIEV				LR		LR		
	comp=Z,2μm,19.0s							
LMQ	La Malbaie	67.74	36	eP		P	17 53 31.5	-0.6
	comp=Z,51nm,0.8s							
AK11	Malin Array Si	67.75	331	eP		P	17 53 31.6	-0.4
RGN	Rugen	67.75	342	eP		P	17 53 33.1	+1.2
RGN				ePcP		sP	17 53 46.3	+3.7
X37A	Clayton	67.86	61	P		P	17 53 32.4	-0.6
	baz=323,SNR=7.0							
W38A	Poteau	67.90	60	P		P	17 53 32.9	-0.4
	baz=323,SNR=42							
Z35A	Perchaven, San	67.91	63	P		P	17 53 33.2	-0.1
	baz=323							
Y36A	Durant	67.95	62	P		P	17 53 33.6	+0.1
	baz=323,SNR=5.3							
OLIL	Olney	68.01	53	eP		P	17 53 33.4	-0.5
	comp=Z,109nm,1.2s							
X38A	Whitesboro	68.06	61	P		P	17 53 33.9	-0.4
	baz=323,SNR=16							
134A	White-Moore Ra	68.08	64	P		P	17 53 34.1	-0.3
	baz=323,SNR=8.2							
233A	Rising Star	68.10	65	P		P	17 53 34.3	-0.3
	baz=323,SNR=8.7							
GOF	Gofitskoye	68.13	319	⇑ iP		P	17 53 35.5	+0.9
GOF				eS		S	18 02 33.3	+0.6
GOF				pmax		pmax		
	comp=Z,272nm,1.1s							
V40A	Witts Springs	68.14	58	P		P	17 53 33.9	-0.9
	baz=324,SNR=27							
W39A	Magazine	68.16	60	P		P	17 53 34.2	-0.7
	baz=323,SNR=11							
Y37A	Hugo	68.22	62	P		P	17 53 34.7	-0.6
	baz=323							
BKB	Balikpapan	68.25	232	P		sP	17 53 52.0	+5.7
SIUC	Southern Illin	68.32	55	eP		P	17 53 35.3	-0.5
	comp=Z,120nm,1.0s							
Z36A	Blue Ridge	68.37	63	P		P	17 53 36.1	-0.2
	baz=323							
BLO	Bloomington	68.37	52	eP		P	17 53 34.5	-1.7
BLO				pmax		pmax		
	comp=Z,123nm,1.4s							
BLO	Bloomington	68.37	52	eP		P	17 53 34.5	-1.7
	comp=Z,123nm,1.4s							
135A	Vickery Place,	68.44	64	P		P	17 53 36.7	0.0
	baz=323							
HPIG		68.50	74	eP		P	17 53 36.9	-0.5
	comp=Z,12nm,0.8s							
234A	Clairette	68.51	65	P		P	17 53 37.0	-0.1
	baz=323							
PBMO	Poplar Bluff	68.51	56	eP		P	17 53 36.7	-0.3
	comp=Z,98nm,0.9s							
W40A	Ferguson Farm,	68.51	59	P		P	17 53 36.6	-0.4
	baz=324,SNR=22							
BUF	Buffalo	68.53	45	eP		P	17 53 36.2	-0.9
BUF				ePcP		sP	17 53 49.2	+1.4
X39A	Fountain Ranch	68.54	60	P		P	17 53 36.9	-0.4
	baz=323,SNR=33							
TTSI	Tana Toraja	68.57	228	P		P	17 53 39.7	+2.1
333A	Richland Sprin	68.61	66	P		P	17 53 37.1	-0.7
	baz=323,SNR=15							
Y38A	Idabel	68.70	61	P		P	17 53 38.3	0.0
	baz=323							
ERPA	Erie	68.75	46	eP		P	17 53 37.8	-0.6
	comp=Z,163nm,1.1s							
LONY	Lake Ozonia	68.75	41	eP		P	17 53 36.9	-1.6
	comp=Z,59nm,1.4s							
LONY				LR		LR		
	comp=Z,923nm,19.0s							
SAUI	Saumlaki	68.77	215	P		P	17 53 40.4	+1.6
X201	Greenbrier Sit	68.78	58	eP		P	17 53 38.2	-0.6
	comp=Z,65nm,1.0s							
MIAR	Mount Ida	68.78	60	P		P	17 53 38.2	-0.5
	baz=324,SNR=24							
MIAR	Mount Ida	68.78	60	eP		P	17 53 38.7	-0.1
MIAR				pmax		pmax		
	comp=Z,70nm,0.9s							
MIAR				MLR		MLR		
	comp=Z,692nm,19.0s							
MIAR	Mount Ida	68.78	60	eP		P	17 53 38.7	-0.1
	comp=Z,70nm,0.9s							
MIAR				LR		LR		
	comp=Z,692nm,19.0s							
X301	Greenbrier Sit	68.80	59	eP		P	17 53 38.3	-0.6
	comp=Z,53nm,0.8s							
BEL	Belsk	68.81	336	eP		P	17 53 40.2	+1.6
BEL				ePcP		sP	17 53 52.5	+3.2
BEL				LMZ		LR	18 22 10.9	
	comp=Z,900nm,22.1s							
BEL	Belsk	68.81	336	eP		P	17 53 40.2	+1.6
BEL				e			17 53 52.5	
BEL				MLR		MLR		
	comp=Z,900nm,22.1s							
WHAR	Wooly Hollow	68.81	58	eP		P	17 53 38.4	-0.6
	comp=Z,92nm,1.0s							
USIN	University of	68.84	54	eP		P	17 53 38.7	-0.4
USIN				ePcP		sP	17 53 51.6	+1.9
Z37A	Pogue Cattle C	68.84	62	P		P	17 53 38.8	-0.3
	baz=323							
JCT	Junction City	68.85	67	P		P	17 53 38.9	-0.4
	baz=323,SNR=16							
JCT	Junction City	68.85	67	eP		P	17 53 39.3	0.0
JCT				pmax		pmax		
	comp=Z,79nm,0.8s							
JCT				MLR		MLR		
	comp=Z,1μm,19.0s							
JCT	Junction City	68.85	67	eP		P	17 53 39.3	0.0
	comp=Z,79nm,0.8s							
JCT				LR		LR		
	comp=Z,1μm,19.0s							
WHTX	Lake Whitney,	68.87	64	P		P	17 53 39.1	-0.2
	baz=323							
WHTX	Lake Whitney,	68.87	64	eP		P	17 53 38.8	-0.6
	comp=Z,24nm,0.9s							
FRNY	Flat Rock	68.93	40	eP		P	17 53 38.2	-1.3
	comp=Z,13nm,0.7s							
W41B	Gary Mavity, V	68.93	58	P		P	17 53 39.1	-0.6
	baz=324,SNR=22							
136A	Ennis	68.95	63	P		P	17 53 39.1	-0.7
	baz=323							
KSM	Kuching	68.96	240	⇓P		P	17 53 41.6	+1.6
KSM	Kuching	68.96	240	eP		P	17 53 40.4	+0.3
	comp=Z,200nm,1.4s							
KSM				LR		LR		
	comp=Z,385nm,20.0s							
334A	Lometa	68.99	65	P		P	17 53 39.8	-0.3
	baz=323,SNR=8.9							
433A	Art	69.00	66	P		P	17 53 39.8	-0.4
	baz=323,SNR=29							
Y39A	Lockesburg	69.01	61	P		P	17 53 40.0	-0.2
	baz=324							
ACSO	Alum Creek Sta	69.06	49	eP		P	17 53 40.0	-0.4
	comp=Z,149nm,1.3s							
ACSO				LR		LR		
	comp=Z,1μm,19.0s							
MMNY	Mt. Morris Dam	69.07	44	eP		P	17 53 39.3	-1.1
ALLY	Alegheny Colle	69.07	46	eP		P	17 53 39.9	-0.6
	comp=Z,171nm,1.1s							
ESK	Eskdalemuir	69.10	352	eP		P	17 53 41.5	+1.1
ESK				e			17 53 54.3	
ESK	Eskdalemuir	69.10	352	eP		P	17 53 41.5	+1.1
ESK				ePcP		sP	17 53 54.3	+3.1
Z38A	Mt. Pleasant	69.12	62	P		P	17 53 40.2	-0.6
	baz=324							
X40A	Basin Creek Fa	69.19	59	P		P	17 53 41.0	-0.3
	baz=324,SNR=11							
UALR	University of	69.20	59	eP		P	17 53 41.3	0.0
	comp=Z,19nm,0.7s							
KIV	Kislovodsk	69.21	319	i P		P	17 53 42.1	+0.7
	SNR=30							
KIV	Kislovodsk	69.21	319	eP		P	17 53 41.7	+0.3
KIV				e			17 56 15.3	
KIV				eS		S	18 02 45.6	-0.1
KIV				pmax		pmax		
	comp=Z,158nm,5.7s							
KIV				pmax		pmax		
	comp=Z,35nm,0.9s							
KIV				MLR		MLR		
	comp=Z,945nm,17.0s							
KIV	Kislovodsk	69.21	319	eP		P	17 53 42.1	+0.7
	comp=Z,84nm,1.1s							
KIV				LR		LR		
	comp=Z,1μm,20.0s							
CHLP	Challavanipeta	69.24	273	eP		P	17 53 41.2	-0.5
CHLP				IAmb		IAmb	17 53 42.6	
	comp=Z,66nm,1.2s							
CHLP				epP		pP	17 53 46.0	-3.6
CHLP				esP		sP	17 53 48.0	-4.5
CHLP				eS		S	18 02 43.5	-2.9
CHLP				eSKSac		ScS	18 03 41.5	+0.3
CHLP				IVMs_BB		IVMs_BB	18 27 43.3	
	comp=Z,366nm,15.8s							
WCI	Wyandotte Cave	69.25	52	eP		P	17 53 41.3	-0.3
WCI				e			17 53 54.0	
WCI	Wyandotte Cave	69.25	52	eP		P	17 53 41.3	-0.3
WCI				ePcP		sP	17 53 54.0	+1.6
137A	Heron Place, G	69.25	63	P		P	17 53 42.0	+0.3
	baz=323							
AKT	Akhty	69.31	314	eP		P	17 53 42.4	+0.3
AKT				e			17 54 01.5	
AKT				pmax		pmax		
	comp=Z,24nm,1.1s							
KBZ	Khabaz	69.32	318	P		P	17 53 42.5	+0.5
	comp=Z,58nm,0.9s,baz=51,slow=3.5,SNR=65							
KBZ				LR		LR	18 28 59.6	
	comp=Z,1μm,19.8s,baz=19,slow=40							
KBZ	Khabaz	69.32	318	P		P	17 53 42.5	+0.5
KBZ				pmax		pmax		
	comp=Z,58nm,0.9s							
KBZ				MLR		MLR		
	comp=Z,1μm,19.8s							
236A	Katherine and	69.33	64	P		P	17 53 42.1	-0.1
	baz=323							
KTGM	Kuala Trenggan	69.34	248	⇑P		P	17 53 44.0	+1.6
434A	Burnet	69.38	66	P		P	17 53 42.0	-0.6
	baz=323,SNR=18							
M54A	Oil Creek Stat	69.39	46	P		P	17 53 41.3	-1.1
	baz=327,SNR=9.9							
SPSI	Sidrap Palu	69.42	228	P		P	17 53 47.6	+4.8
335A	Moody	69.44	65	P		P	17 53 42.7	-0.2
	baz=323							
533A	Kerrville	69.57	67	P		P	17 53 43.5	-0.3
	baz=323,SNR=17							
STKI	Sintang	69.61	238	P		P	17 53 45.6	+1.5
336A	Riesel	69.66	64	P		P	17 53 44.2	-0.1
	baz=323							
WLAR	White Oak Lake	69.70	60	eP		P	17 53 44.9	+0.5
	comp=Z,163nm,1.1s							
N54A	Moraine State	69.71	46	P		P	17 53 43.5	-1.0
	baz=327,SNR=8.3							
ZEI	Tsey	69.74	317	eP		P	17 53 42.9	-1.9
ZEI				e			17 53 58.1	
ZEI				eS		S	18 02 49.1	-3.1
ZEI				pmax		pmax		
	comp=Z,86nm,0.9s							
435B	Jarrell	69.76	65	P		P	17 53 44.7	-0.2
	baz=323							
GUDG	Gudauri	69.79	317	P		P	17 53 46.7	+1.6
Y41A	Eaglette Beard	69.79	60	P		P	17 53 45.0	-0.1
	baz=324							
NEY	Neytrino	69.80	318	eP		P	17 53 44.3	-0.9
LVV	L'vov	69.89	334	eP		P	17 53 45.0	-0.4
LVV				e			17 53 57.2	
LVV				eS		S	18 02 50.8	-2.6
534A	Blanco	69.90	66	P		P	17 53 45.6	-0.2
	baz=323,SNR=27							
Z40A	Long Farm, Mag	69.90	61	P		P	17 53 45.3	-0.4
	baz=324,SNR=5.3							
633A	Saathoff Ranch	69.99	67	P		P	17 53 46.7	+0.4
	baz=323							
DUS	Dusheti	70.02	316	P		PcP	17 54 03.4	-5.1
LBNH	Lisbon	70.05	39	eP		P	17 53 46.4	0.0
LBNH				pmax		pmax		
	comp=Z,56nm,1.1s							
LBNH	Lisbon	70.05	39	eP		P	17 53 46.4	0.0
	comp=Z,56nm,1.1s							
238A	Jacksonville	70.05	63	P		P	17 53 46.8	+0.2
	baz=324							
DRLN	Deer Lake	70.08	27	eP		P	17 53 46.2	-0.3
	comp=Z,196nm,1.9s							
ONI	Oni	70.08	317	P		P	17 53 48.5	+1.7
PKME	Peaks-Kenny Pk	70.08	37	eP		P	17 53 46.4	-0.2
	comp=Z,36nm,1.0s							
PKME				LR		LR		
	comp=Z,2μm,20.0s							
ACCN	Adirondack Com	70.14	41	eP		P	17 53 46.3	-0.7
	comp=Z,52nm,1.0s							
436A	Wall Ranch, Ga	70.18	65	P		P	17 53 48.0	+0.5
	baz=324							
Z41A	Richland Creek	70.20	60	P		P	17 53 47.2	-0.3
	baz=324							
337A	Centerville	70.21	64	P		P	17 53 47.4	-0.3
	baz=324							
Y42A	Garnett, Star	70.23	59	P		P	17 53 47.6	-0.1
	baz=324,SNR=5.4							
WVT	Waverly	70.26	55	eP		P	17 53 47.7	-0.1
WVT				pmax		pmax		
	comp=Z,141nm,1.1s							
WVT	Waverly	70.26	55	eP		P	17 53 47.7	-0.1
	comp=Z,141nm,1.1s							
SORM	Soroca	70.27	330	⇓ iP		P	17 53 47.1	-0.6
TBLG	Delisi	70.31	316	P		P	17 53 49.4	+1.3
TBLG	Delisi	70.31	316	P		P	17 53 49.5	+1.3
140A	Cam and Jess,	70.31	61	P		P	17 53 47.9	-0.4
	baz=324							
KAPI	Kappang	70.37	227	PFAKE			17 54 00.0	+11
KAPI				LR		LR		
	comp=Z,240nm,20.0s							
ANN	Anapa	70.38	323	eP		P	17 53 48.5	+0.1
ANN				eS		S	18 02 59.1	0.0
ANN				pmax		pmax		
	comp=Z,118nm,1.7s							
KWP	Kalwaria Pacla	70.40	334	eP		P	17 53 49.8	+1.3
KWP				ePcP		sP	17 54 02.5	+3.2
KWP				LMZ		LR	18 23 18.9	
	comp=Z,2μm,24.0s							
KWP	Kalwaria Pacla	70.40	334	⇑ iP		P	17 53 49.3	+0.8
KWP	Kalwaria Pacla	70.40	334	eP		P	17 53 49.8	+1.3
KWP				e			17 54 02.4	
KWP				MLR		MLR		
	comp=Z,2μm,24.0s							
338A	Crockett	70.47	63	P		P	17 53 50.0	+0.8
	baz=324							
NATX	Nacogdoches	70.47	62	eP		P	17 53 49.1	-0.1
	comp=Z,30nm,0.7s							
NATX				LR		LR		
	comp=Z,1μm,19.0s							
X44A	Crenshaw	70.49	57	P		P	17 53 49.6	+0.3
	baz=325							
CHVG	Ch'k'valeri	70.49	318	⇓ iP		P	17 53 50.7	+1.5
CHVG	Ch'k'valeri	70.49	318	P		P	17 53 50.0	+0.8
832A	Faith Ranch, C	70.50	68	P		P	17 53 50.0	+0.6
	baz=323,SNR=9.2							
733A	Divot King Ran	70.51	68	P		P	17 53 50.1	+0.5
	baz=323							
OJC	Ojcow	70.54	336	eP		P	17 53 50.4	+1.0
OJC				ePcP		sP	17 54 03.2	+3.1
OJC				LMZ		LR	18 26 10.1	
	comp=Z,2μm,19.5s							
OJC	Ojcow	70.54	336	eP		P	17 53 49.8	+0.4
OJC				pmax		pmax		
	comp=Z,193nm,1.1s							
OJC	Ojcow	70.54	336	eP		P	17 53 49.8	+0.4
	comp=Z,193nm,1.1s							
Y43A	Makayla and Ka	70.59	58	P		P	17 53 50.1	+0.3
	baz=324							
536A	Bastrop	70.59	65	P		P	17 53 50.4	+0.4
	baz=324							
Z42A	Norrel Spur, H	70.61	59	P		P	17 53 49.8	-0.2
	baz=324							
SOC	Sochi	70.62	320	eP		P	17 53 49.7	-0.3
SOC				i *SP		sP	17 54 02.5	+1.8
SOC				e			17 56 23.1	
SOC				ePPP		PPP	17 58 08.5	
SOC				eS		S	18 03 00.7	-1.4
SOC				e			18 03 51.0	
SOC				eSS		SS	18 07 32.1	-0.7
SOC				pmax		pmax		
	comp=Z,25nm,0.9s							
SOC				MLR		MLR		
	comp=Z,2μm,18.0s							
141A	Papa Simpson,	70.67	61	P		P	17 53 50.9	+0.5
	baz=324							
KULM	Kulim	70.69	250	⇓P		P	17 53 51.1	+0.4
KULM	Kulim	70.69	250	eP		P	17 53 51.1	+0.4
	comp=Z,104nm,1.6s							
KULM				LR		LR		
	comp=Z,916nm,20.0s							
KSP	Ksiaz	70.71	339	eP		P	17 53 50.8	+0.4
KSP				epP		pP	17 53 54.3	-3.9
KSP				ePcP		sP	17 54 04.0	+2.8
KSP				LMZ		LR	18 24 20.4	
	comp=Z,800nm,22.6s							
KSP	Ksiaz	70.71	339	eP		P	17 53 50.8	+0.4
KSP				e			17 54 04.0	
KSP				MLR		MLR		
	comp=Z,800nm,22.6s							
833A	Chaparral WMA,	70.78	68	P		P	17 53 51.7	+0.5
	baz=323							
635A	Leesville	70.78	66	P		P	17 53 51.6	+0.5
	baz=324							
734A	La Parita Cree	70.80	67	P		P	17 53 51.8	+0.5
	baz=324							
OXF	Oxford	70.83	57	eP		P	17 53 51.3	-0.1
OXF				pmax		pmax		
	comp=Z,336nm,1.2s							
OXF	Oxford	70.83	57	eP		P	17 53 51.2	-0.1
	comp=Z,336nm,1.2s							
SSPA	Standing Stone	70.85	45	eP		P	17 53 50.3	-1.1
	comp=Z,80nm,1.3s							
339A	Huntington	70.87	63	P		P	17 53 51.7	+0.1
	baz=324							
438A	Sam Houston St	70.87	64	P		P	17 53 52.3	+0.6
	baz=324							
O56A	Blue Knob Stat	70.88	46	P		P	17 53 50.7	-0.9
	baz=328,SNR=7.4							
Y44A	Strider, Charl	70.89	58	P		P	17 53 51.8	+0.1
	baz=325							
KSPA	Keystone Colle	70.91	43	eP		P	17 53 50.4	-1.3
	comp=Z,81nm,1.2s							
CLL	Collm	70.91	341	⇓ iP		P	17 53 51.3	-0.3
	comp=Z,52nm,1.2s							
CLL				i			17 53 57.5	
CLL				i			17 54 04.6	
	comp=Z,96nm,1.1s							
CLL				i			17 55 59.8	
CLL				ePP		PP	17 56 31.0	+2.9
CLL				e			17 56 40.0	
CLL				Lm		MLR	18 26 00.0	
	comp=N,800nm,20.6s							
CLL				Lm		MLR	18 26 00.0	
	comp=E,500nm,18.4s							
CLL				Lm		MLR	18 26 00.0	
	comp=Z,800nm,21.2s							
CLL	Collm	70.91	341	⇓ iP		P	17 53 51.3	-0.3
CLL				i			17 54 04.6	
CLL				pmax		pmax		
	comp=Z,52nm,1.2s							
CLL				MLR		MLR		
	comp=Z,800nm,21.2s							
CLL	Collm	70.91	341	eP		P	17 53 51.4	-0.2
	comp=Z,103nm,1.2s							
STHS	Stebnicka Huta	70.95	335	eP		P	17 53 53.2	+1.3
STHS				e			17 54 06.9	
STHS				pmax		pmax		
	comp=Z,74nm,1.0s							
STHS	Stebnicka Huta	70.95	335	eP		P	17 53 53.2	+1.3
STHS				e			17 54 06.9	
537A	Green Hill Far	70.98	65	P		P	17 53 53.1	+0.8
	baz=324							
LMN	Caledonia Moun	71.04	34	eP		P	17 53 52.2	-0.3
	comp=Z,58nm,1.4s							
AKH	Akhalkalaki	71.07	317	⇑ iP		P	17 53 54.1	+1.1
AKH	Akhalkalaki	71.07	317	P		P	17 53 54.5	+1.6
AKH	Akhalkalaki	71.07	317	P		P	17 53 54.5	+1.6
636A	Smothers Creek	71.08	66	P		P	17 53 53.4	+0.4
	baz=324,SNR=6.8							
BSSI	Bau Bau, Buton	71.08	226	P		P	17 53 55.4	+2.4
UPC	Upice	71.09	339	eP		P	17 53 53.1	+0.4
UPC				epP		pP	17 53 57.2	-3.3
UPC				ex		x	17 54 06.2	
UPC				AMS		AMS	18 29 40.0	
	comp=Z,1μm,18.2s							
UPC	Upice	71.09	339	eP		P	17 53 53.1	+0.4
UPC				e			17 54 06.2	
UPC				MLR		MLR		
	comp=Z,1μm,18.2s							
241A	Mo Tay, Goldon	71.14	61	P		P	17 53 53.1	-0.1
	baz=324							
340A	Bronson	71.14	62	P		P	17 53 53.1	-0.2
	baz=324							
BRG	Berggiesshubel	71.15	340	i P		P	17 53 53.5	+0.5
	comp=Z,31nm,1.2s							
BRG				i			17 54 06.0	
	comp=Z,70nm,1.2s							
BRG				ePP		PP	17 56 26.6	-3.5
	comp=Z,11nm,1.4s							
BRG				S		S	18 03 10.0	+2.1
BRG				SS		SS	18 07 39.0	-1.4
	comp=N,910nm,17.3s							
	comp=E,725nm,15.7s							
	comp=Z,1μm,13.1s							
BRG	Berggiesshubel	71.15	340	i P		P	17 53

BRG MLR MLR
comp=Z,1μm,13.1s
BGD Bogdanovka 71.15 317 P P 17 53 54.7 +1.2
KOLS Kolonicke sedl 71.15 334 *e*P **P 17 53 53.9 +0.8**
KOLS *e* 17 54 06.5
KOLS *e* 17 56 37.0
KOLS pmax pmax
comp=Z,59nm,1.0s
KOLS Kolonicke sedl 71.15 334 *e*P **P 17 53 53.9 +0.8**
KOLS *e* 17 54 06.5
KOLS *e*PP **PP 17 56 37.0 +6.7**
KIS Kishinev 71.17 329⇓ *i*P **P 17 53 53.0 -0.2**
comp=Z,200nm,1.0s
KIS Kishinev 71.17 329 *i* PcP **PcP 17 54 07.0 -6.2**
KIS Kishinev 71.17 329 *e*PP PP 17 56 24.0 -6.4
KIS *i* S **S 18 03 10.0 +1.7**
comp=Z,600nm,2.5s
KIS Kishinev 71.17 329κ *i*P **P 17 53 53.0 -0.2**
KIS *i* 17 54 07.0
KIS *i* S **S 18 03 10.0 +1.7**
KIS *i* PS **PnS 18 03 50.0 +12**
KIS pmax pmax
comp=Z,150nm,1.0s
KIS pmax pmax
comp=Z,300nm,2.0s
KIS smax smax
comp=E,600nm,2.5s
KIS smax smax
comp=N,600nm,8.0s
KIS smax smax
comp=E,2μm,2.0s
KIS MLR MLR
comp=N,2μm,16.0s
KIS MLR MLR
comp=Z,2μm,16.0s
KIS MLR MLR
comp=Z,2μm,18.0s
DPC Dobruska-Polom 71.17 339 *e*P **P 17 53 53.9 +0.6**
DPC *e*pP **pP 17 53 58.2 -2.9**
DPC *e*x x 17 54 07.3
DPC *e*S **S 18 03 11.6 +3.3**
DPC AMS AMS 18 29 40.0
comp=Z,1μm,16.5s
DPC Dobruska-Polom 71.17 339 *e*P **P 17 53 53.9 +0.6**
DPC *e* 17 54 07.3
DPC *e*S **S 18 03 11.6 +3.3**
DPC MLR MLR
comp=Z,1μm,16.5s
IPM Ipoh 71.17 250⇑ P **P 17 53 54.3 +0.6**
IPM Ipoh 71.17 250 *e*P **P 17 53 53.7 0.0**
comp=Z,39nm,0.9s
NIE Niedzica 71.17 336 *e*P **P 17 53 54.1 +0.8**
NIE *e*pP **pP 17 53 57.2 -3.9**
NIE *e*PcP **sP 17 54 07.4 +3.4**
NIE LMZ LR 18 20 08.7
comp=Z,400nm,36.1s
NIE Niedzica 71.17 336 *e*P **P 17 53 54.1 +0.8**
NIE *e* 17 54 07.4
EMMW East Machias 71.19 36 *e*P **P 17 53 53.3 0.0**
comp=Z,80nm,0.9s
142A Monroe 71.19 60 P **P 17 53 53.4 -0.2**
baz=324
MILM Milestii Mici 71.24 329⇓ *i*P **P 17 53 54.3 +0.7**
OKC Ostrava-Krasne 71.27 337 *e*P **P 17 53 54.5 +0.7**
OKC *e*pP **pP 17 53 58.5 -3.1**
OKC *e*x x 17 54 07.7
OKC AMS AMS 18 30 00.0
comp=Z,1μm,12.9s
OKC Ostrava-Krasne 71.27 337 *e*P **P 17 53 54.5 +0.7**
OKC *e* 17 54 07.7
OKC MLR MLR
comp=Z,1μm,12.9s
Y45A Yeager Farm, C 71.29 57 P **P 17 53 54.5 +0.3**
baz=325,SNR=5.7
COEN Coen 71.31 201 *e*P **P 17 53 54.8 +0.5**
comp=Z,68nm,1.1s
COEN *e*PcP **PcP 17 54 09.8 -4.2**
HKT Hockley 71.33 64 *e*P **P 17 53 54.5 +0.1**
HKT *e* 17 54 07.0
HKT Hockley 71.33 64 *e*P **P 17 53 54.5 +0.1**
HKT *e*PcP **sP 17 54 07.0 +1.9**
KRLC Kraliky 71.34 338 *e*P **P 17 53 54.9 +0.6**
KRLC *e*pP **pP 17 53 58.6 -3.5**
KRLC *e*x x 17 54 07.9
KRLC Kraliky 71.34 338 *e*P **P 17 53 54.9 +0.6**
KRLC *e* 17 54 07.9
Z44A Pea Ridge, Bel 71.34 58 P **P 17 53 54.6 +0.1**
baz=325
PVCC Panska Ves 71.36 340 AMS AMS 18 31 50.0
comp=Z,900nm,17.0s
SIM Simferopol' 71.36 325*c* *i*P **P 17 53 54.8 +0.3**
SIM *i* 17 54 08.0
SIM *e* 17 56 37.0
SIM *e*PPP PPP 17 58 21.0
SIM *e*S **S 18 03 10.8 +0.2**
SIM pmax pmax
comp=Z,22nm,1.2s
SIM pmax pmax
comp=Z,100nm,9.5s
SIM MLR MLR
comp=N,2μm,17.3s
834A Tilden 71.38 68 P **P 17 53 55.9 +1.1**
baz=324
CRVS Cervenica-Dubn 71.38 335 *e*P **P 17 53 55.4 +0.9**
CRVS *e* 17 54 08.1
CRVS Cervenica-Dubn 71.38 335 *e*P **P 17 53 55.4 +0.9**
CRVS *e* 17 54 08.1
933A Laredo 71.41 68 P **P 17 53 56.0 +1.0**
baz=324,SNR=9.5
UZH Uzhgorod 71.43 334 *e*P **P 17 53 51.5 -3.3**
UZH *e* 17 54 08.1
UZH *e* 17 56 28.5
UZH *e*S **S 18 03 04.5 -6.7**
UZH *e* 18 03 52.5
UZH *e*SS **SS 18 07 42.5 -2.3**
UZH *e*SSS SSS 18 10 54.5
UZH MLR MLR
comp=N,2μm,16.0s
UZH MLR MLR
comp=E,2μm,16.0s
UZH MLR MLR
comp=Z,1μm,16.0s
N59A State Game Lan 71.45 44 P **P 17 53 54.3 -0.8**
baz=329
MORC Moravsky Berou 71.46 338⇑ *i*P **P 17 53 55.9 +0.9**
MORC Moravsky Berou 71.46 338 *e*P **P 17 53 55.6 +0.6**
MORC pmax pmax
comp=Z,464nm,1.1s
MORC Moravsky Berou 71.46 338 *e*P **P 17 53 55.6 +0.6**
comp=Z,464nm,1.1s
637A Eagle Lake 71.48 65 P **P 17 53 56.6 +1.2**
baz=324
736A Circle Diamond 71.49 66 P **P 17 53 56.5 +1.1**
baz=324
CWF Charnwood Fore 71.50 351 *e*P **P 17 53 56.2 +1.1**
CWF *e*PcP **sP 17 54 09.3 +3.5**
PRAR RASCA 71.57 331⇓ *i*P sP 17 54 09.6 +3.2
BUR08 Bucovina Ar. S 71.59 332 *e*P **P 17 53 56.3 +0.4**
Y46A Houston 71.61 57 P **P 17 53 56.1 0.0**
baz=325,SNR=24
BURAR Bucovina Array 71.61 332⇑ *i*P **P 17 53 56.3 +0.3**
LANS Liptovska Anna 71.62 336 *e*P **P 17 53 57.5 +1.5**
LANS *e* 17 54 10.9
LANS Liptovska Anna 71.62 336 *e*P **P 17 53 57.5 +1.5**
LANS *e* 17 54 10.9
PVM Polavaram 71.62 274 *e*P **P 17 53 56.0 -0.4**
PVM IAmb IAmb 17 53 57.4
comp=Z,40nm,1.2s
PVM *e*pP **pP 17 54 01.2 -3.0**
PVM *e*S **S 18 03 11.5 -2.8**
PVM *e*SKSac **SKSac 18 03 55.0 -3.3**
PVM *e*SS **SS 18 07 49.6 +0.2**
PVM IVMs_BB IVMs_BB 18 29 15.0
comp=Z,599nm,14.0s
Z45A Winona 71.62 58 P **P 17 53 56.0 -0.2**
baz=325,SNR=5.6
835A Beeville 71.63 67 P **P 17 53 57.4 +1.1**
baz=324,SNR=6.8
GNI Garni 71.65 315 P **P 17 53 57.4 +0.9**
GNI Garni 71.65 315 *e*P **P 17 53 58.0 +1.5**
GNI pmax pmax
comp=Z,1μm,1.3s
GNI MLR MLR
comp=Z,3μm,20.0s
GNI Garni 71.65 315 *e*P **P 17 53 58.0 +1.5**
comp=Z,1μm,1.3s
GNI LR LR
comp=Z,3μm,20.0s
RPR Rampur 71.66 277 *e*P **P 17 53 55.5 -1.1**
RPR IAmb IAmb 17 53 56.6
comp=Z,93nm,1.6s
RPR *e*pP **pP 17 54 01.1 -3.3**
RPR *e*sP **sP 17 54 03.0 -4.3**
RPR *e*S **S 18 03 10.0 -4.7**
RPR *e*SKSac **SKSac 18 03 57.0 -1.5**
RPR *e*SS **SS 18 07 51.2 +1.3**
RPR IVMs_BB IVMs_BB 18 28 49.2
comp=Z,792nm,18.1s
MOX Moxa 71.80 342 P **P 17 53 57.5 +0.5**
MOX pmax pmax
comp=Z,61nm,1.1s
934A Benavides 71.81 68 P **P 17 53 58.3 +0.9**
baz=324
TRPA Tarpa 71.83 334 *e*P **P 17 53 57.5 +0.3**
GIRR Girov 71.87 331⇑ *i*P **P 17 53 57.8 +0.4**
WES Weston 71.87 40 *e*P **P 17 53 57.3 -0.2**
WES pmax pmax
comp=Z,86nm,0.9s
WES Weston 71.87 40 *e*P **P 17 53 57.3 -0.2**
comp=Z,86nm,0.9s
PRU Pruhonice 71.88 340 *e*P **P 17 53 58.0 +0.6**
PRU *e*pP **pP 17 54 01.9 -3.4**
PRU *e*x x 17 54 10.8
PRU *e*S **S 18 03 16.8 +0.4**
PRU AMS AMS 18 30 40.0
comp=Z,900nm,18.7s
PRU Pruhonice 71.88 340 *e*P **P 17 53 58.0 +0.6**
PRU *e* 17 54 10.8
PRU *e*S **S 18 03 16.8 +0.4**
PRU MLR MLR
comp=Z,900nm,18.7s
LUPA Lehigh Univers 71.88 44 *e*P **P 17 53 57.1 -0.5**
comp=Z,59nm,1.0s
SWET Sewanee 71.89 54 *e*P **P 17 53 57.2 -0.6**
comp=Z,34nm,0.8s
GOPC GO Pecny, Ondr 71.90 340 *e*P **P 17 53 58.6 +1.0**
GOPC *e*pP **pP 17 54 01.8 -3.6**
GOPC *e*x x 17 54 11.4
GOPC AMS AMS 18 30 20.0
comp=Z,1μm,19.4s
GOPC GO Pecny, Ondr 71.90 340 *e*P **P 17 53 58.6 +1.0**
GOPC *e* 17 54 11.4
GOPC MLR MLR
comp=Z,1μm,19.4s
FRIM Kepong 71.90 248⇓ P **P 17 53 59.5 +1.5**
MYKOM Kota Tinggi 71.95 246⇓ P **P 17 53 59.6 +1.3**
MYKOM Kota Tinggi 71.95 246 *e*P **P 17 53 59.0 +0.7**
comp=Z,140nm,1.9s
342A Flagon Creek P 71.96 61 P **P 17 53 58.8 +0.6**
baz=325
243A Waterproof 71.96 60 P **P 17 53 58.5 +0.3**
baz=325
KECS Kecovo 72.00 335 *e*P **P 17 53 59.3 +1.1**
KECS *e* 17 54 12.1
KECS *e* 17 56 41.1
KECS pmax pmax
comp=Z,23nm,0.9s
KECS Kecovo 72.00 335 *e*P **P 17 53 59.3 +1.1**
KECS *e* 17 54 12.1
KECS *e*PP **PP 17 56 41.1 +3.5**
MVL Millersville 72.00 45 *e*P **P 17 53 57.7 -0.6**
comp=Z,20nm,0.9s
KGM Kluang 72.04 246⇓ P **P 17 54 00.5 +1.6**
NKC Novy Kostel 72.04 341 *e*P **P 17 53 58.7 +0.2**
NKC *e*pP **pP 17 54 02.9 -3.4**
NKC *e*x x 17 54 12.1
NKC AMS AMS 18 27 00.0
comp=Z,1μm,20.1s
NKC Novy Kostel 72.04 341 *e*P **P 17 53 58.7 +0.2**
NKC *e* 17 54 12.1
NKC MLR MLR
comp=Z,1μm,20.1s
AFI Afiamalu 72.06 155 PFAKE 17 54 10.0 +11
AFI LR LR
comp=Z,716nm,20.0s
Y47A UCPARC, Winfie 72.07 56 P **P 17 53 58.0 -0.9**
baz=326,SNR=12
PAL Palisades 72.10 42 *e*P P 17 54 03.7 +4.8
PAL Palisades 72.10 42 *e*pP **P 17 54 03.7 +4.8**
VRAC Vranov 72.10 338⇓ *i*P **P 17 54 00.1 +1.3**
Z46A Louisville 72.13 57 P **P 17 53 59.3 0.0**
baz=325
145A Houston Renfro 72.14 58 P **P 17 53 59.4 +0.1**
baz=325
SRSP Sriramsagar 72.14 277 *e*P **P 17 53 57.7 -1.8**
SRSP IAmb IAmb 17 54 03.3
comp=Z,40nm,1.1s
SRSP *e*pP **pP 17 54 03.5 -3.8**
SRSP *e*S **S 18 03 14.6 -5.7**
SRSP *e*SKSac **SKSac 18 03 59.2 -3.1**
SRSP *e*SS **SS 18 07 59.9 +2.6**
SRSP IVMs_BB IVMs_BB 18 29 02.2
comp=Z,659nm,10.3s
034A Hebbronville 72.16 68 P **P 17 54 00.5 +1.0**
baz=324,SNR=6.2
244A Avery, Jackson 72.22 59 P **P 17 53 59.8 0.0**
baz=325,SNR=8.2
TESR Tescani 72.23 331⇓ *i*P **P 17 53 59.5 -0.1**
SDMD Soldier's Deli 72.31 45 *e*P **P 17 53 59.6 -0.6**
comp=Z,32nm,1.0s
738A Farr-Stevens R 72.32 65 P **P 17 54 00.4 0.0**
baz=324
ARCR ARCALIA 72.33 332⇓ *i*P **P 17 53 59.4 -0.8**
CPCT Cooper Cave 72.34 53 *e*P **P 17 54 00.0 -0.4**
comp=Z,53nm,1.1s
TREC Trest 72.34 339 *e*P **P 17 54 01.3 +1.0**
TREC *e*pP **pP 17 54 04.8 -3.3**
TREC *e*x x 17 54 13.9
TREC AMS AMS 18 30 30.0
comp=Z,1μm,19.2s
TREC Trest 72.34 339 *e*P **P 17 54 01.3 +1.0**
TREC *e* 17 54 13.9
TREC MLR MLR
comp=Z,1μm,19.2s
VYHS Vyhne 72.38 336 *e*P **P 17 54 01.6 +1.1**
VYHS *e* 17 54 14.4
VYHS pmax pmax
comp=Z,25nm,1.0s
VYHS Vyhne 72.38 336 *e*P **P 17 54 01.6 +1.1**
VYHS *e* 17 54 14.4
VYHS *e*PP PP 17 56 31.9 -8.9
TKL Tuckaleechee C 72.50 52 *e*P **P 17 54 01.0 -0.4**
TKL pmax pmax
comp=Z,83nm,1.3s
TKL Tuckaleechee C 72.50 52 *e*P **P 17 54 01.0 -0.4**
comp=Z,83nm,1.3s
146A Union 72.53 58 P **P 17 54 01.8 +0.2**
baz=325,SNR=6.7
Z47A Carrollton 72.54 57 P **P 17 54 01.2 -0.5**
baz=326,SNR=28
541A Lake Charles 72.59 62 P **P 17 54 02.9 +0.9**
baz=325
BEBN Eben Emael 72.59 346 P **P 17 54 02.1 +0.4**
245A Little AP, Sta 72.62 59 P **P 17 54 02.3 +0.1**
baz=325
Z48A Northport 72.64 56 P **P 17 54 01.4 -0.9**
baz=326,SNR=18
MMRI Maumere 72.64 224 P **P 17 54 02.7 +0.3**
MMRI Maumere 72.64 224 *e*P **P 17 54 02.0 -0.3**
comp=Z,146nm,1.3s
MMRI *e*PcP **PcP 17 54 19.4 -0.4**
PSZ Piszkesteto 72.67 336⇑ *i*P **P 17 54 03.6 +1.3**
PSZ Piszkesteto 72.67 336 *e*P **P 17 54 03.1 +0.8**
PSZ Piszkesteto 72.67 336 *e*P **P 17 54 03.4 +1.0**
PSZ pmax pmax
comp=Z,53nm,1.0s
PSZ MLR MLR
comp=Z,1μm,20.0s
PSZ Piszkesteto 72.67 336 *e*P **P 17 54 03.4 +1.0**
comp=Z,53nm,1.0s
PSZ LR LR
comp=Z,1μm,20.0s
SMOL Smolenice 72.67 337 *e*P **PcP 17 54 17.0 -2.6**
SMOL Smolenice 72.67 337 *e* **PcP 17 54 17.0 -2.6**
BLA Blacksburg 72.68 49 *e*P **P 17 54 02.4 -0.1**
BLA pmax pmax
comp=Z,115nm,1.2s
BLA MLR MLR
comp=Z,1μm,19.0s
BLA Blacksburg 72.68 49 *e*P **P 17 54 02.4 -0.1**
comp=Z,115nm,1.2s
BLA LR LR
comp=Z,1μm,19.0s
344A Westbrook Farm 72.68 60 P **P 17 54 02.9 +0.4**
baz=325
GIUM Giurgiulesti 72.72 329⇑ *i*P sP 17 54 16.9 +3.6
MEM Membach 72.73 345 P **P 17 54 03.2 +0.7**
comp=Z,80nm,1.2s
LHMI Lhok Sumawe 72.75 254 P **P 17 54 03.9 +0.8**
LHMI Lhok Sumawe 72.75 254 P **P 17 54 04.5 +1.3**
comp=Z,80nm,0.8s
GRF Grafenberg Arr 72.78 342 P **P 17 54 04.0 +1.1**
GRF pmax pmax
comp=Z,141nm,1.1s
PETR Petresti 72.79 330⇓ *i*P **P 17 54 05.1 +2.2**
VRI Vrincioaia 72.80 330⇑ *i*P **P 17 54 03.7 +0.7**
VRI Vrincioaia 72.80 330 P **P 17 54 04.4 +1.4**
VRI pmax pmax
comp=Z,204nm,1.1s
ODBI Odobesti 72.80 330⇓ *i*P **P 17 54 05.4 +2.4**
PLOR Plostina 72.83 330⇓ *i*P **P 17 54 04.3 +1.0**
CJR Cluj-Napoca 72.87 333⇓ *i*P **P 17 54 04.4 +0.9**
147A Livingston 72.88 57 P **P 17 54 03.1 -0.6**
baz=326,SNR=11
KHC Kasperske Hory 72.88 340 *e*P **P 17 54 04.3 +0.8**
KHC *e*pP **pP 17 54 07.9 -3.5**
KHC *e*x x 17 54 17.5
KHC AMS AMS 18 34 30.0
comp=Z,1μm,14.4s
KHC Kasperske Hory 72.88 340 *e*P **P 17 54 04.3 +0.8**
KHC *e* 17 54 17.5
KHC MLR MLR
comp=Z,1μm,14.4s
KHC Kasperske Hory 72.88 340 *e*P **P 17 54 04.0 +0.4**
comp=Z,41nm,1.2s
WET Wettzell 73.00 341 P **P 17 54 05.0 +0.8**
WET pmax pmax
comp=Z,109nm,1.2s
BCLA Clavier 73.01 346 P **P 17 54 04.6 +0.4**
comp=Z,32nm,1.5s
CFR Carcaliu 73.02 329⇓ *i*P **P 17 54 04.2 -0.1**
DRGR 73.03 333⇑ *i*P **P 17 54 04.9 +0.4**
DOPR Dopca 73.08 331⇑ *i*P **P 17 54 05.8 +1.1**
CBN Corbin Frederi 73.12 46 PFAKE 17 54 20.0 +15
CBN LR LR
comp=Z,1μm,20.0s
GEC2 GERESS Array S 73.13 340 *e*P **P 17 54 05.7 +0.6**
GEC2 pmax pmax
comp=Z,66nm,1.1s
GEC2 GERESS Array S 73.13 340 *e*P **P 17 54 05.7 +0.6**
comp=Z,66nm,1.1s
GERES GERESS Array B 73.13 340 P **P 17 54 05.2 +0.1**
comp=Z,10nm,0.9s,baz=35,slow=4.9,SNR=61
GERES PP **PP 17 56 48.0 +0.7**
comp=Z,3.2nm,1.1s,baz=16,slow=11,SNR=5.4
GERES LR LR 18 31 27.7
comp=Z,754nm,18.5s,baz=26,slow=40
GEA0 GERESS Array S 73.14 340 *e*P **P 17 54 05.2 0.0**
345A Thompson Farm, 73.14 59 P **P 17 54 05.6 +0.4**
baz=325
LRAL Lakeview Retre 73.19 56 *e*P **P 17 54 04.6 -0.9**
comp=Z,82nm,0.6s
247A Quitman 73.22 58 P **P 17 54 06.4 +0.7**
baz=326
HYBB Hyderabad (bro 73.23 276 *e*P **P 17 54 05.1 -0.9**
HYBB IAmb IAmb 17 54 10.1
comp=Z,45nm,1.2s
HYBB *e*pP **pP 17 54 10.3 -3.5**
HYBB *e*S **S 18 03 27.9 -4.9**
HYBB *e*SKSac **SKSac 18 04 09.5 -1.0**
HYBB *e*SS **SS 18 08 17.0 +2.9**
HYBB IVMs_BB IVMs_BB 18 29 34.3
comp=Z,821nm,15.1s
HYB Hyderabad 73.23 276 *i*P **P 17 54 05.0 -1.0**
BUD Budapest 73.28 336 P **P 17 54 06.9 +1.0**
TSI Tuntungan 73.31 251 P **P 17 54 06.5 +0.1**
MLR Muntele Rosu 73.36 331⇑ *i*P **P 17 54 07.2 +0.7**
MLR Muntele Rosu 73.36 331 *e*P **P 17 54 06.7 +0.2**
MLR pmax pmax
comp=Z,118nm,1.1s
MLR Muntele Rosu 73.36 331 *e*P **P 17 54 06.7 +0.2**
comp=Z,118nm,1.1s
MTN Manton Dam 73.39 213 *e*P **P 17 54 06.8 0.0**
comp=Z,106nm,1.1s
DOU Dourbes 73.43 346 P **P 17 54 07.0 +0.3**
comp=Z,22nm,1.4s
445A Amite 73.47 60 P **P 17 54 07.4 +0.3**
baz=325
NJS Nagarjunasagar 73.50 275 *e*P **P 17 54 06.4 -1.1**
NJS IAmb IAmb 17 54 07.5
comp=Z,44nm,1.2s
NJS *e*pP **pP 17 54 11.8 -3.6**
NJS *e*sP **sP 17 54 14.1 -4.2**
NJS *e*S **S 18 03 31.1 -4.6**
NJS *e*SKSac **SKSac 18 04 08.6 -3.8**
NJS *e*SS **SS 18 08 18.6 +0.5**
NJS IVMs_BB IVMs_BB 18 30 19.3
comp=Z,610nm,12.2s
ZAIG Zacatecas 73.51 74 *e*P **P 17 54 08.6 +0.7**
comp=Z,31nm,1.1s
BAIF Baives 73.52 347 *e*P **P 17 54 07.0 -0.2**
HARR Harsova 73.52 329⇑ *i*P **P 17 54 08.6 +1.3**
ISR Istrita 73.53 330⇓ *i*P **P 17 54 08.9 +1.4**
CONA Conrad Observa 73.57 338 *i* pP **P 17 54 08.7 +1.0**
comp=Z,36nm,1.2s,SNR=22
CONA *i* PcP **PcP 17 54 22.4 -1.1**
comp=Z,83nm,1.2s
CSKK Cs'‡kako 73.57 336 *e*P **PcP 17 54 22.5 -1.0**
TIRR Tirgusor 73.59 328 *e*P **P 17 54 07.8 +0.1**
TIRR pmax pmax
comp=Z,115nm,1.1s
TIRR Tirgusor 73.59 328 *e*P **P 17 54 07.8 +0.1**
comp=Z,115nm,1.1s
URVA University of 73.59 47 *e*P **P 17 54 07.8 -0.1**
248A Dixon Mills 73.61 57 P **P 17 54 08.3 +0.3**
baz=326
WLF Walferdange 73.63 345 P **P 17 54 08.7 +0.8**
comp=Z,29nm,1.5s
WLF Walferdange 73.63 345 *e*P **P 17 54 08.7 +0.8**
WLF pmax pmax
comp=Z,47nm,1.2s
WLF MLR MLR
comp=Z,1μm,20.0s
WLF Walferdange 73.63 345 *e*P **P 17 54 08.7 +0.8**
comp=Z,47nm,1.2s
WLF LR LR
comp=Z,1μm,20.0s
SOP Sopron 73.65 338 P **P 17 54 10.1 +2.1**
SOP pmax pmax
comp=Z,56nm,1.1s
VOIR 73.66 331⇓ *i*P **P 17 54 09.0 +0.8**
ADKI Addanki 73.69 274 *e*P **P 17 54 08.5 -0.1**
ADKI IAmb IAmb 17 54 09.2
comp=Z,42nm,1.2s
ADKI *e*pP **pP 17 54 13.2 -3.4**
ADKI *e*S **SKiKP 18 03 34.1 -2.3**
ADKI *e*SKSac **SKSac 18 04 11.9 -1.9**
ADKI *e*SS **SS 18 08 23.9 +2.8**
ADKI IVMs_BB IVMs_BB 18 27 37.8
comp=Z,483nm,20.9s
PSI Prapat 73.71 251 *e*P **P 17 54 08.9 0.0**
PSI pmax pmax
comp=Z,73nm,1.3s
PSI Prapat 73.71 251 *e*P **P 17 54 08.9 0.0**
comp=Z,73nm,1.3s
SIRR Siria 73.78 334⇑ *i*P **P 17 54 09.6 +0.7**
347A Saraland 73.79 58 P **P 17 54 09.4 +0.3**
baz=326
KLRI Killari 73.81 278 *e*P **P 17 54 08.1 -1.4**
KLRI *e*P **P 17 54 09.0 -0.5**
KLRI IAmb IAmb 17 54 09.1
comp=Z,80nm,1.3s
KLRI *e*pP **pP 17 54 13.6 -3.8**
KLRI *e*sP **sP 17 54 15.8 -4.4**
KLRI *e*PcP **PcP 17 54 24.4 -0.6**
KLRI *e*S **SKiKP 18 03 35.6 -1.1**
KLRI *e*SKSac **SKSac 18 04 10.8 -4.1**
KLRI *e* 18 08 15.7
KLRI IVMs_BB IVMs_BB 18 30 15.4
comp=Z,1μm,17.3s
ARR Arges 73.84 331⇓ *i*P **P 17 54 11.0 +1.7**
MSVF Nonsavu 73.86 166 *e*P **P 17 54 11.3 +1.8**
MSVF pmax pmax
comp=Z,101nm,1.7s

MSVF	**Nonsavu**	73.86	166	*e*P	**P**	17 54 11.3	+1.8
	comp=Z,101nm,1.7s						
446A	**Poplarville**	73.89	59	P	**P**	17 54 10.4	+0.7
	baz=326						
MOA	**Molln**	73.97	339	*i* pP	**P**	17 54 11.0	+1.0
	comp=Z,25nm,1.6s,SNR=13						
MOA				*i* PcP	**PcP**	17 54 24.2	-1.0
	comp=Z,52nm,1.4s						
LOT	**Lotru**	74.00	332⇑	*i*P	sP	17 54 20.5	-0.5
SULR		74.02	330⇑	*i*P	**P**	17 54 11.2	+1.0
KMSC	**Kings Mountain**	74.02	51	P	**P**	17 54 09.5	-0.9
	baz=328,SNR=12						
KMSC	**Kings Mountain**	74.02	51	*e*P	**P**	17 54 10.0	-0.4
	comp=Z,79nm,0.8s						
LANF	**Langenberg**	74.04	344	*e*P	**P**	17 54 10.4	+0.1
LANF	**Langenberg**	74.04	344	P	**P**	17 54 11.2	+0.9
SRLM	**Srisailam**	74.10	275	*e*P	**P**	17 54 10.4	-0.7
SRLM				IAmb	IAmb	17 54 15.3	
	comp=Z,44nm,1.1s						
SRLM				*e*S	**SKiKP**	18 03 38.5	+1.3
SRLM				*e*SKSac	**SKSac**	18 04 16.8	-0.2
SRLM				*e*SS	**SS**	18 08 34.2	+6.8
SRLM				IVMs_BB	IVMs_BB	18 30 35.1	
	comp=Z,625nm,17.2s						
GOLR		74.23	331⇓	*i*P	**PcP**	17 54 25.3	-1.0
447A	**Lucedale**	74.24	59	P	**P**	17 54 11.5	-0.2
	baz=326						
ARSA	**Arzberg**	74.28	338	*i* pP	**P**	17 54 13.3	+1.5
	comp=Z,24nm,1.2s,SNR=8.6						
ARSA				*i* PcP	**PcP**	17 54 26.5	0.0
	comp=Z,38nm,1.0s						
WSI	**Waingapu**	74.35	225	P	**P**	17 54 13.1	+0.7
	comp=Z,131nm,0.6s						
BZS	**Buzias**	74.40	334⇓	*i*P	**P**	17 54 12.6	+0.2
448A	**Bay Minette**	74.51	58	P	**P**	17 54 13.4	+0.2
	baz=326						
GOGA	**Godfrey**	74.51	53	*e*P	**P**	17 54 13.3	0.0
GOGA				*e*		17 54 25.8	
GOGA				MLR	MLR		
	comp=Z,2μm,19.0s						
GOGA	**Godfrey**	74.51	53	*e*P	**P**	17 54 13.2	0.0
GOGA				*e*PcP	**sP**	17 54 25.8	+1.8
GOGA				LR	LR		
	comp=Z,2μm,19.0s						
HUMR	**Humele**	74.52	331⇑	*i*P	**P**	17 54 15.1	+2.0
RCLA	**Racherla**	74.58	275	*e*P	**P**	17 54 13.4	-0.4
RCLA				IAmb	IAmb	17 54 18.4	
	comp=Z,45nm,1.1s						
RCLA				*e*pP	**pP**	17 54 18.4	-3.3
RCLA				*e*S	**S**	18 03 44.7	-3.2
RCLA				*e*SKSac	**SKSac**	18 04 20.4	-0.2
RCLA				*e*SS	**SS**	18 08 36.3	+1.7
RCLA				IVMs_BB	IVMs_BB	18 31 00.7	
	comp=Z,720nm,12.5s						
BFO	**Black Forest**	74.59	343	*e*P	**P**	17 54 13.9	+0.3
BFO				pmax	pmax		
	comp=Z,55nm,1.0s						
BFO				MLR	MLR		
	comp=Z,597nm,19.0s						
BFO	**Black Forest**	74.59	343	*e*P	**P**	17 54 13.9	+0.3
	comp=Z,55nm,1.0s						
BFO				LR	LR		
	comp=Z,597nm,19.0s						
WLS	**Welschbruch**	74.67	344⇑	*e*P	**P**	17 54 14.0	0.0
BRAL	**Brewton**	74.70	57	*e*P	**P**	17 54 15.2	+0.8
	comp=Z,152nm,1.1s						
BRAL				LR	LR		
	comp=Z,1μm,20.0s						
JSC	**Jenkinsville**	74.78	51	*e*P	**P**	17 54 14.7	-0.1
JSC				pmax	pmax		
	comp=Z,50nm,0.9s						
JSC	**Jenkinsville**	74.78	51	*e*P	**P**	17 54 14.7	-0.1
	comp=Z,50nm,0.9s						
ECH	**Echery**	74.89	344	*e*P	**P**	17 54 14.9	-0.4
KBA	**Koelnbreinsper**	74.89	340	*e*pP	**P**	17 54 16.7	+1.2
	comp=Z,74nm,1.1s,SNR=40						
KBA				*i* PcP	**PcP**	17 54 31.0	+1.7
	comp=Z,130nm,1.1s						
KBA	**Koelnbreinsper**	74.89	340	P	**P**	17 54 16.7	+1.2
KBA				pmax	pmax		
	comp=Z,127nm,1.0s						
SOKA	**Soboth**	74.93	338	*i* pP	**P**	17 54 16.8	+1.2
	comp=Z,28nm,1.4s,SNR=15						
SOKA				*i* PcP	**PcP**	17 54 30.6	+1.2
	comp=Z,61nm,1.3s						
PERS	**Pernice**	74.95	338	*i* P	**P**	17 54 15.9	+0.2
PERS				*i*		17 54 29.6	
WATA	**Walderalm**	74.98	341	*i* pP	**P**	17 54 17.0	+1.0
	comp=Z,19nm,0.8s,SNR=7.0						
WATA				*i* PcP	**PcP**	17 54 30.2	+0.5
	comp=Z,100nm,1.2s						
RETA	**Reutte**	74.99	342	*i* P	**P**	17 54 15.0	-1.0
	comp=Z,18nm,1.0s,SNR=12						
RETA				*i* PcP	**PcP**	17 54 30.0	+0.4
	comp=Z,60nm,1.4s						
WTTA	**Wattenberg**	75.04	341	*i* pP	**P**	17 54 17.7	+1.3
	comp=Z,37nm,1.1s,SNR=11						
WTTA				*i* PcP	**PcP**	17 54 30.9	+0.9
	comp=Z,122nm,1.6s						
MOTA	**Moosalm**	75.06	341	*i* pP	**P**	17 54 16.8	+0.4
	comp=Z,28nm,0.9s,SNR=14						
MOTA				*i* PcP	**PcP**	17 54 30.6	+0.5
	comp=Z,44nm,0.9s						
SRBI	**Singaraja**	75.07	230	P	**PcP**	17 54 31.4	+1.2
MDVR	**Moldovita**	75.16	333⇑	*i*P	**P**	17 54 16.8	-0.1
SQTA	**Sankt Quirin**	75.16	341	*i* pP	**P**	17 54 18.7	+1.7
SQTA				*i* PcP	**PcP**	17 54 31.5	+1.1
OBKA	**Obir**	75.19	339	*i* pP	**P**	17 54 18.5	+1.4
	comp=Z,66nm,1.1s,SNR=16						
OBKA				*i* PcP	**PcP**	17 54 31.8	+1.3
	comp=Z,114nm,0.9s						
MOF	**Molkenrain**	75.25	344	*e*P	**P**	17 54 17.0	-0.4
MYKA	**Terra Mystica**	75.26	339	*i* pP	**P**	17 54 18.5	+1.0
	comp=Z,20nm,1.1s,SNR=10						
MYKA				*i* PcP	**PcP**	17 54 31.1	+0.2
	comp=Z,49nm,1.0s						
DAVA	**Damuels**	75.34	342	*i* pP	**P**	17 54 18.9	+0.8
	comp=Z,18nm,1.2s,SNR=8.7						
DAVA				*i* PcP	**PcP**	17 54 32.0	+0.7
	comp=Z,46nm,1.3s						
FLN	**La Foliniere**	75.35	349	*e*P	**P**	17 54 17.2	-0.7
FLN				pmax	pmax		
	comp=Z,49nm,1.2s						
ABTA	**Abfaltersbach**	75.37	340	*i* pP	**P**	17 54 18.7	+0.6
	comp=Z,50nm,1.1s,SNR=25						
ABTA				*i* PcP	**PcP**	17 54 32.4	+1.1
	comp=Z,132nm,1.2s						
SZH	**Strazhica**	75.41	330	*e*P	**P**	17 54 17.1	-1.2
FETA	**Feichten**	75.44	341	*i* pP	**P**	17 54 19.2	+0.6
	comp=Z,44nm,1.0s,SNR=20						
FETA				*i* PcP	**PcP**	17 54 33.1	+1.4
	comp=Z,74nm,1.0s						
SKHT	**Srikalahasti**	75.53	273	*e*P	**P**	17 54 18.9	-0.4
SKHT				IAmb	IAmb	17 54 20.7	
	comp=Z,68nm,1.3s						
SKHT				*e*pP	**pP**	17 54 23.9	-3.3
SKHT				*e*PcP	**PcP**	17 54 32.4	+0.2
SKHT				*e*S	**S**	18 03 56.4	-2.0
SKHT				IVMs_BB	IVMs_BB	18 29 24.1	
	comp=Z,443nm,19.5s						
GSI	**Gunungsitoli**	75.69	251	P	**P**	17 54 23.8	+3.6
GSI	**Gunungsitoli**	75.69	251	*e*P	**P**	17 54 20.4	+0.2
	comp=Z,51nm,0.8s						
LOMF	**Lomont**	75.78	344	*e*P	**P**	17 54 20.5	0.0
JAVS	**Javornik**	75.88	339	*e*P	**P**	17 54 20.6	-0.5
JAVS				*i*		17 54 33.4	
FUORN	**Ofenpass-Fuorn**	75.92	342	*e*P	**P**	17 54 22.6	+1.2
	comp=Z,88nm,1.3s						
MPEP	**Malo Peshtene**	75.94	331	*e*P	**P**	17 54 21.2	-0.2
BOJS	**Bojanci**	76.00	338	*i* P	**P**	17 54 21.8	+0.2
BOJS				*i*		17 54 35.3	
TIGA	**Tifton**	76.11	54	P	**P**	17 54 22.3	-0.2
	baz=327,SNR=7.0						
TIGA	**Tifton**	76.11	54	*e*P	**P**	17 54 22.6	+0.2
	comp=Z,187nm,0.9s						
BR131	**Keskin Array S**	76.17	323	*e*P	**P**	17 54 23.2	+0.2
BRTR	**Keskin Array B**	76.17	323	P	**P**	17 54 23.4	+0.4
	comp=Z,12nm,1.0s,baz=48,slow=2.0,SNR=50						
BRTR				PP	**PP**	17 57 13.9	+0.5
	comp=Z,3.3nm,1.0s,baz=28,slow=6.5,SNR=3.8						
BRTR				PKPPKP	P'P'df	18 21 33.0	-12
	comp=Z,0.8nm,0.8s,baz=225,slow=1.8,SNR=3.7						
BRTR				LR	LR	18 33 48.0	
	comp=Z,552nm,18.6s,baz=26,slow=40						
TUE	**Stuetta**	76.22	342	*e*P	**P**	17 54 23.7	+0.6
	comp=Z,111nm,1.2s						
TUE				LR	LR		
	comp=Z,639nm,19.0s						
DIVS	**Divibare**	76.23	334	P	**P**	17 54 23.0	-0.1
NHSC	**New Hope**	76.25	51	*e*P	**P**	17 54 22.3	-0.9
	comp=Z,220nm,1.2s						
NHSC				LR	LR		
	comp=Z,2μm,20.0s						
BLY	**Banja Luka**	76.29	336⇑	*i*P	**P**	17 54 24.0	+0.7
ANTO	**Ankara**	76.34	323	*e*P	**P**	17 54 24.8	+1.1
ANTO	**Ankara**	76.34	323	*e*P	**P**	17 54 24.8	+1.1
ANTO				LR	LR		
	comp=Z,11nm,22.0s						
BR231	**Keskin MP Arra**	76.37	323	*e*P	**P**	17 54 23.3	-0.7
PGB	**Panagyurishte**	76.57	331	*e*P	**P**	17 54 24.5	-0.5
DIM	**Dimitrovgrad**	76.64	329	*e*P	**P**	17 54 26.0	+0.7
SENIN	**Lac Senin/Sane**	76.67	344	*e*P	**P**	17 54 26.3	+0.6
	comp=Z,24nm,1.0s						
CTA	**Charters Tower**	76.71	197	P	**P**	17 54 26.4	+0.6
	comp=Z,37nm,1.0s,baz=24,slow=6.4,SNR=10						
CTAO	**Charters Tower**	76.71	197	*e*P	**P**	17 54 26.1	+0.3
CTAO				MLR	MLR		
	comp=Z,4μm,21.0s						
CTAO	**Charters Tower**	76.71	197	*e*P	**P**	17 54 26.1	+0.3
	comp=Z,992nm,1.8s						
CTAO				LR	LR		
	comp=Z,4μm,21.0s						
OG01	**Vacheresse**	76.80	344	*e*P	**P**	17 54 26.7	+0.4
AVF	**Avril sur Loir**	76.83	346	*e*P	**P**	17 54 26.0	-0.3
AVF				pmax	pmax		
	comp=Z,35nm,1.3s						
PLE	**Pljevlja**	77.10	334⇓	*i*P	**P**	17 54 27.4	-0.7
UPM	**Unac-Piva**	77.34	335⇓	*i*P	**P**	17 54 29.0	-0.5
IVA	**Berane**	77.41	334⇓	*i*P	**P**	17 54 29.6	-0.2
RSL	**Roselend**	77.43	344	*e*P	**P**	17 54 30.2	+0.3
CBJI	**Citeko**	77.48	239	P	sP	17 54 44.9	+3.8
KKB	**Krupnik**	77.50	331	*e*P	**P**	17 54 30.6	+0.4
ALN	**Alexandroupoli**	77.55	329	P	**P**	17 54 29.4	-1.1
ALN	**Alexandroupoli**	77.55	329	P	**P**	17 54 29.4	-1.1
ALN	**Alexandroupoli**	77.55	329	P	**P**	17 54 29.4	-1.1
MMB	**Musomiste**	77.58	331	*e*P	**P**	17 54 30.1	-0.6
LPL	**La Plagne**	77.58	344	*e*P	**P**	17 54 31.6	+0.7
LPL				pmax	pmax		
	comp=Z,54nm,1.0s						
AGO	**Saint Agoulin**	77.59	346	*e*P	**P**	17 54 31.5	+0.9
LPG	**La Plagne**	77.60	344	*e*P	**P**	17 54 31.9	+0.9
LPG				pmax	pmax		
	comp=Z,75nm,1.2s						
PLDF	**La Plantade**	77.60	346⇑	*e*P	**P**	17 54 31.5	+0.7
PVY	**Plav**	77.65	334⇓	*i*P	**P**	17 54 30.3	-0.9
NKY	**Niksic**	77.69	334⇓	*i*P	**P**	17 54 31.1	-0.2
BRY	**Bratogost**	77.72	335	*e*P	**P**	17 54 30.9	-0.6
NKME	**Niksic**	77.74	334⇓	*i*P	**P**	17 54 31.1	-0.5
NVR	**Nevrokopi**	77.77	330	P	**P**	17 54 31.6	-0.1
NVR	**Nevrokopi**	77.77	330	P	**P**	17 54 31.6	-0.1
SKO	**Skopje**	77.85	332	*i* P	**P**	17 54 32.8	+0.7
KAVA	**Kavala**	77.91	330	P	**P**	17 54 32.4	0.0
KAVA	**Kavala**	77.91	330	P	**P**	17 54 32.4	0.0
CEME	**Cevo**	77.96	334⇓	*i*P	**P**	17 54 31.9	-0.9
PDG	**Podgorica**	77.98	334⇓	*i*P	**P**	17 54 32.9	+0.1
TTG	**Podgorica**	77.98	334⇓	*i*P	**P**	17 54 32.6	-0.2
BNI	**Bardonecchia**	78.05	344	PFAKE		17 54 40.0	+6.7
BNI				LR	LR		
	comp=Z,1μm,22.0s						
SRS	**Serrai**	78.06	330	P	**P**	17 54 32.7	-0.6
SRS	**Serrai**	78.06	330	P	**P**	17 54 32.7	-0.6
SRS	**Serrai**	78.06	330	P	**P**	17 54 32.7	-0.6
SSB	**Saint Sauveur**	78.15	345	*e*P	**P**	17 54 34.5	+0.7
SSB	**Saint Sauveur**	78.15	345	*e*P	**P**	17 54 33.8	0.0
SSB				pmax	pmax		
	comp=Z,60nm,1.1s						
SSB				MLR	MLR		
	comp=Z,484nm,20.0s						
SSB	**Saint Sauveur**	78.15	345	*e*P	**P**	17 54 33.8	0.0
	comp=Z,60nm,1.1s						
SSB				LR	LR		
	comp=Z,484nm,20.0s						
VAY	**Valandovo**	78.15	331	*i* P	**P**	17 54 34.8	+1.0
HCY	**Herceg Novi**	78.15	335⇓	*i*P	**P**	17 54 34.6	+0.8
BUM	**Brajici-Budva**	78.19	334⇓	*i*P	**P**	17 54 33.6	-0.5
KNT	**Kendrikon**	78.21	331	P	**P**	17 54 34.2	0.0
KNT	**Kendrikon**	78.21	331	P	**P**	17 54 34.2	0.0
KNT	**Kendrikon**	78.21	331	P	**P**	17 54 34.2	0.0
CGJI	**Cibinong**	78.22	240	P	sP	17 54 45.9	+0.7
DRME	**Dracevica, Mon**	78.23	334⇓	*i*P	**P**	17 54 33.5	-0.7
VLC	**Villacollemand**	78.27	341	PFAKE		17 54 50.0	+16
VLC				LR	LR		
	comp=Z,701nm,19.0s						
ORIF	**Oris-en-Rattie**	78.30	344	*e*P	**P**	17 54 35.3	+0.6
ORIF				pmax	pmax		
	comp=Z,47nm,1.2s						
FRNF	**Fournols**	78.32	347	*e*P	**P**	17 54 35.3	+0.6
LBL	**Lubilhac**	78.38	346	*e*P	**P**	17 54 35.6	+0.5
ULC	**Ulcinj**	78.42	334⇓	*i*P	**P**	17 54 35.5	+0.2
GRG	**Griva**	78.54	331	P	**P**	17 54 36.0	0.0
GRG	**Griva**	78.54	331	P	**P**	17 54 36.0	0.0
GRG	**Griva**	78.54	331	P	**P**	17 54 36.0	0.0
OG26	**St.-Nazaire-De**	78.72	345	*e*P	**P**	17 54 37.8	+0.8
LIA	**Limnos Island**	78.73	329	P	**P**	17 54 36.2	-0.8
LIA	**Limnos Island**	78.73	329	P	**P**	17 54 36.2	-0.8
BIA	**Bitola**	78.77	332	*i* P	**P**	17 54 37.9	+0.6
OHR	**Ohrid**	78.82	332	*i* P	**P**	17 54 37.8	+0.2
CAF	**Calviac**	78.83	347	*e*P	**P**	17 54 37.9	+0.3
CAF				pmax	pmax		
	comp=Z,34nm,1.3s						
TIR	**Tirane**	78.84	333	PFAKE		17 54 50.0	+12
TIR				LR	LR		
	comp=Z,2μm,22.0s						
KULA	**Kula-Manisa**	78.93	326	P	**P**	17 54 37.5	-0.7
KULA	**Kula-Manisa**	78.93	326	P	**P**	17 54 37.5	-0.7
ISP	**Isparta**	78.94	324	PFAKE		17 54 50.0	+12
ISP				LR	LR		
	comp=Z,702nm,20.0s						
FNA	**Florina**	78.98	332	P	**P**	17 54 37.3	-1.1
FNA	**Florina**	78.98	332	P	**P**	17 54 37.3	-1.1
FNA	**Florina**	78.98	332	P	**P**	17 54 37.3	-1.1
TAOE	**Nuku Hiva Isla**	79.06	124	*e*LR	LR	17 55 08.5	
	comp=Z,166nm,21.1s						
LUCF	**Luceram**	79.06	343⇑	*e*P	**P**	17 54 39.0	+0.1
MVIF	**Mont Vial**	79.09	343⇑	*e*P	**P**	17 54 39.0	-0.1
WRAB	**Tennant Creek**	79.17	208	*d* iP	**P**	17 54 38.7	-0.8
WRAB				pmax	pmax		
	comp=Z,116nm,1.1s						
WRAB	**Tennant Creek**	79.17	208	*e*P	**P**	17 54 39.5	0.0
	comp=Z,88nm,1.2s						
WRAB				LR	LR		
	comp=Z,5μm,19.0s						
WB2	**Warramunga Arr**	79.18	208	*e*P	**P**	17 54 39.6	+0.1
	comp=Z,87nm,1.2s						
WRA	**Warramunga Arr**	79.18	208	P	**P**	17 54 39.1	-0.5
	comp=Z,22nm,0.9s,baz=18,slow=5.8,SNR=51						
WRA				PKPPKP	**P'P'df**	18 21 32.5	+3.6
	comp=Z,1.1nm,1.1s,baz=235,slow=3.4,SNR=3.7						
WRA	**Warramunga Arr**	79.18	208	*i* P	**P**	17 54 39.0	-0.5
WRA				pmax	pmax		
	comp=Z,21nm,0.9s						
REVF	**Revere**	79.21	343⇑	*e*P	**P**	17 54 39.6	-0.1
CALN	**Calern**	79.28	343⇑	*e*P	**P**	17 54 40.0	-0.1
HATD	**Hatta, Dubai**	79.34	298	P	**P**	17 54 39.8	-0.9
AQU	**L'Aquila**	79.41	338	*e*P	**P**	17 54 42.2	+1.4
AQU				pmax	pmax		
	comp=Z,66nm,0.9s						
AQU				MLR	MLR		
	comp=Z,1μm,19.0s						
AQU	**L'Aquila**	79.41	338	*e*P	**P**	17 54 42.2	+1.4
	comp=Z,66nm,0.9s						
AQU				LR	LR		
	comp=Z,1μm,19.0s						
ASHO	**Ashiyiah**	79.50	298	*i* P	**P**	17 54 40.2	-1.3
	SNR=6.2						
FAQ	**Al Faqa, Dubai**	79.68	299	P	**P**	17 54 41.2	-1.3
KPRO	**Kipourio**	79.75	332	P	**P**	17 54 42.4	-0.3
SMDO	**Samad**	79.83	296	P	**P**	17 54 43.2	-0.2
	SNR=6.6						
SMDO	**Samad**	79.83	296	P	**P**	17 54 43.2	-0.2
	SNR=6.6						
CHOS	**Chios island**	79.86	328	P	**P**	17 54 42.5	-0.8
CHOS	**Chios island**	79.86	328	P	**P**	17 54 42.5	-0.8
THL	**Klokotos Trika**	79.94	331	P	sP	17 54 55.3	+0.9
FITZ	**Fitzroy Crossi**	80.11	217	P	**P**	17 54 44.9	+0.3
	comp=Z,27nm,1.1s,baz=17,slow=9.5,SNR=16						
FITZ	**Fitzroy Crossi**	80.11	217	*e*P	**P**	17 54 45.0	+0.3
	comp=Z,64nm,1.3s						
PALK	**Pallekele**	80.20	269	*e*P	**P**	17 54 45.2	-0.2
PALK				pmax	pmax		
	comp=Z,47nm,1.1s						
PALK	**Pallekele**	80.20	269	*e*P	**P**	17 54 45.2	-0.2
	comp=Z,47nm,1.1s						
MATE	**Matera**	80.29	335⇑	*i*P	**P**	17 54 45.7	+0.3
AGG	**Agios Georgios**	80.36	331	P	**P**	17 54 44.8	-1.1
AGG	**Agios Georgios**	80.36	331	P	**P**	17 54 44.8	-1.1
AGG	**Agios Georgios**	80.36	331	P	**P**	17 54 44.8	-1.1
SGD	**Sagiada**	80.38	332	P	**P**	17 54 44.6	-1.4
IGT	**Igoumenitsa**	80.43	332	P	**P**	17 54 45.7	-0.6
IGT	**Igoumenitsa**	80.43	332	P	**P**	17 54 45.7	-0.6
IGT	**Igoumenitsa**	80.43	332	P	**P**	17 54 45.7	-0.6
FETY	**Fethiye**	80.50	325	P	**P**	17 54 45.1	-1.6
FETY	**Fethiye**	80.50	325	P	**P**	17 54 45.1	-1.6
CSS	**Mathiatis**	80.55	321	P	**P**	17 54 43.8	-3.2
CSS	**Mathiatis**	80.55	321	*e*P	**P**	17 54 47.0	0.0
	comp=Z,26nm,1.2s						
CSS				LR	LR		
	comp=Z,159nm,19.0s						
DSL	**Palaion Diasel**	80.60	332	P	**P**	17 54 46.2	-1.0
DSL	**Palaion Diasel**	80.60	332	P	**P**	17 54 46.2	-1.0
ANX	**Ano Chora**	80.87	331	P	**P**	17 54 47.8	-1.0
DSF	**Desfina**	80.87	330	P	**P**	17 54 46.4	-2.3
DSF	**Desfina**	80.87	330	P	**P**	17 54 46.4	-2.3
PVO	**Paravola**	80.96	331	P	**P**	17 54 49.0	-0.1
CARF	**Carcanieres**	81.00	347	*e*P	**P**	17 54 50.5	+1.1
PMOR	**Pomariorio Ree**	81.04	133	*e*P	**P**	17 54 50.7	+1.1
	comp=Z,55nm,1.0s						
LARF	**Larrau**	81.06	349	*e*P	**P**	17 54 50.9	+1.3
LTK	**Loutraki**	81.11	330	P	**P**	17 54 48.1	-1.9
LTK	**Loutraki**	81.11	330	P	**P**	17 54 48.1	-1.9
CUC	**Castrocucco**	81.12	336	*e*P	**P**	17 54 49.7	-0.3
	comp=Z,17nm,1.0s						
CUC				LR	LR		
	comp=Z,786nm,21.0s						
LAKA	**Lakka**	81.19	331	P	**P**	17 54 49.0	-1.4
LAKA	**Lakka**	81.19	331	P	**P**	17 54 49.0	-1.4
APE	**Apeiranthos**	81.23	327	*e*P	**P**	17 54 49.2	-1.5
APE				pmax	pmax		
	comp=Z,9.0nm,1.1s						
KLV	**Kalavryta, Ach**	81.32	330	P	**P**	17 54 49.0	-2.1
KLV	**Kalavryta, Ach**	81.32	330	P	**P**	17 54 49.0	-2.1
VALF	**Valcebollere**	81.32	347	*e*P	**P**	17 54 52.6	+1.4
VAH	**Vaihoa**	81.36	133	*e*P	**P**	17 54 52.2	+0.9
	comp=Z,94nm,1.1s						
DRO	**Drossia**	81.53	331	P	**P**	17 54 50.9	-1.3
VLS	**Valsamata**	81.63	332	P	**P**	17 54 51.9	-0.8
VLS	**Valsamata**	81.63	332	P	**P**	17 54 51.9	-0.8
VLS	**Valsamata**	81.63	332	P	**P**	17 54 51.9	-0.8
KFL	**Anninata**	81.64	331	P	**P**	17 54 52.6	-0.1
TIP	**Timpagrande**	81.67	335⇓	*i*P	**P**	17 54 54.1	+1.1
TIP	**Timpagrande**	81.67	335	P	**P**	17 54 52.7	-0.3
TIP	**Timpagrande**	81.67	335	*e*P	**P**	17 54 53.5	+0.6
	comp=Z,81nm,1.1s						
TIP				LR	LR		
	comp=Z,1μm,22.0s						
SANT	**Santorini**	81.90	327	PFAKE		17 55 10.0	+16
SANT				LR	LR		
	comp=Z,709nm,20.0s						
AMT	**Artemida-Makis**	81.92	331	P	**P**	17 54 53.7	-0.6
ITM	**Ithomi**	82.19	330	P	**P**	17 54 52.5	-3.2
PPT	**Papeete**	82.67	136	LR	LR	18 25 40.7	
	comp=Z,530nm,19.0s,baz=338,slow=31						
PPT2	**Papeete2**	82.69	136	*e*P	**P**	17 54 59.4	+1.0
	comp=Z,78nm,1.4s						
PPT2	**Papeete2**	82.69	136	*e*S	**S**	18 05 15.8	+1.4
	comp=Z,898nm,30.2s						
PPT2	**Papeete2**	82.69	136	*e*LQ	LQ	18 16 35.9	
	comp=Z,2μm,29.5s						
PPT2				*e*LR	LR	18 20 12.9	
	comp=Z,816nm,24.2s,baz=335						
PPT2	**Papeete2**	82.69	136	*e*LR	LR	17 55 01.3	
	comp=Z,177nm,26.2s						
PGAV	**Gavieira, Arco**	82.74	354	*e*pP	pP	17 55 05.3	-1.2
PGAV	**Gavieira, Arco**	82.74	354	*e*LR	LR	18 22 38.8	
	comp=Z,407nm,18.0s						
CEL	**Celeste**	82.75	335	PFAKE		17 55 10.0	+11
CEL				LR	LR		
	comp=Z,995nm,20.0s						
TIAR	**Tiarei**	82.75	136	*e*P	**P**	17 54 59.5	+0.9
	comp=Z,12nm,1.0s						
PBRG	**Braganca**	82.80	353	*e*P	**P**	17 54 58.3	-0.5
	comp=Z,54nm,1.9s						
PBRG	**Braganca**	82.80	353	*e*LR	LR	18 22 58.6	
	comp=Z,534nm,20.0s						
AS01	**Alice Springs**	82.83	207	*e*P	**P**	17 54 58.4	-0.5
AS31	**Alice Springs**	82.85	208	*e*P	**P**	17 54 59.2	+0.2
	comp=Z,11nm,0.8s						
ASAR	**Alice Springs**	82.85	208	P	**

PTOM	Tomar	85.09	354	eP	P	17 55 11.3	+0.9
	comp=Z,213nm,1.3s						
PTOM	Tomar	85.09	354	ePP	PP	17 58 27.2	+0.5
PMRV	Marv??o	85.21	353	eP	P	17 55 10.9	-0.2
	comp=Z,122nm,1.7s						
PMRV	Marv??o	85.21	353	eLR	LR	18 24 12.1	
	comp=Z,564nm,20.0s						
WDD	Wied Dalam	85.36	335	PFAKE		17 55 20.0	+8.2
WDD				LR	LR		
	comp=Z,502nm,19.0s						
PMTG	Montargil	85.62	354	eP	P	17 55 13.6	+0.5
	comp=Z,137nm,1.9s						
PMTG	Montargil	85.62	354	eLR	LR	18 24 18.9	
	comp=Z,520nm,18.0s						
RAO	Raoul Island	85.77	164	PFAKE		17 55 30.0	+16
RAO				LR	LR		
	comp=Z,2μm,20.0s						
PESTR	Estremoz	85.78	353	eP	P	17 55 14.6	+0.6
	comp=Z,157nm,1.4s						
PMAFR	Mafra	85.80	355	eP	P	17 55 15.0	+1.0
	comp=Z,289nm,1.7s						
PMAFR	Mafra	85.80	355	eLR	LR	18 23 59.3	
	comp=Z,458nm,20.0s						
EVO	Evora	86.14	354	eP	P	17 55 15.5	-0.2
	comp=Z,110nm,0.9s						
ARMA	Armidale	86.16	191	eP	P	17 55 17.2	+1.5
	comp=Z,52nm,1.3s						
PBAR	Barrancos	86.43	353	eP	P	17 55 17.6	+0.4
	comp=Z,342nm,1.3s						
PBAR	Barrancos	86.43	353	eLR	LR	18 25 26.0	
	comp=Z,978nm,18.0s						
PNCL	Nicolau / Gran	86.59	354	eP	P	17 55 18.7	+0.8
	comp=Z,59nm,1.5s						
KEST	Kesra	86.62	340	P	P	17 55 18.5	+0.3
	comp=Z,10nm,0.8s,baz=323,slow=6.1,SNR=6.5						
KEST				LR	LR	18 38 26.6	
	comp=Z,571nm,18.1s,baz=336,slow=39						
KEST	Kesra	86.62	340	eP	P	17 55 19.0	+0.8
	comp=Z,18nm,0.9s						
PBEJ	Beja	86.64	354	eP	P	17 55 18.6	+0.4
	comp=Z,81nm,1.9s						
PVAQ	Vaqueiros	87.25	353	epP	pP	17 55 28.9	-0.2
PVAQ	Vaqueiros	87.25	353	eS	SKSac	18 05 50.6	+3.7
PVAQ	Vaqueiros	87.25	353	eLR	LR	18 24 52.3	
	comp=Z,556nm,20.0s						
PBDV	Barranco-do-Ve	87.42	353	eP	P	17 55 24.2	+2.2
COCO	West Island	87.44	244	PFAKE		17 55 30.0	+7.8
COCO				LR	LR		
	comp=Z,387nm,21.0s						
PFVI	Vila Bisbo	87.59	354	eLR	LR	18 24 45.6	
	comp=Z,530nm,20.0s						
TBI	Tubuai	87.94	138	eS	S	18 06 05.5	-0.4
	comp=Z,444nm,33.2s						
TBI	Tubuai	87.94	138	eLQ	LQ	18 18 16.7	
	comp=Z,391nm,37.2s						
TBI				eLR	LR	18 22 42.0	
	comp=Z,504nm,34.8s,baz=334						
STKA	Stephens Creek	89.04	199	P	P	17 55 29.7	+0.3
	comp=Z,33nm,1.2s,baz=345,slow=6.2,SNR=26						
STKA	Stephens Creek	89.04	199	eP	P	17 55 30.1	+0.7
	comp=Z,28nm,1.5s						
GTBY	Guantanamo Bay	89.86	54	PFAKE		17 55 50.0	+16
GTBY				LR	LR		
	comp=Z,1μm,20.0s						
MTDJ	Mount Denham	90.20	57	eP	P	17 55 36.6	+1.1
	comp=Z,57nm,1.1s						
MTDJ				LR	LR		
	comp=Z,640nm,20.0s						
GRTK	Grand Turk	90.26	50	PFAKE		17 55 50.0	+14
GRTK				LR	LR		
	comp=Z,853nm,20.0s						
RTC	Rabat Centre	90.58	352	PFAKE		17 55 50.0	+13
RTC				LR	LR		
	comp=Z,2μm,20.0s						
OUZ	Omahuta	90.68	172	eP	P	17 55 39.7	+2.8
	comp=Z,82nm,1.2s						
BBOO	Buckleboo	91.08	203	eP	P	17 55 39.5	+0.7
	comp=Z,78nm,1.4s						
CAN	Canberra	91.30	192	PFAKE		17 55 50.0	+10
CAN				LR	LR		
	comp=Z,2μm,20.0s						
PMOZ	Porto Moniz, M	92.09	1	eLR	LR	18 26 32.5	
	comp=Z,304nm,18.0s						
SDDR	Presa de Saban	92.41	51	eP	P	17 55 46.3	+0.6
	comp=Z,22nm,1.1s						
SDDR				LR	LR		
	comp=Z,821nm,20.0s						
JTS	JuntasAbangare	93.23	67	PFAKE		17 56 00.0	+11
JTS				LR	LR		
	comp=Z,728nm,21.0s						
RKT	Rikitea	93.86	126	ePS	PS	18 08 16.1	-1.1
	comp=Z,226nm,29.0s						
RKT				eSS	SS	18 13 21.6	+1.7
	comp=Z,305nm,28.0s						
RKT				eLQ	LQ	18 21 43.3	
	comp=Z,627nm,29.5s						
RKT				eLR	LR	18 25 55.2	
	comp=Z,688nm,36.2s,baz=331						
SJG	San Juan	95.40	47	PFAKE		17 56 10.0	+11
SJG				LR	LR		
	comp=Z,626nm,19.0s						
NWAO	Narrogin (SRO)	96.64	218	LR	LR	18 36 52.3	
	comp=Z,121nm,19.9s,baz=284,slow=34						
SNZO	South Karori	96.81	172	PFAKE		17 56 20.0	+15
SNZO				LR	LR		
	comp=Z,1μm,20.0s						
BCIP	Isla Barro Col	96.83	63	PFAKE		17 56 20.0	+14
BCIP				LR	LR		
	comp=Z,228nm,19.0s						
ANWB	Willy Bob	97.56	43	PFAKE		17 56 20.0	+11
ANWB				LR	LR		
	comp=Z,595nm,19.0s						
TAU	Tasmania Unive	98.98	192	PFAKE		17 56 30.0	+15
TAU				LR	LR		
	comp=Z,2μm,19.0s						
TAM	Tamanrasset	99.93	340	PFAKE		17 56 30.0	+10
TAM				LR	LR		
	comp=Z,467nm,21.0s						
FDF	Fort de France	100.47	44	PFAKE		17 56 30.0	+7.8
FDF				LR	LR		
	comp=Z,514nm,20.0s						
SDV	Santo Domingo	101.57	55	PFAKE		17 56 40.0	+13
SDV				LR	LR		
	comp=Z,605nm,20.0s						
BBGH	Gun Hill	102.55	43	PFAKE		17 56 40.0	+8.6
BBGH				LR	LR		
	comp=Z,1μm,19.0s						
GRGR	Grenville	102.63	46	PFAKE		17 56 40.0	+8.2
GRGR				LR	LR		
	comp=Z,535nm,19.0s						
OTAV	Otavalo	105.13	67	PFAKE		18 01 10.0	
OTAV				LR	LR		
	comp=Z,390nm,20.0s						
TORD	Torodi Ar. Bea	110.05	342	PKiKP	PKiKP	18 01 05.8	-0.6
	comp=Z,0.8nm,0.7s,baz=355,slow=2.7,SNR=4.0						
TORD				PP	PP	18 01 43.0	+4.1
	comp=Z,4.6nm,1.1s,baz=1.4,slow=6.2,SNR=6.9						
KMBO	Kilima Mbogo	110.87	301	PFAKE		18 01 20.0	
KMBO				LR	LR		
	comp=Z,444nm,21.0s						
PTGA	Pitinga	114.91	50	PFAKE		18 01 30.0	+14
PTGA				LR	LR		
	comp=Z,31μm,21.0s						
NNA	Nana	116.23	72	PFAKE		18 01 30.0	+12
NNA				LR	LR		
	comp=Z,186nm,20.0s						
DBIC	Dimbokro	117.42	347	PKP	PKPdf	18 01 19.1	-1.4
	comp=Z,3.8nm,0.8s,baz=335,slow=1.3,SNR=3.2						
SAML	Samuel	120.68	57	PFAKE		18 01 40.0	+13
SAML				LR	LR		
	comp=Z,553nm,21.0s						
LPAZ	La Paz	124.45	67	PKP	PKPdf	18 01 34.6	-0.1
	comp=Z,3.1nm,0.9s,baz=28,slow=5.4,SNR=9.2						
LPAZ	La Paz	124.45	67	ePKPdf	PKPdf	18 01 34.7	+0.1
PB11	IPOC Station P	126.51	71	ePKPdf	PKPdf	18 01 38.1	+0.2
LSZ	Lusaka	127.51	302	ePKIKP	PKPdf	18 01 40.4	+0.5
LSZ				MLR	MLR		
	comp=Z,767nm,20.0s						
LSZ	Lusaka	127.51	302	ePKPdf	PKPdf	18 01 40.4	+0.5
LSZ				LR	LR		
	comp=Z,767nm,20.0s						
PB01	IPOC Station P	127.64	71	ePKPdf	PKPdf	18 01 39.5	-0.5
CASY	Casey	127.87	204	PFAKE		18 01 50.0	+11
CASY				LR	LR		
	comp=Z,258nm,20.0s						
RCBR	Riachuelo	128.05	25	ePKPdf	PKPdf	18 01 41.5	+0.6
RCBR				LR	LR		
	comp=Z,228nm,20.0s						
LVC	Limon Verde	129.22	72	ePKPdf	PKPdf	18 01 44.1	+0.8
LVC				LR	LR		
	comp=Z,311nm,22.0s						
ASCN	Ascension	132.60	358	PFAKE		18 02 00.0	+10
ASCN				LR	LR		
	comp=Z,724nm,20.0s						
VNDA	Vanda	132.70	181	PKP	PKPdf	18 01 47.0	-0.8
	comp=Z,4.9nm,1.1s,baz=306,slow=4.5,SNR=12						
VNDA	Vanda	132.70	181	PKIKP	PKPdf	18 01 47.0	-0.8
VNDA				pmax	pmax		
	comp=Z,4.0nm,1.0s						
VNDA	Vanda	132.70	181	ePKPdf	PKPdf	18 01 47.9	+0.2
SBA	Scott Base	133.04	179	ePKIKP	PKPdf	18 01 49.5	+1.1
SBA				MLR	MLR		
	comp=Z,561nm,22.0s						
SBA	Scott Base	133.04	179	ePKPdf	PKPdf	18 01 49.5	+1.1
SBA				LR	LR		
	comp=Z,561nm,22.0s						
TSUM	Tsumeb	135.80	311	ePKPdf	PKPdf	18 01 56.5	+1.0
TSUM				LR	LR		
	comp=Z,573nm,19.0s						
ROC1	El Roble	136.09	83	ePKPdf	PKPdf	18 01 55.7	-0.1
LBTB	Lobatse	137.03	298	ePKIKP	PKPdf	18 01 58.1	+0.5
LBTB	Lobatse	137.03	298	ePKPdf	PKPdf	18 01 58.1	+0.5
CPUP	Villa Florida	138.34	63	PKP	PKPdf	18 01 59.2	-0.6
	comp=Z,9.1nm,1.1s,baz=16,slow=5.0,SNR=8.5						
CPUP	Villa Florida	138.34	63	ePKPdf	PKPdf	18 01 59.9	+0.1
BOSA	Boshof	140.14	295	PKhKP	PKPpre	18 01 55.3	
	comp=Z,5.1nm,1.1s,baz=143,slow=10,SNR=2.8						
BOSA				PKP	PKPdf	18 02 03.2	0.0
	comp=Z,5.1nm,0.9s,baz=51,slow=3.8,SNR=5.2						
SPB	Sao Paulo	140.67	49	PFAKE		18 02 20.0	+16
SPB				LR	LR		
	comp=Z,416nm,19.0s						
PLCA	Paso Flores	141.80	91	PKhKP	PKPpre	18 01 59.8	
	comp=Z,6.7nm,0.9s,baz=288,slow=4.5,SNR=6.8						
PLCA				PKP	PKPdf	18 02 06.7	+1.0
	comp=Z,11nm,0.9s,baz=352,slow=3.5,SNR=7.9						
PLCA	Paso Flores	141.80	91	ePKPpre	PKPpre	18 02 03.4	
MAW	Mawson	143.21	219	PKP	PKPbc	18 02 04.7	+0.3
	comp=Z,12nm,1.0s,baz=61,slow=3.8,SNR=9.4						
MAW	Mawson	143.21	219	ePKPpre	PKPbc	18 02 05.0	+0.6
CHRN	Cochrane	144.67	101	ePKPdf	PKPdf	18 02 10.2	-0.2
TRQA	Tornquist	144.84	80	ePKPdf	PKPbc	18 02 10.4	+0.1
TRQA				LR	LR		
	comp=Z,357nm,19.0s						
QSPA	South Pole Qui	145.19	180	ePKPdf	PKPbc	18 02 09.1	-1.5
QSPA				LR	LR		
	comp=Z,695nm,19.0s						
SUR	Sutherland	145.44	296	ePKPbc	PKPab	18 02 13.3	+0.5
SUR				LR	LR		
	comp=Z,986nm,20.0s						
SYO	Syowa Base	151.92	219	⫽pPKPdf	PKPbc	18 02 27.0	-1.1
SYO	Syowa Base	151.92	219	⫽pPKPbc	pPKPbc	18 02 35.0	-1.3
NVL	N'lazarevskaya	160.42	208	ePKP2	PKPab	18 03 14.7	+0.7
NVL				pmax	pmax		
	comp=Z,4.0nm,1.5s						
SNAA	Sanae	162.75	194	P	PKPdf	18 02 33.3	-1.9
SNAA	Sanae	162.75	194	ePKIKP	PKPdf	18 02 33.8	-1.4
SNAA				e		18 03 23.6	
SNAA	Sanae	162.75	194	ePKPdf	PKPdf	18 02 33.8	-1.4
SNAA				ePKPab	PKPab	18 03 23.6	-0.7
VNA3	Neumayer Olymp	163.89	187	P	PKPdf	18 02 34.9	-1.3
VNA2	Neumayer--Watz	164.00	190	P	PKPdf	18 02 35.6	-0.7
	baz=186,slow=3.0						
VNA1	Neumayer--Stat	164.35	190	P	PKPdf	18 02 35.0	-1.6
HOPE	Hope Point	168.19	93	PFAKE		18 02 50.0	+10
HOPE				LR	LR		
	comp=Z,533nm,19.0s						

NIED ***18*** *17:43:00,37°.70N×143°.90E,h8km,Mw3.5 Best double couple: M≥2.18000×10^14 NP1:φs=337.00000°,δ55.00000°, λ-164.00000°. NP2:φs=237.00000°,δ77.00000°, λ-37.00000°.*
IDC ***18*** *17:43:48.9±2.0,37°.54N×144°.13E,h0km,mb3.7/2, mb1 3.9/6,mb1mx3.6/52,mbtmp4.0/6,ML3.4/4,Error ellipse: s-maj=48.7km s-min=29.6km az=87.0*
ISCJB ***18*** *17:43:50.8±0.7,37°.68N±0°.04×144°.05E±0°.06,h33km, mb3.8/2,Error ellipse: s-maj=6.7km s-min=5.7km az=18.2*
JMA ***18*** *17:43:53.4±0.2,37°.74N×143°.88E,h44km,M3.5*
ISC 18 17:43:51.5±1.1,37°.68N±0°.05×144°.09E±0°.08,h35km,n22, σ2°08/34,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	2.30	290	P	Pn	17 44 27.6	+0.7
JIO				S	Sn	17 44 52.9	-1.0
OFUJ	Ofunato	2.36	307	P	Pn	17 44 28.6	+0.9
JMK	Ichinoseki	2.59	300	P	Pn	17 44 32.0	+1.1
JMK				S	Sn	17 45 00.7	-0.4
JOM	Ohasama	2.83	310	P	Pn	17 44 35.7	+1.5
JOM				S	Sn	17 45 06.6	-0.5
JFT	Otama	2.99	268	S	Sn	17 45 10.4	-0.6
JYK	Kaneyama	3.19	294	P	Pn	17 44 40.8	+1.7
JYK				eS	Sn	17 45 16.1	+0.3
JANG	Nango	3.35	324	P	Pn	17 44 43.5	+2.1
JANG				S	Sn	17 45 19.1	-0.9
BSO1	Boso 1	3.93	221	P	Pn	17 44 49.8	+0.9
JRY	Ryogami san	4.48	250	P	Pn	17 44 57.8	+0.9
JRY				eS	Sn	17 45 45.0	-2.9
JOD2	Odawara 2	4.70	241	S	Sn	17 45 50.0	-3.2
JKB	Kayabe	4.82	332	P	Pn	17 45 03.9	+2.4
MJAR	Matsushiro Arr	4.84	258	Pn	Pn	17 45 03.7	+1.8
	0.8nm,0.3s,baz=83,slow=14,SNR=6.9						
MJAR				Sn	Sn	17 45 57.4	+0.8
	0.9nm,0.3s,baz=92,slow=28,SNR=7.0						
MAT	Matsushiro	4.84	258	P	Pn	17 45 05.1	+3.3
MAT				S	Sn	17 45 57.8	+1.2
JCH	Churui	4.96	354	P	Pn	17 45 04.6	+1.2
JCH				S	Sn	17 45 57.4	-2.1
JHJ2	Mitsune	5.74	219	P	Pn	17 45 13.8	-0.4
JHJ	Hachijo jima 2	5.75	219	Pn	Pn	17 45 12.7	-1.7
	3.5nm,0.3s,baz=79,slow=19,SNR=4.5						
JHJ				Sn	Sn	17 46 14.2	-4.9
	7.3nm,0.3s,baz=96,slow=18,SNR=3.6						
NEM2	Nemuro 2	5.82	12	P	Pn	17 45 14.8	-0.4
NEM2				eS	Sn	17 46 17.0	-3.6
JTKR	Abashiri--Toko	6.29	359	P	Pn	17 45 22.7	+1.1
JTKR				S	Sn	17 46 29.1	-3.0
ASAJ	Asahikawa	6.53	350	Pn	Pn	17 45 26.8	+1.8
	0.6nm,0.3s,baz=203,slow=11,SNR=9.3						
JCJ	Chichijima	10.68	189	Pn	Pn	17 46 19.1	-2.8
	1.4nm,0.3s,baz=20,slow=19,SNR=5.0						
WRA	Warramunga Arr	58.05	191	P	P	17 53 42.4	+1.3
	0.9nm,0.5s,baz=8.6,slow=7.1,SNR=6.0						
ASAR	Alice Springs	61.77	191	P	P	17 54 09.4	+2.9
	0.3nm,0.7s,baz=5.0,slow=6.8,SNR=3.2						

DJA ***18*** *17:44:04.0±1.7,2°.S±2°.×12°.8E±°.,h24km±20km,M4.1/2, mB4.8/1,mb4.5/2,MLv4.0/1,Mw(mB)4.0/1*
IDC ***18*** *17:44:05.8±2.3,2°.31S×128°.39E,h62km±27km,mb3.9/5, mb1 4.0/9,mb1mx3.6/45,mbtmp4.1/9,ML4.0/4,MS3.6/2, Ms1 3.5/2,ms1mx2.9/36,Error ellipse: s-maj=22.0km s-min=14.5km az=124.0*
ISC 18 17:44:01.6±0.7,2°.21S±0°.04×128°.57E±0°.05,h34km,n21, σ1°97/29,mb4.2/5,Ceram Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NLAI	Namlea	1.79	235	P	Pn	17 44 30.3	+0.3
NLAI				S	Sn	17 44 52.2	+0.6
LBMI	Labuha	1.89	326	P	Pn	17 44 31.8	+0.4
LBMI				S	Sn	17 44 53.4	-0.7
SANI	Sanana	2.58	273	P	Pn	17 44 40.8	-0.2
SANI				S	Sn	17 45 07.5	-3.7
BNDI	Bandanaira	2.66	150	P	Pb	17 44 49.0	+0.4
BNDI				S	Sb	17 45 23.1	+2.3
SWI	Sorong	3.00	64	P	Pb	17 44 52.6	-1.8
SWI				S	Sb	17 45 32.5	+1.8
SIJI	Sorong	3.01	64	P	Pb	17 44 53.4	-1.1
	20nm,0.3s,baz=180,slow=18,SNR=4.0						
SIJI				S	Sb	17 45 31.6	+0.8
	baz=91,slow=23,SNR=9.9						
FAKI	Fak Fak	3.75	101	P	Pb	17 45 05.4	-1.7
FAKI				S	Sb	17 45 51.8	-0.3
LUWI	Luwuk	5.91	281	P	Pn	17 45 26.5	-0.2
MRSI	Marisa	7.14	292	P	Pn	17 45 41.1	-2.6
TTSI	Tana Toraja	8.78	264	P	Pn	17 46 05.5	-0.7
PCI	Palu	8.82	278	P	Pn	17 46 06.2	-0.6
SPSI	Sidrap Palu	8.96	259	P	Pn	17 46 09.1	+0.5
KAPI	Kappang	9.23	252	P	Pn	17 46 13.1	+0.8
	2.9nm,0.3s,baz=80,slow=11,SNR=13						
KAPI				LR	LR	17 50 00.4	
	comp=Z,184nm,19.2s,baz=90,slow=39						
FITZ	Fitzroy Crossi	16.05	190	P	P	17 47 47.8	-0.1
	0.2nm,0.3s,baz=23,slow=14,SNR=5.5						
WRA	Warramunga Arr	18.51	163	P	Pn	17 48 15.9	+0.4
	0.5nm,0.3s,baz=341,slow=11,SNR=32						
WRA				S	Sn	17 51 36.9	-4.6
	0.1nm,0.3s,baz=352,slow=22,SNR=2.9						
ASAR	Alice Springs	21.95	167	P	P	17 48 54.0	+1.5
	5.5nm,0.7s,baz=345,slow=11,SNR=100						
ASAR				S	S	17 52 48.2	-5.0
	1.2nm,0.9s,baz=350,slow=22,SNR=4.5						
STKA	Stephens Creek	31.97	159	LR	LR	18 04 37.3	
	comp=Z,161nm,18.8s,baz=14,slow=39						
CMAR	Chiang Mai Arr	35.66	306	P	P	17 50 57.8	+1.0
	0.8nm,0.3s,baz=129,slow=7.1,SNR=4.5						
KSRS	Korea Array	39.47	359	P	P	17 51 30.8	+2.2
	2.8nm,0.7s,baz=178,slow=9.7,SNR=7.2						
USRK	Ussuriysk Ar.	46.30	3	P	P	17 52 26.8	+2.8
	2.4nm,0.6s,baz=199,slow=6.1,SNR=4.2						
KURBB	Kurchatov Arra	67.71	328	P	P	17 54 55.6	+0.2
	1.4nm,0.7s,baz=126,slow=6.0,SNR=4.2						

FUNV ***18*** *17:54:28.1,11°.17N×73°.15W,h11km,MW2.8*
ISCJB ***18*** *17:54:35.4±0.7,11°.12N±0°.04×72°.44W±0°.05,h13km,Error ellipse: s-maj=8.5km s-min=4.8km az=35.6*
RSNC ***18*** *17:54:36.4±0.4,11°.24N×72°.57W,h3km±8km,ML2.3*
ISC 18 17:54:36.0±1.1,11°.17N±0°.05×72°.46W±0°.06,h13km,n11, σ0°94/14,Near north coast of Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VIRV	Villa del Rosa	0.67	175	eP	Pg	17 54 46.5	-2.5
VIRV				eS	Sg	17 54 59.2	+1.4
URIC	Uribia, Colomb	0.70	41	eP	Pg	17 54 49.4	-0.2
URIC				i		17 54 52.5	
	comp=Z,78nm,0.1s						
URIC				eS	Sg	17 54 59.3	+0.5
DABV	Dabajuro	1.81	98	eP	Pn	17 55 07.4	+0.5
VIGV	El Vigia	2.56	155	eP	Pn	17 55 12.7	-4.5
VIGV				eS	Sn	17 55 47.0	-1.2
MONV	Montecano	2.56	72	eP	Pn	17 55 17.1	-0.1
CURV	Curarigua	2.71	115	eP	Pn	17 55 20.1	+0.7
SJCC	San Jacinto, C	2.96	245	eP	Pn	17 55 22.1	-0.6
SJCC				eS	Sn	17 55 58.8	+0.7
OCAC	Ocana	3.04	196	eP	Pn	17 55 24.1	+0.2
OCAC				eS	Sn	17 56 01.2	+1.0
SOCV	Socops	3.28	151	eP	Pn	17 55 23.4	-3.7
GRMC	Gramalote, San	3.45	186	eP	Pn	17 55 28.6	-1.0
GRMC				eS	Sn	17 56 09.4	-1.0
GRMC				i		17 56 20.4	
	comp=Z,8.3nm,0.6s						
BAUV	El Baul	4.88	117	eP	Pn	17 55 48.0	-1.1

MEX 18 17:59:47.5±0.4,15°.42N×93°.34W,h91km±6km,MD3.5, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		0.31	23	eP	Pn	17 59 59.6	-1.5
PCIG				eS	Sn	18 00 09.5	-1.7
CCIG	Comitan	1.44	53	eP	Pn	18 00 11.2	-1.5
CCIG				i S	Sn	18 00 30.4	-1.4

IDC ***18*** *18:01:36.6±7.9,36°.68N×71°.68E,h93km±30km,mb3.6/4, mb1 3.5/11,mb1mx3.2/67,mbtmp3.8/11,MS3.0/1, Ms1 3.0/1,ms1mx2.8/46,Error ellipse: s-maj=113.5km s-min=25.9km az=155.0*
NNC ***18*** *18:01:44.6±1.5,37°.35N×71°.42E,h133km±18km,mb3.4, mpv4.1,Error ellipse: s-maj=13.4km s-min=7.2km az=151.0*
ISC 18 18:01:41.6±1.5,37°.2N±0°.1×71°.39E±0°.08,h109km,n20, σ1°75/28,mb3.9/4,7C-7D,Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	Dzherino	2.60	310	⇑P	Pn	18 02 24.6	+2.2
	73nm,0.4s						
DZET				⇓S	Sn	18 02 57.1	+3.4
	267nm,0.5s						
MNAS	Manas	5.38	9	⇓P	Pn	18 03 01.3	+1.7
	5.2nm,0.3s						
MNAS				⇑S	Sn	18 04 00.4	0.0
	24nm,0.8s						
AAK	Ala-Archa	5.96	23	P	Pn	18 03 08.9	+1.5
	8.0nm,0.3s,baz=177,slow=5.9,SNR=35						
AAK				S	Sn	18 04 14.9	+0.5
	1.0nm,0.3s,baz=329,slow=19,SNR=10.0						
AAK				LR	LR	18 05 57.6	
	comp=Z,132nm,21.2s,baz=250,slow=41						
AAK	Ala-Archa	5.96	23	⇓P	Pn	18 03 08.9	+1.5
	12nm,0.4s						
AAK				⇑S	Sn	18 04 13.7	-0.7
	18nm,0.9s						
KK31	Karatay Array	5.96	354	⇓P	Pn	18 03 09.5	+2.1
	9.0nm,0.4s,baz=177,slow=12,SNR=86						
KK31				⇑S	Sn	18 04 14.6	+0.2
	8.2nm,0.4s,baz=164,slow=18,SNR=11						
TKM2	Tokmak 2	6.59	28	⇑P	Pn	18 03 16.6	+0.6
	6.2nm,0.5s						
TKM2				⇑S	Sn	18 04 29.2	-0.7
	4.8nm,0.7s						
SMLA	Simla	7.70	140	eP	Pn	18 03 26.0	-5.0
SMLA				eS	Sn	18 04 42.5	-14
SMLA				IAML		18 04 47.3	
	comp=N,70nm,0.2s						
SMLA				IAML		18 04 47.8	
	comp=E,77nm,0.3s						
GEYT	Alibeck	10.56	278	P	Pn	18 04 08.3	-1.5
	comp=E,2.4nm,0.3s,baz=94,slow=8.1,SNR=30						
GEYT				S	Sn	18 06 01.5	-4.6
	comp=E,0.8nm,0.3s,baz=118,slow=16,SNR=4.3						
MKAR	Makanchi Array	12.57	37	P	Pn	18 04 35.0	-1.5
	comp=E,0.1nm,0.3s,baz=239,slow=13,SNR=2.6						
KURBB	Kurchatov Arra	14.39	19	P	Pn	18 04 59.1	-0.9
	comp=E,0.1nm,0.3s,baz=203,slow=10,SNR=8.1						
AB31	Akbulak array	14.66	329	⇑P	Pn	18 05 04.0	+0.6
	comp=E,1.1nm,0.3s,baz=136,slow=14,SNR=87						
AB31				⇓S	Sn	18 07 42.2	-2.9
	comp=E,4.3nm,0.7s,baz=149,slow=23,SNR=11						
BVAR	Borovoye Array	15.87	358	P	P	18 05 21.1	+1.0
	comp=E,0.3nm,0.3s,baz=163,slow=13,SNR=4.1						
AKTO

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUR	**Kuril'sk**	**1.99**	**277**	*d* iPN	**Pn**	**18 03 54.0**	**-0.9**
KUR				*i* S	**Sn**	**18 04 19.4**	**+0.8**
KUR				pmax	pmax		
	comp=N,66nm,0.1s						
KUR				pmax	pmax		
	comp=E,43nm,0.1s						
KUR				pmax	pmax		
	comp=Z,591nm,0.1s						
KUR				smax	smax		
	comp=E,345nm,0.2s						
KUR				smax	smax		
	comp=N,661nm,0.3s						
KUR	**Kuril'sk**	**1.99**	**277** ⇓	*i* P	**Pn**	**18 03 54.0**	**-0.9**
KUR				AMB	AMB	18 03 56.2	
	comp=N,50nm,0.2s						
KUR				AMB	AMB	18 03 56.2	
	comp=N,220nm,0.2s						
KUR				AMB	AMB	18 03 56.2	
	comp=N,590nm,0.2s						
KUR				*i* S	**Sn**	**18 04 19.1**	**+0.5**
KUR				A	A	18 04 21.4	
	comp=N,350nm,0.2s						
KUR				A	A	18 04 21.4	
	comp=N,660nm,0.2s						
SHO	**Shikotan**	**2.98**	**248**	*d* iPN	**Pn**	**18 04 08.3**	**-0.2**
SHO				*i* S	**Sn**	**18 04 44.3**	**+1.3**
SHO				pmax	pmax		
	comp=Z,68nm,0.4s						
SHO				pmax	pmax		
	comp=N,30nm,0.2s						
SHO				pmax	pmax		
	comp=E,46nm,0.5s						
SHO				smax	smax		
	comp=N,295nm,0.4s						
SHO				smax	smax		
	comp=E,296nm,0.7s						
SHO	**Shikotan**	**2.98**	**248** ⇓	*i* P	**Pn**	**18 04 08.3**	**-0.2**
SHO				AMB	AMB	18 04 11.2	
	comp=E,70nm,0.2s						
SHO				*i* S	**Sn**	**18 04 44.3**	**+1.3**
SHO				A	A	18 04 48.8	
	comp=E,300nm,0.4s						
SHO				A	A	18 04 48.8	
	comp=E,300nm,0.7s						
YUK	**Yuzh-Kuril'sk**	**3.58**	**255**	*d* iPN	**Pn**	**18 04 17.6**	**+0.9**
YUK				*i* S	**Sn**	**18 05 00.1**	**+2.4**
YUK				pmax	pmax		
	comp=Z,222nm,0.2s						
YUK				pmax	pmax		
	comp=E,152nm,0.4s						
YUK				pmax	pmax		
	comp=N,41nm,0.1s						
YUK				smax	smax		
	comp=E,419nm,0.4s						
YUK				smax	smax		
	comp=N,296nm,0.3s						
YUK	**Yuzh-Kuril'sk**	**3.58**	**255** ⇓	*i* P	**Pn**	**18 04 17.6**	**+0.9**
YUK				AMB	AMB	18 04 21.7	
	comp=N,150nm,0.4s						
YUK				AMB	AMB	18 04 21.7	
	comp=N,40nm,0.2s						
YUK				AMB	AMB	18 04 21.7	
	comp=N,220nm,0.2s						
YUK				*i* S	**Sn**	**18 05 00.1**	**+2.4**
YUK				A	A	18 05 09.3	
	comp=N,300nm,0.4s						
YUK				A	A	18 05 09.3	
	comp=N,420nm,0.4s						
NEM2	**Nemuro 2**	**3.92**	**247**	P	**Pn**	**18 04 20.8**	**-0.5**
NEM2				*e*S	**Sn**	**18 05 04.7**	**-1.2**
JRA	**Rausu**	**4.12**	**257**	P	**Pn**	**18 04 25.6**	**+1.5**
JNK	**Nakash**	**4.51**	**253**	P	**Pn**	**18 04 30.6**	**+1.1**
JNK				*e*S	**Sn**	**18 05 21.5**	**+0.9**
JAK	**Akkeshi**	**4.76**	**247**	P	**Pn**	**18 04 32.7**	**-0.2**
JAK				*e*S	**Sn**	**18 05 25.3**	**-1.6**
JTKR	**Abashiri--Toko**	**4.95**	**260**	P	**Pn**	**18 04 37.4**	**+1.9**
JAR	**Ashorobuto**	**5.26**	**253**	P	**Pn**	**18 04 41.1**	**+1.4**
JAR				*e*S	**Sn**	**18 05 40.4**	**+1.4**
JMP	**Maruseppu**	**5.33**	**261**	P	**Pn**	**18 04 42.8**	**+2.1**
JOB	**Onbets**	**5.37**	**249**	P	**Pn**	**18 04 42.1**	**+0.8**
HRK	**Horoka**	**5.64**	**257**	*e*P	**Pn**	**18 04 47.5**	**+2.5**
JKK2	**Kamakawa 2**	**5.79**	**261**	P	**Pn**	**18 04 49.6**	**+2.6**
JCH	**Churui**	**5.81**	**248**	P	**Pn**	**18 04 47.5**	**+0.2**
JCH				*e*S	**Sn**	**18 05 51.7**	**-1.0**
JKA	**Kamikawa-asahi**	**5.84**	**264**	*e*P	**Pn**	**18 04 49.0**	**+1.3**
ASAJ	**Asahikawa**	**5.84**	**264**	P	**Pn**	**18 04 49.6**	**+1.9**
	comp=N,2.5nm,0.3s,baz=79,slow=15,SNR=23						
ASAJ	**Asahikawa**	**5.84**	**264**	P	**Pn**	**18 04 50.3**	**+2.6**
YSS	**Yuzh-Sakhalins**	**5.84**	**292**	*e*P	Pn	18 04 50.2	+2.5
YSS				AMB	AMB	18 04 51.4	
	comp=N,20nm,0.3s						
MYR	**Moyori**	**6.02**	**245**	*e*P	**Pn**	**18 04 50.7**	**+0.6**
JEM	**Erimo**	**6.24**	**244**	P	**Pn**	**18 04 54.6**	**+1.4**
JNBK	**Urakawa-nobuka**	**6.37**	**247**	P	**Pn**	**18 04 54.7**	**-0.3**
JBT2	**Biratori 2**	**6.41**	**252**	P	**Pn**	**18 04 56.2**	**+0.7**
SKR	**Severo-Kuril's**	**6.74**	**31**	*i* P	**Pn**	**18 04 59.1**	**-0.9**
SKR				*i* S	**Sn**	**18 06 12.7**	**-2.6**
SKR				A	A	18 06 13.8	
	comp=N,20nm,0.2s						
UGL	**Uglegorsk**	**7.13**	**308**	*e*P	**Pn**	**18 05 07.6**	**+2.2**
JNB	**Noboribetsu**	**7.43**	**253**	P	**Pn**	**18 05 10.4**	**+0.9**
JNB				*e*S	**Sn**	**18 06 31.4**	**-1.1**
JKB	**Kayabe**	**7.68**	**249**	P	**Pn**	**18 05 13.0**	**0.0**
TYV	**Tymovskoe**	**7.93**	**320**	*e*P	**Pn**	**18 05 18.2**	**+1.8**
TYV				AMB	AMB	18 05 19.7	
	comp=N,10.0nm,0.4s						
TYV				*e*S	**Sn**	**18 06 45.0**	**+0.3**
JANG	**Nango**	**8.19**	**239**	P	**Pn**	**18 05 17.5**	**-2.5**
PETK	**Petropavlovsk-**	**9.30**	**27**	P	**Pn**	**18 05 35.9**	**+0.7**
	comp=N,0.7nm,0.3s,baz=193,slow=11,SNR=7.5						
NKL	**Nikolayevsk**	**10.43**	**325**	*e*P	**Pn**	**18 05 51.8**	**+1.3**
NKL				AMB	AMB	18 05 52.9	
	comp=N,10.0nm,0.5s						
EKMR	**Ekimchan**	**14.10**	**311**	*e*P	**Pn**	**18 06 40.3**	**-0.4**
BMKR	**Bomnak**	**17.01**	**312**	*e*P	**Pn**	**18 07 16.8**	**-1.7**
KROS	**Kirovskiy**	**17.90**	**310**	*e*P	**P**	**18 07 30.4**	**+0.7**
H11N2	**WAKE ISLAND Hy**	**28.60**	**147**	T	T	18 39 59.0	
	baz=336,slow=76,SNR=31						
H11N1	**WAKE ISLAND Hy**	**28.61**	**147**	T	T	18 39 56.0	
	baz=336,slow=76,SNR=24						
H11N3	**WAKE ISLAND Hy**	**28.62**	**147**	T	T	18 39 57.3	
	baz=336,slow=76,SNR=30						
TIXI	**Tiksi**	**28.67**	**346**	P	**P**	**18 09 14.3**	**-2.2**
	comp=N,0.9nm,0.6s,baz=162,slow=4.4,SNR=5.5						
H11S1	**WAKE ISLAND Hy**	**29.64**	**148**	T	T	18 41 15.1	
	baz=340,slow=74						
H11S3	**WAKE ISLAND Hy**	**29.64**	**148**	T	T	18 41 13.4	
	baz=340,slow=74						
H11S2	**WAKE ISLAND Hy**	**29.66**	**148**	T	T	18 41 11.3	
	baz=340						
INK	**Inuvik**	**44.01**	**31**	P	**P**	**18 11 28.6**	**+1.7**
	comp=N,0.6nm,0.4s,baz=284,slow=5.0,SNR=6.5						
MKAR	**Makanchi Array**	**46.22**	**298**	P	**P**	**18 11 43.3**	**-1.5**
	comp=N,0.5nm,0.7s,baz=84,slow=7.3,SNR=6.2						
MKAR				PcP	**PcP**	**18 13 20.2**	**+0.3**
	comp=N,0.3nm,0.6s,baz=46,slow=2.1,SNR=3.6						
KURK	**Kurchatov**	**46.90**	**304**	P	**P**	**18 11 49.0**	**-1.0**
KURK						18 13 22.2	
KURK				pmax	pmax		
	comp=Z,1.0nm,0.4s						
KURK	**Kurchatov**	**46.90**	**304**	*e*P	**P**	**18 11 49.0**	**-1.0**
KURBB	**Kurchatov Arra**	**46.99**	**304**	P	**P**	**18 11 49.0**	**-1.7**
	comp=Z,0.6nm,0.4s,baz=73,slow=8.4,SNR=10						
KURBB				PcP	**PcP**	**18 13 22.2**	**-0.2**
	comp=Z,0.2nm,0.6s,baz=70,slow=2.9,SNR=4.4						
YKA	**Yellowknife Ar**	**53.32**	**35**	P	**P**	**18 12 39.1**	**+0.8**
	comp=Z,0.4nm,0.6s,baz=297,slow=6.7,SNR=5.7						
FINES	**FINESS Array B**	**64.85**	**334**	P	**P**	**18 13 55.9**	**-2.3**
	comp=Z,2.1nm,0.9s,baz=31,slow=8.2,SNR=3.4						
GEYT	**Alibeck**	**66.00**	**300**	P	**P**	**18 14 06.0**	**-0.2**
	comp=Z,1.6nm,0.6s,baz=64,slow=3.4,SNR=3.8						
WRA	**Warramunga Arr**	**66.36**	**197**	P	**P**	**18 14 09.0**	**+0.6**
	comp=Z,0.9nm,0.7s,baz=15,slow=6.7,SNR=6.6						
PDAR	**Pinedale Array**	**67.14**	**52**	P	**P**	**18 14 14.7**	**+1.0**
	comp=Z,0.4nm,0.7s,baz=278,slow=2.6,SNR=4.1						
NB2	**NORSAR Subarra**	**69.28**	**340**	P	**P**	**18 14 25.6**	**-0.9**
	comp=Z,0.7nm,0.5s,baz=28,slow=6.9						
NOA	**NORSAR Array B**	**69.28**	**340**	P	**P**	**18 14 25.6**	**-0.9**
	comp=Z,0.8nm,0.5s,baz=28,slow=6.5,SNR=7.9						
ASAR	**Alice Springs**	**70.06**	**196**	P	**P**	**18 14 33.5**	**+2.0**
	comp=Z,0.3nm,0.7s,baz=6.6,slow=4.3,SNR=5.5						
KBZ	**Khabaz**	**70.80**	**313**	P	**P**	**18 14 36.9**	**+0.9**
	comp=Z,3.0nm,0.8s,baz=77,slow=3.2,SNR=8.4						
ZEI	**Tsey**	**70.93**	**312**	*e*P	**P**	**18 14 36.3**	**-0.8**
ZEI				pmax	pmax		
	comp=Z,8.0nm,0.7s						
ZEI	**Tsey**	**70.93**	**312**	*e*P	**P**	**18 14 36.3**	**-0.8**
AKASG	**Malin Array Be**	**72.00**	**325**	P	**P**	**18 14 41.1**	**-2.0**
	comp=Z,0.6nm,0.3s,baz=39,slow=6.2,SNR=4.8						
BURAR	**Bucovina Array**	**76.06**	**325** ⇓	*i* P	**P**	**18 15 06.7**	**-0.3**
VOIR		**77.88**	**324** ⇓	*i* P	**P**	**18 15 18.0**	**+0.7**
KHC	**Kasperske Hory**	**79.01**	**333**	*e*P	**P**	**18 15 23.7**	**+0.3**
KHC	**Kasperske Hory**	**79.01**	**333**	*e*P	**P**	**18 15 23.7**	**+0.3**
KHC	**Kasperske Hory**	**79.01**	**333**	*e*P	**P**	**18 15 23.7**	**+0.3**
GERES	**GERESS Array B**	**79.22**	**333**	P	**P**	**18 15 23.8**	**-0.8**
	comp=Z,0.8nm,0.5s,baz=46,slow=9.5,SNR=5.9						
TXAR	**Lajitas Array**	**79.83**	**59**	P	**P**	**18 15 29.1**	**+0.8**
	comp=Z,0.2nm,0.5s,baz=316,slow=5.0,SNR=3.0						

KRSC 18 18:11:31.2±1.1, 55°.39N×164°.14E, h68km±25km, ML3.8, Komandorsky Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKI	**Bering**	**1.06**	**99**	*e*P	Pn	18 11 52.3	+1.9
BKI				*e*S	Sn	18 12 07.0	+2.4
KBG	**Krutoberegovo**	**1.19**	**318**	*e*P	Pn	18 11 51.6	-0.4
KBG				*e*S	Sn	18 12 07.6	+0.1
SMKR	**Semkarok**	**1.92**	**310**	*e*P	Pn	18 12 04.2	+2.4
SMKR				*e*S	Sn	18 12 28.5	+3.5
ZLN	**Zelenaya**	**1.99**	**290**	*e*P	Pn	18 12 05.3	+2.5
BDR	**Baidarnaya**	**2.03**	**307**	*e*P	Pn	18 12 05.8	+2.6
BDR				*e*S	Sn	18 12 30.7	+3.1
CIRR	**Tsirk**	**2.05**	**292**	*e*P	Pn	18 12 06.2	+2.6
LGNR	**Loginova**	**2.07**	**291**	*e*P	Pn	18 12 06.9	+2.9
SRKR	**Sorokina**	**2.10**	**309**	*e*P	Pn	18 12 06.1	+1.9
BZMR	**Bezymyannaya**	**2.14**	**286**	*e*P	Pn	18 12 07.0	+2.2
KLY	**Klyuchi**	**2.17**	**297**	*e*P	Pn	18 12 06.3	+1.2
KLY				*e*S	Sn	18 12 30.7	-0.3
KIRR	**Kirishev**	**2.22**	**286**	*e*P	Pn	18 12 08.6	+2.6
KMNR	**Kamenistaya**	**2.25**	**281**	*e*P	Pn	18 12 09.2	+3.0
TUMR	**Tumrok**	**2.28**	**269**	*e*P	Pn	18 12 10.7	+4.0
KOZ	**Kozyrevsk**	**2.50**	**287**	*e*P	Pn	18 12 13.2	+3.6
KOZ				*e*S	Sn	18 12 42.6	+3.5
ESO	**Esso**	**3.13**	**282**	*e*P	Pn	18 12 20.9	+2.8
SPN	**Mys Shipunski**	**3.33**	**228**	*e*P	Pn	18 12 23.4	+2.6
SPN				*e*S	Sn	18 12 58.6	-0.5
NLC	**Nalytchevo**	**3.58**	**234**	*e*S	Sn	18 13 06.8	+1.6
SDLR	**Sedlovina**	**3.73**	**238**	*e*P	Pn	18 12 29.8	+3.4
SDLR				*e*S	Sn	18 13 10.2	+1.0
SMAR	**Somma**	**3.78**	**238**	*e*P	Pn	18 12 30.1	+2.9
KRER	**Koryakskii**	**3.78**	**239**	*e*P	Pn	18 12 30.3	+3.1
KRX	**Arik**	**3.80**	**240**	*e*P	Pn	18 12 30.8	+3.4
UGLR	**Uglovaya**	**3.80**	**237**	*e*P	Pn	18 12 30.7	+3.3
AVH	**Avacha**	**3.81**	**238**	*e*P	Pn	18 12 31.1	+3.6
OSSR	**Ossora**	**3.92**	**352**	*e*S	Sn	18 13 14.7	+1.2
GNL	**Ganaly**	**3.99**	**247**	*e*P	Pn	18 12 32.1	+2.2
KRMR	**Karymshinskiy**	**4.36**	**237**	*e*P	Pn	18 12 39.3	+4.3
KRMR				*e*S	Sn	18 13 27.5	+3.0
RUS	**Russkaya**	**4.45**	**231**	*e*P	Pn	18 12 39.6	+3.5

ISCJB ***18*** *18:11:45.8±0.3, 40°.70N±0°.02×29°.21E±0°.02, h3km±4km, Error ellipse: s-maj=3.6km s-min=3.1km az=18.5*
ISK ***18*** *18:11:45.5, 40°.72N×29°.25E, h15km, MD2.7*
DDA ***18*** *18:11:45.8, 40°.69N×29°.22E, h6km, Ml2.9*
CSEM ***18*** *18:11:46.1±0.1, 40°.71N×29°.21E, h10km, ML2.9, Error ellipse: s-maj=2.5km s-min=2.3km az=17.0*

ISC 18 18:11:45.8±0.8, 40°.70N±0°.02×29°.22E±0°.02, h15km±6km, n54, σ0§47/83, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BUY	**Buyukada**	**0.17**	**333**	P	**Pg**	**18 11 50.1**	**+0.1**
BUY				S	**Sg**	**18 11 52.9**	**+0.1**
BUY	**Buyukada**	**0.17**	**333**	*i* P	**Pg**	**18 11 50.1**	**+0.1**
BUY				*i* S	**Sg**	**18 11 52.9**	**+0.1**
GEMT	**Gemlik**	**0.27**	**185**	*e*PG	**Pg**	**18 11 51.7**	**+0.1**
GEMT	**Gemlik**	**0.27**	**185**	*e*Pg	**Pg**	**18 11 51.7**	**+0.1**
ARMT	**Armutlu**	**0.31**	**243**	*e*PG	**Pb**	**18 11 53.3**	**+0.3**
ARMT	**Armutlu**	**0.31**	**243**	*e*Pg	**Pb**	**18 11 53.3**	**+0.3**
HRT	**Hereke**	**0.36**	**71**	*e*PG	**Pb**	**18 11 53.6**	**-0.3**
HRT				*e*SG	**Sg**	**18 11 57.9**	**-0.4**
HRT	**Hereke**	**0.36**	**71**	*e*Pg	**Pb**	**18 11 53.6**	**-0.3**
HRT				*e*Sg	**Sg**	**18 11 57.9**	**-0.4**
ISK	**Istanbul-Kandi**	**0.38**	**341**	*e*PG	**Pg**	**18 11 53.9**	**+0.3**
ISK	**Istanbul-Kandi**	**0.38**	**341**	*e*Pg	**Pg**	**18 11 53.9**	**+0.3**
IZI	**Iznik**	**0.41**	**152**	*e*PG	**Pg**	**18 11 53.9**	**-0.3**
IZI	**Iznik**	**0.41**	**152**	*e*Pg	**Pg**	**18 11 53.9**	**-0.3**
MDNY	**Mudanya-Bursa**	**0.42**	**218**	*e*PG	**Pg**	**18 11 54.5**	**+0.2**
MDNY	**Mudanya-Bursa**	**0.42**	**218**	*e*Pg	**Pg**	**18 11 54.5**	**+0.2**
IGD	**Bursa**	**0.44**	**182**	*i* P	**Pg**	**18 11 53.9**	**-0.7**
IGD				*i* S	**Sg**	**18 11 60.0**	**-0.6**
ADVT	**Abdulvahap**	**0.48**	**124**	PG	**Pg**	**18 11 55.1**	**-0.2**
ADVT	**Abdulvahap**	**0.48**	**124**	*i* Pg	**Pg**	**18 11 55.1**	**-0.2**
SILT	**Sile**	**0.55**	**35**	*e*PG	**Pg**	**18 11 56.7**	**0.0**
SILT	**Sile**	**0.55**	**35**	*e*Pg	**Pg**	**18 11 56.7**	**0.0**
KLYT	**Kilyos**	**0.57**	**346**	*e*PG	**Pg**	**18 11 56.4**	**-0.6**
KLYT				*e*SG	**Sb**	**18 12 05.0**	**-0.3**
KLYT	**Kilyos**	**0.57**	**346**	*e*Pg	**Pg**	**18 11 56.4**	**-0.6**
KLYT				*e*Sg	**Sb**	**18 12 05.0**	**-0.3**
BGKT	**Bogazkoy**	**0.59**	**325**	*e*PG	**Pg**	**18 11 57.4**	**0.0**
BGKT	**Bogazkoy**	**0.59**	**325**	*e*Pg	**Pg**	**18 11 57.4**	**0.0**
CAVI	**Cavuskoy**	**0.69**	**136**	*e*PG	**Pg**	**18 11 59.2**	**-0.1**
CAVI	**Cavuskoy**	**0.69**	**136**	*e*Pg	**Pg**	**18 11 59.2**	**-0.1**
CTKS	**Kestanelik-??a**	**0.76**	**315**	*e*PG	**Pn**	**18 12 01.3**	**-0.6**
CTKS	**Kestanelik-??a**	**0.76**	**315**	*e*Pg	**Pn**	**18 12 01.3**	**-0.6**
KCTX	**Karacabey (Bur**	**0.79**	**237**	*e*PG	**Pn**	**18 12 02.2**	**-0.2**
KCTX	**Karacabey (Bur**	**0.79**	**237**	*e*Pg	**Pn**	**18 12 02.2**	**-0.2**
KAND	**Kocaeli-Kandir**	**0.83**	**62**	P	**Pg**	**18 12 02.0**	**0.0**
KAND				S	**Sb**	**18 12 12.6**	**-0.4**
KAND	**Kocaeli-Kandir**	**0.83**	**62**	*i* P	**Pg**	**18 12 02.0**	**0.0**
KAND				*i* S	**Sb**	**18 12 12.6**	**-0.4**
GULT	**Gulveren**	**1.02**	**105**	*e*PG	**Pg**	**18 12 05.6**	**0.0**
GULT				*e*SG	**Sn**	**18 12 19.7**	**-0.1**
GULT	**Gulveren**	**1.02**	**105**	*e*Pg	**Pg**	**18 12 05.6**	**0.0**
GULT				*e*Sg	**Sn**	**18 12 19.7**	**-0.1**
CTYL	**Yalikoy Yolu**	**1.04**	**318**	*e*PG	**Pb**	**18 12 05.6**	**+0.1**
CTYL				*e*SG	**Sn**	**18 12 21.1**	**+0.9**
CTYL	**Yalikoy Yolu**	**1.04**	**318**	*e*Pg	**Pb**	**18 12 05.6**	**+0.1**
CTYL				*e*Sg	**Sn**	**18 12 21.1**	**+0.9**
EDC	**Edincik**	**1.09**	**251**	*e*PN	**Pn**	**18 12 06.5**	**0.0**
EDC	**Edincik**	**1.09**	**251**	*e*Pn	**Pn**	**18 12 06.5**	**0.0**
DURS	**Dursunbey**	**1.24**	**208**	P	**Pg**	**18 12 10.0**	**+0.3**
DURS				S	**Sg**	**18 12 26.3**	**+0.4**
DURS	**Dursunbey**	**1.24**	**208**	*i* P	**Pg**	**18 12 10.0**	**+0.3**
DURS				*i* S	**Sg**	**18 12 26.3**	**+0.4**
MRMT	**Marmara Adasi**	**1.24**	**266**	*e*PN	**Pb**	**18 12 09.0**	**+0.1**
MRMT				*e*SN	**Sg**	**18 12 26.4**	**+0.5**
MRMT	**Marmara Adasi**	**1.24**	**266**	*e*Pn	**Pb**	**18 12 09.0**	**+0.1**
MRMT				*e*Sn	**Sg**	**18 12 26.4**	**+0.5**
SAHE	**Sakarya_HENDEK**	**1.25**	**83**	P	**Pg**	**18 12 09.9**	**0.0**
SAHE				S	**Sg**	**18 12 27.4**	**+1.2**
SAHE	**Sakarya_HENDEK**	**1.25**	**83**	*i* P	**Pg**	**18 12 09.9**	**0.0**
SAHE				*i* S	**Sg**	**18 12 27.4**	**+1.2**
BORA	**Eskisehir**	**1.25**	**131**	P	**Pg**	**18 12 09.9**	**0.0**
BORA				S	**Sg**	**18 12 27.0**	**+0.8**
BORA	**Eskisehir**	**1.25**	**131**	*i* P	**Pg**	**18 12 09.9**	**0.0**
BORA				*i* S	**Sg**	**18 12 27.0**	**+0.8**
TVSB	**Tavsanli**	**1.27**	**172**	*e*PN	**Pb**	**18 12 09.6**	**+0.2**
TVSB				*e*SN	**Sg**	**18 12 27.0**	**+0.3**
TVSB	**Tavsanli**	**1.27**	**172**	*e*Pn	**Pb**	**18 12 09.6**	**+0.2**
TVSB				*e*Sn	**Sg**	**18 12 27.0**	**+0.3**
BTAS	**Taskesti**	**1.36**	**95**	P	**Pg**	**18 12 12.5**	**+0.5**
BTAS				S	**Sg**	**18 12 31.0**	**+1.3**
BTAS	**Taskesti**	**1.36**	**95**	*i* P	**Pg**	**18 12 12.5**	**+0.5**
BTAS				*i* S	**Sg**	**18 12 30.9**	**+1.3**
BALY	**Balya**	**1.56**	**232**	P	**Pn**	**18 12 13.0**	**0.0**
BALY				S	**Sn**	**18 12 32.1**	**-0.8**
BALY	**Balya**	**1.56**	**232**	*i* P	**Pn**	**18 12 13.0**	**0.0**
BALY				*i* S	**Sn**	**18 12 32.1**	**-0.8**
GDZ	**Gediz**	**1.62**	**173**	S	**Sg**	**18 12 38.0**	**-0.2**
GDZ	**Gediz**	**1.62**	**173**	*i* P	**Pg**	**18 12 17.8**	**+0.7**
GDZ				*i* S	**Sg**	**18 12 38.0**	**-0.2**
MANT	**Manisa**	**2.27**	**193**	*i* P	**Pg**	**18 12 28.8**	**-0.5**
MANT				*i* S	**Sg**	**18 12 58.2**	**-0.5**

MOS ***18*** *18:28:59.0±1.0, 6°.54S×147°.80E, h34km, mb5.0/32, Error ellipse: s-maj=9.5km s-min=6.1km az=94.9*
ISCJB ***18*** *18:29:00.6±0.2, 6°.64S±0°.02×147°.89E±0°.03, h51km, mb4.9/105, MS4.6/15, Error ellipse: s-maj=4.8km s-min=3.5km az=10.6*
NEIC ***18*** *18:29:02.8±0.6, 6°.65S×147°.84E, h57km±6km, mb4.9/59, Error ellipse: s-maj=5.7km s-min=4.6km az=112.0*
IDC ***18*** *18:29:02.5±1.5, 6°.58S×147°.80E, h53km±14km, mb4.4/28, mb1 4.5/32, mb1mx4.5/44, mbtmp4.7/32, ML4.0/3, MS4.8/9, Ms1 4.7/9, ms1mx4.2/34, Error ellipse: s-maj=12.6km s-min=7.8km az=94.0*
GCMT ***18*** *18:29:02.8±0.2, 6°.63S×147°.79E, h14km, MW5.1/89, Moment Tensor Solution. s52,c68; s89,c144; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-2.71±.17; $M_{\theta\theta}$0.64±.12; $M_{\phi\phi}$2.07±.14; $M_{r\theta}$-1.18±.26; $M_{\theta\phi}$4.21±.11; $M_{\phi r}$1.23±.28; Best double couple: $M_0$5.07100×10^{16} NP1:ϕ_s184.00000°, δ62.00000°, λ-145.00000°. NP2: ϕ_s76.00000°, δ60.00000°, λ-33.00000°. Principal axes: T 5.6300, Plg1.0000°, Azm310.0000°; N -1.1160, Plg47.0000°, Azm219.0000°; P -4.5120, Plg43.0000°, Azm41.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
DJA ***18*** *18:29:05.1±0.5, 7°.5S×14°.8E±°, h56km±5km, M5.2/45, mb5.1/45, mB5.6/8, MLv5.3/1, Mw(mB)5.1/8*

ISC 18 18:29:02.7±0.3, 6°.62S±0°.04×147°.81E±0°.05, h51km, n314, σ1§29/305, mb4.9/103, MS4.6/15, 5C-5D, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.84**	**193**	P	**Pn**	**18 29 44.8**	**-0.8**
	45nm,0.3s,baz=11,slow=7.7,SNR=121						
PMG				S	**Sn**	**18 30 21.3**	**+2.7**
	55nm,0.3s,baz=336,slow=19,SNR=12						
PMG	**Port Moresby**	**2.84**	**193**	*i* P	**Pn**	**18 29 44.7**	**-0.8**
PMG				pmax	pmax		
	comp=Z,6μm,0.8s						
MANU	**Manus Island**	**4.57**	**354**	*e*Pn	**Pn**	**18 30 11.8**	**+2.4**
RABL	**Rabaul**	**4.96**	**61**	*e*Pn	**Pn**	**18 30 13.4**	**-1.4**
JAY	**Jayapura**	**8.17**	**300**	P	**Pn**	**18 30 58.5**	**-0.2**
	comp=Z,0.3nm,0.3s,baz=89,slow=20,SNR=17						
JAY				S	**Sn**	**18 32 28.9**	**-0.9**
	comp=Z,0.1nm,0.3s,baz=90,slow=20,SNR=1.7						
JAY	**Jayapura**	**8.17**	**300**	P	**Pn**	**18 31 02.3**	**+3.5**
	comp=Z,66nm,1.6s,comp=Z,1μm						
COEN	**Coen**	**8.60**	**212**	P	**Pn**	**18 31 04.0**	**-0.6**
	baz=8.7,SNR=14						
COEN	**Coen**	**8.60**	**212**	*e*Pn	**Pn**	**18 31 03.8**	**-0.7**
GENI	**Geneyem**	**8.60**	**297**	P	**Pn**	**18 31 06.3**	**+1.7**
	comp=Z,197nm,1.0s,comp=Z,3μm						
MTSU	**Mount Surprise**	**11.94**	**196**	P	**Pn**	**18 31 50.4**	**+0.1**
	baz=12,SNR=15						
HNR	**Honiara**	**12.34**	**104**	P	**Pn**	**18 31 55.2**	**-0.6**
	baz=185,slow=3.2,SNR=9.2						
HNR	**Honiara**	**12.34**	**104**	*e*P	**Pn**	**18 31 54.0**	**-1.8**
CTA	**Charters Tower**	**13.47**	**186**	P	**Pn**	**18 32 11.9**	**+0.7**
	comp=Z,0.7nm,0.3s,baz=7.0,slow=15,SNR=11						
CTA				LR	LR	18 37 21.0	
	comp=Z,3μm,20.1s,baz=8.5,slow=37						
CTAO	**Charters Tower**	**13.47**	**186**	*e*P	**Pn**	**18 32 11.8**	**+0.6**
CTAO	**Charters Tower**	**13.47**	**186**	*e*Pn	**Pn**	**18 32 11.8**	**+0.6**
FAKI	**Fak Fak**	**15.93**	**283**	P	**P**	**18 32 45.9**	**-0.6**
FAKI	**Fak Fak**	**15.93**	**283**	*e*P	**P**	**18 32 46.8**	**+0.3**
QIS	**Mount Isa**	**15.97**	**209**	P	**Pn**	**18 32 43.6**	**-0.6**
	baz=16,SNR=12						
KDU	**Kakadu**	**16.27**	**247**	P	**P**	**18 32 50.2**	**+0.1**
	baz=16,SNR=4.6						
SAUI	**Saumlaki**	**16.43**	**264**	P	**P**	**18 32 52.4**	**+0.4**
PATS	**Pohnpei**	**16.99**	**38**	*e*P	**P**	**18

comp=Z,37nm,0.7s
KMBL Kambalda 34.55 221 P P 18 35 45.6 -1.0
baz=35,SNR=9.7
PCJI Pacitan 36.35 265 P P 18 36 04.8 +2.6
SBUM Sibu 36.65 283 ||P P 18 36 06.3 +1.5
SBUM Sibu 36.65 283 eP P 18 36 05.6 +0.9
comp=Z,21nm,1.3s
MORW Morawa 37.37 229 P P 18 36 10.6 0.0
baz=38,SNR=15
KLBR Kellerberrin 37.48 225 P P 18 36 10.9 -0.7
baz=38,SNR=26
BLDU Ballidu 37.68 227 P P 18 36 13.1 -0.2
baz=38,SNR=9.1
KSM Kuching 38.28 281 eP P 18 36 19.5 +0.9
comp=Z,19nm,0.9s
NWAO Narrogin (SRO) 38.62 223 P P 18 36 19.4 -1.8
comp=Z,26nm,1.1s,baz=279,slow=8.5,SNR=7.4
NWAO Narrogin (SRO) 38.62 223 P P 18 36 21.1 0.0
baz=39,SNR=5.4
NWAO Narrogin (SRO) 38.62 223 eP P 18 36 20.4 -0.8
NWAO pmax pmax
comp=Z,148nm,1.9s
NWAO Narrogin (SRO) 38.62 223 eP P 18 36 20.4 -0.8
comp=Z,148nm,1.9s
CMJI Cimerak 39.05 266 P P 18 36 31.5 +6.4
CISI Cisompet, Garu 39.69 266 eP P 18 36 28.6 -1.8
comp=Z,56nm,0.7s
RKGY Rocky Gully 39.79 221 P P 18 36 30.5 -0.4
baz=40,SNR=5.4
LEM Lembang 39.90 267 P P 18 36 37.9 +5.5
comp=Z,39nm,0.9s,baz=42,slow=5.1,SNR=7.5
CNJI Cibinong 40.37 267 P P 18 36 36.7 +0.7
comp=Z,174nm,1.2s,comp=Z,2µm
AFI Afiamalu 40.38 104 P P 18 36 35.9 -0.2
comp=Z,78nm,1.0s,baz=73,slow=4.9,SNR=6.7
CGJI Cibinong 41.82 267 P P 18 36 51.8 +3.9
comp=Z,67nm,1.4s,comp=Z,1µm
RPZ Rata Peaks 42.21 155 P P 18 36 50.1 -0.5
comp=Z,25nm,1.0s,baz=275,slow=4.4,SNR=6.1
RPZ LR LR 18 54 23.3
comp=Z,1µm,18.2s,baz=327,slow=36
JNU Nakatsue 42.67 339 P P 18 36 53.9 -0.7
comp=Z,8.8nm,1.0s,baz=65,slow=4.0,SNR=4.5
JNU LR LR 18 51 19.9
comp=Z,894nm,21.7s,baz=146,slow=31
JNU Nakatsue 42.67 339 eP P 18 36 54.3 -0.2
comp=Z,16nm,1.1s
KASI Kota Agung 43.07 269 P P 18 37 05.3 +7.2
TPRI Tanjung Pinang 43.84 278 P P 18 37 05.8 +1.5
comp=Z,39nm,0.9s,comp=Z,1µm
MJAR Matsushiro Arr 43.87 349 P P 18 37 03.0 -1.2
comp=Z,13nm,1.1s,baz=173,slow=8.0,SNR=27
MAJO Matsushiro 43.87 349 eP P 18 37 03.5 -0.7
MAJO pmax pmax
comp=Z,37nm,1.3s
MAJO Matsushiro 43.87 349 eP P 18 37 03.5 -0.7
comp=Z,37nm,1.3s
MAT Matsushiro 43.87 349 P P 18 37 03.2 -1.0
MAT S S 18 43 45.0 +13
MJB9 Matsu-Tunnel 43.88 349 eP P 18 37 03.5 -0.7
comp=Z,9.3nm,1.3s
MYKOM Kota Tinggi 44.66 279 eP P 18 37 10.7 -0.2
comp=Z,24nm,0.9s
KGM Kluang 45.23 279 ||P P 18 37 16.7 +1.3
KTGM Kuala Trenggan 46.14 284 ||P P 18 37 24.2 +1.6
KSRS Korea Array 47.62 339 P P 18 37 33.4 -0.3
comp=Z,4.6nm,0.9s,baz=154,slow=8.6,SNR=13
KSAR Wonju Array Be 47.62 338 P P 18 37 33.4 -0.3
KSAR Wonju Array Be 47.62 338 P P 18 37 33.4 -0.3
KS01 Wonju Array Si 47.65 338 eP P 18 37 33.6 -0.4
PPI Padang Panjang 47.69 275 P P 18 37 35.0 +0.3
comp=Z,44nm,1.0s
IPM Ipoh 47.98 282 eP P 18 37 37.3 +0.3
comp=Z,24nm,0.8s
KULM Kulim 48.53 283 eP P 18 37 41.9 +0.6
comp=Z,19nm,0.8s
CHBT CHBT 49.12 293 P P 18 37 52.7 +7.1
comp=Z,18nm,0.9s
SKNT Sakolnakorn 49.26 299 P P 18 37 53.6 +6.9
comp=Z,20nm,0.8s
PSI Prapat 49.69 279 eP P 18 37 50.6 +0.4
PSI pmax pmax
comp=Z,35nm,1.1s
PSI Prapat 49.69 279 eP P 18 37 50.6 +0.4
comp=Z,35nm,1.1s
TSI Tuntungan 50.18 280 P P 18 38 04.1 +10
NONG Nongkai 50.44 300 P P 18 38 00.5 +4.9
comp=Z,94nm,0.7s
ASAJ Asahikawa 50.72 355 P P 18 37 57.3 0.0
comp=Z,24nm,1.2s,baz=214,slow=23,SNR=4.2
ASAJ Asahikawa 50.72 355 eP P 18 37 58.5 +1.2
comp=Z,29nm,1.2s
GSI Gunungsitoli 50.75 277 P P 18 37 58.5 +0.4
comp=Z,46nm,0.9s
GSI Gunungsitoli 50.75 277 eP P 18 37 58.2 +0.2
comp=Z,32nm,0.7s
KCSI Kotacane, Aceh 50.96 280 P P 18 38 06.1 +6.4
KUR Kuril'sk 51.62 0 i P P 18 38 03.9 -0.1
GYA Guiyang 51.69 311 P P 18 38 06.8 +1.7
GYA pP pP 18 38 20.6 +1.7
GYA sP sP 18 38 27.3 +2.5
GYA PP **PP 18 40 06.4 +3.2**
GYA ScP **ScP 18 43 10.3 -0.5**
GYA S **S 18 45 24.8 +1.5**
GYA sS sS 18 45 49.6 +3.1
GYA Guiyang 51.69 311 SS SS 18 48 59.0 -1.5
GYA pmax pmax
comp=Z,10.0nm,1.0s
GYA pmax pmax
comp=Z,120nm,5.9s
GYA LR LR
comp=N,460nm,19.6s
GYA LR LR
comp=E,380nm,20.3s
GYA LR LR
comp=Z,440nm,19.8s
MLSI Meulaboh, Aceh 52.44 281 P P 18 38 11.2 +0.5
comp=Z,85nm,1.2s
USRK Ussuriysk Ar. 52.56 346 P P 18 38 09.6 -1.4
comp=Z,3.5nm,0.8s,baz=163,slow=7.2,SNR=7.1
MDJ Mudanjiang 53.58 344 P P 18 38 19.0 +0.5
MDJ S **S 18 45 51.1 +3.0**
MDJ pmax pmax
comp=Z,7.0nm,1.3s
MDJ pmax pmax
comp=Z,280nm,11.9s
MDJ LR LR
comp=N,410nm,30.1s
MDJ LR LR
comp=E,690nm,27.9s
MDJ LR LR
comp=Z,350nm,27.2s
KMI Kunming 54.01 308 P P 18 38 25.8 +3.5
KMI pP pP 18 38 38.9 +2.6
KMI sP sP 18 38 44.5 +2.4
KMI pmax pmax
comp=Z,8.0nm,1.0s
KMI LR LR
comp=Z,400nm,19.8s
CN2 Changchun 54.11 340 eP P 18 38 25.1 +2.7
CN2 esP sP 18 38 48.0 +5.8
CN2 eS **S 18 45 57.3 +1.9**
CN2 pmax pmax
comp=Z,10.0nm,0.6s
CN2 pmax pmax
comp=Z,200nm,3.0s
CN2 LR LR
comp=N,800nm,20.0s
CN2 LR LR
comp=E,400nm,20.0s
CN2 LR LR
comp=Z,500nm,18.0s
CM01 Chiang Mai Arr 54.22 298 eP P 18 38 25.6 +1.9
CMAR Chiang Mai Arr 54.25 298 P P 18 38 24.2 +0.3
comp=Z,1.1nm,0.6s,baz=120,slow=5.8,SNR=12
CHTO Chiang Mai 54.38 299 eP P 18 38 27.1 +2.2
CHTO pmax pmax
comp=Z,6.0nm,1.0s
CHTO Chiang Mai 54.38 299 eP P 18 38 27.1 +2.2
comp=Z,6.4nm,1.0s
XAN Xi'an 54.67 320 P P 18 38 25.9 -0.9
XAN pmax pmax
comp=Z,8.0nm,0.9s
XAN pmax pmax
comp=Z,97nm,9.5s
CD2 Chengdu 56.28 314 P P 18 38 38.3 -0.1
CD2 pmax pmax
comp=Z,10.0nm,0.5s
KLR Kul'dur 57.36 348 P P 18 38 45.3 -0.4
comp=Z,7.8nm,1.0s,baz=152,slow=7.8,SNR=14
TYV Tymovskoe 57.43 356 eP P 18 38 45.5 -0.5
TYV pmax pmax
comp=Z,22nm,1.0s
HHC Hu-ho-hao-te 57.78 328 eP P 18 38 52.3 +3.4
HHC S **S 18 46 47.0 +2.5**
HHC pmax pmax
comp=Z,24nm,1.1s
HHC pmax pmax
comp=Z,150nm,6.7s
HHC LR LR
comp=N,260nm,15.8s
HHC LR LR
comp=E,480nm,16.0s
HHC LR LR
comp=Z,550nm,15.7s
LZH Lanzhou 59.20 319 eP P 18 39 00.6 +1.6
LZH pP pP 18 39 16.8 +3.7
LZH sP sP 18 39 23.0 +4.1
LZH PcP **PcP 18 39 45.9 -1.1**
LZH eS **S 18 47 02.8 -0.5**
LZH sS sS 18 47 29.6 +2.6
LZH Lanzhou 59.20 319 SS SS 18 51 02.1 +3.5
LZH pmax pmax
comp=Z,12nm,1.0s
LZH pmax pmax
comp=Z,180nm,5.5s
LZH LR LR
comp=N,1µm,16.9s
LZH LR LR
comp=E,680nm,17.7s
LZH LR LR
comp=Z,2µm,18.8s
NKL Nikolayevsk 59.85 355 eP P 18 39 03.0 +0.2
NKL pmax pmax
comp=Z,22nm,1.1s
PEA0 Petropavlovsk- 60.09 7 eP P 18 39 04.9 +0.4
PEA0B Petropavlovsk- 60.09 7 eP P 18 39 05.6 +1.0
comp=Z,63nm,1.3s
PETK Petropavlovsk- 60.09 7 P P 18 39 04.6 0.0
comp=Z,9.6nm,1.0s,baz=143,slow=4.9,SNR=9.9
PPT2 Papeete2 61.95 106 eS S 18 47 42.7 +3.8
comp=Z,954nm,29.5s
PPT2 eLR LR 18 57 42.5
comp=Z,348nm,21.2s
TIAR Tiarei 62.17 106 eP P 18 39 21.5 +2.1
comp=Z,23nm,1.2s
TBI Tubuai 62.39 113 eS S 18 47 47.7 +3.6
comp=Z,500nm,33.2s
TBI Tubuai 62.39 113 eLR LR 18 57 54.7
comp=Z,417nm,36.5s
SHL Shillong 63.03 303 eP P 18 39 25.0 -0.1
PMOR Pomariorio Ree 63.53 103 eP P 18 39 30.3 +1.9
comp=Z,110nm,1.3s
GTA Gaotai 63.73 320 eP P 18 39 29.8 +0.4
GTA pP pP 18 39 38.8 -4.9
GTA sP sP 18 39 43.0 -6.5
GTA PcP **PcP 18 40 05.3 +0.1**
GTA pmax pmax
comp=Z,4.0nm,1.3s
CASY Casey 64.88 196 eP P 18 39 36.5 +0.2
comp=Z,10nm,0.8s
ULN Ulaanbaatar 65.04 331 eP P 18 39 38.0 +0.2
ULN pmax pmax
comp=Z,8.0nm,1.0s
ULN Ulaanbaatar 65.04 331 eP P 18 39 38.0 +0.2
comp=Z,8.4nm,1.0s
LSA Lhasa 65.25 307 eP P 18 39 40.1 +0.1
LSA pmax pmax
comp=Z,4.0nm,0.9s
LSA Lhasa 65.25 307 eP P 18 39 40.1 +0.1
comp=Z,3.6nm,0.9s
CIT Chita 65.33 337 eP P 18 39 39.5 -0.1
CIT e 18 40 05.3
SONM Songino Array 65.33 331 P P 18 39 39.7 0.0
comp=Z,3.9nm,1.0s,baz=144,slow=6.1,SNR=18
SONA1 Songino Array 65.34 331 eP P 18 39 39.5 -0.3
MA2 Magadan 66.03 2 P P 18 39 43.3 -0.5
comp=Z,13nm,1.0s,baz=156,slow=6.2,SNR=7.0
ZAK Zakamensk 68.57 331 eP P 18 39 59.6 -0.6
ZAK pmax pmax
comp=Z,7.0nm,1.3s
TLY Talaya 69.27 332 i P P 18 40 04.1 -0.3
TLY pmax pmax
comp=Z,6.0nm,1.7s
SEY Seymchan 69.44 2 P P 18 40 04.7 -0.6
comp=Z,8.9nm,1.2s,baz=182,slow=5.6,SNR=5.7
SEY Seymchan 69.44 2 i P P 18 40 04.4 -0.8
BOD Bodaibo 69.82 342 eP P 18 40 05.0 -2.6
BOD pmax pmax
comp=Z,10.0nm,1.4s
YAK Yakutsk 69.87 351 P P 18 40 07.2 -0.6
comp=Z,0.5nm,0.3s,baz=196,slow=7.4,SNR=4.8
YAK Yakutsk 69.87 351 eP P 18 40 06.7 -1.2
YAK pmax pmax
comp=Z,21nm,1.3s
YAK pmax pmax
comp=N,13nm,1.5s
YAK pmax pmax
comp=E,2.0nm,1.4s
YAK Yakutsk 69.87 351 eP P 18 40 07.6 -0.3
comp=E,27nm,1.2s
MIR Mirnyy 70.48 200 i P P 18 40 12.0 +0.4
MIR pmax pmax
comp=Z,4.0nm,1.0s
MOY Mondy 70.50 331 eP P 18 40 12.1 0.0
VNDA Vanda 71.25 177 P P 18 40 16.3 +0.2
comp=Z,9.2nm,0.9s,baz=322,slow=6.6,SNR=30
VNDA Vanda 71.25 177 eP P 18 40 16.7 +0.6
VNDA pmax pmax
comp=Z,14nm,0.8s
VNDA Vanda 71.25 177 eP P 18 40 16.7 +0.6
comp=Z,14nm,0.8s
SBA Scott Base 71.88 176 eP P 18 40 21.6 +1.7
SBA pmax pmax
comp=Z,15nm,1.1s
SBA Scott Base 71.88 176 eP P 18 40 21.6 +1.7
comp=Z,15nm,1.1s
HYB Hyderabad 72.43 291 i P P 18 40 25.0 +0.7
WMQ Urumqi 73.78 319 eP P 18 40 33.3 +1.4
WMQ pmax pmax
comp=Z,5.0nm,0.6s
WMQ pmax pmax
comp=Z,48nm,8.4s
WMQ LR LR
comp=N,84nm,21.2s
WMQ LR LR
comp=E,69nm,32.8s
WMQ LR LR
comp=Z,61nm,25.8s
BILL Bilibino 75.62 7 i P P 18 40 41.4 -0.5
BILL i 18 40 57.3
BILL pmax pmax
comp=Z,4.0nm,1.0s
BILL Bilibino 75.62 7 eP P 18 40 41.6 -0.3
comp=Z,5.8nm,1.3s
RKT Rikitea 75.70 112 eLR LR 19 04 10.0
comp=Z,679nm,21.8s
MK01 Makanchi Array 78.47 320 eP P 18 40 57.5 -0.9
MK31 Makanchi Array 78.48 320 eP P 18 40 58.1 -0.4
MK31 Makanchi Array 78.48 320 eP P 18 40 58.1 -0.4
MKAR Makanchi Array 78.48 320 P P 18 40 57.6 -0.9
comp=Z,1.3nm,0.7s,baz=100,slow=6.7,SNR=20
MKAR Makanchi Array 78.48 320 ceP P 18 40 58.0 -0.5
MKAR pmax pmax
comp=Z,1.0nm,0.6s
MAKZ Makanchi 78.69 320 eP P 18 40 59.1 -0.5
MAKZ pmax pmax
comp=Z,14nm,1.4s
MAKZ Makanchi 78.69 320 eP P 18 40 59.1 -0.5
comp=Z,14nm,1.4s
TIXI Tiksi 79.11 354 P P 18 40 59.5 -1.8
comp=Z,4.6nm,1.0s,baz=145,slow=3.3
TIXI Tiksi 79.11 354 i P P 18 40 59.2 -2.1
TIXI pmax pmax
comp=Z,7.0nm,1.2s
TIXI Tiksi 79.11 354 eP P 18 40 58.6 -2.6
comp=Z,6.4nm,1.1s
ZAA0 Zalesovo Array 79.96 328 eP P 18 41 05.0 -1.3
ZALV Zalesovo Beam 79.96 328 P P 18 41 04.6 -1.7
comp=Z,3.3nm,0.8s,baz=108,slow=4.8,SNR=15
ZALV Zalesovo Beam 79.96 328 i P P 18 41 05.5 -0.8
ZALV pmax pmax
comp=Z,3.0nm,0.8s
KSH Kashi 80.39 312 P P 18 41 10.8 +1.7
KSH eP pP 18 41 28.5 +4.7
KSH eS P sP 18 41 34.9 +5.4
KSH Kashi 80.39 312 S S 18 51 12.4 +0.8
KSH Kashi 80.39 312 SKS SKSac 18 51 19.3 -3.8
KSH pmax pmax
comp=Z,160nm,5.5s
KSH LR LR
comp=N,280nm,8.2s
KSH LR LR
comp=E,210nm,8.7s
KSH LR LR
comp=Z,200nm,9.8s
NVS Novosibirsk 81.18 328 eP P 18 41 09.0 -3.8
NVS eS **S 18 51 19.0 +0.1**
NVS pmax pmax
comp=Z,10.0nm,1.2s
NVS smax smax
comp=E,54nm,2.5s
TKM2 Tokmak 2 81.65 315 eP P 18 41 16.2 +0.3
TKM2 pmax pmax
comp=Z,6.0nm,1.1s
TKM2 Tokmak 2 81.65 315 eP P 18 41 16.2 +0.3
comp=Z,5.5nm,1.1s
MAW Mawson 81.99 203 P P 18 41 16.8 -0.1
comp=Z,4.7nm,1.0s,baz=76,slow=8.4,SNR=4.0
KURK Kurchatov 82.19 323 eP P 18 41 17.1 -1.1
KURK pmax pmax
comp=Z,14nm,1.3s
KURK Kurchatov 82.19 323 eP P 18 41 17.1 -1.1
comp=Z,14nm,1.3s
EKS2 Erkin-Say 82.86 314 eP P 18 41 22.9 +0.8
EKS2 pmax pmax
comp=Z,9.0nm,1.1s
EKS2 Erkin-Say 82.86 314 eP P 18 41 22.9 +0.8
comp=Z,8.7nm,1.1s
CAST Castle Rocks 83.09 23 eP P 18 41 21.3 -1.3
comp=Z,8.7nm,1.2s
QSPA South Pole Qui 83.35 180 eP P 18 41 23.8 -0.4
comp=Z,99nm,1.0s
KTH Kantishna Hill 83.61 23 eP P 18 41 24.0 -1.4
comp=Z,12nm,1.2s
SML Sawmill 83.86 25 eP P 18 41 26.2 -0.5
SML pmax pmax
comp=Z,19nm,1.1s
SML Sawmill 83.86 25 eP P 18 41 26.2 -0.5
comp=Z,19nm,1.1s
SCM Sheep Creek Mo 84.30 26 eP P 18 41 28.7 -0.3
SCM pmax pmax
comp=Z,21nm,1.1s
SCM Sheep Creek Mo 84.30 26 eP P 18 41 28.7 -0.3
comp=Z,21nm,1.1s
RND Reindeer 84.36 24 eP P 18 41 27.6 -1.7
RND pmax pmax
comp=Z,10.0nm,1.0s
RND Reindeer 84.36 24 eP P 18 41 27.6 -1.7
comp=Z,10nm,1.0s
MLY Manley 84.39 22 eP P 18 41 28.4 -0.9
comp=Z,6.9nm,1.0s
MCK McKinley 84.47 24 eP P 18 41 28.2 -1.6
MCK pmax pmax
comp=Z,16nm,1.1s
MCK McKinley 84.47 24 eP P 18 41 28.2 -1.6
comp=Z,16nm,1.1s
DIV Divide 84.68 27 eP P 18 41 31.0 +0.1
comp=Z,16nm,1.1s
KLU Klutina 84.77 26 eP P 18 41 30.9 -0.5
comp=Z,14nm,1.1s
WRH Wood River Hil 85.14 23 eP P 18 41 31.2 -1.8
comp=Z,9.9nm,1.2s
KKAR Karatay Array 85.30 314 eP P 18 41 34.4 +0.1
KKAR Karatay Array 85.30 314 eP P 18 41 34.4 +0.1
CCB Clear Creek Bu 85.33 23 eP P 18 41 31.6 -2.4
comp=Z,12nm,1.3s
COLD Coldfoot 85.64 20 eP P 18 41 35.7 +0.3
comp=Z,6.9nm,1.2s
IL1 Eielson Array 85.74 23 eP P 18 41 33.0 -3.0
ILAR Eielson Array 85.74 23 P P 18 41 33.6 -2.4
comp=Z,3.8nm,0.9s,baz=258,slow=4.9,SNR=22
ILB Eielson Array 85.74 23 eP P 18 41 33.8 -2.3
NRIK Noril'sk 86.11 342 P P 18 41 37.1 -0.7
comp=Z,2.1nm,0.3s,baz=115,slow=6.4,SNR=10
BALM Baldy 86.19 27 eP P 18 41 38.0 -0.5
BALM Baldy 86.19 27 eP P 18 41 38.0 -0.5
DOT Dot Lake 86.41 25 eP P 18 41 39.0 -0.4
comp=Z,28nm,1.0s
FYU Fort Yukon 87.11 22 eP P 18 41 42.9 +0.2
BRVK Borovoye 87.81 324 i P P 18 41 44.9 -1.5
BRVK pmax pmax
comp=Z,8.0nm,1.2s
BRVK Borovoye 87.81 324 eP P 18 41 45.1 -1.3
comp=Z,5.3nm,0.8s
EGAK Eagle 88.00 24 eP P 18 41 47.0 -0.1
comp=Z,10nm,1.2s
DAWY Dawson 88.50 25 eP P 18 41 49.5 0.0
SYO Syowa Base 90.29 200 ||eP P 18 41 55.2 -2.5
INK Inuvik 91.94 21 eP P 18 42 04.4 -0.9
INK Inuvik 91.94 21 eP P 18 42 04.4 -0.9
ABKAR Akbulak array 93.57 319 eP P 18 42 11.3 -2.0
comp=Z,0.7nm,0.3s
GEYT Alibeck 93.78 308 P P 18 42 13.4 -1.2
comp=Z,3.7nm,1.1s,baz=132,slow=2.2,SNR=6.9
ARU Arti 95.05 326 c i P P 18 42 17.8 -2.1
ARU 18 46 07.9
ARU S **SKSac 18 52 47.8 -3.5**
ARU pmax pmax
comp=Z,6.0nm,1.2s
NVAR Mina Array Bea 97.11 52 P Pdif 18 42 31.2 +1.0
comp=Z,0.7nm,0.5s,baz=274,slow=4.2,SNR=5.4
YKA Yellowknife Ar 99.34 28 P Pdif 18 42 38.4 -0.7
comp=Z,1.1nm,1.0s,baz=278,slow=4.2,SNR=7.9
PDAR Pinedale Array 103.74 48 Pdiff **Pdif 18 42 58.8 -0.7**
comp=Z,0.6nm,0.9s,baz=204,slow=3.3,SNR=4.7
KLMR Klimovskoe 104.62 331 eP Pdif 18 42 59.4 -3.3
KLMR pmax pmax
comp=Z,11nm,1.4s
TXAR Lajitas Array 109.36 61 PKiKP **PKiKP 18 47 29.1 +0.9**
comp=Z,0.7nm,0.9s,baz=304,slow=2.7,SNR=5.5
ECSD EROS Data Cent 112.94 45 ePKiKP **PKiKP 18 47 34.0 -0.4**
F36A Milaca 114.52 42 P PKPdf 18 47 37.5 +0.2
baz=287
T38A Diamond 116.15 52 P PKPdf 18 47 40.7 0.0
baz=282
P38A Dawn 116.15 49 P PKPdf 18 47 40.7 +0.1
baz=284
X38A Whitesboro 116.18 55 P PKPdf 18 47 41.6 +0.8
baz=280
U38A Gravette 116.20 53 P PKPdf 18 47 41.2 +0.3
baz=282
Q39A Willow Grove F 116.71 50 P PKPdf 18 47 41.9 +0.1
baz=284
S39A Bolivar 116.76 51 P PKPdf 18 47 42.0 +0.1
baz=283
X39A Fountain Ranch 116.79 55 P PKPdf 18 47 42.8 +0.7
baz=281
R39A Chumby, Stover 116.84 50 P PKPdf 18 47 41.8 -0.2
baz=284
T39A Clever 116.87 52 P PKPdf 18 47 42.5 +0.4
baz=283
V39A Pettigrew 116.91 53 P PKPdf 18 47 42.5 +0.2
baz=282
U39A Green Forest 116.92 53 P PKPdf 18 47 42.1 -0.2
baz=282
Q40A Laux Farm, Aux 117.40 49 P PKPdf 18 47 43.2 +0.1
baz=285
S40A Lebanon 117.42 51 P PKPdf 18 47 43.2 +0.1
baz=284
U40A Yellville 117.42 52 P PKPdf 18 47 43.4 +0.2
baz=283
R40A Maddies Statio 117.43 50 P PKPdf 18 47 43.3 +0.2
baz=284
V40A Witts Springs 117.57 53 P PKPdf 18 47 43.5 0.0
baz=282
V41A Mountainview 118.10 53 P PKPdf 18 47 44.7 +0.1
baz=283
T41A Mountain View 118.12 51 P PKPdf 18 47 44.6 +0.1
baz=284
W41B Gary Mavity, V 118.16 54 P PKPdf 18 47 44.9 +0.3
baz=282
V42A Cord 118.70 53 P PKPdf 18 47 45.4 -0.3
baz=283
KRLC Kraliky 120.51 326 ePKPdf **PKPdf 18 47 50.1 +1.3**
KRLC Kraliky 120.51 326 ePKIKP **PKPdf 18 47 50.1 +1.3**
PLCA Paso Flores 121.17 147 PKP **PKPdf 18 47 51.0 +0.6**
comp=Z,2.4nm,0.8s,baz=208,slow=11,SNR=4.9
BRG Berggiesshubel 121.65 328 ePKP **PKPdf 18 47 51.8 +0.9**

comp=Z,5.8nm,1.0s
BRG Berggiesshubel 121.65 328 *e*PKIKP **PKPdf 18 47 51.8 +0.9**
BRG pmax pmax
comp=Z,6.0nm,1.0s
CLL Collm 121.91 328 ⇓*i*PKPdf **PKPdf 18 47 52.1 +0.8**
comp=Z,6.0nm,1.0s
CLL *e* 18 48 03.0
CLL *e*PP **PP 18 49 21.0 -4.2**
CLL LmV 19 43 00.0
comp=Z,500nm,21.8s
CLL Collm 121.91 328 ⇓*i*PKIKP **PKPdf 18 47 52.1 +0.8**
CLL *e* 18 48 03.0
CLL pmax pmax
comp=Z,6.0nm,1.0s
CLL MLR MLR
comp=Z,500nm,21.8s
CONA Conrad Observa 122.10 324 *i* PKiKP **PKiKP 18 47 53.1 +1.0**
KHC Kasperske Hory 122.79 326 *e*PKPdf **PKPdf 18 47 54.2 +1.0**
KHC *ex* x 18 47 59.4
KHC Kasperske Hory 122.79 326 *e*PKIKP **PKPdf 18 47 54.2 +1.0**
KHC *e* 18 47 59.4
KHC Kasperske Hory 122.79 326 *e*PKPdf **PKPdf 18 47 54.1 +0.9**
GERES GERESS Array B 122.87 326 PKP **PKPdf 18 47 53.2 -0.2**
comp=Z,2.2nm,0.8s,baz=45,slow=2.5,SNR=17
SOKA Soboth 123.20 323 *i* PKiKP **PKiKP 18 47 54.4 +0.1**
comp=Z,4.8nm,0.9s
KBA Koelnbreinsper 124.00 324 *i* PKiKP **PKiKP 18 47 56.0 0.0**
comp=Z,5.6nm,1.2s
ABTA Abfaltersbach 124.66 324 *i* PKiKP **PKPdf 18 47 56.8 -0.1**
comp=Z,7.4nm,1.0s
WTTA Wattenberg 124.89 325 *i* PKiKP **PKiKP 18 47 58.2 +0.4**
comp=Z,7.2nm,1.0s
MOTA Moosalm 125.15 325 *i* PKiKP **PKiKP 18 47 58.8 +0.5**
FETA Feichten 125.54 325 *i* PKiKP **PKPdf 18 47 58.8 +0.2**
comp=Z,7.6nm,1.0s
DAVA Damuels 125.87 326 *i* PKiKP **PKiKP 18 48 00.2 +0.5**
comp=Z,7.0nm,0.9s
SOLC Bahia Solano 135.08 88⇑*e*P **PKPdf 18 48 20.3 +2.8**
DBBC Dabeiba 136.31 87 *e*P **PKPdf 18 48 19.8 -0.1**
MOTC Monteria, Cord 136.88 84 *e*P **PKPdf 18 48 20.8 0.0**
HELC Santa Helena 136.94 88 *e*P **PKPdf 18 48 21.4 -0.1**
GUYC Guyana, Colomb 137.02 89 *e*P **PKPdf 18 48 20.8 -0.9**
TOLC Tolima 137.04 90 *e*P **PKPdf 18 48 21.9 +0.3**
SJCC San Jacinto, C 137.36 83 *e*P **PKPdf 18 48 21.9 +0.1**
NORC Norcasia 137.56 89 *e*P **PKPdf 18 48 21.9 -0.3**
LPAZ La Paz 137.78 123 PKP **PKPdf 18 48 22.9 -0.3**
comp=Z,4.5nm,1.0s,baz=26,slow=2.5,SNR=10
ROSC El Rosal 138.06 90 PKP **PKPdf 18 48 23.6 +0.1**
comp=Z,4.8nm,0.5s,baz=273,slow=7.5,SNR=5.4
VILC Villavicencio, 138.62 91 *e*P **PKPdf 18 48 23.4 -0.8**
CPUP Villa Florida 139.16 144 PKP **PKPdf 18 48 24.6 -0.1**
comp=Z,0.8nm,0.4s,baz=207,slow=6.8,SNR=2.4
OCAC Ocana 139.20 85 *e*P **PKPdf 18 48 22.4 -2.9**
RUSC La Rusia 139.36 89 *e*P PKPpre 18 48 13.6
GRMC Gramalote, San 139.70 86 *e*P PKPpre 18 48 19.3
CBRI Barrientos, No 139.71 86⇑*e*P PKPpre 18 48 19.3
PAMC Pamplona, Colo 139.80 86 *e*P PKPpre 18 48 18.8
URIC Uribia, Colomb 140.41 80 *e*P PKPpre 18 48 19.8
SDV Santo Domingo 141.86 84 *e*PKPpre PKPpre 18 48 26.7
SJG San Juan 144.99 68 *e*P PKPpre 18 48 18.8
SAML Samuel 145.46 116 *e*PKPdf **PKPdf 18 48 36.1 -0.1**
TORD Torodi Ar. Bea 146.02 284 PKPbc **PKPab 18 48 38.4 -0.2**
comp=Z,9.1nm,0.8s,baz=82,slow=2.8,SNR=50
PCM Pelee Case Pet 150.38 72 *e*P **PKPbc 18 48 49.8 +0.2**
CXM Morne La Croix 150.42 72 *e*P **PKPdf 18 48 45.8 +1.3**
FDF Fort de France 150.45 72 *e*P **PKPbc 18 48 51.5 +1.7**
TRMF Trois Ilets 150.59 72 *e*P **PKPbc 18 48 51.2 +1.2**
ZAM Aeronautique 150.60 72 *e*P **PKPbc 18 48 51.7 +1.7**
KIC Kosan Boka 152.72 271 *e*PKP1 **PKPbc 18 48 57.3 +2.3**
comp=Z,59nm,1.4s
DBIC Dimbokro 152.85 272 PKPbc **PKPbc 18 48 55.5 +0.2**
comp=Z,4.6nm,0.6s,baz=73,slow=3.9,SNR=8.6
LIC Lamto 153.00 271 *e*PKP1 **PKPbc 18 48 56.5 +0.9**
TIC Toumodi 153.01 272 *e*PKP1 **PKPbc 18 48 56.1 +0.4**

IDC 18 18:30:17.8±2.0, 6°.19S×147°.55E, h0km, mb4.3/3, mb1 4.5/6, mb1mx3.9/46, mbtmp4.4/6, Error ellipse: s-maj=62.1km s-min=24.5km az=99.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**3.22**	**187**	Pn	Pn	18 31 08.9	-0.7
	baz=103,slow=18,SNR=1.6						
PMG				Sn	Sn	18 31 46.1	-2.7
	baz=3.8,slow=19,SNR=1.3						
CTA	**Charters Tower**	**13.87**	**185**	Pn	Pn	18 33 34.5	-1.3
	baz=54,slow=12,SNR=1.4						
WRA	**Warramunga Arr**	**18.75**	**222**	P	P	18 34 38.1	-0.4
	baz=47,slow=12,SNR=2.2						
ASAR	**Alice Springs**	**21.77**	**216**	P	P	18 35 10.9	-0.5
	6.2nm,0.7s,baz=42,slow=11,SNR=1.7						
FITZ	**Fitzroy Crossi**	**24.43**	**239**	P	P	18 35 39.4	+0.9
	17nm,0.6s,baz=45,slow=6.1,SNR=4.5						
MKAR	**Makanchi Array**	**77.99**	**320**	P	P	18 42 16.6	-1.6
	1.1nm,0.7s,baz=101,slow=7.5,SNR=2.6						
GERES	**GERESS Array B**	**122.37**	**326**	PKP	PKPdf	18 49 16.9	+1.6
	0.5nm,0.5s,baz=96,slow=2.0,SNR=3.7						
TORD	**Torodi Ar. Bea**	**145.66**	**284**	PKPbc	PKPab	18 49 59.8	-0.1
	3.7nm,0.7s,baz=66,slow=3.4,SNR=4.8						

IDC 18 18:39:37.9±4.5, 36°.19N×143°.45E, h0km, mb3.5/2, mb1 3.7/4, mb1mx3.2/50, mbtmp3.6/4, ML3.3/2, Error ellipse: s-maj=86.9km s-min=33.7km az=25.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**4.25**	**276**	Pn	Pn	18 40 43.1	-0.7
	1.3nm,0.3s,baz=89,slow=15,SNR=15						
MJAR				Sn	Sn	18 41 36.0	+1.8
	0.7nm,0.3s,baz=72,slow=23,SNR=3.8						
JHJ	**Hachijo jima 2**	**4.31**	**226**	Pn	Pn	18 40 44.1	-0.5
	6.9nm,0.3s,baz=90,slow=20,SNR=3.5						
JHJ				Sn	Sb	18 41 46.1	-0.9
	2.3nm,0.3s,baz=78,slow=18,SNR=1.9						
WRA	**Warramunga Arr**	**56.49**	**190**	P	P	18 49 21.4	-0.4
	0.5nm,0.5s,baz=12,slow=7.6,SNR=4.6						
ASAR	**Alice Springs**	**60.21**	**190**	P	P	18 49 48.0	+0.2
	0.3nm,0.6s,baz=7.5,slow=7.8,SNR=3.6						

IDC 18 18:42:43.3±2.9, 6°.54S×147°.71E, h0km, mb3.7/2, mb1 3.8/4, mb1mx3.5/33, mbtmp3.6/4, ML3.5/1, MS2.7/1, Ms1 2.7/1, ms1mx2.6/34, Error ellipse: s-maj=66.9km s-min=37.9km az=102.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.91**	**191**	Pn	Pn	18 43 32.3	+1.5
	3.9nm,0.3s,baz=10,slow=8.8,SNR=11						
PMG				Sn	Sb	18 44 13.1	+0.9
	4.8nm,0.3s,baz=75,slow=20,SNR=6.1						
JAY	**Jayapura**	**8.05**	**299**	LR	LR	18 47 54.6	
	comp=Z,55nm,21.4s,baz=6.0,slow=39						
WRA	**Warramunga Arr**	**18.61**	**223**	P	P	18 47 02.3	-0.1
	0.1nm,0.3s,baz=50,slow=11,SNR=8.6						
ASAR	**Alice Springs**	**21.60**	**216**	P	P	18 47 34.4	-0.6
	0.5nm,0.5s,baz=51,slow=9.0,SNR=21						
FITZ	**Fitzroy Crossi**	**24.40**	**240**	P	P	18 48 03.4	-0.3
	4.4nm,0.6s,baz=57,slow=9.2,SNR=24						
TORD	**Torodi Ar. Bea**	**145.91**	**284**	PKPbc	PKPdf	19 02 25.2	-0.1
	0.3nm,0.5s,baz=86,slow=4.6,SNR=4.1						

IDC 18 18:49:15.0±1.4, 0°.08N×125°.37E, h0km, mb3.6/4, mb1 3.8/5, mb1mx3.5/33, mbtmp3.7/5, ML3.7/1, Error ellipse: s-maj=52.6km s-min=22.1km az=64.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAPI	**Kappang**	**7.55**	**228**	Pn	Pn	18 51 05.2	-1.2
	1.1nm,0.3s,baz=68,slow=5.4,SNR=5.1						
KAPI				Sn	Sn	18 52 22.6	-10
	0.3nm,0.3s,baz=14,slow=23,SNR=2.9						
WRA	**Warramunga Arr**	**21.75**	**157**	P	P	18 54 07.9	-0.4
	0.7nm,0.6s,baz=339,slow=9.9,SNR=12						
ASAR	**Alice Springs**	**25.02**	**161**	P	P	18 54 41.2	+0.3
	0.4nm,0.4s,baz=336,slow=9.4,SNR=9.0						
STKA	**Stephens Creek**	**35.30**	**156**	P	P	18 56 12.3	+0.4
	0.7nm,0.6s,baz=336,slow=10.0,SNR=3.6						
MKAR	**Makanchi Array**	**59.81**	**327**	P	P	18 59 22.1	-0.1
	0.8nm,0.4s,baz=127,slow=8.1,SNR=18						

MOS ***18*** *18:51:23.8±1.4, 6°.57S×147°.87E, h41km, mb5.3/30, MS5.4/11, Error ellipse: s-maj=8.4km s-min=5.7km az=104.0*
BJI ***18*** *18:51:23.9, 6°.58S×148°.26E, h60km, mb4.8/68, mB5.2/50, Ms5.4/71, Ms7 5.2/69*
ISCJB ***18*** *18:51:24.1±0.6, 6°.60S±0°.02×147°.99E±0°.03, h45km±5km, mb5.1/146, MS5.2/63, Error ellipse: s-maj=4.6km s-min=3.8km az=158.4*
IDC ***18*** *18:51:25.4±1.4, 6°.56S×147°.87E, h42km±12km, mb4.6/23, mb1 4.7/28, mb1mx4.6/38, mbtmp4.8/28, ML4.3/3, MS5.2/32, Ms1 5.2/32, ms1mx5.1/38, Error ellipse: s-maj=9.7km s-min=8.0km az=113.0*
NEIC ***18*** *18:51:26.6±0.6, 6°.63S×147°.89E, h53km±5km, mb5.2/61, Error ellipse: s-maj=4.7km s-min=4.0km az=74.0*
GCMT ***18*** *18:51:26.6±0.1, 6°.69S×147°.81E, h14km, MW5.5/114, Moment Tensor Solution. s114,c199; s112,c208; Duration: 1s3 Moment tensor: Scale 10^17^Nm; Mrr=1.08±.03; Mθθ0.06±.02; Mφφ1.02±.02; Mrθ-0.98±.06; Mθφ1.21±.02; Mφr0.51±.05; Best double couple: M0=1.94300×10^17^ NP1:φs68.00000°, δ60.00000°, λ-41.00000°. NP2:φs181.00000°, δ55.00000°, λ-143.00000°. Principal axes: T 1.8480, Plg3.0000°, Azm125.0000°; N 0.1880, Plg41.0000°, Azm218.0000°; P -2.0370, Plg49.0000°, Azm32.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
DJA ***18*** *18:51:34.2±0.6, 7°S±3°×14°8E±°, h94km±5km, M5.4/68, mb5.3/68, mB5.8/42, MLv5.5/1, Mw(mB)5.4/42*
ISC 18 18:51:26.4±0.4, 6°.65S±0°.03×147°.93E±0°.04, h49km±3km, h48km:pP-P, n374, σ1s74/413, mb5.1/145, MS5.2/64, 12C-10D, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.84**	**195**	P	Pn	18 52 09.6	+0.3
	108nm,0.3s,baz=13,slow=7.1,SNR=140						
PMG				S	Sn	18 52 44.0	+1.7
	98nm,0.3s,baz=10,slow=19,SNR=4.9						
PMG	**Port Moresby**	**2.84**	**195**	*i* P	Pn	18 52 09.7	+0.4
PMG				pmax	pmax		
	comp=Z,9μm,0.7s						
MANU	**Manus Island**	**4.61**	**353**	*e*Pn	Pn	18 52 34.2	+0.6
RABL	**Rabaul**	**4.88**	**60**	*e*Pn	Pn	18 52 37.1	-0.1
JAY	**Jayapura**	**8.29**	**299**	P	Pn	18 53 22.6	-1.5
	comp=Z,0.4nm,0.3s,baz=82,slow=21,SNR=17						
JAY				S	Sn	18 54 56.8	+0.4
	baz=270,slow=20,SNR=1.1						
JAY	**Jayapura**	**8.29**	**299**	P	Pn	18 53 29.5	+5.4
COEN	**Coen**	**8.63**	**212**	P	Pn	18 53 29.1	+0.3
	baz=8.6,SNR=23						
COEN	**Coen**	**8.63**	**212**	*e*Pn	Pn	18 53 29.0	+0.3
GENI	**Genyem**	**8.72**	**297**	P	Pn	18 53 31.3	+1.4
MTSU	**Mount Surprise**	**11.95**	**197**	P	Pn	18 54 14.6	+0.5
	baz=12,SNR=20						
HNR	**Honiara**	**12.22**	**104**	P	Pn	18 54 17.6	-0.3
	comp=Z,14nm,0.3s,baz=103,slow=22,SNR=13						
HNR	**Honiara**	**12.22**	**104**	*e*P	Pn	18 54 19.0	+1.1
HNR	**Honiara**	**12.22**	**104**	*e*P	Pn	18 54 19.6	+1.7
HNR	**Honiara**	**12.22**	**104**	*e*Pn	Pn	18 54 19.6	+1.7
CTA	**Charters Tower**	**13.46**	**187**	P	Pn	18 54 36.1	+1.3
	comp=Z,0.9nm,0.3s,baz=12,slow=14,SNR=9.9						
CTA				LR	LR	18 59 54.0	
	comp=Z,11μm,18.3s,baz=7.5,slow=38						
CTAO	**Charters Tower**	**13.46**	**187**	*e*P	Pn	18 54 32.5	-2.2
CTAO	**Charters Tower**	**13.46**	**187**	*e*Pn	Pn	18 54 32.5	-2.2
QIS	**Mount Isa**	**16.01**	**209**	P	Pn	18 55 08.4	+0.1
	baz=16,SNR=24						
FAKI	**Fak Fak**	**16.05**	**283**	P	P	18 55 14.4	+2.7
FAKI	**Fak Fak**	**16.05**	**283**	*e*Pn	Pn	18 55 09.8	+0.8
	comp=Z,401nm,1.3s						
KDU	**Kakadu**	**16.37**	**247**	P	P	18 55 14.4	-0.7
	baz=16,SNR=8.3						
PATS	**Pohnpei**	**16.94**	**38**	P	P	18 55 22.0	+0.6
	baz=17,SNR=4.7						
PATS	**Pohnpei**	**16.94**	**38**	*e*Pn	P	18 55 21.9	+0.5
	comp=Z,305nm,1.3s						
SIJI	**Sorong**	**17.58**	**288**	P	Pn	18 55 24.9	-3.2
	comp=Z,18nm,0.3s,baz=350,slow=0.9,SNR=3.1						
SIJI				S	Sn	18 58 41.6	-1.6
	comp=Z,16nm,0.3s,baz=0.0,slow=13,SNR=1.9						
SWI	**Sorong**	**17.59**	**288**	P	Pn	18 55 27.9	-0.3
	comp=Z,314nm,1.1s,comp=Z,4μm						
SWI	**Sorong**	**17.59**	**288**	P	Pn	18 55 27.8	-0.4
SWI				pmax	pmax		
	comp=Z,314nm,1.1s						
MTN	**Manton Dam**	**17.65**	**248**	P	Pn	18 55 28.9	0.0
	baz=18,SNR=15						
MTN	**Manton Dam**	**17.65**	**248**	*e*Pn	P	18 55 29.9	+0.5
	comp=Z,53nm,0.8s						
WRAB	**Tennant Creek**	**18.66**	**224**	*i* P	P	18 55 40.4	0.0
WRAB				pmax	pmax		
	comp=Z,336nm,2.5s						
WRAB	**Tennant Creek**	**18.66**	**224**	*e*P	P	18 55 39.2	-1.2
	comp=Z,152nm,1.2s						
WRA	**Warramunga Arr**	**18.67**	**224**	P	P	18 55 39.9	-0.7
	comp=Z,3.2nm,0.3s,baz=52,slow=10,SNR=50						
WRA				S	Sn	18 59 09.8	+0.4
	comp=Z,0.1nm,0.3s,baz=51,slow=24,SNR=3.5						
WRA				LR	LR	19 04 00.2	
	comp=Z,18μm,19.2s,baz=50,slow=40						
EIDS	**Eidsvold**	**18.86**	**171**	P	P	18 55 43.0	+0.4
	baz=19,SNR=10						
EIDS	**Eidsvold**	**18.86**	**171**	*e*P	P	18 55 42.2	-0.4
	comp=Z,292nm,1.8s						
RMQ	**Roma**	**19.74**	**178**	P	P	18 55 53.1	+0.9
	baz=20,SNR=30						
QLP	**Quilpie**	**20.13**	**190**	P	P	18 55 56.8	+0.4
	baz=20,SNR=50						
GUMO	**Guam**	**20.34**	**351**	P	P	18 55 58.8	+0.1
	comp=Z,100nm,0.7s,baz=131,slow=16,SNR=6.3						
GUMO				LR	LR	19 02 05.8	
	comp=Z,8μm,21.2s,baz=171,slow=32						
GUMO	**Guam**	**20.34**	**351**	*e*P	Pn	18 56 00.2	-0.9
GUMO				pmax	pmax		
	comp=Z,951nm,1.8s						
GUMO	**Guam**	**20.34**	**351**	*e*P	Pn	18 56 00.2	-0.9
	comp=Z,951nm,1.8s						
NLAI	**Namlea**	**21.02**	**278**	P	P	18 56 08.3	+2.1
	comp=Z,144nm,1.1s,comp=Z,3μm						
LBMI	**Labuha**	**21.23**	**286**	P	P	18 56 09.8	+1.3
	comp=Z,488nm,1.9s,comp=Z,13μm						
AS01	**Alice Springs**	**21.60**	**217**	*e*P	P	18 56 11.7	-0.6
AS31	**Alice Springs**	**21.63**	**217**	*e*P	P	18 56 11.9	-0.7
	comp=Z,33nm,0.9s						
ASAR	**Alice Springs**	**21.63**	**217**	P	P	18 56 12.4	-0.3
	comp=Z,35nm,0.7s,baz=52,slow=8.9,SNR=247						
ASAR				S	S	19 00 11.7	+1.9
	comp=Z,6.7nm,1.0s,baz=47,slow=18,SNR=3.3						
ASAR				LR	LR	19 05 22.0	
	comp=Z,12μm,18.8s,baz=42,slow=39						
SANI	**Sanana**	**22.34**	**281**	P	P	18 56 22.6	+2.2
DZM	**Mont Dzumac**	**23.55**	**132**	P	P	18 56 32.7	0.0
	comp=Z,22nm,1.0s,baz=320,slow=7.9,SNR=7.8						
DZM				LR	LR	19 03 12.0	
	comp=Z,8μm,20.7s,baz=322,slow=30						
SOEI	**Soe**	**23.61**	**261**	P	P	18 56 36.4	+3.0
SOEI	**Soe**	**23.61**	**261**	*e*P	P	18 56 33.1	-0.2
	comp=Z,154nm,0.8s						
ARMA	**Armidale**	**23.90**	**172**	P	P	18 56 35.5	-0.3
	baz=24,SNR=18						
ARMA	**Armidale**	**23.90**	**172**	*e*P	P	18 56 34.9	-0.9
	comp=Z,114nm,1.4s						
FITZ	**Fitzroy Crossi**	**24.53**	**240**	P	P	18 56 40.9	-0.7
	comp=Z,105nm,0.5s,baz=57,slow=8.4,SNR=301						
FITZ				S	S	19 00 56.7	-2.4
	comp=Z,5.0nm,0.9s,baz=71,slow=17,SNR=1.3						
FITZ				LR	LR	19 07 47.0	
	comp=Z,7μm,18.0s,baz=62,slow=40						
FITZ	**Fitzroy Crossi**	**24.53**	**240**	P	P	18 56 41.2	-0.4
	baz=25,SNR=520						
FITZ	**Fitzroy Crossi**	**24.53**	**240**	*e*P	P	18 56 41.1	-0.4
	comp=Z,612nm,1.6s						
FITZ				S	S	19 00 56.7	-2.4
CMSA	**Cobar Meteorol**	**24.85**	**185**	P	P	18 56 43.9	-0.4
	baz=25,SNR=18						
KDI	**Kendari**	**25.34**	**275**	P	P	18 56 51.5	+2.5
	comp=Z,52nm,1.0s,comp=Z,1μm						
MMRI	**Maumere**	**25.53**	**264**	P	P	18 56 51.0	+0.2
	comp=Z,215nm,0.6s,comp=Z,3μm						
MMRI	**Maumere**	**25.53**	**264**	*e*P	P	18 56 49.5	-1.3
	comp=Z,126nm,0.8s						
LUWI	**Luwuk**	**25.70**	**281**	P	P	18 56 53.8	+1.5
	comp=Z,564nm,1.1s,comp=Z,6μm						
LUWI	**Luwuk**	**25.70**	**281**	*e*P	P	18 56 52.6	+0.4
	comp=Z,525nm,1.0s						
STKA	**Stephens Creek**	**25.79**	**192**	P	P	18 56 52.2	-0.6
	comp=Z,21nm,0.7s,baz=3.8,slow=8.3,SNR=22						
STKA				S	S	19 01 17.7	-1.2
	comp=Z,7.1nm,1.1s,baz=204,slow=18,SNR=2.1						
STKA				LR	LR	19 07 46.3	
	comp=Z,8μm,19.1s,baz=7.2,slow=38						
STKA	**Stephens Creek**	**25.79**	**192**	P	P	18 56 52.5	-0.4
	baz=26,SNR=28						
STKA	**Stephens Creek**	**25.79**	**192**	*e*P	P	18 56 52.5	-0.4
STKA				S	S	19 01 17.7	-1.2
STKA				pmax	pmax		
	comp=Z,10.0nm,1.0s						
STKA	**Stephens Creek**	**25.79**	**192**	*e*P	P	18 56 52.5	-0.4
	comp=Z,9.9nm,1.0s						
STKA				S	S	19 01 17.7	-1.2
DAV	**Davao City (W)**	**26.13**	**301**	LR	LR	19 06 49.6	
	comp=Z,2μm,21.0s,baz=114,slow=36						
TARA	**Tarawa**	**26.19**	**73**	*e*P	P	18 56 56.0	-0.7
	comp=Z,151nm,1.3s						
WRKA	**Warakurna**	**26.21**	**224**	P	P	18 56 55.9	-1.0
	baz=26,SNR=237						
MGCD	**Mangrove Creek**	**26.59**	**174**	P	P	18 57 00.9	+0.7
	baz=27,SNR=8.6						
MRSI	**Marisa**	**26.88**	**284**	P	P	18 57 03.1	+0.2
	comp=Z,83nm,0.8s,comp=Z,2μm						
CTBH	**Cotabato--PC H**	**27.35**	**300**⇑*i*P	P	P	18 57 08.2	+1.1
WSI	**Waingapu**	**27.51**	**262**	P	P	18 57 09.0	+0.4
	comp=Z,340nm,1.8s,comp=Z,5μm						
YNG	**Young**	**27.52**	**179**	P	P	18 57 08.8	+0.4
	baz=28,SNR=30						
HTT	**Hallett**	**27.93**	**196**	P	P	18 57 13.3	+1.1
	baz=28,SNR=17						
KAPI	**Kappang**	**28.07**	**272**	P	P	18 57 14.0	+0.4
	comp=Z,7.4nm,0.7s,baz=96,slow=3.8,SNR=5.4						
KAPI				S	S	19 01 55.5	+0.1
	comp=Z,2.6nm,0.5s,baz=253,slow=20,SNR=1.9						
KAPI				LR	LR	19 10 50.4	
	comp=Z,5μm,21.1s,baz=110,slow=42						
KAPI	**Kappang**	**28.07**	**272**	*e*P	P	18 57 12.1	-1.5
	comp=Z,78nm,1.2s						
KAPI				S	S	19 01 55.5	+0.1
SPSI	**Sidrap Palu**	**28.16**	**274**	P	P	18 57 16.4	+2.0
TTSI	**Tana Toraja**	**28.23**	**276**	P	P	18 57 17.1	+2.1
BBOO	**Buckleboo**	**28.27**	**201**	P	P	18 57 15.9	+0.7
	baz=28,SNR=18						
BBOO	**Buckleboo**	**28.27**	**201**	*e*P	P	18 57 14.2	-1.0
	comp=Z,180nm,1.8s						
CAN	**Canberra**	**28.55**	**178**	*e*P	P	18 57 17.6	-0.1
CAN				pmax	pmax		
	comp=Z,53nm,1.4s						
CAN	**Canberra**	**28.55**	**178**	*e*P	P	18 57 17.6	-0.1
	comp=Z,53nm,1.4s						
CNB	**Canberra Magne**	**28.56**	**178**	P	P	18 57 17.9	+0.1
	baz=29,SNR=5.1						
PCI	**Palu**	**28.59**	**280**	P	P	18 57 20.4	+2.1
	comp=Z,108nm,1.4s,comp=Z,3μm						
PCI	**Palu**	**28.59**	**280**	P	P	18 57 20.4	+2.1
PCI				pmax	pmax		
	comp=Z,193nm,1.2s						
PLAI	**Plampang**	**29.95**	**264**	P	P	18 57 29.9	-0.4
	comp=Z,97nm,0.9s,comp=Z,1μm						
ARPS	**Mount Arapiles**	**30.49**	**190**	P	P	18 57 36.5	+1.7
	baz=30,SNR=6.4						
MBWA	**Marble Bar**	**30.86**	**239**	*e*P	P	18 57 37.9	-0.3
	comp=Z,252nm,0.8s						
MYLDM	**Lahad Datu**	**31.63**	**291**	*e*P	P	18 57 46.6	+1.4
TSM	**Tawau**	**31.91**	**289**	⇓*i*P	P	18 57 48.5	+0.9
SDKM	**Sandakan**	**33.01**	**291**	⇑P	P	18 57 58.1	+0.8
JAGI	**Jajag, Banyuwa**	**33.52**	**265**	P	P	18 57 59.8	-1.9
JAGI	**Jajag, Banyuwa**	**33.52**	**265**	*e*P	P	18 57 59.6	-2.1
	comp=Z,98nm,1.0s						
KDM	**Kudat**	**33.82**	**293**	⇓P	P	18 58 04.8	+0.5
CBIJ	**Chichi jima**	**34.00**	**351**	*e*P	P	18 58 04.6	-1.1
JCJ	**Chichijima**	**34.00**	**351**	LR	LR	19 09 55.5	
	comp=Z,3μm,21.4s,baz=160,slow=33						
KKM	**Kota Kinabalu**	**34.06**	**291**	*e*P	P	18 58 07.4	+0.9
	comp=Z,22nm,1.0s						
GMJI	**Gumukmas**	**34.22**	**265**	P	P	18 58 09.7	+1.9
KMBL	**Kambalda**	**34.61**	**221**	P	P	18 58 10.9	0.0
	baz=35,SNR=19						
PWJI	**Pagerwojo**	**35.84**	**266**	P	P	18 58 22.4	+0.6
	comp=Z,47nm,1.2s						
TAU	**Tasmania Unive**	**36.12**	**181**	*e*P	P	18 58 24.1	+0.4
TAU				pmax	pmax		
	comp=Z,152nm,2.0s						
TAU	**Tasmania Unive**	**36.12**	**181**	*e*P	P	18 58 24.1	+0.4
	comp=Z,152nm,2.0s						
BTM	**Bintulu**	**36.13**	**285**	⇑P	P	18 58 25.9	+1.6
GIRL	**Giralia**	**36.14**	**240**	P	P	18 58 25.1	+0.9
	baz=36,SNR=6.2						
PCJI	**Pacitan**	**36.46**	**265**	P	P	18 58 29.4	+2.3
	comp=Z,101nm,1.6s						
SBUM	**Sibu**	**36.77**	**283**	⇓P	P	18 58 30.6	+0.9
SBUM	**Sibu**	**36.77**	**283**	*e*P	P	18 58 30.7	+0.9
	comp=Z,53nm,1.2s						
OUZ	**Omahuta**	**36.96**	**144**	*e*P	P	18 58 31.8	+0.9
	comp=Z,162nm,1.9s						
STKI	**Sintang**	**36.97**	**279**	P	P	18 58 33.9	+2.5
	comp=Z,34nm,2.9s,comp=Z,2μm						
UGM	**Wanagama**	**37.11**	**266**	P	P	18 58 34.1	+1.5
UGM	**Wanagama**	**37.11**	**266**	*e*P	P	18 58 32.5	-0.2
	comp=Z,462nm,1.7s						
MORW	**Morawa**	**37.44**	**230**	P	P	18 58 35.3	+0.2
	baz=38,SNR=31						
KLBR	**Kellerberrin**	**37.55**	**225**	P	P	18 58 35.8	-0.3
	baz=38,SNR=22						
BLDU	**

	comp=Z,146nm,1.6s				
CGJI	**Cibinong**	**41.94 268**	P	**P**	**18 59 12.9 +0.1**
	comp=Z,117nm,1.0s,comp=Z,2μm				
RPZ	**Rata Peaks**	**42.13 155**	*e*P	**P**	**18 59 14.8 +0.9**
	comp=Z,129nm,1.6s				
QZH	**Quanzhou**	**42.45 319**	P	**P**	**18 59 16.8 +0.1**
QZH			S	**S**	**19 05 29.0 -6.3**
QZH			LR	LR	
	comp=Z,2μm,14.0s				
QZH			LR	LR	
	comp=Z,1μm,10.2s				
QZH			LR	LR	
	comp=Z,5μm,28.9s				
JNU	**Nakatsue**	**42.74 339**	LR	LR	19 15 46.2
	comp=Z,3μm,20.4s,baz=150,slow=34				
JNU	**Nakatsue**	**42.74 339**	*e*P	**P**	**18 59 20.2 +1.1**
INU	**Inuyama**	**43.02 347**	*e*P	**P**	**18 59 24.0 +2.8**
KASI	**Kota Agung**	**43.19 269**	P	**P**	**18 59 23.3 +0.3**
	comp=Z,80nm,0.9s				
LWLI	**Liwa**	**43.66 270**	P	**P**	**18 59 28.0 +1.1**
	comp=Z,82nm,1.0s				
MJAR	**Matsushiro Arr**	**43.92 349**	P	**P**	**18 59 26.8 -1.6**
	comp=Z,16nm,1.1s,baz=177,slow=7.4,SNR=20				
MJAR			S	**S**	**19 05 59.0 +2.4**
	comp=Z,0.4nm,0.6s,baz=191,slow=12,SNR=1.9				
MAJO	**Matsushiro**	**43.92 349**	*e*P	**P**	**18 59 27.5 -1.0**
MAJO	**Matsushiro**	**43.92 349**	*e*P	**P**	**18 59 27.5 -1.0**
MAT	**Matsushiro**	**43.92 349**	P	**P**	**18 59 26.6 -1.9**
MAT			S	**S**	**19 06 04.8 +8.2**
MJB9	**Matsu-Tunnel**	**43.92 349**	*e*P	**P**	**18 59 27.7 -0.9**
TPRI	**Tanjung Pinang**	**43.96 278**	P	**P**	**18 59 30.1 +0.9**
	comp=Z,99nm,0.8s,comp=Z,2μm				
MYKOM	**Kota Tinggi**	**44.79 279**	*e*P	**P**	**18 59 36.3 +0.5**
QIZ	**Qiongzhong**	**45.38 305**	P	**P**	**18 59 41.8 +1.4**
QIZ			S	**S**	**19 06 16.8 -1.5**
QIZ			pmax	pmax	
	comp=Z,6.0nm,1.1s				
QIZ			LR	LR	
	comp=Z,280nm,20.9s				
QIZ			LR	LR	
	comp=Z,600nm,17.7s				
SSE	**Sheshan**	**45.42 327**	P	**P**	**18 59 41.5 +1.0**
SSE			S	**S**	**19 06 20.8 +2.3**
SSE			sS	**sS**	**19 06 47.5 +7.0**
SSE			pmax	pmax	
	comp=Z,33nm,0.9s				
SSE			pmax	pmax	
	comp=Z,140nm,9.0s				
SSE			LR	LR	
	comp=Z,3μm,20.4s				
SSE			LR	LR	
	comp=Z,2μm,20.5s				
SSE			LR	LR	
	comp=Z,3μm,19.8s				
MASI	**Maura Aman, Be**	**45.64 272**	P	P	18 59 47.7 +5.1
BKNI	**Bangkinang**	**47.29 277**	P	**P**	**18 59 58.0 +2.5**
NJ2	**Nanjing**	**47.43 326**	*e*P	**P**	**18 59 56.0 -0.2**
NJ2			S	**S**	**19 06 43.4 -3.8**
NJ2			sS	**sS**	**19 07 10.4 +1.0**
NJ2			pmax	pmax	
	comp=Z,20nm,0.6s				
NJ2			LR	LR	
	comp=Z,4μm,20.6s				
NJ2			LR	LR	
	comp=Z,2μm,19.5s				
NJ2			LR	LR	
	comp=Z,3μm,18.4s				
KSRS	**Korea Array**	**47.69 338**	P	**P**	**18 59 56.9 -1.2**
	comp=Z,6.1nm,0.9s,baz=160,slow=8.6,SNR=11				
KSRS			LR	LR	19 18 35.9
	comp=Z,3μm,19.5s,baz=154,slow=34				
KSAR	**Wonju Array Be**	**47.69 338**	P	**P**	**18 59 56.9 -1.3**
KSAR	**Wonju Array Be**	**47.69 338**	P	**P**	**18 59 56.9 -1.3**
PPI	**Padang Panjang**	**47.81 275**	P	**P**	**18 59 59.2 -0.3**
	comp=Z,114nm,0.9s,comp=Z,1μm				
IPM	**Ipoh**	**48.10 282**	*e*P	**P**	**19 00 02.3 +0.5**
KULM	**Kulim**	**48.65 283**	*e*P	**P**	**19 00 06.2 +0.2**
PANO	**Nakornpanom**	**48.90 300**	P	**P**	**19 00 09.2 +1.3**
	comp=Z,183nm,1.4s,comp=Z,8μm				
WHN	**Wuhan**	**49.02 321**	P	**P**	**19 00 08.8 +0.3**
WHN			pP	**pP**	**19 00 19.3 -2.5**
WHN			S	**S**	**19 07 12.8 +3.1**
WHN			LR	LR	
	comp=Z,1μm,10.3s				
WHN			LR	LR	
	comp=Z,2μm,13.6s				
WHN			LR	LR	
	comp=Z,3μm,20.4s				
CHBT	**CHBT**	**49.24 293**	P	**P**	**19 00 12.1 +1.6**
	comp=Z,32nm,1.3s,comp=Z,1μm				
SKNT	**Sakolnakorn**	**49.38 299**	P	**P**	**19 00 12.3 +0.8**
	comp=Z,25nm,1.2s				
TRTT	**Trang**	**50.21 286**	P	**P**	**19 00 18.6 +0.7**
	comp=Z,37nm,1.8s,comp=Z,1μm				
TSI	**Tuntungan**	**50.30 280**	P	**P**	**19 00 19.5 +0.9**
	comp=Z,104nm,1.2s				
CHAI	**Chaiyaphum**	**50.70 297**	P	**P**	**19 00 23.8 +2.2**
	comp=Z,5.6nm,0.8s,comp=Z,76nm				
GSI	**Gunungsitoli**	**50.87 277**	P	**P**	**19 00 23.5 +0.6**
	comp=Z,98nm,0.8s				
KCSI	**Kotacane, Aceh**	**51.08 280**	P	**P**	**19 00 23.8 -0.7**
	comp=Z,68nm,0.8s,comp=Z,4μm				
SURT	**Suratani**	**51.36 287**	P	**P**	**19 00 27.4 +0.8**
	comp=Z,17nm,0.7s,comp=Z,301nm				
TIA	**Tai'an**	**51.51 328**	*e*P	**P**	**19 00 24.4 -2.9**
TIA			pmax	pmax	
	comp=Z,20nm,1.4s				
PKDT	**Phuket**	**51.52 286**	P	**P**	**19 00 31.5 +3.7**
	comp=Z,109nm,0.8s,comp=Z,1μm				
VLA	**Vladivostok**	**51.63 345** ⇓	*i*P	**P**	**19 00 24.5 -3.6**
VLA			*e**PP	**pP**	**19 00 38.2 -3.2**
VLA			*e**SP	**sP**	**19 00 43.9 -3.2**
VLA					19 01 38.4
VLA			*e*		19 02 22.0
VLA			*i* S	**S**	**19 07 40.2 -5.5**
VLA			pmax	pmax	
	comp=Z,14nm,0.7s				
PHET	**Kaeng Krachan**	**51.77 292**	P	**P**	**19 00 31.9 +2.3**
	comp=Z,11nm,0.9s,comp=Z,105nm				
GYA	**Guiyang**	**51.80 311** ⇑	*i*P	**P**	**19 00 32.0 +2.2**
GYA			pP	pP	19 00 47.6 +4.4
GYA			sP	sP	19 00 54.0 +5.2
GYA			PP	**PP**	**19 02 31.3 +3.2**
GYA			S	**S**	**19 07 49.4 +0.5**
GYA			pmax	pmax	
	comp=Z,30nm,0.8s				
GYA			pmax	pmax	
	comp=Z,150nm,6.2s				
GYA			LR	LR	
	comp=Z,860nm,19.2s				
GYA			LR	LR	
	comp=Z,730nm,20.3s				
GYA			LR	LR	
	comp=Z,840nm,19.6s				
PBKT	**Sadao Pong**	**51.86 297**	P	**P**	**19 00 32.0 +1.8**
	comp=Z,18nm,1.2s				
ENH	**Enshi**	**52.02 317**	*e*P	**P**	**19 00 29.7 -1.5**
	comp=Z,21nm,1.3s				
LHMI	**Lhok Sumawe**	**52.23 282**	P	**P**	**19 00 35.4 +2.3**
RAR	**Rarotonga**	**52.54 112**	LR	LR	19 19 30.1
	comp=Z,901nm,21.2s,baz=282,slow=32				
MLSI	**Meulaboh, Aceh**	**52.56 281**	P	**P**	**19 00 35.0 -0.5**
	comp=Z,173nm,0.8s				
USRK	**Ussuriysk Ar.**	**52.62 346**	P	**P**	**19 00 34.2 -1.2**
	comp=Z,5.1nm,0.7s,baz=186,slow=5.2,SNR=11				
USRK			LR	LR	19 21 10.2
	comp=Z,1μm,19.9s,baz=143,slow=34				
UTTA	**Uttaradit**	**52.68 298**	P	**P**	**19 00 37.7 +1.4**
	comp=Z,6.9nm,0.8s,comp=Z,61nm				
SRDT	**SRDT**	**52.72 294**	P	P	19 00 42.7 +6.1
	comp=Z,68nm,1.3s,comp=Z,2μm				
NANT	**Nan**	**52.97 299**	P	**P**	**19 00 40.0 +1.5**
	comp=Z,9.0nm,1.0s				
SNY	**Shenyang**	**53.13 337** ⇓	*i*P	**P**	**19 00 37.3 -1.9**
SNY			pP	**pP**	**19 00 53.3 +0.7**
SNY			S	**S**	**19 08 08.0 +1.7**
SNY			pmax	pmax	
	comp=Z,20nm,2.4s				
SNY			pmax	pmax	
	comp=Z,500nm,12.0s				
SNY			LR	LR	
	comp=Z,2μm,19.1s				
SNY			LR	LR	
	comp=Z,2μm,16.9s				
SNY			LR	LR	
	comp=Z,3μm,18.4s				
YSS	**Yuzh-Sakhalins**	**53.56 356**	*e*P	**P**	**19 00 40.2 -2.1**
MDJ	**Mudanjiang**	**53.64 344**	P	**P**	**19 00 45.4 +2.5**
MDJ			pP	pP	19 00 58.1 +1.8
MDJ			sP	sP	19 01 03.3 +1.4
MDJ			PcP	**PcP**	**19 01 49.8 +1.0**
MDJ			S	**S**	**19 08 16.8 +3.8**
MDJ			pmax	pmax	
	comp=Z,12nm,1.4s				
MDJ			pmax	pmax	
	comp=Z,230nm,8.3s				
MDJ			LR	LR	
	comp=Z,1μm,26.6s				
MDJ			LR	LR	
	comp=Z,2μm,27.7s				
MDJ			LR	LR	
	comp=Z,2μm,18.4s				
LAMP	**Lampang**	**53.79 299**	P	**P**	**19 00 46.8 +2.3**
	comp=Z,7.3nm,0.8s,comp=Z,81nm				
CRAI	**Chiangrai**	**53.84 301**	P	**P**	**19 00 46.3 +1.5**
	comp=Z,137nm,1.1s				
KMI	**Kunming**	**54.12 307**	P	**P**	**19 00 49.5 +2.4**
KMI			pP	sP	19 01 04.3 -1.8
KMI			sP	pP	19 01 10.4 +10
KMI			S	**S**	**19 08 25.3 +4.6**
KMI			pmax	pmax	
	comp=Z,12nm,1.4s				
KMI			pmax	pmax	
	comp=Z,210nm,9.0s				
KMI			LR	LR	
	comp=Z,1μm,20.2s				
KMI			LR	LR	
	comp=Z,860nm,20.2s				
KMI			LR	LR	
	comp=Z,1μm,26.1s				
CN2	**Changchun**	**54.18 340**	*e*P	**P**	**19 00 50.1 +3.3**
CN2			*es*P	sP	19 01 13.0 +7.1
CN2			*e*S	**S**	**19 08 22.3 +1.9**
CN2			pmax	pmax	
	comp=Z,10.0nm,0.6s				
CN2			LR	LR	
	comp=Z,2μm,18.0s				
CN2			LR	LR	
	comp=Z,1μm,18.0s				
CN2			LR	LR	
	comp=Z,2μm,21.0s				
CMAR	**Chiang Mai Arr**	**54.37 298**	P	**P**	**19 00 49.0 +0.3**
	comp=Z,7.6nm,1.0s,baz=120,slow=5.8,SNR=33				
CMAR			LR	LR	19 23 57.5
	comp=Z,643nm,20.7s,baz=100,slow=36				
CMAR	**Chiang Mai Arr**	**54.37 298**	P	**P**	**19 00 49.0 +0.3**
CMMT	**Chiang Mai**	**54.50 299**	P	**P**	**19 00 51.2 +1.5**
	comp=Z,14nm,1.1s,comp=Z,469nm				
CHTO	**Chiang Mai**	**54.50 299**	P	**P**	**19 00 51.3 +1.6**
	comp=Z,64nm,1.1s,comp=Z,2μm				
CHTO	**Chiang Mai**	**54.50 299**	*e*P	**P**	**19 00 50.4 +0.7**
CHTO			pmax	pmax	
	comp=Z,22nm,1.3s				
CHTO	**Chiang Mai**	**54.50 299**	*e*P	**P**	**19 00 50.4 +0.7**
	comp=Z,22nm,1.3s				
XAN	**Xi'an**	**54.77 320**	P	**P**	**19 00 49.4 -2.0**
XAN			pP	pP	19 01 05.3 +0.4
XAN			sP	sP	19 01 12.3 +1.8
XAN			PP	**PP**	**19 02 55.4 +0.8**
XAN			S	**S**	**19 08 28.4 -0.4**
XAN			sS	sS	19 08 55.4 +4.1
XAN			SS	**SS**	**19 12 13.4 +0.7**
XAN			pmax	pmax	
	comp=Z,14nm,1.5s				
XAN			LR	LR	
	comp=Z,1μm,22.1s				
XAN			LR	LR	
	comp=Z,1μm,18.4s				
XAN			LR	LR	
	comp=Z,1μm,20.2s				
CMAI	**Chiengmai2**	**54.86 300**	P	**P**	**19 00 55.0 +2.6**
	comp=Z,24nm,1.4s,comp=Z,3μm				
BJI	**Beijing**	**54.92 330**	P	**P**	**19 00 50.3 -1.9**
BJI			S	**S**	**19 08 33.5 +3.1**
BJI			pmax	pmax	
	comp=Z,19nm,2.0s				
BJI			LR	LR	
	comp=Z,3μm,20.6s				
BJI			LR	LR	
	comp=Z,2μm,18.6s				
BJI			LR	LR	
	comp=Z,3μm,23.4s				
CD2	**Chengdu**	**56.38 314**	P	**P**	**19 01 01.3 -1.8**
CD2			pP	pP	19 01 16.0 -0.6
CD2			sP	sP	19 01 22.5 +0.3
CD2			PP	**PP**	**19 03 07.5 -1.6**
CD2			S	**S**	**19 08 54.0 +3.5**
CD2			sS	sS	19 09 14.6 +1.5
CD2			SS	**SS**	**19 12 40.8 +2.5**
CD2			pmax	pmax	
	comp=Z,10.0nm,1.1s				
CD2			pmax	pmax	
	comp=Z,550nm,17.2s				
CD2			LR	LR	
	comp=Z,1μm,16.7s				
CD2			LR	LR	
	comp=Z,2μm,19.0s				
KLR	**Kul'dur**	**57.42 347**	*i* P	**P**	**19 01 09.3 -0.6**
TYV	**Tymovskoe**	**57.46 356**	*e*P	**P**	**19 01 10.5 +0.3**
TYV			pmax	pmax	
	comp=Z,26nm,1.0s				
HHC	**Hu-ho-hao-te**	**57.87 328**	*e*P	**P**	**19 01 15.8 +2.4**
HHC			PP	**PP**	**19 03 24.8 +2.6**
HHC			S	**S**	**19 09 08.8 -1.0**
HHC			pmax	pmax	
	comp=Z,23nm,1.1s				
HHC			pmax	pmax	
	comp=Z,400nm,6.4s				
HHC			LR	LR	
	comp=Z,990nm,16.3s				
HHC			LR	LR	
	comp=Z,2μm,16.5s				
HHC			LR	LR	
	comp=Z,2μm,21.0s				
LZH	**Lanzhou**	**59.30 319**	*e*P	**P**	**19 01 23.6 0.0**
LZH			pP	pP	19 01 39.3 +2.1
LZH			sP	sP	19 01 47.9 +5.1
LZH			PcP	**PcP**	**19 02 10.4 -0.9**
LZH			PP	**PP**	**19 03 35.3 +0.2**
LZH			*e*S	**S**	**19 09 27.0 -1.7**
LZH			sS	sS	19 09 55.1 +3.6
LZH			pmax	pmax	
	comp=Z,15nm,1.2s				
LZH			pmax	pmax	
	comp=Z,55nm,4.7s				
LZH			LR	LR	
	comp=Z,1μm,16.9s				
LZH			LR	LR	
	comp=Z,680nm,17.7s				
LZH			LR	LR	
	comp=Z,2μm,18.8s				
NKL	**Nikolayevsk**	**59.89 355**	*e*P	**P**	**19 01 26.0 -1.0**
NKL			pmax	pmax	
	comp=Z,22nm,1.0s				
NKL			MLR	MLR	
	comp=N,500nm,17.0s				
NKL			MLR	MLR	
	comp=Z,700nm,17.0s				
KIP	**Kipapa**	**59.90 61**	*ce*P	**P**	**19 01 27.1 -0.7**
KIP			pmax	pmax	
	comp=Z,273nm,1.7s				
PETK	**Petropavlovsk-**	**60.10 7**	P	**P**	**19 01 28.4 -0.1**
	comp=Z,13nm,0.8s,baz=152,slow=6.3,SNR=22				
PETK			LR	LR	19 25 09.0
	comp=Z,1μm,20.4s,baz=190,slow=34				
HIA	**Hailar**	**60.88 339**	*e*P	**P**	**19 01 33.5 -0.5**
HIA			pmax	pmax	
	comp=Z,24nm,1.0s				
HIA	**Hailar**	**60.88 339**	*e*P	**P**	**19 01 33.5 -0.5**
	comp=Z,24nm,1.0s				
PAE	**Paea**	**61.83 106**	*e*P	**P**	**19 01 44.7 +3.8**
	comp=Z,18nm,1.3s				
PPT	**Papeete**	**61.83 106**	P	**P**	**19 01 42.6 +1.6**
	comp=Z,17nm,0.5s,baz=253,slow=19,SNR=2.3				
PPT			LR	LR	19 23 34.0
	comp=Z,884nm,20.9s,baz=264,slow=31				
PPT2	**Papeete2**	**61.83 106**	*e*P	**P**	**19 01 45.2 +4.1**
	comp=Z,51nm,1.1s				
PPT2			*e*S	**S**	**19 10 02.6 +1.1**
	comp=Z,1μm,27.0s				
PPT2			*e*LQ	LQ	19 17 29.6
	comp=Z,1μm,26.2s				
PPT2			*e*LR	LR	19 20 47.2
	comp=Z,1μm,21.8s				
TBI	**Tubuai**	**62.27 113**	*e*S	**S**	**19 10 12.3 +5.5**
	comp=Z,1μm,33.8s				
TBI			*e*LQ	LQ	19 17 37.2
	comp=Z,827nm,27.8s				
TBI			*e*LR	LR	19 21 01.2
	comp=Z,2μm,36.0s				
SHL	**Shillong**	**63.14 303**	*e*P	**P**	**19 01 51.5 +1.7**
SHL			*e*S	**S**	**19 10 22.0 +4.1**
GTA	**Gaotai**	**63.83 320**	P	**P**	**19 01 53.8 -0.2**
GTA			pP	pP	19 02 11.5 +3.8
GTA			sP	sP	19 02 19.3 +6.0
GTA			S	**S**	**19 10 24.0 -1.9**
GTA			SS	**SS**	**19 14 35.8 +0.8**
GTA			pmax	pmax	
	comp=Z,11nm,2.1s				
GTA			pmax	pmax	
	comp=Z,190nm,7.1s				
GTA			LR	LR	
	comp=Z,1μm,19.0s				
GTA			LR	LR	
	comp=Z,530nm,18.5s				
GTA			LR	LR	
	comp=Z,780nm,20.9s				
CASY	**Casey**	**64.88 196**	*e*P	**P**	**19 02 00.6 +0.3**
	comp=Z,4.1nm,1.1s				
ULN	**Ulaanbaatar**	**65.12 331**	*e*P	**P**	**19 02 02.0 -0.3**
ULN			pmax	pmax	
	comp=Z,11nm,0.9s				
ULN	**Ulaanbaatar**	**65.12 331**	*e*P	**P**	**19 02 02.0 -0.3**
	comp=Z,11nm,0.9s				
LSA	**Lhasa**	**65.36 307**	*e*P	**P**	**19 02 04.1 -0.6**
LSA			pmax	pmax	
	comp=Z,13nm,1.0s				
LSA	**Lhasa**	**65.36 307**	*e*P	**P**	**19 02 04.1 -0.6**
	comp=Z,13nm,1.0s				
CIT	**Chita**	**65.41 337**	*e*P	**P**	**19 02 03.4 -0.5**
CIT			*e*		19 02 19.0
CIT			*e*		19 02 37.3
CIT			pmax	pmax	
	comp=Z,78nm,2.6s				
SONM	**Songino Array**	**65.42 331**	P	**P**	**19 02 03.3 -0.9**
	comp=Z,5.8nm,1.0s,baz=145,slow=5.4,SNR=13				
SONM			LR	LR	19 30 11.6
	comp=Z,3μm,19.9s,baz=134,slow=36				
PALK	**Pallekele**	**68.47 280**	*e*P	**P**	**19 02 24.8 +0.6**
PALK			pmax	pmax	
	comp=Z,15nm,0.9s				
PALK	**Pallekele**	**68.47 280**	*e*P	**P**	**19 02 24.8 +0.6**
	comp=Z,15nm,0.9s				
ZAK	**Zakamensk**	**68.65 331**	*e*P	**P**	**19 02 23.4 -1.2**
ZAK			pmax	pmax	
	comp=Z,12nm,1.7s				
PKIN	**Phulchoki**	**69.28 303**	*e*P	**P**	**19 02 29.6 +0.3**
	comp=Z,35nm,1.2s				
TLY	**Talaya**	**69.34 332**	*e*P	**P**	**19 02 28.6 -0.2**
TLY			pmax	pmax	
	comp=Z,20nm,1.9s				
TLY			MLR	MLR	
	comp=Z,684nm,16.0s				
IRK	**Irkutsk**	**69.44 333**	*e*P	**P**	**19 02 25.8 -3.6**
IRK			pmax	pmax	
	comp=Z,33nm,2.8s				
KKN	**Kakani**	**69.45 303**	*e*P	**P**	**19 02 31.0 +0.8**
	comp=Z,39nm,0.9s				
SEY	**Seymchan**	**69.47 2**	*i* P	**P**	**19 02 28.9 -0.4**
BOD	**Bodaibo**	**69.88 341**	*e*P	**P**	**19 02 29.6 -2.4**
BOD			pmax	pmax	
	comp=Z,12nm,2.5s				
YAK	**Yakutsk**	**69.92 351**	*e*P	**P**	**19 02 30.6 -1.5**
YAK			*e**PP	**pP**	**19 02 46.2 +0.2**
YAK			*e*		19 02 51.1
YAK			*e*		19 05 08.9
YAK			*e*PPP	PPP	19 06 48.0
YAK			*e*S	**S**	**19 11 40.9 +2.7**
YAK			*e**SS	**sS**	**19 12 05.0 +3.5**
YAK			pmax	pmax	
	comp=N,8.0nm,1.4s				
YAK			pmax	pmax	
	comp=E,4.0nm,1.3s				
YAK			pmax	pmax	
	comp=Z,16nm,1.3s				
YAK			pmax	pmax	
	comp=Z,15nm,0.5s				
YAK			smax	smax	
	comp=E,108nm,2.6s				
YAK			smax	smax	
	comp=N,141nm,4.1s				
GKN	**Gorkha**	**70.06 303**	*e*P	**P**	**19 02 34.4 +0.5**
	comp=N,20nm,0.7s				
MIR	**Mirnyy**	**70.49 200**	*i* P	**P**	**19 02 35.0 -0.6**
MIR			pmax	pmax	
	comp=Z,6.0nm,1.2s				
MOY	**Mondy**	**70.58 331**	*e*P	**P**	**19 02 35.9 -0.6**
MOY			pmax	pmax	
	comp=Z,54nm,2.5s				
KOLN	**Koldanda**	**70.85 302**	*e*P	**P**	**19 02 39.4 +0.6**
	comp=Z,15nm,0.4s				
TAOE	**Nuku Hiva Isla**	**71.21 97**	*e*S	**S**	**19 11 57.0 +1.7**
	comp=Z,489nm,24.5s				
TAOE	**Nuku Hiva Isla**	**71.21 97**	*e*LR	LR	19 24 32.6
	comp=Z,2μm,21.3s				
VNDA	**Vanda**	**71.22 177**	P	**P**	**19 02 40.4 +0.6**
	comp=Z,9.6nm,0.9s,baz=330,slow=6.4,SNR=35				
VNDA			LR	LR	19 33 13.6
	comp=Z,2μm,18.1s,baz=348,slow=35				
PYUN	**Piuthan**	**71.47 302**	*e*P	**P**	**19 02 42.7 +0.2**
	comp=Z,54nm,1.1s				
SBA	**Scott Base**	**71.85 176**	*e*P	**P**	**19 02 45.7 +2.1**
SBA			pmax	pmax	
	comp=Z,29nm,1.3s				
SBA	**Scott Base**	**71.85 176**	*e*P	**P**	**19 02 45.7 +2.1**
	comp=Z,29nm,1.3s				
HYB	**Hyderabad**	**72.55 291**	*i* P	**P**	**19 02 49.0 0.0**
WMQ	**Urumqi**	**73.88 319**	P	**P**	**19 02 55.6 -0.8**
WMQ			pP	PcP	19 03 13.4 +1.8
WMQ			sP	sP	19 03 23.1 +7.2
WMQ			S	**S**	**19 12 26.3 +1.6**
WMQ			ScS	**SKSac**	**19 12 59.1 -0.5**
WMQ			pmax	pmax	
	comp=Z,5.0nm,0.6s				
WMQ			pmax	pmax	
	comp=Z,35nm,7.8s				
WMQ			LR	LR	
	comp=Z,540nm,17.0s				
WMQ			LR	LR	
	comp=Z,250nm,22.8s				
WMQ			LR	LR	
	comp=Z,210nm,24.0s				
RKT	**Rikitea**	**75.58 112**	*e*S	**S**	**19 12 49.4 +5.1**
	comp=Z,1μm,31.2s				
RKT	**Rikitea**	**75.58 112**	*e*LQ	LQ	19 23 17.4
	comp=Z,947nm,26.8s				
RKT			*e*LR	LR	19 27 10.3
	comp=Z,3μm,32.0s,baz=276				
BILL	**Bilibino**	**75.64 7**	*i* P	**P**	**19 03 05.1 -0.8**
BILL			*i*		19 03 15.4
BILL			*i* SS	SS	19 17 34.7 -0.7
BILL			pmax	pmax	
	comp=Z,3.0nm,1.0s				
BILL			MLR	MLR	
	comp=Z,684nm,19.0s				
BILL	**Bilibino**	**75.64 7**	*e*P	**P**	**19 03 05.3 -0.6**
	comp=Z,8.2nm,1.1s				
POO	**Poona**	**77.16 291**	*e*P	**P**	**19 03 13.0 -2.6**
MKAR	**Makanchi Array**	**78.58 320**	P	**P**	**19 03 21.8 -1.2**
	comp=Z,3.1nm,0.8s,baz=100,slow=6.8,SNR=28				
MKAR			LR	LR	19 37 42.2
	comp=Z,549nm,21.5s,baz=102,slow=35				
TIXI	**Tiksi**	**79.15 354**	*d* *i*P	**P**	**19 03 23.3 -2.1**
TIXI			pmax	pmax	
	comp=Z,4.0nm,1.0s				
TIXI	**Tiksi**	**79.15 354**	*e*P	**P**	**19 03 23.1 -2.3**
	comp=Z,8.6nm,1.1s				
ZALV	**Zalesovo Beam**	**80.05 328**	P	**P**	**19 03 28.4 -2.4**
	comp=Z,3.3nm,0.5s,baz=109,slow=6.0,SNR=12				
ZALV			LR	LR	19 38 34.9
	comp=Z,2μm,20.5s,baz=117,slow=35				
KSH	**Kashi**	**80.49 312**	P	**P**	**19 03 34.8 +1.2**
KSH			*ep*P	pP	19 03 51.6 +3.8
KSH			*es*P	sP	19 03 58.8 +5.6
KSH			S	**S**	**19 13 35.1 -1.7**
KSH			SKS	**SKSac**	**19 13 43.4 -4.6**
KSH			pmax	pmax	
	comp=Z,200nm,5.4s				

KSH				LR	LR		
	comp=Z,420nm,12.9s						
KSH				LR	LR		
	comp=Z,650nm,16.4s						
KSH				LR	LR		
	comp=Z,820nm,20.9s						
NVS	**Novosibirsk**	**81.27**	**328**	*e*P	**P**	**19 03 34.9**	**-2.3**
NVS				*e*S	**S**	**19 13 43.7**	**-0.2**
NVS				pmax	pmax		
	comp=Z,60nm,2.2s						
NVS				pmax	pmax		
	comp=E,27nm,2.0s						
NVS				smax	smax		
	comp=E,100nm,2.6s						
TKM2	**Tokmak 2**	**81.75**	**315**	*e*P	**P**	**19 03 39.5**	**-0.9**
TKM2				pmax	pmax		
	comp=Z,7.0nm,0.8s						
TKM2	**Tokmak 2**	**81.75**	**315**	*e*P	**P**	**19 03 39.5**	**-0.9**
	comp=Z,6.5nm,0.8s						
MAW	**Mawson**	**82.01**	**203**	P	**P**	**19 03 40.5**	**-0.4**
	comp=Z,21nm,1.1s,baz=110,slow=8.2,SNR=11						
MAW				LR	LR	19 38 23.7	
	comp=Z,1μm,20.9s,baz=82,slow=34						
MAW	**Mawson**	**82.01**	**203**	P	**P**	**19 03 41.6**	**+0.7**
	baz=82,SNR=9.1						
KURK	**Kurchatov**	**82.28**	**323**	*e*P	**P**	**19 03 41.5**	**-1.1**
KURK				pmax	pmax		
	comp=Z,114nm,1.9s						
KURK	**Kurchatov**	**82.28**	**323**	*e*P	**P**	**19 03 41.5**	**-1.1**
	comp=Z,114nm,1.9s						
FRU	**Bishkek**	**82.42**	**315**	*e*P	**P**	**19 03 41.0**	**-2.6**
FRU				pmax	pmax		
	comp=Z,30nm,1.8s						
AAK	**Ala-Archa**	**82.45**	**314**	*e*P	**P**	**19 03 43.3**	**-0.7**
AAK				pmax	pmax		
	comp=Z,9.0nm,1.0s						
AAK	**Ala-Archa**	**82.45**	**314**	*e*P	**P**	**19 03 43.3**	**-0.7**
	comp=Z,9.1nm,1.0s						
EKS2	**Erkin-Say**	**82.97**	**314**	*e*P	**P**	**19 03 46.2**	**-0.4**
EKS2				pmax	pmax		
	comp=Z,24nm,1.3s						
EKS2	**Erkin-Say**	**82.97**	**314**	*e*P	**P**	**19 03 46.2**	**-0.4**
	comp=Z,24nm,1.3s						
QSPA	**South Pole Qui**	**83.32**	**180**	*e*P	**P**	**19 03 47.8**	**-0.2**
	comp=Z,344nm,1.0s						
MCK	**McKinley**	**84.45**	**24**	*e*P	**P**	**19 03 54.6**	**+1.0**
MCK				pmax	pmax		
	comp=Z,13nm,1.0s						
MCK	**McKinley**	**84.45**	**24**	*e*P	**P**	**19 03 54.6**	**+1.0**
	comp=Z,13nm,1.0s						
KKAR	**Karatay Array**	**85.40**	**314**	*e*P	**P**	**19 03 57.4**	**-1.4**
KKAR				pmax	pmax		
	comp=Z,18nm,1.2s						
KKAR	**Karatay Array**	**85.40**	**314**	*e*P	**P**	**19 03 57.4**	**-1.4**
	comp=Z,18nm,1.2s						
COLD	**Coldfoot**	**85.62**	**20**	*e*P	**P**	**19 03 59.2**	**-0.2**
	comp=Z,4.4nm,1.1s						
ILAR	**Eielson Array**	**85.72**	**23**	P	**P**	**19 03 57.4**	**-2.4**
	comp=Z,2.1nm,0.5s,baz=247,slow=4.8,SNR=15						
ILAR				LR	LR	19 38 18.4	
	comp=Z,322nm,20.7s,baz=256,slow=33						
NRIK	**Noril'sk**	**86.17**	**342**	P	**P**	**19 03 59.6**	**-2.4**
	comp=Z,3.8nm,0.6s,baz=124,slow=4.6,SNR=13						
NRIK				LR	LR	19 43 47.0	
	comp=Z,989nm,19.2s,baz=124,slow=36						
DOT	**Dot Lake**	**86.39**	**24**	*e*P	**P**	**19 04 02.1**	**-1.1**
	comp=Z,29nm,1.1s						
BRVK	**Borovoye**	**87.90**	**324**	⇑*i*P	**P**	**19 04 09.3**	**-1.5**
BRVK				pmax	pmax		
	comp=Z,9.0nm,1.2s						
BRVK	**Borovoye**	**87.90**	**324**	*e*P	**P**	**19 04 08.8**	**-1.9**
	comp=Z,7.4nm,1.0s						
EGAK	**Eagle**	**87.98**	**24**	*e*P	**P**	**19 04 10.1**	**-0.8**
	comp=Z,7.8nm,1.0s						
DAWY	**Dawson**	**88.47**	**25**	*e*P	**P**	**19 04 13.1**	**-0.1**
	comp=Z,11nm,1.2s						
SYO	**Syowa Base**	**90.30**	**200**	‖*e*P	**P**	**19 04 20.6**	**-1.1**
SYO	**Syowa Base**	**90.30**	**200**	‖*e*PcP	**PcP**	**19 04 23.6**	**+0.7**
BBB	**Bella Bella**	**91.51**	**38**	LR	LR	19 37 41.1	
	comp=Z,727nm,21.3s,baz=258,slow=30						
ABKAR	**Akbulak array**	**93.67**	**319**	*e*P	**P**	**19 04 35.2**	**-2.5**
	comp=Z,3.4nm,0.7s						
GEYT	**Alibeck**	**93.89**	**308**	P	**P**	**19 04 37.3**	**-1.7**
	comp=Z,4.6nm,1.1s,baz=270,slow=0.9,SNR=7.9						
GEYT				LR	LR	19 50 48.1	
	comp=Z,538nm,20.4s,baz=90,slow=38						
ARU	**Arti**	**95.14**	**326**	*d i*P	**P**	**19 04 41.1**	**-3.2**
ARU						19 08 30.5	
ARU				S	**SKSac**	**19 15 12.0**	**-3.9**
ARU				pmax	pmax		
	comp=Z,10.0nm,1.7s						
ARU				MLR	MLR		
	comp=Z,1μm,20.0s						
NVAR	**Mina Array Bea**	**97.04**	**52**	P	**P**	**19 04 53.6**	**0.0**
	comp=Z,0.5nm,0.6s,baz=239,slow=8.4,SNR=3.7						
NVAR				LR	LR	19 42 29.0	
	comp=Z,1μm,21.4s,baz=268,slow=32						
NEW	**Newport**	**98.22**	**42**	LR	LR	19 45 26.1	
	comp=Z,547nm,19.0s,baz=260,slow=33						
PFO	**Pinyon Flats O**	**98.31**	**57**	LR	LR	19 44 13.6	
	comp=Z,1μm,19.2s,baz=285,slow=32						
YKA	**Yellowknife Ar**	**99.31**	**28**	P	**Pdif**	**19 05 02.1**	**-0.9**
	comp=Z,0.1nm,0.3s,baz=258,slow=4.6,SNR=2.1						
YKA				LR	LR	19 47 39.8	
	comp=Z,39nm,21.0s,baz=0.0,slow=34						
ELK	**Elko**	**99.48**	**50**	LR	LR	19 44 30.4	
	comp=Z,2μm,21.0s,baz=140,slow=32						
SNAA	**Sanae**	**99.50**	**189**	*e*P	**Pdif**	**19 05 03.3**	**-0.5**
SNAA	**Sanae**	**99.50**	**189**	*e*P	**Pdif**	**19 05 03.6**	**-0.2**
KLMR	**Klimovskoe**	**104.71**	**331**	*e*P	**Pdif**	**19 05 25.9**	**-1.1**
KLMR				pmax	pmax		
	comp=Z,12nm,1.4s						
FINES	**FINESS Array B**	**110.66**	**334**	PKiKP	**PKiKP**	**19 09 53.0**	**-0.3**
	comp=Z,2.0nm,0.7s,baz=76,slow=5.9,SNR=5.7						
LVV	**L'vov**	**116.52**	**323**	*e*PKIKP	**PKPdf**	**19 10 08.0**	**+3.0**
NOA	**NORSAR Array B**	**116.90**	**338**	PKP	**PKPdf**	**19 10 03.6**	**-1.8**
	comp=Z,1.3nm,1.0s,baz=45,slow=2.5,SNR=2.9						
KOLS	**Kolonicke sedl**	**117.92**	**323**	*e*PKIKP	**PKPdf**	**19 10 08.9**	**+1.1**
KOLS	**Kolonicke sedl**	**117.92**	**323**	*e*	**PKPdf**	**19 10 08.9**	**+1.1**
DRGR		**118.50**	**320**	⇑*i*P	**PKPdf**	**19 10 09.1**	**+0.1**
LANS	**Liptovska Anna**	**119.50**	**324**	*e*PKIKP	**PKPdf**	**19 10 12.4**	**+1.6**
LANS	**Liptovska Anna**	**119.50**	**324**	*e*	**PKPdf**	**19 10 12.4**	**+1.6**
BZS	**Buzias**	**119.65**	**319**	⇑*i*P	**PKPdf**	**19 10 11.1**	**-0.1**
MDVR	**Moldovita**	**119.91**	**318**	‖*i*P	**PKPdf**	**19 10 11.4**	**-0.4**
OKC	**Ostrava-Krasne**	**119.95**	**325**	AMS	AMS	20 04 50.0	
	comp=Z,1μm,18.4s						
VYHS	**Vyhne**	**120.17**	**323**	*e*PKIKP	**PKPdf**	**19 10 12.5**	**+0.4**
VYHS	**Vyhne**	**120.17**	**323**	*e*	**PKPdf**	**19 10 12.5**	**+0.4**
LAST	**Lasithi**	**120.17**	**307**	⇑*i*P	**PKPdf**	**19 10 13.2**	**+0.6**
KRLC	**Kraliky**	**120.60**	**326**	*e*PKPdf	**PKPdf**	**19 10 13.7**	**+0.8**
KRLC				*ex*	x	19 10 18.0	
KRLC	**Kraliky**	**120.60**	**326**	*e*PKIKP	**PKPdf**	**19 10 13.7**	**+0.8**
DPC	**Dobruska-Polom**	**120.72**	**326**	*e*PKPdf	**PKPdf**	**19 10 14.0**	**+0.9**
DPC				AMS	AMS	20 05 10.0	
	comp=Z,800nm,16.8s						
DPC	**Dobruska-Polom**	**120.72**	**326**	*e*PKIKP	**PKPdf**	**19 10 14.0**	**+0.9**
DPC				MLR	MLR		
	comp=Z,800nm,16.8s						
UPC	**Upice**	**120.81**	**326**	AMS	AMS	20 04 10.0	
	comp=Z,1μm,19.4s						
PLCA	**Paso Flores**	**121.08**	**146**	PKP	**PKPdf**	**19 10 14.3**	**+0.1**
	comp=Z,3.1nm,0.8s,baz=123,slow=1.5,SNR=5.9						
PVCC	**Panska Ves**	**121.59**	**327**	*e*PKPdf	**PKPdf**	**19 10 15.5**	**+0.8**
PVCC				AMS	AMS	20 08 20.0	
	comp=Z,1μm,19.4s						
PVCC	**Panska Ves**	**121.59**	**327**	*e*PKIKP	**PKPdf**	**19 10 15.5**	**+0.8**
PVCC				MLR	MLR		
	comp=Z,1μm,19.4s						
TREC	**Trest**	**121.72**	**325**	*e*PKPdf	**PKPdf**	**19 10 15.7**	**+0.6**
TREC				AMS	AMS	20 06 20.0	
	comp=Z,1μm,21.3s						
TREC	**Trest**	**121.72**	**325**	*e*PKIKP	**PKPdf**	**19 10 15.7**	**+0.6**
TREC				MLR	MLR		
	comp=Z,1μm,21.3s						
BRG	**Berggiesshubel**	**121.74**	**328**	*e*PKP	**PKPdf**	**19 10 15.6**	**+0.6**
	comp=Z,16nm,1.5s						
	comp=N,912nm,17.2s						
	comp=E,886nm,19.9s						
	comp=Z,1μm,18.3s						
BRG	**Berggiesshubel**	**121.74**	**328**	*e*PKIKP	**PKPdf**	**19 10 15.6**	**+0.6**
BRG				pmax	pmax		
	comp=Z,16nm,1.5s						
BRG				MLR	MLR		
	comp=N,912nm,17.2s						
BRG				MLR	MLR		
	comp=E,886nm,19.9s						
BRG				MLR	MLR		
	comp=Z,1μm,18.3s						
GOPC	**GO Pecny, Ondr**	**121.79**	**326**	AMS	AMS	20 05 20.0	
	comp=Z,1μm,20.3s						
PRU	**Pruhonice**	**121.89**	**326**	*e*PKPdf	**PKPdf**	**19 10 15.8**	**+0.5**
PRU				AMS	AMS	20 05 20.0	
	comp=Z,1μm,20.7s						
PRU	**Pruhonice**	**121.89**	**326**	*e*PKIKP	**PKPdf**	**19 10 15.8**	**+0.5**
PRU				MLR	MLR		
	comp=Z,1μm,20.7s						
CLL	**Collm**	**122.00**	**328**	⇑*i*PKPdf	**PKPdf**	**19 10 15.8**	**+0.3**
	comp=Z,6.0nm,0.8s						
CLL				*i* pPKPdf	**pPKPdf**	**19 10 26.8**	**-3.5**
CLL				*e*Sdif	Sdif	19 19 42.0	+1.3
CLL				*e*PKKPdf	**PKKPdf**	**19 20 47.0**	**-3.3**
CLL				*e*PS	**PS**	**19 21 54.0**	**+10**
CLL				Lm	MLR	20 05 00.0	
	comp=N,1μm,19.3s						
CLL				Lm	MLR	20 05 00.0	
	comp=E,1μm,20.4s						
CLL				Lm	MLR	20 05 00.0	
	comp=Z,2μm,19.9s						
CLL	**Collm**	**122.00**	**328**	⇑*i*PKIKP	**PKPdf**	**19 10 15.8**	**+0.3**
CLL				*i*		19 10 26.8	
CLL				pmax	pmax		
	comp=Z,6.0nm,0.8s						
CLL				MLR	MLR		
	comp=Z,2μm,19.9s						
CONA	**Conrad Observa**	**122.19**	**324**	*i* PKiKP	**PKiKP**	**19 10 16.5**	**+0.2**
	comp=Z,3.1nm,0.8s						
ARSA	**Arzberg**	**122.72**	**323**	*i* PKiKP	**PKPdf**	**19 10 17.1**	**+0.1**
	comp=Z,2.5nm,0.9s						
KHC	**Kasperske Hory**	**122.88**	**326**	*e*PKPdf	**PKPdf**	**19 10 17.9**	**+0.6**
KHC				*ex*	x	19 10 22.1	
KHC				AMS	AMS	20 05 30.0	
	comp=Z,1μm,19.8s						
KHC	**Kasperske Hory**	**122.88**	**326**	*e*PKIKP	**PKPdf**	**19 10 17.9**	**+0.6**
KHC				MLR	MLR		
	comp=Z,1μm,19.8s						
KHC	**Kasperske Hory**	**122.88**	**326**	*e*PKPdf	**PKPdf**	**19 10 17.7**	**+0.4**
NKC	**Novy Kostel**	**122.89**	**328**	*e*PKPdf	**PKPdf**	**19 10 18.0**	**+0.7**
NKC				*ex*	x	19 10 22.2	
NKC				AMS	AMS	20 06 50.0	
	comp=Z,2μm,18.6s						
NKC	**Novy Kostel**	**122.89**	**328**	*e*PKIKP	**PKPdf**	**19 10 18.0**	**+0.7**
NKC				MLR	MLR		
	comp=Z,2μm,18.6s						
GERES	**GERESS Array B**	**122.96**	**326**	PKP	**PKPdf**	**19 10 17.5**	**-0.1**
	comp=Z,2.5nm,0.5s,baz=71,slow=1.9,SNR=27						
MOA	**Molln**	**123.16**	**324**	*i* PKiKP	**PKPdf**	**19 10 17.9**	**+0.1**
	comp=Z,2.8nm,0.9s						
SOKA	**Soboth**	**123.29**	**323**	*i* PKiKP	**PKPdf**	**19 10 18.3**	**+0.1**
	comp=Z,9.8nm,1.4s						
OBKA	**Obir**	**123.67**	**323**	*i* PKiKP	**PKiKP**	**19 10 20.1**	**+0.8**
	comp=Z,3.9nm,0.8s						
KBA	**Koelnbreinsper**	**124.09**	**324**	*i* PKiKP	**PKPdf**	**19 10 19.4**	**-0.5**
	comp=Z,4.9nm,0.7s						
MYKA	**Terra Mystica**	**124.15**	**323**	*i* PKiKP	**PKiKP**	**19 10 20.9**	**+0.7**
	comp=Z,2.7nm,0.7s						
ABTA	**Abfaltersbach**	**124.75**	**324**	*i* PKiKP	**PKPdf**	**19 10 20.8**	**-0.2**
	comp=Z,14nm,1.5s						
WATA	**Walderalm**	**124.97**	**325**	*i* PKiKP	**PKPdf**	**19 10 21.5**	**0.0**
	comp=Z,3.5nm,0.6s						
WTTA	**Wattenberg**	**124.98**	**325**	*i* PKiKP	**PKiKP**	**19 10 22.3**	**+0.4**
	comp=Z,9.4nm,1.0s						
MOTA	**Moosalm**	**125.24**	**325**	*i* PKiKP	**PKPdf**	**19 10 22.2**	**+0.1**
	comp=Z,8.5nm,0.8s						
RETA	**Reutte**	**125.35**	**326**	*i* PKiKP	**PKPdf**	**19 10 22.0**	**-0.2**
	comp=Z,7.3nm,1.4s						
FETA	**Feichten**	**125.63**	**325**	*i* PKiKP	**PKiKP**	**19 10 23.3**	**+0.1**
	comp=Z,14nm,1.4s						
DAVA	**Damuels**	**125.96**	**326**	*i* PKiKP	**PKiKP**	**19 10 24.0**	**+0.2**
	comp=Z,6.7nm,0.8s						
TUE	**Stuetta**	**126.72**	**325**	*e*PKPdf	**PKPdf**	**19 10 25.1**	**+0.2**
ESDC	**Sonseca Array**	**138.54**	**327**	PKP	**PKPdf**	**19 10 47.1**	**-0.1**
	comp=Z,0.1nm,0.3s,baz=23,slow=4.0,SNR=5.2						
CPUP	**Villa Florida**	**139.07**	**144**	PKP	**PKPdf**	**19 10 46.7**	**-1.8**
	comp=Z,2.4nm,0.8s,baz=44,slow=16,SNR=3.3						
TAM	**Tamanrasset**	**140.41**	**298**	*e*PKIKP	**PKPdf**	**19 10 52.2**	**+1.0**
TAM	**Tamanrasset**	**140.41**	**298**	*e*PKPdf	**PKPdf**	**19 10 52.2**	**+1.0**
SDV	**Santo Domingo**	**141.74**	**84**	PKhKP	PKPpre	19 10 48.1	
	comp=Z,13nm,0.6s,baz=292,slow=3.6,SNR=5.9						
SIV	**San Ignacio**	**143.53**	**128**	PKP	PKPbc	19 10 54.2	+0.1
	comp=Z,3.7nm,0.8s,baz=246,slow=5.0,SNR=4.3						
SJG	**San Juan**	**144.89**	**68**	PKP	**PKPab**	**19 10 56.9**	**-1.3**
	comp=Z,9.6nm,0.5s,baz=351,slow=2.9,SNR=6.1						
SAML	**Samuel**	**145.34**	**116**	*e*PKPdf	**PKPbc**	**19 10 59.9**	**0.0**
TORD	**Torodi Ar. Bea**	**146.14**	**284**	PKPbc	**PKPab**	**19 11 02.8**	**-0.2**
	comp=Z,17nm,0.8s,baz=74,slow=1.9,SNR=84						
PCRV	**Puerto La Cruz**	**147.61**	**82**	PKPbc	**PKPbc**	**19 11 07.2**	**+0.6**
	comp=Z,9.1nm,0.4s,baz=41,slow=4.5,SNR=6.4						
CXM	**Morne La Croix**	**150.32**	**72**	*e*P	**PKPab**	**19 11 17.4**	**-2.5**
FDF	**Fort de France**	**150.35**	**72**	*e*P	**PKPbc**	**19 11 15.4**	**+2.0**
FDF	**Fort de France**	**150.35**	**72**	*e*PKIKP	**PKPbc**	**19 11 14.2**	**+0.7**
FDF	**Fort de France**	**150.35**	**72**	*e*PKPbc	**PKPbc**	**19 11 14.2**	**+0.7**
ZAM	**Aeronautique**	**150.50**	**72**	*e*P	**PKPab**	**19 11 18.4**	**-2.1**
PTGA	**Pitinga**	**151.22**	**104**	PKPbc	**PKPbc**	**19 11 16.2**	**+0.6**
	comp=Z,23nm,0.8s,baz=234,slow=1.9,SNR=22						
TOSP	**Speyside**	**151.52**	**79**	*e*P	**PKPab**	**19 11 20.6**	**-4.1**
KIC	**Kosan Boka**	**152.84**	**271**	*e*P	**PKPbc**	**19 11 19.0**	**-0.2**
	comp=Z,162nm,1.6s						
DBIC	**Dimbokro**	**152.97**	**272**	PKPbc	**PKPbc**	**19 11 19.9**	**+0.4**
	comp=Z,9.1nm,0.7s,baz=110,slow=1.6,SNR=23						
LIC	**Lamto**	**153.12**	**271**	*e*P	**PKPbc**	**19 11 20.4**	**+0.6**
	comp=Z,65nm,1.7s						
TIC	**Toumodi**	**153.13**	**272**	*e*P	**PKPbc**	**19 11 20.3**	**+0.4**

*ISCJB **18** 18:54:18.3±0.7, 6°.60S±0°.08×147°.9E±0°.1, h51km, mb4.3/12, Error ellipse: s-maj=21.2km s-min=10.4km az=10.7*
*NEIC **18** 18:54:20.8±1.8, 6°.65S×147°.90E, h59km±16km, mb4.7/5, Error ellipse: s-maj=17.1km s-min=12.9km az=103.0*
*IDC **18** 18:54:20.1±4.2, 6°.65S×148°.04E, h52km±38km, mb3.9/8, mb1 4.1/10, mb1mx3.9/34, mbtmp4.2/10, ML4.2/1, Error ellipse: s-maj=33.2km s-min=21.9km az=99.0*
ISC 18 18:54:20.0±0.8, 6°.57S±0°.08×148°.0E±0°.2, h51km, n20,
σ1°.28/21, mb4.2/12, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.92**	**196**	P	**Pn**	**18 55 04.2**	**+0.1**
	37nm,0.3s,baz=43,slow=18,SNR=14						
PMG				S	**Sn**	**18 55 41.0**	**+3.0**
	20nm,0.3s,baz=159,slow=23,SNR=2.6						
CTAO	**Charters Tower**	**13.54**	**187**	Pn	**Pn**	**18 57 28.8**	**-0.6**
WRAB	**Tennant Creek**	**18.74**	**224**	*e*P	**P**	**18 58 32.6**	**-2.2**
	16nm,0.9s						
WRA	**Warramunga Arr**	**18.75**	**224**	P	**P**	**18 58 33.6**	**-1.3**
	0.9nm,0.3s,baz=51,slow=11,SNR=3.9						
ASAR	**Alice Springs**	**21.71**	**217**	P	**P**	**18 59 06.6**	**-0.4**
	3.6nm,0.6s,baz=54,slow=9.0,SNR=7.0						
FITZ	**Fitzroy Crossi**	**24.60**	**240**	P	**P**	**18 59 35.1**	**-0.5**
	18nm,0.5s,baz=50,slow=10,SNR=8.6						
MBWA	**Marble Bar**	**30.93**	**239**	*e*P	**P**	**19 00 31.2**	**-1.1**
	46nm,0.8s						
NWAO	**Narrogin (SRO)**	**38.76**	**223**	*e*P	**P**	**19 01 38.7**	**-1.0**
	15nm,0.5s						
CMAR	**Chiang Mai Arr**	**54.36**	**298**	P	**P**	**19 03 43.2**	**+1.1**
	2.0nm,0.9s,baz=117,slow=5.6,SNR=4.5						
PETK	**Petropavlovsk-**	**60.03**	**7**	P	**P**	**19 04 22.1**	**+0.8**
	4.8nm,0.9s,baz=173,slow=4.1,SNR=5.2						
SONM	**Songino Array**	**65.37**	**331**	P	**P**	**19 04 59.2**	**+1.9**
	0.7nm,0.6s,baz=141,slow=4.8,SNR=2.3						
VNDA	**Vanda**	**71.29**	**177**	P	**P**	**19 05 33.8**	**+0.2**
	2.9nm,0.9s,baz=322,slow=8.1,SNR=3.1						
SBA	**Scott Base**	**71.92**	**176**	*e*P	**P**	**19 05 37.6**	**+0.2**
	2.6nm,0.9s						
MKAR	**Makanchi Array**	**78.55**	**320**	P	**P**	**19 06 15.6**	**-0.5**
	1.0nm,0.8s,baz=104,slow=7.0,SNR=3.6						
KURK	**Kurchatov**	**82.24**	**323**	P	**P**	**19 06 34.9**	**-0.9**
	8.6nm,1.1s						
QSPA	**South Pole Qui**	**83.40**	**180**	*e*P	**P**	**19 06 41.5**	**-0.3**
ILAR	**Eielson Array**	**85.63**	**23**	P	**P**	**19 06 51.2**	**-1.6**
	0.6nm,0.8s,baz=240,slow=5.3,SNR=2.8						
GERES	**GERESS Array B**	**122.92**	**326**	PKP	**PKPdf**	**19 13 11.0**	**+0.2**
	0.9nm,0.6s,baz=77,slow=1.3,SNR=6.4						
SAML	**Samuel**	**145.34**	**116**	*e*PKPdf	**PKPbc**	**19 13 53.3**	**+0.1**
TORD	**Torodi Ar. Bea**	**146.16**	**284**	PKPbc	**PKPdf**	**19 13 55.9**	**+1.2**
	3.3nm,0.6s,baz=67,slow=3.3,SNR=6.2						

JMA 18 18:59:28.9±0.1, 35°.18N×140°.07E, h13km±3km, M2.9,
Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KTR	**Katsuura**	**0.20**	**99**	P	Pg	18 59 33.4	0.0
TATJ	**Tateyama 2**	**0.21**	**225**	P	Pb	18 59 34.1	-0.5
JCN	**Nagara**	**0.26**	**24**	P	Pb	18 59 35.1	-0.4
BSO4	**Boso 4**	**0.29**	**131**	P	Pg	18 59 35.3	+0.4
JYO	**Yokosk**	**0.33**	**278**	P	Pb	18 59 36.4	-0.3
BSO3	**Boso 3**	**0.52**	**136**	P	Pg	18 59 38.7	-0.4
JIM2	**Oshima 3**	**0.70**	**229**	P	Pg	18 59 40.2	-2.3
JOD2	**Odawara 2**	**0.81**	**276**	P	Pg	18 59 42.3	-2.3
JOD2				S	Sg	18 59 53.6	-1.6
KTJJ	**Kamata 2**	**0.86**	**253**	P	Pg	18 59 42.9	-2.7
KTJJ				S	Sg	18 59 54.2	-2.7
BSO1	**Boso 1**	**0.91**	**125**	P	Pb	18 59 43.4	-2.9
BSO1				S	Sb	18 59 56.7	-1.4
JIZS	**Izushimoda**	**1.08**	**245**	P	Pb	18 59 46.0	-3.5
JIZS				S	Sb	19 00 00.1	-3.4
MAT	**Matsushiro**	**2.03**	**312**	P	Pn	19 00 01.7	-1.2
MAT				S	Sn	19 00 28.0	-0.2

*ISCJB **18** 19:01:18.3±1.0, 6°.67S±0°.09×147°.9E±0°.2, h51km, mb3.6/6, Error ellipse: s-maj=30.4km s-min=11.4km az=10.8*
*IDC **18** 19:01:19.1±4.0, 6°.58S×147°.97E, h47km±37km, mb3.4/6, mb1 3.7/9, mb1mx3.5/37, mbtmp3.7/9, ML3.5/2, Error ellipse: s-maj=38.7km s-min=28.3km az=100.0*
ISC 18 19:01:19.7±1.2, 6°.7S±0°.1×147°.9E±0°.3, h51km, n9,
σ0°.99/10, mb3.5/6, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.85**	**196**	P	**Pn**	**19 02 03.3**	**+0.6**
	21nm,0.3s,baz=39,slow=6.5,SNR=23						
PMG				S	**Sn**	**19 02 33.6**	**-2.1**
	2.1nm,0.3s,baz=38,slow=7.3,SNR=2.6						
CTA	**Charters Tower**	**13.46**	**187**	P	**Pn**	**19 04 28.7**	**+0.6**
	0.2nm,0.3s,baz=22,slow=11,SNR=2.7						
WRA	**Warramunga Arr**	**18.68**	**224**	P	**P**	**19 05 33.9**	**+0.1**
	0.2nm,0.3s,baz=51,slow=11,SNR=8.8						
ASAR	**Alice Springs**	**21.64**	**217**	P	**P**	**19 06 06.3**	**+0.4**
	1.3nm,0.7s,baz=53,slow=8.7,SNR=11						
FITZ	**Fitzroy Crossi**	**24.54**	**240**	P	**P**	**19 06 34.9**	**0.0**
	4.9nm,0.6s,baz=39,slow=9.4,SNR=9.6						
STKA	**Stephens Creek**	**25.79**	**192**	P	**P**	**19 06 46.2**	**+0.2**
	1.4nm,0.8s,baz=1.2,slow=12,SNR=3.1						
VNDA	**Vanda**	**71.21**	**177**	P	**P**	**19 12 33.5**	**+0.5**
	0.5nm,0.8s,baz=328,slow=4.5,SNR=3.7						
MKAR	**Makanchi Array**	**78.59**	**320**	P	**P**	**19 13 16.2**	**+0.1**
	0.2nm,0.5s,baz=123,slow=5.3,SNR=4.3						
ILAR	**Eielson Array**	**85.71**	**23**	P	**P**	**19 13 51.8**	**-1.1**
	0.2nm,0.6s,baz=235,slow=7.6,SNR=3.2						

*ISCJB **18** 19:02:08.2±0.7, 6°.51S±0°.06×147°.9E±0°.1, h51km, mb4.2/12, Error ellipse: s-maj=18.1km s-min=8.7km az=5.5*
*IDC **18** 19:02:09.9±2.9, 6°.52S×147°.98E, h50km±26km, mb3.8/10, mb1 4.0/13, mb1mx3.8/34, mbtmp4.1/13, ML3.9/2, MS4.1/1, Ms1 4.1/1, ms1mx3.6/39, Error ellipse: s-maj=33.9km s-min=15.6km az=93.0*
*NEIC **18** 19:02:10.8±1.3, 6°.54S×147°.92E, h59km±11km, mb4.7/3, Error ellipse: s-maj=16.2km s-min=8.1km az=87.0*
ISC 18 19:02:09.9±0.8, 6°.46S±0°.07×148°.0E±0°.2, h51km, n20,
σ1°.31/21, mb3.9/12, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**3.05**	**196**	P	**Pn**	**19 02 54.7**	**-0.9**
	15nm,0.3s,baz=104,slow=3.7,SNR=3.6						
PMG				S	**Sn**	**19 03 34.5**	**+3.6**
	34nm,0.3s,baz=116,slow=16,SNR=7.3						
PMG				LR	LR	19 04 21.1	
	comp=Z,4μm,21.6s,baz=7.0,slow=44						
JAY	**Jayapura**	**8.28**	**298**	P	**Pn**	**19 04 08.3**	**+0.9**
	0.0nm,0.3s,baz=278,slow=23,SNR=2.5						
CTA	**Charters Tower**	**13.66**	**187**	P	**Pn**	**19 05 20.9**	**0.0**
	0.1nm,0.3s,

IDC 18 19:08:31.0±9.1, 6°87S×147°58E, h75km±49km, mb3.4/3, mb1 3.6/5, mb1mx3.3/33, mbtmp3.7/5, ML3.5/1, Error ellipse: s-maj=99.0km s-min=59.6km az=30.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**2.56**	**189**	P	Pn	19 09 10.3	0.0
	6.2nm,0.3s,baz=8.9,slow=9.9,SNR=6.1						
PMG				S	Sn	19 09 48.4	+7.9
	6.1nm,0.3s,baz=100,slow=14,SNR=3.0						
WRA	**Warramunga Arr**	**18.28**	**223**	P	Pn	19 12 39.5	-0.1
	0.2nm,0.3s,baz=48,slow=11,SNR=6.3						
ASAR	**Alice Springs**	**21.25**	**217**	P	P	19 13 11.5	+0.4
	0.8nm,0.4s,baz=55,slow=8.8,SNR=14						
FITZ	**Fitzroy Crossi**	**24.12**	**240**	P	P	19 13 39.5	-0.5
	2.5nm,0.4s,baz=52,slow=10,SNR=7.4						
STKA	**Stephens Creek**	**25.50**	**192**	P	P	19 13 52.3	-0.1
	0.8nm,0.5s,baz=27,slow=9.0,SNR=3.0						

MEX 18 19:08:55.2±0.4, 13°23N×92°12W, h20km, MD3.6, Off coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PCIG		**2.68**	**337**	*e*P	Pn	19 09 34.9	-2.4
PCIG				*i* S	Sn	19 10 05.8	-3.4
CCIG	**Comitan**	**3.04**	**360**	*i* P	Pn	19 09 41.7	-0.6
CCIG				*e*S	Sn	19 10 15.8	-2.4

*ISCJB **18** 19:10:31.2±0.7, 6°85N±0°05×73°10W±0°05, h161km±6km, Error ellipse: s-maj=9.9km s-min=5.2km az=138.6*
*FUNV **18** 19:10:31.9, 6°82N×73°12W, h175km, MW2.9*
*RSNC **18** 19:10:34.2±1.1, 6°77N×73°11W, h142km±6km, ML3.1*
ISC 18 19:10:30.6±1.5, 6°82N±0°05×73°09W±0°05, h166km±9km, n22, σ1§48/33, 1C-1D, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BARC	**Barichara**	**0.25**	**203**	*i* P	**Pn**	**19 10 53.2**	**-0.1**
BARC				*e*S	**Sn**	**19 11 08.0**	**-2.7**
BARC				*i*		19 11 10.9	
	comp=Z,294nm,0.3s						
PAMC	**Pamplona, Colo**	**0.64**	**37**	*e*P	**Pn**	**19 10 56.0**	**+0.9**
PAMC				*e*S	**Sn**	**19 11 12.8**	**-1.1**
BRRC	**Barranca, Sant**	**0.68**	**294**	⇑*i*P	**Pn**	**19 10 55.1**	**+0.3**
BRRC				*i*		19 10 55.4	
	comp=Z,325nm,0.1s						
BRRC				*e*S	**Sn**	**19 11 12.5**	**-0.8**
RUSC	**La Rusia**	**0.93**	**180**	⇓*i*P	**Pn**	**19 10 57.0**	**0.0**
RUSC				*e*S	**Sn**	**19 11 15.6**	**-1.6**
RUSC				*i*		19 11 17.5	
	comp=Z,75nm,0.3s						
GRMC	**Gramalote, San**	**0.93**	**17**	*i* P	**Pn**	**19 10 59.0**	**+2.4**
GRMC				*e*S	**Sn**	**19 11 19.0**	**+2.3**
GRMC				*i*		19 11 20.3	
	comp=Z,226nm,0.4s						
CBRI	**Barrientos, No**	**0.93**	**18**	*i* P	**Pn**	**19 10 57.8**	**+1.1**
CBRI				*e*S	**Sn**	**19 11 15.7**	**-1.1**
CAPV	**Capacho**	**1.29**	**36**	*e*P	**Pn**	**19 11 01.0**	**+1.3**
CAPV				*e*S	**Sn**	**19 11 22.7**	**+0.6**
OCAC	**Ocana**	**1.42**	**351**	*e*P	**Pn**	**19 11 03.1**	**+2.3**
OCAC				*i*		19 11 30.1	
	comp=Z,193nm,0.5s						
NORC	**Norcasia**	**2.17**	**235**	*e*P	**Pn**	**19 11 09.1**	**+0.3**
NORC				*e*S	**Sn**	**19 11 36.6**	**-1.6**
ROSC	**El Rosal**	**2.32**	**212**	*e*P	**Pn**	**19 11 12.7**	**+1.8**
HELC	**Santa Helena**	**2.51**	**256**	*e*P	**Pn**	**19 11 14.6**	**+1.6**
HELC				*e*S	**Sn**	**19 11 45.1**	**-0.7**
HELC				*i*		19 11 51.9	
	comp=Z,53nm,0.4s						
SOCV	**Socops**	**2.64**	**57**	*e*P	**Pn**	**19 11 16.0**	**+1.7**
SOCV				*e*S	**Sn**	**19 11 47.4**	**-0.8**
GUYC	**Guyana, Colomb**	**2.79**	**235**	*e*P	**Pn**	**19 11 18.4**	**+1.8**
GUYC				*i*		19 12 00.6	
	comp=Z,122nm,0.4s						
DBBC	**Dabeiba**	**3.11**	**274**	*e*P	**Pn**	**19 11 21.9**	**+1.8**
TOLC	**Tolima**	**3.15**	**225**	*e*P	**Pn**	**19 11 22.6**	**+1.8**
MOTC	**Monteria, Cord**	**3.21**	**307**	*e*P	**Pn**	**19 11 20.4**	**-0.8**
PRAC	**Prado**	**3.57**	**210**	*e*P	**Pn**	**19 11 26.9**	**+1.0**
ELOV	**Elorza**	**3.58**	**87**	*e*P	**Pn**	**19 11 26.9**	**+0.9**
SJCC	**San Jacinto, C**	**3.69**	**326**	*e*P	**Pn**	**19 11 27.3**	**-0.1**
VIRV	**Villa del Rosa**	**3.72**	**10**	*e*P	**Pn**	**19 11 27.9**	**+0.2**
VIRV				*e*S	**Sn**	**19 12 10.0**	**-2.3**
TEPV	**Terepaima**	**4.96**	**51**	*e*P	**Pn**	**19 11 43.8**	**0.0**
BAUV	**El Baul**	**5.42**	**67**	*e*P	**Pn**	**19 11 49.7**	**-0.2**

IDC 18 19:11:30.1±7.3, 7°01S×147°74E, h88km±64km, mb3.3/2, mb1 3.3/4, mb1mx3.1/32, mbtmp3.5/4, ML3.1/1, Error ellipse: s-maj=103.6km s-min=61.3km az=140.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**2.45**	**194**	P	Pn	19 12 08.6	+0.4
	3.9nm,0.3s,baz=15,slow=12,SNR=3.7						
PMG				S	Sn	19 12 47.7	+10
	9.6nm,0.3s,baz=7.3,slow=12,SNR=5.1						
WRA	**Warramunga Arr**	**18.29**	**224**	P	P	19 15 37.2	0.0
	0.1nm,0.3s,baz=52,slow=11,SNR=2.9						
ASAR	**Alice Springs**	**21.24**	**217**	P	P	19 16 10.2	+1.1
	0.6nm,0.5s,baz=53,slow=8.9,SNR=7.7						
FITZ	**Fitzroy Crossi**	**24.19**	**241**	P	P	19 16 37.4	-1.1
	2.6nm,0.5s,baz=61,slow=7.6,SNR=12						
TORD	**Torodi Ar. Bea**	**146.04**	**283**	PKPbc	PKPbc	19 31 00.6	-0.4
	0.3nm,0.3s,baz=65,slow=3.2,SNR=4.4						

*ISCJB **18** 19:13:36.6±0.7, 14°81S±0°10×56°18W±0°05, h10km, mb3.9/1, Error ellipse: s-maj=14.4km s-min=6.5km az=177.3*
*IDC **18** 19:13:38.6±1.4, 14°78S×56°27W, h0km, mb4.0/2, mb1 4.1/6, mb1mx3.8/36, mbtmp4.0/6, ML3.9/4, Error ellipse: s-maj=37.4km s-min=20.3km az=171.0*
ISC 18 19:13:38.9±0.8, 14°65S±0°08×56°24W±0°06, h10km, n7, σ2§24/11, Brazil

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SIV	**San Ignacio**	**4.85**	**253**	Pn	**Pn**	**19 14 53.8**	**+1.7**
	4.4nm,0.3s,baz=94,slow=16,SNR=44						
SIV				Sn	**Sn**	**19 15 49.4**	**+0.9**
	6.0nm,0.3s,baz=74,slow=21,SNR=4.1						
SIV				Lg	Lg	19 16 08.2	
	30nm,0.3s,baz=123,slow=23,SNR=18						
BDFB	**Brasilia**	**8.00**	**98**	Pn	**Pn**	**19 15 35.6**	**+0.2**
	1μm,0.3s,baz=79,slow=0.0,SNR=2.5						
BDFB				Sn	**Sn**	**19 17 04.3**	**-1.8**
	951nm,0.3s,baz=84,slow=0.0,SNR=3.3						
BDFB				Lg	Lg	19 17 49.9	
	137nm,0.3s,baz=158,slow=0.0,SNR=2.9						
LPAZ	**La Paz**	**11.58**	**260**	Pn	**Pn**	**19 16 25.4**	**+0.4**
	0.2nm,0.3s,baz=82,slow=10,SNR=14						
LPAZ				Sn	**Sn**	**19 18 32.9**	**-1.9**
	0.1nm,0.3s,baz=65,slow=17,SNR=1.7						
LPAZ				Lg	Lg	19 19 40.9	
	0.5nm,0.3s,baz=201,slow=21,SNR=3.6						
CPUP	**Villa Florida**	**11.67**	**185**	Pn	**Pn**	**19 16 23.5**	**-2.0**
	0.2nm,0.3s,baz=10,slow=12,SNR=3.6						
CPUP				Lg	Lg	19 19 40.6	
	0.8nm,0.3s,baz=284,slow=17,SNR=3.5						
PTGA	**Pitinga**	**14.31**	**345**	Pn	**Pn**	**19 17 03.3**	**+1.6**
	0.7nm,0.3s,baz=174,slow=20,SNR=4.8						
PTGA				Sn	**Sn**	**19 19 36.7**	**-4.0**
	0.6nm,0.3s,baz=238,slow=19,SNR=3.8						
PTGA				Lg	Lg	19 21 09.8	
	0.6nm,0.3s,baz=90,slow=20,SNR=2.4						
NNA	**Nana**	**20.23**	**275**	P	**P**	**19 18 14.0**	**-0.4**
	4.7nm,0.4s,baz=139,slow=11,SNR=2.1						
TORD	**Torodi Ar. Bea**	**63.65**	**67**	P	**P**	**19 24 13.4**	**+2.5**
	0.8nm,0.6s,baz=246,slow=6.2,SNR=4.3						

IDC 18 19:14:26.2±7.6, 6°94S×147°89E, h74km±66km, mb3.6/2, mb1 3.7/4, mb1mx3.3/33, mbtmp3.7/4, ML3.5/1, Error ellipse: s-maj=103.4km s-min=59.9km az=140.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**2.56**	**196**	P	Pn	19 15 05.4	-0.1
	7.5nm,0.3s,baz=8.4,slow=9.9,SNR=6.4						
PMG				S	Sn	19 15 44.4	+8.7
	5.8nm,0.3s,baz=28,slow=16,SNR=3.8						
WRA	**Warramunga Arr**	**18.44**	**224**	P	P	19 18 36.1	+0.1
	0.2nm,0.3s,baz=50,slow=11,SNR=7.8						
ASAR	**Alice Springs**	**21.38**	**217**	P	P	19 19 08.4	+0.5
	0.8nm,0.6s,baz=52,slow=9.4,SNR=10						
FITZ	**Fitzroy Crossi**	**24.36**	**241**	P	P	19 19 37.2	-0.2
	4.5nm,0.5s,baz=58,slow=8.8,SNR=20						
TORD	**Torodi Ar. Bea**	**146.18**	**283**	PKPbc	PKPdf	19 33 58.2	+0.2
	0.4nm,0.7s,baz=96,slow=2.6,SNR=5.3						

IDC 18 19:22:35.5±2.4, 11°26S×165°25E, h0km, mb3.9/6, mb1 4.1/6, mb1mx3.7/41, mbtmp3.9/6, Error ellipse: s-maj=94.0km s-min=28.2km az=132.0, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**29.95**	**223**	P	P	19 28 45.6	0.0
	2.6nm,1.0s,baz=24,slow=12,SNR=4.3						
WRA	**Warramunga Arr**	**30.95**	**250**	P	P	19 28 55.0	+0.3
	2.0nm,0.8s,baz=79,slow=9.3,SNR=9.2						
ASAR	**Alice Springs**	**32.26**	**243**	P	P	19 29 05.6	-0.6
	0.8nm,0.8s,baz=64,slow=10,SNR=8.1						
FITZ	**Fitzroy Crossi**	**38.86**	**255**	P	P	19 30 02.7	-0.2
	3.1nm,0.9s,baz=109,slow=8.3,SNR=3.9						
ILAR	**Eielson Array**	**83.87**	**19**	P	P	19 35 06.4	-0.4
	0.4nm,0.6s,baz=235,slow=5.0,SNR=5.2						
MKAR	**Makanchi Array**	**93.35**	**317**	P	P	19 35 53.3	+0.6
	0.1nm,0.3s,baz=91,slow=6.1,SNR=2.7						

NNC 18 19:23:03.5±13.0, 37°20N×71°21E, h0km, mb3.5, mpv3.1, 4C, Error ellipse: s-maj=106.1km s-min=54.9km az=166.0, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZET	**Dzherino**	**2.47**	**311**	⇑Pn	Pn	19 23 45.0	-0.1
	8.7nm,0.4s						
DZET				⇑Sn	Sn	19 24 17.8	+1.8
	21nm,0.4s						
MNAS	**Manas**	**5.37**	**10**	⇑Pn	Pn	19 24 23.6	-1.4
	0.4nm,0.3s						
MNAS				⇑Sn	Sn	19 25 28.9	+1.3
	1.4nm,0.5s						
KK31	**Karatay Array**	**5.92**	**355**	Pn	Pn	19 24 31.7	-0.7
	0.8nm,0.3s,baz=180,slow=13						
KK31				Sn	Sn	19 25 40.5	-0.4
	1.6nm,0.6s,baz=189,slow=25						

JMA 18 19:28:48.0±0.3, 22°87N×123°16E, h55km, M3.6, Southeast of Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
HATJ	**Hateruma jima**	**1.32**	**27**	P	Pn	19 29 10.7	+0.5
HATJ				S	Sn	19 29 26.7	-0.1
IRIF	**Iriomote-Funau**	**1.55**	**20**	P	Pn	19 29 14.1	+0.8
IRIF				S	Sn	19 29 32.8	+0.5
JKRS	**Kuro-shima**	**1.57**	**30**	P	Pn	19 29 14.3	+0.8
JKRS				eS	Sn	19 29 32.7	0.0
JYNG	**Yonagunijimaku**	**1.59**	**353**	P	Pn	19 29 14.8	+1.0
JYNG				S	Sn	19 29 33.4	+0.2
YOJ	**Yonaguni jima**	**1.59**	**355**	P	Pn	19 29 14.9	+1.1
YOJ				S	Sn	19 29 33.3	0.0
JIJ	**Ishigaki jima**	**1.74**	**31**	P	Pn	19 29 16.2	+0.4
JIJ				S	Sn	19 29 36.2	-0.7
JISG	**Ishigakijimahi**	**2.01**	**31**	P	Pn	19 29 19.8	+0.3
JISG				S	Sn	19 29 43.3	-0.2
JTJ	**Tarama**	**2.26**	**38**	P	Pn	19 29 23.3	+0.4
JTJ				S	Sn	19 29 49.3	-0.3
JIRB	**Irabujima**	**2.68**	**43**	P	Pn	19 29 28.8	+0.1
JIRB				S	Sn	19 29 58.6	-1.4
JMJ	**Miyako jima 2**	**2.75**	**45**	P	Pn	19 29 30.7	+1.0
JMJ				S	Sn	19 30 01.7	0.0
JIKM	**Ikemajima**	**2.80**	**43**	P	Pn	19 29 30.8	+0.5
JIKM				S	Sn	19 30 03.0	+0.1
JKE	**Kume jima 2**	**4.77**	**43**	P	Pn	19 29 58.1	+0.8

*ISCJB **18** 19:30:58.2±0.7, 6°58S±0°07×148°0E±0°1, h51km, mb4.1/12, MS4.0/3, Error ellipse: s-maj=16.4km s-min=9.8km az=2.9*
*IDC **18** 19:30:59.0±2.6, 6°58S×148°11E, h44km±23km, mb3.8/10, mb1 4.0/13, mb1mx3.9/37, mbtmp4.0/13, ML3.9/2, MS4.1/4, Ms1 4.1/4, ms1mx3.6/36, Error ellipse: s-maj=27.0km s-min=13.0km az=101.0*
*NEIC **18** 19:31:01.1±1.6, 6°62S×147°96E, h61km±13km, mb4.4/4, Error ellipse: s-maj=17.5km s-min=9.0km az=86.0*
ISC 18 19:30:59.9±0.8, 6°52S±0°07×148°1E±0°1, h51km, n24, σ1§23/24, mb3.9/12, MS4.0/3, New Britain region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**3.01**	**197**	P	**Pn**	**19 31 44.9**	**-0.2**
	14nm,0.3s,baz=76,slow=3.7,SNR=29						
PMG				S	**Sn**	**19 32 22.7**	**+2.8**
	34nm,0.3s,baz=5.8,slow=21,SNR=7.6						
PMG				LR	LR	19 33 11.8	
	comp=Z,3μm,20.9s,baz=7.0,slow=45						
JAY	**Jayapura**	**8.34**	**298**	P	**Pn**	**19 32 59.2**	**+0.9**
	0.2nm,0.3s,baz=86,slow=21,SNR=13						
SIJI	**Sorong**	**17.67**	**288**	P	**Pn**	**19 35 00.9**	**-1.6**
	26nm,0.3s,baz=359,slow=16,SNR=2.6						
WRAB	**Tennant Creek**	**18.85**	**224**	*e*P	**P**	**19 35 15.0**	**-0.8**
	5.8nm,0.6s						
WRA	**Warramunga Arr**	**18.86**	**224**	P	**P**	**19 35 13.9**	**-2.1**
	0.9nm,0.3s,baz=50,slow=10,SNR=24						
GUMO	**Guam**	**20.23**	**351**	LR	LR	19 41 38.2	
	comp=Z,404nm,21.5s,baz=168,slow=32						
ASAR	**Alice Springs**	**21.82**	**217**	P	**P**	**19 35 46.7**	**-1.4**
	3.9nm,0.4s,baz=51,slow=9.5,SNR=69						
ASAR				S	**S**	**19 39 47.0**	**+0.4**
	1.8nm,1.0s,baz=36,slow=23,SNR=4.0						
FITZ	**Fitzroy Crossi**	**24.71**	**240**	P	**P**	**19 36 15.6**	**-0.9**
	19nm,0.5s,baz=62,slow=7.9,SNR=103						
FITZ	**Fitzroy Crossi**	**24.71**	**240**	*e*P	**P**	**19 36 15.1**	**-1.4**
	19nm,0.6s						
STKA	**Stephens Creek**	**25.94**	**193**	P	**P**	**19 36 26.8**	**-0.8**
	6.8nm,1.0s,baz=6.5,slow=11,SNR=8.4						
STKA				LR	LR	19 47 01.3	
	comp=Z,861nm,18.6s,baz=358,slow=37						
MBWA	**Marble Bar**	**31.04**	**239**	*e*P	**P**	**19 37 11.6**	**-1.6**
MJAR	**Matsushiro Arr**	**43.82**	**349**	P	**P**	**19 39 00.9**	**0.0**
	2.6nm,1.1s,baz=174,slow=6.9,SNR=6.5						
KSRS	**Korea Array**	**47.62**	**338**	LR	LR	19 58 09.8	
	comp=Z,180nm,19.4s,baz=176,slow=34						
CMAR	**Chiang Mai Arr**	**54.42**	**298**	P	**P**	**19 40 24.1**	**+1.8**
	0.5nm,0.6s,baz=122,slow=5.9,SNR=5.5						
SONM	**Songino Array**	**65.37**	**330**	P	**P**	**19 41 37.9**	**+0.8**
	0.8nm,0.6s,baz=133,slow=8.1,SNR=3.8						
VNDA	**Vanda**	**71.34**	**177**	P	**P**	**19 42 13.2**	**-0.7**
	2.7nm,0.8s,baz=316,slow=6.2,SNR=6.0						
MKAR	**Makanchi Array**	**78.57**	**320**	P	**P**	**19 42 55.8**	**-0.3**
	0.5nm,0.6s,baz=99,slow=8.0,SNR=6.0						
TIXI	**Tiksi**	**79.03**	**354**	*e*P	**P**	**19 42 58.8**	**+0.8**
	0.8nm,0.7s						
ZALV	**Zalesovo Beam**	**80.01**	**328**	P	**P**	**19 43 02.8**	**-0.9**
	0.9nm,0.6s,baz=105,slow=4.6,SNR=5.4						
QSPA	**South Pole Qui**	**83.45**	**180**	*e*P	**P**	**19 43 22.2**	**+0.3**
	26nm,0.9s						
ILAR	**Eielson Array**	**85.54**	**23**	P	**P**	**19 43 31.6**	**-0.6**
	0.6nm,0.7s,baz=266,slow=4.6,SNR=5.6						
GERES	**GERESS Array B**	**122.93**	**326**	PKP	**PKPdf**	**19 49 51.1**	**+0.4**
	0.4nm,0.6s,baz=180,slow=0.7,SNR=4.4						
SAML	**Samuel**	**145.27**	**116**	*e*P	**PKPdf**	**19 50 34.0**	**+0.9**
TORD	**Torodi Ar. Bea**	**146.24**	**284**	PKPbc	**PKPab**	**19 50 36.6**	**-0.1**
	1.0nm,0.4s,baz=72,slow=2.4,SNR=13						

*TAP **18** 19:41:51.3, 24°58N×122°37E, h1km, ML2.7, D*
*ISCJB **18** 19:41:52.6±0.5, 24°64N±0°03×122°43E±0°02, h11km±4km, Error ellipse: s-maj=5.6km s-min=2.3km az=2.7*
*JMA **18** 19:41:52.7±0.1, 24°49N×122°35E, h31km±5km, M2.1*
ISC 18 19:41:51.9±1.1, 24°54N±0°04×122°40E±0°02, h9km±10km, n30, σ0§63/56, Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JYNG	**Yonagunijimaku**	**0.51**	**100**	P	**Pb**	**19 42 03.4**	**+0.4**
JYNG				S	**Sb**	**19 42 11.9**	**+1.4**
TWC	**Suao**	**0.51**	**278**	P	**Pg**	**19 42 01.2**	**-0.5**
	baz=273						
TWC				*e*S	**Sg**	**19 42 08.7**	**+0.3**
	baz=273						
YOJ	**Yonaguni jima**	**0.56**	**98**	P	**Pb**	**19 42 04.4**	**+0.4**
YOJ				S	**Sn**	**19 42 14.4**	**-1.2**
TWB1	**Santiao Chiao**	**0.60**	**321**	*e*P	**Pg**	**19 42 03.6**	**0.0**
	baz=321						
TWB1				*e*S	**Sb**	**19 42 12.9**	**-0.3**
	baz=321						
ENA	**Nanau**	**0.61**	**260**	P	**Pg**	**19 42 03.5**	**-0.2**
	baz=254						
ENA				*e*S	**Sb**	**19 42 12.9**	**-0.6**
	baz=254						
TWE	**Neicheng**	**0.69**	**285**	*i* P	**Pg**	**19 42 04.8**	**-0.5**
	baz=282						
TWE				S	**Sb**	**19 42 15.5**	**-0.4**
	baz=282						
ENTT	**Nioudou**	**0.77**	**278**	P	**Pb**	**19 42 07.3**	**-0.1**
	baz=274						
ENTT				S	**Sb**	**19 42 18.4**	**+0.4**
	baz=274						
NWF	**Wu-fen Shan**	**0.77**	**313**	*e*P	**Pb**	**19 42 07.7**	**+0.1**
	baz=312						
NWF				*e*S	**Sb**	**19 42 17.9**	**-0.5**
	baz=312						
TWA	**Mucha**	**0.86**	**301**	*e*P	**Pg**	**19 42 08.4**	**-0.1**
	baz=299						
TWA				*e*S	**Sg**	**19 42 19.5**	**-0.3**
	baz=299						
TWD	**Chiawan**	**0.86**	**238**	*e*P	**Pn**	**19 42 11.4**	**+1.1**
	baz=234						
NNS	**Nan Shan**	**0.94**	**264**	*e*P	**Pb**	**19 42 10.6**	**+0.1**
	baz=260						
NNS				*e*S	**Sb**	**19 42 23.6**	**+0.4**
	baz=260						
TAP	**Taipei**	**0.95**	**302**	*e*S	**Sg**	**19 42 22.2**	**-0.5**
	baz=300						
NSK	**Sanguang**	**0.96**	**278**	P	**Pg**	**19 42 10.4**	**0.0**
	baz=275						
NSK				*e*S	**Sg**	**19 42 23.0**	**+0.1**
	baz=275						
WHF	**Hehuan Shan**	**1.11**	**249**	*e*P	**Pb**	**19 42 13.6**	**0.0**
	baz=246						
WHF				*e*S	**Sn**	**19 42 29.4**	**-0.3**
	baz=246						
ESL	**Shilin**	**1.14**	**231**	*e*P	**Pb**	**19 42 12.3**	**-1.5**
	baz=227						
ESL				*e*S	**Sn**	**19 42 30.4**	**+0.5**
	baz=227						
TWT	**Tachien**	**1.15**	**256**	*e*P	**Pn**	**19 42 15.0**	**+0.6**
	baz=253						
TWT				S	**Sn**	**19 42 31.0**	**+0.6**
	baz=253						
IRIF	**Iriomote-Funau**	**1.23**	**99**	P	**Pn**	**19 42 14.7**	**-0.7**
IRIF				S	**Sb**	**19 42 31.2**	**-0.2**
NSTT	**Nanjuang**	**1.28**	**274**	*e*P	**Pg**	**19 42 17.0**	**+0.5**
	baz=272						
NSTT				S	**Sn**	**19 42 33.5**	**+0.2**
	baz=272						
JKRS	**Kuro-shima**	**1.50**	**101**	P	**Pn**	**19 42 19.2**	**+0.1**
JKRS				S	**Sn**	**19 42 38.6**	**-0.1**
SMLT	**Sun Moon Lake**	**1.52**	**245**	*e*P	**Pb**	**19 42 20.1**	**-0.3**
	baz=242						
SMLT				*e*S	**Sg**	**19 42 41.6**	**+0.8**
	baz=242						
TYC	**Yuchr**	**1.54**	**246**	*e*P	**Pb**	**19 42 20.7**	**0.0**
	baz=243						
TYC				*e*S	**Sg**	**19 42 42.3**	**+0.7**
	baz=243						
JIJ	**Ishigaki jima**	**1.60**	**96**	P	**Pn**	**19 42 19.8**	**-0.6**
JIJ				S	**Sn**	**19 42 39.9**	**-1.3**
JISG	**Ishigakijimahi**	**1.74**	**88**	P	**Pn**	**19 42 22.1**	**-0.3**
JISG				S	**Sn**	**19 42 43.7**	**-1.0**
ALS	**Alishan**	**1.78**	**235**	*e*P	**Pn**	**19 42 23.2**	**-0.1**
	baz=233						
ALS				*e*S	**Sg**	**19 42 50.4**	**+1.1**
	baz=233						
CHN5	**Tsauling**	**1.83**	**240**	P	**Pb**	**19 42 26.2**	**+0.5**
	baz=237						
CHN5				S	**Sg**	**19 42 51.0**	**+0.1**
	baz=237						
CHN4	**Tsaushan**	**2.03**	**235**	*e*P	**Pb**	**19 42 28.9**	**-0.2**
	baz=232						
CHN4				*e*S	**Sg**	**19 42 56.6**	**-0.7**
	baz=232						
WTP	**Ta-pu**	**2.08**	**232**	*e*P	**Pb**	**19 42 29.5**	**-0.4**
	baz=230						
JTJ	**Tarama**	**2.10**	**87**	P	**Pn**	**19 42 28.0**	**+0.7**
JTJ				S	**Sn**	**19 42 53.7**	**+0.1**
CHN1	**Nanshi**	**2.18**	**232**	*e*S	**Sb**	**19 42 57.8**	**-1.0**
	baz=230						
JIRB	**Irabujima**	**2.54**	**83**	P	**Pn**	**19 42 34.2**	**+0.8**
JIRB				S	**Sn**	**19 43 05.2**	**+0.7**

IDC 18 19:55:53.2±7.0, 7°04S×148°01E, h86km±58km, mb3.5/2, mb1 3.6/4, mb1mx3.1/46, mbtmp3.7/4, ML3.4/1, Error ellipse: s-maj=100.1km s-min=59.9km az=137.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	**Port Moresby**	**2.50**	**200**	P	Pn	19 56 32.2	+0.2
	4.6nm,0.3s,baz=356,slow=7.5,SNR=9.6						
PMG				S	Sn	19 57 09.7	+8.1
	2.8nm,0.3s,baz=313,slow=20,SNR=3.1						
WRA	**Warramunga Arr**	**18.45**	**225**	P	P	20 00 01.9	-0.4
	0.1nm,0.3s,baz=50,slow=10,SNR=8.1						
ASAR	**Alice Springs**	**21.38**	**218**	P	P	20 00 34.3	+0.4
	0.6nm,0.5s,baz=54,slow=9.6,SNR=18						
FITZ	**Fitzroy Crossi**	**24.41**	**241**	P	P	20 01 03.6	-0.3
	4.2nm,0.5s,baz=53,slow=8.4,SNR=32						
TORD	**Torodi Ar. Bea**	**146.31**	**283**	PKPbc	PKPbc	20 15 24.5	-0.6
	0.2nm,0.4s,baz=76,slow=3.9,SNR=3.6						

*IDC **18** 19:57:33.1±1.3, 37°56N×144°22E, h0km, mb3.5/4, mb1 3.7/7, mb1mx3.4/59, mbtmp3.6/7, ML3.5/3, Error ellipse: s-maj=32.7km s-min=22.8km az=109.0*
*ISCJB **18** 19:57:38.6±0.9, 37°81N±0°05×143°65E±0°07

WRA	Warramunga Arr	58.12 190	P	P	20 07 26.6	-2.2
	0.3nm,0.6s,baz=9.2,slow=7.3,SNR=2.8					

IDC 18 19:59:35.1±8.0, 6°.95S×147°.94E, h82km±72km, mb3.5/2, mb1 3.6/4, mb1mx3.2/48, mbtmp3.7/4, ML3.5/1, Error ellipse: s-maj=124.5km s-min=63.9km az=139.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	Port Moresby	2.56	197	P	Pn	20 00 14.6	+0.1
	12nm,0.3s,baz=358,slow=7.1,SNR=16						
PMG				S	Sn	20 00 50.7	+6.0
	4.3nm,0.3s,baz=1.8,slow=15,SNR=5.8						
WRA	Warramunga Arr	18.46	224	P	Pn	20 03 45.1	-0.4
	0.2nm,0.3s,baz=50,slow=11,SNR=5.6						
ASAR	Alice Springs	21.40	218	P	P	20 04 16.4	0.0
	0.7nm,0.6s,baz=53,slow=9.2,SNR=16						
FITZ	Fitzroy Crossi	24.39	241	P	P	20 04 45.5	-0.4
	3.3nm,0.4s,baz=56,slow=9.5,SNR=17						
TORD	Torodi Ar. Bea	146.22	283	PKPbc	PKPdf	20 19 06.5	+0.5
	0.4nm,0.5s,baz=75,slow=3.7,SNR=4.6						

IDC 18 20:05:59.6±1.1, 40°.76N×79°.97E, h0km, mb3.7/7, mb1 3.7/10, mb1mx3.5/54, mbtmp3.7/10, ML3.2/3, MS3.8/1, Ms1 3.8/1, ms1mx2.7/60, Error ellipse: s-maj=18.0km s-min=16.7km az=4.0
KRNET 18 20:06:01.9±0.1, 40°.90N×80°.12E, mb4.0
BJI 18 20:06:02.3, 40°.79N×80°.04E, h7km, ML3.6/7
SOME 18 20:06:05.0, 41°.00N×79°.98E, h5km
NNC 18 20:06:08.0±3.0, 41°.19N×80°.67E, h0km, mb3.8, mpv3.5, Error ellipse: s-maj=23.3km s-min=11.7km az=146.0
ISC 18 20:06:02.4±1.6, 40°.84N±0°.04×79°.74E±0°.04, h14km±10km, n54, σ1s88/88, mb3.9/5, 32C-18D, Southern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PRZ	Przheval'sk	1.92	329	⇓eP	Pg	20 06 40.1	+0.8
	baz=321						
PRZ				⇓eS	Sg	20 07 06.8	+2.6
	baz=321						
KDJ	Kajisay	2.31	305	⇑eP	Pg	20 06 46.9	+0.1
	baz=300						
KDJ				⇑eS	Sg	20 07 19.6	+2.8
	baz=300						
UZB	Uzynbulak	2.36	347	eP	Pg	20 06 46.6	-1.1
	116nm,0.2s						
UZB				eS	Sg	20 07 17.1	-1.3
	365nm,0.4s						
SATY	Saty	2.43	336	eP	Pg	20 06 48.7	-0.3
	168nm,0.6s						
SATY				eS	Sg	20 07 20.7	+0.3
	750nm,0.7s						
PDGK	Podgornoye	2.49	356	⇓eP	Pb	20 06 45.9	-0.9
	baz=349						
PDGK				⇓eS	Sb	20 07 18.2	+0.9
	baz=349						
PDGK	Podgornoye	2.49	356	⇓Pn	Pb	20 06 45.5	-1.3
	64nm,0.7s						
PDGK				⇑Lg	Lg	20 07 18.9	
	322nm,0.5s						
ZHN	Zhinishke	2.52	338	eP	Pg	20 06 49.9	-0.8
	80nm,0.2s						
ZHN				⇑iS	Sg	20 07 22.5	-0.9
	766nm,0.3s						
KTMS	Ketmen	2.64	10	eP	Pb	20 06 49.1	-0.4
	134nm,0.3s						
KTMS				eS	Sb	20 07 21.8	0.0
	417nm,0.2s						
KPKS	Kokpek	2.74	344	eP	Pb	20 06 52.1	+1.0
	208nm,1.0s						
KPKS				eS	Sb	20 07 27.3	+2.7
	793nm,1.0s						
ULHL	Ulahol	2.98	299	⇑iP	Pb	20 06 54.8	-0.5
	baz=296						
ULHL				⇑iS	Sg	20 07 35.8	-2.3
	baz=296						
TNSS	Tian-Shan	3.03	317	eP	Pg	20 07 00.2	-0.3
	58nm,0.5s						
TNSS				eS	Sg	20 07 41.4	+1.7
	144nm,0.6s						
MDOK	Medeo	3.07	320	eP	Pg	20 07 01.2	+0.1
	25nm,0.3s						
MDOK				eS	Sg	20 07 42.0	+1.2
	152nm,0.6s						
KNDC	Almaty	3.15	320	⇓Pn	Pb	20 06 58.8	+0.7
KNDC				⇑Pg	Pg	20 07 07.8	+5.1
KNDC				⇑Sn	Sg	20 07 45.0	+1.6
KSH	Kashi	3.18	247	Pn	Pg	20 07 02.1	-1.2
KSH				Sn	Sg	20 07 47.1	+2.6
KSH				smax	smax		
	comp=N,97nm,0.7s						
KSH				smax	smax		
	comp=E,100nm,1.0s						
AAA	Alma-Ata	3.20	320	eP	Pg	20 07 03.8	+0.1
	100nm,0.1s						
AAA				eS	Sg	20 07 45.9	+0.8
	773nm,0.6s						
BOOM	Boomskoye usch	3.29	301	⇑eP	Pb	20 06 59.9	-0.7
	baz=298						
BOOM				⇑eS	Sb	20 07 43.1	+2.6
	baz=298						
MTBS	Maitube	3.37	314	eP	Pg	20 07 07.5	+0.6
	19nm,0.1s						
MTBS				⇑iS	Sg	20 07 51.6	+1.2
	196nm,0.3s						
DJR	Jarkent	3.49	1	eP	Pb	20 07 05.8	+1.9
	43nm,0.5s						
DJR				eS	Sb	20 07 49.2	+3.1
	111nm,0.5s						
KST	Kastek	3.58	309	eP	Pg	20 07 10.4	-0.4
	8.7nm,0.4s						
KST				⇓iS	Sg	20 07 56.5	-0.7
	132nm,0.3s						
KZA	Kyzart	3.60	292	⇑iP	Pb	20 07 04.0	-1.9
	baz=289						
KZA				⇑iS	Sb	20 07 50.8	+1.2
	baz=289						
CHKK	Chushkaly	3.64	327	⇓iP	Pg	20 07 10.6	-1.6
	17nm,0.3s						
CHKK				⇑iS	Sg	20 07 59.0	-0.4
	349nm,0.4s						
ARXS	Arharly	3.65	338	eP	Pg	20 07 11.2	-1.1
	29nm,0.3s						
ARXS				eS	Sg	20 07 58.5	-1.2
	159nm,0.4s						
TKM2	Tokmak 2	3.73	305	⇑iP	Pb	20 07 04.8	-3.3
	baz=302						
TKM2				⇑iS	Sb	20 07 52.4	-0.8
	baz=302						
TKM2	Tokmak 2	3.73	305	⇑Pn	Pb	20 07 10.5	+2.4
	1.5nm,0.2s						
TKM2				⇓Sn	Sg	20 08 02.5	+0.4
	69nm,0.5s						
DGS	Degeres	3.81	310	eP	Pg	20 07 15.8	+0.6
	30nm,0.3s						
DGS				eS	Sg	20 08 05.7	+1.1
	80nm,0.5s						
KUU	Kurty	3.96	321	eP	Pg	20 07 17.4	-0.7
	28nm,0.6s						
KUU				⇓iS	Sg	20 08 08.5	-0.9
	102nm,0.5s						
KBK	Karagaybulak	4.02	298	⇑iP	Pb	20 07 10.0	-3.0
	baz=296						
KBK				⇑iS	Sb	20 07 59.8	-1.7
	baz=296						
UCH	Uchtor	4.16	291	⇑iP	Pb	20 07 12.4	-3.2
	baz=289						
UCH				⇑iS	Sb	20 08 04.2	-1.7
	baz=289						
ARLS	Aral	4.21	286	⇓eP	Pb	20 07 13.6	-2.6
	baz=284						
ARLS				⇓eS	Sb	20 08 06.5	-0.4
	baz=284						
TDK	Taldyqorghan	4.27	347	eP	Pg	20 07 22.9	-1.3
	33nm,0.2s						
TDK				eS	Sg	20 08 18.2	-1.3
	268nm,0.8s						
CHMS	Chumysh	4.30	302	⇑iP	Pb	20 07 13.7	-4.0
	baz=299						
CHMS				⇑iS	Sb	20 08 05.9	-3.6
	baz=299						
AAK	Ala-Archa	4.32	296	Pg	Pg	20 07 21.9	-3.1
	2.7nm,0.3s,baz=122,slow=6.9,SNR=9.7						
AAK				Lg	Lg	20 08 22.5	
	2.7nm,0.3s,baz=294,slow=21,SNR=7.5						
AAK	Ala-Archa	4.32	296	⇑Pn	Pg	20 07 23.7	-1.3
	7.5nm,0.6s						
AAK				⇑Sn	Sg	20 08 22.9	+2.0
	28nm,0.7s						
KAPS	Kapalarasan	4.45	356	eP	Pg	20 07 26.3	-1.2
	14nm,0.3s						
KAPS				eS	Sg	20 08 24.7	-0.5
	45nm,0.6s						
MNAS	Manas	5.67	289	⇑Pn	Pb	20 07 41.4	+0.4
	2.6nm,0.7s						
MNAS				⇓Sn	Sb	20 08 57.3	+8.4
	14nm,0.8s						
MAKZ	Makanchi	6.18	14	⇓Pn	Pn	20 07 34.2	+1.1
	2.3nm,0.7s						
MAKZ				⇑Sn	Sn	20 08 41.5	-1.9
	4.2nm,0.7s						
MAKZ				⇓Lg	Lg	20 09 10.7	
	2.5nm,0.5s						
MK31	Makanchi Array	6.23	16	⇑Pn	Pn	20 07 35.0	+1.2
	1.0nm,0.4s,baz=191,slow=15,SNR=6.0						
MK31				⇓Sn	Sn	20 08 44.3	-0.4
	5.2nm,0.5s,baz=194,slow=24,SNR=7.3						
MK31				⇑Lg	Lg	20 09 09.6	
	20nm,1.1s,baz=197,slow=27,SNR=3.8						
MKAR	Makanchi Array	6.23	16	Pn	Pn	20 07 34.9	+1.1
	1.0nm,0.3s,baz=206,slow=14,SNR=31						
MKAR				Sn	Sn	20 08 43.5	-1.1
	3.5nm,0.3s,baz=183,slow=22,SNR=12						
MKAR				Lg	Lg	20 09 18.8	
	1.0nm,0.3s,baz=182,slow=30,SNR=2.6						
WMQ	Urumqi	6.60	61	ePn	Pn	20 07 38.3	-0.6
WMQ				Sn	Sn	20 08 54.0	0.0
WMQ				smax	smax		
	comp=N,20nm,0.5s						
WMQ				smax	smax		
	comp=E,30nm,0.4s						
KK31	Karatay Array	7.24	291	⇑Pn	Pb	20 08 04.2	-3.6
	1.0nm,0.5s						
KK31				⇑Lg	Lg	20 10 14.7	
	8.4nm,0.7s						
OTUK	Ortayu	9.09	327	⇑Pn	Pn	20 08 21.8	+8.8
	0.9nm,0.5s						
OTUK				⇓Lg	Lg	20 10 58.0	
	14nm,0.9s						
CEP	Cherat	9.38	224	P	Pn	20 08 18.7	+1.5
KURK	Kurchatov	9.90	356	⇓Lg	Lg	20 11 12.2	
	27nm,1.3s						
THW	Thamme Wali	10.28	221	P	Pn	20 08 31.2	+1.8
ZALV	Zalesovo Beam	13.55	13	Pn	Pn	20 09 12.4	-1.6
	0.1nm,0.3s,baz=204,slow=14,SNR=3.2						
BVAR	Borovoye Array	13.74	336	Pn	Pn	20 09 17.1	+0.5
	0.4nm,0.3s,baz=146,slow=16,SNR=6.8						
SONM	Songino Array	20.24	61	P	P	20 10 36.5	-0.5
	1.0nm,0.6s,baz=273,slow=10,SNR=3.2						
ARU	Arti	20.82	326	P	P	20 10 44.4	+1.2
	0.7nm,0.4s,baz=139,slow=16,SNR=3.8						
GNI	Garni	26.52	280	LR	LR	20 24 26.6	
	comp=Z,195nm,18.3s,baz=26,slow=42						
BRTR	Keskin Array B	34.88	284	P	P	20 12 54.9	+1.5
	1.1nm,0.7s,baz=103,slow=7.5,SNR=8.1						
TIXI	Tiksi	39.18	22	P	P	20 13 28.0	-1.3
	0.2nm,0.2s,baz=333,slow=6.8,SNR=2.5						
ARCES	ARCESS Array B	40.02	334	P	P	20 13 36.5	+0.2
	2.9nm,0.9s,baz=92,slow=9.0,SNR=6.8						
TORD	Torodi Ar. Bea	72.53	272	P	P	20 17 28.5	-0.5
	0.8nm,0.6s,baz=34,slow=5.5,SNR=5.5						
ASAR	Alice Springs	81.53	131	P	P	20 18 18.5	-1.0
	0.5nm,0.9s,baz=337,slow=9.2,SNR=3.4						

NIED 18 20:26:00, 38°.30N×142°.30E, h38km, Mw4.0 Best double couple: M0 1.33000×10^15 NP1:φs=99.00000°, δ 14.00000°, λ-154.00000°. NP2:φs=343.00000°, δ 84.00000°, λ-77.00000°.
IDC 18 20:26:10.4±3.1, 38°.53N×143°.50E, h0km, mb3.4/2, mb1 3.6/3, mb1mx3.2/61, mbtmp3.3/3, ML3.1/1, Error ellipse: s-maj=72.4km s-min=39.9km az=59.0
ISCJB 18 20:26:15.3±1.5, 38°.26N±0°.05×142°.30E±0°.09, h21km±8km, mb3.2/2, Error ellipse: s-maj=12.0km s-min=7.8km az=11.3
JMA 18 20:26:16.8±0.1, 38°.34N×142°.28E, h30km±2km, M3.7
ISC 18 20:26:15.8±2.9, 38°.34N±0°.05×142°.30E±0°.09, h13km±15km, n12, σ2s13/21, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.76	279	P	Pb	20 26 30.8	0.0
JIO				S	Sg	20 26 40.4	0.0
OFUJ	Ofunato	0.89	327	P	Pb	20 26 32.9	-0.2
OFUJ				S	Sb	20 26 44.5	-0.5
JMK	Ichinoseki	1.04	306	P	Pb	20 26 35.3	-0.5
JMK				S	Sb	20 26 48.7	-0.7
JMM	Marumori	1.28	249	P	Pn	20 26 38.3	-1.1
JMM				eS	Sb	20 26 53.6	-2.5
JOU	Okura	1.29	272	P	Pn	20 26 39.4	-0.1
JOU				S	Sn	20 26 55.3	-1.4
JOM	Ohasama	1.38	326	P	Pn	20 26 40.5	-0.3
JOM				S	Sn	20 26 58.1	-0.8
JFK	Kawauchi	1.49	230	P	Pn	20 26 40.6	-1.7
JFK				S	Sn	20 26 57.3	-4.3
JYK	Kaneyama	1.63	291	P	Pn	20 26 44.4	+0.2
JYK				eS	Sn	20 27 04.8	-0.2
MJAR	Matsushiro Arr	3.72	242	Pn	Pb	20 27 22.1	+0.7
	0.9nm,0.3s,baz=78,slow=16,SNR=5.5						
MAT	Matsushiro	3.72	242	P	Pn	20 27 16.5	+3.5
MAT				S	Sn	20 28 01.7	+5.1
MKAR	Makanchi Array	44.04	301	P	P	20 34 25.3	+2.1
	0.1nm,0.2s,baz=92,slow=7.2,SNR=3.6						
WRA	Warramunga Arr	58.45	189	P	P	20 36 10.3	-1.1
	0.2nm,0.5s,baz=5.2,slow=7.3,SNR=4.6						

DJA 18 20:30:05.3±0.6, 7°.5S±5°.×10°.5E±°, h10km, M3.5/3, MLv3.5/3, Sunda Strait

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CGJI	Cibinong	0.37	52	P	Pg	20 30 12.1	-0.5
CGJI				S	Sb	20 30 19.1	-0.6
SBJI	Serang	1.02	45	P	Pn	20 30 25.5	-0.2
SKJI	Sukabumi	1.16	98	P	Pb	20 30 27.5	0.0
BLSI	Bandar Lampung	1.47	354	P	Pn	20 30 31.1	-0.8
CBJI	Citeko	1.50	74	P	Pn	20 30 31.1	-1.2
CBJI				S	Sb	20 30 52.7	+0.3
KASI	Kota Agung	1.59	325	P	Pn	20 30 32.4	-1.1
KASI				S	Sn	20 30 53.9	-0.2
CNJI	Cibinong	1.78	105	P	Pn	20 30 35.4	-0.7
LEM	Lembang	2.20	90	P	Pn	20 30 42.1	0.0
LWLI	Liwa	2.25	324	P	Pn	20 30 42.3	-0.4
CMJI	Cimerak	3.17	107	P	Pn	20 30 55.5	+0.3

SJA 18 20:30:15.8±1.4, 24°.13S×67°.09W, h197km±22km, ML2.8, MW3.1
ISCJB 18 20:30:17.6±1.3, 24°.16S±0°.06×67°.27W±0°.04, h164km±18km, Error ellipse: s-maj=10.4km s-min=5.3km az=12.6
GUC 18 20:30:19.2±0.6, 23°.92S×67°.74W, h223km±22km, ML4.2
ISC 18 20:30:15.6±2.8, 24°.17S±0°.07×67°.21W±0°.04, h189km±30km, n14, σ1s42/23, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SLA	San Lorenzo	1.65	110	iP	Pn	20 30 51.3	+1.4
SLA				IAML		20 30 53.1	
	comp=Z,33nm,0.6s						
HJA	Humahuaca	1.91	60	iP	Pn	20 30 53.4	+0.6
HJA				iS	S	20 31 22.0	+0.4
AZAP	Zapla	1.96	92	iP	Pn	20 30 53.7	+0.5
AZAP				IAML		20 30 55.5	
	comp=Z,56nm,0.3s						
AZAP				iS	S	20 31 21.7	-0.5
LVC	Limon Verde	2.21	315	iP	Pn	20 30 57.3	+1.3
FSA	Cafayete	2.23	150	iP	Pn	20 30 57.2	+1.2
YJA	Yavi	2.53	38	iP	Pn	20 31 00.6	+0.9
YJA				iS	S	20 31 33.4	-0.5
ASTB	Santa Barbara	2.53	85	IAML		20 31 00.4	
ASTB				iS	S	20 31 30.5	-2.8
PB06	IPOC Station P	2.62	303	iP	Pn	20 31 01.8	+1.3
PB06				iS	S	20 31 34.1	-1.0
PB06				IAML		20 31 36.9	
	comp=N,1μm,0.1s						
PB14	IPOC Station P	2.95	261	iP	Pn	20 31 05.4	+1.0
PB14				iS	S	20 31 40.9	-1.4
PB14				IAML		20 31 44.1	
	comp=E,226nm,0.6s						
ALOL	LOMAS DE OLMED	2.97	84	iP	Pn	20 31 04.7	+0.2
PB09	IPOC Station P	3.02	321	iP	Pn	20 31 06.9	+1.8
PB09				iS	S	20 31 43.6	-0.1
PB09				IAML		20 31 48.0	
	comp=N,526nm,0.3s						
PB10	IPOC Station P	3.13	281	iP	Pn	20 31 07.6	+1.2
PB10				iS	S	20 31 44.3	-1.6
PB10				IAML		20 31 49.7	
	comp=E,775nm,0.3s						
PB04	IPOC Station P	3.27	304	iP	Pn	20 31 09.1	+1.0
PB04				iS	S	20 31 46.9	-2.2
PB04				IAML		20 31 51.7	
	comp=N,393nm,0.1s						
PB07	IPOC Station P	3.47	314	eP	Pn	20 31 11.3	+0.7
PB07				iS	S	20 31 51.4	-2.1
PB07				IAML		20 31 53.1	
	comp=E,290nm,0.3s						

MAN 18 20:31:27, 7°.01N×125°.95E, h48km, mb4.5, ML3.3, MS3.2, 1C, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MATI	Mati	0.31	101	eP	Pn	20 31 38.0	+1.9
BUKP	Musuan	1.24	314	eP	Pn	20 31 50.3	+2.3
BUKP				eS	Sn	20 32 04.6	+1.0
CGP	Cagayan de Oro	1.91	319	⇑eP	Pn	20 31 57.8	+0.7
CGP				eS	Sn	20 32 21.7	+1.8

IDC 18 20:39:26.9±3.3, 38°.34N×142°.04E, h58km±32km, mb3.3/1, mb1 3.4/5, mb1mx3.1/52, mbtmp3.6/5, ML3.0/4, Error ellipse: s-maj=60.6km s-min=17.7km az=98.0
JMA 18 20:39:27.9±0.1, 38°.40N×141°.78E, h58km±1km, M4.1
JMA Felt II J1.
ISC 18 20:39:24.6±2.2, 38°.37N±0°.05×141°.96E±0°.10, h18km±13km, n12, σ1s25/20, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.49	280	P	Pn	20 39 38.1	+1.4
JIO				S	Sn	20 39 45.3	+0.6
OFUJ	Ofunato	0.74	342	P	Pn	20 39 41.7	+1.4
OFUJ				S	Sn	20 39 51.5	+0.3
JMK	Ichinoseki	0.82	315	P	Pn	20 39 42.3	+1.0
JMK				S	Sn	20 39 52.5	-0.5
JOU	Okura	1.02	270	P	Pn	20 39 44.3	+0.3
JOU				S	Sb	20 39 56.5	-0.3
JMM	Marumori	1.05	242	P	Pn	20 39 44.8	+0.4
JMM				S	Sb	20 39 57.1	-0.5
JOM	Ohasama	1.22	335	P	Pg	20 39 47.8	-0.3
JOM				S	Sn	20 40 03.0	+0.2
MJAR	Matsushiro Arr	3.50	240	P	Pn	20 40 20.2	+2.0
	1.2nm,0.3s,baz=40,slow=12,SNR=10						
MAT	Matsushiro	3.50	240	P	Pn	20 40 20.4	+2.3
MAT				S	Sn	20 41 00.9	+1.8
JHJ	Hachijo jima 2	5.53	199	P	Pn	20 40 46.2	+0.2
	3.5nm,0.3s,baz=90,slow=20,SNR=5.2						
JHJ				S	Sn	20 41 48.8	-0.4
	8.9nm,0.3s,baz=107,slow=19,SNR=3.5						
ASAJ	Asahikawa	5.76	5	P	Pn	20 40 50.0	+0.8
	0.5nm,0.3s,baz=209,slow=10,SNR=4.6						
USRK	Ussuriysk Ar.	9.50	311	P	Pn	20 41 41.4	+0.9
	0.3nm,0.3s,baz=122,slow=14,SNR=4.6						
MKAR	Makanchi Array	43.79	301	P	P	20 47 27.1	-2.0
	0.4nm,0.4s,baz=81,slow=9.7,SNR=5.1						

ISCJB 18 20:41:46.0±0.4, 6°.56S±0°.04×148°.02E±0°.06, h51km, mb4.6/33, MS4.3/13, Error ellipse: s-maj=8.7km s-min=6.0km az=3.3
NEIC 18 20:41:48.6±0.9, 6°.60S×147°.85E, h58km±8km, mb4.9/14, Error ellipse: s-maj=8.7km s-min=7.3km az=96.0
IDC 18 20:41:49.2±2.2, 6°.56S×147°.82E, h60km±19km, mb4.2/17, mb1 4.3/20, mb1mx4.2/35, mbtmp4.5/20, MS4.3/14, Ms1 4.3/14, ms1mx4.0/34, Error ellipse: s-maj=24.5km s-min=11.6km az=89.0
DJA 18 20:41:50.1±1.9, 7°.5S±7°.×14°.8E±1°.0, h38km±13km, M5.0/17, mb4.9/17, mB5.4/6, MLv5.2/1, Mw(mB)4.9/6, Mwp6.6/1
ISC 18 20:41:48.1±0.5, 6°.57S±0°.05×147°.93E±0°.08, h51km, n69, σ1s59/64, mb4.6/33, MS4.3/13, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	Port Moresby	2.92	195	P	Pn	20 42 31.1	-1.0
	48nm,0.3s,baz=36,slow=5.9,SNR=41						
PMG				S	Sn	20 43 08.2	+2.2
	54nm,0.3s,baz=11,slow=14,SNR=18						
PMG				LR	LR	20 43 16.9	
	comp=Z,936nm,21.1s,baz=26,slow=30						
PMG	Port Moresby	2.92	195	ePn	Pn	20 42 30.8	-1.4
PMG				P	Pn	20 42 31.1	-1.0
PMG				S	Sn	20 43 08.2	+2.2
JAY	Jayapura	8.25	299	P	Pn	20 43 45.6	+0.3
	0.1nm,0.3s,baz=94,slow=22,SNR=5.1						
JAY				LR	LR	20 47 49.6	
	comp=Z,127nm,19.0s,baz=17,slow=44						
JAY	Jayapura	8.25	299	P	Pn	20 43 47.7	+2.3
GENI	Genyem	8.69	297	P	Pn	20 43 53.4	+2.1
	104nm,1.1s,2μm						
HNR	Honiara	12.23	104	eP	Pn	20 44 41.0	+1.2
HNR	Honiara	12.23	104	eP	Pn	20 44 41.2	+1.4
	152nm,1.1s						
CTA	Charters Tower	13.54	187	P	Pn	20 44 58.1	+0.5
	0.5nm,0.3s,baz=344,slow=14,SNR=5.1						
CTAO	Charters Tower	13.54	187	eP	Pn	20 44 58.0	+0.4
FAKI	Fak Fak	16.04	282	P	P	20 45 32.9	-0.3
SAUI	Saumlaki	16.56	264	P	P	20 45 38.7	-0.2
SWI	Sorong	17.57	288	P	P	20 45 49.9	-0.2
	94nm,1.4s,936nm						
WRAB	Tennant Creek	18.72	224	eP	P	20 46 02.0	-0.7
	101nm,1.5s						
WRA	Warramunga Arr	18.73	224	P	P	20 46 00.8	-2.0
	0.8nm,0.3s,baz=48,slow=11,SNR=20						
GUMO	Guam	20.26	351	LR	LR	20 54 15.8	
	comp=Z,1μm,18.4s,baz=168,slow=37						
NLAI	Namlea	21.02	278	P	P	20 46 29.7	+2.0
LBMI	Labuha	21.22	285	P	P	20 46 33.6	+3.7
ASAR	Alice Springs	21.70	217	P	P	20 46 33.8	-1.2
	7.1nm,0.5s,baz=56,slow=9.3,SNR=31						
ASAR				LR	LR	20 55 41.2	
	comp=Z,1μm,19.4s,baz=46,slow=38						
SANI	Sanana	22.33	281	P	P	20 46 44.7	+2.8
SOEI	Soe	23.64	261	P	P	20 47 06.9	+12
FITZ	Fitzroy Crossi	24.57	240	P	P	20 47 02.5	-1.0
	38nm,0.5s,baz=52,slow=8.1,SNR=132						
FITZ				LR	LR	20 58 08.3	
	comp=Z,765nm,19.7s,baz=54,slow=40						
MMRI	Maumere	25.55	264	eP	P	20 47 11.2	-1.3
	33nm,0.6s						
LUWI	Luwuk	25.69	281	P	P	20 47 16.9	+3.2
	161nm,1.2s,2μm						
LUWI	Luwuk	25.69	281	eP	P	20 47 17.0	+3.2
	220nm,1.2s						
STKA	Stephens Creek	25.86	192	P	P	20 47 14.7	-0.5
	4.9nm,1.0s,baz=357,slow=12,SNR=3.5						
STKA				LR	LR	20 58 24.6	
	comp=Z,1μm,18.7s,baz=8.2,slow=38						
DAV	Davao City (W)	26.09	301	LR	LR	20 59 31.3	
	comp=Z,425nm,18.1s,baz=64,slow=41						
MRSI	Marisa	26.87	284	P	P	20 47 28.8	+4.4
KAPI	Kappang	28.08	272	P	P	20 47 33.8	-1.4
	7.0nm,0.8s,baz=196,slow=8.8,SNR=2.5						
KAPI				LR	LR	21 01 11.6	
	comp=Z,329nm,20.1s,baz=112,slow=42						
TTSI	Tana Toraja	28.23	276	P	P	20 47 45

NWAO LR LR 21 06 23.8
comp=Z,1μm,18.8s,baz=272,slow=38
CISI Cisompet, Garu 39.81 266 *eP* **P 20 49 16.1 -0.9**
65nm,1.0s
LEM Lembang 40.03 267 LR LR 21 11 19.5
comp=Z,216nm,18.2s,baz=42,slow=44
RPZ Rata Peaks 42.20 155 LR LR 21 07 25.0
comp=Z,570nm,18.8s,baz=334,slow=36
MJAR Matsushiro Arr 43.84 349 P **P 20 49 49.1 -0.3**
12nm,1.1s,baz=172,slow=8.1,SNR=32
MAT Matsushiro 43.84 349 P **P 20 49 49.1 -0.3**
KSRS Korea Array 47.62 338 P **P 20 50 18.6 -0.6**
6.1nm,1.0s,baz=156,slow=8.9,SNR=11
KSRS LR LR 21 08 12.1
comp=Z,357nm,20.1s,baz=154,slow=33
KSAR Wonju Array Be 47.62 338 P **P 20 50 18.6 -0.6**
USRK Ussuriysk Ar. 52.55 346 P **P 20 50 55.8 -0.5**
3.6nm,0.9s,baz=165,slow=7.9,SNR=5.6
CMAR Chiang Mai Arr 54.34 298 P **P 20 51 11.2 +1.2**
1.7nm,0.8s,baz=124,slow=5.7,SNR=11
XAN Xi'an 54.71 320 P **P 20 51 11.8 -0.7**
XAN pmax pmax
comp=Z,8.0nm,1.1s
XAN pmax pmax
comp=Z,37nm,4.5s
PETK Petropavlovsk- 60.03 7 P **P 20 51 50.9 +1.4**
comp=Z,11nm,0.9s,baz=149,slow=5.2,SNR=5.9
GTA Gaotai 63.77 320 *eP* **P 20 52 16.1 +0.9**
GTA pP pP 20 52 20.9 -8.5
GTA sP sP 20 52 23.5 -12
GTA pmax pmax
comp=Z,2.0nm,1.0s
ULN Ulaanbaatar 65.05 331 *eP* **P 20 52 23.1 -0.3**
comp=Z,8.5nm,1.3s
SONM Songino Array 65.35 331 P **P 20 52 24.8 -0.5**
comp=Z,4.9nm,1.0s,baz=142,slow=7.4,SNR=6.9
VNDA Vanda 71.29 177 P **P 20 53 02.6 +0.8**
comp=Z,1.8nm,0.8s,baz=315,slow=6.3,SNR=11
VNDA LR LR 21 23 34.5
comp=Z,204nm,18.5s,baz=350,slow=35
MKAR Makanchi Array 78.53 320 P **P 20 53 43.8 -0.3**
comp=Z,2.6nm,1.0s,baz=108,slow=6.9,SNR=18
TIXI Tiksi 79.07 354 *eP* **P 20 53 45.1 -1.4**
comp=Z,4.2nm,1.1s
ZALV Zalesovo Beam 79.99 328 P **P 20 53 50.5 -1.4**
comp=Z,4.1nm,1.0s,baz=107,slow=5.1,SNR=11
MAW Mawson 82.08 203 P **P 20 54 01.8 -1.0**
comp=Z,2.9nm,1.0s,baz=236,slow=3.6,SNR=2.3
KURK Kurchatov 82.22 323 *eP* **P 20 54 02.7 -1.2**
comp=Z,16nm,1.3s
QSPA South Pole Qui 83.40 180 *eP* **P 20 54 09.9 0.0**
comp=Z,45nm,1.0s
KKAR Karatay Array 85.35 314 *eP* **P 20 54 19.4 -0.7**
comp=Z,7.7nm,1.1s
ILAR Eielson Array 85.64 23 P **P 20 54 19.9 -1.0**
comp=Z,2.0nm,1.0s,baz=254,slow=5.1,SNR=9.0
NRIK Noril'sk 86.10 342 LR LR 21 35 06.4
comp=Z,179nm,18.2s,baz=144,slow=37
DOT Dot Lake 86.31 24 *eP* **P 20 54 24.4 +0.1**
comp=Z,9.5nm,1.2s
BRVK Borovoye 87.84 324 *eP* **P 20 54 30.3 -1.7**
comp=Z,7.8nm,1.4s
ABKAR Akbulak array 93.61 319 *eP* **P 20 54 56.6 -2.4**
comp=Z,4.2nm,1.0s
GEYT Alibeck 93.84 308 P **P 20 54 59.4 -0.9**
comp=Z,1.3nm,0.7s,baz=90,slow=4.3,SNR=4.5
BRTR Keskin Array B 112.81 310 PKiKP **PKiKP 21 00 18.9 -1.0**
comp=Z,1.5nm,1.2s,baz=90,slow=1.4,SNR=5.3
GERES GERESS Array B 122.90 326 PKP **PKPdf 21 00 39.9 +1.0**
comp=Z,0.5nm,0.5s,baz=82,slow=2.8,SNR=8.2
LONY Lake Ozonia 127.05 37 *eP* **Pdif 20 57 27.7 -0.7**
LPAZ La Paz 137.70 123 PKP **PKPdf 21 01 11.8 +3.2**
comp=Z,3.6nm,1.2s,baz=348,slow=3.2,SNR=5.0
SAML Samuel 145.37 116 *e*PKPdf **PKPbc 21 01 21.3 -0.1**
TORD Torodi Ar. Bea 146.13 284 PKPbc **PKPab 21 01 24.5 +0.1**
comp=Z,7.6nm,1.0s,baz=83,slow=2.6,SNR=42
DBIC Dimbokro 152.97 272 PKPbc **PKPbc 21 01 41.3 +0.3**
comp=Z,3.0nm,0.8s,baz=173,slow=1.4,SNR=5.6

ISCJB ***18*** *20:43:35.5±0.7, 6°.63S±0°.06×148°.0E±0°.1, h51km, mb4.3/16, Error ellipse: s-maj=19.6km s-min=8.0km az=7.5*
IDC ***18*** *20:43:36.7±3.3, 6°.63S×148°.01E, h45km±30km, mb4.0/12, mb1 4.2/15, mb1mx4.0/35, mbtmp4.3/15, ML4.1/2, Error ellipse: s-maj=33.5km s-min=18.2km az=91.0*
NEIC ***18*** *20:43:37.6±1.4, 6°.64S×148°.00E, h56km±12km, mb4.8/4, Error ellipse: s-maj=14.3km s-min=9.4km az=94.0*
ISC 18 20:43:37.3±0.8, **6°.61S**±0°.07×**148°.0E**±0°.2, **h51**km, **n34,**
σ0**99**/32, **mb4.2**/16, **New Britain region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.90**	**197**	P	**Pn**	**20 44 21.5**	**+0.4**
	52nm,0.3s,baz=8.4,slow=11,SNR=5.5						
CTA	**Charters Tower**	**13.51**	**187**	P	**Pn**	**20 46 46.5**	**+0.2**
	0.3nm,0.3s,baz=6.3,slow=15,SNR=3.0						
CTAO	**Charters Tower**	**13.51**	**187**	*eP*	**Pn**	**20 46 46.5**	**+0.2**
WRAB	**Tennant Creek**	**18.75**	**224**	*eP*	**P**	**20 47 51.1**	**-1.1**
WRA	**Warramunga Arr**	**18.76**	**224**	P	**P**	**20 47 51.4**	**-1.0**
	0.9nm,0.3s,baz=52,slow=11,SNR=4.5						
ASAR	**Alice Springs**	**21.72**	**217**	P	**P**	**20 48 23.1**	**-1.3**
	4.0nm,0.7s,baz=54,slow=8.6,SNR=5.1						
FITZ	**Fitzroy Crossi**	**24.63**	**240**	P	**P**	**20 48 52.0**	**-1.2**
	13nm,0.5s,baz=56,slow=7.6,SNR=7.5						
STKA	**Stephens Creek**	**25.84**	**193**	P	**P**	**20 49 02.5**	**-1.6**
	6.0nm,0.6s,baz=359,slow=11,SNR=4.7						
MBWA	**Marble Bar**	**30.95**	**239**	*eP*	**P**	**20 49 48.8**	**-1.0**
KSM	**Kuching**	**38.49**	**281**	*eP*	**P**	**20 50 55.6**	**+0.6**
	14nm,1.3s						
NWAO	**Narrogin (SRO)**	**38.77**	**223**	*eP*	**P**	**20 50 56.8**	**-0.2**
JNU	**Nakatsue**	**42.74**	**339**	*eP*	**P**	**20 51 29.5**	**-0.3**
MJAR	**Matsushiro Arr**	**43.90**	**349**	P	**P**	**20 51 38.5**	**-0.6**
	6.9nm,1.1s,baz=171,slow=8.2,SNR=6.5						
MAT	**Matsushiro**	**43.90**	**349**	P	**P**	**20 51 38.7**	**-0.3**
IPM	**Ipoh**	**48.19**	**282**	*eP*	**P**	**20 52 13.7**	**+0.5**
	15nm,1.0s						
USRK	**Ussuriysk Ar.**	**52.61**	**346**	P	**P**	**20 52 47.0**	**+1.0**
	1.6nm,0.6s,baz=178,slow=8.0,SNR=4.2						
CMAR	**Chiang Mai Arr**	**54.43**	**298**	P	**P**	**20 53 00.3**	**+0.5**
	1.4nm,0.7s,baz=122,slow=5.6,SNR=5.0						
PPT2	**Papeete2**	**61.75**	**106**	*e*LR	LR	21 12 54.5	
	209nm,22.0s						
SONM	**Songino Array**	**65.43**	**331**	P	**P**	**20 54 15.1**	**+0.1**
	1.5nm,0.6s,baz=139,slow=11,SNR=3.2						
PALK	**Pallekele**	**68.55**	**280**	P	**P**	**20 54 36.2**	**+0.9**
	4.0nm,0.7s,baz=104,slow=9.8,SNR=4.2						
TAOE	**Nuku Hiva Isla**	**71.12**	**97**	*e*LR	LR	21 17 20.3	
	346nm,22.6s						
VNDA	**Vanda**	**71.25**	**177**	P	**P**	**20 54 51.5**	**+0.8**
	2.5nm,0.8s,baz=323,slow=5.7,SNR=6.3						
MKAR	**Makanchi Array**	**78.61**	**320**	P	**P**	**20 55 33.4**	**-0.4**
	1.6nm,0.9s,baz=104,slow=8.0,SNR=4.1						
ZALV	**Zalesovo Beam**	**80.07**	**328**	P	**P**	**20 55 40.8**	**-0.7**
	1.1nm,0.7s,baz=114,slow=6.6,SNR=3.7						
KURK	**Kurchatov**	**82.31**	**323**	*eP*	**P**	**20 55 53.7**	**+0.3**
QSPA	**South Pole Qui**	**83.36**	**180**	*eP*	**P**	**20 55 58.8**	**0.0**
KKAR	**Karatay Array**	**85.44**	**314**	*eP*	**P**	**20 56 09.7**	**+0.1**
	2.0nm,0.9s						
ILAR	**Eielson Array**	**85.64**	**23**	P	**P**	**20 56 08.8**	**-1.4**
	0.6nm,0.7s,baz=256,slow=4.9,SNR=4.5						
BRVK	**Borovoye**	**87.93**	**324**	*eP*	**P**	**20 56 20.3**	**-1.2**
SYO	**Syowa Base**	**90.37**	**200‖**	*e*PcP	**PcP**	**20 56 37.0**	**+3.2**
ABKAR	**Akbulak array**	**93.70**	**319**	*eP*	**P**	**20 56 47.6**	**-0.9**
	6.6nm,0.6s						
GERES	**GERESS Array B**	**122.98**	**326**	PKP	**PKPdf**	**21 02 28.6**	**+0.4**
	0.8nm,0.6s,baz=75,slow=1.5,SNR=8.8						
TORD	**Torodi Ar. Bea**	**146.22**	**284**	PKPbc	**PKPab**	**21 03 13.7**	**-0.3**
	3.9nm,0.6s,baz=81,slow=3.9,SNR=25						
DBIC	**Dimbokro**	**153.06**	**272**	PKPbc	**PKPbc**	**21 03 30.8**	**+0.4**
	2.4nm,0.7s,baz=94,slow=3.9,SNR=6.3						

CRAAG ***18*** *20:54:34.9, 36°.86N×3°.49E, Ml3.5*
ISCJB ***18*** *20:54:37.5±0.6, 36°.97N±0°.03×3°.33E±0°.06, h12km, Error ellipse: s-maj=6.9km s-min=4.8km az=168.3*
CSEM ***18*** *20:54:38.4±0.2, 36°.82N×3°.34E, h15km, mb3.5, Error ellipse: s-maj=7.3km s-min=4.1km az=79.0*
MDD ***18*** *20:54:39.1±1.2, 36°.84N×3°.35E, h12km±12km, mb3.5/2, Error ellipse: s-maj=14.9km s-min=6.0km az=58.0, PRXIMO*
ISC 18 20:54:37.4±0.9, **36°.93N**±0°.05×**3°.40E**±0°.04, **h12**km, **n39,**
σ1**67**/45, **Northern Algeria**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ABA	**Alger-Bouzarea**	**0.32**	**246**	P	**Pb**	**20 54 44.3**	**-0.7**
ABA	**Alger-Bouzarea**	**0.32**	**246**	P	**Pb**	**20 54 44.3**	**-0.7**
ABA	**Alger-Bouzarea**	**0.32**	**246**	P	**Pb**	**20 54 44.3**	**-0.7**
ADJB	**Djebel Djouab**	**0.77**	**177**	P	**Pg**	**20 54 51.2**	**-1.1**
ADJB	**Djebel Djouab**	**0.77**	**177**	P	**Pg**	**20 54 51.2**	**-1.1**
ADJB	**Djebel Djouab**	**0.77**	**177**	P	**Pg**	**20 54 51.2**	**-1.1**
EMHD	**Djebel Mahouad**	**0.81**	**206**	P	**Pg**	**20 54 52.1**	**-1.0**
EMHD	**Djebel Mahouad**	**0.81**	**206**	P	**Pg**	**20 54 52.1**	**-1.0**
EMHD	**Djebel Mahouad**	**0.81**	**206**	P	**Pg**	**20 54 52.1**	**-1.0**
ATAF	**Djebel Tarf**	**1.27**	**146**	P	**Pb**	**20 55 01.2**	**-0.1**
ATAF	**Djebel Tarf**	**1.27**	**146**	P	**Pb**	**20 55 01.2**	**-0.1**
ATAF	**Djebel Tarf**	**1.27**	**146**	P	**Pb**	**20 55 01.2**	**-0.1**
EBNR	**Beni Rached**	**1.63**	**248**	P	Pn	20 54 55.4	-11
ECHA	**Ech Chlef**	**1.81**	**245**	P	Pn	20 54 58.6	-10
OKGL	**Djebel Kef Gue**	**2.39**	**249**	P	Pg	20 55 26.0	+2.8
	7.2nm,0.3s,SNR=4.0						
OKGL				S	**Sg**	**20 55 54.2**	**0.0**
	25nm,0.3s,SNR=4.0						
EIBI	**Ibiza**	**2.65**	**323**	P	**Pn**	**20 55 21.6**	**+1.7**
	1.4nm,0.1s,SNR=8.8						
EIBI				S	**Sn**	**20 55 51.4**	**-0.6**
	11nm,0.2s,SNR=5.9						
EIBI	**Ibiza**	**2.65**	**323**	P	**Pn**	**20 55 21.6**	**+1.7**
	1.4nm,0.1s,SNR=8.8						
ETOS	**Mallorca**	**2.87**	**351**	P	**Pn**	**20 55 24.3**	**+1.3**
	0.4nm,0.1s,SNR=13						
ETOS				S	**Sn**	**20 55 56.5**	**-1.0**
	1.8nm,0.2s,SNR=7.9						
ETOS	**Mallorca**	**2.87**	**351**	P	**Pn**	**20 55 24.3**	**+1.3**
	0.4nm,0.1s,SNR=13						
AFON	**Font Roja**	**3.57**	**300**	P	Pn	20 55 36.1	+3.5
	0.1nm,0.2s,SNR=7.9						
ETOB	**Tobarra**	**4.27**	**295**	P	**Pn**	**20 55 43.4**	**+1.1**
	0.3nm,0.3s,SNR=11						
ETOB				S	**Sn**	**20 56 31.6**	**-0.5**
	0.8nm,0.2s,SNR=7.3						
ETOB	**Tobarra**	**4.27**	**295**	P	**Pn**	**20 55 43.4**	**+1.1**
	0.3nm,0.3s,SNR=11						
ETOB				S	**Sn**	**20 56 31.6**	**-0.5**
	0.8nm,0.2s,SNR=7.3						
EMOS	**Mosqueruela**	**4.57**	**320**	P	**Pn**	**20 55 48.0**	**+1.4**
	0.4nm,0.2s,SNR=10.0						
EMOS				S	**Sn**	**20 56 38.1**	**-1.6**
	1.0nm,0.2s,SNR=7.9						
EMOS	**Mosqueruela**	**4.57**	**320**	P	**Pn**	**20 55 48.0**	**+1.4**
	0.4nm,0.2s,SNR=10.0						
ERTA	**Horta de San J**	**4.68**	**330**	P	Pn	20 55 53.5	+5.7
	0.4nm,0.3s,SNR=4.0						
ERTA				S	**Sn**	**20 56 39.9**	**-2.1**
	1.0nm,0.2s,SNR=7.9						
EPOB	**Poblet**	**4.77**	**339**	P	**Pn**	**20 55 52.3**	**+3.1**
	0.1nm,0.1s,SNR=7.9						
EPOB				S	**Sn**	**20 56 42.0**	**-2.4**
	0.6nm,0.3s,SNR=7.9						
EPOB	**Poblet**	**4.77**	**339**	P	**Pn**	**20 55 52.3**	**+3.1**
	0.1nm,0.1s,SNR=7.9						
SESP	**Santiago Espad**	**4.87**	**286**	P	Pn	20 55 55.1	+4.5
	0.4nm,0.2s,SNR=4.0						
SESP				S	**Sn**	**20 56 47.5**	**+0.5**
	0.7nm,0.1s,SNR=4.0						
CFON	**Fontmartina**	**4.88**	**352**	P	**Pn**	**20 55 52.1**	**+1.3**
	0.4nm,0.2s,SNR=7.9						
CFON				S	**Sn**	**20 56 44.7**	**-2.5**
	1.2nm,0.2s,SNR=7.9						
CFON	**Fontmartina**	**4.88**	**352**	P	**Pn**	**20 55 52.1**	**+1.3**
	0.4nm,0.2s,SNR=7.9						
EQES	**Quesada**	**5.22**	**282**	P	**Pn**	**20 55 58.6**	**+3.1**
	1.5nm,0.4s,SNR=7.9						
EQES				S	**Sn**	**20 56 56.9**	**+1.2**
	1.0nm,0.3s,SNR=7.9						
EJON	**La Jonquera**	**5.53**	**356**	P	**Pn**	**20 56 01.4**	**+1.9**
	0.9nm,0.1s,SNR=7.9						
EJON	**La Jonquera**	**5.53**	**356**	P	**Pn**	**20 56 01.4**	**+1.9**
	0.9nm,0.1s,SNR=7.9						
SJAF	**Saint Jean de**	**5.56**	**356**	P	**Pn**	**20 56 02.1**	**+2.1**
	0.6nm,0.2s,SNR=7.9						
SJAF	**Saint Jean de**	**5.56**	**356**	P	**Pn**	**20 56 02.1**	**+2.1**
	0.6nm,0.2s,SNR=7.9						
CLLI	**Llivia**	**5.65**	**349**	P	**Pn**	**20 56 04.4**	**+3.1**
	0.1nm,0.1s,SNR=7.9						
CLLI				S	**Sn**	**20 57 06.0**	**-0.2**
	0.1nm,0.2s,SNR=4.0						
CLLI	**Llivia**	**5.65**	**349**	P	**Pn**	**20 56 04.4**	**+3.1**
	0.1nm,0.1s,SNR=7.9						
ESDC	**Sonseca Array**	**6.40**	**298**	P	**Pn**	**20 56 12.8**	**+1.2**
	0.3nm,0.1s,baz=105,slow=14,SNR=3.9						
ESDC	**Sonseca Array**	**6.40**	**298**	P	**Pn**	**20 56 12.8**	**+1.2**
	0.3nm,0.1s,SNR=3.9						

ISCJB ***18*** *20:56:00.8±0.5, 6°.65S±0°.05×148°.21E±0°.07, h51km, mb4.7/43, MS4.1/12, Error ellipse: s-maj=10.3km s-min=6.7km az=9.2*
IDC ***18*** *20:56:02.6±2.4, 6°.72S×148°.19E, h52km±20km, mb4.2/17, mb1 4.3/20, mb1mx4.2/35, mbtmp4.4/20, ML3.6/4, MS4.1/12, Ms1 4.1/12, ms1mx3.8/45, Error ellipse: s-maj=23.6km s-min=10.1km az=104.0*
NEIC ***18*** *20:56:04.8±0.9, 6°.66S×147°.94E, h67km±9km, mb4.8/18, Error ellipse: s-maj=8.9km s-min=7.1km az=88.0*
DJA ***18*** *20:56:09.9±1.1, 7°.5±6°×14°.8E±°, h88km±7km, M4.8/19, mB5.6/2, mb4.7/19, MLv4.8/1, Mw(mB)5.1/2*
ISC 18 20:56:03.1±0.6, **6°.59S**±0°.06×**148°.07E**±0°.09, **h51**km, **n74,**
σ1**25**/63, **mb4.7**/42, **MS4.0**/13, **New Britain region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.94**	**198**	P	**Pn**	**20 56 47.0**	**-0.4**
	77nm,0.3s,baz=357,slow=9.6,SNR=83						
PMG				S	**Sn**	**20 57 25.1**	**+3.5**
	26nm,0.3s,baz=4.2,slow=16,SNR=3.6						
JAY	**Jayapura**	**8.38**	**299**	P	**Pn**	**20 58 02.4**	**+0.3**
	0.1nm,0.3s,baz=90,slow=20,SNR=3.7						
JAY				LR	LR	21 02 05.6	
	comp=Z,86nm,19.0s,baz=68,slow=42						
JAY	**Jayapura**	**8.38**	**299**	P	Pn	20 58 08.0	+5.9
GENI	**Genyem**	**8.82**	**296**	P	Pn	20 58 14.1	+6.0
	99nm,1.3s						
HNR	**Honiara**	**12.09**	**104**	*e*Pn	Pn	20 58 57.6	+4.8
	300nm,1.2s						
CTA	**Charters Tower**	**13.54**	**187**	P	**Pn**	**20 59 12.1**	**-0.4**
	0.4nm,0.3s,baz=333,slow=11,SNR=7.4						
FAKI	**Fak Fak**	**16.18**	**282**	P	**P**	**20 59 50.0**	**+0.3**
SWI	**Sorong**	**17.71**	**288**	P	**P**	**21 00 08.7**	**+2.2**
BNDI	**Bandanaira**	**18.20**	**276**	P	**Pn**	**21 00 13.2**	**+1.0**
WRAB	**Tennant Creek**	**18.80**	**224**	*eP*	**Pn**	**21 00 18.1**	**-1.4**
WRA	**Warramunga Arr**	**18.82**	**224**	P	**P**	**21 00 17.6**	**-1.2**
	1.0nm,0.3s,baz=50,slow=10,SNR=28						
GUMO	**Guam**	**20.30**	**351**	LR	LR	21 06 43.6	
	comp=Z,582nm,20.9s,baz=176,slow=31						
NLAI	**Namlea**	**21.16**	**278**	P	**P**	**21 00 46.5**	**+2.3**
LBMI	**Labuha**	**21.36**	**285**	P	**P**	**21 00 49.2**	**+2.9**
	96nm,1.1s,1μm						
ASAR	**Alice Springs**	**21.77**	**217**	P	**P**	**21 00 49.5**	**-1.3**
	6.1nm,0.5s,baz=47,slow=9.7,SNR=58						
ASAR				S	**S**	**21 04 48.8**	**-0.1**
	1.9nm,0.9s,baz=32,slow=23,SNR=3.6						
ASAR				LR	LR	21 09 48.5	
	comp=Z,743nm,19.6s,baz=42,slow=38						
SOEI	**Soe**	**23.77**	**261**	*eP*	P	21 01 15.5	+4.1
	28nm,1.0s						
ARMA	**Armidale**	**23.94**	**172**	*eP*	**P**	**21 01 13.3**	**+0.6**
	36nm,1.2s						
FITZ	**Fitzroy Crossi**	**24.69**	**240**	P	**P**	**21 01 18.6**	**-0.9**
	14nm,0.4s,baz=51,slow=9.0,SNR=99						
FITZ				LR	LR	21 12 25.0	
	comp=Z,550nm,18.1s,baz=61,slow=40						
LUWI	**Luwuk**	**25.83**	**281**	P	**P**	**21 01 30.7**	**+0.7**
LUWI	**Luwuk**	**25.83**	**281**	*eP*	**P**	**21 01 30.1**	**+0.1**
	65nm,0.8s						
STKA	**Stephens Creek**	**25.88**	**193**	P	**P**	**21 01 29.1**	**-1.1**
	8.8nm,0.7s,baz=1.2,slow=8.2,SNR=18						
STKA				LR	LR	21 12 40.0	
	comp=Z,935nm,18.5s,baz=3.2,slow=39						
DAV	**Davao City (W)**	**26.22**	**301**	LR	LR	21 11 37.4	
	comp=Z,148nm,20.3s,baz=113,slow=35						
MRSI	**Marisa**	**27.01**	**284**	P	**P**	**21 01 42.6**	**+2.0**
KAPI	**Kappang**	**28.22**	**272**	LR	LR	21 15 29.0	
	comp=Z,337nm,19.7s,baz=111,slow=41						
PCI	**Palu**	**28.72**	**280**	P	P	21 01 59.0	+3.0
	28nm,1.3s						
MBWA	**Marble Bar**	**31.01**	**239**	*eP*	**P**	**21 02 15.3**	**-0.8**
	23nm,0.5s						
JCJ	**Chichijima**	**33.97**	**351**	LR	LR	21 14 31.9	
	comp=Z,199nm,19.7s,baz=109,slow=32						
KSM	**Kuching**	**38.54**	**281**	*eP*	**P**	**21 03 21.0**	**-0.2**
	17nm,1.0s						
NWAO	**Narrogin (SRO)**	**38.83**	**223**	P	**P**	**21 03 21.7**	**-1.6**
	3.5nm,0.6s,baz=275,slow=7.9,SNR=6.0						
NWAO	**Narrogin (SRO)**	**38.83**	**223**	*eP*	**P**	**21 03 22.3**	**-1.0**
LEM	**Lembang**	**40.17**	**267**	P	P	21 03 40.0	+5.0
	12nm,0.3s,baz=72,slow=9.5,SNR=5.4						
LEM				LR	LR	21 23 36.5	
	comp=Z,146nm,18.1s,baz=74,slow=41						
YHNB	**Yeheng**	**40.52**	**321**	*eP*	**P**	**21 03 35.9**	**-1.6**
	28nm,1.1s						
URZ	**Urewera**	**41.06**	**144**	LR	LR	21 19 38.3	
	comp=Z,730nm,19.5s,baz=319,slow=35						
JNU	**Nakatsue**	**42.74**	**339**	P	**P**	**21 03 56.0**	**+0.5**
	4.4nm,0.7s,baz=79,slow=2.7,SNR=3.8						
MJAR	**Matsushiro Arr**	**43.89**	**349**	P	**P**	**21 04 04.5**	**-0.2**
	12nm,1.1s,baz=173,slow=8.1,SNR=30						
MAJO	**Matsushiro**	**43.89**	**349**	*eP*	**P**	**21 04 04.5**	**-0.3**
	25nm,1.1s						
MAT	**Matsushiro**	**43.89**	**349**	P	**P**	**21 04 04.5**	**-0.2**
TPRI	**Tanjung Pinang**	**44.09**	**278**	P	P	21 04 09.4	+2.6
	33nm,0.3s,2μm						
KSRS	**Korea Array**	**47.68**	**338**	P	**P**	**21 04 34.7**	**+0.1**
	7.7nm,1.1s,baz=154,slow=9.6,SNR=12						
KSRS				LR	LR	21 21 49.2	
	comp=Z,180nm,21.4s,baz=156,slow=32						
KSAR	**Wonju Array Be**	**47.69**	**338**	P	**P**	**21 04 34.7**	**+0.1**
PPI	**Padang Panjang**	**47.95**	**275**	P	**P**	**21 04 37.4**	**+0.3**
	47nm,0.9s						
IPM	**Ipoh**	**48.23**	**282**	*eP*	**P**	**21 04 40.5**	**+1.2**
	25nm,1.0s						
GSI	**Gunungsitoli**	**51.01**	**277**	*eP*	**P**	**21 04 59.4**	**-1.1**
	16nm,0.6s						
USRK	**Ussuriysk Ar.**	**52.60**	**345**	P	**P**	**21 05 13.0**	**+1.3**
	4.6nm,0.9s,baz=145,slow=7.0,SNR=7.2						
USRK				LR	LR	21 24 21.2	
	comp=Z,144nm,21.5s,baz=148,slow=32						
MLSI	**Meulaboh, Aceh**	**52.70**	**280**	P	**P**	**21 05 14.9**	**+1.9**
	61nm,1.0s						
CMAR	**Chiang Mai Arr**	**54.47**	**298**	P	**P**	**21 05 27.6**	**+1.6**
	2.7nm,0.6s,baz=122,slow=5.7,SNR=19						
XAN	**Xi'an**	**54.81**	**320**	P	**P**	**21 05 27.3**	**-0.9**
XAN				pmax	pmax		
	comp=Z,9.0nm,1.1s						
PETK	**Petropavlovsk-**	**60.02**	**7**	P	**P**	**21 06 05.5**	**+1.0**
	comp=Z,7.4nm,1.0s,baz=168,slow=1.4,SNR=4.0						
GTA	**Gaotai**	**63.87**	**320**	*eP*	**P**	**21 06 33.0**	**+2.2**
GTA				pP	pP	21 06 36.3	-8.7
GTA				sP	sP	21 06 39.3	-12
GTA				PcP	**PP**	**21 08 48.6**	**-3.3**
GTA				pmax	pmax		
	comp=Z,3.0nm,1.1s						
ULN	**Ulaanbaatar**	**65.14**	**331**	*eP*	**P**	**21 06 39.2**	**+0.3**
	comp=Z,2.9nm,0.8s						
SONM	**Songino Array**	**65.43**	**330**	P	**P**	**21 06 41.5**	**+0.7**
	comp=Z,5.9nm,1.1s,baz=134,slow=6.4,SNR=7.4						
LSA	**Lhasa**	**65.44**	**307**	*eP*	**P**	**21 06 41.5**	**-0.1**
	comp=Z,1.7nm,0.4s						
VNDA	**Vanda**	**71.27**	**177**	P	P	21 07 13.7	-2.9
	comp=Z,1.7nm,0.7s,baz=337,slow=6.3,SNR=9.5						
MKAR	**Makanchi Array**	**78.63**	**320**	P	**P**	**21 07 59.1**	**-0.5**
	comp=Z,2.7nm,0.9s,baz=104,slow=7.6,SNR=20						
TIXI	**Tiksi**	**79.10**	**354**	*eP*	**P**	**21 08 00.7**	**-1.0**
	comp=Z,4.0nm,1.1s						
ZALV	**Zalesovo Beam**	**80.07**	**328**	P	**P**	**21 08 06.9**	**-0.4**
	comp=Z,2.2nm,0.8s,baz=107,slow=5.1,SNR=11						
KURK	**Kurchatov**	**82.31**	**323**	*eP*	**P**	**21 08 18.3**	**-0.9**
	comp=Z,10nm,1.1s						
EKS2	**Erkin-Say**	**83.03**	**314**	*eP*	**P**	**21 08 23.6**	**+0.3**
	comp=Z,4.3nm,0.9s						
QSPA	**South Pole Qui**	**83.39**	**180**	*eP*	**P**	**21 08 25.3**	**+0.5**
	comp=Z,21nm,0.7s						
KKAR	**Karatay Array**	**85.46**	**314**	*eP*	**P**	**21 08 35.1**	**-0.4**
	comp=Z,8.7nm,1.1s						
ILAR	**Eielson Array**	**85.60**	**23**	P	**P**	**21 08 34.8**	**-1.0**
	comp=Z,1.6nm,0.9s,baz=258,slow=5.1,SNR=10						
EGAK	**Eagle**	**87.86**	**24**	*eP*	**P**	**21 08 47.4**	**+0.7**
	comp=Z,4.5nm,1.2s						
ABKAR	**Akbulak array**	**93.72**	**319**	*eP*	**P**	**21 09 12.7**	**-1.7**
	comp=Z,7.6nm,0.6s						
YBH	**Yreka Blue Hor**	**93.75**	**49**	LR	LR	21 45 15.8	
	comp=Z,198nm,21.6s,baz=296,slow=32						
GEYT	**Alibeck**	**93.97**	**308**	P	**P**	**21 09 14.8**	**-1.1**
	comp=Z,1.8nm,0.7s,baz=130,slow=2.3,SNR=5.9						
YKA	**Yellowknife Ar**	**99.19**	**28**	P	**Pdif**	**21 09 39.0**	**+0.1**
	comp=Z,0.5nm,1.0s,baz=277,slow=4.6,SNR=4.8						
YKA	**Yellowknife

2.0nm,0.6s,baz=90,slow=6.4,SNR=13
MKAR PKKPbc **PKKPbc** **21 26 46.7 -2.6**
0.3nm,0.4s,baz=274,slow=4.8,SNR=5.4
ZALV Zalesovo Beam 95.52 324 P **P** **21 09 55.8 -0.7**
0.8nm,0.7s,baz=123,slow=5.5,SNR=4.1
YKA Yellowknife Ar 95.72 27 P **P** **21 09 56.5 -0.7**
0.7nm,0.6s,baz=258,slow=4.6,SNR=12
ARCES ARCESS Array B 118.11 346 PKP **PKPdf** **21 15 16.9 0.0**
3.0nm,0.7s,baz=74,slow=2.0,SNR=27
LPAZ La Paz 118.37 116 PKP **PKPdf** **21 15 19.2 -0.5**
0.4nm,0.4s,baz=270,slow=1.0,SNR=3.9
FINES FINESS Array B 123.64 339 PKP **PKPdf** **21 15 27.9 +0.2**
4.9nm,1.1s,baz=88,slow=4.4,SNR=5.6
AGO Saint Agoulin 143.94 341 PKP **PKPdf** **21 16 05.5 -0.5**
LUCF Luceram 144.22 335 PKP PKPbc 21 16 05.7 +0.2
PYM Petit Puy Mans 144.25 341 PKP **PKPdf** **21 16 06.3 -0.4**
MVIF Mont Vial 144.30 335 PKP PKPbc 21 16 06.1 +0.3
REVF Revere 144.34 334 PKP PKPbc 21 16 06.2 +0.4
OG26 St.-Nazaire-De 144.47 337 PKP **PKPdf** **21 16 07.3 +0.2**
CALN Calern 144.53 335 PKP **PKPdf** **21 16 06.9 -0.4**
LBL Lubilhac 144.63 340 PKP **PKPdf** **21 16 07.9 +0.6**
KEST Kesra 149.39 323 PKPbc **PKPbc** **21 16 20.2 0.0**
4.7nm,0.7s,baz=272,slow=1.5,SNR=7.8
ESDC Sonseca Array 151.84 345 PKPbc **PKPbc** **21 16 26.3 +0.5**
2.0nm,0.7s,baz=354,slow=2.2,SNR=12
ESDC PKPab **PKPab** **21 16 36.6 +1.0**
3.2nm,0.7s,baz=14,slow=3.7,SNR=13

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*ISCJB **18** 21:06:14.2±0.5, 6°.73S±0°.07×148°.04E±0°.08, h51km, mb4.4/16, Error ellipse: s-maj=12.5km s-min=8.4km az=29.7*
*NEIC **18** 21:06:17.1±1.0, 6°.72S×148°.09E, h64km±10km, mb4.6/14, Error ellipse: s-maj=11.4km s-min=7.2km az=122.0*
*IDC **18** 21:06:18.0±4.6, 6°.75S×148°.05E, h68km±37km, mb3.7/8, mb1 3.9/10, mb1mx3.7/33, mbtmp4.0/10, ML4.1/1, MS3.7/1, Ms1 3.7/1, ms1mx2.9/40, Error ellipse: s-maj=42.1km s-min=23.8km az=80.0*
ISC 18 21:06:15.9±0.6, 6°.62S±0°.07×148°.03E±0°.10, h51km, n33, σ1§64/35, mb4.5/16, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.90**	**197**	P		**Pn**	**21 07 00.5 +0.9**
	20nm,0.3s,baz=51,slow=6.1,SNR=26						
PMG				S		**Sn**	**21 07 39.5 +6.2**
	9.5nm,0.3s,baz=351,slow=11,SNR=3.8						
PMG				LR	LR	21 08 33.8	
	comp=Z,1μm,20.3s,baz=12,slow=49						
PMG	**Port Moresby**	**2.90**	**197**	*e*Pn		**Pn**	**21 07 01.3 +1.7**
PMG				*e*Sn		**Sn**	**21 07 34.9 +1.7**
RABL	**Rabaul**	**4.77**	**60**	*e*Pn		**Pn**	**21 07 25.7 +0.4**
COEN	**Coen**	**8.72**	**213**	*e*Pn		Pn	21 08 14.1 -5.3
COEN				*e*Sn		**Sn**	**21 09 52.5 -3.9**
WRAB	**Tennant Creek**	**18.75**	**224**	*e*P		**P**	**21 10 30.9 +0.1**
	7.2nm,0.8s						
WB2	**Warramunga Arr**	**18.76**	**224**	*e*P		**P**	**21 10 29.1 -1.7**
	36nm,1.7s						
WR1	**Warramunga Arr**	**18.77**	**224**	*e*P		**Pn**	**21 10 31.3 -0.5**
	49nm,1.8s						
WRA	**Warramunga Arr**	**18.77**	**224**	P		**Pn**	**21 10 31.3 -0.5**
	0.6nm,0.3s,baz=50,slow=11,SNR=16						
AS01	**Alice Springs**	**21.69**	**217**	*e*P		**P**	**21 11 02.1 -0.5**
AS31	**Alice Springs**	**21.72**	**217**	*e*P		**P**	**21 11 02.5 -0.5**
	2.3nm,0.5s						
ASAR	**Alice Springs**	**21.72**	**217**	P		**P**	**21 11 02.5 -0.5**
	2.9nm,0.5s,baz=50,slow=9.5,SNR=31						
FITZ	**Fitzroy Crossi**	**24.64**	**240**	P		**P**	**21 11 31.7 -0.1**
	15nm,0.5s,baz=51,slow=8.4,SNR=81						
FITZ	**Fitzroy Crossi**	**24.64**	**240**	*e*P		**P**	**21 11 31.7 -0.1**
	27nm,1.0s						
STKA	**Stephens Creek**	**25.84**	**193**	P		**P**	**21 11 41.2 -1.4**
	1.9nm,0.5s,baz=340,slow=8.9,SNR=4.5						
STKA	**Stephens Creek**	**25.84**	**193**	*e*P		**P**	**21 11 41.2 -1.4**
	5.3nm,1.7s						
MBWA	**Marble Bar**	**30.96**	**239**	*e*P		**P**	**21 12 28.0 -0.4**
	12nm,1.1s						
TAU	**Tasmania Unive**	**36.15**	**181**	*e*P		**P**	**21 13 11.4 -1.8**
	116nm,1.8s						
NWAO	**Narrogin (SRO)**	**38.77**	**223**	P		**P**	**21 13 35.2 -0.4**
	5.6nm,0.6s,baz=72,slow=18,SNR=4.2						
NWAO	**Narrogin (SRO)**	**38.77**	**223**	*e*P		**P**	**21 13 35.2 -0.4**
	44nm,1.5s						
AFI	**Afiamalu**	**40.16**	**104**	*e*P		**P**	**21 13 47.1 -0.4**
	42nm,1.1s						
KULM	**Kulim**	**48.75**	**283**	*e*P		**P**	**21 14 56.1 +0.1**
	7.1nm,0.9s						
LHMI	**Lhok Sumawe**	**52.33**	**282**	*e*P		**P**	**21 15 22.5 -0.6**
	79nm,1.3s						
CM31	**Chiang Mai Arr**	**54.44**	**298**	*e*P		**P**	**21 15 40.2 +1.7**
CMAR	**Chiang Mai Arr**	**54.44**	**298**	P		**P**	**21 15 40.2 +1.7**
	0.6nm,0.6s,baz=118,slow=5.4,SNR=4.1						
CASY	**Casey**	**64.94**	**196**	*e*P		**P**	**21 16 48.4 -1.5**
TLY	**Talaya**	**69.36**	**332**	*e*P		**P**	**21 17 19.5 +1.3**
	7.9nm,0.8s						
VNDA	**Vanda**	**71.24**	**177**	P		**P**	**21 17 29.3 +0.1**
	0.7nm,0.9s,baz=304,slow=4.7,SNR=2.5						
MK32	**Makanchi Array**	**78.62**	**320**	*e*P		**P**	**21 18 13.3 +0.9**
MKAR	**Makanchi Array**	**78.62**	**320**	P		**P**	**21 18 13.3 +0.9**
	0.2nm,0.3s,baz=92,slow=8.9,SNR=4.5						
ZALV	**Zalesovo Beam**	**80.08**	**328**	P		**P**	**21 18 20.3 +0.2**
	0.3nm,0.4s,baz=105,slow=9.1,SNR=2.6						
ZAA1	**Zalesovo Array**	**80.08**	**328**	*e*P		**P**	**21 18 20.3 +0.1**
QSPA	**South Pole Qui**	**83.35**	**180**	*e*P		**P**	**21 18 38.6 +1.2**
BRVK	**Borovoye**	**87.94**	**324**	*e*P		**P**	**21 18 59.5 -0.7**
	3.0nm,1.0s						

IDC 18 21:07:44.2±1.7, 5°.51S×142°.06E, h0km, mb4.0/2, mb1 4.1/4, mb1mx3.7/30, mbtmp3.8/4, ML3.3/2, MS4.1/1, Ms1 4.1/1, ms1mx2.7/39, Error ellipse: s-maj=61.5km s-min=27.3km az=97.0, New Guinea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAY	**Jayapura**	**3.27**	**335**	Pn		Pn	21 08 37.0 +0.3
	0.8nm,0.3s,baz=89,slow=23,SNR=20						
JAY				Sn		Sn	21 09 13.3 -3.0
	1.4nm,0.3s,baz=269,slow=24,SNR=14						
WRA	**Warramunga Arr**	**16.20**	**207**	Pn		Pn	21 11 32.5 -0.8
	0.2nm,0.3s,baz=27,slow=13,SNR=3.5						
ASAR	**Alice Springs**	**19.69**	**203**	P		P	21 12 15.8 +0.5
	baz=38,slow=9.2,SNR=2.4						
ASAR				S		S	21 15 47.2 -11
	0.1nm,0.3s,baz=18,slow=28,SNR=4.0						
JNU	**Nakatsue**	**39.85**	**345**	LR		LR	21 30 34.1
	comp=Z,277nm,20.8s,baz=268,slow=34						
MKAR	**Makanchi Array**	**74.03**	**322**	P		P	21 19 21.6 -0.3
	0.7nm,0.6s,baz=106,slow=7.7,SNR=6.5						
ILAR	**Eielson Array**	**86.99**	**24**	P		P	21 20 31.4 +0.2
	1.1nm,0.6s,baz=265,slow=4.6,SNR=9.2						

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*IDC **18** 21:20:09.6±0.7, 20°.24S×168°.48E, h0km, mb4.3/15, mb1 4.5/16, mb1mx4.4/39, mbtmp4.3/16, ML3.9/1, MS3.8/5, Ms1 3.8/5, ms1mx3.4/34, Error ellipse: s-maj=24.9km s-min=15.9km az=141.0*
*NEIC **18** 21:20:11.6±0.2, 20°.14S×168°.37E, h10km, mb4.9/22, Error ellipse: s-maj=9.7km s-min=6.5km az=141.0*
*ISCJB **18** 21:20:12.4±0.3, 20°.22S±0°.06×168°.31E±0°.06, h25km, mb4.7/34, MS3.6/4, Error ellipse: s-maj=9.5km s-min=5.9km az=137.9*
ISC 18 21:20:13.8±0.4, 20°.19S±0°.08×168°.3E±0°.1, h25km, n92, σ0§89/89, mb4.8/34, MS3.7/4, 1D, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.55**	**222**	Pn		**Pn**	**21 20 52.3 -1.4**
	24nm,0.3s,baz=94,slow=8.1,SNR=117						
DZM				Sn		**Sn**	**21 21 23.4 -0.6**
	100nm,0.3s,baz=165,slow=22,SNR=15						
DZM				LR	LR	21 21 53.1	
	comp=Z,3μm,18.9s,baz=20,slow=39						
MSVF	**Nonsavu**	**9.54**	**77**	*e*Pn		Pn	21 22 32.7 +2.9
ARMA	**Armidale**	**18.17**	**233**	P		**P**	**21 24 26.2 +1.5**
URZ	**Urewera**	**19.56**	**159**	P		**Pn**	**21 24 41.6 +0.5**
	0.4nm,0.3s,baz=348,slow=5.9,SNR=7.6						
URZ	**Urewera**	**19.56**	**159**	*e*P		**Pn**	**21 24 42.1 +0.9**
	66nm,1.0s						
AFI	**Afiamalu**	**20.04**	**75**	LR		LR	21 30 14.2
	comp=Z,123nm,19.1s,baz=277,slow=30						
CTA	**Charters Tower**	**20.70**	**266**	P		Pn	21 24 54.9 +0.1
	5.4nm,0.7s,baz=101,slow=10,SNR=3.2						
CAN	**Canberra**	**22.72**	**224**	*e*P		**P**	**21 25 15.6 +1.7**
	49nm,1.2s						
PMG	**Port Moresby**	**23.05**	**295**	LR		LR	21 31 26.2
	comp=Z,150nm,21.5s,baz=198,slow=29						
STKA	**Stephens Creek**	**26.59**	**239**	P		**P**	**21 25 51.0 +0.8**
	5.5nm,0.9s,baz=75,slow=9.7,SNR=11						
STKA				LR	LR	21 36 31.2	
	comp=Z,324nm,18.0s,baz=52,slow=37						
STKA	**Stephens Creek**	**26.59**	**239**	*e*P		**P**	**21 25 51.0 +0.8**
	11nm,1.4s						
WR1	**Warramunga Arr**	**31.87**	**264**	*e*P		**P**	**21 26 37.1 -0.1**
	17nm,1.3s						
WRA	**Warramunga Arr**	**31.87**	**264**	P		**P**	**21 26 37.1 -0.1**
	2.2nm,1.0s,baz=86,slow=8.4,SNR=12						
AS31	**Alice Springs**	**32.05**	**257**	*e*P		**P**	**21 26 38.9 0.0**
	3.9nm,0.8s						
ASAR	**Alice Springs**	**32.05**	**257**	P		**P**	**21 26 38.9 0.0**
	4.9nm,0.6s,baz=85,slow=9.0,SNR=37						
ASAR				LR	LR	21 38 58.2	
	comp=Z,272nm,20.7s,baz=115,slow=35						
FITZ	**Fitzroy Crossi**	**40.28**	**266**	P		**P**	**21 27 50.1 +1.0**
	9.4nm,0.9s,baz=113,slow=7.6,SNR=8.2						
VNDA	**Vanda**	**57.46**	**182**	P		**P**	**21 30 00.3 +0.2**
	1.9nm,0.9s,baz=3.1,slow=8.4,SNR=7.2						
VNDA	**Vanda**	**57.46**	**182**	*e*P		**P**	**21 30 00.3 +0.2**
VNDA				*e*pP		**sP**	**21 30 13.9 +2.9**
SBA	**Scott Base**	**57.71**	**180**	*e*P		**P**	**21 30 02.4 +0.5**
	29nm,1.4s						
SBA				*e*			21 30 14.0
KSM	**Kuching**	**60.73**	**284**	*e*P		**P**	**21 30 22.0 -1.8**
	22nm,1.2s						
MJAR	**Matsushiro Arr**	**63.19**	**333**	P		**P**	**21 30 39.5 -0.4**
	2.2nm,0.8s,baz=166,slow=7.2,SNR=7.9						
KSRS	**Korea Array**	**68.80**	**326**	P		**P**	**21 31 17.1 +1.2**
	1.8nm,0.8s,baz=154,slow=6.9,SNR=4.3						
KS15	**Wonju Array Si**	**68.81**	**326**	*e*P		**P**	**21 31 17.1 +1.1**
KSAR	**Wonju Array Be**	**68.81**	**326**	P		**P**	**21 31 17.1 +1.1**
QSPA	**South Pole Qui**	**69.87**	**180**	*e*P		**P**	**21 31 22.3 -0.1**
USRK	**Ussurisyk Ar.**	**72.18**	**333**	P		**P**	**21 31 37.6 +1.2**
	6.3nm,1.5s,baz=135,slow=4.3,SNR=7.4						
KLR	**Kul'dur**	**76.38**	**336**	P		**P**	**21 32 01.7 +1.0**
	1.1nm,0.6s,baz=179,slow=5.8,SNR=5.9						
CM01	**Chiang Mai Arr**	**78.06**	**295**	*e*P		**P**	**21 32 11.8 +0.9**
CM31	**Chiang Mai Arr**	**78.09**	**295**	*e*P		**P**	**21 32 12.8 +1.8**
CMAR	**Chiang Mai Arr**	**78.09**	**295**	P		**P**	**21 32 12.8 +1.8**
	4.0nm,1.0s,baz=132,slow=4.3,SNR=20						
CHTO	**Chiang Mai**	**78.25**	**295**	*e*P		**P**	**21 32 12.9 +0.9**
CHTO				*e*			21 32 24.3
SYO	**Syowa Base**	**83.78**	**196**	||*e*P		**P**	**21 32 39.0 -1.5**
ULN	**Ulaanbaatar**	**87.10**	**324**	*e*P		**P**	**21 32 57.8 +0.3**
	10nm,1.1s						
ULN				*e*			21 33 08.9
SONA0	**Songino Array**	**87.45**	**323**	*e*P		**P**	**21 32 59.6 +0.4**
	15nm,1.4s						
SONM	**Songino Array**	**87.45**	**323**	P		**P**	**21 32 59.6 +0.4**
	3.0nm,0.9s,baz=123,slow=5.5,SNR=6.2						
SONA1	**Songino Array**	**87.45**	**324**	*e*P		**P**	**21 32 59.5 +0.3**
SONA1				*e*pP		**sP**	**21 33 10.7 +0.4**
WDC	**Whiskeytown Da**	**88.16**	**45**	*e*P		**P**	**21 33 03.2 +0.6**
	35nm,1.6s						
SNAA	**Sanae**	**88.17**	**183**	P		**P**	**21 33 01.5 -0.8**
SNAA	**Sanae**	**88.17**	**183**	*e*P		**P**	**21 33 01.8 -0.6**
	9.0nm,1.1s						
CMB	**Columbia Colle**	**88.45**	**48**	*e*P		**P**	**21 33 03.8 -0.3**
	7.2nm,1.1s						
AFDM	**Forest Hills D**	**88.46**	**47**	*e*P		**P**	**21 33 04.3 +0.2**
	35nm,1.9s						
YBH	**Yreka Blue Hor**	**88.60**	**44**	P		**P**	**21 33 03.9 -0.9**
	baz=170,slow=10						
YBH	**Yreka Blue Hor**	**88.60**	**44**	*e*P		**P**	**21 33 03.9 -0.9**
	8.4nm,1.0s						
VNA3	**Neumayer Olymp**	**88.80**	**181**	P		**P**	**21 33 04.3 -0.9**
CAST	**Castle Rocks**	**88.91**	**17**	*e*P		**P**	**21 33 03.4 -2.2**
	14nm,1.7s						
VNA2	**Neumayer--Watz**	**89.08**	**181**	P		**P**	**21 33 05.8 -0.7**
	baz=163,slow=3.9						
WAKR	**Walker**	**89.33**	**48**	*e*P		**P**	**21 33 09.1 +0.7**
DAC	**Darwin (Calif)**	**89.67**	**51**	*e*P		**P**	**21 33 10.3 +0.2**
	7.1nm,1.1s						
PAHR	**Pah Rah Range**	**89.90**	**47**	*e*P		**P**	**21 33 11.3 +0.3**
	14nm,1.4s						
NV01	**Mina Array Sit**	**90.09**	**49**	*e*P		**P**	**21 33 11.7 -0.4**
NVAR	**Mina Array Bea**	**90.09**	**49**	P		**P**	**21 33 11.7 -0.4**
	3.0nm,0.8s,baz=225,slow=8.1,SNR=12						
ILAR	**Eielson Array**	**91.40**	**18**	P		**P**	**21 33 15.6 -1.7**
	1.1nm,0.8s,baz=235,slow=6.1,SNR=7.0						
ILB	**Eielson Array**	**91.40**	**18**	*e*P		**P**	**21 33 15.6 -1.7**
SHPR	**Sheep Range**	**91.55**	**52**	*e*P		**P**	**21 33 19.0 +0.2**
	8.6nm,1.3s						
D05A	**Enumclaw**	**91.65**	**40**	*e*P		**P**	**21 33 19.6 +0.9**
	28nm,1.1s						
COLD	**Coldfoot**	**92.42**	**15**	*e*P		**P**	**21 33 21.8 -0.1**
	6.3nm,1.5s						
TUC	**Tucson**	**93.27**	**57**	*e*P		**P**	**21 33 26.7 0.0**
	4.1nm,1.0s						
DLBC	**Dease Lake**	**93.29**	**28**	*e*P		**P**	**21 33 26.3 +0.1**
	6.0nm,1.1s						
LTX	**Lajitas**	**98.00**	**62**	*e*P		**P**	**21 33 47.9 -0.5**
TXAR	**Lajitas Array**	**98.00**	**62**	P		**P**	**21 33 47.9 -0.5**
	0.5nm,0.8s,baz=231,slow=5.7,SNR=3.1						
N23A	**Red Feather La**	**99.85**	**50**	*e*PKKPbc	PKKPbc		21 50 18.6 +1.0
YKA	**Yellowknife Ar**	**101.92**	**28**	P		**Pdif**	**21 34 04.9 0.0**
	0.2nm,0.5s,baz=252,slow=4.8,SNR=4.0						
YKB5	**Yelloknife Ar**	**101.92**	**28**	*e*Pdif		**Pdif**	**21 34 04.9 0.0**
ARA0	**ARCESS Array S**	**125.75**	**345**	*e*PKPdf		**PKPdf**	**21 39 12.2 -0.4**
ARCES	**ARCESS Array B**	**125.75**	**345**	PKP		**PKPdf**	**21 39 12.2 -0.4**
	3.4nm,0.9s,baz=70,slow=4.0,SNR=9.0						
FIA0	**FINESS Array S**	**131.12**	**337**	*e*PKPdf		**PKPdf**	**21 39 21.3 -1.7**
FINES	**FINESS Array B**	**131.12**	**337**	PKP		**PKPdf**	**21 39 21.3 -1.7**
	1.1nm,0.7s,baz=180,slow=1.0,SNR=5.5						
BRG	**Berggiesshubel**	**143.32**	**333**	*e*PKP		**PKPdf**	**21 39 46.0 +0.2**
	4.6nm,1.1s						
NKC	**Novy Kostel**	**144.43**	**333**	*e*PKP	PKPbc		21 39 46.9 +0.6
NKC				*e*pPKP	pPKPdf		21 39 54.2 -2.1
CONA	**Conrad Observa**	**144.48**	**328**	*i* PKPdf		**PKPdf**	**21 39 47.9 -0.2**
	SNR=11						
IDI	**Anoyia**	**144.52**	**303**	PKP		**PKPab**	**21 39 46.3 -0.6**
	2.5nm,0.6s,baz=294,slow=11,SNR=3.4						
SKO	**Skopje**	**144.60**	**315**	*i* P		**PKPdf**	**21 39 47.9 -0.5**
KHC	**Kasperske Hory**	**144.75**	**331**	*e*PKP		**PKPdf**	**21 39 47.9 -0.6**
KHC				*ex*		x	21 40 00.5
GEC2	**GERESS Array S**	**144.90**	**330**	*e*PKPdf		**PKPdf**	**21 39 48.9 +0.1**
GERES	**GERESS Array B**	**144.90**	**330**	PKPbc		**PKPab**	**21 39 48.0 +0.1**
	2.2nm,0.9s,baz=22,slow=4.3,SNR=14						
GEA0	**GERESS Array S**	**144.90**	**330**	*e*PKPdf		**PKPbc**	**21 39 47.9 -0.1**
ARSA	**Arzberg**	**145.10**	**327**	*i* PKPdf		**PKPdf**	**21 39 49.5 +0.4**
	SNR=7.9						
AGG	**Agios Georgios**	**145.24**	**310**	*e*PKPbc		**PKPbc**	**21 39 48.9 -0.4**
MOA	**Molln**	**145.33**	**329**	*i* PKPdf		**PKPab**	**21 39 50.2 +0.7**
	SNR=11						
OHR	**Ohrid**	**145.42**	**314**	*i* P		**PKPab**	**21 39 50.2 +0.2**
SOKA	**Soboth**	**145.74**	**327**	*i* PKPab		**PKPab**	**21 39 51.1 +0.1**
	SNR=10						
CWF	**Charnwood Fore**	**146.53**	**349**	*e*PKPdf		**PKPbc**	**21 39 53.2 +0.5**
MOTA	**Moosalm**	**147.18**	**331**	*i* pPKPdf		**PKPbc**	**21 39 55.6 +0.6**
	SNR=8.0						
WLF	**Walferdange**	**147.33**	**338**	*e*PKPbc		**PKPbc**	**21 39 55.2 0.0**
FETA	**Feichten**	**147.59**	**331**	*i* sPKPdf		**PKPbc**	**21 39 56.8 +0.6**
	SNR=6.7						
BFO	**Black Forest**	**147.61**	**335**	*e*PKPbc		**PKPbc**	**21 39 56.2 +0.2**
FUORN	**Ofenpass-Fuorn**	**148.11**	**331**	*e*PKPbc		**PKPbc**	**21 39 58.1 +0.4**
TUE	**Stuetta**	**148.63**	**332**	*e*PKPbc		**PKPbc**	**21 39 59.4 +0.4**
TIP	**Timpagrande**	**149.06**	**314**	*e*PKPbc		**PKPbc**	**21 40 00.8 +0.7**
AQU	**L'Aquila**	**149.41**	**322**	*e*PKPbc		**PKPbc**	**21 40 02.0 +1.1**
SENIN	**Lac Senin/Sane**	**149.60**	**334**	*e*PKPbc		**PKPbc**	**21 40 02.1 +0.6**
SSB	**Saint Sauveur**	**151.61**	**335**	*e*PKPbc		**PKPbc**	**21 40 06.4 +0.4**

IDC 18 21:20:17.0±1.5, 2°.89S×138°.62E, h0km, mb3.4/2, mb1 3.5/4, mb1mx3.3/43, mbtmp3.3/4, ML3.2/2, Error ellipse: s-maj=33.2km s-min=27.1km az=100.0, Irian Jaya

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAY	**Jayapura**	**2.12**	**80**	Pn		Pn	21 20 54.0 +0.2
	1.6nm,0.3s,baz=260,slow=22,SNR=33						
JAY				Sn		Sn	21 21 15.2 -5.7
	0.9nm,0.3s,baz=91,slow=23,SNR=5.3						
WRA	**Warramunga Arr**	**17.45**	**194**	P		Pn	21 24 20.6 -1.5
	0.2nm,0.3s,baz=19,slow=13,SNR=13						
ASAR	**Alice Springs**	**21.15**	**192**	P		P	21 25 04.8 +0.9
	0.7nm,0.7s,baz=14,slow=12,SNR=6.0						
MKAR	**Makanchi Array**	**69.88**	**322**	P		P	21 31 29.7 -0.1
	0.3nm,0.4s,baz=113,slow=6.7,SNR=6.0						

IDC 18 21:22:45.8±1.9, 4°.83N×124°.38E, h0km, mb3.9/5, mb1 4.1/5, mb1mx3.6/58, mbtmp3.9/5, Error ellipse: s-maj=281.6km s-min=19.6km az=64.0, Celebes Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**26.49**	**159**	P		P	21 28 25.9 +0.9
	1.8nm,0.3s,baz=337,slow=9.4,SNR=13						
ASAR	**Alice Springs**	**29.81**	**162**	P		P	21 28 54.2 -0.4
	1.0nm,0.5s,baz=339,slow=7.4,SNR=9.2						
STKA	**Stephens Creek**	**40.02**	**157**	P		P	21 30 21.9 -0.7
	1.5nm,0.5s,baz=334,slow=8.2,SNR=7.1						
MKAR	**Makanchi Array**	**55.33**	**326**	P		P	21 32 22.1 +0.6
	0.3nm,0.4s,baz=120,slow=8.4,SNR=6.5						
KURBB	**Kurchatov Arra**	**59.56**	**328**	P		P	21 32 50.4 -0.7
	0.3nm,0.6s,baz=130,slow=6.0,SNR=5.5						

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*IDC **18** 21:27:34.7±2.5, 28°.01S×68°.27W, h0km, mb1 4.4/2, mb1mx3.7/34, mbtmp4.1/2, ML4.4/2, Error ellipse: s-maj=70.7km s-min=53.9km az=40.0*
*SJA **18** 21:27:58.4±1.4, 26°.65S×66°.63W, h198km±10km, ML3.7, MW3.8*
*ISCJB **18** 21:27:59.1±0.3, 26°.58S±0°.03×67°.02W±0°.05, h150km, mb4.6/5, Error ellipse: s-maj=6.0km s-min=3.6km az=172.1*
*NEIC **18** 21:27:59.4±0.8, 26°.59S×66°.70W, h160km±10km, mb4.7/5, Error ellipse: s-maj=16.1km s-min=9.4km az=83.0*
ISC 18 21:27:58.4±0.6, 26°.57S±0°.04×66°.94W±0°.05, h150km, n40, σ2§53/54, mb4.7/5, Catamarca Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FSA	**Cafayete**	**0.97**	**63**	*i* P		**Pn**	**21 28 26.7 +3.5**
FSA				*e*P		**Pn**	**21 28 27.3 +4.0**
FSA				*i* S		**Sn**	**21 28 46.6 +4.5**
AHML	**Horco Molle**	**1.45**	**99**	*i* P		**Pn**	**21 28 29.4 +1.8**
AHML				*e*S		**Sn**	**21 28 52.2 +2.3**
AHML				IAML			21 28 54.5
	comp=Z,108nm,0.6s						
CYA	**Choya**	**2.13**	**152**	*i* P		**Pn**	**21 28 36.8 +1.7**
CYA				*i* S		**Sn**	**21 29 05.0 +1.6**
SLA	**San Lorenzo**	**2.25**	**36**	*i* P		**Pn**	**21 28 39.8 +3.1**
SLA				IAML			21 28 41.4
	comp=Z,452nm,0.5s						
VCA	**Vinchina**	**2.44**	**207**	*e*P		Pn	21 28 43.9 +5.0
VCA				*i* S		**Sn**	**21 29 15.4 +5.1**
VCA				IAML			21 29 20.9
	comp=Z,371nm,0.6s						
AZAP	**Zapla**	**2.88**	**36**	*i* P		**Pn**	**21 28 46.0 +1.4**
AZAP				*e*P		**Pn**	**21 28 47.0 +2.4**
AGUA	**GUANDACOL**	**3.22**	**205**	*i* P		**Pn**	**21 28 51.6 +3.0**
AGUA				*e*S		**Sn**	**21 29 31.5 +3.9**
ASTB	**Santa Barbara**	**3.44**	**41**	*i* P		**Pn**	**21 28 53.4 +1.7**
HJA	**Humahuaca**	**3.62**	**23**	*i* P		**Pn**	**21 28 56.7 +2.5**
ALOL	**LOMAS DE OLMED**	**3.83**	**45**	*i* P		**Pn**	**21 28 58.5 +1.9**
LCO	**Las Campanas**	**4.13**	**233**	*e*Pn		**Pn**	**21 29 03.9 +3.3**
LCO				*e*Sn		**Sn**	**21 29 53.5 +4.6**
LVC	**Limon Verde**	**4.33**	**335**	*e*Pn		**Pn**	**21 29 07.4 +4.0**
LVC				*e*Sn		**Sn**	**21 29 56.6 +2.8**
PB10	**IPOC Station P**	**4.47**	**312**	*e*Pn		**Pn**	**21 29 08.7 +3.8**
PB10				*e*Sn		**Sn**	**21 29 55.5 -1.1**
AMOG	**MOGNA**	**4.57**	**197**	*i* P		**Pn**	**21 29 07.7 +1.5**
RTLL	**Cerro Villicun**	**4.93**	**195**	*i* P		**Pn**	**21 29 12.1 +1.1**
PB04	**IPOC Station P**	**5.13**	**325**	*e*Pn		**Pn**	**21 29 16.6 +2.8**
PB04				*e*Sn		**Sn**	**21 30 05.6 -6.8**
RTCV	**Cerro Valdivia**	**5.46**	**194**	*i* P		**Pn**	**21 29 18.6 +0.6**
RTLS	**Leoncito**	**5.61**	**201**	*i* P		**Pn**	**21 29 21.9 +1.7**
MRA	**San Martin**	**5.93**	**170**	*i* P		**Pn**	**21 29 23.7 -0.6**
MRA				IAML			21 29 35.1
	comp=Z,30nm,0.5s						
PB01	**IPOC Station P**	**5.97**	**336**	*e*Pn		**Pn**	**21 29 26.2 +1.3**
PB01				*e*Sn		**Sn**	**21 30 33.0 +0.5**
**

HAZ	**Te Kaha**	**13.48 202**	PN	Pn	21 42 46.5	-7.2
HAZ			SN	**Sn**	**21 45 17.2**	**-4.8**
PUZ	**Puketiti**	**13.62 200**	PN	Pn	21 42 49.2	-6.3
MWZ	**Matawai**	**14.09 202**	PN	Pn	21 42 54.9	-7.0
MWZ			SN	Sn	21 45 29.1	-7.8
URZ	**Urewera**	**14.17 203**	Pn	Pn	21 42 54.5	-8.5
1.9nm,0.3s,baz=272,slow=5.2,SNR=10						
URZ			Sn	Sn	21 45 29.9	-8.7
17nm,0.3s,baz=217,slow=21,SNR=17						
URZ	**Urewera**	**14.17 203**	Pn	Pn	21 42 54.5	-8.5
URZ			*e*Sn	Sn	21 45 29.9	-8.7
URZ			*e*Sn	S	21 45 36.3	-21
RIGZ	**Rimuhau**	**14.35 200**	PN	Pn	21 43 00.7	-4.7
RIGZ			SN	Sn	21 45 34.1	-9.2
RTZ	**Ruatahuna**	**14.53 203**	PN	Pn	21 43 00.3	-7.6
BKZ	**Black Stump Fm**	**15.19 203**	*e*Pn	**Pn**	**21 43 14.7**	**-1.8**
94nm,0.8s						
BKZ	**Black Stump Fm**	**15.19 203**	PN	Pn	21 43 09.2	-7.3
HIZ	**Hauiti**	**15.27 209**	*e*Pn	**Pn**	**21 43 13.6**	**-3.9**
444nm,1.7s						
RAR	**Rarotonga**	**15.39 78**	Pn	Pn	21 43 10.3	-8.8
44nm,0.3s,baz=239,slow=5.1,SNR=9.3						
RAR			Sn	Sn	21 45 41.9	-27
15nm,0.3s,baz=75,slow=20,SNR=9.6						
RAR			LR	LR	21 47 52.4	
comp=Z,4μm,19.5s,baz=262,slow=32						
RAR	**Rarotonga**	**15.39 78**	*e*P	Pn	21 43 10.8	-8.3
RAR			pmax	pmax		
comp=Z,285nm,1.2s						
RAR	**Rarotonga**	**15.39 78**	*e*Pn	Pn	21 43 10.8	-8.3
comp=Z,285nm,1.2s						
RAR			*e*Sn	Sn	21 45 42.6	-26
BHHZ	**Black Hill Sta**	**15.63 204**	PN	**Pn**	**21 43 18.2**	**-4.0**
WNVZ	**Wahianoa**	**15.66 205**	PN	**Pn**	**21 43 18.1**	**-4.6**
TSZ	**Takapari Road**	**16.17 203**	PN	**Pn**	**21 43 23.7**	**-5.3**
DZM	**Mont Dzumac**	**16.48 278**	Pn	**P**	**21 43 37.6**	**+2.5**
comp=Z,4.7nm,0.3s,baz=87,slow=17,SNR=33						
DZM			LR	LR	21 47 19.6	
comp=Z,1μm,21.6s,baz=102,slow=28						
BFZ	**Birch Farm**	**16.63 201**	*e*Pn	Pn	21 43 29.2	-5.6
comp=Z,154nm,0.7s						
BFZ			*e*Sn	Sn	21 46 25.2	-13
BFZ	**Birch Farm**	**16.63 201**	PN	Pn	21 43 28.5	-6.3
MRZ	**Mangatainoka R**	**16.84 203**	PN	Pn	21 43 28.4	-9.0
OGWZ	**Otaki Gorge**	**17.12 204**	PN	Pn	21 43 32.6	-8.3
SNZO	**South Karori**	**17.73 204**	*e*Pn	**Pn**	**21 43 43.0**	**-5.3**
comp=Z,89nm,0.6s						
SNZO			*e*Sn	Sn	21 46 53.4	-11
PLWZ	**Palliser**	**17.76 202**	PN	**Pn**	**21 43 45.4**	**-3.4**
PLWZ			SN	Sn	21 46 50.0	-16
THZ	**Tophouse**	**18.81 207**	*e*P	P	21 43 54.7	-5.9
comp=Z,64nm,0.6s						
THZ	**Tophouse**	**18.81 207**	PN	**P**	**21 43 55.9**	**-4.7**
THZ			SN	S	21 47 15.3	-17
KHZ	**Kahutara**	**19.12 204**	*e*P	**P**	**21 44 00.5**	**-3.4**
comp=Z,190nm,0.7s						
KHZ	**Kahutara**	**19.12 204**	PN	P	21 43 57.4	-6.5
KHZ			SN	S	21 47 20.9	-17
LTZ	**Lake Taylor**	**19.92 206**	*e*P	**P**	**21 44 12.9**	**+0.2**
comp=Z,203nm,1.6s						
INZ	**Inchbonnie**	**20.21 208**	PN	**P**	**21 44 11.7**	**-4.1**
INZ			SN	S	21 47 44.7	-15
OXZ	**Oxford**	**20.47 206**	*e*P	**P**	**21 44 15.5**	**-3.1**
RPZ	**Rata Peaks**	**21.19 207**	P	**P**	**21 44 23.4**	**-3.0**
comp=Z,18nm,0.6s,baz=359,slow=4.8,SNR=8.5						
RPZ			S	S	21 48 05.8	-13
comp=Z,17nm,0.6s,baz=180,slow=12,SNR=3.7						
RPZ			LR	LR	21 52 50.4	
comp=Z,4μm,20.8s,baz=23,slow=37						
ODZ	**Otahua Downs**	**22.46 206**	*e*P	**P**	**21 44 42.8**	**+2.8**
comp=Z,54nm,1.2s						
LHI	**Lord Howe Isla**	**22.82 249**	*e*P	**P**	**21 44 47.9**	**+4.0**
comp=Z,422nm,0.9s						
MLZ	**Mavora Lakes**	**23.76 209**	*e*P	**P**	**21 44 54.9**	**+1.9**
comp=Z,294nm,1.9s						
TBI	**Tubuai**	**24.18 91**	*e*P	**P**	**21 44 55.3**	**-1.6**
comp=Z,135nm,0.9s						
TBI			*e*LQ	LQ	21 49 32.7	
comp=Z,4μm,31.0s						
TBI			*e*LR	LR	21 50 31.0	
comp=Z,9μm,28.5s,baz=264						
TBI	**Tubuai**	**24.18 91**	*e*T	T	22 09 59.6	
comp=Z,30nm,0.3s						
DCZ	**Deep Cove**	**24.27 210**	*e*P	**P**	**21 44 59.2**	**+1.7**
comp=Z,47nm,0.8s						
PAE	**Paea**	**25.64 78**	*e*P	**P**	**21 45 09.7**	**-0.6**
comp=Z,46nm,1.4s						
PAE	**Paea**	**25.64 78**	*e*T	T	22 11 38.1	
comp=Z,16nm,0.3s						
PPT2	**Papeete2**	**25.67 78**	*e*P	**P**	**21 45 10.3**	**-0.3**
comp=Z,116nm,1.2s						
PPT2			*e*LQ	LQ	21 50 04.1	
comp=Z,5μm,27.5s						
PPT2			*e*LR	LR	21 51 21.9	
comp=Z,11μm,25.2s,baz=247						
PPT	**Papeete**	**25.68 78**	P	**P**	**21 45 09.7**	**-1.0**
comp=Z,38nm,0.8s,baz=280,slow=8.2,SNR=6.3						
PPT			LR	LR	21 52 16.1	
comp=Z,4μm,21.9s,baz=247,slow=30						
TIAR	**Tiarei**	**25.88 78**	*e*P	**P**	**21 45 12.4**	**-0.1**
comp=Z,78nm,1.3s						
TVO	**Taravao**	**25.88 78**	*e*P	**P**	**21 45 12.2**	**-0.4**
comp=Z,64nm,1.2s						
MEH	**Mehetia**	**26.90 80**	*e*T	T	22 13 15.1	
comp=Z,37nm,0.2s						
VAH	**Vaihoa**	**28.32 75**	*e*P	**P**	**21 45 31.8**	**-2.6**
comp=Z,85nm,1.2s						
ARMA	**Armidale**	**29.07 253**	*e*P	**P**	**21 45 42.7**	**+1.6**
comp=Z,44nm,0.9s						
EIDS	**Eidsvold**	**29.78 263**	*e*P	**P**	**21 45 48.3**	**+1.0**
comp=Z,77nm,0.8s						
CAN	**Canberra**	**31.73 243**	*e*P	**P**	**21 46 06.6**	**+2.1**
CAN			pmax	pmax		
comp=Z,78nm,1.7s						
CAN	**Canberra**	**31.73 243**	*e*P	**P**	**21 46 06.6**	**+2.1**
comp=Z,78nm,1.7s						
CTAO	**Charters Tower**	**35.20 271**	*e*P	**P**	**21 46 34.8**	**0.0**
CTAO			pmax	pmax		
comp=Z,38nm,0.7s						
CTAO	**Charters Tower**	**35.20 271**	*e*P	**P**	**21 46 34.8**	**0.0**
comp=Z,38nm,0.7s						
RKT	**Rikitea**	**37.30 95**	*e*LQ	LQ	21 55 11.5	
comp=Z,951nm,30.2s						
RKT			*e*LR	LR	21 56 36.6	
comp=Z,5μm,28.2s,baz=259						
RKT	**Rikitea**	**37.30 95**	*e*T	T	22 26 26.6	
comp=Z,5.6nm,0.3s						
STKA	**Stephens Creek**	**37.68 250**	P	**P**	**21 46 55.8**	**-0.1**
comp=Z,36nm,0.5s,baz=95,slow=9.7,SNR=133						
STKA			PcP	**PcP**	**21 49 13.6**	**+1.2**
comp=Z,7.4nm,0.7s,baz=27,slow=2.3,SNR=3.5						
STKA			LR	LR	22 00 29.3	
comp=Z,4μm,21.8s,baz=84,slow=33						
STKA	**Stephens Creek**	**37.68 250**	*e*P	**P**	**21 46 55.8**	**-0.1**
comp=Z,10nm,0.8s						
STKA			*e*PcP	**PcP**	**21 49 13.6**	**+1.2**
TAOE	**Nuku Hiva Isla**	**37.76 71**	*e*P	**P**	**21 46 54.8**	**-1.9**
comp=Z,310nm,1.1s						
TAOE			*e*LR	LR	21 56 38.8	
comp=Z,5μm,27.7s,baz=246						
PMG	**Port Moresby**	**38.47 288**	LR	LR	22 01 04.7	
comp=Z,2μm,18.5s,baz=124,slow=34						
PMG	**Port Moresby**	**38.47 288**	*e*P	**P**	**21 47 00.3**	**-2.3**
PMG			pmax	pmax		
comp=Z,325nm,0.9s						
PMG	**Port Moresby**	**38.47 288**	*e*P	**P**	**21 47 01.3**	**-1.4**
comp=Z,93nm,0.9s						
COEN	**Coen**	**40.01 279**	*e*P	**P**	**21 47 15.6**	**+0.1**
comp=Z,71nm,1.1s						
BBOO	**Buckleboo**	**42.33 248**	*e*P	**P**	**21 47 34.3**	**-0.1**
comp=Z,58nm,0.6s						
AS01	**Alice Springs**	**45.43 261**	*e*P	**P**	**21 47 56.9**	**-2.5**
AS31	**Alice Springs**	**45.47 261**	*e*P	**P**	**21 47 58.8**	**-1.0**
comp=Z,17nm,1.1s						
AS31			*e*PcP	**PcP**	**21 49 38.2**	**+0.1**
AS31			*e*S	**S**	**21 54 32.6**	**-5.6**
ASAR	**Alice Springs**	**45.47 261**	P	**P**	**21 47 58.8**	**-1.0**
comp=Z,32nm,0.9s,baz=101,slow=7.6,SNR=116						
ASAR			PcP	**PcP**	**21 49 38.2**	**+0.1**
comp=Z,6.6nm,0.8s,baz=113,slow=3.8,SNR=6.1						
ASAR			S	**S**	**21 54 32.6**	**-5.6**
comp=Z,3.3nm,1.1s,baz=101,slow=15,SNR=4.1						
ASAR			LR	LR	22 06 28.0	
comp=Z,3μm,18.8s,baz=105,slow=35						
WB2	**Warramunga Arr**	**46.01 266**	*e*P	**P**	**21 48 02.0**	**-2.0**
comp=Z,47nm,1.0s						
WRAB	**Tennant Creek**	**46.01 266**	*i*P	**P**	**21 48 03.1**	**-0.9**
WRAB			pmax	pmax		
comp=Z,97nm,0.9s						
WRAB	**Tennant Creek**	**46.01 266**	*e*P	**P**	**21 48 03.1**	**-0.9**
comp=Z,44nm,0.9s						
WR1	**Warramunga Arr**	**46.02 266**	*e*P	**P**	**21 48 02.1**	**-1.9**
comp=Z,55nm,1.0s						
WR1			*e*PcP	**PcP**	**21 49 40.7**	**+0.6**
WRA	**Warramunga Arr**	**46.02 266**	P	**P**	**21 48 02.1**	**-1.9**
comp=Z,28nm,0.7s,baz=101,slow=7.6,SNR=130						
WRA			PcP	**PcP**	**21 49 40.7**	**+0.6**
comp=Z,15nm,1.1s,baz=101,slow=4.0,SNR=8.3						
WRA			LR	LR	22 06 20.2	
comp=Z,2μm,20.0s,baz=105,slow=35						
JAY	**Jayapura**	**47.50 291**	P	**P**	**21 48 14.1**	**-1.6**
GENI	**Genyem**	**47.91 291**	P	**P**	**21 48 17.8**	**-1.0**
comp=Z,80nm,0.2s,comp=Z,6μm						
SBA	**Scott Base**	**53.20 185**	*e*P	**P**	**21 49 01.8**	**+3.9**
SBA	**Scott Base**	**53.20 185**	*e*P	**P**	**21 49 01.8**	**+3.9**
VNDA	**Vanda**	**53.29 186**	P	**P**	**21 49 02.3**	**+3.8**
comp=Z,16nm,0.9s,baz=9.3,slow=7.1,SNR=65						
VNDA			LR	LR	22 07 35.1	
comp=Z,314nm,21.6s,baz=18,slow=31						
VNDA	**Vanda**	**53.29 186**	*e*P	**P**	**21 49 02.3**	**+3.8**
comp=Z,24nm,1.0s						
GUMO	**Guam**	**54.39 311**	P	**P**	**21 49 05.9**	**-1.4**
comp=Z,60nm,0.6s,baz=177,slow=16,SNR=3.0						
GUMO			LR	LR	22 09 53.3	
comp=Z,839nm,21.9s,baz=144,slow=34						
FITZ	**Fitzroy Crossi**	**54.42 265**	LR	LR	22 11 38.1	
comp=Z,2μm,19.4s,slow=35						
FITZ	**Fitzroy Crossi**	**54.42 265**	*e*P	**P**	**21 49 07.4**	**-0.3**
comp=Z,46nm,1.1s						
SWI	**Sorong**	**56.42 287**	P	**P**	**21 49 20.7**	**-1.4**
comp=Z,79nm,0.8s,comp=Z,2μm						
SOEI	**Soe**	**58.66 274**	P	**P**	**21 49 39.8**	**+1.8**
SOEI	**Soe**	**58.66 274**	*e*P	**P**	**21 49 39.9**	**+1.9**
comp=Z,76nm,0.9s						
MBWA	**Marble Bar**	**58.78 260**	*e*P	**P**	**21 49 37.5**	**-1.1**
comp=Z,233nm,1.4s						
LBMI	**Labuha**	**59.80 285**	P	**P**	**21 49 43.9**	**-1.8**
CASY	**Casey**	**60.46 206**	*e*P	**P**	**21 49 51.2**	**+1.7**
comp=Z,90nm,0.9s						
KAPI	**Kappang**	**64.69 277**	LR	LR	22 18 16.2	
comp=Z,853nm,20.5s,baz=115,slow=36						
QSPA	**South Pole Qui**	**64.75 180**	*e*P	**P**	**21 50 20.7**	**+2.5**
SPSI	**Sidrap Palu**	**65.13 278**	P	**P**	**21 50 19.8**	**-1.6**
comp=Z,21nm,1.0s						
TWSI	**Taliwang, Sumb**	**65.74 272**	P	**P**	**21 50 25.2**	**-0.1**
comp=Z,38nm,1.1s,comp=Z,952nm						
JCJ	**Chichijima**	**65.95 319**	LR	LR	22 13 56.3	
comp=Z,527nm,21.2s,baz=120,slow=31						
PCI	**Palu**	**66.43 281**	P	**P**	**21 50 31.6**	**+1.8**
MIR	**Mirnyy**	**67.45 206**	*i* P	**P**	**21 50 37.0**	**+1.6**
MIR			pmax	pmax		
comp=Z,10.0nm,1.0s						
MYLDM	**Lahad Datu**	**70.47 286**	⇑P	**P**	**21 50 54.6**	**-0.3**
MTKI	**Muara Teweh, K**	**70.83 278**	P	**P**	**21 50 56.4**	**-0.8**
comp=Z,125nm,0.5s,comp=Z,11μm						
JHJ	**Hachijo jima 2**	**71.82 322**	P	**P**	**21 51 01.9**	**-0.8**
comp=Z,39nm,0.5s,baz=146,slow=3.9,SNR=5.0						
SDKM	**Sandakan**	**71.82 286**	⇑P	**P**	**21 51 02.0**	**-1.2**
KKM	**Kota Kinabalu**	**72.87 285**	⇑P	**P**	**21 51 09.0**	**-0.6**
KKM	**Kota Kinabalu**	**72.87 285**	*e*P	**P**	**21 51 07.8**	**-1.7**
comp=Z,14nm,0.7s						
STKI	**Sintang**	**74.33 278**	P	**P**	**21 51 18.7**	**+0.7**
comp=Z,32nm,1.1s						
SBUM	**Sibu**	**74.73 280**	⇓P	**P**	**21 51 20.6**	**+0.3**
SBUM	**Sibu**	**74.73 280**	*e*P	**P**	**21 51 20.1**	**-0.2**
comp=Z,10nm,1.1s						
INU	**Inuyama**	**75.01 322**	*e*P	**P**	**21 51 20.7**	**-0.7**
comp=Z,28nm,1.1s						
MJAR	**Matsushiro Arr**	**75.23 323**	P	**P**	**21 51 21.5**	**-1.2**
comp=Z,8.3nm,0.6s,baz=160,slow=5.7,SNR=18						
MJAR			LR	LR	22 19 01.7	
comp=Z,242nm,21.8s,baz=125,slow=32						
MAJO	**Matsushiro**	**75.23 323**	*e*P	**P**	**21 51 21.8**	**-0.9**
MAJO			*e**PP	**PcP**	**21 51 34.5**	**-1.4**
MAJO			pmax	pmax		
comp=Z,20nm,0.8s						
MAJO	**Matsushiro**	**75.23 323**	*e*P	**P**	**21 51 21.8**	**-0.9**
comp=Z,20nm,0.8s						
MAJO			*e*pP	**PcP**	**21 51 34.5**	**-1.4**
MAT	**Matsushiro**	**75.23 323**	P	**P**	**21 51 21.5**	**-1.2**
MAT			S	**S**	**22 00 53.6**	**-4.5**
MJB9	**Matsu-Tunnel**	**75.23 323**	*e*P	**P**	**21 51 22.1**	**-0.6**
comp=Z,5.2nm,0.9s						
MJB9			*e*pP	**PcP**	**21 51 34.5**	**-1.4**
KSM	**Kuching**	**76.00 278**	*e*P	**P**	**21 51 26.9**	**-0.7**
comp=Z,25nm,1.0s						
YOJ	**Yonaguni jima**	**77.08 305**	*e*P	**P**	**21 51 34.0**	**+0.6**
YOJ			pmax	pmax		
comp=Z,93nm,1.0s						
YOJ	**Yonaguni jima**	**77.08 305**	*e*P	**P**	**21 51 34.0**	**+0.6**
comp=Z,93nm,1.0s						
JNU	**Nakatsue**	**77.10 316**	P	**P**	**21 51 32.9**	**-0.5**
comp=Z,20nm,0.8s,baz=111,slow=3.9,SNR=15						
TWG	**Pinlang**	**77.60 303**	*e*P	**P**	**21 51 35.0**	**-1.3**
comp=Z,352nm,1.8s						
MAW	**Mawson**	**77.67 200**	P	**P**	**21 51 38.1**	**+2.1**
comp=Z,32nm,0.9s,baz=130,slow=7.8,SNR=35						
MAW			LR	LR	22 25 44.8	
comp=Z,458nm,18.3s,baz=94,slow=36						
MAW	**Mawson**	**77.67 200**	*e*P	**P**	**21 51 38.1**	**+2.1**
comp=Z,33nm,1.5s						
YULB	**Yu-li**	**77.75 303**	*e*P	**P**	**21 51 36.2**	**-1.1**
comp=Z,132nm,2.0s						
NACB	**Ninganchiao**	**77.97 304**	*e*P	**P**	**21 51 37.0**	**-1.5**
comp=Z,143nm,1.1s						
TPUB	**Ta-pu**	**78.21 303**	*e*P	**P**	**21 51 38.0**	**-1.7**
comp=Z,63nm,0.8s						
SSLB	**Suanglung**	**78.23 303**	*e*P	**P**	**21 51 37.8**	**-2.2**
comp=Z,48nm,0.9s						
YHNB	**Yeheng**	**78.42 304**	*e*P	**P**	**21 51 40.4**	**-0.6**
comp=Z,68nm,1.0s						
TATO	**Taipei**	**78.51 305**	*e*P	**P**	**21 51 40.8**	**-0.5**
comp=Z,160nm,1.0s						
ASAJ	**Asahikawa**	**78.88 331**	P	**P**	**21 51 43.9**	**+0.9**
comp=Z,6.6nm,0.6s,baz=245,slow=4.6,SNR=7.0						
ASAJ	**Asahikawa**	**78.88 331**	*e*P	**P**	**21 51 43.8**	**+0.9**
comp=Z,19nm,0.8s						
QZH	**Quanzhou**	**80.66 303**	⇑*i*P	P	21 51 48.1	-5.0
QZH	**Quanzhou**	**80.66 303**	S	**S**	**22 01 57.3**	**+0.3**
QZH			pmax	pmax		
comp=Z,160nm,1.0s						
QZH			pmax	pmax		
comp=Z,890nm,2.6s						
QZH			LR	LR		
comp=Z,970nm,22.4s						
TPRI	**Tanjung Pinang**	**80.95 275**	P	**P**	**21 51 57.7**	**+2.8**
PET	**Petropavlovsk**	**81.12 345**	*e*P	**P**	**21 51 55.6**	**+0.8**
PET			*e*S	**S**	**22 02 01.8**	**+1.3**
PET			*e*PS	**PnS**	**22 02 46.5**	**-6.7**
PET			*e*SS	**SS**	**22 07 17.5**	**+0.4**
PET			pmax	pmax		
comp=Z,24nm,1.3s						
PET			pmax	pmax		
comp=Z,200nm,17.2s						
PET			MLR	MLR		
comp=Z,400nm,15.0s						
PET			MLR	MLR		
comp=Z,600nm,18.0s						
TJN	**Taejon**	**81.41 317**	*i* P	**P**	**21 51 55.2**	**-1.6**
PFO	**Pinyon Flats O**	**81.42 47**	P	**P**	**21 51 56.8**	**-0.3**
comp=Z,2.4nm,0.7s,baz=203,slow=13,SNR=2.6						
PFO	**Pinyon Flats O**	**81.42 47**	*e*P	**P**	**21 51 56.8**	**-0.3**
comp=Z,72nm,1.9s						
PEA0	**Petropavlovsk-**	**81.43 344**	*e*P	**P**	**21 51 56.4**	**-0.1**
PETK	**Petropavlovsk-**	**81.43 344**	P	**P**	**21 51 55.8**	**-0.7**
comp=Z,10nm,0.6s,baz=116,slow=6.5,SNR=12						
PETK			LR	LR	22 25 33.3	
comp=Z,252nm,19.0s,baz=156,slow=34						
PETK	**Petropavlovsk-**	**81.43 344**	P	**P**	**21 51 55.8**	**-0.7**
PETK			pmax	pmax		
comp=Z,10.0nm,0.6s						
PETK			MLR	MLR		
comp=Z,252nm,19.0s						
PEA1	**Petropavlovsk-**	**81.43 344**	*e*P	**P**	**21 51 55.8**	**-0.7**
KSRS	**Korea Array**	**81.77 318**	P	**P**	**21 51 58.6**	**0.0**
comp=Z,5.7nm,0.9s,baz=148,slow=5.0,SNR=14						
KSRS			LR	LR	22 26 59.8	
comp=Z,280nm,18.5s,baz=132,slow=35						
CMB	**Columbia Colle**	**81.77 41**	*e*P	**P**	**21 52 01.4**	**+2.6**
CMB			*e**PP	**PcP**	**21 52 09.0**	**+4.7**
CMB	**Columbia Colle**	**81.77 41**	*e*P	**P**	**21 52 01.4**	**+2.6**
CMB			*e*pP	**PcP**	**21 52 09.0**	**+4.7**
CMB			*e*pwP	**pP**	**21 52 16.5**	**+3.5**
KS15	**Wonju Array Si**	**81.78 318**	*e*P	**P**	**21 51 58.6**	**-0.1**
KSAR	**Wonju Array Be**	**81.78 318**	P	**P**	**21 51 58.6**	**-0.1**
KSAR	**Wonju Array Be**	**81.78 318**	P	**P**	**21 51 58.6**	**-0.1**
KS01	**Wonju Array Si**	**81.80 318**	*e*P	**P**	**21 51 58.9**	**+0.1**
MYKOM	**Kota Tinggi**	**81.94 276**	*e*P	**P**	**21 52 00.8**	**+0.6**
comp=Z,137nm,1.6s						
WDC	**Whiskeytown Da**	**82.23 38**	*e*P	**P**	**21 52 02.2**	**+1.2**
WDC			pmax	pmax		
comp=Z,16nm,1.2s						
WDC	**Whiskeytown Da**	**82.23 38**	*e*P	**P**	**21 52 02.2**	**+1.2**
comp=Z,16nm,1.2s						
SYO	**Syowa Base**	**82.43 192**	⇓*e*P	**P**	**21 52 01.4**	**-0.3**
SYO	**Syowa Base**	**82.43 192**	⇓*i*PcP	**PcP**	**21 52 06.2**	**-0.6**
WAKR	**Walker**	**82.64 41**	*e*P	**P**	**21 52 05.2**	**+1.8**
SNAA	**Sanae**	**83.13 178**	P	**P**	**21 52 06.4**	**+1.0**
SNAA	**Sanae**	**83.13 178**	*e*P	**P**	**21 52 06.4**	**+1.0**
SNAA			pmax	pmax		
comp=Z,86nm,1.1s						
SNAA	**Sanae**	**83.13 178**	*e*P	**P**	**21 52 06.4**	**+1.0**
comp=Z,86nm,1.1s						
VNA3	**Neumayer Olymp**	**83.19 176**	P	**P**	**21 52 07.0**	**+1.2**
NV01	**Mina Array Sit**	**83.27 42**	*e*P	**P**	**21 52 06.9**	**+0.1**
NVAR	**Mina Array Bea**	**83.27 42**	P	**P**	**21 52 06.9**	**+0.1**
comp=Z,1.5nm,0.7s,baz=225,slow=6.8,SNR=9.2						
NVAR			LR	LR	22 21 47.9	
comp=Z,793nm,21.2s,baz=265,slow=30						
VLA	**Vladivostok**	**83.33 324**	⇓*i*P	**P**	**21 52 03.4**	**-3.2**
VLA			*e*		21 55 15.3	
VLA			pmax	pmax		
comp=Z,18nm,0.6s						
VNA2	**Neumayer--Watz**	**83.66 176**	P	**P**	**21 52 09.6**	**+1.6**
baz=170,slow=3.7						
VNA1	**Neumayer--Stat**	**83.87 176**	P	**P**	**21 52 10.8**	**+1.6**
NVL	**N'lazarevskaya**	**84.00 183**	*e*P	**P**	**21 52 11.9**	**+2.1**
NVL			pmax	pmax		
comp=Z,6.0nm,1.3s						
W13A	**Hualapai Mount**	**84.02 47**	*e*P	**P**	**21 52 11.1**	**+0.4**
comp=Z,29nm,1.8s						
USRK	**Ussuriysk Ar.**	**84.03 325**	P	**P**	**21 52 10.3**	**+0.1**
comp=Z,14nm,1.0s,baz=108,slow=4.2,SNR=20						
USRK			LR	LR	22 28 04.6	
comp=Z,299nm,18.9s,baz=132,slow=35						
SHPR	**Sheep Range**	**84.03 45**	*e*P	**P**	**21 52 11.3**	**+0.7**
comp=Z,26nm,1.5s						
TYV	**Tymovskoe**	**84.22 335**	*e*P	**P**	**21 52 10.5**	**-0.5**
TYV			pmax	pmax		
comp=Z,26nm,1.0s						
NJ2	**Nanjing**	**84.43 309**	*e*P	**P**	**21 52 13.3**	**+0.8**
NJ2			pmax	pmax		
comp=Z,33nm,1.0s						
TUC	**Tucson**	**84.51 51**	*e*P	**P**	**21 52 13.5**	**+0.5**
TUC			pmax	pmax		
comp=Z,12nm,1.0s						
TUC	**Tucson**	**84.51 51**	*e*P	**P**	**21 52 13.5**	**+0.5**
comp=Z,12nm,1.0s						
QIZ	**Qiongzhong**	**84.58 294**	P	**P**	**21 52 14.1**	**+0.5**
QIZ			S	**S**	**22 02 43.4**	**+6.2**
QIZ			pmax	pmax		
comp=Z,16nm,1.5s						
QIZ			LR	LR		
comp=Z,62nm,21.8s						
QIZ			LR	LR		
comp=Z,110nm,19.6s						
QIZ	**Qiongzhong**	**84.58 294**	*e*P	**P**	**21 52 14.1**	**+0.5**
comp=Z,121nm,1.8s						
PLCA	**Paso Flores**	**84.58 133**	P	**P**	**21 52 14.9**	**+1.4**
comp=Z,8.2nm,0.8s,baz=244,slow=3.4,SNR=9.7						
PLCA			PKKP	**PKKPbc**	**22 10 19.4**	**-4.2**
comp=Z,4.3nm,1.1s,baz=14,slow=5.8,SNR=3.1						
PLCA			LR	LR	22 20 47.3	
comp=Z,584nm,21.7s,baz=278,slow=29						
R11A	**Troy Canyon, C**	**84.89 43**	*e*P	**P**	**21 52 17.7**	**+2.7**
comp=Z,17nm,1.8s						
X16A	**Lo Mia Camp, P**	**85.25 48**	*e*PKKPbc	PKKPbc	22 10 29.7	+6.5
HPIG		**85.35 57**	*e*PKKPbc	PKKPbc	22 10 23.3	+0.7
MDJ	**Mudanjiang**	**85.56 324**	P	**P**	**21 52 17.9**	**0.0**
MDJ			pP	pP	21 52 28.6	-3.7
MDJ			sP	sP	21 52 31.6	-6.1
MDJ			PP	**PP**	**21 55 34.9**	**-2.6**
MDJ			S	**S**	**22 02 49.3**	**+3.4**
MDJ			SS	**SS**	**22 08 23.3**	**0.0**
MDJ			pmax	pmax		
comp=Z,16nm,1.4s						
MDJ			pmax	pmax		
comp=Z,180nm,5.5s						
MDJ			LR	LR		
comp=Z,170nm,21.7s						
MDJ			LR	LR		
comp=Z,170nm,21.0s						
MDJ			LR	LR		
comp=Z,330nm,19.4s						
MDJ	**Mudanjiang**	**85.56 324**	*e*P	**P**	**21 52 18.7**	**+0.8**
comp=Z,21nm,1.1s						
LCMT	**Little Creek M**	**85.57 46**	*e*P	**P**	**21 52 19.4**	**+1.1**
comp=Z,13nm,0.9s						
IPM	**Ipoh**	**85.64 277**	*e*P	**P**	**21 52 19.5**	**+0.4**
comp=Z,206nm,1.6s						
KNB	**Kanab**	**85.84 46**	*e*P	P	21 52 24.4	+4.7
KNB			pmax	pmax		
comp=Z,17nm,

KCSI	**Kotacane, Aceh**	88.16	275	P		**P**	**21 52 32.2 +0.9**
	comp=Z,50nm,1.1s,comp=Z,5μm						
LAZ	**Ladron**	88.20	50	*e*P		**P**	**21 52 32.0 +0.7**
TRTT	**Trang**	88.28	279	P		**P**	**21 52 33.6 +1.7**
	comp=Z,136nm,1.5s,comp=Z,2μm						
SKNT	**Sakolnakorn**	88.55	289	P		**P**	**21 52 34.0 +1.0**
	comp=Z,242nm,1.2s,comp=Z,4μm						
SRAK	**Srakaew**	88.90	286	P		**P**	**21 52 34.0 -0.7**
	comp=Z,133nm,1.1s,comp=Z,2μm						
MA2	**Magadan**	88.95	344	P		**P**	**21 52 32.8 -1.1**
	comp=Z,3.9nm,0.4s,baz=170,slow=7.1,SNR=6.8						
ANMO	**Albuquerque**	88.97	50	*e*P		**P**	**21 52 34.8 -0.1**
ANMO				pmax		pmax	
	comp=Z,11nm,0.9s						
ANMO	**Albuquerque**	88.97	50	*e*P		**P**	**21 52 34.8 -0.1**
	comp=Z,12nm,0.9s						
KHON	**Khomkaen**	89.25	288	P		**P**	**21 52 38.9 +2.6**
	comp=Z,24nm,1.3s						
PMR	**Palmer**	89.29	12	*e*P		**P**	**21 52 34.9 -0.5**
PMR				pmax		pmax	
	comp=Z,26nm,1.4s						
PMR	**Palmer**	89.29	12	*e*P		**P**	**21 52 34.9 -0.5**
	comp=Z,26nm,1.4s						
TT01	**Tatalina**	89.36	9	*e*P		**P**	**21 52 35.2 -0.5**
TTA	**Tatalina**	89.39	9	*e*P		**P**	**21 52 35.5 -0.5**
TTA				pmax		pmax	
	comp=Z,13nm,1.1s						
TTA	**Tatalina**	89.39	9	*e*P		**P**	**21 52 35.5 -0.5**
	comp=Z,13nm,1.1s						
PKDT	**Phuket**	89.52	279	P		**P**	**21 52 40.7 +3.0**
	comp=Z,70nm,1.2s,comp=Z,2μm						
SURT	**Suratani**	89.56	280	P		**P**	**21 52 39.9 +2.0**
	comp=Z,75nm,1.1s,comp=Z,732nm						
DIV	**Divide**	89.57	14	*e*P		**P**	**21 52 36.5 -0.3**
DIV				*e*PcP		**PcP**	**21 52 41.5 +3.3**
LHMI	**Lhok Sumawe**	89.63	276	*e*P		**P**	**21 52 39.8 +1.5**
	comp=Z,442nm,1.6s						
BMRM	**Bremner River**	89.69	15	*e*P		**P**	**21 52 37.1 -0.3**
	comp=Z,116nm,2.0s						
CHAI	**Chaiyaphum**	89.78	288	P		**P**	**21 52 40.1 +1.3**
	comp=Z,17nm,0.6s,comp=Z,157nm						
CRQM	**Cirque**	89.85	15	*e*P		**P**	**21 52 38.8 +0.5**
KLU	**Klutina**	89.86	14	*e*P		**P**	**21 52 37.8 -0.4**
	comp=Z,9.2nm,0.6s						
SCM	**Sheep Creek Mo**	89.87	13	*e*P		**P**	**21 52 38.0 -0.3**
SCM				pmax		pmax	
	comp=Z,39nm,0.9s						
SCM	**Sheep Creek Mo**	89.87	13	*e*P		**P**	**21 52 38.0 -0.3**
	comp=Z,39nm,0.9s						
S22A	**4UR Ranch, Cre**	90.20	48	*e*P		P	21 52 45.6 +4.9
BALM	**Baldy**	90.28	16	*e*P		**P**	**21 52 40.1 -0.1**
BALM				pmax		pmax	
	comp=Z,15nm,0.9s						
BALM	**Baldy**	90.28	16	*e*P		**P**	**21 52 40.1 -0.1**
	comp=Z,15nm,0.9s						
ENH	**Enshi**	90.32	303	*e*P		**P**	**21 52 41.9 +0.8**
	comp=Z,133nm,1.4s						
CAST	**Castle Rocks**	90.45	10	*e*P		**P**	**21 52 39.1 -1.8**
	comp=Z,9.9nm,0.9s						
PHET	**Kaeng Krachan**	90.53	284	P		**P**	**21 52 45.2 +2.9**
	comp=Z,38nm,0.9s,comp=Z,372nm						
BJT	**Baijiatuau**	90.65	315	*e*P		**P**	**21 52 42.9 +0.5**
BJT				pmax		pmax	
	comp=Z,15nm,0.7s						
BJT	**Baijiatuau**	90.65	315	*e*P		**P**	**21 52 42.9 +0.5**
	comp=Z,15nm,0.7s						
BJI	**Beijing**	90.66	315	P		**P**	**21 52 42.3 -0.1**
BJI				S		**S**	**22 03 37.6 +3.1**
BJI				SS		**SS**	**22 09 41.6 +3.9**
BJI				pmax		pmax	
	comp=Z,16nm,1.6s						
BJI				LR		LR	
	comp=Z,320nm,20.1s						
BJI				LR		LR	
	comp=Z,280nm,18.3s						
BJI				LR		LR	
	comp=Z,470nm,27.2s						
GYA	**Guiyang**	90.69	299	P		**P**	**21 52 44.0 +1.0**
GYA				pP		pP	21 52 54.3 -3.1
GYA				PP		**PP**	**21 56 22.0 +2.9**
GYA				SKS		**SKSac**	**22 03 11.8 +0.8**
GYA				S		**ScS**	**22 03 35.5 -3.5**
GYA				sS		sS	22 03 52.6 -7.3
GYA				SS		**SS**	**22 09 42.3 +3.4**
GYA				pmax		pmax	
	comp=Z,30nm,1.0s						
GYA				pmax		pmax	
	comp=Z,140nm,6.9s						
GYA				LR		LR	
	comp=Z,560nm,20.2s						
GYA				LR		LR	
	comp=Z,530nm,21.0s						
GYA				LR		LR	
	comp=Z,540nm,20.6s						
KTH	**Kantishna Hill**	90.77	11	*e*P		**P**	**21 52 41.4 -1.0**
	comp=Z,11nm,0.9s						
TRF	**Thorofare Moun**	90.79	11	*e*P		**P**	**21 52 41.6 -1.1**
	comp=Z,20nm,0.8s						
RND	**Reindeer**	91.00	12	*e*P		**P**	**21 52 42.9 -0.6**
RND				pmax		pmax	
	comp=Z,15nm,0.8s						
RND	**Reindeer**	91.00	12	*e*P		**P**	**21 52 42.9 -0.6**
	comp=Z,15nm,0.8s						
SDCO	**Great Sand Dun**	91.09	48	*e*P		**P**	**21 52 44.6 -0.2**
	comp=Z,15nm,1.3s						
PDAR	**Pinedale Array**	91.19	42	LR		LR	22 27 02.1
	comp=Z,359nm,20.9s,baz=240,slow=31						
PAX	**Paxson**	91.28	13	*e*P		**P**	**21 52 44.1 -0.7**
PAX				pmax		pmax	
	comp=Z,6.0nm,0.9s						
PAX	**Paxson**	91.28	13	*e*P		**P**	**21 52 44.1 -0.7**
	comp=Z,5.6nm,0.9s						
MCK	**McKinley**	91.29	12	*e*P		**P**	**21 52 44.7 -0.1**
MCK				pmax		pmax	
	comp=Z,20nm,1.2s						
MCK	**McKinley**	91.29	12	*e*P		**P**	**21 52 44.7 -0.1**
	comp=Z,20nm,1.2s						
SEY	**Seymchan**	91.51	346	P		**P**	**21 52 45.1 -0.6**
	comp=Z,5.3nm,0.7s,baz=145,slow=4.7,SNR=17						
SRDT	**SRDT**	91.59	285	P		**P**	**21 52 50.1 +2.8**
	comp=Z,165nm,0.9s,comp=Z,3μm						
MENT	**Mentasta**	91.63	14	*e*P		P	21 52 51.6 +5.2
	comp=Z,81nm,0.2s						
DLBC	**Dease Lake**	91.77	22	P		**P**	**21 52 47.4 +0.2**
	comp=Z,0.9nm,0.6s,baz=198,slow=19,SNR=2.5						
DLBC				LR		LR	22 27 32.0
	comp=Z,124nm,19.4s,baz=211,slow=31						
DLBC	**Dease Lake**	91.77	22	*e*P		**P**	**21 52 47.4 +0.2**
	comp=Z,6.0nm,0.9s						
UTTA	**Uttaradit**	91.82	289	P		**P**	**21 52 50.5 +2.2**
	comp=Z,12nm,1.1s,comp=Z,107nm						
TIY	**Taiyuan**	91.91	311	*e*P		**P**	**21 52 48.6 +0.2**
TIY				pmax		pmax	
	comp=Z,50nm,0.8s						
TIY				pmax		pmax	
	comp=Z,260nm,4.0s						
TIY				LR		LR	
	comp=Z,1μm,29.0s						
TIY				LR		LR	
	comp=Z,600nm,23.9s						
TIY				LR		LR	
	comp=Z,460nm,20.2s						
WRH	**Wood River Hil**	92.12	12	*e*P		**P**	**21 52 47.0 -1.5**
	comp=Z,15nm,1.2s						
NANT	**Nan**	92.15	290	P		**P**	**21 52 51.9 +2.1**
	comp=Z,17nm,0.8s,comp=Z,199nm						
DOT	**Dot Lake**	92.18	14	*e*P		**P**	**21 52 48.4 -0.5**
	comp=Z,19nm,1.0s						
CCB	**Clear Creek Bu**	92.33	12	*e*P		**P**	**21 52 48.3 -1.2**
	comp=Z,7.6nm,1.0s						
XAN	**Xi'an**	92.57	307	P		**P**	**21 52 51.8 +0.4**
XAN				pP		pP	21 53 02.4 -3.5
XAN				sP		sP	21 53 06.3 -5.0
XAN				SKS		**SKSac**	**22 03 22.4 +1.3**
XAN				S		**ScS**	**22 03 56.6 +2.4**
XAN				pmax		pmax	
	comp=Z,25nm,0.8s						
XAN				pmax		pmax	
	comp=Z,110nm,6.3s						
XAN				LR		LR	
	comp=Z,220nm,19.0s						
XAN				LR		LR	
	comp=Z,170nm,18.0s						
XAN				LR		LR	
	comp=Z,310nm,19.9s						
IL1	**Eielson Array**	92.61	12	*e*P		**P**	**21 52 49.2 -1.6**
ILAR	**Eielson Array**	92.61	12	P		**P**	**21 52 49.9 -0.9**
	comp=Z,2.1nm,1.1s,baz=221,slow=5.2,SNR=8.5						
ILAR				LR		LR	22 27 52.6
	comp=Z,203nm,21.2s,baz=218,slow=31						
ILB	**Eielson Array**	92.61	12	*e*P		**P**	**21 52 49.9 -0.9**
LAMP	**Lampang**	92.94	289	P		**P**	**21 52 55.7 +2.2**
	comp=Z,41nm,0.8s,comp=Z,310nm						
CRAI	**Chiangrai**	93.05	291	P		**P**	**21 52 55.3 +1.4**
	comp=Z,222nm,1.4s						
KMI	**Kunming**	93.23	296	P		**P**	**21 52 56.1 +1.2**
KMI				pP		pP	21 53 05.6 -3.8
KMI				sP		sP	21 53 10.1 -4.7
KMI				S		**S**	**22 04 01.0 +2.2**
KMI				sS		sS	22 04 15.0 -8.2
KMI				SS		**SS**	**22 10 23.1 +7.4**
KMI				pmax		pmax	
	comp=Z,41nm,1.0s						
KMI				LR		LR	
	comp=Z,77nm,20.7s						
KMI				LR		LR	
	comp=Z,330nm,22.4s						
KMI				LR		LR	
	comp=Z,490nm,22.4s						
CM01	**Chiang Mai Arr**	93.48	289	*e*P		**P**	**21 52 56.9 +0.9**
CM31	**Chiang Mai Arr**	93.51	289	*e*P		**P**	**21 52 57.6 +1.6**
CM31				*e*PP		**PP**	**21 56 40.4 -1.0**
CMAR	**Chiang Mai Arr**	93.51	289	P		**P**	**21 52 57.6 +1.6**
	comp=Z,28nm,0.8s,baz=134,slow=3.3,SNR=138						
CMAR				PP		**PP**	**21 56 40.4 -1.0**
	comp=Z,2.5nm,1.1s,baz=124,slow=5.9,SNR=5.4						
CMAR	**Chiang Mai Arr**	93.51	289	P		**P**	**21 52 57.7 +1.6**
CMAR							21 56 40.4
CMAR				pmax		pmax	
	comp=Z,29nm,0.8s						
CMAR				pmax		pmax	
	comp=Z,3.0nm,1.1s						
DAWY	**Dawson**	93.59	15	*e*P		**P**	**21 52 56.5 +1.1**
	comp=Z,4.4nm,0.8s						
CMMT	**Chiang Mai**	93.66	289	P		**P**	**21 52 58.1 +1.3**
CHTO	**Chiang Mai**	93.66	289	P		**P**	**21 52 58.2 +1.4**
	comp=Z,286nm,0.8s,comp=Z,4μm						
CHTO	**Chiang Mai**	93.66	289	*e*P		**P**	**21 52 58.2 +1.4**
CHTO				pmax		pmax	
	comp=Z,45nm,0.8s						
CHTO	**Chiang Mai**	93.66	289	*e*P		**P**	**21 52 58.2 +1.4**
	comp=Z,45nm,0.8s						
EGAK	**Eagle**	93.79	14	*e*P		**P**	**21 52 56.0 -0.3**
	comp=Z,14nm,1.5s						
EGMT	**Eagleton**	94.02	38	*e*PKKPdf		PKKPdf	22 10 00.7 -0.6
BILL	**Bilibino**	94.04	353*c*	*i*P		**P**	**21 52 56.2 -1.1**
BILL				*i*			21 56 43.5
BILL				pmax		pmax	
	comp=Z,9.0nm,1.2s						
BILL				MLR		MLR	
	comp=Z,489nm,21.0s						
BILL	**Bilibino**	94.04	353	*e*P		**P**	**21 52 56.4 -0.9**
	comp=Z,13nm,1.1s						
HHC	**Hu-ho-hao-te**	94.08	313	*e*P		**P**	**21 52 59.3 +1.0**
HHC				S		**S**	**22 04 04.5 -0.8**
HHC				pmax		pmax	
	comp=Z,30nm,1.4s						
HHC				pmax		pmax	
	comp=Z,150nm,7.9s						
HHC				LR		LR	
	comp=Z,280nm,17.3s						
HHC				LR		LR	
	comp=Z,390nm,17.8s						
HHC				LR		LR	
	comp=Z,500nm,18.1s						
CD2	**Chengdu**	94.98	302	P		**P**	**21 53 01.8 -0.9**
CD2				pP		pP	21 53 12.1 -5.0
CD2				PP		**PP**	**21 56 51.3 -1.4**
CD2				S		**S**	**22 04 14.3 +0.8**
CD2				sS		sS	22 04 32.0 -6.0
CD2				SS		**SS**	**22 10 41.9 +1.6**
CD2				pmax		pmax	
	comp=Z,20nm,1.3s						
CD2				pmax		pmax	
	comp=Z,150nm,7.6s						
CD2				LR		LR	
	comp=Z,540nm,20.2s						
CD2				LR		LR	
	comp=Z,560nm,22.6s						
LZH	**Lanzhou**	97.20	306	*e*P		Pdif	21 53 14.4 +1.5
LZH				pP		pP	21 53 23.6 -3.6
LZH				sP		sP	21 53 27.9 -4.7
LZH				PP		**PP**	**21 57 13.3 +3.4**
LZH				*e*S		**S**	**22 04 35.3 +2.6**
LZH				sS		sS	22 04 50.6 -6.6
LZH				SS		**SS**	**22 11 11.3 -0.4**
LZH				pmax		pmax	
	comp=Z,23nm,1.2s						
LZH				pmax		pmax	
	comp=Z,80nm,5.5s						
LZH				LR		LR	
	comp=Z,94nm,12.0s						
LZH				LR		LR	
	comp=Z,260nm,16.6s						
LZH				LR		LR	
	comp=Z,320nm,18.5s						
YAK	**Yakutsk**	97.30	337	LR		LR	22 31 21.2
	comp=Z,96nm,20.6s,baz=112,slow=32						
LPAZ	**La Paz**	98.44	112	P		**P**	**21 53 18.5 -0.9**
	comp=Z,0.7nm,0.7s,baz=238,slow=9.5,SNR=4.3						
LPAZ				LR		LR	22 27 43.5
	comp=Z,268nm,21.2s,baz=215,slow=29						
YKA	**Yellowknife Ar**	100.10	24	P		**Pdif**	**21 53 26.3 +1.5**
	comp=Z,0.6nm,0.8s,baz=231,slow=3.8,SNR=5.3						
YKA				PP		**PP**	**21 57 27.2 -3.9**
	comp=Z,0.1nm,0.4s,baz=231,slow=7.6,SNR=4.0						
YKA				PKKPbc		**PKKPbc**	**22 09 43.5 -1.7**
	comp=Z,0.7nm,0.8s,baz=38,slow=2.5,SNR=7.0						
YKA				LR		LR	22 31 43.4
	comp=Z,29nm,21.9s,baz=180,slow=31						
YKB5	**Yellowknife Ar**	100.10	24	*e*Pdif		**Pdif**	**21 53 26.3 +1.5**
YKB5				*e*PP		**PP**	**21 57 27.2 -3.9**
YKB5				*e*PKKPbc		**PKKPbc**	**22 09 43.5 -1.7**
GTA	**Gaotai**	101.49	308	*e*P		**Pdif**	**21 53 31.6 -0.2**
GTA				pP		pP	21 53 41.1 -5.4
GTA				sP			21 53 45.4
GTA				PP		**PP**	**21 57 44.0 +1.5**
GTA				SKS		**SKSac**	**22 04 07.4 +0.2**
GTA				S		**Sdif**	**22 05 05.8 -2.8**
GTA				sS		sS	22 05 24.4 -8.8
GTA				SS		**SS**	**22 12 13.4 +1.9**
GTA				pmax		pmax	
	comp=Z,2.0nm,1.1s						
GTA				pmax		pmax	
	comp=Z,77nm,6.7s						
GTA				LR		LR	
	comp=Z,120nm,17.1s						
GTA				LR		LR	
	comp=Z,200nm,21.4s						
GTA				LR		LR	
	comp=Z,270nm,21.9s						
ZAK	**Zakamensk**	103.56	319	*e*P		**Pdif**	**21 53 41.9 +1.2**
ZAK				pmax		pmax	
	comp=Z,2.0nm,1.8s						
TIXI	**Tiksi**	103.90	344	PKiKP		**PKiKP**	**21 57 57.4 -1.5**
	comp=Z,0.5nm,0.3s,baz=225,slow=2.9,SNR=4.0						
WMQ	**Urumqi**	111.51	309	PKP		**PKiKP**	**21 58 12.6 -1.4**
WMQ				LR		LR	
	comp=Z,50nm,21.0s						
WMQ				LR		LR	
	comp=Z,61nm,21.0s						
WMQ				LR		LR	
	comp=Z,58nm,26.2s						
ZAA0	**Zalesovo Array**	115.44	320	*e*PKiKP		**PKiKP**	**21 58 19.9 -1.1**
ZAA1	**Zalesovo Array**	115.44	320	*e*PKiKP		**PKiKP**	**21 58 19.5 -1.5**
ZALV	**Zalesovo Beam**	115.44	320	PKP		**PKPdf**	**21 58 19.5 -1.5**
	comp=Z,0.6nm,0.4s,baz=299,slow=0.9,SNR=5.7						
MK01	**Makanchi Array**	115.86	312	*e*PKPdf		**PKPdf**	**21 58 20.4 -1.7**
MK31	**Makanchi Array**	115.87	312	*e*PKIKP		**PKPdf**	**21 58 21.1 -1.1**
MK31	**Makanchi Array**	115.87	312	*e*PKPdf		**PKPdf**	**21 58 21.1 -1.1**
MK32	**Makanchi Array**	115.87	312	*e*PKPdf		**PKPdf**	**21 58 20.9 -1.3**
MKAR	**Makanchi Array**	115.87	312	PKP		**PKPdf**	**21 58 20.9 -1.3**
	comp=Z,1.2nm,0.5s,baz=178,slow=0.6,SNR=16						
MKAR	**Makanchi Array**	115.87	312	*e*PKPdf		**PKPdf**	**21 58 21.1 -1.2**
MAKZ	**Makanchi**	116.09	312	*e*PKIKP		**PKPdf**	**21 58 20.9 -1.7**
MAKZ	**Makanchi**	116.09	312	*e*PKPdf		**PKPdf**	**21 58 20.9 -1.7**
NVS	**Novosibirsk**	116.47	321	*e*PKIKP		PKPpre	21 58 15.4
KURK	**Kurchatov**	118.81	316	PKIKP		**PKPdf**	**21 58 26.1 -1.6**
KURK				pmax		pmax	
	comp=Z,2.0nm,0.7s						
KURK	**Kurchatov**	118.81	316	*e*PKPdf		**PKPdf**	**21 58 25.3 -2.4**
KURK				*e*PKPdf		**PKPdf**	**21 58 26.1 -1.6**
KURBB	**Kurchatov Arra**	118.86	316	PKP		**PKPdf**	**21 58 26.1 -1.6**
	comp=Z,1.9nm,0.7s,baz=108,slow=1.9,SNR=18						
KSH	**Kashi**	119.17	303	*e*PKP		**PKPdf**	**21 58 29.8 +0.9**
KSH				*es*PKP			21 58 44.0
KSH				*e*PP		PP	21 59 57.3 +7.2
KSH				PKS		**PKSdf**	**22 02 06.0 +0.3**
KSH				SKS		**SKSdf**	**22 05 37.0 -0.1**
KSH				SKKS		**SKKSac**	**22 06 46.1 +0.3**
KSH				SS		**SKKSdf**	**22 16 15.1 -7.3**
KSH				AMB		AMB	
	comp=Z,69nm,4.5s						
KSH				LR		LR	
	comp=Z,99nm,5.3s						
KSH				LR		LR	
	comp=Z,69nm,8.9s						
KSH				LR		LR	
	comp=Z,170nm,6.8s						
TKM2	**Tokmak 2**	119.97	306	*e*PKIKP		**PKPdf**	**21 58 29.5 -1.0**
TKM2	**Tokmak 2**	119.97	306	*e*PKPdf		**PKPdf**	**21 58 29.5 -1.0**
FRU	**Bishkek**	120.68	306	*e*PKIKP		**PKPdf**	**21 58 30.0 -1.6**
EKS2	**Erkin-Say**	121.27	306	*e*PKIKP		**PKPdf**	**21 58 32.6 -0.3**
EKS2	**Erkin-Say**	121.27	306	*e*PKPdf		**PKPdf**	**21 58 32.6 -0.3**
BOSA	**Boshof**	122.62	202	PKP		**PKPdf**	**21 58 35.5 -0.6**
	comp=Z,15nm,1.0s,baz=162,slow=2.9,SNR=12						
BOSA	**Boshof**	122.62	202	*e*PKPdf		**PKPdf**	**21 58 35.5 -0.6**
BOSA				*e*PKPdf		**PKiKP**	**21 58 37.2 +1.0**
KKAR	**Karatay Array**	123.70	306	*e*PKIKP		**PKPdf**	**21 58 36.7 -0.7**
KKAR	**Karatay Array**	123.70	306	*e*PKPdf		**PKPdf**	**21 58 36.7 -0.7**
KBL	**Kabul**	123.81	296	*e*PKIKP		**PKPdf**	**21 58 37.9 -0.2**
KBL	**Kabul**	123.81	296	*e*PKPdf		**PKPdf**	**21 58 37.9 -0.2**
BVAR	**Borovoye Array**	123.98	318	PKP		**PKPdf**	**21 58 37.0 -0.6**
	comp=Z,2.9nm,0.6s,baz=101,slow=3.0,SNR=20						
BRVK	**Borovoye**	124.04	318*c*	*i*PKIKP		**PKPdf**	**21 58 36.6 -1.1**
BRVK				pmax		pmax	
	comp=Z,14nm,1.7s						
BRVK	**Borovoye**	124.04	318	*e*PKPdf		**PKPdf**	**21 58 37.0 -0.7**
ZRNK	**Zerenda**	124.82	318	*e*PKIKP		**PKPdf**	**21 58 38.2 -0.9**
ZRNK	**Zerenda**	124.82	318	*e*PKPdf		**PKPdf**	**21 58 38.2 -0.9**
DAG	**Danmarks Havn**	127.33	6	*i* P		**PKPdf**	**21 58 40.2 -3.1**
	comp=Z,6.1nm,1.1s						
DAG	**Danmarks Havn**	127.33	6	*e*PKIKP		**PKPdf**	**21 58 40.2 -3.1**
DAG				pmax		pmax	
	comp=Z,8.0nm,1.1s						
SVE	**Sverdlovsk**	129.03	324	*e*PKIKP		**PKPdf**	**21 58 46.6 -0.5**
SVE				pmax		pmax	
	comp=Z,20nm,1.7s						
ARU	**Arti**	130.24	324	*i* PKIKP		**PKPdf**	**21 58 48.5 -0.9**
ARU							22 01 02.2
ARU				SS		SS	22 18 21.2 -4.9
ARU				MLR		MLR	
	comp=Z,366nm,21.0s						
ARU	**Arti**	130.24	324	*e*PKPdf		**PKPdf**	**21 58 48.7 -0.6**
GEYT	**Alibeck**	132.91	299	PKP		**PKPdf**	**21 58 56.4 +1.3**
	comp=Z,4.6nm,1.0s,baz=349,slow=3.0,SNR=12						
LSZ	**Lusaka**	133.29	213	*e*PKIKP		**PKPdf**	**21 58 57.8 +1.2**
LSZ	**Lusaka**	133.29	213	*e*PKPdf		**PKPdf**	**21 58 57.8 +1.2**
TSUM	**Tsumeb**	133.81	198	*e*PKPdf		**PKPdf**	**21 59 00.1 +2.5**
TSUM				*e*PP		**PP**	**22 01 28.2 +2.6**
ARA0	**ARCESS Array S**	134.01	350	*e*PKPpre		PKPpre	21 58 49.9
ARA0				*e*PKPdf		**PKPdf**	**21 58 56.0 -0.2**
ARCES	**ARCESS Array B**	134.01	350	PKhKP		PKPpre	21 58 49.9
	comp=Z,1.7nm,0.7s,baz=98,slow=2.7,SNR=4.1						
ARCES				PKP		**PKPdf**	**21 58 56.0 -0.2**
	comp=Z,4.1nm,0.6s,baz=101,slow=1.2,SNR=20						
ARCES	**ARCESS Array B**	134.01	350	PKIKP		**PKPdf**	**21 58 56.0 -0.2**
ARCES				pmax		pmax	
	comp=Z,4.0nm,0.6s						
KLMR	**Klimovskoe**	137.06	335	*e*PKIKP		PKPpre	21 58 58.2
KLMR				*e*			21 59 13.9
KLMR				pmax		pmax	
	comp=Z,16nm,1.4s						
KMBO	**Kilima Mbogo**	138.50	236	*e*PKHKP		PKPpre	21 59 00.6
KMBO				*e*			22 01 55.7
KMBO	**Kilima Mbogo**	138.50	236	*e*PKPpre		PKPpre	21 59 00.6
KMBO				*e*PP		**PP**	**22 01 55.7 -0.8**
FIA0	**FINESS Array S**	140.94	343	*e*PKHKP		PKPpre	21 59 01.2
FIA0				*e*			21 59 08.6
FIA0	**FINESS Array S**	140.94	343	*e*PKPpre		PKPpre	21 59 01.2
FIA0				*e*PKPdf		**PKPdf**	**21 59 08.6 -0.5**
FINES	**FINESS Array B**	140.94	343	PKhKP		PKPpre	21 59 01.2
	comp=Z,1.1nm,0.5s,baz=76,slow=3.9,SNR=19						
FINES				PKP		**PKPdf**	**21 59 08.6 -0.5**
	comp=Z,2.9nm,0.7s,baz=66,slow=2.5,SNR=9.4						
VRH	**Novokhopyorsk**	141.42	322	*e*PKIKP		**PKPdf**	**21 59 07.6 -2.7**
VRH				pmax		pmax	
	comp=Z,10.0nm,1.4s						
OBN	**Obninsk**	141.90	330	*i* PKIKP		PKPpre	21 59 06.8
OBN				pmax		pmax	
	comp=Z,8.0nm,0.9s						
OBN				MLR		MLR	
	comp=Z,208nm,19.0s						
LPSR	**Galich'ya Gora**	142.21	325	*e*PKIKP		**PKPdf**	**21 59 10.8 -0.9**
LPSR				pmax		pmax	
	comp=Z,6.0nm,1.1s						
DUS	**Dusheti**	142.71	307	P		**PKPdf**	**21 59 10.1 -3.0**
DUS	**Dusheti**	142.71	307	PKIKP		**PKPdf**	**21 59 10.0 -3.0**
TBLG	**Delisi**	142.76	306	P		PKPpre	21 59 05.7
TBLG	**Delisi**	142.76	306	PKHKP		PKPpre	21 59 05.7
GUDG	**Gudauri**	142.78	308	P		**PKPdf**	**21 59 11.0 -2.4**
VSR	**Storozhevoye**	142.81	323	*e*PKHKP		PKPpre	21 59 07.5
VSR				pmax		pmax	
	comp=Z,5.0nm,0.7s						
GNI	**Garni**	143.09	304	*e*PKIKP		**PKPdf**	**21 59 14.2 +0.3**
GNI	**Garni**	143.09	304	*e*PKPdf		**PKPdf**	**21 59 14.2 +0.3**
ZEI	**Tsey**	143.11	308	*i* PKIKP		**PKPdf**	**21 59 12.6 -1.3**
ZEI				pmax		pmax	
	comp=Z,27nm,1.3s						
ONI	**Oni**	143.48	308	P		PKPbc	21 59 12.0 +0.2
ONI	**Oni**	143.48	308	PKIKP		PKPbc	21 59 11.9 +0.2
KBZ	**Khabaz**	143.55	310	PKP		PKPbc	21 59 11.8 0.0
	comp=Z,3.1nm,0.8s,baz=85,slow=5.9,SNR=8.7						
KIV	**Kislovodsk**	143.62	311	*i* PKIKP		**PKPdf**	**21 59 14.0 -0.6**
KIV				pmax		pmax	
	comp=Z,9.0nm,1.0s					

SUW	Suwalki	148.03 339	ePKP	PKPbc	21 59 23.9	-0.9
SUW	Suwalki	148.03 339	ePKP2	PKPbc	21 59 23.9	-0.9
AKASG	Malin Array Be	148.15 329	PKPbc	PKPbc	21 59 23.9	-1.3
	comp=Z,4.9nm,0.5s,baz=39,slow=3.8,SNR=42					
AKBB	Malin Array Si	148.15 329	ePKP2	PKPbc	21 59 23.9	-1.3
AKBB	Malin Array Si	148.15 329	ePKPdf	PKPbc	21 59 23.9	-1.3
KIEV	Kiev	148.16 329	ePKIKP	PKPbc	21 59 23.4	-1.9
KIEV	Kiev	148.16 329	ePKPdf	PKPbc	21 59 23.4	-1.9
AK11	Malin Array Si	148.19 329	ePKPdf	PKPbc	21 59 24.0	-1.4
MUD	Monsted U'grnd	148.70 355	i P	PKPbc	21 59 25.9	-0.5
	comp=Z,86nm,1.4s					
MUD	Monsted U'grnd	148.70 355	i PKP2	PKPbc	21 59 25.9	-0.5
MUD			pmax	pmax		
	comp=Z,86nm,1.4s					
CUKAN	kangal_SIVAS	148.73 305	i P	PKPbc	21 59 27.6	+0.2
SIM	Simferopol'	148.87 317	c iPKP2	PKPbc	21 59 26.9	-0.4
SIM			pmax	pmax		
	comp=Z,25nm,0.9s					
BSD	Bornholm Skovb	149.21 348	i P	PKPbc	21 59 27.0	-0.8
	comp=Z,71nm,1.3s					
BSD	Bornholm Skovb	149.21 348	i PKP2	PKPbc	21 59 27.0	-0.8
BSD			pmax	pmax		
	comp=Z,71nm,1.3s					
CUALT	Altinyayla-SIV	149.27 305	i P	PKPbc	21 59 28.8	+0.1
CUSAR	Sarkisla-SIVAS	149.61 305	i P	PKPbc	21 59 29.7	+0.2
KAMA	Osmaniye	149.89 301	i P	PKPbc	21 59 30.0	-0.2
ANDN	Andirin	150.05 302	i P	PKPbc	21 59 31.0	+0.4
COAL	Corum-Alaca	150.25 308	i P	PKPbc	21 59 30.8	-0.2
SORM	Soroca	150.30 326	⇓iP	PKPbc	21 59 29.7	-1.0
BEL	Belsk	150.65 339	ePKP	PKPbc	21 59 31.4	-0.1
BEL	Belsk	150.65 339	ePKIKP	PKPbc	21 59 31.3	-0.1
AVNS	Nevsehir-Avano	150.83 305	i P	PKPbc	21 59 30.8	-1.7
CDAG	Cicekdag	150.91 307	i P	PKPbc	21 59 31.2	-1.4
LVV	L'vov	151.08 333	ePKIKP	PKPbc	21 59 31.7	-0.8
DED	Mersin	151.40 301	i P	PKPbc	21 59 32.7	-1.0
BR101	Keskin Array S	151.41 307	ePKPdf	PKPdf	21 59 26.6	-1.0
BR101			ePKPbc	PKPbc	21 59 32.8	-1.0
BR131	Keskin Array S	151.41 307	ePKPbc	PKPbc	21 59 33.0	-0.8
BRTR	Keskin Array B	151.41 307	PKP	PKPdf	21 59 26.6	-1.0
	comp=Z,1.4nm,1.1s,baz=304,slow=0.9,SNR=7.5					
BRTR			PKPbc	PKPbc	21 59 32.8	-1.0
	comp=Z,8.1nm,0.8s,baz=144,slow=4.0,SNR=42					
LEOM	Leova	151.43 324	⇓iP	PKPab	21 59 51.5	+10
AKSY	AKSARAY - Alti	151.69 305	i P	PKPbc	21 59 32.8	-1.6
KWP	Kalwaria Pacla	151.76 334	ePKP	PKPbc	21 59 33.6	-0.5
KWP	Kalwaria Pacla	151.76 334	⇑iP	PKPbc	21 59 34.0	-0.1
KWP	Kalwaria Pacla	151.76 334	ePKIKP	PKPbc	21 59 33.6	-0.5
KERG	Konya-Eregli	151.79 303	i P	PKPbc	21 59 34.0	-0.7
BBAL	Bala	151.84 307	i P	PKPbc	21 59 33.8	-1.0
PRAR	RASCA	151.88 327	⇓iP	PKPbc	21 59 35.1	+0.6
ANTO	Ankara	151.96 308	ePKIKP	PKPbc	21 59 35.0	0.0
ANTO	Ankara	151.96 308	ePKPbc	PKPbc	21 59 35.0	0.0
BR231	Keskin MP Arra	151.98 308	ePKPdf	PKPdf	21 59 26.5	-2.0
BR231			ePKPbc	PKiKP	21 59 35.8	+0.4
KKUL	Konya-Kulu	152.13 307	i P	PKPbc	21 59 34.7	-0.7
BUR08	Bucovina Ar. S	152.18 329	ePKPbc	PKPbc	21 59 33.2	-2.1
BURAR	Bucovina Array	152.19 328	⇑iP	PKPbc	21 59 37.0	+1.7
TESR	Tescani	152.25 325	⇓iP	PKPbc	21 59 34.3	-1.0
CFR	Carcaliu	152.30 322	⇑iP	PKPbc	21 59 35.8	+0.4
OJC	Ojcow	152.35 338	ePKP	PKPbc	21 59 34.9	-0.5
OJC	Ojcow	152.35 338	ePKIKP	PKPbc	21 59 35.0	-0.4
OJC	Ojcow	152.35 338	ePKPbc	PKPbc	21 59 35.0	-0.4
KOLS	Kolonicke sedl	152.49 334	ePKPdf	PKPdf	21 59 28.8	0.0
KOLS			e		21 59 35.9	
KOLS	Kolonicke sedl	152.49 334	ePKP	PKPdf	21 59 28.8	0.0
KOLS			e		21 59 35.9	
STHS	Stebnicka Huta	152.50 335	ePKIKP	PKPbc	21 59 36.0	+0.2
STHS			e		21 59 47.7	
STHS	Stebnicka Huta	152.50 335	ePKP	PKPbc	21 59 36.0	+0.2
STHS			e		21 59 47.7	
TIRR	Tirgusor	152.57 320	⇓iP	PKPbc	21 59 36.2	+0.2
VRI	Vrincioaia	152.63 324	⇑iP	PKPbc	21 59 36.3	+0.1
PLOR	Plostina	152.68 324	⇑iP	PKPbc	21 59 36.2	-0.1
HARR	Harsova	152.71 321	⇓iP	PKPbc	21 59 37.2	+0.9
UZH	Uzhgorod	152.72 333	⇓ePKIKP	PKPbc	21 59 35.7	-0.5
UZH			i		21 59 50.9	
CRVS	Cervenica-Dubn	152.84 334	ePKIKP	PKPdf	21 59 29.7	+0.4
CRVS			e		21 59 37.1	
CRVS			e		21 59 47.7	
CRVS	Cervenica-Dubn	152.84 334	ePKP	PKPdf	21 59 29.7	+0.4
CRVS			e		21 59 37.1	
CRVS			e		21 59 47.7	
NIE	Niedzica	152.85 336	ePKP	PKPdf	21 59 29.0	-0.4
NIE	Niedzica	152.85 336	ePKIKP	PKPdf	21 59 29.0	-0.4
KSP	Ksiaz	152.86 343	ePKP	PKPbc	21 59 36.4	-0.1
KSP	Ksiaz	152.86 343	ePKIKP	PKPbc	21 59 36.4	-0.1
KDHN	Kadinhani	152.94 306	i P	PKPbc	21 59 36.3	-0.9
CSS	Mathiatis	153.03 298	P	PKPbc	21 59 39.2	+1.8
CSS	Mathiatis	153.03 298	ePKPbc	PKPbc	21 59 36.8	-0.6
CLL	Collm	153.19 348	ePKPdf	PKPdf	21 59 30.0	+0.3
CLL			i PKPbc	PKPbc	21 59 36.3	-0.9
	comp=Z,19nm,0.9s					
CLL			i		21 59 42.4	
CLL			i		21 59 44.2	
CLL			i PKPab	PKPab	21 59 47.9	-1.1
	comp=Z,17nm,1.0s					
CLL			i		21 59 50.2	
	comp=Z,19nm,0.6s					
CLL			i		21 59 52.1	
CLL			eSS	SS	22 24 00.0	+69
CLL			eSSS	SSS	22 28 36.0	
CLL			LmV		23 20 00.0	
	comp=Z,200nm,18.5s					
CLL	Collm	153.19 348	ePKIKP	PKPdf	21 59 30.0	+0.3
CLL			i		21 59 44.2	
CLL			i		21 59 47.9	
CLL			pmax	pmax		
	comp=Z,17nm,1.0s					
CLL			MLR	MLR		
	comp=Z,200nm,18.5s					
CLL	Collm	153.19 348	ePKPbc	PKPbc	21 59 37.6	+0.4
OKC	Ostrava-Krasne	153.22 340	⇑ePKP	PKPbc	21 59 36.9	-0.4
OKC			ex	x	21 59 43.5	
OKC			ePKPAB	PKPab	21 59 47.7	-1.5
OKC	Ostrava-Krasne	153.22 340	ePKIKP	PKPbc	21 59 36.9	-0.4
OKC			e		21 59 47.7	
UPC	Upice	153.24 343	⇑ePKP	PKPbc	21 59 37.5	+0.1
UPC			ePKPAB	PKPab	21 59 49.4	+0.1
UPC			epPKP	pPKPab	22 00 05.4	+1.6
UPC			AMS	AMS	23 09 40.0	
UPC	Upice	153.24 343	ePKIKP	PKPbc	21 59 37.5	+0.1
UPC			e		21 59 49.4	
DOPR	Dopca	153.26 326	⇑iP	PKPbc	21 59 38.5	+0.9
MLR	Muntele Rosu	153.29 324	⇓iP	PKPbc	21 59 37.0	-0.8
MLR	Muntele Rosu	153.29 324	ePKIKP	PKPbc	21 59 36.7	-1.1
MLR	Muntele Rosu	153.29 324	ePKPbc	PKPbc	21 59 36.7	-1.1
DPC	Dobruska-Polom	153.30 342	ePKPDF	PKPdf	21 59 30.1	+0.1
DPC			⇑ePKP	PKiKP	21 59 37.4	-0.3
DPC			ex	x	21 59 45.6	
DPC			ePKPAB	PKPab	21 59 49.8	+0.2
DPC			epPKP	pPKPab	22 00 05.1	+1.0
DPC	Dobruska-Polom	153.30 342	ePKIKP	PKPdf	21 59 30.1	+0.1
DPC			e		21 59 37.4	
DPC			e		21 59 45.6	
DPC			e		21 59 49.8	
LANS	Liptovska Anna	153.37 337	ePKIKP	PKPbc	21 59 38.4	+0.7
LANS			e		21 59 50.2	
LANS	Liptovska Anna	153.37 337	ePKP	PKPbc	21 59 38.4	+0.7
LANS			e		21 59 50.2	
BRG	Berggiesshubel	153.41 346	ePKP	PKPdf	21 59 30.5	+0.4
	comp=Z,18nm,1.7s					
BRG			i		21 59 37.2	
	comp=Z,12nm,0.8s					
BRG			i		21 59 49.9	
	comp=Z,25nm,1.1s					
BRG			SS	SS	22 22 54.0	+0.3
	comp=N,312nm,21.7s					
	comp=E,375nm,16.5s					
	comp=Z,298nm,16.5s					
BRG	Berggiesshubel	153.41 346	ePKIKP	PKPdf	21 59 30.5	+0.4
BRG			i		21 59 49.9	
BRG			SS	SS	22 22 54.0	+0.3
BRG			pmax	pmax		
	comp=Z,18nm,1.7s					
BRG			MLR	MLR		
	comp=N,312nm,21.7s					
BRG			MLR	MLR		
	comp=E,375nm,16.5s					
BRG			MLR	MLR		
	comp=Z,298nm,16.5s					
KRLC	Kraliky	153.42 342	ePKPDF	PKPdf	21 59 30.5	+0.3
KRLC			⇑ePKP	PKiKP	21 59 38.0	+0.1
KRLC			ePKPAB	PKPab	21 59 50.1	0.0
KRLC	Kraliky	153.42 342	ePKIKP	PKPdf	21 59 30.5	+0.3
KRLC			e		21 59 38.0	
KRLC			e		21 59 50.1	
MORC	Moravsky Berou	153.46 340	⇑iP	PKPbc	21 59 37.6	-0.3
MORC	Moravsky Berou	153.46 340	ePKIKP	PKPdf	21 59 30.9	+0.6
MORC	Moravsky Berou	153.46 340	ePKPdf	PKPdf	21 59 30.9	+0.6
KECS	Kecovo	153.55 335	ePKIKP	PKPbc	21 59 39.4	+1.3
KECS			e		21 59 50.9	
KECS	Kecovo	153.55 335	ePKP	PKPbc	21 59 39.4	+1.3
KECS			e		21 59 50.9	
PVCC	Panska Ves	153.59 345	ePKPDF	PKPdf	21 59 30.3	0.0
PVCC			⇑ePKP	PKiKP	21 59 38.3	+0.1
PVCC			epPKP	pPKPdf	21 59 44.5	-0.8
PVCC	Panska Ves	153.59 345	ePKIKP	PKPdf	21 59 30.3	0.0
PVCC			e		21 59 38.3	
PVCC			e		21 59 44.5	
VOIR		153.79 325	⇓iP	PKPab	21 59 54.5	+2.6
DRGR		153.96 330	⇑iP	PKPbc	21 59 38.1	-1.0
ARR	Arges	154.06 326	⇓iP	PKPdf	21 59 31.5	+0.2
PRU	Pruhonice	154.09 344	AMS	AMS	23 09 50.0	
	comp=Z,500nm,20.0s					
GOPC	GO Pecny, Ondr	154.10 344	AMS	AMS	23 09 20.0	
	comp=Z,600nm,21.4s					
VYHS	Vyhne	154.15 337	ePKIKP	PKPdf	21 59 30.5	-0.7
VYHS			e		21 59 39.1	
VYHS			e		21 59 53.4	
VYHS	Vyhne	154.15 337	ePKP	PKPdf	21 59 30.5	-0.7
VYHS			e		21 59 39.0	
VYHS			e		21 59 53.4	
VRAC	Vranov	154.16 341	⇑iP	PKPab	21 59 53.5	+0.3
PSZ	Piszkesteto	154.24 335	⇑iP	PKPab	21 59 53.9	+0.2
PSZ	Piszkesteto	154.24 335	ePKPab	PKPab	21 59 53.6	-0.1
SMOL	Smolenice	154.61 339	ePKP2	PKPab	21 59 54.7	-0.4
SMOL	Smolenice	154.61 339	ePKP	PKPab	21 59 54.7	-0.4
SIRR	Siria	154.83 330	⇑iP	PKPbc	21 59 47.2	+6.3
BCLA	Clavier	154.95 358	PKPbc	PKPbc	21 59 41.4	+0.4
BCLA			PKPab	PKPab	21 59 55.0	-1.4
KHC	Kasperske Hory	155.12 345	ePKPDF	PKPdf	21 59 32.1	-0.5
KHC			⇑ePKP	PKP	21 59 40.9	
KHC			epPKP	pPKPdf	21 59 49.1	+1.5
KHC			ePKPAB	PKPab	21 59 56.9	-0.4
KHC			ex	x	22 00 02.0	
KHC			ex	x	22 00 11.4	
KHC	Kasperske Hory	155.12 345	ePKIKP	PKPdf	21 59 32.1	-0.5
KHC			e		21 59 40.9	
KHC			e		21 59 49.1	
KHC			e		21 59 56.9	
KHC	Kasperske Hory	155.12 345	ePKPdf	PKPdf	21 59 32.1	-0.5
BZS	Buzias	155.34 330	⇓iP	PKPdf	21 59 32.4	-0.5
GEC2	GERESS Array S	155.36 345	ePKIKP	PKPdf	21 59 33.0	0.0
GEC2			e		21 59 58.4	
GEC2	GERESS Array S	155.36 345	ePKPdf	PKPdf	21 59 33.0	0.0
GEC2			ePKPab	PKPab	21 59 58.4	0.0
GERES	GERESS Array B	155.36 345	PKP	PKPdf	21 59 32.4	-0.6
	comp=Z,0.5nm,0.7s,baz=59,slow=2.5,SNR=7.7					
GERES			PKPbc	PKPbc	21 59 39.8	
	comp=Z,0.8nm,0.6s,baz=14,slow=1.7,SNR=6.7					
GERES			PKPab	PKPab	21 59 55.2	-3.2
	comp=Z,1.0nm,0.6s,baz=26,slow=2.7,SNR=6.8					
GEA0	GERESS Array S	155.37 345	ePKPdf	PKPdf	21 59 31.6	-1.4
CONA	Conrad Observa	155.62 341	i PKPdf	PKPdf	21 59 32.4	-0.9
	comp=Z,2.6nm,1.2s					
CONA			i PKPab	PKPab	21 59 55.9	-3.6
	comp=Z,12nm,1.0s					
WLF	Walferdange	155.67 357	PKPab	PKPab	21 59 58.9	-0.6
DIM	Dimitrovgrad	155.69 319	eP	PKPab	22 00 01.4	+1.4
FETY	Fethiye	155.86 304	P	PKPab	22 00 00.7	-0.3
MOA	Molln	156.14 343	i PKPdf	PKPdf	21 59 33.3	-0.7
	comp=Z,5.3nm,1.4s					
MOA			i PKPab	PKPab	22 00 02.2	+0.5
	comp=Z,18nm,1.6s					
PGB	Panagyurishte	156.18 321	eP	PKPab	22 00 01.6	-0.5
YER	Yerkesik	156.27 305	P	PKPab	22 00 02.7	-0.1
ARSA	Arzberg	156.32 340	PKPab	PKPab	22 00 02.2	-0.3
	comp=Z,12nm,1.3s					
RZN	Rozhen	156.40 319	eP	PKPab	22 00 02.4	-0.9
BFO	Black Forest	156.81 353	ePKP2	PKPab	22 00 03.4	-1.2
BFO	Black Forest	156.81 353	ePKPab	PKPab	22 00 03.4	-1.2
SOKA	Soboth	156.99 340	i PKPdf	PKPdf	21 59 33.3	-1.9
	comp=Z,5.9nm,1.6s					
SOKA			i PKPab	PKPab	22 00 05.0	-0.5
	comp=Z,26nm,1.4s					
PERS	Pernice	157.00 340	i PKPab	PKPab	22 00 04.4	-1.1
MMB	Musomiste	157.04 320	eP	PKPab	22 00 04.9	-1.0
KBA	Koelnbreinsper	157.09 344	i PKPdf	PKPdf	21 59 34.7	-0.8
	comp=Z,2.8nm,1.1s					
KBA			i PKPab	PKPab	22 00 05.9	-0.1
	comp=Z,6.7nm,0.8s					
NVR	Nevrokopi	157.11 319	P	PKPab	22 00 05.3	-0.9
WATA	Walderalm	157.26 347	i PKPab	PKPab	22 00 07.1	+0.4
	comp=Z,16nm,1.5s					
RETA	Reutte	157.28 348	i PKPdf	PKPdf	21 59 35.4	-0.2
	comp=Z,5.5nm,1.3s					
RETA			i PKPab	PKPab	22 00 06.5	-0.1
	comp=Z,7.5nm,1.1s					
OBKA	Obir	157.28 341	i PKPab	PKPab	22 00 05.0	-1.7
	comp=Z,4.6nm,0.8s					
WTTA	Wattenberg	157.32 347	i PKPab	PKPab	22 00 07.1	+0.1
	comp=Z,18nm,1.8s					
MOTA	Moosalm	157.35 348	i PKPdf	PKPdf	21 59 35.2	-0.5
	comp=Z,2.4nm,0.8s					
MOTA			i PKPab	PKPab	22 00 07.2	+0.1
	comp=Z,4.4nm,0.8s					
SRS	Serrai	157.41 319	P	PKPab	22 00 06.7	-0.8
MYKA	Terra Mystica	157.43 343	i PKPab	PKPab	22 00 06.6	-0.8
	comp=Z,20nm,1.7s					
ABTA	Abfaltersbach	157.61 345	i PKPdf	PKPdf	21 59 34.1	-1.8
	comp=Z,8.0nm,1.5s					
ABTA			i PKPab	PKPab	22 00 07.8	-0.3
	comp=Z,14nm,1.6s					
DAVA	Damuels	157.62 350	i PKPdf	PKPdf	21 59 35.5	-0.6
	comp=Z,5.4nm,1.1s					
OUR	Ouranopolis	157.65 317	P	PKPab	22 00 08.4	0.0
KARP	Karpathos	157.70 303	ePKPab	PKPab	22 00 08.0	-1.0
FETA	Feichten	157.73 348	i PKPdf	PKPdf	21 59 35.6	-0.6
	comp=Z,4.4nm,2.1s					
KNT	Kendrikon	157.79 320	P	PKPab	22 00 07.2	-1.9
VISS	Visnje	157.83 340	i PKPdf	PKPdf	21 59 35.2	-1.0
VAY	Valandovo	157.88 321	P	PKPab	22 00 09.3	-0.1
VAY	Valandovo	157.88 321	i P	PKPab	22 00 09.6	+0.2
BOJS	Bojanci	157.96 339	i PKPdf	PKPdf	21 59 35.1	-1.3
JAVS	Javornik	157.98 341	i PKPab	PKPab	22 00 04.2	-5.6
SKO	Skopje	158.07 323	i P	PKPab	22 00 11.2	+0.9
TRI	Trieste	158.24 341	ePKP2	PKPab	22 00 09.6	-1.2
TRI	Trieste	158.24 341	ePKPab	PKPab	22 00 09.6	-1.2
SANT	Santorini	158.66 306	ePKPab	PKPab	22 00 12.7	-0.4
LIT	Litokhoron	158.70 318	P	PKPab	22 00 10.8	-2.3
BIA	Bitola	158.79 322	i P	PKPab	22 00 13.2	-0.3
SENIN	Lac Senin/Sane	158.87 354	ePKPab	PKPab	22 00 13.5	-0.3
OHR	Ohrid	159.02 323	i P	PKPab	22 00 14.4	0.0
LAST	Lasithi	159.12 303	⇓iP	PKPab	22 00 14.9	-0.2
LAST	Lasithi	159.12 303	P	PKPab	22 00 15.0	-0.2
LAST	Lasithi	159.12 303	ePKPab	PKPab	22 00 14.8	-0.4
LKR	Lokris	159.24 314	P	PKPab	22 00 14.1	-1.3
DSL	Palaion Diasel	160.14 318	P	PKPab	22 00 17.6	-1.8
PAB	San Pablo	164.17 25	ePKIKP	PKPdf	21 59 44.7	+1.4
PAB	San Pablo	164.17 25	ePKPdf	PKPdf	21 59 44.7	+1.4
ES19	SONSECA Array	164.19 23	ePKPdf	PKPdf	21 59 43.8	+0.5
ESDC	Sonseca Array	164.19 23	PKP	PKPdf	21 59 44.0	+0.8
	comp=Z,4.8nm,1.2s,baz=340,slow=1.5,SNR=9.9					
ESDC			PKPab	PKPab	22 00 36.1	-0.9
	comp=Z,0.2nm,0.5s,baz=319,slow=5.5,SNR=2.7					
KEST	Kesra	168.70 338	PKPab	PKPab	22 00 55.8	-1.2
	comp=Z,2.6nm,0.7s,baz=156,slow=2.4,SNR=3.7					
TAM	Tamanrasset	177.14 208	ePKIKP	PKPdf	21 59 51.1	+0.3
TAM	Tamanrasset	177.14 208	ePKPdf	PKPdf	21 59 51.1	+0.3
TAM			ePKPab	PKPab	22 01 37.3	+2.5

JMA 18 21:46:16.6,36°.73N×140°.64E,h6km±1km,M2.5,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	Hitachi	0.13	206	P	Pg	21 46 19.3	0.0
JHO				S	Sg	21 46 21.4	+0.2
ONAJ	Iwakimizuishiy	0.39	19	P	Pg	21 46 24.3	+0.1
ONAJ				S	Sg	21 46 29.8	+0.4
JFK	Kawauchi	0.66	16	P	Pg	21 46 29.1	-0.3
JFK				S	Sg	21 46 37.9	-0.1
JFT	Otama	0.82	343	P	Pg	21 46 32.5	+0.1
JFT				S	Sg	21 46 43.4	+0.3
JMM	Marumori	1.14	6	P	Pg	21 46 37.6	-0.9
JMM				S	Sg	21 46 52.4	-0.9
MAT	Matsushiro	1.97	265	P	Pn	21 46 51.4	+0.9
MAT				S	Sb	21 47 17.4	-0.2

NEIC 18 21:48:45.9, 13°.87N×60°.31W, h27km, MD4.0(TRN), After TRN.

TRN 18 21:48:45.7, 13°.86N×60°.34W, h23km, MD4.0, 3C, Windward Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MCLT	Moule a Chique	0.61	255	eP	Pn	21 49 00.2	+1.3
MCLT				eS	Sn	21 49 09.6	+1.6
MCLT	Moule a Chique	0.61	255	ePn	Pn	21 49 00.2	+1.3
MCLT				eS	Sn	21 49 09.6	+1.6
MVM	Montagne Vaucl	0.88	322	eP	Pn	21 49 03.5	+0.9
LPMF	Morne Lapointe	0.93	319	eP	Pn	21 49 04.4	+1.0
TRMF	Trois Ilets	0.96	314	eP	Pn	21 49 04.9	+1.1
BIM	Bigot	0.96	312	eP	Pn	21 49 05.0	+1.1
BIM				eS	Sn	21 49 18.4	+1.6
ZAM	Aeronautique	0.97	316	eP	Pn	21 49 05.1	+1.1
SVV	Soufriere Volc	1.01	238	eP	Pb	21 49 06.1	+1.5
SVV				eS	Sn	21 49 20.7	+2.6
SVV	Soufriere Volc	1.01	238	ePn	Pb	21 49 06.1	+1.5
SVV				eS	Sn	21 49 18.1	0.0
BBGH	Gun Hill	1.04	133	eP	Pb	21 49 05.7	+0.6
BBGH	Gun Hill	1.04	133	ePn	Pb	21 49 05.8	+0.8
SVB	Belmont	1.07	237	eP	Pb	21 49 06.8	+1.3
SVB				eS	Sn	21 49 20.6	+1.2
SVB	Belmont	1.07	237	ePn	Pb	21 49 06.8	+1.3
SVB				eS	Sn	21 49 20.6	+1.2
FCV	Fort Charlotte	1.13	232	⇑iP	Pb	21 49 07.6	+1.1
FCV				eS	Sn	21 49 22.7	+1.8
FCV	Fort Charlotte	1.13	232	⇑iP	Pb	21 49 07.6	+1.1
FCV				eS	Sn	21 49 22.7	+1.8
BBSP	Saint Philip	1.14	131	eP	Pb	21 49 07.1	+0.4
BBSP	Saint Philip	1.14	131	eP	Pn	21 49 05.9	-0.4
FDF	Fort de France	1.17	318	⇑iP	Pb	21 49 07.8	+0.5
FDF				eS	Sb	21 49 22.8	+0.7
FDF	Fort de France	1.17	318	i Pn	Pb	21 49 07.8	+0.5
FDF				eSn	Sn	21 49 21.9	-0.1
GBMF	Grand Be	1.23	319	eP	Pb	21 49 08.8	+0.5
PML	Morne Lenard	1.23	318	eP	Pb	21 49 09.0	+0.7
BAMF	Morne Balai	1.23	320	eP	Pb	21 49 08.8	+0.5
CXM	Morne La Croix	1.24	320	eP	Pb	21 49 09.1	+0.6
CXM				eS	Sb	21 49 25.2	+1.0
SVN	Savane Anatole	1.26	320	eP	Pb	21 49 09.2	+0.3
PCM	Pelee Case Pet	1.27	318	eP	Pb	21 49 08.5	-0.4
PCM	Pelee Case Pet	1.27	318	eP	Pb	21 49 09.6	+0.6
DSHT	Scott's Head	1.68	323	eP	Pn	21 49 14.7	+1.1
DSHT				eS	Sb	21 49 36.4	-0.2
DSHT	Scott's Head	1.68	323	ePn	Pn	21 49 14.7	+1.1
DLPL	La Plaine	1.71	329	eP	Pn	21 49 15.1	+1.1
DLPL				eS	Sb	21 49 37.7	+0.2
DLPL	La Plaine	1.71	329	ePn	Pn	21 49 15.1	+1.1
DLPL				eS	Sn	21 49 35.4	+0.3
DPMT	Pointe Michel	1.72	324	eP	Pb	21 49 15.9	-0.6
DPMT	Pointe Michel	1.72	324	ePn	Pb	21 49 17.9	+1.4
DWS	Wesley	1.94	331	eP	Pn	21 49 18.4	+1.1
DWS				eS	Sb	21 49 43.0	-1.2
DWS	Wesley	1.94	331	ePn	Pn	21 49 18.4	+1.1
BBL	Barber's Block	1.98	327	eP	Pn	21 49 19.4	+1.5
BBL	Barber's Block	1.98	327	ePn	Pn	21 49 19.4	+1.5
GRGR	Grenville	2.15	217	eP	Pb	21 49 22.5	-1.4
GRGR				eS	Sn	21 49 47.0	+1.0
GRGR	Grenville	2.15	217	ePn	Pb	21 49 22.5	-1.5
MGG	Marie-Galante	2.25	335	eP	Pn	21 49 22.3	+0.8
MGG				eS	Sn	21 49 50.0	+1.4
MGG	Marie-Galante	2.25	335	ePn	Pn	21 49 22.3	+0.8
MGG				eS	Sn	21 49 50.0	+1.4
TBG	Guadaloupe-3	2.35	328	eP	Pn	21 49 24.6	+1.8
TBG				eS	Sn	21 49 52.3	+1.3
DEG	La Desirade	2.53	344	eP	Pn	21 49 26.2	+0.8
DEG				eS	Sn	21 49 55.4	-0.2
DEG	La Desirade	2.53	344	ePn	Pn	21 49 25.6	+0.1
TOSP	Speyside	2.56	184	eP	Pn	21 49 27.6	+1.8
TOSP	Speyside	2.56	184	eS	Sn	21 49 57.9	+1.8
TOSP	Speyside	2.56	184	ePn	Pn	21 49 27.6	+1.8
MLYT	Lee's Yard	3.36	328	eP	Pn	21 49 38.1	+1.3
MLYT				eS	Sn	21 50 16.2	+0.2
TRN	Trinidad (W)	3.36	198	eP	Pn	21 49 38.2	+1.4
TRN	Trinidad (W)	3.36	198	eS	Sn	21 50 17.3	+1.3
TRN	Trinidad (W)	3.36	198	ePn	Pn	21 49 38.2	+1.4
TRN				eS	Sn

GCAM *i* S **Sn** **21 53 47.1 +0.5**
SMG Samos 1.90 311 P **Pn** **21 53 28.7 0.0**
SMG S **Sn** **21 53 52.5 0.0**
SMG Samos 1.90 311 P **Pn** **21 53 28.7 0.0**
SMG S **Sn** **21 53 52.5 0.0**
KHAL Karahalli 2.01 19 P **Pn** **21 53 29.4 -0.8**
KHAL S **Sn** **21 53 54.0 -1.2**
KHAL Karahalli 2.01 19 *i* P **Pn** **21 53 29.4 -0.8**
KHAL *i* S **Sn** **21 53 54.0 -1.2**
DGB ˜zmir 2.11 319 *i* P **Pn** **21 53 31.6 +0.1**
DGB *i* S **Sn** **21 53 57.6 0.0**

CSEM ***18*** *21:58:25.6, 45˚.95N×15˚.35E, h0km*
LJU 18 21:58:25.5, 45˚.95N×15˚.35E, h7km, ML0.0, 2C, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LEGS	**Legarje**	**0.02**	**264⇑**	*i* Pg	Pg	21 58 26.8	-0.1
LEGS				*i* Sg	Sg	21 58 27.9	0.0
LEGS	**Legarje**	**0.02**	**264⇑**	*i* Pg	Pg	21 58 26.8	-0.1
LEGS				*i* Sg	Sg	21 58 27.9	0.0
CESS	**Cesta pri Krsk**	**0.08**	**74**	*i* Pg	Pg	21 58 27.5	-0.1
CESS				*i* Sg	Sg	21 58 29.1	+0.1
	comp=Z,4.0nm,0.1s						
CESS	**Cesta pri Krsk**	**0.08**	**74**	*i* Pg	Pg	21 58 27.5	-0.1
CESS				*i* Sg	Sg	21 58 29.1	+0.1
	comp=Z,4.0nm,0.1s						
CRES	**Cresnjev**	**0.15**	**149**	*i* Pg	Pg	21 58 28.7	+0.1
CRES				*i* Sg	Sg	21 58 31.2	+0.6
	comp=Z,1.0nm,0.1s						
CRES	**Cresnjev**	**0.15**	**149**	*i* Pg	Pg	21 58 28.7	+0.1
CRES				*i* Sg	Sg	21 58 31.2	+0.6
	comp=Z,1.0nm,0.1s						
GOLS	**Golise**	**0.20**	**73**	*i* Pg	Pg	21 58 29.7	+0.2
GOLS				*i* Sg	Sg	21 58 32.6	+0.3
	comp=Z,1.0nm,0.1s						
GOLS	**Golise**	**0.20**	**73**	*i* Pg	Pg	21 58 29.7	+0.1
GOLS				*i* Sg	Sg	21 58 32.6	+0.3
	comp=Z,1.0nm,0.1s						
GCIS	**Gornji Cirnik**	**0.21**	**113**	*i* Pg	Pg	21 58 29.9	+0.2
GCIS	**Gornji Cirnik**	**0.21**	**113**	*i* Pg	Pg	21 58 29.9	+0.2
PDKS	**Podkum**	**0.27**	**294**	*i* Pg	Pg	21 58 30.8	0.0
PDKS	**Podkum**	**0.27**	**294**	*i* Pg	Pg	21 58 30.8	0.0

IDC ***18*** *22:00:10.2±0.8, 6˚.54S×147˚.98E, h0km, mb4.1/10, mb1 4.3/13, mb1mx4.2/35, mbtmp4.2/13, ML4.1/2, MS4.3/4, Ms1 4.2/4, ms1mx3.4/43, Error ellipse: s-maj=32.7km s-min=14.1km az=100.0*
ISCJB ***18*** *22:00:15.5±0.6, 6˚.62S±0˚.06×147˚.9E±0˚.1, h51km, mb4.3/15, MS4.3/4, Error ellipse: s-maj=18.8km s-min=7.6km az=13.6*
NEIC ***18*** *22:00:16.7±1.7, 6˚.63S×147˚.92E, h47km±15km, mb4.2/6, Error ellipse: s-maj=15.0km s-min=10.1km az=108.0*
ISC 18 22:00:17.3±0.7, 6˚.60S±0˚.07×147˚.9E±0˚.2, h51km, n33, σ1§11/31, mb4.2/15, MS4.3/4, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.88**	**195**	Pn	**Pn**	**22 01 00.5**	**-0.3**
	43nm,0.3s,baz=44,slow=4.6,SNR=36						
PMG				Sn	**Sn**	**22 01 36.9**	**+2.6**
	19nm,0.3s,baz=1.5,slow=23,SNR=3.5						
CTA	**Charters Tower**	**13.50**	**187**	Pn	**Pn**	**22 03 25.4**	**-0.9**
	0.4nm,0.3s,baz=24,slow=15,SNR=3.7						
WRAB	**Tennant Creek**	**18.68**	**224**	*e*P	**Pn**	**22 04 31.3**	**-0.9**
	16nm,1.2s						
WR1	**Warramunga Arr**	**18.69**	**224**	*e*P	**P**	**22 04 30.4**	**-1.1**
	16nm,1.2s						
WRA	**Warramunga Arr**	**18.69**	**224**	P	**P**	**22 04 30.4**	**-1.1**
	0.8nm,0.3s,baz=52,slow=11,SNR=35						
AS01	**Alice Springs**	**21.62**	**217**	*e*P	**P**	**22 05 03.0**	**-0.4**
AS31	**Alice Springs**	**21.65**	**217**	*e*P	**P**	**22 05 03.0**	**-0.7**
	3.6nm,0.5s						
ASAR	**Alice Springs**	**21.66**	**217**	P	**P**	**22 05 03.0**	**-0.7**
	3.2nm,0.5s,baz=52,slow=8.8,SNR=32						
FITZ	**Fitzroy Crossi**	**24.53**	**240**	P	**P**	**22 05 32.2**	**-0.2**
	6.7nm,0.4s,baz=52,slow=8.1,SNR=50						
STKA	**Stephens Creek**	**25.83**	**192**	P	**P**	**22 05 43.4**	**-0.6**
	6.5nm,0.9s,baz=359,slow=9.6,SNR=10						
STKA				LR	LR	22 15 42.7	
	comp=Z,272nm,18.1s,baz=16,slow=36						
MBWA	**Marble Bar**	**30.86**	**239**	*e*P	**P**	**22 06 28.4**	**-0.6**
	27nm,0.9s						
URZ	**Urewera**	**41.15**	**144**	LR	LR	22 23 53.1	
	comp=Z,237nm,18.9s,baz=344,slow=35						
MJAR	**Matsushiro Arr**	**43.87**	**349**	P	**P**	**22 08 18.4**	**-0.4**
	2.6nm,0.9s,baz=169,slow=8.5,SNR=10.0						
CM31	**Chiang Mai Arr**	**54.32**	**298**	*e*P	**P**	**22 09 40.9**	**+1.8**
CMAR	**Chiang Mai Arr**	**54.32**	**298**	P	**P**	**22 09 40.9**	**+1.8**
	0.6nm,0.7s,baz=126,slow=6.3,SNR=4.6						
PETK	**Petropavlovsk-**	**60.06**	**7**	P	**P**	**22 10 20.2**	**+1.3**
	5.8nm,0.9s,baz=148,slow=8.1,SNR=4.3						
PEA1	**Petropavlovsk-**	**60.06**	**7**	*e*P	**P**	**22 10 20.2**	**+1.2**
VNDA	**Vanda**	**71.27**	**177**	P	**P**	**22 11 31.8**	**+0.9**
	3.5nm,0.8s,baz=315,slow=6.4,SNR=16						
MK32	**Makanchi Array**	**78.53**	**320**	*e*P	**P**	**22 12 13.2**	**-0.2**
MKAR	**Makanchi Array**	**78.53**	**320**	P	**P**	**22 12 13.2**	**-0.2**
	0.4nm,0.5s,baz=98,slow=8.0,SNR=6.0						
MAKZ	**Makanchi**	**78.73**	**320**	*e*P	**P**	**22 12 14.2**	**-0.3**
	4.6nm,1.4s						
ZALV	**Zalesovo Beam**	**79.99**	**328**	P	**P**	**22 12 20.1**	**-1.0**
	1.2nm,0.8s,baz=120,slow=6.0,SNR=5.0						
ZAA1	**Zalesovo Array**	**80.00**	**328**	*e*P	**P**	**22 12 20.1**	**-1.0**
QSPA	**South Pole Qui**	**83.37**	**180**	*e*P	**P**	**22 12 39.2**	**+0.3**
	21nm,0.6s						
RND	**Reindeer**	**84.30**	**24**	*e*P	**P**	**22 12 42.8**	**-0.8**
	5.8nm,1.2s						
ILAR	**Eielson Array**	**85.68**	**23**	P	**P**	**22 12 48.7**	**-1.7**
	1.1nm,0.8s,baz=258,slow=4.9,SNR=9.9						
ILB	**Eielson Array**	**85.68**	**23**	*e*P	**P**	**22 12 48.7**	**-1.7**
GEYT	**Alibeck**	**93.84**	**308**	LR	LR	22 58 14.6	
	comp=Z,159nm,21.8s,baz=95,slow=37						
ARU	**Arti**	**95.08**	**326**	LR	LR	22 56 34.3	
	comp=Z,366nm,20.5s,baz=94,slow=36						
GERES	**GERESS Array B**	**122.91**	**326**	PKP	**PKPdf**	**22 19 09.3**	**+1.2**
	0.5nm,0.6s,baz=52,slow=2.2,SNR=6.5						
LPAZ	**La Paz**	**137.71**	**123**	PKP	**PKPdf**	**22 19 38.1**	**+0.4**
	1.3nm,0.9s,baz=342,slow=3.2,SNR=2.5						
SAML	**Samuel**	**145.38**	**116**	*e*PKPdf	**PKPab**	**22 19 51.2**	**+0.3**
DBIC	**Dimbokro**	**152.94**	**272**	PKPbc	**PKPbc**	**22 20 09.3**	**-0.8**
	1.7nm,0.6s,baz=78,slow=4.2,SNR=5.0						

IDC ***18*** *22:13:10.7±1.1, 35˚.72N×143˚.08E, h0km, mb3.7/6, mb1 3.8/8, mb1mx3.5/63, mbtmp3.7/8, ML3.2/2, Error ellipse: s-maj=28.5km s-min=22.2km az=73.0*
ISCJB ***18*** *22:13:14.0±0.8, 35˚.78N±0˚.05×142˚.94E±0˚.06, h33km, mb3.7/6, Error ellipse: s-maj=7.4km s-min=7.1km az=138.4*
JMA ***18*** *22:13:16.1±0.3, 35˚.91N×142˚.79E, h86km, M3.4*
ISC 18 22:13:15.4±1.1, 35˚.79N±0˚.06×142˚.98E±0˚.09, h35km, n19, σ1§36/25, mb3.8/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.73**	**268**	P	**Pn**	**22 13 43.0**	**+0.1**
CHOJ				S	**Sn**	**22 14 03.9**	**+0.1**
BSO1	**Boso 1**	**1.99**	**236**	S	**Sn**	**22 14 08.7**	**-0.8**
JHO	**Hitachi**	**2.12**	**294**	P	**Pn**	**22 13 47.6**	**-0.7**
JHO				S	**Sn**	**22 14 11.2**	**-2.2**
ONAJ	**Iwakimizuishiy**	**2.20**	**307**	P	**Pn**	**22 13 48.5**	**-0.9**
ONAJ				S	**Sn**	**22 14 13.1**	**-2.3**
JFK	**Kawauchi**	**2.32**	**314**	P	**Pn**	**22 13 49.7**	**-1.4**
JFT	**Otama**	**2.74**	**310**	P	**Pn**	**22 13 57.3**	**+0.4**
JFT				*e*S	**Sn**	**22 14 27.0**	**-1.8**
JAG	**Ashikaga**	**2.93**	**284**	P	**Pn**	**22 13 59.3**	**-0.1**
JOD2	**Odawara 2**	**3.22**	**262**	P	**Pn**	**22 14 03.4**	**0.0**
JOD2				S	**Sn**	**22 14 39.7**	**-0.9**
JRY	**Ryogami san**	**3.32**	**275**	P	**Pn**	**22 14 05.2**	**+0.3**
JMK	**Ichinoseki**	**3.46**	**337**	P	**Pn**	**22 14 05.2**	**-1.5**
JHJ	**Hachijo jima 2**	**3.75**	**226**	Pn	**Pn**	**22 14 09.1**	**-1.7**
	2.2nm,0.3s,baz=142,slow=20,SNR=7.5						
JHJ				Sn	**Sn**	**22 14 50.3**	**-3.3**
	44nm,0.3s,baz=351,slow=23,SNR=10						
MJAR	**Matsushiro Arr**	**3.94**	**282**	Pn	**Pn**	**22 14 14.2**	**+0.9**
	3.2nm,0.3s,baz=103,slow=6.6,SNR=23						
MAT	**Matsushiro**	**3.94**	**282**	P	Pn	22 14 15.4	+2.1
MAT				*e*S	**Sn**	**22 14 58.8**	**+0.5**
ZALV	**Zalesovo Beam**	**43.69**	**313**	P	**P**	**22 21 17.0**	**+0.3**
	1.0nm,0.4s,baz=110,slow=7.5,SNR=5.6						
MKAR	**Makanchi Array**	**45.86**	**303**	P	**P**	**22 21 35.5**	**+1.4**
	0.1nm,0.3s,baz=74,slow=11,SNR=2.6						
KURBB	**Kurchatov Arra**	**47.77**	**309**	P	**P**	**22 21 50.3**	**+1.4**
	0.7nm,0.7s,baz=83,slow=7.8,SNR=6.2						
WRA	**Warramunga Arr**	**56.02**	**190**	P	**P**	**22 22 50.9**	**+0.2**
	1.0nm,0.6s,baz=7.3,slow=7.4,SNR=6.3						
ASAR	**Alice Springs**	**59.75**	**190**	P	**P**	**22 23 17.1**	**+0.3**
	0.3nm,0.3s,baz=22,slow=10.0,SNR=3.6						
PDAR	**Pinedale Array**	**77.63**	**46**	P	**P**	**22 25 09.2**	**+0.8**
	0.4nm,0.6s,baz=297,slow=0.6,SNR=3.5						

IDC 18 22:13:18.2±8.3, 25˚.63S×177˚.49W, h142km±48km, mb3.6/3, mb1 3.9/4, mb1mx3.4/42, mbtmp4.2/4, Error ellipse: s-maj=93.5km s-min=34.9km az=50.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**3.63**	**186**	P	Pn	22 14 14.7	+1.3
	80nm,0.3s,baz=210,slow=22,SNR=5.4						
RAO				S	Sn	22 14 56.2	0.0
	104nm,0.3s,baz=73,slow=19,SNR=4.8						
ASAR	**Alice Springs**	**44.03**	**262**	P	P	22 21 12.0	0.0
	0.5nm,0.4s,baz=94,slow=7.6,SNR=4.4						
WRA	**Warramunga Arr**	**44.59**	**267**	P	P	22 21 16.3	-0.2
	1.3nm,0.4s,baz=103,slow=7.7,SNR=15						
MAW	**Mawson**	**76.93**	**200**	P	P	22 24 54.4	-0.1
	1.8nm,0.6s,baz=123,slow=8.5,SNR=7.0						

ISCJB ***18*** *22:15:01.5±2.2, 6˚.30S±0˚.10×148˚.0E±0˚.4, h51km, mb3.8/4, MS3.9/2, Error ellipse: s-maj=51.4km s-min=13.6km az=2.4*
IDC ***18*** *22:15:07.6±4.5, 6˚.62S×148˚.22E, h93km±36km, mb3.6/4, mb1 3.8/6, mb1mx3.4/48, mbtmp4.0/6, MS3.6/3, Ms1 3.6/3, ms1mx3.2/35, Error ellipse: s-maj=52.2km s-min=33.1km az=100.0*
ISC 18 22:15:04.1±2.1, 6˚.3S±0˚.1×147˚.9E±0˚.5, h51km, n9, σ1§29/8, mb3.7/4, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**3.15**	**194**	P	**Pn**	**22 15 52.0**	**+0.8**
	14nm,0.3s,baz=39,slow=7.2,SNR=18						
PMG				S	**Sn**	**22 16 28.4**	**+0.9**
	4.7nm,0.3s,baz=13,slow=18,SNR=4.8						
PMG				LR	LR	22 16 56.9	
	comp=Z,262nm,20.8s,baz=297,slow=37						
WRA	**Warramunga Arr**	**18.91**	**223**	P	**P**	**22 19 20.3**	**-0.4**
	0.5nm,0.3s,baz=53,slow=11,SNR=30						
GUMO	**Guam**	**20.02**	**351**	LR	LR	22 26 11.2	
	comp=Z,110nm,18.7s,baz=160,slow=33						
ASAR	**Alice Springs**	**21.89**	**217**	P	**P**	**22 19 51.7**	**-1.3**
	2.5nm,0.7s,baz=52,slow=9.1,SNR=23						
FITZ	**Fitzroy Crossi**	**24.69**	**240**	P	**P**	**22 20 20.9**	**+0.3**
	8.9nm,0.6s,baz=61,slow=7.4,SNR=32						
STKA	**Stephens Creek**	**26.09**	**192**	P	**P**	**22 20 31.1**	**-2.0**
	1.4nm,0.6s,baz=35,slow=13,SNR=4.0						
MKAR	**Makanchi Array**	**78.34**	**320**	P	**P**	**22 26 59.4**	**+0.2**
	0.1nm,0.5s,baz=123,slow=5.3,SNR=2.7						
BVAR	**Borovoye Array**	**87.58**	**324**	LR	LR	23 06 48.6	
	comp=Z,220nm,21.3s,baz=84,slow=35						
GERES	**GERESS Array B**	**122.70**	**326**	PKP	**PKPdf**	**22 33 55.5**	**+1.0**
	0.1nm,0.4s,baz=66,slow=3.2,SNR=3.7						

IDC 18 22:46:45.9±2.6, 5˚.67S×149˚.11E, h0km, mb4.1/5, mb1 4.3/6, mb1mx3.8/43, mbtmp4.2/6, ML2.2/1, MS3.6/2, Ms1 3.6/2, ms1mx2.9/35, Error ellipse: s-maj=66.5km s-min=27.4km az=97.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**4.19**	**207**	Pn	Pn	22 47 50.3	-0.8
	11nm,0.3s,baz=357,slow=8.2,SNR=19						
PMG				Sn	Sn	22 48 30.6	-10
	9.7nm,0.3s,baz=93,slow=15,SNR=8.3						
PMG				LR	LR	22 49 18.7	
	comp=Z,783nm,19.5s,baz=312,slow=36						
WRA	**Warramunga Arr**	**20.19**	**224**	P	P	22 51 21.3	-1.2
	1.5nm,0.4s,baz=52,slow=11,SNR=23						
ASAR	**Alice Springs**	**23.12**	**218**	P	P	22 51 53.0	-0.9
	2.1nm,0.5s,baz=52,slow=9.3,SNR=27						
FITZ	**Fitzroy Crossi**	**26.04**	**240**	P	P	22 52 21.7	+0.5
	10nm,0.5s,baz=55,slow=7.9,SNR=53						
STKA	**Stephens Creek**	**27.01**	**194**	P	P	22 52 31.4	+1.6
	1.2nm,0.6s,baz=338,slow=11,SNR=2.6						
SONM	**Songino Array**	**65.16**	**330**	P	P	22 57 28.5	-0.5
	1.9nm,0.7s,baz=131,slow=5.9,SNR=3.7						
INK	**Inuvik**	**90.58**	**21**	LR	LR	23 33 53.4	
	comp=Z,27nm,21.9s,baz=237,slow=31						

IDC 18 22:50:55.1±2.1, 4˚.79S×152˚.48E, h0km, mb3.8/4, mb1 4.1/4, mb1mx3.6/43, mbtmp3.8/4, Error ellipse: s-maj=128.0km s-min=26.3km az=130.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**23.21**	**228**	P	P	22 56 02.9	-1.2
	1.2nm,0.5s,baz=53,slow=9.9,SNR=9.8						
ASAR	**Alice Springs**	**25.94**	**227**	P	P	22 56 31.1	+1.7
	0.4nm,0.5s,baz=62,slow=8.4,SNR=4.7						
FITZ	**Fitzroy Crossi**	**29.39**	**241**	P	P	22 56 59.7	-0.6
	1.1nm,0.4s,baz=52,slow=11,SNR=3.8						
ILAR	**Eielson Array**	**82.27**	**22**	P	P	23 03 18.3	+0.1
	1.0nm,0.7s,baz=244,slow=5.4,SNR=9.0						

MDD ***18*** *22:52:51.8±2.0, 37˚.55N×15˚.19W, h0km, mb4.1/6, Error ellipse: s-maj=18.9km s-min=16.2km az=31.0, PRXIMO*
IGIL ***18*** *22:52:52.2, 37˚.58N×15˚.24W, h0km, ML2.5*
INMG ***18*** *22:52:52.5±1.9, 37˚.33N×15˚.66W, h10km, ML2.7, Error ellipse: s-maj=7.9km s-min=4.4km az=124.0*
CSEM ***18*** *22:52:56.2±0.3, 37˚.64N×14˚.80W, h10km, ML3.1/22, Error ellipse: s-maj=7.5km s-min=5.6km az=24.0*
ISC 18 22:52:51.2±3.7, 37˚.62N±0˚.09×15˚.1W±0˚.2, h10km, n84, σ1§79/156, 4D, Azores-Cape St. Vincent Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMAFR	**Mafra**	**4.78**	**72**	*e*Pn	**Pn**	**22 54 05.9**	**+2.6**
PMAFR				*e*Sn	**Sn**	**22 55 00.0**	**+1.3**
PMAFR	**Mafra**	**4.78**	**72**	Pn	**Pn**	**22 54 05.8**	**+2.6**
	2.4nm,0.1s,SNR=12						
PMAFR				Sn	**Sn**	**22 55 00.9**	**+2.1**
	84nm,1.2s						
PMAFR	**Mafra**	**4.78**	**72**	Pn	**Pn**	**22 54 05.8**	**+2.6**
	2.4nm,0.1s,SNR=12						
PMAFR				*e*Sn	**Sn**	**22 55 00.0**	**+1.3**
PFVI	**Vila Bisbo**	**5.03**	**94**	*e*Pn	**Pn**	**22 54 07.6**	**+0.8**
PFVI				*e*Sn	**Sn**	**22 55 03.6**	**-1.4**
PFVI				A	A	22 55 08.8	
	6.7nm,1.0s						
PFVI	**Vila Bisbo**	**5.03**	**94**	Pn	**Pn**	**22 54 07.5**	**+0.8**
	21nm,1.1s,SNR=25						
PFVI				Sn	**Sn**	**22 55 03.5**	**-1.4**
	12nm,0.7s,SNR=6.5						
PFVI	**Vila Bisbo**	**5.03**	**94**	*e*Pn	**Pn**	**22 54 07.6**	**+0.8**
PFVI				Sn	**Sn**	**22 55 03.5**	**-1.4**
	12nm,0.7s,SNR=6.5						
PTEO	**Sao Teotonio**	**5.08**	**89**	*e*Pn	**Pn**	**22 54 08.6**	**+1.2**
PTEO				*e*Sn	**Sn**	**22 55 04.6**	**-1.5**
PTEO				A	A	22 55 13.0	
	7.2nm,0.8s						
PTEO	**Sao Teotonio**	**5.08**	**89**	Pn	**Pn**	**22 54 08.6**	**+1.2**
PTEO				Sn	**Sn**	**22 55 04.6**	**-1.5**
	3.6nm,0.8s						
PTEO	**Sao Teotonio**	**5.08**	**89**	*e*Pn	**Pn**	**22 54 08.6**	**+1.2**
PTEO				Sn	**Sn**	**22 55 04.6**	**-1.5**
	3.6nm,0.8s						
MORF	**Marmelete**	**5.15**	**92**	*e*P	**Pn**	**22 54 09.3**	**+0.8**
MORF				*e*S	**Sn**	**22 55 06.4**	**-1.6**
MORF				AML	AML	22 55 08.2	
	comp=N,6.6nm,0.2s						
MORF	**Marmelete**	**5.15**	**92**	*e*Pn	**Pn**	**22 54 09.3**	**+0.8**
MORF				*e*Sn	**Sn**	**22 55 05.9**	**-2.1**
MORF				A	A	22 55 13.7	
	comp=N,8.7nm,0.1s						
MORF	**Marmelete**	**5.15**	**92**	Pn	**Pn**	**22 54 09.3**	**+0.8**
MORF				Sn	**Sn**	**22 55 05.9**	**-2.1**
	comp=N,8.7nm,0.1s						
MORF	**Marmelete**	**5.15**	**92**	*e*Pn	**Pn**	**22 54 09.3**	**+0.8**
MORF				Sn	**Sn**	**22 55 05.9**	**-2.1**
	comp=N,8.7nm,0.1s						
MESJ	**Messejana**	**5.47**	**86**	*e*P	**Pn**	**22 54 14.2**	**+1.5**
MESJ				*e*S	**Sn**	**22 55 14.1**	**-1.7**
MESJ				AML	AML	22 55 18.1	
	comp=N,7.3nm,0.2s						
MESJ	**Messejana**	**5.47**	**86**	*e*Pn	**Pn**	**22 54 14.3**	**+1.5**
MESJ				*e*Sn	**Sn**	**22 55 15.5**	**-0.3**
MESJ				A	A	22 55 25.3	
	comp=N,3.0nm,0.6s						
MESJ	**Messejana**	**5.47**	**86**	Pn	**Pn**	**22 54 14.3**	**+1.5**
MESJ				Sn	**Sn**	**22 55 15.5**	**-0.3**
	comp=N,3.0nm,0.6s						
MESJ	**Messejana**	**5.47**	**86**	*e*Pn	**Pn**	**22 54 14.3**	**+1.5**
MESJ				Sn	**Sn**	**22 55 15.5**	**-0.3**
	comp=N,3.0nm,0.6s						
PMTG	**Montargil**	**5.61**	**73**	*e*Pn	**Pn**	**22 54 16.3**	**+1.7**
PMTG				*e*Sn	**Sn**	**22 55 19.0**	**-0.1**
PMTG				A	A	22 55 25.9	
	comp=N,3.4nm,0.8s						
PMTG	**Montargil**	**5.61**	**73**	*e*Pn	**Pn**	**22 54 16.3**	**+1.7**
PMTG				*e*Sn	**Sn**	**22 55 19.0**	**-0.1**
	comp=N,3.4nm,0.8s						
PTOM	**Tomar**	**5.62**	**67**	*e*Pn	**Pn**	**22 54 17.3**	**+2.5**
PTOM				*e*Sn	**Sn**	**22 55 19.0**	**-0.3**
PTOM				A	A	22 55 34.9	
	comp=N,6.6nm,0.7s						
PTOM	**Tomar**	**5.62**	**67**	Pn	**Pn**	**22 54 17.3**	**+2.5**
PTOM				Sn	**Sn**	**22 55 19.0**	**-0.3**
	comp=N,3.3nm,0.7s						
PTOM	**Tomar**	**5.62**	**67**	*e*Pn	**Pn**	**22 54 17.3**	**+2.5**
PTOM				Sn	**Sn**	**22 55 19.0**	**-0.3**
	comp=N,3.3nm,0.7s						
PCVE	**Castro Verde**	**5.62**	**88**	*e*Pn	**Pn**	**22 54 16.0**	**+1.2**
PCVE				*e*Sn	**Sn**	**22 55 17.1**	**-2.3**
PCVE				A	A	22 55 29.7	
	comp=N,3.3nm,1.0s						
PCVE	**Castro Verde**	**5.62**	**88**	Pn	**Pn**	**22 54 16.0**	**+1.2**
PCVE				Sn	**Sn**	**22 55 17.1**	**-2.3**
	comp=N,3.3nm,1.0s						
PCVE	**Castro Verde**	**5.62**	**88**	*e*Pn	**Pn**	**22 54 16.0**	**+1.2**
PCVE				Sn	**Sn**	**22 55 17.1**	**-2.3**
	comp=N,3.3nm,1.0s						
EVO	**Evora**	**5.68**	**79**	*e*Pn	**Pn**	**22 54 17.5**	**+1.9**
EVO				*e*Sn	**Sn**	**22 55 19.9**	**-1.0**
EVO				A	A	22 55 25.4	
	comp=N,4.0nm,0.2s						
EVO	**Evora**	**5.68**	**79**	Pn	**Pn**	**22 54 17.5**	**+1.9**
EVO				Sn	**Sn**	**22 55 19.9**	**-1.0**
	comp=N,4.0nm,0.2s						
EVO	**Evora**	**5.68**	**79**	*e*Pn	**Pn**	**22 54 17.5**	**+1.9**
EVO				Sn	**Sn**	**22 55 19.9**	**-1.0**
	comp=N,4.0nm,0.2s						
PBDV	**Barranco-do-Ve**	**5.73**	**92**	*e*Pn	**Pn**	**22 54 17.8**	**+1.4**
PBDV				*e*Sn	**Sn**	**22 55 21.2**	**-1.0**
PBDV				A	A	22 55 30.1	
	comp=N,5.6nm,1.0s						
PBDV	**Barranco-do-Ve**	**5.73**	**92**	Pn	**Pn**	**22 54 17.8**	**+1.4**
PBDV				Sn	**Sn**	**22 55 21.2**	**-1.0**
	comp=N,5.6nm,1.0s						
PBDV	**Barranco-do-Ve**	**5.73**	**92**	*e*Pn	**Pn**	**22 54 17.8**	**+1.4**
PBDV				Sn	**Sn**	**22 55 21.2**	**-1.0**
	comp=N,5.6nm,1.0s						
PBEJ	**Beja**	**5.75**	**84**	*e*Pn	**Pn**	**22 54 18.1**	**+1.4**
PBEJ				*e*Sn	**Sn**	**22 55 21.2**	**-1.5**
PBEJ				A	A	22 55 31.9	
	comp=N,1.8nm,0.5s						
PBEJ	**Beja**	**5.75**	**84**	Pn	**Pn**	**22 54 18.1**	**+1.4**
PBEJ				Sn	**Sn**	**22 55 21.2**	**-1.5**
	comp=N,0.9nm,0.5s						
PBEJ	**Beja**	**5.75**	**84**	*e*Pn	**Pn**	**22 54 18.1**	**+1.4**
PBEJ				Sn	**Sn**	**22 55 21.2**	**-1.5**
	comp=N,0.9nm,0.5s						
PVAQ	**Vaqueiros**	**5.89**	**90**	*e*Pn	**Pn**	**22 54 19.6**	**+1.1**
PVAQ				*e*Sn	**Sn**	**22 55 24.4**	**-1.6**
PVAQ				A	A	22 55 31.3	
	comp=N,3.7nm,0.3s						
PVAQ	**Vaqueiros**	**5.89**	**90**	Pn	**Pn**	**22 54 19.6**	**+1.1**
PVAQ				Sn	**Sn**	**22 55 24.4**	**-1.6**
	comp=N,3.7nm,0.3s						
PVAQ	**Vaqueiros**	**5.89**	**90**	*e*Pn	**Pn**	**22 54 19.6**	**+1.1**
PVAQ				Sn	**Sn**	**22 55 24.4**	**-1.6**
	comp=N,3.7nm,0.3s						
PESTR	**Estremoz**	**6.05**	**76**	*e*Pn	**Pn**	**22 54 22.9**	**+2.1**
PESTR				*e*Sn	**Sn**	**22 55 29.7**	**-0.4**
PESTR				A	A	22 55 33.5	
	comp=N,2.5nm,1.0s						
PESTR	**Estremoz**	**6.05**	**76**	*e*Pn	**Pn**	**22 54 22.9**	**+2.1**
PESTR				*e*Sn	**Sn**	**22 55 29.7**	**-0.4**
	comp=N,2.5nm,1.0s						
EGRO	**El Granado**	**6.06**	**88**	Pn	**Pn**	**22 54 22.0**	**+1.1**
	comp=N,5.2nm,0.8s,SNR=4.9						
EGRO	

comp=N,1.9nm,0.4s,SNR=11
EMAZ Mazaricos 7.09 39 Sn **Sn 22 55 52.8 -2.9**
comp=N,0.0nm,0.3s,SNR=7.9
MVO Moncorvo 7.19 58 *e*Pn **Pn 22 54 38.1 +1.6**
MVO *e*Sn **Sn 22 55 55.7 -2.6**
MVO A A 22 56 00.7
comp=N,2.9nm,0.2s
MVO Moncorvo 7.19 58 Pn **Pn 22 54 38.0 +1.5**
comp=N,0.0nm,0.0s,SNR=13
MVO Sn **Sn 22 55 55.7 -2.6**
comp=N,0.2nm,0.2s,SNR=7.9
MVO Moncorvo 7.19 58 *e*Pn **Pn 22 54 38.1 +1.6**
ESPR Espera 7.42 93 Sn **Sn 22 56 01.7 -2.1**
comp=N,1.9nm,0.2s,SNR=7.9
ESPR Espera 7.42 93 Sn **Sn 22 56 01.7 -2.1**
comp=N,1.9nm,0.2s,SNR=7.9
EAGO Agolada(Pontev 7.46 44 Pn **Pn 22 54 41.0 +0.9**
comp=N,0.0nm,0.0s,SNR=7.9
EAGO Sn **Sn 22 55 59.7 -5.1**
comp=N,0.4nm,0.3s,SNR=7.9
EAGO Agolada(Pontev 7.46 44 Pn **Pn 22 54 41.0 +0.9**
SNR=7.9
EPLA Plasencia 7.46 68 Pn **Pn 22 54 42.5 +2.3**
comp=N,0.0nm,0.0s,SNR=6.2
EPLA Sn **Sn 22 56 03.5 -1.4**
comp=N,1.4nm,0.3s,SNR=7.9
EPLA Plasencia 7.46 68 Pn **Pn 22 54 42.5 +2.3**
SNR=6.2
EPLA Sn **Sn 22 56 03.5 -1.4**
comp=N,1.4nm,0.3s,SNR=7.9
ECAB El Cabril 7.69 84 Pn **Pn 22 54 45.3 +2.1**
comp=N,2.1nm,0.8s,SNR=6.0
ECAB Sn **Sn 22 56 06.5 -3.8**
comp=N,0.9nm,0.2s,SNR=7.9
ECAB El Cabril 7.69 84 Pn **Pn 22 54 45.3 +2.1**
comp=N,2.1nm,0.8s,SNR=6.0
ECAB Sn **Sn 22 56 06.6 -3.8**
comp=N,0.9nm,0.2s,SNR=7.9
ECAL Calabor 7.76 54 Pn **Pn 22 54 46.0 +1.7**
comp=N,0.1nm,0.0s,SNR=8.5
ECAL Sn **Sn 22 56 10.5 -1.7**
comp=N,57nm,1.6s
ECAL Calabor 7.76 54 Pn **Pn 22 54 46.0 +1.7**
comp=N,0.1nm,0.0s,SNR=8.5
ECAL Sn **Sn 22 56 10.5 -1.7**
comp=N,57nm,1.6s
EPON Pontenova 8.32 44 Pn **Pn 22 54 52.2 +0.2**
comp=N,0.2nm,0.1s,SNR=7.9
EPON Sn **Sn 22 56 21.9 -4.1**
comp=N,1.4nm,0.2s,SNR=7.9
EADA Adamuz 8.35 83 Pn **Pn 22 54 53.7 +1.4**
comp=N,0.2nm,0.1s,SNR=7.9
EADA Sn **Sn 22 56 24.8 -1.9**
comp=N,0.7nm,0.2s,SNR=7.9
EADA Adamuz 8.35 83 Pn **Pn 22 54 53.7 +1.4**
comp=N,0.2nm,0.1s,SNR=7.9
EADA Sn **Sn 22 56 24.8 -1.9**
comp=N,0.7nm,0.2s,SNR=7.9
ESDC Sonseca Array 8.96 73 Pn **Pn 22 55 02.1 +1.3**
comp=N,0.2nm,0.2s,baz=258,slow=13,SNR=9.4
ESDC Sonseca Array 8.96 73 Pn **Pn 22 55 02.1 +1.3**
comp=N,0.2nm,0.2s,SNR=9.4
EARI Arriondas 9.44 50 Pn **Pn 22 55 10.0 +2.7**
comp=N,0.1nm,0.1s,SNR=9.3
EARI Arriondas 9.44 50 Pn **Pn 22 55 10.0 +2.7**
comp=N,0.1nm,0.1s,SNR=9.3

*NEIC **18** 23:10:44.3, 40°.61S×175°.14E, h42km, ML4.2(WEL), After WEL.*
NEIC Felt at Manawatu and Wellington.
WEL 18 23:10:44.3±0.1, 40°.61S×175°.14E, h42km±1km, ML4.2/16, 15C-18D, Error ellipse: s-maj=0.9km s-min=0.6km az=90.0, MM 4., North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OGWZ	**Otaki Gorge**	**0.21**	**173**	⇑P*	Pn	23 10 51.7	-0.3
KIW	**Kapiti Island**	**0.30**	**215**	⇓P*	Pn	23 10 52.1	-0.8
KIW				S*	Sn	23 10 58.1	-0.8
KIW				AML	AML	23 10 59.0	
KIW	**Kapiti Island**	**0.30**	**215**	*e*Pn	Pn	23 10 52.1	-0.8
KIW				*e*Sn	Sn	23 10 58.1	-0.8
MRZ	**Mangatainoka R**	**0.34**	**99**	⇑P*	Pn	23 10 53.2	0.0
MRZ				S*	Sn	23 11 00.4	+1.0
MRZ	**Mangatainoka R**	**0.34**	**99**	*e*Pn	Pn	23 10 53.2	0.0
HOWZ	**Holdsworth Sta**	**0.41**	**135**	⇑P*	Pn	23 10 54.1	+0.1
HOWZ				S*	Sn	23 11 02.6	+1.8
OHWZ	**Ohakea**	**0.43**	**18**	P*	Pn	23 10 53.6	-0.6
CAW	**Cannon Point**	**0.50**	**186**	⇑P*	Pn	23 10 55.0	-0.1
CAW				S*	Sn	23 11 03.6	+0.7
CAW				AML	AML	23 11 06.0	
CAW	**Cannon Point**	**0.50**	**186**	*e*Pn	Pn	23 10 55.0	-0.1
POWZ	**Post Office Ro**	**0.53**	**66**	P*	Pn	23 10 55.4	-0.2
TIWZ	**Tintock**	**0.59**	**106**	⇓P*	Pn	23 10 56.5	+0.1
TIWZ				AML	AML	23 11 08.0	
TIWZ				AML	AML	23 11 09.1	
MTW	**Mount Morrison**	**0.61**	**153**	P*	Pn	23 10 57.0	+0.3
MTW				AML	AML	23 11 08.4	
MTW				AML	AML	23 11 09.1	
PRWZ	**Pori Road**	**0.64**	**85**	⇓P*	Pn	23 10 57.2	+0.2
WEL	**Wellington**	**0.73**	**203**	P*	Pn	23 10 58.1	-0.1
TMWZ	**Te Maipa**	**0.76**	**131**	P*	Pn	23 10 58.3	-0.3
SNZO	**South Karori**	**0.77**	**205**	*e*Pn	Pn	23 10 58.6	-0.1
PAWZ	**Paruwai Farm**	**0.80**	**164**	⇓P*	Pn	23 10 59.7	+0.5
PAWZ				AML	AML	23 11 14.5	
PAWZ				AML	AML	23 11 14.6	
PAWZ	**Paruwai Farm**	**0.80**	**164**	*e*Pn	Pn	23 10 59.7	+0.5
MSWZ	**Moikau Station**	**0.81**	**174**	P*	Pn	23 10 58.9	-0.4
MSWZ				AML	AML	23 11 14.4	
MSWZ				AML	AML	23 11 14.6	
BHW	**Baring Head**	**0.82**	**194**	⇑P*	Pn	23 10 59.4	0.0
BHW				AML	AML	23 11 11.7	
BHW				AML	AML	23 11 11.8	
BHW	**Baring Head**	**0.82**	**194**	*e*Sn	Sn	23 11 11.8	+1.3
TSZ	**Takapari Road**	**0.84**	**49**	⇓PN	Pn	23 10 59.5	-0.2
TSZ				AML	AML	23 11 14.2	
TSZ				AML	AML	23 11 14.4	
DVHZ	**Dannevirke**	**0.84**	**69**	⇓PN	Pn	23 10 59.3	-0.5
BFZ	**Birch Farm**	**0.84**	**95**	PN	Pn	23 10 59.3	-0.5
BFZ				AML	AML	23 11 14.6	
BFZ				AML	AML	23 11 14.7	
BFZ				AML	AML	23 11 14.7	
BFZ				AML	AML	23 11 17.5	
BFZ	**Birch Farm**	**0.84**	**95**	*e*Pn	Pn	23 10 59.5	-0.3
BFZ				*e*Sn	Sn	23 11 14.7	+3.6
CPWZ	**Castlepoint**	**0.86**	**111**	⇑PN	Pn	23 11 00.3	+0.3
WAZ	**Wanganui**	**0.86**	**352**	⇑PN	Pn	23 10 59.6	-0.4
TCW	**Tory Channel**	**0.89**	**227**	⇓PN	Pn	23 10 59.5	-0.8
TCW				AML	AML	23 11 14.0	
TCW				AML	AML	23 11 15.2	
TCW	**Tory Channel**	**0.89**	**227**	*e*Pn	Pn	23 10 59.5	-0.8
TRWZ	**Traveller**	**0.89**	**152**	PN	Pn	23 11 01.1	+0.7
TRWZ				AML	AML	23 11 18.3	
TRWZ				AML	AML	23 11 20.1	
DUWZ	**D'Urville Isla**	**0.94**	**258**	⇑PN	Pn	23 10 59.8	-1.3
DUWZ	**D'Urville Isla**	**0.94**	**258**	*e*Pn	Pn	23 10 59.8	-1.3
PLWZ	**Palliser**	**0.96**	**175**	PN	Pn	23 11 01.1	-0.3
ANWZ	**Angora Road**	**1.03**	**82**	Pn	Pn	23 11 01.7	-0.6
PNHZ	**Pukenui**	**1.07**	**50**	⇓PN	Pn	23 11 02.3	-0.5
WPHZ	**Waipukurau**	**1.14**	**62**	⇓PN	Pn	23 11 03.2	-0.6
PRHZ	**Porangahau**	**1.19**	**74**	⇓PN	Pn	23 11 03.8	-0.8
TUWZ	**Tuamarina**	**1.22**	**228**	⇓PN	Pn	23 11 04.3	-0.6
TUWZ				AML	AML	23 11 24.2	
TUWZ				AML	AML	23 11 26.0	
TUWZ	**Tuamarina**	**1.22**	**228**	*e*Pn	Pn	23 11 04.3	-0.6
MTVZ	**Mangateitei**	**1.25**	**12**	⇓PN	Pn	23 11 05.3	-0.1
MTVZ	**Mangateitei**	**1.25**	**12**	*e*Pn	Pn	23 11 05.3	-0.1
LREZ	**Lake Rotokare**	**1.28**	**334**	⇑PN	Pn	23 11 05.3	-0.4
MOVZ	**Moawhango**	**1.29**	**22**	⇓PN	Pn	23 11 05.3	-0.7
MOVZ	**Moawhango**	**1.29**	**22**	*e*Pn	Pn	23 11 05.3	-0.7
BHHZ	**Black Hill Sta**	**1.32**	**33**	PN	Pn	23 11 05.9	-0.5
PKVZ	**Pokaka**	**1.33**	**7**	⇑PN	Pn	23 11 06.1	-0.4
WNVZ	**Wahianoa**	**1.33**	**16**	⇑PN	Pn	23 11 06.3	-0.2
WNVZ	**Wahianoa**	**1.33**	**16**	*e*Pn	Pn	23 11 06.3	-0.2
CMWZ	**Cape Campbell**	**1.33**	**211**	PN	Pn	23 11 09.0	+2.5
CMWZ				AML	AML	23 11 37.4	
CMWZ				AML	AML	23 11 43.7	
TRVZ	**Turoa**	**1.35**	**14**	⇑PN	Pn	23 11 06.7	-0.2
KRHZ	**Kereru**	**1.35**	**45**	⇓PN	Pn	23 11 05.8	-0.9
WHVZ	**Whangaehu Hut**	**1.37**	**15**	⇑PN	Pn	23 11 07.1	-0.1
DRZ	**Dome Shelter**	**1.37**	**14**	PN	Pn	23 11 07.2	-0.1
DRZ	**Dome Shelter**	**1.37**	**14**	*e*Pn	Pn	23 11 07.2	-0.1
FWVZ	**Far West T-bar**	**1.39**	**13**	PN	Pn	23 11 07.3	-0.2
FWVZ	**Far West T-bar**	**1.39**	**13**	*e*Pn	Pn	23 11 07.3	-0.2
TUVZ	**Tukino**	**1.40**	**17**	⇑PN	Pn	23 11 07.5	0.0
TUVZ	**Tukino**	**1.40**	**17**	*e*Pn	Pn	23 11 07.5	0.0
PXZ	**Pawanui**	**1.44**	**67**	PN	Pn	23 11 06.6	-1.2
PXZ				AML	AML	23 11 39.9	
PXZ				AML	AML	23 11 39.9	
PXZ				AML	AML	23 11 43.5	
PXZ				AML	AML	23 11 43.5	
PXZ	**Pawanui**	**1.44**	**67**	*e*Pn	Pn	23 11 06.6	-1.2
BSWZ	**Blackbirch Sta**	**1.46**	**220**	PN	Pn	23 11 07.8	-0.4
BSWZ				AML	AML	23 11 34.3	
BSWZ				AML	AML	23 11 36.4	
NNZ	**Nelson**	**1.47**	**245**	⇓PN	Pn	23 11 07.4	-0.8
PREZ	**Palmer Road**	**1.47**	**329**	PN	Pn	23 11 08.7	+0.3
NGZ	**Ngauruhoe**	**1.48**	**14**	Pn	Pn	23 11 08.8	+0.2
NGZ	**Ngauruhoe**	**1.48**	**14**	*e*Pn	Pn	23 11 08.8	+0.2
OTVZ	**Oturere**	**1.50**	**16**	Pn	Pn	23 11 08.9	0.0
OTVZ	**Oturere**	**1.50**	**16**	*e*Pn	Pn	23 11 08.9	0.0
VRZ	**Vera Road**	**1.51**	**349**	PN	Pn	23 11 08.4	-0.5
WTVZ	**West Tongariro**	**1.53**	**13**	⇓PN	Pn	23 11 09.5	+0.1
NMEZ	**Namu Road**	**1.54**	**321**	PN	Pn	23 11 09.2	0.0
KWHZ	**Kaweka Forest**	**1.54**	**40**	⇓PN	Pn	23 11 08.4	-1.0
TWVZ	**Taurewa**	**1.56**	**9**	PN	Pn	23 11 09.1	-0.5
TWVZ	**Taurewa**	**1.56**	**9**	*e*Pn	Pn	23 11 09.1	-0.5
KAHZ	**Kahuranaki**	**1.56**	**59**	PN	Pn	23 11 08.6	-1.0
NEZ	**North Egmont**	**1.56**	**329**	PN	Pn	23 11 09.5	-0.2
KRVZ	**Karewarewa**	**1.56**	**14**	PN	Pn	23 11 09.8	+0.1
KHEZ	**Kahui Hut**	**1.57**	**326**	PN	Pn	23 11 09.8	-0.1
DREZ	**Durham Road**	**1.59**	**333**	PN	Pn	23 11 10.1	0.0
MHEZ	**Mangahewa**	**1.66**	**337**	⇑PN	Pn	23 11 11.1	+0.3
MCHZ	**McNeill Hill**	**1.67**	**46**	PN	Pn	23 11 10.2	-0.9
PKE	**Pukeiti**	**1.67**	**328**	PN	Pn	23 11 11.2	+0.1
KATZ	**Kakaramea**	**1.69**	**15**	PN	Pn	23 11 11.9	+0.5
RITZ	**Rihia Road**	**1.72**	**19**	PN	Pn	23 11 12.7	+0.8
CKHZ	**Cape Kidnapper**	**1.76**	**58**	PN	Pn	23 11 11.1	-1.2
BKZ	**Black Stump Fm**	**1.78**	**36**	*e*Pn	Pn	23 11 11.7	-0.9
BKZ				*e*Sn	Sn	23 11 44.4	+10
RATZ	**Rangitukua**	**1.81**	**16**	⇓PN	Pn	23 11 13.9	+0.8
WATZ	**Wairara**	**1.96**	**14**	PN	Pn	23 11 15.7	+0.7
ARHZ	**Aropaoanui**	**1.96**	**47**	PN	Pn	23 11 12.3	-2.8
NMHZ	**Naumai**	**1.98**	**41**	PN	Pn	23 11 14.2	-1.3
QRZ	**Quartz Range**	**2.00**	**263**	PN	Pn	23 11 13.9	-1.7
MRHZ	**Matea Rd**	**2.03**	**29**	PN	Pn	23 11 14.6	-1.5
THZ	**Tophouse**	**2.04**	**235**	PN	Pn	23 11 14.9	-1.3
THZ	**Tophouse**	**2.04**	**235**	*e*Pn	Pn	23 11 14.9	-1.3
HIZ	**Hauiti**	**2.11**	**354**	PN	Pn	23 11 16.5	-0.5
HIZ	**Hauiti**	**2.11**	**354**	*e*Pn	Pn	23 11 17.1	+0.1
KHZ	**Kahutara**	**2.17**	**213**	PN	Pn	23 11 16.5	-1.4
KHZ	**Kahutara**	**2.17**	**213**	*e*Pn	Pn	23 11 16.5	-1.4
WHHZ	**Waihua**	**2.22**	**47**	PN	Pn	23 11 17.0	-1.7
TLZ	**Tolley Road**	**2.30**	**8**	PN	Pn	23 11 19.5	-0.3
RTZ	**Ruatahuna**	**2.45**	**36**	PN	Pn	23 11 19.8	-2.1
KNZ	**Kokohu**	**2.52**	**52**	*e*Pn	Pn	23 11 19.8	-2.9
MHGZ	**Mahia Peninsul**	**2.58**	**57**	PN	Pn	23 11 21.2	-2.4
DSZ	**Denniston Nort**	**2.76**	**245**	PN	Pn	23 11 24.7	-1.4
URZ	**Urewera**	**2.80**	**34**	*e*Pn	Pn	23 11 24.4	-2.2
URZ				*e*Sn	Sn	23 12 02.3	+3.2
URZ				*e*Sn	Sn	23 12 09.0	+10
TOZ	**Tahuroa Road**	**2.89**	**6**	PN	Pn	23 11 27.1	-0.7
MWZ	**Matawai**	**2.93**	**40**	PN	Pn	23 11 25.5	-2.9
MWZ				AML	AML	23 12 32.7	
MWZ				AML	AML	23 12 34.3	
MWZ	**Matawai**	**2.93**	**40**	*e*Pn	Pn	23 11 25.6	-2.9
LTZ	**Lake Taylor**	**3.05**	**224**	PN	Pn	23 11 28.3	-1.8
LTZ	**Lake Taylor**	**3.05**	**224**	*e*Pn	Pn	23 11 33.7	+3.6
INZ	**Inchbonnie**	**3.48**	**231**	PN	Pn	23 11 34.2	-1.7
OXZ	**Oxford**	**3.56**	**219**	*e*Pn	Pn	23 11 42.2	+5.1
MXZ	**Matakaoa Point**	**3.92**	**40**	*e*Pn	Pn	23 11 38.9	-3.0
RPZ	**Rata Peaks**	**4.34**	**223**	*e*Pn	Pn	23 11 53.0	+5.2
ODZ	**Otahua Downs**	**5.53**	**215**	*e*Pn	Pn	23 12 00.9	-3.1
JCZ	**Jackson Bay**	**5.84**	**232**	*e*Pn	Pn	23 12 05.2	-3.3

*NIED **18** 23:17:00, 37°.80N×142°.00E, h8km, Mw4.1 Best double couple: Ms1.46000×10^15 NP1:φs148.00000°, δ24.00000°, λ-38.00000°. NP2:φs274.00000°, δ76.00000°, λ-109.00000°.*
*ISCJB **18** 23:17:28.7±0.4, 37°.77N±0°.03×142°.07E±0°.03, h10km, mb4.4/28, MS3.5/2, Error ellipse: s-maj=4.6km s-min=3.5km az=140.9*
*IDC **18** 23:17:29.4±0.7, 37°.82N×141°.98E, h0km, mb4.0/17, mb1 4.1/20, mb1mx4.0/55, mbtmp4.0/20, ML3.8/3, MS3.3/6, Ms1 3.3/6, ms1mx2.9/52, Error ellipse: s-maj=19.4km s-min=15.0km az=116.0*
*JMA **18** 23:17:30.9±0.1, 37°.77N×141°.97E, h24km±2km, M4.2*
JMA Felt I J1.
*NEIC **18** 23:17:30.5±3.6, 37°.79N×142°.10E, h11km±22km, mb4.8/9, Error ellipse: s-maj=12.6km s-min=7.2km az=120.0*
NEIC Recorded [1 JMA] in Fukushima, Iwate and Miyagi.
ISC 18 23:17:30.2±0.5, 37°.82N±0°.03×141°.98E±0°.04, h10km, n76, σ1§42/74, mb4.3/28, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.81**	**322**	P	Pn	23 17 46.6	-1.0
JIO				S	Sb	23 17 57.1	-0.1
JMM	**Marumori**	**0.94**	**273**	P	Pb	23 17 48.0	-0.6
JMM				S	Sg	23 17 59.7	-0.8
JFK	**Kawauchi**	**0.99**	**243**	P	Pg	23 17 48.4	-0.8
JFK				S	Sg	23 18 00.7	-1.3
JOU	**Okura**	**1.17**	**298**	P	Pg	23 17 52.6	-0.1
JOU				S	Sn	23 18 07.9	-0.8
ONAJ	**Iwakimizuishiy**	**1.18**	**233**	P	Pb	23 17 51.1	-1.6
ONAJ				S	Sb	23 18 05.9	-2.2
JMK	**Ichinoseki**	**1.28**	**332**	P	Pg	23 17 53.8	-0.9
JMK				*e*S	Sg	23 18 15.8	-0.5
OFUJ	**Ofunato**	**1.28**	**349**	P	Pb	23 17 53.4	-1.0
JFT	**Otama**	**1.34**	**257**	P	Pb	23 17 54.8	-0.6
JFT				S	Sn	23 18 12.2	-0.6
JYS	**Shirataka**	**1.56**	**285**	P	Pb	23 17 58.7	-0.5
JYS				S	Sg	23 18 19.2	-1.3
JYK	**Kaneyama**	**1.68**	**311**	P	Pb	23 17 59.8	-1.4
JYK				S	Sg	23 18 22.7	-1.5
MJAR	**Matsushiro Arr**	**3.27**	**248**	Pn	Pn	23 18 22.9	+1.4
	9.2nm,0.3s,baz=84,slow=16,SNR=63						
MAJO	**Matsushiro**	**3.27**	**248**	*e*Pn	Pn	23 18 23.2	+1.6
MAJO				*e*Sn	Sn	23 19 00.1	-0.5
MAT	**Matsushiro**	**3.27**	**248**	P	Pn	23 18 23.0	+1.5
MAT				S	Sn	23 19 01.5	+1.0
MJB9	**Matsu-Tunnel**	**3.27**	**248**	*e*Pn	Pn	23 18 23.0	+1.4
ERM	**Erimo**	**4.29**	**12**	*e*Pn	Pn	23 18 34.8	-0.6
ERM				*e*Sn	Sn	23 19 24.4	-1.1
INU	**Inuyama**	**4.69**	**240**	*e*Pn	Pn	23 18 43.3	+2.3
JHJ	**Hachijo jima 2**	**5.02**	**202**	LR	LR	23 21 08.2	
	comp=Z,194nm,18.2s,baz=339,slow=44						
ASAJ	**Asahikawa**	**6.31**	**4**	Pn	Pn	23 19 04.3	+1.1
	3.5nm,0.3s,baz=198,slow=9.4,SNR=4.6						
USRK	**Ussuriysk Ar.**	**9.88**	**313**	Pn	Pn	23 19 56.1	+4.0
	0.3nm,0.3s,baz=115,slow=12,SNR=7.1						
USRK				LR	LR	23 23 20.8	
	comp=Z,108nm,19.4s,baz=118,slow=36						
JNU	**Nakatsue**	**10.19**	**246**	LR	LR	23 24 06.7	
	comp=Z,175nm,18.9s,baz=232,slow=39						
CBIJ	**Chichi jima**	**10.70**	**179**	*e*Pn	Pn	23 20 00.0	-3.4
JCJ	**Chichijima**	**10.70**	**179**	Pn	Pn	23 20 00.5	-2.9
	baz=270,slow=18						
KLR	**Kul'dur**	**13.59**	**330**	Pn	Pn	23 20 41.9	-1.0
	0.1nm,0.3s,baz=302,slow=19,SNR=2.6						
PEA0	**Petropavlovsk-**	**18.78**	**30**	*e*P	P	23 21 44.0	-5.4
PETK	**Petropavlovsk-**	**18.78**	**30**	LR	LR	23 29 39.4	
	comp=Z,45nm,19.6s,baz=198,slow=39						
MA2	**Magadan**	**22.49**	**12**	P	P	23 22 28.3	-1.2
	5.6nm,0.6s,baz=178,slow=16,SNR=3.3						
YAK	**Yakutsk**	**25.41**	**346**	LR	LR	23 33 05.3	
	comp=Z,58nm,18.9s,baz=29,slow=37						
SEY	**Seymchan**	**25.93**	**11**	P	P	23 23 04.7	+2.4
	8.0nm,0.9s,baz=188,slow=6.0,SNR=20						
SONA1	**Songino Array**	**27.73**	**303**	*e*P	P	23 23 17.6	-1.2
H11N2	**WAKE ISLAND Hy**	**28.18**	**123**	T	T	23 52 44.0	
	baz=315,slow=75,SNR=293						
H11N1	**WAKE ISLAND Hy**	**28.19**	**123**	T	T	23 52 55.6	
	baz=315,slow=75,SNR=327						
H11N3	**WAKE ISLAND Hy**	**28.20**	**123**	T	T	23 52 56.6	
	baz=315,slow=75,SNR=296						
H11S1	**WAKE ISLAND Hy**	**28.92**	**125**	T	T	23 53 54.8	
	baz=317,slow=76,SNR=252						
H11S3	**WAKE ISLAND Hy**	**28.92**	**125**	T	T	23 53 54.8	
	baz=317,slow=76,SNR=355						
H11S2	**WAKE ISLAND Hy**	**28.94**	**125**	T	T	23 53 55.3	
	baz=317,slow=76,SNR=253						
TIXI	**Tiksi**	**34.56**	**353**	P	P	23 24 18.3	-0.3
	0.7nm,0.3s,baz=268,slow=0.5,SNR=2.8						
ZAA0	**Zalesovo Array**	**41.72**	**312**	*e*P	P	23 25 20.2	+1.2
ZAA1	**Zalesovo Array**	**41.72**	**312**	*e*P	P	23 25 19.6	+0.5
ZALV	**Zalesovo Beam**	**41.72**	**312**	P	P	23 25 19.6	+0.5
	1.7nm,0.7s,baz=94,slow=7.5,SNR=7.9						
MK01	**Makanchi Array**	**44.09**	**301**	*e*P	P	23 25 39.8	+1.5
MK31	**Makanchi Array**	**44.09**	**302**	*e*P	P	23 25 40.2	+1.9
MK32	**Makanchi Array**	**44.09**	**302**	*e*P	P	23 25 39.9	+1.5
MKAR	**Makanchi Array**	**44.09**	**302**	P	P	23 25 39.9	+1.5
	3.1nm,0.8s,baz=81,slow=9.5,SNR=11						
MKAR	**Makanchi Array**	**44.09**	**302**	*e*P	P	23 25 40.2	+1.9
MAKZ	**Makanchi**	**44.30**	**302**	*e*P	P	23 25 45.7	+5.6
	11nm,1.4s						
KURK	**Kurchatov**	**45.81**	**308**	*e*P	P	23 25 53.0	+1.0
	0.7nm,0.8s						
KURBB	**Kurchatov Arra**	**45.88**	**307**	P	P	23 25 53.0	+0.5
	5.8nm,0.6s,baz=82,slow=8.1,SNR=12						
ILAR	**Eielson Array**	**48.59**	**33**	P	P	23 26 14.8	+1.3
	0.8nm,0.5s,baz=272,slow=6.1,SNR=9.9						
ILB	**Eielson Array**	**48.59**	**33**	*e*P	P	23 26 14.8	+1.3
TKM2	**Tokmak 2**	**49.66**	**298**	*e*P	P	23 26 23.7	+1.5
	4.5nm,0.8s						
AAK	**Ala-Archa**	**50.52**	**298**	P	P	23 26 28.7	0.0
	1.2nm,0.3s,baz=196,slow=7.4,SNR=2.9						
INK	**Inuvik**	**53.48**	**27**	P	P	23 26 50.3	+0.2
	0.9nm,0.8s,baz=260,slow=11,SNR=2.9						
INK	**Inuvik**	**53.48**	**27**	*e*P	P	23 26 50.3	+0.2
	10nm,1.6s						
ARU	**Arti**	**56.07**	**318**	*e*P	P	23 27 09.6	+0.5
	4.1nm,0.9s						
FITZ	**Fitzroy Crossi**	**57.71**	**198**	P	P	23 27 22.0	+0.9
	2.3nm,0.6s,baz=27,slow=6.6,SNR=7.5						
FITZ	**Fitzroy Crossi**	**57.71**	**198**	*e*P	P	23 27 22.0	+0.9
	24nm,0.6s						
WRAB	**Tennant Creek**	**57.89**	**188**	*e*P	P	23 27 20.5	-1.9
	16nm,1.0s						
WB2	**Warramunga Arr**	**57.90**	**188**	*e*P	P	23 27 21.5	-0.9
	16nm,0.9s						
WR1	**Warramunga Arr**	**57.90**	**188**	*e*P	P	23 27 22.3	-0.1
	11nm,0.6s						
WRA	**Warramunga Arr**	**57.90**	**188**	P	P	23 27 22.3	-0.1
	7.1nm,0.5s,baz=5.6,slow=6.8,SNR=14						
YKA	**Yellowknife Ar**	**62.90**	**30**	P	P	23 27 57.3	+1.1
	1μm,0.8s,baz=302,slow=6.5,SNR=6.4						
YKB5	**Yellowknife Ar**	**62.90**	**30**	*e*P	P	23 27 57.3	+1.1
ARA0	**ARCESS Array S**	**63.42**	**339**	*e*P	P	23 28 00.1	+0.6
ARCES	**ARCESS Array B**	**63.42**	**339**	P	P	23 28 00.1	+0.6
	3.6nm,1.0s,baz=40,slow=9.6,SNR=5.6						
GEYT	**Alibeck**	**63.85**	**299**	P	P	23 28 04.7	+1.8
	0.9nm,0.5s,baz=74,slow=11,SNR=3.1						
FIA0	**FINESS Array S**	**68.33**	**332**	*e*P	P	23 28 32.2	+1.1
FINES	**FINESS Array B**	**68.33**	**332**	P	P	23 28 32.2	+1.1
	1.4nm,0.7s,baz=52,slow=9.0,SNR=4.7						
KBZ	**Khabaz**	**70.73**	**311**	P	P	23 28 47.6	+1.3
	0.7nm,0.5s,baz=90,slow=5.1,SNR=2.5						
NB2	**NORSAR Subarra**	**73.64**	**337**	P	P	23 29 09.6	+6.1
	comp=Z,1.0nm,0.7s,baz=41,slow=6.2						
AKASG	**Malin Array Be**	**73.95**	**322**	P	P	23 29 05.7	+0.3
	comp=Z,0.3nm,0.3s,baz=46,slow=6.1,SNR=3.2						
AKBB	**Malin Array Si**	**73.95**	**322**	*e*P	P	23 29 05.7	+0.3
	comp=Z,13nm,1.3s						
GERES	**GERESS Array B**	**82.28**	**328**	P	P	23 29 52.8	+0.9
	comp=Z,0.1nm,0.4s,baz=29,slow=6.7,SNR=2.3						
DAVOX	**Davos/Dischmat**	**85.49**	**329**	LR	LR	00 11 18.5	
	comp=Z,53nm,18.1s,baz=64,slow=38						
LTX	**Lajitas**	**89.28**	**53**	*e*P	P	23 30 28.2	+1.3
TXAR	**Lajitas Array**	**89.28**	**53**	P	P	23 30 28.2	+1.3
	comp=Z,0.3nm,0.6s,baz=298,slow=3.8,SNR=3.6						
LPAZ	**La Paz**

JNU	**Nakatsue**	**42.65 339**	*eP*	P		23 30 17.0 +3.1
	13nm,1.2s					
KSRS	**Korea Array**	**47.60 338**	P	**P**		**23 30 52.7 -0.2**
	1.6nm,0.8s,baz=154,slow=9.7,SNR=4.1					
KSRS			LR	LR		23 49 28.3
	comp=Z,35nm,20.8s,baz=175,slow=34					
KS15	**Wonju Array Si**	**47.60 338**	*eP*	**P**		**23 30 52.7 -0.2**
KSAR	**Wonju Array Be**	**47.60 338**	P	**P**		**23 30 52.7 -0.2**
KLR	**Kul'dur**	**57.34 348**	P	**P**		**23 32 05.0 +0.2**
	1.3nm,0.6s,baz=186,slow=4.2,SNR=3.7					
SONA0	**Songino Array**	**65.32 331**	*eP*	**P**		**23 32 59.5 +0.4**
	4.6nm,1.1s					
SONM	**Songino Array**	**65.32 331**	P	**P**		**23 32 59.5 +0.4**
	0.5nm,0.3s,baz=126,slow=10,SNR=4.0					
SONM			LR	LR		00 01 06.5
	comp=Z,72nm,20.6s,baz=258,slow=36					
VNDA	**Vanda**	**71.28 177**	P	**P**		**23 33 36.3 +0.6**
	2.0nm,0.5s,baz=345,slow=6.5,SNR=16					
VNDA	**Vanda**	**71.28 177**	*eP*	**P**		**23 33 36.3 +0.6**
	3.1nm,0.7s					
MK01	**Makanchi Array**	**78.46 320**	*eP*	**P**		**23 34 17.1 -0.7**
MK31	**Makanchi Array**	**78.48 320**	*eP*	**P**		**23 34 17.8 0.0**
MK32	**Makanchi Array**	**78.48 320**	*eP*	**P**		**23 34 17.7 -0.1**
MKAR	**Makanchi Array**	**78.48 320**	P	**P**		**23 34 17.7 -0.1**
	0.6nm,0.6s,baz=96,slow=8.5,SNR=7.8					
MAKZ	**Makanchi**	**78.68 320**	*eP*	**P**		**23 34 19.2 +0.2**
	15nm,2.0s					
ZAA0	**Zalesovo Array**	**79.95 328**	*eP*	**P**		**23 34 25.2 -0.5**
ZALV	**Zalesovo Beam**	**79.95 328**	P	**P**		**23 34 24.9 -0.8**
	1.2nm,0.7s,baz=99,slow=4.3,SNR=6.1					
ZAA1	**Zalesovo Array**	**79.95 328**	*eP*	**P**		**23 34 24.9 -0.8**
ILAR	**Eielson Array**	**85.69 23**	P	**P**		**23 34 53.8 -1.5**
	0.9nm,0.8s,baz=250,slow=5.1,SNR=7.9					
ILB	**Eielson Array**	**85.69 23**	*eP*	**P**		**23 34 53.8 -1.5**
NRIK	**Noril'sk**	**86.09 342**	P	**P**		**23 34 56.8 -0.3**
	1.2nm,0.4s,baz=92,slow=3.4,SNR=4.1					
AKTO	**Aktyubinsk**	**94.91 320**	LR	LR		00 17 19.8
	comp=Z,34nm,21.1s,slow=35					
ARU	**Arti**	**95.04 326**	LR	LR		00 18 25.9
	comp=Z,19nm,20.7s,baz=161,slow=35					
MSTX	**Muleshoe**	**109.72 56**	*eP*dif	**Pdif**		**23 36 44.9 -0.7**
GERES	**GERESS Array B**	**122.86 326**	PKP	**PKPdf**		**23 41 13.4 +0.6**
	0.5nm,0.6s,baz=319,slow=3.9,SNR=6.9					
LPAZ	**La Paz**	**137.77 123**	PKP	**PKPdf**		**23 41 44.1 +1.5**
	1.3nm,0.8s,baz=318,slow=4.1,SNR=4.1					

*IDC **18** 23:26:44.2±0.8, 35°.29N×142°.41E, h0km, mb3.8/10, mb1 4.0/11, mb1mx3.8/46, mbtmp3.7/11, ML3.1/1, MS2.7/1, Ms1 2.7/1, ms1mx2.4/43, Error ellipse: s-maj=27.9km s-min=19.3km az=103.0*
*JMA **18** 23:26:46.0±0.4, 35°.36N×142°.44E, h57km, M3.4*
*ISCJB **18** 23:26:47.8±0.6, 35°.36N±0°.06×142°.30E±0°.06, h35km, mb3.7/10, Error ellipse: s-maj=9.0km s-min=6.6km az=3.3*

ISC 18 23:26:49.6±0.8, 35°.38N±0°.07×142°.30E±0°.08, h35km, n21, σ1§17/25, mb3.8/10, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.22**	**286**	P	**Pn**	**23 27 09.4**	**-0.7**
CHOJ				*eS*	**Sn**	**23 27 24.7**	**-0.7**
BSO1	**Boso 1**	**1.30**	**237**	P	**Pn**	**23 27 08.9**	**-1.9**
BSO4	**Boso 4**	**1.66**	**257**	P	**Pn**	**23 27 15.6**	**-0.4**
JFK	**Kawauchi**	**2.29**	**330**	P	**Pn**	**23 27 22.6**	**-2.4**
JAG	**Ashikaga**	**2.54**	**295**	P	**Pn**	**23 27 27.2**	**-1.1**
JOD2	**Odawara 2**	**2.63**	**268**	P	**Pn**	**23 27 28.4**	**-1.2**
JOD2				*eS*	**Sn**	**23 27 59.2**	**-1.1**
JFT	**Otama**	**2.66**	**324**	P	**Pn**	**23 27 28.8**	**-1.2**
JFT				S	**Sn**	**23 27 59.4**	**-1.6**
JYN	**Shimob**	**3.07**	**273**	P	**Pn**	**23 27 34.8**	**-0.9**
MJAR	**Matsushiro Arr**	**3.52**	**290**	Pn	**Pn**	**23 27 41.2**	**-0.5**
	1.5nm,0.3s,baz=94,slow=9.5,SNR=11						
MAT	**Matsushiro**	**3.52**	**290**	P	**Pn**	**23 27 43.5**	**+1.7**
MAT				S	**Sn**	**23 28 22.9**	**+0.7**
KSRS	**Korea Array**	**11.77**	**284**	LR	LR	23 34 20.9	
	comp=Z,34nm,18.1s,baz=70,slow=38						
MA2	**Magadan**	**24.84**	**10**	P	**P**	**23 32 09.3**	**+1.0**
	4.4nm,0.6s,baz=198,slow=9.6,SNR=4.7						
SEY	**Seymchan**	**28.29**	**10**	P	**P**	**23 32 39.8**	**+0.4**
	1.1nm,0.4s,baz=108,slow=20,SNR=7.0						
MKAR	**Makanchi Array**	**45.62**	**304**	P	**P**	**23 35 06.6**	**+0.2**
	0.2nm,0.2s,baz=96,slow=8.8,SNR=2.7						
MKAR				PcP	**PcP**	**23 36 45.2**	**+0.9**
	0.1nm,0.3s,baz=72,slow=4.7,SNR=2.7						
ILAR	**Eielson Array**	**50.52**	**32**	P	**P**	**23 35 44.0**	**+0.1**
	0.7nm,0.7s,baz=253,slow=5.6,SNR=4.2						
WRA	**Warramunga Arr**	**55.53**	**189**	P	**P**	**23 36 20.8**	**-0.6**
	0.8nm,0.5s,baz=7.5,slow=7.5,SNR=13						
ASAR	**Alice Springs**	**59.26**	**189**	P	**P**	**23 36 46.6**	**-0.9**
	0.4nm,0.7s,baz=16,slow=14,SNR=4.5						
YKA	**Yellowknife Ar**	**64.88**	**30**	P	**P**	**23 37 23.7**	**-1.1**
	0.1nm,0.4s,baz=299,slow=6.8,SNR=4.4						
BRTR	**Keskin Array B**	**80.49**	**312**	P	**P**	**23 38 59.8**	**+1.6**
	0.6nm,0.7s,baz=105,slow=4.6,SNR=4.8						
GERES	**GERESS Array B**	**84.50**	**329**	P	**P**	**23 39 19.2**	**+0.3**
	0.3nm,0.5s,baz=46,slow=7.6,SNR=3.9						
TXAR	**Lajitas Array**	**90.55**	**53**	P	**P**	**23 39 49.3**	**+0.9**
	0.4nm,0.8s,baz=319,slow=3.6,SNR=3.7						

*DDA **18** 23:40:09.0, 37°.90N×26°.93E, h5km, Md2.8*
*ATH **18** 23:40:08.6, 37°.80N×26°.86E, h25km±1km, ML2.2/2, Error ellipse: s-maj=4.2km s-min=1.2km az=82.0*
*ISCJB **18** 23:40:09.2±0.4, 37°.86N±0°.02×26°.89E±0°.03, h5km±3km, Error ellipse: s-maj=4.2km s-min=2.9km az=151.9*
*CSEM **18** 23:40:09.3±0.2, 37°.84N×26°.88E, h10km, ML2.2, Error ellipse: s-maj=4.8km s-min=3.3km az=55.0*
*THE **18** 23:40:10.1, 37°.83N×26°.87E, h12km, ML2.3/3, Error ellipse: s-maj=1.2km s-min=0.5km az=229.0*

ISC 18 23:40:08.5±0.9, 37°.85N±0°.02×26°.88E±0°.02, h13km±7km, n41, σ0§54/74, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SMG	**Samos**	**0.15**	**192**	P	**Pb**	**23 40 13.2**	**+0.1**
SMG				S	**Sb**	**23 40 16.1**	**0.0**
SMG	**Samos**	**0.15**	**192**	P	**Pb**	**23 40 13.2**	**+0.1**
SMG				S	**Sb**	**23 40 16.1**	**0.0**
SMG	**Samos**	**0.15**	**192**	P	**Pb**	**23 40 13.2**	**+0.1**
SMG				S	**Sb**	**23 40 16.6**	**+0.5**
SMG				AML	AML	23 40 16.7	
	comp=N,3031μm,0.3s						
SMG				AML	AML	23 40 17.6	
	comp=E,2087μm,0.3s						
DGB	**˜zmir**	**0.20**	**1**	*iP*	**Pg**	**23 40 12.9**	**0.0**
DGB				*iS*	**Sg**	**23 40 15.2**	**-0.7**
GCAM	**G?zelcaml?**	**0.32**	**118**	P	**Pb**	**23 40 15.8**	**-0.2**
GCAM				S	**Sb**	**23 40 20.7**	**-0.4**
GCAM	**G?zelcaml?**	**0.32**	**118**	*iP*	**Pb**	**23 40 15.8**	**-0.2**
GCAM				*iS*	**Sb**	**23 40 20.7**	**-0.4**
ZEY	**˜zmir**	**0.48**	**323**	*iP*	**Pg**	**23 40 18.3**	**+0.2**
ZEY				*iS*	**Sb**	**23 40 25.9**	**0.0**
URLA	**Izmir**	**0.55**	**336**	P	**Pg**	**23 40 19.6**	**+0.3**
URLA				S	**Sb**	**23 40 27.5**	**-0.4**
URLA	**Izmir**	**0.55**	**336**	*iP*	**Pg**	**23 40 19.6**	**+0.3**
URLA				*iS*	**Sb**	**23 40 27.5**	**-0.4**
AYDN	**Tasoluk**	**0.82**	**103**	P	**Pb**	**23 40 24.8**	**+0.3**
AYDN				S	**Sb**	**23 40 35.4**	**-0.1**
AYDN	**Tasoluk**	**0.82**	**103**	*iP*	**Pb**	**23 40 24.8**	**+0.3**
AYDN				*iS*	**Sb**	**23 40 35.4**	**-0.1**
CHOS	**Chios island**	**0.84**	**310**	P	**Pn**	**23 40 26.0**	**0.0**
CHOS				S	**Sn**	**23 40 38.1**	**-0.1**
CHOS	**Chios island**	**0.84**	**310**	P	**Pn**	**23 40 26.0**	**0.0**
CHOS				S	**Sn**	**23 40 37.8**	**-0.4**
CHOS	**Chios island**	**0.84**	**310**	P	**Pg**	**23 40 25.3**	**+0.5**
CHOS				S	**Sn**	**23 40 37.8**	**-0.4**
CHOS				AML	AML	23 40 41.9	
	comp=E,315μm,0.2s						
CHOS				AML	AML	23 40 42.2	
	comp=N,231μm,0.3s						
BODT	**Bodrum**	**0.86**	**156**	P	**Pg**	**23 40 25.7**	**+0.6**
BODT				S	**Sn**	**23 40 38.5**	**-0.2**
BODT	**Bodrum**	**0.86**	**156**	P	**Pg**	**23 40 25.7**	**+0.6**
BODT				S	**Sn**	**23 40 38.5**	**-0.2**
BDRM	**Kayabasi**	**0.91**	**150**	P	**Pg**	**23 40 26.4**	**+0.4**
BDRM				S	**Sn**	**23 40 39.7**	**-0.1**
BDRM	**Kayabasi**	**0.91**	**150**	*iP*	**Pg**	**23 40 26.4**	**+0.4**
BDRM				*iS*	**Sn**	**23 40 39.7**	**-0.1**
AKHS	**Akhisar**	**1.26**	**35**	P	**Pb**	**23 40 32.2**	**+0.1**
AKHS				S	**Sb**	**23 40 48.2**	**0.0**
AKHS	**Akhisar**	**1.26**	**35**	*iP*	**Pb**	**23 40 32.2**	**+0.1**
AKHS				*iS*	**Sb**	**23 40 48.2**	**0.0**
APE	**Apeiranthos**	**1.33**	**234**	P	**Pn**	**23 40 32.6**	**-0.1**
APE				S	**Sg**	**23 40 50.9**	**-0.3**
APE	**Apeiranthos**	**1.33**	**234**	P	**Pn**	**23 40 32.9**	**+0.2**
APE				S	**Sg**	**23 40 50.9**	**-0.3**
APE	**Apeiranthos**	**1.33**	**234**	P	**Pn**	**23 40 32.9**	**+0.2**
YER	**Yerkesik**	**1.33**	**122**	P	**Pb**	**23 40 33.3**	**+0.1**
YER				S	**Sb**	**23 40 50.6**	**+0.4**
YER	**Yerkesik**	**1.33**	**122**	P	**Pb**	**23 40 33.3**	**+0.1**
YER				S	**Sb**	**23 40 50.6**	**+0.4**
AYVA	**Ayvalik**	**1.46**	**354**	*iP*	Pn	23 40 26.1	-8.4
AYVA				*iS*	**Sg**	**23 40 57.3**	**+1.8**
MANT	**Manisa**	**1.47**	**64**	P	**Pb**	**23 40 36.0**	**+0.2**
MANT				S	**Sn**	**23 40 53.0**	**-1.0**
MANT	**Manisa**	**1.47**	**64**	*iP*	**Pb**	**23 40 36.0**	**+0.2**
MANT				*iS*	**Sn**	**23 40 53.0**	**-1.0**
PRK	**Paraskevi**	**1.47**	**341**	P	**Pb**	**23 40 36.0**	**+0.4**
PRK				S	**Sg**	**23 40 55.4**	**-0.4**
PRK	**Paraskevi**	**1.47**	**341**	P	**Pb**	**23 40 36.0**	**+0.4**
PRK				S	**Sg**	**23 40 55.4**	**-0.4**
PRK	**Paraskevi**	**1.47**	**341**	P	**Pg**	**23 40 36.7**	**0.0**
SIGR	**SIGRI**	**1.57**	**330**	P	**Pb**	**23 40 37.1**	**-0.3**
SIGR	**SIGRI**	**1.57**	**330**	P	**Pb**	**23 40 37.1**	**-0.3**
SIGR	**SIGRI**	**1.57**	**330**	P	**Pb**	**23 40 36.9**	**-0.5**
TURN	**Turunc**	**1.69**	**125**	*iP*	**Pn**	**23 40 36.0**	**-1.5**
DEMI	**Demirci**	**1.87**	**50**	P	**Pg**	**23 40 44.6**	**+0.2**
DEMI				S	**Sb**	**23 41 06.7**	**+0.9**
DEMI	**Demirci**	**1.87**	**50**	*iP*	**Pg**	**23 40 44.6**	**+0.2**
DEMI				*iS*	**Sb**	**23 41 06.7**	**+0.9**
BALY	**Balya**	**1.97**	**17**	P	**Pb**	**23 40 43.6**	**-0.6**
BALY	**Balya**	**1.97**	**17**	*iP*	**Pb**	**23 40 43.6**	**-0.6**
BALY				*iS*	**Sg**	**23 41 12.7**	**+0.8**
DURS	**Dursunbey**	**2.15**	**35**	P	**Pb**	**23 40 47.7**	**+0.5**
DURS				S	**Sb**	**23 41 15.2**	**+1.4**
DURS	**Dursunbey**	**2.15**	**35**	*iP*	**Pb**	**23 40 47.7**	**+0.5**
DURS				*iS*	**Sb**	**23 41 15.2**	**+1.4**

*IDC **18** 23:50:56.2±1.0, 17°.48N×122°.94E, h0km, mb3.9/8, mb1 4.0/8, mb1mx3.6/56, mbtmp3.9/8, Error ellipse: s-maj=52.7km s-min=17.9km az=62.0*
*MAN **18** 23:50:58, 17°.38N×122°.67E, h2km, mb4.8, ML3.7, MS3.7*

ISC 18 23:50:56.5±1.9, 17°.21N±0°.04×122°.65E±0°.08, h0km±11km, n22, σ1§07/22, mb3.9/8, 2C, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CAUP	**Cauayan**	**0.83**	**252**	*eP*	**Pn**	**23 51 16.4**	**+0.9**
CAUP				*eS*	Sn	23 51 39.5	+11
SGCP	**Mt. Cagua**	**1.18**	**331**	*eP*	**Pg**	**23 51 19.3**	**+0.2**
SGCP				*eS*	**Sg**	**23 51 33.8**	**-0.7**
APYP	**Conner**	**1.49**	**296**	*eP*	**Pb**	**23 51 25.0**	**-0.1**
APYP				*eS*	**Sn**	**23 51 45.4**	**+0.7**
BALP	**Baler**	**1.79**	**215**	*eP*	**Pg**	**23 51 31.5**	**+0.7**
BALP				*eS*	**Sn**	**23 51 50.1**	**-1.8**
ABRA	**Dolores**	**1.90**	**284**	*eP*	**Pb**	**23 51 31.9**	**-0.2**
BCPH	**Baguio City Da**	**2.15**	**248**	*iP*	**Pg**	**23 51 38.0**	**+0.3**
BCPH				*iS*	**Sg**	**23 52 05.7**	**+0.2**
PCPH	**Palayan**	**2.22**	**223**	*eP*	**Pg**	**23 51 38.6**	**-0.4**
PCPH				*eS*	**Sg**	**23 52 06.8**	**-1.0**
BOLP	**Bolinao**	**2.75**	**253**	*eP*	**Pb**	**23 51 45.6**	**-1.0**
BOLP				*eS*	**Sn**	**23 52 15.7**	**0.0**
CMAR	**Chiang Mai Arr**	**22.60**	**277**	P	**P**	**23 56 00.8**	**+2.0**
	0.7nm,0.3s,baz=86,slow=8.7,SNR=4.2						
WRA	**Warramunga Arr**	**38.66**	**162**	P	**P**	**23 58 23.0**	**+1.0**
	1.6nm,0.9s,baz=332,slow=10,SNR=8.0						
H11S3	**WAKE ISLAND Hy**	**41.86**	**81**	T	T	00 43 43.1	
	baz=276,slow=75,SNR=363						
H11S1	**WAKE ISLAND Hy**	**41.87**	**81**	T	T	00 43 45.4	
	baz=276,slow=75,SNR=325						
H11S2	**WAKE ISLAND Hy**	**41.88**	**81**	T	T	00 43 44.2	
	baz=276,slow=75,SNR=234						
H11N1	**WAKE ISLAND Hy**	**41.95**	**79**	T	T	00 43 48.1	
	baz=274,slow=75,SNR=189						
H11N2	**WAKE ISLAND Hy**	**41.96**	**79**	T	T	00 43 48.9	
	baz=274,slow=75,SNR=177						
H11N3	**WAKE ISLAND Hy**	**41.97**	**79**	T	T	00 43 49.4	
	baz=274,slow=75,SNR=123						
ASAR	**Alice Springs**	**42.09**	**165**	P	**P**	**23 58 51.8**	**+1.5**
	0.3nm,0.3s,baz=351,slow=6.6,SNR=4.1						
MKAR	**Makanchi Array**	**44.44**	**321**	P	**P**	**23 59 09.2**	**0.0**
	0.3nm,0.4s,baz=104,slow=6.5,SNR=7.7						
STKA	**Stephens Creek**	**52.08**	**160**	P	**P**	**00 00 08.8**	**+0.6**
	0.9nm,0.4s,baz=360,slow=16,SNR=3.5						
NRIK	**Noril'sk**	**56.47**	**346**	P	**P**	**00 00 37.7**	**-2.0**
	1.0nm,0.4s,baz=104,slow=4.2,SNR=4.7						
AKTO	**Aktyubinsk**	**60.80**	**319**	P	**P**	**00 01 09.9**	**-0.3**
	0.7nm,0.5s,baz=141,slow=6.5						
FINES	**FINESS Array B**	**78.15**	**331**	P	**P**	**00 02 56.3**	**-1.0**
	2.0nm,1.0s,baz=66,slow=6.7,SNR=3.4						

DJA 18 23:56:30.6±0.6, 1°S±4°×12°0E±°, h30km, M3.7/5, MLv3.7/5, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCI	**Palu**	**0.41**	**46**	P	Pb	23 56 40.0	+0.3
PCI				S	Sn	23 56 47.4	+0.3
TTSI	**Tana Toraja**	**1.86**	**171**	P	Pn	23 56 59.4	-1.1
TTSI				S	Sn	23 57 24.0	+1.0
SPSI	**Sidrap Palu**	**2.77**	**175**	P	Pn	23 57 13.4	+0.5
SPSI				S	Sn	23 57 46.2	+0.9
MRSI	**Marisa**	**2.92**	**55**	P	Pb	23 57 19.0	-2.9
LUWI	**Luwuk**	**3.23**	**87**	P	Pn	23 57 21.1	+1.7
LUWI				S	Sn	23 57 59.9	+3.0
KDI	**Kendari**	**4.12**	**132**	P	Pn	23 57 31.7	+0.1
BSSI	**Bau Bau, Buton**	**5.01**	**169**	P	Pn	23 57 44.6	+0.8

MEX 18 23:59:24.7±0.6, 15°.35N×91°.91W, h205km±6km, MD3.7, Mexico-Guatemala border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CCIG	**Comitan**	**0.95**	**347**	*eS*	S	00 00 16.0	-2.4
PCIG		**1.31**	**286**	*eP*	Pn	23 59 56.2	-1.1
PCIG				*eS*	S	00 00 20.0	-2.2

DDA 19 00:00:30.1, 37°.96N×27°.01E, h7km, Md2.2, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DGB	**˜zmir**	**0.13**	**312**	*iP*	Pg	00 00 33.6	+0.7
DGB				*iS*	Sg	00 00 36.2	+1.4
GCAM	**G?zelcaml?**	**0.32**	**146**	*iP*	Pg	00 00 36.6	+0.4
GCAM				*iS*	Sg	00 00 41.6	+1.1
ZEY	**˜zmir**	**0.48**	**305**	*iP*	Pg	00 00 39.2	-0.2
ZEY				*iS*	Sg	00 00 46.5	+0.7

*THE **19** 00:01:51.7, 45°.53N×25°.59E, h14km±22km, ML3.3/2, Error ellipse: s-maj=30.9km s-min=2.3km az=6.0*
*BUC **19** 00:01:58.6±0.5, 45°.13N×25°.67E, h25km±4km, MD3.5/3, Error ellipse: s-maj=5.6km s-min=3.8km az=42.0*
*SIGU **19** 00:01:58.4±0.1, 45°.15N±0°.01×25°.63E±0°.01, h14km, mb3.1/3*
*SOF **19** 00:01:58.0, 45°.05N×25°.65E, h15km, MD2.9*
*CSEM **19** 00:01:59.1±0.1, 45°.11N×25°.64E, h25km±1km, MD3.5, Error ellipse: s-maj=2.6km s-min=2.3km az=174.0*

ISC 19 00:01:57.5±1.2, 45°.11N±0°.01×25°.65E±0°.01, h10km±10km, n182, σ1§01/260, 83C-42D, Romania

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SECR		**0.31**	**104**	*iP*	**Pb**	**00 02 06.3**	**+1.3**
SECR		**0.31**	**104**	*iP*	**Pb**	**00 02 06.3**	**+1.3**
SECR				*iS*	**Sb**	**00 02 09.9**	**-0.2**
SECR		**0.31**	**104**	*iP*	**Pb**	**00 02 06.3**	**+1.3**
SECR				*iS*	**Sb**	**00 02 09.9**	**-0.2**
PLAR	**PLOIESTI**	**0.33**	**126**	*iP*	**Pn**	**00 02 07.0**	**-1.3**
PLAR	**PLOIESTI**	**0.33**	**126**	*iP*	**Pn**	**00 02 07.0**	**-1.3**
PLAR	**PLOIESTI**	**0.33**	**126**	*iP*	**Pn**	**00 02 07.0**	**-1.3**
MTUR	**Matau**	**0.43**	**286**	*iP*	**Pn**	**00 02 08.7**	**-1.1**
MTUR	**Matau**	**0.43**	**286**	*iP*	**Pn**	**00 02 08.7**	**-1.1**
MTUR	**Matau**	**0.43**	**286**	*iP*	**Pn**	**00 02 08.7**	**-1.1**
MLR	**Muntele Rosu**	**0.43**	**29**	*iP*	**Pb**	**00 02 07.7**	**+0.4**
MLR	**Muntele Rosu**	**0.43**	**29**	*iP*	**Pb**	**00 02 07.7**	**+0.4**
MLR				*iS*	**Sb**	**00 02 14.3**	**+0.3**
MLR	**Muntele Rosu**	**0.43**	**29**	*iP*	**Pb**	**00 02 07.7**	**+0.4**
MLR				*iS*	**Sb**	**00 02 14.3**	**+0.3**
VOIR		**0.54**	**308**	*iP*	**Pb**	**00 02 09.6**	**+0.6**
VOIR				*iS*	**Sb**	**00 02 18.0**	**+1.2**
VOIR		**0.54**	**308**	*iP*	**Pb**	**00 02 09.6**	**+0.6**
VOIR				*iS*	**Sb**	**00 02 18.0**	**+1.2**
GOLR		**0.56**	**241**	*iP*	**Pn**	**00 02 11.6**	**+0.1**
GOLR		**0.56**	**241**	*iP*	**Pn**	**00 02 11.6**	**+0.1**
GOLR				*iS*	**Sn**	**00 02 19.9**	**-0.9**
GOLR		**0.56**	**241**	*iP*	**Pn**	**00 02 11.6**	**+0.1**
GOLR				*iS*	**Sn**	**00 02 19.9**	**-0.9**
SULR		**0.61**	**135**	*iP*	**Pn**	**00 02 11.3**	**-0.9**
SULR		**0.61**	**135**	*iP*	**Pn**	**00 02 11.3**	**-0.9**
SULR				*iS*	**Sb**	**00 02 19.9**	**+1.1**
SULR		**0.61**	**135**	*iP*	**Pn**	**00 02 11.3**	**-0.9**
SULR				*iS*	**Sb**	**00 02 19.9**	**+1.1**
HUMR	**Humele**	**0.75**	**220**	*iP*	**Pn**	**00 02 14.1**	**0.0**
HUMR	**Humele**	**0.75**	**220**	*iP*	**Pn**	**00 02 14.1**	**0.0**
HUMR				*iS*	**Sn**	**00 02 25.3**	**-0.3**
HUMR	**Humele**	**0.75**	**220**	*iP*	**Pn**	**00 02 14.1**	**0.0**
HUMR				*iS*	**Sn**	**00 02 25.3**	**-0.3**
ARR	**Arges**	**0.76**	**290**	*iP*	**Pn**	**00 02 13.9**	**-0.5**
ARR	**Arges**	**0.76**	**290**	*iP*	**Pn**	**00 02 13.9**	**-0.5**
ARR				*iS*	**Sb**	**00 02 23.5**	**+0.2**
ARR	**Arges**	**0.76**	**290**	*iP*	**Pn**	**00 02 13.9**	**-0.5**
ARR				*iS*	**Sb**	**00 02 23.5**	**+0.2**
INCR	**INCERC-Sediu C**	**0.76**	**151**	*iP*	**Pn**	**00 02 13.9**	**-0.3**
INCR	**INCERC-Sediu C**	**0.76**	**151**	*iP*	**Pn**	**00 02 13.9**	**-0.3**
INCR				*iS*	**Sn**	**00 02 25.7**	**-0.1**
INCR	**INCERC-Sediu C**	**0.76**	**151**	*iP*	**Pn**	**00 02 13.9**	**-0.3**
INCR				*iS*	**Sn**	**00 02 25.7**	**-0.1**
BUC1	**Bucharest**	**0.81**	**160**	*iP*	**Pn**	**00 02 14.4**	**-0.5**
BUC1	**Bucharest**	**0.81**	**160**	*iP*	**Pn**	**00 02 14.4**	**-0.5**
BUC1				*iS*	**Sn**	**00 02 26.3**	**-0.6**
BUC1	**Bucharest**	**0.81**	**160**	*iP*	**Pn**	**00 02 14.4**	**-0.5**
BUC1				*iS*	**Sn**	**00 02 26.3**	**-0.6**
DOPR	**Dopca**	**0.88**	**348**	*iP*	**Pb**	**00 02 14.9**	**+0.1**
DOPR	**Dopca**	**0.88**	**348**	*iP*	**Pb**	**00 02 14.9**	**+0.1**
DOPR				*iS*	**Sb**	**00 02 27.3**	**+0.7**
DOPR	**Dopca**	**0.88**	**348**	*iP*	**Pb**	**00 02 14.9**	**+0.1**
DOPR				*iS*	**Sb**	**00 02 27.3**	**+0.7**
PGOR	**Pogoanele**	**0.97**	**102**	*iP*	**Pb**	**00 02 16.3**	**0.0**
PGOR	**Pogoanele**	**0.97**	**102**	*iP*	**Pb**	**00 02 16.3**	**0.0**
PGOR				*iS*	**Sn**	**00 02 30.7**	**-0.2**
PGOR	**Pogoanele**	**0.97**	**102**	*iP*	**Pb**	**00 02 16.3**	**0.0**
PGOR				*iS*	**Sn**	**00 02 30.7**	**-0.2**
GRER		**0.97**	**73**	*iP*	**Pn**	**00 02 17.5**	**+0.3**
GRER		**0.97**	**73**	*iP*	**Pn**	**00 02 17.5**	**+0.3**
GRER				*iS*	**Sb**	**00 02 29.2**	**-0.2**
GRER		**0.97**	**73**	*iP*	**Pn**	**00 02 17.5**	**+0.3**
GRER				*iS*	**Sb**	**00 02 29.2**	**-0.2**
PLOR	**Plostina**	**1.02**	**43**	P	**Pb**	**00 02 17.5**	**+0.2**
PLOR	**Plostina**	**1.02**	**43**	P	**Pb**	**00 02 17.5**	**+0.2**
PLOR				*iS*	**Sn**	**00 02 31.6**	**-0.8**
PLOR	**Plostina**	**1.02**	**43**	P	**Pb**	**00 02 17.5**	**+0.2**
PLOR				*iS*	**Sn**	**00 02 31.6**	**-0.8**
VRI	**Vrincioaia**	**1.07**	**45**	P	**Pg**	**00 02 18.3**	**+0.2**
VRI	**Vrincioaia**	**1.07**	**45**	P	**Pg**	**00 02 18.3**	**+0.2**
VRI				*iS*	**Sb**	**00 02 32.7**	**+0.5**
VRI	**Vrincioaia**	**1.07**	**45**	P	**Pg**	**00 02 18.3**	**+0.2**
VRI				*iS*	**Sb**	**00 02 32.7**	**+0.5**
ODBI	**Odobesti**	**1.19**	**56**	P	**Pg**	**00 02 20.7**	**+0.4**
ODBI	**Odobesti**	**1.19**	**56**	P	**Pg**	**00 02 20.7**	**+0.4**
ODBI	**Odobesti**	**1.19**	**56**	P	**Pg**	**00 02 20.7**	**+0.4**
PETR	**Petresti**	**1.27**	**61**	*iP*	**Pb**	**00 02 21.7**	**+0.2**
PETR	**Petresti**	**1.27**	**61**	*iP*	**Pb**	**00 02 21.7**	**+0.2**
PETR	**Petresti**	**1.27**	**61**	*iP*	**Pb**	**00 02 21.7**	**+0.2**
MDB	**Medias**	**1.36**	**320**	*iP*	**Pg**	**00 02 23.6**	**0.0**
MDB	**Medias**	**1.36**	**320**	*iP*	**Pg**	**00 02 23.6**	**0.0**
MDB				*iS*

BZS	**Buzias**	**2.89 282**	⇑*i*P	**Pn**	**00 02 44.4 +0.9**
BZS	**Buzias**	**2.89 282**	⇑*i*P	**Pn**	**00 02 44.4 +0.9**
KUBS	**Kucevo**	**2.92 258**	*i* Pn	**Pn**	**00 02 41.4 -2.5**
BMR	**Baia Mare**	**2.97 331**	⇑*i*P	**Pn**	**00 02 45.4 +0.8**
BMR	**Baia Mare**	**2.97 331**	⇑*i*P	**Pn**	**00 02 45.4 +0.8**
BMR	**Baia Mare**	**2.97 331**	⇑*i*P	**Pn**	**00 02 45.4 +0.8**
SIRR	**Siria**	**3.03 294**	⇓*i*P	**Pn**	**00 02 46.3 +0.9**
SIRR	**Siria**	**3.03 294**	⇓*i*P	**Pn**	**00 02 46.3 +0.9**
SIRR	**Siria**	**3.03 294**	⇓*i*P	**Pn**	**00 02 46.3 +0.9**
PLD	**Plovdiv**	**3.08 193**	*i* P	**Pn**	**00 02 45.8 -0.4**
RAKU	**Rahkiv**	**3.09 341**	*i* Pn	**Pn**	**00 02 46.4 +0.1**
RAKU			Pnm		00 02 47.3
RAKU			*i* Sn	**Sn**	**00 03 24.4 +1.1**
RAKU			Snm		00 03 27.0
BOVS	**Bovan**	**3.19 244**	*e*Pn	**Pn**	**00 02 46.8 -0.8**
NSLU	**Nyzhne Selyshc**	**3.20 346**	*i* Pn	**Pb**	**00 02 51.7 -2.6**
NSLU			Pnm		00 02 58.7
NSLU			*i* Sn	**Sb**	**00 03 33.1 -0.2**
NSLU			Snm		00 03 34.9
KSV	**Kosov**	**3.23 353**	*i* Pn	**Pn**	**00 02 48.7 +0.5**
KSV			Pnm		00 02 48.8
KSV			*e*Sn	**Sn**	**00 03 28.1 +1.3**
KSV			Snm		00 03 28.9
KSV			Snm		00 03 28.9
EDRB	**Edirne**	**3.36 166**	P	**Pn**	**00 02 49.3 -0.7**
EDRB			S	**Sb**	**00 03 35.1 -2.8**
EDRB	**Edirne**	**3.36 166**	P	**Pn**	**00 02 49.3 -0.7**
KDZ	**Kurdzhali**	**3.46 183**	P	**Pn**	**00 02 51.7 +0.3**
KMPD	**K-Podol'skiy**	**3.50 9**	*i* Pn	**Pn**	**00 02 53.0 +1.1**
KMPD			*i* Sn	**Sn**	**00 03 34.8 +1.5**
KORU	**Korolevo**	**3.51 331**	*e*Pn	**Pn**	**00 02 53.0 +1.0**
KORU			*i* Sn	**Sn**	**00 03 34.8 +1.3**
KORU			Snm		00 03 38.8
TRSU	**Trosnyk**	**3.52 329**	*i* Pn	**Pn**	**00 02 53.0 +0.9**
TRSU			Pnm		00 03 00.6
TRSU			*i* Sn	**Sn**	**00 03 34.4 +0.7**
TRSU			Snm		00 03 44.2
SORM	**Soroca**	**3.55 31**	⇑*i*P	**Pn**	**00 02 51.2 -1.4**
SORM	**Soroca**	**3.55 31**	⇑*i*P	**Pn**	**00 02 51.2 -1.4**
SORM			*i* S	**Sn**	**00 03 32.3 -2.3**
SORM	**Soroca**	**3.55 31**	⇑*i*P	**Pn**	**00 02 51.2 -1.4**
SORM			*i* S	**Sn**	**00 03 32.3 -2.3**
BARS	**Barje**	**3.59 232**	⇓*i*Pn	**Pn**	**00 02 53.1 -0.1**
NDNU	**Novodnistrovsk**	**3.68 18**	*i* Pn	**Pn**	**00 02 55.3 +0.9**
NDNU			Pnm		00 02 55.8
NDNU			*i* Sn	**Sn**	**00 03 39.1 +1.3**
NDNU			Snm		00 03 41.0
STNU	**Starunia**	**3.69 348**	*e*Pn	**Pn**	**00 02 55.3 +0.8**
STNU			*e*Sn	**Sn**	**00 03 38.9 +0.9**
BRIU	**Brid**	**3.70 332**	*e*Pn	**Pn**	**00 02 56.1 +1.4**
BRIU			*i* Sn	**Sn**	**00 03 39.3 +1.0**
BRIU			Snm		00 03 48.1
GRUS	**Gruza**	**3.73 253**	*e*Pn	**Pn**	**00 02 55.3 +0.2**
KKB	**Krupnik**	**3.74 211**	*i* P	**Pn**	**00 02 55.8 +0.5**
SELS	**Selova**	**3.77 241**	*e*Pn	**Pn**	**00 02 53.9 -1.7**
MMB	**Musomiste**	**3.79 202**	*i* P	**Pn**	**00 02 56.6 +0.7**
TRUS	**Trudelj**	**3.84 259**	*e*Pn	**Pn**	**00 02 55.5 -1.2**
MUKU	**Mukachevo**	**3.92 330**	*i* Pn	**Pn**	**00 02 58.9 +1.3**
MUKU			Pnm		00 03 02.7
MUKU			*i* Sn	**Sn**	**00 03 44.9 +1.3**
MUKU			Snm		00 03 48.7
NVR	**Nevrokopi**	**3.98 200**	P	**Pn**	**00 02 58.0 -0.5**
NVR			S	**Sn**	**00 03 48.9 +3.7**
NVR	**Nevrokopi**	**3.98 200**	P	**Pn**	**00 02 58.0 -0.5**
NVR			S	**Sn**	**00 03 48.9 +3.7**
HORU	**Horodok**	**4.14 7**	*i* Pn	**Pn**	**00 03 01.7 +1.0**
HORU			*i* Sn	**Sn**	**00 03 51.3 +2.1**
DIVS	**Divibare**	**4.17 258**	*e*Pn	**Pn**	**00 03 00.0 -1.1**
KAVA	**Kavala**	**4.19 192**	P	**Pn**	**00 03 00.9 -0.6**
KAVA	**Kavala**	**4.19 192**	P	**Pn**	**00 03 00.9 -0.6**
UZH	**Uzhgorod**	**4.21 328**	*e*Pn	**Pn**	**00 03 02.9 +1.3**
UZH			*e*Sn	**Sn**	**00 03 52.1 +1.3**
ALN	**Alexandroupoli**	**4.22 176**	P	**Pn**	**00 03 01.2 -0.6**
ALN	**Alexandroupoli**	**4.22 176**	P	**Pn**	**00 03 01.2 -0.6**
IVAS	**Ivanjica**	**4.23 251**	*e*Pn	**Pn**	**00 03 00.5 -1.5**
SRS	**Serrai**	**4.26 201**	P	**Pn**	**00 03 02.2 -0.3**
SRS	**Serrai**	**4.26 201**	P	**Pn**	**00 03 02.2 -0.3**
TEKS	**Tekeris**	**4.39 265**	*e*Pn	**Pn**	**00 03 03.4 -0.8**
VAY	**Valandovo**	**4.41 212**	*i* Pn	**Pn**	**00 03 05.0 +0.7**
VAY			*i* Sn	**Sg**	**00 04 18.5 -0.3**
VAY	**Valandovo**	**4.41 212**	*i* Pn	**Pn**	**00 03 05.0 +0.7**
STZU	**Stuzhytsa**	**4.42 333**	*e*Pn	**Pn**	**00 03 06.2 +1.6**
STZU			*e*Sn	**Sn**	**00 03 58.0 +1.9**
KNT	**Kendrikon**	**4.43 208**	P	**Pn**	**00 03 04.3 -0.4**
KNT			S	**Sn**	**00 04 00.0 +3.7**
KNT	**Kendrikon**	**4.43 208**	P	**Pn**	**00 03 04.3 -0.4**
KNT			S	**Sn**	**00 04 00.0 +3.7**
CRVS	**Cervenica-Dubn**	**4.75 324**	*e*PN	**Pn**	**00 03 08.9 -0.3**
CRVS			*e*SN	**Sn**	**00 04 01.9 -2.4**
KECS	**Kecovo**	**4.89 315**	*e*Pn	**Pn**	**00 03 11.1 0.0**
KECS			*e*Sn	**Sn**	**00 04 06.6 -1.1**
KECS	**Kecovo**	**4.89 315**	*e*PN	**Pn**	**00 03 11.1 0.0**
KECS			*e*SN	**Sn**	**00 04 06.6 -1.1**
KECS			*e*LG	Lg	00 04 08.0
STHS	**Stebnicka Huta**	**5.25 327**	*e*Pn	**Pn**	**00 03 15.7 -0.3**
STHS			*e*Sn	**Sn**	**00 04 12.4 -4.1**
STHS	**Stebnicka Huta**	**5.25 327**	*e*PN	**Pn**	**00 03 15.7 -0.3**
STHS			*e*SN	**Sn**	**00 04 12.4 -4.1**
STHS			*e*LG	Lg	00 04 16.5
VYHS	**Vyhne**	**5.77 308**	*e*Pn	**Pn**	**00 03 22.4 -0.8**
VYHS	**Vyhne**	**5.77 308**	*e*PN	**Pn**	**00 03 22.4 -0.8**

*ISCJB **19** 00:41:27.2±0.9, 19°.8S±0°.2×175°.9W±0°.1, h222km, mb3.8/7, Error ellipse: s-maj=28.6km s-min=19.4km az=2.9*
*IDC **19** 00:41:38.4±10.0, 19°.72S×176°.27W, h303km±95km, mb3.5/7, mb1 3.8/8, mb1mx3.4/37, mbtmp4.3/8, Error ellipse: s-maj=36.7km s-min=28.4km az=63.0*
ISC 19 00:41:28.3±1.1, 20°.0S±0°.3×175°.9W±0°.2, h222km, n11, σ0s85/10, mb3.8/7, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**16.66**	**260**	P	**Pn**	**00 45 11.1**	**+1.5**
	1.6nm,0.3s,baz=78,slow=20,SNR=11						
CTA	**Charters Tower**	**35.55**	**263**	P	**P**	**00 48 04.5**	**-0.2**
	2.2nm,0.3s,baz=92,slow=9.7,SNR=6.3						
JAY	**Jayapura**	**45.81**	**287**	P	**P**	**00 49 28.9**	**+0.5**
	1.2nm,0.7s,baz=92,slow=23,SNR=6.1						
ASAR	**Alice Springs**	**46.60**	**256**	P	**P**	**00 49 33.9**	**-0.7**
	6.9nm,0.6s,baz=96,slow=8.4,SNR=77						
WRA	**Warramunga Arr**	**46.67**	**261**	P	**P**	**00 49 33.9**	**-1.2**
	1.8nm,0.4s,baz=96,slow=7.5,SNR=80						
VNDA	**Vanda**	**58.62**	**186**	P	P	00 51 06.7	+5.2
	0.9nm,0.4s,baz=0.0,slow=5.1,SNR=3.5						
MJAR	**Matsushiro Arr**	**71.01**	**322**	P	**P**	**00 52 21.6**	**-0.4**
	0.7nm,0.3s,baz=123,slow=4.5,SNR=3.7						
TXAR	**Lajitas Array**	**85.08**	**57**	P	**P**	**00 53 40.1**	**+0.6**
	0.6nm,0.9s,baz=210,slow=8.7,SNR=5.2						
VNA3	**Neumayer Olymp**	**88.52**	**176**	P	**P**	**00 53 55.3**	**0.0**
VNA2	**Neumayer--Watz**	**88.98**	**176**	P	**P**	**00 53 57.5**	**0.0**
	baz=171,slow=2.2						
BRTR	**Keskin Array B**	**147.95**	**314**	PKPbc	**PKPbc**	**01 00 47.4**	**-0.3**
	0.4nm,0.6s,baz=137,slow=1.8,SNR=5.0						

*NIED **19** 00:52:00, 36°.70N×144°.30E, h8km, Mw3.7 Best double couple: M0=4.29000×10^14 NP1:φs=11.00000°, δ27.00000°, λ-95.00000°. NP2:φs=197.00000°, δ63.00000°, λ-87.00000°.*
*IDC **19** 00:52:22.9±3.4, 36°.12N×144°.21E, h0km, mb3.5/2, mb1 3.8/3, mb1mx3.4/38, mbtmp3.6/3, ML3.8/1, MS3.2/1, Ms1 3.4/1, ms1mx2.4/35, Error ellipse: s-maj=90.6km s-min=34.7km az=56.0*
*ISCJB **19** 00:52:23.5±1.1, 36°.69N±0°.06×144°.29E±0°.08, h33km, mb3.6/2, MS3.2/1, Error ellipse: s-maj=9.9km s-min=8.7km az=136.9*
*JMA **19** 00:52:24.3±0.3, 36°.74N×144°.26E, h52km, M3.9*
ISC 19 00:52:24.0±1.7, 36°.74N±0°.07×144°.4E±0°.1, h35km, n21, σ1s30/21, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**2.88**	**284**	P	**Pn**	**00 53 07.5**	**+0.1**
JFK				*e*S	**Sn**	**00 53 40.2**	**-0.7**
ONAJ	**Iwakimizuishiy**	**2.90**	**278**	P	**Pn**	**00 53 08.2**	**+0.5**
ONAJ				*e*S	**Sn**	**00 53 40.4**	**-1.0**
JIO	**Ouri**	**2.96**	**306**	P	**Pn**	**00 53 09.1**	**+0.6**
JIO				S	**Sn**	**00 53 42.0**	**-0.8**
JFT	**Otama**	**3.33**	**285**	P	**Pn**	**00 53 14.8**	**+1.2**
JFT				*e*S	**Sn**	**00 53 51.7**	**-0.3**
JMK	**Ichinoseki**	**3.34**	**312**	P	**Pn**	**00 53 14.2**	**+0.5**
BSO1	**Boso 1**	**3.47**	**234**	P	**Pn**	**00 53 15.2**	**+0.2**
JRY	**Ryogami san**	**4.49**	**262**	P	**Pn**	**00 53 29.8**	**+0.3**
JRY				S	**Sn**	**00 54 19.1**	**-1.4**
JOD2	**Odawara 2**	**4.54**	**253**	P	**Pn**	**00 53 31.2**	**+0.9**
JOD2				*e*S	**Sn**	**00 54 20.8**	**-1.0**
MJAR	**Matsushiro Arr**	**4.97**	**270**	Pn	**Pn**	**00 53 37.4**	**+1.2**
	3.6nm,0.3s,baz=91,slow=15,SNR=26						
MAT	**Matsushiro**	**4.97**	**270**	P	**Pn**	**00 53 37.6**	**+1.4**
MAT				S	**Sn**	**00 54 34.4**	**+1.9**
JOT	**Ohata**	**5.32**	**332**	P	**Pn**	**00 53 42.4**	**+1.6**
JOT				*e*S	**Sn**	**00 54 37.8**	**-3.0**
JKB	**Kayabe**	**5.76**	**334**	P	**Pn**	**00 53 48.7**	**+1.7**
H11N2	**WAKE ISLAND Hy**	**25.98**	**125**	T	T	01 24 43.8	
	baz=316,slow=75,SNR=84						
H11N1	**WAKE ISLAND Hy**	**25.99**	**125**	T	T	01 24 50.4	
	baz=316,slow=75,SNR=48						
H11N3	**WAKE ISLAND Hy**	**26.00**	**125**	T	T	01 24 44.5	
	baz=316,slow=75,SNR=65						
H11S1	**WAKE ISLAND Hy**	**26.73**	**127**	T	T	01 25 40.7	
	baz=318,slow=76,SNR=44						
H11S3	**WAKE ISLAND Hy**	**26.73**	**127**	T	T	01 25 38.4	
	baz=318,slow=76,SNR=46						
H11S2	**WAKE ISLAND Hy**	**26.75**	**127**	T	T	01 25 42.4	
	baz=318,slow=76,SNR=31						
CMAR	**Chiang Mai Arr**	**43.75**	**258**	LR	LR	01 19 59.3	
	comp=Z,26nm,18.3s,baz=125,slow=38						
MKAR	**Makanchi Array**	**46.29**	**303**	P	P	01 00 51.7	+5.6
	0.2nm,0.5s,baz=88,slow=6.5,SNR=3.1						
WRA	**Warramunga Arr**	**57.17**	**191**	P	**P**	**01 02 06.9**	**-0.4**
	0.6nm,0.5s,baz=10,slow=7.3,SNR=6.0						

*NNC **19** 00:55:27.7±1.4, 43°.34N×76°.10E, h0km, mb2.7, mpv2.2, Error ellipse: s-maj=21.1km s-min=4.3km az=148.0*
*SOME **19** 00:55:28.7, 42°.82N×76°.33E, h15km*
*KRNET **19** 00:55:28.6±0.1, 42°.81N×76°.28E, h13km, mb1.9*
ISC 19 00:55:28.0±1.0, 42°.86N±0°.02×76°.27E±0°.02, h9km±9km, n31, σ0s58/58, 32C-4D, Lake Issyk-Kul region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KST	**Kastek**	**0.29**	**310**	*e*P	**Pb**	**00 55 35.1**	**-0.4**
	20nm,0.1s						
KST				*e*S	**Sb**	**00 55 39.6**	**-0.9**
	41nm,0.2s						
MTBS	**Maitube**	**0.30**	**23**	*e*P	**Pg**	**00 55 34.0**	**-0.1**
	15nm,0.2s						
MTBS				*e*S	**Sg**	**00 55 38.1**	**0.0**
	108nm,0.2s						
BOOM	**Boomskoye usch**	**0.44**	**214**	⇑*e*P	**Pg**	**00 55 37.0**	**+0.3**
	baz=218						
BOOM				⇑*e*S	**Sg**	**00 55 42.7**	**+0.2**
	baz=218						
TKM2	**Tokmak 2**	**0.50**	**278**	⇑*i*P	**Pb**	**00 55 38.9**	**-0.2**
	baz=283						
TKM2				⇑*i*S	**Sb**	**00 55 46.2**	**-0.3**
	baz=283						
TKM2	**Tokmak 2**	**0.50**	**278**	⇓P	**Pb**	**00 55 38.9**	**-0.2**
	2.1nm,0.3s						
TKM2				⇑S	**Sb**	**00 55 46.4**	**-0.2**
	24nm,0.3s						
DGS	**Degeres**	**0.53**	**317**	*e*P	**Pb**	**00 55 39.3**	**-0.3**
	10nm,0.2s						
DGS				*e*S	**Sb**	**00 55 47.0**	**-0.4**
	21nm,0.3s						
TNSS	**Tian-Shan**	**0.53**	**69**	*e*P	**Pg**	**00 55 38.4**	**0.0**
	4.7nm,0.1s						
TNSS				*e*S	**Sg**	**00 55 45.4**	**-0.1**
	36nm,0.1s						
ULHL	**Ulahol**	**0.61**	**182**	⇑*i*P	**Pg**	**00 55 39.9**	**0.0**
	baz=184						
ULHL				⇑*i*S	**Sg**	**00 55 47.4**	**-0.5**
	baz=184						
MDOK	**Medeo**	**0.65**	**62**	⇓*i*P	**Pg**	**00 55 40.2**	**-0.5**
	3.5nm,0.7s						
MDOK				⇓*i*S	**Sg**	**00 55 49.0**	**-0.2**
	12nm,0.2s						
KOTS	**Kotyrbulak**	**0.72**	**58**	*e*P	**Pg**	**00 55 42.0**	**-0.1**
KOTS				*e*S	**Sg**	**00 55 51.4**	**-0.1**
KDJ	**Kajisay**	**0.99**	**137**	⇑*i*P	**Pg**	**00 55 46.8**	**-0.3**
	baz=135						
KDJ				⇑*i*S	**Sg**	**00 56 00.0**	**0.0**
	baz=135						
KBK	**Karagaybulak**	**0.99**	**259**	⇑*i*P	**Pn**	**00 55 47.9**	**-0.4**
	baz=262						
KBK				⇑*i*S	**Sn**	**00 56 01.7**	**-0.8**
	baz=262						
KUU	**Kurty**	**1.04**	**3**	⇑*i*P	**Pg**	**00 55 47.9**	**-0.1**
	4.4nm,0.2s						
KUU				⇑*i*S	**Sb**	**00 56 01.8**	**-0.1**
	41nm,0.2s						
KZA	**Kyzart**	**1.08**	**224**	⇑*i*P	**Pn**	**00 55 49.4**	**-0.4**
	baz=227						
KZA				⇑*i*S	**Sn**	**00 56 04.5**	**-0.6**
	baz=227						
CHMS	**Chumysh**	**1.12**	**278**	⇑*i*P	**Pn**	**00 55 50.4**	**+0.4**
	baz=280						
CHMS				⇑*i*S	**Sn**	**00 56 06.4**	**+0.8**
	baz=280						
CHKK	**Chushkaly**	**1.15**	**28**	*e*P	**Pb**	**00 55 49.5**	**-0.5**
	4.8nm,0.1s						
CHKK				*e*S	**Sb**	**00 56 04.5**	**-0.5**
	19nm,0.3s						
AAK	**Ala-Archa**	**1.32**	**261**	⇑*i*P	**Pg**	**00 55 53.3**	**-0.2**
	baz=263						
AAK				⇑*i*S	**Sg**	**00 56 11.6**	**+0.9**
	baz=263						
USP	**Ospenovka**	**1.36**	**288**	⇑*i*P	**Pg**	**00 55 54.0**	**-0.1**
	baz=290						
USP				⇑*i*S	**Sg**	**00 56 13.3**	**+1.5**
	baz=290						
NRN	**Naryn**	**1.44**	**188**	⇑*i*P	**Pg**	**00 55 55.6**	**0.0**
	baz=189						
NRN				⇑*i*S	**Sg**	**00 56 14.1**	**-0.2**
	baz=189						
UCH	**Uchtor**	**1.44**	**245**	⇑*i*P	**Pg**	**00 55 56.1**	**+0.4**
	baz=247						
UCH				⇑*i*S	**Sg**	**00 56 15.9**	**+1.5**
	baz=247						
SATY	**Saty**	**1.58**	**82**	*e*P	**Pb**	**00 55 57.3**	**-0.3**
	3.9nm,0.1s						
SATY				*e*S	**Sb**	**00 56 17.6**	**-0.1**
	30nm,0.1s						
ARXS	**Arharly**	**1.77**	**39**	*e*P	**Pb**	**00 56 00.2**	**-0.5**
	3.4nm,0.2s						
ARXS				*e*S	**Sb**	**00 56 22.7**	**-0.3**
	17nm,0.5s						
EKS2	**Erkin-Say**	**1.84**	**265**	⇑*i*P	**Pg**	**00 56 02.9**	**-0.5**
	baz=267						
EKS2				⇑*i*S	**Sg**	**00 56 27.3**	**0.0**
	baz=267						
KPKS	**Kokpek**	**1.87**	**70**	*e*P	**Pb**	**00 56 02.1**	**-0.3**
	5.8nm,0.1s						
KPKS				*e*S	**Sb**	**00 56 26.1**	**+0.2**
	19nm,0.3s						
MNBS	**Baschi**	**1.98**	**51**	*e*P	**Pb**	**00 56 03.7**	**-0.5**
	0.7nm,0.4s						
MNBS				*e*S	**Sb**	**00 56 28.9**	**-0.1**
	17nm,0.6s						
UZB	**Uzynbulak**	**2.04**	**81**	*e*P	**Pb**	**00 56 04.9**	**-0.4**
	1.9nm,0.2s						
UZB				*e*S	**Sb**	**00 56 30.8**	**-0.1**
	10nm,0.2s						
PDGK	**Podgornoye**	**2.40**	**78**	⇑*i*P	**Pb**	**00 56 11.1**	**-0.3**
	baz=76						
PDGK				⇑*i*S	**Sb**	**00 56 42.8**	**+1.7**
	baz=76						
PDGK	**Podgornoye**	**2.40**	**78**	⇑Pn	**Pn**	**00 56 09.1**	**+1.6**
	0.6nm,0.3s						
PDGK				⇑Sn	**Sb**	**00 56 41.1**	**-0.1**
	5.6nm,0.7s						
MNAS	**Manas**	**2.80**	**264**	⇓Lg	Lg	00 56 54.8	
	0.8nm,0.5s						
KAPS	**Kapalarasan**	**3.29**	**41**	*e*P	**Pb**	**00 56 26.3**	**-0.3**
	0.4nm,0.2s						
KAPS				*e*S	**Sb**	**00 57 07.7**	**+0.8**
	2.4nm,0.5s						
KK31	**Karatay Array**	**4.23**	**275**	⇑Lg	Lg	00 57 39.0	
	0.6nm,0.5s,baz=82,slow=28,SNR=4.0						

IDC 19 01:06:39.9±1.5, 3°.78S×123°.28E, h0km, mb3.6/3, mb1 3.7/5, mb1mx3.5/28, mbtmp3.6/5, ML3.4/2, Error ellipse: s-maj=47.4km s-min=23.1km az=54.0, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAPI	**Kappang**	**3.72**	**251**	Pn	Pn	01 07 38.2	-0.4
	9.6nm,0.3s,baz=113,slow=14,SNR=38						
KAPI				Sn	Sn	01 08 20.6	-2.7
	6.5nm,0.3s,baz=82,slow=21,SNR=5.6						
WRA	**Warramunga Arr**	**19.35**	**147**	P	P	01 11 06.9	-0.3
	0.1nm,0.3s,baz=320,slow=12,SNR=4.5						
ASAR	**Alice Springs**	**22.28**	**154**	P	P	01 11 39.3	+0.4
	0.7nm,0.8s,baz=334,slow=12,SNR=8.2						
CMAR	**Chiang Mai Arr**	**32.60**	**313**	P	P	01 13 14.2	+0.7
	0.5nm,0.4s,baz=135,slow=7.5,SNR=4.8						
ZALV	**Zalesovo Beam**	**65.85**	**336**	P	P	01 17 26.6	-0.6
	0.4nm,0.3s,baz=142,slow=5.4,SNR=3.7						

*JMA **19** 01:18:01.9±0.1, 24°.03N×122°.51E, h61km±3km, M2.3*
*TAP **19** 01:18:02.9, 24°.03N×122°.53E, h30km, ML2.9, D*
ISC 19 01:18:00.4±1.2, 24°.00N±0°.04×122°.53E±0°.02, h16km±10km, n32, σ0s59/62, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JYNG	**Yonagunijimaku**	**0.58**	**40**	P	**Pn**	**01 18 14.9**	**+0.8**
JYNG				S	**Sn**	**01 18 24.1**	**+0.8**
ENA	**Nanau**	**0.84**	**300**	P	**Pn**	**01 18 18.1**	**+0.6**
	baz=298						
ENA				S	**Sn**	**01 18 29.4**	**-0.2**
	baz=298						
TWD	**Chiawan**	**0.86**	**275**	*i* P	**Pn**	**01 18 18.3**	**+0.4**
	baz=273						
TWD				*e*S	**Sn**	**01 18 29.4**	**-0.7**
	baz=273						
TWC	**Suao**	**0.87**	**314**	*i* P	**Pn**	**01 18 18.2**	**+0.3**
	baz=313						
TWC				S	**Sn**	**01 18 29.9**	**-0.4**
	baz=313						
TWE	**Neicheng**	**1.06**	**312**	*e*P	**Pg**	**01 18 21.1**	**+0.1**
	baz=311						
TWE				*e*S	**Sg**	**01 18 34.3**	**-0.7**
	baz=311						
ENTT	**Nioudou**	**1.08**	**306**	*i* P	**Pg**	**01 18 21.9**	**+0.5**
	baz=304						
ENTT				S	**Sn**	**01 18 35.3**	**-0.4**
	baz=304						
IRIF	**Iriomote-Funau**	**1.14**	**73**	P	**Pb**	**01 18 22.2**	**+0.4**
IRIF				S	**Sb**	**01 18 36.7**	**+0.3**
NNS	**Nan Shan**	**1.14**	**293**	*e*P	**Pg**	**01 18 22.5**	**0.0**
	baz=290						
NNS				*i* S	**Sn**	**01 18 37.0**	**-0.4**
	baz=290						
HATJ	**Hateruma jima**	**1.17**	**87**	P	**Pg**	**01 18 23.1**	**+0.2**
WHF	**Hehuan Shan**	**1.17**	**277**	P	**Pg**	**01 18 22.9**	**-0.1**
	baz=275						
WHF				S	**Sn**	**01 18 37.9**	**-0.4**
	baz=275						
EHY	**Hungye**	**1.21**	**246**	*e*P	**Pb**	**01 18 23.2**	**+0.2**
	baz=244						
EHY				*e*S	**Sn**	**01 18 39.3**	**+0.4**
	baz=244						
NSK	**Sanguang**	**1.26**	**302**	P	**Pb**	**01 18 24.1**	**+0.2**
	baz=300						
NSK				*e*S	**Sb**	**01 18 39.2**	**-0.7**
	baz=300						
TWT	**Tachien**	**1.26**	**282**	*e*P	**Pg**	**01 18 24.8**	**0.0**
	baz=279						
TWT				S	**Sn**	**01 18 40.3**	**0.0**
	baz=279						
TWF1	**Yuli**	**1.30**	**240**	*e*P	**Pb**	**01 18 24.9**	**+0.3**
	baz=238						
TWF1				*e*S	**Sb**	**01 18 41.6**	**+0.5**
	baz=238						
WDT	**Danda**	**1.30**	**259**	P	**Pb**	**01 18 25.0**	**+0.3**
	baz=257						
WDT				S	**Sb**	**01 18 41.4**	**+0.1**
	baz=257						
JKRS	**Kuro-shima**	**1.37**	**80**	P	**Pb**	**01 18 26.0**	**+0.3**
JKRS				S	**Sb**	**01 18 43.6**	**+0.6**
CHKT	**Chengkung**	**1.40**	**230**	P	**Pb**	**01 18 26.7**	**+0.6**
	baz=228						
CHKT				*e*S	**Sn**	**01 18 41.9**	**-1.5**
	baz=228						
SMLT	**Sun Moon Lake**	**1.50**	**266**	P	**Pb**	**01 18 27.8**	**-0.2**
	baz=264						
SMLT				*e*S	**Sn**	**01 18 45.8**	**-0.3**
	baz=264						
JIJ	**Ishigaki jima**	**1.52**	**76**	P	**Pn**	**01 18 27.1**	**+0.2**
JIJ				S	**Sn**	**01 18 45.2**	**-1.1**
NSTT	**Nanjuang**	**1.53**	**294**	*e*P	**Pb**	**01 18 28.6**	**+0.2**
	baz=293						
NSTT				*e*S	**Sn**	**01 18 46.4**	**-0.3**
	baz=293						
TYC	**Yuchr**	**1.54**	**267**	*e*P	**Pb**	**01 18 28.8**	**+0.3**
	baz=265						
TYC				S	**Sn**	**01 18 46.8**	**+0.1**
	baz=265						
YUS	**Yu-Shan**	**1.54**	**251**	P	**Pb**	**01 18 28.6**	**-0.2**
	baz=249						
YUS				S	**Sn**	**01 18 47.4**	**-0.1**
	baz=249						
ELDTW	**Lidau**	**1.61**	**240**	*e*P	**Pn**	**01 18 28.3**	**0.0**
	baz=238						
ELDTW				*e*S	**Sn**	**01 18 48.2**	**-0.6**
	baz=238						
TWQ1	**Liyutan**	**1.64**	**282**	P	**Pb**	**01 18 30.1**	**-0.3**
	baz=281						
TWQ1				*e*S	**Sn**	**01 18 49.4**	**-0.1**
	baz=281						
ALS	**Alishan**	**1.66**	**253**	*e*P	**Pb**	**01 18 30.9**	**+0.1**
	baz=251						
ALS				*e*S	**Sn**	**01 18 50.5**	**+0.2**
	baz=251						
JISG	**Ishigakijimahi**	**1.72**	**70**	P	**Pn**	**01 18 29.7**	**-0.1**
JISG				S	**Sn**	**01

MOAB				eS	Sg	01 19 53.5	-0.5
MOAB				AML	AML	01 19 55.4	
	comp=Z,62nm,0.1s						
TLEK	**Tau Lekoa**	**1.51**	**204**	eP	**Pn**	**01 19 34.8**	**+1.0**
TLEK				eS	**Sg**	**01 19 54.4**	**-0.2**
TLEK				AML	AML	01 19 56.0	
	comp=Z,112nm,0.2s						
SWZ	**Schweizer**	**2.42**	**228**	eP	**Pn**	**01 19 46.8**	**+0.4**
SWZ				eS	**Sn**	**01 20 17.6**	**+1.2**
SWZ				AML	AML	01 20 29.7	
	comp=Z,80nm,0.4s						
SEK	**Senekal**	**2.74**	**175**	eP	**Pn**	**01 19 52.9**	**+2.0**
SEK				eS	**Sn**	**01 20 25.2**	**+0.9**
SEK				AML	AML	01 20 38.4	
	comp=Z,52nm,0.6s						
BOSA	**Boshof**	**3.55**	**211**	i P	**Pn**	**01 20 03.9**	**+1.9**
BOSA				i S	**Sb**	**01 20 50.5**	**-2.5**
MSNA	**Messina**	**4.04**	**38**	eP	**Pn**	**01 20 08.6**	**0.0**
MSNA				eS	**Sn**	**01 20 54.4**	**-2.0**
MSNA				AML	AML	01 21 20.3	
	comp=Z,9.8nm,0.4s						
POGA	**Pongola**	**4.21**	**116**	eP	**Pn**	**01 20 12.5**	**+1.7**
POGA				eS	**Sn**	**01 21 01.6**	**+1.2**
POGA				AML	AML	01 21 26.7	
	comp=Z,22nm,0.7s						
MATP	**Matopo**	**5.24**	**12**	i P	**Pn**	**01 20 27.4**	**+2.2**
MATP				i S	**Sn**	**01 21 27.9**	**+1.9**
KSD	**Kokstad**	**5.26**	**160**	eP	**Pn**	**01 20 27.4**	**+1.9**
KSD				eS	**Sn**	**01 21 24.4**	**-2.1**
KSD				AML	AML	01 22 00.3	
	comp=Z,3.0nm,0.8s						
BLWY	**Bulawayo**	**5.54**	**12**	i P	**Pn**	**01 20 30.8**	**+1.4**
BLWY				i S	**Sn**	**01 21 35.1**	**+1.7**
KEIM	**Keimoes**	**6.49**	**240**	eP	**Pn**	**01 20 44.1**	**+1.8**
KEIM				eS	**Sn**	**01 21 53.7**	**-3.0**
KEIM				AML	AML	01 22 01.2	
	comp=Z,4.6nm,0.7s						

IDC 19 01:23:38.1±6.1, 7°18S×147°97E, h99km±51km, mb3.6/2, mb1 3.5/4, mb1mx3.2/32, mbtmp3.7/4, Error ellipse: s-maj=87.0km s-min=51.3km az=126.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.35**	**200**	P	Pn	01 24 15.7	+0.5
	2.8nm,0.3s,baz=3.7,slow=12,SNR=8.0						
PMG				S	Sn	01 24 44.3	+0.6
	24nm,0.3s,baz=346,slow=11,SNR=12						
WRA	**Warramunga Arr**	**18.32**	**225**	P	P	01 27 44.9	+0.1
	0.1nm,0.3s,baz=52,slow=11,SNR=6.6						
ASAR	**Alice Springs**	**21.24**	**218**	P	P	01 28 17.1	+0.8
	0.9nm,0.4s,baz=51,slow=9.2,SNR=14						
FITZ	**Fitzroy Crossi**	**24.31**	**241**	P	P	01 28 46.2	-0.4
	5.8nm,0.9s,baz=55,slow=9.0,SNR=25						
TORD	**Torodi Ar. Bea**	**146.30**	**283**	PKPbc	PKPdf	01 43 07.4	+0.3
	0.3nm,0.7s,baz=62,slow=3.8,SNR=6.9						

IDC 19 01:23:51.8±3.2, 6°91S×148°44E, h0km, mb3.8/2, mb1 3.9/3, mb1mx3.5/32, mbtmp3.7/3, MLL3.7/1, Error ellipse: s-maj=101.5km s-min=43.6km az=121.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**18.84**	**225**	P	P	01 28 13.7	+0.2
	0.3nm,0.3s,baz=52,slow=11,SNR=8.0						
ASAR	**Alice Springs**	**21.73**	**218**	P	P	01 28 45.5	+0.5
	1.1nm,0.5s,baz=53,slow=9.3,SNR=3.5						
FITZ	**Fitzroy Crossi**	**24.84**	**241**	P	P	01 29 15.1	-1.1
	1.9nm,0.4s,baz=54,slow=9.3,SNR=9.7						
TORD	**Torodi Ar. Bea**	**146.69**	**283**	PKPbc	PKPbc	01 43 36.5	-0.2
	0.3nm,0.3s,baz=73,slow=3.0,SNR=12						

*ISCJB **19** 01:24:40.8±1.6, 32°55S±0°08×70°19W±0°09, h113km±17km, Error ellipse: s-maj=15.0km s-min=11.1km az=141.6*
*SJA **19** 01:24:41.7±0.7, 32°47S×70°20W, h90km±11km, ML2.9, MW3.4*
*GUC **19** 01:24:41.7±0.4, 32°43S×70°23W, h97km±10km, ML3.2*
ISC 19 01:24:41.5±2.3, 32°54S±0°08×70°19W±0°08, h107km±20km, n17, σ0°60/21, 1C-1D, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PEL	**Peldehue**	**0.73**	**215**	eP	**Pn**	**01 24 59.6**	**-0.3**
PEL				eS	**Sn**	**01 25 13.2**	**-0.6**
PEL				IAML		01 25 14.0	
	comp=E,757nm,0.6s						
AUSP	**Uspallata**	**0.75**	**65**	eP	**Pn**	**01 25 00.0**	**-0.3**
ROCH	**El Roble**	**0.82**	**238**	eP	**Pn**	**01 25 00.6**	**-0.3**
ROCH				eS	**Sn**	**01 25 15.3**	**-0.2**
ROCH				IAML		01 25 16.3	
	comp=E,580nm,0.5s						
ROC1	**El Roble**	**0.82**	**238**	eP	**Pn**	**01 25 00.8**	**-0.1**
ROC1				eS	**Sn**	**01 25 15.2**	**-0.4**
CLCH	**Cerro Calan**	**0.90**	**199**	eP	**Pn**	**01 25 01.7**	**+0.1**
CLCH				eS	**Sn**	**01 25 17.1**	**+0.4**
CLCH				IAML		01 25 18.2	
	comp=E,678nm,0.6s						
RTLS	**Leoncito**	**1.06**	**46**	eP	**Pn**	**01 25 03.4**	**0.0**
ANTU	**Antumapu**	**1.09**	**200**	eP	**Pn**	**01 25 04.0**	**+0.5**
ANTU				eS	**Sn**	**01 25 20.6**	**+0.5**
ANTU				IAML		01 25 21.5	
	comp=N,1μm,0.3s						
ARCO	**CERRO ARCO**	**1.10**	**106**	eP	**Pn**	**01 25 04.3**	**+0.6**
ARCO				IAML		01 25 24.7	
	comp=Z,253nm,0.5s						
ASAL	**Salagasta**	**1.14**	**93**	eP	**Pn**	**01 25 04.5**	**+0.4**
AAGR	**Agrelo**	**1.27**	**116**	eP	**Pn**	**01 25 06.4**	**+0.9**
RTCV	**Cerro Valdivia**	**1.55**	**65**	eP	**Pn**	**01 25 08.7**	**-0.1**
RTLL	**Cerro Villicun**	**1.89**	**51**	eP	**Pn**	**01 25 12.9**	**-0.1**
AMOG	**MOGNA**	**2.15**	**43**	eP	**Pn**	**01 25 16.5**	**+0.1**
ACAN	**Cantantal**	**2.55**	**85**	eP	**Pn**	**01 25 21.3**	**-0.2**
AGUA	**GUANDACOL**	**3.38**	**26**	eP	**Pn**	**01 25 33.6**	**+1.1**
MRA	**San Martin**	**3.78**	**89**	eP	**Pn**	**01 25 36.5**	**-1.5**
MRA				IAML		01 26 49.1	
	comp=Z,14nm,0.6s						
VCA	**Vinchina**	**4.16**	**25**	IAML		01 26 35.9	
	comp=Z,18nm,0.3s						

IDC 19 01:25:26.8±2.2, 2°43S×127°56E, h0km, mb3.2/2, mb1 3.4/3, mb1mx3.2/37, mbtmp3.2/3, MLL3.5/1, Error ellipse: s-maj=196.6km s-min=26.0km az=67.0, Ceram Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**18.63**	**160**	P	P	01 29 45.2	-0.9
	0.2nm,0.3s,baz=341,slow=12,SNR=5.2						
ASAR	**Alice Springs**	**21.99**	**164**	P	P	01 30 23.4	+0.7
	0.6nm,0.7s,baz=349,slow=12,SNR=3.8						
MKAR	**Makanchi Array**	**63.09**	**327**	P	P	01 35 56.1	-0.1
	0.3nm,0.7s,baz=132,slow=6.4,SNR=2.8						

*DDA **19** 01:25:51.9, 36°28N×28°67E, h7km, Md3.0*
*ISK **19** 01:25:52.1, 36°34N×28°70E, h5km, MD2.5*
*CSEM **19** 01:25:52.4±0.3, 36°31N×28°72E, h2km, MD2.5, Error ellipse: s-maj=5.9km s-min=4.0km az=4.0*
ISC 19 01:25:52.2±1.3, 36°30N±0°04×28°71E±0°03, h3km±10km, n27, σ0°52/47, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FETY	**Fethiye**	**0.45**	**42**	ePG	**Pg**	**01 26 00.7**	**-0.2**
FETY				eSG	**Sg**	**01 26 07.7**	**+1.0**
FETY	**Fethiye**	**0.45**	**42**	ePg	**Pg**	**01 26 00.7**	**-0.2**
FETY				eSg	**Sg**	**01 26 07.7**	**+1.0**
DALY	**Dalyan (Mu¨la**	**0.52**	**355**	ePG	**Pg**	**01 26 02.1**	**-0.1**
DALY				eSG	**Sg**	**01 26 09.1**	**+0.2**
DALY	**Dalyan (Mu¨la**	**0.52**	**355**	ePg	**Pg**	**01 26 02.1**	**-0.1**
DALY				eSg	**Sg**	**01 26 09.1**	**+0.2**
TURN	**Turunc**	**0.58**	**351**	i P	**Pg**	**01 26 02.8**	**-0.5**
TURN				i S	**Sb**	**01 26 12.9**	**-0.7**
AKAS	**Kas**	**0.72**	**95**	P	**Pb**	**01 26 07.0**	**-0.6**
AKAS	**Kas**	**0.72**	**95**	i P	**Pb**	**01 26 07.0**	**-0.6**
AKAS				i S	**Sn**	**01 26 21.2**	**0.0**
YER	**Yerkesik**	**0.90**	**338**	ePG	**Pg**	**01 26 08.8**	**-0.7**
YER	**Yerkesik**	**0.90**	**338**	ePg	**Pg**	**01 26 08.8**	**-0.7**
ELL	**Elmali**	**1.06**	**65**	ePG	**Pg**	**01 26 12.3**	**-0.3**
ELL	**Elmali**	**1.06**	**65**	ePg	**Pg**	**01 26 12.3**	**-0.3**
GOLH	**Golhisar**	**1.16**	**36**	P	**Pg**	**01 26 13.6**	**-0.8**
GOLH				S	**Sn**	**01 26 32.5**	**+0.7**
GOLH	**Golhisar**	**1.16**	**36**	i P	**Pg**	**01 26 13.6**	**-0.8**
GOLH				i S	**Sn**	**01 26 32.5**	**+0.7**
BDRM	**Kayabasi**	**1.27**	**307**	P	**Pg**	**01 26 16.5**	**-0.2**
BDRM				S	**Sn**	**01 26 34.7**	**+0.2**
BDRM	**Kayabasi**	**1.27**	**307**	i P	**Pg**	**01 26 16.5**	**-0.2**
BDRM				i S	**Sn**	**01 26 34.7**	**+0.2**
BODT	**Bodrum**	**1.36**	**304**	ePN	**Pn**	**01 26 17.7**	**-0.4**
BODT				eSN	**Sb**	**01 26 36.4**	**+0.3**
BODT	**Bodrum**	**1.36**	**304**	ePn	**Pn**	**01 26 17.7**	**-0.4**
BODT				eSn	**Sb**	**01 26 36.4**	**+0.3**
DNZL	**Cakiroluk**	**1.41**	**11**	P	**Pb**	**01 26 19.4**	**0.0**
DNZL				S	**Sn**	**01 26 39.2**	**+1.0**
DNZL	**Cakiroluk**	**1.41**	**11**	i P	**Pb**	**01 26 19.4**	**0.0**
DNZL				i S	**Sn**	**01 26 39.2**	**+1.0**
KARP	**Karpathos**	**1.47**	**240**	ePN	**Pg**	**01 26 20.4**	**+0.1**
KARP	**Karpathos**	**1.47**	**240**	ePn	**Pg**	**01 26 20.4**	**+0.1**
AYDN	**Tasoluk**	**1.51**	**334**	P	**Pn**	**01 26 20.3**	**0.0**
AYDN				S	**Sg**	**01 26 41.7**	**+0.8**
AYDN	**Tasoluk**	**1.51**	**334**	i P	**Pn**	**01 26 20.3**	**0.0**
AYDN				i S	**Sg**	**01 26 41.7**	**+0.8**
AYDB	**Zeytinkoy-Aydi**	**1.77**	**338**	PN	**Pn**	**01 26 23.9**	**+0.1**
AYDB				eSN	**Sn**	**01 26 46.6**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**1.77**	**338**	i Pn	**Pn**	**01 26 24.0**	**+0.1**
AYDB				eSn	**Sn**	**01 26 46.6**	**-0.3**
GCAM	**G?zelcaml?**	**1.83**	**320**	P	**Pb**	**01 26 25.9**	**-0.5**
GCAM				S	**Sb**	**01 26 49.5**	**-0.2**
GCAM	**G?zelcaml?**	**1.83**	**320**	i P	**Pb**	**01 26 25.9**	**-0.5**
GCAM				i S	**Sb**	**01 26 49.5**	**-0.2**

*NIED **19** 01:33:00, 37°10N×143°50E, h5km, Mw4.1 Best double couple: M0:1.49000×10^15 NP1:φs31.00000°, δ20.00000°, λ-76.00000°. NP2:φs196.00000°, δ71.00000°, λ-95.00000°.*
*IDC **19** 01:33:38.6±0.6, 36°97N×143°65E, h0km, mb4.1/16, mb1 4.3/21, mb1mx4.1/38, mbtmp4.1/21, MLL8.4/, MS3.0/4, Ms1 3.0/4, ms1mx2.6/38, Error ellipse: s-maj=16.2km s-min=14.8km az=128.0*
*NEIC **19** 01:33:39.8±0.4, 36°96N×143°64E, h10km, mb4.4/3, Error ellipse: s-maj=8.6km s-min=7.0km az=122.0*
*ISCJB **19** 01:33:41.7±0.4, 37°08N±0°03×143°44E±0°04, h33km, mb4.1/20, MS3.3/2, Error ellipse: s-maj=5.3km s-min=4.1km az=151.0*
*JMA **19** 01:33:41.5±0.2, 37°10N×143°45E, h52km, M4.1*
ISC 19 01:33:44.1±0.6, 37°10N±0°05×143°49E±0°06, h35km, n48, σ1°51/56, mb4.1/20, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**2.10**	**278**	P	**Pn**	**01 34 14.8**	**-2.0**
JFK				eS	**Sn**	**01 34 39.4**	**-2.3**
ONAJ	**Iwakimizuishiy**	**2.15**	**271**	P	**Pn**	**01 34 15.3**	**-2.2**
JIO	**Ouri**	**2.16**	**309**	P	**Pn**	**01 34 15.9**	**-1.7**
JIO				eS	**Sn**	**01 34 40.7**	**-2.5**
JMM	**Marumori**	**2.27**	**290**	P	**Pn**	**01 34 17.3**	**-1.8**
JMM				eS	**Sn**	**01 34 43.8**	**-2.1**
JFT	**Otama**	**2.54**	**280**	P	**Pn**	**01 34 21.9**	**-1.0**
JFT				eS	**Sn**	**01 34 51.5**	**-1.1**
JMK	**Ichinoseki**	**2.57**	**317**	P	**Pn**	**01 34 21.4**	**-1.8**
JOM	**Ohasama**	**2.93**	**325**	P	**Pn**	**01 34 26.4**	**-1.7**
JOM				S	**Sn**	**01 35 00.2**	**-1.9**
JYK	**Kaneyama**	**3.06**	**307**	P	**Pn**	**01 34 28.7**	**-1.3**
BSO1	**Boso 1**	**3.18**	**221**	P	**Pn**	**01 34 29.6**	**-1.5**
BSO1				S	**Sn**	**01 35 06.1**	**-1.5**
JAG	**Ashikaga**	**3.31**	**259**	P	**Pn**	**01 34 31.8**	**-1.6**
JAG				eS	**Sn**	**01 35 08.6**	**-2.8**
JANG	**Nango**	**3.61**	**335**	P	**Pn**	**01 34 35.7**	**-1.8**
JANG				S	Sn	01 35 15.3	-3.6
JAW	**Awa shima**	**3.62**	**293**	P	**Pn**	**01 34 37.7**	**+0.1**
JRY	**Ryogami san**	**3.85**	**255**	P	**Pn**	**01 34 39.1**	**-1.7**
JRY				S	**Sn**	**01 35 22.2**	**-2.6**
JOD2	**Odawara 2**	**4.00**	**244**	P	**Pn**	**01 34 41.0**	**-1.9**
JOD2				S	**Sn**	**01 35 27.3**	**-1.3**
MJAR	**Matsushiro Arr**	**4.27**	**264**	Pn	**Pn**	**01 34 46.4**	**-0.2**
	9.3nm,0.3s,baz=76,slow=11,SNR=92						
MJAR				LR	LR	01 37 10.7	
	comp=Z,53nm,19.1s,baz=105,slow=49						
MAJO	**Matsushiro**	**4.27**	**264**	ePn	**Pn**	**01 34 46.2**	**-0.4**
MAJO				eS	**Sn**	**01 35 36.1**	**+0.8**
MAT	**Matsushiro**	**4.27**	**264**	P	**Pn**	**01 34 46.2**	**-0.4**
MAT				S	**Sn**	**01 35 34.6**	**-0.6**
ERM	**Erimo**	**4.91**	**357**	ePn	**Pn**	**01 34 53.9**	**-1.5**
ERM				eS	**Sn**	**01 35 47.5**	**-3.5**
ASAJ	**Asahikawa**	**7.04**	**355**	Pn	**Pn**	**01 35 23.2**	**-1.4**
	2.7nm,0.3s,baz=245,slow=16,SNR=6.3						
ASAJ				Sn	Sn	01 36 36.3	-7.0
	baz=233,slow=20,SNR=3.5						
ASAJ	**Asahikawa**	**7.04**	**355**	ePn	**Pn**	**01 35 23.2**	**-1.4**
	4.4nm,0.6s						
ASAJ				eS	Sn	01 36 37.8	-5.5
CBIJ	**Chichi jima**	**10.04**	**187**	ePn	Pn	01 36 00.1	-5.7
CBIJ				eS	Sn	01 37 38.0	-19
JCJ	**Chichijima**	**10.04**	**187**	Pn	Pn	01 35 59.4	-6.4
	4.9nm,0.3s,baz=276,slow=22,SNR=10						
JCJ				Sn	Sn	01 37 44.4	-13
	baz=184,slow=19						
JNU	**Nakatsue**	**11.06**	**253**	Pn	**Pn**	**01 36 19.0**	**-0.8**
	0.4nm,0.3s,baz=69,slow=12,SNR=4.6						
USRK	**Ussuriysk Ar.**	**11.24**	**313**	Pn	**Pn**	**01 36 22.9**	**+0.7**
	0.3nm,0.3s,baz=138,slow=13,SNR=8.5						
KSRS	**Korea Array**	**12.40**	**276**	Pn	**Pn**	**01 36 40.0**	**+1.9**
	0.2nm,0.3s,baz=89,slow=14,SNR=10.0						
KSRS				LR	LR	01 40 54.1	
	comp=Z,68nm,20.9s,baz=73,slow=35						
KSAR	**Wonju Array Be**	**12.44**	**276**	Pn	**Pn**	**01 36 40.0**	**+1.5**
KLR	**Kul'dur**	**14.82**	**329**	Pn	Pn	01 37 08.0	-2.9
	0.3nm,0.3s,baz=129,slow=12,SNR=24						
SEY	**Seymchan**	**26.43**	**9**	P	**P**	**01 39 18.0**	**+0.8**
	1.3nm,0.5s,baz=196,slow=4.7,SNR=6.2						
SONM	**Songino Array**	**29.12**	**303**	P	**P**	**01 39 44.1**	**+2.4**
	3.1nm,0.7s,baz=95,slow=8.8,SNR=13						
ZALV	**Zalesovo Beam**	**43.09**	**312**	P	**P**	**01 41 41.4**	**+0.9**
	1.0nm,0.6s,baz=94,slow=6.5,SNR=4.5						
ZALV				LR	LR	01 59 35.9	
	comp=Z,16nm,20.8s,baz=70,slow=36						
MKAR	**Makanchi Array**	**45.48**	**302**	P	**P**	**01 42 00.6**	**+0.8**
	1.7nm,0.6s,baz=87,slow=7.8,SNR=9.0						
KURK	**Kurchatov**	**47.19**	**308**	eP	**P**	**01 42 13.4**	**+0.3**
	10.0nm,0.5s						
ILAR	**Eielson Array**	**48.55**	**32**	P	**P**	**01 42 23.2**	**-0.3**
	0.7nm,0.8s,baz=262,slow=7.0,SNR=8.5						
TKM2	**Tokmak 2**	**51.05**	**299**	eP	P	01 42 49.9	+6.9
	4.4nm,0.7s						
INK	**Inuvik**	**53.57**	**27**	P	**P**	**01 43 01.4**	**+0.4**
	0.4nm,0.5s,baz=270,slow=5.1,SNR=3.3						
WRAB	**Tennant Creek**	**57.38**	**190**	eP	**P**	**01 43 27.6**	**-1.4**
	6.4nm,0.6s						
WRA	**Warramunga Arr**	**57.39**	**190**	P	**P**	**01 43 27.7**	**-1.3**
	8.3nm,0.6s,baz=7.5,slow=7.1,SNR=104						
ABKAR	**Akbulak array**	**59.16**	**311**	eP	**P**	**01 43 41.1**	**-0.1**
	0.5nm,0.5s						
ASAR	**Alice Springs**	**61.12**	**190**	P	**P**	**01 43 53.9**	**-0.9**
	3.7nm,0.7s,baz=8.3,slow=7.8,SNR=32						
YKA	**Yellowknife Ar**	**62.91**	**31**	P	**P**	**01 44 06.6**	**+0.2**
	0.4nm,0.7s,baz=301,slow=7.0,SNR=5.9						
GEYT	**Alibeck**	**65.24**	**300**	P	**P**	**01 44 23.2**	**+1.0**
	0.7nm,0.4s,baz=110,slow=7.8,SNR=3.3						
STKA	**Stephens Creek**	**68.65**	**182**	P	**P**	**01 44 42.8**	**-0.8**
	1.5nm,0.5s,baz=2.1,slow=9.8,SNR=3.4						
FINES	**FINESS Array B**	**69.52**	**333**	P	**P**	**01 44 49.0**	**+0.3**
	2.1nm,0.8s,baz=88,slow=4.6,SNR=4.4						
FINES				LR	LR	02 16 52.9	
	comp=Z,49nm,19.1s,baz=18,slow=37						
KBZ	**Khabaz**	**72.11**	**312**	P	**P**	**01 45 06.1**	**+1.3**
	1.0nm,0.6s,baz=117,slow=2.3,SNR=2.8						
NVAR	**Mina Array Bea**	**73.61**	**54**	P	**P**	**01 45 14.9**	**+0.8**
	0.5nm,0.5s,baz=306,slow=7.7,SNR=2.4						
PDAR	**Pinedale Array**	**76.43**	**46**	P	**P**	**01 45 30.0**	**-0.3**
	0.9nm,0.8s,baz=261,slow=2.9,SNR=8.1						
TXAR	**Lajitas Array**	**88.76**	**54**	P	**P**	**01 46 34.5**	**0.0**
	0.9nm,0.6s,baz=293,slow=3.4,SNR=16						
LPAZ	**La Paz**	**145.21**	**62**	PKPbc	**PKPdf**	**01 53 18.0**	**-1.2**
	1.7nm,0.5s,baz=346,slow=3.2,SNR=11						

JMA 19 01:43:08.6±0.2, 38°37N×144°46E, h32km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.29**	**289**	P	Pn	01 43 45.6	+1.4
OFUJ				eS	Sn	01 44 12.7	+1.3
JIO	**Ouri**	**2.44**	**273**	S	Sn	01 44 16.6	+1.6
JMK	**Ichinoseki**	**2.60**	**284**	P	Pn	01 43 50.7	+2.3
JMK				eS	Sn	01 44 21.1	+2.2
JOM	**Ohasama**	**2.71**	**295**	P	Pn	01 43 51.5	+1.7
JOM				S	Sn	01 44 24.0	+2.5
JMM	**Marumori**	**2.94**	**261**	eS	Sn	01 44 28.2	+1.1
JOU	**Okura**	**2.98**	**271**	P	Pn	01 43 55.9	+2.2
JOU				S	Sn	01 44 30.6	+2.2
JRG	**Rokugo**	**3.16**	**290**	P	Pn	01 43 58.7	+2.6
JRG				eS	Sn	01 44 35.9	+3.3
JYK	**Kaneyama**	**3.26**	**281**	P	Pn	01 44 00.1	+2.7
JYK				eS	Sn	01 44 38.0	+2.9
JFT	**Otama**	**3.37**	**257**	eS	Sn	01 44 39.7	+1.8
JTM	**Tenmabayashi**	**3.56**	**314**	eS	Sn	01 44 43.5	+0.9
JNBK	**Urakawa-nobuka**	**4.12**	**342**	P	Pn	01 44 10.4	+1.2
JNBK				eS	Sn	01 44 57.1	+0.8
JRY	**Ryogami san**	**5.02**	**244**	P	Pn	01 44 22.0	+0.3
JRY				eS	Sn	01 45 16.5	-2.1

MAN 19 01:47:38.8±25N×126°90E, h35km, mb4.4, ML3.2, MS3.0, 3C-2D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MATI	**Mati**	**1.44**	**206**	eP	Pn	01 48 02.6	+0.9
MATI				eS	Sn	01 48 19.5	+0.2
DMPH	**Davao City--Mi**	**1.80**	**230**	eP	Pn	01 48 14.2	+7.6
DMPH				eS	Sn	01 48 36.4	+8.2
BUKP	**Musuan**	**1.86**	**259**	eP	Pn	01 48 09.4	+2.0
BUKP				eS	Sn	01 48 31.1	+1.4
CGP	**Cagayan de Oro**	**2.19**	**276**	eP	Pn	01 48 13.9	+1.9
CGP				eS	Sn	01 48 38.4	+0.5
CTBH	**Cotabato--PC H**	**2.82**	**249**	i P	Pn	01 48 22.5	+1.8
TBP	**Tagbilaran**	**3.33**	**296**	eP	Pn	01 48 30.1	+2.5
PLP	**Palo**	**3.46**	**327**	eP	Pn	01 48 30.1	+0.6
PLP				eS	Sn	01 49 11.4	+2.1
PAGZ	**Pagadian**	**3.51**	**264**	eP	Pn	01 48 33.5	+3.5

IDC 19 02:01:58.7±15.0, 33°76S×54°95E, h0km, mb3.7/2, mb1 3.9/2, mb1mx3.3/38, mbtmp3.7/2, Error ellipse: s-maj=785.7km s-min=61.8km az=40.0, Southwest Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**68.46**	**105**	P	P	02 13 03.2	+0.2
	0.3nm,0.6s,baz=232,slow=5.7,SNR=4.3						
WRA	**Warramunga Arr**	**70.62**	**101**	P	P	02 13 16.2	-0.1
	1.0nm,1.0s,baz=237,slow=5.4,SNR=4.7						
ILAR	**Eielson Array**	**146.22**	**17**	PKPbc	PKPdf	02 21 39.4	+0.2
	0.3nm,0.7s,baz=345,slow=2.8,SNR=3.5						

*ATH **19** 02:08:36.2, 36°49N×28°63E, h28km±1km, ML2.1/2, Error ellipse: s-maj=3.4km s-min=1.1km az=176.0*
*ISK **19** 02:08:36.6, 36°48N×28°60E, h12km, MD2.9*
*ISCJB **19** 02:08:37.1±0.5, 36°48N±0°02×28°59E±0°02, h11km±3km, Error ellipse: s-maj=3.9km s-min=2.9km az=164.5*
*DDA **19** 02:08:37.1, 36°54N×28°64E, h7km, Ml3.1*
*CSEM **19** 02:08:37.0±0.1, 36°47N×28°62E, h15km, MD2.9, Error ellipse: s-maj=3.6km s-min=2.6km az=161.0*
ISC 19 02:08:35.9±1.3, 36°49N±0°02×28°62E±0°02, h5km±11km, n55, σ0°84/95, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DALY	**Dalyan (Mu¨la**	**0.33**	**5**	ePG	**Pb**	**02 08 44.3**	**0.0**
DALY				eSG	**Sb**	**02 08 49.2**	**-0.6**
DALY	**Dalyan (Mu¨la**	**0.33**	**5**	ePg	**Pb**	**02 08 44.3**	**0.0**
DALY				eSg	**Sb**	**02 08 49.3**	**-0.6**
TURN	**Turunc**	**0.39**	**358**	i P	**Pn**	**02 08 47.4**	**-0.8**
TURN				i S	**Sb**	**02 08 51.9**	**+0.4**
FETY	**Fethiye**	**0.40**	**68**	ePG	**Pb**	**02 08 45.2**	**-0.3**
FETY				eSG	**Sb**	**02 08 52.0**	**0.0**
FETY	**Fethiye**	**0.40**	**68**	ePg	**Pb**	**02 08 45.2**	**-0.3**
FETY				eSg	**Sb**	**02 08 52.0**	**0.0**
ARG	**Arkhangelos**	**0.48**	**236**	P	**Pb**	**02 08 46.4**	**-0.4**
ARG				S	**Sb**	**02 08 54.4**	**+0.3**
YER	**Yerkesik**	**0.70**	**338**	ePG	**Pb**	**02 08 51.1**	**+0.5**
YER				eSG	**Sb**	**02 09 01.0**	**+0.4**
YER	**Yerkesik**	**0.70**	**338**	ePg	**Pb**	**02 08 51.1**	**+0.5**
YER				eSg	**Sb**	**02 09 01.0**	**+0.4**
AKAS	**Kas**	**0.84**	**107**	P	**Pb**	**02 08 52.8**	**-0.2**
AKAS				S	**Sn**	**02 09 06.6**	**-0.6**
AKAS	**Kas**	**0.84**	**107**	i P	**Pb**	**02 08 52.8**	**-0.2**
AKAS				i S	**Sn**	**02 09 06.5**	**-0.6**
KSL	**Kastellorizon**	**0.85**	**113**	P	**Pb**	**02 08 52.7**	**-0.4**
KSL				S	**Sb**	**02 09 05.7**	**+0.9**
KSL				AML	AML	02 09 13.8	
	comp=N,80μm,0.7s						
KSL				AML	AML	02 09 16.8	
	comp=E,89μm,0.4s						
GLHS	**Glhisar (BURDU**	**0.97**	**46**

SMG	**Samos**	**1.88**	**311**	P	**Pn**	**02 09 07.8**	**-0.8**
SMG				S	**Sn**	**02 09 33.0**	**+0.4**
KHAL	**Karahalli**	**2.01**	**20**	P	**Pn**	**02 09 09.8**	**-0.7**
KHAL				S	**Sn**	**02 09 32.5**	**-3.5**
KHAL	**Karahalli**	**2.01**	**20**	*i* P	**Pn**	**02 09 09.8**	**-0.7**
KHAL				*i* S	**Sn**	**02 09 32.5**	**-3.5**
KULA	**Kula-Manisa**	**2.03**	**1**	*e*PN	**Pn**	**02 09 11.1**	**+0.4**
KULA	**Kula-Manisa**	**2.03**	**1**	*e*Pn	**Pn**	**02 09 11.1**	**+0.4**
ZKR	**Zakros**	**2.38**	**236**	P	**Pn**	**02 09 14.1**	**-1.4**
ZKR	**Zakros**	**2.38**	**236**	P	**Pn**	**02 09 14.1**	**-1.4**
NPS	**Neapolis**	**2.73**	**244**	P	**Pn**	**02 09 18.6**	**-1.7**
NPS	**Neapolis**	**2.73**	**244**	P	**Pn**	**02 09 18.6**	**-1.7**
CHOS	**Chios island**	**2.79**	**314**	P	**Pn**	**02 09 21.6**	**+0.4**
CHOS	**Chios island**	**2.79**	**314**	P	**Pn**	**02 09 21.6**	**+0.4**
LAST	**Lasithi**	**2.87**	**244**	P	**Pn**	**02 09 21.3**	**-1.1**
LAST	**Lasithi**	**2.87**	**244**	P	**Pn**	**02 09 21.3**	**-1.1**

IDC 19 02:10:58.5±2.0, 5°.34N×125°.60E, h0km, mb3.5/3, mb1 3.7/3, mb1mx3.3/54, mbtmp3.5/3, Error ellipse: s-maj=131.3km s-min=25.0km az=70.0, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**23.30**	**180**	P	P	02 16 08.5	+0.3
	0.9nm,0.3s,baz=355,slow=12,SNR=5.3						
WRA	**Warramunga Arr**	**26.56**	**161**	P	P	02 16 38.6	+0.2
	0.2nm,0.4s,baz=340,slow=10,SNR=7.4						
MKAR	**Makanchi Array**	**55.59**	**325**	P	P	02 20 36.6	+0.6
	0.2nm,0.3s,baz=113,slow=7.6,SNR=2.8						
TORD	**Torodi Ar. Bea**	**121.34**	**289**	PKP	PKPdf	02 29 53.3	-1.5
	0.5nm,1.1s,baz=48,slow=1.9,SNR=3.3						

KRSC 19 02:19:33.5±2.0, 49°.86N×157°.64E, h41km±17km, ML3.5, East of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PAU	**Pauzhetka**	**1.69**	**342**	*e*P	Pn	02 20 01.3	+0.8
PAU				*e*S	Sn	02 20 21.7	+0.8
ASAK	**Asacha**	**2.53**	**4**	*e*P	Pn	02 20 15.3	+3.2
RUS	**Russkaya**	**2.63**	**12**	*e*P	Pn	02 20 17.0	+3.6
RUS				*e*S	Sn	02 20 49.0	+4.9
UGLR	**Uglovaya**	**3.43**	**12**	*e*P	Pn	02 20 29.1	+4.6
AVH	**Avacha**	**3.48**	**11**	*e*P	Pn	02 20 29.2	+4.1
SMAR	**Somma**	**3.48**	**12**	*e*P	Pn	02 20 28.8	+3.5
SDLR	**Sedlovina**	**3.51**	**12**	*e*P	Pn	02 20 29.3	+3.7
KRX	**Arik**	**3.56**	**10**	*e*P	Pn	02 20 30.5	+4.2
GNL	**Ganaly**	**3.84**	**3**	*e*P	Pn	02 20 34.7	+4.5
KBG	**Krutoberegovo**	**7.09**	**24**	*e*P	Pn	02 21 18.8	+4.2

IDC 19 02:20:34.3±3.4, 6°.84S×148°.46E, h0km, mb3.0/1, mb1 3.4/2, mb1mx3.2/33, mbtmp3.2/2, ML3.3/1, Error ellipse: s-maj=127.5km s-min=44.4km az=117.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**18.91**	**225**	P	P	02 24 56.3	-0.5
	0.1nm,0.3s,baz=51,slow=11,SNR=5.5						
ASAR	**Alice Springs**	**21.81**	**218**	P	P	02 25 28.2	0.0
	0.3nm,0.4s,baz=52,slow=8.8,SNR=4.5						
TORD	**Torodi Ar. Bea**	**146.70**	**283**	PKPbc	PKPbc	02 40 18.6	-0.7
	0.4nm,0.4s,baz=62,slow=3.4,SNR=22						

*ISCJB **19** 02:34:29.1±0.9, 32°.13N±0°.03×115°.15W±0°.09, h24km±8km, Error ellipse: s-maj=12.4km s-min=5.1km az=168.3*
*MEX **19** 02:34:30.9±0.5, 32°.16N×115°.08W, h20km±147km, MD3.5*
*ECX **19** 02:34:30.7±0.4, 32°.11N×115°.21W, h10km, MD2.5, ML2.7*
ISC 19 02:34:28.3±1.2, 32°.15N±0°.04×115°.14W±0°.07, h30km±11km, n11, σ0°.42/18, 2C-1D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MBIG	**Mexicali**	**0.26**	**350**	*e*P	**Pn**	**02 34 36.2**	**0.0**
MBIG				*e*S	**Sb**	**02 34 39.6**	**-0.4**
MBIG	**Mexicali**	**0.26**	**350**	*e*P	**Pn**	**02 34 36.1**	**0.0**
CPBX	**Cerro Prieto**	**0.30**	**333**	*e*P	**Pn**	**02 34 36.5**	**-0.2**
CPBX				*e*S	**Sb**	**02 34 41.2**	**+0.3**
CPBX				AML	AML	02 34 42.8	
	comp=E,4μm,0.2s						
CPBX				⇑*e*		02 34 42.8	
ECBX	**El Chinero**	**0.68**	**173**	*e*P	**Pb**	**02 34 41.5**	**-0.1**
ECBX				*e*S	**Sb**	**02 34 50.8**	**+0.1**
IKP	**In-Ko-Pah, Jac**	**0.96**	**302**	*e*P	**Pb**	**02 34 47.2**	**+0.7**
SPIG	**San Pedro Mart**	**1.13**	**194**	*e*P	**Pb**	**02 34 49.4**	**-0.1**
SPIG				*e*S	**Sn**	**02 35 02.9**	**-0.2**
SPIG	**San Pedro Mart**	**1.13**	**194**	*e*P	**Pb**	**02 34 49.3**	**-0.2**
SPX	**San Pedro Mart**	**1.13**	**194**	*e*P	**Pb**	**02 34 49.6**	**+0.2**
SPX				*e*S	**Sb**	**02 35 04.7**	**+0.7**
SPX				⇑*e*		02 35 07.4	
SPX				AML	AML	02 35 07.4	
	comp=E,100nm,0.2s						
ZAX	**El Zacaton**	**1.15**	**237**	*e*S	**Sb**	**02 35 04.2**	**0.0**
CBX	**Cerro Bola**	**1.30**	**278**	*e*P	**Pb**	**02 34 51.5**	**-0.7**
CBX				*e*S	**Sb**	**02 35 08.4**	**-0.1**
CBX	**Cerro Bola**	**1.30**	**278**	*e*P	**Pb**	**02 34 52.0**	**-0.2**
CBX				*e*S	**Sb**	**02 35 09.1**	**+0.6**
CBX				AML	AML	02 35 12.3	
	comp=N,179nm,0.2s						
CBX				⇓*e*		02 35 12.3	

JMA 19 02:37:30.6±0.2, 38°.39N×143°.98E, h33km, M4.1, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**1.93**	**292**	P	Pn	02 38 02.5	+1.3
JIO	**Ouri**	**2.07**	**273**	P	Pn	02 38 04.1	+1.1
JIO				S	Sn	02 38 28.9	+1.3
JMK	**Ichinoseki**	**2.23**	**285**	P	Pn	02 38 06.8	+1.6
JMK				S	Sn	02 38 34.0	+2.3
JTH	**Tanohata**	**2.26**	**314**	P	Pn	02 38 06.8	+1.2
JTH				*e*S	Sn	02 38 34.3	+2.0
JOM	**Ohasama**	**2.36**	**298**	P	Pn	02 38 09.0	+2.0
JOM				S	Sn	02 38 36.9	+2.1
JMM	**Marumori**	**2.57**	**259**	P	Pn	02 38 11.0	+1.2
JMM				S	Sn	02 38 40.9	+1.0
JOU	**Okura**	**2.61**	**270**	P	Pn	02 38 12.4	+2.0
JOU				S	Sn	02 38 43.2	+2.3
JANG	**Nango**	**2.75**	**317**	P	Pn	02 38 14.0	+1.6
JRG	**Rokugo**	**2.80**	**292**	P	Pn	02 38 15.3	+2.3
JYK	**Kaneyama**	**2.88**	**282**	P	Pn	02 38 16.1	+1.9
JFT	**Otama**	**3.01**	**254**	P	Pn	02 38 17.7	+1.8
JNBK	**Urakawa-nobuka**	**4.00**	**347**	P	Pn	02 38 30.3	+0.8
JKB	**Kayabe**	**4.16**	**328**	P	Pn	02 38 34.5	+2.8
JCH	**Churui**	**4.25**	**354**	P	Pn	02 38 33.0	+0.1
MAT	**Matsushiro**	**4.95**	**250**	P	Pn	02 38 45.1	+2.5

IDC 19 02:40:36.3±7.1, 6°.80S×148°.11E, h88km±60km, mb3.2/2, mb1 3.3/4, mb1mx3.1/35, mbtmp3.4/4, ML3.3/1, Error ellipse: s-maj=90.8km s-min=55.5km az=126.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.76**	**200**	P	Pn	02 41 16.8	-1.8
	2.7nm,0.3s,baz=56,slow=7.3,SNR=5.2						
PMG				S	Sn	02 41 53.0	+2.0
	1.1nm,0.3s,baz=337,slow=18,SNR=2.8						
WRA	**Warramunga Arr**	**18.69**	**224**	P	P	02 44 47.1	-0.7
	0.1nm,0.3s,baz=52,slow=11,SNR=5.6						
ASAR	**Alice Springs**	**21.63**	**218**	P	P	02 45 18.4	-1.0
	0.4nm,0.7s,baz=53,slow=9.1,SNR=5.3						
FITZ	**Fitzroy Crossi**	**24.62**	**241**	P	P	02 45 48.0	-0.6
	1.7nm,0.5s,baz=52,slow=9.2,SNR=13						
TORD	**Torodi Ar. Bea**	**146.35**	**283**	PKPbc	PKPab	03 00 08.6	-0.5
	0.3nm,0.7s,baz=69,slow=3.4,SNR=7.1						

WEL 19 02:42:26.7±0.1, 43°.61S×172°.52E, h11km, ML3.7/17, 4D, Error ellipse: s-maj=0.6km s-min=0.5km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRLZ	**Canterbury Las**	**0.08**	**68**	⇓PG	Pg	02 42 29.0	-0.1
CRLZ				SG	Sg	02 42 30.6	-0.2
CRLZ				SG		02 42 30.8	
CRLZ				AML	AML	02 42 30.8	
CRLZ				AML	AML	02 42 30.9	
MQZ	**McQueen's Vall**	**0.14**	**136**	⇓PG	Pg	02 42 30.0	+0.1
MQZ				AML	AML	02 42 30.1	
MQZ				SG	Sg	02 42 32.4	+0.2
OXZ	**Oxford**	**0.45**	**308**	⇓P*	Pg	02 42 35.2	-0.2
OXZ				S*	Sb	02 42 42.6	-0.7
LTZ	**Lake Taylor**	**0.84**	**347**	P*	Pg	02 42 43.0	0.0
LTZ				S*	Sb	02 42 54.5	-0.3
LTZ				AML	AML	02 42 54.9	
RPZ	**Rata Peaks**	**1.07**	**264**	⇓P*	Pb	02 42 46.3	-0.9
RPZ				AML	AML	02 43 02.0	
RPZ				AML	AML	02 43 05.8	
INZ	**Inchbonnie**	**1.18**	**318**	P*	Pb	02 42 48.4	-0.7
WVZ	**Waitaha Valley**	**1.41**	**292**	PN	Pn	02 42 51.4	-0.9
WVZ				AML	AML	02 43 16.8	
WVZ				AML	AML	02 43 16.8	
LBZ	**Lake Benmore**	**1.86**	**244**	AML	AML	02 43 28.1	
LBZ				AML	AML	02 43 28.1	
LBZ				AML	AML	02 43 34.9	
LBZ				AML	AML	02 43 34.9	
THZ	**Tophouse**	**1.86**	**9**	PN	Pn	02 42 57.2	-1.4
THZ				AML	AML	02 43 32.8	
THZ				AML	AML	02 43 33.7	
DSZ	**Denniston Nort**	**1.93**	**344**	PN	Pn	02 42 58.9	-0.7
DSZ				AML	AML	02 43 33.8	
DSZ				AML	AML	02 43 33.8	
DSZ				AML	AML	02 43 35.0	
DSZ				AML	AML	02 43 35.1	
FOZ	**Fox Glacier**	**1.97**	**271**	PN	Pn	02 42 60.0	0.0
FOZ				AML	AML	02 43 34.1	
FOZ				AML	AML	02 43 37.9	
ODZ	**Otahua Downs**	**1.97**	**222**	PN	Pn	02 42 58.8	-1.2
ODZ				AML	AML	02 43 33.3	
ODZ				AML	AML	02 43 33.6	
ODZ				AML	AML	02 43 40.2	
ODZ				AML	AML	02 43 40.2	
BSWZ	**Blackbirch Sta**	**2.14**	**28**	PN	Pn	02 43 01.0	-1.3
NNZ	**Nelson**	**2.47**	**15**	PN	Pn	02 43 06.6	-0.2
JCZ	**Jackson Bay**	**2.74**	**259**	AML	AML	02 43 58.3	
JCZ				AML	AML	02 44 02.4	
QRZ	**Quartz Range**	**2.78**	**0**	AML	AML	02 43 46.9	
QRZ				AML	AML	02 43 58.6	
WKZ	**Wanaka**	**2.80**	**243**	AML	AML	02 44 00.7	
WKZ				AML	AML	02 44 04.9	
EAZ	**Earnscleugh**	**2.82**	**234**	AML	AML	02 43 58.4	
EAZ				AML	AML	02 43 59.5	
EAZ				AML	AML	02 43 59.5	
EAZ				AML	AML	02 44 07.8	
TUZ	**Tuapeka**	**3.12**	**220**	AML	AML	02 44 10.0	
TUZ				AML	AML	02 44 17.2	
CAW	**Cannon Point**	**3.13**	**38**	AML	AML	02 43 50.0	
SYZ	**Scrubby Hill**	**3.79**	**218**	AML	AML	02 44 35.3	

*ISCJB **19** 02:46:45.4±0.5, 35°.60N±0°.01×97°.19W±0°.02, h5km±4km, Error ellipse: s-maj=2.4km s-min=2.3km az=28.9*
*NEIC **19** 02:46:46.0, 35°.59N×97°.20W, h3km, MD2.8(TUL), After TUL.*
NEIC Felt [III] at Harrah and [II] at Luther. Also felt at Choctaw and Oklahoma City.
ISC 19 02:46:45.6±0.9, 35°.58N±0°.02×97°.20W±0°.02, h14km±7km, n92, σ1°.35/122, Oklahoma

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ADOK	**Arcadia Dam**	**0.16**	**299**	Pg	**Pg**	**02 46 49.0**	**-0.6**
V35A	**Meyer Ranch, C**	**0.35**	**58**	P	**Pg**	**02 46 52.8**	**0.0**
	baz=239,SNR=423						
V35A				S	**Sg**	**02 46 57.8**	**+0.1**
	baz=239						
V34A	**Guthrie**	**0.36**	**315**	P	**Pg**	**02 46 53.0**	**0.0**
	baz=132,SNR=378						
V34A				S	**Sg**	**02 46 58.4**	**+0.4**
	baz=132						
V34A	**Guthrie**	**0.36**	**315**	*e*Pg	**Pg**	**02 46 52.9**	**-0.1**
W35A	**Tecumseh**	**0.50**	**148**	P	**Pg**	**02 46 55.6**	**+0.1**
	baz=330,SNR=162						
W35A				S	**Sg**	**02 47 02.8**	**+0.5**
	baz=330						
W34A	**Bridge Creek,**	**0.58**	**234**	P	**Pg**	**02 46 57.1**	**+0.1**
	baz=53,SNR=26						
W34A				S	**Sb**	**02 47 05.6**	**+0.1**
	baz=53						
W34A	**Bridge Creek,**	**0.58**	**234**	*e*Pg	**Pg**	**02 46 57.0**	**+0.1**
U35A	**Pawnee**	**0.88**	**26**	P	**Pg**	**02 47 02.0**	**-0.7**
	baz=205						
U35A				S	**Sg**	**02 47 14.0**	**-0.2**
	baz=205						
U34A	**Anderson Ranch**	**0.90**	**343**	P	**Pb**	**02 47 02.8**	**-0.3**
	baz=162,SNR=138						
U34A				Sb	**Sn**	**02 47 16.7**	**+0.1**
	baz=162						
U34A	**Anderson Ranch**	**0.90**	**343**	*e*Pg	**Pb**	**02 47 02.7**	**-0.3**
W36A	**Wetumka**	**0.91**	**118**	P	**Pb**	**02 47 02.8**	**-0.4**
	baz=300,SNR=26						
W36A				S	**Sb**	**02 47 15.3**	**+0.2**
	baz=300						
V33A	**Lossen Ranch,**	**0.91**	**286**	P	**Pb**	**02 47 03.1**	**-0.1**
	baz=104,SNR=28						
V33A				S	**Sg**	**02 47 15.9**	**+0.6**
	baz=104						
V36A	**Jenks**	**1.05**	**78**	P	**Pb**	**02 47 04.6**	**-0.9**
	baz=259,SNR=202						
V36A				S	**Sb**	**02 47 19.1**	**0.0**
	baz=259						
X34A	**Smith Ranch, M**	**1.10**	**208**	P	**Pn**	**02 47 06.9**	**+0.3**
	baz=28,SNR=32						
X34A				S	**Sn**	**02 47 22.7**	**+1.1**
	baz=28						
W33A	**Caddo, Fort Co**	**1.12**	**248**	P	**Pn**	**02 47 07.2**	**+0.4**
	baz=67,SNR=40						
U33A	**Lingo Farm, Me**	**1.13**	**319**	P	**Pb**	**02 47 06.7**	**-0.2**
	baz=138,SNR=34						
U33A				S	**Sn**	**02 47 22.8**	**+0.5**
	baz=138						
X35A	**Drake**	**1.19**	**171**	P	**Pn**	**02 47 07.7**	**-0.2**
	baz=352,SNR=143						
X35A				S	**Sn**	**02 47 24.2**	**+0.5**
	baz=352						
TUL1	**Leonard**	**1.20**	**73**	P	**Pn**	**02 47 07.2**	**-0.7**
	baz=255,SNR=124						
TUL1				S	**Sb**	**02 47 23.8**	**+0.4**
	baz=255						
TUL1	**Leonard**	**1.20**	**73**	*e*Pg	**Pn**	**02 47 06.9**	**-1.0**
TUL1				*e*S	**Sb**	**02 47 23.4**	**+0.1**
X36A	**Centrahoma**	**1.22**	**145**	P	**Pn**	**02 47 08.3**	**+0.1**
	baz=326,SNR=14						
X36A				S	**Sn**	**02 47 25.2**	**+0.6**
	baz=326						
T34A	**McClaskey Farm**	**1.44**	**0**	P	**Pb**	**02 47 11.9**	**-0.3**
	baz=180,SNR=48						
T34A				S	**Sg**	**02 47 31.4**	**-0.7**
	baz=180						
U36A	**Oologah**	**1.44**	**55**	P	**Pn**	**02 47 11.5**	**+0.2**
	baz=236,SNR=47						
U36A				S	**Sb**	**02 47 31.2**	**+0.7**
	baz=236						
T35A	**Sooner Cattle**	**1.45**	**22**	P	**Pn**	**02 47 11.8**	**+0.4**
	baz=202,SNR=28						
T35A				S	**Sg**	**02 47 31.7**	**-0.7**
	baz=202						
X33A	**Lawton**	**1.48**	**226**	P	**Pn**	**02 47 12.5**	**+0.7**
	baz=45,SNR=44						
X33A				S	**Sg**	**02 47 33.1**	**-0.3**
	baz=45						
V32A	**Arapaho**	**1.51**	**276**	P	**Pb**	**02 47 13.5**	**+0.1**
	baz=94,SNR=22						
W37B	**Quinton**	**1.51**	**106**	P	**Pb**	**02 47 13.2**	**-0.2**
	baz=288,SNR=41						
W37B				S	**Sg**	**02 47 34.1**	**-0.3**
	baz=288						
WMOK	**Wichita Mounta**	**1.54**	**238**	P	**Pn**	**02 47 13.5**	**+0.9**
	baz=56,SNR=280						
WMOK	**Wichita Mounta**	**1.54**	**238**	*e*Pn	**Pn**	**02 47 13.5**	**+0.9**
WMOK				*e*S	**Sb**	**02 47 34.0**	**+0.8**
U32A	**Winter Ranch,**	**1.66**	**299**	P	**Pb**	**02 47 15.6**	**-0.4**
	baz=118,SNR=22						
Y35A	**Marietta**	**1.67**	**175**	P	**Pb**	**02 47 16.3**	**+0.1**
	baz=356,SNR=29						
Y35A				Sb	**Sg**	**02 47 40.2**	**+0.7**
	baz=356						
Y34A	**Reagan Ranch,**	**1.68**	**196**	P	**Pn**	**02 47 15.7**	**+1.2**
	baz=16,SNR=26						
V37A	**Hulbert**	**1.71**	**79**	P	**Pn**	**02 47 16.0**	**+1.1**
	baz=261,SNR=318						
T33A	**Patterson Ranc**	**1.72**	**331**	P	**Pb**	**02 47 16.5**	**-0.5**
	baz=150,SNR=8.5						
W32A	**Sentinel**	**1.73**	**255**	P	**Pb**	**02 47 16.9**	**-0.3**
	baz=74,SNR=57						
X37A	**Clayton**	**1.80**	**123**	P	**Pb**	**02 47 17.7**	**-0.6**
	baz=304,SNR=45						
T36A	**Boggs Farm, Ca**	**1.83**	**35**	P	**Pb**	**02 47 17.9**	**-0.9**
	baz=216,SNR=74						
Y36A	**Durant**	**1.84**	**155**	P	**Pb**	**02 47 18.4**	**-0.5**
	baz=337,SNR=16						
U37A	**Salina**	**1.88**	**63**	P	**Pn**	**02 47 18.7**	**+1.4**
	baz=245,SNR=156						
Y33A	**Hilltop Ranch,**	**1.96**	**217**	P	**Pb**	**02 47 20.4**	**-0.6**
	baz=36,SNR=19						
Y37A	**Hugo**	**2.06**	**140**	P	**Pn**	**02 47 21.6**	**+1.8**
	baz=322,SNR=16						
X32A	**Elmer**	**2.06**	**237**	P	**Pb**	**02 47 22.0**	**-0.8**
	baz=55,SNR=25						
S33A	**Kaszmaul Farm,**	**2.11**	**343**	P	**Pn**	**02 47 21.4**	**+0.9**
	baz=162,SNR=8.2						
T32A	**Huddler Ranch,**	**2.12**	**320**	P	**Pn**	**02 47 21.9**	**+1.3**
	baz=138						
S34A	**Willow Spring**	**2.12**	**2**	P	**Pn**	**02 47 21.6**	**+1.0**
	baz=182,SNR=5.2						
X38A	**Whitesboro**	**2.15**	**114**	P	**Pn**	**02 47 22.5**	**+1.5**
	baz=296,SNR=23						
S35A	**Otter Creek Ra**	**2.22**	**18**	P	**Pn**	**02 47 23.2**	**+1.2**
	baz=199,SNR=15						
Z35A	**Perchaven, San**	**2.24**	**181**	P	**Pn**	**02 47 24.4**	**+2.1**
	baz=1.4,SNR=11						
W38A	**Poteau**	**2.25**	**102**	P	**Pn**	**02 47 24.0**	**+1.6**
	baz=284,SNR=19						
Z34A	**Collier Ranch,**	**2.28**	**195**	P	**Pn**	**02 47 24.7**	**+1.9**
	baz=15,SNR=6.4						
V38A	**Canehill**	**2.29**	**82**	P	**Pn**	**02 47 24.5**	**+1.5**
	baz=264						
Z36A	**Blue Ridge**	**2.39**	**164**	P	**Pn**	**02 47 26.4**	**+2.1**
	baz=345						
T37A	**Cheneyville 18**	**2.41**	**49**	P	**Pn**	**02 47 26.5**	**+1.9**
	baz=231,SNR=37						
U38A	**Gravette**	**2.44**	**69**	P	**Pn**	**02 47 26.7**	**+1.7**
	baz=250,SNR=45						
S36A	**Lake Cedric, C**	**2.50**	**31**	P	**Pn**	**02 47 27.5**	**+1.6**
	baz=211						
S32A	**Newby Ranch, P**	**2.54**	**327**	P	**Pn**	**02 47 28.2**	**+1.8**
	baz=146						
Z37A	**Pogue Cattle C**	**2.71**	**151**	P	**Pn**	**02 47 30.8**	**+2.1**
	baz=332						
R34A	**Isabella, Hill**	**2.72**	**359**	P	**Pn**	**02 47 30.5**	**+1.6**
	baz=179						
HHAR	**Hobbs**	**2.74**	**74**	Pn	**Pn**	**02 47 30.9**	**+1.8**
X39A	**Fountain Ranch**	**2.75**	**112**	P	**Pn**	**02 47 31.0**	**+1.7**
	baz=294,SNR=14						
T38A	**Diamond**	**2.76**	**57**	P	**Pn**	**02 47 31.0**	**+1.6**
	baz=239,SNR=19						
R33A	**Olander Ranch,**	**2.80**	**347**	P	**Pn**	**02 47 31.5**	**+1.6**
	baz=167						
W39A	**Magazine**	**2.82**	**97**	P	**Pn**	**02 47 31.6**	**+1.4**
	baz=279						
R35A	**Emporia Munici**	**2.86**	**16**	P	**Pn**	**02 47 32.3**	**+1.5**
	baz=196						
S37A	**Fort Scott**	**2.90**	**41**	P	**Pn**	**02 47 32.9**	**+1.6**
	baz=222,SNR=11						
V39A	**Pettigrew**	**2.91**	**84**	P	**Pn**	**02 47 32.6**	**+1.1**
	baz=266,SNR=14						
R36A	**Gordon, Harris**	**3.06**	**26**	P	**Pn**	**02 47 34.8**	**+1.3**
	baz=207,SNR=11						
MIAR	**Mount Ida**	**3.15**	**108**	P	**Pn**	**02 47 36.6**	**+1.9**
	baz=290,SNR=14						
MIAR	**Mount Ida**	**3.15**	**108**	*e*Pn	**Pn**	**02 47 36.0**	**+1.2**
MIAR				*e*S	**Sn**	**02 48 11.4**	**-0.7**
R37A	**Teagarden Farm**	**3.33**	**34**	P	**Pn**	**02 47 38.7**	**+1.5**
	baz=215,SNR=11						
Q34A	**Chapman**	**3.34**	**4**	P	**Pn**	**02 47 38.9**	**+1.5**
	baz=183						
W40A	**Ferguson Farm,**	**3.40**	**95**	P	**Pn**	**02 47 40.0**	**+1.8**
	baz=278,SNR=7.7						
Q35A	**Mercer Eighty,**	**3.41**	**16**	P	**Pn**	**02 47 39.5**	**+1.2**
	baz=196						
T39A	**Clever**	**3.41**	**64**	P	**Pn**	**02 47 39.9**	**+1.5**
	baz=246						
Q33A	**Connelly Farm,**	**3.45**	**352**	P	**Pn**	**02 47 40.1**	**+1.2**
	baz=171,SNR=6.2						
KSU1	**Kansas State U**	**3.55**	**7**	*e*Pn	**Pn**	**02 47 41.5**	**+1.2**
KSU1				*e*S	**Sg**	**02 48 35.9**	**-3.7**
V40A	**Witts Springs**	**3.57**	**85**	P	**Pn**	**02 47 41.9**	**+1.3**
	baz=268,SNR=10						
U40A	**Yellville**	**3.61**	**76**	P	**Pn**	**02 47 42.2**	**+1.1**
	baz=259,SNR=7.1						
R38A	**Fenwick Farm,**	**3.71**	**44**	P	**Pn**	**02 47 43.6**	**+1.1**
	baz=226						
AMTX	**Amarillo**	**3.73**	**261**	*e*Pn	**Pn**	**02 47 44.8**	**+1.9**
AMTX				*e*S	**Sn**	**02 48 24.3**	**-2.3**
S39A	**Bolivar**	**3.77**	**55**	P	**Pn**	**02 47 44.4**	**+1.1**
	baz=237						
CBKS	**Cedar Bluff**	**3.81**	**329**	*e*Pn	**Pn**	**02 47 43.7**	**-0.2**
CBKS				*e*S	**Sb**	**02 48 43.3**	**+4.6**
P34A	**Walnut Farm, R**	**3.97**	**4**	P	**Pn**	**02 47 47.4**	**+1.3**
	baz=184,SNR=31						
W41B	**Gary Mavity, V**	**4.07**	**94**	P	**Pn**	**02 47 48.9**	**+1.5**
	baz=277,SNR=12						
S40A	**Lebanon**	**4.29**	**61**	P	**Pn**	**02 47 51.6**	**+1.2**
	baz=243,SNR=11						
R39A	**Chumby, Stover**	**4.31**	**49**	P	**Pn**	**02 47 51.9**	**+1.1**
	baz=232						
O35A	**Humboldt**	**4.79**	**12**	P	**Pn**	**02 47 58.3**	**+1.0**
	baz=193						
MSTX	**Muleshoe**	**4.86**	**252**	*e*Pn	**Pn**	**02 48 00.6**	**+2.2**
MSTX				*e*S	**Sg**	**02 49 17.6**	**-4.0**
O31A	**Woolen Ranch,**	**4.87**	**340**	P	**Pn**	**02 47 59.5**	**+1.1**
	baz=159						
O36A	**Bolckow**	**4.88**	**21**	P	**Pn**	**02 47 59.6**	**+1.1**
	baz=202						
N35A	**Tabor**	**5.42**	**13**	P	**Pn**	**02 48 06.7**	**+0.8**
	baz=193						
JCT	**Junction City**	**5.53**	**204**	Pn	**Pn**	**02 48 09.9**	**+2.4**
JCT				*e*Pg	**Pg**	**02 48 29.6**	**-2.0**
JCT				*e*S	**Sn**	**02 49 09.2**	**-1.8**
ISCO	**Idaho Springs**	**7.89**	**305**	*e*Pn	**Pn**

Halmahera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**19.79**	**185**	P	P	03 09 24.5	+1.6
	0.2nm,0.3s,baz=354,slow=10,SNR=4.5						
WRA	**Warramunga Arr**	**22.66**	**162**	P	P	03 09 47.9	-0.8
	0.8nm,0.4s,baz=334,slow=11,SNR=20						
ASAR	**Alice Springs**	**26.08**	**166**	P	P	03 10 18.4	-0.7
	0.6nm,0.3s,baz=352,slow=7.6,SNR=9.3						
MKAR	**Makanchi Array**	**59.46**	**326**	P	P	03 14 38.0	-0.6
	0.5nm,0.4s,baz=107,slow=7.7,SNR=4.8						
KURBB	**Kurchatov Arra**	**63.67**	**328**	P	P	03 15 05.9	+0.1
	0.8nm,0.4s,baz=128,slow=5.5,SNR=8.2						
ARCES	**ARCESS Array B**	**92.47**	**340**	P	P	03 17 40.9	+0.6
	1.5nm,0.9s,baz=82,slow=6.5,SNR=3.8						

*NIED **19** 03:12:00,41.°60N×142.°10E,h50km,Mw3.8 Best double couple: M0:6.24000×10^14 NP1:φ1:91.00000°,δ26.00000°, λ78.00000°. NP2:φ2:24.00000°,δ64.00000°,λ96.00000°.*
*MOS **19** 03:12:28.3±1.0,41.°36N×142.°06E,h49km,mb4.2/13,Error ellipse: s-maj=15.3km s-min=9.4km az=82.0*
*ISCJB **19** 03:12:30.7±0.3,41.°53N±0.°04×142.°12E±0.°05,h59km, mb3.9/16,MS3.7/1,Error ellipse: s-maj=6.5km s-min=3.5km az=43.3*
*JMA **19** 03:12:31.9±0.1,41.°57N×142.°06E,h62km±2km,M3.6*
JMA Felt II J1.
*IDC **19** 03:12:32.4±1.8,41.°54N×142.°13E,h67km±15km,mb3.6/15, mb1 3.7/20,mb1mx3.5/64,mbtmp3.9/20,MS2.9/3, Ms1 2.9/3,ms1mx2.5/46,Error ellipse: s-maj=17.8km s-min=12.0km az=113.0*

ISC 19 03:12:32.0±0.6,41.°54N±0.°05×142.°12E±0.°05,h59km,n47, σ1:19/48,mb4.0/16,2C-6D,Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JOT	**Ohata**	**0.82**	**259**	↓P	**Pn**	**03 12 47.3**	**-0.4**
JNBK	**Urakawa-nobuka**	**0.88**	**33**	↑P	**Pn**	**03 12 48.1**	**-0.3**
JKB	**Kayabe**	**0.88**	**293**	↓P	**Pn**	**03 12 47.7**	**-0.8**
JEM	**Erimo**	**0.91**	**58**	↑P	**Pn**	**03 12 49.1**	**+0.2**
JEM				*e*S	**Sn**	**03 13 01.9**	**+0.6**
JTM	**Tenmabayashi**	**1.09**	**227**	↓P	**Pn**	**03 12 51.4**	**+0.2**
JTM				*e*S	**Sn**	**03 13 05.4**	**-0.1**
JNB	**Noboribetsu**	**1.23**	**319**	↓P	**Pn**	**03 12 52.1**	**-0.9**
JBT2	**Biratori 2**	**1.25**	**8**	P	**Pn**	**03 12 53.5**	**+0.2**
JANG	**Nango**	**1.25**	**201**	P	**Pn**	**03 12 53.4**	**0.0**
JANG				*e*S	**Sn**	**03 13 09.1**	**-0.2**
JSR	**Shiriuchi**	**1.27**	**270**	P	**Pn**	**03 12 53.5**	**-0.1**
JEW	**Eniwo**	**1.39**	**339**	↓P	**Pn**	**03 12 55.2**	**0.0**
JCH	**Churui**	**1.42**	**40**	P	**Pn**	**03 12 56.4**	**+0.8**
JYM2	**Yakumo 2**	**1.43**	**294**	↓P	**Pn**	**03 12 55.6**	**-0.1**
JFR	**Furan**	**1.66**	**12**	P	**Pn**	**03 12 59.5**	**+0.6**
JOSM	**Okushiri--Mats**	**2.05**	**286**	P	**Pn**	**03 13 03.2**	**-0.9**
ASAJ	**Asahikawa**	**2.60**	**8**	P	**Pn**	**03 13 12.7**	**+1.0**
	6.9nm,0.3s,baz=212,slow=18,SNR=22						
ASAJ				S	**Sn**	**03 13 42.8**	**+0.8**
	8.6nm,0.3s,baz=330,slow=29,SNR=11						
YUK	**Yuzh-Kuril'sk**	**3.72**	**47**	*e*P	**Pn**	**03 13 26.7**	**-0.2**
YUK				*e*S	**Sn**	**03 14 07.2**	**-2.2**
YUK				pmax	pmax		
	comp=Z,51nm,0.4s						
SHO	**Shikotan**	**4.18**	**55**	*e*P	**Pn**	**03 13 32.0**	**-1.2**
SHO				*e*S	**Sn**	**03 14 16.6**	**-4.2**
SHO				pmax	pmax		
	comp=E,30nm,0.5s						
SHO				pmax	pmax		
	comp=Z,34nm,0.5s						
SHO				pmax	pmax		
	comp=N,20nm,0.3s						
KUR	**Kuril'sk**	**5.58**	**47**	P	**Pn**	**03 13 54.2**	**+1.8**
KUR				*e*S	**Sn**	**03 14 56.6**	**+1.4**
KUR				pmax	pmax		
	comp=Z,38nm,0.3s						
MAT	**Matsushiro**	**5.84**	**213**	P	**Pn**	**03 13 56.7**	**+0.6**
MJAR	**Matsushiro Arr**	**5.84**	**213**	P	**Pn**	**03 13 56.7**	**+0.6**
	comp=Z,1.5nm,0.3s,baz=75,slow=16,SNR=8.5						
USRK	**Ussuriysk Ar.**	**7.90**	**293**	P	**Pn**	**03 14 24.8**	**+0.7**
	comp=Z,0.5nm,0.3s,baz=90,slow=14,SNR=6.7						
KLR	**Kul'dur**	**10.59**	**320**	P	**Pn**	**03 15 02.0**	**+1.2**
	comp=Z,0.1nm,0.3s,baz=126,slow=14,SNR=4.8						
KLR				LR	LR	03 19 07.1	
	comp=Z,25nm,19.2s,baz=50,slow=37						
KSRS	**Korea Array**	**11.70**	**254**	P	**Pn**	**03 15 20.5**	**+4.4**
	comp=Z,0.7nm,0.3s,baz=65,slow=14,SNR=6.7						
KSRS				LR	LR	03 19 42.8	
	comp=Z,23nm,19.6s,baz=88,slow=37						
PETK	**Petropavlovsk-**	**15.63**	**37**	P	**Pn**	**03 16 09.6**	**+1.2**
	comp=Z,0.6nm,0.3s,baz=226,slow=9.9,SNR=8.7						
SONM	**Songino Array**	**26.00**	**296**	P	**P**	**03 17 59.3**	**0.0**
	comp=Z,1.0nm,0.6s,baz=81,slow=9.7,SNR=6.1						
H11N2	**WAKE ISLAND Hy**	**30.26**	**128**	T	T	03 51 09.3	
	baz=321,slow=75,SNR=29						
H11N1	**WAKE ISLAND Hy**	**30.27**	**128**	T	T	03 51 08.6	
	baz=321,slow=75,SNR=26						
H11N3	**WAKE ISLAND Hy**	**30.28**	**128**	T	T	03 51 09.3	
	baz=321,slow=75,SNR=22						
H11S1	**WAKE ISLAND Hy**	**31.11**	**130**	T	T	03 52 07.7	
	baz=323,slow=76,SNR=22						
H11S3	**WAKE ISLAND Hy**	**31.11**	**130**	T	T	03 52 07.4	
	baz=323,slow=76,SNR=9.0						
H11S2	**WAKE ISLAND Hy**	**31.12**	**130**	T	T	03 52 09.5	
	baz=323,slow=76,SNR=16						
ZALV	**Zalesovo Beam**	**39.41**	**308**	P	**P**	**03 19 55.6**	**-0.2**
	comp=Z,1.1nm,0.3s,baz=84,slow=8.0,SNR=3.9						
MKAR	**Makanchi Array**	**42.33**	**296**	P	**P**	**03 20 19.4**	**-0.6**
	comp=Z,1.1nm,0.7s,baz=81,slow=9.3,SNR=7.5						
KURK	**Kurchatov**	**43.70**	**305**	P	**P**	**03 20 31.0**	**+0.1**
KURK				pmax	pmax		
	comp=Z,2.0nm,0.6s						
KURBB	**Kurchatov Arra**	**43.78**	**304**	P	**P**	**03 20 31.0**	**-0.6**
	comp=Z,1.9nm,0.5s,baz=79,slow=8.7,SNR=12						
ILAR	**Eielson Array**	**45.44**	**35**	P	**P**	**03 20 44.2**	**-0.4**
	comp=Z,1.0nm,0.9s,baz=273,slow=6.7,SNR=14						
BVAR	**Borovoye Array**	**48.03**	**310**	P	**P**	**03 21 04.8**	**-0.3**
	comp=Z,1.0nm,0.3s,baz=71,slow=9.1,SNR=5.9						
INK	**Inuvik**	**50.16**	**29**	P	**P**	**03 21 21.1**	**+0.1**
	comp=Z,2.3nm,0.7s,baz=303,slow=6.1,SNR=6.3						
YKA	**Yellowknife Ar**	**59.66**	**32**	P	**P**	**03 22 29.0**	**-0.7**
	comp=Z,0.2nm,0.8s,baz=301,slow=6.6,SNR=3.6						
YKA	**Yellowknife Ar**	**59.66**	**32**	P	**P**	**03 22 29.0**	**-0.7**
ARCES	**ARCESS Array B**	**59.99**	**339**	P	**P**	**03 22 31.5**	**-0.4**
	comp=Z,1.3nm,0.9s,baz=64,slow=8.1,SNR=2.8						
WRA	**Warramunga Arr**	**61.59**	**188**	P	**P**	**03 22 42.5**	**-0.8**
	comp=Z,0.6nm,0.5s,baz=5.9,slow=6.8,SNR=14						
WRA				LR	LR	03 49 50.0	
	comp=Z,49nm,18.1s,baz=105,slow=36						
FINES	**FINESS Array B**	**65.10**	**332**	P	**P**	**03 23 05.1**	**-0.9**
	comp=Z,2.3nm,0.6s,baz=34,slow=8.3,SNR=9.0						
ASAR	**Alice Springs**	**65.32**	**188**	P	**P**	**03 23 07.1**	**-0.8**
	comp=Z,0.4nm,0.5s,baz=8.5,slow=7.3,SNR=5.0						
KBZ	**Khabaz**	**68.41**	**310**	P	**P**	**03 23 27.5**	**+0.1**
	comp=Z,1.0nm,0.5s,baz=65,slow=7.9,SNR=3.8						
NOA	**NORSAR Array B**	**70.25**	**337**	P	**P**	**03 23 37.8**	**-0.7**
	comp=Z,0.5nm,0.6s,baz=90,slow=6.2,SNR=3.2						
AKASG	**Malin Array Be**	**71.08**	**322**	P	**P**	**03 23 42.9**	**-0.8**
	comp=Z,0.5nm,0.4s,baz=45,slow=5.7,SNR=3.5						

JMA 19 03:13:22.5,37.°06N×140.°55E,h7km±1km,M2.6,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.20**	**78**	P	Pg	03 13 26.9	+0.3
ONAJ				S	Sg	03 13 30.0	+0.6
JFK	**Kawauchi**	**0.40**	**40**	P	Pg	03 13 30.4	+0.1
JFK				S	Sg	03 13 35.8	+0.2
JHO	**Hitachi**	**0.45**	**178**	P	Pg	03 13 31.2	0.0
JHO				S	Sg	03 13 37.5	+0.4
JFT	**Otama**	**0.49**	**340**	P	Pg	03 13 32.1	+0.1
JFT				S	Sg	03 13 38.7	+0.3
JSB	**Shiboa**	**0.51**	**260**	P	Pg	03 13 33.1	+0.7
JMM	**Marumori**	**0.83**	**13**	P	Pg	03 13 38.0	-0.4
JMM				S	Sg	03 13 48.5	-0.7
MAT	**Matsushiro**	**1.95**	**255**	S	Sb	03 14 22.3	-0.6

*DHMR **19** 03:16:30.5±1.7,12.°01N×43.°94E,h9km±12km,ML4.4*
*IDC **19** 03:16:32.0±3.5,11.°66N×44.°05E,h0km,mb3.5/5, mb1 3.6/5,mb1mx3.4/48,mbtmp3.5/5,MS3.1/6,Ms1 3.1/6, ms1mx2.8/39,Error ellipse: s-maj=81.9km s-min=31.5km az=157.0*
*ISCJB **19** 03:16:33.1±1.1,12.°02N±0.°07×44.°03E±0.°07,h10km, mb3.5/5,MS3.0/5,Error ellipse: s-maj=10.4km s-min=9.1km az=36.8*

ISC 19 03:16:35.2±1.3,12.°12N±0.°08×44.°07E±0.°07,h10km,n16, σ1:75/17,mb3.5/5,MS2.9/5,Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ADEN	**Aden**	**1.11**	**54**	*i*P	**Pb**	**03 16 54.4**	**-2.1**
ADEN				*i*S	**Sn**	**03 17 11.6**	**-0.5**
ADEN				AML	AML	03 17 17.9	
	comp=N,8μm,0.6s						
TRBA	**At Turbah**	**1.11**	**2**	*i*P	**Pb**	**03 16 54.0**	**-2.6**
TRBA				*i*S	**Sg**	**03 17 10.1**	**-0.9**
UDYN	**Al 'Udayn**	**1.84**	**357**	*i*P	**Pn**	**03 17 05.4**	**-1.6**
UDYN				*i*S	**Sb**	**03 17 31.9**	**-0.3**
BDHA	**Al Bayda'**	**2.35**	**38**	*i*P	**Pn**	**03 17 13.3**	**-0.9**
BDHA				*i*S	**Sb**	**03 17 48.7**	**+1.6**
DHBB	**Dhamar BB**	**2.46**	**7**	*i*P	**Pn**	**03 17 15.4**	**-0.2**
DHBB				*i*S	**Sb**	**03 17 51.0**	**+0.9**
HAJJ	**Hajjah**	**3.59**	**353**	*i*P	**Pn**	**03 17 29.4**	**-1.7**
HAJJ				*i*S	**Sn**	**03 18 16.7**	**+3.0**
EIL	**Elat**	**19.41**	**335**	LR	LR	03 27 09.1	
	comp=N,49nm,20.3s,baz=239,slow=32						
MMAI	**Mount Meron Ar**	**22.26**	**340**	LR	LR	03 28 43.7	
	comp=N,41nm,19.0s,baz=150,slow=32						
GNI	**Garni**	**27.93**	**1**	LR	LR	03 34 27.9	
	comp=N,31nm,20.0s,baz=190,slow=38						
GEYT	**Alibeck**	**28.61**	**24**	LR	LR	03 35 39.8	
	comp=N,55nm,18.4s,baz=155,slow=40						
BRTR	**Keskin Array B**	**29.00**	**343**	P	**P**	**03 22 37.4**	**+1.9**
	comp=N,0.8nm,0.8s,baz=161,slow=7.9,SNR=5.1						
BRTR				LR	LR	03 34 12.4	
	comp=N,28nm,20.0s,baz=129,slow=36						
LBTB	**Lobatse**	**41.07**	**206**	LR	LR	03 41 23.4	
	comp=N,28nm,18.5s,baz=176,slow=37						
TORD	**Torodi Ar. Bea**	**41.33**	**276**	P	**P**	**03 24 19.9**	**-1.6**
	comp=N,0.3nm,0.6s,baz=93,slow=6.6,SNR=3.2						
GERES	**GERESS Array B**	**44.44**	**332**	P	**P**	**03 24 47.9**	**+1.5**
	comp=N,0.3nm,0.6s,baz=125,slow=8.5,SNR=4.7						
MKAR	**Makanchi Array**	**47.20**	**35**	P	**P**	**03 25 09.4**	**+1.2**
	comp=N,0.8nm,0.9s,baz=224,slow=7.9,SNR=3.8						
KURBB	**Kurchatov Arra**	**47.59**	**29**	P	**P**	**03 25 12.5**	**+1.4**
	comp=N,0.3nm,0.3s,baz=230,slow=8.4,SNR=4.4						

SCB 19 03:16:43.7±0.1,17.°67S×65.°08W,h17km,MI3.5/3,8C-1D, Error ellipse: s-maj=4.6km s-min=3.3km az=29.0, Central Bolivia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BBOE	**La Paz, Chanca**	**2.90**	**287**	↑*i*Pn	Pb	03 17 37.0	+1.6
BBOJ	**La Paz, Jacaqu**	**3.05**	**283**	↑*i*Pn	Pb	03 17 38.7	+0.8
BBOJ				↑*i*Sn	Sb	03 18 18.3	+3.2
	14nm,0.3s						
LPAZ	**La Paz**	**3.23**	**295**	↑*i*Pn	Pb	03 17 40.8	-0.2
LPAZ				*e*Sn	Sb	03 18 21.7	+1.4
	53nm,0.4s						
BBOB	**La Paz, Bander**	**3.30**	**297**	↑*i*Pn	Pb	03 17 41.1	-1.0
BBOB				↑*i*Sn	Sb	03 18 23.2	+1.1
	101nm,0.4s						
BBOD	**La Paz, Gloria**	**3.52**	**287**	↑*i*Pn	Pb	03 17 43.2	-2.7
MOCB	**Mochara**	**3.60**	**188**	↑*i*Pn	Pb	03 17 45.6	-1.5
MOCB				*e*Sn	Sb	03 18 30.6	-0.1
SIV	**San Ignacio**	**4.19**	**67**	↓*i*Pn	Pb	03 17 53.5	-3.5

*IDC **19** 03:18:51.7±1.9,36.°32N×68.°19E,h0km,mb3.6/6, mb1 3.8/11,mb1mx3.6/54,mbtmp3.7/11,ML3.5/5,Error ellipse: s-maj=44.0km s-min=15.9km az=145.0*
*ISCJB **19** 03:18:55.5±1.5,36.°6N±0.°2×68.°0E±0.°2,h30km,mb3.5/5, Error ellipse: s-maj=28.8km s-min=10.7km az=145.3*

ISC 19 03:18:57.6±1.8,36.°6N±0.°2×68.°0E±0.°2,h30km,n13, σ2:20/14,mb3.6/5,4C,Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**2.30**	**17**	↑Pn	**Pn**	**03 19 34.0**	**+0.4**
	82nm,0.8s						
DZET				↑Lg	Lg	03 20 07.4	
	132nm,0.5s						
KK31	**Karatay Array**	**6.78**	**16**	↑Pg	**Pn**	**03 20 35.2**	**+0.2**
	3.5nm,0.7s,baz=191,slow=15,SNR=15						
KK31				↑Lg	Lg	03 21 50.8	
	1.3nm,0.4s						
AAK	**Ala-Archa**	**7.86**	**38**	Pn	**Pn**	**03 20 50.2**	**+0.2**
	1.7nm,0.3s,baz=180,slow=11,SNR=8.5						
AAK				Sn	**Sn**	**03 22 21.3**	**+3.5**
	0.2nm,0.3s,baz=159,slow=8.6,SNR=1.7						
MKAR	**Makanchi Array**	**14.75**	**42**	Pn	**Pn**	**03 22 21.7**	**-2.3**
	0.2nm,0.3s,baz=232,slow=14,SNR=14						
AKTO	**Aktyubinsk**	**15.56**	**336**	Pn	**Pn**	**03 22 33.8**	**-0.9**
	0.1nm,0.3s,baz=158,slow=13,SNR=2.8						
KURBB	**Kurchatov Arra**	**15.94**	**25**	Pn	**Pn**	**03 22 35.2**	**-4.3**
	0.1nm,0.3s,baz=216,slow=11,SNR=4.7						
BVAR	**Borovoye Array**	**16.51**	**5**	Pn	**Pn**	**03 22 43.3**	**-3.5**
	0.2nm,0.3s,baz=180,slow=12,SNR=4.7						
ZALV	**Zalesovo Beam**	**20.92**	**29**	P	**P**	**03 23 37.0**	**-0.6**
	2.1nm,0.5s,baz=224,slow=11,SNR=6.3						
BRTR	**Keskin Array B**	**27.06**	**287**	P	**P**	**03 24 39.1**	**+1.6**
	0.2nm,0.4s,baz=61,slow=10,SNR=2.7						
NOA	**NORSAR Array B**	**42.82**	**323**	P	**P**	**03 26 52.5**	**+0.1**
	1.0nm,0.8s,baz=99,slow=8.1,SNR=3.4						
TORD	**Torodi Ar. Bea**	**63.27**	**267**	P	**P**	**03 29 23.7**	**0.0**
	0.3nm,0.8s,baz=49,slow=6.1,SNR=3.8						
INK	**Inuvik**	**74.17**	**8**	P	**P**	**03 30 31.4**	**+0.7**
	1.0nm,0.8s,baz=290,slow=4.2,SNR=4.1						
YKA	**Yellowknife Ar**	**81.22**	**1**	P	**P**	**03 31 10.5**	**+0.4**
	0.4nm,0.6s,baz=352,slow=5.4,SNR=13						

IDC 19 03:30:15.5±2.0,6.°46S×129.°22E,h0km,mb3.6/1, mb1 4.1/3,mb1mx3.6/34,mbtmp3.9/3,ML4.0/2,Error ellipse: s-maj=116.0km s-min=30.7km az=68.0,Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**14.29**	**160**	Pn	Pn	03 33 38.5	-0.9
	0.6nm,0.3s,baz=339,slow=12,SNR=32						
WRA				Sn	Sn	03 36 03.7	-15
	1.6nm,0.3s,baz=333,slow=23,SNR=11						
ASAR	**Alice Springs**	**17.69**	**166**	P	P	03 34 24.1	-0.4
	0.7nm,0.3s,baz=343,slow=9.1,SNR=24						
ASAR				S	Sn	03 37 29.6	-12
	0.3nm,0.3s,baz=355,slow=29,SNR=4.8						
MKAR	**Makanchi Array**	**67.36**	**327**	P	P	03 41 12.6	0.0
	0.3nm,0.5s,baz=124,slow=7.8,SNR=3.7						

GUC 19 03:31:29.7±0.3,37.°86S×72.°44W,h78km±4km,ML3.9,1D, Central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CCSP	**San Pedro de C**	**1.15**	**332**	*e*P	Pn	03 31 50.2	-0.2
CCSP				*e*S	Sn	03 32 05.5	-0.5
CCSP				IAML		03 32 09.9	
	comp=N,1μm,0.4s						
CCHI	**Chillan**	**1.29**	**13**	↓*e*P	Pn	03 31 51.9	-0.3
CCHI				*e*S	Sn	03 32 08.9	-0.3
CCHI				IAML		03 32 09.6	
	comp=N,6μm,0.3s						
TALC	**Talca**	**2.55**	**15**	*e*P	Pn	03 32 08.5	-0.3
TALC				*e*S	Sn	03 32 38.1	-0.7
TALC				IAML		03 32 56.7	
	comp=N,894nm,0.6s						

*NIED **19** 03:41:00,40.°90N×142.°10E,h56km,Mw3.7 Best double couple: M0:3.79000×10^14 NP1:φ1:168.00000°,δ61.00000°, λ-6.00000°. NP2:φ2:260.00000°,δ85.00000°, λ-151.00000°.*
*ISCJB **19** 03:41:48.2±0.7,40.°91N±0.°04×142.°06E±0.°09,h65km±7km, mb4.2/3,Error ellipse: s-maj=11.4km s-min=5.9km az=15.4*
*JMA **19** 03:41:48.4±0.1,40.°91N×142.°13E,h52km±2km,M3.8*
JMA Felt II J1.
*IDC **19** 03:41:51.7±3.4,41.°06N×141.°81E,h70km±27km,mb3.9/3, mb1 3.7/5,mb1mx3.2/48,mbtmp3.9/5,MS2.3/1,Ms1 2.3/1, ms1mx2.0/48,Error ellipse: s-maj=92.9km s-min=18.9km az=110.0*

ISC 19 03:41:48.8±1.1,40.°90N±0.°04×142.°06E±0.°07,h57km±11km, n16,σ0:47/21,mb4.4/3,5D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JANG	**Nango**	**0.67**	**218**	↓P	**Pn**	**03 42 02.4**	**-0.1**
JANG				S	**Sn**	**03 42 12.1**	**-0.3**
JTM	**Tenmabayashi**	**0.76**	**262**	↓P	**Pn**	**03 42 03.6**	**0.0**
JTM				S	**Sn**	**03 42 14.6**	**+0.2**
JOT	**Ohata**	**0.90**	**303**	↓P	**Pn**	**03 42 05.2**	**-0.2**
JOT				*e*S	**Sn**	**03 42 17.6**	**-0.1**
JKB	**Kayabe**	**1.25**	**322**	↓P	**Pn**	**03 42 09.9**	**-0.2**
JKB				*e*S	**Sn**	**03 42 26.4**	**+0.4**
JAH	**Hinai**	**1.29**	**237**	↓P	**Pn**	**03 42 11.2**	**+0.6**
JAH				*e*S	**Sn**	**03 42 28.0**	**+1.1**
JSR	**Shiriuchi**	**1.39**	**298**	P	**Pn**	**03 42 12.1**	**+0.2**
JEM	**Erimo**	**1.39**	**36**	P	**Pn**	**03 42 12.0**	**+0.1**
JNBK	**Urakawa-nobuka**	**1.48**	**20**	P	**Pn**	**03 42 13.0**	**-0.1**
JOM	**Ohasama**	**1.54**	**203**	P	**Pn**	**03 42 14.2**	**+0.3**
JOM				*e*S	**Sn**	**03 42 32.8**	**0.0**
JIW	**Iwasaki**	**1.59**	**260**	P	**Pn**	**03 42 15.0**	**+0.4**
ASAJ	**Asahikawa**	**3.24**	**7**	P	**Pn**	**03 42 38.1**	**+1.0**
	4.2nm,0.3s,baz=204,slow=12,SNR=13						
ASAJ				S	**Sn**	**03 43 15.1**	**+0.6**
	2.8nm,0.3s,baz=332,slow=30,SNR=3.5						
MJAR	**Matsushiro Arr**	**5.29**	**216**	P	Pn	03 43 08.6	+3.3
	0.5nm,0.3s,baz=28,slow=13,SNR=4.6						
KLR	**Kul'dur**	**11.06**	**322**	LR	LR	03 49 07.4	
	comp=Z,17nm,21.9s,slow=40						
MKAR	**Makanchi Array**	**42.60**	**299**	P	**P**	**03 49 38.7**	**-0.4**
	0.7nm,0.4s,baz=80,slow=7.9,SNR=8.7						
BVAR	**Borovoye Array**	**48.41**	**310**	P	**P**	**03 50 24.6**	**-0.3**
	1.6nm,0.3s,baz=67,slow=8.0,SNR=5.7						
FINES	**FINESS Array B**	**65.64**	**332**	P	**P**	**03 52 26.5**	**0.0**
	2.8nm,0.7s,baz=42,slow=8.4,SNR=12						

*IDC **19** 03:42:01.8±1.4,20.°31S×168.°30E,h0km,mb4.1/9, mb1 4.3/10,mb1mx4.0/37,mbtmp4.1/10,ML3.6/1,MS3.5/3, Ms1 3.5/3,ms1mx2.9/34,Error ellipse: s-maj=47.5km s-min=19.0km az=134.0*
*ISCJB **19** 03:42:04.6±0.8,20.°2S±0.°1×168.°2E±0.°2,h26km,mb4.1/9, MS3.4/3,Error ellipse: s-maj=25.1km s-min=9.6km az=34.0*

ISC 19 03:42:05.9±0.9,20.°3S±0.°1×168.°3E±0.°2,h26km,n15, σ0:59/15,mb4.1/9,MS3.5/3,Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.46**	**223**	Pn	**Pn**	**03 42 43.7**	**-0.8**
	13nm,0.3s,baz=115,slow=15,SNR=48						
DZM				Sn	**Sn**	**03 43 14.5**	**+0.7**
	56nm,0.3s,baz=135,slow=20,SNR=17						
STKA	**Stephens Creek**	**26.52**	**239**	P	**P**	**03 47 42.2**	**+0.8**
	2.9nm,0.6s,baz=59,slow=12,SNR=3.7						
STKA				LR	LR	03 58 58.2	
	comp=Z,88nm,18.1s,baz=30,slow=38						
WRA	**Warramunga Arr**	**31.82**	**265**	LR	LR	04 02 14.9	
	comp=Z,98nm,18.2s,baz=105,slow=38						
ASAR	**Alice Springs**	**31.99**	**258**	P	**P**	**03 48 30.0**	**-0.3**
	4.3nm,0.8s,baz=88,slow=8.8,SNR=27						
FITZ	**Fitzroy Crossi**	**40.23**	**266**	P	**P**	**03 49 40.5**	**-0.2**
	3.8nm,0.8s,baz=97,slow=8.1,SNR=3.3						
FITZ				LR	LR	04 07 44.5	
	comp=Z,56nm,18.1s,baz=64,slow=38						
MJAR	**Matsushiro Arr**	**63.24**	**333**	P	**P**	**03 52 31.2**	**-0.9**
	0.9nm,0.5s,baz=169,slow=7.4,SNR=3.9						
USRK	**Ussuriysk Ar.**	**72.23**	**333**	P	**P**	**03 53 28.7**	**+0.1**
	2.0nm,0.7s,baz=177,slow=7.6,SNR=4.0						
CMAR	**Chiang Mai Arr**	**78.08**	**295**	P	**P**	**03 54 03.9**	**+0.9**
	0.9nm,0.5s,baz=136,slow=4.0,SNR=7.5						
SONM	**Songino Array**	**87.49**	**324**	P	**P**	**03 54 51.5**	**+0.2**
	0.6nm,0.6s,baz=157,slow=4.1,SNR=3.7						
VNA3	**Neumayer Olymp**	**88.72**	**181**	P	**P**	**03 54 56.4**	**-0.4**
VNA2	**Neumayer--Watz**	**89.00**	**181**	P	**P**	**03 54 58.1**	**0.0**
	baz=193,slow=4.2						
NVAR	**Mina Array Bea**	**90.17**	**49**	P	**P**	**03 55 04.5**	**+0.2**
	0.8nm,0.8s,baz=222,slow=7.9,SNR=5.1						
ILAR	**Eielson Array**	**91.49**	**18**	P	**P**	**03 55 10.1**	**+0.6**
	0.3nm,0.6s,baz=248,slow=4.8,SNR=3.4						
ARCES	**ARCESS Array B**	**125.82**	**345**	PKP	**PKPdf**	**04 01 04.4**	**-0.2**
	1.2nm,0.6s,baz=60,slow=2.9,SNR=6.7						
GERES	**GERESS Array B**	**144.94**	**330**	PKPbc	**PKPab**	**04 01 39.7**	**-0.3**
	0.4nm,0.3s,baz=35,slow=3.6,SNR=3.6						

*MAN **19** 03:43:04,4.°49N×126.°71E,h7km,mb5.2,ML4.1,MS4.3*
*NEIC **19** 03:43:05.4±0.3,4.°96N×126.°95E,h35km,mb4.4/10,Error ellipse: s-maj=9.5km s-min=5.4km az=69.0*
*ISCJB **19** 03:43:07.3±0.5,4.°64N±0.°05×126.°90E±0.°05,h85km, mb4.3/24,Error ellipse: s-maj=8.3km s-min=6.5km az=142.6*
*IDC **19** 03:43:13.8±2.4,4.°83N×126.°70E,h113km±21km,mb3.9/14, mb1 4.0/15,mb1mx3.7/49,mbtmp4.2/15,MS2.8/3, Ms1 2.9/3,ms1m

STKA	Stephens Creek	38.97 160	eP	P	03 50 30.2	+1.8
	comp=Z,1.8nm,0.8s					
CN2	Changchun	39.00 358	eP	P	03 50 27.3	-1.2
SONM	Songino Array	46.44 341	P	P	03 51 28.3	-0.5
	comp=Z,1.6nm,0.6s,baz=156,slow=7.4,SNR=5.4					
TLY	Talaya	50.67 342	P	P	03 51 59.9	-1.2
	comp=Z,2.7nm,0.5s,baz=349,slow=5.2,SNR=3.4					
WMQ	Urumqi	52.00 325	P	P	03 52 10.5	-0.7
WMQ			pmax	pmax		
	comp=Z,5.0nm,0.6s					
WMQ			pmax	pmax		
	comp=Z,54nm,4.6s					
WMQ			LR	LR		
	comp=Z,11nm,23.2s					
MK01	Makanchi Array	56.81 325	eP	P	03 52 44.8	-1.1
MK31	Makanchi Array	56.83 325	eP	P	03 52 45.4	-0.7
MKAR	Makanchi Array	56.83 325	P	P	03 52 45.0	-1.1
	comp=Z,1.7nm,0.5s,baz=121,slow=8.2,SNR=17					
MKAR			LR	LR	04 18 31.6	
	comp=Z,14nm,21.1s,baz=82,slow=37					
MKAR	Makanchi Array	56.83 325	eP	P	03 52 45.4	-0.7
MAKZ	Makanchi	57.02 325	eP	P	03 52 46.7	-0.7
	comp=Z,2.6nm,0.9s					
ZALV	Zalesovo Beam	59.79 333	P	P	03 53 05.7	-0.8
	comp=Z,0.6nm,0.4s,baz=145,slow=8.6,SNR=3.0					
BVAR	Borovoye Array	66.58 327	P	P	03 53 50.4	-1.1
	comp=Z,1.4nm,0.5s,baz=128,slow=6.4,SNR=8.4					
ZRNK	Zerenda	67.31 326	eP	P	03 53 55.2	-0.9
	comp=Z,15nm,1.6s					
ABKAR	Akbulak array	71.47 321	eP	P	03 54 20.9	-0.9
	comp=Z,0.5nm,0.3s					
AKTO	Aktyubinsk	72.97 321	P	P	03 54 29.9	-0.9
	comp=Z,1.6nm,0.5s,baz=105,slow=10.0,SNR=5.5					
ILAR	Eielson Array	84.25 25	P	P	03 55 32.3	-0.1
	comp=Z,0.2nm,0.5s,baz=246,slow=6.1,SNR=3.5					
ARCES	ARCESS Array B	89.60 340	P	P	03 55 57.4	-0.9
	comp=Z,1.9nm,0.8s,baz=88,slow=6.2,SNR=20					
FINES	FINESS Array B	91.04 332	P	P	03 56 04.5	-0.6
	comp=Z,1.3nm,0.7s,baz=51,slow=6.1,SNR=6.1					
YKW3	Yellowknife Ar	98.61 24	eP	P	03 56 29.3	-10
	comp=Z,6.5nm,1.3s					
TORD	Torodi Ar. Bea	122.67 289	PKP	PKPdf	04 01 57.4	0.0
	comp=Z,0.4nm,0.6s,baz=67,slow=1.9,SNR=8.1					

*SCB **19** 03:43:45.8±1.0, 17°.31S×73°.31W, h32km, Ml4.4/1, Error ellipse: s-maj=26.0km s-min=11.9km az=112.0*
*ISCJB **19** 03:43:57.7±0.8, 17°.56S±0°.06×72°.72W±0°.07, h29km, mb4.0/6, MS3.9/2, Error ellipse: s-maj=9.4km s-min=7.8km az=161.9*
*IDC **19** 03:44:02.2±2.3, 17°.54S×72°.50W, h57km±21km, mb3.9/5, mb1 4.1/9, mb1mx3.8/30, mbtmp4.2/9, ML3.5/3, MS3.5/6, Ms1 3.5/6, ms1mx3.3/22, Error ellipse: s-maj=27.9km s-min=17.3km az=58.0*

ISC 19 03:43:58.5±0.7, 17°.50S±0°.06×72°.73W±0°.06, h29km, n36, σ2§28/38, mb4.3/6, 1C, Near coast of Peru

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PB12	IPOC Station P	2.54 116		eP	Pn	03 44 37.3	-0.6
PB12				eS	Sb	03 45 15.1	+0.6
PB13	IPOC Station P	3.19 106		eP	Pn	03 44 46.7	-0.6
PB13				eS	Sb	03 45 31.4	-2.1
PB13				IAML		03 45 41.4	
	comp=E,8μm,0.8s						
PSGC	Pisagua	3.24 131		eP	Pn	03 44 47.8	+0.3
PSGC				eS	Sb	03 45 33.4	-1.1
PSGC				IAML		03 45 47.1	
	comp=E,439nm,0.7s						
MNMC	Minye Minye	3.40 119		eP	Pn	03 44 49.6	-0.2
MNMC				eS	Sb	03 45 36.6	-2.5
MNMC				IAML		03 45 52.0	
	comp=N,1μm,0.5s						
BBOD	La Paz, Gloria	4.05 78		ePn	Pn	03 44 59.9	+0.9
PB08	IPOC Station P	4.29 128		eP	Pn	03 45 03.2	+0.9
BBOJ	La Paz, Jacaqu	4.37 84		ePn	Pn	03 45 04.7	+1.2
LPAZ	La Paz	4.57 75		P	Pn	03 45 07.2	+0.9
	comp=N,2.6nm,0.3s,baz=252,slow=9.7,SNR=113						
LPAZ				LR	LR	03 46 57.6	
	comp=N,428nm,19.5s,baz=292,slow=40						
LPAZ	La Paz	4.57 75		eS	Sn	03 45 59.5	+0.8
LPAZ	La Paz	4.57 75		ePn	Pn	03 45 07.0	+0.7
BBOE	La Paz, Chanca	4.59 82		ePn	Pn	03 45 07.2	+0.7
BBOB	La Paz, Bander	4.61 74		ePn	Pn	03 45 07.5	+0.8
BBOB				eSn	Sn	03 46 06.3	+6.7
	comp=N,221nm,0.8s						
PB07	IPOC Station P	4.99 148		eP	Pn	03 45 12.5	+0.8
LVC	Limon Verde	6.23 145		P	Pn	03 45 30.2	+1.3
	comp=N,130nm,0.3s,baz=336,slow=13,SNR=40						
LVC				S	Sn	03 46 39.0	-0.3
	comp=N,588nm,0.3s,baz=90,slow=19,SNR=16						
NNA	Nana	6.77 324		P	Pn	03 45 40.6	+4.6
	comp=N,0.7nm,0.3s,baz=150,slow=18,SNR=2.3						
NNA				S	Sb	03 47 09.3	-6.6
	comp=N,2.7nm,0.3s,baz=68,slow=19,SNR=3.7						
NNA				LR	LR	03 48 11.2	
	comp=N,144nm,21.2s,baz=149,slow=36						
MOCB	Mochara	7.67 120		↑ePn	Pn	03 45 50.9	+2.2
SIV	San Ignacio	11.27 84		P	Pn	03 46 34.5	-3.2
	comp=N,0.6nm,0.3s,baz=265,slow=13,SNR=8.9						
SIV				LR	LR	03 51 28.0	
	comp=N,298nm,18.8s,baz=262,slow=40						
SIV	San Ignacio	11.27 84		eP	Pn	03 46 34.4	-3.4
ATAH	Atahualpa	11.69 331		LR	LR	03 51 30.6	
	comp=N,146nm,19.2s,baz=116,slow=38						
CPUP	Villa Florida	16.77 124		P	Pn	03 47 50.7	-0.6
	comp=N,0.0nm,0.3s,baz=308,slow=8.4,SNR=2.9						
PTGA	Pitinga	20.87 38		P	P	03 48 34.7	-3.6
	comp=N,7.6nm,0.5s,baz=216,slow=14,SNR=22						
PLCA	Paso Flores	23.23 176		P	P	03 49 02.7	-0.7
	comp=N,2.2nm,1.0s,baz=354,slow=9.2,SNR=2.1						
TXAR	Lajitas Array	55.31 327		P	P	03 53 38.5	+8.7
	comp=N,0.1nm,0.6s,baz=154,slow=9.0,SNR=2.9						
DBIC	Dimbokro	71.19 76		P	P	03 55 14.4	-0.8
	comp=N,4.1nm,0.9s,baz=245,slow=6.0,SNR=5.1						
DBIC				LR	LR	04 25 14.7	
	comp=N,58nm,18.3s,baz=218,slow=35						
TORD	Torodi Ar. Bea	79.51 73		P	P	03 56 01.7	-1.4
	comp=N,2.5nm,0.7s,baz=253,slow=5.0,SNR=28						
TORD				LR	LR	04 28 50.1	
	comp=N,73nm,21.3s,baz=100,slow=34						
ESDC	Sonseca Array	85.60 46		P	P	03 56 34.1	-0.3
	comp=N,2.0nm,0.8s,baz=254,slow=4.9,SNR=9.9						
YKA	Yellowknife Ar	86.26 342		P	P	03 56 37.7	+0.7
	comp=N,1.3nm,0.8s,baz=136,slow=5.0,SNR=28						
H11S2	WAKE ISLAND Hyl	23.69 281		T	T	06 18 55.9	
	baz=99,slow=75,SNR=13						
H11S1	WAKE ISLAND Hyl	23.70 281		T	T	06 18 57.5	
	baz=99,slow=75,SNR=20						
H11S3	WAKE ISLAND Hyl	23.71 281		T	T	06 18 58.0	
	baz=99,slow=75,SNR=16						
WRA	Warramunga Arr	134.27 217		PKP	PKPdf	04 03 14.7	+0.2
	comp=N,0.7nm,0.8s,baz=132,slow=1.8,SNR=3.0						
ZALV	Zalesovo Beam	139.68 20		PKP	PKPdf	04 03 24.9	+1.6
	comp=N,0.7nm,0.3s,baz=321,slow=2.0,SNR=3.1						
MKAR	Makanchi Array	144.24 30		PKP	PKPab	04 03 30.4	+0.8
	comp=N,1.1nm,0.7s,baz=329,slow=4.5,SNR=8.8						
MJAR	Matsushiro Arr	146.75 311		PKPbc	PKPbc	04 03 38.9	+0.7
	comp=N,0.9nm,0.4s,baz=69,slow=0.9,SNR=6.0						
SONM	Songino Array	149.74 1		PKPbc	PKPbc	04 03 46.2	+0.4
	comp=N,1.2nm,0.6s,baz=344,slow=2.3,SNR=7.1						
KSRS	Korea Array	153.07 322		PKPab	PKPab	04 04 05.8	+0.7
	comp=N,2.0nm,0.9s,baz=15,slow=1.4,SNR=4.3						

*NIED **19** 03:45:00.39°.30N×143°.00E, h17km, Mw3.6 Best double couple: M0=2.60000×10^14 NP1:φs=59.00000°, δ17.00000°, λ-96.00000°. NP2:φs=245.00000°, δ73.00000°, λ-88.00000°.*
*JMA **19** 03:45:25.8±0.1, 39°.32N×143°.00E, h18km±2km, M3.6*
*IDC **19** 03:45:28.5±1.4, 38°.31N×143°.55E, h0km, mb3.4/2, mb1 3.7/3, mb1mx3.3/45, mbtmp3.3/3, ML3.2/1, Error ellipse: s-maj=64.8km s-min=28.8km az=126.0*

ISC 19 03:45:25.5±2.5, 39°.40N±0°.08×143°.0E±0°.1, h15km±12km, n11, σ1§28/15, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MIYJ	Miyakonagasawa	0.96 281		P	Pb	03 45 43.5	-0.2
MIYJ				S	Sg	03 45 56.1	-0.4
JTH	Tanohata	1.05 301		P	Pg	03 45 45.6	-0.2
JTH				eS	Sn	03 46 00.0	0.0
OFUJ	Ofunato	1.11 254		P	Pb	03 45 45.6	-0.7
JOM	Ohasama	1.35 274		P	Pb	03 45 49.8	-0.6
JOM				S	Sn	03 46 06.7	-0.7
JKZ	Kuzumaki	1.44 295		P	Pb	03 45 51.7	-0.3
JKZ				eS	Sb	03 46 10.3	+0.2
JMK	Ichinoseki	1.48 253		P	Pb	03 45 51.8	-0.8
JMK				S	Sn	03 46 09.7	-0.8
JANG	Nango	1.52 310		P	Pb	03 45 53.0	-0.3
MJAR	Matsushiro Arr	4.76 235		Pn	Pn	03 46 39.2	+2.6
	1.1nm,0.3s,baz=48,slow=11,SNR=17						
MAT	Matsushiro	4.76 235		P	Pn	03 46 39.1	+2.4
MAT				eS	Sb	03 47 38.6	-7.1
WRA	Warramunga Arr	59.59 189		P	P	03 55 27.1	-1.5
	0.6nm,0.7s,baz=6.6,slow=7.0,SNR=6.4						
YKA	Yellowknife Ar	61.13 31		P	P	03 55 49.0	+10
	0.2nm,0.7s,baz=301,slow=6.2,SNR=3.5						

*IDC **19** 04:02:18.9±2.1, 6°.55S×148°.18E, h0km, mb4.0/4, mb1 4.2/6, mb1mx3.8/37, mbtmp4.0/6, ML4.1/1, MS3.3/4, Ms1 3.3/4, ms1mx2.9/32, Error ellipse: s-maj=45.9km s-min=35.3km az=105.0*

ISC 19 04:02:27.0±2.4, 6°.7S±0°.2×147°.9E±0°.4, h51km, n9, σ0§27/7, mb3.8/4, MS3.3/3, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PMG	Port Moresby	2.83 196		Pn	Pn	04 03 09.8	+0.1
	12nm,0.3s,baz=43,slow=5.0,SNR=22						
PMG				Sn	Sn	04 03 50.0	+7.4
	9.5nm,0.3s,baz=18,slow=22,SNR=7.0						
PMG				LR	LR	04 04 18.8	
	comp=Z,385nm,21.1s,baz=284,slow=40						
WRA	Warramunga Arr	18.67 224		P	P	04 06 41.2	+0.3
	0.6nm,0.3s,baz=51,slow=11,SNR=17						
ASAR	Alice Springs	21.63 217		P	P	04 07 13.1	0.0
	2.3nm,0.5s,baz=52,slow=9.3,SNR=27						
FITZ	Fitzroy Crossi	24.53 240		P	P	04 07 41.8	-0.2
	8.1nm,0.5s,baz=61,slow=9.1,SNR=66						
FITZ				LR	LR	04 18 23.7	
	comp=Z,88nm,19.6s,baz=57,slow=39						
STKA	Stephens Creek	25.77 192		P	P	04 07 52.7	-0.4
	1.5nm,0.7s,baz=25,slow=14,SNR=3.2						
MJAR	Matsushiro Arr	43.94 349		LR	LR	04 26 19.7	
	comp=Z,26nm,21.2s,baz=175,slow=33						
KSRS	Korea Array	47.71 338		LR	LR	04 29 45.1	
	comp=Z,42nm,18.6s,baz=158,slow=34						
VNDA	Vanda	71.19 177		P	P	04 13 40.1	+0.1
	0.9nm,0.8s,baz=325,slow=6.6,SNR=3.6						
TORD	Torodi Ar. Bea	146.16 284		PKPbc	PKPbc	04 22 02.8	+0.1
	0.8nm,0.4s,baz=65,slow=3.7,SNR=33						

*IDC **19** 04:12:11.9±1.0, 20°.27S×168°.38E, h0km, mb4.2/11, mb1 4.4/13, mb1mx4.2/30, mbtmp4.2/13, ML3.9/2, MS3.7/9, Ms1 3.7/9, ms1mx3.4/28, Error ellipse: s-maj=30.1km s-min=19.0km az=139.0*
*ISCJB **19** 04:12:14.4±0.7, 20°.29S±0°.09×168°.3E±0°.1, h26km, mb4.1/10, MS3.7/8, Error ellipse: s-maj=16.6km s-min=9.4km az=36.7*

ISC 19 04:12:15.9±0.8, 20°.3S±0°.1×168°.3E±0°.1, h26km, n25, σ0§93/19, mb4.1/10, MS3.7/8, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	Mont Dzumac	2.48 225		Pn	Pn	04 12 54.7	-0.1
	19nm,0.3s,baz=57,slow=18,SNR=72						
DZM				Sn	Sn	04 13 23.4	-0.9
	39nm,0.3s,baz=44,slow=17,SNR=6.7						
HNR	Honiara	13.51 322		LR	LR	04 19 45.6	
	comp=Z,154nm,20.0s,baz=131,slow=34						
URZ	Urewera	19.43 159		P	P	04 16 40.1	-0.3
	0.4nm,0.3s,baz=74,slow=15,SNR=2.5						
CTA	Charters Tower	20.73 267		P	P	04 16 55.4	+0.8
	2.4nm,0.3s,baz=102,slow=14,SNR=3.3						
CTA				LR	LR	04 25 20.7	
	comp=Z,384nm,19.3s,baz=86,slow=38						
STKA	Stephens Creek	26.56 239		P	P	04 17 53.0	+1.2
	4.3nm,0.8s,baz=60,slow=10,SNR=9.3						
STKA				LR	LR	04 27 28.4	
	comp=Z,252nm,19.4s,baz=28,slow=34						
RAR	Rarotonga	29.81 97		LR	LR	04 28 31.0	
	comp=Z,45nm,18.4s,baz=268,slow=33						
WRA	Warramunga Arr	31.89 265		P	P	04 18 38.5	-0.9
	1.2nm,0.8s,baz=96,slow=8.3,SNR=11						
WRA				LR	LR	04 32 33.7	
	comp=Z,148nm,18.9s,baz=105,slow=38						
ASAR	Alice Springs	32.05 258		P	P	04 18 41.0	+0.1
	5.7nm,0.7s,baz=84,slow=9.0,SNR=50						
ASAR				LR	LR	04 31 48.2	
	comp=Z,252nm,18.1s,baz=96,slow=37						
PPT2	Papeete2	39.82 93		eLR	LR	04 31 12.6	
	169nm,28.5s						
PPT	Papeete	39.83 93		LR	LR	04 33 57.3	
	comp=Z,86nm,18.4s,baz=307,slow=33						
FITZ	Fitzroy Crossi	40.30 266		P	P	04 19 50.4	-0.9
	8.6nm,0.9s,baz=106,slow=12,SNR=7.6						
VNDA	Vanda	57.34 182		LR	LR	04 44 23.2	
	comp=Z,40nm,18.4s,baz=346,slow=34						
MJAR	Matsushiro Arr	63.31 333		P	P	04 22 42.1	-0.5
	0.7nm,0.4s,baz=159,slow=6.5,SNR=4.0						
USRK	Ussuriysk Ar.	72.31 333		P	P	04 23 39.4	+0.3
	2.6nm,0.9s,baz=158,slow=4.2,SNR=3.8						
CMAR	Chiang Mai Arr	78.17 295		P	P	04 24 15.3	+1.8
	1.5nm,0.7s,baz=121,slow=4.7,SNR=8.8						
SONM	Songino Array	87.57 323		P	P	04 25 00.5	-1.3
	0.3nm,0.5s,baz=123,slow=5.5,SNR=5.3						
VNA3	Neumayer Olymp	88.67 181		P	P	04 25 07.3	+0.7
VNA2	Neumayer--Watz	88.96 181		P	P	04 25 08.9	+1.0
	baz=184,slow=2.2						
NVAR	Mina Array Bea	90.15 49		P	P	04 25 13.5	-0.7
	1.7nm,0.9s,baz=226,slow=8.3,SNR=5.9						
ILAR	Eielson Array	91.51 18		P	P	04 25 20.1	+0.4
	0.2nm,0.4s,baz=233,slow=5.1,SNR=3.2						
TXAR	Lajitas Array	98.02 62		LR	LR	05 04 34.3	
	comp=Z,46nm,18.0s,baz=0.0,slow=32						
MKAR	Makanchi Array	101.91 316		PP	PP	04 30 17.2	-1.6
	0.1nm,0.2s,baz=97,slow=4.5,SNR=1.9						
YKA	Yellowknife Ar	102.01 28		P	Pdif	04 26 07.0	-0.2
	0.3nm,1.0s,baz=278,slow=4.2,SNR=2.7						
ARCES	ARCESS Array B	125.88 345		PKP	PKPdf	04 31 13.7	-1.2
	1.6nm,0.8s,baz=52,slow=5.8,SNR=3.9						
GERES	GERESS Array B	145.02 330		PKPbc	PKPdf	04 31 51.3	+0.4
	0.3nm,0.5s,baz=58,slow=3.3,SNR=5.0						

IDC 19 04:21:06.7±2.2, 18°.14S×178°.09W, h494km±25km, mb3.4/9, mb1 3.7/10, mb1mx3.3/37, mbtmp4.2/10, Error ellipse: s-maj=72.6km s-min=13.0km az=152.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AFI	Afiamalu	7.38 56		P	P	04 22 56.0	-0.7
	6.4nm,0.3s,baz=114,slow=12,SNR=6.9						
CTA	Charters Tower	33.71 261		P	P	04 27 07.4	+1.0
	3.1nm,0.3s,baz=100,slow=14,SNR=5.4						
STKA	Stephens Creek	38.79 241		P	P	04 27 47.9	-0.4
	2.5nm,0.4s,baz=90,slow=14,SNR=7.7						
WRA	Warramunga Arr	44.89 260		P	P	04 28 36.5	-0.3
	3.6nm,0.4s,baz=98,slow=6.9,SNR=36						
ASAR	Alice Springs	45.02 254		P	P	04 28 37.6	-0.2
	3.6nm,0.4s,baz=92,slow=7.5,SNR=47						
NVAR	Mina Array Bea	79.38 44		P	P	04 32 22.0	+0.8
	0.7nm,0.7s,baz=225,slow=8.9,SNR=3.9						
TXAR	Lajitas Array	85.86 57		P	P	04 32 54.6	+0.6
	1.2nm,0.7s,baz=221,slow=6.8,SNR=15						
ILAR	Eielson Array	86.04 13		P	P	04 32 53.9	-0.1
	0.5nm,0.4s,baz=214,slow=5.2,SNR=13						
PDAR	Pinedale Array	87.31 43		P	P	04 33 00.5	-0.2
	0.3nm,0.5s,baz=208,slow=2.9,SNR=4.5						
YKA	Yellowknife Ar	94.41 25		P	P	04 33 32.6	-0.1
	0.3nm,0.6s,baz=242,slow=4.6,SNR=6.9						
ARCES	ARCESS Array B	126.60 350		PKP	PKPdf	04 39 11.5	-1.2
	3.1nm,1.0s,baz=5.7,slow=1.2,SNR=6.3						
BRTR	Keskin Array B	145.16 315		PKPbc	PKPdf	04 39 47.3	-0.7
	0.4nm,0.5s,baz=150,slow=5.6,SNR=3.6						
GERES	GERESS Array B	147.91 345		PKPbc	PKPbc	04 39 55.2	-0.7
	0.8nm,0.9s,baz=345,slow=2.2,SNR=5.3						

JMA 19 04:27:21.0±0.1, 39°.09N×142°.39E, h31km±1km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	Ofunato	0.56 269		P	Pb	04 27 32.4	-0.1
OFUJ				S	Sb	04 27 40.1	-0.2
MIYJ	Miyakonagasawa	0.66 318		P	Pb	04 27 33.4	-0.7
MIYJ				S	Sb	04 27 42.3	-0.7
JMK	Ichinoseki	0.92 262		P	Pn	04 27 37.8	0.0
JMK				S	Sn	04 27 49.7	-0.3
JOM	Ohasama	0.93 295		P	Pn	04 27 38.1	+0.1
JOM				S	Sn	04 27 50.3	0.0
JTH	Tanohata	0.94 335		P	Pn	04 27 38.3	+0.2
JTH				eS	Sn	04 27 50.5	0.0
JIO	Ouri	1.03 232		P	Pn	04 27 38.8	-0.5
JIO				S	Sn	04 27 51.2	-1.5

*IDC **19** 04:53:28.6±2.1, 2°.28S×128°.08E, h0km, mb3.6/2, mb1 3.8/3, mb1mx3.5/35, mbtmp3.6/3, ML3.5/1, Error ellipse: s-maj=146.7km s-min=26.4km az=67.0*
*ISCJB **19** 04:53:31.6±0.5, 2°.12S±0°.06×128°.21E±0°.04, h33km, mb3.8/2, Error ellipse: s-maj=8.4km s-min=4.9km az=9.8*
*DJA **19** 04:53:33.3±1.6, 2°.S±3°×12°.8E±°, h30km±19km, M3.7/5, MLv3.7/5*

ISC 19 04:53:33.3±0.9, 2°.01S±0°.06×128°.23E±0°.05, h33km, n13, σ1§68/18, Ceram Sea

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LBMI	Labuha	1.54 332		P	Pn	04 53 58.7	+0.2
LBMI				S	Sn	04 54 17.9	+0.5
NLAI	Namlea	1.66 223		P	Pn	04 54 01.1	+0.9
NLAI				S	Sn	04 54 23.4	+3.0
SANI	Sanana	2.24 269		P	Pn	04 54 08.8	+0.7
SANI				S	Sn	04 54 32.2	-2.4
SWI	Sorong	3.24 70		P	Pn	04 54 22.0	+0.1
SWI				S	Sn	04 55 01.6	+2.2
FAKI	Fak Fak	4.12 103		P	Pn	04 54 34.3	+0.3
FAKI				S	Sn	04 55 20.4	-0.8
LUWI	Luwuk	5.54 280		P	Pn	04 54 54.2	+0.7
KDI	Kendari	5.92 251		P	Pn	04 54 59.6	+0.8
SAUI	Saumlaki	6.68 153		P	Pn	04 55 09.4	+0.2
MRSI	Marisa	6.75 291		P	Pn	04 55 10.0	-0.2
PCI	Palu	8.46 277		P	Pn	04 55 34.1	+0.5
WRA	Warramunga Arr	18.80 162		P	P	04 57 47.1	-3.2
	0.2nm,0.3s,baz=340,slow=12,SNR=8.9						
ASAR	Alice Springs	22.22 166		P	P	04 58 24.7	-2.6
	2.3nm,0.8s,baz=347,slow=12,SNR=19						
MKAR	Makanchi Array	63.11 326		P	P	05 03 59.2	+1.4
	0.5nm,0.6s,baz=116,slow=8.5,SNR=4.9						

IDC 19 05:00:32.7±8.6, 54°.90N×81°.99E, h0km, Error ellipse: s-maj=48.8km s-min=36.0km az=119.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
I46RU	ZALESOVO INFRA	1.91 119		i		05 09 20.0	
	baz=300,slow=322,SNR=1.6						
ZALV	Zalesovo Beam	1.91 119		Pg	Pn	05 01 07.1	+0.7
	0.4nm,0.3s,baz=305,slow=17,SNR=4.4						
ZALV				Lg	Lg	05 01 33.9	
	0.8nm,0.3s,baz=300,slow=29,SNR=6.2						
I31KZ	AKTYUBINSK INF	15.19 263		i		06 33 00.0	
	baz=63,slow=324,SNR=0.3						

JMA 19 05:13:09.3±0.2, 37°.73N×142°.01E, h34km±3km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	Ouri	0.89 324		P	Pn	05 13 25.8	+0.4
JIO				S	Sn	05 13 36.9	-0.2
JFK	Kawauchi	0.97 248		P	Pn	05 13 26.5	-0.1
JFK				S	Sn	05 13 38.7	-0.5
JMM	Marumori	0.97 278		P	Pn	05 13 26.9	+0.4
JMM				S	Sn	05 13 39.0	-0.2
JOU	Okura	1.24 301		P	Pb	05 13 31.6	-0.6
JOU				S	Sb	05 13 47.0	-0.9
JFT	Otama	1.34 261		P	Pb	05 13 33.0	-1.0
JFT				S	Sb	05 13 50.1	-0.8
JMK	Ichinoseki	1.37 333		P	Pn	05 13 33.1	+1.1
JMK				eS	Sn	05 13 49.8	+0.9
OFUJ	Ofunato	1.37 349		P	Pn	05 13 32.4	+0.3
JOM	Ohasama	1.83 342		P	Pn	05 13 39.7	+1.4
JOM				S	Sn	05 14 02.2	+1.9
MIYJ	Miyakonagasawa	1.85 355		P	Pn	05 13 38.8	+0.2
MIYJ				S	Sn	05 14 01.8	+1.0
JRG	Rokugo	1.98 327		P	Pn	05 13 42.1	+1.7
JKZ	Kuzumaki	2.31 347		P	Pn	05 13 47.2	+2.2
MAT	Matsushiro	3.26 250		P	Pn	05 14 00.9	+2.9
MAT				S	Sb	05 14 41.2	-4.6

*RSNC **19** 05:24:09.9±0.4, 5°.95N×72°.72W, h9km±2km, ML2.6*
*FUNV **19** 05:24:14.0, 6°.02N×73°.04W, h97km, MW3.1*
*IDC **19** 05:24:15.3±7.5, 5°.89N×72°.42W, h60km±57km, mb3.0/1, mb1 3.4/2, mb1mx3.1/24, mbtmp3.5/2, ML2.3/1, Error ellipse: s-maj=81.8km s-min=40.8km az=122.0*

ISC 19 05:24:11.8±1.2, 6°.14N±0°.05×72°.86W±0°.06, h9km±10km, n19, σ1§24/26, 1D, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
RUSC	La Rusia	0.33 222		↓iP	Pg	05 24 17.2	-1.4
RUSC				eS	Sg	05 24 23.0	0.0
RUSC				i		05 24 25.6	
	comp=Z,190nm,0.4s						
BARC	Barichara	0.55 325		eP	Pb	05 24 23.8	0.0
BARC				i		05 24 25.3	
	comp=Z,95nm,0.4s						
BTLC	Betulia, Santa	0.87 333		eP	Pb	05 24 29.5	+0.2
PAMC	Pamplona, Colo	1.21 8		eP	Pb	05 24 34.4	-0.7
BRRC	Barranca, Sant	1.28 319		eP	Pn	05 24 36.0

comp=Z,103nm,0.7s
GRMC Gramalote, San 1.81 357 *e*P **Pn 05 45 04.0 +3.3**
GRMC *e*S **Sn 05 45 29.5 +7.0**
GRMC *i* 05 45 37.7
comp=Z,70nm,0.5s
CAPV Capacho 2.00 11 *e*P **Pn 05 45 05.8 +2.6**
CAPV *e*S **Sn 05 45 24.3 -2.9**
HELC Santa Helena 2.81 276 *e*S **Sn 05 45 50.3 +2.7**
SOCV Socops 3.01 38 *e*P **Pn 05 45 19.5 +2.6**
SOCV *e*S **Sn 05 45 46.4 -5.4**
VIGV El Vigia 3.22 24 *e*P **Pn 05 45 21.2 +1.3**
VIGV *e*S **Sn 05 45 52.8 -4.3**
VIRV Villa del Rosa 4.59 4 *e*P **Pn 05 45 41.6 +2.9**
VIRV *e*S **Sn 05 46 26.2 -4.7**
SANV Sanarito 4.77 41 *e*P **Pn 05 45 42.0 +0.7**
CURV Curarigua 4.92 33 *e*P **Pn 05 45 45.5 +2.2**
DABV Dabajuro 5.40 22 *e*P **Pn 05 45 51.4 +1.5**
SIQV Siquisique 5.53 31 *e*P **Pn 05 45 53.5 +1.8**
BAUV El Baul 5.54 57 *e*P **Pn 05 45 53.7 +2.0**
MONV Montecano 6.60 24 *e*P **Pn 05 46 07.2 +0.7**

IDC 19 05:46:31.2±3.4, 6°41′S×147°65′E, h0km, mb3.7/2, mb1 3.8/4, mb1mx3.5/35, mbtmp3.6/4, ML3.3/1, Error ellipse: s-maj=73.1km s-min=35.5km az=94.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**3.02**	**189**	Pn	Pn	05 47 21.0	+0.8
	2.2nm,0.3s,baz=349,slow=20,SNR=2.2						
PMG				Sn	Sn	05 47 59.9	+2.8
	1.7nm,0.3s,baz=212,slow=23,SNR=3.0						
WRA	**Warramunga Arr**	**18.66**	**223**	P	P	05 50 50.6	-0.2
	0.1nm,0.3s,baz=50,slow=11,SNR=3.3						
ASAR	**Alice Springs**	**21.66**	**216**	P	P	05 51 22.6	-0.9
	0.7nm,0.6s,baz=48,slow=9.9,SNR=4.6						
FITZ	**Fitzroy Crossi**	**24.41**	**240**	P	P	05 51 50.8	-0.8
	2.8nm,0.4s,baz=55,slow=8.6,SNR=4.8						
TORD	**Torodi Ar. Bea**	**145.81**	**284**	PKPbc	PKPbc	06 06 13.6	+0.1
	0.2nm,0.4s,baz=63,slow=4.2,SNR=2.6						

*ISCJB **19** 05:49:28.1±0.5, 28°.11N±0°.05×141°.2E±0°.1, h100km, mb3.9/15, Error ellipse: s-maj=16.1km s-min=4.8km az=157.7*
*JMA **19** 05:49:28.8, 28°.41N×142°.10E, h92km, M4.1*
*IDC **19** 05:49:30.7±0.6, 27°.99N×141°.28E, h104km±5km, mb3.7/15, mb1 4.0/16, mb1mx3.7/38, mbtmp4.1/16, MS2.5/1, Ms1 2.5/1, ms1mx2.1/53, Error ellipse: s-maj=18.1km s-min=8.4km az=74.0*
ISC 19 05:49:30.2±0.6, 28°.10N±0°.07×141°.2E±0°.1, h100km, n30, σ1°55/37, mb3.9/15, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**1.33**	**139**	P	**Pn**	**05 49 52.5**	**-1.9**
CBIJ				*e*S	**Sn**	**05 50 10.3**	**-2.4**
JCJ	**Chichijima**	**1.33**	**139**	P	**Pn**	**05 49 52.7**	**-1.7**
	463nm,0.3s,baz=64,slow=4.7,SNR=610						
JCJ				S	**Sn**	**05 50 10.1**	**-2.7**
	938nm,0.3s,baz=292,slow=23,SNR=32						
BSO1	**Boso 1**	**6.54**	**358**	P	**Pn**	**05 51 01.2**	**-2.0**
BSO1				*e*S	**Sn**	**05 52 12.1**	**-3.9**
JOD2	**Odawara 2**	**7.36**	**346**	P	**Pn**	**05 51 14.8**	**-0.2**
JOD2				S	Sn	05 52 23.9	-13
JRY	**Ryogami san**	**8.13**	**347**	P	**Pn**	**05 51 23.6**	**-1.9**
JRY				S	**Sn**	**05 52 54.0**	**-1.6**
MJAR	**Matsushiro Arr**	**8.79**	**344**	P	**Pn**	**05 51 34.6**	**+0.2**
	1.6nm,0.3s,baz=159,slow=13,SNR=8.9						
MAT	**Matsushiro**	**8.79**	**344**	P	**Pn**	**05 51 33.3**	**-1.1**
MAT				*e*S	**Sn**	**05 53 09.9**	**-1.8**
KSRS	**Korea Array**	**14.54**	**313**	LR	LR	05 58 28.6	
	comp=Z,17nm,18.6s,baz=50,slow=37						
KLR	**Kul'dur**	**22.32**	**344**	P	**P**	**05 54 20.3**	**+0.9**
	4.5nm,0.5s,baz=152,slow=8.7,SNR=19						
H11N2	**WAKE ISLAND Hy**	**24.89**	**104**	T	T	06 20 29.5	
	baz=296,slow=75,SNR=22						
H11N1	**WAKE ISLAND Hy**	**24.89**	**104**	T	T	06 20 31.1	
	baz=296,slow=75,SNR=29						
H11N3	**WAKE ISLAND Hy**	**24.91**	**104**	T	T	06 20 37.4	
	baz=296,slow=75,SNR=26						
WRA	**Warramunga Arr**	**48.22**	**189**	P	**P**	**05 58 00.5**	**-0.5**
	4.6nm,0.3s,baz=7.2,slow=8.4,SNR=247						
FITZ	**Fitzroy Crossi**	**48.34**	**200**	P	**P**	**05 58 01.8**	**0.0**
	3.5nm,0.6s,baz=19,slow=9.7,SNR=12						
ASAR	**Alice Springs**	**51.95**	**189**	P	**P**	**05 58 28.8**	**-0.3**
	0.4nm,0.3s,baz=16,slow=9.1,SNR=10						
ASAR				PcP	**PcP**	**05 59 40.2**	**-0.1**
	0.2nm,0.3s,baz=18,slow=4.5,SNR=4.1						
ILAR	**Eielson Array**	**57.26**	**29**	P	**P**	**05 59 07.5**	**+0.5**
	0.4nm,0.8s,baz=240,slow=5.1,SNR=3.8						
ILAR				pP	**pP**	**05 59 33.8**	**+2.4**
	0.6nm,0.7s,baz=264,slow=6.4,SNR=4.2						
STKA	**Stephens Creek**	**59.65**	**180**	P	**P**	**05 59 23.1**	**-0.8**
	2.2nm,0.7s,baz=356,slow=10,SNR=5.6						
INK	**Inuvik**	**62.48**	**25**	P	**P**	**05 59 43.1**	**+0.5**
	0.4nm,0.5s,baz=20,slow=6.7,SNR=2.7						
INK				pP	**pP**	**06 00 10.1**	**+2.6**
	1.0nm,0.5s,baz=347,slow=5.0,SNR=2.7						
YKA	**Yellowknife Ar**	**71.67**	**28**	P	**P**	**06 00 41.0**	**+0.1**
	0.3nm,0.4s,baz=297,slow=6.2,SNR=13						
YKA				pP	**pP**	**06 01 07.8**	**+1.6**
	0.4nm,0.6s,baz=296,slow=6.3,SNR=4.8						
ARCES	**ARCESS Array B**	**72.31**	**341**	P	**P**	**06 00 44.9**	**+0.4**
	2.4nm,0.6s,baz=64,slow=8.2,SNR=12						
FINES	**FINESS Array B**	**76.66**	**333**	P	**P**	**06 01 09.4**	**-0.5**
	1.2nm,0.3s,baz=72,slow=4.4,SNR=16						
KBZ	**Khabaz**	**76.69**	**313**	P	**P**	**06 01 09.8**	**-0.5**
	1.5nm,0.7s,baz=68,slow=4.6,SNR=4.7						
NVAR	**Mina Array Bea**	**80.58**	**52**	P	**P**	**06 01 32.9**	**+0.7**
	0.3nm,0.4s,baz=274,slow=6.5,SNR=3.7						
NB2	**NORSAR Subarra**	**82.35**	**338**	P	**P**	**06 01 39.8**	**-1.0**
	comp=Z,1.0nm,0.6s,baz=44,slow=5.3						
NOA	**NORSAR Array B**	**82.35**	**338**	P	**P**	**06 01 40.1**	**-0.7**
	comp=Z,1.6nm,0.7s,baz=44,slow=5.0,SNR=4.2						
PDAR	**Pinedale Array**	**84.11**	**44**	P	**P**	**06 01 51.1**	**+0.6**
	comp=Z,0.4nm,0.6s,baz=122,slow=1.9,SNR=4.1						
TXAR	**Lajitas Array**	**95.70**	**53**	P	**P**	**06 02 46.2**	**+1.0**
	comp=Z,0.2nm,0.4s,baz=262,slow=1.8,SNR=4.1						
TORD	**Torodi Ar. Bea**	**123.27**	**311**	PKP	**PKPdf**	**06 08 15.1**	**-1.1**
	comp=Z,0.5nm,0.5s,baz=51,slow=1.5,SNR=6.8						
TORD				pPKP	**pPKPdf**	**06 08 45.4**	**+1.8**
	comp=Z,0.4nm,0.5s,baz=40,slow=1.3,SNR=2.7						
LPAZ	**La Paz**	**150.49**	**73**	PKPbc	**PKPbc**	**06 09 12.5**	**+0.8**
	comp=Z,2.2nm,0.4s,baz=4.4,slow=2.4,SNR=18						
LPAZ				pPKPbc	**pPKPbc**	**06 09 41.3**	**+2.3**
	comp=Z,2.4nm,0.9s,baz=352,slow=2.4,SNR=3.8						
PLCA	**Paso Flores**	**151.10**	**124**	PKPbc	**PKPbc**	**06 09 12.6**	**+0.8**
	comp=Z,1.9nm,0.9s,baz=261,slow=3.8,SNR=5.5						

*ISCJB **19** 06:13:16.7±0.7, 40°.64N±0°.04×35°.21E±0°.07, h0km±10km, Error ellipse: s-maj=9.9km s-min=4.4km az=31.6*
*ISK **19** 06:13:16.5, 40°.62N×35°.17E, h9km, MD2.5*
*CSEM **19** 06:13:16.7±0.3, 40°.61N×35°.23E, h10km, MD2.7, Error ellipse: s-maj=8.4km s-min=4.2km az=123.0*
*DDA **19** 06:13:17.3, 40°.63N×35°.18E, h7km, Md2.7*
ISC 19 06:13:16.3±1.3, 40°.60N±0°.03×35°.25E±0°.04, h12km±11km, n22, σ0°94/34, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
COAL	**Corum-Alaca**	**0.40**	**210**	P	**Pb**	**06 13 24.6**	**-0.8**
COAL				S	**Sb**	**06 13 32.2**	**+0.7**
COAL	**Corum-Alaca**	**0.40**	**210**	*i* P	**Pb**	**06 13 24.6**	**-0.8**
COAL				*i* S	**Sb**	**06 13 32.2**	**+0.7**
HAVZ	**Havza**	**0.59**	**37**	P	**Pg**	**06 13 27.2**	**-0.7**
HAVZ	**Havza**	**0.59**	**37**	*i* P	**Pg**	**06 13 27.2**	**-0.7**
HAVZ				*i* S	**Sn**	**06 13 42.0**	**+1.8**
CORM	**Corum**	**0.63**	**228**	*e*PG	**Pb**	**06 13 29.2**	**-0.2**
CORM				*e*SG	**Sb**	**06 13 37.3**	**-0.9**
CORM	**Corum**	**0.63**	**228**	*e*Pg	**Pb**	**06 13 29.2**	**-0.2**
CORM				*e*Sg	**Sb**	**06 13 37.3**	**-0.9**
KVT	**Kavak**	**0.77**	**52**	*e*PG	**Pb**	**06 13 32.2**	**+0.5**
KVT				*e*SG	**Sn**	**06 13 44.4**	**-0.3**
KVT	**Kavak**	**0.77**	**52**	*e*Pg	**Pb**	**06 13 32.2**	**+0.5**
KVT				*e*Sg	**Sn**	**06 13 44.4**	**-0.3**
BOYT	**Boyabat**	**0.86**	**343**	P	**Pn**	**06 13 33.6**	**-0.7**
BOYT	**Boyabat**	**0.86**	**343**	*i* P	**Pn**	**06 13 33.6**	**-0.7**
DIKM	**Dikmen**	**1.05**	**1**	*e*PG	**Pn**	**06 13 36.3**	**-0.5**
DIKM	**Dikmen**	**1.05**	**1**	*e*Pg	**Pn**	**06 13 36.3**	**-0.5**
CDAG	**Cicekdag**	**1.19**	**215**	P	**Pn**	**06 13 38.0**	**-0.8**
CDAG				S	**Sn**	**06 13 56.4**	**+1.5**
CDAG	**Cicekdag**	**1.19**	**215**	*i* P	**Pn**	**06 13 38.0**	**-0.8**
CDAG				*i* S	**Sn**	**06 13 56.4**	**+1.5**
ILGA	**Ilgaz**	**1.24**	**292**	P	**Pg**	**06 13 39.6**	**-0.6**
ILGA				S	**Sn**	**06 13 57.0**	**+0.4**
ILGA	**Ilgaz**	**1.24**	**292**	*i* P	**Pg**	**06 13 39.6**	**-0.6**
ILGA				*i* S	**Sn**	**06 13 57.0**	**+0.4**
ELDT	**Eldivan**	**1.39**	**266**	P	**Pg**	**06 13 42.4**	**-0.6**
ELDT	**Eldivan**	**1.39**	**266**	*i* P	**Pg**	**06 13 42.4**	**-0.6**
ELDT				*i* S	**Sg**	**06 14 04.0**	**+2.9**
SNOP	**Sinop**	**1.42**	**359**	*e*PN	**Pb**	**06 13 42.4**	**-0.2**
SNOP	**Sinop**	**1.42**	**359**	*e*Pn	**Pb**	**06 13 42.4**	**-0.2**
BZK	**Bozkurt**	**1.65**	**326**	*e*PN	**Pb**	**06 13 46.2**	**-0.4**
BZK	**Bozkurt**	**1.65**	**326**	*e*Pn	**Pb**	**06 13 46.2**	**-0.4**

JMA 19 06:13:18.8±0.2, 38°.12N×143°.80E, h0km, M3.7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**1.93**	**301**	P	Pn	06 13 53.6	+0.8
JIO	**Ouri**	**1.96**	**281**	P	Pn	06 13 53.9	+0.7
JIO				S	Sn	06 14 18.9	+0.4
JMK	**Ichinoseki**	**2.19**	**293**	P	Pn	06 13 57.6	+1.2
JMK				S	Sb	06 14 25.8	-1.1
JOU	**Okura**	**2.48**	**277**	P	Pn	06 14 02.0	+1.5
JOU				S	Sn	06 14 33.1	+1.6
JYK	**Kaneyama**	**2.81**	**288**	P	Pn	06 14 06.5	+1.5
JYK				*e*S	Sn	06 14 42.2	+2.5

MEX 19 06:20:15.9±0.3, 18°.25N×101°.34W, h47km±18km, MD3.6, Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZIIG	**Zihuatanejo**	**0.65**	**191**	*e*P	Pn	06 20 27.3	-1.6
ZIIG				*e*S	Sn	06 20 37.0	-1.2
ARIG	**Puente Sto Nin**	**0.94**	**88**	*e*P	Pn	06 20 31.1	-1.7
ARIG				*e*S	Sn	06 20 43.2	-2.0
CAIG	**El Cayaco**	**1.57**	**139**	*e*P	Pn	06 20 39.7	-1.7
CAIG				*e*S	Sn	06 20 58.1	-2.5
MEIG	**Mezcala**	**1.67**	**101**	*e*P	Pn	06 20 41.8	-0.9
MEIG				*i* S	Sn	06 21 01.4	-1.6
PLIG	**Platanillo**	**1.75**	**85**	*i* P	Pn	06 20 42.6	-1.3
PLIG				*e*S	Sn	06 21 02.5	-2.5
MMIG	**Aquila**	**1.91**	**271**	*e*P	Pn	06 20 44.6	-1.4
MMIG				*e*S	Sn	06 21 06.6	-2.2
YAIG	**Yautepec**	**2.24**	**74**	*i* P	Pn	06 20 50.1	-0.5
YAIG				*i* S	Sn	06 21 15.2	-2.0
EZ5V		**2.47**	**300**	*i* S	Sn	06 21 19.5	-3.5
R15V		**2.67**	**290**	*e*P	Pn	06 20 56.3	-0.2

*IDC **19** 06:22:59.0±0.6, 18°.98S×174°.39W, h0km, mb4.3/18, mb1 4.5/19, mb1mx4.4/43, mbtmp4.3/19, ML4.7/1, MS3.7/6, Ms1 3.7/6, ms1mx3.3/30, Error ellipse: s-maj=22.8km s-min=14.2km az=122.0*
*ISCJB **19** 06:23:02.7±0.3, 19°.01S±0°.07×174°.54W±0°.08, h35km, mb4.7/42, MS3.8/6, Error ellipse: s-maj=11.8km s-min=7.6km az=38.0*
*NEIC **19** 06:23:04.1±0.2, 18°.97S×174°.47W, h35km, mb4.8/21, Error ellipse: s-maj=10.8km s-min=6.1km az=129.0*
ISC 19 06:23:04.4±0.4, 18°.87S±0°.08×174°.4W±0°.1, h35km, n86, σ2°25/71, mb4.7/42, MS3.8/6, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**5.52**	**27**	P	**Pn**	**06 24 23.8**	**-0.4**
	20nm,0.3s,baz=125,slow=3.3,SNR=17						
AFI				Sn	**Sn**	**06 25 20.7**	**-5.9**
	73nm,0.3s,baz=156,slow=20,SNR=11						
AFI	**Afiamalu**	**5.52**	**27**	*e*Pn	**Pn**	**06 24 24.2**	**0.0**
AFI				Sn	**Sn**	**06 25 20.7**	**-5.9**
AFI				*e*Sn	Sn	06 25 20.8	-5.8
MSVF	**Nonsavu**	**7.30**	**278**	*e*Pn	Pn	06 25 01.3	+13
RAR	**Rarotonga**	**13.91**	**102**	Pn	Pn	06 26 12.4	-6.6
	5.2nm,0.3s,baz=261,slow=9.5,SNR=7.3						
RAR	**Rarotonga**	**13.91**	**102**	*e*Pn	Pn	06 26 13.7	-5.4
DZM	**Mont Dzumac**	**18.26**	**257**	LR	LR	06 32 04.7	
	comp=Z,354nm,18.4s,baz=47,slow=30						
URZ	**Urewera**	**20.70**	**199**	P	**P**	**06 27 39.8**	**-1.7**
	19nm,0.5s,baz=28,slow=2.6,SNR=24						
URZ	**Urewera**	**20.70**	**199**	*e*P	**P**	**06 27 39.5**	**-2.1**
	21nm,0.7s						
PAE	**Paea**	**23.56**	**91**	*e*T	T	06 52 02.7	
	20nm,0.3s						
PPT2	**Papeete2**	**23.57**	**91**	*e*LR	LR	06 33 33.4	
	462nm,27.8s						
PPT2	**Papeete2**	**23.57**	**91**	*e*T	T	06 52 04.5	
	7.4nm,0.2s						
PPT	**Papeete**	**23.58**	**91**	LR	LR	06 34 40.2	
	comp=Z,94nm,20.6s,baz=282,slow=30						
TBI	**Tubuai**	**23.64**	**105**	*e*LR	LR	06 33 29.8	
	301nm,30.5s						
TBI	**Tubuai**	**23.64**	**105**	*e*T	T	06 52 17.6	
	22nm,0.3s						
TIAR	**Tiarei**	**23.80**	**91**	*e*T	T	06 52 19.8	
	2.2nm,0.3s						
MEH	**Mehetia**	**24.97**	**92**	*e*T	T	06 53 48.9	
	30nm,0.2s						
HNR	**Honiara**	**26.59**	**287**	LR	LR	06 37 25.2	
	comp=Z,166nm,18.9s,baz=110,slow=33						
OXZ	**Oxford**	**26.94**	**202**	*e*P	**P**	**06 28 40.3**	**-2.2**
	24nm,0.9s						
RPZ	**Rata Peaks**	**27.64**	**203**	P	**P**	**06 28 48.9**	**+0.2**
	6.3nm,0.5s,baz=108,slow=3.2,SNR=5.3						
TAOE	**Nuku Hiva Isla**	**34.62**	**78**	*e*LR	LR	06 38 48.7	
	148nm,25.7s						
TAOE	**Nuku Hiva Isla**	**34.62**	**78**	*e*T	T	07 05 44.0	
	50nm,0.2s						
RKT	**Rikitea**	**36.94**	**104**	*e*LR	LR	06 39 36.1	
	209nm,27.0s						
RKT	**Rikitea**	**36.94**	**104**	*e*T	T	07 08 53.0	
	3.3nm,0.3s						
PMG	**Port Moresby**	**38.41**	**279**	LR	LR	06 44 37.4	
	comp=Z,147nm,18.0s,baz=80,slow=34						
STKA	**Stephens Creek**	**41.58**	**243**	P	**P**	**06 30 47.5**	**-1.4**
	1.8nm,0.6s,baz=80,slow=7.6,SNR=3.8						
AS01	**Alice Springs**	**48.20**	**255**	*e*P	**P**	**06 31 40.6**	**-1.3**
WB2	**Warramunga Arr**	**48.23**	**260**	*e*P	**P**	**06 31 40.0**	**-2.1**
	30nm,1.7s						
WRAB	**Tennant Creek**	**48.23**	**260**	*e*P	**P**	**06 31 40.2**	**-2.0**
	12nm,1.3s						
AS31	**Alice Springs**	**48.24**	**255**	*e*P	**P**	**06 31 40.0**	**-2.1**
	3.7nm,0.6s						
ASAR	**Alice Springs**	**48.24**	**255**	P	**P**	**06 31 40.9**	**-1.3**
	4.7nm,0.6s,baz=86,slow=8.5,SNR=27						
WRA	**Warramunga Arr**	**48.24**	**260**	P	**P**	**06 31 40.8**	**-1.4**
	4.2nm,0.4s,baz=96,slow=7.5,SNR=62						
MTN	**Manton Dam**	**52.61**	**268**	*e*P	**P**	**06 32 13.4**	**-1.9**
	19nm,0.8s						
FITZ	**Fitzroy Crossi**	**56.66**	**260**	P	**P**	**06 32 43.6**	**-1.0**
	2.0nm,0.7s,baz=158,slow=5.8,SNR=7.3						
FITZ				LR	LR	06 55 25.5	
	comp=Z,69nm,20.8s,baz=86,slow=34						
SBA	**Scott Base**	**59.73**	**185**	*e*P	**P**	**06 33 06.0**	**+0.8**
	12nm,0.8s						
VNDA	**Vanda**	**59.85**	**186**	P	**P**	**06 33 05.6**	**-0.3**
	5.0nm,0.8s,baz=3.3,slow=7.5,SNR=26						
VNDA	**Vanda**	**59.85**	**186**	*e*P	**P**	**06 33 06.2**	**+0.2**
	5.6nm,0.8s						
JHJ2	**Mitsune**	**67.73**	**319**	*e*P	P	06 34 05.3	+6.9
	449nm,0.3s						
MJAR	**Matsushiro Arr**	**71.02**	**321**	P	**P**	**06 34 18.5**	**-0.3**
	1.6nm,0.5s,baz=156,slow=6.5,SNR=4.3						
QSPA	**South Pole Qui**	**71.19**	**180**	*e*P	**P**	**06 34 18.4**	**-1.2**
	34nm,0.8s						
PETK	**Petropavlovsk-**	**75.65**	**343**	P	**P**	**06 34 47.4**	**+1.8**
	2.4nm,0.6s,baz=99,slow=8.9,SNR=3.6						
TPUB	**Ta-pu**	**76.03**	**301**	*e*P	**P**	**06 34 47.6**	**-0.9**
	93nm,1.9s						
NV01	**Mina Array Sit**	**77.51**	**42**	*e*P	**P**	**06 34 57.8**	**+0.9**
NVAR	**Mina Array Bea**	**77.51**	**42**	P	**P**	**06 34 58.3**	**+1.5**
	1.3nm,0.9s,baz=210,slow=7.0,SNR=4.6						
USRK	**Ussuriysk Ar.**	**79.61**	**324**	LR	LR	07 05 57.5	
	comp=Z,52nm,18.6s,baz=97,slow=32						
TMUT	**Trail Mountain**	**82.59**	**44**	*e*P	**P**	**06 35 26.5**	**+2.2**
	3.3nm,0.9s						
TX31	**Lajitas Ar. Si**	**83.30**	**56**	*e*P	**P**	**06 35 27.5**	**-0.5**
TX31				*e*pP	**sP**	**06 35 50.8**	**+7.7**
TXAR	**Lajitas Array**	**83.30**	**56**	P	**P**	**06 35 28.1**	**+0.1**
	1.0nm,1.0s,baz=193,slow=4.9,SNR=5.2						
MAW	**Mawson**	**84.23**	**199**	P	**P**	**06 35 30.9**	**-1.0**
	1.9nm,0.6s,baz=92,slow=6.7,SNR=5.8						
S22A	**4UR Ranch, Cre**	**84.79**	**47**	*e*P	**P**	**06 35 35.6**	**0.0**
	6.2nm,1.4s						
SNOW	**Snow King Moun**	**85.06**	**41**	*e*P	**P**	**06 35 37.3**	**+0.5**
	2.6nm,0.8s						
SMCO	**Snowmass**	**85.37**	**46**	*e*P	**P**	**06 35 38.3**	**-0.4**
	4.8nm,1.3s						
PDAR	**Pinedale Array**	**85.45**	**42**	P	**P**	**06 35 39.1**	**+0.3**
	0.9nm,0.6s,baz=237,slow=5.1,SNR=10						
WRH	**Wood River Hil**	**85.52**	**11**	*e*P	**P**	**06 35 38.8**	**+0.5**
	5.8nm,1.0s						
SEY	**Seymchan**	**85.62**	**345**	P	**P**	**06 35 40.7**	**+1.9**
	1.5nm,0.7s,baz=125,slow=2.6,SNR=6.4						
BOZ	**Bozeman (W)**	**85.69**	**39**	*e*P	**P**	**06 35 39.8**	**0.0**
	1.4nm,0.8s						
CCB	**Clear Creek Bu**	**85.73**	**11**	*e*P	**P**	**06 35 39.7**	**+0.4**
	5.4nm,0.6s						
COLA	**College**	**85.93**	**11**	*e*P	**P**	**06 35 40.6**	**+0.4**
	9.7nm,0.7s						
MSTX	**Muleshoe**	**86.00**	**52**	*e*P	**P**	**06 35 41.9**	**+0.3**
	6.2nm,0.8s						
ILAR	**Eielson Array**	**86.01**	**11**	P	**P**	**06 35 40.8**	**0.0**
	1.2nm,0.5s,baz=228,slow=6.2,SNR=29						
ILB	**Eielson Array**	**86.01**	**11**	*e*P	**P**	**06 35 41.0**	**+0.3**
IL1	**Eielson Array**	**86.01**	**11**	*e*P	**P**	**06 35 40.8**	**0.0**
DAWY	**Dawson**	**86.99**	**15**	*e*P	**P**	**06 35 46.6**	**+0.9**
	2.8nm,0.8s						
ABTX	**Abilene, Hawle**	**87.82**	**55**	*e*P	**P**	**06 35 51.0**	**+0.7**
ABTX				*e*pP	**sP**	**06 36 08.5**	**+3.0**
PLCA	**Paso Flores**	**87.87**	**132**	P	**P**	**06 35 49.6**	**-1.0**
	1.0nm,0.6s,baz=239,slow=5.7,SNR=5.6						
GYA	**Guiyang**	**88.86**	**298**	*e*P	**P**	**06 35 55.3**	**-0.2**
GYA				pmax	pmax		
	comp=Z,10.0nm,1.0s						
VNA3	**Neumayer Olymp**	**89.50**	**175**	P	**P**	**06 35 56.4**	**-1.3**
SNAA	**Sanae**	**89.50**	**177**	P	**P**	**06 35 56.2**	**-1.5**
SNAA	**Sanae**	**89.50**	**177**	*e*P	**P**	**06 35 56.1**	**-1.5**
	comp=Z,4.8nm,1.0s						
VNA2	**Neumayer--Watz**	**89.98**	**176**	P	**P**	**06 35 59.0**	**-0.8**
	baz=190,slow=3.1						
VNA1	**Neumayer--Stat**	**90.19**	**175**	P	**P**	**06 35 59.9**	**-0.8**
HHC	**Hu-ho-hao-te**	**90.71**	**313**	*e*P	**P**	**06 36 04.6**	**+0.8**
HHC	**Hu-ho-hao-te**	**90.71**	**313**	S	**S**	**06 46 56.5**	**-1.2**
HHC				pmax	pmax		
	comp=Z,13nm,1.4s						
HHC				pmax	pmax		
	comp=Z,78nm,7.7s						
HHC				LR	LR		
	comp=N,120nm,17.2s						
HHC				LR	LR		
	comp=E,280nm,17.3s						
HHC				LR	LR		
	comp=Z,56nm,14.8s						
KMI	**Kunming**	**91.70**	**296**	P	**P**	**06 36 12.3**	**+3.4**
KMI				pmax	pmax		
	comp=Z,21nm,0.5s						
CMAR	**Chiang Mai Arr**	**92.83**	**288**	P	**P**	**06 36 15.7**	**+1.7**
	comp=Z,1.0nm,0.3s,baz=129,slow=2.8,SNR=6.4						
CD2	**Chengdu**	**92.83**	**302**	P	**P**	**06 36 12.3**	**-1.5**
CD2				pmax	pmax		
	comp=Z,16nm,0.8s						
YKA	**Yellowknife Ar**	**93.63**	**24**	P	**P**	**06 36 17.3**	**+0.7**
	comp=Z,0.8nm,1.0s,baz=241,slow=3.8,SNR=9.6						
LZH	**Lanzhou**	**94.53**	**306**	*e*P	**P**	**06 36 24.8**	**+3.1**
LZH				pP	sP	06 36 34.6	-2.2
LZH				sP	pP	06 36 37.9	+5.1
LZH				pmax	pmax		
	comp=Z,15nm,1.0s						
SAML	**Samuel**	**106.76**	**106**	*e*Pdif	**Pdif**	**06 37 13.5**	**-3.2**
BVAR	**Borovoye Array**	**120.01**	**321**	PKP	**PKPdf**	**06 41 50.3**	**-0.8**
	comp=Z,1.5nm,0.6s,baz=116,slow=3.4,SNR=6.9						
STHS	**Stebnicka Huta**	**147.04**	**341**	*e*PKP	**PKPbc**	**06 42 43.6**	**+0.1**
CRVS	**Cervenica-Dubn**	**147.43**	**340**	*e*PKP	**PKPbc**	**06 42 43.9**	**-0.6**
DPC	**Dobruska-Polom**	**147.46**	**347**	*e*PKP	**PKPab**	**06 42 46.8**	**+0.2**
DPC				*ex*	x	06 43 02.0	
BRTR	**Keskin Array B**	**148.15**	**317**	PKPbc	**PKPbc**	**06 42 47.1**	**+0.1**
	comp=Z,1.1nm,0.5s,baz=135,slow=3.5,SNR=7.7						
KHC	**Kasperske Hory**	**149.14**	**350**	*e*PKP	**PKPbc**	**06 42 50.1**	**+1.0**
KHC				*ep*PKP	**pPKPdf**	**06 43 06.1**	**+10**
GERES	**GERESS Array B**	**149.40**	**350**	PKPbc	**PKPbc**	**06 42 50.3**	**+0.5**
	comp=Z,1.1nm,0.5s,baz=112,slow=1.4,SNR=8.8						
TORD

GUNV				*e*S		**Sn**	**06 33 11.1 +0.4**
TOSP	**Speyside**	**1.52**	**80**	*e*P		**Pn**	**06 32 55.8 +0.2**
TOSP				*e*S		**Sn**	**06 33 16.0 -0.8**
ORIV	**Oritupano**	**2.36**	**214**	*e*P		**Pn**	**06 33 06.5 +0.6**
ORIV				*e*S		**Sn**	**06 33 34.9 -0.2**
SVB	**Belmont**	**2.37**	**19**	*e*P		**Pn**	**06 33 07.4 +1.4**
SVB				*e*S		**Sn**	**06 33 33.7 -1.6**
SVV	**Soufriere Volc**	**2.42**	**20**	*e*P		**Pn**	**06 33 08.7 +2.0**
SVV				*e*S		**Sn**	**06 33 35.9 -0.7**
GURV	**El Guri**	**3.40**	**197**	⇓*i*P		**Pn**	**06 33 21.2 +1.7**
CUPV	**Cœpira**	**3.79**	**256**‖	*e*P		**Pn**	**06 33 26.4 +1.7**
CUPV				*e*S		**Sn**	**06 34 08.0 -0.8**
LUEV	**Luepa**	**5.19**	**173**	*e*P		**Pn**	**06 33 44.0 +0.4**
BAUV	**El Baul**	**6.25**	**251**	*e*P		**Pn**	**06 33 58.0 +0.3**
BAUV				*e*S		**Sn**	**06 35 04.5 -3.2**

BJI ***19*** *06:33:04.5, 7°.59S×123°.79E, h624km, mb4.9/65, mB5.0/6*
ISCJB ***19*** *06:33:11.0±0.2, 7°.02S±0°.02×123°.41E±0°.03, h644km±2km, mb4.7/101, Error ellipse: s-maj=4.1km s-min=2.9km az=151.1*
MOS ***19*** *06:33:10.3±0.9, 6°.92S×123°.40E, h630km, mb4.9/23, Error ellipse: s-maj=10.9km s-min=6.1km az=109.9*
NEIC ***19*** *06:33:11.8±0.2, 6°.99S×123°.40E, h632km±3km, mb5.0/27, Error ellipse: s-maj=5.4km s-min=3.3km az=61.0*
IDC ***19*** *06:33:11.9±0.5, 6°.98S×123°.43E, h634km±6km, mb4.2/40, mb1 4.2/46, mb1mx4.2/50, mbtmp5.2/46, Error ellipse: s-maj=8.7km s-min=5.0km az=66.0*
GCMT ***19*** *06:33:11.8±0.3, 6°.88S×123°.32E, h640km±3km, MW5.3/82, Moment Tensor Solution. s82,c102; Duration: 1*$\overset{s}{1}$*1 Moment tensor: Scale 10*^{17}*Nm; Mrr-0.83±.04; Mθθ0.79±.05; Mφφ0.03±.06; Mrθ-0.51±.05; Mφθ0.06±.06; Mφr0.26±.06; Best double couple: M*$_0$*0.98800×10*^{17} *NP1:*ϕ_s*=252.00000°, δ31.00000°, λ-116.00000°. Principal axes: T 0.9360, Plg16.0000°, Azm181.0000°; N 0.1050, Plg13.0000°, Azm275.0000°; P -1.0410, Plg69.0000°, Azm42.0000°; nsta1 refers to body waves, cutoff=40s.*
DJA ***19*** *06:33:12.2±0.2, 7°S±2°×12°3E±°, h632km±3km, M5.1/45, mb5.3/45, mB5.5/34, MLv5.7/18, Mw(mB)5.0/34*
KLM ***19*** *06:33:19.6, 6°.29S×123°.07E, h643km, mb5.1, MS5.6*
ISC 19 06:33:11.2±0.3, 7°.01S±0°.03×123°.42E±0°.04, h624km±3km**, n540,** σ1$\overset{s}{1}$**4**/619**, mb4.8**/99**, 11C-13D, Banda Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MMRI	**Maumere**	**2.00**	**216**	P	**P**	**06 34 27.8**	**+0.1**
MMRI				S	**S**	**06 35 30.0**	**0.0**
MMRI	**Maumere**	**2.00**	**216**	*e*P	**P**	**06 34 27.8**	**+0.1**
MMRI				*e*S	**S**	**06 35 30.1**	**+0.1**
SOEI	**Soe**	**2.86**	**163**	P	**P**	**06 34 32.5**	**+0.7**
SOEI				S	**S**	**06 35 37.2**	**-0.3**
SOEI	**Soe**	**2.86**	**163**	*e*P	**P**	**06 34 32.5**	**+0.7**
SOEI				*e*S	**S**	**06 35 34.2**	**-3.3**
BSSI	**Bau Bau, Buton**	**3.03**	**286**	P	**P**	**06 34 34.2**	**+1.6**
KDI	**Kendari**	**3.13**	**345**	P	**P**	**06 34 35.6**	**+2.4**
KDI				S	**S**	**06 35 42.4**	**+2.5**
WSI	**Waingapu**	**4.06**	**229**	P	**P**	**06 34 38.6**	**-0.3**
WSI				S	**S**	**06 35 46.8**	**-3.6**
KAPI	**Kappang**	**4.15**	**298**	P	**P**	**06 34 41.9**	**+2.4**
	69nm,0.3s,baz=157,slow=3.4,SNR=74						
KAPI				S	**S**	**06 35 53.7**	**+2.3**
	baz=106,slow=18,SNR=13						
BASI	**Baing, Sumba**	**4.25**	**221**	P	**P**	**06 34 40.5**	**+0.3**
BASI				S	**S**	**06 35 50.7**	**-2.0**
NLAI	**Namlea**	**5.24**	**45**	P	**P**	**06 34 48.3**	**+0.7**
	3μm,0.6s,65μm20nm						
NLAI				S	**S**	**06 36 05.5**	**-0.7**
	3μm,0.6s,65μm20nm						
TTSI	**Tana Toraja**	**5.32**	**318**	P	**P**	**06 34 49.9**	**+1.7**
	748nm,0.9s,8μm2.8nm						
TTSI				S	**S**	**06 36 10.1**	**+2.8**
	748nm,0.9s,8μm2.8nm						
SANI	**Sanana**	**5.55**	**28**	P	**P**	**06 34 52.8**	**+2.8**
	2μm,1.4s,17μm5.1nm						
SANI				S	**S**	**06 36 11.8**	**+1.1**
	2μm,1.4s,17μm5.1nm						
PLAI	**Plampang**	**5.87**	**252**	P	**P**	**06 34 51.8**	**-0.8**
	3μm,0.6s,30μm9.9nm						
PLAI				S	**S**	**06 36 11.1**	**-4.4**
	3μm,0.6s,30μm9.9nm						
LUWI	**Luwuk**	**5.96**	**354**	P	**P**	**06 34 54.9**	**+1.5**
	2μm,1.4s,25μm6.1nm						
LUWI	**Luwuk**	**5.96**	**354**	*e*P	**P**	**06 34 54.9**	**+1.5**
TWSI	**Taliwang, Sumb**	**6.70**	**255**	P	**P**	**06 34 58.9**	**-0.8**
	918nm,0.8s,16μm4.5nm						
TWSI				S	**S**	**06 36 23.5**	**-4.8**
	918nm,0.8s,16μm4.5nm						
PCI	**Palu**	**7.03**	**329**	P	**P**	**06 35 04.7**	**+2.0**
	2μm,1.0s,25μm8.0nm						
MRSI	**Marisa**	**7.58**	**349**	P	**P**	**06 35 08.5**	**+0.9**
	4μm,0.8s,34μm12nm						
MRSI				S	**S**	**06 36 44.6**	**+1.8**
	4μm,0.8s,34μm12nm						
SRBI	**Singaraja**	**8.20**	**262**	P	**P**	**06 35 13.7**	**+0.4**
	516nm,1.3s,5μm						
DNP	**Denpasar**	**8.30**	**258**	P	**P**	**06 35 16.8**	**+2.6**
ABJI	**Asem Bagus**	**9.14**	**264**	P	**P**	**06 35 25.7**	**+3.5**
JAGI	**Jajag, Banyuwa**	**9.29**	**260**	P	**P**	**06 35 22.3**	**-1.4**
	264nm,0.8s,5μm						
JAGI	**Jajag, Banyuwa**	**9.29**	**260**	*e*P	**P**	**06 35 22.3**	**-1.4**
JAGI				*e*S	**S**	**06 37 06.7**	**-5.7**
MTN	**Manton Dam**	**9.56**	**128**	P	**P**	**06 35 26.7**	**+0.4**
	baz=9.6,SNR=72						
MTN	**Manton Dam**	**9.56**	**128**	*e*P	**P**	**06 35 26.6**	**+0.4**
MTN				*e*S	**S**	**06 37 15.0**	**-2.0**
FAKI	**Fak Fak**	**9.69**	**66**	P	**P**	**06 35 26.9**	**-0.7**
	828nm,0.6s,7μm						
FAKI	**Fak Fak**	**9.69**	**66**	*e*P	**P**	**06 35 28.6**	**+1.1**
FAKI				*e*S	**S**	**06 37 16.1**	**-3.3**
SWI	**Sorong**	**9.92**	**52**	P	**P**	**06 35 30.1**	**+0.3**
	759nm,0.9s,14μm						
SIJI	**Sorong**	**9.92**	**52**	P	**P**	**06 35 30.5**	**+0.7**
	16nm,0.3s,baz=88,slow=22,SNR=5.5						
SIJI				S	**S**	**06 37 21.8**	**-1.8**
	12nm,0.3s,baz=89,slow=23,SNR=12						
GMJI	**Gumukmas**	**9.96**	**262**	P	**P**	**06 35 31.7**	**+1.5**
	66nm,0.5s						
KDU	**Kakadu**	**10.56**	**123**	P	**P**	**06 35 35.9**	**-0.1**
	baz=11,SNR=7.0						
SGSI	**Sangihe**	**10.83**	**11**	P	**P**	**06 35 38.5**	**-0.2**
	1μm,0.5s,25μm						
FITZ	**Fitzroy Crossi**	**11.24**	**169**	P	**P**	**06 35 42.6**	**0.0**
	45nm,0.3s,baz=358,slow=7.7,SNR=1345						
FITZ				S	**S**	**06 37 45.7**	**-1.0**
	8.4nm,0.3s,baz=103,slow=23,SNR=13						
FITZ	**Fitzroy Crossi**	**11.24**	**169**	P	**P**	**06 35 42.6**	**0.0**
	baz=11,SNR=373						
PWJI	**Pagerwojo**	**11.56**	**264**	P	**P**	**06 35 44.2**	**-1.6**
	77nm,0.8s						
RKPI	**Ransiki, Papua**	**12.04**	**64**	P	**P**	**06 35 51.4**	**+1.0**
	610nm,0.8s,5μm						
PCJI	**Pacitan**	**12.19**	**264**	P	**P**	**06 35 50.2**	**-1.6**
	143nm,0.9s						
TSM	**Tawau**	**12.51**	**334**	⇓P	**P**	**06 35 56.1**	**+1.2**
UGM	**Wanagama**	**12.82**	**265**	*e*S	**S**	**06 38 14.7**	**+0.1**
MYLDM	**Lahad Datu**	**13.06**	**338**	*e*P	**P**	**06 36 02.5**	**+2.2**
DAV	**Davao City (W)**	**14.15**	**9**	P	**P**	**06 36 11.1**	**+0.4**
	baz=110,slow=2.3,SNR=12						
MBWA	**Marble Bar**	**14.52**	**194**	*e*P	**P**	**06 36 13.8**	**-0.1**
SBUM	**Sibu**	**14.60**	**310**	⇑P	**P**	**06 36 17.0**	**+2.1**
SBUM	**Sibu**	**14.60**	**310**	*e*P	**P**	**06 36 16.8**	**+2.0**
SBUM				*e*S	**S**	**06 38 49.5**	**+4.9**
KKM	**Kota Kinabalu**	**14.82**	**331**	⇑P	**P**	**06 36 18.1**	**+1.1**
KKM	**Kota Kinabalu**	**14.82**	**331**	*e*P	**P**	**06 36 17.9**	**+0.9**
CMJI	**Cimerak**	**14.86**	**266**	P	**P**	**06 36 16.1**	**-1.1**
	260nm,1.0s						
KDM	**Kudat**	**15.31**	**334**	⇓P	**P**	**06 36 23.9**	**+2.6**
CISI	**Cisompet, Garu**	**15.48**	**267**	*e*P	**P**	**06 36 22.5**	**-0.5**
	158nm,0.7s						
CISI				*e*S	**S**	**06 38 58.9**	**-0.3**
CISI				*e*ScP	**ScP**	**06 43 16.8**	**-2.5**
KSM	**Kuching**	**15.56**	**302**	⇓P	**P**	**06 36 25.8**	**+2.3**
KSM	**Kuching**	**15.56**	**302**	*e*P	**P**	**06 36 25.4**	**+1.9**
	58nm,1.2s						
LEM	**Lembang**	**15.69**	**270**	P	**P**	**06 36 31.0**	**+6.1**
	12nm,0.3s,baz=261,slow=22,SNR=16						
CNJI	**Cibinong**	**16.16**	**268**	P	**P**	**06 36 29.1**	**0.0**
	448nm,1.0s,4μm						
CBJI	**Citeko**	**16.46**	**271**	P	**P**	**06 36 31.8**	**0.0**
	535nm,0.7s						
WRA	**Warramunga Arr**	**16.66**	**142**	P	**P**	**06 36 34.0**	**+0.4**
	19nm,0.3s,baz=68,slow=26,SNR=461						
WRA				S	**S**	**06 39 15.8**	**-2.4**
	5.4nm,0.3s,baz=319,slow=15,SNR=11						
WRA	**Warramunga Arr**	**16.66**	**142**	*i* P	**P**	**06 36 31.5**	**-2.1**
WRA				pmax	pmax		
	comp=Z,10.0nm,0.2s						
WRAB	**Tennant Creek**	**16.66**	**142**	*c i*P	**P**	**06 36 34.0**	**+0.4**
WRAB	**Tennant Creek**	**16.66**	**142**	*e*P	**P**	**06 36 34.0**	**+0.4**
	comp=Z,134nm,1.0s						
WB2	**Warramunga Arr**	**16.67**	**142**	*e*P	**P**	**06 36 34.1**	**+0.4**
	comp=Z,116nm,1.0s						
CGJI	**Cibinong**	**17.60**	**270**	P	**P**	**06 36 42.5**	**+0.3**
	comp=Z,72nm,0.7s,comp=Z,3μm						
JAY	**Jayapura**	**17.79**	**76**	P	**P**	**06 36 44.8**	**+0.7**
	comp=Z,0.4nm,0.3s,baz=94,slow=23,SNR=10						
GIRL	**Giralia**	**17.89**	**209**	P	**P**	**06 36 45.9**	**+1.2**
	baz=18,SNR=55						
WRKA	**Warakurna**	**18.53**	**166**	P	**P**	**06 36 51.1**	**+0.6**
	baz=19,SNR=630						
AS31	**Alice Springs**	**19.39**	**150**	*e*P	**P**	**06 36 58.9**	**+0.5**
	comp=Z,42nm,0.8s						
ASAR	**Alice Springs**	**19.39**	**150**	P	**P**	**06 36 59.0**	**+0.6**
	comp=Z,26nm,0.3s,baz=336,slow=9.7,SNR=766						
ASAR				S	**S**	**06 39 59.9**	**-2.1**
	comp=Z,6.5nm,0.3s,baz=313,slow=16,SNR=15						
ASAR				ScP	**ScP**	**06 43 25.6**	**-1.9**
	comp=Z,1.1nm,0.3s,baz=340,slow=2.2,SNR=9.3						
AS01	**Alice Springs**	**19.41**	**150**	*e*P	**P**	**06 36 59.0**	**+0.5**
COEN	**Coen**	**20.61**	**111**	P	**P**	**06 37 09.6**	**+0.1**
	baz=21,SNR=37						
COEN	**Coen**	**20.61**	**111**	*e*P	**P**	**06 37 09.4**	**0.0**
	comp=Z,37nm,0.9s						
QIS	**Mount Isa**	**20.68**	**132**	P	**P**	**06 37 10.3**	**+0.3**
	baz=21,SNR=49						
MORW	**Morawa**	**23.02**	**197**	P	**P**	**06 37 30.8**	**+0.1**
	baz=23,SNR=52						
MTSU	**Mount Surprise**	**23.18**	**120**	P	**P**	**06 37 33.2**	**+0.9**
	baz=23,SNR=22						
PMG	**Port Moresby**	**23.62**	**97**	P	**P**	**06 37 36.7**	**+0.5**
	comp=Z,22nm,0.5s,baz=92,slow=2.8,SNR=8.3						
PMG	**Port Moresby**	**23.62**	**97**‖	*e*P	**P**	**06 37 37.1**	**+0.9**
KMBL	**Kambalda**	**24.28**	**183**	P	**P**	**06 37 41.9**	**+0.1**
	baz=24,SNR=120						
BLDU	**Ballidu**	**24.32**	**194**	P	**P**	**06 37 42.0**	**-0.1**
	baz=24,SNR=222						
MANU	**Manus Island**	**24.37**	**79**	*e*P	**P**	**06 37 43.8**	**+0.9**
	comp=Z,339nm,1.8s						
MNSI	**Mandailing Nat**	**25.01**	**287**	P	**P**	**06 37 47.8**	**-0.7**
	comp=Z,39nm,0.7s						
KLBR	**Kellerberrin**	**25.03**	**191**	P	**P**	**06 37 48.4**	**0.0**
	baz=25,SNR=220						
CTA	**Charters Tower**	**25.68**	**123**	P	**P**	**06 37 55.5**	**+1.2**
	comp=Z,23nm,0.8s,baz=303,slow=13,SNR=11						
NWAO	**Narrogin (SRO)**	**26.42**	**192**	P	**P**	**06 38 00.8**	**+0.2**
	comp=Z,109nm,0.5s,baz=251,slow=8.2,SNR=127						
NWAO	**Narrogin (SRO)**	**26.42**	**192**	P	**P**	**06 38 00.9**	**+0.2**
	baz=26,SNR=118						
NWAO	**Narrogin (SRO)**	**26.42**	**192**	*e*P	**P**	**06 38 00.9**	**+0.2**
NWAO				pmax	pmax		
	comp=Z,117nm,0.6s						
NWAO	**Narrogin (SRO)**	**26.42**	**192**	*e*P	**P**	**06 38 00.9**	**+0.2**
	comp=Z,117nm,0.6s						
RKGY	**Rocky Gully**	**28.11**	**191**	P	**P**	**06 38 16.7**	**+1.5**
	baz=28,SNR=128						
BBOO	**Buckleboo**	**28.24**	**157**	P	**P**	**06 38 16.7**	**+0.3**
	baz=28,SNR=421						
BBOO	**Buckleboo**	**28.24**	**157**	*e*P	**P**	**06 38 16.7**	**+0.3**
	comp=Z,150nm,0.7s						
BBOO				*e*S	**S**	**06 42 22.7**	**+2.3**
QIZ	**Qiongzhong**	**29.12**	**333**	P	**P**	**06 38 23.8**	**-0.4**
QIZ				sP	**sP**	**06 41 13.9**	**-0.6**
QIZ				S	**S**	**06 42 32.1**	**-2.3**
QIZ				pmax	pmax		
	comp=Z,5.0nm,0.9s						
MLSI	**Meulaboh, Aceh**	**29.19**	**292**	P	**P**	**06 38 23.7**	**-1.2**
GUMO	**Guam**	**29.54**	**46**	P	**P**	**06 38 27.6**	**-0.3**
	comp=Z,59nm,0.3s,baz=209,slow=7.8,SNR=4.1						
SRAK	**Srakaew**	**29.77**	**315**	P	**P**	**06 38 26.5**	**-3.3**
	comp=Z,57nm,0.6s,comp=Z,713nm						
HTT	**Hallett**	**29.97**	**153**	P	**P**	**06 38 32.5**	**+1.1**
	baz=30,SNR=685						
STKA	**Stephens Creek**	**30.00**	**148**	P	**P**	**06 38 32.6**	**+1.0**
	comp=Z,196nm,0.5s,baz=318,slow=9.2,SNR=671						
STKA				S	**S**	**06 42 47.1**	**-0.4**
	comp=Z,17nm,0.7s,baz=128,slow=18,SNR=5.3						
STKA	**Stephens Creek**	**30.00**	**148**	P	**P**	**06 38 32.6**	**+1.0**
	baz=30,SNR=504						
STKA	**Stephens Creek**	**30.00**	**148**	*e*P	**P**	**06 38 32.4**	**+0.8**
STKA				S	**S**	**06 42 47.1**	**-0.4**
STKA				pmax	pmax		
	comp=Z,41nm,0.7s						
STKA	**Stephens Creek**	**30.00**	**148**	*e*P	**P**	**06 38 32.4**	**+0.8**
	comp=Z,40nm,0.7s						
STKA				S	**S**	**06 42 47.1**	**-0.4**
TPUB	**Ta-pu**	**30.24**	**355**	*e*P	**P**	**06 38 34.0**	**+0.2**
	comp=Z,34nm,0.7s						
TPUB				*e*S	**S**	**06 42 50.2**	**-1.3**
YULB	**Yu-li**	**30.28**	**356**	*e*P	**P**	**06 38 32.0**	**-2.1**
	comp=Z,26nm,0.8s						
PANO	**Nakornpanom**	**30.36**	**322**	P	**P**	**06 38 35.9**	**+1.1**
	comp=Z,27nm,0.7s						
SKNT	**Sakolnakorn**	**30.61**	**321**	P	**P**	**06 38 37.4**	**+0.4**
	comp=Z,19nm,0.7s						
SSLB	**Suanglung**	**30.70**	**356**	*e*P	**P**	**06 38 36.5**	**-1.2**
	comp=Z,18nm,0.8s						
SSLB				*e*S	**S**	**06 42 54.1**	**-4.3**
RMQ	**Roma**	**30.93**	**132**	P	**P**	**06 38 41.4**	**+1.8**
	baz=31,SNR=12						
CHAI	**Chaiyaphum**	**31.12**	**317**	P	**P**	**06 38 42.0**	**+0.7**
	comp=Z,5.0nm,0.6s,comp=Z,614nm						
YOJ	**Yonaguni jima**	**31.28**	**359**	*e*P	**P**	**06 38 42.8**	**+0.3**
YOJ				pmax	pmax		
	comp=Z,40nm,0.7s						
YOJ	**Yonaguni jima**	**31.28**	**359**	*e*P	**P**	**06 38 42.8**	**+0.3**
	comp=Z,40nm,0.7s						
YHNB	**Yeheng**	**31.55**	**356**	*e*P	**P**	**06 38 43.7**	**-1.2**
	comp=Z,54nm,1.6s						
CMSA	**Cobar Meteorol**	**32.07**	**142**	P	**P**	**06 38 50.5**	**+1.3**
	baz=32,SNR=309						
EIDS	**Eidsvold**	**32.12**	**128**	P	**P**	**06 38 49.9**	**+0.3**
	baz=32,SNR=4.4						
LOEI	**Loei**	**32.75**	**318**	P	**P**	**06 38 53.2**	**-1.9**
	comp=Z,8.0nm,0.9s,comp=Z,1μm						
UTTA	**Uttaradit**	**33.39**	**318**	P	**P**	**06 39 01.0**	**+0.6**
	comp=Z,7.1nm,0.7s,comp=Z,71nm						
ARPS	**Mount Arapiles**	**34.06**	**153**	P	**P**	**06 39 06.7**	**+0.9**
	baz=34,SNR=76						
LAMP	**Lampang**	**34.55**	**318**	P	**P**	**06 39 12.0**	**+1.9**
	comp=Z,4.3nm,0.7s						
CM01	**Chiang Mai Arr**	**34.94**	**317**	*e*P	**P**	**06 39 14.1**	**+0.8**
CM01				*e*PcP	**PcP**	**06 41 28.3**	**+0.8**
CMAR	**Chiang Mai Arr**	**34.97**	**317**	P	**P**	**06 39 14.2**	**+0.6**
	comp=Z,4.7nm,0.5s,baz=145,slow=6.6,SNR=24						
CMAR				PcP	**PcP**	**06 41 28.5**	**+0.9**
	comp=Z,5.4nm,0.7s,baz=173,slow=2.9,SNR=16						
CMAR				ScP	**ScP**	**06 44 14.7**	**-0.3**
	comp=Z,6.1nm,0.9s,baz=165,slow=3.1,SNR=16						
CMMT	**Chiang Mai**	**35.22**	**317**	P	**P**	**06 39 16.3**	**+0.7**
	comp=Z,18nm,0.6s						
CHTO	**Chiang Mai**	**35.22**	**317**	P	**P**	**06 39 16.4**	**+0.8**
	comp=Z,76nm,0.7s,comp=Z,1μm						
CHTO	**Chiang Mai**	**35.22**	**317**	*e*P	**P**	**06 39 16.2**	**+0.6**
CHTO				pmax	pmax		
	comp=Z,9.0nm,0.6s						
CHTO	**Chiang Mai**	**35.22**	**317**	*e*P	**P**	**06 39 16.2**	**+0.6**
	comp=Z,9.4nm,0.6s						
ARMA	**Armidale**	**35.25**	**135**	P	**P**	**06 39 18.0**	**+2.1**
	baz=35,SNR=24						
ARMA	**Armidale**	**35.25**	**135**	*e*P	**P**	**06 39 18.2**	**+2.3**
	comp=Z,81nm,1.7s						
ARMA				*e*pP	**pP**	**06 40 58.1**	**+0.8**
ARMA				*e*ScP	**ScP**	**06 44 16.0**	**-0.1**
CRAI	**Chiangrai**	**35.30**	**321**	P	**P**	**06 39 17.0**	**+0.7**
	comp=Z,94nm,0.7s,comp=Z,5μm						
YNG	**Young**	**35.62**	**143**	P	**P**	**06 39 20.3**	**+1.5**
	baz=36,SNR=82						
HNR	**Honiara**	**36.23**	**96**	P	**P**	**06 39 24.2**	**+0.2**
	comp=Z,72nm,0.4s,baz=236,slow=2.0,SNR=7.1						
HNR	**Honiara**	**36.23**	**96**	*e*P	**P**	**06 39 24.4**	**+0.4**
HNR				pmax	pmax		
	comp=Z,107nm,0.7s						
HNR	**Honiara**	**36.23**	**96**	*e*P	**P**	**06 39 24.4**	**+0.4**
	comp=Z,107nm,0.7s						
TOO	**Toolangi**	**36.44**	**150**	P	**P**	**06 39 27.3**	**+1.8**
	baz=37,SNR=43						
MGCD	**Mangrove Creek**	**36.59**	**139**	P	**P**	**06 39 28.7**	**+2.0**
	baz=37,SNR=23						
CAN	**Canberra**	**36.69**	**144**	*e*P	**P**	**06 39 29.1**	**+1.6**
CAN				pmax	pmax		
	comp=Z,95nm,0.7s						
CAN	**Canberra**	**36.69**	**144**	*e*P	**P**	**06 39 29.1**	**+1.6**
	comp=Z,95nm,0.7s						
CNB	**Canberra Magne**	**36.90**	**143**	P	**P**	**06 39 30.8**	**+1.5**
	baz=37,SNR=28						
GYA	**Guiyang**	**37.02**	**335**	P	**P**	**06 39 31.8**	**+1.4**
GYA				PcP	**PcP**	**06 41 35.0**	**+1.1**
GYA				sP	sP	06 42 25.4	+0.9
GYA				ScP	**ScP**	**06 44 23.6**	**+1.0**
GYA				S	**S**	**06 44 38.8**	**+5.3**
GYA				sS	SS	06 47 49.0	-4.8
GYA				ScS	**ScS**	**06 48 33.3**	**+0.6**
GYA				pmax	pmax		
	comp=Z,20nm,0.9s						
KMI	**Kunming**	**37.75**	**328**	P	**P**	**06 39 38.3**	**+1.8**
KMI				sP	sP	06 42 31.8	+0.9
KMI				S	**S**	**06 44 45.3**	**+0.8**
KMI				sS	sS	06 47 55.4	+0.4
KMI				pmax	pmax		
	comp=Z,15nm,1.1s						
MILA	**Mila**	**38.00**	**146**	P	**P**	**06 39 40.0**	**+1.9**
	baz=38,SNR=11						
WHN	**Wuhan**	**38.33**	**347**⇑	*i*P	**P**	**06 39 42.4**	**+1.6**
WHN				S	**S**	**06 44 50.5**	**-1.9**
WHN				pmax	pmax		
	comp=Z,54nm,0.7s						
CBIJ	**Chichi jima**	**38.47**	**27**	P	**P**	**06 39 41.2**	**-0.7**
JCJ	**Chichijima**	**38.47**	**27**	P	**P**	**06 39 41.2**	**-0.7**
	comp=Z,128nm,0.5s,baz=87,slow=15,SNR=15						
NJ2	**Nanjing**	**39.08**	**354**	*e*P	**P**	**06 39 47.4**	**+0.6**
NJ2				pmax	pmax		
	comp=Z,41nm,1.0s						
ENH	**Enshi**	**39.40**	**341**	*e*P	**P**	**06 39 49.6**	**+0.2**
	comp=Z,26nm,0.7s						
JNU	**Nakatsue**	**40.53**	**10**	P	**P**	**06 39 58.0**	**-0.3**
	comp=Z,25nm,0.8s,baz=229,slow=2.5,SNR=15						
JNU	**Nakatsue**	**40.53**	**10**	*e*P	**P**	**06 39 58.7**	**+0.4**
	comp=Z,26nm,0.8s						
MOO	**Moorlands**	**41.07**	**153**	P	**P**	**06 40 04.0**	**+1.5**
	baz=41,SNR=6.3						
CD2	**Chengdu**	**42.14**	**334**	P	**P**	**06 40 11.8**	**+0.8**
CD2				pP	pP	06 41 58.4	+0.6
CD2				PP	**PP**	**06 42 04.6**	**+0.9**
CD2				sP	sP	06 43 08.6	+0.7
CD2				S	**S**	**06 45 45.6**	**-1.9**
CD2				sS	ScS	06 49 05.3	+2.0
CD2				SS	**SS**	**06 49 20.4**	**+3.6**
CD2				pmax	pmax		
	comp=Z,50nm,0.6s						
XAN	**Xi'an**	**43.07**	**342**	P	**P**	**06 40 17.6**	**-0.6**
XAN				pP	pP	06 42 02.1	-3.6
XAN				pmax	pmax		
	comp=Z,76nm,0.7s						
TJN	**Taejon**	**43.31**	**5***d*	*i*P	**P**	**06 40 20.2**	**+0.3**
KSAR	**Wonju Array Be**	**44.41**	**5**	P	**P**	**06 40 29.5**	**+1.1**
KSAR	**Wonju Array Be**	**44.41**	**5**	P	**P**	**06 40 29.5**	**+1.1**
KSRS	**Korea Array**	**44.43**	**5**	P	**P**	**06 40 29.5**	**+1.0**
	comp=Z,26nm,0.8s,baz=189,slow=7.7,SNR=42						
PALK	**Pallekele**	**44.90**	**288**	P	**P**	**06 40 32.4**	**-0.2**
	comp=Z,6.1nm,0.7s,baz=114,slow=6.6,SNR=4.9						
PALK				PcP	**PcP**	**06 42 00.7**	**+0.4**
	comp=Z,4.3nm,0.8s,baz=106,slow=1.4,SNR=4.3						
MJAR	**Matsushiro Arr**	**45.49**	**17**	P	**P**	**06 40 36.4**	**-0.2**
	comp=Z,39nm,0.7s,baz=190,slow=8.6,SNR=47						
MAJO	**Matsushiro**	**45.49**	**17***d*	*i*P	**P**	**06 40 36.0**	**-0.6**
MAJO				pmax	pmax		
	comp=Z,180nm,0.8s						
MAJO	**Matsushiro**	**45.49**	**17**	*e*P	**P**	**06 40 36.5**	**-0.1**
	comp=Z,41nm,0.8s						
MAT	**Matsushiro**	**45.49**	**17**	P	**P**	**06 40 36.0**	**-0.6**
MJB9	**Matsu-Tunnel**	**45.49**	**17**	*e*P	**P**	**06 40 36.5**	**-0.1**
	comp=Z,10nm,0.8s						
LZH	**Lanzhou**	**46.64**	**338**	*e*P	**P**	**06 40 46.3**	**+0.8**
LZH				PcP	**PcP**	**06 42 07.3**	**+1.1**
LZH				pP	pP	06 42 36.3	+0.5
LZH				sP	sP	06 43 41.3	-3.5
LZH				*e*S	**S**	**06 46 50.3**	**-0.4**
LZH				pmax	pmax		
	comp=Z,100nm,1.3s						
LZH				pmax	pmax		
	comp=Z,410nm,4.2s						
BJT	**Baijiatuau**	**47.27**	**352**	*e*P	**P**	**06 40 49.7**	**-0.2**
BJT				*e*		06 42

HABR e 06 49 07.1
HABR e 06 50 39.5
HABR eSS **SS** **06 52 58.6 +0.7**
HABR pmax pmax
comp=Z,61nm,1.1s
HABR MLR MLR
comp=Z,70nm,20.0s
KLR Kul'dur 56.47 7 P **P** **06 41 55.4 -0.1**
comp=Z,8.3nm,0.7s,baz=224,slow=3.9,SNR=15
KLR PcP **PcP** **06 42 42.7 -0.3**
comp=Z,4.4nm,0.6s,baz=125,slow=2.0,SNR=6.4
ULN Ulaanbaatar 56.51 347 *d iP* **P** **06 41 56.3 +0.3**
ULN pmax pmax
comp=Z,42nm,1.7s
ULN Ulaanbaatar 56.51 347 *e*P **P** **06 41 56.3 +0.3**
comp=Z,30nm,1.2s
SONM Songino Array 56.64 346 P **P** **06 41 57.0 +0.2**
comp=Z,21nm,0.6s,baz=165,slow=8.0,SNR=66
SONM Songino Array 56.64 346 *e*P **P** **06 41 57.0 +0.2**
SONA1 Songino Array 56.65 346 *e*P **P** **06 41 56.9 0.0**
BKZ Black Stump Fm 57.33 132 *e*P **P** **06 42 02.0 +0.4**
comp=Z,41nm,1.1s
URZ Urewera 57.49 131 *e*P **P** **06 42 02.7 0.0**
comp=Z,39nm,0.7s
ZAK Zakamensk 59.76 345 *e*P **P** **06 42 17.6 -0.1**
ZAK *e* 06 44 22.0
ZAK pmax pmax
comp=Z,11nm,1.2s
CASY Casey 59.85 186 *e*P **P** **06 42 17.8 0.0**
comp=Z,23nm,0.8s
WMQ Urumqi 60.02 331 P **P** **06 42 19.8 +0.3**
WMQ PcP **PcP** **06 42 59.0 +1.6**
WMQ PP **PP** **06 44 42.8 -0.1**
WMQ pmax pmax
comp=Z,20nm,0.6s
TLY Talaya 60.87 346 P **P** **06 42 25.3 +0.5**
comp=Z,5.7nm,0.7s,baz=214,slow=4.4,SNR=9.3
TLY Talaya 60.87 346 || *e*P **P** **06 42 25.7 +0.9**
TLY pmax pmax
comp=Z,9.0nm,0.6s
MOY Mondy 61.53 344 *e*P **P** **06 42 29.7 +0.5**
MOY pmax pmax
comp=Z,43nm,2.1s
NKL Nikolayevsk 61.69 12 *e*P **P** **06 42 29.0 -1.0**
NKL pmax pmax
comp=Z,43nm,0.9s
KSH Kashi 63.73 321 P **P** **06 42 43.9 +0.2**
KSH *e*pP pP 06 44 43.0 -2.4
KSH *e*PP **PP** **06 45 14.9 -0.4**
KSH *e*sP sP 06 45 45.6 -5.2
KSH S **S** **06 50 30.8 -0.5**
KSH ScS **ScS** **06 51 37.1 +0.5**
KSH pmax pmax
comp=Z,19nm,0.7s
MK01 Makanchi Array 64.78 330 *e*P **P** **06 42 49.4 -0.6**
MK31 Makanchi Array 64.81 330 *e*P **P** **06 42 50.3 +0.2**
MK31 Makanchi Array 64.81 330 *e*P **P** **06 42 50.3 +0.2**
MKAR Makanchi Array 64.81 330 P **P** **06 42 50.2 +0.1**
comp=Z,23nm,0.6s,baz=132,slow=7.8,SNR=280
MKAR PcP **PcP** **06 43 16.8 -0.2**
comp=Z,5.3nm,0.6s,baz=156,slow=4.8,SNR=5.9
MKAR S **S** **06 50 42.7 -0.9**
comp=Z,0.9nm,0.9s,baz=137,slow=14,SNR=5.3
MAKZ Makanchi 64.97 330 *e*P **P** **06 42 50.9 -0.2**
MAKZ Makanchi 64.97 330 *e*P **P** **06 42 50.9 -0.2**
BOD Bodaibo 65.06 354 *e*P **P** **06 42 51.5 +0.1**
BOD pmax pmax
comp=Z,37nm,1.1s
KBL Kabul 65.86 313 *e*P **P** **06 42 57.3 +0.1**
KBL Kabul 65.86 313 *e*P **P** **06 42 57.3 +0.1**
TKM2 Tokmak 2 65.96 323 *e*P **P** **06 42 57.7 +0.1**
TKM2 Tokmak 2 65.96 323 *e*P **P** **06 42 57.7 +0.1**
AAK Ala-Archa 66.45 323 P **P** **06 43 01.1 +0.5**
comp=Z,16nm,0.5s,baz=126,slow=5.4,SNR=38
AAK PcP **PcP** **06 43 23.7 -0.5**
comp=Z,2.4nm,0.6s,baz=148,slow=4.9,SNR=5.0
PETK Petropavlovsk- 66.56 22 P **P** **06 43 01.4 +0.6**
comp=Z,19nm,0.6s,baz=222,slow=1.4,SNR=22
PET Petropavlovsk 66.85 22 *e*P **P** **06 43 02.9 +0.4**
PET pmax pmax
comp=Z,49nm,1.5s
EKS2 Erkin-Say 66.90 322 *e*P **P** **06 43 03.8 +0.5**
EKS2 Erkin-Say 66.90 322 *e*P **P** **06 43 03.8 +0.5**
ZALV Zalesovo Beam 68.85 337 P **P** **06 43 13.8 -0.9**
comp=Z,24nm,0.7s,baz=133,slow=4.3,SNR=43
ZALV S **S** **06 51 27.4 -3.0**
comp=Z,0.4nm,0.3s,baz=97,slow=12,SNR=3.9
ZALV Zalesovo Beam 68.85 337 *i* P **P** **06 43 13.8 -0.8**
ZALV pmax pmax
comp=Z,24nm,0.7s
YAK Yakutsk 69.00 3 P **P** **06 43 14.8 -0.6**
comp=Z,6.3nm,0.4s,baz=5.4,slow=18,SNR=6.2
YAK Yakutsk 69.00 3 *e*P **P** **06 43 15.2 -0.2**
YAK *e* 06 43 35.4
YAK *e*S **S** **06 51 30.1 -1.7**
YAK *e* 06 52 14.1
YAK pmax pmax
comp=Z,66nm,0.7s
YAK pmax pmax
comp=N,47nm,1.5s
YAK pmax pmax
comp=E,6.0nm,1.1s
YAK smax smax
comp=E,94nm,2.1s
YAK smax smax
comp=N,143nm,2.8s
YAK Yakutsk 69.00 3 *e*P **P** **06 43 15.0 -0.3**
KKAR Karatay Array 69.14 321 *e*P **P** **06 43 16.4 -0.3**
KKAR Karatay Array 69.14 321 *e*P **P** **06 43 16.4 -0.3**
KURBB Kurchatov Arra 69.23 331 P **P** **06 43 16.8 -0.2**
comp=N,9.3nm,0.6s,baz=143,slow=5.1,SNR=110
KURBB S **S** **06 51 32.1 -2.8**
comp=N,0.5nm,0.8s,baz=131,slow=13,SNR=7.2
KURK Kurchatov 69.25 331 *e*P **P** **06 43 17.1 0.0**
KURK S **S** **06 51 32.1 -3.0**
KURK Kurchatov 69.25 331 *e*P **P** **06 43 17.1 0.0**
KURK S **S** **06 51 32.1 -3.0**
MA2 Magadan 69.86 14 P **P** **06 43 21.2 +0.7**
comp=N,30nm,0.6s,baz=198,slow=7.4,SNR=19
NVS Novosibirsk 70.13 337 *e*S **S** **06 51 38.7 -6.2**
NVS pmax pmax
comp=N,30nm,1.3s
NVS pmax pmax
comp=E,28nm,1.3s
NVS pmax pmax
comp=Z,38nm,1.3s
NVS smax smax
comp=N,17nm,1.6s
NVS smax smax
comp=E,32nm,1.8s
MAW Mawson 72.60 200 P **P** **06 43 36.8 +0.4**
comp=E,9.4nm,0.6s,baz=79,slow=5.0,SNR=30
MAW Mawson 72.60 200 P **P** **06 43 36.3 -0.1**
baz=73,SNR=9.4
SEY Seymchan 73.17 13 || *i*P **P** **06 43 40.3 +0.7**
VNDA Vanda 73.30 172 P **P** **06 43 40.2 0.0**
comp=E,13nm,0.7s,baz=324,slow=5.5,SNR=106
VNDA Vanda 73.30 172 *e*P **P** **06 43 40.5 +0.3**
VNDA Vanda 73.30 172 *e*P **P** **06 43 40.5 +0.3**
SBA Scott Base 74.26 171 *e*P **P** **06 43 46.8 +1.2**
SBA Scott Base 74.26 171 *e*P **P** **06 43 46.8 +1.2**
BVAR Borovoye Array 74.69 330 P **P** **06 43 48.3 -0.2**
comp=E,7.6nm,0.5s,baz=122,slow=6.9,SNR=46
BRVK Borovoye 74.76 330 || *i*P **P** **06 43 48.7 -0.1**
BRVK pmax pmax
comp=Z,52nm,1.7s
BRVK Borovoye 74.76 330 *e*P **P** **06 43 48.7 -0.1**
GEYT Alibeck 75.29 312 P **P** **06 43 52.5 +0.4**
comp=Z,15nm,0.6s,baz=160,slow=4.7,SNR=16
ZRNK Zerenda 75.34 329 *e*P **P** **06 43 51.8 -0.3**
ZRNK Zerenda 75.34 329 *e*P **P** **06 43 51.8 -0.3**
ABKAR Akbulak array 78.53 323 *e*P **P** **06 44 08.9 -0.4**
TIXI Tiksi 78.58 2 P **P** **06 44 08.1 -1.1**
comp=Z,5.1nm,0.3s,baz=150,slow=5.3,SNR=27
TIXI Tiksi 78.58 2 || *i*P **P** **06 44 08.1 -1.1**
TIXI pmax pmax
comp=Z,57nm,1.7s
NRIK Noril'sk 80.08 348 P **P** **06 44 17.3 +0.2**
comp=Z,9.2nm,0.6s,baz=131,slow=5.0,SNR=30
AKTO Aktyubinsk 80.15 324 P **P** **06 44 17.7 -0.2**
comp=Z,15nm,0.6s,baz=109,slow=7.1,SNR=72
BILL Bilibino 80.71 15 *ce*P **P** **06 44 20.7 +0.3**
BILL *e* 06 47 40.9
BILL pmax pmax
comp=Z,28nm,2.5s
BILL Bilibino 80.71 15 *e*P **P** **06 44 20.8 +0.5**
BILL Bilibino 80.71 15 *e*S **P** **06 44 20.9 +0.5**
BILL Bilibino 80.71 15 *e*S **P** **06 44 20.8 +0.5**
SYO Syowa Base 81.28 201 || *e*P **P** **06 44 22.0 -1.4**
SYO Syowa Base 81.28 201 || *e*PcP **PcP** **06 44 28.0 +0.6**
ARU Arti 82.32 330 P **P** **06 44 28.2 -0.6**
comp=Z,8.3nm,0.5s,baz=99,slow=3.2,SNR=17
ARU Arti 82.32 330 *d iP* **P** **06 44 28.2 -0.6**
ARU 06 47 48.7
ARU S **S** **06 53 53.7 -0.4**
ARU pmax pmax
comp=Z,55nm,1.7s
DGRG David-gareji 85.72 312 P **P** **06 44 46.9 +1.0**
DGRG David-gareji 85.72 312 P **P** **06 44 46.9 +1.0**
TBLG Delisi 86.24 313 P **P** **06 44 49.3 +1.0**
TBLG Delisi 86.24 313 P **P** **06 44 49.3 +1.0**
GUDG Gudauri 86.59 313 P **P** **06 44 51.9 +1.7**
ZEI Tsey 87.08 314 *e*P **P** **06 44 51.2 -1.2**
ZEI pmax pmax
comp=Z,15nm,0.6s
ONI Oni 87.36 313 P **P** **06 44 54.1 +0.5**
ONI Oni 87.36 313 P **P** **06 44 54.1 +0.5**
KBZ Khabaz 87.99 314 P **P** **06 44 56.0 -0.4**
comp=Z,5.3nm,0.7s,baz=123,slow=3.6,SNR=16
NEY Neytrino 88.02 314 || *e*P **P** **06 44 57.2 +0.4**
NEY pmax pmax
comp=Z,5.0nm,1.7s
VRH Novokhopyorsk 90.23 321 *e*P **P** **06 45 04.5 -2.1**
VRH pmax pmax
comp=Z,10.0nm,0.6s
ASF Jabal al Asfar 90.75 302 P **P** **06 45 10.0 +0.5**
comp=Z,1.1nm,0.5s,baz=105,slow=6.0,SNR=3.9
VSR Storozhevoye 91.81 321 *e*P **P** **06 45 12.4 -1.5**
VSR pmax pmax
comp=Z,10.0nm,0.6s
MMAI Mount Meron Ar 92.11 303 P **P** **06 45 16.1 +0.3**
comp=Z,0.8nm,0.3s,baz=76,slow=11,SNR=4.4
BOSA Boshof 93.79 241 P **P** **06 45 23.0 -0.7**
comp=Z,2.2nm,0.7s,baz=148,slow=4.2,SNR=4.0
OBN Obninsk 93.89 325 *ce*P **P** **06 45 22.3 -0.9**
OBN *e* 06 49 16.1
OBN pmax pmax
comp=Z,12nm,0.9s
BRTR Keskin Array B 94.25 309 P **P** **06 45 23.6 -1.9**
comp=Z,1.5nm,0.7s,baz=132,slow=5.2,SNR=6.9
ILAR Eielson Array 96.16 26 P **P** **06 45 30.9 -2.4**
comp=Z,1.7nm,0.8s,baz=233,slow=5.6,SNR=11
AKASG Malin Array Be 98.03 320 P Pdif 06 45 40.4 -1.6
comp=Z,1.3nm,0.5s,baz=75,slow=5.1,SNR=7.1
AKASG Malin Array Be 98.03 320 *i* P Pdif 06 45 40.4 -1.5
AKASG pmax pmax
comp=Z,2.0nm,0.6s
ARCES ARCESS Array B 99.29 339 P **Pdif** **06 45 45.5 -1.7**
comp=Z,1.6nm,0.6s,baz=65,slow=6.8,SNR=6.1
ARCES PKiKP **PKiKP** **06 50 12.2 -0.5**
comp=Z,0.5nm,0.5s,baz=156,slow=0.6,SNR=9.4
FINES FINESS Array B 99.62 331 PKiKP **PKiKP** **06 50 13.3 -0.2**
comp=Z,1.0nm,0.5s,baz=197,slow=4.2,SNR=4.8
SPITS Spitsbergen Ar 100.29 348 P **Pdif** **06 45 50.0 -1.4**
comp=Z,3.4nm,0.6s,baz=118,slow=5.0,SNR=9.6
GERES GERESS Array B 108.19 319 PKiKP **PKiKP** **06 50 29.1 -0.7**
comp=Z,0.3nm,0.2s,baz=54,slow=2.3,SNR=3.8
YKA Yellowknife Ar 110.57 25 PKiKP **PKiKP** **06 50 32.7 -1.0**
comp=Z,1.5nm,0.6s,baz=309,slow=1.9,SNR=55
YKA SKP 06 53 08.6
comp=Z,0.2nm,0.6s,baz=300,slow=2.0,SNR=4.3
B05A Bryant 111.41 41 P **PKiKP** **06 50 35.8 +0.1**
baz=284
I05D Terrebonne, OR 112.84 45 P **PKiKP** **06 50 38.8 +0.1**
baz=283
J05D Fort Rock, OR 113.15 46 P **PKiKP** **06 50 39.8 +0.4**
baz=283
O03D Paynes Creek 113.35 49 P **PKiKP** **06 50 39.3 -0.5**
baz=281
NEW Newport 114.61 40 P PKPdf 06 50 42.1 +0.2
baz=288
RCTC Rector, Farmer 116.08 53 P **PKPdf** **06 50 44.9 -0.2**
baz=281
VES Vestal, Richgr 116.30 54 P **PKPdf** **06 50 45.4 -0.1**
baz=281
NVAR Mina Array Bea 116.38 51 PKP **PKPdf** **06 50 46.1 +0.2**
comp=Z,1.9nm,0.7s,baz=263,slow=2.9,SNR=10
ARVC Arvin 116.64 54 P **PKPdf** **06 50 46.7 +0.5**
baz=281
MSO Missoula 117.11 41 P **PKPdf** **06 50 46.3 -0.6**
baz=290,SNR=5.8
EDW2 Edwards Air Fo 117.36 54 P **PKPdf** **06 50 47.9 +0.3**
baz=281
GRAC Grapevine Rang 117.42 52 P **PKPdf** **06 50 48.1 +0.3**
baz=283
MPMC Manual Prospec 117.52 53 P **PKPdf** **06 50 48.1 0.0**
baz=282
BFSC Mount Baldy Ra 117.75 55 P **PKPdf** **06 50 48.6 0.0**
baz=281
HLID Hailey 117.87 44 P **PKPdf** **06 50 49.0 +0.4**
baz=288,SNR=15
FURC Furnace Creek, 117.93 52 P **PKPdf** **06 50 49.0 +0.4**
baz=283
GSC Goldstone, Bar 118.23 54 P **PKPdf** **06 50 49.6 +0.2**
baz=282
MURC Murrieta 118.25 56 P **PKPdf** **06 50 49.9 +0.5**
baz=281
R11A Troy Canyon, C 118.48 50 P **PKPdf** **06 50 49.8 -0.1**
baz=285,SNR=5.4
SHOC Shoshone, Teco 118.52 53 P **PKPdf** **06 50 50.0 +0.2**
baz=283
PFO Pinyon Flats O 118.85 55 P **PKPdf** **06 50 50.7 0.0**
baz=282
TPFO Pinon Flats 118.86 56 P **PKPdf** **06 50 50.8 +0.1**
baz=282
TUQ Turquoise Moun 118.90 53 P **PKPdf** **06 50 50.9 +0.2**
baz=283
BOZ Bozeman (W) 119.03 41 P **PKPdf** **06 50 50.6 -0.1**
baz=292
BELC Belle Mtn. Jos 119.15 55 P **PKPdf** **06 50 51.7 +0.4**
baz=282
GMRC Granite Mounta 119.25 54 P **PKPdf** **06 50 51.9 +0.5**
baz=283
EGMT Eagleton 119.29 38 P **PKPdf** **06 50 51.1 +0.1**
baz=294
BC3 Big Chuckawall 119.66 55 P **PKPdf** **06 50 52.9 +0.7**
baz=282
DUG Dugway, Tooele 120.04 47 P **PKPdf** **06 50 53.3 +0.5**
baz=288
H17A Grant Village 120.19 42 P **PKPdf** **06 50 53.7 +0.6**
baz=292
Y12C Blythe 120.40 55 P **PKPdf** **06 50 53.8 +0.4**
baz=283
RLMT Red Lodge 120.77 41 P **PKPdf** **06 50 54.1 0.0**
baz=293
BW06 Boulder Array 121.48 44 P **PKPdf** **06 50 55.3 -0.3**
baz=292
PDAR Pinedale Array 121.48 44 PKP **PKPdf** **06 50 55.0 -0.5**
comp=Z,1.4nm,0.5s,baz=148,slow=0.8,SNR=16
LAO LASA Array 122.03 38 P **PKPdf** **06 50 56.7 +0.4**
baz=297
DGMT Dagmar 122.40 36 P **PKPdf** **06 50 56.4 -0.5**
baz=300
TORD Torodi Ar. Bea 122.40 281 PKP **PKPdf** **06 50 57.0 -0.8**
comp=Z,9.0nm,0.7s,baz=79,slow=2.0,SNR=58
TORD SKP 06 53 34.0
comp=Z,0.7nm,0.6s,baz=76,slow=1.6,SNR=3.8
WUAZ Wupatki 122.48 52 P **PKPdf** **06 50 57.8 +0.2**
baz=286
ESDC Sonseca Array 122.83 313 PKP **PKPdf** **06 50 57.8 -0.2**
comp=Z,0.2nm,0.3s,baz=21,slow=2.7,SNR=6.6
C25A Freed Ranch, W 123.32 36 P **PKPdf** **06 50 58.9 +0.1**
baz=300
O20A White River Ci 123.36 46 P **PKPdf** **06 50 59.5 +0.2**
baz=291
A26A Wade Farm, Ken 123.41 34 P **PKPdf** **06 50 59.0 +0.2**
baz=302
D25A Fairfield 123.56 37 P **PKPdf** **06 50 59.6 +0.3**
baz=300
B26A Jensen Ranch, 123.57 35 P **PKPdf** **06 50 59.2 0.0**
baz=302
K22A Casper 123.58 43 P **PKPdf** **06 50 59.3 -0.3**
baz=294
TUC Tucson 123.79 56 P **PKPdf** **06 50 60.0 -0.2**
baz=284
E25A Miller Ranch, 123.84 37 P **PKPdf** **06 50 60.0 +0.2**
baz=300
C26A Wahner Farm, P 123.94 35 P **PKPdf** **06 50 59.7 -0.2**
baz=302
F25A Bowman 124.08 38 P **PKPdf** **06 50 60.0 -0.3**
baz=299
D26A Manning 124.15 36 P **PKPdf** **06 51 00.2 -0.1**
baz=301
MVCO Mesa Verde 124.18 49 P **PKPdf** **06 51 01.3 +0.3**
baz=289
C27A Sayler Ranch, 124.33 35 P **PKPdf** **06 51 00.7 0.0**
baz=302
A28A Rude Farm, Bot 124.38 34 P **PKPdf** **06 51 00.9 +0.2**
baz=304
E26A Carlson Angus 124.42 37 P **PKPdf** **06 51 00.9 +0.1**
baz=300
RSSD Black Hills 124.58 40 P **PKPdf** **06 51 01.0 -0.5**
baz=298
B28A Dugan Ranch, T 124.58 34 P **PKPdf** **06 51 01.4 +0.3**
baz=304
F26A Lodgepole 124.60 38 P **PKPdf** **06 51 01.0 -0.2**
baz=300
H25A Fruitdale 124.62 39 P **PKPdf** **06 51 01.1 -0.3**
baz=298
D27A Center 124.64 36 P **PKPdf** **06 51 01.2 0.0**
baz=302
N23A Red Feather La 124.69 44 P **PKPdf** **06 51 01.5 -0.4**
baz=294
I25A Rochford 124.82 40 P **PKPdf** **06 51 01.3 -0.6**
baz=298
G26A Maurine 124.92 38 P **PKPdf** **06 51 01.7 -0.2**
baz=300
A29A Manning Farm, 124.94 33 P **PKPdf** **06 51 01.8 +0.1**
baz=305
E27A Carson 124.97 37 P **PKPdf** **06 51 02.1 +0.2**
baz=301
B29A Wagenman Farm, 125.13 34 P **PKPdf** **06 51 01.5 -0.6**
baz=305
H26A Fairpoint 125.14 39 P **PKPdf** **06 51 02.2 -0.1**
baz=299
D28A Regan 125.15 35 P **PKPdf** **06 51 01.6 -0.6**
baz=303
S22A 4UR Ranch, Cre 125.25 48 P **PKPdf** **06 51 03.9 +0.9**
baz=291
G27A Dupree 125.29 38 P **PKPdf** **06 51 02.3 -0.2**
baz=300
MDND Maddock 125.34 34 P **PKPdf** **06 51 01.8 -0.7**
baz=304
ISCO Idaho Springs 125.36 45 P **PKPdf** **06 51 03.3 0.0**
baz=293
E28A Huff 125.41 36 P **PKPdf** **06 51 02.1 -0.6**
baz=302
A30A Hoffart Farm, 125.43 33 P **PKPdf** **06 51 02.5 -0.2**
baz=306
H27A Howes 125.57 39 P **PKPdf** **06 51 02.8 -0.4**
baz=300
J26A Sides Ranch, S 125.57 41 P **PKPdf** **06 51 02.5 -0.7**
baz=298
B30A Myrvik Farm, E 125.70 33 P **PKPdf** **06 51 02.9 -0.3**
baz=306
D29A Pettibone, Tap 125.78 35 P **PKPdf** **06 51 02.8 -0.6**
baz=304
ULM Lac du Bonnet 125.88 30 PKP **PKPdf** **06 51 02.7 -0.8**
comp=Z,4.2nm,0.7s,baz=300,slow=1.9,SNR=5.6
E29A Napoleon 126.02 36 P **PKPdf** **06 51 04.0 +0.1**
baz=303
C30A Mose, Pekin 126.05 34 P **PKPdf** **06 51 03.4 -0.5**
baz=305
B31A Greenbush Farm 126.08 33 P **PKPdf** **06 51 03.6 -0.3**
baz=306
121A Cookes Peak, D 126.17 55 P **PKPdf** **06 51 05.3 +0.5**
baz=287
SDCO Great Sand Dun 126.23 48 P **PKPdf** **06 51 05.7 +0.7**
baz=292
D30A Buchanan 126.23 35 P **PKPdf** **06 51 03.8 -0.5**
baz=304
F29A Eureka 126.31 36 P **PKPdf** **06 51 04.0 -0.4**
baz=303
A32A Rocking H Ranc 126.39 32 P **PKPdf** **06 51 03.7 -0.8**
baz=306
C31A Landman Farms, 126.40 33 P **PKPdf** **06 51 04.4 -0.1**
baz=306
I28A Midland 126.45 39 P **PKPdf** **06 51 04.9 +0.1**
baz=300
E30A Jud 126.48 35 P **PKPdf** **06 51 04.5 -0.3**
baz=304
ANMO Albuquerque 126.49 51 P **PKPdf** **06 51 06.0 +0.7**
baz=289
ANMO Albuquerque 126.49 51 *c iP*KIKP **PKPdf** **06 51 06.3 +0.9**
ANMO pmax pmax
comp=Z,9.0nm,1.2s
G29A Hoven 126.60 37 P **PKPdf** **06 51 04.7 -0.3**
baz=302
B32A Ashes, Strandq 126.69 32 P **PKPdf** **06 51 04.7 -0.4**
baz=308
D31A Mcclaflin, Tow 126.84 34 P **PKPdf** **06 51 05.1 -0.3**
baz=305
A33A Warroad 126.95 31 P **PKPdf** **06 51 04.9 -0.7**
baz=309
I29A Vivian Onida 126.97 39 P **PKPdf** **06 51 05.5 -0.3**
baz=301
E31A Nome 127.03 35 P **PKPdf** **06 51 05.2 -0.6**
baz=305
C32A Crookston 127.04 33 P **PKPdf** **06 51 05.0 -0.8**
baz=307
G30A Faulkton 127.10 37 P **PKPdf** **06 51 05.9 -0.1**
baz=303
T25A Trinidad 127.26 48 P **PKPdf** **06 51 07.1 +0.3**
baz=293
B33A Robert and Kas 127.27 32 P **PKPdf** **06 51 05.4 -0.7**
baz=308
C33A Trail 127.48 32 P **PKPdf** **06 51 06.0 -0.6**
baz=308
I30A Oacoma 127.57 38 P **PKPdf** **06 51 06.4 -0.5**
baz=302
B34A Aery, Baudette 127.62 31 P **PKPdf** **06 51 06.2 -0.6**
baz=310
D33A AnnSam, Wauburn 127.82 33 P **PKPdf** **06 51 06.9 -0.4**
baz=307
J30A Dallas 127.84 39 P **PKPdf** **06 51 07.2 -0.3**
baz=301
H31A Wolsey 127.85 37 P **PKPdf** **06 51 07.2 -0.2**
baz=303
C34A RKJ Ranch, Bem 128.01 32 P **PKPdf** **06 51 07.0 -0.7**
baz=309
I31A Royce, Wessing 128.06 38 P **PKPdf** **06 51 07.8 0.0**
baz=303
K30A Basset 128.09 40 P **PKPdf** **06 51 07.8 -0.2**
baz=301
E33A Westby DABS, E 128.12 34 P **PKPdf** **06 51 07.7 -0.2**
baz=307
B35A Bob, Littlefor 128.17 31 P **PKPdf** **06 51 07.6 -0.3**
baz=310
D34A Park Rapids 128.21 33 P **PKPdf** **06 51 07.7 -0.3**
baz=308
F33A 5 Mile Ranch, 128.35 35 P **PKPdf** **06 51 08.0 -0.3**
baz=306
MNTX Cornudas Mount 128.37 55 P **PKPdf** **06 51 09.6 +0.8**
baz=288
H32A Carlson Farm, 128.46 37 P **PKPdf** **06 51 08.4 -0.2**
baz=304
C35A Jirik Farms, M 128.47 32 P **PKPdf** **06 51 07.7 -0.8**
baz=310
KIC Kosan Boka 128.53 273 *e*PKP2 SKPbc 06 53 31.6
comp=Z,13nm,0.7s
DBIC Dimbokro 128.66 273 PKP **PKPdf** **06 51 09.9 +0.1**
comp=Z,7.6nm,0.9s,baz=59,slow=3.9,SNR=9.2
DBIC SKPbc SKPbc 06 53 32.3
comp=Z,8.4nm,0.7s,baz=72,slow=4.3,SNR=11
K31A O'Neill 128.66 39 P **PKPdf** **06 51 08.7 -0.3**
baz=302
I32A Karley and Nic 128.70 37 P **PKPdf** **06 51 08.8 -0.3**
baz=304
H33A Prehn Over Nor 128.76 36 P **PKPdf** **06 51 08.9 -0.3**
baz=305
LIC Lamto 128.80 272 *e*PKP2 SKPbc 06 53 32.8
comp=Z,54nm,1.6s
D35A Remer 128.82 32 P **PKPdf** **06 51 08.7 -0.5**
baz=309
TIC Toumodi 128.82 273 *e*PKP2 SKPbc 06 53 33.0
L31A Butterfield Fa 128.84 40 P **PKPdf** **06 51 08.9 -0.5**
baz=301
E35A Pequot Lakes 128.96 33 P **PKPdf** **06 51 09.1 -0.3**
baz=309
C36A Pine Crest Far 129.02 31 P **PKPdf** **06 51 09.2 -0.3**
baz=311
G34A Benson 129.08 35 P **PKPdf** **06 51 09.6 -0.1**
baz=306
K32A Verdigre 129.14 39 P **PKPdf** **06 51 09.7 -0.2**
baz=302
M31A Lambtecht Ranc 129.18 41 P **PKPdf** **06 51 09.8 -0.3**
baz=300
F35A Swanville 129.30 34 P **PKPdf** **06 51 09.4 -0.7**
baz=308,SNR=8.2
H34A Spellman Lake, 129.33 36 P **PKPdf** **06 51 10.1 -0.1**

baz=306
ECSD EROS Data Cent 129.38 37 P PKPdf 06 51 09.9 -0.4
baz=304
J33A Davis 129.40 38 P PKPdf 06 51 09.6 -0.8
baz=304
EYMN Ely 129.56 30 P PKPdf 06 51 10.3 -0.3
baz=313
E36A McGregor 129.60 32 P PKPdf 06 51 10.1 -0.6
baz=310,SNR=10.0
D37A Cotton 129.62 31 P PKPdf 06 51 10.4 -0.3
baz=311
BGNE Belgrade 129.68 40 P PKPdf 06 51 11.0 0.0
baz=301
MSTX Muleshoe 129.68 51 P PKPdf 06 51 11.8 +0.4
baz=292
G35A Watkins 129.74 34 P PKPdf 06 51 10.5 -0.5
baz=308,SNR=8.8
H35A Sunnyside Ranc 129.86 35 P PKPdf 06 51 10.9 -0.3
baz=307,SNR=9.3
F36A Milaca 129.87 33 P PKPdf 06 51 10.5 -0.7
baz=309,SNR=18
CBKS Cedar Bluff 129.90 44 P PKPdf 06 51 11.3 -0.2
baz=298
N32A Stulken Farm, 129.92 41 P PKPdf 06 51 11.2 -0.3
baz=301
E37A Wrenshall 130.02 32 P PKPdf 06 51 10.7 -0.7
baz=311
J34A George 130.03 37 P PKPdf 06 51 11.0 -0.6
baz=305
G36A St. Michael 130.14 34 P PKPdf 06 51 11.5 -0.3
baz=308
I35A Creekview Farm 130.27 36 P PKPdf 06 51 11.4 -0.7
baz=306,SNR=5.6
C39A Grand Marais 130.32 29 P PKPdf 06 51 11.1 -1.0
baz=314
H36A Jessenland, He 130.45 35 P PKPdf 06 51 12.6 +0.3
baz=308,SNR=8.2
TXAR Lajitas Array 130.49 57 PKP **PKPdf 06 51 13.8 +0.7**
comp=Z,1.3nm,0.6s,baz=211,slow=2.6,SNR=13
TXAR SKPbc **SKPbc 06 53 39.4 -0.2**
comp=Z,4.9nm,0.8s,baz=254,slow=2.9,SNR=25
M34A Aspy Farms, Fr 130.63 40 P PKPdf 06 51 12.6 -0.2
baz=303
SPMN Marine on St. 130.67 33 P PKPdf 06 51 12.8 +0.1
baz=310,SNR=9.0
O33A Hebron 130.73 42 P PKPdf 06 51 12.5 -0.6
baz=301
K35A Storm Lake 130.78 37 P PKPdf 06 51 12.7 -0.4
baz=305,SNR=10
PLCA Paso Flores 130.79 166 PKP **PKPdf 06 51 14.2 +1.0**
comp=Z,3.6nm,0.7s,baz=199,slow=1.8,SNR=4.4
PLCA SKPbc **SKPbc 06 53 39.9 -0.4**
comp=Z,7.8nm,0.8s,baz=226,slow=2.7,SNR=16
R32A Long Quarter, 130.79 44 P PKPdf 06 51 13.0 -0.2
baz=299
L35A Bielow Farm, R 130.94 38 P PKPdf 06 51 12.9 -0.5
baz=304,SNR=8.1
J36A Seneca 1, Swea 130.96 36 P PKPdf 06 51 12.8 -0.6
baz=306,SNR=11
H37A Dierke Farm, C 131.01 34 P PKPdf 06 51 13.1 -0.3
baz=309
I37A Lemond, Waseca 131.09 35 P PKPdf 06 51 12.6 -1.0
baz=308
M35A Neola 131.21 39 P PKPdf 06 51 13.6 -0.3
baz=304
T32A Huddler Ranch, 131.22 46 P PKPdf 06 51 13.8 -0.3
baz=297
O34A Beatrice 131.26 41 P PKPdf 06 51 13.7 -0.3
baz=302
K36A Gilmore City 131.30 37 P PKPdf 06 51 13.5 -0.5
baz=306,SNR=10
J37A Redenius Farm, 131.43 36 P PKPdf 06 51 13.9 -0.4
baz=307,SNR=6.0
L36A Harm Buss Farm 131.48 38 P PKPdf 06 51 13.9 -0.5
baz=305
P34A Walnut Farm, R 131.50 42 P PKPdf 06 51 14.4 -0.1
baz=301
SCHQ Schefferville 131.60 8 PKP **PKPdf 06 51 14.9 +0.7**
comp=Z,2.5nm,0.3s,baz=336,slow=2.2,SNR=16
SCHQ SKPbc **SKPbc 06 53 41.7 -0.9**
comp=Z,6.1nm,0.8s,baz=312,slow=2.3,SNR=7.4
I38A Scanlan Farm, 131.68 34 P PKPdf 06 51 14.3 -0.4
baz=309,SNR=12
K37A Belmond 131.71 36 P PKPdf 06 51 14.2 -0.6
baz=307,SNR=6.2
O35A Humboldt 131.73 41 P PKPdf 06 51 14.6 -0.3
baz=303
T33A Patterson Ranc 131.75 45 P PKPdf 06 51 15.0 -0.1
baz=298
Q34A Chapman 131.75 43 P PKPdf 06 51 14.8 -0.2
baz=301
R34A Isabella, Hill 131.85 43 P PKPdf 06 51 15.5 +0.3
baz=300
KSU1 Kansas State U 131.88 42 P PKPdf 06 51 14.9 -0.3
baz=301
N36A Muff Farm, Cla 132.03 39 P PKPdf 06 51 15.3 -0.2
baz=304,SNR=10
P35A Duane Minner, 132.05 41 P PKPdf 06 51 15.4 -0.2
baz=302
M37A Trindle Farm, 132.26 38 P PKPdf 06 51 15.7 -0.2
baz=305,SNR=7.5
Q35A Mercer Eighty, 132.39 42 P PKPdf 06 51 16.3 +0.1
baz=302
T34A McClaskey Farm 132.52 45 P PKPdf 06 51 16.3 -0.2
baz=299
N37A Lee Faris, Mou 132.53 39 P PKPdf 06 51 16.2 -0.2
baz=305,SNR=6.6
X33A Lawton 132.70 49 P PKPdf 06 51 16.8 -0.1
baz=296
Q36A Arnold C. Orve 132.72 42 P PKPdf 06 51 16.7 -0.1
baz=302
S35A Otter Creek Ra 132.80 44 P PKPdf 06 51 17.3 +0.3
baz=300
O37A Wolven Farm, M 132.91 40 P PKPdf 06 51 17.2 0.0
baz=304
P37A Lathrop 133.10 40 P PKPdf 06 51 17.2 -0.3
baz=304
X34A Smith Ranch, M 133.17 48 P PKPdf 06 51 18.0 +0.2
baz=296
133A Hamilton Ranch 133.18 51 P PKPdf 06 51 18.1 +0.2
baz=294
S36A Lake Cedric, C 133.27 43 P PKPdf 06 51 17.7 -0.1
baz=301,SNR=6.0
JCT Junction City 133.29 54 P PKPdf 06 51 18.8 +0.6
baz=291,SNR=10
T36A Boggs Farm, Ca 133.41 44 P PKPdf 06 51 18.4 +0.2
baz=300
233A Rising Star 133.43 52 P PKPdf 06 51 18.4 0.0
baz=293,SNR=7.7
R37A Teagarden Farm 133.48 42 P PKPdf 06 51 18.4 +0.1
baz=302
N39A Derby Farms, D 133.52 38 P PKPdf 06 51 17.7 -0.6
baz=307
P38A Dawn 133.60 40 P PKPdf 06 51 18.6 +0.2
baz=305,SNR=15
W35A Tecumseh 133.62 47 P PKPdf 06 51 19.2 +0.6
baz=298
333A Richland Sprin 133.63 53 P PKPdf 06 51 19.4 +0.6
baz=292,SNR=14
433A Art 133.76 54 P PKPdf 06 51 19.6 +0.6
baz=292,SNR=9.4
S37A Fort Scott 133.77 43 P PKPdf 06 51 19.4 +0.6
baz=302,SNR=5.3
134A White-Moore Ra 133.84 51 P PKPdf 06 51 20.0 +0.9
baz=294
832A Faith Ranch, C 133.89 57 P PKPdf 06 51 19.3 0.0
baz=289,SNR=10.0
X35A Drake 133.89 48 P PKPdf 06 51 19.3 +0.1
baz=297,SNR=6.8
Q38A Cooks Store, C 133.92 41 P PKPdf 06 51 19.3 +0.3
baz=304
V36A Jenks 133.99 46 P PKPdf 06 51 19.0 -0.3
baz=299
234A Clairette 134.03 52 P PKPdf 06 51 19.2 -0.3
baz=294,SNR=7.8
T37A Cheneyville 18 134.04 44 P PKPdf 06 51 19.2 -0.2
baz=301,SNR=5.5
533A Kerrville 134.05 54 P PKPdf 06 51 19.2 -0.4
baz=291,SNR=6.8
W36A Wetumka 134.10 47 P PKPdf 06 51 19.8 +0.3
baz=298
R38A Fenwick Farm, 134.16 42 P PKPdf 06 51 19.4 -0.1
baz=303
P39B Salisbury 134.18 40 P PKPdf 06 51 19.5 0.0
baz=305
334A Lometa 134.22 53 P PKPdf 06 51 20.0 +0.2
baz=293
U37A Salina 134.27 45 P PKPdf 06 51 20.0 +0.2
baz=300
X36A Centrahoma 134.27 47 P PKPdf 06 51 19.5 -0.4
baz=298,SNR=5.1
Q39A Willow Grove F 134.29 40 P PKPdf 06 51 19.6 -0.1
baz=305,SNR=12
O40A La Belle 134.35 38 P PKPdf 06 51 19.6 -0.2
baz=307
833A Chaparral WMA, 134.36 57 P PKPdf 06 51 21.0 +0.8
baz=290,SNR=5.2
434A Burnet 134.39 53 P PKPdf 06 51 20.2 0.0
baz=293
S38A Stockton 134.46 42 P PKPdf 06 51 20.4 +0.3
baz=303
T38A Diamond 134.51 43 P PKPdf 06 51 19.9 -0.3
baz=302,SNR=5.1
V37A Hulbert 134.51 45 P PKPdf 06 51 19.8 -0.5
baz=300
534A Blanco 134.52 54 P PKPdf 06 51 20.2 -0.3
baz=292,SNR=8.9
WHTX Lake Whitney, 134.56 51 P PKPdf 06 51 20.3 -0.2
baz=294
P40A Paris 134.59 39 P PKPdf 06 51 20.0 -0.2
baz=306,SNR=7.3
Y36A Durant 134.63 48 P PKPdf 06 51 20.7 +0.2
baz=297
R39A Chumby, Stover 134.66 41 P PKPdf 06 51 20.3 -0.2
baz=304
W37B Quinton 134.67 46 P PKPdf 06 51 20.6 0.0
baz=299
U38A Gravette 134.76 44 P PKPdf 06 51 20.4 -0.4
baz=301,SNR=6.2
Z36A Blue Ridge 134.80 49 P PKPdf 06 51 20.8 0.0
baz=296
S39A Bolivar 134.81 42 P PKPdf 06 51 20.6 -0.2
baz=303,SNR=5.5
335A Moody 134.87 52 P PKPdf 06 51 21.1 +0.1
baz=294
Q40A Laux Farm, Aux 134.89 40 P PKPdf 06 51 21.3 +0.5
baz=306,SNR=7.6
X37A Clayton 134.98 47 P PKPdf 06 51 21.2 0.0
baz=299
V38A Canehill 135.04 45 P PKPdf 06 51 21.4 +0.1
baz=301
Y37A Hugo 135.08 48 P PKPdf 06 51 21.4 0.0
baz=298
T39A Clever 135.14 43 P PKPdf 06 51 21.4 0.0
baz=303
R40A Maddies Statio 135.17 41 P PKPdf 06 51 21.7 +0.3
baz=305,SNR=8.4
535A Dale 135.25 54 P PKPdf 06 51 22.8 +1.0
baz=292
236A Katherine and 135.27 51 P PKPdf 06 51 22.6 +0.8
baz=295
X38A Whitesboro 135.33 47 P PKPdf 06 51 22.2 +0.4
baz=299
S40A Lebanon 135.41 42 P PKPdf 06 51 22.6 +0.7
baz=304,SNR=10
U39A Green Forest 135.41 44 P PKPdf 06 51 22.0 0.0
baz=302,SNR=5.2
V39A Pettigrew 135.58 44 P PKPdf 06 51 22.7 +0.4
baz=301
HDIL Hopedale 135.63 36 P PKPdf 06 51 22.3 +0.1
baz=310
T40A Mansfield 135.65 42 P PKPdf 06 51 22.7 +0.4
baz=304,SNR=5.5
W39A Magazine 135.81 45 P PKPdf 06 51 23.4 +0.8
baz=301
U40A Yellville 135.85 43 P PKPdf 06 51 23.4 +0.6
baz=303
636A Smothers Creek 135.87 54 P PKPdf 06 51 24.1 +1.1
baz=292
Q42A Golden Eagle 135.91 39 P PKPdf 06 51 23.6 +0.8
baz=307
X39A Fountain Ranch 135.92 46 P PKPdf 06 51 23.3 +0.3
baz=300,SNR=11
035Z Hargill 136.08 59 P PKPdf 06 51 24.5 +1.1
baz=289
V40A Witts Springs 136.17 44 P PKPdf 06 51 23.6 +0.2
baz=302
T41A Mountain View 136.21 42 P PKPdf 06 51 23.9 +0.5
baz=304
MIAR Mount Ida 136.29 46 P PKPdf 06 51 23.9 +0.3
baz=300
W40A Ferguson Farm, 136.32 45 P PKPdf 06 51 24.2 +0.6
baz=301
W41B Gary Mavity, V 136.90 44 P PKPdf 06 51 25.3 +0.6
baz=302
X41A Kaden, Bauxite 137.07 45 P PKPdf 06 51 26.0 +1.0
baz=301
Y41A Eaglette Beard 137.31 46 P PKPdf 06 51 26.3 +0.8
baz=301
Z41A Richland Creek 137.49 47 P PKPdf 06 51 26.8 +1.0
baz=300
Y42A Garnett, Star 137.93 46 P PKPdf 06 51 27.4 +0.8
baz=302
Z42A Norrel Spur, H 138.10 47 P PKPdf 06 51 27.7 +0.8
baz=301
341A Kurthwood 138.14 50 P PKPdf 06 51 27.5 +0.4
baz=298
CPUP Villa Florida 146.85 179 PKPbc **PKPbc 06 51 45.5 -0.1**
comp=Z,17nm,0.9s,baz=160,slow=1.7,SNR=32
LPAZ La Paz 154.19 154 PKP **PKPdf 06 51 55.6 +0.8**
comp=Z,1.5nm,0.7s,baz=117,slow=3.5,SNR=6.1
LPAZ PKPbc **PKPbc 06 52 03.8 +0.3**
comp=Z,2.4nm,0.8s,baz=71,slow=4.9,SNR=7.9
LPAZ PKPab **PKPab 06 52 21.2 +0.8**
comp=Z,8.5nm,0.8s,baz=192,slow=3.2,SNR=14

NIED ***19*** *06:35:00, 47.°00N×152.°90E, h5km, Mw4.9 Best double couple: M₀2.67000×10¹⁶ NP1:φ₀=193.00000°, δ4.00000°, λ136.00000°. NP2:φ₀=327.00000°, δ87.00000°, λ87.00000°.*
ISCJB ***19*** *06:35:23.5±0.5, 46.°70N±0.°03×152.°83E±0.°04, h40km±4km, mb4.7/80, MS3.8/29, Error ellipse: s-maj=6.1km s-min=2.8km az=142.7*
JMA ***19*** *06:35:23.1±0.8, 46.°99N×152.°88E, h30km, M5.3*
MOS ***19*** *06:35:24.7±1.1, 46.°74N×152.°77E, h53km, mb4.9/22, Error ellipse: s-maj=7.9km s-min=5.9km az=59.0*
SKHL ***19*** *06:35:25.0±0.8, 46.°63N×153.°00E, h60km±5km, mb5.5/2, Ms4.2/6, msh5.1/2*
NEIC ***19*** *06:35:26.1±0.6, 46.°73N×152.°70E, h50km±5km, mb4.8/48, Error ellipse: s-maj=7.7km s-min=3.0km az=140.0*
IDC ***19*** *06:35:28.9±2.5, 46.°85N×152.°69E, h72km±22km, mb4.0/19, mb1 4.3/24, mb1mx4.0/61, mbtmp4.4/24, MS3.7/28, Ms1 3.7/28, ms1mx3.6/55, Error ellipse: s-maj=19.1km s-min=10.4km az=139.0*
ISC 19 06:35:25.2±0.6, 46.°68N±0.°05×152.°83E±0.°04, h42km±5km, h42km:pP-P, n260, σ1°66/279, mb4.7/80, MS3.9/29, 17C-2D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUR	**Kuril'sk**	**3.75**	**249**	*d iPN*	**Pn**	**06 36 23.1**	**+2.6**
KUR				*i S*	**Sn**	**06 37 08.4**	**+5.0**
KUR	comp=N,133nm,0.4s			pmax	pmax		
KUR	comp=E,89nm,0.4s			pmax	pmax		
KUR	comp=Z,481nm,0.4s			pmax	pmax		
KUR	comp=E,1.0nm,0.6s			smax	smax		
KUR	**Kuril'sk**	**3.75**	**249**	*eP*	**Pn**	**06 36 21.6**	**+1.1**
KUR	comp=E,130nm,0.4s			AMB	AMB	06 36 25.2	
KUR	comp=E,90nm,0.4s			AMB	AMB	06 36 25.2	
KUR	comp=E,480nm,0.4s			AMB	AMB	06 36 25.2	
KUR				*eS*	**Sn**	**06 37 04.1**	**+0.7**
KUR	comp=E,1μm,2.0s			A	A	06 37 06.4	
KUR	comp=E,1μm,0.4s			A	A	06 37 18.5	
KUR	comp=E,2μm,0.4s			A	A	06 37 18.5	
SKR	**Severo-Kuril's**	**4.56**	**27**	*e*PN	Pn	06 36 24.4	-7.2
SKR	comp=Z,390nm,0.5s			pmax	pmax		
SKR	comp=N,220nm,0.3s			pmax	pmax		
SKR	comp=Z,3μm,14.0s			MLR	MLR		
SKR	**Severo-Kuril's**	**4.56**	**27**	*eP*	**Pn**	**06 36 31.6**	**0.0**
SKR	comp=Z,500nm,0.7s			AMB	AMB	06 36 34.4	
SKR				*eS*	**Sn**	**06 37 20.9**	**-2.3**
SKR				A	A	06 37 41.1	
SKR	comp=Z,930nm,0.5s			AMS	AMS	06 38 06.0	
SHO	comp=Z,3μm,14.0s **Shikotan**	**5.08**	**239**	*c iPN*	**Pn**	**06 36 39.1**	**+0.3**
SHO	comp=N,319nm,0.5s			pmax	pmax		
SHO	comp=Z,435nm,0.5s			pmax	pmax		
SHO	comp=E,112nm,0.4s			pmax	pmax		
SHO	**Shikotan**	**5.08**	**239**	*eP*	**Pn**	**06 36 39.1**	**+0.3**
SHO	comp=E,440nm,0.4s			AMB	AMB	06 36 41.3	
SHO				*eS*	**Sn**	**06 37 35.2**	**-0.9**
SHO	comp=E,2μm,0.6s			A	A	06 37 59.5	
SHO	comp=E,2μm,0.6s			A	A	06 37 59.5	
PAU	**Pauzhetka**	**5.46**	**27**	*eP*	**Pn**	**06 36 43.9**	**0.0**
PAU	comp=E,340nm,0.7s			AMB	AMB	06 36 53.8	
PAU				*eS*	**Sn**	**06 37 43.7**	**-1.6**
PAU	comp=E,1μm,0.8s			A	A	06 38 09.0	
PAU	comp=E,920nm,0.8s			A	A	06 38 09.0	
YUK	**Yuzh-Kuril'sk**	**5.58**	**244**	*d iPN*	**Pn**	**06 36 48.3**	**+2.7**
YUK				*i S*	**Sn**	**06 37 53.2**	**+4.9**
YUK	comp=E,188nm,0.4s			pmax	pmax		
YUK	comp=Z,438nm,0.4s			pmax	pmax		
YUK	comp=N,74nm,0.2s			pmax	pmax		
YUK	comp=N,1μm,0.6s			smax	smax		
YUK	comp=E,2μm,0.5s			smax	smax		
YUK	comp=Z,2μm,16.0s			MLR	MLR		
YUK	comp=N,3μm,15.0s			MLR	MLR		
YUK	**Yuzh-Kuril'sk**	**5.58**	**244**	*eP*	**Pn**	**06 36 47.6**	**+2.0**
YUK	comp=N,190nm,0.4s			AMB	AMB	06 36 49.2	
YUK	comp=N,440nm,0.4s			AMB	AMB	06 36 49.2	
YUK				*eS*	**Sn**	**06 37 49.0**	**+0.7**
YUK	comp=N,2μm,0.7s			A	A	06 38 12.0	
YUK	comp=N,2μm,0.7s			A	A	06 38 12.0	
YUK	comp=N,3μm,16.0s			AMS	AMS	06 38 48.0	
YUK	comp=N,2μm,16.0s			AMS	AMS	06 38 48.0	
NEM2	**Nemuro 2**	**6.02**	**239**	P	**Pn**	**06 36 51.7**	**+0.1**
NEM2				*e*S	**Sn**	**06 37 57.1**	**-2.1**
JRA	**Rausu**	**6.09**	**246**	P	**Pn**	**06 36 55.3**	**+2.7**
JNK	**Nakash**	**6.52**	**245**	P	**Pn**	**06 37 00.1**	**+1.6**
JNK				*e*S	**Sn**	**06 38 13.2**	**+1.7**
JTKR	**Abashiri--Toko**	**6.85**	**250**	P	**Pn**	**06 37 05.9**	**+2.9**
JAK	**Akkeshi**	**6.85**	**240**	P	**Pn**	**06 37 03.3**	**+0.2**
YSS	**Yuzh-Sakhalins**	**6.92**	**276⇑**	*e*PN	**Pn**	**06 37 07.2**	**+3.2**
YSS				*e*S	**Sn**	**06 38 22.5**	**+1.2**
YSS	comp=Z,90nm,1.0s			pmax	pmax		
YSS	comp=Z,1μm,15.0s			MLR	MLR		
YSS	comp=E,1μm,18.0s			MLR	MLR		
YSS	**Yuzh-Sakhalins**	**6.92**	**276⇑**	*eP*	**Pn**	**06 37 07.2**	**+3.2**
YSS	comp=E,90nm,1.0s			AMB	AMB	06 37 10.2	
YSS				*e*S	**Sn**	**06 38 22.5**	**+1.2**
YSS	comp=E,1μm,15.0s			AMS	AMS	06 39 22.0	
PEA0	**Petropavlovsk-**	**7.16**	**24**	*e*Pn	**Pn**	**06 37 08.0**	**+0.8**
PEA0				*e*Sn	**Sn**	**06 38 28.3**	**+1.0**
PEA0B	**Petropavlovsk-**	**7.16**	**24**	*e*Pn	**Pn**	**06 37 08.2**	**+0.9**
PEA0B				*e*Sn	**Sn**	**06 38 28.1**	**+0.9**
PETK	**Petropavlovsk-**	**7.16**	**24**	P	**Pn**	**06 37 08.1**	**+0.8**
PETK	comp=E,3.1nm,0.3s,baz=187,slow=12,SNR=52			LR	LR	06 39 54.6	
JMP	comp=E,940nm,22.0s,baz=216,slow=38 **Maruseppu**	**7.19**	**252**	P	**Pn**	**06 37 10.9**	**+3.2**
JAR	**Ashorobuto**	**7.26**	**245**	P	**Pn**	**06 37 10.9**	**+2.2**
JAR				*e*S	**Sn**	**06 38 32.1**	**+2.4**
PET	**Petropavlovsk**	**7.38**	**29**	*e*PN	**Pn**	**06 37 11.3**	**+1.1**
PET	comp=Z,700nm,19.0s			MLR	MLR		
PET	comp=Z,400nm,15.0s			MLR	MLR		
PET	**Petropavlovsk**	**7.38**	**29**	*e*Pn	**Pn**	**06 37 11.8**	**+1.6**
PET				*e*Sn	**Sn**	**06 38 31.0**	**-1.5**
PET	**Petropavlovsk**	**7.38**	**29**	*eP*	**Pn**	**06 37 10.9**	**+0.7**
PET	comp=Z,200nm,2.5s			AMB	AMB	06 37 14.5	
PET	comp=Z,49nm,0.7s			AMB	AMB	06 37 19.9	
PET				*e*S	**Sn**	**06 38 29.6**	**-3.0**
PET	comp=Z,700nm,3.5s			A	A	06 38 43.0	
PET	comp=Z,120nm,0.6s			A	A	06 38 48.0	
PET	comp=Z,240nm,0.6s			A	A	06 38 48.0	
PET	comp=Z,700nm,19.0s			AMS	AMS	06 39 39.0	
HRK	**Horoka**	**7.58**	**248**	*e*P	**Pn**	**06 37 15.7**	**+2.6**
UGL	**Uglegorsk**	**7.62**	**292**	*e*PN	**Pn**	**06 37 15.0**	**+1.4**
UGL	comp=Z,108nm,0.8s			pmax	pmax		
UGL	comp=N,400nm,14.0s			MLR	MLR		
UGL	comp=E,600nm,14.0s			MLR	MLR		
UGL	comp=Z,600nm,14.0s			MLR	MLR		
UGL	**Uglegorsk**	**7.62**	**292**	*e*P	**Pn**	**06 37 15.0**	**+1.4**
UGL	comp=Z,90nm,0.7s			AMB	AMB	06 37 18.0	
UGL	comp=Z,500nm,2.0s			AMB	AMB	06 37 18.0	
UGL				*e*S	**Sn**	**06 38 40.0**	**+1.4**
UGL	comp=Z,400nm,15.0s			AMS	AMS	06 40 18.0	
UGL	comp=Z,600nm,15.0s			AMS	AMS	06 40 18.0	
JKA	**Kamikawa-asahi**	**7.64**	**254**	*e*P	**Pn**	**06 37 18.2**	**+4.3**
ASAJ	**Asahikawa**	**7.64**	**254**	P	**Pn**	**06 37 18.1**	**+4.2**
ASAJ	comp=Z,10nm,0.3s,baz=80,slow=14,SNR=42			LR	LR	06 40 06.1	
ASAJ	comp=Z,854nm,20.5s,baz=53,slow=36 **Asahikawa**	**7.64**	**254**	P	**Pn**	**06 37 18.0**	**+4.1**
ASAJ	**Asahikawa**	**7.64**	**254**	*e*Pn	**Pn**	**06 37 17.7**	**+3.8**
JKK2	**Kamakawa 2**	**7.64**	**252**	P	**Pn**	**06 37 17.4**	**+3.4**
JCH	**Churui**	**7.88**	**242**	P	**Pn**	**06 37 17.4**	**+0.3**
JCH				*e*S	**Sn**	**06 38 41.8**	**-3.1**
TYV	**Tymovskoe**	**7.91**	**306**	*e*PN	**Pn**	**06 37 20.5**	**+2.9**
TYV	comp=Z,29nm,0.8s			pmax	pmax		
TYV	comp=E,1μm,10.0s			MLR	MLR		
TYV	comp=Z,1μm,17.0s			MLR	MLR		
TYV	**Tymovskoe**	**7.91**	**306**	*e*P	**Pn**	**06 37 20.7**	**+3.1**
TYV	comp=Z,30nm,0.8s			AMB	AMB	06 37 25.8	
TYV				*e*S	**Sn**	**06 38 47.5**	**+1.8**
TYV	comp=Z,900nm,17.0s			AMS	AMS	06 40 10.0	
TYV	comp=Z,1μm,17.0s			AMS	AMS	06 40 10.0	
JFR	**Furan**	**8.07**	**248**	P	**Pn**	**06 37 22.3**	**+2.5**
MYR	**Moyori**	**8.11**	**241**	*e*P	**Pn**	**06 37 21.0**	**+0.7**
JAB	**Ashibetsu**	**8.15**	**251**	P	**Pn**	**06 37 24.7**	**+3.9**
JEM	**Erimo**	**8.35**	**240**	P	**Pn**	**06 37 24.8**	**+1.2**
ERM	**Erimo**	**8.35**	**240⇑**	*i*PN	**Pn**	**06 37 24.9**	**+1.3**
ERM	**Erimo**	**8.35**	**240**	*e*Pn	**Pn**	**06 37 25.0**	**+1.3**
ERM	**Erimo**	**8.35**	**240⇑**	*i*P	**Pn**	**06 37 24.9**	**+1.3**
JNBK	**Urakawa-nobuka**	**8.44**	**242**	P	**Pn**	**06 37 24.7**	**-0.1**
OKH	**Okha**	**9.36**	**321**	*e*P	Pn	06 37 43.2	+5.9

OKH AMS AMS 06 42 30.0
comp=Z,1µm,14.0s
OKH AMS AMS 06 42 30.0
comp=Z,900nm,14.0s
JNB Noboribetsu 9.41 248 P **Pn 06 37 38.6 +0.5**
JKB Kayabe 9.72 245 P **Pn 06 37 41.8 -0.5**
JYM2 Yakumo 2 10.01 247 P **Pn 06 37 47.0 +0.6**
NKL Nikolayevsk 10.15 314 *e*PN **Pn 06 37 51.0 +2.8**
NKL pmax pmax
comp=E,30nm,1.3s
NKL pmax pmax
comp=Z,39nm,1.3s
NKL MLR MLR
comp=E,600nm,14.0s
NKL MLR MLR
comp=Z,900nm,14.0s
NKL Nikolayevsk 10.15 314 *e*P **Pn 06 37 51.0 +2.8**
NKL AMB AMB 06 37 52.8
comp=Z,10.0nm,0.8s
NKL AMS AMS 06 42 43.0
comp=Z,600nm,14.0s
NKL AMS AMS 06 42 43.0
comp=Z,900nm,14.0s
JTM Tenmabayashi 10.35 240 P **Pn 06 37 49.8 -1.1**
JANG Nango 10.35 237 P **Pn 06 37 48.5 -2.5**
JOSM Okushiri--Mats 10.60 249 P **Pn 06 37 54.9 +0.5**
TEY Ternei 11.44 268 *e*P Pn 06 38 11.4 +5.6
TEY AMB AMB 06 38 12.8
comp=Z,30nm,0.6s
TEY AMS AMS 06 42 10.0
comp=Z,1µm,17.0s
JRG Rokugo 11.51 235 P **Pn 06 38 05.5 -1.3**
GRNR Gornyy 11.58 297 *e*P **Pn 06 38 11.5 +3.7**
GRNR AMB AMB 06 38 12.4
comp=Z,40nm,1.0s
HABR Khabarovsk 12.14 285 PN **Pn 06 38 14.0 -1.4**
HABR pmax pmax
comp=Z,21nm,1.4s
HABR MLR MLR
comp=Z,96nm,10.0s
HABR Khabarovsk 12.14 285 *e*P **Pn 06 38 14.0 -1.4**
HABR AMB AMB 06 38 17.8
comp=Z,20nm,1.4s
HABR AMS AMS 06 42 49.0
comp=Z,100nm,10.0s
JYA Atsumi 12.58 235 P **Pn 06 38 19.4 -2.1**
MA2 Magadan 12.97 355 P **Pn 06 38 27.5 +0.7**
comp=Z,3.4nm,0.3s,baz=182,slow=8.2,SNR=12
MA2 LR LR 06 43 07.4
comp=Z,390nm,21.7s,baz=201,slow=36
EKMR Ekimchan 14.30 304 *e*P **Pn 06 38 45.5 +0.7**
EKMR AMB AMB 06 38 49.5
comp=Z,10.0nm,0.8s
KLR Kul'dur 14.35 288 P **Pn 06 38 47.0 +1.6**
comp=Z,0.1nm,0.3s,baz=106,slow=18,SNR=3.4
KLR LR LR 06 44 29.0
comp=Z,402nm,19.0s,baz=109,slow=38
USRK Ussuriysk Ar. 14.84 268 P **Pn 06 38 53.1 +1.1**
comp=Z,1.0nm,0.3s,baz=67,slow=12,SNR=15
USRK LR LR 06 44 18.6
comp=Z,526nm,20.1s,baz=76,slow=36
MJAR Matsushiro Arr 14.88 232 P **Pn 06 38 50.7 -2.0**
comp=Z,0.5nm,0.3s,baz=27,slow=13,SNR=15
MJB9 Matsu-Tunnel 14.88 232 *e*Pn **Pn 06 38 51.3 -1.4**
MAJO Matsushiro 14.88 232 ⇑*i*P **Pn 06 38 51.1 -1.6**
MAJO Matsushiro 14.88 232 *e*Pn **Pn 06 38 50.9 -1.8**
MAJO Matsushiro 14.88 232 ⇑*i*P **Pn 06 38 51.1 -1.6**
MAT Matsushiro 14.88 232 P **Pn 06 38 51.5 -1.2**
VLA Vladivostok 15.26 264⇑*e*P **Pn 06 38 57.9 +0.4**
VLA pmax pmax
comp=Z,11nm,0.8s
VLA Vladivostok 15.26 264⇑*e*P **Pn 06 38 57.9 +0.4**
MDJ Mudanjiang 16.37 271 *e*Pn **Pn 06 39 10.5 -1.3**
comp=Z,9.9nm,0.8s
MDJ Mudanjiang 16.37 271 *e*P **Pn 06 39 10.5 -1.3**
INU Inuyama 16.41 232 *e*Pn **Pn 06 39 13.0 +0.6**
comp=Z,18nm,0.8s
BMKR Bomnak 17.12 307 *e*P **P 06 39 23.0 +0.6**
BMKR AMB AMB 06 39 26.2
comp=Z,10.0nm,0.7s
KROS Kirovskiy 18.09 305 *e*P **P 06 39 33.5 +0.4**
KROS AMB AMB 06 39 36.6
comp=Z,3.0nm,0.5s
CN2 Changchun 19.46 271 *e*P **P 06 39 45.3 -2.8**
CN2 *ep*P Pn 06 39 53.8 +4.2
CN2 PP **PnPn 06 40 02.6 -0.9**
CN2 *e*S **S 06 43 15.4 -10**
CN2 pmax pmax
comp=Z,10.0nm,0.6s
CN2 pmax pmax
comp=Z,30nm,3.0s
CN2 LR LR
comp=N,200nm,15.0s
CN2 LR LR
comp=E,300nm,15.0s
CN2 LR LR
comp=Z,400nm,17.0s
YAK Yakutsk 20.27 328 LR LR 06 47 35.4
comp=Z,81nm,19.3s,baz=134,slow=36
YAK Yakutsk 20.27 328 *e*P Pn 06 40 07.4 +8.3
YAK pmax pmax
comp=Z,35nm,1.0s
YAK pmax pmax
comp=E,24nm,1.4s
YAK pmax pmax
comp=N,26nm,1.6s
KSRS Korea Array 20.59 252 P **P 06 40 00.8 +0.4**
comp=N,7.4nm,0.8s,baz=56,slow=11,SNR=4.3
KSRS LR LR 06 46 54.1
comp=N,282nm,20.1s,baz=62,slow=33
KSAR Wonju Array Be 20.62 252 P **P 06 40 00.8 0.0**
KSAR Wonju Array Be 20.62 252 P **P 06 40 00.8 0.0**
KSAR Wonju Array Be 20.62 252 *e*P **P 06 40 00.8 0.0**
JNU Nakatsue 21.52 239 LR LR 06 49 27.8
comp=N,158nm,18.4s,baz=108,slow=39
TJN Taejon 21.58 251⇑*e*P **P 06 40 12.7 +1.6**
BILL Bilibino 22.50 13⇑*e*P **P 06 40 19.5 -1.3**
BILL *e* 06 40 47.3
BILL pmax pmax
comp=Z,4.0nm,1.1s
BILL MLR MLR
comp=Z,361nm,17.0s
BILL Bilibino 22.50 13 *e*P **P 06 40 19.5 -1.3**
comp=Z,5.2nm,0.6s
BILL Bilibino 22.50 13⇑*e*P **P 06 40 19.5 -1.3**
BOD Bodaibo 25.88 310 *e*P **P 06 40 53.7 +1.0**
BJI Beijing 27.28 269 P **P 06 41 04.4 -1.0**
BJI S **S 06 45 41.1 -0.7**
BJI pmax pmax
comp=Z,8.0nm,0.7s
BJI LR LR
comp=N,160nm,16.0s
BJI LR LR
comp=E,390nm,16.4s
BJI LR LR
comp=Z,480nm,23.0s
TIXI Tiksi 27.48 344 LR LR 06 52 08.9
comp=Z,178nm,21.8s,baz=141,slow=37
TIXI Tiksi 27.48 344⇑*e*P **P 06 41 05.6 -1.3**
TIXI Tiksi 27.48 344⇑*e*P **P 06 41 05.6 -1.3**
TNA Tin City 28.20 34 *e*P **P 06 41 13.5 +0.1**
TNA *ep*P **pP 06 41 27.0 +2.2**
TNA Tin City 28.20 34 *e*P **P 06 41 13.5 +0.1**
TNA *e*rx rx 06 41 27.0
H11N2 WAKE ISLAND Hy 29.25 152 T T 07 12 59.6
baz=340,slow=76,SNR=7933
H11N1 WAKE ISLAND Hy 29.26 152 T T 07 13 00.9
baz=340,slow=76,SNR=3941
H11N3 WAKE ISLAND Hy 29.27 152 T T 07 13 01.1
baz=340,slow=76,SNR=4348
NJ2 Nanjing 29.79 253 *e*P **P 06 41 27.3 -0.5**
NJ2 pmax pmax
comp=Z,19nm,0.5s
H11S1 WAKE ISLAND Hy 30.33 153 T T 07 14 06.7
baz=341,slow=76,SNR=2373
H11S3 WAKE ISLAND Hy 30.34 153 T T 07 14 12.4
baz=341,slow=76,SNR=1949
H11S2 WAKE ISLAND Hy 30.35 153 T T 07 14 09.7
baz=341,slow=76,SNR=1077
ULN Ulaanbaatar 30.73 289⇑*i*P **P 06 41 35.4 -0.9**
ULN pmax pmax
comp=Z,1.0nm,0.7s
ULN Ulaanbaatar 30.73 289⇑*i*P **P 06 41 35.4 -0.9**
SONM Songino Array 31.17 289 P **P 06 41 39.8 -0.2**
comp=Z,0.4nm,0.5s,baz=316,slow=33,SNR=2.9
SONM LR LR 06 55 13.8
comp=Z,232nm,18.7s,baz=112,slow=38
TLY Talaya 32.04 297 LR LR 06 55 24.1
comp=Z,190nm,19.8s,baz=74,slow=38
TT01 Tatalina 32.59 41 *e*P **P 06 41 52.6 +0.4**
TTA Tatalina 32.60 41 *e*P **P 06 41 52.7 +0.3**
TTA pmax pmax
comp=Z,6.0nm,0.7s
TTA Tatalina 32.60 41 *e*P **P 06 41 52.7 +0.3**
comp=Z,6.0nm,0.7s
KDAK Kodiak Island 34.30 51 *i*P **P 06 42 07.8 +0.7**
KDAK Kodiak Island 34.30 51 *e*P **P 06 42 07.8 +0.7**
CAST Castle Rocks 34.41 41 *e*P **P 06 42 09.0 +0.9**
comp=Z,41nm,1.9s
BPAW Bear Paw Mtn. 34.93 40 *e*P **P 06 42 13.1 +0.5**
comp=Z,8.1nm,1.0s
KTH Kantishna Hill 34.94 41 *e*P **P 06 42 13.7 +1.0**
comp=Z,100nm,1.9s
MLY Manley 35.09 38 *e*P **P 06 42 14.8 +0.9**
comp=Z,6.6nm,1.0s
TRF Thorofare Moun 35.22 41 *e*P **P 06 42 15.0 -0.3**
TRF *ep*P **pP 06 42 29.1 +2.3**
COLD Coldfoot 35.50 34 *e*P **P 06 42 17.5 +0.2**
comp=Z,12nm,0.8s
BWN Browne 35.60 40 *e*P **P 06 42 19.8 +1.6**
comp=Z,86nm,1.2s
BWN *e*ScP **ScP 06 48 26.6 -1.8**
MCK McKinley 35.83 40 *e*P **P 06 42 20.5 +0.2**
MCK *e**PP **pP 06 42 32.7 +0.8**
MCK McKinley 35.83 40 *e*P **P 06 42 20.5 +0.2**
MCK *ep*P **pP 06 42 32.7 +0.8**
MCK McKinley 35.83 40 *e*P **P 06 42 20.5 +0.2**
MCK *e*rx rx 06 42 32.7
RND Reindeer 35.87 41 *e*P **P 06 42 20.5 -0.2**
RND *e**PP **pP 06 42 30.6 -1.7**
RND Reindeer 35.87 41 *e*P **P 06 42 20.5 -0.2**
RND *ep*P **pP 06 42 30.6 -1.7**
SML Sawmill 36.15 44 *e*P **P 06 42 23.3 +0.2**
SML pmax pmax
comp=Z,26nm,0.7s
SML Sawmill 36.15 44 *e*P **P 06 42 23.3 +0.2**
comp=Z,26nm,0.7s
SML Sawmill 36.15 44 *e*P **P 06 42 23.3 +0.2**
WRH Wood River Hil 36.20 39 *e*P **P 06 42 23.8 +0.4**
comp=Z,28nm,1.5s
COLA College 36.31 38 *e*P **P 06 42 25.0 +0.7**
COLA *e**PP **pP 06 42 34.8 -1.1**
COLA College 36.31 38 *e*P **P 06 42 25.0 +0.7**
COLA *ep*P **pP 06 42 34.8 -1.1**
COLA College 36.31 38 *e*P **P 06 42 25.0 +0.7**
COLA *e*rx rx 06 42 34.8
CCB Clear Creek Bu 36.33 39 *e*P **P 06 42 24.7 +0.3**
CCB *ep*P **pP 06 42 31.9 -4.2**
SCM Sheep Creek Mo 36.63 43 *e*P **P 06 42 27.3 +0.1**
SCM pmax pmax
comp=Z,12nm,0.8s
SCM Sheep Creek Mo 36.63 43 *e*P **P 06 42 27.3 +0.1**
comp=Z,12nm,0.8s
IL1 Eielson Array 36.72 38 *e*P **P 06 42 27.7 -0.1**
IL1 *ep*P **pP 06 42 35.9 -3.6**
ILAR Eielson Array 36.72 38 P **P 06 42 27.4 -0.5**
comp=Z,2.8nm,0.9s,baz=263,slow=7.4,SNR=28
ILAR LR LR 06 58 06.8
comp=Z,126nm,21.1s,baz=278,slow=37
ILAR Eielson Array 36.72 38 P **P 06 42 27.4 -0.5**
ILAR pmax pmax
comp=Z,2.0nm,0.8s
ILAR MLR MLR
comp=Z,126nm,21.1s
ILB Eielson Array 36.72 38 *e*P **P 06 42 27.4 -0.5**
KLU Klutina 37.33 44 *e*P **P 06 42 33.7 +0.6**
comp=Z,11nm,1.0s
FYU Fort Yukon 37.42 36 *e*P **P 06 42 35.1 +1.4**
comp=Z,41nm,1.1s
LZH Lanzhou 37.69 272 *e*P **P 06 42 40.3 +3.7**
LZH pP pP 06 42 46.5 -1.8
LZH sP sP 06 42 50.0 -3.3
LZH pmax pmax
comp=Z,17nm,1.0s
DOT Dot Lake 38.00 40 *e*P **P 06 42 37.6 -1.1**
comp=Z,12nm,0.7s
NRIK Noril'sk 38.72 329 LR LR 06 59 19.3
comp=Z,37nm,19.1s,baz=88,slow=37
GTA Gaotai 38.79 279 *e*P **P 06 42 46.8 +1.1**
GTA pP pP 06 42 54.8 -2.6
GTA sP sP 06 42 58.3 -4.1
GTA PcP **PcP 06 44 57.8 +1.4**
GTA S **S 06 48 42.3 +2.0**
GTA sS sS 06 48 55.9 -3.8
GTA SS **SS 06 51 26.5 -5.3**
GTA pmax pmax
comp=Z,6.0nm,1.3s
GTA pmax pmax
comp=Z,84nm,7.1s
GTA LR LR
comp=N,130nm,16.2s
GTA LR LR
comp=E,120nm,20.0s
GTA LR LR
comp=Z,170nm,18.1s
EGAK Eagle 39.17 38 *e*P **P 06 42 48.1 -0.4**
comp=Z,12nm,1.0s
DAWY Dawson 40.02 39 *e*P **P 06 42 56.0 +0.4**
comp=Z,23nm,2.0s
CD2 Chengdu 40.68 265 P **P 06 42 59.3 -2.1**
CD2 sP pP 06 43 13.8 +0.6
CD2 PP **PP 06 44 32.9 -2.7**
CD2 S **S 06 49 06.3 -2.3**
CD2 sS sS 06 49 23.6 -4.5
CD2 SS **SS 06 52 07.8 -2.1**
CD2 pmax pmax
comp=Z,50nm,0.8s
CD2 pmax pmax
comp=Z,150nm,7.4s
CD2 LR LR
comp=N,200nm,15.5s
CD2 LR LR
comp=Z,210nm,17.8s
INK Inuvik 41.81 32 P **P 06 43 10.4 +0.2**
comp=Z,4.9nm,0.8s,baz=292,slow=9.0,SNR=16
INK Inuvik 41.81 32 *e*P **P 06 43 10.7 +0.5**
INK pmax pmax
comp=Z,13nm,0.9s
INK Inuvik 41.81 32 *e*P **P 06 43 10.7 +0.5**
comp=Z,13nm,0.9s
INK Inuvik 41.81 32 *e*P **P 06 43 10.7 +0.5**
ZAA0 Zalesovo Array 42.49 306 *e*P **P 06 43 13.7 -2.3**
NVS Novosibirsk 43.08 307 *e*P **P 06 43 21.1 +0.5**
NVS pmax pmax
comp=N,30nm,1.3s
NVS pmax pmax
comp=E,28nm,1.3s
NVS pmax pmax
comp=Z,38nm,1.3s
NVS Novosibirsk 43.08 307 *e*P **P 06 43 21.1 +0.5**
WMQ Urumqi 44.77 291 *e*P **P 06 43 34.3 -0.2**
WMQ pmax pmax
comp=Z,7.0nm,1.0s
WMQ pmax pmax
comp=Z,62nm,5.0s
WMQ LR LR
comp=N,37nm,13.2s
WMQ LR LR
comp=E,89nm,14.0s
WMQ LR LR
comp=Z,44nm,19.8s
DLBC Dease Lake 45.78 46 P **P 06 43 43.4 +1.1**
comp=Z,2.6nm,0.8s,baz=293,slow=8.4,SNR=6.9
DLBC Dease Lake 45.78 46 *e*P **P 06 43 42.6 +0.3**
comp=Z,5.8nm,1.0s
MKAR Makanchi Array 46.80 297 LR LR 07 04 46.6
comp=Z,149nm,18.7s,baz=70,slow=38
KURK Kurchatov 47.24 304 *e*P **P 06 43 52.7 -1.0**
PANO Nakornpanom 49.37 250 P **P 06 44 12.8 +2.3**
comp=Z,42nm,1.1s
NONG Nongkai 49.66 252 P **P 06 44 14.0 +1.3**
comp=Z,58nm,1.4s
SKNT Sakolnakorn 49.91 250 P **P 06 44 15.8 +1.2**
comp=Z,20nm,1.1s
CRAI Chiangrai 49.96 257 P **P 06 44 15.8 +0.8**
comp=Z,123nm,1.0s
YKA Yellowknife Ar 51.10 37 P **P 06 44 23.0 0.0**
comp=Z,1.2nm,0.9s,baz=298,slow=7.3,SNR=12
YKA LR LR 07 08 04.0
comp=Z,12nm,19.2s,baz=0.0,slow=38
YKA Yellowknife Ar 51.10 37 P **P 06 44 23.0 0.0**
YKA pmax pmax
comp=Z,1.0nm,0.9s
YKA Yellowknife Ar 51.10 37 *e*P **P 06 44 23.0 0.0**
UTTA Uttaradit 51.60 254 P **P 06 44 28.8 +1.5**
comp=Z,4.4nm,0.8s
LAMP Lampang 51.66 256 P **P 06 44 29.4 +1.6**
comp=Z,6.7nm,0.8s
CHTO Chiang Mai 51.91 256 P **P 06 44 30.8 +1.1**
comp=Z,65nm,0.9s
CHTO Chiang Mai 51.91 256 *e*P **P 06 44 29.2 -0.5**
CHTO pmax pmax
comp=Z,11nm,0.8s
CHTO Chiang Mai 51.91 256 *e*P **P 06 44 29.2 -0.5**
comp=Z,11nm,0.8s
CHAI Chaiyaphum 51.99 251 P **P 06 44 31.4 +1.1**
comp=Z,5.4nm,0.8s
CMAR Chiang Mai Arr 52.16 256 P **P 06 44 32.6 +1.1**
comp=Z,4.8nm,0.7s,baz=36,slow=7.3,SNR=16
CMAR LR LR 07 08 37.0
comp=Z,100nm,19.4s,baz=82,slow=38
SHL Shillong 52.17 268 *ex* **P 06 44 31.5 -0.3**
CM01 Chiang Mai Arr 52.18 256 *e*P **P 06 44 32.7 +1.0**
SRAK Srakaew 53.35 250 P **P 06 44 39.2 -1.1**
AAK Ala-Archa 53.69 296 LR LR 07 08 49.0
comp=Z,137nm,18.6s,baz=52,slow=37
KSH Kashi 54.50 292 *e*P **P 06 44 51.0 +2.4**
KSH *ep*P pP 06 45 01.5 +0.7
KSH *e*PP **PP 06 46 54.8 +3.9**
KSH *e*ScP **ScP 06 49 49.3 +3.0**
KSH PcS **PcS 06 49 52.8 +1.5**
KSH S **S 06 52 25.1 +0.5**
KSH Kashi 54.50 292 SS **SS 06 56 08.4 +1.4**
KSH pmax pmax
comp=Z,66nm,4.8s
KSH LR LR
comp=N,190nm,9.3s
KSH LR LR
comp=E,150nm,10.4s
KSH LR LR
comp=Z,120nm,12.7s
H04A Detroit Lake 56.55 58 *e*P **P 06 45 03.6 +0.4**
comp=Z,13nm,1.0s
ARCES ARCESS Array B 57.85 341 LR LR 07 13 05.6
comp=Z,32nm,18.7s,baz=24,slow=39
AKTO Aktyubinsk 58.62 312 LR LR 07 11 35.0
comp=Z,102nm,18.2s,baz=59,slow=37
WALA Waterton Lakes 58.63 50 *e*P **P 06 45 17.9 0.0**
comp=Z,8.0nm,1.0s
WALA Waterton Lakes 58.63 50 *e*P **P 06 45 17.9 0.0**
MSO Missoula 59.96 52 *e*P **P 06 45 27.8 +0.8**
comp=Z,19nm,1.3s
CHMT Chamberlain Mo 60.28 52 *e*P **P 06 45 29.4 0.0**
SUMG Summit 60.78 4 *i*P **P 06 45 31.8 -0.8**
comp=Z,7.0nm,0.8s
SUMG Summit 60.78 4 *e*P **P 06 45 32.4 -0.2**
SUMG pmax pmax
comp=Z,13nm,1.1s
SUMG Summit 60.78 4 *e*P **P 06 45 32.4 -0.2**
comp=Z,13nm,1.1s
FFC Flin Flon 60.92 40 *e*P **P 06 45 33.8 +0.5**
FFC pmax pmax
comp=Z,23nm,1.9s
FFC Flin Flon 60.92 40 *e*P **P 06 45 33.8 +0.5**
comp=Z,23nm,1.9s
FFC Flin Flon 60.92 40 *e*P **P 06 45 33.8 +0.5**
LRM Limekiln Ridge 61.39 53 *e*P **P 06 45 37.3 +0.3**
FCC Fort Churchill 61.43 33 *e*P **P 06 45 36.0 -0.7**
FCC pmax pmax
comp=Z,48nm,2.0s
FCC Fort Churchill 61.43 33 *e*P **P 06 45 36.0 -0.7**
comp=Z,48nm,2.0s
FCC Fort Churchill 61.43 33 *e*P **P 06 45 36.0 -0.7**
EGMT Eagleton 61.45 49 *e*P **P 06 45 37.5 +0.4**
comp=Z,17nm,1.1s
BOZ Bozeman (W) 61.95 52 *e*P **P 06 45 41.5 +0.9**
BOZ pmax pmax
comp=Z,15nm,1.3s
BOZ Bozeman (W) 61.95 52 *e*P **P 06 45 41.5 +0.9**
comp=Z,16nm,1.3s
BOZ Bozeman (W) 61.95 52 *e*P **P 06 45 41.5 +0.9**
QLMT Earthquake Lak 62.58 53 *e*P **P 06 45 45.3 +0.4**
NV01 Mina Array Sit 62.64 62 *e*P **P 06 45 46.0 +0.5**
NVAR Mina Array Bea 62.64 62 P **P 06 45 46.4 +1.0**
comp=Z,1.3nm,0.7s,baz=288,slow=7.0,SNR=7.8
IMW Indian Meadow 63.44 53 *e*P **P 06 45 50.9 +0.1**
comp=Z,10nm,1.4s
RLMT Red Lodge 63.57 52 *e*P **P 06 45 52.0 +0.5**
comp=Z,7.4nm,1.0s
MOOW Moose Ponds 63.65 53 *e*P **P 06 45 53.2 +1.1**
MOOW *ep*P **pP 06 46 03.7 -0.7**
SNOW Snow King Moun 63.83 54 *e*P **P 06 45 51.0 -2.3**
comp=Z,17nm,1.4s
REDW Red Top Meadow 63.84 54 *e*P **P 06 45 54.5 +1.1**
comp=Z,13nm,1.0s
FINES FINESS Array B 64.02 335 P **P 06 45 52.6 -1.2**
comp=Z,2.5nm,0.6s,baz=24,slow=7.1,SNR=13
FINES LR LR 07 18 06.9
comp=Z,119nm,18.2s,baz=8.0,slow=40
LAO LASA Array 64.15 49 *e*P **P 06 45 56.0 +0.9**
comp=Z,9.3nm,0.9s
R11A Troy Canyon, C 64.33 61 *e*P **P 06 45 57.3 +0.7**
comp=Z,5.5nm,1.3s
HWUT Hardware Ranch 64.58 56 *e*P **P 06 45 58.6 +0.5**
comp=Z,6.5nm,1.1s
DUG Dugway, Tooele 64.78 58 *e*P **P 06 46 00.4 +1.0**
DUG pmax pmax
comp=Z,9.0nm,1.0s
DUG Dugway, Tooele 64.78 58 *e*P **P 06 46 00.4 +1.0**
comp=Z,8.8nm,1.0s
BW06 Boulder Array 64.94 54 *e*P **P 06 46 01.1 +0.6**
PD31 Pinedale Array 64.94 54 *e*P **P 06 46 01.0 +0.5**
PDAR Pinedale Array 64.94 54 P **P 06 46 01.1 +0.5**
comp=Z,1.6nm,0.8s,baz=298,slow=1.7,SNR=17
SHPR Sheep Range 65.79 62 *e*P **P 06 46 06.3 +0.3**
comp=Z,9.7nm,1.5s
LCMT Little Creek M 66.61 60 *e*P **P 06 46 12.0 +0.7**
comp=Z,5.2nm,1.0s
ULM Lac du Bonnet 66.70 41 LR LR 07 16 16.5
comp=Z,52nm,20.1s,baz=0.5,slow=37
SRU San Rafael Swe 66.82 57 *e*P **P 06 46 13.3 +0.7**
SRU pmax pmax
comp=Z,8.0nm,0.8s
SRU San Rafael Swe 66.82 57 *e*P **P 06 46 13.3 +0.7**
comp=Z,8.0nm,0.8s
RSSD Black Hills 67.02 50 *e*P **P 06 46 13.9 +0.1**
RSSD pmax pmax
comp=Z,9.0nm,0.8s
RSSD Black Hills 67.02 50 *e*P **P 06 46 13.9 +0.1**
comp=Z,8.6nm,0.8s
NB2 NORSAR Subarra 68.23 341 P **P 06 46 19.8 -1.2**
comp=Z,1.8nm,0.6s,baz=30,slow=6.5
NOA NORSAR Array B 68.23 341 P **P 06 46 19.9 -1.0**
comp=Z,1.1nm,0.5s,baz=28,slow=6.5,SNR=6.2
NOA LR LR 07 19 53.1
comp=Z,63nm,18.2s,baz=265,slow=39
NOA NORSAR Array B 68.23 341 *e*P **P 06 46 20.0 -1.0**
WRA Warramunga Arr 68.39 199 P **P 06 46 22.3 0.0**
comp=Z,4.9nm,0.8s,baz=16,slow=6.7,SNR=6.7
SMCO Snowmass 68.80 55 *e*P **P 06 46 25.9 +0.5**
comp=Z,3.3nm,0.8s
FITZ Fitzroy Crossi 68.99 208 P **P 06 46 26.9 +0.8**
comp=Z,8.5nm,0.9s,baz=88,slow=4.4,SNR=5.5
ISCO Idaho Springs 69.14 54 *e*P **P 06 46 27.7 +0.4**
ISCO pmax pmax
comp=Z,3.0nm,0.8s
ISCO Idaho Springs 69.14 54 *e*P **P 06 46 27.7 +0.4**
comp=Z,3.2nm,0.8s
S22A 4UR Ranch, Cre 69.87 56 *e*P **P 06 46 32.6 +0.8**
comp=Z,5.5nm,1.0s
SDCO Great Sand Dun 70.63 55 *e*P **P 06 46 35.9 -0.6**
comp=Z,2.4nm,0.9s
KBZ Khabaz 70.77 314 LR LR 07 21 32.8
comp=Z,81nm,18.2s,baz=54,slow=39
ECSD EROS Data Cent 71.07 46 *e*P **P 06 46 38.4 -0.3**
comp=Z,4.9nm,0.8s
AKASG Malin Array Be 71.49 326 P **P 06 46 39.5 -1.6**
comp=Z,3.0nm,0.5s,baz=34,slow=6.2,SNR=8.8
AKASG LR LR 07 20 36.5
comp=Z,65nm,18.9s,baz=275,slow=38
KIEV Kiev 71.50 326⇑*i*P **P 06 46 40.2 -1.0**
KIEV pmax pmax
comp=Z,2.0nm,0.8s
T25A Trinidad 71.67 55 *e*P **P 06 46 42.9 +0.2**
comp=Z,12nm,1.4s
LAZ Ladron 72.02 59 *e*P **P 06 46 45.5 +0.6**
ANMO Albuquerque 72.04 58 P **P 06 46 46.1 +1.2**

AS01	Alice Springs	72.07	198	eP	P	06 46 45.8	+1.0
ASAR	Alice Springs	72.08	198	P	P	06 46 46.1	+1.2
	comp=Z,6.8nm,0.7s,baz=16,slow=5.6,SNR=16						
PALK	Pallekele	72.49	262	P	P	06 46 48.2	+0.5
	comp=Z,6.2nm,0.6s,baz=289,slow=2.9,SNR=5.3						
PALK	Pallekele	72.49	262	P	P	06 46 48.2	+0.5
PALK				pmax	pmax		
	comp=Z,7.0nm,0.7s						
SCHQ	Schefferville	73.45	23	LR	LR	07 24 28.0	
	comp=Z,59nm,19.0s,baz=54,slow=40						
AMTX	Amarillo	74.83	55	eP	P	06 47 01.8	+0.5
	comp=Z,11nm,0.8s						
MSTX	Muleshoe	74.87	56	eP	P	06 47 01.7	+0.3
	comp=Z,8.2nm,1.0s						
BUR08	Bucovina Ar. S	75.52	326	eP	P	06 47 04.4	-0.6
WSAR	Wadi Sarin	76.22	289	LR	LR	07 23 29.8	
	comp=Z,50nm,21.9s,baz=78,slow=38						
TX31	Lajitas Ar. Si	77.70	60	eP	P	06 47 18.1	+0.5
TXAR	Lajitas Array	77.70	60	P	P	06 47 17.9	+0.4
	comp=Z,0.6nm,0.6s,baz=302,slow=4.5,SNR=7.1						
TXAR	Lajitas Array	77.70	60	P	P	06 47 18.0	+0.4
TXAR				pmax	pmax		
	comp=Z,1.0nm,0.5s						
TXAR	Lajitas Array	77.70	60	eP	P	06 47 18.0	+0.4
BRTR	Keskin Array B	78.30	317	P	P	06 47 20.5	-0.4
	comp=Z,0.8nm,0.8s,baz=86,slow=6.4,SNR=4.3						
GERES	GERESS Array B	78.43	334	LR	LR	07 24 40.8	
	comp=Z,54nm,20.5s,baz=15,slow=38						
JCT	Junction City	79.13	57	eP	P	06 47 25.4	0.0
JCT				pmax	pmax		
	comp=Z,7.0nm,0.9s						
JCT	Junction City	79.13	57	eP	P	06 47 25.4	0.0
	comp=Z,6.8nm,0.9s						
BFO	Black Forest	80.44	337	i P	P	06 47 33.0	+0.8
NWAO	Narrogin (SRO)	85.50	209	P	P	06 47 58.8	+0.5
	comp=Z,10nm,0.9s,baz=230,slow=6.7,SNR=5.6						
ESDC	Sonseca Array	91.56	342	LR	LR	07 33 03.0	
	comp=Z,26nm,21.1s,baz=330,slow=38						
SAML	Samuel	131.48	51	ePKPdf	PKPdf	06 54 33.2	-0.1

*ISCJB **19** 06:38:23.5±0.6, 34°.77S±0°.03×71°.83W±0°.07, h25km±7km, Error ellipse: s-maj=10.5km s-min=4.3km az=14.9*
*GUC **19** 06:38:23.0±0.3, 34°.76S×71°.83W, h39km±1km, ML3.8*
ISC 19 06:38:23.4±1.1, 34°.79S±0°.03×71°.91W±0°.08, h27km±12km, n19, σ1°.03/27, 1D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHPI	Pichilemu	0.41	349	eP	Pb	06 38 31.9	-0.2
CHPI				eS	Sb	06 38 38.7	+0.6
TALC	Talca	0.65	159	eP	Pb	06 38 35.8	-0.4
TALC				eS	Sb	06 38 45.3	+0.4
COCH	Cobquecura	1.52	208	eP	Pb	06 38 50.1	-0.8
COCH				eS	Sb	06 39 10.3	+0.6
COCH				IAML		06 39 14.3	
	comp=E,1μm,0.3s						
ANTU	Antumapu	1.61	41	eP	Pn	06 38 49.6	-0.6
ANTU				eS	Sn	06 39 10.1	-0.1
SJCH	San Jose de Ma	1.73	49	eP	Pn	06 38 51.3	-0.5
SJCH				eS	Sn	06 39 13.1	0.0
CCHI	Chillan	1.81	184	eP	Pn	06 38 53.9	+1.0
CCHI				eS	Sb	06 39 17.4	-0.9
CCHI				IAML		06 39 29.9	
	comp=E,2μm,0.5s						
PEL	Peldehue	1.93	32	eP	Pn	06 38 54.4	-0.2
PEL				eS	Sn	06 39 18.3	+0.2
PEL				IAML		06 39 22.0	
	comp=N,1μm,0.3s						
ROC1	El Roble	1.96	23	eP	Pn	06 38 54.9	-0.3
ROC1				eS	Sn	06 39 19.6	+0.6
AAGR	Agrelo	3.08	57	eP	Pn	06 39 12.9	+2.5
ARCO	CERRO ARCO	3.15	53	eP	Pn	06 39 13.0	+1.5
ARCO				IAML		06 39 30.7	
	comp=Z,119nm,0.6s						
AUSP	Uspallata	3.32	40	eP	Pn	06 39 15.3	+1.4
ASAL	Salagasta	3.38	50	eP	Pn	06 39 16.5	+2.0
RTLS	Leoncito	3.70	37	eP	Pn	06 39 20.5	+1.3
RTCV	Cerro Valdivia	4.06	45	eP	Pn	06 39 23.9	0.0
ACAN	Cantantal	4.67	59	eP	Pn	06 39 30.8	-1.5
AMOG	MOGNA	4.80	38	eP	Pn	06 39 33.8	-0.3
MRA	San Martin	5.68	67	eP	Pn	06 39 45.7	-0.6
MRA				IAML		06 41 28.4	
	comp=Z,21nm,0.6s						
AGUA	GUANDACOL	6.03	30	eP	Pn	06 39 50.4	-0.6
VCA	Vinchina	6.81	29	eP	Pn	06 40 01.4	-0.4
VCA				IAML		06 41 37.6	
	comp=Z,30nm,0.6s						

IDC 19 06:42:56.0±1.2, 6°.68S×108°.73E, h130km±18km, mb3.5/4, mb1 3.8/5, mb1mx3.2/48, mbtmp4.0/5, Error ellipse: s-maj=40.3km s-min=18.6km az=42.0, Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LEM	Lembang	1.11	262	P	Pn	06 43 18.6	-1.5
	25nm,0.3s,baz=206,slow=21,SNR=11						
LEM				S	Sn	06 43 39.3	+0.8
	8.8nm,0.3s,baz=271,slow=22,SNR=3.7						
KAPI	Kappang	11.09	82	P	Pn	06 45 32.1	+1.1
	2.1nm,0.3s,baz=202,slow=17,SNR=7.2						
WRA	Warramunga Arr	28.14	120	P	P	06 48 36.0	-0.1
	0.3nm,0.3s,baz=306,slow=9.0,SNR=10						
ASAR	Alice Springs	29.50	128	P	P	06 48 48.9	+0.7
	1.0nm,0.4s,baz=296,slow=8.0,SNR=7.5						
STKA	Stephens Creek	39.60	134	P	P	06 50 14.3	-0.6
	4.6nm,0.4s,baz=314,slow=8.0,SNR=18						
MKAR	Makanchi Array	58.18	339	P	P	06 52 36.4	+0.1
	0.2nm,0.6s,baz=147,slow=6.6,SNR=2.4						

*ISK **19** 06:53:37.4, 37°.22N×28°.25E, h23km, MD2.7*
*CSEM **19** 06:53:38.1±0.1, 37°.23N×28°.28E, h20km, MD2.7, Error ellipse: s-maj=6.0km s-min=2.9km az=47.0*
*DDA **19** 06:53:40.0, 37°.27N×28°.18E, h7km, Md2.7*
ISC 19 06:53:38.3±1.0, 37°.23N±0°.04×28°.27E±0°.05, h17km±8km, n14, σ0°.40/20, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	Yerkesik	0.09	172	PG	Pg	06 53 41.8	0.0
YER	Yerkesik	0.09	172	i Pg	Pg	06 53 41.8	0.0
TURN	Turunc	0.44	143	i P	Pb	06 53 48.2	+0.5
TURN				i S	Sn	06 53 57.4	-0.1
DALY	Dalyan (Mu¨la	0.51	143	ePG	Pg	06 53 48.5	0.0
DALY				eSG	Sb	06 53 56.3	+0.3
DALY	Dalyan (Mu¨la	0.51	143	ePg	Pg	06 53 48.5	0.0
DALY				eSg	Sb	06 53 56.3	+0.3
AYDN	Tasoluk	0.53	325	P	Pg	06 53 49.2	+0.3
AYDN				S	Sg	06 53 55.9	-0.2
AYDN	Tasoluk	0.53	325	i P	Pg	06 53 49.1	+0.3
AYDN				i S	Sg	06 53 55.9	-0.2
AYDB	Zeytinkoy-Aydi	0.78	338	ePG	Pb	06 53 53.3	-0.2
AYDB	Zeytinkoy-Aydi	0.78	338	ePg	Pb	06 53 53.3	-0.2
BODT	Bodrum	0.78	258	ePG	Pb	06 53 52.9	-0.5
BODT				eSG	Sg	06 54 04.3	+0.4
BODT	Bodrum	0.78	258	ePg	Pb	06 53 52.9	-0.5
BODT				eSg	Sg	06 54 04.3	+0.4
FETY	Fethiye	0.88	132	ePG	Pb	06 53 54.5	-0.7
FETY	Fethiye	0.88	132	ePg	Pb	06 53 54.5	-0.7
AKAS	Kas	1.46	132	i P	Pg	06 54 10.0	+3.5

*ISCJB **19** 07:14:42.8±0.6, 10°.3S±0°.1×66°.38E±0°.10, h14km, mb4.2/22, MS4.1/27, Error ellipse: s-maj=16.2km s-min=13.3km az=161.5*
*IDC **19** 07:14:42.7±0.7, 10°.34S×66°.39E, h0km, mb4.1/18, mb1 4.3/18, mb1mx4.0/65, mbtmp4.1/18, MS4.0/27, Ms1 4.0/27, ms1mx3.9/48, Error ellipse: s-maj=20.4km s-min=16.9km az=174.0*
*NEIC **19** 07:14:44.3±0.4, 10°.35S×66°.38E, h10km, mb4.6/4, Error ellipse: s-maj=12.5km s-min=10.1km az=159.0*
*GCMT **19** 07:14:44.3±0.2, 10°.51S×66°.28E, h12km±1km, MW5.1/83, Moment Tensor Solution. s25,c26; s83,c108; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-3.15±.21; $M_{\theta\theta}$0.87±.13; $M_{\phi\phi}$2.28±.15; $M_{r\theta}$3.05±.54; $M_{\theta\phi}$-1.47±.10; $M_{\phi r}$3.25±.52; Best double couple: $M_0$5.03800×10^{16} NP1:ϕ_s197.00000°, δ73.00000°, λ-65.00000°. NP2: ϕ_s319.00000°, δ29.00000°, λ-144.00000°. Principal axes: T 3.8010, Plg24.0000°, Azm268.0000°; N 2.4730,*

Plg24.0000°, Azm10.0000°; P -6.2740, Plg55.0000°, Azm138.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.
ISC 19 07:14:44.9±0.8, 10°.3S±0°.2×66°.4E±0°.1, h14km, n59, σ1°.16/34, mb4.2/22, MS4.1/27, Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08N3	Diego Garcia H	6.07	50	T	T	07 22 33.1	
	baz=227,slow=76,SNR=4161						
H08N1	Diego Garcia H	6.09	50	T	T	07 22 34.8	
	baz=227,slow=76,SNR=2339						
H08N2	Diego Garcia H	6.09	49	T	T	07 22 34.6	
	baz=227,slow=76,SNR=3471						
H08S1	Diego Garcia H	6.62	67	T	T	07 23 11.1	
	baz=245,slow=75,SNR=1679						
H08S3	Diego Garcia H	6.63	67	T	T	07 23 15.9	
	baz=245,slow=75,SNR=1542						
H08S2	Diego Garcia H	6.63	67	T	T	07 23 13.6	
	baz=245,slow=75,SNR=1269						
PALK	Pallekele	22.59	40	P	P	07 19 44.9	-0.4
	25nm,1.2s,baz=117,slow=2.2,SNR=6.7						
PALK				LR	LR	07 26 26.5	
	comp=Z,698nm,19.8s,baz=296,slow=31						
PALK	Pallekele	22.59	40	eP	P	07 19 44.6	-0.6
	40nm,1.3s						
LSZ	Lusaka	37.49	258	P	P	07 21 58.5	-0.2
	1.4nm,0.3s,baz=66,slow=8.1,SNR=4.9						
LBTB	Lobatse	41.30	244	P	P	07 22 30.4	0.0
	4.5nm,0.9s,baz=122,slow=6.8,SNR=3.8						
BOSA	Boshof	42.53	239	LR	LR	07 38 50.8	
	comp=Z,372nm,18.1s,baz=75,slow=34						
CMAR	Chiang Mai Arr	43.05	49	P	P	07 22 44.4	-0.2
	1.1nm,0.3s,baz=246,slow=9.6,SNR=8.5						
CMAR				LR	LR	07 40 08.7	
	comp=Z,179nm,18.9s,baz=214,slow=36						
GEYT	Alibeck	48.62	351	LR	LR	07 42 05.5	
	comp=Z,155nm,21.2s,baz=175,slow=34						
H01W3	Cape Leeuwin H	49.84	127	T	T	08 16 49.0	
	baz=287,slow=75,SNR=19						
H01W2	Cape Leeuwin H	49.84	127	T	T	08 16 53.7	
	baz=287,slow=75,SNR=18						
H01W1	Cape Leeuwin H	49.85	127	T	T	08 16 50.3	
	baz=287,slow=75,SNR=20						
EIL	Elat	49.97	324	LR	LR	07 43 11.2	
	comp=Z,91nm,18.1s,baz=120,slow=34						
AAK	Ala-Archa	53.24	8	LR	LR	07 45 09.9	
	comp=Z,234nm,21.1s,baz=172,slow=34						
TKM2	Tokmak 2	53.67	8	eP	P	07 24 07.0	+0.7
	2.1nm,0.9s						
GNI	Garni	54.07	340	LR	LR	07 47 10.3	
	comp=Z,96nm,18.1s,baz=127,slow=36						
MAW	Mawson	57.25	182	LR	LR	07 44 15.8	
	comp=Z,262nm,18.0s,baz=58,slow=31						
KBZ	Khabaz	57.88	340	LR	LR	07 48 54.8	
	comp=Z,97nm,19.4s,baz=154,slow=35						
BRTR	Keskin Array B	58.33	331	P	P	07 24 39.6	0.0
	1.1nm,0.9s,baz=161,slow=12,SNR=6.1						
BRTR				LR	LR	07 48 57.5	
	comp=Z,62nm,19.4s,baz=136,slow=35						
MKAR	Makanchi Array	58.63	13	P	P	07 24 39.9	-1.6
	0.7nm,0.7s,baz=204,slow=8.3,SNR=8.5						
ABKAR	Akbulak array	59.60	355	eP	P	07 24 48.6	+0.5
	4.4nm,1.0s						
AKTO	Aktyubinsk	60.95	354	P	P	07 24 57.5	+0.1
	1.2nm,0.6s,baz=169,slow=7.0,SNR=3.8						
AKTO				LR	LR	07 51 00.3	
	comp=Z,80nm,20.6s,slow=36						
KURBB	Kurchatov Arra	61.62	9	P	P	07 25 01.6	-0.3
	2.5nm,0.9s,baz=207,slow=7.1,SNR=13						
KURK	Kurchatov	61.73	9	eP	P	07 25 02.6	0.0
BVAR	Borovoye Array	63.20	3	P	P	07 25 12.5	+0.1
	1.4nm,0.8s,baz=130,slow=6.0,SNR=8.2						
ASAR	Alice Springs	65.45	111	P	P	07 25 27.3	-0.6
	2.7nm,1.0s,baz=278,slow=5.8,SNR=14						
ZALV	Zalesovo Beam	65.93	12	P	P	07 25 30.2	0.0
	1.0nm,0.4s,baz=212,slow=5.3,SNR=6.2						
WRA	Warramunga Arr	65.97	107	P	P	07 25 30.3	-1.0
	4.1nm,1.0s,baz=279,slow=5.9,SNR=14						
WRA				LR	LR	07 50 13.8	
	comp=Z,271nm,21.7s,baz=85,slow=32						
WRAB	Tennant Creek	65.97	107	eP	P	07 25 31.4	+0.1
	5.4nm,0.8s						
ARU	Arti	66.83	355	P	P	07 25 36.4	+0.4
	4.6nm,0.2s,baz=179,slow=4.9,SNR=4.5						
SONM	Songino Array	67.93	28	P	P	07 25 43.8	+0.5
	1.7nm,0.7s,baz=229,slow=5.8,SNR=7.2						
SONM				LR	LR	07 54 49.5	
	comp=Z,689nm,19.5s,baz=258,slow=35						
TORD	Torodi Ar. Bea	68.28	289	P	P	07 25 45.6	-0.4
	1.4nm,1.0s,baz=282,slow=30,SNR=5.7						
TORD				LR	LR	07 52 35.6	
	comp=Z,78nm,21.1s,baz=120,slow=33						
AKASG	Malin Array Be	68.82	336	P	P	07 25 48.3	-0.3
	0.3nm,0.3s,baz=134,slow=5.1,SNR=4.7						
AKASG				LR	LR	07 58 07.9	
	comp=Z,42nm,18.3s,baz=40,slow=38						
KEST	Kesra	70.58	314	LR	LR	07 57 13.8	
	comp=Z,41nm,19.5s,baz=242,slow=36						
STKA	Stephens Creek	72.13	120	LR	LR	07 54 00.0	
	comp=Z,140nm,20.6s,baz=234,slow=33						
DBIC	Dimbokro	72.88	280	LR	LR	07 56 48.2	
	comp=Z,265nm,19.7s,baz=92,slow=35						
BRG	Berggiesshubel	75.97	329	eP	P	07 26 39.5	+8.2
	18nm,1.7s						
CTA	Charters Tower	77.12	108	LR	LR	07 59 42.5	
	comp=Z,179nm,18.9s,slow=35						
FINES	FINESS Array B	78.20	342	LR	LR	08 03 15.6	
	comp=Z,86nm,18.1s,baz=190,slow=37						
PMG	Port Moresby	79.40	98	LR	LR	08 02 07.5	
	comp=Z,49nm,19.6s,baz=324,slow=36						
NRIK	Noril'sk	80.86	7	LR	LR	08 03 24.0	
	comp=Z,112nm,19.8s,baz=118,slow=36						
VNDA	Vanda	81.17	167	LR	LR	07 58 45.7	
	comp=Z,158nm,19.1s,baz=265,slow=33						
ESDC	Sonseca Array	81.81	313	P	P	07 27 04.2	+0.5
	0.2nm,0.3s,baz=108,slow=4.2,SNR=3.8						
MJAR	Matsushiro Arr	81.89	51	P	P	07 27 04.5	+0.3
	1.3nm,0.9s,baz=253,slow=8.3,SNR=3.8						
MJAR				LR	LR	08 02 37.6	
	comp=Z,134nm,20.2s,baz=250,slow=35						
JCJ	Chichijima	82.31	61	LR	LR	08 03 25.5	
	comp=Z,87nm,18.6s,baz=334,slow=36						
NOA	NORSAR Array B	83.22	336	LR	LR	08 05 03.4	
	comp=Z,31nm,19.8s,baz=155,slow=36						
ARCES	ARCESS Array B	84.55	347	LR	LR	08 07 02.8	
	comp=Z,47nm,18.5s,baz=98,slow=37						
YKA	Yellowknife Ar	127.93	1	PKP	PKPdf	07 33 51.2	+1.2
	0.2nm,0.8s,baz=353,slow=2.5,SNR=3.2						
RSSD	Black Hills	145.32	348	ePKPbc	PKPdf	07 34 23.6	+0.7
LRAL	Lakeview Retre	146.66	317	ePKPbc	PKPab	07 34 26.6	-1.2
LOHW	Long Hollow	146.74	356	ePKPbc	PKPab	07 34 30.7	+2.6
PDAR	Pinedale Array	147.50	354	PKPbc	PKPab	07 34 30.6	-0.5
	0.2nm,0.5s,baz=104,slow=2.3,SNR=2.5						
DUG	Dugway, Tooele	150.25	359	ePKPdf	PKPdf	07 34 30.6	-0.4
DUG				ePKPbc	PKiKP	07 34 37.7	+0.8
DUG				ePKPab	PKPab	07 34 44.6	+2.5
SMCO	Snowmass	150.66	349	ePKPdf	PKPbc	07 34 36.2	-1.3
SMCO				ePKPbc	PKPab	07 34 41.0	-3.2
SMCO				ePKPab	PKiKP	07 34 45.8	+7.6
NVAR	Mina Array Bea	151.72	8	PKPbc	PKPbc	07 34 42.2	+2.4
	0.9nm,0.7s,baz=292,slow=2.8,SNR=2.5						

*IDC **19** 07:19:37.0±0.7, 20°.23S×168°.38E, h0km, mb4.3/14, mb1 4.5/16, mb1mx4.4/30, mbtmp4.4/16, ML3.7/2, Error ellipse: s-maj=21.7km s-min=16.4km az=122.0*
*NEIC **19** 07:19:38.5±0.2, 20°.23S×168°.36E, h10km, mb5.0/18, Error ellipse: s-maj=8.8km s-min=5.4km az=156.0*
*ISCJB **19** 07:19:39.3±0.2, 20°.35S±0°.06×168°.35E±0°.05, h25km, mb4.8/34, MS4.3/1, Error ellipse: s-maj=10.0km s-min=5.6km az=145.0*
ISC 19 07:19:40.6±0.4, 20°.33S±0°.08×168°.44E±0°.06, h25km, n100, σ1°.09/103, mb4.7/34, 2C, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	2.54	227	Pn	Pn	07 20 18.3	-2.1
	18nm,0.3s,baz=118,slow=14,SNR=205						
DZM				Sn	Sn	07 20 48.4	-2.3
	86nm,0.3s,baz=309,slow=21,SNR=12						
MSVF	Nonsavu	9.45	76	Pn	Pn	07 21 55.4	0.0
	529nm,1.8s						
MSVF				eSn	Sn	07 23 38.4	-2.5
URZ	Urewera	19.39	159	P	P	07 24 05.8	+1.1
	0.2nm,0.3s,baz=59,slow=18,SNR=4.5						
URZ	Urewera	19.39	159	eP	Pn	07 24 07.2	+1.3
	159nm,1.7s						
AFI	Afiamalu	19.95	74	eP	P	07 24 10.8	-0.3
	9.6nm,0.6s						
CTA	Charters Tower	20.82	267	P	P	07 24 21.6	+1.1
	11nm,0.8s,baz=76,slow=12,SNR=6.6						
CTAO	Charters Tower	20.82	267	eP	P	07 24 20.2	-0.3
	222nm,1.2s						
STKA	Stephens Creek	26.63	239	P	P	07 25 18.5	+1.1
	3.8nm,0.7s,baz=67,slow=8.8,SNR=7.4						
STKA	Stephens Creek	26.63	239	eP	P	07 25 18.4	+1.0
	22nm,1.8s						
WRA	Warramunga Arr	31.98	265	P	P	07 26 03.6	-1.5
	1.2nm,0.6s,baz=97,slow=8.0,SNR=8.9						
AS01	Alice Springs	32.10	258	eP	P	07 26 05.5	-0.6
AS31	Alice Springs	32.14	258	eP	P	07 26 06.0	-0.5
	5.4nm,0.8s						
ASAR	Alice Springs	32.14	258	P	P	07 26 05.7	-0.8
	8.1nm,0.7s,baz=87,slow=8.8,SNR=62						
FITZ	Fitzroy Crossi	40.39	266	P	P	07 27 16.8	-0.1
	6.9nm,0.9s,baz=136,slow=6.3,SNR=7.9						
FITZ	Fitzroy Crossi	40.39	266	eP	P	07 27 15.3	-1.6
	6.5nm,0.8s						
MBWA	Marble Bar	45.41	260	eP	P	07 27 57.0	-0.6
	168nm,1.8s						
VNDA	Vanda	57.32	182	P	P	07 29 26.8	+0.7
	1.1nm,0.7s,baz=6.9,slow=4.9,SNR=7.2						
SBA	Scott Base	57.57	180	eP	P	07 29 29.1	+1.3
	3.3nm,0.8s						
MJAR	Matsushiro Arr	63.37	333	P	P	07 30 06.2	-1.6
	2.1nm,0.6s,baz=173,slow=8.6,SNR=6.2						
QIZ	Qiongzhong	69.47	300	P	P	07 30 44.5	-2.8
QIZ				S	S	07 39 42.3	-11
QIZ				pmax	pmax		
	comp=Z,3.0nm,1.4s						
QIZ				LR	LR		
	comp=N,110nm,21.2s						
QIZ				LR	LR		
	comp=E,160nm,24.3s						
QSPA	South Pole Qui	69.73	180	eP	P	07 30 48.6	+0.2
KULM	Kulim	71.23	283	eP	P	07 30 58.7	+0.5
	comp=E,6.1nm,0.8s						
USRK	Ussuriysk Ar.	72.36	333	P	P	07 31 04.4	+0.1
	comp=E,5.7nm,0.8s,baz=151,slow=4.4,SNR=12						
WHN	Wuhan	72.53	313	i P	P	07 31 17.3	+12
PETK	Petropavlovsk-	73.72	353	P	P	07 31 13.1	+1.0
	comp=E,2.6nm,0.6s,baz=115,slow=7.9,SNR=5.0						
GYA	Guiyang	75.83	305	P	P	07 31 25.8	+0.7
GYA				pP	PcP	07 31 56.3	+19
GYA				sP	sP	07 32 11.0	+35
GYA				PP	PP	07 34 19.6	+3.9
GYA				S	S	07 40 55.6	-11
GYA				SKS	SKSac	07 41 18.9	-15
GYA				pmax	pmax		
	comp=Z,20nm,1.0s						
GYA				pmax	pmax		
	comp=Z,120nm,5.8s						
MAW	Mawson	77.14	202	P	P	07 31 33.1	+1.4
	comp=Z,3.0nm,0.8s,baz=46,slow=6.1,SNR=4.9						
KMI	Kunming	78.21	302	P	P	07 31 40.3	+1.6
KMI				pmax	pmax		
	comp=Z,18nm,1.1s						
CMAR	Chiang Mai Arr	78.27	295	P	P	07 31 39.0	+0.1
	comp=Z,3.1nm,0.5s,baz=137,slow=4.0,SNR=18						
CHTO	Chiang Mai	78.42	295	eP	P	07 31 40.8	+1.0
	comp=Z,3.0nm,0.6s						
CD2	Chengdu	80.30	308	P	P	07 31 49.1	-0.7
CD2				pP	sP	07 32 20.6	+20
CD2				sP	pP	07 32 34.1	+36
CD2				PP	PP	07 34 53.3	+0.3
CD2				S	S	07 41 44.8	-9.3
CD2	Chengdu	80.30	308	SS	SS	07 46 59.6	-6.6
CD2				pmax	pmax		
	comp=Z,10.0nm,0.6s						
CD2				pmax	pmax		
	comp=Z,70nm,5.3s						
HHC	Hu-ho-hao-te	80.56	320	eP	P	07 31 52.1	+1.1
HHC				S	S	07 41 47.1	-9.4
HHC				pmax	pmax		
	comp=Z,47nm,1.2s						
HHC				pmax	pmax		
	comp=Z,340nm,7.5s						
LZH	Lanzhou	82.90	312	eP	P	07 32 05.6	+2.0
LZH				pP	sP	07 32 38.4	+24
LZH				sP	pP	07 32 50.0	+38
LZH	Lanzhou	82.90	312	eS	S	07 42 11.3	-10
LZH	Lanzhou	82.90	312	SS	SS	07 47 40.6	-4.3
LZH				pmax	pmax		
	comp=Z,22nm,1.1s						
LZH				pmax	pmax		
	comp=Z,100nm,4.4s						
SYO	Syowa Base	83.68	196	eP	P	07 32 07.0	+0.1
ULN	Ulaanbaatar	87.29	324	eP	P	07 32 25.6	+0.3
	comp=Z,25nm,1.7s						
GTA	Gaotai	87.33	314	eP	P	07 32 26.3	+0.6
GTA				pP	sP	07 32 56.5	+20
GTA				sP	pP	07 33 11.8	+38
GTA				pmax	pmax		
	comp=Z,4.0nm,1.1s						
SONM	Songino Array	87.64	323	P	P	07 32 26.7	-0.2
	comp=Z,1.7nm,0.9s,baz=143,slow=5.2,SNR=9.6						
SONA1	Songino Array	87.64	323	eP	P	07 32 26.9	-0.1
BILL	Bilibino	88.12	359	eP	P	07 32 28.7	+0.1
	comp=Z,22nm,1.5s						
N02D	Trinity Center	88.24	45	P	P	07 32 31.1	+1.2
	baz=241						
PMR	Palmer	88.40	19	eP	P	07 32 28.7	-1.3
	comp=Z,1.9nm,0.4s						
CMB	Columbia Colle	88.44	48	eP	P	07 32 31.3	+0.4
	comp=Z,642nm,1.5s						
AFDM	Forest Hills D	88.45	47	eP	P	07 32 31.6	+0.6
O03D	Paynes Creek	88.52	46	P	P	07 32 30.8	-0.5
	baz=242						
MONP2	Monument Peak	89.09	54	P	P	07 32 34.8	+0.5
	baz=245						
I03D	Drain, OR	89.15	42	P	P	07 32 33.9	-0.1
	baz=241						
M04C	Macdoel	89.

ARCES	ARCESS Array B	125.92	345	PKP	PKPdf	07 38 39.9	+0.2
	comp=Z,1.5nm,0.6s,baz=70,slow=1.4,SNR=9.1						
NKC	Novy Kostel	144.61	333	*e*PKP	PKPdf	07 39 14.5	-0.5
CONA	Conrad Observa	144.67	328	*i* PKPdf	PKPdf	07 39 15.4	+0.1
	comp=Z,15nm,1.4s,SNR=8.5						
KHC	Kasperske Hory	144.93	331	*e*PKP	PKPdf	07 39 15.4	-0.2
GERES	GERESS Array B	145.08	330	PKP	PKPab	07 39 15.0	-0.4
	comp=Z,1.2nm,0.5s,baz=29,slow=3.0,SNR=11						
ARSA	Arzberg	145.29	327	*i* PKPdf	PKPdf	07 39 16.8	+0.6
	comp=Z,16nm,1.6s,SNR=5.1						
MOA	Molln	145.51	329	*i* pPKPbc	PKPab	07 39 17.6	+0.7
	comp=Z,28nm,1.7s,SNR=8.8						
SOKA	Soboth	145.92	327	*i* PKPab	PKPab	07 39 18.5	-0.1
	comp=Z,13nm,1.3s,SNR=8.1						
OBKA	Obir	146.28	327	*i* PKPab	PKPbc	07 39 19.4	+0.2
	comp=Z,5.3nm,1.3s						
KBA	Koelnbreinsper	146.50	329	*e*PKPab	PKPbc	07 39 20.3	+0.4
	comp=Z,2.9nm,1.1s						
BEBN	Eben Emael	146.69	340	PKP	PKPab	07 39 21.6	+0.4
MEM	Membach	146.74	339	PKPab	PKPbc	07 39 20.8	+0.6
WTTA	Wattenberg	147.18	330	*i* PKPab	PKPab	07 39 22.9	-0.6
	comp=Z,11nm,1.4s						
MOTA	Moosalm	147.36	331	*i* pPKPdf	PKPbc	07 39 22.7	+0.4
	comp=Z,3.6nm,0.5s						
RETA	Reutte	147.41	331	*i* pPKPdf	PKPbc	07 39 22.8	+0.4
	comp=Z,5.3nm,1.1s						
WLF	Walferdange	147.50	338	PKPab	PKPab	07 39 23.8	-0.7
WLF	Walferdange	147.50	338	*e*PKPbc	PKPbc	07 39 23.0	+0.6
DOU	Dourbes	147.64	340	PKPbc	PKPbc	07 39 23.3	+0.5
FETA	Feichten	147.78	331	*i* sPKPdf	PKPbc	07 39 24.0	+0.5
	comp=Z,8.2nm,0.9s						
BFO	Black Forest	147.79	335	*e*PKPdf	PKPdf	07 39 18.9	-1.5
BFO				*e*PKPbc	PKPbc	07 39 23.2	-0.1
BFO				*e*PKPab	PKPab	07 39 26.6	+0.8
DAVA	Damuels	147.96	332	*i* sPKPdf	PKPbc	07 39 24.5	+0.5
	comp=Z,6.7nm,0.8s						
DAVOX	Davos/Dischmat	148.34	331	PKPbc	PKPbc	07 39 24.9	-0.1
	comp=Z,4.5nm,0.6s,baz=359,slow=2.6,SNR=7.4						
TUE	Stuetta	148.81	332	*e*PKPbc	PKPbc	07 39 26.4	+0.1
TUE				*e*PKPab	PKPab	07 39 30.2	+0.1
TORD	Torodi Ar. Bea	165.44	243	PKP	PKPdf	07 39 43.5	-0.4
	comp=Z,1.1nm,0.9s,baz=319,slow=1.0,SNR=5.0						

*IDC **19** 07:20:19.1±1.6,20°.19S×168°.46E, h0km, mb4.4/8, mb1 4.7/8, mb1mx4.3/27, mbtmp4.4/8, MS3.6/2, Ms1 3.7/2, ms1mx3.2/17, Error ellipse: s-maj=57.5km s-min=25.4km az=154.0*
*ISCJB **19** 07:20:21.2±1.4,20°.3S±0°.2×168°.4E±0°.2, h26km, mb4.4/8, MS3.4/1, Error ellipse: s-maj=41.2km s-min=10.7km az=41.0*
ISC 19 07:20:22.5±1.3,20°.4S±0°.2×168°.4E±0°.2, h26km, n16, σ1§00/12, mb4.5/8, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	2.52	228	Sn	Sn	07 21 30.9	-0.8
	83nm,0.3s,baz=304,slow=20,SNR=3.3						
HNR	Honiara	13.62	322	LR	LR	07 28 14.4	
	comp=Z,375nm,18.8s,baz=151,slow=35						
WRA	Warramunga Arr	31.99	265	P	P	07 26 47.4	+0.5
	1.3nm,0.7s,baz=92,slow=8.3,SNR=2.5						
ASAR	Alice Springs	32.14	258	P	P	07 26 47.8	-0.5
	12nm,1.0s,baz=83,slow=9.0,SNR=4.7						
TBI	Tubuai	39.08	102	*e*LR	LR	07 37 59.8	
	295nm,34.0s						
PPT2	Papeete2	39.72	93	*e*LQ	LQ	07 36 40.5	
	416nm,26.2s						
PPT2				*e*LR	LR	07 38 20.1	
	534nm,31.2s						
FITZ	Fitzroy Crossi	40.40	266	P	P	07 27 59.6	+0.8
	4.9nm,0.8s,baz=120,slow=10,SNR=3.6						
TAOE	Nuku Hiva Isla	50.86	85	*e*LR	LR	07 43 29.3	
	313nm,29.4s						
MJAR	Matsushiro Arr	63.41	333	P	P	07 30 48.5	-1.4
	2.1nm,0.8s,baz=180,slow=4.6,SNR=5.1						
USRK	Ussuriysk Ar.	72.41	333	P	P	07 31 46.3	0.0
	6.6nm,0.9s,baz=152,slow=6.0,SNR=6.2						
CMAR	Chiang Mai Arr	78.29	295	P	P	07 32 22.6	+1.8
	6.1nm,0.8s,baz=136,slow=4.3,SNR=10						
CMAR				LR	LR	08 10 28.8	
	comp=Z,18nm,18.1s,baz=95,slow=38						
NVAR	Mina Array Bea	90.11	49	P	P	07 33 20.9	+0.2
	5.1nm,0.9s,baz=223,slow=6.5,SNR=8.8						
ILAR	Eielson Array	91.53	18	P	P	07 33 25.7	-0.7
	1.0nm,0.8s,baz=220,slow=5.9,SNR=6.0						
GERES	GERESS Array B	145.12	330	PKP	PKPdf	07 39 58.2	+0.5
	2.0nm,0.7s,baz=116,slow=3.1,SNR=6.2						
DAVOX	Davos/Dischmat	148.39	331	PKPbc	PKPbc	07 40 06.0	-0.9
	6.1nm,0.6s,baz=26,slow=8.6,SNR=4.7						
TORD	Torodi Ar. Bea	165.42	243	PKP	PKPdf	07 40 26.4	+0.7
	1.2nm,1.1s,baz=198,slow=9.2,SNR=4.0						

*JMA **19** 07:30:53.8±0.2,24°.01N×122°.87E, h16km±3km, M2.7*
*ISCJB **19** 07:30:54.7±0.6,24°.02N±0°.04×122°.90E±0°.02, h18km±7km, Error ellipse: s-maj=7.3km s-min=3.5km az=1.4*
*TAP **19** 07:30:55.3,24°.10N×122°.94E, h42km±1km, ML3.0, D*
ISC 19 07:30:54.7±1.2,24°.07N±0°.05×122°.92E±0°.02, h19km±3km, n26, σ0§49/42, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JYNG	Yonagunijimaku	0.39	4	P	Pg	07 31 02.6	-0.2
JYNG				S	Sb	07 31 08.7	0.0
YOJ	Yonaguni jima	0.40	12	P	Pg	07 31 03.0	-0.1
YOJ				S	Sb	07 31 09.8	+0.6
IRIF	Iriomote-Funau	0.79	70	P	Pb	07 31 09.8	0.0
IRIF				S	Sg	07 31 21.1	+0.5
HATJ	Hateruma jima	0.81	90	P	Pb	07 31 09.8	-0.4
HATJ				S	Sg	07 31 21.7	+0.4
JKRS	Kuro-shima	1.01	80	P	Pn	07 31 13.9	0.0
JKRS				S	Sg	07 31 28.1	+0.5
TWC	Suao	1.12	299	*e*P	Pb	07 31 15.7	+0.3
	baz=297						
TWC				S	Sb	07 31 29.7	+0.1
	baz=297						
ENA	Nanau	1.13	289	P	Pb	07 31 15.7	0.0
	baz=286						
ENA				S	Sn	07 31 30.8	+0.1
	baz=286						
JIJ	Ishigaki jima	1.16	75	P	Pn	07 31 15.5	-0.4
JIJ				S	Sb	07 31 30.7	0.0
TWB1	Santiao Chiao	1.27	318	*e*P	Pg	07 31 19.5	+0.3
	baz=316						
TWE	Neicheng	1.31	300	*e*P	Pn	07 31 17.3	-0.8
	baz=298						
ENTT	Nioudou	1.36	295	*e*P	Pn	07 31 18.9	+0.2
	baz=293						
JISG	Ishigakijimahi	1.37	67	P	Pn	07 31 18.0	-0.8
JISG				S	Sb	07 31 37.5	+0.6
ESL	Shilin	1.38	260	*e*P	Pn	07 31 18.7	-0.3
	baz=258						
NWF	Wu-fen Shan	1.44	314	*e*P	Pn	07 31 19.6	-0.3
	baz=312						
NWF				*e*S	Sn	07 31 38.1	-0.2
	baz=312						
WHF	Hehuan Shan	1.51	273	*e*P	Pn	07 31 21.2	0.0
	baz=271						
NSK	Sanguang	1.55	293	*e*P	Pb	07 31 22.8	-0.1
	baz=291						
NSK				*e*S	Sb	07 31 41.8	-0.3
	baz=291						
TWT	Tachien	1.60	277	*e*P	Pb	07 31 23.8	-0.1
	baz=275						
TWF1	Yuli	1.65	245	*e*P	Pn	07 31 22.7	0.0
	baz=243						
WDT	Danda	1.66	260	*e*P	Pn	07 31 21.7	-1.5
	baz=258						
JTJ	Tarama	1.72	70	P	Pb	07 31 25.0	-0.8
JTJ				*e*S	Sb	07 31 48.1	+1.0
NSTT	Nanjuang	1.84	288	*e*P	Pb	07 31 27.2	-0.5
	baz=286						
SMLT	Sun Moon Lake	1.86	265	*e*P	Pn	07 31 24.6	-1.1
	baz=263						
TYC	Yuchr	1.89	266	*e*P	Pn	07 31 25.9	-0.1
	baz=264						
TYC				*e*S	Sn	07 31 49.1	-0.3
	baz=264						
CHN5	Tsauling	2.10	258	*e*P	Pn	07 31 29.2	+0.2
	baz=256						
CHN5				*e*S	Sn	07 31 54.8	0.0
	baz=256						
CHN4	Tsaushan	2.25	252	*e*P	Pn	07 31 30.8	-0.1
	baz=251						
CHN4				*e*S	Sn	07 31 58.1	0.0
	baz=251						
CHN1	Nanshi	2.36	249	*e*P	Pn	07 31 32.8	+0.3
	baz=247						
CHN1				*e*S	Sn	07 32 00.8	-0.2
	baz=247						

*IDC **19** 07:40:57.4±3.3, 46°.28S×166°.08E, h0km, mb3.6/2, mb1 3.8/3, mb1mx3.6/31, mbtmp3.6/3, ML3.5/1, Error ellipse: s-maj=94.3km s-min=35.5km az=172.0*
*ISCJB **19** 07:40:58.1±1.0, 46°.27S±0°.07×165°.99E±0°.08, h13km, mb3.6/2, Error ellipse: s-maj=10.9km s-min=7.4km az=27.2*
*NEIC **19** 07:41:01.7, 46°.41S×165°.95E, h33km, ML4.0(WEL), After WEL.*
*WEL **19** 07:41:01.4±0.4, 46°.37S×165°.92E, h33km, ML4.0/12, Error ellipse: s-maj=4.9km s-min=2.2km az=90.0*
ISC 19 07:40:59.2±1.2, 46°.30S±0°.07×166°.11E±0°.07, h13km, n41, σ1§22/45, 2C, Off west coast of South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DCZ	Deep Cove	1.11	42	AML	AML	07 41 43.4	
DCZ				AML	AML	07 41 45.3	
DCZ	Deep Cove	1.11	42	Pn	Pb	07 41 18.6	-1.5
APZ	The Paps	1.41	113	PN	Pn	07 41 25.3	+0.8
APZ				SN	Sn	07 41 43.8	+0.8
APZ				AML	AML	07 41 45.2	
APZ	The Paps	1.41	113	Pn	Pn	07 41 25.3	+0.8
MLZ	Mavora Lakes	1.69	57	PN	Pb	07 41 29.8	-0.3
MLZ				SN	Sn	07 41 50.5	+0.6
MLZ				AML	AML	07 41 57.9	
MLZ	Mavora Lakes	1.69	57	Pn	Pb	07 41 29.8	-0.3
MLZ				Sn	Sb	07 41 51.5	+0.2
MSZ	Milford Sound	2.07	39	PN	Pn	07 41 35.1	+1.5
MSZ				AML	AML	07 42 13.7	
MSZ				AML	AML	07 42 13.8	
MSZ				AML	AML	07 42 15.1	
MSZ				AML	AML	07 42 15.2	
MSZ	Milford Sound	2.07	39	Pn	Pn	07 41 35.1	+1.5
SYZ	Scrubby Hill	2.11	98	⇑PN	Pn	07 41 35.4	+1.3
SYZ				SN	Sn	07 42 01.1	+0.9
SYZ				AML	AML	07 42 04.5	
SYZ				AML	AML	07 42 08.4	
SYZ				AML	AML	07 42 08.4	
SYZ	Scrubby Hill	2.11	98	Pn	Pn	07 41 35.4	+1.3
TUZ	Tuapeka	2.48	83	PN	Pn	07 41 40.5	+1.3
TUZ				AML	AML	07 42 16.4	
TUZ				AML	AML	07 42 16.4	
TUZ				AML	AML	07 42 18.0	
TUZ				AML	AML	07 42 18.0	
TUZ	Tuapeka	2.48	83	Pn	Pn	07 41 40.5	+1.3
EAZ	Earnscleugh	2.48	66	PN	Pn	07 41 41.4	+2.1
EAZ				AML	AML	07 42 14.0	
EAZ				AML	AML	07 42 15.0	
EAZ				AML	AML	07 42 15.0	
EAZ				AML	AML	07 42 15.0	
EAZ	Earnscleugh	2.48	66	Pn	Pn	07 41 41.4	+2.1
WKZ	Wanaka	2.52	55	PN	Pb	07 41 42.4	-1.9
WKZ				AML	AML	07 42 21.3	
WKZ				AML	AML	07 42 22.5	
WKZ	Wanaka	2.52	55	Pn	Pb	07 41 42.4	-1.9
JCZ	Jackson Bay	2.92	41	PN	Pn	07 41 47.0	+1.6
JCZ				AML	AML	07 42 35.1	
JCZ				AML	AML	07 42 41.7	
JCZ	Jackson Bay	2.92	41	Pn	Pn	07 41 47.0	+1.6
ODZ	Otahua Downs	3.42	70	⇑PN	Pn	07 41 52.5	+0.4
ODZ				AML	AML	07 42 45.8	
ODZ	Otahua Downs	3.42	70	Pn	Pn	07 41 52.5	+0.4
LBZ	Lake Benmore	3.45	58	PN	Pn	07 41 53.5	+0.8
LBZ				AML	AML	07 43 07.8	
LBZ				AML	AML	07 43 08.0	
LBZ	Lake Benmore	3.45	58	Pn	Pn	07 41 53.5	+0.8
FOZ	Fox Glacier	3.82	45	PN	Pn	07 41 59.2	+1.6
FOZ	Fox Glacier	3.82	45	Pn	Pn	07 41 59.8	+2.1
RPZ	Rata Peaks	4.36	55	Pn	Pn	07 42 04.9	-0.2
	2.4nm,0.3s,baz=264,slow=7.0,SNR=17						
RPZ				Sn	Sn	07 42 54.2	-1.4
	5.7nm,0.3s,baz=38,slow=19,SNR=10						
RPZ	Rata Peaks	4.36	55	PN	Pn	07 42 05.1	0.0
RPZ				AML	AML	07 42 58.8	
RPZ				AML	AML	07 43 14.1	
RPZ	Rata Peaks	4.36	55	Pn	Pn	07 42 05.1	0.0
WVZ	Waitaha Valley	4.61	47	PN	Pn	07 42 10.4	+1.9
WVZ	Waitaha Valley	4.61	47	Pn	Pn	07 42 10.4	+1.9
INZ	Inchbonnie	5.23	49	PN	Pn	07 42 17.3	+0.3
LTZ	Lake Taylor	5.63	54	PN	Pn	07 42 22.5	-0.2
LTZ	Lake Taylor	5.63	54	Pn	Pn	07 42 22.5	-0.2
DSZ	Denniston Nort	6.13	44	PN	Pn	07 42 30.3	+0.9
DSZ	Denniston Nort	6.13	44	Pn	Pn	07 42 30.3	+0.9
THZ	Tophouse	6.67	50	PN	Pn	07 42 37.9	+1.0
THZ	Tophouse	6.67	50	Pn	Pn	07 42 37.9	+1.0
QRZ	Quartz Range	7.19	43	PN	Pn	07 42 45.3	+1.4
QRZ	Quartz Range	7.19	43	Pn	Pn	07 42 45.3	+1.4
ASAR	Alice Springs	34.35	300	P	P	07 47 45.6	-0.2
	0.6nm,0.6s,baz=131,slow=8.5,SNR=7.6						
WRA	Warramunga Arr	36.98	305	P	P	07 48 08.2	0.0
	0.7nm,0.8s,baz=138,slow=8.0,SNR=6.1						
BRTR	Keskin Array B	145.06	277	PKPbc	PKPbc	08 00 34.8	-0.6
	0.7nm,0.6s,baz=116,slow=3.4,SNR=4.3						

*IDC **19** 07:48:08.1±1.5, 6°.60S×148°.05E, h0km, mb3.6/4, mb1 3.8/6, mb1mx3.6/34, mbtmp3.6/6, ML3.5/1, Error ellipse: s-maj=55.0km s-min=24.5km az=116.0*
*ISCJB **19** 07:48:13.6±1.4, 6°.6S±0°.2×147°.8E±0°.3, h51km, mb3.6/4, Error ellipse: s-maj=40.2km s-min=20.2km az=23.2*
ISC 19 07:48:15.0±1.5, 6°.6S±0°.2×147°.9E±0°.4, h51km, n7, σ0§20/7, mb3.6/4, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	Port Moresby	2.85	195	Pn	Pn	07 48 58.0	-0.1
	7.5nm,0.3s,baz=32,slow=6.4,SNR=13						
PMG				Sn	Sn	07 49 36.9	+5.7
	16nm,0.3s,baz=350,slow=18,SNR=7.8						
WRA	Warramunga Arr	18.67	224	P	P	07 52 28.8	-0.2
	0.1nm,0.3s,baz=52,slow=11,SNR=8.2						
ASAR	Alice Springs	21.63	217	P	P	07 53 01.0	-0.1
	0.9nm,0.6s,baz=52,slow=8.7,SNR=13						
FITZ	Fitzroy Crossi	24.51	240	P	P	07 53 29.9	0.0
	1.9nm,0.4s,baz=50,slow=8.6,SNR=11						
STKA	Stephens Creek	25.80	192	P	P	07 53 41.6	+0.3
	2.1nm,0.8s,baz=352,slow=7.2,SNR=3.8						
ILAR	Eielson Array	85.71	23	P	P	08 00 48.0	-0.1
	0.2nm,0.7s,baz=239,slow=5.7,SNR=4.3						
TORD	Torodi Ar. Bea	146.10	284	PKPbc	PKPab	08 07 51.4	+0.1
	0.3nm,0.4s,baz=65,slow=4.0,SNR=9.7						

*ISCJB **19** 07:49:02.7±0.5, 6°.79N±0°.04×73°.06W±0°.04, h162km±4km, Error ellipse: s-maj=8.9km s-min=3.8km az=41.5*
*FUNV **19** 07:49:04.7, 6°.83N×73°.09W, h170km, MW3.4*
*RSNC **19** 07:49:05.4±0.5, 6°.76N×73°.12W, h146km±3km, ML3.6*
ISC 19 07:49:02.5±1.4, 6°.79N±0°.04×73°.08W±0°.05, h165km±8km, n33, σ1§09/50, 1C-11D, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BARC	Barichara	0.22	207	*i* P	Pn	07 49 25.0	0.0
BARC				*e*S	Sn	07 49 40.8	-1.3
BARC				*i*		07 49 42.5	
	comp=Z,749nm,0.2s						
BTLC	Betulia, Santa	0.22	304	*i* P	Pn	07 49 25.2	+0.2
BTLC				*e*S	Sn	07 49 40.6	-1.5
GIRC	Giron, Santand	0.31	338	*i* P	Pn	07 49 25.2	+0.2
PAMC	Pamplona, Colo	0.66	35	*i* P	Pn	07 49 27.9	+0.9
PAMC				*e*S	Sn	07 49 44.9	-0.8
BRRC	Barranca, Sant	0.70	297	⇑*i* P	Pn	07 49 26.9	+0.3
BRRC				*e*S	Sn	07 49 43.9	-1.2
BRRC				*i*		07 49 46.4	
	comp=Z,954nm,0.2s						
RUSC	La Rusia	0.89	180	*e*P	Pn	07 49 29.0	+0.4
RUSC				*e*S	Sn	07 49 47.0	-1.4
RUSC				*i*		07 49 48.9	
	comp=Z,290nm,0.4s						
GRMC	Gramalote, San	0.96	17	*i* P	Pn	07 49 30.9	+2.3
GRMC				*e*S	Sn	07 49 50.6	+2.0
GRMC				*i*		07 49 51.6	
	comp=Z,514nm,0.4s						
CBRI	Barrientos, No	0.96	17	*i* P	Pn	07 49 29.6	+1.0
CBRI				*e*S	Sn	07 49 48.5	-0.2
CBRI				*i*		07 49 53.6	
	comp=Z,564nm,0.6s						
GUEC	Guerrero, Nort	1.04	8	*e*P	Pn	07 49 30.3	+0.8
CAPV	Capacho	1.31	35	⇓*i* P	Pn	07 49 33.0	+1.4
CAPV				*e*S	Sn	07 49 54.7	+0.6
OCAC	Ocana	1.46	351	*e*P	Pn	07 49 33.9	+0.9
OCAC				*e*S	Sn	07 49 56.6	+0.1
OCAC				*i*		07 49 59.2	
	comp=Z,518nm,0.5s						
NORC	Norcasia	2.16	236	*e*P	Pn	07 49 40.9	+0.5
NORC				*e*S	Sn	07 50 08.9	-0.9
HELC	Santa Helena	2.51	256	*e*P	Pn	07 49 45.4	+0.5
HELC				*e*S	Sn	07 50 17.2	-0.3
HELC				*i*		07 50 24.4	
	comp=Z,184nm,0.6s						
VIGV	El Vigia	2.65	40	⇓*i* P	Pn	07 49 47.6	+1.3
VIGV				*e*S	Sn	07 50 19.2	-0.9
SOCV	Socops	2.66	56	⇓*i* P	Pn	07 49 47.4	+1.1
SOCV				*e*S	Sn	07 50 18.7	-1.6
VILC	Villavicencio,	2.73	193	*e*P	Pn	07 49 48.3	+0.9
VILC				*e*S	Sn	07 50 22.3	+0.1
VILC				*i*		07 50 28.5	
	comp=Z,101nm,0.3s						
GUYC	Guyana, Colomb	2.78	236	*e*P	Pn	07 49 49.6	+1.4
GUYC				*e*S	Sn	07 50 22.8	-0.8
GUYC				*i*		07 50 32.1	
	comp=Z,251nm,0.3s						
DBBC	Dabeiba	3.12	274	*e*P	Pn	07 49 53.5	+1.5
TOLC	Tolima	3.13	226	*e*P	Pn	07 49 54.1	+1.6
PRAC	Prado	3.55	211	*e*P	Pn	07 49 58.3	+0.8
PRAC				*e*S	Sn	07 50 40.5	+0.2
ELOV	Elorza	3.58	86	⇓*e*P	Pn	07 49 59.3	+1.5
SJAC	San Juan de Ar	3.60	194	*e*P	Pn	07 49 58.9	+0.7
SJAC				*i*		07 50 52.7	
	comp=Z,173nm,0.5s						
VIRV	Villa del Rosa	3.75	10	⇓*i* P	Pn	07 50 00.0	+0.1
VIRV				*e*S	Sn	07 50 41.9	-2.9
SANV	Sanarito	4.42	52	⇓*e*P	Pn	07 50 09.4	+0.6
CURV	Curarigua	4.45	44	⇓*e*P	Pn	07 50 09.9	+0.8
DABV	Dabajuro	4.76	30	*e*P	Pn	07 50 14.0	+0.9
TEPV	Terepaima	4.97	50	⇓*i* P	Pn	07 50 16.7	+0.7
SIQV	Siquisique	5.01	40	⇓*i* P	Pn	07 50 15.9	-0.6
BAUV	El Baul	5.43	66	⇓*e*P	Pn	07 50 21.4	-0.5
MAPV	Macapo	5.48	56	⇓*e*P	Pn	07 50 23.1	+0.5
MONV	Montecano	5.98	31	*e*P	Pn	07 50 28.9	-0.2
TURV	Turiamo	6.33	55	*e*P	Pn	07 50 34.0	+0.3
CUPV	Cœpira	7.91	65	*e*P	Pn	07 50 54.7	-0.2

*IDC **19** 07:54:02.8±2.7, 6°.55S×147°.74E, h0km, mb4.0/3, mb1 4.1/5, mb1mx3.8/31, mbtmp4.0/5, ML3.8/1, Error ellipse: s-maj=59.2km s-min=36.2km az=94.0*
*NEIC **19** 07:54:08.2±1.0, 6°.60S×147°.63E, h35km, mb4.5/4, Error ellipse: s-maj=25.6km s-min=17.5km az=115.0*
*ISCJB **19** 07:54:09.2±2.0, 6°.7S±0°.1×147°.6E±0°.2, h63km, mb4.2/5, Error ellipse: s-maj=33.1km s-min=19.5km az=166.9*
ISC 19 07:54:10.8±1.5, 6°.6S±0°.1×147°.6E±0°.3, h63km, n12, σ1§95/13, mb4.5/5, 1D, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	Port Moresby	2.82	189	Pn	Pn	07 54 52.4	-1.1
	24nm,0.3s,baz=14,slow=7.4,SNR=28						
PMG				Sn	Sn	07 55 31.5	+5.1
	19nm,0.3s,baz=355,slow=23,SNR=6.7						
PMG	Port Moresby	2.82	189	*e*Pn	Pn	07 54 51.9	-1.7
PMG				*e*Sn	Sn	07 55 24.9	-1.5
WRAB	Tennant Creek	18.46	223	*e*P	Pn	07 58 22.3	-0.1
	2.8nm,0.7s						
WRA	Warramunga Arr	18.48	223	P	P	07 58 21.0	-0.8
	0.3nm,0.3s,baz=50,slow=11,SNR=14						
ASAR	Alice Springs	21.47	216	P	P	07 58 54.1	-0.2
	1.2nm,0.5s,baz=54,slow=9.3,SNR=37						
FITZ	Fitzroy Crossi	24.26	240	P	P	07 59 22.7	+0.5
	7.4nm,0.5s,baz=58,slow=7.3,SNR=44						
STKA	Stephens Creek	25.77	192	P	P	07 59 35.6	-0.1
	0.9nm,0.6s,baz=343,slow=12,SNR=3.8						
MBWA	Marble Bar	30.59	239	*e*P	P	08 00 19.1	+0.1
	6.1nm,0.3s						
QSPA	South Pole Qui	83.37	180	*e*P	P	08 06 30.0	-1.0
	3.5nm,0.6s						
SYO	Syowa Base	90.24	200	⇓*e*pP	pP	08 07 15.0	-6.9
V34A	Guthrie	113.97	54	*e*PKPdf	PKiKP	08 12 44.8	+1.6
TORD	Torodi Ar. Bea	145.80	284	PKPbc	PKPab	08 13 45.4	+1.0
	0.4nm,0.4s,baz=66,slow=3.2,SNR=12						

DJA 19 08:11:16.3±0.5, 9°.S±7°.×11°.1E±°, h53km±21km, M3.7/6, MLv3.7/6, South of Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCJI	Pacitan	1.33	26	P	Pn	08 11 38.0	-0.5
PCJI				S	Sn	08 11 55.7	+0.6
UGM	Wanagama	1.47	358	P	Pn	08 11 40.4	-0.1
UGM				S	Sn	08 11 59.6	+1.0
PWJI	Pagerwojo	1.82	42	P	Pn	08 11 43.4	-1.8
PWJI				S	Sn	08 12 05.6	-1.6
NGJI	Ngawi	2.19	24	P	Pn	08 11 50.5	+0.2
CMJI	Cimerak	2.64	307	P	Pn	08 11 56.7	+0.2
CMJI				S	Sn	08 12 28.6	+1.2
UWJI	Ujung Watu	2.97	7	P	Pn	08 12 01.0	-0.1
GMJI	Gumukmas	3.04	69	P	Pn	08 12 02.0	+0.1
GMJI				S	Sn	08 12 37.0	-0.1
JAGI	Jajag, Banyuwa	3.65	76	P	Pn	08 12 10.0	-0.3
JAGI				S	Sn	08 12 51.1	-1.0
JCJI	Jatiwangi	3.68	321	P	Pn	08 12 07.9	-2.8
CNJI	Cibinong	3

	comp=E,392nm,0.4s							
SVKR	**Severomuysk**	**1.51**	**84**	*e*Pg	**Pn**	**08 14 16.3**	**-0.3**
SVKR				*e*Sg	**Sn**	**08 14 35.8**	**-0.5**
SVKR				*e*		08 14 39.0	
SVKR				Pmax			
	comp=E,225nm,0.4s						
SVKR				max			
	comp=E,2μm,0.5s						
SVKR	**Severomuysk**	**1.51**	**84**	*e*PG	**Pn**	**08 14 16.4**	**-0.2**
SVKR				*e*		08 14 36.8	
SVKR				pmax	pmax		
	comp=Z,207nm,0.3s						
SVKR				smax	smax		
	comp=N,4μm,0.7s						
UKT	**Uakit**	**1.63**	**107⇑**	*i*Pg	**Pn**	**08 14 18.7**	**+0.5**
UKT				*e*Sg	**Sn**	**08 14 39.8**	**+0.5**
UKT				*e*Sb	**Sg**	**08 14 41.3**	**-0.4**
UKT				Pmax			
	comp=N,178nm,0.6s						
UKT				Smax			
	comp=N,489nm,0.6s						
UKT	**Uakit**	**1.63**	**107⇑**	*i*PN	**Pn**	**08 14 18.8**	**+0.5**
UKT				*e*		08 14 36.4	
UKT				pmax	pmax		
	comp=Z,115nm,0.2s						
UKT				smax	smax		
	comp=E,496nm,0.5s						
SYVR	**Suvo**	**2.38**	**193**	*e*Pg	**Pb**	**08 14 32.8**	**+0.4**
SYVR				*e*		08 14 35.7	
SYVR				*e*Sg	**Sg**	**08 15 05.3**	**-0.7**
SYVR				max			
	comp=E,76nm,0.7s						
SYVR				Smax			
	comp=E,217nm,0.7s						
SYVR	**Suvo**	**2.38**	**193**	*e*PN	**Pb**	**08 14 32.5**	**+0.1**
SYVR				*e*		08 15 04.4	
SYVR				pmax	pmax		
	comp=Z,77nm,0.6s						
SYVR				smax	smax		
	comp=E,222nm,0.7s						
BOD	**Bodaibo**	**2.51**	**42**	*e*Pg	**Pb**	**08 14 33.8**	**-0.8**
BOD				*e*Sn	**Sn**	**08 15 01.9**	**+0.9**
BOD				*e*Sg	**Sb**	**08 15 06.3**	**+0.7**
BOD				Pmax			
	comp=E,38nm,0.3s						
BOD				Smax			
	comp=E,194nm,0.5s						
BOD	**Bodaibo**	**2.51**	**42⇑**	*i*PN	**Pn**	**08 14 31.6**	**+1.3**
BOD				*e*		08 14 37.9	
BOD				*e*S	**Sn**	**08 15 02.5**	**+1.5**
BOD				*e*		08 15 06.5	
BOD				pmax	pmax		
	comp=Z,38nm,0.3s						
BOD				smax	smax		
	comp=E,195nm,0.4s						
NLYR	**Nelyaty**	**2.74**	**77**	*e*PN	**Pn**	**08 14 34.3**	**+0.9**
NLYR				*e*		08 14 38.4	
NLYR				*e*		08 15 12.7	
NLYR				pmax	pmax		
	comp=Z,52nm,0.9s						
NLYR				smax	smax		
	comp=E,1μm,0.6s						
OGRR	**Ongureny**	**3.02**	**220**	*e*Pn	**Pn**	**08 14 40.0**	**+2.7**
OGRR				*e*Pg	**Pb**	**08 14 44.0**	**+0.7**
OGRR				*e*Sn	**Sn**	**08 15 14.7**	**+1.2**
OGRR				*e*Sg	**Sg**	**08 15 24.5**	**-1.8**
OGRR				Pmax			
	comp=E,13nm,0.4s						
OGRR				Smax			
	comp=E,68nm,0.7s						
VTMR	**Vitim**	**3.58**	**14**	*e*	**Sn**	**08 15 32.9**	**+5.6**
VTMR				*e*Sg	**Sg**	**08 15 41.4**	**-3.0**
ZRHB	**Zarechye**	**4.07**	**214**	*e*Sg	**Sg**	**08 15 56.9**	**-3.2**
ZRHB				*e*		08 15 58.3	
ZRHB				*e*		08 16 10.5	
ZRHB				max			
	comp=E,201nm,1.2s						
TRG	**Tyrgan**	**4.18**	**221**	*e*	**Pn**	**08 14 55.6**	**+2.4**
TRG				*e*		08 15 05.2	
TRG				*e*		08 15 41.9	
TRG				*e*Sg	**Sg**	**08 15 59.3**	**-4.2**
TRG				max			
	comp=E,10.0nm,0.7s						
TRG				Smax			
	comp=E,54nm,0.4s						
CRS	**Chara**	**4.20**	**74**	*e*Pg	**Pb**	**08 15 05.0**	**+1.6**
CRS				*e*		08 15 08.2	
CRS				*e*Sg	**Sb**	**08 15 59.4**	**+5.2**
CRS				max			
	comp=E,26nm,0.8s						
CRS				Smax			
	comp=E,185nm,1.6s						
CRS	**Chara**	**4.20**	**74**	*e*PN	**Pb**	**08 15 05.1**	**+1.6**
CRS				*e*		08 15 59.5	
CRS				pmax	pmax		
	comp=Z,38nm,1.4s						
CRS				smax	smax		
	comp=E,184nm,1.5s						
CIT	**Chita**	**4.27**	**157**	*e*Sg	**Sb**	**08 15 59.7**	**+3.6**
CIT				Smax			
	comp=E,145nm,0.4s						
UUDB	**Ulan-Yde**	**4.54**	**206**	*e*Pg	**Pb**	**08 15 12.5**	**+3.3**
UUDB				*e*Sg	**Sg**	**08 16 12.5**	**-2.6**
UUDB				Pmax			
	comp=E,16nm,0.6s						
UUDB				Smax			
	comp=E,63nm,1.4s						
KAB	**Kabansk**	**4.66**	**214**	*e*Sg	**Sg**	**08 16 17.1**	**-1.9**
KAB				*e*		08 16 24.7	
KAB				max			
	comp=E,195nm,0.1s						
HRMR	**Khuramsha**	**4.94**	**210**	*e*Pn	**Pn**	**08 15 06.2**	**+2.4**
HRMR				*e*Pg	**Pb**	**08 15 18.3**	**+2.2**
HRMR				*e*Sn	**Sn**	**08 15 59.2**	**-1.8**
HRMR				*e*		08 16 07.5	
HRMR				*e*Sg	**Sg**	**08 16 23.9**	**-4.2**
HRMR				Pmax			
	comp=E,16nm,0.7s						
HRMR				Smax			
	comp=E,108nm,0.9s						
KHNR	**Khani**	**5.13**	**76**	*e*Sg	**Sg**	**08 16 27.9**	**-6.2**
TUP	**Tupik**	**5.42**	**103**	*e*Pn	**Pn**	**08 15 10.7**	**+0.4**
TUP				*e*		08 15 13.9	
TUP				*e*Pg	**Pb**	**08 15 26.5**	**+2.3**
TUP				*e*Sg	**Sg**	**08 16 36.8**	**-6.6**
TUP				max			
	comp=E,6.0nm,0.3s						
TUP				Smax			
	comp=E,126nm,1.0s						
TUP	**Tupik**	**5.42**	**103**	*e*PN	**Pn**	**08 15 10.5**	**+0.2**
TUP				*e*		08 15 26.5	
TUP				*e*S	**Sn**	**08 16 11.6**	**-1.2**
TUP				*e*		08 16 36.7	
TUP				pmax	pmax		
	comp=Z,13nm,0.5s						
TUP				smax	smax		
	comp=N,127nm,0.9s						
LSTR	**Listvyanka**	**5.46**	**223**	*e*	**Sn**	**08 16 12.5**	**-1.0**
LSTR				*e*Sg	**Sg**	**08 16 40.4**	**-4.0**
LSTR				Smax			
	comp=N,29nm,0.9s						
YKLR	**Yuktali**	**6.03**	**80**	*e*Sg	**Sb**	**08 16 54.3**	**+7.6**
TLY	**Talaya**	**6.08**	**228**	*e*	**Sn**	**08 16 29.4**	**+0.6**
TLY				*e*Sg	**Sg**	**08 16 59.9**	**-4.4**
TLY				Smax			
	comp=N,19nm,0.9s						
KPC	**Khapcheranga**	**6.35**	**171**	*e*Pg	**Pb**	**08 15 42.9**	**+2.8**
KPC				*e*		08 16 47.6	
KPC				*e*Sg	**Sg**	**08 17 05.4**	**-7.8**
KPC				Pmax			
	comp=N,5.0nm,0.5s						
KPC				Smax			
	comp=N,65nm,1.2s						
ARS	**Arshan**	**6.44**	**234**	*e*	**Pn**	**08 15 22.3**	**-2.0**
ARS				*e*		08 15 32.0	
ARS				*e*Sn	**Sn**	**08 16 38.4**	**+0.5**
ARS				*e*Sg	**Sg**	**08 17 12.5**	**-3.5**
ARS				Smax			
	comp=N,119nm,0.8s						
ARS	**Arshan**	**6.44**	**234**	*e*PN	**Pn**	**08 15 24.8**	**+0.5**
ARS				*e*		08 15 46.2	
ARS				*e*S	**Sn**	**08 16 38.6**	**+0.7**
ARS				*e*		08 17 12.6	
ARS				pmax	pmax		
	comp=Z,7.0nm,0.3s						
ARS				smax	smax		
	comp=E,120nm,0.7s						
ZAK	**Zakamensk**	**7.23**	**222**	*e*Sg	**Sg**	**08 17 36.5**	**-4.9**
ZAK				Smax			
	comp=E,20nm,1.3s						
MOY	**Mondy**	**7.28**	**238**	*e*Pn	**Pn**	**08 15 38.9**	**+3.1**
MOY				*e*		08 15 55.8	
MOY				*e*Sn	**Sn**	**08 16 57.3**	**-1.2**
MOY				*e*Sg	**Sg**	**08 17 37.4**	**-5.4**
MOY				max			
	comp=E,8.0nm,0.5s						
MOY				Smax			
	comp=E,33nm,2.0s						
MOY	**Mondy**	**7.28**	**238**	*e*PN	**Pn**	**08 15 39.0**	**+3.1**
MOY				*e*		08 16 03.5	
MOY				*e*S	**Sn**	**08 16 59.4**	**+0.9**
MOY				*e*		08 17 41.0	
MOY				pmax	pmax		
	comp=Z,5.0nm,0.4s						
MOY				smax	smax		
	comp=E,29nm,1.6s						
ORL	**Orlik**	**7.34**	**247**	*e*Pn	**Pn**	**08 15 40.4**	**+3.6**
ORL				*e*Pg	Pg	08 16 03.7	-6.3
ORL				*e*Sn	**Sn**	**08 17 01.0**	**+0.8**
ORL				*e*Sg	**Sg**	**08 17 40.7**	**-4.3**
ORL				max			
	comp=E,3.0nm,0.8s						
ORL				Smax			
	comp=E,20nm,0.7s						
ORL	**Orlik**	**7.34**	**247**	*e*PN	**Pn**	**08 15 40.1**	**+3.3**
ORL				*e*		08 16 03.9	
ORL				*e*S	**Sn**	**08 17 01.4**	**+1.2**
ORL				*e*		08 17 39.1	
ORL				pmax	pmax		
	comp=Z,5.0nm,0.5s						
ORL				smax	smax		
	comp=N,20nm,1.0s						
IENR	**Iengra**	**7.82**	**82**	*e*	Sn	08 16 59.4	-12
IENR				*e*Sg	**Sg**	**08 17 51.5**	**-8.6**

*ISK **19** 08:15:23.3, 39.°89N×37.°49E, h6km, MD2.9*
*ISCJB **19** 08:15:25.0±0.6, 39.°94N±0.°04×37.°41E±0.°05, h25km±7km, Error ellipse: s-maj=7.8km s-min=5.6km az=159.8*
*CSEM **19** 08:15:24.6±0.2, 39.°92N×37.°44E, h15km, MD2.6, Error ellipse: s-maj=7.8km s-min=5.4km az=167.0*
*DDA **19** 08:15:25.1, 40.°00N×37.°41E, h7km, Md2.6*
ISC 19 08:15:25.2±0.9, 39.°92N±0.°04×37.°45E±0.°03, h13km±8km, n19, σ1°09/31, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CUZAR	**Zara_SIVAS**	**0.25**	**98**	P	**Pg**	**08 15 30.6**	**+0.1**
CUZAR				S	**Sb**	**08 15 36.3**	**+0.4**
CUZAR	**Zara_SIVAS**	**0.25**	**98**	*i* P	**Pg**	**08 15 30.6**	**+0.1**
CUZAR				*i* S	**Sb**	**08 15 36.3**	**+0.4**
SCER	**sogukcermik**	**0.26**	**256**	P	**Pg**	**08 15 29.7**	**-1.0**
SCER				S	**Sg**	**08 15 35.9**	**+1.5**
SCER	**sogukcermik**	**0.26**	**256**	*i* P	**Pg**	**08 15 29.7**	**-1.0**
SCER				*i* S	**Sg**	**08 15 35.9**	**+1.5**
SVSK	**Karacayir**	**0.35**	**269**	*e*PG	**Pg**	**08 15 31.3**	**-1.0**
SVSK				*e*SG	**Sg**	**08 15 37.2**	**+0.2**
SVSK	**Karacayir**	**0.35**	**269**	*e*Pg	**Pg**	**08 15 31.3**	**-1.0**
SVSK				*e*Sg	**Sg**	**08 15 37.2**	**+0.2**
RSDY	**Resadiye-TOKAT**	**0.48**	**349**	*e*PG	**Pg**	**08 15 34.1**	**-0.7**
RSDY				*e*SG	**Sg**	**08 15 41.5**	**+0.2**
RSDY	**Resadiye-TOKAT**	**0.48**	**349**	*e*Pg	**Pg**	**08 15 34.1**	**-0.7**
RSDY				*e*Sg	**Sg**	**08 15 41.5**	**+0.2**
CUKAN	**kangal_SIVAS**	**0.60**	**179**	*i* P	**Pb**	**08 15 37.0**	**-0.7**
CUKAN				*i* S	**Sn**	**08 15 49.1**	**-0.2**
SUSE	**Susehri**	**0.64**	**63**	P	**Pg**	**08 15 36.7**	**-1.1**
SUSE				S	**Sb**	**08 15 48.6**	**+1.2**
SUSE	**Susehri**	**0.64**	**63**	*i* P	**Pg**	**08 15 36.7**	**-1.1**
SUSE				*i* S	**Sb**	**08 15 48.6**	**+1.2**
CUSAR	**Sarkisla-SIVAS**	**1.06**	**242**	P	**Pn**	**08 15 45.8**	**-0.1**
CUSAR	**Sarkisla-SIVAS**	**1.06**	**242**	*i* P	**Pn**	**08 15 45.8**	**-0.1**
CUSAR				*i* S	**Sn**	**08 16 03.8**	**+3.2**
DARE	**Darende-Malaty**	**1.35**	**179**	*e*PN	**Pn**	**08 15 48.4**	**-1.5**
DARE	**Darende-Malaty**	**1.35**	**179**	*e*Pn	**Pn**	**08 15 48.4**	**-1.5**
GUMT	**Gumushane**	**1.64**	**70**	*e*PN	**Pn**	**08 15 53.1**	**-0.8**
GUMT	**Gumushane**	**1.64**	**70**	*e*Pn	**Pn**	**08 15 53.1**	**-0.8**
PTK	**Pertek**	**1.82**	**124**	*e*PN	**Pn**	**08 15 56.2**	**-0.1**
PTK	**Pertek**	**1.82**	**124**	*e*Pn	**Pn**	**08 15 56.3**	**-0.1**

*DDA **19** 08:19:55.6, 37.°96N×28.°51E, h1km, Ml2.8*
*ISCJB **19** 08:20:26.3±0.7, 39.°46N±0.°03×29.°82E±0.°04, h4km±8km, Error ellipse: s-maj=6.6km s-min=4.4km az=42.3*
*ISK **19** 08:20:26.0, 39.°44N×29.°73E, h16km, MD2.6*
*CSEM **19** 08:20:26.0, 39.°44N×29.°73E, h16km, MD2.6*
ISC 19 08:20:25.5±1.2, 39.°51N±0.°03×29.°82E±0.°03, h4km±10km, n25, σ0°88/36, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TVSB	**Tavsanli**	**0.28**	**259**	PG	**Pg**	**08 20 31.0**	**0.0**
TVSB				*e*SG	**Sg**	**08 20 34.9**	**+0.2**
TVSB	**Tavsanli**	**0.28**	**259**	*i* Pg	**Pg**	**08 20 31.0**	**0.0**
TVSB				*e*Sg	**Sg**	**08 20 34.9**	**+0.2**
GDZ	**Gediz**	**0.49**	**212**	*i* P	**Pg**	**08 20 34.7**	**-0.3**
GDZ				*i* S	**Sg**	**08 20 41.7**	**+0.3**
GDZ	**Gediz**	**0.49**	**212**	*i* P	**Pg**	**08 20 34.8**	**-0.1**
GDZ				*i* S	**Sg**	**08 20 41.6**	**+0.3**
BORA	**Eskisehir**	**0.61**	**52**	*i* P	**Pb**	**08 20 38.4**	**-0.5**
BORA				*i* S	**Sn**	**08 20 48.8**	**-2.8**
CAVI	**Cavuskoy**	**0.69**	**1**	*e*PG	**Pn**	**08 20 41.4**	**-0.8**
CAVI	**Cavuskoy**	**0.69**	**1**	*e*Pg	**Pn**	**08 20 41.4**	**-0.8**
GPA	**Golpazari**	**0.87**	**26**	*e*PG	**Pn**	**08 20 45.2**	**+0.7**
GPA	**Golpazari**	**0.87**	**26**	*e*Pg	**Pn**	**08 20 45.2**	**+0.7**
IZI	**Iznik**	**0.87**	**342**	*e*PG	**Pn**	**08 20 44.6**	**0.0**
IZI	**Iznik**	**0.87**	**342**	*e*Pg	**Pn**	**08 20 44.6**	**0.0**
IGD	**Bursa**	**0.89**	**328**	*i* P	**Pn**	**08 20 44.6**	**-0.2**
IGD				*i* S	**Sn**	**08 20 59.0**	**+0.8**
DEMI	**Demirci**	**0.97**	**242**	*i* P	**Pn**	**08 20 44.9**	**-1.1**
DEMI				*i* S	**Sn**	**08 21 01.4**	**+1.0**
DEMI	**Demirci**	**0.97**	**242**	*i* P	**Pn**	**08 20 45.0**	**-1.1**
DEMI				*i* S	**Sn**	**08 21 01.2**	**+0.8**
DURS	**Dursunbey**	**1.04**	**276**	*i* P	**Pn**	**08 20 46.3**	**-0.7**
DURS				*i* S	**Sn**	**08 21 03.5**	**+1.5**
DURS	**Dursunbey**	**1.04**	**276**	*i* P	**Pg**	**08 20 45.6**	**+0.1**
DURS				*i* S	**Sn**	**08 21 03.7**	**+1.6**
GULT	**Gulveren**	**1.07**	**30**	*e*PN	**Pn**	**08 20 47.6**	**+0.3**
GULT	**Gulveren**	**1.07**	**30**	*e*Pn	**Pn**	**08 20 47.6**	**+0.3**
KHAL	**Karahalli**	**1.16**	**193**	*i* P	**Pn**	**08 20 49.4**	**+0.7**
KHAL				*i* S	**Sg**	**08 21 03.4**	**+0.6**
ARMT	**Armutlu**	**1.29**	**326**	*e*PN	**Pg**	**08 20 50.1**	**-0.1**
ARMT	**Armutlu**	**1.29**	**326**	*e*Pn	**Pg**	**08 20 50.1**	**-0.1**
SVRH	**Sivrihisar-ESK**	**1.32**	**92**	*e*PN	**Pg**	**08 20 51.3**	**+0.5**
SVRH	**Sivrihisar-ESK**	**1.32**	**92**	*e*Pn	**Pg**	**08 20 51.3**	**+0.5**
KULA	**Kula-Manisa**	**1.34**	**223**	*e*PN	**Pn**	**08 20 49.9**	**-1.2**
KULA	**Kula-Manisa**	**1.34**	**223**	*e*Pn	**Pn**	**08 20 49.9**	**-1.2**

*WAR **19** 08:20:57.5, 52.°44N×16.°19E, h1km*
*CSEM **19** 08:21:15.3±0.6, 51.°46N×16.°27E, h1km, Error ellipse: s-maj=9.8km s-min=5.7km az=26.0*
PRU 19 08:21:16.8, 51.°41N×16.°27E, h0km, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.57**	**179**	*e*Pg	Pg	08 21 27.4	-0.3
KSP				*e*Sg	Sg	08 21 35.3	+0.3
KSP	**Ksiaz**	**0.57**	**179**	*e*Pg	Pg	08 21 27.4	-0.3
KSP				*e*Sg	Sg	08 21 35.3	+0.3
KSP	**Ksiaz**	**0.57**	**179**	*e*Pg	Pg	08 21 27.4	-0.3
KSP				*e*Sg	Sg	08 21 35.3	+0.3
UPC	**Upice**	**0.92**	**190**	*e*PG	Pg	08 21 34.6	+0.2
UPC				*e*SG	Sg	08 21 46.1	-0.2
UPC	**Upice**	**0.92**	**190**	Pg	Pg	08 21 34.6	+0.2
UPC				Sg	Sg	08 21 46.1	-0.2
DPC	**Dobruska-Polom**	**1.06**	**178**	*e*PG	Pg	08 21 36.4	-0.7
DPC				*e*SG	Sg	08 21 50.5	-0.4
	comp=Z,2.4nm,0.2s						
DPC	**Dobruska-Polom**	**1.06**	**178**	Pg	Pg	08 21 36.4	-0.7
DPC				Sg	Sg	08 21 50.5	-0.4
	2.4nm,0.2s						
KRLC	**Kraliky**	**1.38**	**166**	*e*PG	Pg	08 21 42.4	-0.7
KRLC				*e*SG	Sg	08 22 00.9	0.0
KRLC	**Kraliky**	**1.38**	**166**	Pg	Pg	08 21 42.4	-0.7
KRLC				Sg	Sg	08 22 00.9	0.0
PVCC	**Panska Ves**	**1.39**	**231**	*e*PG	Pg	08 21 42.3	-1.1
PVCC				*e*SG	Sg	08 22 01.1	-0.4
	comp=Z,11nm,0.2s						
PVCC	**Panska Ves**	**1.39**	**231**	Pg	Pg	08 21 42.3	-1.1
PVCC				Sg	Sg	08 22 01.1	-0.4
	11nm,0.2s						

IDC 19 08:22:51.9±4.0, 17.°53S×70.°73W, h91km±32km, mb3.3/2, mb1 3.3/4, mb1mx3.2/25, mbtmp3.5/4, Error ellipse: s-maj=56.5km s-min=22.3km az=97.0, Near coast of Peru

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LPAZ	**La Paz**	**2.78**	**64**	P	Pn	08 23 35.3	+0.2
	0.4nm,0.3s,baz=264,slow=6.1,SNR=15						
LVC	**Limon Verde**	**5.33**	**162**	P	Pn	08 24 08.6	-0.7
	16nm,0.3s,baz=31,slow=4.2,SNR=9.5						
LVC				S	Sn	08 25 10.6	+0.9
	27nm,0.3s,baz=232,slow=27,SNR=1.4						
TORD	**Torodi Ar. Bea**	**77.71**	**72**	P	P	08 34 39.2	-0.1
	0.9nm,0.7s,baz=255,slow=6.1,SNR=6.2						
YKA	**Yellowknife Ar**	**86.90**	**341**	P	P	08 35 26.3	+0.2
	0.2nm,0.7s,baz=138,slow=5.1,SNR=4.8						

MEX 19 08:29:40.7±0.7, 13.°97N×91.°75W, h5km±176km, MD3.8, Near coast of Guatemala

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		**2.24**	**321**	*e*P	Pn	08 30 15.9	-2.6
PCIG				*e*S	Sn	08 30 42.1	-4.4
CCIG	**Comitan**	**2.33**	**351**	*e*P	Pn	08 30 16.8	-3.2
CCIG				*e*S	Sn	08 30 44.8	-4.4
TGIG		**3.09**	**335**	*i* P	Pn	08 30 28.2	-2.1
TGIG				*i* S	Sn	08 31 03.1	-4.6

*NIED **19** 08:32:00, 38.°30N×141.°80E, h59km, Mw4.7 Best double couple: M0:1.47000×10^16 NP1:φ=99.00000°, δ=20.00000°, λ=103.00000°. NP2:φ=265.00000°, δ=71.00000°, λ=85.00000°.*
*ISCJB **19** 08:32:48.9±0.3, 38.°39N±0.°02×141.°70E±0.°03, h64km±2km, mb4.8/161, Error ellipse: s-maj=4.8km s-min=3.1km az=38.2*
*MOS **19** 08:32:48.5±0.9, 38.°62N×141.°67E, h53km, mb5.0/67, Error ellipse: s-maj=7.6km s-min=4.6km az=97.4*
*IDC **19** 08:32:49.8±1.5, 38.°32N×141.°81E, h66km±13km, mb4.2/23, mb1 4.4/28, mb1mx4.3/35, mbtmp4.5/28, MS3.9/16, Ms1 3.9/16, ms1mx3.6/55, Error ellipse: s-maj=14.0km s-min=10.1km az=101.0*
*NEIC **19** 08:32:49.9±0.6, 38.°35N×141.°66E, h60km±5km, mb4.8/93, Error ellipse: s-maj=5.0km s-min=3.6km az=127.0*
NEIC Recorded [3 JMA] in Iwate and Miyagi.
*JMA **19** 08:32:49.1, 38.°33N×141.°78E, h60km±1km, M4.8*
JMA Felt III J1.
ISC 19 08:32:48.1±0.4, 38.°37N±0.°03×141.°90E±0.°03, h54km±3km, h53km: pP-P, n357, σ1°88/387, mb4.8/160, MS4.0/24, 11C-4D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.44**	**281**	P	**Pn**	**08 32 59.8**	**+0.9**
JIO				S	**Sn**	**08 33 07.2**	**+0.5**
OFUJ	**Ofunato**	**0.73**	**346**	P	**Pn**	**08 33 04.0**	**+1.6**
OFUJ				S	**Sn**	**08 33 14.7**	**+1.9**
JMK	**Ichinoseki**	**0.79**	**318**	P	**Pn**	**08 33 04.4**	**+1.3**
JMK				S	**Sn**	**08 33 15.1**	**+1.0**
JOU	**Okura**	**0.97**	**270**	P	**Pn**	**08 33 05.8**	**+0.2**
JOU				S	**Sn**	**08 33 18.0**	**-0.4**
JMM	**Marumori**	**1.01**	**240**	P	**Pn**	**08 33 05.7**	**-0.3**
JMM				S	**Sn**	**08 33 18.1**	**-1.1**
JFK	**Kawauchi**	**1.29**	**219**	P	**Pn**	**08 33 09.8**	**0.0**
JFK				S	**Sn**	**08 33 25.2**	**-0.9**
JYS	**Shirataka**	**1.45**	**265**	P	**Pn**	**08 33 12.4**	**+0.4**
JYS				S	**Sn**	**08 33 29.7**	**-0.2**
JFT	**Otama**	**1.50**	**236**	P	**Pn**	**08 33 13.0**	**+0.3**
JFT				S	**Sn**	**08 33 30.4**	**-0.7**
ONAJ	**Iwakimizuishiy**	**1.54**	**215**	P	**Pn**	**08 33 13.1**	**-0.1**
ONAJ				S	**Sn**	**08 33 31.3**	**-0.8**
MJAR	**Matsushiro Arr**	**3.46**	**239**	P	**Pn**	**08 33 40.4**	**+1.0**
	35nm,0.3s,baz=44,slow=12,SNR=293						
MAJO	**Matsushiro**	**3.46**	**239**	*d* P	**Pn**	**08 33 41.2**	**+1.8**
MAJO	**Matsushiro**	**3.46**	**239**	*e*Pn	**Pn**	**08 33 41.3**	**+1.8**
MAJO				*e*Sn	Sn	08 34 06.5	-13
MAT	**Matsushiro**	**3.46**	**239**	P	**Pn**	**08 33 41.1**	**+1.6**
MAT				S	**Sn**	**08 34 21.0**	**+1.8**
MJB9	**Matsu-Tunnel**	**3.46**	**239**	*e*Pn	**Pn**	**08 33 41.4**	**+1.9**
ERM	**Erimo**	**3.77**	**14**	*c* P	**Pn**	**08 33 44.4**	**+0.8**
ERM				pmax	pmax		
	comp=Z,232nm,1.0s						
ERM	**Erimo**	**3.77**	**14**	*e*Pn	**Pn**	**08 33 44.4**	**+0.8**
ERM				*e*Sn	**Sn**	**08 34 23.0**	**-3.6**
INU	**Inuyama**	**4.94**	**234**	*e*Pn	**Pn**	**08 34 01.1**	**+1.3**
JHJ2	**Mitsune**	**5.51**	**199**	*e*Pn	**Pn**	**08 34 06.8**	**-0.8**
JHJ2				*e*Sn	**Sn**	**08 35 08.5**	**-1.2**
JHJ	**Hachijo jima 2**	**5.51**	**199**	P	**Pn**	**08 34 06.8**	**-0.9**
	comp=Z,108nm,0.3s,baz=323,slow=19,SNR=52						
JHJ				S	**Sn**	**08 35 04.8**	**-4.9**
	comp=Z,305nm,0.3s,baz=133,slow=22,SNR=14						
ASAJ	**Asahikawa**	**5.77**	**5**	P	**Pn**	**08 34 11.8**	**+0.8**
	comp=Z,56nm,0.3s,baz=205,slow=10,SNR=96						
ASAJ				S	**Sn**	**08 35 12.9**	**-2.9**
	comp=Z,6.1nm,0.3s,baz=247,slow=21,SNR=2.3						
ASAJ	**Asahikawa**	**5.77**	**5**	*e*Pn	**Pn**	**08 34 11.8**	**+0.8**
ASAJ				*e*Sn	**Sn**	**08 35 16.9**	**+1.2**
YUK	**Yuzh-Kuril'sk**	**6.40**	**27**	*i* P	**Pn**	**08 34 19.0**	**-0.7**
YUK				*i* S	**Sn**	**08 35 27.4**	**-3.9**
YUK				pmax	pmax		
	comp=Z,635nm,0.2s						
YUK				pmax	pmax		
	comp=N,149nm,0.3s						
YUK				pmax	pmax		
	comp=E,132nm,0.3s						
YUK				MLR	MLR		
	comp=Z,923nm,14.0s						
YUK				MLR	MLR		
	comp=N,1μm,11.0s						
SHO	**Shikotan**	**6.63**	**33**	*i* P	**Pn**	**08 34 21.7**	**-1.2**
SHO				*i* S	**Sn**	**08 35 31.7**	**-5.4**
SHO				pmax	pmax		
	comp=Z,149nm,0.3s						
SHO				pmax	pmax		
	comp=E,233nm,0.4s						
SHO				pmax	pmax		
	comp=N,150nm,0.8s						
KUR	**Kuril'sk**	**8.18**	**31**	*c* P	**Pn**	**08 34 44.4**	**+0.4**
KUR				*i* S	**Sn**	**08 36 11.3**	**-3.6**
KUR				pmax	pmax		
	comp=Z,92nm,0.7s						
KUR				smax	smax		
	comp=N,123nm,0.5s						
KUR				smax	smax		
	comp=E,2.0nm,0.5s						
YSS	**Yuzh-Sakhalins**	**8.60**	**4**	*e*P	**Pn**	**08

MDJ	**Mudanjiang**	**11.14 308**	*e*Pn	**Pn**	**08 35 28.6**	**+4.1**
CBIJ	**Chichi jima**	**11.24 179**	*e*Pn	**Pn**	**08 35 22.4**	**-3.7**
JCJ	**Chichijima**	**11.24 179**	P	**Pn**	**08 35 22.5**	**-3.6**
	comp=Z,28nm,0.3s,baz=265,slow=21,SNR=35					
JCJ			S	Sn	08 37 17.0	-13
	comp=Z,60nm,0.3s,baz=225,slow=23,SNR=9.3					
HABR	**Khabarovsk**	**11.25 336**	*e*P	**Pn**	**08 35 23.4**	**-2.7**
HABR			*e*S	**Sn**	**08 37 25.4**	**-4.8**
HABR			pmax	pmax		
	comp=Z,88nm,1.5s					
HABR			pmax	pmax		
	comp=N,33nm,1.5s					
HABR			pmax	pmax		
	comp=E,55nm,1.5s					
HABR			MLR	MLR		
	comp=Z,429nm,14.0s					
KLR	**Kul'dur**	**13.09 329**	P	**Pn**	**08 35 49.2**	**-1.9**
	comp=Z,0.5nm,0.3s,baz=128,slow=12,SNR=13					
KLR			LR	LR	08 40 52.9	
	comp=Z,654nm,19.6s,baz=152,slow=37					
CN2	**Changchun**	**13.54 299**	*e*P	**P**	**08 36 02.5**	**-2.3**
CN2			*e*pP	pP	08 36 12.1	
CN2			*e*S	**Sn**	**08 38 30.9**	**+4.9**
CN2			pmax	pmax		
	comp=Z,10.0nm,0.2s					
CN2			pmax	pmax		
	comp=Z,10.0nm,3.0s					
CN2			LR	LR		
	comp=N,200nm,13.0s					
CN2			LR	LR		
	comp=E,400nm,13.0s					
CN2			LR	LR		
	comp=Z,400nm,14.0s					
SNY	**Shenyang**	**14.44 290**	⇑P	**P**	**08 36 15.8**	**+1.0**
SNY			pP	pP	08 36 25.6	
SNY			S	**S**	**08 39 04.1**	**-1.2**
SNY			pmax	pmax		
	comp=Z,17nm,0.5s					
SNY			pmax	pmax		
	comp=Z,170nm,6.5s					
SNY			LR	LR		
	comp=N,310nm,20.8s					
SNY			LR	LR		
	comp=E,500nm,22.6s					
SNY			LR	LR		
	comp=Z,850nm,21.1s					
NKL	**Nikolayevsk**	**14.81 357**	*e*P	**Pn**	**08 36 12.0**	**-2.1**
NKL			pmax	pmax		
	comp=Z,28nm,1.1s					
NKL			MLR	MLR		
	comp=N,300nm,17.0s					
NKL			MLR	MLR		
	comp=Z,350nm,17.0s					
PETK	**Petropavlovsk-**	**18.34 31**	P	**P**	**08 36 57.1**	**-0.8**
	comp=Z,0.3nm,0.3s,baz=202,slow=7.5,SNR=7.2					
PETK			LR	LR	08 44 42.8	
	comp=Z,181nm,18.0s,baz=222,slow=39					
PEA1	**Petropavlovsk-**	**18.35 31**	*e*P	**P**	**08 36 57.1**	**-0.9**
PET	**Petropavlovsk**	**18.68 33**	*e*P	**Pn**	**08 37 04.0**	**+1.5**
PET			*e*S	**Sn**	**08 40 26.0**	**-4.5**
PET			pmax	pmax		
	comp=Z,100nm,8.7s					
PET			pmax	pmax		
	comp=Z,300nm,8.7s					
PET			pmax	pmax		
	comp=Z,49nm,1.2s					
PET			MLR	MLR		
	comp=Z,300nm,19.0s					
PET			MLR	MLR		
	comp=Z,300nm,17.0s					
PET	**Petropavlovsk**	**18.68 33**	*e*P	**Pn**	**08 37 04.6**	**+2.1**
	comp=Z,63nm,1.2s					
TIA	**Tai'an**	**19.82 271**	⇑P	**P**	**08 37 13.9**	**-0.3**
TIA			pmax	pmax		
	comp=Z,20nm,1.4s					
NJ2	**Nanjing**	**19.83 258**	*e*P	**Pn**	**08 37 17.9**	**+1.5**
NJ2			pmax	pmax		
	comp=Z,36nm,0.6s					
BJI	**Beijing**	**19.99 283**	P	**P**	**08 37 15.0**	**-1.0**
BJI			sP	**sP**	**08 37 35.3**	**+0.5**
BJI			S	**S**	**08 40 54.8**	**-3.0**
BJI			sS	**sS**	**08 41 17.6**	**+0.3**
BJI			pmax	pmax		
	comp=Z,16nm,0.9s					
BJI			LR	LR		
	comp=N,240nm,18.2s					
BJI			LR	LR		
	comp=E,150nm,24.1s					
BJI			LR	LR		
	comp=Z,240nm,32.7s					
CLNS	**Chul'man**	**21.64 334**	*e*P	**P**	**08 37 32.2**	**-1.4**
CLNS			pmax	pmax		
	comp=Z,25nm,1.0s					
CLNS			pmax	pmax		
	comp=E,8.0nm,1.0s					
CLNS			pmax	pmax		
	comp=N,23nm,1.1s					
MA2	**Magadan**	**21.97 12**	P	**P**	**08 37 37.1**	**0.0**
	comp=N,47nm,0.8s,baz=216,slow=9.6,SNR=28					
SSLB	**Suanglung**	**23.02 237**	*e*P	**P**	**08 37 45.5**	**-3.1**
	comp=N,18nm,0.9s					
HHC	**Hu-ho-hao-te**	**23.45 286**	*e*P	**P**	**08 37 51.8**	**-0.9**
HHC			S	S	08 41 50.3	-12
HHC			pmax	pmax		
	comp=Z,29nm,0.9s					
HHC			pmax	pmax		
	comp=Z,210nm,4.6s					
HHC			LR	LR		
	comp=N,860nm,11.8s					
HHC			LR	LR		
	comp=E,930nm,12.4s					
HHC			LR	LR		
	comp=Z,920nm,12.4s					
TPUB	**Ta-pu**	**23.57 237**	*e*P	**P**	**08 37 53.0**	**-0.8**
	comp=Z,214nm,1.9s					
CIT	**Chita**	**24.01 314**	*e*P	**P**	**08 37 57.7**	**0.0**
CIT			*e*		08 38 10.3	
CIT			pmax	pmax		
	comp=Z,167nm,1.2s					
YAK	**Yakutsk**	**24.86 346**	P	**P**	**08 38 05.1**	**-0.1**
	comp=Z,5.4nm,0.4s,baz=333,slow=23,SNR=9.5					
YAK	**Yakutsk**	**24.86 346**	*e*P	**P**	**08 38 04.2**	**-1.0**
YAK			*e**PP	**pP**	**08 38 18.5**	**-0.2**
YAK			*e*S	**S**	**08 42 20.1**	**-4.1**
YAK			*e**SS	**sS**	**08 42 46.1**	**-0.8**
YAK			pmax	pmax		
	comp=Z,61nm,1.0s					
YAK			pmax	pmax		
	comp=N,38nm,1.1s					
YAK			pmax	pmax		
	comp=E,22nm,1.4s					
YAK			smax	smax		
	comp=N,142nm,2.1s					
YAK			smax	smax		
	comp=E,139nm,3.0s					
YAK	**Yakutsk**	**24.86 346**	*e*P	**P**	**08 38 06.0**	**+0.8**
	comp=E,88nm,1.1s					
SEY	**Seymchan**	**25.41 11**	P	**P**	**08 38 12.3**	**+2.0**
	comp=E,20nm,0.9s,baz=202,slow=7.0,SNR=64					
BOD	**Bodaibo**	**26.62 326**	*e*P	**P**	**08 38 20.6**	**-0.7**
BOD			pmax	pmax		
	comp=Z,27nm,0.9s					
XAN	**Xi'an**	**26.88 271**	P	**P**	**08 38 22.5**	**-1.4**
XAN			pmax	pmax		
	comp=Z,5.0nm,0.5s					
XAN			pmax	pmax		
	comp=Z,12nm,3.0s					
ULN	**Ulaanbaatar**	**26.95 302**	⇑*i*P	**P**	**08 38 25.1**	**+0.5**
ULN			pmax	pmax		
	comp=Z,14nm,1.2s					
ULN	**Ulaanbaatar**	**26.95 302**	*e*P	**P**	**08 38 25.4**	**+0.8**
	comp=Z,23nm,1.5s					
SONA1	**Songino Array**	**27.38 302**	*e*P	**P**	**08 38 28.4**	**0.0**
SONA0	**Songino Array**	**27.39 302**	*e*P	**P**	**08 38 28.5**	**0.0**
	comp=Z,11nm,1.4s					
SONM	**Songino Array**	**27.39 302**	P	**P**	**08 38 28.5**	**0.0**
	comp=Z,2.2nm,0.5s,baz=108,slow=8.4,SNR=12					
SONM			ScP	**ScP**	**08 45 20.8**	**-1.3**
	comp=Z,3.5nm,1.0s,baz=103,slow=3.0,SNR=13					
SONM			LR	LR	08 49 31.3	
	comp=Z,212nm,19.2s,baz=100,slow=37					
ENH	**Enshi**	**27.86 263**	*e*P	**P**	**08 38 32.1**	**-0.6**
	comp=Z,31nm,1.0s					
H11N2	**WAKE ISLAND Hy 28.53 124**		T	T	09 08 56.5	
	baz=316,slow=76,SNR=1419					
H11N1	**WAKE ISLAND Hy 28.54 124**		T	T	09 08 57.1	
	baz=316,slow=76,SNR=2166					
H11N3	**WAKE ISLAND Hy 28.55 124**		T	T	09 08 57.8	
	baz=316,slow=76,SNR=1670					
H11S1	**WAKE ISLAND Hy 29.29 126**		T	T	09 10 16.9	
	baz=318,slow=76,SNR=902					
H11S3	**WAKE ISLAND Hy 29.29 126**		T	T	09 09 55.5	
	baz=318,slow=76,SNR=584					
H11S2	**WAKE ISLAND Hy 29.31 126**		T	T	09 09 51.2	
	baz=318,slow=76,SNR=849					
ZAK	**Zakamensk**	**29.77 306**	*e*P	**P**	**08 38 49.4**	**-0.1**
ZAK			pmax	pmax		
	comp=E,9.0nm,1.1s					
TLY	**Talaya**	**29.77 309**	*e*P	**P**	**08 38 49.7**	**+0.3**
TLY			pmax	pmax		
	comp=Z,12nm,1.1s					
TLY			MLR	MLR		
	comp=Z,273nm,17.0s					
TLY	**Talaya**	**29.77 309**	*e*P	**P**	**08 38 49.8**	**+0.3**
	comp=Z,9.4nm,0.9s					
LZH	**Lanzhou**	**30.25 278**	*e*P	**P**	**08 38 53.3**	**-0.7**
LZH			pP	pP	08 39 08.3	+0.7
LZH			sP	sP	08 39 16.5	+2.6
LZH			PP	**PnPn**	**08 39 53.6**	**+0.2**
LZH			*e*S	**S**	**08 43 45.3**	**-4.7**
LZH			sS	sS	08 44 10.6	-2.4
LZH			SS	**SnSn**	**08 45 21.5**	**-6.5**
LZH			pmax	pmax		
	comp=Z,15nm,1.0s					
LZH			pmax	pmax		
	comp=Z,79nm,4.2s					
LZH			LR	LR		
	comp=N,1μm,15.2s					
LZH			LR	LR		
	comp=E,2μm,16.8s					
LZH			LR	LR		
	comp=Z,1μm,17.1s					
MOY	**Mondy**	**31.39 308**	*e*P	**P**	**08 39 03.6**	**-0.3**
MOY			pmax	pmax		
	comp=Z,12nm,1.4s					
GYA	**Guiyang**	**31.84 259**	⇑*i*P	**P**	**08 39 06.8**	**-1.3**
GYA			pP	pP	08 39 24.3	+2.6
GYA			PP	**PnPn**	**08 40 15.5**	**+1.3**
GYA			PcP	PP	08 41 00.8	+40
GYA			S	**S**	**08 44 12.4**	**-2.6**
GYA			sS	sS	08 44 40.0	+1.9
GYA			ScP	**ScP**	**08 45 35.6**	**-1.1**
GYA			SS	**SnSn**	**08 46 05.9**	**-1.0**
GYA	**Guiyang**	**31.84 259**	ScS	ScS	08 49 32.3	-3.1
GYA			pmax	pmax		
	comp=Z,50nm,0.9s					
GYA			pmax	pmax		
	comp=Z,130nm,5.2s					
GYA			LR	LR		
	comp=N,560nm,17.8s					
GYA			LR	LR		
	comp=E,530nm,18.0s					
GYA			LR	LR		
	comp=Z,540nm,18.6s					
CD2	**Chengdu**	**32.08 268**	P	**P**	**08 39 08.9**	**-1.1**
CD2			sP	sP	08 39 31.8	+1.8
CD2			PP	**PP**	**08 40 21.8**	**-1.4**
CD2			S	**S**	**08 44 15.8**	**-2.7**
CD2			sS	sS	08 44 42.6	+1.1
CD2			SS	**SS**	**08 46 35.1**	**-2.6**
CD2			pmax	pmax		
	comp=Z,20nm,0.5s					
CD2			pmax	pmax		
	comp=Z,180nm,7.8s					
CD2			LR	LR		
	comp=N,250nm,16.1s					
CD2			LR	LR		
	comp=Z,210nm,13.7s					
GTA	**Gaotai**	**32.56 285**	*e*P	**P**	**08 39 16.0**	**+1.7**
GTA			pP	sP	08 39 31.5	-2.7
GTA			sP	pP	08 39 38.8	+11
GTA			PcP	**PcP**	**08 42 00.9**	**+1.2**
GTA			S	**S**	**08 44 26.6**	**+0.6**
GTA			sS	sS	08 44 51.3	+2.2
GTA			SS	**SnSn**	**08 46 26.0**	**+2.0**
GTA			pmax	pmax		
	comp=Z,5.0nm,1.0s					
GTA			pmax	pmax		
	comp=Z,43nm,6.7s					
GTA			LR	LR		
	comp=N,170nm,20.9s					
GTA			LR	LR		
	comp=E,270nm,17.6s					
GTA			LR	LR		
	comp=Z,340nm,18.5s					
BILL	**Bilibino**	**32.64 17**	⇑*e*P	**P**	**08 39 15.2**	**+0.8**
BILL			*e*		08 40 22.8	
BILL			pmax	pmax		
	comp=Z,14nm,1.2s					
BILL			MLR	MLR		
	comp=Z,213nm,22.0s					
BILL	**Bilibino**	**32.64 17**	*e*P	**P**	**08 39 15.2**	**+0.8**
	comp=Z,8.1nm,0.8s					
TIXI	**Tiksi**	**34.01 353**	LR	LR	08 54 19.9	
	comp=Z,179nm,19.4s,baz=162,slow=38					
TIXI	**Tiksi**	**34.01 353**	⇓*i*P	**P**	**08 39 26.2**	**-0.1**
TIXI			pmax	pmax		
	comp=Z,5.0nm,0.7s					
TIXI	**Tiksi**	**34.01 353**	*e*P	**P**	**08 39 26.5**	**+0.1**
	comp=Z,7.1nm,1.0s					
TIXI			*e*S	**S**	**08 44 48.5**	**+1.0**
KMI	**Kunming**	**35.56 260**	P	**P**	**08 39 41.0**	**+0.5**
KMI			pP	pP	08 39 57.0	+2.7
KMI			sP	sP	08 40 04.4	+3.9
KMI			PP	**PP**	**08 41 02.3**	**+0.3**
KMI			S	**S**	**08 45 16.4**	**+3.6**
KMI			SS	**SnSn**	**08 47 31.9**	**-5.3**
KMI			pmax	pmax		
	comp=Z,14nm,0.7s					
KMI			pmax	pmax		
	comp=Z,38nm,3.6s					
KMI			LR	LR		
	comp=N,80nm,15.8s					
KMI			LR	LR		
	comp=E,160nm,16.5s					
KMI			LR	LR		
	comp=Z,140nm,16.5s					
MYLDM	**Lahad Datu**	**39.29 219**	*e*P	**P**	**08 40 13.8**	**+1.9**
	comp=Z,26nm,0.9s					
NONG	**Nongkai**	**39.32 250**	P	**P**	**08 40 12.4**	**+0.3**
	comp=Z,46nm,0.9s,comp=Z,7μm					
TNA	**Tin City**	**39.51 30**	*e*P	**P**	**08 40 15.7**	**+2.7**
	comp=Z,18nm,1.1s					
CRAI	**Chiangrai**	**40.09 255**	P	**P**	**08 40 18.3**	**-0.2**
	comp=Z,81nm,0.9s					
WMQ	**Urumqi**	**40.60 296**	P	**P**	**08 40 23.6**	**+1.1**
WMQ			pP	pP	08 40 41.3	+4.8
WMQ			sP	sP	08 40 48.5	+5.8
WMQ			S	**S**	**08 46 31.6**	**+3.3**
WMQ			SS	**SS**	**08 49 19.5**	**-10**
WMQ			pmax	pmax		
	comp=Z,20nm,0.8s					
WMQ			pmax	pmax		
	comp=Z,46nm,5.0s					
WMQ			LR	LR		
	comp=N,130nm,26.6s					
WMQ			LR	LR		
	comp=E,69nm,37.2s					
WMQ			LR	LR		
	comp=Z,64nm,31.8s					
LOEI	**Loei**	**41.06 251**	P	**P**	**08 40 23.2**	**-3.3**
	comp=Z,8.2nm,1.1s,comp=Z,478nm					
CMAI	**Chiengmai2**	**41.27 256**	P	**P**	**08 40 29.2**	**+0.8**
	comp=Z,12nm,1.2s					
ZAA0	**Zalesovo Array**	**41.31 311**	*e*P	**P**	**08 40 27.8**	**-0.4**
ZAA1	**Zalesovo Array**	**41.31 311**	*e*P	**P**	**08 40 28.2**	**0.0**
ZALV	**Zalesovo Beam**	**41.31 311**	P	**P**	**08 40 28.2**	**0.0**
	comp=Z,8.1nm,0.4s,baz=86,slow=7.7,SNR=23					
ZALV			ScP	**ScP**	**08 46 09.3**	**-1.8**
	comp=Z,1.5nm,0.7s,baz=107,slow=5.1,SNR=5.0					
UTTA	**Uttaradit**	**41.44 252**	P	**P**	**08 40 30.1**	**+0.5**
	comp=Z,3.2nm,0.9s,comp=Z,41nm					
MRSI	**Marisa**	**41.93 211**	P	**P**	**08 40 34.0**	**+0.4**
	comp=Z,57nm,1.3s,comp=Z,1μm					
FAKI	**Fak Fak**	**42.04 194**	P	**P**	**08 40 37.3**	**+2.8**
	comp=Z,74nm,0.9s					
FAKI	**Fak Fak**	**42.04 194**	*e*P	**P**	**08 40 34.7**	**+0.2**
	comp=Z,45nm,0.8s					
NVS	**Novosibirsk**	**42.21 313**	*e*P	**P**	**08 40 34.8**	**-0.7**
NVS			pmax	pmax		
	comp=E,19nm,1.1s					
NVS			pmax	pmax		
	comp=Z,27nm,1.1s					
CMAR	**Chiang Mai Arr**	**42.22 254**	P	**P**	**08 40 35.4**	**-0.6**
	comp=Z,1.4nm,0.6s,baz=20,slow=3.0,SNR=7.8					
CMAR			PcP	**PcP**	**08 42 29.4**	**0.0**
	comp=Z,2.2nm,0.6s,baz=12,slow=3.0,SNR=6.5					
CMAR			LR	LR	08 59 37.5	
	comp=Z,52nm,19.5s,baz=35,slow=38					
NRIK	**Noril'sk**	**42.22 335**	P	**P**	**08 40 35.6**	**+0.2**
	comp=Z,2.5nm,0.3s,baz=102,slow=8.5,SNR=7.5					
NRIK			LR	LR	08 59 08.4	
	comp=Z,314nm,18.6s,baz=105,slow=37					
CM01	**Chiang Mai Arr**	**42.23 254**	*e*P	**P**	**08 40 35.5**	**-0.6**
SUKH	**Sukhothai**	**42.29 253**	P	**P**	**08 40 36.9**	**+0.3**
	comp=Z,5.5nm,0.9s,comp=Z,51nm					
SRAK	**Srakaew**	**42.74 246**	P	**P**	**08 40 37.1**	**-3.1**
	comp=Z,29nm,0.8s,comp=Z,494nm					
SANI	**Sanana**	**42.82 204**	P	**P**	**08 40 42.3**	**+1.5**
	comp=Z,95nm,0.8s					
LUWI	**Luwuk**	**43.00 209**	P	**P**	**08 40 43.2**	**+0.9**
	comp=Z,83nm,1.2s,comp=Z,5μm					
MK01	**Makanchi Array**	**43.75 301**	*e*P	**P**	**08 40 47.9**	**-0.2**
MK31	**Makanchi Array**	**43.75 301**	*e*P	**P**	**08 40 48.8**	**+0.7**
MK31	**Makanchi Array**	**43.75 301**	*e*P	**P**	**08 40 48.8**	**+0.7**
MK32	**Makanchi Array**	**43.75 301**	*e*P	**P**	**08 40 48.1**	**0.0**
MKAR	**Makanchi Array**	**43.75 301**	P	**P**	**08 40 48.1**	**0.0**
	comp=Z,10.0nm,0.7s,baz=83,slow=9.9,SNR=40					
MKAR			LR	LR	08 59 18.9	
	comp=Z,90nm,20.7s,baz=80,slow=36					
MKAR	**Makanchi Array**	**43.75 301**	*e*P	**P**	**08 40 48.8**	**+0.7**
MKAR	**Makanchi Array**	**43.75 301**	*e*P	**P**	**08 40 48.8**	**+0.7**
MAKZ	**Makanchi**	**43.96 301**	*e*P	**P**	**08 40 49.6**	**-0.2**
MAKZ			pmax	pmax		
	comp=Z,29nm,1.4s					
MAKZ	**Makanchi**	**43.96 301**	*e*P	**P**	**08 40 49.6**	**-0.2**
	comp=Z,29nm,1.4s					
PCI	**Palu**	**44.05 213**	P	**P**	**08 40 51.4**	**+0.6**
	comp=Z,76nm,1.2s,comp=Z,740nm					
KURK	**Kurchatov**	**45.42 307**	*e*P	**P**	**08 41 01.2**	**-0.1**
KURK			pmax	pmax		
	comp=Z,155nm,1.6s					
KURK	**Kurchatov**	**45.42 307**	*e*P	**P**	**08 41 01.2**	**-0.1**
	comp=Z,155nm,1.6s					
KTH	**Kantishna Hill**	**46.43 35**	*e*P	**P**	**08 41 12.2**	**+3.0**
	comp=Z,18nm,1.2s					
PDGK	**Podgornoye**	**46.51 297**	P	**P**	**08 41 10.5**	**+0.6**
PDGK			pmax	pmax		
	comp=Z,17nm,1.1s					
MLY	**Manley**	**46.52 33**	*e*P	**P**	**08 41 11.8**	**+2.0**
	comp=Z,8.9nm,1.3s					
BWN	**Browne**	**47.07 34**	*e*P	**P**	**08 41 17.4**	**+3.4**
	comp=Z,35nm,1.0s					
RND	**Reindeer**	**47.36 35**	*e*P	**P**	**08 41 18.2**	**+1.7**
RND			pmax	pmax		
	comp=Z,12nm,1.2s					
RND	**Reindeer**	**47.36 35**	*e*P	**P**	**08 41 18.1**	**+1.7**
	comp=Z,12nm,1.2s					
GUN	**Gumba**	**47.42 275**	*e*P	**P**	**08 41 17.6**	**-0.1**
	comp=Z,96nm,0.9s					
COLA	**College**	**47.75 33**	*e*P	**P**	**08 41 21.8**	**+2.5**
COLA			pmax	pmax		
	comp=Z,7.0nm,2.3s					
KKN	**Kakani**	**47.95 275**	*e*P	**P**	**08 41 21.5**	**-0.1**
	comp=Z,93nm,1.0s					
PKIN	**Phulchoki**	**47.95 275**	*e*P	**P**	**08 41 20.9**	**-0.9**
	comp=Z,22nm,0.8s					
HDA	**Harding Lake**	**48.16 33**	*e*P	**P**	**08 41 21.0**	**-1.5**
	comp=Z,22nm,0.9s					
IL1	**Eielson Array**	**48.16 33**	*e*P	**P**	**08 41 23.8**	**+1.3**
ILAR	**Eielson Array**	**48.16 33**	P	**P**	**08 41 23.9**	**+1.4**
	comp=Z,2.1nm,0.8s,baz=267,slow=6.1,SNR=33					
ILAR	**Eielson Array**	**48.16 33**	P	**P**	**08 41 24.0**	**+1.4**
ILAR			pmax	pmax		
	comp=Z,2.0nm,0.8s					
ILB	**Eielson Array**	**48.16 33**	*e*P	**P**	**08 41 23.9**	**+1.4**
GKN	**Gorkha**	**48.35 275**	*e*P	**P**	**08 41 24.5**	**-0.2**
	comp=Z,157nm,1.1s					
FYU	**Fort Yukon**	**48.76 31**	*e*P	**P**	**08 41 30.3**	**+3.2**
	comp=Z,39nm,1.7s					
KOLN	**Koldanda**	**49.27 276**	*e*P	**P**	**08 41 31.5**	**-0.3**
	comp=Z,78nm,1.0s					
TKM2	**Tokmak 2**	**49.34 298**	*e*P	**P**	**08 41 32.9**	**+0.7**
TKM2			pmax	pmax		
	comp=Z,24nm,0.9s					
TKM2	**Tokmak 2**	**49.34 298**	*e*P	**P**	**08 41 32.9**	**+0.7**
	comp=Z,24nm,0.9s					
PKDT	**Phuket**	**49.57 244**	P	**P**	**08 41 34.9**	**+1.0**
	comp=Z,53nm,1.0s,comp=Z,4μm					
PYUN	**Piuthan**	**49.59 277**	*e*P	**P**	**08 41 34.2**	**-0.1**
	comp=Z,280nm,1.0s					
BRVK	**Borovoye**	**50.02 312**	*c i*P	**P**	**08 41 37.2**	**+0.3**
BRVK			pmax	pmax		
	comp=Z,24nm,2.5s					
BRVK	**Borovoye**	**50.02 312**	*e*P	**P**	**08 41 37.2**	**+0.3**
	comp=Z,23nm,1.0s					
AAK	**Ala-Archa**	**50.21 298**	LR	LR	09 03 34.9	
	comp=Z,128nm,20.4s,baz=66,slow=37					
AAK	**Ala-Archa**	**50.21 298**	*e*P	**P**	**08 41 38.9**	**+0.2**
AAK			pmax	pmax		
	comp=Z,10.0nm,1.0s					
AAK	**Ala-Archa**	**50.21 298**	*e*P	**P**	**08 41 38.9**	**+0.2**
	comp=Z,9.8nm,1.0s					
KSH	**Kashi**	**50.23 293**	P	**P**	**08 41 43.3**	**+4.5**
KSH			*e*pP	pP	08 41 58.6	+5.5
KSH			*e*sP	sP	08 42 05.9	+6.6
KSH			S	**S**	**08 48 51.0**	**+3.8**
KSH			ScS	**ScS**	**08 51 25.3**	**0.0**
KSH			pmax	pmax		
	comp=Z,38nm,2.5s					
KSH			LR	LR		
	comp=N,130nm,9.9s					
KSH			LR	LR		
	comp=E,100nm,10.1s					
EGAK	**Eagle**	**50.61 33**	*e*P	**P**	**08 41 44.0**	**+2.8**
	comp=E,8.6nm,0.8s					
EKS2	**Erkin-Say**	**50.70 298**	*e*P	**P**	**08 41 42.7**	**+0.4**
EKS2			pmax	pmax		
	comp=Z,6.0nm,0.8s					
EKS2	**Erkin-Say**	**50.70 298**	*e*P	**P**	**08 41 42.7**	**+0.4**
	comp=Z,5.9nm,0.8s					
ZRNK	**Zerenda**	**50.80 312**	*e*P	**P**	**08 41 43.0**	**+0.2**
ZRNK			pmax	pmax		
	comp=Z,38nm,1.0s					
ZRNK	**Zerenda**	**50.80 312**	*e*P	**P**	**08 41 43.0**	**+0.2**
	comp=Z,38nm,1.0s					
MNAS	**Manas**	**51.64 298**	P	**P**	**08 41 50.6**	**+1.2**
MNAS			pmax	pmax		
	comp=Z,24nm,0.8s					
MTN	**Manton Dam**	**51.93 193**	*e*P	**P**	**08 41 51.3**	**-0.2**
	comp=Z,85nm,1.1s					
COEN	**Coen**	**52.06 178**	*e*P	**P**	**08 41 53.6**	**+1.1**
	comp=Z,57nm,0.9s					
KKAR	**Karatay Array**	**52.80 299**	*e*P	**P**	**08 41 57.9**	**0.0**
KKAR	**Karatay Array**	**52.80 299**	*e*P	**P**	**08 41 57.9**	**0.0**
PSI	**Prapat**	**52.81 239**	*e*P	**P**	**08 41 58.0**	**-0.4**
PSI			pmax	pmax		
	comp=Z,11nm,0.7s					
PSI	**Prapat**	**52.81 239**	*e*P	**P**	**08 41 58.0**	**-0.4**
	comp=Z,11nm,0.7s					
INK	**Inuvik**	**53.02 28**	*e*P	**P**	**08 42 01.1**	**+2.0**
INK			pmax	pmax		
	comp=Z,5.0nm,0.8s					
INK	**Inuvik**	**53.02 28**	*e*P	**P**	**08 42 01.1**	**+2.0**
	comp=Z,5.4nm,0.8s					
SVE	**Sverdlovsk**	**54.41 318**	*e*P	**P**	**08 42 09.8**	**+0.4**
SVE			pmax	pmax		
	comp=Z,31nm,1.1s					
GSI	**Gunungsitoli**	**54.82 239**	*e*P	**P**	**08 42 12.9**	**0.0**
	comp=Z,48nm,0.8s					
ARU	**Arti**	**55.62 318**	LR	LR	09 08 41.7	
	comp=Z,252nm,18.5s,baz=107,slow=39					
ARU	**Arti**	**55.62 318**	*c i*P	**P**	**08 42 18.5**	**+0.4**
ARU			*e**PP	**pP**	**08 42 32.7**	**+0.1**
ARU					08 44 21.1	
ARU			S	**S**	**08 50 00.5**	**+0.6**
ARU			SS	**SS**	**08 53 35.8**	**-9.2**
ARU			pmax	pmax		
	comp=Z,31nm,1.2s					
ARU	**Arti**	**55.62 318**	*e*P	**P**	**08 42 18.6**	**+0.4**
	comp=Z,50nm,0.9s					
ABKAR	**Akbulak array**	**57.38 310**	*e*P	**P**	**08 42 30.4**	**-0.4**
AKTO	**Aktyubinsk**	**58.08 311**	LR	LR	09 08 51.0	
	comp=Z,122nm,18.1s,slow=37					
FITZ	**Fitzroy Crossi**	**58.21 198**	*e*P	**P**	**08 42 37.0**	**+0.2**
	comp=Z,53nm,1.5s					
WRAB	**Tennant Creek**	**58.42 188**	*e*P	**P**	**08 42 37.7**	**-0.6**
WRAB			pmax	pmax		
	comp=Z,43nm,0.8s					

WRAB Tennant Creek 58.42 188 *e*P **P 08 42 37.7 -0.6**
comp=Z,44nm,0.8s
WB2 Warramunga Arr 58.43 188 *e*P **P 08 42 37.8 -0.5**
comp=Z,48nm,0.8s
WR1 Warramunga Arr 58.44 188 *e*P **P 08 42 37.7 -0.7**
comp=Z,48nm,0.7s
WRA Warramunga Arr 58.44 188 P **P 08 42 37.7 -0.7**
comp=Z,42nm,0.6s,baz=6.2,slow=7.2,SNR=244
WRA LR LR 09 07 03.6
comp=Z,68nm,21.3s,baz=100,slow=35
WRA Warramunga Arr 58.44 188 P **P 08 42 37.7 -0.7**
WRA pmax pmax
comp=Z,39nm,0.6s
SPITS Spitsbergen Ar 59.29 349 LR LR 09 10 05.1
comp=Z,99nm,20.0s,baz=240,slow=38
TMCR Tamitsa 61.76 331 *e*P **P 08 43 01.1 +0.5**
TMCR pmax pmax
comp=Z,36nm,1.2s
AS01 Alice Springs 62.16 188 *e*P **P 08 43 03.5 -0.3**
AS31 Alice Springs 62.16 188 *e*P **P 08 43 03.5 -0.2**
comp=Z,6.9nm,0.8s
ASAR Alice Springs 62.16 188 P **P 08 43 03.5 -0.3**
comp=Z,25nm,0.7s,baz=11,slow=5.2,SNR=222
YKW3 Yellowknife Ar 62.42 31 *e*P **P 08 43 06.1 +1.0**
comp=Z,12nm,1.7s
YKA Yellowknife Ar 62.46 31 P **P 08 43 06.4 +1.1**
comp=Z,1.0nm,0.7s,baz=302,slow=6.3,SNR=16
YKB5 Yellowknife Ar 62.46 31 *e*P **P 08 43 05.8 +0.4**
MBWA Marble Bar 62.77 203 *e*P **P 08 43 07.3 -0.6**
comp=Z,15nm,0.8s
KLMR Klimovskoe 62.84 327 *e*P **P 08 43 06.7 -1.2**
KLMR *e**PP **pP 08 43 21.8 -0.8**
KLMR *e* 08 45 24.3
KLMR pmax pmax
comp=Z,13nm,1.5s
ARA0 ARCESS Array S 62.88 339 *e*P **P 08 43 08.9 +0.8**
ARCES ARCESS Array B 62.88 339 P **P 08 43 08.9 +0.8**
comp=Z,2.0nm,0.5s,baz=56,slow=7.9,SNR=27
ARCES LR LR 09 14 44.8
comp=Z,88nm,19.3s,baz=36,slow=40
PALK Pallekele 63.04 257 *c*e**P P 08 43 10.5 +0.6**
SGF Sodankyl 63.87 337 *e*P **P 08 43 17.7 +3.1**
SGF pmax pmax
comp=Z,25nm,0.9s
MSF Maaselka 64.00 335 *e*P **P 08 43 16.8 +1.3**
MSF pmax pmax
comp=Z,17nm,1.1s
DAG Danmarks Havn 64.48 355 *i* P **P 08 43 18.3 -0.2**
comp=Z,6.9nm,0.8s
DAG Danmarks Havn 64.48 355 *i* P **P 08 43 18.3 -0.2**
DAG pmax pmax
comp=Z,5.0nm,0.8s
MOS Moscow 66.41 323 *e*P pP 08 43 46.0 -0.1
VRH Novokhopyorsk 66.85 318 *e*P **P 08 43 33.0 -1.1**
VRH *e**PP **pP 08 43 47.2 -1.8**
VRH pmax pmax
comp=Z,10.0nm,1.0s
OBN Obninsk 67.26 323⇓*e*P **P 08 43 37.1 +0.5**
OBN *e* 08 46 04.9
OBN *e*S **S 08 52 27.2 -0.1**
OBN pmax pmax
comp=Z,8.0nm,0.5s
OBN MLR MLR
comp=Z,108nm,16.0s
LPSR Galich'ya Gora 67.53 320 *e*P **P 08 43 37.3 -1.1**
LPSR *e**PP **pP 08 43 52.4 -0.9**
LPSR pmax pmax
comp=Z,10.0nm,1.0s
FIA1 FINESS Array S 67.81 332 *e*P **P 08 43 40.3 +0.3**
FIA0 FINESS Array S 67.81 332 *e*P **P 08 43 40.3 +0.2**
FIA0 FINESS Array S 67.81 332 *e*P **P 08 43 40.3 +0.2**
FINES FINESS Array B 67.81 332 P **P 08 43 40.3 +0.2**
comp=Z,10nm,0.9s,baz=79,slow=9.9,SNR=12
VSR Storozhevoye 68.18 319 *e*P **P 08 43 41.4 -1.2**
VSR *e**PP **pP 08 43 56.2 -1.3**
VSR pmax pmax
comp=Z,6.0nm,0.5s
NEW Newport 68.91 45 *e*P **P 08 43 49.6 +2.4**
NEW pmax pmax
comp=Z,6.0nm,0.9s
NEW Newport 68.91 45 *e*P **P 08 43 49.6 +2.4**
comp=Z,5.8nm,0.9s
ARMA Armidale 69.03 171 *e*P **P 08 43 49.0 +0.9**
comp=Z,25nm,1.1s
SUMG Summit 69.35 0 *i* P **P 08 43 50.8 +0.8**
comp=Z,14nm,0.9s
SUMG Summit 69.35 0 *i* P **P 08 43 50.8 +0.8**
SUMG pmax pmax
comp=Z,14nm,0.9s
SUMG Summit 69.35 0 *e*P **P 08 43 51.2 +1.3**
comp=Z,15nm,1.0s
STKA Stephens Creek 69.89 180 P **P 08 43 53.2 +0.1**
comp=Z,7.1nm,0.7s,baz=347,slow=8.9,SNR=13
STKA Stephens Creek 69.89 180 *e*P **P 08 43 53.4 +0.2**
STKA pmax pmax
comp=Z,2.0nm,0.9s
STKA Stephens Creek 69.89 180 *e*P **P 08 43 53.4 +0.2**
comp=Z,2.1nm,0.9s
ZEI Tsey 70.25 309 *e*P **pP 08 44 09.5 -1.3**
ZEI pmax pmax
comp=Z,20nm,0.9s
KIV Kislovodsk 70.33 311 *e*P **P 08 43 58.1 +2.0**
KIV pmax pmax
comp=Z,15nm,0.9s
KIV MLR MLR
comp=Z,80nm,18.0s
KIV Kislovodsk 70.33 311 *e*P **P 08 43 57.5 +1.4**
comp=Z,40nm,0.9s
KBZ Khabaz 70.33 311 P **P 08 43 56.7 +0.7**
comp=Z,4.0nm,0.9s,baz=113,slow=1.7,SNR=7.9
NEY Neytrino 70.70 310⇑*e*P **P 08 44 00.8 +2.3**
NEY pmax pmax
comp=Z,2.0nm,1.5s
UOSS Minazif 71.77 288 *e*P **P 08 44 05.3 +0.3**
comp=Z,1.8nm,0.9s
MFID Camas Ranch 72.45 48 *e*P **P 08 44 10.8 +1.9**
comp=Z,7.4nm,1.3s
NC405 NORSAR Array S 72.90 337 *e*P **P 08 44 12.1 +0.9**
LRM Limekiln Ridge 72.92 45 *e*P **P 08 44 13.1 +1.2**
EGMT Eagleton 73.02 42 *e*P **P 08 44 14.5 +2.3**
comp=Z,10nm,0.9s
NC204 NORSAR Array S 73.06 338 *e*P **P 08 44 13.0 +0.9**
NB2 NORSAR Subarra 73.11 337 P **P 08 44 12.3 -0.1**
comp=Z,17nm,1.0s,baz=39,slow=6.2
NB2 NORSAR Subarra 73.11 337 P **P 08 44 12.3 -0.1**
baz=39,slow=6.2
NB2 NORSAR Subarra 73.11 337 P **P 08 44 12.2 -0.1**
NB2 pmax pmax
comp=Z,15nm,1.0s
NB200 NORSAR Array S 73.11 337 *e*P **P 08 44 12.9 +0.5**
NOA NORSAR Array B 73.11 337 P **P 08 44 12.9 +0.5**
comp=Z,8.5nm,0.8s,baz=39,slow=5.9,SNR=17
NOA LR LR 09 19 00.8
comp=Z,149nm,21.8s,baz=35,slow=38
DLMT Dillon 73.12 45 *e*P **P 08 44 14.7 +1.7**
comp=Z,7.2nm,1.0s
HLID Hailey 73.18 48 *e*P **P 08 44 17.6 +4.2**
comp=Z,4.6nm,0.9s
NBO02 NORSAR Array S 73.21 337 *e*P **P 08 44 13.7 +0.7**
AKASG Malin Array Be 73.48 322 P **P 08 44 14.7 0.0**
comp=Z,2.3nm,0.3s,baz=46,slow=6.6,SNR=10.0
AKBB Malin Array Si 73.48 322 *e*P **P 08 44 14.7 0.0**
AKBB pmax pmax
comp=Z,20nm,1.0s
AKBB Malin Array Si 73.48 322 *e*P **P 08 44 14.7 0.0**
comp=Z,20nm,1.0s
BOZ Bozeman (W) 73.49 45 *e*P **P 08 44 17.4 +2.3**
BOZ pmax pmax
comp=Z,5.0nm,0.8s
BOZ Bozeman (W) 73.49 45 *e*P **P 08 44 17.4 +2.3**
comp=Z,4.7nm,0.8s
KIEV Kiev 73.49 322 *e*P **P 08 44 14.8 0.0**
KIEV pmax pmax
comp=Z,22nm,1.1s
KIEV Kiev 73.49 322 *e*P **P 08 44 14.8 0.0**
comp=Z,22nm,1.1s
CAN Canberra 73.62 174 *e*P **P 08 44 16.6 +1.0**
CAN pmax pmax
comp=Z,17nm,1.0s
CAN Canberra 73.62 174 *e*P **P 08 44 16.6 +1.0**
comp=Z,17nm,1.0s
NV01 Mina Array Sit 73.88 54 *e*P **P 08 44 19.4 +1.8**
NVAR Mina Array Bea 73.88 54 P **P 08 44 19.4 +1.8**
comp=Z,0.4nm,0.3s,baz=283,slow=5.2,SNR=7.7
NWAO Narrogin (SRO) 74.55 201 *e*P **P 08 44 21.1 +0.1**
NWAO pmax pmax
comp=Z,21nm,0.9s
NWAO Narrogin (SRO) 74.55 201 *e*P **P 08 44 21.1 +0.1**
comp=Z,21nm,0.9s
SIM Simferopol' 74.65 315 *e*P **pP 08 44 37.4 +0.7**
SIM pmax pmax
comp=Z,23nm,0.8s
IMW Indian Meadow 74.96 46 *e*P **P 08 44 26.9 +3.1**
comp=Z,6.2nm,0.9s
RLMT Red Lodge 75.11 44 *e*P **P 08 44 28.6 +4.0**
comp=Z,5.8nm,0.9s
MOOW Moose Ponds 75.16 46 *e*P **P 08 44 27.1 +2.2**
comp=Z,3.9nm,0.9s
TPAW Teton Pass 75.21 46 *e*P **P 08 44 27.4 +2.1**
comp=Z,5.5nm,0.9s
HVU Hansel Valley 75.23 48 *e*P **P 08 44 27.4 +2.1**
HVU pmax pmax
comp=Z,6.0nm,0.9s
HVU Hansel Valley 75.23 48 *e*P **P 08 44 27.4 +2.1**
comp=Z,6.4nm,0.9s
R11A Troy Canyon, C 75.64 52 *e*P **P 08 44 30.0 +2.3**
comp=Z,5.5nm,1.0s
HWUT Hardware Ranch 76.04 48 *e*P **P 08 44 32.2 +2.3**
comp=Z,9.9nm,1.1s
TPNV Topopah Spring 76.07 54 *e*P **P 08 44 32.5 +2.3**
TPNV pmax pmax
comp=Z,7.0nm,0.9s
TPNV Topopah Spring 76.07 54 *e*P **P 08 44 32.5 +2.3**
comp=Z,6.9nm,0.9s
DUG Dugway, Tooele 76.19 50 *e*P **P 08 44 33.2 +2.4**
DUG pmax pmax
comp=Z,7.0nm,0.9s
DUG Dugway, Tooele 76.19 50 *e*P **P 08 44 33.2 +2.4**
comp=Z,6.6nm,0.9s
TCUT Toone Canyon 76.44 48 *e*P **P 08 44 35.1 +2.8**
comp=Z,11nm,0.9s
BW06 Boulder Array 76.46 46 *e*P **P 08 44 34.2 +1.8**
PD31 Pinedale Array 76.46 46 *e*P **P 08 44 34.3 +1.9**
PDAR Pinedale Array 76.46 46 P **P 08 44 33.9 +1.5**
comp=Z,9.9nm,0.5s,baz=286,slow=0.9,SNR=13
PSUT Pine Spring 76.59 51 *e*P **P 08 44 35.1 +1.9**
comp=Z,9.9nm,1.3s
NLU North Lily Min 76.78 49 *e*P **P 08 44 36.3 +2.0**
comp=Z,5.6nm,1.0s
SHPR Sheep Range 77.04 54 *e*P **P 08 44 38.2 +2.5**
comp=Z,9.7nm,1.3s
BUR08 Bucovina Ar. S 77.49 322 *e*P **P 08 44 38.9 +1.0**
MSU Marysvale 77.63 51 *e*P **P 08 44 41.8 +2.8**
MSU Marysvale 77.63 51 *e*P **P 08 44 41.8 +2.8**
LCMT Little Creek M 77.92 52 *e*P **P 08 44 43.1 +2.5**
comp=Z,8.6nm,1.0s
MTPU Mount Pierson 77.93 51 *e*P **P 08 44 43.3 +2.5**
comp=Z,4.4nm,0.9s
Q16A Castle Valley 77.98 50 *e*P **P 08 44 44.1 +3.2**
comp=Z,12nm,1.2s
STHS Stebnicka Huta 78.09 325 *e* pP 08 44 57.4 +1.1
OJC Ojcow 78.15 326 *e*P **P 08 44 42.4 +1.0**
OJC pmax pmax
comp=Z,23nm,1.1s
OJC Ojcow 78.15 326 *e*P **P 08 44 42.4 +1.0**
comp=Z,23nm,1.1s
KNB Kanab 78.18 52 *e*P **P 08 44 45.3 +3.3**
KNB pmax pmax
comp=Z,12nm,1.3s
KNB Kanab 78.18 52 *e*P **P 08 44 45.3 +3.3**
comp=Z,12nm,1.3s
SRU San Rafael Swe 78.25 49 *e*P **P 08 44 44.6 +2.2**
SRU pmax pmax
comp=Z,9.0nm,0.8s
SRU San Rafael Swe 78.25 49 *e*P **P 08 44 44.6 +2.2**
comp=Z,8.7nm,0.8s
BR101 Keskin Array S 78.26 312 *e*P **P 08 44 42.9 +0.5**
BR131 Keskin Array S 78.26 312 *e*P **P 08 44 43.1 +0.7**
BRTR Keskin Array B 78.26 312 P **P 08 44 42.9 +0.5**
comp=Z,0.6nm,0.4s,baz=115,slow=2.8,SNR=5.8
CRVS Cervenica-Dubn 78.36 324 *e* pP 08 44 58.9 +1.1
MLR Muntele Rosu 78.62 320 *e*P **P 08 44 44.7 +0.5**
MLR pmax pmax
comp=Z,12nm,1.2s
MLR Muntele Rosu 78.62 320 *e*P **P 08 44 44.7 +0.5**
comp=Z,12nm,1.2s
BR231 Keskin MP Arra 78.69 312 *e*P **P 08 44 43.3 -1.4**
LANS Liptovska Anna 79.08 326 *e* pP 08 45 03.2 +1.4
KECS Kecovo 79.11 325 *e* pP 08 45 02.5 +0.6
MORC Moravsky Berou 79.45 327 *e*P **P 08 44 49.3 +0.7**
MORC pmax pmax
comp=Z,52nm,1.2s
MORC Moravsky Berou 79.45 327 *e*P **P 08 44 49.3 +0.7**
comp=Z,52nm,1.2s
DPC Dobruska-Polom 79.53 328 *e*pP pP 08 45 05.2 +1.0
PV10 Paradox Valley 79.61 49 *e*P **P 08 44 52.4 +2.4**
N23A Red Feather La 79.72 46 *e*P **P 08 44 52.9 +2.4**
comp=Z,6.1nm,0.9s
PV05 Paradox Valley 79.76 49 *e*P **P 08 44 53.1 +2.4**
VYHS Vyhne 79.85 326 *e* pP 08 45 06.7 +0.8
Y14A Wickenburg 80.02 55 *e*P **P 08 44 54.1 +2.2**
comp=Z,119nm,1.8s
WUAZ Wupatki 80.04 52 *e*P **P 08 44 54.9 +2.7**
comp=Z,7.1nm,1.0s
BRG Berggiesshubel 80.10 330 *e*P pP 08 45 08.0 +0.8
comp=Z,8.1nm,1.2s
CLL Collm 80.13 330 *i* P **P 08 44 52.6 +0.4**
comp=Z,8.0nm,0.7s
CLL *i* pP **pP 08 45 07.8 +0.4**
CLL Collm 80.13 330 *i* P **P 08 44 52.6 +0.4**
CLL *i* *PP **pP 08 45 07.8 +0.4**
CLL pmax pmax
comp=Z,8.0nm,0.7s
CLL Collm 80.13 330 *e*P **P 08 44 52.5 +0.4**
comp=Z,14nm,1.2s
SMCO Snowmass 80.29 47 *e*P **P 08 44 57.1 +3.3**
comp=Z,6.0nm,1.3s
GOPC GO Pecny, Ondr 80.50 328 *e*pP pP 08 45 10.4 +0.9
ISCO Idaho Springs 80.65 46 *e*P **P 08 44 59.3 +3.7**
ISCO pmax pmax
comp=Z,3.0nm,0.8s
ISCO Idaho Springs 80.65 46 *e*P **P 08 44 59.3 +3.7**
comp=Z,2.6nm,0.8s
TREC Trest 80.69 328 *e*pP pP 08 45 11.1 +0.6
MVCO Mesa Verde 80.69 50 *e*P **P 08 44 59.2 +3.4**
comp=Z,11nm,1.1s
X16A Lo Mia Camp, P 80.70 53 *e*P **P 08 44 58.2 +2.3**
comp=Z,6.1nm,0.9s
CONA Conrad Observa 81.58 327 *i* pP pP 08 45 16.7 +1.4
comp=Z,9.4nm,1.2s
KHC Kasperske Hory 81.61 329 *e*P **P 08 45 01.0 +0.9**
KHC *e*pP **pP 08 45 16.1 +0.7**
KHC Kasperske Hory 81.61 329 *e*P **P 08 45 01.1 +0.9**
KHC pmax pmax
comp=Z,3.0nm,1.1s
KHC Kasperske Hory 81.61 329 *e*P **P 08 45 01.1 +0.9**
comp=Z,3.5nm,1.1s
GERES GERESS Array B 81.78 328 P **P 08 45 01.4 +0.3**
comp=Z,0.7nm,0.5s,baz=58,slow=3.3,SNR=6.4
GEA0 GERESS Array S 81.79 328 *e*P **P 08 45 01.5 +0.4**
SDCO Great Sand Dun 82.10 48 *e*P **P 08 45 06.0 +2.6**
comp=Z,3.5nm,1.1s
ARSA Arzberg 82.25 326 *i* pP pP 08 45 20.0 +1.2
comp=Z,1.9nm,0.5s
MOA Molln 82.32 327 *i* pP pP 08 45 21.3 +2.1
comp=Z,1.4nm,0.4s
ECSD EROS Data Cent 82.63 39 *e*P **P 08 45 07.7 +2.1**
comp=Z,5.0nm,0.9s
SOKA Soboth 82.90 326 *i* P **P 08 45 07.9 +0.9**
comp=Z,4.8nm,1.0s
SOKA *i* pP **pP 08 45 23.1 +0.7**
comp=Z,16nm,1.2s
T25A Trinidad 83.15 47 *e*P **P 08 45 10.2 +1.6**
comp=Z,6.0nm,0.9s
KBA Koelnbreinsper 83.31 327 *i* pP pP 08 45 24.9 +0.4
comp=Z,8.5nm,1.1s
LAZ Ladron 83.39 51 *e*P **P 08 45 12.3 +2.4**
ANMO Albuquerque 83.44 50⇓*i* P **P 08 45 12.9 +2.8**
ANMO pmax pmax
comp=Z,5.0nm,1.2s
ANMO Albuquerque 83.44 50 *e*P **P 08 45 12.6 +2.4**
comp=Z,7.4nm,1.1s
SCHQ Schefferville 83.95 16 P **P 08 45 12.6 +0.5**
comp=Z,2.0nm,0.7s,baz=28,slow=6.8,SNR=4.1
SCHQ Schefferville 83.95 16 *e*P **P 08 45 12.6 +0.5**
comp=Z,24nm,1.7s
PPT2 Papeete2 84.90 117 *e*LR LR 09 12 17.6
comp=Z,167nm,25.8s
PPT2 Papeete2 84.90 117 *e*T T 10 19 19.9
comp=Z,7.1nm,0.3s
PAE Paea 84.95 117 *e*T T 10 19 22.6
comp=Z,1.7nm,0.3s
FUORN Ofenpass-Fuorn 84.96 329 *e*P **P 08 45 18.6 +0.9**
comp=Z,24nm,1.4s
TIAR Tiarei 85.04 117 *e*T T 10 19 29.8
comp=Z,4.3nm,0.3s
LAST Lasithi 86.11 313 *e*P **P 08 45 24.2 +0.8**
comp=Z,25nm,1.0s
TAOE Nuku Hiva Isla 86.12 104 *e*LR LR 09 12 48.6
comp=Z,153nm,28.2s
TAOE Nuku Hiva Isla 86.12 104 *e*T T 10 20 52.6
comp=Z,63nm,0.3s
MEH Mehetia 86.16 116 *e*T T 10 20 53.4
comp=Z,134nm,0.3s
MNTX Cornudas Mount 86.30 52 *e*P **P 08 45 25.8 +1.4**
comp=Z,3.4nm,1.0s
SSF Saint Saulge 87.17 333 *e*P **P 08 45 29.5 +1.2**
SSF pmax pmax
comp=Z,19nm,1.7s
LPL La Plagne 87.27 330 *e*P **P 08 45 29.8 +0.7**
LPL pmax pmax
comp=Z,2.0nm,0.7s
LPG La Plagne 87.28 330 *e*P **P 08 45 29.9 +0.7**
LPG pmax pmax
comp=Z,3.0nm,0.6s
AVF Avril sur Loir 87.46 333 *e*P **P 08 45 30.0 +0.3**
AVF pmax pmax
comp=Z,6.0nm,0.9s
TBI Tubuai 88.88 121 *e*T T 10 24 16.5
comp=Z,153nm,0.3s
TX31 Lajitas Ar. Si 89.00 53 *e*P **P 08 45 38.7 +1.3**
LTX Lajitas 89.00 53 *e*P **P 08 45 38.5 +1.0**
LTX Lajitas 89.00 53 *e*P **P 08 45 38.5 +1.0**
TXAR Lajitas Array 89.00 53 P **P 08 45 38.5 +1.0**
comp=Z,1.6nm,0.7s,baz=295,slow=3.1,SNR=18
VNDA Vanda 116.27 175 PKP **PKPdf 08 51 23.8 -0.3**
comp=Z,0.6nm,0.7s,baz=304,slow=12,SNR=3.7
TOA1 Torodi Ar. Sit 116.65 316 *e*PKPdf **PKPdf 08 51 25.9 -0.9**
TORD Torodi Ar. Bea 116.66 316 PKP **PKPdf 08 51 25.8 -0.9**
comp=Z,0.4nm,0.6s,baz=43,slow=2.1,SNR=3.8
MAW Mawson 120.91 206 PKP **PKPdf 08 51 33.5 +0.3**
comp=Z,2.5nm,0.7s,baz=48,slow=1.2,SNR=4.4
BOSA Boshof 127.19 261 PKP **PKPdf 08 51 46.5 -0.2**
comp=Z,3.2nm,0.9s,baz=127,slow=15,SNR=3.3
QSPA South Pole Qui 128.11 180 *e*PKPdf **PKPdf 08 51 46.9 -0.3**
SNAA Sanae 142.14 197 PKP **PKPdf 08 52 08.1 -5.1**
SAML Samuel 143.02 44 *e*PKPdf **PKPdf 08 52 17.5 +1.1**
VNA2 Neumayer--Watz 143.71 196 PKP PKPab 08 52 13.2 +0.4
baz=93,slow=2.1
VNA3 Neumayer Olymp 143.95 195 PKP PKPab 08 52 13.7 0.0
VNA1 Neumayer--Stat 144.10 196 PKP PKPbc 08 52 14.9 +0.2
LPAZ La Paz 145.68 58 PKPbc **PKPab 08 52 22.6 +0.2**
comp=Z,11nm,0.9s,baz=331,slow=2.6,SNR=40
PB11 IPOC Station P 146.99 65 *e*PKPdf **PKPbc 08 52 24.6 -0.7**
LVC Limon Verde 149.33 68 *e*PKPdf **PKPdf 08 52 26.1 -1.2**
LVC *e*PKPbc **PKiKP 08 52 32.8 0.0**
LVC *e*PKPab **PKPab 08 52 37.4 +1.0**
LCO Las Campanas 151.44 81 *e*PKPbc **PKPbc 08 52 37.6 +1.2**
PLCA Paso Flores 154.94 106 PKPbc **PKPbc 08 52 43.8 +0.3**
comp=Z,2.2nm,0.9s,baz=250,slow=5.2,SNR=4.8

NNC 19 08:34:16.8±0.9, 51°.62N×75°.63E, h0km, mb3.8, mpv3.4, 3C-5D, Error ellipse: s-maj=17.6km s-min=6.0km az=28.0, Suspected Mining explosion., Eastern Kazakhstan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KURBB	**Kurchatov Arra**	**2.08**	**118**	⇓Pg	Pb	08 34 55.0	-0.4
	14nm,0.3s,baz=296,slow=16						
KURBB				⇓Lg	Lg	08 35 21.5	
	41nm,0.6s,baz=301,slow=30						
KURK	**Kurchatov**	**2.09**	**115**	⇑Pg	Pb	08 34 55.7	+0.1
	16nm,0.7s						
KURK				⇓Lg	Lg	08 35 21.9	
	31nm,0.5s						
BVA0	**Borovoye Array**	**3.51**	**296**	⇑Pg	Pb	08 35 21.8	+2.0
	5.5nm,0.8s,baz=0.0,slow=0.1,SNR=11						
BVA0				⇓Lg	Lg	08 36 07.2	
	5.2nm,0.5s,baz=107,slow=26,SNR=5.6						
CHKZ	**Chkalovo**	**3.68**	**306**	⇓Pg	Pb	08 35 23.0	+0.3
	17nm,1.2s						
CHKZ				⇑Lg	Lg	08 36 13.2	
	6.5nm,0.6s						
MK31	**Makanchi Array**	**6.51**	**135**	Lg	Lg	08 37 43.9	
	1.5nm,0.5s,baz=320,slow=24,SNR=5.1						

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*NEIC **19** 08:41:10.5, 36°.82N×90°.79W, h9km, MD2.5(CERI), After CERI.*
NEIC Felt at Festus, Poplar Bluff and Wentzville.
ISC 19 08:41:08.9±1.7, 36°.76N±0°.03×90°.81W±0°.06, h2km±12km, n18, σ0°.58/30, New Madrid region, Missouri

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
T41A	**Mountain View**	**0.82**	**290**	P	**Pb**	**08 41 26.0**	**+0.2**
	baz=106						
T41A				S	**Sb**	**08 41 36.4**	**-0.8**
	baz=106						
V42A	**Cord**	**1.06**	**206**	P	**Pn**	**08 41 30.9**	**+0.1**
	baz=25						
T40A	**Mansfield**	**1.43**	**286**	P	**Pg**	**08 41 36.8**	**+0.5**
	baz=103						
T40A				S	**Sn**	**08 41 55.8**	**+0.7**
	baz=103						
V41A	**Mountainview**	**1.46**	**229**	P	**Pg**	**08 41 37.8**	**+0.9**
	baz=46						
S40A	**Lebanon**	**1.59**	**302**	P	**Pb**	**08 41 39.1**	**+0.1**
	baz=119						
S40A				S	**Sg**	**08 42 00.4**	**+0.4**
	baz=119						
U40A	**Yellville**	**1.70**	**257**	P	**Pg**	**08 41 41.6**	**+0.2**
	baz=74,SNR=7.9						
U40A				S	**Sg**	**08 42 04.0**	**+0.6**
	baz=74						
V40A	**Witts Springs**	**1.89**	**240**	P	**Pb**	**08 41 44.4**	**+0.3**
	baz=58						
V40A				S	**Sg**	**08 42 09.0**	**-0.6**
	baz=58						
R40A	**Maddies Statio**	**1.92**	**323**	P	**Pb**	**08 41 44.0**	**-0.5**
	baz=141,SNR=13						
R40A				S	**Sb**	**08 42 09.2**	**+0.3**
	baz=141						
W41B	**Gary Mavity, V**	**1.97**	**217**	P	**Pb**	**08 41 45.3**	**-0.2**
	baz=35,SNR=10						
W41B				S	**Sg**	**08 42 11.8**	**-0.4**
	baz=35						
T39A	**Clever**	**2.08**	**278**	Pb	**Pg**	**08 41 48.6**	**-0.1**
	baz=95						
T39A				Sb	**Sg**	**08 42 15.6**	**-0.1**
	baz=95						
Q42A	**Golden Eagle**	**2.16**	**6**	S	**Sb**	**08 42 15.4**	**-0.4**
	baz=186						
U39A	**Green Forest**	**2.19**	**261**	P	**Pb**	**08 41 48.5**	**-0.7**
	baz=78,SNR=8.0						
U39A				Sb	**Sg**	**08 42 18.8**	**-0.4**
	baz=78						
S39A	**Bolivar**	**2.21**	**296**	P	**Pb**	**08 41 48.8**	**-0.8**
	baz=113,SNR=13						
S39A				Sb	**Sg**	**08 42 19.5**	**-0.5**
	baz=113						
R39A	**Chumby, Stover**	**2.35**	**312**	Sb	**Sg**	**08 42 24.2**	**-0.3**
	baz=129						
W40A	**Ferguson Farm,**	**2.41**	**230**	S	**Sb**	**08 42 22.4**	**-0.8**
	baz=48						
V39A	**Pettigrew**	**2.47**	**249**	Pb	**Pg**	**08 41 55.9**	**-0.3**
	baz=66						
OXF	**Oxford**	**2.52**	**153**	Pn	**Pn**	**08 41 50.5**	**-0.3**
OXF				*e*Sn	**Sn**	**08 42 22.6**	**+0.6**
MIAR	**Mount Ida**	**3.16**	**226**	*e*Pn	**Pn**	**08 42 00.8**	**+1.3**
MIAR				*e*Sn	**Sn**	**08 42 37.1**	**-0.7**

WEL 19 08:43:40.4±0.3, 36°.15S×179°.82W, h33km, ML3.5/6, 1C, Error ellipse: s-maj=3.7km s-min=2.2km az=90.0, East of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MXZ	**Matakaoa Point**	**2.06**	**226**	PN	Pn	08 44 11.3	-1.5
MXZ				SN	Sn	08 44 35.6	-1.7
WMGZ	**Waiomatatini S**	**2.19**	**220**	PN	Pn	08 44 13.8	-0.6
WMGZ				SN	Sn	08 44 38.5	-1.9
PUZ	**Puketiti**	**2.46**	**218**	PN	Pn	08 44 17.1	-1.1
PUZ				SN	Sn	08 44 44.0	-3.2
HAZ	**Te Kaha**	**2.51**	**229**	PN	Pn	08 44 18.4	-0.3

TWGZ	**Tauwhareparae**	**2.69 220**	PN	Pn	08 44 20.4	-0.9
TWGZ			SN	Sn	08 44 51.7	-1.0
CNGZ	**Carnagh Statio**	**2.82 213**	PN	Pn	08 44 22.5	-0.6
MWZ	**Matawai**	**3.04 223**	PN	Pn	08 44 25.1	-1.2
MWZ			SN	Sn	08 44 59.6	-1.9
RIGZ	**Rimuhau**	**3.20 216**	PN	Pn	08 44 27.4	-1.0
RIGZ			SN	Sn	08 45 03.9	-1.5
RAGZ	**Rawiri**	**3.22 222**	PN	Pn	08 44 28.0	-0.7
URZ	**Urewera**	**3.23 228** ⇑	PN	Pn	08 44 27.8	-1.0
SNGZ	**Shannon Statio**	**3.47 220**	PN	Pn	08 44 30.9	-1.2
RTZ	**Ruatahuna**	**3.55 225**	PN	Pn	08 44 33.0	-0.2
KUZ	**Kuaotunu**	**3.65 259**	PN	Pn	08 44 33.8	-0.7
RAHZ	**Arahi**	**3.70 221**	PN	Pn	08 44 34.6	-0.7
BKZ	**Black Stump Fm**	**4.20 223**	PN	Pn	08 44 40.5	-1.7
KAHZ	**Kahuranaki**	**4.48 215**	PN	Pn	08 44 43.3	-2.7
BHHZ	**Black Hill Sta**	**4.67 223**	PN	Pn	08 44 46.9	-1.7

ISK ***19*** *08:47:30.9, 37°.16N×28°.12E, h11km, MD2.8*
DDA ***19*** *08:47:31.2, 37°.27N×28°.30E, h7km, Md2.7*
CSEM ***19*** *08:47:31.3±0.1, 37°.18N×28°.14E, h12km, MD2.8, Error ellipse: s-maj=3.5km s-min=2.2km az=36.0*
ISC 19 08:47:30.9±1.0**, 37°.20N**±0°.04×**28°.17E**±0°.03**, h16**km±7km**, n15**, σ1§28/24**, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.11**	**125**	*e*PG	**Pg**	**08 47 34.1**	**-0.3**
YER				*e*SG	**Sg**	**08 47 37.3**	**+0.6**
YER	**Yerkesik**	**0.11**	**125**	*e*Pg	**Pg**	**08 47 34.1**	**-0.3**
YER				*e*Sg	**Sg**	**08 47 37.3**	**+0.6**
TURN	**Turunc**	**0.47**	**133**	*i* P	**Pg**	**08 47 40.7**	**+0.4**
TURN				*i* S	**Sb**	**08 47 48.6**	**+1.0**
AYDN	**Tasoluk**	**0.52**	**333**	P	**Pg**	**08 47 41.5**	**+0.3**
AYDN				S	**Sg**	**08 47 48.9**	**+0.7**
AYDN	**Tasoluk**	**0.52**	**333**	*i* P	**Pg**	**08 47 41.5**	**+0.3**
AYDN				*i* S	**Sg**	**08 47 48.9**	**+0.7**
DALY	**Dalyan (Mu¨la**	**0.54**	**134**	*e*PG	**Pb**	**08 47 42.4**	**+0.4**
DALY	**Dalyan (Mu¨la**	**0.54**	**134**	*e*Pg	**Pb**	**08 47 42.4**	**+0.4**
BODT	**Bodrum**	**0.70**	**259**	*e*PG	**Pb**	**08 47 44.3**	**-0.5**
BODT				*e*SG	**Sb**	**08 47 53.7**	**-0.5**
BODT	**Bodrum**	**0.70**	**259**	*e*Pg	**Pb**	**08 47 44.3**	**-0.5**
BODT				*e*Sg	**Sb**	**08 47 53.7**	**-0.5**
AYDB	**Zeytinkoy-Aydi**	**0.78**	**343**	*e*PG	**Pb**	**08 47 47.0**	**+0.8**
AYDB	**Zeytinkoy-Aydi**	**0.78**	**343**	*e*Pg	**Pb**	**08 47 47.0**	**+0.8**
DNZL	**Cakiroluk**	**0.85**	**54**	P	**Pg**	**08 47 48.4**	**+0.9**
DNZL				S	**Sg**	**08 47 55.2**	**-3.6**
DNZL	**Cakiroluk**	**0.85**	**54**	*i* P	**Pg**	**08 47 48.4**	**+0.9**
DNZL				*i* S	**Sg**	**08 47 55.2**	**-3.6**
FETY	**Fethiye**	**0.92**	**127**	*e*PG	**Pb**	**08 47 49.0**	**+0.5**
FETY	**Fethiye**	**0.92**	**127**	*e*Pg	**Pb**	**08 47 49.0**	**+0.5**

ISCJB ***19*** *08:55:00.2±0.4, 44°.30N×0°.03×149°.31E±0°.03, h35km±3km, mb4.6/158, MS4.3/22, Error ellipse: s-maj=5.0km s-min=2.9km az=155.7*
NIED ***19*** *08:55:00, 44°.50N×149°.10E, h38km, Mw5.0 Best double couple: M0 3.30000×10^16 NP1:φ=158.00000°, δ36.00000°, λ-5.00000°. NP2:φ=252.00000°, δ87.00000°, λ-126.00000°.*
MOS ***19*** *08:55:01.4±1.2, 44°.40N×149°.19E, h40km, mb4.8/61, Error ellipse: s-maj=6.5km s-min=4.8km az=96.7*
MOS Felt (II-III) at Kuril'sk.
SKHL ***19*** *08:55:02.1±0.8, 44°.33N×149°.31E, h48km±5km, mb5.5/3, mbh4.9/1, Ms4.7/8, msh5.1/2*
SKHL Felt (II-III) at Kurilsk.
JMA ***19*** *08:55:02.4±0.6, 44°.52N×149°.12E, h30km, M4.9*
IDC ***19*** *08:55:03.2±2.3, 44°.39N×149°.20E, h46km±21km, mb4.1/28, mb1 4.3/33, mb1mx4.2/54, mbtmp4.4/33, ML3.5/4, MS4.2/20, Ms1 4.2/20, ms1mx3.9/63, Error ellipse: s-maj=14.6km s-min=11.0km az=151.0*
NEIC ***19*** *08:55:03.7±0.5, 44°.37N×149°.13E, h47km±4km, mb4.7/97, Error ellipse: s-maj=5.9km s-min=3.1km az=154.0*
NEIC Felt [III] at Kuril'sk.
ISC 19 08:55:02.6±0.7**, 44°.38N**±0°.05×**149°.29E**±0°.04**, h34**km±2km**, n666, σ1§37/677, mb4.7**/163**, MS4.3**/22**, 18C-9D, Kuril Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUR	**Kuril'sk**	**1.33**	**311**	*d* iPN	**Pn**	**08 55 23.4**	**-1.2**
KUR				*i* S	**Sn**	**08 55 39.5**	**-1.6**
KUR	comp=N,251nm,0.5s			pmax	pmax		
KUR	comp=E,186nm,0.5s			pmax	pmax		
KUR	comp=Z,865nm,0.5s			pmax	pmax		
KUR	comp=N,8.0nm,0.6s			smax	smax		
KUR	comp=E,7.0nm,0.6s			smax	smax		
KUR	**Kuril'sk**	**1.33**	**311** ⇓	*i*P	**Pn**	**08 55 23.5**	**-1.2**
KUR	comp=E,250nm,0.5s			AMB	AMB	08 55 23.8	
KUR	comp=E,190nm,0.5s			AMB	AMB	08 55 23.8	
KUR	comp=E,870nm,0.5s			AMB	AMB	08 55 23.8	
KUR				*i* S	**Sn**	**08 55 39.5**	**-1.6**
KUR	comp=E,8μm,0.6s			A	A	08 55 43.1	
KUR	comp=E,7μm,0.6s			A	A	08 55 43.1	
SHO	**Shikotan**	**1.85**	**255**	*c i*PN	**Pn**	**08 55 30.3**	**-1.5**
SHO				*i* S	**Sn**	**08 55 52.1**	**-1.8**
SHO	comp=Z,715nm,0.4s			pmax	pmax		
SHO	comp=N,316nm,0.3s			pmax	pmax		
SHO	comp=E,260nm,0.3s			pmax	pmax		
SHO	comp=N,4μm,0.4s			smax	smax		
SHO	comp=E,6μm,0.4s			smax	smax		
SHO	**Shikotan**	**1.85**	**255** ⇑	*i*P	**Pn**	**08 55 30.3**	**-1.5**
SHO	comp=E,320nm,0.4s			AMB	AMB	08 55 35.2	
SHO	comp=E,260nm,0.4s			AMB	AMB	08 55 35.2	
SHO	comp=E,720nm,0.4s			AMB	AMB	08 55 35.2	
SHO				*i* S	**Sn**	**08 55 52.1**	**-1.8**
SHO	comp=E,4μm,0.4s			A	A	08 55 55.3	
SHO	comp=E,6μm,0.4s			A	A	08 55 55.3	
YUK	**Yuzh-Kuril'sk**	**2.49**	**263**	*c i*PN	**Pn**	**08 55 40.9**	**+0.3**
YUK				*i* S	**Sn**	**08 56 09.9**	**+0.1**
YUK	comp=N,191nm,0.3s			pmax	pmax		
YUK	comp=Z,1μm,0.3s			pmax	pmax		
YUK	comp=E,741nm,0.1s			pmax	pmax		
YUK	comp=N,2μm,0.5s			smax	smax		
YUK	comp=E,7μm,0.5s			smax	smax		
YUK	**Yuzh-Kuril'sk**	**2.49**	**263** ⇑	*i*P	**Pn**	**08 55 40.5**	**-0.1**
YUK	comp=E,190nm,0.3s			AMB	AMB	08 55 46.8	
YUK	comp=E,1μm,0.3s			AMB	AMB	08 55 46.8	
YUK	comp=E,740nm,0.1s			AMB	AMB	08 55 46.8	
YUK				*i* S	**Sn**	**08 56 08.7**	**-1.1**
YUK	comp=E,2μm,0.5s			A	A	08 56 15.2	
YUK	comp=E,7μm,0.5s			A	A	08 56 15.2	
NEM2	**Nemuro 2**	**2.76**	**250**	P	**Pn**	**08 55 42.7**	**-1.6**
NEM2				*e*S	**Sn**	**08 56 12.4**	**-4.1**
JRA	**Rausu**	**3.04**	**263**	P	**Pn**	**08 55 48.1**	**0.0**
JNK	**Nakash**	**3.40**	**258**	P	**Pn**	**08 55 52.6**	**-0.5**
JAK	**Akkeshi**	**3.61**	**249**	P	**Pn**	**08 55 54.5**	**-1.5**
JTKR	**Abashiri--Toko**	**3.90**	**266**	P	**Pn**	**08 56 00.5**	**+0.6**
JAR	**Ashorobuto**	**4.14**	**257**	P	**Pn**	**08 56 03.4**	**+0.1**
JOB	**Onbets**	**4.23**	**251**	P	**Pn**	**08 56 04.1**	**-0.4**
JOB				*e*S	**Sn**	**08 56 50.3**	**-2.4**
JMP	**Maruseppu**	**4.28**	**267**	P	**Pn**	**08 56 06.3**	**+1.0**
HRK	**Horoka**	**4.55**	**261**	*e*P	**Pn**	**08 56 09.8**	**+0.8**
JCH	**Churui**	**4.66**	**250**	P	**Pn**	**08 56 09.8**	**-0.7**
JKK2	**Kamakawa 2**	**4.74**	**266**	P	**Pn**	**08 56 13.2**	**+1.6**
JKA	**Kamikawa-asahi**	**4.82**	**269**	*e*P	**Pn**	**08 56 15.1**	**+2.5**
ASAJ	**Asahikawa**	**4.82**	**269**	P	**Pn**	**08 56 15.1**	**+2.4**
ASAJ	comp=E,5.9nm,0.3s,baz=81,slow=16,SNR=18			S	**Sb**	**08 57 20.2**	**-3.4**
ASAJ	comp=E,9.4nm,0.3s,baz=78,slow=5.1,SNR=3.7			LR	LR	08 58 19.2	
ASAJ	**Asahikawa**	**4.82**	**269**	P	**Pn**	**08 56 14.8**	**+2.2**
ASAJ	**Asahikawa**	**4.82**	**269**	*e*Pn	**Pn**	**08 56 14.9**	**+2.3**
ASAJ				*e*Sn	**Sn**	**08 57 06.5**	**-0.7**
MYR	**Moyori**	**4.86**	**247**	*e*P	**Pn**	**08 56 12.9**	**-0.2**
JFR	**Furan**	**5.00**	**258**	P	**Pn**	**08 56 16.8**	**+1.6**
ERM	**Erimo**	**5.07**	**244**	*ce*PN	**Pn**	**08 56 16.5**	**+0.4**
ERM	comp=Z,133nm,0.6s			pmax	pmax		
ERM	**Erimo**	**5.07**	**244**	*e*Pn	**Pn**	**08 56 16.6**	**+0.5**
ERM				*e*Sn	**Sn**	**08 57 11.2**	**-2.3**
ERM	**Erimo**	**5.07**	**244**	*e*P	**Pn**	**08 56 16.5**	**+0.4**
JAB	**Ashibetsu**	**5.18**	**263**	P	**Pn**	**08 56 20.3**	**+2.7**
JNBK	**Urakawa-nobuka**	**5.21**	**249**	P	**Pn**	**08 56 17.2**	**-0.8**
JNBK				*e*S	**Sn**	**08 57 14.0**	**-2.9**
YSS	**Yuzh-Sakhalins**	**5.26**	**302** ⇑	*e*PN	**Pn**	**08 56 19.3**	**+0.7**
YSS				*e*S	**Sn**	**08 57 19.4**	**+1.4**
YSS	comp=Z,40nm,0.7s			pmax	pmax		
YSS	comp=Z,3μm,14.0s			MLR	MLR		
YSS	comp=N,600nm,17.0s			MLR	MLR		
YSS	comp=E,3μm,16.0s			MLR	MLR		
YSS	**Yuzh-Sakhalins**	**5.26**	**302**	*e*P	**Pn**	**08 56 19.0**	**+0.4**
YSS	comp=E,40nm,0.7s			AMB	AMB	08 56 20.6	
YSS				*e*S	**Sn**	**08 57 18.6**	**+0.6**
YSS				AMS	AMS	08 58 11.0	
YSS	comp=E,3μm,14.0s			AMS	AMS	08 58 11.0	
YSS	comp=E,600nm,17.0s			AMS	AMS	08 58 11.0	
YSS	comp=E,3μm,17.0s			AMS	AMS	08 58 11.0	
JBT2	**Biratori 2**	**5.28**	**255**	P	**Pn**	**08 56 18.7**	**-0.3**
JEW	**Eniwo**	**5.90**	**258**	P	**Pn**	**08 56 28.6**	**+1.1**
JNB	**Noboribetsu**	**6.31**	**255**	P	**Pn**	**08 56 32.9**	**-0.2**
JKB	**Kayabe**	**6.54**	**250**	P	**Pn**	**08 56 34.9**	**-1.3**
UGL	**Uglegorsk**	**6.84**	**316**	*e*PN	**Pn**	**08 56 43.0**	**+2.7**
UGL	comp=Z,60nm,0.8s			pmax	pmax		
UGL	comp=N,3μm,16.0s			MLR	MLR		
UGL	comp=E,28μm,16.0s			MLR	MLR		
UGL	comp=Z,3μm,16.0s			MLR	MLR		
UGL	**Uglegorsk**	**6.84**	**316**	*e*P	**Pn**	**08 56 42.4**	**+2.1**
UGL				AMB	AMB	08 56 46.1	
UGL	comp=Z,50nm,0.6s			AMS	AMS	08 59 26.0	
UGL	comp=Z,3μm,16.0s			AMS	AMS	08 59 26.0	
UGL	comp=Z,3μm,16.0s			AMS	AMS	08 59 26.0	
JYM2	**Yakumo 2**	**6.90**	**254**	P	**Pn**	**08 56 40.9**	**-0.3**
JANG	**Nango**	**7.01**	**238**	P	**Pn**	**08 56 40.3**	**-2.5**
JTM	**Tenmabayashi**	**7.05**	**242**	P	**Pn**	**08 56 42.3**	**-1.0**
JSR	**Shiriuchi**	**7.11**	**249**	P	**Pn**	**08 56 43.2**	**-0.8**
JOSM	**Okushiri--Mats**	**7.53**	**256**	P	**Pn**	**08 56 49.2**	**-0.6**
OFUJ	**Ofunato**	**7.78**	**230**	P	**Pn**	**08 56 51.0**	**-2.3**
SKR	**Severo-Kuril's**	**7.81**	**34**	*e*PN	Pn	08 56 46.2	-7.5
SKR	comp=N,270nm,1.0s			pmax	pmax		
SKR	comp=E,220nm,1.0s			pmax	pmax		
SKR	comp=Z,400nm,1.0s			pmax	pmax		
SKR	comp=Z,3μm,12.0s			MLR	MLR		
SKR	**Severo-Kuril's**	**7.81**	**34**	*e*P	**Pn**	**08 56 54.3**	**+0.6**
SKR				AMB	AMB	08 56 56.6	
SKR	comp=Z,700nm,2.0s			AMB	AMB	08 57 02.3	
SKR	comp=Z,260nm,0.8s			*e*S	**Sn**	**08 58 18.6**	**-2.2**
SKR				A	A	08 59 26.6	
SKR	comp=Z,1μm,5.5s			AMS	AMS	08 59 55.5	
SKR	comp=Z,3μm,16.0s			AMS	AMS	08 59 55.5	
SKR	comp=Z,2μm,16.0s			AMS	AMS	08 59 55.5	
SKR	comp=Z,2μm,16.0s			AMS	AMS	08 59 55.5	
TYV	**Tymovskoe**	**7.88**	**328**	*e*PN	**Pn**	**08 56 56.0**	**+1.4**
TYV	comp=Z,31nm,0.8s			pmax	pmax		
TYV	comp=E,4μm,18.0s			MLR	MLR		
TYV	comp=Z,2μm,16.0s			MLR	MLR		
TYV	**Tymovskoe**	**7.88**	**328**	*e*P	**Pn**	**08 56 56.0**	**+1.4**
TYV	comp=Z,30nm,0.8s			AMB	AMB	08 56 59.1	
TYV	comp=Z,4μm,17.0s			AMS	AMS	08 59 43.0	
TYV	comp=Z,2μm,17.0s			AMS	AMS	08 59 43.0	
JRG	**Rokugo**	**8.15**	**235**	P	**Pn**	**08 56 57.0**	**-1.4**
JIO	**Ouri**	**8.40**	**228**	P	**Pn**	**08 56 59.7**	**-2.2**
PAU	**Pauzhetka**	**8.70**	**33**	*e*P	**Pn**	**08 57 07.7**	**+1.9**
TEY	**Ternei**	**9.06**	**279**	*e*P	Pn	08 57 16.0	+5.1
TEY				AMB	AMB	08 57 19.4	
TEY	comp=Z,30nm,0.8s			AMS	AMS	09 00 54.0	
TEY	comp=Z,4μm,17.0s			AMS	AMS	09 00 54.0	
TEY	comp=Z,1μm,17.0s			AMS	AMS	09 00 54.0	
TEY	comp=Z,2μm,17.0s			AMS	AMS	09 00 54.0	
JYA	**Atsumi**	**9.22**	**234**	P	**Pn**	**08 57 12.4**	**-0.7**
OKH	**Okha**	**10.08**	**338**	*e*P	**Pn**	**08 57 27.0**	**+2.3**
OKH				AMS	AMS	09 01 44.0	
OKH	comp=Z,2μm,17.0s			AMS	AMS	09 01 44.0	
OKH	comp=Z,2μm,17.0s			AMS	AMS	09 01 44.0	
PEA0	**Petropavlovsk-**	**10.34**	**29**	*e*Pn	**Pn**	**08 57 29.1**	**+0.8**
PEA0B	**Petropavlovsk-**	**10.34**	**29**	*e*Pn	**Pn**	**08 57 29.9**	**+1.5**
PETK	**Petropavlovsk-**	**10.34**	**29**	P	**Pn**	**08 57 29.6**	**+1.3**
PETK	comp=Z,2.6nm,0.3s,baz=202,slow=12,SNR=25			LR	LR	09 01 29.9	
PEA1	**Petropavlovsk-**	**10.35**	**29**	*e*Pn	**Pn**	**08 57 29.6**	**+1.2**
NKL	**Nikolayevsk**	**10.45**	**330**	*e*PN	**Pn**	**08 57 31.5**	**+1.7**
NKL	comp=Z,1μm,18.9s,baz=198,slow=37			pmax	pmax		
NKL	comp=N,200nm,4.0s			pmax	pmax		
NKL	comp=Z,300nm,4.0s			pmax	pmax		
NKL	comp=N,33nm,1.1s			pmax	pmax		
NKL	comp=E,30nm,1.1s			pmax	pmax		
NKL	comp=Z,83nm,1.1s			MLR	MLR		
NKL	comp=N,400nm,15.0s			MLR	MLR		
NKL	comp=E,900nm,15.0s			MLR	MLR		
NKL	comp=Z,1μm,15.0s			MLR	MLR		
NKL	**Nikolayevsk**	**10.45**	**330**	*e*P	**Pn**	**08 57 31.1**	**+1.3**
NKL				AMB	AMB	08 57 34.0	
NKL	comp=Z,200nm,4.0s			AMB	AMB	08 57 34.0	
NKL	comp=Z,300nm,4.0s			AMB	AMB	08 57 35.0	
NKL	comp=Z,30nm,1.1s			AMB	AMB	08 57 35.0	
NKL	comp=Z,80nm,1.1s			AMS	AMS	09 03 12.0	
NKL	comp=Z,400nm,15.0s			AMS	AMS	09 03 12.0	
NKL	comp=Z,900nm,15.0s			AMS	AMS	09 03 12.0	
NKL	comp=Z,1μm,15.0s			AMS	AMS	09 03 12.0	
PET	**Petropavlovsk**	**10.62**	**32**	*e*PN	**Pn**	**08 57 33.3**	**+1.1**
PET				MLR	MLR		
PET	comp=Z,2μm,17.0s			MLR	MLR		
PET	comp=Z,2μm,15.0s			MLR	MLR		
PET	**Petropavlovsk**	**10.62**	**32**	*e*P	**Pn**	**08 57 33.3**	**+1.1**
PET				AMB	AMB	08 57 47.2	
PET	comp=Z,300nm,4.5s			*e*S	**Sn**	**08 59 26.3**	**-3.5**
PET				A	A	08 59 45.6	
PET	comp=Z,300nm,3.0s			AMS	AMS	09 01 28.0	
PET	comp=Z,2μm,14.0s			AMS	AMS	09 01 28.0	
PET	comp=Z,2μm,14.0s			AMS	AMS	09 01 28.0	
PET	comp=Z,2μm,14.0s			AMS	AMS	09 01 28.0	
HABR	**Khabarovsk**	**10.65**	**298**	*e*PN	**Pn**	**08 57 31.1**	**-1.4**
HABR				*e*SS	Sn	08 59 44.2	+14
HABR	comp=E,23nm,1.1s			pmax	pmax		
HABR	comp=Z,1μm,15.0s			MLR	MLR		
HABR	**Khabarovsk**	**10.65**	**298**	*e*P	**Pn**	**08 57 31.1**	**-1.4**
HABR	comp=Z,20nm,1.1s			AMB	AMB	08 57 38.8	
HABR				*e*S	Sn	08 59 44.2	+14
HABR	comp=Z,1μm,15.0s			AMS	AMS	09 01 56.5	
GRNR	**Gornyy**	**10.78**	**311**	*e*P	**Pn**	**08 57 38.0**	**+3.6**
GRNR	comp=Z,10.0nm,0.8s			AMB	AMB	08 57 39.2	
MAJO	**Matsushiro**	**11.51**	**231**	*i* PN	**Pn**	**08 57 45.7**	**+1.3**
MAJO	**Matsushiro**	**11.51**	**231**	*e*Pn	**Pn**	**08 57 42.0**	**-2.4**
MAJO	**Matsushiro**	**11.51**	**231**	*e*P	**Pn**	**08 57 45.7**	**+1.3**
MAT	**Matsushiro**	**11.51**	**231**	P	**Pn**	**08 57 46.1**	**+1.7**
MAT				*e*S	**Sn**	**08 59 54.0**	**+2.4**
MJAR	**Matsushiro Arr**	**11.51**	**231**	P	**Pn**	**08 57 42.9**	**-1.5**
MJAR	comp=Z,1.0nm,0.3s,baz=29,slow=12,SNR=10.0			S	**Sn**	**08 59 47.1**	**-4.6**
MJB9	**Matsu-Tunnel**	**11.51**	**231**	*e*Pn	**Pn**	**08 57 42.9**	**-1.5**
USRK	**Ussuriysk Ar.**	**12.41**	**275**	P	**Pn**	**08 57 57.3**	**+0.7**
USRK	comp=Z,0.9nm,0.3s,baz=89,slow=14,SNR=13			LR	LR	09 02 53.0	
KLR	**Kul'dur**	**12.95**	**298**	P	**Pn**	**08 58 07.5**	**+3.4**
KLR	comp=Z,0.1nm,0.3s,baz=104,slow=15,SNR=18			LR	LR	09 03 25.5	
EKMR	**Ekimchan**	**13.83**	**315**	*e*P	**Pn**	**08 58 18.1**	**+2.1**
EKMR				AMB	AMB	08 58 22.7	
MDJ	**Mudanjiang**	**14.07**	**278**	P	**Pn**	**08 58 20.3**	**+1.0**
MDJ	comp=Z,7.0nm,0.7s			pmax	pmax		
MDJ	comp=Z,59nm,3.9s			pmax	pmax		
MA2	**Magadan**	**15.25**	**3**	P	**Pn**	**08 58 34.3**	**-0.7**
MA2	comp=Z,3.3nm,0.3s,baz=190,slow=10,SNR=13			LR	LR	09 04 41.5	
MA2	**Magadan**	**15.25**	**3**	*e*Pn	**Pn**	**08 58 35.2**	**+0.1**
MA2	**Magadan**	**15.25**	**3**	*e*P	**Pn**	**08 58 34.3**	**-0.7**
MA2	comp=Z,700nm,18.0s			AMS	AMS	09 04 41.5	
BMKR	**Bomnak**	**16.76**	**315**	*e*P	**Pn**	**08 58 55.1**	**+0.7**
BMKR	comp=Z,10.0nm,0.6s			AMB	AMB	08 59 01.9	
ZEA	**Zeya**	**17.15**	**311**	*e*P	**Pn**	**08 58 59.8**	**+0.5**
ZEA	comp=Z,2μm,16.0s			AMS	AMS	09 06 02.0	
ZEA	comp=Z,2μm,16.0s			AMS	AMS	09 06 02.0	
ZEA	comp=Z,2μm,16.0s			AMS	AMS	09 06 02.0	
KSRS	**Korea Array**	**17.55**	**254**	P	**Pn**	**08 59 03.5**	**-0.9**
KSRS	comp=Z,0.1nm,0.3s,baz=63,slow=13,SNR=4.6			LR	LR	09 05 27.5	
KS15	**Wonju Array Si**	**17.58**	**254**	*e*Pn	**Pn**	**08 59 03.5**	**-1.3**
KROS	**Kirovskiy**	**17.59**	**313**	*e*P	**Pn**	**08 59 04.8**	**0.0**
KROS	comp=Z,10.0nm,0.8s			AMB	AMB	08 59 09.6	
JCJ	**Chichijima**	**18.17**	**201**	LR	LR	09 07 59.0	
SEY	**Seymchan**	**18.67**	**4**	P	**P**	**08 59 14.6**	**-2.8**
SEY	comp=Z,2μm,21.2s,baz=152,slow=39			LR	LR	09 07 10.4	
YAK	**Yakutsk**	**21.07**	**334**	LR	LR	09 08 22.7	
YAK	**Yakutsk**	**21.07**	**334**	*e*P	**P**	**08 59 42.3**	**-1.2**
YAK				*e*		08 59 58.3	
YAK				*e*S	**S**	**09 03 28.8**	**-7.1**
YAK				*e**SS	Sn	09 03 45.2	+2.0
YAK				*e*		09 03 51.2	
YAK	comp=Z,163nm,1.0s			pmax	pmax		
YAK	comp=E,55nm,1.2s			pmax	pmax		
YAK	comp=N,83nm,1.2s			pmax	pmax		
YAK	comp=E,154nm,2.9s			smax	smax		
YAK	comp=N,144nm,2.4s			smax	smax		
YAK	comp=E,518nm,16.0s			MLR	MLR		
YAK	comp=Z,907nm,17.0s			MLR	MLR		
YAK	comp=N,651nm,20.0s			MLR	MLR		
YAK	**Yakutsk**	**21.07**	**334**	*e*P	**P**	**08 59 42.1**	**-1.4**
YAK	**Yakutsk**	**21.07**	**334**	*e*P	**P**	**08 59 42.3**	**-1.2**
BJI	**Beijing**	**24.81**	**272**	P	**P**	**09 00 20.8**	**-0.5**
BJI				sP	**sP**	**09 00 39.8**	**+4.5**
BJI				S	**S**	**09 04 39.6**	**-1.9**
BJI				sS	**sS**	**09 04 57.8**	**+0.1**
BJI	comp=Z,8.0nm,0.6s			pmax	pmax		
BJI	comp=Z,100nm,3.4s			pmax	pmax		
BJI	comp=N,410nm,15.7s			LR	LR		
BJI	comp=E,410nm,16.6s			LR	LR		
BJI	comp=Z,400nm,19.4s			LR	LR		
BILL	**Bilibino**	**25.34**	**15** ⇑	*e*P	**P**	**09 00 23.3**	**-2.5**
BILL				*e*		09 01 02.6	
BILL	comp=Z,4.0nm,1.0s			pmax	pmax		
BILL	comp=Z,590nm,15.0s			MLR	MLR		
BOD	**Bodaibo**	**25.57**	**314**	*e*P	**P**	**09 00 23.9**	**-4.2**
BOD	comp=Z,3.0nm,1.0s			pmax	pmax		
TIA	**Tai'an**	**25.73**	**263**	*e*P	**P**	**09 00 31.3**	**+1.6**
TIA	comp=Z,20nm,0.9s			pmax	pmax		
HHC	**Hu-ho-hao-te**	**27.83**	**276**	*e*P	**P**	**09 00 48.5**	**-0.2**
HHC				sP	sP	09 01 12.9	+10
HHC				PP	**PP**	**09 01 44.1**	**-7.6**
HHC				S	**S**	**09 05 20.4**	**-9.1**
HHC				sS	sS	09 05 45.3	-0.4
HHC	comp=Z,31nm,0.8s			pmax	pmax		
HHC	comp=Z,150nm,4.2s			pmax	pmax		
HHC	comp=N,530nm,13.9s			LR	LR		
HHC	comp=E,430nm,14.5s			LR	LR		
HHC	comp=Z,440nm,13.8s			LR	LR		
H11N2	**WAKE ISLAND Hy**	**28.63**	**144**	T	T	09 31 47.5	
H11N1	**WAKE ISLAND Hy**	**28.64**	**144**	T	T	09 31 57.5	
H11N3	**WAKE ISLAND Hy**	**28.64**	**144**	T	T	09 31 51.2	
TIXI	**Tiksi**	**29.08**	**347**	P	**P**	**09 00 55.0**	**-4.3**
TIXI	comp=Z,1.4nm,0.3s,baz=140,slow=5.1,SNR=7.1			LR	LR	09 13 24.1	
TIXI	comp=Z,384nm,18.5s,baz=162,slow=38						

TIXI Tiksi 29.08 347 *e*P **P 09 00 58.7 -0.6**
TIXI Tiksi 29.08 347 *e*P **P 09 00 58.7 -0.6**
TIXI Tiksi 29.08 347 *e*P **P 09 00 58.7 -0.6**
ULN Ulaanbaatar 29.22 292 *c*e**P P 09 00 59.4 -1.6**
ULN pmax pmax
comp=Z,5.0nm,1.4s
ULN Ulaanbaatar 29.22 292 *e*P **P 09 00 59.4 -1.6**
H11S1 WAKE ISLAND Hy 29.64 145 T T 09 33 03.8
baz=334,slow=76,SNR=1176
H11S3 WAKE ISLAND Hy 29.64 145 T T 09 33 12.2
baz=334,slow=76,SNR=918
H11S2 WAKE ISLAND Hy 29.65 145 T T 09 33 08.2
baz=334,slow=76,SNR=851
SONA1 Songino Array 29.65 292 *e*P **P 09 01 04.2 -0.7**
SONA0 Songino Array 29.66 292 *e*P **P 09 01 03.1 -1.8**
comp=Z,3.1nm,0.9s
SONM Songino Array 29.66 292 P **P 09 01 03.1 -1.8**
comp=Z,1.1nm,0.5s,baz=80,slow=8.4,SNR=5.1
SONM LR LR 09 13 57.9
comp=Z,675nm,18.4s,baz=162,slow=38
TLY Talaya 30.96 300 *e*P **P 09 01 17.6 +1.4**
TNA Tin City 31.48 33 *e*P **P 09 01 22.4 +1.8**
comp=Z,13nm,1.2s
TNA Tin City 31.48 33 *e*P **P 09 01 22.4 +1.8**
XAN Xi'an 32.65 266 P P 09 01 42.3 +11
XAN pmax pmax
comp=Z,6.0nm,1.1s
XAN pmax pmax
comp=Z,28nm,4.1s
LZH Lanzhou 35.29 272 *e*P **P 09 01 55.9 +1.6**
LZH pP pP 09 02 10.8 +6.5
LZH sP sP 09 02 17.3 +8.9
LZH PP **PP 09 03 17.6 +3.0**
LZH *e*S **S 09 07 27.4 +1.3**
LZH sS sS 09 07 51.0 +8.5
LZH SS **SnSn 09 09 41.8 -3.7**
LZH pmax pmax
comp=Z,60nm,1.3s
LZH pmax pmax
comp=Z,140nm,4.4s
LZH LR LR
comp=N,1µm,14.5s
LZH LR LR
comp=E,2µm,16.4s
LZH LR LR
comp=Z,1µm,16.5s
TT01 Tatalina 35.96 40 *e*P **P 09 01 60.0 +0.4**
TTA Tatalina 35.96 39 *e*P **P 09 02 00.0 +0.3**
TTA pmax pmax
comp=Z,10.0nm,0.8s
TTA Tatalina 35.96 39 *e*P **P 09 02 00.0 +0.3**
comp=Z,10nm,0.8s
GTA Gaotai 36.71 280 *e*P **P 09 02 06.8 +0.4**
GTA pP pP 09 02 14.6 -1.8
GTA sP sP 09 02 17.6 -2.9
GTA S **S 09 07 47.3 -0.4**
GTA sS sS 09 07 57.9 -6.2
GTA SS **SnSn 09 10 16.6 -3.1**
GTA pmax pmax
comp=Z,4.0nm,0.8s
GTA pmax pmax
comp=Z,21nm,4.8s
GTA LR LR
comp=N,230nm,13.8s
GTA LR LR
comp=E,310nm,14.7s
GTA LR LR
comp=Z,340nm,16.2s
RSO Redoubt South 37.44 44 *e*P **P 09 02 13.1 +0.7**
KDAK Kodiak Island 37.68 48 *i*P **P 09 02 13.3 -0.9**
PPLA Purkeypile 37.71 40 *e*P **P 09 02 15.7 +1.1**
comp=Z,31nm,1.2s
SPU Mount Spurr 37.77 42 *e*P **P 09 02 15.4 +0.3**
CAST Castle Rocks 37.77 39 *e*P **P 09 02 15.8 +0.8**
comp=Z,9.8nm,0.6s
CD2 Chengdu 38.00 265 P **P 09 02 15.6 -1.7**
CD2 pmax pmax
comp=Z,20nm,0.6s
BPAW Bear Paw Mtn. 38.28 38 *e*P **P 09 02 19.9 +0.6**
comp=Z,6.5nm,0.8s
KTH Kantishna Hill 38.30 39 *e*P **P 09 02 20.1 +0.6**
comp=Z,32nm,1.1s
MLY Manley 38.42 36 *e*P **P 09 02 21.2 +0.7**
comp=Z,8.2nm,0.7s
GYA Guiyang 38.57 257 *e*P **P 09 02 22.8 +0.6**
GYA pmax pmax
comp=Z,10.0nm,0.8s
TRF Thorofare Moun 38.58 39 *e*P **P 09 02 23.8 +1.8**
comp=Z,8.7nm,1.0s
COLD Coldfoot 38.79 33 *e*P **P 09 02 24.7 +1.2**
comp=Z,15nm,1.2s
PMR Palmer 39.16 42 *e*P **P 09 02 26.5 -0.1**
PMR pmax pmax
comp=Z,10.0nm,0.9s
PMR Palmer 39.16 42 *e*P **P 09 02 26.5 -0.1**
comp=Z,9.8nm,0.9s
PMR Palmer 39.16 42 *e*P **P 09 02 26.5 -0.1**
MCK McKinley 39.18 38 *e*P **P 09 02 27.9 +1.1**
MCK pmax pmax
comp=Z,13nm,1.0s
MCK McKinley 39.18 38 *e*P **P 09 02 27.9 +1.1**
comp=Z,13nm,1.0s
MCK McKinley 39.18 38 *e*P **P 09 02 27.9 +1.1**
RND Reindeer 39.23 39 *e*P **P 09 02 27.4 +0.1**
RND pmax pmax
comp=Z,10.0nm,0.8s
RND Reindeer 39.23 39 *e*P **P 09 02 27.4 +0.1**
comp=Z,10nm,0.8s
NRIK Noril'sk 39.45 331 LR LR 09 19 26.6
comp=Z,446nm,21.7s,baz=88,slow=37
SML Sawmill 39.53 41 *e*P **P 09 02 29.7 -0.1**
SML pmax pmax
comp=Z,31nm,0.8s
SML Sawmill 39.53 41 *e*P **P 09 02 29.7 -0.1**
comp=Z,31nm,0.8s
SML Sawmill 39.53 41 *e*P **P 09 02 29.7 -0.1**
WRH Wood River Hil 39.55 37 *e*P **P 09 02 30.8 +1.0**
comp=Z,7.7nm,0.7s
COLA College 39.65 37 *c i*P **P 09 02 31.0 +0.4**
COLA pmax pmax
comp=Z,13nm,0.7s
COLA College 39.65 37 *e*P **P 09 02 32.1 +1.5**
comp=Z,18nm,0.6s
COLA College 39.65 37 *e*P **P 09 02 32.1 +1.5**
CCB Clear Creek Bu 39.67 37 *e*P **P 09 02 31.8 +1.0**
comp=Z,16nm,1.4s
SCM Sheep Creek Mo 40.00 41 *e*P **P 09 02 35.1 +1.4**
SCM pmax pmax
comp=Z,16nm,0.9s
SCM Sheep Creek Mo 40.00 41 *e*P **P 09 02 35.1 +1.4**
comp=Z,16nm,0.9s
HDA Harding Lake 40.05 37 *e*P **P 09 02 34.9 +0.9**
comp=Z,12nm,0.7s
IL1 Eielson Array 40.06 37 *e*P **P 09 02 34.3 +0.2**
ILAR Eielson Array 40.06 37 P **P 09 02 33.6 -0.5**
comp=Z,6.1nm,0.8s,baz=256,slow=7.9,SNR=46
ILAR LR LR 09 20 19.0
comp=Z,104nm,20.6s,baz=285,slow=38
ILB Eielson Array 40.06 37 *e*P **P 09 02 33.6 -0.5**
KLU Klutina 40.70 42 *e*P **P 09 02 40.9 +1.4**
comp=Z,18nm,1.1s
FYU Fort Yukon 40.72 34 *e*P **P 09 02 40.8 +1.3**
comp=Z,21nm,0.6s
PAX Paxson 40.78 39 *e*P **P 09 02 41.2 +1.1**
PAX pmax pmax
comp=Z,6.0nm,0.8s
PAX Paxson 40.78 39 *e*P **P 09 02 41.2 +1.1**
comp=Z,5.6nm,0.8s
DOT Dot Lake 41.36 38 *e*P **P 09 02 44.5 -0.3**
comp=Z,20nm,0.7s
BMRM Bremner River 41.40 42 *e*P **P 09 02 47.0 +1.8**
comp=Z,35nm,1.3s
MENT Mentasta 41.58 39 *e*P **P 09 02 48.5 +1.8**
ZAA1 Zalesovo Array 41.85 307 *e*P **P 09 02 47.7 -1.2**
ZAA1 *e*PcP **PcP 09 04 43.2 -1.1**
ZALV Zalesovo Beam 41.85 307 P **P 09 02 47.7 -1.3**
comp=Z,0.6nm,0.3s,baz=79,slow=9.0,SNR=2.8
ZALV PcP **PcP 09 04 43.2 -1.1**
comp=Z,2.0nm,0.6s,baz=68,slow=3.5,SNR=5.8
CRQM Cirque 42.14 43 *e*P **P 09 02 53.4 +2.0**
KMI Kunming 42.16 259 P **P 09 02 55.8 +3.7**
KMI S **S 09 09 09.3 -0.5**
KMI sS sS 09 09 27.8 +1.3
KMI pmax pmax
comp=Z,13nm,1.0s
KMI pmax pmax
comp=Z,52nm,3.1s
KMI LR LR
comp=N,290nm,19.8s
KMI LR LR
comp=E,170nm,24.8s
KMI LR LR
comp=Z,210nm,19.8s
BALM Baldy 42.48 42 *e*P **P 09 02 55.9 +1.8**
BALM pmax pmax
comp=Z,12nm,0.9s
BALM Baldy 42.48 42 *e*P **P 09 02 55.9 +1.8**
comp=Z,12nm,0.9s
EGAK Eagle 42.51 36 *e*P **P 09 02 53.7 -0.5**
comp=Z,21nm,1.1s
WMQ Urumqi 43.30 292 P **P 09 03 03.9 +3.0**
WMQ pP sP 09 03 13.4 -1.7
WMQ sP pP 09 03 19.6 +8.6
WMQ pmax pmax
comp=Z,11nm,0.6s
WMQ pmax pmax
comp=Z,65nm,5.2s
WMQ LR LR
comp=N,220nm,15.2s
WMQ LR LR
comp=E,320nm,16.6s
WMQ LR LR
comp=Z,190nm,20.4s
DAWY Dawson 43.36 37 *e*P **P 09 03 02.4 +1.3**
comp=Z,3.7nm,0.9s
INK Inuvik 45.08 31 P **P 09 03 14.8 +0.1**
comp=Z,4.7nm,0.4s,baz=337,slow=32,SNR=30
INK Inuvik 45.08 31 *e*P **P 09 03 14.8 +0.1**
comp=Z,12nm,1.0s
MK31 Makanchi Array 45.66 298 *e*P **P 09 03 20.9 +1.2**
MK31 Makanchi Array 45.66 298 *e*P **P 09 03 20.9 +1.2**
MK32 Makanchi Array 45.66 298 *e*P **P 09 03 18.2 -1.4**
MKAR Makanchi Array 45.66 298 P **P 09 03 18.2 -1.4**
comp=Z,1.9nm,0.6s,baz=72,slow=7.8,SNR=9.2
MK01 Makanchi Array 45.66 298 *e*P **P 09 03 18.1 -1.6**
MAKZ Makanchi 45.85 298 *e*P **P 09 03 20.5 -0.7**
MAKZ pmax pmax
comp=Z,4.0nm,0.8s
MAKZ Makanchi 45.85 298 *e*P **P 09 03 20.5 -0.7**
comp=Z,4.3nm,0.8s
KURK Kurchatov 46.46 304 P **P 09 03 24.9 -0.9**
KURK 09 04 59.8
KURK pmax pmax
comp=Z,2.0nm,0.5s
KURK Kurchatov 46.46 304 *e*P **P 09 03 24.9 -0.9**
KURK *e*PcP **PcP 09 04 59.8 -0.2**
KURK Kurchatov 46.46 304 *e*P **P 09 03 24.9 -0.9**
KURBB Kurchatov Arra 46.54 304 P **P 09 03 24.9 -1.6**
comp=Z,1.3nm,0.3s,baz=73,slow=8.1,SNR=5.5
KURBB PcP **PcP 09 04 59.8 -0.6**
comp=Z,1.3nm,0.5s,baz=72,slow=3.5,SNR=4.5
LOEI Loei 48.24 252 P P 09 03 48.7 +8.6
comp=Z,6.6nm,0.8s
CHAI Chaiyaphum 48.88 250 P P 09 03 54.8 +10
comp=Z,6.4nm,0.7s,comp=Z,786nm
CMAR Chiang Mai Arr 49.18 255 P **P 09 03 46.6 -0.7**
comp=Z,0.5nm,0.5s,baz=34,slow=6.7,SNR=3.1
SRAK Srakaew 50.20 248 P P 09 04 03.0 +7.9
comp=Z,45nm,0.8s,comp=Z,826nm
BVAR Borovoye Array 50.30 310 P **P 09 03 54.4 -1.0**
comp=Z,0.7nm,0.3s,baz=75,slow=9.6,SNR=5.6
BRVK Borovoye 50.34 310⇑ *e*P **P 09 03 55.9 +0.2**
BRVK pmax pmax
comp=Z,1.0nm,0.6s
BRVK Borovoye 50.34 310 *e*P **P 09 03 55.9 +0.2**
ZRNK Zerenda 51.09 310 *e*P **P 09 04 00.9 -0.5**
ZRNK pmax pmax
comp=Z,3.0nm,0.6s
ZRNK Zerenda 51.09 310 *e*P **P 09 04 00.9 -0.5**
comp=Z,2.5nm,0.6s
AAK Ala-Archa 52.47 296 P **P 09 04 11.1 -1.0**
comp=Z,3.3nm,0.5s,baz=116,slow=10,SNR=3.8
GUN Gumba 52.52 274 *e*P **P 09 04 12.7 -0.1**
comp=Z,59nm,0.8s
EKS2 Erkin-Say 52.92 296 *e*P **P 09 04 15.1 -0.3**
EKS2 pmax pmax
comp=Z,4.0nm,0.8s
EKS2 Erkin-Say 52.92 296 *e*P **P 09 04 15.1 -0.3**
comp=Z,4.1nm,0.8s
KKN Kakani 53.01 274 *e*P **P 09 04 17.4 +1.1**
comp=Z,41nm,0.9s
PKIN Phulchoki 53.06 274 *e*P **P 09 04 17.5 +0.8**
KSH Kashi 53.06 292 *e*P **P 09 04 19.8 +3.4**
KSH *e*pP sP 09 04 35.8 +5.0
KSH *e*PcP **PcP 09 05 27.1 +2.5**
KSH PcS **PcS 09 09 25.1 +1.6**
KSH S **S 09 11 44.5 +0.3**
KSH ScS **ScS 09 14 01.1 -2.3**
KSH pmax pmax
comp=Z,110nm,4.3s
KSH LR LR
comp=N,160nm,7.3s
KSH LR LR
comp=E,140nm,7.0s
KSH LR LR
comp=Z,340nm,16.6s
DMN Daman 53.24 274 *e*P **P 09 04 19.5 +1.4**
comp=Z,44nm,0.8s
GKN Gorkha 53.35 275 *e*P **P 09 04 19.8 +1.1**
comp=Z,15nm,0.4s
RES Resolute Bay 53.91 17 P **P 09 04 20.4 -1.5**
comp=Z,17nm,0.8s,baz=1.1,slow=2.8,SNR=6.5
RES Resolute Bay 53.91 17 *e*P **P 09 04 22.0 +0.1**
RES pmax pmax
comp=Z,22nm,1.0s
RES Resolute Bay 53.91 17 *e*P **P 09 04 22.0 +0.1**
comp=Z,22nm,1.0s
RES Resolute Bay 53.91 17 *e*P **P 09 04 22.0 +0.1**
KOLN Koldanda 54.23 276 *e*P **P 09 04 26.7 +1.5**
comp=Z,35nm,0.9s
YKW3 Yellowknife Ar 54.38 35 *e*P **P 09 04 25.2 -0.3**
comp=Z,7.1nm,1.0s
YKA Yellowknife Ar 54.41 35 P **P 09 04 25.6 -0.2**
comp=Z,4.3nm,0.7s,baz=299,slow=6.8,SNR=54
YKB5 Yellowknife Ar 54.41 35 *e*P **P 09 04 26.0 +0.3**
SPITS Spitsbergen Ar 54.45 349 P **P 09 04 23.0 -2.9**
comp=Z,2.1nm,0.6s,baz=212,slow=5.1,SNR=5.7
SPITS Spitsbergen Ar 54.45 349 P **P 09 04 23.0 -2.9**
SPITS pmax pmax
comp=Z,2.0nm,0.6s
PYUN Piuthan 54.47 276 *e*P **P 09 04 28.5 +1.6**
comp=Z,57nm,0.9s
KKAR Karatay Array 54.78 298 *e*P **P 09 04 27.8 -1.0**
KKAR Karatay Array 54.78 298 *e*P **P 09 04 27.8 -1.0**
ARU Arti 54.94 317 *c i*P **P 09 04 31.8 +2.1**
ARU 09 05 30.8
ARU 09 06 31.5
ARU S **S 09 12 16.0 +7.3**
ARU SS **SS 09 15 49.3 -2.5**
ARU pmax pmax
comp=Z,4.0nm,0.8s
ARU MLR MLR
comp=Z,633nm,17.0s
ARU Arti 54.94 317⇑ *i*P **P 09 04 31.8 +2.1**
DZET Dzherino 58.14 295 P **P 09 04 52.4 -0.5**
DZET pmax pmax
comp=Z,10.0nm,0.7s
AKTO Aktyubinsk 58.29 311 P **P 09 04 53.2 -0.4**
comp=Z,2.7nm,0.4s,baz=110,slow=12,SNR=9.6
ARA0 ARCESS Array S 59.19 340 *e*P **P 09 04 58.2 -1.3**
ARCES ARCESS Array B 59.19 340 P **P 09 04 58.2 -1.3**
comp=Z,2.5nm,0.9s,baz=32,slow=8.6,SNR=4.1
KBL Kabul 60.42 291 *e*P **P 09 05 07.5 -1.3**
KBL pmax pmax
comp=Z,15nm,1.1s
KBL Kabul 60.42 291 *e*P **P 09 05 07.5 -1.3**
comp=Z,15nm,1.1s
I05D Terrebonne, OR 60.58 55 P **P 09 05 08.7 -0.9**
baz=305
PSI Prapat 60.62 242 *e*P **P 09 05 11.3 +1.1**
PSI pmax pmax
comp=Z,10.0nm,0.9s
PSI Prapat 60.62 242 *e*P **P 09 05 11.3 +1.1**
comp=Z,10nm,0.9s
KLMR Klimovskoe 60.72 328 *e*P **P 09 05 09.6 -0.6**
KLMR pmax pmax
comp=Z,4.0nm,0.9s
NEW Newport 60.75 50 P **P 09 05 10.2 -0.4**
comp=Z,5.0nm,0.9s,baz=340,slow=2.0,SNR=3.9
NEW Newport 60.75 50 P **P 09 05 10.4 -0.3**
baz=305
NEW Newport 60.75 50 *e*P **P 09 05 11.2 +0.5**
NEW pmax pmax
comp=Z,5.0nm,0.9s
NEW Newport 60.75 50 *e*P **P 09 05 11.2 +0.5**
comp=Z,5.5nm,0.9s
NEW Newport 60.75 50 *e*P **P 09 05 11.2 +0.5**
J05D Fort Rock, OR 61.25 56 P **P 09 05 14.3 0.0**
baz=305
YBH Yreka Blue Hor 61.25 59 LR LR 09 28 30.6
comp=Z,71nm,19.2s,baz=318,slow=33
M02C Callahan 61.36 59 P **P 09 05 15.6 +0.6**
baz=305
LNOR Lincton Mounta 61.48 53 *e*P **P 09 05 17.0 +1.4**
LNOR Lincton Mounta 61.48 53 *e*P **P 09 05 17.0 +1.4**
WALA Waterton Lakes 62.02 48 *e*P **P 09 05 19.5 +0.2**
comp=Z,6.1nm,1.0s
WALA Waterton Lakes 62.02 48 *e*P **P 09 05 19.5 +0.2**
BSMT Bassoo Peak 62.26 49 *e*P **P 09 05 20.6 -0.5**
O03D Paynes Creek 62.65 59 P **P 09 05 22.2 -1.4**
baz=306
YBMT Yellow Bay 62.68 49 *e*P **P 09 05 24.0 +0.3**
SWMT Swartz Lake 62.90 49 *e*P **P 09 05 25.4 +0.2**
SUMG Summit 63.22 3 *e*P **P 09 05 26.1 -1.2**
SUMG pmax pmax
comp=Z,11nm,1.1s
SUMG Summit 63.22 3 *e*P **P 09 05 26.1 -1.2**
comp=Z,11nm,1.1s
MSO Missoula 63.34 50 P **P 09 05 27.0 -1.1**
baz=307,SNR=12
MSO Missoula 63.34 50 *e*P **P 09 05 28.3 +0.2**
comp=Z,9.9nm,1.0s
CHMT Chamberlain Mo 63.66 49 *e*P **P 09 05 30.1 -0.3**
FFC Flin Flon 64.27 38 *e*P **P 09 05 34.0 +0.1**
FFC pmax pmax
comp=Z,12nm,1.1s
FFC Flin Flon 64.27 38 *e*P **P 09 05 34.0 +0.1**
comp=Z,12nm,1.1s
FFC Flin Flon 64.27 38 *e*P **P 09 05 34.0 +0.1**
FCC Fort Churchill 64.69 31 *e*P **P 09 05 37.6 +1.0**
FCC pmax pmax
comp=Z,9.0nm,1.1s
FCC Fort Churchill 64.69 31 *e*P **P 09 05 37.6 +1.0**
comp=Z,9.2nm,1.1s
FCC Fort Churchill 64.69 31 *e*P **P 09 05 37.6 +1.0**
LRM Limekiln Ridge 64.77 50 *e*P **P 09 05 37.9 +0.1**
EGMT Eagleton 64.84 47 P **P 09 05 37.0 -0.9**
baz=309,SNR=6.8
EGMT Eagleton 64.84 47 *e*P **P 09 05 37.8 -0.1**
comp=Z,11nm,0.9s
FIA0 FINESS Array S 65.01 334 *e*P **P 09 05 38.1 -0.6**
FIA0 FINESS Array S 65.01 334 *e*P **P 09 05 38.0 -0.6**
FINES FINESS Array B 65.01 334 P **P 09 05 38.0 -0.6**
comp=Z,3.7nm,0.5s,baz=42,slow=6.1,SNR=12
HLID Hailey 65.07 53 P **P 09 05 38.2 -1.5**
baz=308
HLID Hailey 65.07 53 *e*P **P 09 05 40.0 +0.3**
comp=Z,3.8nm,1.0s
BOZ Bozeman (W) 65.33 50 P **P 09 05 41.0 -0.2**
baz=309,SNR=15
BOZ Bozeman (W) 65.33 50 *e*P **P 09 05 41.3 +0.1**
BOZ pmax pmax
comp=Z,8.0nm,0.9s
BOZ Bozeman (W) 65.33 50 *e*P **P 09 05 41.3 +0.1**
comp=Z,8.2nm,0.9s
BOZ Bozeman (W) 65.33 50 *e*P **P 09 05 41.3 +0.1**
WR1 Warramunga Arr 65.45 195 *e*P **P 09 05 40.3 -1.7**
comp=Z,11nm,1.0s
WRA Warramunga Arr 65.45 195 P **P 09 05 40.3 -1.7**
comp=Z,2.6nm,0.7s,baz=11,slow=6.6,SNR=20
WRA Warramunga Arr 65.45 195 *i*P **P 09 05 40.2 -1.8**
WRA pmax pmax
comp=Z,3.0nm,0.6s
GEYT Alibeck 65.48 300 P **P 09 05 42.0 -0.1**
comp=Z,3.2nm,0.4s,baz=42,slow=4.6,SNR=4.4
FITZ Fitzroy Crossi 65.83 205 *e*P **P 09 05 44.6 +0.2**
comp=Z,6.0nm,0.9s
NV01 Mina Array Sit 65.93 59 *e*P **P 09 05 45.2 -0.1**
NVAR Mina Array Bea 65.93 59 P **P 09 05 45.5 +0.2**
comp=Z,2.1nm,0.6s,baz=296,slow=7.0,SNR=10
NV11 Mina Array Sit 66.02 59 *e*P **P 09 05 45.8 0.0**
comp=Z,7.9nm,1.1s
VRH Novokhopyorsk 66.07 319 *e*P **P 09 05 43.2 -2.5**
VRH pmax pmax
comp=Z,10.0nm,1.0s
GCMT Greycliff 66.30 49 *e*P **P 09 05 47.9 +0.4**
YMR Madison River 66.31 50 *e*P **P 09 05 47.9 +0.2**
comp=Z,30nm,1.9s
LPSR Galich'ya Gora 66.41 321 *e*P **P 09 05 46.6 -1.2**
LPSR pmax pmax
comp=Z,7.0nm,0.7s
H17A Grant Village 66.70 50 P **P 09 05 50.8 +0.6**
baz=310,SNR=6.6
IMW Indian Meadow 66.82 51 *e*P **P 09 05 52.0 +1.0**
comp=Z,7.2nm,0.9s
RLMT Red Lodge 66.95 49 P **P 09 05 51.1 -0.6**
baz=310,SNR=7.7
RLMT Red Lodge 66.95 49 *e*P **P 09 05 51.9 +0.2**
comp=Z,8.3nm,1.1s
MOOW Moose Ponds 67.02 51 *e*P **P 09 05 52.9 +0.7**
comp=Z,7.6nm,1.1s
NPI North Pocatell 67.04 53 *e*P **P 09 05 51.6 -0.7**
TPAW Teton Pass 67.07 51 *e*P **P 09 05 53.6 +1.0**
comp=Z,9.8nm,0.8s
LOHW Long Hollow 67.19 51 *e*P **P 09 05 54.0 +0.7**
comp=Z,4.0nm,0.9s
SNOW Snow King Moun 67.20 51 *e*P **P 09 05 54.4 +1.0**
comp=Z,9.3nm,1.0s
REDW Red Top Meadow 67.21 51 *e*P **P 09 05 54.2 +0.8**
comp=Z,13nm,1.1s
VSR Storozhevoye 67.25 320 *e*P **P 09 05 51.9 -1.3**
VSR pmax pmax
comp=Z,10.0nm,0.5s
DGMT Dagmar 67.38 44 P **P 09 05 53.4 -0.8**
baz=312,SNR=7.3
DGMT Dagmar 67.38 44 *e*P **P 09 05 54.1 0.0**
comp=Z,13nm,0.8s
GRAC Grapevine Rang 67.41 60 P **P 09 05 54.2 -0.3**
baz=309
SBC Santa Barbara 67.53 63 P **P 09 05 54.2 -1.0**
baz=309
LAO LASA Array 67.54 46 P **P 09 05 55.3 +0.1**
baz=312,SNR=5.5
LAO LASA Array 67.54 46 *e*P **P 09 05 56.1 +0.8**
comp=Z,12nm,1.1s
R11A Troy Canyon, C 67.64 58 P **P 09 05 55.7 -0.5**
baz=310
ARVC Arvin 67.67 62 P **P 09 05 55.8 -0.3**
baz=309
MPMC Manual Prospec 67.92 61 P **P 09 05 57.7 -0.3**
baz=310
HWUT Hardware Ranch 67.94 53 *e*P **P 09 05 58.2 +0.3**
comp=Z,5.4nm,1.0s
FURC Furnace Creek, 68.05 60 P **P 09 05 58.4 -0.1**
baz=310
DUG Dugway, Tooele 68.12 55 P **P 09 05 58.6 -0.5**
baz=310
DUG Dugway, Tooele 68.12 55 *e*P **P 09 05 59.2 +0.1**
DUG pmax pmax
comp=Z,6.0nm,0.9s
DUG Dugway, Tooele 68.12 55 *e*P **P 09 05 59.2 +0.1**
comp=Z,6.2nm,0.9s
TPNV Topopah Spring 68.13 59 P **P 09 05 58.1 -1.1**
baz=310
TPNV Topopah Spring 68.13 59 *e*P **P 09 05 59.0 -0.2**
TPNV pmax pmax
comp=Z,13nm,1.2s
TPNV Topopah Spring 68.13 59 *e*P **P 09 05 59.0 -0.2**
comp=Z,12nm,1.2s
BW06 Boulder Array 68.32 51 P **P 09 05 59.7 -0.7**
baz=311
BW06 Boulder Array 68.32 51 *e*P **P 09 06 00.2 -0.2**
PD31 Pinedale Array 68.32 51 *e*P **P 09 05 59.9 -0.5**
PDAR Pinedale Array 68.32 51 P **P 09 05 59.9 -0.5**
comp=Z,2.2nm,0.7s,baz=257,slow=1.9,SNR=19
A27A Ledoux Ranch, 68.49 42 P **P 09 06 00.7 -0.4**
baz=314,SNR=9.0
JLU Jordanelle 68.65 54 *e*P **P 09 06 03.1 +0.6**
comp=Z,4.4nm,0.9s
D25A Fairfield 68.70 44 P **P 09 06 02.0 -0.6**
baz=313
NLU North Lily Min 68.71 55 *e*P **P 09 06 02.8 -0.1**
comp=Z,5.3nm,0.9s
C26A Wahner Farm, P 68.85 43 P **P 09 06 02.6 -0.8**
baz=313
O16A Springville 68.88 54 *e*P **P 09 06 00.6 -3.3**
A28A Rude Farm, Bot 68.99 41 P **P 09 06 03.9 -0.3**
baz=314
SHPR Sheep Range 69.08 59 *e*P **P 09 06 05.7 +0.5**

comp=Z,14nm,1.4s
E25A **Miller Ranch,** 69.11 45 P P 09 06 04.8 -0.2
baz=313
AS01 **Alice Springs** 69.16 195 *e*P P 09 06 05.2 -0.2
ASAR **Alice Springs** 69.17 195 P P 09 06 04.9 -0.6
comp=Z,2.7nm,0.8s,baz=12,slow=6.3,SNR=20
B28A **Dugan Ranch, T** 69.26 42 P P 09 06 05.6 -0.3
baz=314
TUQ **Turquoise Moun** 69.30 60 P P 09 06 05.8 -0.7
baz=310
NC405 **NORSAR Array S** 69.37 340 *e*P P 09 06 05.0 -1.4
HEC **Hector,Ludlow** 69.43 61 P P 09 06 06.5 -0.7
baz=310
A29A **Manning Farm,** 69.47 41 P P 09 06 06.2 -0.9
baz=315,SNR=16
NB2 **NORSAR Subarra** 69.56 340 P P 09 06 05.2 -2.4
comp=Z,4.2nm,0.5s,baz=30,slow=6.5
NB2 **NORSAR Subarra** 69.56 340 P P 09 06 07.8 +0.2
NB2 pmax pmax
comp=Z,3.0nm,0.5s
NB200 **NORSAR Array S** 69.56 340 *e*P P 09 06 05.4 -2.1
NOA **NORSAR Array B** 69.56 340 P P 09 06 05.4 -2.1
comp=Z,3.5nm,0.6s,baz=32,slow=6.6,SNR=21
MSU **Marysvale** 69.59 56 *e*P P 09 06 08.7 +0.4
MSU **Marysvale** 69.59 56 *e*P P 09 06 08.7 +0.4
E26A **Carlson Angus** 69.60 44 P P 09 06 07.5 -0.6
baz=314
HFS **Hagfors** 69.69 338 LR LR 09 39 08.6
comp=Z,215nm,21.5s,baz=7.0,slow=38
B29A **Wagenman Farm,** 69.73 41 P P 09 06 08.3 -0.5
baz=315,SNR=7.6
P17A **Butcher Ranch,** 69.80 54 *e*P P 09 06 10.3 +0.7
comp=Z,13nm,1.2s
GMRC **Granite Mounta** 69.88 61 P P 09 06 09.9 -0.2
baz=311
A30A **Hoffart Farm,** 69.89 40 P P 09 06 09.2 -0.5
baz=315
MTPU **Mount Pierson** 69.89 56 *e*P P 09 06 10.9 +0.5
comp=Z,21nm,2.0s
Q16A **Castle Valley** 69.91 55 *e*P P 09 06 10.0 -0.4
F26A **Lodgepole** 69.92 45 P P 09 06 09.6 -0.4
baz=314
LCMT **Little Creek M** 69.92 58 *e*P P 09 06 10.4 +0.1
comp=Z,9.2nm,1.2s
MDND **Maddock** 70.05 42 P P 09 06 10.2 -0.5
baz=315
MDND **Maddock** 70.05 42 *e*P P 09 06 10.8 +0.1
comp=Z,18nm,1.0s
K22A **Casper** 70.07 50 P P 09 06 10.3 -0.9
baz=312
E27A **Carson** 70.08 44 P P 09 06 10.3 -0.7
baz=314
PFO **Pinyon Flats O** 70.14 62 P P 09 06 11.2 -0.5
baz=311
TPFO **Pinon Flats** 70.15 62 P P 09 06 11.4 -0.4
baz=311
SRU **San Rafael Swe** 70.17 54 *e*P P 09 06 12.0 +0.1
SRU pmax pmax
comp=Z,9.0nm,0.8s
SRU **San Rafael Swe** 70.17 54 *e*P P 09 06 11.9 +0.1
comp=Z,9.2nm,0.8s
KNB **Kanab** 70.18 57 *e*P P 09 06 12.5 +0.6
KNB pmax pmax
comp=Z,10.0nm,1.1s
KNB **Kanab** 70.18 57 *e*P P 09 06 12.5 +0.6
comp=Z,9.8nm,1.1s
B30A **Myrvik Farm, E** 70.22 41 P P 09 06 11.2 -0.7
baz=315,SNR=16
MMU **Miners Mountai** 70.31 56 *e*P P 09 06 13.4 +0.6
G26A **Maurine** 70.34 45 P P 09 06 11.7 -0.9
baz=314,SNR=13
RSSD **Black Hills** 70.40 47 P P 09 06 12.8 -0.5
baz=313
RSSD **Black Hills** 70.40 47 *e*P P 09 06 12.8 -0.5
RSSD pmax pmax
comp=Z,13nm,1.3s
RSSD **Black Hills** 70.40 47 *e*P P 09 06 12.8 -0.5
comp=Z,13nm,1.3s
E28A **Huff** 70.41 43 P P 09 06 12.1 -0.9
baz=314
A31A **Linda, St. Vin** 70.41 40 P P 09 06 12.4 -0.5
baz=316
KVAR **Kislovodsk Arr** 70.48 313 LR LR 09 41 43.7
comp=Z,618nm,19.1s,baz=19,slow=40
KIV **Kislovodsk** 70.48 313 *e*P P 09 06 13.9 +0.3
KIV pmax pmax
comp=Z,13nm,1.0s
KIV MLR MLR
comp=Z,547nm,18.0s
KIV **Kislovodsk** 70.48 313 *e*P P 09 06 13.9 +0.3
KBZ **Khabaz** 70.53 312 P P 09 06 13.4 -0.3
comp=Z,6.4nm,0.8s,baz=40,slow=3.3,SNR=11
G27A **Dupree** 70.62 45 P P 09 06 13.8 -0.6
baz=314
I25A **Rochford** 70.63 47 P P 09 06 14.4 -0.2
baz=314
ZEI **Tsey** 70.63 311 *e*P P 09 06 12.1 -2.5
ZEI pmax pmax
comp=Z,12nm,0.8s
C30A **Mose, Pekin** 70.69 41 P P 09 06 14.7 +0.1
baz=316,SNR=5.6
H26A **Fairpoint** 70.72 46 P P 09 06 14.4 -0.6
baz=314
A32A **Rocking H Ranc** 70.74 40 P P 09 06 14.4 -0.5
baz=316
BC3 **Big Chuckawall** 70.75 62 P P 09 06 14.1 -1.2
baz=311
O20A **White River Ci** 70.80 52 P P 09 06 15.3 -0.4
baz=312
O20A **White River Ci** 70.80 52 *e*P P 09 06 16.4 +0.7
comp=Z,9.8nm,1.1s
E29A **Napoleon** 70.93 43 P P 09 06 15.5 -0.7
baz=315
C31A **Landman Farms,** 70.97 41 P P 09 06 15.5 -0.9
baz=316
D30A **Buchanan** 70.97 42 P P 09 06 15.8 -0.7
baz=316
IKP **In-Ko-Pah, Jac** 70.99 63 P P 09 06 16.6 -0.2
baz=311
H27A **Howes** 71.07 46 P P 09 06 16.4 -0.7
baz=314
B32A **Ashes, Strandq** 71.10 40 P P 09 06 16.0 -1.2
baz=316,SNR=12
PDMCI **Parker Dam,Lak** 71.15 60 P P 09 06 17.4 -0.2
baz=311
A33A **Warroad** 71.23 39 P P 09 06 16.8 -1.0
baz=317,SNR=10
Y12C **Blythe** 71.27 61 P P 09 06 18.0 -0.4
baz=311
E30A **Jud** 71.33 43 P P 09 06 17.4 -1.2
baz=316
PV09 **Paradox Valley** 71.38 54 *e*P P 09 06 19.5 0.0
J26A **Sides Ranch, S** 71.46 47 P P 09 06 19.2 -0.3
baz=314
D31A **Mcclaflin, Tow** 71.51 42 P P 09 06 18.9 -0.8
baz=316
C32A **Crookston** 71.51 40 P P 09 06 18.7 -0.9
baz=317
PV10 **Paradox Valley** 71.52 54 *e*P P 09 06 20.6 +0.4
N23A **Red Feather La** 71.58 51 P P 09 06 19.7 -0.8
baz=313
N23A **Red Feather La** 71.58 51 *e*P P 09 06 21.5 +1.0
comp=Z,19nm,1.3s
B33A **Robert and Kas** 71.62 40 P P 09 06 19.2 -1.0
baz=317
PV05 **Paradox Valley** 71.69 55 *e*P P 09 06 21.1 -0.1
E31A **Nome** 71.78 42 P P 09 06 20.8 -0.5
baz=316
B34A **Aery, Baudette** 71.89 39 P P 09 06 21.0 -0.9
baz=318
C33A **Trail** 71.91 40 P P 09 06 21.4 -0.7
baz=317
PV01 **Paradox Valley** 71.96 54 *e*P P 09 06 22.6 -0.2
AKASG **Malin Array Be** 71.97 325 P P 09 06 20.9 -1.4
comp=Z,1.3nm,0.3s,baz=38,slow=6.8,SNR=10
I28A **Midland** 71.97 46 P P 09 06 22.0 -0.5
baz=315
KIEV **Kiev** 71.98 325 *i*P P 09 06 21.1 -1.3
KIEV pmax pmax
comp=Z,5.0nm,0.7s
KIEV **Kiev** 71.98 325 *e*P P 09 06 21.1 -1.3
comp=Z,29nm,1.7s
WUAZ **Wupatki** 72.05 58 P P 09 06 22.6 -0.7
baz=312
WUAZ **Wupatki** 72.05 58 *e*P P 09 06 22.5 -0.7
comp=Z,9.6nm,1.1s
Y14A **Wickenburg** 72.09 60 *e*P P 09 06 22.6 -0.9
comp=Z,33nm,1.0s
F31A **Hecla** 72.11 43 P P 09 06 22.4 -0.9
baz=316
SMCO **Snowmass** 72.17 52 *e*P P 09 06 24.2 0.0
comp=Z,6.8nm,0.9s
G30A **Faulkton** 72.19 44 P P 09 06 22.8 -1.0
baz=316
SOC **Sochi** 72.29 314 *e*P P 09 06 27.7 +3.4
SOC pmax pmax
comp=Z,8.0nm,0.4s
D33A **AnnSam, Waubun** 72.33 41 P P 09 06 23.1 -1.4
baz=317
C34A **RKJ Ranch, Bem** 72.39 40 P P 09 06 24.1 -0.8
baz=318
B35A **Bob, Littlefor** 72.40 39 P P 09 06 24.0 -0.9
baz=318
I29A **Vivian Onida** 72.40 45 P P 09 06 24.0 -1.0
baz=315
ISCO **Idaho Springs** 72.51 51 P P 09 06 25.3 -0.8
baz=314
ISCO **Idaho Springs** 72.51 51 *e*P P 09 06 26.5 +0.3
ISCO pmax pmax
comp=Z,4.0nm,0.9s
ISCO **Idaho Springs** 72.51 51 *e*P P 09 06 26.5 +0.3
comp=Z,4.1nm,0.9s
MVCO **Mesa Verde** 72.62 55 P P 09 06 25.9 -0.9
baz=313
MVCO **Mesa Verde** 72.62 55 *e*P P 09 06 26.8 +0.1
comp=Z,5.4nm,0.8s
F32A **Veblen** 72.65 42 P P 09 06 25.7 -0.8
baz=317
D34A **Park Rapids** 72.67 40 P P 09 06 25.6 -1.1
baz=318
E33A **Westby DABS, E** 72.72 41 P P 09 06 26.0 -0.9
baz=317
X16A **Lo Mia Camp, P** 72.74 59 *e*P P 09 06 27.9 +0.4
comp=Z,7.4nm,1.0s
C35A **Jirik Farms, M** 72.78 39 P P 09 06 25.3 -1.9
baz=318,SNR=6.7
H31A **Wolsey** 72.99 44 P P 09 06 28.3 -0.3
baz=316
F33A **5 Mile Ranch,** 73.07 42 P P 09 06 27.8 -1.2
baz=317
D35A **Remer** 73.20 40 P P 09 06 28.5 -1.2
baz=318
S22A **4UR Ranch, Cre** 73.23 53 P P 09 06 29.5 -0.9
baz=314
C36A **Pine Crest Far** 73.25 39 P P 09 06 28.5 -1.4
baz=319,SNR=9.8
J30A **Dallas** 73.31 45 P P 09 06 29.2 -1.3
baz=316
E35A **Pequot Lakes** 73.43 40 P P 09 06 29.5 -1.6
baz=318
G33A **Ortonville** 73.47 42 P P 09 06 30.1 -1.3
baz=317,SNR=7.6
H32A **Carlson Farm,** 73.49 43 P P 09 06 29.6 -1.9
baz=317
D36A **Goodland** 73.53 39 P P 09 06 29.9 -1.8
baz=319
C37A **Embarrass** 73.56 38 P P 09 06 30.6 -1.2
baz=319,SNR=6.9
X18A **Snowflake** 73.57 58 *e*P P 09 06 32.8 +0.4
comp=Z,8.0nm,1.4s
OGNE **Ogallala** 73.67 48 P P 09 06 31.9 -0.8
baz=315
OGNE **Ogallala** 73.67 48 *e*P P 09 06 35.5 +2.7
comp=Z,27nm,1.1s
EYMN **Ely** 73.70 38 P P 09 06 30.9 -1.7
baz=320,SNR=7.6
EYMN **Ely** 73.70 38 *e*P P 09 06 31.7 -0.9
comp=Z,7.4nm,0.9s
H33A **Prehn Over Nor** 73.70 43 P P 09 06 32.3 -0.4
baz=317
K30A **Basset** 73.72 46 P P 09 06 31.7 -1.2
baz=316
F35A **Swanville** 73.87 41 P P 09 06 32.4 -1.3
baz=318
D37A **Cotton** 73.88 39 P P 09 06 32.4 -1.3
baz=319
C38A **Sawbill Land.** 73.97 38 P P 09 06 32.9 -1.3
baz=320,SNR=10
E36A **McGregor** 73.99 40 P P 09 06 33.4 -0.9
baz=319,SNR=6.9
SDCO **Great Sand Dun** 73.99 53 P P 09 06 34.0 -0.9
baz=314
SDCO **Great Sand Dun** 73.99 53 *e*P P 09 06 36.1 +1.2
comp=Z,4.3nm,1.1s
J32A **Parkston** 74.11 44 P P 09 06 34.0 -1.1
baz=317
I33A **Coleman** 74.14 43 P P 09 06 34.6 -0.7
baz=317
H34A **Spellman Lake,** 74.18 42 P P 09 06 35.1 -0.4
baz=318
K31A **O'Neill** 74.19 45 P P 09 06 35.2 -0.4
baz=316
E37A **Wrenshall** 74.34 39 P P 09 06 35.6 -0.8
baz=319
F36A **Milaca** 74.36 40 P P 09 06 35.7 -0.8
baz=319
C39A **Grand Marais** 74.39 37 P P 09 06 35.5 -1.2
baz=320
ECSD **EROS Data Cent** 74.46 43 P P 09 06 36.5 -0.7
baz=317
ECSD **EROS Data Cent** 74.46 43 *e*P P 09 06 36.4 -0.7
comp=Z,11nm,1.3s
L31A **Butterfield Fa** 74.47 46 P P 09 06 36.6 -0.7
baz=316
TUC **Tucson** 74.56 60 P P 09 06 37.7 -0.4
baz=313
WSAR **Wadi Sarin** 74.58 287 LR LR 09 44 11.2
comp=Z,152nm,18.0s,slow=40
H35A **Sunnyside Ranc** 74.61 42 P P 09 06 36.6 -1.4
baz=318,SNR=7.6
T25A **Trinidad** 75.03 53 P P 09 06 40.0 -0.9
baz=315
SPMN **Marine on St.** 75.17 40 P P 09 06 40.5 -0.7
baz=319
LAZ **Ladron** 75.35 56 *e*P P 09 06 43.7 +1.0
ANMO **Albuquerque** 75.38 55 P P 09 06 42.3 -0.6
baz=314
ANMO **Albuquerque** 75.38 55 *ce*P P 09 06 42.2 -0.6
ANMO pmax pmax
comp=Z,3.0nm,1.2s
ANMO **Albuquerque** 75.38 55 *e*P P 09 06 42.9 +0.1
comp=Z,2.7nm,0.9s
I36A **Fitzsimmons Fa** 75.50 42 P P 09 06 42.4 -0.8
baz=319
H37A **Dierke Farm, C** 75.60 41 P P 09 06 42.8 -0.9
baz=319
O31A **Woolen Ranch,** 75.68 47 P P 09 06 43.2 -1.1
baz=317
I37A **Lemond, Waseca** 75.80 41 P P 09 06 44.4 -0.4
baz=319
BUR08 **Bucovina Ar. S** 76.01 325 *e*P P 09 06 45.5 -0.6
BURAR **Bucovina Array** 76.03 325 ⇓*i*P P 09 06 45.6 -0.6
BURAR **Bucovina Array** 76.03 325 ⇓P P 09 06 45.6 -0.6
COWI **Conover** 76.15 38 *e*P P 09 06 47.0 +0.2
comp=Z,17nm,1.6s
STHS **Stebnicka Huta** 76.16 328 *e*P P 09 06 48.9 +2.1
STHS pmax pmax
comp=Z,5.0nm,0.8s
STHS **Stebnicka Huta** 76.16 328 *e*P P 09 06 48.9 +2.1
121A **Cookes Peak, D** 76.25 58 P P 09 06 47.9 0.0
baz=314
J37A **Redenius Farm,** 76.26 42 P P 09 06 46.5 -1.1
baz=319
I38A **Scanlan Farm,** 76.28 41 P P 09 06 46.3 -1.3
baz=320
TESR **Tescani** 76.29 323 ⇓*i*P P 09 06 48.2 +0.6
CRVS **Cervenica-Dubn** 76.50 328 *e*P P 09 06 49.0 +0.2
CRVS **Cervenica-Dubn** 76.50 328 *e*P P 09 06 49.0 +0.2
SCHQ **Schefferville** 76.50 21 P P 09 06 47.6 -1.1
comp=Z,4.3nm,1.0s,baz=286,slow=7.1,SNR=9.4
SCHQ **Schefferville** 76.50 21 *e*P P 09 06 48.3 -0.4
comp=Z,16nm,1.3s
K37A **Belmond** 76.63 42 P P 09 06 48.8 -0.8
baz=319
J38A **Wedel Dairy, R** 76.77 41 P P 09 06 49.2 -1.2
baz=320
LANS **Liptovska Anna** 77.05 329 *e*P P 09 06 52.7 +0.8
LANS **Liptovska Anna** 77.05 329 *e*P P 09 06 52.7 +0.8
L37A **Phoenix Point,** 77.06 43 P P 09 06 50.9 -1.2
baz=319
N35A **Tabor** 77.06 45 P P 09 06 50.6 -1.5
baz=318
DPC **Dobruska-Polom** 77.17 331 *e*P P 09 06 52.8 +0.2
DPC **Dobruska-Polom** 77.17 331 *e*P P 09 06 52.8 +0.2
MORC **Moravsky Berou** 77.22 330 ⇓*i*P P 09 06 54.7 +1.8
MORC **Moravsky Berou** 77.22 330 ⇓P P 09 06 54.7 +1.8
MORC **Moravsky Berou** 77.22 330 *e*P P 09 06 52.7 -0.2
comp=Z,40nm,1.2s
Q33A **Connelly Farm,** 77.31 47 P P 09 06 52.3 -1.2
baz=318
MLR **Muntele Rosu** 77.40 323 LR LR 09 43 51.4
comp=Z,68nm,18.1s,baz=69,slow=38
MLR **Muntele Rosu** 77.40 323 ⇓*i*P P 09 06 55.8 +1.7
MLR **Muntele Rosu** 77.40 323 ⇓P P 09 06 55.8 +1.7
L38A **Oak Wood Farm,** 77.43 42 P P 09 06 53.6 -0.5
baz=320
P34A **Walnut Farm, R** 77.43 46 P P 09 06 51.9 -2.2
baz=318
CLL **Collm** 77.45 334 *i*P P 09 06 53.3 -0.7
CLL *e* 09 06 58.0
CLL **Collm** 77.45 334 *i*P P 09 06 53.3 -0.7
CLL *e* 09 06 58.0
CLL **Collm** 77.45 334 *i*P P 09 06 53.3 -0.7
SCIA **State Center** 77.48 43 *e*P P 09 06 55.7 +1.3
comp=Z,70nm,1.8s
BRG **Berggiesshubel** 77.52 333 *e*P P 09 06 56.0 +1.6
comp=Z,3.3nm,0.9s
BRG **Berggiesshubel** 77.52 333 *e*P P 09 06 56.0 +1.6
BRG pmax pmax
comp=Z,3.0nm,0.9s
S32A **Newby Ranch, P** 77.67 49 P P 09 06 54.6 -1.0
baz=317
R33A **Olander Ranch,** 77.74 48 P P 09 06 55.2 -0.8
baz=318
VYHS **Vyhne** 77.82 329 *e*P P 09 06 55.7 -0.5
VYHS pmax pmax
comp=Z,4.0nm,1.4s
VYHS **Vyhne** 77.82 329 *e*P P 09 06 55.7 -0.5
VOIR 77.83 323 ⇑*i*P P 09 06 56.8 +0.4
VOIR 77.83 323 ⇑P P 09 06 56.8 +0.4
Q34A **Chapman** 77.84 47 P P 09 06 56.5 0.0
baz=318
N37A **Lee Faris, Mou** 77.86 44 P P 09 06 55.9 -0.7
baz=319
VRAC **Vranov** 77.95 331 ⇑*i*P P 09 06 57.6 +0.7
VRAC **Vranov** 77.95 331 ⇑P P 09 06 57.6 +0.7
T32A **Huddler Ranch,** 78.06 49 P P 09 06 57.1 -0.6
baz=317
R34A **Isabella, Hill** 78.13 48 P P 09 06 57.4 -0.8
baz=318
AMTX **Amarillo** 78.19 53 P P 09 06 57.0 -1.6
baz=316
BR101 **Keskin Array S** 78.21 315 *e*P P 09 06 58.1 -0.6
BRTR **Keskin Array B** 78.21 315 P P 09 06 58.1 -0.6
comp=Z,0.8nm,0.4s,baz=136,slow=2.6,SNR=7.0
BRTR **Keskin Array B** 78.21 315 *i*P P 09 07 01.1 +2.4
BRTR pmax pmax
comp=Z,1.0nm,0.4s
MSTX **Muleshoe** 78.22 54 P P 09 06 57.5 -1.3
baz=316
S33A **Kaszmaul Farm,** 78.25 48 P P 09 06 57.9 -0.9
baz=318
MNTX **Cornudas Mount** 78.29 57 P P 09 06 58.5 -0.6
baz=315,SNR=5.1
MNTX **Cornudas Mount** 78.29 57 *e*P P 09 06 59.0 -0.1
comp=Z,6.4nm,1.1s
N38A **Joes South For** 78.32 43 P P 09 06 58.0 -1.0
baz=320
O37A **Wolven Farm, M** 78.34 44 P P 09 06 58.1 -1.1
baz=319
BR231 **Keskin MP Arra** 78.56 315 *e*P P 09 06 59.0 -1.6
N39A **Derby Farms, D** 78.61 43 P P 09 06 59.8 -0.9
baz=320
P37A **Lathrop** 78.67 45 P P 09 06 59.8 -1.3
baz=319
R36A **Gordon, Harris** 79.03 46 P P 09 07 01.9 -1.1
baz=319
P38A **Dawn** 79.06 44 P P 09 07 01.6 -1.5
baz=320
O39A **Kirksville** 79.07 43 P P 09 07 01.6 -1.7
baz=320
S35A **Otter Creek Ra** 79.08 47 P P 09 07 01.9 -1.5
baz=318
T34A **McClaskey Farm** 79.11 48 P P 09 07 01.7 -1.9
baz=318
KHC **Kasperske Hory** 79.14 332 *e*P P 09 07 03.5 0.0
KHC *ex* x 09 07 31.5
KHC **Kasperske Hory** 79.14 332 *e*P P 09 07 03.5 0.0
KHC **Kasperske Hory** 79.14 332 *e*P P 09 07 03.0 -0.5
comp=Z,3.2nm,0.6s
KHC **Kasperske Hory** 79.14 332 *e*P P 09 07 03.0 -0.5
GERES **GERESS Array B** 79.35 332 P P 09 07 03.6 -1.1
comp=Z,2.0nm,0.5s,baz=46,slow=5.9,SNR=11
GEA0 **GERESS Array S** 79.35 332 *e*P P 09 07 03.6 -1.1
U34A **Anderson Ranch** 79.36 49 P P 09 07 04.2 -0.7
baz=318
WET **Wettzell** 79.36 333 P P 09 07 06.7 +2.0
WET pmax pmax
comp=Z,15nm,0.9s
CONA **Conrad Observa** 79.38 330 *i*P P 09 07 05.9 +1.1
comp=Z,3.4nm,0.7s
W32A **Sentinel** 79.39 51 P P 09 07 04.1 -1.0
baz=317
V33A **Lossen Ranch,** 79.41 50 P P 09 07 03.2 -2.0
baz=318
S36A **Lake Cedric, C** 79.44 47 P P 09 07 04.3 -1.0
baz=319,SNR=6.3
O40A **La Belle** 79.50 43 P P 09 07 04.8 -0.8
baz=320
Q38A **Cooks Store, C** 79.52 45 P P 09 07 04.2 -1.5
baz=320,SNR=5.7
P39B **Salisbury** 79.55 44 P P 09 07 04.8 -1.0
baz=320
T35A **Sooner Cattle** 79.55 48 P P 09 07 05.3 -0.6
baz=318
MDVR **Moldovita** 79.75 325 ⇑*i*P P 09 07 06.1 -0.8
Q39A **Willow Grove F** 79.78 44 P P 09 07 06.4 -0.6
baz=320
T36A **Boggs Farm, Ca** 79.78 48 P P 09 07 06.3 -0.9
baz=319
W33A **Caddo, Fort Co** 79.80 50 P P 09 07 06.5 -0.8
baz=318
S37A **Fort Scott** 79.81 46 P P 09 07 05.5 -1.7
baz=319,SNR=8.0
V34A **Guthrie** 79.81 49 P P 09 07 06.0 -1.3
baz=318
U35A **Pawnee** 79.84 49 P P 09 07 06.5 -1.0
baz=318
P40A **Paris** 79.87 44 P P 09 07 06.4 -1.2
baz=320
X32A **Elmer** 79.88 51 P P 09 07 06.6 -1.2
baz=318
WMOK **Wichita Mounta** 79.93 51 P P 09 07 06.6 -1.5
baz=318
R38A **Fenwick Farm,** 79.96 46 P P 09 07 05.8 -2.2
baz=320
MOA **Molln** 80.01 331 *i*PcP P 09 07 10.3 +2.1
comp=Z,1.7nm,0.6s
ARSA **Arzberg** 80.08 330 *i*PcP P 09 07 11.2 +2.6
comp=Z,2.0nm,0.5s
V35A **Meyer Ranch, C** 80.24 49 P P 09 07 08.1 -1.6
baz=318
T37A **Cheneyville 18** 80.24 47 P P 09 07 08.3 -1.4
baz=319
Q40A **Laux Farm, Aux** 80.27 44 P P 09 07 08.8 -0.9
baz=320
R39A **Chumby, Stover** 80.31 45 P P 09 07 08.3 -1.6
baz=320,SNR=5.1
HDIL **Hopedale** 80.41 41 P P 09 07 08.9 -1.6
baz=322
HDIL **Hopedale** 80.41 41 *e*P P 09 07 11.0 +0.6
comp=Z,12nm,0.6s
Y33A **Hilltop Ranch,** 80.55 51 P P 09 07 10.8 -0.6
baz=318
X34A **Smith Ranch, M** 80.56 50 P P 09 07 09.9 -1.5
baz=318
T38A **Diamond** 80.63 47 P P 09 07 10.5 -1.3
baz=320,SNR=7.5
S39A **Bolivar** 80.64 46 P P 09 07 10.5 -1.3
baz=320
W35A **Tecumseh** 80.67 49 P P 09 07 10.4 -1.6
baz=319
U37A **Salina** 80.68 48 P P 09 07 11.0 -1.0
baz=319
TUL1 **Leonard** 80.69 48 P P 09 07 10.8 -1.2
baz=319
R40A **Maddies Statio** 80.71 45 P P 09 07 10.9 -1.3
baz=320,SNR=5.4
SOKA **Soboth** 80.74 330 *i*P P 09 07 12.7 +0.5
comp=Z,8.0nm,0.9s
KBA **Koelnbreinsper** 80.99 331 *i*P P 09 07 14.2 +0.5
comp=Z,4.9nm,0.5s

Z33A	Whitaker Ranch	81.01	52	P		P	09 07 12.6 -1.2
	baz=318						
TX31	Lajitas Ar. Si	81.01	58	eP		P	09 07 13.7 -0.3
LTX	Lajitas	81.01	58	eP		P	09 07 13.7 -0.3
LTX	Lajitas	81.01	58	eP		P	09 07 13.7 -0.3
TXAR	Lajitas Array	81.01	58	P		P	09 07 13.7 -0.4
	comp=Z,3.3nm,0.5s,baz=302,slow=4.0,SNR=70						
W36A	Wetumka	81.03	49	P		P	09 07 13.2 -0.7
	baz=319						
U38A	Gravette	81.04	47	P		P	09 07 12.5 -1.4
	baz=320						
V37A	Hulbert	81.06	48	P		P	09 07 13.0 -1.0
	baz=319						
Q42A	Golden Eagle	81.09	43	P		P	09 07 13.2 -0.9
	baz=321						
T39A	Clever	81.12	46	P		P	09 07 13.2 -1.2
	baz=320						
S40A	Lebanon	81.12	45	P		P	09 07 13.2 -1.2
	baz=320						
MYKA	Terra Mystica	81.28	331	i P		P	09 07 15.8 +0.8
	comp=Z,3.2nm,0.7s						
WATA	Walderalm	81.37	332	i PcP		P	09 07 16.5 +0.9
	comp=Z,5.3nm,0.5s						
X36A	Centrahoma	81.39	49	P		P	09 07 14.6 -1.2
	baz=319						
WTTA	Wattenberg	81.41	332	i P		P	09 07 15.9 0.0
	comp=Z,5.2nm,0.6s						
133A	Hamilton Ranch	81.42	52	P		P	09 07 15.3 -0.7
	baz=318						
T40A	Mansfield	81.46	45	P		P	09 07 14.6 -1.5
	baz=320						
V38A	Canehill	81.46	47	P		P	09 07 15.2 -1.0
	baz=320						
W37B	Quinton	81.46	49	P		P	09 07 15.7 -0.5
	baz=319						
Y35A	Marietta	81.51	50	P		P	09 07 16.1 -0.3
	baz=319						
MOTA	Moosalm	81.51	333	i PcP		P	09 07 17.2 +0.8
	comp=Z,5.8nm,0.6s						
BFO	Black Forest	81.52	335	i P		P	09 07 18.9 +2.6
U39A	Green Forest	81.55	47	P		P	09 07 15.4 -1.3
	baz=320,SNR=7.7						
SFIN	Lafayette	81.57	40	P		P	09 07 15.9 -0.7
	baz=323						
233A	Rising Star	81.87	53	P		P	09 07 17.3 -1.1
	baz=318						
V39A	Pettigrew	81.88	47	P		P	09 07 17.3 -1.2
	baz=320						
U40A	Yellville	81.90	46	P		P	09 07 17.2 -1.3
	baz=320,SNR=8.1						
X37A	Clayton	81.91	49	P		P	09 07 17.6 -1.0
	baz=319						
T41A	Mountain View	81.93	45	P		P	09 07 17.3 -1.3
	baz=321						
Y36A	Durant	81.93	50	P		P	09 07 17.1 -1.6
	baz=319						
DAVA	Damuels	81.96	333	i PcP		P	09 07 19.5 +0.7
	comp=Z,3.3nm,0.5s						
W38A	Poteau	82.00	48	P		P	09 07 17.4 -1.6
	baz=320						
X38A	Whitesboro	82.14	48	P		P	09 07 19.2 -0.6
	baz=320						
W39A	Magazine	82.30	47	P		P	09 07 19.7 -0.9
	baz=320						
MMAI	Mount Meron Ar	82.30	309	LR		LR	09 48 52.1
	comp=Z,176nm,18.5s,baz=15,slow=39						
234A	Clairette	82.31	52	P		P	09 07 20.3 -0.4
	baz=318						
333A	Richland Sprin	82.33	53	P		P	09 07 20.2 -0.7
	baz=318						
V40A	Witts Springs	82.34	46	P		P	09 07 19.3 -1.6
	baz=320						
JCT	Junction City	82.48	54	P		P	09 07 21.6 -0.1
	baz=318						
TAOE	Nuku Hiva Isla	82.57	110	eLR		LR	09 33 20.1
	comp=Z,185nm,25.0s						
X39A	Fountain Ranch	82.64	48	P		P	09 07 21.7 -0.8
	baz=320						
W40A	Ferguson Farm,	82.68	47	P		P	09 07 21.7 -0.9
	baz=320						
433A	Art	82.69	54	P		P	09 07 22.2 -0.6
	baz=318						
WHTX	Lake Whitney,	82.71	52	P		P	09 07 22.2 -0.5
	baz=319						
334A	Lometa	82.75	53	P		P	09 07 22.2 -0.8
	baz=318						
136A	Ennis	82.86	51	P		P	09 07 23.2 -0.3
	baz=319						
MIAR	Mount Ida	82.90	48	P		P	09 07 23.1 -0.7
	baz=320						
MIAR	Mount Ida	82.90	48	eP		P	09 07 23.0 -0.7
MIAR				pmax		pmax	
	comp=Z,10.0nm,0.9s						
MIAR	Mount Ida	82.90	48	eP		P	09 07 23.0 -0.7
	comp=Z,10.0nm,0.9s						
WHAR	Wooly Hollow	83.01	46	eP		P	09 07 23.7 -0.5
	comp=Z,11nm,1.0s						
PPT2	Papeete2	83.06	123	eLR		LR	09 33 31.0
	comp=Z,207nm,26.5s						
PPT2	Papeete2	83.06	123	eT		T	10 39 32.8
	comp=Z,4.5nm,0.3s						
Y39A	Lockesburg	83.09	48	P		P	09 07 23.7 -1.0
	baz=320						
PAE	Paea	83.11	123	eT		T	10 39 36.0
	comp=Z,1.4nm,0.3s						
434A	Burnet	83.12	53	P		P	09 07 23.8 -1.2
	baz=318						
W41B	Gary Mavity, V	83.12	47	P		P	09 07 24.1 -0.7
	baz=321						
Z38A	Mt. Pleasant	83.13	49	P		P	09 07 23.4 -1.5
	baz=320						
TIAR	Tiarei	83.17	123	eT		T	10 39 40.6
	comp=Z,2.1nm,0.3s						
533A	Kerrville	83.22	54	P		P	09 07 25.0 -0.6
	baz=318						
335A	Moody	83.25	52	P		P	09 07 25.2 -0.4
	baz=319						
534A	Blanco	83.58	54	P		P	09 07 26.5 -0.8
	baz=318						
633A	Saathoff Ranch	83.59	55	P		P	09 07 27.0 -0.4
	baz=318						
M54A	Oil Creek Stat	83.88	35	P		P	09 07 28.7 0.0
	baz=327						
832A	Faith Ranch, C	83.99	56	P		P	09 07 29.3 -0.1
	baz=318						
N54A	Moraine State	84.21	35	P		P	09 07 29.5 -0.8
	baz=327						
WVT	Waverly	84.60	43	eP		P	09 07 31.9 -0.5
WVT				pmax		pmax	
	comp=Z,4.0nm,0.9s						
WVT	Waverly	84.60	43	eP		P	09 07 31.9 -0.5
	comp=Z,4.4nm,0.9s						
933A	Laredo	84.90	56	P		P	09 07 33.8 -0.2
	baz=318						
EIL	Elat	85.06	307	LR		LR	09 50 54.8
	comp=Z,206nm,19.0s,baz=56,slow=39						
736A	Circle Diamond	85.20	54	P		P	09 07 35.0 -0.5
	baz=319						
O56A	Blue Knob Stat	85.38	35	P		P	09 07 35.3 -1.0
	baz=328						
PLAL	Pickwick Lake	85.39	44	eP		P	09 07 35.5 -0.9
	comp=Z,7.4nm,1.1s						
Y45A	Yeager Farm, C	85.53	46	P		P	09 07 36.6 -0.5
	baz=322						
341A	Kurthwood	85.58	50	P		P	09 07 37.2 -0.2
	baz=321						
034A	Hebbronville	85.66	56	P		P	09 07 37.9 0.0
	baz=318						
244A	Avery, Jackson	86.37	47	P		P	09 07 41.0 -0.3
	baz=322						
245A	Little AP, Sta	86.79	47	P		P	09 07 43.1 -0.3
	baz=322						
147A	Livingston	87.13	45	P		P	09 07 44.3 -0.7
	baz=323						
TBI	Tubuai	87.57	126	eLR		LR	09 35 27.2
	comp=Z,239nm,26.8s						
TBI	Tubuai	87.57	126	eT		T	10 45 11.4
	comp=Z,7.4nm,0.3s						
TOA1	Torodi Ar. Sit	115.61	325	ePKPdf		PKPdf	09 13 39.6 -1.8
TORD	Torodi Ar. Bea	115.61	325	PKP		PKPdf	09 13 39.6 -1.8
	comp=Z,0.4nm,0.5s,baz=17,slow=1.5,SNR=9.8						
LPAZ	La Paz	137.83	60	PKP		PKPdf	09 14 25.1 +0.8
	comp=Z,0.9nm,0.7s,baz=258,slow=6.5,SNR=6.5						
SNAA	Sanae	149.51	197	PKP		PKPbc	09 14 46.5 -0.4
PLCA	Paso Flores	150.63	97	PKPbc		PKPbc	09 14 49.5 -1.1
	comp=Z,5.7nm,1.0s,baz=288,slow=1.9,SNR=7.7						
VNA2	Neumayer--Watz	151.02	196	PKP		PKPbc	09 14 50.3 -0.1
	baz=72,slow=0.7						
VNA3	Neumayer Olymp	151.17	194	PKP		PKPbc	09 14 49.9 -0.9
VNA1	Neumayer--Stat	151.41	195	PKP		PKPbc	09 14 52.4 +1.1
CPUP	Villa Florida	151.98	59	PKPbc		PKPbc	09 14 52.6 -1.4
	comp=Z,3.5nm,1.0s,baz=267,slow=4.8,SNR=5.0						
CPUP	Villa Florida	151.98	59	ePKPbc		PKPbc	09 14 53.7 -0.3

*ISCJB **19** 09:05:37.8±0.4, 38.°45N±0.°01×23.°88E±0.°02, h5km±3km, mb3.9/7, Error ellipse: s-maj=2.5km s-min=2.2km az=177.2*
*IDC **19** 09:05:37.4±1.5, 38.°43N×23.°73E, h0km, mb3.7/6, mb1 3.8/6, mb1mx3.6/42, mbtmp3.7/6, Error ellipse: s-maj=38.8km s-min=25.0km az=135.0*
*ATH **19** 09:05:38.0, 38.°43N×23.°86E, h24km, ML3.8/11, Error ellipse: s-maj=1.2km s-min=0.6km az=252.0*
*CSEM **19** 09:05:38.8±0.1, 38.°44N×23.°86E, h10km, ML3.8, Error ellipse: s-maj=3.0km s-min=2.5km az=80.0*
*THE **19** 09:05:38.3, 38.°43N×23.°85E, h1km±1km, ML3.9/29, Error ellipse: s-maj=1.2km s-min=0.5km az=76.0*
ISC 19 09:05:37.3±1.1, 38.°41N±0.°01×23.°88E±0.°01, h3km±8km, n168, σ0°86/238, mb3.6/7, 8C-3D, Greece

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
PTL	**Penteli**	**0.36**	**182**	P	P	Pb	09 05 46.4	0.0
PTL				S	S	Sb	09 05 51.6	-1.0
PTL	**Penteli**	**0.36**	**182**	P	P	Pb	09 05 46.4	0.0
PTL				S	S	Sb	09 05 51.6	-1.0
PTL	**Penteli**	**0.36**	**182**	P	P	Pb	09 05 46.8	+0.4
PTL				S	S	Sb	09 05 50.8	-1.8
PTL				AML	AML		09 05 56.9	
	comp=N,16106μm,0.4s							
PTL				AML	AML		09 05 57.5	
	comp=E,16804μm,0.8s							
ATH	**Athens Observa**	**0.46**	**196**	P	P	Pb	09 05 47.8	-0.2
ATH				S	S	Sb	09 05 55.1	-0.1
ATH	**Athens Observa**	**0.46**	**196**	P	P	Pb	09 05 47.8	-0.2
ATH				S	S	Sb	09 05 54.9	-0.3
VLY	**Voula,Athens**	**0.56**	**187**	P	P	Pb	09 05 49.9	+0.1
VLY				S	S	Sb	09 05 57.8	-0.5
VLY	**Voula,Athens**	**0.56**	**187**	P	P	Pb	09 05 49.9	+0.1
VLY				S	S	Sb	09 05 57.8	-0.5
VLY	**Voula,Athens**	**0.56**	**187**	P	P	Pb	09 05 50.3	+0.5
VLY				S	S	Sb	09 05 57.1	-1.1
VLY				AML	AML		09 05 59.1	
	comp=N,21186μm,0.3s							
VLY				AML	AML		09 06 00.6	
	comp=E,22284μm,0.4s							
SMIA	**Simia**	**0.70**	**312**	P	Pg		09 05 51.4	+0.7
SMIA				S	Sg		09 06 01.0	+1.2
SMIA	**Simia**	**0.70**	**312**	P	Pg		09 05 51.4	+0.7
SMIA				S	Sg		09 06 01.0	+1.2
SMIA	**Simia**	**0.70**	**312**	P	Pb		09 05 52.1	0.0
SMIA				S	Sb		09 06 02.0	-0.2
LKR	**Lokris**	**0.73**	**289**	P	Pg		09 05 51.1	-0.1
LKR				S	Sb		09 06 02.1	-0.9
LKR	**Lokris**	**0.73**	**289**	P	Pg		09 05 51.1	-0.1
LKR				S	Sb		09 06 02.1	-0.9
LKR	**Lokris**	**0.73**	**289**	P	Pg		09 05 50.7	-0.6
LKR				S	Sb		09 06 02.2	-0.8
LKR				AML	AML		09 06 03.6	
	comp=N,15963μm,0.2s							
LKR				AML	AML		09 06 05.0	
	comp=E,16219μm,0.4s							
AOS	**Alonnisos**	**0.76**	**0**	P	Pg		09 05 52.3	+0.5
AOS				S	Sg		09 06 02.6	+1.0
AOS	**Alonnisos**	**0.76**	**0**	P	Pg		09 05 52.3	+0.5
AOS				S	Sg		09 06 02.6	+1.0
AOS	**Alonnisos**	**0.76**	**0**	P	Pb		09 05 52.9	-0.2
AOS				S	Sb		09 06 04.0	+0.2
AOS				AML	AML		09 06 05.9	
	comp=E,28067μm,0.6s							
AOS				AML	AML		09 06 06.2	
	comp=N,27298μm,0.4s							
LTK	**Loutraki**	**0.82**	**242**	P	Pb		09 05 54.0	-0.1
LTK				S	Sb		09 06 05.5	-0.1
LTK	**Loutraki**	**0.82**	**242**	P	Pb		09 05 54.0	-0.1
LTK				S	Sb		09 06 05.5	-0.1
LTK	**Loutraki**	**0.82**	**242**	P	Pg		09 05 53.0	0.0
LTK				S	Sb		09 06 04.6	-1.0
LTK				AML	AML		09 06 07.4	
	comp=E,32528μm,0.4s							
LTK				AML	AML		09 06 11.8	
	comp=N,33344μm,0.4s							
NEO	**Neokhori**	**1.03**	**330**	P	Pg		09 05 57.1	+0.1
NEO				S	Sb		09 06 12.0	+0.3
NEO	**Neokhori**	**1.03**	**330**	P	Pg		09 05 57.1	+0.1
NEO				S	Sb		09 06 12.0	+0.3
NEO	**Neokhori**	**1.03**	**330**	P	Pb		09 05 57.9	+0.2
NEO				AML	AML		09 06 13.8	
	comp=E,21560μm,0.6s							
NEO				AML	AML		09 06 15.1	
	comp=N,33332μm,0.4s							
DID	**Didima**	**1.04**	**209**	P	Pb		09 05 57.6	-0.3
DID				S	Sn		09 06 13.4	-0.5
DID	**Didima**	**1.04**	**209**	P	Pb		09 05 57.7	-0.3
DID				S	Sn		09 06 13.4	-0.5
DID	**Didima**	**1.04**	**209**	P	Pb		09 05 57.6	-0.3
DID				S	Sn		09 06 14.0	+0.1
DSF	**Desfina**	**1.06**	**270**	P	Pg		09 05 56.6	-1.0
DSF				S	Sb		09 06 12.7	0.0
DSF	**Desfina**	**1.06**	**270**	P	Pg		09 05 56.6	-1.0
DSF				S	Sb		09 06 12.7	0.0
DSF	**Desfina**	**1.06**	**270**	P	Pg		09 05 56.0	-1.6
XOR	**Xorichti**	**1.09**	**331**	P	Pg		09 05 58.3	+0.1
XOR				S	Sb		09 06 13.8	+0.3
XOR	**Xorichti**	**1.09**	**331**	P	Pg		09 05 58.3	+0.1
XOR				S	Sg		09 06 13.0	+0.7
XOR	**Xorichti**	**1.09**	**331**	P	Pg		09 05 58.1	-0.1
XOR				S	Sg		09 06 13.0	+0.7
XOR				AML	AML		09 06 13.8	
	comp=E,6578μm,0.7s							
XOR				AML	AML		09 06 20.1	
	comp=N,14529μm,0.6s							
KRND	**KRANIDI**	**1.18**	**209**	P	Pn		09 06 00.5	-0.1
KRND				S	Sn		09 06 17.4	+0.1
KRND	**KRANIDI**	**1.18**	**209**	P	Pn		09 06 00.6	-0.1
KRND				S	Sn		09 06 17.4	+0.1
KRND	**KRANIDI**	**1.18**	**209**	P	Pn		09 06 00.6	-0.1
KRND				S	Sn		09 06 17.2	-0.1
KRND				AML	AML		09 06 19.8	
	comp=N,5960μm,0.5s							
KRND				AML	AML		09 06 22.0	
	comp=E,7604μm,0.6s							
FYTO	**Fytoko, Volos**	**1.23**	**324**	P	Pg		09 06 01.0	+0.1
FYTO				S	Sn		09 06 18.5	-0.1
FYTO	**Fytoko, Volos**	**1.23**	**324**	P	Pb		09 06 01.4	+0.2
FYTO				S	Sn		09 06 18.5	-0.1
FYTO	**Fytoko, Volos**	**1.23**	**324**	P	Pb		09 06 01.4	+0.2
FYTO				S	Sn		09 06 19.1	+0.5
FYTO				AML	AML		09 06 22.3	
	comp=E,4730μm,0.6s							
FYTO				AML	AML		09 06 22.4	
	comp=N,7510μm,0.7s							
SERI	**Serifos**	**1.34**	**159**	P	Pb		09 06 03.3	+0.2
SERI				S	Sn		09 06 21.5	+0.2
SERI	**Serifos**	**1.34**	**159**	P	Pb		09 06 03.3	+0.2
SERI				S	Sn		09 06 21.5	+0.2
SERI				AML	AML		09 06 24.5	
	comp=N,2368μm,0.1s							
SERI				AML	AML		09 06 27.4	
	comp=E,4975μm,0.8s							
AGG	**Agios Georgios**	**1.35**	**297**	P	Pn		09 06 02.7	-0.4
AGG				S	Sn		09 06 21.9	+0.2
AGG	**Agios Georgios**	**1.35**	**297**	P	Pn		09 06 03.1	0.0
AGG				S	Sn		09 06 21.9	+0.2
AGG	**Agios Georgios**	**1.35**	**297**	P	Pn		09 06 03.1	0.0
KLV	**Kalavryta, Ach**	**1.41**	**255**	P	Pn		09 06 03.5	-0.4
KLV				S	Sg		09 06 21.2	-1.4
KLV	**Kalavryta, Ach**	**1.41**	**255**	P	Pn		09 06 03.5	-0.4
KLV				S	Sg		09 06 22.5	-0.1
KLV	**Kalavryta, Ach**	**1.41**	**255**	P	Pn		09 06 03.4	-0.5
KLV				S	Sg		09 06 22.5	-0.1
KLV				AML	AML		09 06 23.9	
	comp=N,5172μm,0.8s							
KLV				AML	AML		09 06 25.8	
	comp=E,6330μm,0.5s							
SERG	**Sergoula**	**1.43**	**271**	P	Pn		09 06 03.8	-0.4
SERG				S	Sg		09 06 23.0	-0.2
SERG	**Sergoula**	**1.43**	**271**	P	Pn		09 06 03.8	-0.4
SERG				S	Sg		09 06 23.0	-0.2
LAKA	**Lakka**	**1.50**	**264**	P	Pn		09 06 05.4	+0.2
LAKA				S	Sg		09 06 26.5	+0.9
LAKA	**Lakka**	**1.50**	**264**	P	Pb		09 06 05.9	0.0
LAKA				S	Sg		09 06 26.5	+0.9
LAKA	**Lakka**	**1.50**	**264**	P	Pb		09 06 05.9	0.0
PAIG	**Paliouri**	**1.52**	**354**	P	Pn		09 06 04.9	-0.5
PAIG				S	Sn		09 06 23.6	-2.1
PAIG	**Paliouri**	**1.52**	**354**	P	Pn		09 06 04.9	-0.5
PAIG				S	Sn		09 06 23.6	-2.1
PAIG	**Paliouri**	**1.52**	**354**	P	Pn		09 06 04.3	-1.0
ANX	**Ano Chora**	**1.55**	**277**	P	Pn		09 06 05.8	0.0
ANX				S	Sb		09 06 26.8	+0.1
ANX	**Ano Chora**	**1.55**	**277**	P	Pn		09 06 05.8	0.0
ANX				S	Sb		09 06 26.8	+0.1
EFP	**Efpalio**	**1.55**	**271**	P	Pn		09 06 05.7	-0.1
EFP				S	Sg		09 06 27.2	+0.2
EFP	**Efpalio**	**1.55**	**271**	P	Pn		09 06 05.7	-0.1
EFP				S	Sg		09 06 27.2	+0.2
VLX	**Vlachokerasia**	**1.58**	**229**	P	Pn		09 06 06.5	+0.3
VLX				S	Sn		09 06 27.1	-0.2
VLX	**Vlachokerasia**	**1.58**	**229**	P	Pn		09 06 06.6	+0.3
VLX				S	Sn		09 06 27.1	-0.2
VLX	**Vlachokerasia**	**1.58**	**229**	P	Pn		09 06 06.6	+0.3
EVR	**Evrytania**	**1.70**	**288**	P	Pn		09 06 07.8	-0.1
EVR				S	Sn		09 06 30.3	+0.1
EVR	**Evrytania**	**1.70**	**288**	P	Pb		09 06 09.4	+0.2
EVR				S	Sn		09 06 30.3	+0.1
EVR	**Evrytania**	**1.70**	**288**	P	Pb		09 06 09.4	+0.2
CHOS	**Chios island**	**1.71**	**90**	P	Pb		09 06 08.7	-0.7
CHOS	**Chios island**	**1.71**	**90**	P	Pg		09 06 09.8	-0.2
CHOS	**Chios island**	**1.71**	**90**	P	Pg		09 06 09.8	-0.2
SIGR	**SIGRI**	**1.74**	**62**	P	Pn		09 06 08.8	+0.4
SIGR				S	Sg		09 06 33.5	+0.4
SIGR	**SIGRI**	**1.74**	**62**	P	Pn		09 06 08.8	+0.4
SIGR				S	Sg		09 06 33.5	+0.4
SIGR	**SIGRI**	**1.74**	**62**	P	Pb		09 06 09.8	-0.1
DRO	**Drossia**	**1.77**	**256**	P	Pn		09 06 09.2	+0.4
DRO				S	Sb		09 06 33.3	+0.3
DRO	**Drossia**	**1.77**	**256**	P	Pn		09 06 09.2	+0.4
DRO				S	Sb		09 06 33.3	+0.3
DRO	**Drossia**	**1.77**	**256**	P	Pn		09 06 08.6	-0.2
MHLO	**Agia Marina, M**	**1.77**	**166**	P	Pb		09 06 10.4	0.0
MHLO				S	Sg		09 06 34.6	+0.4
MHLO	**Agia Marina, M**	**1.77**	**166**	P	Pb		09 06 09.8	-0.6
MHLO				S	Sg		09 06 34.6	+0.4
MHLO	**Agia Marina, M**	**1.77**	**166**	P	Pb		09 06 09.8	-0.6
LIA	**Limnos Island**	**1.80**	**34**	P	Pn		09 06 08.8	-0.4
LIA	**Limnos Island**	**1.80**	**34**	P	Pn		09 06 08.9	-0.3
VLI	**Veliai**	**1.85**	**204**	P	Pn		09 06 10.1	+0.2
VLI				S	Sb		09 06 35.5	+0.2
VLI	**Veliai**	**1.85**	**204**	P	Pn		09 06 10.1	+0.2
VLI				S	Sb		09 06 35.5	+0.2
THL	**Klokotos Trika**	**1.85**	**309**	P	Pn		09 06 09.7	-0.2
THL				S	Sg		09 06 37.0	+0.2
THL	**Klokotos Trika**	**1.85**	**309**	P	Pn		09 06 10.0	+0.1
THL				S	Sg		09 06 37.0	+0.2
PVO	**Paravola**	**1.86**	**277**	P	Pn		09 06 10.0	0.0
PVO				S	Sb		09 06 35.9	+0.4
PVO	**Paravola**	**1.86**	**277**	P	Pb		09 06 12.1	+0.3
PVO				S	Sb		09 06 35.9	+0.4
PVO	**Paravola**	**1.86**	**277**	P	Pb		09 06 12.1	+0.3
APE	**Apeiranthos**	**1.88**	**135**	⇓iP	Pb		09 06 11.5	-0.7
APE	**Apeiranthos**	**1.88**	**135**	P	Pn		09 06 11.0	+0.7
APE				S	Sg		09 06 36.5	-1.0
APE	**Apeiranthos**	**1.88**	**135**	P	Pb		09 06 11.7	-0.5
APE				S	Sg		09 06 36.5	-1.0
APE	**Apeiranthos**	**1.88**	**135**	P	Pb		09 06 11.7	-0.5
OUR	**Ouranopolis**	**1.92**	**2**	P	Pn		09 06 10.6	-0.2
OUR	**Ouranopolis**	**1.92**	**2**	P	Pn		09 06 10.6	-0.2
AMT	**Artemida-Makis**	**1.93**	**243**	P	Pn		09 06 11.4	+0.4
AMT				S	Sb		09 06 37.3	-0.2
AMT	**Artemida-Makis**	**1.93**	**243**	P	Pb		09 06 12.2	-0.9
AMT				S	Sb		09 06 37.3	-0.2
AMT	**Artemida-Makis**	**1.93**	**243**	P	Pb		09 06 12.2	-0.9
ITM	**Ithomi**	**1.98**	**232**	P	Pn		09 06 12.1	+0.4
ITM				S	Sb		09 06 38.3	-0.7
ITM	**Ithomi**	**1.98**	**232**	P	Pn		09 06 12.1	+0.4
ITM				S	Sb		09 06 38.3	-0.7
ITM	**Ithomi**	**1.98**	**232**	P	Pg		09 06 14.5	-0.6
AXS	**Araxos**	**1.98**	**264**	P	Pn		09 06 12.7	+1.0
AXS				S	Sn		09 06 37.9	+0.9
PLG	**Polygyros**	**1.98**	**350**	P	Pn		09 06 11.4	-0.4
PLG				S	Sn		09 06 34.6	-2.7
PLG	**Polygyros**	**1.98**	**350**	P	Pn		09 06 11.4	-0.4
PLG				S	Sn		09 06 34.6	-2.7
PLG	**Polygyros**	**1.98**	**350**	P	Pn		09 06 11.1	-0.8
LIT	**Litokhoron**	**2.00**	**328**	P	Pn		09 06 11.2	-0.8
LIT	**Litokhoron**	**2.00**	**328**	P	Pn		09 06 11.2	-0.8
LIT	**Litokhoron**	**2.00**	**328**	P	Pn		09 06 10.8	-1.2
ZEY	**¯zmir**	**2.07**	**94**	i P	Pb		09 06 14.8	-0.7
URLA	**Izmir**	**2.14**	**91**	P	Pn		09 06 14.8	+0.9
URLA	**Izmir**	**2.14**	**91**	i P	Pn		09 06 14.8	+0.9
BOZC	**Bozcaada**	**2.21**	**49**	i P	Pn		09 06 12.2	-2.7
KYTH	**Kithira**	**2.23**	**198**	P	Pn		09 06 15.7	+0.5
KYTH	**Kithira**	**2.23**	**198**	P	Pn		09 06 16.1	+0.9
KYTH	**Kithira**	**2.23**	**198**	P	Pn		09 06 16.1	+0.9
PYL	**PYLOS**	**2.27**	**229**	P	Pb		09 06 18.5	-0.5
PYL	**PYLOS**	**2.27**	**229**	P	Pb		09 06 18.5	-0.5
DSL	**Palaion Diasel**	**2.29**	**289**	P	Pn		09 06 16.8	+0.8
DSL	**Palaion Diasel**	**2.29**	**289**	P	Pn		09 06 16.6	+0.6
DSL	**Palaion Diasel**	**2.29**	**289**	P	Pn		09 06 16.6	+0.6
AYVA	**Ayvalik**	**2.37**	**67**	i P	Pg		09 06 22.6	-0.1
DGB	**¯zmir**	**2.39**	**98**	i P	Pn		09 06 18.7	+1.3
SANT	**Santorini**	**2.40**	**148**	⇑iP	Pg		09 06 25.9	+2.7
KPRO	**Kipourio**	**2.49**	**309**	P	Pn		09 06 19.2	+0.4
KPRO	**Kipourio**	**2.49**	**309**	P	Pn		09 06 19.2	+0.4
KZN	**Kozani**	**2.50**	**320**	P

comp=Z,0.3nm,0.8s,baz=31,slow=5.3,SNR=5.8

NIED **19** *09:12:00,37°.20N×142°.80E,h17km,Mw5.2 Best double couple: M0 7.59000×10^16 NP1:φs324.00000°,δ46.00000°, λ-159.00000°. NP2:φs219.00000°,δ75.00000°, λ-46.00000°.*
IDC **19** *09:12:42.1±0.4,37°.13N×142°.86E,h0km,mb4.8/40, mb1 4.9/45,mb1mx4.8/61,mbtmp4.8/45,ML4.5/4,MS4.9/44, Ms1 4.9/44,ms1mx4.8/57,Error ellipse: s-maj=12.0km s-min=9.7km az=91.0*
JMA **19** *09:12:43.7±0.2,37°.17N×142°.85E,h42km,M5.5*
JMA Felt II J1.
ISCJB **19** *09:12:43.4±0.7,37°.14N±0°.02×142°.71E±0°.02,h15km±5km, mb5.2/277,MS5.2/80,Error ellipse: s-maj=3.6km s-min=2.3km az=156.6*
BJI **19** *09:12:45.3,37°.32N×142°.51E,h22km,mb5.0/79,mB5.1/64, Ms5.4/91,Ms7 5.3/83*
GCMT **19** *09:12:48.5±0.2,37°.24N×142°.76E,h15km,MW5.3/100, Moment Tensor Solution. s57,c87; s100,c166; Duration: 1§1 Moment tensor: Scale 10^17Nm; Mrr-0.09±.01; Mθθ-0.35±.01; Mφφ0.43±.01; Mrθ0.94±.04; Mφθ0.17±.01; Mφr0.69±.04; Best double couple: M0 1.24600×10^17 NP1:φs233.00000°,δ88.00000°, λ-70.00000°. NP2:φs330.00000°,δ20.00000°, λ-173.00000°. Principal axes: T 1.2510, Plg40.0000°, Azm305.0000°; N -0.0110, Plg20.0000°, Azm53.0000°; P -1.2410, Plg44.0000°, Azm163.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
MOS **19** *09:12:48.2±1.0,37°.64N×142°.62E,h33km,mb5.2/89, MS5.2/25 Error ellipse: s-maj=6.2km s-min=4.2km az=95.0*
NEIC **19** *09:12:48.5±0.5,37°.12N×142°.67E,h40km±4km,mb5.4/189, Error ellipse: s-maj=3.7km s-min=2.6km az=135.0*
NEIC Felt at Ichinoseki. Recorded [2 JMA] in Fukushima and Miyagi.

ISC 19 09:12:46.6±0.3,37°.26N±0°.03×142°.67E±0°.03,h28km±1km, h28km:pP-P,n832,σ1§53/876,mb5.3/280,MS5.2/82, 41C-21D,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.44**	**275**	⇑P		**Pn**	**09 13 10.1**	**-0.8**
JFK				S		**Sn**	**09 13 29.1**	**+0.2**
ONAJ	**Iwakimizuishiy**	**1.50**	**265**	⇑P		**Pn**	**09 13 10.8**	**-1.0**
JIO	**Ouri**	**1.59**	**319**	⇑P		**Pn**	**09 13 12.3**	**-0.6**
JMM	**Marumori**	**1.61**	**293**	⇑P		**Pn**	**09 13 12.9**	**-0.3**
JMM				S		**Sn**	**09 13 34.4**	**+1.3**
JFT	**Otama**	**1.88**	**279**	⇑P		**Pn**	**09 13 17.2**	**+0.3**
JFT				*e*S		**Sn**	**09 13 39.4**	**-0.3**
JOU	**Okura**	**1.94**	**305**	⇑P		**Pn**	**09 13 18.0**	**+0.3**
JOU				*e*S		**Sb**	**09 13 43.8**	**-1.3**
JMK	**Ichinoseki**	**2.04**	**326**	⇑P		**Pn**	**09 13 18.9**	**-0.3**
JOM	**Ohasama**	**2.46**	**334**	P		**Pn**	**09 13 24.5**	**-0.5**
JYK	**Kaneyama**	**2.47**	**313**	P		**Pn**	**09 13 25.3**	**+0.3**
JAG	**Ashikaga**	**2.71**	**253**	P		**Pn**	**09 13 27.9**	**-0.5**
JAG				S		**Sn**	**09 13 59.6**	**-0.7**
JNS	**Sasagawa**	**2.73**	**283**	P		**Pn**	**09 13 30.2**	**+1.7**
BSO1	**Boso 1**	**2.94**	**208**	P		**Pn**	**09 13 29.4**	**-1.6**
BSO1				*e*S		**Sn**	**09 14 03.7**	**-1.4**
JAW	**Awa shima**	**2.96**	**295**	P		**Pn**	**09 13 32.5**	**+0.7**
JANG	**Nango**	**3.24**	**344**	P		**Pn**	**09 13 34.3**	**-1.3**
JRY	**Ryogami san**	**3.28**	**249**	P		**Pn**	**09 13 35.7**	**-0.4**
JRY				S		**Sn**	**09 14 12.2**	**-2.0**
JOD2	**Odawara 2**	**3.51**	**237**	P		**Pn**	**09 13 38.7**	**-0.7**
JOD2				*e*S		**Sn**	**09 14 18.8**	**-1.3**
JSD	**Sado**	**3.59**	**284**	P		**Pn**	**09 13 40.5**	**+0.1**
MJAR	**Matsushiro Arr**	**3.65**	**260**	Pn		**Pn**	**09 13 42.0**	**+0.7**
	64nm,0.3s,baz=90,slow=15,SNR=281							
MJAR	**Matsushiro Arr**	**3.65**	**260**	P		**Pn**	**09 13 42.0**	**+0.7**
MJAR				pmax		pmax		
	comp=Z,64nm,0.3s							
MAJO	**Matsushiro**	**3.65**	**260**	⇑*i*P		**Pn**	**09 13 42.6**	**+1.3**
MAJO	**Matsushiro**	**3.65**	**260**	*e*Pn		**Pn**	**09 13 42.3**	**+1.1**
MAT	**Matsushiro**	**3.65**	**260**	P		**Pn**	**09 13 42.1**	**+0.8**
MAT				S		**Sn**	**09 14 25.2**	**+1.8**
MAT	**Matsushiro**	**3.65**	**260**	P		**Pn**	**09 13 42.3**	**+1.0**
MJB9	**Matsu-Tunnel**	**3.65**	**260**	*e*Pn		**Pn**	**09 13 42.4**	**+1.1**
JHJ2	**Mitsune**	**4.75**	**210**	*e*Pn		**Pn**	**09 13 53.4**	**-3.0**
JHJ	**Hachijo jima 2**	**4.76**	**211**	Pn		**Pn**	**09 13 53.4**	**-3.1**
	comp=Z,178nm,0.3s,baz=126,slow=22,SNR=105							
ERM	**Erimo**	**4.77**	**4**	*c i*P		**Pn**	**09 13 55.0**	**-1.6**
ERM				pmax		pmax		
	comp=Z,409nm,1.2s							
ERM	**Erimo**	**4.77**	**4**	*e*Pn		**Pn**	**09 13 54.1**	**-2.5**
INU	**Inuyama**	**4.95**	**249**	*e*Pn		**Pn**	**09 14 00.3**	**+1.2**
ASAJ	**Asahikawa**	**6.85**	**360**	*e*Pn		**Pn**	**09 14 23.8**	**-1.4**
YUK	**Yuzh-Kuril'sk**	**7.19**	**19**	*i* P		**Pn**	**09 14 26.6**	**-3.2**
YUK				*i* S		**Sn**	**09 15 43.3**	**-7.2**
YUK				pmax		pmax		
	comp=E,104nm,0.4s							
YUK				pmax		pmax		
	comp=Z,329nm,0.4s							
YUK				pmax		pmax		
	comp=N,160nm,0.2s							
YUK				MLR		MLR		
	comp=N,11μm,14.0s							
YUK				MLR		MLR		
	comp=Z,10μm,14.0s							
YUK				MLR		MLR		
	comp=E,5μm,13.0s							
SHO	**Shikotan**	**7.32**	**24**	*i* P		**Pn**	**09 14 27.9**	**-3.8**
SHO				*i* S		Sn	09 15 44.9	-8.9
SHO				pmax		pmax		
	comp=Z,170nm,0.4s							
KUR	**Kuril'sk**	**8.88**	**24**	*i* P		**Pn**	**09 14 50.9**	**-2.0**
KUR				*i* S		Sn	09 16 23.4	-8.5
KUR				pmax		pmax		
	comp=E,75nm,0.4s							
KUR				pmax		pmax		
	comp=Z,123nm,0.4s							
KUR				pmax		pmax		
	comp=N,46nm,0.3s							
KUR				MLR		MLR		
	comp=N,9μm,11.0s							
KUR				MLR		MLR		
	comp=E,4μm,11.0s							
KUR				MLR		MLR		
	comp=Z,8μm,11.0s							
YSS	**Yuzh-Sakhalins**	**9.69**	**0**	⇓*e*P		**Pn**	**09 15 03.7**	**-0.4**
YSS				*e*S		**Sn**	**09 16 48.2**	**-3.8**
YSS				pmax		pmax		
	comp=Z,140nm,0.9s							
YSS				MLR		MLR		
	comp=Z,7μm,14.0s							
YSS				MLR		MLR		
	comp=N,7μm,15.0s							
YSS				MLR		MLR		
	comp=E,4μm,16.0s							
VLA	**Vladivostok**	**10.12**	**309**	P		**Pn**	**09 15 08.7**	**-1.2**
CBIJ	**Chichi jima**	**10.14**	**182**	*e*Pn		Pn	09 15 04.3	-6.0
CBIJ				*e*Sn		Sn	09 16 51.2	-12
JCJ	**Chichijima**	**10.14**	**182**	Pn		Pn	09 15 04.1	-6.3
	comp=E,69nm,0.3s,baz=274,slow=23,SNR=49							
JCJ				Sn		Sn	09 16 49.8	-13
	comp=E,49nm,0.3s,baz=99,slow=23,SNR=5.4							
JCJ				LR		LR	09 20 04.6	
	comp=E,767nm,20.7s,baz=351,slow=44							
JNU	**Nakatsue**	**10.49**	**250**	Pn		**Pn**	**09 15 16.8**	**+1.6**
	comp=E,2.8nm,0.3s,baz=58,slow=8.6,SNR=57							
JNU				LR		LR	09 20 03.6	
	comp=E,3μm,18.3s,baz=70,slow=42							
JNU	**Nakatsue**	**10.49**	**250**	*e*Pn		**Pn**	**09 15 16.4**	**+1.1**
USRK	**Ussuriysk Ar.**	**10.66**	**314**	Pn		**Pn**	**09 15 21.5**	**+4.1**
	comp=E,2.8nm,0.3s,baz=129,slow=16,SNR=38							
USRK				LR		LR	09 19 29.5	
	comp=E,14μm,18.2s,baz=117,slow=38							
KSRS	**Korea Array**	**11.74**	**275**	Pn		**Pn**	**09 15 35.5**	**+3.3**
	comp=E,0.8nm,0.3s,baz=90,slow=14,SNR=34							
KSRS				LR		LR	09 20 05.8	
	comp=E,10μm,18.4s,baz=84,slow=37							
KS01	**Wonju Array Si**	**11.77**	**276**	*e*Pn		**Pn**	**09 15 34.7**	**+2.2**
KS15	**Wonju Array Si**	**11.78**	**275**	*e*Pn		**Pn**	**09 15 35.6**	**+2.9**
KSAR	**Wonju Array Be**	**11.78**	**275**	P		**Pn**	**09 15 35.5**	**+2.8**
KSAR	**Wonju Array Be**	**11.78**	**275**	Pn		**Pn**	**09 15 35.5**	**+2.8**
UGL	**Uglegorsk**	**11.82**	**358**	*e*P		**Pn**	**09 15 31.0**	**-2.3**
UGL				*e*			09 17 45.0	
UGL				pmax		pmax		
	comp=Z,112nm,1.0s							
UGL				MLR		MLR		
	comp=N,10μm,16.0s							
UGL				MLR		MLR		
	comp=E,9μm,16.0s							
UGL				MLR		MLR		
	comp=Z,10μm,16.0s							
TJN	**Taejon**	**12.30**	**271**	*c e*P		**Pn**	**09 15 42.2**	**+2.3**
MDJ	**Mudanjiang**	**12.31**	**311**	P		**Pn**	**09 15 39.4**	**-0.6**
MDJ				S		**Sn**	**09 17 55.6**	**-0.7**
MDJ				PcP		**PcP**	**09 21 20.4**	**-0.3**
MDJ				ScP		**ScP**	**09 24 53.9**	**+2.2**
MDJ				ScS		**ScS**	**09 28 27.5**	**-0.1**
MDJ				pmax		pmax		
	comp=Z,11nm,0.7s							
MDJ				pmax		pmax		
	comp=Z,1μm,5.4s							
MDJ				LR		LR		
	comp=Z,8μm,13.4s							
MDJ				LR		LR		
	comp=Z,6μm,13.4s							
MDJ				LR		LR		
	comp=Z,11μm,17.2s							
MDJ	**Mudanjiang**	**12.31**	**311**	*e*Pn		**Pn**	**09 15 44.2**	**+4.2**
HABR	**Khabarovsk**	**12.52**	**336**	*e*P		**Pn**	**09 15 39.0**	**-3.8**
HABR				*e*S		**Sn**	**09 17 53.8**	**-7.4**
HABR				pmax		pmax		
	comp=N,52nm,1.4s							
HABR				pmax		pmax		
	comp=E,42nm,1.4s							
HABR				pmax		pmax		
	comp=Z,85nm,1.4s							
HABR				MLR		MLR		
	comp=Z,9μm,13.0s							
TYV	**Tymovskoe**	**13.60**	**360**	*e*P		**Pn**	**09 15 54.8**	**-2.8**
TYV				*e*S		**Sn**	**09 18 30.0**	**+2.3**
TYV				pmax		pmax		
	comp=E,18nm,0.8s							
TYV				pmax		pmax		
	comp=Z,31nm,0.8s							
TYV				smax		smax		
	comp=E,2μm,10.0s							
TYV				MLR		MLR		
	comp=E,8μm,16.0s							
TYV				MLR		MLR		
	comp=Z,7μm,18.0s							
KLR	**Kul'dur**	**14.35**	**330**	Pn		**Pn**	**09 16 06.3**	**-1.5**
	comp=Z,0.7nm,0.3s,baz=131,slow=13,SNR=16							
KLR				LR		LR	09 21 41.5	
	comp=Z,8μm,19.6s,baz=145,slow=37							
CN2	**Changchun**	**14.63**	**302**	*e*P		**Pn**	**09 16 09.9**	**-1.7**
CN2				*e*S		**Sn**	**09 18 52.1**	**-0.6**
CN2				pmax		pmax		
	comp=Z,10.0nm,1.0s							
CN2				pmax		pmax		
	comp=Z,300nm,6.0s							
CN2				LR		LR		
	comp=Z,4μm,17.0s							
CN2				LR		LR		
	comp=Z,5μm,17.0s							
CN2				LR		LR		
	comp=Z,6μm,16.0s							
SNY	**Shenyang**	**15.42**	**293**	⇑P		**Pn**	**09 16 20.8**	**-1.3**
SNY				S		**Sn**	**09 19 02.4**	**-10**
SNY				pmax		pmax		
	comp=Z,17nm,1.1s							
SNY				pmax		pmax		
	comp=Z,780nm,11.6s							
SNY				LR		LR		
	comp=Z,8μm,13.5s							
SNY				LR		LR		
	comp=Z,14μm,16.7s							
SNY				LR		LR		
	comp=Z,19μm,17.1s							
NKL	**Nikolayevsk**	**15.96**	**356**	*e*P		**Pn**	**09 16 25.0**	**-3.9**
NKL				pmax		pmax		
	comp=N,34nm,1.2s							
NKL				pmax		pmax		
	comp=E,21nm,1.2s							
NKL				pmax		pmax		
	comp=Z,48nm,1.2s							
NKL				pmax		pmax		
	comp=N,500nm,10.0s							
NKL				pmax		pmax		
	comp=Z,700nm,10.0s							
NKL				MLR		MLR		
	comp=N,4μm,17.0s							
NKL				MLR		MLR		
	comp=Z,8μm,17.0s							
OKH	**Okha**	**16.30**	**1**	*e*P		**Pn**	**09 16 34.0**	**+0.7**
DL2	**Dalian**	**16.65**	**282**	⇑P		**Pn**	**09 16 37.0**	**-0.9**
DL2				S		**Sn**	**09 19 39.3**	**-2.7**
DL2				pmax		pmax		
	comp=Z,83nm,1.1s							
DL2				pmax		pmax		
	comp=Z,710nm,6.1s							
DL2				LR		LR		
	comp=Z,2μm,13.0s							
DL2				LR		LR		
	comp=Z,5μm,15.7s							
DL2				LR		LR		
	comp=Z,6μm,14.6s							
SSE	**Sheshan**	**18.79**	**257**	*e*P		**P**	**09 17 03.4**	**-0.4**
SSE				S		**Sn**	**09 20 31.0**	**-2.9**
SSE				pmax		pmax		
	comp=Z,41nm,0.7s							
SSE				pmax		pmax		
	comp=Z,270nm,7.8s							
SSE				LR		LR		
	comp=Z,7μm,20.5s							
SSE				LR		LR		
	comp=Z,3μm,20.4s							
SSE				LR		LR		
	comp=Z,4μm,16.1s							
PEA0	**Petropavlovsk-**	**19.00**	**29**	*e*P		**P**	**09 17 06.2**	**+0.2**
PEA0B	**Petropavlovsk-**	**19.00**	**29**	*e*P		**P**	**09 17 06.6**	**+0.6**
	comp=Z,160nm,1.5s							
PETK	**Petropavlovsk-**	**19.00**	**29**	P		**P**	**09 17 04.2**	**-1.7**
	comp=Z,0.2nm,0.3s,baz=184,slow=11,SNR=6.8							
PETK				LR		LR	09 25 17.2	
	comp=Z,2μm,18.8s,baz=217,slow=40							
PET	**Petropavlovsk**	**19.31**	**30**	*c e*P		**P**	**09 17 09.4**	**+0.1**
PET				*e*S		**S**	**09 20 38.0**	**-8.0**
PET				pmax		pmax		
	comp=Z,800nm,8.0s							
PET				pmax		pmax		
	comp=Z,500nm,13.3s							
PET				pmax		pmax		
	comp=Z,58nm,1.2s							
PET				smax		smax		
	comp=E,36nm,0.6s							
PET				smax		smax		
	comp=N,32nm,0.6s							
PET				MLR		MLR		
	comp=Z,4μm,15.0s							
PET				MLR		MLR		
	comp=Z,3μm,14.0s							
NJ2	**Nanjing**	**20.25**	**262**	*e*P		**P**	**09 17 19.4**	**-0.3**
NJ2				pP		**sP**	**09 17 28.4**	**-2.4**
NJ2				pmax		pmax		
	comp=Z,22nm,0.7s							
NJ2				pmax		pmax		
	comp=Z,360nm,10.3s							
NJ2				LR		LR		
	comp=Z,5μm,16.8s							
NJ2				LR		LR		
	comp=Z,5μm,16.8s							
NJ2				LR		LR		
	comp=Z,6μm,16.8s							
HIA	**Hailar**	**20.48**	**313**	*e*P		Pn	09 17 27.0	+2.7
HIA				pmax		pmax		
	comp=Z,27nm,0.7s							
HIA	**Hailar**	**20.48**	**313**	*e*P		Pn	09 17 27.0	+2.6
	comp=Z,27nm,0.7s							
TIA	**Tai'an**	**20.49**	**275**	⇓P		**P**	**09 17 20.9**	**-1.4**
TIA				pmax		pmax		
	comp=Z,30nm,1.1s							
TIA				pmax		pmax		
	comp=Z,470nm,3.5s							
TIA				LR		LR		
	comp=Z,3μm,13.1s							
TIA				LR		LR		
	comp=Z,7μm,15.2s							
TIA				LR		LR		
	comp=Z,9μm,15.2s							
BJI	**Beijing**	**20.86**	**286**	P		**P**	**09 17 23.8**	**-2.4**
BJI				S		**S**	**09 21 11.8**	**-5.6**
BJI				pmax		pmax		
	comp=Z,34nm,2.5s							
BJI				LR		LR		
	comp=Z,4μm,12.7s							
BJI				LR		LR		
	comp=Z,2μm,15.3s							
BJI				LR		LR		
	comp=Z,2μm,19.1s							
BJT	**Baijiatuau**	**20.86**	**286**	*e*P		**P**	**09 17 26.2**	**-0.1**
BJT				pmax		pmax		
	comp=Z,55nm,0.7s							
BJT	**Baijiatuau**	**20.86**	**286**	*e*P		**P**	**09 17 26.2**	**-0.1**
	comp=Z,55nm,0.7s							
YHNB	**Yeheng**	**22.10**	**241**	*e*P		**P**	**09 17 40.9**	**+1.1**
	comp=Z,31nm,0.9s							
MA2	**Magadan**	**22.94**	**11**	P		**P**	**09 17 47.8**	**-0.5**
	comp=Z,26nm,0.8s,baz=223,slow=8.7,SNR=9.4							
MA2	**Magadan**	**22.94**	**11**	P		**P**	**09 17 47.8**	**-0.5**
MA2				pmax		pmax		
	comp=Z,29nm,0.9s							
SSLB	**Suanglung**	**22.96**	**240**	*e*P		**P**	**09 17 46.8**	**-2.1**
	comp=Z,21nm,0.7s							
YULB	**Yu-li**	**22.98**	**239**	*e*P		**P**	**09 17 47.5**	**-1.6**
	comp=Z,23nm,0.8s							
TPUB	**Ta-pu**	**23.50**	**240**	*e*P		**P**	**09 17 52.4**	**-1.9**
	comp=Z,76nm,1.0s							
TWG	**Pinlang**	**23.52**	**238**	*e*P		**P**	**09 17 53.6**	**-0.8**
	comp=Z,187nm,0.8s							
GUMO	**Guam**	**23.65**	**175**	LR		LR	09 26 11.4	
	comp=Z,742nm,21.3s,baz=10,slow=34							
QZH	**Quanzhou**	**23.92**	**246**	⇑*i*P		P	09 17 50.8	-7.4
QZH				S		S	09 22 02.0	-11
QZH				pmax		pmax		
	comp=Z,140nm,0.7s							
QZH				LR		LR		
	comp=N,7μm,20.3s							
QZH				LR		LR		
	comp=E,5μm,15.5s							
QZH				LR		LR		
	comp=Z,4μm,16.0s							
TIY	**Taiyuan**	**23.95**	**280**	*e*P		**P**	**09 18 00.0**	**+1.4**
TIY				S		**S**	**09 22 13.5**	**-0.1**
TIY				pmax		pmax		
	comp=Z,350nm,6.0s							
TIY				LR		LR		
	comp=Z,2μm,12.5s							
TIY				LR		LR		
	comp=Z,6μm,13.4s							
TIY				LR		LR		
	comp=Z,7μm,15.0s							
HHC	**Hu-ho-hao-te**	**24.36**	**288**	*e*P		**P**	**09 18 00.3**	**-2.0**
HHC				pP		sP	09 18 14.0	+0.1
HHC				sP		pP	09 18 16.8	+6.3
HHC				S		**S**	**09 22 15.6**	**-4.5**
HHC				sS		sS	09 22 29.3	-4.1
HHC				pmax		pmax		
	comp=Z,37nm,0.8s							
HHC				pmax		pmax		
	comp=Z,360nm,4.9s							
HHC				LR		LR		
	comp=Z,5μm,13.2s							
HHC				LR		LR		
	comp=Z,5μm,13.1s							
HHC				LR		LR		
	comp=Z,6μm,13.5s							
WHN	**Wuhan**	**24.39**	**262**	⇓*i*P		**P**	**09 18 02.8**	**+0.3**
WHN				S		**S**	**09 22 21.0**	**+0.6**
WHN				LR		LR		
	comp=Z,9μm,12.8s							
WHN				LR		LR		
	comp=Z,9μm,13.3s							
WHN				LR		LR		
	comp=Z,13μm,15.7s							
CIT	**Chita**	**25.22**	**315**	*e*P		**P**	**09 18 11.1**	**+1.1**
CIT				*e*			09 18 21.8	
CIT				*e*			09 18 28.7	
CIT				*e*			09 18 49.2	
CIT				pmax		pmax		
	comp=Z,798nm,2.2s							
YAK	**Yakutsk**	**26.09**	**346**	P		**P**	**09 18 19.0**	**+1.5**
	comp=Z,4.0nm,0.4s,baz=330,slow=22,SNR=9.6							
YAK				LR		LR	09 30 57.4	
	comp=Z,2μm,18.5s,baz=156,slow=42							
YAK	**Yakutsk**	**26.09**	**346**	*e*P		**P**	**09 18 16.5**	**-1.1**
YAK				*e*PPP		PPP	09 19 02.4	
YAK				*e*S		**S**	**09 22 48.4**	**+1.5**
YAK				*e*SS		**SnSn**	**09 23 38.7**	**-7.2**
YAK				*e*SSS		SSS	09 23 56.1	
YAK				pmax		pmax		
	comp=E,33nm,1.4s							
YAK				pmax		pmax		
	comp=Z,95nm,1.0s							
YAK				pmax		pmax		
	comp=N,80nm,1.4s							
YAK				smax		smax		
	comp=N,1μm,3.8s							
YAK				smax		smax		
	comp=E,362nm,2.2s							
YAK				MLR		MLR		
	comp=N,7μm,17.0s							
YAK				MLR		MLR		
	comp=Z,8μm,14.0s							
YAK				MLR		MLR		
	comp=E,4μm,15.0s							
YAK	**Yakutsk**	**26.09**	**346**	*e*P		**P**	**09 18 19.4**	**+1.8**
	comp=E,85nm,0.8s							
SEY	**Seymchan**	**26.39**	**10**	P		**P**	**09 18 22.2**	**+1.9**
	comp=E,44nm,1.1s,baz=188,slow=7.8,SNR=41							
H11N2	**WAKE ISLAND Hy 27.41**	**123**		T		T	09 47 21.4	
	baz=315,slow=75,SNR=43							
H11N1	**WAKE ISLAND Hy 27.42**	**123**		T		T	09 47 26.1	
	baz=315,slow=75,SNR=248							
H11N3	**WAKE ISLAND Hy 27.43**	**123**		T		T	09 47 24.8	
	baz=315,slow=75,SNR=30							
XAN	**Xi'an**	**27.53**	**274**	P		**P**	**09 18 31.0**	**0.0**
XAN				pP		sP	09 18 40.4	-2.2
XAN				sP		pP	09 18 44.4	+5.3
XAN				PP		**PnPn**	**09 19 20.6**	**+4.3**
XAN				S		**S**	**09 23 10.8**	**+0.4**
XAN				pmax		pmax		
	comp=E,28nm,1.5s							
XAN				pmax		pmax		
	comp=E,250nm,4.5s							
XAN				LR		LR		
	comp=E,2μm,14.2s							
XAN				LR		LR		
	comp=E,3μm,14.8s							
XAN				LR		LR		
	comp=E,4μm,13.7s							
BOD	**Bodaibo**	**27.89**	**327**	*e*P		**P**	**09 18 34.0**	**+0.2**
BOD				pmax		pmax		
	comp=Z,69nm,1.1s							
ULN	**Ulaanbaatar**	**28.07**	**304**	*c i*P		**P**	**09 18 37.1**	**+1.3**
ULN				pmax		pmax		
	comp=Z,125nm,1.7s							
ULN	**Ulaanbaatar**	**28.07**	**304**	*e*P		**P**	**09 18 35.8**	**0.0**
	comp=Z,34nm,0.7s							
H11S1	**WAKE ISLAND Hy 28.15**	**125**		T		T	09 48 18.1	
	baz=317,slow=76,SNR=120							
H11S3	**WAKE ISLAND Hy 28.15**	**125**		T		T	09 48 28.0	
	baz=317,slow=76,SNR=96							
H11S2	**WAKE ISLAND Hy 28.16**	**125**		T		T	09 48 30.9	
	baz=317,slow=76,SNR=77							
ENH	**Enshi**	**28.35**	**266**	*e*P		**P**	**09 18 38.7**	**+0.4**
	comp=Z,86nm,0.8s							
SONA1	**Songino Array**	**28.50**	**303**	*e*P		**P**	**09 18 39.8**	**+0.2**
SONM	**Songino Array**	**28.50**	**303**	P		**P**	**09 18 41.2**	**+1.6**
	comp=Z,46nm,0.7s,baz=102,slow=9.5,SNR=74							
SONM				LR		LR	09 30 34.5	
	comp=Z,3μm,18.6s,baz=109,slow=37							
GZH	**Guangzhou**	**28.88**	**249**	P		**P**	**09 18 40.4**	**-2.6**
GZH				PP		**PnPn**	**09 19 33.3**	**-1.5**
GZH				S		**S**	**09 23 25.5**	**-6.2**
GZH				LR		LR		
	comp=Z,5μm,16.3s							
GZH				LR		LR		
	comp=Z,5μm,16.5s							
IRK	**Irkutsk**	**30.70**	**312**	*e*P		**P**	**09 18 58.2**	**-0.7**
IRK				pmax		pmax		
	comp=Z,80nm,2.4s							
ZAK	**Zakamensk**	**30.93**	**308**	*e*P		**P**	**09 19 01.2**	**+0.2**
ZAK				pmax		pmax		
	comp=Z,45nm,1.6s							
TLY	**Talaya**	**30.95**	**310**	P		**P**	**09 19 02.0**	**+0.9**
	comp=Z,17nm,0.8s,baz=120,slow=5.0,SNR=14							
TLY				LR		LR	09 32 14.3	

comp=Z,5μm,18.7s,baz=100,slow=38
TLY Talaya 30.95 310 *i* P **P 09 19 02.6 +1.5**
TLY pmax pmax
comp=Z,48nm,1.7s
TLY Talaya 30.95 310 *eP* **P 09 19 01.9 +0.9**
comp=Z,24nm,1.0s
LZH Lanzhou 31.02 280 *eP* **P 09 19 03.0 +0.9**
LZH pP sP 09 19 14.5 +0.8
LZH sP pP 09 19 18.6 +8.3
LZH PP **PnPn 09 20 00.8 -2.7**
LZH *e*S **S 09 24 03.1 -2.3**
LZH sS sS 09 24 13.3 -5.7
LZH SS **SnSn 09 25 46.5 -0.5**
LZH pmax pmax
comp=Z,37nm,1.0s
LZH pmax pmax
comp=Z,120nm,4.5s
LZH LR LR
comp=Z,1μm,15.6s
LZH LR LR
comp=Z,2μm,13.8s
LZH LR LR
comp=Z,2μm,16.0s
GYA Guiyang 32.25 261⇑ *i*P **P 09 19 11.4 -1.5**
GYA pP sP 09 19 24.3 -0.2
GYA PP **PnPn 09 20 22.0 +2.5**
GYA PcP **PcP 09 22 02.8 +1.9**
GYA S **S 09 24 24.6 -0.1**
GYA sS sS 09 24 41.0 +2.8
GYA ScP **ScP 09 25 41.9 -0.7**
GYA SS **SnSn 09 26 18.3 +1.3**
GYA ScS **ScS 09 29 40.0 -1.9**
GYA pmax pmax
comp=Z,40nm,1.1s
GYA pmax pmax
comp=Z,160nm,5.0s
GYA LR LR
comp=Z,860nm,17.8s
GYA LR LR
comp=Z,730nm,18.0s
GYA LR LR
comp=Z,840nm,18.6s
MOY Mondy 32.57 310 *eP* **P 09 19 16.0 +0.6**
MOY pmax pmax
comp=Z,85nm,3.2s
CD2 Chengdu 32.68 271 P **P 09 19 15.1 -1.5**
CD2 sP sP 09 19 29.5 +1.3
CD2 PP **PP 09 20 29.3 -1.3**
CD2 S **S 09 24 29.3 -1.9**
CD2 sS sS 09 24 46.3 +1.6
CD2 pmax pmax
comp=Z,40nm,0.8s
CD2 pmax pmax
comp=Z,150nm,4.3s
CD2 LR LR
comp=Z,5μm,15.5s
CD2 LR LR
comp=Z,6μm,15.5s
GTA Gaotai 33.46 287⇑P **P 09 19 23.8 +0.4**
GTA pP pP 09 19 30.0 -1.6
GTA sP sP 09 19 33.3 -1.7
GTA PcP **PcP 09 22 04.8 +0.7**
GTA S **S 09 24 46.5 +3.2**
GTA sS sS 09 24 55.6 -1.3
GTA ScP **ScP 09 25 47.8 +1.2**
GTA ScS **ScS 09 29 48.0 +0.3**
GTA pmax pmax
comp=Z,19nm,1.4s
GTA pmax pmax
comp=Z,720nm,8.1s
GTA LR LR
comp=Z,3μm,18.5s
GTA LR LR
comp=Z,2μm,17.6s
GTA LR LR
comp=Z,3μm,16.2s
BILL Bilibino 33.53 16*d i*P **P 09 19 23.9 +0.4**
BILL *e* 09 20 33.0
BILL pmax pmax
comp=Z,26nm,1.2s
BILL MLR MLR
comp=Z,2μm,16.0s
BILL Bilibino 33.53 16 *eP* **P 09 19 22.4 -1.1**
comp=Z,55nm,1.5s
DAV Davao City (W) 33.84 212 LR LR 09 33 20.6
comp=Z,1μm,19.9s,baz=33,slow=37
QIZ Qiongzhong 33.94 247 P **P 09 19 28.3 +0.7**
QIZ sP **sP 09 19 43.9 +4.7**
QIZ S **S 09 24 54.3 +3.5**
QIZ pmax pmax
comp=Z,6.0nm,1.4s
QIZ LR LR
comp=Z,1μm,17.1s
QIZ LR LR
comp=Z,990nm,19.3s
QIZ Qiongzhong 33.94 247 *eP* **P 09 19 31.0 +3.4**
comp=Z,17nm,0.9s
TIXI Tiksi 35.20 352 P **P 09 19 37.7 -0.1**
comp=Z,6.3nm,0.7s,baz=142,slow=9.3,SNR=13
TIXI Tiksi 35.20 352⇑ *i*P **P 09 19 37.8 -0.1**
TIXI pmax pmax
comp=Z,15nm,1.2s
TIXI Tiksi 35.20 352 *eP* **P 09 19 37.0 -0.8**
comp=Z,8.0nm,0.6s
KMI Kunming 35.99 262 P **P 09 19 45.8 +0.3**
KMI pP sP 09 19 55.0 -2.1
KMI sP pP 09 20 00.4 +6.7
KMI PP **PP 09 21 07.3 -0.2**
KMI S **S 09 25 22.0 -0.7**
KMI sS sS 09 25 36.3 0.0
KMI SS **SnSn 09 27 45.9 -2.0**
KMI pmax pmax
comp=Z,41nm,0.9s
KMI pmax pmax
comp=Z,180nm,4.3s
KMI LR LR
comp=Z,1μm,15.3s
KMI LR LR
comp=Z,4μm,16.1s
KMI LR LR
comp=Z,4μm,16.7s
KDM Kudat 38.27 224⇑P **P 09 20 04.6 -0.1**
MYLDM Lahad Datu 38.83 221⇓P **P 09 20 10.9 +1.6**
MYLDM Lahad Datu 38.83 221 *eP* **P 09 20 11.1 +1.8**
comp=Z,55nm,0.9s
PANO Nakornpanom 38.99 250 P **P 09 20 13.8 +3.1**
comp=Z,14nm,1.2s
SDKM Sandakan 39.13 223⇓P **P 09 20 12.2 +0.3**
KKM Kota Kinabalu 39.34 224⇑P **P 09 20 13.4 -0.3**
SWI Sorong 39.38 198 P **P 09 20 12.5 -1.3**
comp=Z,42nm,1.5s,comp=Z,1μm
NONG Nongkai 39.53 252 P **P 09 20 17.3 +2.1**
comp=Z,34nm,0.8s,comp=Z,8μm
SKNT Sakolnakorn 39.57 250 P **P 09 20 17.2 +1.7**
comp=Z,26nm,1.1s
JAY Jayapura 39.61 183 P **P 09 20 15.2 -0.6**
comp=Z,1.1nm,0.5s,baz=277,slow=23,SNR=6.5
JAY Jayapura 39.61 183 P **P 09 20 13.8 -2.1**
comp=Z,36nm,1.0s
GENI Genyem 39.72 184 P **P 09 20 15.4 -1.3**
comp=Z,85nm,0.8s,comp=Z,2μm
TSM Tawau 39.90 221⇑P **P 09 20 18.6 +0.3**
TNA Tin City 40.17 29 *eP* **P 09 20 24.4 +4.5**
comp=Z,25nm,1.1s
CRAI Chiangrai 40.41 257 P **P 09 20 24.0 +1.5**
comp=Z,124nm,0.9s,comp=Z,6μm
FAKI Fak Fak 41.13 196 *eP* **P 09 20 27.4 -1.0**
comp=Z,41nm,0.7s
LOEI Loei 41.30 253 P **P 09 20 28.0 -1.8**
comp=Z,16nm,0.9s,comp=Z,335nm
MRSI Marisa 41.31 212 P **P 09 20 28.0 -1.9**
comp=Z,72nm,1.3s,comp=Z,2μm
WMQ Urumqi 41.64 297 P **P 09 20 34.6 +2.2**
WMQ pP sP 09 20 43.4 -0.8
WMQ sP pP 09 20 46.5 +5.7
WMQ S **S 09 26 48.9 +1.7**
WMQ ScS **ScS 09 30 29.3 -4.5**
WMQ pmax pmax
comp=Z,37nm,0.6s
WMQ pmax pmax
comp=Z,370nm,4.0s
WMQ LR LR
comp=Z,1μm,18.0s
WMQ LR LR
comp=Z,1μm,15.8s
WMQ LR LR
comp=Z,710nm,22.4s
UTTA Uttaradit 41.70 254 P **P 09 20 36.2 +3.1**
comp=Z,4.0nm,0.7s,comp=Z,46nm
LAMP Lampang 41.96 256 P P 09 20 40.7 +5.5
comp=Z,5.6nm,0.7s,comp=Z,203nm
SANI Sanana 42.06 205 P **P 09 20 35.4 -0.6**
comp=Z,102nm,0.7s,comp=Z,1μm
CMMT Chiang Mai 42.32 257 P P 09 20 43.4 +5.2
comp=Z,16nm,1.1s
CHTO Chiang Mai 42.32 257 P P 09 20 44.9 +6.7
comp=Z,71nm,1.1s
CHTO Chiang Mai 42.32 257 *eP* P 09 20 43.2 +5.0
CHTO pmax pmax
comp=Z,9.0nm,0.8s
CHTO Chiang Mai 42.32 257 *eP* P 09 20 43.2 +5.0
comp=Z,9.5nm,0.8s
ZAA0 Zalesovo Array 42.51 312 *eP* **P 09 20 39.1 -0.2**
ZALV Zalesovo Beam 42.51 312 P **P 09 20 40.2 +0.9**
comp=Z,9.1nm,0.4s,baz=95,slow=6.9,SNR=21
CMAR Chiang Mai Arr 42.53 256 P **P 09 20 40.6 +0.8**
comp=Z,2.8nm,0.6s,baz=49,slow=5.9,SNR=10
CMAR LR LR 09 39 49.5
comp=Z,1μm,18.2s,baz=52,slow=38
CM01 Chiang Mai Arr 42.54 256 *eP* **P 09 20 40.2 +0.3**
SUKH Sukhothai 42.56 254 P P 09 20 45.3 +5.1
comp=Z,6.2nm,1.0s,comp=Z,56nm
NLAI Namlea 42.81 203 P **P 09 20 41.4 -0.7**
comp=Z,40nm,1.0s
SRAK Srakaew 42.88 248 P **P 09 20 42.7 0.0**
comp=Z,69nm,0.8s,comp=Z,530nm
NVS Novosibirsk 43.41 314⇑ *i*P **P 09 20 46.9 +0.3**
NVS pmax pmax
comp=E,43nm,1.2s
NVS pmax pmax
comp=Z,57nm,1.2s
PCI Palu 43.47 214 P **P 09 20 46.1 -1.3**
comp=Z,95nm,1.0s,comp=Z,1μm
CHBT CHBT 43.49 247 P P 09 20 53.3 +5.7
comp=Z,32nm,0.8s,comp=Z,2μm
NRIK Noril'sk 43.49 335 P **P 09 20 47.5 +0.5**
comp=Z,10nm,0.5s,baz=112,slow=8.0,SNR=18
NRIK LR LR 09 39 57.0
comp=Z,5μm,19.0s,baz=106,slow=37
SHL Shillong 44.41 270 *eP* **P 09 20 56.0 +0.7**
SBUM Sibu 44.54 226⇓P **P 09 20 56.6 +0.5**
SBUM Sibu 44.54 226 *eP* **P 09 20 56.1 +0.1**
comp=Z,11nm,0.8s
TT01 Tatalina 44.66 35 *eP* **P 09 20 56.6 +0.1**
TTA Tatalina 44.66 35 *eP* **P 09 20 58.2 +1.6**
TTA pmax pmax
comp=Z,62nm,2.0s
TTA Tatalina 44.66 35 *eP* **P 09 20 58.2 +1.6**
comp=Z,62nm,2.0s
SVW2 Sparrevohn 44.73 37 *eP* **P 09 20 58.9 +1.8**
comp=Z,47nm,1.3s
MKAR Makanchi Array 44.85 302 P **P 09 20 58.9 +0.6**
comp=Z,27nm,0.7s,baz=87,slow=9.4,SNR=68
MKAR LR LR 09 40 23.4
comp=Z,1μm,19.3s,baz=82,slow=37
MAKZ Makanchi 45.06 302 *eP* **P 09 20 56.9 -3.1**
MAKZ pmax pmax
comp=Z,28nm,0.8s
MAKZ Makanchi 45.06 302 *eP* **P 09 20 56.9 -3.1**
comp=Z,28nm,0.8s
TARA Tarawa 45.31 135 *eP* **P 09 21 01.9 -0.3**
comp=Z,276nm,1.4s
TTSI Tana Toraja 45.38 213 P **P 09 21 01.8 -0.9**
comp=Z,24nm,1.0s,comp=Z,689nm
PHET Kaeng Krachan 45.38 249 P **P 09 21 04.4 +1.6**
comp=Z,12nm,0.8s,comp=Z,141nm
RSO Redoubt South 46.10 38 *eP* **P 09 21 09.1 +0.9**
KDAK Kodiak Island 46.26 42 *eP* **P 09 21 09.7 +0.5**
KDAK pmax pmax
comp=Z,232nm,1.6s
KDAK Kodiak Island 46.26 42 *eP* **P 09 21 09.7 +0.5**
comp=Z,232nm,1.6s
PPLA Purkeypile 46.41 35 *eP* **P 09 21 12.8 +2.3**
comp=Z,185nm,1.9s
KSM Kuching 46.44 228⇑P **P 09 21 11.7 +0.6**
KSM Kuching 46.44 228 *eP* **P 09 21 12.0 +0.8**
comp=Z,18nm,0.7s
SPU Mount Spurr 46.45 37 *eP* **P 09 21 12.0 +1.2**
CAST Castle Rocks 46.48 34 *eP* **P 09 21 12.5 +1.6**
comp=Z,18nm,1.0s
KURK Kurchatov 46.59 308 *eP* **P 09 21 12.3 +0.4**
KURK pmax pmax
comp=Z,141nm,0.6s
KURK Kurchatov 46.59 308 *eP* **P 09 21 12.3 +0.4**
comp=Z,141nm,0.6s
PMG Port Moresby 46.61 174 LR LR 09 38 15.4
comp=Z,298nm,20.9s,baz=334,slow=33
BPAW Bear Paw Mtn. 46.99 33 *eP* **P 09 21 16.1 +1.2**
comp=Z,60nm,1.8s
KTH Kantishna Hill 47.00 34 *eP* **P 09 21 16.3 +1.2**
comp=Z,88nm,1.6s
MLY Manley 47.13 32 *eP* **P 09 21 17.0 +1.0**
comp=Z,98nm,1.9s
KAPI Kapang 47.17 212 LR LR 09 40 29.2
comp=Z,363nm,21.4s,baz=28,slow=35
KAPI Kappang 47.17 212 *eP* **P 09 21 17.0 +0.1**
comp=Z,51nm,0.8s
TRF Thorofare Moun 47.28 34 *eP* **P 09 21 18.5 +1.1**
comp=Z,62nm,1.6s
COLD Coldfoot 47.47 29 *eP* **P 09 21 20.4 +1.8**
comp=Z,42nm,1.9s
PDGK Podgornoye 47.56 298 P **P 09 21 20.1 +0.5**
PDGK pmax pmax
comp=Z,51nm,0.9s
BWN Browne 47.65 33 *eP* **P 09 21 22.9 +2.8**
comp=Z,90nm,1.0s
PMR Palmer 47.84 37 *eP* **P 09 21 19.3 -2.2**
PMR pmax pmax
comp=Z,63nm,1.3s
PMR Palmer 47.84 37 *eP* **P 09 21 19.3 -2.2**
comp=Z,63nm,1.3s
MCK McKinley 47.89 34 *eP* **P 09 21 22.9 +1.0**
MCK pmax pmax
comp=Z,88nm,1.9s
MCK McKinley 47.89 34 *eP* **P 09 21 22.9 +1.0**
comp=Z,88nm,1.9s
RND Reindeer 47.93 34 *eP* **P 09 21 22.5 +0.2**
RND pmax pmax
comp=Z,30nm,1.2s
RND Reindeer 47.93 34 *eP* **P 09 21 22.5 +0.2**
comp=Z,30nm,1.2s
GUN Gumba 48.13 276 *eP* **P 09 21 25.6 +0.9**
SML Sawmill 48.22 36 *eP* **P 09 21 25.1 +0.6**
SML pmax pmax
comp=Z,110nm,1.6s
SML Sawmill 48.22 36 *eP* **P 09 21 25.1 +0.6**
comp=Z,110nm,1.6s
WRH Wood River Hil 48.25 33 *eP* **P 09 21 25.2 +0.5**
comp=Z,17nm,1.1s
COLA College 48.35 32*c i*P **P 09 21 26.4 +1.0**
COLA *i* *PP **sP 09 21 36.6 -0.6**
COLA pmax pmax
comp=Z,37nm,2.0s
COLA College 48.35 32 *eP* **P 09 21 26.8 +1.4**
comp=Z,24nm,0.9s
CCB Clear Creek Bu 48.38 33 *eP* **P 09 21 26.0 +0.4**
comp=Z,26nm,1.5s
SKLT Songkhla 48.50 243 P **P 09 21 28.3 +1.1**
comp=Z,23nm,1.3s
SURT Suratani 48.59 246 P **P 09 21 32.1 +4.2**
comp=Z,12nm,1.2s
KKN Kakani 48.66 276 *eP* **P 09 21 29.3 +0.7**
comp=Z,98nm,0.7s
PKIN Phulchoki 48.66 276 *eP* **P 09 21 29.7 +1.0**
comp=Z,42nm,0.8s
SCM Sheep Creek Mo 48.69 36 *eP* **P 09 21 27.9 -0.3**
SCM pmax pmax
comp=Z,91nm,1.5s
SCM Sheep Creek Mo 48.69 36 *eP* **P 09 21 27.9 -0.3**
comp=Z,90nm,1.5s
IL1 Eielson Array 48.77 32 *eP* **P 09 21 28.3 -0.3**
ILAR Eielson Array 48.77 32 P **P 09 21 28.4 -0.2**
comp=Z,9.6nm,0.8s,baz=265,slow=6.3,SNR=105
ILAR LR LR 09 44 07.7
comp=Z,388nm,19.4s,baz=280,slow=39
ILB Eielson Array 48.77 32 *eP* **P 09 21 28.7 +0.1**
DMN Daman 48.88 276 *eP* **P 09 21 31.3 +1.0**
GKN Gorkha 49.08 277 *eP* **P 09 21 32.0 +0.3**
comp=Z,114nm,0.7s
HNR Honiara 49.19 157 LR LR 09 40 58.0
comp=Z,2μm,20.6s,baz=327,slow=35
KLU Klutina 49.39 37 *eP* **P 09 21 34.5 +1.0**
comp=Z,99nm,1.6s
FYU Fort Yukon 49.41 30 *eP* **P 09 21 35.4 +1.9**
comp=Z,168nm,1.7s
PAX Paxson 49.48 35 *eP* **P 09 21 35.6 +1.4**
PAX pmax pmax
comp=Z,14nm,1.1s
PAX Paxson 49.48 35 *eP* **P 09 21 35.6 +1.4**
comp=Z,14nm,1.1s
DIV Divide 49.49 37 *eP* **P 09 21 35.4 +1.1**
comp=Z,152nm,1.5s
EYAK Cordova Ski Ar 49.56 38 *eP* **P 09 21 36.8 +2.1**
EYAK *ep*P **sP 09 21 45.8 -0.8**
PKDT Phuket 49.64 245 P **P 09 21 37.4 +1.5**
comp=Z,60nm,0.8s
SOEI Soe 49.85 204 P **P 09 21 34.8 -2.7**
comp=Z,116nm,0.8s,comp=Z,1μm
SOEI Soe 49.85 204 *eP* **P 09 21 33.8 -3.7**
comp=Z,74nm,0.8s
KOLN Koldanda 50.00 277 *eP* **P 09 21 39.6 +0.8**
comp=Z,41nm,0.6s
DOT Dot Lake 50.06 34 *eP* **P 09 21 38.5 -0.1**
comp=Z,29nm,1.0s
BMRM Bremner River 50.07 37 *eP* **P 09 21 39.4 +0.7**
comp=Z,84nm,1.4s
RAGM Ragged Mountai 50.11 38 *eP* **P 09 21 41.4 +2.5**
comp=Z,166nm,1.1s
IPM Ipoh 50.12 240⇑P **P 09 21 38.7 -0.9**
IPM Ipoh 50.12 240 *eP* **P 09 21 39.5 0.0**
comp=Z,23nm,0.6s
MYKOM Kota Tinggi 50.21 235⇓P **P 09 21 40.0 -0.2**
MENT Mentasta 50.28 35 *eP* **P 09 21 41.4 +1.2**
comp=Z,67nm,1.4s
PYUN Piuthan 50.34 278 *eP* **P 09 21 42.3 +0.9**
comp=Z,194nm,0.9s
TKM2 Tokmak 2 50.41 299 *eP* **P 09 21 43.2 +1.5**
TKM2 pmax pmax
comp=Z,54nm,0.8s
TKM2 Tokmak 2 50.41 299 *eP* **P 09 21 43.2 +1.5**
comp=Z,54nm,0.8s
COEN Coen 50.94 179 *eP* **P 09 21 45.4 -0.2**
comp=Z,338nm,1.8s
MTN Manton Dam 51.00 195 *eP* **P 09 21 44.7 -1.3**
comp=Z,51nm,0.8s
FRU Bishkek 51.12 299 *eP* **P 09 21 47.0 +0.1**
FRU *e* 09 23 40.0
FRU *e*S **S 09 29 04.0 +1.0**
FRU *e* 09 32 40.0
FRU pmax pmax
comp=Z,60nm,2.0s
BALM Baldy 51.16 37 *eP* **P 09 21 48.2 +1.3**
BALM pmax pmax
comp=Z,72nm,1.7s
BALM Baldy 51.16 37 *eP* **P 09 21 48.2 +1.3**
comp=Z,72nm,1.7s
BVAR Borovoye Array 51.17 312 LR LR 09 44 39.9
comp=Z,3μm,18.3s,baz=76,slow=37
EGAK Eagle 51.22 32 *eP* **P 09 21 47.5 +0.3**
comp=Z,18nm,1.0s
BRVK Borovoye 51.22 312*c i*P **P 09 21 47.8 +0.4**
BRVK pmax pmax
comp=Z,15nm,0.7s
BRVK Borovoye 51.22 312 *eP* **P 09 21 48.1 +0.7**
comp=Z,21nm,0.9s
KSH Kashi 51.23 294 P **P 09 21 52.5 +4.6**
KSH *ep*P sP 09 22 02.6 +2.9
KSH *eP*P **PP 09 23 51.5 +6.8**
KSH PcS **PcS 09 27 02.3 +1.6**
KSH S **S 09 29 09.8 +5.0**
KSH ScS **ScS 09 31 37.5 +0.9**
KSH pmax pmax
comp=Z,13nm,0.7s
KSH pmax pmax
comp=Z,210nm,3.5s
KSH LR LR
comp=Z,4μm,14.1s
KSH LR LR
comp=Z,3μm,15.3s
KSH LR LR
comp=Z,7μm,15.4s
AAK Ala-Archa 51.27 299 LR LR 09 45 17.0
comp=Z,4μm,18.2s,baz=60,slow=38
AAK Ala-Archa 51.27 299 *eP* **P 09 21 50.0 +1.8**
AAK pmax pmax
comp=Z,21nm,0.7s
AAK Ala-Archa 51.27 299 *eP* **P 09 21 50.0 +1.8**
comp=Z,21nm,0.7s
EKS2 Erkin-Say 51.76 299 *eP* **P 09 21 53.2 +1.4**
EKS2 pmax pmax
comp=Z,20nm,0.6s
EKS2 Erkin-Say 51.76 299 *eP* **P 09 21 53.2 +1.4**
comp=Z,20nm,0.6s
ZRNK Zerenda 52.00 313 *eP* **P 09 21 53.9 +0.7**
ZRNK pmax pmax
comp=Z,28nm,1.0s
ZRNK Zerenda 52.00 313 *eP* **P 09 21 53.9 +0.7**
comp=Z,28nm,1.0s
DAWY Dawson 52.07 33 *eP* **P 09 21 54.5 +0.8**
comp=Z,39nm,1.8s
PSI Prapat 52.77 240 *eP* **P 09 21 59.6 0.0**
PSI pmax pmax
comp=Z,17nm,0.9s
PSI Prapat 52.77 240 *eP* **P 09 21 59.6 0.0**
comp=Z,17nm,0.9s
PWJI Pagerwojo 53.51 219 P **P 09 22 02.3 -2.5**
comp=Z,81nm,0.7s
INK Inuvik 53.73 27 P **P 09 22 06.2 +0.4**
comp=Z,8.9nm,0.9s,baz=275,slow=6.1,SNR=16
INK Inuvik 53.73 27 *eP* **P 09 22 06.6 +0.9**
INK pmax pmax
comp=Z,40nm,1.4s
INK Inuvik 53.73 27 *eP* **P 09 22 06.6 +0.9**
comp=Z,40nm,1.4s
MNSI Mandailing Nat 53.78 238 P **P 09 22 08.0 +1.2**
comp=Z,31nm,0.9s,comp=Z,5μm
KKAR Karatay Array 53.88 300 *eP* **P 09 22 08.2 +0.9**
KKAR Karatay Array 53.88 300 *eP* **P 09 22 08.2 +0.9**
THN Thein Dam 54.14 286 *ex* **P 09 22 12.0 +2.8**
GSI Gunungsitoli 54.78 240 P **P 09 22 13.8 -0.3**
GSI Gunungsitoli 54.78 240 *eP* **P 09 22 13.8 -0.3**
comp=Z,80nm,0.7s
SKAG Skagway 54.90 38 *eP* **P 09 22 16.1 +1.8**
comp=Z,56nm,1.5s
SVE Sverdlovsk 55.65 319 *eP* **P 09 22 20.7 +0.9**
SVE pmax pmax
comp=Z,65nm,0.8s
SVE MLR MLR
comp=Z,6μm,16.0s
SVE MLR MLR
comp=E,4μm,15.0s
POHA Pohakuloa 56.10 90 *eP* **P 09 22 24.7 +0.9**
comp=E,115nm,1.3s
ARU Arti 56.86 319 LR LR 09 49 19.2
comp=E,3μm,18.8s,baz=70,slow=38
ARU Arti 56.86 319*c i*P **P 09 22 28.9 +0.4**
ARU 09 23 23.4
ARU 09 24 36.7
ARU S **S 09 30 20.3 +0.3**
ARU 09 32 12.7
ARU SS **SS 09 34 08.5 +0.7**
ARU pmax pmax
comp=Z,84nm,1.7s
ARU MLR MLR
comp=Z,4μm,17.0s
ARU Arti 56.86 319 *eP* **P 09 22 28.5 +0.1**
comp=Z,39nm,0.6s
CTA Charters Tower 57.14 176 P **P 09 22 28.9 -1.9**
comp=Z,4.6nm,0.6s,baz=17,slow=7.3,SNR=9.4
FITZ Fitzroy Crossi 57.35 199 LR LR 09 45 01.6
comp=Z,198nm,21.7s,baz=34,slow=34
FITZ Fitzroy Crossi 57.35 199 *eP* **P 09 22 31.8 -0.5**
comp=Z,181nm,1.9s
WRAB Tennant Creek 57.42 189*d i*P **P 09 22 31.3 -1.5**
WRAB Tennant Creek 57.42 189 *eP* **P 09 22 31.1 -1.7**
comp=Z,103nm,0.8s
WB2 Warramunga Arr 57.43 189 *eP* **P 09 22 31.2 -1.6**
comp=Z,109nm,0.8s
WRA Warramunga Arr 57.43 189 P **P 09 22 31.0 -1.9**
comp=Z,75nm,0.7s,baz=9.9,slow=7.4,SNR=215
WRA LR LR 09 47 45.7
comp=Z,92nm,20.5s,baz=10.0,slow=37
WRA Warramunga Arr 57.43 189 P **P 09 22 31.0 -1.9**
WRA pmax pmax
comp=Z,76nm,0.7s
WRA MLR MLR
comp=Z,92nm,20.5s
DLBC Dease Lake 57.83 38 *eP* **P 09 22 37.4 +2.0**

comp=Z,80nm,1.5s
ABKAR **Akbulak array** 58.56 310 eP P 09 22 40.1 -0.4
HYB **Hyderabad** 59.21 269 i P P 09 22 46.0 +0.4
AKTO **Aktyubinsk** 59.27 312 LR LR 09 49 38.0
comp=Z,2µm,18.5s,baz=64,slow=37
AS01 **Alice Springs** 61.15 189 eP P 09 22 56.4 -2.1
AS31 **Alice Springs** 61.16 189 eP P 09 22 57.4 -1.2
comp=Z,16nm,0.6s
ASAR **Alice Springs** 61.16 189 P P 09 22 57.2 -1.4
comp=Z,34nm,0.7s,baz=12,slow=7.5,SNR=294
ASAR LR LR 09 49 57.6
comp=Z,244nm,20.9s,baz=10.0,slow=37
MBWA **Marble Bar** 62.00 204 eP P 09 23 03.4 -0.9
comp=Z,156nm,0.6s
RES **Resolute Bay** 62.13 15 eP P 09 23 05.0 +0.5
RES pmax pmax
comp=Z,31nm,1.3s
RES **Resolute Bay** 62.13 15 eP P 09 23 05.0 +0.5
comp=Z,31nm,1.3s
POO **Poona** 62.36 273 ex P 09 23 00.0 -7.0
EIDS **Eidsvold** 62.79 171 eP P 09 23 09.4 -0.1
comp=Z,25nm,0.8s
APA **Apatity** 62.90 336⇑ i P P 09 23 10.8 +1.0
APA pmax pmax
comp=Z,26nm,1.0s
APA MLR MLR
comp=Z,3µm,15.0s
TMCR **Tamitsa** 63.03 332 eP P 09 23 11.9 +1.2
TMCR pmax pmax
comp=Z,29nm,0.4s
YKW3 **Yellowknife Ar** 63.07 30 eP P 09 23 11.1 +0.1
comp=Z,35nm,1.6s
YKA **Yellowknife Ar** 63.11 31 P P 09 23 11.0 -0.2
comp=Z,5.1nm,1.0s,baz=295,slow=6.6,SNR=33
YKA LR LR 09 51 41.3
comp=Z,22nm,21.7s,baz=0.0,slow=37
YKB5 **Yellowknife Ar** 63.11 31 eP P 09 23 09.7 -1.6
DZM **Mont Dzumac** 63.12 155 P P 09 23 11.7 -0.1
comp=Z,12nm,0.6s,baz=37,slow=12,SNR=5.6
DZM LR LR 09 47 18.6
comp=Z,1µm,21.5s,baz=346,slow=33
PALK **Pallekele** 63.40 258 LR LR 09 55 24.4
comp=Z,812nm,18.2s,baz=115,slow=40
ARA0 **ARCESS Array S** 64.14 340 eP P 09 23 19.0 +1.0
ARCES **ARCESS Array B** 64.14 340 P P 09 23 18.8 +0.8
comp=Z,4.1nm,0.5s,baz=52,slow=7.4,SNR=47
ARCES LR LR 09 57 38.6
comp=Z,875nm,19.7s,baz=52,slow=42
GEYT **Alibeck** 64.61 299 P P 09 23 22.9 +1.3
comp=Z,2.6nm,0.7s,baz=38,slow=2.6,SNR=4.3
GEYT LR LR 09 53 31.4
comp=Z,1µm,18.8s,baz=65,slow=38
DAG **Danmarks Havn** 65.64 355 i P P 09 23 27.5 -0.1
comp=Z,6.5nm,0.7s
DAG **Danmarks Havn** 65.64 355 i P P 09 23 27.5 -0.1
DAG pmax pmax
comp=Z,5.0nm,0.7s
OSR **Olympics--Salm** 65.71 48 P P 09 23 30.3 +1.7
NLWA **Neilton Lookou** 65.82 48 eP P 09 23 31.0 +1.7
comp=Z,84nm,1.2s
CMW **Cultus Mountai** 66.34 46 P P 09 23 33.8 +1.1
E03A **Lebam** 66.42 49 eP P 09 23 35.5 +2.4
comp=Z,53nm,1.1s
E03A epP sP 09 23 45.5 +0.4
B05A **Bryant** 66.43 47 P P 09 23 33.9 +0.8
baz=300
AFI **Afiamalu** 66.51 131 LR LR 09 47 20.7
comp=Z,564nm,21.4s,baz=7.0,slow=31
JCW **Jim Creek** 66.56 47 P P 09 23 34.8 +0.7
D05A **Enumclaw** 67.03 48 eP P 09 23 39.3 +2.3
comp=Z,116nm,1.6s
TDL **Tradedollar La** 67.32 48 P P 09 23 40.2 +1.1
LON **Longmire** 67.36 48 eP P 09 23 40.9 +1.7
LON pmax pmax
comp=Z,17nm,1.2s
LON **Longmire** 67.36 48 eP P 09 23 40.9 +1.7
comp=Z,17nm,1.2s
F04A **Amboy** 67.41 49 eP P 09 23 40.5 +1.1
comp=Z,64nm,1.1s
MTMW **Mount Mitchell** 67.49 49 P P 09 23 41.4 +1.3
MOS **Moscow** 67.67 324 eP P 09 23 40.0 -0.8
MOS e 09 23 55.0
MOS e 09 24 05.6
MOS eS S 09 32 36.7 +0.6
MOS MLR MLR
comp=Z,2µm,15.0s
ARMA **Armidale** 67.84 172 eP P 09 23 42.5 +0.3
comp=Z,58nm,1.4s
ARMA epP sP 09 23 55.9 +1.6
B08A **Colville Reser** 67.97 45 eP P 09 23 45.3 +2.4
comp=Z,43nm,1.4s
I03D **Drain, OR** 67.99 51 P P 09 23 44.5 +1.4
baz=301
VRH **Novokhopyorsk** 68.09 318 eP P 09 23 43.5 -0.1
VRH pmax pmax
comp=Z,10.0nm,0.6s
VRH MLR MLR
comp=Z,5µm,15.0s
H04A **Detroit Lake** 68.19 50 eP P 09 23 45.5 +1.0
comp=Z,81nm,1.2s
VFP **Flag Point** 68.30 49 P P 09 23 46.4 +1.1
OBN **Obninsk** 68.52 324 P P 09 23 47.6 +1.4
comp=Z,16nm,0.5s,baz=176,slow=21,SNR=6.8
OBN **Obninsk** 68.52 324⇑ i P P 09 23 47.6 +1.4
OBN e 09 26 18.6
OBN pmax pmax
comp=Z,55nm,1.7s
OBN MLR MLR
comp=Z,2µm,14.0s
I04A **Tendick Farm,** 68.52 51 P P 09 23 47.1 +0.6
baz=301
LPSR **Galich'ya Gora** 68.77 321 eP P 09 23 48.5 +0.7
LPSR pmax pmax
comp=Z,8.0nm,0.5s
LPSR MLR MLR
comp=Z,4µm,16.0s
STKA **Stephens Creek** 68.78 181 P P 09 23 47.0 -1.0
comp=Z,5.5nm,0.6s,baz=347,slow=7.0,SNR=31
STKA LR LR 09 55 10.1
comp=Z,180nm,20.3s,baz=15,slow=37
STKA **Stephens Creek** 68.78 181 eP P 09 23 47.5 -0.5
STKA pmax pmax
comp=Z,16nm,1.9s
STKA **Stephens Creek** 68.78 181 eP P 09 23 47.5 -0.5
comp=Z,16nm,1.9s
I05D **Terrebonne, OR** 68.89 50 P P 09 23 49.3 +0.5
baz=302
FIA1 **FINESS Array S** 69.08 333 eP P 09 23 50.7 +1.1
FINES **FINESS Array B** 69.08 333 P P 09 23 50.1 +0.5
comp=Z,14nm,0.5s,baz=58,slow=5.8,SNR=44
FINES LR LR 09 55 59.8
comp=Z,1µm,18.5s,baz=42,slow=38
NEW **Newport** 69.27 45 P P 09 23 51.5 +0.4
baz=303
NEW **Newport** 69.27 45 eP P 09 23 53.0 +1.9
NEW pmax pmax
comp=Z,82nm,1.8s
NEW **Newport** 69.27 45 eP P 09 23 53.0 +1.9
comp=Z,82nm,1.8s
YBH **Yreka Blue Hor** 69.41 53 P P 09 23 52.7 +0.6
comp=Z,6.9nm,0.4s,baz=327,slow=14,SNR=4.3
VSR **Storozhevoye** 69.42 319 eP P 09 23 52.1 +0.2
VSR pmax pmax
comp=Z,50nm,1.4s
VSR MLR MLR
comp=Z,5µm,16.0s
J05D **Fort Rock, OR** 69.51 51 P P 09 23 53.9 +1.1
baz=302
BBOO **Buckleboo** 69.98 186 eP P 09 23 54.9 -0.5
comp=Z,34nm,0.9s
K05A **Summer Lake** 70.02 51 eP P 09 23 57.5 +1.5
comp=Z,97nm,1.1s
SUMG **Summit** 70.46 0 i P P 09 23 59.4 +1.0
comp=Z,12nm,0.8s
SUMG **Summit** 70.46 0 i P P 09 23 59.4 +1.0
SUMG pmax pmax
comp=Z,12nm,0.8s
SUMG **Summit** 70.46 0 eP P 09 23 58.5 +0.1
comp=Z,104nm,2.0s
WALA **Waterton Lakes** 70.59 43 eP P 09 23 59.9 +0.5
comp=Z,53nm,1.6s
O03D **Paynes Creek** 70.76 54 P P 09 24 00.1 -0.3
baz=303
VSU **Vasula** 70.77 330 P P 09 24 01.8 +1.8
MOD **Modoc Plateau** 70.84 52 eP P 09 24 01.0 0.0
comp=Z,7.7nm,0.9s
JTMT **Jette** 71.14 44 eP P 09 24 04.1 +1.5

YBMT **Yellow Bay** 71.22 44 eP P 09 24 04.5 +1.4
GUDG **Gudauri** 71.26 309 P P 09 24 09.1 +5.5
SWMT **Swartz Lake** 71.43 44 eP P 09 24 05.0 +0.6
ZEI **Tsey** 71.43 310 eP P 09 24 01.9 -2.7
ZEI pmax pmax
comp=Z,69nm,1.5s
TBLG **Delisi** 71.50 309 P P 09 24 06.2 +1.4
TBLG **Delisi** 71.50 309 P P 09 24 06.2 +1.4
KVAR **Kislovodsk Arr** 71.51 311 P P 09 24 06.8 +1.8
comp=Z,6.4nm,0.4s,baz=238,slow=14,SNR=17
KBZ **Khabaz** 71.52 311 P P 09 24 06.2 +1.5
comp=Z,8.4nm,0.9s,baz=60,slow=6.9,SNR=14
KBZ LR LR 09 58 23.3
comp=Z,2µm,18.3s,baz=40,slow=38
KIV **Kislovodsk** 71.52 311 eP P 09 24 06.5 +1.5
KIV eS S 09 33 21.6 -0.4
KIV pmax pmax
comp=Z,40nm,1.1s
KIV MLR MLR
comp=Z,1µm,18.0s
KIV **Kislovodsk** 71.52 311 eP P 09 24 06.7 +1.7
comp=Z,77nm,1.2s
MSO **Missoula** 71.86 45 P P 09 24 06.5 -0.5
baz=305
MSO **Missoula** 71.86 45 eP P 09 24 07.8 +0.8
comp=Z,32nm,1.5s
NEY **Neytrino** 71.89 311 P P 09 24 10.6 +3.3
NEY pmax pmax
comp=Z,2.0nm,2.3s
GNI **Garni** 72.38 307 P P 09 24 12.6 +2.4
comp=Z,3.7nm,0.4s,baz=16,slow=3.3,SNR=5.1
CAN **Canberra** 72.45 175 eP P 09 24 09.5 -0.8
CAN pmax pmax
comp=Z,15nm,1.1s
CAN **Canberra** 72.45 175 eP P 09 24 09.5 -0.8
comp=Z,15nm,1.1s
MFID **Camas Ranch** 72.73 48 eP P 09 24 13.1 +0.8
comp=Z,95nm,1.8s
MICGM **Minsk** 72.87 326 e P 09 24 14.0 +1.3
MICGM eLR LR 09 56 50.0
MICGM LRM MLR 09 59 16.0
comp=Z,6.2nm,14.0s
MNK **Minsk** 72.87 326 eP P 09 24 14.0 +1.3
MNK MLR MLR
comp=Z,6µm,14.0s
CMB **Columbia Colle** 72.92 55 eP P 09 24 14.2 +0.8
CMB e*PP sP 09 24 24.9 -0.6
CMB **Columbia Colle** 72.92 55 eP P 09 24 14.2 +0.8
CMB epP sP 09 24 24.9 -0.6
FFC **Flin Flon** 72.97 33 eP P 09 24 13.4 +0.1
FFC pmax pmax
comp=Z,60nm,1.4s
FFC **Flin Flon** 72.97 33 eP P 09 24 13.4 +0.1
comp=Z,60nm,1.4s
LRM **Limekiln Ridge** 73.28 45 eP P 09 24 16.0 +0.3
FCC **Fort Churchill** 73.35 27 eP P 09 24 15.2 -0.2
FCC pmax pmax
comp=Z,58nm,1.5s
FCC **Fort Churchill** 73.35 27 eP P 09 24 15.2 -0.2
comp=Z,58nm,1.5s
EGMT **Eagleton** 73.44 42 P P 09 24 16.5 +0.2
baz=308
EGMT **Eagleton** 73.44 42 eP P 09 24 16.8 +0.4
comp=Z,61nm,1.5s
DLMT **Dillon** 73.47 45 eP P 09 24 17.6 +0.9
comp=Z,48nm,1.2s
HLID **Hailey** 73.48 48 P P 09 24 17.1 +0.4
baz=306
HLID **Hailey** 73.48 48 eP P 09 24 17.6 +0.8
comp=Z,20nm,1.1s
SOC **Sochi** 73.49 312 eP P 09 24 20.6 +4.0
SOC e 09 27 00.6
SOC ePPP PPP 09 28 44.2
SOC eS SKiKP 09 33 45.7 +0.6
SOC eSS SS 09 38 22.9 -3.6
SOC pmax pmax
comp=Z,9.0nm,0.3s
SOC MLR MLR
comp=Z,1µm,16.0s
MCMT **McKenzie Canyo** 73.64 46 eP P 09 24 18.4 +0.5
BOZ **Bozeman (W)** 73.85 45 P P 09 24 19.1 +0.3
baz=307
BOZ **Bozeman (W)** 73.85 45 eP P 09 24 19.3 +0.4
BOZ pmax pmax
comp=Z,23nm,0.9s
BOZ **Bozeman (W)** 73.85 45 eP P 09 24 19.2 +0.4
comp=Z,23nm,0.9s
NV01 **Mina Array Sit** 74.05 54 eP P 09 24 20.8 +0.6
NVAR **Mina Array Bea** 74.05 54 P P 09 24 20.6 +0.3
comp=Z,11nm,0.9s,baz=284,slow=5.9,SNR=3.8
ANN **Anapa** 74.10 314 eP P 09 24 21.4 +1.3
ANN eS S 09 33 49.8 -1.3
ANN pmax pmax
comp=Z,49nm,1.3s
NV11 **Mina Array Sit** 74.14 54 eP P 09 24 21.6 +0.9
comp=Z,48nm,1.4s
NC405 **NORSAR Array S** 74.16 338 eP P 09 24 21.1 +0.9
NC204 **NORSAR Array S** 74.31 338 eP P 09 24 22.3 +1.1
NB201 **NORSAR Array S** 74.33 338 eP P 09 24 21.5 +0.3
NB2 **NORSAR Subarra** 74.37 338 P P 09 24 21.2 -0.3
comp=Z,9.8nm,0.7s,baz=40,slow=6.2
NOA **NORSAR Array B** 74.37 338 P P 09 24 21.6 +0.2
comp=Z,4.6nm,0.7s,baz=43,slow=5.4,SNR=26
NOA LR LR 10 00 08.1
comp=Z,2µm,19.8s,baz=20,slow=38
QLMT **Earthquake Lak** 74.45 45 eP P 09 24 23.6 +1.1
NBO02 **NORSAR Array S** 74.47 338 eP P 09 24 23.3 +1.3
AKASG **Malin Array Be** 74.73 323 P P 09 24 23.7 0.0
comp=Z,11nm,0.5s,baz=45,slow=6.2,SNR=41
AKASG LR LR 10 01 52.5
comp=Z,937nm,18.2s,baz=55,slow=39
AKASG **Malin Array Be** 74.73 323 P P 09 24 23.7 0.0
AKASG pmax pmax
comp=Z,10.0nm,0.5s
AKASG MLR MLR
comp=Z,937nm,18.2s
AKBB **Malin Array Si** 74.73 323 eP P 09 24 23.5 -0.2
AKBB pmax pmax
comp=Z,17nm,0.8s
AKBB **Malin Array Si** 74.73 323 eP P 09 24 23.5 -0.2
comp=Z,17nm,0.8s
KIEV **Kiev** 74.75 323⇑ i P P 09 24 24.4 +0.6
KIEV pmax pmax
comp=Z,9.0nm,0.9s
KIEV **Kiev** 74.75 323 eP P 09 24 23.8 0.0
comp=Z,25nm,1.1s
AK11 **Malin Array Si** 74.78 323 eP P 09 24 24.3 +0.4
YMR **Madison River** 74.81 45 eP P 09 24 25.8 +1.2
comp=Z,108nm,1.9s
GCMT **Greycliff** 74.85 44 eP P 09 24 25.6 +0.9
YFT **Old Faithful** 75.02 45 eP P 09 24 28.4 +2.6
comp=Z,58nm,1.4s
VES **Vestal, Richgr** 75.02 56 P P 09 24 25.5 -0.1
baz=305
LKWY **Lake** 75.20 45 eP P 09 24 29.3 +2.4
LKWY pmax pmax
comp=Z,33nm,1.1s
LKWY **Lake** 75.20 45 eP P 09 24 29.3 +2.4
comp=Z,33nm,1.1s
H17A **Grant Village** 75.20 45 P P 09 24 29.3 +2.4
baz=308
H17A **Grant Village** 75.20 45 eP P 09 24 29.2 +2.4
comp=Z,76nm,1.3s
IMW **Indian Meadow** 75.30 46 eP P 09 24 28.8 +1.3
comp=Z,70nm,1.4s
FLWY **Flagg Ranch** 75.32 46 eP P 09 24 30.0 +2.4
comp=Z,51nm,1.3s
GRAC **Grapevine Rang** 75.48 55 P P 09 24 28.3 0.0
baz=306
RLMT **Red Lodge** 75.49 44 P P 09 24 29.3 +0.9
baz=308
RLMT **Red Lodge** 75.49 44 eP P 09 24 29.2 +0.7
comp=Z,41nm,1.4s
MOOW **Moose Ponds** 75.50 46 eP P 09 24 29.6 +1.0
comp=Z,64nm,1.5s
HVU **Hansel Valley** 75.51 48 eP P 09 24 29.7 +1.1
HVU e*PP sP 09 24 40.4 -0.3
HVU **Hansel Valley** 75.51 48 eP P 09 24 29.6 +1.1
HVU epP sP 09 24 40.4 -0.3
TPAW **Teton Pass** 75.54 46 eP P 09 24 29.9 +1.0
comp=Z,74nm,1.5s
SFJD **Kangerlussuaq** 75.58 5 i P P 09 24 28.2 0.0
comp=Z,12nm,0.9s
SFJD **Kangerlussuaq** 75.58 5 i P P 09 24 28.2 0.0
SFJD pmax pmax
comp=Z,12nm,0.9s

LOHW **Long Hollow** 75.67 46 eP P 09 24 30.7 +1.2
comp=Z,38nm,1.5s
SNOW **Snow King Moun** 75.67 46 eP P 09 24 31.0 +1.4
comp=Z,57nm,1.4s
REDW **Red Top Meadow** 75.68 46 eP P 09 24 30.8 +1.2
comp=Z,59nm,1.4s
DAC **Darwin (Calif)** 75.75 55 eP P 09 24 30.6 +0.5
DAC pmax pmax
comp=Z,38nm,1.4s
DAC **Darwin (Calif)** 75.75 55 eP P 09 24 30.6 +0.5
comp=Z,38nm,1.4s
R11A **Troy Canyon, C** 75.83 53 P P 09 24 31.4 +0.9
baz=306
SIM **Simferopol'** 75.87 316 eP P 09 24 36.5 +6.1
SIM pmax pmax
comp=Z,18nm,0.6s
SIM MLR MLR
comp=N,790nm,15.8s
BGU **Big Grassy Mou** 75.87 49 eP P 09 24 31.8 +1.2
comp=N,28nm,1.3s
AHID **Auburn Hatcher** 75.90 47 eP P 09 24 31.6 +0.8
comp=N,56nm,1.5s
MPMC **Manual Prospec** 75.95 55 P P 09 24 31.6 +0.4
baz=306
SPUT **South Promonto** 75.99 49 eP P 09 24 35.9 +4.5
comp=N,74nm,1.7s
DGMT **Dagmar** 76.03 39 eP P 09 24 31.5 +0.2
DGMT epP sP 09 24 42.5 -1.0
FURC **Furnace Creek,** 76.12 55 P P 09 24 32.8 +0.9
baz=306
LAO **LASA Array** 76.14 41 P P 09 24 32.9 +0.9
baz=310
LAO **LASA Array** 76.14 41 eP P 09 24 32.9 +0.9
comp=N,83nm,1.4s
TPNV **Topopah Spring** 76.23 54 P P 09 24 33.4 +0.6
baz=306
TPNV **Topopah Spring** 76.23 54 eP P 09 24 33.6 +0.8
TPNV pmax pmax
comp=Z,69nm,1.4s
TPNV **Topopah Spring** 76.23 54 eP P 09 24 33.6 +0.8
comp=Z,69nm,1.4s
EDW2 **Edwards Air Fo** 76.30 57 P P 09 24 34.0 +0.9
baz=306
HWUT **Hardware Ranch** 76.34 48 eP P 09 24 34.1 +0.8
comp=Z,88nm,1.4s
DUG **Dugway, Tooele** 76.45 50 P P 09 24 34.7 +0.8
baz=307
DUG **Dugway, Tooele** 76.45 50 eP P 09 24 34.8 +0.8
DUG pmax pmax
comp=Z,96nm,1.5s
DUG **Dugway, Tooele** 76.45 50 eP P 09 24 34.8 +0.8
comp=Z,96nm,1.5s
MWC **Mount Wilson** 76.64 57 eP P 09 24 35.6 +0.4
MWC pmax pmax
comp=Z,46nm,1.3s
MWC **Mount Wilson** 76.64 57 eP P 09 24 35.6 +0.4
comp=Z,46nm,1.3s
TCUT **Toone Canyon** 76.73 48 eP P 09 24 36.7 +1.1
comp=Z,140nm,1.7s
BW06 **Boulder Array** 76.79 46 P P 09 24 36.0 +0.1
baz=309
BW06 **Boulder Array** 76.79 46 eP P 09 24 36.2 +0.3
PD31 **Pinedale Array** 76.79 46 eP P 09 24 36.2 +0.3
PDAR **Pinedale Array** 76.79 46 P P 09 24 36.1 +0.2
comp=Z,2.1nm,0.5s,baz=318,slow=0.8,SNR=28
A26A **Wade Farm, Ken** 76.82 38 P P 09 24 35.9 +0.2
baz=312
GSC **Goldstone, Bar** 76.84 56 P P 09 24 36.7 +0.5
baz=306
GSC **Goldstone, Bar** 76.84 56 eP P 09 24 36.7 +0.5
GSC pmax pmax
comp=Z,32nm,1.3s
GSC **Goldstone, Bar** 76.84 56 eP P 09 24 36.7 +0.5
comp=Z,32nm,1.3s
SORM **Soroca** 76.85 321⇓ i P P 09 24 36.6 +0.8
SORM **Soroca** 76.85 321⇓ P P 09 24 36.6 +0.8
JLU **Jordanelle** 77.02 49 eP P 09 24 38.4 +1.1
comp=Z,110nm,1.9s
NLU **North Lily Min** 77.04 50 eP P 09 24 38.3 +0.9
comp=Z,29nm,1.3s
A27A **Ledoux Ranch,** 77.17 37 P P 09 24 38.1 +0.5
baz=313
SHPR **Sheep Range** 77.20 54 eP P 09 24 39.6 +1.3
comp=Z,56nm,1.5s
TUQ **Turquoise Moun** 77.34 55 P P 09 24 39.5 +0.5
baz=307
KIS **Kishinev** 77.37 320 eP P 09 24 32.0 -6.8
KIS LRM MLR 10 02 04.0
comp=Z,6µm,16.0s
KIS **Kishinev** 77.37 320 eP P 09 24 32.0 -6.8
KIS MLR MLR
comp=N,3µm,15.0s
KIS MLR MLR
comp=E,3µm,15.0s
KIS MLR MLR
comp=Z,7µm,15.0s
KIS MLR MLR
comp=Z,6µm,16.0s
HEC **Hector,Ludlow** 77.43 56 P P 09 24 39.8 +0.3
baz=307
C26A **Wahner Farm, P** 77.51 39 P P 09 24 39.9 +0.2
baz=312
MURC **Murrieta** 77.59 57 P P 09 24 39.8 -0.5
baz=306
A28A **Rude Farm, Bot** 77.67 37 P P 09 24 40.8 +0.3
baz=313
CCUT **Cedar City** 77.71 52 eP P 09 24 40.8 -0.4
comp=Z,46nm,1.2s
BSD **Bornholm Skovb** 77.72 332 i P sP 09 24 52.9 +0.2
comp=Z,23nm,0.9s
comp=Z,2µm,15.0s
E25A **Miller Ranch,** 77.74 40 P P 09 24 41.3 +0.4
baz=312
LVV **L'vov** 77.79 324 eP P 09 24 40.1 -1.0
LVV e 09 27 39.3
LVV ePPP PPP 09 29 25.7
LVV eS S 09 34 33.0 +1.3
LVV eSS SS 09 39 28.3 -2.8
MSU **Marysvale** 77.86 51 eP P 09 24 43.1 +1.1
MSU **Marysvale** 77.86 51 eP P 09 24 43.1 +1.1
GMRC **Granite Mounta** 77.91 56 P P 09 24 42.3 +0.1
baz=307
B28A **Dugan Ranch, T** 77.94 37 P P 09 24 42.3 +0.3
baz=313
TMUT **Trail Mountain** 77.97 50 eP P 09 24 43.7 +1.0
comp=Z,55nm,1.6s
PFO **Pinyon Flats O** 78.08 57 eP P 09 24 44.3 +1.2
PFO pmax pmax
comp=Z,44nm,1.4s
PFO **Pinyon Flats O** 78.08 57 eP P 09 24 44.3 +1.2
comp=Z,44nm,1.4s
P17A **Butcher Ranch,** 78.15 49 eP P 09 24 44.7 +1.2
comp=Z,102nm,1.4s
MTPU **Mount Pierson** 78.15 51 eP P 09 24 45.3 +1.5
comp=Z,102nm,1.7s
BELC **Belle Mtn. Jos** 78.15 56 P P 09 24 43.3 -0.3
baz=307
A29A **Manning Farm,** 78.16 36 P P 09 24 43.5 +0.3
baz=314
Q16A **Castle Valley** 78.23 50 eP P 09 24 45.1 +1.1
comp=Z,113nm,1.6s
P18A **Preston Nutter** 78.35 49 eP P 09 24 45.8 +1.0
comp=Z,36nm,1.1s
KNB **Kanab** 78.38 52 eP P 09 24 46.1 +1.3
KNB pmax pmax
comp=Z,121nm,1.4s
KNB **Kanab** 78.38 52 eP P 09 24 46.1 +1.3
comp=Z,121nm,1.4s
B29A **Wagenman Farm,** 78.42 37 P P 09 24 44.5 -0.1
baz=314
SRU **San Rafael Swe** 78.50 49 eP P 09 24 46.3 +0.8
SRU pmax pmax
comp=Z,41nm,1.0s
SRU **San Rafael Swe** 78.50 49 eP P 09 24 46.3 +0.8
comp=Z,41nm,1.0s
KWP **Kalwaria Pacla** 78.53 325⇓ i P P 09 24 47.4 +2.2
KWP **Kalwaria Pacla** 78.53 325⇓ P P 09 24 47.4 +2.2
A30A **Hoffart Farm,** 78.58 36 P P 09 24 45.6 +0.1
baz=315
K22A **Casper** 78.59 45 P P 09 24 45.9 0.0
baz=310
K22A **Casper** 78.59 45 eP P 09 24 46.3 +0.4
K22A epP PcP 09 24 56.3 +1.5
G25A **Newell** 78.60 41 P P 09 24 45.9 +0.1
baz=312
MMU **Miners Mountai** 78.60 51 eP P 09 24 47.1 +0.9
BC3 **Big Chuckawall** 78.72 56 P P 09 24 46.6 -0.1

baz=307
MDND Maddock 78.72 37 P **P 09 24 46.7 +0.4**
baz=314
MDND Maddock 78.72 37 *e*P **P 09 24 46.9 +0.5**
comp=Z,100nm,1.4s
E27A Carson 78.73 39 P **P 09 24 46.6 +0.2**
baz=313
BUR08 Bucovina Ar. S 78.74 322 *e*P **P 09 24 47.2 +0.7**
BURAR Bucovina Array 78.76 322⇑*i*P **P 09 24 47.5 +0.9**
BURAR Bucovina Array 78.76 322⇑P **P 09 24 47.5 +0.9**
ULM Lac du Bonnet 78.76 34 P **P 09 24 46.1 -0.3**
comp=Z,1.9nm,0.4s,baz=328,slow=7.1,SNR=3.5
ULM LR LR 10 02 33.0
comp=Z,197nm,19.4s,baz=334,slow=38
ULM Lac du Bonnet 78.76 34 *e*P **P 09 24 46.8 +0.3**
ULM pmax pmax
comp=Z,19nm,1.2s
ULM Lac du Bonnet 78.76 34 *e*P **P 09 24 46.8 +0.3**
comp=Z,19nm,1.2s
TESR Tescani 78.80 321⇑*i*P **P 09 24 47.8 +1.0**
W13A Hualapai Mount 78.87 54 *e*P **P 09 24 48.2 +0.5**
comp=Z,32nm,1.4s
H25A Fruitdale 78.89 42 P **P 09 24 47.6 +0.3**
baz=312
B30A Myrvik Farm, E 78.91 36 P **P 09 24 47.3 0.0**
baz=315
G26A Maurine 78.97 41 P **P 09 24 47.5 -0.2**
baz=312
RSSD Black Hills 78.99 42 P **P 09 24 48.0 -0.1**
baz=312
RSSD Black Hills 78.99 42 *e*P **P 09 24 48.2 +0.1**
RSSD pmax pmax
comp=Z,10.0nm,0.8s
RSSD Black Hills 78.99 42 *e*P **P 09 24 48.2 +0.1**
comp=Z,10nm,0.8s
E28A Huff 79.07 39 P **P 09 24 48.9 +0.6**
baz=313
U15A North Rim 79.08 52 *e*P **P 09 24 50.0 +1.2**
U15A *ep*P **sP 09 25 01.1 +0.1**
PDMCI Parker Dam,Lak 79.19 55 P **P 09 24 49.2 +0.1**
baz=308
VRI Vrincioaia 79.20 320⇓*i*P **P 09 24 50.7 +1.7**
VRI Vrincioaia 79.20 320⇓P **P 09 24 50.7 +1.7**
I25A Rochford 79.22 42 P **P 09 24 49.1 -0.2**
baz=312
O20A White River Ci 79.22 48 P **P 09 24 48.7 -0.7**
baz=310
O20A White River Ci 79.22 48 *e*P **P 09 24 49.9 +0.5**
O20A *ep*P **sP 09 25 00.4 -1.2**
B31A Greenbush Farm 79.25 36 P **P 09 24 48.8 -0.4**
baz=315
G27A Dupree 79.25 40 P **P 09 24 49.1 -0.2**
baz=313
PLOR Plostina 79.25 320⇓*i*P **P 09 24 54.0 +4.7**
PLOR Plostina 79.25 320⇓P **P 09 24 54.0 +4.7**
Y12C Blythe 79.28 56 P **P 09 24 50.1 +0.5**
baz=308
Y12C Blythe 79.28 56 *e*P **P 09 24 50.4 +0.8**
comp=Z,52nm,1.4s
STHS Stebnicka Huta 79.35 325 *e*P **P 09 24 51.4 +1.7**
STHS *e* 09 25 08.6
STHS pmax pmax
comp=Z,11nm,1.0s
STHS Stebnicka Huta 79.35 325 *e*P **P 09 24 51.4 +1.7**
STHS *e* 09 25 08.6
C30A Mose, Pekin 79.37 37 P **P 09 24 49.8 -0.1**
baz=315
OJC Ojcow 79.41 327 *e*P **P 09 24 51.6 +1.6**
OJC pmax pmax
comp=Z,97nm,1.7s
OJC Ojcow 79.41 327 *e*P **P 09 24 51.6 +1.6**
comp=Z,97nm,1.7s
UZH Uzhgorod 79.43 324 *e*P **P 09 24 50.5 +0.4**
UZH *e* 09 25 02.7
UZH *e*SS **PP 09 27 57.5 +7.7**
UZH *e*S **S 09 34 48.5 -0.8**
UZH MLR MLR
comp=N,2μm,14.5s
UZH MLR MLR
comp=E,4μm,14.5s
UZH MLR MLR
comp=Z,2μm,14.5s
A32A Rocking H Ranc 79.44 35 P **P 09 24 49.4 -0.8**
baz=316
BR131 Keskin Array S 79.45 312 *e*P **P 09 24 52.7 +2.1**
BRTR Keskin Array B 79.45 312 P **P 09 24 52.2 +1.6**
comp=Z,2.3nm,1.0s,baz=152,slow=3.9,SNR=10.0
BRTR LR LR 10 04 48.3
comp=Z,610nm,18.3s,baz=38,slow=39
BRTR Keskin Array B 79.45 312 *i* P **P 09 24 52.5 +1.9**
BRTR pmax pmax
comp=Z,2.0nm,1.0s
GLA Glamis 79.50 57 *e*P **P 09 24 52.3 +1.4**
GLA pmax pmax
comp=Z,50nm,1.4s
GLA Glamis 79.50 57 *e*P **P 09 24 52.3 +1.4**
comp=Z,50nm,1.4s
CRVS Cervenica-Dubn 79.62 325 *e*P **P 09 24 53.2 +2.0**
CRVS *e* 09 25 04.8
CRVS Cervenica-Dubn 79.62 325 *e*P **P 09 24 53.2 +2.0**
CRVS *e* 09 25 04.8
C31A Landman Farms, 79.66 37 P **P 09 24 51.3 -0.1**
baz=315
H27A Howes 79.69 41 P **P 09 24 51.8 +0.1**
baz=313
PV09 Paradox Valley 79.73 49 *e*P **P 09 24 53.5 +1.1**
B32A Ashes, Strandq 79.79 36 P **P 09 24 51.6 -0.5**
baz=316
DOPR Dopca 79.81 321⇑*i*P **P 09 24 51.8 -0.5**
MLR Muntele Rosu 79.86 320 P **P 09 24 53.3 +0.6**
comp=Z,0.7nm,0.2s,baz=211,slow=1.7,SNR=7.0
MLR Muntele Rosu 79.86 320⇑*i*P **P 09 24 53.9 +1.2**
MLR Muntele Rosu 79.86 320 *e*P **P 09 24 53.9 +1.2**
comp=Z,46nm,1.7s
PV10 Paradox Valley 79.87 49 *e*P **P 09 24 54.3 +1.2**
BR231 Keskin MP Arra 79.89 313 *e*P **P 09 24 53.0 0.0**
A33A Warroad 79.93 35 P **P 09 24 52.5 -0.3**
baz=317
PV04 Paradox Valley 79.94 49 *e*P **P 09 24 54.4 +1.0**
PV05 Paradox Valley 80.02 50 *e*P **P 09 24 55.0 +1.1**
N23A Red Feather La 80.06 46 P **P 09 24 54.9 +0.8**
baz=311
N23A Red Feather La 80.06 46 *e*P **P 09 24 55.1 +1.0**
comp=Z,62nm,1.3s
Y14A Wickenburg 80.16 55 *e*P **P 09 24 55.2 +0.7**
comp=Z,226nm,1.4s
WUAZ Wupatki 80.23 53 P **P 09 24 55.7 +0.7**
baz=309
WUAZ Wupatki 80.23 53 *e*P **P 09 24 56.0 +1.0**
comp=Z,54nm,1.1s
PV01 Paradox Valley 80.31 49 *e*P **P 09 24 56.2 +0.8**
B33A Robert and Kas 80.32 35 P **P 09 24 54.8 -0.1**
baz=316
LANS Liptovska Anna 80.34 326 *e*P **P 09 24 58.5 +3.4**
LANS *e* 09 25 10.0
LANS Liptovska Anna 80.34 326 *e*P **P 09 24 58.5 +3.4**
LANS *e* 09 25 10.0
VOIR 80.35 321⇑*i*P **P 09 24 57.6 +2.3**
VOIR 80.35 321⇑P **P 09 24 57.6 +2.3**
113A Mohawk Valley, 80.38 56 *e*P **P 09 24 55.8 +0.2**
comp=Z,39nm,1.3s
OKC Ostrava-Krasne 80.41 327 AMS AMS 10 03 50.0
comp=Z,3μm,17.2s
F30A Leola 80.41 39 P **P 09 24 55.7 +0.2**
baz=315
SMCO Snowmass 80.59 48 *e*P **P 09 24 57.7 +0.6**
comp=Z,94nm,1.9s
B34A Aery, Baudette 80.59 35 P **P 09 24 55.5 -0.9**
baz=317
I28A Midland 80.59 41 P **P 09 24 56.8 +0.2**
baz=314
C33A Trail 80.61 36 P **P 09 24 56.0 -0.5**
baz=316
MORC Moravsky Berou 80.72 328⇑*i*P **P 09 24 58.2 +1.1**
MORC Moravsky Berou 80.72 328 *e*P **P 09 24 58.8 +1.7**
MORC pmax pmax
comp=Z,219nm,1.8s
MORC Moravsky Berou 80.72 328 *e*P **P 09 24 58.8 +1.7**
comp=Z,219nm,1.8s
F31A Hecla 80.78 38 P **P 09 24 57.2 -0.3**
baz=315
DPC Dobruska-Polom 80.80 328 *e*P **P 09 24 59.5 +1.9**
DPC AMS AMS 10 04 00.0
comp=Z,2μm,15.5s
DPC Dobruska-Polom 80.80 328 *e*P **P 09 24 59.5 +1.9**
DPC MLR MLR
comp=Z,2μm,15.5s
UPC Upice 80.81 329 AMS AMS 10 04 00.0
comp=Z,3μm,15.7s
KRLC Kraliky 80.81 328 *e*P **P 09 24 59.2 +1.5**
KRLC Kraliky 80.81 328 *e*P **P 09 24 59.2 +1.5**
G30A Faulkton 80.85 39 P **P 09 24 57.8 -0.1**
baz=315
X16A Lo Mia Camp, P 80.87 54 *e*P **P 09 24 59.1 +0.7**
comp=Z,31nm,1.1s
MVCO Mesa Verde 80.94 50 P **P 09 24 59.6 +0.7**
baz=310
MVCO Mesa Verde 80.94 50 *e*P **P 09 24 59.3 +0.5**
comp=Z,130nm,1.7s
ISCO Idaho Springs 80.97 46 P **P 09 24 59.4 +0.4**
baz=311
ISCO Idaho Springs 80.97 46 *e*P **P 09 25 00.0 +1.0**
comp=Z,77nm,1.9s
I29A Vivian Onida 81.03 41 P **P 09 24 59.1 +0.2**
baz=314
PSZ Piszkesteto 81.06 325⇓*i*P **P 09 25 01.0 +1.9**
PSZ Piszkesteto 81.06 325 *e*P **P 09 25 00.9 +1.9**
PSZ pmax pmax
comp=Z,96nm,1.9s
PSZ Piszkesteto 81.06 325 *e*P **P 09 25 00.9 +1.9**
comp=Z,96nm,1.9s
C34A RKJ Ranch, Bem 81.09 35 P **P 09 24 57.9 -1.3**
baz=317
B35A Bob, Littlefor 81.10 34 P **P 09 24 58.5 -0.7**
baz=318
VYHS Vyhne 81.11 326 *e*P **P 09 25 01.2 +2.0**
VYHS *e* 09 25 13.9
VYHS pmax pmax
comp=Z,12nm,1.5s
VYHS MLR MLR
comp=Z,2μm,17.3s
VYHS Vyhne 81.11 326 *e*P **P 09 25 01.1 +1.9**
VYHS *e* 09 25 13.9
VYHS *e*L L 10 04 27.7
F32A Veblen 81.32 38 P **P 09 25 00.1 -0.3**
baz=316
D34A Park Rapids 81.37 36 P **P 09 25 00.1 -0.5**
baz=317
BRG Berggiesshubel 81.37 330 *e*P **P 09 25 01.1 +0.6**
comp=Z,6.3nm,1.1s
BRG Berggiesshubel 81.37 330 S sS 09 35 25.0 +0.7
BRG Berggiesshubel 81.37 330 *e*P **P 09 25 01.1 +0.6**
BRG pmax pmax
comp=Z,6.0nm,1.1s
PVCC Panska Ves 81.38 329 *e*P **P 09 25 02.6 +2.0**
PVCC AMS AMS 10 04 30.0
comp=Z,3μm,16.5s
PVCC Panska Ves 81.38 329 *e*P **P 09 25 02.6 +2.0**
PVCC MLR MLR
comp=Z,3μm,16.5s
CLL Collm 81.40 331 *e*P **P 09 25 01.0 +0.3**
comp=Z,10.0nm,1.0s
CLL *e* 09 25 14.0
CLL *i* 09 25 20.2
CLL *e* 09 25 25.0
CLL *e*S **S 09 35 09.0 -0.8**
CLL Lmax 10 05 00.0
CLL Collm 81.40 331 *e*P **P 09 25 01.0 +0.3**
CLL *e* 09 25 14.0
CLL *e*S **S 09 35 09.0 -0.8**
CLL pmax pmax
comp=Z,10.0nm,1.0s
CLL Collm 81.40 331 *e*P **P 09 25 00.3 -0.3**
comp=Z,27nm,1.2s
E33A Westby DABS, E 81.41 37 P **P 09 25 00.6 -0.3**
baz=316
VRAC Vranov 81.48 328⇓*i*P **P 09 25 00.1 -1.1**
VRAC Vranov 81.48 328⇓P **P 09 25 00.1 -1.1**
C35A Jirik Farms, M 81.48 35 P **P 09 25 00.6 -0.6**
baz=318
I30A Oacoma 81.56 40 P **P 09 25 01.9 +0.1**
baz=314
URZ Urewera 81.59 153 LR LR 09 57 32.2
comp=Z,547nm,21.1s,baz=3.0,slow=33
S22A 4UR Ranch, Cre 81.61 49 P **P 09 25 03.5 +1.0**
baz=311
S22A 4UR Ranch, Cre 81.61 49 *e*P **P 09 25 03.1 +0.7**
comp=Z,73nm,1.5s
H31A Wolsey 81.64 39 P **P 09 25 02.1 0.0**
baz=315
F33A 5 Mile Ranch, 81.75 37 P **P 09 25 02.5 -0.2**
baz=316
X18A Snowflake 81.76 53 *e*P **P 09 25 04.0 +0.8**
comp=Z,40nm,1.4s
GOPC GO Pecny, Ondr 81.77 329 *e*P **P 09 25 04.4 +1.7**
GOPC *ep*P **sP 09 25 13.8 -1.1**
GOPC AMS AMS 10 04 40.0
comp=Z,3μm,15.9s
GOPC GO Pecny, Ondr 81.77 329 *e*P **P 09 25 04.4 +1.7**
GOPC *e* 09 25 13.8
GOPC *e* 09 25 16.8
GOPC MLR MLR
comp=Z,3μm,15.9s
E34A Wadena 81.80 36 P **P 09 25 01.3 -1.6**
baz=317
PRU Pruhonice 81.81 329 *ep*P **pP 09 25 15.2 +3.4**
PRU AMS AMS 10 04 50.0
comp=Z,3μm,16.1s
PRU Pruhonice 81.81 329 *e*P **pP 09 25 15.2 +3.4**
PRU MLR MLR
comp=Z,3μm,16.1s
D35A Remer 81.90 35 P **P 09 25 02.3 -1.1**
baz=318
C36A Pine Crest Far 81.95 34 P **P 09 25 03.3 -0.3**
baz=318
TREC Trest 81.95 328 *e*P **P 09 25 05.2 +1.5**
TREC AMS AMS 10 06 10.0
comp=Z,3μm,14.9s
TREC Trest 81.95 328 *e*P **P 09 25 05.2 +1.5**
TREC MLR MLR
comp=Z,3μm,14.9s
G33A Ortonville 82.15 38 P **P 09 25 04.7 0.0**
baz=316
C37A Embarrass 82.26 34 P **P 09 25 04.9 -0.4**
baz=319
F34A Alexandria 82.28 37 P **P 09 25 05.2 -0.2**
baz=317
K30A Basset 82.33 41 P **P 09 25 05.6 -0.2**
baz=315
H33A Prehn Over Nor 82.37 38 P **P 09 25 06.0 +0.1**
baz=316
SDCO Great Sand Dun 82.40 48 P **P 09 25 07.0 +0.5**
baz=312
SDCO Great Sand Dun 82.40 48 *e*P **P 09 25 07.1 +0.5**
comp=Z,62nm,1.7s
EYMN Ely 82.40 33 P **P 09 25 05.7 -0.3**
baz=319
EYMN Ely 82.40 33 *e*P **P 09 25 05.8 -0.3**
comp=Z,47nm,1.5s
NKC Novy Kostel 82.46 330 AMS AMS 10 05 00.0
comp=Z,3μm,15.8s
MDVR Moldovita 82.48 322⇓*i*P **P 09 25 07.4 +0.8**
MPEP Malo Peshtene 82.48 320 *e*P P 09 25 01.5 -5.0
TUC Tucson 82.63 55 *e*P **P 09 25 08.7 +1.1**
TUC *e**PP **sP 09 25 19.3 -0.5**
TUC Tucson 82.63 55 *e*P **P 09 25 08.7 +1.1**
TUC *ep*P **sP 09 25 19.3 -0.5**
MMAI Mount Meron Ar 82.65 306 P **P 09 25 09.5 +1.8**
comp=Z,1.6nm,0.4s,baz=53,slow=5.6,SNR=3.5
C38A Sawbill Land. 82.67 33 P **P 09 25 06.7 -0.8**
baz=319
E36A McGregor 82.69 35 P **P 09 25 07.3 -0.2**
baz=318
I33A Coleman 82.80 39 P **P 09 25 08.3 +0.1**
baz=316
CONA Conrad Observa 82.84 327 *i* PcP **P 09 25 10.2 +1.7**
comp=Z,5.4nm,0.9s
CONA *i* sP **sP 09 25 23.9 +3.3**
comp=Z,17nm,1.1s
KHC Kasperske Hory 82.88 329 *e*P **P 09 25 10.0 +1.5**
KHC *ep*P **sP 09 25 20.4 -0.3**
KHC *ex* x 09 25 22.2
KHC AMS AMS 10 05 00.0
comp=Z,2μm,15.1s
KHC Kasperske Hory 82.88 329 *e*P **P 09 25 09.2 +0.7**
KHC pmax pmax
comp=Z,4.0nm,0.8s
KHC Kasperske Hory 82.88 329 *e*P **P 09 25 09.2 +0.7**
comp=Z,4.1nm,0.8s
GEC2 GERESS Array S 83.05 329 *e*P **P 09 25 11.0 +1.5**
GEC2 pmax pmax
comp=Z,12nm,1.4s
GEC2 GERESS Array S 83.05 329 *e*P **P 09 25 11.0 +1.5**
comp=Z,12nm,1.4s
GERES GERESS Array B 83.05 329 P **P 09 25 09.7 +0.2**
comp=Z,1.4nm,0.4s,baz=30,slow=6.2,SNR=12
GERES LR LR 10 04 53.4
comp=Z,1μm,20.2s,baz=29,slow=38
GEA0 GERESS Array S 83.05 329 *e*P **P 09 25 09.8 +0.3**
L31A Butterfield Fa 83.09 41 P **P 09 25 09.8 0.0**
baz=315
C39A Grand Marais 83.09 33 P **P 09 25 09.3 -0.3**
baz=320
ECSD EROS Data Cent 83.12 39 P **P 09 25 09.6 -0.2**
baz=316
ECSD EROS Data Cent 83.12 39 *e*P **P 09 25 09.5 -0.4**
comp=Z,35nm,1.4s
KSCO Kaye Shedlock' 83.21 45 *e*P **P 09 25 10.9 +0.3**
comp=Z,91nm,1.6s
EKA Eskdalemuir Ar 83.25 341 P **P 09 25 11.6 +1.4**
comp=Z,3.6nm,0.7s,baz=20,slow=4.5,SNR=8.9
H35A Sunnyside Ranc 83.29 37 P **P 09 25 10.9 +0.2**
baz=317
T25A Trinidad 83.45 48 P **P 09 25 12.0 0.0**
baz=312
T25A Trinidad 83.45 48 *e*P **P 09 25 12.8 +0.8**
comp=Z,162nm,1.9s
LAZ Ladron 83.61 51 *e*P **P 09 25 13.4 +0.6**
ANMO Albuquerque 83.67 51 P **P 09 25 13.6 +0.5**
baz=311
ANMO Albuquerque 83.67 51*c i*P **P 09 25 13.8 +0.7**
ANMO *i* *PP **sP 09 25 24.1 -1.2**
ANMO pmax pmax
comp=Z,51nm,1.7s
ANMO Albuquerque 83.67 51 *e*P **P 09 25 14.0 +0.9**
comp=Z,49nm,1.3s
MMB Musomiste 83.75 319 *e*P **P 09 25 13.0 -0.1**
PPT Papeete 83.84 117 LR LR 09 56 27.7
comp=Z,528nm,20.1s,baz=317,slow=31
PPT2 Papeete2 83.85 117 *e*LR LR 09 51 12.8
comp=Z,685nm,21.2s,baz=313
SPMN Marine on St. 83.86 36 *e*P **P 09 25 16.0 +2.4**
SPMN *ep*P **sP 09 25 24.3 -1.5**
KKB Krupnik 83.88 319 *e*P **P 09 25 14.3 +0.5**
BGNE Belgrade 84.00 41 P **P 09 25 14.3 -0.1**
baz=316
BGNE Belgrade 84.00 41 *e*P **P 09 25 14.3 -0.1**
comp=Z,124nm,1.4s
BNM Barren Site 84.09 51 *e*P **P 09 25 16.2 +0.9**
SOKA Soboth 84.17 327 *i* PcP **P 09 25 16.8 +1.6**
comp=Z,7.7nm,1.0s
319A Douglas 84.21 55 *e*P **P 09 25 16.6 +0.7**
comp=Z,70nm,1.3s
121A Cookes Peak, D 84.42 53 P **P 09 25 17.8 +0.9**
baz=311
121A Cookes Peak, D 84.42 53 *e*P **P 09 25 17.7 +0.8**
comp=Z,49nm,1.3s
I37A Lemond, Waseca 84.48 37 P **P 09 25 16.9 +0.1**
baz=318
MYKA Terra Mystica 84.81 327 *i* PcP **P 09 25 19.7 +1.2**
comp=Z,5.1nm,1.0s
SCHQ Schefferville 84.84 17 P **P 09 25 19.7 +1.3**
comp=Z,2.8nm,0.8s,baz=332,slow=6.1,SNR=4.3
SCHQ LR LR 10 08 45.3
comp=Z,388nm,18.1s,baz=338,slow=40
N33A J Bar K, Exete 84.84 41 P **P 09 25 19.2 +0.5**
baz=316
P32A Huiting Farm, 85.03 43 P **P 09 25 19.2 -0.4**
baz=315
EIL Elat 85.09 304 P **P 09 25 21.8 +1.7**
comp=Z,1.2nm,0.3s,baz=29,slow=8.3,SNR=3.6
M35A Neola 85.23 40 P **P 09 25 20.7 0.0**
baz=317
TAOE Nuku Hiva Isla 85.25 105 *e*LR LR 09 52 00.7
comp=Z,1μm,23.6s
K37A Belmond 85.30 38 P **P 09 25 20.5 -0.5**
baz=318
RETA Reutte 85.33 330 *i* PcP **P 09 25 22.4 +1.3**
comp=Z,9.5nm,1.2s
PDG Podgorica 85.42 322⇑*i*P **P 09 25 22.9 +1.4**
J38A Wedel Dairy, R 85.45 37 P **P 09 25 21.9 +0.2**
baz=319
Q32A Meitler Ranch, 85.50 43 P **P 09 25 22.1 +0.1**
baz=316
BFO Black Forest 85.60 331 *i* P **P 09 25 23.7 +1.4**
BFO Black Forest 85.60 331 *e*P **P 09 25 22.5 +0.2**
comp=Z,18nm,0.9s
L37A Phoenix Point, 85.72 38 P **P 09 25 23.0 -0.1**
baz=318
DAVA Damuels 85.84 330 *i* PcP **PcP 09 25 25.4 -1.1**
comp=Z,14nm,0.8s
Q33A Connelly Farm, 85.89 43 P **P 09 25 23.4 -0.6**
baz=316
P34A Walnut Farm, R 86.03 42 P **P 09 25 24.1 -0.6**
baz=316
L38A Oak Wood Farm, 86.10 38 P **P 09 25 24.8 -0.1**
baz=319
M37A Trindle Farm, 86.11 39 P **P 09 25 24.9 0.0**
baz=318
SCIA State Center 86.15 38 *e*P **P 09 25 26.2 +1.0**
comp=Z,126nm,1.6s
S32A Newby Ranch, P 86.21 44 P **P 09 25 25.5 -0.1**
baz=315
FUORN Ofenpass-Fuorn 86.22 329 *e*P **P 09 25 27.4 +1.6**
comp=Z,15nm,0.7s
DAVOX Davos/Dischmat 86.25 330 LR LR 10 07 40.4
comp=Z,2μm,18.6s,baz=74,slow=38
R33A Olander Ranch, 86.30 43 P **P 09 25 25.4 -0.6**
baz=316
KSU1 Kansas State U 86.47 42 P **P 09 25 26.1 -0.7**
baz=317
KSU1 Kansas State U 86.47 42 *e*P **P 09 25 26.6 -0.2**
KSU1 *ep*P **pP 09 25 35.5 -0.3**
P35A Duane Minner, 86.48 41 P **P 09 25 26.7 -0.1**
baz=317
MNTX Cornudas Mount 86.50 52 P **P 09 25 26.9 -0.2**
baz=312
MNTX Cornudas Mount 86.50 52 *e*P **P 09 25 27.4 +0.3**
comp=Z,61nm,1.7s
N37A Lee Faris, Mou 86.51 40 P **P 09 25 26.9 -0.1**
baz=318
M38A Pleasantville 86.53 39 P **P 09 25 25.9 -1.1**
baz=319
MSTX Muleshoe 86.58 49 P **P 09 25 27.1 -0.4**
baz=313
MSTX Muleshoe 86.58 49 *e*P **P 09 25 28.0 +0.4**
comp=Z,40nm,1.6s
T32A Huddler Ranch, 86.58 45 P **P 09 25 27.5 +0.1**
baz=315
O36A Bolckow 86.58 40 P **P 09 25 27.5 +0.1**
baz=318
AMTX Amarillo 86.60 48 P **P 09 25 28.1 +0.5**
baz=314
AMTX Amarillo 86.60 48 *e*P **P 09 25 28.1 +0.5**
comp=Z,53nm,1.1s
S33A Kaszmaul Farm, 86.80 44 P **P 09 25 28.9 +0.4**
baz=316
P36A Good Intent, A 86.84 41 P **P 09 25 28.7 +0.1**
baz=317
Q35A Mercer Eighty, 86.95 42 P **P 09 25 29.1 -0.1**
baz=317
N38A Joes South For 86.98 39 P **P 09 25 29.2 0.0**
baz=319
R35A Emporia Munici 87.26 42 P **P 09 25 31.1 +0.4**
baz=317
N39A Derby Farms, D 87.28 39 P **P 09 25 30.8 +0.1**
baz=319
P37A Lathrop 87.31 40 P **P 09 25 30.2 -0.7**
baz=318
LAST Lasithi 87.32 313⇑*i*P P 09 25 39.9 +8.8
O38A Galt 87.36 40 P **P 09 25 30.9 -0.2**
baz=318
V32A Arapaho 87.55 46 P **P 09 25 33.3 +1.1**
baz=315
IDI Anoyia 87.57 314 P **P 09 25 33.2 +0.9**
comp=Z,3.1nm,0.5s,baz=313,slow=3.1,SNR=3.7
U33A Lingo Farm, Me 87.57 45 P **P 09 25 32.9 +0.7**
baz=316
R36A Gordon, Harris 87.63 42 P **P 09 25 32.5 +0.1**
baz=317
S35A Otter Creek Ra 87.66 43 P **P 09 25 32.9 +0.3**
baz=317
T34A McClaskey Farm 87.66 44 P **P 09 25 32.8 +0.1**
baz=316
P38A Dawn 87.70 40 P **P 09 25 32.4 -0.3**
baz=318
TBI Tubuai 87.78 122 *e*LR LR 09 52 53.9
comp=Z,612nm,22.2s,baz=319

W32A	Sentinel	87.86	46	P	P	09 25 33.6	0.0
	baz=315						
U34A	Anderson Ranch	87.89	44	P	P	09 25 33.5	-0.2
	baz=316						
U34A	Anderson Ranch	87.89	44	eP	P	09 25 34.4	+0.6
U34A				epP	pP	09 25 43.2	+0.5
V33A	Lossen Ranch,	87.91	45	P	P	09 25 34.3	+0.4
	baz=316						
S36A	Lake Cedric, C	88.02	42	P	P	09 25 34.5	+0.1
	baz=317						
T35A	Sooner Cattle	88.11	44	P	P	09 25 35.7	+0.9
	baz=317						
Q38A	Cooks Store, C	88.15	40	P	P	09 25 34.5	-0.4
	baz=318						
O40A	La Belle	88.16	39	P	P	09 25 34.6	-0.3
	baz=320						
P39B	Salisbury	88.20	40	P	P	09 25 35.3	+0.2
	baz=319						
W33A	Caddo, Fort Co	88.28	46	P	P	09 25 36.6	+0.9
	baz=316						
X32A	Elmer	88.33	47	P	P	09 25 36.0	+0.1
	baz=315						
V34A	Guthrie	88.33	45	P	P	09 25 36.1	+0.2
	baz=316						
V34A	Guthrie	88.33	45	eP	P	09 25 36.5	+0.6
	comp=Z,52nm,1.1s						
T36A	Boggs Farm, Ca	88.35	43	P	P	09 25 36.0	+0.1
	baz=317						
U35A	Pawnee	88.39	44	P	P	09 25 36.1	0.0
	baz=317						
S37A	Fort Scott	88.41	42	P	P	09 25 35.6	-0.5
	baz=318						
Q39A	Willow Grove F	88.42	40	P	P	09 25 36.1	-0.1
	baz=319						
P40A	Paris	88.53	39	P	P	09 25 35.9	-0.8
	baz=319						
R38A	Fenwick Farm,	88.58	41	P	P	09 25 36.1	-0.8
	baz=318						
W34A	Bridge Creek,	88.62	45	eP	P	09 25 38.0	+0.7
	comp=Z,6.5nm,0.5s						
T37A	Cheneyville 18	88.83	42	P	P	09 25 37.8	-0.3
	baz=318						
Q40A	Laux Farm, Aux	88.92	40	P	P	09 25 37.9	-0.6
	baz=319						
R39A	Chumby, Stover	88.94	41	P	P	09 25 37.9	-0.8
	baz=319						
HDIL	Hopedale	89.09	37	P	P	09 25 39.2	-0.1
	baz=321						
TX31	Lajitas Ar. Si	89.19	53	eP	P	09 25 40.4	+0.3
TXAR	Lajitas Array	89.19	53	P	P	09 25 40.0	0.0
	comp=Z,3.8nm,0.8s,baz=304,slow=3.4,SNR=42						
W35A	Tecumseh	89.19	45	P	P	09 25 39.7	-0.2
	baz=317						
T38A	Diamond	89.23	42	P	P	09 25 40.0	0.0
	baz=318						
TUL1	Leonard	89.24	44	eP	P	09 25 40.5	+0.4
TUL1				epP	sP	09 25 51.3	-1.0
U37A	Salina	89.25	43	P	P	09 25 40.0	-0.1
	baz=318						
V36A	Jenks	89.25	44	P	P	09 25 40.6	+0.5
	baz=317						
S39A	Bolivar	89.25	41	P	P	09 25 40.0	-0.2
	baz=319						
R40A	Maddies Statio	89.35	40	P	P	09 25 40.4	-0.2
	baz=319						
Z33A	Whitaker Ranch	89.44	47	P	P	09 25 40.8	-0.4
	baz=316						
HPIG		89.50	56	eP	P	09 25 46.5	+4.7
	comp=Z,15nm,0.7s						
U38A	Gravette	89.62	43	P	P	09 25 41.7	-0.2
	baz=318						
V37A	Hulbert	89.62	43	P	P	09 25 41.7	-0.2
	baz=318						
X35A	Drake	89.68	46	P	P	09 25 42.0	-0.2
	baz=316						
X36A	Centrahoma	89.91	45	P	P	09 25 43.5	+0.2
	baz=317						
HHAR	Hobbs	89.98	42	eP	P	09 25 43.4	-0.2
HHAR				epP	pP	09 25 53.2	+0.7
V38A	Canehill	90.04	43	P	P	09 25 43.6	-0.2
	baz=318						
T40A	Mansfield	90.08	41	P	P	09 25 43.8	-0.3
	baz=319						
U39A	Green Forest	90.15	42	P	P	09 25 43.9	-0.5
	baz=318						
233A	Rising Star	90.26	48	P	P	09 25 45.2	+0.2
	baz=316						
Z35A	Perchaven, San	90.29	46	P	P	09 25 44.9	-0.2
	baz=316						
Y36A	Durant	90.43	45	P	P	09 25 45.3	-0.4
	baz=317						
X37A	Clayton	90.44	44	P	P	09 25 44.5	-1.3
	baz=317						
U40A	Yellville	90.50	42	P	P	09 25 45.8	-0.3
	baz=319						
T41A	Mountain View	90.56	41	P	P	09 25 45.7	-0.6
	baz=320						
W38A	Poteau	90.56	44	P	P	09 25 47.1	+0.9
	baz=318						
LMQ	La Malbaie	90.57	22	eP	P	09 25 46.8	+0.7
	comp=Z,38nm,1.1s						
X38A	Whitesboro	90.69	44	P	P	09 25 47.2	+0.3
	baz=318						
333A	Richland Sprin	90.70	49	P	P	09 25 47.3	+0.2
	baz=315						
234A	Clairette	90.73	48	P	P	09 25 47.2	+0.1
	baz=316						
JCT	Junction City	90.81	50	P	P	09 25 47.3	-0.3
	baz=315						
JCT	Junction City	90.81	50	eP	P	09 25 47.6	0.0
JCT				e*PP	sP	09 25 58.3	-1.5
JCT	Junction City	90.81	50	eP	P	09 25 47.6	0.0
JCT				epP	sP	09 25 58.3	-1.5
W39A	Magazine	90.87	43	P	P	09 25 48.0	+0.3
	baz=318						
WHTX	Lake Whitney,	91.14	47	eP	P	09 25 49.7	+0.6
WHTX				epP	sP	09 26 00.6	-0.7
334A	Lometa	91.15	48	P	P	09 25 49.3	+0.2
	baz=316						
X39A	Fountain Ranch	91.20	44	P	P	09 25 49.6	+0.3
	baz=318						
W40A	Ferguson Farm,	91.26	43	P	P	09 25 48.9	-0.6
	baz=319						
V41A	Mountainview	91.30	42	P	P	09 25 49.2	-0.6
	baz=319						
Z37A	Pogue Cattle C	91.32	46	P	P	09 25 50.2	+0.3
	baz=317						
PBMO	Poplar Bluff	91.45	40	eP	P	09 25 51.1	+0.7
	comp=Z,31nm,1.3s						
MIAR	Mount Ida	91.47	43	P	P	09 25 50.8	+0.4
	baz=318						
MIAR	Mount Ida	91.47	43	eP	P	09 25 50.9	+0.4
MIAR				pmax	pmax		
	comp=Z,38nm,1.1s						
MIAR	Mount Ida	91.47	43	eP	P	09 25 50.9	+0.4
	comp=Z,38nm,1.1s						
X201	Greenbrier Sit	91.57	42	eP	P	09 25 51.3	+0.4
	comp=Z,35nm,1.1s						
X301	Greenbrier Sit	91.59	42	eP	P	09 25 51.4	+0.4
	comp=Z,23nm,1.2s						
WHAR	Wooly Hollow	91.61	42	eP	P	09 25 51.1	0.0
	comp=Z,44nm,1.1s						
Y39A	Lockesburg	91.64	44	P	P	09 25 51.6	+0.3
	baz=318						
W41B	Gary Mavity, V	91.72	42	P	P	09 25 51.5	-0.1
	baz=319						
336A	Riesel	91.93	48	P	P	09 25 52.6	-0.1
	baz=317						
534A	Blanco	91.93	49	P	P	09 25 52.7	-0.1
	baz=316						
LMN	Caledonia Moun	93.65	19	eP	P	09 26 00.8	+0.5
LMN				epP	sP	09 26 11.2	-1.4
KEST	Kesra	95.45 324	LR		LR	10 14 27.8	
	comp=Z,2μm,18.9s,baz=348,slow=39						
ESDC	Sonseca Array	97.53 335	LR		LR	10 15 43.1	
	comp=Z,1μm,18.7s,baz=45,slow=39						
RKT	Rikitea	97.91 113	eLR		LR	09 58 04.6	
	comp=Z,737nm,22.8s,baz=306						
VNDA	Vanda	115.11 175	PKP		PKPdf	09 31 22.1	-1.7
	comp=Z,0.6nm,0.7s,baz=312,slow=4.7,SNR=5.3						
TORD	Torodi Ar. Bea	117.88 316	PKP		PKPdf	09 31 30.1	-0.9
	comp=Z,0.6nm,0.8s,baz=83,slow=0.6,SNR=6.5						
TORD				PP	PP	09 32 37.8	-6.3
	comp=Z,0.8nm,0.6s,baz=22,slow=8.3,SNR=5.5						
MAW	Mawson	120.18 206	PKP		PKPdf	09 31 33.7	0.0
	comp=Z,2.6nm,0.8s,baz=7.1,slow=8.1,SNR=3.7						
QSPA	South Pole Qui	127.00 180	ePKPdf		PKPdf	09 31 46.3	-0.7
SNAA	Sanae	141.25 197	PKP		PKPpre	09 32 09.2	
SNAA	Sanae	141.25 197	ePKHKP		PKPpre	09 32 09.5	
SNAA	Sanae	141.25 197	ePKPpre		PKPpre	09 32 09.5	
VNA2	Neumayer--Watz	142.81 196	PKP		PKPpre	09 32 12.1	
	baz=81,slow=1.8						
VNA3	Neumayer Olymp	143.04 194	PKP		PKPpre	09 32 12.1	
VNA1	Neumayer--Stat	143.21 196	PKP		PKPbc	09 32 13.2	-0.8
SAML	Samuel	143.37 46	ePKPdf		PKPdf	09 32 18.3	-0.7
LPAZ	La Paz	145.71 61	PKPbc		PKPdf	09 32 23.4	-0.3
	comp=Z,8.9nm,0.9s,baz=336,slow=5.4,SNR=31						
LPAZ	La Paz	145.71 61	ePKPdf		PKPdf	09 32 23.6	-0.1
PB01	IPOC Station P	147.79 69	ePKPdf		PKPdf	09 32 27.2	+0.8
LVC	Limon Verde	149.15 71	ePKPdf		PKPdf	09 32 30.2	+1.3
LCO	Las Campanas	150.98 83	ePKPbc		PKPbc	09 32 37.5	+0.2
ROC1	El Roble	152.20 91	ePKPbc		PKPbc	09 32 39.8	-0.2
PLCA	Paso Flores	154.03 108	PKPbc		PKPbc	09 32 43.0	-0.4
	comp=Z,2.9nm,0.8s,baz=282,slow=2.0,SNR=9.0						

*IDC **19** 09:15:45.8±1.2, 14°.815×167°.95E, h0km, mb4.1/8, mb1 4.2/9, mb1mx3.9/42, mbtmp4.1/9, ML3.9/1, Error ellipse: s-maj=34.8km s-min=20.9km az=101.0*
*ISCJB **19** 09:15:49.7±0.9, 14°.89S±0°.07×167°.9E±0°.2, h36km, mb4.0/8, Error ellipse: s-maj=26.3km s-min=10.1km az=2.0*

ISC 19 09:15:51.3±1.1, 14°.83S±0°.09×168°.0E±0°.2, h36km, n9, σ0°.87/10, mb4.0/8, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	7.34 191		Pn	Pn	09 17 36.3	+0.2
	2.0nm,0.3s,baz=161,slow=14,SNR=8.6						
DZM				Sn	Sn	09 18 58.4	+0.1
	0.3nm,0.3s,baz=122,slow=22,SNR=1.9						
URZ	Urewera	24.70 163		P	P	09 21 08.6	-0.4
	15nm,1.1s,baz=64,slow=9.3,SNR=3.1						
STKA	Stephens Creek	29.44 230		P	P	09 21 52.5	+0.8
	2.0nm,0.7s,baz=51,slow=9.7,SNR=5.3						
WRA	Warramunga Arr	32.44 256		P	P	09 22 16.9	-1.5
	0.6nm,0.9s,baz=86,slow=9.2,SNR=5.2						
ASAR	Alice Springs	33.26 249		P	P	09 22 24.6	-0.9
	0.8nm,0.5s,baz=79,slow=9.2,SNR=13						
USRK	Ussuriysk Ar.	67.28 333		P	P	09 26 42.8	+0.6
	1.6nm,0.9s,baz=170,slow=9.6,SNR=4.1						
SONM	Songino Array	82.97 323		P	P	09 28 13.1	+0.3
	0.4nm,0.4s,baz=138,slow=12,SNR=3.1						
ILAR	Eielson Array	86.42 18		P	P	09 28 28.8	-0.8
	0.9nm,0.8s,baz=241,slow=4.9,SNR=6.7						
MKAR	Makanchi Array	97.73 316		P	P	09 29 23.3	+0.6
	0.8nm,0.5s,baz=101,slow=6.4,SNR=4.7						

JMA 19 09:17:23.7±0.3, 36°.08N×143°.15E, h88km, M3.9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	1.90 259		P	Pn	09 17 55.2	+0.7
JHO	Hitachi	2.15 285		P	Pn	09 17 58.2	+0.4
JHO				S	Sn	09 18 24.4	+0.5
JMM	Marumori	2.60 314		P	Pn	09 18 04.1	+0.4
JMM				S	Sn	09 18 35.0	+0.5
JFT	Otama	2.68 303		eS	Sn	09 18 38.1	+1.7
JAG	Ashikaga	3.01 278		P	Pn	09 18 10.4	+1.1

IDC 19 09:23:42.5±3.2, 6°.37S×147°.91E, h0km, mb4.0/2, mb1 4.1/4, mb1mx3.6/36, mbtmp3.9/4, ML3.6/1, Error ellipse: s-maj=75.9km s-min=33.3km az=98.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	Port Moresby	3.11 194		Pn	Pn	09 24 33.9	+1.0
	6.7nm,0.3s,baz=42,slow=4.7,SNR=15						
PMG				Sn	Sn	09 25 13.8	+3.0
	3.4nm,0.3s,baz=3.4,slow=17,SNR=8.6						
WRA	Warramunga Arr	18.87 223		P	P	09 28 04.3	-0.2
	0.2nm,0.3s,baz=50,slow=10,SNR=6.0						
ASAR	Alice Springs	21.85 217		P	P	09 28 35.8	-1.2
	1.1nm,0.5s,baz=51,slow=8.7,SNR=12						
FITZ	Fitzroy Crossi	24.66 240		P	P	09 29 04.5	-0.7
	5.4nm,0.4s,baz=57,slow=7.9,SNR=20						
TORD	Torodi Ar. Bea	146.06 284		PKPbc	PKPbc	09 43 25.8	+0.2
	0.2nm,0.3s,baz=69,slow=3.1,SNR=7.1						

*ISK **19** 09:23:46.6, 36°.35N×29°.08E, h5km, MD2.4*
*CSEM **19** 09:23:46.7±0.3, 36°.33N×29°.13E, h2km, MD2.4, Error ellipse: s-maj=6.7km s-min=4.4km az=152.0*
*ISCJB **19** 09:23:47.4±1.0, 36°.36N±0°.05×29°.10E±0°.05, h3km±7km, Error ellipse: s-maj=8.5km s-min=7.0km az=11.8*
*DDA **19** 09:23:48.5, 36°.45N×29°.03E, h7km, Md2.6*

ISC 19 09:23:48.1±1.3, 36°.40N±0°.06×29°.14E±0°.03, h14km±8km, n23, σ0°.95/34, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FETY	Fethiye	0.24 349		PG	Pg	09 23 53.1	-0.2
FETY				eSG	Sg	09 23 57.4	+0.6
FETY	Fethiye	0.24 349		i Pg	Pg	09 23 53.1	-0.2
FETY				eSg	Sg	09 23 57.4	+0.6
AKAS	Kas	0.41 114		P	Pn	09 23 58.7	-1.1
AKAS	Kas	0.41 114		i P	Pn	09 23 58.7	-1.1
AKAS				i S	Sb	09 24 07.3	+3.8
DALY	Dalyan (Mu¨la	0.57 317		ePG	Pg	09 23 58.4	-0.9
DALY				eSG	Sg	09 24 06.7	-0.2
DALY	Dalyan (Mu¨la	0.57 317		ePg	Pg	09 23 58.4	-0.9
DALY				eSg	Sg	09 24 06.7	-0.2
TURN	Turunc	0.64 318		i P	Pb	09 24 01.7	+0.7
ELL	Elmali	0.71 61		ePG	Pb	09 24 01.7	-0.6
ELL	Elmali	0.71 61		ePg	Pb	09 24 01.7	-0.6
GLHS	Glhisar (BURDU	0.81 21		ePG	Pg	09 24 03.0	-0.8
GLHS	Glhisar (BURDU	0.81 21		ePg	Pg	09 24 03.0	-0.8
GOLH	Golhisar	0.90 22		P	Pg	09 24 04.8	-0.7
GOLH				S	Sn	09 24 19.5	+0.2
GOLH	Golhisar	0.90 22		i P	Pg	09 24 04.8	-0.7
GOLH				i S	Sn	09 24 19.4	+0.2
YER	Yerkesik	1.00 317		ePG	Pg	09 24 06.7	-0.8
YER	Yerkesik	1.00 317		ePg	Pg	09 24 06.7	-0.8
BDRM	Kayabasi	1.51 296		P	Pb	09 24 15.7	-0.2
BDRM				S	Sb	09 24 35.7	+0.7
BDRM	Kayabasi	1.51 296		i P	Pb	09 24 15.7	-0.2
BDRM				i S	Sb	09 24 35.7	+0.7
BODT	Bodrum	1.61 295		ePN	Pn	09 24 16.2	+0.1
BODT	Bodrum	1.61 295		ePn	Pn	09 24 16.2	+0.1
AYDN	Tasoluk	1.61 322		P	Pb	09 24 18.0	+0.4
AYDN				S	Sb	09 24 38.5	+0.6
AYDN	Tasoluk	1.61 322		i P	Pb	09 24 18.1	+0.4
AYDN				i S	Sb	09 24 38.5	+0.6
KARP	Karpathos	1.82 243		ePN	Pn	09 24 18.4	-0.6
KARP	Karpathos	1.82 243		ePn	Pn	09 24 18.4	-0.6

IDC 19 09:26:31.6±3.1, 6°.39S×147°.72E, h0km, mb3.8/2, mb1 4.0/4, mb1mx3.5/44, mbtmp3.8/4, ML3.5/1, Error ellipse: s-maj=70.5km s-min=32.9km az=96.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	Port Moresby	3.04 190		Pn	Pn	09 27 21.6	+0.5
	8.2nm,0.3s,baz=33,slow=8.9,SNR=8.0						
PMG				Sn	Sn	09 28 00.7	+2.4
	7.6nm,0.3s,baz=346,slow=17,SNR=6.7						
WRA	Warramunga Arr	18.71 223		P	P	09 30 51.5	-0.4
	0.2nm,0.3s,baz=48,slow=11,SNR=4.4						
ASAR	Alice Springs	21.71 216		P	P	09 31 23.6	-1.0
	1.0nm,0.5s,baz=50,slow=9.1,SNR=11						
FITZ	Fitzroy Crossi	24.48 240		P	P	09 31 52.3	-0.4
	3.0nm,0.5s,baz=51,slow=7.5,SNR=12						
TORD	Torodi Ar. Bea	145.88 284		PKPbc	PKPbc	09 46 14.1	0.0
	0.3nm,0.7s,baz=59,slow=3.8,SNR=3.8						

IDC 19 09:28:01.1±2.3, 7°.76S×150°.74E, h0km, mb3.5/2, mb1 3.8/4, mb1mx3.5/46, mbtmp3.6/4, ML3.5/1, MS3.8/2, Ms1 3.8/2, ms1mx3.1/26, Error ellipse: s-maj=136.9km s-min=28.4km az=133.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	Port Moresby	3.90 245		Pn	Pn	09 29 04.3	+2.0
	4.9nm,0.3s,baz=16,slow=11,SNR=3.7						
PMG				Sn	Sn	09 29 42.7	-6.2
	2.5nm,0.3s,baz=6.2,slow=15,SNR=4.4						
WRA	Warramunga Arr	19.98 231		P	P	09 32 33.4	-1.9
	0.2nm,0.3s,baz=48,slow=11,SNR=5.9						
ASAR	Alice Springs	22.60 224		P	P	09 33 03.1	-0.5
	0.7nm,0.5s,baz=50,slow=9.1,SNR=7.7						
JCJ	Chichijima	35.63 347		LR	LR	09 46 57.1	
	comp=Z,132nm,20.9s,baz=114,slow=32						
NWAO	Narrogin (SRO)	39.87 226		LR	LR	09 52 56.4	
	comp=Z,148nm,21.2s,slow=38						
ILAR	Eielson Array	85.66 22		P	P	09 40 40.5	-0.9
	0.5nm,1.1s,baz=235,slow=3.2,SNR=4.3						
TORD	Torodi Ar. Bea	149.11 283		PKPbc	PKPbc	09 47 53.8	+1.2
	0.1nm,0.4s,baz=61,slow=3.4,SNR=4.5						

IDC 19 09:37:38.3±6.2, 9°.22S×149°.21E, h178km±38km, mb2.3/1, mb1 2.7/3, mb1mx2.6/44, mbtmp3.1/3, Error ellipse: s-maj=87.8km s-min=45.6km az=110.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	Port Moresby	2.03 265		P	Pn	09 38 13.7	-1.9
	3.9nm,0.3s,baz=348,slow=5.9,SNR=7.5						
PMG				S	Sn	09 38 45.8	+1.3
	2.0nm,0.3s,baz=60,slow=13,SNR=4.0						
WRA	Warramunga Arr	17.89 232		P	P	09 41 33.7	-0.9
	0.0nm,0.3s,baz=52,slow=10,SNR=2.7						
ASAR	Alice Springs	20.51 224		P	P	09 42 02.1	-0.7
	0.3nm,0.6s,baz=56,slow=9.0,SNR=4.6						
TORD	Torodi Ar. Bea	147.91 280		PKPbc	PKPbc	09 57 03.6	+0.1
	0.1nm,0.3s,baz=76,slow=3.2,SNR=3.8						

IDC 19 09:38:21.6±3.1, 42°.25N×129°.38E, h0km, mb1 2.6/2, mb1mx2.5/60, mbtmp2.6/2, ML1.8/2, Error ellipse: s-maj=55.6km s-min=20.1km az=123.0, North Korea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I45RU	USSURIYSK INFR	2.72 43		i		09 58 00.0	
	baz=224,slow=298,SNR=1.6						
USRK	Ussuriysk Ar.	2.73 44		Pn	Pn	09 39 06.7	+0.1
	0.3nm,0.3s,baz=223,slow=11,SNR=6.2						
USRK				Pg	Pb	09 39 11.8	+0.6
	1.3nm,0.3s,baz=228,slow=14,SNR=16						
USRK				Lg	Lg	09 39 47.4	
	2.1nm,0.3s,baz=234,slow=26,SNR=9.6						
KSRS	Korea Array	4.92 194		Pn	Pn	09 39 36.9	+0.2
	0.2nm,0.3s,baz=6.6,slow=13,SNR=3.3						

*IDC **19** 09:50:04.4±6.5, 6°.68S×147°.87E, h80km±44km, mb3.6/4, mb1 3.8/6, mb1mx3.4/36, mbtmp3.9/6, ML3.7/1, MS3.8/2, Ms1 3.8/2, ms1mx3.1/35, Error ellipse: s-maj=51.6km s-min=38.1km az=46.0*

ISC 19 09:49:59.8±2.0, 6°.4S±0°.1×147°.9E±0°.3, h51km, n8, σ0°.64/8, mb3.6/4, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	Port Moresby	3.04 194		P	Pn	09 50 45.5	0.0
	9.6nm,0.3s,baz=37,slow=5.5,SNR=20						
PMG				S	Sn	09 51 21.4	+0.6
	5.9nm,0.3s,baz=19,slow=13,SNR=5.2						
PMG				LR	LR	09 52 01.7	
	comp=Z,615nm,18.0s,baz=219,slow=42						
WRA	Warramunga Arr	18.81 223		P	P	09 54 14.8	-0.5
	0.2nm,0.3s,baz=50,slow=11,SNR=9.8						
ASAR	Alice Springs	21.79 217		P	P	09 54 46.9	-0.8
	1.3nm,0.5s,baz=56,slow=9.3,SNR=16						
DZM	Mont Dzumac	23.72 133		LR	LR	10 02 20.8	
	comp=Z,445nm,19.0s,baz=38,slow=31						
FITZ	Fitzroy Crossi	24.61 240		P	P	09 55 15.6	+0.1
	6.1nm,0.5s,baz=69,slow=7.7,SNR=20						
STKA	Stephens Creek	25.99 192		P	P	09 55 27.8	-0.2
	0.8nm,0.5s,baz=22,slow=11,SNR=2.9						
VNDA	Vanda	71.44 177		P	P	10 01 14.2	-0.2
	0.7nm,0.8s,baz=328,slow=8.8,SNR=4.4						
TORD	Torodi Ar. Bea	146.06 284		PKPbc	PKPab	10 09 36.7	+0.9
	1.1nm,0.7s,baz=69,slow=3.8,SNR=7.1						

*NIED **19** 09:58:00, 36°.70N×141°.00E, h32km, Mw3.7 Best double couple: M0 3.66000×10^14 NP1:φ0 173.00000°, δ43.00000°, λ54.00000°. NP2:φ0 39.00000°, δ56.00000°, λ119.00000°.*
*ISCJB **19** 09:58:22.4±0.7, 36°.68N±0°.03×141°.22E±0°.08, h48km±6km, mb3.8/12, Error ellipse: s-maj=10.3km s-min=5.5km az=13.9*
*JMA **19** 09:58:24.7±0.1, 36°.71N×141°.04E, h48km±1km, M3.7*
JMA Felt II J1.
*IDC **19** 09:58:27.7±2.4, 36°.55N×140°.98E, h80km±22km, mb3.5/12, mb1 3.7/14, mb1mx3.5/55, mbtmp3.8/14, Error ellipse: s-maj=22.4km s-min=10.5km az=64.0*

ISC 19 09:58:23.6±1.3, 36°.69N±0°.04×141°.18E±0°.08, h41km±11km, n32, σ1°.03/32, mb3.8/12, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	Hitachi	0.50 261		P	Pn	09 58 34.5	+0.1
JHO				S	Sn	09 58 41.2	-0.7
ONAJ	Iwakimizuishiy	0.51 323		P	Pn	09 58 34.7	+0.1
ONAJ				S	Sn	09 58 41.7	-0.7
JFK	Kawauchi	0.72 340		P	Pn	09 58 37.5	+0.2
JFK				S	Sn	09 58 46.5	-0.7
JYT	Yasato	0.92 240		P	Pn	09 58 40.2	+0.1
JYT				S	Sn	09 58 51.1	-1.0
JFT	Otama	1.07 321		P	Pn	09 58 42.9	+0.8
JFT				S	Sn	09 58 55.7	0.0
JMM	Marumori	1.21 345		P	Pn	09 58 44.5	+0.4
JMM				S	Sn	09 58 58.7	-0.6
JFY	Yanaizu	1.38 302		P	Pn	09 58 46.4	0.0
MJAR	Matsushiro Arr	2.40 267		P	Pn	09 59 01.0	+0.7
	26nm,0.3s,baz=89,slow=15,SNR=165						
MJAR				S	Sn	09 59 29.4	+0.9
	14nm,0.3s,baz=97,slow=30,SNR=17						
MAT	Matsushiro	2.40 267		P	Pn	09 59 01.4	+1.0
MAT				S	Sn	09 59 29.4	+0.9
JHJ	Hachijo jima 2	3.75 198		P	Pn	09 59 20.8	+1.9
	11nm,0.3s,baz=322,slow=21,SNR=25						
JHJ				S	Sn	10 00 02.5	+0.9
	49nm,0.3s,baz=25,slow=22,SNR=8.6						
ASAJ	Asahikawa	7.50 8		P	Pn	10 00 10.2	-0.1
	1.1nm,0.3s,baz=198,slow=10,SNR=6.3						
JCJ	Chichijima	9.61 175		P	Pn	10 00 38.5	-0.8
	3.8nm,0.3s,baz=349,slow=22,SNR=7.2						
JCJ				S	Sn	10 02 18.0	-7.9
	4.2nm,0.3s,baz=298,slow=22,SNR=5.9						
H11N2	WAKE ISLAND Hy	28.14 120		T	T	10 34 15.6	
	baz=313,slow=75,SNR=42						
H11N1	WAKE ISLAND Hy	28.14 120		T	T	10 34 14.8	
	baz=313,slow=75,SNR=39						
H11N3	WAKE ISLAND Hy	28.15 120		T	T	10 34 17.9	
	baz=313,slow=75,SNR=40						
H11S1	WAKE ISLAND Hy	28.83 122		T	T	10 35 07

AKASG	Malin Array Be	74.45	322	P	P	10 09 56.9	-0.4
	comp=Z,1.6nm,0.5s,baz=44,slow=5.7,SNR=5.4						
GERES	GERESS Array B	82.90	328	P	P	10 10 42.8	-1.2
	comp=Z,0.5nm,0.5s,baz=37,slow=6.9,SNR=4.4						
LPAZ	La Paz	147.03	60	PKPbc	PKPbc	10 18 04.0	+0.8
	comp=Z,0.7nm,0.5s,baz=175,slow=4.2,SNR=4.2						

IDC 19 09:58:24.3±3.7, 7°.41S×148°.60E, $h0^{km}$, mb2.7/1, mb1 3.2/2, mb1mx3.1/32, mbtmp2.9/2, ML3.0/1, Error ellipse: s-maj=133.0km s-min=50.2km az=120.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	18.62	227	P	P	10 02 42.1	-1.4
	0.1nm,0.3s,baz=52,slow=10,SNR=1.4						
ASAR	Alice Springs	21.46	219	P	P	10 03 13.4	-1.1
	0.2nm,0.6s,baz=47,slow=9.6,SNR=1.7						
TORD	Torodi Ar. Bea	146.96	283	PKPbc	PKPbc	10 18 10.4	+0.5
	0.4nm,1.0s,baz=132,slow=0.7,SNR=1.1						

IDC 19 10:03:31.8±5.7, 8°.24S×158°.62E, $h0^{km}$, mb3.8/4, mb1 4.0/4, mb1mx3.6/32, mbtmp3.8/4, Error ellipse: s-maj=116.0km s-min=22.0km az=20.0, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	Honiara	1.77	132	Pn	Pn	10 04 04.4	+0.6
	47nm,0.3s,baz=167,slow=6.8,SNR=23						
HNR				Sn	Sn	10 04 26.1	-1.0
	262nm,0.3s,baz=358,slow=15,SNR=30						
WRA	Warramunga Arr	26.22	241	P	P	10 09 09.2	+0.5
	0.3nm,0.4s,baz=67,slow=9.1,SNR=4.6						
H11S3	WAKE ISLAND Hy	27.73	17	T	T	10 38 09.6	
	baz=194,slow=76,SNR=19						
H11S2	WAKE ISLAND Hy	27.73	17	T	T	10 38 11.4	
	baz=194,slow=76,SNR=23						
H11S1	WAKE ISLAND Hy	27.75	17	T	T	10 38 10.7	
	baz=194,slow=76,SNR=18						
ASAR	Alice Springs	28.21	234	P	P	10 09 25.9	-0.6
	0.4nm,0.4s,baz=62,slow=9.8,SNR=15						
STKA	Stephens Creek	28.35	212	P	P	10 09 27.7	0.0
	0.9nm,0.5s,baz=44,slow=14,SNR=4.6						
H11N1	WAKE ISLAND Hy	28.95	16	T	T	10 39 36.6	
	baz=195,slow=76,SNR=16						
H11N3	WAKE ISLAND Hy	28.95	16	T	T	10 39 36.7	
	baz=195,slow=76,SNR=14						
H11N2	WAKE ISLAND Hy	28.96	16	T	T	10 39 38.5	
	baz=195,slow=76,SNR=12						
FITZ	Fitzroy Crossi	33.52	250	P	P	10 10 13.5	+0.1
	1.4nm,0.7s,baz=60,slow=8.1,SNR=2.1						

*IDC **19** 10:04:10.8±3.7, 11°.43N×85°.68W, $h0^{km}$, mb3.5/4, mb1 3.9/5, mb1mx3.7/36, mbtmp3.5/5, ML3.4/1, MS3.2/2, Ms1 3.4/2, ms1mx2.9/26, Error ellipse: s-maj=94.4km s-min=61.7km az=33.0*

*CASC **19** 10:04:16.8±2.5, 11°.01N×86°.65W, $h37^{km}$±$.999^{km}$, MD3.8*

ISC 19 10:04:17.3±1.0, 11°.1N±0°.2×86°.5W±0°.2, $h35^{km}$, n16, σ1°69/16, mb3.5/4, Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCR	Jicaral	1.85	133	eP	Pn	10 04 46.3	-0.3
JCR				eS	Sn	10 05 09.5	+0.7
CGA2	Cerro Gallo 2	2.27	118	eP	Pn	10 04 53.6	+1.1
CNCH	Conchagua	2.52	329	eP	Pn	10 04 55.0	-0.9
VSM	San Miguel	2.88	323	eP	Pn	10 05 02.1	+1.1
PACA	Pacayal	2.94	323	eP	Pn	10 05 02.3	+0.6
PACA				eS	Sn	10 05 34.8	-1.1
URSC	Urasca	2.96	115	eP	Pn	10 05 05.2	+3.2
LFRS	El Faro	3.54	315	eP	Pn	10 05 10.1	+0.2
TEIG	Tepich	9.22	350	LR	LR	10 09 37.6	
	comp=Z,59nm,19.8s,baz=134,slow=36						
CMIG	Matias Romero	10.07	307	Pn	Pn	10 06 43.4	+3.8
	0.3nm,0.3s,baz=185,slow=16,SNR=2.9						
TXAR	Lajitas Array	24.20	321	P	P	10 09 31.6	+0.8
	1.9nm,0.7s,baz=137,slow=10.0,SNR=28						
LPAZ	La Paz	32.73	146	LR	LR	10 25 22.7	
	comp=Z,124nm,20.2s,baz=310,slow=39						
PDAR	Pinedale Array	37.39	332	P	P	10 11 27.2	+0.1
	0.6nm,0.7s,baz=120,slow=8.8,SNR=6.0						
YKA	Yellowknife Ar	55.14	345	P	P	10 13 44.1	-1.8
	0.3nm,0.7s,baz=141,slow=7.4,SNR=7.8						
ILAR	Eielson Array	67.61	336	P	P	10 15 08.9	-1.3
	0.3nm,0.7s,baz=134,slow=4.2,SNR=4.1						
ASAR	Alice Springs	139.62	247	PKP	PKPdf	10 23 42.7	+0.5
	0.2nm,0.7s,baz=146,slow=1.8,SNR=3.3						
WRA	Warramunga Arr	139.78	252	PKP	PKPdf	10 23 43.4	+0.9
	0.5nm,0.8s,baz=96,slow=2.6,SNR=3.3						

JMA 19 10:13:38.4±0.2, 35°.96N×141°.76E, $h28^{km}$±3^{km}, M2.7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	0.78	251	P	Pb	10 13 53.0	-0.3
CHOJ				S	Sb	10 14 03.3	-0.2
BSO1	Boso 1	1.45	206	P	Pn	10 14 03.0	+0.7
MAT	Matsushiro	2.93	282	P	Pb	10 14 32.0	+2.1
MAT				eS	Sb	10 15 05.1	-0.2

*NIED **19** 10:25:00, 37°.40N×142°.00E, $h11^{km}$, Mw3.8 Best double couple: M_0=5.02000×10^{14} NP1:ϕ_s=224.00000°, δ33.00000°, λ-134.00000°. NP2:ϕ_s=94.00000°, δ67.00000°, λ-65.00000°.*

*ISCJB **19** 10:25:12.3±1.1, 37°.37N±0°.03×142°.06E±0°.06, $h15^{km}$±7^{km}, mb3.8/14, MS3.6/2, Error ellipse: s-maj=7.7km s-min=5.4km az=14.8*

*JMA **19** 10:25:14.2±0.2, 37°.45N×141°.97E, $h25^{km}$±3^{km}, M3.9*

*IDC **19** 10:25:17.4±3.4, 37°.38N×141°.95E, $h35^{km}$±27^{km}, mb3.6/14, mb1 3.8/19, mb1mx3.7/46, mbtmp3.8/19, ML3.4/4, MS3.7/2, Ms1 3.7/2, ms1mx2.9/43, Error ellipse: s-maj=19.8km s-min=13.8km az=99.0*

ISC 19 10:25:12.0±2.0, 37°.39N±0°.04×141°.98E±0°.06, $h4^{km}$±11^{km}, n42, σ1°66/44, mb3.9/14, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	0.88	269	P	Pn	10 25 30.3	-0.9
JFK				S	Sb	10 25 41.9	-0.1
ONAJ	Iwakimizuishiy	0.98	254	P	Pn	10 25 32.2	-0.5
ONAJ				S	Sb	10 25 45.1	+0.1
JMM	Marumori	1.06	297	P	Pn	10 25 32.6	-1.0
JIO	Ouri	1.18	335	P	Pb	10 25 33.9	-1.0
JIO				S	Sb	10 25 47.9	-2.6
JFT	Otama	1.31	276	P	Pg	10 25 37.6	+0.4
JFT				eS	Sg	10 25 54.1	-0.1
JOU	Okura	1.43	314	P	Pg	10 25 38.9	-0.5
JOU				S	Sn	10 25 56.3	-1.7
JMK	Ichinoseki	1.67	339	P	Pn	10 25 41.7	-0.4
JYS	Shirataka	1.73	299	P	Pb	10 25 44.1	-0.2
JYS				S	Sb	10 26 05.6	-0.8
JFY	Yanaizu	1.81	271	P	Pb	10 25 44.7	-1.0
JYK	Kaneyama	1.99	321	P	Pn	10 25 46.4	-0.1
JYK				eS	Sb	10 26 12.3	-1.7
MJAR	Matsushiro Arr	3.13	256	Pn	Pn	10 26 04.0	+1.8
	3.4nm,0.3s,baz=82,slow=16,SNR=23						
MAT	Matsushiro	3.14	256	P	Pn	10 26 04.3	+2.1
MAT				S	Sn	10 26 41.2	+1.0
JHJ	Hachijo jima 2	4.62	204	Pn	Pn	10 26 24.4	+1.7
	12nm,0.3s,baz=147,slow=23,SNR=12						
JHJ				Sn	Sn	10 27 15.2	-1.6
	12nm,0.3s,baz=74,slow=23,SNR=3.1						
ASAJ	Asahikawa	6.74	4	Pn	Pn	10 26 52.4	+0.7
	1.1nm,0.3s,baz=228,slow=10,SNR=8.2						
ASAJ				Sn	Sn	10 28 10.3	+1.4
	0.5nm,0.3s,baz=281,slow=32,SNR=6.1						
JNU	Nakatsue	10.02	248	Pn	Pn	10 27 38.4	+1.6
	0.2nm,0.3s,baz=350,slow=9.4,SNR=3.4						
USRK	Ussuriysk Ar.	10.18	315	Pn	Pn	10 27 42.5	+3.7
	0.1nm,0.3s,baz=121,slow=13,SNR=2.3						
JCJ	Chichijima	10.26	179	Pn	Pn	10 27 39.0	-1.1
	2.8nm,0.3s,baz=281,slow=23,SNR=5.0						
JCJ				Sn	Sn	10 29 29.5	-6.1
	2.2nm,0.3s,baz=274,slow=22,SNR=3.0						
KSRS	Korea Array	11.18	275	Pn	Pn	10 27 59.6	+7.0
	0.1nm,0.3s,baz=88,slow=13,SNR=2.2						
KLR	Kul'dur	13.97	331	Pn	P	10 28 35.2	-3.6
	0.1nm,0.3s,baz=147,slow=17,SNR=2.1						
GUMO	Guam	23.84	173	LR	LR	10 43 39.8	
	comp=Z,19nm,18.9s,baz=328,slow=46						
SEY	Seymchan	26.36	11	P	P	10 30 50.8	+1.8
	0.4nm,0.3s,baz=184,slow=15,SNR=3.6						
H11N2	WAKE ISLAND Hy	27.95	122	T	T	11 00 28.6	
	baz=315,slow=75,SNR=149						
H11N1	WAKE ISLAND Hy	27.95	122	T	T	11 00 26.5	
	baz=315,slow=75,SNR=151						
H11N3	WAKE ISLAND Hy	27.96	122	T	T	11 00 29.9	
	baz=315,slow=75,SNR=118						
SONM	Songino Array	27.97	303	P	P	10 31 04.6	+0.9
	0.4nm,0.4s,baz=98,slow=10,SNR=2.4						
H11S1	WAKE ISLAND Hy	28.68	124	T	T	11 01 17.8	
	baz=317,slow=76,SNR=93						
H11S3	WAKE ISLAND Hy	28.68	124	T	T	11 01 27.0	
	baz=317,slow=76,SNR=86						
H11S2	WAKE ISLAND Hy	28.69	124	T	T	11 01 18.0	
	baz=317,slow=76,SNR=80						
ZALV	Zalesovo Beam	42.01	312	P	P	10 33 05.4	+1.2
	2.1nm,0.9s,baz=88,slow=4.9,SNR=4.1						
MKAR	Makanchi Array	44.31	302	P	P	10 33 23.3	+0.3
	1.3nm,0.7s,baz=88,slow=9.1,SNR=10						
ILAR	Eielson Array	48.95	33	P	P	10 33 59.6	+0.6
	1.4nm,0.7s,baz=260,slow=6.2,SNR=18						
BVAR	Borovoye Array	50.67	312	P	P	10 34 12.4	+0.1
	0.7nm,0.5s,baz=66,slow=7.2,SNR=4.0						
WRA	Warramunga Arr	57.47	189	P	P	10 35 02.6	+0.3
	0.4nm,0.4s,baz=7.2,slow=7.1,SNR=12						
AKTO	Aktyubinsk	58.77	312	P	P	10 35 11.6	+0.5
	0.4nm,0.3s,baz=74,slow=15,SNR=3.4						
ASAR	Alice Springs	61.20	188	P	P	10 35 28.7	+0.7
	0.3nm,0.7s,baz=3.5,slow=6.1,SNR=3.5						
YKA	Yellowknife Ar	63.28	30	P	P	10 35 41.7	+0.2
	0.6nm,0.6s,baz=305,slow=6.8,SNR=13						
FINES	FINESS Array B	68.71	332	P	P	10 36 16.7	+0.3
	1.3nm,0.6s,baz=30,slow=12,SNR=5.1						
NOA	NORSAR Array B	74.03	337	P	P	10 36 48.9	+0.2
	0.7nm,0.6s,baz=40,slow=5.6,SNR=3.2						
AKASG	Malin Array Be	74.29	322	P	P	10 36 50.4	+0.1
	0.9nm,0.5s,baz=44,slow=5.7,SNR=4.3						
RAO	Raoul Island	76.20	145	LR	LR	11 04 27.3	
	comp=Z,371nm,20.7s,baz=128,slow=31						
PDAR	Pinedale Array	77.10	46	P	P	10 37 07.8	+0.9
	1.0nm,0.6s,baz=272,slow=3.0,SNR=10						
LPAZ	La Paz	146.13	60	PKPbc	PKPab	10 44 55.0	-0.2
	1.4nm,0.8s,baz=11,slow=5.3,SNR=6.4						

IDC 19 10:35:01.2±4.7, 26°.48N×92°.71E, $h0^{km}$, mb3.6/4, mb1 3.7/4, mb1mx3.3/53, mbtmp3.6/4, Error ellipse: s-maj=403.1km s-min=22.4km az=60.0, Northeastern India

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHL	Shillong	1.17	219	ePN	Pn	10 35 32.5	+7.4
SHL				eSN	Sn	10 35 54.5	+13
MKAR	Makanchi Array	21.89	341	P	P	10 39 55.4	-0.4
	0.8nm,0.6s,baz=156,slow=9.6,SNR=7.8						
KURBB	Kurchatov Arra	26.44	339	P	P	10 40 39.9	+0.3
	0.5nm,0.2s,baz=154,slow=10,SNR=3.4						
WRA	Warramunga Arr	61.33	135	P	P	10 45 18.9	0.0
	0.2nm,0.6s,baz=322,slow=7.6,SNR=5.0						
ASAR	Alice Springs	63.81	138	P	P	10 45 35.5	0.0
	0.1nm,0.5s,baz=321,slow=6.7,SNR=5.9						

*ISCJB **19** 10:35:22.3±0.5, 30°.70N±0°.04×105°.62W±0°.04, $h10^{km}$, Error ellipse: s-maj=5.4km s-min=5.1km az=154.5*

*NEIC **19** 10:35:23.5±0.6, 30°.80N×105°.69W, $h10^{km}$, MW3.4, Error ellipse: s-maj=8.0km s-min=6.9km az=181.0, Moment Tensor Solution. s13 Moment tensor: Scale 10^{14}Nm; M_{rr}-1.50; $M_{\theta\theta}$0.25; $M_{\phi\phi}$1.25; $M_{r\theta}$-0.12; $M_{\theta\phi}$-0.34; $M_{\phi r}$-0.63; Best double couple: $M_0$1.60000×10^{14} NP1:ϕ_s154.00000°, δ35.00000°, λ-105.00000°. NP2:ϕ_s353.00000°, δ57.00000°, λ-79.00000°. Principal axes: T 1.4600, Plg11.0000°, Azm75.0000°; N 0.1900, Plg9.0000°, Azm167.0000°; P -1.6500, Plg76.0000°, Azm295.0000°;*

*MEX **19** 10:35:26.6±0.6, 30°.75N×105°.44W, $h20^{km}$±30^{km}, MD3.8*

ISC 19 10:35:21.3±0.8, 30°.72N±0°.03×105°.70W±0°.04, $h10^{km}$, n26, σ2°12/37, Texas-Mexico border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MNTX	Cornudas Mount	1.01	15	eP	Pg	10 35 40.5	-0.3
MNTX				eSn	Sn	10 35 57.5	+1.6
GDL2	Guadalupe Moun	1.87	37	ePn	Pg	10 35 56.8	-0.3
GDL2				eSn	Sg	10 36 21.0	-0.3
CGIG		2.00	260	eP	Pb	10 35 57.2	-0.6
CGIG				eS	Sg	10 36 26.0	+0.5
CGIG		2.00	260	eP	Pb	10 35 57.2	-0.6
CGIG				eS	Sg	10 36 26.0	+0.5
CLNB	Carlsbad	2.19	45	ePn	Pg	10 36 01.9	-1.4
TX31	Lajitas Ar. Si	2.24	128	ePn	Pg	10 36 02.8	-1.4
121A	Cookes Peak, D	2.54	316	eP	Pb	10 36 06.1	-1.0
121A				eS	Sb	10 36 38.1	-0.2
319A	Douglas	3.14	283	eP	Pb	10 36 15.6	-1.8
319A				eS	Sb	10 36 53.5	-2.3
319A	Douglas	3.14	283	ePn	Pn	10 36 12.8	+1.8
Y22D	IRIS PASSCAL I	3.50	343	ePn	Pb	10 36 23.8	+0.4
BNM	Barren Site	3.51	347	ePn	Pb	10 36 21.1	-2.6
LPM	Los Pinos Moun	3.67	348	ePn	Pn	10 36 19.6	+1.3
HPIG		3.77	180	eP	Pn	10 36 22.5	+2.8
HPIG				eS	Sn	10 37 05.6	+1.4
HPIG		3.77	180	ePn	Pn	10 36 23.5	+3.8
HPIG				eS	Sn	10 37 05.6	+1.4
LAZ	Ladron	3.87	342	ePn	Pn	10 36 22.8	+1.8
MSTX	Muleshoe	4.08	37	ePn	Pn	10 36 25.8	+1.9
ANMO	Albuquerque	4.26	352	ePn	Pn	10 36 28.2	+1.8
TUC	Tucson	4.62	291	ePn	Pn	10 36 32.6	+1.3
JCT	Junction City	5.09	91	ePn	Pn	10 36 38.0	+0.3
X18A	Snowflake	5.22	318	ePn	Pn	10 36 41.6	+1.9
AMTX	Amarillo	5.36	38	ePn	Pn	10 36 42.2	+0.8
ABTX	Abilene, Hawle	5.50	68	ePn	Pn	10 36 43.5	+0.2
ABTX				ePg	Pg	10 37 03.8	-2.8
ABTX				ePg	Pg	10 37 03.8	-2.8
X16A	Lo Mia Camp, P	6.09	309	ePn	Pn	10 36 55.8	+4.2
Y14A	Wickenburg	6.97	299	ePn	Pn	10 37 05.1	+1.6
Y14A				eSg	Sg	10 39 02.0	-2.9
S22A	4UR Ranch, Cre	7.07	353	ePn	Pn	10 37 09.7	+4.5
WHTX	Lake Whitney,	7.16	78	Pn	Pn	10 37 10.2	+4.1

JMA 19 10:47:43.8±0.1, 35°.85N×140°.89E, $h36^{km}$±1^{km}, M2.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	0.15	190	P	Pn	10 47 50.0	-3.9
CHOJ				S	Sn	10 47 54.9	-8.6
JYT	Yasato	0.68	304	S	Sn	10 48 05.6	-0.6
BSO3	Boso 3	1.09	197	P	Pn	10 48 02.7	+0.4
BSO1	Boso 1	1.20	177	P	Pn	10 48 03.6	+0.1
MAT	Matsushiro	2.28	288	P	Pn	10 48 21.4	+2.5
MAT				eS	Sn	10 48 47.7	+2.0

IDC 19 11:05:09.8±8.4, 14°.69S×167°.35E, $h137^{km}$±57^{km}, mb3.6/5, mb1 3.8/6, mb1mx3.4/39, mbtmp4.1/6, Error ellipse: s-maj=71.3km s-min=30.6km az=36.0, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	7.40	187	P	Pn	11 06 55.9	+0.6
	2.2nm,0.3s,baz=319,slow=23,SNR=14						
DZM				S	Sn	11 08 17.3	-0.6
	1.6nm,0.3s,baz=154,slow=23,SNR=6.0						
STKA	Stephens Creek	29.08	230	P	P	11 10 58.7	+1.1
	3.2nm,0.5s,baz=56,slow=9.5,SNR=26						
WRA	Warramunga Arr	31.91	256	P	P	11 11 21.9	-0.8
	0.7nm,0.8s,baz=79,slow=6.0,SNR=11						
ASAR	Alice Springs	32.76	249	P	P	11 11 29.3	-0.8
	1.1nm,0.4s,baz=76,slow=9.4,SNR=37						
ASAR				PcP	PcP	11 14 11.9	-0.4
	0.2nm,0.8s,baz=84,slow=2.4,SNR=4.2						
FITZ	Fitzroy Crossi	40.10	259	P	P	11 12 32.7	+0.4
	1.3nm,0.3s,baz=75,slow=8.9,SNR=9.4						
VNDA	Vanda	62.91	181	P	P	11 15 20.7	-0.3
	0.8nm,0.7s,baz=356,slow=5.2,SNR=3.7						

*ISK **19** 11:30:46.9, 36°.38N×28°.97E, $h13^{km}$, MD2.6*

*ISCJB **19** 11:30:47.4±1.1, 36°.38N±0°.05×28°.95E±0°.05, $h7^{km}$±6^{km}, Error ellipse: s-maj=9.5km s-min=6.1km az=19.9*

*CSEM **19** 11:30:47.8±0.5, 36°.41N×28°.98E, $h10^{km}$, MD2.6, Error ellipse: s-maj=9.5km s-min=5.5km az=17.0*

*DDA **19** 11:30:48.4, 36°.48N×28°.99E, $h7^{km}$, Md2.7*

ISC 19 11:30:48.4±1.2, 36°.45N±0°.05×29°.00E±0°.03, $h17^{km}$±8^{km}, n23, σ0°60/37, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FETY	Fethiye	0.19	20	PG	Pg	11 30 52.9	-0.3
FETY				eSG	Sb	11 30 57.3	+0.4
FETY	Fethiye	0.19	20	iP Pg	Pg	11 30 52.9	-0.3
FETY				eSg	Sb	11 30 57.3	+0.4
DALY	Dalyan (Mu¨la	0.46	322	ePG	Pg	11 30 57.5	-0.2
DALY				eSG	Sb	11 31 04.5	0.0
DALY	Dalyan (Mu¨la	0.46	322	ePg	Pg	11 30 57.5	-0.2
DALY				eSg	Sb	11 31 04.5	0.0
TURN	Turunc	0.53	323	iP	Pn	11 31 02.7	+1.6
TURN				iS	Sn	11 31 17.0	+7.4
AKAS	Kas	0.53	114	P	Pb	11 30 58.9	-0.5
AKAS				S	Sn	11 31 09.7	-0.3
AKAS	Kas	0.53	114	iP	Pb	11 30 58.9	-0.5
AKAS				iS	Sn	11 31 09.7	-0.3
ELL	Elmali	0.79	68	ePG	Pb	11 31 03.2	-0.5
ELL	Elmali	0.79	68	ePg	Pb	11 31 03.2	-0.5
GLHS	Glhisar (BURDU	0.81	29	ePG	Pn	11 31 05.1	0.0
GLHS	Glhisar (BURDU	0.81	29	ePg	Pn	11 31 05.1	0.0
YER	Yerkesik	0.89	320	ePG	Pg	11 31 05.5	-0.3
YER	Yerkesik	0.89	320	ePg	Pg	11 31 05.5	-0.3
GOLH	Golhisar	0.90	30	P	Pb	11 31 04.7	-1.0
GOLH				S	Sn	11 31 19.2	+0.1
GOLH	Golhisar	0.90	30	iP	Pb	11 31 04.7	-1.0
GOLH				iS	Sn	11 31 19.2	+0.1
KORT	Korkueli	1.21	63	P	Pg	11 31 11.9	0.0
KORT				S	Sg	11 31 29.3	+1.5
KORT	Korkueli	1.21	63	iP	Pg	11 31 11.9	0.0
KORT				iS	Sg	11 31 29.3	+1.5
DNZL	Cakiroluk	1.24	2	P	Pn	11 31 10.7	-0.3
DNZL				S	Sg	11 31 28.2	-0.3
DNZL	Cakiroluk	1.24	2	iP	Pn	11 31 10.7	-0.3
DNZL				iS	Sg	11 31 28.2	-0.3
BODT	Bodrum	1.49	295	ePN	Pn	11 31 14.1	-0.3
BODT	Bodrum	1.49	295	ePn	Pn	11 31 14.1	-0.3
AYDN	Tasoluk	1.50	324	P	Pb	11 31 16.1	+0.2
AYDN				S	Sg	11 31 37.5	+0.5
AYDN	Tasoluk	1.50	324	iP	Pb	11 31 16.1	+0.2
AYDN				iS	Sg	11 31 37.5	+0.5

*IDC **19** 11:54:10.5±0.7, 6°.55S×147°.90E, $h0^{km}$, mb4.1/10, mb1 4.3/13, mb1mx4.1/43, mbtmp4.2/13, ML3.8/1, MS3.7/12, Ms1 3.7/12, ms1mx3.3/44, Error ellipse: s-maj=27.1km s-min=16.0km az=100.0*

*ISCJB **19** 11:54:15.0±0.5, 6°.61S±0°.06×147°.92E±0°.08, $h51^{km}$, mb4.1/14, MS3.6/12, Error ellipse: s-maj=11.6km s-min=8.9km az=5.5*

*NEIC **19** 11:54:16.0±1.0, 6°.59S×147°.92E, $h40^{km}$±9^{km}, mb4.2/1, Error ellipse: s-maj=9.8km s-min=8.4km az=96.0*

ISC 19 11:54:16.9±0.6, 6°.61S±0°.08×147°.92E±0°.10, $h51^{km}$, n32, σ0°95/24, mb4.0/14, MS3.7/12, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	Port Moresby	2.88	195	Pn	Pn	11 54 59.6	-0.7
	12nm,0.3s,baz=16,slow=4.9,SNR=26						
PMG				Sn	Sn	11 55 42.3	+8.6
	9.4nm,0.3s,baz=355,slow=18,SNR=10						
PMG	Port Moresby	2.88	195	Pn	Pn	11 54 59.6	-0.7
PMG				ePn	Pn	11 55 00.8	+0.5
PMG				Sn	Sn	11 55 42.3	+8.6
JAY	Jayapura	8.26	299	Pn	Pn	11 56 13.7	-0.6
	0.0nm,0.3s,baz=269,slow=23,SNR=2.7						
JAY				LR	LR	11 59 44.3	
	comp=Z,27nm,18.7s,baz=64,slow=41						
COEN	Coen	8.66	212	ePn	Pn	11 56 19.2	-0.5
HNR	Honiara	12.23	104	Pn	Pn	11 57 08.4	-0.2
	3.2nm,0.3s,baz=24,slow=22,SNR=3.4						
WRAB	Tennant Creek	18.68	224	eP	Pn	11 58 31.6	-0.2
WRA	Warramunga Arr	18.69	224	P	P	11 58 31.2	0.0
	0.3nm,0.3s,baz=51,slow=1.1,SNR=17						
EIDS	Eidsvold	18.89	171	P	P	11 58 33.1	-0.2
GUMO	Guam	20.30	351	LR	LR	12 04 56.9	
	comp=Z,200nm,21.3s,baz=170,slow=32						
ASAR	Alice Springs	21.66	217	P	P	11 59 02.8	-0.5
	2.5nm,0.5s,baz=52,slow=8.8,SNR=68						
ASAR				LR	LR	12 08 43.5	
	comp=Z,336nm,18.3s,baz=44,slow=40						
ARMA	Armidale	23.94	172	eP	P	11 59 26.7	+0.2
	6.3nm,0.7s						
FITZ	Fitzroy Crossi	24.54	240	P	P	11 59 32.1	+0.1
	13nm,0.5s,baz=52,slow=7.6,SNR=34						
FITZ				LR	LR	12 10 37.0	
	comp=Z,240nm,18.2s,baz=62,slow=40						
STKA	Stephens Creek	25.82	192	P	P	11 59 43.2	-0.3
	5.0nm,0.8s,baz=0.0,slow=7.7,SNR=10						
STKA				LR	LR	12 10 54.5	
	comp=Z,234nm,19.3s,baz=15,slow=39						
DAV	Davao City (W)	26.11	301	LR	LR	12 09 48.4	
	comp=Z,72nm,18.9s,baz=122,slow=36						
KAPI	Kappang	28.07	272	LR	LR	12 13 29.8	
	comp=Z,101nm,21.9s,baz=116,slow=41						
MBWA	Marble Bar

319A	**Douglas**	**3.15 282**	*e*Pn	**Pb**	**11 57 44.5**	**+1.1**
HPIG		**3.80 180**	*e*Pn	Pg	11 58 06.0	+5.8
HPIG			*e*Sn	**Sg**	**11 58 51.2**	**+1.8**
LAZ	**Ladron**	**3.84 342**	*e*Pn	**Pb**	**11 57 57.4**	**+2.0**
MSTX	**Muleshoe**	**4.05 37**	*e*Pg	**Pg**	**11 58 04.1**	**-0.8**
MSTX			*e*Sg	**Sg**	**11 58 58.7**	**+1.3**
ANMO	**Albuquerque**	**4.24 351**	Pn	**Pn**	**11 57 56.4**	**+4.3**
TUC	**Tucson**	**4.62 291**	*e*Pn	**Pn**	**11 58 00.6**	**+3.3**
TUC			*e*Sg	**Sg**	**11 59 16.0**	**+0.2**
JCT	**Junction City**	**5.08 92**	Pn	**Pn**	**11 58 05.9**	**+2.3**
JCT			*e*Pg	**Pg**	**11 58 23.9**	**-0.7**
JCT			*e*Sg	**Sg**	**11 59 28.8**	**-1.8**
X18A	**Snowflake**	**5.21 317**	*e*Pn	**Pb**	**11 58 14.2**	**-4.4**
X18A			*e*Sn	**Sb**	**11 59 19.5**	**-1.8**
AMTX	**Amarillo**	**5.33 38**	*e*Pn	**Pn**	**11 58 08.5**	**+1.5**
ABTX	**Abilene, Hawle**	**5.48 68**	Pn	**Pn**	**11 58 09.8**	**+0.7**
ABTX			*e*Sg	**Sg**	**11 59 41.7**	**-1.6**
T25A	**Trinidad**	**6.46 9**	*e*Pn	**Pb**	**11 58 37.0**	**-3.0**
T25A			*e*Pg	**Pg**	**11 58 52.2**	**+1.1**
WUAZ	**Wupatki**	**6.73 316**	*e*Pg	**Pg**	**11 58 56.1**	**-0.2**
WUAZ			*e*Sg	**Sg**	**12 00 23.0**	**-0.5**

NIED ***19*** *11:59:00,37.°20N×142.°90E,h17km,Mw3.7 Best double couple: M₀3.78000×10¹⁴ NP1:φ₀334.00000°,δ42.00000°, λ-151.00000°. NP2:φ₀222.00000°,δ71.00000°, λ-51.00000°.*
IDC ***19*** *11:59:36.2±1.2,37.°03N×143.°07E,h0km,mb3.8/5, mb1 3.9/9,mb1mx3.6/54,mbtmp3.8/9,ML3.5/4,MS1.8/1, Ms1 1.8/1,ms1mx1.7/54,Error ellipse: s-maj=25.6km s-min=20.3km az=98.0*
ISCJB ***19*** *11:59:37.2±1.9,37.°16N±0.°05×142.°90E±0.°06, h24km±17km,mb3.7/5,Error ellipse: s-maj=8.3km s-min=7.8km az=175.4*
JMA ***19*** *11:59:37.6±0.3,37.°20N×142.°88E,h33km,M4.0*
ISC 19 11:59:37.3±4.1,37.°18N±0.°04×142.°95E±0.°07,h14km±27km, n29,σ1§22/24,mb3.6/5,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.67**	**277**	P	Pn	12 00 04.4	-1.7
ONAJ	**Iwakimizuishiy**	**1.72**	**268**	P	**Pn**	**12 00 05.6**	**-1.3**
JIO	**Ouri**	**1.80**	**316**	P	Pn	12 00 06.6	-1.3
JMM	**Marumori**	**1.85**	**293**	P	**Pn**	**12 00 07.3**	**-1.3**
JMM				S	Sn	12 00 28.0	-3.7
JFT	**Otama**	**2.11**	**280**	P	**Pn**	**12 00 11.6**	**-0.6**
JFT				S	**Sn**	**12 00 36.9**	**-1.3**
JOU	**Okura**	**2.17**	**304**	P	**Pn**	**12 00 13.0**	**0.0**
JOU				*e*S	**Sn**	**12 00 37.3**	**-2.3**
JYS	**Shiratake**	**2.52**	**295**	P	**Pn**	**12 00 17.8**	**0.0**
JYS				*e*S	**Sn**	**12 00 46.9**	**-1.3**
JOM	**Ohasama**	**2.64**	**331**	P	**Pn**	**12 00 19.0**	**-0.4**
JYK	**Kaneyama**	**2.69**	**311**	P	**Pn**	**12 00 19.6**	**-0.5**
JAG	**Ashikaga**	**2.91**	**256**	P	**Pn**	**12 00 22.5**	**-0.6**
JAG				S	Sn	12 00 54.0	-3.8
BSO1	**Boso 1**	**2.98**	**213**	S	**Sn**	**12 00 58.0**	**-1.0**
JAW	**Awa shima**	**3.20**	**295**	P	**Pn**	**12 00 27.6**	**+0.5**
MJAR	**Matsushiro Arr**	**3.86**	**262**	Pn	**Pn**	**12 00 36.3**	**+0.1**
	2.8nm,0.3s,baz=89,slow=15,SNR=18						
MJAR				Sn	**Sn**	**12 01 23.2**	**+1.9**
	2.6nm,0.3s,baz=81,slow=16,SNR=5.1						
MJAR				LR	LR	12 01 55.8	
	comp=Z,12nm,20.1s,baz=65,slow=36						
MAT	**Matsushiro**	**3.86**	**262**	P	**Pn**	**12 00 36.6**	**+0.4**
MAT				S	**Sn**	**12 01 21.7**	**+0.4**
JHJ	**Hachijo jima 2**	**4.81**	**214**	Pn	**Pn**	**12 00 47.8**	**-1.5**
	14nm,0.3s,baz=319,slow=22,SNR=29						
JHJ				Sn	Sn	12 01 40.3	-4.4
	15nm,0.3s,baz=236,slow=23,SNR=3.7						
ASAJ	**Asahikawa**	**6.94**	**358**	Pn	**Pn**	**12 01 19.1**	**+0.7**
	1.4nm,0.3s,baz=219,slow=8.7,SNR=14						
ASAJ				Sn	**Sn**	**12 02 35.4**	**-1.8**
	0.5nm,0.3s,baz=57,slow=32,SNR=3.3						
JNU	**Nakatsue**	**10.68**	**251**	Pn	Pn	12 02 12.8	+3.0
	0.2nm,0.3s,baz=194,slow=4.9,SNR=3.2						
USRK	**Ussuriysk Ar.**	**10.88**	**314**	Pn	Pn	12 02 18.2	+5.7
	0.2nm,0.3s,baz=150,slow=35,SNR=2.9						
H11N2	**WAKE ISLAND Hy**	**27.18**	**123**	T	T	12 34 09.9	
	baz=315,slow=75,SNR=25						
H11N1	**WAKE ISLAND Hy**	**27.19**	**123**	T	T	12 34 16.5	
	baz=315,slow=75,SNR=14						
H11N3	**WAKE ISLAND Hy**	**27.20**	**123**	T	T	12 34 23.5	
	baz=315,slow=75,SNR=12						
H11S1	**WAKE ISLAND Hy**	**27.92**	**125**	T	T	12 35 11.9	
	baz=317,slow=76,SNR=16						
H11S3	**WAKE ISLAND Hy**	**27.92**	**125**	T	T	12 35 14.3	
	baz=317,slow=76,SNR=16						
H11S2	**WAKE ISLAND Hy**	**27.94**	**125**	T	T	12 35 13.6	
	baz=317,slow=76,SNR=11						
SONM	**Songino Array**	**28.73**	**303**	P	P	12 05 38.5	+4.2
	0.3nm,0.3s,baz=115,slow=9.7,SNR=3.4						
MKAR	**Makanchi Array**	**45.08**	**302**	P	**P**	**12 07 54.2**	**+1.4**
	0.5nm,0.7s,baz=83,slow=12,SNR=2.4						
ILAR	**Eielson Array**	**48.72**	**32**	P	**P**	**12 08 22.7**	**+1.8**
	0.2nm,0.8s,baz=261,slow=6.6,SNR=4.4						
WRA	**Warramunga Arr**	**57.39**	**190**	P	**P**	**12 09 25.2**	**0.0**
	2.5nm,0.8s,baz=9.9,slow=7.4,SNR=6.8						
ASAR	**Alice Springs**	**61.11**	**189**	P	**P**	**12 09 51.6**	**+0.6**
	1.0nm,0.6s,baz=28,slow=8.4,SNR=2.4						

ISCJB ***19*** *12:03:15.1±0.5,38.°20N±0.°02×20.°44E±0.°03,h12km±3km, Error ellipse: s-maj=4.6km s-min=2.3km az=40.3*
ATH ***19*** *12:03:15.8,38.°17N×20.°55E,h18km±1km,ML3.5/11,Error ellipse: s-maj=1.7km s-min=0.9km az=63.0*
THE ***19*** *12:03:15.9,38.°17N×20.°56E,h0km±3km,ML3.8/10,Error ellipse: s-maj=3.1km s-min=0.9km az=227.0*
CSEM ***19*** *12:03:16.2±0.2,38.°19N×20.°54E,h10km,ML3.5,Error ellipse: s-maj=4.7km s-min=2.5km az=44.0*
PDG ***19*** *12:03:16.5±1.0,38.°24N×20.°61E,h13km±1km,ML3.8/12, Error ellipse: s-maj=1.4km s-min=1.3km az=90.0*
ISC 19 12:03:16.3±0.8,38.°21N±0.°02×20.°55E±0.°03,h15km±5km, n173,σ1§41/247,11C-14D,Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VLS	**Valsamata**	**0.04**	**129**	P	**Pg**	**12 03 19.2**	**0.0**
VLS				S	**Sg**	**12 03 21.6**	**+0.5**
KFL	**Anninata**	**0.21**	**116**	P	**Pg**	**12 03 19.2**	**-2.0**
KFL				S	**Sg**	**12 03 23.5**	**-1.0**
KFL	**Anninata**	**0.21**	**116**	P	**Pg**	**12 03 20.6**	**-0.6**
KFL				S	**Sg**	**12 03 24.5**	**0.0**
KFL	**Anninata**	**0.21**	**116**	P	**Pg**	**12 03 20.4**	**-0.8**
KFL				S	**Sg**	**12 03 24.5**	**0.0**
ZKS	**Zakynthos**	**0.54**	**159**	P	**Pg**	**12 03 25.5**	**-1.5**
ZKS				S	**Sg**	**12 03 33.8**	**-0.5**
ZKS	**Zakynthos**	**0.54**	**159**	P	**Pg**	**12 03 25.6**	**-1.5**
ZKS				S	**Sg**	**12 03 33.8**	**-0.5**
ZKS	**Zakynthos**	**0.54**	**159**	P	**Pg**	**12 03 25.6**	**-1.5**
ZKS				S	**Sg**	**12 03 34.6**	**+0.4**
ZKS				AML	AML	12 03 38.6	
	comp=N,40149μm,0.5s						
ZKS				AML	AML	12 03 41.5	
	comp=E,46556μm,0.5s						
VTN	**Vitineika**	**0.58**	**119**	P	**Pg**	**12 03 27.0**	**-0.8**
VTN				S	**Sb**	**12 03 36.3**	**+0.1**
VTN	**Vitineika**	**0.58**	**119**	P	**Pg**	**12 03 27.0**	**-0.8**
VTN				S	**Sb**	**12 03 36.3**	**+0.1**
LKD2	**Lefkada island**	**0.59**	**9**	P	**Pb**	**12 03 27.7**	**-0.6**
LKD2				S	**Sb**	**12 03 37.3**	**+0.7**
LKD2	**Lefkada island**	**0.59**	**9**	P	**Pb**	**12 03 27.7**	**-0.6**
LKD2				S	**Sb**	**12 03 37.2**	**+0.7**
LKD2	**Lefkada island**	**0.59**	**9**	P	**Pb**	**12 03 27.5**	**-0.9**
LKD2				S	**Sb**	**12 03 37.5**	**+1.0**
LKD2				AML	AML	12 03 43.8	
	comp=E,8845μm,0.5s						
LKD2				AML	AML	12 03 44.4	
	comp=N,8438μm,0.6s						
PDO	**Prodromos**	**0.64**	**52**	P	**Pb**	**12 03 28.0**	**-1.1**
PDO	**Prodromos**	**0.64**	**52**	P	**Pb**	**12 03 28.2**	**-1.0**
PDO				S	**Sb**	**12 03 37.7**	**-0.1**
PDO	**Prodromos**	**0.64**	**52**	P	**Pb**	**12 03 28.1**	**-1.0**
AXS	**Araxos**	**0.66**	**91**	P	**Pn**	**12 03 30.6**	**-0.4**
AXS				S	**Sb**	**12 03 39.0**	**+0.7**
AXS	**Araxos**	**0.66**	**91**	P	**Pn**	**12 03 30.6**	**-0.4**
AXS				S	**Sb**	**12 03 39.0**	**+0.7**
RLS	**Riolos of Patr**	**0.74**	**101**	P	**Pg**	**12 03 29.4**	**-1.4**
RLS				S	**Sb**	**12 03 41.0**	**+0.2**
RLS	**Riolos of Patr**	**0.74**	**101**	P	**Pg**	**12 03 29.4**	**-1.4**
RLS				S	**Sb**	**12 03 41.0**	**+0.2**
RLS	**Riolos of Patr**	**0.74**	**101**	S	**Sb**	**12 03 42.3**	**+1.5**
RLS				AML	AML	12 03 45.2	
	comp=N,4210μm,0.6s						
RLS				AML	AML	12 03 48.5	
	comp=E,4029μm,0.5s						
PVO	**Paravola**	**0.87**	**62**	P	**Pb**	**12 03 32.5**	**-0.7**
PVO	**Paravola**	**0.87**	**62**	P	**Pb**	**12 03 32.7**	**-0.5**
PVO				S	**Sb**	**12 03 45.2**	**+0.6**
PVO	**Paravola**	**0.87**	**62**	P	**Pb**	**12 03 32.7**	**-0.5**
PVO				S	**Sb**	**12 03 45.2**	**+0.6**
DRO	**Drossia**	**0.95**	**105**	P	**Pg**	**12 03 33.3**	**-1.5**
DRO				S	**Sb**	**12 03 48.1**	**+1.1**
DRO	**Drossia**	**0.95**	**105**	P	**Pg**	**12 03 33.3**	**-1.5**
DRO				S	**Sb**	**12 03 48.1**	**+1.1**
DRO	**Drossia**	**0.95**	**105**	P	**Pg**	**12 03 32.9**	**-1.9**
DRO				S	**Sn**	**12 03 49.3**	**+0.8**
DRO				AML	AML	12 03 54.7	
	comp=E,9334μm,0.5s						
DRO				AML	AML	12 03 59.6	
	comp=N,6559μm,0.4s						
DSL	**Palaion Diasel**	**1.02**	**25**	P	**Pb**	**12 03 35.0**	**-0.7**
DSL				S	**Sn**	**12 03 51.8**	**+1.6**
DSL	**Palaion Diasel**	**1.02**	**25**	P	**Pb**	**12 03 35.0**	**-0.7**
DSL				S	**Sn**	**12 03 51.8**	**+1.6**
DSL	**Palaion Diasel**	**1.02**	**25**	P	**Pg**	**12 03 34.2**	**-1.9**
DSL				S	**Sn**	**12 03 53.2**	**+3.0**
DSL				AML	AML	12 03 53.8	
	comp=E,8255μm,0.5s						
DSL				AML	AML	12 03 53.9	
	comp=N,8746μm,0.5s						
EFP	**Efpalio**	**1.09**	**78**	P	**Pg**	**12 03 35.6**	**-1.8**
EFP				S	**Sn**	**12 03 53.0**	**+1.1**
EFP	**Efpalio**	**1.09**	**78**	P	**Pg**	**12 03 35.6**	**-1.8**
EFP				S	**Sb**	**12 03 52.0**	**+1.1**
EFP	**Efpalio**	**1.09**	**78**	P	**Pg**	**12 03 34.5**	**-2.9**
EFP				S	**Sb**	**12 03 52.0**	**+1.1**
LAKA	**Lakka**	**1.13**	**88**	P	**Pg**	**12 03 36.2**	**-1.9**
LAKA				S	**Sb**	**12 03 52.8**	**+0.8**
LAKA	**Lakka**	**1.13**	**88**	P	**Pg**	**12 03 36.2**	**-1.9**
LAKA				S	**Sb**	**12 03 52.8**	**+0.8**
AMT	**Artemida-Makis**	**1.14**	**126**	P	**Pg**	**12 03 36.6**	**-1.7**
AMT	**Artemida-Makis**	**1.14**	**126**	P	**Pg**	**12 03 37.3**	**-1.0**
AMT				S	**Sn**	**12 03 55.0**	**+1.9**
AMT	**Artemida-Makis**	**1.14**	**126**	P	**Pg**	**12 03 37.3**	**-1.0**
AMT				S	**Sn**	**12 03 55.0**	**+1.9**
AMT				AML	AML	12 03 58.5	
	comp=N,6275μm,0.9s						
AMT				AML	AML	12 03 59.4	
	comp=E,5361μm,0.9s						
ANX	**Ano Chora**	**1.15**	**70**	P	**Pg**	**12 03 36.7**	**-1.8**
ANX				S	**Sn**	**12 03 55.7**	**+2.3**
ANX	**Ano Chora**	**1.15**	**70**	P	**Pg**	**12 03 36.7**	**-1.8**
ANX				S	**Sn**	**12 03 55.7**	**+2.3**
ANX	**Ano Chora**	**1.15**	**70**	P	**Pg**	**12 03 36.5**	**-2.0**
SERG	**Sergoula**	**1.21**	**80**	P	**Pg**	**12 03 37.4**	**-2.2**
SERG	**Sergoula**	**1.21**	**80**	P	**Pg**	**12 03 37.5**	**-2.2**
SERG				S	**Sn**	**12 03 56.7**	**+2.0**
EVR	**Evrytania**	**1.22**	**54**	P	**Pg**	**12 03 38.0**	**-1.8**
EVR	**Evrytania**	**1.22**	**54**	P	**Pg**	**12 03 38.0**	**-1.8**
EVR				S	**Sn**	**12 03 56.1**	**+1.0**
EVR	**Evrytania**	**1.22**	**54**	P	**Pg**	**12 03 37.0**	**-2.9**
EVR				S	**Sn**	**12 03 56.1**	**+1.0**
EVR				AML	AML	12 04 03.4	
	comp=N,3152μm,0.6s						
KLV	**Kalavryta, Ach**	**1.28**	**97**	P	**Pg**	**12 03 38.4**	**-2.5**
KLV				S	**Sn**	**12 03 58.1**	**+1.6**
KLV	**Kalavryta, Ach**	**1.28**	**97**	P	**Pg**	**12 03 38.5**	**-2.5**
KLV				S	**Sn**	**12 03 57.5**	**+1.0**
KLV	**Kalavryta, Ach**	**1.28**	**97**	P	Pg	12 03 37.3	-3.5
KLV				S	**Sn**	**12 03 59.0**	**+2.5**
KLV				AML	AML	12 04 03.6	
	comp=N,2653μm,0.6s						
KLV				AML	AML	12 04 05.0	
	comp=E,2426μm,0.7s						
IGT	**Igoumenitsa**	**1.34**	**353**	P	**Pn**	**12 03 41.3**	**+0.9**
IGT				S	**Sn**	**12 04 01.1**	**+3.2**
IGT	**Igoumenitsa**	**1.34**	**353**	P	**Pn**	**12 03 41.3**	**+0.9**
IGT				S	**Sn**	**12 04 01.1**	**+3.2**
IGT	**Igoumenitsa**	**1.34**	**353**	P	**Pn**	**12 03 42.9**	**+2.4**
IGT				S	**Sn**	**12 04 01.4**	**+3.5**
IGT				AML	AML	12 04 05.4	
	comp=E,4211μm,0.4s						
IGT				AML	AML	12 04 06.1	
	comp=N,2398μm,0.3s						
SGD	**Sagiada**	**1.43**	**350**	P	**Pb**	**12 03 43.7**	**+1.1**
SGD	**Sagiada**	**1.43**	**350**	P	**Pb**	**12 03 43.7**	**+1.1**
SGD	**Sagiada**	**1.43**	**350**	P	**Pb**	**12 03 44.1**	**+1.5**
SGD				S	**Sn**	**12 04 05.1**	**+5.0**
JAN	**Janina**	**1.47**	**9**	P	**Pb**	**12 03 43.9**	**+0.6**
JAN	**Janina**	**1.47**	**9**	P	**Pb**	**12 03 43.8**	**+0.5**
JAN	**Janina**	**1.47**	**9**	AML	AML	12 04 08.7	
	comp=E,3388μm,0.4s						
ITM	**Ithomi**	**1.50**	**133**	P	**Pn**	**12 03 42.4**	**-0.3**
ITM	**Ithomi**	**1.50**	**133**	P	**Pn**	**12 03 42.4**	**-0.3**
ITM				S	**Sn**	**12 04 04.3**	**+2.4**
ITM	**Ithomi**	**1.50**	**133**	P	**Pn**	**12 03 41.6**	**-1.1**
ITM				S	**Sn**	**12 04 04.3**	**+2.4**
ITM				AML	AML	12 04 14.2	
	comp=N,895μm,0.6s						
ITM				AML	AML	12 04 17.0	
	comp=E,1176μm,0.5s						
DSF	**Desfina**	**1.57**	**82**	P	**Pn**	**12 03 43.4**	**-0.3**
DSF	**Desfina**	**1.57**	**82**	P	**Pn**	**12 03 43.4**	**-0.3**
KEK	**Kerkira**	**1.61**	**339**	P	**Pn**	**12 03 44.9**	**+0.7**
KEK	**Kerkira**	**1.61**	**339**	P	**Pn**	**12 03 44.9**	**+0.7**
KEK				S	**Sg**	**12 04 08.3**	**0.0**
PYL	**PYLOS**	**1.62**	**144**	P	**Pn**	**12 03 43.9**	**-0.4**
PYL	**PYLOS**	**1.62**	**144**	P	**Pn**	**12 03 43.9**	**-0.4**
PYL	**PYLOS**	**1.62**	**144**	P	**Pn**	**12 03 42.7**	**-1.5**
AGG	**Agios Georgios**	**1.62**	**59**	P	**Pb**	**12 03 45.6**	**-0.3**
AGG	**Agios Georgios**	**1.62**	**59**	P	**Pb**	**12 03 45.6**	**-0.3**
AGG	**Agios Georgios**	**1.62**	**59**	P	**Pg**	**12 03 47.1**	**-0.4**
THL	**Klokotos Trika**	**1.78**	**40**	P	**Pb**	**12 03 48.3**	**-0.3**
THL	**Klokotos Trika**	**1.78**	**40**	P	**Pb**	**12 03 48.3**	**-0.3**
KPRO	**Kipourio**	**1.86**	**20**	P	**Pg**	**12 03 50.1**	**-1.9**
KPRO	**Kipourio**	**1.86**	**20**	P	**Pg**	**12 03 50.1**	**-1.9**
KPRO	**Kipourio**	**1.86**	**20**	P	**Pg**	**12 03 50.9**	**-1.1**
LTK	**Loutraki**	**1.92**	**95**	P	**Pn**	**12 03 49.3**	**+0.9**
LTK	**Loutraki**	**1.92**	**95**	P	**Pn**	**12 03 48.9**	**+0.5**
LTK	**Loutraki**	**1.92**	**95**	P	**Pn**	**12 03 48.9**	**+0.5**
LKR	**Lokris**	**1.98**	**76**	P	**Pn**	**12 03 50.5**	**+1.3**
LKR	**Lokris**	**1.98**	**76**	P	**Pn**	**12 03 50.3**	**+1.1**
LKR	**Lokris**	**1.98**	**76**	P	**Pn**	**12 03 50.3**	**+1.1**
PENT	**Pentalofos**	**2.04**	**13**	P	**Pg**	**12 03 53.4**	**-2.1**
PENT	**Pentalofos**	**2.04**	**13**	P	**Pg**	**12 03 53.4**	**-2.1**
KRND	**KRANIDI**	**2.22**	**111**	P	**Pb**	**12 03 54.9**	**-1.2**
KRND	**KRANIDI**	**2.22**	**111**	P	**Pb**	**12 03 54.9**	**-1.2**
NEST	**Nestorio**	**2.24**	**10**	P	**Pb**	**12 03 55.4**	**-1.1**
NEST	**Nestorio**	**2.24**	**10**	P	**Pb**	**12 03 55.4**	**-1.1**
NEST	**Nestorio**	**2.24**	**10**	P	**Pb**	**12 03 55.8**	**-0.7**
DID	**Didima**	**2.24**	**107**	P	**Pn**	**12 03 53.3**	**+0.4**
DID	**Didima**	**2.24**	**107**	P	**Pn**	**12 03 53.3**	**+0.4**
DID	**Didima**	**2.24**	**107**	P	**Pn**	**12 03 54.6**	**+1.8**
KZN	**Kozani**	**2.30**	**24**	P	**Pb**	**12 03 56.0**	**-1.6**
KZN	**Kozani**	**2.30**	**24**	P	**Pb**	**12 03 56.0**	**-1.6**
XOR	**Xorichti**	**2.37**	**60**	P	**Pn**	**12 03 55.8**	**+1.1**
XOR	**Xorichti**	**2.37**	**60**	P	**Pn**	**12 03 55.8**	**+1.1**
VLI	**Veliai**	**2.41**	**127**	P	**Pn**	**12 03 57.4**	**+2.2**
VLI	**Veliai**	**2.41**	**127**	P	**Pn**	**12 03 57.4**	**+2.2**
VLI	**Veliai**	**2.41**	**127**	P	**Pb**	**12 03 58.3**	**-1.1**
LIT	**Litokhoron**	**2.42**	**38**	P	**Pn**	**12 03 56.7**	**+1.3**
LIT	**Litokhoron**	**2.42**	**38**	P	**Pn**	**12 03 56.7**	**+1.3**
VLY	**Voula,Athens**	**2.59**	**97**	P	**Pn**	**12 03 58.3**	**+0.7**
VLY	**Voula,Athens**	**2.59**	**97**	P	**Pn**	**12 03 58.3**	**+0.7**
VLY	**Voula,Athens**	**2.59**	**97**	P	**Pn**	**12 03 56.9**	**-0.7**
FNA	**Florina**	**2.65**	**14**	P	**Pn**	**12 04 00.2**	**+1.6**
FNA	**Florina**	**2.65**	**14**	P	**Pn**	**12 04 00.2**	**+1.6**
KYTH	**Kithira**	**2.76**	**133**	P	**Pn**	**12 04 02.1**	**+2.0**
KYTH	**Kithira**	**2.76**	**133**	P	**Pn**	**12 04 02.1**	**+2.0**
KYTH	**Kithira**	**2.76**	**133**	P	**Pn**	**12 04 02.9**	**+2.8**
BIA	**Bitola**	**2.87**	**12**	*e*Pn	**Pn**	**12 04 03.8**	**+2.2**
BIA	**Bitola**	**2.87**	**12**	*e*Pn	**Pn**	**12 04 03.8**	**+2.2**
OHR	**Ohrid**	**2.91**	**4**	*i* Pn	**Pn**	**12 04 03.6**	**+1.4**
OHR	**Ohrid**	**2.91**	**4**	*i* Pn	**Pn**	**12 04 03.5**	**+1.4**
GRG	**Griva**	**3.10**	**27**	P	**Pn**	**12 04 05.6**	**+0.9**
GRG	**Griva**	**3.10**	**27**	P	**Pn**	**12 04 05.6**	**+0.9**
TIP	**Timpagrande**	**3.12**	**289**	P	**Pn**	**12 04 05.5**	**+0.5**
TIP	**Timpagrande**	**3.12**	**289**	P	**Pn**	**12 04 05.5**	**+0.5**
ANKY	**Antikythira Is**	**3.21**	**136**	P	**Pn**	**12 04 07.3**	**+1.2**
ANKY	**Antikythira Is**	**3.21**	**136**	P	**Pn**	**12 04 07.3**	**+1.2**
TAR1	**Taranto**	**3.43**	**314**	*e*Pn	**Pn**	**12 04 10.4**	**+1.2**
VAY	**Valandovo**	**3.48**	**26**	*i* Pn	**Pn**	**12 04 09.6**	**-0.3**
VAY	**Valandovo**	**3.48**	**26**	*i* Pn	**Pn**	**12 04 09.6**	**-0.3**
SKO	**Skopje**	**3.82**	**10**	*e*Pn	**Pn**	**12 04 15.7**	**+1.1**
SKO	**Skopje**	**3.82**	**10**	*e*Pn	**Pn**	**12 04 15.7**	**+1.1**
ULC	**Ulcinj**	**3.88**	**346**	⇑*i*Pn	**Pn**	**12 04 15.9**	**+0.4**
ULC				*e*Sn	**Sn**	**12 05 02.4**	**+1.6**
ULC	**Ulcinj**	**3.88**	**346**	⇑*i*Pn	**Pn**	**12 04 15.9**	**+0.4**
SG1	**Sgolgore (BA)**	**3.98**	**313**	*e*Pn	**Pn**	**12 04 17.8**	**+1.0**
SG1				Sn	**Sn**	**12 05 02.9**	**-0.3**
DRME	**Dracevica, Mon**	**4.11**	**346**	*e*Pn	**Pn**	**12 04 18.6**	**+0.1**
DRME				*e*Sn	**Sn**	**12 05 06.1**	**-0.2**
DRME	**Dracevica, Mon**	**4.11**	**346**	*e*Pn	**Pn**	**12 04 18.6**	**+0.1**
DRME				*e*Sn	**Sn**	**12 05 06.1**	**-0.2**
KKB	**Krupnik**	**4.14**	**27**	*e*P	**Pn**	**12 04 19.5**	**+0.5**
MMB	**Musomiste**	**4.17**	**35**	*e*P	**Pn**	**12 04 20.3**	**+0.9**
BUM	**Brajici-Budva**	**4.28**	**343**	⇑*i*Pn	**Pn**	**12 04 21.1**	**+0.1**
BUM				*e*Sn	**Sn**	**12 05 10.8**	**+0.2**
BUM	**Brajici-Budva**	**4.28**	**343**	⇑*i*Pn	**Pn**	**12 04 21.1**	**+0.1**
BUM				*e*Sn	**Sn**	**12 05 10.8**	**+0.2**
PDG	**Podgorica**	**4.33**	**347**	⇓*i*Pn	**Pn**	**12 04 23.3**	**+1.7**
PDG				*e*Sn	**Sn**	**12 05 13.3**	**+1.5**
TTG	**Podgorica**	**4.33**	**347**	⇓*i*Pn	**Pn**	**12 04 23.3**	**+1.7**
TTG				*e*Sn	**Sn**	**12 05 13.3**	**+1.5**
CDT	**Castel del Mon**	**4.37**	**312**	*e*Pn	**Pn**	**12 04 22.9**	**+0.7**
PVY	**Plav**	**4.41**	**354**	⇓*i*Pn	**Pn**	**12 04 24.5**	**+1.8**
PVY				*e*Sn	**Sn**	**12 05 15.5**	**+1.7**
PVY	**Plav**	**4.41**	**354**	⇓*i*Pn	**Pn**	**12 04 24.5**	**+1.8**
PVY				*e*Sn	**Sn**	**12 05 15.5**	**+1.7**
CEME	**Cevo**	**4.51**	**345**	⇓*i*Pn	**Pn**	**12 04 24.5**	**+0.4**
CEME				*e*Sn	**Sn**	**12 05 17.0**	**+0.7**
CEME	**Cevo**	**4.51**	**345**	⇓*i*Pn	**Pn**	**12 04 24.5**	**+0.4**
CEME				*e*Sn	**Sn**	**12 05 17.0**	**+0.7**
HCY	**Herceg Novi**	**4.52**	**340**	⇑*i*Pn	**Pn**	**12 04 23.7**	**-0.4**
HCY				*e*Sn	**Sn**	**12 05 17.0**	**+0.6**
HCY	**Herceg Novi**	**4.52**	**340**	⇑*i*Pn	**Pn**	**12 04 23.7**	**-0.4**
HCY				*e*Sn	**Sn**	**12 05 17.0**	**+0.6**
BEY	**Berane**	**4.69**	**354**	⇓*i*Pn	**Pn**	**12 04 27.8**	**+1.2**
BEY				*e*Sn	**Sn**	**12 05 21.9**	**+1.2**
IVA	**Berane**	**4.69**	**354**	⇓*i*Pn	**Pn**	**12 04 27.8**	**+1.2**
IVA				*e*Sn	**Sn**	**12 05 21.9**	**+1.2**
BARS	**Barje**	**4.71**	**11**	⇑*i*Pn	**Pn**	**12 04 27.1**	**+0.4**
NKME	**Niksic**	**4.72**	**346**	⇓*i*Pn	**Pn**	**12 04 27.6**	**+0.7**
NKME				*e*Sn	**Sn**	**12 05 22.4**	**+1.1**
NKME	**Niksic**	**4.72**	**346**	⇓*i*Pn	**Pn**	**12 04 27.6**	**+0.7**
NKME				*e*Sn	**Sn**	**12 05 22.4**	**+1.1**
RZN	**Rozhen**	**4.73**	**41**	*e*P	**Pn**	**12 04 28.2**	**+1.0**
NKY	**Niksic**	**4.75**	**346**	⇓*i*Pn	**Pn**	**12 04 28.8**	**+1.3**
NKY				*e*Sn	**Sn**	**12 05 23.4**	**+1.1**
NKY	**Niksic**	**4.75**	**346**	⇓*i*Pn	**Pn**	**12 04 28.8**	**+1.3**
NKY				*e*Sn	**Sn**	**12 05 23.4**	**+1.1**
BRY	**Bratogost**	**4.93**	**343**	⇑*i*Pn	**Pn**	**12 04 29.9**	**-0.1**

NIED ***19*** *12:12:00.36°00′N×141°20′E, h47km, Mw4.1 Best double couple: M₀1.41000×10¹⁵ NP1:φ₀155.00000°, δ15.00000°, λ-126.00000°. NP2:φ₀12.00000°, δ78.00000°, λ-81.00000°.*
ISCJB ***19*** *12:12:15.8±1.0, 36°01′N±0°03′×141°29′E±0°07, h17km±7km, mb3.8/15, MS3.6/3, Error ellipse: s-maj=8.9km s-min=5.5km az=3.7*
IDC ***19*** *12:12:15.6±0.7, 35°98′N×141°13′E, h0km, mb3.9/14, mb1 3.9/18, mb1mx3.8/63, mbtmp3.9/18, ML3.7/4, MS3.1/6, Ms1 3.1/6, ms1mx2.8/57, Error ellipse: s-maj=18.0km s-min=13.9km az=93.0*
JMA ***19*** *12:12:18.2±0.1, 35°99′N×141°10′E, h34km±2km, M4.1*
JMA Felt II J1.
NEIC ***19*** *12:12:20.5±0.5, 35°95′N×141°09′E, h35km, mb4.1/1, Error ellipse: s-maj=10.3km s-min=8.8km az=79.0*
NEIC Recorded [2 JMA] in Chiba and Ibaraki.

ISC 19 12:12:16.0±1.7, 36°03′N±0°04×141°16′E±0°06, h3km±11km, n37, σ0§94/35, mb3.8/15, MS3.6/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.41**	**217**	P	**Pb**	**12 12 26.4**	**+0.5**
CHOJ				S	**Sb**	**12 12 32.2**	**-0.3**
JHO	**Hitachi**	**0.75**	**321**	P	**Pb**	**12 12 32.0**	**+0.3**
JHO				S	**Sb**	**12 12 43.1**	**+0.7**
JYT	**Yasato**	**0.81**	**284**	P	**Pb**	**12 12 32.4**	**-0.3**
JYT				S	**Sg**	**12 12 42.8**	**+0.8**
ONAJ	**Iwakimizuishiy**	**1.11**	**345**	P	**Pg**	**12 12 37.2**	**-0.1**
ONAJ				S	**Sg**	**12 12 51.0**	**-0.6**
MJAR	**Matsushiro Arr**	**2.44**	**283**	Pn	**Pn**	**12 12 56.4**	**-0.4**
	7.6nm,0.3s,baz=58,slow=12,SNR=51						
MJAR				Sn	**Sn**	**12 13 28.2**	**+1.1**
	15nm,0.3s,baz=84,slow=18,SNR=5.5						
MJAR				LR	LR	12 13 52.0	
	comp=Z,110nm,20.2s,baz=125,slow=40						
MAJO	**Matsushiro**	**2.44**	**283**	*e*Pn	**Pn**	**12 12 57.1**	**+0.3**
MAT	**Matsushiro**	**2.44**	**283**	P	**Pn**	**12 12 57.0**	**+0.2**
MAT				S	**Sn**	**12 13 23.9**	**-3.3**
JHJ	**Hachijo jima 2**	**3.12**	**202**	Pn	**Pn**	**12 13 07.2**	**+1.1**
	7.7nm,0.3s,baz=300,slow=21,SNR=20						
JHJ				Sn	**Sn**	**12 13 44.6**	**+0.7**
	20nm,0.3s,baz=252,slow=23,SNR=7.9						
JHJ				LR	LR	12 14 04.5	
	comp=Z,45nm,18.4s,baz=230,slow=36						
ASAJ	**Asahikawa**	**8.15**	**7**	Pn	**Pn**	**12 14 15.7**	**+0.5**
	1.6nm,0.3s,baz=226,slow=10,SNR=13						
CBIJ	**Chichi jima**	**8.95**	**174**	Pn	**Pn**	**12 14 24.9**	**-1.3**
CBIJ				Sn	Sn	12 16 00.1	-7.4
JCJ	**Chichijima**	**8.95**	**174**	Pn	**Pn**	**12 14 24.9**	**-1.3**
	4.3nm,0.3s,baz=82,slow=22,SNR=5.5						
JCJ				Sn	Sn	12 16 00.1	-7.5
	4.1nm,0.3s,baz=269,slow=23,SNR=2.8						
USRK	**Ussuriysk Ar.**	**10.76**	**322**	Pn	Pn	12 14 56.1	+5.2
	0.2nm,0.3s,baz=139,slow=18,SNR=4.8						
USRK				LR	LR	12 18 44.9	
	comp=Z,66nm,18.8s,baz=125,slow=36						
SEY	**Seymchan**	**27.81**	**11**	P	**P**	**12 18 05.0**	**-1.1**
	0.3nm,0.3s,baz=124,slow=4.0,SNR=2.5						
H11N2	**WAKE ISLAND Hy**	**27.83**	**119**	T	T	12 47 07.9	
	baz=311,slow=75,SNR=61						
H11N1	**WAKE ISLAND Hy**	**27.83**	**119**	T	T	12 47 06.0	
	baz=311,slow=75,SNR=58						
H11N3	**WAKE ISLAND Hy**	**27.84**	**119**	T	T	12 47 10.0	
	baz=311,slow=75,SNR=67						
SONM	**Songino Array**	**28.19**	**306**	P	**P**	**12 18 10.1**	**+0.2**
	0.4nm,0.4s,baz=92,slow=8.8,SNR=3.5						
H11S1	**WAKE ISLAND Hy**	**28.50**	**121**	T	T	12 47 55.5	
	baz=313,slow=76,SNR=142						
H11S3	**WAKE ISLAND Hy**	**28.50**	**121**	T	T	12 47 56.9	
	baz=313,slow=76,SNR=106						
H11S2	**WAKE ISLAND Hy**	**28.52**	**121**	T	T	12 48 02.5	
	baz=313,slow=76,SNR=48						
ZALV	**Zalesovo Beam**	**42.45**	**313**	P	**P**	**12 20 12.4**	**+0.4**
	0.8nm,0.5s,baz=88,slow=5.6,SNR=3.2						
NRIK	**Noril'sk**	**44.09**	**336**	LR	LR	12 40 08.5	
	comp=Z,52nm,18.0s,baz=110,slow=38						
MKAR	**Makanchi Array**	**44.49**	**303**	P	**P**	**12 20 28.9**	**+0.3**
	0.6nm,0.5s,baz=87,slow=9.8,SNR=7.5						
KURK	**Kurchatov**	**46.40**	**309**	P	**P**	**12 20 43.4**	**-0.2**
KURBB	**Kurchatov Arra**	**46.46**	**309**	P	**P**	**12 20 43.4**	**-0.7**
	1.1nm,0.4s,baz=81,slow=7.5,SNR=15						
ILAR	**Eielson Array**	**50.45**	**32**	P	**P**	**12 21 15.7**	**+1.0**
	0.7nm,0.7s,baz=262,slow=6.2,SNR=9.7						
BVAR	**Borovoye Array**	**51.10**	**313**	P	**P**	**12 21 19.7**	**-0.1**
	0.6nm,0.5s,baz=73,slow=9.9,SNR=3.9						
INK	**Inuvik**	**55.37**	**27**	P	**P**	**12 21 52.0**	**+1.2**
	1.0nm,0.6s,baz=311,slow=7.5,SNR=5.4						
WRA	**Warramunga Arr**	**56.04**	**188**	P	**P**	**12 21 55.4**	**-0.9**
	0.4nm,0.3s,baz=5.0,slow=7.1,SNR=22						
WRA				LR	LR	12 44 31.6	
	comp=Z,56nm,21.0s,baz=90,slow=35						
ARU	**Arti**	**56.98**	**319**	P	**P**	**12 22 02.5**	**-0.1**
	2.4nm,0.4s,baz=42,slow=3.3,SNR=5.7						
ABKAR	**Akbulak array**	**58.43**	**311**	*e*P	**P**	**12 22 12.6**	**-0.3**
	1.0nm,0.6s						
ASAR	**Alice Springs**	**59.77**	**188**	P	**P**	**12 22 21.4**	**-1.0**
	0.4nm,0.7s,baz=15,slow=9.6,SNR=7.9						
YKA	**Yellowknife Ar**	**64.78**	**30**	P	**P**	**12 22 56.1**	**+0.6**
	0.5nm,0.6s,baz=306,slow=7.1,SNR=8.9						
FINES	**FINESS Array B**	**69.61**	**332**	LR	LR	12 59 57.0	
	comp=Z,42nm,18.3s,baz=28,slow=41						
NOA	**NORSAR Array B**	**75.03**	**337**	P	**P**	**12 23 58.5**	**-0.1**
	1.5nm,0.8s,baz=40,slow=5.9,SNR=3.6						
BRTR	**Keskin Array B**	**79.36**	**312**	P	**P**	**12 24 24.0**	**+0.5**
	1.1nm,0.9s,baz=59,slow=4.8,SNR=4.3						
LPAZ	**La Paz**	**147.37**	**61**	PKPbc	**PKPbc**	**12 32 03.1**	**+0.7**
	0.9nm,0.7s,baz=159,slow=4.1,SNR=4.0						

NNC ***19*** *12:14:03.2±3.6, 37°76′N×72°03′E, h172km±75km, mb2.6, mpv3.6, Error ellipse: s-maj=50.4km s-min=18.1km az=129.0*
IDC ***19*** *12:14:09.1±4.6, 37°89′N×72°31′E, h259km±29km, mb3.5/5, mb1 3.3/11, mb1mx3.0/57, mbtmp3.9/11, Error ellipse: s-maj=62.9km s-min=18.6km az=156.0*

ISC 19 12:13:55.8±1.4, 37°3′N±0°1×72°45′E±0°09, h150km, n15, σ2§02/19, mb3.7/5, 4C-3D, Tajikistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**3.21**	**298**	⇓P	**Pn**	**12 14 48.1**	**+2.1**
	61nm,0.4s						
DZET				⇑S	**Sn**	**12 15 23.7**	**-1.0**
	115nm,0.4s						
MNAS	**Manas**	**5.14**	**0**	⇓P	**Pn**	**12 15 14.2**	**+3.0**
	2.7nm,0.3s						
MNAS				⇓S	**Sn**	**12 16 09.5**	**-0.6**
	9.5nm,0.3s						
AAK	**Ala-Archa**	**5.52**	**16**	⇑P	**Pn**	**12 15 19.6**	**+3.3**
	3.9nm,0.6s						
AAK				⇑S	**Sn**	**12 16 21.5**	**+2.4**
	12nm,0.8s						
KK31	**Karatay Array**	**5.95**	**346**	⇑P	**Pn**	**12 15 23.4**	**+1.6**
	1.0nm,0.3s,baz=156,slow=11						
KK31				S	**Sn**	**12 16 25.4**	**-3.6**
	4.7nm,0.3s,baz=156,slow=14,SNR=9.1						
GEYT	**Alibeck**	**11.38**	**277**	P	**P**	**12 16 43.7**	**+1.9**
	0.2nm,0.3s,baz=101,slow=7.5,SNR=3.3						
MKAR	**Makanchi Array**	**11.94**	**35**	P	**P**	**12 16 46.5**	**-1.4**
	0.1nm,0.3s,baz=215,slow=9.6,SNR=3.1						
KURBB	**Kurchatov Arra**	**13.98**	**16**	P	**P**	**12 17 10.8**	**+0.4**
	0.1nm,0.3s,baz=203,slow=11,SNR=20						
BVAR	**Borovoye Array**	**15.75**	**355**	P	**Pn**	**12 17 29.0**	**-0.3**
	0.3nm,0.3s,baz=168,slow=15,SNR=4.0						
AKTO	**Aktyubinsk**	**16.68**	**326**	P	**P**	**12 17 40.5**	**+0.1**
	0.2nm,0.3s,baz=106,slow=7.4,SNR=2.9						
ZALV	**Zalesovo Beam**	**18.68**	**23**	P	**P**	**12 18 02.7**	**+0.4**
	1.1nm,0.3s,baz=220,slow=10,SNR=22						
GNI	**Garni**	**21.76**	**286**	P	**P**	**12 18 37.4**	**+1.8**
	11nm,0.4s,baz=60,slow=7.5,SNR=4.4						
ARCES	**ARCESS Array B**	**40.82**	**337**	P	**P**	**12 21 20.8**	**-1.4**
	1.2nm,0.7s,baz=115,slow=8.6,SNR=6.2						
TIXI	**Tiksi**	**44.56**	**22**	P	**P**	**12 21 51.3**	**-1.0**
	1.0nm,0.3s,baz=306,slow=8.3,SNR=3.3						
INK	**Inuvik**	**72.89**	**10**	P	**P**	**12 25 06.8**	**-1.1**
	1.6nm,1.0s,baz=350,slow=6.1,SNR=3.3						
YKA	**Yellowknife Ar**	**80.35**	**3**	P	**P**	**12 25 47.7**	**-2.2**
	0.3nm,0.5s,baz=351,slow=5.6,SNR=9.5						

ISCJB ***19*** *12:22:29.0±0.3, 6°85′N±0°03×73°04′W±0°03, h165km±3km, mb3.6/5, Error ellipse: s-maj=7.0km s-min=3.3km az=136.2*
FUNV ***19*** *12:22:30.6, 6°78′N×73°10′W, h169km, MW3.0*
IDC ***19*** *12:22:30.4±0.7, 6°82′N×73°01′W, h160km±9km, mb3.4/5, mb1 3.7/8, mb1mx3.3/42, mbtmp4.0/8, MS4.1/1, Ms1 4.1/1, ms1mx2.6/28, Error ellipse: s-maj=28.4km s-min=7.4km az=130.0*
RSNC ***19*** *12:22:32.2±1.0, 6°77′N×73°11′W, h146km±6km, ML3.8*

ISC 19 12:22:30.2±0.7, 6°84′N±0°04×73°05′W±0°04, h164km±5km, n47, σ1§82/71, mb3.8/5, 5C-2D, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BARC	**Barichara**	**0.28**	**208**	⇑*i*P	**Pn**	**12 22 51.8**	**-0.8**
BARC				*e*S	**Sn**	**12 23 06.5**	**-3.3**
PAMC	**Pamplona, Colo**	**0.61**	**35**	*i*P	**Pn**	**12 22 54.6**	**+0.4**
PAMC				*e*S	**Sn**	**12 23 11.9**	**-0.7**
BRRC	**Barranca, Sant**	**0.71**	**292**	⇓*i*P	**Pn**	**12 22 53.8**	**-0.5**
BRRC				*i*		12 22 54.3	
	comp=Z,751nm,0.1s						
BRRC				*e*S	**Sn**	**12 23 11.1**	**-1.5**
GRMC	**Gramalote, San**	**0.91**	**16**	*i*P	**Pn**	**12 22 57.6**	**+1.8**
GRMC				*e*S	**Sn**	**12 23 17.3**	**+1.8**
GRMC				*i*		12 23 18.6	
	comp=Z,814nm,0.4s						
CBRI	**Barrientos, No**	**0.91**	**16**	*e*P	**Pn**	**12 22 56.5**	**+0.6**
CBRI				*e*S	**Sn**	**12 23 14.5**	**-1.0**
RUSC	**La Rusia**	**0.94**	**182**	⇓*i*P	**Pn**	**12 22 55.7**	**-0.8**
RUSC				*e*S	**Sn**	**12 23 14.1**	**-2.4**
GUEC	**Guerrero, Nort**	**0.99**	**7**	*e*P	**Pn**	**12 22 57.1**	**+0.5**
CAPV	**Capacho**	**1.25**	**36**	⇑*e*P	**Pn**	**12 22 59.7**	**+1.0**
CAPV				*e*S	**Sn**	**12 23 20.6**	**0.0**
OCAC	**Ocana**	**1.42**	**349**	*e*P	**Pn**	**12 23 00.4**	**+0.3**
OCAC				*i*		12 23 27.2	
	comp=Z,619nm,0.3s						
NORC	**Norcasia**	**2.21**	**235**	*e*P	**Pn**	**12 23 07.8**	**-0.9**
NORC				*e*S	**Sn**	**12 23 35.6**	**-2.8**
ROSC	**El Rosal**	**2.35**	**213**	P	**Pn**	**12 23 11.4**	**+0.7**
	comp=Z,41nm,0.3s,baz=293,slow=11,SNR=54						
ROSC				S	**Sn**	**12 23 42.1**	**+0.1**
	comp=Z,47nm,0.3s,baz=107,slow=16,SNR=12						
ROSC	**El Rosal**	**2.35**	**213**	*e*P	**Pn**	**12 23 11.3**	**+0.6**
ROSC				*i*		12 23 45.8	
	comp=Z,430nm,0.5s						
HELC	**Santa Helena**	**2.55**	**256**	*e*P	**Pn**	**12 23 12.9**	**-0.1**
HELC				*e*S	**Sn**	**12 23 43.6**	**-2.4**
VIGV	**El Vigia**	**2.60**	**40**	*e*P	**Pn**	**12 23 14.1**	**+0.9**
VIGV				*e*S	**Sn**	**12 23 45.6**	**-0.9**
SOCV	**Socops**	**2.60**	**56**	*e*P	**Pn**	**12 23 13.9**	**+0.6**
SOCV				*e*S	**Sn**	**12 23 45.9**	**-0.8**
VILC	**Villavicencio,**	**2.78**	**193**	*e*P	**Pn**	**12 23 15.4**	**-0.2**
VILC				*e*S	**Sn**	**12 23 48.5**	**-2.4**
GUYC	**Guyana, Colomb**	**2.83**	**236**	*e*P	**Pn**	**12 23 16.1**	**-0.4**
GUYC				*e*S	**Sn**	**12 23 51.2**	**-1.0**
GUYC				*i*		12 23 58.3	
	comp=Z,474nm,0.4s						
SDV	**Santo Domingo**	**3.14**	**49**	P	**Pn**	**12 23 21.8**	**+1.7**
	comp=Z,7.1nm,0.3s,baz=231,slow=10,SNR=8.3						
SDV				S	**Sn**	**12 23 58.2**	**-0.6**
	comp=Z,20nm,0.3s,baz=260,slow=23,SNR=26						
SDV	**Santo Domingo**	**3.14**	**49**	*e*P	**Pn**	**12 23 21.2**	**+1.1**
DBBC	**Dabeiba**	**3.14**	**273**	*e*P	**Pn**	**12 23 19.5**	**-0.5**
TOLC	**Tolima**	**3.18**	**225**	*e*P	**Pn**	**12 23 21.3**	**+0.5**
MOTC	**Monteria, Cord**	**3.23**	**307**	*e*P	**Pn**	**12 23 18.9**	**-2.1**
ELOV	**Elorza**	**3.54**	**87**	*e*P	**Pn**	**12 23 25.8**	**+0.8**
ELOV				*e*S	**Sn**	**12 24 04.8**	**-2.8**
PRAC	**Prado**	**3.60**	**211**	*e*P	**Pn**	**12 23 24.4**	**-1.4**
PRAC				*i*		12 24 10.3	
	comp=Z,277nm,0.3s						
SJAC	**San Juan de Ar**	**3.66**	**194**	*e*P	**Pn**	**12 23 24.5**	**-2.0**
SJAC				*i*		12 24 16.4	
	comp=Z,269nm,0.4s						
VIRV	**Villa del Rosa**	**3.70**	**10**	⇑*e*P	**Pn**	**12 23 26.4**	**-0.5**
VIRV				*e*S	**Sn**	**12 24 08.5**	**-2.7**
SJCC	**San Jacinto, C**	**3.70**	**325**	*e*P	**Pn**	**12 23 25.9**	**-1.2**
SJCC				*i*		12 24 11.5	
	comp=Z,112nm,0.4s						
SANV	**Sanarito**	**4.37**	**53**	*e*P	**Pn**	**12 23 35.1**	**-0.7**
SANV				*e*S	**Sn**	**12 24 23.1**	**-3.8**
CURV	**Curarigua**	**4.39**	**44**	⇑*e*P	**Pn**	**12 23 36.2**	**+0.3**
CURV				*e*S	**Sn**	**12 24 23.4**	**-3.9**
CAPC	**Capurgana**	**4.62**	**293**	*e*P	Pn	12 23 36.2	-2.7
DABV	**Dabajuro**	**4.71**	**30**	*e*P	**Pn**	**12 23 40.5**	**-0.4**
DABV				*e*S	**Sn**	**12 24 31.8**	**-2.9**
TEPV	**Terepaima**	**4.92**	**51**	*e*P	**Pn**	**12 23 42.2**	**-0.6**
TEPV				*e*S	**Sn**	**12 24 36.7**	**-3.0**
URIC	**Uribia, Colomb**	**4.94**	**12**	*e*P	**Pn**	**12 23 42.0**	**-1.2**
SIQV	**Siquisique**	**4.96**	**40**	⇑*e*P	**Pn**	**12 23 42.6**	**-0.8**
SIQV				*e*S	**Sn**	**12 24 36.6**	**-4.1**
BAUV	**El Baul**	**5.38**	**67**	*e*P	**Pn**	**12 23 47.9**	**-1.1**
BAUV				*e*S	**Sn**	**12 24 46.8**	**-3.7**
MAPV	**Macapo**	**5.43**	**56**	*e*P	**Pn**	**12 23 49.5**	**0.0**
MAPV				*e*S	**Sn**	**12 24 46.7**	**-5.0**
POPC	**Popayan, Colom**	**5.59**	**220**	*e*P	**Pn**	**12 23 52.5**	**+0.5**
MONV	**Montecano**	**5.92**	**31**	*e*P	**Pn**	**12 23 55.1**	**-0.9**
MONV				*e*S	**Sn**	**12 24 59.3**	**-4.1**
SJG	**San Juan**	**13.07**	**30**	P	**Pn**	**12 25 30.2**	**+0.4**
	comp=Z,3.5nm,0.3s,baz=313,slow=19,SNR=2.5						
LVC	**Limon Verde**	**29.55**	**172**	LR	LR	12 41 54.8	
	comp=Z,427nm,21.7s,baz=175,slow=39						
TXAR	**Lajitas Array**	**36.50**	**312**	P	**P**	**12 29 21.2**	**+1.2**
	comp=Z,0.5nm,0.7s,baz=127,slow=9.6,SNR=8.0						
TXAR				PcP	**PcP**	**12 31 42.2**	**+1.9**
	comp=Z,0.2nm,0.6s,baz=118,slow=7.2,SNR=2.5						
ULM	**Lac du Bonnet**	**47.29**	**340**	P	**P**	**12 30 46.0**	**-1.1**
	comp=Z,1.8nm,0.6s,baz=99,slow=4.8,SNR=2.6						
PDAR	**Pinedale Array**	**48.11**	**324**	P	**P**	**12 30 54.5**	**+0.8**
	comp=Z,0.4nm,0.6s,baz=114,slow=8.3,SNR=3.0						
YKA	**Yellowknife Ar**	**63.27**	**340**	P	**P**	**12 32 41.8**	**+0.7**
	comp=Z,0.9nm,0.6s,baz=133,slow=6.6,SNR=28						
INK	**Inuvik**	**73.04**	**340**	P	**P**	**12 33 43.3**	**+1.5**
	comp=Z,2.0nm,1.1s,baz=76,slow=4.2,SNR=2.6						
ASAR	**Alice Springs**	**149.18**	**234**	PKPbc	**PKPbc**	**12 41 60.0**	**-0.3**
	comp=Z,0.5nm,0.5s,baz=120,slow=3.5,SNR=14						
WRA	**Warramunga Arr**	**150.41**	**241**	PKPbc	**PKPbc**	**12 42 03.1**	**-0.1**
	comp=Z,0.5nm,0.4s,baz=108,slow=2.7,SNR=21						

IDC ***19*** *12:25:15.9±0.6, 20°32S×168°31E, h0km, mb4.4/19, mb1 4.5/20, mb1mx4.4/36, mbtmp4.4/20, ML3.9/1, MS3.7/15, Ms1 3.8/15, ms1mx3.4/40, Error ellipse: s-maj=23.6km s-min=15.3km az=133.0*
NEIC ***19*** *12:25:17.0±0.2, 20°40S×168°39E, h10km, mb5.0/32, Error ellipse: s-maj=7.8km s-min=4.6km az=156.0*
ISCJB ***19*** *12:25:18.2±0.2, 20°31S±0°05×168°25E±0°04, h26km, mb4.7/56, MS3.8/15, Error ellipse: s-maj=7.2km s-min=5.2km az=148.9*
BJI ***19*** *12:25:20.6, 20°00S×168°68E, h49km, mb4.7/21, mB4.9/15, Ms4.8/2, Ms7 4.5/3*

ISC 19 12:25:19.6±0.3, 20°30S±0°06×168°29E±0°06, h26km, n126, σ1§42/135, mb4.8/54, MS3.9/15, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.46**	**224**	Pn	**Pn**	**12 25 56.7**	**-1.5**
	25nm,0.3s,baz=82,slow=8.1,SNR=202						
DZM				Sn	**Sn**	**12 26 26.6**	**-0.9**
	64nm,0.3s,baz=57,slow=20,SNR=6.9						
DZM				LR	LR	12 26 36.1	
	comp=Z,1μm,18.8s,baz=4.5,slow=33						
MSVF	**Nonsavu**	**9.58**	**76**	*e*Pn	**Pn**	**12 27 34.4**	**-1.6**
RAO	**Raoul Island**	**15.37**	**128**	Pn	**Pn**	**12 28 51.0**	**-3.7**
	58nm,0.3s,baz=274,slow=19,SNR=3.0						
RAO				Sn	**Sn**	**12 31 46.3**	**+2.1**
	49nm,0.3s,baz=88,slow=18,SNR=3.0						
ARMA	**Armidale**	**18.09**	**233**	*e*Pn	**Pn**	**12 29 28.9**	**-0.4**
	20nm,1.1s						
URZ	**Urewera**	**19.47**	**159**	P	**Pn**	**12 29 46.5**	**+0.9**
	0.2nm,0.3s,baz=353,slow=8.7,SNR=8.1						
URZ	**Urewera**	**19.47**	**159**	*e*P	**Pn**	**12 29 48.0**	**+2.3**
	63nm,1.2s						
AFI	**Afiamalu**	**20.08**	**75**	LR	LR	12 36 27.4	
	comp=Z,200nm,19.6s,baz=260,slow=34						
CTA	**Charters Tower**	**20.68**	**267**	P	Pn	12 30 02.0	+1.9
	12nm,1.1s,baz=85,slow=16,SNR=3.1						
CTAO	**Charters Tower**	**20.68**	**267**	*e*P	**P**	**12 29 59.0**	**+1.3**
RPZ	**Rata Peaks**	**23.47**	**175**	LR	LR	12 39 09.2	
	comp=Z,423nm,18.5s,baz=348,slow=36						
STKA	**Stephens Creek**	**26.53**	**239**	P	**P**	**12 30 56.0**	**+0.8**
	6.3nm,0.7s,baz=73,slow=9.5,SNR=15						
STKA				LR	LR	12 40 41.1	
	comp=Z,266nm,19.6s,baz=40,slow=35						
STKA	**Stephens Creek**	**26.53**	**239**	*e*P	**P**	**12 30 57.1**	**+1.9**
STKA				*e*pP	**sP**	**12 31 07.5**	**+1.4**
WRA	**Warramunga Arr**	**31.85**	**265**	P	**P**	**12 31 42.3**	**-0.3**
	0.7nm,0.5s,baz=91,slow=8.5,SNR=15						
WRA				PcP	**PcP**	**12 34 33.3**	**0.0**
	1.2nm,1.1s,baz=78,slow=3.4,SNR=3.4						
AS01	**Alice Springs**	**31.97**	**258**	*e*P	**P**	**12 31 43.3**	**-0.4**
AS31	**Alice Springs**	**32.01**	**258**	*e*P	**P**	**12 31 44.6**	**+0.5**
	4.5nm,0.8s						
ASAR	**Alice Springs**	**32.01**	**258**	P	**P**	**12 31 43.7**	**-0.4**
	5.4nm,0.7s,baz=88,slow=9.3,SNR=44						
TBI	**Tubuai**	**39.24**	**102**	*e*LR	LR	12 43 40.1	
	164nm,29.5s						
PPT2	**Papeete2**	**39.87**	**93**	*e*LR	LR	12 43 56.7	
	340nm,30.8s						
FITZ	**Fitzroy Crossi**	**40.26**	**266**	*e*P	**P**	**12 32 56.7**	**+2.1**
FITZ				*e*pP	**pP**	**12 33 02.4**	**0.0**
KAPI	**Kappang**	**49.52**	**281**	LR	LR	12 55 17.2	
	comp=Z,19nm,20.1s,baz=139,slow=36						
TAOE	**Nuku Hiva Isla**	**51.00**	**85**	*e*S	**S**	**12 41 35.9**	**+0.2**
	81nm,26.6s						
TAOE				*e*LR	LR	12 49 09.0	
	170nm,29.1s						
VNDA	**Vanda**	**57.35**	**182**	P	**P**	**12 35 05.4**	**+0.4**
	1.1nm,0.8s,baz=353,slow=7.5,SNR=5.2						
KSM	**Kuching**	**60.74**	**284**	*e*P	**P**	**12 35 29.6**	**+0.2**
	21nm,1.1s						
TWG	**Pinlang**	**62.91**	**310**	*e*P	**P**	**12 35 39.7**	**-4.2**
	46nm,0.4s						
MJAR	**Matsushiro Arr**	**63.27**	**333**	P	**P**	**12 35 45.5**	**-0.5**
	2.4nm,0.8s,baz=156,slow=6.4,SNR=4.1						
QSPA	**South Pole Qui**	**69.76**	**180**	*e*P	**P**	**12 36 26.8**	**-0.6**
	18nm,0.8s						
USRK	**Ussuriysk Ar.**	**72.27**	**333**	P	**P**	**12 36 43.3**	**+0.8**
	6.0nm,0.9s,baz=124,slow=2.7,SNR=9.5						
PETK	**Petropavlovsk-**	**73.67**	**353**	P	**P**	**12 36 52.4**	**+1.8**
	2.4nm,0.5s,baz=179,slow=7.2,SNR=2.3						
PETK				LR	LR	13 06 57.0	
	comp=Z,41nm,18.2s,baz=154,slow=34						
CN2	**Changchun**	**74.90**	**329**	*e*P	**P**	**12 36 58.3**	**+0.3**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.8s						
CN2				pmax	pmax		
	comp=Z,40nm,4.0s						
GYA	**Guiyang**	**75.69**	**306**	P	**P**	**12 37 04.8**	**+1.7**
GYA				pP	PcP	12 37 18.4	+2.6
GYA				PP	**PP**	**12 39 57.5**	**+4.2**
GYA				S	**S**	**12 46 41.0**	**-2.4**
GYA				SKS	**SKSac**	**12 47 04.6**	**-7.4**
GYA				pmax	pmax		
	comp=Z,10.0nm,1.0s						
GYA				pmax	pmax		
	comp=Z,120nm,6.2s						
KLR	**Kul'dur**	**76.47**	**336**	P	**P**	**12 37 07.5**	**+0.7**
	1.4nm,0.9s,baz=124,slow=6.0,SNR=5.1						
MAW	**Mawson**	**77.12**	**202**	P	**P**	**12 37 11.5**	**+1.1**
	4.4nm,1.0s,baz=120,slow=7.1,SNR=3.7						
MAW				LR	LR	13 08 54.6	
	comp=Z,58nm,18.1s,baz=62,slow=34						
KMI	**Kunming**	**78.07**	**303**	P	**P**	**12 37 18.1**	**+1.4**
KMI				pmax	pmax		
	comp=Z,10.0nm,1.0s						
CM01	**Chiang Mai Arr**	**78.09**	**295**	*e*P	**P**	**12 37 17.8**	**+1.2**
CMAR	**Chiang Mai Arr**	**78.12**	**295**	P	**P**	**12 37 18.2**	**+1.3**
	3.4nm,0.8s,baz=130,slow=4.2,SNR=18						
CHTO	**Chiang Mai**	**78.28**	**295**	*e*P	**P**	**12 37 18.8**	**+1.1**
	6.2nm,0.9s						
CHTO				*e*pP	**sP**	**12 37 31.0**	**+1.9**
CD2	**Chengdu**	**80.17**	**308**	P	**P**	**12 37 27.1**	**-0.8**
CD2				pP	pP	12 37 41.3	+5.1
CD2				sP	sP	12 37 47.0	+7.7
CD2				PP	**PP**	**12 40 29.6**	**-1.1**
CD2				S	**S**	**12 47 28.8**	**-2.6**
CD2				SKS	**SKSac**	**12 47 39.4**	**-4.6**
CD2				sS	ScS	12 47 53.1	+1.3
CD2				SS	**SS**	**12 52 41.1**	**-1.8**
CD2				pmax	pmax		
	comp=Z,10.0nm,0.5s						

BC3	Big Chuckawall	90.24	54	P	P	12 38 18.0	-0.3
	baz=246						
NV11	Mina Array Sit	90.28	49	eP	P	12 38 18.3	-0.1
	7.4nm,0.8s						
K05A	Summer Lake	90.34	44	eP	P	12 38 18.8	+0.1
	14nm,1.1s						
MOD	Modoc Plateau	90.35	45	eP	P	12 38 18.5	-0.2
	13nm,1.1s						
FURC	Furnace Creek,	90.36	51	P	P	12 38 18.3	-0.3
	baz=245						
J05D	Fort Rock, OR	90.37	43	P	P	12 38 18.9	+0.2
	baz=242						
H04A	Detroit Lake	90.43	42	eP	P	12 38 18.3	-0.5
	13nm,1.1s						
SHOC	Shoshone, Teco	90.56	52	P	P	12 38 19.5	-0.1
	baz=245						
TUQ	Turquoise Moun	90.62	52	P	P	12 38 20.3	+0.2
	baz=245						
IRM	Iron Mountain	90.68	54	P	P	12 38 20.6	+0.4
	baz=246						
I05D	Terrebonne, OR	90.80	43	P	P	12 38 20.3	-0.3
	baz=242						
BBB	Bella Bella	90.85	33	LR	LR	13 10 11.0	
	comp=Z,29nm,20.8s,baz=176,slow=30						
TPNV	Topopah Spring	91.01	51	P	P	12 38 21.7	-0.1
	baz=245						
TPNV	Topopah Spring	91.01	51	eP	P	12 38 21.8	-0.1
	10nm,1.0s						
TLY	Talaya	91.12	326	P	P	12 38 24.0	+2.2
	2.6nm,0.7s,baz=94,slow=19,SNR=2.6						
PDMCI	Parker Dam,Lak	91.50	54	P	P	12 38 24.3	+0.4
	baz=246						
ILAR	Eielson Array	91.50	18	P	P	12 38 24.6	+1.4
	1.0nm,0.8s,baz=233,slow=5.8,SNR=10						
ILAR				LR	LR	13 20 03.4	
	comp=Z,40nm,18.2s,baz=232,slow=36						
SHPR	Sheep Range	91.63	52	eP	P	12 38 24.9	+0.1
	7.5nm,1.3s						
WVOR	Wild Horse Val	91.69	45	eP	P	12 38 24.8	-0.1
	8.3nm,1.0s						
D05A	Enumclaw	91.74	40	eP	P	12 38 25.7	+0.9
	35nm,1.3s						
W13A	Hualapai Mount	92.01	53	eP	P	12 38 26.5	-0.1
	4.3nm,1.0s						
R11A	Troy Canyon, C	92.07	50	P	P	12 38 25.8	-1.0
	baz=246						
R11A	Troy Canyon, C	92.07	50	eP	P	12 38 26.1	-0.7
	3.2nm,1.2s						
B05A	Bryant	92.18	39	P	P	12 38 26.7	0.0
	baz=242						
LCMT	Little Creek M	93.24	52	eP	P	12 38 32.1	-0.1
	3.8nm,1.0s						
TUC	Tucson	93.33	57	P	P	12 38 32.3	-0.3
	baz=248						
TUC	Tucson	93.33	57	eP	P	12 38 33.3	+0.7
	5.4nm,1.1s						
DLBC	Dease Lake	93.39	28	eP	P	12 38 32.2	0.0
	9.8nm,1.2s						
PSUT	Pine Spring	93.39	50	eP	P	12 38 33.0	+0.1
	2.1nm,0.7s						
X16A	Lo Mia Camp, P	93.61	55	eP	P	12 38 34.1	+0.2
	4.2nm,0.9s						
WUAZ	Wupatki	94.07	54	P	P	12 38 36.0	0.0
	baz=248						
WUAZ	Wupatki	94.07	54	eP	P	12 38 36.1	+0.1
	7.0nm,1.2s						
MTPU	Mount Pierson	94.41	51	eP	P	12 38 38.6	+0.8
	3.0nm,0.7s						
NEW	Newport	95.16	40	LR	LR	13 12 45.9	
	comp=Z,50nm,21.5s,baz=296,slow=30						
WMQ	Urumqi	97.29	314	eP	P	12 38 49.0	-1.4
WMQ				pmax	pmax		
	comp=Z,4.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,47nm,4.8s						
PDAR	Pinedale Array	97.99	47	P	Pdif	12 38 54.1	+0.2
	0.3nm,0.7s,baz=232,slow=7.2,SNR=4.0						
PDAR				LR	LR	13 18 49.1	
	comp=Z,51nm,18.8s,baz=280,slow=33						
TXAR	Lajitas Array	98.06	62	P	Pdif	12 38 54.5	+0.2
	0.4nm,0.9s,baz=253,slow=2.7,SNR=2.7						
TXAR				LR	LR	13 17 27.1	
	comp=Z,48nm,18.6s,baz=0.0,slow=32						
YKA	Yellowknife Ar	102.02	28	P	Pdif	12 39 09.9	-1.0
	0.3nm,0.8s,baz=247,slow=4.7,SNR=4.9						
ARCES	ARCESS Array B	125.85	345	PKP	PKPdf	12 44 20.1	+1.7
	2.7nm,0.9s,baz=116,slow=2.1,SNR=3.9						
KOLS	Kolonicke sedl	140.58	325	ePKP	PKPdf	12 44 47.2	+0.6
GEC2	GERESS Array S	144.98	330	ePKPdf	PKPdf	12 44 55.7	+1.1
GERES	GERESS Array B	144.98	330	PKPbc	PKPdf	12 44 54.4	-0.1
	1.5nm,0.7s,baz=354,slow=4.0,SNR=12						
GEA0	GERESS Array S	144.99	330	ePKPdf	PKPbc	12 44 53.6	-0.2
MEM	Membach	146.66	339	PKP	PKPab	12 45 00.2	+0.3
WLF	Walferdange	147.42	338	PKPab	PKPbc	12 45 02.1	+1.2
WLF	Walferdange	147.42	338	ePKPbc	PKPab	12 45 02.2	-0.7
DOU	Dourbes	147.56	340	PKPbc	PKPbc	12 45 01.7	+0.4
BFO	Black Forest	147.70	335	ePKPbc	PKPbc	12 45 02.1	+0.3
FUORN	Ofenpass-Fuorn	148.19	331	ePKPbc	PKPbc	12 45 04.2	+0.6
TUE	Stuetta	148.72	331	ePKPbc	PKPbc	12 45 05.2	+0.4
AQU	L'Aquila	149.48	322	ePKPbc	PKPbc	12 45 07.0	+0.3
SENIN	Lac Senin/Sane	149.69	333	ePKPbc	PKPbc	12 45 07.5	+0.2
SSB	Saint Sauveur	151.69	335	ePKPbc	PKPbc	12 45 12.3	+0.5
TOA0	Torodi Ar. Sit	165.33	243	ePKPdf	PKPdf	12 45 21.4	-1.1
TORD	Torodi Ar. Bea	165.33	243	PKP	PKPdf	12 45 20.8	-1.8
	1.1nm,0.9s,baz=50,slow=2.3,SNR=4.7						
TORD				PKPab	PKPab	12 46 21.1	+0.8
	1.2nm,1.1s,baz=103,slow=5.2,SNR=3.5						

IDC 19 12:31:42.4±3.1, 54°.69N×87°.05E, h0km, mb1 3.0/2, mb1mx2.8/57, mbtmp3.0/2, ML2.5/2, 1C-1D, Error ellipse: s-maj=23.9km s-min=18.6km az=55.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	ZALESOVO INFRA	1.50	241	i		12 39 12.0	
	baz=59,slow=320,SNR=6.9						
ZALV	Zalesovo Beam	1.50	241	Pg	Pn	12 32 08.1	-2.5
	0.7nm,0.3s,baz=61,slow=15,SNR=8.7						
ZALV				Lg	Lg	12 32 30.8	
	1.2nm,0.3s,baz=61,slow=26,SNR=10						
ZALV				Rg	Rg	12 32 40.7	
	4.5nm,0.7s,baz=62,slow=35,SNR=5.0						
KURBB	Kurchatov Arra	6.59	235	Pn	Pn	12 33 21.1	+0.7
	0.1nm,0.3s,baz=52,slow=14,SNR=13						
KURBB				Sn	Sn	12 34 34.5	-1.7
	0.1nm,0.3s,baz=36,slow=21,SNR=3.9						
KURBB				Lg	Lg	12 35 13.8	
	0.1nm,0.3s,baz=49,slow=32,SNR=8.9						
KURBB	Kurchatov Arra	6.59	235	⇑Pg	Pn	12 33 20.3	-0.1
	2.3nm,0.7s,baz=53,slow=14						
KURBB				⇓Lg	Lg	12 35 08.3	
	5.8nm,0.8s,baz=53,slow=34						
MKAR	Makanchi Array	8.46	203	Pn	Pn	12 33 47.5	+1.4
	0.1nm,0.3s,baz=19,slow=14,SNR=2.6						
MKAR				Sn	Sn	12 35 21.0	-1.2
	0.1nm,0.3s,baz=28,slow=26,SNR=13						
MKAR				Lg	Lg	12 36 13.0	
	0.1nm,0.3s,baz=24,slow=28,SNR=4.0						

*NIED **19** 12:42:00, 38°.10N×143°.90E, h5km, Mw3.5 Best double couple: M0:2.11000×10^14 NP1:φs:4.00000°, δ:21.00000°, λ:-43.00000°. NP2:φs:134.00000°, δ:76.00000°, λ:-106.00000°.*
*IDC **19** 12:42:13.0±1.8, 37°.94N×144°.36E, h0km, mb3.6/4, mb1 3.8/8, mb1mx3.5/56, mbtmp3.9/8, ML3.8/4, MS3.3/2, Ms1 3.3/2, ms1mx2.4/50, Error ellipse: s-maj=46.2km s-min=20.5km az=74.0*
*ISCJB **19** 12:42:16.1±0.8, 38°.05N±0°.04×143°.99E±0°.06, h33km, mb3.6/4, MS4.0/1, Error ellipse: s-maj=6.5km s-min=5.6km az=9.3*
*JMA **19** 12:42:16.7±0.1, 38°.12N×143°.92E, h30km, M3.9*
ISC 19 12:42:18.4±1.1, 38°.02N±0°.05×143°.99E±0°.09, h35km, n25, σ1°53/34, mb3.5/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	2.10	301	P	Pn	12 42 49.7	-1.4
OFUJ				S	Sn	12 43 14.2	-1.8
JIO	Ouri	2.12	283	P	Pn	12 42 50.2	-1.1
JIO				S	Sn	12 43 14.6	-1.9
JMK	Ichinoseki	2.36	294	P	Pn	12 42 53.7	-0.9
JMK				S	Sn	12 43 21.2	-1.2
JMM	Marumori	2.53	267	P	Pn	12 42 56.0	-0.9
JMM				eS	Sn	12 43 25.2	-1.3
JTH	Tanohata	2.53	320	S	Sn	12 43 24.2	-2.4
JOM	Ohasama	2.56	305	P	Pn	12 42 56.3	-1.0
JOU	Okura	2.64	279	P	Pn	12 42 58.1	-0.4
JOU				S	Sn	12 43 28.0	-1.3
JFT	Otama	2.94	261	P	Pn	12 43 02.5	0.0
JFT				eS	Sn	12 43 36.1	-0.5
JRG	Rokugo	2.96	299	P	Pn	12 43 02.3	-0.6
JRG				eS	Sn	12 43 36.1	-1.1
JYK	Kaneyama	2.99	289	P	Pn	12 43 02.9	-0.3
JYK				eS	Sn	12 43 37.0	-0.8
JANG	Nango	3.04	321	S	Sn	12 43 36.6	-2.4
JOT	Ohata	4.05	327	P	Pn	12 43 17.7	-0.1
JNBK	Urakawa-nobuka	4.36	348	P	Pn	12 43 21.0	-1.0
JKB	Kayabe	4.48	330	P	Pn	12 43 23.2	-0.5
JRY	Ryogami san	4.54	245	P	Pn	12 43 24.0	-0.5
MJAR	Matsushiro Arr	4.84	254	Pn	Pn	12 43 29.6	+0.9
	1.5nm,0.3s,baz=86,slow=15,SNR=11						
MJAR				Sn	Sn	12 44 26.3	+2.8
	1.0nm,0.3s,baz=78,slow=25,SNR=3.4						
JHJ	Hachijo jima 2	5.97	216	Pn	Pn	12 43 43.5	-0.7
	5.7nm,0.3s,baz=92,slow=23,SNR=6.2						
JHJ				Sn	Sn	12 44 48.7	-2.7
	5.1nm,0.3s,baz=88,slow=22,SNR=3.1						
ASAJ	Asahikawa	6.18	351	Pn	Pn	12 43 46.5	-0.6
	1.5nm,0.3s,baz=244,slow=11,SNR=9.9						
ASAJ				Sn	Sn	12 44 58.1	+1.7
	0.6nm,0.3s,baz=220,slow=31,SNR=4.1						
JCJ	Chichijima	11.00	188	Pn	Pn	12 44 50.9	-2.4
	2.3nm,0.3s,baz=355,slow=23,SNR=2.7						
KLR	Kul'dur	14.26	326	LR	LR	12 51 21.0	
	comp=Z,28nm,20.9s,baz=340,slow=38						
SONM	Songino Array	28.97	302	P	P	12 48 18.2	+3.7
	0.4nm,0.6s,baz=91,slow=9.4,SNR=3.2						
MKAR	Makanchi Array	45.34	302	P	P	12 50 34.1	+1.2
	0.2nm,0.3s,baz=74,slow=7.7,SNR=2.6						
WRA	Warramunga Arr	58.36	191	P	P	12 52 09.9	-0.3
	1.9nm,0.9s,baz=9.3,slow=7.0,SNR=14						
ASAR	Alice Springs	62.09	190	P	P	12 52 35.6	0.0
	0.2nm,0.7s,baz=15,slow=16,SNR=3.8						
SCHQ	Schefferville	83.81	17	LR	LR	13 37 27.6	
	comp=Z,54nm,18.2s,baz=291,slow=40						

*IDC **19** 12:49:59.5±5.7, 6°.45S×147°.37E, h14km±26km, mb3.9/4, mb1 4.0/6, mb1mx3.6/48, mbtmp3.9/6, ML3.7/1, Error ellipse: s-maj=48.3km s-min=33.3km az=76.0*
*ISCJB **19** 12:50:03.2±2.2, 6°.5S±0°.1×147°.3E±0°.3, h63km, mb3.8/4, Error ellipse: s-maj=38.7km s-min=17.2km az=165.1*
ISC 19 12:50:05.6±1.5, 6°.6S±0°.1×147°.3E±0°.3, h63km, n8, σ1°82/10, mb3.7/4, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	Port Moresby	2.81	183	Pn	Pn	12 50 45.7	-2.5
	6.8nm,0.3s,baz=11,slow=9.1,SNR=14						
PMG				Sn	Sn	12 51 23.3	+2.3
	5.5nm,0.3s,baz=143,slow=1.7,SNR=3.6						
WRA	Warramunga Arr	18.31	222	P	P	12 54 14.2	-0.6
	0.2nm,0.3s,baz=51,slow=11,SNR=13						
ASAR	Alice Springs	21.33	216	P	P	12 54 47.3	-0.2
	1.4nm,0.4s,baz=55,slow=9.0,SNR=26						
FITZ	Fitzroy Crossi	24.04	240	P	P	12 55 16.1	+1.1
	5.0nm,0.5s,baz=55,slow=8.1,SNR=26						
STKA	Stephens Creek	25.73	191	P	P	12 55 29.1	-1.2
	1.2nm,0.6s,baz=48,slow=12,SNR=3.3						
VNDA	Vanda	71.32	177	P	P	13 01 20.1	+2.0
	1.0nm,1.0s,baz=346,slow=6.8,SNR=7.7						
CPUP	Villa Florida	139.48	145	PKP	PKPdf	13 09 25.6	-1.1
	1.7nm,0.5s,baz=49,slow=3.7,SNR=5.1						
CPUP				SKPbc	SKiKP	13 13 01.8	+1.8
	2.4nm,0.4s,baz=3.2,slow=4.0,SNR=5.9						
TORD	Torodi Ar. Bea	145.53	284	PKPbc	PKPdf	13 09 37.4	-0.3
	1.2nm,1.1s,baz=347,slow=1.0,SNR=4.6						

*NEIC **19** 13:05:15.2, 59°.49N×122°.41W, h10km, mb3.5/1, MW3.6(OTT), After OTT.*
NEIC Felt in the epicentral area.
PGC 19 13:05:15.2, 59°.49N×122°.41W, h10km, ML4.2/23, Mw3.6, British Columbia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FNBB	Fort Nelson	0.68	208	P	Pg	13 05 26.6	-1.6
FNBB	Fort Nelson	0.68	208	P	Pg	13 05 26.6	-1.6
HILA	High Level	2.94	106	Pn	Pn	13 06 01.6	-0.3
HILA				Pg	Pb	13 06 09.3	+1.7
HILA				Sg	Sg	13 06 47.3	-2.1
HILA	High Level	2.94	106	Pn	Pn	13 06 01.6	-0.3
HILA				Pg	Pb	13 06 09.3	+1.7
HILA				Sg	Sg	13 06 47.3	-2.1
MANA	Manning	3.65	134	Pn	Pn	13 06 11.4	-0.3
MANA				Sn	Sn	13 06 54.0	-0.9
MANA				Sg	Sg	13 07 10.2	-2.2
MANA	Manning	3.65	134	Pn	Pn	13 06 11.4	-0.3
MANA				Sn	Sn	13 06 54.0	-0.9
MANA				Sg	Sg	13 07 10.2	-2.2
DLBC	Dease Lake	4.08	258	Pn	Pn	13 06 16.8	-1.0
DLBC				Pg	Pb	13 06 29.5	+2.3
DLBC				Sg	Sb	13 07 19.6	+3.0
DLBC	Dease Lake	4.08	258	ePn	Pn	13 06 17.4	-0.4
DLBC				eSn	Sn	13 07 04.2	-1.3
WAPA	Wapiti River	4.64	157	Pn	Pn	13 06 24.0	-1.3
WAPA				Pg	Pb	13 06 40.3	+3.6
WAPA				Sg	Sb	13 07 35.9	+3.3
WAPA	Wapiti River	4.64	157	Pn	Pn	13 06 24.0	-1.3
WAPA				Pg	Pb	13 06 40.3	+3.6
WAPA				Sg	Sb	13 07 35.9	+3.3
YKR1	Yellowknife Ar	4.72	47	Pn	Pn	13 06 24.5	-1.8
YKR1				Sn	Sn	13 07 17.1	-4.0
YKR1	Yellowknife Ar	4.72	47	Pn	Pn	13 06 24.5	-1.8
YKR1				Sn	Sn	13 07 17.1	-4.0
YKR2	Yellowknife Ar	4.74	47	Pn	Pn	13 06 24.9	-1.6
YKR2				Sn	Sn	13 07 18.1	-3.3
YKR2				Sg	Sg	13 07 44.1	-3.0
YKR2	Yellowknife Ar	4.74	47	Pn	Pn	13 06 24.9	-1.6
YKR2				Sn	Sn	13 07 18.1	-3.3
YKR3	Yellowknife Ar	4.75	47	Pn	Pn	13 06 25.2	-1.6
YKR3				Sg	Sg	13 07 44.5	-3.2
YKR3	Yellowknife Ar	4.75	47	Pn	Pn	13 06 25.2	-1.6
YKR3				Sg	Sg	13 07 44.5	-3.2
YKR4	Yellowknife Ar	4.77	48	Pn	Pb	13 06 25.2	-1.9
YKR4				Pg	Pb	13 06 42.3	+3.5
YKR4				Sn	Sn	13 07 18.6	-3.7
YKB1	Yellowknife Ar	4.79	49	Pn	Pn	13 06 25.6	-1.8
YKB2	Yellowknife Ar	4.81	49	Pn	Pn	13 06 25.8	-1.8
YKR6	Yellowknife Ar	4.81	48	Pn	Pn	13 06 25.6	-2.0
YKR6				Sn	Sn	13 07 19.4	-3.9
YKB3	Yellowknife Ar	4.82	49	Pn	Pn	13 06 25.8	-1.9
YKB3				Sn	Sn	13 07 19.8	-3.8
YKR7	Yellowknife Ar	4.83	48	Pn	Pn	13 06 25.9	-2.0
YKR7				Pg	Pb	13 06 43.5	+3.8
YKR7				Sn	Sn	13 07 20.3	-3.5
YKB4	Yellowknife Ar	4.83	48	Pn	Pn	13 06 26.1	-1.9
YKR8	Yellowknife Ar	4.85	48	Pn	Pn	13 06 26.1	-2.0
YKB6	Yellowknife Ar	4.86	48	Pn	Pn	13 06 26.5	-1.8
YKR9	Yellowknife Ar	4.87	48	Pn	Pn	13 06 26.4	-1.9
YKR9				Sn	Sn	13 07 20.6	-4.0
YKB7	Yellowknife Ar	4.87	48	Pn	Pn	13 06 26.4	-2.0
YKB7				Sn	Sn	13 07 20.6	-4.2
YKW3	Yellowknife Ar	4.88	48	Pn	Pn	13 06 26.7	-1.9
YKW3				Pg	Pg	13 06 45.2	-3.4
YKW3				Sn	Sn	13 07 20.4	-4.6
YKW3				Sg	Sg	13 07 49.0	-2.8
YKW3	Yellowknife Ar	4.88	48	Pn	Pn	13 06 26.7	-1.9
YKW3				Pg	Pg	13 06 45.2	-3.4
YKW3				Sn	Sn	13 07 20.4	-4.6
YKW3				Sg	Sg	13 07 49.0	-2.8
YKB8	Yellowknife Ar	4.89	48	Pn	Pn	13 06 26.6	-2.0
YKB8				Pg	Pg	13 06 45.7	-3.0
YKB9	Yellowknife Ar	4.90	47	Pn	Pn	13 06 26.7	-2.1
YKB0	Yellowknife Ar	4.91	47	Pn	Pn	13 06 27.1	-1.9
FSMA	Fort Smith	5.38	80	Sn	Sn	13 07 33.4	-3.8
FSMA				Sg	Sg	13 08 03.7	-3.9
WHY	Whitehorse	6.36	286	Pn	Pn	13 06 47.8	-1.2
WHY				Sn	Sn	13 07 57.7	-3.8
WHY				Sg	Sg	13 08 30.6	-8.4
WHY	Whitehorse	6.36	286	Pn	Pn	13 06 47.8	-1.2
WHY				Sn	Sn	13 07 57.7	-3.8
WHY				Sg	Sg	13 08 30.6	-8.4
UBRB	Upper Baezaeko	6.68	189	Sg	Sg	13 08 42.9	-6.5
PLBC	Pleasant Camp	7.11	276	Sn	Sn	13 08 17.5	-2.4
PLBC				Sg	Sg	13 08 53.4	-10
COKN	Cook Lake	7.56	54	Pn	Pn	13 07 03.1	-2.3
COKN				Sn	Sn	13 08 24.2	-6.8
COKN				Sg	Sg	13 09 10.6	-7.1
COKN	Cook Lake	7.56	54	Pn	Pn	13 07 03.1	-2.3
COKN				Sn	Sn	13 08 24.2	-6.8
COKN				Sg	Sg	13 09 10.6	-7.1
MNB	Mounoet Dainar	7.65	161	Pn	Pn	13 07 06.4	-0.4
MNB				Sn	Sn	13 08 30.5	-3.0
HYT	Haines Junctio	7.65	287	Pn	Pn	13 07 05.9	-0.8
HYT				Sn	Sn	13 08 32.2	-1.2
HYT				Sg	Sg	13 09 10.1	-10
HYT	Haines Junctio	7.65	287	Pn	Pn	13 07 05.9	-0.8
HYT				Sn	Sn	13 08 32.2	-1.2
HYT				Sg	Sg	13 09 10.1	-10
BLBC	Blue River	7.67	165	Pn	Pn	13 07 06.1	-1.0
BLBC				Sg	Sg	13 09 17.2	-4.1
BLBC	Blue River	7.67	165	Pn	Pn	13 07 06.1	-1.0
BLBC				Sg	Sg	13 09 17.2	-4.1
DHRN	Dharma Camp	7.69	9	Pn	Pn	13 07 04.3	-2.7
DHRN				Pg	Pb	13 07 18.0	-10
DHRN				Sn	Sn	13 08 26.4	-7.6
DHRN				Sg	Sg	13 09 16.9	-4.6
SNLN	Sandy Lake, NW	7.89	59	Pn	Pn	13 07 05.9	-4.0
SNLN				Sn	Sn	13 08 31.6	-7.5
SNLN	Sandy Lake, NW	7.89	59	Pn	Pn	13 07 05.9	-4.0
SNLN				Sn	Sn	13 08 31.6	-7.5
YUK7	Dusty Glacier	7.95	284	Pn	Pn	13 07 10.9	0.0
YUK7				Sg	Sg	13 09 20.8	-9.4
YUK7	Dusty Glacier	7.95	284	Pn	Pn	13 07 10.9	0.0
YUK7				Sg	Sg	13 09 20.8	-9.4
BBB	Bella Bella	7.99	206	Sg	Sg	13 09 25.1	-6.3
WHFN	White Fish Lak	8.05	61	Pn	Pn	13 07 07.5	-4.5
WHFN				Sn	Sn	13 08 35.5	-7.4
WHFN	White Fish Lak	8.05	61	Pn	Pn	13 07 07.5	-4.5
WHFN				Sn	Sn	13 08 35.5	-7.4
DOWB	Downie Slide	8.29	163	Pn	Pn	13 07 13.4	-1.9
DOWB				Sg	Sg	13 09 36.6	-4.3
DOWB	Downie Slide	8.29	163	Pn	Pn	13 07 13.4	-1.9
LLLB	Lillooet	8.90	178	Pn	Pn	13 07 22.1	-1.7
LLLB				Sg	Sg	13 09 53.8	-6.9
SMPN	Simpson Lake	8.95	350	Pn	Pn	13 07 23.5	-0.8
SMPN				Sn	Sn	13 08 59.7	-5.3
KUKN	Kugluktuk,NWT	8.97	18	Pn	Pn	13 07 21.7	-2.9
KUKN				Sn	Sn	13 08 57.1	-8.4
KUKN				Sg	Sg	13 09 55.1	-7.4
KUKN	Kugluktuk,NWT	8.97	18	Pn	Pn	13 07 21.7	-2.9
KUKN				Sn	Sn	13 08 57.1	-8.4
KUKN				Sg	Sg	13 09 55.1	-7.4
YUK3	Moose Creek	9.16	292	Pn	Pn	13 07 25.8	-1.6
YUK3				Sg	Sn	13 10 01.2	+51
YUK3	Moose Creek	9.16	292	Pn	Pn	13 07 25.8	-1.6
YUK3				e		13 10 01.2	
YUK1	Sand Pete Hill	9.24	295	Pn	Pn	13 07 26.7	-1.7
YUK1				Sg	Sn	13 10 02.7	+50
DAWY	Dawson	9.25	307	Pn	Pn	13 07 28.1	-0.3
DAWY				Sn	Sn	13 09 09.4	-3.0
DAWY				Sg		13 10 03.3	
DAWY	Dawson	9.25	307	Pn	Pn	13 07 28.1	-0.3
DAWY				Sn	Sn	13 09 09.4	-3.0
DAWY				Sg		13 10 03.3	
YUK2	White River	9.34	292	Pn	Pn	13 07 28.1	-1.7
YUK2				Sn	Sn	13 09 10.1	-4.7
YUK2				Sg		13 10 03.0	
BVCY	Beaver Creek	9.44	296	Pn	Pn	13 07 29.8	-1.2
BVCY				Sn	Sn	13 09 10.9	-6.1
BVCY				Sg		13 10 08.3	
PRDA	Priddis	9.80	148	Pn	Pn	13 07 34.2	-2.0
PRDA				Sn	Sn	13 09 20.5	-5.7
PRDA	Priddis	9.80	148	Pn	Pn	13 07 34.2	-2.0
PRDA				Sn	Sn	13 09 20.5	-5.7
INK	Inuvik	10.09	336	Pn	Pn	13 07 37.4	-2.5
INK				Sn	Sn	13 09 28.4	-4.7
INK	Inuvik	10.09	336	Pn	Pn	13 07 37.4	-2.5
INK				Sn	Sn	13 09 28.4	-4.7
PGC	Sidney	10.88	184	Pn	Pn	13 07 49.4	-1.3
DOT	Dot Lake	11.11	301	Sg		13 11 04.0	
WALA	Waterton Lakes	11.56	151	P	Pn	13 07 57.3	-2.9
WALA	Waterton Lakes	11.56	151	ePn	Pn	13 07 57.6	-2.6
WALA				eSn	Sn	13 10 06.1	-3.2
EGMT	Eagleton	13.68	142	ePn	Pn	13 08 24.0	-5.0
RSSD	Black Hills	19.02	136	eP	Pn	13 09 37.7	-0.2
	1.6nm,0.5s						

*ISCJB **19** 13:15:43.6±0.7, 36°.60N±0°.03×25°.75E±0°.04, h5km±5km, Error ellipse: s-maj=6.1km s-min=4.8km az=7.4*
*ISK **19** 13:15:43.5, 36°.59N×25°.71E, h9km, MD3.2*
*CSEM **19** 13:15:43.9±0.1, 36°.58N×25°.71E, h10km, ML2.6, Error ellipse: s-maj=2.8km s-min=2.4km az=107.0*
*ATH **19** 13:15:43.0, 36°.57N×25°.76E, h16km±5km, ML2.2/4, Error ellipse: s-maj=5.5km s-min=1.2km az=267.0*
*THE **19** 13:15:44.3, 36°.61N×25°.68E, h8km±1km, ML2.6/3, Error ellipse: s-maj=1.7km s-min=0.6km az=278.0*
**ISC 19 13:15:43.7±0.9, 36°.58N±0°.02×25°.70E±0°.02, h14km±8km, n42, σ0°59/61, Dodecanese Islands

IDI	Anoyia	1.45 207	P	Pn	13 16 09.7	+0.1
IDI	Anoyia	1.45 207	P	Pn	13 16 09.7	+0.1
IDI			S	Sg	13 16 32.4	+2.0
IDI	Anoyia	1.45 207	P	Pn	13 16 08.9	-0.7
IDI			S	Sg	13 16 32.4	+2.0
IDI			AML	AML	13 16 32.8	
	comp=N,49μm,0.3s					
IDI			AML	AML	13 16 33.0	
	comp=E,94μm,0.3s					
ZKR	Zakros	1.52 164	P	Pb	13 16 11.1	-0.6
ZKR	Zakros	1.52 164	P	Pb	13 16 11.1	-0.6
KARP	Karpathos	1.57 131	ePn	Pb	13 16 11.8	-0.7
KARP	Karpathos	1.57 131	P	Pn	13 16 11.6	+0.4
KARP	Karpathos	1.57 131	ePn	Pb	13 16 11.8	-0.7
KARP	Karpathos	1.57 131	P	Pb	13 16 11.7	-0.7
CHOS	Chios island	1.82 9	ePN	Pb	13 16 16.2	-0.7
CHOS	Chios island	1.82 9	P	Pn	13 16 14.7	0.0
CHOS	Chios island	1.82 9	P	Pn	13 16 14.7	0.0
CHOS	Chios island	1.82 9	ePn	Pb	13 16 16.2	-0.7

GUC 19 13:22:26.6±0.5, 34°.46S×71°.85W, h41km±257km, ML3.9, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TALC	Talca	0.95	170	*i* S		Sn	13 22 58.5	+2.6
TALC				IAML			13 23 00.9	
	comp=N,6μm,0.1s							
RCDM	Rinconada Maip	1.29	42	*i* P		Pn	13 22 49.8	+1.5
RCDM				*i* S		Sn	13 23 08.0	+3.6
CLCH	Cerro Calan	1.52	46	*i* S		Sn	13 23 13.6	+3.6
PEL	Peldehue	1.63	37	*i* P		Pn	13 22 55.0	+2.2
PEL				*i* S		Sn	13 23 16.7	+4.1

MEX 19 13:27:13.0±0.4, 14°.12N×92°.57W, h16km±999km, MD3.7, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PCIG		1.70	338	*e*P		Pn	13 27 38.1	-3.8
PCIG				*e*S		Sn	13 27 58.5	-4.8
CCIG	Comitan	2.19	11	*e*P		Pn	13 27 46.2	-2.7
CCIG				*e*S		Sn	13 28 11.1	-4.7
TGIG		2.70	349	*i* P		Pn	13 27 52.2	-3.6
TGIG				*e*S		Sn	13 28 24.6	-3.5

*ISCJB **19** 13:28:48.2±1.3, 18°.7S±0°.4×177°.9W±0°.3, h532km, mb3.4/6, Error ellipse: s-maj=59.2km s-min=10.8km az=149.5*
*IDC **19** 13:28:48.5±1.9, 18°.85S×177°.77W, h530km±21km, mb3.0/6, mb1 3.3/7, mb1mx3.0/31, mbtmp4.0/7, Error ellipse: s-maj=59.0km s-min=15.8km az=145.0*
ISC 19 13:28:48.6±1.4, 18°.8S±0°.4×177°.8W±0°.2, h532km, n9, σ0.9 70/12, mb3.4/6, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AFI	Afiamalu	7.54	51	P		P	13 30 42.4	+1.0
	1.9nm,0.3s,baz=62,slow=3.4,SNR=5.8							
AFI				S		S	13 32 13.1	-0.6
	1.8nm,0.3s,baz=50,slow=21,SNR=2.6							
STKA	Stephens Creek	38.74	242	P		P	13 35 28.2	+0.9
	1.3nm,0.9s,baz=40,slow=14,SNR=3.2							
WRA	Warramunga Arr	45.07	260	P		P	13 36 16.7	-0.7
	1.5nm,0.4s,baz=98,slow=7.8,SNR=49							
WRA				PcP		PcP	13 37 46.5	-0.4
	0.2nm,0.5s,baz=93,slow=3.7,SNR=4.7							
ASAR	Alice Springs	45.13	255	P		P	13 36 17.4	-0.4
	3.4nm,0.7s,baz=88,slow=8.0,SNR=53							
ASAR				PcP		PcP	13 37 46.5	-0.7
	0.6nm,0.7s,baz=100,slow=4.6,SNR=5.4							
MJAR	Matsushiro Arr	68.98	323	P		P	13 39 01.2	+0.5
	0.5nm,0.6s,baz=151,slow=6.4,SNR=4.3							
ILAR	Eielson Array	86.62	13	P		P	13 40 35.0	-0.1
	0.2nm,0.4s,baz=230,slow=4.3,SNR=6.0							
PDAR	Pinedale Array	87.59	43	P		P	13 40 39.8	-0.7
	0.1nm,0.3s,baz=201,slow=4.8,SNR=2.2							
BRTR	Keskin Array B	145.84	314	PKPbc		PKPbc	13 47 28.6	-0.3
	0.9nm,0.7s,baz=122,slow=1.6,SNR=4.6							
GERES	GERESS Array B	148.63	345	PKPbc		PKPbc	13 47 36.1	+0.3
	0.5nm,0.5s,baz=41,slow=4.3,SNR=5.9							

*ISCJB **19** 13:42:26.0±0.5, 36°.70N±0°.03×140°.64E±0°.05, h10km, mb3.5/10, Error ellipse: s-maj=6.6km s-min=3.6km az=19.6*
*JMA **19** 13:42:26.2, 36°.70N×140°.63E, h6km±1km, M3.2 Broadband fault plane solution: P waves. NP1: φ±0.00000°, δ56.00000°, λ-74.00000°. NP2:φ±152.00000°, δ37.00000°, λ-113.00000°. Principal axes: T Plg10.0000°, Azm78.0000°; N Plg14.0000°, Azm170.0000°; P Plg73.0000°, Azm313.0000°;*
JMA Felt III J1.
*IDC **19** 13:42:26.3±0.7, 36°.70N×140°.51E, h0km, mb3.5/10, mb1 3.8/13, mb1mx3.6/36, mbtmp3.6/13, ML3.3/3, MS2.4/1, Ms1 2.4/1, ms1mx2.1/47 Error ellipse: s-maj=19.6km s-min=14.8km az=118.0*
ISC 19 13:42:27.7±0.6, 36°.71N±0°.03×140°.54E±0°.05, h10km, n26, σ1.9 64/29, mb3.5/10, 4C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	Hitachi	0.10	164	⇑P		Pg	13 42 28.5	-1.8
JHO				S		Sg	13 42 30.2	-1.9
ONAJ	Iwakimizuishiy	0.45	28	⇑P		Pg	13 42 34.4	-2.1
ONAJ				*e*S		Sg	13 42 40.3	-2.1
JYT	Yasato	0.55	210	⇑P		Pg	13 42 37.4	-1.0
JSB	Shiboa	0.56	298	P		Pb	13 42 39.0	-0.6
JSB				*e*S		Sb	13 42 48.0	+0.4
JFK	Kawauchi	0.71	22	⇑P		Pg	13 42 39.3	-2.2
JFK				S		Sg	13 42 48.6	-2.2
JFT	Otama	0.82	349	⇓P		Pg	13 42 42.5	-1.1
JFT				S		Sg	13 42 53.2	-1.2
MJAR	Matsushiro Arr	1.88	266	Pn		Pb	13 42 60.0	-2.1
	9.3nm,0.3s,baz=85,slow=9.7,SNR=91							
MJAR				Sn		Sg	13 43 26.9	-1.1
	9.2nm,0.3s,baz=80,slow=29,SNR=13							
MJAR				LR		LR	13 43 59.4	
	comp=Z,78nm,18.2s,baz=115,slow=51							
JHJ	Hachijo jima 2	3.63	190	Pn		Pn	13 43 25.4	+1.4
	4.9nm,0.3s,baz=325,slow=21,SNR=5.0							
JHJ				Sn		Sn	13 44 07.2	+0.3
	3.5nm,0.3s,baz=213,slow=22,SNR=2.7							
ASAJ	Asahikawa	7.57	11	Pn		Pn	13 44 18.4	+0.5
	0.6nm,0.3s,baz=237,slow=9.7,SNR=4.9							
ASAJ				Sn		Sn	13 45 48.8	+5.0
	0.2nm,0.3s,baz=187,slow=31,SNR=3.2							
JNU	Nakatsue	8.70	249	Pn		Pn	13 44 33.9	+0.2
	0.2nm,0.3s,baz=227,slow=15,SNR=2.5							
JNU				LR		LR	13 48 12.5	
	comp=Z,26nm,19.3s,baz=118,slow=40							
SONM	Songino Array	27.39	305	P		P	13 48 12.4	-0.9
	0.7nm,0.9s,baz=108,slow=9.1,SNR=3.8							
H11N2	WAKE ISLAND Hy 28.60	119		T		T	14 18 05.5	
	baz=312,slow=75,SNR=1055							
H11N1	WAKE ISLAND Hy 28.60	119		T		T	14 18 06.1	
	baz=312,slow=75,SNR=969							
H11N3	WAKE ISLAND Hy 28.61	119		T		T	14 18 06.9	
	baz=312,slow=75,SNR=894							
H11S1	WAKE ISLAND Hy 29.28	121		T		T	14 18 57.9	
	baz=314,slow=76,SNR=2003							
H11S3	WAKE ISLAND Hy 29.28	121		T		T	14 18 58.0	
	baz=314,slow=76,SNR=1038							
H11S2	WAKE ISLAND Hy 29.30	121		T		T	14 18 58.8	
	baz=314,slow=76,SNR=1079							
ZALV	Zalesovo Beam	41.62	313	P		P	13 50 15.6	-0.1
	0.5nm,0.3s,baz=87,slow=9.6,SNR=4.3							
MKAR	Makanchi Array	43.70	302	P		P	13 50 32.6	-0.2
	0.2nm,0.5s,baz=96,slow=4.5,SNR=2.3							
ILAR	Eielson Array	50.15	32	P		P	13 51 23.6	+0.7
	0.2nm,0.6s,baz=268,slow=5.9,SNR=3.9							
WRA	Warramunga Arr	56.65	187	P		P	13 52 10.7	-0.4
	1.0nm,0.5s,baz=4.5,slow=7.3,SNR=24							
WRA				PcP		PcP	13 53 08.3	+1.0
	0.3nm,0.6s,baz=1.6,slow=4.8,SNR=4.6							
ASAR	Alice Springs	60.37	187	P		P	13 52 36.6	-0.5
	0.5nm,0.7s,baz=14,slow=6.1,SNR=9.7							
YKA	Yellowknife Ar	64.44	30	P		P	13 53 04.4	+0.6
	0.2nm,0.7s,baz=259,slow=6.1,SNR=3.1							
NVAR	Mina Array Bea	75.75	53	P		P	13 54 15.3	+1.4
	0.4nm,0.6s,baz=288,slow=3.6,SNR=2.6							
PDAR	Pinedale Array	78.39	45	P		P	13 54 27.4	-1.3
	0.1nm,0.5s,baz=352,slow=5.8,SNR=3.3							
TXAR	Lajitas Array	90.88	52	P		P	13 55 33.1	+1.2
	0.2nm,0.6s,baz=290,slow=3.7,SNR=2.4							

*NIED **19** 14:01:00, 38°.60N×141°.90E, h53km, Mw3.9 Best double couple: M0:6.75000×10^14 NP1:φ±227.00000°, δ21.00000°, λ109.00000°. NP2:φ±27.00000°, δ70.00000°, λ83.00000°.*
*ISCJB **19** 14:01:44.6±1.1, 38°.56N±0°.05×142°.0E±0°.1, h50km±9km, mb3.7/3, Error ellipse: s-maj=16.3km s-min=7.1km az=17.8*
*IDC **19** 14:01:46.8±2.4, 38°.55N×142°.13E, h63km±22km, mb3.5/3, mb1 3.5/8, mb1mx3.2/58, mbtmp3.7/8, MS2.5/3, Ms1 2.5/3, ms1mx2.2/47, Error ellipse: s-maj=35.9km s-min=15.4km az=99.0*
*JMA **19** 14:01:46.6±0.1, 38°.62N×141°.89E, h47km±1km, M3.8*
JMA Felt II J1.
ISC 19 14:01:45.8±1.5, 38°.57N±0°.05×142°.0E±0°.1, h45km±14km, n20, σ0.9 96/18, mb3.9/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JIO	Ouri	0.48	257	P		Pn	14 01 57.1	+0.5
JIO				S		Sn	14 02 04.3	+0.1
OFUJ	Ofunato	0.56	337	P		Pn	14 01 57.6	0.0
OFUJ				S		Sn	14 02 05.3	-0.6
JMK	Ichinoseki	0.69	304	P		Pn	14 01 59.3	0.0
JMK				S		Sn	14 02 08.4	-0.5
JOU	Okura	1.03	259	P		Pn	14 02 04.2	+0.3
JOU				S		Sn	14 02 17.4	+0.2
JOM	Ohasama	1.04	331	P		Pn	14 02 04.0	0.0
JOM				*e*S		Sn	14 02 16.9	-0.5
MJAR	Matsushiro Arr	3.59	237	P		Pn	14 02 40.9	+1.8
	3.4nm,0.3s,baz=40,slow=12,SNR=18							
MJAR				S		Sn	14 03 33.4	+13
	1.8nm,0.3s,baz=50,slow=18,SNR=4.1							
MJAR				LR		LR	14 04 17.7	
	comp=Z,52nm,21.5s,baz=120,slow=41							
ASAJ	Asahikawa	5.57	5	P		Pn	14 03 07.5	+1.4
	0.7nm,0.3s,baz=232,slow=14,SNR=7.7							
ASAJ				S		Sn	14 04 10.2	+1.5
	0.6nm,0.3s,baz=68,slow=19,SNR=4.2							
JHJ	Hachijo jima 2	5.71	199	P		Pn	14 03 08.2	+0.1
	5.4nm,0.3s,baz=97,slow=21,SNR=7.8							
JHJ				S		Sn	14 04 10.6	-1.8
	18nm,0.3s,baz=98,slow=22,SNR=6.8							
USRK	Ussuriysk Ar.	9.36	310	P		Pn	14 04 01.8	+3.7
	0.1nm,0.3s,baz=120,slow=14,SNR=6.9							
JNU	Nakatsue	10.50	242	LR		LR	14 08 38.3	
	comp=Z,30nm,19.3s,baz=127,slow=39							
KSRS	Korea Array	11.12	269	P		Pn	14 04 26.5	+4.3
	0.2nm,0.3s,baz=76,slow=14,SNR=3.2							
KSRS				LR		LR	14 08 18.9	
	comp=Z,33nm,18.1s,baz=120,slow=35							
H11N2	WAKE ISLAND Hy 28.61	124		T		T	14 38 07.9	
	baz=317,slow=75,SNR=167							
H11N1	WAKE ISLAND Hy 28.62	124		T		T	14 38 06.9	
	baz=317,slow=75,SNR=519							
H11N3	WAKE ISLAND Hy 28.62	124		T		T	14 37 56.7	
	baz=317,slow=75,SNR=258							
H11S1	WAKE ISLAND Hy 29.37	126		T		T	14 38 54.9	
	baz=318,slow=76,SNR=84							
H11S3	WAKE ISLAND Hy 29.38	126		T		T	14 39 00.6	
	baz=318,slow=76,SNR=104							
H11S2	WAKE ISLAND Hy 29.39	126		T		T	14 39 02.9	
	baz=318,slow=76,SNR=90							
ZALV	Zalesovo Beam	41.21	311	P		P	14 09 25.5	-0.5
	1.1nm,0.4s,baz=76,slow=6.1,SNR=4.4							
MKAR	Makanchi Array	43.68	301	P		P	14 09 46.0	-0.2
	0.5nm,0.5s,baz=91,slow=6.1,SNR=5.6							
WRA	Warramunga Arr	58.63	188	P		P	14 11 38.0	-0.4
	0.8nm,0.9s,baz=7.8,slow=7.7,SNR=6.1							

IDC 19 14:13:10.6±393.0, 49°.01N×45°.31E, h0km, Error ellipse: s-maj=298.8km s-min=143.9km az=162.0, Ukraine-Moldova-Southwestern Russia region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
I43RU	DUBNA INFRASON	9.14	331	*i*		15 04 50.0	
	baz=140,slow=315,SNR=1.3						
I26DE	FREYUNG INFRAS	20.69	282	*i*		16 20 20.0	
	baz=82,slow=149,SNR=0.4						
I46RU	ZALESOVO INFRA	24.86	63	*i*		16 48 00.0	
	baz=267,slow=365,SNR=1.8						

*ISCJB **19** 14:20:18.7±1.1, 42°.04N±0°.09×30°.1W±0°.2, h10km, mb3.4/4, MS3.1/1, Error ellipse: s-maj=27.6km s-min=10.4km az=16.9*
*IDC **19** 14:20:19.6±1.3, 42°.67N×29°.69W, h0km, mb3.4/4, mb1 3.7/4, mb1mx3.3/54, mbtmp3.4/4, MS3.1/1, Ms1 3.2/1, ms1mx2.4/41, Error ellipse: s-maj=54.3km s-min=28.1km az=31.0*
ISC 19 14:20:17.1±1.4, 41°.9N±0°.1×30°.2W±0°.4, h10km, n7, σ0.9 62/6, mb3.4/4, Azores Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
H07N1	FLORES T-PHASE	2.31	198	*e*P		Pb	14 20 59.7	+0.9
H07N1				*e*S		Sg	14 21 30.7	-0.5
H07S1	FLORES T-PHASE	2.62	197	*e*P		Pb	14 21 04.4	+0.2
H07S1				*e*S		Sb	14 21 36.3	-0.2
ARCES	ARCESS Array B	39.59	27	LR		LR	14 40 31.6	
	comp=Z,28nm,19.5s,baz=284,slow=31							
TORD	Torodi Ar. Bea	39.84	127	P		P	14 27 55.8	+4.9
	1.5nm,1.0s,baz=321,slow=7.8,SNR=7.5							
YKA	Yellowknife Ar	51.46	324	P		P	14 29 22.0	-0.1
	0.2nm,0.8s,baz=66,slow=6.8,SNR=3.1							
TXAR	Lajitas Array	59.34	283	P		P	14 30 25.5	+6.0
	0.2nm,0.7s,baz=54,slow=6.1,SNR=4.5							
MKAR	Makanchi Array	73.32	42	P		P	14 31 48.6	-0.2
	0.3nm,0.6s,baz=308,slow=6.0,SNR=4.0							

*ISCJB **19** 14:22:13.1±0.4, 24°.35N±0°.02×121°.85E±0°.02, h5km±4km, Error ellipse: s-maj=4.0km s-min=2.8km az=34.0*
*JMA **19** 14:22:13.3±0.1, 24°.36N×121°.79E, h8km*
*TAP **19** 14:22:13.2, 24°.37N×121°.81E, h9km, ML2.7, C*
ISC 19 14:22:13.2±0.9, 24°.36N±0°.02×121°.83E±0°.02, h11km±5km, n37, σ0.9 56/56, 3C-4D, Taiwan

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
EHP	Heping Village	0.09	238	*e*P		Pg	14 22 16.2	+0.4
	baz=219							
EHP				*e*S		Sg	14 22 18.3	+0.7
	baz=219							
ENA	Nanau	0.10	312	⇓*i*P		Pg	14 22 15.7	-0.2
	baz=317							
ENA				S		Sg	14 22 17.2	-0.7
	baz=317							
TWC	Suao	0.25	5	⇑*i*P		Pg	14 22 18.6	+0.2
	baz=6.0							
TWC				*i* S		Sg	14 22 21.8	-0.1
	baz=6.0							
TWD	Chiawan	0.35	217	⇑*i*P		Pg	14 22 20.2	+0.1
	baz=213							
TWD				*e*S		Sg	14 22 24.7	-0.1
	baz=213							
ENTT	Nioudou	0.37	320	⇓*i*P		Pg	14 22 20.8	+0.3
	baz=322							
ENTT				S		Sg	14 22 24.9	-0.5
	baz=322							
TWE	Neicheng	0.39	338	⇓*i*P		Pg	14 22 21.3	+0.3
	baz=342							
TWE				*i* S		Sg	14 22 26.0	-0.1
	baz=342							
ILA	Ilan	0.41	350	*e*P		Pb	14 22 22.7	+0.1
	baz=346							
ILA				*e*S		Sg	14 22 27.6	+0.8
	baz=346							
NNS	Nan Shan	0.42	281	P		Pg	14 22 21.7	+0.2
	baz=280							
NNS				S		Sg	14 22 26.9	-0.3
	baz=280							
HWA	Hwalien	0.43	208	*e*P		Pb	14 22 22.5	-0.4
	baz=213							
NSK	Sanguang	0.53	307	⇓*i*P		Pg	14 22 23.9	+0.3
	baz=307							
NSK				S		Sg	14 22 31.1	+0.5
	baz=307							
WHF	Hehuan Shan	0.55	248	⇑*i*P		Pg	14 22 24.0	-0.1
	baz=246							
WHF				*e*S		Sg	14 22 31.5	0.0
	baz=246							
TWT	Tachien	0.60	260	*e*P		Pb	14 22 25.9	0.0
	baz=259							
TWT				*i* S		Sg	14 22 33.5	+0.6
	baz=259							
ESL	Shilin	0.65	214	*e*P		Pg	14 22 25.2	-0.6
	baz=211							
TWB1	Santiao Chiao	0.66	13	*e*P		Pb	14 22 26.7	-0.2
	baz=15							
TWB1				*e*S		Sg	14 22 35.0	+0.1
	baz=15							
NWF	Wu-fen Shan	0.71	357	*e*P		Pb	14 22 27.8	+0.1
	baz=358							
NSTT	Nanjuang	0.80	290	P		Pb	14 22 29.4	+0.2
	baz=290							
NSTT				S		Sg	14 22 39.2	+0.1
	baz=290							
TWS1	Kuangyinshan	0.83	333	*e*P		Pn	14 22 30.4	-0.4
	baz=334							
TWS1				*e*S		Sn	14 22 42.0	-1.1
	baz=334							
TWY	Chenhua	0.94	347	*e*P		Pn	14 22 32.1	-0.2
	baz=340							
TWY				*e*S		Sn	14 22 45.2	-0.5
	baz=340							
TWQ1	Liyutan	0.96	270	*e*P		Pn	14 22 32.9	+0.2
	baz=268							
EHY	Hungye	0.96	209	*e*P		Pb	14 22 31.6	-0.4
	baz=212							
SMLT	Sun Moon Lake	0.97	241	*e*P		Pg	14 22 32.0	+0.1
	baz=239							
TYC	Yuchr	0.99	243	*e*P		Pb	14 22 32.2	-0.2
	baz=241							
JYNG	Yonaguni jima	1.03	85	P		Pg	14 22 33.2	+0.2
JYNG				*e*S		Sg	14 22 47.0	+0.7
YOJ	Yonaguni jima	1.09	84	P		Pb	14 22 33.9	-0.2
YOJ				*e*S		Sn	14 22 48.9	-0.6
YOJ	Yonaguni jima	1.09	84	*e*P		Pb	14 22 32.7	-1.4
	baz=73							
TWF1	Yuli	1.11	206	*e*P		Pb	14 22 33.6	-0.9
	baz=217							
YUS	Yu-Shan	1.18	223	*e*P		Pb	14 22 35.3	-0.6
	baz=231							
ALS	Alishan	1.26	228	*e*P		Pg	14 22 37.6	+0.1
	baz=226							
CHN5	Tsauling	1.29	234	*e*P		Pg	14 22 38.4	+0.3
	baz=223							
CHN5				S		Sg	14 22 57.3	+2.4
	baz=223							
ELDTW	Lidau	1.38	213	*e*P		Pb	14 22 38.8	-0.4
	baz=211							
CHN4	Tsaushan	1.51	229	*e*P		Pg	14 22 42.3	+0.1
	baz=227							
WTP	Ta-pu	1.57	225	*e*P		Pg	14 22 43.2	-0.1
	baz=210							
CHN1	Nanshi	1.67	226	*e*P		Pn	14 22 42.7	+0.3
	baz=225							
IRIF	Iriomote-Funau	1.74	90	*e*S		Sn	14 23 05.3	-0.3
JKRS	Kuro-shima	2.00	93	*e*S		Sn	14 23 12.1	+0.1
JISG	Ishigakijimahi	2.28	84	P		Pn	14 22 51.6	+0.8
JISG				*e*S		Sn	14 23 18.7	-0.2
JTJ	Tarama	2.64	83	*e*S		Sn	14 23 28.2	+0.5

DDA 19 14:22:36.5, 37°.83N×29°.67E, h7km, Md2.9, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DNZL	Cakiroluk	0.51	255	*i* P		Pg	14 22 45.9	-0.5
DNZL				*i* S		Sb	14 22 54.5	-1.1
KHAL	Karahalli	0.56	346	*i* P		Pg	14 22 47.6	+0.3
KHAL				*i* S		Sb	14 22 56.0	-1.0
GOLH	Golhisar	0.60	188	*i* P		Pg	14 22 46.8	-1.2
GOLH				*i* S		Sb	14 22 57.1	-0.9

*ISCJB **19** 14:24:16.8±1.2, 30°.30S±0°.05×71°.4W±0°.1, h74km±9km, Error ellipse: s-maj=18.4km s-min=7.4km az=171.8*
*SJA **19** 14:24:16.2±0.8, 30°.42S×71°.28W, h23km±22km, ML2.5, MW2.7*
*GUC **19** 14:24:17.2±0.5, 30°.25S×71°.16W, h75km±3km, ML3.0*
ISC 19 14:24:17.6±1.9, 30°.31S±0°.05×71°.4W±0°.1, h71km±12km, n15, σ1.9 66/20, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LSCH	La Serena	0.41	14	*i* P		Pn	14 24 29.5	-0.2
LSCH				*i* S		Sn	14 24 39.3	+0.8
LSCH				IAML			14 24 40.2	
	comp=N,1μm,0.3s							
TLL	Tololo Astrono	0.50	74	*i* P		Pn	14 24 30.5	-0.3
TLL				*i* S		Sn	14 24 40.2	-0.1
TLL				IAML			14 24 41.6	
	comp=E,1μm,0.4s							
LCO	Las Campanas	1.42	24	*i* P		Pn	14 24 41.6	-0.1
LCO				*i* S		Sn	14 24 60.0	+0.1
VACH	Vallenar	1.81	17	*i* P		Pn	14 24 46.1	-0.6
VACH				*i* S		Sn	14 25 07.9	-0.8
RTLS	Leoncito	2.31	131	*e*P		Pn	14 24 54.5	+0.8
RTLS				*e*S		Sn	14 25 22.6	+1.3
AUSP	Uspallata	2.55	139	*e*P		Pn	14 24 57.3	+0.4
AMOG	MOGNA	2.55	105	*e*P		Pn	14 24 57.6	+0.9
AGUA	GUANDACOL	2.62	72	*e*P		Pn	14 24 60.0	+2.2
ROC1	El Roble	2.67	174	*e*P		Pn	14 24 59.2	+0.6
RTCV	Cerro Valdivia	2.87	123	*e*P		Pn	14 25 01.3	+0.2
VCA	Vinchina	3.16	61	*e*P		Pn	14 25 07.3	+2.2
ARCO	CERRO ARCO	3.26	141	*e*P		Pn	14 25 07.8	+1.3
ARCO				IAML			14 25 48.6	
	comp=Z,11nm,0.8s							
AAGR	Agrelo	3.51	143	*e*P		Pn	14 25 11.0	+1.2
ACAN	Cantantal	4.07	120	*e*P		Pn	14 25 16.5	-1.0
MRA	San Martin	5.26	115	*e*S		Sn	14 26 28.2	-5.0
MRA				IAML			14 26 33.8	
	comp=Z,3.8nm,2.1s							

*IDC **19** 14:35:29.7±0.9, 2°.58N×125°.49E, h0km, mb3.8/7, mb1 3.9/7, mb1mx3.6/41, mbtmp3.8/7, Error ellipse: s-maj=89.9km s-min=16.8km az=72.0*
*ISCJB **19** 14:35:40.3±0.8, 2°.6N±0°.2×125°.6E±0°.5, h109km, mb3.7/7, Error ellipse: s-maj=80.8km s-min=11.8km az=162.7*
ISC 19 14:35:42.3±0.9, 2°.7N±0°.2×125°.7E±0°.6, h109km, n8, σ1.9 20/9, mb3.8/7, 1C, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CTBH	Cotabato--PC H	4.77	342	⇑*i*P		Pn	14 36 50.4	-1.7
WRA	Warramunga Arr	24.00	160	P		P	14 40 46.0	-1.1
	1.8nm,0.5s,baz=336,slow=11,SNR=21							
ASAR	Alice Springs

SUTC					*e*Sg		Sn	14 39 39.3	0.0
KMER	**Konya-Meram**	**0.69**	**50**		P		Pg	14 39 27.4	0.0
KMER					S		Sb	14 39 39.2	+0.6
KMER	**Konya-Meram**	**0.69**	**50**		*i* P		Pg	14 39 27.4	0.0
KMER					*i* S		Sb	14 39 39.2	+0.6
KONT	**Konya--Tatoy**	**0.81**	**40**		*e*PG		Pg	14 39 30.1	+0.4
KONT					*e*SG		Sg	14 39 39.3	-0.8
KONT	**Konya--Tatoy**	**0.81**	**40**		*e*Pg		Pg	14 39 30.1	+0.4
KONT					*e*Sg		Sg	14 39 39.3	-0.8
LADK	**Ladik-KONYA**	**1.01**	**31**		*e*PG		Pg	14 39 34.0	+0.3
LADK					*e*SG		Sg	14 39 46.4	-0.4
LADK	**Ladik-KONYA**	**1.01**	**31**		*e*Pg		Pg	14 39 34.0	+0.3
LADK					*e*Sg		Sg	14 39 46.4	-0.4
ERMK	**Ermenek**	**1.18**	**125**		P		Pb	14 39 36.8	-0.5
ERMK					S		Sn	14 39 55.2	+1.0
ERMK	**Ermenek**	**1.18**	**125**		*i* P		Pb	14 39 36.8	-0.5
ERMK					*i* S		Sn	14 39 55.2	+1.0
GAZI	**Gazipasa**	**1.20**	**156**		P		Pb	14 39 36.1	-1.2
GAZI					S		Sb	14 39 52.5	-0.6
GAZI	**Gazipasa**	**1.20**	**156**		*i* P		Pb	14 39 36.1	-1.2
GAZI					*i* S		Sb	14 39 52.5	-0.6
KDHN	**Kadinhani**	**1.23**	**15**		P		Pg	14 39 39.3	+1.4
KDHN					S		Sb	14 39 51.8	-2.5
KDHN	**Kadinhani**	**1.23**	**15**		*i* P		Pg	14 39 39.3	+1.4
KDHN					*i* S		Sb	14 39 51.8	-2.5
KIZT	**Kizilcal**	**1.56**	**5**		*e*PN		Pb	14 39 44.0	+0.4
KIZT	**Kizilcal**	**1.56**	**5**		*e*Pn		Pb	14 39 44.0	+0.4
KERG	**Konya-Eregli**	**1.93**	**87**		P		Pb	14 39 48.7	-1.3
KERG	**Konya-Eregli**	**1.93**	**87**		*i* P		Pb	14 39 48.6	-1.3
KERG					*i* S		Sg	14 40 18.1	+1.9
SVRH	**Sivrihisar-ESK**	**2.12**	**356**		*e*PN		Pb	14 39 52.4	-0.8
SVRH	**Sivrihisar-ESK**	**2.12**	**356**		*e*Pn		Pb	14 39 52.4	-0.8

*ROM **19** 14:50:51.5±0.1,39°.07N×15°.13E,h298km±2km,MI4.6/93, Error ellipse: s-maj=2.7km s-min=1.5km az=106.0*
*PDG **19** 14:50:51.2±0.6,39°.25N×15°.01E,h292km±2km,ML4.2/12, Error ellipse: s-maj=0.9km s-min=1.0km az=0.0*
*MOS **19** 14:50:53.6±1.1,39°.18N×14°.95E,h293km,mb4.7/56,Error ellipse: s-maj=4.6km s-min=2.9km az=71.4*
*LDG **19** 14:50:53.1±0.1,39°.20N×14°.99E,h280km,ms3.0/5,Error ellipse: s-maj=6.4km s-min=3.8km az=55.0*
*CRAAG **19** 14:50:53.0,39°.05N×15°.18E,MI4.7*
*CSEM **19** 14:50:53.8±0.1,39°.29N×14°.92E,h273km,mb4.6/65, ML5.0/21,Mw4.6,Error ellipse: s-maj=2.5km s-min=1.9km az=11.0*
*ISCJB **19** 14:50:53.4±0.1,39°.16N±0°.01×14°.96E±0°.01,h289km, mb4.6/103,Error ellipse: s-maj=1.9km s-min=1.4km az=10.9*
*IDC **19** 14:50:54.6±0.7,39°.22N×14°.86E,h290km±6km,mb4.2/25, mb1 4.4/37,mb1mx4.3/52,mbtmp4.9/37,Error ellipse: s-maj=7.2km s-min=6.7km az=131.0*
*NEIC **19** 14:50:54.0±0.2,39°.21N×14°.96E,h292km±2km,mb4.8/50, MW4.7(ROM),Error ellipse: s-maj=4.9km s-min=3.3km az=200.0*

ISC 19 14:50:53.6±0.4,39°.18N±0°.03×15°.00E±0°.03,h282km±3km, n1569,σ1º41/1722,mb4.7/105,217C-117D,Tyrrhenian Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STR3	**STROMBOLI 3**	**0.42**	**155**	⇓*i*Pg	**Pn**	**14 51 30.9**	**+0.8**
STR3				Sg	**S**	**14 51 59.3**	**+0.4**
STR3	**STROMBOLI 3**	**0.42**	**155**	⇓*i*Pg	**Pn**	**14 51 30.9**	**+0.8**
STR3				Sg	**S**	**14 51 59.3**	**+0.4**
IFIL	**Filicudi I Eol**	**0.70**	**209**	⇓*i*Pg	**Pn**	**14 51 31.5**	**+0.6**
IFIL				Sg	**S**	**14 52 00.1**	**-0.2**
9μm,1.3s							
IFIL	**Filicudi I Eol**	**0.70**	**209**	⇓*i*Pg	**Pn**	**14 51 31.5**	**+0.6**
IFIL				Sg	**S**	**14 52 00.1**	**-0.2**
9μm,1.3s							
LLI	**Lipari**	**0.74**	**183**	⇓*i*Pg	**Pn**	**14 51 31.8**	**+0.8**
8μm,0.6s							
LLI	**Lipari**	**0.74**	**183**	⇓*i*Pg	**Pn**	**14 51 31.8**	**+0.8**
8μm,0.6s							
VPL	**Vulcano Piano**	**0.80**	**181**	⇓*i*Pg	**Pn**	**14 51 31.4**	**+0.1**
VPL				Sg	**S**	**14 52 01.2**	**+0.1**
9μm,0.5s							
VPL	**Vulcano Piano**	**0.80**	**181**	⇓*i*Pg	**Pn**	**14 51 31.4**	**+0.1**
VPL				Sg	**S**	**14 52 01.2**	**+0.1**
9μm,0.5s							
IACL	**Alicudi**	**0.82**	**218**	⇓*i*Pg	**Pn**	**14 51 32.0**	**+0.7**
IACL				Sg	**S**	**14 52 01.4**	**+0.3**
10μm,1.5s							
IACL	**Alicudi**	**0.82**	**218**	⇓*i*Pg	**Pn**	**14 51 32.0**	**+0.7**
IACL				Sg	**S**	**14 52 01.4**	**+0.3**
10μm,1.5s							
JOPP	**Joppolo**	**0.90**	**129**	⇓*i*Pg	**Pn**	**14 51 31.3**	**-0.4**
JOPP				Sg	**S**	**14 52 00.2**	**-1.6**
12μm,0.9s							
JOPP	**Joppolo**	**0.90**	**129**	⇓*i*Pg	**Pn**	**14 51 31.3**	**-0.4**
JOPP				Sg	**S**	**14 52 00.2**	**-1.6**
12μm,0.9s							
MILZ	**Milazzo**	**0.93**	**169**	⇓*i*Pg	**Pn**	**14 51 31.5**	**-0.3**
MILZ				Sg	**S**	**14 52 01.3**	**-0.7**
5μm,0.7s							
MILZ	**Milazzo**	**0.93**	**169**	⇓*i*Pg	**Pn**	**14 51 31.5**	**-0.3**
MILZ				Sg	**S**	**14 52 01.3**	**-0.7**
5μm,0.7s							
BULG	**Bulgheria - Ca**	**0.94**	**18**	⇑*i*Pg	**Pn**	**14 51 33.5**	**+1.7**
BULG				Sg	**S**	**14 52 03.8**	**+1.7**
4μm,1.2s							
BULG	**Bulgheria - Ca**	**0.94**	**18**	⇑*i*Pg	**Pn**	**14 51 33.5**	**+1.7**
BULG				Sg	**S**	**14 52 03.8**	**+1.7**
4μm,1.2s							
CAR1	**CAROLEI**	**0.94**	**85**	⇓*i*Pg	**Pn**	**14 51 31.8**	**0.0**
CAR1				Sg	**S**	**14 52 01.0**	**-1.1**
7μm,0.6s							
CAR1	**CAROLEI**	**0.94**	**85**	⇓*i*Pg	**Pn**	**14 51 31.8**	**0.0**
CAR1				Sg	**S**	**14 52 01.0**	**-1.1**
7μm,0.6s							
MSRU	**Castanea**	**1.00**	**156**	⇓*i*Pg	**Pn**	**14 51 31.5**	**-0.7**
MSRU				Sg	**S**	**14 52 01.0**	**-1.7**
6μm,0.4s							
MSRU	**Castanea**	**1.00**	**156**	⇓*i*Pg	**Pn**	**14 51 31.5**	**-0.7**
MSRU				Sg	**S**	**14 52 01.0**	**-1.7**
6μm,0.4s							
CUC	**Castrocucco**	**1.03**	**38**	Pg	**Pn**	**14 51 33.2**	**+1.0**
CUC				Sg	**S**	**14 52 02.7**	**-0.1**
999nm,0.7s							
CUC	**Castrocucco**	**1.03**	**38**	*e*Pn	**Pn**	**14 51 33.2**	**+1.0**
CUC				*e*S	**S**	**14 52 02.7**	**-0.1**
CUC	**Castrocucco**	**1.03**	**38**	*e*Pn	**Pn**	**14 51 33.2**	**+1.0**
CUC				*e*S	**S**	**14 52 02.7**	**-0.1**
MGR	**Morigerati**	**1.04**	**24**	⇑*i*Pg	**Pn**	**14 51 33.6**	**+1.4**
MGR				Sg	**S**	**14 52 03.9**	**+1.1**
1μm,1.0s							
MGR	**Morigerati**	**1.04**	**24**	⇑*i*Pg	**Pn**	**14 51 33.6**	**+1.4**
MGR				Sg	**S**	**14 52 03.9**	**+1.1**
1μm,1.0s							
MPNC	**Port Mandanici**	**1.07**	**165**	⇓*i*Pg	**Pn**	**14 51 31.9**	**-0.6**
8μm,0.8s							
MPNC	**Port Mandanici**	**1.07**	**165**	⇓*i*Pg	**Pn**	**14 51 31.9**	**-0.6**
8μm,0.8s							
MSCL	**Scilla**	**1.13**	**147**	⇓*i*Pg	**Pn**	**14 51 32.1**	**-0.8**
MSCL				Sg	**S**	**14 52 02.4**	**-1.6**
9μm,0.7s							
MSCL	**Scilla**	**1.13**	**147**	⇓*i*Pg	**Pn**	**14 51 32.1**	**-0.8**
MSCL				Sg	**S**	**14 52 02.4**	**-1.6**
9μm,0.7s							
MCSR	**Castroreale**	**1.14**	**170**	⇓*i*Pg	**Pn**	**14 51 32.9**	**-0.1**
MCSR	**Castroreale**	**1.14**	**170**	⇓*i*Pg	**Pn**	**14 51 32.9**	**-0.1**
MUCR	**Ucria**	**1.14**	**185**	⇓*i*Pg	**Pn**	**14 51 32.6**	**-0.4**
MUCR	**Ucria**	**1.14**	**185**	⇓*i*Pg	**Pn**	**14 51 32.6**	**-0.4**
CEL	**Celeste**	**1.16**	**143**	Pg	**Pn**	**14 51 32.2**	**-0.8**
CEL	**Celeste**	**1.16**	**143**	⇓*i*Pn	**Pn**	**14 51 32.3**	**-0.8**
CEL				*e*S	**S**	**14 52 00.4**	**-3.8**
CEL	**Celeste**	**1.16**	**143**	⇓*i*Pn	**Pn**	**14 51 32.3**	**-0.8**
CEL				*e*S	**S**	**14 52 00.4**	**-3.8**
CMPR	**Campora**	**1.16**	**12**	⇑*i*Pg	**Pn**	**14 51 34.6**	**+1.7**
6μm,1.1s							
CMPR	**Campora**	**1.16**	**12**	⇑*i*Pg	**Pn**	**14 51 34.6**	**+1.7**
6μm,1.1s							
NOV	**Novara**	**1.16**	**175**	*e*P	**Pn**	**14 51 33.1**	**0.0**
NOV	**Novara**	**1.16**	**175**	⇓*e*Pg	**Pn**	**14 51 33.3**	**+0.2**
7μm,0.8s							
NOV	**Novara**	**1.16**	**175**	*e*P	**Pn**	**14 51 33.1**	**0.0**
GRI	**Girifalco**	**1.17**	**108**	⇓*e*Pg	**Pn**	**14 51 33.0**	**0.0**
GRI				Sg	**S**	**14 52 03.4**	**-0.7**
4μm,0.8s							
GRI	**Girifalco**	**1.17**	**108**		P	**Pn**	**14 51 33.0**	**0.0**
GRI					S	**S**	**14 52 03.0**	**-1.1**
GRI	**Girifalco**	**1.17**	**108**	⇓*e*Pg	**Pn**	**14 51 33.0**	**0.0**
GRI				Sg	**S**	**14 52 03.4**	**-0.7**
4μm,0.8s							
SIRI	**Monte Sirino -**	**1.20**	**34**	⇑*i*Pg	**Pn**	**14 51 34.2**	**+1.0**
1μm,0.9s							
SIRI	**Monte Sirino -**	**1.20**	**34**	⇑*i*Pg	**Pn**	**14 51 34.2**	**+1.0**
1μm,0.9s							
MTSN	**Montesano sull**	**1.23**	**28**	⇑*i*Pg	**Pn**	**14 51 34.3**	**+1.0**
423nm,1.1s							
MTSN	**Montesano sull**	**1.23**	**28**	⇑*i*Pg	**Pn**	**14 51 34.3**	**+1.0**
423nm,1.1s							
SALB	**San Lorenzo Be**	**1.25**	**56**	⇓*i*Pg	**Pn**	**14 51 34.7**	**+1.2**
SALB				Sg	**S**	**14 52 06.0**	**+0.9**
4μm,0.9s							
SALB	**San Lorenzo Be**	**1.25**	**56**	⇓*i*Pg	**Pn**	**14 51 34.7**	**+1.2**
SALB				Sg	**S**	**14 52 06.0**	**+0.9**
4μm,0.9s							
MMME	**Mongiuffi-Meli**	**1.26**	**171**	⇓*i*Pg	**Pn**	**14 51 33.8**	**+0.1**
5μm,0.8s							
MMME	**Mongiuffi-Meli**	**1.26**	**171**	⇓*i*Pg	**Pn**	**14 51 33.8**	**+0.1**
5μm,0.8s							
MNO	**Monte Soro**	**1.27**	**191**	⇓*i*Pg	**Pn**	**14 51 34.7**	**+0.8**
2μm,0.6s							
MNO	**Monte Soro**	**1.27**	**191**	⇓*i*Pg	**Pn**	**14 51 34.7**	**+0.8**
2μm,0.6s							
MCEL	**Monticello**	**1.30**	**28**	Pg	**Pn**	**14 51 35.0**	**+1.3**
1μm,0.9s							
MCEL	**Monticello**	**1.30**	**28**	Pg	**Pn**	**14 51 35.0**	**+1.3**
1μm,0.9s							
SCHR	**S. Chirico Rap**	**1.31**	**39**	⇓*e*Pg	**Pn**	**14 51 35.6**	**+1.8**
SCHR				Sg	**S**	**14 52 07.6**	**+1.9**
2μm,1.6s							
SERS	**Sersale**	**1.32**	**96**	⇓*i*Pg	**Pn**	**14 51 34.2**	**+0.2**
SERS				Sg	**S**	**14 52 04.3**	**-1.7**
4μm,0.7s							
SERS	**Sersale**	**1.32**	**96**	⇓*i*Pg	**Pn**	**14 51 34.2**	**+0.2**
SERS				Sg	**S**	**14 52 04.3**	**-1.7**
4μm,0.7s							
CDRU	**Civita di Ruta**	**1.33**	**10**	⇑*i*Pg	**Pn**	**14 51 35.6**	**+1.7**
CDRU				Sg	**S**	**14 52 06.6**	**+0.7**
1μm,1.1s							
CDRU	**Civita di Ruta**	**1.33**	**10**	⇑*i*Pg	**Pn**	**14 51 35.6**	**+1.7**
CDRU				Sg	**S**	**14 52 06.6**	**+0.7**
1μm,1.1s							
PLAC	**Placanica**	**1.34**	**123**	⇓*i*Pg	**Pn**	**14 51 33.9**	**-0.2**
PLAC				Sg	**S**	**14 52 04.6**	**-1.5**
7μm,0.6s							
PLAC	**Placanica**	**1.34**	**123**	⇓*i*Pg	**Pn**	**14 51 33.9**	**-0.2**
PLAC				Sg	**S**	**14 52 04.6**	**-1.5**
7μm,0.6s							
PLLN	**Pollina**	**1.36**	**210**	⇓*i*Pg	**Pn**	**14 51 34.5**	**+0.2**
PLLN				Sg	**S**	**14 52 05.9**	**-0.6**
4μm,0.9s							
PLLN	**Pollina**	**1.36**	**210**	⇓*i*Pg	**Pn**	**14 51 34.5**	**+0.2**
PLLN				Sg	**S**	**14 52 05.9**	**-0.6**
4μm,0.9s							
TIP	**Timpagrande**	**1.37**	**90**	P	**Pn**	**14 51 34.6**	**+0.4**
TIP	**Timpagrande**	**1.37**	**90**	⇓*i*Pg	**Pn**	**14 51 34.7**	**+0.5**
TIP				Sg	**S**	**14 52 04.8**	**-1.6**
7μm,0.7s							
TIP	**Timpagrande**	**1.37**	**90**	P	**Pn**	**14 51 34.6**	**+0.4**
TIP				Sg	**S**	**14 52 04.8**	**-1.6**
7μm,0.7s							
TIP	**Timpagrande**	**1.37**	**90**	P	**Pn**	**14 51 34.6**	**+0.4**
SOI	**Samo**	**1.38**	**143**	⇓*i*Pg	**Pn**	**14 51 33.8**	**-0.5**
SOI				Sg	**S**	**14 52 05.5**	**-1.0**
4μm,0.7s							
SOI	**Samo**	**1.38**	**143**	⇓*i*Pg	**Pn**	**14 51 33.8**	**-0.5**
SOI				Sg	**S**	**14 52 05.5**	**-1.0**
4μm,0.7s							
GIB	**Gibilmanna**	**1.41**	**213**	⇓*i*Pg	**Pn**	**14 51 34.7**	**+0.1**
4μm,0.7s							
GIB	**Gibilmanna**	**1.41**	**213**	⇓*i*Pg	**Pn**	**14 51 34.7**	**+0.1**
4μm,0.7s							
ORI	**Oriolo Calabro**	**1.42**	**51**	⇓*i*Pg	**Pn**	**14 51 35.8**	**+1.4**
4μm,0.5s							
ORI	**Oriolo Calabro**	**1.42**	**51**	⇓*i*Pg	**Pn**	**14 51 35.8**	**+1.4**
4μm,0.5s							
PIPA	**Pietrapaola**	**1.44**	**77**	⇓*i*Pg	**Pn**	**14 51 35.2**	**+0.6**
PIPA				Sg	**S**	**14 52 07.0**	**-0.1**
4μm,0.5s							
PIPA	**Pietrapaola**	**1.44**	**77**	⇓*i*Pg	**Pn**	**14 51 35.2**	**+0.6**
PIPA				Sg	**S**	**14 52 07.0**	**-0.1**
4μm,0.5s							
MPAZ	**Palizzi**	**1.46**	**147**	⇓*i*Pg	**Pn**	**14 51 34.3**	**-0.5**
4μm,0.4s							
MPAZ	**Palizzi**	**1.46**	**147**	⇓*i*Pg	**Pn**	**14 51 34.3**	**-0.5**
4μm,0.4s							
ESLN	**Serra La Nave**	**1.49**	**181**	⇓*i*Pg	**Pn**	**14 51 35.2**	**-0.1**
4μm,1.0s							
ESLN	**Serra La Nave**	**1.49**	**181**	⇓*i*Pg	**Pn**	**14 51 35.2**	**-0.1**
4μm,1.0s							
USI	**Ustica**	**1.50**	**252**	⇑*i*Pg	**Pn**	**14 51 36.0**	**+1.0**
3μm,0.8s							
USI	**Ustica**	**1.50**	**252**	⇑*i*Pg	**Pn**	**14 51 36.0**	**+1.0**
3μm,0.8s							
GALF	**Gagliano Caste**	**1.51**	**193**	⇓*i*Pg	**Pn**	**14 51 35.8**	**+0.6**
2μm,0.7s							
GALF	**Gagliano Caste**	**1.51**	**193**	⇓*i*Pg	**Pn**	**14 51 35.8**	**+0.6**
2μm,0.7s							
PTRP	**Pietrapertosa**	**1.57**	**31**	⇑*i*Pg	**Pn**	**14 51 37.2**	**+1.7**
2μm,1.1s							
PTRP	**Pietrapertosa**	**1.57**	**31**	⇑*i*Pg	**Pn**	**14 51 37.2**	**+1.7**
2μm,1.1s							
SOLUN	**Solunto**	**1.58**	**227**	⇑*i*Pg	**Pn**	**14 51 35.9**	**+0.3**
SOLUN				Sg	**S**	**14 52 08.4**	**-0.5**
2μm,0.8s							
SOLUN	**Solunto**	**1.58**	**227**	⇑*i*Pg	**Pn**	**14 51 35.9**	**+0.3**
SOLUN				Sg	**S**	**14 52 08.4**	**-0.5**
2μm,0.8s							
ECNV	**Catenanuova**	**1.60**	**188**	⇓*i*Pg	**Pn**	**14 51 36.8**	**+1.0**
6μm,0.9s							
ECNV	**Catenanuova**	**1.60**	**188**	⇓*i*Pg	**Pn**	**14 51 36.8**	**+1.0**
6μm,0.9s							
MCRV	**Calabrutti - M**	**1.60**	**5**	⇑*i*Pg	**Pn**	**14 51 37.8**	**+2.0**
MCRV				Sg	**S**	**14 52 11.3**	**+2.0**
1μm,0.8s							
MCRV	**Calabrutti - M**	**1.60**	**5**	⇑*i*Pg	**Pn**	**14 51 37.8**	**+2.0**
MCRV				Sg	**S**	**14 52 11.3**	**+2.0**
1μm,0.8s							
CAGR	**Agira**	**1.61**	**194**	⇓*i*Pg	**Pn**	**14 51 36.9**	**+1.0**
2μm,0.6s							
CAGR	**Agira**	**1.61**	**194**	⇓*i*Pg	**Pn**	**14 51 36.9**	**+1.0**
2μm,0.6s							
MRLC	**Muro Lucano**	**1.62**	**13**	⇑*i*Pg	**Pn**	**14 51 37.6**	**+1.8**
MRLC				Sg	**S**	**14 52 11.8**	**+2.5**
1μm,1.6s							
MRLC	**Muro Lucano**	**1.62**	**13**	⇑*i*Pg	**Pn**	**14 51 37.6**	**+1.8**
MRLC				Sg	**S**	**14 52 11.8**	**+2.5**
1μm,1.6s							
MPG	**Monte Pellegri**	**1.64**	**232**	⇑*i*Pg	**Pn**	**14 51 36.6**	**+0.5**
MPG				Sg	**S**	**14 52 10.2**	**+0.5**
1μm,0.8s							
MPG	**Monte Pellegri**	**1.64**	**232**	⇑*i*Pg	**Pn**	**14 51 36.6**	**+0.5**
MPG				Sg	**S**	**14 52 10.2**	**+0.5**
1μm,0.8s							
RESU	**Resuttano**	**1.70**	**206**	⇓*i*Pg	**Pn**	**14 51 37.6**	**+1.0**
2μm,0.6s							
RESU	**Resuttano**	**1.70**	**206**	⇓*i*Pg	**Pn**	**14 51 37.6**	**+1.0**
2μm,0.6s							
ALJA	**Alia**	**1.73**	**215**	⇓*i*Pg	**Pn**	**14 51 37.7**	**+0.9**
ALJA				Sg	**S**	**14 52 12.4**	**+1.3**
17μm,1.6s							
ALJA	**Alia**	**1.73**	**215**	⇓*i*Pg	**Pn**	**14 51 37.7**	**+0.9**
ALJA				Sg	**S**	**14 52 12.4**	**+1.3**
17μm,1.6s							
SNAL	**S. Angelo Dei**	**1.75**	**5**	⇑*i*Pg	**Pn**	**14 51 38.7**	**+1.9**
1μm,0.8s							
SNAL	**S. Angelo Dei**	**1.75**	**5**	⇑*i*Pg	**Pn**	**14 51 38.7**	**+1.9**
1μm,0.8s							
ACER	**Acerenza**	**1.76**	**24**	⇑*i*Pg	**Pn**	**14 51 37.8**	**+0.9**
2μm,0.9s							
ACER	**Acerenza**	**1.76**	**24**	⇑*i*Pg	**Pn**	**14 51 37.8**	**+0.9**
2μm,0.9s							
VAE	**Valguarnera**	**1.76**	**195**	P	**Pn**	**14 51 37.5**	**+0.4**
43nm,0.3s,baz=30,slow=0.9,SNR=28							
VAE					S	**S**	**14 52 17.6**	**+6.1**
40nm,0.3s,baz=185,slow=23,SNR=5.6							
OC9	**Casamicciola**	**1.77**	**332**	Pg	**Pn**	**14 51 38.7**	**+1.8**
OC9	**Casamicciola**	**1.77**	**332**	Pg	**Pn**	**14 51 38.7**	**+1.8**
MIGL	**Miglionico**	**1.80**	**38**	⇑*i*Pg	**Pn**	**14 51 37.5**	**+0.3**
MIGL				Sg	**S**	**14 52 11.9**	**+0.2**
5μm,0.9s							
MIGL	**Miglionico**	**1.80**	**38**	⇑*i*Pg	**Pn**	**14 51 37.5**	**+0.3**
MIGL				Sg	**S**	**14 52 11.9**	**+0.2**
5μm,0.9s							
VULT	**Monte Vulture**	**1.83**	**15**	⇑*i*Pg	**Pn**	**14 51 38.8**	**+1.3**
855nm,1.0s							
VULT	**Monte Vulture**	**1.83**	**15**	⇑*i*Pg	**Pn**	**14 51 38.8**	**+1.3**
855nm,1.0s							
HLNI	**Lentini**	**1.83**	**183**	⇓*i*Pg	**Pn**	**14 51 37.1**	**-0.4**
HLNI				Sg	**S**	**14 52 11.1**	**-1.3**
1μm,0.8s							
HLNI	**Lentini**	**1.83**	**183**	⇓*i*Pg	**Pn**	**14 51 37.1**	**-0.4**
HLNI				Sg	**S**	**14 52 11.1**	**-1.3**
1μm,0.8s							
CAFE	**Carife**	**1.85**	**6**	⇑*i*Pg	**Pn**	**14 51 39.8**	**+2.2**
1μm,1.5s							
CAFE	**Carife**	**1.85**	**6**	⇑*i*Pg	**Pn**	**14 51 39.8**	**+2.2**
1μm,1.5s							
PAOL	**Paolisi**	**1.88**	**350**	⇑*i*Pg	**Pn**	**14 51 39.6**	**+1.8**
747nm,0.6s							
PAOL	**Paolisi**	**1.88**	**350**	⇑*i*Pg	**Pn**	**14 51 39.6**	**+1.8**
747nm,0.6s							
HAGA	**Augusta**	**1.90**	**176**	⇓*i*Pg	**Pn**	**14 51 37.5**	**-0.5**
3μm,0.7s							
HAGA	**Augusta**	**1.90**	**176**	⇓*i*Pg	**Pn**	**14 51 37.5**	**-0.5**
3μm,0.7s							
PALZ	**Palazzo San Ge**	**1.91**	**22**	⇑*i*Pg	**Pn**	**14 51 38.9**	**+0.9**
2μm,1.4s							
PALZ	**Palazzo San Ge**	**1.91**	**22**	⇑*i*Pg	**Pn**	**14 51 38.9**	**+0.9**
2μm,1.4s							
MRB1	**Monte Rocchett**	**1.94**	**359**	⇑*i*Pg	**Pn**	**14 51 40.6**	**+2.3**
2μm,0.7s							
MRB1	**Monte Rocchett**	**1.94**	**359**	⇑*i*Pg	**Pn**	**14 51 40.6**	**+2.3**
2μm,0.7s							
MATE	**Matera**	**1.97**	**41**	⇑*i*P	**Pn**	**14 51 38.4**	**0.0**
SGTA	**Sant Agata di**	**1.97**	**8**	⇑*i*Pg	**Pn**	**14 51 40.5**	**+2.0**
440nm,0.8s							
SGTA	**Sant Agata di**	**1.97**	**8**	⇑*i*Pg	**Pn**	**14 51 40.5**	**+2.0**
440nm,0.8s							
HVZN	**Vizzini**	**2.01**	**186**	⇓*i*Pg	**Pn**	**14 51 38.9**	**-0.2**
4μm,0.4s							
HVZN	**Vizzini**	**2.01**	**186**	⇓*i*Pg	**Pn**	**14 51 38.9**	**-0.2**
4μm,0.4s							
VENT	**Ventotene**	**2.01**	**324**	⇑*i*Pg	**Pn**	**14 51 40.8**	**+2.0**
2μm,1.1s							
VENT	**Ventotene**	**2.01**	**324**	⇑*i*Pg	**Pn**	**14 51 40.8**	**+2.0**
2μm,1.1s							
RAFF	**Raffo Rosso**	**2.02**	**195**	⇓*i*Pg	**Pn**	**14 51 39.1**	**0.0**
2μm,0.9s							
RAFF	**Raffo Rosso**	**2.02**	**195**	⇓*i*Pg	**Pn**	**14 51 39.1**	**0.0**
2μm,0.9s							
SSY	**Sortino**	**2.03**	**178**	⇓*i*Pg	**Pn**	**14 51 38.8**	**-0.3**
3μm,0.5s							
SSY	**Sortino**	**2.03**	**178**	⇓*i*Pg	**Pn**	**14 51 38.8**	**-0.3**
3μm,0.5s							
PSB1	**Pescosannita**	**2.04**	**356**	⇑*i*Pg	**Pn**	**14 51 41.4**	**+2.3**
981nm,0.9s							
PSB1	**Pescosannita**	**2.04**	**356**	⇑*i*Pg	**Pn**	**14 51 41.4**	**+2.3**
981nm,0.9s							
MRVN	**Minervino Murg**	**2.09**	**26**	⇑*i*Pg	**Pn**	**14 51 39.9**	**+0.4**
2μm,1.6s							
MRVN	**Minervino Murg**	**2.09**	**26**	⇑*i*Pg	**Pn**	**14 51 39.9**	**+0.4**
2μm,1.6s							
AMUR	**Altamura**	**2.12**	**35**	⇑*i*Pg	**Pn**	**14 51 39.9**	**+0.2**
1μm,0.9s							
AMUR	**Altamura**	**2.12**	**35**	⇑*i*Pg	**Pn**	**14 51 39.9**	**+0.2**
1μm,0.9s							
CLTB	**Caltabellotta**	**2.13**	**222**	⇓*i*Pg	**Pn**	**14 51 40.4**	**+0.4**
6μm,0.5s							
CLTB	**Caltabellotta**	**2.13**	**222**	⇓*i*Pg	**Pn**	**14 51 40.4**	**+0.4**
6μm,0.5s							
CLTB				*e*S	**S**	**14 52 15.9**	**-1.0**
CLTB	**Caltabellotta**	**2.13**	**222**	*e*Pn	**Pn**	**14 51 40.4**	**+0.4**
CLTB				*e*S	**S**	**14 52 15.9**	**-1.0**
**MOD

262nm,0.7s
TERO Teramo 3.59 343⇑*i*Pg Pn 14 51 56.8 +2.4
482nm,1.5s
TERO Teramo 3.59 343⇑*i*Pg Pn 14 51 56.8 +2.4
482nm,1.5s
TOLF Tolfa 3.67 323⇑*i*Pg Pn 14 51 57.4 +2.2
385nm,1.1s
TOLF Tolfa 3.67 323⇑*i*Pg Pn 14 51 57.4 +2.2
385nm,1.1s
LNSS Leonessa 3.73 337⇑*i*Pg Pn 14 51 58.3 +2.4
228nm,0.8s
LNSS Leonessa 3.73 337⇑*i*Pg Pn 14 51 58.3 +2.4
228nm,0.8s
KEK Kerkira 3.75 80 P Pn 14 51 56.3 +0.2
KEK Kerkira 3.75 80⇓*i*Pg Pn 14 51 56.4 +0.3
506nm,0.9s
KEK Kerkira 3.75 80⇓*i*Pg Pn 14 51 56.4 +0.3
506nm,0.9s
KEK Kerkira 3.75 80 P Pn 14 51 56.3 +0.2
NRCA Norcia 3.92 339⇑*i*Pg Pn 14 52 00.4 +2.5
216nm,1.1s
NRCA Norcia 3.92 339⇑*i*Pg Pn 14 52 00.4 +2.5
216nm,1.1s
SGD Sagiada 4.08 82 P Pn 14 52 00.2 +0.5
FDMO Fiordimonte 4.11 340⇑*i*Pg Pn 14 52 02.9 +2.8
2um,3.8s
FDMO Fiordimonte 4.11 340⇑*i*Pg Pn 14 52 02.9 +2.8
2um,3.8s
IGT Igoumenitsa 4.15 83 P Pn 14 52 01.1 +0.5
IGT Igoumenitsa 4.15 83 P Pn 14 52 01.1 +0.5
IGT Igoumenitsa 4.15 83 P Pn 14 52 01.1 +0.5
IGT Igoumenitsa 4.15 83 P Pn 14 52 01.1 +0.5
HCY Herceg Novi 4.20 38⇓*i*Pn Pn 14 52 01.6 +0.5
HCY *e*Sn S 14 52 52.1 -3.0
HCY Herceg Novi 4.20 38⇓*i*Pn Pn 14 52 01.6 +0.5
HCY *e*Sn S 14 52 52.1 -3.0
ULC Ulcinj 4.26 48⇑*i*Pn Pn 14 52 02.3 +0.5
ULC *e*Sn S 14 52 54.4 -2.0
ULC Ulcinj 4.26 48⇑*i*Pn Pn 14 52 02.3 +0.5
ULC *e*Sn S 14 52 54.4 -2.0
BUM Brajici-Budva 4.29 42⇑*i*Pn Pn 14 52 02.6 +0.4
BUM *e*Sn S 14 52 55.0 -2.1
BUM Brajici-Budva 4.29 42⇑*i*Pn Pn 14 52 02.6 +0.4
BUM *e*Sn S 14 52 55.0 -2.1
TIR Tirane 4.30 58⇓*i*P Pn 14 52 03.5 +1.2
TIR Tirane 4.30 58 *e*P Pn 14 52 02.7 +0.4
TIR Tirane 4.30 58 *e*P Pn 14 52 02.7 +0.4
TIR Tirane 4.30 58 *e*P Pn 14 52 02.7 +0.4
MGAB Montegabbione 4.32 331⇑*i*Pg Pn 14 52 05.0 +2.6
175nm,1.3s
MGAB Montegabbione 4.32 331⇑*i*Pg Pn 14 52 05.0 +2.6
175nm,1.3s
VSL Villasalto 4.37 276 *e*P Pn 14 52 04.7 +1.6
VSL Villasalto 4.37 276 *e*P Pn 14 52 04.7 +1.6
DRME Dracevica, Mon 4.37 45⇓*i*Pn Pn 14 52 04.0 +0.9
DRME *e*Sn S 14 52 56.6 -2.0
DRME Dracevica, Mon 4.37 45⇓*i*Pn Pn 14 52 04.0 +0.9
DRME *e*Sn S 14 52 56.6 -2.0
MAON Monte Argentar 4.37 319⇑*i*Pg Pn 14 52 05.3 +2.3
462nm,1.7s
MAON Monte Argentar 4.37 319⇑*i*Pg Pn 14 52 05.3 +2.3
462nm,1.7s
LKD2 Lefkada island 4.43 93 P Pn 14 52 04.5 +0.7
LKD2 Lefkada island 4.43 93 P Pn 14 52 04.5 +0.7
LKD2 Lefkada island 4.43 93 P Pn 14 52 04.5 +0.7
CEME Cevo 4.49 40⇓*i*Pn Pn 14 52 04.8 +0.4
CEME *e*Sn S 14 52 59.0 -2.1
CEME Cevo 4.49 40⇓*i*Pn Pn 14 52 04.8 +0.4
CEME *e*Sn S 14 52 59.0 -2.1
VLS Valsamata 4.49 101 P Pn 14 52 04.9 +0.4
VLS Valsamata 4.49 101 P Pn 14 52 04.9 +0.4
VLS Valsamata 4.49 101 P Pn 14 52 04.9 +0.4
VLS Valsamata 4.49 101 P Pn 14 52 04.9 +0.4
JAN Janina 4.56 82 P Pn 14 52 06.7 +1.4
JAN Janina 4.56 82 P Pn 14 52 06.7 +1.4
JAN Janina 4.56 82 P Pn 14 52 06.7 +1.4
JAN Janina 4.56 82 P Pn 14 52 06.7 +1.4
PDG Podgorica 4.58 44⇓*i*Pn Pn 14 52 06.4 +1.0
PDG *e*Sn S 14 53 00.6 -2.3
TTG Podgorica 4.58 44⇓*i*Pn Pn 14 52 06.4 +1.0
TTG *e*Sn S 14 53 00.6 -2.3
TTG Podgorica 4.58 44 P Pn 14 52 07.2 +1.8
TTG Podgorica 4.58 44 P Pn 14 52 07.2 +1.8
TTG Podgorica 4.58 44 P Pn 14 52 07.2 +1.8
BRY Bratogost 4.58 35 *e*Pn Pn 14 52 06.0 +0.4
BRY *e*Sn S 14 53 00.8 -2.4
BRY Bratogost 4.58 35 *e*Pn Pn 14 52 06.0 +0.4
BRY *e*Sn S 14 53 00.8 -2.4
KFL Anninata 4.66 101 P Pn 14 52 06.9 +0.5
NKME Niksic 4.67 39 *e*Pn Pn 14 52 07.0 +0.5
NKME *e*Sn S 14 53 03.1 -1.8
NKME Niksic 4.67 39 *e*Pn Pn 14 52 07.0 +0.5
NKME *e*Sn S 14 53 03.1 -1.8
NKY Niksic 4.72 39⇑*i*Pn Pn 14 52 07.5 +0.3
NKY *e*Sn S 14 53 03.8 -2.3
NKY Niksic 4.72 39⇑*i*Pn Pn 14 52 07.5 +0.3
NKY *e*Sn S 14 53 03.8 -2.3
DSL Palaion Diasel 4.74 89 P Pn 14 52 08.5 +1.1
DSL Palaion Diasel 4.74 89 P Pn 14 52 08.5 +1.1
DSL Palaion Diasel 4.74 89 P Pn 14 52 08.5 +1.1
ZKS Zakynthos 4.78 106 P Pn 14 52 08.1 +0.2
OHR Ohrid 4.84 65 *i*Pn Pn 14 52 10.1 +1.5
PDO Prodromos 4.86 95 P Pn 14 52 10.0 +1.2
KPRO Kipourio 4.98 79 P Pn 14 52 12.3 +2.1
UPM Unac-Piva 4.98 35⇓*i*Pn Pn 14 52 10.8 +0.5
UPM *e*Sn S 14 53 09.1 -2.7
UPM Unac-Piva 4.98 35⇓*i*Pn Pn 14 52 10.8 +0.5
UPM *e*Sn S 14 53 09.1 -2.7
PVY Plav 5.07 46⇓*i*Pn Pn 14 52 12.4 +1.0
PVY *e*Sn S 14 53 11.5 -2.2
PVY Plav 5.07 46⇓*i*Pn Pn 14 52 12.4 +1.0
PVY *e*Sn S 14 53 11.5 -2.2
PVO Paravola 5.12 94 P Pn 14 52 13.7 +1.8
FNA Florina 5.15 70 *e*P Pn 14 52 14.4 +2.2
FNA Florina 5.15 70 P Pn 14 52 13.3 +1.0
FNA Florina 5.15 70 P Pn 14 52 13.3 +1.0
FNA Florina 5.15 70 P Pn 14 52 13.3 +1.0
FNA Florina 5.15 70 P Pn 14 52 13.3 +1.0
BIA Bitola 5.18 67 *i*Pn Pn 14 52 13.1 +0.5
RLS Riolos of Patr 5.19 100 P Pn 14 52 14.0 +1.3
RLS Riolos of Patr 5.19 100 P Pn 14 52 14.0 +1.3
RLS Riolos of Patr 5.19 100 P Pn 14 52 14.0 +1.3
BEY Berane 5.22 44 *e*Pn Pn 14 52 14.6 +1.5
BEY *e*Sn S 14 53 14.6 -2.2
IVA Berane 5.22 44 *e*Pn Pn 14 52 14.6 +1.5
IVA *e*Sn S 14 53 14.6 -2.2
PLE Pljevlja 5.30 37⇑*i*Pn Pn 14 52 14.9 +0.8
PLE *e*Sn S 14 53 16.4 -2.2
PLE Pljevlja 5.30 37⇑*i*Pn Pn 14 52 14.9 +0.8
PLE *e*Sn S 14 53 16.4 -2.2
EVR Evrytania 5.31 91 P Pn 14 52 16.2 +2.0
EVR Evrytania 5.31 91 P Pn 14 52 16.2 +2.0
EVR Evrytania 5.31 91 P Pn 14 52 16.2 +2.0
KZN Kozani 5.34 76 P Pn 14 52 15.9 +1.4
KZN Kozani 5.34 76 P Pn 14 52 15.9 +1.4
KZN Kozani 5.34 76 P Pn 14 52 15.9 +1.4
KZN Kozani 5.34 76 P Pn 14 52 15.9 +1.4
UDBI Udbina 5.37 6 P Pn 14 52 17.1 +2.3
NVLJ Novalja 5.38 359 P Pn 14 52 15.9 +1.2
UPR University Cam 5.38 97 P Pn 14 52 18.6 +3.6
DRO Drossia 5.40 101 P Pn 14 52 16.8 +1.5
ANX Ano Chora 5.43 94 P Pn 14 52 17.9 +2.2
EFP Efpalio 5.45 96 P Pn 14 52 17.7 +1.9
THL Klokotos Trika 5.45 84 P Pn 14 52 17.2 +1.4
AMT Artemida-Makis 5.53 105 P Pn 14 52 17.7 +0.9
SKO Skopje 5.64 58 P Pn 14 52 19.2 +1.2
SKO Skopje 5.64 58 *i*Pn Pn 14 52 19.2 +1.2
SKO Skopje 5.64 58 P Pn 14 52 19.2 +1.2
SKO Skopje 5.64 58 P Pn 14 52 19.2 +1.2
SKO Skopje 5.64 58 P Pn 14 52 19.2 +1.2
PGF Pioggiola 5.66 308 *e*P Pn 14 52 20.0 +1.7
PGF Pioggiola 5.66 308 *e*P Pn 14 52 20.0 +1.7
KEST Kesra 5.66 234 P Pn 14 52 20.2 +1.7
3.5nm,0.3s,baz=309,slow=3.6,SNR=80
KEST S S 14 53 26.2 -0.5
baz=274,slow=16,SNR=2.3
AGG Agios Georgios 5.71 89 *e*P Pn 14 52 20.6 +1.7
AGG Agios Georgios 5.71 89 P Pn 14 52 20.9 +2.0
AGG Agios Georgios 5.71 89 P Pn 14 52 20.9 +2.0
AGG Agios Georgios 5.71 89 P Pn 14 52 20.9 +2.0
AGG Agios Georgios 5.71 89 P Pn 14 52 20.9 +2.0
KLV Kalavryta, Ach 5.72 99 P Pn 14 52 20.6 +1.5
KLV Kalavryta, Ach 5.72 99 P Pn 14 52 20.6 +1.5
KLV Kalavryta, Ach 5.72 99 P Pn 14 52 20.6 +1.5
PYL PYLOS 5.79 111 P Pn 14 52 20.3 +0.4
PYL PYLOS 5.79 111 P Pn 14 52 20.3 +0.4
PYL PYLOS 5.79 111 P Pn 14 52 20.3 +0.4
BLY Banja Luka 5.79 16⇓*i*P Pn 14 52 21.4 +1.6
ITM Ithomi 5.81 108 P Pn 14 52 21.2 +1.0
ITM Ithomi 5.81 108 P Pn 14 52 21.2 +1.0
ITM Ithomi 5.81 108 P Pn 14 52 21.2 +1.0
LIT Litokhoron 5.86 79 P Pn 14 52 21.8 +1.1
LIT Litokhoron 5.86 79 P Pn 14 52 21.8 +1.1
LIT Litokhoron 5.86 79 P Pn 14 52 21.8 +1.1
LIT Litokhoron 5.86 79 P Pn 14 52 21.8 +1.1
DSF Desfina 5.93 95 P Pn 14 52 23.0 +1.3
DSF Desfina 5.93 95 P Pn 14 52 23.0 +1.3
DSF Desfina 5.93 95 P Pn 14 52 23.0 +1.3
GRG Griva 5.95 70 *e*P Pn 14 52 22.9 +1.1
GRG Griva 5.95 70 P Pn 14 52 22.7 +0.9
GRG Griva 5.95 70 P Pn 14 52 22.7 +0.9
GRG Griva 5.95 70 P Pn 14 52 22.7 +0.9
GRG Griva 5.95 70 P Pn 14 52 22.7 +0.9
VLX Vlachokerasia 6.08 105 P Pn 14 52 24.9 +1.3
VLX Vlachokerasia 6.08 105 P Pn 14 52 24.9 +1.3
VLX Vlachokerasia 6.08 105 P Pn 14 52 24.9 +1.3
FYTO Fytoko, Volos 6.16 85 P Pn 14 52 25.7 +1.3
FYTO Fytoko, Volos 6.16 85 P Pn 14 52 25.7 +1.3
FYTO Fytoko, Volos 6.16 85 P Pn 14 52 25.7 +1.3
VAY Valandovo 6.17 67 P Pn 14 52 25.3 +0.8
VAY Valandovo 6.17 67 *i*Pn Pn 14 52 24.8 +0.4
VAY Valandovo 6.17 67 P Pn 14 52 25.3 +0.8
VAY Valandovo 6.17 67 P Pn 14 52 25.3 +0.8
VAY Valandovo 6.17 67 P Pn 14 52 25.3 +0.8
LKR Lokris 6.26 92 P Pn 14 52 27.8 +2.2
LKR Lokris 6.26 92 P Pn 14 52 27.8 +2.2
LKR Lokris 6.26 92 P Pn 14 52 27.8 +2.2
THE Thessaloniki 6.29 74 P Pn 14 52 26.7 +0.8
THE Thessaloniki 6.29 74 P Pn 14 52 26.7 +0.8
THE Thessaloniki 6.29 74 P Pn 14 52 26.7 +0.8
THE Thessaloniki 6.29 74 P Pn 14 52 26.7 +0.8
BOJS Bojanci 6.32 2 *i*P Pn 14 52 28.1 +1.9
BOJS *e*S S 14 53 40.3 -0.5
comp=Z,456nm,1.7s
LTK Loutraki 6.35 98 P Pn 14 52 27.4 +0.7
LTK Loutraki 6.35 98 P Pn 14 52 27.4 +0.7
LTK Loutraki 6.35 98 P Pn 14 52 27.4 +0.7
KNDS Knezji Dol 6.36 356 *i*P Pn 14 52 28.1 +1.4
KNDS *i*S S 14 53 42.3 +0.6
XOR Xorichti 6.36 86 P Pn 14 52 28.1 +1.3
XOR Xorichti 6.36 86 P Pn 14 52 28.1 +1.3
XOR Xorichti 6.36 86 P Pn 14 52 28.1 +1.3
KNT Kendrikon 6.37 69 *e*P Pn 14 52 28.4 +1.6
KNT Kendrikon 6.37 69 P Pn 14 52 27.9 +1.1
KNT Kendrikon 6.37 69 P Pn 14 52 27.9 +1.1
KNT Kendrikon 6.37 69 P Pn 14 52 27.9 +1.1
KNT Kendrikon 6.37 69 P Pn 14 52 27.9 +1.1
NEO Neokhori 6.39 86 P Pn 14 52 28.6 +1.4
NEO Neokhori 6.39 86 P Pn 14 52 28.6 +1.4
NEO Neokhori 6.39 86 P Pn 14 52 28.6 +1.4
HORT Hortiatis 6.39 75 *e*P Pn 14 52 28.6 +1.3
HORT Hortiatis 6.39 75 P Pn 14 52 27.7 +0.5
HORT Hortiatis 6.39 75 P Pn 14 52 27.7 +0.5
HORT Hortiatis 6.39 75 P Pn 14 52 27.7 +0.5
SMIA Simia 6.40 90 P Pn 14 52 28.4 +1.1
CMAH Djebel Manchou 6.51 249 P Pn 14 52 29.5 +0.7
CMAH Djebel Manchou 6.51 249 P Pn 14 52 29.5 +0.7
TRI Trieste 6.58 352 P Pn 14 52 30.4 +1.0
TRI pmax pmax
comp=Z,222nm,0.7s
TRI Trieste 6.58 352 *e*Pn Pn 14 52 29.6 +0.2
comp=Z,139nm,0.6s
TRI Trieste 6.58 352 P Pn 14 52 30.4 +1.0
comp=Z,222nm,0.7s
TRI Trieste 6.58 352 *e*Pn Pn 14 52 29.6 +0.2
comp=Z,139nm,0.6s
PLG Polygyros 6.62 77 P Pn 14 52 29.9 0.0
PLG Polygyros 6.62 77 P Pn 14 52 29.9 0.0
PLG Polygyros 6.62 77 P Pn 14 52 29.9 0.0
PLG Polygyros 6.62 77 P Pn 14 52 29.9 0.0
VISS Visnje 6.62 359 *i*P Pn 14 52 31.4 +1.6
VISS *i*S S 14 53 47.5 +0.1
SOH Sokhos 6.62 73 P Pn 14 52 31.1 +1.1
SOH Sokhos 6.62 73 P Pn 14 52 31.1 +1.1
SOH Sokhos 6.62 73 P Pn 14 52 31.1 +1.1
SOH Sokhos 6.62 73 P Pn 14 52 31.1 +1.1
ABSA Djebel Ababsia 6.63 246 P Pn 14 52 31.4 +1.1
ABSA Djebel Ababsia 6.63 246 P Pn 14 52 31.4 +1.1
KRND KRANIDI 6.66 103 P Pn 14 52 30.8 +0.3
DID Didima 6.69 102 P Pn 14 52 30.9 0.0
DID Didima 6.69 102 P Pn 14 52 30.9 0.0
DID Didima 6.69 102 P Pn 14 52 30.9 0.0
KKB Krupnik 6.72 64 *i*P Pn 14 52 33.0 +1.8
VLI Veliai 6.74 109 P Pn 14 52 33.1 +1.6
VLI Veliai 6.74 109 P Pn 14 52 33.1 +1.6
VLI Veliai 6.74 109 P Pn 14 52 33.1 +1.6
PAIG Paliouri 6.75 81 P Pn 14 52 31.6 0.0
PAIG Paliouri 6.75 81 P Pn 14 52 31.6 0.0
PAIG Paliouri 6.75 81 P Pn 14 52 31.6 0.0
PAIG Paliouri 6.75 81 P Pn 14 52 31.6 0.0
LMSR Misrath 6.86 180 *i*P Pn 14 52 33.0 0.0
SNR=34
SRS Serrai 6.86 71 P Pn 14 52 33.8 +0.9
SRS Serrai 6.86 71 P Pn 14 52 33.8 +0.9
SRS Serrai 6.86 71 P Pn 14 52 33.8 +0.9
SRS Serrai 6.86 71 P Pn 14 52 33.8 +0.9
LJU Ljubljana 6.87 357 *i*P Pn 14 52 34.2 +1.3
LJU *e*S S 14 53 51.1 -1.8
comp=Z,993nm,2.3s
CAEH 'Ain El Ouahch 6.87 252 P Pn 14 52 34.4 +1.3
CAEH 'Ain El Ouahch 6.87 252 P Pn 14 52 34.4 +1.3
AOS Alonnisos 6.90 87 P Pn 14 52 33.7 +0.3
AOS Alonnisos 6.90 87 P Pn 14 52 33.7 +0.3
AOS Alonnisos 6.90 87 P Pn 14 52 33.7 +0.3
KYTH Kithira 7.01 112 P Pn 14 52 36.1 +1.2
KYTH Kithira 7.01 112 P Pn 14 52 36.1 +1.2
KYTH Kithira 7.01 112 P Pn 14 52 36.1 +1.2
OUR Ouranopolis 7.02 78 *e*P Pn 14 52 35.2 +0.4
OUR Ouranopolis 7.02 78 P Pn 14 52 35.1 +0.3
OUR Ouranopolis 7.02 78 P Pn 14 52 35.1 +0.3
OUR Ouranopolis 7.02 78 P Pn 14 52 35.1 +0.3
OUR Ouranopolis 7.02 78 P Pn 14 52 35.1 +0.3
VLY Voula,Athens 7.02 98 P Pn 14 52 35.4 +0.4
VLY Voula,Athens 7.02 98 P Pn 14 52 35.4 +0.4
VLY Voula,Athens 7.02 98 P Pn 14 52 35.4 +0.4
PTL Penteli 7.03 96 P Pn 14 52 35.8 +0.7
PTL Penteli 7.03 96 P Pn 14 52 35.8 +0.7
PTL Penteli 7.03 96 P Pn 14 52 35.8 +0.7
MMB Musomiste 7.08 67 *i*P Pn 14 52 37.4 +1.7
CADS Cadrg 7.10 353 *i*P Pn 14 52 36.3 +0.5
CADS *e*S S 14 53 57.4 -0.9
NVR Nevrokopi 7.12 69 P Pn 14 52 37.5 +1.4
NVR Nevrokopi 7.12 69 P Pn 14 52 37.5 +1.4
NVR Nevrokopi 7.12 69 P Pn 14 52 37.5 +1.4
CKFL Kef-Lekhel 7.12 250 P Pn 14 52 38.0 +1.7
CKFL Kef-Lekhel 7.12 250 P Pn 14 52 38.0 +1.7
GHAR Gharyan 7.21 193 *i*P Pn 14 52 37.2 -0.3
SNR=34
REVF Revere 7.32 311 *e*P Pn 14 52 39.7 +1.2
REVF Revere 7.32 311 *e*P Pn 14 52 39.7 +1.2
OBKA Obir 7.33 358 *i*Pn Pn 14 52 39.9 +1.2
comp=Z,84nm,0.6s,SNR=59
CASM Ain Smara 7.35 249 P Pn 14 52 40.7 +1.7
CASM Ain Smara 7.35 249 P Pn 14 52 40.7 +1.7
SBF Sospel 7.35 312 *e*P Pn 14 52 40.3 +1.3
SBF Sospel 7.35 312 *e*P Pn 14 52 40.3 +1.3
ANKY Antikythira Is 7.38 114 P Pn 14 52 40.5 +1.1
ANKY Antikythira Is 7.38 114 P Pn 14 52 40.5 +1.1
ANKY Antikythira Is 7.38 114 P Pn 14 52 40.5 +1.1
LUCF Luceram 7.42 312⇑*e*P Pn 14 52 41.2 +1.3
LUCF Luceram 7.42 312⇑*e*P Pn 14 52 41.2 +1.3
SOKA Soboth 7.49 0 *i*Pn Pn 14 52 42.0 +1.3
comp=Z,58nm,0.9s,SNR=55
CTEI Djebel Teioual 7.50 248 P Pn 14 52 43.1 +2.1
CTEI Djebel Teioual 7.50 248 P Pn 14 52 43.1 +2.1
MDVR Moldovita 7.50 40⇑*i*P Pn 14 52 42.8 +2.0
MYKA Terra Mystica 7.51 353 *i*Pn Pn 14 52 42.3 +1.4
comp=Z,19nm,0.7s,SNR=21
MVIF Mont Vial 7.54 311⇑*e*P Pn 14 52 42.8 +1.5
MVIF Mont Vial 7.54 311⇑*e*P Pn 14 52 42.8 +1.5
CALN Calern 7.61 309 *e*P Pn 14 52 44.1 +1.9
CALN Calern 7.61 309 *e*P Pn 14 52 44.1 +1.9
LMR La Mourre 7.62 306 *e*P Pn 14 52 43.5 +1.3
LMR La Mourre 7.62 306 *e*P Pn 14 52 43.5 +1.3
FRF La Foret Royal 7.65 308 *e*P Pn 14 52 44.0 +1.4
FRF La Foret Royal 7.65 308 *e*P Pn 14 52 44.0 +1.4
DFRA Djebel Bou Aff 7.68 253 P Pn 14 52 45.6 +2.4
DFRA Djebel Bou Aff 7.68 253 P Pn 14 52 45.6 +2.4
ABTA Abfaltersbach 7.78 347 *i*Pn Pn 14 52 45.9 +1.7
comp=Z,296nm,0.6s,SNR=202
MPEP Malo Peshtene 7.79 55 *i*P Pn 14 52 45.9 +1.5
RZN Rozhen 7.82 68 *i*P Pn 14 52 46.6 +1.6
KBA Koelnbreinsper 7.98 352 *i*Pn Pn 14 52 48.4 +1.5
comp=Z,77nm,1.1s,SNR=79
KBA Koelnbreinsper 7.98 352 P Pn 14 52 48.1 +1.2
KBA pmax pmax
comp=Z,74nm,0.7s
KBA Koelnbreinsper 7.98 352 P Pn 14 52 48.1 +1.2
comp=Z,74nm,0.7s
IMMV Iera Moni Meta 8.06 115 P Pn 14 52 48.6 +0.8
ARSA Arzberg 8.07 3 *i*Pn Pn 14 52 49.0 +1.2
comp=Z,18nm,0.7s,SNR=27
BZS Buzias 8.08 35⇑*i*P Pn 14 52 49.8 +1.9
CKHR Kef el Ahmar 8.16 250 P Pn 14 52 51.6 +2.3
CKHR Kef el Ahmar 8.16 250 P Pn 14 52 51.6 +2.3
SET Setif 8.17 252 P Pn 14 52 57.0 +7.7
SET Setif 8.17 252 P Pn 14 52 57.0 +7.7
OG22 Abries 8.23 316 *e*P Pn 14 52 51.1 +1.2
OG22 Abries 8.23 316 *e*P Pn 14 52 51.1 +1.2
VAM Vamos 8.24 114 P Pn 14 52 50.9 +0.8
VAM Vamos 8.24 114 P Pn 14 52 50.9 +0.8
VAM Vamos 8.24 114 P Pn 14 52 50.9 +0.8
VAM Vamos 8.24 114 P Pn 14 52 50.9 +0.8
MBDF Montbardon 8.26 315 *e*P Pn 14 52 52.4 +2.1
MBDF Montbardon 8.26 315 *e*P Pn 14 52 52.4 +2.1
KDZ Kurdzhali 8.32 69 *i*P Pn 14 52 51.3 +0.3
TUE Stuetta 8.38 332 *e*Pn Pn 14 52 52.7 +0.8
comp=Z,494nm,0.6s
TUE Stuetta 8.38 332 *e*Pn Pn 14 52 52.7 +0.8
comp=Z,494nm,0.6s
SIGR SIGRI 8.43 86 *e*P Pn 14 52 56.3 +3.9
FETA Feichten 8.43 340 *i*Pn Pn 14 52 54.0 +1.6
comp=Z,7.2nm,0.7s,SNR=273
FETA *i*Pn Pn 14 52 56.4 +4.0
comp=Z,329nm,0.8s
WTTA Wattenberg 8.44 344 *i*Pn Pn 14 52 55.5 +2.9
comp=Z,138nm,0.7s,SNR=49
DAVOX Davos/Dischmat 8.47 335 P Pn 14 52 54.8 +1.9
comp=Z,18nm,0.3s,baz=144,slow=14,SNR=56
DAVOX S S 14 54 32.4 +2.9
baz=252,slow=19,SNR=2.3
SQTA Sankt Quirin 8.49 342 *i*Pn Pn 14 52 56.1 +3.0
WATA Walderalm 8.52 344 *i*Pn Pn 14 52 55.5 +2.0
comp=Z,274nm,0.6s,SNR=139
SMRF Simiane la Rot 8.53 307 *e*P Pn 14 52 55.7 +2.1
SMRF Simiane la Rot 8.53 307 *e*P Pn 14 52 55.7 +2.1
APE Apeiranthos 8.56 101⇑*i*P Pn 14 52 50.8 -3.3
APE Apeiranthos 8.56 101⇑*i*P Pn 14 52 55.2 +1.1
APE Apeiranthos 8.56 101 *i*P Pn 14 52 55.2 +1.1
SOP Sopron 8.57 7⇑*i*Pn Pn 14 52 56.1 +2.1
SIRR Siria 8.61 33⇑*i*P Pn 14 52 56.4 +1.9
MOTA Moosalm 8.64 342 *i*Pn Pn 14 52 57.2 +2.2
comp=Z,137nm,0.6s,SNR=89
THR5 Thira Island, 8.64 105 *e*P Pn 14 52 57.1 +2.1
THR5 Thira Island, 8.64 105 P Pn 14 52 56.2 +1.2
ALN Alexandroupoli 8.65 75 *e*P Pn 14 52 57.8 +2.8
ALN Alexandroupoli 8.65 75 P Pn 14 52 55.9 +0.9
ALN Alexandroupoli 8.65 75 P Pn 14 52 55.9 +0.9
ALN Alexandroupoli 8.65 75 P Pn 14 52 55.9 +0.9
ALN Alexandroupoli 8.65 75 P Pn 14 52 55.9 +0.9
CHOS Chios island 8.67 92 *e*P Pn 14 52 56.8 +1.4
MOA Molln 8.68 357 *i*Pn Pn 14 52 56.8 +1.4
comp=Z,60nm,0.7s,SNR=50
THR3 Thira Island, 8.69 105 P Pn 14 52 57.4 +1.8
THR3 Thira Island, 8.69 105 P Pn 14 52 57.4 +1.8
THR3 Thira Island, 8.69 105 P Pn 14 52 57.4 +1.8
ENEZ Enez 8.71 76 *e*P P 14 53 02.1 +0.4
SANT Santorini 8.74 105⇑*i*P Pn 14 52 57.9 +1.6
CONA Conrad Observa 8.76 4 *i*Pn Pn 14 52 57.8 +1.4
comp=Z,8.3nm,0.6s,SNR=20
LPG La Plagne 8.78 319 *e*P Pn 14 52 58.9 +2.0
LPG La Plagne 8.78 319 *e*P Pn 14 52 58.9 +2.0
EZN Ezine 8.78 82 *e*P Pn 14 52 58.0 +1.4
IDI Anoyia 8.79 113 P Pn 14 52 57.4 +0.4
comp=Z,4.6nm,0.3s,baz=306,slow=14,SNR=25
IDI S S 14 54 34.0 -3.1
baz=180,slow=20,SNR=3.9
IDI Anoyia 8.79 113⇑*i*P Pn 14 52 57.9 +0.9
IDI Anoyia 8.79 113 P Pn 14 52 57.4 +0.4
LPL La Plagne 8.80 319 *e*P Pn 14 52 59.2 +2.1
LPL La Plagne 8.80 319 *e*P Pn 14 52 59.2 +2.1
RETA Reutte 8.85 341 *i*Pn Pn 14 52 59.6 +2.1
comp=Z,104nm,0.5s,SNR=89
SIVA Sivas 8.87 115⇑*i*P Pn 14 52 59.7 +1.8
SIVA Sivas 8.87 115 P Pn 14 52 58.8 +0.9
SIVA Sivas 8.87 115 P Pn 14 52 58.8 +0.9
SIVA Sivas 8.87 115 P Pn 14 52 58.8 +0.9
ORIF Oris-en-Rattie 8.88 313 *e*P Pn 14 52 58.9 +1.0
ORIF Oris-en-Rattie 8.88 313 *e*P Pn 14 52 58.9 +1.0
DAVA Damuels 8.92 337 *i*Pn Pn 14 53 00.4 +2.0
comp=Z,282nm,0.7s,SNR=146
GELI Tayfur-Gelibol 8.92 79 *e*P Pn 14 52 59.0 +0.7
ERIK Erikli-Kesan 8.97 77 *e*P P 14 53 07.5 +2.9
RSL Roselend 8.97 319 *e*P Pn 14 53 01.2 +2.0
RSL Roselend 8.97 319 *e*P Pn 14 53 01.2 +2.0
OG26 St.-Nazaire-De 9.02 310 *e*P Pn 14 53 01.6 +2.0
OG26 St.-Nazaire-De 9.02 310 *e*P Pn 14 53 01.6 +2.0
LOT Lotru 9.02 43⇓*i*P Pn 14 53 02.2 +2.5
LPK Lapseki 9.13 79 *e*P Pn 14 53 01.7 +0.7
HUMR Humele 9.16 51⇑*i*P Pn 14 53 03.3 +2.0
DKL Dikili 9.26 87 *e*P Pn 14 53 01.1 -1.5
LAST Lasithi 9.28 112⇑*i*P Pn 14 53 03.7 +0.7
LAST Lasithi 9.28 112 P Pn 14 53 03.0 0.0
LAST Lasithi 9.28 112 P Pn 14 53 03.0 0.0
LAST Lasithi 9.28 112 P Pn 14 53 03.0 0.0
EDRB Edirne 9.33 70 *e*P Pn 14 53 04.1 +0.6
PSZ Piszkesteto 9.43 21⇑*i*P Pn 14 53 05.8 +1.2
PSZ Piszkesteto 9.43 21⇓*e*Pn Pn 14 53 05.4 +0.8
PSZ Piszkesteto 9.43 21 *e*P Pn 14 53 04.0 -0.7
PSZ pmax pmax
comp=Z,32nm,0.8s
PSZ Piszkesteto 9.43 21 *e*Pn Pn 14 53 04.0 -0.7
comp=Z,32nm,0.8s
PSZ Piszkesteto 9.43 21 *e*Pn Pn 14 53 04.0 -0.7
comp=Z,32nm,0.8s
DRGR 9.47 34⇓*i*P Pn 14 53 06.9 +1.7
RKY Sarkoy-Tekirda 9.48 77 *e*P P 14 53 12.0 +1.6
VIVF Saint-Julien-l 9.54 310 *e*P Pn 14 53 07.0 +0.9
VIVF Saint-Julien-l 9.54 310 *e*P Pn 14 53 07.0 +0.9
MTUR Matau 9.60 48⇑*i*P P 14 53 14.7 +2.9
GERES GERESS Array B 9.70 355 P Pn 14 53 09.0 +0.9
comp=Z,2.4nm,0.3s,baz=165,slow=12,SNR=101
GERES ScP ScP 15 01 56.1 -2.7
comp=Z,0.2nm,0.3s,baz=171,slow=1.9,SNR=4.4
GERES GERESS Array B 9.70 355 P Pn 14 53 09.0 +0.9
GERES pmax pmax
comp=Z,2.0nm,0.3s
VYHS Vyhne 9.71 15 *e*P Pn 14 53 08.8 +0.7
VYHS Vyhne 9.71 15 *e*P Pn 14 53 08.8 +0.7
VYHS Vyhne 9.71 15 *e*PN Pn 14 53 08.8 +0.7
VOIR 9.71 47 P P 14 53 10.8 -2.2
VOIR pmax pmax
comp=Z,91nm,0.6s
VOIR 9.71 47 P P 14 53 10.8 -2.2
comp=Z,91nm,0.6s
ZKR Zakros 9.83 111 P Pn 14 53 10.9 +1.1
ZKR Zakros 9.83 111 P Pn 14 53 10.9 +1.1
ZKR Zakros 9.83 111 P Pn 14 53 10.9 +1.1
SSB Saint Sauveur 9.86 312 *e*P Pn 14 53 09.8 -0.2
SSB Saint Sauveur 9.86 312 *e*P Pn 14 53 10.3 +0.3
SSB pmax pmax
comp=Z,71nm,0.6s
SSB Saint Sauveur 9.86 312 *e*P Pn 14 53 09.8 -0.2
SSB Saint Sauveur 9.86 312 *e*Pn Pn 14 53 10.3 +0.3
com

NIS1	Nisyros Isl.	9.97	101	eP	P	14 53 16.7	+0.9
EDC	Edincik	9.97	79	eP	P	14 53 17.6	+1.7
BALB	Balikesir	9.98	83	eP	Pn	14 53 13.6	+2.0
SPAK	Spaichingen-Ko	9.98	335⇑	eP	Pn	14 53 12.4	+0.8
KHC	Kasperske Hory	10.00	355	eP	Pn	14 53 12.4	+0.7
KHC				ex	x	14 53 15.6	
KHC				ex	x	14 53 28.2	
KHC				eS	S	14 55 07.7	+3.5
KHC				ex	x	14 55 12.8	
KHC	Kasperske Hory	10.00	355	eP	Pn	14 53 12.4	+0.7
KHC				eS	S	14 55 07.7	+3.5
KHC	Kasperske Hory	10.00	355	ePn	Pn	14 53 11.9	+0.2
	comp=Z,20nm,0.6s						
KHC	Kasperske Hory	10.00	355	eP	Pn	14 53 12.4	+0.7
KHC				eS	S	14 55 07.7	+3.5
KHC	Kasperske Hory	10.00	355	ePn	Pn	14 53 11.9	+0.2
	comp=Z,20nm,0.6s						
EMHD	Djebel Mahoud	10.00	256	P	Pn	14 53 14.0	+2.0
EMHD	Djebel Mahoud	10.00	256	P	Pn	14 53 14.0	+2.0
FILF	Fillols	10.01	294⇑	eP	Pn	14 53 12.9	+1.0
FILF	Fillols	10.01	294⇑	eP	Pn	14 53 12.9	+1.0
FELD	Feldberg im Sc	10.06	332	eP	Pn	14 53 12.9	+0.3
LJFR	Jufra	10.08	176	i P	Pn	14 53 12.4	-0.5
	SNR=34						
LOMF	Lomont	10.10	327	eP	Pn	14 53 12.7	-0.3
LOMF	Lomont	10.10	327	eP	Pn	14 53 12.7	-0.3
KECS	Kecovo	10.10	21	eP	Pn	14 53 14.9	+1.9
KECS	Kecovo	10.10	21	eP	Pn	14 53 14.9	+1.9
KECS	Kecovo	10.10	21	ePN	Pn	14 53 14.9	+1.9
KECS				e		14 53 20.2	
TREC	Trest	10.12	2	eP	Pn	14 53 14.3	+1.2
TREC				ex	x	14 53 19.1	
TREC				ex	x	14 53 31.7	
TREC	Trest	10.12	2	eP	Pn	14 53 14.3	+1.2
TREC	Trest	10.12	2	eP	Pn	14 53 14.3	+1.2
LRDF	Laroque-de-Fa	10.13	296⇑	eP	Pn	14 53 13.4	0.0
LRDF	Laroque-de-Fa	10.13	296⇑	eP	Pn	14 53 13.4	0.0
PRD	Provadia	10.17	63	i P	Pn	14 53 15.3	+1.5
AYDB	Zeytinkoy-Aydi	10.17	93	eP	P	14 53 19.7	+1.4
VRAC	Vranov	10.19	6	P	Pn	14 53 15.1	+1.1
	comp=Z,9.3nm,0.3s,baz=191,slow=12,SNR=82						
VRAC	Vranov	10.19	6	⇑iP	Pn	14 53 14.9	+0.9
LGHD	Ghdames	10.22	208	i P	Pn	14 53 16.3	+1.5
	SNR=34						
DOPR	Dopca	10.22	45	⇑iP	Pn	14 53 16.3	+1.8
MLR	Muntele Rosu	10.26	49	P	P	14 53 18.3	-0.8
	comp=Z,1.2nm,0.3s,baz=156,slow=12,SNR=36						
MLR				S	S	14 55 16.0	+5.6
	baz=145,slow=18,SNR=6.0						
MLR	Muntele Rosu	10.26	49	⇑iP	P	14 53 17.7	-1.4
BFO	Black Forest	10.33	334	eP	Pn	14 53 16.7	+0.9
BFO				pmax	pmax		
	comp=Z,252nm,0.8s						
BFO	Black Forest	10.33	334	ePn	Pn	14 53 16.7	+0.9
	comp=Z,252nm,0.8s						
BFO	Black Forest	10.33	334	ePn	Pn	14 53 16.7	+0.9
	comp=Z,252nm,0.8s						
KARP	Karpathos	10.34	107	eP	Pn	14 53 15.9	-0.2
KARP	Karpathos	10.34	107	P	Pn	14 53 15.6	-0.5
KARP	Karpathos	10.34	107	P	Pn	14 53 15.6	-0.5
KARP	Karpathos	10.34	107	P	Pn	14 53 15.6	-0.5
KCTX	Karacabey (Bur	10.35	80	eP	P	14 53 22.4	+2.3
VALF	Valcebollere	10.36	292	eP	Pn	14 53 17.0	+0.7
VALF	Valcebollere	10.36	292	eP	Pn	14 53 17.0	+0.7
CARF	Carcanieres	10.37	294	eP	Pn	14 53 16.3	-0.2
CARF	Carcanieres	10.37	294	eP	Pn	14 53 16.3	-0.2
MOF	Molkenrain	10.37	329	eP	Pn	14 53 16.3	-0.4
MOF	Molkenrain	10.37	329	eP	Pn	14 53 16.0	-0.4
ISR	Istrita	10.42	52	⇑iP	P	14 53 19.9	-0.9
ARCR	ARCALIA	10.44	38	⇑iP	Pn	14 53 18.8	+1.7
STU	Stuttgart	10.45	338	eP	Pn	14 53 16.3	-1.0
STU				pmax	pmax		
	comp=Z,58nm,0.6s						
STU	Stuttgart	10.45	338	ePn	Pn	14 53 16.3	-1.0
	comp=Z,58nm,0.6s						
STU	Stuttgart	10.45	338	ePn	Pn	14 53 16.3	-1.0
	comp=Z,58nm,0.6s						
HINF	Hinteralfeld	10.46	328	eP	Pn	14 53 16.5	-0.9
HINF	Hinteralfeld	10.46	328	eP	Pn	14 53 16.5	-0.9
LANS	Liptovska Anna	10.47	16	eP	P	14 53 19.5	-1.8
LANS	Liptovska Anna	10.47	16	eP	P	14 53 19.5	-1.8
LANS	Liptovska Anna	10.47	16	ePN	P	14 53 19.5	-1.8
LANS				e		14 53 24.1	
MTLF	Montolieu	10.48	297	eP	Pn	14 53 18.1	+0.4
MTLF	Montolieu	10.48	297	eP	Pn	14 53 18.1	+0.4
CTKS	Kestanelik-??a	10.54	74	eP	P	14 53 24.7	+2.7
LBL	Lubilhac	10.60	309	eP	P	14 53 21.6	-1.3
LBL	Lubilhac	10.60	309	eP	P	14 53 21.6	-1.3
ECH	Echery	10.66	330	eP	Pn	14 53 20.0	+0.1
ECH	Echery	10.66	330	eP	Pn	14 53 20.0	+0.1
KULA	Kula-Manisa	10.68	89	eP	P	14 53 26.1	+2.2
BGKT	Bogazkoy	10.73	75	eP	P	14 53 24.4	+0.2
GOPC	GO Pecny, Ondr	10.73	359	eP	Pn	14 53 22.1	+1.4
GOPC				ex	x	14 53 25.2	
GOPC				eS	S	14 55 21.8	+0.9
GOPC				ex	x	14 55 27.5	
GOPC	GO Pecny, Ondr	10.73	359	eP	Pn	14 53 22.1	+1.4
GOPC				eS	S	14 55 21.8	+0.9
GOPC	GO Pecny, Ondr	10.73	359	eP	Pn	14 53 22.1	+1.4
GOPC				eS	S	14 55 21.8	+0.9
MORC	Moravsky Berou	10.75	9	⇓iP	Pn	14 53 22.6	+1.7
MORC	Moravsky Berou	10.75	9	P	Pn	14 53 22.2	+1.3
MORC				pmax	pmax		
	comp=Z,289nm,0.9s						
MORC	Moravsky Berou	10.75	9	P	Pn	14 53 22.2	+1.3
	comp=Z,289nm,0.9s						
WLS	Welschbruch	10.75	332⇑	eP	Pn	14 53 21.5	+0.5
WLS	Welschbruch	10.75	332⇑	eP	Pn	14 53 21.5	+0.5
CRVS	Cervenica-Dubn	10.77	23	eP	P	14 53 23.1	-1.5
CRVS	Cervenica-Dubn	10.77	23	eP	P	14 53 23.1	-1.5
CRVS	Cervenica-Dubn	10.77	23	ePN	P	14 53 23.0	-1.5
CDF	Champ du Feu	10.78	331	eP	Pn	14 53 21.6	+0.2
CDF	Champ du Feu	10.78	331	eP	Pn	14 53 21.6	+0.2
PLDF	La Plantade	10.78	313	eP	Pn	14 53 22.7	+1.2
PLDF	La Plantade	10.78	313	eP	Pn	14 53 22.7	+1.2
UZH	Uzhgorod	10.80	27	eP	Pn	14 53 21.1	-0.5
UZH	Uzhgorod	10.80	27	eP	Pn	14 53 21.1	-0.5
PRU	Pruhonice	10.81	358	eP	Pn	14 53 22.8	+1.1
PRU				ex	x	14 53 26.2	
PRU				eS	S	14 55 30.0	+7.4
PRU	Pruhonice	10.81	358	eP	Pn	14 53 22.8	+1.1
PRU				eS	S	14 55 30.0	+7.4
PRU	Pruhonice	10.81	358	eP	Pn	14 53 22.8	+1.1
PRU				eS	S	14 55 30.0	+7.4
GRER		10.81	51	⇑iP	Pn	14 53 20.6	-1.2
ARG	Arkhangelos	10.81	102	P	P	14 53 25.5	+0.2
ARG				pmax	pmax		
	comp=Z,205nm,0.9s						
ARG	Arkhangelos	10.81	102	P	P	14 53 25.5	+0.2
	comp=Z,205nm,0.9s						
HAU	Haudompre	10.81	327	eP	Pn	14 53 21.1	-0.7
HAU	Haudompre	10.81	327	eP	Pn	14 53 21.1	-0.7
GRA1	Grafenberg Arr	10.85	347	P	Pn	14 53 23.3	+1.1
	comp=Z,623nm,0.8s						
GRF	Grafenberg Arr	10.85	347	P	Pn	14 53 23.3	+1.1
GRF				pmax	pmax		
	comp=Z,623nm,0.8s						
PSN	Preselentsi	10.87	61	i P	Pn	14 53 23.1	+0.6
PLOR	Plostina	10.87	48	⇑iP	P	14 53 25.1	-0.7
OKC	Ostrava-Krasne	10.89	11	eP	Pn	14 53 24.2	+1.6
OKC	Ostrava-Krasne	10.89	11	eP	Pn	14 53 24.2	+1.6
OKC	Ostrava-Krasne	10.89	11	eP	Pn	14 53 24.2	+1.6
NIE	Niedzica	10.91	19	eP	P	14 53 25.7	-0.5
NIE	Niedzica	10.91	19	eP	P	14 53 25.7	-0.5
NIE	Niedzica	10.91	19	eP	P	14 53 25.7	-0.5
VRI	Vrincioaia	10.93	49	eP	P	14 53 25.0	-1.4
VRI	Vrincioaia	10.93	49	⇑iP	P	14 53 24.9	-1.5
VRI	Vrincioaia	10.93	49	P	Pn	14 53 22.2	-1.0
VRI				pmax	pmax		
	comp=Z,291nm,1.0s						
VRI	Vrincioaia	10.93	49	P	Pn	14 53 22.2	-1.0
	comp=Z,291nm,1.0s						
KRLC	Kraliky	10.96	6	eP	P	14 53 25.4	-1.4
KRLC				ex	x	14 53 28.2	
KRLC	Kraliky	10.96	6	eP	P	14 53 25.4	-1.4
KRLC	Kraliky	10.96	6	eP	P	14 53 25.4	-1.4
CVDA	Cernavoda	11.01	58	⇑iP	P	14 53 30.2	+2.9
DALY	Dalyan (Mu¨la	11.03	98	eP	P	14 53 27.5	-0.2
EBNR	Beni Rached	11.05	259	P	Pn	14 53 17.8	-7.1
EBNR	Beni Rached	11.05	259	P	Pn	14 53 17.8	-7.1
KOLS	Kolonicke sedl	11.06	26	eP	P	14 53 27.3	-0.5
KOLS	Kolonicke sedl	11.06	26	eP	P	14 53 27.3	-0.5
KOLS	Kolonicke sedl	11.06	26	eP	P	14 53 27.3	-0.5
KOLS				e		14 53 30.6	
SMF	Signal de Mont	11.06	316	eP	Pn	14 53 24.0	-0.9
SMF	Signal de Mont	11.06	316	eP	Pn	14 53 24.0	-0.9
LANF	Langenberg	11.07	335⇑	eP	Pn	14 53 26.0	+1.1
LANF	Langenberg	11.07	335⇑	eP	Pn	14 53 26.0	+1.1
HARR	Harsova	11.09	56	⇑iP	P	14 53 27.4	-0.8
AGO	Saint Agoulin	11.11	312	eP	Pn	14 53 26.9	+1.4
AGO	Saint Agoulin	11.11	312	eP	Pn	14 53 26.9	+1.4
STHS	Stebnicka Huta	11.16	22	eP	P	14 53 29.1	+0.1
STHS	Stebnicka Huta	11.16	22	eP	P	14 53 29.1	+0.1
STHS	Stebnicka Huta	11.16	22	ePN	P	14 53 29.1	+0.1
CAF	Calviac	11.19	305	eP	Pn	14 53 27.4	+0.9
CAF	Calviac	11.19	305	eP	Pn	14 53 27.4	+0.9
NKC	Novy Kostel	11.20	352	eP	Pn	14 53 27.0	+0.5
NKC				ex	x	14 53 31.0	
NKC	Novy Kostel	11.20	352	eP	Pn	14 53 27.0	+0.5
NKC	Novy Kostel	11.20	352	eP	Pn	14 53 27.0	+0.5
IZI	Iznik	11.20	80	eP	P	14 53 28.8	-0.8
DPC	Dobruska-Polom	11.21	4	eP	Pn	14 53 27.7	+1.1
DPC				ex	x	14 53 29.7	
DPC	Dobruska-Polom	11.21	4	eP	Pn	14 53 27.7	+1.1
DPC	Dobruska-Polom	11.21	4	eP	Pn	14 53 27.7	+1.1
ECHA	Ech Chlef	11.22	259	P	Pn	14 53 20.0	-6.9
ECHA	Ech Chlef	11.22	259	P	Pn	14 53 20.0	-6.9
BURAR	Bucovina Array	11.23	38	⇓iP	P	14 53 30.0	+0.2
TESR	Tescani	11.25	46	⇑iP	P	14 53 30.4	+0.4
KTD	Kalmit	11.28	336⇑	eP	Pn	14 53 28.7	+1.2
TIRR	Tirgusor	11.31	58	⇓iP	Pn	14 53 29.1	+1.2
TOD	Tromm	11.32	339⇑	eP	Pn	14 53 29.3	+1.3
VERF	Verneugheol	11.33	309	eP	Pn	14 53 28.9	+0.7
VERF	Verneugheol	11.33	309	eP	Pn	14 53 28.9	+0.7
UPC	Upice	11.35	3	eP	P	14 53 30.1	-0.9
UPC				ex	x	14 53 32.3	
UPC				ex	x	14 53 48.1	
UPC	Upice	11.35	3	eP	P	14 53 30.1	-0.9
UPC	Upice	11.35	3	eP	P	14 53 30.1	-0.9
PVCC	Panska Ves	11.35	359	eP	Pn	14 53 29.6	+1.3
PVCC	Panska Ves	11.35	359	eP	Pn	14 53 29.6	+1.3
PVCC	Panska Ves	11.35	359	eP	Pn	14 53 29.6	+1.3
MELF	Melles	11.37	293	eP	Pn	14 53 29.0	+0.2
MELF	Melles	11.37	293	eP	Pn	14 53 29.0	+0.2
HRT	Hereke	11.37	77	eP	Pn	14 53 30.1	+1.4
SILT	Sile	11.38	75	eP	P	14 53 31.1	-0.4
ADVT	Abdulvahap	11.41	79	eP	P	14 53 33.7	+1.9
FETY	Fethiye	11.41	98	eP	P	14 53 30.8	-1.1
AVF	Avril sur Loir	11.42	316	eP	Pn	14 53 28.5	-0.7
AVF	Avril sur Loir	11.42	316	eP	Pn	14 53 28.5	-0.7
CFR	Carcaliu	11.44	54	⇓iP	P	14 53 30.9	-1.1
LOR	Lormes	11.45	318	eP	Pn	14 53 28.4	-1.2
	baz=135						
LOR				eR			
	comp=Z,144nm,15.9s						
LOR	Lormes	11.45	318	eP	Pn	14 53 28.4	-1.2
CAVI	Cavuskoy	11.48	80	eP	P	14 53 32.8	+0.1
EANR	'Ain N'Sour	11.49	258	P	P	14 53 32.0	-0.9
EANR	'Ain N'Sour	11.49	258	P	P	14 53 32.0	-0.9
SSF	Saint Saulge	11.50	317	eP	Pn	14 53 29.2	-1.0
SSF	Saint Saulge	11.50	317	eP	Pn	14 53 29.2	-1.0
PAGF	Fort de Pagny	11.50	328	eP	Pn	14 53 30.1	-0.1
	baz=138						
PAGF	Fort de Pagny	11.50	328	eP	Pn	14 53 30.1	-0.1
SFTF	Sexfontaines	11.54	325	eP	Pn	14 53 30.5	-0.1
	baz=148						
SFTF	Sexfontaines	11.54	325	eP	Pn	14 53 30.5	-0.1
OJC	Ojcow	11.55	16	eP	P	14 53 32.5	-0.7
OJC	Ojcow	11.55	16	eP	P	14 53 32.5	-0.7
OJC	Ojcow	11.55	16	eP	P	14 53 32.5	-0.7
ETRT	Tiaret	11.55	255	P	Pn	14 53 29.0	-2.1
ETRT	Tiaret	11.55	255	P	Pn	14 53 29.0	-2.1
BGF	Bois d'Agland	11.56	314	eP	Pn	14 53 31.0	0.0
BGF	Bois d'Agland	11.56	314	eP	Pn	14 53 31.0	0.0
GLHS	Ghisar (BURDU	11.59	96	eP	P	14 53 33.2	-0.9
GIUM	Giurgiulesti	11.62	53	⇓iP	Pn	14 53 31.9	+0.2
RESF	Ens	11.65	293⇑	eP	P	14 53 34.0	-0.7
RESF	Ens	11.65	293⇑	eP	P	14 53 34.0	-0.7
KSP	Ksiaz	11.70	4	eP	P	14 53 33.7	-1.2
KSP	Ksiaz	11.70	4	eP	P	14 53 33.7	-1.2
KSP	Ksiaz	11.70	4	eP	P	14 53 33.7	-1.2
EPF	Esparros	11.71	294	eP	P	14 53 35.0	-0.2
EPF	Esparros	11.71	294	eP	P	14 53 35.0	-0.2
MOX	Moxa	11.71	349	P	P	14 53 34.4	-0.6
MOX				pmax	pmax		
	comp=Z,247nm,1.1s						
MOX	Moxa	11.71	349	P	P	14 53 34.4	-0.6
	comp=Z,247nm,1.1s						
RJF	Les Rejaudoux	11.71	306	eP	Pn	14 53 32.2	-0.6
RJF	Les Rejaudoux	11.71	306	eP	Pn	14 53 32.2	-0.6
BRG	Berggiesshubel	11.71	357	i P	P	14 53 34.6	-0.4
	comp=Z,92nm,0.7s						
BRG				i		14 53 41.2	
	comp=Z,42nm,1.0s						
BRG				i		14 53 46.6	
	comp=Z,58nm,0.7s						
BRG				S	S	14 55 47.5	+4.3
	comp=Z,9.7nm,1.1s						
BRG	Berggiesshubel	11.71	357	i P	P	14 53 34.6	-0.4
BRG				S	S	14 55 47.5	+4.3
BRG				pmax	pmax		
	comp=Z,92nm,0.7s						
BRG				smax	smax		
	comp=N,10.0nm,1.1s						
BRG	Berggiesshubel	11.71	357	i P	P	14 53 34.6	-0.4
	comp=N,92nm,0.7s						
BRG				S	S	14 55 47.5	+4.3
	comp=N,10.0nm,1.1s						
TCF	Toulx Ste Croi	11.77	311	eP	Pn	14 53 34.0	+0.4
TCF	Toulx Ste Croi	11.77	311	eP	Pn	14 53 34.0	+0.4
KWP	Kalwaria Pacla	11.80	25	eP	P	14 53 37.7	+1.6
KWP	Kalwaria Pacla	11.80	25	⇑iP	P	14 53 36.5	+0.4
KWP	Kalwaria Pacla	11.80	25	eP	P	14 53 37.7	+1.6
KWP	Kalwaria Pacla	11.80	25	eP	P	14 53 37.7	+1.6
GPA	Golpazari	11.84	80	eP	P	14 53 38.2	+1.6
VIEF	Viey	11.90	293	eP	P	14 53 36.4	-0.9
VIEF	Viey	11.90	293	eP	P	14 53 36.4	-0.9
LABF	Labassere	11.90	294⇑	eP	P	14 53 37.9	+0.6
LABF	Labassere	11.90	294⇑	eP	P	14 53 37.9	+0.6
ABH	Alteburg	11.94	336⇑	eP	P	14 53 36.9	-0.7
RUP	Ruppelstein	11.94	334⇑	eP	P	14 53 37.0	-0.7
GULT	Gulveren	12.00	79	eP	P	14 53 41.6	+3.1
ELL	Elmali	12.02	97	eP	P	14 53 38.4	-0.4
LFF	La Frestale	12.05	303	eP	P	14 53 38.1	-0.8
LFF	La Frestale	12.05	303	eP	P	14 53 38.1	-0.8
LEOM	Leova	12.14	49	eP	P	14 53 41.7	+1.9
CLL	Collm	12.21	354	⇑iP	P	14 53 41.0	+0.5
	comp=Z,170nm,1.0s						
CLL				eS	S	14 55 46.0	-8.4
CLL				e		14 56 26.0	
CLL				e		14 57 42.0	
CLL				e		15 02 00.0	
CLL	Collm	12.21	354	⇑iP	P	14 53 41.0	+0.5
CLL				eS	S	14 55 46.0	-8.4
CLL				pmax	pmax		
	comp=Z,170nm,1.0s						
CLL	Collm	12.21	354	i P	P	14 53 41.0	+0.5
	comp=Z,170nm,1.0s						
CLL				eS	S	14 55 46.0	-8.4
WLF	Walferdange	12.23	332	P	P	14 53 41.4	+0.6
WLF	Walferdange	12.23	332	eP	P	14 53 40.0	-0.8
WLF				pmax	pmax		
	comp=Z,80nm,0.7s						
WLF	Walferdange	12.23	332	ePn	P	14 53 40.0	-0.8
	comp=Z,80nm,0.7s						
WLF	Walferdange	12.23	332	ePn	P	14 53 40.0	-0.8
	comp=Z,80nm,0.7s						
REYF	Montagne du Re	12.24	293	eP	P	14 53 40.5	-0.6
REYF	Montagne du Re	12.24	293	eP	P	14 53 40.5	-0.6
ISP	Isparta	12.24	91	eP	P	14 53 43.0	+1.8
ISP	Isparta	12.24	91	i P	P	14 53 41.9	+0.7
ISP	Isparta	12.24	91	i P	P	14 53 41.9	+0.7
ETSF	Etsaut	12.32	293	eP	Pn	14 53 41.0	+0.6
ETSF	Etsaut	12.32	293	eP	Pn	14 53 41.0	+0.6
BCK	Bucak	12.37	93	eP	P	14 53 44.7	+2.1
ATE	Arette	12.46	293	eP	P	14 53 42.8	-0.7
ATE	Arette	12.46	293	eP	P	14 53 42.8	-0.7
MDUB	Mudurnu	12.52	79	eP	Pn	14 53 43.7	+0.7
ANTB	Antalya	12.55	96	eP	P	14 53 44.7	+0.1
LARF	Larrau	12.65	293	eP	Pn	14 53 45.0	+0.6
LARF	Larrau	12.65	293	eP	Pn	14 53 45.0	+0.6
SUTC	Sutluce-Ispart	12.68	93	eP	P	14 53 46.4	+0.2
KIS	Kishinev	12.76	48	eP	P	14 53 46.5	-0.2
KIS				epP	pP	14 54 20.0	
KIS				i S	S	14 56 08.0	+1.0
	comp=Z,1μm,2.0s						
KIS	Kishinev	12.76	48	eP	P	14 53 46.5	-0.2
KIS				i S	S	14 56 08.0	+1.0
KIS				smax	smax		
	comp=E,1μm,2.0s						
KIS				smax	smax		
	comp=E,1μm,2.0s						
KIS	Kishinev	12.76	48	eP	P	14 53 46.5	-0.2
KIS				i S	S	14 56 08.0	+1.0
SVRH	Sivrihisar-ESK	12.80	84	eP	P	14 53 48.6	+1.2
SJPF	Ste Jean	12.84	293	eP	Pn	14 53 42.6	-4.1
SJPF	Ste Jean	12.84	293	eP	Pn	14 53 42.6	-4.1
MEM	Membach	13.07	334	P	P	14 53 50.1	0.0
GIVF	Givet	13.09	330	eP	Pn	14 53 49.5	0.0
GIVF	Givet	13.09	330	eP	Pn	14 53 49.5	0.0
KIZT	Kizilcal	13.13	86	eP	P	14 53 53.2	+2.1
BCLA	Clavier	13.16	332	P	P	14 53 50.8	-0.3
DOU	Dourbes	13.17	329	P	Pn	14 53 50.5	0.0
HGN	Heimansgroeve	13.23	334	eP	P	14 53 52.4	+0.6
BEL	Belsk	13.28	16	eP	P	14 53 55.2	+2.8
BEL	Belsk	13.28	16	eP	P	14 53 55.2	+2.8
BEL	Belsk	13.28	16	eP	P	14 53 55.2	+2.8
BAIF	Baives	13.30	328	eP	Pn	14 53 51.9	-0.2
BAIF	Baives	13.30	328	eP	Pn	14 53 51.9	-0.2
MFF	Saint Martin d	13.34	309	eP	P	14 53 53.4	+0.3
MFF	Saint Martin d	13.34	309	eP	P	14 53 53.4	+0.3
BEBN	Eben Emael	13.34	334	P	P	14 53 54.3	+1.2
LADK	Ladik-KONYA	13.61	89	eP	P	14 53 58.9	+2.6
SNF	Seneffe	13.62	330	P	P	14 53 57.4	+1.2
KONT	Konya--Tatoy	13.65	90	eP	P	14 53 59.2	+2.5
UCC	Uccle	13.82	331	P	P	14 53 59.3	+0.9
WTSB	Winterswijk	14.00	339	eP	Pn	14 54 01.7	+1.2
LDF	La Druitiere	14.38	316	eP	P	14 54 04.4	-0.2
LDF	La Druitiere	14.38	316	eP	P	14 54 04.4	-0.2
BRTR	Keskin Array B	14.42	82	P	Pn	14 54 07.5	+1.8
	comp=E,2.4nm,0.3s,baz=264,slow=10,SNR=156						
AKMC	Akamas	14.44	101	P	P	14 54 05.1	-0.4
ALFC	Alefka	14.60	101	P	Pn	14 54 07.7	-0.2
GRR	Gorron	14.67	314	eP	P	14 54 06.6	-1.2
GRR	Gorron	14.67	314	eP	P	14 54 06.6	-1.2
ESDC	Sonseca Array	14.67	278	P	Pn	14 54 08.6	-0.1
	comp=E,8.1nm,0.3s,baz=80,slow=12,SNR=172						
ESDC				ScP	ScP	15 02 04.5	-1.9
	baz=75,slow=3.0,SNR=4.7						
FLN	La Foliniere	14.67	316	eP	P	14 54 07.8	0.0
	baz=130						
FLN				eR			
	comp=E,175nm,17.1s						
FLN	La Foliniere	14.67	316	eP	P	14 54 07.8	0.0
BZK	Bozkurt	14.71	73	eP	Pn	14 54 09.0	0.0
AKDN	Akdeniz- K¨–br	14.83	100	eP	Pn	14 54 11.4	+0.8
LEF	Lefka	14.83	100	eP	P	14 54 10.2	+0.4
SZAC	Souni	14.96	102	P	Pn	14 54 12.3	+0.1
PAB	San Pablo	14.97	278	eP	Pn	14 54 12.3	-0.1
PAB				pmax	pmax		
	comp=Z,40nm,0.8s						
PAB	San Pablo	14.97	278	eP	Pn	14 54 12.3	-0.1
	comp=Z,40nm,0.8s						
PAB	San Pablo	14.97	278	eP	Pn	14 54 12.3	-0.1
	comp=Z,40nm,0.8s						
CORM	Corum	15.15	80	eP	Pn	14 54 16.5	+2.0
CSS	Mathiatis	15.22	100	P	Pn	14 54 15.7	+0.4
AKASG	Malin Array Be	15.27	36	P	P	14 54 14.5	+0.1
	comp=Z,7.1nm,0.3s,baz=229,slow=9.5,SNR=19						
AKASG				S	S	14 56 55.8	-5.3
	comp=Z,2.3nm,0.3s,baz=226,slow=20,SNR=11						
AKASG				ScP	ScP	15 02 04.8	-2.4
	comp=Z,0.5nm,0.3s,baz=255,slow=2.3,SNR=5.4						
AKASG	Malin Array Be	15.27	36	i P	P	14 54 14.8	+0.5
AKASG				pmax	pmax		
	comp=Z,3.0nm,0.3s						
AKASG	Malin Array Be	15.27	36	i P	P	14 54 14.8	+0.5
	comp=Z,3.0nm,0.3s						
AKASG				S	S	14 56 55.8	-5.3
SIM	Simferopol'	15.31	62	eP	Pn	14 54 17.1	+0.9
SIM				eS	S	14 56 56

comp=Z,157nm,0.9s
MTE Manteigas 17.36 281 *e*P **P 14 54 37.4 -0.1**
comp=Z,107nm,0.8s
MTE Manteigas 17.36 281 *e*P **P 14 54 37.4 -0.1**
comp=Z,107nm,0.8s
PVRL Vila Real 17.46 284 *e*P **P 14 54 39.5 +1.0**
comp=Z,86nm,1.5s
PVRL Vila Real 17.46 284 *e*P **P 14 54 39.5 +1.0**
comp=Z,86nm,1.5s
DARE Darende-Malaty 17.52 85 *e*P **Pn 14 54 41.1 -1.1**
POLO Lamas de Olo 17.52 284 *e*P **P 14 54 39.2 0.0**
comp=Z,44nm,1.0s
POLO Lamas de Olo 17.52 284 *e*P **P 14 54 39.2 0.0**
comp=Z,44nm,1.0s
PESTR Estremoz 17.55 276 *e*P **P 14 54 39.3 -0.1**
comp=Z,138nm,1.1s
PESTR Estremoz 17.55 276 *e*P **P 14 54 39.3 -0.1**
comp=Z,138nm,1.1s
ANN Anapa 17.57 64 *e*P **P 14 54 39.5 0.0**
ANN *e*S **S 14 57 44.5 -2.7**
ANN pmax pmax
comp=Z,159nm,0.9s
ANN Anapa 17.57 64 *e*P **P 14 54 39.5 0.0**
comp=Z,159nm,0.9s
ANN *e*S **S 14 57 44.5 -2.7**
GAZ Gaziantep 17.58 90 *e*P **Pn 14 54 41.9 -1.0**
MMAI Mount Meron Ar 17.59 104 P **Pn 14 54 41.8 -1.3**
comp=Z,22nm,0.3s,baz=294,slow=11,SNR=92
PVIS Viseu 17.61 282 *e*P **P 14 54 40.7 +0.6**
comp=Z,226nm,1.3s
PVIS Viseu 17.61 282 *e*P **P 14 54 40.7 +0.6**
comp=Z,226nm,1.3s
MICGM Minsk 17.63 25 *e*P **P 14 54 38.0 -2.0**
MICGM *ep*P **Pn 14 54 48.0 +4.8**
MICGM *e*S **S 14 57 42.0 -6.1**
MICGM *es*S **S 14 57 52.0 +3.9**
MNK Minsk 17.63 25 *e*P **P 14 54 38.0 -2.0**
MNK *e*S **S 14 57 42.0 -6.1**
PCAB Cabril 17.70 286 *e*P **P 14 54 41.4 +0.4**
comp=Z,143nm,1.3s
PCAB Cabril 17.70 286 *e*P **P 14 54 41.4 +0.4**
comp=Z,143nm,1.3s
MUD Monsted U'grnd 17.71 349 *i*P **P 14 54 40.5 -0.3**
comp=Z,48nm,0.8s
MUD Monsted U'grnd 17.71 349 *i*P **P 14 54 40.5 -0.3**
MUD pmax pmax
comp=Z,48nm,0.8s
MUD Monsted U'grnd 17.71 349 *i*P **P 14 54 40.5 -0.3**
comp=Z,48nm,0.8s
MONM Monmouth 17.71 321 *e*P **P 14 54 40.3 -0.7**
MONM Monmouth 17.71 321 *e*P **P 14 54 40.3 -0.7**
LMK Market Rasen 17.71 329 *e*P **P 14 54 40.4 -0.5**
LMK AMB AMB 14 54 43.4
comp=Z,194nm,1.3s
LMK Market Rasen 17.71 329 *e*P **P 14 54 40.4 -0.5**
KZIT Kziot 17.88 112 P **P 14 54 44.0 +1.0**
PGAV Gavieira, Arco 17.88 286 *e*P **P 14 54 43.5 +0.4**
comp=Z,84nm,2.0s
PGAV Gavieira, Arco 17.88 286 *e*P **P 14 54 43.5 +0.4**
comp=Z,84nm,2.0s
MCH1 Michaelchurch 17.90 322⇑ *e*P **P 14 54 42.8 -0.2**
MCH1 Michaelchurch 17.90 322⇑ *e*P **P 14 54 42.8 -0.2**
PBEJ Beja 17.91 274 *e*P **P 14 54 43.1 -0.1**
comp=Z,111nm,1.3s
PBEJ Beja 17.91 274 *e*P **P 14 54 43.1 -0.1**
comp=Z,111nm,1.3s
PVAQ Vaqueiros 17.91 271 *e*P **P 14 54 44.3 +1.0**
comp=Z,93nm,1.9s
PVAQ Vaqueiros 17.91 271 *e*P **P 14 54 44.3 +1.0**
comp=Z,93nm,1.9s
EVO Evora 17.93 275 *e*P **P 14 54 43.4 -0.1**
comp=Z,144nm,1.3s
EVO Evora 17.93 275 *e*P **P 14 54 43.4 -0.1**
comp=Z,144nm,1.3s
IDID Didziasalis 17.96 22 *e*P **P 14 54 43.6 +0.1**
IDID IAmb IAmb 14 54 44.5
comp=Z,27nm,0.9s
IDID Didziasalis 17.96 22 *e*P **P 14 54 43.6 +0.1**
SNR=35
ISAL Salakas 18.00 21 *e*P **P 14 54 44.2 +0.2**
ISAL IAmb IAmb 14 54 45.2
comp=Z,64nm,0.9s
ISAL Salakas 18.00 21 *e*P **P 14 54 44.2 +0.2**
SNR=35
PMTG Montargil 18.02 277 *e*P **P 14 54 44.3 -0.1**
comp=Z,242nm,0.7s
PMTG Montargil 18.02 277 *e*P **P 14 54 44.3 -0.1**
comp=Z,242nm,0.7s
CCA1 Carnmenellis 18.05 314 *e*P **P 14 54 44.4 -0.2**
CCA1 Carnmenellis 18.05 314 *e*P **P 14 54 44.4 -0.2**
PTOM Tomar 18.09 279 *e*P **P 14 54 45.5 +0.3**
comp=Z,336nm,0.6s
PTOM Tomar 18.09 279 *e*P **P 14 54 45.5 +0.3**
comp=Z,336nm,0.6s
PCVE Castro Verde 18.12 272 *e*P **P 14 54 45.4 -0.1**
comp=Z,102nm,1.0s
PCVE Castro Verde 18.12 272 *e*P **P 14 54 45.4 -0.1**
comp=Z,102nm,1.0s
PBDV Barranco-do-Ve 18.12 271 *e*P **P 14 54 46.1 +0.6**
comp=Z,80nm,1.1s
PBDV Barranco-do-Ve 18.12 271 *e*P **P 14 54 46.1 +0.6**
comp=Z,80nm,1.1s
PTO Porto 18.14 284 *e*P **P 14 54 46.5 +0.9**
comp=Z,212nm,1.1s
PTO Porto 18.14 284 *e*P **P 14 54 46.5 +0.9**
comp=Z,212nm,1.1s
HLM1 Long Mynd 18.18 323⇑ *e*P **P 14 54 45.3 -0.7**
HLM1 AMB AMB 14 54 46.4
comp=Z,121nm,0.8s
HLM1 Long Mynd 18.18 323⇑ *e*P **P 14 54 45.3 -0.7**
IZAR Zarasai 18.19 21 *e*P **P 14 54 46.3 +0.2**
IZAR IAmb IAmb 14 54 47.2
comp=Z,78nm,0.7s
IZAR Zarasai 18.19 21 *e*P **P 14 54 46.3 +0.2**
SNR=35
MESJ Messejana 18.21 273 *e*P **P 14 54 46.6 +0.1**
MESJ AMb AMB 14 54 48.4
comp=Z,122nm,1.2s
MESJ Messejana 18.21 273 *e*P **P 14 54 46.4 -0.1**
comp=Z,123nm,1.3s
MESJ Messejana 18.21 273 *e*P **P 14 54 46.6 +0.1**
MESJ pmax pmax
comp=Z,122nm,1.2s
MESJ Messejana 18.21 273 *e*P **P 14 54 46.6 +0.1**
comp=Z,122nm,1.2s
TAM Tamanrasset 18.23 209 *e*P **P 14 54 48.8 +1.8**
TAM pmax pmax
comp=Z,19nm,1.0s
TAM Tamanrasset 18.23 209 *e*P **P 14 54 48.8 +1.8**
comp=Z,19nm,1.0s
TAM Tamanrasset 18.23 209 *e*P **P 14 54 48.8 +1.8**
comp=Z,19nm,1.0s
STNC Stoke 18.25 325⇑ *e*P **P 14 54 46.9 +0.1**
STNC AMB AMB 14 54 47.7
comp=Z,160nm,0.8s
STNC Stoke 18.25 325⇑ *e*P **P 14 54 46.8 +0.1**
ALMR Almeirim 18.27 277 *e*P **P 14 54 47.1 -0.1**
ALMR AMb AMB 14 54 47.6
comp=Z,401nm,0.6s
ALMR Almeirim 18.27 277 *e*P **P 14 54 47.1 -0.1**
ALMR pmax pmax
comp=Z,401nm,0.6s
ALMR Almeirim 18.27 277 *e*P **P 14 54 47.1 -0.1**
comp=Z,401nm,0.6s
PNCL Nicolau / Gran 18.40 274 *e*P **P 14 54 49.0 +0.5**
comp=Z,347nm,0.9s
PNCL Nicolau / Gran 18.40 274 *e*P **P 14 54 49.0 +0.5**
comp=Z,347nm,0.9s
LHO Holmfirth 18.41 327 *e*P **P 14 54 48.2 -0.3**
LHO Holmfirth 18.41 327 *e*P **P 14 54 48.2 -0.3**
LPW Lampeter 18.50 321⇑ *e*P **P 14 54 49.4 0.0**
LPW AMB AMB 14 54 50.3
comp=Z,115nm,1.3s
LPW Lampeter 18.50 321⇑ *e*P **P 14 54 49.4 0.0**
FOEL Foel Wylfa 18.57 324⇑ *e*P **P 14 54 50.1 -0.1**
FOEL AMB AMB 14 54 50.9
comp=Z,187nm,0.9s
FOEL Foel Wylfa 18.57 324⇑ *e*P **P 14 54 50.1 -0.1**
HPK Haverah Park 18.61 328 *e*P **P 14 54 49.9 -0.7**
HPK AMB AMB 14 54 52.0
comp=Z,155nm,0.8s
HPK Haverah Park 18.61 328 *e*P **P 14 54 49.8 -0.7**
MORF Marmelete 18.66 272 *e*P **P 14 54 51.3 -0.1**
MORF Marmelete 18.66 272 *e*P **P 14 54 51.3 -0.1**
MORF Marmelete 18.66 272 *e*P **P 14 54 51.3 -0.1**
PTEO Sao Teotonio 18.67 272 *e*P **P 14 54 50.5 -0.9**
comp=Z,165nm,1.1s
PTEO Sao Teotonio 18.67 272 *e*P **P 14 54 50.5 -0.9**
comp=Z,165nm,1.1s
LIS Lisbon 18.78 276 *e*P **P 14 54 52.9 +0.3**
LIS AMb AMB 14 54 53.8
comp=Z,166nm,0.9s
LIS Lisbon 18.78 276 *e*P **P 14 54 52.8 +0.3**
LIS pmax pmax
comp=Z,166nm,0.9s
PMST Lisbon--Monsan 18.80 276 *e*P **P 14 54 53.2 +0.4**
comp=Z,195nm,1.1s
PMST Lisbon--Monsan 18.80 276 *e*P **P 14 54 53.2 +0.4**
comp=Z,195nm,1.1s
HRFI Mount Harif 18.82 113 P **P 14 54 55.1 +2.0**
PFVI Vila Bisbo 18.84 271 *e*P **P 14 54 53.3 +0.1**
PFVI Vila Bisbo 18.84 271 *e*P **P 14 54 53.3 +0.1**
PMAFR Mafra 18.85 277 *e*P **P 14 54 52.5 -0.8**
PMAFR Mafra 18.85 277 *e*P **P 14 54 52.5 -0.8**
PTK Pertek 18.94 83 *e*P **P 14 54 56.5 +1.9**
SVRC Sivrice-ELAZID 18.96 85 *e*P **P 14 54 56.4 +1.7**
EIL Elat 18.97 114 P **P 14 54 56.2 +1.5**
comp=Z,8.9nm,0.3s,baz=309,slow=6.2,SNR=108
EIL S **S 14 58 21.4 +6.6**
comp=Z,0.3nm,0.3s,baz=36,slow=17,SNR=3.7
SOC Sochi 19.04 69 *e*P **P 14 54 55.1 -0.2**
SOC *e*S **S 14 58 14.5 -1.4**
SOC pmax pmax
comp=Z,152nm,0.8s
SOC Sochi 19.04 69 *e*P **P 14 54 55.1 -0.2**
comp=Z,152nm,0.8s
SOC *e*S **S 14 58 14.5 -1.4**
ASF Jabal al Asfar 19.09 105 P **P 14 54 58.1 +2.0**
comp=Z,3.3nm,0.3s,baz=81,slow=21,SNR=24
LCP Cassop 19.12 330⇑ *e*P **P 14 54 54.8 -1.2**
LCP Cassop 19.12 330⇑ *e*P **P 14 54 54.8 -1.2**
BAYT Ayd¨–ntepe-Bay 19.35 78 *e*P **P 14 55 00.6 +1.8**
WPS Cemaes, Angles 19.50 323 *e*P **P 14 54 59.3 -0.7**
WPS AMB AMB 14 55 00.8
comp=Z,224nm,0.9s
WPS Cemaes, Angles 19.50 323 *e*P **P 14 54 59.3 -0.7**
KESW Keswick, Cumbr 19.67 328⇑ *e*P **P 14 55 00.9 -0.9**
KESW AMB AMB 14 55 03.1
comp=Z,200nm,1.4s
KESW Keswick, Cumbr 19.67 328⇑ *e*P **P 14 55 00.9 -0.9**
DYBB Diyarbakir 19.68 86 *e*P **Pn 14 55 06.3 -1.1**
SNART Snartemo 19.82 348 *e*P **P 14 55 03.6 +0.2**
SNART IAmb IAmb 14 55 07.6
comp=Z,32nm,0.7s
SNART Snartemo 19.82 348 *e*P **P 14 55 03.6 +0.2**
SNR=63
BBO1 Bothel 19.83 328 *e*P **P 14 55 02.2 -1.4**
BBO1 Bothel 19.83 328 *e*P **P 14 55 02.2 -1.4**
MAZI Mazidag 20.02 87 *e*P **P 14 55 07.2 +1.2**
ECK Cauldkaine Hil 20.10 329⇑ *e*P **P 14 55 04.8 -1.5**
ECK Cauldkaine Hil 20.10 329⇑ *e*P **P 14 55 04.8 -1.5**
EKA Eskdalemuir Ar 20.22 329 P **P 14 55 05.9 -1.7**
comp=Z,32nm,0.5s,baz=138,slow=11,SNR=88
ESK Eskdalemuir 20.23 329⇑ *e*P **P 14 55 06.2 -1.5**
ESK Eskdalemuir 20.23 329 *e*P **P 14 55 05.9 -1.8**
ESK pmax pmax
comp=Z,64nm,0.6s
ESK Eskdalemuir 20.23 329⇑ *e*P **P 14 55 06.2 -1.5**
ESK Eskdalemuir 20.23 329 *e*P **P 14 55 05.9 -1.8**
comp=Z,64nm,0.6s
DSB Dublin 20.30 321 *e*P **P 14 55 07.1 -1.4**
comp=Z,91nm,0.8s
DSB Dublin 20.30 321 *e*P **P 14 55 07.1 -1.4**
comp=Z,91nm,0.8s
ESY Stoneypath 20.43 331⇑ *e*P **P 14 55 08.4 -1.4**
ESY Stoneypath 20.43 331⇑ *e*P **P 14 55 08.4 -1.4**
STAV Stavanger 20.65 346 *e*P **P 14 55 11.7 -0.3**
STAV IAmb IAmb 14 55 11.9
comp=Z,60nm,0.8s
STAV Stavanger 20.65 346 *e*P **P 14 55 11.7 -0.3**
SNR=62
EDI Edinburgh 20.66 330⇑ *e*P **P 14 55 10.5 -1.6**
EDI AMB AMB 14 55 11.1
comp=Z,60nm,1.0s
EDI Edinburgh 20.66 330⇑ *e*P **P 14 55 10.5 -1.6**
GMM Mts of Mourne 20.69 324 *e*P **P 14 55 11.3 -1.2**
GMM Mts of Mourne 20.69 324 *e*P **P 14 55 11.3 -1.2**
VSU Vasula 20.73 18 *d*i P **P 14 55 12.2 -0.6**
VSU pmax pmax
comp=Z,172nm,0.9s
VSU Vasula 20.73 18 *i*P **P 14 55 12.2 -0.6**
comp=Z,172nm,0.9s
CHVG Ch'k'valeri 20.73 71 P **P 14 55 15.4 +2.4**
VSR Storozhevoye 20.74 47 *e*P **P 14 55 12.4 -0.6**
VSR *e*S **S 14 58 45.1 -1.2**
VSR pmax pmax
comp=Z,60nm,0.8s
VSR smax smax
comp=E,390nm,2.9s
VSR Storozhevoye 20.74 47 *e*P **P 14 55 12.4 -0.6**
comp=E,60nm,0.8s
VSR *e*S **S 14 58 45.1 -1.2**
KONO Kongsberg 20.77 352 *e*P **P 14 55 11.8 -1.5**
KONO IAmb IAmb 14 55 13.4
comp=Z,99nm,1.1s
KONO Kongsberg 20.77 352 *e*P **P 14 55 11.7 -1.5**
KONO pmax pmax
comp=Z,90nm,1.1s
KONO Kongsberg 20.77 352 *e*P **P 14 55 11.8 -1.5**
SNR=62
KONO Kongsberg 20.77 352 *e*P **P 14 55 11.7 -1.5**
comp=Z,90nm,1.1s
OSL Oslo 20.95 354 *e*P **P 14 55 14.4 -0.5**
OSL IAmb IAmb 14 55 14.9
comp=Z,154nm,1.1s
OSL Oslo 20.95 354 *e*P **P 14 55 14.4 -0.5**
SNR=62
BLS5 Blasjo 20.98 348 *e*P **P 14 55 14.6 -0.7**
BLS5 IAmb IAmb 14 55 15.2
comp=Z,100nm,0.9s
BLS5 Blasjo 20.98 348 *e*P **P 14 55 14.6 -0.7**
SNR=62
HFS Hagfors 20.99 358 P **P 14 55 13.4 -2.0**
comp=Z,17nm,0.5s,baz=171,slow=11,SNR=58
KMY Karmoy 20.99 346 *e*P **P 14 55 14.0 -1.4**
KMY IAmb IAmb 14 55 15.2
comp=Z,129nm,0.6s
KMY Karmoy 20.99 346 *e*P **P 14 55 14.0 -1.4**
SNR=62
SENK Senkaya-Erzuru 21.01 77 *e*P **P 14 55 17.9 +1.8**
EDU Dundee 21.05 332 *e*P **P 14 55 14.0 -2.0**
EDU Dundee 21.05 332 *e*P **P 14 55 14.0 -2.0**
DRUM Mains of Drumt 21.13 333⇑ *e*P **P 14 55 15.0 -1.8**
DRUM Mains of Drumt 21.13 333⇑ *e*P **P 14 55 15.0 -1.8**
NEY Neytrino 21.20 70 *j*i P **P 14 55 19.3 +1.4**
NEY pmax pmax
comp=Z,16nm,1.3s
NEY Neytrino 21.20 70 *i*P **P 14 55 19.3 +1.4**
comp=Z,16nm,1.3s
KIV Kislovodsk 21.21 68 *e*P **P 14 55 20.9 +3.1**
KIV Kislovodsk 21.21 68 *i*P **P 14 55 18.6 +0.8**
SNR=6.5
KIV Kislovodsk 21.21 68 *e*P **P 14 55 18.5 +0.7**
KIV *e*S **S 14 58 55.3 +1.1**
KIV pmax pmax
comp=Z,52nm,1.1s
KIV Kislovodsk 21.21 68 P **P 14 55 18.6 +0.8**
SNR=6.5
KIV *e*S **S 14 58 55.3 +1.1**
KIV Kislovodsk 21.21 68 *e*P **P 14 55 17.0 -0.8**
comp=Z,52nm,1.0s
LPSR Galich'ya Gora 21.26 43 *e*P **P 14 55 19.0 +1.0**
LPSR *e*S **S 14 58 51.2 -3.4**
LPSR pmax pmax
comp=Z,40nm,0.9s
LPSR smax smax
comp=N,520nm,5.1s
LPSR Galich'ya Gora 21.26 43 *e*P **P 14 55 19.0 +1.0**
comp=N,40nm,0.9s
EAB Aberfoyle 21.30 329⇑ *e*P **P 14 55 17.8 -0.5**
EAB Aberfoyle 21.30 329⇑ *e*P **P 14 55 17.8 -0.5**
KBZ Khabaz 21.35 69 P **P 14 55 20.4 +1.4**
comp=N,27nm,0.9s,baz=265,slow=7.8,SNR=46
ODD1 Odda 21.41 348 *e*P **P 14 55 19.9 +0.5**
ODD1 IAmb IAmb 14 55 20.7
comp=Z,53nm,0.8s
ODD1 Odda 21.41 348 *e*P **P 14 55 19.9 +0.5**
SNR=51
OBN Obninsk 21.52 35⇑ *e*P **P 14 55 21.7 +1.3**
OBN *i*S **S 14 58 58.4 -0.3**
OBN pmax pmax
comp=Z,9.0nm,1.0s
OBN Obninsk 21.52 35 *e*P **P 14 55 21.7 +1.3**
comp=Z,9.0nm,1.0s
OBN *i*S **S 14 58 58.4 -0.3**
GOF Gofitskoye 21.55 65 *c e*P **P 14 55 21.8 +1.0**
GOF Gofitskoye 21.55 65 *e*P **P 14 55 21.8 +1.0**
MME1 Meikle Cairn 21.61 333⇑ *e*P **P 14 55 19.6 -1.6**
MME1 Meikle Cairn 21.61 333⇑ *e*P **P 14 55 19.6 -1.6**
ONI Oni 21.74 72 P **P 14 55 24.2 +1.5**
ONI Oni 21.74 72 P **P 14 55 24.1 +1.5**
ONI Oni 21.74 72 P **P 14 55 24.1 +1.5**
MCD Coleburn Disti 21.91 333⇑ *e*P **P 14 55 21.9 -2.0**
MCD Coleburn Disti 21.91 333⇑ *e*P **P 14 55 21.9 -2.0**
NB2 NORSAR Subarra 22.01 355 P **P 14 55 23.8 -1.0**
comp=Z,54nm,1.4s,baz=171,slow=10
NB2 NORSAR Subarra 22.01 355 P **P 14 55 23.8 -1.0**
baz=171,slow=10
NB2 NORSAR Subarra 22.01 355 P **P 14 55 23.8 -1.0**
comp=Z,54nm,1.4s,SNR=2.3
NOA NORSAR Array B 22.01 355 P **P 14 55 23.6 -1.2**
comp=Z,21nm,0.8s,baz=187,slow=11,SNR=43
ZEI Tsey 22.07 71 *e*P **P 14 55 27.5 +1.8**
ZEI pmax pmax
comp=Z,67nm,0.7s
ZEI Tsey 22.07 71 *e*P **P 14 55 27.5 +1.8**
comp=Z,67nm,0.7s
BER Bergen 22.07 347 *e*P **P 14 55 25.4 +0.2**
BER IAmb IAmb 14 55 26.6
comp=Z,104nm,1.0s
BER Bergen 22.07 347 *e*P **P 14 55 25.5 +0.2**
SNR=51
VRH Novokhopyorsk 22.20 48 *e*P **P 14 55 27.7 +1.1**
VRH *e*S **S 14 59 10.2 +0.3**
VRH pmax pmax
comp=Z,50nm,0.6s
VRH smax smax
comp=N,280nm,2.8s
VRH Novokhopyorsk 22.20 48 *e*P **P 14 55 27.7 +1.1**
comp=N,50nm,0.6s
VRH *e*S **S 14 59 10.2 +0.3**
comp=N,280nm,2.8s
KSB Sheil Bridge 22.44 330⇑ *e*P **P 14 55 27.9 -0.8**
KSB Sheil Bridge 22.44 330⇑ *e*P **P 14 55 27.9 -0.8**
MVH1 Achvaich 22.50 333 *e*P **P 14 55 28.0 -1.3**
MVH1 Achvaich 22.50 333 *e*P **P 14 55 28.0 -1.3**
MLA1 Latheron 22.51 334⇑ *e*P **P 14 55 28.1 -1.2**
MLA1 Latheron 22.51 334⇑ *e*P **P 14 55 28.1 -1.2**
KAC Achnashellach 22.60 331⇑ *e*P **P 14 55 28.9 -1.3**
KAC Achnashellach 22.60 331⇑ *e*P **P 14 55 28.9 -1.3**
KPL Plockton 22.62 330 *e*P **P 14 55 29.2 -1.1**
KPL AMB AMB 14 55 30.5
comp=Z,72nm,0.7s
KPL Plockton 22.62 330 *e*P **P 14 55 29.2 -1.1**
HYA Hoyanger 22.68 349 *e*P **P 14 55 29.7 -1.1**
HYA IAmb IAmb 14 55 33.4
comp=Z,84nm,1.4s
HYA Hoyanger 22.68 349 *e*P **P 14 55 29.7 -1.1**
SNR=51
PUL Pulkovo 22.77 20⇑ *i*P **P 14 55 32.9 +1.2**
PUL pmax pmax
comp=Z,167nm,0.6s
PUL Pulkovo 22.77 20 *i*P **P 14 55 32.9 +1.2**
comp=Z,167nm,0.6s
GNI Garni 22.87 78 P **P 14 55 35.1 +2.1**
comp=Z,84nm,1.0s,baz=301,slow=1.9,SNR=40
GNI Garni 22.87 78 *i*P **P 14 55 35.2 +2.1**
SNR=13
GNI Garni 22.87 78 P **P 14 55 35.3 +2.2**
SNR=21
GNI Garni 22.87 78 P **P 14 55 35.3 +2.2**
SNR=21
LRW Lerwick 23.32 339 *e*P **P 14 55 34.5 -2.1**
LRW Lerwick 23.32 339 *e*P **P 14 55 34.5 -2.1**
FINES FINESS Array B 23.32 13 P **P 14 55 36.2 -0.4**
comp=Z,27nm,0.4s,baz=188,slow=9.3,SNR=141
WAL1 Walls 23.54 339 *e*P **P 14 55 36.6 -2.0**
WAL1 Walls 23.54 339 *e*P **P 14 55 36.6 -2.0**
YEL1 Yell 23.64 340 *e*P **P 14 55 38.2 -1.4**
YEL1 Yell 23.64 340 *e*P **P 14 55 38.2 -1.4**
KLMR Klimovskoe 26.51 27 *e*P **P 14 56 04.3 -1.0**
KLMR pmax pmax
comp=Z,9.0nm,0.6s
KLMR Klimovskoe 26.51 27 *e*P **P 14 56 04.3 -1.0**
comp=Z,9.0nm,0.6s
TORD Torodi Ar. Bea 28.48 208 P **P 14 56 23.4 +0.1**
comp=Z,9.5nm,0.5s,baz=16,slow=9.5,SNR=109
TORD S **S 15 00 48.9 -0.8**
comp=Z,1.8nm,0.8s,baz=18,slow=16,SNR=8.2
TORD ScP **ScP 15 02 39.4 -1.9**
comp=Z,1.2nm,0.6s,baz=7.3,slow=3.4,SNR=6.3
LVZ Lovozero 30.75 14⇑ *i*P **P 14 56 43.2 +0.5**
LVZ pmax pmax
comp=Z,68nm,2.5s
LVZ Lovozero 30.75 14 *i*P **P 14 56 43.2 +0.5**
comp=Z,68nm,2.5s
ARCES ARCESS Array B 30.93 7 P **P 14 56 43.2 -1.0**
comp=Z,13nm,0.5s,baz=189,slow=9.1,SNR=117
ARCES ScP **ScP 15 02 45.8 -2.5**
comp=Z,0.7nm,0.5s,baz=180,slow=4.4,SNR=8.3
ARE0 ARCESS Array S 30.93 7 *e*P **P 14 56 43.2 -1.0**
ARE0 ARCESS Array S 30.93 7 *e*P **P 14 56 43.2 -1.0**
SNR=48
AKTK Aktyubinsk 32.10 55 P **P 14 56 55.0 +0.4**
comp=Z,8.0nm,0.5s
AKTO Aktyubinsk 32.10 55 P **P 14 56 55.0 +0.4**
AKTO pmax pmax
comp=Z,8.0nm,0.5s
SOKR Solikamsk 33.23 38⇑ *i*P **P 14 57 04.3 +0.1**
SOKR pmax pmax
comp=Z,19nm,1.0s
ARU Arti 33.27 44 *c i*P **P 14 57 05.2 +0.5**
ARU *PP **pP 14 57 58.6 -1.3**
ARU 14 59 35.9
ARU S **S 15 02 03.0 -0.4**
ARU SS **SS 15 04 36.1 -3.6**
ARU pmax pmax
comp=Z,32nm,1.2s
ARU Arti 33.27 44 *i*P **P 14 57 05.2 +0.5**
comp=Z,32nm,1.2s
ARU Arti 33.27 44 *e*P **P 14 57 03.5 -1.2**
comp=Z,11nm,0.6s
AB31 Akbulak array 33.30 57 P **P 14 57 05.8 +0.8**
AB31 pmax pmax
comp=Z,7.0nm,0.5s
AB31 Akbulak array 33.30 57 P **P 14 57 05.8 +0.8**
comp=Z,7.0nm,0.5s
ABKAR Akbulak array 33.30 57 *e*P **P 14 57 02.8 -2.3**
comp=Z,11nm,0.5s
GEYT Alibeck 33.51 78 P **P 14 57 08.2 +1.1**
comp=Z,18nm,0.6s,baz=267,slow=7.4,SNR=34
SVE Sverdlovsk 34.48 44⇑ *e*P **P 14 57 15.8 +0.8**
SVE pmax pmax
comp=Z,33nm,0.9s
SVE Sverdlovsk 34.48 44 *e*P **P 14 57 15.8 +0.8**
comp=Z,33nm,0.9s
SCO Scoresbysund 36.74 340⇑ *i*P **P 14 57 35.4 +1.5**
comp=Z,27nm,0.8s
SCO Scoresbysund 36.74 340⇑ *i*P **P 14 57 35.4 +1.5**
SCO pmax pmax
comp=Z,27nm,0.8s
SCO Scoresbysund 36.74 340 *i*P **P 14 57 35.4 +1.5**
comp=Z,27nm,0.8s
BANOM Banah 36.93 98 *i*P **P 14 57 37.0 +0.8**
SNR=28
BANOM Banah 36.93 98 P **P 14 57 37.0 +0.8**
SNR=28
BANOM Banah 36.93 98 P **P 14 57 37.0 +0.8**
SNR=28
NAZ Nazwa, Dubai 36.93 100 *i*P **P 14 57 37.3 +1.2**
SNR=39
NAZ Nazwa, Dubai 36.93 100 P **P 14 57 37.3 +1.2**
SNR=39
NAZ Nazwa, Dubai 36.93 100 P **P 14 57 37.3 +1.2**
SNR=39
DBIC Dimbokro 36.99 214 P **P 14 57 36.7 0.0**
comp=Z,8.7nm,0.4s,baz=12,slow=8.8,SNR=46
FAQ Al Faqa, Dubai 37.01 101 *i*P **P 14 57 37.8 +1.0**
SNR=11
FAQ Al Faqa, Dubai 37.01 101 P **P 14 57 37.8 +1.0**
SNR=11
FAQ Al Faqa, Dubai 37.01 101 P **P 14 57 37.8 +1.0**
SNR=11
TIC Toumodi 37.09 214 *e*P **P 14 57 38.2 +0.7**
KIC Kosan Boka 37.22 214 *e*P **P 14 57 38.6 0.0**
comp=Z,12nm,0.2s
UOSS Minazif 37.37 100 P **P 14 57 40.4 +0.6**

SNR=11
HATD Hatta, Dubai 37.38 100 *i* P **P 14 57 41.0 +1.1**
SNR=38
HATD Hatta, Dubai 37.38 100 P **P 14 57 41.0 +1.1**
SNR=38
HATD Hatta, Dubai 37.38 100 P **P 14 57 40.8 +0.9**
SNR=38
ASHO Ashiyiah 37.40 100 *i* P **P 14 57 40.8 +0.7**
SNR=47
ASHO Ashiyiah 37.40 100 P **P 14 57 40.8 +0.7**
SNR=47
ASHO Ashiyiah 37.40 100 P **P 14 57 40.8 +0.7**
SNR=47
LIC Lamto 37.46 214 *e*P **P 14 57 41.0 +0.3**
comp=Z,39nm,0.6s
LIC Lamto 37.46 214 *e*P **P 14 57 40.8 +0.1**
comp=Z,13nm,0.4s,baz=38
LIC *e*pP **pP 14 58 36.4 -0.6**
LIC Lamto 37.46 214 *e*P **P 14 57 40.8 +0.1**
comp=Z,6.7nm,0.4s
LIC *e*pP **pP 14 58 36.4 -0.6**
ZRNK Zerenda 38.98 51 P **P 14 57 53.9 +1.1**
ZRNK pmax pmax
comp=Z,17nm,0.6s
ZRNK Zerenda 38.98 51 P **P 14 57 53.9 +1.1**
comp=Z,17nm,0.6s
SPA0 Spitsbergen Ar 39.11 0 *e*P **P 14 57 54.1 +0.5**
SPA0 Spitsbergen Ar 39.11 0 *e*P **P 14 57 54.1 +0.5**
SNR=45
ABTO Aybut 39.73 112 P **P 14 58 00.5 +1.0**
SNR=16
ABTO Aybut 39.73 112 P **P 14 58 00.5 +1.0**
SNR=16
BRVK Borovoye 39.75 51*c i*P **P 14 58 00.5 +1.4**
BRVK pmax pmax
comp=Z,48nm,0.8s
BRVK Borovoye 39.75 51 *i* P **P 14 58 00.5 +1.4**
comp=Z,48nm,0.8s
BRVK Borovoye 39.75 51 P **P 14 57 56.4 -2.8**
comp=Z,44nm,0.8s
SMDO Samad 39.81 101 P **P 14 58 00.6 +0.4**
SNR=16
SMDO Samad 39.81 101 P **P 14 58 00.6 +0.4**
SNR=16
SMDO Samad 39.81 101 P **P 14 58 00.6 +0.4**
SNR=16
BVA0 Borovoye Array 39.81 51 *i* P **P 14 58 00.8 +1.1**
BVA0 pmax pmax
comp=Z,14nm,0.7s
BVA0 Borovoye Array 39.81 51 *i* P **P 14 58 00.8 +1.1**
comp=Z,14nm,0.7s
CHKZ Chkalovo 39.92 50 P **P 14 58 00.7 +0.2**
CHKZ pmax pmax
comp=Z,10.0nm,0.5s
CHKZ Chkalovo 39.92 50 P **P 14 58 00.7 +0.2**
comp=Z,10.0nm,0.5s
DAG Danmarks Havn 40.42 349⇓ *i*P **P 14 58 04.6 +0.3**
comp=Z,19nm,0.8s
DAG Danmarks Havn 40.42 349⇓ *i*P **P 14 58 04.6 +0.3**
DAG pmax pmax
comp=Z,14nm,0.8s
KK31 Karatay Array 41.34 66 *i* P **P 14 58 12.9 +0.6**
KK31 pmax pmax
comp=Z,8.0nm,0.4s
KK31 Karatay Array 41.34 66 *i* P **P 14 58 12.9 +0.6**
comp=Z,8.0nm,0.4s
KKAR Karatay Array 41.34 66 P **P 14 58 11.5 -0.8**
KKAR pmax pmax
comp=Z,17nm,0.5s
KKAR Karatay Array 41.34 66 P **P 14 58 11.5 -0.8**
comp=Z,17nm,0.5s
KKAR Karatay Array 41.34 66 P **P 14 58 11.5 -0.8**
comp=Z,18nm,0.5s
OTUK Ortayu 41.55 58 P **P 14 58 15.0 +1.1**
OTUK pmax pmax
comp=Z,43nm,0.8s
OTUK Ortayu 41.55 58 P **P 14 58 15.0 +1.1**
comp=Z,43nm,0.8s
SUMG Summit 42.32 339 *i* P **P 14 58 21.1 +1.0**
comp=Z,17nm,0.9s
SUMG Summit 42.32 339 *i* P **P 14 58 21.1 +1.0**
SUMG pmax pmax
comp=Z,17nm,0.9s
SUMG Summit 42.32 339 *i* P **P 14 58 21.1 +1.0**
comp=Z,17nm,0.9s
SUMG Summit 42.32 339 *e*P **P 14 58 19.2 -1.0**
comp=Z,13nm,0.7s
MNAS Manas 42.92 66 P **P 14 58 25.5 +0.4**
MNAS pmax pmax
comp=Z,10.0nm,0.8s
MNAS Manas 42.92 66 P **P 14 58 25.5 +0.4**
comp=Z,10.0nm,0.8s
EKS2 Erkin-Say 43.78 66 *e*P **P 14 58 31.7 -0.2**
EKS2 pmax pmax
comp=Z,27nm,0.6s
EKS2 Erkin-Say 43.78 66 *e*P **P 14 58 31.7 -0.2**
comp=Z,27nm,0.6s
EKS2 Erkin-Say 43.78 66 *e*P **P 14 58 31.7 -0.2**
comp=Z,27nm,0.6s
FRU Bishkek 44.32 65 *e*P **P 14 58 36.5 +0.4**
FRU pmax pmax
comp=Z,50nm,1.6s
FRU Bishkek 44.32 65 *e*P **P 14 58 36.5 +0.4**
comp=Z,50nm,1.6s
TKM2 Tokmak 2 44.99 65 *e*P **P 14 58 39.8 -1.7**
TKM2 pmax pmax
comp=Z,4.0nm,0.5s
TKM2 Tokmak 2 44.99 65 *e*P **P 14 58 39.8 -1.7**
comp=Z,3.7nm,0.5s
KURK Kurchatov 45.15 53 P **P 14 58 41.6 -0.8**
KURK pmax pmax
comp=Z,50nm,0.7s
KURK Kurchatov 45.15 53 P **P 14 58 41.6 -0.8**
comp=Z,50nm,0.7s
KURK Kurchatov 45.15 53 *e*P **P 14 58 40.6 -1.8**
comp=Z,55nm,0.8s
SFJD Kangerlussuaq 45.19 330 *i* P **P 14 58 42.6 +0.1**
comp=Z,19nm,0.7s
SFJD Kangerlussuaq 45.19 330 *i* P **P 14 58 42.6 +0.1**
SFJD pmax pmax
comp=Z,19nm,0.7s
SFJD Kangerlussuaq 45.19 330 *i* P **P 14 58 42.6 +0.1**
comp=Z,19nm,0.7s
SFJD Kangerlussuaq 45.19 330 *e*P **P 14 58 41.1 -1.4**
comp=Z,10nm,0.6s
NVS Novosibirsk 47.16 47⇓ *i*P **P 14 58 59.6 +1.7**
NVS *e* 15 00 50.7
NVS *i* S **S 15 05 28.6 +0.4**
NVS pmax pmax
comp=Z,17nm,0.8s
NVS pmax pmax
comp=E,5.0nm,0.7s
NVS smax smax
comp=N,11nm,1.0s
NVS smax smax
comp=E,8.0nm,1.0s
NVS Novosibirsk 47.16 47 *i* P **P 14 58 59.6 +1.7**
comp=E,17nm,0.8s
NRIK Noril'sk 47.86 27 P **P 14 59 04.1 +1.1**
comp=E,7.9nm,0.7s,baz=252,slow=9.0,SNR=23
ZALV Zalesovo Beam 48.24 48 P **P 14 59 06.5 +0.4**
comp=E,11nm,0.3s,baz=280,slow=8.1,SNR=46
ZALV PP **PP 15 01 01.9 +0.7**
comp=E,2.1nm,0.6s,baz=270,slow=10,SNR=3.6
MK31 Makanchi Array 48.44 58 *e*P **P 14 59 08.2 +0.3**
MK31 pmax pmax
comp=Z,15nm,0.6s
MK31 Makanchi Array 48.44 58 *e*P **P 14 59 08.2 +0.3**
comp=Z,15nm,0.6s
MKAR Makanchi Array 48.44 58 P **P 14 59 08.4 +0.5**
comp=Z,23nm,0.5s,baz=283,slow=6.6,SNR=314
MKAR ScP **ScP 15 03 54.4 -2.2**
comp=Z,1.2nm,0.8s,baz=284,slow=3.8,SNR=4.8
MKAR S **S 15 05 46.0 -0.6**
comp=Z,1.6nm,0.9s,baz=294,slow=11,SNR=7.7
SMLA Simla 50.59 79 *e*P **P 14 59 24.0 -0.1**
SCHQ Schefferville 54.75 315 P **P 14 59 53.6 -0.5**
comp=Z,21nm,0.7s,baz=73,slow=8.1,SNR=9.4
PYUN Piuthan 56.49 79 *e*P **P 15 00 07.4 +0.3**
comp=Z,110nm,0.7s
KOLN Koldanda 57.12 79 *e*P **P 15 00 11.4 -0.1**
comp=Z,21nm,0.6s
GKN Gorkha 57.79 78 *e*P **P 15 00 16.0 -0.1**
comp=Z,123nm,0.7s
DMN Daman 58.35 79 *e*P **P 15 00 20.3 +0.2**
comp=Z,92nm,0.6s
KKN Kakani 58.39 78 *e*P **P 15 00 20.3 0.0**
comp=Z,88nm,0.7s
PKIN Phulchoki 58.59 78 *e*P **P 15 00 21.7 0.0**
comp=Z,31nm,0.5s
GUN Gumba 58.78 78 *e*P **P 15 00 23.2 0.0**
comp=Z,164nm,0.8s
TLY Talaya 59.74 46 *i* P **P 15 00 30.7 +1.8**
TLY pmax pmax
comp=Z,6.0nm,1.7s
TLY Talaya 59.74 46 *i* P **P 15 00 30.7 +1.8**
comp=Z,6.0nm,1.7s
TIXI Tiksi 60.18 20⇑ *i*P **P 15 00 32.2 +0.7**
TIXI pmax pmax
comp=Z,4.0nm,1.7s
TIXI Tiksi 60.18 20 *i* P **P 15 00 32.2 +0.7**
comp=Z,4.0nm,1.7s
TIXI Tiksi 60.18 20 *e*P **P 15 00 31.6 +0.1**
comp=Z,3.0nm,0.8s
LSA Lhasa 61.83 73 *e*P **P 15 00 41.8 -2.1**
LSA pmax pmax
comp=Z,11nm,0.9s
LSA Lhasa 61.83 73 P **P 15 00 44.4 +0.5**
LSA Lhasa 61.83 73 *e*P **P 15 00 41.8 -2.1**
comp=Z,11nm,0.9s
BOD Bodaibo 62.20 37 *e*P **P 15 00 45.0 -0.2**
BOD pmax pmax
comp=Z,3.0nm,1.7s
BOD Bodaibo 62.20 37 *e*P **P 15 00 45.0 -0.2**
comp=Z,3.0nm,1.7s
SONM Songino Array 63.11 49 P **P 15 00 52.1 +0.5**
comp=Z,5.7nm,0.8s,baz=287,slow=7.7,SNR=29
ULN Ulaanbaatar 63.48 49⇑ *i*P **P 15 00 54.6 +0.6**
ULN pmax pmax
comp=Z,7.0nm,2.5s
ULN Ulaanbaatar 63.48 49 *i* P **P 15 00 54.6 +0.6**
comp=Z,7.0nm,2.5s
FCC Fort Churchill 66.13 327 *e*P **P 15 01 08.3 -2.3**
FCC pmax pmax
comp=Z,3.0nm,0.5s
FCC Fort Churchill 66.13 327 *e*P **P 15 01 08.3 -2.3**
comp=Z,3.4nm,0.5s
PALK Pallekele 66.65 100 *i* P **P 15 01 15.0 +0.4**
SNR=8.4
PALK Pallekele 66.65 100*ce*P **P 15 01 15.3 +0.7**
PALK Pallekele 66.65 100 *e*P **P 15 01 15.3 +0.7**
BOSA Boshof 68.12 170 P **P 15 01 24.2 +0.7**
comp=Z,16nm,0.4s,baz=345,slow=6.1,SNR=58
O56A Blue Knob Stat 68.40 305 P **P 15 01 23.6 -1.6**
baz=56
M54A Oil Creek Stat 68.41 306 P **P 15 01 23.5 -1.7**
baz=56
N54A Moraine State 68.92 306 P **P 15 01 27.0 -1.3**
baz=56
INK Inuvik 70.26 348 *e*P **P 15 01 35.8 -0.2**
INK pmax pmax
comp=Z,12nm,1.3s
INK Inuvik 70.26 348 *e*P **P 15 01 35.8 -0.2**
comp=Z,12nm,1.3s
INK Inuvik 70.26 348 *e*P **P 15 01 35.8 -0.2**
comp=Z,12nm,1.3s
C39A Grand Marais 70.84 316 P **P 15 01 39.5 -0.3**
baz=52,SNR=6.8
YKA Yellowknife Ar 70.90 338 P **P 15 01 40.1 +0.3**
comp=Z,11nm,0.6s,baz=40,slow=5.5,SNR=205
BILL Biiibino 70.93 11⇑ *e*P **P 15 01 39.8 -0.2**
BILL *e* 15 04 23.6
BILL *e*S **S 15 10 26.7 -5.0**
BILL pmax pmax
comp=Z,9.0nm,2.5s
BILL Biiibino 70.93 11 *e*P **P 15 01 39.8 -0.2**
comp=Z,9.0nm,2.5s
COWI Conover 71.34 315 *e*P **P 15 01 42.7 -0.2**
comp=Z,26nm,0.8s
COWI Conover 71.34 315 *e*P **P 15 01 42.7 -0.2**
comp=Z,26nm,0.8s
EYMN Ely 71.49 317 P **P 15 01 43.7 0.0**
baz=52,SNR=10
EYMN Ely 71.49 317 *e*P **P 15 01 41.6 -2.1**
comp=Z,6.6nm,0.5s
EYMN Ely 71.49 317 *e*P **P 15 01 41.6 -2.1**
comp=Z,6.6nm,0.5s
C38A Sawbill Land. 71.51 317 P **P 15 01 43.4 -0.5**
baz=52
C37A Embarrass 71.99 317 P **P 15 01 46.5 -0.2**
baz=51
FFC Flin Flon 72.06 327 P **P 15 01 43.6 -3.4**
FFC pmax pmax
comp=Z,6.0nm,0.7s
FFC Flin Flon 72.06 327 P **P 15 01 43.6 -3.4**
comp=Z,5.5nm,0.7s
XAN Xi'an 72.15 60 P **P 15 01 48.8 +0.8**
XAN pmax pmax
comp=Z,14nm,1.0s
XAN pmax pmax
comp=Z,14nm,4.2s
ULM Lac du Bonnet 72.26 321 P **P 15 01 48.1 -0.1**
comp=Z,21nm,0.6s,baz=49,slow=5.9,SNR=26
C36A Pine Crest Far 72.31 318 P **P 15 01 48.7 +0.1**
baz=51,SNR=6.1
B35A Bob, Littlefor 72.39 318 P **P 15 01 49.0 0.0**
baz=50,SNR=6.9
D37A Cotton 72.47 317 P **P 15 01 49.2 -0.4**
baz=51
B34A Aery, Baudette 72.79 319 P **P 15 01 51.2 -0.2**
baz=50
D36A Goodland 72.85 317 P **P 15 01 51.6 -0.2**
baz=50,SNR=5.3
A33A Warroad 72.87 320 P **P 15 01 51.9 +0.1**
baz=50
C35A Jirik Farms, M 72.94 318 P **P 15 01 51.9 -0.4**
baz=50
KMSC Kings Mountain 73.12 302 P **P 15 01 52.2 -1.4**
baz=54
COLD Coldfoot 73.32 354 *e*P **P 15 01 53.3 -0.8**
comp=Z,10nm,1.2s
COLD Coldfoot 73.32 354 *e*P **P 15 01 53.3 -0.8**
comp=Z,10nm,1.2s
E36A McGregor 73.32 317 P **P 15 01 54.7 +0.2**
baz=50
D35A Remer 73.38 318 P **P 15 01 54.6 -0.3**
baz=50
C34A RKJ Ranch, Bem 73.46 318 P **P 15 01 55.4 +0.1**
baz=50
SFIN Lafayette 73.64 309 P **P 15 01 55.5 -0.9**
baz=52
CHTO Chiang Mai 73.78 79 P **P 15 01 57.8 +0.2**
comp=Z,93nm,1.1s
CHTO Chiang Mai 73.78 79 *i* P **P 15 01 57.8 +0.2**
CHTO pmax pmax
comp=Z,21nm,1.0s
CHTO Chiang Mai 73.78 79 P **P 15 01 58.0 +0.4**
SNR=8.4
CHTO Chiang Mai 73.78 79 P **P 15 01 58.0 +0.4**
SNR=8.4
CHTO Chiang Mai 73.78 79 P **P 15 01 58.0 +0.4**
SNR=8.4
CHTO Chiang Mai 73.78 79 *i* P **P 15 01 57.8 +0.2**
comp=Z,21nm,1.0s
CMMT Chiang Mai 73.78 79 P **P 15 01 57.7 +0.1**
comp=Z,21nm,1.1s
B32A Ashes, Strandq 73.80 320 P **P 15 01 57.3 +0.1**
baz=49
F36A Milaca 73.88 316 P **P 15 01 57.4 -0.4**
baz=50,SNR=7.4
E35A Pequot Lakes 73.90 317 P **P 15 01 57.8 0.0**
baz=50
JFWS Jewell Farm 73.93 312 *e*P **P 15 01 53.7 -4.4**
JFWS pmax pmax
comp=Z,12nm,0.7s
JFWS Jewell Farm 73.93 312 *e*P **P 15 01 53.7 -4.4**
comp=Z,12nm,0.7s
CMAR Chiang Mai Arr 73.99 79 P **P 15 01 59.3 +0.5**
comp=Z,14nm,0.7s,baz=306,slow=7.0,SNR=105
CRAI Chiangrai 74.03 77 P **P 15 01 59.4 +0.4**
comp=Z,58nm,1.1s,comp=Z,9um
D33A AmnSam, Waubun 74.27 318 P **P 15 02 00.3 +0.3**
baz=49
A30A Hoffart Farm, 74.31 321 P **P 15 01 59.9 -0.2**
baz=48
B31A Greenbush Farm 74.34 320 P **P 15 01 59.9 -0.4**
baz=48
LAMP Lampang 74.47 79 P **P 15 02 02.2 +0.6**
comp=Z,22nm,0.7s
B30A Myrvik Farm, E 74.66 321 P **P 15 02 02.4 +0.3**
baz=48
E33A Westby DABS, E 74.78 318 P **P 15 02 02.9 0.0**
baz=49
A29A Manning Farm, 74.78 321 P **P 15 02 03.3 +0.4**
baz=47
HDIL Hopedale 74.85 310 P **P 15 02 03.2 -0.2**
baz=51
I37A Lemond, Waseca 75.01 315 P **P 15 02 04.0 -0.2**
baz=50
MA2 Magadan 75.03 22⇑ *i*P **P 15 02 05.4 +1.3**
MA2 Magadan 75.03 22 *i* P **P 15 02 05.4 +1.3**
SUKH Sukhothai 75.09 80 P **P 15 02 05.7 +0.6**
comp=Z,11nm,0.8s,comp=Z,86nm
A28A Rude Farm, Bot 75.28 322 P **P 15 02 06.1 +0.4**
baz=46
F33A 5 Mile Ranch, 75.36 318 P **P 15 02 06.1 -0.1**
baz=48
ILAR Eielson Array 75.41 352 P **P 15 02 07.1 +1.0**
comp=Z,1.2nm,0.5s,baz=347,slow=2.8,SNR=19
COLA College 75.41 353⇑ *i*P **P 15 02 07.5 +1.4**
COLA College 75.41 353 *i* P **P 15 02 07.5 +1.4**
SDDR Presa de Saban 75.46 283 *e*P **P 15 02 05.0 -2.3**
comp=Z,9.2nm,0.6s
SDDR Presa de Saban 75.46 283 *e*P **P 15 02 05.0 -2.3**
comp=Z,9.2nm,0.6s
K38A Parkersburg 75.54 313 P **P 15 02 06.6 -0.6**
baz=50
J37A Redenius Farm, 75.55 314 P **P 15 02 07.2 -0.2**
baz=49
UTTA Uttaradit 75.64 79 P **P 15 02 09.0 +0.8**
comp=Z,3.1nm,0.6s
B28A Dugan Ranch, T 75.65 322 P **P 15 02 08.4 +0.6**
baz=46
E31A Nome 75.71 319 P **P 15 02 08.3 +0.2**
baz=48
D30A Buchanan 75.78 320 P **P 15 02 09.1 +0.6**
baz=47
K37A Belmond 75.95 314 P **P 15 02 09.2 -0.4**
baz=49
L38A Oak Wood Farm, 75.97 313 P **P 15 02 08.9 -0.8**
baz=50,SNR=6.1
A26A Wade Farm, Ken 76.13 323 P **P 15 02 11.6 +1.1**
baz=45
DOT Dot Lake 76.16 351 *e*P **P 15 02 09.1 -1.4**
comp=Z,27nm,1.1s
DOT Dot Lake 76.16 351 *e*P **P 15 02 09.1 -1.4**
comp=Z,27nm,1.1s
D29A Pettibone, Tap 76.23 320 P **P 15 02 11.7 +0.6**
baz=47
LOEI Loei 76.32 79 P **P 15 02 13.4 +1.3**
comp=Z,84nm,1.0s
H33A Prehn Over Nor 76.37 317 P **P 15 02 12.1 +0.1**
baz=48
L37A Phoenix Point, 76.43 314 P **P 15 02 11.9 -0.4**
baz=49
N39A Derby Farms, D 76.53 312 P **P 15 02 12.4 -0.5**
baz=50,SNR=6.0
M38A Pleasantville 76.58 313 P **P 15 02 12.8 -0.3**
baz=49
E29A Napoleon 76.59 320 P **P 15 02 13.7 +0.6**
baz=46
Q42A Golden Eagle 76.63 309 P **P 15 02 12.9 -0.6**
baz=50
O40A La Belle 76.65 311 P **P 15 02 12.9 -0.7**
baz=50,SNR=5.2
PBKT Sadao Pong 76.66 79 P **P 15 02 14.6 +0.7**
comp=Z,13nm,1.2s
C26A Wahner Farm, P 76.92 322 P **P 15 02 16.0 +1.0**
baz=45
ECSD EROS Data Cent 76.94 316 P **P 15 02 15.5 +0.3**
baz=48,SNR=21
ECSD EROS Data Cent 76.94 316 *e*P **P 15 02 14.2 -0.9**
comp=Z,22nm,0.6s
ECSD EROS Data Cent 76.94 316 *e*P **P 15 02 14.2 -0.9**
comp=Z,22nm,0.6s
O39A Kirksville 76.95 311 P **P 15 02 14.5 -0.8**
baz=49
N38A Joes South For 77.00 312 P **P 15 02 15.2 -0.3**
baz=49
M37A Trindle Farm, 77.07 313 P **P 15 02 15.7 -0.2**
baz=49
E28A Huff 77.11 320 P **P 15 02 16.8 +0.8**
baz=46
P40A Paris 77.13 311 P **P 15 02 15.9 -0.3**
baz=50,SNR=8.6
G30A Faulkton 77.33 319 P **P 15 02 17.5 +0.2**
baz=46
M36A Felix, Anita 77.46 314 P **P 15 02 18.0 0.0**
baz=48
Q40A Laux Farm, Aux 77.50 310 P **P 15 02 17.9 -0.4**
baz=50,SNR=5.1
P39B Salisbury 77.58 311 P **P 15 02 18.3 -0.4**
baz=49
N37A Lee Faris, Mou 77.58 313 P **P 15 02 18.5 -0.2**
baz=49
D26A Manning 77.64 322 P **P 15 02 19.8 +0.9**
baz=45
I31A Royce, Wessing 77.76 317 P **P 15 02 20.1 +0.5**
baz=47
O37A Wolven Farm, M 77.94 312 P **P 15 02 20.6 -0.1**
baz=48,SNR=5.5
P38A Dawn 77.94 312 P **P 15 02 20.6 -0.1**
baz=49,SNR=9.0
M35A Neola 77.95 314 P **P 15 02 20.9 +0.2**
baz=48
D25A Fairfield 77.98 322 P **P 15 02 22.4 +1.5**
baz=44
Q39A Willow Grove F 77.99 311 P **P 15 02 21.0 0.0**
baz=49,SNR=8.0
L34A Svendsen Farm, 78.00 315 P **P 15 02 21.0 0.0**
baz=48
R40A Maddies Statio 78.07 310 P **P 15 02 21.5 +0.1**
baz=49,SNR=17
Y47A UCPARC, Winfie 78.13 304 P **P 15 02 21.6 -0.3**
baz=51
KHON Khomkaen 78.22 79 P **P 15 02 24.2 +1.7**
comp=Z,13nm,0.8s
Z48A Northport 78.28 303 P **P 15 02 22.1 -0.5**
baz=51
M34A Aspy Farms, Fr 78.42 315 P **P 15 02 23.6 +0.2**
baz=47
Q38A Cooks Store, C 78.43 311 P **P 15 02 23.5 +0.2**
baz=49,SNR=6.4
O36A Bolckow 78.43 313 P **P 15 02 23.5 +0.1**
baz=48
P37A Lathrop 78.44 312 P **P 15 02 23.4 -0.1**
baz=48
R39A Chumby, Stover 78.51 310 P **P 15 02 24.2 +0.4**
baz=49,SNR=24
G27A Dupree 78.56 320 P **P 15 02 24.4 +0.4**
baz=45
T41A Mountain View 78.57 309 P **P 15 02 24.7 +0.4**
baz=49,SNR=31
F26A Lodgepole 78.59 321 P **P 15 02 25.1 +0.8**
baz=44
W44A Shelby Farms P 78.60 306 P **P 15 02 25.0 +0.6**
baz=50
S40A Lebanon 78.66 309 P **P 15 02 25.0 +0.3**
baz=49,SNR=18
I29A Vivian Onida 78.69 318 P **P 15 02 25.3 +0.5**
baz=46
SKNT Sakolnakorn 78.71 77 P **P 15 02 25.5 +0.3**
comp=Z,28nm,0.9s
M33A Taylor Creek F 78.71 315 P **P 15 02 25.3 +0.3**
baz=47
Z47A Carrollton 78.72 304 P **P 15 02 25.2 +0.1**
baz=50
J30A Dallas 78.75 317 P **P 15 02 25.6 +0.5**
baz=46
Y46A Houston 78.79 305 P **P 15 02 25.2 -0.3**
baz=50
N34A Lincoln 78.83 314 P **P 15 02 25.8 +0.3**
baz=47
L32A Elgin 78.86 316 P **P 15 02 26.1 +0.3**
baz=47
O35A Humboldt 78.88 313 P **P 15 02 26.0 +0.2**
baz=48
P36A Good Intent, A 78.91 312 P **P 15 02 25.8 -0.1**
baz=48
F25A Bowman 78.92 321 P **P 15 02 26.8 +0.7**
baz=44
G26A Maurine 78.95 320 P **P 15 02 26.8 +0.6**
baz=44
T40A Mansfield 78.96 309 P **P 15 02 26.9 +0.6**
baz=49,SNR=30
Q37A Longview Farm, 78.97 311 P **P 15 02 26.5 +0.1**
baz=48
SRAK Srakaew 79.03 81 P **P 15 02 30.3 +3.3**
comp=Z,64nm,0.8s,comp=Z,520nm
S39A Bolivar 79.09 310 P **P 15 02 27.2 +0.2**
baz=49,SNR=22
R38A Fenwick Farm, 79.11 311 P **P 15 02 27.2 +0.2**
baz=48,SNR=15

I28A	Midland	79.15 319	P	P	15 02 28.3	+1.1
	baz=45					
H27A	Howes	79.16 320	P	P	15 02 28.5	+1.2
	baz=45					
147A	Livingston	79.19 303	P	P	15 02 26.9	-0.6
	baz=50					
Y45A	Yeager Farm, C	79.24 305	P	P	15 02 27.9	0.0
	baz=50					
O34A	Beatrice	79.38 314	P	P	15 02 29.0	+0.5
	baz=47					
USRK	Ussuriysk Ar.	79.43 41	P	P	15 02 29.0	+0.3
	comp=Z,2.1nm,0.9s,baz=319,slow=5.7,SNR=3.5					
G25A	Newell	79.43 321	P	P	15 02 29.5	+0.8
	baz=44					
P35A	Duane Minner,	79.44 313	P	P	15 02 29.0	+0.1
	baz=48					
S38A	Stockton	79.48 310	P	P	15 02 29.0	0.0
	baz=48,SNR=6.5					
Q36A	Arnold C. Orve	79.50 312	P	P	15 02 29.2	+0.1
	baz=48,SNR=5.6					
H26A	Fairpoint	79.52 320	P	P	15 02 29.7	+0.4
	baz=44					
T39A	Clever	79.56 309	P	P	15 02 29.4	-0.2
	baz=48					
R37A	Teagarden Farm	79.56 311	P	P	15 02 29.4	-0.1
	baz=48					
Z45A	Winona	79.66 305	P	P	15 02 28.9	-1.1
	baz=50					
LAO	LASA Array	79.68 323	P	P	15 02 30.0	-0.1
	baz=42					
U40A	Yellville	79.69 309	P	P	15 02 30.3	+0.1
	baz=49,SNR=15					
247A	Quitman	79.80 303	P	P	15 02 30.4	-0.5
	baz=50					
M31A	Lambtecht Ranc	79.84 316	P	P	15 02 31.4	+0.3
	baz=46					
P34A	Walnut Farm, R	79.88 313	P	P	15 02 31.5	+0.2
	baz=47,SNR=8.4					
Q35A	Mercer Eighty,	79.90 312	P	P	15 02 31.4	+0.1
	baz=47					
H25A	Fruitdale	79.93 320	P	P	15 02 32.4	+1.0
	baz=44					
S37A	Fort Scott	79.93 311	P	P	15 02 31.6	+0.1
	baz=48,SNR=6.0					
O33A	Hebron	79.95 314	P	P	15 02 31.8	+0.2
	baz=47					
R36A	Gordon, Harris	79.95 312	P	P	15 02 31.3	-0.3
	baz=48,SNR=7.7					
V40A	Witts Springs	80.03 308	P	P	15 02 32.3	+0.2
	baz=49,SNR=12					
U39A	Green Forest	80.05 309	P	P	15 02 32.1	-0.1
	baz=48,SNR=6.0					
KSU1	Kansas State U	80.06 313	P	P	15 02 32.5	+0.3
	baz=47					
W41B	Gary Mavity, V	80.09 307	P	P	15 02 32.4	0.0
	baz=49,SNR=13					
T38A	Diamond	80.10 310	P	P	15 02 32.2	-0.2
	baz=48,SNR=5.1					
347A	Saraland	80.17 302	P	P	15 02 32.9	0.0
	baz=50					
O32A	Brockman Farm,	80.21 314	P	P	15 02 33.3	+0.3
	baz=46					
EGMT	Eagleton	80.27 326	P	P	15 02 34.3	+1.1
	baz=40,SNR=13					
EGMT	Eagleton	80.27 326	eP	P	15 02 34.0	+0.8
	comp=Z,34nm,1.1s					
EGMT	Eagleton	80.27 326	eP	P	15 02 34.0	+0.8
	comp=Z,34nm,1.1s					
Q34A	Chapman	80.38 313	P	P	15 02 34.4	+0.6
	baz=47					
S36A	Lake Cedric, C	80.41 311	P	P	15 02 34.3	+0.2
	baz=47					
T37A	Cheneyville 18	80.41 310	P	P	15 02 34.2	+0.1
	baz=48,SNR=7.2					
I25A	Rochford	80.43 320	P	P	15 02 35.2	+0.9
	baz=44					
V39A	Pettigrew	80.51 309	P	P	15 02 34.5	-0.1
	baz=48,SNR=7.3					
RSSD	Black Hills	80.51 320	P	P	15 02 35.8	+1.0
	baz=43					
RSSD	Black Hills	80.51 320	eP	P	15 02 31.3	-3.5
RSSD			pmax	pmax		
	comp=Z,3.0nm,0.8s					
RSSD	Black Hills	80.51 320	eP	P	15 02 31.2	-3.5
	comp=Z,2.8nm,0.8s					
U38A	Gravette	80.55 310	P	P	15 02 35.0	+0.1
	baz=48					
W40A	Ferguson Farm,	80.58 308	P	P	15 02 35.6	+0.7
	baz=48					
J26A	Sides Ranch, S	80.61 319	P	P	15 02 36.1	+0.9
	baz=44					
Q33A	Connelly Farm,	80.83 313	P	P	15 02 36.6	+0.3
	baz=46,SNR=6.7					
P32A	Huiting Farm,	80.83 314	P	P	15 02 36.7	+0.4
	baz=46					
S35A	Otter Creek Ra	80.86 312	P	P	15 02 36.6	+0.2
	baz=47					
O31A	Woolen Ranch,	80.86 315	P	P	15 02 37.0	+0.5
	baz=46					
X40A	Basin Creek Fa	80.91 307	P	P	15 02 36.6	-0.1
	baz=48,SNR=7.3					
V38A	Canehill	80.95 309	P	P	15 02 36.8	-0.2
	baz=48,SNR=8.4					
R34A	Isabella, Hill	80.97 312	P	P	15 02 37.5	+0.5
	baz=47,SNR=10					
U37A	Salina	81.01 310	P	P	15 02 37.2	0.0
	baz=48,SNR=5.3					
W39A	Magazine	81.02 308	P	P	15 02 37.6	+0.3
	baz=48					
T36A	Boggs Farm, Ca	81.02 311	P	P	15 02 37.4	+0.1
	baz=47					
446A	Poplarville	81.11 302	P	P	15 02 37.8	0.0
	baz=50					
WALA	Waterton Lakes	81.21 329	eP	P	15 02 36.5	-1.7
	comp=Z,3.8nm,0.6s					
WALA	Waterton Lakes	81.21 329	eP	P	15 02 36.5	-1.7
	comp=Z,3.8nm,0.6s					
Q32A	Meitler Ranch,	81.24 314	P	P	15 02 38.7	+0.2
	baz=46					
S34A	Willow Spring	81.31 312	P	P	15 02 39.2	+0.4
	baz=47					
MIAR	Mount Ida	81.33 308	P	P	15 02 39.4	+0.5
	baz=48,SNR=9.4					
MIAR	Mount Ida	81.33 308	eP	P	15 02 37.7	-1.2
MIAR			pmax	pmax		
	comp=Z,15nm,0.9s					
MIAR	Mount Ida	81.33 308	eP	P	15 02 37.7	-1.2
	comp=Z,15nm,0.9s					
MIAR	Mount Ida	81.33 308	eP	P	15 02 37.7	-1.2
	comp=Z,15nm,0.9s					
V37A	Hulbert	81.38 310	P	P	15 02 39.4	+0.2
	baz=48					
U36A	Oologah	81.39 310	P	P	15 02 39.6	+0.4
	baz=47					
R33A	Olander Ranch,	81.39 313	P	P	15 02 39.9	+0.7
	baz=46					
T35A	Sooner Cattle	81.49 311	P	P	15 02 40.3	+0.5
	baz=47,SNR=12					
W38A	Poteau	81.55 309	P	P	15 02 40.3	+0.2
	baz=48					
X39A	Fountain Ranch	81.68 308	P	P	15 02 41.5	+0.7
	baz=48,SNR=6.3					
R32A	Long Quarter,	81.72 313	P	P	15 02 41.6	+0.7
	baz=46					
TUL1	Leonard	81.75 310	P	P	15 02 41.3	+0.2
	baz=47					
T34A	McClaskey Farm	81.81 312	P	P	15 02 42.4	+0.9
	baz=46,SNR=7.3					
S33A	Kaszmaul Farm,	81.89 312	P	P	15 02 42.5	+0.6
	baz=46					
V36A	Jenks	81.92 310	P	P	15 02 42.7	+0.7
	baz=47					
KSAR	Wonju Array Be	81.93 48	P	P	15 02 42.5	+0.5
KSAR	Wonju Array Be	81.93 48	P	P	15 02 42.5	+0.5
KSAR	Wonju Array Be	81.93 48	P	P	15 02 42.5	+0.5
KSRS	Korea Array	81.94 48	P	P	15 02 42.5	+0.5
	comp=Z,1.5nm,0.7s,baz=331,slow=5.3,SNR=4.7					
U35A	Pawnee	81.99 311	P	P	15 02 43.0	+0.6
	baz=47					
X38A	Whitesboro	82.01 308	P	P	15 02 43.2	+0.8
	baz=48,SNR=14					
CBKS	Cedar Bluff	82.03 314	P	P	15 02 43.4	+0.8
	baz=45					
Y39A	Lockesburg	82.05 308	P	P	15 02 43.0	+0.4
	baz=48					
W37B	Quinton	82.06 309	P	P	15 02 43.0	+0.3
	baz=47,SNR=6.9					
RLMT	Red Lodge	82.27 324	P	P	15 02 45.2	+1.3
	baz=40,SNR=6.9					
RLMT	Red Lodge	82.27 324	eP	P	15 02 41.5	-2.4
	comp=Z,3.0nm,0.6s					
T33A	Patterson Ranc	82.39 312	P	P	15 02 44.9	+0.5
	baz=46					
X37A	Clayton	82.39 309	P	P	15 02 45.1	+0.6
	baz=47,SNR=8.9					
U34A	Anderson Ranch	82.42 311	P	P	15 02 45.2	+0.7
	baz=46					
V35A	Meyer Ranch, C	82.47 310	P	P	15 02 45.2	+0.3
	baz=47					
140A	Cam and Jess,	82.59 306	P	P	15 02 45.3	-0.2
	baz=48					
T32A	Huddler Ranch,	82.71 313	P	P	15 02 46.9	+0.8
	baz=46					
U33A	Lingo Farm, Me	82.76 312	P	P	15 02 47.1	+0.8
	baz=46					
K22A	Casper	82.82 321	P	P	15 02 47.0	+0.2
	baz=42,SNR=16					
K22A	Casper	82.82 321	eP	P	15 02 45.5	-1.2
	comp=Z,27nm,0.9s					
K22A	Casper	82.82 321	eP	P	15 02 45.5	-1.2
	comp=Z,27nm,0.9s					
V34A	Guthrie	82.82 311	P	P	15 02 47.6	+1.0
	baz=46					
KDAK	Kodiak Island	82.83 353	eP	P	15 02 47.5	+1.3
KDAK	Kodiak Island	82.83 353	eP	P	15 02 47.5	+1.3
W35A	Tecumseh	82.91 310	P	P	15 02 48.0	+0.9
	baz=46					
BOZ	Bozeman (W)	82.92 325	P	P	15 02 48.5	+1.4
	baz=39,SNR=7.9					
MSO	Missoula	82.99 327	P	P	15 02 48.5	+1.1
	baz=37					
X36A	Centrahoma	83.00 309	P	P	15 02 48.4	+0.9
	baz=47					
NEW	Newport	83.12 330	P	P	15 02 48.8	+0.8
	baz=35					
LKWY	Lake	83.21 324	eP	P	15 02 46.7	-2.1
LKWY			pmax	pmax		
	comp=Z,10.0nm,0.8s					
LKWY	Lake	83.21 324	eP	P	15 02 46.7	-2.1
	comp=Z,10.0nm,0.8s					
LKWY	Lake	83.21 324	eP	P	15 02 46.7	-2.1
	comp=Z,10.0nm,0.8s					
LKWY			ePcP	PcP	15 02 51.5	-1.1
PHWY	Pilot Hill	83.28 319	eP	P	15 02 48.7	-0.6
	comp=Z,28nm,0.7s					
PHWY	Pilot Hill	83.28 319	eP	P	15 02 48.7	-0.6
	comp=Z,28nm,0.7s					
KULM	Kulim	83.32 89	eP	P	15 02 49.2	-0.3
	comp=Z,17nm,0.8s					
KULM	Kulim	83.32 89	eP	P	15 02 49.2	-0.3
	comp=Z,17nm,0.8s					
W34A	Bridge Creek,	83.39 311	P	P	15 02 50.6	+1.0
	baz=46					
GSI	Gunungsitoli	83.42 94	eP	P	15 02 50.6	+0.6
	comp=Z,20nm,0.8s					
GSI	Gunungsitoli	83.42 94	eP	P	15 02 50.6	+0.6
	comp=Z,20nm,0.8s					
H17A	Grant Village	83.42 324	P	P	15 02 52.7	+2.9
	baz=39,SNR=7.5					
KSCO	Kaye Shedlock'	83.47 316	P	P	15 02 51.4	+1.3
	baz=44					
KSCO	Kaye Shedlock'	83.47 316	eP	P	15 02 48.0	-2.1
	comp=Z,34nm,1.3s					
KSCO	Kaye Shedlock'	83.47 316	eP	P	15 02 48.0	-2.1
	comp=Z,34nm,1.3s					
KSCO			ePcP	P	15 02 51.4	+1.3
X35A	Drake	83.49 309	P	P	15 02 50.3	+0.3
	baz=46					
542A	Morse	83.62 304	P	P	15 02 51.2	+0.5
	baz=48					
N23A	Red Feather La	83.83 319	P	P	15 02 53.3	+1.3
	baz=42,SNR=15					
Y35A	Marietta	83.86 309	P	P	15 02 52.6	+0.7
	baz=46					
Z36A	Blue Ridge	83.94 308	P	P	15 02 52.6	+0.3
	baz=47					
BW06	Boulder Array	84.20 322	P	P	15 02 53.9	+0.1
	baz=40,SNR=6.9					
PDAR	Pinedale Array	84.20 322	P	P	15 02 53.7	-0.1
	comp=Z,2.5nm,0.6s,baz=52,slow=5.4,SNR=18					
WMOK	Wichita Mounta	84.33 311	P	P	15 02 53.3	-1.0
	baz=46					
ISCO	Idaho Springs	84.47 318	P	P	15 02 56.4	+1.1
	baz=42,SNR=10					
ISCO	Idaho Springs	84.47 318	eP	P	15 02 51.9	-3.4
ISCO			pmax	pmax		
	comp=Z,9.0nm,0.8s					
ISCO	Idaho Springs	84.47 318	eP	P	15 02 51.9	-3.4
	comp=Z,9.0nm,0.8s					
ISCO			ePcP	PcP	15 02 57.2	-1.1
Y33A	Hilltop Ranch,	84.74 310	P	P	15 02 57.2	+0.8
	baz=46					
Z34A	Collier Ranch,	84.76 309	P	P	15 02 57.5	+1.0
	baz=46					
X32A	Elmer	84.84 311	P	P	15 02 57.9	+1.0
	baz=45					
Q24A	Divide	84.85 317	P	P	15 02 58.5	+1.3
	baz=42					
236A	Katherine and	84.86 307	P	P	15 02 57.6	+0.6
	baz=46					
337A	Centerville	84.93 307	P	P	15 02 58.0	+0.7
	baz=47					
PGC	Sidney	85.11 334	ePcP	PcP	15 02 59.0	-1.5
PGC	Sidney	85.11 334	eP	P	15 02 54.8	-3.0
PGC			ePcP	PcP	15 02 59.0	-1.5
	comp=Z,17nm,0.7s					
134A	White-Moore Ra	85.42 309	P	P	15 03 00.2	+0.5
	baz=46					
WHTX	Lake Whitney,	85.44 308	P	P	15 03 00.6	+0.8
	baz=46					
336A	Riesel	85.48 307	P	P	15 03 00.4	+0.4
	baz=46					
O20A	White River Ci	85.56 320	P	P	15 03 01.1	+0.5
	baz=41					
T25A	Trinidad	85.80 316	P	P	15 03 01.7	-0.1
	baz=43					
234A	Clairette	85.85 308	P	P	15 03 02.7	+0.8
	baz=46					
436A	Wall Ranch, Ga	85.87 307	P	P	15 03 02.8	+0.9
	baz=46					
133A	Hamilton Ranch	85.90 309	P	P	15 03 02.7	+0.6
	baz=45					
335A	Moody	85.91 307	P	P	15 03 02.7	+0.5
	baz=46					
SDCO	Great Sand Dun	85.94 317	P	P	15 03 02.6	+0.1
	baz=42					
YUK	Yuzh-Kuril'sk	86.04 33	iP	P	15 03 04.5	+2.0
YUK	Yuzh-Kuril'sk	86.04 33	iP	P	15 03 04.5	+2.0
233A	Rising Star	86.30 309	P	P	15 03 04.5	+0.5
	baz=45					
ABTX	Abilene, Hawle	86.32 310	P	P	15 03 05.6	+1.4
	baz=45					
435B	Jarrell	86.36 307	P	P	15 03 05.1	+0.8
	baz=46					
334A	Lometa	86.38 308	P	P	15 03 05.7	+1.3
	baz=46					
S22A	4UR Ranch, Cre	86.64 318	P	P	15 03 07.2	+1.2
	baz=41					
434A	Burnet	86.75 308	P	P	15 03 06.9	+0.6
	baz=46					
333A	Richland Sprin	86.84 308	P	P	15 03 07.9	+1.2
	baz=45					
636A	Smothers Creek	86.92 306	P	P	15 03 08.4	+1.3
	baz=46					
433A	Art	87.30 308	P	P	15 03 09.3	+0.4
	baz=45					
534A	Blanco	87.43 307	P	P	15 03 09.9	+0.4
	baz=45					
DUG	Dugway, Tooele	87.73 323	P	P	15 03 11.9	+1.0
	baz=38					
MVCO	Mesa Verde	87.91 318	P	P	15 03 12.7	+0.7
	baz=40					
ANMO	Albuquerque	88.53 315	P	P	15 03 15.3	+0.5
	baz=41					
ANMO	Albuquerque	88.53 315	iP	P	15 03 16.1	+1.3
ANMO			pmax	pmax		
	comp=Z,3.0nm,1.0s					
ANMO	Albuquerque	88.53 315	iP	P	15 03 16.1	+1.3
	comp=Z,3.0nm,1.0s					
J05D	Fort Rock, OR	88.85 330	P	P	15 03 18.0	+1.9
	baz=32					
I04A	Tendick Farm,	88.88 331	P	P	15 03 16.8	+0.7
	baz=32					
934A	Benavides	89.15 306	P	P	15 03 17.7	+0.1
	baz=45					
I03D	Drain, OR	89.31 331	P	P	15 03 19.7	+1.7
	baz=31					
MNTX	Cornudas Mount	90.34 313	P	P	15 03 23.8	+0.7
	baz=42					
M04C	Macdoel	90.36 329	P	P	15 03 23.9	+0.8
	baz=32					
WUAZ	Wupatki	90.69 319	P	P	15 03 26.3	+1.4
	baz=39					
121A	Cookes Peak, D	91.07 315	P	P	15 03 28.3	+1.6
	baz=41					
TXAR	Lajitas Array	91.08 310	P	P	15 03 27.8	+1.1
	comp=Z,2.2nm,0.8s,baz=61,slow=3.8,SNR=23					
NVAR	Mina Array Bea	91.67 325	P	P	15 03 29.7	+0.3
	comp=Z,0.6nm,0.6s,baz=40,slow=4.7,SNR=4.0					
TUC	Tucson	92.87 317	P	P	15 03 36.2	+1.3
	baz=39					
GMRC	Granite Mounta	93.41 321	P	P	15 03 38.8	+1.5
	baz=36					
WRA	Warramunga Arr	124.86 88	PKP	PKPdf	15 09 19.9	-0.5
	comp=Z,0.5nm,0.5s,baz=315,slow=2.0,SNR=11					
WRAB	Tennant Creek	124.87 88	PKIKP	PKPdf	15 09 21.1	+0.8
ASAR	Alice Springs	126.56 92	PKP	PKPdf	15 09 23.0	-0.5
	comp=Z,0.5nm,0.4s,baz=316,slow=1.6,SNR=7.1					

DDA 19 14:53:22.6, 38.85N × 29.86E, h7km, Md2.7, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
KHAL	Karahalli	0.56	211	iP	Pg	14 53 31.5	-1.9
KHAL				iS	Sb	14 53 41.9	-1.1
BOLV	Bolvadin	0.86	98	iP	Pn	14 53 44.9	+3.6
ESKT	Eskisehir	1.02	49	iP	Pg	14 53 42.5	+0.2
BAGO	Egridir - ISPA	1.13	139	iP	Pb	14 53 44.5	+0.1
KDHN	Kadinhani	1.80	100	iP	Pb	14 53 55.6	-0.4
KDHN				iS	Sn	14 54 14.4	-2.9

*SCB **19** 15:00:42.5±0.1, 17.47S × 64.40W, h25km, Ml4.2/3, Error ellipse: s-maj=4.3km s-min=2.8km az=178.0*
*ISCJB **19** 15:00:43.4±2.0, 17.38S±0.05 × 64.24W±0.05, h8km±13km, mb4.7/7, Error ellipse: s-maj=8.2km s-min=7.9km az=24.5*
*IDC **19** 15:00:44.8±1.3, 17.27S × 64.48W, h0km, mb3.8/2, mb1 4.1/5, mb1mx3.8/26, mbtmp4.0/5, ML4.2/3, MS3.0/4, Ms1 3.0/4, ms1mx2.8/28, Error ellipse: s-maj=38.7km s-min=13.2km az=176.0*
*NEIC **19** 15:00:49.6±0.9, 17.35S × 64.48W, h40km±9km, mb4.8/4, Error ellipse: s-maj=14.0km s-min=8.5km az=130.0*
NEIC Felt at Mizque.

ISC 19 15:00:45.3±0.7, 17.30S±0.06 × 64.54W±0.04, h10km, n26, σ2.38/33, mb4.7/7, 7C, Central Bolivia

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BBOE	La Paz, Chanca	3.33	278	⇑iPn	Pb	15 01 42.1	-2.7
BBOJ	La Paz, Jacaqu	3.51	275	⇑iPn	Pb	15 01 44.7	-3.1
SIV	San Ignacio	3.57	69	Pn	Pn	15 01 42.3	+1.4
	28nm,0.3s,baz=267,slow=10,SNR=735						
SIV				Sn	Sn	15 02 23.3	+0.1
	35nm,0.3s,baz=304,slow=19,SNR=3.7						
SIV				Lg	Lg	15 02 36.5	
	57nm,0.3s,baz=336,slow=22,SNR=13						
SIV	San Ignacio	3.57	69	ePn	Pn	15 01 42.2	+1.4
SIV				eSn	Sn	15 02 25.1	+1.9
LPAZ	La Paz	3.58	286	Pn	Pn	15 01 44.7	+3.1
	2.5nm,0.3s,baz=93,slow=9.7,SNR=46						
LPAZ				Pg	Pb	15 01 51.4	+2.2
	30nm,0.3s,baz=134,slow=15,SNR=67						
LPAZ				Sn	Sn	15 02 28.1	+3.8
	17nm,0.3s,baz=194,slow=14,SNR=3.5						
LPAZ				Lg	Lg	15 02 38.5	
	27nm,0.3s,baz=49,slow=17,SNR=5.2						
LPAZ				LR	LR	15 03 33.5	
	comp=Z,140nm,20.5s,baz=114,slow=46						
LPAZ	La Paz	3.58	286	⇑iPn	Pn	15 01 44.5	+2.9
LPAZ				eSn	Sb	15 02 32.9	-0.1
BBOB	La Paz, Bander	3.63	288	⇑iPn	Pn	15 01 45.1	+3.0
BBOB				⇑iSn	Sb	15 02 33.0	-1.3
	242nm,0.3s						
BBOD	La Paz, Gloria	3.94	279	⇑iPn	Pb	15 01 51.2	-4.0
BBOD				⇑iSn	Sb	15 02 39.5	-3.7
	157nm,0.7s						
MOCB	Mochara	4.06	195	ePn	Pn	15 01 48.6	+0.6
MOCB				eSn	Sn	15 02 36.3	+0.5
	213nm,0.6s						
PB11	IPOC Station P	5.43	242	ePn	Pn	15 02 08.3	+1.7
PB01	IPOC Station P	5.97	231	ePn	Pn	15 02 16.4	+2.4
LVC	Limon Verde	6.69	217	Pn	Pn	15 02 25.8	+1.8
	40nm,0.3s,baz=40,slow=9.5,SNR=7.9						
LVC	Limon Verde	6.69	217	ePn	Pn	15 02 25.2	+1.1
PB04	IPOC Station P	7.27	226	ePn	Pn	15 02 33.1	+1.2
SAML	Samuel	8.41	9	ePn	Pn	15 02 50.0	+2.7
SAML				eSn	Sn	15 04 16.2	-6.2
CPUP	Villa Florida	11.20	145	LR	LR	15 08 24.0	
	comp=Z,54nm,21.5s,baz=314,slow=41						
NNA	Nana	13.02	292	LR	LR	15 09 59.3	
	comp=Z,78nm,21.9s,baz=158,slow=42						
PLCA	Paso Flores	23.92	191	eP	P	15 05 58.7	-0.8
	48nm,2.0s						
HUMP	Col San Antoni	35.25	358	eP	P	15 07 40.2	-0.1
	28nm,1.3s						
STVI	Saint Thomas	35.43	359	eP	P	15 07 41.2	-0.6
	48nm,1.2s						
ABVI	Anegada Island	35.81	0	eP	P	15 07 44.0	-1.0
	110nm,0.9s						
TOA1	Torodi Ar. Sit	72.05	70	eP	P	15 12 09.8	-0.4
	11nm,1.5s						
TORD	Torodi Ar. Bea	72.05	70	P	P	15 12 09.8	-0.4
	0.8nm,0.5s,baz=252,slow=5.4,SNR=9.3						
TORD				LR	LR	15 41 13.8	
	comp=Z,26nm,20.8s,baz=185,slow=34						
YKA	Yellowknife Ar	88.69	339	P	P	15 13 39.7	+1.2
	0.3nm,0.7s,baz=125,slow=4.3,SNR=9.9						
ZALV	Zalesovo Beam	136.41	26	PKP	PKPdf	15 20 08.5	+1.2
	0.5nm,0.3s,baz=338,slow=1.6,SNR=3.1						
SONM	Songino Array	148.65	12	PKPbc	PKPbc	15 20 33.9	+0.9
	0.8nm,0.6s,baz=346,slow=1.2,SNR=6.7						

IDC 19 15:03:19.4±1.8, 11.55S × 165.48E, h0km, mb3.8/5, mb1 4.0/6, mb1mx3.7/32, mbtmp3.8/6, ML4.1/1, MS3.4/1, Ms1 3.4/1, ms1mx2.6/28, Error ellipse: s-maj=48.1km s-min=31.6km az=119.0, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DZM	Mont Dzumac	10.50	175	Pn	Pn	15 05 51.7	+0.3
	1.6nm,0.3s,baz=247,slow=7.7,SNR=6.9						
PMG	Port Moresby	18.14	275	LR	LR	15 13 37.6	
	comp=Z,116nm,18.9s,baz=84,slow=34						
WRA	Warramunga Arr	31.07	251	P	P	15 09 39.4	-0.1
	1.7nm,0.7s,baz=79,slow=9.3,SNR=10						
ASAR	Alice Springs	32.34	244	P	P	15 09 49.8	-0.9
	0.4nm,0.6s,baz=67,slow=10,SNR=5.2						
CMAR	Chiang Mai Arr	72.08	294	P	P	15 14 47.4	+1.3
	0.3nm,0.4s,baz=122,slow=4.7,SNR=4.5						
ILAR	Eielson Array	84.07	19	P	P	15 15 51.3	-0.3
	0.4nm,0.9s,baz=213,slow=6.5,SNR=3.7						
MKAR	Makanchi Array	93.71	317	P	P	15 16 37.5	-0.6
	0.4nm,0.7s,baz=89,slow=5.9,SNR=4.6						

MAN 19 15:07:45, 13.19N × 125.05E, h53km, mb4.7, ML3.5, MS3.5, 1C-1D, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
PLP	Palo	2.01	182	‖eP	Pn	15 08 17.6	+1.0
PLP				eS	Sn	15 08 37.1	-3.5
RCP	Roxas	2.77	235	⇑eP	Pn	15 08 28.6	+1.6
GUIM	Jordan	3.50	224	eP	Pn	15 08 38.0	+1.0
GUIM				eS	Sn	15 09 19.3	+2.1

*ISCJB **19** 15:20:25.6±0.8, 22.65S±0.08 × 65.91W±0.09, h251km, mb3.7/3, Error ellipse: s-maj=11.8km s-min=11.0km az=19.0*
*IDC **19** 15:20:26.2±1.4, 22.57S × 65.96W, h245km±18km, mb3.6/3, mb1 3.5/7, mb1mx3.3/28, mbtmp4.0/7, Error ellipse: s-maj=28.3km s-min=16.3km az=113.0*

ISC 19 15:20:26.8±0.8, 22.55S±0.09 × 66.0W±0.1, h251km, n9, σ0.81/11, mb3.9/3, Jujuy Province

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LVC	Limon Verde	2.69	268	P	Pn	15 21 17.1	+0.6

1μm,0.3s,baz=101,slow=4.3,SNR=204
LVC S **S** 15 21 54.4 -1.3
222nm,0.3s,baz=256,slow=19,SNR=3.6
LPAZ La Paz 6.55 342 P **Pn** 15 22 03.3 +0.7
0.8nm,0.3s,baz=155,slow=6.7,SNR=14
LPAZ S **S** 15 23 18.4 -0.7
0.3nm,0.3s,baz=1.7,slow=16,SNR=11
SIV San Ignacio 8.02 36 P **Pn** 15 22 20.7 +0.2
1.5nm,0.3s,baz=236,slow=12,SNR=14
PLCA Paso Flores 18.53 191 P **P** 15 24 25.3 +0.2
0.1nm,0.3s,baz=46,slow=11,SNR=3.9
DBIC Dimbokro 66.48 72 P **P** 15 30 49.4 -0.7
2.2nm,0.8s,baz=213,slow=6.5,SNR=3.6
TORD Torodi Ar. Bea 75.19 69 P **P** 15 31 41.8 -0.6
1.2nm,0.4s,baz=255,slow=5.7,SNR=34
YKA Yellowknife Ar 93.09 340 P **P** 15 33 12.0 +0.4
0.3nm,0.6s,baz=134,slow=4.8,SNR=5.9
WRA Warramunga Arr 133.33 207 PKP **PKPdf** 15 39 13.8 0.0
0.2nm,0.3s,baz=154,slow=1.8,SNR=7.4
MKAR Makanchi Array 144.83 39 PKP **PKPdf** 15 39 34.8 +1.0
0.3nm,0.4s,baz=318,slow=1.9,SNR=4.6

ISCJB ***19*** *15:37:54.9±0.2,24°.66S±0°.03×179°.92E±0°.05,h500km, mb4.6/75, Error ellipse: s-maj=6.0km s-min=4.1km az=178.7*
IDC ***19*** *15:37:54.8±0.8,24°.58S×179°.99E,h490km±8km, mb3.9/22, mb1 4.0/25,mb1mx3.9/40,mbtmp4.7/25, Error ellipse: s-maj=10.7km s-min=10.0km az=160.0*
NEIC ***19*** *15:37:55.3±0.6,24°.64S×179°.99E,h498km±7km, mb4.8/56, Error ellipse: s-maj=7.0km s-min=5.9km az=105.0*
ISC 19 15:37:55.7±0.3,24°.63S±0°.05×179.99W±0°.07,h500km, n143,σ1§50/176,mb4.6/75,1C-1D,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**4.96**	**159**	P	**P**	**15 39 22.9**	**+0.8**
RAO	116nm,0.3s,baz=70,slow=14,SNR=8.4			S	**S**	**15 40 32.5**	**-0.3**
MSVF	**Nonsavu**	**7.10**	**345**	*eP*	**P**	**15 39 43.1**	**0.0**
OUZ	**Omahuta**	**11.92**	**206**	*eP*	**P**	**15 40 35.5**	**+2.2**
DZM	**Mont Dzumac**	**12.72**	**279**	P	**P**	**15 40 43.7**	**+1.7**
	3.1nm,0.3s,baz=86,slow=16,SNR=12						
MXZ	**Matakaoa Point**	**12.97**	**186**	*eP*	**P**	**15 40 45.2**	**+0.9**
AFI	**Afiamalu**	**13.18**	**37**	P	**P**	**15 40 44.5**	**-2.4**
	3.4nm,0.3s,baz=198,slow=6.4,SNR=9.8						
AFI				S	S	15 42 57.9	-10
	1.4nm,0.3s,baz=104,slow=19,SNR=3.2						
URZ	**Urewera**	**13.81**	**190**	P	**P**	**15 40 51.4**	**-1.8**
	2.7nm,0.3s,baz=346,slow=1.1,SNR=16						
URZ				S	**S**	**15 43 20.1**	**+0.5**
	1.6nm,0.3s,baz=90,slow=20,SNR=10						
URZ	**Urewera**	**13.81**	**190**	*eP*	**P**	**15 40 51.1**	**-2.0**
URZ				*eS*	**S**	**15 43 16.5**	**-3.0**
HIZ	**Hauiti**	**14.52**	**196**	*eP*	**P**	**15 41 01.8**	**+1.1**
BKZ	**Black Stump Fm**	**14.79**	**191**	*eP*	**P**	**15 41 02.5**	**-1.1**
BKZ				*eS*	**S**	**15 43 33.4**	**-5.1**
BFZ	**Birch Farm**	**16.31**	**190**	*eP*	**P**	**15 41 17.6**	**-1.8**
	123nm,1.6s						
SNZO	**South Karori**	**17.21**	**194**	*eP*	**P**	**15 41 27.4**	**-1.1**
	117nm,1.1s						
THZ	**Tophouse**	**18.08**	**197**	*eP*	**P**	**15 41 35.2**	**-1.4**
	26nm,0.6s						
THZ				*eS*	**S**	**15 44 31.6**	**-5.3**
KHZ	**Kahutara**	**18.53**	**195**	*eP*	**P**	**15 41 39.3**	**-1.3**
	29nm,0.4s						
LTZ	**Lake Taylor**	**19.20**	**198**	*eP*	**P**	**15 41 45.6**	**-1.3**
	29nm,0.6s						
OXZ	**Oxford**	**19.77**	**197**	*eP*	**P**	**15 41 50.6**	**-1.4**
	36nm,0.8s						
CRLZ	**Canterbury Las**	**19.84**	**196**	*eP*	**P**	**15 41 51.0**	**-1.7**
	256nm,1.8s						
MQZ	**McQueen's Vall**	**19.96**	**196**	*eP*	**P**	**15 41 52.5**	**-1.2**
	120nm,1.5s						
RPZ	**Rata Peaks**	**20.40**	**199**	P	**P**	**15 41 56.1**	**-1.7**
	18nm,0.5s,baz=4.2,slow=2.7,SNR=16						
FOZ	**Fox Glacier**	**20.63**	**201**	*eP*	**P**	**15 41 58.4**	**-1.3**
	49nm,1.1s						
LBZ	**Lake Benmore**	**21.27**	**200**	*eP*	**P**	**15 42 02.9**	**-2.8**
	72nm,1.6s						
ODZ	**Otahua Downs**	**21.74**	**198**	*eP*	**P**	**15 42 10.9**	**+1.1**
	66nm,1.5s						
WKZ	**Wanaka**	**22.04**	**201**	*eP*	**P**	**15 42 10.5**	**-2.1**
	107nm,1.4s						
MLZ	**Mavora Lakes**	**22.82**	**202**	*eP*	**P**	**15 42 18.7**	**-0.9**
	68nm,1.5s						
HNR	**Honiara**	**24.37**	**305**	P	**P**	**15 42 32.1**	**-1.6**
	63nm,0.7s,baz=129,slow=6.5,SNR=6.1						
ARMA	**Armidale**	**25.78**	**251**	*eP*	**P**	**15 42 47.3**	**+1.1**
	12nm,0.6s						
EIDS	**Eidsvold**	**26.21**	**262**	*eP*	**P**	**15 42 50.2**	**+0.3**
	19nm,0.6s						
CAN	**Canberra**	**28.79**	**241**	*eP*	**P**	**15 43 13.6**	**+1.1**
	11nm,0.6s						
CTA	**Charters Tower**	**31.50**	**271**	P	**P**	**15 43 36.5**	**+0.4**
	55nm,0.3s,baz=93,slow=11,SNR=91						
CTAO	**Charters Tower**	**31.50**	**271**	*eP*	**P**	**15 43 36.7**	**+0.7**
	71nm,0.9s						
TAU	**Tasmania Unive**	**32.45**	**228**	*eP*	**P**	**15 43 44.6**	**+0.8**
	26nm,0.6s						
STKA	**Stephens Creek**	**34.46**	**249**	P	**P**	**15 44 01.5**	**+0.4**
	17nm,0.4s,baz=93,slow=10,SNR=130						
STKA	**Stephens Creek**	**34.46**	**249**	*eP*	**P**	**15 44 01.7**	**+0.5**
	4.1nm,0.8s						
PMG	**Port Moresby**	**34.75**	**290**	P	**P**	**15 44 03.3**	**-0.4**
	43nm,1.0s,baz=106,slow=7.4,SNR=6.0						
PMG	**Port Moresby**	**34.75**	**290**	*eP*	**P**	**15 44 03.3**	**-0.4**
	62nm,1.2s						
COEN	**Coen**	**36.24**	**280**	*eP*	**P**	**15 44 16.6**	**+0.4**
	30nm,1.0s						
MANU	**Manus Island**	**38.69**	**300**	*eP*	**P**	**15 44 35.7**	**-0.5**
	119nm,1.8s						
BBOO	**Buckleboo**	**39.17**	**248**	*eP*	**P**	**15 44 39.3**	**-0.6**
	33nm,0.9s						
AS01	**Alice Springs**	**41.89**	**261**	*eP*	**P**	**15 45 01.4**	**-0.4**
AS31	**Alice Springs**	**41.93**	**261**	*eP*	**P**	**15 45 01.9**	**-0.3**
	5.8nm,0.4s						
AS31				*e*ScP	**ScP**	**15 49 49.9**	**+1.0**
AS31				*eS*	**S**	**15 50 46.0**	**+1.9**
ASAR	**Alice Springs**	**41.93**	**261**	P	**P**	**15 45 01.6**	**-0.5**
	13nm,0.5s,baz=88,slow=6.7,SNR=424						
ASAR				PcP	**PcP**	**15 46 45.0**	**-1.2**
	2.2nm,0.8s,baz=94,slow=5.7,SNR=4.2						
ASAR				ScP	**ScP**	**15 49 49.9**	**+1.0**
	1.0nm,0.7s,baz=106,slow=4.3,SNR=4.3						
ASAR				S	**S**	**15 50 46.0**	**+1.9**
	0.5nm,0.9s,baz=98,slow=17,SNR=3.0						
WB2	**Warramunga Arr**	**42.36**	**267**	*eP*	**P**	**15 45 04.8**	**-0.8**
	40nm,0.4s						
WRAB	**Tennant Creek**	**42.36**	**267**	*eP*	**P**	**15 45 04.8**	**-0.8**
	32nm,0.5s						
WR1	**Warramunga Arr**	**42.37**	**267**	*eP*	**P**	**15 45 04.7**	**-1.0**
	40nm,0.8s						
WR1				*e*ScP	**ScP**	**15 49 52.7**	**+2.1**
WR1				*eS*	**S**	**15 50 50.4**	**-0.1**
WRA	**Warramunga Arr**	**42.37**	**267**	P	**P**	**15 45 04.7**	**-1.0**
	35nm,0.5s,baz=99,slow=7.0,SNR=442						
WRA				ScP	**ScP**	**15 49 52.7**	**+2.1**
	9.8nm,0.8s,baz=100,slow=3.8,SNR=29						
WRA				S	**S**	**15 50 50.4**	**-0.2**
	2.8nm,1.0s,baz=107,slow=14,SNR=4.7						
MTN	**Manton Dam**	**47.52**	**275**	*eP*	**P**	**15 45 44.1**	**-1.3**
	33nm,1.4s						
FITZ	**Fitzroy Crossi**	**50.78**	**266**	*eP*	**P**	**15 46 09.3**	**-0.2**
	25nm,0.8s						
FAKI	**Fak Fak**	**50.80**	**287**	*eP*	**P**	**15 46 09.0**	**-0.7**
	184nm,1.6s						
GUMO	**Guam**	**51.18**	**314**	*eP*	**P**	**15 46 11.6**	**-0.8**
	352nm,1.4s						
SWI	**Sorong**	**52.69**	**289**	P	**P**	**15 46 22.1**	**-1.2**
	79nm,0.7s,817nm						
SBA	**Scott Base**	**53.65**	**183**	*eP*	**P**	**15 46 31.3**	**+2.1**
	23nm,1.7s						
VNDA	**Vanda**	**53.65**	**185**	P	**P**	**15 46 30.1**	**+0.9**
	1.0nm,0.5s,baz=4.4,slow=8.1,SNR=12						
VNDA	**Vanda**	**53.65**	**185**	*eP*	**P**	**15 46 30.6**	**+1.4**
	2.7nm,1.1s						
SOEI	**Soe**	**54.92**	**275**	P	**P**	**15 46 39.5**	**+0.2**
	60nm,1.0s						
SOEI	**Soe**	**54.92**	**275**	*eP*	**P**	**15 46 40.2**	**+0.9**
	56nm,1.0s						
MBWA	**Marble Bar**	**55.26**	**261**	*eP*	**P**	**15 46 40.4**	**-1.1**
	35nm,1.3s						
CBIJ	**Chichi jima**	**63.06**	**322**	*eP*	**P**	**15 47 33.0**	**-0.6**
	94nm,0.9s						
JAGI	**Jajag, Banyuwa**	**64.60**	**272**	*eP*	**P**	**15 47 42.7**	**-1.2**
	127nm,1.4s						
QSPA	**South Pole Qui**	**65.45**	**180**	*eP*	**P**	**15 47 49.5**	**+1.0**
UGM	**Wanagama**	**68.12**	**271**	*eP*	**P**	**15 48 05.3**	**-0.5**
	412nm,1.6s						
KKM	**Kota Kinabalu**	**69.13**	**287**	*eP*	**P**	**15 48 11.5**	**-0.4**
	14nm,0.7s						
SBUM	**Sibu**	**70.97**	**282**	*eP*	**P**	**15 48 21.9**	**-0.8**
	7.2nm,1.1s						
KSM	**Kuching**	**72.24**	**280**	*eP*	**P**	**15 48 29.5**	**-0.7**
	19nm,0.8s						
MJAR	**Matsushiro Arr**	**72.50**	**326**	P	**P**	**15 48 30.2**	**-1.0**
	3.8nm,0.8s,baz=155,slow=4.5,SNR=6.7						
MAT	**Matsushiro**	**72.50**	**326**	P	**P**	**15 48 30.6**	**-0.6**
YOJ	**Yonaguni jima**	**73.68**	**307**	*eP*	**P**	**15 48 37.8**	**-0.4**
	63nm,1.0s						
JNU	**Nakatsue**	**74.08**	**319**	*eP*	**P**	**15 48 38.8**	**-1.5**
	32nm,1.5s						
YULB	**Yu-li**	**74.30**	**305**	*eP*	**P**	**15 48 41.4**	**-0.4**
	37nm,1.8s						
NACB	**Ninganchiao**	**74.54**	**306**	*eP*	**P**	**15 48 41.6**	**-1.5**
	15nm,0.7s						
SSLB	**Suanglung**	**74.78**	**305**	*eP*	**P**	**15 48 42.8**	**-1.7**
	13nm,1.0s						
ASAJ	**Asahikawa**	**76.52**	**333**	P	**P**	**15 48 54.8**	**+1.1**
	5.8nm,0.7s,baz=188,slow=9.1,SNR=4.1						
ASAJ	**Asahikawa**	**76.52**	**333**	*eP*	**P**	**15 48 54.2**	**+0.6**
	25nm,1.4s						
MAW	**Mawson**	**77.07**	**200**	P	**P**	**15 48 57.1**	**+0.7**
	4.5nm,0.6s,baz=132,slow=5.8,SNR=9.6						
MAW	**Mawson**	**77.07**	**200**	*eP*	**P**	**15 48 56.5**	**+0.1**
	2.8nm,1.4s						
KSRS	**Korea Array**	**78.81**	**320**	P	**P**	**15 49 06.2**	**0.0**
	2.5nm,0.6s,baz=134,slow=6.3,SNR=13						
KS15	**Wonju Array Si**	**78.83**	**320**	*eP*	**P**	**15 49 06.6**	**+0.3**
KSAR	**Wonju Array Be**	**78.83**	**320**	P	**P**	**15 49 06.2**	**-0.1**
PETK	**Petropavlovsk-**	**79.81**	**347**	P	**P**	**15 49 10.6**	**-0.6**
	4.5nm,0.8s,baz=142,slow=4.2,SNR=6.4						
PEA1	**Petropavlovsk**	**79.81**	**347**	*eP*	**P**	**15 49 10.6**	**-0.6**
USRK	**Ussuriysk Ar.**	**81.38**	**327**	P	**P**	**15 49 19.7**	**+0.1**
	2.5nm,0.6s,baz=144,slow=4.3,SNR=6.3						
IPM	**Ipoh**	**81.88**	**279**	*eP*	**P**	**15 49 22.2**	**-0.7**
	12nm,0.7s						
SYO	**Syowa Base**	**82.31**	**193**	*eP*	**P**	**15 49 22.2**	**-1.8**
GSI	**Gunungsitoli**	**83.66**	**274**	P	**P**	**15 49 31.7**	**-0.2**
GSI	**Gunungsitoli**	**83.66**	**274**	*eP*	**P**	**15 49 31.9**	**0.0**
	11nm,0.7s						
CN2	**Changchun**	**84.48**	**324**	*eP*	**P**	**15 49 35.4**	**+0.2**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.8s						
CN2				pmax	pmax		
	comp=Z,60nm,4.0s						
SKNT	**Sakolnakorn**	**84.83**	**291**	P	**P**	**15 49 37.8**	**+0.3**
	comp=Z,40nm,0.7s						
KLR	**Kul'dur**	**85.17**	**331**	P	**P**	**15 49 40.5**	**+2.0**
	comp=Z,1.2nm,0.6s,baz=321,slow=6.5,SNR=5.2						
NV01	**Mina Array Sit**	**85.27**	**44**	*eP*	**P**	**15 49 40.0**	**+0.5**
NVAR	**Mina Array Bea**	**85.27**	**44**	P	**P**	**15 49 39.6**	**+0.1**
	comp=Z,1.9nm,0.8s,baz=224,slow=8.9,SNR=9.7						
TPNV	**Topopah Spring**	**85.73**	**46**	*eP*	**P**	**15 49 42.4**	**+0.8**
	comp=Z,4.4nm,0.7s						
PHET	**Kaeng Krachan**	**86.77**	**286**	P	**P**	**15 49 48.9**	**+2.0**
	comp=Z,8.0nm,0.9s						
ENH	**Enshi**	**86.87**	**305**	*eP*	**P**	**15 49 47.2**	**+0.2**
	comp=Z,15nm,1.3s						
GYA	**Guiyang**	**87.13**	**301**	P	**P**	**15 49 48.3**	**-0.1**
GYA				pP	pP	15 51 42.0	+2.8
GYA				sP	sP	15 52 32.4	+2.3
GYA				PP	**PP**	**15 53 23.6**	**+2.2**
GYA				SKS	**SKSac**	**15 59 24.4**	**-3.7**
GYA				S	**S**	**15 59 44.0**	**-1.9**
GYA				pmax	pmax		
	comp=Z,10.0nm,1.0s						
GYA				pmax	pmax		
	comp=Z,120nm,5.8s						
PBKT	**Sadao Pong**	**87.22**	**290**	P	**P**	**15 49 50.3**	**+1.4**
	comp=Z,8.3nm,1.0s						
PLCA	**Paso Flores**	**87.75**	**134**	P	**P**	**15 49 52.4**	**+1.2**
	comp=Z,3.4nm,1.1s,baz=248,slow=2.8,SNR=3.6						
MTPU	**Mount Pierson**	**89.02**	**47**	*eP*	**P**	**15 49 59.2**	**+1.9**
	comp=Z,4.2nm,0.8s						
XAN	**Xi'an**	**89.20**	**308**	P	**P**	**15 49 58.8**	**+0.9**
XAN				pmax	pmax		
	comp=Z,8.0nm,0.9s						
XAN				pmax	pmax		
	comp=Z,35nm,6.0s						
LAMP	**Lampang**	**89.23**	**291**	P	**P**	**15 50 00.5**	**+2.2**
	comp=Z,3.2nm,0.9s						
CRAI	**Chiangrai**	**89.35**	**293**	P	**P**	**15 50 00.0**	**+1.2**
	comp=Z,61nm,0.8s						
CM01	**Chiang Mai Arr**	**89.76**	**290**	*eP*	**P**	**15 50 01.2**	**+0.5**
CM31	**Chiang Mai Arr**	**89.79**	**290**	*eP*	**P**	**15 50 01.5**	**+0.6**
CMAR	**Chiang Mai Arr**	**89.79**	**290**	P	**P**	**15 50 02.0**	**+1.1**
	comp=Z,3.9nm,0.9s,baz=139,slow=3.4,SNR=21						
CMMT	**Chiang Mai**	**89.94**	**291**	P	**P**	**15 50 02.8**	**+1.2**
CHTO	**Chiang Mai**	**89.94**	**291**	P	**P**	**15 50 02.9**	**+1.3**
	comp=Z,37nm,1.2s						
CHTO	**Chiang Mai**	**89.94**	**291**	*eP*	**P**	**15 50 03.0**	**+1.3**
	comp=Z,5.6nm,0.8s						
SEY	**Seymchan**	**89.98**	**348**	P	**P**	**15 50 00.5**	**-0.2**
	comp=Z,2.5nm,0.8s,baz=145,slow=11,SNR=8.8						
TMUT	**Trail Mountain**	**90.34**	**46**	*eP*	**P**	**15 50 03.8**	**+0.4**
	comp=Z,9.1nm,0.7s						
MNTX	**Cornudas Mount**	**90.62**	**55**	*eP*	**P**	**15 50 02.7**	**-1.8**
	comp=Z,3.3nm,0.9s						
LAZ	**Ladron**	**90.64**	**52**	*eP*	**P**	**15 50 03.9**	**-0.9**
SRU	**San Rafael Swe**	**90.69**	**47**	*eP*	**P**	**15 50 05.7**	**+0.8**
	comp=Z,4.2nm,0.8s						
TX31	**Lajitas Ar. Si**	**90.81**	**58**	*eP*	**P**	**15 50 06.6**	**+1.1**
LTX	**Lajitas**	**90.81**	**58**	*eP*	**P**	**15 50 06.5**	**+0.9**
TXAR	**Lajitas Array**	**90.81**	**58**	P	**P**	**15 50 06.5**	**+0.9**
	comp=Z,3.6nm,0.8s,baz=215,slow=6.8,SNR=36						
HHC	**Hu-ho-hao-te**	**90.94**	**315**	*eP*	**P**	**15 50 06.4**	**+0.6**
HHC	**Hu-ho-hao-te**	**90.94**	**315**	S	**S**	**16 00 17.1**	**-3.0**
HHC				pmax	pmax		
	comp=Z,35nm,0.8s						
HHC				pmax	pmax		
	comp=Z,220nm,7.2s						
ANMO	**Albuquerque**	**91.40**	**52**	P	**P**	**15 50 08.4**	**+0.2**
	comp=Z,1.5nm,0.8s,baz=257,slow=8.0,SNR=4.2						
ANMO	**Albuquerque**	**91.40**	**52**	*eP*	**P**	**15 50 08.0**	**-0.3**
	comp=Z,14nm,1.9s						
CD2	**Chengdu**	**91.49**	**303**	P	**P**	**15 50 08.3**	**-0.2**
CD2				pmax	pmax		
	comp=Z,2.0nm,0.5s						
ILAR	**Eielson Array**	**92.74**	**14**	P	**P**	**15 50 12.8**	**-0.6**
	comp=Z,0.2nm,0.5s,baz=193,slow=3.5,SNR=3.3						
PDAR	**Pinedale Array**	**93.21**	**44**	P	**P**	**15 50 15.8**	**-0.6**
	comp=Z,0.8nm,0.8s,baz=217,slow=4.7,SNR=6.9						
MK32	**Makanchi Array**	**112.65**	**312**	*e*Pdif	**Pdif**	**15 51 43.1**	**+0.3**
MK32				*e*PKiKP	**PKiKP**	**15 55 33.4**	**-1.4**
MK32				*e*SKPdf	**SKPdf**	**15 58 21.9**	**-0.7**
MK32				*e*PKKPbc	**PKKPbc**	**16 06 23.7**	**-1.9**
MK32				*e*PKKPab	**PKKPab**	**16 06 34.6**	**+1.2**
MKAR	**Makanchi Array**	**112.65**	**312**	Pdiff	**Pdif**	**15 51 43.1**	**+0.3**
	comp=Z,0.4nm,0.7s,baz=90,slow=5.8,SNR=4.9						
MKAR				PKiKP	**PKiKP**	**15 55 33.4**	**-1.4**
	comp=Z,0.3nm,0.6s,baz=142,slow=1.1,SNR=3.6						
MKAR				SKP		15 58 21.9	
	comp=Z,0.4nm,0.6s,baz=87,slow=1.6,SNR=4.1						
MKAR				PKKPbc	**PKKPbc**	**16 06 23.7**	**-1.9**
	comp=Z,0.2nm,0.3s,baz=294,slow=2.4,SNR=3.4						
MKAR				PKKPab	**PKKPab**	**16 06 34.6**	**+1.2**
	comp=Z,0.3nm,0.4s,baz=280,slow=2.4,SNR=4.4						
KSH	**Kashi**	**115.68**	**304**	*e*PKP	**PKPdf**	**15 55 42.4**	**+1.4**
KSH				*e*PP	PP	15 57 15.3	+22
KSH				*es*PKP		15 58 41.1	
KSH				SKS	**SKSdf**	**16 02 03.4**	**-2.1**
KSH				SKKS	**SKKSac**	**16 03 09.8**	**+8.0**
KSH				AMB	AMB		
	comp=Z,54nm,5.0s						
BVAR	**Borovoye Array**	**120.99**	**318**	PKP	**PKPdf**	**15 55 49.6**	**-1.1**
	comp=Z,0.9nm,0.4s,baz=104,slow=1.2,SNR=7.4						
ARU	**Arti**	**127.47**	**323**	PKP	**PKPdf**	**15 56 02.3**	**-0.6**
	comp=Z,2.2nm,0.5s,baz=153,slow=4.5,SNR=4.5						
ARU	**Arti**	**127.47**	**323**	*e*PKPdf	**PKPdf**	**15 56 02.0**	**-0.9**
GEYT	**Alibeck**	**129.34**	**300**	SKPbc	SKPab	15 58 43.0	+1.3
	comp=Z,2.0nm,0.7s,baz=236,slow=0.5,SNR=6.4						
ARA0	**ARCESS Array S**	**132.60**	**348**	*e*PKPdf	**PKPdf**	**15 56 12.5**	**+0.2**
ARA0				*e*SKPbc	**SKPbc**	**15 58 52.6**	**+0.1**
ARCES	**ARCESS Array B**	**132.60**	**348**	PKP	**PKPdf**	**15 56 12.5**	**+0.2**
	comp=Z,2.2nm,0.9s,baz=45,slow=1.7,SNR=6.2						
ARCES				SKPbc	**SKPbc**	**15 58 52.6**	**+0.1**
	comp=Z,2.5nm,0.8s,baz=1.9,slow=5.4,SNR=8.7						
FIA0	**FINESS Array S**	**139.14**	**341**	*e*PKPpre	PKPpre	15 56 14.4	
FIA0				*e*PKPdf	**PKPdf**	**15 56 25.1**	**+0.5**
FIA0				*e*SKPbc	**SKPbc**	**15 59 12.4**	**-0.1**
FINES	**FINESS Array B**	**139.14**	**341**	PKhKP	PKPpre	15 56 14.4	
	comp=Z,1.6nm,0.8s,baz=329,slow=4.9,SNR=3.5						
FINES				PKP	**PKPdf**	**15 56 25.1**	**+0.5**
	comp=Z,1.6nm,0.8s,baz=250,slow=3.9,SNR=3.6						
FINES				SKPbc	**SKPbc**	**15 59 12.4**	**-0.1**
	comp=Z,6.4nm,0.9s,baz=46,slow=4.0,SNR=11						
AKASG	**Malin Array Be**	**145.59**	**327**	PKPbc	**PKPdf**	**15 56 36.5**	**+0.2**
	comp=Z,2.6nm,0.5s,baz=44,slow=4.2,SNR=13						
AKASG				SKPbc	**SKPbc**	**15 59 29.3**	**+0.7**
	comp=Z,0.3nm,0.3s,baz=57,slow=3.0,SNR=4.9						
AK11	**Malin Array Si**	**145.63**	**327**	*e*PKPdf	**PKPdf**	**15 56 36.6**	**+0.2**
BR101	**Keskin Array S**	**148.02**	**306**	*e*PKPbc	**PKPdf**	**15 56 43.7**	**+2.7**
BR131	**Keskin Array S**	**148.02**	**306**	*e*PKPbc	**PKPbc**	**15 56 44.2**	**-0.6**
BR131				*e*PKPab	**PKiKP**	**15 56 49.0**	**+2.9**
BRTR	**Keskin Array B**	**148.02**	**306**	PKPbc	**PKPdf**	**15 56 43.7**	**+2.7**
	comp=Z,2.2nm,0.6s,baz=90,slow=1.4,SNR=13						
BR231	**Keskin MP Arra**	**148.61**	**307**	*e*PKPdf	**PKPdf**	**15 56 44.7**	**+2.9**
BR231				*e*PKPbc	**PKiKP**	**15 56 49.6**	**+2.2**
BUR08	**Bucovina Ar. S**	**149.56**	**325**	*e*PKPbc	**PKPbc**	**15 56 49.0**	**+0.7**
CRVS	**Cervenica-Dubn**	**150.50**	**331**	*e*PKP	**PKPbc**	**15 56 50.0**	**-0.3**
CRVS				e		15 56 58.6	
DPC	**Dobruska-Polom**	**151.38**	**338**	*e*PKP	**PKPbc**	**15 56 53.1**	**+0.8**
DPC				*e*PKPAB	**PKPab**	**15 57 03.2**	**+0.4**
KHC	**Kasperske Hory**	**153.33**	**340**	*e*PKPAB	**PKPab**	**15 57 11.4**	**+0.3**
TORD	**Torodi Ar. Bea**	**168.47**	**188**	PKPab	**PKPab**	**15 58 17.1**	**-0.8**
	comp=Z,0.6nm,0.7s,baz=178,slow=3.3,SNR=3.9						
TOA1	**Torodi Ar. Sit**	**168.47**	**188**	*e*PKPab	**PKPab**	**15 58 17.1**	**-0.8**

NIED ***19*** *15:48:00.39°.70N×142°.10E,h65km,Mw3.6 Best double couple: M0:3.25000×10^14 NP1:φ=149.00000°,δ=18.00000°, λ=78.00000°. NP2:φ=341.00000°,δ=73.00000°,λ=94.00000°.*
JMA 19 15:48:18.3±0.1,39°.71N×142°.13E,h46km±1km,M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**0.27**	**241**	P	Pn	15 48 26.9	+0.1
MIYJ				S	Sn	15 48 32.8	0.0
JTH	**Tanohata**	**0.31**	**318**	P	Pn	15 48 27.3	+0.2
JTH				S	Sn	15 48 33.3	-0.1
JKZ	**Kuzumaki**	**0.67**	**294**	P	Pn	15 48 31.7	+0.1
JKZ				S	Sn	15 48 41.1	-0.1
JOM	**Ohasama**	**0.69**	**250**	P	Pn	15 48 31.8	+0.1
JOM				S	Sn	15 48 41.5	+0.1
OFUJ	**Ofunato**	**0.72**	**210**	P	Pn	15 48 32.1	-0.1
OFUJ				S	Sn	15 48 41.4	-0.8
JANG	**Nango**	**0.81**	**325**	P	Pn	15 48 33.2	-0.2
JANG				S	Sn	15 48 44.0	-0.4
JMK	**Ichinoseki**	**1.03**	**223**	P	Pn	15 48 36.6	+0.2
JMK				S	Sn	15 48 49.6	-0.1
JAH	**Hinai**	**1.24**	**293**	P	Pn	15 48 39.8	+0.6
JAH				S	Sn	15 48 55.9	+1.1
JTM	**Tenmabayashi**	**1.35**	**323**	P	Pn	15 48 40.8	+0.1
JTM				S	Sn	15 48 57.7	+0.3

IDC 19 15:57:03.9±1.7,9°.83S×124°.03E,h0km,mb3.7/1, mb1 3.6/4,mb1mx3.4/39,mbtmp3.5/4,ML3.4/3,MS2.4/1, Ms1 2.6/1,ms1mx2.1/39,Error ellipse: s-maj=112.6km s-min=26.9km az=63.0,Timor region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**8.37**	**169**	Pn	Pn	15 59 07.6	+1.1
	0.4nm,0.3s,baz=354,slow=9.9,SNR=19						
FITZ				Sn	Sn	16 00 39.1	-2.6
	0.7nm,0.3s,baz=92,slow=12,SNR=6.8						
WRA	**Warramunga Arr**	**14.14**	**136**	Pn	Pn	16 00 23.8	-1.9
	0.2nm,0.3s,baz=312,slow=14,SNR=4.9						
WRA				Sn	Sn	16 02 53.4	-10
	0.3nm,0.3s,baz=311,slow=23,SNR=4.0						
**

PMG Port Moresby 2.99 184 Pn Pn 16 20 52.2 -0.3
4.2nm,0.3s,baz=338,slow=6.5,SNR=14
PMG Sn Sn 16 21 31.5 +2.4
4.1nm,0.3s,baz=184,slow=15,SNR=6.6
WRA Warramunga Arr 18.48 222 P P 16 24 21.4 -0.1
0.1nm,0.3s,baz=49,slow=11,SNR=6.0
ASAR Alice Springs 21.51 216 P P 16 24 53.4 -1.1
0.3nm,0.5s,baz=33,slow=12,SNR=14
FITZ Fitzroy Crossi 24.18 239 P P 16 25 22.5 +0.4
1.3nm,0.6s,baz=50,slow=8.8,SNR=11
RAO Raoul Island 39.84 129 LR LR 16 39 42.8
comp=Z,74nm,20.2s,baz=224,slow=30
TORD Torodi Ar. Bea 145.55 284 PKPbc PKPdf 16 39 44.8 -0.3
0.3nm,0.7s,baz=58,slow=3.6,SNR=2.4

*CSEM **19** 16:23:24.0, 43.°42N×12.°47E, h7km, MD1.6/6*
ROM 19 16:23:24.0±0.1, 43.°42N×12.°47E, h7km±1km, Md1.6/6, Ml1.1/3, Error ellipse: s-maj=0.6km s-min=0.6km az=66.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ATVO	**AVT- Monte Val**	**0.06**	**232**	Pg	Pg	16 23 25.9	+0.1
ATVO				Sg	Sg	16 23 27.2	+0.2
48nm,0.2s							
ATVO	**AVT- Monte Val**	**0.06**	**232**	Pg	Pg	16 23 25.9	+0.1
ATVO				Sg	Sg	16 23 27.2	+0.2
48nm,0.2s							
ATPC	**Poggio Castell**	**0.06**	**352**	Pg	Pg	16 23 26.1	+0.2
ATPC				Sg	Sg	16 23 27.6	+0.4
179nm,0.1s							
ATPC	**Poggio Castell**	**0.06**	**352**	Pg	Pg	16 23 26.1	+0.2
ATPC				Sg	Sg	16 23 27.6	+0.4
179nm,0.1s							
PIEI	**Pieia**	**0.13**	**22**	Pg	Pg	16 23 27.2	+0.4
PIEI				Sg	Sg	16 23 29.7	+1.0
36nm,0.2s							
PIEI	**Pieia**	**0.13**	**22**	Pg	Pg	16 23 27.2	+0.4
PIEI				Sg	Sg	16 23 29.7	+1.0
36nm,0.2s							
MURB	**Monte Urbino**	**0.16**	**165**	Pg	Pg	16 23 28.0	+0.7
MURB				Sg	Sg	16 23 30.9	+1.3
50nm,0.3s							
MURB	**Monte Urbino**	**0.16**	**165**	Pg	Pg	16 23 28.0	+0.7
MURB				Sg	Sg	16 23 30.9	+1.3
50nm,0.3s							
BADI	**Badiali**	**0.19**	**299**	Pg	Pg	16 23 28.4	+0.6
BADI				Sg	Sg	16 23 31.8	+1.4
BADI	**Badiali**	**0.19**	**299**	Pg	Pg	16 23 28.4	+0.6
BADI				Sg	Sg	16 23 31.8	+1.4
SSFR	**Montelago di S**	**0.23**	**85**	Pg	Pg	16 23 29.0	+0.4
SSFR				Sg	Sg	16 23 33.2	+1.5
23nm,0.2s							
SSFR	**Montelago di S**	**0.23**	**85**	Pg	Pg	16 23 29.0	+0.4
SSFR				Sg	Sg	16 23 33.2	+1.5
23nm,0.2s							

*PRU **19** 16:27:30.8, 49.°83N×18.°54E, h0km*
*ISCJB **19** 16:27:47.0±0.5, 50.°32N±0.°03×18.°68E±0.°03, h0km, Error ellipse: s-maj=5.1km s-min=2.2km az=13.2*
*WAR **19** 16:27:48.8, 50.°27N×18.°81E, h1km, Mw2.7*
*CSEM **19** 16:27:48.4±0.3, 50.°30N×18.°71E, h2km, ML3.1/8, Error ellipse: s-maj=8.3km s-min=3.5km az=8.0*
ISC 19 16:27:48.3±0.8, 50.°23N±0.°03×18.°73E±0.°02, h0km, n45, σ0.°78/75, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHZP	**Chorzow**	**0.18**	**71**	*e*Pg	**Pg**	**16 27 51.5**	**-0.2**
CHZP				*e*Sg	**Sg**	**16 27 53.6**	**-0.4**
CHZP	**Chorzow**	**0.18**	**71**	*e*Pg	**Pg**	**16 27 51.5**	**-0.2**
CHZP				*e*Sg	**Sg**	**16 27 53.6**	**-0.4**
CHZP	**Chorzow**	**0.18**	**71**	*e*Pg	**Pg**	**16 27 51.5**	**-0.2**
CHZP				*e*Sg	**Sg**	**16 27 53.6**	**-0.4**
OKC	**Ostrava-Krasne**	**0.55**	**224**	*e*PG	**Pb**	**16 28 00.6**	**-0.1**
OKC				*e*SG	**Sb**	**16 28 09.0**	**-0.1**
comp=Z,37nm,0.4s							
OKC	**Ostrava-Krasne**	**0.55**	**224**	Pg	**Pb**	**16 28 00.6**	**-0.1**
OKC				Sg	**Sb**	**16 28 09.0**	**-0.1**
37nm,0.4s							
OJC	**Ojcow**	**0.69**	**91**	*e*Pg	**Pg**	**16 28 00.9**	**-0.6**
OJC				*e*Sg	**Sg**	**16 28 09.7**	**-0.6**
OJC	**Ojcow**	**0.69**	**91**	*e*Pg	**Pg**	**16 28 00.9**	**-0.6**
OJC				*e*Sg	**Sg**	**16 28 09.7**	**-0.6**
MORC	**Moravsky Berou**	**0.89**	**240**	*e*Pg	**Pb**	**16 28 06.3**	**-0.3**
MORC				*e*Sg	**Sb**	**16 28 19.0**	**-0.1**
LANS	**Liptovska Anna**	**1.18**	**156**	*e*Pg	**Pb**	**16 28 11.6**	**0.0**
LANS				*e*Sg	**Sn**	**16 28 28.4**	**-0.6**
LANS	**Liptovska Anna**	**1.18**	**156**	*e*PG	**Pb**	**16 28 11.6**	**0.0**
LANS				*e*SG	**Sn**	**16 28 28.4**	**-0.6**
KRLC	**Kraliky**	**1.26**	**264**	*e*PG	**Pg**	**16 28 12.0**	**-0.5**
KRLC				*e*SG	**Sg**	**16 28 28.9**	**+0.1**
KRLC	**Kraliky**	**1.26**	**264**	Pg	**Pg**	**16 28 12.0**	**-0.5**
KRLC				Sg	**Sg**	**16 28 28.9**	**+0.1**
NIE	**Niedzica**	**1.30**	**128**	*e*Pg	**Pg**	**16 28 13.1**	**-0.1**
NIE				*e*Sg	**Sb**	**16 28 31.2**	**+0.3**
NIE	**Niedzica**	**1.30**	**128**	*e*Pg	**Pg**	**16 28 13.1**	**-0.1**
NIE				*e*Sg	**Sb**	**16 28 31.2**	**+0.3**
NIE	**Niedzica**	**1.30**	**128**	*e*Pg	**Pg**	**16 28 13.1**	**-0.1**
NIE				*e*Sg	**Sb**	**16 28 31.2**	**+0.3**
DPC	**Dobruska-Polom**	**1.55**	**275**	*e*PG	**Pn**	**16 28 17.3**	**+0.1**
DPC				*e*SG	**Sb**	**16 28 38.2**	**+0.2**
comp=Z,34nm,0.4s							
DPC	**Dobruska-Polom**	**1.55**	**275**	Pg	**Pn**	**16 28 17.3**	**+0.1**
DPC				Sg	**Sb**	**16 28 38.2**	**+0.2**
34nm,0.4s							
VRAC	**Vranov**	**1.67**	**237**	*e*Pn	**Pb**	**16 28 19.7**	**-0.1**
VRAC				*e*Sg	**Sb**	**16 28 41.3**	**0.0**
KSP	**Ksiaz**	**1.67**	**292**	*e*Pg	**Pg**	**16 28 21.2**	**+0.9**
KSP				*e*Sg	**Sg**	**16 28 42.8**	**+0.9**
KSP	**Ksiaz**	**1.67**	**292**	*e*Pg	**Pg**	**16 28 21.2**	**+0.9**
KSP				*e*Sg	**Sg**	**16 28 42.6**	**+0.7**
KSP	**Ksiaz**	**1.67**	**292**	*e*Pg	**Pg**	**16 28 21.2**	**+0.9**
KSP				*e*Sg	**Sg**	**16 28 42.6**	**+0.7**
VYHS	**Vyhne**	**1.74**	**178**	*e*Pn	**Pg**	**16 28 22.3**	**+0.7**
VYHS				*e*Sn	**Sg**	**16 28 44.1**	**-0.1**
VYHS	**Vyhne**	**1.74**	**178**	*e*PN	**Pg**	**16 28 22.3**	**+0.7**
VYHS				*e*SN	**Sg**	**16 28 44.1**	**-0.1**
VYHS				*e*LG	Lg	16 28 56.6	
UPC	**Upice**	**1.76**	**280**	*e*SG	**Sb**	**16 28 44.4**	**+0.3**
comp=Z,20nm,0.4s							
UPC	**Upice**	**1.76**	**280**	Sg	**Sb**	**16 28 44.4**	**+0.3**
20nm,0.4s							
STHS	**Stebnicka Huta**	**1.82**	**116**	*e*Pn	**Pb**	**16 28 21.9**	**-0.6**
STHS				*e*Sn	**Sg**	**16 28 48.6**	**+1.8**
STHS	**Stebnicka Huta**	**1.82**	**116**	*e*PN	**Pb**	**16 28 21.9**	**-0.6**
STHS				*e*SN	**Sg**	**16 28 48.6**	**+1.8**
STHS				*e*LG	Lg	16 28 59.1	
CRVS	**Cervenica-Dubn**	**2.22**	**126**	*e*Pn	**Pb**	**16 28 29.6**	**+0.3**
CRVS	**Cervenica-Dubn**	**2.22**	**126**	*e*PN	**Pb**	**16 28 29.6**	**+0.3**
TREC	**Trest**	**2.30**	**247**	*e*SG	**Sb**	**16 29 00.4**	**+0.7**
comp=Z,15nm,0.3s							
TREC	**Trest**	**2.30**	**247**	Sg	**Sb**	**16 29 00.4**	**+0.7**
15nm,0.3s							
GOPC	**GO Pecny, Ondr**	**2.56**	**264**	*e*SG	**Sb**	**16 29 08.5**	**+1.4**
comp=Z,19nm,0.5s							
GOPC	**GO Pecny, Ondr**	**2.56**	**264**	Sg	**Sb**	**16 29 08.5**	**+1.4**
19nm,0.5s							
KOLS	**Kolonicke sedl**	**2.65**	**118**	*e*Pn	**Pb**	**16 28 36.7**	**+0.1**
KOLS	**Kolonicke sedl**	**2.65**	**118**	*e*PN	**Pb**	**16 28 36.7**	**+0.1**
PVCC	**Panska Ves**	**2.68**	**278**	*e*PG	**Pg**	**16 28 39.9**	**+0.3**
PVCC				*e*SG	**Sg**	**16 29 14.2**	**-0.1**
comp=Z,21nm,0.4s							
PVCC	**Panska Ves**	**2.68**	**278**	Pg	**Pg**	**16 28 39.9**	**+0.3**
PVCC				Sg	**Sg**	**16 29 14.2**	**-0.1**
21nm,0.4s							
PRU	**Pruhonice**	**2.71**	**266**	*e*SG	**Sg**	**16 29 13.4**	**-1.8**
comp=Z,10.0nm,0.4s							
PRU	**Pruhonice**	**2.71**	**266**	Sg	**Sg**	**16 29 13.4**	**-1.8**
10.0nm,0.4s							
BRG	**Berggiesshubel**	**3.12**	**284**	PG	**Pg**	**16 28 48.0**	**-0.1**
BRG				SG	**Sg**	**16 29 27.1**	**-1.4**
1.0nm,0.8s							
KHC	**Kasperske Hory**	**3.52**	**254**	*e*PN	**Pn**	**16 28 44.2**	**-0.1**
KHC				*e*PG	**Pg**	**16 28 54.1**	**-1.6**
KHC				*e*SG	**Sb**	**16 29 37.6**	**+2.8**
comp=Z,17nm,0.6s							
KHC	**Kasperske Hory**	**3.52**	**254**	Pn	**Pn**	**16 28 44.2**	**-0.1**
CLL	**Collm**	**3.79**	**289**	*e*Sg	**Sg**	**16 29 50.0**	**0.0**
comp=Z,15nm,0.8s							
NKC	**Novy Kostel**	**4.03**	**272**	*e*SG	**Sg**	**16 29 56.6**	**-1.2**
comp=Z,11nm,0.4s							
NKC	**Novy Kostel**	**4.03**	**272**	Sg	**Sg**	**16 29 56.6**	**-1.2**
comp=Z,11nm,0.4s							

MEX 19 16:39:29.9±0.5, 14.°46N×93.°03W, h16km±73km, MD3.9, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		**1.25**	**352**	*i* P	Pn	16 39 49.1	-3.5
PCIG				*e*S	Sb	16 40 03.4	-5.5
CCIG	**Comitan**	**2.00**	**25**	*e*P	Pn	16 40 00.6	-2.7
CCIG				*i* S	Sn	16 40 23.4	-4.7
TGIG		**2.30**	**358**	*e*P	Pn	16 40 03.6	-3.7
TGIG				*i* S	Sn	16 40 31.4	-4.0

MAN 19 16:47:38, 8.°24N×126.°90E, h37km, mb4.4, ML3.2, MS3.0, Mindanao

*WAR **19** 17:05:39.3, 50.°04N×18.°44E, h1km, Mw2.2*
ISC 19 17:04:39.4±0.9, 50.°07N±0.°05×18.°42E±0.°02, h0km, n16, σ0.°84/25, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OKC	**Ostrava-Krasne**	**0.29**	**218**	*e*PG	**Pg**	**17 04 45.8**	**+0.8**
OKC				*e*SG	**Sg**	**17 04 49.6**	**+0.8**
comp=Z,56nm,0.5s							
OJC	**Ojcow**	**0.90**	**80**	*e*Pg	**Pg**	**17 04 56.2**	**-0.4**
OJC				*e*Sg	**Sg**	**17 05 08.4**	**+0.2**
OJC	**Ojcow**	**0.90**	**80**	*e*Pg	**Pg**	**17 04 56.2**	**-0.4**
OJC				*e*Sg	**Sg**	**17 05 08.4**	**+0.2**
KRLC	**Kraliky**	**1.06**	**271**	*e*PG	**Pg**	**17 04 59.4**	**-0.3**
KRLC				*e*SG	**Sg**	**17 05 13.3**	**-0.1**
LANS	**Liptovska Anna**	**1.14**	**143**	*e*PG	**Pg**	**17 05 01.3**	**0.0**
LANS				*e*SG	**Sg**	**17 05 14.0**	**-2.1**
DPC	**Dobruska-Polom**	**1.38**	**283**	*e*PG	**Pg**	**17 05 05.7**	**-0.1**
DPC				*e*SG	**Sg**	**17 05 24.2**	**+0.5**
comp=Z,8.8nm,0.3s							
NIE	**Niedzica**	**1.38**	**117**	*e*Pg	**Pg**	**17 05 05.9**	**+0.1**
NIE				*e*Sg	**Sg**	**17 05 24.4**	**+0.7**
NIE	**Niedzica**	**1.38**	**117**	*e*Pg	**Pg**	**17 05 05.9**	**+0.1**
NIE				*e*Sg	**Sg**	**17 05 24.4**	**+0.7**
VYHS	**Vyhne**	**1.60**	**170**	*e*PN	**Pn**	**17 05 08.2**	**-0.8**
VYHS				*e*SN	**Sn**	**17 05 29.8**	**-0.5**
VYHS				*e*LG	Lg	17 05 31.8	
UPC	**Upice**	**1.61**	**287**	*e*SG	**Sg**	**17 05 31.5**	**+0.4**
comp=Z,6.0nm,0.3s							
STHS	**Stebnicka Huta**	**1.94**	**109**	*e*PN	**Pb**	**17 05 16.6**	**+0.9**
STHS				*e*LG	Lg	17 05 48.0	
TREC	**Trest**	**2.06**	**249**	*e*SG	**Sb**	**17 05 44.0**	**+0.2**
comp=Z,4.6nm,0.3s							
GOPC	**GO Pecny, Ondr**	**2.35**	**268**	*e*SG	**Sb**	**17 05 52.6**	**+0.4**
PRU	**Pruhonice**	**2.50**	**270**	*e*SG	**Sb**	**17 05 57.4**	**+0.8**
comp=Z,2.8nm,0.3s							
PVCC	**Panska Ves**	**2.51**	**282**	*e*SG	**Sg**	**17 05 59.7**	**-0.5**
comp=Z,9.6nm,0.3s							
KHC	**Kasperske Hory**	**3.29**	**255**	*e*SG	**Sg**	**17 06 22.7**	**-2.3**
comp=Z,2.6nm,0.5s							

*MOS **19** 17:05:10.9±1.2, 34.°75S×71.°72W, h50km, mb5.4/24, Error ellipse: s-maj=17.5km s-min=7.4km az=101.3*
*GUC **19** 17:05:11.3±0.7, 34.°75S×71.°67W, h36km±3km, ML5.2*
*NEIC **19** 17:05:11.0, 34.°75S×71.°67W, h36km, mb5.2/84, After GUC.*
NEIC Felt [VI] at Constitucion and [V] at Cauquenes, Hualane, Linares, Longavi, Maule, Molina, Paredones, Parral, Pichilemu, San Clemente and Talca. Felt widely in central Chile from Los Andes to Los Angeles. Felt at Mendoza, Argentina.
*BJI **19** 17:05:11.5, 34.°70S×71.°50W, h46km, mB5.0/17, Ms5.3/12, Ms7 4.9/12*
*IDC **19** 17:05:11.2±0.4, 34.°63S×71.°95W, h53km±1km, MW5.2/71, mb1 4.8/20, mb1mx4.7/29, mbtmp5.0/20, MS4.3/20, Ms1 4.3/20, ms1mx4.2/27, Error ellipse: s-maj=14.9km s-min=10.3km az=70.0*
*GCMT **19** 17:05:11.6±0.2, 34.°63S×71.°95W, h53km±1km, MW5.2/71, Moment Tensor Solution. s65,c86; s71,c108; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}5.58±.20; $M_{\theta\theta}$0.59±.17; $M_{\phi\phi}$-6.17±.16; $M_{r\theta}$1.74±.14; $M_{\phi\theta}$-0.34±.14; $M_{\phi r}$-3.57±.16; Best double couple: $M_0$7.11700×10^{16} NP1:ϕs167.00000°, δ62.00000°, λ74.00000°. NP2: ϕs19.00000°, δ32.00000°, λ118.00000°. Principal axes: T 7.0620, Plg68.0000°, Azm44.0000°; N 0.1140, Plg14.0000°, Azm175.0000°; P -7.1720, Plg16.0000°, Azm269.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*ISCJB **19** 17:05:12.0±0.4, 34.°76S±0.°02×71.°63W±0.°05, h68km±3km, mb5.0/96 Error ellipse: s-maj=6.8km s-min=3.7km az=7.0*
*SJA **19** 17:05:15.4±0.5, 34.°43S×71.°59W, h127km±8km, ML5.0, MW5.1*
ISC 19 17:05:11.3±0.3, 34.°75S±0.°03×71.°66W±0.°05, h46km±2km, h45km:pP-P, n771, σ1s12/895, mb5.2/96, MS4.4/20, 11C-8D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHPI	**Pichilemu**	**0.46**	**322**	↑*i* P	**Pn**	**17 05 21.0**	**-0.8**
CHPI				*i* S	**Sn**	**17 05 28.7**	**-0.4**
TALC	**Talca**	**0.65**	**178**	↑*i* P	**Pn**	**17 05 24.2**	**0.0**
TALC				*i* S	**Sn**	**17 05 33.6**	**+0.1**
ANTU	**Antumapu**	**1.46**	**36**	↑*i* P	**Pn**	**17 05 36.5**	**+1.3**
ANTU				*i* S	**Sn**	**17 05 56.1**	**+3.0**
ANTU				IAML		17 05 59.1	
comp=E,42μm,0.3s							
SJCH	**San Jose de Ma**	**1.55**	**45**	↓*i* P	**Pn**	**17 05 38.2**	**+1.6**
SJCH				*i* S	**Sn**	**17 05 57.8**	**+2.2**
STL	**Santa Lucia**	**1.56**	**33**	↓*i* P	**Pn**	**17 05 37.9**	**+1.3**
STL				*i* S	**Sn**	**17 05 58.3**	**+2.6**
CLCH	**Cerro Calan**	**1.64**	**35**	↓*i* P	**Pn**	**17 05 39.0**	**+1.2**
CLCH				*i* S	**Sn**	**17 06 01.0**	**+3.2**
CLCH				IAML		17 06 07.9	
comp=N,42μm,0.6s							
YECH	**El Yeso**	**1.70**	**51**	IAML		17 06 04.7	
comp=N,17μm,0.3s							
PEL	**Peldehue**	**1.80**	**27**	↑*i* P	**Pn**	**17 05 41.2**	**+1.4**
PEL				*i* S	**Sn**	**17 06 04.5**	**+3.0**
PEL				IAML		17 06 10.1	
comp=N,47μm,0.8s							
ROC1	**El Roble**	**1.85**	**17**	*e*P	**Pn**	**17 05 44.6**	**+3.8**
ROC1				*e*S	**Sn**	**17 06 06.4**	**+3.3**
ROC1	**El Roble**	**1.85**	**17**	*e*Pn	**Pn**	**17 05 41.9**	**+1.1**
ROCH	**El Roble**	**1.85**	**17**	*e*P	**Pn**	**17 05 42.3**	**+1.4**
ROCH				IAML		17 06 13.1	
comp=N,24μm,0.2s							
CCHI	**Chillan**	**1.88**	**190**	*e*P	**Pn**	**17 05 41.9**	**+1.0**
CCHI				*e*S	**Sn**	**17 06 05.8**	**+2.4**
CCHI				IAML		17 06 15.7	
comp=E,84μm,0.6s							
CCSP	**San Pedro de C**	**2.40**	**209**	IAML		17 06 32.0	
comp=N,23μm,0.6s							
AAGR	**Agrelo**	**2.88**	**56**	*e*P	**Pn**	**17 05 58.8**	**+3.9**
ARCO	**CERRO ARCO**	**2.96**	**51**	*e*P	**Pn**	**17 05 59.8**	**+3.8**
ARCO				IAML		17 06 53.4	
comp=Z,3μm,0.8s							
AUSP	**Uspallata**	**3.16**	**38**	*e*P	**Pn**	**17 06 02.3**	**+3.5**
ASAL	**Salagasta**	**3.19**	**48**	*e*P	**Pn**	**17 06 02.3**	**+3.2**
RTLS	**Leoncito**	**3.55**	**35**	*e*P	**Pn**	**17 06 07.2**	**+3.0**
RTCV	**Cerro Valdivia**	**3.89**	**43**	*e*P	**Pn**	**17 06 11.2**	**+2.6**
SJA	**San Juan**	**4.13**	**40**	*e*P	**Pn**	**17 06 15.1**	**+3.2**
SJA				IAML		17 07 38.5	
comp=Z,3μm,1.2s							
RTLL	**Cerro Villicun**	**4.34**	**39**	*e*P	**Pn**	**17 06 16.8**	**+2.1**
ACAN	**Cantantal**	**4.48**	**58**	*e*P	**Pn**	**17 06 19.2**	**+2.5**
AMOG	**MOGNA**	**4.64**	**36**	*e*P	**Pn**	**17 06 20.9**	**+1.9**
MRA	**San Martin**	**5.48**	**67**	*e*P	**Pn**	**17 06 33.0**	**+2.5**
LCO	**Las Campanas**	**5.78**	**8**	*e*P	**Pn**	**17 06 34.7**	**0.0**
LCO	**Las Campanas**	**5.78**	**8**	*e*Pn	**Pn**	**17 06 33.9**	**-0.8**
AGUA	**GUANDACOL**	**5.90**	**28**	*e*P	**Pn**	**17 06 37.4**	**+1.1**
PLCA	**Paso Flores**	**6.04**	**172**	P	**Pn**	**17 06 40.3**	**+2.2**
comp=Z,14nm,0.3s,baz=356,slow=11,SNR=253							
PLCA				LR	LR	17 09 06.6	
comp=Z,3μm,19.8s,baz=18,slow=38							
CYA	**Choya**	**8.03**	**40**	*e*P	**Pn**	**17 07 02.9**	**-2.5**
TRQA	**Tornquist**	**8.47**	**116**	*e*Pn	**Pn**	**17 07 13.2**	**+1.7**
AHML	**Horco Molle**	**9.62**	**36**	*e*P	**Pn**	**17 07 24.1**	**-3.2**
PB10	**IPOC Station P**	**11.24**	**5**	*e*Pn	**Pn**	**17 07 52.1**	**+2.8**
LVC	**Limon Verde**	**12.33**	**12**	LR	LR	17 12 53.1	
comp=Z,7μm,21.4s,baz=214,slow=38							
CHRN	**Cochrane**	**12.51**	**183**	*e*Pn	**Pn**	**17 08 07.3**	**+0.8**
CPUP	**Villa Florida**	**14.92**	**60**	P	**Pn**	**17 08 41.2**	**+2.0**
comp=Z,0.4nm,0.3s,baz=225,slow=11,SNR=8.3							
CPUP				LR	LR	17 15 00.1	
comp=Z,4μm,19.0s,baz=237,slow=40							
CPUP	**Villa Florida**	**14.92**	**60**	*e*Pn	**P**	**17 08 43.0**	**-1.0**
LPAZ	**La Paz**	**18.66**	**11**	P	**Pn**	**17 09 27.6**	**+0.8**
comp=Z,0.7nm,0.3s,baz=177,slow=7.7,SNR=71							
LPAZ	**La Paz**	**18.66**	**11**	*e*P	**Pn**	**17 09 27.1**	**+0.4**
comp=Z,73nm,1.0s							
EFI	**East Falkland**	**19.55**	**154**	↓*e*P	**P**	**17 09 34.7**	**-0.2**
EFI				pmax	pmax		
comp=Z,237nm,3.2s							
USHA	**Ushuaia**	**20.21**	**175**	P	**P**	**17 09 42.9**	**+0.9**
comp=Z,177nm,1.0s,baz=345,slow=8.9,SNR=7.5							
USHA				LR	LR	17 18 18.3	
comp=Z,6μm,18.1s,baz=22,slow=39							
SIV	**San Ignacio**	**20.96**	**30**	P	**P**	**17 09 49.6**	**-0.9**
comp=Z,80nm,1.0s,baz=226,slow=12,SNR=127							
SIV				LR	LR	17 19 21.5	
comp=Z,840nm,19.8s,baz=206,slow=41							
NNA	**Nana**	**23.14**	**347**	LR	LR	17 17 10.7	
comp=Z,457nm,22.0s,baz=159,slow=31							
NNA	**Nana**	**23.14**	**347**	*i* P	**P**	**17 10 16.1**	**+2.3**
SPB	**Sao Paulo**	**23.84**	**69**	*e*P	**P**	**17 10 19.5**	**-0.7**
comp=Z,108nm,1.0s							
SAML	**Samuel**	**26.83**	**19**	*e*P	**P**	**17 10 46.7**	**-0.7**
comp=Z,71nm,1.6s							
ATAH	**Atahualpa**	**28.17**	**346**	LR	LR	17 20 34.3	
comp=Z,291nm,20.6s,baz=193,slow=33							
OTAV	**Otavalo**	**35.38**	**348**	*e*P	**P**	**17 12 05.1**	**+1.9**
comp=Z,36nm,1.3s							
OTAV	**Otavalo**	**35.38**	**348**	*e*P	**P**	**17 12 03.1**	**-0.1**
PTGA	**Pitinga**	**35.56**	**20**	P	**P**	**17 12 03.3**	**-1.0**
comp=Z,77nm,0.9s,baz=199,slow=9.3,SNR=77							
PTGA				pP	**pP**	**17 12 15.9**	**-0.7**
comp=Z,14nm,0.5s,baz=181,slow=12,SNR=5.1							
PTGA	**Pitinga**	**35.56**	**20**	*e*P	**P**	**17 12 03.5**	**-0.8**
comp=Z,98nm,1.0s							
PTGA				pP	**pP**	**17 12 15.9**	**-0.7**
CRUC	**La Cruz**	**36.47**	**351**	*e*P	**P**	**17 12 13.8**	**+1.4**
PRAC	**Prado**	**38.38**	**355**	*e*P	**P**	**17 12 28.6**	**+0.3**
VILC	**Villavicencio,**	**38.70**	**357**	*e*P	**P**	**17 12 30.2**	**-0.8**
MALC	**Bahia Malaga**	**38.92**	**351**	*e*P	**P**	**17 12 31.9**	**-0.8**
TOLC	**Tolima**	**39.28**	**354**	*e*P	**P**	**17 12 37.6**	**+1.5**
ROSC	**El Rosal**	**39.46**	**356**	P	**P**	**17 12 40.1**	**+2.5**
comp=Z,14nm,0.7s,baz=166,slow=11,SNR=9.8							
ROSC	**El Rosal**	**39.46**	**356**	*e*P	**P**	**17 12 41.5**	**+3.9**
comp=Z,20nm,1.0s							
ROSC				*es*P	**sP**	**17 13 01.7**	**+6.3**
GUYC	**Guyana, Colomb**	**39.91**	**354**	*e*P	**P**	**17 12 41.5**	**0.0**
NORC	**Norcasia**	**40.21**	**355**	*e*P	**P**	**17 12 42.7**	**-0.8**
RUSC	**La Rusia**	**40.45**	**358**	*e*P	**P**	**17 12 46.1**	**+0.1**
HELC	**Santa Helena**	**40.88**	**354**	*e*P	**P**	**17 12 46.1**	**-3.4**
BARC	**Barichara**	**41.14**	**358**	*e*P	**P**	**17 12 47.8**	**-3.7**
DBBC	**Dabeiba**	**41.76**	**353**	*e*P	**P**	**17 12 56.8**	**+0.5**
CBRI	**Barrientos, No**	**42.25**	**358**	*e*P	**P**	**17 12 58.5**	**-1.9**
GRMC	**Gramalote, San**	**42.25**	**358**	*e*P	**P**	**17 12 58.0**	**-2.4**
OCAC	**Ocana**	**42.78**	**358**	*e*P	**P**	**17 13 01.9**	**-2.8**
SDV	**Santo Domingo**	**43.41**	**1**	P	**P**	**17 13 09.5**	**-0.3**
comp=Z,24nm,0.6s,baz=201,slow=5.7,SNR=7.2							
MOTC	**Monteria, Cord**	**43.46**	**354**	*e*P	**P**	**17 13 09.8**	**-0.1**
RCBR	**Riachuelo**	**43.78**	**57**	P	**P**	**17 13 11.8**	**-0.9**
comp=Z,11nm,0.9s,baz=252,slow=7.5,SNR=2.8							
BCIP	**Isla Barro Col**	**44.36**	**348**	*e*P	**P**	**17 13 18.1**	**+1.0**
BCIP				*ep*P	**pP**	**17 13 30.0**	**+0.3**
SJCC	**San Jacinto, C**	**44.53**	**355**	*e*P	**P**	**17 13 17.7**	**-0.9**
PCRV	**Puerto La Cruz**	**45.17**	**10**	P	**P**	**17 13 23.3**	**-0.4**
comp=Z,24nm,0.9s,baz=177,slow=0.5,SNR=6.4							
URIC	**Uribia, Colomb**	**46.20**	**360**	*e*P	**P**	17 13 26.8	-5.0
JTS	**JuntasAbangare**	**46.53**	**342**	↑↑*e*P	**P**	**17 13 34.8**	**+0.4**
JTS				pmax	pmax		
comp=Z,29nm,1.3s							
VNA3	**Neumayer Olymp**	**48.55**	**158**	P	**P**	**17 13 49.6**	**+0.1**
VNA1	**Neumayer--Stat**	**48.86**	**157**	P	**P**	**17 13 52.2**	**+0.4**
VNA2	**Neumayer--Watz**	**49.20**	**157**	P	**P**	**17 13 54.5**	**+0.1**
baz=283,slow=8.9							
SNAA	**Sanae**	**50.77**	**158**	P	**P**	**17 14 06.5**	**0.0**
SNAA	**Sanae**	**50.77**	**158**	*c* *i* P	**P**	**17 14 06.2**	**-0.3**
SNAA	**Sanae**	**50.77**	**158**	*e*P	**P**	**17 14

baz=165
440A **Kirbyville** 68.45 339 P P 17 16 09.4 +1.0
baz=160
537A **Green Hill Far** 68.55 337 P P 17 16 09.7 +0.6
baz=158
342A **Flagon Creek P** 68.59 341 P P 17 16 09.9 +0.7
baz=162
245A **Little AP, Sta** 68.61 343 P P 17 16 09.7 +0.3
baz=164
GOGA **Godfrey** 68.70 349 eP P 17 16 09.3 -0.7
GOGA e*PP pP 17 16 22.4 -0.8
GOGA **Godfrey** 68.70 349 eP P 17 16 09.3 -0.7
GOGA epP pP 17 16 22.4 -0.8
341A **Kurthwood** 68.78 340 P P 17 16 10.7 +0.3
baz=161
244A **Avery, Jackson** 68.81 343 P P 17 16 11.2 +0.6
baz=163
243A **Waterproof** 68.85 342 P P 17 16 10.7 -0.2
baz=163
147A **Livingston** 68.86 345 P P 17 16 10.9 0.0
baz=166
535A **Dale** 68.91 336 P P 17 16 11.4 +0.1
baz=157
633A **Saathoff Ranch** 68.94 334 P P 17 16 11.9 +0.3
baz=156
LRAL **Lakeview Retre** 68.95 346 eP P 17 16 11.4 -0.1
comp=Z,14nm,0.9s
146A **Union** 69.00 344 P P 17 16 12.4 +0.6
baz=165
MEH **Mehetia** 69.06 262 eT T 18 31 07.6
comp=Z,44nm,0.2s
145A **Houston Renfro** 69.16 344 P P 17 16 13.0 +0.2
baz=164
339A **Huntington** 69.18 339 P P 17 16 13.2 +0.3
baz=160
JSC **Jenkinsville** 69.26 352 eP P 17 16 13.3 -0.1
JSC pmax pmax
comp=Z,18nm,0.9s
JSC **Jenkinsville** 69.26 352 eP P 17 16 13.3 -0.1
comp=Z,18nm,0.9s
HPIG 69.28 328 eP P 17 16 14.7 +0.7
HPIG epP pP 17 16 27.1 -0.1
Z47A **Carrollton** 69.33 345 P P 17 16 14.1 +0.3
baz=166
436A **Wall Ranch, Ga** 69.34 337 P P 17 16 14.1 +0.1
baz=158
Z48A **Northport** 69.39 346 P P 17 16 13.8 -0.4
baz=166
338A **Crockett** 69.42 338 P P 17 16 14.6 +0.1
baz=159
533A **Kerrville** 69.45 335 P P 17 16 15.0 +0.2
baz=156,SNR=5.6
Z46A **Louisville** 69.51 345 P P 17 16 15.4 +0.5
baz=165
337A **Centerville** 69.56 338 P P 17 16 16.0 +0.7
baz=159
142A **Monroe** 69.61 342 P P 17 16 15.9 +0.3
baz=162
NATX **Nacogdoches** 69.61 339 P P 17 16 16.2 +0.6
baz=160
NATX **Nacogdoches** 69.61 339 eP P 17 16 16.2 +0.6
143A **Socs Landing,** 69.61 342 P P 17 16 16.0 +0.4
baz=163
Z45A **Winona** 69.84 344 P P 17 16 17.4 +0.4
baz=164
434A **Burnet** 69.87 336 P P 17 16 17.1 -0.1
baz=157,SNR=7.0
141A **Papa Simpson,** 69.91 341 P P 17 16 17.6 +0.2
baz=162
336A **Riesel** 69.93 337 P P 17 16 17.6 0.0
baz=158
Y47A **UCPARC, Winfie** 69.96 346 P P 17 16 17.4 -0.3
baz=166
335A **Moody** 70.02 337 P P 17 16 18.1 0.0
baz=158
433A **Art** 70.09 335 P P 17 16 18.6 0.0
baz=156,SNR=16
JCT **Junction City** 70.09 334 P P 17 16 18.8 +0.1
baz=156,SNR=8.1
JCT **Junction City** 70.09 334 eP P 17 16 19.4 +0.7
JCT pmax pmax
comp=Z,27nm,0.9s
JCT **Junction City** 70.09 334 eP P 17 16 19.4 +0.7
comp=Z,27nm,0.9s
KMSC **Kings Mountain** 70.12 352 P P 17 16 18.0 -0.6
baz=172
KMSC **Kings Mountain** 70.12 352 eP P 17 16 18.4 -0.2
comp=Z,25nm,0.9s
140A **Cam and Jess,** 70.13 340 P P 17 16 18.9 +0.2
baz=161
Y46A **Houston** 70.15 345 P P 17 16 18.3 -0.5
baz=165
237A **Washetta, Mont** 70.17 338 P P 17 16 19.4 +0.4
baz=159
TIAR **Tiarei** 70.26 262 eT T 18 32 38.3
comp=Z,18nm,0.2s
Y45A **Yeager Farm, C** 70.28 344 P P 17 16 19.9 +0.2
baz=164
334A **Lometa** 70.33 336 P P 17 16 20.0 -0.1
baz=157,SNR=6.8
236A **Katherine and** 70.40 338 P P 17 16 20.6 +0.1
baz=158
PPT2 **Papeete2** 70.44 262 eS S 17 25 38.9 +7.9
comp=Z,166nm,28.0s
PPT2 **Papeete2** 70.44 262 eLR LR 17 37 48.3
comp=Z,986nm,28.0s,baz=131
PPT **Papeete** 70.45 262 LR LR 17 39 33.1
comp=Z,148nm,21.7s,baz=152,slow=29
TXAR **Lajitas Array** 70.54 331 P P 17 16 21.7 +0.2
comp=Z,3.7nm,0.7s,baz=151,slow=8.5,SNR=44
TXAR pP pP 17 16 34.5 -0.3
comp=Z,6.6nm,0.5s,baz=155,slow=8.8,SNR=30
TXAR LR LR 17 43 20.8
comp=Z,197nm,18.1s,baz=0.0,slow=32
TX31 **Lajitas Ar. Si** 70.54 331 eP P 17 16 21.8 +0.3
TX31 epP pP 17 16 35.0 +0.3
333A **Richland Sprin** 70.58 335 P P 17 16 21.5 -0.1
baz=156,SNR=7.2
Y43A **Makayla and Ka** 70.65 343 P P 17 16 22.2 +0.3
baz=163
Z40A **Long Farm, Mag** 70.66 341 P P 17 16 22.4 +0.4
baz=161
WHTX **Lake Whitney,** 70.68 337 P P 17 16 22.2 0.0
baz=158
WHTX **Lake Whitney,** 70.68 337 eP P 17 16 22.6 +0.5
comp=Z,22nm,0.8s
WHTX epP pP 17 16 35.6 +0.2
137A **Heron Place, G** 70.71 339 P P 17 16 22.9 +0.5
baz=159
Y42A **Garnett, Star** 70.79 342 P P 17 16 23.0 +0.2
baz=163
136A **Ennis** 70.84 338 P P 17 16 23.0 -0.1
baz=159
Z39A **Irene McRaven,** 70.86 340 P P 17 16 23.8 +0.5
baz=161
CPCT **Cooper Cave** 70.86 349 eP P 17 16 23.1 -0.2
comp=Z,19nm,0.9s
CPCT epP pP 17 16 35.9 -0.6
SWET **Sewanee** 70.87 348 eP P 17 16 23.1 -0.2
comp=Z,17nm,0.9s
SWET epP pP 17 16 36.2 -0.4
OXF **Oxford** 70.88 345 eP P 17 16 23.3 0.0
OXF e*PP pP 17 16 36.3 -0.2
OXF pmax pmax
comp=Z,56nm,1.0s
OXF **Oxford** 70.88 345 eP P 17 16 23.2 0.0
comp=Z,56nm,1.0s
OXF epP pP 17 16 36.3 -0.2
234A **Clairette** 70.92 336 P P 17 16 23.7 +0.1
baz=157
TKL **Tuckaleechee C** 70.95 350 eP P 17 16 22.8 -1.0
TKL pmax pmax
comp=Z,24nm,0.9s
TKL **Tuckaleechee C** 70.95 350 eP P 17 16 22.8 -1.0
comp=Z,24nm,0.9s
Y41A **Eaglette Beard** 71.04 342 P P 17 16 24.7 +0.4
baz=162
Z38A **Mt. Pleasant** 71.10 339 P P 17 16 25.0 +0.3
baz=160
233A **Rising Star** 71.18 336 P P 17 16 25.0 -0.2
baz=157,SNR=5.5
135A **Vickery Place,** 71.19 337 P P 17 16 24.7 -0.5
baz=158
134A **White-Moore Ra** 71.42 337 P P 17 16 26.8 +0.1
baz=157
Z36A **Blue Ridge** 71.55 338 P P 17 16 27.5 +0.1
baz=159,SNR=6.1

W44A **Shelby Farms P** 71.57 344 P P 17 16 26.1 -1.3
baz=164
X40A **Basin Creek Fa** 71.67 342 P P 17 16 27.8 -0.3
baz=162
133A **Hamilton Ranch** 71.73 336 P P 17 16 28.7 +0.1
baz=157,SNR=6.6
Z35A **Perchaven, San** 71.85 338 P P 17 16 29.1 -0.1
baz=158,SNR=6.1
MIAR **Mount Ida** 71.92 341 P P 17 16 29.1 -0.5
baz=161,SNR=5.3
MIAR **Mount Ida** 71.92 341 eP P 17 16 29.3 -0.3
MIAR pmax pmax
comp=Z,28nm,1.4s
MIAR **Mount Ida** 71.92 341 eP P 17 16 29.3 -0.3
comp=Z,28nm,1.4s
Y37A **Hugo** 71.96 339 P P 17 16 29.8 -0.1
baz=160
ABTX **Abilene, Hawle** 71.99 335 P P 17 16 30.0 -0.1
baz=156,SNR=5.7
ABTX **Abilene, Hawle** 71.99 335 eP P 17 16 30.6 +0.5
ABTX epP pP 17 16 43.2 -0.1
X39A **Fountain Ranch** 72.03 341 P P 17 16 30.2 -0.1
baz=161,SNR=6.9
Y36A **Durant** 72.08 339 P P 17 16 30.3 -0.3
baz=159
Z34A **Collier Ranch,** 72.10 337 P P 17 16 30.8 0.0
baz=158
WVT **Waverly** 72.11 346 eP P 17 16 30.1 -0.6
WVT e*PP pP 17 16 43.5 -0.5
WVT pmax pmax
comp=Z,100nm,0.9s
WVT **Waverly** 72.11 346 eP P 17 16 30.1 -0.6
comp=Z,100nm,0.9s
WVT epP pP 17 16 43.5 -0.5
URVA **University of** 72.16 355 eP P 17 16 31.5 +0.5
URVA epP pP 17 16 44.3 +0.1
W41B **Gary Mavity, V** 72.17 342 P P 17 16 30.6 -0.5
baz=162,SNR=8.6
X301 **Greenbrier Sit** 72.28 342 eP P 17 16 31.9 +0.3
X301 epP pP 17 16 44.3 -0.7
WHAR **Wooly Hollow** 72.30 342 eP P 17 16 31.9 +0.1
comp=Z,76nm,1.5s
Z33A **Whitaker Ranch** 72.30 336 P P 17 16 32.1 +0.2
baz=157
X201 **Greenbrier Sit** 72.32 342 eP P 17 16 32.1 +0.2
comp=Z,39nm,1.0s
X201 epP pP 17 16 44.6 -0.7
Y35A **Marietta** 72.32 338 P P 17 16 32.3 +0.3
baz=158
MAW **Mawson** 72.37 163 P P 17 16 32.1 +0.1
comp=Z,24nm,0.9s,baz=223,slow=6.9,SNR=21
MAW LR LR 17 48 06.3
comp=Z,306nm,21.5s,baz=236,slow=36
MAW **Mawson** 72.37 163 eP P 17 16 32.0 +0.1
comp=Z,7.4nm,0.9s
X38A **Whitesboro** 72.38 340 P P 17 16 32.3 0.0
baz=160,SNR=7.7
W40A **Ferguson Farm,** 72.40 342 P P 17 16 32.2 -0.3
baz=162,SNR=5.2
X37A **Clayton** 72.46 340 P P 17 16 33.0 +0.2
baz=160
W39A **Magazine** 72.59 341 P P 17 16 33.8 +0.2
baz=161,SNR=23
Y34A **Reagan Ranch,** 72.59 337 P P 17 16 33.6 -0.1
baz=158
W38A **Poteau** 72.67 341 P P 17 16 34.1 0.0
baz=160,SNR=6.0
X36A **Centrahoma** 72.73 339 P P 17 16 33.7 -0.7
baz=159,SNR=13
X35A **Drake** 72.76 338 P P 17 16 34.1 -0.5
baz=158
Y33A **Hilltop Ranch,** 72.92 337 P P 17 16 35.2 -0.3
baz=157,SNR=5.2
V40A **Witts Springs** 72.92 342 P P 17 16 34.9 -0.7
baz=162,SNR=5.5
W37B **Quinton** 72.99 340 P P 17 16 35.3 -0.6
baz=160,SNR=5.6
V39A **Pettigrew** 73.16 341 P P 17 16 36.6 -0.5
baz=161,SNR=8.4
X34A **Smith Ranch, M** 73.21 338 P P 17 16 36.7 -0.6
baz=158
W36A **Wetumka** 73.22 339 P P 17 16 36.1 -1.2
baz=159
PBMO **Poplar Bluff** 73.28 344 eP P 17 16 37.1 -0.5
comp=Z,22nm,0.8s
MNTX **Cornudas Mount** 73.31 330 P P 17 16 37.8 -0.2
baz=152
MNTX **Cornudas Mount** 73.31 330 eP P 17 16 37.2 -0.8
comp=Z,14nm,0.6s
X33A **Lawton** 73.37 337 P P 17 16 37.3 -0.9
baz=157
V38A **Canehill** 73.39 341 P P 17 16 37.4 -0.9
baz=161,SNR=8.3
W35A **Tecumseh** 73.43 339 P P 17 16 37.6 -1.0
baz=159,SNR=5.6
U40A **Yellville** 73.45 342 P P 17 16 37.9 -0.7
baz=162,SNR=14
X32A **Elmer** 73.51 336 P P 17 16 38.6 -0.4
baz=157
V37A **Hulbert** 73.61 340 P P 17 16 38.8 -0.8
baz=160
U39A **Green Forest** 73.63 342 P P 17 16 39.0 -0.8
baz=162,SNR=12
WMOK **Wichita Mounta** 73.64 337 P P 17 16 38.9 -0.9
baz=157,SNR=5.8
WMOK **Wichita Mounta** 73.64 337 eP P 17 16 39.2 -0.6
WMOK pmax pmax
comp=Z,5.0nm,0.9s
WMOK **Wichita Mounta** 73.64 337 eP P 17 16 39.2 -0.6
comp=Z,5.0nm,0.9s
HHAR **Hobbs** 73.66 341 eP P 17 16 39.5 -0.4
comp=Z,15nm,0.8s
V36A **Jenks** 73.74 340 P P 17 16 39.7 -0.7
baz=159,SNR=6.7
W34A **Bridge Creek,** 73.78 338 P P 17 16 40.0 -0.6
baz=158
W34A **Bridge Creek,** 73.78 338 eP P 17 16 40.3 -0.3
comp=Z,17nm,0.8s
TUL1 **Leonard** 73.82 340 P P 17 16 40.2 -0.6
baz=160
TUL1 **Leonard** 73.82 340 eP P 17 16 40.8 -0.1
comp=Z,26nm,0.8s
TUL1 epP pP 17 16 53.3 -0.8
T41A **Mountain View** 73.84 343 P P 17 16 40.3 -0.7
baz=163,SNR=11
USIN **University of** 73.86 347 eP P 17 16 40.3 -0.7
comp=Z,66nm,1.0s
USIN epP pP 17 16 53.2 -1.1
W33A **Caddo, Fort Co** 73.92 337 P P 17 16 41.6 +0.1
baz=157,SNR=7.5
SIUC **Southern Illin** 73.92 346 eP P 17 16 41.1 -0.3
comp=Z,32nm,0.9s
U38A **Gravette** 73.92 341 P P 17 16 40.5 -0.9
baz=161
SDMD **Soldier's Deli** 73.95 356 eP P 17 16 42.6 +1.1
comp=Z,14nm,1.1s
V35A **Meyer Ranch, C** 73.98 339 P P 17 16 41.1 -0.7
baz=159,SNR=5.3
U37A **Salina** 74.09 340 P P 17 16 41.7 -0.7
baz=160
T40A **Mansfield** 74.12 343 P P 17 16 42.1 -0.5
baz=162,SNR=6.9
W32A **Sentinel** 74.14 337 P P 17 16 42.8 0.0
baz=157,SNR=19
SUR **Sutherland** 74.20 119 P P 17 16 43.9 +0.2
comp=Z,0.9nm,0.9s,baz=240,slow=8.1,SNR=6.0
SUR pP PcP 17 16 58.2 -0.3
comp=Z,0.8nm,0.7s,baz=236,slow=7.3,SNR=4.0
T39A **Clever** 74.21 342 P P 17 16 42.6 -0.6
baz=162,SNR=7.8
U36A **Oologah** 74.25 340 P P 17 16 42.3 -1.0
baz=160
V34A **Guthrie** 74.25 338 P P 17 16 43.0 -0.3
baz=158
V34A **Guthrie** 74.25 338 eP P 17 16 43.4 0.0
V34A epP pP 17 16 56.0 -0.7
MSTX **Muleshoe** 74.32 334 P P 17 16 43.5 -0.4
baz=154
MSTX **Muleshoe** 74.32 334 eP P 17 16 42.0 -1.9
MSTX epP pP 17 16 56.9 -0.4
T38A **Diamond** 74.46 341 P P 17 16 44.0 -0.6
baz=161,SNR=8.3
V33A **Lossen Ranch,** 74.48 338 P P 17 16 44.5 -0.1
baz=158,SNR=5.7
MVL **Millersville** 74.51 356 eP P 17 16 45.8 +1.1
comp=Z,16nm,1.1s
U35A **Pawnee** 74.52 339 P P 17 16 44.4 -0.5

baz=159,SNR=6.5
S40A **Lebanon** 74.54 343 P P 17 16 44.7 -0.4
baz=162,SNR=23
V32A **Arapaho** 74.62 337 P P 17 16 45.2 -0.4
baz=157
OLIL **Olney** 74.69 347 eP P 17 16 45.1 -0.7
comp=Z,38nm,1.0s
319A **Douglas** 74.70 327 eP P 17 16 47.2 +1.0
319A epP pP 17 16 59.7 +0.2
T37A **Cheneyville 18** 74.71 341 P P 17 16 45.2 -0.8
baz=160,SNR=11
LIC **Lamto** 74.72 71 eP P 17 16 45.3 -1.3
AMTX **Amarillo** 74.75 335 P P 17 16 46.2 -0.1
baz=155
AMTX **Amarillo** 74.75 335 eP P 17 16 46.2 -0.1
comp=Z,53nm,1.3s
U34A **Anderson Ranch** 74.81 339 P P 17 16 46.2 -0.5
baz=158
U34A **Anderson Ranch** 74.81 339 eP P 17 16 46.9 +0.2
U34A epP pP 17 16 59.4 -0.6
S39A **Bolivar** 74.83 342 P P 17 16 46.0 -0.7
baz=162,SNR=13
T36A **Boggs Farm, Ca** 74.92 340 P P 17 16 46.7 -0.4
baz=160,SNR=6.7
O56A **Blue Knob Stat** 74.92 355 P P 17 16 46.7 -0.5
baz=174
S38A **Stockton** 74.92 342 P P 17 16 46.6 -0.7
baz=161,SNR=25
T35A **Sooner Cattle** 74.96 340 P P 17 16 47.0 -0.5
baz=159,SNR=8.1
TIC **Toumodi** 74.98 71 eP P 17 16 47.1 -1.1
U33A **Lingo Farm, Me** 74.99 338 P P 17 16 47.1 -0.5
baz=158
KIC **Kosan Boka** 75.03 71 eP P 17 16 46.7 -1.7
comp=Z,87nm,1.1s
121A **Cookes Peak, D** 75.04 329 P P 17 16 49.2 +1.0
baz=150,SNR=7.9
121A **Cookes Peak, D** 75.04 329 eP P 17 16 49.2 +1.0
comp=Z,31nm,0.9s
DBIC **Dimbokro** 75.13 71 P P 17 16 48.5 -0.4
comp=Z,24nm,1.0s,baz=213,slow=6.3,SNR=16
DBIC pP PcP 17 17 02.8 +0.4
comp=Z,12nm,0.6s,baz=211,slow=7.9,SNR=7.5
DBIC LR LR 17 47 25.7
comp=Z,200nm,20.1s,baz=211,slow=34
DBIC **Dimbokro** 75.13 71 eP P 17 16 48.7 -0.3
DBIC *PP PcP 17 17 02.8 +0.4
DBIC pmax pmax
comp=Z,44nm,1.1s
DBIC **Dimbokro** 75.13 71 eP P 17 16 48.6 -0.3
comp=Z,44nm,1.1s
DBIC pP PcP 17 17 02.8 +0.4
R40A **Maddies Statio** 75.15 343 P P 17 16 47.7 -0.8
baz=163,SNR=24
U32A **Winter Ranch,** 75.21 337 P P 17 16 49.1 +0.2
baz=157
SSPA **Standing Stone** 75.23 355 eP P 17 16 49.0 +0.1
comp=Z,15nm,0.9s
T34A **McClaskey Farm** 75.26 339 P P 17 16 49.0 -0.1
baz=159,SNR=9.6
S37A **Fort Scott** 75.28 341 P P 17 16 48.7 -0.6
baz=160,SNR=6.1
ACSO **Alum Creek Sta** 75.34 351 eP P 17 16 48.9 -0.6
comp=Z,51nm,0.8s
Q42A **Golden Eagle** 75.35 345 P P 17 16 48.8 -0.8
baz=164,SNR=9.3
R39A **Chumby, Stover** 75.35 343 P P 17 16 48.9 -0.7
baz=162,SNR=5.6
N59A **State Game Lan** 75.39 357 P P 17 16 49.7 -0.2
baz=176
R38A **Fenwick Farm,** 75.45 342 P P 17 16 49.4 -0.8
baz=161,SNR=6.4
S36A **Lake Cedric, C** 75.46 341 P P 17 16 49.5 -0.8
baz=160,SNR=12
S35A **Otter Creek Ra** 75.62 340 P P 17 16 50.6 -0.6
baz=159,SNR=6.4
T33A **Patterson Ranc** 75.63 338 P P 17 16 51.4 +0.2
baz=158,SNR=10
Q40A **Laux Farm, Aux** 75.77 344 P P 17 16 51.4 -0.6
baz=163,SNR=19
R37A **Teagarden Farm** 75.81 341 P P 17 16 51.5 -0.8
baz=161,SNR=7.4
S34A **Willow Spring** 75.86 339 P P 17 16 51.9 -0.7
baz=159
BNM **Barren Site** 75.96 331 eP P 17 16 54.8 +1.2
R36A **Gordon, Harris** 76.00 341 P P 17 16 52.5 -0.8
baz=160
S33A **Kaszmaul Farm,** 76.03 339 P P 17 16 53.3 -0.2
baz=158
Q39A **Willow Grove F** 76.03 343 P P 17 16 52.6 -0.9
baz=162,SNR=15
SFIN **Lafayette** 76.10 348 P P 17 16 52.8 -1.1
baz=167
LPM **Los Pinos Moun** 76.11 331 eP P 17 16 55.5 +1.2
LPM epP pP 17 17 08.1 +0.4
Q38A **Cooks Store, C** 76.11 343 P P 17 16 53.4 -0.5
baz=162,SNR=18
TUC **Tucson** 76.17 327 P P 17 16 55.1 +0.6
baz=148
TUC **Tucson** 76.17 327 eP P 17 16 56.0 +1.4
TUC e*PP pP 17 17 08.8 +0.8
TUC **Tucson** 76.17 327 eP P 17 16 56.0 +1.4
TUC epP pP 17 17 08.8 +0.8
R35A **Emporia Munici** 76.19 340 P P 17 16 54.1 -0.3
baz=160
Q37A **Longview Farm,** 76.24 342 P P 17 16 53.8 -0.9
baz=161
M54A **Oil Creek Stat** 76.24 354 P P 17 16 53.7 -1.0
baz=173
P40A **Paris** 76.28 344 P P 17 16 54.4 -0.5
baz=163,SNR=31
LAZ **Ladron** 76.39 330 eP P 17 16 57.0 +1.1
LAZ epP pP 17 17 10.1 +0.7
P39B **Salisbury** 76.40 343 P P 17 16 54.9 -0.7
baz=162,SNR=9.9
S32A **Newby Ranch, P** 76.41 338 P P 17 16 55.4 -0.4
baz=157
R34A **Isabella, Hill** 76.46 340 P P 17 16 55.8 -0.2
baz=159,SNR=9.8
Q36A **Arnold C. Orve** 76.58 341 P P 17 16 55.4 -1.3
baz=160
ANMO **Albuquerque** 76.59 331 P P 17 16 57.5 +0.4
baz=151
ANMO **Albuquerque** 76.59 331 c iP P 17 16 57.8 +0.8
ANMO i *PP pP 17 17 11.6 +1.2
ANMO pmax pmax
comp=Z,11nm,1.1s
ANMO **Albuquerque** 76.59 331 eP P 17 16 58.1 +1.1
ANMO epP pP 17 17 10.8 +0.4
Q35A **Mercer Eighty,** 76.64 341 P P 17 16 56.6 -0.4
baz=160
HDIL **Hopedale** 76.68 346 P P 17 16 56.3 -0.9
baz=165
HDIL **Hopedale** 76.68 346 eP P 17 16 56.2 -0.9
comp=Z,14nm,0.6s
R33A **Olander Ranch,** 76.68 339 P P 17 16 56.8 -0.5
baz=158
P38A **Dawn** 76.72 343 P P 17 16 56.7 -0.7
baz=162,SNR=12
RAR **Rarotonga** 76.74 253 LR LR 17 42 20.7
comp=Z,168nm,21.9s,baz=114,slow=29
O40A **La Belle** 76.80 344 P P 17 16 57.0 -0.8
baz=163,SNR=9.8
214A **Organ Pipe Nat** 76.81 325 P P 17 16 59.4 +1.3
baz=146
214A **Organ Pipe Nat** 76.81 325 eP P 17 16 58.7 +0.6
comp=Z,19nm,0.8s
ERPA **Erie** 76.88 354 eP P 17 16 58.0 -0.3
comp=Z,38nm,1.0s
P37A **Lathrop** 76.88 342 P P 17 16 57.4 -0.9
baz=161
Q34A **Chapman** 76.95 340 P P 17 16 58.3 -0.5
baz=159,SNR=5.8
R32A **Long Quarter,** 77.00 338 P P 17 16 59.2 +0.1
baz=158
KSU1 **Kansas State U** 77.03 340 P P 17 16 58.7 -0.4
baz=159
KSU1 **Kansas State U** 77.03 340 eP P 17 16 59.1 -0.1
comp=Z,13nm,0.8s
O39A **Kirksville** 77.08 344 P P 17 16 58.6 -0.8
baz=163,SNR=6.6
TRY **Troy** 77.13 358 eP P 17 17 01.1 +1.4
comp=Z,49nm,0.9s
P36A **Good Intent, A** 77.13 342 P P 17 16 58.6 -1.2
baz=160,SNR=5.3
O38A **Galt** 77.17 343 P P 17 16 59.2 -0.8
baz=162

P35A Duane Minner, 77.26 341 P P 17 16 59.7 -0.8
baz=160,SNR=11
Q33A Connelly Farm, 77.28 339 P P 17 16 59.9 -0.7
baz=158
MMNY Mt. Morris Dam 77.32 355 *e*P **P 17 17 00.9 +0.2**
O37A Wolven Farm, M 77.38 343 P P 17 17 00.3 -0.8
baz=161,SNR=9.9
Q32A Meitler Ranch, 77.48 339 P P 17 17 01.5 -0.2
baz=158
P34A Walnut Farm, R 77.50 340 P P 17 17 01.7 -0.1
baz=159
O36A Bolckow 77.55 342 P P 17 17 00.9 -1.2
baz=161
N39A Derby Farms, D 77.67 344 P P 17 17 01.9 -0.7
baz=163,SNR=11
X18A Snowflake 77.68 328 *e*P **P 17 17 04.8 +1.6**
X18A *ep*P **pP 17 17 17.7 +1.1**
CBKS Cedar Bluff 77.68 338 P P 17 17 03.2 +0.3
baz=157
CBKS Cedar Bluff 77.68 338 *e*P **P 17 17 03.6 +0.7**
CBKS *e**PP **pP 17 17 16.7 +0.4**
CBKS Cedar Bluff 77.68 338 *e*P **P 17 17 03.6 +0.7**
CBKS *ep*P **pP 17 17 16.6 +0.4**
T25A Trinidad 77.74 334 P P 17 17 04.0 +0.6
baz=153
T25A Trinidad 77.74 334 *e*P **P 17 17 04.3 +0.8**
T25A *ep*P **pP 17 17 17.8 +0.8**
N38A Joes South For 77.75 343 P P 17 17 02.7 -0.5
baz=162
ACCN Adirondack Com 77.78 359 *e*P **P 17 17 04.4 +1.1**
comp=Z,26nm,1.1s
O35A Humboldt 77.93 341 P P 17 17 03.1 -1.0
baz=160
113A Mohawk Valley, 77.93 325 *ep*P pP 17 17 18.8 +1.0
N37A Lee Faris, Mou 77.95 343 P P 17 17 03.4 -0.9
baz=161
O34A Beatrice 78.06 341 P P 17 17 04.5 -0.4
baz=159,SNR=8.3
P32A Huiting Farm, 78.08 339 P P 17 17 05.0 0.0
baz=158
W18A Petrified Fore 78.08 329 P P 17 17 05.9 +0.5
baz=149
W18A Petrified Fore 78.08 329 *e*P **P 17 17 05.9 +0.5**
comp=Z,58nm,1.4s
O33A Hebron 78.20 340 P P 17 17 05.3 -0.4
baz=158
X16A Lo Mia Camp, P 78.23 327 *e*P **P 17 17 07.4 +1.2**
X16A *ep*P **pP 17 17 20.2 +0.5**
M38A Pleasantville 78.34 344 P P 17 17 05.6 -0.8
baz=162,SNR=8.3
N35A Tabor 78.41 342 P P 17 17 05.9 -0.9
baz=160
M37A Trindle Farm, 78.53 343 P P 17 17 06.9 -0.5
baz=161
Y14A Wickenburg 78.54 326 *e*P **P 17 17 07.9 +0.1**
Y14A *ep*P **PcP 17 17 17.5 +0.8**
O32A Brockman Farm, 78.57 340 P P 17 17 07.0 -0.7
baz=158
LBNH Lisbon 78.62 360 *e*P **P 17 17 08.6 +0.7**
LBNH pmax pmax
comp=Z,33nm,1.1s
LBNH Lisbon 78.62 360 *e*P **P 17 17 08.6 +0.7**
comp=Z,32nm,1.1s
N34A Lincoln 78.62 341 P P 17 17 07.3 -0.7
baz=159
GLA Glamis 78.67 324 P P 17 17 08.7 +0.2
baz=145
SDCO Great Sand Dun 78.68 333 P P 17 17 09.1 +0.3
baz=152
TSUM Tsumeb 78.71 106 P P 17 17 09.1 -0.2
comp=Z,17nm,1.1s,baz=242,slow=5.3,SNR=14
TSUM pP **pP 17 17 23.7 +1.0**
comp=Z,9.6nm,1.0s,baz=241,slow=10.0,SNR=6.9
TSUM Tsumeb 78.71 106 *e*P **P 17 17 09.3 0.0**
comp=Z,26nm,1.1s
TSUM pP **pP 17 17 23.7 +1.0**
M36A Felix, Anita 78.76 342 P P 17 17 08.5 -0.2
baz=161
O31A Woolen Ranch, 78.78 339 P P 17 17 08.5 -0.5
baz=157
N33A J Bar K, Exete 78.78 340 P P 17 17 09.1 +0.2
baz=159
KSCO Kaye Shedlock' 78.79 336 P P 17 17 09.7 +0.5
baz=154
L38A Oak Wood Farm, 78.97 344 P P 17 17 09.3 -0.6
baz=162
M35A Neola 79.00 342 P P 17 17 09.9 -0.1
baz=160
LONY Lake Ozonia 79.04 358 *e*P **P 17 17 10.5 +0.2**
LONY *ep*P **pP 17 17 23.5 -0.2**
N32A Stulken Farm, 79.05 340 P P 17 17 10.1 -0.2
baz=158
Y12C Blythe 79.10 325 P P 17 17 11.3 +0.5
baz=145
Y12C Blythe 79.10 325 *e*P **P 17 17 12.7 +1.9**
Y12C *ep*P **pP 17 17 25.6 +1.4**
WUAZ Wupatki 79.13 328 P P 17 17 11.9 +0.7
baz=148
WUAZ Wupatki 79.13 328 *e*P **P 17 17 12.8 +1.6**
WUAZ *ep*P **pP 17 17 25.4 +0.9**
JFWS Jewell Farm 79.14 346 *e*P **P 17 17 09.1 -1.7**
JFWS e 17 17 21.6
JFWS *e**PP **pP 17 17 23.4 -0.8**
JFWS pmax pmax
comp=Z,31nm,0.8s
JFWS Jewell Farm 79.14 346 *e*P **P 17 17 09.1 -1.7**
comp=Z,30nm,0.8s
JFWS *e*PcP **PcP 17 17 21.6 +2.6**
JFWS *ep*P **pP 17 17 23.4 -0.8**
L37A Phoenix Point, 79.14 343 P P 17 17 10.2 -0.6
baz=162
S22A 4UR Ranch, Cre 79.18 332 P P 17 17 12.0 +0.4
baz=151,SNR=6.1
S22A 4UR Ranch, Cre 79.18 332 *e*P **P 17 17 12.7 +1.2**
S22A *ep*P **pP 17 17 25.8 +0.8**
FRNY Flat Rock 79.23 359 *e*P **P 17 17 11.5 +0.3**
FRNY *ep*P **pP 17 17 24.7 0.0**
CASY Casey 79.28 181 *e*P **P 17 17 12.2 +0.8**
comp=Z,20nm,0.9s
MONP2 Monument Peak 79.33 323 P P 17 17 12.9 +0.6
baz=144
L36A Harm Buss Farm 79.34 343 P P 17 17 11.3 -0.6
baz=161
MVCO Mesa Verde 79.37 331 P P 17 17 13.1 +0.7
baz=150
MVCO Mesa Verde 79.37 331 *e*P **P 17 17 13.5 +1.0**
comp=Z,49nm,1.5s
K38A Parkersburg 79.41 344 P P 17 17 11.4 -0.9
baz=162
SADO Sadowa 79.44 355 *e*P **P 17 17 12.1 -0.2**
comp=Z,22nm,1.0s
SADO *ep*P **pP 17 17 25.3 -0.5**
BOSA Boshof 79.45 117 P P 17 17 12.8 -0.4
comp=Z,30nm,0.9s,baz=224,slow=5.4,SNR=23
BOSA pP **pP 17 17 27.3 +0.6**
comp=Z,33nm,0.7s,baz=229,slow=5.6,SNR=14
BOSA LR LR 17 47 19.2
comp=Z,107nm,21.2s,baz=216,slow=32
BOSA Boshof 79.45 117 *e*P **P 17 17 12.1 -1.1**
comp=Z,37nm,0.9s
BOSA *ep*P **pP 17 17 27.1 +0.4**
BC3 Big Chuckawall 79.47 324 P P 17 17 13.5 +0.6
baz=145
M33A Taylor Creek F 79.49 341 P P 17 17 12.3 -0.4
baz=159
L35A Bielow Farm, R 79.56 342 P P 17 17 12.6 -0.5
baz=160
BGNE Belgrade 79.60 340 P P 17 17 13.2 -0.2
baz=158
BGNE Belgrade 79.60 340 *e*P **P 17 17 13.8 +0.4**
BGNE *ep*P **pP 17 17 26.8 0.0**
Q24A Divide 79.63 334 P P 17 17 13.8 -0.2
baz=153,SNR=9.0
Q24A Divide 79.63 334 *e*P **P 17 17 15.1 +1.1**
Q24A *ep*P **pP 17 17 27.9 +0.5**
L34A Svendsen Farm, 79.64 342 P P 17 17 13.2 -0.3
baz=160
K37A Belmond 79.72 344 P P 17 17 13.1 -0.8
baz=162
IRM Iron Mountain 79.73 325 P P 17 17 14.7 +0.5
baz=145
M31A Lambtecht Ranc 79.78 339 P P 17 17 14.3 -0.1
baz=158
K36A Gilmore City 79.79 343 P P 17 17 13.9 -0.4
baz=161
W13A Hualapai Mount 79.91 326 *e*P **P 17 17 16.7 +1.3**
comp=Z,10.0nm,0.8s
TPFO Pinon Flats 79.92 323 P P 17 17 16.4 +1.0
baz=144
J38A Wedel Dairy, R 79.99 345 P P 17 17 15.5 +0.1
baz=163
BELC Belle Mtn. Jos 80.01 324 P P 17 17 16.2 +0.3
baz=144
L32A Elgin 80.11 340 P P 17 17 16.3 +0.2
baz=158
PV01 Paradox Valley 80.19 331 *e*P **P 17 17 17.6 +0.7**
comp=Z,581nm,0.9s
J37A Redenius Farm, 80.22 344 P P 17 17 16.3 -0.3
baz=162
K34A Le Mars 80.24 342 P P 17 17 16.5 -0.3
baz=160
MURC Murrieta 80.28 323 P P 17 17 18.3 +1.0
baz=144
K33A Hardington 80.40 341 P P 17 17 17.6 0.0
baz=159
J36A Seneca 1, Swea 80.42 343 P P 17 17 17.6 -0.1
baz=161
SCI2 San Clemente I 80.47 322 P P 17 17 19.6 +1.4
baz=143
LMN Caledonia Moun 80.47 5 *e*P **P 17 17 17.8 -0.1**
comp=Z,17nm,0.9s
LMN *ep*P **pP 17 17 31.7 +0.3**
GMRC Granite Mounta 80.48 325 P P 17 17 19.3 +0.8
baz=145
SMCO Snowmass 80.49 333 *e*P **P 17 17 19.6 +1.0**
comp=Z,52nm,1.4s
L31A Butterfield Fa 80.51 340 P P 17 17 18.9 +0.6
baz=158
ISCO Idaho Springs 80.53 334 P P 17 17 19.5 +0.7
baz=152
ISCO Idaho Springs 80.53 334 *e*P **P 17 17 19.9 +1.1**
ISCO *e**PP **pP 17 17 32.6 +0.3**
ISCO Idaho Springs 80.53 334 *e*P **P 17 17 19.9 +1.1**
ISCO *ep*P **pP 17 17 32.6 +0.3**
PV04 Paradox Valley 80.55 331 *e*P **P 17 17 19.6 +0.8**
TRQ Mont Tremblant 80.64 358 *e*P **P 17 17 18.7 -0.2**
TRQ *ep*P **pP 17 17 32.0 -0.3**
I38A Scanlan Farm, 80.64 345 P P 17 17 18.7 -0.2
baz=163
K32A Verdigre 80.71 341 P P 17 17 19.4 +0.1
baz=158
PV09 Paradox Valley 80.73 331 *e*P **P 17 17 21.4 +1.5**
HEC Hector,Ludlow 80.84 324 P P 17 17 21.2 +0.9
baz=144
I37A Lemond, Waseca 80.85 344 P P 17 17 19.5 -0.6
baz=162
K31A O'Neill 80.89 340 P P 17 17 20.7 +0.4
baz=158
I36A Fitzsimmons Fa 81.00 344 P P 17 17 20.0 -0.8
baz=162
BFSC Mount Baldy Ra 81.02 323 P P 17 17 21.8 +0.5
baz=143
KNB Kanab 81.02 328 *e*P **P 17 17 23.0 +1.7**
KNB pmax pmax
comp=Z,149nm,1.9s
KNB Kanab 81.02 328 *e*P **P 17 17 23.0 +1.7**
comp=Z,149nm,1.9s
J33A Davis 81.06 342 P P 17 17 20.9 -0.3
baz=159
I35A Creekview Farm 81.07 343 P P 17 17 20.5 -0.7
baz=161
SNCC San Nicolas Is 81.18 321 P P 17 17 22.8 +0.8
baz=142
K30A Basset 81.19 340 P P 17 17 22.1 +0.2
baz=157
LCMT Little Creek M 81.20 327 *e*P **P 17 17 23.6 +1.4**
LCMT *ep*P **pP 17 17 36.6 +0.8**
H37A Dierke Farm, C 81.29 345 P P 17 17 22.0 -0.3
baz=162
ECSD EROS Data Cent 81.36 342 P P 17 17 22.4 -0.3
baz=160
ECSD EROS Data Cent 81.36 342 *e*P **P 17 17 22.5 -0.2**
comp=Z,35nm,0.9s
ECSD *ep*P **pP 17 17 35.4 -0.8**
GSC Goldstone, Bar 81.45 324 P P 17 17 23.4 -0.1
baz=144
GSC Goldstone, Bar 81.45 324 *ep*P pP 17 17 38.2 +1.2
H36A Jessenland, He 81.51 344 P P 17 17 22.8 -0.7
baz=162
J31A Geddes 81.51 340 P P 17 17 23.2 -0.3
baz=158
MTPU Mount Pierson 81.60 329 *e*P **P 17 17 25.7 +1.1**
MTPU *ep*P **pP 17 17 38.2 +0.1**
N23A Red Feather La 81.62 334 P P 17 17 24.9 +0.4
baz=152,SNR=6.0
N23A Red Feather La 81.62 334 *e*P **P 17 17 25.5 +1.0**
comp=Z,26nm,1.4s
SHPR Sheep Range 81.65 326 *e*P **P 17 17 26.3 +1.6**
comp=Z,13nm,0.9s
EDW2 Edwards Air Fo 81.70 323 P P 17 17 26.2 +1.4
baz=143
I33A Coleman 81.70 342 P P 17 17 24.5 0.0
baz=159
LBTB Lobatse 81.71 115 *e*P **P 17 17 24.9 -0.4**
LBTB *e**PP **pP 17 17 39.2 +0.3**
LBTB Lobatse 81.71 115 *e*P **P 17 17 24.9 -0.4**
LBTB *ep*P **pP 17 17 39.2 +0.3**
J30A Dallas 81.75 340 P P 17 17 24.7 -0.1
baz=157
O20A White River Ci 81.80 333 P P 17 17 25.7 +0.3
baz=150
PHWY Pilot Hill 81.81 335 *e*P **P 17 17 26.3 +0.8**
PHWY *ep*P **pP 17 17 39.4 +0.4**
SRU San Rafael Swe 81.82 330 *e*P **P 17 17 26.2 +0.7**
SRU pmax pmax
comp=Z,14nm,0.9s
SRU San Rafael Swe 81.82 330 *e*P **P 17 17 26.2 +0.7**
comp=Z,14nm,0.9s
H35A Sunnyside Ranc 81.83 344 P P 17 17 24.5 -0.6
baz=161
SPMN Marine on St. 81.88 345 P P 17 17 24.4 -0.9
baz=163
Q16A Castle Valley 81.92 330 *e*P **P 17 17 27.3 +1.3**
comp=Z,92nm,1.8s
LMQ La Malbaie 81.94 1 *e*P **P 17 17 25.8 +0.1**
LMQ *ep*P **pP 17 17 39.2 0.0**
COWI Conover 82.01 348 *e*P **P 17 17 25.6 -0.5**
comp=Z,13nm,0.9s
LRMC Laurel Mtn Rad 82.02 324 P P 17 17 26.7 +0.2
baz=143
H34A Spellman Lake, 82.02 343 P P 17 17 26.0 -0.1
baz=160
P18A Preston Nutter 82.14 331 *e*P **P 17 17 28.4 +1.1**
P18A *ep*P **pP 17 17 41.2 +0.4**
P17A Butcher Ranch, 82.21 330 *e*P **P 17 17 28.4 +0.9**
P17A *ep*P **pP 17 17 41.2 +0.1**
TMUT Trail Mountain 82.25 330 *e*P **P 17 17 28.9 +1.0**
TMUT *ep*P **pP 17 17 42.1 +0.6**
H33A Prehn Over Nor 82.28 342 P P 17 17 27.0 -0.5
baz=159
I30A Oacoma 82.28 340 P P 17 17 27.4 -0.1
baz=157
H32A Carlson Farm, 82.29 342 P P 17 17 27.2 -0.4
baz=159
MPMC Manual Prospec 82.39 324 P P 17 17 28.8 +0.2
baz=144
TPNV Topopah Spring 82.52 325 P P 17 17 29.7 +0.5
baz=144
TPNV Topopah Spring 82.52 325 *e*P **P 17 17 30.8 +1.6**
TPNV *e**PP **pP 17 17 43.5 +0.8**
TPNV Topopah Spring 82.52 325 *e*P **P 17 17 30.8 +1.6**
TPNV *ep*P **pP 17 17 43.5 +0.8**
H31A Wolsey 82.54 341 P P 17 17 28.5 -0.4
baz=158
PKM Mcpherson Peak 82.61 322 P P 17 17 31.0 +1.3
baz=142
DAC Darwin (Calif) 82.62 324 *e*P **P 17 17 31.1 +1.4**
DAC *e**PP **pP 17 17 44.0 +0.7**
DAC Darwin (Calif) 82.62 324 *e*P **P 17 17 31.1 +1.4**
DAC *ep*P **pP 17 17 44.0 +0.7**
SUSD Miller 82.63 341 P P 17 17 28.5 -0.9
baz=158
F36A Milaca 82.64 345 P P 17 17 28.3 -1.0
baz=162,SNR=16
G33A Ortonville 82.68 343 P P 17 17 28.7 -0.9
baz=160
PSUT Pine Spring 82.74 328 *e*P **P 17 17 31.7 +1.3**
comp=Z,20nm,1.2s
J26A Sides Ranch, S 82.81 337 P P 17 17 30.6 +0.1
baz=154,SNR=5.9
I28A Midland 82.86 339 P P 17 17 30.7 +0.1
baz=156,SNR=8.9
SMMC Simmler 83.04 322 P P 17 17 32.6 +0.8
baz=142
H29A Onida 83.15 340 P P 17 17 32.3 +0.2
baz=157
E36A McGregor 83.20 345 P P 17 17 31.5 -0.8
baz=162,SNR=11
LTZ Lake Taylor 83.25 222 *e*P **P 17 17 34.6 +1.6**
comp=Z,39nm,1.1s
RPZ Rata Peaks 83.28 220 *e*P **P 17 17 34.4 +1.3**
comp=Z,87nm,1.2s
G30A Faulkton 83.32 341 P P 17 17 32.5 -0.4
baz=158
R11A Troy Canyon, C 83.35 327 P P 17 17 33.9 +0.4
baz=145
R11A Troy Canyon, C 83.35 327 *e*P **P 17 17 35.0 +1.5**
R11A *ep*P **pP 17 17 47.9 +0.9**
K22A Casper 83.37 335 P P 17 17 33.6 +0.2
baz=152,SNR=6.2
K22A Casper 83.37 335 *e*P **P 17 17 34.1 +0.7**
comp=Z,46nm,1.3s
URZ Urewera 83.39 228 LR LR 17 47 23.2
comp=Z,190nm,18.3s,baz=184,slow=30
JLU Jordanelle 83.46 331 *e*P **P 17 17 35.0 +0.9**
JLU *ep*P **pP 17 17 47.8 +0.2**
E35A Pequot Lakes 83.49 344 P P 17 17 32.9 -0.9
baz=161
D37A Cotton 83.64 346 P P 17 17 33.7 -0.9
baz=163
DUG Dugway, Tooele 83.67 330 P P 17 17 35.2 +0.1
baz=147
DUG Dugway, Tooele 83.67 330 *e*P **P 17 17 36.0 +1.0**
DUG *e**PP **pP 17 17 49.0 +0.4**
DUG Dugway, Tooele 83.67 330 *e*P **P 17 17 36.0 +1.0**
DUG *ep*P **pP 17 17 49.0 +0.4**
H27A Howes 83.70 339 P P 17 17 34.7 -0.3
baz=155,SNR=8.4
C39A Grand Marais 83.84 348 P P 17 17 34.5 -1.0
baz=165,SNR=11
RSSD Black Hills 83.84 337 P P 17 17 35.9 -0.1
baz=154
RSSD Black Hills 83.84 337 *e*P **P 17 17 36.0 +0.1**
RSSD *e**PP **pP 17 17 49.2 -0.3**
RSSD Black Hills 83.84 337 *e*P **P 17 17 36.0 +0.1**
RSSD *ep*P **pP 17 17 49.2 -0.3**
D35A Remer 83.91 345 P P 17 17 35.3 -0.6
baz=162
F30A Leola 83.94 341 P P 17 17 36.0 -0.2
baz=158
C38A Sawbill Land. 83.96 347 P P 17 17 34.9 -1.2
baz=164,SNR=13
C37A Embarrass 84.14 346 P P 17 17 36.1 -1.0
baz=163,SNR=6.4
F29A Eureka 84.15 341 P P 17 17 36.9 -0.3
baz=157
H25A Fruitdale 84.16 338 P P 17 17 37.0 -0.3
baz=154
D34A Park Rapids 84.17 344 P P 17 17 36.7 -0.5
baz=161
TOA0 Torodi Ar. Sit 84.17 70 *e*P **P 17 17 37.5 -0.6**
TORD Torodi Ar. Bea 84.17 70 P P 17 17 37.5 -0.5
comp=Z,26nm,1.0s,baz=241,slow=4.7,SNR=88
TORD pP **pP 17 17 51.4 -0.2**
comp=Z,11nm,0.7s,baz=246,slow=3.7,SNR=9.8
EYMN Ely 84.22 347 P P 17 17 36.2 -1.3
baz=164,SNR=8.9
EYMN Ely 84.22 347 *e*P **P 17 17 37.0 -0.5**
EYMN *ep*P **pP 17 17 48.8 -2.2**
C36A Pine Crest Far 84.30 346 P P 17 17 37.0 -0.9
baz=163,SNR=9.3
E31A Nome 84.32 342 P P 17 17 38.1 +0.2
baz=159
G27A Dupree 84.33 339 P P 17 17 37.9 -0.2
baz=155
HWUT Hardware Ranch 84.36 331 *e*P **P 17 17 38.6 +0.1**
HWUT *ep*P **pP 17 17 52.0 -0.1**
D33A AnnSam, Waubun 84.37 344 P P 17 17 38.1 -0.2
baz=160
G26A Maurine 84.46 339 P P 17 17 38.3 -0.4
baz=155,SNR=5.5
C35A Jirik Farms, M 84.48 345 P P 17 17 37.9 -0.9
baz=162,SNR=6.0
E30A Jud 84.53 341 P P 17 17 38.7 -0.3
baz=158
BW06 Boulder Array 84.57 333 P P 17 17 39.2 -0.4
baz=150
BW06 Boulder Array 84.57 333 *e*P **P 17 17 39.6 0.0**
BW06 *ep*P **pP 17 17 52.7 -0.5**
PD31 Pinedale Array 84.57 333 *e*P **P 17 17 39.6 0.0**
PD31 *ep*P **pP 17 17 52.8 -0.4**
PDAR Pinedale Array 84.57 333 P P 17 17 38.8 -0.8
comp=Z,4.2nm,0.9s,baz=158,slow=3.9,SNR=18
PDAR pP **pP 17 17 52.5 -0.7**
comp=Z,2.4nm,0.6s,baz=176,slow=4.2,SNR=8.3
PDAR LR LR 17 52 28.0
comp=Z,157nm,19.8s,baz=152,slow=34
C34A RKJ Ranch, Bem 84.64 344 P P 17 17 38.9 -0.7
baz=161
NV01 Mina Array Sit 84.68 325 *e*P **P 17 17 40.8 +0.5**
NVAR Mina Array Bea 84.68 325 P P 17 17 41.0 +0.7
comp=Z,4.0nm,0.8s,baz=155,slow=5.9,SNR=19
NVAR pP **pP 17 17 54.0 +0.2**
comp=Z,5.6nm,0.7s,baz=159,slow=5.3,SNR=13
NVAR LR LR 17 48 41.1
comp=Z,103nm,19.0s,baz=102,slow=31
D31A Mcclaflin, Tow 84.73 342 P P 17 17 39.6 -0.4
baz=159
E29A Napoleon 84.78 341 P P 17 17 39.0 -1.4
baz=157
C33A Trail 84.93 344 P P 17 17 40.4 -0.7
baz=160
D30A Buchanan 85.05 342 P P 17 17 41.3 -0.4
baz=158
B35A Bob, Littlefor 85.06 345 P P 17 17 40.9 -0.8
baz=162,SNR=12
ELK Elko 85.16 328 *e*P **P 17 17 43.4 +0.7**
ELK *e**PP **pP 17 17 56.1 -0.1**
ELK Elko 85.16 328 *e*P **P 17 17 43.4 +0.7**
ELK *ep*P **pP 17 17 56.1 -0.1**
WAKR Walker 85.28 324 *e*P **P 17 17 45.1 +1.8**
WAKR *ep*P **pP 17 17 58.3 +1.4**
F25A Bowman 85.29 338 P P 17 17 42.5 -0.4
baz=154
CMB Columbia Colle 85.37 323 *e*P **P 17 17 43.6 +0.1**
CMB pmax pmax
comp=Z,5.0nm,0.8s
CMB Columbia Colle 85.37 323 *e*P **P 17 17 43.6 +0.1**
comp=Z,4.6nm,0.8s
B34A Aery, Baudette 85.37 345 P P 17 17 42.6 -0.7
baz=161
B33A Robert and Kas 85.38 344 P P 17 17 42.6 -0.7
baz=160
C31A Landman Farms, 85.43 343 P P 17 17 43.2 -0.3
baz=159
C30A Mose, Pekin 85.53 342 P P 17 17 43.6 -0.4
baz=158
REDW Red Top Meadow 85.57 332 *e*P **P 17 17 44.9 +0.3**
REDW *ep*P **pP 17 17 57.1 -1.1**
SNOW Snow King Moun 85.62 333 *e*P **P 17 17 45.8 +0.9**
SNOW *ep*P **pP 17 17 58.7 +0.2**
B32A Ashes, Strandq 85.71 344 P P 17 17 44.3 -0.5
baz=160
TPAW Teton Pass 85.72 332 *e*P **P 17 17 45.9 +0.4**
comp=Z,17nm,1.2s
RAO Raoul Island 85.73 237 LR LR 17 45 38.6
comp=Z,341nm,21.9s,baz=114,slow=28
MOOW Moose Ponds 85.86 333 *e*P **P 17 17 46.2 +0.1**
MOOW *ep*P **pP 17 17 59.3 -0.4**
FXWY Fox Creek 85.87 333 *e*P **P 17 17 46.4 +0.2**
comp=Z,6.8nm,1.0s
A33A Warroad 85.96 345 P P 17 17 45.5 -0.6
baz=161
D26A Manning 85.98 339 P P 17 17 46.1 -0.2
baz=155
IMW Indian Meadow 86.06 333 *e*P **P 17 17 47.2 +0.1**
comp=Z,17nm,1.0s
FLWY Flagg Ranch 86.13 333 *e*P **P 17 17 47.9 +0.5**
comp=Z,26nm,0.9s
B30A Myrvik Farm, E 86.19 343 P P 17 17 46.9 -0.4
baz=158,SNR=7.2
PAHR Pah Rah Range 86.20 325 *e*P **P 17 17 49.2 +1.5**
PAHR *ep*P **pP 17 18 02.5 +1.2**
H17A Grant Village 86.35 333 P P 17 17 49.0 +0.5
baz=149
D25A Fairfield 86.35 339 P P 17 17 48.4 +0.2
baz=154
AFDM Forest Hills D 86.36 324 *e*P **P 17 17 49.6 +1.1**

AFDM *e*PP **pP** **17 18 02.3 +0.3**
B29A Wagenman Farm, 86.46 342 P **P** **17 17 48.6 -0.1**
baz=158
RLMT Red Lodge 86.50 334 P **P** **17 17 49.0 -0.2**
baz=150
RLMT Red Lodge 86.50 334 *e*P **P** **17 17 49.2 0.0**
comp=Z,43nm,1.4s
C26A Wahner Farm, P 86.61 340 P **P** **17 17 49.6 +0.2**
baz=155
A30A Hoffart Farm, 86.64 343 P **P** **17 17 49.6 +0.2**
baz=158
B28A Dugan Ranch, T 86.70 341 P **P** **17 17 49.8 0.0**
baz=157
YMR Madison River 86.73 333 *e*P **P** **17 17 51.5 +1.2**
comp=Z,28nm,1.0s
LAO LASA Array 86.83 337 P **P** **17 17 50.5 0.0**
baz=152
LAO LASA Array 86.83 337 *e*P **P** **17 17 49.8 -0.7**
comp=Z,30nm,1.1s
A29A Manning Farm, 86.85 342 P **P** **17 17 50.2 -0.3**
baz=158
ORV Oroville 87.09 324 *e*P **P** **17 17 53.4 +1.5**
ORV *e**PP **pP** **17 18 06.2 +0.7**
ORV Oroville 87.09 324 *e*P **P** **17 17 53.4 +1.5**
ORV *e*pP **pP** **17 18 06.2 +0.7**
A28A Rude Farm, Bot 87.10 342 P **P** **17 17 51.7 -0.1**
baz=157
HLID Hailey 87.14 330 P **P** **17 17 52.7 +0.4**
baz=146
HLID Hailey 87.14 330 *e*P **P** **17 17 53.0 +0.7**
comp=Z,13nm,1.0s
GCMT Greycliff 87.22 334 *e*P **P** **17 17 52.6 +0.1**
ULM Lac du Bonnet 87.30 345 P **P** **17 17 51.4 -1.2**
comp=Z,9.7nm,0.8s,baz=162,slow=5.1,SNR=9.8
ULM pP **pP** **17 18 04.8 -1.5**
comp=Z,3.7nm,0.4s,baz=131,slow=1.9,SNR=5.7
ULM Lac du Bonnet 87.30 345 *e*P **P** **17 17 51.9 -0.7**
ULM *e**PP **pP** **17 18 05.0 -1.2**
ULM Lac du Bonnet 87.30 345 *e*P **P** **17 17 51.9 -0.7**
ULM *e*pP **pP** **17 18 05.0 -1.2**
A26A Wade Farm, Ken 87.56 340 P **P** **17 17 53.7 -0.3**
baz=155
MCMT McKenzie Canyo 87.58 332 *e*P P 17 17 48.9 -5.6
MCMT *e*pP pP 17 18 08.8 +0.8
MFID Camas Ranch 87.60 329 *e*P **P** **17 17 54.6 +0.1**
DGMT Dagmar 87.79 339 P **P** **17 17 55.3 +0.2**
baz=154
BOZ Bozeman (W) 87.81 333 P **P** **17 17 55.4 0.0**
baz=148
O03D Paynes Creek 87.81 324 P **P** **17 17 55.8 +0.3**
baz=141
LRM Limekiln Ridge 88.26 333 *e*P **P** **17 17 58.4 +0.7**
MOD Modoc Plateau 88.36 326 *e*pP pP 17 18 12.5 +0.8
WDC Whiskeytown Da 88.39 324 *e*P **P** **17 17 57.8 -0.3**
WDC Whiskeytown Da 88.39 324 *e*P **P** **17 17 57.8 -0.3**
WDC *e*pP **pP** **17 18 06.2 -5.5**
N02D Trinity Center 88.78 324 P **P** **17 18 00.6 +0.6**
baz=140
M04C Macdoel 88.98 325 P **P** **17 18 01.2 +0.2**
baz=141
M02C Callahan 89.17 324 P **P** **17 18 02.9 +1.0**
baz=140
EGMT Eagleton 89.17 336 P **P** **17 18 02.3 +0.6**
baz=150
K05A Summer Lake 89.28 326 *e*P **P** **17 18 03.9 +1.4**
comp=Z,25nm,1.0s
LSZ Lusaka 89.28 108 *e*P **P** **17 18 04.7 +1.6**
LSZ pmax pmax
comp=Z,20nm,1.1s
LSZ Lusaka 89.28 108 *e*P **P** **17 18 04.7 +1.6**
comp=Z,41nm,18.8s,baz=156,slow=38
SCHQ Schefferville 89.32 3 LR LR 18 01 24.5
comp=Z,41nm,18.8s,baz=156,slow=38
YBH Yreka Blue Hor 89.36 324 *e*P pP 17 18 16.1 -0.3
YBH Yreka Blue Hor 89.36 324 *e*pP pP 17 18 16.1 -0.3
K04D Chiloquin, OR 89.59 326 P **P** **17 18 04.6 +0.7**
baz=141
MSO Missoula 89.67 332 P **P** **17 18 03.9 -0.2**
baz=146
J05D Fort Rock, OR 89.87 326 P **P** **17 18 05.6 +0.4**
baz=141
I05D Terrebonne, OR 90.74 327 P **P** **17 18 10.2 +1.2**
baz=141
BSMT Bassoo Peak 90.84 333 *e*P **P** **17 18 10.0 +0.4**
WALA Waterton Lakes 91.52 334 *e*P **P** **17 18 12.9 +0.3**
WALA *e*pP **pP** **17 18 25.6 -0.7**
TAM Tamanrasset 92.87 64 *e*P **P** **17 18 20.0 +0.4**
TAM *e**PP **pP** **17 18 33.9 +0.6**
TAM Tamanrasset 92.87 64 *e*P **P** **17 18 20.0 +0.4**
TAM *e*pP **pP** **17 18 33.9 +0.6**
FCC Fort Churchill 95.03 348 *e*P **P** **17 18 28.1 -0.2**
FCC *e**PP **pP** **17 18 41.6 -0.5**
FCC Fort Churchill 95.03 348 *e*P **P** **17 18 28.1 -0.2**
FCC *e*pP **pP** **17 18 41.6 -0.5**
ESDC Sonseca Array 96.87 46 P **P** **17 18 36.5 -0.9**
comp=Z,0.9nm,0.8s,baz=224,slow=2.7,SNR=4.6
ESDC LR LR 18 01 15.3
comp=Z,78nm,20.7s,baz=170,slow=35
YKA Yellowknife Ar 102.87 341 P **Pdif** **17 19 02.4 -1.1**
comp=Z,0.5nm,0.7s,baz=138,slow=4.3,SNR=9.8
YKA pP 17 19 15.1
comp=Z,0.5nm,0.6s,baz=141,slow=4.6,SNR=4.8
GERES GERESS Array B 112.46 45 PKiKP **PKiKP** **17 23 41.4 -0.6**
comp=Z,0.3nm,0.6s,baz=349,slow=3.0,SNR=5.0
CLL Collm 113.18 43 *e*PKiKP **PKiKP** **17 23 43.0 -0.1**
CLL *e*PS **PS** **17 34 18.0 +8.4**
CLL *e*PPS PPS 17 35 36.0
CLL *e*SSS SSS 17 44 12.0
CLL *e*SSSS 17 47 58.0
CLL LmH 18 07 00.0
comp=N,100nm,20.5s
CLL LmH 18 07 00.0
comp=E,200nm,21.4s
CLL LmV 18 10 00.0
comp=Z,200nm,18.9s
CLL Collm 113.18 43 *e*PKiKP **PKiKP** **17 23 43.0 -0.1**
CLL MLR MLR
comp=Z,200nm,18.9s
ILAR Eielson Array 115.00 333 PKP **PKPdf** **17 23 45.6 -0.6**
comp=Z,0.8nm,0.8s,baz=98,slow=1.0,SNR=7.9
ASAR Alice Springs 117.04 206 PKP **PKPdf** **17 23 50.2 -1.5**
comp=Z,0.6nm,0.9s,baz=135,slow=2.0,SNR=3.7
ASAR pPKP **pPKPdf** **17 24 04.0 -1.8**
comp=Z,0.5nm,0.5s,baz=147,slow=1.4,SNR=3.3
KLNR Kaliningrad 118.50 41 *e*PKiKP **PKPdf** **17 23 55.2 +2.0**
WRA Warramunga Arr 120.26 209 PKP **PKPdf** **17 23 56.5 -1.3**
comp=Z,1.8nm,0.9s,baz=169,slow=1.4,SNR=5.4
WRA pPKP **pPKPdf** **17 24 10.5 -1.5**
comp=Z,2.0nm,0.5s,baz=162,slow=1.6,SNR=8.9
MMAI Mount Meron Ar 120.71 69 PKP **PKPdf** **17 23 57.9 -0.4**
comp=Z,2.3nm,0.8s,baz=289,slow=4.4,SNR=4.6
BR231 Keskin MP Arra 121.34 61 *e*PKPdf **PKPdf** **17 23 59.3 -0.1**
BRTR Keskin Array B 121.92 61 PKP **PKPdf** **17 23 59.4 -1.1**
comp=Z,2.5nm,0.8s,baz=208,slow=1.8,SNR=15
BRTR pPKP **pPKPdf** **17 24 14.0 -0.7**
comp=Z,2.4nm,0.9s,baz=218,slow=3.3,SNR=8.0
BR131 Keskin Array S 121.92 61 *e*PKPdf **PKPdf** **17 24 00.2 -0.3**
AKASG Malin Array Be 122.47 48 PKP **PKPdf** **17 24 01.1 +0.1**
comp=Z,0.6nm,0.4s,baz=270,slow=1.9,SNR=8.3
AKASG pPKP **pPKPdf** **17 24 14.5 -0.6**
comp=Z,1.0nm,0.5s,baz=263,slow=3.0,SNR=3.4
H11S2 WAKE ISLAND Hyl 126.06 268 T T 19 42 45.5
baz=119
H11S1 WAKE ISLAND Hyl 126.08 268 T T 19 42 47.3
baz=119
H11S3 WAKE ISLAND Hyl 126.08 268 T T 19 42 46.7
baz=119
H11N3 WAKE ISLAND Hyl 126.50 270 T T 19 43 13.1
baz=115,slow=79,SNR=39
H11N1 WAKE ISLAND Hyl 126.51 270 T T 19 43 15.9
baz=115,slow=79,SNR=114
H11N2 WAKE ISLAND Hyl 126.52 270 T T 19 43 19.1
baz=115,slow=79,SNR=50
OBN Obninsk 127.77 44‖ *e*PKiKP **PKPdf** **17 24 10.3 -0.7**
OBN pmax pmax
comp=Z,5.0nm,0.5s
VSR Storozhevoye 128.70 49 *e*PKiKP **PKPdf** **17 24 11.1 -1.8**
VSR pmax pmax
comp=Z,10.0nm,1.1s
LPSR Galich'ya Gora 128.78 47 *e*PKiKP **PKPdf** **17 24 12.2 -0.8**
LPSR pmax pmax
comp=Z,9.0nm,0.9s
KIV Kislovodsk 129.62 59 *e*PKiKP **PKPdf** **17 24 15.8 +0.7**
KIV Kislovodsk 129.62 59 *e*PKPdf **PKPdf** **17 24 15.8 +0.7**
KBZ Khabaz 129.71 59 PKP **PKPdf** **17 24 15.3 +0.3**
comp=Z,2.4nm,0.8s,baz=229,slow=3.0,SNR=4.9

KLMR Klimovskoe 129.82 36 *e*PKiKP **PKPdf** **17 24 13.0 -1.7**
KLMR *e* 17 24 26.7
KLMR pmax pmax
comp=Z,13nm,1.2s
GNI Garni 130.17 64⇑ *i*PKiKP **PKPdf** **17 24 17.6 +1.3**
ZEI Tsey 130.21 60 *i*PKiKP **PKPdf** **17 24 16.1 -0.3**
ZEI pmax pmax
comp=Z,15nm,1.1s
VRH Novokhopyorsk 130.29 49 *e*PKiKP **PKPdf** **17 24 15.6 -0.3**
VRH pmax pmax
comp=Z,8.0nm,0.5s
BILL Bilibino 133.64 334‖ *e*PKiKP **PKPdf** **17 24 22.2 +0.4**
BILL *e* 17 26 56.5
BILL *e* 17 31 28.2
BILL pmax pmax
comp=Z,8.0nm,1.5s
BILL MLR MLR
comp=Z,75nm,19.0s
BILL Bilibino 133.64 334 *e*PKPdf **PKPdf** **17 24 22.2 +0.4**
GEYT Alibeck 139.81 70 PKP **PKPdf** **17 24 33.9 -0.3**
comp=Z,3.6nm,0.9s,baz=254,slow=9.0,SNR=7.3
ARU Arti 140.10 41 *i*PKiKP **PKPdf** **17 24 35.2 +1.1**
ARU 17 27 32.5
AKTO Aktyubinsk 140.57 51 PKhKP PKPpre 17 24 27.6
comp=Z,1.7nm,0.8s,baz=196,slow=1.8,SNR=6.5
AKTO PKP **PKPdf** **17 24 35.0 -0.1**
comp=Z,2.1nm,0.9s,baz=343,slow=3.3,SNR=5.2
SEY Seymchan 140.83 330 PKhKP PKPpre 17 24 27.5
comp=Z,4.8nm,0.8s,baz=58,slow=4.4,SNR=7.9
SEY PKP **PKPdf** **17 24 35.5 +0.3**
comp=Z,4.8nm,0.8s,baz=101,slow=4.7,SNR=11
SEY pPKP pPKPdf 17 24 49.5 +0.2
comp=Z,6.4nm,0.9s,baz=130,slow=7.2,SNR=6.9
PETK Petropavlovsk- 140.90 314 PKhKP PKPpre 17 24 28.3
comp=Z,3.4nm,1.0s,baz=159,slow=17,SNR=2.8
PETK PKP **PKPdf** **17 24 35.6 0.0**
comp=Z,3.8nm,0.9s,baz=90,slow=1.8,SNR=3.2
PETK pPKP pPKPdf 17 24 49.5 -0.2
comp=Z,4.3nm,0.7s,baz=104,slow=6.1,SNR=4.1
TIXI Tiksi 141.49 350 PKhKP PKPpre 17 24 28.6
comp=Z,1.9nm,0.9s,baz=58,slow=1.3,SNR=4.3
TIXI PKP **PKPdf** **17 24 34.7 -1.5**
comp=Z,1.7nm,0.8s,baz=45,slow=4.8,SNR=4.0
TIXI Tiksi 141.49 350‖ *e*PKiKP **PKPdf** **17 24 37.8 +1.7**
ABKAR Akbulak array 141.90 53 *e*PKPpre PKPpre 17 24 31.7
MA2 Magadan 142.92 325 PKhKP PKPpre 17 24 33.2
comp=Z,3.5nm,0.8s,baz=168,slow=5.9,SNR=3.9
MA2 PKP **PKPdf** **17 24 38.8 -0.2**
comp=Z,3.5nm,0.8s,baz=59,slow=1.9,SNR=3.2
GOA Goa 143.59 113 *e*P **PKPdf** **17 24 41.2 -0.4**
BKNI Bangkinang 145.08 167 *e*PKPdf **PKPbc** **17 24 43.0 -0.7**
GSI Gunungsitoli 145.24 161 *e*PKPbc **PKPdf** **17 24 44.5 0.0**
POO Poona 145.41 109 *e*P **PKPbc** **17 24 44.3 -0.4**
ZRNK Zerenda 146.84 45 PKiKP **PKPdf** **17 24 45.5 -0.5**
ZRNK pmax pmax
comp=Z,52nm,1.1s
ZRNK Zerenda 146.84 45 *e*PKPdf **PKPdf** **17 24 46.6 +0.5**
KSM Kuching 146.84 184 *e*PKPdf **PKPbc** **17 24 48.5 -0.6**
MYKOM Kota Tinggi 146.94 172 *e*PKPdf **PKPbc** **17 24 48.9 -0.5**
PSI Prapat 147.03 163 *e*PKP2 **PKPdf** **17 24 48.7 +1.0**
PSI Prapat 147.03 163 *e*PKPdf **PKPdf** **17 24 48.7 +1.0**
BRVK Borovoye 147.54 44 *e*PKP2 **PKPbc** **17 24 49.2 -0.7**
BRVK Borovoye 147.54 44 *e*PKPdf **PKPbc** **17 24 49.2 -0.7**
BVA0 Borovoye Array 147.61 44 *e*PKiKP **PKPdf** **17 24 46.3 -1.0**
BVA0 pmax pmax
comp=Z,20nm,1.0s
BVAR Borovoye Array 147.61 44 PKPbc **PKPdf** **17 24 47.4 0.0**
comp=Z,9.6nm,0.8s,baz=258,slow=2.8,SNR=36
BVAR pPKPbc **pPKPbc** **17 25 04.2 +0.1**
comp=Z,9.8nm,0.6s,baz=298,slow=3.1,SNR=16
SBUM Sibu 147.66 187 *e*PKPdf **PKPbc** **17 24 50.4 -1.0**
HYB Hyderabad 148.33 115 *i*PKP **PKPbc** **17 24 54.0 +0.9**
HYB Hyderabad 148.33 115 *e*P **PKPdf** **17 24 50.0 +0.4**
LHMI Lhok Sumawe 148.79 158 *e*PKPbc **PKPbc** **17 24 53.7 -0.6**
SHO Shikotan 149.09 299 *e*PKP2 **PKPab** **17 24 56.5 -2.1**
MYLDM Lahad Datu 149.11 200 *e*PKPbc **PKPbc** **17 24 55.9 +0.8**
IPM Ipoh 149.13 166 *e*PKPdf **PKPbc** **17 24 54.0 -1.2**
IPM *e*pPKPdf **pPKPdf** **17 25 03.9 -1.3**
YAK Yakutsk 149.54 340 PKPbc **PKPbc** **17 24 54.6 -0.1**
comp=Z,1.1nm,0.3s,baz=222,slow=7.4,SNR=5.3
YAK pPKPbc **pPKPbc** **17 25 08.0 -0.8**
comp=Z,1.4nm,0.3s,baz=235,slow=16,SNR=2.9
YAK Yakutsk 149.54 340*c* *i*PKHKP **PKPbc** **17 24 53.7 -1.0**
YAK pmax pmax
comp=Z,79nm,1.1s
YAK pmax pmax
comp=E,6.0nm,1.0s
YAK pmax pmax
comp=N,7.0nm,1.5s
YAK Yakutsk 149.54 340 *e*PKPdf **PKPdf** **17 24 49.2 -0.9**
YAK PKPbc **PKPbc** **17 24 54.6 -0.1**
YAK pPKPbc **pPKPbc** **17 25 08.0 -0.8**
KK31 Karatay Array 149.62 63 *i*PKHKP PKPpre 17 24 54.2
KK31 pmax pmax
comp=Z,13nm,1.1s
KKAR Karatay Array 149.62 63 *e*PKP2 **PKPbc** **17 24 55.1 -0.5**
KKAR Karatay Array 149.62 63 *e*PKPbc **PKPbc** **17 24 55.1 -0.5**
KULM Kulim 149.83 165 *e*PKPdf **PKPbc** **17 24 55.5 -1.5**
OTUK Ortayu 150.15 52 PKiKP **PKPbc** **17 24 56.5 -0.2**
OTUK pmax pmax
comp=Z,38nm,1.0s
KKM Kota Kinabalu 150.52 196 *e*PKPdf **PKPbc** **17 24 57.1 -1.6**
KKM *e* 17 25 11.6
NKL Nikolayevsk 150.69 319 *e*PKiKP **PKPbc** **17 24 57.0 -0.7**
NKL pmax pmax
comp=Z,65nm,1.0s
BHPL Bhopal 150.74 105 *e*P **PKPbc** **17 24 56.3 -2.6**
NGP Nagpur 150.92 110 *e*P **PKPdf** **17 24 53.6 0.0**
NGP IAMs_20 IAMs_20 18 16 05.6
comp=Z,746nm,26.3s
MNAS Manas 151.12 64 PKiKP **PKPbc** **17 24 58.2 -1.2**
MNAS pmax pmax
comp=Z,25nm,1.2s
VIS Vishakhapatnam 152.00 121 *e*P **PKPdf** **17 24 54.2 -1.1**
VIS IAMs_20 IAMs_20 17 39 15.9
comp=Z,229nm,3.3s
EKS2 Erkin-Say 152.05 63 *e*PKiKP **PKPdf** **17 24 55.5 +0.7**
EKS2 Erkin-Say 152.05 63 *e*PKPdf **PKPdf** **17 24 55.5 +0.7**
ASAJ Asahikawa 152.10 300 PKPbc **PKPbc** **17 25 00.2 -1.1**
comp=Z,11nm,0.9s,baz=146,slow=3.6,SNR=7.3
ASAJ PKPab **PKPab** **17 25 11.3 +0.2**
comp=Z,7.5nm,0.7s,baz=119,slow=7.8,SNR=5.8
AAK Ala-Archa 152.57 63 PKiKP **PKPbc** **17 25 02.4 -0.3**
AAK pmax pmax
comp=Z,30nm,1.0s
AAK Ala-Archa 152.57 63 *e*PKPbc **PKPbc** **17 25 03.1 +0.4**
FRU Bishkek 152.65 63 *e*PKiKP **PKPbc** **17 25 02.0 -0.7**
FRU *e* 17 25 15.5
FRU *e* 17 28 44.0
FRU pmax pmax
comp=Z,60nm,1.8s
PBA Port Blair 152.98 145 *e*P PKPdf 17 24 57.3 +0.4
KURK Kurchatov 153.21 44 *e*PKiKP **PKPdf** **17 24 55.4 -0.7**
KURK Kurchatov 153.21 44 *e*PKPdf **PKPdf** **17 24 55.4 -0.7**
DHRM DHARAMSHALA 153.23 86 *e*P **PKPdf** **17 24 57.7 +0.7**
DHRM IAmb IAmb 17 25 05.3
TKM2 Tokmak 2 153.35 62 *e*PKiKP **PKPdf** **17 24 57.3 +0.4**
TKM2 Tokmak 2 153.35 62 *e*PKPdf **PKPdf** **17 24 57.1 +0.2**
NVS Novosibirsk 153.40 33‖ *i*PKiKP **PKPbc** **17 25 04.2 +0.4**
NVS pmax pmax
comp=N,5.0nm,1.2s
NVS pmax pmax
comp=E,8.0nm,1.2s
NVS pmax pmax
comp=Z,30nm,1.2s
SMLA Simla 153.65 89 *e*x **PKPbc** **17 25 04.9 -0.3**
KSH Kashi 153.85 70 *e*PKPbc **PKPdf** **17 24 58.3 +0.7**
KSH *es*PKP 17 25 13.0
KSH PKS **PKSdf** **17 28 30.5 -1.4**
KSH *e*PP **PP** **17 28 52.9 -1.0**
KSH SKKS 17 35 36.3
KSH AMB AMB
comp=Z,81nm,6.2s
KSH LR LR
comp=Z,230nm,8.4s
KSH LR LR
comp=Z,150nm,8.5s
ZAA0 Zalesovo Array 154.69 33 *e*PKPdf **PKPdf** **17 24 56.8 -1.3**
ZAA0 *e*PKPdf **PKPdf** **17 24 57.5 -0.6**
ZAA0 *e*PKPbc **PKPbc** **17 25 06.4 -0.3**
ZALV Zalesovo Beam 154.69 33 PKP **PKPdf** **17 24 56.9 -1.2**
comp=Z,0.6nm,0.4s,baz=299,slow=3.1,SNR=7.2
ZALV PKPbc **PKPbc** **17 25 05.6 -1.1**
comp=Z,5.1nm,0.9s,baz=276,slow=2.8,SNR=14

ZALV PKPab **PKPab** **17 25 19.4 -2.3**
comp=Z,6.7nm,0.8s,baz=298,slow=3.1,SNR=11
ZALV pPKPab **pPKPab** **17 25 34.3 -1.1**
comp=Z,11nm,0.9s,baz=308,slow=4.3,SNR=5.0
MJAR Matsushiro Arr 155.70 283 PKP **PKPdf** **17 24 59.7 -0.3**
comp=Z,0.9nm,0.9s,baz=81,slow=0.3,SNR=4.1
MJAR PKPab **PKPab** **17 25 24.1 -2.6**
comp=Z,1.3nm,0.7s,baz=101,slow=4.3,SNR=3.7
BOD Bodaibo 156.61 352 *e*PKiKP **PKPdf** **17 24 58.3 -2.2**
BOD pmax pmax
comp=Z,11nm,1.0s
MAKZ Makanchi 156.81 51 *e*PKiKP **PKPdf** **17 25 00.8 -0.4**
MAKZ Makanchi 156.81 51 *e*PKPdf **PKPdf** **17 25 00.8 -0.4**
MK31 Makanchi Array 157.01 51 *e*PKiKP **PKPdf** **17 25 01.0 -0.5**
MK31 Makanchi Array 157.01 51 *e*PKPdf **PKPdf** **17 25 01.0 -0.5**
MKAR Makanchi Array 157.01 51 PKP **PKPdf** **17 25 00.4 -1.1**
comp=Z,1.0nm,0.9s,baz=289,slow=3.7,SNR=9.7
MKAR PKPab **PKPab** **17 25 31.2 -0.8**
comp=Z,3.7nm,0.8s,baz=293,slow=3.3,SNR=12
MKAR PP **PP** **17 29 07.5 -3.4**
comp=Z,1.6nm,1.0s,baz=284,slow=4.9,SNR=4.3
MKAR Makanchi Array 157.01 51 *e*PKiKP **PKPdf** **17 25 01.0 -0.5**
MKAR 17 29 07.5
MKAR Makanchi Array 157.01 51 *e*PKPdf **PKPdf** **17 25 01.0 -0.5**
MKAR PKPab **PKPab** **17 25 31.2 -0.8**
MKAR PP **PP** **17 29 07.5 -3.4**
MK01 Makanchi Array 157.03 51 *e*PKPdf **PKPdf** **17 24 59.0 -2.4**
KLR Kul'dur 157.49 317 PKP **PKPdf** **17 25 01.2 -0.8**
comp=Z,1.7nm,0.8s,baz=14,slow=4.2,SNR=7.0
KLR PKPab **PKPab** **17 25 33.0 -1.0**
comp=Z,2.2nm,0.9s,baz=20,slow=4.9,SNR=5.9
WMQ Urumqi 161.67 54 *e*PKP **PKPdf** **17 25 07.3 +0.3**
WMQ LR LR
comp=Z,54nm,26.2s
WMQ LR LR
comp=Z,37nm,23.2s
WMQ LR LR
comp=Z,51nm,26.2s
CM01 Chiang Mai Arr 161.72 150 *e*PKPdf **PKPdf** **17 25 06.9 -0.8**
CMAR Chiang Mai Arr 161.75 150 PKP **PKPdf** **17 25 07.0 -0.7**
comp=Z,1.1nm,0.8s,baz=243,slow=2.8,SNR=6.6
CMAR pPKP **pPKPdf** **17 25 20.9 -1.0**
comp=Z,1.5nm,0.9s,baz=237,slow=2.2,SNR=4.9
CMAR PKPab **PKPab** **17 25 51.8 -1.3**
comp=Z,0.9nm,0.8s,baz=225,slow=5.9,SNR=5.4
CMAR pPKPab **pPKPab** **17 26 05.9 -0.9**
comp=Z,3.3nm,1.0s,baz=220,slow=5.4,SNR=4.8
CHTO Chiang Mai 162.06 150 *e*PKP2 **PKPab** **17 25 53.5 -1.0**
CHTO Chiang Mai 162.06 150 *e*PKPab **PKPab** **17 25 53.5 -1.0**
CIT Chita 162.33 349 *e*PKP2 **PKPab** **17 25 55.4 +0.5**
TLY Talaya 162.74 10 PKPab **PKPab** **17 25 56.9 +0.3**
comp=Z,1.4nm,0.7s,baz=312,slow=5.4,SNR=4.3
SHL Shillong 163.10 118 *e*P **PKPdf** **17 25 07.6 -1.6**
KSRS Korea Array 163.94 285 PKP **PKPdf** **17 25 08.0 -1.3**
comp=Z,1.0nm,0.8s,baz=86,slow=1.6,SNR=4.9
KSRS pPKP **pPKPdf** **17 25 22.0 -1.5**
comp=Z,1.6nm,1.0s,baz=121,slow=1.1,SNR=3.1
KSRS pPKPab **pPKPab** **17 26 15.7 -0.5**
comp=Z,2.9nm,0.9s,baz=105,slow=4.8,SNR=5.7
KSRS Korea Array 163.94 285 PKiKP **PKPdf** **17 25 08.0 -1.3**
KSRS 17 25 22.0
KSRS pmax pmax
comp=Z,1.0nm,0.8s
KSAR Wonju Array Be 163.97 285 PKiKP **PKPdf** **17 25 08.0 -1.4**
KSAR 17 25 22.0
KSAR Wonju Array Be 163.97 285 PKP **PKPdf** **17 25 08.0 -1.4**
KSAR pPKP **pPKPdf** **17 25 21.9 -1.6**
KSAR pPKPab **pPKPab** **17 26 15.7 -0.6**
SONM Songino Array 166.85 6 PKPab **PKPab** **17 26 14.8 -0.2**
comp=Z,1.9nm,0.7s,baz=346,slow=3.3,SNR=7.9
SONM pPKPab **pPKPab** **17 26 28.2 -0.4**
comp=Z,1.9nm,0.9s,baz=324,slow=3.3,SNR=4.3
SONM PP **PP** **17 30 02.1 -0.3**
comp=Z,1.1nm,1.0s,baz=346,slow=4.9,SNR=4.2
ULN Ulaanbaatar 166.86 4 *e*PKP2 **PKPab** **17 26 15.6 +0.6**
ULN Ulaanbaatar 166.86 4 *e*PKPab **PKPab** **17 26 15.6 +0.6**
KMI Kunming 169.25 152 PKP **PKPdf** **17 25 15.1 +1.0**
GYA Guiyang 171.61 170 *e*PKP **PKPdf** **17 25 15.0 -0.2**
GYA sPKP 17 25 34.4
GYA PKPab **PKPab** **17 26 38.4 +1.9**
GYA PKS **PKSdf** **17 28 46.0 -1.7**
GYA PP **PP** **17 30 29.8 +3.4**
GYA AMB AMB
comp=Z,120nm,8.6s
GTA Gaotai 171.75 53 *e*PKP **PKPdf** **17 25 14.8 -0.1**
GTA pPKP pPKPdf 17 25 28.9 -0.2
GTA sPKP 17 25 34.8
GTA PKPab **PKPab** **17 26 37.1 0.0**
GTA PP **PP** **17 30 30.3 +2.0**
GTA SKS **SKSdf** **17 32 13.5 -1.0**
GTA SKKS **SKKSac** **17 37 12.1 +0.9**
GTA SS **SS** **17 51 30.3 -2.7**
GTA AMB AMB
comp=Z,110nm,8.6s
GTA LR LR
comp=Z,79nm,20.4s
GTA LR LR
comp=Z,99nm,19.0s
GTA LR LR
comp=Z,110nm,19.5s
HHC Hu-ho-hao-te 173.40 338 *e*PKP **PKPdf** **17 25 16.8 +1.3**
HHC AMB AMB
comp=Z,30nm,5.0s
HHC LR LR
comp=Z,97nm,21.8s
HHC LR LR
comp=Z,190nm,21.8s
HHC LR LR
comp=Z,120nm,21.7s
CD2 Chengdu 174.57 134 PKP **PKPdf** **17 25 15.1 -1.1**
CD2 sPKP 17 25 34.5
CD2 SKS **SKSdf** **17 32 14.4 -1.2**
CD2 SKKS **SKKSac** **17 37 23.0 -1.7**
CD2 SS **SS** **17 51 59.3 -0.4**
CD2 AMB AMB
comp=Z,150nm,5.9s
CD2 LR LR
comp=Z,100nm,6.5s
CD2 LR LR
comp=Z,140nm,6.5s
LZH Lanzhou 176.10 69 *e*PKP **PKPdf** **17 25 15.1 -1.5**
LZH pPKP pPKPdf 17 25 27.3 -3.5
LZH sPKP 17 25 31.0
LZH PP **PP** **17 30 53.5 +3.6**
LZH SKKS 17 37 33.1
LZH AMB AMB
comp=Z,120nm,4.4s
LZH LR LR
comp=Z,1μm,19.0s
XAN Xi'an 179.14 214 PKP **PKPdf** **17 25 16.4 -0.5**
XAN sPKP 17 25 30.8
XAN PKS **PKSdf** **17 28 47.6 -1.4**
XAN SKS **SKSdf** **17 32 14.8 -1.3**
XAN AMB AMB
comp=Z,140nm,12.4s

IDC ***19*** *17:06:18.3±1.2, 39°.57N×144°.73E, h0km, mb3.5/6, mb1 3.6/10, mb1mx3.5/44, mbtmp3.5/10, ML2.9/4, MS2.6/2, Ms1 2.6/2, ms1mx2.2/42, Error ellipse: s-maj=27.0km s-min=21.1km az=79.0*
ISCJB ***19*** *17:06:21.5±0.7, 39°.84N±0°.03×144°.42E±0°.06, h34km, mb3.4/6, Error ellipse: s-maj=7.0km s-min=4.0km az=28.5*
JMA ***19*** *17:06:21.5±0.2, 39°.86N×144°.36E, h35km, M3.4*
ISC 19 17:06:23.4±1.0, 39°.81N±0°.05×144°.45E±0°.07, h34km, n25, σ1§80/36, mb3.6/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.99**	**275**	P	**Pn**	**17 06 53.0**	**-1.7**
JTH				*e*S	**Sn**	**17 07 16.8**	**-1.7**
MIYJ	**Miyakonagasawa**	**2.04**	**264**	P	**Pn**	**17 06 53.8**	**-1.6**
JANG	**Nango**	**2.32**	**285**	P	**Pn**	**17 06 57.6**	**-1.6**
JOM	**Ohasama**	**2.46**	**263**	P	**Pn**	**17 07 00.2**	**-0.9**
JOM				*e*S	**Sn**	**17 07 28.3**	**-1.7**
JCH	**Churui**	**2.92**	**344**	P	**Pn**	**17 07 06.7**	**-0.7**
JCH				*e*S	**Sn**	**17 07 39.7**	**-1.6**
JOT	**Ohata**	**3.03**	**302**	P	**Pn**	**17 07 08.4**	**-0.5**
JOT				*e*S	**Sn**	**17 07 41.9**	**-2.1**
JAK	**Akkeshi**	**3.19**	**3**	P	**Pn**	**17 07 10.4**	**-0.7**
JYK	**Kaneyama**	**3.29**	**256**	P	**Pn**	**17 07 11.7**	**-0.9**
JYK				*e*S	**Sn**	**17 07 49.1**	**-1.4**
JKB	**Kayabe**	**3.32**	**310**	P	**Pn**	**17 07 13.1**	**+0.2**

JKB eS **Sn** **17 07 48.6 -2.6**
JAR Ashorobuto 3.52 352 P **Pn** **17 07 14.5 -1.2**
JAR eS **Sn** **17 07 54.7 -1.5**
NEM2 Nemuro 2 3.68 15 P **Pn** **17 07 16.3 -1.6**
NEM2 eS **Sn** **17 07 56.8 -3.3**
JEW Eniwo 3.78 324 eS **Sn** **17 08 01.3 -1.1**
JFT Otama 3.95 236 P **Pn** **17 07 19.4 -2.2**
JFT eS **Sn** **17 08 03.4 -3.3**
JTKR Abashiri--Toko 4.18 355 P **Pn** **17 07 24.6 -0.1**
JTKR eS **Sn** **17 08 11.7 -0.6**
ASAJ Asahikawa 4.52 343 Pn **Pn** **17 07 30.1 +0.6**
0.4nm,0.3s,baz=202,slow=14,SNR=6.6
ASAJ Sn **Sn** **17 08 19.5 -1.2**
0.6nm,0.3s,baz=135,slow=16,SNR=4.1
MAT Matsushiro 5.90 238 P **Pn** **17 07 47.9 -0.5**
MAT eS **Sn** **17 08 58.7 +3.8**
MJAR Matsushiro Arr 5.90 238 Pn **Pn** **17 07 47.8 -0.6**
1.6nm,0.3s,baz=54,slow=12,SNR=26
MJAR LR LR 17 10 19.1
comp=Z,62nm,19.8s,baz=85,slow=40
USRK Ussuriysk Ar. 10.26 299 Pn **Pn** **17 08 49.6 +1.5**
0.1nm,0.3s,baz=93,slow=15,SNR=3.8
KSRS Korea Array 13.13 265 Pn **Pn** **17 09 30.1 +2.6**
0.1nm,0.3s,baz=70,slow=14,SNR=3.2
KSRS LR LR 17 14 05.9
comp=Z,24nm,19.9s,baz=60,slow=35
SONM Songino Array 28.37 299 P P 17 12 18.4 +4.0
0.2nm,0.5s,baz=97,slow=7.4,SNR=2.7
MKAR Makanchi Array 44.72 300 P **P** **17 14 35.3 +2.1**
0.2nm,0.7s,baz=80,slow=9.5,SNR=3.2
ILAR Eielson Array 45.87 34 P **P** **17 14 43.0 +1.0**
0.7nm,0.8s,baz=264,slow=6.3,SNR=6.8
KURBB Kurchatov Arra 46.23 306 P **P** **17 14 47.0 +2.0**
0.7nm,0.7s,baz=79,slow=8.3,SNR=7.4
WRA Warramunga Arr 60.19 191 P **P** **17 16 26.2 -1.7**
0.5nm,0.8s,baz=13,slow=7.0,SNR=5.9
ASAR Alice Springs 63.91 191 P **P** **17 16 51.6 -1.3**
0.4nm,0.8s,baz=6.7,slow=8.7,SNR=5.1

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*ISCJB **19** 17:07:31.2±1.4, 33°.36N±0°.04×45°.70E±0°.06, h3km±11km, Error ellipse: s-maj=8.9km s-min=6.7km az=170.0*
*ISN **19** 17:07:31.3±0.9, 33°.32N×45°.66E, h0km±12km, ML2.9*
*CSEM **19** 17:07:32.3±0.2, 33°.36N×45°.69E, h5km, ML2.9, Error ellipse: s-maj=4.9km s-min=3.8km az=134.0*
*TEH **19** 17:07:33.6, 33°.36N×45°.69E, h12km, ML2.9*
ISC 19 17:07:32.3±1.3, 33°.37N±0°.04×45°.69E±0°.05, h9km±13km, n16, σ0$60/23, Iran-Iraq border region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
IBDR	**Badra**	**0.33**	**142**	*e*Pn		**Pg**	**17 07 39.0**	**+0.2**
IBDR				*e*Sg		**Sg**	**17 07 43.0**	**-0.2**
	SNR=9.0							
BHD	**Baghdad**	**1.10**	**265**	*e*Pn		**Pb**	**17 07 53.0**	**-0.5**
	SNR=3.0							
BHD				*i* Sn		**Sn**	**17 08 09.0**	**-0.2**
	SNR=3.0							
IGHG	**Ghaleghazi**	**1.21**	**37**	*e*Pg		**Pb**	**17 07 55.1**	**-0.4**
IGHG				*e*AMB		AMB	17 08 15.3	
	comp=Z,3μm,0.1s							
IGHG	**Ghaleghazi**	**1.21**	**37**	*e*Pg		**Pb**	**17 07 55.1**	**-0.4**
IDHR	**Dehrash**	**1.45**	**23**	*e*Pn		**Pg**	**17 08 00.1**	**-0.1**
IDHR				*e*Sg		**Sg**	**17 08 20.0**	**+1.0**
IDHR				*e*AMB		AMB	17 08 22.4	
	comp=Z,4μm,0.1s							
IDHR	**Dehrash**	**1.45**	**23**	*e*Pn		**Pg**	**17 08 00.1**	**-0.1**
IDHR				*e*Sg		**Sg**	**17 08 20.0**	**+1.0**
IVIS	**Veis**	**1.51**	**40**	*e*Pn		**Pb**	**17 08 00.3**	**-0.2**
IVIS				*e*Sg		**Sg**	**17 08 20.4**	**-0.4**
IVIS				*e*AMB		AMB	17 08 21.5	
	comp=Z,2μm,0.2s							
IVIS	**Veis**	**1.51**	**40**	*e*Pn		**Pb**	**17 08 00.3**	**-0.2**
IVIS				*e*Sg		**Sg**	**17 08 20.4**	**-0.4**
IKFM	**Kafar-mosalman**	**1.81**	**84**	*e*Sg		**Sg**	**17 08 30.3**	**-0.3**
IKFM				*e*Pn		**Pn**	**17 08 04.2**	**+0.5**
IKFM				*e*AMB		AMB	17 08 32.2	
	comp=Z,99nm,0.2s							
ILIN	**Lien**	**1.87**	**34**	*e*AMB		AMB	17 08 08.1	
	comp=Z,754nm,0.1s							
ILIN				*e*Pn		**Pb**	**17 08 05.5**	**-1.4**
IPIR	**Pirpir**	**4.42**	**97**	*e*Pn		**Pn**	**17 08 40.5**	**+0.5**
IPIR				*e*AMB		AMB	17 09 33.8	
	comp=Z,93nm,0.2s							
IPIR	**Pirpir**	**4.42**	**97**	*e*Pn		**Pn**	**17 08 40.5**	**+0.5**
IKLH	**Kolahrood**	**4.93**	**89**	*e*Pn		**Pn**	**17 08 47.2**	**+0.3**
IKLH				*e*AMB		AMB	17 09 47.8	
	comp=Z,67nm,0.2s							
IKLH	**Kolahrood**	**4.93**	**89**	*e*Pn		**Pn**	**17 08 47.2**	**+0.3**
IRAM	**Ramesheh**	**5.86**	**104**	*e*Pn		**Pn**	**17 09 00.2**	**+0.6**
IRAM				*e*AMB		AMB	17 10 11.1	
	comp=Z,22nm,0.1s							
IRAM	**Ramesheh**	**5.86**	**104**	*e*Pn		**Pn**	**17 09 00.2**	**+0.6**

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*NEIC **19** 17:13:24.0±0.3, 24°.83N×122°.94E, h131km±3km, mb4.6/9, Error ellipse: s-maj=6.8km s-min=5.0km az=126.0*
*JMA **19** 17:13:24.7±0.2, 24°.73N×122°.92E, h127km±3km, M4.0*
*IDC **19** 17:13:26.9±3.0, 24°.90N×122°.95E, h156km±28km, mb3.9/23, mb1 4.0/26, mb1mx3.8/49, mbtmp4.3/26, Error ellipse: s-maj=14.0km s-min=10.1km az=81.0*
ISC 19 17:13:23.9±0.6, 24°.88N±0°.06×122°.94E±0°.04, h128km±6km, n70, σ1$06/88, mb4.1/31, Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
YOJ	**Yonaguni jima**	**0.42**	**171**	P		**Pn**	**17 13 42.7**	**+0.3**
YOJ				S		**Sn**	**17 13 55.8**	**-0.5**
YOJ	**Yonaguni jima**	**0.42**	**171**	*e*Pn		**Pn**	**17 13 42.3**	**-0.1**
JYNG	**Yonagunijimaku**	**0.43**	**179**	P		**Pn**	**17 13 42.7**	**+0.3**
JYNG				*e*S		**Sn**	**17 13 55.3**	**-1.1**
IRIF	**Iriomote-Funau**	**0.90**	**127**	P		**Pn**	**17 13 45.9**	**+0.2**
IRIF				S		**Sn**	**17 14 01.4**	**-0.9**
HATJ	**Hateruma jima**	**1.14**	**136**	P		**Pn**	**17 13 48.5**	**+0.5**
HATJ				*e*S		**Sn**	**17 14 05.2**	**-1.1**
JKRS	**Kuro-shima**	**1.17**	**123**	P		**Pn**	**17 13 49.0**	**+0.7**
JKRS				S		**Sn**	**17 14 06.2**	**-0.6**
JIJ	**Ishigaki jima**	**1.21**	**115**	P		**Pn**	**17 13 49.2**	**+0.5**
JIJ				S		**Sn**	**17 14 05.9**	**-1.7**
JISG	**Ishigakijimahi**	**1.28**	**103**	P		**Pn**	**17 13 50.0**	**+0.6**
JISG				S		**Sn**	**17 14 08.1**	**-0.8**
TATO	**Taipei**	**1.32**	**274**	*e*Pn		**Pn**	**17 13 50.8**	**+1.0**
NACB	**Ninganchiao**	**1.41**	**240**	*e*Pn		**Pn**	**17 13 50.1**	**-0.8**
YHNB	**Yeheng**	**1.44**	**262**	*e*Pn		**Pn**	**17 13 52.2**	**+1.0**
JTJ	**Tarama**	**1.62**	**98**	P		**Pn**	**17 13 54.1**	**+0.9**
JTJ				S		**Sn**	**17 14 15.3**	**-0.3**
JIRB	**Irabujima**	**2.03**	**91**	P		**Pn**	**17 13 59.0**	**+0.9**
JIRB				S		**Sn**	**17 14 23.5**	**-0.8**
JIKM	**Ikemajima**	**2.10**	**88**	P		**Pn**	**17 14 00.0**	**+1.1**
JIKM				S		**Sn**	**17 14 25.9**	**+0.1**
YULB	**Yu-li**	**2.11**	**226**	*e*Pn		**Pn**	**17 13 58.3**	**-0.9**
SSLB	**Suanglung**	**2.11**	**239**	*e*Pn		**Pn**	**17 13 59.4**	**+0.3**
JMJ	**Miyako jima 2**	**2.14**	**91**	P		**Pn**	**17 14 00.6**	**+1.1**
JMJ				S		**Sn**	**17 14 26.6**	**-0.2**
TPUB	**Ta-pu**	**2.63**	**234**	*e*Pn		**Pn**	**17 14 05.8**	**+0.1**
TWG	**Pinlang**	**2.67**	**220**	*e*Pn		**Pn**	**17 14 04.7**	**-1.5**
JKE	**Kume jima 2**	**3.76**	**67**	P		**Pn**	**17 14 21.2**	**+0.8**
JKE				S		**Sn**	**17 15 04.6**	**+0.4**
JAGN	**Aguni-jima**	**4.24**	**65**	P		**Pn**	**17 14 27.4**	**+0.7**
JAGN				S		**Sn**	**17 15 15.5**	**0.0**
JJT2	**Tamagusuku 2**	**4.52**	**73**	P		**Pn**	**17 14 31.4**	**+0.9**
JJT2				*e*S		**Sn**	**17 15 22.1**	**-0.3**
JNTH	**Nagotoyohara**	**4.87**	**69**	P		**Pn**	**17 14 35.0**	**-0.1**
JNTH				*e*S		**Sn**	**17 15 28.4**	**-2.2**
JIH	**Iheya**	**5.01**	**64**	P		**Pn**	**17 14 37.0**	**0.0**
JIH				*e*S		**Sn**	**17 15 32.0**	**-2.0**
JOW	**Kunigami**	**5.18**	**67**	P		**Pn**	**17 14 38.8**	**-0.6**
JOW				*e*S		**Sn**	**17 15 36.1**	**-2.2**
JOW	**Kunigami**	**5.18**	**67**	*e*Pn		**Pn**	**17 14 38.8**	**-0.6**
	11nm,0.3s							
JOKE	**Okinoerabujima**	**5.63**	**63**	P		**Pn**	**17 14 44.3**	**-1.1**
JTK	**Tokunoshima**	**6.12**	**61**	P		**Pn**	**17 14 50.7**	**-1.3**
JTK				*e*S		**Sn**	**17 15 57.1**	**-3.7**
JAMN	**Amaminishikomi**	**6.51**	**58**	P		**Pn**	**17 14 55.6**	**-1.6**
JAM	**Amami Oshima**	**6.92**	**58**	P		**Pn**	**17 15 01.1**	**-1.7**
JMZ	**Minamidaito 2**	**7.55**	**81**	P		**Pn**	**17 15 09.2**	**-2.1**
JNU	**Nakatsue**	**10.75**	**38**	P		**Pn**	**17 15 56.3**	**+2.0**
	0.4nm,0.3s,baz=187,slow=4.9,SNR=4.5							
KSAR	**Wonju Array Be**	**13.21**	**17**	P		**P**	**17 16 30.0**	**-1.7**
KSRS	**Korea Array**	**13.24**	**18**	P		**P**	**17 16 30.0**	**-1.9**
	2.5nm,0.3s,baz=197,slow=11,SNR=49							
JHJ	**Hachijo jima 2**	**16.85**	**57**	P		**Pn**	**17 17 15.8**	**+3.7**
	5.2nm,0.3s,baz=210,slow=11,SNR=4.3							
MJAR	**Matsushiro Arr**	**17.51**	**45**	P		**P**	**17 17 19.5**	**+0.2**
	0.3nm,0.3s,baz=234,slow=11,SNR=5.1							
USRK	**Ussuriysk Ar.**	**20.64**	**19**	P		**P**	**17 17 53.9**	**+0.8**
	15nm,0.6s,baz=202,slow=11,SNR=41							
CHTO	**Chiang Mai**	**23.06**	**260**	*e*Pn		**P**	**17 18 19.4**	**+1.1**
	10.0nm,1.4s							
CMAR	**Chiang Mai Arr**	**23.18**	**259**	P		**P**	**17 18 20.5**	**+1.1**
	2.5nm,0.9s,baz=64,slow=8.5,SNR=13							
ASAJ	**Asahikawa**	**25.00**	**35**	P		**P**	**17 18 34.8**	**-0.9**
	8.8nm,0.4s,baz=236,slow=10,SNR=13							
KLR	**Kul'dur**	**25.27**	**14**	P		**P**	**17 18 38.4**	**+0.4**
	4.6nm,0.7s,baz=210,slow=5.8,SNR=25							
SONM	**Songino Array**	**26.39**	**334**	P		**P**	**17 18 48.9**	**+0.6**
	2.9nm,0.7s,baz=140,slow=9.2,SNR=18							
TLY	**Talaya**	**30.55**	**336**	*e*Pn		**P**	**17 19 25.3**	**+0.2**
	2.2nm,0.8s							
YAK	**Yakutsk**	**37.42**	**5**	*e*P		**P**	**17 20 23.8**	**-0.3**
	13nm,0.4s							
PETK	**Petropavlovsk-**	**38.40**	**34**	P		**P**	**17 20 32.5**	**-0.1**
	0.9nm,0.3s,baz=177,slow=2.2,SNR=14							
MKAR	**Makanchi Array**	**38.97**	**315**	P		**P**	**17 20 37.9**	**+0.4**
	1.5nm,0.4s,baz=98,slow=9.6,SNR=49							
ZALV	**Zalesovo Beam**	**40.55**	**326**	P		**P**	**17 20 49.9**	**-0.4**
	5.9nm,0.5s,baz=115,slow=8.3,SNR=25							
KURK	**Kurchatov**	**42.60**	**319**	*e*P		**P**	**17 21 07.0**	**-0.1**
	8.1nm,0.8s							
SEY	**Seymchan**	**42.79**	**19**	P		**P**	**17 21 08.9**	**+0.5**
	1.8nm,0.6s,baz=278,slow=24,SNR=7.8							
MBWA	**Marble Bar**	**45.87**	**184**	*e*P		**P**	**17 21 32.3**	**-1.2**
WRAB	**Tennant Creek**	**45.91**	**165**	*e*P		**P**	**17 21 33.7**	**-0.1**
	7.4nm,0.5s							
WRA	**Warramunga Arr**	**45.91**	**165**	P		**P**	**17 21 33.7**	**-0.1**
	9.2nm,0.4s,baz=346,slow=8.4,SNR=166							
TIXI	**Tiksi**	**46.92**	**3**	P		**P**	**17 21 40.4**	**-0.6**
	4.1nm,0.4s,baz=206,slow=5.3,SNR=43							
BVAR	**Borovoye Array**	**48.16**	**320**	P		**P**	**17 21 51.2**	**+0.3**
	3.0nm,0.4s,baz=106,slow=7.8,SNR=28							
BRVK	**Borovoye**	**48.23**	**320**	*e*P		**P**	**17 21 51.7**	**+0.3**
	3.9nm,0.3s							
ASAR	**Alice Springs**	**49.42**	**167**	P		**P**	**17 22 01.2**	**+0.4**
	2.4nm,0.3s,baz=350,slow=7.0,SNR=224							
ABKAR	**Akbulak array**	**54.10**	**314**	*e*P		**P**	**17 22 35.7**	**+0.3**
	2.7nm,0.5s							
ARU	**Arti**	**55.52**	**323**	*e*P		**P**	**17 22 45.0**	**-0.4**
	5.4nm,0.6s							
NWAO	**Narrogin (SRO)**	**57.74**	**186**	*e*P		**P**	**17 23 01.2**	**-0.2**
	96nm,1.1s							
STKA	**Stephens Creek**	**59.19**	**162**	P		**P**	**17 23 11.4**	**+0.1**
	3.1nm,0.5s,baz=353,slow=6.1,SNR=20							
ILAR	**Eielson Array**	**67.86**	**28**	P		**P**	**17 24 08.7**	**+0.6**
	0.4nm,0.5s,baz=273,slow=5.9,SNR=7.5							
ARCES	**ARCESS Array B**	**69.49**	**338**	P		**P**	**17 24 17.1**	**-0.9**
	2.4nm,0.8s,baz=79,slow=6.5,SNR=9.4							
FINES	**FINESS Array B**	**71.65**	**330**	P		**P**	**17 24 31.0**	**-0.2**
	1.4nm,0.4s,baz=59,slow=5.6,SNR=12							
INK	**Inuvik**	**71.98**	**22**	P		**P**	**17 24 33.3**	**+0.2**
	0.8nm,0.4s,baz=325,slow=7.1,SNR=5.4							
AKASG	**Malin Array Be**	**73.41**	**319**	P		**P**	**17 24 41.2**	**-0.7**
	0.4nm,0.4s,baz=72,slow=5.8,SNR=4.2							
NB2	**NORSAR Subarra**	**78.35**	**333**	P		**P**	**17 25 09.5**	**-0.3**
	comp=Z,1.0nm,0.5s,baz=54,slow=5.9							
NOA	**NORSAR Array B**	**78.35**	**333**	P		**P**	**17 25 09.5**	**-0.3**
	comp=Z,1.2nm,0.5s,baz=74,slow=6.5,SNR=5.4							
YKA	**Yellowknife Ar**	**81.70**	**23**	P		**P**	**17 25 27.9**	**+0.2**
	comp=Z,1.9nm,0.6s,baz=310,slow=4.9,SNR=22							
GERES	**GERESS Array B**	**83.31**	**321**	P		**P**	**17 25 36.4**	**-0.1**
	comp=Z,0.9nm,0.8s,baz=60,slow=3.2,SNR=6.1							
NEW	**Newport**	**89.52**	**35**	P		**P**	**17 26 07.2**	**+0.5**
	comp=Z,3.4nm,0.7s,baz=284,slow=6.6,SNR=3.9							

MEX 19 17:23:47.1±0.5, 17°.29N×101°.38W, h26km±8km, MD3.8, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
ZIIG	**Zihuatanejo**	**0.32**	**346**	*e*P		Pb	17 23 53.4	-1.2
ZIIG				*e*S		Sb	17 23 58.3	-1.4
ARIG	**Puente Sto Nin**	**1.39**	**45**	*e*P		Pn	17 24 08.0	-2.8
ARIG				*e*S		Sn	17 24 24.6	-3.9
MEIG	**Mezcala**	**1.80**	**69**	*e*P		Pn	17 24 14.8	-1.7
MEIG				*e*S		Sn	17 24 34.9	-3.6
PLIG	**Platanillo**	**2.10**	**58**	*e*P		Pn	17 24 19.1	-1.5
PLIG				*i* S		Sn	17 24 43.7	-2.3
MMIG	**Aquila**	**2.12**	**298**	*e*P		Pn	17 24 18.2	-2.5
MMIG				*e*S		Sn	17 24 43.3	-2.9
YAIG	**Yautepec**	**2.70**	**54**	*i* P		Pn	17 24 27.5	-1.5
YAIG				*e*S		Sn	17 24 58.6	-2.3
EZ5V		**3.03**	**316**	*i* P		Pn	17 24 29.8	-3.7

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*ISCJB **19** 17:23:50.9±0.7, 38°.47N±0°.04×118°.81W±0°.06, h9km, Error ellipse: s-maj=6.9km s-min=5.0km az=16.9*
*NEIC **19** 17:23:50.5, 38°.42N×118°.74W, h4km, ML3.3(REN), After REN.*
NEIC Felt at Hawthorne.
ISC 19 17:23:50.7±1.0, 38°.41N±0°.04×118°.74W±0°.04, h9km, n17, σ1$46/20, California-Nevada border region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
MLAC	**Mammoth, Mammo**	**0.78**	**186**	P		**Pg**	**17 24 05.7**	**+0.1**
	baz=5.3							
MLAC				S		**Sb**	**17 24 16.9**	**-0.4**
	baz=5.3							
CMB	**Columbia Colle**	**1.35**	**255**	*e*Pn		**Pn**	**17 24 15.2**	**-0.6**
TIN	**Tinemaha, Big**	**1.41**	**163**	S		**Sg**	**17 24 37.3**	**+1.4**
	baz=344							
GRAC	**Grapevine Rang**	**1.78**	**142**	Pb		**Pb**	**17 24 23.6**	**+0.1**
	baz=323							
DAC	**Darwin (Calif)**	**2.31**	**156**	*e*Pn		**Pn**	**17 24 29.8**	**+0.6**
TPNV	**Topopah Spring**	**2.45**	**126**	Pg		**Pg**	**17 24 36.3**	**-1.3**
	baz=308							
R11A	**Troy Canyon, C**	**2.48**	**90**	Pb		**Pb**	**17 24 34.8**	**-0.7**
	baz=273							
R11A				Sb		**Sg**	**17 25 08.3**	**-2.0**
	baz=273							
R11A	**Troy Canyon, C**	**2.48**	**90**	*e*Pn		**Pb**	**17 24 34.8**	**-0.7**
MPMC	**Manual Prospec**	**2.55**	**157**	Pg		**Pg**	**17 24 38.8**	**-0.7**
	baz=338							
MPMC				Sb		**Sg**	**17 25 11.2**	**-1.3**
	baz=338							
VES	**Vestal, Richgr**	**2.58**	**186**	Sb		**Sg**	**17 25 11.9**	**-1.4**
	baz=5.9							
SAO	**San Andreas Ge**	**2.71**	**234**	*e*Pn		**Pn**	**17 24 35.9**	**+1.5**
ISA	**Isabella, Lake**	**2.75**	**176**	Sb		**Sb**	**17 25 16.5**	**+2.7**
	baz=356							
MCCM	**Marconi Confer**	**3.27**	**267**	*e*Pn		**Pb**	**17 24 47.5**	**-1.3**
ELK	**Elko**	**3.57**	**48**	*e*Pn		**Pn**	**17 24 46.0**	**-0.5**
MOD	**Modoc Plateau**	**3.69**	**342**	*e*Pn		**Pn**	**17 24 49.9**	**+1.8**
WVOR	**Wild Horse Val**	**4.03**	**1**	*e*Pn		**Pb**	**17 25 02.1**	**+0.2**
DUG	**Dugway, Tooele**	**4.93**	**67**	*e*Pn		**Pn**	**17 25 07.8**	**+2.8**

IDC 19 17:24:05.9±2.2, 6°.40S×147°.79E, h0km, mb3.8/4, mb1 4.0/6, mb1mx3.6/35, mbtmp3.8/6, ML3.6/1, MS3.7/3, Ms1 3.7/3, ms1mx2.9/35, Error ellipse: s-maj=62.6km s-min=22.8km az=95.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**3.05**	**192**	Pn		Pn	17 24 56.6	+1.1
	7.4nm,0.3s,baz=22,slow=6.0,SNR=23							
PMG				Sn		Sn	17 25 35.3	+2.7
	15nm,0.3s,baz=339,slow=19,SNR=8.3							
WRA	**Warramunga Arr**	**18.75**	**223**	P		P	17 28 26.0	-0.7
	0.2nm,0.3s,baz=47,slow=11,SNR=12							
ASAR	**Alice Springs**	**21.75**	**216**	P		P	17 28 58.2	-0.9
	1.8nm,0.6s,baz=52,slow=9.1,SNR=38							
FITZ	**Fitzroy Crossi**	**24.53**	**240**	P		P	17 29 27.2	-0.3
	4.4nm,0.4s,baz=50,slow=8.1,SNR=32							
FITZ				LR		LR	17 40 05.4	
	comp=Z,86nm,20.3s,baz=73,slow=39							
STKA	**Stephens Creek**	**26.00**	**192**	P		P	17 29 40.0	-0.5
	1.3nm,0.7s,baz=10,slow=11,SNR=3.8							
STKA				LR		LR	17 41 07.3	
	comp=Z,125nm,18.4s,baz=26,slow=39							
MKAR	**Makanchi Array**	**78.30**	**320**	P		P	17 36 08.0	0.0
	0.1nm,0.5s,baz=99,slow=4.5,SNR=2.6							
WSAR	**Wadi Sarin**	**91.72**	**293**	LR		LR	18 20 37.7	
	comp=Z,125nm,22.0s,slow=37							
TORD	**Torodi Ar. Bea**	**145.34**	**284**	PKPbc		PKPab	17 43 49.0	-0.1
	0.4nm,0.4s,baz=80,slow=3.1,SNR=6.0							

GUC 19 17:47:33.8±0.4, 19°.84S×69°.18W, h96km±2km, ML3.8, 1C-1D, Northern Chile

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
PB08	**IPOC Station P**	**0.30**	**176**	*i* P		Pn	17 47 48.9	+0.5
PB08				*i* S		Sn	17 48 00.3	+1.0
PB08				IAML			17 48 00.7	
	comp=N,5μm,0.2s							
PB11	**IPOC Station P**	**0.46**	**280**	*i* P		Pn	17 47 49.3	+0.3
PB11				*i* S		Sn	17 48 01.1	+0.7
PB11				IAML			17 48 01.8	
	comp=E,11μm,0.3s							
MNMC	**Minye Minye**	**0.81**	**331**	⇓*i* P		Pn	17 47 52.8	+0.6
MNMC				*i* S		Sn	17 48 06.8	+0.8
MNMC				IAML			17 48 07.9	
	comp=E,5μm,0.4s							
PSGC	**Pisagua**	**0.92**	**285**	⇑*i* P		Pn	17 47 53.4	+0.2
PSGC				*i* S		Sn	17 48 08.5	+0.7
PSGC				IAML			17 48 09.1	
	comp=E,1μm,0.2s							
PB01	**IPOC Station P**	**1.23**	**194**	*i* P		Pn	17 47 57.1	+0.4
PB01				*i* S		Sn	17 48 15.0	+1.1
PB01				IAML			17 48 16.7	
	comp=E,2μm,0.4s							
PB13	**IPOC Station P**	**1.53**	**348**	*i* P		Pn	17 48 02.0	+1.1
PB13				*i* S		Sn	17 48 23.4	+2.2
PB13				IAML			17 48 25.9	
	comp=N,3μm,0.4s							
PB12	**IPOC Station P**	**1.64**	**318**	*e*P		Pn	17 48 01.6	-0.1
PB12				*e*S		Sn	17 48 22.5	-0.3
PB09	**IPOC Station P**	**1.94**	**182**	*i* P		Pn	17 48 06.5	+0.8
PB09				*e*S		Sn	17 48 32.6	+2.6
PB09				IAML			17 48 35.2	
	comp=E,1μm,0.9s							
PB07	**IPOC Station P**	**1.99**	**199**	*e*P		Pn	17 48 06.6	+0.3
PB07				*i* S		Sn	17 48 32.6	+1.6
PB07				IAML			17 48 38.3	
	comp=E,1μm,0.2s							

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*ISCJB **19** 17:48:44.7±0.6, 6°.28N±0°.04×73°.29W±0°.05, h158km±5km, mb3.2/1, Error ellipse: s-maj=9.6km s-min=4.1km az=41.4*
*FUNV **19** 17:48:46.2, 6°.33N×73°.32W, h176km, MW2.8*
*RSNC **19** 17:48:46.7±1.0, 6°.26N×73°.30W, h144km±6km, ML3.2*
*IDC **19** 17:48:47.7±6.3, 6°.21N×75°.52W, h134km±77km, mb3.0/1, mb1 3.4/1, mb1mx2.9/23, mbtmp3.4/1, MS2.9/1, Ms1 3.1/1, ms1mx2.9/4, Error ellipse: s-maj=176.7km s-min=39.3km az=81.0*
ISC 19 17:48:44.8±1.0, 6°.28N±0°.04×73°.27W±0°.05, h160km±6km, n27, σ1$51/43, 1C-1D, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
BARC	**Barichara**	**0.32**	**15**	*i* P		**Pn**	**17 49 06.5**	**-0.4**
BARC				*e*S		**Sn**	**17 49 21.8**	**-2.1**
BARC				*i*			17 49 23.4	
	comp=Z,278nm,0.2s							
RUSC	**La Rusia**	**0.42**	**155**	⇓*i* P		**Pn**	**17 49 07.4**	**-0.1**
RUSC				*e*S		**Sn**	**17 49 23.2**	**-1.8**
RUSC				*i*			17 49 26.5	
	comp=Z,176nm,0.4s							
BRRC	**Barranca, Sant**	**0.94**	**332**	⇑*i* P		**Pn**	**17 49 10.1**	**0.0**
BRRC				*e*S		**Sn**	**17 49 28.8**	**-0.7**
BRRC				*i*			17 49 30.1	
	comp=Z,372nm,0.2s							
PAMC	**Pamplona, Colo**	**1.19**	**28**	*i* P		**Pn**	**17 49 13.7**	**+1.0**
PAMC				*e*S		**Sn**	**17 49 33.6**	**-0.6**
GRMC	**Gramalote, San**	**1.50**	**18**	*e*P		**Pn**	**17 49 17.7**	**+2.3**
GRMC				*e*S		**Sn**	**17 49 41.1**	**+2.2**
GRMC				*i*			17 49 44.5	
	comp=Z,120nm,0.4s							
CBRI	**Barrientos, No**	**1.50**	**18**	*e*P		**Pn**	**17 49 16.2**	**+0.8**
CBRI				*e*S		**Sn**	**17 49 39.4**	**+0.5**
NORC	**Norcasia**	**1.75**	**246**	*e*P		**Pn**	**17 49 17.4**	**-0.4**
NORC				*e*S		**Sn**	**17 49 41.2**	**-1.9**
ROSC	**El Rosal**	**1.77**	**216**	P		**Pn**	**17 49 20.1**	**+1.7**
	comp=Z,9.8nm,0.3s,baz=266,slow=9.7,SNR=11							
ROSC				S		**Sn**	**17 49 44.9**	**+0.5**
	comp=Z,15nm,0.3s,baz=82,slow=22,SNR=20							
ROSC	**El Rosal**	**1.77**	**216**	*e*P		**Pn**	**17 49 18.

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KTMS	**Ketmen**	**2.67**	**299**	*eP*	**Pb**	**18 03 14.1**	**-0.3**
	146nm,0.2s						
KTMS				*eS*	**Sb**	**18 03 46.6**	**-0.4**
	482nm,0.2s						
SHLS	**Shalkode**	**2.87**	**291**	*eP*	**Pb**	**18 03 18.4**	**+0.5**
	96nm,0.3s						
SHLS				*eS*	**Sb**	**18 03 53.9**	**+0.9**
	392nm,0.7s						
PDGK	**Podgornoye**	**3.20**	**292**	⇓Pn	**Pn**	**18 03 16.3**	**-0.3**
	20nm,0.5s						
PDGK				⇑Sn	**Sn**	**18 03 55.7**	**+1.2**
	286nm,0.6s						
WMQ	**Urumqi**	**3.45**	**60**	*e*Pn	**Pn**	**18 03 20.1**	**0.0**
WMQ				Sn	**Sb**	**18 04 06.9**	**-2.5**
WMQ				smax	smax		
	comp=N,800nm,0.5s						
WMQ				smax	smax		
	comp=E,150nm,0.4s						
UZB	**Uzynbulak**	**3.48**	**288**	*eP*	**Pn**	**18 03 22.6**	**+2.1**
	20nm,0.4s						
UZB				*eS*	**Sn**	**18 04 01.2**	**-0.2**
	138nm,0.5s						
DJR	**Jarkent**	**3.48**	**309**	*eP*	**Pb**	**18 03 27.1**	**-1.2**
	58nm,0.6s						
DJR				*eS*	**Sb**	**18 04 08.5**	**-1.9**
	119nm,0.7s						
KPKS	**Kokpek**	**3.80**	**291**	*eP*	**Pb**	**18 03 33.6**	**-0.1**
	85nm,0.4s						
KPKS				*eS*	**Sb**	**18 04 19.4**	**-0.1**
	404nm,0.5s						
SATY	**Saty**	**3.90**	**285**	*eP*	**Pb**	**18 03 36.0**	**+0.7**
	90nm,0.6s						
SATY				*eS*	**Sb**	**18 04 24.7**	**+2.3**
	146nm,0.8s						
ZHN	**Zhinishke**	**3.90**	**286**	*eP*	**Pb**	**18 03 34.7**	**-0.6**
	37nm,0.6s						
ZHN				*eS*	**Sb**	**18 04 22.0**	**-0.4**
	70nm,0.3s						
MNBS	**Baschi**	**4.22**	**298**	*eP*	**Pb**	**18 03 42.9**	**+2.1**
	9.9nm,0.3s						
MNBS				*eS*	**Sb**	**18 04 36.2**	**+4.7**
	208nm,0.3s						
KAPS	**Kapalarasan**	**4.34**	**317**	*eP*	**Pb**	**18 03 45.8**	**+3.0**
	52nm,0.8s						
KAPS				*eS*	**Sg**	**18 04 41.7**	**-4.4**
	67nm,0.6s						
ARXS	**Arharly**	**4.65**	**298**	*eP*	**Pb**	**18 03 50.5**	**+2.4**
	35nm,0.4s						
ARXS				*eS*	**Sb**	**18 04 49.1**	**+5.2**
	121nm,0.5s						
MK31	**Makanchi Array**	**4.69**	**349**	Pn	**Pn**	**18 03 37.9**	**+0.8**
	1.1nm,0.5s,baz=166,slow=14,SNR=142						
MK31				⇓Pg	**Pb**	**18 03 51.3**	**+2.6**
	14nm,0.5s,baz=173,slow=15,SNR=60						
MK31				⇓Lg	Lg	18 04 53.4	
	36nm,0.6s,baz=163,slow=26,SNR=5.8						
MKAR	**Makanchi Array**	**4.69**	**349**	Pn	**Pn**	**18 03 38.4**	**+1.3**
	0.9nm,0.3s,baz=165,slow=16,SNR=27						
MKAR				Pg	**Pb**	**18 03 50.8**	**+2.0**
	7.8nm,0.3s,baz=164,slow=16,SNR=58						
MKAR				Lg	Lg	18 04 55.4	
	9.3nm,0.3s,baz=165,slow=27,SNR=9.3						
KOTS	**Kotyrbulak**	**4.86**	**285**	*eP*	**Pb**	**18 03 53.0**	**+1.2**
KOTS				*eS*	**Sb**	**18 04 53.4**	**+3.3**
MDOK	**Medeo**	**4.89**	**284**	*eP*	**Pb**	**18 03 51.5**	**-0.8**
	27nm,0.8s						
MDOK				*eS*	**Sb**	**18 04 50.4**	**-0.6**
	70nm,0.9s						
TNSS	**Tian-Shan**	**4.95**	**282**	*eP*	**Pb**	**18 03 56.4**	**+3.0**
	19nm,0.6s						
TNSS				*eS*	**Sg**	**18 04 59.5**	**-6.2**
	30nm,0.6s						
KNDC	**Almaty**	**4.96**	**284**	⇑Pn	**Pn**	**18 03 44.0**	**+3.1**
	34nm,0.8s						
KNDC				⇓Sn	**Sn**	**18 04 43.5**	**+5.5**
	144nm,0.9s						
AAA	**Alma-Ata**	**4.98**	**285**	*eP*	**Pb**	**18 03 57.7**	**+3.9**
	32nm,0.1s						
AAA				*eS*	**Sg**	**18 05 01.7**	**-5.1**
	104nm,0.9s						
CHKK	**Chushkaly**	**5.09**	**291**	*eP*	**Pg**	**18 04 00.1**	**-4.1**
	16nm,0.4s						
CHKK				*eS*	**Sg**	**18 05 05.5**	**-4.6**
	54nm,0.2s						
ZSN	**Zaisan**	**5.29**	**6**	*eP*	**Pg**	**18 04 07.5**	**-0.7**
	14nm,1.2s						
ZSN				*eS*	**Sg**	**18 05 18.4**	**+1.7**
	54nm,0.9s						
MTBS	**Maitube**	**5.34**	**283**	*eP*	**Pb**	**18 04 03.7**	**+3.9**
	13nm,0.8s						
MTBS				*eS*	**Sg**	**18 05 12.0**	**-6.1**
	38nm,0.5s						
KUU	**Kurty**	**5.55**	**290**	*eP*	**Pb**	**18 04 05.3**	**+1.9**
	19nm,0.6s						
KUU				*eS*	**Sb**	**18 05 15.0**	**+5.1**
	49nm,0.5s						
KST	**Kastek**	**5.67**	**281**	*eP*	**Pb**	**18 04 07.4**	**+2.0**
	6.9nm,0.7s						
KST				*eS*	**Sb**	**18 05 18.3**	**+5.1**
	35nm,1.1s						
DGS	**Degeres**	**5.83**	**283**	*eP*	**Pb**	**18 04 12.2**	**+4.0**
	13nm,0.8s						
DGS				*eS*	**Sg**	**18 05 26.4**	**-7.4**
	61nm,0.6s						
TKM2	**Tokmak 2**	**5.92**	**280**	⇑Pn	**Pn**	**18 03 53.1**	**-1.1**
	3.0nm,0.5s						
TKM2				⇑Pg	**Pb**	**18 04 12.5**	**+2.6**
	6.0nm,0.5s						
TKM2				⇑Lg	Lg	18 05 31.7	
	38nm,0.9s						
KSH	**Kashi**	**6.34**	**248**	Pn	**Pn**	**18 04 03.5**	**+3.7**
KSH				Sn	**Sn**	**18 05 15.1**	**+3.1**
KSH				smax	smax		
	comp=N,30nm,0.7s						
KSH				smax	smax		
	comp=E,24nm,0.7s						
AAK	**Ala-Archa**	**6.72**	**277**	⇑Pg	**Pb**	**18 04 24.9**	**+1.4**
	5.8nm,0.6s						
AAK				⇓Lg	Lg	18 05 57.2	
	20nm,0.8s						
MNAS	**Manas**	**8.19**	**276**	⇓Lg	Lg	18 06 43.4	
	10nm,0.9s						
KURBB	**Kurchatov Arra**	**9.12**	**339**	Pn	**Pn**	**18 04 36.2**	**-1.6**
	0.2nm,0.3s,baz=158,slow=13,SNR=16						
KURBB				Lg	Lg	18 07 17.5	
	0.2nm,0.3s,baz=157,slow=33,SNR=6.2						
KURBB	**Kurchatov Arra**	**9.12**	**339**	⇑Pn	**Pn**	**18 04 37.4**	**-0.4**
	4.2nm,0.6s						
KURBB				⇑Lg	Lg	18 07 12.9	
	35nm,0.8s						
KURK	**Kurchatov**	**9.18**	**340**	⇓Pn	**Pn**	**18 04 37.0**	**-1.6**
	4.8nm,0.6s						
KURK				⇓Lg	Lg	18 07 12.9	
	31nm,0.9s						
KK31	**Karatay Array**	**9.65**	**280**	⇑Pg	Pn	18 05 21.5	+36
	1.1nm,0.7s,baz=86,slow=16,SNR=3.6						
KK31				⇑Lg	Lg	18 07 32.0	
	3.5nm,0.6s,baz=92,slow=26,SNR=5.2						
ZALV	**Zalesovo Beam**	**11.80**	**4**	Pn	**Pn**	**18 05 11.7**	**-2.8**
	0.5nm,0.3s,baz=183,slow=14,SNR=16						
ZALV				LR	LR	18 10 22.3	
	comp=Z,34nm,20.9s,baz=68,slow=41						
BVAR	**Borovoye Array**	**13.99**	**325**	Pn	**Pn**	**18 05 45.3**	**+1.0**
	0.2nm,0.3s,baz=127,slow=11,SNR=7.2						
BVAR				Lg	Lg	18 09 46.7	
	0.2nm,0.3s,baz=124,slow=25,SNR=4.3						
KSRS	**Korea Array**	**34.11**	**83**	LR	LR	18 24 04.9	
	comp=Z,54nm,21.5s,baz=84,slow=39						
BRTR	**Keskin Array B**	**37.34**	**283**	P	**P**	**18 09 40.6**	**+1.8**
	0.4nm,0.7s,baz=91,slow=8.9,SNR=3.7						
FINES	**FINESS Array B**	**38.85**	**320**	P	**P**	**18 09 51.8**	**+0.9**
	1.6nm,0.9s,baz=101,slow=14,SNR=3.2						
ARCES	**ARCESS Array B**	**40.12**	**332**	P	**P**	**18 10 02.7**	**+1.1**
	1.1nm,0.7s,baz=76,slow=7.6,SNR=3.6						
YKA	**Yellowknife Ar**	**74.65**	**9**	P	**P**	**18 14 02.5**	**-2.5**
	0.1nm,0.5s,baz=342,slow=6.0,SNR=2.5						
WRA	**Warramunga Arr**	**77.58**	**132**	P	**P**	**18 14 20.5**	**-1.8**
	0.6nm,0.7s,baz=328,slow=5.5,SNR=6.4						
ASAR	**Alice Springs**	**80.35**	**134**	P	**P**	**18 14 35.6**	**-1.8**
	0.5nm,1.0s,baz=328,slow=5.7,SNR=3.3						
BOSA	**Boshof**	**88.59**	**228**	LR	LR	18 58 19.0	
	comp=Z,21nm,18.1s,baz=350,slow=38						

*IDC **19** 18:30:56.0±2.3, 39.°75N×143.°62E, h0km, mb3.4/4,*
mb1 3.4/6, mb1mx3.2/57, mbtmp3.3/6, ML2.7/2, MS2.9/1, Ms1 2.9/1, ms1mx2.2/32, Error ellipse: s-maj=56.9km s-min=24.9km az=78.0
*JMA **19** 18:30:58.5±0.3, 39.°77N×143.°40E, h11km±3km, M3.3*
ISC 19 18:30:57.1±2.0, 39.°76N±0.°05×143.°39E±0.°07, h3km±12km, n23, σ1°23/28, mb3.4/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.19**	**279**	P	**Pg**	**18 31 20.5**	**+0.7**
JTH				*eS*	**Sn**	**18 31 36.0**	**-1.2**
MIYJ	**Miyakonagasawa**	**1.22**	**262**	P	**Pg**	**18 31 21.5**	**+0.9**
OFUJ	**Ofunato**	**1.50**	**243**	P	**Pg**	**18 31 25.3**	**-0.4**
JANG	**Nango**	**1.56**	**294**	P	**Pb**	**18 31 26.1**	**-0.5**
JKZ	**Kuzumaki**	**1.60**	**279**	P	**Pg**	**18 31 27.5**	**-0.2**
JKZ				S	**Sg**	**18 31 49.1**	**+0.6**
JOM	**Ohasama**	**1.64**	**261**	P	**Pg**	**18 31 28.1**	**-0.5**
JMK	**Ichinoseki**	**1.86**	**245**	P	**Pb**	**18 31 30.8**	**-1.0**
JTM	**Tenmabayashi**	**2.05**	**301**	P	**Pb**	**18 31 34.0**	**-0.9**
JTM				*eS*	**Sn**	**18 31 58.1**	**-0.4**
JIO	**Ouri**	**2.05**	**231**	P	**Pn**	**18 31 32.8**	**+0.3**
JAH	**Hinai**	**2.16**	**282**	P	**Pb**	**18 31 35.7**	**-1.1**
JAH				S	**Sb**	**18 32 04.4**	**+0.5**
JRG	**Rokugo**	**2.16**	**261**	P	**Pb**	**18 31 35.8**	**-1.0**
JOT	**Ohata**	**2.41**	**313**	P	**Pb**	**18 31 40.1**	**-0.9**
JOT				S	**Sb**	**18 32 09.2**	**-1.9**
JYK	**Kaneyama**	**2.50**	**251**	P	**Pb**	**18 31 40.3**	**-2.2**
JNBK	**Urakawa-nobuka**	**2.56**	**349**	P	**Pb**	**18 31 41.7**	**-2.0**
JKB	**Kayabe**	**2.77**	**321**	P	**Pb**	**18 31 46.4**	**-0.9**
JCH	**Churui**	**2.85**	**360**	P	**Pn**	**18 31 44.6**	**+1.2**
JCH				*eS*	**Sn**	**18 32 18.6**	**+0.4**
ASAJ	**Asahikawa**	**4.39**	**353**	Pn	**Pn**	**18 32 06.1**	**+1.5**
	0.3nm,0.3s,baz=54,slow=18,SNR=4.5						
MJAR	**Matsushiro Arr**	**5.20**	**233**	Pn	**Pn**	**18 32 18.6**	**+2.9**
	0.5nm,0.3s,baz=51,slow=11,SNR=5.6						
GUMO	**Guam**	**26.10**	**177**	LR	LR	18 44 30.8	
	comp=Z,29nm,20.1s,baz=15,slow=31						
SONM	**Songino Array**	**27.68**	**299**	P	**P**	**18 36 47.3**	**+0.9**
	0.2nm,0.4s,baz=77,slow=7.8,SNR=2.6						
ZALV	**Zalesovo Beam**	**41.28**	**310**	P	**P**	**18 38 44.2**	**+0.7**
	0.5nm,0.5s,baz=101,slow=7.6,SNR=2.8						
MKAR	**Makanchi Array**	**44.04**	**300**	P	**P**	**18 39 05.4**	**-0.6**
	0.2nm,0.7s,baz=70,slow=9.3,SNR=2.1						
WRA	**Warramunga Arr**	**59.99**	**190**	P	**P**	**18 41 04.3**	**-0.6**
	0.4nm,0.7s,baz=5.7,slow=7.4,SNR=3.3						

*ISCJB **19** 18:45:18.3±0.5, 4.°67N±0.°08×127.°7E±0.°2, h104km, mb3.8/17, Error ellipse: s-maj=31.4km s-min=10.4km az=168.7*
*IDC **19** 18:45:24.6±6.3, 4.°61N×127.°78E, h148km±61km, mb3.5/17, mb1 3.6/17, mb1mx3.4/48, mbtmp3.9/17, Error ellipse: s-maj=30.1km s-min=12.0km az=78.0*
ISC 19 18:45:19.8±0.7, 4.°6N±0.°1×127.°6E±0.°3, h104km, n17, σ1°55/20, mb4.0/17, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**22.67**	**185**	P	**P**	**18 50 13.4**	**+0.9**
	1.6nm,1.0s,baz=28,slow=8.3,SNR=7.8						
WRA	**Warramunga Arr**	**25.31**	**165**	P	**P**	**18 50 36.7**	**-0.2**
	0.9nm,0.3s,baz=343,slow=10,SNR=28						
ASAR	**Alice Springs**	**28.79**	**168**	P	**P**	**18 51 08.3**	**+0.2**
	0.4nm,0.5s,baz=359,slow=9.3,SNR=9.9						
ASAR				PcP	**PcP**	**18 54 16.1**	**+0.4**
	0.3nm,0.4s,baz=341,slow=1.8,SNR=7.1						
KSRS	**Korea Array**	**32.67**	**1**	P	**P**	**18 51 43.2**	**+1.1**
	0.9nm,0.7s,baz=164,slow=12,SNR=3.4						
STKA	**Stephens Creek**	**38.68**	**161**	P	**P**	**18 52 33.1**	**-0.4**
	1.3nm,0.4s,baz=338,slow=9.5,SNR=6.3						
KLR	**Kul'dur**	**44.58**	**4**	P	**P**	**18 53 22.2**	**+0.8**
	0.5nm,0.4s,baz=270,slow=5.1,SNR=3.8						
SONM	**Songino Array**	**46.73**	**340**	P	**P**	**18 53 40.0**	**+1.5**
	0.3nm,0.4s,baz=157,slow=7.9,SNR=3.7						
PETK	**Petropavlovsk-**	**54.28**	**22**	P	**P**	**18 54 35.1**	**0.0**
	0.8nm,0.5s,baz=134,slow=2.3,SNR=4.5						
MKAR	**Makanchi Array**	**57.31**	**325**	P	**P**	**18 54 58.3**	**+1.4**
	1.9nm,0.6s,baz=122,slow=8.1,SNR=29						
MKAR				pP	**sP**	**18 55 30.4**	**-3.3**
	0.5nm,0.5s,baz=120,slow=8.7,SNR=5.0						
ZALV	**Zalesovo Beam**	**60.18**	**332**	P	**P**	**18 55 17.1**	**+0.5**
	0.6nm,0.4s,baz=133,slow=5.4,SNR=3.4						
KURBB	**Kurchatov Arra**	**61.45**	**327**	P	**P**	**18 55 26.9**	**+1.6**
	2.9nm,0.6s,baz=125,slow=6.2,SNR=37						
KURBB				pP	**sP**	**18 55 58.4**	**-3.9**
	0.7nm,0.7s,baz=125,slow=6.4,SNR=5.7						
TIXI	**Tiksi**	**66.94**	**0**	P	**P**	**18 55 59.3**	**-1.4**
	1.6nm,0.6s,baz=167,slow=5.3,SNR=7.5						
BVAR	**Borovoye Array**	**67.03**	**327**	P	**P**	**18 56 02.4**	**+0.7**
	1.0nm,0.6s,baz=127,slow=9.6,SNR=5.3						
AKTO	**Aktyubinsk**	**73.48**	**321**	P	**P**	**18 56 41.8**	**+0.7**
	1.3nm,0.5s,baz=76,slow=10,SNR=5.3						
ARU	**Arti**	**74.63**	**327**	P	**P**	**18 56 47.1**	**-0.5**
	1.6nm,0.5s,baz=107,slow=17,SNR=3.3						
ILAR	**Eielson Array**	**83.93**	**25**	P	**P**	**18 57 37.6**	**-0.4**
	0.2nm,0.5s,baz=275,slow=5.2,SNR=2.9						
ARCES	**ARCESS Array B**	**89.90**	**340**	P	**P**	**18 58 06.1**	**-0.8**
	1.2nm,0.6s,baz=23,slow=6.6,SNR=5.7						

WEL 19 18:54:08.6±0.1, 38.°68S×176.°41E, h73km±1km, ML3.5/12, 13C-11D, Error ellipse: s-maj=1.0km s-min=0.9km az=0.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ALRZ	**Allen Road**	**0.13**	**337**	P*	Pn	18 54 18.7	-0.7
ALRZ				S*	Sn	18 54 26.4	-0.8
MRHZ	**Matea Rd**	**0.15**	**177**	⇑P*	Pn	18 54 18.7	-0.8
MRHZ				S*	Sn	18 54 26.6	-0.8
PRRZ	**Plateau Road**	**0.18**	**357**	P*	Pn	18 54 19.0	-0.5
PRRZ				S*	Sn	18 54 27.3	-0.2
WPRZ	**Whakapapatarin**	**0.25**	**310**	P*	Pn	18 54 19.4	-0.5
WPRZ				S*	Sn	18 54 28.3	+0.2
MUGZ	**Murupara**	**0.35**	**55**	P*	Pn	18 54 19.8	-0.7
WHTZ	**Whakaora**	**0.35**	**272**	P*	Pn	18 54 20.7	+0.1
WHTZ				S*	Sn	18 54 31.5	+2.1
TARZ	**Mount Tarawera**	**0.45**	**10**	P*	Pn	18 54 21.7	+0.3
RTZ	**Ruatahuna**	**0.46**	**82**	P*	Pn	18 54 20.7	-0.6
BKZ	**Black Stump Fm**	**0.49**	**172**	⇑P*	Pn	18 54 21.0	-0.7
BKZ				S*	Sn	18 54 31.0	-0.3
BKZ				AML	AML	18 54 31.4	
KUTZ	**Kaahu Road**	**0.50**	**293**	⇓P*	Pn	18 54 21.4	-0.2
NMHZ	**Naumai**	**0.52**	**143**	⇑PN	Pn	18 54 22.1	+0.2
NMHZ				SN	Sn	18 54 33.3	+1.5
RITZ	**Rihia Road**	**0.52**	**235**	⇑P*	Pn	18 54 22.1	+0.1
RITZ				S*	Sn	18 54 32.0	+0.3
WATZ	**Wairara**	**0.53**	**267**	P*	Pn	18 54 21.6	-0.4
RATZ	**Rangitukua**	**0.53**	**249**	⇓P*	Pn	18 54 21.7	-0.4
RAHZ	**Arahi**	**0.58**	**114**	⇑PN	Pn	18 54 22.3	-0.2
RAHZ				SN	Sn	18 54 33.1	+0.4
KATZ	**Kakaramea**	**0.63**	**242**	P*	Pn	18 54 22.9	-0.2
URZ	**Urewera**	**0.70**	**53**	⇓P*	Pn	18 54 22.9	-0.8
URZ				S*	Sn	18 54 33.7	-1.1
URZ				AML	AML	18 54 34.5	
KRVZ	**Karewarewa**	**0.72**	**235**	P*	Pn	18 54 24.2	0.0
SNGZ	**Shannon Statio**	**0.74**	**98**	⇓PN	Pn	18 54 24.5	+0.3
ARHZ	**Aropaoanui**	**0.74**	**142**	⇓PN	Pn	18 54 24.4	+0.3
KWHZ	**Kaweka Forest**	**0.74**	**179**	⇑P*	Pn	18 54 24.1	-0.2
OTVZ	**Oturere**	**0.75**	**230**	P*	Pn	18 54 24.4	-0.1
WHHZ	**Waihua**	**0.76**	**122**	PN	Pn	18 54 25.4	+1.0
TLZ	**Tolley Road**	**0.77**	**297**	⇓P*	Pn	18 54 24.5	-0.1
TLZ				S*	Sn	18 54 36.9	+0.6
WTVZ	**West Tongariro**	**0.77**	**236**	P*	Pn	18 54 24.5	-0.1
MCHZ	**McNeill Hill**	**0.79**	**164**	PN	Pn	18 54 25.1	+0.3
NGZ	**Ngauruhoe**	**0.80**	**232**	P*	Pn	18 54 25.0	0.0
RAGZ	**Rawiri**	**0.81**	**77**	P*	Pn	18 54 24.6	-0.5
TUVZ	**Tukino**	**0.83**	**225**	P*	Pn	18 54 25.2	-0.2
BHHZ	**Black Hill Sta**	**0.85**	**198**	⇑P*	Pn	18 54 25.1	-0.4
TWVZ	**Taurewa**	**0.85**	**242**	P*	Pn	18 54 25.3	-0.3
WHVZ	**Whangaehu Hut**	**0.88**	**226**	P*	Pn	18 54 25.9	-0.1
FWVZ	**Far West T-bar**	**0.88**	**229**	P*	Pn	18 54 25.9	-0.2
MOVZ	**Moawhango**	**0.89**	**215**	P*	Pn	18 54 25.4	-0.5
WNVZ	**Wahianoa**	**0.90**	**224**	P*	Pn	18 54 26.0	-0.2
TRVZ	**Turoa**	**0.91**	**227**	⇓P*	Pn	18 54 26.3	-0.1
MWZ	**Matawai**	**0.95**	**69**	⇓P*	Pn	18 54 26.0	-0.7
MWZ				AML	AML	18 54 37.3	
MWZ				AML	AML	18 54 46.5	
MWZ				AML	AML	18 54 47.4	
KRHZ	**Kereru**	**0.96**	**182**	⇑PN	Pn	18 54 26.7	-0.1
MTVZ	**Mangateitei**	**1.01**	**226**	⇓P*	Pn	18 54 27.5	0.0
PKVZ	**Pokaka**	**1.02**	**233**	P*	Pn	18 54 27.6	0.0
KNZ	**Kokohu**	**1.05**	**109**	PN	Pn	18 54 28.1	+0.3
KNZ				AML	AML	18 54 50.2	
KNZ				AML	AML	18 54 50.3	
RIGZ	**Rimuhau**	**1.06**	**92**	PN	Pn	18 54 28.5	+0.4
KAHZ	**Kahuranaki**	**1.17**	**162**	PN	Pn	18 54 29.2	-0.2
PRGZ	**Paritu Road**	**1.18**	**102**	PN	Pn	18 54 29.4	-0.1
TOZ	**Tahuroa Road**	**1.19**	**323**	P*	Pn	18 54 29.6	+0.1
HIZ	**Hauiti**	**1.23**	**277**	⇓PN	Pn	18 54 30.3	+0.2
PNHZ	**Pukenui**	**1.24**	**187**	PN	Pn	18 54 29.7	-0.6
MHGZ	**Mahia Peninsul**	**1.26**	**112**	PN	Pn	18 54 30.4	-0.1
TWGZ	**Tauwhareparae**	**1.33**	**68**	⇑PN	Pn	18 54 32.0	+0.5
VRZ	**Vera Road**	**1.36**	**251**	⇓P*	Pn	18 54 31.9	+0.1
PXZ	**Pawanui**	**1.39**	**165**	PN	Pn	18 54 31.4	-0.8
PXZ				AML	AML	18 54 50.7	
PXZ				AML	AML	18 54 50.9	
PXZ				AML	AML	18 54 53.7	
TSZ	**Takapari Road**	**1.42**	**194**	⇑PN	Pn	18 54 31.8	-0.8
TSZ				AML	AML	18 54 54.9	
TSZ				AML	AML	18 54 56.7	
CNGZ	**Carnagh Statio**	**1.43**	**83**	PN	Pn	18 54 33.0	+0.3
HAZ	**Te Kaha**	**1.43**	**50**	P*	Pn	18 54 31.5	-1.1
WAZ	**Wanganui**	**1.54**	**225**	⇑PN	Pn	18 54 34.9	+0.8
PUZ	**Puketiti**	**1.58**	**68**	PN	Pn	18 54 34.3	-0.4
PUZ				AML	AML	18 55 03.2	
PUZ				AML	AML	18 55 06.8	
PRHZ	**Porangahau**	**1.59**	**174**	PN	Pn	18 54 33.6	-1.3
DVHZ	**Dannevirke**	**1.63**	**186**	PN	Pn	18 54 33.8	-1.6
WMGZ	**Waiomatatini S**	**1.80**	**62**	⇑PN	Pn	18 54 37.5	-0.1
MXZ	**Matakaoa Point**	**1.87**	**54**	PN	Pn	18 54 38.8	+0.2
MXZ				AML	AML	18 55 12.2	
MXZ				AML	AML	18 55 13.0	
NEZ	**North Egmont**	**1.89**	**251**	PN	Pn	18 54 40.1	+1.1
PRWZ	**Pori Road**	**1.90**	**190**	PN	Pn	18 54 37.5	-1.5
BFZ	**Birch Farm**	**2.00**	**183**	PN	Pn	18 54 38.3	-2.1
MRZ	**Mangatainoka R**	**2.08**	**198**	⇑PN	Pn	18 54 39.4	-2.0
TIWZ	**Tintock**	**2.13**	**191**	PN	Pn	18 54 40.1	-2.0
HOWZ	**Holdsworth Sta**	**2.32**	**197**	PN	Pn	18 54 42.1	-2.5
OGWZ	**Otaki Gorge**	**2.33**	**204**	PN	Pn	18 54 42.9	-1.9
TMWZ	**Te Maipa**	**2.45**	**189**	PN	Pn	18 54 43.9	-2.6
KIW	**Kapiti Island**	**2.46**	**207**	PN	Pn	18 54 44.5	-2.0
MTW	**Mount Morrison**	**2.57**	**195**	PN	Pn	18 54 45.0	-3.0
MTW				AML	AML	18 55 32.9	
CAW	**Cannon Point**	**2.63**	**203**	PN	Pn	18 54 46.2	-2.6
CAW				AML	AML	18 55 29.9	
CAW				AML	AML	18 55 30.9	
TCW	**Tory Channel**	**3.01**	**212**	AML	AML	18 55 36.6	
TCW				AML	AML	18 55 38.7	
TUWZ	**Tuamarina**	**3.33**	**214**	AML	AML	18 55 47.6	

IDC 19 18:56:28.1±4.7, 27.°54S×179.°74E, h0km, mb3.6/3, mb1 3.8/3, mb1mx3.6/18, mbtmp3.6/3, ML5.0/1, Error ellipse: s-maj=151.7km s-min=29.4km az=24.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**2.68**	**130**	Pn	Pn	18 57 12.5	+0.1
	246nm,0.3s,baz=207,slow=19,SNR=7.6						
RAO				Sn	Sn	18 57 40.1	-5.5
	137nm,0.3s,baz=270,slow=20,SNR=3.6						
STKA	**Stephens Creek**	**33.30**	**253**	P	P	19 03 07.5	-0.1
	1.8nm,1.0s,baz=101,slow=16,SNR=3.7						
ASAR	**Alice Springs**	**41.34**	**265**	P	P	19 04 15.3	-0.7
	0.3nm,0.5s,baz=101,slow=6.9,SNR=7.3						
WRA	**Warramunga Arr**	**42.06**	**270**	P	P	19 04 22.1	+0.3
	0.3nm,0.3s,baz=109,slow=8.0,SNR=13						

*ISK **19** 19:02:58.0, 34.°11N×23.°35E, h21km, ML4.3*
*HLW **19** 19:02:58.6, 34.°66N×23.°75E, h33km±23km, Ml4.1*
*IDC **19** 19:02:59.3±0.6, 34.°27N×23.°78E, h0km, mb4.3/25, mb1 4.3/37, mb1mx4.3/53, mbtmp4.2/37, ML3.9/12, MS4.3/34, Ms1 4.3/34, ms1mx4.1/66, Error ellipse: s-maj=14.6km s-min=11.3km az=173.0*
*CSEM **19** 19:03:00.4±0.1, 34.°13N×23.°65E, h10km, mb4.7/33, Error ellipse: s-maj=4.0km s-min=2.4km az=34.0*
*NEIC **19** 19:03:00.1±1.9, 34.°23N×23.°78E, h4km±12km, mb4.5/24, ML4.1(THE), Error ellipse: s-maj=7.6km s-min=4.1km az=188.0*
*MOS **19** 19:03:01.5±1.5, 34.°30N×23.°80E, h17km, mb4.7/27, MS4.3/21, Error ellipse: s-maj=5.9km s-min=3.1km az=87.2*
*PDG **19** 19

KYTH	Kithira	2.10	342	P	Pb	19 03 37.9	-2.3
KYTH	Kithira	2.10	342	P	Pb	19 03 37.9	-2.3
KYTH	Kithira	2.10	342	P	Pb	19 03 38.5	-1.7
ZKR	Zakros	2.14	66	P	Pb	19 03 40.4	-0.5
ZKR	Zakros	2.14	66	P	Pb	19 03 40.1	-0.8
ZKR	Zakros	2.14	66	P	Pb	19 03 40.1	-0.8
THR6	Thira Island,	2.45	31	P	Pn	19 03 43.1	+1.4
THR6	Thira Island,	2.45	31	P	Pn	19 03 43.1	+1.4
MHLO	Agia Marina, M	2.46	11	P	Pn	19 03 42.1	+0.1
MHLO	Agia Marina, M	2.46	11	P	Pn	19 03 42.1	+0.1
MHLO	Agia Marina, M	2.46	11	P	Pn	19 03 42.0	0.0
MHLO				AML	AML	19 04 14.2	
	comp=N,10255µm,0.9s						
MHLO				AML	AML	19 04 17.4	
	comp=E,5345µm,1.0s						
THR5	Thira Island,	2.48	30	*e*PN	Pb	19 03 44.0	-2.7
THR5	Thira Island,	2.48	30	P	Pn	19 03 43.5	+1.3
THR5	Thira Island,	2.48	30	P	Pn	19 03 43.5	+1.3
THR5	Thira Island,	2.48	30	*e*Pn	Pb	19 03 44.0	-2.7
SANT	Santorini	2.49	32	P	Pn	19 03 43.6	+1.3
SANT	Santorini	2.49	32	*e*Pn	Pn	19 03 43.3	+1.0
SANT	Santorini	2.49	32	P	Pn	19 03 43.6	+1.3
SANT	Santorini	2.49	32	P	Pn	19 03 43.0	+0.7
SANT				AML	AML	19 04 36.7	
	comp=E,1889µm,0.9s						
SANT				AML	AML	19 04 46.7	
	comp=N,2733µm,1.2s						
SANT	Santorini	2.49	32	*e*Pn	Pn	19 03 43.3	+1.0
THT1	Athinios (Pele	2.49	31	P	Pn	19 03 42.6	+0.3
THT1	Athinios (Pele	2.49	31	P	Pn	19 03 42.6	+0.3
THR3	Thira Island,	2.49	31	P	Pn	19 03 43.8	+1.4
THR3	Thira Island,	2.49	31	P	Pn	19 03 43.8	+1.4
THR2	Thira island,	2.54	31	P	Pn	19 03 44.7	+1.7
THR2	Thira island,	2.54	31	P	Pn	19 03 44.7	+1.7
CMBO	Columbo, Santo	2.55	30	P	Pn	19 03 43.2	+0.1
CMBO	Columbo, Santo	2.55	30	P	Pn	19 03 43.4	+0.3
CMBO	Columbo, Santo	2.55	30	P	Pn	19 03 43.4	+0.3
VLI	Veliai	2.55	344	P	Pn	19 03 44.8	+1.6
VLI	Veliai	2.55	344	P	Pn	19 03 44.8	+1.6
VLI	Veliai	2.55	344	P	Pb	19 03 45.6	-2.3
SLUM	Salum	3.00	157	P	Pn	19 03 49.2	-0.2
	baz=158						
SLUM				AMP		19 04 00.0	
	comp=N,1270µm,1.0s,logA/T=6.1,baz=158						
SLUM				S	Sn	19 04 26.0	+1.1
	baz=158						
SLUM	Salum	3.00	157	P	Pn	19 03 49.2	-0.2
SLUM				S	Sn	19 04 26.0	+1.1
KARP	Karpathos	3.02	64	*e*PN	Pb	19 03 52.6	-3.4
KARP				*e*SN	Sb	19 04 31.9	-0.6
KARP	Karpathos	3.02	64	P	Pb	19 03 53.0	-2.9
KARP	Karpathos	3.02	64	*e*Pn	Pb	19 03 52.6	-3.4
KARP	Karpathos	3.02	64	P	Pb	19 03 53.0	-2.9
KARP				*e*Sn	Sb	19 04 31.9	-0.6
KARP	Karpathos	3.02	64	P	Pb	19 03 53.1	-2.9
APE	Apeiranthos	3.12	26	*e*PN	Pn	19 03 52.5	+1.4
APE				*e*SN	Sb	19 04 31.6	-3.8
APE	Apeiranthos	3.12	26	P	Pn	19 03 51.3	+0.3
APE	Apeiranthos	3.12	26	⇑*i*P	Pn	19 03 51.4	+0.4
APE	Apeiranthos	3.12	26	*i*P	Pn	19 03 51.4	+0.4
APE	Apeiranthos	3.12	26	*e*Pn	Pn	19 03 52.5	+1.4
APE				*e*Sn	Sb	19 04 31.6	-3.8
APE	Apeiranthos	3.12	26	P	Pn	19 03 49.8	-1.3
APE				AML	AML	19 04 48.9	
	comp=N,814µm,1.0s						
APE				AML	AML	19 04 58.2	
	comp=E,1200µm,1.5s						
PYL	PYLOS	3.13	328	P	Pn	19 03 51.3	+0.2
PYL	PYLOS	3.13	328	P	Pn	19 03 51.3	+0.2
KRND	KRANIDI	3.16	350	P	Pn	19 03 52.4	+0.9
KRND	KRANIDI	3.16	350	P	Pn	19 03 52.4	+0.9
DID	Didima	3.27	352	P	Pn	19 03 53.3	+0.2
DID	Didima	3.27	352	P	Pn	19 03 53.3	+0.2
ITM	Ithomi	3.29	332	P	Pn	19 03 54.0	+0.6
ITM	Ithomi	3.29	332	P	Pn	19 03 54.0	+0.6
ITM	Ithomi	3.29	332	P	Pn	19 03 54.5	+1.1
VLY	Voula,Athens	3.58	360	P	Pn	19 03 57.5	+0.2
VLY	Voula,Athens	3.58	360	P	Pn	19 03 57.5	+0.2
VLY	Voula,Athens	3.58	360	P	Pn	19 03 56.7	-0.6
NIS1	Nisyros Isl.	3.59	49	*e*PN	Pn	19 04 00.5	+3.0
NIS1	Nisyros Isl.	3.59	49	*e*Pn	Pn	19 04 00.5	+3.0
NIS1	Nisyros Isl.	3.59	49	P	Pb	19 04 01.2	-4.5
NIS1	Nisyros Isl.	3.59	49	P	Pb	19 04 01.2	-4.5
AMT	Artemida-Makis	3.69	333	P	Pn	19 03 59.2	+0.4
AMT	Artemida-Makis	3.69	333	P	Pn	19 03 59.2	+0.4
PTL	Penteli	3.77	0	P	Pn	19 04 00.1	+0.1
PTL	Penteli	3.77	0	P	Pn	19 04 00.1	+0.1
PTL	Penteli	3.77	0	P	Pn	19 03 58.7	-1.3
LTK	Loutraki	3.81	350	P	Pn	19 04 00.7	+0.1
LTK	Loutraki	3.81	350	P	Pn	19 04 00.7	+0.1
BODT	Bodrum	3.98	44	*e*PN	Pn	19 04 05.7	+2.9
BODT	Bodrum	3.98	44	P	Pn	19 04 04.2	+1.4
BODT	Bodrum	3.98	44	P	Pn	19 04 04.2	+1.4
BODT	Bodrum	3.98	44	*e*Pn	Pn	19 04 05.7	+2.9
KLV	Kalavryta, Ach	4.01	341	P	Pn	19 04 04.0	+0.8
KLV	Kalavryta, Ach	4.01	341	P	Pn	19 04 04.0	+0.8
KLV	Kalavryta, Ach	4.01	341	P	Pn	19 04 04.0	+0.8
ARG	Arkhangelos	4.02	60	P	Pn	19 04 04.2	+0.9
BDRM	Kayabasi	4.06	45	P	Pn	19 04 05.9	+2.0
BDRM	Kayabasi	4.06	45	*i*P	Pn	19 04 05.9	+2.0
DRO	Drossia	4.06	336	P	Pn	19 04 05.0	+1.1
DRO	Drossia	4.06	336	P	Pn	19 04 05.0	+1.1
HMAT	Matruh	4.19	138	P	Pn	19 04 05.2	-0.6
	baz=140						
HMAT				S	Sn	19 04 53.6	-0.8
	baz=140						
HMAT	Matruh	4.19	138	P	Pn	19 04 05.2	-0.6
HMAT				S	Sn	19 04 53.6	-0.8
SMG	Samos	4.21	34	P	Pn	19 04 07.6	+1.6
SMG	Samos	4.21	34	P	Pn	19 04 07.6	+1.6
ZKS	Zakynthos	4.22	325	P	Pn	19 04 06.9	+0.8
ZKS	Zakynthos	4.22	325	P	Pn	19 04 06.9	+0.8
DSF	Desfina	4.27	346	P	Pn	19 04 06.7	-0.1
DSF	Desfina	4.27	346	P	Pn	19 04 06.7	-0.1
SERG	Sergoula	4.38	341	P	Pn	19 04 08.2	-0.1
SERG	Sergoula	4.38	341	P	Pn	19 04 08.2	-0.1
GCAM	G?zelcaml?	4.40	38	P	Pn	19 04 12.9	+4.3
GCAM	G?zelcaml?	4.40	38	*i*P	Pn	19 04 12.9	+4.3
LKR	Lokris	4.43	352	P	Pn	19 04 08.8	-0.1
LKR	Lokris	4.43	352	P	Pn	19 04 08.8	-0.1
EFP	Efpalio	4.43	340	P	Pn	19 04 10.8	+1.8
EFP	Efpalio	4.43	340	P	Pn	19 04 10.8	+1.8
CHOS	Chios island	4.49	23	*e*PN	Pn	19 04 11.0	+1.1
CHOS	Chios island	4.49	23	P	Pn	19 04 09.8	-0.1
CHOS	Chios island	4.49	23	P	Pn	19 04 09.8	-0.1
CHOS	Chios island	4.49	23	*e*Pn	Pn	19 04 11.0	+1.1
DGB	¯zmir	4.51	32	*i*P	Pn	19 04 12.9	+2.8
ZEY	¯zmir	4.51	28	*i*P	Pn	19 04 12.9	+2.7
ANX	Ano Chora	4.58	341	P	Pn	19 04 11.6	+0.4
ANX	Ano Chora	4.58	341	P	Pn	19 04 11.6	+0.4
YER	Yerkesik	4.62	50	*e*PN	Pn	19 04 14.5	+2.9
YER	Yerkesik	4.62	50	P	Pn	19 04 14.1	+2.5
YER	Yerkesik	4.62	50	P	Pn	19 04 14.1	+2.5
YER	Yerkesik	4.62	50	*e*Pn	Pn	19 04 14.5	+2.9
SMIA	Simia	4.63	354	P	Pn	19 04 12.3	+0.5
SMIA	Simia	4.63	354	P	Pn	19 04 12.3	+0.5
URLA	Izmir	4.66	28	P	Pn	19 04 14.2	+2.1
URLA	Izmir	4.66	28	*i*P	Pn	19 04 14.2	+2.1
TURN	Turunc	4.68	55	*i*P	Pn	19 04 09.9	-2.5
TURN				*i*S	Sn	19 04 59.3	-6.9
DALY	Dalyan (Mu¯la	4.68	56	*e*PN	Pn	19 04 15.8	+3.3
DALY	Dalyan (Mu¯la	4.68	56	*e*Pn	Pn	19 04 15.8	+3.3
VLS	Valsamata	4.70	327	P	Pn	19 04 11.8	-0.9
VLS	Valsamata	4.70	327	P	Pn	19 04 11.8	-0.9
AYDN	Tasoluk	4.72	43	P	Pn	19 04 15.5	+2.5
AYDN	Tasoluk	4.72	43	*i*P	Pn	19 04 15.5	+2.5
PDO	Prodromos	4.82	334	P	Pn	19 04 16.3	+1.9
PDO	Prodromos	4.82	334	P	Pn	19 04 16.3	+1.9
AOS	Alonnisos	4.89	0	*e*PN	Pn	19 04 15.1	-0.3
AOS	Alonnisos	4.89	0	*e*Pn	Pn	19 04 15.1	-0.3
FETY	Fethiye	4.89	60	*e*PN	Pn	19 04 18.4	+2.9
FETY	Fethiye	4.89	60	P	Pn	19 04 17.2	+1.8
FETY	Fethiye	4.89	60	P	Pn	19 04 17.2	+1.8
FETY	Fethiye	4.89	60	*e*Pn	Pn	19 04 18.4	+2.9
AGG	Agios Georgios	4.90	346	*e*PN	Pn	19 04 14.3	-1.1
AGG	Agios Georgios	4.90	346	P	Pn	19 04 16.0	+0.5
AGG	Agios Georgios	4.90	346	P	Pn	19 04 14.3	-1.1
AGG	Agios Georgios	4.90	346	*e*Pn	Pn	19 04 14.4	-1.1
AGG	Agios Georgios	4.90	346	P	Pn	19 04 16.0	+0.5
EVR	Evrytania	4.92	341	P	Pn	19 04 17.9	+2.1
EVR	Evrytania	4.92	341	P	Pn	19 04 17.9	+2.1
AYDB	Zeytinkoy-Aydi	4.93	41	*e*PN	Pn	19 04 19.3	+3.3
AYDB	Zeytinkoy-Aydi	4.93	41	*e*Pn	Pn	19 04 19.3	+3.3
AKAS	Kas	5.12	66	P	Pn	19 04 20.8	+2.2
AKAS				S	Sn	19 05 20.0	+2.7
AKAS	Kas	5.12	66	*i*P	Pn	19 04 20.8	+2.2
AKAS				*i*S	Sn	19 05 20.0	+2.7
LKD2	Lefkada island	5.19	331	P	Pn	19 04 19.6	+0.2
LKD2	Lefkada island	5.19	331	P	Pn	19 04 19.6	+0.2
SIGR	SIGRI	5.20	18	*e*PN	Pn	19 04 20.7	+1.2
SIGR	SIGRI	5.20	18	*e*Pn	Pn	19 04 20.7	+1.2
SWA2		5.20	164	P	Pn	19 04 19.3	-0.2
	baz=164						
SWA2		5.20	164	P	Pn	19 04 19.3	-0.2
DSL	Palaion Diasel	5.33	336	P	Pn	19 04 21.7	+0.3
DSL	Palaion Diasel	5.33	336	P	Pn	19 04 21.7	+0.3
DNZL	Cakiroluk	5.43	50	*i*P	Pn	19 04 26.7	+3.7
GLHS	Glhisar (BURDU	5.44	56	*e*PN	Pn	19 04 25.7	+2.8
GLHS	Glhisar (BURDU	5.44	56	*e*Pn	Pn	19 04 25.7	+2.8
DENT	Denizli	5.47	49	*e*PN	Pn	19 04 26.2	+2.9
DENT	Denizli	5.47	49	*e*Pn	Pn	19 04 26.2	+2.9
THL	Klokotos Trika	5.48	345	P	Pn	19 04 23.6	+0.1
THL	Klokotos Trika	5.48	345	P	Pn	19 04 23.6	+0.1
GOLH	Golhisar	5.52	56	*i*P	Pn	19 04 26.5	+2.4
GOLH				*i*S	Sn	19 05 34.0	+6.8
ELL	Elmali	5.54	62	*e*PN	Pn	19 04 27.9	+3.5
ELL	Elmali	5.54	62	*e*Pn	Pn	19 04 27.9	+3.5
AKS	Akhisar	5.61	34	*e*PN	Pn	19 04 27.9	+2.7
AKS	Akhisar	5.61	34	*e*Pn	Pn	19 04 27.9	+2.7
PAIG	Paliouri	5.65	359	P	Pn	19 04 25.6	-0.2
PAIG	Paliouri	5.65	359	P	Pn	19 04 25.6	-0.2
MANT	Manisa	5.68	41	*i*P	Pn	19 04 28.4	+2.0
KULA	Kula-Manisa	5.76	41	*e*PN	Pn	19 04 29.6	+2.3
KULA	Kula-Manisa	5.76	41	P	Pn	19 04 29.8	+2.5
KULA	Kula-Manisa	5.76	41	*e*Pn	Pn	19 04 29.6	+2.3
IGT	Igoumenitsa	5.96	333	P	Pn	19 04 29.9	-0.1
IGT	Igoumenitsa	5.96	333	P	Pn	19 04 29.9	-0.1
KORT	Korkueli	5.97	61	*i*P	Pn	19 04 32.6	+2.3
KORT				*i*S	Sn	19 05 44.6	+6.4
OUR	Ouranopolis	6.06	1	*e*PN	Pn	19 04 31.5	+0.2
OUR	Ouranopolis	6.06	1	*e*Pn	Pn	19 04 31.5	+0.2
SGD	Sagiada	6.06	333	P	Pn	19 04 31.4	0.0
SGD	Sagiada	6.06	333	P	Pn	19 04 31.4	0.0
KHL	Karahalli	6.12	47	*e*PN	Pn	19 04 36.0	+3.7
KHL	Karahalli	6.12	47	*e*Pn	Pn	19 04 36.0	+3.7
KHAL	Karahalli	6.13	47	*i*P	Pn	19 04 34.9	+2.4
ANTB	Antalya	6.15	63	*e*PN	Pn	19 04 37.2	+4.6
DEMI	Demirci	6.17	38	*i*P	Pn	19 04 36.2	+3.2
BALB	Balikesir	6.27	30	*e*PN	Pn	19 04 37.2	+3.0
BALB	Balikesir	6.27	30	*e*Pn	Pn	19 04 37.2	+3.0
HBRG	Burj al 'Arab	6.27	124	P	Pn	19 04 33.5	-0.9
	baz=126						
PENT	Pentalofos	6.30	341	P	Pn	19 04 35.3	+0.6
PENT	Pentalofos	6.30	341	P	Pn	19 04 35.3	+0.6
KEK	Kerkira	6.32	330	P	Pn	19 04 34.6	-0.4
KEK	Kerkira	6.32	330	P	Pn	19 04 34.6	-0.4
BCK	Bucak	6.34	58	*e*PN	Pn	19 04 39.1	+3.7
BCK	Bucak	6.34	58	*e*Pn	Pn	19 04 39.1	+3.7
HORT	Hortiatis	6.35	355	*e*PN	Pn	19 04 35.4	0.0
HORT	Hortiatis	6.35	355	*e*Pn	Pn	19 04 35.4	0.0
GELI	Tayfur-Gelibol	6.47	18	*e*PN	Pn	19 04 39.0	+2.0
GELI	Tayfur-Gelibol	6.47	18	*e*Pn	Pn	19 04 39.0	+2.0
ISP	Isparta	6.48	55	*e*PN	Pn	19 04 41.3	+4.0
ISP	Isparta	6.48	55	P	Pn	19 04 41.2	+4.0
DURS	Dursunbey	6.49	34	*i*P	Pn	19 04 40.1	+2.7
NEST	Nestorio	6.52	341	P	Pn	19 04 38.0	+0.1
NEST	Nestorio	6.52	341	P	Pn	19 04 38.0	+0.1
LPK	Lapseki	6.53	20	*e*PN	Pn	19 04 39.4	+1.6
LPK	Lapseki	6.53	20	*e*Pn	Pn	19 04 39.4	+1.6
SOH	Sokhos	6.55	357	P	Pn	19 04 41.1	+2.9
SOH				pmax	pmax		
	comp=Z,24nm,1.0s						
SOH	Sokhos	6.55	357	P	Pn	19 04 41.1	+2.9
	comp=Z,24nm,1.0s						
GDZ	Gediz	6.62	42	*i*P	Pn	19 04 41.4	+2.3
SUTC	Sutluce-Ispart	6.64	59	*e*PN	Pn	19 04 43.1	+3.6
SUTC	Sutluce-Ispart	6.64	59	*e*Pn	Pn	19 04 43.1	+3.6
ERIK	Erikli-Kesan	6.74	18	*e*PN	Pn	19 04 42.2	+1.5
ERIK	Erikli-Kesan	6.74	18	*e*Pn	Pn	19 04 42.2	+1.5
GRG	Griva	6.77	351	*e*PN	Pn	19 04 40.5	-0.7
GRG	Griva	6.77	351	P	Pn	19 04 41.8	+0.6
GRG				pmax	pmax		
	comp=Z,28nm,0.9s						
GRG	Griva	6.77	351	*e*Pn	Pn	19 04 40.5	-0.7
GRG	Griva	6.77	351	P	Pn	19 04 41.8	+0.6
	comp=Z,28nm,0.9s						
FNA	Florina	6.79	344	*e*PN	Pn	19 04 40.0	-1.5
FNA	Florina	6.79	344	P	Pn	19 04 41.3	-0.2
FNA				pmax	pmax		
	comp=Z,44nm,0.9s						
FNA	Florina	6.79	344	*e*Pn	Pn	19 04 40.0	-1.5
FNA	Florina	6.79	344	P	Pn	19 04 41.3	-0.2
	comp=Z,44nm,0.9s						
ALN	Alexandroupoli	6.85	14	*e*PN	Pn	19 04 44.0	+1.8
ALN	Alexandroupoli	6.85	14	*e*Pn	Pn	19 04 44.0	+1.8
TVSB	Tavsanli	6.86	39	*e*PN	Pn	19 04 44.9	+2.4
TVSB	Tavsanli	6.86	39	*e*Pn	Pn	19 04 44.9	+2.4
EDC	Edincik	6.87	27	*e*PN	Pn	19 04 44.1	+1.6
EDC	Edincik	6.87	27	*e*Pn	Pn	19 04 44.1	+1.6
KNT	Kendrikon	6.92	354	*e*PN	Pn	19 04 43.0	-0.3
KNT	Kendrikon	6.92	354	P	Pn	19 04 43.7	+0.4
KNT	Kendrikon	6.92	354	*e*Pn	Pn	19 04 43.0	-0.3
KNT	Kendrikon	6.92	354	P	Pn	19 04 43.7	+0.4
RKY	Sarkoy-Tekirda	6.94	22	*e*PN	Pn	19 04 45.6	+2.1
RKY	Sarkoy-Tekirda	6.94	22	*e*Pn	Pn	19 04 45.6	+2.1
KCTX	Karacabey (Bur	6.99	30	*e*PN	Pn	19 04 46.3	+2.1
KCTX	Karacabey (Bur	6.99	30	*e*Pn	Pn	19 04 46.3	+2.1
MRMT	Marmara Adasi	7.00	24	*e*PN	Pn	19 04 46.3	+2.0
MRMT	Marmara Adasi	7.00	24	*e*Pn	Pn	19 04 46.3	+2.0
BIA	Bitola	7.03	344	*i*Pn	Pn	19 04 44.2	-0.5
BIA				*i*Sn	Sn	19 06 02.2	-2.0
AKMC	Akamas	7.05	81	P	Pn	19 04 44.5	-0.5
	baz=263						
AKMC	Akamas	7.05	81	P	Pn	19 04 44.5	-0.5
VAY	Valandovo	7.11	352	*e*Pn	Pn	19 04 45.5	-0.4
GAZI	Gazipasa	7.21	72	*i*P	Pn	19 04 46.5	-0.8
GAZI				*i*S	Sn	19 06 04.7	-4.0
OHR	Ohrid	7.24	342	*e*Pn	Pn	19 04 45.7	-2.0
ALFC	Alefka	7.28	81	P	Pn	19 04 47.8	-0.3
	baz=262						
ALFC				S	Sn	19 06 04.7	-5.6
ALFC	Alefka	7.28	81	P	Pn	19 04 47.8	-0.3
AWBH		7.34	142	P	Pn	19 04 49.0	-0.1
	baz=143						
AWBH		7.34	142	P	Pn	19 04 49.0	-0.1
HNAT	Natroun	7.39	127	P	Pn	19 04 49.0	-0.7
	baz=128						
HNAT	Natroun	7.39	127	P	Pn	19 04 48.9	-0.7
SZAC	Souni	7.49	84	P	Pn	19 04 50.8	-0.3
	baz=265						
SZAC	Souni	7.49	84	P	Pn	19 04 50.8	-0.3
TIP	Timpagrande	7.50	313	*e*Pn	Pn	19 04 49.5	-1.8
	comp=Z,27nm,0.5s						
TIP	Timpagrande	7.50	313	*e*Pn	Pn	19 04 49.5	-1.8
	comp=Z,27nm,0.5s						
IZI	Iznik	7.54	35	*e*PN	Pn	19 04 53.6	+1.8
IZI	Iznik	7.54	35	*e*Pn	Pn	19 04 53.6	+1.8
CEL	Celeste	7.55	304	*e*Pn	Pn	19 04 50.0	-1.9
	comp=Z,48nm,0.8s						
CEL	Celeste	7.55	304	*e*Pn	Pn	19 04 50.0	-1.9
	comp=Z,48nm,0.8s						
CAVI	Cavuskoy	7.62	37	*e*PN	Pn	19 04 55.8	+3.0
CAVI	Cavuskoy	7.62	37	*e*Pn	Pn	19 04 55.8	+3.0
AYT	Al 'Ayyat	7.70	124	P	Pn	19 04 53.6	-0.4
	baz=126						
AYT	Al 'Ayyat	7.70	124	P	Pn	19 04 53.6	-0.4
BORA	Eskisehir	7.71	41	*i*P	Pn	19 04 57.0	+2.9
TIR	Tirane	7.73	337	P	Pn	19 04 53.4	-1.0
TIR	Tirane	7.73	337	P	Pn	19 04 53.4	-1.0
TIR	Tirane	7.73	337	Pn	Pn	19 04 53.4	-1.0
ERMK	Ermenek	7.78	70	*i*P	Pn	19 04 57.0	+1.8
ERMK				*i*S	Sn	19 06 23.9	+0.9
MAMC	Mammari	7.78	81	P	Pn	19 04 55.0	-0.1
	baz=263						
MAMC	Mammari	7.78	81	P	Pn	19 04 55.0	-0.1
WDD	Wied Dalam	7.80	284	*e*Pn	Pn	19 04 52.9	-2.3
	comp=Z,112nm,0.6s						
WDD	Wied Dalam	7.80	284	*e*Pn	Pn	19 04 52.9	-2.3
	comp=Z,112nm,0.6s						
KONT	Konya--Tatoy	7.82	60	*e*PN	Pn	19 04 58.9	+3.4
KONT	Konya--Tatoy	7.82	60	*e*Pn	Pn	19 04 58.9	+3.4
CSS	Mathiatis	7.86	82	P	Pn	19 04 55.6	-0.6
	baz=264						
CSS				S	Sn	19 06 18.0	-6.8
CSS	Mathiatis	7.86	82	Pn	Pn	19 04 55.9	-0.3
CSS	Mathiatis	7.86	82	P	Pn	19 04 55.6	-0.6
CSS	Mathiatis	7.86	82	Pn	Pn	19 04 55.9	-0.3
CSS	Mathiatis	7.86	82	*e*Pn	Pn	19 04 55.6	-0.6
	comp=Z,10nm,0.8s						
EDRB	Edirne	7.91	16	*e*PN	Pn	19 04 58.2	+1.5
EDRB	Edirne	7.91	16	*e*Pn	Pn	19 04 58.2	+1.5
KDHN	Kadinhani	7.91	55	*i*P	Pn	19 04 58.3	+1.3
SKO	Skopje	7.92	347	*e*Pn	Pn	19 04 54.8	-2.2
GPA	Golpazari	7.92	39	*e*PN	Pn	19 04 59.2	+2.2
GPA	Golpazari	7.92	39	*e*Pn	Pn	19 04 59.2	+2.2
KIZT	Kizilcal	7.94	52	*e*PN	Pn	19 05 00.1	+2.7
KIZT	Kizilcal	7.94	52	*e*Pn	Pn	19 05 00.1	+2.7
SVRH	Sivrihisar-ESK	8.04	48	*e*PN	Pn	19 05 01.7	+3.0
SVRH	Sivrihisar-ESK	8.04	48	*e*Pn	Pn	19 05 01.7	+3.0
KOT	Kottamia	8.04	120	P	Pn	19 04 57.9	-0.8
	baz=122						
KOT	Kottamia	8.04	120	P	Pn	19 04 57.9	-0.8
GULT	Gulveren	8.13	39	*e*PN	Pn	19 05 02.6	+2.7
GULT	Gulveren	8.13	39	*e*Pn	Pn	19 05 02.7	+2.7
GLL	Jalalah	8.16	123	P	Pn	19 04 59.6	-0.8
	baz=124						
GLL	Jalalah	8.16	123	P	Pn	19 04 59.6	-0.8
HHAG	Hagoal	8.22	119	P	Pn	19 05 00.6	-0.6
	baz=121						
HHAG				S	Sn	19 06 28.6	-5.1
	baz=121						
HHAG	Hagoal	8.22	119	P	Pn	19 05 00.6	-0.6
VAE	Valguarnera	8.29	295	Pn	Pn	19 05 02.3	+0.2
	comp=Z,3.2nm,0.3s,baz=355,slow=21,SNR=11						
ULC	Ulcinj	8.49	336	⇑*i*Pn	Pn	19 05 02.4	-2.4
ULC				*e*Sn	Sn	19 06 34.1	-6.1
ULC	Ulcinj	8.49	336	⇑*i*Pn	Pn	19 05 02.4	-2.4
NBNS	Bani Suef	8.50	129	P	Pn	19 05 04.5	-0.4
	baz=131						
NBNS	Bani Suef	8.50	129	P	Pn	19 05 04.5	-0.4
MDUB	Mudurnu	8.53	41	*e*PN	Pn	19 05 07.8	+2.5
MDUB	Mudurnu	8.53	41	*e*Pn	Pn	19 05 07.8	+2.5
CUC	Castrocucco	8.58	314	*e*Pn	Pn	19 05 04.7	-1.3
	comp=Z,20nm,0.7s						
CUC	Castrocucco	8.58	314	*e*Pn	Pn	19 05 04.7	-1.3
	comp=Z,20nm,0.7s						
KIZK	Mersin	8.71	72	*i*P	Pn	19 05 09.9	+2.2
KIZK				*i*S	Sn	19 06 44.6	-0.9
DRME	Dracevica, Mon	8.71	337	⇑*i*Pn	Pn	19 05 05.6	-2.2
DRME				*e*Sn	Sn	19 06 39.9	-5.6
DRME	Dracevica, Mon	8.71	337	⇑*i*Pn	Pn	19 05 05.6	-2.2
SUZ	Suez	8.82	118	P	Pn	19 05 08.6	-0.7
	baz=119						
SUZ	Suez	8.82

HRFI Mount Harif 10.39 111 Pn **Pn** **19 05 30.6 -0.3**
HRFI Sn **Sn** **19 07 21.5 -5.4**
HRFI Mount Harif 10.39 111 Pn **Pn** **19 05 30.6 -0.3**
MBRI Mt Berech 10.41 112 Pn **Pn** **19 05 31.3 +0.1**
MBRI Sn **Sn** **19 07 21.5 -5.9**
MBRI Mt Berech 10.41 112 Pn **Pn** **19 05 31.3 +0.1**
CORM Corum 10.43 52 *e*PN **Pn** **19 05 34.0 +2.5**
CORM Corum 10.43 52 *e*Pn **Pn** **19 05 34.0 +2.5**
AKRG Al Kharijah 10.47 145 P **Pn** **19 05 32.7 +0.7**
baz=145
EIL Elat 10.49 113 Pn **Pn** **19 05 30.8 -1.5**
comp=Z,1.4nm,0.3s,baz=311,slow=8.9,SNR=17
EIL Sn **Sn** **19 07 26.0 -3.4**
comp=Z,2.0nm,0.3s,baz=131,slow=20,SNR=4.9
EIL Elat 10.49 113 Pn **Pn** **19 05 31.5 -0.8**
EIL Elat 10.49 113 Pn **Pn** **19 05 31.5 -0.8**
EIL Sn **Sn** **19 07 26.0 -3.4**
BNN Bunyan 10.69 61 *e*PN **Pn** **19 05 37.6 +2.6**
BNN Bunyan 10.69 61 *e*Pn **Pn** **19 05 37.6 +2.6**
HCB Kahramanmara˜ 11.05 70 *i* P **Pn** **19 05 39.8 -0.1**
ASF Jabal al Asfar 11.14 97 Pn **Pn** **19 05 39.9 -1.3**
comp=Z,0.3nm,0.3s,baz=240,slow=12,SNR=9.1
MLR Muntele Rosu 11.33 8 Pn **Pn** **19 05 43.7 0.0**
comp=Z,0.0nm,0.3s,baz=225,slow=4.3,SNR=3.7
VRI Vrincioaia 11.79 10 *e*PN **Pn** **19 05 50.1 +0.2**
VRI Vrincioaia 11.79 10 *e*Pn **Pn** **19 05 50.2 +0.2**
KEST Kesra 11.97 281 Pn **Pn** **19 05 51.2 -1.3**
comp=Z,0.2nm,0.3s,baz=52,slow=18,SNR=3.2
UDBI Udbina 11.99 331 *e*Pn **Pn** **19 05 50.8 -1.9**
UDBI Sn **Sn** **19 07 58.4 -7.6**
UDBI Udbina 11.99 331 *e*Pn **Pn** **19 05 50.8 -1.9**
NVLJ Novalja 12.39 329 *e*Pn **Pn** **19 05 55.9 -2.2**
NVLJ Novalja 12.39 329 *e*Pn **Pn** **19 05 55.9 -2.2**
KIS Kishinev 13.27 15 *e*P **P** **19 06 18.0 -1.8**
KIS LRM MLR 19 11 48.0
comp=Z,3µm,16.0s
KIS Kishinev 13.27 15 *e*P **Pn** **19 06 10.0 0.0**
KIS *e*S **Sn** **19 08 34.0 -3.0**
KIS LRM MLR 19 11 50.0
comp=Z,2µm,14.0s
KIS Kishinev 13.27 15 *e*P **Pn** **19 06 10.0 0.0**
KIS *e*S **Sn** **19 08 34.0 -3.0**
KIS MLR MLR
comp=Z,2µm,12.5s
KIS MLR MLR
comp=N,2µm,14.0s
KIS MLR MLR
comp=Z,2µm,14.0s
KIS Kishinev 13.27 15 *e*P **Pn** **19 06 10.0 0.0**
SOKA Soboth 14.08 334 *i* Pn **Pn** **19 06 18.3 -3.0**
comp=Z,7.4nm,0.9s
OBKA Obir 14.11 333 *i* Pn **Pn** **19 06 20.2 -1.6**
comp=Z,3.9nm,0.6s
UZH Uzhgorod 14.40 356 *e*P **P** **19 06 31.0 -1.3**
UZH *e*S S 19 09 14.1 -10
UZH MLR MLR
comp=N,2µm,10.0s
UZH MLR MLR
comp=E,2µm,10.0s
UZH MLR MLR
comp=Z,1µm,10.0s
UZH Uzhgorod 14.40 356 *e*P **P** **19 06 31.0 -1.3**
ARSA Arzberg 14.40 337 *i* Pn **Pn** **19 06 23.6 -2.0**
comp=Z,7.3nm,0.8s
VYHS Vyhne 14.70 347 *e*P **P** **19 06 35.7 0.0**
VYHS Vyhne 14.70 347 *e*P **P** **19 06 35.7 0.0**
VYHS Vyhne 14.70 347 *e* **P** **19 06 35.7 0.0**
VYHS *e* 19 06 45.5
KOLS Kolonicke sedl 14.70 356 *e*P **P** **19 06 32.7 -3.0**
KOLS Kolonicke sedl 14.70 356 *e* **P** **19 06 32.7 -3.0**
ANN Anapa 14.84 41 *e*P **Pn** **19 06 31.4 -0.1**
ANN *e*S **Sn** **19 09 14.3 -1.1**
ANN pmax pmax
comp=Z,32nm,1.4s
CONA Conrad Observa 14.90 339 *i* Pn **Pn** **19 06 30.3 -2.2**
comp=Z,9.3nm,1.1s
KBA Koelnbreinsper 15.05 331 P **P** **19 06 39.6 -0.2**
KBA pmax pmax
comp=Z,22nm,1.2s
KBA Koelnbreinsper 15.05 331 P **P** **19 06 39.6 -0.2**
comp=Z,22nm,1.2s
ABTA Abfaltersbach 15.13 329 *i* Pn **Pn** **19 06 34.4 -1.1**
comp=Z,18nm,1.0s,SNR=5.3
LANS Liptovska Anna 15.22 349 *e*P **P** **19 06 42.7 +1.1**
LANS Liptovska Anna 15.22 349 *e*P **P** **19 06 42.7 +1.1**
LANS Liptovska Anna 15.22 349 *e*P **P** **19 06 42.7 +1.1**
STHS Stebnicka Huta 15.26 354 *e*P **P** **19 06 42.5 +0.5**
STHS Stebnicka Huta 15.26 354 *e*P **P** **19 06 42.5 +0.5**
STHS Stebnicka Huta 15.26 354 *e*P **P** **19 06 42.5 +0.5**
STHS *e* 19 12 21.7
MOA Molln 15.35 335 *i* Pn **Pn** **19 06 38.2 -0.1**
comp=Z,9.5nm,0.5s
NIE Niedzica 15.36 351 *e*P **P** **19 06 43.4 +0.3**
NIE Niedzica 15.36 351 *e*P **P** **19 06 43.4 +0.3**
NIE Niedzica 15.36 351 *e*P **P** **19 06 43.4 +0.3**
SOC Sochi 15.45 48 *e*P **Pn** **19 06 39.0 -0.7**
SOC *e* 19 09 31.3
SOC MLR MLR
comp=Z,515nm,10.0s
LVV L'vov 15.54 0 *e*P **P** **19 06 45.8 +0.7**
LVV MLR MLR
comp=N,800nm,13.0s
LVV MLR MLR
comp=Z,1µm,13.0s
LVV MLR MLR
comp=E,400nm,12.0s
LVV L'vov 15.54 0 *e*P **P** **19 06 45.8 +0.7**
WTTA Wattenberg 15.91 328 *i* Pn **Pn** **19 06 44.8 -0.9**
comp=E,8.9nm,1.0s
SBF Sospel 15.91 312 *e*P **P** **19 06 48.8 -0.5**
SBF pmax pmax
comp=Z,7.0nm,0.7s
SBF Sospel 15.91 312 *e*P **P** **19 06 48.8 -0.5**
comp=Z,7.0nm,0.7s
VRAC Vranov 15.96 343 Pn **Pn** **19 06 45.9 -0.3**
comp=Z,1.1nm,0.3s,baz=151,slow=8.7,SNR=15
VRAC LR LR 19 15 04.5
comp=Z,2µm,19.3s,baz=170,slow=46
VRAC Vranov 15.96 343 *e*P **P** **19 06 49.3 -0.4**
WATA Walderalm 15.99 328 *i* P **Pn** **19 06 47.3 +0.6**
comp=Z,5.1nm,0.6s
WATA Walderalm 15.99 328 P **Pn** **19 06 47.3 +0.6**
comp=Z,5.1nm,0.6s
OKC Ostrava-Krasne 16.11 347 *e*P **P** **19 06 51.4 0.0**
OKC *e*x x 19 06 58.5
OKC AMS AMS 19 14 30.0
comp=Z,2µm,13.5s
OKC Ostrava-Krasne 16.11 347 *e*P **P** **19 06 51.4 0.0**
OKC MLR MLR
comp=Z,2µm,13.5s
OKC Ostrava-Krasne 16.11 347 *e*P **P** **19 06 51.4 0.0**
comp=Z,2µm,13.5s
FETA Feichten 16.13 326 *i* P **P** **19 06 52.0 +0.2**
comp=Z,25nm,1.1s
FETA Feichten 16.13 326 P **P** **19 06 52.0 +0.2**
comp=Z,25nm,1.1s
MORC Moravsky Berou 16.18 345 *e*P **P** **19 06 50.2 -2.0**
MOTA Moosalm 16.20 328 *i* Pn **Pn** **19 06 49.2 -0.3**
comp=Z,8.6nm,0.9s,SNR=7.6
OJC Ojcow 16.21 351 *e*P **P** **19 06 52.1 -0.4**
OJC Ojcow 16.21 351 *e*P **P** **19 06 52.1 -0.4**
OJC Ojcow 16.21 351 *e*P **P** **19 06 52.1 -0.4**
TREC Trest 16.24 340 *e*P **Pn** **19 06 49.6 -0.2**
TREC *e*pP **P** **19 06 52.4 -0.4**
TREC *e*x x 19 06 58.6
TREC AMS AMS 19 14 20.0
comp=Z,2µm,14.2s
TREC Trest 16.24 340 *e*P **Pn** **19 06 49.6 -0.2**
TREC MLR MLR
comp=Z,2µm,14.2s
FRF La Foret Royal 16.25 310 *e*P **P** **19 06 51.7 -1.3**
FRF pmax pmax
comp=Z,6.0nm,1.1s
FRF La Foret Royal 16.25 310 *e*P **P** **19 06 51.7 -1.3**
comp=Z,6.0nm,1.1s
DAVOX Davos/Dischmat 16.36 324 Pn **Pn** **19 06 51.5 -0.1**
comp=Z,0.6nm,0.3s,baz=109,slow=3.0,SNR=6.8
DAVOX LR LR 19 14 59.5
comp=Z,1µm,19.6s,baz=116,slow=44
GERES GERESS Array B 16.40 336 Pn **Pn** **19 06 49.9 -2.0**
comp=Z,0.2nm,0.3s,baz=148,slow=13,SNR=23
GERES LR LR 19 15 07.6
comp=Z,2µm,18.0s,baz=144,slow=44
TUE Stuetta 16.41 322 *e*Pn **Pn** **19 06 49.6 -2.6**
comp=Z,11nm,0.7s
TUE Stuetta 16.41 322 *e*Pn **Pn** **19 06 49.6 -2.6**
comp=Z,11nm,0.7s
RETA Reutte 16.46 327 *i* pP **P** **19 06 56.9 +1.5**
comp=Z,6.1nm,0.6s
CHVG Ch'k'valeri 16.57 54 P **P** **19 06 56.0 -0.6**
KRLC Kraliky 16.63 344 *e*P **P** **19 06 57.0 -0.1**
KRLC *e*x x 19 07 07.4
KRLC Kraliky 16.63 344 *e*P **P** **19 06 57.0 -0.1**
KRLC Kraliky 16.63 344 *e*P **P** **19 06 57.0 -0.1**
KHC Kasperske Hory 16.68 336 *e*P **Pn** **19 06 53.9 -1.6**
KHC *e*pP **P** **19 06 58.6 +0.8**
KHC *e*x x 19 07 05.1
KHC AMS AMS 19 15 00.0
comp=Z,2µm,16.8s
KHC Kasperske Hory 16.68 336 *e*P **Pn** **19 06 53.5 -2.0**
KHC pmax pmax
comp=Z,21nm,1.1s
KHC Kasperske Hory 16.68 336 *e*P **Pn** **19 06 53.5 -2.0**
comp=Z,21nm,1.1s
KHC Kasperske Hory 16.68 336 *e*P **Pn** **19 06 53.5 -2.0**
comp=Z,21nm,1.1s
DAVA Damuels 16.72 325 *i* P **P** **19 06 57.1 -1.2**
comp=Z,3.3nm,0.5s
DAVA Damuels 16.72 325 P **P** **19 06 57.1 -1.2**
comp=Z,3.3nm,0.5s
AKASG Malin Array Be 16.89 12 Pn **Pn** **19 06 57.6 -0.4**
comp=Z,2.9nm,0.3s,baz=204,slow=11,SNR=23
WET Wettzell 16.94 335 P **P** **19 07 01.0 +0.4**
WET pmax pmax
comp=Z,59nm,1.2s
WET Wettzell 16.94 335 P **P** **19 07 01.0 +0.4**
comp=Z,59nm,1.2s
DPC Dobruska-Polom 16.99 343 *e*P **P** **19 07 01.0 -0.2**
DPC *e*x x 19 07 11.8
DPC AMS AMS 19 15 10.0
comp=Z,2µm,13.7s
DPC Dobruska-Polom 16.99 343 *e*P **P** **19 07 01.0 -0.2**
DPC MLR MLR
comp=Z,2µm,13.7s
DPC Dobruska-Polom 16.99 343 *e*P **P** **19 07 01.0 -0.2**
comp=Z,2µm,13.7s
GOPC GO Pecny, Ondr 16.99 340 *e*P **Pn** **19 06 57.5 -1.9**
GOPC *e*pP **P** **19 07 00.9 -0.3**
GOPC *e*x x 19 07 11.6
GOPC AMS AMS 19 15 10.0
comp=Z,2µm,13.1s
GOPC GO Pecny, Ondr 16.99 340 *e*P **Pn** **19 06 57.5 -1.9**
GOPC MLR MLR
comp=Z,2µm,13.1s
BNI Bardonecchia 17.01 314 *e*P **Pn** **19 06 55.0 -4.7**
BNI pmax pmax
comp=Z,20nm,1.4s
BNI Bardonecchia 17.01 314 *e*Pn **Pn** **19 06 55.0 -4.7**
comp=Z,20nm,1.4s
BNI Bardonecchia 17.01 314 *e*Pn **Pn** **19 06 55.0 -4.7**
comp=Z,20nm,1.4s
PRU Pruhonice 17.13 339 *e*P **Pn** **19 07 00.5 -0.6**
PRU *e*pP **P** **19 07 03.2 +0.5**
PRU AMS AMS 19 15 10.0
comp=Z,2µm,12.2s
PRU Pruhonice 17.13 339 *e*P **Pn** **19 07 00.5 -0.6**
PRU MLR MLR
comp=Z,2µm,12.2s
PRU Pruhonice 17.13 339 *e*P **Pn** **19 07 00.5 -0.6**
comp=Z,2µm,12.2s
UPC Upice 17.21 343 *e*P **P** **19 07 04.1 +0.5**
UPC AMS AMS 19 15 20.0
comp=Z,2µm,18.9s
UPC Upice 17.21 343 *e*P **P** **19 07 04.1 +0.5**
UPC MLR MLR
comp=Z,2µm,18.9s
UPC Upice 17.21 343 *e*P **P** **19 07 04.1 +0.5**
comp=Z,2µm,18.9s
LPG La Plagne 17.21 316 *e*P **P** **19 07 03.2 -0.7**
LPG pmax pmax
comp=Z,5.0nm,0.9s
LPG La Plagne 17.21 316 *e*P **P** **19 07 03.2 -0.7**
comp=Z,5.0nm,0.9s
NEY Neytrino 17.22 53⇑ *i*P **P** **19 07 04.7 +0.8**
NEY pmax pmax
comp=Z,4.0nm,1.0s
NEY Neytrino 17.22 53 *i* P **P** **19 07 04.7 +0.8**
comp=Z,4.0nm,1.0s
LPL La Plagne 17.24 316 *e*P **P** **19 07 07.4 +3.3**
LPL pmax pmax
comp=Z,12nm,1.4s
ONI Oni 17.45 56 P **P** **19 07 05.7 -0.7**
ONI Oni 17.45 56 P **P** **19 07 05.6 -0.7**
ONI Oni 17.45 56 P **P** **19 07 05.6 -0.7**
KSP Ksiaz 17.45 344 *e*P **P** **19 07 07.5 +1.3**
KSP Ksiaz 17.45 344 *e*P **P** **19 07 07.5 +1.3**
KSP Ksiaz 17.45 344 *e*P **P** **19 07 07.5 +1.3**
KIV Kislovodsk 17.51 51 *e*P **P** **19 07 08.8 +1.8**
KIV *e*S **Sn** **19 10 23.7 +3.3**
KIV pmax pmax
comp=Z,27nm,1.1s
KIV MLR MLR
comp=Z,582nm,13.0s
KIV Kislovodsk 17.51 51 *e*P **Pn** **19 07 05.6 -0.3**
comp=Z,52nm,1.2s
KIV Kislovodsk 17.51 51 *e*P **Pn** **19 07 05.5 -0.3**
comp=Z,52nm,1.2s
KVAR Kislovodsk Arr 17.51 51 P **P** **19 07 06.7 -0.4**
baz=179,slow=2.1,SNR=6.4
KVAR LR LR 19 15 54.4
comp=Z,1µm,19.3s,baz=239,slow=44
KBZ Khabaz 17.54 52 P **P** **19 07 07.7 +0.5**
comp=Z,0.1nm,0.3s,baz=256,slow=10,SNR=12
PVCC Panska Ves 17.61 340 AMS AMS 19 15 40.0
comp=Z,2µm,13.1s
GNI Garni 17.65 64 LR LR 19 15 31.5
comp=Z,1µm,18.2s,baz=266,slow=42
GNI Garni 17.65 64⇑P **P** **19 07 11.5 +2.9**
GNI pmax pmax
comp=Z,60nm,1.7s
GNI Garni 17.65 64 P **P** **19 07 11.5 +2.9**
comp=Z,60nm,1.7s
ZEI Tsey 17.83 56 *e*P **P** **19 07 11.2 +0.5**
ZEI pmax pmax
comp=Z,53nm,1.8s
NKC Novy Kostel 18.01 336 *e*P **P** **19 07 12.1 -0.3**
NKC AMS AMS 19 15 50.0
comp=Z,2µm,18.1s
NKC Novy Kostel 18.01 336 *e*P **P** **19 07 12.1 -0.3**
NKC MLR MLR
comp=Z,2µm,18.1s
NKC Novy Kostel 18.01 336 *e*P **P** **19 07 12.1 -0.3**
comp=Z,2µm,18.1s
BRG Begiesshubel 18.09 339 *e*P **P** **19 07 12.8 -0.5**
comp=Z,5.4nm,0.7s
BRG *e* 19 12 52.5
comp=Z,2.9nm,0.8s
comp=N,2µm,12.7s
comp=E,1µm,15.5s
comp=Z,2µm,14.5s
BRG Berggiesshubel 18.09 339 *e*P **P** **19 07 12.8 -0.5**
BRG pmax pmax
comp=Z,5.0nm,0.7s
BRG MLR MLR
comp=N,2µm,12.7s
BRG MLR MLR
comp=E,1µm,15.5s
BRG MLR MLR
comp=Z,2µm,14.5s
BRG Berggiesshubel 18.09 339 *e*P **P** **19 07 12.8 -0.5**
comp=Z,2µm,14.5s
BFO Black Forest 18.20 325 *ce*P **P** **19 07 15.2 +0.7**
BFO Black Forest 18.20 325 *e*Pn **Pn** **19 07 13.9 -0.4**
comp=Z,6.1nm,0.8s
BFO Black Forest 18.20 325 *e*P **P** **19 07 15.2 +0.7**
BFO Black Forest 18.20 325 *e*Pn **Pn** **19 07 13.9 -0.4**
comp=Z,6.1nm,0.8s
GOF Gofitskoye 18.25 48⇑ *e*P **Pn** **19 07 12.9 -2.1**
GOF pmax pmax
comp=Z,36nm,1.0s
HINF Hinteralfeld 18.58 322 *e*P **P** **19 07 17.6 -1.1**
HINF pmax pmax
comp=Z,10.0nm,0.9s
HINF Hinteralfeld 18.58 322 *e*P **P** **19 07 17.6 -1.1**
comp=Z,10.0nm,0.9s
MOX Moxa 18.64 335 P **Pn** **19 07 21.1 +1.4**
MOX pmax pmax
comp=Z,15nm,1.1s
MOX Moxa 18.64 335 P **Pn** **19 07 21.1 +1.4**
comp=Z,15nm,1.1s
CLL Collm 18.76 338⇓ *i*P **Pn** **19 07 20.5 -0.6**
comp=Z,11nm,1.0s
CLL *i* 19 07 29.0
CLL *i* 19 07 32.6
CLL *i* 19 07 36.7
CLL *e*SS 19 12 00.0
CLL LmH 19 15 00.0
comp=Z,1µm,20.8s
CLL Lmax 19 15 00.0
CLL Collm 18.76 338⇓ *i*P **Pn** **19 07 20.5 -0.6**
CLL pmax pmax
comp=Z,11nm,1.0s
CLL Collm 18.76 338 *i* P **Pn** **19 07 20.5 -0.6**
comp=Z,11nm,1.0s
CDF Champ du Feu 18.76 324 *e*P **Pn** **19 07 21.5 +0.2**
CDF pmax pmax
comp=Z,35nm,1.6s
CDF Champ du Feu 18.76 324 *e*P **Pn** **19 07 21.5 +0.2**
comp=Z,35nm,1.6s
SMF Signal de Mont 19.54 315 *e*P **Pn** **19 07 31.8 +1.3**
SMF pmax pmax
comp=Z,4.0nm,0.8s
TAM Tamanrasset 19.70 239 *e*P **Pn** **19 07 33.8 +1.0**
TAM pmax pmax
comp=Z,9.0nm,1.0s
TAM Tamanrasset 19.70 239 *e*P **Pn** **19 07 33.8 +1.0**
comp=Z,9.0nm,1.0s
SUW Suwalki 19.75 359 *e*P **P** **19 07 29.6 -1.8**
SUW Suwalki 19.75 359 *e*P **P** **19 07 29.6 -1.8**
SUW Suwalki 19.75 359 *e*P **P** **19 07 29.6 -1.8**
WLF Walferdange 20.16 325 P Pn 19 07 37.7 -0.1
comp=Z,36nm,1.7s
WLF Walferdange 20.16 325 *e*P Pn 19 07 37.6 -0.2
WLF pmax pmax
comp=Z,40nm,0.9s
WLF Walferdange 20.16 325 *e*Pn Pn 19 07 37.5 -0.3
comp=Z,40nm,0.9s
WLF Walferdange 20.16 325 *e*Pn Pn 19 07 37.5 -0.3
comp=Z,40nm,0.9s
VSR Storozhevoye 20.27 29 *e*P Pn 19 07 38.0 -1.1
VSR *e*S Sn 19 11 25.1 -1.8
VSR pmax pmax
comp=Z,9.0nm,0.6s
VSR smax smax
comp=E,190nm,4.6s
VSR MLR MLR
comp=Z,580nm,12.0s
VSR Storozhevoye 20.27 29 *e*P Pn 19 07 38.0 -1.1
comp=Z,9.0nm,0.6s
VSR *e*S Sn 19 11 25.1 -1.8
comp=Z,580nm,12.0s
MICGM Minsk 20.43 7 *e* **P** **19 07 36.0 -2.8**
MNK Minsk 20.43 7 *e*P **P** **19 07 36.0 -2.8**
NACGM Naroch 20.74 5 *e* **P** **19 07 40.0 -2.1**
NACGM eLR LR 19 16 14.0
MEM Membach 20.88 327 P Pn 19 07 44.9 -1.4
comp=Z,12nm,1.3s
DOU Dourbes 21.20 324 P **P** **19 07 47.0 -0.2**
comp=Z,9.6nm,0.6s
LPSR Galich'ya Gora 21.28 26 *e*P **P** **19 07 49.0 +1.0**
LPSR *e*S Sn 19 11 47.9 -3.1
LPSR pmax pmax
comp=Z,10.0nm,0.9s
LPSR smax smax
comp=N,430nm,5.7s
LPSR Galich'ya Gora 21.28 26 *e*P **P** **19 07 49.0 +1.0**
comp=N,10.0nm,0.9s
LPSR *e*S Sn 19 11 47.9 -3.1
comp=N,430nm,5.7s
VRH Novokhopyorsk 21.33 32 *e*P **P** **19 07 49.5 +0.9**
VRH *e*S **S** **19 11 40.8 -3.9**
VRH pmax pmax
comp=Z,10.0nm,0.6s
VRH smax smax
comp=N,280nm,3.5s
VRH Novokhopyorsk 21.33 32 *e*P **P** **19 07 49.5 +0.9**
comp=N,10.0nm,0.6s
RGN Rugen 21.58 343 *e*P **P** **19 07 49.9 -1.2**
comp=N,78nm,1.0s
RGN Rugen 21.58 343 *e*P **P** **19 07 49.9 -1.2**
comp=N,78nm,1.0s
SNF Seneffe 21.62 325 P **P** **19 07 51.8 +0.2**
BSD Bornholm Skovb 21.75 346⇑ *i*P **P** **19 07 51.6 -1.4**
comp=N,13nm,0.7s
BSD Bornholm Skovb 21.75 346⇑ *i*P **P** **19 07 51.6 -1.4**
BSD pmax pmax
comp=Z,13nm,0.7s
BSD Bornholm Skovb 21.75 346 *i* P **P** **19 07 51.6 -1.4**
comp=Z,13nm,0.7s
OBN Obninsk 22.66 19 P **P** **19 08 02.2 -0.5**
comp=Z,9.5nm,0.4s,baz=235,slow=4.2,SNR=12
OBN LR LR 19 17 29.4
comp=Z,876nm,21.0s,baz=222,slow=38
OBN Obninsk 22.66 19⇓ *i*P **P** **19 08 03.3 +0.6**
OBN *e* 19 08 29.4
OBN *i* S **S** **19 12 13.6 +3.8**
OBN pmax pmax
comp=Z,91nm,1.7s
OBN MLR MLR
comp=Z,857nm,16.0s
OBN Obninsk 22.66 19 *e*P **P** **19 08 02.5 -0.2**
comp=Z,40nm,0.9s
OBN Obninsk 22.66 19 *e*P **P** **19 08 02.5 -0.2**
comp=Z,40nm,0.9s
ESDC Sonseca Array 22.81 292 P **P** **19 08 03.5 -1.1**
comp=Z,0.9nm,0.6s,baz=90,slow=11,SNR=7.1
ESDC LR LR 19 18 45.4
comp=Z,245nm,19.5s,baz=115,slow=42
FLN La Foliniere 23.13 316 *e*P **P** **19 08 06.9 -0.8**
FLN pmax pmax
comp=Z,9.0nm,0.6s
FLN La Foliniere 23.13 316 *e*P **P** **19 08 06.9 -0.8**
comp=Z,9.0nm,0.6s
MOS Moscow 23.50 20 *e*P **P** **19 08 10.9 -0.4**
MOS *e* 19 08 37.1
MOS *e* 19 08 55.7
MOS *e* 19 12 20.5
MOS pmax pmax
comp=Z,71nm,0.9s
MOS MLR MLR
comp=N,800nm,15.0s
MOS MLR MLR
comp=Z,900nm,15.0s
MOS Moscow 23.50 20 *e*P **P** **19 08 10.9 -0.4**
comp=Z,71nm,0.9s
VSU Vasula 24.28 4⇑ *e*P **P** **19 08 18.9 +0.2**
VSU pmax pmax
comp=Z,25nm,1.1s
VSU Vasula 24.28 4 *e*P **P** **19 08 18.9 +0.2**
comp=Z,25nm,1.1s
PUL Pulkovo 25.87 8⇑ *e*P **P** **19 08 34.7 +1.7**
PUL pmax pmax
comp=Z,42nm,0.8s
PUL Pulkovo 25.87 8 *e*P **P** **19 08 34.7 +1.7**
comp=Z,42nm,0.8s
HFS Hagfors 26.72 349 P **P** **19 08 39.5 -1.3**
comp=Z,3.6nm,0.5s,baz=150,slow=12,SNR=21
FINES FINESS Array B 27.23 2 P **P** **19 08 43.2 -2.2**
comp=Z,2.1nm,0.7s,baz=160,slow=11,SNR=7.0
FINES ScP **ScP** **19 15 45.1 +0.7**
comp=Z,2.5nm,0.8s,baz=122,slow=2.5,SNR=3.4
FINES LR LR 19 20 56.1
comp=Z,1µm,18.4s,baz=186,slow=40
FINES FINESS Array B 27.23 2 *ce*P **P** **19 08 44.7 -0.7**
FINES pmax pmax
comp=Z,2.0nm,0.7s
FINES FINESS Array B 27.23 2 *e*P **P** **19 08 44.7 -0.7**
comp=Z,2.0nm,0.7s
FINES ScP **ScP** **19 15 45.2 +0.7**
GEYT Alibeck 27.85 72 P **P** **19 08 51.3 0.0**
comp=Z,0.9nm,0.5s,baz=90,slow=15,SNR=3.5
NB2 NORSAR Subarra 28.00 347 P **P** **19 08 51.1 -1.3**
comp=Z,3.6nm,0.7s,baz=156,slow=9.3
NB2 NORSAR Subarra 28.00 347 P **P** **19 08 55.8 +3.5**
NB2 pmax pmax
comp=Z,1.0nm,0.5s
NB2 NORSAR Subarra 28.00 347 P **P** **19 08 51.1 -1.3**
comp=Z,3.6nm,0.7s,SNR=9.2
NOA NORSAR Array B 28.00 347 P **P** **19 08 51.0 -1.3**
comp=Z,0.9nm,0.6s,baz=269,slow=4.1,SNR=12
NOA LR LR 19 22 36.5
comp=Z,661nm,18.1s,baz=170,slow=42
EKA Eskdalemuir Ar 28.16 327 P **P** **19 08 52.1 -1.6**
comp=Z,6.4nm,0.6s,baz=129,slow=8.7,SNR=21
KLMR Klimovskoe 28.47 16 P **P** **19 08 56.3 -0.2**
KLMR pmax pmax
comp=Z,8.0nm,0.9s

KLMR	**Klimovskoe**	**28.47**	**16**	P	**P**	**19 08 56.3**	**-0.2**
	comp=Z,8.0nm,0.9s						
ATD	**Arta Tunnel**	**28.52**	**138**	LR	LR	19 20 43.9	
	comp=Z,343nm,18.1s,baz=342,slow=37						
TORD	**Torodi Ar. Bea**	**29.08**	**229**	P	**P**	**19 09 01.4**	**-0.9**
	comp=Z,2.2nm,0.7s,baz=39,slow=8.6,SNR=12						
TORD				LR	LR	19 23 13.4	
	comp=Z,450nm,18.1s,baz=20,slow=42						
AKTK	**Aktyubinsk**	**29.66**	**47**	P	**P**	**19 09 06.1**	**-1.0**
AKTO	**Aktyubinsk**	**29.66**	**47**	P	**P**	**19 09 06.1**	**-1.0**
	comp=Z,3.8nm,0.6s,baz=251,slow=9.8,SNR=13						
ABKAR	**Akbulak array**	**30.48**	**50**	*e*P	**P**	**19 09 14.5**	**+0.1**
	comp=Z,4.2nm,0.8s						
ABKAR	**Akbulak array**	**30.48**	**50**	*e*P	**P**	**19 09 14.5**	**+0.1**
	comp=Z,4.2nm,0.8s						
WSAR	**Wadi Sarin**	**32.28**	**101**	LR	LR	19 25 47.2	
	comp=Z,109nm,20.2s,baz=322,slow=42						
ARU	**Arti**	**32.42**	**36***c*	*i*P	**P**	**19 09 31.5**	**+0.1**
ARU				PPP	PPP	19 10 47.0	
ARU						19 12 13.7	
ARU				S	**S**	**19 14 46.0**	**+1.1**
ARU				SS	**SnSn**	**19 16 36.1**	**-1.8**
ARU				pmax	pmax		
	comp=Z,31nm,1.7s						
ARU	**Arti**	**32.42**	**36**	*e*P	**P**	**19 09 31.4**	**+0.1**
	comp=Z,35nm,1.4s						
ARU	**Arti**	**32.42**	**36**	*e*P	**P**	**19 09 31.4**	**+0.1**
	comp=Z,35nm,1.4s						
SOKR	**Solikamsk**	**33.28**	**30**⇑	*i*P	**P**	**19 09 40.2**	**+1.4**
SOKR				pmax	pmax		
	comp=Z,16nm,0.9s						
SOKR				MLR	MLR		
	comp=Z,488nm,18.0s						
SVE	**Sverdlovsk**	**33.62**	**36**	*e*P	**P**	**19 09 41.7**	**-0.2**
SVE				pmax	pmax		
	comp=Z,22nm,0.9s						
SVE	**Sverdlovsk**	**33.62**	**36**	*e*P	**P**	**19 09 41.7**	**-0.2**
	comp=Z,22nm,0.9s						
LVZ	**Lovozero**	**34.25**	**7**	⇓P	**P**	**19 09 48.2**	**+1.0**
LVZ				pmax	pmax		
	comp=Z,65nm,1.9s						
LVZ	**Lovozero**	**34.25**	**7**	P	**P**	**19 09 48.2**	**+1.0**
	comp=Z,65nm,1.9s						
ARCES	**ARCESS Array B**	**35.33**	**1**	P	**P**	**19 09 54.8**	**-1.8**
	comp=Z,2.5nm,0.6s,baz=182,slow=11,SNR=13						
ARCES				LR	LR	19 25 37.7	
	comp=Z,1μm,20.7s,baz=187,slow=38						
KKAR	**Karatay Array**	**37.09**	**62**	*e*P	**P**	**19 10 12.5**	**+0.6**
KKAR				pmax	pmax		
	comp=Z,7.0nm,0.7s						
KKAR	**Karatay Array**	**37.09**	**62**	*e*P	**P**	**19 10 12.4**	**+0.6**
	comp=Z,6.8nm,0.7s						
KKAR	**Karatay Array**	**37.09**	**62**	*e*P	**P**	**19 10 12.4**	**+0.6**
	comp=Z,6.9nm,0.7s						
BRVK	**Borovoye**	**37.70**	**46**⇑	*i*P	**P**	**19 10 17.8**	**+0.9**
BRVK				pmax	pmax		
	comp=Z,15nm,2.5s						
BRVK	**Borovoye**	**37.70**	**46**	*e*P	**P**	**19 10 17.1**	**+0.2**
	comp=Z,3.6nm,0.8s						
BRVK	**Borovoye**	**37.70**	**46**	*e*P	**P**	**19 10 17.1**	**+0.2**
	comp=Z,3.6nm,0.8s						
BVAR	**Borovoye Array**	**37.75**	**46**	P	**P**	**19 10 16.3**	**-1.1**
	comp=Z,1.4nm,0.7s,baz=275,slow=6.7,SNR=6.3						
DBIC	**Dimbokro**	**38.16**	**231**	P	**P**	**19 10 20.4**	**-0.8**
	comp=Z,2.7nm,0.6s,baz=18,slow=9.7,SNR=4.8						
DBIC				LR	LR	19 27 12.2	
	comp=Z,489nm,21.1s,baz=16,slow=38						
EKS2	**Erkin-Say**	**39.51**	**63**	*e*P	**P**	**19 10 33.2**	**+0.8**
EKS2				pmax	pmax		
	comp=Z,13nm,1.2s						
EKS2	**Erkin-Say**	**39.51**	**63**	*e*P	**P**	**19 10 33.2**	**+0.8**
	comp=Z,13nm,1.2s						
EKS2	**Erkin-Say**	**39.51**	**63**	*e*P	**P**	**19 10 33.2**	**+0.8**
	comp=Z,13nm,1.2s						
FRU	**Bishkek**	**40.11**	**62**	*e*P	**P**	**19 10 38.0**	**+0.7**
FRU				pmax	pmax		
	comp=Z,70nm,1.8s						
FRU	**Bishkek**	**40.11**	**62**	*e*P	**P**	**19 10 38.0**	**+0.7**
	comp=Z,70nm,1.8s						
TKM2	**Tokmak 2**	**40.82**	**62**	*e*P	**P**	**19 10 44.3**	**+0.9**
TKM2				pmax	pmax		
	comp=Z,7.0nm,0.9s						
TKM2	**Tokmak 2**	**40.82**	**62**	*e*P	**P**	**19 10 44.3**	**+0.9**
	comp=Z,7.1nm,0.9s						
TKM2	**Tokmak 2**	**40.82**	**62**	*e*P	**P**	**19 10 44.3**	**+0.9**
	comp=Z,7.1nm,0.9s						
KURBB	**Kurchatov Arra**	**42.53**	**50**	P	**P**	**19 10 56.9**	**-0.2**
	comp=Z,4.2nm,0.7s,baz=270,slow=8.5,SNR=31						
KURBB				PP	**PP**	**19 12 41.6**	**+6.0**
	comp=Z,1.5nm,1.0s,baz=273,slow=11,SNR=4.0						
KURK	**Kurchatov**	**42.59**	**50**	P	**P**	**19 10 56.9**	**-0.6**
KURK						19 12 41.6	
KURK				pmax	pmax		
	comp=Z,4.0nm,0.7s						
KURK				pmax	pmax		
	comp=Z,2.0nm,1.0s						
KURK	**Kurchatov**	**42.59**	**50**	*e*P	**P**	**19 10 56.7**	**-0.8**
	comp=Z,24nm,1.1s						
KURK	**Kurchatov**	**42.59**	**50**	*e*P	**P**	**19 10 56.7**	**-0.8**
	comp=Z,24nm,1.1s						
MKAR	**Makanchi Array**	**45.18**	**56**	P	**P**	**19 11 18.7**	**+0.3**
	comp=Z,9.1nm,0.7s,baz=275,slow=7.0,SNR=29						
NVS	**Novosibirsk**	**45.49**	**44**⇓	*i*P	**P**	**19 11 21.5**	**+0.8**
NVS				pmax	pmax		
	comp=Z,17nm,1.3s						
NVS				pmax	pmax		
	comp=N,3.0nm,1.2s						
NVS				pmax	pmax		
	comp=E,6.0nm,1.2s						
NVS	**Novosibirsk**	**45.49**	**44**	*i*P	**P**	**19 11 21.5**	**+0.8**
	comp=E,17nm,1.3s						
ZALV	**Zalesovo Beam**	**46.41**	**46**	P	**P**	**19 11 27.1**	**-0.9**
	comp=E,2.6nm,0.5s,baz=273,slow=8.6,SNR=11						
ZALV				LR	LR	19 34 08.8	
	comp=E,198nm,19.8s,baz=252,slow=40						
NRIK	**Noril'sk**	**49.15**	**25**	P	**P**	**19 11 48.5**	**-0.5**
	comp=E,2.2nm,0.4s,baz=254,slow=8.5,SNR=5.2						
NRIK				LR	LR	19 35 08.4	
	comp=E,357nm,19.2s,baz=277,slow=39						
PYUN	**Piuthan**	**50.38**	**80**	*e*P	**P**	**19 11 59.9**	**+0.7**
	comp=E,43nm,0.6s						
KRAR	**Krasnoyarsk**	**50.94**	**42***d*	*i*P	**P**	**19 12 04.7**	**+1.9**
KRAR				*e*PP	**pP**	**19 12 07.6**	**-0.7**
KRAR	**Krasnoyarsk**	**50.94**	**42**	*i*P	**P**	**19 12 04.7**	**+1.9**
KOLN	**Koldanda**	**51.01**	**80**	*e*P	**P**	**19 12 04.6**	**+0.6**
	comp=E,11nm,0.6s						
GKN	**Gorkha**	**51.76**	**79**	*e*P	**P**	**19 12 09.3**	**-0.2**
	comp=E,30nm,0.7s						
KKN	**Kakani**	**52.37**	**79**	*e*P	**P**	**19 12 14.1**	**0.0**
	comp=E,30nm,0.6s						
PKIN	**Phulchoki**	**52.55**	**80**	*e*P	**P**	**19 12 15.8**	**+0.3**
	comp=E,12nm,0.6s						
GUN	**Gumba**	**52.81**	**79**	*e*P	**P**	**19 12 17.7**	**+0.1**
	comp=E,21nm,0.5s						
LSA	**Lhasa**	**56.35**	**75**	*e*P	**P**	**19 12 44.3**	**+0.9**
LSA				pmax	pmax		
	comp=Z,9.0nm,1.0s						
LSA	**Lhasa**	**56.35**	**75**	*e*P	**P**	**19 12 44.3**	**+0.9**
	comp=Z,9.4nm,1.0s						
LSA	**Lhasa**	**56.35**	**75**	*e*P	**P**	**19 12 44.3**	**+0.9**
	comp=Z,9.4nm,1.0s						
MOY	**Mondy**	**56.42**	**47**	*e*P	**P**	**19 12 46.2**	**+3.0**
TLY	**Talaya**	**58.01**	**46**	*e*P	**P**	**19 12 57.7**	**+3.4**
TLY				pmax	pmax		
	comp=Z,15nm,1.7s						
TLY				MLR	MLR		
	comp=Z,139nm,18.0s						
ZAK	**Zakamensk**	**58.15**	**48**	*e*P	**P**	**19 12 55.2**	**-0.2**
ZAK				pmax	pmax		
	comp=Z,7.0nm,1.5s						
GTA	**Gaotai**	**59.35**	**61**	*e*P	**P**	**19 13 04.8**	**+0.9**
GTA				pP	pP	19 13 14.8	+5.3
GTA				sP	sP	19 13 19.0	+7.3
GTA				S	S	19 22 35.0	+83
GTA				sS	ScS	19 22 53.0	-0.5
FRB	**Frobisher Bay**	**60.88**	**329**	LR	LR	19 41 09.5	
	comp=Z,445nm,20.6s,baz=62,slow=38						
SONM	**Songino Array**	**60.90**	**50**	P	**P**	**19 13 14.4**	**0.0**
	comp=Z,4.5nm,1.0s,baz=289,slow=7.0,SNR=18						
SONM				LR	LR	19 43 27.5	
	comp=Z,340nm,19.5s,baz=288,slow=40						
ULN	**Ulaanbaatar**	**61.30**	**50**⇓	*i*P	**P**	**19 13 18.4**	**+1.2**
ULN				pmax	pmax		
	comp=Z,14nm,1.7s						
ULN	**Ulaanbaatar**	**61.30**	**50**	*e*P	**P**	**19 13 16.7**	**-0.5**
	comp=Z,14nm,1.4s						
ULN	**Ulaanbaatar**	**61.30**	**50**	*e*P	**P**	**19 13 16.7**	**-0.5**
	comp=Z,14nm,1.4s						
BOD	**Bodaibo**	**61.83**	**37**	*e*P	**P**	**19 13 19.3**	**-1.1**
BOD				pmax	pmax		
	comp=Z,5.0nm,1.0s						
TIXI	**Tiksi**	**62.38**	**20**⇑	*i*P	**P**	**19 13 25.8**	**+2.0**
TIXI				pmax	pmax		
	comp=Z,6.0nm,2.5s						
TIXI	**Tiksi**	**62.38**	**20**	*e*P	**P**	**19 13 23.9**	**0.0**
	comp=Z,3.3nm,0.9s						
TIXI	**Tiksi**	**62.38**	**20**	*e*P	**P**	**19 13 23.9**	**0.0**
	comp=Z,3.3nm,0.9s						
BOSA	**Boshof**	**62.55**	**179**	LR	LR	19 42 43.9	
	comp=Z,603nm,18.2s,baz=358,slow=38						
SCHQ	**Schefferville**	**63.16**	**320**	P	**P**	**19 13 29.4**	**+0.1**
	comp=Z,3.4nm,0.7s,baz=25,slow=6.5,SNR=4.5						
SCHQ				LR	LR	19 40 18.6	
	comp=Z,276nm,21.5s,baz=82,slow=36						
CMAR	**Chiang Mai Arr**	**67.77**	**82**	P	**P**	**19 13 58.6**	**-1.1**
	comp=Z,1.5nm,0.8s,baz=299,slow=6.9,SNR=10						
CMAR				LR	LR	19 49 45.4	
	comp=Z,90nm,20.5s,baz=290,slow=41						
ENH	**Enshi**	**70.40**	**66**	*e*P	**P**	**19 14 16.8**	**+0.8**
	comp=Z,5.9nm,0.8s						
ENH	**Enshi**	**70.40**	**66**	*e*P	**P**	**19 14 16.8**	**+0.8**
	comp=Z,5.9nm,0.8s						
BILL	**Bilibino**	**74.19**	**14**⇓	*e*P	**P**	**19 14 40.4**	**+2.5**
BILL				*e*		19 17 22.5	
BILL				*i* S	SKSac	19 24 59.9	+16
BILL				pmax	pmax		
	comp=Z,6.0nm,1.2s						
BILL				MLR	MLR		
	comp=Z,185nm,19.0s						
SEY	**Seymchan**	**74.80**	**22***d*	*i*P	**P**	**19 14 41.8**	**+0.4**
SADO	**Sadowa**	**74.87**	**314**	LR	LR	19 47 09.6	
	comp=Z,98nm,19.8s,baz=186,slow=35						
KLR	**Kul'dur**	**75.16**	**40**	LR	LR	19 51 41.7	
	comp=Z,73nm,20.4s,baz=313,slow=39						
KLR	**Kul'dur**	**75.16**	**40**⇑	*i*P	**P**	**19 14 45.1**	**+1.3**
KLR				*i* PP	**sP**	**19 14 51.4**	**-0.2**
INK	**Inuvik**	**76.34**	**352**	P	**P**	**19 14 49.3**	**-0.9**
	comp=Z,1.9nm,0.9s,baz=19,slow=3.8,SNR=3.7						
MA2	**Magadan**	**76.75**	**25**	LR	LR	19 53 10.3	
	comp=Z,232nm,18.1s,baz=338,slow=39						
MA2	**Magadan**	**76.75**	**25**⇑	*i*P	**P**	**19 14 56.1**	**+3.4**
YKA	**Yellowknife Ar**	**77.95**	**342**	P	**P**	**19 14 59.6**	**+0.3**
	comp=Z,0.5nm,0.6s,baz=30,slow=5.8,SNR=9.0						
YKA				LR	LR	19 52 11.6	
	comp=Z,20nm,18.4s,baz=0.0,slow=38						
USRK	**Ussuriysk Ar.**	**78.24**	**44**	P	**P**	**19 15 00.6**	**-0.8**
	comp=Z,3.2nm,0.5s,baz=310,slow=4.8,SNR=12						
KSAR	**Wonju Array Be**	**79.67**	**52**	P	**P**	**19 15 09.1**	**-0.2**
KSAR	**Wonju Array Be**	**79.67**	**52**	P	**P**	**19 15 09.1**	**-0.2**
KSAR	**Wonju Array Be**	**79.67**	**52**	P	**P**	**19 15 09.1**	**-0.2**
KSRS	**Korea Array**	**79.69**	**52**	P	**P**	**19 15 09.1**	**-0.3**
	comp=Z,3.6nm,0.6s,baz=310,slow=4.5,SNR=14						
KSRS				LR	LR	19 55 31.6	
	comp=Z,214nm,18.4s,baz=306,slow=40						
COWI	**Conover**	**79.77**	**319**	*e*P	**P**	**19 15 10.9**	**+1.2**
	comp=Z,7.1nm,0.9s						
COWI	**Conover**	**79.77**	**319**	*e*P	**P**	**19 15 10.9**	**+1.2**
	comp=Z,7.1nm,0.9s						
FFC	**Flin Flon**	**79.90**	**331**	*e*P	**P**	**19 15 11.4**	**+1.2**
FFC				pmax	pmax		
	comp=Z,2.0nm,0.8s						
FFC	**Flin Flon**	**79.90**	**331**	*e*P	**P**	**19 15 11.4**	**+1.2**
	comp=Z,2.5nm,0.8s						
FFC	**Flin Flon**	**79.90**	**331**	*e*P	**P**	**19 15 11.4**	**+1.2**
	comp=Z,2.5nm,0.8s						
ULM	**Lac du Bonnet**	**80.43**	**326**	LR	LR	19 52 06.3	
	comp=Z,241nm,20.8s,baz=44,slow=37						
ILAR	**Eielson Array**	**81.02**	**356**	P	**P**	**19 15 16.0**	**-0.1**
	comp=Z,0.7nm,0.8s,baz=19,slow=2.7,SNR=4.7						
ILAR				LR	LR	19 53 49.1	
	comp=Z,133nm,20.6s,baz=356,slow=38						
ILAR	**Eielson Array**	**81.02**	**356**	P	**P**	**19 15 16.0**	**-0.1**
ILAR	**Eielson Array**	**81.02**	**356**	P	**P**	**19 15 16.0**	**-0.1**
BPAW	**Bear Paw Mtn.**	**81.88**	**358**	*e*P	**P**	**19 15 20.4**	**-0.2**
	comp=Z,0.9nm,0.9s						
BPAW	**Bear Paw Mtn.**	**81.88**	**358**	*e*P	**P**	**19 15 20.4**	**-0.2**
	comp=Z,0.9nm,0.9s						
PETK	**Petropavlovsk-**	**84.19**	**26**	LR	LR	19 59 56.4	
	comp=Z,82nm,18.2s,baz=315,slow=41						
ECSD	**EROS Data Cent**	**85.30**	**321**	*e*P	**P**	**19 15 39.5**	**+0.9**
	comp=Z,3.7nm,0.8s						
ECSD	**EROS Data Cent**	**85.30**	**321**	*e*P	**P**	**19 15 39.5**	**+0.9**
	comp=Z,3.7nm,0.8s						
MAJO	**Matsushiro**	**86.73**	**47**	*i*P	**P**	**19 15 48.1**	**+2.3**
MJAR	**Matsushiro Arr**	**86.73**	**47**	P	**P**	**19 15 47.0**	**+1.2**
	comp=Z,1.7nm,0.9s,baz=294,slow=6.4,SNR=5.6						
MJAR	**Matsushiro Arr**	**86.73**	**47**	P	**P**	**19 15 47.0**	**+1.2**
MJAR	**Matsushiro Arr**	**86.73**	**47**	P	**P**	**19 15 47.0**	**+1.2**
NEW	**Newport**	**90.73**	**335**	LR	LR	20 00 28.3	
	comp=Z,147nm,18.7s,baz=16,slow=38						
PDAR	**Pinedale Array**	**92.28**	**328**	LR	LR	20 00 04.4	
	comp=Z,205nm,19.8s,baz=31,slow=37						
CPUP	**Villa Florida**	**97.64**	**243**	LR	LR	20 01 14.8	
	comp=Z,107nm,20.7s,baz=60,slow=36						
NVAR	**Mina Array Bea**	**99.59**	**331**	LR	LR	20 05 18.2	
	comp=Z,242nm,18.5s,baz=57,slow=38						
WRA	**Warramunga Arr**	**117.58**	**96**	PKP	**PKPdf**	**19 21 46.8**	**-1.2**
	comp=Z,0.4nm,0.7s,baz=312,slow=1.9,SNR=4.0						
ASAR	**Alice Springs**	**118.97**	**100**	PKP	**PKPdf**	**19 21 49.9**	**-0.7**
	comp=Z,0.4nm,0.7s,baz=296,slow=0.7,SNR=6.2						
STKA	**Stephens Creek**	**128.52**	**106**	PKP	**PKPdf**	**19 22 08.8**	**+0.2**
	comp=Z,0.9nm,0.7s,baz=331,slow=6.7,SNR=3.4						

NIED ***19*** *19:03:00, 37°.70N×143°.90E, h5km, Mw3.6 Best double couple: M0=2.89000×10^14 NP1:φs=3.00000°, δ=20.00000°, λ=-147.00000°. NP2:φs=242.00000°, δ=79.00000°, λ=-73.00000°.*

JMA 19 19:03:30.1±0.4, 37°.65N×143°.85E, h55km, M3.8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.13**	**293**	P	Pn	19 04 04.4	+1.1
JIO				*e*S	Sn	19 04 30.1	+1.6
JMK	**Ichinoseki**	**2.44**	**303**	S	Sn	19 04 37.5	+1.3
JOM	**Ohasama**	**2.71**	**313**	*e*S	Sn	19 04 43.6	+0.9
JFT	**Otama**	**2.79**	**268**	P	Pn	19 04 14.6	+2.2
JFT				S	Sn	19 04 47.4	+2.5
JYK	**Kaneyama**	**3.02**	**296**	P	Pn	19 04 16.9	+1.4
JYK				*e*S	Sn	19 04 53.3	+2.8
JANG	**Nango**	**3.27**	**327**	S	Sn	19 04 56.8	+0.3
BSO1	**Boso 1**	**3.79**	**219**	P	Pn	19 04 26.1	+0.7
BSO1				S	Sn	19 05 10.3	+1.8
JRY	**Ryogami san**	**4.29**	**249**	P	Pn	19 04 34.1	+1.2
JRY				S	Sn	19 05 21.5	-0.2
JOD2	**Odawara 2**	**4.52**	**240**	P	Pn	19 04 37.3	+1.3
MAT	**Matsushiro**	**4.64**	**258**	P	Pn	19 04 41.1	+3.4
MAT				*e*S	Sn	19 05 32.6	+2.3
JKB	**Kayabe**	**4.76**	**334**	P	Pn	19 04 40.9	+1.7
JKB				*e*S	Sn	19 05 32.0	-1.0
JCH	**Churui**	**4.97**	**356**	P	Pn	19 04 41.9	-0.3
JCH				*e*S	Sn	19 05 34.8	-3.5
JHJ2	**Mitsune**	**5.60**	**217**	*e*S	Sn	19 05 50.8	-3.0
JTKR	**Abashiri--Toko**	**6.32**	**0**	P	Pn	19 05 00.1	-0.4
JTKR				S	Sn	19 06 05.7	-5.5

MAN 19 19:05:31, 9°.22N×125°.84E, h51km, mb4.1, ML2.9, MS2.6, 2C, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BIPH	**Bislig**	**1.15**	**153**⇑	*e*P	Pn	19 05 51.4	+0.6
BIPH				*i* S	Sn	19 06 05.6	+0.2
CGP	**Cagayan de Oro**	**1.36**	**236**⇑	*e*P	Pn	19 05 55.2	+1.5
CGP				*e*S	Sn	19 06 13.1	+2.4
BUKP	**Musuan**	**1.54**	**210**	*e*P	Pn	19 05 57.7	+1.6
BUKP				*e*S	Sn	19 06 16.9	+1.9
MATI	**Mati**	**2.29**	**170**	*e*P	Pn	19 06 08.2	+1.7
MATI				*e*S	Sn	19 06 35.8	+2.3

IDC ***19*** *19:08:37.3±0.9, 34°.24N×23°.75E, h0km, mb4.1/12, mb1 4.0/19, mb1mx3.9/48, mbtmp3.9/19, ML3.4/7, Error ellipse: s-maj=20.3km s-min=14.8km az=157.0*
ISCJB ***19*** *19:08:39.9±0.7, 34°.04N±0°.04×23°.79E±0°.04, h37km±6km, mb3.9/13, Error ellipse: s-maj=8.0km s-min=4.1km az=27.8*
CSEM ***19*** *19:08:40.4±0.3, 34°.10N×23°.71E, h20km, ML3.2, Error ellipse: s-maj=7.2km s-min=4.1km az=28.0*

NEIC ***19*** *19:08:40.9±2.3, 34°.19N×23°.78E, h24km±17km, mb4.1/1, ML3.5(THE), Error ellipse: s-maj=11.4km s-min=6.7km az=186.0*
ATH ***19*** *19:08:46.4, 34°.64N×23°.86E, h32km±1km, ML3.2/7, Error ellipse: s-maj=2.1km s-min=1.3km az=204.0*
THE ***19*** *19:08:47.8, 34°.64N×23°.83E, h16km, ML3.5/6, Error ellipse: s-maj=1.2km s-min=0.7km az=202.0*
GII ***19*** *19:08:49.4±0.0, 34°.34N×24°.84E, h1km, mb4.4/1, MD4.3/1*
ISK ***19*** *19:08:50.9, 34°.83N×24°.67E, h5km, ML3.6*

ISC 19 19:08:41.4±0.7, 34°.20N±0°.05×23°.76E±0°.04, h31km±4km, n201, σ1§52/206, mb4.0/13, Crete

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GVD	**Gavdhos**	**0.70**	**23**	P	**Pb**	**19 08 53.9**	**-1.3**
GVD				S	Sb	19 08 59.1	-5.4
GVD	**Gavdhos**	**0.70**	**23**	P	**Pb**	**19 08 53.9**	**-1.3**
GVD	**Gavdhos**	**0.70**	**23**	P	**Pb**	**19 08 53.8**	**-1.3**
GVD				AML	AML	19 09 10.0	
	comp=N,19168μm,0.5s						
GVD				AML	AML	19 09 13.4	
	comp=E,13194μm,0.6s						
SIVA	**Sivas**	**1.19**	**46**	P	**Pb**	**19 09 04.2**	**+0.8**
SIVA				S	**Sn**	**19 09 17.1**	**0.0**
SIVA	**Sivas**	**1.19**	**46**	P	**Pb**	**19 09 04.1**	**+0.7**
SIVA				S	**Sn**	**19 09 17.1**	**0.0**
SIVA	**Sivas**	**1.19**	**46**	P	**Pb**	**19 09 04.1**	**+0.7**
SIVA				S	**Sn**	**19 09 14.7**	**-2.4**
SIVA				AML	AML	19 09 27.5	
	comp=E,8599μm,0.6s						
SIVA				AML	AML	19 09 28.1	
	comp=N,10200μm,0.7s						
VAM	**Vamos**	**1.26**	**16**	P	**Pn**	**19 09 03.4**	**+0.4**
VAM				S	**Sn**	**19 09 15.5**	**-3.4**
VAM	**Vamos**	**1.26**	**16**	P	**Pn**	**19 09 03.4**	**+0.4**
VAM				S	Sn	19 09 14.3	-4.6
IMMV	**Iera Moni Meta**	**1.27**	**8**	P	**Pn**	**19 09 02.9**	**-0.3**
IMMV				S	Sn	19 09 14.9	-4.3
IMMV	**Iera Moni Meta**	**1.27**	**8**	P	**Pn**	**19 09 02.9**	**-0.3**
IMMV				S	Sn	19 09 14.1	-5.1
IMMV	**Iera Moni Meta**	**1.27**	**8**	P	**Pn**	**19 09 02.2**	**-1.0**
IMMV				S	Sn	19 09 14.1	-5.1
IDI	**Anoyia**	**1.43**	**40**	Pn	**Pn**	**19 09 06.1**	**+0.7**
	comp=N,10nm,0.3s,baz=248,slow=7.2,SNR=22						
IDI	**Anoyia**	**1.43**	**40**	P	**Pb**	**19 09 07.5**	**-0.1**
IDI				S	**Sn**	**19 09 22.5**	**-0.7**
IDI	**Anoyia**	**1.43**	**40**	P	**Pn**	**19 09 07.0**	**+1.7**
IDI				S	**Sn**	**19 09 22.5**	**-0.7**
IDI	**Anoyia**	**1.43**	**40**	P	**Pn**	**19 09 07.0**	**+1.7**
IDI				S	**Sn**	**19 09 22.3**	**-0.9**
IDI				AML	AML	19 09 35.5	
	comp=N,990μm,1.2s						
IDI				AML	AML	19 09 38.3	
	comp=E,1501μm,0.6s						
IDI	**Anoyia**	**1.43**	**40**	Pn	**Pn**	**19 09 06.1**	**+0.7**
IDI				*e*Pn	**Pn**	**19 09 07.1**	**+1.7**
ANKY	**Antikythira Is**	**1.71**	**347**	P	**Pn**	**19 09 10.4**	**+1.3**
ANKY				S	**Sn**	**19 09 28.1**	**-1.8**
ANKY	**Antikythira Is**	**1.71**	**347**	P	**Pn**	**19 09 10.4**	**+1.3**
ANKY				S	**Sn**	**19 09 28.1**	**-1.8**
ANKY	**Antikythira Is**	**1.71**	**347**	P	**Pn**	**19 09 10.4**	**+1.3**
ANKY				AML	AML	19 09 44.9	
	comp=N,1104μm,1.2s						
ANKY				AML	AML	19 09 57.5	
	comp=E,2321μm,0.9s						
LAST	**Lasithi**	**1.71**	**55**	P	**Pb**	**19 09 12.2**	**-0.1**
LAST	**Lasithi**	**1.71**	**55**	P	**Pn**	**19 09 11.3**	**+2.1**
LAST	**Lasithi**	**1.71**	**55**	P	**Pn**	**19 09 11.3**	**+2.1**
NPS	**Neapolis**	**1.86**	**55**	P	**Pb**	**19 09 14.6**	**-0.2**
NPS	**Neapolis**	**1.86**	**55**	P	**Pb**	**19 09 14.6**	**-0.2**
NPS				S	**Sn**	**19 09 35.0**	**+1.4**
NPS	**Neapolis**	**1.86**	**55**	P	**Pb**	**19 09 15.1**	**+0.3**
NPS				S	**Sn**	**19 09 35.0**	**+1.4**
NPS				AML	AML	19 09 55.1	
	comp=E,1079μm,1.0s						
NPS				AML	AML	19 09 55.5	
	comp=N,819μm,1.0s						
KYTH	**Kithira**	**2.16**	**344**	P	**Pn**	**19 09 17.2**	**+1.8**
KYTH	**Kithira**	**2.16**	**344**	P	**Pn**	**19 09 17.2**	**+1.8**
KYTH	**Kithira**	**2.16**	**344**	P	**Pn**	**19 09 17.8**	**+2.4**
ZKR	**Zakros**	**2.22**	**65**	P	**Pb**	**19 09 19.8**	**-1.1**
ZKR	**Zakros**	**2.22**	**65**	P	**Pb**	**19 09 19.6**	**-1.3**
ZKR	**Zakros**	**2.22**	**65**	P	**Pb**	**19 09 19.6**	**-1.3**
THR6	**Thira Island,**	**2.54**	**31**	P	**Pn**	**19 09 22.4**	**+1.9**
THR6	**Thira Island,**	**2.54**	**31**	P	**Pn**	**19 09 22.4**	**+1.9**
MHLO	**Agia Marina, M**	**2.54**	**12**	P	**Pn**	**19 09 21.8**	**+1.2**
MHLO	**Agia Marina, M**	**2.54**	**12**	P	**Pn**	**19 09 22.1**	**+1.5**
MHLO	**Agia Marina, M**	**2.54**	**12**	P	**P

SMG	Samos	4.30	35	P	Pn	19 09 46.7 +1.9
DSF	Desfina	4.32	347	P	Pn	19 09 46.1 +1.0
DSF	Desfina	4.32	347	P	Pn	19 09 46.1 +1.0
DSF	Desfina	4.32	347	P	Pn	19 09 45.1 0.0
SERG	Sergoula	4.43	342	P	Pn	19 09 47.9 +1.4
CHOS	Chios island	4.57	23	ePN	Pn	19 09 51.5 +2.9
CHOS	Chios island	4.57	23	ePn	Pn	19 09 51.5 +2.9
SMIA	Simia	4.70	355	P	Pn	19 09 50.9 +0.7
SMIA	Simia	4.70	355	P	Pn	19 09 50.9 +0.7
YER	Yerkesik	4.71	50	ePN	Pn	19 09 52.1 +1.7
YER	Yerkesik	4.71	50	P	Pn	19 09 52.9 +2.5
YER	Yerkesik	4.71	50	ePn	Pn	19 09 52.1 +1.7
YER	Yerkesik	4.71	50	P	Pn	19 09 52.9 +2.5
DALY	Dalyan (Mu¨la	4.77	55	ePN	Pn	19 09 52.4 +1.2
DALY	Dalyan (Mu¨la	4.77	55	eSN	Sn	19 10 37.9 -7.5
DALY	Dalyan (Mu¨la	4.77	55	ePn	Pn	19 09 52.4 +1.2
PDO	Prodromos	4.86	335	P	Pn	19 09 56.0 +3.6
PDO	Prodromos	4.86	335	P	Pn	19 09 56.0 +3.6
FETY	Fethiye	4.98	59	ePN	Pn	19 09 56.0 +2.0
FETY	Fethiye	4.98	59	ePn	Pn	19 09 56.1 +2.0
AYDB	Zeytinkoy-Aydi	5.02	41	ePN	Pn	19 09 56.4 +1.7
AYDB	Zeytinkoy-Aydi	5.02	41	ePn	Pn	19 09 56.4 +1.7
GLHS	Gíhisar (BURDU	5.52	56	ePN	Pn	19 10 03.3 +1.7
GLHS	Gíhisar (BURDU	5.52	56	ePn	Pn	19 10 03.3 +1.7
ELL	Elmali	5.62	61	ePN	Pn	19 10 05.7 +2.6
ELL	Elmali	5.62	61	ePn	Pn	19 10 05.7 +2.6
KULA	Kula-Manisa	5.85	41	ePN	Pn	19 10 08.0 +1.9
KULA	Kula-Manisa	5.85	41	ePn	Pn	19 10 08.0 +1.9
SUTC	Sutluce-Ispart	6.73	59	ePN	Pn	19 10 20.9 +2.7
SUTC	Sutluce-Ispart	6.73	59	ePn	Pn	19 10 20.9 +2.7
TVSB	Tavsanli	6.96	39	ePN	Pn	19 10 24.2 +2.9
TVSB	Tavsanli	6.96	39	ePn	Pn	19 10 24.2 +2.9
TIP	Timpagrande	7.51	314	eP	Pn	19 10 28.3 -0.6
TIP	Timpagrande	7.51	314	eP	Pn	19 10 28.3 -0.6
CEL	Celeste	7.54	305	eP	Pn	19 10 29.5 +0.2
CEL	Celeste	7.54	305	eP	Pn	19 10 29.6 +0.2
CSS	Mathiatis	7.93	82	Pn	Pn	19 10 33.5 -1.1
CSS	Mathiatis	7.93	82	Pn	Pn	19 10 33.5 -1.1
CSS	Mathiatis	7.93	82	eP	Pn	19 10 32.8 -1.8
VAE	Valguarnera	8.27	296	Pn	Pn	19 10 40.8 +1.5
	comp=N,0.6nm,0.3s,baz=164,slow=19,SNR=4.3					
KZIT	Kziot	9.56	107	Pn	Pn	19 10 57.5 +0.6
KZIT				Sn	Sn	19 12 37.3 -6.0
KZIT	Kziot	9.56	107	Pn	Pn	19 10 57.5 +0.6
BRTR	Keskin Array B	9.64	52	Pn	Pn	19 10 57.9 -0.2
	comp=N,0.1nm,0.3s,baz=224,slow=14,SNR=5.1					
SLTI	Sal'ít	9.65	99	Pn	Pn	19 10 57.9 -0.3
SLTI				Sn	Sn	19 12 39.0 -6.5
SLTI	Sal'ít	9.65	99	Pn	Pn	19 10 57.9 -0.3
MMAI	Mount Meron Ar	9.78	94	Pn	Pn	19 10 59.1 -1.0
	comp=N,1.5nm,0.3s,baz=268,slow=12,SNR=6.3					
MMAI				Sn	Sn	19 12 45.6 -3.2
	comp=N,2.1nm,0.3s,baz=256,slow=23,SNR=5.7					
MMLI	Mount Malkishu	9.91	97	Pn	Pn	19 11 01.1 -0.7
MMLI				Sn	Sn	19 12 44.9 -7.2
MMLI	Mount Malkishu	9.91	97	Pn	Pn	19 11 01.1 -0.7
HMDT	Nahal Hemdat	10.04	98	Pn	Pn	19 11 02.7 -0.9
HMDT				Sn	Sn	19 12 48.8 -6.4
HMDT	Nahal Hemdat	10.04	98	Pn	Pn	19 11 02.7 -0.9
DSI	Dead Sea	10.11	102	Pn	Pn	19 11 04.0 -0.5
DSI				Sn	Sn	19 12 51.5 -5.4
DSI	Dead Sea	10.11	102	Pn	Pn	19 11 04.0 -0.5
MZDA	Masada	10.18	103	Pn	Pn	19 11 05.5 +0.1
MZDA				Sn	Sn	19 12 52.6 -5.9
MZDA	Masada	10.18	103	Pn	Pn	19 11 05.5 +0.1
PRNI	Paran	10.26	109	Pn	Pn	19 11 07.3 +0.7
PRNI	Paran	10.26	109	Pn	Pn	19 11 07.3 +0.7
ZFRI	Zfri	10.31	107	Pn	Pn	19 11 07.8 +0.6
ZFRI	Zfri	10.31	107	Pn	Pn	19 11 07.8 +0.6
HRFI	Mount Harif	10.42	110	Pn	Pn	19 11 09.3 +0.5
HRFI	Mount Harif	10.42	110	Pn	Pn	19 11 09.3 +0.5
MBRI	Mt Berech	10.43	112	Pn	Pn	19 11 10.3 +1.3
MBRI				Sn	Sn	19 13 00.6 -4.3
MBRI	Mt Berech	10.43	112	Pn	Pn	19 11 10.3 +1.3
EIL	Elat	10.52	112	Sn	Sn	19 13 05.3 -1.6
	comp=N,0.8nm,0.3s,baz=126,slow=19,SNR=3.6					
ASF	Jabal al Asfar	11.19	97	Pn	Pn	19 11 19.3 -0.1
	comp=N,0.1nm,0.3s,baz=264,slow=10,SNR=3.6					
UDBI	Udbina	12.02	331	ePn	Pn	19 11 30.1 -0.6
UDBI	Udbina	12.02	331	ePn	Pn	19 11 30.1 -0.6
NVLJ	Novalja	12.42	329	ePn	Pn	19 11 35.5 -0.5
NVLJ	Novalja	12.42	329	ePn	Pn	19 11 35.5 -0.5
OKC	Ostrava-Krasne	16.17	347	eP	P	19 12 29.8 +0.6
OKC	Ostrava-Krasne	16.17	347	P	P	19 12 29.8 +0.6
GERES	GERESS Array B	16.44	336	Pn	Pn	19 12 29.6 -0.2
	comp=N,0.1nm,0.3s,baz=144,slow=12,SNR=4.9					
KRLC	Kraliky	16.68	344	eP	P	19 12 35.5 +0.6
KRLC	Kraliky	16.68	344	P	P	19 12 35.5 +0.6
KHC	Kasperske Hory	16.73	336	eP	P	19 12 37.5 +2.1
KHC	Kasperske Hory	16.73	336	eP	P	19 12 37.5 +2.1
KHC	Kasperske Hory	16.73	336	eP	P	19 12 37.5 +2.1
AKASG	Malin Array Be	16.97	12	Pn	Pn	19 12 35.3 -1.1
	comp=N,1.0nm,0.3s,baz=203,slow=11,SNR=3.4					
DPC	Dobruska-Polom	17.04	344	eP	P	19 12 40.1 +1.2
DPC				epP	sP	19 12 49.7 -1.3
DPC	Dobruska-Polom	17.04	344	P	P	19 12 40.1 +1.2
PRU	Pruhonice	17.18	340	eP	P	19 12 41.5 +1.1
PRU				epP	sP	19 12 51.2 -1.3
PRU	Pruhonice	17.18	340	P	P	19 12 41.5 +1.1
KBZ	Khabaz	17.63	52	P	Pn	19 12 46.0 +1.3
	comp=N,0.1nm,0.3s,baz=254,slow=5.5,SNR=4.4					
KBZ	Khabaz	17.63	52	P	Pn	19 12 46.0 +1.3
HFS	Hagfors	26.77	349	P	P	19 14 17.7 -0.6
	comp=N,1.2nm,0.4s,baz=148,slow=12,SNR=8.6					
NOA	NORSAR Array B	28.06	347	P	P	19 14 29.8 0.0
	comp=N,0.6nm,0.6s,baz=149,slow=9.6,SNR=3.3					
EKA	Eskdalemuir Ar	28.19	327	P	P	19 14 32.1 +1.1
	comp=N,1.6nm,0.5s,baz=126,slow=8.0,SNR=14					
TORD	Torodi Ar. Bea	28.99	229	P	P	19 14 39.1 +0.6
	comp=N,1.6nm,0.7s,baz=39,slow=8.7,SNR=8.6					
AKTO	Aktyubinsk	29.75	47	P	P	19 14 44.8 -0.2
	comp=N,1.8nm,0.7s,baz=266,slow=8.8,SNR=2.6					
ARCES	ARCESS Array B	35.41	1	P	P	19 15 32.8 -1.4
	comp=N,1.5nm,0.8s,baz=163,slow=8.7,SNR=6.8					
KKAR	Karatay Array	37.17	62	eP	P	19 15 51.7 +2.1
KKAR	Karatay Array	37.17	62	eP	P	19 15 51.7 +2.1
DBIC	Dimbokro	38.07	231	P	P	19 15 57.2 -0.1
	comp=N,4.8nm,0.9s,baz=53,slow=5.2,SNR=3.9					
KURK	Kurchatov	42.68	50	eP	P	19 16 33.8 -1.4
	comp=N,3.5nm,1.0s					
KURK	Kurchatov	42.68	50	eP	P	19 16 33.8 -1.4
	comp=N,3.5nm,1.0s					
MKAR	Makanchi Array	45.27	56	P	P	19 16 56.0 0.0
	comp=N,1.8nm,0.6s,baz=274,slow=7.1,SNR=17					
ZALV	Zalesovo Beam	46.50	45	P	P	19 17 05.7 +0.1
	comp=N,1.1nm,0.4s,baz=260,slow=9.3,SNR=6.1					
SONM	Songino Array	60.99	50	P	P	19 18 52.7 +0.8
	comp=N,0.3nm,0.4s,baz=270,slow=7.4,SNR=3.7					
USRK	Ussuriysk Ar.	78.33	44	P	P	19 20 38.5 -0.1
	comp=N,1.0nm,0.5s,baz=264,slow=4.4,SNR=4.1					
KSAR	Wonju Array Be	79.76	52	P	P	19 20 48.2 +1.6
KSAR	Wonju Array Be	79.76	52	P	P	19 20 48.2 +1.6
KSRS	Korea Array	79.78	52	P	P	19 20 48.2 +1.6
	comp=N,1.4nm,0.8s,baz=299,slow=4.6,SNR=4.7					

*IDC **19** 19:13:18.9±3.1, 0.78S±99.47E, h0km, mb4.0/5, mb1 4.0/6, mb1mx3.7/40, mbtmp3.9/6, ML3.9/1, MS4.1/1, Ms1 4.1/1, ms1mx2.7/51, Error ellipse: s-maj=129.6km s-min=18.9km az=58.0*

*ISCJB **19** 19:13:27.7±0.8, 0.55S±0.05×99.46E±0.08, h54km, mb4.0/5, MS4.1/1, Error ellipse: s-maj=11.4km s-min=7.7km az=169.1*

*DJA **19** 19:13:29.7±1.2, 1.5S±3.3×10.0E±., h32km±14km, M3.8/6, MLv3.8/6*

ISC 19 19:13:28.2±0.9, 0.61S±0.05×99.60E±0.07, h54km, n15, σ2S26/14, mb4.2/5, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PPI	Padang Panjang	0.81	79	P	Pn	19 13 45.3 +1.8
PPI				S	Sn	19 13 57.1 +2.3
MNSI	Mandailing Nat	1.39	359	P	Pn	19 13 52.8 +1.5
MNSI				S	Sn	19 14 11.7 +3.0
BKNI	Bangkinang	1.71	57	P	Pn	19 13 57.7 +2.0
PPSI	Pulau Pagai	2.18	169	P	Pn	19 14 04.0 +2.0
PPSI				S	Sn	19 14 30.8 +2.9
GSI	Gunungsitoli	2.77	313	P	Pn	19 14 12.5 +2.3
CMAR	Chiang Mai Arr	18.96	358	P	P	19 17 44.0 -1.1
	0.1nm,0.3s,baz=190,slow=9.9,SNR=6.4					
H08S2	Diego Garcia H	27.91	255	T	T	19 47 26.5
	baz=77,slow=76,SNR=21					
H08S3	Diego Garcia H	27.91	255	T	T	19 47 29.3
	baz=77,slow=76,SNR=25					
H08S1	Diego Carcia H	27.92	255	T	T	19 47 30.3
	baz=77,slow=76,SNR=23					
WRA	Warramunga Arr	39.05	122	P	P	19 20 48.1 -2.0
	1.9nm,0.4s,baz=304,slow=8.9,SNR=26					
ASAR	Alice Springs	40.40	127	P	P	19 20 58.9 -2.4
	0.6nm,0.3s,baz=300,slow=7.4,SNR=36					
SONM	Songino Array	48.61	6	P	P	19 22 05.7 -0.9
	0.3nm,0.3s,baz=193,slow=12,SNR=3.1					
MKAR	Makanchi Array	49.59	344	P	P	19 22 12.9 -1.0
	1.2nm,0.5s,baz=149,slow=7.8,SNR=18					
TLY	Talaya	52.21	3	LR	LR	19 45 43.1
	comp=Z,191nm,19.6s,baz=284,slow=37					
ZALV	Zalesovo Beam	55.73	349	P	P	19 22 58.2 -1.0
	1.9nm,0.5s,baz=174,slow=6.8,SNR=15					

IDC 19 19:30:31.3±0.9, 13.77N×145.17E, h130km±5km, mb3.3/7, mb1 3.5/7, mb1mx3.2/44, mbtmp3.7/7, Error ellipse: s-maj=35.5km s-min=15.3km az=93.0, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	Guam	0.34	239	P	Pn	19 30 51.2	+1.7
	393nm,0.3s,baz=302,slow=3.3,SNR=364						
GUMO				S	Sn	19 31 04.3	+1.0
	969nm,0.3s,baz=330,slow=20,SNR=118						
H11N1	WAKE ISLAND Hy	21.62	71	T	T	19 58 27.3	
	baz=257,slow=75,SNR=6.1						
H11N2	WAKE ISLAND Hy	21.63	71	T	T	19 58 30.4	
	baz=257,slow=75,SNR=6.0						
H11N3	WAKE ISLAND Hy	21.64	71	T	T	19 58 31.1	
	baz=257,slow=75,SNR=8.5						
WRA	Warramunga Arr	35.15	198	P	P	19 37 12.6	-0.1
	0.9nm,0.6s,baz=16,slow=8.7,SNR=18						
ASAR	Alice Springs	38.80	197	P	P	19 37 43.3	-0.3
	0.2nm,0.4s,baz=19,slow=13,SNR=15						
STKA	Stephens Creek	45.51	184	P	P	19 38 37.9	0.0
	1.1nm,0.7s,baz=26,slow=8.3,SNR=5.3						
MKAR	Makanchi Array	61.56	316	P	P	19 40 35.1	+0.2
	0.7nm,0.4s,baz=89,slow=8.6,SNR=9.9						
ILAR	Eielson Array	68.28	25	P	P	19 41 17.2	-0.8
	0.2nm,0.4s,baz=245,slow=5.9,SNR=4.0						
BVAR	Borovoye Array	69.97	322	P	P	19 41 28.7	0.0
	1.4nm,0.5s,baz=108,slow=7.1,SNR=13						
YKA	Yellowknife Ar	82.57	27	P	P	19 42 39.9	+0.3
	0.1nm,0.4s,baz=289,slow=5.3,SNR=4.4						
DBIC	Dimbokro	143.97	302	PKP	PKPab	19 49 50.3	+0.2
	3.7nm,0.8s,baz=6.0,slow=5.1,SNR=4.4						

*SOME **19** 19:32:43.3, 41.37N×82.78E, h20km*
*NNC **19** 19:32:54.9±3.9, 42.48N×83.03E, h0km, mb3.4, mpv3.0, Error ellipse: s-maj=35.0km s-min=18.9km az=132.0*

ISC 19 19:32:56.7±2.6, 41.8N±0.1×82.41E±0.09, h13km, n11, σ1S79/19, 4C-2D, Southern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KTMS	Ketmen	2.24	318	eP	Pn	19 33 31.5	-2.1
	14nm,0.4s						
KTMS				eS	Sb	19 34 06.3	+1.5
	30nm,0.5s						
SHLS	Shalkode	2.31	307	eP	Pn	19 33 35.9	+1.3
	10nm,0.8s						
SHLS				eS	Sg	19 34 13.8	+2.8
	23nm,0.9s						
PDGK	Podgornoye	2.65	306	⇑Pn	Pn	19 33 40.6	+1.6
	4.3nm,0.8s						
PDGK				⇓Lg	Lg	19 34 20.8	
	19nm,0.6s						
UZB	Uzynbulak	2.85	299	eP	Pn	19 33 40.8	-1.1
	1.4nm,0.4s						
UZB				eS	Sb	19 34 22.6	+0.4
	11nm,0.7s						
DJR	Jarkent	3.18	324	eP	Pb	19 33 50.9	-2.1
	8.1nm,0.5s						
DJR				eS	Sg	19 34 39.5	+0.8
	5.5nm,0.6s						
KPKS	Kokpek	3.22	303	eP	Pb	19 33 51.6	-2.1
	4.8nm,0.4s						
KPKS				eS	Sg	19 34 41.0	+1.1
	24nm,0.5s						
SATY	Saty	3.22	294	eP	Pn	19 33 47.8	+0.8
	1.5nm,0.1s						
SATY				eS	Sb	19 34 33.9	+0.9
	8.8nm,0.6s						
KAPS	Kapalarasan	4.13	329	eP	Pb	19 34 07.0	-2.3
	3.7nm,0.8s						
KAPS				eS	Sg	19 35 07.2	-2.2
	3.4nm,0.5s						
MDOK	Medeo	4.19	291	eP	Pb	19 34 09.5	-0.9
	2.6nm,0.6s						
MDOK				eS	Sg	19 35 11.7	+0.4
	3.7nm,0.8s						
MK31	Makanchi Array	5.00	359	⇑Pg	Pn	19 34 13.6	+2.2
	2.2nm,0.6s,baz=161,slow=15,SNR=18						
MK31				⇓Lg	Lg	19 35 14.9	
	4.0nm,0.7s,baz=162,slow=26,SNR=5.8						
MAKZ	Makanchi	5.02	357	⇑Pg	Pn	19 34 13.6	+1.9
	3.6nm,1.1s						
MAKZ				⇑Lg	Lg	19 35 16.5	
	1.5nm,0.5s						

*ISK **19** 19:34:56.4, 37.94N×26.62E, h5km, MD2.8*
*ISCJB **19** 19:34:57.6±0.6, 37.90N±0.03×26.62E±0.04, h4km±5km, Error ellipse: s-maj=6.1km s-min=3.7km az=146.0*
*CSEM **19** 19:34:57.7±0.2, 37.92N×26.61E, h5km, ML2.9, Error ellipse: s-maj=6.4km s-min=3.7km az=52.0*
*DDA **19** 19:34:57.6, 37.91N×26.65E, h6km, Ml2.9*

ISC 19 19:34:57.4±1.1, 37.92N±0.03×26.63E±0.03, h14km±8km, n33, σ0S61/52, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DGB	¨zmir	0.24	57	iP	Pg	19 35 02.2	-0.4
DGB				iS	Sg	19 35 06.2	+0.1
ZEY	¨zmir	0.33	343	iP	Pg	19 35 04.3	+0.1
ZEY				iS	Sb	19 35 09.8	-0.5
URLA	Izmir	0.44	357	P	Pg	19 35 06.2	0.0
URLA				S	Sb	19 35 14.0	+0.5
URLA	Izmir	0.44	357	iP	Pg	19 35 06.2	0.0
URLA				iS	Sb	19 35 14.0	+0.5
GCAM	G?zelcaml?	0.53	115	P	Pb	19 35 08.3	-0.2
GCAM				S	Sb	19 35 15.5	-0.5
GCAM	G?zelcaml?	0.53	115	iP	Pb	19 35 08.3	-0.2
GCAM				iS	Sb	19 35 15.5	-0.5
CHOS	Chios island	0.65	316	ePG	Pg	19 35 09.7	-0.4
CHOS				eSG	Sb	19 35 20.0	+0.5
CHOS	Chios island	0.65	316	ePg	Pg	19 35 09.7	-0.4
CHOS				eSg	Sb	19 35 20.0	+0.5
AYDB	Zeytinkoy-Aydi	1.00	88	ePG	Pn	19 35 16.8	-0.4
AYDB	Zeytinkoy-Aydi	1.00	88	ePg	Pn	19 35 16.8	-0.4
BODT	Bodrum	1.02	147	ePG	Pn	19 35 17.5	+0.2
BODT				eSG	Sn	19 35 32.4	+1.0
BODT	Bodrum	1.02	147	ePg	Pn	19 35 17.5	+0.2
BODT				eSg	Sn	19 35 32.4	+1.0
AYDN	Tasoluk	1.03	104	P	Pb	19 35 16.8	-0.2
AYDN				S	Sb	19 35 29.6	-0.8
AYDN	Tasoluk	1.03	104	iP	Pb	19 35 16.8	-0.2
AYDN				iS	Sb	19 35 29.6	-0.8
BDRM	Kayabasi	1.07	143	P	Pn	19 35 18.3	+0.2
BDRM				S	Sn	19 35 32.6	-0.2
BDRM	Kayabasi	1.07	143	iP	Pn	19 35 18.3	+0.2
BDRM				iS	Sn	19 35 32.6	-0.2
DKL	Dikili	1.17	11	ePN	Pg	19 35 19.5	-0.4
DKL	Dikili	1.17	11	ePn	Pg	19 35 19.5	-0.4
APE	Apeiranthos	1.22	226	ePN	Pg	19 35 20.7	-0.2
APE	Apeiranthos	1.22	226	ePn	Pg	19 35 20.7	-0.2
AKS	Akhisar	1.33	44	ePN	Pg	19 35 22.6	-0.5
AKS				eSN	Sg	19 35 42.3	+1.8
AKS	Akhisar	1.33	44	ePn	Pg	19 35 22.6	-0.5
AKS				eSn	Sg	19 35 42.3	+1.8
SIGR	SIGRI	1.42	335	ePN	Pg	19 35 24.2	-0.6
SIGR	SIGRI	1.42	335	ePn	Pg	19 35 24.2	-0.6
YER	Yerkesik	1.53	120	ePN	Pg	19 35 26.6	-0.3
YER	Yerkesik	1.53	120	ePn	Pg	19 35 26.6	-0.3
MANT	Manisa	1.62	69	P	Pg	19 35 29.4	+0.7
MANT				S	Sb	19 35 47.7	-0.1
MANT	Manisa	1.62	69	iP	Pg	19 35 29.4	+0.7
MANT				iS	Sb	19 35 47.6	-0.1
KULA	Kula-Manisa	1.71	69	ePn	Pb	19 35 28.4	-0.3
KULA	Kula-Manisa	1.71	69	ePN	Pb	19 35 28.4	-0.3
BALB	Balikesir	1.98	29	ePN	Pb	19 35 32.2	-1.0
BALB	Balikesir	1.98	29	ePn	Pb	19 35 32.2	-1.0
DEMI	Demirci	1.98	55	iP	Pg	19 35 35.2	-0.3
DEMI				iS	Sg	19 36 01.1	-0.2

*NIED **19** 19:36:00, 36.90N×143.70E, h5km, Mw3.7 Best double couple: M∞3.45000×10^14 NP1:φs16.00000°, δ22.00000°, λ-74.00000°. NP2:φs180.00000°, δ69.00000°, λ-96.00000°.*

*IDC **19** 19:36:29.2±1.7, 36.47N×143.79E, h0km, mb3.8/3, mb1 3.9/6, mb1mx3.5/48, mbtmp3.8/6, ML3.5/3, MS2.2/2, Ms1 2.2/2, ms1mx2.1/67, Error ellipse: s-maj=32.2km s-min=28.4km az=72.0*

*ISCJB **19** 19:36:30.9±0.8, 36.69N±0.05×143.70E±0.06, h33km, mb3.9/3, Error ellipse: s-maj=6.9km s-min=6.2km az=38.3*

*JMA **19** 19:36:31.4±0.2, 36.89N×143.68E, h47km, M3.6*

ISC 19 19:36:31.6±1.4, 36.79N±0.06×143.81E±0.09, h35km, n21, σ1S29/32, mb4.0/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	2.42	285	P	Pn	19 37 07.6	-1.0
JFK				S	Sn	19 37 35.0	-2.0
ONAJ	Iwakimizuishiy	2.43	278	P	Pn	19 37 08.4	-0.5
ONAJ				S	Sn	19 37 35.5	-1.9
JHO	Hitachi	2.61	267	P	Pn	19 37 11.3	0.0
JHO				eS	Sn	19 37 40.1	-1.6
JFT	Otama	2.87	286	P	Pn	19 37 14.8	0.0
JFT				S	Sn	19 37 47.2	-0.9
JOM	Ohasama	3.33	324	P	Pn	19 37 20.1	-1.1
JYK	Kaneyama	3.46	309	P	Pn	19 37 22.6	-0.4
JAG	Ashikaga	3.52	265	P	Pn	19 37 24.1	+0.3
JAG				S	Sn	19 38 02.4	-1.9
JAW	Awa shima	3.98	296	S	Sn	19 38 15.0	-0.6
JRY	Ryogami san	4.03	260	P	Pn	19 37 30.9	0.0
JRY				S	Sn	19 38 15.4	-1.5
JOD2	Odawara 2	4.12	250	P	Pn	19 37 33.0	+1.0
JOD2				eS	Sn	19 38 17.9	-1.1
JYN	Shimob	4.45	255	P	Pn	19 37 37.5	+0.8
JYN				eS	Sn	19 38 26.7	-0.6
MJAR	Matsushiro Arr	4.51	269	Pn	Pn	19 37 38.6	+1.2
	2.4nm,0.3s,baz=86,slow=14,SNR=21						
MJAR				Sn	Sn	19 38 29.9	+1.3
	1.1nm,0.3s,baz=87,slow=27,SNR=6.8						
MJAR				LR	LR	19 39 46.4	
	comp=Z,23nm,20.4s,baz=85,slow=44						
MAT	Matsushiro	4.51	269	P	Pn	19 37 38.9	+1.5
MAT				S	Sn	19 38 30.6	+2.0
MAT	Matsushiro	4.51	269	P	Pn	19 37 38.6	+1.2
MAT				eS	Sn	19 38 29.4	+0.8
JHJ2	Mitsune	4.92	223	P	Pn	19 37 42.6	-0.4
JHJ2				S	Sn	19 38 37.7	-1.0
JHJ	Hachijo jima 2	4.93	223	Pn	Pn	19 37 41.6	-1.6
	5.9nm,0.3s,baz=334,slow=19,SNR=13						
JHJ				Sn	Sn	19 38 36.1	-2.9
	9.1nm,0.3s,baz=58,slow=22,SNR=8.4						
ASAJ	Asahikawa	7.38	353	Pn	Pn	19 38 22.8	+6.1
	0.8nm,0.3s,baz=239,slow=14,SNR=4.8						
KSRS	Korea Array	12.70	278	LR	LR	19 45 14.4	
	comp=Z,14nm,18.5s,baz=300,slow=41						
WRA	Warramunga Arr	57.13	191	P	P	19 46 15.1	+0.3
	0.6nm,0.4s,baz=9.6,slow=7.1,SNR=21						
ASAR	Alice Springs	60.85	190	P	P	19 46 41.4	+0.8
	0.4nm,0.5s,baz=7.3,slow=6.7,SNR=5.6						
STKA	Stephens Creek	68.34	182	P	P	19 47 30.1	+0.9
	1.9nm,1.0s,baz=18,slow=8.1,SNR=3.8						

*NIED **19** 19:41:00, 37.20N×141.10E, h5km, Mw3.5 Best double couple: M∞2.26000×10^14 NP1:φs195.00000°, δ38.00000°, λ-136.00000°. NP2:φs67.00000°, δ65.00000°, λ-61.00000°.*

*ISCJB **19** 19:41:57.9±1.2, 37.22N±0.04×141.25E±0.07, h12km±5km, mb3.4/5, Error ellipse: s-maj=8.8km s-min=5.8km az=9.1*

*IDC **19** 19:41:57.8±1.2, 37.19N×141.14E, h0km, mb3.5/5, mb1 3.5/9, mb1mx3.4/51, mbtmp3.5/9, ML3.0/4, Error ellipse: s-maj=22.3km s-min=16.4km az=139.0*

*JMA **19** 19:41:59.8, 37.23N×141.14E, h13km±1km, M3.8*

JMA Felt II J1.

ISC 19 19:41:59.1±1.8, 37.22N±0.04×141.19E±0.08, h9km±10km, n22, σ0S55/24, mb3.4/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	0.29	301	P	Pg	19 42 05.3	+0.2
JFK				S	Sg	19 42 08.9	-0.1
ONAJ	Iwakimizuishiy	0.34	250	P	Pg	19 42 06.1	+0.3
ONAJ				S	Sg	19 42 10.2	-0.1
JMM	Marumori	0.72	334	P	Pg	19 42 12.9	-0.2
JMM				S	Sg	19 42 22.2	-0.3
JFT	Otama	0.75	294	P	Pg	19 42 13.5	0.0
JFT				S	Sg	19 42 22.8	-0

ISC 19 19:59:47.5±1.0, 39.12N±0.02×29.10E±0.02, h8km±7km, n129, σ0.74/170, mb3.4/4, 13C-11D, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.30**	**96**	P	**Pg**	19 59 53.7	+0.2
GDZ				S	**Sg**	19 59 58.3	+0.9
GDZ	**Gediz**	**0.30**	**96**	*i* P	**Pg**	19 59 53.7	+0.2
GDZ				*i* S	**Sg**	19 59 58.4	+0.9
DEMI	**Demirci**	**0.31**	**256**	P	**Pg**	19 59 53.5	-0.1
DEMI				S	**Sg**	19 59 58.0	+0.3
DEMI	**Demirci**	**0.31**	**256**	*i* P	**Pg**	19 59 53.5	-0.1
DEMI				*i* S	**Sg**	19 59 58.0	+0.3
DURS	**Dursunbey**	**0.68**	**315**	P	**Pg**	20 00 00.2	-0.5
DURS	**Dursunbey**	**0.68**	**315**	*i* P	**Pg**	20 00 00.2	-0.5
KULA	**Kula-Manisa**	**0.69**	**210**	P	**Pg**	20 00 00.3	-0.6
KULA				S	**Sg**	20 00 09.6	-0.3
KULA	**Kula-Manisa**	**0.69**	**210**	P	**Pg**	20 00 00.3	-0.6
KULA				S	**Sg**	20 00 09.6	-0.3
MANT	**Manisa**	**0.76**	**214**	P	**Pg**	20 00 11.7	-0.2
MANT				S	**Sg**	20 00 11.7	-0.2
MANT	**Manisa**	**0.76**	**214**	*i* P	**Pg**	20 00 01.7	-0.4
MANT				*i* S	**Sg**	20 00 11.7	-0.2
KHAL	**Karahalli**	**0.81**	**158**	P	**Pg**	20 00 03.1	0.0
KHAL				S	**Sb**	20 00 14.8	-0.2
KHAL	**Karahalli**	**0.81**	**158**	*i* P	**Pg**	20 00 03.1	0.0
KHAL				*i* S	**Sb**	20 00 14.8	-0.2
AKHS	**Akhisar**	**1.03**	**257**	P	**Pg**	20 00 06.9	-0.4
AKHS	**Akhisar**	**1.03**	**257**	*i* P	**Pg**	20 00 06.9	-0.4
AKHS				*i* S	**Sn**	20 00 22.8	-0.1
IGD	**Bursa**	**1.15**	**4**	*i* P	**Pg**	20 00 07.6	-1.9
IGD				*i* S	**Sb**	20 00 25.0	+0.3
BORA	**Eskisehir**	**1.29**	**54**	P	**Pn**	20 00 11.2	-0.8
BORA				S	**Sn**	20 00 29.5	-0.1
BORA	**Eskisehir**	**1.29**	**54**	*i* P	**Pn**	20 00 11.2	-0.8
BORA				*i* S	**Sn**	20 00 29.5	-0.1
BALY	**Balya**	**1.30**	**299**	P	**Pn**	20 00 11.7	-0.4
BALY	**Balya**	**1.30**	**299**	*i* P	**Pn**	20 00 11.7	-0.4
DNZL	**Cakiroluk**	**1.43**	**182**	P	**Pn**	20 00 13.1	-0.8
DNZL	**Cakiroluk**	**1.43**	**182**	*i* P	**Pn**	20 00 13.1	-0.8
BOLV	**Bolvadin**	**1.50**	**105**	P	**Pn**	20 00 14.8	-0.1
BOLV	**Bolvadin**	**1.50**	**105**	*i* P	**Pn**	20 00 14.8	-0.1
KNL	**Bal¯–kesir**	**1.67**	**314**	*i* P	**Pn**	20 00 15.9	-1.3
KNL				*i* S	**Sb**	20 00 40.4	+0.6
ISP	**Isparta**	**1.71**	**139**	||*i* P	**Pn**	20 00 17.0	-0.7
ISP	**Isparta**	**1.71**	**139**	P	**Pn**	20 00 17.1	-0.7
ISP				S	**Sn**	20 00 39.6	-0.2
ISP	**Isparta**	**1.71**	**139**	P	**Pn**	20 00 17.1	-0.7
ISP				S	**Sn**	20 00 39.6	-0.2
BUY	**Buyukada**	**1.73**	**0**	P	**Pn**	20 00 17.3	-0.6
BUY	**Buyukada**	**1.73**	**0**	*i* P	**Pn**	20 00 17.3	-0.6
BUY				*i* S	**Sg**	20 00 44.0	+0.7
BAGO	**Egridir - ISPA**	**1.74**	**130**	*i* P	**Pn**	20 00 17.6	-0.6
AYDN	**Tasoluk**	**1.74**	**214**	P	**Pn**	20 00 17.3	-0.9
AYDN	**Tasoluk**	**1.74**	**214**	*i* P	**Pn**	20 00 17.3	-0.9
AYVA	**Ayvalik**	**1.88**	**277**	*i* P	**Pg**	20 00 24.1	+0.6
AYVA				*i* S	**Sg**	20 00 49.5	+1.6
GOLH	**Golhisar**	**1.91**	**169**	P	**Pn**	20 00 20.7	+0.2
GOLH	**Golhisar**	**1.91**	**169**	*i* P	**Pn**	20 00 20.7	+0.2
ISK	**Istanbul-Kandi**	**1.94**	**359**	P	**Pn**	20 00 19.8	-1.1
ISK				S	**Sn**	20 00 46.2	+0.7
ISK	**Istanbul-Kandi**	**1.94**	**359**	P	**Pn**	20 00 19.8	-1.1
ISK				S	**Sn**	20 00 46.2	+0.7
AUMIH	**MIHALICIK**	**1.99**	**67**	*i* P	**Pb**	20 00 24.6	+0.5
AUMIH				*i* S	**Sg**	20 00 51.5	0.0
DGB	**¯zmir**	**2.04**	**239**	*i* P	**Pg**	20 00 26.1	-0.5
DGB				*i* S	**Sg**	20 00 52.9	-0.1
GCAM	**G?zelcaml?**	**2.04**	**227**	P	**Pb**	20 00 24.4	-0.4
GCAM	**G?zelcaml?**	**2.04**	**227**	*i* P	**Pb**	20 00 24.4	-0.4
BTAS	**Taskesti**	**2.06**	**45**	P	**Pn**	20 00 22.1	-0.4
BTAS	**Taskesti**	**2.06**	**45**	*i* P	**Pn**	20 00 22.1	-0.4
YER	**Yerkesik**	**2.08**	**198**	P	**Pn**	20 00 22.4	-0.4
YER	**Yerkesik**	**2.08**	**198**	*i* P	**Pn**	20 00 22.4	-0.4
KAND	**Kocaeli-Kandir**	**2.14**	**23**	P	**Pn**	20 00 23.8	+0.2
KAND	**Kocaeli-Kandir**	**2.14**	**23**	*i* P	**Pn**	20 00 23.8	+0.2
KAND				*i* S	**Sg**	20 00 55.8	-0.6
SART	**Tekirdag**	**2.15**	**317**	P	**Pn**	20 00 23.4	-0.4
SART	**Tekirdag**	**2.15**	**317**	*i* P	**Pn**	20 00 23.4	-0.4
SART				*i* S	**Sg**	20 00 56.6	-0.1
SAHE	**Sakarya_HENDEK**	**2.19**	**37**	P	**Pn**	20 00 23.6	-0.7
SAHE	**Sakarya_HENDEK**	**2.19**	**37**	*i* P	**Pn**	20 00 23.6	-0.7
PRK	**Paraskevi**	**2.20**	**274**	P	**Pn**	20 00 25.0	+0.6
PRK				S	**Sn**	20 00 52.9	+1.1
PRK	**Paraskevi**	**2.20**	**274**	P	**Pn**	20 00 25.0	+0.6
PRK				S	**Sn**	20 00 52.9	+1.1
ZEY	**¯zmir**	**2.21**	**247**	*i* P	**Pg**	20 00 29.4	-0.6
ZEY				*i* S	**Sg**	20 01 00.7	+2.0
SMG	**Samos**	**2.27**	**232**	P	**Pn**	20 00 23.3	-2.0
SMG	**Samos**	**2.27**	**232**	P	**Pn**	20 00 23.3	-2.0
KORT	**Korkueli**	**2.33**	**155**	P	**Pn**	20 00 26.9	+0.6
KORT	**Korkueli**	**2.33**	**155**	*i* P	**Pn**	20 00 26.9	+0.6
KDHN	**Kadinhani**	**2.43**	**103**	P	**Pn**	20 00 27.6	-0.1
KDHN	**Kadinhani**	**2.43**	**103**	*i* P	**Pn**	20 00 27.6	-0.1
BOZC	**Bozcaada**	**2.47**	**288**	*i* P	**Pn**	20 00 27.9	-0.1
FETY	**Fethiye**	**2.48**	**180**	P	**Pn**	20 00 28.9	+0.6
FETY	**Fethiye**	**2.48**	**180**	P	**Pn**	20 00 28.9	+0.6
CHOS	**Chios island**	**2.49**	**254**	P	**Pn**	20 00 27.9	-0.5
CHOS				S	**Sn**	20 00 59.7	+0.6
CHOS	**Chios island**	**2.49**	**254**	P	**Pn**	20 00 27.9	-0.5
CHOS				S	**Sn**	20 00 59.7	+0.6
BODT	**Bodrum**	**2.49**	**215**	P	**Pn**	20 00 27.6	-0.8
BODT	**Bodrum**	**2.49**	**215**	P	**Pn**	20 00 27.6	-0.8
KESN	**Edirne-Kesan**	**2.52**	**313**	P	**Pn**	20 00 28.0	-1.2
KESN	**Edirne-Kesan**	**2.52**	**313**	*i* P	**Pn**	20 00 28.0	-1.2
KESN				*i* S	**Sg**	20 01 07.7	-0.9
SIGR	**SIGRI**	**2.52**	**273**	P	**Pn**	20 00 29.2	+0.4
SIGR	**SIGRI**	**2.52**	**273**	P	**Pn**	20 00 29.2	+0.4
ENEZ	**Enez**	**2.78**	**306**	P	**Pn**	20 00 32.2	-0.2
ENEZ				S	**Sn**	20 01 07.1	+0.9
ENEZ	**Enez**	**2.78**	**306**	P	**Pn**	20 00 32.2	-0.2
ENEZ				S	**Sn**	20 01 07.1	+0.9
BCAM	**Yenicaga**	**2.84**	**52**	P	**Pn**	20 00 34.6	+1.3
BCAM	**Yenicaga**	**2.84**	**52**	*i* P	**Pn**	20 00 34.6	+1.3
AKAS	**Kas**	**2.91**	**172**	P	**Pn**	20 00 35.5	+1.2
AKAS	**Kas**	**2.91**	**172**	*i* P	**Pn**	20 00 35.5	+1.2
ALN	**Alexandroupoli**	**2.94**	**308**	P	**Pn**	20 00 34.0	-0.6
ALN				S	**Sn**	20 01 10.7	+0.6
ALN	**Alexandroupoli**	**2.94**	**308**	P	**Pn**	20 00 34.0	-0.6
ALN				S	**Sn**	20 01 10.7	+0.6
KKUL	**Konya-Kulu**	**2.97**	**88**	P	**Pn**	20 00 36.7	+1.6
KKUL	**Konya-Kulu**	**2.97**	**88**	*i* P	**Pn**	20 00 36.7	+1.6
SMTH	**Samothraki Isl**	**3.06**	**297**	P	**Pn**	20 00 36.0	-0.3
SMTH				S	**Sn**	20 01 13.4	+0.3
SMTH	**Samothraki Isl**	**3.06**	**297**	P	**Pn**	20 00 36.0	-0.3
SMTH				S	**Sn**	20 01 13.4	+0.3
LIA	**Limnos Island**	**3.13**	**286**	P	**Pn**	20 00 37.6	+0.5
LIA				S	**Sn**	20 01 14.1	-0.6
LIA	**Limnos Island**	**3.13**	**286**	P	**Pn**	20 00 37.6	+0.5
LIA				S	**Sn**	20 01 14.1	-0.6
EDRB	**Edirne**	**3.26**	**327**	P	**Pn**	20 00 38.6	-0.4
EDRB	**Edirne**	**3.26**	**327**	P	**Pn**	20 00 38.6	-0.4
BTIN	**Bart¯–n**	**3.48**	**43**	P	**Pn**	20 00 42.1	+0.1
BTIN	**Bart¯–n**	**3.48**	**43**	*i* P	**Pn**	20 00 42.1	+0.1
BRTR	**Keskin Array B**	**3.57**	**79**	Pn	**Pn**	20 00 43.9	+0.5
	0.7nm,0.3s,baz=254,slow=14,SNR=23						
BRTR				Pg	**Pg**	20 00 54.4	-1.5
	2.3nm,0.3s,baz=260,slow=16,SNR=25						
BRTR				Sn	**Sn**	20 01 24.4	-1.4
	3.3nm,0.3s,baz=252,slow=23,SNR=10						
BRTR				Lg	Lg	20 01 46.0	
	2.1nm,0.3s,baz=277,slow=21,SNR=6.5						
GAZI	**Gazipasa**	**3.85**	**137**	P	**Pn**	20 00 46.1	-1.0
GAZI	**Gazipasa**	**3.85**	**137**	*i* P	**Pn**	20 00 46.1	-1.0
OUR	**Ouranopolis**	**4.13**	**289**	P	**Pn**	20 00 50.7	-0.2
PAIG	**Paliouri**	**4.27**	**283**	P	**Pn**	20 00 53.8	+1.0
NVR	**Nevrokopi**	**4.59**	**301**	P	**Pn**	20 00 57.3	+0.1
NVR	**Nevrokopi**	**4.59**	**301**	P	**Pn**	20 00 57.3	+0.1
SRS	**Serrai**	**4.67**	**297**	P	**Pn**	20 00 58.1	-0.3
SRS	**Serrai**	**4.67**	**297**	P	**Pn**	20 00 58.1	-0.3
IDI	**Anoyia**	**5.09**	**223**	Pn	**Pn**	20 01 03.7	-0.5
	0.2nm,0.3s,baz=61,slow=19,SNR=2.9						
TIRR	**Tirgusor**	**5.36**	**355**	||*i* P	**Pn**	20 01 07.4	-0.4
TIRR	**Tirgusor**	**5.36**	**355**	||*i* P	**Pn**	20 01 07.4	-0.4
TLCR		**6.07**	**358**	||*i* P	**Pn**	20 01 17.5	0.0
TLCR		**6.07**	**358**	||*i* P	**Pn**	20 01 17.5	0.0
CFR	**Carcaliu**	**6.10**	**354**	||*i* P	**Pn**	20 01 17.2	-0.7
CFR	**Carcaliu**	**6.10**	**354**	||*i* P	**Pn**	20 01 17.2	-0.7
MLR	**Muntele Rosu**	**6.78**	**341**	Pn	**Pn**	20 01 28.1	+0.6
	0.2nm,0.3s,baz=243,slow=1.4,SNR=25						
MLR	**Muntele Rosu**	**6.78**	**341**	||*i* P	**Pn**	20 01 28.1	+0.6
PLOR	**Plostina**	**6.97**	**346**	||*i* P	**Pn**	20 01 31.2	+1.3
PLOR	**Plostina**	**6.97**	**346**	||*i* P	**Pn**	20 01 31.2	+1.3
VRI	**Vrincioaia**	**6.97**	**346**	||*i* P	**Pn**	20 01 30.2	+0.3
VRI	**Vrincioaia**	**6.97**	**346**	||*i* P	**Pn**	20 01 30.2	+0.3
VOIR		**6.99**	**336**	||*i* P	**Pn**	20 01 30.3	0.0
VOIR		**6.99**	**336**	||*i* P	**Pn**	20 01 30.3	0.0
DOPR	**Dopca**	**7.37**	**339**	||*i* P	**Pn**	20 01 35.5	0.0
DOPR	**Dopca**	**7.37**	**339**	||*i* P	**Pn**	20 01 35.5	0.0
TESR	**Tescani**	**7.61**	**347**	||*i* P	**Pn**	20 01 38.2	-0.4
TESR	**Tescani**	**7.61**	**347**	||*i* P	**Pn**	20 01 38.2	-0.4
MDVR	**Moldovita**	**7.89**	**318**	||*i* P	**Pn**	20 01 42.5	-0.1
MDVR	**Moldovita**	**7.89**	**318**	||*i* P	**Pn**	20 01 42.5	-0.1
MMAI	**Mount Meron Ar**	**7.94**	**138**	Pn	**Pn**	20 01 42.6	-0.8
	1.9nm,0.3s,baz=324,slow=13,SNR=18						
BURAR	**Bucovina Array**	**8.95**	**343**	||*i* P	**Pn**	20 01 57.5	+0.3
BURAR	**Bucovina Array**	**8.95**	**343**	||*i* P	**Pn**	20 01 57.5	+0.3
SORM	**Soroca**	**9.03**	**357**	||*i* P	**Pn**	20 01 56.7	-1.4
SORM	**Soroca**	**9.03**	**357**	||*i* P	**Pn**	20 01 56.7	-1.4
AKASG	**Malin Array Be**	**11.58**	**0**	Pn	**Pn**	20 02 33.0	0.0
	0.5nm,0.3s,baz=187,slow=12,SNR=4.6						
FINES	**FINESS Array B**	**22.43**	**356**	P	**P**	20 04 46.9	+0.4
	1.9nm,0.8s,baz=192,slow=13,SNR=3.7						
TORD	**Torodi Ar. Bea**	**35.44**	**231**	P	**P**	20 06 43.6	-0.7
	0.2nm,0.7s,baz=32,slow=8.5,SNR=2.9						
MKAR	**Makanchi Array**	**39.03**	**61**	P	**P**	20 07 14.6	0.0
	0.2nm,0.5s,baz=282,slow=6.8,SNR=3.1						
ZALV	**Zalesovo Beam**	**40.02**	**49**	P	**P**	20 07 24.8	+2.1
	0.3nm,0.4s,baz=277,slow=13,SNR=2.3						

DDA 19 20:00:27.9, 39.12N×29.08E, h7km, Md2.7, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.29**	**256**	*i* P	Pb	20 00 34.7	-0.9
DEMI				*i* S	Sg	20 00 38.9	+1.3
GDZ	**Gediz**	**0.31**	**95**	*i* P	Pg	20 00 34.6	+0.5
MANT	**Manisa**	**0.75**	**213**	*i* P	Pg	20 00 42.6	+0.3
MANT				*i* S	Sg	20 00 52.7	+0.7

*CSEM **19** 20:01:03.3, 38.91N×29.11E, h7km, ML2.9*
DDA 19 20:01:03.3, 38.91N×29.11E, h7km, Ml2.9, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.33**	**293**	P	Pg	20 01 10.1	+0.3
DEMI	**Demirci**	**0.33**	**293**	*i* P	Pg	20 01 10.2	+0.3
GDZ	**Gediz**	**0.34**	**59**	P	Pg	20 01 10.1	+0.1
GDZ				S	Sg	20 01 15.6	+1.1
GDZ	**Gediz**	**0.34**	**59**	*i* P	Pg	20 01 10.1	+0.1
GDZ				*i* S	Sg	20 01 15.6	+1.1
MANT	**Manisa**	**0.60**	**226**	P	Pg	20 01 14.2	-0.7
MANT	**Manisa**	**0.60**	**226**	*i* P	Pg	20 01 14.2	-0.8
KHAL	**Karahalli**	**0.62**	**151**	P	Pg	20 01 15.5	+0.2
KHAL	**Karahalli**	**0.62**	**151**	*i* P	Pg	20 01 15.5	+0.3
UZP	**Denizli**	**0.88**	**177**	*i* P	Pg	20 01 19.8	-0.5

*IDC **19** 20:04:42.0±3.4, 33.88N×23.95E, h0km, mb3.9/4, mb1 3.7/7, mb1mx3.4/40, mbtmp3.6/7, ML3.4/3, Error ellipse: s-maj=58.5km s-min=26.1km az=16.0*
*ATH **19** 20:04:52.8, 34.64N×23.90E, h28km±2km, ML2.8/1, Error ellipse: s-maj=9.8km s-min=2.2km az=25.0*
*CSEM **19** 20:04:53.7±0.4, 34.66N×23.91E, h15km, ML2.6, Error ellipse: s-maj=9.2km s-min=5.4km az=17.0*
*THE **19** 20:04:55.3, 34.73N×23.95E, h13km±2km, ML2.6/3, Error ellipse: s-maj=3.0km s-min=1.8km az=23.0*
ISC 19 20:04:53.6±1.8, 34.65N±0.10×23.92E±0.05, h25km±7km, n37, σ0.93/41, mb3.7/4, Crete

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GVD	**Gavdhos**	**0.23**	**36**	P	**Pb**	**20 04 59.6**	**0.0**
GVD	**Gavdhos**	**0.23**	**36**	P	**Pb**	**20 04 59.6**	**0.0**
GVD	**Gavdhos**	**0.23**	**36**	P	**Pb**	**20 04 59.8**	**+0.2**
GVD				S	**Sb**	**20 05 03.1**	**-0.6**
GVD				AML	AML	20 05 16.0	
	comp=E,4122μm,0.4s						
GVD				AML	AML	20 05 16.0	
	comp=N,5446μm,0.4s						
VAM	**Vamos**	**0.79**	**17**	P	**Pb**	**20 05 08.8**	**+0.2**
VAM				S	**Sb**	**20 05 18.5**	**-0.4**
VAM	**Vamos**	**0.79**	**17**	P	**Pn**	**20 05 09.0**	**-0.1**
VAM				S	**Sb**	**20 05 18.5**	**-0.4**
IMMV	**Iera Moni Meta**	**0.81**	**3**	P	**Pb**	**20 05 08.5**	**-0.5**
IMMV				S	**Sn**	**20 05 20.7**	**+0.1**
IMMV	**Iera Moni Meta**	**0.81**	**3**	P	**Pb**	**20 05 08.5**	**-0.5**
IMMV				S	**Sn**	**20 05 20.7**	**+0.1**
IMMV	**Iera Moni Meta**	**0.81**	**3**	P	**Pb**	**20 05 08.3**	**-0.7**
SIVA	**Sivas**	**0.82**	**63**	P	**Pn**	**20 05 10.1**	**+0.6**
SIVA	**Sivas**	**0.82**	**63**	P	**Pn**	**20 05 10.1**	**+0.6**
IDI	**Anoyia**	**1.02**	**51**	Pn	**Pb**	**20 05 13.6**	**+1.0**
	comp=N,4.8nm,0.3s,baz=244,slow=11,SNR=33						
IDI	**Anoyia**	**1.02**	**51**	P	**Pb**	**20 05 12.5**	**-0.1**
IDI				S	**Sn**	**20 05 27.1**	**+1.2**
IDI	**Anoyia**	**1.02**	**51**	P	**Pb**	**20 05 13.4**	**+0.9**
IDI				S	**Sn**	**20 05 27.1**	**+1.2**
IDI	**Anoyia**	**1.02**	**51**	P	**Pb**	**20 05 13.4**	**+0.9**
ANKY	**Antikythira Is**	**1.31**	**337**	P	**Pb**	**20 05 17.2**	**-0.3**
ANKY	**Antikythira Is**	**1.31**	**337**	P	**Pb**	**20 05 17.3**	**-0.3**
ANKY	**Antikythira Is**	**1.31**	**337**	P	**Pb**	**20 05 17.3**	**-0.3**
LAST	**Lasithi**	**1.38**	**68**	P	**Pn**	**20 05 17.8**	**+0.5**
LAST	**Lasithi**	**1.38**	**68**	P	**Pn**	**20 05 17.8**	**+0.5**
LAST	**Lasithi**	**1.38**	**68**	P	**Pn**	**20 05 17.6**	**+0.3**
NPS	**Neapolis**	**1.52**	**66**	P	**Pb**	**20 05 20.3**	**-0.7**
NPS	**Neapolis**	**1.52**	**66**	P	**Pb**	**20 05 20.3**	**-0.7**
KYTH	**Kithira**	**1.78**	**336**	P	**Pn**	**20 05 24.0**	**+1.2**
KYTH	**Kithira**	**1.78**	**336**	P	**Pn**	**20 05 24.0**	**+1.2**
VLI	**Veliai**	**2.21**	**339**	P	**Pn**	**20 05 30.6**	**+1.9**
VLI	**Veliai**	**2.21**	**339**	P	**Pn**	**20 05 30.6**	**+1.9**
DID	**Didima**	**2.90**	**349**	P	**Pn**	**20 05 38.4**	**+0.2**
DID	**Didima**	**2.90**	**349**	P	**Pn**	**20 05 38.4**	**+0.2**
DRO	**Drossia**	**3.75**	**332**	P	**Pn**	**20 05 51.2**	**+1.4**
DRO	**Drossia**	**3.75**	**332**	P	**Pn**	**20 05 51.2**	**+1.4**
BRTR	**Keskin Array B**	**9.26**	**54**	Pn	**Pn**	**20 07 05.2**	**-0.5**
	comp=N,0.1nm,0.3s,baz=234,slow=12,SNR=2.4						
MMAI	**Mount Meron Ar**	**9.69**	**96**	Pn	Pn	20 06 59.9	-12
	comp=N,0.7nm,0.3s,baz=251,slow=14,SNR=3.3						
GERES	**GERESS Array B**	**16.08**	**335**	Pn	**Pn**	**20 08 39.2**	**+1.2**
	comp=N,0.1nm,0.3s,baz=160,slow=12,SNR=5.3						
HFS	**Hagfors**	**26.35**	**348**	P	**P**	**20 10 25.0**	**-2.4**
	comp=N,2.8nm,0.8s,baz=156,slow=14,SNR=4.1						
EKA	**Eskdalemuir Ar**	**27.88**	**326**	P	**P**	**20 10 40.5**	**-0.7**
	comp=N,0.7nm,0.5s,baz=121,slow=8.5,SNR=4.8						
AKTO	**Aktyubinsk**	**29.34**	**47**	P	P	20 10 50.8	-3.5
	comp=N,0.5nm,0.5s,baz=249,slow=12,SNR=3.6						
MKAR	**Makanchi Array**	**44.90**	**56**	P	P	20 13 02.9	-3.3
	comp=N,0.7nm,0.5s,baz=272,slow=7.7,SNR=3.6						

*ISCJB **19** 20:06:47.5±0.8, 10.71N±0.05×62.38W±0.04, h87km±9km, Error ellipse: s-maj=9.2km s-min=5.3km az=153.8*
*TRN **19** 20:06:48.9, 10.81N×62.37W, h78km, MD3.1*
*FUNV **19** 20:06:50.6, 10.65N×62.38W, h70km, MW2.5*
ISC 19 20:06:47.5±1.5, 10.74N±0.05×62.38W±0.04, h91km±13km, n13, σ1.24/21, 1C-2D, Near coast of Venezuela

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TCE	**Chacachacare**	**0.62**	**94**	*eS*	**Sn**	**20 07 14.6**	**-0.6**
GUNV	**Guanoco**	**0.80**	**224**	||*eP*	**Pn**	**20 07 06.4**	**+1.4**
GUNV				*eS*	**Sn**	**20 07 16.8**	**-1.4**
CRUV	**Carupano**	**0.84**	**266**	||*eP*	**Pn**	**20 07 05.8**	**+0.3**
CRUV				*eS*	**Sn**	**20 07 18.4**	**-0.7**
TRN	**Trinidad (W)**	**0.97**	**95**	||*eP*	**Pn**	**20 07 07.6**	**+0.7**
TRN				*eS*	**Sn**	**20 07 20.8**	**-0.7**
TBH	**Brigand Hill**	**1.32**	**101**	*eP*	**Pn**	**20 07 12.4**	**+1.4**
TBH				*eS*	**Sn**	**20 07 29.1**	**+0.3**
GRGR	**Grenville**	**1.56**	**27**	*eP*	**Pn**	**20 07 13.7**	**-0.3**
GRGR				*eS*	**Sn**	**20 07 33.1**	**-1.0**
TOSP	**Speyside**	**1.90**	**73**	*eP*	**Pn**	**20 07 19.1**	**+0.7**
TOSP				*eS*	**Sn**	**20 07 41.3**	**-0.6**
ORIV	**Oritupano**	**1.94**	**211**	*eP*	**Pn**	**20 07 20.5**	**+1.5**
ORIV				*eS*	**Sn**	**20 07 41.5**	**-1.6**
PCRV	**Puerto La Cruz**	**2.29**	**256**	*eP*	**Pn**	**20 07 25.0**	**+1.5**
GURV	**El Guri**	**3.04**	**193**	*eP*	**Pn**	**20 07 34.4**	**+0.7**
GURV				*eS*	**Sn**	**20 08 06.9**	**-2.3**
CUPV	**Cœpira**	**3.42**	**259**	*eP*	**Pn**	**20 07 40.6**	**+1.8**
LUEV	**Luepa**	**4.95**	**169**	*eP*	**Pn**	**20 07 59.7**	**+0.1**
BAUV	**El Baul**	**5.86**	**253**	*eP*	**Pn**	**20 08 12.3**	**+0.5**

*IDC **19** 20:12:16.7±2.4, 34.11N×23.72E, h0km, mb3.9/5, mb1 3.9/10, mb1mx3.6/67, mbtmp3.8/10, ML3.7/5, Error ellipse: s-maj=45.4km s-min=18.4km az=21.0*
ISC 19 20:12:20.9±1.3, 34.1N±0.2×23.76E±0.08, h30km, n12, σ0.58/13, mb3.8/5, Crete

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IDI	**Anoyia**	**1.53**	**37**	Pn	**Pn**	**20 12 46.5**	**+0.2**
	8.6nm,0.3s,baz=225,slow=12,SNR=38						
VAE	**Valguarnera**	**8.32**	**297**	Pn	**Pn**	**20 14 19.5**	**0.0**
	1.3nm,0.3s,baz=348,slow=23,SNR=4.8						
VAE				Sn	**Sn**	**20 15 52.8**	**+0.3**
	1.4nm,0.3s,baz=68,slow=11,SNR=3.3						
MMAI	**Mount Meron Ar**	**9.78**	**93**	Pn	**Pn**	**20 14 40.0**	**+0.5**
	0.8nm,0.3s,baz=275,slow=12,SNR=4.5						
EIL	**Elat**	**10.48**	**112**	Pn	**Pn**	**20 14 49.0**	**-0.1**
	0.4nm,0.3s,baz=311,slow=9.3,SNR=3.5						
VRAC	**Vranov**	**16.12**	**343**	Pn	**P**	**20 16 07.2**	**-1.0**
	0.1nm,0.3s,baz=137,slow=7.7,SNR=3.9						
GERES	**GERESS Array B**	**16.55**	**336**	Pn	**Pn**	**20 16 10.3**	**-0.4**
	0.1nm,0.3s,baz=149,slow=12,SNR=10						
KHC	**Kasperske Hory**	**16.83**	**336**	*eP*	**P**	**20 16 16.7**	**+0.5**
KHC				*ex*	x	20 16 22.4	
HFS	**Hagfors**	**26.89**	**349**	P	**P**	**20 17 58.2**	**-0.7**
	2.4nm,0.7s,baz=151,slow=9.8,SNR=5.9						
EKA	**Eskdalemuir Ar**	**28.29**	**327**	P	**P**	**20 18 12.3**	**+0.8**
	1.0nm,0.5s,baz=125,slow=8.6,SNR=3.4						
KURBB	**Kurchatov Arra**	**42.70**	**50**	P	**P**	**20 20 14.8**	**-0.2**
	0.4nm,0.4s,baz=272,slow=8.6,SNR=9.0						
MKAR	**Makanchi Array**	**45.34**	**55**	P	**P**	**20 20 35.8**	**-0.4**
	0.5nm,0.4s,baz=272,slow=6.9,SNR=9.1						
ZALV	**Zalesovo Beam**	**46.59**	**45**	P	**P**	**20 20 46.0**	**+0.1**
	0.9nm,0.5s,baz=277,slow=9.5,SNR=4.4						

*ISCJB **19** 20:14:53.9±0.6, 6.52S±0.05×147.95E±0.09, h51km, mb4.7/22, MS4.2/10, Error ellipse: s-maj=12.4km s-min=6.5km az=175.0*
*NEIC **19** 20:14:56.0±1.0, 6.59S×147.87E, h52km±8km, mb4.9/8, Error ellipse: s-maj=9.3km s-min=5.5km az=73.0*
*IDC **19** 20:14:57.0±1.9, 6.54S×147.84E, h60km±16km, mb4.1/9, mb1 4.3/12, mb1mx4.0/48, mbtmp

MS5.5/49, Ms1 5.5/49, ms1mx5.4/59, Error ellipse: s-maj=7.5km s-min=7.0km az=171.0

SFS **19** 20:15:22.0, 39.°15N×29.°10E, h7km, ML5.8

GCMT **19** 20:15:22.9±0.1, 39.°08N×29.°11E, h12km, MW5.9/136, Moment Tensor Solution. s134,c267; s136,c438; Duration: 2±2 Moment tensor: Scale 10^{18}Nm; M_{rr}-0.81±.01; $M_{\theta\theta}$0.89±.01; $M_{\phi\phi}$-0.08±.01; $M_{r\theta}$0.03±.01; $M_{\theta\phi}$-0.22±.01; $M_{\phi r}$-0.05±.02; Best double couple: $M_0$0.87500×10^{18} NP1:ϕ_s286.00000°, δ46.00000°, λ-85.00000°. NP2:ϕ_s98.00000°, δ44.00000°, λ-96.00000°. Principal axes: T 0.9390, Plg1.0000°, Azm12.0000°; N -0.1280, Plg4.0000°, Azm102.0000°; P -0.8110, Plg86.0000°, Azm264.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.

NEIC **19** 20:15:22.9, 39.°15N×29.°10E, h7km, mb5.8/279, ME5.8, MS5.8/281, MW5.8, MW5.8, ML5.9(ISK), ML6.2(THE), Moment Tensor Solution. s24 Moment tensor: Scale 10^{17}Nm; M_{rr}-5.05; $M_{\theta\theta}$6.23; $M_{\phi\phi}$-1.17; $M_{r\theta}$2.07; $M_{\theta\phi}$-2.31; $M_{\phi r}$1.90; Best double couple: $M_0$6.80000×10^{17} NP1: ϕ_s262.00000°, δ58.00000°, λ-122.00000°. NP2: ϕ_s131.00000°, δ44.00000°, λ-50.00000°. Principal axes: T 7.0800, Plg7.0000°, Azm14.0000°; N -0.6200, Plg27.0000°, Azm280.0000°; P -6.4600, Plg62.0000°, Azm118.0000°; Broadband fault plane solution: P waves. NP1:ϕ_s37.00000°, δ46.00000°, λ-144.00000°. NP2: ϕ_s280.00000°, δ65.00000°, λ-50.00000°. Principal axes: T Plg11.0000°, Azm342.0000°; N Plg0.0000°, Azm0.0000°; P Plg52.0000°, Azm238.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from BB mechanism. After ISK.

NEIC Felt [VI] at Simav and [V] at Kutahya and Usak. Felt throughout western Turkey and as far as Adana and Corum. Felt [III] at Burgas and [II] at Plovdiv and Sofia, Bulgaria. Felt at Alexandroupoli, Mitilini, Orestias and Souflion, Greece.

DDA **19** 20:15:22.8, 39.°13N×29.°08E, h24km, Ml5.7

MOS **19** 20:15:22.8±1.1, 39.°20N×29.°09E, h9km, mb6.0/102, MS5.8/92, Error ellipse: s-maj=3.7km s-min=2.6km az=103.8

BJI **19** 20:15:22.1, 39.°10N×29.°00E, h10km, mb5.5/84, mB6.0/84, Ms6.1/96, Ms7 5.7/88

ISCJB **19** 20:15:22.1±0.2, 39.°126N±0.°008×29.°122E±0.°009, h6km±1km, mb5.7/417, MS5.7/362, Error ellipse: s-maj=1.5km s-min=1.2km az=23.5

PDA **19** 20:15:23.0, 39.°15N×29.°10E, h7km, ML5.9

NEIC **19** 20:15:23.0±0.0, 39.°11N×29.°12E, h15km, Moment Tensor Solution. s32 Moment tensor: Scale 10^{17}Nm; M_{rr}-6.49; $M_{\theta\theta}$5.79; $M_{\phi\phi}$0.70; $M_{r\theta}$-1.73; $M_{\theta\phi}$-1.24; $M_{\phi r}$1.46; Best double couple: $M_0$6.70000×10^{17} NP1:ϕ_s111.00000°, δ54.00000°, λ-80.00000°. NP2:ϕ_s275.00000°, δ37.00000°, λ-102.00000°. Principal axes: T 6.3900, Plg8.0000°, Azm194.0000°; N 0.5500, Plg7.0000°, Azm285.0000°; P -6.9500, Plg78.0000°, Azm55.0000°;

CSEM **19** 20:15:23.4±0.0, 39.°14N×29.°13E, h2km, mb5.8/99, Ms5.8, Mw5.8 Error ellipse: s-maj=1.4km s-min=1.3km az=21.0

ISN **19** 20:15:23.3±1.0, 39.°15N×29.°29E, h0km±90km, ML5.8

THE **19** 20:15:23.8, 39.°11N×29.°12E, h1km, ML6.1/7, Error ellipse: s-maj=1.7km s-min=0.9km az=65.0

ISK **19** 20:15:23.0, 39.°16N×29.°10E, h8km, ML5.9

PDG **19** 20:15:23.7±0.7, 39.°16N×29.°07E, h13km±1km, MD6.0/6, ML5.9/13, Error ellipse: s-maj=0.5km s-min=0.7km az=0.0

GII **19** 20:15:25.3±0.0, 38.°77N×28.°95E, h1km, mb5.1/3, MD5.2/3

NIC **19** 20:15:26.4±0.5, 38.°92N×28.°74E, h25km, mb5.3, ML5.1

SOF **19** 20:15:28.3, 39.°64N×28.°93E, h2km, MD4.5

ISC 19 20:15:25.1±0.4, **39.°13N**±0.°01×**29.°07E**±0.°01, **h12**km±2km, **h11**km:**pP-P, n2777,** σ1°±**60**/3029, **mb5.8**/444, **MS5.8**/368, **152C-89D, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.29**	**253**	P	**Pg**	**20 15 29.7**	**-1.4**
DEMI				S	**Sg**	**20 15 34.5**	**-0.5**
DEMI	**Demirci**	**0.29**	**253**	⇑iP	**Pg**	**20 15 29.7**	**-1.4**
DEMI				*i* S	**Sg**	**20 15 34.5**	**-0.5**
GDZ	**Gediz**	**0.32**	**97**	P	**Pg**	**20 15 29.6**	**-2.1**
GDZ	**Gediz**	**0.32**	**97**	⇑iP	**Pg**	**20 15 29.6**	**-2.1**
GDZ				*i* S	**Sg**	**20 15 36.5**	**+0.4**
TVSB	**Tavsanli**	**0.44**	**43**	*e*PG	**Pg**	**20 15 31.8**	**-2.1**
TVSB	**Tavsanli**	**0.44**	**43**	*e*Pg	**Pg**	**20 15 31.8**	**-2.1**
DURS	**Dursunbey**	**0.66**	**316**	P	**Pg**	**20 15 37.3**	**-0.7**
DURS				S	**Sg**	**20 15 46.2**	**-0.5**
DURS	**Dursunbey**	**0.66**	**316**	⇑iP	**Pg**	**20 15 37.3**	**-0.7**
DURS				*i* S	**Sg**	**20 15 46.2**	**-0.5**
KULA	**Kula-Manisa**	**0.69**	**208**	*e*PG	**Pg**	**20 15 36.9**	**-1.6**
KULA	**Kula-Manisa**	**0.69**	**208**	P	**Pg**	**20 15 36.6**	**-1.9**
KULA				S	**Sg**	**20 15 47.6**	**0.0**
KULA	**Kula-Manisa**	**0.69**	**208**	P	**Pg**	**20 15 36.6**	**-1.9**
KULA	**Kula-Manisa**	**0.69**	**208**	*e*Pg	**Pg**	**20 15 36.9**	**-1.6**
KULA				S	**Sg**	**20 15 47.6**	**0.0**
KULA	**Kula-Manisa**	**0.69**	**208**	P	**Pg**	**20 15 36.6**	**-1.9**
KULA				S	**Sg**	**20 15 47.6**	**0.0**
MANT	**Manisa**	**0.75**	**212**	P	**Pg**	**20 15 37.8**	**-1.9**
MANT				S	**Sg**	**20 15 48.7**	**-0.9**
MANT	**Manisa**	**0.75**	**212**	⇑iP	**Pg**	**20 15 37.8**	**-1.9**
MANT				*i* S	**Sg**	**20 15 48.7**	**-0.9**
KHAL	**Karahalli**	**0.82**	**156**	P	**Pg**	**20 15 39.2**	**-1.9**
KHAL	**Karahalli**	**0.82**	**156**	⇑iP	**Pg**	**20 15 39.2**	**-1.9**
KHL	**Karahalli**	**0.88**	**156**	*e*PG	**Pg**	**20 15 40.2**	**-1.9**
KHL	**Karahalli**	**0.88**	**156**	*e*Pg	**Pg**	**20 15 40.2**	**-1.9**
ORLT	**Orhaneli**	**0.93**	**352**	*e*PG	**Pg**	**20 15 41.1**	**-1.9**
ORLT	**Orhaneli**	**0.93**	**352**	*e*Pg	**Pg**	**20 15 41.1**	**-1.9**
AKHS	**Akhisar**	**1.01**	**256**	P	**Pg**	**20 15 43.0**	**-1.5**
AKHS				S	**Sg**	**20 15 57.1**	**-0.6**
AKHS	**Akhisar**	**1.01**	**256**	⇑iP	**Pg**	**20 15 43.0**	**-1.5**
AKHS				*i* S	**Sg**	**20 15 57.1**	**-0.6**
AKS	**Akhisar**	**1.01**	**256**	*e*PG	**Pg**	**20 15 43.2**	**-1.4**
AKS	**Akhisar**	**1.01**	**256**	*e*Pg	**Pg**	**20 15 43.2**	**-1.4**
BALB	**Balikesir**	**1.05**	**299**	*e*PG	**Pb**	**20 15 43.9**	**-1.4**
BALB				*e*SG	**Sb**	**20 15 58.5**	**-0.6**
BALB	**Balikesir**	**1.05**	**299**	*e*Pg	**Pb**	**20 15 43.9**	**-1.4**
BALB				*e*Sg	**Sb**	**20 15 58.5**	**-0.6**
IGD	**Bursa**	**1.14**	**5**	⇑iP	**Pb**	**20 15 43.6**	**-3.1**
IGD				*i* S	**Sn**	**20 16 03.3**	**+0.8**
CAVI	**Cavuskoy**	**1.23**	**29**	*e*PN	**Pn**	**20 15 46.1**	**-2.1**
CAVI				*e*SN	**Sb**	**20 16 03.0**	**-1.1**
CAVI	**Cavuskoy**	**1.23**	**29**	*e*PN	**Pn**	**20 15 46.1**	**-2.1**
CAVI				*e*Sn	**Sb**	**20 16 03.0**	**-1.1**
IZI	**Iznik**	**1.25**	**14**	*e*PN	**Pn**	**20 15 46.9**	**-1.6**
IZI	**Iznik**	**1.25**	**14**	*e*Pn	**Pn**	**20 15 46.9**	**-1.6**
MDNY	**Mudanya-Bursa**	**1.25**	**353**	*e*PN	**Pn**	**20 15 46.8**	**-1.6**
MDNY	**Mudanya-Bursa**	**1.25**	**353**	*e*Pn	**Pn**	**20 15 46.8**	**-1.6**
KCTX	**Karacabey (Bur**	**1.26**	**334**	*e*PN	**Pn**	**20 15 47.3**	**-1.3**
KCTX	**Karacabey (Bur**	**1.26**	**334**	*e*Pn	**Pn**	**20 15 47.3**	**-1.3**
BALY	**Balya**	**1.28**	**299**	P	**Pn**	**20 15 47.7**	**-1.2**
BALY				S	**Sb**	**20 16 05.4**	**-0.2**
BALY	**Balya**	**1.28**	**299**	⇑iP	**Pn**	**20 15 47.7**	**-1.2**
BALY				*i* S	**Sb**	**20 16 05.5**	**-0.2**
GEMT	**Gemlik**	**1.31**	**4**	*e*PN	**Pn**	**20 15 47.7**	**-1.5**
GEMT	**Gemlik**	**1.31**	**4**	*e*Pn	**Pn**	**20 15 47.7**	**-1.5**
DENT	**Denizli**	**1.37**	**181**	*e*PN	**Pn**	**20 15 49.3**	**-0.8**
DENT	**Denizli**	**1.37**	**181**	*e*Pn	**Pn**	**20 15 49.3**	**-0.8**
ADVT	**Abdulvahap**	**1.40**	**21**	*e*PN	**Pn**	**20 15 49.0**	**-1.5**
ADVT	**Abdulvahap**	**1.40**	**21**	*e*Pn	**Pn**	**20 15 49.0**	**-1.5**
GONE	**Gonen-Balikesi**	**1.41**	**311**	*e*PN	**Pn**	**20 15 50.2**	**-0.4**
GONE	**Gonen-Balikesi**	**1.41**	**311**	*e*Pn	**Pn**	**20 15 50.2**	**-0.4**
ESKT	**Eskisehir**	**1.44**	**74**	*i* P	**Pn**	**20 15 49.4**	**-1.7**
SEYT	**Eskypehyr**	**1.44**	**74**	P	**Pn**	**20 15 49.4**	**-1.7**
DNZL	**Cakiroluk**	**1.44**	**181**	P	**Pn**	**20 15 49.2**	**-1.9**
DNZL	**Cakiroluk**	**1.44**	**181**	⇓iP	**Pn**	**20 15 49.2**	**-1.9**
DNZL				*i* S	**Sg**	**20 16 15.2**	**+3.9**
ARMT	**Armutlu**	**1.45**	**354**	*e*PN	**Pn**	**20 15 49.3**	**-1.8**
ARMT	**Armutlu**	**1.45**	**354**	*e*Pn	**Pn**	**20 15 49.3**	**-1.8**
AYDB	**Zeytinkoy-Aydi**	**1.50**	**218**	*e*PN	**Pn**	**20 15 51.4**	**-0.6**
AYDB	**Zeytinkoy-Aydi**	**1.50**	**218**	*e*Pn	**Pn**	**20 15 51.4**	**-0.6**
GPA	**Golpazari**	**1.50**	**39**	*e*PN	**Pn**	**20 15 50.6**	**-1.3**
GPA	**Golpazari**	**1.50**	**39**	*e*Pn	**Pn**	**20 15 50.6**	**-1.3**
BOLV	**Bolvadin**	**1.52**	**105**	P	**Pn**	**20 15 50.9**	**-1.4**
BOLV	**Bolvadin**	**1.52**	**105**	⇓iP	**Pn**	**20 15 50.9**	**-1.4**
BOLV				*i* S	**Sg**	**20 16 16.4**	**+2.3**
EDC	**Edincik**	**1.53**	**323**	*e*PN	**Pn**	**20 15 51.0**	**-1.3**
EDC	**Edincik**	**1.53**	**323**	*e*Pn	**Pn**	**20 15 51.0**	**-1.3**
KNL	**Bal¯–kesir**	**1.65**	**314**	⇑iP	**Pn**	**20 15 51.7**	**-2.2**
KNL				*i* S	**Sb**	**20 16 16.0**	**-0.2**
DKL	**Dikili**	**1.69**	**269**	*e*PN	**Pn**	**20 15 54.2**	**-0.2**
DKL	**Dikili**	**1.69**	**269**	*e*Pn	**Pn**	**20 15 54.2**	**-0.2**
GULT	**Gulveren**	**1.71**	**40**	*e*PN	**Pn**	**20 15 53.1**	**-1.8**
GULT	**Gulveren**	**1.71**	**40**	*e*Pn	**Pn**	**20 15 53.1**	**-1.8**
BUY	**Buyukada**	**1.72**	**1**	P	**Pn**	**20 15 53.1**	**-1.8**
BUY				S	**Sn**	**20 16 17.5**	**+0.6**
BUY	**Buyukada**	**1.72**	**1**	⇑iP	**Pn**	**20 15 53.1**	**-1.8**
BUY				*i* S	**Sn**	**20 16 17.5**	**+0.6**
ISP	**Isparta**	**1.73**	**138**	*e*PN	**Pn**	**20 15 54.5**	**-0.6**
ISP	**Isparta**	**1.73**	**138**	⇓iP	**Pn**	**20 15 55.1**	**0.0**
ISP	**Isparta**	**1.73**	**138**	S	**Sb**	**20 16 19.2**	**+0.5**
ISP	**Isparta**	**1.73**	**138**	P	**Pn**	**20 15 53.0**	**-2.1**
ISP				S	**Sn**	**20 16 15.3**	**-1.9**
ISP	**Isparta**	**1.73**	**138**	Pn	**Pn**	**20 15 54.7**	**-0.4**
ISP	**Isparta**	**1.73**	**138**	*e*P	**Pn**	**20 15 55.5**	**+0.4**
ISP				S	**Sn**	**20 16 15.3**	**-1.9**
ISP	**Isparta**	**1.73**	**138**	P	**Pn**	**20 15 53.0**	**-2.1**
ISP	**Isparta**	**1.73**	**138**	*e*Pn	**Pn**	**20 15 54.5**	**-0.6**
ISP				S	**Sn**	**20 16 15.3**	**-1.9**
ISP	**Isparta**	**1.73**	**138**	*e*Pn	**Pn**	**20 15 55.5**	**+0.4**
ISP				S	**Sn**	**20 16 15.3**	**-1.9**
AYDN	**Tasoluk**	**1.74**	**213**	P	**Pn**	**20 15 54.9**	**-0.3**
AYDN				S	**Sg**	**20 16 20.2**	**-0.8**
AYDN	**Tasoluk**	**1.74**	**213**	⇓iP	**Pn**	**20 15 54.9**	**-0.3**
AYDN				*i* S	**Sg**	**20 16 20.2**	**-0.8**
HRT	**Hereke**	**1.75**	**15**	*e*PN	**Pn**	**20 15 54.2**	**-1.2**
HRT	**Hereke**	**1.75**	**15**	*e*Pn	**Pn**	**20 15 54.2**	**-1.2**
BAGO	**Egridir - ISPA**	**1.76**	**130**	⇓iP	**Pn**	**20 15 53.9**	**-1.6**
BAGO				*i* S	**Sg**	**20 16 25.1**	**+3.3**
SPNC	**Sapanca-Adapaz**	**1.82**	**31**	*e*PN	**Pn**	**20 15 54.9**	**-1.4**
SPNC	**Sapanca-Adapaz**	**1.82**	**31**	*e*Pn	**Pn**	**20 15 54.9**	**-1.4**
AYVA	**Ayvalik**	**1.86**	**276**	P	**Pn**	**20 15 56.4**	**-0.3**
AYVA	**Ayvalik**	**1.86**	**276**	⇓iP	**Pn**	**20 15 56.4**	**-0.3**
AYVA				*i* S	**Sg**	**20 16 23.7**	**-1.1**
MRMT	**Marmara Adasi**	**1.86**	**323**	*e*PN	**Pn**	**20 15 55.7**	**-1.2**
MRMT	**Marmara Adasi**	**1.86**	**323**	*e*Pn	**Pn**	**20 15 55.7**	**-1.2**
KRBG	**Karabiga-Canak**	**1.86**	**313**	*e*PN	**Pn**	**20 15 55.7**	**-1.1**
KRBG	**Karabiga-Canak**	**1.86**	**313**	*e*Pn	**Pn**	**20 15 55.7**	**-1.1**
SVRH	**Sivrihisar-ESK**	**1.93**	**80**	*e*PN	**Pn**	**20 15 57.6**	**-0.2**
SVRH	**Sivrihisar-ESK**	**1.93**	**80**	*e*Pn	**Pn**	**20 15 57.6**	**-0.2**
ISK	**Istanbul-Kandi**	**1.94**	**360**	*e*PN	**Pn**	**20 15 57.0**	**-0.8**
ISK	**Istanbul-Kandi**	**1.94**	**360**	P	**Pn**	**20 15 55.8**	**-2.0**
ISK	**Istanbul-Kandi**	**1.94**	**360**	P	**Pn**	**20 15 55.8**	**-2.0**
ISK	**Istanbul-Kandi**	**1.94**	**360**	P	**Pn**	**20 15 55.8**	**-2.0**
ISK	**Istanbul-Kandi**	**1.94**	**360**	*e*Pn	**Pn**	**20 15 57.0**	**-0.8**
ISK	**Istanbul-Kandi**	**1.94**	**360**	P	**Pn**	**20 15 55.8**	**-2.0**
GLHS	**Glhisar (BURDU**	**2.00**	**170**	*e*PN	**Pn**	**20 15 58.6**	**-0.2**
GLHS	**Glhisar (BURDU**	**2.00**	**170**	*e*Pn	**Pn**	**20 15 58.6**	**-0.2**
AUMIH	**MIHALICIK**	**2.01**	**68**	P	**Pn**	**20 15 58.2**	**-0.8**
AUMIH	**MIHALICIK**	**2.01**	**68**	⇓iP	**Pn**	**20 15 58.2**	**-0.8**
AUMIH				*i* S	**Sg**	**20 16 29.8**	**+0.1**
DGB	**¯zmir**	**2.02**	**239**	⇓iP	**Pn**	**20 15 58.1**	**-0.9**
DGB				*i* S	**Sb**	**20 16 28.1**	**+1.2**
BCK	**Bucak**	**2.05**	**144**	*e*PN	**Pn**	**20 15 59.2**	**-0.3**
BCK	**Bucak**	**2.05**	**144**	*e*Pn	**Pn**	**20 15 59.2**	**-0.3**
BGKT	**Bogazkoy**	**2.06**	**354**	*e*PN	**Pn**	**20 15 58.6**	**-1.0**
BGKT	**Bogazkoy**	**2.06**	**354**	*e*Pn	**Pn**	**20 15 58.6**	**-1.0**
BTAS	**Taskesti**	**2.07**	**45**	P	**Pn**	**20 15 58.2**	**-1.5**
BTAS	**Taskesti**	**2.07**	**45**	⇑iP	**Pn**	**20 15 58.2**	**-1.5**
BTAS				*i* S	**Sg**	**20 16 33.8**	**+2.1**
SILT	**Sile**	**2.07**	**12**	*e*PN	**Pn**	**20 15 58.2**	**-1.5**
SILT	**Sile**	**2.07**	**12**	*e*Pn	**Pn**	**20 15 58.2**	**-1.5**
URLA	**Izmir**	**2.08**	**249**	P	**Pn**	**20 15 59.1**	**-0.8**
URLA	**Izmir**	**2.08**	**249**	⇓iP	**Pn**	**20 15 59.1**	**-0.8**
URLA				*i* S	**Sg**	**20 16 31.4**	**-0.6**
YER	**Yerkesik**	**2.08**	**198**	*e*PN	**Pn**	**20 15 59.4**	**-0.5**
YER	**Yerkesik**	**2.08**	**198**	P	**Pn**	**20 15 58.4**	**-1.5**
YER	**Yerkesik**	**2.08**	**198**	P	**Pn**	**20 15 58.4**	**-1.5**
YER	**Yerkesik**	**2.08**	**198**	P	**Pn**	**20 15 58.4**	**-1.5**
YER	**Yerkesik**	**2.08**	**198**	*e*PN	**Pn**	**20 15 59.4**	**-0.5**
YER	**Yerkesik**	**2.08**	**198**	P	**Pn**	**20 15 58.4**	**-1.5**
MDUB	**Mudurnu**	**2.12**	**50**	*e*PN	**Pn**	**20 15 59.1**	**-1.3**
MDUB	**Mudurnu**	**2.12**	**50**	*e*Pn	**Pn**	**20 15 59.1**	**-1.3**
KLYT	**Kilyos**	**2.12**	**359**	*e*PN	**Pn**	**20 15 59.8**	**-0.6**
KLYT	**Kilyos**	**2.12**	**359**	*e*Pn	**Pn**	**20 15 59.8**	**-0.6**
RKY	**Sarkoy-Tekirda**	**2.13**	**318**	*e*PN	**Pn**	**20 15 59.8**	**-0.8**
RKY	**Sarkoy-Tekirda**	**2.13**	**318**	*e*Pn	**Pn**	**20 15 59.8**	**-0.8**
KAND	**Kocaeli-Kandir**	**2.14**	**23**	P	**Pn**	**20 15 59.2**	**-1.5**
KAND	**Kocaeli-Kandir**	**2.14**	**23**	⇑iP	**Pn**	**20 15 59.2**	**-1.5**
KAND				*i* S	**Sb**	**20 16 31.9**	**+1.5**
CTKS	**Kestanelik-??a**	**2.15**	**349**	*e*PN	**Pn**	**20 15 59.8**	**-1.0**
CTKS	**Kestanelik-??a**	**2.15**	**349**	*e*Pn	**Pn**	**20 15 59.8**	**-1.0**
LPK	**Lapseki**	**2.17**	**306**	*e*PN	**Pn**	**20 16 00.3**	**-0.8**
LPK	**Lapseki**	**2.17**	**306**	*e*Pn	**Pn**	**20 16 00.3**	**-0.8**
PRK	**Paraskevi**	**2.18**	**274**	P	**Pn**	**20 16 00.3**	**-0.9**
PRK				S	**Sn**	**20 16 29.1**	**+1.0

NPS	Neapolis	4.74 217	P	Pn	20 16 36.8 +0.3
NPS	Neapolis	4.74 217	P	Pn	20 16 36.8 +0.3
NPS	Neapolis	4.74 217	P	Pn	20 16 36.8 +0.3
MMB	Musomiste	4.76 303	P	Pn	20 16 37.0 +0.2
SZH	Strazhica	4.76 331	P	Pn	20 16 35.7 -1.0
FYTO	Fytoko, Volos	4.77 275	P	Pn	20 16 38.1 +1.4
FYTO	Fytoko, Volos	4.77 275	P	Pn	20 16 38.1 +1.4
FYTO	Fytoko, Volos	4.77 275	P	Pn	20 16 38.1 +1.4
HORT	Hortiatis	4.82 290	P	Pn	20 16 38.0 +0.4
HORT	Hortiatis	4.82 290	P	Pn	20 16 38.0 +0.4
HORT	Hortiatis	4.82 290	P	Pn	20 16 38.0 +0.4
AKMC	Akamas	4.85 147	P	Pn	20 16 36.0 -2.0
baz=324					
AKMC	Akamas	4.85 147	P	Pn	20 16 36.0 -2.0
ALFC	Alefka	4.86 144	P	Pn	20 16 36.6 -1.5
baz=321					
ALFC			S	Sn	20 17 32.6 -1.8
ALFC	Alefka	4.86 144	P	Pn	20 16 36.6 -1.5
ALFC			S	Sn	20 17 32.6 -1.8
DID	Didima	4.87 252	P	Pn	20 16 37.6 -0.5
DID	Didima	4.87 252	P	Pn	20 16 37.6 -0.5
DID	Didima	4.87 252	P	Pn	20 16 37.6 -0.5
LAST	Lasithi	4.89 217	*i* P	Pn	20 16 39.5 +1.0
LAST	Lasithi	4.89 217	P	Pn	20 16 39.3 +0.8
LAST	Lasithi	4.89 217	P	Pn	20 16 39.3 +0.8
LAST	Lasithi	4.89 217	*e*Pn	Pn	20 16 39.8 +1.3
LAST	Lasithi	4.89 217	*e*Pn	Pn	20 16 39.8 +1.3
LTK	Loutraki	4.91 259	P	Pn	20 16 38.4 -0.3
LTK	Loutraki	4.91 259	P	Pn	20 16 38.4 -0.3
LTK	Loutraki	4.91 259	P	Pn	20 16 38.4 -0.3
THE	Thessaloniki	4.93 290	P	Pn	20 16 39.6 +0.6
THE	Thessaloniki	4.93 290	P	Pn	20 16 39.6 +0.6
THE	Thessaloniki	4.93 290	P	Pn	20 16 39.6 +0.6
THE	Thessaloniki	4.93 290	P	Pn	20 16 39.6 +0.6
EFOR	EFORIE	4.96 356	*i* P	Pn	20 16 38.1 -1.3
EFOR	EFORIE	4.96 356	*i* P	Pn	20 16 38.1 -1.3
KRND	KRANIDI	4.97 251	P	Pn	20 16 39.2 -0.4
KRND	KRANIDI	4.97 251	P	Pn	20 16 39.2 -0.4
PPCY	Paphos	4.98 147	P	Pn	20 16 39.1 -0.6
baz=325					
PPCY	Paphos	4.98 147	P	Pn	20 16 39.1 -0.6
PGB	Panagyurishte	5.05 314	P	Pn	20 16 39.9 -0.8
IDI	Anoyia	5.08 222	Pn	Pn	20 16 40.1 -1.0
comp=Z,21nm,0.3s,baz=307,slow=6.0,SNR=33					
IDI			Sn	Sn	20 17 41.5 +1.7
comp=Z,36nm,0.3s,baz=30,slow=12,SNR=4.2					
IDI	Anoyia	5.08 222	*i* P	Pn	20 16 40.6 -0.6
IDI	Anoyia	5.08 222	P	Pn	20 16 40.5 -0.6
IDI	Anoyia	5.08 222	P	Pn	20 16 40.5 -0.6
IDI	Anoyia	5.08 222	*e*Pn	Pn	20 16 41.2 0.0
IDI			Sn	Sn	20 17 41.5 +1.7
IDI	Anoyia	5.08 222	*e*Pn	Pn	20 16 41.2 0.0
IDI			Sn	Sn	20 17 41.5 +1.7
KNT	Kendrikon	5.15 295	P	Pn	20 16 42.0 0.0
KNT	Kendrikon	5.15 295	P	Pn	20 16 42.0 0.0
KNT	Kendrikon	5.15 295	P	Pn	20 16 42.0 0.0
KNT	Kendrikon	5.15 295	P	Pn	20 16 42.0 0.0
MAMC	Mammari	5.16 139	P	Pn	20 16 41.8 -0.3
baz=317					
MAMC	Mammari	5.16 139	P	Pn	20 16 41.8 -0.3
DSF	Desfina	5.16 264	P	Pn	20 16 41.9 -0.4
DSF	Desfina	5.16 264	P	Pn	20 16 41.9 -0.4
DSF	Desfina	5.16 264	P	Pn	20 16 41.9 -0.4
LIT	Litokhoron	5.17 283	P	Pn	20 16 42.9 +0.5
LIT	Litokhoron	5.17 283	P	Pn	20 16 42.9 +0.5
LIT	Litokhoron	5.17 283	P	Pn	20 16 42.9 +0.5
LIT	Litokhoron	5.17 283	P	Pn	20 16 42.9 +0.5
AGG	Agios Georgios	5.25 271	P	Pn	20 16 43.2 -0.2
AGG	Agios Georgios	5.25 271	*e*P	Pn	20 16 43.7 +0.3
AGG	Agios Georgios	5.25 271	P	Pn	20 16 43.2 -0.2
AGG	Agios Georgios	5.25 271	*e*Pn	Pn	20 16 43.7 +0.3
AGG	Agios Georgios	5.25 271	*e*Pn	Pn	20 16 43.7 +0.3
CVDA	Cernavoda	5.26 352	⇑ P	Pn	20 16 42.8 -0.7
CVDA	Cernavoda	5.26 352	⇑ P	Pn	20 16 42.8 -0.7
ZIMR		5.31 330	*i* P	Pn	20 16 43.4 -0.8
KKB	Krupnik	5.32 303	P	Pn	20 16 44.7 +0.3
SZAC	Souni	5.33 144	P	Pn	20 16 43.9 -0.6
baz=322					
SZAC	Souni	5.33 144	P	Pn	20 16 43.9 -0.6
SIVA	Sivas	5.33 221	*i* P	Pn	20 16 45.8 +1.3
SIVA	Sivas	5.33 221	P	Pn	20 16 45.5 +1.0
SIVA	Sivas	5.33 221	P	Pn	20 16 45.5 +1.0
SIVA	Sivas	5.33 221	P	Pn	20 16 45.5 +1.0
TIRR	Tirgusor	5.35 355	⇑ *i* P	Pn	20 16 43.5 -1.2
TIRR	Tirgusor	5.35 355	*e*P	Pn	20 16 43.3 -1.4
TIRR	Tirgusor	5.35 355	*e*P	Pn	20 16 43.3 -1.4
TIRR	Tirgusor	5.35 355	*e*Pn	Pn	20 16 43.2 -1.4
VAM	Vamos	5.37 228	P	Pn	20 16 45.3 +0.2
VAM	Vamos	5.37 228	P	Pn	20 16 45.3 +0.2
VAM	Vamos	5.37 228	P	Pn	20 16 45.3 +0.2
VAM	Vamos	5.37 228	P	Pn	20 16 45.3 +0.2
CSS	Mathiatis	5.38 139	P	Pn	20 16 44.4 -0.8
baz=318					
CSS	Mathiatis	5.38 139	P	Pn	20 16 41.7 -3.5
CSS	Mathiatis	5.38 139	Pn	Pn	20 16 43.9 -1.3
CSS	Mathiatis	5.38 139	Pn	Pn	20 16 43.9 -1.3
CSS	Mathiatis	5.38 139	P	Pn	20 16 44.4 -0.8
CSS	Mathiatis	5.38 139	*e*Pn	Pn	20 16 43.9 -1.3
VLI	Veliai	5.41 246	P	Pn	20 16 46.1 +0.5
VLI	Veliai	5.41 246	P	Pn	20 16 46.1 +0.5
VLI	Veliai	5.41 246	P	Pn	20 16 46.1 +0.5
GRG	Griva	5.43 292	P	Pn	20 16 46.6 +0.6
GRG	Griva	5.43 292	P	Pn	20 16 46.6 +0.6
GRG	Griva	5.43 292	P	Pn	20 16 46.6 +0.6
GRG	Griva	5.43 292	P	Pn	20 16 46.6 +0.6
VAY	Valandovo	5.44 296	P	Pn	20 16 46.7 +0.8
VAY	Valandovo	5.44 296	*i* Pn	Pn	20 16 47.3 +1.3
VAY	Valandovo	5.44 296	P	Pn	20 16 46.7 +0.8
VAY	Valandovo	5.44 296	P	Pn	20 16 46.7 +0.8
VAY	Valandovo	5.44 296	P	Pn	20 16 46.7 +0.8
IMMV	Iera Moni Meta	5.46 230	P	Pn	20 16 47.0 +0.7
IMMV	Iera Moni Meta	5.46 230	P	Pn	20 16 47.0 +0.7
THL	Klokotos Trika	5.49 277	P	Pn	20 16 46.9 +0.3
THL	Klokotos Trika	5.49 277	P	Pn	20 16 46.9 +0.3
SERG	Sergoula	5.53 265	P	Pn	20 16 48.5 +1.3
SERG	Sergoula	5.53 265	P	Pn	20 16 48.5 +1.3
KLV	Kalavryta, Ach	5.53 261	P	Pn	20 16 46.8 -0.5
KLV	Kalavryta, Ach	5.53 261	P	Pn	20 16 46.8 -0.5
KLV	Kalavryta, Ach	5.53 261	P	Pn	20 16 46.8 -0.5
VLX	Vlachokerasia	5.55 254	P	Pn	20 16 47.5 -0.1
VLX	Vlachokerasia	5.55 254	P	Pn	20 16 47.5 -0.1
VLX	Vlachokerasia	5.55 254	P	Pn	20 16 47.5 -0.1
KYTH	Kithira	5.56 241	P	Pn	20 16 48.0 +0.2
KYTH	Kithira	5.56 241	P	Pn	20 16 48.0 +0.2
KYTH	Kithira	5.56 241	P	Pn	20 16 48.0 +0.2
ANX	Ano Chora	5.61 267	P	Pn	20 16 50.0 +1.6
ANX	Ano Chora	5.61 267	P	Pn	20 16 50.0 +1.6
LAKA	Lakka	5.62 263	P	Pn	20 16 48.7 +0.2
LAKA	Lakka	5.62 263	P	Pn	20 16 48.7 +0.2
LAKA	Lakka	5.62 263	P	Pn	20 16 48.7 +0.2
HARR	Harsova	5.62 352	*i* P	Pn	20 16 47.0 -1.5
ANKY	Antikythira Is	5.62 236	P	Pn	20 16 47.9 -0.6
ANKY	Antikythira Is	5.62 236	P	Pn	20 16 47.9 -0.6
ANKY	Antikythira Is	5.62 236	P	Pn	20 16 47.9 -0.6
AMRR	Amara	5.63 347	⇑ *i* P	Pn	20 16 48.5 -0.1
EVR	Evrytania	5.66 270	P	Pn	20 16 49.5 +0.4
EVR	Evrytania	5.66 270	P	Pn	20 16 49.5 +0.4
EVR	Evrytania	5.66 270	P	Pn	20 16 49.5 +0.4
BUC1	Bucharest	5.69 337	*i* P	Pn	20 16 48.6 -0.8
KZN	Kozani	5.75 284	P	Pn	20 16 51.5 +1.2
KZN	Kozani	5.75 284	P	Pn	20 16 51.5 +1.2
KZN	Kozani	5.75 284	P	Pn	20 16 51.5 +1.2
KZN	Kozani	5.75 284	P	Pn	20 16 51.5 +1.2
MPEP	Malo Peshtene	5.83 318	P	Pn	20 16 50.9 -0.4
DRO	Drossia	5.89 261	P	Pn	20 16 52.6 +0.4
DRO	Drossia	5.89 261	P	Pn	20 16 52.6 +0.4
PVO	Paravola	5.91 267	P	Pn	20 16 54.2 +1.7
PVO	Paravola	5.91 267	P	Pn	20 16 54.2 +1.7
SULR		5.93 340	*i* P	Pn	20 16 52.0 -0.7
ITM	Ithomi	5.96 253	P	Pn	20 16 53.9 +0.8
ITM	Ithomi	5.96 253	P	Pn	20 16 53.9 +0.8
ITM	Ithomi	5.96 253	P	Pn	20 16 53.9 +0.8
PGOR	Pogoanele	5.98 346	*i* P	Pn	20 16 53.9 +0.5
AMT	Artemida-Makis	6.00 257	P	Pn	20 16 55.5 +1.7
AMT	Artemida-Makis	6.00 257	P	Pn	20 16 55.5 +1.7
KPRO	Kipourio	6.01 280	P	Pn	20 16 53.8 -0.2
KPRO	Kipourio	6.01 280	P	Pn	20 16 53.8 -0.2
TLCR		6.06 358	⇓ *i* P	Pn	20 16 53.4 -1.0
CFR	Carcaliu	6.09 354	*i* P	Pn	20 16 53.2 -1.6
AXS	Araxos	6.09 264	P	Pn	20 16 56.8 +1.8
AXS	Araxos	6.09 264	P	Pn	20 16 56.8 +1.8
FNA	Florina	6.14 288	P	Pn	20 16 56.2 +0.5
FNA	Florina	6.14 288	P	Pn	20 16 56.2 +0.5
FNA	Florina	6.14 288	P	Pn	20 16 56.2 +0.5
FNA	Florina	6.14 288	P	Pn	20 16 56.2 +0.5
PDO	Prodromos	6.18 268	P	Pn	20 16 57.5 +1.4
PDO	Prodromos	6.18 268	P	Pn	20 16 57.5 +1.4
DSL	Palaion Diasel	6.20 273	P	Pn	20 16 58.0 +1.5
DSL	Palaion Diasel	6.20 273	P	Pn	20 16 58.0 +1.5
DSL	Palaion Diasel	6.20 273	P	Pn	20 16 58.0 +1.5
HUMR	Humele	6.20 332	⇑ *i* P	Pn	20 16 55.0 -1.4
PYL	PYLOS	6.20 251	P	Pn	20 16 58.3 +1.8
PYL	PYLOS	6.20 251	P	Pn	20 16 58.3 +1.8
PYL	PYLOS	6.20 251	P	Pn	20 16 58.3 +1.8
PLAR	PLOIESTI	6.21 340	⇑ *i* P	Pn	20 16 56.3 -0.3
PENT	Pentalofos	6.21 282	P	Pn	20 16 58.2 +1.5
PENT	Pentalofos	6.21 282	P	Pn	20 16 58.2 +1.5
BIA	Bitola	6.23 290	*i* Pn	Pn	20 16 58.8 +1.8
ISR	Istrita	6.27 343	*i* P	Pn	20 16 57.5 0.0
SECR		6.31 340	⇑ *i* P	Pn	20 16 58.1 +0.1
NEST	Nestorio	6.31 284	P	Pn	20 16 59.6 +1.5
NEST	Nestorio	6.31 284	P	Pn	20 16 59.6 +1.5
GIUM	Giurgiulesti	6.38 355	*i* P	Pn	20 16 58.9 -0.1
SEV	Sevastopol'	6.41 31	⇑ *e*P	Pn	20 16 57.0 -2.3
SEV			*e*S	Sn	20 18 09.4 -2.9
SEV	Sevastopol'	6.41 31	*e*P	Pn	20 16 57.0 -2.3
SEV			*e*S	Sn	20 18 09.4 -2.9
GRER		6.44 347	⇑ *i* P	Pn	20 17 00.5 +0.8
SKO	Skopje	6.47 298	*i* Pn	Pn	20 17 02.0 +1.8
GOLR		6.47 333	*i* P	Pn	20 17 00.1 -0.1
LKD2	Lefkada island	6.56 270	P	Pn	20 17 04.1 +2.6
LKD2	Lefkada island	6.56 270	P	Pn	20 17 04.1 +2.6
YAL	Yalta	6.56 34	⇑ *e*P	Pn	20 17 00.0 -1.4
YAL			*e*S	Sn	20 18 13.3 -2.9
YAL			MLR	MLR	
comp=Z,275μm,17.7s					
YAL	Yalta	6.56 34	*e*P	Pn	20 17 00.0 -1.4
YAL			*e*S	Sn	20 18 13.3 -2.9
comp=Z,75μm,17.7s					
OHR	Ohrid	6.64 290	*i* Pn	Pn	20 17 04.2 +1.6
ZKS	Zakynthos	6.66 260	P	Pn	20 17 04.7 +1.9
ZKS	Zakynthos	6.66 260	P	Pn	20 17 04.7 +1.9
VLS	Valsamata	6.71 265	P	Pn	20 17 05.5 +2.1
VLS	Valsamata	6.71 265	P	Pn	20 17 05.5 +2.1
VLS	Valsamata	6.71 265	P	Pn	20 17 05.5 +2.1
VLS	Valsamata	6.71 265	P	Pn	20 17 05.5 +2.1
PETR	Petresti	6.73 349	⇑ *i* P	Pn	20 17 03.5 -0.2
MLR	Muntele Rosu	6.77 341	Pn	Pn	20 17 04.3 0.0
comp=Z,4.7nm,0.3s,baz=156,slow=5.3,SNR=244					
MLR			LR	LR	20 19 27.7
comp=Z,8μm,22.0s,baz=148,slow=36					
MLR	Muntele Rosu	6.77 341	⇑ *i* P	Pn	20 17 04.3 0.0
MTUR	Matau	6.78 335	⇑ *i* P	Pn	20 17 05.1 +0.6
ODBI	Odobesti	6.80 348	⇑ *i* P	Pn	20 17 05.0 +0.4
ALU	Alushta	6.83 34	*e*P	Pn	20 17 02.8 -2.2
ALU			*e*S	Sn	20 18 18.8 -3.8
ALU	Alushta	6.83 34	*e*P	Pn	20 17 02.8 -2.2
ALU			*e*S	Sn	20 18 18.8 -3.8
SGD	Sagiada	6.86 277	P	Pn	20 17 08.0 +2.5
SIM	Simferopol'	6.92 31	⇑ *e*P	Pn	20 17 05.1 -1.3
SIM			*e*S	Sn	20 18 22.5 -2.5
SIM	Simferopol'	6.92 31	*e*P	Pn	20 17 05.1 -1.3
PLOR	Plostina	6.95 346	*i* P	Pn	20 17 06.6 -0.2
VRI	Vrincioaia	6.95 346	⇑ *i* P	Pn	20 17 06.3 -0.5
VOIR		6.97 336	⇑ *i* P	Pn	20 17 06.3 -0.8
ARR	Arges	7.05 334	*i* P	Pn	20 17 07.6 -0.6
SRE	Strehaia	7.05 324	*i* P	Pn	20 17 07.0 -1.1
KEK	Kerkira	7.20 278	P	Pn	20 17 12.9 +2.7
KEK	Kerkira	7.20 278	P	Pn	20 17 12.9 +2.7
SUDU	Sudak	7.25 36	*e*P	Pn	20 17 07.1 -3.8
SUDU			*e*S	Sn	20 18 27.8 -5.4
SUDU	Sudak	7.25 36	*e*P	Pn	20 17 07.1 -3.8
RMGR	Halanga-Turnu	7.29 321	*i* P	Pn	20 17 11.3 -0.1
HWQ	Hawqa	7.34 129	*e*P	Pn	20 17 11.3 -1.0
DOPR	Dopca	7.36 340	⇑ *i* P	Pn	20 17 12.0 -0.3
BEYL	Beirut	7.37 133	*e*P	Pn	20 17 11.1 -1.4
LEOM	Leova	7.37 356	⇑ *i* P	Pn	20 17 11.8 -0.6
TIR	Tirane	7.38 290	*i* P	Pn	20 17 16.1 +3.4
TIR	Tirane	7.38 290	*e*P	Pn	20 17 16.4 +3.7
TIR	Tirane	7.38 290	*e*Pn	Pn	20 17 16.4 +3.7
TIR	Tirane	7.38 290	*e*Pn	Pn	20 17 16.4 +3.7
BHL	Bhannes	7.43 133	*e*P	Pn	20 17 12.0 -1.5
LOT	Lotru	7.44 330	⇑ *i* P	Pn	20 17 13.8 +0.3
DQRL	Deir Qamar	7.53 134	*e*P	Pn	20 17 14.2 -0.6
FEO	Feodosiya	7.53 37	*e*P	Pn	20 17 13.6 -1.1
FEO			*e*S	Sn	20 18 39.1 -0.9
FEO	Feodosiya	7.53 37	*e*P	Pn	20 17 13.6 -1.1
TESR	Tescani	7.59 347	⇑ *i* P	Pn	20 17 14.0 -1.5
PVY	Plav	7.72 300	*i* Pn	Pn	20 17 18.1 +0.6
PVY			*e*Sn	Sn	20 18 43.2 -1.8
PVY	Plav	7.72 300	*i* Pn	Pn	20 17 18.1 +0.6
NAQL	Naqoura	7.75 139	*e*P	Pn	20 17 16.5 -1.3
MILM	Milestii Mici	7.79 359	⇑ *i* P	Pn	20 17 17.0 -1.2
HNTI	Hanita	7.79 139	Pn	Pn	20 17 17.2 -1.2
HNTI	Hanita	7.79 139	Pn	Pn	20 17 17.2 -1.2
MDB	Medias	7.81 335	⇑ *i* P	Pn	20 17 18.2 -0.4
RCY	Rachaya	7.83 134	*e*P	Pn	20 17 17.9 -1.1
KIS	Kishinev	7.87 359	⇑ *i* P	Pn	20 17 19.0 -0.3
comp=Z,2μm,2.0s					
KIS			*i* S	Sn	20 18 44.0 -4.3
comp=Z,11μm,2.0s					
KIS			LRM	MLR	20 20 32.0
comp=Z,67μm,10.0s					
KIS	Kishinev	7.87 359	*i* P	Pn	20 17 18.3 -1.0
KIS	Kishinev	7.87 359	*o* P	Pn	20 17 19.0 -0.3
KIS			*i* S	Sn	20 18 44.0 -4.3
KIS			pmax	pmax	
comp=Z,2μm,2.0s					
KIS			pmax	pmax	
comp=Z,5μm,2.0s					
KIS			pmax	pmax	
comp=N,8μm,4.0s					
KIS			smax	smax	
comp=E,19μm,2.3s					
KIS			smax	smax	
comp=N,11μm,2.0s					
KIS			smax	smax	
comp=E,10μm,2.0s					
KIS			MLR	MLR	
comp=N,88μm,10.0s					
KIS			MLR	MLR	
comp=E,67μm,10.0s					
KIS			MLR	MLR	
comp=Z,100μm,10.0s					
KIS			MLR	MLR	
comp=Z,86μm,12.0s					
KIS	Kishinev	7.87 359	*i* P	Pn	20 17 19.0 -0.3
comp=Z,8μm,4.0s					
MDVR	Moldovita	7.87 318	*i* P	Pn	20 17 18.1 -1.3
BEY	Berane	7.88 301	*i* Pn	Pn	20 17 20.5 +0.9
IVA	Berane	7.88 301	*i* Pn	Pn	20 17 20.5 +0.9
IVA			*e*Sn	Sn	20 18 46.9 -1.9
KSDI	Kefar Szold	7.96 136	Pn	Pn	20 17 20.0 -0.7
KSDI	Kefar Szold	7.96 136	Pn	Pn	20 17 20.0 -0.7
MMA0B	Mount Meron ar	7.97 138	Pn	Pn	20 17 19.5 -1.3
MMA0B	Mount Meron ar	7.97 138	Pn	Pn	20 17 19.5 -1.3
MMAI	Mount Meron Ar	7.97 138	Pn	Pn	20 17 19.4 -1.4
comp=Z,100nm,0.3s,baz=326,slow=12,SNR=336					
MMAI			Sn	Sn	20 18 51.7 +0.8
comp=Z,25nm,0.3s,baz=324,slow=15,SNR=3.0					
ULC	Ulcinj	8.00 294	*i* Pn	Pn	20 17 22.3 +1.1
ULC			*e*Sn	Sn	20 18 49.6 -2.0
ULC	Ulcinj	8.00 294	*i* Pn	Pn	20 17 22.3 +1.1
JOSR	Joseni	8.01 342	⇑ *i* P	Pn	20 17 21.3 0.0
OFRI	'Ofer	8.07 142	Pn	Pn	20 17 20.7 -1.5
OFRI	'Ofer	8.07 142	Pn	Pn	20 17 20.7 -1.5
BLGI	Bet Lehem HaGe	8.08 140	Pn	Pn	20 17 21.2 -1.1
BLGI	Bet Lehem HaGe	8.08 140	Pn	Pn	20 17 21.2 -1.1
DRME	Dracevica, Mon	8.11 295	*e*Pn	Pn	20 17 24.0 +1.3
DRME			*e*Sn	Sn	20 18 51.5 -2.8
DRME	Dracevica, Mon	8.11 295	*e*Pn	Pn	20 17 24.0 +1.3
IAS	Iasi	8.14 353	⇑ *i* P	Pn	20 17 23.0 0.0
DEV	Deva	8.14 328	⇑ *i* P	Pn	20 17 24.3 +1.2
PDG	Podgorica	8.14 297	⇑ *i* P	Pn	20 17 26.1 +3.0
PDG	Podgorica	8.14 297	⇑ *i* Pn	Pn	20 17 24.3 +1.2
TTG	Podgorica	8.14 297	⇑ *i* Pn	Pn	20 17 24.3 +1.2
TTG			*e*Sn	Sn	20 18 52.8 -2.3
KERU	Kerch	8.26 39	*e*P	Pn	20 17 25.9 +1.3
BUM	Brajici-Budva	8.35 296	*i* Pn	Pn	20 17 27.3 +1.2
BUM			*e*Sn	Sn	20 18 57.7 -2.6
BUM	Brajici-Budva	8.35 296	*i* Pn	Pn	20 17 27.3 +1.2
SLTI	Sal'it	8.41 143	Pn	Pn	20 17 24.5 -2.3
SLTI			Sn	Sn	20 18 59.1 -2.7
SLTI	Sal'it	8.41 143	Pn	Pn	20 17 24.5 -2.3
PLE	Pljevlja	8.41 303	*e*Pn	Pn	20 17 27.8 +0.8
PLE			*e*Sn	Sn	20 18 59.6 -2.3
PLE	Pljevlja	8.41 303	*e*Pn	Pn	20 17 27.8 +0.8
DIVS	Divibare	8.42 309	*i* Pn	Pn	20 17 25.9 -1.1
CEME	Cevo	8.42 297	*i* Pn	Pn	20 17 27.1 +0.1
CEME			*e*Sn	Sn	20 18 59.4 -2.5
CEME	Cevo	8.42 297	*i* Pn	Pn	20 17 27.1 +0.1
ANN	Anapa	8.42 45	*e*P	Pn	20 17 27.1 +0.2
ANN			*e*S	Sn	20 19 07.9 +6.1
ANN			pmax	pmax	
comp=Z,308nm,1.1s					
ANN	Anapa	8.42 45	*e*P	Pn	20 17 27.1 +0.2
comp=Z,308nm,1.1s					
MMLI	Mount Malkishu	8.44 140	Pn	Pn	20 17 26.0 -1.2
MMLI			Sn	Sn	20 19 00.9 -1.5
MMLI	Mount Malkishu	8.44 140	Pn	Pn	20 17 26.0 -1.2
NKY	Niksic	8.46 299	*i* Pn	Pn	20 17 28.8 +1.2
NKY			*e*Sn	Sn	20 19 01.2 -1.9
NKY	Niksic	8.46 299	*i* Pn	Pn	20 17 28.8 +1.2
NKME	Niksic	8.47 299	⇑ *i* Pn	Pn	20 17 28.8 +1.1
NKME			*e*Sn	Sn	20 19 00.7 -2.6
NKME	Niksic	8.47 299	⇑ *i* Pn	Pn	20 17 28.8 +1.1
PRAR	RASCA	8.49 347	⇑ *i* P	Pn	20 17 27.5 -0.3
BZS	Buzias	8.51 322	*i* P	Pn	20 17 26.6 -1.5
CJR	Cluj-Napoca	8.58 334	⇑ *i* P	Pn	20 17 28.5 -0.6
BANR	Banloc	8.58 319	*i* P	Pn	20 17 28.8 -0.3
HMDT	Nahal Hemdat	8.64 141	Pn	Pn	20 17 28.8 -1.1
HMDT			Sn	Sn	20 19 05.4 -1.8
HMDT	Nahal Hemdat	8.64 141	Pn	Pn	20 17 28.8 -1.1
BBLS	Lazići	8.66 306	*e*Pn	Pn	20 17 31.0 +0.8
ARCR	ARCALIA	8.67 338	⇑ *i* P	Pn	20 17 29.9 -0.4
UPM	Unac-Piva	8.68 301	*i* Pn	Pn	20 17 31.7 +1.1
UPM			*e*Sn	Sn	20 19 05.3 -3.2
UPM	Unac-Piva	8.68 301	*i* Pn	Pn	20 17 31.7 +1.1
HCY	Herceg Novi	8.68 296	*i* Pn	Pn	20 17 31.7 +1.2
HCY			*e*Sn	Sn	20 19 05.5 -2.8
HCY	Herceg Novi	8.68 296	*i* Pn	Pn	20 17 31.7 +1.2
BRY	Bratogost	8.81 299	*i* Pn	Pn	20 17 33.4 +1.0
BRY			*e*Sn	Sn	20 19 08.4 -3.2
BRY	Bratogost	8.81 299	*i* Pn	Pn	20 17 33.4 +1.0
BURAR	Bucovina Array	8.93 343	⇑ *i* P	Pn	20 17 33.3 -0.7
TEKS	Tekeris	8.94 310	*e*Pn	Pn	20 17 32.8 -1.3
AMAZ	Amatzia	8.96 146	Pn	Pn	20 17 32.7 -1.6
AMAZ	Amatzia	8.96 146	Pn	Pn	20 17 32.7 -1.6
DRGR		8.96 331	*i* P	Pn	20 17 32.9 -1.5
BUR08	Bucovina Ar. S	8.96 343	*e*Pn	Pn	20 17 33.3 -1.2
BUR08	Bucovina Ar. S	8.96 343	*e*Pn	Pn	20 17 33.3 -1.2
SIRR	Siria	8.98 325	*i* P	Pn	20 17 33.1 -1.5
SORM	Soroca	9.02 357	⇑ *i* P	Pn	20 17 32.7 -2.4
HAPS	Han Pijesak,BI	9.05 306	*e*Pn	Pn	20 17 34.1 -1.6
DSI	Dead Sea	9.13 144	Pn	Pn	20 17 34.9 -1.8
DSI	Dead Sea	9.13 144	Pn	Pn	20 17 34.9 -1.8
SOC	Sochi	9.16 58	*c i* P	Pn	20 17 37.9 +0.9
SOC			*e*		20 19 24.6
SOC			pmax	pmax	
comp=Z,88nm,1.0s					
SOC			MLR	MLR	
comp=E,20μm,12.0s					
SOC			MLR	MLR	
comp=Z,25μm,12.0s					
SOC			MLR	MLR	
comp=N,19μm,12.0s					
SOC	Sochi	9.16 58	*i* P	Pn	20 17 37.9 +0.9
comp=N,88nm,1.0s					
KZIT	Kziot	9.29 150	Pn	Pn	20 17 37.1 -1.8
KZIT	Kziot	9.29 150	Pn	Pn	20 17 37.1 -1.8
MZDA	Masada	9.34 145	Pn	Pn	20 17 38.1 -1.4
MZDA	Masada	9.34 145	Pn	Pn	20 17 38.1 -1.4
ASF	Jabal al Asfar	9.42 135	Pn	Pn	20 17 39.9 -0.7
comp=N,2.3nm,0.3s,baz=251,slow=7.0,SNR=38					
ASF			Sn	Sn	20 19 23.4 -3.1
baz=188,slow=11,SNR=1.5					
ASF			LR	LR	20 22 37.1
comp=N,13μm,18.4s,baz=285,slow=46					
BMR	Baia Mare	9.45 336	⇑ *i* P	Pn	20 17 40.8 -0.2
TIP	Timpagrande	9.57 274	*i* P	Pn	20 17 42.9 +0.2
TIP	Tim

baz=232,slow=3.1,SNR=63
KVAR LR LR 20 22 52.5
comp=Z,12μm,18.9s,baz=232,slow=40
KVAR Kislovodsk Arr 11.29 60 Pn **Pn 20 18 07.0 +0.7**
KVAR Kislovodsk Arr 11.29 60 Pn **Pn 20 18 07.0 +0.7**
UDBI Udbina 11.29 303 *i* Pn **Pn 20 18 10.0 +3.6**
BGD Bogdanovka 11.32 75 P **Pn 20 18 11.1 +4.3**
KBZ Khabaz 11.35 62 Pn **Pn 20 18 09.4 +2.4**
comp=Z,0.2nm,0.3s,baz=267,slow=10,SNR=39
CSKK Cs˙‡kako 11.39 320 *e*Pn **Pn 20 18 08.1 +0.6**
CSKK *e*Sn **Sn 20 20 10.1 -4.5**
CSKK Cs˙‡kako 11.39 320 *e*P **Pn 20 18 08.1 +0.6**
ONI Oni 11.43 68 P **Pn 20 18 11.7 +3.5**
ONI Oni 11.43 68 P **Pn 20 18 11.7 +3.5**
KWP Kalwaria Pacla 11.44 339 *e*P **Pn 20 18 08.1 -0.2**
KWP *e* 20 18 13.8
KWP LMZ LR 20 23 46.9
comp=Z,111μm,14.9s
KWP Kalwaria Pacla 11.44 339⇑*i*P **Pn 20 18 07.7 -0.5**
KWP Kalwaria Pacla 11.44 339 *e*P **Pn 20 18 08.1 -0.2**
KWP MLR MLR
comp=Z,111μm,14.9s
KWP Kalwaria Pacla 11.44 339 *e*P **Pn 20 18 08.1 -0.2**
comp=Z,11μm,14.9s
AK11 Malin Array Si 11.55 0 *e*Pn **Pn 20 18 06.8 -2.9**
AK11 Malin Array Si 11.55 0 *e*Pn **Pn 20 18 06.8 -2.9**
AKASG Malin Array Be 11.57 0 Pn **Pn 20 18 06.7 -3.4**
comp=Z,22nm,0.3s,baz=180,slow=12,SNR=49
AKASG Sn **Sn 20 20 25.9 +6.7**
comp=Z,37nm,0.3s,baz=227,slow=33,SNR=8.1
AKASG Malin Array Be 11.57 0 *i* P **Pn 20 18 06.6 -3.4**
AKASG pmax pmax
comp=Z,20nm,0.4s
AKBB Malin Array Si 11.57 0 *e*P **Pn 20 18 07.8 -2.2**
AKBB Malin Array Si 11.57 0 *e*P **Pn 20 18 07.8 -2.2**
AKBB Malin Array Si 11.57 0 *e*Pn **Pn 20 18 07.8 -2.2**
BEHE Becsehely 11.63 313 *e*P **Pn 20 18 09.2 -1.6**
BEHE Becsehely 11.63 313 *e*Pn **Pn 20 18 11.6 +0.8**
VAE Valguarnera 11.64 266 Pn **Pn 20 18 11.2 +0.1**
comp=Z,1.0nm,0.3s,baz=103,slow=3.7,SNR=15
STHS Stebnicka Huta 11.71 334 *e*P **Pn 20 18 12.4 +0.5**
STHS Stebnicka Huta 11.71 334 *e*P **Pn 20 18 12.4 +0.5**
STHS Stebnicka Huta 11.71 334 *e*PN **Pn 20 18 12.4 +0.5**
STHS *e* 20 42 39.2
ZEI Tsey 11.79 67 *e*P **Pn 20 18 14.7 +1.4**
ZEI *e*S **Sn 20 20 32.0 +7.0**
ZEI pmax pmax
comp=Z,1μm,1.7s
ZEI MLR MLR
comp=Z,8μm,6.0s
NVLJ Novalja 11.90 302 *e*Pn **Pn 20 18 16.4 +1.9**
NVLJ Novalja 11.90 302 *e*Pn **Pn 20 18 16.4 +1.9**
VYHS Vyhne 11.92 325 *e*P **Pn 20 18 13.1 -1.7**
VYHS Vyhne 11.92 325 *e*P **Pn 20 18 13.1 -1.7**
VYHS Vyhne 11.92 325 *e*PN **Pn 20 18 13.1 -1.7**
GOF Gofitskoye 11.95 56⇓*i*P **Pn 20 18 17.7 +2.5**
GOF pmax pmax
comp=Z,304nm,1.0s
WDD Wied Dalam 12.00 259 *e*Pn **Pn 20 18 15.4 -0.6**
WDD Wied Dalam 12.00 259 *e*Pn **Pn 20 18 15.4 -0.6**
BOJS Bojanci 12.04 306 *i* Pn **Pn 20 18 17.7 +1.2**
BOJS *e*Sn **Sn 20 20 28.3 -2.4**
comp=Z,81μm,9.1s
NIE Niedzica 12.05 332 *e*P **Pn 20 18 18.4 +1.9**
NIE *e* 20 18 23.1
NIE *e*S Sn 20 20 40.6 +10
NIE LMZ LR 20 23 39.0
comp=Z,66μm,14.8s
NIE Niedzica 12.05 332 *e*P **Pn 20 18 18.4 +1.9**
NIE *e*S Sn 20 20 40.6 +10
NIE MLR MLR
comp=Z,66μm,14.8s
CRES Cresnjev 12.07 308⇓*i*Pn **Pn 20 18 17.4 +0.6**
GNI Garni 12.13 80 Pn **Pn 20 18 21.2 +3.4**
comp=Z,0.6nm,0.3s,baz=254,slow=2.9,SNR=28
GNI LR LR 20 23 03.5
comp=Z,26μm,21.1s,baz=278,slow=38
GNI Garni 12.13 80 *i* P **Pn 20 18 21.3 +3.5**
SNR=42
GNI Garni 12.13 80 *e*Pn **Pn 20 18 22.3 +4.5**
GNI Garni 12.13 80 PnPn **Pn 20 18 21.8 +3.9**
SNR=60
GNI Garni 12.13 80 P **Pn 20 18 21.8 +3.9**
SNR=60
GNI Garni 12.13 80 *e*Pn **Pn 20 18 22.3 +4.5**
GUDG Gudauri 12.14 69 P Pn 20 18 23.0 +4.9
LANS Liptovska Anna 12.15 329 *e*P **Pn 20 18 19.1 +1.0**
LANS Liptovska Anna 12.15 329 *e*P **Pn 20 18 19.1 +1.0**
LANS Liptovska Anna 12.15 329 *e*PN **Pn 20 18 19.0 +1.0**
TBLG Delisi 12.22 73 P **Pn 20 18 22.5 +3.5**
TBLG Delisi 12.22 73 P **Pn 20 18 22.5 +3.5**
DUS Dusheti 12.24 71 P Pn 20 18 24.2 +4.8
DUS Dusheti 12.24 71 P **Pn 20 18 24.1 +4.8**
AQU L'Aquila 12.31 290 *e*P **Pn 20 18 21.3 +1.0**
AQU L'Aquila 12.31 290 *e*Pn **Pn 20 18 21.2 +1.0**
AQU L'Aquila 12.31 290 *e*Pn **Pn 20 18 21.2 +1.0**
SOP Sopron 12.47 317 *e*Pn **Pn 20 18 25.3 +2.9**
SOP *e*Sn **Sn 20 20 39.3 -1.9**
CLTB Caltabellotta 12.54 268 *e*Pn **Pn 20 18 24.5 +1.0**
CLTB Caltabellotta 12.54 268 *e*Pn **Pn 20 18 24.5 +1.0**
SMOL Smolenice 12.58 322 *e*P **Pn 20 18 24.7 +0.8**
SMOL Smolenice 12.58 322 *e*PN **Pn 20 18 24.7 +0.8**
DGRG David-gareji 12.66 74 P **Pn 20 18 29.7 +4.7**
DGRG David-gareji 12.66 74 P **Pn 20 18 29.7 +4.7**
CEY Cerknica 12.67 306⇓*i*Pn **Pn 20 18 25.3 +0.3**
PERS Pernice 12.68 311 *i* Pn **Pn 20 18 25.7 +0.5**
LJU Ljubljana 12.74 308 *e*Pn **Pn 20 18 26.6 +0.5**
LJU *e*Sn **Sn 20 20 48.4 +0.6**
comp=Z,7μm,10.4s
LJU Ljubljana 12.74 308 *e*Pn **Pn 20 18 25.7 -0.4**
SOKA Soboth 12.75 311 *i* P **Pn 20 18 26.9 +0.7**
comp=Z,43nm,1.5s,SNR=35
SOKA *i* Sn **Sn 20 20 50.5 +2.4**
comp=Z,162nm,1.5s
SOKA Soboth 12.75 311 P **Pn 20 18 26.9 +0.7**
comp=Z,43nm,1.5s,SNR=35
SOKA S **Sn 20 20 50.5 +2.4**
comp=Z,162nm,1.5s
ARSA Arzberg 12.78 314 *i* P **Pn 20 18 26.8 +0.2**
comp=Z,152nm,1.3s,SNR=91
ARSA Arzberg 12.78 314 P **Pn 20 18 26.8 +0.2**
comp=Z,152nm,1.3s,SNR=91
SKDS Skadanscina 12.84 305 *e*Pn **Pn 20 18 27.8 +0.3**
OJC Ojcow 12.89 332 *e*P **Pn 20 18 27.2 -0.9**
OJC *e* 20 18 30.9
OJC *e*S **Sn 20 20 57.6 +6.3**
OJC LMZ LR 20 24 19.9
comp=Z,112μm,12.8s
OJC Ojcow 12.89 332 *e*P **Pn 20 18 27.2 -0.9**
OJC *e*S **Sn 20 20 57.7 +6.3**
OJC MLR MLR
comp=Z,112μm,12.8s
OJC Ojcow 12.89 332 *e*P **Pn 20 18 27.2 -0.9**
OJC Ojcow 12.89 332 *e*Pn **Pn 20 18 27.1 -1.0**
OBKA Obir 12.95 309 *i* P **Pn 20 18 29.8 +0.8**
comp=Z,31nm,1.2s,SNR=20
OBKA Obir 12.95 309 P **Pn 20 18 29.8 +0.8**
comp=Z,31nm,1.2s,SNR=20
JAVS Javornik 12.96 306 *e*Pn **Pn 20 18 29.4 +0.3**
CONA Conrad Observa 12.99 317 *i* P **Pn 20 18 29.2 -0.4**
comp=Z,91nm,1.0s,SNR=59
CONA Conrad Observa 12.99 317 P **Pn 20 18 29.2 -0.4**
comp=Z,91nm,1.0s,SNR=59
TRI Trieste 13.07 305 *e*P **Pn 20 18 30.3 -0.2**
TRI Trieste 13.07 305 *e*Pn **Pn 20 18 30.3 -0.2**
TRI Trieste 13.07 305 *e*Pn **Pn 20 18 30.3 -0.2**
OKC Ostrava-Krasne 13.23 328 *e*P **Pn 20 18 32.4 -0.3**
OKC *e*x x 20 18 38.7
OKC *e*x x 20 18 46.3
OKC *e*S **Sn 20 21 08.1 +8.5**
OKC AMS AMS 20 24 40.0
comp=Z,119μm,12.4s
OKC Ostrava-Krasne 13.23 328 *e*P **Pn 20 18 32.4 -0.3**
OKC *e*S **Sn 20 21 08.1 +8.5**
OKC MLR MLR
comp=Z,119μm,12.4s
CADS Cadrg 13.31 307 *e*Pn **Pn 20 18 34.5 +0.6**
CADS *e*Sn **Sn 20 21 00.8 -1.0**
comp=Z,68μm,7.6s
RAC Raciborz 13.40 328 *e*P **Pn 20 18 35.4 +0.4**
RAC *e*S **Sn 20 21 08.0 +4.2**
RAC MLR MLR
comp=E,78μm,20.4s
RAC MLR MLR
comp=N,87μm,17.4s
RAC MLR MLR
comp=Z,123μm,13.3s
MORC Moravsky Berou 13.44 326⇑*i*P **Pn 20 18 35.7 +0.1**
MORC Moravsky Berou 13.44 326 *e*P **Pn 20 18 36.1 +0.5**
MORC Moravsky Berou 13.44 326 *e*Pn **Pn 20 18 36.1 +0.5**
MORC Moravsky Berou 13.44 326 *e*Pn **Pn 20 18 36.1 +0.5**
VRAC Vranov 13.53 323 Pn **Pn 20 18 36.6 -0.2**
comp=Z,0.4nm,0.3s,baz=141,slow=13,SNR=38
VRAC LR LR 20 24 56.9
comp=Z,20μm,20.2s,baz=138,slow=42
VRAC Vranov 13.53 323⇓*i*P **Pn 20 18 35.9 -0.9**
MYKA Terra Mystica 13.56 309 *i* P **Pn 20 18 38.4 +1.1**
comp=Z,123nm,1.5s,SNR=50
MYKA Terra Mystica 13.56 309 P **Pn 20 18 38.4 +1.1**
comp=Z,123nm,1.5s,SNR=50
MOA Molln 13.82 314 *i* P **Pn 20 18 42.0 +1.2**
comp=Z,106nm,1.3s,SNR=59
MOA Molln 13.82 314 P **Pn 20 18 42.0 +1.2**
comp=Z,106nm,1.3s,SNR=59
KBA Koelnbreinsper 13.95 310 *i* P **Pn 20 18 43.5 +0.8**
comp=Z,293nm,1.3s,SNR=33
KBA Koelnbreinsper 13.95 310 P **Pn 20 18 43.5 +0.8**
comp=Z,293nm,1.3s,SNR=33
BEL Belsk 13.96 338 *e*P **Pn 20 18 44.2 +1.6**
BEL *e* 20 18 48.1
BEL *e*S **Sn 20 21 23.2 +5.8**
BEL LMZ LR 20 25 42.5
comp=Z,192μm,11.7s
BEL Belsk 13.96 338 *e*P **Pn 20 18 44.2 +1.6**
BEL *e*S **Sn 20 21 23.2 +5.8**
BEL MLR MLR
comp=Z,192μm,11.7s
BEL Belsk 13.96 338 *e*P **Pn 20 18 44.2 +1.6**
KRLC Kraliky 13.99 325 *e*P **Pn 20 18 43.9 +0.7**
KRLC *e*x x 20 18 48.1
KRLC *e*x x 20 18 55.3
KRLC Kraliky 13.99 325 *e*P **Pn 20 18 43.9 +0.7**
VSR Storozhevoye 14.01 27 *e*P **Pn 20 18 42.6 -0.7**
VSR pmax pmax
comp=Z,540nm,0.8s
VSR MLR MLR
comp=Z,21μm,14.0s
TREC Trest 14.05 321 *e*P **Pn 20 18 43.3 -0.7**
TREC *e*x x 20 18 55.2
TREC *e*S **Sn 20 21 22.4 +2.5**
TREC AMS AMS 20 25 40.0
comp=Z,48μm,11.2s
TREC Trest 14.05 321 *e*P **Pn 20 18 43.3 -0.7**
TREC *e*S **Sn 20 21 22.4 +2.5**
TREC MLR MLR
comp=Z,48μm,11.2s
ABTA Abfaltersbach 14.30 308 *i* P **Pn 20 18 47.7 +0.2**
comp=Z,190nm,1.3s,SNR=13
DPC Dobruska-Polom 14.40 325 *e*P **Pn 20 18 49.5 +0.8**
DPC *e*pP **P 20 18 54.2 -1.4**
DPC *e*x x 20 19 01.1
DPC *e*S **Sn 20 21 33.9 +5.7**
DPC AMS AMS 20 25 40.0
comp=Z,65μm,10.3s
DPC Dobruska-Polom 14.40 325 *e*P **Pn 20 18 49.5 +0.8**
DPC *e*S **Sn 20 21 33.9 +5.7**
DPC MLR MLR
comp=Z,65μm,10.3s
VORR Voronezh 14.40 26 *e*P **Pn 20 18 48.0 -0.7**
VORR pmax pmax
comp=Z,1μm,2.3s
UPC Upice 14.65 325 *e*P **Pn 20 18 52.5 +0.4**
UPC *e*pP **P 20 18 57.2 -1.2**
UPC *e*S **Sn 20 21 38.1 +3.9**
UPC AMS AMS 20 25 50.0
comp=Z,74μm,10.7s
UPC Upice 14.65 325 *e*P **Pn 20 18 52.5 +0.4**
UPC *e*S **Sn 20 21 38.1 +3.9**
UPC MLR MLR
comp=Z,74μm,10.7s
GEA0 GERESS Array S 14.69 316 *e*Pn **Pn 20 18 52.3 -0.4**
GEA0 GERESS Array S 14.69 316 *e*Pn **Pn 20 18 52.3 -0.4**
GEC2 GERESS Array S 14.70 316 *e*P **Pn 20 18 52.5 -0.3**
GEC2 GERESS Array S 14.70 316 *e*Pn **Pn 20 18 52.5 -0.3**
GEC2 GERESS Array S 14.70 316 *e*Pn **Pn 20 18 52.5 -0.3**
GERES GERESS Array B 14.70 316 Pn **Pn 20 18 52.5 -0.3**
comp=Z,0.4nm,0.3s,baz=122,slow=12,SNR=120
GERES LR LR 20 25 01.0
comp=Z,23μm,18.6s,baz=124,slow=39
KSP Ksiaz 14.77 327 *e*P **Pn 20 18 53.2 -0.5**
KSP *e* 20 18 56.4
KSP *e*S **Sn 20 21 39.5 +2.3**
KSP LMZ LR 20 25 46.6
comp=Z,91μm,14.0s
KSP Ksiaz 14.77 327 *e*P **Pn 20 18 53.2 -0.5**
KSP *e*S **Sn 20 21 39.5 +2.3**
KSP MLR MLR
comp=Z,91μm,14.0s
GOPC GO Pecny, Ondr 14.81 321 *e*P **Pn 20 18 53.9 -0.3**
GOPC *e*pP **P 20 18 59.1 -1.1**
GOPC *e*S **Sn 20 21 39.4 +1.2**
GOPC AMS AMS 20 25 40.0
comp=Z,58μm,13.3s
GOPC GO Pecny, Ondr 14.81 321 *e*P **Pn 20 18 53.9 -0.3**
GOPC *e*S **Sn 20 21 39.4 +1.2**
GOPC MLR MLR
comp=Z,58μm,13.3s
VLC Villacollemand 14.84 296 *e*Pn **Pn 20 18 57.1 +2.4**
VLC Villacollemand 14.84 296 *e*Pn **Pn 20 18 57.1 +2.4**
KHC Kasperske Hory 14.93 317 *e*P **Pn 20 18 55.2 -0.7**
KHC *e*pP **P 20 18 59.8 -1.8**
KHC *e*x x 20 19 05.6
KHC *e*S **Sn 20 21 46.5 +5.3**
KHC AMS AMS 20 25 20.0
comp=Z,44μm,9.9s
KHC Kasperske Hory 14.93 317 *e*P **Pn 20 18 55.2 -0.7**
KHC Kasperske Hory 14.93 317 *e*Pn **Pn 20 18 55.2 -0.7**
KHC Kasperske Hory 14.93 317 *e*Pn **Pn 20 18 55.2 -0.7**
PRU Pruhonice 14.97 321 *e*P **Pn 20 18 55.4 -1.1**
PRU *e*pP **P 20 19 04.8 +2.8**
PRU *e*S **Sn 20 21 42.2 0.0**
PRU AMS AMS 20 25 50.0
comp=Z,54μm,14.9s
PRU Pruhonice 14.97 321 *e*P **Pn 20 18 55.4 -1.1**
PRU *e*S **Sn 20 21 42.2 0.0**
PRU MLR MLR
comp=Z,54μm,14.9s
VRH Novokhopyorsk 14.98 32 *e*P **Pn 20 18 55.0 -1.6**
VRH pmax pmax
comp=Z,2μm,1.9s
VRH MLR MLR
comp=Z,17μm,14.0s
WTTA Wattenberg 15.07 308 *i* P **Pn 20 18 58.7 +0.8**
comp=Z,179nm,1.3s,SNR=21
LPSR Galich'ya Gora 15.10 24 *e*P **Pn 20 18 56.0 -2.1**
LPSR pmax pmax
comp=Z,400nm,0.7s
LPSR MLR MLR
comp=Z,13μm,13.0s
WATA Walderalm 15.14 308 *i* P **Pn 20 18 59.2 +0.3**
comp=Z,344nm,1.1s,SNR=14
VSL Villasalto 15.25 278 *e*Pn **Pn 20 19 00.1 -0.2**
comp=Z,220nm,1.1s
VSL Villasalto 15.25 278 *e*Pn **Pn 20 19 00.1 -0.2**
comp=Z,220nm,1.1s
SQTA Sankt Quirin 15.31 308 *i* P **Pn 20 19 01.5 +0.4**
PVCC Panska Ves 15.32 323 *e*P **Pn 20 19 01.1 0.0**
PVCC *e*S **Sn 20 21 55.9 +5.3**
PVCC AMS AMS 20 26 40.0
comp=Z,47μm,10.0s
PVCC Panska Ves 15.32 323 *e*P **Pn 20 19 01.1 0.0**
PVCC *e*S **Sn 20 21 55.9 +5.3**
PVCC MLR MLR
comp=Z,47μm,10.0s
MICGM Minsk 15.40 357⇓*e*P **Pn 20 18 57.0 -5.1**
MICGM PM 20 18 58.0
comp=N,0.7nm,1.5s
MICGM PM 20 18 58.0
comp=N,9.1nm,4.0s
MICGM PM 20 18 59.0
comp=Z,0.3nm,1.4s
MICGM PM 20 18 59.0
comp=E,0.2nm,2.0s
MICGM PM 20 19 00.0
comp=Z,7.0nm,4.0s
MICGM *e*S **Sn 20 21 46.0 -6.5**
MICGM *e*LR LR 20 23 10.0
MICGM LRM MLR 20 25 15.0
comp=Z,111nm,12.0s
MICGM LRM MLR 20 25 15.0
comp=N,91nm,12.0s
MICGM LRM MLR 20 25 15.0
comp=E,95nm,16.0s
MNK Minsk 15.40 357⇓*e*P **Pn 20 18 57.0 -5.1**
MNK *e*S **Sn 20 21 46.0 -6.5**
MNK pmax pmax
comp=N,9μm,4.0s
MNK pmax pmax
comp=N,740nm,1.5s
MNK pmax pmax
comp=E,220nm,2.0s
MNK pmax pmax
comp=Z,260nm,1.4s
MNK pmax pmax
comp=Z,7μm,4.0s
MNK MLR MLR
comp=E,95μm,16.0s
MNK MLR MLR
comp=N,96μm,12.0s
MNK MLR MLR
comp=Z,111μm,12.0s
SUW Suwalki 15.42 347 *e*P **Pn 20 18 59.5 -2.8**
SUW *e* 20 19 09.4
SUW *e*S **S 20 22 09.7 +0.6**
SUW LMZ LR 20 25 19.0
comp=Z,36μm,17.1s
SUW Suwalki 15.42 347 *e*P **Pn 20 18 59.5 -2.8**
SUW MLR MLR
comp=Z,36μm,17.1s
MOTA Moosalm 15.43 308 *i* P **Pn 20 19 02.6 -0.1**
comp=Z,264nm,1.3s,SNR=37
FETA Feichten 15.53 306 *i* P **Pn 20 19 04.8 +0.9**
comp=Z,687nm,1.2s,SNR=105
FUORN Ofenpass-Fuorn 15.67 305 *e*Pn **Pn 20 19 06.3 +0.5**
comp=Z,467nm,1.2s
FUORN Ofenpass-Fuorn 15.67 305 *e*Pn **Pn 20 19 06.3 +0.5**
comp=Z,467nm,1.2s
RETA Reutte 15.70 308 *i* P **Pn 20 19 05.9 -0.3**
comp=Z,187nm,1.0s,SNR=36
BRG Berggiesshubel 15.85 323 *e*P **Pn 20 19 07.8 -0.1**
comp=Z,44nm,1.9s
BRG *i* 20 19 13.2
comp=Z,190nm,1.2s
BRG S **Sn 20 22 07.0 +3.6**
comp=N,63μm,9.8s
comp=E,60μm,10.8s
comp=Z,46μm,13.7s
BRG Berggiesshubel 15.85 323 *e*P **Pn 20 19 07.8 -0.1**
BRG S **Sn 20 22 07.0 +3.6**
BRG pmax pmax
comp=Z,45nm,1.9s
BRG MLR MLR
comp=N,63μm,9.8s
BRG MLR MLR
comp=E,60μm,10.8s
BRG MLR MLR
comp=Z,46μm,13.7s
NACGM Naroch 15.86 355 *e*P **Pn 20 19 03.0 -5.0**
NACGM PM 20 19 16.0
comp=Z,2.7nm,1.0s
NACGM *e*S **Sn 20 22 00.0 -3.6**
NACGM *e*SS **S 20 22 18.0 0.0**
NACGM *e*SSS SSS 20 22 42.0
NACGM *e*LQ LQ 20 23 56.0
NACGM *e*LR LR 20 24 53.0
NACGM LRM MLR 20 25 29.0
comp=Z,58nm,16.0s
DAVOX Davos/Dischmat 15.97 305 Pn **Pn 20 19 10.4 +0.7**
comp=Z,0.9nm,0.3s,baz=112,slow=9.7,SNR=75
DAVOX LR LR 20 25 52.6
comp=Z,11μm,18.9s,baz=110,slow=39
I48TN KESRA INFRASON16.02 264 *i* 21 46 10.0
baz=72,slow=315,SNR=0.4
KEST Kesra 16.03 264 Pn **Pn 20 19 11.5 +1.1**
comp=Z,0.4nm,0.3s,baz=32,slow=9.2,SNR=28
KEST LR LR 20 27 08.2
comp=Z,13μm,18.1s,baz=33,slow=44
KEST Kesra 16.03 264 *e*Pn **P 20 19 12.4 -1.5**
comp=Z,551nm,1.4s
KEST Kesra 16.03 264 *e*Pn **P 20 19 12.3 -1.5**
comp=Z,551nm,1.4s
DAVA Damuels 16.16 307 *i* P **Pn 20 19 12.4 +0.2**
comp=Z,462nm,1.2s,SNR=186
NKC Novy Kostel 16.18 319 *e*P **Pn 20 19 10.6 -1.6**
NKC *e*pP **P 20 19 16.9 +1.5**
NKC AMS AMS 20 26 50.0
comp=Z,57μm,10.5s
NKC Novy Kostel 16.18 319 *e*P **Pn 20 19 10.6 -1.6**
NKC MLR MLR
comp=Z,57μm,10.5s
TUE Stuetta 16.20 303 *e*Pn **Pn 20 19 13.7 +0.9**
comp=Z,209nm,0.9s
TUE Stuetta 16.20 303 *e*Pn **Pn 20 19 13.7 +0.9**
comp=Z,209nm,0.9s
IDID Didziasalis 16.27 355 *e*P **Pn 20 19 09.3 -4.0**
IDID IAmb IAmb 20 19 21.5
comp=Z,312nm,1.1s
ISAL Salakas 16.57 354 *e*P **Pn 20 19 12.9 -4.2**
ISAL IAmb IAmb 20 19 28.5
comp=Z,113nm,0.8s
CLL Collm 16.58 322 *e*P **Pn 20 19 16.0 -1.3**
comp=Z,271nm,1.4s
CLL *i* 20 19 20.9
comp=Z,239nm,1.5s
CLL *i* 20 19 24.7
comp=Z,271nm,1.4s
CLL *e* 20 19 37.0
CLL *e* 20 21 13.0
CLL *e*S **Sn 20 22 25.0 +3.8**
CLL LmV 20 26 00.0
comp=Z,32μm,18.1s
CLL *e*Lmax 20 27 09.0
CLL Collm 16.58 322 *e*P **Pn 20 19 16.0 -1.3**
CLL *e*S **Sn 20 22 25.0 +3.8**
CLL pmax pmax
comp=Z,271nm,1.4s
CLL MLR MLR
comp=Z,32μm,18.1s
CLL Collm 16.58 322 *e*Pn **Pn 20 19 16.5 -0.8**
comp=Z,215nm,1.3s
CLL Collm 16.58 322 *e*Pn **Pn 20 19 16.4 -0.8**
comp=Z,215nm,1.3s
KLNR Kaliningrad 16.60 342 *i* P **Pn 20 19 14.4 -3.1**
KLNR pmax pmax
comp=Z,1μm,1.4s
KLNR MLR MLR
comp=Z,25μm,14.0s
IZAR Zarasai 16.74 354 *e*P **Pn 20 19 14.9 -4.3**
IZAR IAmb IAmb 20 19 24.3
comp=Z,376nm,1.6s
OBN Obninsk 16.77 15 Pn **Pn 20 19 15.3 -4.3**
comp=Z,64nm,0.3s,baz=35,slow=0.3,SNR=51
OBN Sn **Sn 20 22 24.1 -1.6**
comp=Z,4.7nm,0.3s,baz=216,slow=22,SNR=3.4
OBN LR LR 20 26 13.4
comp=Z,16μm,18.3s,baz=207,slow=39
OBN Obninsk 16.77 15*c*e*P* **Pn 20 19 15.2 -4.4**
OBN pmax pmax
comp=Z,592nm,1.0s
OBN MLR MLR
comp=Z,16μm,15.0s
OBN Obninsk 16.77 15 *e*Pn **Pn 20 19 16.0 -3.6**
comp=Z,832nm,1.2s
OBN Sn **Sn 20 22 24.1 -1.6**
OBN Obninsk 16.77 15 *e*Pn **Pn 20 19 16.0 -3.6**
comp=Z,832nm,1.2s
OBN Sn **Sn 20 22 24.1 -1.6**
REVF Revere 16.90 293⇑*e*P **Pn 20 19 21.0 -0.5**
REVF Revere 16.90 293⇑*e*P **Pn 20 19 21.0 -0.5**
LUCF Luceram 16.94 293⇑*e*P **Pn 20 19 22.1 +0.1**
LUCF Luceram 16.94 293⇑*e*P **Pn 20 19 22.1 +0.1**
MVIF Mont Vial 17.08 293 *e*P **P 20 19 24.9 -0.6**
MVIF Mont Vial 17.08 293 *e*P **P 20 19 24.9 -0.6**
SPAK Spaichingen-Ko 17.17 308⇑*e*P **Pn 20 19 24.9 +0.1**
STU Stuttgart 17.21 311 *e*P **Pn 20 19 25.8 +0.5**
STU pmax pmax
comp=Z,689nm,1.4s
STU Stuttgart 17.21 311 *e*Pn **Pn 20 19 25.8 +0.5**
comp=Z,689nm,1.4s
STU Stuttgart 17.21 311 *e*Pn **Pn 20 19 25.8 +0.5**
comp=Z,689nm,1.4s
CALN Calern 17.25 293⇑*e*P **Pn 20 19 20.8 -5.1**
CALN Calern 17.25 293⇑*e*P **Pn 20 19 20.8 -5.1**

CMAH Djebel Manchou 17.27 268 P **Pn 20 19 26.4 +0.2**
CMAH Djebel Manchou 17.27 268 P **Pn 20 19 26.4 +0.2**
ABSA Djebel Ababsia 17.32 267 P **P 20 19 28.0 -0.2**
ABSA Djebel Ababsia 17.32 267 P **P 20 19 28.0 -0.2**
OG22 Abries 17.39 296 *eP* **Pn 20 19 27.0 -0.7**
OG22 Abries 17.39 296 *eP* **Pn 20 19 27.0 -0.7**
SENIN Lac Senin/Sane 17.52 301 *e*Pn **P 20 19 30.2 -0.3**
comp=Z,242nm,1.0s
SENIN Lac Senin/Sane 17.52 301 *e*Pn **P 20 19 30.2 -0.3**
comp=Z,242nm,1.0s
BFO Black Forest 17.54 308 *eP* **Pn 20 19 28.7 -0.7**
BFO pmax pmax
comp=Z,343nm,1.1s
BFO Black Forest 17.54 308 *e*Pn **Pn 20 19 28.7 -0.7**
comp=Z,343nm,1.1s
BFO Black Forest 17.54 308 *e*Pn **Pn 20 19 28.7 -0.7**
comp=Z,343nm,1.1s
FELD Feldberg im Sc 17.56 307⇑ *eP* **Pn 20 19 28.1 -1.7**
MOS Moscow 17.57 16*c i*P **Pn 20 19 26.4 -3.3**
MOS *e*S **Sn 20 22 43.9 -1.3**
MOS pmax pmax
comp=Z,10μm,2.6s
MOS pmax pmax
comp=N,10μm,3.4s
MOS pmax pmax
comp=E,5μm,3.4s
MOS pmax pmax
comp=E,612nm,2.0s
MOS pmax pmax
comp=Z,2μm,2.0s
MOS pmax pmax
comp=N,1μm,2.2s
MOS MLR MLR
comp=Z,21μm,12.0s
CAEH 'Ain El Ouahch 17.68 269 P **P 20 19 33.3 +1.3**
CAEH 'Ain El Ouahch 17.68 269 P **P 20 19 33.3 +1.3**
BBS Basel-Blauen 17.73 305⇑ *eP* **P 20 19 32.3 -0.3**
RSL Roselend 17.79 299 *eP* **P 20 19 34.1 +0.6**
RSL Roselend 17.79 299 *eP* **P 20 19 34.1 +0.6**
TOD Tromm 17.82 313⇑ *eP* **Pn 20 19 32.9 0.0**
CKFL Kef-Lekhel 17.88 268 P **P 20 19 36.0 +1.6**
CKFL Kef-Lekhel 17.88 268 P **P 20 19 36.0 +1.6**
LIBD Limburg 17.92 307 *eP* **Pn 20 19 33.0 -1.0**
STR Strasbourg 17.99 309⇑ *eP* **P 20 19 38.1 +2.7**
STR Strasbourg 17.99 309⇑ *eP* **P 20 19 38.1 +2.7**
LEPF PUYLOUBIER 18.07 292⇑ *eP* **Pn 20 19 35.3 -0.7**
LEPF PUYLOUBIER 18.07 292⇑ *eP* **Pn 20 19 35.3 -0.7**
CASM Ain Smara 18.09 268 P **P 20 19 39.1 +2.4**
CASM Ain Smara 18.09 268 P **P 20 19 39.1 +2.4**
MOF Molkenrain 18.10 306⇑ *eP* **P 20 19 36.7 0.0**
MOF Molkenrain 18.10 306⇑ *eP* **P 20 19 36.7 0.0**
KTD Kalmit 18.11 311⇑ *eP* **P 20 19 36.7 -0.1**
LOMF Lomont 18.13 304 *eP* **P 20 19 37.5 +0.5**
LOMF Lomont 18.13 304 *eP* **P 20 19 37.5 +0.5**
LANF Langenberg 18.13 310⇑ *eP* **P 20 19 37.3 +0.4**
LANF Langenberg 18.13 310⇑ *eP* **P 20 19 37.3 +0.4**
WLS Welschbruch 18.17 308⇑ *eP* **P 20 19 38.6 +1.1**
WLS Welschbruch 18.17 308⇑ *eP* **P 20 19 38.6 +1.1**
CTEI Djebel Teioual 18.21 267 P **P 20 19 40.4 +2.3**
CTEI Djebel Teioual 18.21 267 P **P 20 19 40.4 +2.3**
ECH Echery 18.22 307⇑ *eP* **P 20 19 38.1 +0.1**
ECH Echery 18.22 307⇑ *eP* **P 20 19 38.1 +0.1**
DFRA Djebel Bou Aff 18.49 269 P **Pn 20 19 43.5 +2.2**
DFRA Djebel Bou Aff 18.49 269 P **Pn 20 19 43.5 +2.2**
OG26 St.-Nazaire-De 18.50 295 *eP* **Pn 20 19 41.7 +0.5**
OG26 St.-Nazaire-De 18.50 295 *eP* **Pn 20 19 41.7 +0.5**
BSD Bornholm Skovb 18.61 334 *i*P **P 20 19 39.5 -2.6**
comp=Z,298nm,1.1s
BSD *i* 20 23 08.3
BSD Bornholm Skovb 18.61 334 *i*P **P 20 19 39.5 -2.6**
BSD *i* 20 23 08.3
BSD pmax pmax
comp=Z,300nm,1.1s
BSD Bornholm Skovb 18.61 334 *eP* **P 20 19 39.3 -2.8**
comp=Z,234nm,1.7s,SNR=40
BSD *e*S **Sn 20 23 04.0 -6.2**
SNR=47
ABH Alteburg 18.67 312⇑ *eP* **Pn 20 19 43.8 +0.5**
RGN Rugen 18.74 331 *eP* **P 20 19 43.7 +0.1**
comp=Z,1μm,1.2s
RGN Rugen 18.74 331 *eP* **P 20 19 43.7 +0.1**
comp=Z,1μm,1.2s
RUP Ruppelstein 18.88 311 *eP* **P 20 19 44.5 -0.7**
CKHR Kef el Ahmar 18.92 268 P **P 20 19 42.2 -3.7**
CKHR Kef el Ahmar 18.92 268 P **P 20 19 42.2 -3.7**
SET Setif 18.95 269 P **Pn 20 19 50.0 +3.1**
SET Setif 18.95 269 P **Pn 20 19 50.0 +3.1**
SLIT Slitere, Latvi 19.04 349 *eP* **P 20 19 46.0 -0.8**
comp=Z,2μm,1.2s,SNR=35
SLIT *e*S **S 20 23 22.1 -0.4**
SNR=133
MAHO Mahon 19.14 280 *i*P **Pn 20 19 48.6 -0.4**
MAHO *i*S **Sn 20 23 21.5 -1.8**
SSB Saint Sauveur 19.14 297 *eP* **P 20 19 47.3 -0.9**
SSB Saint Sauveur 19.14 297 *eP* **P 20 19 47.7 -0.5**
SSB pmax pmax
comp=Z,82nm,0.9s
SSB Saint Sauveur 19.14 297 *eP* **P 20 19 47.3 -0.9**
SSB Saint Sauveur 19.14 297 *eP* **P 20 19 47.7 -0.5**
comp=Z,82nm,0.9s
WLF Walferdange 19.39 310 P **Pn 20 19 52.3 +0.4**
comp=Z,153nm,1.2s
WLF Walferdange 19.39 310 *eP* **Pn 20 19 51.9 -0.1**
WLF pmax pmax
comp=Z,244nm,1.1s
WLF Walferdange 19.39 310 *eP* **Pn 20 19 51.9 -0.1**
comp=Z,244nm,1.1s
WLF Walferdange 19.39 310 *eP* **Pn 20 19 51.9 -0.1**
comp=Z,244nm,1.1s
VSU Vasula 19.41 356*ce*P **P 20 19 50.0 -0.9**
VSU pmax pmax
comp=Z,3μm,1.0s
VSU MLR MLR
comp=Z,60μm,18.0s
VSU Vasula 19.41 356 *eP* **P 20 19 50.8 -0.1**
comp=Z,2μm,1.2s,SNR=35
MEM Membach 19.89 313 P **Pn 20 19 57.5 -0.3**
comp=Z,264nm,1.4s
MTSE Matsula 19.89 352 *eP* **Pn 20 19 57.3 -0.5**
SNR=38
MTSE *e*S **S 20 23 38.6 -1.1**
SNR=47
PLDF La Plantade 19.91 298⇑ *eP* **P 20 19 57.1 +0.6**
PLDF La Plantade 19.91 298⇑ *eP* **P 20 19 57.1 +0.6**
COP Copenhagen 19.94 332 *i*P **P 20 19 56.7 +0.1**
COP *i* 20 23 36.8
COP Copenhagen 19.94 332 *i*P **P 20 19 56.7 +0.1**
COP *i* 20 23 36.8
COP Copenhagen 19.94 332 *i*P **P 20 19 56.8 +0.1**
SNR=35
HGN Heimansgroeve 20.00 313 *eP* **Pn 20 19 58.6 -0.5**
comp=Z,381nm,1.1s
HGN *e*S **Sn 20 23 47.0 +3.2**
HGN *e*L L 20 27 21.6
comp=Z,9μm,21.4s
LBL Lubilhac 20.04 296 *eP* **P 20 19 57.9 -0.1**
LBL Lubilhac 20.04 296 *eP* **P 20 19 57.9 -0.1**
WTSB Winterswijk 20.10 317 *eP* Pn 20 19 59.4 -0.9
comp=Z,447nm,1.2s
BEBN Eben Emael 20.16 313 P Pn 20 20 00.2 -0.7
comp=Z,86nm,1.1s
BCLA Clavier 20.21 312 P **P 20 20 00.3 +0.6**
comp=Z,30nm,1.4s
AGO Saint Agoulin 20.26 298⇑ *eP* **P 20 20 00.8 +0.5**
AGO Saint Agoulin 20.26 298⇑ *eP* **P 20 20 00.8 +0.5**
PYM Petit Puy Mans 20.29 297⇑ *eP* **P 20 20 01.3 +0.6**
PYM Petit Puy Mans 20.29 297⇑ *eP* **P 20 20 01.3 +0.6**
FILF Fillols 20.32 288 *eP* **P 20 20 01.5 +0.5**
FILF Fillols 20.32 288 *eP* **P 20 20 01.5 +0.5**
LRDF Laroque-de-Fa 20.34 289 *eP* **P 20 20 01.1 -0.1**
LRDF Laroque-de-Fa 20.34 289 *eP* **P 20 20 01.1 -0.1**
DOU Dourbes 20.49 310 P **P 20 20 03.2 +0.4**
comp=Z,160nm,1.1s
ABA Alger-Bouzarea 20.64 272 P **P 20 20 05.0 +0.5**
ABA Alger-Bouzarea 20.64 272 P **P 20 20 05.0 +0.5**
VERF Verneugheol 20.65 297 *eP* **P 20 20 05.4 +0.8**
VERF Verneugheol 20.65 297 *eP* **P 20 20 05.4 +0.8**
CARF Carcanieres 20.65 289⇑ *eP* **P 20 20 03.3 -1.4**
CARF Carcanieres 20.65 289⇑ *eP* **P 20 20 03.3 -1.4**
PUL Pulkovo 20.68 2 *eP* **P 20 20 05.1 +0.5**
PUL pmax pmax
comp=Z,886nm,0.9s
PUL MLR MLR
comp=Z,27μm,15.0s

PUL Pulkovo 20.68 2 *eP* **P 20 20 05.1 +0.5**
comp=Z,1μm,1.9s,SNR=34
PUL *e*S **S 20 23 57.2 +2.0**
SNR=42
VALF Valcebollere 20.72 288⇑ *eP* **P 20 20 04.8 -0.7**
VALF Valcebollere 20.72 288⇑ *eP* **P 20 20 04.8 -0.7**
SNF Seneffe 20.84 311 P Pn 20 20 07.7 -1.2
EMHD Djebel Mahouad 20.86 270 P **P 20 20 08.0 +1.0**
EMHD Djebel Mahouad 20.86 270 P **P 20 20 08.0 +1.0**
UCC Uccle 20.91 312 P Pn 20 20 09.7 -0.1
MEF Metsahovi 21.32 354 *eP* **P 20 20 12.4 +0.9**
comp=Z,388nm,1.5s,SNR=34
MEF *e*S **S 20 24 08.2 +0.3**
SNR=37
MELF Melles 21.65 289⇑ *eP* **P 20 20 15.3 -0.1**
MELF Melles 21.65 289⇑ *eP* **P 20 20 15.3 -0.1**
MUD Monsted U'grnd 21.75 329 *i*P **P 20 20 16.3 0.0**
MUD Monsted U'grnd 21.75 329 *i*P **P 20 20 16.3 0.0**
MUD Monsted U'grnd 21.75 329 *i*P **P 20 20 16.4 +0.1**
SNR=34
EBNR Beni Rached 21.94 271 P **P 20 20 20.0 +1.4**
EBNR Beni Rached 21.94 271 P **P 20 20 20.0 +1.4**
RESF Ens 21.96 289 *eP* **P 20 20 18.6 -0.2**
RESF Ens 21.96 289 *eP* **P 20 20 18.6 -0.2**
ECHA Ech Chlef 22.11 271 P **P 20 20 21.0 +0.8**
ECHA Ech Chlef 22.11 271 P **P 20 20 21.0 +0.8**
MENF Mencas 22.11 310⇑ *eP* **P 20 20 18.1 -2.1**
MENF Mencas 22.11 310⇑ *eP* **P 20 20 18.1 -2.1**
LABF Labassere 22.15 290⇑ *eP* **P 20 20 20.4 -0.4**
LABF Labassere 22.15 290⇑ *eP* **P 20 20 20.4 -0.4**
VIEF Viey 22.19 289 *eP* **P 20 20 20.6 -0.6**
VIEF Viey 22.19 289 *eP* **P 20 20 20.6 -0.6**
EANR 'Ain N'Sour 22.37 271 P **P 20 20 23.0 -0.2**
EANR 'Ain N'Sour 22.37 271 P **P 20 20 23.0 -0.2**
RAF Rauma 22.39 351 *eP* **P 20 20 22.4 -0.6**
comp=Z,240nm,1.9s,SNR=34
RAF *e*S **S 20 24 26.8 -1.8**
SNR=36
FINES FINESS Array B 22.42 356 P **P 20 20 22.6 -0.8**
comp=Z,41nm,0.7s,baz=151,slow=12,SNR=32
FINES LR LR 20 29 46.2
comp=Z,26μm,19.9s,baz=171,slow=38
FIA1 FINESS Array S 22.42 356 *eP* **P 20 20 22.1 -1.3**
FIA1 FINESS Array S 22.42 356 *eP* **P 20 20 22.1 -1.3**
REYF Montagne du Re 22.49 290⇑ *eP* **P 20 20 25.2 +0.7**
REYF Montagne du Re 22.49 290⇑ *eP* **P 20 20 25.2 +0.7**
KLMR Klimovskoe 22.71 13 *eP* **P 20 20 22.6 -3.8**
KLMR pmax pmax
comp=Z,2μm,1.5s
GEYT Alibeck 22.72 84 P **P 20 20 27.0 +0.1**
comp=Z,200nm,0.9s,baz=294,slow=12,SNR=188
GEYT S **S 20 24 36.9 +1.7**
comp=Z,4.3nm,0.8s,baz=240,slow=15,SNR=3.4
ATE Arette 22.72 290⇑ *eP* **P 20 20 27.0 +0.2**
ATE Arette 22.72 290⇑ *eP* **P 20 20 27.0 +0.2**
ELSH Elham, Standar 22.93 311 *eP* **P 20 20 28.6 -0.3**
LARF Larrau 22.93 290⇑ *eP* **P 20 20 29.5 +0.5**
LARF Larrau 22.93 290⇑ *eP* **P 20 20 29.5 +0.5**
OSSF Osses 23.13 290⇑ *eP* **P 20 20 30.2 -0.8**
OSSF Osses 23.13 290⇑ *eP* **P 20 20 30.2 -0.8**
HFS Hagfors 23.15 340 P **P 20 20 31.1 0.0**
comp=Z,192nm,0.9s,baz=138,slow=9.6,SNR=24
HFS LR LR 20 29 42.6
comp=Z,18μm,21.7s,baz=150,slow=37
AKTO Aktyubinsk 23.30 51 P **P 20 20 31.6 -1.1**
comp=Z,82nm,0.8s,baz=252,slow=10,SNR=102
AKTO LR LR 20 33 41.4
comp=Z,16μm,18.7s,baz=252,slow=47
HOMB Homborsund 23.30 332 *eP* **P 20 20 32.4 -0.2**
HOMB IVmB_BB 20 20 36.4
comp=Z,5μm,6.8s
HOMB *e*S **S 20 24 45.8 +1.1**
HOMB *e*ScP **ScP 20 28 00.9 +3.6**
HOMB IVMs_BB IVMs_BB 20 31 42.4
comp=Z,20μm,10.1s
HMNX Herstmonceux 23.31 310 *eP* **P 20 20 32.6 -0.1**
HMNX AMS AMS 20 31 23.6
comp=Z,28μm,10.2s
CART Cartagena 23.58 276 *i*P **P 20 20 33.8 -1.8**
CART *i*S **S 20 24 49.9 +0.2**
OSL Oslo 23.83 337 *eP* **P 20 20 37.3 -0.5**
OSL IVmB_BB 20 20 40.0
comp=Z,4μm,3.5s
OSL *e*S **S 20 24 57.3 +4.1**
OSL IVMs_BB IVMs_BB 20 31 50.5
comp=Z,36μm,12.2s
SNART Snartemo 23.83 331 *eP* **P 20 20 38.3 +0.4**
SNART IVmB_BB 20 20 46.0
comp=Z,3μm,2.8s
SNART *e*S **S 20 24 54.7 +1.4**
KONO Kongsberg 23.96 335 *eP* **P 20 20 38.0 -1.0**
KONO IVmB_BB 20 20 45.7
comp=Z,4μm,4.2s
KONO *e*S **S 20 24 55.5 +0.2**
KONO IVMs_BB IVMs_BB 20 31 52.9
comp=Z,33μm,12.9s
KONO Kongsberg 23.96 335 *eP* **P 20 20 38.5 -0.5**
KONO pmax pmax
comp=Z,346nm,1.3s
KONO Kongsberg 23.96 335 *eP* **P 20 20 38.5 -0.5**
comp=Z,346nm,1.3s
KONO Kongsberg 23.96 335 *eP* **P 20 20 38.5 -0.5**
comp=Z,346nm,1.3s
ABKAR Akbulak array 24.19 55 *eP* **P 20 20 41.0 -0.3**
ABKAR Akbulak array 24.19 55 *eP* **P 20 20 41.0 -0.3**
NC602 NORSAR Array S 24.24 339 *eP* **P 20 20 40.6 -1.0**
NC602 NORSAR Array S 24.24 339 *eP* **P 20 20 40.6 -1.0**
JQE Queens East 24.32 305 *eP* **P 20 20 41.1 -1.3**
JQE *eP* **P 20 20 41.2 -1.3**
JRS Jersey 24.36 305 *eP* **P 20 20 41.5 -1.3**
WOL Wolverton 24.38 310 *eP* **P 20 20 42.0 -1.0**
WOL AMB AMB 20 20 48.2
comp=Z,266nm,2.0s
JSA Saint Aubin 24.41 305⇑ *eP* **P 20 20 42.1 -1.2**
NC405 NORSAR Array S 24.50 340 *eP* **P 20 20 44.2 +0.1**
NC405 NORSAR Array S 24.50 340 *eP* **P 20 20 44.1 +0.1**
NAO01 NORSAR Array S 24.52 338 *eP* **P 20 20 44.5 +0.4**
NAO01 NORSAR Array S 24.52 338 *eP* **P 20 20 44.5 +0.4**
NB201 NORSAR Array S 24.57 339 *eP* **P 20 20 44.8 +0.2**
NB201 NORSAR Array S 24.57 339 *eP* **P 20 20 44.9 +0.2**
NB2 NORSAR Subarra 24.58 339 P **P 20 20 44.3 -0.5**
comp=Z,275nm,0.9s,baz=143,slow=9.3
NB2 NORSAR Subarra 24.58 339 P **P 20 20 44.3 -0.5**
baz=143,slow=9.3
NB2 NORSAR Subarra 24.58 339 P **P 20 20 44.3 -0.5**
comp=Z,275nm,0.9s,SNR=84
NOA NORSAR Array B 24.58 339 P **P 20 20 43.6 -1.2**
comp=Z,73nm,0.7s,baz=143,slow=9.4,SNR=84
NOA LR LR 20 30 24.3
comp=Z,5μm,21.9s,baz=140,slow=37
LMK Market Rasen 24.64 315 *eP* **P 20 20 45.4 +0.1**
LMK AMB AMB 20 20 49.6
comp=Z,559nm,2.6s
NBO02 NORSAR Array S 24.69 339 *eP* **P 20 20 46.2 +0.4**
NBO02 NORSAR Array S 24.69 339 *eP* **P 20 20 46.1 +0.4**
NC303 NORSAR Array S 24.69 339 *eP* **P 20 20 45.8 +0.1**
NC303 NORSAR Array S 24.69 339 *eP* **P 20 20 45.8 +0.1**
NBO00 NORSAR Array S 24.70 339 *eP* **P 20 20 46.5 +0.7**
NBO00 NORSAR Array S 24.70 339 *eP* **P 20 20 46.5 +0.7**
SWN1 Swindon 24.79 310 *eP* **P 20 20 44.7 -2.0**
SWN1 AMB AMB 20 20 52.2
comp=Z,575nm,1.8s
STAV Stavanger 24.82 331 *eP* **P 20 20 47.1 +0.2**
STAV IVMs_BB IVMs_BB 20 20 52.1
comp=Z,5μm,5.0s
STAV *e*S **S 20 25 11.1 +2.1**
BLS5 Blasjo 24.88 332 *eP* **P 20 20 47.8 +0.3**
BLS5 IVmB_BB 20 20 56.0
comp=Z,4μm,3.7s
BLS5 *e*S **S 20 25 11.2 +1.1**
BLS5 IVMs_BB IVMs_BB 20 32 56.9
comp=Z,19μm,11.3s
NC204 NORSAR Array S 24.90 339 *eP* **P 20 20 48.5 +0.8**
NC204 NORSAR Array S 24.90 339 *eP* **P 20 20 48.5 +0.8**
SSW Stow on the Wo 24.96 311⇑ *eP* **P 20 20 46.7 -1.6**
STRD Stroud 25.09 311 *eP* **P 20 20 48.5 -0.9**
STRD AMB AMB 20 20 54.7
comp=Z,320nm,1.7s
ODD1 Odda 25.16 333 *eP* **P 20 20 50.1 0.0**
ODD1 IVmB_BB 20 20 58.7
comp=Z,8μm,5.7s
ODD1 *e*S **S 20 25 16.4 +1.7**
ODD1 IVMs_BB IVMs_BB 20 32 13.3
comp=Z,15μm,11.4s

KMY Karmoy 25.18 331 *eP* **P 20 20 52.8 +2.7**
KMY IVmB_BB 20 20 58.5
comp=Z,4μm,5.9s
KMY *e*S **S 20 25 16.0 +1.2**
KMY IVMs_BB IVMs_BB 20 32 56.9
comp=Z,23μm,11.2s
ES19 SONSECA Array 25.40 282 *eP* **P 20 20 51.5 -1.0**
ES19 SONSECA Array 25.40 282 *eP* **P 20 20 51.5 -1.0**
ESDC Sonseca Array 25.46 282 P **P 20 20 52.6 -0.4**
comp=Z,12nm,0.7s,baz=72,slow=9.9,SNR=64
ESDC LR LR 20 31 42.3
comp=Z,9μm,18.2s,baz=80,slow=38
ESLA Sonseca Array 25.46 282 *eP* **P 20 20 52.5 -0.4**
comp=Z,127nm,1.2s
ESLA Sonseca Array 25.46 282 *eP* **P 20 20 52.5 -0.4**
comp=Z,127nm,1.2s
ESLA LR LR
comp=Z,10μm,19.0s
STNC Stoke 25.54 313 *eP* **P 20 20 53.8 +0.2**
STNC AMB AMB 20 20 57.6
comp=Z,316nm,1.5s
TMCR Tamitsa 25.63 9 *eP* **P 20 20 55.3 +1.2**
TMCR *e*S **S 20 25 25.9 +4.0**
TMCR pmax pmax
comp=Z,810nm,1.2s
MCH1 Michaelchurch 25.64 311⇑ *eP* **P 20 20 53.3 -1.1**
MCH1 AMB AMB 20 20 57.4
comp=Z,189nm,2.2s
MCH1 AMS AMS 20 32 24.2
comp=Z,19μm,9.9s
MELI Melilla 25.70 272 *i*P **P 20 20 55.2 +0.1**
MELI *i*S **S 20 25 30.0 +6.4**
HLM1 Long Mynd 25.74 312 *eP* **P 20 20 55.0 -0.3**
HLM1 AMS AMS 20 33 00.0
comp=Z,13μm,11.0s
PAB San Pablo 25.77 282 *eP* **P 20 20 56.0 +0.2**
PAB pmax pmax
comp=Z,87nm,1.0s
PAB MLR MLR
comp=Z,9μm,20.0s
PAB San Pablo 25.77 282 *eP* **P 20 20 56.0 +0.2**
comp=Z,87nm,1.0s
PAB San Pablo 25.77 282 *eP* **P 20 20 56.0 +0.2**
comp=Z,87nm,1.0s
PAB LR LR
comp=Z,9μm,20.0s
DYA Yadsworthy 25.80 307 *eP* **P 20 20 56.2 +0.3**
DYA AMS AMS 20 32 11.2
comp=Z,17μm,10.8s
DYA Yadsworthy 25.80 307 *eP* **P 20 20 56.8 +1.0**
comp=Z,96nm,0.8s
DYA Yadsworthy 25.80 307 *eP* **P 20 20 56.8 +1.0**
comp=Z,96nm,0.8s
DYA LR LR
comp=Z,17μm,18.0s
TAM Tamanrasset 25.83 238 *eP* **P 20 20 57.1 +0.6**
TAM pmax pmax
comp=Z,120nm,1.0s
TAM Tamanrasset 25.83 238 *eP* **P 20 20 57.1 +0.6**
comp=Z,120nm,1.0s
TAM Tamanrasset 25.83 238 *eP* **P 20 20 57.1 +0.6**
comp=Z,120nm,1.0s
HEX Exmoor 25.87 308⇑ *eP* **P 20 20 55.8 -0.7**
BER Bergen 25.95 333 *eP* **P 20 20 59.8 +2.6**
BER *e*S **S 20 25 27.8 +0.7**
BER IVMs_BB IVMs_BB 20 33 33.1
comp=Z,21μm,10.1s
ARU Arti 26.01 39 P **P 20 20 57.6 -0.2**
comp=Z,116nm,1.0s,baz=238,slow=6.0,SNR=72
ARU LR LR 20 33 02.5
comp=Z,8μm,19.1s,baz=264,slow=41
ARU Arti 26.01 39*d i*P **P 20 20 56.9 -0.8**
ARU 20 21 34.8
ARU PPP PPP 20 21 44.0
ARU 20 24 23.3
ARU S **S 20 25 29.8 +1.7**
ARU SS **SnSn 20 26 27.3 +2.1**
ARU SSS SSS 20 26 45.2
ARU pmax pmax
comp=Z,414nm,1.7s
ARU MLR MLR
comp=Z,16μm,16.0s
ARU Arti 26.01 39 *eP* **P 20 20 57.5 -0.2**
comp=Z,613nm,0.9s
ARU Arti 26.01 39 *eP* **P 20 20 57.5 -0.2**
comp=Z,613nm,0.9s
FOEL Foel Wylfa 26.04 313 *eP* **P 20 20 58.7 +0.6**
FOEL AMB AMB 20 21 01.0
comp=Z,246nm,1.7s
FOEL AMS AMS 20 32 24.8
comp=Z,15μm,11.6s
ASK Askoy 26.07 333 *eP* **P 20 20 56.1 -2.1**
ASK *e*S **S 20 25 29.9 +1.0**
ASK IVMs_BB IVMs_BB 20 33 37.3
comp=Z,19μm,10.4s
HYA Hoyanger 26.22 335 *eP* **P 20 21 04.0 +4.5**
HYA *e*S **S 20 25 32.2 +0.9**
HYA IVMs_BB IVMs_BB 20 33 11.9
comp=Z,13μm,13.8s
HTL Hartland 26.27 308 *eP* **P 20 20 59.6 -0.5**
HTL AMB AMB 20 21 06.6
comp=Z,83nm,1.0s
HTL AMS AMS 20 32 51.9
comp=Z,11μm,11.5s
LPW Lampeter 26.31 310⇑ *eP* **P 20 21 00.3 -0.2**
LPW AMB AMB 20 21 03.0
comp=Z,71nm,1.7s
BANOM Banah 26.35 112 *i*P **P 20 21 01.7 +0.5**
SNR=57
BANOM Banah 26.35 112 P **P 20 21 00.6 -0.5**
SNR=75
BANOM Banah 26.35 112 P **P 20 21 00.6 -0.5**
SNR=75
EMAL Malaga-Limoner 26.44 275 *i*P **P 20 21 00.9 -0.9**
EMAL *i*S **S 20 25 34.3 -0.9**
NAZ Nazwa, Dubai 26.46 114 *i*P **P 20 21 02.7 +0.6**
SNR=76
NAZ Nazwa, Dubai 26.46 114 pP **P 20 21 02.8 +0.6**
SNR=60
NAZ Nazwa, Dubai 26.46 114 P **P 20 21 02.8 +0.6**
SNR=60
NAZ P **P 20 21 02.8 +0.6**
SNR=60
CCA1 Carnmenellis 26.56 306 *eP* **P 20 21 00.8 -1.9**
CCA1 AMS AMS 20 32 56.8
comp=Z,19μm,11.4s
FAQ Al Faqa, Dubai 26.57 115 *i*P **P 20 21 03.1 +0.1**
SNR=40
FAQ Al Faqa, Dubai 26.57 115 P **P 20 21 03.4 +0.4**
SNR=46
FAQ Al Faqa, Dubai 26.57 115 P **P 20 21 03.4 +0.4**
SNR=46
KESW Keswick, Cumbr 26.59 316 *eP* **P 20 21 02.9 0.0**
KESW AMB AMB 20 21 09.8
comp=Z,384nm,1.2s
SUE Sulen 26.63 333 *eP* **P 20 21 08.2 +5.0**
SUE IVmB_BB 20 21 21.1
comp=Z,5μm,4.1s
SUE *e*S **S 20 25 40.4 +2.7**
SUE IVMs_BB IVMs_BB 20 33 49.1
comp=Z,15μm,12.5s
TBLU Trondheim 26.67 341 *eP* **P 20 21 08.3 +4.7**
TBLU IVmB_BB 20 21 10.9
comp=Z,3μm,5.5s
TBLU *e*S **S 20 25 41.7 +3.4**
TBLU IVMs_BB IVMs_BB 20 33 53.6
comp=Z,16μm,10.2s
AKN Aaknes 26.72 337 *eP* **P 20 21 07.0 +2.9**
AKN *e*S **S 20 25 41.5 +2.3**
AKN IVMs_BB IVMs_BB 20 33 37.1
comp=Z,46μm,11.3s
ECK Cauldkaine Hil 26.83 317⇑ *i*P **P 20 21 04.5 -0.7**
BHH Howats Hill 26.84 317⇑ *i*P **P 20 21 04.9 -0.3**
MOL Molde 26.86 338 *eP* **P 20 21 08.4 +3.1**
MOL *e*S **S 20 25 42.5 +1.2**
MOL IVMs_BB IVMs_BB 20 33 36.4
comp=Z,32μm,12.4s
ESY Stoneypath 26.87 319⇑ *eP* **P 20 21 04.8 -0.7**
UOSS Minazif 26.88 114 *eP* **P 20 21 04.3 -1.5**
comp=Z,33nm,1.2s
UOSS Minazif 26.88 114 *eP* **P 20 21 04.3 -1.5**
comp=Z,33nm,1.2s
HATD Hatta, Dubai 26.90 114 *i*P **P 20 21 06.0 -0.1**
SNR=107
HATD Hatta, Dubai 26.90 114 P **P 20 21 06.0 -0.1**
SNR=91

HATD Hatta, Dubai 26.90 114 P **P 20 21 06.0 -0.1**
SNR=91
HATD P **P 20 21 06.0 -0.1**
SNR=91
EKA Eskdalemuir Ar 26.91 318 P **P 20 21 05.0 -0.8**
comp=Z,28nm,0.5s,baz=114,slow=12,SNR=96
EKA LR LR 20 32 11.5
comp=Z,7μm,18.2s,baz=140,slow=38
EKA Eskdalemuir Ar 26.91 318 P **P 20 21 05.0 -0.8**
FOO Floro 26.91 335 *eP* **P 20 21 09.5 +3.7**
FOO *eS* **S 20 25 44.8 +2.6**
FOO IVMs_BB IVMs_BB 20 33 36.1
comp=Z,12μm,11.8s
ESK Eskdalemuir 26.92 318 *eP* **P 20 21 04.9 -1.1**
ESK AMB AMB 20 21 10.1
comp=Z,208nm,1.6s
ESK AMS AMS 20 34 05.6
comp=Z,16μm,13.3s
ESK Eskdalemuir 26.92 318 *i* P **P 20 21 06.3 +0.3**
ESK Eskdalemuir 26.92 318 *eP* **P 20 21 05.3 -0.7**
comp=Z,409nm,1.5s
ESK Eskdalemuir 26.92 318 *eP* **P 20 21 05.3 -0.7**
comp=Z,409nm,1.5s
ASHO Ashiyiah 26.93 114 *i* P **P 20 21 05.9 -0.5**
SNR=118
ASHO Ashiyiah 26.93 114 P **P 20 21 06.5 +0.1**
SNR=84
ASHO Ashiyiah 26.93 114 P **P 20 21 06.5 +0.1**
SNR=84
ASHO P **P 20 21 06.5 +0.1**
SNR=84
BWH Wardlaw 27.11 317⇑ *i P* **P 20 21 07.2 -0.4**
EDI Edinburgh 27.16 319⇑ *eP* **P 20 21 07.9 -0.2**
EDI AMB AMB 20 21 12.6
comp=Z,341nm,1.5s
EDI AMS AMS 20 34 33.0
comp=Z,22μm,12.8s
SVE Sverdlovsk 27.21 39 *ceP* **P 20 21 07.7 -0.8**
SVE *eS* **S 20 25 48.0 +1.0**
SVE pmax pmax
comp=Z,2μm,10.3s
SVE pmax pmax
comp=Z,383nm,1.5s
SVE MLR MLR
comp=Z,19μm,14.0s
SVE MLR MLR
comp=N,7μm,12.0s
SVE MLR MLR
comp=E,12μm,16.0s
DRUM Mains of Drumt 27.25 321 *eP* **P 20 21 07.9 -0.9**
DRUM AMS AMS 20 34 55.7
comp=Z,17μm,15.0s
PBRG Braganca 27.26 287 *eP* **P 20 21 06.8 -2.4**
comp=Z,116nm,1.4s
PBRG *eS* **S 20 25 47.0 -1.2**
PBRG *eLR* LR 20 30 49.8
comp=Z,8μm,18.0s
EDU Dundee 27.34 320⇑ *i P* **P 20 21 08.7 -1.0**
NSS Namsos 27.36 344 *eP* **P 20 21 12.4 +2.7**
NSS *eS* S **20 25 49.4 +0.3**
NSS IVMs_BB IVMs_BB 20 33 59.8
comp=Z,18μm,9.8s
MVO Moncorvo 27.55 286 *eP* **P 20 21 07.1 -4.7**
comp=Z,122nm,1.6s
MVO Moncorvo 27.55 286 *eP* **P 20 21 09.6 -2.2**
comp=Z,122nm,1.6s
MVO *eS* **S 20 25 53.3 +0.5**
MVO *eLR* LR 20 30 41.9
comp=Z,9μm,18.0s
MVO Moncorvo 27.55 286 *eP* **P 20 21 09.6 -2.2**
comp=Z,122nm,1.6s
PGBU Glenifferbraes 27.79 318⇑ *eP* **P 20 21 13.5 -0.2**
PGBU AMB AMB 20 21 18.5
comp=Z,221nm,1.5s
PGBU AMS AMS 20 33 57.6
comp=Z,14μm,14.5s
PGBU Glenifferbraes 27.79 318⇑ *eP* **P 20 21 13.5 -0.2**
EAB Aberfoyle 27.86 319⇑ *i P* **P 20 21 13.4 -0.9**
EAB Aberfoyle 27.86 319⇑ *i P* **P 20 21 13.4 -0.9**
SFS San Fernando 27.90 276 *eP* **P 20 21 11.0 -3.9**
SFS *eS* **S 20 25 49.5 -8.7**
MCD Coleburn Disti 27.92 322⇑ *i P* **P 20 21 14.4 -0.5**
MCD Coleburn Disti 27.92 322⇑ *i P* **P 20 21 14.4 -0.5**
DAMY Dhamar 27.93 147 *eP* **P 20 21 16.1 +0.4**
comp=Z,542nm,1.0s
DAMY Dhamar 27.93 147 *eP* **P 20 21 16.1 +0.4**
comp=Z,542nm,1.0s
DAMY LR LR
comp=Z,5μm,19.0s
DSB Dublin 27.98 312 *eP* **P 20 21 17.2 +1.8**
comp=Z,270nm,1.8s
DSB Dublin 27.98 312 *eP* **P 20 21 17.2 +1.8**
comp=Z,270nm,1.8s
DSB LR LR
comp=Z,10μm,19.0s
MTE Manteigas 28.05 284 *eP* **P 20 21 14.3 -2.0**
comp=Z,176nm,1.3s
MTE Manteigas 28.05 284 *eP* **P 20 21 16.1 -0.2**
comp=Z,176nm,1.3s
MTE *eS* **S 20 26 01.2 +0.5**
MTE *eLR* LR 20 30 48.4
comp=Z,8μm,20.0s
MTE Manteigas 28.05 284 *eP* **P 20 21 16.7 +0.4**
comp=Z,132nm,1.1s
MTE Manteigas 28.05 284 *eP* **P 20 21 16.7 +0.4**
comp=Z,132nm,1.1s
MTE LR LR
comp=Z,8μm,20.0s
POLO Lamas de Olo 28.09 286 *eP* **P 20 21 15.8 -0.9**
comp=Z,64nm,1.4s
POLO *eS* **S 20 26 03.3 +1.9**
POLO *eLR* LR 20 30 24.2
comp=Z,3μm,18.0s
PCBR Castelo Branco 28.10 283 *eP* **P 20 21 16.3 -0.3**
comp=Z,126nm,1.7s
PBAR Barrancos 28.10 280 *eP* **P 20 21 16.0 -0.7**
comp=Z,168nm,1.3s
PBAR *eS* **S 20 26 02.1 +0.6**
PBAR *eLR* LR 20 30 35.4
comp=Z,10μm,20.0s
PMRV Marv??o 28.11 282 *eP* **P 20 21 16.0 -0.8**
comp=Z,65nm,1.7s
PMRV Marv??o 28.11 282 *eP* **P 20 21 17.8 +1.0**
comp=Z,65nm,1.7s
PMRV *eS* **S 20 26 02.5 +0.9**
PMRV *eLR* LR 20 29 06.0
comp=Z,8μm,16.0s
PMRV Marv??o 28.11 282 *eP* **P 20 21 17.8 +1.0**
comp=Z,65nm,1.7s
PCAB Cabril 28.22 287 *eP* **P 20 21 18.9 +1.1**
comp=Z,123nm,1.4s
LRW Lerwick 28.31 328 *eP* **P 20 21 18.6 +0.2**
LRW AMB AMB 20 21 23.9
comp=Z,243nm,1.3s
LRW AMS AMS 20 35 02.9
comp=Z,22μm,16.2s
LRW Lerwick 28.31 328 *eP* **P 20 21 18.5 +0.2**
MLA1 Latheron 28.31 323⇑ *eP* **P 20 21 16.0 -2.4**
MLA1 Latheron 28.31 323⇑ *eP* **P 20 21 16.0 -2.4**
PGAV Gavieira, Arco 28.37 288 *eP* **P 20 21 19.2 0.0**
comp=Z,180nm,1.4s
PGAV Gavieira, Arco 28.37 288 *eP* **P 20 21 23.1 +3.9**
comp=Z,180nm,1.4s
PGAV *eS* **S 20 26 12.7 +6.9**
PGAV *eLQ* LQ 20 30 59.0
PGAV *eLR* LR 20 31 55.3
comp=Z,8μm,16.0s
PESTR Estremoz 28.37 281 *eP* **P 20 21 18.4 -0.8**
comp=Z,75nm,1.6s
PESTR *eS* **S 20 26 08.6 +2.9**
PESTR *eLR* LR 20 30 00.1
comp=Z,7μm,16.0s
APA Apatity 28.60 3⇓ *iP* **P 20 21 21.4 +0.6**
APA *i* S **S 20 26 07.0 -1.6**
APA *i* SS **SnSn 20 27 27.0 -1.1**
APA pmax pmax
comp=Z,162nm,1.2s
APA MLR MLR
comp=Z,28μm,14.0s
APA Apatity 28.60 3 *i P* **P 20 21 21.4 +0.6**
comp=Z,162nm,1.2s
BIGH Upper Bighouse 28.66 323 AMS AMS 20 36 22.0
comp=Z,55μm,14.0s
STOK Stokkvaagen 28.75 347 *eS* **S 20 26 13.0 +2.1**
EVO Evora 28.77 281 *eP* **P 20 21 22.3 -0.3**
comp=Z,58nm,1.6s

PBEJ Beja 28.77 280 *eP* **P 20 21 21.8 -0.9**
comp=Z,112nm,1.7s
PVAQ Vaqueiros 28.81 278 *eP* **P 20 21 21.4 -1.6**
comp=Z,136nm,1.5s
PVAQ Vaqueiros 28.81 278 *eP* **P 20 21 23.0 0.0**
comp=Z,136nm,1.5s
PVAQ *eS* **S 20 26 13.4 +0.8**
PVAQ *eLR* LR 20 30 16.1
comp=Z,4μm,18.0s
PVAQ Vaqueiros 28.81 278 *eP* **P 20 21 23.0 0.0**
comp=Z,136nm,1.5s
PMTG Montargil 28.81 282 *eP* **P 20 21 22.2 -0.8**
comp=Z,59nm,1.5s
PMTG *eS* **S 20 26 12.0 -0.6**
PMTG *eLR* LR 20 29 32.3
comp=Z,8μm,16.0s
PCAS Casmilo, Conde 28.83 284 *eP* **P 20 21 22.8 -0.4**
comp=Z,84nm,1.9s
PCAS *eS* **S 20 26 12.1 -0.8**
PCAS *eLR* LR 20 30 58.8
comp=Z,9μm,16.0s
PTOM Tomar 28.84 283 *eP* **P 20 21 22.9 -0.4**
comp=Z,142nm,1.3s
KPL Plockton 28.99 320 *eP* **P 20 21 23.1 -1.2**
KPL AMS AMS 20 35 42.7
comp=Z,23μm,14.6s
KPL Plockton 28.99 320 *eP* **P 20 21 23.1 -1.2**
LVZ Lovozero 28.99 4⇓ *eP* **P 20 21 22.6 -1.7**
LVZ pmax pmax
comp=Z,138nm,1.2s
LVZ MLR MLR
comp=Z,20μm,14.0s
LVZ Lovozero 28.99 4 *eP* **P 20 21 25.2 +0.8**
comp=Z,257nm,0.9s
LVZ Lovozero 28.99 4 *eP* **P 20 21 25.2 +0.8**
comp=Z,257nm,0.9s
LVZ LR LR
comp=Z,5μm,22.0s
PCVE Castro Verde 29.00 279 *eP* **P 20 21 24.1 -0.6**
comp=Z,96nm,2.1s
PCVE *eS* **S 20 26 19.2 +3.6**
PCVE *eLR* LR 20 29 50.5
comp=Z,6μm,18.0s
PBDV Barranco-do-Ve 29.02 278 *eP* **P 20 21 24.3 -0.6**
comp=Z,179nm,1.8s
PBDV *eS* **S 20 26 18.5 +2.6**
PBDV *eLR* LR 20 31 25.9
comp=Z,5μm,18.0s
MESJ Messejana 29.09 279 *eP* **P 20 21 25.1 -0.5**
MESJ *eS* **S 20 26 17.5 +0.5**
MESJ AMS AMS 20 33 59.6
comp=N,10μm,19.1s
MESJ Messejana 29.09 279 *eP* **P 20 21 25.1 -0.5**
comp=N,97nm,1.8s
MESJ Messejana 29.09 279 *eP* **P 20 21 25.0 -0.5**
MESJ *eS* **S 20 26 17.5 +0.5**
MESJ Messejana 29.09 279 *eP* **P 20 21 25.0 -0.5**
BIDO Bidbid 29.13 114 P **P 20 21 24.6 -1.4**
SNR=14
BIDO Bidbid 29.13 114 P **P 20 21 24.6 -1.4**
SNR=14
BIDO Bidbid 29.13 114 P **P 20 21 24.6 -1.4**
SNR=14
BIDO P **P 20 21 24.6 -1.4**
SNR=14
RSC Scourie 29.18 323⇑ *eP* **P 20 21 25.4 -0.6**
RSC Scourie 29.18 323⇑ *eP* **P 20 21 25.4 -0.6**
PNCL Nicolau / Gran 29.26 280 *eP* **P 20 21 27.0 0.0**
comp=N,69nm,1.7s
PNCL *eS* **S 20 26 22.3 +2.7**
PNCL *eLR* LR 20 30 27.8
comp=N,6μm,16.0s
SMDO Samad 29.37 115 P **P 20 21 27.9 -0.4**
SNR=20
SMDO Samad 29.37 115 P **P 20 21 27.9 -0.4**
SNR=20
SMDO Samad 29.37 115 P **P 20 21 27.9 -0.4**
SNR=20
PTEO Sao Teotonio 29.55 279 *eP* **P 20 21 30.9 +1.3**
comp=N,232nm,1.9s
MORF Marmelete 29.56 279 *eP* **P 20 21 28.9 -0.8**
MORF *eS* **S 20 26 24.9 +0.5**
MORF AMS AMS 20 34 24.4
comp=N,9μm,20.0s
MORF Marmelete 29.56 279 *eP* **P 20 21 28.3 -1.4**
MORF *eLR* LR 20 30 35.4
comp=N,5μm,20.0s
MORF Marmelete 29.56 279 *eP* **P 20 21 28.9 -0.8**
MORF *eS* **S 20 26 24.9 +0.5**
MORF Marmelete 29.56 279 *eP* **P 20 21 28.9 -0.8**
LIS Lisbon 29.59 281 *eP* **P 20 21 29.2 -0.7**
LIS *eS* **S 20 26 25.7 +0.9**
LIS AMS AMS 20 34 03.3
comp=N,11μm,22.3s
LIS Lisbon 29.59 281 *eP* **P 20 21 29.2 -0.7**
PMST Lisbon--Monsan 29.61 282 *eP* **P 20 21 29.5 -0.7**
PMAFR Mafra 29.64 282 *eP* **P 20 21 30.6 +0.2**
PMAFR *eS* **S 20 26 30.3 +4.6**
PMAFR *eLR* LR 20 30 40.7
comp=N,6μm,18.0s
WSAR Wadi Sarin 29.67 114 P **P 20 21 30.5 -0.3**
comp=N,58nm,0.9s,baz=312,slow=7.5,SNR=23
WSAR LR LR 20 36 50.2
comp=N,8μm,19.2s,baz=326,slow=43
PFVI Vila Bisbo 29.74 278 *eP* **P 20 21 30.7 -0.6**
comp=N,156nm,1.4s
PFVI *eS* **S 20 26 29.0 +1.8**
PFVI *eLR* LR 20 30 24.8
comp=N,5μm,18.0s
VAL Valentia 29.99 308 *eP* **P 20 21 31.8 -1.5**
VAL *eS* **S 20 26 28.2 -2.5**
ATD Arta Tunnel 30.09 152 P **P 20 21 34.9 +0.3**
comp=N,26nm,1.0s,baz=329,slow=4.8,SNR=12
KTK1 Kautokeino 30.11 356 *eP* **P 20 21 35.8 +1.6**
KTK1 IVmB_BB 20 21 37.2
comp=Z,2μm,3.0s
KTK1 *eS* **S 20 26 33.6 +1.2**
KTK1 IVMs_BB IVMs_BB 20 34 29.2
comp=Z,12μm,13.8s
KTK1 Kautokeino 30.11 356 *eP* **P 20 21 35.8 +1.6**
SNR=27
LOF Lofoten 30.29 349 *eP* **P 20 21 37.3 +1.5**
LOF *eS* **S 20 26 34.4 -0.7**
LOF IVMs_BB IVMs_BB 20 36 19.5
comp=Z,16μm,9.9s
LOF Lofoten 30.29 349 *eP* **P 20 21 37.3 +1.5**
SNR=27
ARA0 ARCESS Array S 30.53 358 *eP* **P 20 21 37.5 -0.4**
ARA0 ARCESS Array S 30.53 358 *eP* **P 20 21 37.5 -0.4**
ARCES ARCESS Array B 30.53 358 P **P 20 21 37.9 -0.1**
comp=Z,55nm,0.8s,baz=180,slow=6.8,SNR=29
ARCES LR LR 20 34 27.5
comp=Z,19μm,19.1s,baz=168,slow=38
ARE0 ARCESS Array S 30.53 358 *eP* **P 20 21 38.6 +0.7**
comp=Z,472nm,1.8s
ARE0 ARCESS Array S 30.53 358 *eP* **P 20 21 38.6 +0.7**
comp=Z,472nm,1.8s
ARE0 LR LR
comp=Z,21μm,19.0s
ZRNK Zerenda 30.54 50 *i P* **P 20 21 38.2 0.0**
ZRNK pmax pmax
comp=Z,106nm,1.3s
ZRNK Zerenda 30.54 50 *eP* **P 20 21 37.5 -0.7**
comp=Z,165nm,0.9s
ZRNK Zerenda 30.54 50 *eP* **P 20 21 37.5 -0.7**
comp=Z,165nm,0.9s
BRLS Borolday 30.68 70 *i P* **P 20 21 38.5 -1.0**
comp=Z,17nm,0.6s
BRLS *i* PP **PnPn 20 22 37.3 -1.7**
BRLS *eS* **S 20 26 43.3 +1.4**
BRLS LR LR 20 33 47.1
comp=Z,150nm,11.8s
KEV Kevo 30.71 359 *eP* **P 20 21 40.5 +1.0**
KEV pmax pmax
comp=Z,112nm,1.0s
KEV MLR MLR
comp=Z,25μm,19.0s
KEV Kevo 30.71 359 *eP* **P 20 21 40.5 +1.0**
comp=Z,112nm,1.0s
KEV Kevo 30.71 359 *eP* **P 20 21 40.5 +1.0**
comp=Z,112nm,1.0s
KEV LR LR
comp=Z,25μm,19.0s
IUG Iuzhnay 31.02 71 *i P* **P 20 21 41.3 -1.4**
comp=Z,775nm,1.1s
IUG *i* PP **PnPn 20 22 41.8 -1.8**

IUG *eS* **S 20 26 47.4 -0.1**
TRO Tromso 31.04 353 *eP* **P 20 21 43.0 +0.6**
TRO IVmB_BB 20 21 45.4
comp=Z,2μm,3.3s
TRO *eS* **S 20 26 51.6 +4.7**
TRO IVMs_BB IVMs_BB 20 35 06.8
comp=Z,19μm,9.5s
TRO Tromso 31.04 353 *eP* **P 20 21 43.0 +0.6**
SNR=27
KKAR Karatay Array 31.24 69 *eP* **P 20 21 43.2 -1.3**
KKAR Karatay Array 31.24 69 *eP* **P 20 21 43.2 -1.3**
KKAR Karatay Array 31.24 69 *eP* **P 20 21 43.2 -1.3**
FURI Furi 31.31 161 P **P 20 21 48.0 +2.4**
FURI S S 20 26 43.2 -9.4
FURI Furi 31.31 161 *eP* **P 20 21 47.8 +2.2**
comp=Z,313nm,1.0s
FURI Furi 31.31 161 *eP* **P 20 21 47.8 +2.2**
comp=Z,313nm,1.0s
BRVK Borovoye 31.32 50 *d iP* **P 20 21 45.6 +0.5**
BRVK pmax pmax
comp=Z,249nm,2.5s
BRVK MLR MLR
comp=Z,11μm,17.0s
BRVK Borovoye 31.32 50 *eP* **P 20 21 45.5 +0.5**
comp=Z,393nm,1.9s
BRVK Borovoye 31.32 50 *eP* **P 20 21 45.5 +0.5**
comp=Z,393nm,1.9s
BVAR Borovoye Array 31.38 50 P **P 20 21 45.8 +0.2**
comp=Z,19nm,0.8s,baz=260,slow=6.8,SNR=30
BVAR LR LR 20 37 55.4
comp=Z,11μm,18.4s,baz=234,slow=43
CHKZ Chkalovo 31.62 49 *i P* **P 20 21 47.8 +0.1**
CHKZ pmax pmax
comp=Z,126nm,1.2s
CHKZ Chkalovo 31.62 49 *i P* **P 20 21 47.8 +0.1**
comp=Z,126nm,1.2s
HAMF Hammerfest 31.71 357 *eP* **P 20 21 48.1 -0.2**
HAMF IVmB_BB 20 21 51.3
comp=Z,2μm,3.2s
HAMF *eS* **S 20 26 57.7 +0.4**
HAMF IVMs_BB IVMs_BB 20 35 22.6
comp=Z,13μm,11.6s
HAMF Hammerfest 31.71 357 *eP* **P 20 21 48.1 -0.2**
SNR=27
KBL Kabul 32.14 86 *eP* **P 20 21 53.5 +0.8**
KBL pmax pmax
comp=Z,105nm,1.1s
KBL MLR MLR
comp=Z,4μm,18.0s
KBL Kabul 32.14 86 *eP* **P 20 21 53.5 +0.8**
comp=Z,104nm,1.1s
KBL Kabul 32.14 86 *eP* **P 20 21 53.5 +0.8**
comp=Z,104nm,1.1s
KBL LR LR
comp=Z,4μm,18.0s
OTUK Ortayu 32.22 59 *i P* **P 20 21 52.9 -0.1**
OTUK pmax pmax
comp=Z,287nm,1.1s
OTUK Ortayu 32.22 59 *i P* **P 20 21 52.9 -0.1**
comp=Z,287nm,1.1s
BRZS Berezniki 32.48 56 *eP* **P 20 21 54.7 -0.6**
comp=Z,25nm,1.4s
BRZS *eS* **S 20 27 11.8 +1.9**
BRZS LR LR 20 35 02.4
comp=Z,92nm,10.6s
MNAS Manas 32.78 70 *i P* **P 20 21 58.5 +0.3**
MNAS pmax pmax
comp=Z,134nm,1.3s
MNAS Manas 32.78 70 *i P* **P 20 21 58.5 +0.3**
comp=Z,134nm,1.3s
EKS2 Erkin-Say 33.68 69 *eP* **P 20 22 05.8 -0.3**
EKS2 pmax pmax
comp=Z,161nm,1.1s
EKS2 MLR MLR
comp=Z,4μm,18.0s
EKS2 Erkin-Say 33.68 69 *eP* **P 20 22 05.8 -0.3**
comp=Z,161nm,1.1s
EKS2 Erkin-Say 33.68 69 *eP* **P 20 22 05.8 -0.3**
comp=Z,161nm,1.1s
EKS2 LR LR
comp=Z,4μm,18.0s
AML Almayashu 33.71 70 P **P 20 22 07.3 +0.7**
SNR=23
AAK Ala-Archa 34.21 69 *i P* **P 20 22 11.4 +0.7**
AAK pmax pmax
comp=Z,245nm,1.3s
AAK Ala-Archa 34.21 69 *eP* **P 20 22 10.2 -0.5**
comp=Z,171nm,1.0s
AAK Ala-Archa 34.21 69 *eP* **P 20 22 10.2 -0.5**
comp=Z,171nm,1.0s
AAK LR LR
comp=Z,6μm,20.0s
FRU Bishkek 34.26 69 *eP* **P 20 22 10.0 -1.0**
FRU *i* 20 23 31.5
FRU *eS* **S 20 27 32.0 -5.7**
FRU pmax pmax
comp=Z,950nm,1.8s
FRU smax smax
comp=E,600nm,3.0s
FRU smax smax
comp=E,2μm,7.0s
FRU Bishkek 34.26 69 *eP* **P 20 22 10.0 -1.0**
comp=E,950nm,1.8s
TKM2 Tokmak 2 34.96 68 *i P* **P 20 22 16.5 -0.7**
TKM2 pmax pmax
comp=Z,106nm,0.9s
TKM2 Tokmak 2 34.96 68 *i P* **P 20 22 16.5 -0.7**
comp=Z,106nm,0.9s
TKM2 Tokmak 2 34.96 68 *eP* **P 20 22 17.7 +0.5**
comp=Z,96nm,0.9s
TKM2 LR LR
comp=Z,6μm,19.0s
BMNS Besmoynak 34.98 68 *i P* **P 20 22 16.5 -0.8**
comp=Z,625nm,1.9s
BMNS *eS* **S 20 27 49.8 +0.8**
KUU Kurty 35.33 67 *i P* **P 20 22 19.8 -0.4**
comp=Z,1μm,1.1s
KUU *i* PP **PnPn 20 23 38.8 +0.5**
KUU *eS* **S 20 27 55.6 +1.4**
KUU *eSS* **SnSn 20 30 13.6 +1.3**
KUU LRM MLR 20 38 07.1
comp=Z,1μm,10.9s
TOC1 Torodi Ar. Sit 35.40 231 PFAKE 20 22 30.0 +9.0
TOC1 LR LR
comp=Z,6μm,18.0s
TOC2 Torodi Ar. Sit 35.40 231 PFAKE 20 22 30.0 +9.0
TOC2 LR LR
comp=Z,6μm,18.0s
TOB2 Torodi Ar. Sit 35.41 231 PFAKE 20 22 30.0 +8.9
TOB2 LR LR
comp=Z,6μm,18.0s
TOB1 Torodi Ar. Sit 35.41 231 PFAKE 20 22 30.0 +8.9
TOB1 LR LR
comp=Z,7μm,18.0s
TOC3 Torodi Ar. Sit 35.42 231 PFAKE 20 22 30.0 +8.9
TOC3 LR LR
comp=Z,6μm,19.0s
TOC7 Torodi Ar. Sit 35.42 231 PFAKE 20 22 30.0 +8.9
TOC7 LR LR
comp=Z,6μm,19.0s
TOA1 Torodi Ar. Sit 35.42 231 PFAKE 20 22 30.0 +8.8
TOA1 LR LR
comp=Z,6μm,19.0s
TOA0 Torodi Ar. Sit 35.42 231 *eP* **P 20 22 19.8 -1.4**
TOA0 Torodi Ar. Sit 35.42 231 *eP* **P 20 22 19.8 -1.4**
TOA0 LR LR
comp=Z,6μm,19.0s
TORD Torodi Ar. Bea 35.42 231 P **P 20 22 19.8 -1.4**
comp=Z,41nm,0.8s,baz=38,slow=8.0,SNR=174
TORD LR LR 20 36 58.5
comp=Z,4μm,21.4s,baz=25,slow=37
TOB3 Torodi Ar. Sit 35.43 231 PFAKE 20 22 30.0 +8.8
TOB3 LR LR
comp=Z,6μm,19.0s
TOB5 Torodi Ar. Sit 35.43 231 PFAKE 20 22 30.0 +8.8
TOB5 LR LR
comp=Z,6μm,19.0s
TOB4 Torodi Ar. Sit 35.44 231 PFAKE 20 22 30.0 +8.7
TOB4 LR LR
comp=Z,7μm,18.0s
TOC4 Torodi Ar. Sit 35.44 231 PFAKE 20 22 30.0 +8.7
TOC4 LR LR
comp=Z,6μm,18.0s
TOC5 Torodi Ar. Sit 35.45 231 PFAKE 20 22 30.0 +8.6
TOC5 LR LR
comp=Z,8μm,18.0s

BJO Bjornoya 35.77 355 *e*P **P** **20 22 22.7 -0.8**
BJO IVmB_BB 20 22 27.4
comp=Z,2μm,2.3s
BJO *e*PP **PnPn** **20 23 43.1 -0.1**
BJO *e*S **S** **20 28 01.0 +0.9**
BJO Bjornoya 35.77 355 *e*P **P** **20 22 22.7 -0.8**
SNR=27
AAA Alma-Ata 35.87 68 *i* P **P** **20 22 27.0 +2.1**
AAA *i* S **S** **20 28 04.1 +1.6**
AAA pmax pmax
comp=Z,3μm,4.0s
AAA smax smax
comp=N,4μm,5.0s
AAA Alma-Ata 35.87 68 *i* P **P** **20 22 24.4 -0.5**
comp=N,957nm,1.0s
AAA *i* PP **PnPn** **20 23 41.4 -3.6**
AAA *e*S **S** **20 28 03.7 +1.2**
AAA LR LR 20 36 53.4
comp=N,902nm,12.9s
KSH Kashi 35.96 74 P **P** **20 22 24.8 -1.0**
KSH *e*pP pP 20 22 29.3 -0.1
KSH *e*PP **PnPn** **20 23 45.3 -1.0**
KSH *e*PcP **PcP** **20 24 53.4 +1.0**
KSH S **S** **20 27 59.4 -4.7**
KSH pmax pmax
comp=N,150nm,1.2s
KSH pmax pmax
comp=N,3μm,5.8s
KSH LR LR
comp=N,4μm,10.6s
KSH LR LR
comp=N,3μm,12.6s
KSH LR LR
comp=N,6μm,15.4s
MDOK Medeo 35.96 68 *i* P **P** **20 22 25.1 -0.7**
comp=N,605nm,1.5s
MDOK *i* PP **PnPn** **20 23 42.3 -4.0**
MDOK *i* S **S** **20 28 05.6 +1.5**
MDOK *e*SS **SnSn** **20 30 30.7 +2.9**
KURBB Kurchatov Arra 36.24 55 P **P** **20 22 27.2 -0.7**
comp=N,146nm,1.0s,baz=279,slow=9.3,SNR=197
KURBB PP **PnPn** **20 23 47.7 -1.7**
comp=N,29nm,1.1s,baz=280,slow=12,SNR=4.9
KURBB PKiKP **PKiKP** **20 32 12.9 +1.1**
comp=N,1.3nm,0.9s,baz=299,slow=1.0,SNR=4.9
KURK Kurchatov 36.30 55 P **P** **20 22 27.2 -1.1**
KURK 20 23 47.7
KURK Kurchatov 36.30 55 P **P** **20 22 27.2 -1.1**
KURK Kurchatov 36.30 55 P **P** **20 22 27.2 -1.1**
KURK PP **PnPn** **20 23 47.7 -2.4**
KURK PKiKP **PKiKP** **20 32 12.9 +1.0**
JASL Jaisalmer 36.82 96 *e*P **P** **20 22 32.6 -0.5**
JASL IAmb IAmb 20 22 39.6
comp=Z,344nm,0.9s
SATY Saty 36.96 68 *i* P **P** **20 22 33.8 -0.4**
comp=Z,3μm,1.1s
SATY *i* PP **PP** **20 23 58.4 0.0**
SATY *e*S **S** **20 28 20.4 +1.1**
SATY *e*SS **SnSn** **20 30 53.9 +2.0**
ZHN Zhinishke 36.96 67 *i* P **P** **20 22 33.6 -0.6**
comp=Z,862nm,1.0s
ZHN *i* PP **PP** **20 23 58.4 +0.1**
ZHN *e*S **S** **20 28 20.8 +1.5**
ZHN *e*SS **SnSn** **20 30 55.0 +3.2**
ZHN LR LR 20 38 11.9
comp=Z,3μm,12.3s
KPKS Kokpek 37.08 67 *i* P **P** **20 22 34.1 -1.2**
comp=Z,570nm,1.2s
KPKS *i* PP **PP** **20 23 58.9 -0.7**
KPKS *e*S **S** **20 28 21.8 +0.7**
KPKS *e*SS **SnSn** **20 30 55.5 +0.8**
KPKS LR LR 20 37 29.6
comp=Z,2μm,11.4s
JMIC Jan Mayen 37.27 341 LR LR 20 38 56.6
comp=Z,5μm,18.3s,baz=119,slow=38
JMIC Jan Mayen 37.27 341 *e*P **P** **20 22 34.5 -1.8**
JMIC *e*S **S** **20 28 26.3 +3.3**
JMIC Jan Mayen 37.27 341 *e*P **P** **20 22 34.5 -1.8**
SNR=26
SEM Semipalatinsk 37.35 55 *i* P **P** **20 22 36.2 -1.1**
comp=Z,457nm,1.7s
SEM *i* PP **PP** **20 24 02.4 +0.1**
SEM *e*S **S** **20 28 24.9 +0.2**
SEM *e*SS **SnSn** **20 31 02.8 +2.0**
SEM LRM MLR 20 41 57.1
comp=Z,3μm,16.9s
UZB Uzynbulak 37.39 67 *i* P **P** **20 22 36.1 -1.8**
comp=Z,334nm,2.1s
UZB *i* PP **PnPn** **20 24 03.4 -0.3**
UZB *e*S **S** **20 28 26.4 +0.6**
HOPEN Hopen 37.53 358 *e*P **P** **20 22 38.6 +0.1**
HOPEN *e*S **S** **20 28 26.1 -0.7**
HOPEN IVMs_BB IVMs_BB 20 39 09.7
comp=Z,9μm,11.4s
HOPEN Hopen 37.53 358 *e*P **P** **20 22 38.6 +0.1**
SNR=26
PMOZ Porto Moniz, M 37.65 275 *e*P **P** **20 22 38.2 -1.9**
PMOZ Porto Moniz, M 37.65 275 *e*P **P** **20 22 43.1 +3.0**
PMOZ *e*S **S** **20 28 35.6 +5.8**
PMOZ *e*LR LR 20 33 06.8
comp=Z,3μm,20.0s
BHJ Bhuj 37.81 103 *e*P **P** **20 22 40.5 -1.0**
BHJ IAmb IAmb 20 22 43.6
comp=Z,576nm,0.2s
THN Thein Dam 38.09 85 *e*P **P** **20 22 41.0 -2.8**
HSPB Hornsund (broa 38.43 355 *e*P **P** **20 22 43.0 -3.1**
HSPB IVmB_BB 20 22 50.2
comp=Z,2μm,3.2s
HSPB *e*PP **PP** **20 24 12.5 -1.3**
HSPB *e*S **S** **20 28 43.3 +2.7**
HSPB *e*SS **SS** **20 31 30.4 +1.1**
HSPB Hornsund (broa 38.43 355 *e*P **P** **20 22 47.3 +1.2**
HSPB *e**PP **pP** **20 22 49.4 -0.3**
HSPB *e* 20 24 21.8
HSPB *e*S **S** **20 28 43.8 +3.3**
HSPB *e*SSS SSS 20 31 44.8
HSPB MLR MLR
comp=Z,8μm,41.9s
HSPB Hornsund (broa 38.43 355 *e*P **P** **20 22 47.3 +1.2**
HSPB *e*S **S** **20 28 43.8 +3.3**
HSPB *e*SS **SnSn** **20 31 27.5 +1.2**
DHRM DHARAMSHALA 38.62 85 *e*P **P** **20 22 49.0 +0.5**
DHRM IAmb IAmb 20 22 53.7
comp=Z,280nm,0.4s
BORG Borgarnes 38.70 328 P **P** **20 22 49.3 +0.8**
comp=Z,79nm,0.9s,baz=125,slow=7.2,SNR=6.4
BORG Borgarnes 38.70 328 *e*P **P** **20 22 51.1 +2.6**
comp=Z,194nm,1.1s
MAKZ Makanchi 38.83 61 *e*P **P** **20 22 49.9 0.0**
MAKZ pmax pmax
comp=Z,90nm,1.1s
MAKZ Makanchi 38.83 61 *e*P **P** **20 22 49.9 0.0**
comp=Z,90nm,1.1s
MAKZ Makanchi 38.83 61 *e*P **P** **20 22 49.9 0.0**
comp=Z,90nm,1.1s
MK31 Makanchi Array 39.05 61 *e*P **P** **20 22 50.7 -1.0**
MK31 Makanchi Array 39.05 61 *e*P **P** **20 22 50.7 -1.0**
MK31 Makanchi Array 39.05 61 *e*P **P** **20 22 50.7 -1.0**
MKAR Makanchi Array 39.05 61 P **P** **20 22 50.6 -1.1**
comp=Z,16nm,0.5s,baz=278,slow=7.2,SNR=103
MKAR LR LR 20 41 08.7
comp=Z,7μm,19.1s,baz=278,slow=40
MKAR Makanchi Array 39.05 61 *e*P **P** **20 22 50.7 -1.0**
MKAR Makanchi Array 39.05 61 *e*P **P** **20 22 50.7 -1.0**
MKAR Makanchi Array 39.05 61 *e*P **P** **20 22 50.7 -1.0**
MK01 Makanchi Array 39.06 61 *e*P **P** **20 22 50.6 -1.2**
MK01 Makanchi Array 39.06 61 *e*P **P** **20 22 50.6 -1.2**
NVS Novosibirsk 39.10 48 ||*i*P **P** **20 22 53.2 +1.3**
NVS *i* 20 24 24.8
NVS *i* 20 25 08.8
NVS *e*S **S** **20 28 48.4 -2.6**
NVS pmax pmax
comp=Z,196nm,0.9s
NVS pmax pmax
comp=N,107nm,0.8s
NVS pmax pmax
comp=E,45nm,0.8s
NVS pmax pmax
comp=Z,412nm,1.7s
NVS pmax pmax
comp=N,187nm,1.9s
NVS pmax pmax
comp=E,390nm,1.9s
NVS smax smax
comp=N,57nm,1.9s
NVS smax smax
comp=E,78nm,1.9s
SPA0 Spitsbergen Ar 39.52 356 *e*P **P** **20 22 54.3 -0.9**
SPA0 Spitsbergen Ar 39.52 356 *e*P **P** **20 22 54.3 -0.9**
SPITS Spitsbergen Ar 39.52 356 P **P** **20 22 54.2 -0.9**
comp=E,37nm,1.1s,baz=144,slow=13,SNR=18
SPITS LR LR 20 40 37.1
comp=E,13μm,18.8s,baz=175,slow=38
SMLA Simla 39.76 86 *e*P **P** **20 22 57.8 +0.1**
SMLA IAmb IAmb 20 23 02.5
comp=Z,2μm,2.5s
KKR Kurukshetra 39.99 88 *e*P **P** **20 23 00.4 +0.7**
KKR IAmb IAmb 20 23 02.0
comp=Z,249nm,0.5s
ZAA0 Zalesovo Array 40.03 49 *e*P **P** **20 22 58.2 -1.6**
ZAA0 Zalesovo Array 40.03 49 *e*P **P** **20 22 58.1 -1.6**
ZALV Zalesovo Beam 40.03 49 P **P** **20 22 58.0 -1.7**
comp=Z,40nm,0.9s,baz=266,slow=7.7,SNR=107
ZALV LR LR 20 43 30.5
comp=Z,6μm,18.1s,baz=280,slow=42
KHET Khetri 40.07 91 *e*P **P** **20 22 59.9 -0.5**
KHET IAmb IAmb 20 23 01.0
comp=Z,60nm,1.0s
RTK Rohtak 40.09 90 *e*P **P** **20 23 00.1 -0.4**
RTK IAmb IAmb 20 23 02.6
comp=Z,333nm,0.8s
ZSN Zaisan 40.37 60 *i* P **P** **20 23 04.2 +1.5**
comp=Z,333nm,2.2s
ZSN *e*S **S** **20 29 13.2 +2.8**
ZSN *e*SS **SnSn** **20 32 14.2 +0.4**
ZSN LR LR 20 39 59.3
comp=Z,2μm,9.8s
KBS Kingsbay 40.51 355 *e*P **P** **20 23 03.2 -0.1**
KBS IVmB_BB 20 23 07.6
comp=Z,3μm,1.9s
KBS *e*PP **PP** **20 24 33.6 -2.8**
KBS *e*ScP **ScP** **20 28 55.8 +1.0**
KBS *e*SS **SS** **20 32 11.8 +1.0**
KBS Kingsbay 40.51 355 *e*P **P** **20 23 03.5 +0.1**
KBS pmax pmax
comp=Z,595nm,1.8s
KBS Kingsbay 40.51 355 *e*P **P** **20 23 03.5 +0.1**
comp=Z,595nm,1.8s
KBS Kingsbay 40.51 355 *e*P **P** **20 23 03.5 +0.1**
comp=Z,595nm,1.8s
KUDL Kundal 40.56 91 *e*P **P** **20 23 03.6 -0.9**
KUDL IAmb IAmb 20 23 11.2
comp=Z,259nm,1.4s
BHGR Bahadurgarh 40.66 90 *e*P **P** **20 23 05.9 +0.7**
BHGR IAmb IAmb 20 23 07.6
comp=Z,352nm,0.9s
KMBO Kilima Mbogo 40.76 167 *e*P **P** **20 23 08.6 +2.2**
KMBO pmax pmax
comp=Z,95nm,1.4s
KMBO Kilima Mbogo 40.76 167 *e*P **P** **20 23 08.6 +2.2**
comp=Z,95nm,1.4s
KMBO Kilima Mbogo 40.76 167 pP **P** **20 23 08.4 +2.0**
SNR=38
KMBO Kilima Mbogo 40.76 167 P **P** **20 23 08.4 +2.0**
SNR=38
KMBO Kilima Mbogo 40.76 167 *e*P **P** **20 23 08.6 +2.2**
comp=Z,95nm,1.4s
DDI Dehra Dun 40.79 87 *e*P **P** **20 23 06.2 -0.2**
DDI IAmb IAmb 20 23 10.3
comp=Z,112nm,0.9s
SCO Scoresbysund 40.85 336 *i* P **P** **20 23 07.4 +1.1**
comp=Z,258nm,1.4s
SCO Scoresbysund 40.85 336 *i* P **P** **20 23 07.4 +1.1**
SCO pmax pmax
comp=Z,260nm,1.4s
SCO Scoresbysund 40.85 336 *i* P **P** **20 23 07.4 +1.1**
comp=Z,259nm,1.4s
NDI New Delhi 40.88 90 *e*P P 20 23 01.0 -6.1
NDI *e*S **S** **20 29 11.0 -7.3**
AYAN Aya Nagar 40.90 90 *ex* P 20 22 59.2 -8.1
AYAN IAmb IAmb 20 23 00.3
comp=Z,132nm,0.7s
BISR Bishrakh 41.10 90 *e*P **P** **20 23 08.0 -0.9**
BISR IAmb IAmb 20 23 09.8
comp=Z,212nm,0.8s
JOSI Joshimath 41.86 86 *e*P **P** **20 23 14.2 -1.2**
JOSI IAmb IAmb 20 23 17.4
comp=Z,363nm,0.8s
BART Pico Bartolome 41.96 286 *e*P **P** **20 23 14.5 -1.5**
comp=Z,141nm,1.0s
BART Pico Bartolome 41.96 286 *e*P **P** **20 23 14.5 -1.5**
comp=Z,141nm,1.0s
PSMN Pico do Norte, 42.15 285 *e*P **P** **20 23 16.5 -0.9**
comp=Z,202nm,1.6s
PSMN Pico do Norte, 42.15 285 *e*PP PP 20 24 58.2 +3.4
PSMN Pico do Norte, 42.15 285 *e*P **P** **20 23 16.5 -0.9**
comp=Z,202nm,1.6s
PSMN Pico do Norte, 42.15 285 *e*PP PP 20 24 58.2 +3.4
PSMA Santa Maria 42.20 285 *e*P **P** **20 23 16.9 -0.9**
comp=Z,242nm,1.7s
PSMA *e*S **S** **20 29 39.3 +1.6**
CMLA Cha da Macela 42.23 286 *e*P **P** **20 23 16.9 -1.2**
comp=Z,297nm,1.3s
CMLA Cha da Macela 42.23 286 *e*PP PP 20 24 55.4 -0.4
CMLA *e*S **S** **20 29 39.9 +1.6**
CMLA Cha da Macela 42.23 286 *e*P **P** **20 23 16.9 -1.2**
comp=Z,297nm,1.3s
CMLA Cha da Macela 42.23 286 *e*PP PP 20 24 55.4 -0.4
CMLA *e*S **S** **20 29 39.9 +1.6**
CMLA Cha da Macela 42.23 286 PFAKE 20 23 30.0 +12
CMLA LR LR
comp=Z,5μm,19.0s
PSET Sete Cidades 42.36 286 *e*P **P** **20 23 16.7 -2.5**
comp=Z,130nm,1.5s
PSET *e*S **S** **20 29 41.2 +1.0**
PSET Sete Cidades 42.36 286 *e*P **P** **20 23 16.7 -2.5**
comp=Z,130nm,1.5s
PSET Sete Cidades 42.36 286 *e*PP PP 20 25 00.6 +3.4
PSET *e*S **S** **20 29 41.2 +1.0**
BOM Bombay 42.75 105 *ex* P 20 23 15.0 -7.5
BOM AMb AMB 20 23 26.8
comp=Z,296nm,8.6s
BOM *e*S **S** **20 29 47.0 +0.9**
DAG Danmarks Havn 42.94 346 *i* P **P** **20 23 23.5 +0.2**
comp=Z,89nm,1.2s
comp=Z,8μm,18.0s
DAG Danmarks Havn 42.94 346 *i* P **P** **20 23 23.5 +0.2**
DAG pmax pmax
comp=Z,140nm,1.2s
DAG MLR MLR
comp=Z,8μm,18.0s
NRIK Noril'sk 42.96 26 P **P** **20 23 23.2 -0.3**
comp=Z,25nm,0.8s,baz=260,slow=7.1,SNR=28
NRIK LR LR 20 43 09.4
comp=Z,6μm,21.2s,baz=254,slow=39
WMQ Urumqi 43.38 64 P **P** **20 23 28.9 +1.5**
WMQ PP **PP** **20 25 07.9 -0.2**
WMQ S **S** **20 29 58.3 +3.1**
WMQ SS **SS** **20 33 07.8 -0.9**
WMQ pmax pmax
comp=Z,65nm,1.0s
WMQ pmax pmax
comp=Z,1μm,5.0s
WMQ LR LR
comp=Z,6μm,20.8s
WMQ LR LR
comp=Z,4μm,17.4s
WMQ LR LR
comp=Z,2μm,25.0s
POO Poona 43.75 105 ||*i*P **P** **20 23 28.0 -2.6**
comp=Z,10.0nm,1.0s
POO *e*P **pP** **20 23 30.3 -4.0**
POO IAmb IAmb 20 23 32.1
comp=Z,236nm,1.7s
BHPL Bhopal 43.78 97 *e*P **P** **20 23 30.8 0.0**
BHPL IAmb IAmb 20 23 31.9
comp=Z,58nm,1.0s
DBIC Dimbokro 44.47 232 P **P** **20 23 36.0 -0.4**
comp=Z,32nm,0.8s,baz=24,slow=9.3,SNR=33
DBIC LR LR 20 42 36.4
comp=Z,4μm,21.5s,baz=20,slow=37
DBIC Dimbokro 44.47 232 P **P** **20 23 36.0 -0.4**
DBIC pmax pmax
comp=Z,32nm,0.8s
DBIC MLR MLR
comp=Z,4μm,21.5s
DBIC Dimbokro 44.47 232 *e*P **P** **20 23 35.3 -1.0**
comp=Z,60nm,0.9s
DBIC Dimbokro 44.47 232 *e*P **P** **20 23 35.3 -1.0**
comp=Z,60nm,0.9s
KRAR Krasnoyarsk 44.53 46 *d* *i*P **P** **20 23 37.6 +1.2**
KRAR pmax pmax
comp=Z,297nm,1.0s
KRAR MLR MLR
comp=Z,6μm,18.0s
TIC Toumodi 44.59 232 *e*P **P** **20 23 36.8 -0.5**
KIC Kosan Boka 44.64 232 *e*P **P** **20 23 37.3 -0.4**
comp=Z,119nm,1.0s
LIC Lamto 44.92 232 *e*P **P** **20 23 39.6 -0.4**
comp=Z,206nm,1.7s
GOA Goa 45.62 108 *e*P **P** **20 23 44.2 -1.3**
GOA IAmb IAmb 20 23 46.8
comp=Z,74nm,0.9s
PYUN Piuthan 45.64 87 *e*P **P** **20 23 46.1 +0.3**
comp=Z,822nm,1.1s
KLRI Killari 46.10 103 *e*P **P** **20 23 47.8 -1.6**
KLRI IAmb IAmb 20 23 54.9
comp=Z,347nm,1.1s
KLRI *e*S **S** **20 30 34.2 -0.8**
KLRI IVMs_BB IVMs_BB 20 47 30.7
comp=Z,2μm,17.2s
NGP Nagpur 46.19 98 *e*P **P** **20 23 49.4 -0.6**
NGP IAmb IAmb 20 23 55.7
comp=Z,125nm,0.5s
KOLN Koldanda 46.27 87 *e*P **P** **20 23 50.7 -0.1**
comp=Z,512nm,1.0s
SUMG Summit 46.46 337 *i* P **P** **20 23 53.4 +1.5**
SUMG Summit 46.46 337 *e*P **P** **20 23 52.2 +0.3**
SUMG pmax pmax
comp=Z,188nm,1.1s
SUMG Summit 46.46 337 *i* P **P** **20 23 53.4 +1.5**
SUMG Summit 46.46 337 *e*P **P** **20 23 52.2 +0.3**
comp=Z,188nm,1.1s
BBTS Babate 46.78 252 P **P** **20 23 54.9 +0.3**
comp=Z,126nm,0.9s,baz=62,slow=5.3,SNR=12
BBTS LR LR 20 45 43.5
comp=Z,4μm,19.6s,baz=58,slow=39
SRSP Sriramsagar 46.92 101 *e*P **P** **20 23 54.0 -1.8**
SRSP IAmb IAmb 20 24 00.8
comp=Z,138nm,1.0s
SRSP *e*S **S** **20 30 44.3 -2.4**
SRSP IVMs_BB IVMs_BB 20 47 02.7
comp=Z,2μm,16.1s
GKN Gorkha 46.97 86 *e*P **P** **20 23 55.6 -0.6**
comp=Z,728nm,1.2s
DMN Daman 47.52 86 *e*P **P** **20 24 00.5 -0.1**
comp=Z,654nm,1.1s
KKN Kakani 47.57 86 *e*P **P** **20 24 00.6 -0.3**
comp=Z,309nm,1.1s
RPR Rampur 47.69 100 *e*P **P** **20 24 00.1 -1.6**
RPR IAmb IAmb 20 24 06.8
comp=Z,130nm,1.0s
RPR *e*S **S** **20 30 54.8 -2.7**
RPR IVMs_BB IVMs_BB 20 47 26.1
comp=Z,3μm,15.4s
PKIN Phulchoki 47.76 86 *e*P **P** **20 24 02.2 -0.3**
comp=Z,135nm,1.0s
GUN Gumba 47.97 86 *e*P **P** **20 24 03.9 -0.4**
comp=Z,443nm,1.1s
HYBB Hyderabad (bro 47.98 102 *e*P **P** **20 24 02.2 -1.7**
HYBB IAmb IAmb 20 24 09.0
comp=Z,106nm,0.9s
HYBB *e*S **S** **20 30 59.9 -1.9**
HYBB IVMs_BB IVMs_BB 20 52 00.1
comp=Z,2μm,15.1s
HYB Hyderabad 47.98 102 *i* P **P** **20 24 02.0 -2.0**
comp=Z,190nm,1.0s
HYB *e*S **S** **20 31 02.0 +0.2**
HYB Hyderabad 47.98 102 *e*P **P** **20 24 03.5 -0.5**
HYB IAmb IAmb 20 24 09.3
comp=Z,104nm,0.9s
SRLM Srisailam 49.03 103 *e*P **P** **20 24 09.6 -2.5**
SRLM IAmb IAmb 20 24 17.3
comp=Z,224nm,1.1s
SRLM *e*S **S** **20 31 18.3 +1.6**
SRLM IVMs_BB IVMs_BB 20 48 29.2
comp=Z,1μm,11.6s
NJS Nagarjunasagar 49.07 103 *e*P **P** **20 24 10.8 -1.6**
NJS IAmb IAmb 20 24 17.2
comp=Z,139nm,1.1s
NJS *e*S **S** **20 31 14.3 -2.9**
NJS IVMs_BB IVMs_BB 20 46 41.2
comp=Z,2μm,24.9s
NRS Narsarsuaq 49.42 322 *i* P **P** **20 24 14.7 +0.3**
comp=Z,149nm,1.2s
comp=Z,16μm,18.0s
NRS Narsarsuaq 49.42 322 *i* P **P** **20 24 14.7 +0.3**
NRS pmax pmax
comp=Z,150nm,1.2s
NRS MLR MLR
comp=Z,16μm,18.0s
NRS Narsarsuaq 49.42 322 *i* P **P** **20 24 14.8 +0.3**
SNR=24
RCLA Racherla 49.48 104 *e*P **P** **20 24 13.6 -1.9**
RCLA IAmb IAmb 20 24 20.5
comp=Z,116nm,1.0s
RCLA *e*S **S** **20 31 20.6 -2.4**
RCLA IVMs_BB IVMs_BB 20 53 25.2
comp=Z,1μm,19.1s
ADKI Addanki 50.01 103 *e*P **P** **20 24 17.8 -1.7**
ADKI IAmb IAmb 20 24 24.2
comp=Z,91nm,1.1s
ADKI *e*S **S** **20 31 25.6 -4.6**
ADKI IVMs_BB IVMs_BB 20 46 55.7
comp=Z,2μm,22.5s
BOK Bokaro 50.05 90 *e*P **P** **20 24 19.1 -0.7**
BOK IAmb IAmb 20 24 25.1
comp=Z,168nm,1.3s
MOY Mondy 50.06 51 *e*P **P** **20 24 20.5 +0.9**
MOY *e* 20 26 18.0
MOY pmax pmax
comp=Z,328nm,2.5s
PVM Polavaram 50.42 100 *e*P **P** **20 24 21.2 -1.4**
PVM IAmb IAmb 20 24 28.0
comp=Z,140nm,1.2s
PVM *e*S **S** **20 31 32.6 -3.4**
PVM IVMs_BB IVMs_BB 20 49 01.4
comp=Z,2μm,13.1s
SFJD Kangerlussuaq 50.76 330 P **P** **20 24 25.5 +1.0**
comp=Z,14nm,0.8s,baz=80,slow=10,SNR=7.8
SFJD Kangerlussuaq 50.76 330 *i* P **P** **20 24 26.2 +1.7**
comp=Z,7μm,18.0s
SFJD Kangerlussuaq 50.76 330 *i* P **P** **20 24 26.2 +1.7**
SFJD MLR MLR
comp=Z,7μm,18.0s
SFJD Kangerlussuaq 50.76 330 *e*P **P** **20 24 24.6 +0.1**
comp=Z,163nm,1.6s
SFJD Kangerlussuaq 50.76 330 *e*P **P** **20 24 24.6 +0.1**
comp=Z,163nm,1.6s
SFJD LR LR
comp=Z,8μm,18.0s
SKHT Srikalahasti 51.12 105 *e*P **P** **20 24 26.4 -1.5**
SKHT IAmb IAmb 20 24 32.7
comp=Z,62nm,1.2s
SKHT *e*S **S** **20 31 42.9 -2.8**
SKHT IVMs_BB IVMs_BB 20 50 09.4
comp=Z,2μm,16.3s
LSA Lhasa 51.19 81 P **P** **20 24 29.6 +0.7**
LSA S **S** **20 31 48.5 +1.0**
LSA pmax pmax
comp=Z,70nm,1.2s
LSA pmax pmax
comp=Z,2μm,6.1s
LSA LR LR
comp=Z,2μm,24.0s
LSA LR LR
comp=Z,3μm,23.1s
LSA LR LR
comp=Z,3μm,24.9s
LSA Lhasa 51.19 81 *e*P **P** **20 24 28.5 -0.4**
LSA pmax pmax
comp=Z,117nm,1.0s
LSA MLR MLR
comp=Z,4μm,22.0s
LSA Lhasa 51.19 81 *e*P **P** **20 24 28.5 -0.4**
comp=Z,117nm,1.0s
LSA Lhasa 51.19 81 *e*P **P** **20 24 28.5 -0.4**
comp=Z,117nm,1.0s
LSA LR LR
comp=Z,4μm,22.0s
VIS Vishakhapatnam 51.45 98 *e*P **P** **20 24 30.2 -0.2**
CHLP Challavanipeta 51.55 97 *e*P **P** **20 24 29.4 -1.8**
CHLP IAmb IAmb 20 24 35.3
comp=Z,101nm,1.0s
CHLP *e*S **S** **20 31 49.1 -2.6**
CHLP IVMs_BB IVMs_BB 20 49 44.8

comp=Z,2μm,29.1s
TLY Talaya 51.64 50 P **P 20 24 32.3 +0.9**
comp=Z,66nm,0.8s,baz=272,slow=6.2,SNR=17
TLY Talaya 51.64 50 *d i* P **P 20 24 31.8 +0.4**
TLY *e* 20 25 45.1
TLY *e* 20 26 32.0
TLY *e*PPP PPP 20 27 31.3
TLY *e*S **S 20 31 51.2 -1.0**
TLY *e* 20 34 25.1
TLY *e*SS **SS 20 35 32.4 +4.4**
TLY pmax pmax
comp=Z,209nm,1.5s
TLY MLR MLR
comp=Z,6μm,18.0s
TLY Talaya 51.64 50 *e*P **P 20 24 32.3 +0.9**
comp=Z,139nm,1.0s
TLY Talaya 51.64 50 *e*P **P 20 24 32.3 +0.9**
comp=Z,139nm,1.0s
ZAK Zakamensk 51.81 52 *e*P **P 20 24 32.2 -0.6**
ZAK pmax pmax
comp=Z,112nm,1.4s
IRK Irkutsk 51.84 49 *e*P **P 20 24 32.3 -0.6**
IRK *e*S **S 20 31 49.2 -5.8**
IRK pmax pmax
comp=Z,304nm,2.4s
BWNR Bhubaneshwar 51.89 94 *e*P **P 20 24 32.7 -0.9**
BWNR IAmb IAmb 20 24 38.2
comp=Z,427nm,2.2s
MDRS Chennai 51.95 105 *e*P **P 20 24 33.3 -0.9**
MDRS IAmb IAmb 20 24 34.2
comp=Z,187nm,1.8s
MDRS *ex* x 20 28 46.8
MDRS *ex* x 20 31 34.8
MDRS *ex* x 20 35 22.8
TRD Trivandrum 52.53 112 *e*P **P 20 24 38.6 +0.2**
GTA Gaotai 53.41 66 ⇑P **P 20 24 43.6 -1.3**
GTA pP pP 20 24 48.4 -0.2
GTA sP sP 20 24 50.8 +0.8
GTA PP **PP 20 26 46.3 +1.3**
GTA ScP **ScP 20 29 48.0 -1.6**
GTA PcS **PcS 20 29 50.9 -0.2**
GTA S **S 20 32 17.8 +0.9**
GTA sS sS 20 32 26.3 +3.2
GTA SS **SS 20 35 58.3 +1.7**
GTA pmax pmax
comp=Z,2μm,5.9s
GTA LR LR
comp=Z,5μm,18.1s
GTA LR LR
comp=Z,3μm,19.0s
GTA LR LR
comp=Z,5μm,20.0s
SHL Shillong 53.79 85 *e*P **P 20 24 46.0 -1.9**
comp=Z,26nm,1.2s
SHL *e*S **S 20 32 21.0 -1.6**
LSZ Lusaka 54.12 181 LR LR 20 48 58.0
comp=Z,7μm,20.8s,baz=358,slow=37
LSZ Lusaka 54.12 181 *e*P **P 20 24 51.8 +1.6**
LSZ pmax pmax
comp=Z,208nm,1.8s
LSZ Lusaka 54.12 181 *e*P **P 20 24 51.8 +1.6**
comp=Z,208nm,1.8s
LSZ Lusaka 54.12 181 P **P 20 24 51.3 +1.1**
SNR=14
LSZ Lusaka 54.12 181 P **P 20 24 51.3 +1.1**
SNR=14
LSZ P **P 20 24 51.3 +1.1**
SNR=14
LSZ Lusaka 54.12 181 *e*P **P 20 24 51.8 +1.6**
comp=Z,208nm,1.8s
SONM Songino Array 54.59 54 P **P 20 24 52.4 -1.0**
comp=Z,25nm,0.9s,baz=281,slow=6.9,SNR=87
SONM PcP **PcP 20 25 57.5 +1.1**
comp=Z,18nm,1.0s,baz=274,slow=3.4,SNR=3.6
ULN Ulaanbaatar 54.99 54 *d i* P **P 20 24 56.4 +0.1**
ULN pmax pmax
comp=Z,151nm,0.8s
ULN MLR MLR
comp=Z,4μm,19.0s
ULN Ulaanbaatar 54.99 54 *e*P **P 20 24 56.6 +0.3**
comp=Z,160nm,0.9s
ULN Ulaanbaatar 54.99 54 pP **P 20 24 55.8 -0.5**
SNR=125
ULN Ulaanbaatar 54.99 54 P **P 20 24 55.8 -0.5**
SNR=125
ULN P **P 20 24 55.8 -0.5**
SNR=125
ULN Ulaanbaatar 54.99 54 *e*P **P 20 24 56.6 +0.3**
comp=Z,160nm,0.9s
ULN LR LR
comp=Z,5μm,20.0s
BOD Bodaibo 55.41 40 *e*P **P 20 24 57.1 -1.9**
BOD pmax pmax
comp=Z,129nm,1.6s
PALK Pallekele 56.08 110 P **P 20 25 03.5 -0.9**
comp=Z,45nm,1.0s,baz=296,slow=8.0,SNR=11
PALK Pallekele 56.08 110 *i* P **P 20 25 03.6 -0.9**
SNR=7.4
PALK Pallekele 56.08 110 *i* P **P 20 25 04.7 +0.3**
PALK Pallekele 56.08 110 *e*P **P 20 25 03.8 -0.6**
comp=Z,77nm,1.1s
PALK Pallekele 56.08 110 *e*P **P 20 25 03.8 -0.6**
comp=Z,77nm,1.1s
PALK LR LR
comp=Z,5μm,18.0s
TIXI Tiksi 56.34 22 P **P 20 25 05.6 +0.1**
comp=Z,23nm,0.8s,baz=310,slow=5.2,SNR=36
TIXI PcP **PcP 20 26 04.7 +2.1**
comp=Z,16nm,0.8s,baz=313,slow=3.6,SNR=4.7
TIXI Tiksi 56.34 22 *d i* P **P 20 25 05.3 -0.1**
TIXI pmax pmax
comp=Z,140nm,2.2s
TIXI MLR MLR
comp=Z,7μm,16.0s
TIXI Tiksi 56.34 22 *e*P **P 20 25 05.9 +0.5**
comp=Z,70nm,1.2s
TIXI Tiksi 56.34 22 *e*P **P 20 25 06.0 +0.5**
comp=Z,70nm,1.2s
TIXI PcP **PcP 20 26 04.7 +2.1**
TIXI LR LR
comp=Z,8μm,18.0s
CIT Chita 57.29 47 *e*P **P 20 25 12.0 -0.6**
CIT pmax pmax
comp=Z,327nm,2.3s
LZH Lanzhou 57.72 68 *e*P **P 20 25 16.1 +0.1**
LZH pP pP 20 25 19.1 -0.6
LZH sP sP 20 25 21.8 +0.6
LZH PP **PP 20 27 25.8 +2.1**
LZH *e*S **S 20 33 13.4 -1.3**
LZH pmax pmax
comp=Z,230nm,1.0s
LZH pmax pmax
comp=Z,2μm,4.0s
LZH LR LR
comp=Z,8μm,15.4s
LZH LR LR
comp=Z,2μm,12.5s
LZH LR LR
comp=Z,7μm,16.6s
TSUM Tsumeb 59.01 193 *e*P **P 20 25 26.1 +1.2**
comp=Z,197nm,1.8s
TSUM Tsumeb 59.01 193 *e*P **P 20 25 26.1 +1.2**
comp=Z,197nm,1.8s
TSUM LR LR
comp=Z,10μm,19.0s
MATP Matopo 59.24 181 P **P 20 25 26.3 -0.2**
comp=Z,29nm,0.8s,baz=3.4,slow=11
DRLN Deer Lake 59.65 311 *e*P **P 20 25 28.4 -0.6**
comp=Z,161nm,1.4s
DRLN Deer Lake 59.65 311 *e*P **P 20 25 28.4 -0.6**
comp=Z,161nm,1.4s
DRLN LR LR
comp=Z,5μm,21.0s
BTO Baotou 59.96 60 *e*P **P 20 25 32.0 +0.6**
CD2 Chengdu 60.15 73 P **P 20 25 32.8 +0.1**
CD2 PcP **PcP 20 26 18.6 +0.2**
CD2 PP **PP 20 27 45.0 -0.2**
CD2 S **S 20 33 44.1 -2.0**
CD2 SS **SS 20 37 41.9 -0.9**
CD2 pmax pmax
comp=Z,240nm,0.9s
CD2 pmax pmax
comp=Z,2μm,7.0s
CD2 LR LR
comp=Z,3μm,19.0s
CD2 LR LR
comp=Z,5μm,17.8s
RES Resolute Bay 60.63 345 LR LR 20 51 39.1
comp=Z,3μm,18.6s,baz=52,slow=36
RES Resolute Bay 60.63 345 *e*P **P 20 25 35.7 +0.4**
RES pmax pmax
comp=Z,94nm,1.5s
RES Resolute Bay 60.63 345 *e*P **P 20 25 35.7 +0.4**
comp=Z,94nm,1.5s
RES Resolute Bay 60.63 345 *e*P **P 20 25 35.7 +0.4**
comp=Z,94nm,1.5s
YAK Yakutsk 60.87 32 *e*P **P 20 25 36.6 -0.5**
YAK *e**PP **sP 20 25 44.1 +1.8**
YAK *e* 20 26 20.5
YAK *e* 20 27 48.1
YAK *e*PPP PPP 20 29 18.2
YAK *e*S **S 20 33 49.4 -4.9**
YAK *e**SS **sS 20 34 05.9 +5.4**
YAK *e*SS **SS 20 37 59.7 +7.1**
YAK *e*SSS SSS 20 40 35.8
YAK pmax pmax
comp=Z,62nm,0.8s
YAK pmax pmax
comp=N,19nm,1.5s
YAK pmax pmax
comp=E,37nm,1.5s
YAK pmax pmax
comp=Z,455nm,4.4s
YAK pmax pmax
comp=E,523nm,5.7s
YAK pmax pmax
comp=N,604nm,5.9s
YAK smax smax
comp=E,364nm,4.8s
YAK smax smax
comp=N,1μm,8.9s
YAK MLR MLR
comp=N,6μm,16.0s
YAK MLR MLR
comp=E,7μm,18.0s
YAK MLR MLR
comp=Z,7μm,16.0s
YAK Yakutsk 60.87 32 *e*P **P 20 25 36.8 -0.3**
comp=Z,89nm,0.8s
YAK Yakutsk 60.87 32 *e*P **P 20 25 36.8 -0.3**
comp=Z,89nm,0.8s
YAK LR LR
comp=Z,8μm,18.0s
HHC Hu-ho-hao-te 60.88 59 *e*P **P 20 25 38.6 +0.9**
HHC pP sP 20 25 42.5 -0.4
HHC PP **PP 20 27 51.3 -0.2**
HHC S **S 20 33 53.3 -2.1**
HHC pmax pmax
comp=Z,140nm,1.1s
HHC pmax pmax
comp=Z,2μm,6.6s
HHC LR LR
comp=Z,4μm,16.8s
HHC LR LR
comp=Z,5μm,16.4s
HHC LR LR
comp=Z,7μm,16.9s
CLNS Chul'man 61.20 39 *e*P **P 20 25 37.8 -1.7**
CLNS *e* 20 26 16.8
CLNS *e* 20 27 55.9
CLNS *e*PPP PPP 20 29 21.2
CLNS *e*S **S 20 33 54.0 -4.8**
CLNS *e* 20 35 23.4
CLNS pmax pmax
comp=Z,8.0nm,0.8s
CLNS pmax pmax
comp=N,8.0nm,0.8s
CLNS pmax pmax
comp=E,29nm,0.9s
CLNS pmax pmax
comp=E,46nm,1.1s
CLNS pmax pmax
comp=E,22nm,0.9s
CLNS pmax pmax
comp=N,24nm,0.9s
CLNS smax smax
comp=N,1μm,12.4s
CLNS smax smax
comp=E,226nm,10.1s
CLNS MLR MLR
comp=Z,4μm,15.0s
CLNS MLR MLR
comp=N,4μm,15.0s
CLNS MLR MLR
comp=E,3μm,16.0s
DGAR Diego Garcia 61.31 129 PFAKE 20 25 50.0 +9.3
DGAR LR LR
comp=Z,2μm,20.0s
DGPR DIGLIPUR 61.57 96 *e*P **P 20 25 41.8 -0.6**
DGPR IAmb IAmb 20 25 46.7
comp=Z,356nm,0.2s
HIA Hailar 62.04 48 *e*P **P 20 25 46.6 +1.3**
HIA pmax pmax
comp=Z,126nm,1.0s
HIA Hailar 62.04 48 *e*P **P 20 25 46.6 +1.3**
comp=Z,126nm,1.0s
HIA Hailar 62.04 48 *e*P **P 20 25 46.6 +1.3**
comp=Z,126nm,1.0s
SCHQ Schefferville 62.20 319 P **P 20 25 45.7 -0.5**
comp=Z,73nm,0.6s,baz=67,slow=6.1,SNR=23
SCHQ LR LR 20 51 47.1
comp=Z,4μm,21.6s,baz=62,slow=35
SCHQ Schefferville 62.20 319 *e*P **P 20 25 45.8 -0.5**
comp=Z,74nm,0.7s
SCHQ Schefferville 62.20 319 *e*P **P 20 25 45.8 -0.4**
comp=Z,74nm,0.7s
PBA Port Blair 62.35 98 *e*P P 20 25 47.3 -0.5
PBA IAmb IAmb 20 25 47.6
comp=Z,880nm,2.4s
XAN Xi'an 62.35 67 P **P 20 25 46.8 -0.9**
XAN pP pP 20 25 50.8 -0.7
XAN sP sP 20 25 53.3 +0.4
XAN PP **PP 20 28 06.1 +1.5**
XAN S **S 20 34 14.8 +0.7**
XAN sS sS 20 34 22.3 +2.0
XAN SS **SS 20 38 22.0 +4.8**
XAN pmax pmax
comp=Z,77nm,1.5s
XAN pmax pmax
comp=Z,2μm,6.5s
XAN LR LR
comp=Z,4μm,19.2s
XAN LR LR
comp=Z,4μm,20.2s
XAN LR LR
comp=Z,4μm,17.3s
KMI Kunming 62.38 79 P **P 20 25 47.6 -0.6**
KMI pP pP 20 25 51.3 -0.7
KMI PP **PP 20 28 04.5 -0.7**
KMI S **S 20 34 11.3 -3.7**
KMI ScS **SKKSac 20 35 38.6 -2.1**
KMI pmax pmax
comp=Z,42nm,1.1s
KMI pmax pmax
comp=Z,2μm,7.1s
KMI LR LR
comp=Z,3μm,22.1s
KMI LR LR
comp=Z,3μm,24.9s
KMI LR LR
comp=Z,3μm,19.7s
CHTO Chiang Mai 62.94 87 P **P 20 25 50.8 -0.9**
comp=Z,289nm,1.0s,comp=Z,10μm
CHTO Chiang Mai 62.94 87 *e*P **P 20 25 50.7 -0.9**
CHTO pmax pmax
comp=Z,58nm,1.0s
CHTO Chiang Mai 62.94 87 *e*P **P 20 25 50.7 -0.9**
comp=Z,58nm,1.0s
CHTO Chiang Mai 62.94 87 P **P 20 25 50.0 -1.7**
SNR=20
CHTO Chiang Mai 62.94 87 P **P 20 25 50.0 -1.7**
SNR=20
CHTO P **P 20 25 50.0 -1.7**
SNR=20
CHTO Chiang Mai 62.94 87 *e*P **P 20 25 50.7 -1.0**
comp=Z,58nm,1.0s
CMMT Chiang Mai 62.94 87 P **P 20 25 50.7 -1.0**
comp=Z,64nm,1.0s,comp=Z,2μm
TIY Taiyuan 62.99 62 *e*P **P 20 25 52.4 +0.5**
TIY PcP **PcP 20 26 31.0 +1.2**
TIY PP **PP 20 28 14.4 +4.3**
TIY S **S 20 34 19.8 -2.2**
TIY pmax pmax
comp=Z,60nm,1.0s
TIY pmax pmax
comp=Z,2μm,5.2s
TIY LR LR
comp=Z,2μm,11.5s
TIY LR LR
comp=Z,2μm,12.3s
TIY LR LR
comp=Z,5μm,15.9s
CM31 Chiang Mai Arr 63.14 87 *e*P **P 20 25 52.1 -0.9**
CM31 Chiang Mai Arr 63.14 87 *e*P **P 20 25 52.1 -0.9**
CMAR Chiang Mai Arr 63.14 87 P **P 20 25 51.8 -1.3**
comp=Z,30nm,0.9s,baz=300,slow=7.9,SNR=79
CMAR LR LR 20 58 16.0
comp=Z,2μm,21.7s,baz=308,slow=41
CM01 Chiang Mai Arr 63.17 87 *e*P **P 20 25 51.7 -1.5**
CM01 Chiang Mai Arr 63.17 87 *e*P **P 20 25 51.7 -1.5**
CRAI Chiangrai 63.24 85 P **P 20 25 52.6 -1.1**
comp=Z,172nm,2.1s,comp=Z,109μm
SHEL Horse Pasture 63.73 218 *i* P P 20 26 04.5 +7.7
LBTB Lobatse 63.89 184 P **P 20 25 57.3 -0.5**
comp=Z,55nm,1.2s,baz=13,slow=8.4,SNR=5.8
LBTB Lobatse 63.89 184 *e*P **P 20 25 58.7 +0.9**
LBTB pmax pmax
comp=Z,154nm,1.4s
LBTB Lobatse 63.89 184 *e*P **P 20 25 58.7 +0.9**
comp=Z,154nm,1.4s
LBTB Lobatse 63.89 184 *e*P **P 20 25 58.7 +0.9**
comp=Z,154nm,1.4s
BJI Beijing 64.35 58 P **P 20 26 00.9 +0.2**
BJI PP **PP 20 28 20.9 -1.0**
BJI S **S 20 34 41.3 +2.7**
BJI pmax pmax
comp=Z,83nm,1.7s
BJI pmax pmax
comp=Z,2μm,6.4s
BJI LR LR
comp=Z,4μm,17.2s
BJI LR LR
comp=Z,6μm,16.5s
BJI LR LR
comp=Z,5μm,19.3s
BJT Baijiatuau 64.36 58 *e*P **P 20 26 00.7 0.0**
BJT pmax pmax
comp=Z,237nm,1.1s
BJT MLR MLR
comp=Z,6μm,21.0s
BJT Baijiatuau 64.36 58 *e*P **P 20 26 00.7 0.0**
comp=Z,237nm,1.1s
BJT Baijiatuau 64.36 58 *e*P **P 20 26 00.7 0.0**
comp=Z,237nm,1.1s
BJT LR LR
comp=Z,6μm,21.0s
UMPA Umpang Tak 64.38 90 P **P 20 26 00.8 -0.4**
comp=Z,16nm,0.8s,comp=Z,136nm
GYA Guiyang 64.64 76 ⇓ *i* P **P 20 26 01.8 -1.2**
GYA PP **PP 20 28 28.0 +3.1**
GYA ScP 20 30 39.4
GYA S **S 20 34 37.1 -5.8**
GYA SKS **SKSac 20 35 55.5 -2.1**
GYA pmax pmax
comp=Z,70nm,1.1s
GYA pmax pmax
comp=Z,1μm,7.5s
GYA LR LR
comp=Z,3μm,21.4s
GYA LR LR
comp=Z,3μm,24.2s
GYA LR LR
comp=Z,2μm,20.8s
ENH Enshi 64.71 71 *e*P **P 20 26 01.3 -2.0**
comp=Z,125nm,0.9s
ENH Enshi 64.71 71 *e*P **P 20 26 01.3 -2.0**
comp=Z,125nm,0.9s
UTTA Uttaradit 64.80 87 P **P 20 26 03.7 -0.2**
comp=Z,11nm,1.0s,comp=Z,112nm
MRIV Mauritius Mete 64.83 150 *e*P **P 20 26 03.9 0.0**
MRIV Mauritius Mete 64.83 150 *e*P **P 20 26 03.9 0.0**
LMN Caledonia Moun 65.62 310 *e*P **P 20 26 07.8 -1.1**
comp=Z,135nm,1.1s
LMN Caledonia Moun 65.62 310 *e*P **P 20 26 07.8 -1.1**
comp=Z,135nm,1.1s
LMN LR LR
comp=Z,4μm,22.0s
SRDT SRDT 65.67 91 P **P 20 26 09.0 -0.6**
comp=Z,155nm,2.1s,comp=Z,5μm
PHET Kaeng Krachan 66.92 92 P **P 20 26 17.4 -0.3**
comp=Z,23nm,0.9s,comp=Z,199nm
TIA Tai'an 66.98 61 *e*P **P 20 26 16.1 -1.7**
TIA pP **sP 20 26 28.4 +5.4**
TIA PP **PP 20 28 47.4 +2.4**
TIA S **S 20 35 11.4 +0.4**
TIA ScS **SKSac 20 36 12.0 -2.9**
TIA pmax pmax
comp=Z,100nm,1.0s
TIA pmax pmax
comp=Z,3μm,6.2s
TIA LR LR
comp=Z,4μm,9.4s
TIA LR LR
comp=Z,3μm,16.8s
TIA LR LR
comp=Z,3μm,20.2s
BOSA Boshof 67.49 184 P **P 20 26 20.4 -0.5**
comp=Z,32nm,0.9s,baz=10.0,slow=6.1,SNR=24
BOSA LR LR 20 57 33.6
comp=Z,3μm,18.4s,baz=1.0,slow=38
BOSA Boshof 67.49 184 *e*P **P 20 26 20.8 -0.2**
BOSA pmax pmax
comp=Z,49nm,1.0s
BOSA Boshof 67.49 184 *e*P **P 20 26 20.8 -0.2**
comp=Z,49nm,1.0s
BOSA Boshof 67.49 184 *e*P **P 20 26 20.8 -0.2**
comp=Z,49nm,1.0s
EMMW East Machias 67.81 310 *e*P **P 20 26 23.6 +0.7**
comp=Z,162nm,1.3s
EMMW East Machias 67.81 310 *e*P **P 20 26 23.6 +0.7**
comp=Z,162nm,1.3s
LMQ La Malbaie 67.90 314 *e*P **P 20 26 23.4 0.0**
comp=Z,174nm,1.8s
LMQ La Malbaie 67.90 314 *e*P **P 20 26 23.4 0.0**
comp=Z,174nm,1.8s
LMQ LR LR
comp=Z,5μm,19.0s
SKNT Sakolnakorn 67.91 86 P **P 20 26 23.1 -0.8**
comp=Z,70nm,1.0s,comp=Z,3μm
WHN Wuhan 68.10 68 ⇓P **P 20 26 24.8 -0.1**
WHN PP **PP 20 28 55.9 +1.1**
WHN S **S 20 35 25.3 +0.8**
WHN ScS **SKSac 20 36 22.6 -0.8**
WHN pmax pmax
comp=Z,670nm,2.1s
WHN pmax pmax
comp=Z,4μm,3.9s
WHN LR LR
comp=Z,6μm,13.6s
WHN LR LR
comp=Z,5μm,17.7s
WHN LR LR
comp=Z,11μm,18.2s
SNY Shenyang 68.17 53 ⇓P **P 20 26 24.8 -0.3**
SNY PP **PP 20 28 53.6 -1.5**
SNY S **S 20 35 24.5 -0.5**
SNY pmax pmax
comp=Z,99nm,2.5s
SNY pmax pmax
comp=Z,2μm,6.2s
SNY LR LR
comp=Z,5μm,20.6s
SNY LR LR
comp=Z,5μm,20.6s
SNY LR LR
comp=Z,5μm,23.5s
CN2 Changchun 68.23 51 *e*P **P 20 26 24.5 -1.0**
CN2 *e*pP pP 20 26 28.6 -0.7
CN2 PcP **PcP 20 26 50.8 -0.5**
CN2 PP **PP 20 28 56.6 +1.0**
CN2 *e*S **S 20 35 21.8 -3.9**
CN2 pmax pmax
comp=Z,40nm,1.7s
CN2 pmax pmax
comp=Z,2μm,6.0s
CN2 LR LR
comp=Z,4μm,17.0s
CN2 LR LR

comp=Z,4μm,17.0s
CN2 LR LR
comp=Z,5μm,17.0s
BILL Bilibino 68.43 16⇓eP P 20 26 26.8 +0.4
BILL e 20 26 49.6
BILL e 20 28 53.5
BILL i S **S 20 35 25.8 -1.5**
BILL pmax pmax
comp=Z,141nm,1.6s
BILL MLR MLR
comp=Z,4μm,17.0s
BILL Bilibino 68.43 16 eP P 20 26 26.8 +0.4
comp=Z,209nm,1.6s
BILL Bilibino 68.43 16 eP P 20 26 26.8 +0.4
comp=Z,209nm,1.6s
BILL LR LR
comp=Z,4μm,18.0s
DL2 Dalian 68.53 57 ⇓P P 20 26 25.3 -2.2
DL2 PP **PP 20 28 59.9 +1.6**
DL2 S **S 20 35 29.3 -0.1**
DL2 pmax pmax
comp=Z,140nm,1.3s
DL2 pmax pmax
comp=Z,2μm,6.2s
DL2 LR LR
comp=Z,4μm,20.0s
DL2 LR LR
comp=Z,3μm,18.4s
DL2 LR LR
comp=Z,4μm,17.7s
PKME Peaks-Kenny Pk 68.59 311 eP P 20 26 28.5 +0.8
comp=Z,92nm,1.3s
PKME Peaks-Kenny Pk 68.59 311 eP P 20 26 28.4 +0.8
comp=Z,92nm,1.3s
PKME LR LR
comp=Z,4μm,18.0s
SURT Suratani 68.68 96 P P 20 26 26.7 -2.0
SEY Seymchan 68.69 24 P P 20 26 28.0 0.0
comp=Z,17nm,1.0s,baz=305,slow=6.2,SNR=24
KLR Kul'dur 68.73 43 P P 20 26 28.5 -0.1
comp=Z,29nm,0.8s,baz=309,slow=7.3,SNR=56
WVL Waterville 69.20 311 eP P 20 26 32.5 +1.0
comp=Z,94nm,1.3s
WVL Waterville 69.20 311 eP P 20 26 32.5 +1.0
comp=Z,94nm,1.3s
WVL LR LR
comp=Z,7μm,22.0s
LHMI Lhok Sumawe 69.60 100 PFAKE 20 26 40.0 +5.6
LHMI LR LR
comp=Z,2μm,21.0s
MLSI Meulaboh, Aceh 69.80 101 P P 20 26 31.2 -4.4
MDJ Mudanjiang 70.22 48 P P 20 26 37.4 -0.4
MDJ PcP **PcP 20 26 59.8 +0.2**
MDJ PP **PP 20 29 10.1 -2.7**
MDJ S **S 20 35 48.3 -0.9**
MDJ ScS **ScS 20 36 40.3 0.0**
MDJ pmax pmax
comp=Z,46nm,1.1s
MDJ pmax pmax
comp=Z,1μm,5.4s
MDJ LR LR
comp=Z,5μm,15.8s
MDJ LR LR
comp=Z,3μm,14.3s
MDJ LR LR
comp=Z,5μm,15.4s
MDJ Mudanjiang 70.22 48 eP P 20 26 40.3 +2.5
comp=Z,52nm,1.0s
MDJ Mudanjiang 70.22 48 eP P 20 26 40.3 +2.5
comp=Z,52nm,1.0s
MDJ LR LR
comp=Z,3μm,19.0s
NJ2 Nanjing 70.46 64 eP P 20 26 39.4 -0.1
NJ2 pP **pP 20 26 43.3 -0.1**
NJ2 S **S 20 35 53.8 +1.4**
NJ2 SS **SS 20 40 28.5 +5.6**
NJ2 pmax pmax
comp=Z,59nm,0.6s
NJ2 pmax pmax
comp=Z,1μm,6.0s
NJ2 LR LR
comp=Z,4μm,21.7s
NJ2 LR LR
comp=Z,2μm,19.5s
NJ2 LR LR
comp=Z,4μm,18.4s
MA2 Magadan 70.55 27 P P 20 26 39.8 +0.3
comp=Z,70nm,0.8s,baz=346,slow=5.9,SNR=49
LBNH Lisbon 70.71 312 eP P 20 26 41.7 +0.8
LBNH pmax pmax
comp=Z,127nm,1.2s
LBNH MLR MLR
comp=Z,4μm,22.0s
LBNH Lisbon 70.71 312 eP P 20 26 41.7 +0.8
comp=Z,127nm,1.2s
LBNH Lisbon 70.71 312 eP P 20 26 41.7 +0.8
comp=Z,127nm,1.2s
LBNH LR LR
comp=Z,4μm,22.0s
NKL Nikolayevsk 70.78 36 i P P 20 26 41.0 -0.1
NKL e 20 29 20.5
NKL e 20 35 57.0
NKL e 20 43 34.0
NKL pmax pmax
comp=Z,86nm,1.0s
NKL pmax pmax
comp=N,500nm,6.0s
NKL pmax pmax
comp=E,600nm,6.0s
NKL pmax pmax
comp=Z,2μm,6.0s
NKL MLR MLR
comp=N,7μm,16.0s
NKL MLR MLR
comp=E,6μm,16.0s
HABR Khabarovsk 70.94 43deP P 20 26 40.1 -2.0
HABR e*PP **pP 20 26 43.6 -2.4**
HABR e*SP **sP 20 26 44.8 -2.6**
HABR e 20 27 00.5
HABR e 20 29 17.0
HABR ePPP PPP 20 30 59.9
HABR eS **S 20 35 56.2 -1.2**
HABR e 20 36 43.9
HABR eSS **SS 20 40 30.7 +1.4**
HABR pmax pmax
comp=E,43nm,2.3s
HABR pmax pmax
comp=Z,111nm,2.3s
HABR pmax pmax
comp=N,27nm,2.3s
HABR pmax pmax
comp=Z,2μm,5.3s
HABR MLR MLR
comp=N,5μm,20.0s
HABR MLR MLR
comp=Z,3μm,20.0s
HABR MLR MLR
comp=E,7μm,19.0s
FFD Franklin Falls 71.00 311 PFAKE 20 26 50.0 +7.4
FFD LR LR
comp=Z,11μm,22.0s
TRQ Mont Tremblant 71.03 314 eP P 20 26 43.0 +0.2
TRQ Mont Tremblant 71.03 314 eP P 20 26 43.0 +0.2
QIZ Qiongzhong 71.23 80 P P 20 26 43.6 -0.8
QIZ PP **PP 20 29 22.8 +0.6**
QIZ S **S 20 36 02.9 +1.2**
QIZ pmax pmax
comp=Z,22nm,1.1s
QIZ LR LR
comp=Z,930nm,20.9s
QIZ LR LR
comp=Z,1μm,26.5s
QIZ Qiongzhong 71.23 80 eP P 20 26 43.9 -0.5
comp=Z,190nm,1.5s
QIZ Qiongzhong 71.23 80 eP P 20 26 43.9 -0.5
comp=Z,190nm,1.5s
HNH Hanover 71.24 311 eP P 20 26 44.8 +0.8
comp=Z,178nm,1.1s
HNH Hanover 71.24 311 eP P 20 26 44.8 +0.8
comp=Z,178nm,1.1s
HNH LR LR
comp=Z,6μm,18.0s
FRNY Flat Rock 71.31 313 eP P 20 26 44.8 +0.3
comp=Z,44nm,0.8s
FRNY Flat Rock 71.31 313 eP P 20 26 44.8 +0.3
comp=Z,44nm,0.8s

BCX Boston College 71.39 310 eP P 20 26 45.5 +0.6
comp=Z,227nm,0.9s
BCX Boston College 71.39 310 eP P 20 26 45.5 +0.6
comp=Z,227nm,0.9s
WES Weston 71.45 310 eP P 20 26 46.2 +0.9
WES pmax pmax
comp=Z,201nm,1.1s
WES MLR MLR
comp=Z,8μm,21.0s
WES Weston 71.45 310 eP P 20 26 46.2 +0.9
comp=Z,200nm,1.1s
WES Weston 71.45 310 eP P 20 26 46.1 +0.9
comp=Z,200nm,1.1s
WES LR LR
comp=Z,8μm,21.0s
HRV Adam Dziewonsk 71.52 310 eP P 20 26 46.2 +0.4
HRV pmax pmax
comp=Z,119nm,1.2s
HRV MLR MLR
comp=Z,4μm,19.0s
HRV Adam Dziewonsk 71.52 310 eP P 20 26 46.2 +0.4
comp=Z,119nm,1.2s
HRV Adam Dziewonsk 71.52 310 eP P 20 26 46.2 +0.4
comp=Z,119nm,1.2s
HRV LR LR
comp=Z,4μm,19.0s
GZH Guangzhou 71.55 75 P P 20 26 45.1 -1.1
GZH PP **PP 20 29 27.3 +2.5**
GZH S **S 20 36 05.6 +0.4**
GZH pmax pmax
comp=Z,3μm,5.5s
GZH LR LR
comp=Z,3μm,18.4s
GZH LR LR
comp=Z,3μm,18.8s
SUR Sutherland 71.56 187 P P 20 26 45.9 -0.3
comp=Z,2.1nm,0.8s,baz=7.0,slow=5.3,SNR=23
SUR Sutherland 71.56 187 eP P 20 26 47.4 +1.3
comp=Z,46nm,1.0s
SUR Sutherland 71.56 187 eP P 20 26 47.4 +1.3
comp=Z,46nm,1.0s
SUR LR LR
comp=Z,5μm,19.0s
MDV Middlebury 71.58 312 eP P 20 26 46.1 0.0
MDV Middlebury 71.58 312 eP P 20 26 46.1 0.0
FCC Fort Churchill 71.66 333 eP P 20 26 45.6 -0.7
FCC pmax pmax
comp=Z,119nm,1.4s
FCC MLR MLR
comp=Z,6μm,20.0s
FCC Fort Churchill 71.66 333 eP P 20 26 45.6 -0.7
comp=Z,119nm,1.4s
FCC Fort Churchill 71.66 333 eP P 20 26 45.6 -0.7
comp=Z,119nm,1.4s
FCC LR LR
comp=Z,6μm,20.0s
USRK Ussuriysk Ar. 71.85 48 P P 20 26 46.2 -1.5
comp=Z,36nm,0.8s,baz=288,slow=4.9,SNR=38
USRK LR LR 21 02 38.9
comp=Z,2μm,18.5s,baz=298,slow=40
BRYW Bryant College 71.85 309 eP P 20 26 48.2 +0.4
comp=Z,195nm,1.4s
BRYW Bryant College 71.85 309 eP P 20 26 48.2 +0.4
comp=Z,195nm,1.4s
BRYW LR LR
comp=Z,10μm,22.0s
LONY Lake Ozonia 72.01 313 eP P 20 26 49.0 +0.3
comp=Z,81nm,1.1s
LONY Lake Ozonia 72.01 313 eP P 20 26 49.0 +0.3
comp=Z,81nm,1.1s
LONY LR LR
comp=Z,6μm,19.0s
INK Inuvik 72.09 353 P P 20 26 47.0 -1.8
comp=Z,7.0nm,0.8s,baz=22,slow=11,SNR=12
INK Inuvik 72.09 353 eP P 20 26 48.2 -0.5
INK pmax pmax
comp=Z,86nm,1.6s
INK Inuvik 72.09 353 eP P 20 26 48.2 -0.5
comp=Z,86nm,1.6s
INK Inuvik 72.09 353 eP P 20 26 48.1 -0.5
comp=Z,86nm,1.6s
QUA2 Belchertown 72.12 310 eP P 20 26 50.1 +0.7
comp=Z,153nm,1.4s
QUA2 Belchertown 72.12 310 eP P 20 26 50.1 +0.7
comp=Z,153nm,1.4s
QUA2 LR LR
comp=Z,4μm,20.0s
ACCN Adirondack Com 72.23 312 eP P 20 26 50.9 +0.8
comp=Z,82nm,1.1s
ACCN Adirondack Com 72.23 312 eP P 20 26 50.9 +0.8
comp=Z,82nm,1.1s
KULM Kulim 72.40 98 ⇑P P 20 26 50.8 -0.7
KULM Kulim 72.40 98 eP P 20 26 50.0 -1.5
comp=Z,53nm,0.8s
KULM Kulim 72.40 98 eP P 20 26 50.0 -1.5
comp=Z,53nm,0.8s
KULM LR LR
comp=Z,2μm,21.0s
VLA Vladivostok 72.44 48⇑i P P 20 26 50.8 -0.5
VLA pmax pmax
comp=Z,207nm,1.1s
INCN Inchon 72.58 56 eP P 20 26 52.5 +0.2
comp=Z,133nm,0.9s
INCN Inchon 72.58 56 pP P 20 26 52.0 -0.3
SNR=9.0
INCN Inchon 72.58 56 P P 20 26 52.0 -0.3
SNR=9.0
INCN Inchon 72.58 56 eP P 20 26 52.5 +0.2
comp=Z,133nm,0.9s
INCN LR LR
comp=Z,6μm,18.0s
GSI Gunungsitoli 72.59 103 P P 20 26 50.4 -2.2
comp=Z,95nm,1.2s,comp=Z,3μm
GSI Gunungsitoli 72.59 103 eP P 20 26 51.5 -1.1
comp=Z,67nm,1.0s
GSI Gunungsitoli 72.59 103 eP P 20 26 51.5 -1.1
comp=Z,67nm,1.0s
HKC Hong Kong Obse 72.63 75 i P P 20 26 55.0 +2.3
TRY Troy 72.63 311 eP P 20 26 53.5 +1.1
comp=Z,179nm,1.5s
TRY Troy 72.63 311 eP P 20 26 53.5 +1.1
comp=Z,179nm,1.5s
SSE Sheshan 72.64 64 P P 20 26 52.0 -0.7
SSE S **S 20 36 16.6 -1.0**
SSE ScS **SKKSac 20 36 57.9 0.0**
SSE pmax pmax
comp=Z,48nm,0.8s
SSE pmax pmax
comp=Z,1μm,6.5s
SSE LR LR
comp=Z,2μm,21.7s
SSE LR LR
comp=Z,2μm,21.7s
SSE LR LR
comp=Z,2μm,16.3s
PSI Prapat 72.66 101 eP P 20 26 51.9 -1.3
PSI pmax pmax
comp=Z,82nm,0.9s
PSI MLR MLR
comp=Z,2μm,20.0s
PSI Prapat 72.66 101 eP P 20 26 51.9 -1.3
comp=Z,82nm,0.9s
PSI LR LR
comp=Z,2μm,20.0s
BBSR BB Station 73.04 298 eP P 20 26 55.5 +0.5
comp=Z,38nm,0.8s
BBSR BB Station 73.04 298 eP P 20 26 55.5 +0.5
comp=Z,38nm,0.8s
BBSR LR LR
comp=Z,2μm,20.0s
YLE Yale 73.05 310 eP P 20 26 55.8 +0.9
comp=Z,89nm,1.1s
YLE Yale 73.05 310 eP P 20 26 55.8 +0.9
comp=Z,89nm,1.1s
YLE LR LR
comp=Z,7μm,21.0s
IPM Ipoh 73.20 98 eP P 20 26 54.8 -1.5
comp=Z,40nm,0.9s
IPM Ipoh 73.20 98 eP P 20 26 54.8 -1.5
comp=Z,40nm,0.9s
TYV Tymovskoe 73.20 37 eP P 20 26 57.0 +1.3
TYV e 20 31 26.0
TYV pmax pmax
comp=Z,2μm,5.0s
TYV pmax pmax
comp=Z,26nm,1.0s
TYV MLR MLR

comp=N,6μm,16.0s
KS01 Wonju Array Si 73.39 55 eP P 20 26 55.5 -1.5
KS01 Wonju Array Si 73.39 55 eP P 20 26 55.5 -1.5
KS15 Wonju Array Si 73.40 55 eP P 20 26 55.5 -1.6
KS15 Wonju Array Si 73.40 55 eP P 20 26 55.5 -1.6
KSAR Wonju Array Be 73.40 55 P P 20 26 56.3 -0.8
KSAR Wonju Array Be 73.40 55 P P 20 26 56.2 -0.8
KSAR Wonju Array Be 73.40 55 P P 20 26 56.2 -0.8
KSRS Korea Array 73.42 55 P P 20 26 56.2 -0.9
comp=N,185nm,0.8s,baz=305,slow=4.8,SNR=104
KSRS LR LR 21 02 59.7
comp=N,6μm,19.5s,baz=306,slow=39
KSRS Korea Array 73.42 55 P P 20 26 56.3 -0.9
KSRS pmax pmax
comp=Z,52nm,0.8s
KSRS MLR MLR
comp=Z,6μm,19.5s
PAL Palisades 73.82 310 eP P 20 26 59.7 +0.2
PAL pmax pmax
comp=Z,132nm,1.4s
PAL Palisades 73.82 310 eP P 20 26 59.7 +0.2
comp=Z,132nm,1.4s
PAL Palisades 73.82 310 eP P 20 26 59.7 +0.2
comp=Z,132nm,1.4s
COLD Coldfoot 73.97 360 eP P 20 27 00.6 +0.7
comp=Z,182nm,1.8s
COLD Coldfoot 73.97 360 eP P 20 27 00.6 +0.7
comp=Z,182nm,1.8s
COLD LR LR
comp=Z,2μm,20.0s
ODNJ Ogdensburg 74.19 310 eP P 20 27 02.0 +0.4
comp=Z,210nm,1.8s
ODNJ Ogdensburg 74.19 310 eP P 20 27 02.0 +0.4
comp=Z,210nm,1.8s
KTGM Kuala Trenggan 74.30 96 ⇑P P 20 27 02.2 -0.5
BINY Binghamton 74.31 312 PFAKE 20 27 10.0 +7.6
BINY LR LR
comp=Z,5μm,21.0s
QZH Quanzhou 74.37 71⇓i P P 20 26 56.3 -6.6
QZH PP **PP 20 29 45.4 -3.4**
QZH S **SKiKP 20 36 27.1 -2.6**
QZH pmax pmax
comp=Z,150nm,1.0s
QZH pmax pmax
comp=Z,2μm,3.8s
QZH LR LR
comp=N,6μm,17.8s
QZH LR LR
comp=E,2μm,10.8s
QZH LR LR
comp=Z,5μm,23.0s
BRNJ Basking Ridge 74.42 310 eP P 20 27 03.6 +0.7
comp=Z,351nm,1.9s
BRNJ Basking Ridge 74.42 310 eP P 20 27 03.6 +0.7
comp=Z,351nm,1.9s
MNSI Mandailing Nat 74.44 102 P P 20 27 01.1 -2.4
comp=Z,44nm,1.7s,comp=Z,1μm
FRIM Kepong 74.45 99 ⇓P P 20 27 02.6 -0.9
SADO Sadowa 74.46 315 eP P 20 27 03.3 +0.2
comp=Z,89nm,1.1s
SADO Sadowa 74.46 315 eP P 20 27 03.3 +0.2
comp=Z,89nm,1.1s
SADO LR LR
comp=Z,6μm,21.0s
YKW3 Yellowknife Ar 74.53 343 eP P 20 27 01.5 -1.8
comp=Z,80nm,1.2s
YKW3 Yellowknife Ar 74.53 343 eP P 20 27 01.5 -1.8
comp=Z,80nm,1.2s
FYU Fort Yukon 74.54 358 eP P 20 27 04.6 +1.4
comp=Z,497nm,2.0s
FYU Fort Yukon 74.54 358 eP P 20 27 04.6 +1.4
comp=Z,497nm,2.0s
YKA Yellowknife Ar 74.59 343 P P 20 27 03.1 -0.5
comp=Z,21nm,1.0s,baz=27,slow=5.8,SNR=34
YKA LR LR 21 02 14.8
comp=Z,399nm,18.1s,baz=0.0,slow=38
YKB5 Yellowknife Ar 74.59 343 eP P 20 27 03.8 +0.2
YKB5 Yellowknife Ar 74.59 343 eP P 20 27 03.8 +0.2
RCBR Riachuelo 74.69 249 P P 20 27 05.4 +0.4
comp=Z,20nm,0.9s,baz=40,slow=10,SNR=5.7
RCBR Riachuelo 74.69 249 eP P 20 27 05.6 +0.7
comp=Z,39nm,1.1s
RCBR Riachuelo 74.69 249 eP P 20 27 05.6 +0.7
comp=Z,39nm,1.1s
RCBR LR LR
comp=Z,3μm,19.0s
TNA Tin City 74.81 7 eP P 20 27 06.1 +1.3
comp=Z,84nm,1.2s
TNA Tin City 74.81 7 eP P 20 27 06.1 +1.3
comp=Z,84nm,1.2s
TNA LR LR
comp=Z,3μm,21.0s
LUPA Lehigh Univers 74.95 310 eP P 20 27 06.7 +0.6
comp=Z,179nm,1.7s
LUPA Lehigh Univers 74.95 310 eP P 20 27 06.7 +0.6
comp=Z,179nm,1.7s
N59A State Game Lan 74.98 311 P P 20 27 06.3 0.0
baz=51,SNR=22
MMNY Mt. Morris Dam 75.07 313 eP P 20 27 06.8 0.0
MMNY Mt. Morris Dam 75.07 313 eP P 20 27 06.8 0.0
BUF Buffalo 75.48 314 eP P 20 27 09.3 +0.2
BUF Buffalo 75.48 314 eP P 20 27 09.3 +0.2
BKNI Bangkinang 75.86 101 PFAKE 20 27 20.0 +8.3
BKNI LR LR
comp=Z,2μm,19.0s
PPI Padang Panjang 75.88 102 P P 20 27 09.4 -2.3
comp=Z,46nm,2.0s,comp=Z,2μm
YSS Yuzh-Sakhalins 75.89 40d i P P 20 27 11.0 -0.3
YSS e 20 29 56.0
YSS ePPP PPP 20 31 54.0
YSS i S **S 20 36 54.0 +0.5**
YSS ePS **PnS 20 37 22.0 -7.7**
YSS eSS **SS 20 41 51.0 +6.3**
YSS pmax pmax
comp=E,700nm,3.3s
YSS pmax pmax
comp=Z,2μm,3.3s
YSS pmax pmax
comp=N,600nm,3.6s
YSS pmax pmax
comp=Z,120nm,2.2s
YSS pmax pmax
comp=Z,900nm,6.2s
YSS pmax pmax
comp=N,400nm,6.7s
YSS pmax pmax
comp=E,400nm,6.2s
YSS smax smax
comp=N,2μm,7.3s
YSS smax smax
comp=E,400nm,3.7s
MVL Millersville 75.91 310 eP P 20 27 11.9 +0.3
comp=E,137nm,1.3s
MVL Millersville 75.91 310 eP P 20 27 11.9 +0.3
comp=E,137nm,1.3s
GAMB Gambell 76.11 9 PFAKE 20 27 20.0 +7.7
GAMB LR LR
comp=Z,5μm,20.0s
EGAK Eagle 76.15 356 eP P 20 27 13.4 +0.9
comp=Z,36nm,1.1s
EGAK Eagle 76.15 356 eP P 20 27 13.4 +0.9
comp=Z,36nm,1.1s
EGAK LR LR
comp=Z,2μm,20.0s
MLY Manley 76.18 360 eP P 20 27 13.2 +0.4
comp=Z,191nm,1.7s
MLY Manley 76.18 360 eP P 20 27 13.2 +0.4
comp=Z,191nm,1.7s
MLY LR LR
comp=Z,2μm,21.0s
MDM Murphy Dome 76.23 359 PFAKE 20 27 20.0 +7.0
MDM LR LR
comp=Z,200nm,18.0s
COLA College 76.31 359 eP P 20 27 14.6 +1.2
COLA pmax pmax
comp=Z,299nm,1.9s
COLA College 76.31 359 eP P 20 27 14.6 +1.2
comp=Z,299nm,1.9s
COLA College 76.31 359 eP P 20 27 14.6 +1.2
comp=Z,299nm,1.9s
IL1 Eielson Array 76.39 358 eP P 20 27 13.4 -0.5
IL1 Eielson Array 76.39 358 eP P 20 27 13.3 -0.5
ILAR Eielson Array 76.39 358 P P 20 27 13.7 -0.1
comp=Z,4.9nm,0.8s,baz=337,slow=2.9,SNR=25
ILAR PKKPbc **PKKPbc 20 46 29.8 +3.5**
comp=Z,0.7nm,1.0s,baz=213,slow=3.4,SNR=4.5
ILB Eielson Array 76.39 358 eP P 20 27 13.8 -0.1

ILB	Eielson Array	76.39	358	eP		P	20 27 13.8 -0.1
SSPA	Standing Stone	76.40	312	eP		P	20 27 14.6 +0.2
	comp=Z,122nm,1.3s						
SSPA	Standing Stone	76.40	312	eP		P	20 27 14.6 +0.2
	comp=Z,122nm,1.3s						
SSPA				LR		LR	
	comp=Z,5μm,22.0s						
TATO	Taipei	76.46	69	eP		P	20 27 16.3 +1.3
	comp=Z,473nm,1.6s						
TATO	Taipei	76.46	69	pP		P	20 27 15.1 +0.2
	SNR=9.8						
TATO	Taipei	76.46	69	P		P	20 27 15.1 +0.2
	SNR=9.8						
TATO	Taipei	76.46	69	eP		P	20 27 16.3 +1.3
	comp=Z,473nm,1.6s						
CCB	Clear Creek Bu	76.53	359	eP		P	20 27 14.4 -0.3
	comp=Z,234nm,1.9s						
CCB	Clear Creek Bu	76.53	359	eP		P	20 27 14.4 -0.3
	comp=Z,234nm,1.9s						
CCB				LR		LR	
	comp=Z,2μm,21.0s						
YHNB	Yeheng	76.56	69	eP		P	20 27 15.9 +0.2
	comp=Z,562nm,1.7s						
YHNB	Yeheng	76.56	69	eP		P	20 27 15.9 +0.2
	comp=Z,562nm,1.7s						
SDMD	Soldier's Deli	76.57	310	eP		P	20 27 15.5 +0.1
	comp=Z,58nm,1.1s						
SDMD	Soldier's Deli	76.57	310	eP		P	20 27 15.5 +0.1
	comp=Z,58nm,1.1s						
ERPA	Erie	76.65	314	eP		P	20 27 16.0 +0.3
	comp=Z,151nm,1.1s						
ERPA	Erie	76.65	314	eP		P	20 27 16.0 +0.3
	comp=Z,151nm,1.1s						
ERPA				LR		LR	
	comp=Z,3μm,20.0s						
WRH	Wood River Hil	76.72	359	eP		P	20 27 15.5 -0.2
	comp=Z,286nm,1.8s						
WRH	Wood River Hil	76.72	359	eP		P	20 27 15.5 -0.2
	comp=Z,286nm,1.8s						
DAWY	Dawson	76.74	355	eP		P	20 27 16.1 +0.1
	comp=Z,40nm,1.0s						
DAWY	Dawson	76.74	355	eP		P	20 27 16.1 +0.1
	comp=Z,40nm,1.0s						
DAWY				LR		LR	
	comp=Z,2μm,19.0s						
HDA	Harding Lake	76.75	358	eP		P	20 27 16.0 0.0
	comp=Z,304nm,2.0s						
HDA	Harding Lake	76.75	358	eP		P	20 27 16.0 0.0
	comp=Z,304nm,2.0s						
SSLB	Suanglung	76.78	70	eP		P	20 27 17.8 +0.9
	comp=Z,35nm,1.0s						
SSLB	Suanglung	76.78	70	eP		P	20 27 17.8 +0.9
	comp=Z,35nm,1.0s						
TPUB	Ta-pu	76.84	71	eP		P	20 27 18.1 +0.9
	comp=Z,128nm,1.2s						
TPUB	Ta-pu	76.84	71	eP		P	20 27 18.1 +0.9
	comp=Z,128nm,1.2s						
M54A	Oil Creek Stat	76.86	313	P		P	20 27 16.3 -0.7
	baz=49,SNR=18						
NACB	Ninganchiao	77.02	69	PFAKE			20 27 30.0 +12
NACB				LR		LR	
	comp=Z,3μm,20.0s						
O56A	Blue Knob Stat	77.04	312	P		P	20 27 17.6 -0.4
	baz=49,SNR=14						
ALLY	Alegheny Colle	77.04	313	eP		P	20 27 17.8 -0.2
	comp=Z,57nm,0.6s						
ALLY	Alegheny Colle	77.04	313	eP		P	20 27 17.8 -0.2
	comp=Z,57nm,0.6s						
MYKOM	Kota Tinggi	77.08	98	eP		P	20 27 17.4 -1.2
	comp=Z,27nm,1.0s						
MYKOM	Kota Tinggi	77.08	98	eP		P	20 27 17.4 -1.2
	comp=Z,27nm,1.0s						
MYKOM				LR		LR	
	comp=Z,2μm,20.0s						
BPAW	Bear Paw Mtn.	77.11	0	eP		P	20 27 18.2 +0.2
	comp=Z,79nm,1.4s						
BPAW	Bear Paw Mtn.	77.11	0	eP		P	20 27 18.2 +0.2
	comp=Z,79nm,1.4s						
YULB	Yu-li	77.27	70	eP		P	20 27 19.6 0.0
	comp=Z,90nm,1.2s						
YULB	Yu-li	77.27	70	eP		P	20 27 19.6 0.0
	comp=Z,90nm,1.2s						
YULB				LR		LR	
	comp=Z,3μm,18.0s						
N54A	Moraine State	77.40	313	P		P	20 27 19.6 -0.5
	baz=49,SNR=22						
DOT	Dot Lake	77.42	357	eP		P	20 27 20.5 +0.8
	comp=Z,345nm,1.8s						
DOT	Dot Lake	77.42	357	eP		P	20 27 20.5 +0.8
	comp=Z,345nm,1.8s						
DOT				LR		LR	
	comp=Z,6μm,20.0s						
TWG	Pinlang	77.45	71	eP		P	20 27 21.6 +1.0
	comp=Z,752nm,1.5s						
TWG	Pinlang	77.45	71	eP		P	20 27 21.6 +1.0
	comp=Z,752nm,1.5s						
TWG				LR		LR	
	comp=Z,8μm,22.0s						
MCK	McKinley	77.47	359	eP		P	20 27 19.8 -0.2
MCK				pmax		pmax	
	comp=Z,142nm,1.4s						
MCK				MLR		MLR	
	comp=Z,2μm,21.0s						
MCK	McKinley	77.47	359	eP		P	20 27 19.8 -0.2
	comp=Z,142nm,1.4s						
MCK	McKinley	77.47	359	eP		P	20 27 19.8 -0.2
	comp=Z,142nm,1.4s						
MCK				LR		LR	
	comp=Z,2μm,21.0s						
FFC	Flin Flon	77.55	333	eP		P	20 27 19.4 -1.2
FFC				pmax		pmax	
	comp=Z,90nm,1.3s						
FFC				MLR		MLR	
	comp=Z,5μm,21.0s						
FFC	Flin Flon	77.55	333	eP		P	20 27 19.4 -1.2
	comp=Z,90nm,1.3s						
FFC	Flin Flon	77.55	333	eP		P	20 27 19.4 -1.2
	comp=Z,90nm,1.3s						
FFC				LR		LR	
	comp=Z,5μm,21.0s						
KTH	Kantishna Hill	77.66	360	eP		P	20 27 21.2 +0.1
	comp=Z,100nm,1.4s						
KTH	Kantishna Hill	77.66	360	eP		P	20 27 21.2 +0.1
	comp=Z,100nm,1.4s						
CBN	Corbin Frederi	77.66	309	PFAKE			20 27 30.0 +8.5
CBN				LR		LR	
	comp=Z,4μm,21.0s						
ASAJ	Asahikawa	77.74	43	P		P	20 27 22.0 +0.2
	comp=Z,24nm,0.8s,baz=307,slow=6.6,SNR=20						
ASAJ	Asahikawa	77.74	43	eP		P	20 27 22.0 +0.2
	comp=Z,424nm,2.0s						
ASAJ	Asahikawa	77.74	43	eP		P	20 27 22.0 +0.2
	comp=Z,424nm,2.0s						
ASAJ				LR		LR	
	comp=Z,3μm,20.0s						
TRF	Thorofare Moun	77.76	360	eP		P	20 27 22.0 +0.1
	comp=Z,137nm,1.7s						
TRF	Thorofare Moun	77.76	360	eP		P	20 27 22.0 +0.1
	comp=Z,137nm,1.7s						
RND	Reindeer	77.80	359	eP		P	20 27 21.9 0.0
RND				pmax		pmax	
	comp=Z,42nm,1.3s						
RND				MLR		MLR	
	comp=Z,2μm,22.0s						
RND	Reindeer	77.80	359	eP		P	20 27 21.9 0.0
	comp=Z,42nm,1.3s						
RND	Reindeer	77.80	359	eP		P	20 27 21.9 0.0
	comp=Z,42nm,1.3s						
RND				LR		LR	
	comp=Z,2μm,22.0s						
YOJ	Yonaguni jima	77.87	68	PFAKE			20 27 30.0 +7.1
YOJ				LR		LR	
	comp=Z,2μm,21.0s						
PEA0	Petropavlovsk-	77.95	29	eP		P	20 27 24.2 +1.3
PEA0	Petropavlovsk-	77.95	29	eP		P	20 27 24.2 +1.3
PEA0B	Petropavlovsk-	77.95	29	PFAKE			20 27 30.0 +7.1
PEA0B				LR		LR	
	comp=Z,6μm,20.0s						
PETK	Petropavlovsk-	77.95	29	P		P	20 27 23.2 +0.3
	comp=Z,7.7nm,0.8s,baz=349,slow=2.0,SNR=8.1						
PETK				LR		LR	21 04 45.9
	comp=Z,5μm,20.1s,baz=314,slow=38						
C39A	Grand Marais	77.96	323	P		P	20 27 21.4 -1.6
	baz=44,SNR=20						
JNU	Nakatsue	77.98	57	P		P	20 27 22.7 -0.7
	comp=Z,144nm,0.9s,baz=304,slow=0.6,SNR=18						
JNU	Nakatsue	77.98	57	eP		P	20 27 23.2 -0.2
	comp=Z,270nm,1.0s						
JNU	Nakatsue	77.98	57	eP		P	20 27 23.2 -0.2
	comp=Z,270nm,1.0s						
MENT	Mentasta	78.11	357	eP		P	20 27 24.8 +1.2
	comp=Z,35nm,1.0s						
MENT	Mentasta	78.11	357	eP		P	20 27 24.8 +1.2
	comp=Z,35nm,1.0s						
MENT				LR		LR	
	comp=Z,2μm,20.0s						
PAX	Paxson	78.15	357	eP		P	20 27 24.6 +0.7
PAX				pmax		pmax	
	comp=Z,109nm,2.0s						
PAX	Paxson	78.15	357	eP		P	20 27 24.6 +0.7
	comp=Z,109nm,2.0s						
PAX	Paxson	78.15	357	eP		P	20 27 24.6 +0.7
	comp=Z,109nm,2.0s						
TPRI	Tanjung Pinang	78.15	99	P		P	20 27 23.2 -1.4
URVA	University of	78.17	309	eP		P	20 27 23.0 -1.3
URVA	University of	78.17	309	eP		P	20 27 23.0 -1.3
MCWV	Mont Chateau	78.18	312	PFAKE			20 27 30.0 +5.6
MCWV				LR		LR	
	comp=Z,2μm,21.0s						
TTA	Tatalina	78.20	2	eP		P	20 27 24.8 +0.6
TTA				pmax		pmax	
	comp=Z,136nm,1.5s						
TTA	Tatalina	78.20	2	eP		P	20 27 24.8 +0.6
	comp=Z,136nm,1.5s						
TTA	Tatalina	78.20	2	eP		P	20 27 24.8 +0.6
	comp=Z,136nm,1.5s						
TT01	Tatalina	78.23	2	eP		P	20 27 25.5 +1.3
TT01	Tatalina	78.23	2	eP		P	20 27 25.5 +1.3
JSRW	J. Sargeant Re	78.30	309	eP		P	20 27 24.6 -0.5
JSRW	J. Sargeant Re	78.30	309	eP		P	20 27 24.6 -0.5
PPLA	Purkeypile	78.31	1	eP		P	20 27 25.0 +0.1
	comp=Z,136nm,1.4s						
PPLA	Purkeypile	78.31	1	eP		P	20 27 25.1 +0.1
	comp=Z,136nm,1.4s						
PET	Petropavlovsk	78.38	28	*d* iP		P	20 27 19.3 -5.9
PET				*e*S		S	20 37 08.9 -11
PET				*e*PS		**PnS**	**20 37 47.3 -14**
PET				*e*PPS		PPS	20 38 04.5
PET				pmax		pmax	
	comp=Z,1μm,7.6s						
PET				MLR		MLR	
	comp=Z,4μm,18.0s						
PET	Petropavlovsk	78.38	28	PFAKE			20 27 40.0 +15
PET				LR		LR	
	comp=Z,5μm,20.0s						
EYMN	Ely	78.50	324	P		P	20 27 24.8 -1.2
	baz=43,SNR=22						
EYMN	Ely	78.50	324	eP		P	20 27 24.9 -1.2
	comp=Z,124nm,1.6s						
EYMN	Ely	78.50	324	eP		P	20 27 24.9 -1.2
	comp=Z,124nm,1.6s						
EYMN				LR		LR	
	comp=Z,6μm,20.0s						
AAM	Ann Arbor	78.55	316	eP		P	20 27 25.6 -0.8
AAM				pmax		pmax	
	comp=Z,58nm,0.9s						
AAM				MLR		MLR	
	comp=Z,5μm,20.0s						
AAM	Ann Arbor	78.55	316	eP		P	20 27 25.6 -0.8
	comp=Z,58nm,0.9s						
AAM	Ann Arbor	78.55	316	eP		P	20 27 25.6 -0.8
	comp=Z,58nm,0.9s						
AAM				LR		LR	
	comp=Z,5μm,20.0s						
C38A	Sawbill Land.	78.57	324	P		P	20 27 24.5 -1.9
	baz=43,SNR=5.2						
ULM	Lac du Bonnet	78.70	328	P		P	20 27 26.4 -0.7
	comp=Z,52nm,1.0s,baz=38,slow=5.8,SNR=18						
ULM				LR		LR	21 04 02.3
	comp=Z,5μm,18.7s,baz=40,slow=37						
ULM	Lac du Bonnet	78.70	328	eP		P	20 27 26.2 -0.9
	comp=Z,126nm,1.3s						
ULM	Lac du Bonnet	78.70	328	eP		P	20 27 26.2 -0.9
	comp=Z,126nm,1.3s						
COWI	Conover	78.72	321	eP		P	20 27 26.3 -1.0
	comp=Z,249nm,1.8s						
COWI	Conover	78.72	321	eP		P	20 27 26.3 -1.0
	comp=Z,249nm,1.8s						
COWI				LR		LR	
	comp=Z,3μm,18.0s						
C37A	Embarrass	78.98	324	P		P	20 27 27.3 -1.4
	baz=42,SNR=17						
B35A	Bob, Littlefor	79.20	325	P		P	20 27 29.2 -0.6
	baz=42,SNR=32						
SKR	Severo-Kuril's	79.23	31	eP		P	20 27 18.0 -12
SKR				*e*			20 37 18.0
C36A	Pine Crest Far	79.25	324	P		P	20 27 28.9 -1.2
	baz=42,SNR=25						
SCM	Sheep Creek Mo	79.34	358	eP		P	20 27 30.6 +0.1
SCM				pmax		pmax	
	comp=Z,236nm,1.4s						
SCM				MLR		MLR	
	comp=Z,1μm,20.0s						
SCM	Sheep Creek Mo	79.34	358	eP		P	20 27 30.6 +0.1
	comp=Z,236nm,1.4s						
SCM	Sheep Creek Mo	79.34	358	eP		P	20 27 30.6 +0.1
	comp=Z,236nm,1.4s						
SCM				LR		LR	
	comp=Z,1μm,20.0s						
SML	Sawmill	79.39	359	eP		P	20 27 31.6 +0.9
SML				pmax		pmax	
	comp=Z,72nm,1.1s						
SML	Sawmill	79.39	359	eP		P	20 27 31.6 +0.9
	comp=Z,72nm,1.1s						
SML	Sawmill	79.39	359	eP		P	20 27 31.6 +0.9
	comp=Z,72nm,1.1s						
ERM	Erimo	79.48	44	eP		P	20 27 32.8 +1.3
ERM				pmax		pmax	
	comp=Z,227nm,1.6s						
ERM				MLR		MLR	
	comp=Z,4μm,21.0s						
ERM	Erimo	79.48	44	eP		P	20 27 32.8 +1.3
	comp=Z,226nm,1.6s						
ERM	Erimo	79.48	44	eP		P	20 27 32.8 +1.3
	comp=Z,226nm,1.6s						
ERM				LR		LR	
	comp=Z,4μm,21.0s						
YUK	Yuzh-Kuril'sk	79.49	41	*d* iP		P	**20 27 30.7 -0.7**
YUK				*e*			20 30 30.4
YUK				*i* PPP		PPP	20 32 23.0
YUK				*i* S		**S**	**20 37 33.6 +1.1**
YUK				*e*			20 37 51.8
YUK				*e*SS		**SS**	**20 42 48.0 +9.0**
YUK				*i* SSS		SSS	20 46 07.8
YUK				pmax		pmax	
	comp=Z,2μm,5.2s						
YUK				pmax		pmax	
	comp=N,99nm,1.2s						
YUK				pmax		pmax	
	comp=E,76nm,1.2s						
YUK				pmax		pmax	
	comp=Z,331nm,1.2s						
A33A	Warroad	79.50	326	P		P	20 27 30.3 -1.2
	baz=41,SNR=22						
D37A	Cotton	79.51	324	P		P	20 27 30.1 -1.5
	baz=42,SNR=16						
B34A	Aery, Baudette	79.52	326	P		P	20 27 30.5 -1.1
	baz=41,SNR=36						
ACSO	Alum Creek Sta	79.58	314	eP		P	20 27 31.7 -0.4
	comp=Z,101nm,1.1s						
ACSO	Alum Creek Sta	79.58	314	eP		P	20 27 31.7 -0.4
	comp=Z,101nm,1.1s						
ACSO				LR		LR	
	comp=Z,4μm,19.0s						
PMR	Palmer	79.62	359	eP		P	20 27 32.7 +0.9
PMR				pmax		pmax	
	comp=Z,147nm,1.5s						
PMR	Palmer	79.62	359	eP		P	20 27 32.7 +0.9
	comp=Z,147nm,1.5s						
PMR	Palmer	79.62	359	eP		P	20 27 32.7 +0.9
	comp=Z,147nm,1.5s						
ANWB	Willy Bob	79.72	284	PFAKE			20 27 40.0 +6.9
ANWB				LR		LR	
	comp=Z,900nm,20.0s						
C35A	Jirik Farms, M	79.81	325	P		P	20 27 31.4 -1.8
	baz=41,SNR=16						
D36A	Goodland	79.83	324	P		P	20 27 31.8 -1.6
	baz=42,SNR=14						
CNNC	Cliffs of the	79.91	307	PFAKE			20 27 40.0 +6.1
CNNC				LR		LR	
	comp=Z,5μm,18.0s						
E37A	Wrenshall	79.93	323	P		P	20 27 32.0 -1.8
	baz=42						
BALM	Baldy	79.94	356	PFAKE			20 27 40.0 +6.2
BALM				LR		LR	
	comp=Z,2μm,20.0s						
A32A	Rocking H Ranc	79.98	327	P		P	20 27 32.6 -1.5
	baz=40,SNR=11						
SPU	Mount Spurr	80.04	1	eP		P	20 27 34.4 +0.2
SPU	Mount Spurr	80.04	1	eP		P	20 27 34.4 +0.2
SVW2	Sparrevohn	80.05	2	PFAKE			20 27 40.0 +5.7
SVW2				LR		LR	
	comp=Z,98μm,21.0s						
B33A	Robert and Kas	80.09	326	P		P	20 27 33.1 -1.5
	baz=40						
RC01	Rabbit Creek A	80.13	359	eP		P	20 27 35.3 +0.7
	comp=Z,106nm,1.1s						
RC01	Rabbit Creek A	80.13	359	eP		P	20 27 35.3 +0.7
	comp=Z,106nm,1.1s						
BLA	Blacksburg	80.14	310	eP		P	20 27 34.8 -0.4
BLA				pmax		pmax	
	comp=Z,58nm,0.8s						
BLA				MLR		MLR	
	comp=Z,5μm,21.0s						
BLA	Blacksburg	80.14	310	eP		P	20 27 34.8 -0.4
	comp=Z,58nm,0.8s						
BLA	Blacksburg	80.14	310	eP		P	20 27 34.8 -0.4
	comp=Z,58nm,0.8s						
BLA				LR		LR	
	comp=Z,5μm,21.0s						
JOW	Kunigami	80.15	64	eP		P	20 27 34.7 -0.7
	comp=Z,184nm,1.0s						
JOW	Kunigami	80.15	64	eP		P	20 27 34.7 -0.7
	comp=Z,184nm,1.0s						
JOW				LR		LR	
	comp=Z,2μm,22.0s						
C34A	RKJ Ranch, Bem	80.26	325	P		P	20 27 33.9 -1.7
	baz=41						
A31A	Linda, St. Vin	80.26	327	P		P	20 27 34.2 -1.4
	baz=39						
D35A	Remer	80.31	325	P		P	20 27 34.4 -1.5
	baz=41						
ABRA	Dolores	80.32	75	eP		P	20 27 36.9 +0.5
MNAI	Manna	80.34	104	PFAKE			20 27 50.0 +13
MNAI				LR		LR	
	comp=Z,2μm,20.0s						
E36A	McGregor	80.37	324	P		P	20 27 35.2 -1.0
	baz=42,SNR=18						
MJB9	Matsu-Tunnel	80.37	51	eP		P	20 27 35.7 -0.7
	comp=Z,28nm,1.0s						
MJB9	Matsu-Tunnel	80.37	51	eP		P	20 27 35.7 -0.7
	comp=Z,28nm,1.0s						
MAJO	Matsushiro	80.37	51	eP		P	20 27 35.3 -1.2
MAJO				pmax		pmax	
	comp=Z,105nm,0.9s						
MAJO	Matsushiro	80.37	51	eP		P	20 27 35.3 -1.2
	comp=Z,105nm,0.9s						
MAJO	Matsushiro	80.37	51	eP		P	20 27 35.3 -1.2
	comp=Z,105nm,0.9s						
MAT	Matsushiro	80.37	51	P		P	20 27 36.4 0.0
MAT				S		S	20 37 43.0 +0.8
MJAR	Matsushiro Arr	80.37	51	P		P	20 27 35.9 -0.6
	comp=Z,72nm,0.9s,baz=308,slow=5.7,SNR=41						
MJAR				LR		LR	21 06 30.6
	comp=Z,2μm,20.6s,baz=320,slow=38						
B32A	Ashes, Strandq	80.40	327	P		P	20 27 34.9 -1.5
	baz=40,SNR=12						
INU	Inuyama	80.44	52	eP		P	20 27 37.0 +0.2
	comp=Z,306nm,1.8s						
INU	Inuyama	80.44	52	eP		P	20 27 37.0 +0.2
	comp=Z,306nm,1.8s						
INU				LR		LR	
	comp=Z,3μm,20.0s						
BOLP	Bolinao	80.49	77	eP		P	20 27 37.0 -0.3
C33A	Trail	80.56	326	P		P	20 27 35.7 -1.5
	baz=40						
APYP	Conner	80.59	75	eP		P	20 27 37.3 -0.5
A30A	Hoffart Farm,	80.72	328	P		P	20 27 36.6 -1.5
	baz=39						
SEUS	St. Eustatius	80.72	285	PFAKE			20 27 50.0 +11
SEUS				LR		LR	
	comp=Z,2μm,20.0s						
D34A	Park Rapids	80.82	325	P		P	20 27 36.8 -1.8
	baz=40						
C32A	Crookston	80.83	326	P		P	20 27 37.1 -1.6
	baz=40						
SABA	Saba	80.84	285	PFAKE			20 27 50.0 +11
SABA				LR		LR	
	comp=Z,2μm,21.0s						
B31A	Greenbush Farm	80.85	327	P		P	20 27 37.0 -1.7
	baz=39						
E35A	Pequot Lakes	80.86	324	P		P	20 27 37.6 -1.2
	baz=41						
SKAG	Skagway	80.92	352	eP		P	20 27 41.0 +2.1
	comp=Z,190nm,2.0s						
SKAG	Skagway	80.92	352	eP		P	20 27 41.0 +2.1
	comp=Z,190nm,2.0s						
SKAG				LR		LR	
	comp=Z,4μm,20.0s						
SGCP	Mt. Cagua	80.96	74	eP		P	20 27 38.4 -1.4
F36A	Milaca	80.98	323	P		P	20 27 38.0 -1.5
	baz=41,SNR=23						
FDF	Fort de France	81.03	282	PFAKE			20 27 50.0 +10
FDF				LR		LR	
	comp=Z,1μm,21.0s						
COCO	West Island	81.03	114	eP		P	20 27 41.0 +0.9
COCO				pmax		pmax	
	comp=Z,185nm,0.9s						
COCO				MLR		MLR	
	comp=Z,2μm,18.0s						
COCO	West Island	81.03	114	eP		P	20 27 41.0 +0.9
	comp=Z,185nm,0.9s						
COCO	West Island	81.03	114	eP		P	20 27 41.0 +0.9
	comp=Z,185nm,0.9s						
COCO				LR		LR	
	comp=Z,2μm,18.0s						
D33A	AnnSam, Waubun	81.06	325	P		P	20 27 38.5 -1.4
	baz=40						
B30A	Myrvik Farm, E	81.11	328	P		P	20 27 38.3 -1.9
	baz=39						
SEW	Seward	81.12	359	*es*P		sP	20 27 44.9 -0.3
A29A	Manning Farm,	81.12	328	P		P	20 27 38.5 -1.7
	baz=38						
SPMN	Marine on St.	81.12	323	P		P	20 27 39.0 -1.3
	baz=42						
SPMN	Marine on St.	81.12	323	eP		P	20 27 40.6 +0.4
	comp=Z,196nm,1.9s						
SPMN	Marine on St.	81.12	323	eP		P	20 27 40.6 +0.4
	comp=Z,196nm,1.9s						
SPMN				LR		LR	
	comp=Z,6μm,21.0s						
DLBC	Dease Lake	81.24	349	P		P	20 27 41.3 +0.5
	comp=Z,7.7nm,0.9s,baz=356,slow=3.8,SNR=12						
DLBC	Dease Lake	81.24	349	eP		P	20 27 42.3 +1.6
	comp=Z,20nm,1.3s						
DLBC	Dease Lake	81.24	349	eP		P	20 27 42.3 +1.6
	comp=Z,20nm,1.3s						
DLBC				LR		LR	
	comp=Z,5μm,19.0s						
E34A	Wadena	81.24	325	P		P	20 27 39.0 -1.9
	baz=40						
C31A	Landman Farms,	81.38	327	P		P	20 27 40.0 -1.6
	baz=39						
BRLK	Bradley Lake	81.46	360	eP		P	20 27 44.0 +2.1
	comp=Z,98nm,1.3s						
BRLK	Bradley Lake	81.46	360	eP		P	20 27 44.0 +2.1
	comp=Z,98nm,1.3s						
F35A	Swanville	81.47	324	P		P	20 27 40.6 -1.4
	baz=41						
B29A	Wagenman Farm,	81.53	328	P		P	20 27 41.0 -1.4
	baz=38						
A28A	Rude Farm, Bot	81.55	329	P		P	20 27 41.4 -1.1
	baz=37						
G36A	St. Michael	81.56	323	P		P	20 27 41.2 -1.4
	baz=41						
JFWS	Jewell Farm	81.57	320	eP		P	20 27 41.5 -1.2
JFWS				pmax		pmax	
	comp=Z,68nm,1.3s						
JFWS				MLR		MLR	
	comp=Z,4μm,20.0s						
JFWS	Jewell Farm	81.57	320	eP		P	20 27 41.5 -1.2
	comp=Z,68nm,1.3s						
JFWS	Jewell Farm	81.57	320	eP		P	20 27 41.5 -1.2
	comp=Z,68nm,1.3s						
JFWS				LR		LR	
	comp=Z,4μm,20.0s						
D32A	Dogwood Acres,	81.58	326	P		P	20 27 41.2 -1.4
	baz=39						
CAUP	Cauayan	81.59	75	eP		P	20 27 41.6 -1.5
E33A	Westby DABS, E	81.62	325	P		P	20 27 41.2 -1.7
	baz=40						
H37A	Dierke Farm, C	81.65	322	P		P	20 27 41.5 -1.6

	baz=42					
SFIN	Lafayette	81.75 316	P	P	20 27 41.5	-2.1
	baz=45					
SFIN	Lafayette	81.75 316	eP	P	20 27 42.6	-1.1
	comp=Z,73nm,1.3s					
SFIN	Lafayette	81.75 316	eP	P	20 27 42.6	-1.1
	comp=Z,73nm,1.3s					
SFIN			LR	LR		
	comp=Z,5μm,19.0s					
C30A	Mose, Pekin	81.76 327	P	P	20 27 42.2	-1.5
	baz=38					
I38A	Scanlan Farm,	81.77 322	P	P	20 27 42.2	-1.5
	baz=42					
F34A	Alexandria	81.83 324	P	P	20 27 42.1	-1.9
	baz=40					
A27A	Ledoux Ranch,	81.90 329	P	P	20 27 43.0	-1.3
	baz=37					
CDVI	St. Croix	81.90 286	eP	P	20 27 44.4	-0.4
	comp=Z,249nm,1.2s					
CDVI	St. Croix	81.90 286	eP	P	20 27 44.4	-0.4
	comp=Z,249nm,1.2s					
G35A	Watkins	81.91 323	P	P	20 27 42.9	-1.6
	baz=41					
B28A	Dugan Ranch, T	81.95 329	P	P	20 27 43.4	-1.2
	baz=37					
D31A	Mcclaflin, Tow	81.95 326	P	P	20 27 42.8	-1.9
	baz=39					
SVB	Belmont	82.00 281	eP	P	20 27 46.0	+0.6
	comp=Z,97nm,0.9s					
SVB	Belmont	82.00 281	eP	P	20 27 46.0	+0.6
	comp=Z,97nm,0.9s					
E32A	Braaten, Kindr	82.02 326	P	P	20 27 43.6	-1.4
	baz=39					
KMSC	Kings Mountain	82.07 309	P	P	20 27 44.5	-1.0
	baz=47					
KMSC	Kings Mountain	82.07 309	eP	P	20 27 45.6	+0.1
	comp=Z,59nm,0.9s					
KMSC	Kings Mountain	82.07 309	eP	P	20 27 45.6	+0.1
	comp=Z,59nm,0.9s					
KMSC			LR	LR		
	comp=Z,3μm,20.0s					
MDND	Maddock	82.12 328	P	P	20 27 44.1	-1.4
	baz=38					
H36A	Jessenland, He	82.13 323	P	P	20 27 43.9	-1.7
	baz=41					
BALP	Baler	82.14 76	eP	P	20 27 45.9	-0.2
A26A	Wade Farm, Ken	82.26 330	P	P	20 27 45.7	-0.5
	baz=36					
F33A	5 Mile Ranch,	82.26 325	P	P	20 27 45.1	-1.2
	baz=40					
KSM	Kuching	82.27 94	eP	P	20 27 47.2	+0.4
	comp=Z,77nm,1.3s					
KSM	Kuching	82.27 94	eP	P	20 27 47.1	+0.4
	comp=Z,77nm,1.3s					
KSM			LR	LR		
	comp=Z,3μm,22.0s					
MTP	Monte Pirata	82.28 287	eP	P	20 27 48.7	+1.9
	comp=Z,153nm,1.4s					
MTP	Monte Pirata	82.28 287	eP	P	20 27 48.7	+1.9
	comp=Z,153nm,1.4s					
BLO	Bloomington	82.29 315	eP	P	20 27 47.0	+0.5
BLO			pmax	pmax		
	comp=Z,334nm,1.7s					
BLO	Bloomington	82.29 315	eP	P	20 27 47.0	+0.5
	comp=Z,334nm,1.7s					
BLO	Bloomington	82.29 315	eP	P	20 27 47.0	+0.5
	comp=Z,334nm,1.7s					
I37A	Lemond, Waseca	82.30 322	P	P	20 27 45.6	-1.0
	baz=41					
B27A	Peters Farms,	82.35 329	P	P	20 27 45.5	-1.2
	baz=37					
D30A	Buchanan	82.35 327	P	P	20 27 45.5	-1.2
	baz=38					
J38A	Wedel Dairy, R	82.38 321	P	P	20 27 45.1	-1.9
	baz=42					
CBYP	Canovanas	82.39 287	eP	P	20 27 47.5	0.0
	comp=Z,73nm,1.1s					
CBYP	Canovanas	82.39 287	eP	P	20 27 47.5	0.0
	comp=Z,73nm,1.1s					
CBYP			LR	LR		
	comp=Z,2μm,20.0s					
E31A	Nome	82.40 326	P	P	20 27 45.5	-1.5
	baz=39					
G34A	Benson	82.42 324	P	P	20 27 45.6	-1.5
	baz=40					
H35A	Sunnyside Ranc	82.46 323	P	P	20 27 46.2	-1.2
	baz=40					
HUMP	Col San Antoni	82.47 287	eP	P	20 27 48.1	+0.3
	comp=Z,177nm,1.5s					
HUMP	Col San Antoni	82.47 287	eP	P	20 27 48.1	+0.3
	comp=Z,177nm,1.5s					
HUMP			LR	LR		
	comp=Z,2μm,22.0s					
C28A	Hausauer Farms	82.54 328	P	P	20 27 46.9	-0.8
	baz=37					
I36A	Fitzsimmons Fa	82.59 322	P	P	20 27 46.7	-1.3
	baz=41					
F32A	Veblen	82.61 325	P	P	20 27 46.7	-1.4
	baz=39					
JSC	Jenkinsville	82.61 308	eP	P	20 27 48.2	-0.1
JSC			pmax	pmax		
	comp=Z,135nm,1.6s					
JSC	Jenkinsville	82.61 308	eP	P	20 27 48.2	-0.1
	comp=Z,135nm,1.6s					
JSC	Jenkinsville	82.61 308	eP	P	20 27 48.2	-0.1
	comp=Z,135nm,1.6s					
SJG	San Juan	82.71 287	P	P	20 27 49.9	+0.9
	comp=Z,7.7nm,0.2s,baz=47,slow=7.2,SNR=6.8					
SJG	San Juan	82.71 287	eP	P	20 27 49.5	+0.5
SJG			pmax	pmax		
	comp=Z,164nm,1.6s					
SJG			MLR	MLR		
	comp=Z,1μm,22.0s					
SJG	San Juan	82.71 287	eP	P	20 27 49.5	+0.5
	comp=Z,164nm,1.6s					
SJG	San Juan	82.71 287	eP	P	20 27 49.5	+0.5
	comp=Z,164nm,1.6s					
SJG			LR	LR		
	comp=Z,1μm,22.0s					
NHSC	New Hope	82.73 307	eP	P	20 27 49.5	+0.6
	comp=Z,186nm,1.2s					
NHSC	New Hope	82.73 307	eP	P	20 27 49.5	+0.6
	comp=Z,186nm,1.2s					
NHSC			LR	LR		
	comp=Z,4μm,18.0s					
D29A	Pettibone, Tap	82.74 327	P	P	20 27 47.6	-1.2
	baz=38					
CSU	Charleston Sou	82.75 307	eP	P	20 27 50.6	+1.6
CSU	Charleston Sou	82.75 307	eP	P	20 27 50.6	+1.6
B26A	Jensen Ranch,	82.75 330	P	P	20 27 48.0	-0.9
	baz=36					
HDIL	Hopedale	82.79 317	P	P	20 27 47.4	-1.7
	baz=44					
HDIL	Hopedale	82.79 317	eP	P	20 27 48.5	-0.6
	comp=Z,414nm,1.9s					
HDIL	Hopedale	82.79 317	eP	P	20 27 48.5	-0.6
	comp=Z,414nm,1.9s					
HDIL			LR	LR		
	comp=Z,4μm,18.0s					
G33A	Ortonville	82.82 325	P	P	20 27 47.6	-1.6
	baz=40					
WCI	Wyandotte Cave	82.83 314	eP	P	20 27 49.1	-0.3
WCI			pmax	pmax		
	comp=Z,105nm,1.0s					
WCI			MLR	MLR		
	comp=Z,6μm,21.0s					
WCI	Wyandotte Cave	82.83 314	eP	P	20 27 49.1	-0.3
	comp=Z,105nm,1.0s					
WCI	Wyandotte Cave	82.83 314	eP	P	20 27 49.1	-0.3
	comp=Z,105nm,1.0s					
WCI			LR	LR		
	comp=Z,6μm,21.0s					
E30A	Jud	82.89 327	P	P	20 27 48.2	-1.3
	baz=38					
J37A	Redenius Farm,	82.91 322	P	P	20 27 47.9	-1.8
	baz=41					
H34A	Spellman Lake,	82.92 324	P	P	20 27 48.7	-1.1
	baz=40					
C27A	Sayler Ranch,	83.00 329	P	P	20 27 48.7	-1.4
	baz=36					
GRGR	Grenville	83.01 280	eP	P	20 27 51.4	+0.7
	comp=Z,274nm,1.1s					
GRGR	Grenville	83.01 280	eP	P	20 27 51.4	+0.7
	comp=Z,274nm,1.1s					
K38A	Parkersburg	83.02 321	P	P	20 27 48.3	-2.0
	baz=42					
D28A	Regan	83.03 328	P	P	20 27 48.4	-2.0
	baz=37					
CELP	Cerrillos	83.05 288	eP	P	20 27 51.0	+0.2
CELP	Cerrillos	83.05 288	eP	P	20 27 51.0	+0.2
F31A	Hecla	83.11 326	P	P	20 27 48.7	-2.0
	baz=38					
C26A	Wahner Farm, P	83.14 329	P	P	20 27 50.4	-0.5
	baz=36					
SBUM	Sibu	83.14 92	eP	P	20 27 50.7	-0.6
	comp=Z,108nm,1.3s					
SBUM	Sibu	83.14 92	eP	P	20 27 50.7	-0.6
	comp=Z,108nm,1.3s					
SBUM			LR	LR		
	comp=Z,2μm,20.0s					
E29A	Napoleon	83.14 327	P	P	20 27 49.8	-1.1
	baz=38					
I35A	Creekview Farm	83.17 323	P	P	20 27 49.2	-1.9
	baz=40					
TKL	Tuckaleechee C	83.17 311	P	P	20 27 51.0	-0.2
	comp=Z,48nm,0.8s,baz=24,slow=5.0,SNR=9.4					
TKL	Tuckaleechee C	83.17 311	P	P	20 27 51.0	-0.2
TKL			MLR	MLR		
	comp=Z,5μm,21.0s					
TKL	Tuckaleechee C	83.17 311	P	P	20 27 51.0	-0.2
TKL			LR	LR		
	comp=Z,5μm,21.0s					
B25A	Knox Farm, Ray	83.20 330	P	P	20 27 50.2	-1.0
	baz=35					
G32A	Webster	83.25 325	P	P	20 27 50.3	-1.2
	baz=39					
AGP	Aguadilla	83.26 288	eP	P	20 27 52.1	+0.2
	comp=Z,309nm,1.4s					
AGP	Aguadilla	83.26 288	eP	P	20 27 52.1	+0.2
	comp=Z,309nm,1.4s					
J36A	Seneca 1, Swea	83.27 322	P	P	20 27 50.3	-1.3
	baz=41					
ENPP	El Nido	83.30 81	eP	P	20 27 52.7	+0.5
H33A	Prehn Over Nor	83.35 324	P	P	20 27 51.0	-1.1
	baz=39					
K37A	Belmond	83.36 321	P	P	20 27 50.1	-1.9
	baz=41,SNR=18					
MPR	Mayaguez	83.38 288	eP	P	20 27 52.7	+0.2
	comp=Z,88nm,1.3s					
MPR	Mayaguez	83.38 288	eP	P	20 27 52.7	+0.2
	comp=Z,88nm,1.3s					
BUSP	Coron	83.40 80	eP	P	20 27 56.6	+3.9
DGMT	Dagmar	83.44 331	P	P	20 27 50.9	-1.4
	baz=35					
DGMT	Dagmar	83.44 331	eP	P	20 27 53.9	+1.5
	comp=Z,295nm,1.9s					
DGMT	Dagmar	83.44 331	eP	P	20 27 53.9	+1.5
	comp=Z,295nm,1.9s					
DGMT			LR	LR		
	comp=Z,4μm,20.0s					
KDAK	Kodiak Island	83.44 1	eP	P	20 27 54.3	+2.1
KDAK			pmax	pmax		
	comp=Z,74nm,1.1s					
KDAK			MLR	MLR		
	comp=Z,3μm,20.0s					
KDAK	Kodiak Island	83.44 1	eP	P	20 27 54.2	+2.1
	comp=Z,74nm,1.1s					
KDAK	Kodiak Island	83.44 1	eP	P	20 27 54.2	+2.1
	comp=Z,74nm,1.1s					
KDAK			LR	LR		
	comp=Z,3μm,20.0s					
I34A	Hadley	83.44 323	P	P	20 27 50.8	-1.7
	baz=40					
F30A	Leola	83.46 326	P	P	20 27 51.5	-1.1
	baz=38					
OLIL	Olney	83.46 316	eP	P	20 27 52.1	-0.5
	comp=Z,118nm,1.1s					
OLIL	Olney	83.46 316	eP	P	20 27 52.1	-0.5
	comp=Z,118nm,1.1s					
L38A	Oak Wood Farm,	83.49 321	P	P	20 27 50.7	-2.1
	baz=41,SNR=14					
D27A	Center	83.49 329	P	P	20 27 52.1	-0.6
	baz=36					
E28A	Huff	83.58 328	P	P	20 27 51.6	-1.6
	baz=37					
G31A	Conde	83.58 326	P	P	20 27 51.8	-1.3
	baz=38					
SMY	Shemya	83.61 21	PFAKE		20 28 00.0	+6.9
SMY			LR	LR		
	comp=Z,4μm,21.0s					
JHJ	Hachijo jima 2	83.63 52	P	P	20 27 54.2	+0.6
	comp=Z,174nm,0.9s,baz=246,slow=5.6,SNR=6.8					
J35A	Milford	83.65 323	P	P	20 27 52.0	-1.6
	baz=40					
JHJ2	Mitsune	83.66 52	eP	P	20 27 56.8	+3.1
	comp=Z,270nm,1.0s					
C25A	Freed Ranch, W	83.69 330	P	P	20 27 52.8	-0.9
	baz=35					
USIN	University of	83.77 315	eP	P	20 27 53.5	-0.8
	comp=Z,83nm,0.8s					
USIN	University of	83.77 315	eP	P	20 27 53.5	-0.8
	comp=Z,83nm,0.8s					
SCIA	State Center	83.79 321	PFAKE		20 28 00.0	+5.7
SCIA			LR	LR		
	comp=Z,4μm,21.0s					
H32A	Carlson Farm,	83.80 325	P	P	20 27 53.1	-1.3
	baz=39					
F29A	Eureka	83.81 327	P	P	20 27 52.6	-1.7
	baz=37					
SJMP	San Jose	83.82 79	eP	P	20 27 54.3	-0.5
K36A	Gilmore City	83.84 322	P	P	20 27 52.8	-1.7
	baz=41					
I33A	Coleman	83.87 324	P	P	20 27 53.0	-1.7
	baz=39					
L37A	Phoenix Point,	83.89 321	P	P	20 27 52.9	-1.9
	baz=41,SNR=12					
D26A	Manning	83.92 329	P	P	20 27 54.1	-0.8
	baz=36					
OHAK	Old Harbor	83.99 1	PFAKE		20 28 00.0	+5.0
OHAK			LR	LR		
	comp=Z,2μm,20.0s					
KKM	Kota Kinabalu	84.02 87	eP	P	20 27 56.0	0.0
	comp=Z,56nm,1.1s					
KKM	Kota Kinabalu	84.02 87	eP	P	20 27 56.0	0.0
	comp=Z,56nm,1.1s					
KKM			ePP	PP	20 31 15.0	+5.3
ECSD	EROS Data Cent	84.03 324	P	P	20 27 54.2	-1.3
	baz=39,SNR=20					
ECSD	EROS Data Cent	84.03 324	eP	P	20 27 54.8	-0.7
	comp=Z,201nm,1.9s					
ECSD	EROS Data Cent	84.03 324	eP	P	20 27 54.8	-0.7
	comp=Z,201nm,1.9s					
ECSD			LR	LR		
	comp=Z,5μm,20.0s					
E27A	Carson	84.06 328	P	P	20 27 54.6	-1.0
	baz=36					
J34A	George	84.07 323	P	P	20 27 54.1	-1.6
	baz=40					
G30A	Faulkton	84.07 326	P	P	20 27 54.3	-1.4
	baz=38					
M38A	Pleasantville	84.15 320	P	P	20 27 54.6	-1.5
	baz=41,SNR=15					
K35A	Storm Lake	84.16 322	P	P	20 27 54.6	-1.6
	baz=40					
D25A	Fairfield	84.18 330	P	P	20 27 55.4	-0.8
	baz=35					
I32A	Karley and Nic	84.19 324	P	P	20 27 54.9	-1.4
	baz=39					
N39A	Derby Farms, D	84.21 320	P	P	20 27 54.5	-1.9
	baz=42					
GRTK	Grand Turk	84.21 293	eP	P	20 27 58.4	+1.7
	comp=Z,239nm,1.3s					
GRTK	Grand Turk	84.21 293	eP	P	20 27 58.4	+1.7
	comp=Z,239nm,1.3s					
H31A	Wolsey	84.29 325	P	P	20 27 55.2	-1.5
	baz=38					
G29A	Hoven	84.36 326	P	P	20 27 54.7	-2.5
	baz=37					
L36A	Harm Buss Farm	84.36 322	P	P	20 27 55.1	-2.1
	baz=40					
E26A	Carlson Angus	84.39 329	P	P	20 27 56.6	-0.7
	baz=36					
O40A	La Belle	84.45 319	P	P	20 27 55.8	-1.9
	baz=42,SNR=18					
J33A	Davis	84.51 324	P	P	20 27 55.9	-2.0
	baz=39					
SUSD	Miller	84.53 325	P	P	20 27 56.1	-1.9
	baz=38					
GOGA	Godfrey	84.54 309	eP	P	20 27 58.3	+0.1
GOGA			pmax	pmax		
	comp=Z,262nm,1.7s					
GOGA			MLR	MLR		
	comp=Z,3μm,20.0s					
GOGA	Godfrey	84.54 309	eP	P	20 27 58.3	+0.1
	comp=Z,262nm,1.7s					
GOGA	Godfrey	84.54 309	eP	P	20 27 58.3	+0.1
	comp=Z,262nm,1.7s					
GOGA			LR	LR		
	comp=Z,3μm,20.0s					
CRAG	Craig	84.55 350	PFAKE		20 28 10.0	+12
CRAG			LR	LR		
	comp=Z,3μm,21.0s					
M37A	Trindle Farm,	84.59 321	P	P	20 27 56.4	-2.0
	baz=41					
K34A	Le Mars	84.59 323	P	P	20 27 56.2	-2.1
	baz=40					
N38A	Joes South For	84.64 320	P	P	20 27 56.8	-1.9
	baz=41					
Q42A	Golden Eagle	84.64 317	P	P	20 27 56.8	-1.9
	baz=43,SNR=15					
I31A	Royce, Wessing	84.67 325	P	P	20 27 56.6	-2.1
	baz=38					
SLM	Saint Louis	84.68 317	eP	P	20 27 58.1	-0.7
SLM			pmax	pmax		
	comp=Z,335nm,1.6s					
SLM			MLR	MLR		
	comp=Z,4μm,20.0s					
SLM	Saint Louis	84.68 317	eP	P	20 27 58.1	-0.7
	comp=Z,334nm,1.6s					
SLM	Saint Louis	84.68 317	eP	P	20 27 58.1	-0.7
	comp=Z,334nm,1.6s					
SLM			LR	LR		
	comp=Z,4μm,20.0s					
O39A	Kirksville	84.69 319	P	P	20 27 56.9	-2.0
	baz=42					
E25A	Miller Ranch,	84.74 329	P	P	20 27 57.1	-2.0
	baz=35					
SWET	Sewanee	84.74 312	eP	P	20 27 59.6	+0.3
	comp=Z,44nm,1.8s					
SWET	Sewanee	84.74 312	eP	P	20 27 59.6	+0.3
	comp=Z,44nm,1.8s					
CUYO	Cuyo Island	84.75 80	eP	P	20 27 60.0	+0.4
L35A	Bielow Farm, R	84.77 322	P	P	20 27 57.4	-1.9
	baz=40					
SIUC	Southern Illin	84.81 315	eP	P	20 27 59.0	-0.5
	comp=Z,244nm,1.4s					
SIUC	Southern Illin	84.81 315	eP	P	20 27 59.0	-0.5
	comp=Z,244nm,1.4s					
J32A	Parkston	84.87 324	P	P	20 27 57.8	-1.9
	baz=38					
M36A	Felix, Anita	84.92 321	P	P	20 27 58.0	-2.1
	baz=40					
H29A	Onida	84.93 326	P	P	20 27 57.9	-2.2
	baz=37					
F26A	Lodgepole	84.98 328	P	P	20 27 59.0	-1.3
	baz=36					
P40A	Paris	84.98 318	P	P	20 27 58.7	-1.6
	baz=42,SNR=23					
G27A	Dupree	85.06 328	P	P	20 27 59.1	-1.6
	baz=36					
K33A	Hardington	85.08 323	P	P	20 27 59.2	-1.6
	baz=39					
N37A	Lee Faris, Mou	85.15 320	P	P	20 27 59.6	-1.5
	baz=41					
I30A	Oacoma	85.15 325	P	P	20 27 59.5	-1.7
	baz=38					
WVT	Waverly	85.18 314	eP	P	20 27 59.9	-1.5
WVT			pmax	pmax		
	comp=Z,31nm,1.0s					
WVT			MLR	MLR		
	comp=Z,4μm,20.0s					
WVT	Waverly	85.18 314	eP	P	20 27 59.9	-1.5
	comp=Z,30nm,1.0s					
WVT	Waverly	85.18 314	eP	P	20 27 59.9	-1.5
	comp=Z,30nm,1.0s					
WVT			LR	LR		
	comp=Z,4μm,20.0s					
F25A	Bowman	85.23 329	P	P	20 28 00.8	-0.8
	baz=35					
O38A	Galt	85.26 320	P	P	20 28 00.2	-1.5
	baz=41,SNR=13					
L34A	Svendsen Farm,	85.28 322	P	P	20 27 59.0	-2.8
	baz=39					
M35A	Neola	85.34 322	P	P	20 28 00.1	-2.0
	baz=40					
J31A	Geddes	85.34 325	P	P	20 28 00.6	-1.5
	baz=38					
P39B	Salisbury	85.37 319	P	P	20 28 01.0	-1.3
	baz=41,SNR=28					
Q40A	Laux Farm, Aux	85.39 318	P	P	20 28 01.2	-1.2
	baz=42					
G26A	Maurine	85.40 328	P	P	20 28 01.2	-1.2
	baz=36,SNR=34					
I29A	Vivian Onida	85.45 326	P	P	20 28 01.4	-1.3
	baz=37					
N36A	Muff Farm, Cla	85.48 321	P	P	20 28 01.2	-1.6
	baz=40					
K32A	Verdigre	85.48 324	P	P	20 28 00.7	-2.1
	baz=38					
JAP	San Jose, Anti	85.52 80	eP	P	20 28 04.1	+0.7
SDPT	Sand Point	85.54 5	eP	P	20 28 03.7	+0.9
	comp=Z,90nm,1.0s					
SDPT	Sand Point	85.54 5	eP	P	20 28 03.7	+0.9
	comp=Z,90nm,1.0s					
SDPT			LR	LR		
	comp=Z,3μm,19.0s					
L33A	Hoskins	85.55 323	P	P	20 28 01.2	-1.9
	baz=39					
O37A	Wolven Farm, M	85.57 320	P	P	20 28 01.6	-1.6
	baz=41					
BANI	BANI	85.63 290	eP	P	20 28 06.6	+2.5
BANI	BANI	85.63 290	eP	P	20 28 06.6	+2.5
J30A	Dallas	85.65 325	P	P	20 28 02.2	-1.5
	baz=38					
P38A	Dawn	85.67 319	P	P	20 28 02.1	-1.6
	baz=41					
LAO	LASA Array	85.68 331	P	P	20 28 03.7	-0.1
	baz=33,SNR=26					
LAO	LASA Array	85.68 331	eP	P	20 28 04.4	+0.6
	comp=Z,971nm,2.0s					
LAO	LASA Array	85.68 331	eP	P	20 28 04.4	+0.6
	comp=Z,971nm,2.0s					
LAO			LR	LR		
	comp=Z,4μm,18.0s					
H27A	Howes	85.72 327	P	P	20 28 02.4	-1.6
	baz=36,SNR=15					
M34A	Aspy Farms, Fr	85.73 322	P	P	20 28 02.0	-2.1
	baz=39					
FALS	False Pass	85.77 7	PFAKE		20 28 10.0	+6.0
FALS			LR	LR		
	comp=Z,3μm,20.0s					
N35A	Tabor	85.78 321	P	P	20 28 02.7	-1.6
	baz=40					
G25A	Newell	85.82 328	P	P	20 28 03.4	-1.1
	baz=35					
Q39A	Willow Grove F	85.82 319	P	P	20 28 03.3	-1.3
	baz=41,SNR=16					
EGMT	Eagleton	85.82 334	P	P	20 28 04.0	-0.6
	baz=31,SNR=51					
EGMT	Eagleton	85.82 334	eP	P	20 28 03.7	-0.8
	comp=Z,306nm,1.5s					
EGMT	Eagleton	85.82 334	eP	P	20 28 03.7	-0.8
	comp=Z,306nm,1.5s					
EGMT			LR	LR		
	comp=Z,6μm,18.0s					
I28A	Midland	85.84 326	P	P	20 28 03.3	-1.4
	baz=36,SNR=6.5					
K31A	O'Neill	85.87 324	P	P	20 28 03.1	-1.7
	baz=38					
SDDR	Presa de Saban	85.94 291	eP	P	20 28 05.9	+0.4
	comp=Z,387nm,1.5s					
SDDR	Presa de Saban	85.94 291	eP	P	20 28 05.9	+0.4
	comp=Z,387nm,1.5s					
SDDR			LR	LR		
	comp=Z,2μm,20.0s					
M33A	Taylor Creek F	85.97 323	P	P	20 28 03.3	-2.0
	baz=39					
TIGA	Tifton	85.98 308	P	P	20 28 04.1	-1.3
	baz=46					
TIGA	Tifton	85.98 308	eP	P	20 28 05.4	-0.1
	comp=Z,686nm,2.0s					
TIGA	Tifton	85.98 308	eP	P	20 28 05.4	-0.1
	comp=Z,686nm,2.0s					
TIGA			LR	LR		
	comp=Z,4μm,18.0s					
O36A	Bolckow	86.00 320	P	P	20 28 03.6	-1.8
	baz=40					
L32A	Elgin	86.01 323	P	P	20 28 03.5	-2.0
	baz=38					
R40A	Maddies Statio	86.01 318	P	P	20 28 04.4	-1.1
	baz=42,SNR=55					
H26A	Fairpoint	86.02 328	P	P	20 28 03.8	-1.8
	baz=35,SNR=20					
CISI	Cisompet, Garu	86.08 103	eP	P	20 28 04.2	-2.0

comp=Z,241nm,1.1s
CISI Cisompet, Garu 86.08 103 eP P 20 28 04.2 -2.0
comp=Z,241nm,1.1s
CISI LR LR
comp=Z,2µm,21.0s
P37A Lathrop 86.11 320 P **P 20 28 04.1 -1.8**
baz=40
PLAL Pickwick Lake 86.14 313 PFAKE 20 28 20.0 +14
PLAL LR LR
comp=Z,5µm,21.0s
PBMO Poplar Bluff 86.15 316 eP P 20 28 05.0 -1.2
comp=Z,170nm,1.2s
PBMO Poplar Bluff 86.15 316 eP P 20 28 05.0 -1.2
comp=Z,170nm,1.2s
N34A Lincoln 86.21 322 P **P 20 28 04.7 -1.8**
baz=39
Q38A Cooks Store, C 86.21 319 P **P 20 28 05.1 -1.3**
baz=41,SNR=8.3
K30A Basset 86.22 325 P **P 20 28 05.8 -0.7**
baz=37,SNR=6.9
AKUT Akutan 86.23 9 PFAKE 20 28 20.0 +14
AKUT LR LR
comp=Z,3µm,21.0s
L31A Butterfield Fa 86.26 324 P **P 20 28 05.5 -1.2**
baz=38
WALA Waterton Lakes 86.28 337 eP P 20 28 05.8 -1.0
comp=Z,43nm,1.1s
WALA Waterton Lakes 86.28 337 eP P 20 28 05.8 -1.0
comp=Z,43nm,1.1s
WALA LR LR
comp=Z,6µm,18.0s
MYLDM Lahad Datu 86.33 86 eP P 20 28 06.7 -0.7
comp=Z,150nm,1.2s
MYLDM Lahad Datu 86.33 86 eP P 20 28 06.7 -0.7
comp=Z,150nm,1.2s
XMIS Christmas Isla 86.33 107 PFAKE 20 28 20.0 +13
XMIS LR LR
comp=Z,1µm,19.0s
H25A Fruitdale 86.36 328 P **P 20 28 06.1 -1.1**
baz=35,SNR=14
O35A Humboldt 86.36 321 P **P 20 28 04.9 -2.3**
baz=40
R39A Chumby, Stover 86.40 318 P **P 20 28 06.7 -0.7**
baz=41,SNR=33
UNV Unalaska Valle 86.43 9 PFAKE 20 28 20.0 +13
UNV LR LR
comp=Z,4µm,20.0s
P36A Good Intent, A 86.51 320 P **P 20 28 06.3 -1.7**
baz=40
PCRV Puerto La Cruz 86.51 280 P **P 20 28 07.4 -1.0**
comp=Z,19nm,0.9s,baz=93,slow=4.4,SNR=4.3
BGNE Belgrade 86.55 323 P **P 20 28 06.4 -1.7**
baz=38
BGNE Belgrade 86.55 323 eP P 20 28 08.2 +0.1
comp=Z,335nm,1.3s
BGNE Belgrade 86.55 323 eP P 20 28 08.2 +0.1
comp=Z,335nm,1.3s
BGNE LR LR
comp=Z,8µm,21.0s
S40A Lebanon 86.65 317 P **P 20 28 07.7 -1.0**
baz=41,SNR=35
T41A Mountain View 86.67 317 P **P 20 28 08.2 -0.6**
baz=42,SNR=66
Q37A Longview Farm, 86.70 319 P **P 20 28 06.7 -2.2**
baz=40
N33A J Bar K, Exete 86.74 322 P **P 20 28 07.2 -1.9**
baz=39
Y47A UCPARC, Winfie 86.79 312 P **P 20 28 07.5 -1.9**
baz=44
O34A Beatrice 86.81 321 P **P 20 28 07.9 -1.5**
baz=39,SNR=13
I25A Rochford 86.91 328 P **P 20 28 08.9 -1.1**
baz=35
DWPF Disney Wildern 86.91 304 eP P 20 28 09.4 -0.7
comp=Z,1µm,1.6s
DWPF Disney Wildern 86.91 304 eP P 20 28 09.4 -0.7
comp=Z,1µm,1.6s
DWPF LR LR
comp=Z,2µm,21.0s
LRAL Lakeview Retre 86.91 311 eP P 20 28 09.4 -0.6
comp=Z,177nm,1.4s
LRAL Lakeview Retre 86.91 311 eP P 20 28 09.4 -0.6
comp=Z,177nm,1.4s
LRAL LR LR
comp=Z,6µm,22.0s
BBB Bella Bella 86.91 346 P **P 20 28 09.3 -0.3**
comp=Z,8.2nm,1.0s,baz=111,slow=2.3,SNR=4.8
R38A Fenwick Farm, 86.94 319 P **P 20 28 08.3 -1.8**
baz=41,SNR=14
RSSD Black Hills 86.95 328 P **P 20 28 09.2 -1.1**
baz=34
RSSD Black Hills 86.95 328 eP P 20 28 09.9 -0.4
RSSD pmax pmax
comp=Z,84nm,1.3s
RSSD MLR MLR
comp=Z,5µm,21.0s
RSSD Black Hills 86.95 328 eP P 20 28 09.9 -0.4
comp=Z,84nm,1.3s
RSSD Black Hills 86.95 328 eP P 20 28 09.9 -0.4
comp=Z,84nm,1.3s
RSSD LR LR
comp=Z,5µm,21.0s
NIKH Nikolski High 86.96 11 PFAKE 20 28 20.0 +10
NIKH LR LR
comp=Z,3µm,21.0s
PAPH Port-au-Prince 86.96 291 PFAKE 20 28 20.0 +10
PAPH LR LR
comp=Z,2µm,20.0s
M31A Lambtecht Ranc 86.98 324 P **P 20 28 09.0 -1.3**
baz=38
P35A Duane Minner, 86.98 321 P **P 20 28 08.9 -1.4**
baz=40,SNR=17
Z48A Northport 86.99 311 P **P 20 28 08.3 -2.1**
baz=44
T40A Mansfield 87.00 317 P **P 20 28 09.3 -1.1**
baz=41,SNR=18
W44A Shelby Farms P 87.01 314 P **P 20 28 08.3 -2.1**
baz=43
S39A Bolivar 87.01 318 P **P 20 28 09.2 -1.3**
baz=41,SNR=22
N32A Stulken Farm, 87.12 323 P **P 20 28 09.3 -1.7**
baz=38
Q36A Arnold C. Orve 87.14 320 P **P 20 28 09.3 -1.7**
baz=40
J26A Sides Ranch, S 87.21 327 P **P 20 28 09.9 -1.5**
baz=35
OXF Oxford 87.24 313 eP P 20 28 10.8 -0.8
OXF pmax pmax
comp=Z,86nm,1.1s
OXF MLR MLR
comp=Z,3µm,20.0s
OXF Oxford 87.24 313 eP P 20 28 10.8 -0.8
comp=Z,86nm,1.1s
OXF Oxford 87.24 313 eP P 20 28 10.8 -0.8
comp=Z,86nm,1.1s
OXF LR LR
comp=Z,3µm,20.0s
R37A Teagarden Farm 87.32 319 P **P 20 28 09.3 -2.6**
baz=40
O33A Hebron 87.32 322 P **P 20 28 09.7 -2.2**
baz=38
BLMT Blacktail Moun 87.35 336 eP P 20 28 11.6 -0.6
BLMT Blacktail Moun 87.35 336 eP P 20 28 11.6 -0.6
S38A Stockton 87.36 318 P **P 20 28 10.6 -1.5**
baz=41,SNR=22
P34A Walnut Farm, R 87.37 321 P **P 20 28 10.7 -1.5**
baz=39,SNR=19
YBMT Yellow Bay 87.37 336 eP P 20 28 12.8 +0.7
YBMT Yellow Bay 87.37 336 eP P 20 28 12.8 +0.7
Y46A Houston 87.38 313 P **P 20 28 10.4 -1.8**
baz=43,SNR=21
N31A Bailey Ranch, 87.38 323 P **P 20 28 10.6 -1.7**
baz=38
Z47A Carrollton 87.42 312 P **P 20 28 10.2 -2.3**
baz=44
O32A Brockman Farm, 87.51 322 P **P 20 28 11.0 -1.8**
baz=38
Q35A Mercer Eighty, 87.51 320 P **P 20 28 10.8 -2.1**
baz=39,SNR=5.3
T39A Clever 87.54 317 P **P 20 28 11.4 -1.6**
baz=41
JTMT Jette 87.56 336 eP P 20 28 13.5 +0.4
JTMT Jette 87.56 336 eP P 20 28 13.5 +0.4
KSU1 Kansas State U 87.61 321 P **P 20 28 11.4 -1.9**
baz=39
KSU1 Kansas State U 87.61 321 eP P 20 28 13.3 0.0
comp=Z,77nm,1.4s
KSU1 Kansas State U 87.61 321 eP P 20 28 13.3 0.0
comp=Z,77nm,1.4s
KSU1 LR LR
comp=Z,4µm,20.0s
BSMT Bassoo Peak 87.62 337 eP P 20 28 14.0 +0.5
BSMT Bassoo Peak 87.62 337 eP P 20 28 14.0 +0.5
R36A Gordon, Harris 87.65 320 P **P 20 28 11.5 -2.1**
baz=40
X44A Crenshaw 87.66 314 P **P 20 28 12.2 -1.4**
baz=43
SWMT Swartz Lake 87.68 336 eP P 20 28 13.5 -0.1
SWMT Swartz Lake 87.68 336 eP P 20 28 13.5 -0.1
GCMT Greycliff 87.71 332 eP P 20 28 14.3 +0.5
GCMT Greycliff 87.71 332 eP P 20 28 14.3 +0.5
S37A Fort Scott 87.74 319 P **P 20 28 12.0 -1.9**
baz=40
U40A Yellville 87.77 317 P **P 20 28 12.5 -1.6**
baz=41,SNR=8.8
Y45A Yeager Farm, C 87.78 313 P **P 20 28 12.3 -1.9**
baz=43
P33A Williams Farm, 87.87 322 P **P 20 28 12.8 -1.8**
baz=38
Q34A Chapman 87.91 321 P **P 20 28 13.4 -1.4**
baz=39
147A Livingston 87.91 311 P **P 20 28 13.0 -1.9**
baz=44
Z46A Louisville 87.93 312 P **P 20 28 13.1 -1.8**
baz=43
NEW Newport 87.95 338 P **P 20 28 14.5 -0.3**
comp=Z,12nm,0.9s,baz=23,slow=3.1,SNR=10
NEW LR LR 21 10 04.3
comp=Z,5µm,18.3s,baz=29,slow=37
NEW Newport 87.95 338 P **P 20 28 14.3 -0.6**
baz=26,SNR=6.2
NEW Newport 87.95 338 eP P 20 28 14.8 0.0
comp=Z,18nm,0.9s
NEW Newport 87.95 338 eP P 20 28 14.8 0.0
comp=Z,18nm,0.9s
CHMT Chamberlain Mo 87.96 335 eP P 20 28 15.0 -0.1
CHMT Chamberlain Mo 87.96 335 eP P 20 28 15.0 -0.1
R35A Emporia Munici 88.00 320 P **P 20 28 12.9 -2.3**
baz=39
T38A Diamond 88.02 318 P **P 20 28 13.7 -1.6**
baz=40,SNR=14
248A Dixon Mills 88.02 311 P **P 20 28 13.7 -1.7**
baz=44
GTBY Guantanamo Bay 88.07 294 PFAKE 20 28 30.0 +14
GTBY LR LR
comp=Z,2µm,20.0s
U39A Green Forest 88.08 317 P **P 20 28 13.8 -1.8**
baz=41,SNR=17
O31A Woolen Ranch, 88.09 323 P **P 20 28 13.3 -2.3**
baz=37
Y44A Strider, Charl 88.09 314 P **P 20 28 13.9 -1.7**
baz=43
RLMT Red Lodge 88.14 332 P **P 20 28 15.7 -0.4**
baz=31,SNR=30
RLMT Red Lodge 88.14 332 eP P 20 28 15.6 -0.4
comp=Z,317nm,1.9s
RLMT Red Lodge 88.14 332 eP P 20 28 15.6 -0.4
comp=Z,317nm,1.9s
RLMT LR LR
comp=Z,4µm,19.0s
S36A Lake Cedric, C 88.16 319 P **P 20 28 13.7 -2.3**
baz=40
P32A Huiting Farm, 88.16 322 P **P 20 28 14.1 -1.8**
baz=38
V40A Witts Springs 88.17 316 P **P 20 28 14.1 -2.0**
baz=41
Z45A Winona 88.23 313 P **P 20 28 14.0 -2.4**
baz=43
MSO Missoula 88.26 336 P **P 20 28 15.1 -1.3**
baz=28
MSO Missoula 88.26 336 eP P 20 28 16.2 -0.2
comp=Z,66nm,1.8s
MSO Missoula 88.26 336 eP P 20 28 16.2 -0.2
comp=Z,66nm,1.8s
MSO LR LR
comp=Z,6µm,20.0s
WHAR Wooly Hollow 88.26 316 eP P 20 28 15.8 -0.7
comp=Z,202nm,1.8s
WHAR Wooly Hollow 88.26 316 eP P 20 28 15.8 -0.7
comp=Z,202nm,1.8s
BRAL Brewton 88.27 310 PFAKE 20 28 30.0 +13
BRAL LR LR
comp=Z,3µm,18.0s
T37A Cheneyville 18 88.27 318 P **P 20 28 14.7 -1.7**
baz=40,SNR=17
Q33A Connelly Farm, 88.28 321 P **P 20 28 14.5 -2.1**
baz=38,SNR=11
X201 Greenbrier Sit 88.30 316 eP P 20 28 16.0 -0.7
comp=Z,178nm,1.8s
X201 Greenbrier Sit 88.30 316 eP P 20 28 16.0 -0.7
comp=Z,178nm,1.8s
W41B Gary Mavity, V 88.33 316 P **P 20 28 15.1 -1.6**
baz=42,SNR=15
X301 Grenbrier Sit 88.36 316 eP P 20 28 16.4 -0.5
comp=Z,113nm,1.6s
X301 Greenbrier Sit 88.36 316 eP P 20 28 16.4 -0.5
comp=Z,113nm,1.6s
UGM Wanagama 88.36 101 PFAKE 20 28 30.0 +13
UGM LR LR
comp=Z,1µm,20.0s
146A Union 88.40 312 P **P 20 28 15.3 -1.8**
baz=43
HHAR Hobbs 88.40 317 eP P 20 28 16.3 -0.8
comp=Z,84nm,1.5s
HHAR Hobbs 88.40 317 eP P 20 28 16.3 -0.8
comp=Z,84nm,1.5s
PAGZ Pagadian 88.44 81 eP P 20 28 17.6 0.0
U38A Gravette 88.52 318 P **P 20 28 15.6 -2.1**
baz=40
BOZ Bozeman (W) 88.53 334 P **P 20 28 17.5 -0.3**
baz=29,SNR=25
BOZ Bozeman (W) 88.53 334 eP P 20 28 18.1 +0.4
BOZ pmax pmax
comp=Z,180nm,2.0s
BOZ MLR MLR
comp=Z,6µm,19.0s
BOZ Bozeman (W) 88.53 334 eP P 20 28 18.1 +0.4
comp=Z,180nm,2.0s
BOZ Bozeman (W) 88.53 334 eP P 20 28 18.1 +0.4
comp=Z,180nm,2.0s
BOZ LR LR
comp=Z,6µm,19.0s
Y43A Makayla and Ka 88.53 314 P **P 20 28 15.8 -1.9**
baz=42
R34A Isabella, Hill 88.54 321 P **P 20 28 16.3 -1.4**
baz=39,SNR=24
S35A Otter Creek Ra 88.56 320 P **P 20 28 15.8 -2.1**
baz=39
247A Quitman 88.56 311 P **P 20 28 17.3 -0.7**
baz=43
V39A Pettigrew 88.58 317 P **P 20 28 16.1 -1.9**
baz=41
348A Jackson 88.61 310 P **P 20 28 17.3 -0.9**
baz=44
Q32A Meitler Ranch, 88.64 322 P **P 20 28 16.0 -2.3**
baz=38
LRM Limekiln Ridge 88.66 334 eP P 20 28 19.0 +0.5
LRM Limekiln Ridge 88.66 334 eP P 20 28 19.0 +0.5
UALR University of 88.67 315 eP P 20 28 18.8 +0.4
comp=Z,77nm,1.4s
UALR University of 88.67 315 eP P 20 28 18.8 +0.4
comp=Z,77nm,1.4s
OGNE Ogallala 88.69 325 P **P 20 28 16.4 -2.1**
baz=36
OGNE Ogallala 88.69 325 eP P 20 28 19.3 +0.8
comp=Z,205nm,1.8s
OGNE Ogallala 88.69 325 eP P 20 28 19.3 +0.8
comp=Z,205nm,1.8s
OGNE LR LR
comp=Z,4µm,19.0s
C09A Chrisman Ranch 88.70 339 eP P 20 28 18.6 +0.3
comp=Z,24nm,0.9s
C09A Chrisman Ranch 88.70 339 eP P 20 28 18.6 +0.3
comp=Z,24nm,0.9s
C09A LR LR
comp=Z,4µm,18.0s
Z44A Pea Ridge, Bel 88.72 313 P **P 20 28 16.9 -1.8**
baz=42
W40A Ferguson Farm, 88.76 316 P **P 20 28 17.2 -1.6**
baz=41
T36A Boggs Farm, Ca 88.81 319 P **P 20 28 17.1 -1.9**
baz=40
246A Jackson Lee, B 88.89 312 P **P 20 28 18.2 -1.2**
baz=43
R33A Olander Ranch, 88.90 321 P **P 20 28 17.6 -1.9**
baz=38
U37A Salina 88.92 318 P **P 20 28 17.7 -1.9**
baz=40
145A Houston Renfro 88.92 312 P **P 20 28 17.9 -1.7**
baz=43
448A Bay Minette 88.93 310 P **P 20 28 18.6 -1.1**
baz=44
S34A Willow Spring 88.94 320 P **P 20 28 17.8 -1.9**
baz=39
V38A Canehill 88.97 317 P **P 20 28 17.4 -2.4**
baz=40
X41A Kaden, Bauxite 88.98 315 P **P 20 28 18.1 -1.8**
baz=41
347A Saraland 88.99 311 P **P 20 28 19.0 -0.9**
baz=43
A04D Lummi Island 89.02 342 P **P 20 28 18.5 -1.2**
baz=22
LKWY Lake 89.03 332 eP P 20 28 21.7 +1.4
LKWY pmax pmax
comp=Z,38nm,0.2s
LKWY MLR MLR
comp=Z,7µm,20.0s
LKWY Lake 89.03 332 eP P 20 28 21.7 +1.4
comp=Z,38nm,0.2s
LKWY Lake 89.03 332 eP P 20 28 21.7 +1.4
comp=Z,38nm,0.2s
LKWY LR LR
comp=Z,7µm,20.0s
Y42A Garnett, Star 89.07 314 P **P 20 28 18.9 -1.4**
baz=42
DLMT Dillon 89.11 334 eP P 20 28 20.4 -0.1
comp=Z,65nm,1.4s
DLMT Dillon 89.11 334 eP P 20 28 20.4 -0.1
comp=Z,65nm,1.4s
DLMT LR LR
comp=Z,4µm,19.0s
W39A Magazine 89.14 317 P **P 20 28 18.5 -2.1**
baz=41
YMR Madison River 89.14 333 eP P 20 28 21.5 +0.8
comp=Z,146nm,1.6s
YMR Madison River 89.14 333 eP P 20 28 21.5 +0.8
comp=Z,146nm,1.6s
X40A Basin Creek Fa 89.16 315 P **P 20 28 18.8 -1.9**
baz=41
R32A Long Quarter, 89.16 322 P **P 20 28 18.2 -2.5**
baz=38
QLMT Earthquake Lak 89.17 333 eP P 20 28 22.4 +1.6
QLMT Earthquake Lak 89.17 333 eP P 20 28 22.4 +1.6
K22A Casper 89.18 329 P **P 20 28 18.5 -2.4**
baz=33
K22A Casper 89.18 329 eP P 20 28 20.8 -0.1
comp=Z,117nm,1.7s
K22A Casper 89.18 329 eP P 20 28 20.8 -0.1
comp=Z,117nm,1.7s
K22A LR LR
comp=Z,5µm,19.0s
144A Alexander Plac 89.19 313 P **P 20 28 19.3 -1.6**
baz=42
Z43A Armstrong Fami 89.23 314 P **P 20 28 18.9 -2.1**
baz=42
H17A Grant Village 89.24 332 P **P 20 28 21.9 +0.6**
baz=30,SNR=17
H17A Grant Village 89.24 332 eP P 20 28 23.0 +1.8
comp=Z,302nm,1.9s
H17A Grant Village 89.24 332 eP P 20 28 23.0 +1.8
comp=Z,302nm,1.9s
H17A LR LR
comp=Z,6µm,18.0s
T35A Sooner Cattle 89.25 319 P **P 20 28 19.8 -1.3**
baz=39,SNR=7.4
U36A Oologah 89.25 319 P **P 20 28 18.9 -2.2**
baz=40
PGC Sidney 89.27 342 eP P 20 28 23.2 +2.3
comp=Z,39nm,1.4s
PGC Sidney 89.27 342 eP P 20 28 23.2 +2.3
comp=Z,39nm,1.4s
PGC LR LR
comp=Z,5µm,18.0s
CBIJ Chichi jima 89.28 55 PFAKE 20 28 30.0 +8.6
CBIJ LR LR
comp=Z,3µm,19.0s
B05A Bryant 89.29 341 P **P 20 28 19.3 -1.8**
baz=22
C06D Leavenworth 89.30 340 P **P 20 28 19.3 -1.9**
baz=23
245A Little AP, Sta 89.32 312 P **P 20 28 20.3 -1.2**
baz=43
V37A Hulbert 89.33 318 P **P 20 28 19.4 -2.1**
baz=40
CBKS Cedar Bluff 89.34 322 P **P 20 28 19.7 -1.8**
baz=37
CBKS Cedar Bluff 89.34 322 eP P 20 28 20.4 -1.1
CBKS pmax pmax
comp=Z,164nm,1.4s
CBKS MLR MLR
comp=Z,6µm,21.0s
CBKS Cedar Bluff 89.34 322 eP P 20 28 20.4 -1.1
comp=Z,164nm,1.4s
CBKS Cedar Bluff 89.34 322 eP P 20 28 20.4 -1.1
comp=Z,164nm,1.4s
CBKS LR LR
comp=Z,6µm,21.0s
S33A Kaszmaul Farm, 89.46 321 P **P 20 28 20.2 -2.0**
baz=38
Y41A Eaglette Beard 89.49 315 P **P 20 28 20.2 -2.1**
baz=41
447A Lucedale 89.50 310 P **P 20 28 22.3 0.0**
baz=43
T34A McClaskey Farm 89.50 320 P **P 20 28 21.0 -1.4**
baz=39,SNR=17
MIAR Mount Ida 89.52 316 P **P 20 28 21.6 -0.8**
baz=41,SNR=29
MIAR Mount Ida 89.52 316 eP P 20 28 22.0 -0.4
MIAR pmax pmax
comp=Z,210nm,1.8s
MIAR MLR MLR
comp=Z,4µm,19.0s
MIAR Mount Ida 89.52 316 eP P 20 28 22.0 -0.4
comp=Z,210nm,1.8s
MIAR Mount Ida 89.52 316 eP P 20 28 22.0 -0.4
comp=Z,210nm,1.8s
MIAR LR LR
comp=Z,4µm,19.0s
346A Big Creek Wild 89.54 311 P **P 20 28 20.9 -1.7**
baz=43
VBMS Vicksburg 89.55 313 P **P 20 28 21.2 -1.3**
baz=42
VBMS Vicksburg 89.55 313 PFAKE 20 28 30.0 +7.5
VBMS LR LR
comp=Z,4µm,19.0s
FLWY Flagg Ranch 89.55 332 eP P 20 28 23.7 +1.0
comp=Z,276nm,1.8s
FLWY Flagg Ranch 89.55 332 eP P 20 28 23.7 +1.0
comp=Z,276nm,1.8s
FLWY LR LR
comp=Z,3µm,19.0s
Z42A Norrel Spur, H 89.57 314 P **P 20 28 21.3 -1.3**
baz=42
W38A Poteau 89.62 317 P **P 20 28 21.6 -1.2**
baz=40
TUL1 Leonard 89.65 318 P **P 20 28 21.3 -1.7**
baz=40
TUL1 Leonard 89.65 318 eP P 20 28 21.8 -1.2
comp=Z,90nm,1.3s
TUL1 Leonard 89.65 318 eP P 20 28 21.8 -1.2
comp=Z,90nm,1.3s
TUL1 LR LR
comp=Z,5µm,20.0s
MCMT McKenzie Canyo 89.66 334 eP P 20 28 23.8 +0.6
MCMT McKenzie Canyo 89.66 334 eP P 20 28 23.8 +0.6
143A Socs Landing, 89.69 313 P **P 20 28 22.0 -1.2**
baz=42
PTGA Pitinga 89.71 269 P **P 20 28 23.3 -0.2**
comp=Z,9.2nm,1.0s,baz=67,slow=5.4,SNR=11
PTGA Pitinga 89.71 269 eP P 20 28 23.6 +0.1
comp=Z,100nm,1.8s
PTGA Pitinga 89.71 269 eP P 20 28 23.6 +0.1
comp=Z,100nm,1.8s
PTGA LR LR
comp=Z,1µm,19.0s
Y40A Okolona 89.76 315 P **P 20 28 22.4 -1.1**
baz=41
244A Avery, Jackson 89.77 312 P **P 20 28 22.7 -0.9**
baz=42
U35A Pawnee 89.78 319 P **P 20 28 22.1 -1.5**
baz=39
IMW Indian Meadow 89.80 332 eP P 20 28 25.1 +1.2
comp=Z,108nm,1.7s
IMW Indian Meadow 89.80 332 eP P 20 28 25.1 +1.2

comp=Z,108nm,1.7s
IMW LR LR
comp=Z,3µm,20.0s
V36A Jenks 89.83 318 P **P** 20 28 22.0 -1.8
baz=39
X39A Fountain Ranch 89.83 316 P **P** 20 28 23.1 -0.8
baz=40,SNR=14
S32A Newby Ranch, P 89.84 321 P **P** 20 28 22.1 -1.8
baz=38
MOOW Moose Ponds 89.86 332 *eP* **P** 20 28 24.5 +0.3
comp=Z,115nm,1.9s
MOOW Moose Ponds 89.86 332 *eP* **P** 20 28 24.4 +0.3
comp=Z,115nm,1.9s
MOOW LR LR
comp=Z,3µm,19.0s
PHWY Pilot Hill 89.87 328 *eP* **P** 20 28 23.4 -0.9
comp=Z,56nm,1.3s
PHWY Pilot Hill 89.87 328 *eP* **P** 20 28 23.4 -0.9
comp=Z,56nm,1.3s
PHWY LR LR
comp=Z,4µm,20.0s
446A Poplarville 89.92 311 P **P** 20 28 22.9 -1.4
baz=43
LOHW Long Hollow 89.93 332 *eP* **P** 20 28 25.0 +0.6
comp=Z,93nm,2.0s
LOHW Long Hollow 89.93 332 *eP* **P** 20 28 25.0 +0.6
comp=Z,93nm,2.0s
LOHW LR LR
comp=Z,3µm,19.0s
345A Thompson Farm, 89.93 312 P **P** 20 28 23.7 -0.7
baz=43
T33A Patterson Ranc 89.98 321 P **P** 20 28 22.9 -1.7
baz=38
F10A Beach Ranch, E 90.05 337 *eP* **P** 20 28 24.6 -0.2
comp=Z,120nm,1.9s
F10A Beach Ranch, E 90.05 337 *eP* **P** 20 28 24.6 -0.2
comp=Z,120nm,1.9s
W37B Quinton 90.06 318 P **P** 20 28 23.6 -1.4
baz=40
FXWY Fox Creek 90.06 332 *eP* **P** 20 28 25.5 +0.4
comp=Z,130nm,1.9s
FXWY Fox Creek 90.06 332 *eP* **P** 20 28 25.5 +0.4
comp=Z,130nm,1.9s
FXWY LR LR
comp=Z,3µm,20.0s
Z41A Richland Creek 90.06 315 P **P** 20 28 24.1 -0.8
baz=41
X38A Whitesboro 90.10 317 P **P** 20 28 24.0 -1.1
baz=40,SNR=43
SNOW Snow King Moun 90.11 332 *eP* **P** 20 28 26.3 +0.9
comp=Z,44nm,1.4s
SNOW Snow King Moun 90.11 332 *eP* **P** 20 28 26.3 +0.9
comp=Z,44nm,1.4s
SNOW LR LR
comp=Z,3µm,18.0s
142A Monroe 90.11 314 P **P** 20 28 23.8 -1.4
baz=42
U34A Anderson Ranch 90.14 320 P **P** 20 28 23.4 -1.8
baz=38
U34A Anderson Ranch 90.14 320 *eP* **P** 20 28 24.4 -0.9
comp=Z,80nm,1.4s
U34A Anderson Ranch 90.14 320 *eP* **P** 20 28 24.4 -0.9
comp=Z,80nm,1.4s
U34A LR LR
comp=Z,4µm,21.0s
TPAW Teton Pass 90.16 332 *eP* **P** 20 28 26.6 +1.0
comp=Z,98nm,1.7s
TPAW Teton Pass 90.16 332 *eP* **P** 20 28 26.6 +1.0
comp=Z,98nm,1.7s
344A Westbrook Farm 90.23 312 P **P** 20 28 25.2 -0.5
baz=42
REDW Red Top Meadow 90.23 332 *eP* **P** 20 28 26.4 +0.5
comp=Z,29nm,1.3s
REDW Red Top Meadow 90.23 332 *eP* **P** 20 28 26.4 +0.5
comp=Z,29nm,1.3s
REDW LR LR
comp=Z,3µm,18.0s
T32A Huddler Ranch, 90.24 321 P **P** 20 28 23.4 -2.4
baz=38
Y39A Lockesburg 90.26 316 P **P** 20 28 24.3 -1.6
baz=40
PD31 Pinedale Array 90.26 331 *eP* **P** 20 28 26.3 +0.3
PD31 Pinedale Array 90.26 331 *eP* **P** 20 28 26.3 +0.3
PDAR Pinedale Array 90.26 331 P **P** 20 28 25.2 -0.9
comp=Z,2.9nm,0.8s,baz=46,slow=4.3,SNR=15
PDAR LR LR 21 09 46.3
comp=Z,4µm,20.6s,baz=36,slow=36
BW06 Boulder Array 90.27 331 P **P** 20 28 24.4 -1.7
baz=31
BW06 Boulder Array 90.27 331 *eP* **P** 20 28 26.3 +0.2
comp=Z,79nm,1.8s
BW06 Boulder Array 90.27 331 *eP* **P** 20 28 26.3 +0.2
comp=Z,79nm,1.8s
BW06 LR LR
comp=Z,4µm,20.0s
V35A Meyer Ranch, C 90.31 319 P **P** 20 28 24.5 -1.6
baz=39
HAWA Hanford 90.34 339 PFAKE 20 28 40.0 +14
HAWA LR LR
comp=Z,3µm,19.0s
243A Waterproof 90.35 313 P **P** 20 28 24.9 -1.4
baz=42
Z40A Long Farm, Mag 90.39 315 P **P** 20 28 25.5 -0.9
baz=41
N23A Red Feather La 90.41 328 P **P** 20 28 25.1 -1.7
baz=33
N23A Red Feather La 90.41 328 *eP* **P** 20 28 27.5 +0.7
comp=Z,47nm,1.3s
N23A Red Feather La 90.41 328 *eP* **P** 20 28 27.6 +0.7
comp=Z,47nm,1.3s
N23A LR LR
comp=Z,5µm,20.0s
U33A Lingo Farm, Me 90.43 320 P **P** 20 28 24.1 -2.6
baz=38
X37A Clayton 90.44 317 P **P** 20 28 25.4 -1.3
baz=40,SNR=20
W36A Wetumka 90.47 318 P **P** 20 28 24.6 -2.2
baz=39
KSCO Kaye Shedlock' 90.52 324 P **P** 20 28 26.0 -1.2
baz=35
KSCO Kaye Shedlock' 90.52 324 *eP* **P** 20 28 26.5 -0.7
comp=Z,289nm,1.5s
KSCO Kaye Shedlock' 90.52 324 *eP* **P** 20 28 26.5 -0.7
comp=Z,289nm,1.5s
KSCO LR LR
comp=Z,4µm,20.0s
445A Amite 90.53 311 P **P** 20 28 26.1 -1.1
baz=42
NLWA Neilton Lookou 90.54 342 PFAKE 20 28 40.0 +13
NLWA LR LR
comp=Z,4µm,18.0s
242A Grayson 90.59 313 P **P** 20 28 26.1 -1.3
baz=42
V34A Guthrie 90.60 319 P **P** 20 28 25.1 -2.3
baz=38
V34A Guthrie 90.60 319 *eP* **P** 20 28 27.3 -0.1
comp=Z,61nm,1.4s
V34A Guthrie 90.60 319 *eP* **P** 20 28 27.3 -0.1
comp=Z,61nm,1.4s
V34A LR LR
comp=Z,4µm,18.0s
141A Papa Simpson, 90.61 314 P **P** 20 28 27.1 -0.4
baz=41
Y38A Idabel 90.61 316 P **P** 20 28 25.9 -1.6
baz=40
DAV Davao City (W) 90.61 80 LR LR 21 15 36.8
comp=Z,1µm,19.1s,baz=332,slow=40
DAV Davao City (W) 90.61 80 *eP* **P** 20 28 26.4 -1.4
LON Longmire 90.62 340 *eP* **P** 20 28 27.4 0.0
LON pmax pmax
comp=Z,10.0nm,1.1s
LON Longmire 90.62 340 *eP* **P** 20 28 27.4 0.0
comp=Z,9.5nm,1.1s
LON Longmire 90.62 340 *eP* **P** 20 28 27.4 0.0
comp=Z,9.5nm,1.1s
444A Pine Grove 90.78 312 P **P** 20 28 27.5 -0.9
baz=42
W35A Tecumseh 90.80 318 P **P** 20 28 27.0 -1.3
baz=39
Z39A Irene McRaven, 90.83 316 P **P** 20 28 27.7 -0.8
baz=40
AHID Auburn Hatcher 90.84 332 *eP* **P** 20 28 28.3 -0.4
comp=Z,23nm,1.1s
AHID Auburn Hatcher 90.84 332 *eP* **P** 20 28 28.3 -0.4
comp=Z,23nm,1.1s
AHID LR LR
comp=Z,3µm,21.0s
343A Vidalia 90.86 313 P **P** 20 28 28.3 -0.4
baz=42
MTDJ Mount Denham 90.91 294 *eP* **P** 20 28 28.3 -0.9
comp=Z,213nm,2.0s
MTDJ Mount Denham 90.91 294 *eP* **P** 20 28 28.3 -0.9
comp=Z,213nm,2.0s
MTDJ LR LR
comp=Z,2µm,19.0s
U32A Winter Ranch, 90.91 321 P **P** 20 28 27.6 -1.3
baz=38
140A Cam and Jess, 90.95 315 P **P** 20 28 28.1 -1.0
baz=41
X36A Centrahoma 90.97 318 P **P** 20 28 27.6 -1.6
baz=39
V33A Lossen Ranch, 90.99 320 P **P** 20 28 27.9 -1.4
baz=38
Y37A Hugo 91.04 317 P **P** 20 28 27.6 -1.9
baz=40
241A Mo Tay, Goldon 91.05 314 P **P** 20 28 28.9 -0.7
baz=41
646A Port Sulphur 91.07 310 P **P** 20 28 28.9 -0.8
baz=43
BMO Blue Mountains 91.08 337 *eP* **P** 20 28 29.2 -0.4
comp=Z,21nm,1.1s
BMO Blue Mountains 91.08 337 *eP* **P** 20 28 29.2 -0.4
comp=Z,21nm,1.1s
BMO LR LR
comp=Z,3µm,21.0s
545A Edgard 91.12 311 P **P** 20 28 30.9 +0.9
baz=42
ISCO Idaho Springs 91.18 327 P **P** 20 28 29.1 -1.4
baz=34
ISCO Idaho Springs 91.18 327 *eP* **P** 20 28 30.3 -0.2
ISCO pmax pmax
comp=Z,44nm,1.6s
ISCO MLR MLR
comp=Z,5µm,19.0s
ISCO Idaho Springs 91.18 327 *eP* **P** 20 28 30.3 -0.2
comp=Z,44nm,1.6s
ISCO Idaho Springs 91.18 327 *eP* **P** 20 28 30.3 -0.2
comp=Z,44nm,1.6s
ISCO LR LR
comp=Z,5µm,19.0s
W34A Bridge Creek, 91.19 319 P **P** 20 28 29.4 -0.8
baz=38
W34A Bridge Creek, 91.19 319 PFAKE 20 28 40.0 +10
W34A LR LR
comp=Z,3µm,20.0s
342A Flagon Creek P 91.20 313 P **P** 20 28 29.9 -0.3
baz=41
MATI Mati 91.21 80 *eP* **P** 20 28 30.8 +0.3
Z38A Mt. Pleasant 91.26 316 P **P** 20 28 29.4 -1.1
baz=40
HLID Hailey 91.31 334 P **P** 20 28 30.4 -0.4
baz=28
HLID Hailey 91.31 334 *eP* **P** 20 28 31.0 +0.2
comp=Z,11nm,1.4s
HLID Hailey 91.31 334 *eP* **P** 20 28 31.0 +0.2
comp=Z,11nm,1.4s
HLID LR LR
comp=Z,5µm,18.0s
139A Bunkhouse Ranc 91.37 315 P **P** 20 28 30.6 -0.5
baz=40
X35A Drake 91.43 318 P **P** 20 28 29.6 -1.7
baz=39,SNR=5.2
V32A Arapaho 91.45 320 P **P** 20 28 29.8 -1.7
baz=38
Y36A Durant 91.46 317 P **P** 20 28 30.2 -1.3
baz=39
544A White Castle 91.47 312 P **P** 20 28 31.3 -0.2
baz=42
JAGI Jajag, Banyuwa 91.49 100 PFAKE 20 28 40.0 +8.2
JAGI LR LR
comp=Z,2µm,22.0s
240A Hunter Patters 91.51 314 P **P** 20 28 30.9 -0.8
baz=41
F04D Rainier, OR 91.55 341 P **P** 20 28 30.8 -0.8
baz=21
W33A Caddo, Fort Co 91.61 319 P **P** 20 28 30.7 -1.4
baz=38
645A Chauvin 91.62 311 P **P** 20 28 30.9 -1.3
baz=42
Z37A Pogue Cattle C 91.64 316 P **P** 20 28 31.1 -1.2
baz=40
Q24A Divide 91.68 326 P **P** 20 28 31.4 -1.4
baz=34
Q24A Divide 91.68 326 *eP* **P** 20 28 32.0 -0.8
comp=Z,55nm,1.6s
Q24A Divide 91.68 326 *eP* **P** 20 28 32.0 -0.8
comp=Z,55nm,1.6s
Q24A LR LR
comp=Z,4µm,22.0s
341A Kurthwood 91.71 314 P **P** 20 28 32.5 -0.1
baz=41
X34A Smith Ranch, M 91.72 319 P **P** 20 28 31.2 -1.4
baz=38
442A Mamou 91.75 313 P **P** 20 28 32.9 0.0
baz=41
138A Matatall Enter 91.77 316 P **P** 20 28 32.8 0.0
baz=40
Y35A Marietta 91.85 318 P **P** 20 28 31.7 -1.5
baz=39
G05D Wamic, OR 91.89 340 P **P** 20 28 33.6 +0.3
baz=22
SDV Santo Domingo 91.90 283 P **P** 20 28 32.3 -1.7
comp=Z,31nm,0.8s,baz=44,slow=4.1,SNR=18
SDV Santo Domingo 91.90 283 *eP* **P** 20 28 32.8 -1.2
comp=Z,41nm,0.8s
SDV Santo Domingo 91.90 283 *eP* **P** 20 28 32.8 -1.2
comp=Z,41nm,0.8s
SDV LR LR
comp=Z,1µm,21.0s
MFID Camas Ranch 91.91 335 *eP* **P** 20 28 33.5 0.0
comp=Z,77nm,1.8s
MFID Camas Ranch 91.91 335 *eP* **P** 20 28 33.5 0.0
comp=Z,77nm,1.8s
MFID LR LR
comp=Z,5µm,19.0s
239A Gary 91.92 315 P **P** 20 28 33.1 -0.5
baz=40
O20A White River Ci 91.99 329 P **P** 20 28 32.7 -1.5
baz=32
O20A White River Ci 91.99 329 *eP* **P** 20 28 32.6 -1.5
comp=Z,42nm,1.5s
O20A White River Ci 91.99 329 *eP* **P** 20 28 32.6 -1.5
comp=Z,42nm,1.5s
O20A LR LR
comp=Z,5µm,20.0s
HWUT Hardware Ranch 92.02 332 *eP* **P** 20 28 33.4 -0.7
comp=Z,170nm,1.9s
HWUT Hardware Ranch 92.02 332 *eP* **P** 20 28 33.4 -0.7
comp=Z,170nm,1.9s
HWUT LR LR
comp=Z,6µm,20.0s
Z36A Blue Ridge 92.02 317 P **P** 20 28 32.9 -1.2
baz=39
W32A Sentinel 92.02 320 P **P** 20 28 32.7 -1.4
baz=38
340A Bromson 92.05 314 P **P** 20 28 33.0 -1.3
baz=41
WMOK Wichita Mounta 92.09 319 P **P** 20 28 32.4 -2.0
baz=38
WMOK Wichita Mounta 92.09 319 *eP* **P** 20 28 34.5 +0.1
WMOK pmax pmax
comp=Z,50nm,1.3s
WMOK MLR MLR
comp=Z,3µm,19.0s
WMOK Wichita Mounta 92.09 319 *eP* **P** 20 28 34.5 +0.1
comp=Z,50nm,1.3s
WMOK Wichita Mounta 92.09 319 *eP* **P** 20 28 34.5 +0.1
comp=Z,50nm,1.3s
WMOK LR LR
comp=Z,3µm,19.0s
X33A Lawton 92.11 319 P **P** 20 28 33.4 -1.0
baz=38
441A DeRidder 92.16 313 P **P** 20 28 33.9 -0.8
baz=41
137A Heron Place, G 92.18 316 P **P** 20 28 34.0 -0.8
baz=40
Y34A Reagan Ranch, 92.18 318 P **P** 20 28 32.9 -1.9
baz=38
NATX Nacogdoches 92.22 315 P **P** 20 28 33.8 -1.1
baz=40
NATX Nacogdoches 92.22 315 *eP* **P** 20 28 35.2 +0.2
comp=Z,162nm,1.3s
NATX Nacogdoches 92.22 315 *eP* **P** 20 28 35.2 +0.2
comp=Z,162nm,1.3s
NATX LR LR
comp=Z,4µm,19.0s
542A Morse 92.26 312 P **P** 20 28 33.6 -1.6
baz=41
SMCO Snowmass 92.28 327 *eP* **P** 20 28 35.8 +0.1
comp=Z,43nm,1.9s
SMCO Snowmass 92.28 327 *eP* **P** 20 28 35.8 +0.1
comp=Z,43nm,1.9s
SMCO LR LR
comp=Z,6µm,20.0s
238A Jacksonville 92.28 315 P **P** 20 28 34.4 -0.9
baz=40
HVU Hansel Valley 92.31 332 *eP* **P** 20 28 36.6 +1.1
HVU pmax pmax
comp=Z,90nm,1.6s
HVU Hansel Valley 92.31 332 *eP* **P** 20 28 36.6 +1.1
comp=Z,90nm,1.6s
HVU Hansel Valley 92.31 332 *eP* **P** 20 28 36.6 +1.1
comp=Z,90nm,1.6s
TCUT Toone Canyon 92.38 331 *eP* **P** 20 28 36.4 +0.5
comp=Z,67nm,1.4s
TCUT Toone Canyon 92.38 331 *eP* **P** 20 28 36.4 +0.5
comp=Z,67nm,1.4s
Z35A Perchaven, San 92.41 318 P **P** 20 28 34.4 -1.4
baz=39
G03D McMinnville, O 92.43 341 P **P** 20 28 34.7 -1.0
baz=21
339A Huntington 92.48 315 P **P** 20 28 35.6 -0.6
baz=40
Y33A Hilltop Ranch, 92.59 319 P **P** 20 28 35.4 -1.3
baz=38
440A Kirbyville 92.60 314 P **P** 20 28 35.7 -1.0
baz=41
X32A Elmer 92.60 320 P **P** 20 28 35.3 -1.4
baz=38
237A Washetta, Mont 92.66 316 P **P** 20 28 36.1 -0.9
baz=40
541A Lake Charles 92.67 313 P **P** 20 28 35.8 -1.3
baz=41
136A Ennis 92.69 317 P **P** 20 28 36.1 -1.0
baz=39
Z34A Collier Ranch, 92.72 318 P **P** 20 28 35.8 -1.5
baz=38
I05D Terrebonne, OR 92.73 339 P **P** 20 28 36.5 -0.7
baz=22
SDCO Great Sand Dun 92.84 326 P **P** 20 28 35.5 -2.7
baz=34
SDCO Great Sand Dun 92.84 326 PFAKE 20 28 50.0 +12
SDCO LR LR
comp=Z,4µm,21.0s
JLU Jordanelle 92.85 331 *eP* **P** 20 28 37.6 -0.5
comp=Z,81nm,1.6s
JLU Jordanelle 92.85 331 *eP* **P** 20 28 37.6 -0.5
comp=Z,81nm,1.6s
T25A Trinidad 92.86 325 P **P** 20 28 36.8 -1.4
baz=34
T25A Trinidad 92.86 325 *eP* **P** 20 28 37.5 -0.7
comp=Z,73nm,1.5s
T25A Trinidad 92.86 325 *eP* **P** 20 28 37.5 -0.7
comp=Z,73nm,1.5s
T25A LR LR
comp=Z,3µm,20.0s
338A Crockett 92.88 315 P **P** 20 28 37.6 -0.5
baz=40
439A Center Grove, 93.01 314 P **P** 20 28 38.4 -0.3
baz=40
540A Vidor 93.01 313 P **P** 20 28 37.7 -1.0
baz=41
COR Corvallis 93.02 341 PFAKE 20 28 50.0 +12
COR LR LR
comp=Z,4µm,20.0s
236A Katherine and 93.05 316 P **P** 20 28 37.2 -1.6
baz=39
135A Vickery Place, 93.09 317 P **P** 20 28 37.5 -1.5
baz=39
BGU Big Grassy Mou 93.15 332 *eP* **P** 20 28 40.7 +1.3
comp=Z,131nm,1.9s
BGU Big Grassy Mou 93.15 332 *eP* **P** 20 28 40.7 +1.3
comp=Z,131nm,1.9s
P18A Preston Nutter 93.22 330 *eP* **P** 20 28 39.6 -0.3
comp=Z,34nm,1.4s
P18A Preston Nutter 93.22 330 *eP* **P** 20 28 39.6 -0.3
comp=Z,34nm,1.4s
Z33A Whitaker Ranch 93.23 319 P **P** 20 28 37.2 -2.5
baz=38
337A Centerville 93.23 315 P **P** 20 28 38.5 -1.1
baz=40
AMTX Amarillo 93.42 321 P **P** 20 28 38.7 -1.9
baz=36
AMTX Amarillo 93.42 321 PFAKE 20 28 50.0 +9.4
AMTX LR LR
comp=Z,3µm,22.0s
S22A 4UR Ranch, Cre 93.42 326 P **P** 20 28 39.6 -1.2
baz=33
S22A 4UR Ranch, Cre 93.42 326 *eP* **P** 20 28 40.0 -0.8
comp=Z,56nm,1.9s
S22A 4UR Ranch, Cre 93.42 326 *eP* **P** 20 28 40.0 -0.8
comp=Z,56nm,1.9s
S22A LR LR
comp=Z,5µm,19.0s
134A White-Moore Ra 93.43 318 P **P** 20 28 39.3 -1.3
baz=38
438A Sam Houston St 93.44 315 P **P** 20 28 38.6 -2.0
baz=40
539A Cross D Ranch, 93.51 314 P **P** 20 28 40.2 -0.7
baz=40
I04A Tendick Farm, 93.52 340 P **P** 20 28 39.9 -0.9
baz=22
LUWI Luwuk 93.53 88 PFAKE 20 28 50.0 +8.7
LUWI LR LR
comp=Z,1µm,22.0s
WHTX Lake Whitney, 93.56 317 P **P** 20 28 39.5 -1.7
baz=39
WHTX Lake Whitney, 93.56 317 PFAKE 20 28 50.0 +8.8
WHTX LR LR
comp=Z,4µm,18.0s
NLU North Lily Min 93.64 331 *eP* **P** 20 28 42.3 +0.6
comp=Z,56nm,1.9s
NLU North Lily Min 93.64 331 *eP* **P** 20 28 42.3 +0.6
comp=Z,56nm,1.9s
NLU *ePP* **PP** 20 32 31.7 +6.1
KAPI Kappang 93.66 93 LR LR 21 16 18.8
comp=Z,1µm,19.5s,baz=326,slow=39
KAPI Kappang 93.66 93 PFAKE 20 28 50.0 +8.2
KAPI LR LR
comp=Z,1µm,20.0s
J05D Fort Rock, OR 93.67 339 P **P** 20 28 41.1 -0.6
baz=23
WVOR Wild Horse Val 93.68 337 *eP* **P** 20 28 41.9 +0.2
WVOR pmax pmax
comp=Z,20nm,1.1s
WVOR MLR MLR
comp=Z,3µm,19.0s
WVOR Wild Horse Val 93.68 337 *eP* **P** 20 28 41.9 +0.2
comp=Z,20nm,1.1s
WVOR Wild Horse Val 93.68 337 *eP* **P** 20 28 41.9 +0.2
comp=Z,20nm,1.1s
WVOR LR LR
comp=Z,3µm,19.0s
336A Riesel 93.70 316 P **P** 20 28 39.9 -1.9
baz=39
DUG Dugway, Tooele 93.71 332 P **P** 20 28 40.5 -1.4
baz=29
DUG Dugway, Tooele 93.71 332 *eP* **P** 20 28 41.6 -0.4
DUG pmax pmax
comp=Z,20nm,1.0s
DUG MLR MLR
comp=Z,5µm,20.0s
DUG Dugway, Tooele 93.71 332 *eP* **P** 20 28 41.5 -0.4
comp=Z,20nm,1.0s
DUG Dugway, Tooele 93.71 332 *eP* **P** 20 28 41.5 -0.4
comp=Z,20nm,1.0s
DUG LR LR
comp=Z,5µm,20.0s
437A Phantom Ranch, 93.74 315 P **P** 20 28 39.6 -2.4
baz=39
PV04 Paradox Valley 93.74 328 *eP* **P** 20 28 42.0 -0.1
PV04 Paradox Valley 93.74 328 *eP* **P** 20 28 42.0 -0.1
PV09 Paradox Valley 93.75 328 *eP* **P** 20 28 42.0 -0.3
PV09 Paradox Valley 93.75 328 *eP* **P** 20 28 42.0 -0.3
SRU San Rafael Swe 93.78 330 *eP* **P** 20 28 41.2 -1.1
SRU pmax pmax
comp=Z,38nm,1.5s
SRU San Rafael Swe 93.78 330 *eP* **P** 20 28 41.2 -1.1
comp=Z,38nm,1.5s
SRU San Rafael Swe 93.78 330 *eP* **P** 20 28 41.2 -1.1
comp=Z,38nm,1.5s
PV10 Paradox Valley 93.81 328 *eP* **P** 20 28 43.4 +0.8
PV10 Paradox Valley 93.81 328 *eP* **P** 20 28 43.4 +0.8

PV01	Paradox Valley	93.83 328	eP	P	20 28 43.3	+0.7
PV01	Paradox Valley	93.83 328	eP	P	20 28 43.3	+0.7
133A	Hamilton Ranch	93.84 318	P	P	20 28 40.8	-1.7
	baz=38					
538A	Harpers Horsep	93.85 314	P	P	20 28 41.3	-1.2
	baz=40					
I03D	Drain, OR	93.86 340	P	P	20 28 41.7	-0.7
	baz=21					
TMUT	Trail Mountain	93.89 330	eP	P	20 28 43.4	+0.4
	comp=Z,37nm,1.5s					
TMUT	Trail Mountain	93.89 330	eP	P	20 28 43.4	+0.4
	comp=Z,37nm,1.5s					
234A	Clairette	93.91 317	P	P	20 28 40.9	-1.9
	baz=38					
K05A	Summer Lake	94.09 338	eP	P	20 28 45.4	+1.7
	comp=Z,213nm,2.0s					
K05A	Summer Lake	94.09 338	eP	P	20 28 45.4	+1.7
	comp=Z,213nm,2.0s					
K05A			ePP	PP	20 32 36.0	+7.0
335A	Moody	94.09 316	P	P	20 28 41.8	-1.9
	baz=39					
ELK	Elko	94.09 334	LR	LR	21 13 42.7	
	comp=Z,4μm,18.7s,baz=136,slow=37					
ELK	Elko	94.09 334	eP	P	20 28 45.4	+1.6
ELK			pmax	pmax		
	comp=Z,40nm,1.6s					
ELK	Elko	94.09 334	eP	P	20 28 45.4	+1.6
	comp=Z,40nm,1.6s					
ELK	Elko	94.09 334	eP	P	20 28 45.4	+1.6
	comp=Z,40nm,1.6s					
PV05	Paradox Valley	94.09 328	eP	P	20 28 43.8	-0.1
PV05	Paradox Valley	94.09 328	eP	P	20 28 43.8	-0.1
436A	Wall Ranch, Ga	94.15 316	P	P	20 28 42.5	-1.4
	baz=39					
Q16A	Castle Valley	94.20 330	eP	P	20 28 44.2	-0.1
	comp=Z,46nm,1.7s					
Q16A	Castle Valley	94.20 330	eP	P	20 28 44.2	-0.1
	comp=Z,46nm,1.7s					
ABTX	Abilene, Hawle	94.20 319	P	P	20 28 41.9	-2.3
	baz=37					
ABTX	Abilene, Hawle	94.20 319	eP	P	20 28 43.0	-1.2
	comp=Z,77nm,1.6s					
ABTX	Abilene, Hawle	94.20 319	eP	P	20 28 43.0	-1.2
	comp=Z,77nm,1.6s					
ABTX			LR	LR		
	comp=Z,3μm,21.0s					
HKT	Hockley	94.25 314	eP	P	20 28 46.7	+2.4
HKT			pmax	pmax		
	comp=Z,44nm,1.6s					
HKT			MLR	MLR		
	comp=Z,3μm,20.0s					
HKT	Hockley	94.25 314	eP	P	20 28 46.7	+2.4
	comp=Z,44nm,1.6s					
HKT	Hockley	94.25 314	eP	P	20 28 46.7	+2.4
	comp=Z,44nm,1.6s					
HKT			LR	LR		
	comp=Z,3μm,20.0s					
233A	Rising Star	94.30 318	P	P	20 28 42.4	-2.3
	baz=38					
537A	Green Hill Far	94.42 315	P	P	20 28 44.0	-1.1
	baz=39					
K04D	Chiloquin, OR	94.43 339	P	P	20 28 43.8	-1.3
	baz=22					
638A	Rosharon	94.44 314	P	P	20 28 45.1	-0.1
	baz=40					
334A	Lometa	94.48 317	P	P	20 28 43.9	-1.5
	baz=38					
435B	Jarrell	94.56 316	P	P	20 28 44.4	-1.4
	baz=39					
MVCO	Mesa Verde	94.58 327	P	P	20 28 44.6	-1.5
	baz=32					
MVCO	Mesa Verde	94.58 327	PFAKE		20 29 00.0	+14
MVCO			LR	LR		
	comp=Z,6μm,19.0s					
MOD	Modoc Plateau	94.67 338	eP	P	20 28 47.5	+1.2
	comp=Z,29nm,1.1s					
MOD	Modoc Plateau	94.67 338	eP	P	20 28 47.5	+1.2
	comp=Z,29nm,1.1s					
MOD			LR	LR		
	comp=Z,4μm,19.0s					
MSTX	Muleshoe	94.68 322	P	P	20 28 44.5	-1.9
	baz=35					
MSTX	Muleshoe	94.68 322	PFAKE		20 29 00.0	+14
MSTX			LR	LR		
	comp=Z,5μm,20.0s					
HUMO	Hull Mountain	94.77 340	eP	P	20 28 47.1	+0.5
	comp=Z,45nm,1.8s					
HUMO	Hull Mountain	94.77 340	eP	P	20 28 47.1	+0.5
	comp=Z,45nm,1.8s					
HUMO			LR	LR		
	comp=Z,4μm,20.0s					
SPB	Sao Paulo	94.79 244	PFAKE		20 29 00.0	+13
SPB			LR	LR		
	comp=Z,3μm,18.0s					
536A	Bastrop	94.83 315	P	P	20 28 44.7	-2.3
	baz=39					
333A	Richland Sprin	94.89 317	P	P	20 28 45.5	-1.8
	baz=38					
434A	Burnet	94.91 317	P	P	20 28 45.3	-2.2
	baz=38					
637A	Eagle Lake	94.92 314	P	P	20 28 47.1	-0.3
	baz=39					
BMN	Battle Mountai	95.04 335	PFAKE		20 29 00.0	+12
BMN			LR	LR		
	comp=Z,5μm,20.0s					
535A	Dale	95.14 316	P	P	20 28 46.6	-1.8
	baz=39					
M04C	Macdoel	95.23 339	P	P	20 28 46.6	-2.3
	baz=22					
636A	Smothers Creek	95.28 315	P	P	20 28 47.6	-1.6
	baz=39					
MTPU	Mount Pierson	95.35 330	eP	P	20 28 49.8	0.0
	comp=Z,34nm,1.4s					
MTPU	Mount Pierson	95.35 330	eP	P	20 28 49.8	0.0
	comp=Z,34nm,1.4s					
L02D	Cave Junction,	95.37 340	P	P	20 28 47.3	-2.0
	baz=21					
433A	Art	95.39 317	P	P	20 28 46.6	-3.0
	baz=38					
737A	Port Lavaca	95.50 314	P	P	20 28 46.4	-3.7
	baz=39					
YBH	Yreka Blue Hor	95.52 339	LR	LR	21 14 39.5	
	comp=Z,3μm,18.2s,baz=18,slow=37					
YBH	Yreka Blue Hor	95.52 339	PFAKE		20 29 00.0	+10
YBH			LR	LR		
	comp=Z,3μm,19.0s					
PSUT	Pine Spring	95.55 332	eP	P	20 28 50.7	+0.2
	comp=Z,22nm,1.1s					
PSUT	Pine Spring	95.55 332	eP	P	20 28 50.7	+0.2
	comp=Z,22nm,1.1s					
ANMO	Albuquerque	95.60 325	P	P	20 28 49.8	-1.0
	comp=Z,4.1nm,1.0s,baz=58,slow=5.1,SNR=11					
ANMO			LR	LR	21 13 39.3	
	comp=Z,4μm,19.2s,baz=44,slow=37					
ANMO	Albuquerque	95.60 325	P	P	20 28 48.3	-2.4
	baz=33					
ANMO	Albuquerque	95.60 325	eP	P	20 28 51.3	+0.5
	comp=Z,14nm,1.3s					
ANMO	Albuquerque	95.60 325	eP	P	20 28 51.3	+0.5
	comp=Z,14nm,1.3s					
534A	Blanco	95.63 316	P	P	20 28 49.0	-1.8
	baz=38					
635A	Leesville	95.75 315	P	P	20 28 49.0	-2.2
	baz=38					
M02C	Callahan	95.88 339	P	P	20 28 50.3	-1.5
	baz=22					
533A	Kerrville	95.90 317	P	P	20 28 50.9	-1.1
	baz=38					
JCT	Junction City	95.98 317	P	P	20 28 51.2	-1.2
	baz=37					
JCT	Junction City	95.98 317	eP	P	20 28 52.5	+0.1
JCT			pmax	pmax		
	comp=Z,50nm,1.6s					
JCT			MLR	MLR		
	comp=Z,4μm,20.0s					
JCT	Junction City	95.98 317	eP	P	20 28 52.5	+0.1
	comp=Z,50nm,1.6s					
JCT	Junction City	95.98 317	eP	P	20 28 52.5	+0.1
	comp=Z,50nm,1.6s					
JCT			LR	LR		
	comp=Z,4μm,20.0s					
634A	China Grove, S	96.07 316	P	P	20 28 52.1	-0.6
	baz=38					
LPM	Los Pinos Moun	96.21 324	eP	P	20 28 53.4	-0.1
LPM	Los Pinos Moun	96.21 324	eP	P	20 28 53.4	-0.1
N02D	Trinity Center	96.22 339	P	P	20 28 51.3	-2.0
	baz=22					
BNM	Barren Site	96.34 324	eP	P	20 28 53.5	-0.7
BNM			ePP	PP	20 32 51.4	+4.6
R11A	Troy Canyon, C	96.34 333	P	P	20 28 52.0	-2.1
	baz=27					
R11A	Troy Canyon, C	96.34 333	eP	P	20 28 53.9	-0.2
	comp=Z,38nm,1.6s					
R11A	Troy Canyon, C	96.34 333	eP	P	20 28 53.9	-0.2
	comp=Z,38nm,1.6s					
R11A			LR	LR		
	comp=Z,6μm,19.0s					
PAHR	Pah Rah Range	96.40 336	eP	P	20 28 55.7	+1.5
	comp=Z,55nm,1.8s					
PAHR	Pah Rah Range	96.40 336	eP	P	20 28 55.7	+1.5
	comp=Z,55nm,1.8s					
PAHR			LR	LR		
	comp=Z,4μm,18.0s					
633A	Saathoff Ranch	96.45 316	P	P	20 28 52.6	-1.9
	baz=38					
Y22D	IRIS PASSCAL I	96.54 325	PFAKE		20 29 00.0	+5.0
Y22D			LR	LR		
	comp=Z,4μm,19.0s					
WDC	Whiskeytown Da	96.54 339	PFAKE		20 29 00.0	+5.3
WDC			LR	LR		
	comp=Z,3μm,19.0s					
O03D	Paynes Creek	96.59 338	P	P	20 28 53.0	-2.0
	baz=22					
KHMM	Horse Mountain	96.60 340	PFAKE		20 29 00.0	+4.9
KHMM			LR	LR		
	comp=Z,3μm,18.0s					
734A	La Parita Cree	96.60 316	P	P	20 28 52.8	-2.3
	baz=38					
JCC	Jacoby Creek,	96.73 340	PFAKE		20 29 10.0	+15
JCC			LR	LR		
	comp=Z,4μm,20.0s					
U15A	North Rim	96.80 330	PFAKE		20 29 10.0	+14
U15A			LR	LR		
	comp=Z,6μm,19.0s					
TEIG	Tepich	96.86 303	PFAKE		20 29 10.0	+14
TEIG			LR	LR		
	comp=Z,2μm,19.0s					
W18A	Petrified Fore	96.89 327	PFAKE		20 29 10.0	+13
W18A			LR	LR		
	comp=Z,6μm,19.0s					
733A	Divot King Ran	97.10 316	P	P	20 28 56.1	-1.3
	baz=38					
NV11	Mina Array Sit	97.16 335	PFAKE		20 29 10.0	+12
NV11			LR	LR		
	comp=Z,5μm,20.0s					
ORV	Oroville	97.19 337	PFAKE		20 29 10.0	+12
ORV			LR	LR		
	comp=Z,4μm,19.0s					
KMRM	Mail Ridge	97.20 339	PFAKE		20 29 10.0	+12
KMRM			LR	LR		
	comp=Z,5μm,18.0s					
NV01	Mina Array Sit	97.21 335	eP	Pdif	20 28 59.5	+1.4
NV01	Mina Array Sit	97.21 335	eP	Pdif	20 28 59.5	+1.4
NVAR	Mina Array Bea	97.21 335	P	P	20 28 58.0	0.0
	comp=Z,1.0nm,0.7s,baz=47,slow=3.0,SNR=6.7					
NVAR			PP	PP	20 32 55.2	+2.0
	comp=Z,1.0nm,0.7s,baz=19,slow=4.0,SNR=4.5					
NVAR			LR	LR	21 15 20.1	
	comp=Z,4μm,19.8s,baz=32,slow=37					
NVAR	Mina Array Bea	97.21 335	P	P	20 28 58.0	0.0
WUAZ	Wupatki	97.22 328	P	P	20 28 56.4	-1.7
	baz=30					
WUAZ	Wupatki	97.22 328	eP	P	20 28 57.4	-0.7
	comp=Z,21nm,1.3s					
WUAZ	Wupatki	97.22 328	eP	P	20 28 57.4	-0.7
	comp=Z,21nm,1.3s					
WUAZ			LR	LR		
	comp=Z,4μm,20.0s					
ROSC	El Rosal	97.29 282	LR	LR	21 12 00.4	
	comp=Z,1μm,20.1s,baz=31,slow=35					
SAML	Samuel	97.32 264	PFAKE		20 29 10.0	+11
SAML			LR	LR		
	comp=Z,900nm,20.0s					
833A	Chaparral WMA,	97.46 316	P	P	20 28 57.5	-1.5
	baz=38					
X18A	Snowflake	97.48 327	PFAKE		20 29 10.0	+11
X18A			LR	LR		
	comp=Z,6μm,19.0s					
WAKR	Walker	97.51 336	eP	Pdif	20 29 01.4	+2.0
	comp=Z,12nm,1.4s					
WAKR	Walker	97.51 336	eP	Pdif	20 29 00.3	+0.9
WAKR			ePP	PP	20 33 00.7	+5.2
934A	Benavides	97.55 315	P	P	20 28 59.2	-0.3
	baz=38					
AFDM	Forest Hills D	97.58 337	eP	Pdif	20 28 59.5	0.0
	comp=Z,15nm,1.3s					
AFDM	Forest Hills D	97.58 337	eP	Pdif	20 28 59.5	0.0
	comp=Z,15nm,1.3s					
AFDM			LR	LR		
	comp=Z,2μm,19.0s					
MNTX	Cornudas Mount	97.80 322	P	P	20 28 58.5	-2.0
	baz=34					
MNTX	Cornudas Mount	97.80 322	eP	P	20 28 59.1	-1.4
	comp=Z,21nm,1.4s					
MNTX	Cornudas Mount	97.80 322	eP	P	20 28 59.1	-1.4
	comp=Z,21nm,1.4s					
MNTX			ePKKPdf	PKKPdf	20 45 37.8	+2.4
MNTX			LR	LR		
	comp=Z,5μm,22.0s					
832A	Faith Ranch, C	97.81 316	P	P	20 28 58.8	-1.8
	baz=37					
SHPR	Sheep Range	97.83 332	eP	Pdif	20 29 01.9	+1.1
	comp=Z,43nm,1.9s					
SHPR	Sheep Range	97.83 332	eP	Pdif	20 29 01.9	+1.1
	comp=Z,43nm,1.9s					
SHPR			LR	LR		
	comp=Z,4μm,20.0s					
TPNV	Topopah Spring	97.83 333	P	P	20 28 58.9	-1.9
	baz=26					
TPNV	Topopah Spring	97.83 333	eP	Pdif	20 29 03.2	+2.4
TPNV			pmax	pmax		
	comp=Z,5.0nm,0.9s					
TPNV			MLR	MLR		
	comp=Z,4μm,18.0s					
TPNV	Topopah Spring	97.83 333	eP	Pdif	20 29 03.2	+2.4
	comp=Z,5.3nm,0.9s					
TPNV	Topopah Spring	97.83 333	eP	Pdif	20 29 03.2	+2.4
	comp=Z,5.3nm,0.9s					
TPNV			LR	LR		
	comp=Z,4μm,18.0s					
MMRI	Maumere	97.83 95	PFAKE		20 29 10.0	+9.1
MMRI			LR	LR		
	comp=Z,2μm,20.0s					
035A	Encino	97.84 314	P	P	20 28 60.0	-0.8
	baz=38					
933A	Laredo	97.96 315	P	P	20 29 00.8	-0.4
	baz=38					
MLAC	Mammoth, Mammo	98.11 335	P	P	20 29 00.8	-1.3
	baz=25					
HOPS	Hopland Field	98.17 338	PFAKE		20 29 10.0	+8.0
HOPS			LR	LR		
	comp=Z,3μm,18.0s					
GRAC	Grapevine Rang	98.18 333	P	P	20 29 00.8	-1.4
	baz=26					
035Z	Hargill	98.19 314	P	P	20 29 02.2	-0.1
	baz=39					
X16A	Lo Mia Camp, P	98.20 328	eP	Pdif	20 29 03.9	+1.4
	comp=Z,15nm,1.4s					
X16A	Lo Mia Camp, P	98.20 328	eP	Pdif	20 29 03.9	+1.4
	comp=Z,15nm,1.4s					
X16A			ePKKPbc	PKKPdf	20 45 40.9	+6.0
X16A			LR	LR		
	comp=Z,6μm,21.0s					
121A	Cookes Peak, D	98.22 324	P	P	20 29 01.3	-1.3
	baz=32					
121A	Cookes Peak, D	98.22 324	eP	P	20 29 01.4	-1.3
	comp=Z,12nm,1.4s					
CMB	Columbia Colle	98.24 336	PFAKE		20 29 10.0	+7.5
CMB			LR	LR		
	comp=Z,4μm,19.0s					
W13A	Hualapai Mount	98.59 330	eP	Pdif	20 29 05.7	+1.4
	comp=Z,17nm,1.6s					
W13A	Hualapai Mount	98.59 330	eP	Pdif	20 29 05.7	+1.4
	comp=Z,17nm,1.6s					
W13A			LR	LR		
	comp=Z,4μm,20.0s					
BCIP	Isla Barro Col	98.59 289	PFAKE		20 29 10.0	+5.7
BCIP			LR	LR		
	comp=Z,1μm,20.0s					
TX31	Lajitas Ar. Si	98.89 320	eP	P	20 29 05.1	-0.5
TX31	Lajitas Ar. Si	98.89 320	eP	P	20 29 05.1	-0.5
TXAR	Lajitas Array	98.89 320	P	P	20 29 05.2	-0.4
	comp=Z,7.9nm,1.0s,baz=57,slow=4.6,SNR=16					
TXAR			PP	PP	20 33 06.3	-0.1
	comp=Z,1.9nm,1.0s,baz=38,slow=6.9,SNR=4.5					
TXAR			PKKPbc	PKKPdf	20 45 35.9	+2.3
	comp=Z,0.6nm,0.8s,baz=188,slow=7.6,SNR=3.9					
TXAR			LR	LR	21 13 12.0	
	comp=Z,3μm,22.0s,baz=0.0,slow=35					
MCCM	Marconi Confer	98.90 338	PFAKE		20 29 20.0	+15
MCCM			LR	LR		
	comp=Z,2μm,20.0s					
DAC	Darwin (Calif)	98.91 333	PFAKE		20 29 20.0	+14
DAC			LR	LR		
	comp=Z,4μm,19.0s					
Y14A	Wickenburg	99.25 329	PFAKE		20 29 20.0	+13
Y14A			LR	LR		
	comp=Z,17μm,19.0s					
GSC	Goldstone, Bar	99.50 332	eP	Pdif	20 29 09.1	+0.9
GSC			pmax	pmax		
	comp=Z,43nm,2.0s					
GSC	Goldstone, Bar	99.50 332	eP	Pdif	20 29 09.1	+0.9
	comp=Z,43nm,2.0s					
GSC	Goldstone, Bar	99.50 332	eP	Pdif	20 29 09.1	+0.9
	comp=Z,43nm,2.0s					
TUC	Tucson	99.74 326	Pdiff	Pdif	20 29 06.9	-2.4
	baz=30					
TUC	Tucson	99.74 326	eP	Pdif	20 29 11.3	+2.0
TUC			pmax	pmax		
	comp=Z,13nm,1.4s					
TUC			MLR	MLR		
	comp=Z,4μm,18.0s					
TUC	Tucson	99.74 326	ePdif	Pdif	20 29 11.2	+2.0
	comp=Z,13nm,1.4s					
TUC			LR	LR		
	comp=Z,4μm,18.0s					
SAO	San Andreas Ge	99.74 336	PFAKE		20 29 20.0	+11
SAO			LR	LR		
	comp=Z,5μm,18.0s					
HEC	Hector,Ludlow	99.75 332	Pdiff	Pdif	20 29 07.1	-2.2
	baz=26					
ISA	Isabella, Lake	99.77 334	Pdiff	Pdif	20 29 06.5	-2.9
	baz=25					
ISA	Isabella, Lake	99.77 334	PFAKE		20 29 20.0	+11
ISA			LR	LR		
	comp=Z,5μm,19.0s					
319A	Douglas	99.87 325	PFAKE		20 29 20.0	+10
319A			LR	LR		
	comp=Z,3μm,19.0s					
IRM	Iron Mountain	99.90 331	Pdiff	Pdif	20 29 06.9	-3.1
	baz=27					
Y12C	Blythe	100.02 330	ePdif	Pdif	20 29 10.2	-0.2
Y12C			LR	LR		
	comp=Z,5μm,20.0s					
SOEI	Soe	100.09 94	PFAKE		20 29 20.0	+8.9
SOEI			LR	LR		
	comp=Z,2μm,21.0s					
EDW2	Edwards Air Fo	100.31 333	Pdiff	Pdif	20 29 10.0	-1.7
	baz=25					
TGUH	Tegucigalpa,Un	100.56 298	PFAKE		20 29 20.0	+7.0
TGUH			LR	LR		
	comp=Z,1μm,19.0s					
GLA	Glamis	100.76 330	PFAKE		20 29 20.0	+6.3
GLA			LR	LR		
	comp=Z,4μm,20.0s					
BFSC	Mount Baldy Ra	100.76 332	Pdiff	Pdif	20 29 12.1	-1.8
	baz=26					
OSI	Osito Audit: C	100.80 333	Pdiff	Pdif	20 29 11.4	-2.6
	baz=25					
PFO	Pinyon Flats O	100.89 331	Pdiff	Pdif	20 29 12.2	-2.2
	baz=26					
PFO	Pinyon Flats O	100.89 331	PFAKE		20 29 20.0	+5.6
PFO			LR	LR		
	comp=Z,3μm,19.0s					
TPFO	Pinon Flats	100.89 331	Pdiff	Pdif	20 29 12.2	-2.2
	baz=26					
214A	Organ Pipe Nat	100.90 328	Pdiff	Pdif	20 29 13.4	-1.0
	baz=29					
MWC	Mount Wilson	100.92 333	PFAKE		20 29 20.0	+5.4
MWC			LR	LR		
	comp=Z,5μm,18.0s					
PASC	Pasadena Art C	101.01 333	PFAKE		20 29 20.0	+5.2
PASC			LR	LR		
	comp=Z,4μm,18.0s					
HDC	Heredia	101.14 293	PFAKE		20 29 30.0	+14
HDC			LR	LR		
	comp=Z,2μm,18.0s					
MURC	Murrieta	101.17 332	Pdiff	Pdif	20 29 14.3	-1.3
	baz=26					
BLG	Laguna Peak, P	101.38 333	Pdiff	Pdif	20 29 15.3	-1.1
	baz=25					
IKP	In-Ko-Pah, Jac	101.61 331	Pdiff	Pdif	20 29 16.1	-1.5
	baz=27					
SCI2	San Clemente I	102.22 333	Pdiff	Pdif	20 29 19.1	-1.1
	baz=25					
MBWA	Marble Bar	103.53 106	PFAKE		20 29 40.0	+14
MBWA			LR	LR		
	comp=Z,8μm,19.0s					
UNM	Universidad Na	104.36 310	PFAKE		20 29 40.0	+10
UNM			LR	LR		
	comp=Z,2μm,21.0s					
LPAZ	La Paz	105.59 262	PP	PP	20 33 59.8	+1.2
	comp=Z,1.8nm,0.9s,baz=23,slow=4.2,SNR=4.1					
FITZ	Fitzroy Crossi	106.18 100	PFAKE		20 34 00.0	
FITZ			LR	LR		
	comp=Z,800nm,22.0s					
SLBS	Sierra La Lagu	106.69 321	PFAKE		20 34 00.0	
SLBS			LR	LR		
	comp=Z,3μm,19.0s					
MTN	Manton Dam	107.30 93	PFAKE		20 34 00.0	
MTN			LR	LR		
	comp=Z,600nm,22.0s					
SYO	Syowa Base	108.10 176	ePdif	Pdif	20 29 43.2	-2.0
HOPE	Hope Point	108.69 214	PFAKE		20 34 00.0	
HOPE			LR	LR		
	comp=Z,4μm,21.0s					
MAW	Mawson	109.44 167	PFAKE		20 34 00.0	
MAW			LR	LR		
	comp=Z,500nm,21.0s					
NNA	Nana	109.78 270	PFAKE		20 34 10.0	
NNA			LR	LR		
	comp=Z,5μm,21.0s					
PB10	IPOC Station P	111.64 257	PFAKE		20 34 10.0	
PB10			LR	LR		
	comp=Z,2μm,20.0s					
TRQA	Tornquist	113.39 239	PFAKE		20 34 10.0	
TRQA			LR	LR		
	comp=Z,2μm,21.0s					
WRA	Warramunga Arr	113.94 97	PKiKP	PKiKP	20 34 04.5	+0.2
	comp=Z,5.0nm,1.0s,baz=314,slow=1.5,SNR=11					
WRA			PP	PP	20 34 53.2	-5.1
	comp=Z,2.3nm,1.0s,baz=318,slow=5.4,SNR=4.9					
WRA			PKKPbc	PKKPbc	20 44 45.7	+1.0
	comp=Z,3.0nm,0.8s,baz=124,slow=3.4,SNR=12					
AS31	Alice Springs	115.69 100	ePKIKP	PKPdf	20 34 06.6	-1.0
AS31	Alice Springs	115.69 100	ePKPdf	PKPdf	20 34 06.6	-1.0
ASAR	Alice Springs	115.69 100	PKP	PKPdf	20 34 05.3	-2.2
	comp=Z,7.4nm,0.9s,baz=322,slow=1.6,SNR=18					
ASAR			PKKPbc	PKKPbc	20 44 39.6	+0.7
	comp=Z,2.9nm,0.8s,baz=122,slow=3.6,SNR=20					
AS01	Alice Springs	115.72 100	ePKIKP	PKPdf	20 34 04.7	-2.9
AS01	Alice Springs	115.72 100	ePKPdf	PKPdf	20 34 04.7	-2.9
AS01			ePKKPbc	PKKPbc	20 44 38.1	-0.6
PMG	Port Moresby	117.61 79	PP	PP	20 35 23.1	-0.8
	comp=Z,20nm,1.0s,baz=8.0,slow=0.2,SNR=3.3					
PLCA	Paso Flores	120.48 240	PKP	PKPdf	20 34 15.1	-1.3
	comp=Z,2.8nm,0.8s,baz=62,slow=2.2,SNR=6.2					
PLCA	Paso Flores	120.48 240	ePKIKP	PKPdf	20 34 16.4	+0.1
PLCA	Paso Flores	120.48 240	ePKPdf	PKPdf	20 34 16.4	+0.1
BBOO	Buckleboo	122.03 108	ePKIKP	PKPdf	20 34 20.1	+0.6
BBOO	Buckleboo	122.03 108	ePKPdf	PKPdf	20 34 20.1	+0.6
BBOO			LR	LR		
	comp=Z,3μm,20.0s					
CTA	Charters Tower	123.27 90	PKP	PKPdf	20 34 21.3	-0.9
	comp=Z,26nm,1.0s,baz=294,slow=3.3,SNR=11					
CTAO	Charters Tower	123.27 90	ePKIKP	PKPdf	20 34 23.5	+1.3
CTAO	Charters Tower	123.27 90	ePKIKP	PKPdf	20 34 23.5	+1.3
CTAO	Charters Tower	123.27 90	ePKPdf	PKPdf	20 34 23.5	+1.3
STKA	Stephens Creek	125.72 105	PKP	PKPdf	20 34 24.9	-1.6
	comp=Z,24nm,1.1s,baz=340,slow=3.1,SNR=9.7					
STKA			PP	PP	20 36 20.6	+1.3
	comp=Z,5.8nm,1.0s,baz=316,slow=7.6,SNR=3.1					
STKA	Stephens Creek	125.72 105	ePKIKP	PKPdf	20 34 25.9	-0.7
STKA	Stephens Creek	125.72 105	ePKPdf	PKPdf	20 34 25.9	-0.7
STKA			PP	PP	20 36 20.6	+1.3
STKA			LR	LR		
	comp=Z,400nm,20.0s					
QSPA	South Pole Qui	128.97 180	ePKPdf	PKPdf	20 34 29.7	-2.0
EIDS	Eidsvold	129.85 92	PFAKE		20 34 40.0	+5.4
EIDS			LR	LR		

	comp=Z,2μm,21.0s						
ARMA	**Armidale**	**132.71**	**98**	PFAKE		20 34 50.0	+10
ARMA				LR	LR		
	comp=Z,2μm,20.0s						
CAN	**Canberra**	**132.77**	**105**	PFAKE		20 34 50.0	+10
CAN				LR	LR		
	comp=Z,1μm,20.0s						
TAU	**Tasmania Unive**	**134.18**	**116**	PFAKE		20 34 50.0	+7.8
TAU				LR	LR		
	comp=Z,2μm,20.0s						
VNDA	**Vanda**	**136.75**	**167**	PKP	**PKPdf**	**20 34 46.1**	**0.0**
	comp=Z,2.8nm,1.1s,baz=309,slow=6.0,SNR=6.4						
VNDA	**Vanda**	**136.75**	**167**	PKIKP	**PKPdf**	**20 34 46.1**	**0.0**
VNDA				pmax	pmax		
	comp=Z,4.0nm,1.1s						
VNDA	**Vanda**	**136.75**	**167**	*e*PKIKP	**PKPdf**	**20 34 48.0**	**+1.9**
VNDA	**Vanda**	**136.75**	**167**	*e*PKPdf	**PKPdf**	**20 34 48.0**	**+1.9**
SBA	**Scott Base**	**137.40**	**168**	*e*PKIKP	**PKPdf**	**20 34 44.6**	**-2.7**
SBA				MLR	MLR		
	comp=Z,2μm,22.0s						
SBA	**Scott Base**	**137.40**	**168**	*e*PKPdf	**PKPdf**	**20 34 44.6**	**-2.7**
SBA				LR	LR		
	comp=Z,2μm,22.0s						
MSVF	**Nonsavu**	**145.65**	**61**	*e*PKIKP	**PKPab**	**20 35 05.2**	**+0.8**
MSVF	**Nonsavu**	**145.65**	**61**	*e*PKIKP	**PKPab**	**20 35 05.2**	**+0.8**
MSVF	**Nonsavu**	**145.65**	**61**	*e*PKPdf	**PKPab**	**20 35 05.2**	**+0.8**
TAOE	**Nuku Hiva Isla**	**148.34**	**339**	*e*LR	LR	21 23 51.6	
	comp=Z,2μm,38.2s						
DCZ	**Deep Cove**	**148.63**	**115**	*e*pPKPdf	**PKPbc**	**20 35 11.7**	**+0.1**
DCZ	**Deep Cove**	**148.63**	**115**	*e*pPKPdf	**PKPbc**	**20 35 11.7**	**+0.1**
AFI	**Afiamalu**	**148.87**	**42**	*e*PKP2	**PKPab**	**20 35 17.1**	**0.0**
AFI	**Afiamalu**	**148.87**	**42**	*e*PKPab	**PKPab**	**20 35 17.1**	**0.0**
AFI	**Afiamalu**	**148.87**	**42**	*e*PKPab	**PKPab**	**20 35 17.1**	**0.0**
FOZ	**Fox Glacier**	**150.39**	**111**	*e*PKPbc	**PKPbc**	**20 35 15.5**	**-0.5**
LBZ	**Lake Benmore**	**150.72**	**113**	*e*PKPbc	**PKPbc**	**20 35 17.1**	**+0.3**
LBZ	**Lake Benmore**	**150.72**	**113**	*e*PKPbc	**PKPbc**	**20 35 17.1**	**+0.3**
ODZ	**Otahua Downs**	**151.07**	**114**	*e*PKPbc	**PKPbc**	**20 35 19.0**	**+1.3**
ODZ	**Otahua Downs**	**151.07**	**114**	*e*PKPbc	**PKPbc**	**20 35 19.0**	**+1.3**
RPZ	**Rata Peaks**	**151.30**	**112**	PKPbc	**PKPbc**	**20 35 15.6**	**-2.6**
	comp=Z,163nm,1.1s,baz=306,slow=3.4,SNR=12						
RPZ	**Rata Peaks**	**151.30**	**112**	*e*PKPbc	**PKPbc**	**20 35 17.6**	**-0.6**
RPZ	**Rata Peaks**	**151.30**	**112**	*e*PKPbc	**PKPbc**	**20 35 17.6**	**-0.6**
OXZ	**Oxford**	**151.99**	**111**	*e*PKPbc	**PKPbc**	**20 35 19.5**	**-0.3**
OXZ	**Oxford**	**151.99**	**111**	*e*PKPbc	**PKPbc**	**20 35 19.5**	**-0.3**
OXZ				LR	LR		
	comp=Z,2μm,20.0s						
LTZ	**Lake Taylor**	**152.11**	**109**	*e*PKPbc	**PKPbc**	**20 35 21.0**	**+0.8**
LTZ	**Lake Taylor**	**152.11**	**109**	*e*PKPbc	**PKPbc**	**20 35 21.0**	**+0.8**
MQZ	**McQueen's Vall**	**152.46**	**111**	PFAKE		20 35 20.0	-0.8
MQZ				LR	LR		
	comp=Z,1μm,21.0s						
THZ	**Tophouse**	**152.48**	**107**	*e*PKPdf	**PKPbc**	**20 35 19.3**	**-1.7**
THZ				LR	LR		
	comp=Z,2μm,21.0s						
KHZ	**Kahutara**	**153.01**	**108**	*e*PKPbc	**PKPbc**	**20 35 21.8**	**-0.3**
KHZ	**Kahutara**	**153.01**	**108**	*e*PKPbc	**PKPbc**	**20 35 21.8**	**-0.3**
HIZ	**Hauiti**	**153.42**	**100**	PFAKE		20 35 30.0	-5.4
HIZ				LR	LR		
	comp=Z,2μm,21.0s						
BKZ	**Black Stump Fm**	**154.81**	**100**	*e*PKIKP	**PKPdf**	**20 35 19.1**	**+1.6**
BKZ	**Black Stump Fm**	**154.81**	**100**	*e*PKPdf	**PKPdf**	**20 35 19.1**	**+1.6**
URZ	**Urewera**	**155.10**	**98**	*e*PKPdf	**PKPdf**	**20 35 20.8**	**+3.0**
URZ				*e*PKPab	**PKPab**	**20 35 40.9**	**-1.7**
URZ				LR	LR		
	comp=Z,2μm,20.0s						
PPT2	**Papeete2**	**158.51**	**356**	*e*SS	SS	20 59 45.1	+7.9
	comp=Z,3μm,29.0s						
PPT2	**Papeete2**	**158.51**	**356**	*e*LR	LR	21 29 05.2	
	comp=Z,3μm,23.0s						
RKT	**Rikitea**	**159.05**	**315**	*e*SS	SS	20 59 36.5	-7.7
	comp=Z,528nm,33.2s						
RKT	**Rikitea**	**159.05**	**315**	*e*LR	LR	21 29 18.4	
	comp=Z,2μm,31.5s						
TBI	**Tubuai**	**164.22**	**355**	*e*SS	SS	21 00 37.3	+0.5
	comp=Z,2μm,29.2s						
TBI	**Tubuai**	**164.22**	**355**	*e*LR	LR	21 31 37.4	
	comp=Z,3μm,23.5s						

*DDA **19** 20:17:16.2, 39°.14N×29°.11E, h7km, Md3.9*
*ISK **19** 20:17:16.5, 39°.12N×29°.16E, h2km, MD3.2*
*CSEM **19** 20:17:17.0±0.1, 39°.11N×29°.12E, h2km, MD3.9, Error ellipse: s-maj=2.3km s-min=1.9km az=99.0*
ISC 19 20:17:16.7±1.1,**39°.13N**±0°.02×**29°.10E**±0°.02, **h3**km±10km, **n78**, σ0°**85**/96, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.30**	**98**	P	**Pg**	**20 17 22.5**	**-0.1**
GDZ				S	**Sg**	**20 17 26.6**	**+0.1**
GDZ	**Gediz**	**0.30**	**98**	*i* P	**Pg**	**20 17 22.5**	**-0.1**
GDZ				*i* S	**Sg**	**20 17 26.6**	**+0.1**
DEMI	**Demirci**	**0.31**	**254**	P	**Pg**	**20 17 22.8**	**+0.1**
DEMI				S	**Sg**	**20 17 27.4**	**+0.7**
DEMI	**Demirci**	**0.31**	**254**	*i* P	**Pg**	**20 17 22.8**	**+0.1**
DEMI				*i* S	**Sg**	**20 17 27.4**	**+0.7**
TVSB	**Tavsanli**	**0.43**	**41**	*e*PG	**Pg**	**20 17 24.7**	**-0.2**
TVSB	**Tavsanli**	**0.43**	**41**	*e*Pg	**Pg**	**20 17 24.7**	**-0.2**
DURS	**Dursunbey**	**0.67**	**314**	P	**Pg**	**20 17 29.8**	**+0.2**
DURS	**Dursunbey**	**0.67**	**314**	*i* P	**Pg**	**20 17 29.8**	**+0.2**
KULA	**Kula-Manisa**	**0.70**	**209**	*e*PG	**Pg**	**20 17 30.4**	**+0.2**
KULA	**Kula-Manisa**	**0.70**	**209**	*e*Pg	**Pg**	**20 17 30.4**	**+0.2**
MANT	**Manisa**	**0.77**	**214**	P	**Pg**	**20 17 31.0**	**-0.4**
MANT				S	**Sg**	**20 17 40.9**	**-0.4**
MANT	**Manisa**	**0.77**	**214**	*i* P	**Pg**	**20 17 31.0**	**-0.4**
MANT				*i* S	**Sg**	**20 17 40.9**	**-0.4**
KHAL	**Karahalli**	**0.82**	**158**	P	**Pg**	**20 17 32.1**	**-0.3**
KHAL				S	**Sg**	**20 17 42.7**	**-0.4**
KHAL	**Karahalli**	**0.82**	**158**	*i* P	**Pg**	**20 17 32.1**	**-0.3**
KHAL				*i* S	**Sg**	**20 17 42.7**	**-0.4**
KHL	**Karahalli**	**0.87**	**157**	*e*PG	**Pg**	**20 17 33.8**	**+0.4**
KHL	**Karahalli**	**0.87**	**157**	*e*Pg	**Pg**	**20 17 33.8**	**+0.4**
ORLT	**Orhaneli**	**0.93**	**350**	*e*PG	**Pg**	**20 17 35.1**	**+0.6**
ORLT	**Orhaneli**	**0.93**	**350**	*e*Pg	**Pg**	**20 17 35.1**	**+0.6**
AKHS	**Akhisar**	**1.03**	**256**	P	**Pg**	**20 17 36.2**	**-0.3**
AKHS				S	**Sb**	**20 17 50.9**	**-0.3**
AKHS	**Akhisar**	**1.03**	**256**	*i* P	**Pg**	**20 17 36.2**	**-0.3**
AKHS				*i* S	**Sb**	**20 17 50.9**	**-0.3**
AKS	**Akhisar**	**1.03**	**256**	*e*PG	**Pn**	**20 17 37.5**	**-0.6**
AKS	**Akhisar**	**1.03**	**256**	*e*Pg	**Pn**	**20 17 37.5**	**-0.6**
BALB	**Balikesir**	**1.07**	**299**	*e*PN	**Pn**	**20 17 39.0**	**+0.3**
BALB				*e*SN	**Sn**	**20 17 55.1**	**+1.0**
BALB	**Balikesir**	**1.07**	**299**	*e*Pn	**Pn**	**20 17 39.0**	**+0.3**
BALB				*e*Sn	**Sn**	**20 17 55.1**	**+1.0**
IGD	**Bursa**	**1.14**	**4**	*i* P	**Pb**	**20 17 37.0**	**-2.1**
IGD				*i* S	**Sb**	**20 17 52.6**	**-1.6**
CAVI	**Cavuskoy**	**1.22**	**28**	*e*PN	**Pg**	**20 17 40.5**	**+0.5**
CAVI				*e*SN	**Sn**	**20 17 57.6**	**-0.1**
CAVI	**Cavuskoy**	**1.22**	**28**	*e*Pn	**Pg**	**20 17 40.6**	**+0.5**
CAVI				*e*Sn	**Sn**	**20 17 57.6**	**-0.1**
IZI	**Iznik**	**1.24**	**13**	*e*PN	**Pg**	**20 17 41.3**	**+0.8**
IZI	**Iznik**	**1.24**	**13**	*e*Pn	**Pg**	**20 17 41.3**	**+0.8**
MDNY	**Mudanya-Bursa**	**1.25**	**353**	*e*PN	**Pg**	**20 17 41.8**	**+1.2**
MDNY	**Mudanya-Bursa**	**1.25**	**353**	*e*Pn	**Pg**	**20 17 41.8**	**+1.2**
KCTX	**Karacabey (Bur**	**1.27**	**333**	*e*PN	**Pg**	**20 17 42.6**	**+1.5**
KCTX	**Karacabey (Bur**	**1.27**	**333**	*e*Pn	**Pg**	**20 17 42.6**	**+1.5**
GEMT	**Gemlik**	**1.30**	**3**	*e*PN	**Pg**	**20 17 42.3**	**+0.6**
GEMT	**Gemlik**	**1.30**	**3**	*e*Pn	**Pg**	**20 17 42.3**	**+0.6**
ADVT	**Abdulvahap**	**1.39**	**21**	*e*PN	**Pg**	**20 17 43.9**	**+0.5**
ADVT	**Abdulvahap**	**1.39**	**21**	*e*Pn	**Pg**	**20 17 43.9**	**+0.5**
GONE	**Gonen-Balikesi**	**1.42**	**310**	*e*PN	**Pg**	**20 17 44.5**	**+0.5**
GONE	**Gonen-Balikesi**	**1.42**	**310**	*e*Pn	**Pg**	**20 17 44.5**	**+0.5**
DNZL	**Cakiroluk**	**1.44**	**182**	P	**Pb**	**20 17 44.2**	**-0.1**
DNZL				S	**Sg**	**20 18 04.5**	**+1.5**
DNZL	**Cakiroluk**	**1.44**	**182**	*i* P	**Pb**	**20 17 44.2**	**-0.1**
DNZL				*i* S	**Sg**	**20 18 04.5**	**+1.5**
ARMT	**Armutlu**	**1.45**	**353**	*e*PN	**Pb**	**20 17 44.1**	**-0.1**
ARMT	**Armutlu**	**1.45**	**353**	*e*Pn	**Pb**	**20 17 44.2**	**-0.1**
GPA	**Golpazari**	**1.49**	**39**	*e*PN	**Pn**	**20 17 44.4**	**0.0**
GPA	**Golpazari**	**1.49**	**39**	*e*Pn	**Pn**	**20 17 44.4**	**0.0**
BOLV	**Bolvadin**	**1.50**	**105**	*i* P	**Pg**	**20 17 47.8**	**+2.3**
BOLV				*i* S	**Sb**	**20 18 04.5**	**-0.4**
AYDB	**Zeytinkoy-Aydi**	**1.51**	**219**	*e*PN	**Pb**	**20 17 45.4**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**1.51**	**219**	*e*Pn	**Pb**	**20 17 45.4**	**-0.1**
EDC	**Edincik**	**1.54**	**322**	*e*PN	**Pg**	**20 17 46.7**	**+0.4**
EDC	**Edincik**	**1.54**	**322**	*e*Pn	**Pg**	**20 17 46.7**	**+0.4**
GULT	**Gulveren**	**1.70**	**40**	*e*PN	**Pb**	**20 17 47.8**	**-0.9**
GULT	**Gulveren**	**1.70**	**40**	*e*Pn	**Pb**	**20 17 47.8**	**-0.9**
ISP	**Isparta**	**1.72**	**139**	*e*PN	**Pb**	**20 17 48.2**	**-0.8**
ISP	**Isparta**	**1.72**	**139**	*e*Pn	**Pb**	**20 17 48.2**	**-0.8**
HRT	**Hereke**	**1.75**	**14**	*e*PN	**Pb**	**20 17 48.8**	**-0.6**
HRT	**Hereke**	**1.75**	**14**	*e*Pn	**Pb**	**20 17 48.8**	**-0.6**
SPNC	**Sapanca-Adapaz**	**1.81**	**31**	*e*PN	**Pn**	**20 17 49.3**	**+0.5**
SPNC	**Sapanca-Adapaz**	**1.81**	**31**	*e*Pn	**Pn**	**20 17 49.3**	**+0.5**
SVRH	**Sivrihisar-ESK**	**1.91**	**80**	*e*PN	**Pn**	**20 17 50.2**	**-0.1**
SVRH	**Sivrihisar-ESK**	**1.91**	**80**	*e*Pn	**Pn**	**20 17 50.2**	**-0.1**
ISK	**Istanbul-Kandi**	**1.93**	**359**	*e*PN	**Pb**	**20 17 51.4**	**-1.2**
ISK	**Istanbul-Kandi**	**1.93**	**359**	*e*Pn	**Pb**	**20 17 51.4**	**-1.2**
BCK	**Bucak**	**2.04**	**144**	*e*PN	**Pn**	**20 17 52.4**	**+0.4**
BCK	**Bucak**	**2.04**	**144**	*e*Pn	**Pn**	**20 17 52.4**	**+0.4**
SILT	**Sile**	**2.06**	**12**	*e*PN	**Pb**	**20 17 53.5**	**-1.3**
SILT	**Sile**	**2.06**	**12**	*e*Pn	**Pb**	**20 17 53.5**	**-1.3**
MDUB	**Mudurnu**	**2.10**	**50**	*e*PN	**Pn**	**20 17 53.2**	**+0.3**
MDUB	**Mudurnu**	**2.10**	**50**	*e*Pn	**Pn**	**20 17 53.2**	**+0.3**
RKY	**Sarkoy-Tekirda**	**2.14**	**317**	*e*PN	**Pb**	**20 17 55.3**	**-1.0**
RKY	**Sarkoy-Tekirda**	**2.14**	**317**	*e*Pn	**Pb**	**20 17 55.3**	**-1.0**
CTKS	**Kestanelik-??a**	**2.15**	**348**	*e*PN	**Pb**	**20 17 55.0**	**-1.3**
CTKS	**Kestanelik-??a**	**2.15**	**348**	*e*Pn	**Pb**	**20 17 55.0**	**-1.3**
TKR	**Tekirdag**	**2.21**	**328**	*e*PN	**Pb**	**20 17 55.8**	**-1.5**
TKR	**Tekirdag**	**2.21**	**328**	*e*Pn	**Pb**	**20 17 55.8**	**-1.5**
CRLT	**Corlu**	**2.25**	**333**	*e*PN	**Pb**	**20 17 56.3**	**-1.8**
CRLT	**Corlu**	**2.25**	**333**	*e*Pn	**Pb**	**20 17 56.3**	**-1.8**
CTYL	**Yalikoy Yolu**	**2.42**	**345**	*e*PN	**Pn**	**20 17 58.6**	**+1.4**
CTYL	**Yalikoy Yolu**	**2.42**	**345**	*e*Pn	**Pn**	**20 17 58.7**	**+1.4**

*DDA **19** 20:23:02.8, 39°.11N×29°.02E, h7km, Ml3.4*
*ISK **19** 20:23:02.8, 39°.13N×29°.03E, h5km, ML3.9*
*CSEM **19** 20:23:03.8±0.1, 39°.11N×29°.03E, h2km, ML3.4, Error ellipse: s-maj=2.7km s-min=2.5km az=97.0*
ISC 19 20:23:03.0±0.9,**39°.12N**±0°.02×**29°.02E**±0°.02, **h12**km±8km, **n82**, σ0°**77**/96, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**252**	P	**Pg**	**20 23 08.2**	**0.0**
DEMI				S	**Sg**	**20 23 11.7**	**0.0**
DEMI	**Demirci**	**0.25**	**252**	*i* P	**Pg**	**20 23 08.2**	**0.0**
DEMI				*i* S	**Sg**	**20 23 11.7**	**0.0**
GDZ	**Gediz**	**0.36**	**95**	P	**Pg**	**20 23 10.4**	**+0.1**
GDZ				S	**Sg**	**20 23 15.6**	**+0.4**
GDZ	**Gediz**	**0.36**	**95**	*i* P	**Pg**	**20 23 10.4**	**+0.1**
GDZ				*i* S	**Sg**	**20 23 15.6**	**+0.4**
MANT	**Manisa**	**0.72**	**210**	P	**Pg**	**20 23 17.0**	**-0.1**
MANT				S	**Sg**	**20 23 26.5**	**-0.1**
MANT	**Manisa**	**0.72**	**210**	*i* P	**Pg**	**20 23 17.0**	**-0.1**
MANT				*i* S	**Sg**	**20 23 26.5**	**-0.1**
KHAL	**Karahalli**	**0.83**	**154**	P	**Pn**	**20 23 20.5**	**-0.2**
KHAL				S	**Sb**	**20 23 30.2**	**-0.5**
KHAL	**Karahalli**	**0.83**	**154**	*i* P	**Pn**	**20 23 20.5**	**-0.2**
KHAL				*i* S	**Sb**	**20 23 30.2**	**-0.5**
AKHS	**Akhisar**	**0.97**	**256**	P	**Pn**	**20 23 21.9**	**-0.5**
AKHS				S	**Sg**	**20 23 34.8**	**+0.5**
AKHS	**Akhisar**	**0.97**	**256**	*i* P	**Pn**	**20 23 21.9**	**-0.5**
AKHS				*i* S	**Sg**	**20 23 34.8**	**+0.5**
AKS	**Akhisar**	**0.97**	**256**	**Pn**	**Pn**	**20 23 21.9**	**-0.5**
AKS	**Akhisar**	**0.97**	**256**	*i* Pg	**Pn**	**20 23 21.9**	**-0.5**
BALB	**Balikesir**	**1.02**	**301**	*e*PG	**Pn**	**20 23 24.0**	**+0.8**
BALB				*e*SG	**Sn**	**20 23 38.7**	**+1.2**
BALB	**Balikesir**	**1.02**	**301**	*e*Pg	**Pn**	**20 23 24.0**	**+0.8**
BALB				*e*Sg	**Sn**	**20 23 38.7**	**+1.2**
MDNY	**Mudanya-Bursa**	**1.25**	**355**	*e*PN	**Pg**	**20 23 26.9**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.25**	**355**	*e*Pn	**Pg**	**20 23 26.9**	**-0.2**
CAVI	**Cavuskoy**	**1.25**	**30**	*e*PN	**Pg**	**20 23 27.4**	**+0.3**
CAVI				*e*SN	**Sg**	**20 23 46.0**	**+2.6**
CAVI	**Cavuskoy**	**1.25**	**30**	*e*Pn	**Pg**	**20 23 27.5**	**+0.3**
CAVI				*e*Sn	**Sg**	**20 23 46.0**	**+2.6**
KCTX	**Karacabey (Bur**	**1.25**	**336**	*e*PN	**Pg**	**20 23 27.4**	**+0.4**
KCTX	**Karacabey (Bur**	**1.25**	**336**	*e*Pn	**Pg**	**20 23 27.5**	**+0.4**
GEMT	**Gemlik**	**1.32**	**6**	*e*PN	**Pg**	**20 23 28.5**	**+0.1**
GEMT	**Gemlik**	**1.32**	**6**	*e*Pn	**Pg**	**20 23 28.5**	**+0.1**
DENT	**Denizli**	**1.36**	**180**	*e*PN	**Pg**	**20 23 30.3**	**+1.2**
DENT	**Denizli**	**1.36**	**180**	*e*Pn	**Pg**	**20 23 30.3**	**+1.2**
GONE	**Gonen-Balikesi**	**1.39**	**312**	*e*PN	**Pg**	**20 23 29.3**	**-0.3**
GONE	**Gonen-Balikesi**	**1.39**	**312**	*e*Pn	**Pg**	**20 23 29.3**	**-0.3**
ADVT	**Abdulvahap**	**1.43**	**23**	*e*PN	**Pg**	**20 23 29.9**	**-0.5**
ADVT	**Abdulvahap**	**1.43**	**23**	*e*Pn	**Pg**	**20 23 29.9**	**-0.5**
ARMT	**Armutlu**	**1.45**	**355**	*e*PN	**Pg**	**20 23 31.2**	**+0.3**
ARMT	**Armutlu**	**1.45**	**355**	*e*Pn	**Pg**	**20 23 31.2**	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**217**	*e*PN	**Pg**	**20 23 31.6**	**+0.5**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**217**	*e*Pn	**Pg**	**20 23 31.6**	**+0.5**
EDC	**Edincik**	**1.52**	**324**	*e*PN	**Pg**	**20 23 31.9**	**-0.2**
EDC	**Edincik**	**1.52**	**324**	*e*Pn	**Pg**	**20 23 31.9**	**-0.2**
DKL	**Dikili**	**1.65**	**269**	*e*PN	**Pg**	**20 23 34.2**	**-0.3**
DKL	**Dikili**	**1.65**	**269**	*e*Pn	**Pg**	**20 23 34.3**	**-0.3**
GULT	**Gulveren**	**1.75**	**41**	*e*PN	**Pg**	**20 23 35.3**	**-1.2**
GULT	**Gulveren**	**1.75**	**41**	*e*Pn	**Pg**	**20 23 35.3**	**-1.2**
ISP	**Isparta**	**1.75**	**137**	*e*PN	**Pg**	**20 23 35.7**	**-0.9**
ISP	**Isparta**	**1.75**	**137**	*e*Pn	**Pg**	**20 23 35.7**	**-0.9**
HRT	**Hereke**	**1.77**	**16**	*e*PN	**Pg**	**20 23 36.1**	**-0.9**
HRT	**Hereke**	**1.77**	**16**	*e*Pn	**Pg**	**20 23 36.1**	**-0.9**
KRBG	**Karabiga-Canak**	**1.84**	**314**	*e*PN	**Pg**	**20 23 37.1**	**-1.1**
KRBG	**Karabiga-Canak**	**1.84**	**314**	*e*Pn	**Pg**	**20 23 37.1**	**-1.1**
MRMT	**Marmara Adasi**	**1.84**	**324**	*e*PN	**Pg**	**20 23 37.4**	**-1.0**
MRMT	**Marmara Adasi**	**1.84**	**324**	*e*Pn	**Pg**	**20 23 37.4**	**-1.0**
SPNC	**Sapanca-Adapaz**	**1.85**	**32**	*e*PN	**Pb**	**20 23 36.7**	**-0.1**
SPNC	**Sapanca-Adapaz**	**1.85**	**32**	*e*Pn	**Pb**	**20 23 36.7**	**-0.1**
ISK	**Istanbul-Kandi**	**1.94**	**1**	*e*PN	**Pb**	**20 23 37.9**	**-0.5**
ISK	**Istanbul-Kandi**	**1.94**	**1**	*e*Pn	**Pb**	**20 23 37.9**	**-0.5**
SVRH	**Sivrihisar-ESK**	**1.97**	**80**	*e*PN	**Pb**	**20 23 38.2**	**-0.7**
SVRH	**Sivrihisar-ESK**	**1.97**	**80**	*e*Pn	**Pb**	**20 23 38.2**	**-0.7**
GLHS	**Glhisar (BURDU**	**2.00**	**169**	*e*PN	**Pb**	**20 23 39.1**	**-0.2**
GLHS	**Glhisar (BURDU**	**2.00**	**169**	*e*Pn	**Pb**	**20 23 39.1**	**-0.2**
YER	**Yerkesik**	**2.06**	**197**	*e*PN	**Pb**	**20 23 40.3**	**-0.1**
YER	**Yerkesik**	**2.06**	**197**	*e*Pn	**Pb**	**20 23 40.3**	**-0.1**
BGKT	**Bogazkoy**	**2.07**	**355**	*e*PN	**Pb**	**20 23 40.0**	**-0.5**
BGKT	**Bogazkoy**	**2.07**	**355**	*e*Pn	**Pb**	**20 23 40.0**	**-0.5**
SILT	**Sile**	**2.09**	**13**	*e*PN	**Pb**	**20 23 40.3**	**-0.5**
SILT	**Sile**	**2.09**	**13**	*e*Pn	**Pb**	**20 23 40.3**	**-0.5**
RKY	**Sarkoy-Tekirda**	**2.11**	**318**	*e*PN	**Pb**	**20 23 40.8**	**-0.5**
RKY	**Sarkoy-Tekirda**	**2.11**	**318**	*e*Pn	**Pb**	**20 23 40.8**	**-0.5**
KLYT	**Kilyos**	**2.13**	**0**	*e*PN	**Pb**	**20 23 40.8**	**-0.7**
KLYT	**Kilyos**	**2.13**	**0**	*e*Pn	**Pb**	**20 23 40.8**	**-0.7**
LPK	**Lapseki**	**2.15**	**306**	*e*PN	**Pb**	**20 23 41.3**	**-0.5**
LPK	**Lapseki**	**2.15**	**306**	*e*Pn	**Pb**	**20 23 41.3**	**-0.5**
CTKS	**Kestanelik-??a**	**2.15**	**350**	*e*PN	**Pb**	**20 23 41.0**	**-0.8**
CTKS	**Kestanelik-??a**	**2.15**	**350**	*e*Pn	**Pb**	**20 23 41.1**	**-0.8**
MDUB	**Mudurnu**	**2.15**	**50**	*e*PN	**Pb**	**20 23 40.8**	**-1.2**
MDUB	**Mudurnu**	**2.15**	**50**	*e*Pn	**Pb**	**20 23 40.8**	**-1.2**
TKR	**Tekirdag**	**2.19**	**329**	*e*PN	**Pb**	**20 23 41.8**	**-0.7**
TKR	**Tekirdag**	**2.19**	**329**	*e*Pn	**Pb**	**20 23 41.8**	**-0.7**
EZN	**Ezine**	**2.20**	**290**	*e*PN	**Pb**	**20 23 42.4**	**-0.3**
EZN	**Ezine**	**2.20**	**290**	*e*Pn	**Pb**	**20 23 42.4**	**-0.3**
CRLT	**Corlu**	**2.24**	**334**	*e*PN	**Pb**	**20 23 42.1**	**-1.2**
CRLT	**Corlu**	**2.24**	**334**	*e*Pn	**Pb**	**20 23 42.1**	**-1.2**
KIZT	**Kizilcal**	**2.24**	**95**	*e*PN	**Pb**	**20 23 42.6**	**-0.9**
KIZT	**Kizilcal**	**2.24**	**95**	*e*Pn	**Pb**	**20 23 42.6**	**-0.9**
GELI	**Tayfur-Gelibol**	**2.34**	**304**	*e*PN	**Pb**	**20 23 44.2**	**-0.9**
GELI	**Tayfur-Gelibol**	**2.34**	**304**	*e*Pn	**Pb**	**20 23 44.2**	**-0.9**
CTYL	**Yalikoy Yolu**	**2.42**	**347**	*e*PN	**Pb**	**20 23 45.2**	**-1.2**
CTYL	**Yalikoy Yolu**	**2.42**	**347**	*e*Pn	**Pb**	**20 23 45.2**	**-1.2**

*CSEM **19** 20:23:52.3, 39°.09N×29°.02E, h7km, MD3.0*
DDA 19 20:23:52.3, 39°.09N×29°.02E, h7km, Md3.0, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**258**	P	Pg	20 23 57.6	+0.5
DEMI				S	Sg	20 24 01.1	+0.7
DEMI	**Demirci**	**0.24**	**258**	*i* P	Pg	20 23 57.6	+0.5
DEMI				*i* S	Sg	20 24 01.1	+0.7
GDZ	**Gediz**	**0.36**	**91**	P	Pg	20 23 59.2	-0.1
GDZ				S	Sg	20 24 03.7	-0.4
GDZ	**Gediz**	**0.36**	**91**	*i* P	Pg	20 23 59.2	-0.2
GDZ				*i* S	Sg	20 24 03.7	-0.4
DURS	**Dursunbey**	**0.66**	**320**	P	Pn	20 24 09.8	+1.6
DURS	**Dursunbey**	**0.66**	**320**	*i* P	Pn	20 24 09.8	+1.6
MANT	**Manisa**	**0.70**	**211**	P	Pg	20 24 06.2	+0.4
MANT				S	Sb	20 24 16.1	-0.8
MANT	**Manisa**	**0.70**	**211**	*i* P	Pg	20 24 06.2	+0.4
MANT				*i* S	Sb	20 24 16.1	-0.8
KHAL	**Karahalli**	**0.81**	**153**	P	Pn	20 24 10.0	-0.2
KHAL	**Karahalli**	**0.81**	**153**	*i* P	Pn	20 24 10.0	-0.3
AKHS	**Akhisar**	**0.96**	**258**	P	Pb	20 24 11.2	-0.1
AKHS				S	Sb	20 24 24.4	+0.1
AKHS	**Akhisar**	**0.96**	**258**	*i* P	Pb	20 24 11.2	-0.1
AKHS				*i* S	Sb	20 24 24.4	+0.1

*ISN **19** 20:25:30.8±1.0, 39°.02N×29°.14E, h0km±93km, ML4.6*

*MOS **19** 20:25:30.9±1.0, 39°.15N×29°.19E, h7km, mb4.4/4, Error ellipse: s-maj=7.0km s-min=4.6km az=83.9*
*IDC **19** 20:25:30.6±0.7, 39°.00N×29°.12E, h0km, mb4.2/15, mb1 4.2/25, mb1mx3.9/78, mbtmp4.1/25, ML3.7/10, Error ellipse: s-maj=13.7km s-min=12.0km az=40.0*
*ISK **19** 20:25:32.0, 39°.13N×29°.09E, h5km, ML4.6*
*NEIC **19** 20:25:32.1, 39°.12N×29°.08E, h5km, ML4.4(THE), ML4.6(ISK), After ISK.*
*DDA **19** 20:25:32.4, 39°.14N×29°.11E, h7km, Ml4.6*
*THE **19** 20:25:33.0, 39°.13N×29°.09E, h1km±2km, ML4.4/3, Error ellipse: s-maj=3.2km s-min=1.4km az=102.0*
*NIC **19** 20:25:33.3±0.1, 39°.00N×28°.93E, h25km, mb4.4, ML3.9*
*ISCJB **19** 20:25:33.2±0.3, 39°.12N±0°.01×29°.14E±0°.02, h23km±3km, mb4.1/19, Error ellipse: s-maj=2.5km s-min=2.3km az=161.4*
*CSEM **19** 20:25:33.1±0.1, 39°.10N×29°.12E, h10km, ML4.6, Error ellipse: s-maj=2.5km s-min=2.2km az

YER	Yerkesik	2.10 199	*e*Pn	Pn	20 26 09.2	+1.4
YER	Yerkesik	2.10 199	P	Pn	20 26 07.8	0.0
KLYT	Kilyos	2.13 358	*e*PN	Pb	20 26 10.0	-1.2
KLYT	Kilyos	2.13 358	*e*Pn	Pb	20 26 10.0	-1.2
KIZT	Kizilcal	2.15 96	*e*PN	Pb	20 26 11.2	-0.4
KIZT	Kizilcal	2.15 96	*e*Pn	Pb	20 26 11.3	-0.4
CTKS	Kestanelik-??a	2.16 347	*e*PN	Pb	20 26 10.5	-1.3
CTKS	Kestanelik-??a	2.16 347	*e*Pn	Pb	20 26 10.5	-1.3
RKY	Sarkoy-Tekirda	2.17 317	*e*PN	Pb	20 26 10.5	-1.4
RKY	Sarkoy-Tekirda	2.17 317	*e*Pn	Pb	20 26 10.5	-1.4
SUTC	Sutluce-Ispart	2.20 138	*e*PN	Pb	20 26 11.2	-1.3
SUTC	Sutluce-Ispart	2.20 138	*e*Pn	Pb	20 26 11.3	-1.3
LPK	Lapseki	2.22 305	*e*PN	Pn	20 26 10.5	+1.2
LPK	Lapseki	2.22 305	*e*Pn	Pn	20 26 10.5	+1.2
PRK	Paraskevi	2.23 274	P	Pn	20 26 09.1	-0.4
PRK			S	Sn	20 26 37.3	+0.3
PRK	Paraskevi	2.23 274	P	Pn	20 26 09.1	-0.4
PRK			S	Sn	20 26 37.3	+0.3
PRK	Paraskevi	2.23 274	P	Pn	20 26 09.1	-0.4
PRK			S	Sn	20 26 37.3	+0.3
PRK	Paraskevi	2.23 274	P	Pn	20 26 09.1	-0.4
PRK			S	Sn	20 26 37.3	+0.3
TKR	Tekirdag	2.23 327	*e*PN	Pn	20 26 11.1	+1.5
TKR	Tekirdag	2.23 327	*e*Pn	Pn	20 26 11.1	+1.5
CRLT	Corlu	2.27 332	*e*PN	Pb	20 26 12.6	-1.1
CRLT	Corlu	2.27 332	*e*Pn	Pb	20 26 12.6	-1.1
EZN	Ezine	2.29 289	*e*PN	Pb	20 26 12.4	-1.5
EZN	Ezine	2.29 289	*e*Pn	Pb	20 26 12.4	-1.5
SMG	Samos	2.29 233	P	Pn	20 26 09.4	-1.0
SMG	Samos	2.29 233	P	Pn	20 26 09.4	-1.0
SMG	Samos	2.29 233	P	Pn	20 26 09.4	-1.0
GELI	Tayfur-Gelibol	2.41 303	*e*PN	Pn	20 26 13.4	+1.3
GELI	Tayfur-Gelibol	2.41 303	*e*Pn	Pn	20 26 13.4	+1.3
CTYL	Yalikoy Yolu	2.44 345	*e*PN	Pb	20 26 14.7	-1.7
CTYL	Yalikoy Yolu	2.44 345	*e*Pn	Pb	20 26 14.7	-1.7
FETY	Fethiye	2.49 181	P	Pn	20 26 14.4	+1.3
FETY	Fethiye	2.49 181	P	Pn	20 26 14.4	+1.3
FETY	Fethiye	2.49 181	P	Pn	20 26 14.4	+1.3
BODT	Bodrum	2.51 216	P	Pn	20 26 13.2	-0.3
BODT	Bodrum	2.51 216	P	Pn	20 26 13.2	-0.3
BODT	Bodrum	2.51 216	P	Pn	20 26 13.2	-0.3
CHOS	Chios island	2.52 254	P	Pn	20 26 13.3	-0.3
CHOS			S	Sn	20 26 45.4	+1.1
CHOS	Chios island	2.52 254	P	Pn	20 26 13.3	-0.3
CHOS			S	Sn	20 26 45.4	+1.1
CHOS	Chios island	2.52 254	P	Pn	20 26 13.3	-0.3
CHOS			S	Sn	20 26 45.4	+1.1
ERIK	Erikli-Kesan	2.54 308	*e*PN	Pb	20 26 16.0	-2.2
ERIK	Erikli-Kesan	2.54 308	*e*Pn	Pb	20 26 16.0	-2.2
SIGR	SIGRI	2.55 273	P	Pn	20 26 13.6	-0.4
SIGR			S	Sn	20 26 46.1	+1.1
SIGR	SIGRI	2.55 273	P	Pn	20 26 13.6	-0.4
SIGR			S	Sn	20 26 46.1	+1.1
SIGR	SIGRI	2.55 273	P	Pn	20 26 13.6	-0.4
SIGR			S	Sn	20 26 46.1	+1.1
LADK	Ladik-KONYA	2.69 109	*e*PN	Pb	20 26 18.4	-2.5
LADK	Ladik-KONYA	2.69 109	*e*Pn	Pb	20 26 18.4	-2.5
PHSR	Pinarhisar	2.79 334	*e*PN	Pn	20 26 19.4	+2.2
PHSR	Pinarhisar	2.79 334	*e*Pn	Pn	20 26 19.4	+2.2
ENEZ	Enez	2.80 306	P	Pn	20 26 17.8	+0.4
ENEZ	Enez	2.80 306	P	Pn	20 26 17.8	+0.4
KDZE	Karadeniz Ereo	2.81 38	*e*PN	Pb	20 26 20.1	-2.7
KDZE	Karadeniz Ereo	2.81 38	*e*Pn	Pb	20 26 20.1	-2.7
AKAS	Kas	2.91 173	*i* P	Pn	20 26 21.3	+2.2
ALN	Alexandroupoli	2.96 308	P	Pn	20 26 19.6	0.0
ALN	Alexandroupoli	2.96 308	P	Pn	20 26 19.6	0.0
ALN	Alexandroupoli	2.96 308	P	Pn	20 26 19.6	0.0
ALN	Alexandroupoli	2.96 308	P	Pn	20 26 19.6	0.0
ARG	Arkhangelos	3.01 196	P	Pn	20 26 22.0	+1.7
ARG	Arkhangelos	3.01 196	P	Pn	20 26 22.0	+1.7
ARG	Arkhangelos	3.01 196	P	Pn	20 26 22.0	+1.7
ARG	Arkhangelos	3.01 196	P	Pn	20 26 22.0	+1.7
SMTH	Samothraki Isl	3.09 297	P	Pn	20 26 21.3	0.0
SMTH	Samothraki Isl	3.09 297	P	Pn	20 26 21.3	0.0
SMTH	Samothraki Isl	3.09 297	P	Pn	20 26 21.3	0.0
EDRB	Edirne	3.27 327	P	Pn	20 26 24.3	+0.4
EDRB	Edirne	3.27 327	P	Pn	20 26 24.3	+0.4
EDRB	Edirne	3.27 327	P	Pn	20 26 24.3	+0.4
APE	Apeiranthos	3.51 235	⇓*i*P	Pn	20 26 27.0	-0.2
APE	Apeiranthos	3.51 235	*i* P	Pn	20 26 26.0	-1.2
APE	Apeiranthos	3.51 235	*i* P	Pn	20 26 26.0	-1.2
BRTR	Keskin Array B	3.54 79	Pn	Pn	20 26 27.9	+0.2
	5.1nm,0.3s,baz=33,slow=12,SNR=28					
BRTR			Lg	Lg	20 27 28.9	
	14nm,0.3s,baz=271,slow=25,SNR=6.7					
BRTR	Keskin Array B	3.54 79	*i* P	Pn	20 26 28.7	+1.0
BRTR			pmax	pmax		
	comp=Z,9.0nm,0.3s					
BRTR	Keskin Array B	3.54 79	*i* P	Pn	20 26 28.7	+1.0
	comp=Z,9.0nm,0.3s					
SANT	Santorini	4.01 228	⇑*i*P	Pn	20 26 33.9	-0.1
SANT	Santorini	4.01 228	*e*Pn	Pn	20 26 33.5	-0.5
SANT	Santorini	4.01 228	⇑*i*P	Pn	20 26 33.9	-0.1
SANT	Santorini	4.01 228	*e*Pn	Pn	20 26 33.5	-0.5
MANR	Mangalia	4.71 355	⇑*i*P	Pn	20 26 43.8	+0.3
MANR	Mangalia	4.71 355	⇑*i*P	Pn	20 26 43.8	+0.3
SOH	Sokhos	4.75 293	P	Pn	20 26 45.1	+0.8
SOH	Sokhos	4.75 293	P	Pn	20 26 45.1	+0.8
NPS	Neapolis	4.77 217	P	Pn	20 26 46.5	+2.0
NPS	Neapolis	4.77 217	P	Pn	20 26 46.5	+2.0
AKMC	Akamas	4.82 147	P	Pn	20 26 44.4	-0.8
	baz=326					
AKMC	Akamas	4.82 147	P	Pn	20 26 44.4	-0.8
ALFC	Alefka	4.83 144	P	Pn	20 26 44.3	-1.0
	baz=323					
ALFC			S	Sn	20 27 40.6	-0.7
ALFC	Alefka	4.83 144	P	Pn	20 26 44.3	-1.0
ALFC			S	Sn	20 27 40.6	-0.7
LAST	Lasithi	4.92 218	⇑*i*P	Pn	20 26 49.0	+2.4
LAST	Lasithi	4.92 218	⇑*i*P	Pn	20 26 49.0	+2.4
PPCY	Paphos	4.95 148	P	Pn	20 26 46.0	-0.9
	baz=327					
PPCY	Paphos	4.95 148	P	Pn	20 26 46.0	-0.9
IDI	Anoyia	5.11 223	Pn	Pn	20 26 48.5	-0.8
	comp=Z,1.7nm,0.3s,baz=15,slow=5.5,SNR=14					
IDI	Anoyia	5.11 223	⇑*i*P	Pn	20 26 49.9	+0.6
IDI	Anoyia	5.11 223	*e*Pn	Pn	20 26 49.4	+0.1
IDI	Anoyia	5.11 223	⇑*i*P	Pn	20 26 49.9	+0.6
IDI	Anoyia	5.11 223	*e*Pn	Pn	20 26 49.4	+0.1
MAMC	Mammari	5.12 139	P	Pn	20 26 48.8	-0.5
	baz=319					
MAMC	Mammari	5.12 139	P	Pn	20 26 48.8	-0.5
KNT	Kendrikon	5.20 295	P	Pn	20 26 51.3	+1.0
KNT	Kendrikon	5.20 295	P	Pn	20 26 51.3	+1.0
CVDA	Cernavoda	5.27 351	⇑*i*P	Pn	20 26 51.9	+0.6
CVDA	Cernavoda	5.27 351	⇑*i*P	Pn	20 26 51.9	+0.6
CSS	Mathiatis	5.34 140	*e*Pn	Pn	20 26 51.1	-1.2
CSS	Mathiatis	5.34 140	*e*Pn	Pn	20 26 51.1	-1.2
ZIMR		5.34 329	⇓*i*P	Pn	20 26 52.8	+0.5
TIRR	Tirgusor	5.36 354	⇑*i*P	Pn	20 26 52.5	0.0
TIRR	Tirgusor	5.36 354	⇑*i*P	Pn	20 26 52.5	0.0
SIVA	Sivas	5.36 221	⇓*i*P	Pn	20 26 56.0	+3.4
SIVA	Sivas	5.36 221	⇓*i*P	Pn	20 26 56.0	+3.4
GRG	Griva	5.48 292	P	Pn	20 26 56.2	+1.9
GRG	Griva	5.48 292	P	Pn	20 26 56.2	+1.9
HARR	Harsova	5.63 351	⇓*i*P	Pn	20 26 56.5	+0.2
HARR	Harsova	5.63 351	⇓*i*P	Pn	20 26 56.5	+0.2
PGOR	Pogoanele	6.00 345	⇑*i*P	Pn	20 27 03.5	+2.2
PGOR	Pogoanele	6.00 345	⇑*i*P	Pn	20 27 03.5	+2.2
TLCR		6.06 358	⇑*i*P	Pn	20 27 02.6	+0.4
TLCR		6.06 358	⇑*i*P	Pn	20 27 02.6	+0.4
CFR	Carcaliu	6.09 353	⇑*i*P	Pn	20 27 02.3	-0.3
CFR	Carcaliu	6.09 353	⇑*i*P	Pn	20 27 02.3	-0.3
FNA	Florina	6.19 288	P	Pn	20 27 05.4	+1.4
FNA	Florina	6.19 288	P	Pn	20 27 05.4	+1.4
SECR		6.33 340	⇓*i*P	Pn	20 27 07.0	+1.1
SECR		6.33 340	⇓*i*P	Pn	20 27 07.0	+1.1
SEV	Sevastopol'	6.38 31	*e*P	Pn	20 27 06.1	-0.5
SEV			*e*S	Sn	20 28 15.5	-3.9
SEV	Sevastopol'	6.38 31	*e*P	Pn	20 27 06.1	-0.5
GIUM	Giurgiulesti	6.39 354	⇓*i*P	Pn	20 27 08.1	+1.4
GIUM	Giurgiulesti	6.39 354	⇓*i*P	Pn	20 27 08.1	+1.4
YAL	Yalta	6.54 33	*e*P	Pn	20 27 09.6	+0.9
YAL			*e*S	Sn	20 28 20.4	-2.8
YAL	Yalta	6.54 33	*e*P	Pn	20 27 09.6	+0.9
BARS	Barje	6.65 306	⇓*i*Pn	Pn	20 27 11.2	+0.9
MLR	Muntele Rosu	6.79 341	Pn	Pn	20 27 14.0	+1.7
	comp=Z,0.7nm,0.3s,baz=331,slow=2.4,SNR=58					
MLR	Muntele Rosu	6.79 341	⇑*i*P	Pn	20 27 13.9	+1.7
MLR	Muntele Rosu	6.79 341	P	Pn	20 27 14.0	+1.7
MLR	Muntele Rosu	6.79 341	P	Pn	20 27 14.0	+1.7
	comp=Z,4.9nm,0.8s,baz=306,slow=5.3,SNR=18					
MJAR	Matsushiro Arr	80.33 51	P	P	20 37 43.4	-0.6
	comp=Z,0.8nm,0.6s,baz=308,slow=6.0,SNR=5.0					
ALU	Alushta	6.80 34	*e*P	Pn	20 27 11.6	-0.7
ALU			*e*S	Sn	20 28 24.4	-5.3
ALU	Alushta	6.80 34	*e*P	Pn	20 27 11.6	-0.7
MTUR	Matau	6.80 335	⇑*i*P	Pn	20 27 13.0	+0.5
MTUR	Matau	6.80 335	⇑*i*P	Pn	20 27 13.0	+0.5
ODBI	Odobesti	6.81 348	⇑*i*P	Pn	20 27 14.1	+1.7
ODBI	Odobesti	6.81 348	⇑*i*P	Pn	20 27 14.1	+1.7
SIM	Simferopol'	6.90 31	*e*P	Pn	20 27 14.0	+0.3
SIM			*e*S	Sn	20 28 29.0	-3.1
SIM			pmax	pmax		
	comp=Z,218nm,0.3s					
SIM			smax	smax		
	comp=E,186nm,0.5s					
SIM	Simferopol'	6.90 31	*e*P	Pn	20 27 14.0	+0.3
	comp=E,218nm,0.3s					
PLOR	Plostina	6.97 346	⇑*i*P	Pn	20 27 16.3	+1.6
PLOR	Plostina	6.97 346	⇑*i*P	Pn	20 27 16.3	+1.6
VRI	Vrincioaia	6.97 346	⇓*i*P	Pn	20 27 15.7	+1.1
VRI	Vrincioaia	6.97 346	P	Pn	20 27 15.5	+0.9
VRI	Vrincioaia	6.97 346	P	Pn	20 27 15.5	+0.9
VOIR		7.00 336	P	Pn	20 27 15.7	+0.6
VOIR		7.00 336	P	Pn	20 27 15.7	+0.6
ARR	Arges	7.08 333	⇓*i*P	Pn	20 27 16.8	+0.6
ARR	Arges	7.08 333	⇓*i*P	Pn	20 27 16.8	+0.6
BOLS	Boljevac	7.15 313	⇓*i*Pn	Pn	20 27 16.5	-0.7
BOVS	Bovan	7.18 311	*i* Pn	Pn	20 27 18.8	+1.3
SUDU	Sudak	7.23 35	*e*P	Pn	20 27 16.5	-1.7
SUDU			*e*S	Sn	20 28 34.9	-5.3
SUDU	Sudak	7.23 35	*e*P	Pn	20 27 16.5	-1.7
DOPR	Dopca	7.38 339	⇓*i*P	Pn	20 27 21.1	+0.9
DOPR	Dopca	7.38 339	⇓*i*P	Pn	20 27 21.1	+0.9
LOT	Lotru	7.46 330	⇑*i*P	Pn	20 27 23.1	+1.5
LOT	Lotru	7.46 330	⇑*i*P	Pn	20 27 23.1	+1.5
TESR	Tescani	7.61 347	⇓*i*P	Pn	20 27 23.4	0.0
TESR	Tescani	7.61 347	⇓*i*P	Pn	20 27 23.4	0.0
KUBS	Kucevo	7.68 316	*i* Pn	Pn	20 27 22.7	-1.7
MILM	Milestii Mici	7.79 358	⇓*i*P	Pn	20 27 26.2	+0.3
MILM	Milestii Mici	7.79 358	⇓*i*P	Pn	20 27 26.2	+0.3
MDB	Medias	7.84 335	⇓*i*P	Pn	20 27 28.2	+1.6
MDB	Medias	7.84 335	⇓*i*P	Pn	20 27 28.2	+1.6
KIS	Kishinev	7.87 358	*e*P	Pn	20 27 30.0	+3.0
KIS	Kishinev	7.87 358	*e*P	Pn	20 27 30.0	+3.0
KIS	Kishinev	7.87 358	*e*P	Pn	20 27 30.0	+3.0
MMAI	Mount Meron Ar	7.93 138	Pn	Pn	20 27 28.0	+0.1
	comp=E,9.5nm,0.3s,baz=316,slow=12,SNR=26					
MMAI			Sn	Sn	20 28 56.7	-1.0
	comp=E,3.1nm,0.3s,baz=311,slow=25,SNR=3.6					
IVAS	Ivanjica	8.09 306	*i* Pn	Pn	20 27 30.6	+0.5
TRUS	Trudelj	8.28 311	*i* Pn	Pn	20 27 32.7	0.0
ANN	Anapa	8.38 45	*e*P	Pn	20 27 34.7	+0.7
ANN			*e*S	Sn	20 29 05.8	-2.8
ANN			pmax	pmax		
	comp=Z,156nm,3.3s					
ANN	Anapa	8.38 45	*e*P	Pn	20 27 34.7	+0.7
	comp=Z,156nm,3.3s					
BZS	Buzias	8.54 322	⇑*i*P	Pn	20 27 36.2	0.0
BZS	Buzias	8.54 322	⇑*i*P	Pn	20 27 36.2	0.0
ARCR	ARCALIA	8.69 338	⇓*i*P	Pn	20 27 39.6	+1.4
ARCR	ARCALIA	8.69 338	⇓*i*P	Pn	20 27 39.6	+1.4
BBLS	Lazići	8.70 306	*e*Pn	Pn	20 27 37.0	-1.5
BURAR	Bucovina Array	8.95 343	⇑*i*P	Pn	20 27 43.2	+1.3
BURAR	Bucovina Array	8.95 343	⇑*i*P	Pn	20 27 43.2	+1.3
TEKS	Tekeris	8.99 310	*i* Pn	Pn	20 27 42.6	+0.3
DRGR		8.99 331	⇓*i*P	Pn	20 27 43.8	+1.4
DRGR		8.99 331	⇓*i*P	Pn	20 27 43.8	+1.4
SIRR	Siria	9.01 325	⇓*i*P	Pn	20 27 42.6	-0.1
SIRR	Siria	9.01 325	⇓*i*P	Pn	20 27 42.6	-0.1
SORM	Soroca	9.03 357	⇑*i*P	Pn	20 27 42.0	-0.8
SORM	Soroca	9.03 357	⇑*i*P	Pn	20 27 42.0	-0.8
SOC	Sochi	9.12 57	*e*P	Pn	20 27 43.5	-0.6
SOC			pmax	pmax		
	comp=Z,127nm,1.3s					
SOC	Sochi	9.12 57	*e*P	Pn	20 27 43.5	-0.6
	comp=Z,127nm,1.3s					
ASF	Jabal al Asfar	9.38 135	Pn	Pn	20 27 47.5	-0.3
	comp=Z,0.1nm,0.3s,baz=14,slow=4.2,SNR=1.7					
BMR	Baia Mare	9.48 336	⇓*i*P	Pn	20 27 50.6	+1.6
BMR	Baia Mare	9.48 336	⇓*i*P	Pn	20 27 50.6	+1.6
CUC	Castrocucco	10.32 279	*e*Pn	Pn	20 28 02.5	+1.8
CUC	Castrocucco	10.32 279	*e*Pn	Pn	20 28 02.5	+1.8
EIL	Elat	10.58 151	Pn	Pn	20 28 04.0	-0.2
	comp=Z,1.2nm,0.3s,baz=291,slow=2.2,SNR=8.7					
EIL			Sn	Sn	20 29 59.9	-2.8
	comp=Z,1.9nm,0.3s,baz=108,slow=14,SNR=5.6					
NEY	Neytrino	11.03 64	*i* P	Pn	20 28 12.8	+2.3
NEY	Neytrino	11.03 64	*i* P	Pn	20 28 12.8	+2.3
AKASG	Malin Array Be	11.58 0	Pn	Pn	20 28 18.5	+0.8
	comp=Z,2.0nm,0.3s,baz=193,slow=12,SNR=2.9					
AKASG			Sn	Sn	20 30 32.6	+5.7
	comp=Z,3.1nm,0.3s,baz=185,slow=26,SNR=4.7					
GERES	GERESS Array B	14.73 316	Pn	Pn	20 29 01.3	+0.3
	comp=Z,0.1nm,0.3s,baz=113,slow=10,SNR=6.8					
DAVOX	Davos/Dischmat	16.02 305	Pn	P	20 29 20.1	-1.3
	comp=Z,0.2nm,0.3s,baz=339,slow=19,SNR=3.2					
KEST	Kesra	16.08 264	Pn	Pn	20 29 17.9	-0.8
	comp=Z,0.1nm,0.3s,baz=330,slow=17,SNR=1.9					
KLNR	Kaliningrad	16.62 342	*e*P	Pn	20 29 24.2	-1.2
KLNR			pmax	pmax		
	comp=Z,128nm,1.8s					
OBN	Obninsk	16.76 15	⇓*e*P	Pn	20 29 27.4	+0.3
OBN			pmax	pmax		
	comp=Z,133nm,2.1s					
VSU	Vasula	19.41 356	*e*P	Pn	20 30 01.5	+1.7
VSU			pmax	pmax		
	comp=Z,91nm,1.1s					
VSU	Vasula	19.41 356	*e*P	Pn	20 30 01.5	+1.7
	comp=Z,91nm,1.1s					
FINES	FINESS Array B	22.43 356	P	P	20 30 32.3	+1.2
	comp=Z,1.8nm,0.6s,baz=153,slow=9.0,SNR=7.1					
GEYT	Alibeck	22.67 84	P	P	20 30 33.9	-0.1
	comp=Z,5.9nm,0.7s,baz=301,slow=9.5,SNR=9.6					
HFS	Hagfors	23.17 340	P	P	20 30 40.5	+1.6
	comp=Z,7.3nm,0.8s,baz=144,slow=13,SNR=4.2					
AKTK	Aktyubinsk	23.26 51	P	P	20 30 40.2	+0.2
AKTO	Aktyubinsk	23.26 51	P	P	20 30 40.1	+0.2
	comp=Z,4.3nm,0.7s,baz=253,slow=9.7,SNR=9.8					
ARU	Arti	25.98 39	⇑*e*P	P	20 31 06.7	+1.6
ARU			pmax	pmax		
	comp=Z,15nm,1.3s					
ARU	Arti	25.98 39	*e*P	P	20 31 06.7	+1.6
	comp=Z,15nm,1.3s					
EKA	Eskdalemuir Ar	26.94 318	P	P	20 31 13.8	0.0
	comp=Z,2.0nm,0.5s,baz=116,slow=12,SNR=20					
BRVK	Borovoye	31.28 50	*i* P	P	20 31 54.3	+1.9
BRVK			pmax	pmax		
	comp=Z,1.0nm,0.8s					
BRVK	Borovoye	31.28 50	*i* P	P	20 31 54.3	+1.9
	comp=Z,1.0nm,0.8s					
TORD	Torodi Ar. Bea	35.46 231	P	P	20 32 27.9	-1.3
	comp=Z,1.8nm,0.6s,baz=37,slow=8.8,SNR=18					
KURBB	Kurchatov Arra	36.20 55	P	P	20 32 35.8	+0.6
	comp=Z,2.0nm,0.7s,baz=275,slow=8.8,SNR=14					
KURK	Kurchatov	36.26 55	P	P	20 32 35.8	+0.1
KURK	Kurchatov	36.26 55	P	P	20 32 35.8	+0.1
KURK	Kurchatov	36.26 55	P	P	20 32 35.8	+0.1
MKAR	Makanchi Array	39.00 61	P	P	20 32 59.8	+0.8
	comp=Z,1.7nm,0.5s,baz=269,slow=9.0,SNR=16					
ZALV	Zalesovo Beam	39.99 49	P	P	20 33 07.2	+0.2
	comp=Z,2.1nm,0.6s,baz=271,slow=8.5,SNR=6.5					
GTA	Gaotai	53.36 66	*e*P	P	20 34 52.9	+0.7
GTA			pP	sP	20 34 56.8	-0.3
GTA			sP	pP	20 34 59.6	+3.8
GTA			pmax	pmax		
	comp=Z,4.0nm,0.7s					
SONM	Songino Array	54.55 54	P	P	20 35 01.5	+0.8
	comp=Z,1.9nm,0.6s,baz=287,slow=7.6,SNR=7.6					
ULN	Ulaanbaatar	54.95 54	*e*P	P	20 35 02.9	-0.8
ULN	Ulaanbaatar	54.95 54	*e*P	P	20 35 02.9	-0.8
ULN	Ulaanbaatar	54.95 54	*e*P	P	20 35 02.9	-0.8
CMAR	Chiang Mai Arr	63.09 88	P	P	20 35 59.5	-0.8
	comp=Z,0.9nm,0.7s,baz=300,slow=8.0,SNR=5.8					
BOSA	Boshof	67.49 184	P	P	20 36 26.4	-2.2
	comp=Z,3.6nm,0.9s,baz=344,slow=6.9,SNR=3.6					
BILL	Bilibino	68.42 16	⇓*e*P	P	20 36 38.8	+4.8
BILL			*e*		20 39 04.7	
BILL			pmax	pmax		
	comp=Z,2.0nm,1.6s					
SEY	Seymchan	68.67 24	P	P	20 36 36.9	+1.3
	comp=Z,0.9nm,0.3s,baz=90,slow=3.9,SNR=3.9					
KSAR	Wonju Array Be	73.36 55	P	P	20 37 04.6	+0.1
KSAR	Wonju Array Be	73.36 55	P	P	20 37 04.6	+0.1
KSAR	Wonju Array Be	73.36 55	P	P	20 37 04.6	+0.1
KSRS	Korea Array	73.38 55	P	P	20 37 04.6	0.0

*ISCJB **19** 20:26:32.8±0.8, 59°.81N±0°.04×141°.49W±0°.05, h12km±5km, Error ellipse: s-maj=6.0km s-min=4.4km az=1.0*
*PGC **19** 20:26:33.5±1.2, 59°.84N×141°.64W, h1km, ML3.0/6, 135km Wnw of Yakutat, Ak Southeastern Alaska*
*NEIC **19** 20:26:35.3, 59°.95N×141°.52W, h8km, ML2.7(AEIC), ML3.0(OTT), After AEIC.*

ISC 19 20:26:34.4±1.5, 59°.92N±0°.05×141°.56W±0°.02, h8km±10km, n43, σ0s87/64, Southeastern Alaska

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MESA	MESA	0.33	323	P	Pg	20 26 41.9	+1.0
MESA				S	Sb	20 26 48.9	+0.7
RKAV	Rock Avalanche	0.40	15	P	Pg	20 26 43.0	+0.8
RKAV				S	Sb	20 26 50.9	+0.8
TABL	Table Mountain	0.56	21	P	Pg	20 26 45.8	+0.5
TABL				S	Sb	20 26 55.3	+0.3
BAGL	Bagley Icefiel	0.63	335	P	Pg	20 26 47.1	+0.5
BAGL				S	Sb	20 26 57.3	+0.6
KULT	Kultieth River	0.67	300	P	Pg	20 26 47.7	+0.4
KULT				S	Sb	20 26 58.6	+0.6
BARK	Barkley Ridge	0.67	316	P	Pg	20 26 47.7	+0.3
BARK				S	Sb	20 26 58.6	+0.6
ISLE	Juniper Island	0.79	331	P	Pg	20 26 49.6	0.0
ISLE				S	Sb	20 27 02.0	+0.6
GRNC	Granite Creek	0.82	353	P	Pg	20 26 50.2	0.0
GRNC				S	Sb	20 27 02.7	+0.3
BGLC	Bering Glacier	0.89	284	P	Pg	20 26 51.7	+0.2
LOGN	Logan Glacier	0.95	17	P	Pg	20 26 51.9	-0.7
LOGN				S	Sb	20 27 05.8	-0.2
GRIN	Grindle Hills	0.95	293	P	Pg	20 26 52.4	-0.3
KHIT	Khitrov Hills	1.00	303	P	Pg	20 26 53.0	-0.6
TGL	Tana Glacier	1.05	323	P	Pg	20 26 53.7	-0.9
TGL				S	Sg	20 27 08.8	+0.6
CTGM	Chitina Glacie	1.05	6	P	Pg	20 26 53.8	-0.9
CTGM				S	Sb	20 27 08.9	-0.2
CTGM	Chitina Glacie	1.05	6	P	Pg	20 26 53.8	-0.9
KIAG	Kiagna River	1.08	339	P	Pg	20 26 54.2	-1.0
BARN	Barnard Glacie	1.15	357	P	Pg	20 26 55.5	-0.9
CRQM	Cirque	1.15	318	P	Pg	20 26 54.9	-1.6
BERG	Berg Lake	1.17	295	P	Pg	20 26 55.9	-1.0
BERG				S	Sg	20 27 12.7	+0.5
BALM	Baldy	1.19	341	P	Pg	20 26 55.8	-1.4
BALM				S	Sg	20 27 12.1	-0.4
BALM	Baldy	1.19	341	P	Pg	20 26 55.8	-1.4
NICHA	Nichawak Mount	1.25	286	P	Pn	20 26 57.4	-0.8
PTPK	Patty Peak	1.35	341	P	Pn	20 26 58.6	-1.1
VRDI	Verde Repeater	1.61	325	P	Pn	20 27 02.2	-1.2
MCARA	McCarthy VSAT	1.64	334	P	Pn	20 27 02.9	-0.7
YUK7	Dusty Glacier	1.81	69	Pn	Pn	20 27 06.1	0.0
YUK7				Sg	Sb	20 27 31.2	+0.4
YUK7	Dusty Glacier	1.81	69	Pn	Pn	20 27 06.1	0.0
YUK7				Sg	Sb	20 27 31.2	+0.4
BMRM	Bremner River	1.84	306	P	Pn	20 27 05.9	-0.5
YUK2	White River	1.91	10	Pn	Pn	20 27 08.6	+1

KCTX	Karacabey (Bur	1.36	333	ePn	Pb	20 32 11.8	+1.2
KCTX	Karacabey (Bur	1.36	333	ePn	Pb	20 32 11.9	+1.2
ADVT	Abdulvahap	1.45	18	ePN	Pn	20 32 11.8	+0.5
ADVT	Abdulvahap	1.45	18	ePn	Pn	20 32 11.8	+0.5
GONE	Gonen-Balikesi	1.51	311	ePN	Pb	20 32 13.1	-0.1
GONE	Gonen-Balikesi	1.51	311	ePn	Pb	20 32 13.1	-0.1
ARMT	Armutlu	1.53	351	ePN	Pn	20 32 12.6	+0.2
ARMT	Armutlu	1.53	351	ePn	Pn	20 32 12.6	+0.2
EDC	Edincik	1.64	323	ePN	Pb	20 32 15.2	-0.1
EDC	Edincik	1.64	323	ePn	Pb	20 32 15.2	-0.1
GULT	Gulveren	1.73	37	ePN	Pn	20 32 15.8	+0.6
GULT	Gulveren	1.73	37	ePn	Pn	20 32 15.8	+0.6
SPNC	Sapanca-Adapaz	1.85	28	ePN	Pn	20 32 17.3	+0.5
SPNC	Sapanca-Adapaz	1.85	28	ePn	Pn	20 32 17.3	+0.5
SVRH	Sivrihisar-ESK	1.87	77	ePN	Pn	20 32 17.1	-0.1
SVRH	Sivrihisar-ESK	1.87	77	ePn	Pn	20 32 17.1	-0.1
ISK	Istanbul-Kandi	2.01	358	ePN	Pb	20 32 20.0	+1.0
ISK	Istanbul-Kandi	2.01	358	ePn	Pb	20 32 20.0	+1.0
MDUB	Mudurnu	2.11	47	ePN	Pn	20 32 21.3	+0.8
MDUB	Mudurnu	2.11	47	ePn	Pn	20 32 21.3	+0.8
SILT	Sile	2.13	10	ePN	Pn	20 32 21.5	+0.9
SILT	Sile	2.13	10	ePn	Pn	20 32 21.5	+0.9

*ISCJB **19** 20:32:32.3±0.5, 39°.12N±0°.03×29°.01E±0°.03, h3km±6km,*
Error ellipse: s-maj=5.0km s-min=3.6km az=151.8
*CSEM **19** 20:32:32.6±0.1, 39°.13N×29°.02E, h5km, MD2.3, Error*
ellipse: s-maj=1.8km s-min=1.5km az=120.0
*ISK **19** 20:32:32.1, 39°.13N×29°.05E, h6km, ML3.3*
*DDA **19** 20:32:32.3, 39°.13N×29°.01E, h7km, Md2.3*

ISC 19 20:32:32.8±1.0, 39°.13N±0°.02×29°.02E±0°.02, h7km±10km, n47, σ0°.40/64, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.25	249	P	Pg	20 32 37.8	0.0
DEMI				S	Sg	20 32 41.2	0.0
DEMI	Demirci	0.25	249	*i* P	Pg	20 32 37.8	0.0
DEMI				*i* S	Sg	20 32 41.2	0.0
GDZ	Gediz	0.36	97	P	Pg	20 32 40.0	+0.1
GDZ				S	Sg	20 32 45.5	+0.8
GDZ	Gediz	0.36	97	*i* P	Pg	20 32 40.0	+0.1
GDZ				*i* S	Sg	20 32 45.5	+0.8
TVSB	Tavsanli	0.47	47	PG	Pg	20 32 41.3	-0.6
TVSB				*e*SG	Sg	20 32 48.1	+0.2
TVSB	Tavsanli	0.47	47	*i* Pg	Pg	20 32 41.3	-0.6
TVSB				*e*Sg	Sg	20 32 48.2	+0.2
KULA	Kula-Manisa	0.68	205	*e*PG	Pg	20 32 45.8	-0.1
KULA	Kula-Manisa	0.68	205	*e*Pg	Pg	20 32 45.8	-0.1
MANT	Manisa	0.73	209	P	Pg	20 32 46.4	-0.5
MANT				S	Sg	20 32 55.4	-1.2
MANT	Manisa	0.73	209	*i* P	Pg	20 32 46.4	-0.5
MANT				*i* S	Sg	20 32 55.4	-1.2
KHAL	Karahalli	0.85	154	P	Pb	20 32 49.7	-0.2
KHAL				S	Sg	20 33 00.3	+0.3
KHAL	Karahalli	0.85	154	*i* P	Pb	20 32 49.6	-0.2
KHAL				*i* S	Sg	20 33 00.3	+0.3
KHL	Karahalli	0.90	154	*e*PG	Pg	20 32 49.8	-0.3
KHL				*e*SG	Sg	20 33 02.2	+0.5
KHL	Karahalli	0.90	154	*e*Pg	Pg	20 32 49.8	-0.3
KHL				*e*Sg	Sg	20 33 02.2	+0.5
ORLT	Orhaneli	0.92	354	*e*PG	Pg	20 32 50.3	-0.1
ORLT	Orhaneli	0.92	354	*e*Pg	Pg	20 32 50.3	-0.1
AKHS	Akhisar	0.97	255	P	Pg	20 32 51.6	+0.1
AKHS				S	Sg	20 33 04.2	+0.1
AKHS	Akhisar	0.97	255	*i* P	Pg	20 32 51.6	+0.1
AKHS				*i* S	Sg	20 33 04.2	+0.1
AKS	Akhisar	0.97	255	*e*PG	Pg	20 32 51.6	+0.1
AKS	Akhisar	0.97	255	*e*Pg	Pg	20 32 51.6	+0.1
BALB	Balikesir	1.02	300	*e*PG	Pg	20 32 52.5	+0.2
BALB	Balikesir	1.02	300	*e*Pg	Pg	20 32 52.5	+0.2
IGD	Bursa	1.14	7	*i* P	Pg	20 32 53.9	-0.8
IGD				*i* S	Sn	20 33 10.7	-0.2
MDNY	Mudanya-Bursa	1.24	355	*e*PN	Pg	20 32 56.3	-0.3
MDNY	Mudanya-Bursa	1.24	355	*e*Pn	Pg	20 32 56.3	-0.3
KCTX	Karacabey (Bur	1.24	336	*e*PN	Pb	20 32 56.6	+0.1
KCTX	Karacabey (Bur	1.24	336	*e*Pn	Pb	20 32 56.6	+0.1
CAVI	Cavuskoy	1.24	30	*e*PN	Pg	20 32 56.0	-0.6
CAVI	Cavuskoy	1.24	30	*e*Pn	Pg	20 32 56.0	-0.6
IZI	Iznik	1.25	16	*e*PN	Pg	20 32 56.3	-0.6
IZI	Iznik	1.25	16	*e*Pn	Pg	20 32 56.3	-0.6
BORA	Eskisehir	1.34	56	P	Pn	20 32 58.0	+0.1
BORA				S	Sn	20 33 16.1	+0.1
BORA	Eskisehir	1.34	56	*i* P	Pn	20 32 58.0	+0.1
BORA				*i* S	Sn	20 33 16.1	+0.1
GONE	Gonen-Balikesi	1.38	312	*e*PN	Pn	20 32 58.6	+0.2
GONE	Gonen-Balikesi	1.38	312	*e*Pn	Pn	20 32 58.6	+0.2
ADVT	Abdulvahap	1.41	23	*e*PN	Pn	20 32 59.1	+0.2
ADVT	Abdulvahap	1.41	23	*e*Pn	Pn	20 32 59.1	+0.2
ARMT	Armutlu	1.44	355	*e*PN	Pn	20 32 59.4	+0.1
ARMT	Armutlu	1.44	355	*e*Pn	Pn	20 32 59.4	+0.1
EDC	Edincik	1.50	324	*e*PN	Pn	20 33 00.6	+0.4
EDC	Edincik	1.50	324	*e*Pn	Pn	20 33 00.6	+0.4
GULT	Gulveren	1.74	41	*e*PN	Pn	20 33 03.7	+0.3
GULT	Gulveren	1.74	41	*e*Pn	Pn	20 33 03.7	+0.3
HRT	Hereke	1.76	16	*e*PN	Pn	20 33 03.9	+0.2
HRT	Hereke	1.76	16	*e*Pn	Pn	20 33 03.9	+0.2
SILT	Sile	2.07	13	*e*PN	Pn	20 33 08.4	+0.4
SILT	Sile	2.07	13	*e*Pn	Pn	20 33 08.4	+0.4

*ISK **19** 20:34:58.5, 39°.04N×29°.09E, h5km, ML3.8*
*DDA **19** 20:34:59.8, 39°.14N×29°.02E, h8km, Md2.4*
*CSEM **19** 20:35:00.1±0.1, 39°.07N×29°.06E, h2km, MD2.4, Error*
ellipse: s-maj=3.4km s-min=2.6km az=130.0

ISC 19 20:34:58.9±0.9, 39°.07N±0°.02×29°.07E±0°.02, h12km±8km, n72, σ1°.29/97, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.28	265	P	Pb	20 35 05.1	-0.8
DEMI				S	Sg	20 35 09.1	+0.4
DEMI	Demirci	0.28	265	*i* P	Pb	20 35 05.1	-0.8
DEMI				*i* S	Sg	20 35 09.1	+0.4
GDZ	Gediz	0.32	86	*i* P	Pg	20 35 02.9	-2.6
GDZ				*i* S	Sb	20 35 11.4	-0.4
TVSB	Tavsanli	0.49	38	PG	Pb	20 35 09.0	-0.5
TVSB	Tavsanli	0.49	38	*i* Pg	Pb	20 35 09.0	-0.5
KULA	Kula-Manisa	0.64	210	PG	Pb	20 35 11.6	-0.5
KULA				*e*SG	Sb	20 35 21.3	+0.4
KULA	Kula-Manisa	0.64	210	*i* Pg	Pb	20 35 11.6	-0.5
KULA				*e*Sg	Sb	20 35 21.3	+0.4
MANT	Manisa	0.70	215	P	Pn	20 35 13.6	-1.3
MANT				S	Sb	20 35 22.9	0.0
MANT	Manisa	0.70	215	*i* P	Pn	20 35 13.6	-1.3
MANT				*i* S	Sb	20 35 22.9	0.0
KHAL	Karahalli	0.77	155	*i* P	Pg	20 35 09.3	-4.6
KHL	Karahalli	0.82	154	*e*PG	Pb	20 35 15.0	-0.2
KHL				*e*SG	Sn	20 35 27.0	-1.4
KHL	Karahalli	0.82	154	*e*Pg	Pb	20 35 15.0	-0.2
KHL				*e*Sg	Sn	20 35 27.0	-1.4
ORLT	Orhaneli	0.99	352	*e*PG	Pn	20 35 19.1	+0.4
ORLT	Orhaneli	0.99	352	*e*Pg	Pn	20 35 19.1	+0.4
AKHS	Akhisar	1.00	260	P	Pn	20 35 19.4	+0.6
AKHS				S	Sn	20 35 32.2	-0.5
AKHS	Akhisar	1.00	260	*i* P	Pn	20 35 19.4	+0.6
AKHS				*i* S	Sn	20 35 32.2	-0.5
AKS	Akhisar	1.00	260	*e*PG	Pn	20 35 19.3	+0.5
AKS	Akhisar	1.00	260	*e*Pg	Pn	20 35 19.3	+0.5
BALB	Balikesir	1.09	302	*e*PN	Pn	20 35 20.9	+1.0
BALB	Balikesir	1.09	302	*e*Pn	Pn	20 35 20.9	+1.0
IGD	Bursa	1.20	5	*i* P	Pn	20 35 21.0	-0.5
IGD				*i* S	Sb	20 35 32.5	-4.5
CAVI	Cavuskoy	1.28	27	*e*PN	Pg	20 35 24.5	+0.9
CAVI	Cavuskoy	1.28	27	*e*Pn	Pg	20 35 24.5	+0.9
IZI	Iznik	1.31	14	*e*PN	Pg	20 35 24.8	+0.7
IZI	Iznik	1.31	14	*e*Pn	Pg	20 35 24.8	+0.7
MDNY	Mudanya-Bursa	1.31	354	*e*PN	Pg	20 35 25.1	+1.0
MDNY	Mudanya-Bursa	1.31	354	*e*Pn	Pg	20 35 25.1	+1.0
DENT	Denizli	1.31	181	*e*PN	Pg	20 35 24.3	+0.2
DENT	Denizli	1.31	181	*e*Pn	Pg	20 35 24.3	+0.2
BALY	Balya	1.31	301	P	Pn	20 35 23.2	+0.1
BALY				S	Sg	20 35 41.9	+0.7
BALY	Balya	1.31	301	*i* P	Pn	20 35 23.2	+0.1
BALY				*i* S	Sg	20 35 41.9	+0.7
KCTX	Karacabey (Bur	1.32	335	*e*PN	Pg	20 35 24.8	+0.5
KCTX	Karacabey (Bur	1.32	335	*e*Pn	Pg	20 35 24.8	+0.5
BORA	Eskisehir	1.34	52	P	Pg	20 35 25.2	+0.5
BORA				S	Sg	20 35 43.1	+0.9
BORA	Eskisehir	1.34	52	*i* P	Pg	20 35 25.2	+0.5
BORA				*i* S	Sg	20 35 43.1	+0.9
GEMT	Gemlik	1.37	4	*e*PN	Pg	20 35 26.4	+1.1
GEMT	Gemlik	1.37	4	*e*Pn	Pg	20 35 26.4	+1.1
DNZL	Cakiroluk	1.38	181	P	Pg	20 35 27.1	+1.7
DNZL	Cakiroluk	1.38	181	*i* P	Pg	20 35 27.1	+1.7
DNZL				*i* S	Sg	20 35 49.3	+6.1
ESKT	Eskisehir	1.45	71	*i* P	Pg	20 35 28.1	+1.3
ESKT				*i* S	Sg	20 35 46.6	+0.9
SEYT	Eskypehyr	1.45	71	P	Pg	20 35 28.1	+1.3
SEYT				S	Sg	20 35 46.6	+0.9
GONE	Gonen-Balikesi	1.45	313	*e*PN	Pg	20 35 27.1	+0.3
GONE	Gonen-Balikesi	1.45	313	*e*Pn	Pg	20 35 27.1	+0.3
ADVT	Abdulvahap	1.46	20	*e*PN	Pg	20 35 27.7	+0.7
ADVT	Abdulvahap	1.46	20	*e*Pn	Pg	20 35 27.7	+0.7
ARMT	Armutlu	1.51	354	*e*PN	Pg	20 35 28.5	+0.6
ARMT	Armutlu	1.51	354	*e*Pn	Pg	20 35 28.5	+0.6
GPA	Golpazari	1.55	38	*e*PN	Pg	20 35 29.3	+0.6
GPA	Golpazari	1.55	38	*e*Pn	Pg	20 35 29.3	+0.6
EDC	Edincik	1.58	324	*e*PN	Pg	20 35 28.9	-0.4
EDC	Edincik	1.58	324	*e*Pn	Pg	20 35 28.9	-0.4
AYDN	Tasoluk	1.69	214	P	Pg	20 35 32.6	+1.3
AYDN	Tasoluk	1.69	214	*i* P	Pg	20 35 32.6	+1.3
AYDN				*i* S	Sg	20 35 55.7	+2.5
GULT	Gulveren	1.76	39	*e*PN	Pb	20 35 31.8	+0.6
GULT	Gulveren	1.76	39	*e*Pn	Pb	20 35 31.8	+0.6
HRT	Hereke	1.81	14	*e*PN	Pb	20 35 32.6	+0.5
HRT	Hereke	1.81	14	*e*Pn	Pb	20 35 32.6	+0.5
AYVA	Ayvalik	1.87	278	P	Pg	20 35 34.4	-0.3
AYVA				S	Sg	20 35 58.1	-0.9
AYVA	Ayvalik	1.87	278	*i* P	Pg	20 35 34.4	-0.3
AYVA				*i* S	Sg	20 35 58.1	-0.9
SPNC	Sapanca-Adapaz	1.88	30	*e*PN	Pb	20 35 33.7	+0.6
SPNC	Sapanca-Adapaz	1.88	30	*e*Pn	Pb	20 35 33.7	+0.6
SVRH	Sivrihisar-ESK	1.94	78	*e*PN	Pb	20 35 34.6	+0.4
SVRH	Sivrihisar-ESK	1.94	78	*e*Pn	Pb	20 35 34.6	+0.4
DGB	¨zmir	1.99	240	*i* P	Pg	20 35 36.4	-0.8
DGB				*i* S	Sg	20 36 01.9	-1.1
ISK	Istanbul-Kandi	2.00	360	*e*PN	Pb	20 35 35.1	0.0
ISK	Istanbul-Kandi	2.00	360	*e*Pn	Pb	20 35 35.2	0.0
AUMIH	MIHALICIK	2.03	66	*i* P	Pg	20 35 39.1	+1.2
AUMIH				*i* S	Sg	20 36 05.4	+1.2
URLA	Izmir	2.06	251	*i* P	Pg	20 35 41.6	+3.1
URLA				*i* S	Sg	20 36 05.4	+0.2
SILT	Sile	2.13	12	*e*PN	Pb	20 35 37.0	-0.4
SILT	Sile	2.13	12	*e*Pn	Pb	20 35 37.0	-0.4
MDUB	Mudurnu	2.16	49	*e*PN	Pb	20 35 37.2	-0.7
MDUB	Mudurnu	2.16	49	*e*Pn	Pb	20 35 37.2	-0.7

*IDC **19** 20:36:26.5±1.1, 39°.12N×28°.94E, h0km, mb3.5/6,*
mb1 3.5/10, mb1mx3.4/47, mbtmp3.5/10, ML3.2/4, Error
ellipse: s-maj=18.3km s-min=14.1km az=175.0
*DDA **19** 20:36:26.5, 39°.12N×29°.10E, h2km, Md2.8*
*ISK **19** 20:36:26.3, 39°.10N×29°.19E, h5km, ML3.9*
*CSEM **19** 20:36:27.6±0.1, 39°.11N×29°.15E, h2km, MD2.8, Error*
ellipse: s-maj=3.0km s-min=2.4km az=86.0

ISC 19 20:36:27.1±1.1, 39°.12N±0°.01×29°.10E±0°.01, h1km±9km, n174, σ1°.06/214, mb3.5/6, 24C-4D, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	Gediz	0.30	95	P	Pg	20 36 33.0	+0.2
GDZ				S	Sg	20 36 37.6	+0.9
GDZ	Gediz	0.30	95	*i* P	Pg	20 36 33.0	+0.2
GDZ				*i* S	Sg	20 36 37.6	+0.9
DEMI	Demirci	0.31	256	P	Pg	20 36 33.3	+0.3
DEMI				S	Sg	20 36 37.7	+0.8
DEMI	Demirci	0.31	256	*i* P	Pg	20 36 33.3	+0.3
DEMI				*i* S	Sg	20 36 37.7	+0.8
TVSB	Tavsanli	0.44	40	PG	Pg	20 36 35.1	-0.4
TVSB	Tavsanli	0.44	40	*i* Pg	Pg	20 36 35.1	-0.4
DURS	Dursunbey	0.69	315	P	Pg	20 36 40.4	+0.1
DURS				S	Sb	20 36 50.8	-1.2
DURS	Dursunbey	0.69	315	*i* P	Pg	20 36 40.4	+0.1
DURS				*i* S	Sb	20 36 50.9	-1.2
KULA	Kula-Manisa	0.69	210	PG	Pb	20 36 41.2	-0.8
KULA	Kula-Manisa	0.69	210	*i* Pg	Pb	20 36 41.2	-0.8
MANT	Manisa	0.75	214	P	Pg	20 36 41.6	+0.1
MANT				S	Sg	20 36 50.6	-0.7
MANT	Manisa	0.75	214	*i* P	Pg	20 36 41.6	+0.1
MANT				*i* S	Sg	20 36 50.6	-0.7
KHAL	Karahalli	0.81	157	P	Pg	20 36 42.4	-0.1
KHAL				S	Sb	20 36 54.1	-1.3
KHAL	Karahalli	0.81	157	*i* P	Pg	20 36 42.4	-0.1
KHAL				*i* S	Sb	20 36 54.1	-1.3
KHL	Karahalli	0.86	157	*e*PG	Pg	20 36 42.6	-0.9
KHL	Karahalli	0.86	157	*e*Pg	Pg	20 36 42.7	-0.9
ORLT	Orhaneli	0.94	351	*e*PG	Pb	20 36 46.2	-0.1
ORLT	Orhaneli	0.94	351	*e*Pg	Pb	20 36 46.2	-0.1
AKHS	Akhisar	1.03	257	P	Pg	20 36 47.1	+0.3
AKHS				S	Sb	20 37 00.9	-0.9
AKHS	Akhisar	1.03	257	*i* P	Pg	20 36 47.1	+0.3
AKHS				*i* S	Sb	20 37 00.9	-0.9
AKS	Akhisar	1.03	257	*e*PN	Pn	20 36 48.3	-0.4
AKS	Akhisar	1.03	257	*e*Pn	Pn	20 36 48.3	-0.4
BALB	Balikesir	1.08	299	*e*PN	Pn	20 36 49.4	0.0
BALB				*e*SN	Sn	20 37 05.9	+0.8
BALB	Balikesir	1.08	299	*e*Pn	Pn	20 36 49.4	0.0
BALB				*e*Sn	Sn	20 37 05.9	+0.8
IGD	Bursa	1.15	4	*i* P	Pb	20 36 47.8	-2.1
IGD				*i* S	Sn	20 37 05.3	-1.6
CAVI	Cavuskoy	1.23	28	*e*PN	Pg	20 36 50.8	+0.1
CAVI				*e*SN	Sn	20 37 08.4	-0.3
CAVI	Cavuskoy	1.23	28	*e*Pn	Pg	20 36 50.8	+0.1
CAVI				*e*Sn	Sn	20 37 08.5	-0.3
IZI	Iznik	1.25	13	*e*PN	Pn	20 36 51.0	-0.9
IZI	Iznik	1.25	13	*e*Pn	Pn	20 36 51.0	-0.9
MDNY	Mudanya-Bursa	1.26	353	*e*PN	Pg	20 36 52.5	+1.2
MDNY	Mudanya-Bursa	1.26	353	*e*Pn	Pg	20 36 52.5	+1.2
KCTX	Karacabey (Bur	1.28	334	*e*PN	Pg	20 36 52.9	+1.2
KCTX	Karacabey (Bur	1.28	334	*e*Pn	Pg	20 36 52.9	+1.2
BORA	Eskisehir	1.30	54	P	Pb	20 36 51.8	-0.6
BORA				S	Sg	20 37 09.4	+0.6
BORA	Eskisehir	1.30	54	*i* P	Pb	20 36 51.8	-0.6
BORA				*i* S	Sg	20 37 09.4	+0.6
BALY	Balya	1.30	299	P	Pn	20 36 51.6	-1.0
BALY	Balya	1.30	299	*i* P	Pn	20 36 51.6	-1.0
BALY				*i* S	Sb	20 37 08.3	-1.4
GEMT	Gemlik	1.32	3	*e*PN	Pg	20 36 52.6	+0.2
GEMT	Gemlik	1.32	3	*e*Pn	Pg	20 36 52.6	+0.2
DENT	Denizli	1.36	182	*e*PN	Pn	20 36 52.6	-0.7
DENT	Denizli	1.36	182	*e*Pn	Pn	20 36 52.6	-0.7
ADVT	Abdulvahap	1.41	20	*e*PN	Pb	20 36 53.9	-0.3
ADVT	Abdulvahap	1.41	20	*e*Pn	Pb	20 36 53.9	-0.3
DNZL	Cakiroluk	1.42	182	P	Pb	20 36 53.8	-0.8
DNZL				S	Sg	20 37 14.0	+1.2
DNZL	Cakiroluk	1.42	182	*i* P	Pb	20 36 53.8	-0.8
DNZL				*i* S	Sg	20 37 14.0	+1.2
GONE	Gonen-Balikesi	1.43	311	*e*PN	Pg	20 36 55.4	+0.8
GONE	Gonen-Balikesi	1.43	311	*e*Pn	Pg	20 36 55.4	+0.8
ARMT	Armutlu	1.46	353	*e*PN	Pb	20 36 54.7	-0.4
ARMT	Armutlu	1.46	353	*e*Pn	Pb	20 36 54.7	-0.4
BOLV	Bolvadin	1.50	105	P	Pb	20 36 55.1	-0.7
BOLV	Bolvadin	1.50	105	*i* P	Pb	20 36 55.1	-0.7
BOLV				*i* S	Sg	20 37 16.8	+1.6
GPA	Golpazari	1.50	38	*e*PN	Pb	20 36 55.3	-0.5
GPA	Golpazari	1.50	38	*e*Pn	Pb	20 36 55.3	-0.5
AYDB	Zeytinkoy-Aydi	1.50	219	*e*PN	Pg	20 36 56.1	+0.2
AYDB	Zeytinkoy-Aydi	1.50	219	*e*Pn	Pg	20 36 56.1	+0.2
EDC	Edincik	1.56	323	*e*PN	Pg	20 36 57.1	+0.2
EDC	Edincik	1.56	323	*e*Pn	Pg	20 36 57.2	+0.2
KNL	Bal¨–kesir	1.67	314	*i* P	Pn	20 36 57.3	-0.3
KNL				*i* S	Sb	20 37 19.9	-0.5
DKL	Dikili	1.71	269	*e*PN	Pg	20 36 59.6	-0.2
DKL	Dikili	1.71	269	*e*Pn	Pg	20 36 59.6	-0.2
ISP	Isparta	1.71	139	*e*PN	Pn	20 36 57.7	-0.5
ISP	Isparta	1.71	139	⇑*e*P	Pg	20 37 00.4	+0.6
ISP	Isparta	1.71	139	*e*Pn	Pn	20 36 57.7	-0.5
ISP	Isparta	1.71	139	⇑*e*P	Pg	20 37 00.4	+0.6
GULT	Gulveren	1.71	39	*e*PN	Pb	20 36 58.5	-0.9
GULT	Gulveren	1.71	39	*e*Pn	Pb	20 36 58.5	-0.9
BUY	Buyukada	1.73	1	P	Pb	20 36 58.6	-1.2
BUY				S	Sb	20 37 21.8	-0.3
BUY	Buyukada	1.73	1	*i* P	Pb	20 36 58.6	-1.2
BUY				*i* S	Sb	20 37 21.8	-0.3
BAGO	Egridir - ISPA	1.74	130	*i* P	Pn	20 36 57.8	-0.8
BAGO				*i* S	Sg	20 37 24.7	+1.8
AYDN	Tasoluk	1.74	214	P	Pb	20 36 59.0	-0.9
AYDN				S	Sg	20 37 23.2	+0.2
AYDN	Tasoluk	1.74	214	*i* P	Pb	20 36 59.0	-0.9
AYDN				*i* S	Sg	20 37 23.2	+0.2
HRT	Hereke	1.76	14	*e*PN	Pb	20 36 59.3	-1.0
HRT	Hereke	1.76	14	*e*Pn	Pb	20 36 59.3	-1.0
SPNC	Sapanca-Adapaz	1.82	30	*e*PN	Pb	20 37 00.5	-0.8
SPNC	Sapanca-Adapaz	1.82	30	*e*Pn	Pb	20 37 00.5	-0.8
AYVA	Ayvalik	1.88	277	P	Pg	20 37 03.0	-0.2
AYVA				S	Sg	20 37 28.7	+1.2
AYVA	Ayvalik	1.88	277	*i* P	Pg	20 37 03.0	-0.2
AYVA				*i* S	Sg	20 37 28.7	+1.2
MRMT	Marmara Adasi	1.88	323	*e*PN	Pb	20 37 02.2	-0.2
MRMT	Marmara Adasi	1.88	323	*e*Pn	Pb	20 37 02.2	-0.2
KRBG	Karabiga-Canak	1.89	313	*e*PN	Pb	20 37 01.9	-0.4
KRBG	Karabiga-Canak	1.89	313	*e*Pn	Pb	20 37 01.9	-0.4
GOLH	Golhisar	1.91	169	P	Pb	20 37 01.4	-1.4
GOLH	Golhisar	1.91	169	*i* P	Pb	20 37 01.4	-1.4
GOLH				*i* S	Sg	20 37 30.2	+1.7
SVRH	Sivrihisar-ESK	1.91	79	*e*PN	Pn	20 37 00.6	-0.4
SVRH	Sivrihisar-ESK	1.91	79	*e*Pn	Pn	20 37 00.6	-0.4
ISK	Istanbul-Kandi	1.95	359	*e*PN	Pb	20 37 02.3	-1.2
ISK	Istanbul-Kandi	1.95	359	*e*Pn	Pb	20 37 02.3	-1.2
GLHS	Glhisar (BURDU	1.98	171	*e*PN	Pb	20 37 02.7	-1.3
GLHS	Glhisar (BURDU	1.98	171	*e*Pn	Pb	20 37 02.7	-1.3
AUMIH	MIHALICIK	1.99	67	*i* P	Pg	20 37 05.1	-0.3
AUMIH				*i* S	Sg	20 37 32.9	+1.8
BCK	Bucak	2.03	144	*e*PN	Pn	20 37 01.7	-0.8
BCK	Bucak	2.03	144	*e*Pn	Pn	20 37 01.7	-0.8
BTAS	Taskesti	2.06	45	*i* P	Pb	20 37 05.8	+0.4
BTAS				*i* S	Sg	20 37 34.7	+1.2
BGKT	Bogazkoy	2.08	353	*e*PN	Pb	20 37 04.0	-1.6
BGKT	Bogazkoy	2.08	353	*e*Pn	Pb	20 37 04.1	-1.6
SILT	Sile	2.08	11	*e*PN	Pb	20 37 03.8	-1.8
SILT	Sile	2.08	11	*e*Pn	Pb	20 37 03.8	-1.8
YER	Yerkesik	2.08	198	*e*PN	Pb	20 37 04.6	-1.1
YER	Yerkesik	2.08	198	*e*Pn	Pb	20 37 04.6	-1.1
MDUB	Mudurnu	2.11	49	*e*PN	Pb	20 37 04.3	-1.9
MDUB	Mudurnu	2.11	49	*e*Pn	Pb	20 37 04.3	-1.9
KLYT	Kilyos	2.14	359	*e*PN	Pb	20 37 04.7	-1.9
KLYT	Kilyos	2.14	359	*e*Pn	Pb	20 37 04.7	-1.9
KAND	Kocaeli-Kandir	2.15	23	P	Pb	20 37 07.0	+0.2
KAND				S	Sb	20 37 31.8	-2.2
KAND	Kocaeli-Kandir	2.15	23	*i* P	Pb	20 37 07.0	+0.2
KAND				*i* S	Sb	20 37 31.8	-2.2
RKY	Sarkoy-Tekirda	2.16	317	*e*PN	Pb	20 37 05.9	-1.1
RKY	Sarkoy-Tekirda	2.16	317	*e*Pn	Pb	20 37 05.9	-1.1

MANT				*i* S		**Sg**	**20 38 17.5**	**-0.5**
KHAL	**Karahalli**	**0.85**	**152**	P		**Pg**	**20 38 10.9**	**-0.3**
KHAL				S		**Sg**	**20 38 21.9**	**-0.5**
KHAL	**Karahalli**	**0.85**	**152**	*i* P		**Pg**	**20 38 10.9**	**-0.3**
KHAL				*i* S		**Sg**	**20 38 21.9**	**-0.5**
KHL	**Karahalli**	**0.90**	**152**	*e*PG		**Pn**	**20 38 13.0**	**-0.2**
KHL	**Karahalli**	**0.90**	**152**	*e*Pg		**Pn**	**20 38 13.0**	**-0.2**
ORLT	**Orhaneli**	**0.93**	**356**	*e*PG		**Pg**	**20 38 13.2**	**+0.4**
ORLT				*e*SG		**Sn**	**20 38 26.5**	**-0.3**
ORLT	**Orhaneli**	**0.93**	**356**	*e*Pg		**Pg**	**20 38 13.2**	**+0.4**
ORLT				*e*Sg		**Sn**	**20 38 26.5**	**-0.3**
AKHS	**Akhisar**	**0.94**	**256**	P		**Pn**	**20 38 13.4**	**-0.3**
AKHS				S		**Sb**	**20 38 24.8**	**-0.5**
AKHS	**Akhisar**	**0.94**	**256**	*i* P		**Pn**	**20 38 13.4**	**-0.3**
AKHS				*i* S		**Sb**	**20 38 24.8**	**-0.5**
AKS	**Akhisar**	**0.94**	**256**	*e*PG		**Pg**	**20 38 13.2**	**+0.2**
AKS				*e*SG		**Sg**	**20 38 26.2**	**+0.9**
AKS	**Akhisar**	**0.94**	**256**	*e*Pg		**Pg**	**20 38 13.3**	**+0.2**
AKS				*e*Sg		**Sg**	**20 38 26.2**	**+0.9**
BALB	**Balikesir**	**1.00**	**302**	*e*PG		**Pn**	**20 38 15.0**	**+0.5**
BALB				*e*SG		**Sn**	**20 38 28.7**	**+0.3**
BALB	**Balikesir**	**1.00**	**302**	*e*Pg		**Pn**	**20 38 15.0**	**+0.5**
BALB				*e*Sg		**Sn**	**20 38 28.7**	**+0.3**
IGD	**Bursa**	**1.16**	**8**	*i* P		**Pb**	**20 38 15.1**	**-1.5**
IGD				*i* S		**Sb**	**20 38 30.4**	**-1.1**
BALY	**Balya**	**1.23**	**301**	P		**Pg**	**20 38 19.0**	**+0.6**
BALY				S		**Sb**	**20 38 33.6**	**0.0**
BALY	**Balya**	**1.23**	**301**	*i* P		**Pg**	**20 38 19.0**	**+0.6**
BALY				*i* S		**Sb**	**20 38 33.6**	**0.0**
KCTX	**Karacabey (Bur**	**1.24**	**337**	*e*PN		**Pg**	**20 38 19.0**	**+0.2**
KCTX	**Karacabey (Bur**	**1.24**	**337**	*e*Pn		**Pg**	**20 38 19.0**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.25**	**357**	*e*PN		**Pg**	**20 38 18.8**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.25**	**357**	*e*Pn		**Pg**	**20 38 18.8**	**-0.2**
CAVI	**Cavuskoy**	**1.27**	**31**	*e*PN		**Pg**	**20 38 19.8**	**+0.5**
CAVI	**Cavuskoy**	**1.27**	**31**	*e*Pn		**Pg**	**20 38 19.8**	**+0.5**
IZI	**Iznik**	**1.27**	**17**	*e*PN		**Pg**	**20 38 20.1**	**+0.7**
IZI	**Iznik**	**1.27**	**17**	*e*Pn		**Pg**	**20 38 20.1**	**+0.7**
GEMT	**Gemlik**	**1.32**	**7**	*e*PN		**Pg**	**20 38 21.0**	**+0.7**
GEMT	**Gemlik**	**1.32**	**7**	*e*Pn		**Pg**	**20 38 21.0**	**+0.7**
BORA	**Eskisehir**	**1.37**	**56**	P		**Pg**	**20 38 20.9**	**-0.3**
BORA				S		**Sb**	**20 38 38.3**	**+0.5**
BORA	**Eskisehir**	**1.37**	**56**	*i* P		**Pg**	**20 38 20.9**	**-0.3**
BORA				*i* S		**Sb**	**20 38 38.3**	**+0.5**
DNZL	**Cakiroluk**	**1.43**	**178**	P		**Pg**	**20 38 22.5**	**+0.2**
DNZL				S		**Sg**	**20 38 42.2**	**+1.4**
DNZL	**Cakiroluk**	**1.43**	**178**	*i* P		**Pg**	**20 38 22.6**	**+0.2**
DNZL				*i* S		**Sg**	**20 38 42.2**	**+1.4**
ADVT	**Abdulvahap**	**1.44**	**24**	*e*PN		**Pg**	**20 38 22.7**	**+0.2**
ADVT	**Abdulvahap**	**1.44**	**24**	*e*Pn		**Pg**	**20 38 22.7**	**+0.2**
ARMT	**Armutlu**	**1.45**	**356**	*e*PN		**Pg**	**20 38 22.7**	**0.0**
ARMT	**Armutlu**	**1.45**	**356**	*e*Pn		**Pg**	**20 38 22.7**	**0.0**
EDC	**Edincik**	**1.50**	**325**	*e*PN		**Pg**	**20 38 23.9**	**+0.2**
EDC	**Edincik**	**1.50**	**325**	*e*Pn		**Pg**	**20 38 23.9**	**+0.2**
ESKT	**Eskisehir**	**1.50**	**74**	*i* P		**Pg**	**20 38 23.9**	**+0.2**
ESKT				*i* S		**Sg**	**20 38 42.9**	**-0.5**
SEYT	**Eskypehyr**	**1.50**	**74**	P		**Pg**	**20 38 23.9**	**+0.2**
SEYT				S		**Sg**	**20 38 42.8**	**-0.5**
GPA	**Golpazari**	**1.55**	**41**	*e*PN		**Pb**	**20 38 23.9**	**+0.5**
GPA	**Golpazari**	**1.55**	**41**	*e*Pn		**Pb**	**20 38 23.9**	**+0.5**
BOLV	**Bolvadin**	**1.59**	**104**	P		**Pg**	**20 38 26.0**	**+0.7**
BOLV				S		**Sg**	**20 38 46.0**	**+0.1**
BOLV	**Bolvadin**	**1.59**	**104**	*i* P		**Pg**	**20 38 26.0**	**+0.7**
BOLV				*i* S		**Sg**	**20 38 46.0**	**+0.1**
KNL	**Bal¨–kesir**	**1.61**	**316**	*i* P		**Pb**	**20 38 24.0**	**-0.3**
KNL				*i* S		**Sn**	**20 38 43.7**	**+0.3**
AYDN	**Tasoluk**	**1.69**	**211**	P		**Pb**	**20 38 26.0**	**+0.2**
AYDN				S		**Sg**	**20 38 48.8**	**-0.6**
AYDN	**Tasoluk**	**1.69**	**211**	*i* P		**Pb**	**20 38 26.0**	**+0.2**
AYDN				*i* S		**Sg**	**20 38 48.8**	**-0.6**
BUY	**Buyukada**	**1.73**	**3**	P		**Pn**	**20 38 24.8**	**+0.2**
BUY				S		**Sg**	**20 38 50.8**	**+0.1**
BUY	**Buyukada**	**1.73**	**3**	*i* P		**Pn**	**20 38 24.8**	**+0.2**
BUY				*i* S		**Sg**	**20 38 50.8**	**+0.1**
GULT	**Gulveren**	**1.77**	**42**	*e*PN		**Pb**	**20 38 27.3**	**+0.2**
GULT	**Gulveren**	**1.77**	**42**	*e*Pn		**Pb**	**20 38 27.3**	**+0.2**
HRT	**Hereke**	**1.78**	**17**	*e*PN		**Pb**	**20 38 27.5**	**+0.2**
HRT	**Hereke**	**1.78**	**17**	*e*Pn		**Pb**	**20 38 27.5**	**+0.2**
SPNC	**Sapanca-Adapaz**	**1.87**	**33**	*e*PN		**Pb**	**20 38 28.9**	**+0.1**
SPNC	**Sapanca-Adapaz**	**1.87**	**33**	*e*Pn		**Pb**	**20 38 28.9**	**+0.1**
ISK	**Istanbul-Kandi**	**1.95**	**2**	*e*PN		**Pb**	**20 38 29.9**	**-0.2**
ISK	**Istanbul-Kandi**	**1.95**	**2**	*e*Pn		**Pb**	**20 38 29.9**	**-0.2**
SVRH	**Sivrihisar-ESK**	**2.00**	**80**	*e*PN		**Pb**	**20 38 30.5**	**-0.6**
SVRH	**Sivrihisar-ESK**	**2.00**	**80**	*e*Pn		**Pb**	**20 38 30.5**	**-0.6**
AUMIH	**MIHALICIK**	**2.08**	**68**	*i* P		**Pg**	**20 38 34.6**	**-0.1**
AUMIH				*i* S		**Sg**	**20 39 03.3**	**+1.7**
MDUB	**Mudurnu**	**2.18**	**51**	*e*PN		**Pb**	**20 38 33.0**	**-1.1**
MDUB	**Mudurnu**	**2.18**	**51**	*e*Pn		**Pb**	**20 38 33.0**	**-1.1**
KAND	**Kocaeli-Kandir**	**2.18**	**25**	*i* P		**Pg**	**20 38 35.9**	**-0.8**
KAND				*i* S		**Sg**	**20 39 03.5**	**-1.4**
SAHE	**Sakarya_HENDEK**	**2.25**	**39**	*i* P		**Pg**	**20 38 37.7**	**-0.3**
SAHE				*i* S		**Sg**	**20 39 06.6**	**-0.6**

ISCJB ***19*** *20:38:18.7±0.9,39°.58N±0°.05×143°.77E±0°.10,h11km, mb3.6/3,Error ellipse: s-maj=12.1km s-min=4.3km az=26.2*
JMA ***19*** *20:38:18.3±0.2,39°.56N×143°.75E,h10km,M3.9*
IDC ***19*** *20:38:19.4±2.2,39°.61N×143°.71E,h0km,mb3.6/3, mb1 3.6/6,mb1mx3.4/61,mbtmp3.5/6,ML3.0/3,Error ellipse: s-maj=52.4km s-min=23.1km az=80.0*
ISC 19 20:38:20.5±1.2,39°.64N±0°.06×143°.59E±0°.08,h11km,n24,
σ1§29/30,mb3.7/3,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.36**	**283**	P	**Pn**	**20 38 45.3**	**-0.2**
MIYJ	**Miyakonagasawa**	**1.37**	**268**	P	**Pn**	**20 38 45.3**	**-0.2**
OFUJ	**Ofunato**	**1.59**	**250**	P	**Pn**	**20 38 48.1**	**-0.5**
JANG	**Nango**	**1.75**	**295**	P	**Pn**	**20 38 50.8**	**0.0**
JOM	**Ohasama**	**1.79**	**265**	P	**Pn**	**20 38 51.7**	**+0.5**
JMK	**Ichinoseki**	**1.96**	**250**	P	**Pn**	**20 38 53.6**	**-0.1**
JTM	**Tenmabayashi**	**2.25**	**301**	P	**Pn**	**20 38 58.8**	**+1.2**
JRG	**Rokugo**	**2.30**	**265**	P	**Pn**	**20 38 59.2**	**+0.9**
JAH	**Hinai**	**2.34**	**284**	P	**Pn**	**20 39 00.0**	**+1.2**
JOT	**Ohata**	**2.60**	**313**	P	**Pb**	**20 39 05.7**	**-1.5**
JYK	**Kaneyama**	**2.61**	**255**	P	**Pn**	**20 39 03.1**	**+0.5**
JOU	**Okura**	**2.61**	**242**	P	**Pn**	**20 39 02.6**	**0.0**
JNBK	**Urakawa-nobuka**	**2.71**	**347**	P	**Pb**	**20 39 06.2**	**-2.8**
JNBK				S	**Sb**	**20 39 40.1**	**-2.2**
JCH	**Churui**	**2.98**	**357**	P	**Pn**	**20 39 08.8**	**+1.2**
JCH				S	**Sn**	**20 39 43.5**	**+0.2**
JAR	**Ashorobuto**	**3.66**	**2**	P	**Pn**	**20 39 17.7**	**+0.7**
JAR				S	**Sn**	**20 40 00.9**	**+0.9**
NEM2	**Nemuro 2**	**4.06**	**23**	P	**Pn**	**20 39 22.9**	**+0.5**
NEM2				S	**Sn**	**20 40 07.9**	**-2.0**
JTKR	**Abashiri--Toko**	**4.33**	**3**	P	**Pn**	**20 39 27.8**	**+1.6**
JTKR				S	**Sn**	**20 40 17.2**	**+0.5**
ASAJ	**Asahikawa**	**4.53**	**351**	Pn	**Pn**	**20 39 30.4**	**+1.4**
	0.8nm,0.3s,baz=180,slow=16,SNR=6.5						
ASAJ				Sn	**Sn**	**20 40 23.3**	**+1.6**
	0.7nm,0.3s,baz=90,slow=20,SNR=3.0						
MJAR	**Matsushiro Arr**	**5.25**	**236**	Pn	**Pn**	**20 39 39.4**	**+0.4**
	1.1nm,0.3s,baz=39,slow=12,SNR=19						
MAT	**Matsushiro**	**5.25**	**236**	P	**Pn**	**20 39 40.1**	**+1.1**
USRK	**Ussuriysk Ar.**	**9.77**	**302**	Pn	**Pn**	**20 40 43.7**	**+2.8**
	0.2nm,0.3s,baz=118,slow=11,SNR=5.0						
MKAR	**Makanchi Array**	**44.24**	**300**	P	**P**	**20 46 30.9**	**+1.2**
	0.3nm,0.4s,baz=87,slow=10,SNR=4.5						
KURBB	**Kurchatov Arra**	**45.80**	**306**	P	**P**	**20 46 42.9**	**+1.0**
	1.2nm,0.6s,baz=81,slow=8.7,SNR=11						
WRA	**Warramunga Arr**	**59.90**	**190**	P	**P**	**20 48 26.9**	**+0.5**
	0.6nm,1.1s,baz=6.0,slow=7.0,SNR=2.4						

ISCJB ***19*** *20:38:57.8±0.5,34°.20N±0°.01×23°.71E±0°.01,h7km±3km, mb4.8/138,MS5.0/11,Error ellipse: s-maj=2.3km s-min=1.8km az=32.9*
HLW ***19*** *20:38:58.0,34°.60N×23°.74E,h33km±25km,Ml4.1*
IDC ***19*** *20:38:58.4±0.5,34°.34N×23°.76E,h0km,mb4.6/30, mb1 4.7/42,mb1mx4.6/54,mbtmp4.6/42,ML4.2/12, MS4.9/11,Ms1 4.8/11,ms1mx4.5/41,Error ellipse: s-maj=12.0km s-min=10.4km az=163.0*
ISK ***19*** *20:38:59.6,34°.16N×23°.56E,h37km,ML4.6*
CSEM ***19*** *20:38:59.9±0.1,34°.21N×23°.73E,h10km,mb5.1/62,Mw4.1, Error ellipse: s-maj=3.2km s-min=2.1km az=30.0*
PDG ***19*** *20:39:00.3±0.3,34°.41N×23°.51E,h10km±7km,ML4.8/12, Error ellipse: s-maj=7.9km s-min=3.5km az=90.0*
ATH ***19*** *20:39:00.1,34°.26N×23°.62E,h22km±3km,ML4.5/10,Error ellipse: s-maj=5.6km s-min=1.5km az=25.0*
MOS ***19*** *20:39:02.3±1.2,34°.34N×23°.69E,h33km,mb5.1/49, MS4.9/18,Error ellipse: s-maj=5.2km s-min=2.8km az=90.0*
THE ***19*** *20:39:03.8,34°.39N×23°.72E,h11km±1km,ML4.6/26,Error ellipse: s-maj=1.5km s-min=0.6km az=191.0*
GCMT ***19*** *20:39:03.3±0.2,34°.32N×23°.66E,h18km±1km,MW5.2/108, Moment Tensor Solution. s37,c45; s108,c182; Duration: 1s0 Moment tensor: Scale 10^17^Nm; Mrr-0.37±.03; Mθθ-0.47±.02; Mφφ0.84±.03; Mrθ0.32±.06; Mφθ0.32±.02; Mφr-0.28±.06; Best double couple: M0:0.90400×10^17^ NP1:φs335.00000°,δ71.00000°, λ-144.00000°. NP2:φs232.00000°,δ56.00000°, λ-24.00000°. Principal axes: T 0.9540, Plg9.0000°, Azm101.0000°; N -0.1010, Plg49.0000°, Azm360.0000°; P -0.8530, Plg39.0000°, Azm198.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
NEIC ***19*** *20:39:03.3±1.4,34°.38N×23°.72E,h26km±9km,mb4.9/66, ML4.6(THE) Error ellipse: s-maj=6.8km s-min=3.8km az=179.0*
GII ***19*** *20:39:08.8±0.0,34°.08N×24°.62E,h5km,mb4.4/6,MD4.2/6*
NIC ***19*** *20:39:08.0±0.4,35°.59N×24°.23E,h138km,mb5.3,ML5.0*
ISC 19 20:39:02.2±0.6,34°26N±0°.03×23°.73E±0°.02,h18km±2km,
n982,σ1§46/972,mb4.9/141,MS5.0/11,48C-33D,Crete

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GVD	**Gavdhos**	**0.65**	**27**	P	**Pg**	**20 39 13.9**	**-1.1**
GVD				S	**Sg**	**20 39 23.1**	**-0.6**
GVD	**Gavdhos**	**0.65**	**27**	P	**Pg**	**20 39 13.9**	**-1.1**
GVD				S	**Sg**	**20 39 23.1**	**-0.6**
GVD	**Gavdhos**	**0.65**	**27**	P	**Pg**	**20 39 14.1**	**-1.0**
GVD				S	**Sg**	**20 39 24.6**	**+0.9**
GVD				AML	AML	20 39 31.9	
GVD				AML	AML	20 39 33.5	
SIVA	**Sivas**	**1.17**	**49**	⇑*i*P	**Pb**	**20 39 24.4**	**+0.6**
SIVA	**Sivas**	**1.17**	**49**	P	**Pb**	**20 39 24.0**	**+0.2**
SIVA				S	**Sb**	**20 39 39.6**	**+1.0**
SIVA	**Sivas**	**1.17**	**49**	P	**Pb**	**20 39 24.0**	**+0.2**
SIVA				S	**Sb**	**20 39 39.6**	**+1.0**
SIVA	**Sivas**	**1.17**	**49**	P	**Pb**	**20 39 24.9**	**+1.1**
SIVA				S	**Sn**	**20 39 41.9**	**+2.9**
SIVA				AML	AML	20 39 49.6	
	comp=N,82492μm,0.6s						
SIVA				AML	AML	20 39 56.4	
	comp=E,67266μm,0.8s						
VAM	**Vamos**	**1.21**	**18**	P	**Pb**	**20 39 23.2**	**-1.3**
VAM				S	**Sb**	**20 39 39.3**	**-0.4**
VAM	**Vamos**	**1.21**	**18**	P	**Pb**	**20 39 23.2**	**-1.3**
VAM				S	**Sb**	**20 39 39.3**	**-0.4**
VAM	**Vamos**	**1.21**	**18**	P	**Pb**	**20 39 23.2**	**-1.3**
VAM				S	**Sb**	**20 39 39.3**	**-0.4**
IMMV	**Iera Moni Meta**	**1.21**	**10**	P	**Pn**	**20 39 22.9**	**-1.4**
IMMV				S	**Sb**	**20 39 38.5**	**-1.5**
IMMV	**Iera Moni Meta**	**1.21**	**10**	P	**Pn**	**20 39 22.9**	**-1.4**
IMMV				S	**Sb**	**20 39 41.6**	**+1.6**
IMMV	**Iera Moni Meta**	**1.21**	**10**	P	**Pn**	**20 39 22.1**	**-2.2**
IMMV				S	**Sb**	**20 39 41.6**	**+1.6**
IDI	**Anoyia**	**1.40**	**43**	Pn	**Pn**	**20 39 26.1**	**-0.7**
	comp=E,46nm,0.3s,baz=240,slow=8.4,SNR=131						
IDI	**Anoyia**	**1.40**	**43**	⇑*i*P	**Pn**	**20 39 27.7**	**+0.8**
IDI	**Anoyia**	**1.40**	**43**	P	**Pn**	**20 39 27.6**	**+0.8**
IDI				S	**Sb**	**20 39 44.5**	**-0.9**
IDI	**Anoyia**	**1.40**	**43**	P	**Pn**	**20 39 27.6**	**+0.8**
IDI				S	**Sb**	**20 39 44.5**	**-0.9**
IDI	**Anoyia**	**1.40**	**43**	P	**Pn**	**20 39 27.8**	**+0.9**
IDI				AML	AML	20 40 00.3	
	comp=E,18532μm,0.7s						
IDI				AML	AML	20 40 00.7	
	comp=N,12625μm,1.1s						
IDI	**Anoyia**	**1.40**	**43**	*e*Pn	**Pn**	**20 39 27.7**	**+0.8**
IACM	**Heraklion**	**1.52**	**46**	P	**Pn**	**20 39 29.0**	**+0.6**
IACM				S	**Sn**	**20 39 47.4**	**-0.3**
IACM	**Heraklion**	**1.52**	**46**	P	**Pn**	**20 39 29.0**	**+0.6**
IACM				S	**Sn**	**20 39 47.4**	**-0.3**
IACM	**Heraklion**	**1.52**	**46**	AML	AML	20 40 09.5	
IACM				AML	AML	20 40 14.4	
ANKY	**Antikythira Is**	**1.64**	**348**	P	**Pn**	**20 39 30.0**	**-0.1**
ANKY				S	**Sn**	**20 39 50.0**	**-0.7**
ANKY	**Antikythira Is**	**1.64**	**348**	P	**Pn**	**20 39 30.0**	**-0.1**
ANKY				S	**Sn**	**20 39 50.0**	**-0.7**
ANKY	**Antikythira Is**	**1.64**	**348**	P	**Pn**	**20 39 31.1**	**+1.0**
ANKY				AML	AML	20 40 10.2	
	comp=N,18602μm,1.1s						
ANKY				AML	AML	20 40 11.5	
	comp=E,21260μm,0.9s						
LAST	**Lasithi**	**1.70**	**58**	⇓*i*P	**Pn**	**20 39 32.7**	**+1.7**
LAST	**Lasithi**	**1.70**	**58**	P	**Pn**	**20 39 31.9**	**+0.9**
LAST				S	**Sn**	**20 39 52.7**	**+0.4**
LAST	**Lasithi**	**1.70**	**58**	P	**Pn**	**20 39 31.9**	**+0.9**
LAST	**Lasithi**	**1.70**	**58**	*e*Pn	**Pn**	**20 39 32.2**	**+1.2**
LAST				S	**Sn**	**20 39 52.7**	**+0.4**
LAST	**Lasithi**	**1.70**	**58**	P	**Pn**	**20 39 32.0**	**+1.0**
LAST	**Lasithi**	**1.70**	**58**	*e*Pn	**Pn**	**20 39 32.2**	**+1.2**
NPS	**Neapolis**	**1.84**	**57**	P	**Pn**	**20 39 33.9**	**+1.0**
NPS				S	**Sn**	**20 39 56.9**	**+1.1**
NPS	**Neapolis**	**1.84**	**57**	P	**Pn**	**20 39 33.9**	**+1.0**
NPS				S	**Sn**	**20 39 56.9**	**+1.1**
NPS	**Neapolis**	**1.84**	**57**	P	**Pn**	**20 39 33.9**	**+1.0**
NPS				S	**Sn**	**20 39 56.9**	**+1.1**
NPS	**Neapolis**	**1.84**	**57**	P	**Pn**	**20 39 35.2**	**+2.3**
KYTH	**Kithira**	**2.08**	**345**	P	**Pn**	**20 39 36.3**	**+0.1**
KYTH				S	**Sn**	**20 40 01.2**	**-0.4**
KYTH	**Kithira**	**2.08**	**345**	P	**Pn**	**20 39 36.3**	**+0.1**
KYTH				S	**Sn**	**20 40 01.2**	**-0.4**
KYTH	**Kithira**	**2.08**	**345**	P	**Pn**	**20 39 36.8**	**+0.6**
LTBQ	**Tobruq**	**2.21**	**176**	*i* P	**Pn**	**20 39 39.0**	**+1.1**
	SNR=92						
ZKR	**Zakros**	**2.22**	**67**	P	**Pn**	**20 39 39.1**	**+1.0**
ZKR				S	**Sn**	**20 40 06.3**	**+1.3**
ZKR	**Zakros**	**2.22**	**67**	P	**Pn**	**20 39 38.2**	**+0.1**
ZKR	**Zakros**	**2.22**	**67**	P	**Pn**	**20 39 38.1**	**+0.1**
ZKR				AML	AML	20 40 41.9	
	comp=N,6544μm,2.1s						
ZKR				AML	AML	20 40 54.9	
	comp=E,7467μm,1.0s						
MHLO	**Agia Marina, M**	**2.48**	**13**	P	**Pn**	**20 39 41.6**	**-0.1**
MHLO				S	**Sn**	**20 40 10.9**	**-0.7**
MHLO	**Agia Marina, M**	**2.48**	**13**	P	**Pn**	**20 39 41.6**	**-0.1**
MHLO				S	**Sn**	**20 40 10.9**	**-0.7**
MHLO	**Agia Marina, M**	**2.48**	**13**	P	**Pn**	**20 39 41.9**	**+0.1**
MHLO				AML	AML	20 40 27.3	
	comp=E,17715μm,0.6s						
MHLO				AML	AML	20 40 35.3	
	comp=N,25354μm,0.9s						
THR6	**Thira Island,**	**2.49**	**33**	P	**Pn**	**20 39 42.1**	**+0.2**
THR6	**Thira Island,**	**2.49**	**33**	P	**Pn**	**20 39 42.1**	**+0.2**
THR5	**Thira Island,**	**2.52**	**31**	*e*PN	**Pn**	**20 39 42.0**	**-0.3**
THR5	**Thira Island,**	**2.52**	**31**	P	**Pn**	**20 39 42.5**	**+0.2**
THR5	**Thira Island,**	**2.52**	**31**	*e*Pn	**Pn**	**20 39 42.0**	**-0.3**
THR5	**Thira Island,**	**2.52**	**31**	P	**Pn**	**20 39 42.5**	**+0.2**
THT1	**Athinios (Pele**	**2.53**	**33**	P	**Pn**	**20 39 42.2**	**-0.2**
THT1	**Athinios (Pele**	**2.53**	**33**	P	**Pn**	**20 39 42.2**	**-0.2**
SANT	**Santorini**	**2.53**	**33**	⇑*i*P	**Pn**	**20 39 42.0**	**-0.5**
SANT	**Santorini**	**2.53**	**33**	P	**Pn**	**20 39 42.3**	**-0.2**
SANT				S	**Sn**	**20 40 12.8**	**-0.1**
SANT	**Santorini**	**2.53**	**33**	*e*Pn	**Pn**	**20 39 42.2**	**-0.2**
SANT				S	**Sn**	**20 40 12.8**	**-0.1**
SANT	**Santorini**	**2.53**	**33**	P	**Pn**	**20 39 41.2**	**-1.3**
SANT	**Santorini**	**2.53**	**33**	*e*Pn	**Pn**	**20 39 42.2**	**-0.2**
VLI	**Veliai**	**2.54**	**345**	P	**Pn**	**20 39 43.2**	**+0.8**
VLI				S	**Sn**	**20 40 11.4**	**-1.4**
VLI	**Veliai**	**2.54**	**345**	P	**Pn**	**20 39 43.2**	**+0.8**
VLI	**Veliai**	**2.54**	**345**	P	**Pn**	**20 39 44.4**	**+2.0**
THR3	**Thira Island,**	**2.54**	**32**	P	**Pn**	**20 39 42.3**	**-0.2**
THR3	**Thira Island,**	**2.54**	**32**	P	**Pn**	**20 39 42.3**	**-0.2**
THR7	**Fira-Santorini**	**2.56**	**32**	P	**Pn**	**20 39 42.7**	**-0.1**
THR7	**Fira-Santorini**	**2.56**	**32**	P	**Pn**	**20 39 42.7**	**-0.1**
THR2	**Thira island,**	**2.59**	**32**	P	**Pn**	**20 39 43.1**	**0.0**
THR2	**Thira island,**	**2.59**	**32**	P	**Pn**	**20 39 43.1**	**0.0**
CMBO	**Columbo, Santo**	**2.59**	**31**	P	**Pn**	**20 39 43.2**	**0.0**
CMBO				S	**Sn**	**20 40 14.3**	**0.0**
CMBO	**Columbo, Santo**	**2.59**	**31**	P	**Pn**	**20 39 43.2**	**0.0**
CMBO				S	**Sn**	**20 40 14.3**	**0.0**
SLUM	**Salum**	**3.03**	**155**	P	**Pn**	**20 39 48.0**	**-1.2**
	baz=157						
SLUM				AMP		20 40 00.0	
	comp=E,570μm,0.4s,logA/T=6.2,baz=157						
SLUM				S	**Sn**	**20 40 24.0**	**-1.0**
	baz=157						
SLUM	**Salum**	**3.03**	**155**	P	**Pn**	**20 39 48.0**	**-1.2**
SLUM				S	**Sn**	**20 40 24.0**	**-1.0**
PYL	**PYLOS**	**3.09**	**329**	P	**Pn**	**20 39 49.5**	**-0.5**
PYL				S	**Sn**	**20 40 26.6**	**+0.1**
PYL	**PYLOS**	**3.09**	**329**	P	**Pn**	**20 39 49.5**	**-0.5**
PYL				S	**Sn**	**20 40 26.6**	**+0.1**
KARP	**Karpathos**	**3.10**	**65**	*e*PN	**Pn**	**20 39 50.3**	**+0.1**
KARP				*e*SN	**Sn**	**20 40 26.9**	**+0.1**
KARP	**Karpathos**	**3.10**	**65**	P	**Pn**	**20 39 51.4**	**+1.2**
KARP	**Karpathos**	**3.10**	**65**	*e*Pn	**Pn**	**20 39 50.3**	**+0.1**
KARP	**Karpathos**	**3.10**	**65**	P	**Pn**	**20 39 51.4**	**+1.2**
KARP				*e*Sn	**Sn**	**20 40 26.9**	**+0.1**
KARP	**Karpathos**	**3.10**	**65**	P	**Pn**	**20 39 51.9**	**+1.7**
KARP				AML	AML	20 40 37.2	
	comp=E,3452μm,0.6s						
KARP				AML	AML	20 40 41.9	
	comp=N,3416μm,0.5s						
KARP	**Karpathos**	**3.10**	**65**	*e*Pn	**Pn**	**20 39 51.7**	**+1.6**
KRND	**KRANIDI**	**3.15**	**352**	P	**Pn**	**20 39 50.8**	**-0.1**
KRND				S	**Sn**	**20 40 27.1**	**-0.9**
KRND	**KRANIDI**	**3.15**	**352**	P	**Pn**	**20 39 50.8**	**-0.1**
KRND				S	**Sn**	**20 40 27.1**	**-0.9**
APE	**Apeiranthos**	**3.16**	**27**	*e*PN	**Pn**	**20 39 51.0**	**-0.1**
APE				*e*SN	**Sn**	**20 40 28.2**	**-0.2**
APE	**Apeiranthos**	**3.16**	**27**	⇓*i*P	**Pn**	**20 39 50.8**	**-0.3**
APE	**Apeiranthos**	**3.16**	**27**	P	**Pn**	**20 39 50.1**	**-1.0**
APE				S	**Sn**	**20 40 28.1**	**-0.2**
APE	**Apeiranthos**	**3.16**	**27**	*i* P	**Pn**	**20 39 49.7**	**-1.4**
APE	**Apeiranthos**	**3.16**	**27**	P	**Pn**	**20 39 50.1**	**-1.0**
APE	**Apeiranthos**	**3.16**	**27**	*e*Pn	**Pn**	**20 39 51.0**	**-0.1**
APE				*e*Sn	**Sn**	**20 40 28.2**	**-0.2**
APE	**Apeiranthos**	**3.16**	**27**	P	Pn	20 39 48.6	-2.5
APE				AML	AML	20 40 54.3	
	comp=N,1136μm,0.5s						
APE				AML	AML	20 41 10.3	
	comp=E,1933μm,1.0s						
ITM	**Ithomi**	**3.26**	**334**	P	**Pn**	**20 39 52.8**	**+0.4**
ITM				S	**Sn**	**20 40 30.4**	**-0.4**
ITM	**Ithomi**	**3.26**	**334**	P	**Pn**	**20 39 52.8**	**+0.4**
ITM				S	**Sn**	**20 40 30.4**	**-0.4**
ITM	**Ithomi**	**3.26**	**334**	P	**Pn**	**20 39 52.8**	**+0.4**
ITM				AML	AML	20 41 08.7	
	comp=N,4544μm,2.1s						
ITM				AML	AML	20 41 34.5	
	comp=E,3935μm,1.7s						
DID	**Didima**	**3.26**	**353**	P	**Pn**	**20 39 52.0**	**-0.5**
DID				S	**Sn**	**20 40 30.1**	**-0.7**
DID	**Didima**	**3.26**	**353**	P	**Pn**	**20 39 52.0**	**-0.5**
DID				S	**Sn**	**20 40 30.1**	**-0.7**
DID	**Didima**	**3.26**	**353**	P	**Pn**	**20 39 51.4**	**-1.1**
VLX	**Vlachokerasia**	**3

SWA2		5.21 163	P	Pn	20 40 18.6	-0.7
DSL	Palaion Diasel	5.30 337	P	Pn	20 40 20.8	+0.3
DSL	Palaion Diasel	5.30 337	P	Pn	20 40 20.8	+0.3
DSL	Palaion Diasel	5.30 337	P	Pn	20 40 18.6	-1.9
THL	Klokotos Trika	5.47 346	P	Pn	20 40 22.6	-0.1
THL	Klokotos Trika	5.47 346	P	Pn	20 40 22.6	-0.1
GLHS	Glhisar (BURDU	5.51 57	ePN	Pn	20 40 24.3	+0.9
GLHS	Glhisar (BURDU	5.51 57	ePn	Pn	20 40 24.3	+0.9
ELL	Elmali	5.62 62	ePN	Pn	20 40 25.6	+0.7
ELL	Elmali	5.62 62	ePn	Pn	20 40 25.6	+0.7
JAN	Janina	5.86 338	P	Pn	20 40 28.6	+0.5
JAN	Janina	5.86 338	P	Pn	20 40 28.6	+0.5
LIT	Litokhoron	5.91 351	P	Pn	20 40 28.8	-0.1
LIT	Litokhoron	5.91 351	P	Pn	20 40 28.8	-0.1
KPRO	Kipourio	5.99 342	P	Pn	20 40 30.4	+0.4
KPRO	Kipourio	5.99 342	P	Pn	20 40 30.4	+0.4
OUR	Ouranopolis	6.07 2	ePN	Pn	20 40 30.4	-0.4
OUR	Ouranopolis	6.07 2	ePn	Pn	20 40 30.5	-0.4
ANTB	Antalya	6.22 63	ePN	Pn	20 40 35.0	+1.9
KZN	Kozani	6.23 346	P	Pn	20 40 32.5	-0.8
KZN	Kozani	6.23 346	P	Pn	20 40 32.5	-0.8
PENT	Pentalofos	6.27 342	P	Pn	20 40 32.5	-1.4
PENT	Pentalofos	6.27 342	P	Pn	20 40 32.5	-1.4
KEK	Kerkira	6.29 331	P	Pn	20 40 31.2	-2.8
HBRG	Burj al 'Arab	6.34 124	P	Pn	20 40 32.7	-2.0
	baz=126					
HORT	Hortiatis	6.34 356	ePN	Pn	20 40 34.5	-0.3
HORT	Hortiatis	6.34 356	ePn	Pn	20 40 34.5	-0.3
BCK	Bucak	6.42 58	ePN	Pn	20 40 36.8	+0.9
BCK	Bucak	6.42 58	ePn	Pn	20 40 36.8	+0.9
NEST	Nestorio	6.50 342	P	Pn	20 40 37.3	+0.3
NEST	Nestorio	6.50 342	P	Pn	20 40 37.3	+0.3
ISP	Isparta	6.55 55	*i* P	Pn	20 40 39.2	+1.5
ISP	Isparta	6.55 55	*i* P	Pn	20 40 39.2	+1.5
ISP	Isparta	6.55 55	eSg	Sb	20 42 17.4	+3.9
SOH	Sokhos	6.55 357	P	Pn	20 40 38.8	+1.1
SOH	Sokhos	6.55 357	P	Pn	20 40 38.8	+1.1
SUTC	Sutluce-Ispart	6.71 59	ePN	Pn	20 40 41.1	+1.1
SUTC	Sutluce-Ispart	6.71 59	ePn	Pn	20 40 41.1	+1.1
GRG	Griva	6.77 351	ePN	Pn	20 40 39.9	-0.7
GRG	Griva	6.77 351	P	Pn	20 40 41.7	+1.1
GRG	Griva	6.77 351	P	Pn	20 40 42.2	+1.6
GRG			pmax	pmax		
	comp=Z,86nm,1.1s					
GRG	Griva	6.77 351	ePn	Pn	20 40 39.9	-0.7
GRG	Griva	6.77 351	P	Pn	20 40 41.7	+1.1
FNA	Florina	6.77 345	ePN	Pn	20 40 40.4	-0.3
FNA	Florina	6.77 345	P	Pn	20 40 40.1	-0.6
FNA			pmax	pmax		
	comp=Z,100nm,0.6s					
FNA	Florina	6.77 345	P	Pn	20 40 40.1	-0.6
	comp=Z,100nm,0.6s					
FNA	Florina	6.77 345	ePn	Pn	20 40 40.4	-0.3
KNT	Kendrikon	6.92 355	ePN	Pn	20 40 42.4	-0.3
KNT	Kendrikon	6.92 355	P	Pn	20 40 43.1	+0.4
KNT	Kendrikon	6.92 355	ePn	Pn	20 40 42.4	-0.3
KNT	Kendrikon	6.92 355	P	Pn	20 40 43.1	+0.4
BIA	Bitola	7.01 345	ePn	Pn	20 40 42.9	-1.1
VAY	Valandovo	7.11 353	ePn	Pn	20 40 41.5	-3.7
AKMC	Akamas	7.13 81	P	Pn	20 40 42.6	-3.0
	baz=277					
AKMC	Akamas	7.13 81	P	Pn	20 40 42.6	-3.0
PPCY	Paphos	7.13 83	P	Pn	20 40 43.8	-1.8
	baz=278					
PPCY	Paphos	7.13 83	P	Pn	20 40 43.8	-1.8
OHR	Ohrid	7.22 342	ePn	Pn	20 40 42.9	-3.9
MMB	Musomiste	7.32 360	P	Pn	20 40 47.5	-0.6
ALFC	Alefka	7.36 81	P	Pn	20 40 45.8	-2.9
	baz=275					
ALFC			S	Sn	20 42 03.4	-8.4
ALFC	Alefka	7.36 81	P	Pn	20 40 45.8	-2.9
AWBH		7.39 142	P	Pn	20 40 47.8	-1.4
	baz=143					
AWBH		7.39 142	P	Pn	20 40 47.8	-1.4
TIP	Timpagrande	7.44 313	⇑*i* P	Pn	20 40 48.6	-1.3
TIP	Timpagrande	7.44 313	ePn	Pn	20 40 47.5	-2.4
TIP	Timpagrande	7.44 313	ePn	Pn	20 40 47.5	-2.4
HNAT	Natroun	7.45 126	P	Pn	20 40 47.9	-2.1
	baz=128					
HNAT	Natroun	7.45 126	P	Pn	20 40 47.9	-2.1
RZN	Rozhen	7.45 6	P	Pn	20 40 58.6	+8.4
HMYD	Mayadein	7.47 125	P	Pn	20 40 48.0	-2.3
	baz=126					
HMYD	Mayadein	7.47 125	P	Pn	20 40 48.0	-2.3
CEL	Celeste	7.48 304	ePn	Pn	20 40 48.4	-2.1
CEL	Celeste	7.48 304	ePn	Pn	20 40 48.4	-2.1
KDZ	Kurdzhali	7.50 10	P	Pn	20 40 51.6	+1.0
LMSR	Misrath	7.56 258	*i* P	Pn	20 40 49.1	-2.4
	SNR=76					
SZAC	Souni	7.57 84	P	Pn	20 40 50.1	-1.6
	baz=279					
SZAC	Souni	7.57 84	P	Pn	20 40 50.1	-1.6
KKB	Krupnik	7.61 356	P	Pn	20 40 49.1	-3.1
AKDN	Akdeniz- K¯–br	7.67 80	ePN	Pn	20 40 53.7	+0.7
AKDN	Akdeniz- K¯–br	7.67 80	ePn	Pn	20 40 53.7	+0.7
TIR	Tirane	7.71 338	⇑*i* P	Pn	20 40 52.4	-1.1
TIR	Tirane	7.71 338	eP	Pn	20 40 52.4	-1.1
TIR	Tirane	7.71 338	eP	Pn	20 40 52.4	-1.1
TIR	Tirane	7.71 338	ePn	Pn	20 40 52.4	-1.1
WDD	Wied Dalam	7.72 285	ePn	Pn	20 40 51.8	-1.8
WDD	Wied Dalam	7.72 285	ePn	Pn	20 40 51.8	-1.8
AYT	Al 'Ayyat	7.77 124	P	Pn	20 40 52.8	-1.6
	baz=125					
AYT	Al 'Ayyat	7.77 124	P	Pn	20 40 52.8	-1.6
MAMC	Mammari	7.86 81	P	Pn	20 40 53.2	-2.5
	baz=275					
MAMC	Mammari	7.86 81	P	Pn	20 40 53.2	-2.5
KONT	Konya--Tatoy	7.89 60	ePN	Pn	20 40 56.6	+0.5
KONT	Konya--Tatoy	7.89 60	ePn	Pn	20 40 56.6	+0.5
SKO	Skopje	7.91 347	ePn	Pn	20 40 50.8	-5.4
CSS	Mathiatis	7.95 82	P	Pn	20 40 53.7	-3.1
	baz=277					
CSS			S	Sn	20 42 18.0	-8.2
CSS	Mathiatis	7.95 82	Pn	Pn	20 40 54.3	-2.5
CSS	Mathiatis	7.95 82	P	Pn	20 40 53.7	-3.1
CSS	Mathiatis	7.95 82	Pn	Pn	20 40 54.3	-2.5
CSS	Mathiatis	7.95 82	ePn	Pn	20 40 53.5	-3.3
HSAF	As Saff	8.10 123	P	Pn	20 40 56.3	-2.7
	baz=124					
HSAF	As Saff	8.10 123	P	Pn	20 40 56.3	-2.6
KOT	Kottamia	8.11 120	P	Pn	20 40 57.0	-2.2
	baz=122					
KOT	Kottamia	8.11 120	P	Pn	20 40 57.0	-2.2
VAE	Valguarnera	8.22 296	Pn	Pn	20 41 00.1	-0.4
	comp=Z,2.4nm,0.3s,baz=335,slow=12,SNR=8.3					
VAE			Sn	Sn	20 42 32.3	-0.6
	comp=Z,18nm,0.3s,baz=135,slow=13,SNR=4.2					
GLL	Jalalah	8.23 122	P	Pn	20 40 58.6	-2.1
	baz=124					
GLL	Jalalah	8.23 122	P	Pn	20 40 58.6	-2.1
HBNS	Bani Suef	8.29 128	P	Pn	20 40 59.8	-1.7
	baz=129					
HBNS	Bani Suef	8.29 128	P	Pn	20 40 59.8	-1.7
HHAG	Hagoal	8.29 119	P	Pn	20 40 59.7	-1.9
	baz=120					
HHAG	Hagoal	8.29 119	P	Pn	20 40 59.7	-1.9
ULC	Ulcinj	8.46 337	⇑*i* PN	Pn	20 41 01.9	-2.0
ULC			eSn	Sn	20 42 33.6	-5.3
ULC	Ulcinj	8.46 337	⇑*i* PN	Pn	20 41 01.9	-2.0
MATE	Matera	8.47 321	⇑*i* PN	Pn	20 41 02.4	-1.6
LJFR	Jufra	8.48 235	*i* P	Pn	20 41 01.6	-2.6
	SNR=76					
CUC	Castrocucco	8.52 314	ePn	Pn	20 41 04.0	-0.7
CUC	Castrocucco	8.52 314	ePn	Pn	20 41 04.0	-0.7
DRME	Dracevica, Mon	8.68 337	⇑*i* PN	Pn	20 41 05.1	-1.7
DRME			eSn	Sn	20 42 38.8	-5.4
DRME	Dracevica, Mon	8.68 337	⇑*i* PN	Pn	20 41 05.1	-1.7
PVY	Plav	8.83 342	⇑*i* PN	Pn	20 41 06.8	-2.2
PVY			eSn	Sn	20 42 42.0	-6.0
PVY	Plav	8.83 342	⇑*i* PN	Pn	20 41 06.8	-2.2
BUM	Brajici-Budva	8.88 336	⇑*i* PN	Pn	20 41 07.9	-1.7
BUM			eSn	Sn	20 42 43.3	-5.9
BUM	Brajici-Budva	8.88 336	⇑*i* PN	Pn	20 41 07.9	-1.7
PDG	Podgorica	8.88 338	⇑*i* P	Sn	20 42 46.0	-3.1
PDG	Podgorica	8.88 338	⇓*i* PN	Pn	20 41 07.6	-1.9
TTG	Podgorica	8.88 338	⇓*i* PN	Pn	20 41 07.6	-1.9
TTG			eSn	Sn	20 42 42.9	-6.2
SUZ	Suez	8.89 117	P	Pn	20 41 07.8	-2.0
	baz=119					
SUZ	Suez	8.89 117	P	Pn	20 41 07.8	-2.0
ZAF	Zafarana	9.00 121	P	Pn	20 41 09.1	-2.1
	baz=123					
ZAF	Zafarana	9.00 121	P	Pn	20 41 09.1	-2.1
CEME	Cevo	9.09 337	⇓*i* PN	Pn	20 41 09.9	-2.6
CEME			eSn	Sn	20 42 48.2	-6.2
CEME	Cevo	9.09 337	⇓*i* PN	Pn	20 41 09.9	-2.6
BEY	Berane	9.11 342	⇓*i* PN	Pn	20 41 10.5	-2.2
IVA	Berane	9.11 342	⇓*i* PN	Pn	20 41 10.5	-2.2
IVA			eSn	Sn	20 42 49.1	-5.7
BR231	Keskin MP Arra	9.12 50	ePn	Pn	20 41 13.4	+0.4
BR231			eSn	Sn	20 42 41.3	-14
BR231	Keskin MP Arra	9.12 50	ePn	Pn	20 41 13.4	+0.4
BR231			eSn	Sn	20 42 41.3	-14
HCY	Herceg Novi	9.15 335	⇓*i* PN	Pn	20 41 11.0	-2.2
HCY			eSn	Sn	20 42 49.7	-6.0
HCY	Herceg Novi	9.15 335	⇓*i* PN	Pn	20 41 11.0	-2.2
CLTB	Caltabellotta	9.15 294	ePn	Pn	20 41 13.3	-0.1
CLTB	Caltabellotta	9.15 294	ePn	Pn	20 41 13.3	-0.1
ANTO	Ankara	9.15 50	eP	Pn	20 41 14.1	+0.8
ANTO	Ankara	9.15 50	eP	Pn	20 41 14.1	+0.8
ANTO	Ankara	9.15 50	ePn	Pn	20 41 14.1	+0.8
SZH	Strazhica	9.15 10	P	Pn	20 41 18.6	+5.3
GHAR	Gharyan	9.17 259	*i* P	Pn	20 41 12.7	-1.0
	SNR=76					
NKME	Niksic	9.28 338	⇓*i* PN	Pn	20 41 14.3	-0.8
NKME			eSn	Sn	20 42 53.4	-5.6
NKME	Niksic	9.28 338	⇓*i* PN	Pn	20 41 14.3	-0.8
NKY	Niksic	9.31 338	⇑*i* PN	Pn	20 41 14.3	-1.2
NKY			eSn	Sn	20 42 54.0	-5.8
NKY	Niksic	9.31 338	⇑*i* PN	Pn	20 41 14.3	-1.2
BRY	Bratogost	9.53 336	⇓*i* PN	Pn	20 41 16.6	-2.1
BRY			eSn	Sn	20 42 59.1	-6.3
BRY	Bratogost	9.53 336	⇓*i* PN	Pn	20 41 16.6	-2.1
OFRI	'Ofer	9.54 97	Pn	Pn	20 41 16.2	-2.6
OFRI	'Ofer	9.54 97	Pn	Pn	20 41 16.2	-2.6
KZIT	Kziot	9.60 107	Pn	Pn	20 41 17.1	-2.4
KZIT	Kziot	9.60 107	Pn	Pn	20 41 17.1	-2.4
HNTI	Hanita	9.61 94	Pn	Pn	20 41 17.6	-2.0
HNTI	Hanita	9.61 94	Pn	Pn	20 41 17.6	-2.0
BR131	Keskin Array S	9.62 53	ePn	Pn	20 41 20.1	+0.3
BR131	Keskin Array S	9.62 53	ePn	Pn	20 41 20.1	+0.3
BRTR	Keskin Array B	9.62 53	Pn	Pn	20 41 19.7	-0.1
	comp=Z,0.5nm,0.3s,baz=229,slow=13,SNR=8.7					
BRTR			LR	LR	20 46 06.3	
	comp=Z,8μm,19.2s,baz=230,slow=45					
BRTR	Keskin Array B	9.62 53	*i* P	Pn	20 41 23.1	+3.3
BRTR			pmax	pmax		
	comp=Z,9.0nm,0.8s					
PLE	Pljevlja	9.67 341	⇓*i* PN	Pn	20 41 18.6	-1.8
PLE			eSn	Sn	20 43 02.1	-6.5
PLE	Pljevlja	9.67 341	⇓*i* PN	Pn	20 41 18.6	-1.8
SLTI	Sal'it	9.68 99	Pn	Pn	20 41 17.1	-3.5
SLTI			Sn	Sn	20 43 00.5	-8.4
SLTI	Sal'it	9.68 99	Pn	Pn	20 41 17.1	-3.5
UPM	Unac-Piva	9.69 339	⇓*i* PN	Pn	20 41 18.9	-1.9
UPM			eSn	Sn	20 43 03.0	-6.2
UPM	Unac-Piva	9.69 339	⇓*i* PN	Pn	20 41 18.9	-1.9
AMAZ	Amatzia	9.79 103	Pn	Pn	20 41 19.7	-2.4
AMAZ	Amatzia	9.79 103	Pn	Pn	20 41 19.7	-2.4
MMAI	Mount Meron Ar	9.81 94	Pn	Pn	20 41 18.7	-3.7
	comp=Z,9.0nm,0.3s,baz=287,slow=11,SNR=28					
MMAI			Sn	Sn	20 43 04.1	-8.1
	comp=Z,6.6nm,0.3s,baz=233,slow=38,SNR=3.9					
MMAI			LR	LR	20 47 06.6	
	comp=Z,3μm,21.5s,baz=295,slow=50					
MMA0B	Mount Meron ar	9.81 94	Pn	Pn	20 41 19.9	-2.5
MMA0B	Mount Meron ar	9.81 94	Pn	Pn	20 41 19.9	-2.5
DQRL	Deir Qamar	9.85 90	eP	Pn	20 41 20.8	-2.1
BHL	Bhannes	9.90 89	eP	Pn	20 41 22.5	-1.1
MMLI	Mount Malkishu	9.95 97	Pn	Pn	20 41 20.9	-3.4
MMLI			Sn	Sn	20 43 06.3	-9.1
MMLI	Mount Malkishu	9.95 97	Pn	Pn	20 41 20.9	-3.4
KSDI	Kefar Szold	9.99 93	Pn	Pn	20 41 21.6	-3.2
KSDI	Kefar Szold	9.99 93	Pn	Pn	20 41 21.6	-3.2
RMNI	Mount Ramon	10.01 108	Pn	Pn	20 41 22.9	-2.3
RMNI	Mount Ramon	10.01 108	Pn	Pn	20 41 22.9	-2.3
HMDT	Nahal Hemdat	10.08 98	Pn	Pn	20 41 23.0	-3.0
HMDT	Nahal Hemdat	10.08 98	Pn	Pn	20 41 23.0	-3.0
RCY	Rachaya	10.09 91	eP	Pn	20 41 22.8	-3.5
HWQ	Hawqa	10.11 86	eP	Pn	20 41 23.3	-3.3
DSI	Dead Sea	10.15 102	Pn	Pn	20 41 23.7	-3.3
DSI	Dead Sea	10.15 102	Pn	Pn	20 41 23.7	-3.3
KSHT	Keshet	10.15 94	Pn	Pn	20 41 25.3	-1.8
KSHT	Keshet	10.15 94	Pn	Pn	20 41 25.3	-1.8
MZDA	Masada	10.22 104	Pn	Pn	20 41 25.6	-2.4
MZDA			Sn	Sn	20 43 13.2	-8.9
MZDA	Masada	10.22 104	Pn	Pn	20 41 25.6	-2.4
HUMR	Humele	10.30 5	⇓*i* P	Pn	20 41 29.5	+0.5
PRNI	Paran	10.30 109	Pn	Pn	20 41 26.7	-2.4
PRNI			Sn	Sn	20 43 14.9	-9.3
PRNI	Paran	10.30 109	Pn	Pn	20 41 26.7	-2.4
ZFRI	Zfri	10.36 108	Pn	Pn	20 41 26.5	-3.3
ZFRI			Sn	Sn	20 43 15.5	-10
ZFRI	Zfri	10.36 108	Pn	Pn	20 41 26.5	-3.3
HRFI	Mount Harif	10.47 111	Pn	Pn	20 41 29.2	-2.2
HRFI	Mount Harif	10.47 111	Pn	Pn	20 41 29.2	-2.2
MBRI	Mt Berech	10.48 112	Pn	Pn	20 41 29.5	-2.1
MBRI			Sn	Sn	20 43 18.8	-10
MBRI	Mt Berech	10.48 112	Pn	Pn	20 41 29.5	-2.1
EIL	Elat	10.57 113	Pn	Pn	20 41 29.5	-3.3
	comp=Z,2.3nm,0.3s,baz=197,slow=2.8,SNR=22					
EIL			Sn	Sn	20 43 21.9	-8.8
	comp=Z,4.2nm,0.3s,baz=25,slow=15,SNR=5.8					
EIL	Elat	10.57 113	Pn	Pn	20 41 30.1	-2.7
EIL	Elat	10.57 113	Pn	Pn	20 41 30.1	-2.7
EIL			Sn	Sn	20 43 21.9	-8.8
MDVR	Moldovita	10.62 352	⇓*i* P	Pn	20 41 32.5	-0.9
TIRR	Tirgusor	10.80 18	eP	Pn	20 41 41.7	+5.8
TIRR	Tirgusor	10.80 18	ePn	Pn	20 41 41.7	+5.8
TIRR			eLg	Lg	20 44 51.3	
TIRR	Tirgusor	10.80 18	ePn	Pn	20 41 41.6	+5.8
TIRR			eLg	Lg	20 44 51.4	
HARR	Harsova	10.91 16	⇑*i* P	Pn	20 41 43.5	+6.2
ISR	Istrita	11.06 10	⇓*i* P	Pn	20 41 45.2	+5.8
ARR	Arges	11.11 3	⇑*i* P	Pn	20 41 48.7	+8.5
VOIR		11.21 5	⇑*i* P	Pn	20 41 49.1	+7.6
ASF	Jabal al Asfar	11.22 97	Pn	Pn	20 41 38.5	-3.3
	comp=Z,0.7nm,0.3s,baz=230,slow=11,SNR=12					
ASF			LR	LR	20 48 23.4	
	comp=Z,2μm,18.8s,baz=240,slow=50					
MLR	Muntele Rosu	11.34 8	⇑*i* P	Pn	20 41 48.5	+5.1
MLR	Muntele Rosu	11.34 8	eP	Pn	20 41 44.6	+1.2
MLR	Muntele Rosu	11.34 8	eP	Pn	20 41 44.6	+1.2
MLR	Muntele Rosu	11.34 8	ePn	Pn	20 41 44.6	+1.2
CFR	Carcaliu	11.41 16	⇑*i* P	Pn	20 41 47.7	+3.5
AQU	L'Aquila	11.44 318	eP	Pn	20 41 44.5	-0.2
AQU	L'Aquila	11.44 318	eP	Pn	20 41 44.5	-0.2
AQU	L'Aquila	11.44 318	ePn	Pn	20 41 44.5	-0.2
BZS	Buzias	11.46 353	⇓*i* P	Pn	20 41 41.9	-2.9
BLY	Banja Luka	11.62 336	⇑*i* P	Pn	20 41 44.9	-2.2
DOPR	Dopca	11.76 6	⇑*i* P	Pn	20 41 51.6	+2.6
PLOR	Plostina	11.79 10	⇑*i* P	Pn	20 41 51.5	+2.1
KEST	Kesra	11.89 281	Pn	Pn	20 41 47.4	-3.5
	comp=Z,0.2nm,0.3s,baz=35,slow=5.8,SNR=5.0					
KEST	Kesra	11.89 281	ePn	Pn	20 41 49.9	-1.0
KEST	Kesra	11.89 281	ePn	Pn	20 41 49.9	-1.0
UDBI	Udbina	11.95 331	*i* Pn	Pn	20 41 49.6	-2.1
UDBI	Udbina	11.95 331	*i* Pn	Pn	20 41 49.5	-2.2
NVLJ	Novalja	12.35 329	ePn	Pn	20 41 54.3	-2.7
NVLJ	Novalja	12.35 329	ePn	Pn	20 41 54.3	-2.7
TESR	Tescani	12.44 9	⇑*i* P	Pn	20 41 57.8	-0.4
DRGR		12.54 357	⇑*i* P	Pn	20 42 09.0	+9.3
VSL	Villasalto	12.62 299	ePn	Pn	20 42 00.0	-0.8
VSL	Villasalto	12.62 299	ePn	Pn	20 42 00.0	-0.8
BOJS	Bojanci	12.97 332	*i* Pn	Pn	20 42 02.0	-3.5
CRES	Cresnjev	13.16 334	ePn	Pn	20 42 04.4	-3.7
PRAR	RASCA	13.22 7	⇑*i* P	P	20 42 17.2	-1.6
KIS	Kishinev	13.29 15	eP	Pn	20 42 12.0	+2.1
KIS			LRM	MLR	20 47 52.0	
	comp=Z,9μm,14.0s					
KIS	Kishinev	13.29 15	eP	Pn	20 42 12.0	+2.1
KIS			MLR	MLR		
	comp=Z,7μm,12.0s					
KIS			MLR	MLR		
	comp=N,6μm,14.0s					
KIS			MLR	MLR		
	comp=E,2μm,12.0s					
KIS			MLR	MLR		
	comp=Z,9μm,14.0s					
KIS	Kishinev	13.29 15	eP	Pn	20 42 12.0	+2.1
	comp=Z,9μm,14.0s					
SIM	Simferopol'	13.33 34	P	Pn	20 42 14.5	+4.1
SIM			S	Sn	20 44 43.0	+5.0
SIM			pmax	pmax		
	comp=Z,15nm,1.5s					
VISS	Visnje	13.38 332	*i* Pn	Pn	20 42 07.7	-3.4
BURAR	Bucovina Array	13.39 4	⇑*i* P	Pn	20 42 14.4	+3.1
VNDS	Vrh nad Dolski	13.68 332	ePn	Pn	20 42 11.4	-3.8
LJU	Ljubljana	13.70 332	ePn	Pn	20 42 13.0	-2.5
LJU			*e*		20 42 15.3	
TRI	Trieste	13.74 329	eP	Pn	20 42 13.2	-2.8
TRI	Trieste	13.74 329	ePn	Pn	20 42 13.2	-2.8
TRI	Trieste	13.74 329	ePn	Pn	20 42 13.2	-2.8
JAVS	Javornik	13.76 330	*i* Pn	Pn	20 42 12.7	-3.7
PSZ	Piszkesteto	13.94 349	⇑*i* P	Pn	20 42 18.9	0.0
PSZ	Piszkesteto	13.94 349	ePKiKP	Pn	20 42 18.7	-0.2
PSZ	Piszkesteto	13.94 349	eP	Pn	20 42 16.4	-2.5
PSZ	Piszkesteto	13.94 349	ePn	Pn	20 42 16.4	-2.5
PSZ	Piszkesteto	13.94 349	ePn	Pn	20 42 16.4	-2.5
PERS	Pernice	13.98 335	*i* Pn	Pn	20 42 15.4	-3.9
SOKA	Soboth	14.05 335	*i* Pn	Pn	20 42 16.2	-4.0
	comp=Z,1.9nm,0.4s,SNR=16					
OBKA	Obir	14.08 333	*i* Pn	Pn	20 42 19.4	-1.3
	comp=Z,11nm,0.6s,SNR=6.5					
SORM	Soroca	14.29 13	⇑*i* P	Pn	20 42 22.6	-0.8
ARSA	Arzberg	14.38 337	*i* Pn	Pn	20 42 21.9	-2.9
	comp=Z,6.2nm,0.5s					
ARSA			*i* P	P	20 42 33.4	+1.8
	comp=Z,23nm,0.8s					
UZH	Uzhgorod	14.40 356	eP	Pn	20 42 30.1	+5.1
UZH			eS	Sn	20 45 09.9	+5.9
UZH			MLR	MLR		
	comp=N,6μm,13.5s					
UZH			MLR	MLR		
	comp=E,4μm,13.5s					
UZH			MLR	MLR		
	comp=Z,3μm,13.5s					
UZH	Uzhgorod	14.40 356	eP	Pn	20 42 30.1	+5.1
KECS	Kecovo	14.41 351	eP	Pn	20 42 25.0	-0.2
KECS	Kecovo	14.41 351	ePn	Pn	20 42 25.0	-0.2
KECS	Kecovo	14.41 351	ePN	Pn	20 42 25.0	-0.2
KECS			*e*		20 42 35.1	
MYKA	Terra Mystica	14.53 331	*i* Pn	Pn	20 42 23.9	-3.0
	comp=Z,13nm,0.6s					
VYHS	Vyhne	14.68 347	eP	Pn	20 42 30.5	+1.6
VYHS	Vyhne	14.68 347	ePn	Pn	20 42 30.5	+1.6
VYHS	Vyhne	14.68 347	ePN	Pn	20 42 30.5	+1.6
VYHS			*e*		20 42 35.1	
CRVS	Cervenica-Dubn	14.72 354	eP	Pn	20 42 32.1	+2.6
CRVS	Cervenica-Dubn	14.72 354	ePN	Pn	20 42 32.1	+2.6
CRVS			*e*		20 42 51.7	
CRVS			*e*		21 15 43.7	
CONA	Conrad Observa	14.87 339	*i* Pn	Pn	20 42 29.6	-2.0
	comp=Z,23nm,1.0s					
ANN	Anapa	14.89 41	eP	Pn	20 42 34.3	+2.5
ANN			eS	Sn	20 45 16.8	+0.6
ANN			pmax	pmax		
	comp=Z,92nm,1.8s					
ANN	Anapa	14.89 41	eP	Pn	20 42 34.3	+2.5
	comp=Z,92nm,1.8s					
SMOL	Smolenice	15.00 344	eP	P	20 42 38.8	+0.3
SMOL	Smolenice	15.00 344	eP	P	20 42 38.8	+0.3
SMOL	Smolenice	15.00 344	ePN	P	20 42 38.8	+0.3
KBA	Koelnbreinsper	15.01 332	*i* Pn	Pn	20 42 32.9	-0.6
	comp=Z,31nm,1.1s					
ABTA	Abfaltersbach	15.09 329	*i* Pn	Pn	20 42 32.7	-1.8
	comp=Z,35nm,0.7s,SNR=7.0					
LANS	Liptovska Anna	15.21 349	eP	P	20 42 44.3	+3.4
LANS	Liptovska Anna	15.21 349	eP	P	20 42 44.2	+3.4
STHS	Stebnicka Huta	15.26 354	eP	P	20 42 42.2	+0.8
STHS	Stebnicka Huta	15.26 354	eP	P	20 42 42.2	+0.8
STHS	Stebnicka Huta	15.26 354	eP	P	20 42 42.1	+0.7
MOA	Molln	15.32 335	*i* Pn	Pn	20 42 35.1	-2.3
	comp=Z,32nm,0.6s					
NIE	Niedzica	15.36 352	eP	P	20 42 43.0	+0.5
NIE	Niedzica	15.36 352	eP	P	20 42 43.0	+0.5
NIE	Niedzica	15.36 352	eP	P	20 42 43.0	+0.5
KWP	Kalwaria Pacla	15.38 357	eP	Pn	20 42 41.0	+2.8
KWP	Kalwaria Pacla	15.38 357	⇑*i* P	Pn	20 42 38.9	+0.7
KWP	Kalwaria Pacla	15.38 357	eP	Pn

comp=Z,0.3nm,0.3s,baz=151,slow=12,SNR=26
GERES ScP **ScP** **20 51 15.5 -1.5**
comp=Z,0.1nm,0.3s,baz=149,slow=2.8,SNR=6.7
GERES GERESS Array B 16.37 336 P **Pn** **20 42 49.0 -2.0**
RETA Reutte 16.42 327 *i* Pn **Pn** **20 42 51.4 -0.3**
comp=Z,14nm,0.6s
KRLC Kraliky 16.61 344 *e*P **Pn** **20 42 54.8 +0.8**
KRLC *ex* x 20 42 57.1
KRLC *ep*P **sP** **20 43 03.7 -0.2**
KRLC Kraliky 16.61 344 *e*P **Pn** **20 42 54.8 +0.8**
KRLC Kraliky 16.61 344 *e*P **Pn** **20 42 54.8 +0.8**
CHVG Ch'k'valeri 16.64 54⇑*i*P **Pn** **20 42 57.3 +2.9**
CHVG Ch'k'valeri 16.64 54 P **Pn** **20 42 56.1 +1.6**
KHC Kasperske Hory 16.66 336 *e*P **Pn** **20 42 52.3 -2.3**
KHC *ex* x 20 42 56.0
KHC AMS AMS 20 51 00.0
comp=Z,8μm,15.0s
KHC Kasperske Hory 16.66 336 *e*P **Pn** **20 42 52.3 -2.3**
KHC pmax pmax
comp=Z,37nm,1.1s
KHC Kasperske Hory 16.66 336 *e*Pn **Pn** **20 42 52.2 -2.3**
comp=Z,37nm,1.1s
KHC Kasperske Hory 16.66 336 *e*Pn **Pn** **20 42 52.2 -2.3**
comp=Z,37nm,1.1s
DAVA Damuels 16.68 325 *i* P **Pn** **20 42 57.1 +2.0**
comp=Z,17nm,0.7s,SNR=12
DAVA Damuels 16.68 325 P **Pn** **20 42 57.1 +2.0**
comp=Z,17nm,0.7s,SNR=12
AK11 Malin Array Si 16.88 12 *e*Pn **Pn** **20 42 57.2 -0.1**
AK11 Malin Array Si 16.88 12 *e*Pn **Pn** **20 42 57.2 -0.1**
WET Wettzell 16.91 335 P **Pn** **20 42 58.9 +1.1**
WET pmax pmax
comp=Z,120nm,1.1s
WET Wettzell 16.91 335 P **Pn** **20 42 58.9 +1.1**
comp=Z,120nm,1.1s
AKASG Malin Array Be 16.91 12 Pn **Pn** **20 42 54.6 -3.1**
comp=Z,6.5nm,0.3s,baz=205,slow=11,SNR=27
AKASG Sn **Sn** **20 46 04.8 -0.3**
comp=Z,0.6nm,0.3s,baz=199,slow=22,SNR=3.5
AKASG Malin Array Be 16.91 12 *i* P **Pn** **20 42 55.7 -2.1**
AKASG pmax pmax
comp=Z,6.0nm,0.4s
AKASG pmax pmax
comp=Z,1.0nm,0.4s
AKBB Malin Array Si 16.91 12 *e*P **Pn** **20 42 56.0 -1.8**
AKBB pmax pmax
comp=Z,23nm,0.7s
AKBB Malin Array Si 16.91 12 *e*Pn **Pn** **20 42 56.0 -1.8**
comp=Z,23nm,0.7s
AKBB *e*S **S** **20 46 13.8 -1.5**
AKBB Malin Array Si 16.91 12 *e*Pn **Pn** **20 42 56.0 -1.8**
comp=Z,23nm,0.7s
AKBB *e*S **S** **20 46 13.8 -1.5**
DPC Dobruska-Polom 16.97 344 *e*P **Pn** **20 42 57.5 -1.1**
DPC *ex* x 20 43 00.7
DPC *ep*P **sP** **20 43 07.2 -0.7**
DPC AMS AMS 20 51 10.0
comp=Z,8μm,13.7s
DPC Dobruska-Polom 16.97 344 *e*P **Pn** **20 42 57.5 -1.1**
DPC MLR MLR
comp=Z,8μm,13.7s
GOPC GO Pecny, Ondr 16.97 340 *e*P **Pn** **20 42 57.1 -1.5**
GOPC AMS AMS 20 51 10.0
comp=Z,8μm,13.6s
GOPC GO Pecny, Ondr 16.97 340 *e*P **Pn** **20 42 57.1 -1.5**
GOPC MLR MLR
comp=Z,8μm,13.6s
PRU Pruhonice 17.11 339 *e*P **Pn** **20 42 57.7 -2.5**
PRU *ex* x 20 43 02.8
PRU AMS AMS 20 51 10.0
comp=Z,10μm,12.6s
PRU Pruhonice 17.11 339 *e*P **Pn** **20 42 57.7 -2.5**
PRU MLR MLR
comp=Z,10μm,12.6s
AKH Akhalkalaki 17.14 60⇑*i*P **Pn** **20 43 00.1 -0.9**
LPG La Plagne 17.16 316 *e*P **Pn** **20 43 02.9 +1.7**
LPG pmax pmax
comp=Z,12nm,1.0s
LPG La Plagne 17.16 316 *e*P **Pn** **20 43 02.9 +1.7**
comp=Z,12nm,1.0s
BGD Bogdanovka 17.18 60 P P 20 43 12.5 +10
LPL La Plagne 17.18 316 *e*P **Pn** **20 43 01.4 0.0**
LPL pmax pmax
comp=Z,20nm,1.3s
LPL La Plagne 17.18 316 *e*P **Pn** **20 43 01.4 0.0**
comp=Z,20nm,1.3s
UPC Upice 17.19 343 *e*P **Pn** **20 43 01.8 +0.5**
UPC *ex* x 20 43 04.0
UPC *ep*P **sP** **20 43 10.0 -0.3**
UPC AMS AMS 20 51 30.0
comp=Z,9μm,16.6s
UPC Upice 17.19 343 *e*P **Pn** **20 43 01.8 +0.5**
UPC MLR MLR
comp=Z,9μm,16.6s
UPC Upice 17.19 343 *e*P **Pn** **20 43 01.8 +0.5**
comp=Z,9μm,16.6s
NEY Neytrino 17.29 53⇓*i*P **Pn** **20 43 02.0 -0.7**
NEY Neytrino 17.29 53 *i* P **Pn** **20 43 02.0 -0.7**
SENIN Lac Senin/Sane 17.37 319 *e*Pn **Pn** **20 43 03.2 -0.6**
comp=Z,29nm,1.2s
SENIN Lac Senin/Sane 17.37 319 *e*Pn **Pn** **20 43 03.2 -0.6**
comp=Z,29nm,1.2s
KSP Ksiaz 17.44 344 *e*P **Pn** **20 43 05.2 +0.9**
KSP Ksiaz 17.44 344 *e*P **Pn** **20 43 05.2 +0.9**
KSP Ksiaz 17.44 344 *e*P **Pn** **20 43 05.2 +0.9**
ONI Oni 17.52 56 P **Pn** **20 43 06.3 +0.8**
ONI Oni 17.52 56 P **Pn** **20 43 06.3 +0.8**
ONI Oni 17.52 56 P **Pn** **20 43 06.3 +0.8**
KIV Kislovodsk 17.57 51 *e*P **Pn** **20 43 07.6 +1.4**
KIV pmax pmax
comp=Z,28nm,0.9s
KIV MLR MLR
comp=Z,1μm,11.0s
KIV Kislovodsk 17.57 51 *e*P **Pn** **20 43 06.8 +0.6**
comp=Z,42nm,0.8s
KIV Kislovodsk 17.57 51 *e*P **Pn** **20 43 06.8 +0.6**
comp=Z,42nm,0.8s
KVAR Kislovodsk Arr 17.58 51 P **Pn** **20 43 05.0 -1.3**
baz=108,slow=4.1,SNR=12
KVAR LR LR 20 51 54.9
comp=Z,3μm,19.1s,baz=244,slow=44
PVCC Panska Ves 17.58 340 *e*P **Pn** **20 43 05.6 -0.6**
PVCC *ep*P **P** **20 43 10.4 +3.3**
PVCC AMS AMS 20 51 30.0
comp=Z,8μm,13.5s
PVCC Panska Ves 17.58 340 *e*P **Pn** **20 43 05.6 -0.6**
PVCC MLR MLR
comp=Z,8μm,13.5s
PVCC Panska Ves 17.58 340 *e*P **Pn** **20 43 05.6 -0.6**
comp=Z,8μm,13.5s
KBZ Khabaz 17.61 52 P **Pn** **20 43 04.8 -1.7**
comp=Z,0.3nm,0.3s,baz=260,slow=11,SNR=33
KBZ LR LR 20 51 57.6
comp=Z,4μm,18.9s,baz=245,slow=44
GNI Garni 17.72 65 LR LR 20 51 22.3
comp=Z,6μm,18.6s,baz=264,slow=42
GNI Garni 17.72 65 *e*P **Pn** **20 43 09.0 +0.9**
GNI pmax pmax
comp=Z,68nm,0.8s
GNI Garni 17.72 65 *e*P **Pn** **20 43 09.0 +0.9**
comp=Z,68nm,0.8s
GNI Garni 17.72 65 *e*P **Pn** **20 43 09.0 +0.9**
comp=Z,68nm,0.8s
ZEI Tsey 17.90 56 *e*P **Pn** **20 43 10.6 +0.2**
ZEI pmax pmax
comp=Z,53nm,1.1s
ZEI Tsey 17.90 56 *e*P **Pn** **20 43 10.6 +0.2**
comp=Z,53nm,1.1s
GRA1 Grafenberg Arr 17.97 333 P **Pn** **20 43 13.1 +2.2**
comp=Z,137nm,1.1s
GRF Grafenberg Arr 17.97 333 P **Pn** **20 43 13.1 +2.2**
GRF pmax pmax
comp=Z,137nm,1.1s
NKC Novy Kostel 17.98 336 *e*P **Pn** **20 43 10.1 -1.0**
NKC *ep*P **pP** **20 43 17.5 +0.8**
NKC AMS AMS 20 51 50.0
comp=Z,7μm,15.9s
NKC Novy Kostel 17.98 336 *e*P **Pn** **20 43 10.1 -1.0**
NKC MLR MLR
comp=Z,7μm,15.9s
NKC Novy Kostel 17.98 336 *e*P **Pn** **20 43 10.1 -1.0**
comp=Z,7μm,15.9s
FELD Feldberg im Sc 18.00 324 *e*P **Pn** **20 43 09.5 -1.9**
VIVF Saint-Julien-l 18.07 311 *e*P **Pn** **20 43 11.6 -0.6**
VIVF pmax pmax
comp=Z,13nm,0.9s
VIVF Saint-Julien-l 18.07 311 *e*P **Pn** **20 43 11.6 -0.6**
comp=Z,13nm,0.9s
BRG Berggiesshubel 18.07 340 *e*P **Pn** **20 43 11.9 -0.3**
comp=Z,18nm,0.7s
comp=N,7μm,12.3s
comp=E,4μm,16.2s
comp=Z,10μm,13.5s
BRG Berggiesshubel 18.07 340 *e*P **Pn** **20 43 11.9 -0.3**
BRG pmax pmax
comp=Z,18nm,0.7s
BRG MLR MLR
comp=N,7μm,12.3s
BRG MLR MLR
comp=E,4μm,16.2s
BRG MLR MLR
comp=Z,10μm,13.5s
BRG Berggiesshubel 18.07 340 *e*P **Pn** **20 43 11.9 -0.3**
comp=Z,10μm,13.5s
BFO Black Forest 18.16 325 *e*P **Pn** **20 43 12.9 -0.4**
BFO pmax pmax
comp=Z,26nm,1.0s
BFO Black Forest 18.16 325 *e*P **Pn** **20 43 12.9 -0.4**
comp=Z,26nm,1.0s
BFO Black Forest 18.16 325 *e*Pn **Pn** **20 43 12.9 -0.4**
comp=Z,26nm,1.0s
GUDG Gudauri 18.18 57 P **Pn** **20 43 15.0 +1.2**
CABF La Chapelle 18.18 318 *e*P **Pn** **20 43 12.3 -1.4**
CABF pmax pmax
comp=Z,10.0nm,0.8s
CABF La Chapelle 18.18 318 *e*P **Pn** **20 43 12.3 -1.4**
comp=Z,10.0nm,0.8s
LOMF Lomont 18.24 321 *e*P **Pn** **20 43 11.2 -3.2**
SSB Saint Sauveur 18.36 313 *e*P **Pn** **20 43 15.2 -0.6**
SSB pmax pmax
comp=Z,27nm,1.3s
SSB Saint Sauveur 18.36 313 *e*P **Pn** **20 43 15.2 -0.6**
comp=Z,27nm,1.3s
SSB Saint Sauveur 18.36 313 *e*P **Pn** **20 43 15.2 -0.6**
comp=Z,27nm,1.3s
LIBD Limburg 18.38 324 *e*P **Pn** **20 43 16.1 +0.1**
MOF Molkenrain 18.41 322⇓*e*P **P** **20 43 14.9 -1.5**
MOF Molkenrain 18.41 322⇓*e*P **P** **20 43 14.9 -1.5**
DGRG David-gareji 18.51 61 P **P** **20 43 16.1 -1.4**
DGRG David-gareji 18.51 61 P **P** **20 43 16.1 -1.4**
DGRG David-gareji 18.51 61 P **P** **20 43 16.1 -1.4**
MOX Moxa 18.61 335 P **P** **20 43 18.9 +0.4**
MOX pmax pmax
comp=Z,31nm,1.0s
MOX Moxa 18.61 335 P **P** **20 43 18.9 +0.4**
comp=Z,31nm,1.0s
ECH Echery 18.64 323 *e*P **P** **20 43 18.0 -0.9**
ECH Echery 18.64 323 *e*P **P** **20 43 18.0 -0.9**
LRDF Laroque-de-Fa 18.66 304 *e*P **P** **20 43 17.4 -1.6**
LRDF Laroque-de-Fa 18.66 304 *e*P **P** **20 43 17.4 -1.6**
WLS Welschbruch 18.68 324⇓*e*P **P** **20 43 19.9 +0.6**
WLS Welschbruch 18.68 324⇓*e*P **P** **20 43 19.9 +0.6**
CLL Collm 18.73 339 *e*P **P** **20 43 19.0 -0.8**
CLL *i* 20 43 20.6
CLL *i* 20 43 21.7
comp=Z,26nm,0.7s
CLL *e* 20 43 28.0
CLL *e*PPP PPP 20 43 36.0
CLL LmH 20 50 00.0
comp=N,4μm,20.4s
CLL LmH 20 50 00.0
comp=E,7μm,21.1s
CLL Lmax 20 52 00.0
CLL Collm 18.73 339 *e*P **P** **20 43 19.0 -0.8**
CLL pmax pmax
comp=Z,42nm,0.8s
CLL Collm 18.73 339 *e*P **P** **20 43 19.0 -0.8**
comp=Z,42nm,0.8s
CLL Collm 18.73 339 *e*P **P** **20 43 19.0 -0.8**
comp=Z,42nm,0.8s
VALF Valcebollere 18.84 302 *e*P **P** **20 43 20.4 -0.8**
VALF Valcebollere 18.84 302 *e*P **P** **20 43 20.4 -0.8**
LANF Langenberg 18.86 326 *e*P **P** **20 43 22.4 +1.1**
LANF Langenberg 18.86 326 *e*P **P** **20 43 22.4 +1.1**
TOD Tromm 18.88 329⇓*e*P **P** **20 43 21.3 -0.1**
KTD Kalmit 18.98 327 *e*P **P** **20 43 24.3 +1.7**
LBL Lubilhac 19.13 311 *e*P **Pn** **20 43 27.6 +2.4**
PLDF La Plantade 19.26 313 *e*P **P** **20 43 25.8 +0.1**
PLDF La Plantade 19.26 313 *e*P **P** **20 43 25.8 +0.1**
PYM Petit Puy Mans 19.53 312 *e*P **P** **20 43 28.9 +0.3**
PYM Petit Puy Mans 19.53 312 *e*P **P** **20 43 28.9 +0.3**
AGO Saint Agoulin 19.60 313 *e*P **P** **20 43 26.1 -3.2**
TAM Tamanrasset 19.63 239 *e*P **P** **20 43 32.1 +2.1**
TAM pmax pmax
comp=Z,43nm,1.6s
TAM Tamanrasset 19.63 239 *e*P **P** **20 43 32.1 +2.1**
comp=Z,43nm,1.6s
TAM Tamanrasset 19.63 239 *e*P **P** **20 43 32.1 +2.1**
comp=Z,43nm,1.6s
ABH Alteburg 19.63 328 *e*P **P** **20 43 29.7 +0.1**
RUP Ruppelstein 19.72 326 *e*P **P** **20 43 30.3 -0.4**
CAF Calviac 19.75 309 *e*P **P** **20 43 30.8 -0.2**
CAF pmax pmax
comp=Z,15nm,1.1s
CAF Calviac 19.75 309 *e*P **P** **20 43 30.8 -0.2**
comp=Z,15nm,1.1s
SUW Suwalki 19.75 359 *e*P **P** **20 43 28.0 -2.9**
SUW Suwalki 19.75 359 *e*P **P** **20 43 28.0 -2.9**
AVF Avril sur Loir 19.84 315 *e*P **P** **20 43 30.8 -1.2**
AVF pmax pmax
comp=Z,25nm,1.2s
AVF Avril sur Loir 19.84 315 *e*P **P** **20 43 30.8 -1.2**
comp=Z,25nm,1.2s
MELF Melles 19.87 302 *e*P **P** **20 43 32.6 +0.2**
MELF Melles 19.87 302 *e*P **P** **20 43 32.6 +0.2**
WLF Walferdange 20.11 325 P **P** **20 43 35.3 +0.4**
comp=Z,91nm,1.6s
WLF Walferdange 20.11 325 *e*P **P** **20 43 34.7 -0.2**
WLF pmax pmax
comp=Z,135nm,1.2s
WLF Walferdange 20.11 325 *e*P **P** **20 43 34.7 -0.2**
comp=Z,135nm,1.2s
WLF Walferdange 20.11 325 *e*P **P** **20 43 34.7 -0.2**
comp=Z,135nm,1.2s
RESF Ens 20.14 302 *e*P **P** **20 43 35.7 +0.3**
RESF Ens 20.14 302 *e*P **P** **20 43 35.7 +0.3**
VSR Storozhevoye 20.32 29 *e*P **P** **20 43 35.8 -1.2**
VSR pmax pmax
comp=Z,40nm,1.2s
VSR Storozhevoye 20.32 29 *e*P **P** **20 43 35.8 -1.2**
comp=Z,40nm,1.2s
VIEF Viey 20.39 302 *e*P **P** **20 43 37.7 -0.3**
VIEF Viey 20.39 302 *e*P **P** **20 43 37.7 -0.3**
LABF Labassere 20.40 302 *e*P **P** **20 43 37.2 -0.9**
LABF Labassere 20.40 302 *e*P **P** **20 43 37.2 -0.9**
MICGM Minsk 20.45 7 *e* **P** **20 43 34.0 -4.4**
MNK Minsk 20.45 7 *e*P **P** **20 43 34.0 -4.4**
KLNR Kaliningrad 20.49 354⇓*e*P **P** **20 43 37.5 -1.4**
KLNR pmax pmax
comp=Z,51nm,0.6s
KLNR Kaliningrad 20.49 354 *e*P **P** **20 43 37.5 -1.4**
comp=Z,51nm,0.6s
REYF Montagne du Re 20.73 302 *e*P **P** **20 43 40.8 -1.0**
REYF Montagne du Re 20.73 302 *e*P **P** **20 43 40.8 -1.0**
NACGM Naroch 20.75 5 *e*P **P** **20 43 38.0 -3.7**
MEM Membach 20.84 327 P **P** **20 43 43.2 +0.4**
comp=Z,27nm,1.3s
ATE Arette 20.95 302 *e*P **P** **20 43 42.0 -2.1**
ATE Arette 20.95 302 *e*P **P** **20 43 42.0 -2.1**
BCLA Clavier 21.03 326 P **P** **20 43 44.4 -0.4**
comp=Z,22nm,1.8s
LARF Larrau 21.14 302 *e*P **P** **20 43 45.7 -0.5**
LARF Larrau 21.14 302 *e*P **P** **20 43 45.7 -0.5**
DOU Dourbes 21.15 324 P **P** **20 43 45.3 -0.8**
comp=Z,54nm,1.3s
IDID Didziasalis 21.16 5 *e*P **P** **20 43 43.7 -2.4**
IDID IAmb IAmb 20 44 05.6
comp=Z,43nm,1.1s
IDID Didziasalis 21.16 5 *e*P **P** **20 43 43.7 -2.4**
SNR=33
LPSR Galich'ya Gora 21.32 26 *e*P **P** **20 43 48.2 +0.4**
LPSR pmax pmax
comp=Z,30nm,0.9s
LPSR Galich'ya Gora 21.32 26 *e*P **P** **20 43 48.2 +0.4**
comp=Z,30nm,0.9s
ISAL Salakas 21.37 4 *e*P **P** **20 43 46.2 -2.2**
ISAL IAmb IAmb 20 44 05.6
comp=Z,16nm,0.8s
ISAL Salakas 21.37 4 *e*P **P** **20 43 46.2 -2.2**
SNR=33
VRH Novokhopyorsk 21.38 32 *e*P **P** **20 43 46.7 -1.8**
VRH pmax pmax
comp=Z,50nm,0.9s
VRH Novokhopyorsk 21.38 32 *e*P **P** **20 43 46.7 -1.8**
comp=Z,50nm,0.9s
RGN Rugen 21.56 343 *e*P **P** **20 43 48.0 -2.4**
comp=Z,108nm,0.9s
RGN Rugen 21.56 343 *e*P **P** **20 43 48.0 -2.4**
comp=Z,108nm,0.9s
IZAR Zarasai 21.56 4 *e*P **P** **20 43 48.0 -2.4**
IZAR IAmb IAmb 20 44 06.8
comp=Z,18nm,0.6s
IZAR Zarasai 21.56 4 *e*P **P** **20 43 48.0 -2.4**
SNR=29
SNF Seneffe 21.57 325 P **P** **20 43 50.0 -0.6**
BSD Bornholm Skovb 21.74 346 *i* P **P** **20 43 49.7 -2.6**
comp=Z,33nm,0.8s
BSD Bornholm Skovb 21.74 346 *e*P **P** **20 43 49.7 -2.6**
BSD pmax pmax
comp=Z,33nm,0.8s
BSD Bornholm Skovb 21.74 346 *e*P **P** **20 43 49.7 -2.6**
comp=Z,33nm,0.8s
MENF Mencas 22.65 322 *e*P **P** **20 43 59.2 -3.0**
MENF Mencas 22.65 322 *e*P **P** **20 43 59.2 -3.0**
ES19 SONSECA Array 22.68 292 *e*P **P** **20 44 02.9 +0.2**
ES19 SONSECA Array 22.68 292 *e*P **P** **20 44 02.9 +0.2**
OBN Obninsk 22.69 19 P **P** **20 44 00.4 -2.1**
comp=Z,45nm,0.9s,baz=80,slow=21,SNR=16
OBN Obninsk 22.69 19⇑*i*P **P** **20 44 01.5 -1.0**
OBN *e* 20 44 24.8
OBN pmax pmax
comp=Z,129nm,1.4s
OBN MLR MLR
comp=Z,3μm,16.0s
OBN Obninsk 22.69 19 *i* P **P** **20 44 01.5 -1.0**
comp=Z,129nm,1.4s
OBN Obninsk 22.69 19 *e*P **P** **20 44 00.6 -1.9**
comp=Z,153nm,1.4s
ESDC Sonseca Array 22.73 292 P **P** **20 44 02.2 -1.1**
comp=Z,2.8nm,0.6s,baz=86,slow=9.5,SNR=14
ESDC LR LR 20 52 25.3
comp=Z,1μm,21.3s,baz=110,slow=36
ESLA Sonseca Array 22.73 292 *e*P **P** **20 44 04.8 +1.6**
comp=Z,16nm,1.0s
ESLA Sonseca Array 22.73 292 *e*P **P** **20 44 04.8 +1.6**
comp=Z,16nm,1.0s
COP Copenhagen 22.81 343 *i* P **P** **20 44 02.7 -1.0**
comp=Z,33nm,1.1s
COP Copenhagen 22.81 343 *i* P **P** **20 44 02.7 -1.0**
COP pmax pmax
comp=Z,33nm,1.1s
COP Copenhagen 22.81 343 *i* P **P** **20 44 02.7 -1.0**
comp=Z,33nm,1.1s
PAB San Pablo 23.02 291 *e*P **P** **20 44 06.6 +0.4**
PAB pmax pmax
comp=Z,26nm,1.1s
PAB San Pablo 23.02 291 *e*P **P** **20 44 06.6 +0.4**
comp=Z,26nm,1.1s
PAB San Pablo 23.02 291 *e*P **P** **20 44 06.6 +0.4**
comp=Z,26nm,1.1s
GRR Gorron 23.11 315 *e*P **P** **20 44 05.1 -1.9**
GRR pmax pmax
comp=Z,35nm,0.9s
GRR Gorron 23.11 315 *e*P **P** **20 44 05.1 -1.9**
comp=Z,35nm,0.9s
SLIT Slitere, Latvi 23.39 358 *e*P **P** **20 44 08.3 -1.4**
SNR=32
MOS Moscow 23.53 20 *e*P **P** **20 44 10.4 -0.7**
MOS *e* 20 44 26.9
MOS *e* 20 44 35.6
MOS *e*S **S** **20 48 18.8 -5.1**
MOS pmax pmax
comp=Z,163nm,1.1s
MOS pmax pmax
comp=Z,300nm,1.5s
MOS MLR MLR
comp=N,3μm,16.0s
MOS MLR MLR
comp=E,3μm,16.0s
MOS MLR MLR
comp=Z,3μm,16.0s
MOS Moscow 23.53 20 *e*P **P** **20 44 10.4 -0.7**
comp=Z,300nm,1.5s
VSU Vasula 24.29 4*ce*P **P** **20 44 15.5 -2.7**
VSU pmax pmax
comp=Z,163nm,1.7s
VSU Vasula 24.29 4 *e*P **P** **20 44 15.8 -2.4**
SNR=38
MUD Monsted U'grnd 24.34 340 *i* P **P** **20 44 24.1 +5.4**
comp=Z,39nm,1.2s
MUD Monsted U'grnd 24.34 340 *i* P **P** **20 44 24.1 +5.4**
MUD pmax pmax
comp=Z,39nm,1.2s
MTSE Matsula 24.46 0 *e*P **P** **20 44 17.9 -1.9**
SNR=38
PBRG Braganca 25.06 296 *e*P **P** **20 44 25.9 +0.4**
comp=Z,78nm,1.4s
PBRG Braganca 25.06 296 *e*P **P** **20 44 25.9 +0.4**
comp=Z,78nm,1.4s
PBAR Barrancos 25.07 288 *e*P **P** **20 44 25.7 +0.1**
PBAR Barrancos 25.07 288 *e*P **P** **20 44 25.7 +0.1**
MVO Moncorvo 25.20 295 *e*P **P** **20 44 26.3 -0.5**
comp=Z,45nm,1.2s
MVO Moncorvo 25.20 295 *e*P **P** **20 44 26.3 -0.5**
comp=Z,45nm,1.2s
PMRV Marv??o 25.36 291 *e*P **P** **20 44 30.2 +2.0**
comp=Z,32nm,1.3s
PCBR Castelo Branco 25.45 292 *e*P **P** **20 44 29.9 +1.0**
comp=Z,38nm,1.4s
PESTR Estremoz 25.50 290 *e*P **P** **20 44 30.2 +0.7**
comp=Z,32nm,1.5s
PVAQ Vaqueiros 25.63 286 *e*P **P** **20 44 32.1 +1.5**
POLO Lamas de Olo 25.80 295 *e*P **P** **20 44 32.4 +0.1**
PBDV Barranco-do-Ve 25.81 286 *e*P **P** **20 44 32.4 +0.1**
EVO Evora 25.83 289 *e*P **P** **20 44 33.6 +1.1**
comp=Z,44nm,1.9s
PCVE Castro Verde 25.87 287 *e*P **P** **20 44 33.7 +0.8**
comp=Z,54nm,1.6s
PUL Pulkovo 25.88 8⇓*i*P **P** **20 44 33.6 +1.0**
PUL pmax pmax
comp=Z,461nm,1.7s
PMTG Montargil 26.00 290 *e*P **P** **20 44 36.0 +2.0**
comp=Z,33nm,1.8s
PCAB Cabril 26.01 296 *e*P **P** **20 44 34.9 +0.8**
comp=Z,64nm,1.8s
MESJ Messejana 26.01 287 *e*P **P** **20 44 35.9 +1.8**
PTEO Sao Teotonio 26.42 287 *e*P **P** **20 44 39.2 +1.4**
HFS Hagfors 26.70 349 P **P** **20 44 38.4 -1.7**
comp=Z,13nm,0.6s,baz=150,slow=12,SNR=28
FINES FINESS Array B 27.24 2 P **P** **20 44 41.6 -3.2**
comp=Z,6.0nm,0.7s,baz=164,slow=9.4,SNR=26
FIA1 FINESS Array S 27.24 2 *e*P **P** **20 44 41.3 -3.6**
NC602 NORSAR Array S 27.64 347 *e*P **P** **20 44 46.4 -2.1**
NC602 NORSAR Array S 27.64 347 *e*P **P** **20 44 46.4 -2.1**
NAO01 NORSAR Array S 27.87 347 *e*P **P** **20 44 48.3 -2.3**
NAO01 NORSAR Array S 27.87 347 *e*P **P** **20 44 48.3 -2.3**
GEYT Alibeck 27.93 72 P **P** **20 44 50.9 -0.5**
comp=Z,2.4nm,0.7s,baz=269,slow=8.6,SNR=6.3
NC405 NORSAR Array S 27.96 348 *e*P **P** **20 44 49.9 -1.5**
NC405 NORSAR Array S 27.96 348 *e*P **P** **20 44 49.9 -1.5**
NB201 NORSAR Array S 27.98 347 *e*P **P** **20 44 49.4 -2.2**
NB201 NORSAR Array S 27.98 347 *e*P **P** **20 44 49.4 -2.2**
NB2 NORSAR Subarra 27.99 347 P **P** **20 44 49.5 -2.2**
comp=Z,12nm,0.9s,baz=156,slow=9.3
NB2 NORSAR Subarra 27.99 347 P **P** **20 44 49.5 -2.2**
comp=Z,12nm,0.9s,SNR=5.1
NOA NORSAR Array B 27.99 347 P **P** **20 44 49.7 -2.0**
comp=Z,2.1nm,0.5s,baz=150,slow=9.7,SNR=20
NBO00 NORSAR Array S 28.06 347 *e*P **P** **20 44 51.4 -0.9**
NBO00 NORSAR Array S 28.06 347 *e*P **P** **20 44 51.4 -0.9**
NBO02 NORSAR Array S 28.06 347 *e*P P 20 44 50.0 -2.3
NBO02 NORSAR Array S 28.06 347 *e*P P 20 44 50.0 -2.3
EKA Eskdalemuir Ar 28.12 327 P **P** **20 44 51.6 -1.2**
comp=Z,9.8nm,0.5s,baz=128,slow=8.5,SNR=33
ESK Eskdalemuir 28.13 327 *e*P **P** **20 44 51.3 -1.7**
ESK pmax pmax
comp=Z,178nm,1.8s
ESK Eskdalemuir 28.13 327 *e*P **P** **20 44 51.2 -1.7**
comp=Z,178nm,1.8s
ESK Eskdalemuir 28.13 327 *e*P **P** **20 44 51.2 -1.7**
comp=Z,178nm,1.8s
NC303 NORSAR Array S 28.13 347 *e*P **P** **20 44 51.7 -1.2**
NC303 NORSAR Array S 28.13 347 *e*P **P** **20 44 51.7 -1.2**
NC204 NORSAR Array S 28.29 347 *e*P **P** **20 44 53.5 -0.9**
NC204 NORSAR Array S 28.29 347 *e*P **P** **20 44 53.5 -0.9**
KLMR Klimovskoe 28.50 16 *e*P P 20 44 53.0 -3.2

KLMR pmax pmax
comp=Z,15nm,0.8s
VAF Ylistaro 28.81 359 *e*P **P 20 45 00.4 +1.5**
VAF pmax pmax
comp=Z,39nm,2.7s
VAF Ylistaro 28.81 359 *e*P **P 20 45 00.4 +1.5**
comp=Z,39nm,2.7s
TOA0 Torodi Ar. Sit 29.01 229 *e*P **P 20 45 01.0 -0.1**
TOA0 Torodi Ar. Sit 29.01 229 *e*P **P 20 45 01.1 -0.1**
TORD Torodi Ar. Bea 29.01 229 P **P 20 45 01.0 -0.2**
comp=Z,4.9nm,0.6s,baz=38,slow=8.9,SNR=26
TORD LR LR 20 56 58.6
comp=Z,3μm,21.7s,baz=30,slow=37
TORD Torodi Ar. Bea 29.01 229 P **P 20 45 01.0 -0.2**
UOSS Minazif 29.62 100 *e*P **P 20 45 05.5 -1.0**
comp=Z,0.9nm,0.8s
UOSS Minazif 29.62 100 *e*P **P 20 45 05.5 -1.0**
comp=Z,0.9nm,0.8s
AKTK Aktyubinsk 29.72 47 P **P 20 45 05.3 -1.9**
AKTO Aktyubinsk 29.72 47 P **P 20 45 05.3 -1.9**
comp=Z,8.6nm,0.6s,baz=250,slow=9.6,SNR=17
ABKAR Akbulak array 30.55 50 *e*P **P 20 45 13.7 -0.8**
ABKAR Akbulak array 30.55 50 *e*P **P 20 45 13.7 -0.8**
ARU Arti 32.47 36 P P 20 45 29.2 -2.1
comp=Z,9.9nm,0.6s,baz=233,slow=5.8,SNR=20
ARU Arti 32.47 36*c i*P **P 20 45 30.5 -0.8**
ARU 20 46 35.2
ARU 20 48 14.3
ARU S **S 20 50 43.9 -1.2**
ARU SS **SnSn 20 52 41.1 +2.5**
ARU pmax pmax
comp=Z,56nm,1.7s
ARU Arti 32.47 36 *i*P **P 20 45 30.5 -0.8**
comp=Z,56nm,1.7s
ARU Arti 32.47 36 *e*P **P 20 45 29.5 -1.8**
comp=Z,35nm,1.1s
SVE Sverdlovsk 33.67 37⇓*e*P **P 20 45 40.6 -1.2**
SVE pmax pmax
comp=Z,52nm,0.9s
SVE Sverdlovsk 33.67 37 *e*P **P 20 45 40.6 -1.2**
comp=Z,52nm,0.9s
APA Apatity 33.82 7⇑*i*P **P 20 45 42.0 -0.9**
APA pmax pmax
comp=Z,14nm,0.8s
APA MLR MLR
comp=Z,2μm,14.0s
APA Apatity 33.82 7 *i*P **P 20 45 42.0 -0.9**
comp=Z,2μm,14.0s
ARA0 ARCESS Array S 35.34 1 *e*P P 20 45 53.3 -2.8
ARA0 ARCESS Array S 35.34 1 *e*P P 20 45 53.3 -2.7
ARCES ARCESS Array B 35.34 1 P P 20 45 53.2 -2.8
comp=Z,9.3nm,0.7s,baz=175,slow=8.6,SNR=32
ZRNK Zerenda 36.98 46 *e*P **P 20 46 09.2 -1.1**
ZRNK pmax pmax
comp=Z,24nm,0.8s
ZRNK Zerenda 36.98 46 *e*P **P 20 46 09.2 -1.1**
comp=Z,24nm,0.8s
ZRNK Zerenda 36.98 46 *e*P **P 20 46 09.2 -1.1**
comp=Z,24nm,0.8s
KKAR Karatay Array 37.16 62 *e*P **P 20 46 12.2 +0.2**
KKAR Karatay Array 37.16 62 *e*P **P 20 46 12.2 +0.2**
KKAR Karatay Array 37.16 62 *e*P **P 20 46 12.2 +0.2**
BRVK Borovoye 37.76 46*ce*P **P 20 46 16.5 -0.4**
BRVK pmax pmax
comp=Z,22nm,1.7s
BRVK Borovoye 37.76 46 *e*P **P 20 46 16.5 -0.4**
comp=Z,22nm,1.7s
BRVK Borovoye 37.76 46 *e*P **P 20 46 16.9 0.0**
comp=Z,16nm,1.1s
BVAR Borovoye Array 37.82 46 P **P 20 46 16.2 -1.2**
comp=Z,3.7nm,0.7s,baz=273,slow=5.5,SNR=15
DBIC Dimbokro 38.09 230 P **P 20 46 19.4 -0.6**
comp=Z,7.7nm,0.7s,baz=14,slow=8.8,SNR=11
DBIC LR LR 21 03 11.7
comp=Z,2μm,20.6s,baz=22,slow=38
TIC Toumodi 38.21 231 *e*P **P 20 46 20.2 -0.9**
KIC Kosan Boka 38.25 230 *e*P **P 20 46 20.5 -0.9**
comp=Z,32nm,0.8s
LIC Lamto 38.54 230 *e*P P 20 46 21.8 -2.0
EKS2 Erkin-Say 39.58 63 *e*P **P 20 46 32.7 +0.2**
EKS2 pmax pmax
comp=Z,17nm,0.8s
EKS2 Erkin-Say 39.58 63 *e*P **P 20 46 32.7 +0.2**
comp=Z,17nm,0.8s
EKS2 Erkin-Say 39.58 63 *e*P **P 20 46 32.7 +0.2**
comp=Z,17nm,0.8s
AAK Ala-Archa 40.11 63 *e*P **P 20 46 37.3 +0.3**
AAK Ala-Archa 40.11 63 *e*P **P 20 46 37.2 +0.3**
AAK Ala-Archa 40.11 63 *e*P **P 20 46 37.2 +0.3**
FRU Bishkek 40.18 62 *e*P **P 20 46 38.0 +0.6**
FRU *e* 20 46 56.5
FRU pmax pmax
comp=Z,140nm,2.2s
FRU Bishkek 40.18 62 *e*P **P 20 46 38.0 +0.6**
comp=Z,140nm,2.2s
TKM2 Tokmak 2 40.89 62 *e*P **P 20 46 43.5 0.0**
TKM2 pmax pmax
comp=Z,13nm,0.8s
TKM2 Tokmak 2 40.89 62 *e*P **P 20 46 43.5 0.0**
comp=Z,12nm,0.8s
TKM2 Tokmak 2 40.89 62 *e*P **P 20 46 43.5 0.0**
comp=Z,12nm,0.8s
KSH Kashi 41.63 67 P **P 20 46 48.5 -1.0**
KSH *ep*P pP 20 46 55.8 +0.7
KSH S **S 20 53 00.6 -4.5**
KSH pmax pmax
comp=Z,15nm,1.1s
KSH pmax pmax
comp=Z,1μm,9.2s
KSH LR LR
comp=N,1μm,14.0s
KSH LR LR
comp=E,1μm,12.6s
KSH LR LR
comp=Z,920nm,11.1s
KURBB Kurchatov Arra 42.60 50 P **P 20 46 55.6 -1.4**
comp=Z,14nm,0.8s,baz=278,slow=8.6,SNR=65
KURK Kurchatov 42.66 50 P **P 20 46 55.6 -1.9**
KURK Kurchatov 42.66 50 P **P 20 46 55.6 -1.9**
KURK Kurchatov 42.66 50 P **P 20 46 55.6 -1.9**
SCO Scoresbysund 43.76 340 *i*P **P 20 47 08.9 +2.8**
comp=Z,39nm,1.2s
SCO Scoresbysund 43.76 340 *e*P **P 20 47 08.9 +2.8**
SCO pmax pmax
comp=Z,39nm,1.2s
SPITS Spitsbergen Ar 44.13 358 P **P 20 47 07.4 -1.7**
comp=Z,5.0nm,0.6s,baz=160,slow=13,SNR=20
SPITS LR LR 21 07 37.4
comp=Z,5μm,21.5s,baz=105,slow=39
MAKZ Makanchi 45.03 56 *e*P **P 20 47 16.0 -0.7**
MAKZ pmax pmax
comp=Z,12nm,0.9s
MAKZ Makanchi 45.03 56 *e*P **P 20 47 16.0 -0.7**
comp=Z,12nm,0.9s
MAKZ Makanchi 45.03 56 *e*P **P 20 47 16.0 -0.7**
comp=Z,12nm,0.9s
MK31 Makanchi Array 45.25 56 *e*P **P 20 47 17.7 -0.8**
MK31 Makanchi Array 45.25 56 *e*P **P 20 47 17.7 -0.8**
MK31 Makanchi Array 45.25 56 *e*P **P 20 47 17.7 -0.8**
MKAR Makanchi Array 45.25 56 P **P 20 47 17.6 -0.9**
comp=Z,14nm,0.6s,baz=269,slow=7.5,SNR=72
MKAR Makanchi Array 45.25 56 *e*P **P 20 47 17.7 -0.8**
MKAR Makanchi Array 45.25 56 *e*P **P 20 47 17.7 -0.8**
MKAR Makanchi Array 45.25 56 *e*P **P 20 47 17.7 -0.8**
MK01 Makanchi Array 45.26 56 *e*P **P 20 47 17.6 -0.9**
MK01 Makanchi Array 45.26 56 *e*P **P 20 47 17.6 -0.9**
NVS Novosibirsk 45.55 44⇑*i*P **P 20 47 20.0 -0.6**
NVS *e* 20 47 30.4
NVS *i* 20 49 03.5
NVS *e*S **S 20 53 59.4 -2.3**
NVS pmax pmax
comp=N,6.0nm,1.0s
NVS pmax pmax
comp=E,13nm,1.0s
NVS pmax pmax
comp=Z,33nm,1.0s
NVS smax smax
comp=N,15nm,1.8s
NVS smax smax
comp=E,12nm,2.3s
ZAA0 Zalesovo Array 46.47 46 *e*P P 20 47 25.6 -2.3
ZAA0 Zalesovo Array 46.47 46 *e*P P 20 47 25.6 -2.3
ZALV Zalesovo Beam 46.47 46 P P 20 47 25.8 -2.2
comp=E,6.7nm,0.4s,baz=262,slow=9.8,SNR=22
DAG Danmarks Havn 46.67 348 *i*P **P 20 47 27.6 -1.5**
DAG Danmarks Havn 46.67 348 *e*P **P 20 47 27.6 -1.5**
NRIK Noril'sk 49.19 25 P **P 20 47 47.2 -1.5**
comp=E,11nm,0.9s,baz=244,slow=4.4,SNR=11
SUMG Summit 49.40 339 *e*P **P 20 47 51.2 +0.4**
SUMG pmax pmax
comp=Z,81nm,1.9s
SUMG Summit 49.40 339 *e*P **P 20 47 51.2 +0.4**
comp=Z,81nm,1.9s
SUMG Summit 49.40 339 *e*P **P 20 47 51.1 +0.4**
comp=Z,81nm,1.9s
LSZ Lusaka 49.45 174 P **P 20 47 51.8 +0.4**
comp=Z,1.5nm,0.6s,baz=22,slow=7.5,SNR=3.5
WMQ Urumqi 49.47 59 P **P 20 47 53.8 +2.4**
WMQ pP pP 20 47 57.6 +0.4
WMQ sP sP 20 48 04.0 +4.6
WMQ pmax pmax
comp=Z,6.0nm,0.8s
WMQ pmax pmax
comp=Z,4μm,11.4s
PYUN Piuthan 50.46 80 *e*P **P 20 47 58.8 -0.5**
KRAR pmax pmax
comp=Z,70nm,0.7s
KRAR Krasnoyarsk 51.00 42⇓*e*P **P 20 48 03.3 +0.6**
KRAR pmax pmax
comp=Z,30nm,1.0s
KOLN Koldanda 51.09 80 *e*P **P 20 48 03.2 -0.8**
comp=Z,36nm,0.9s
HYB Hyderabad 51.52 95 *i*P **P 20 48 08.0 +0.9**
GKN Gorkha 51.84 79 *e*P **P 20 48 08.6 -1.0**
comp=Z,93nm,1.0s
KKN Kakani 52.45 79 *e*P **P 20 48 13.1 -1.1**
comp=Z,48nm,0.8s
PKIN Phulchoki 52.63 79 *e*P **P 20 48 14.4 -1.2**
comp=Z,21nm,0.6s
LSA Lhasa 56.43 75 *e*P **P 20 48 42.7 -0.7**
LSA pmax pmax
comp=Z,16nm,0.8s
LSA Lhasa 56.43 75 *e*P **P 20 48 42.7 -0.7**
comp=Z,16nm,0.8s
LSA Lhasa 56.43 75 *e*P **P 20 48 42.7 -0.7**
comp=Z,16nm,0.8s
MOY Mondy 56.48 47 *e*P **P 20 48 45.2 +2.1**
TLY Talaya 58.07 46 *e*P **P 20 48 56.6 +2.5**
TLY pmax pmax
comp=Z,13nm,1.1s
TLY Talaya 58.07 46 *e*P **P 20 48 56.6 +2.5**
comp=Z,13nm,1.1s
ZAK Zakamensk 58.22 48 *e*P **P 20 48 53.7 -1.6**
ZAK pmax pmax
comp=Z,12nm,1.2s
IRK Irkutsk 58.29 45 *e*P **P 20 48 55.5 -0.1**
IRK pmax pmax
comp=Z,46nm,1.7s
GTA Gaotai 59.42 61 *e*P **P 20 49 04.4 +0.5**
GTA pP sP 20 49 12.6 +0.6
GTA sP pP 20 49 16.6 +6.8
GTA PcP **PcP 20 49 53.5 +1.9**
GTA pmax pmax
comp=Z,2.0nm,1.0s
SONM Songino Array 60.96 50 P **P 20 49 13.3 -1.0**
comp=Z,9.3nm,1.0s,baz=280,slow=7.8,SNR=38
SONA1 Songino Array 60.96 50 *e*P **P 20 49 13.8 -0.5**
SONA1 Songino Array 60.96 50 *e*P **P 20 49 13.8 -0.5**
ULN Ulaanbaatar 61.37 50*ce*P **P 20 49 16.5 -0.6**
ULN pmax pmax
comp=Z,27nm,1.7s
ULN Ulaanbaatar 61.37 50 *e*P **P 20 49 16.9 -0.2**
comp=Z,16nm,1.1s
ULN Ulaanbaatar 61.37 50 *e*P **P 20 49 16.9 -0.2**
comp=Z,16nm,1.1s
BOD Bodaibo 61.88 37 *e*P P 20 49 18.2 -2.0
BOD pmax pmax
comp=Z,8.0nm,1.1s
TIXI Tiksi 62.42 20⇑*e*P **P 20 49 22.5 -1.0**
TIXI pmax pmax
comp=Z,15nm,1.7s
TIXI Tiksi 62.42 20 *e*P **P 20 49 21.9 -1.6**
comp=Z,8.0nm,0.9s
TIXI Tiksi 62.42 20 *e*P **P 20 49 21.9 -1.6**
comp=Z,8.0nm,0.9s
BOSA Boshof 62.55 178 P **P 20 49 24.8 -0.2**
comp=Z,1.7nm,0.6s,baz=17,slow=7.5,SNR=5.0
SCHQ Schefferville 63.10 320 P **P 20 49 27.5 -0.9**
comp=Z,4.9nm,0.5s,baz=86,slow=7.4,SNR=6.2
SCHQ Schefferville 63.10 320 *e*P **P 20 49 28.4 0.0**
comp=Z,11nm,0.8s
SCHQ Schefferville 63.10 320 *e*P **P 20 49 28.4 0.0**
comp=Z,11nm,0.8s
LZH Lanzhou 63.65 63 *e*P **P 20 49 34.8 +2.3**
LZH pP sP 20 49 42.8 +2.1
LZH sP pP 20 49 47.0 +8.5
LZH PcP **PcP 20 50 09.1 +0.3**
LZH PP **PP 20 51 51.0 -1.3**
LZH *e*S **S 20 58 04.0 -2.1**
LZH sS sS 20 58 13.0 -2.8
LZH Lanzhou 63.65 63 SS SS 21 02 06.0 -7.3
LZH pmax pmax
comp=Z,26nm,1.2s
LZH pmax pmax
comp=Z,170nm,5.8s
LZH LR LR
comp=N,680nm,13.2s
LZH LR LR
comp=E,2μm,14.6s
LZH LR LR
comp=Z,2μm,17.4s
LMN Caledonia Moun 65.44 310 *e*P **P 20 49 44.9 +1.0**
comp=Z,18nm,1.2s
LMN Caledonia Moun 65.44 310 *e*P **P 20 49 44.9 +1.0**
comp=Z,18nm,1.2s
CD2 Chengdu 65.81 68 P P 20 49 44.3 -2.3
CD2 pmax pmax
comp=Z,50nm,1.1s
HHC Hu-ho-hao-te 67.11 55 *e*P **P 20 49 56.4 +1.6**
HHC S **S 20 58 46.8 -1.4**
HHC pmax pmax
comp=Z,24nm,1.2s
HHC pmax pmax
comp=Z,240nm,6.3s
YAK Yakutsk 67.24 29⇑*e*P **P 20 49 55.7 +0.7**
YAK pmax pmax
comp=Z,10.0nm,0.8s
CHTO Chiang Mai 67.67 82 P **P 20 49 59.9 +1.3**
comp=Z,37nm,1.4s
CHTO Chiang Mai 67.67 82 *e*P **P 20 49 59.1 +0.6**
CHTO pmax pmax
comp=Z,9.0nm,1.1s
CHTO Chiang Mai 67.67 82 *e*P **P 20 49 59.1 +0.6**
comp=Z,9.2nm,1.1s
CHTO Chiang Mai 67.67 82 *e*P **P 20 49 59.1 +0.6**
comp=Z,9.2nm,1.1s
CMMT Chiang Mai 67.68 82 P **P 20 49 59.9 +1.3**
comp=Z,8.3nm,1.4s
KMI Kunming 67.68 74 P **P 20 49 57.1 -1.7**
KMI pP sP 20 50 07.1 +0.2
KMI sP pP 20 50 10.8 +6.1
KMI pmax pmax
comp=Z,13nm,1.4s
CMAR Chiang Mai Arr 67.85 82 P **P 20 49 58.0 -1.7**
comp=Z,5.9nm,1.1s,baz=300,slow=7.6,SNR=23
CMAR Chiang Mai Arr 67.85 82 *i*P **P 20 50 00.5 +0.8**
CMAR pmax pmax
comp=Z,6.0nm,1.0s
CM01 Chiang Mai Arr 67.88 82 *e*P **P 20 49 59.0 -0.9**
CM01 Chiang Mai Arr 67.88 82 *e*P **P 20 49 59.0 -0.9**
CRAI Chiangrai 68.14 80 P **P 20 50 01.5 0.0**
comp=Z,801nm,0.9s,comp=Z,82μm
XAN Xi'an 68.29 63 P **P 20 50 03.6 +1.3**
XAN pmax pmax
comp=Z,8.0nm,1.5s
LAMP Lampang 68.38 82 P **P 20 50 04.8 +1.8**
comp=Z,6.0nm,1.1s
NANT Nan 69.12 81 P **P 20 50 09.0 +1.4**
comp=Z,3.3nm,1.0s
UTTA Uttaradit 69.53 82 P **P 20 50 11.2 +1.1**
comp=Z,3.6nm,1.0s,comp=Z,41nm
SRDT SRDT 70.09 86 P **P 20 50 16.0 +2.4**
comp=Z,38nm,1.7s
GYA Guiyang 70.14 71 P **P 20 50 14.0 0.0**
GYA pmax pmax
comp=Z,10.0nm,1.0s
PBKT Sadao Pong 70.47 83 P **P 20 50 17.2 +1.3**
comp=Z,9.7nm,1.2s,comp=Z,1μm
ENH Enshi 70.48 66 *e*P **P 20 50 15.8 -0.1**
comp=Z,17nm,1.1s
ENH Enshi 70.48 66 *e*P **P 20 50 15.8 -0.1**
comp=Z,17nm,1.1s
BJI Beijing 70.61 54 P **P 20 50 17.6 +1.2**
BJI pmax pmax
comp=Z,11nm,1.1s
PHET Kaeng Krachan 71.27 87 P **P 20 50 23.4 +2.6**
comp=Z,4.9nm,0.9s,comp=Z,73nm
KHON Khomkaen 72.11 82 P **P 20 50 27.7 +1.8**
comp=Z,6.7nm,0.8s,comp=Z,589nm
SRAK Srakaew 72.68 85 P **P 20 50 33.4 +4.1**
comp=Z,33nm,1.1s,comp=Z,290nm
SKNT Sakolnakorn 72.73 81 P **P 20 50 30.7 +1.1**
comp=Z,15nm,0.9s
KRAB Krabi 73.42 91 P P 20 50 39.8 +6.2
comp=Z,5μm,0.5s,comp=Z,413μm
FCC Fort Churchill 73.93 331 *e*P **P 20 50 36.8 +0.9**
FCC pmax pmax
comp=Z,19nm,1.6s
FCC Fort Churchill 73.93 331 *e*P **P 20 50 36.8 +0.9**
comp=Z,19nm,1.6s
FCC Fort Churchill 73.93 331 *e*P **P 20 50 36.8 +0.9**
comp=Z,19nm,1.6s
BILL Bilibino 74.22 14⇑*i*P **P 20 50 38.6 +1.1**
BILL *e* 20 53 25.2
BILL *e*S **SKiKP 21 00 00.9 -2.9**
BILL pmax pmax
comp=Z,10.0nm,1.0s
BILL MLR MLR
comp=Z,1μm,19.0s
BILL Bilibino 74.22 14 *e*P **P 20 50 37.2 -0.3**
comp=Z,10nm,1.0s
BILL Bilibino 74.22 14 *e*P **P 20 50 37.1 -0.3**
comp=Z,10nm,1.0s
CN2 Changchun 74.65 47 *e*P P 20 50 37.3 -3.1
CN2 *es*P sP 20 50 48.3 -0.3
CN2 pmax pmax
comp=Z,10.0nm,1.2s
CN2 pmax pmax
comp=Z,300nm,5.0s
CN2 LR LR
comp=N,2μm,17.0s
CN2 LR LR
comp=E,1μm,17.0s
CN2 LR LR
comp=Z,2μm,17.0s
SEY Seymchan 74.83 22⇑*e*P **P 20 50 40.4 -0.7**
KLR Kul'dur 75.21 40 *i*P **P 20 50 42.5 -1.1**
GSI Gunungsitoli 75.93 98 P **P 20 50 48.1 -0.1**
comp=Z,14nm,0.9s
GSI Gunungsitoli 75.93 98 *e*P **P 20 50 47.8 -0.4**
comp=Z,8.2nm,0.7s
GSI Gunungsitoli 75.93 98 *e*P **P 20 50 47.8 -0.4**
comp=Z,8.2nm,0.7s
PSI Prapat 76.19 96 *e*P **P 20 50 48.6 -1.3**
PSI pmax pmax
comp=Z,16nm,0.9s
PSI Prapat 76.19 96 *e*P **P 20 50 48.6 -1.3**
comp=Z,16nm,0.9s
KULM Kulim 76.23 93 *e*P **P 20 50 50.5 +0.6**
comp=Z,23nm,1.4s
KULM Kulim 76.23 93 *e*P **P 20 50 50.5 +0.6**
comp=Z,23nm,1.4s
INK Inuvik 76.33 351 P **P 20 50 47.9 -1.7**
comp=Z,4.3nm,0.8s,baz=18,slow=3.9,SNR=10
MA2 Magadan 76.79 25 *e*P **P 20 50 52.3 -0.1**
MA2 pmax pmax
comp=Z,88nm,0.9s
MA2 Magadan 76.79 25 *e*P **P 20 50 52.3 -0.1**
comp=Z,88nm,0.9s
MA2 Magadan 76.79 25 *e*P **P 20 50 52.3 -0.1**
comp=Z,88nm,0.9s
YKW3 Yellowknife Ar 77.88 342 *e*P **P 20 50 59.8 +1.4**
comp=Z,9.5nm,1.3s
YKW3 Yellowknife Ar 77.88 342 *e*P **P 20 50 59.8 +1.4**
comp=Z,9.5nm,1.3s
YKA Yellowknife Ar 77.93 342 P **P 20 50 57.5 -1.1**
comp=Z,1.6nm,0.7s,baz=36,slow=5.4,SNR=21
USRK Ussuriysk Ar. 78.30 44 P **P 20 50 59.6 -1.5**
comp=Z,7.8nm,0.5s,baz=293,slow=4.5,SNR=15
COLD Coldfoot 78.72 358 *e*P **P 20 51 02.7 -0.3**
comp=Z,7.2nm,0.9s
COLD Coldfoot 78.72 358 *e*P **P 20 51 02.6 -0.3**
comp=Z,7.2nm,0.9s
VLA Vladivostok 78.89 45⇑*i*P **P 20 51 03.7 -0.6**
VLA *e* 20 51 12.5
VLA *e**PP **PcP 20 51 14.2 +1.2**
VLA pmax pmax
comp=Z,37nm,1.5s
COWI Conover 79.72 319 *e*P **P 20 51 09.9 +1.0**
comp=Z,11nm,0.8s
COWI Conover 79.72 319 *e*P **P 20 51 09.9 +1.0**
comp=Z,11nm,0.8s
KS01 Wonju Array Si 79.73 52 *e*P **P 20 51 08.4 -0.7**
KS01 Wonju Array Si 79.73 52 *e*P **P 20 51 08.4 -0.7**
KSAR Wonju Array Be 79.74 52 P **P 20 51 08.4 -0.7**
KSAR Wonju Array Be 79.74 52 P **P 20 51 08.4 -0.7**
KSAR Wonju Array Be 79.74 52 P **P 20 51 08.3 -0.7**
KSRS Korea Array 79.76 52 P **P 20 51 08.3 -0.8**
comp=Z,4.0nm,0.6s,baz=309,slow=5.2,SNR=14
FFC Flin Flon 79.86 331 *e*P **P 20 51 10.1 +0.7**
FFC pmax pmax
comp=Z,9.0nm,1.0s
FFC Flin Flon 79.86 331 *e*P **P 20 51 10.1 +0.7**
comp=Z,8.8nm,1.0s
FFC Flin Flon 79.86 331 *e*P **P 20 51 10.1 +0.7**
comp=Z,8.8nm,1.0s
TNA Tin City 80.09 5 *e*P **P 20 51 10.1 -0.3**
comp=Z,11nm,1.1s
TNA Tin City 80.09 5 *e*P **P 20 51 10.1 -0.3**
comp=Z,11nm,1.1s
CELP Cerrillos 80.30 285 *e*P **P 20 51 14.4 +2.0**
ULM Lac du Bonnet 80.39 326 P **P 20 51 12.0 -0.3**
comp=Z,3.0nm,0.6s,baz=70,slow=1.6,SNR=4.1
MLY Manley 80.94 358 *e*P **P 20 51 15.6 +0.5**
comp=Z,32nm,1.6s
MLY Manley 80.94 358 *e*P **P 20 51 15.6 +0.5**
comp=Z,32nm,1.6s
IL1 Eielson Array 81.02 356 *e*P **P 20 51 15.4 -0.1**
IL1 Eielson Array 81.02 356 *e*P **P 20 51 15.4 -0.1**
ILAR Eielson Array 81.02 356 P **P 20 51 14.7 -0.8**
comp=Z,1.9nm,0.8s,baz=348,slow=3.4,SNR=14
DAWY Dawson 81.09 353 *e*P **P 20 51 15.9 -0.1**
comp=Z,17nm,1.2s
DAWY Dawson 81.09 353 *e*P **P 20 51 15.9 -0.1**
comp=Z,17nm,1.2s
CCB Clear Creek Bu 81.19 356 *e*P **P 20 51 17.8 +1.4**
comp=Z,6.5nm,1.0s
CCB Clear Creek Bu 81.19 356 *e*P **P 20 51 17.8 +1.4**
comp=Z,6.5nm,1.0s
WRH Wood River Hil 81.38 356 *e*P **P 20 51 16.2 -1.2**
comp=Z,12nm,0.8s
WRH Wood River Hil 81.38 356 *e*P **P 20 51 16.2 -1.2**
comp=Z,12nm,0.8s
BPAW Bear Paw Mtn. 81.88 358 *e*P **P 20 51 19.2 -0.9**
comp=Z,8.8nm,0.8s
BPAW Bear Paw Mtn. 81.88 358 *e*P **P 20 51 19.2 -0.9**
comp=Z,8.8nm,0.8s
DOT Dot Lake 81.94 355 *e*P **P 20 51 21.4 +1.0**
comp=Z,32nm,1.2s
DOT Dot Lake 81.94 355 *e*P **P 20 51 21.4 +1.0**
comp=Z,32nm,1.2s
MCK McKinley 82.16 357 *e*P **P 20 51 22.6 +1.0**
MCK pmax pmax
comp=Z,14nm,1.0s
MCK McKinley 82.16 357 *e*P **P 20 51 22.6 +1.0**
comp=Z,14nm,1.0s
MCK McKinley 82.16 357 *e*P **P 20 51 22.6 +1.0**
comp=Z,14nm,1.0s
TRF Thorofare Moun 82.50 357 *e*P **P 20 51 22.8 -0.7**
comp=Z,12nm,1.0s
TRF Thorofare Moun 82.50 357 *e*P **P 20 51 22.8 -0.7**
comp=Z,12nm,1.0s
CAST Castle Rocks 82.59 358 *e*P **P 20 51 24.6 +0.8**
comp=Z,7.4nm,0.9s
CAST Castle Rocks 82.59 358 *e*P **P 20 51 24.6 +0.8**
comp=Z,7.4nm,0.9s
PPLA Purkeypile 83.12 358 *e*P **P 20 51 26.0 -0.8**
comp=Z,57nm,1.7s
PPLA Purkeypile 83.12 358 *e*P **P 20 51 25.9 -0.8**
comp=Z,57nm,1.7s
CPCT Cooper Cave 83.58 309 *e*P **P 20 51 31.4 +1.9**
comp=Z,7.3nm,0.8s
CPCT Cooper Cave 83.58 309 *e*P **P 20 51 31.4 +1.9**
comp=Z,7.3nm,0.8s
PTGA Pitinga 85.19 266 *e*P **P 20 51 40.8 +2.9**
comp=Z,11nm,1.3s
ECSD EROS Data Cent 85.25 321 *e*P **P 20 51 38.0 +0.2**
comp=Z,6.9nm,0.8s
ECSD EROS Data Cent 85.25 321 *e*P **P 20 51 38.0 +0.2**

comp=Z,6.9nm,0.8s
WVT Waverly 85.26 311 *e*P **P 20 51 36.8 -1.1**
WVT pmax pmax
comp=Z,21nm,0.9s
WVT Waverly 85.26 311 *e*P **P 20 51 36.8 -1.1**
comp=Z,21nm,0.9s
WVT Waverly 85.26 311 *e*P **P 20 51 36.8 -1.1**
comp=Z,21nm,0.9s
LRAL Lakeview Retre 86.69 308 *e*P **P 20 51 46.9 +1.9**
comp=Z,91nm,0.9s
LRAL Lakeview Retre 86.69 308 *e*P **P 20 51 46.9 +1.9**
comp=Z,91nm,0.9s
MJAR Matsushiro Arr 86.80 47 P **P 20 51 45.5 0.0**
comp=Z,4.1nm,1.0s,baz=311,slow=5.3,SNR=8.4
SBUM Sibu 87.39 89 *e*P **P 20 51 49.9 +1.2**
comp=Z,9.7nm,1.2s
SBUM Sibu 87.39 89 *e*P **P 20 51 49.9 +1.2**
comp=Z,9.7nm,1.2s
LAO LASA Array 87.69 328 *e*P **P 20 51 50.5 +0.7**
comp=Z,13nm,0.9s
LAO LASA Array 87.69 328 *e*P **P 20 51 50.5 +0.7**
comp=Z,13nm,0.9s
EGMT Eagleton 88.12 331 *e*P **P 20 51 52.9 +1.1**
comp=Z,16nm,1.1s
EGMT Eagleton 88.12 331 *e*P **P 20 51 52.9 +1.1**
comp=Z,16nm,1.1s
MIAR Mount Ida 89.85 313 *e*P **P 20 52 02.2 +2.1**
MIAR pmax pmax
comp=Z,6.0nm,0.8s
MIAR Mount Ida 89.85 313 *e*P **P 20 52 02.2 +2.1**
comp=Z,5.8nm,0.8s
K22A Casper 90.95 326 *e*P **P 20 52 04.6 -0.7**
comp=Z,18nm,0.6s
K22A Casper 90.95 326 *e*P **P 20 52 04.5 -0.7**
comp=Z,18nm,0.6s
PHWY Pilot Hill 91.48 324 *e*P **P 20 52 07.3 -0.6**
comp=Z,7.8nm,0.9s
PHWY Pilot Hill 91.48 324 *e*P **P 20 52 07.3 -0.6**
comp=Z,7.8nm,0.9s
PDAR Pinedale Array 92.24 328 P **P 20 52 10.8 -0.5**
comp=Z,0.1nm,0.3s,baz=36,slow=4.9,SNR=2.3
WRA Warramunga Arr 117.66 96 PKP **PKPdf 20 57 45.6 -2.0**
comp=Z,0.4nm,0.7s,baz=318,slow=1.3,SNR=11
ASAR Alice Springs 119.05 100 PKP **PKPdf 20 57 48.5 -1.7**
comp=Z,0.8nm,0.7s,baz=306,slow=1.7,SNR=6.8

*CSEM **19** 20:39:30.5, 39.°09N×29.°13E, h7km, MD2.5*
DDA 19 20:39:30.5, 39.°09N×29.°13E, h7km, Md2.5, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.27**	**89**	P	Pg	20 39 36.6	+0.7
GDZ				S	Sg	20 39 40.5	+1.0
GDZ	**Gediz**	**0.27**	**89**	*i* P	Pg	20 39 36.6	+0.7
GDZ				*i* S	Sg	20 39 40.5	+0.9
DEMI	**Demirci**	**0.33**	**262**	P	Pg	20 39 37.2	+0.3
DEMI				S	Sg	20 39 41.9	+0.7
DEMI	**Demirci**	**0.33**	**262**	*i* P	Pg	20 39 37.2	+0.4
DEMI				*i* S	Sg	20 39 41.9	+0.7
DURS	**Dursunbey**	**0.72**	**316**	P	Pg	20 39 44.8	+0.4
DURS				S	Sb	20 39 55.4	-0.2
DURS	**Dursunbey**	**0.72**	**316**	*i* P	Pg	20 39 44.8	+0.4
DURS				*i* S	Sb	20 39 55.4	-0.2
MANT	**Manisa**	**0.74**	**217**	P	Pg	20 39 45.0	+0.2
MANT				S	Sg	20 39 53.9	-0.6
MANT	**Manisa**	**0.74**	**217**	*i* P	Pg	20 39 45.0	+0.2
MANT				*i* S	Sg	20 39 53.9	-0.6
KHAL	**Karahalli**	**0.77**	**158**	P	Pb	20 39 46.3	+0.1
KHAL				S	Sg	20 39 55.7	+0.5
KHAL	**Karahalli**	**0.77**	**158**	*i* P	Pb	20 39 46.3	+0.1
KHAL				*i* S	Sg	20 39 55.7	+0.5
IGD	**Bursa**	**1.18**	**3**	*i* P	Pg	20 39 51.4	-1.7
IGD				*i* S	Sg	20 40 07.9	-0.5
BORA	**Eskisehir**	**1.29**	**52**	P	Pn	20 39 54.7	-0.4
BORA				S	Sb	20 40 11.8	-0.3
BORA	**Eskisehir**	**1.29**	**52**	*i* P	Pn	20 39 54.7	-0.3
BORA				*i* S	Sb	20 40 11.8	-0.3

*IDC **19** 20:41:40.9±1.4, 38.°89N×28.°94E, h0km, mb4.0/2, mb1 3.8/4, mb1mx3.5/43, mbtmp3.7/4, ML3.2/2, MS4.1/1, Ms1 4.1/1, ms1mx3.6/42, Error ellipse: s-maj=25.4km s-min=16.2km az=172.0*
*DDA **19** 20:41:44.4, 39.°13N×29.°08E, h12km, Md3.0*
*ISK **19** 20:41:44.5, 39.°10N×29.°13E, h5km, ML4.0*
*CSEM **19** 20:41:46.3±0.1, 39.°07N×29.°10E, h10km, MD3.0, Error ellipse: s-maj=3.6km s-min=3.4km az=94.0*
ISC 19 20:41:44.9±0.9, 39.°10N±0.°02×29.°08E±0.°02, h15km±6km, n135, σ1°01/170, 6C-2D, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.29**	**259**	P	**Pg**	**20 41 51.0**	**-0.1**
DEMI				S	**Sg**	**20 41 55.3**	**0.0**
DEMI	**Demirci**	**0.29**	**259**	*i* P	**Pg**	**20 41 51.0**	**-0.1**
DEMI				*i* S	**Sg**	**20 41 55.3**	**0.0**
GDZ	**Gediz**	**0.31**	**91**	*i* P	Pg	20 41 44.3	-7.3
GDZ				*i* S	**Sg**	**20 41 55.0**	**-1.1**
TVSB	**Tavsanli**	**0.46**	**40**	PG	**Pg**	**20 41 54.2**	**0.0**
TVSB	**Tavsanli**	**0.46**	**40**	*i* Pg	**Pg**	**20 41 54.2**	**0.0**
KULA	**Kula-Manisa**	**0.67**	**209**	*e*PG	**Pb**	**20 41 58.7**	**+0.4**
KULA	**Kula-Manisa**	**0.67**	**209**	*e*Pg	**Pb**	**20 41 58.7**	**+0.4**
DURS	**Dursunbey**	**0.69**	**317**	P	**Pg**	**20 41 57.8**	**-0.6**
DURS				S	**Sn**	**20 42 10.3**	**-0.3**
DURS	**Dursunbey**	**0.69**	**317**	*i* P	**Pg**	**20 41 57.8**	**-0.6**
DURS				*i* S	**Sn**	**20 42 10.3**	**-0.3**
MANT	**Manisa**	**0.73**	**214**	*i* P	**Pg**	**20 41 56.8**	**-2.4**
MANT				*i* S	**Sg**	**20 42 07.9**	**-1.0**
KHAL	**Karahalli**	**0.80**	**156**	P	**Pg**	**20 41 59.5**	**-0.9**
KHAL				S	**Sg**	**20 42 11.1**	**+0.2**
KHAL	**Karahalli**	**0.80**	**156**	*i* P	**Pg**	**20 41 59.5**	**-0.9**
KHAL				*i* S	**Sg**	**20 42 11.1**	**+0.2**
KHL	**Karahalli**	**0.85**	**156**	*e*PG	**Pb**	**20 42 02.1**	**+0.7**
KHL	**Karahalli**	**0.85**	**156**	*e*Pg	**Pb**	**20 42 02.1**	**+0.7**
ORLT	**Orhaneli**	**0.96**	**352**	*e*PG	**Pb**	**20 42 03.8**	**+0.5**
ORLT	**Orhaneli**	**0.96**	**352**	*e*Pg	**Pb**	**20 42 03.8**	**+0.5**
AKHS	**Akhisar**	**1.01**	**258**	P	**Pb**	**20 42 04.0**	**-0.1**
AKHS				S	**Sn**	**20 42 18.6**	**+0.1**
AKHS	**Akhisar**	**1.01**	**258**	*i* P	**Pb**	**20 42 04.0**	**-0.1**
AKHS				*i* S	**Sn**	**20 42 18.6**	**+0.1**
AKS	**Akhisar**	**1.01**	**258**	*e*PG	**Pn**	**20 42 05.0**	**+0.5**
AKS	**Akhisar**	**1.01**	**258**	*e*Pg	**Pn**	**20 42 05.0**	**+0.5**
BALB	**Balikesir**	**1.07**	**301**	*e*PN	**Pn**	**20 42 06.5**	**+1.2**
BALB				*e*SN	**Sn**	**20 42 23.2**	**+3.2**
BALB	**Balikesir**	**1.07**	**301**	*e*Pn	**Pn**	**20 42 06.6**	**+1.2**
BALB				*e*Sn	**Sn**	**20 42 23.3**	**+3.2**
IGD	**Bursa**	**1.17**	**5**	*i* P	**Pb**	**20 42 05.5**	**-1.3**
IGD				*i* S	**Sb**	**20 42 22.2**	**+0.5**
CAVI	**Cavuskoy**	**1.25**	**28**	*e*PN	**Pg**	**20 42 09.0**	**-0.1**
CAVI				*e*SN	**Sg**	**20 42 26.9**	**+1.6**
CAVI	**Cavuskoy**	**1.25**	**28**	*e*Pn	**Pg**	**20 42 09.0**	**-0.1**
CAVI				*e*Sn	**Sg**	**20 42 27.0**	**+1.6**
IZI	**Iznik**	**1.27**	**14**	*e*PN	**Pg**	**20 42 09.5**	**0.0**
IZI	**Iznik**	**1.27**	**14**	*e*Pn	**Pg**	**20 42 09.5**	**0.0**
MDNY	**Mudanya-Bursa**	**1.28**	**353**	*e*PN	**Pg**	**20 42 09.2**	**-0.4**
MDNY	**Mudanya-Bursa**	**1.28**	**353**	*e*Pn	**Pg**	**20 42 09.2**	**-0.4**
KCTX	**Karacabey (Bur**	**1.29**	**335**	*e*PN	**Pg**	**20 42 10.6**	**+0.7**
KCTX	**Karacabey (Bur**	**1.29**	**335**	*e*Pn	**Pg**	**20 42 10.6**	**+0.7**
BALY	**Balya**	**1.30**	**300**	P	**Pg**	**20 42 09.8**	**-0.2**
BALY				S	**Sn**	**20 42 26.2**	**+0.5**
BALY	**Balya**	**1.30**	**300**	*i* P	**Pg**	**20 42 09.8**	**-0.2**
BALY				*i* S	**Sn**	**20 42 26.2**	**+0.5**
BORA	**Eskisehir**	**1.32**	**53**	P	**Pb**	**20 42 09.6**	**+0.1**
BORA				S	**Sb**	**20 42 26.6**	**+0.4**
BORA	**Eskisehir**	**1.32**	**53**	*i* P	**Pb**	**20 42 09.6**	**+0.1**
BORA				*i* S	**Sb**	**20 42 26.6**	**+0.4**
GEMT	**Gemlik**	**1.34**	**4**	*e*PN	**Pg**	**20 42 10.6**	**-0.1**
GEMT	**Gemlik**	**1.34**	**4**	*e*Pn	**Pg**	**20 42 10.6**	**-0.1**
DENT	**Denizli**	**1.34**	**181**	*e*PN	**Pg**	**20 42 11.0**	**+0.2**
DENT	**Denizli**	**1.34**	**181**	*e*Pn	**Pg**	**20 42 11.0**	**+0.2**
DNZL	**Cakiroluk**	**1.41**	**181**	P	**Pg**	**20 42 12.2**	**+0.2**
DNZL	**Cakiroluk**	**1.41**	**181**	*i* P	**Pg**	**20 42 12.2**	**+0.2**
DNZL				*i* S	**Sg**	**20 42 34.0**	**+3.7**
ADVT	**Abdulvahap**	**1.43**	**21**	*e*PN	**Pg**	**20 42 12.3**	**-0.1**
ADVT	**Abdulvahap**	**1.43**	**21**	*e*Pn	**Pg**	**20 42 12.3**	**-0.1**
GONE	**Gonen-Balikesi**	**1.43**	**312**	*e*PN	**Pg**	**20 42 13.7**	**+1.2**
GONE	**Gonen-Balikesi**	**1.43**	**312**	*e*Pn	**Pg**	**20 42 13.7**	**+1.2**
ARMT	**Armutlu**	**1.48**	**354**	*e*PN	**Pg**	**20 42 13.0**	**-0.3**
ARMT	**Armutlu**	**1.48**	**354**	*e*Pn	**Pg**	**20 42 13.0**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**1.48**	**219**	*e*PN	**Pg**	**20 42 14.3**	**+0.9**
AYDB	**Zeytinkoy-Aydi**	**1.48**	**219**	*e*Pn	**Pg**	**20 42 14.3**	**+0.9**
BOLV	**Bolvadin**	**1.51**	**104**	P	**Pb**	**20 42 13.2**	**+0.5**
BOLV				S	**Sn**	**20 42 31.3**	**+0.3**
BOLV	**Bolvadin**	**1.51**	**104**	*i* P	**Pb**	**20 42 13.2**	**+0.5**
BOLV				*i* S	**Sn**	**20 42 31.3**	**+0.3**
GPA	**Golpazari**	**1.52**	**38**	*e*PN	**Pb**	**20 42 12.9**	**0.0**
GPA	**Golpazari**	**1.52**	**38**	*e*Pn	**Pb**	**20 42 12.9**	**0.0**
EDC	**Edincik**	**1.56**	**324**	*e*PN	**Pg**	**20 42 15.4**	**+0.5**
EDC	**Edincik**	**1.56**	**324**	*e*Pn	**Pg**	**20 42 15.4**	**+0.5**
KNL	**Bal¨–kesir**	**1.68**	**315**	*i* P	**Pb**	**20 42 14.8**	**-0.6**
KNL				*i* S	**Sg**	**20 42 38.0**	**-0.9**
DKL	**Dikili**	**1.69**	**270**	*e*PN	**Pb**	**20 42 16.6**	**+0.9**
DKL	**Dikili**	**1.69**	**270**	*e*Pn	**Pb**	**20 42 16.6**	**+0.9**
ISP	**Isparta**	**1.71**	**138**	*e*PN	**Pb**	**20 42 16.2**	**+0.2**
ISP	**Isparta**	**1.71**	**138**	‖*i*P	**Pn**	**20 42 15.0**	**+0.8**
ISP	**Isparta**	**1.71**	**138**	‖*i*P	**Pn**	**20 42 15.0**	**+0.8**
ISP	**Isparta**	**1.71**	**138**	*e*Pn	**Pb**	**20 42 16.2**	**+0.2**
AYDN	**Tasoluk**	**1.72**	**214**	P	**Pb**	**20 42 16.5**	**+0.3**
AYDN				S	**Sg**	**20 42 40.5**	**+0.3**
AYDN	**Tasoluk**	**1.72**	**214**	*i* P	**Pb**	**20 42 16.5**	**+0.3**
AYDN				*i* S	**Sg**	**20 42 40.5**	**+0.3**
GULT	**Gulveren**	**1.73**	**39**	*e*PN	**Pg**	**20 42 16.9**	**+0.4**
GULT	**Gulveren**	**1.73**	**39**	*e*Pn	**Pb**	**20 42 16.9**	**+0.4**
BAGO	**Egridir - ISPA**	**1.74**	**129**	*i* P	**Pn**	**20 42 14.8**	**+0.1**
BAGO				*i* S	**Sg**	**20 42 42.5**	**+1.6**
BUY	**Buyukada**	**1.75**	**1**	P	**Pb**	**20 42 17.0**	**+0.2**
BUY				S	**Sb**	**20 42 39.2**	**+0.6**
BUY	**Buyukada**	**1.75**	**1**	*i* P	**Pb**	**20 42 16.9**	**+0.2**
BUY				*i* S	**Sb**	**20 42 39.2**	**+0.6**
HRT	**Hereke**	**1.78**	**15**	*e*PN	**Pb**	**20 42 17.2**	**-0.1**
HRT	**Hereke**	**1.78**	**15**	*e*Pn	**Pb**	**20 42 17.2**	**-0.1**
SPNC	**Sapanca-Adapaz**	**1.85**	**30**	*e*PN	**Pb**	**20 42 18.5**	**+0.1**
SPNC	**Sapanca-Adapaz**	**1.85**	**30**	*e*Pn	**Pb**	**20 42 18.5**	**+0.1**
KRBG	**Karabiga-Canak**	**1.89**	**314**	*e*PN	**Pg**	**20 42 20.3**	**-0.8**
KRBG	**Karabiga-Canak**	**1.89**	**314**	*e*Pn	**Pg**	**20 42 20.3**	**-0.8**
MRMT	**Marmara Adasi**	**1.89**	**323**	*e*PN	**Pb**	**20 42 19.6**	**+0.5**
MRMT	**Marmara Adasi**	**1.89**	**323**	*e*Pn	**Pb**	**20 42 19.6**	**+0.5**
SVRH	**Sivrihisar-ESK**	**1.93**	**79**	*e*PN	**Pb**	**20 42 19.0**	**-0.8**
SVRH	**Sivrihisar-ESK**	**1.93**	**79**	*e*Pn	**Pb**	**20 42 19.0**	**-0.8**
ISK	**Istanbul-Kandi**	**1.97**	**360**	*e*PN	**Pb**	**20 42 20.4**	**0.0**
ISK	**Istanbul-Kandi**	**1.97**	**360**	*e*Pn	**Pb**	**20 42 20.4**	**0.0**
AUMIH	**MIHALICIK**	**2.02**	**67**	P	**Pg**	**20 42 23.0**	**-0.6**
AUMIH	**MIHALICIK**	**2.02**	**67**	*i* P	**Pg**	**20 42 23.0**	**-0.6**
AUMIH				*i* S	**Sg**	**20 42 48.6**	**-1.2**
YER	**Yerkesik**	**2.06**	**198**	*e*PN	**Pb**	**20 42 21.9**	**-0.1**
YER	**Yerkesik**	**2.06**	**198**	*e*Pn	**Pb**	**20 42 21.9**	**-0.1**
BTAS	**Taskesti**	**2.09**	**45**	P	**Pb**	**20 42 23.7**	**+1.2**
BTAS	**Taskesti**	**2.09**	**45**	*i* P	**Pb**	**20 42 23.7**	**+1.2**
BTAS				*i* S	**Sg**	**20 42 50.9**	**-1.2**
BGKT	**Bogazkoy**	**2.09**	**354**	*e*PN	**Pb**	**20 42 21.9**	**-0.7**
BGKT	**Bogazkoy**	**2.09**	**354**	*e*Pn	**Pb**	**20 42 21.9**	**-0.7**
SILT	**Sile**	**2.10**	**12**	*e*PN	**Pb**	**20 42 22.2**	**-0.5**
SILT	**Sile**	**2.10**	**12**	*e*Pn	**Pb**	**20 42 22.2**	**-0.5**
MDUB	**Mudurnu**	**2.13**	**49**	*e*PN	**Pb**	**20 42 22.4**	**-0.8**
MDUB	**Mudurnu**	**2.13**	**49**	*e*Pn	**Pb**	**20 42 22.5**	**-0.8**
KLYT	**Kilyos**	**2.15**	**359**	*e*PN	**Pb**	**20 42 23.2**	**-0.3**
KLYT	**Kilyos**	**2.15**	**359**	*e*Pn	**Pb**	**20 42 23.3**	**-0.3**
RKY	**Sarkoy-Tekirda**	**2.16**	**318**	*e*PN	**Pb**	**20 42 23.8**	**+0.1**
RKY	**Sarkoy-Tekirda**	**2.16**	**318**	*e*Pn	**Pb**	**20 42 23.8**	**+0.1**
KAND	**Kocaeli-Kandir**	**2.17**	**23**	P	**Pb**	**20 42 24.2**	**+0.3**
KAND				S	**Sb**	**20 42 51.0**	**+0.5**
KAND	**Kocaeli-Kandir**	**2.17**	**23**	*i* P	**Pb**	**20 42 24.2**	**+0.3**
KAND				*i* S	**Sb**	**20 42 51.0**	**+0.5**
CTKS	**Kestanelik-??a**	**2.18**	**349**	*e*PN	**Pb**	**20 42 24.0**	**0.0**
CTKS	**Kestanelik-??a**	**2.18**	**349**	*e*Pn	**Pb**	**20 42 24.0**	**0.0**
LPK	**Lapseki**	**2.19**	**306**	*e*PN	**Pb**	**20 42 24.6**	**+0.3**
LPK	**Lapseki**	**2.19**	**306**	*e*Pn	**Pb**	**20 42 24.6**	**+0.3**
KIZT	**Kizilcal**	**2.19**	**95**	*e*PN	**Pb**	**20 42 23.2**	**-1.1**
KIZT	**Kizilcal**	**2.19**	**95**	*e*Pn	**Pb**	**20 42 23.3**	**-1.1**
SAHE	**Sakarya_HENDEK**	**2.22**	**37**	P	**Pb**	**20 42 24.3**	**-0.5**
SAHE				S	**Sb**	**20 42 52.5**	**+0.4**
SAHE	**Sakarya_HENDEK**	**2.22**	**37**	*i* P	**Pb**	**20 42 24.3**	**-0.5**
SAHE				*i* S	**Sb**	**20 42 52.5**	**+0.4**
TKR	**Tekirdag**	**2.23**	**328**	*e*PN	**Pb**	**20 42 24.8**	**-0.1**
TKR	**Tekirdag**	**2.23**	**328**	*e*Pn	**Pb**	**20 42 24.8**	**-0.1**
EZN	**Ezine**	**2.25**	**290**	*e*PN	**Pb**	**20 42 25.4**	**+0.1**
EZN	**Ezine**	**2.25**	**290**	*e*Pn	**Pb**	**20 42 25.4**	**+0.1**
CRLT	**Corlu**	**2.27**	**334**	*e*PN	**Pb**	**20 42 25.4**	**-0.3**
CRLT	**Corlu**	**2.27**	**334**	*e*Pn	**Pb**	**20 42 25.4**	**-0.3**
GELI	**Tayfur-Gelibol**	**2.39**	**304**	*e*PN	**Pb**	**20 42 26.4**	**-1.2**
GELI	**Tayfur-Gelibol**	**2.39**	**304**	*e*Pn	**Pb**	**20 42 26.4**	**-1.2**
CTYL	**Yalikoy Yolu**	**2.45**	**346**	*e*PN	**Pb**	**20 42 27.5**	**-1.2**
CTYL	**Yalikoy Yolu**	**2.45**	**346**	*e*Pn	**Pb**	**20 42 27.5**	**-1.2**
ERIK	**Erikli-Kesan**	**2.52**	**309**	*e*PN	**Pb**	**20 42 29.1**	**-0.8**
ERIK	**Erikli-Kesan**	**2.52**	**309**	*e*Pn	**Pb**	**20 42 29.1**	**-0.8**
LADK	**Ladik-KONYA**	**2.73**	**108**	*e*PN	**Pn**	**20 42 30.2**	**+2.0**
LADK	**Ladik-KONYA**	**2.73**	**108**	*e*Pn	**Pn**	**20 42 30.2**	**+2.0**
PHSR	**Pinarhisar**	**2.79**	**335**	*e*PN	**Pb**	**20 42 32.5**	**-2.0**
PHSR	**Pinarhisar**	**2.79**	**335**	*e*Pn	**Pb**	**20 42 32.5**	**-2.0**
KDZE	**Karadeniz Ereo**	**2.86**	**39**	*e*PN	**Pn**	**20 42 32.1**	**+2.1**
KDZE	**Karadeniz Ereo**	**2.86**	**39**	*e*Pn	**Pn**	**20 42 32.1**	**+2.1**
BRTR	**Keskin Array B**	**3.59**	**79**	Pn	**Pn**	**20 42 42.3**	**+2.2**
	1.7nm,0.3s,baz=255,slow=14,SNR=14						
BRTR				Pg	**Pb**	**20 42 50.5**	**+2.3**
	1.8nm,0.3s,baz=256,slow=13,SNR=7.1						
BRTR				Sn	**Sn**	**20 43 22.9**	**+0.6**
	1.9nm,0.3s,baz=257,slow=19,SNR=3.5						
BRTR				Lg	Lg	20 43 42.0	
	2.2nm,0.3s,baz=261,slow=24,SNR=6.9						
CFR	**Carcaliu**	**6.12**	**354**	‖*i*P	**Pn**	**20 43 15.5**	**+0.8**
CFR	**Carcaliu**	**6.12**	**354**	‖*i*P	**Pn**	**20 43 15.5**	**+0.8**
MLR	**Muntele Rosu**	**6.80**	**341**	Pn	**Pn**	**20 43 25.6**	**+1.5**
	0.2nm,0.3s,baz=19,slow=1.9,SNR=12						
MLR				LR	LR	20 46 40.4	
	comp=Z,1μm,18.5s,baz=186,slow=43						
DOPR	**Dopca**	**7.38**	**340**	‖*i*P	**Pn**	**20 43 33.7**	**+1.6**
DOPR	**Dopca**	**7.38**	**340**	‖*i*P	**Pn**	**20 43 33.7**	**+1.6**
MDB	**Medias**	**7.84**	**335**	‖*i*P	**Pn**	**20 43 41.0**	**+2.6**
MDB	**Medias**	**7.84**	**335**	‖*i*P	**Pn**	**20 43 41.0**	**+2.6**
TORD	**Torodi Ar. Bea**	**35.41**	**231**	P	**P**	**20 48 37.3**	**-3.1**
	0.9nm,0.8s,baz=30,slow=8.3,SNR=2.1						
ZALV	**Zalesovo Beam**	**40.05**	**49**	P	**P**	**20 49 17.2**	**-1.9**
	4.2nm,0.8s,baz=271,slow=11,SNR=3.1						

*ISK **19** 20:43:30.7, 39.°12N×29.°09E, h2km, ML4.0*
*DDA **19** 20:43:31.0, 39.°13N×29.°09E, h9km, Md2.8*
*CSEM **19** 20:43:31.7±0.1, 39.°12N×29.°11E, h2km, MD2.8, Error ellipse: s-maj=2.3km s-min=2.0km az=78.0*
ISC 19 20:43:31.6±1.0, 39.°13N±0.°01×29.°09E±0.°01, h8km±8km, n132, σ0°83/170, 2D, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.30**	**254**	P	**Pg**	**20 43 37.8**	**+0.1**
DEMI				S	**Sg**	**20 43 42.2**	**+0.5**
DEMI	**Demirci**	**0.30**	**254**	*i* P	**Pg**	**20 43 37.8**	**+0.1**
DEMI				*i* S	**Sg**	**20 43 42.2**	**+0.5**
GDZ	**Gediz**	**0.31**	**97**	P	**Pg**	**20 43 37.5**	**-0.3**
GDZ				S	**Sg**	**20 43 42.1**	**+0.3**
GDZ	**Gediz**	**0.31**	**97**	*i* P	**Pg**	**20 43 37.5**	**-0.3**
GDZ				*i* S	**Sg**	**20 43 42.1**	**+0.3**
TVSB	**Tavsanli**	**0.43**	**42**	PG	**Pg**	**20 43 39.9**	**-0.2**
TVSB	**Tavsanli**	**0.43**	**42**	*i* Pg	**Pg**	**20 43 39.9**	**-0.2**
DURS	**Dursunbey**	**0.67**	**315**	P	**Pg**	**20 43 44.7**	**+0.1**
DURS				S	**Sg**	**20 43 53.4**	**0.0**
DURS	**Dursunbey**	**0.67**	**315**	*i* P	**Pg**	**20 43 44.7**	**+0.1**
DURS				*i* S	**Sg**	**20 43 53.4**	**0.0**
KULA	**Kula-Manisa**	**0.70**	**209**	*e*PG	**Pg**	**20 43 44.8**	**-0.3**
KULA	**Kula-Manisa**	**0.70**	**209**	*e*Pg	**Pg**	**20 43 44.8**	**-0.3**
MANT	**Manisa**	**0.76**	**213**	P	**Pg**	**20 43 45.7**	**-0.6**
MANT				S	**Sg**	**20 43 55.2**	**-1.0**
MANT	**Manisa**	**0.76**	**213**	*i* P	**Pg**	**20 43 45.7**	**-0.6**
MANT				*i* S	**Sg**	**20 43 55.2**	**-1.0**
KHAL	**Karahalli**	**0.82**	**157**	P	**Pg**	**20 43 47.1**	**-0.3**
KHAL				S	**Sg**	**20 43 57.7**	**-0.4**
KHAL	**Karahalli**	**0.82**	**157**	*i* P	**Pg**	**20 43 47.1**	**-0.3**
KHAL				*i* S	**Sg**	**20 43 57.7**	**-0.4**
KHL	**Karahalli**	**0.87**	**157**	*e*PG	**Pb**	**20 43 48.6**	**-0.5**
KHL	**Karahalli**	**0.87**	**157**	*e*Pg	**Pb**	**20 43 48.6**	**-0.5**
ORLT	**Orhaneli**	**0.93**	**351**	*e*PG	**Pb**	**20 43 49.8**	**-0.2**
ORLT	**Orhaneli**	**0.93**	**351**	*e*Pg	**Pb**	**20 43 49.8**	**-0.2**
AKHS	**Akhisar**	**1.02**	**256**	P	**Pn**	**20 43 51.8**	**-0.6**
AKHS				S	**Sn**	**20 44 05.9**	**-1.0**
AKHS	**Akhisar**	**1.02**	**256**	*i* P	**Pn**	**20 43 51.8**	**-0.6**
AKHS				*i* S	**Sn**	**20 44 05.9**	**-1.0**
AKS	**Akhisar**	**1.03**	**256**	*e*PG	**Pb**	**20 43 51.4**	**-0.2**
AKS	**Akhisar**	**1.03**	**256**	*e*Pg	**Pb**	**20 43 51.4**	**-0.2**
BALB	**Balikesir**	**1.07**	**299**	*e*PG	**Pn**	**20 43 52.5**	**-0.4**
BALB				*e*SG	**Sn**	**20 44 07.6**	**-0.4**
BALB	**Balikesir**	**1.07**	**299**	*e*Pg	**Pn**	**20 43 52.5**	**-0.4**
BALB				*e*Sg	**Sn**	**20 44 07.6**	**-0.4**
IGD	**Bursa**	**1.14**	**4**	*i* P	**Pb**	**20 43 51.9**	**-1.7**
IGD				*i* S	**Sb**	**20 44 07.6**	**-1.0**
CAVI	**Cavuskoy**	**1.22**	**28**	*e*PN	**Pb**	**20 43 54.9**	**-0.1**
CAVI				*e*SN	**Sn**	**20 44 12.4**	**+0.6**
CAVI	**Cavuskoy**	**1.22**	**28**	*e*Pn	**Pb**	**20 43 54.9**	**-0.1**
CAVI				*e*Sn	**Sn**	**20 44 12.4**	**+0.6**
IZI	**Iznik**	**1.24**	**14**	*e*PN	**Pg**	**20 43 55.6**	**+0.1**
IZI	**Iznik**	**1.24**	**14**	*e*Pn	**Pg**	**20 43 55.6**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.25**	**353**	*e*PN	**Pn**	**20 43 55.1**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.25**	**353**	*e*Pn	**Pn**	**20 43 55.1**	**-0.3**
KCTX	**Karacabey (Bur**	**1.27**	**334**	*e*PN	**Pn**	**20 43 55.4**	**-0.3**
KCTX	**Karacabey (Bur**	**1.27**	**334**	*e*Pn	**Pn**	**20 43 55.4**	**-0.3**
BALY	**Balya**	**1.29**	**299**	P	**Pg**	**20 43 56.3**	**-0.2**
BALY				S	**Sn**	**20 44 13.2**	**-0.4**
BALY	**Balya**	**1.29**	**299**	*i* P	**Pg**	**20 43 56.3**	**-0.2**
BALY				*i* S	**Sn**	**20 44 13.2**	**-0.4**
BORA	**Eskisehir**	**1.29**	**54**	P	**Pn**	**20 43 55.7**	**-0.4**
BORA				S	**Sn**	**20 44 13.1**	**-0.6**
BORA	**Eskisehir**	**1.29**	**54**	*i* P	**Pn**	**20 43 55.7**	**-0.4**
BORA				*i* S	**Sn**	**20 44 13.1**	**-0.6**
GEMT	**Gemlik**	**1.31**	**3**	*e*PN	**Pg**	**20 43 56.7**	**0.0**
GEMT	**Gemlik**	**1.31**	**3**	*e*Pn	**Pg**	**20 43 56.7**	**0.0**
DENT	**Denizli**	**1.37**	**182**	*e*PN	**Pb**	**20 43 57.2**	**-0.4**
DENT	**Denizli**	**1.37**	**182**	*e*Pn	**Pb**	**20 43 57.2**	**-0.4**
ADVT	**Abdulvahap**	**1.40**	**21**	*e*PN	**Pb**	**20 43 58.1**	**+0.1**
ADVT	**Abdulvahap**	**1.40**	**21**	*e*Pn	**Pb**	**20 43 58.1**	**+0.1**
GONE	**Gonen-Balikesi**	**1.42**	**311**	*e*PN	**Pg**	**20 43 58.9**	**0.0**
GONE	**Gonen-Balikesi**	**1.42**	**311**	*e*Pn	**Pg**	**20 43 58.9**	**0.0**
DNZL	**Cakiroluk**	**1.44**	**181**	P	**Pb**	**20 43 58.7**	**-0.1**
DNZL				S	**Sg**	**20 44 19.8**	**+2.0**
DNZL	**Cakiroluk**	**1.44**	**181**

URZ				LR	LR	21 03 15.4	
	comp=Z,475nm,19.2s,baz=194,slow=36						
H01W1	**Cape Leeuwin H**	**31.80**	**300**	T	T	21 26 58.4	
	baz=144,slow=74,SNR=127						
H01W2	**Cape Leeuwin H**	**31.80**	**300**	T	T	21 26 57.8	
	baz=144,slow=74,SNR=183						
H01W3	**Cape Leeuwin H**	**31.81**	**300**	T	T	21 26 55.9	
	baz=144,slow=74,SNR=135						
QSPA	**South Pole Qui**	**32.97**	**180**	*e*P	**P**	**20 53 46.2**	**-1.0**
	28nm,1.3s						
ASAR	**Alice Springs**	**34.95**	**337**	P	**P**	**20 54 04.3**	**-0.3**
	1.3nm,0.6s,baz=161,slow=8.8,SNR=15						
ASAR				PcP	**PcP**	**20 56 37.4**	**+0.5**
	0.9nm,0.8s,baz=142,slow=2.5,SNR=5.1						
WRA	**Warramunga Arr**	**38.48**	**339**	P	**P**	**20 54 33.9**	**-0.7**
	5.4nm,0.8s,baz=166,slow=7.6,SNR=21						
WRAB	**Tennant Creek**	**38.49**	**339**	*e*P	**P**	**20 54 34.8**	**+0.1**
	18nm,1.3s						
MBWA	**Marble Bar**	**41.47**	**318**	*e*P	**P**	**20 54 58.4**	**-1.0**
	20nm,0.9s						
SNAA	**Sanae**	**49.85**	**192**	*e*P	**P**	**20 56 05.2**	**0.0**
	62nm,0.8s						
PMSA	**Palmer Station**	**56.00**	**164**	*e*P	**P**	**20 56 49.4**	**-1.1**
H08S2	**Diego Garcia H**	**75.71**	**278**	T	T	22 21 50.3	
	baz=147,slow=76,SNR=55						
H08S1	**Diego Carcia H**	**75.72**	**278**	T	T	22 21 46.3	
	baz=147,slow=76,SNR=61						
H08S3	**Diego Garcia H**	**75.73**	**278**	T	T	22 21 43.5	
	baz=147,slow=76,SNR=76						
CMAR	**Chiang Mai Arr**	**85.65**	**314**	LR	LR	21 37 38.9	
	comp=Z,144nm,18.9s,baz=285,slow=35						
TORD	**Torodi Ar. Bea**	**129.12**	**224**	PKP	**PKPdf**	**21 06 20.8**	**+0.1**
	0.7nm,1.0s,baz=119,slow=1.8,SNR=2.7						
YKA	**Yellowknife Ar**	**140.84**	**47**	PKP	**PKPdf**	**21 06 42.1**	**+1.1**
	1.6nm,0.7s,baz=251,slow=2.7,SNR=5.7						
AKASG	**Malin Array Be**	**144.44**	**286**	PKP	**PKPab**	**21 06 45.7**	**-0.3**
	0.2nm,0.2s,baz=90,slow=2.8,SNR=2.7						
SOKA	**Soboth**	**149.70**	**270**	*i* PKPbc	**PKPbc**	**21 07 02.4**	**+0.9**
	5.2nm,1.3s						
SOKA				*i* sPKPab	**sPKPab**	**21 07 15.0**	**+3.5**
FINES	**FINESS Array B**	**150.86**	**303**	PKPbc	**PKPbc**	**21 07 02.6**	**-1.1**
	4.9nm,0.9s,baz=106,slow=6.9,SNR=8.4						
GERES	**GERESS Array B**	**151.71**	**273**	PKPbc	**PKPbc**	**21 07 06.2**	**0.0**
	1.2nm,0.8s,baz=169,slow=1.4,SNR=10						
MOTA	**Moosalm**	**152.25**	**268**	*i* PKPbc	**PKPbc**	**21 07 08.1**	**+0.5**
	4.4nm,1.0s						
ARCES	**ARCESS Array B**	**152.56**	**320**	PKPbc	**PKPbc**	**21 07 08.4**	**+1.0**
	3.6nm,1.0s,baz=120,slow=2.5,SNR=3.9						

*CSEM **19** 20:48:45.2, 39°.27N×29°.25E, h6km, MD2.8*
ISK 19 20:48:45.2, 39°.27N×29°.25E, h6km, MD2.8, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TVSB	**Tavsanli**	**0.24**	**43**	PG	Pg	20 48 50.7	+0.7
TVSB	**Tavsanli**	**0.24**	**43**	*i* Pg	Pg	20 48 50.7	+0.7
ORLT	**Orhaneli**	**0.82**	**341**	PG	Pg	20 49 00.9	-0.1
ORLT	**Orhaneli**	**0.82**	**341**	*i* Pg	Pg	20 49 00.9	-0.1
KHL	**Karahalli**	**0.97**	**167**	*e*PG	Pg	20 49 04.1	+0.3
KHL	**Karahalli**	**0.97**	**167**	*e*Pg	Pg	20 49 04.1	+0.3
CAVI	**Cavuskoy**	**1.04**	**26**	*e*PG	Pb	20 49 05.5	-0.1
CAVI				*e*SG	Sn	20 49 20.4	-0.8
CAVI	**Cavuskoy**	**1.04**	**26**	*e*Pg	Pb	20 49 05.5	-0.1
CAVI				*e*Sg	Sn	20 49 20.4	-0.7
IZI	**Iznik**	**1.08**	**9**	*e*PG	Pb	20 49 06.3	0.0
IZI	**Iznik**	**1.08**	**9**	*e*Pg	Pb	20 49 06.3	0.0
BALB	**Balikesir**	**1.12**	**290**	*e*PN	Pn	20 49 07.6	+0.2
BALB	**Balikesir**	**1.12**	**290**	*e*Pn	Pn	20 49 07.6	+0.2
MDNY	**Mudanya-Bursa**	**1.13**	**346**	*e*PN	Pg	20 49 06.4	-0.5
MDNY				*e*SN	Sn	20 49 23.2	-0.2
MDNY	**Mudanya-Bursa**	**1.13**	**346**	*e*Pn	Pg	20 49 06.4	-0.5
MDNY				*e*Sn	Sn	20 49 23.2	-0.2
GEMT	**Gemlik**	**1.16**	**358**	*e*PN	Pn	20 49 08.2	+0.2
GEMT	**Gemlik**	**1.16**	**358**	*e*Pn	Pn	20 49 08.2	+0.2
KCTX	**Karacabey (Bur**	**1.21**	**326**	*e*PN	Pn	20 49 09.3	+0.6
KCTX	**Karacabey (Bur**	**1.21**	**326**	*e*Pn	Pn	20 49 09.3	+0.6
ADVT	**Abdulvahap**	**1.22**	**18**	*e*PN	Pn	20 49 09.0	+0.2
ADVT	**Abdulvahap**	**1.22**	**18**	*e*Pn	Pn	20 49 09.0	+0.2
ARMT	**Armutlu**	**1.33**	**347**	*e*PN	Pg	20 49 11.2	+0.5
ARMT	**Armutlu**	**1.33**	**347**	*e*Pn	Pg	20 49 11.2	+0.6
EDC	**Edincik**	**1.51**	**316**	*e*PN	Pb	20 49 13.6	-0.1
EDC	**Edincik**	**1.51**	**316**	*e*Pn	Pb	20 49 13.6	-0.1
GULT	**Gulveren**	**1.51**	**40**	*e*PN	Pb	20 49 13.4	-0.4
GULT	**Gulveren**	**1.51**	**40**	*e*Pn	Pb	20 49 13.4	-0.4
HRT	**Hereke**	**1.58**	**12**	*e*PN	Pn	20 49 14.2	+0.4
HRT	**Hereke**	**1.58**	**12**	*e*Pn	Pn	20 49 14.2	+0.4
SPNC	**Sapanca-Adapaz**	**1.63**	**30**	*e*PN	Pn	20 49 15.0	+0.6
SPNC	**Sapanca-Adapaz**	**1.63**	**30**	*e*Pn	Pn	20 49 15.0	+0.6
ISK	**Istanbul-Kandi**	**1.80**	**355**	*e*PN	Pb	20 49 17.7	-0.8
ISK	**Istanbul-Kandi**	**1.80**	**355**	*e*Pn	Pb	20 49 17.7	-0.8

*DDA **19** 20:49:40.0, 39°.12N×29°.06E, h5km, Md2.9*
*CSEM **19** 20:49:40.2±0.1, 39°.10N×29°.11E, h2km, MD2.9, Error ellipse: s-maj=3.6km s-min=3.1km az=110.0*
*THE **19** 20:49:42.2, 38°.95N×29°.08E, h0km±2km, ML3.5/3, Error ellipse: s-maj=4.1km s-min=1.5km az=67.0*
ISC 19 20:49:39.9±1.1, 39°.12N±0°.02×29°.10E±0°.01, h3km±10km, n95, σ1§16/138, 24C-2D, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.30**	**96**	P	**Pb**	**20 49 46.8**	**-1.2**
GDZ				S	**Sb**	**20 49 51.7**	**-1.8**
GDZ	**Gediz**	**0.30**	**96**	*i* P	**Pb**	**20 49 46.8**	**-1.2**
GDZ				*i* S	**Sb**	**20 49 51.7**	**-1.8**
DEMI	**Demirci**	**0.30**	**256**	P	**Pg**	**20 49 45.8**	**0.0**
DEMI				S	**Sg**	**20 49 49.7**	**-0.1**
DEMI	**Demirci**	**0.30**	**256**	*i* P	**Pg**	**20 49 45.8**	**+0.1**
DEMI				*i* S	**Sg**	**20 49 49.7**	**0.0**
DURS	**Dursunbey**	**0.68**	**315**	P	**Pg**	**20 49 53.6**	**+0.7**
DURS				S	**Sg**	**20 50 02.7**	**+0.9**
DURS	**Dursunbey**	**0.68**	**315**	*i* P	**Pg**	**20 49 53.6**	**+0.6**
DURS				*i* S	**Sg**	**20 50 02.7**	**+0.9**
KULA	**Kula-Manisa**	**0.69**	**209**	P	**Pg**	**20 49 52.0**	**-1.2**
KULA				S	**Sg**	**20 50 01.6**	**-0.6**
KULA	**Kula-Manisa**	**0.69**	**209**	P	**Pg**	**20 49 52.0**	**-1.2**
KULA				S	**Sg**	**20 50 01.6**	**-0.6**
MANT	**Manisa**	**0.76**	**214**	P	**Pg**	**20 49 54.0**	**-0.4**
MANT				S	**Sg**	**20 50 03.5**	**-0.7**
MANT	**Manisa**	**0.76**	**214**	*i* P	**Pg**	**20 49 54.0**	**-0.4**
MANT				*i* S	**Sg**	**20 50 03.5**	**-0.7**
KHAL	**Karahalli**	**0.81**	**157**	P	**Pb**	**20 49 55.7**	**-1.0**
KHAL				S	**Sb**	**20 50 06.4**	**-1.6**
KHAL	**Karahalli**	**0.81**	**157**	*i* P	**Pb**	**20 49 55.7**	**-1.0**
KHAL				*i* S	**Sb**	**20 50 06.4**	**-1.6**
AKHS	**Akhisar**	**1.03**	**257**	P	**Pn**	**20 50 00.6**	**-0.6**
AKHS				S	**Sb**	**20 50 14.3**	**+0.1**
AKHS	**Akhisar**	**1.03**	**257**	*i* P	**Pn**	**20 50 00.6**	**-0.6**
AKHS				*i* S	**Sb**	**20 50 14.3**	**+0.1**
IGD	**Bursa**	**1.15**	**4**	*i* P	**Pb**	**20 50 01.4**	**-1.0**
IGD				*i* S	**Sn**	**20 50 18.5**	**-0.6**
BORA	**Eskisehir**	**1.30**	**54**	P	**Pg**	**20 50 04.9**	**+0.2**
BORA				S	**Sn**	**20 50 23.2**	**+0.3**
BORA	**Eskisehir**	**1.30**	**54**	*i* P	**Pg**	**20 50 04.9**	**+0.2**
BORA				*i* S	**Sn**	**20 50 23.2**	**+0.3**
BALY	**Balya**	**1.30**	**299**	P	**Pn**	**20 50 04.4**	**-0.6**
BALY				S	**Sb**	**20 50 22.3**	**+0.2**
BALY	**Balya**	**1.30**	**299**	*i* P	**Pn**	**20 50 04.4**	**-0.6**
BALY				*i* S	**Sb**	**20 50 22.3**	**+0.2**
ESKT	**Eskisehir**	**1.42**	**73**	*i* P	**Pg**	**20 50 07.8**	**+0.7**
SEYT	**Eskypehyr**	**1.42**	**73**	P	**Pg**	**20 50 07.8**	**+0.7**
DNZL	**Cakiroluk**	**1.43**	**182**	P	**Pg**	**20 50 07.1**	**-0.2**
DNZL	**Cakiroluk**	**1.43**	**182**	*i* P	**Pg**	**20 50 07.1**	**-0.2**
DNZL				*i* S	**Sg**	**20 50 29.7**	**+4.0**
BOLV	**Bolvadin**	**1.50**	**105**	P	**Pg**	**20 50 09.7**	**+1.0**
BOLV				S	**Sg**	**20 50 29.1**	**+0.9**
BOLV	**Bolvadin**	**1.50**	**105**	*i* P	**Pg**	**20 50 09.7**	**+1.0**
BOLV				*i* S	**Sg**	**20 50 29.1**	**+0.9**
KNL	**Bal¨–kesir**	**1.67**	**314**	*i* P	**Pn**	**20 50 10.1**	**0.0**
KNL				*i* S	**Sn**	**20 50 32.0**	**0.0**
ISP	**Isparta**	**1.71**	**139**	⇑*i* P	**Pg**	**20 50 13.6**	**+0.9**
ISP				S	**Sg**	**20 50 37.6**	**+2.7**
ISP	**Isparta**	**1.71**	**139**	P	**Pn**	**20 50 09.8**	**-0.9**
ISP	**Isparta**	**1.71**	**139**	P	**Pn**	**20 50 09.8**	**-0.9**
ISP				S	**Sg**	**20 50 37.6**	**+2.7**
BUY	**Buyukada**	**1.73**	**1**	P	**Pn**	**20 50 10.1**	**-0.8**
BUY				S	**Sb**	**20 50 33.9**	**-0.6**
BUY	**Buyukada**	**1.73**	**1**	*i* P	**Pn**	**20 50 10.2**	**-0.7**
BUY				*i* S	**Sb**	**20 50 33.9**	**-0.5**
AYDN	**Tasoluk**	**1.74**	**214**	P	**Pb**	**20 50 11.8**	**-0.7**
AYDN				S	**Sb**	**20 50 34.9**	**+0.1**
AYDN	**Tasoluk**	**1.74**	**214**	*i* P	**Pb**	**20 50 11.8**	**-0.7**
AYDN				*i* S	**Sb**	**20 50 34.9**	**+0.1**
BAGO	**Egridir - ISPA**	**1.74**	**130**	*i* P	**Pb**	**20 50 10.9**	**-1.6**
BAGO				*i* S	**Sg**	**20 50 34.8**	**-1.1**
AYVA	**Ayvalik**	**1.88**	**277**	P	**Pb**	**20 50 15.1**	**+0.3**
AYVA	**Ayvalik**	**1.88**	**277**	*i* P	**Pb**	**20 50 15.1**	**+0.3**
AYVA				*i* S	**Sg**	**20 50 40.1**	**-0.1**
AUMIH	**MIHALICIK**	**1.99**	**67**	*i* P	**Pg**	**20 50 18.4**	**+0.3**
AUMIH				*i* S	**Sg**	**20 50 46.4**	**+2.4**
DGB	**¨zmir**	**2.04**	**239**	*i* P	**Pn**	**20 50 18.6**	**-0.3**
DGB				*i* S	**Sg**	**20 50 44.9**	**-0.4**
BTAS	**Taskesti**	**2.06**	**45**	P	**Pn**	**20 50 15.4**	**-0.1**
BTAS	**Taskesti**	**2.06**	**45**	*i* P	**Pn**	**20 50 15.4**	**-0.1**
YER	**Yerkesik**	**2.08**	**198**	P	**Pn**	**20 50 15.0**	**-0.8**
YER	**Yerkesik**	**2.08**	**198**	P	**Pn**	**20 50 15.0**	**-0.8**
URLA	**Izmir**	**2.10**	**250**	*i* P	**Pg**	**20 50 20.8**	**+0.7**
URLA				*i* S	**Sg**	**20 50 48.5**	**+1.3**
KAND	**Kocaeli-Kandir**	**2.14**	**23**	P	**Pn**	**20 50 16.4**	**-0.2**
KAND	**Kocaeli-Kandir**	**2.14**	**23**	*i* P	**Pn**	**20 50 16.4**	**-0.2**
KAND				*i* S	**Sg**	**20 50 49.1**	**+0.3**
SART	**Tekirdag**	**2.15**	**317**	*i* P	**Pg**	**20 50 20.6**	**-0.5**
SART				*i* S	**Sg**	**20 50 49.1**	**+0.1**
SAHE	**Sakarya_HENDEK**	**2.20**	**37**	P	**Pn**	**20 50 16.8**	**-0.5**
SAHE	**Sakarya_HENDEK**	**2.20**	**37**	*i* P	**Pn**	**20 50 16.8**	**-0.5**
PRK	**Paraskevi**	**2.20**	**274**	P	**Pn**	**20 50 18.4**	**+1.1**
PRK				S	**Sb**	**20 50 47.5**	**-0.4**
PRK	**Paraskevi**	**2.20**	**274**	P	**Pn**	**20 50 18.4**	**+1.1**
PRK				S	**Sb**	**20 50 47.5**	**-0.4**
ZEY	**¨zmir**	**2.21**	**247**	*i* P	**Pb**	**20 50 21.0**	**+0.5**
ZEY				*i* S	**Sg**	**20 50 51.2**	**+0.3**
SMG	**Samos**	**2.27**	**232**	P	**Pn**	**20 50 17.9**	**-0.3**
SMG	**Samos**	**2.27**	**232**	P	**Pn**	**20 50 17.9**	**-0.3**
BOZC	**Bozcaada**	**2.46**	**288**	*i* P	**Pn**	**20 50 22.3**	**+1.4**
FETY	**Fethiye**	**2.48**	**180**	P	**Pn**	**20 50 21.3**	**+0.1**
FETY	**Fethiye**	**2.48**	**180**	P	**Pn**	**20 50 21.3**	**+0.1**
CHOS	**Chios island**	**2.49**	**254**	P	**Pn**	**20 50 22.3**	**+1.0**
CHOS				S	**Sn**	**20 50 53.8**	**+1.6**
CHOS	**Chios island**	**2.49**	**254**	P	**Pn**	**20 50 22.3**	**+1.0**
CHOS				S	**Sn**	**20 50 53.8**	**+1.6**
BODT	**Bodrum**	**2.49**	**215**	P	**Pn**	**20 50 19.9**	**-1.4**
BODT	**Bodrum**	**2.49**	**215**	P	**Pn**	**20 50 19.9**	**-1.4**
SIGR	**SIGRI**	**2.52**	**273**	P	**Pb**	**20 50 23.5**	**-2.3**
SIGR				S	**Sb**	**20 50 55.8**	**-1.4**
SIGR	**SIGRI**	**2.52**	**273**	P	**Pb**	**20 50 23.5**	**-2.3**
SIGR				S	**Sb**	**20 50 55.8**	**-1.4**
ALN	**Alexandroupoli**	**2.94**	**308**	P	**Pb**	**20 50 30.0**	**-2.9**
ALN	**Alexandroupoli**	**2.94**	**308**	P	**Pb**	**20 50 30.0**	**-2.9**
ARG	**Arkhangelos**	**3.00**	**195**	P	**Pn**	**20 50 28.6**	**+0.3**
ARG	**Arkhangelos**	**3.00**	**195**	P	**Pn**	**20 50 28.6**	**+0.3**
SMTH	**Samothraki Isl**	**3.06**	**297**	P	**Pn**	**20 50 31.2**	**+2.0**
SMTH	**Samothraki Isl**	**3.06**	**297**	P	**Pn**	**20 50 31.2**	**+2.0**
LIA	**Limnos Island**	**3.12**	**286**	P	**Pn**	**20 50 32.0**	**+2.0**
LIA	**Limnos Island**	**3.12**	**286**	P	**Pn**	**20 50 32.0**	**+2.0**
TIRR	**Tirgusor**	**5.36**	**355**	⇑*i* P	**Pn**	**20 51 01.2**	**+0.5**
TIRR	**Tirgusor**	**5.36**	**355**	⇑*i* P	**Pn**	**20 51 01.2**	**+0.5**
HARR	**Harsova**	**5.63**	**352**	⇑*i* P	**Pn**	**20 51 05.5**	**+1.0**
HARR	**Harsova**	**5.63**	**352**	⇑*i* P	**Pn**	**20 51 05.5**	**+1.0**
CFR	**Carcaliu**	**6.10**	**354**	⇓*i* P	**Pn**	**20 51 10.4**	**-0.4**
CFR	**Carcaliu**	**6.10**	**354**	⇓*i* P	**Pn**	**20 51 10.4**	**-0.4**
ISR	**Istrita**	**6.29**	**343**	⇑*i* P	**Pn**	**20 51 17.3**	**+3.8**
MLR	**Muntele Rosu**	**6.78**	**341**	⇑*i* P	**Pn**	**20 51 22.3**	**+1.9**
MLR	**Muntele Rosu**	**6.78**	**341**	⇑*i* P	**Pn**	**20 51 22.3**	**+1.9**
PLOR	**Plostina**	**6.96**	**346**	⇑*i* P	**Pn**	**20 51 22.6**	**-0.2**
PLOR	**Plostina**	**6.96**	**346**	⇑*i* P	**Pn**	**20 51 22.6**	**-0.2**
VRI	**Vrincioaia**	**6.96**	**346**	⇑*i* P	**Pn**	**20 51 22.8**	**0.0**
VRI	**Vrincioaia**	**6.96**	**346**	⇑*i* P	**Pn**	**20 51 22.8**	**0.0**
VOIR		**6.99**	**336**	⇑*i* P	**Pn**	**20 51 23.6**	**+0.4**
VOIR		**6.99**	**336**	⇑*i* P	**Pn**	**20 51 23.6**	**+0.4**
ARR	**Arges**	**7.07**	**334**	⇑*i* P	**Pn**	**20 51 25.0**	**+0.8**
ARR	**Arges**	**7.07**	**334**	⇑*i* P	**Pn**	**20 51 25.0**	**+0.8**
DOPR	**Dopca**	**7.37**	**339**	⇑*i* P	**Pn**	**20 51 29.3**	**+0.9**
DOPR	**Dopca**	**7.37**	**339**	⇑*i* P	**Pn**	**20 51 29.3**	**+0.9**
TESR	**Tescani**	**7.60**	**347**	⇑*i* P	**Pn**	**20 51 31.8**	**+0.2**
TESR	**Tescani**	**7.60**	**347**	⇑*i* P	**Pn**	**20 51 31.8**	**+0.2**
BURAR	**Bucovina Array**	**8.95**	**343**	⇑*i* P	**Pn**	**20 51 51.9**	**+1.8**
BURAR	**Bucovina Array**	**8.95**	**343**	⇑*i* P	**Pn**	**20 51 51.9**	**+1.8**
SORM	**Soroca**	**9.03**	**357**	⇑*i* P	**Pn**	**20 51 51.8**	**+0.7**
SORM	**Soroca**	**9.03**	**357**	⇑*i* P	**Pn**	**20 51 51.8**	**+0.7**

*ISCJB **19** 20:51:21.8±0.5, 39°.09N±0°.03×29°.04E±0°.03, h3km±6km, Error ellipse: s-maj=4.3km s-min=3.8km az=154.9*
*DDA **19** 20:51:21.7, 39°.08N×29°.04E, h7km, Md2.2*
*ISK **19** 20:51:21.6, 39°.09N×29°.10E, h4km, ML3.1*
*CSEM **19** 20:51:22.2±0.1, 39°.11N×29°.06E, h2km, MD2.2, Error ellipse: s-maj=2.5km s-min=2.2km az=99.0*
ISC 19 20:51:22.1±1.1, 39°.11N±0°.02×29°.03E±0°.02, h1km±14km, n55, σ1§51/72, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**255**	P	**Pg**	**20 51 25.1**	**-1.8**
DEMI				S	**Sg**	**20 51 31.0**	**+0.8**
DEMI	**Demirci**	**0.25**	**255**	*i* P	**Pg**	**20 51 25.1**	**-1.8**
DEMI				*i* S	**Sg**	**20 51 31.0**	**+0.8**
GDZ	**Gediz**	**0.35**	**93**	P	**Pg**	**20 51 28.7**	**-0.1**
GDZ				S	**Sg**	**20 51 33.3**	**-0.1**
GDZ	**Gediz**	**0.35**	**93**	*i* P	**Pg**	**20 51 28.7**	**-0.1**
GDZ				*i* S	**Sg**	**20 51 33.4**	**-0.1**
TVSB	**Tavsanli**	**0.48**	**44**	PG	**Pg**	**20 51 31.2**	**-0.1**
TVSB	**Tavsanli**	**0.48**	**44**	*i* Pg	**Pg**	**20 51 31.2**	**-0.1**
DURS	**Dursunbey**	**0.65**	**319**	P	**Pb**	**20 51 35.5**	**-0.8**
DURS	**Dursunbey**	**0.65**	**319**	*i* P	**Pb**	**20 51 35.5**	**-0.8**
KULA	**Kula-Manisa**	**0.66**	**206**	PG	**Pg**	**20 51 35.1**	**+0.3**
KULA	**Kula-Manisa**	**0.66**	**206**	*i* Pg	**Pg**	**20 51 35.1**	**+0.3**
MANT	**Manisa**	**0.72**	**211**	P	**Pg**	**20 51 35.6**	**-0.3**
MANT				S	**Sg**	**20 51 45.2**	**0.0**
MANT	**Manisa**	**0.72**	**211**	*i* P	**Pg**	**20 51 35.6**	**-0.3**
MANT				*i* S	**Sg**	**20 51 45.2**	**0.0**
KHAL	**Karahalli**	**0.82**	**154**	P	**Pb**	**20 51 39.4**	**+0.2**
KHAL				S	**Sg**	**20 51 48.4**	**-0.1**
KHAL	**Karahalli**	**0.82**	**154**	*i* P	**Pb**	**20 51 39.4**	**+0.2**
KHAL				*i* S	**Sg**	**20 51 48.4**	**-0.1**
KHL	**Karahalli**	**0.88**	**154**	*e*PG	**Pg**	**20 51 38.6**	**-0.2**
KHL				*e*SG	**Sg**	**20 51 50.4**	**+0.2**
KHL	**Karahalli**	**0.88**	**154**	*e*Pg	**Pg**	**20 51 38.6**	**-0.2**
KHL				*e*Sg	**Sg**	**20 51 50.4**	**+0.2**
ORLT	**Orhaneli**	**0.94**	**354**	*e*PG	**Pg**	**20 51 40.0**	**-0.1**
ORLT				*e*SG	**Sb**	**20 51 54.6**	**+0.3**
ORLT	**Orhaneli**	**0.94**	**354**	*e*Pg	**Pg**	**20 51 40.0**	**-0.1**
ORLT				*e*Sg	**Sb**	**20 51 54.6**	**+0.3**
AKHS	**Akhisar**	**0.97**	**257**	P	**Pg**	**20 51 41.2**	**+0.4**
AKHS				S	**Sg**	**20 51 54.2**	**+0.8**
AKHS	**Akhisar**	**0.97**	**257**	*i* P	**Pg**	**20 51 41.2**	**+0.4**
AKHS				*i* S	**Sg**	**20 51 54.2**	**+0.8**
AKS	**Akhisar**	**0.98**	**257**	*e*PG	**Pb**	**20 51 41.9**	**+0.1**
AKS	**Akhisar**	**0.98**	**257**	*e*Pg	**Pb**	**20 51 41.9**	**+0.1**
BALB	**Balikesir**	**1.04**	**301**	*e*PN	**Pn**	**20 51 43.4**	**-0.4**
BALB	**Balikesir**	**1.04**	**301**	*e*Pn	**Pn**	**20 51 43.4**	**-0.4**
IGD	**Bursa**	**1.16**	**6**	*i* P	**Pg**	**20 51 42.7**	**-1.6**
IGD				*i* S	**Sg**	**20 51 59.4**	**0.0**
CAVI	**Cavuskoy**	**1.26**	**30**	*e*PN	**Pg**	**20 51 46.0**	**-0.2**
CAVI	**Cavuskoy**	**1.26**	**30**	*e*Pn	**Pg**	**20 51 46.0**	**-0.2**
BALY	**Balya**	**1.26**	**300**	P	**Pg**	**20 51 46.1**	**-0.2**
BALY				S	**Sg**	**20 52 02.8**	**+0.2**
BALY	**Balya**	**1.26**	**300**	*i* P	**Pg**	**20 51 46.1**	**-0.2**
BALY				*i* S	**Sg**	**20 52 02.9**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.26**	**355**	*e*PN	**Pb**	**20 51 46.7**	**0.0**
MDNY	**Mudanya-Bursa**	**1.26**	**355**	*e*Pn	**Pb**	**20 51 46.7**	**0.0**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*PN	**Pb**	**20 51 46.7**	**-0.1**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*Pn	**Pb**	**20 51 46.7**	**-0.1**
IZI	**Iznik**	**1.27**	**15**	*e*PN	**Pg**	**20 51 46.6**	**+0.1**
IZI	**Iznik**	**1.27**	**15**	*e*Pn	**Pg**	**20 51 46.6**	**+0.1**
GONE	**Gonen-Balikesi**	**1.40**	**312**	*e*PN	**Pb**	**20 51 49.5**	**+0.5**
GONE	**Gonen-Balikesi**	**1.40**	**312**	*e*Pn	**Pb**	**20 51 49.5**	**+0.5**
ADVT	**Abdulvahap**	**1.43**	**22**	*e*PN	**Pn**	**20 51 49.0**	**-0.2**
ADVT	**Abdulvahap**	**1.43**	**22**	*e*Pn	**Pn**	**20 51 49.0**	**-0.2**
ARMT	**Armutlu**	**1.46**	**355**	*e*PN	**Pb**	**20 51 50.1**	**0.0**
ARMT	**Armutlu**	**1.46**	**355**	*e*Pn	**Pb**	**20 51 50.1**	**0.0**
EDC	**Edincik**	**1.53**	**324**	*e*PN	**Pg**	**20 51 51.4**	**0.0**
EDC	**Edincik**	**1.53**	**324**	*e*Pn	**Pg**	**20 51 51.4**	**0.0**
GULT	**Gulveren**	**1.75**	**40**	*e*PN	**Pn**	**20 51 53.5**	**-0.2**
GULT	**Gulveren**	**1.75**	**40**	*e*Pn	**Pn**	**20 51 53.5**	**-0.2**
HRT	**Hereke**	**1.78**	**16**	*e*PN	**Pn**	**20 51 53.9**	**-0.1**
HRT	**Hereke**	**1.78**	**16**	*e*Pn	**Pn**	**20 51 53.9**	**-0.1**
SPNC	**Sapanca-Adapaz**	**1.86**	**32**	*e*PN	**Pn**	**20 51 54.9**	**-0.2**
SPNC	**Sapanca-Adapaz**	**1.86**	**32**	*e*Pn	**Pn**	**20 51 54.9**	**-0.2**
ISK	**Istanbul-Kandi**	**1.95**	**1**	*e*PN	**Pn**	**20 51 57.1**	**+0.7**
ISK	**Istanbul-Kandi**	**1.95**	**1**	*e*Pn	**Pn**	**20 51 57.1**	**+0.7**
SVRH	**Sivrihisar-ESK**	**1.96**	**79**	*e*PN	**Pn**	**20 51 56.0**	**-0.6**
SVRH	**Sivrihisar-ESK**	**1.96**	**79**	*e*Pn	**Pn**	**20 51 56.0**	**-0.6**
SILT	**Sile**	**2.09**	**13**	*e*PN	**Pn**	**20 51 58.4**	**+0.1**
SILT	**Sile**	**2.09**	**13**	*e*Pn	**Pn**	**20 51 58.4**	**+0.1**

*ISCJB **19** 20:51:57.5±0.5, 39°.11N±0°.03×29°.05E±0°.03, h7km±5km, Error ellipse: s-maj=4.8km s-min=3.7km az=44.6*
*DDA **19** 20:51:57.4, 39°.13N×29°.03E, h7km, Md2.1*
*ISK **19** 20:51:57.2, 39°.11N×29°.10E, h10km, ML3.2*
*CSEM **19** 20:51:57.8±0.1, 39°.12N×29°.05E, h8km, MD2.1, Error ellipse: s-maj=2.3km s-min=1.8km az=115.0*
ISC 19 20:51:57.5±0.9, 39°.10N±0°.02×29°.08E±0°.02, h11km±10km, n43, σ0§41/58, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.29**	**258**	P	**Pg**	**20 52 03.5**	**0.0**
DEMI				S	**Sg**	**20 52 07.2**	**-0.2**
DEMI	**Demirci**	**0.29**	**258**	*i* P	**Pg**	**20 52 03.5**	**0.0**
DEMI				*i* S	**Sg**	**20 52 07.2**	**-0.2**
GDZ	**Gediz**	**0.32**	**93**	P	**Pb**	**20 52 05.0**	**-0.3**
GDZ				S	**Sb**	**20 52 09.6**	**-0.9**
GDZ	**Gediz**	**0.32**	**93**	*i* P	**Pb**	**20 52 05.0**	**-0.3**
GDZ				*i* S	**Sb**	**20 52 09.6**	**-0.9**
TVSB	**Tavsanli**	**0.46**	**41**	*e*PG	**Pg**

AKHS	Akhisar	1.02	256	P	Pn	20 57 48.7	-1.0
AKHS				S	Sg	20 58 00.6	-0.3
AKHS	Akhisar	1.02	256	*i* P	Pn	20 57 48.7	-1.0
AKHS				*i* S	Sg	20 58 00.6	-0.3
IGD	Bursa	1.14	5	*i* P	Pb	20 57 49.2	-1.6
IGD				*i* S	Sn	20 58 09.8	+2.1
BORA	Eskisehir	1.30	54	P	Pg	20 57 53.0	-0.2
BORA				S	Sn	20 58 11.4	-0.4
BORA	Eskisehir	1.30	54	*i* P	Pg	20 57 53.0	-0.2
BORA				*i* S	Sn	20 58 11.4	-0.4
DNZL	Cakiroluk	1.44	181	P	Pg	20 57 56.2	+0.5
DNZL				S	Sg	20 58 17.1	+2.8
DNZL	Cakiroluk	1.44	181	*i* P	Pg	20 57 56.2	+0.5
DNZL				*i* S	Sg	20 58 17.1	+2.8
BOLV	Bolvadin	1.52	105	P	Pg	20 57 56.5	-0.8
BOLV	Bolvadin	1.52	105	*i* P	Pg	20 57 56.5	-0.8
BUY	Buyukada	1.72	1	P	Pg	20 58 00.9	-0.3
BUY				S	Sg	20 58 24.4	+0.8
BUY	Buyukada	1.72	1	*i* P	Pg	20 58 00.9	-0.3
BUY				*i* S	Sg	20 58 24.4	+0.8
ISP	Isparta	1.73	139	⇑*i* P	Pg	20 58 02.2	+0.9
ISP				S	Sg	20 58 28.2	+4.5
ISP	Isparta	1.73	139	⇑*i* P	Pg	20 58 02.2	+0.9
BAGO	Egridir - ISPA	1.76	130	*i* P	Pg	20 58 01.3	-0.6
AUMIH	MIHALICIK	2.00	68	P	Pb	20 58 05.0	-0.5
AUMIH	MIHALICIK	2.00	68	*i* P	Pb	20 58 05.0	-0.5
AUMIH				*i* S	Sg	20 58 34.1	+1.5
PRK	Paraskevi	2.19	274	P	Pn	20 58 05.8	+0.1
PRK	Paraskevi	2.19	274	P	Pn	20 58 05.8	+0.1
SMG	Samos	2.26	232	P	Pn	20 58 06.4	-0.4
SMG	Samos	2.26	232	P	Pn	20 58 06.4	-0.4
CHOS	Chios island	2.48	254	P	Pn	20 58 09.6	-0.2
CHOS	Chios island	2.48	254	P	Pn	20 58 09.6	-0.2
FETY	Fethiye	2.49	180	P	Pn	20 58 10.4	+0.5
FETY	Fethiye	2.49	180	P	Pn	20 58 10.4	+0.5
SIGR	SIGRI	2.51	273	P	Pn	20 58 11.3	+1.2
SIGR	SIGRI	2.51	273	P	Pn	20 58 11.3	+1.2
ENEZ	Enez	2.77	306	P	Pn	20 58 14.4	+0.7
ENEZ	Enez	2.77	306	P	Pn	20 58 14.4	+0.7
ARG	Arkhangelos	3.00	195	P	Pn	20 58 17.9	+0.9
ARG	Arkhangelos	3.00	195	P	Pn	20 58 17.9	+0.9
EDRB	Edirne	3.25	328	P	Pn	20 58 20.6	+0.3
EDRB	Edirne	3.25	328	P	Pn	20 58 20.6	+0.3
APE	Apeiranthos	3.47	235	⇓*i* P	Pg	20 58 35.1	+0.3
BRTR	Keskin Array B	3.58	79	Pn	Pb	20 58 29.6	-2.9
	0.8nm,0.3s,baz=256,slow=14,SNR=14						
BRTR				Pg	Pg	20 58 39.0	+2.1
	1.3nm,0.3s,baz=258,slow=16,SNR=20						
BRTR				Sn	Sb	20 59 10.3	-6.2
	1.2nm,0.3s,baz=251,slow=22,SNR=4.4						
BRTR				Lg	Lg	20 59 31.6	
	1.6nm,0.3s,baz=264,slow=26,SNR=6.2						
JMB	Yambol	3.84	331	P	Pn	20 58 29.1	+0.7
DIM	Dimitrovgrad	3.98	318	P	Pn	20 58 30.7	+0.4
PLD	Plovdiv	4.46	313	*e*P	Pn	20 58 35.3	-1.8
SZH	Strazhica	4.77	331	P	Pn	20 58 41.4	+0.2
LAST	Lasithi	4.89	217	⇑*i* P	Pn	20 58 45.0	+2.0
LAST	Lasithi	4.89	217	⇑*i* P	Pn	20 58 45.0	+2.0
IDI	Anoyia	5.08	222	Pn	Pn	20 58 45.7	0.0
	0.3nm,0.3s,baz=256,slow=18,SNR=3.2						
IDI	Anoyia	5.08	222	⇓*i* P	Pn	20 58 48.5	+2.8
IDI	Anoyia	5.08	222	⇓*i* P	Pn	20 58 48.5	+2.8
TIRR	Tirgusor	5.35	355	⇑*i* P	Pn	20 58 49.5	+0.3
TIRR	Tirgusor	5.35	355	⇑*i* P	Pn	20 58 49.5	+0.3
MPEP	Malo Peshtene	5.83	318	P	Pn	20 58 56.7	+0.8
CFR	Carcaliu	6.09	354	⇑*i* P	Pn	20 58 59.2	-0.1
CFR	Carcaliu	6.09	354	⇑*i* P	Pn	20 58 59.2	-0.1
MLR	Muntele Rosu	6.77	341	Pn	Pn	20 59 09.6	+0.8
	0.1nm,0.3s,baz=297,slow=6.8,SNR=8.1						
MLR	Muntele Rosu	6.77	341	⇑*i* P	Pn	20 59 10.0	+1.2
MLR	Muntele Rosu	6.77	341	⇑*i* P	Pn	20 59 10.0	+1.2
PLOR	Plostina	6.96	346	⇓*i* P	Pn	20 59 12.5	+1.2
PLOR	Plostina	6.96	346	⇓*i* P	Pn	20 59 12.5	+1.2
VRI	Vrincioaia	6.96	346	⇓*i* P	Pn	20 59 12.1	+0.8
VRI	Vrincioaia	6.96	346	⇓*i* P	Pn	20 59 12.1	+0.8
VOIR		6.98	336	⇑*i* P	Pn	20 59 12.1	+0.5
VOIR		6.98	336	⇑*i* P	Pn	20 59 12.1	+0.5
ARR	Arges	7.05	334	⇓*i* P	Pn	20 59 13.8	+1.1
ARR	Arges	7.05	334	⇓*i* P	Pn	20 59 13.8	+1.1
DOPR	Dopca	7.36	339	⇑*i* P	Pn	20 59 17.6	+0.8
DOPR	Dopca	7.36	339	⇑*i* P	Pn	20 59 17.6	+0.8
TESR	Tescani	7.59	347	⇑*i* P	Pn	20 59 20.1	+0.1
TESR	Tescani	7.59	347	⇑*i* P	Pn	20 59 20.1	+0.1
MILM	Milestii Mici	7.79	359	⇑*i* P	Pn	20 59 13.5	-9.2
BZS	Buzias	8.52	322	⇑*i* P	Pn	20 59 33.1	+0.4
BZS	Buzias	8.52	322	⇑*i* P	Pn	20 59 33.1	+0.4
BURAR	Bucovina Array	8.94	343	⇓*i* P	Pn	20 59 39.6	+1.1
BURAR	Bucovina Array	8.94	343	⇓*i* P	Pn	20 59 39.6	+1.1
SORM	Soroca	9.02	357	⇓*i* P	Pn	20 59 39.6	+0.1
SORM	Soroca	9.02	357	⇓*i* P	Pn	20 59 39.6	+0.1
TORD	Torodi Ar. Bea	35.43	231	P	P	21 04 25.4	-0.7
	0.2nm,0.5s,baz=46,slow=8.0,SNR=2.4						
MKAR	Makanchi Array	39.04	61	P	P	21 04 58.8	+2.4
	0.1nm,0.3s,baz=262,slow=10.0,SNR=2.8						

*ISK **19** 20:59:47.1, 39.°12N×29.°10E, h5km, ML3.3*
*DDA **19** 20:59:48.0, 39.°12N×29.°05E, h7km, Ml3.9*
*CSEM **19** 20:59:48.4±0.1, 39.°12N×29.°08E, h2km, ML3.3, Error ellipse: s-maj=2.6km s-min=1.9km az=96.0*
ISC 19 20:59:48.2±1.2, 39.°13N±0.°02×29.°09E±0.°03, h0km±14km, n55, σ0°49/66, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TVSB	Tavsanli	0.44	42	PG	Pg	20 59 56.5	-0.1
TVSB	Tavsanli	0.44	42	*i* Pg	Pg	20 59 56.5	-0.1
DURS	Dursunbey	0.67	315	P	Pg	21 00 01.3	+0.2
DURS				S	Sg	21 00 10.5	+0.7
DURS	Dursunbey	0.67	315	*i* P	Pg	21 00 01.3	+0.2
DURS				*i* S	Sg	21 00 10.5	+0.7
KULA	Kula-Manisa	0.69	209	PG	Pg	21 00 00.9	-0.6
KULA	Kula-Manisa	0.69	209	*i* Pg	Pg	21 00 00.9	-0.6
MANT	Manisa	0.76	213	P	Pg	21 00 02.7	0.0
MANT				S	Sg	21 00 12.2	-0.3
MANT	Manisa	0.76	213	*i* P	Pg	21 00 02.7	0.0
MANT				*i* S	Sg	21 00 12.2	-0.3
KHAL	Karahalli	0.82	157	P	Pg	21 00 04.5	+0.6
KHAL				S	Sg	21 00 14.9	+0.4
KHAL	Karahalli	0.82	157	*i* P	Pg	21 00 04.5	+0.6
KHAL				*i* S	Sg	21 00 14.9	+0.4
KHL	Karahalli	0.87	157	*e*PG	Pg	21 00 05.2	+0.3
KHL				*e*SG	Sb	21 00 17.5	-0.9
KHL	Karahalli	0.87	157	*e*Pg	Pg	21 00 05.2	+0.3
KHL				*e*Sg	Sb	21 00 17.5	-0.9
ORLT	Orhaneli	0.93	351	*e*PG	Pg	21 00 06.5	+0.4
ORLT	Orhaneli	0.93	351	*e*Pg	Pg	21 00 06.5	+0.4
AKS	Akhisar	1.02	256	*e*PG	Pb	21 00 08.3	-0.5
AKS				*e*SG	Sb	21 00 22.9	+0.2
AKS	Akhisar	1.02	256	*e*Pg	Pb	21 00 08.3	-0.5
AKS				*e*Sg	Sb	21 00 22.9	+0.2
BALB	Balikesir	1.07	299	*e*PG	Pg	21 00 08.8	+0.1
BALB	Balikesir	1.07	299	*e*Pg	Pg	21 00 08.8	+0.1
IGD	Bursa	1.14	4	*i* P	Pg	21 00 08.5	-1.6
IGD				*i* S	Sg	21 00 23.4	-1.5
CAVI	Cavuskoy	1.22	28	*e*PN	Pg	21 00 12.0	+0.3
CAVI	Cavuskoy	1.22	28	*e*Pn	Pg	21 00 12.0	+0.3
IZI	Iznik	1.25	14	*e*PN	Pb	21 00 12.7	+0.1
IZI	Iznik	1.25	14	*e*Pn	Pb	21 00 12.7	+0.1
MDNY	Mudanya-Bursa	1.25	353	*e*PN	Pg	21 00 12.2	0.0
MDNY	Mudanya-Bursa	1.25	353	*e*Pn	Pg	21 00 12.2	0.0
KCTX	Karacabey (Bur	1.27	334	*e*PN	Pg	21 00 12.8	+0.2
KCTX	Karacabey (Bur	1.27	334	*e*Pn	Pg	21 00 12.8	+0.2
GEMT	Gemlik	1.31	3	*e*PN	Pg	21 00 13.3	-0.1
GEMT	Gemlik	1.31	3	*e*Pn	Pg	21 00 13.3	-0.1
DENT	Denizli	1.37	182	*e*PN	Pb	21 00 14.9	+0.2
DENT	Denizli	1.37	182	*e*Pn	Pb	21 00 14.9	+0.2
ADVT	Abdulvahap	1.40	21	*e*PN	Pn	21 00 14.9	-0.1
ADVT	Abdulvahap	1.40	21	*e*Pn	Pn	21 00 14.9	-0.1
GONE	Gonen-Balikesi	1.42	311	*e*PN	Pb	21 00 15.7	+0.1
GONE	Gonen-Balikesi	1.42	311	*e*Pn	Pb	21 00 15.7	+0.1
ARMT	Armutlu	1.45	353	*e*PN	Pn	21 00 15.4	-0.3
ARMT	Armutlu	1.45	353	*e*Pn	Pn	21 00 15.4	-0.3
GPA	Golpazari	1.50	39	*e*PN	Pn	21 00 15.9	-0.4
GPA	Golpazari	1.50	39	*e*Pn	Pn	21 00 15.9	-0.4
EDC	Edincik	1.54	323	*e*PN	Pn	21 00 17.0	+0.1
EDC	Edincik	1.54	323	*e*Pn	Pn	21 00 17.0	+0.1
GULT	Gulveren	1.71	40	*e*PN	Pn	21 00 19.6	+0.3
GULT	Gulveren	1.71	40	*e*Pn	Pn	21 00 19.6	+0.3
HRT	Hereke	1.75	15	*e*PN	Pn	21 00 19.9	0.0
HRT	Hereke	1.75	15	*e*Pn	Pn	21 00 19.9	0.0
SPNC	Sapanca-Adapaz	1.82	31	*e*PN	Pn	21 00 21.2	+0.4
SPNC	Sapanca-Adapaz	1.82	31	*e*Pn	Pn	21 00 21.2	+0.4
SVRH	Sivrihisar-ESK	1.92	80	*e*PN	Pn	21 00 22.8	+0.6
SVRH	Sivrihisar-ESK	1.92	80	*e*Pn	Pn	21 00 22.8	+0.6
ISK	Istanbul-Kandi	1.94	359	*e*PN	Pn	21 00 23.0	+0.7
ISK	Istanbul-Kandi	1.94	359	*e*Pn	Pn	21 00 23.0	+0.7
SILT	Sile	2.07	12	*e*PN	Pn	21 00 24.9	+0.7
SILT	Sile	2.07	12	*e*Pn	Pn	21 00 24.9	+0.7
MDUB	Mudurnu	2.11	50	*e*PN	Pn	21 00 24.9	0.0
MDUB	Mudurnu	2.11	50	*e*Pn	Pn	21 00 24.9	0.0

*NEIC **19** 21:00:12.0, 37.°16N×117.°38W, h14km, ML3.4(REN), After REN.*
NEIC Felt at Las Vegas. Also felt at Death Valley, California.
ISC 19 21:00:11.9±1.2, 37.°15N±0.°03×117.°37W±0.°03, h12km±12km, n13, σ0°69/23, California-Nevada border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GRAC	Grapevine Rang	0.15	179	P	Pb	21 00 16.5	-0.2
	baz=356						
GRAC				S	Sb	21 00 19.6	+1.4
	baz=356						
TIN	Tinemaha, Big	0.69	262	P	Pb	21 00 26.3	+0.3
	baz=81						
TIN				S	Sb	21 00 35.4	-0.2
	baz=81						
FURC	Furnace Creek,	0.79	149	P	Pb	21 00 28.1	+0.5
	baz=329						
DAC	Darwin (Calif)	0.89	192	*e*Pg	Pb	21 00 29.5	+0.1
DAC				*e*Sg	Sb	21 00 41.5	+0.2
CWC	Cottonwood Cre	0.91	219	S	Sb	21 00 42.2	+0.4
	baz=38						
TPNV	Topopah Spring	0.92	102	P	Pg	21 00 30.4	+0.7
	baz=284						
MPMC	Manual Prospec	1.09	185	P	Pn	21 00 33.2	0.0
	baz=4.5						
MPMC				S	Sn	21 00 48.0	-0.3
	baz=4.5						
MLAC	Mammoth, Mammo	1.26	293	Pb	Pg	21 00 36.1	-0.2
	baz=112						
R11A	Troy Canyon, C	1.85	49	Pb	Pb	21 00 46.6	+0.7
	baz=231						
R11A				Sb	Sg	21 01 11.7	+0.1
	baz=231						
R11A	Troy Canyon, C	1.85	49	*e*Pn	Pn	21 00 43.5	-0.2
R11A				*e*Pg	Pg	21 00 46.9	-0.6
R11A				*e*Sg	Sg	21 01 12.0	+0.4
VES	Vestal, Richgr	1.90	227	Sb	Sg	21 01 12.8	-0.2
	baz=46						
CMB	Columbia Colle	2.55	291	*e*Pn	Pn	21 00 53.8	+0.6
CMB				*e*Pg	Pb	21 00 59.0	+1.3
CMB				*e*Sg	Sg	21 01 33.4	-0.6
ELK	Elko	3.96	24	*e*Pn	Pn	21 01 12.4	-0.3
ELK				*e*Pg	Pg	21 01 26.2	-1.5

*ISCJB **19** 21:01:02.0±0.5, 39.°07N±0.°03×29.°03E±0.°03, h4km±5km, Error ellipse: s-maj=5.2km s-min=4.0km az=152.4*
*ISK **19** 21:01:01.9, 39.°13N×28.°98E, h5km, MD2.6*
*DDA **19** 21:01:01.5, 39.°09N×29.°03E, h7km, Ml3.2*
*CSEM **19** 21:01:02.2±0.2, 39.°09N×29.°03E, h2km, ML3.2, Error ellipse: s-maj=5.4km s-min=4.0km az=145.0*
ISC 19 21:01:01.9±1.0, 39.°07N±0.°03×29.°04E±0.°02, h10km±9km, n30, σ0°40/42, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.26	264	P	Pg	21 01 06.8	-0.2
DEMI				S	Sg	21 01 10.5	-0.1
DEMI	Demirci	0.26	264	*i* P	Pg	21 01 06.8	-0.2
DEMI				*i* S	Sg	21 01 10.5	-0.1
GDZ	Gediz	0.34	87	P	Pg	21 01 08.3	-0.4
GDZ				S	Sg	21 01 13.8	+0.5
GDZ	Gediz	0.34	87	*i* P	Pg	21 01 08.3	-0.4
GDZ				*i* S	Sg	21 01 13.8	+0.5
TVSB	Tavsanli	0.50	41	PG	Pb	21 01 12.8	0.0
TVSB	Tavsanli	0.50	41	*i* Pg	Pb	21 01 12.8	0.0
KULA	Kula-Manisa	0.63	208	*e*PG	Pb	21 01 15.5	+0.5
KULA	Kula-Manisa	0.63	208	*e*Pg	Pb	21 01 15.5	+0.5
MANT	Manisa	0.69	213	P	Pg	21 01 15.6	+0.4
MANT				S	Sg	21 01 25.0	+0.6
MANT	Manisa	0.69	213	*i* P	Pg	21 01 15.6	+0.4
MANT				*i* S	Sg	21 01 25.0	+0.6
AKHS	Akhisar	0.98	259	P	Pg	21 01 20.6	0.0
AKHS				S	Sg	21 01 33.4	+0.1
AKHS	Akhisar	0.98	259	*i* P	Pg	21 01 20.6	0.0
AKHS				*i* S	Sg	21 01 33.4	+0.1
AKS	Akhisar	0.98	259	*e*PG	Pn	21 01 21.7	0.0
AKS				*e*SG	Sn	21 01 35.2	-0.4
AKS	Akhisar	0.98	259	*e*Pg	Pn	21 01 21.7	0.0
ORLT	Orhaneli	0.98	353	*e*PG	Pg	21 01 20.3	-0.4
UZP	Denizli	1.04	174	*i* P	Pg	21 01 20.4	-1.5
UZP				*i* S	Sg	21 01 35.6	+0.1
BALB	Balikesir	1.06	303	*e*PG	Pb	21 01 22.2	-0.2
BALB				*e*SG	Sb	21 01 36.4	+0.1
BALB	Balikesir	1.06	303	*e*Pg	Pb	21 01 22.2	-0.2
BALB				*e*Sg	Sb	21 01 36.4	+0.1
CAVI	Cavuskoy	1.29	28	*e*PN	Pg	21 01 26.8	+0.3
MDNY	Mudanya-Bursa	1.30	355	*e*PN	Pb	21 01 26.3	-0.1
KCTX	Karacabey (Bur	1.30	336	*e*PN	Pn	21 01 26.0	-0.2
KCTX	Karacabey (Bur	1.30	336	*e*Pn	Pn	21 01 26.0	-0.2
IZI	Iznik	1.31	15	*e*PN	Pg	21 01 27.4	+0.4
ADVT	Abdulvahap	1.46	21	*e*PN	Pg	21 01 30.6	+0.7
ARMT	Armutlu	1.50	355	*e*PN	Pg	21 01 30.4	-0.2
ARMT	Armutlu	1.50	355	*e*Pn	Pg	21 01 30.4	-0.2
EDC	Edincik	1.56	325	*e*PN	Pb	21 01 30.9	0.0
EDC	Edincik	1.56	325	*e*Pn	Pb	21 01 30.9	0.0
GULT	Gulveren	1.77	39	*e*PN	Pb	21 01 34.7	+0.2
SPNC	Sapanca-Adapaz	1.88	31	*e*PN	Pb	21 01 36.3	0.0

DDA 19 21:01:32.8, 39.°10N×29.°09E, h7km, Ml3.5, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.30	260	*i* P	Pg	21 01 39.4	+0.7
DEMI				*i* S	Sg	21 01 43.5	+0.9
GDZ	Gediz	0.30	91	*i* P	Pg	21 01 39.2	+0.3
GDZ				*i* S	Sg	21 01 43.9	+0.9
MANT	Manisa	0.73	215	*i* P	Pg	21 01 47.4	+0.4
MANT				*i* S	Sg	21 01 57.1	+0.6

*ISCJB **19** 21:01:59.2±0.5, 39.°11N±0.°02×29.°03E±0.°03, h4km±5km, Error ellipse: s-maj=4.2km s-min=3.7km az=26.0*
*DDA **19** 21:01:59.5, 39.°08N×29.°07E, h7km, Ml3.7*
*CSEM **19** 21:01:59.8±0.1, 39.°10N×29.°02E, h5km, ML3.7, Error ellipse: s-maj=2.8km s-min=2.4km az=104.0*
*ISK **19** 21:01:59.4, 39.°11N×28.°97E, h7km, ML3.4*
ISC 19 21:01:59.8±1.0, 39.°10N±0.°02×29.°05E±0.°02, h9km±8km, n67, σ0°58/83, 7C-4D, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.26	258	P	Pg	21 02 05.5	+0.4
DEMI				S	Sg	21 02 09.4	+0.7
DEMI	Demirci	0.26	258	*i* P	Pg	21 02 05.5	+0.4
DEMI				*i* S	Sg	21 02 09.4	+0.7
GDZ	Gediz	0.34	91	P	Pg	21 02 06.0	-0.6
GDZ				S	Sg	21 02 10.4	-0.6
GDZ	Gediz	0.34	91	*i* P	Pg	21 02 06.0	-0.6
GDZ				*i* S	Sg	21 02 10.4	-0.6
TVSB	Tavsanli	0.48	42	PG	Pg	21 02 09.3	+0.2
TVSB	Tavsanli	0.48	42	*i* Pg	Pg	21 02 09.3	+0.2
KULA	Kula-Manisa	0.66	208	PG	Pg	21 02 12.6	+0.1
KULA	Kula-Manisa	0.66	208	*i* Pg	Pg	21 02 12.6	+0.1
MANT	Manisa	0.72	212	P	Pg	21 02 13.5	-0.1
MANT				S	Sg	21 02 23.0	0.0
MANT	Manisa	0.72	212	*i* P	Pg	21 02 13.5	-0.1
MANT				*i* S	Sg	21 02 23.0	0.0
KHAL	Karahalli	0.81	154	P	Pg	21 02 15.2	-0.1
KHAL				S	Sg	21 02 25.5	-0.3
KHAL	Karahalli	0.81	154	*i* P	Pg	21 02 15.2	-0.1
KHAL				*i* S	Sg	21 02 25.5	-0.3
KHL	Karahalli	0.86	154	*e*PG	Pb	21 02 17.2	+0.3
KHL	Karahalli	0.86	154	*e*Pg	Pb	21 02 17.2	+0.3
ORLT	Orhaneli	0.95	353	*e*PG	Pg	21 02 18.0	-0.2
ORLT	Orhaneli	0.95	353	*e*Pg	Pg	21 02 18.0	-0.2
AKHS	Akhisar	0.99	258	P	Pb	21 02 19.4	+0.3
AKHS				S	Sb	21 02 32.5	+0.3
AKHS	Akhisar	0.99	258	*i* P	Pb	21 02 19.4	+0.3
AKHS				*i* S	Sb	21 02 32.5	+0.3
AKS	Akhisar	0.99	258	*e*PG	Pg	21 02 17.2	-1.5
AKS	Akhisar	0.99	258	*e*Pg	Pg	21 02 17.2	-1.5
BALB	Balikesir	1.05	301	*e*PG	Pg	21 02 18.8	-1.3
BALB				*e*SG	Sg	21 02 33.4	-0.4
BALB	Balikesir	1.05	301	*e*Pg	Pg	21 02 18.8	-1.3
BALB				*e*Sg	Sg	21 02 33.4	-0.4
CAVI	Cavuskoy	1.26	29	*e*PN	Pg	21 02 24.7	+0.7
CAVI	Cavuskoy	1.26	29	*e*Pn	Pg	21 02 24.7	+0.7
MDNY	Mudanya-Bursa	1.28	354	*e*PN	Pn	21 02 23.9	+0.1
MDNY	Mudanya-Bursa	1.28	354	*e*Pn	Pn	21 02 24.0	+0.1
IZI	Iznik	1.28	15	*e*PN	Pg	21 02 24.8	+0.4
IZI	Iznik	1.28	15	*e*Pn	Pg	21 02 24.8	+0.4
KCTX	Karacabey (Bur	1.28	336	*e*PN	Pn	21 02 23.7	-0.3
KCTX				*e*SN	Sn	21 02 41.6	+0.3
KCTX	Karacabey (Bur	1.28	336	*e*Pn	Pn	21 02 23.7	-0.3
KCTX				*e*Sn	Sn	21 02 41.6	+0.3
DENT	Denizli	1.34	180	*e*PN	Pn	21 02 25.0	+0.2
DENT	Denizli	1.34	180	*e*Pn	Pn	21 02 25.0	+0.2
GEMT	Gemlik	1.34	5	*e*PN	Pb	21 02 25.2	+0.1
GEMT	Gemlik	1.34	5	*e*Pn	Pb	21 02 25.3	+0.1
ADVT	Abdulvahap	1.44	22	*e*PN	Pb	21 02 26.8	0.0
ADVT	Abdulvahap	1.44	22	*e*Pn	Pb	21 02 26.8	0.0
ARMT	Armutlu	1.47	354	*e*PN	Pn	21 02 27.1	+0.5
ARMT	Armutlu	1.47	354	*e*Pn	Pn	21 02 27.1	+0.5
GPA	Golpazari	1.54	39	*e*PN	Pn	21 02 28.1	+0.6
GPA	Golpazari	1.54	39	*e*Pn	Pn	21 02 28.1	+0.6
EDC	Edincik	1.55	324	*e*PN	Pn	21 02 27.1	-0.5
EDC	Edincik	1.55	324	*e*Pn	Pn	21 02 27.1	-0.5
ISP	Isparta	1.72	137	⇓*i* P	Pn	21 02 30.3	+0.2
ISP				S	Sn	21 02 52.1	-0.1
ISP	Isparta	1.72	137	⇓*i* P	Pn	21 02 30.3	+0.2
ISP				S	Sn	21 02 52.1	-0.1
GULT	Gulveren	1.75	40	*e*PN	Pb	21 02 31.7	-0.4
GULT	Gulveren	1.75	40	*e*Pn	Pb	21 02 31.7	-0.4
HRT	Hereke	1.79	15	*e*PN	Pn	21 02 31.5	+0.5
HRT	Hereke	1.79	15	*e*Pn	Pn	21 02 31.5	+0.5
SPNC	Sapanca-Adapaz	1.86	31	*e*PN	Pn	21 02 32.5	+0.6
SPNC	Sapanca-Adapaz	1.86	31	*e*Pn	Pn	21 02 32.5	+0.6
SVRH	Sivrihisar-ESK	1.95	79	*e*PN	Pb	21 02 35.1	-0.5
SVRH	Sivrihisar-ESK	1.95	79	*e*Pn	Pb	21 02 35.1	-0.5
ISK	Istanbul-Kandi	1.97	0	*e*PN	Pn	21 02 33.8	+0.5
ISK	Istanbul-Kandi	1.97	0	*e*Pn	Pn	21 02 33.8	+0.5
SILT	Sile	2.10	12	*e*PN	Pn	21 02 35.9	+0.7
SILT	Sile	2.10	12	*e*Pn	Pn	21 02 35.9	+0.7
MDUB	Mudurnu	2.15	50	*e*PN	Pb	21 02 37.7	-1.3
MDUB	Mudurnu	2.15	50	*e*Pn	Pb	21 02 37.7	-1.3
TIRR	Tirgusor	5.38	355	⇑*i* P	Pn	21 03 20.1	-0.1
TIRR	Tirgusor	5.38	355	⇑*i* P	Pn	21 03 20.1	-0.1
CFR	Carcaliu	6.11	354	⇑*i* P	Pn	21 03 29.9	-0.4
MLR	Muntele Rosu	6.79	341	⇓*i* P	Pn	21 03 40.0	+0.3
PLOR	Plostina	6.98	346	⇑*i* P	Pn	21 03 43.7	+1.5
VRI	Vrincioaia	6.98	347	⇑*i* P	Pn	21 03 43.1	+0.9
VOIR		6.99	336	⇑*i* P	Pn	21 03 43.1	+0.6
DOPR	Dopca	7.38	340	⇑*i* P	Pn	21 03 48.3	+0.6
TESR	Tescani	7.62	347	⇓*i* P	Pn	21 03 51.1	+0.1

*SOME **19** 21:04:47.1, 41.°23N×82.°43E, h10km*
*NNC **19**

ARMT	**Armutlu**	**1.47**	**356**	*e*PN	**Pn**	**21 05 40.1 +0.2**
ARMT				*e*SN	**Sn**	**21 05 59.6 +0.1**
ARMT	**Armutlu**	**1.47**	**356**	*e*PN	**Pn**	**21 05 40.1 +0.2**
ARMT				*e*Sn	**Sn**	**21 05 59.6 +0.1**
EDC	**Edincik**	**1.53**	**325**	*e*PN	**Pn**	**21 05 41.2 +0.5**
EDC	**Edincik**	**1.53**	**325**	*e*Pn	**Pn**	**21 05 41.2 +0.5**
GPA	**Golpazari**	**1.56**	**40**	*e*PN	**Pn**	**21 05 41.8 +0.7**
GPA	**Golpazari**	**1.56**	**40**	*e*Pn	**Pn**	**21 05 41.8 +0.7**
GULT	**Gulveren**	**1.77**	**41**	*e*PN	**Pn**	**21 05 44.5 +0.4**
GULT	**Gulveren**	**1.77**	**41**	*e*Pn	**Pn**	**21 05 44.5 +0.4**
HRT	**Hereke**	**1.80**	**16**	*e*PN	**Pn**	**21 05 44.5 +0.1**
HRT	**Hereke**	**1.80**	**16**	*e*Pn	**Pn**	**21 05 44.5 +0.1**
SPNC	**Sapanca-Adapaz**	**1.88**	**32**	*e*PN	**Pn**	**21 05 45.7 +0.2**
SPNC	**Sapanca-Adapaz**	**1.88**	**32**	*e*Pn	**Pn**	**21 05 45.7 +0.2**
ISK	**Istanbul-Kandi**	**1.97**	**1**	*e*PN	**Pb**	**21 05 48.2 -0.8**
ISK	**Istanbul-Kandi**	**1.97**	**1**	*e*Pn	**Pb**	**21 05 48.2 -0.8**
SVRH	**Sivrihisar-ESK**	**1.98**	**79**	*e*PN	**Pn**	**21 05 47.8 +0.7**
SVRH	**Sivrihisar-ESK**	**1.98**	**79**	*e*Pn	**Pn**	**21 05 47.8 +0.7**
SILT	**Sile**	**2.11**	**13**	*e*PN	**Pn**	**21 05 49.0 +0.3**
SILT	**Sile**	**2.11**	**13**	*e*Pn	**Pn**	**21 05 49.0 +0.3**
MDUB	**Mudurnu**	**2.18**	**50**	*e*PN	**Pn**	**21 05 49.4 -0.3**
MDUB	**Mudurnu**	**2.18**	**50**	*e*Pn	**Pn**	**21 05 49.4 -0.3**

*CSEM **19** 21:06:17.9, 39°.08N×29°.07E, h7km, ML3.6*

DDA 19 21:06:17.9, 39°.08N×29°.07E, h7km, Ml3.6, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**262**	P	Pg	21 06 23.5	+0.1
DEMI				S	Sg	21 06 27.9	+0.8
DEMI	**Demirci**	**0.28**	**262**	*i* P	Pg	21 06 23.4	+0.1
DEMI				*i* S	Sg	21 06 27.9	+0.8
GDZ	**Gediz**	**0.32**	**88**	P	Pg	21 06 20.2	-4.0
GDZ				S	Sg	21 06 28.7	+0.2
GDZ	**Gediz**	**0.32**	**88**	*i* P	Pg	21 06 20.2	-4.1
GDZ				*i* S	Sg	21 06 28.7	+0.2
MANT	**Manisa**	**0.71**	**214**	P	Pg	21 06 32.0	+0.4
MANT				S	Sg	21 06 41.0	+0.1
MANT	**Manisa**	**0.71**	**214**	*i* P	Pg	21 06 32.0	+0.4
MANT				*i* S	Sg	21 06 41.0	+0.2
AKHS	**Akhisar**	**1.00**	**259**	P	Pb	21 06 37.6	+0.1
AKHS				S	Sb	21 06 51.7	+0.8
AKHS	**Akhisar**	**1.00**	**259**	*i* P	Pb	21 06 37.6	+0.1
AKHS				*i* S	Sb	21 06 51.7	+0.8
UZP	**Denizli**	**1.05**	**175**	*i* P	Pn	21 06 44.8	+5.7
UZP				*i* S	Sn	21 06 59.1	+5.0

IDC 19 21:06:24.4±2.6, 1°.44S×134°.71E, h0km, mb3.3/2, mb1 3.7/4, mb1mx3.4/41, mbtmp3.5/4, ML3.6/2, Error ellipse: s-maj=99.4km s-min=25.2km az=82.0, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**18.40**	**181**	P	Pn	21 10 40.5	-0.6
	0.1nm,0.3s,baz=360,slow=12,SNR=9.0						
FITZ	**Fitzroy Crossi**	**18.81**	**208**	P	P	21 10 45.8	+0.2
	0.2nm,0.3s,baz=31,slow=11,SNR=9.4						
ASAR	**Alice Springs**	**22.11**	**182**	P	P	21 11 21.8	+0.2
	1.2nm,0.6s,baz=6.5,slow=12,SNR=20						
MKAR	**Makanchi Array**	**66.37**	**324**	P	P	21 17 15.1	-0.1
	0.1nm,0.3s,baz=101,slow=7.5,SNR=2.8						

*DDA **19** 21:06:45.7, 39°.13N×29°.11E, h7km, Ml3.8*
*ISCJB **19** 21:06:46.3±0.4, 39°.11N±0°.02×29°.11E±0°.03, h9km±4km, Error ellipse: s-maj=4.3km s-min=3.6km az=9.7*
*ISK **19** 21:06:46.1, 39°.11N×29°.14E, h5km, MD3.1*
*CSEM **19** 21:06:46.4±0.1, 39°.11N×29°.12E, h2km, ML3.8, Error ellipse: s-maj=2.2km s-min=1.6km az=107.0*

ISC 19 21:06:46.6±1.0, 39°.12N±0°.02×29°.12E±0°.02, h8km±11km, n67, σ1§12/80, 3C-3D, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.28**	**96**	P	**Pg**	**21 06 52.1**	**-0.2**
GDZ				S	**Sg**	**21 06 56.0**	**0.0**
GDZ	**Gediz**	**0.28**	**96**	*i* P	**Pg**	**21 06 52.1**	**-0.2**
GDZ				*i* S	**Sg**	**21 06 56.0**	**0.0**
DEMI	**Demirci**	**0.32**	**256**	P	**Pg**	**21 06 53.0**	**+0.1**
DEMI				S	**Sg**	**21 06 57.7**	**+0.4**
DEMI	**Demirci**	**0.32**	**256**	*i* P	**Pg**	**21 06 53.0**	**+0.1**
DEMI				*i* S	**Sg**	**21 06 57.6**	**+0.4**
TVSB	**Tavsanli**	**0.42**	**39**	PG	**Pg**	**21 06 54.8**	**-0.1**
TVSB	**Tavsanli**	**0.42**	**39**	*i* Pg	**Pg**	**21 06 54.8**	**-0.1**
KULA	**Kula-Manisa**	**0.70**	**211**	PG	**Pg**	**21 07 00.0**	**-0.1**
KULA				*e*SG	**Sb**	**21 07 10.4**	**-0.7**
KULA	**Kula-Manisa**	**0.70**	**211**	*i* Pg	**Pg**	**21 07 00.0**	**-0.1**
KULA				*e*Sg	**Sb**	**21 07 10.4**	**-0.7**
MANT	**Manisa**	**0.77**	**215**	P	**Pg**	**21 07 00.9**	**-0.4**
MANT				S	**Sg**	**21 07 11.0**	**-0.4**
MANT	**Manisa**	**0.77**	**215**	*i* P	**Pg**	**21 07 00.9**	**-0.4**
MANT				*i* S	**Sg**	**21 07 11.0**	**-0.4**
KHAL	**Karahalli**	**0.80**	**159**	P	**Pg**	**21 07 01.9**	**-0.1**
KHAL				S	**Sg**	**21 07 12.3**	**-0.2**
KHAL	**Karahalli**	**0.80**	**159**	*i* P	**Pg**	**21 07 01.9**	**-0.1**
KHAL				*i* S	**Sg**	**21 07 12.3**	**-0.2**
KHL	**Karahalli**	**0.86**	**158**	*e*PG	**Pg**	**21 07 03.0**	**-0.1**
KHL				*e*SG	**Sg**	**21 07 14.6**	**+0.4**
ORLT	**Orhaneli**	**0.94**	**350**	*e*PG	**Pg**	**21 07 04.6**	**-0.1**
ORLT				*e*SG	**Sb**	**21 07 18.1**	**+0.2**
ORLT	**Orhaneli**	**0.94**	**350**	*e*Pg	**Pg**	**21 07 04.6**	**-0.1**
ORLT				*e*Sg	**Sb**	**21 07 18.1**	**+0.2**
AKS	**Akhisar**	**1.05**	**257**	*e*PG	**Pg**	**21 07 06.7**	**0.0**
AKS	**Akhisar**	**1.05**	**257**	*e*Pg	**Pg**	**21 07 06.7**	**0.0**
BALB	**Balikesir**	**1.09**	**299**	*e*PN	**Pn**	**21 07 08.2**	**+0.1**
BALB	**Balikesir**	**1.09**	**299**	*e*Pn	**Pn**	**21 07 08.3**	**+0.1**
CAVI	**Cavuskoy**	**1.22**	**27**	*e*PN	**Pg**	**21 07 09.7**	**-0.3**
IZI	**Iznik**	**1.25**	**13**	*e*PN	**Pn**	**21 07 10.9**	**+0.4**
IZI	**Iznik**	**1.25**	**13**	*e*Pn	**Pn**	**21 07 10.9**	**+0.4**
MDNY	**Mudanya-Bursa**	**1.26**	**352**	*e*PN	**Pb**	**21 07 10.6**	**0.0**
MDNY	**Mudanya-Bursa**	**1.26**	**352**	*e*Pn	**Pb**	**21 07 10.6**	**0.0**
KCTX	**Karacabey (Bur**	**1.29**	**333**	*e*PN	**Pg**	**21 07 11.7**	**+0.4**
KCTX	**Karacabey (Bur**	**1.29**	**333**	*e*Pn	**Pg**	**21 07 11.7**	**+0.4**
GEMT	**Gemlik**	**1.31**	**2**	*e*PN	**Pg**	**21 07 11.7**	**-0.1**
GEMT	**Gemlik**	**1.31**	**2**	*e*Pn	**Pg**	**21 07 11.7**	**-0.1**
ADVT	**Abdulvahap**	**1.40**	**20**	*e*PN	**Pg**	**21 07 13.3**	**-0.1**
ADVT	**Abdulvahap**	**1.40**	**20**	*e*Pn	**Pg**	**21 07 13.3**	**-0.1**
GONE	**Gonen-Balikesi**	**1.44**	**310**	*e*PN	**Pg**	**21 07 14.1**	**-0.1**
GONE	**Gonen-Balikesi**	**1.44**	**310**	*e*Pn	**Pg**	**21 07 14.1**	**-0.1**
ARMT	**Armutlu**	**1.46**	**352**	*e*PN	**Pg**	**21 07 14.4**	**-0.1**
ARMT	**Armutlu**	**1.46**	**352**	*e*Pn	**Pg**	**21 07 14.4**	**-0.1**
GPA	**Golpazari**	**1.48**	**38**	*e*PN	**Pn**	**21 07 13.7**	**0.0**
EDC	**Edincik**	**1.56**	**322**	*e*PN	**Pn**	**21 07 14.9**	**+0.2**
EDC	**Edincik**	**1.56**	**322**	*e*Pn	**Pn**	**21 07 14.9**	**+0.2**
GULT	**Gulveren**	**1.69**	**39**	*e*PN	**Pn**	**21 07 16.6**	**0.0**
ISP	**Isparta**	**1.70**	**139**	‖ *i* P	**Pn**	**21 07 12.7**	**-4.0**
ISP	**Isparta**	**1.70**	**139**	S	**Sg**	**21 07 44.3**	**+3.0**
HRT	**Hereke**	**1.75**	**14**	*e*PN	**Pn**	**21 07 17.7**	**+0.4**
HRT	**Hereke**	**1.75**	**14**	*e*Pn	**Pn**	**21 07 17.7**	**+0.4**
SPNC	**Sapanca-Adapaz**	**1.81**	**30**	*e*PN	**Pn**	**21 07 18.9**	**+0.7**
SPNC	**Sapanca-Adapaz**	**1.81**	**30**	*e*Pn	**Pn**	**21 07 18.9**	**+0.7**
SVRH	**Sivrihisar-ESK**	**1.89**	**79**	*e*PN	**Pn**	**21 07 19.6**	**+0.2**
SVRH	**Sivrihisar-ESK**	**1.89**	**79**	*e*Pn	**Pn**	**21 07 19.6**	**+0.2**
ISK	**Istanbul-Kandi**	**1.94**	**359**	*e*PN	**Pn**	**21 07 21.1**	**+1.1**
ISK	**Istanbul-Kandi**	**1.94**	**359**	*e*Pn	**Pn**	**21 07 21.1**	**+1.1**
SILT	**Sile**	**2.07**	**11**	*e*PN	**Pn**	**21 07 22.3**	**+0.6**
SILT	**Sile**	**2.07**	**11**	*e*Pn	**Pn**	**21 07 22.3**	**+0.6**
MDUB	**Mudurnu**	**2.09**	**49**	*e*PN	**Pn**	**21 07 22.8**	**+0.7**
KDZ	**Kurdzhali**	**3.79**	**313**	P	**Pn**	**21 07 45.4**	**0.0**
JMB	**Yambol**	**3.86**	**331**	P	**Pn**	**21 07 46.8**	**+0.6**
DIM	**Dimitrovgrad**	**4.00**	**318**	P	**Pn**	**21 07 48.0**	**-0.2**
RZN	**Rozhen**	**4.23**	**309**	P	**Pn**	**21 07 56.0**	**+4.5**
PRD	**Provadia**	**4.28**	**343**	P	**Pn**	**21 07 56.6**	**+4.6**
PLD	**Plovdiv**	**4.49**	**313**	P	**Pn**	**21 07 55.0**	**0.0**
SZH	**Strazhica**	**4.79**	**331**	P	**Pn**	**21 07 58.6**	**-0.5**
LAST	**Lasithi**	**4.91**	**217**	‖ *i* P	**Pn**	**21 08 01.8**	**+1.0**
TIRR	**Tirgusor**	**5.36**	**355**	S	**Pn**	**21 08 06.8**	**-0.1**
TIRR	**Tirgusor**	**5.36**	**355**	S	**Sg**	**21 09 34.9**	**-3.7**
CFR	**Carcaliu**	**6.10**	**353**	S	**Pn**	**21 08 15.9**	**-1.1**
CFR	**Carcaliu**	**6.10**	**353**	S	**Sb**	**21 09 44.9**	**-1.2**
ARR	**Arges**	**7.07**	**333**	‖ *i* P	**Pn**	**21 09 30.5**	**0.0**
DOPR	**Dopca**	**7.38**	**339**	‖ *i* P	**Pn**	**21 08 34.9**	**+0.3**
BZS	**Buzias**	**8.54**	**322**	‖ *i* P	**Pn**	**21 08 49.4**	**-1.1**
BURAR	**Bucovina Array**	**8.95**	**343**	‖ *i* P	**Pn**	**21 08 57.3**	**+1.0**

*ISCJB **19** 21:07:00.5±0.3, 57°.95S±0°.05×25°.5W±0°.1, h49km,*
mb5.0/34, Error ellipse: s-maj=10.8km s-min=6.7km az=152.4
*NEIC **19** 21:07:06.6±1.5, 58°.03S×25°.60W, h86km±12km, mb5.0/24, Error ellipse: s-maj=10.9km s-min=6.9km az=54.0*
*IDC **19** 21:07:07.0±5.7, 57°.95S×25°.52W, h90km±49km, mb4.6/11, mb1 4.7/12, mb1mx4.4/22, mbtmp4.9/12, Error ellipse: s-maj=22.1km s-min=15.1km az=82.0*

ISC 19 21:07:02.3±0.3, 57°.99S±0°.08×25°.54W±0°.08, h49km, n95, σ1§29/100, mb5.0/34, 1C, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HOPE	**Hope Point**	**7.16**	**297**	*e*Pn	**Pn**	21 08 49.6	+5.4
VNA1	**Neumayer--Stat**	**14.65**	**157**	P	**Pn**	**21 10 25.4**	**-0.8**
VNA3	**Neumayer Olymp**	**14.85**	**160**	P	**Pn**	**21 10 27.2**	**-1.6**
VNA2	**Neumayer--Watz**	**15.05**	**157**	P	Pn	21 10 22.4	-9.0
	baz=329,slow=13						
SNAA	**Sanae**	**16.59**	**155**	P	**Pn**	**21 10 51.0**	**-0.2**
SNAA	**Sanae**	**16.59**	**155**	*e*Pn	**Pn**	**21 10 50.6**	**-0.6**
	2μm,1.0s						
PMSA	**Palmer Station**	**19.39**	**234**	P	**Pn**	**21 11 27.0**	**+1.9**
	2.7nm,0.3s,baz=86,slow=6.0,SNR=10						
USHA	**Ushuaia**	**23.64**	**259**	P	**P**	**21 12 10.3**	**+1.7**
	58nm,0.6s,baz=92,slow=12,SNR=9.3						
SYO	**Syowa Base**	**29.52**	**138**	‖ *e*P	**P**	**21 12 58.4**	**-3.0**
CHRN	**Cochrane**	**29.91**	**270**	*e*P	**P**	**21 13 06.0**	**+0.9**
	6.3nm,0.9s						
QSPA	**South Pole Qui**	**32.25**	**180**	*e*P	**P**	**21 13 26.4**	**+0.6**
	55nm,0.6s						
PLCA	**Paso Flores**	**33.25**	**281**	P	**P**	**21 13 34.7**	**+0.1**
	11nm,0.8s,baz=163,slow=5.7,SNR=21						
PLCA				PcP	**PcP**	**21 16 16.1**	**+0.2**
	2.3nm,0.7s,baz=103,slow=1.8,SNR=3.5						
PLCA	**Paso Flores**	**33.25**	**281**	*e*P	**P**	**21 13 34.3**	**-0.3**
	13nm,0.8s						
PLCA				PcP	**PcP**	**21 16 16.1**	**+0.2**
SPB	**Sao Paulo**	**37.80**	**326**	*e*P	**P**	**21 14 14.2**	**+0.6**
	98nm,1.4s						
MAW	**Mawson**	**38.05**	**142**	*e*P	**P**	**21 14 15.7**	**+0.3**
	1.2nm,0.8s						
CPUP	**Villa Florida**	**38.77**	**311**	P	**P**	**21 14 21.4**	**-0.4**
	5.9nm,0.6s,baz=161,slow=7.9,SNR=13						
CPUP				PcP	**PcP**	**21 16 32.9**	**+0.5**
	3.9nm,0.5s,baz=172,slow=1.6,SNR=7.3						
CPUP	**Villa Florida**	**38.77**	**311**	*e*P	**P**	**21 14 21.8**	**0.0**
CPUP				PcP	**PcP**	**21 16 32.9**	**+0.5**
SBA	**Scott Base**	**44.20**	**184**	*e*P	**P**	**21 15 06.4**	**+0.8**
	12nm,0.8s						
VNDA	**Vanda**	**44.67**	**182**	P	**P**	**21 15 10.8**	**+1.5**
	13nm,0.6s,baz=184,slow=6.7,SNR=107						
VNDA	**Vanda**	**44.67**	**182**	*e*P	**P**	**21 15 10.4**	**+1.0**
	13nm,0.6s						
LVC	**Limon Verde**	**47.06**	**300**	*e*P	**P**	**21 15 28.7**	**-0.6**
	6.9nm,0.9s						
PB04	**IPOC Station P**	**47.87**	**299**	*e*P	**P**	**21 15 34.8**	**-0.6**
	19nm,1.0s						
PB01	**IPOC Station P**	**48.68**	**300**	*e*P	**P**	**21 15 41.2**	**-0.3**
	7.6nm,0.7s						
H10S2	**ASCENSION HYDR**	**49.63**	**14**	T	T	22 10 23.7	
	baz=188,slow=75,SNR=28						
H10S3	**ASCENSION HYDR**	**49.64**	**14**	T	T	22 10 24.5	
	baz=188,slow=75,SNR=24						
H10S1	**ASCENSION HYDR**	**49.65**	**14**	T	T	22 10 25.9	
	baz=188,slow=75,SNR=48						
PB11	**IPOC Station P**	**49.87**	**301**	*e*P	**P**	**21 15 50.3**	**-0.4**
	12nm,1.0s						
TSUM	**Tsumeb**	**49.90**	**58**	*e*P	**P**	**21 15 53.9**	**+3.0**
	11nm,1.5s						
H10N1	**ASCENSION HYDR**	**50.75**	**14**	T	T	22 11 47.0	
	baz=187,slow=75,SNR=13						
H10N3	**ASCENSION HYDR**	**50.76**	**14**	T	T	22 11 48.3	
	baz=187,slow=75,SNR=36						
H10N2	**ASCENSION HYDR**	**50.77**	**14**	T	T	22 11 49.1	
	baz=187,slow=75,SNR=27						
CASY	**Casey**	**51.77**	**159**	*e*P	**P**	**21 16 05.4**	**+1.2**
	42nm,2.0s						
LPAZ	**La Paz**	**52.23**	**305**	P	**P**	**21 16 09.0**	**+0.1**
	7.1nm,0.5s,baz=141,slow=5.3,SNR=32						
LPAZ				PcP	**PcP**	**21 17 19.4**	**-0.5**
	4.7nm,0.5s,baz=58,slow=4.0,SNR=7.2						
LPAZ	**La Paz**	**52.23**	**305**	*e*P	**P**	**21 16 08.5**	**-0.5**
	7.7nm,0.6s						
LPAZ				PcP	**PcP**	**21 17 19.4**	**-0.5**
SAML	**Samuel**	**56.81**	**314**	*e*P	**P**	**21 16 39.3**	**-2.2**
	23nm,0.6s						
LSZ	**Lusaka**	**58.28**	**66**	*e*P	**P**	**21 16 54.0**	**+2.0**
	6.4nm,1.1s						
NNA	**Nana**	**59.97**	**298**	*e*P	**P**	**21 17 02.5**	**-1.0**
	94nm,1.2s						
PTGA	**Pitinga**	**63.26**	**321**	*e*P	**P**	**21 17 25.6**	**0.0**
	11nm,0.6s						
LIC	**Lamto**	**66.12**	**22**	*e*P	**P**	**21 17 44.0**	**-0.2**
	92nm,1.8s						
KIC	**Kosan Boka**	**66.31**	**23**	*e*P	**P**	**21 17 45.5**	**+0.1**
	26nm,0.8s						
TIC	**Toumodi**	**66.53**	**22**	*e*P	**P**	**21 17 46.8**	**-0.1**
DBIC	**Dimbokro**	**66.59**	**22**	P	**P**	**21 17 47.4**	**+0.2**
	9.1nm,0.5s,baz=167,slow=6.6,SNR=28						
DBIC	**Dimbokro**	**66.59**	**22**	*e*P	**P**	**21 17 47.4**	**+0.2**
	20nm,1.0s						
OTAV	**Otavalo**	**71.48**	**303**	*e*P	**P**	**21 18 16.5**	**-1.6**
	32nm,1.8s						
TOA0	**Torodi Ar. Sit**	**74.33**	**28**	*e*P	**P**	**21 18 34.8**	**+0.4**
TORD	**Torodi Ar. Bea**	**74.33**	**28**	P	**P**	**21 18 34.7**	**+0.3**
	17nm,0.6s,baz=198,slow=6.3,SNR=146						
SDV	**Santo Domingo**	**76.02**	**314**	*e*P	**P**	**21 18 44.9**	**+0.5**
	13nm,0.8s						
RPZ	**Rata Peaks**	**77.72**	**192**	P	**P**	**21 18 53.5**	**+0.1**
	17nm,0.8s,baz=352,slow=6.7,SNR=5.6						
THZ	**Tophouse**	**79.42**	**194**	*e*P	**P**	**21 19 02.8**	**-0.1**
	38nm,0.6s						
URZ	**Urewera**	**82.24**	**198**	P	**P**	**21 19 17.9**	**0.0**
	5.7nm,0.5s,baz=172,slow=3.3,SNR=4.0						
STVI	**Saint Thomas**	**82.77**	**323**	*e*P	**P**	**21 19 20.2**	**-0.5**
	42nm,0.6s						
HUMP	**Col San Antoni**	**82.86**	**322**	*e*P	**P**	**21 19 21.3**	**+0.1**
	25nm,0.6s						
CBYP	**Canovanas**	**82.99**	**322**	*e*P	**P**	**21 19 21.9**	**0.0**
	34nm,0.7s						
STKA	**Stephens Creek**	**89.83**	**169**	P	**P**	**21 19 55.1**	**-0.3**
	2.8nm,0.7s,baz=169,slow=3.4,SNR=6.4						
ASAR	**Alice Springs**	**96.86**	**161**	P	**P**	**21 20 27.1**	**-0.9**
	2.2nm,0.7s,baz=182,slow=3.8,SNR=20						
AS01	**Alice Springs**	**96.87**	**161**	*e*P	**P**	**21 20 26.7**	**-1.3**
WRA	**Warramunga Arr**	**100.57**	**161**	P	**Pdif**	**21 20 43.5**	**-1.1**
	0.5nm,0.7s,baz=200,slow=4.3,SNR=3.8						
BNI	**Bardonecchia**	**106.12**	**23**	*e*PKP	**PKiKP**	**21 25 22.5**	**+2.4**
PDAR	**Pinedale Array**	**122.12**	**300**	PKP	**PKPdf**	**21 25 50.0**	**-0.7**
	0.6nm,0.4s,baz=113,slow=5.1,SNR=14						
HWUT	**Hardware Ranch**	**122.16**	**298**	*e*PKPdf	**PKPdf**	**21 25 51.0**	**+0.2**
ULM	**Lac du Bonnet**	**122.27**	**314**	PKP	**PKPdf**	**21 25 49.3**	**-1.1**
	4.7nm,0.7s,baz=166,slow=1.2,SNR=5.1						
NVAR	**Mina Array Bea**	**122.96**	**291**	PKP	**PKPdf**	**21 25 53.2**	**+0.7**
	1.3nm,0.7s,baz=173,slow=1.9,SNR=6.8						
LOHW	**Long Hollow**	**123.26**	**300**	*e*PKPdf	**PKPdf**	**21 25 53.3**	**+0.4**
MOOW	**Moose Ponds**	**123.43**	**300**	*e*PKPdf	**PKPdf**	**21 25 53.6**	**+0.4**
CMAR	**Chiang Mai Arr**	**123.54**	**110**	PKP	**PKPdf**	**21 25 53.6**	**-0.3**
	3.0nm,0.7s,baz=229,slow=3.8,SNR=21						
IMW	**Indian Meadow**	**123.64**	**300**	*e*PKPdf	**PKPdf**	**21 25 54.4**	**+0.7**
FINES	**FINESS Array B**	**125.69**	**28**	PKP	**PKPdf**	**21 25 56.0**	**-0.6**
	2.9nm,0.5s,baz=148,slow=2.4,SNR=37						
ABKAR	**Akbulak array**	**127.73**	**56**	*e*PKPdf	**PKPdf**	**21 26 00.4**	**-0.5**
AKTO	**Aktyubinsk**	**127.77**	**53**	PKP	**PKPdf**	**21 25 59.8**	**-1.2**
	2.2nm,0.9s,baz=208,slow=1.6,SNR=7.1						
KKAR	**Karatay Array**	**128.12**	**68**	*e*PKPdf	**PKPdf**	**21 26 01.4**	**-0.5**
KSH	**Kashi**	**128.21**	**75**	*e*PKP	**PKPdf**	**21 26 01.9**	**-0.5**
KSH				*es*PKP		21 26 39.8	
KSH				*e*PP	**PP**	**21 28 04.0**	**-3.5**
KSH				PKS	**PKSdf**	**21 29 37.0**	**-2.0**
KSH				SKS	**SKSac**	**21 33 02.9**	**-2.5**
KSH				SKKS	SKKSac	21 34 45.1	-15
KSH				AMB	AMB		
	comp=Z,590nm,17.1s						
KSH				LR	LR		
	comp=N,310nm,8.0s						
KSH				LR	LR		
	comp=E,240nm,9.2s						
KSH				LR	LR		
	comp=Z,160nm,7.4s						
ARCES	**ARCESS Array B**	**132.42**	**22**	PKP	**PKPdf**	**21 26 08.9**	**-0.4**
	comp=Z,1.4nm,0.5s,baz=215,slow=1.5,SNR=14						
GYA	**Guiyang**	**134.09**	**112**	*e*Pdif	**Pdif**	**21 23 12.8**	**-0.6**
GYA				PKP	**PKPdf**	**21 26 13.0**	**-0.9**
GYA				sPKP		21 26 59.4	
GYA				PP	**PP**	**21 28 50.0**	**+4.8**
GYA				AMB	AMB		
	comp=Z,120nm,7.9s						
CD2	**Chengdu**	**136.26**	**106**	PKP	**PKPdf**	**21 26 17.4**	**-0.3**
MKAR	**Makanchi Array**	**136.63**	**72**	PKhKP	PKPpre	21 26 08.9	
	comp=Z,0.4nm,0.6s,baz=269,slow=1.9,SNR=4.4						
MKAR				PKP	**PKPdf**	**21 26 17.6**	**-0.3**
	comp=Z,1.0nm,0.6s,baz=244,slow=4.3,SNR=8.6						
YKA	**Yellowknife Ar**	**138.21**	**316**	PKhKP	PKPpre	21 26 11.3	
	comp=Z,3.7nm,0.8s,baz=120,slow=3.4,SNR=8.1						
YKA				PKP	**PKPdf**	**21 26 20.5**	**+0.3**
	comp=Z,902nm,0.8s,baz=130,slow=2.3,SNR=45						
LZH	**Lanzhou**	**140.36**	**101**	*e*PKP	**PKPdf**	**21 26 30.5**	**+5.2**
LZH				sPKP		21 27 11.3	
ZALV	**Zalesovo Beam**	**142.39**	**65**	PKhKP	PKPpre	21 26 23.5	
	comp=Z,0.9nm,0.3s,baz=222,slow=4.0,SNR=4.5						
ZALV				PKP	**PKPdf**	**21 26 28.4**	**+0.3**
	comp=Z,0.8nm,0.4s,baz=231,slow=2.1,SNR=4.4						
SKAG	**Skagway**	**145.06**	**303**	*e*PKPbc	**PKPdf**	**21 26 33.0**	**+0.4**
INK	**Inuvik**	**147.87**	**318**	PKPbc	**PKPbc**	**21 26 39.1**	**-1.0**
	comp=Z,18nm,0.6s,baz=86,slow=2.3,SNR=54						
BJI	**Beijing**	**149.69**	**110**	PKiKP	**PKPab**	**21 26 48.3**	**-2.7**
EGAK	**Eagle**	**149.70**	**310**	*e*PKPbc	**PKPbc**	**21 26 45.2**	**+0.4**
BMRM	**Bremner River**	**149.89**	**302**	*e*PKPbc	**PKPbc**	**21 26 46.5**	**+1.0**
SONM	**Songino Array**	**149.91**	**89**	PKPbc	**PKPbc**	**21 26 45.6**	**-0.5**
	comp=Z,9.7nm,0.7s,baz=226,slow=3.0,SNR=47						
NRIK	**Noril'sk**	**149.93**	**41**	PKPbc	**PKPbc**	**21 26 44.3**	**-1.0**
	comp=Z,3.7nm,0.5s,baz=142,slow=2.8,SNR=5.1						
ULN	**Ulaanbaatar**	**150.28**	**89**	*e*PKPbc	**PKPbc**	**21 26 46.4**	**-0.6**
DIV	**Divide**	**150.48**	**302**	*e*PKPbc	**PKPbc**	**21 26 47.9**	**+1.0**
DOT	**Dot Lake**	**150.57**	**307**	*e*PKPbc	**PKPbc**	**21 26 47.8**	**+0.7**
PAX	**Paxson**	**150.96**	**305**	*e*PKPbc	**PKPbc**	**21 26 48.6**	**+0.6**
SML	**Sawmill**	**151.87**	**302**	*e*PKPbc	**PKPbc**	**21 26 50.8**	**+0.7**
ILAR	**Eielson Array**	**152.06**	**309**	PKP	**PKPdf**	**21 26 41.7**	**-2.1**
	comp=Z,0.5nm,0.7s,baz=70,slow=0.8,SNR=4.8						
ILAR				PKPbc	**PKiKP**	**21 26 50.5**	**-0.2**
	comp=Z,13nm,0.8s,baz=132,slow=3.9,SNR=72						
COLA	**College**	**152.49**	**309**	*e*PKPbc	**PKPbc**	**21 26 51.6**	**+0.3**
COLA				*e*PKPab	**PKPab**	**21 27 02.7**	**+0.7**
MCK	**McKinley**	**152.68**	**306**	*e*PKPbc	**PKPbc**	**21 26 52.4**	**+0.6**
KSRS	**Korea Array**	**153.09**	**128**	PKPbc	**PKPbc**	**21 26 52.5**	**-1.0**
	comp=Z,1.9nm,0.6s,baz=201,slow=2.5,SNR=7.4						

GPA	Golpazari	1.55	41	ePN	Pb	21 09 35.4	+0.1
HRT	Hereke	1.78	17	ePN	Pb	21 09 38.5	-0.7
HRT	Hereke	1.78	17	ePN	Pb	21 09 38.5	-0.7

IDC ***19*** *21:12:49.2±0.6,39°.07N×28°.98E,h0km,mb4.1/18, mb1 4.2/31,mb1mx4.1/50,mbtmp4.1/31,ML3.6/13,MS3.6/4, Ms1 3.6/4,ms1mx3.3/49,Error ellipse: s-maj=12.5km s-min=9.5km az=9.0*

ISN ***19*** *21:12:49.9±1.2,39°.15N×29°.13E,h0km±108km,ML4.6*

MOS ***19*** *21:12:50.1±1.1,39°.15N×29°.05E,h8km,mb4.6/20,Error ellipse: s-maj=4.5km s-min=3.7km az=99.1*

ISK ***19*** *21:12:50.9,39°.11N×29°.04E,h6km,ML4.6*

ISCJB ***19*** *21:12:50.6±0.3,39°.09N±0°.01×29°.06E±0°.01,h11km±2km, mb4.3/37,MS3.9/1,Error ellipse: s-maj=1.8km s-min=1.7km az=135.6*

DDA ***19*** *21:12:50.7,39°.11N×29°.04E,h8km,Ml4.8*

CSEM ***19*** *21:12:51.3±0.1,39°.09N×29°.07E,h5km,mb4.5/16,Error ellipse: s-maj=1.7km s-min=1.6km az=47.0*

NEIC ***19*** *21:12:51.0,39°.12N×29°.04E,h7km,mb4.3/10, ML4.6(THE),ML4.6(ISK),After ISK.*

NEIC Felt [IV] at Kutahya; [III] at Bursa, Buyukcekmece and Izmir; [II] at Istanbul. Also felt at Adapazari, Antalya, Balikesir, Corlu, Esenyurt, Eskisehir, Mudanya, Selcuk, Sindirgi, Soma, Sultanbeyli, Tire and Usak.

THE ***19*** *21:12:52.0,39°.09N×29°.01E,h0km±1km,ML4.6/5,Error ellipse: s-maj=2.1km s-min=1.1km az=57.0*

NIC ***19*** *21:12:53.0±0.3,38°.99N×28°.83E,h25km,mb4.7,ML4.3*

GII ***19*** *21:12:53.7±0.2,38°.79N×28°.84E,h10km,mb4.2/1, MD3.8/2*

ISC 19 21:12:51.5±0.9,**39°.11N**±0°.02×**29°.04E**±0°.01,**h9**km±5km, **n701**,σ1°**23**/786,**mb4.3**/37,**53C-43D**,**Turkey**

Code	Station Name	Δ°	AZ°	Phase Op	ID	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**256**	P		**Pg**	**21 12 56.6**	**-0.1**
DEMI				S		**Sg**	**21 13 00.6**	**+0.3**
DEMI	**Demirci**	**0.26**	**256**	⇑iP		**Pg**	**21 12 56.6**	**-0.1**
DEMI				*i* S		**Sg**	**21 13 00.6**	**+0.3**
GDZ	**Gediz**	**0.34**	**93**	P		**Pg**	**21 12 58.3**	**0.0**
GDZ				S		**Sg**	**21 13 03.2**	**+0.4**
GDZ	**Gediz**	**0.34**	**93**	⇑iP		**Pg**	**21 12 58.3**	**0.0**
GDZ				*i* S		**Sg**	**21 13 03.2**	**+0.4**
TVSB	**Tavsanli**	**0.47**	**43**	PG		**Pg**	**21 13 00.4**	**-0.3**
TVSB	**Tavsanli**	**0.47**	**43**	*i* Pg		**Pg**	**21 13 00.4**	**-0.3**
DURS	**Dursunbey**	**0.66**	**318**	P		**Pg**	**21 13 03.7**	**-0.5**
DURS				S		**Sg**	**21 13 12.9**	**0.0**
DURS	**Dursunbey**	**0.66**	**318**	⇑iP		**Pg**	**21 13 03.7**	**-0.5**
DURS				*i* S		**Sg**	**21 13 12.9**	**0.0**
KULA	**Kula-Manisa**	**0.66**	**207**	PG		**Pg**	**21 13 03.8**	**-0.4**
KULA	**Kula-Manisa**	**0.66**	**207**	P		**Pg**	**21 13 04.1**	**-0.1**
KULA				S		**Sg**	**21 13 12.9**	**0.0**
KULA	**Kula-Manisa**	**0.66**	**207**	*i* Pg		**Pg**	**21 13 03.8**	**-0.4**
KULA	**Kula-Manisa**	**0.66**	**207**	P		**Pg**	**21 13 04.1**	**-0.1**
KULA				S		**Sg**	**21 13 12.9**	**0.0**
KULA	**Kula-Manisa**	**0.66**	**207**	P		**Pg**	**21 13 04.1**	**-0.1**
KULA				S		**Sg**	**21 13 12.9**	**0.0**
MANT	**Manisa**	**0.72**	**212**	P		**Pg**	**21 13 04.9**	**-0.5**
MANT				S		**Sg**	**21 13 14.7**	**-0.1**
MANT	**Manisa**	**0.72**	**212**	⇑iP		**Pg**	**21 13 04.9**	**-0.5**
MANT				*i* S		**Sg**	**21 13 14.7**	**-0.1**
KHAL	**Karahalli**	**0.81**	**154**	P		**Pg**	**21 13 07.1**	**0.0**
KHAL				S		**Sg**	**21 13 17.0**	**-0.7**
KHAL	**Karahalli**	**0.81**	**154**	⇑iP		**Pg**	**21 13 07.1**	**0.0**
KHAL				*i* S		**Sg**	**21 13 17.0**	**-0.7**
KHL	**Karahalli**	**0.87**	**154**	*e*PG		**Pg**	**21 13 08.3**	**+0.1**
KHL	**Karahalli**	**0.87**	**154**	*e*Pg		**Pg**	**21 13 08.3**	**+0.1**
ORLT	**Orhaneli**	**0.94**	**353**	*e*PG		**Pg**	**21 13 09.2**	**-0.5**
ORLT	**Orhaneli**	**0.94**	**353**	*e*Pg		**Pg**	**21 13 09.2**	**-0.5**
AKHS	**Akhisar**	**0.98**	**257**	P		**Pg**	**21 13 09.9**	**-0.4**
AKHS				S		**Sb**	**21 13 23.7**	**-0.1**
AKHS	**Akhisar**	**0.98**	**257**	⇑iP		**Pg**	**21 13 09.9**	**-0.4**
AKHS				*i* S		**Sb**	**21 13 23.7**	**-0.1**
AKS	**Akhisar**	**0.98**	**257**	*e*PG		**Pg**	**21 13 10.5**	**+0.1**
AKS	**Akhisar**	**0.98**	**257**	*e*Pg		**Pg**	**21 13 10.5**	**+0.1**
BALB	**Balikesir**	**1.05**	**301**	*e*PG		**Pg**	**21 13 11.7**	**+0.1**
BALB				*e*SG		**Sn**	**21 13 26.5**	**-0.6**
BALB	**Balikesir**	**1.05**	**301**	*e*Pg		**Pg**	**21 13 11.7**	**+0.1**
BALB				*e*Sg		**Sn**	**21 13 26.5**	**-0.6**
IGD	**Bursa**	**1.16**	**6**	⇑iP		**Pb**	**21 13 11.6**	**-2.2**
IGD				*i* S		**Sb**	**21 13 28.9**	**0.0**
CAVI	**Cavuskoy**	**1.26**	**29**	*e*PN		**Pn**	**21 13 15.3**	**0.0**
CAVI				*e*SN		**Sn**	**21 13 32.5**	**+0.2**
CAVI	**Cavuskoy**	**1.26**	**29**	*e*Pn		**Pn**	**21 13 15.3**	**0.0**
CAVI				*e*Sn		**Sn**	**21 13 32.6**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.27**	**355**	*e*PN		**Pn**	**21 13 15.3**	**-0.1**
MDNY				*e*SN		**Sn**	**21 13 33.8**	**+1.2**
MDNY	**Mudanya-Bursa**	**1.27**	**355**	*e*Pn		**Pn**	**21 13 15.3**	**-0.1**
MDNY				*e*Sn		**Sn**	**21 13 33.8**	**+1.2**
BALY	**Balya**	**1.27**	**300**	P		**Pn**	**21 13 15.3**	**-0.2**
BALY				S		**Sn**	**21 13 33.8**	**+1.1**
BALY	**Balya**	**1.27**	**300**	⇓iP		**Pn**	**21 13 15.3**	**-0.2**
BALY				*i* S		**Sn**	**21 13 33.8**	**+1.1**
IZI	**Iznik**	**1.27**	**15**	*e*PN		**Pb**	**21 13 15.7**	**0.0**
IZI				*e*SN		**Sn**	**21 13 33.5**	**+0.6**
IZI	**Iznik**	**1.27**	**15**	*e*Pn		**Pb**	**21 13 15.7**	**0.0**
IZI				*e*Sn		**Sn**	**21 13 33.5**	**+0.6**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*PN		**Pn**	**21 13 15.0**	**-0.5**
KCTX				*e*SN		**Sn**	**21 13 33.8**	**+1.0**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*Pn		**Pn**	**21 13 15.0**	**-0.5**
KCTX				*e*Sn		**Sn**	**21 13 33.8**	**+1.0**
GEMT	**Gemlik**	**1.33**	**5**	*e*PN		**Pn**	**21 13 16.1**	**-0.2**
GEMT				*e*SN		**Sg**	**21 13 35.3**	**+1.0**
GEMT	**Gemlik**	**1.33**	**5**	*e*Pn		**Pn**	**21 13 16.1**	**-0.2**
GEMT				*e*Sn		**Sg**	**21 13 35.3**	**+1.0**
BORA	**Eskisehir**	**1.34**	**54**	P		**Pn**	**21 13 15.8**	**-0.7**
BORA				S		**Sg**	**21 13 34.6**	**+0.1**
BORA	**Eskisehir**	**1.34**	**54**	⇑iP		**Pn**	**21 13 15.8**	**-0.7**
BORA				*i* S		**Sg**	**21 13 34.6**	**+0.1**
DENT	**Denizli**	**1.35**	**180**	*e*PN		**Pn**	**21 13 16.6**	**+0.1**
DENT	**Denizli**	**1.35**	**180**	*e*Pn		**Pn**	**21 13 16.6**	**+0.1**
GONE	**Gonen-Balikesi**	**1.41**	**312**	*e*PN		**Pb**	**21 13 17.9**	**0.0**
GONE	**Gonen-Balikesi**	**1.41**	**312**	*e*Pn		**Pb**	**21 13 17.9**	**0.0**
DNZL	**Cakiroluk**	**1.41**	**180**	P		**Pn**	**21 13 17.1**	**-0.5**
DNZL				S		**Sg**	**21 13 37.7**	**+0.8**
DNZL	**Cakiroluk**	**1.41**	**180**	⇓iP		**Pn**	**21 13 17.1**	**-0.5**
DNZL				*i* S		**Sg**	**21 13 37.7**	**+0.8**
ADVT	**Abdulvahap**	**1.43**	**22**	*e*PN		**Pn**	**21 13 17.5**	**-0.1**
ADVT	**Abdulvahap**	**1.43**	**22**	*e*Pn		**Pn**	**21 13 17.5**	**-0.1**
ARMT	**Armutlu**	**1.46**	**355**	*e*PN		**Pn**	**21 13 17.6**	**-0.5**
ARMT	**Armutlu**	**1.46**	**355**	*e*Pn		**Pn**	**21 13 17.6**	**-0.5**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**218**	*e*PN		**Pn**	**21 13 17.8**	**-0.4**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**218**	*e*Pn		**Pn**	**21 13 17.8**	**-0.4**
GPA	**Golpazari**	**1.53**	**39**	*e*PN		**Pb**	**21 13 19.8**	**-0.3**
GPA	**Golpazari**	**1.53**	**39**	*e*Pn		**Pb**	**21 13 19.8**	**-0.3**
EDC	**Edincik**	**1.54**	**324**	*e*PN		**Pb**	**21 13 19.6**	**-0.5**
EDC	**Edincik**	**1.54**	**324**	*e*Pn		**Pb**	**21 13 19.6**	**-0.5**
BOLV	**Bolvadin**	**1.54**	**104**	P		**Pn**	**21 13 19.7**	**+0.5**
BOLV				S		**Sg**	**21 13 40.5**	**-0.4**
BOLV	**Bolvadin**	**1.54**	**104**	⇓iP		**Pn**	**21 13 19.7**	**+0.5**
BOLV				*i* S		**Sg**	**21 13 40.5**	**-0.4**
KNL	**Bal¨–kesir**	**1.65**	**315**	⇓iP		**Pn**	**21 13 19.5**	**-1.2**
KNL				*i* S		**Sb**	**21 13 43.5**	**+0.6**
DKL	**Dikili**	**1.66**	**269**	*e*PN		**Pn**	**21 13 21.2**	**+0.4**
DKL	**Dikili**	**1.66**	**269**	*e*Pn		**Pn**	**21 13 21.2**	**+0.4**
AYDN	**Tasoluk**	**1.71**	**213**	P		**Pn**	**21 13 21.2**	**-0.3**
AYDN				S		**Sg**	**21 13 46.7**	**+0.4**
AYDN	**Tasoluk**	**1.71**	**213**	⇓iP		**Pn**	**21 13 21.2**	**-0.3**
AYDN				*i* S		**Sg**	**21 13 46.7**	**+0.4**
ISP	**Isparta**	**1.73**	**137**	*e*PN		**Pn**	**21 13 22.2**	**+0.4**
ISP	**Isparta**	**1.73**	**137**	⇓iP		**Pn**	**21 13 21.6**	**-0.2**
ISP				S		**Sb**	**21 13 45.5**	**+0.1**
ISP	**Isparta**	**1.73**	**137**	P		**Pn**	**21 13 21.6**	**-0.2**
ISP				S		**Sn**	**21 13 44.7**	**+0.6**
ISP	**Isparta**	**1.73**	**137**	Pn		**Pn**	**21 13 21.3**	**-0.5**
ISP	**Isparta**	**1.73**	**137**	*e*P		**Pn**	**21 13 21.6**	**-0.2**
ISP				S		**Sn**	**21 13 44.7**	**+0.6**
ISP	**Isparta**	**1.73**	**137**	P		**Pn**	**21 13 21.6**	**-0.2**
ISP	**Isparta**	**1.73**	**137**	*e*Pn		**Pn**	**21 13 22.2**	**+0.4**
ISP				S		**Sn**	**21 13 44.7**	**+0.6**
ISP	**Isparta**	**1.73**	**137**	*e*Pn		**Pn**	**21 13 21.6**	**-0.2**
ISP				S		**Sn**	**21 13 44.7**	**+0.6**
GULT	**Gulveren**	**1.74**	**40**	*e*PN		**Pn**	**21 13 22.2**	**+0.2**
GULT	**Gulveren**	**1.74**	**40**	*e*Pn		**Pn**	**21 13 22.2**	**+0.2**
BUY	**Buyukada**	**1.75**	**2**	P		**Pn**	**21 13 21.4**	**-0.6**
BUY				S		**Sn**	**21 13 43.5**	**-0.8**
BUY	**Buyukada**	**1.75**	**2**	⇑iP		**Pn**	**21 13 21.4**	**-0.6**
BUY				*i* S		**Sn**	**21 13 43.5**	**-0.8**
BAGO	**Egridir - ISPA**	**1.77**	**129**	⇓iP		**Pn**	**21 13 22.4**	**+0.1**
BAGO				*i* S		**Sg**	**21 13 52.4**	**+4.2**
HRT	**Hereke**	**1.78**	**15**	*e*PN		**Pn**	**21 13 22.4**	**-0.1**
HRT	**Hereke**	**1.78**	**15**	*e*Pn		**Pn**	**21 13 22.4**	**-0.1**
AYVA	**Ayvalik**	**1.84**	**277**	P		**Pn**	**21 13 23.1**	**-0.1**
AYVA				S		**Sg**	**21 13 50.5**	**0.0**
AYVA	**Ayvalik**	**1.84**	**277**	⇓iP		**Pn**	**21 13 23.1**	**-0.1**
AYVA				*i* S		**Sg**	**21 13 50.5**	**0.0**
SPNC	**Sapanca-Adapaz**	**1.85**	**31**	*e*PN		**Pn**	**21 13 24.3**	**+0.8**
SPNC	**Sapanca-Adapaz**	**1.85**	**31**	*e*Pn		**Pn**	**21 13 24.3**	**+0.8**
KRBG	**Karabiga-Canak**	**1.86**	**314**	*e*PN		**Pn**	**21 13 23.5**	**0.0**
KRBG	**Karabiga-Canak**	**1.86**	**314**	*e*Pn		**Pn**	**21 13 23.5**	**0.0**
MRMT	**Marmara Adasi**	**1.86**	**324**	*e*PN		**Pn**	**21 13 24.3**	**+0.6**
MRMT	**Marmara Adasi**	**1.86**	**324**	*e*Pn		**Pn**	**21 13 24.3**	**+0.6**
GOLH	**Golhisar**	**1.91**	**167**	P		**Pn**	**21 13 24.8**	**+0.5**
GOLH	**Golhisar**	**1.91**	**167**	⇓iP		**Pn**	**21 13 24.8**	**+0.5**
GOLH				*i* S		**Sg**	**21 13 57.9**	**+5.0**
SVRH	**Sivrihisar-ESK**	**1.96**	**79**	*e*PN		**Pn**	**21 13 25.9**	**+0.9**
SVRH	**Sivrihisar-ESK**	**1.96**	**79**	*e*Pn		**Pn**	**21 13 25.9**	**+0.9**
ISK	**Istanbul-Kandi**	**1.96**	**0**	*e*PN		**Pn**	**21 13 25.8**	**+0.9**
ISK	**Istanbul-Kandi**	**1.96**	**0**	P		**Pn**	**21 13 24.1**	**-0.8**
ISK	**Istanbul-Kandi**	**1.96**	**0**	P		**Pn**	**21 13 24.1**	**-0.8**
ISK	**Istanbul-Kandi**	**1.96**	**0**	P		**Pn**	**21 13 24.1**	**-0.8**
ISK	**Istanbul-Kandi**	**1.96**	**0**	*e*Pn		**Pn**	**21 13 25.8**	**+0.9**
ISK	**Istanbul-Kandi**	**1.96**	**0**	P		**Pn**	**21 13 24.1**	**-0.8**
GLHS	**Gihisar (BURDU**	**1.98**	**169**	*e*PN		**Pn**	**21 13 25.6**	**+0.3**
GLHS	**Gihisar (BURDU**	**1.98**	**169**	*e*Pn		**Pn**	**21 13 25.6**	**+0.3**
DGB	**¨zmir**	**1.99**	**239**	*i* P		**Pn**	**21 13 24.0**	**-1.3**
DGB				*i* S		**Sb**	**21 13 52.6**	**-0.2**
GCAM	**G?zelcaml?**	**2.00**	**226**	P		**Pn**	**21 13 24.1**	**-1.3**
GCAM	**G?zelcaml?**	**2.00**	**226**	*i* P		**Pn**	**21 13 24.1**	**-1.3**
GCAM				*i* S		**Sg**	**21 13 57.4**	**+1.8**
BCK	**Bucak**	**2.04**	**143**	*e*PN		**Pn**	**21 13 26.9**	**+0.7**
BCK	**Bucak**	**2.04**	**143**	*e*Pn		**Pn**	**21 13 26.9**	**+0.7**
YER	**Yerkesik**	**2.06**	**197**	*e*PN		**Pn**	**21 13 27.0**	**+0.7**
YER	**Yerkesik**	**2.06**	**197**	P		**Pn**	**21 13 26.5**	**+0.2**
YER	**Yerkesik**	**2.06**	**197**	P		**Pn**	**21 13 26.5**	**+0.2**
YER	**Yerkesik**	**2.06**	**197**	P		**Pn**	**21 13 26.5**	**+0.2**
YER	**Yerkesik**	**2.06**	**197**	*e*Pn		**Pn**	**21 13 27.0**	**+0.7**
YER	**Yerkesik**	**2.06**	**197**	P		**Pn**	**21 13 26.5**	**+0.2**
BGKT	**Bogazkoy**	**2.08**	**354**	*e*PN		**Pn**	**21 13 27.4**	**+0.8**
BGKT	**Bogazkoy**	**2.08**	**354**	*e*Pn		**Pn**	**21 13 27.4**	**+0.8**
SILT	**Sile**	**2.10**	**13**	*e*PN		**Pn**	**21 13 26.7**	**-0.1**
SILT	**Sile**	**2.10**	**13**	*e*Pn		**Pn**	**21 13 26.7**	**-0.1**
RKY	**Sarkoy-Tekirda**	**2.13**	**318**	*e*PN		**Pn**	**21 13 27.8**	**+0.5**
RKY	**Sarkoy-Tekirda**	**2.13**	**318**	*e*Pn		**Pn**	**21 13 27.8**	**+0.5**
KLYT	**Kilyos**	**2.14**	**0**	*e*PN		**Pn**	**21 13 27.9**	**+0.5**
KLYT	**Kilyos**	**2.14**	**0**	*e*Pn		**Pn**	**21 13 27.9**	**+0.5**
MDUB	**Mudurnu**	**2.15**	**50**	*e*PN		**Pn**	**21 13 28.4**	**+0.8**
MDUB	**Mudurnu**	**2.15**	**50**	*e*Pn		**Pn**	**21 13 28.4**	**+0.8**
PRK	**Paraskevi**	**2.16**	**275**	P		**Pn**	**21 13 27.6**	**0.0**
PRK				S		**Sn**	**21 13 55.2**	**+0.7

FNA Florina 6.12 288 P **Pn** **21 14 23.6 +1.4**
FNA Florina 6.12 288 P **Pn** **21 14 23.6 +1.4**
PYL PYLOS 6.17 251 P **Pn** **21 14 25.0 +2.2**
PYL PYLOS 6.17 251 P **Pn** **21 14 25.0 +2.2**
PYL PYLOS 6.17 251 P **Pn** **21 14 25.0 +2.2**
DSL Palaion Diasel 6.18 273 P **Pn** **21 14 25.6 +2.7**
DSL Palaion Diasel 6.18 273 P **Pn** **21 14 25.6 +2.7**
DSL Palaion Diasel 6.18 273 P **Pn** **21 14 25.6 +2.7**
HUMR Humele 6.21 332 ⇓*iP* **Pn** **21 14 23.5 +0.2**
HUMR Humele 6.21 332 ⇓*iP* **Pn** **21 14 23.5 +0.2**
BIA Bitola 6.22 290 *e*Pn Pn 21 14 12.3 -11
ISR Istrita 6.29 344 ⇑*iP* **Pn** **21 14 26.4 +2.0**
ISR Istrita 6.29 344 ⇑*iP* **Pn** **21 14 26.4 +2.0**
NEST Nestorio 6.30 285 P **Pn** **21 14 26.6 +2.0**
NEST Nestorio 6.30 285 P **Pn** **21 14 26.6 +2.0**
GIUM Giurgiulesti 6.41 355 ⇓*iP* **Pn** **21 14 27.4 +1.4**
GIUM Giurgiulesti 6.41 355 ⇓*iP* **Pn** **21 14 27.4 +1.4**
SEV Sevastopol' 6.44 31 ⇓*eP* **Pn** **21 14 25.4 -1.0**
SEV *e*S **Sn** **21 15 35.7 -4.3**
SEV Sevastopol' 6.44 31 *eP* **Pn** **21 14 25.4 -1.0**
SKO Skopje 6.46 299 *e*Pn **Pn** **21 14 26.8 +0.1**
SKO Skopje 6.46 299 *e*Pn **Pn** **21 14 26.8 +0.1**
LKD2 Lefkada island 6.54 270 P **Pn** **21 14 29.9 +2.0**
LKD2 Lefkada island 6.54 270 P **Pn** **21 14 29.9 +2.0**
LKD2 Lefkada island 6.54 270 P **Pn** **21 14 29.9 +2.0**
YAL Yalta 6.59 34 *eP* **Pn** **21 14 28.9 +0.3**
YAL *e*S **Sn** **21 15 41.0 -2.8**
YAL Yalta 6.59 34 *eP* **Pn** **21 14 28.9 +0.3**
OHR Ohrid 6.63 290 *e*Pn Pn 21 14 22.8 -6.4
PETR Petresti 6.75 349 ⇑*iP* **Pn** **21 14 32.1 +1.4**
PETR Petresti 6.75 349 ⇑*iP* **Pn** **21 14 32.1 +1.4**
MLR Muntele Rosu 6.78 341 Pn **Pn** **21 14 32.7 +1.4**
0.3nm,0.3s,baz=21,slow=2,7,SNR=27
MLR Muntele Rosu 6.78 341 ⇑*iP* **Pn** **21 14 32.6 +1.4**
MTUR Matau 6.79 336 ⇓*iP* **Pn** **21 14 32.3 +0.9**
MTUR Matau 6.79 336 ⇓*iP* **Pn** **21 14 32.3 +0.9**
ODBI Odobesti 6.81 348 ⇑*iP* **Pn** **21 14 33.5 +1.9**
ODBI Odobesti 6.81 348 ⇑*iP* **Pn** **21 14 33.5 +1.9**
ALU Alushta 6.86 34 *eP* **Pn** **21 14 31.4 -0.8**
ALU *e*S **Sn** **21 15 46.3 -4.0**
ALU Alushta 6.86 34 *eP* **Pn** **21 14 31.4 -0.8**
SIM Simferopol' 6.95 31 *eP* **Pn** **21 14 34.3 +0.8**
SIM *e*S **Sn** **21 15 49.0 -3.7**
SIM pmax pmax
comp=Z,89nm,0.3s
SIM smax smax
comp=N,156nm,0.4s
SIM Simferopol' 6.95 31 *eP* **Pn** **21 14 34.3 +0.8**
comp=N,89nm,0.3s
PLOR Plostina 6.97 346 ⇑*iP* **Pn** **21 14 35.1 +1.3**
PLOR Plostina 6.97 346 ⇑*iP* **Pn** **21 14 35.1 +1.3**
VRI Vrincioaia 6.97 347 ⇑*iP* **Pn** **21 14 34.5 +0.8**
VRI Vrincioaia 6.97 347 P **Pn** **21 14 34.0 +0.3**
VRI pmax pmax
comp=Z,639nm,1.3s
VRI Vrincioaia 6.97 347 P **Pn** **21 14 34.0 +0.3**
comp=Z,639nm,1.3s
VOIR 6.98 336 ⇓*iP* **Pn** **21 14 34.7 +0.7**
VOIR 6.98 336 P **Pn** **21 14 34.0 0.0**
VOIR pmax pmax
comp=Z,29nm,0.6s
VOIR 6.98 336 P **Pn** **21 14 34.0 0.0**
comp=Z,29nm,0.6s
ARR Arges 7.06 334 ⇓*iP* **Pn** **21 14 36.1 +1.1**
ARR Arges 7.06 334 ⇓*iP* **Pn** **21 14 36.1 +1.1**
BOLS Boljevac 7.11 314 ⇑*iPn* **Pn** **21 14 34.9 -0.8**
SELS Selova 7.25 307 ⇑*iPn* **Pn** **21 14 38.0 +0.3**
SUDU Sudak 7.28 36 ⇓*iP* **Pn** **21 14 35.7 -2.3**
SUDU *e*S **Sn** **21 15 55.4 -5.4**
DOPR Dopca 7.37 340 ⇑*iP* **Pn** **21 14 40.0 +0.8**
DOPR Dopca 7.37 340 ⇑*iP* **Pn** **21 14 40.0 +0.8**
TIR Tirane 7.37 291 *eP* **Pn** **21 14 40.6 +1.4**
TIR Tirane 7.37 291 *eP* **Pn** **21 14 40.6 +1.4**
TIR Tirane 7.37 291 *e*Pn **Pn** **21 14 40.6 +1.4**
LEOM Leova 7.39 356 ⇓*iP* **Pn** **21 14 40.2 +0.8**
LEOM Leova 7.39 356 ⇓*iP* **Pn** **21 14 40.2 +0.8**
TESR Tescani 7.61 347 ⇓*iP* **Pn** **21 14 42.4 -0.1**
TESR Tescani 7.61 347 ⇓*iP* **Pn** **21 14 42.4 -0.1**
MILM Milestii Mici 7.81 359 ⇑*iP* **Pn** **21 14 45.5 +0.3**
MDB Medias 7.83 335 ⇓*iP* **Pn** **21 14 47.0 +1.5**
MDVR Moldovita 7.87 318 ⇓*iP* **Pn** **21 14 46.2 0.0**
KIS Kishinev 7.89 359 *eP* **Pn** **21 14 46.5 +0.2**
KIS Kishinev 7.89 359 *eP* **Pn** **21 14 46.5 +0.2**
KIS *e* 21 16 20.0
KIS Kishinev 7.89 359 *eP* **Pn** **21 14 46.5 +0.2**
MMA0B Mount Meron ar 7.96 138 Pn **Pn** **21 14 47.5 0.0**
MMA0B Sn **Sn** **21 16 16.7 -1.1**
MMA0B Mount Meron ar 7.96 138 Pn **Pn** **21 14 47.5 0.0**
MMA0B Sn **Sn** **21 16 16.7 -1.1**
MMAI Mount Meron Ar 7.96 138 Pn **Pn** **21 14 47.9 +0.4**
comp=Z,6.9nm,0.3s,baz=324,slow=12,SNR=60
MMAI Sn **Sn** **21 16 14.9 -2.9**
comp=Z,4.4nm,0.3s,baz=303,slow=26,SNR=6.6
OFRI 'Ofer 8.07 142 Pn **Pn** **21 14 49.1 +0.2**
OFRI 'Ofer 8.07 142 Pn **Pn** **21 14 49.1 +0.2**
PDG Podgorica 8.13 297 ⇑*iP* **Pn** **21 14 53.5 +3.8**
KSHT Keshet 8.21 136 Pn **Pn** **21 14 51.2 +0.4**
KSHT Keshet 8.21 136 Pn **Pn** **21 14 51.2 +0.4**
SLTI Sal'it 8.41 143 Pn **Pn** **21 14 53.0 -0.5**
SLTI Sal'it 8.41 143 Pn **Pn** **21 14 53.0 -0.5**
MMLI Mount Malkishu 8.43 140 Pn **Pn** **21 14 53.8 -0.1**
MMLI Mount Malkishu 8.43 140 Pn **Pn** **21 14 53.8 -0.1**
ANN Anapa 8.45 45 *eP* **Pn** **21 14 53.2 -0.8**
ANN *e*S **Sn** **21 16 26.4 -3.1**
ANN pmax pmax
comp=Z,19nm,1.3s
ANN Anapa 8.45 45 *eP* **Pn** **21 14 53.2 -0.8**
comp=Z,19nm,1.3s
BZS Buzias 8.51 322 ⇓*iP* **Pn** **21 14 53.8 -1.1**
HMDT Nahal Hemdat 8.63 140 Pn **Pn** **21 14 56.5 -0.1**
HMDT Sn **Sn** **21 16 33.6 -0.5**
HMDT Nahal Hemdat 8.63 140 Pn **Pn** **21 14 56.5 -0.1**
HMDT Sn **Sn** **21 16 33.6 -0.5**
ARCR ARCALIA 8.68 338 ⇓*iP* **Pn** **21 14 58.4 +1.2**
ARCR ARCALIA 8.68 338 ⇓*iP* **Pn** **21 14 58.4 +1.2**
BURAR Bucovina Array 8.95 343 ⇓*iP* **Pn** **21 15 02.1 +1.1**
BURAR Bucovina Array 8.95 343 ⇓*iP* **Pn** **21 15 02.1 +1.1**
DRGR 8.97 331 ⇓*iP* **Pn** **21 15 02.9 +1.6**
DRGR 8.97 331 ⇓*iP* **Pn** **21 15 02.9 +1.6**
BUR08 Bucovina Ar. S 8.98 343 *e*Pn **Pn** **21 15 02.5 +1.1**
BUR08 Bucovina Ar. S 8.98 343 *e*Pn **Pn** **21 15 02.5 +1.1**
SORM Soroca 9.04 357 ⇓*iP* **Pn** **21 14 59.3 -2.8**
DSI Dead Sea 9.13 144 Pn **Pn** **21 15 03.2 -0.2**
DSI Sn **Sn** **21 16 44.8 -1.4**
DSI Dead Sea 9.13 144 Pn **Pn** **21 15 03.2 -0.2**
DSI Sn **Sn** **21 16 44.8 -1.4**
FGSL Fruska Gora 9.14 314 *e*Pn **Pn** **21 15 03.2 -0.3**
KZIT Kziot 9.28 150 Pn **Pn** **21 15 05.0 -0.5**
KZIT Sn **Sn** **21 16 47.3 -2.8**
KZIT Kziot 9.28 150 Pn **Pn** **21 15 05.0 -0.5**
ASF Jabal al Asfar 9.42 135 Pn **Pn** **21 15 07.3 -0.1**
comp=Z,0.4nm,0.3s,baz=281,slow=15,SNR=5.9
TIP Timpagrande 9.54 274 ⇑*iP* **Pn** **21 15 10.0 +0.9**
TIP Timpagrande 9.54 274 ⇑*iP* **Pn** **21 15 10.0 +0.9**
TIP Timpagrande 9.54 274 *e*Pn **Pn** **21 15 10.2 +1.1**
MATE Matera 9.61 283 ⇓*iP* **Pn** **21 15 10.9 +1.0**
MATE Matera 9.61 283 ⇓*iP* **Pn** **21 15 10.9 +1.0**
PRNI Paran 10.01 149 Pn **Pn** **21 15 14.9 -0.7**
PRNI Sn **Sn** **21 17 04.8 -3.3**
PRNI Paran 10.01 149 Pn **Pn** **21 15 14.9 -0.7**
CUC Castrocucco 10.26 279 *e*Pn **Pn** **21 15 20.7 +1.8**
CUC Castrocucco 10.26 279 *e*Pn **Pn** **21 15 20.7 +1.8**
HRFI Mount Harif 10.31 150 Pn **Pn** **21 15 18.4 -1.2**
HRFI Mount Harif 10.31 150 Pn **Pn** **21 15 18.4 -1.2**
CEL Celeste 10.32 269 *e*Pn **Pn** **21 15 20.6 +0.9**
comp=Z,21nm,1.1s
CEL Celeste 10.32 269 *e*Pn **Pn** **21 15 20.6 +0.9**
comp=Z,21nm,1.1s
MBRI Mt Berech 10.47 151 Pn **Pn** **21 15 21.2 -0.7**
MBRI Sn **Sn** **21 17 17.5 -2.0**
MBRI Mt Berech 10.47 151 Pn **Pn** **21 15 21.2 -0.7**
MBRI Sn **Sn** **21 17 17.5 -2.0**
EIL Elat 10.60 151 Pn **Pn** **21 15 21.7 -1.9**
comp=Z,1.0nm,0.3s,baz=315,slow=10.0,SNR=9.5
EIL Sn **Sn** **21 17 17.6 -4.8**
comp=Z,1.3nm,0.3s,baz=79,slow=17,SNR=8.2
EIL Elat 10.60 151 Pn **Pn** **21 15 21.5 -2.1**
NEY Neytrino 11.11 64 ⇓P **Pn** **21 15 34.0 +3.4**
KECS Kecovo 11.22 329 *eP* **Pn** **21 15 34.7 +2.7**
KECS Kecovo 11.22 329 *eP* **Pn** **21 15 34.7 +2.7**
KECS Kecovo 11.22 329 *e*PN **Pn** **21 15 34.7 +2.7**

LVV L'vov 11.29 343 *eP* **Pn** **21 15 34.2 +1.3**
LVV L'vov 11.29 343 *eP* **Pn** **21 15 34.2 +1.3**
KIV Kislovodsk 11.31 60 *eP* **Pn** **21 15 33.4 0.0**
KIV pmax pmax
comp=Z,27nm,1.1s
KIV MLR MLR
comp=Z,215nm,10.0s
KIV Kislovodsk 11.31 60 *eP* **Pn** **21 15 33.4 0.0**
comp=Z,215nm,10.0s
KIV Kislovodsk 11.31 60 *e*Pn Pn 21 15 40.4 +7.0
KIV Kislovodsk 11.31 60 *e*Pn Pn 21 15 40.4 +7.0
KVAR Kislovodsk Arr 11.32 60 Pn **Pn** **21 15 36.4 +2.9**
baz=64,slow=7.6,SNR=16
KBZ Khabaz 11.38 62 Pn **Pn** **21 15 37.0 +2.8**
comp=Z,0.1nm,0.3s,baz=273,slow=12,SNR=8.1
KBZ Khabaz 11.38 62 P **Pn** **21 15 37.0 +2.8**
KBZ Khabaz 11.38 62 Pn **Pn** **21 15 37.0 +2.8**
AKASG Malin Array Be 11.60 1 Pn **Pn** **21 15 34.3 -2.8**
comp=Z,1.1nm,0.3s,baz=183,slow=12,SNR=5.8
AKASG Sn **Sn** **21 17 50.0 +3.4**
comp=Z,1.6nm,0.3s,baz=181,slow=26,SNR=6.2
STHS Stebnicka Huta 11.72 334 *eP* **Pn** **21 15 36.7 -2.1**
STHS Stebnicka Huta 11.72 334 *e* **Pn** **21 15 36.7 -2.1**
ZEI Tsey 11.82 67 *eP* **Pn** **21 15 44.8 +4.4**
ZEI pmax pmax
comp=Z,37nm,1.4s
VYHS Vyhne 11.92 325 *eP* **Pn** **21 15 42.7 +1.1**
VYHS Vyhne 11.92 325 *eP* **Pn** **21 15 42.7 +1.1**
VYHS Vyhne 11.92 325 *e*PN **Pn** **21 15 42.7 +1.1**
GOF Gofitskoye 11.98 56 *ce*P **Pn** **21 15 46.0 +3.7**
GNI Garni 12.15 80 LR LR 21 20 05.0
comp=Z,248nm,20.1s,baz=34,slow=36
GNI Garni 12.15 80 ⇓*eP* **Pn** **21 15 45.0 +0.1**
GNI pmax pmax
comp=Z,53nm,1.3s
GNI Garni 12.15 80 *eP* **Pn** **21 15 45.0 +0.1**
comp=Z,53nm,1.3s
DGRG David-gareji 12.69 74 P Pn 21 15 57.5 +5.3
DGRG David-gareji 12.69 74 P Pn 21 15 57.4 +5.2
SOKA Soboth 12.75 311 *i* P **Pn** **21 15 54.7 +1.8**
SOKA Soboth 12.75 311 P **Pn** **21 15 54.7 +1.8**
ARSA Arzberg 12.78 314 *i* P **Pn** **21 15 54.3 +1.0**
comp=Z,9.7nm,1.8s
ARSA Arzberg 12.78 314 P **Pn** **21 15 54.3 +1.0**
comp=Z,9.7nm,1.8s
OBKA Obir 12.95 310 *i* P Pn 21 16 01.5 +5.8
comp=Z,2.2nm,0.6s
CONA Conrad Observa 12.99 317 *i* Pn **Pn** **21 15 52.7 -3.6**
comp=Z,4.9nm,1.8s
VRAC Vranov 13.54 323 Pn **Pn** **21 16 02.9 -0.8**
comp=Z,0.2nm,0.3s,baz=126,slow=14,SNR=3.3
MOA Molln 13.82 314 *i* P **Pn** **21 16 09.7 +2.2**
comp=Z,12nm,1.7s,SNR=5.2
MOA Molln 13.82 314 P **Pn** **21 16 09.7 +2.2**
comp=Z,12nm,1.7s,SNR=5.2
KBA Koelnbreinsper 13.95 310 *i* P **Pn** **21 16 10.4 +1.0**
comp=Z,8.5nm,0.9s
KBA Koelnbreinsper 13.95 310 P **Pn** **21 16 08.4 -1.0**
KBA pmax pmax
comp=Z,7.0nm,0.9s
KBA Koelnbreinsper 13.95 310 P **Pn** **21 16 08.4 -1.0**
comp=Z,7.0nm,0.9s
VSR Storozhevoye 14.04 27 *eP* **Pn** **21 16 09.6 -0.9**
VSR pmax pmax
comp=Z,20nm,1.1s
VSR Storozhevoye 14.04 27 *eP* **Pn** **21 16 09.6 -0.9**
comp=Z,20nm,1.1s
ABTA Abfaltersbach 14.30 308 *i* sP **P** **21 16 23.6 +2.1**
comp=Z,4.9nm,0.9s
DPC Dobruska-Polom 14.40 325 *eP* **P** **21 16 23.2 +0.7**
DPC Dobruska-Polom 14.40 325 *eP* **P** **21 16 23.2 +0.7**
DPC Dobruska-Polom 14.40 325 *eP* **P** **21 16 23.2 +0.7**
GEA0 GERESS Array S 14.69 316 *e*Pn **Pn** **21 16 19.8 +0.3**
GEA0 *e*ScP **ScP** **21 25 03.5 -2.2**
GEA0 GERESS Array S 14.69 316 *e*Pn **Pn** **21 16 19.8 +0.3**
GEA0 *e*ScP **ScP** **21 25 03.5 -2.2**
GEC2 GERESS Array S 14.70 316 *eP* **Pn** **21 16 20.6 +1.0**
GEC2 GERESS Array S 14.70 316 *e*Pn **Pn** **21 16 20.6 +1.0**
GEC2 GERESS Array S 14.70 316 *e*Pn **Pn** **21 16 20.6 +1.0**
GERES GERESS Array B 14.70 316 Pn **Pn** **21 16 20.4 +0.8**
comp=Z,0.1nm,0.3s,baz=122,slow=13,SNR=12
KHC Kasperske Hory 14.93 317 *eP* **Pn** **21 16 22.7 0.0**
KHC *e*pP **P** **21 16 31.2 +2.8**
KHC Kasperske Hory 14.93 317 *eP* **Pn** **21 16 22.7 0.0**
VRH Novokhopyorsk 15.02 32 *eP* **Pn** **21 16 23.7 0.0**
VRH pmax pmax
comp=Z,30nm,1.0s
WTTA Wattenberg 15.07 308 *i* sP **P** **21 16 32.3 +2.3**
comp=Z,13nm,1.1s
WTTA Wattenberg 15.07 308 P **P** **21 16 32.3 +2.3**
comp=Z,13nm,1.1s
LPSR Galich'ya Gora 15.13 24 *eP* **Pn** **21 16 23.0 -2.3**
LPSR pmax pmax
comp=Z,20nm,1.1s
MOTA Moosalm 15.43 308 *i* P **P** **21 16 32.4 -1.6**
comp=Z,8.8nm,0.8s,SNR=6.2
FETA Feichten 15.52 307 *i* P **P** **21 16 33.8 -1.3**
comp=Z,32nm,1.0s,SNR=8.0
FETA Feichten 15.52 307 P **P** **21 16 33.8 -1.3**
comp=Z,32nm,1.0s,SNR=8.0
FUORN Ofenpass-Fuorn 15.66 305 *e*Pn **P** **21 16 39.3 +2.6**
comp=Z,14nm,1.0s
FUORN Ofenpass-Fuorn 15.66 305 *e*Pn **P** **21 16 39.3 +2.6**
comp=Z,14nm,1.0s
RETA Reutte 15.70 308 *i* pP **P** **21 16 38.5 +1.6**
comp=Z,19nm,1.5s,SNR=9.2
RETA Reutte 15.70 308 P **P** **21 16 38.5 +1.6**
comp=Z,19nm,1.5s,SNR=9.2
BRG Berggiesshubel 15.85 323 *eP* **P** **21 16 39.4 +0.9**
comp=Z,9.5nm,1.4s
BRG Berggiesshubel 15.85 323 *eP* **P** **21 16 39.4 +0.9**
BRG pmax pmax
comp=Z,10.0nm,1.4s
BRG Berggiesshubel 15.85 323 *eP* **P** **21 16 39.4 +0.9**
comp=Z,10.0nm,1.4s
DAVOX Davos/Dischmat 15.97 305 Pn **Pn** **21 16 36.4 0.0**
comp=Z,0.2nm,0.3s,baz=107,slow=12,SNR=8.1
KEST Kesra 16.00 264 Pn **Pn** **21 16 36.0 -0.9**
comp=Z,0.1nm,0.3s,baz=274,slow=15,SNR=2.5
DAVA Damuels 16.16 307 *i* pP **P** **21 16 43.7 +1.5**
comp=Z,25nm,1.1s,SNR=7.6
DAVA Damuels 16.16 307 P **P** **21 16 43.7 +1.5**
comp=Z,25nm,1.1s,SNR=7.6
TUE Stuetta 16.20 303 *e*Pn **P** **21 16 46.7 +4.1**
comp=Z,14nm,1.0s
TUE Stuetta 16.20 303 *e*Pn **P** **21 16 46.7 +4.1**
comp=Z,14nm,1.0s
CLL Collm 16.59 323 *eP* **P** **21 16 47.0 +0.4**
comp=Z,18nm,1.6s
CLL *e* 21 17 00.0
CLL Collm 16.59 323 *eP* **P** **21 16 47.0 +0.4**
CLL pmax pmax
comp=Z,18nm,1.6s
CLL Collm 16.59 323 *eP* **P** **21 16 47.0 +0.4**
comp=Z,18nm,1.6s
OBN Obninsk 16.80 15 LR LR 21 23 52.1
comp=Z,433nm,21.3s,baz=34,slow=39
OBN Obninsk 16.80 15 ⇓*eP* **P** **21 16 50.3 +1.4**
OBN pmax pmax
comp=Z,20nm,1.1s
OBN MLR MLR
comp=Z,405nm,20.0s
OBN Obninsk 16.80 15 *eP* **P** **21 16 50.3 +1.4**
comp=Z,405nm,20.0s
SBF Sospel 16.86 293 *eP* **Pn** **21 16 48.6 +0.9**
SBF pmax pmax
comp=Z,19nm,1.2s
SBF Sospel 16.86 293 *eP* **Pn** **21 16 48.6 +0.9**
comp=Z,19nm,1.2s
SENIN Lac Senin/Sane 17.51 302 *e*Pn **P** **21 16 57.8 +0.6**
comp=Z,21nm,1.2s
SENIN Lac Senin/Sane 17.51 302 *e*Pn **P** **21 16 57.8 +0.6**
comp=Z,21nm,1.2s
BFO Black Forest 17.54 308 *i* P **P** **21 16 59.3 +2.0**
BFO Black Forest 17.54 308 *e*Pn **P** **21 16 59.0 +1.7**
comp=Z,20nm,1.2s
BFO Black Forest 17.54 308 *i* P **P** **21 16 59.3 +2.0**
BFO Black Forest 17.54 308 *e*Pn **P** **21 16 59.0 +1.7**
comp=Z,20nm,1.2s
FELD Feldberg im Sc 17.56 307 *eP* **Pn** **21 16 56.7 +0.2**
MOS Moscow 17.60 16 *eP* **P** **21 16 59.0 +1.2**
MOS pmax pmax
comp=Z,101nm,1.3s
MOS pmax pmax
comp=Z,300nm,2.6s
MOS Moscow 17.60 16 *eP* **P** **21 16 59.0 +1.2**
comp=Z,300nm,2.6s
LPG La Plagne 17.66 298 *eP* **P** **21 17 00.0 +1.1**
LPG pmax pmax
comp=Z,42nm,1.4s
LPG La Plagne 17.66 298 *eP* **P** **21 17 00.0 +1.1**
comp=Z,42nm,1.4s
LPL La Plagne 17.67 298 *eP* **P** **21 17 00.4 +1.4**
LPL pmax pmax
comp=Z,27nm,1.3s
LPL La Plagne 17.67 298 *eP* **P** **21 17 00.4 +1.4**
comp=Z,27nm,1.3s
BBS Basel-Blauen 17.72 305 *eP* **P** **21 16 59.1 -0.2**
TOD Tromm 17.82 313 *eP* **Pn** **21 16 59.8 +0.2**
LIBD Limburg 17.91 307 *eP* **P** **21 17 01.8 +0.5**
MOF Molkenrain 18.10 306 *eP* **P** **21 17 03.6 +0.1**
MOF Molkenrain 18.10 306 *eP* **P** **21 17 03.6 +0.1**
KTD Kalmit 18.11 311 *eP* **P** **21 17 07.1 +3.6**
LOMF Lomont 18.12 304 *eP* **Pn** **21 17 02.8 -0.6**
LOMF Lomont 18.12 304 *eP* **Pn** **21 17 02.8 -0.6**
LANF Langenberg 18.12 310 *eP* **Pn** **21 17 03.1 -0.3**
LANF Langenberg 18.12 310 *eP* **Pn** **21 17 03.1 -0.3**
ORIF Oris-en-Rattie 18.14 296 *eP* **P** **21 17 05.0 +1.0**
ORIF pmax pmax
comp=Z,25nm,1.0s
ORIF Oris-en-Rattie 18.14 296 *eP* **P** **21 17 05.0 +1.0**
comp=Z,25nm,1.0s
WLS Welschbruch 18.17 308 *eP* **P** **21 17 05.3 +1.1**
WLS Welschbruch 18.17 308 *eP* **P** **21 17 05.3 +1.1**
ECH Echery 18.21 307 *eP* **P** **21 17 05.4 +0.7**
ECH Echery 18.21 307 *eP* **P** **21 17 05.4 +0.7**
CDF Champ du Feu 18.21 308 *eP* **P** **21 17 06.0 +1.2**
CDF pmax pmax
comp=Z,260nm,1.2s
CDF Champ du Feu 18.21 308 *eP* **P** **21 17 06.0 +1.2**
comp=Z,260nm,1.2s
CABF La Chapelle 18.38 302 *eP* **P** **21 17 07.2 +0.5**
CABF pmax pmax
comp=Z,40nm,1.4s
CABF La Chapelle 18.38 302 *eP* **P** **21 17 07.2 +0.5**
comp=Z,40nm,1.4s
RUP Ruppelstein 18.88 311 *eP* **Pn** **21 17 13.3 +0.8**
VIVF Saint-Julien-l 18.97 295 *eP* **Pn** **21 17 14.1 +0.4**
VIVF pmax pmax
comp=Z,10.0nm,1.0s
VIVF Saint-Julien-l 18.97 295 *eP* **Pn** **21 17 14.1 +0.4**
comp=Z,10.0nm,1.0s
SSB Saint Sauveur 19.14 297 *eP* **P** **21 17 15.0 +0.1**
SSB pmax pmax
comp=Z,43nm,1.9s
SSB Saint Sauveur 19.14 297 *eP* **P** **21 17 15.0 +0.1**
comp=Z,43nm,1.9s
SSB Saint Sauveur 19.14 297 *eP* **P** **21 17 15.0 +0.1**
comp=Z,43nm,1.9s
WLF Walferdange 19.39 310 *eP* **Pn** **21 17 18.4 -0.3**
WLF pmax pmax
comp=Z,21nm,1.3s
WLF Walferdange 19.39 310 *eP* **Pn** **21 17 18.4 -0.3**
comp=Z,21nm,1.3s
WLF Walferdange 19.39 310 *eP* **Pn** **21 17 18.4 -0.3**
comp=Z,21nm,1.3s
VSU Vasula 19.43 356 *c i* P **Pn** **21 17 19.1 +0.1**
VSU Vasula 19.43 356 *i* P **Pn** **21 17 19.1 +0.1**
MEM Membach 19.88 313 P **Pn** **21 17 24.8 +0.3**
comp=Z,17nm,1.2s
MEM Membach 19.88 313 P **Pn** **21 17 24.8 +0.3**
comp=Z,17nm,1.2s
PLDF La Plantade 19.90 298 *eP* **Pn** **21 17 25.0 +0.1**
PLDF La Plantade 19.90 298 *eP* **Pn** **21 17 25.0 +0.1**
HGN Heimansgroeve 20.00 313 *eP* **Pn** **21 17 25.7 -0.1**
comp=Z,33nm,1.1s
HGN Heimansgroeve 20.00 313 *eP* **Pn** **21 17 25.7 -0.1**
comp=Z,33nm,1.1s
LBL Lubilhac 20.03 296 *eP* Pn 21 17 25.6 -0.8
LBL Lubilhac 20.03 296 *eP* Pn 21 17 25.6 -0.8
WTSB Winterswijk 20.10 317 *eP* Pn 21 17 26.8 -0.2
comp=Z,29nm,1.0s
WTSB Winterswijk 20.10 317 *eP* Pn 21 17 26.8 -0.3
comp=Z,29nm,1.0s
BCLA Clavier 20.21 312 P Pn 21 17 28.3 -0.1
comp=Z,22nm,1.5s
BCLA Clavier 20.21 312 P Pn 21 17 28.2 -0.2
comp=Z,22nm,1.5s
AGO Saint Agoulin 20.25 298 *eP* **P** **21 17 27.9 +0.9**
AGO Saint Agoulin 20.25 298 *eP* **P** **21 17 27.9 +0.9**
AVF Avril sur Loir 20.25 301 *eP* **P** **21 17 27.5 +0.5**
AVF pmax pmax
comp=Z,21nm,1.0s
AVF Avril sur Loir 20.25 301 *eP* **P** **21 17 27.5 +0.5**
comp=Z,21nm,1.0s
PYM Petit Puy Mans 20.28 298 *eP* **P** **21 17 28.3 +0.9**
PYM Petit Puy Mans 20.28 298 *eP* **P** **21 17 28.3 +0.9**
DOU Dourbes 20.49 310 P **P** **21 17 30.5 +0.9**
DOU Dourbes 20.49 310 P **P** **21 17 30.4 +0.9**
CAF Calviac 20.82 295 *eP* **P** **21 17 33.8 +0.6**
CAF pmax pmax
comp=Z,20nm,1.2s
CAF Calviac 20.82 295 *eP* **P** **21 17 33.8 +0.6**
comp=Z,20nm,1.2s
SNF Seneffe 20.84 311 P **P** **21 17 34.3 +1.0**
SNF Seneffe 20.84 311 P **P** **21 17 34.2 +1.0**
FINES FINESS Array B 22.44 356 P **P** **21 17 51.1 +0.8**
comp=Z,8.9nm,0.9s,baz=155,slow=12,SNR=9.5
KLMR Klimovskoe 22.73 13 *eP* **P** **21 17 52.8 -0.7**
KLMR *e* 21 18 16.0
KLMR pmax pmax
comp=Z,37nm,1.1s
KLMR Klimovskoe 22.73 13 *eP* **P** **21 17 52.8 -0.7**
comp=Z,37nm,1.1s
GEYT Alibeck 22.74 84 P **P** **21 17 54.0 +0.1**
comp=Z,11nm,1.0s,baz=290,slow=9.3,SNR=16
HFS Hagfors 23.16 340 P **P** **21 17 56.8 -1.2**
comp=Z,4.4nm,1.0s,baz=128,slow=12,SNR=3.3
FLN La Foliniere 23.22 304 *eP* **P** **21 17 58.6 -0.1**
FLN pmax pmax
comp=Z,30nm,1.4s
FLN La Foliniere 23.22 304 *eP* **P** **21 17 58.6 -0.1**
comp=Z,30nm,1.4s
AKTK Aktyubinsk 23.33 51 P **P** **21 17 59.1 -0.7**
AKTO Aktyubinsk 23.33 51 P **P** **21 17 59.0 -0.8**
comp=Z,11nm,1.0s,baz=250,slow=10,SNR=14
ABKAR Akbulak array 24.22 55 *eP* **P** **21 18 10.1 +1.7**
ABKAR Akbulak array 24.22 55 *eP* **P** **21 18 10.1 +1.7**
NB2 NORSAR Subarra 24.59 339 P **P** **21 18 11.1 -0.7**
comp=Z,6.0nm,0.9s,baz=143,slow=9.3
NB2 NORSAR Subarra 24.59 339 P **P** **21 18 11.1 -0.7**
comp=Z,6.0nm,0.9s,SNR=7.1
NOA NORSAR Array B 24.59 339 P **P** **21 18 09.6 -2.2**
comp=Z,4.0nm,0.8s,baz=143,slow=9.3,SNR=7.4
ESDC Sonseca Array 25.44 282 P **P** **21 18 18.2 -1.4**
comp=Z,1.2nm,0.7s,baz=70,slow=11,SNR=8.2
TAM Tamanrasset 25.80 238 *eP* **P** **21 18 24.9 +1.8**
TAM pmax pmax
comp=Z,18nm,1.8s
TAM Tamanrasset 25.80 238 *eP* **P** **21 18 24.9 +1.8**
comp=Z,18nm,1.8s
TAM Tamanrasset 25.80 238 *eP* **P** **21 18 24.9 +1.8**
comp=Z,18nm,1.8s
ARU Arti 26.04 39 P **P** **21 18 24.7 -0.2**
comp=Z,7.0nm,0.7s,baz=250,slow=5.9,SNR=15
ARU Arti 26.04 39 *d iP* **P** **21 18 27.2 +2.4**
ARU 21 19 01.9
ARU 21 21 53.2
ARU S **S** **21 23 01.3 +5.6**
ARU SS **SnSn** **21 23 58.7 +5.8**
ARU pmax pmax
comp=Z,50nm,1.7s
ARU Arti 26.04 39 *eP* **P** **21 18 26.7 +1.9**
comp=Z,140nm,2.0s
ARU Arti 26.04 39 PcP **PcP** **21 21 53.2 +0.7**
ARU Arti 26.04 39 *eP* **P** **21 18 26.7 +1.9**
comp=Z,140nm,2.0s
EKA Eskdalemuir Ar 26.91 318 P **P** **21 18 31.0 -1.7**
comp=Z,2.1nm,0.6s,baz=113,slow=12,SNR=15
SVE Sverdlovsk 27.24 39 *eP* **P** **21 18 38.6 +3.0**
SVE pmax pmax
comp=Z,24nm,1.4s
SVE Sverdlovsk 27.24 39 *eP* **P** **21 18 38.6 +3.0**
comp=Z,24nm,1.4s
ZRNK Zerenda 30.57 50 *eP* **P** **21 19 06.8 +1.5**
ZRNK pmax pmax
comp=Z,7.0nm,1.3s
ZRNK Zerenda 30.57 50 *eP* **P** **21 19 06.8 +1.5**
comp=Z,6.8nm,1.3s
ZRNK Zerenda 30.57 50 *eP* **P** **21 19 06.8 +1.5**
comp=Z,6.8nm,1.3s

KKAR	**Karatay Array**	**31.27**	**69**	*e*P	**P**	**21 19 12.4**	**+0.8**
KKAR	**Karatay Array**	**31.27**	**69**	*e*P	**P**	**21 19 12.4**	**+0.8**
KKAR	**Karatay Array**	**31.27**	**69**	*e*P	**P**	**21 19 12.4**	**+0.8**
BRVK	**Borovoye**	**31.35**	**50**	⇑*i*P	**P**	**21 19 14.2**	**+2.0**
BRVK				pmax	pmax		
	comp=Z,6.0nm,1.7s						
BRVK	**Borovoye**	**31.35**	**50**	*i* P	**P**	**21 19 14.2**	**+2.0**
	comp=Z,6.0nm,1.7s						
OTUK	**Ortayu**	**32.25**	**59**	P	**P**	**21 19 21.3**	**+1.2**
OTUK				pmax	pmax		
	comp=Z,7.0nm,1.3s						
OTUK	**Ortayu**	**32.25**	**59**	P	**P**	**21 19 21.3**	**+1.2**
	comp=Z,7.0nm,1.3s						
EKS2	**Erkin-Say**	**33.71**	**69**	*e*P	**P**	**21 19 35.6**	**+2.4**
EKS2				pmax	pmax		
	comp=Z,5.0nm,1.1s						
EKS2	**Erkin-Say**	**33.71**	**69**	*e*P	**P**	**21 19 35.5**	**+2.4**
	comp=Z,5.1nm,1.1s						
EKS2	**Erkin-Say**	**33.71**	**69**	*e*P	**P**	**21 19 35.5**	**+2.4**
	comp=Z,5.1nm,1.1s						
FRU	**Bishkek**	**34.29**	**69**	*e*P	**P**	**21 19 38.0**	**-0.1**
FRU				pmax	pmax		
	comp=Z,40nm,1.8s						
FRU	**Bishkek**	**34.29**	**69**	*e*P	**P**	**21 19 38.0**	**-0.1**
	comp=Z,40nm,1.8s						
TORD	**Torodi Ar. Bea**	**35.39**	**231**	P	**P**	**21 19 46.1**	**-1.7**
	comp=Z,2.0nm,0.6s,baz=38,slow=9.1,SNR=7.6						
KURK	**Kurchatov**	**36.33**	**55**	*e*P	**P**	**21 19 56.0**	**+0.6**
KURK				pmax	pmax		
	comp=Z,12nm,1.0s						
KURK	**Kurchatov**	**36.33**	**55**	*e*P	**P**	**21 19 56.0**	**+0.6**
	comp=Z,12nm,1.0s						
KURK	**Kurchatov**	**36.33**	**55**	*e*P	**P**	**21 19 56.0**	**+0.6**
	comp=Z,12nm,1.0s						
MK31	**Makanchi Array**	**39.08**	**61**	*e*P	**P**	**21 20 19.3**	**+0.5**
MK31	**Makanchi Array**	**39.08**	**61**	*e*P	**P**	**21 20 19.3**	**+0.5**
MK31	**Makanchi Array**	**39.08**	**61**	*e*P	**P**	**21 20 19.3**	**+0.5**
MKAR	**Makanchi Array**	**39.08**	**61**	P	**P**	**21 20 18.3**	**-0.5**
	comp=Z,1.8nm,0.7s,baz=282,slow=7.2,SNR=19						
MKAR	**Makanchi Array**	**39.08**	**61**	*i* P	**P**	**21 20 19.2**	**+0.5**
MKAR				pmax	pmax		
	comp=Z,2.0nm,0.7s						
MKAR	**Makanchi Array**	**39.08**	**61**	*e*P	**P**	**21 20 19.3**	**+0.5**
MKAR	**Makanchi Array**	**39.08**	**61**	*e*P	**P**	**21 20 19.3**	**+0.5**
MK01	**Makanchi Array**	**39.09**	**61**	*e*P	**P**	**21 20 19.4**	**+0.5**
MK01	**Makanchi Array**	**39.09**	**61**	*e*P	**P**	**21 20 19.4**	**+0.5**
NVS	**Novosibirsk**	**39.13**	**48**	⇓*i*P	**P**	**21 20 19.7**	**+0.7**
NVS				pmax	pmax		
	comp=Z,11nm,1.2s						
NVS				pmax	pmax		
	comp=E,6.0nm,1.0s						
NVS	**Novosibirsk**	**39.13**	**48**	*i* P	**P**	**21 20 19.7**	**+0.7**
	comp=E,11nm,1.2s						
ZAA0	**Zalesovo Array**	**40.06**	**49**	*e*P	**P**	**21 20 27.0**	**+0.2**
ZAA0	**Zalesovo Array**	**40.06**	**49**	*e*P	**P**	**21 20 27.0**	**+0.2**
ZALV	**Zalesovo Beam**	**40.06**	**49**	P	**P**	**21 20 26.0**	**-0.8**
	comp=E,3.3nm,0.7s,baz=265,slow=8.8,SNR=12						
ZALV	**Zalesovo Beam**	**40.06**	**49**	*i* P	**P**	**21 20 29.1**	**+2.3**
ZALV				pmax	pmax		
	comp=Z,3.0nm,0.6s						
WMQ	**Urumqi**	**43.41**	**64**	*e*P	**P**	**21 20 55.6**	**+1.1**
WMQ				pmax	pmax		
	comp=Z,3.0nm,0.8s						
WMQ				pmax	pmax		
	comp=Z,160nm,11.0s						
WMQ				LR	LR		
	comp=N,130nm,28.6s						
WMQ				LR	LR		
	comp=E,130nm,24.0s						
WMQ				LR	LR		
	comp=Z,160nm,18.0s						
DBIC	**Dimbokro**	**44.44**	**232**	P	**P**	**21 21 01.2**	**-1.7**
	comp=Z,3.9nm,0.8s,baz=26,slow=9.8,SNR=3.6						
KRAR	**Krasnoyarsk**	**44.56**	**46**	⇑*e*P	**P**	**21 21 05.2**	**+1.8**
KRAR				pmax	pmax		
	comp=Z,7.0nm,0.7s						
KRAR	**Krasnoyarsk**	**44.56**	**46**	*e*P	**P**	**21 21 05.2**	**+1.8**
	comp=Z,7.0nm,0.7s						
TLY	**Talaya**	**51.67**	**50**	⇑*e*P	**P**	**21 21 59.9**	**+1.4**
TLY	**Talaya**	**51.67**	**50**	*e*P	**P**	**21 21 59.9**	**+1.4**
GTA	**Gaotai**	**53.44**	**66**	*e*P	**P**	**21 22 12.4**	**+0.5**
GTA				pP	sP	21 22 16.9	+1.2
GTA				sP	pP	21 22 19.5	+4.8
GTA				pmax	pmax		
	comp=Z,3.0nm,1.0s						
SONM	**Songino Array**	**54.62**	**54**	P	**P**	**21 22 19.8**	**-0.6**
	comp=Z,0.9nm,0.4s,baz=269,slow=10,SNR=4.1						
TIXI	**Tiksi**	**56.37**	**22**	⇑*i*P	**P**	**21 22 32.5**	**0.0**
TIXI				pmax	pmax		
	comp=Z,3.0nm,1.7s						
TIXI	**Tiksi**	**56.37**	**22**	*i* P	**P**	**21 22 32.5**	**0.0**
	comp=Z,3.0nm,1.7s						
CD2	**Chengdu**	**60.17**	**73**	P	**P**	**21 22 58.9**	**-0.9**
CD2				pmax	pmax		
	comp=Z,2.0nm,0.6s						
HHC	**Hu-ho-hao-te**	**60.91**	**59**	*e*P	**P**	**21 23 04.8**	**0.0**
HHC				pmax	pmax		
	comp=Z,16nm,0.9s						
HHC				pmax	pmax		
	comp=Z,85nm,6.8s						
KMI	**Kunming**	**62.41**	**79**	P	**P**	**21 23 14.8**	**-0.4**
KMI				pmax	pmax		
	comp=Z,7.0nm,1.5s						
CMAR	**Chiang Mai Arr**	**63.16**	**87**	P	**P**	**21 23 18.9**	**-1.2**
	comp=Z,1.1nm,0.8s,baz=299,slow=8.3,SNR=7.2						
BILL	**Bilibino**	**68.45**	**16**	⇑*e*P	**P**	**21 23 53.4**	**0.0**
BILL				*e*		21 26 29.2	
BILL				pmax	pmax		
	comp=Z,6.0nm,1.7s						
BILL	**Bilibino**	**68.45**	**16**	*e*P	**P**	**21 23 53.4**	**0.0**
	comp=Z,6.0nm,1.7s						
KSAR	**Wonju Array Be**	**73.43**	**55**	P	**P**	**21 24 24.1**	**0.0**
KSAR	**Wonju Array Be**	**73.43**	**55**	P	**P**	**21 24 24.1**	**0.0**
KSAR	**Wonju Array Be**	**73.43**	**55**	P	**P**	**21 24 24.1**	**0.0**
KSRS	**Korea Array**	**73.45**	**55**	P	**P**	**21 24 24.1**	**-0.1**
	comp=Z,5.2nm,0.8s,baz=306,slow=5.3,SNR=15						
KSRS	**Korea Array**	**73.45**	**55**	P	**P**	**21 24 24.1**	**-0.1**
KSRS				pmax	pmax		
	comp=Z,6.0nm,0.9s						
YKA	**Yellowknife Ar**	**74.61**	**343**	P	**P**	**21 24 29.9**	**-0.6**
	comp=Z,0.9nm,0.9s,baz=23,slow=6.4,SNR=5.7						
ILAR	**Eielson Array**	**76.41**	**358**	P	**P**	**21 24 40.1**	**-0.8**
	comp=Z,0.4nm,0.8s,baz=22,slow=5.1,SNR=3.7						
MJAR	**Matsushiro Arr**	**80.40**	**50**	P	**P**	**21 25 03.2**	**-0.3**
	comp=Z,1.8nm,0.8s,baz=309,slow=3.9,SNR=6.2						
ASAR	**Alice Springs**	**115.70**	**100**	PKP	**PKPdf**	**21 31 32.4**	**-2.1**
	comp=Z,0.5nm,0.8s,baz=306,slow=0.8,SNR=3.6						

BYKL ***19*** *21:17:36.4±0.3,55°.52N×110°.43E*
MOS ***19*** *21:17:36.8±1.0,55°.53N×110°.43E,h10km,mb4.2/1,Error ellipse: s-maj=59.9km s-min=28.1km az=72.2*
ISC 19 21:17:35.0±0.7,55°.52N±0°.03×110°.21E±0°.02,h10km,n29,
σ2§65/65,5C-1D,Lake Baykal region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NIZ	**Nizh Angarsk**	**0.46**	**305**	*e*Pg	**Pn**	**21 17 47.7**	**0.0**
NIZ				*e*Sg	**Sb**	**21 17 55.7**	**+3.6**
NIZ				Pmax			
	58nm,0.3s						
NIZ				Smax			
	390nm,0.3s						
KMO	**Kumora**	**0.67**	**56**	*e*Pg	**Pg**	**21 17 46.8**	**-1.2**
KMO				*e*Sg	**Sg**	**21 17 54.1**	**-2.7**
KMO				*e*Sb	**Sn**	**21 17 59.2**	**-2.0**
KMO				Pmax			
	60nm,0.3s						
KMO				Smax			
	365nm,1.0s						
YLYR	**Ulyunkhan**	**0.84**	**139**	⇓*i*Pg	**Pg**	**21 17 50.6**	**-0.7**
	87nm,0.4s						
YLYR				⇑*i*Pg	**Pg**	**21 17 50.6**	**-0.7**
	45nm,0.4s						
YLYR				⇑*i*Pg	**Pg**	**21 17 50.6**	**-0.7**
	119nm,0.4s						
YLYR				*e*Sg	**Sg**	**21 18 00.8**	**-1.4**
YLYR				*e*Sb	**Sn**	**21 18 03.9**	**-1.5**
YLYR				Pmax			
	88nm,0.2s						
YLYR				Smax			
	419nm,0.3s						
YLYR	**Ulyunkhan**	**0.84**	**139**	⇑*i*PG	**Pg**	**21 17 50.5**	**-0.7**
YLYR				*e*		21 18 00.3	
YLYR				pmax	pmax		
	comp=Z,86nm,0.3s						
YLYR				smax	smax		
	comp=E,419nm,0.3s						
SYVR	**Suvo**	**1.87**	**184**	*e*Pg	**Pg**	**21 18 10.8**	**0.0**
SYVR				*e*		21 18 13.8	
SYVR				*e*Sg	**Sg**	**21 18 35.8**	**+0.8**
SYVR				*e*		21 18 39.8	
SYVR				max			
	comp=E,33nm,0.7s						
SYVR				Smax			
	comp=E,300nm,0.7s						
SYVR	**Suvo**	**1.87**	**184**	*e*PN	**Pg**	**21 18 10.4**	**-0.4**
SYVR				*e*		21 18 36.4	
SYVR				pmax	pmax		
	comp=Z,33nm,0.7s						
SYVR				smax	smax		
	comp=E,301nm,0.6s						
UKT	**Uakit**	**1.94**	**89**	⇑*i*Pg	**Pb**	**21 18 09.1**	**-1.5**
UKT				*e*Sg	**Sn**	**21 18 33.0**	**+0.3**
UKT				Pmax			
	comp=E,83nm,0.4s						
UKT				Smax			
	comp=E,108nm,0.5s						
SVKR	**Severomuysk**	**1.98**	**71**	*e*Pg	**Pb**	**21 18 10.3**	**-0.9**
SVKR				*e*Sg	**Sb**	**21 18 35.4**	**-0.6**
SVKR				*e*		21 18 40.0	
SVKR				Pmax			
	comp=E,67nm,0.4s						
SVKR				Smax			
	comp=E,610nm,0.7s						
OGRR	**Ongureny**	**2.42**	**220**	*e*Pn	**Pg**	**21 18 19.3**	**-2.0**
OGRR				*e*Pg	**Pb**	**21 18 21.4**	**+2.8**
OGRR				*e*Sg	**Sg**	**21 18 54.6**	**+2.0**
OGRR				Pmax			
	comp=E,15nm,0.3s						
OGRR				Smax			
	comp=E,118nm,0.3s						
OGRR	**Ongureny**	**2.42**	**220**	*e*PN	**Pb**	**21 18 18.9**	**+0.3**
OGRR				*e*		21 18 22.5	
OGRR				*e*		21 18 54.2	
OGRR				pmax	pmax		
	comp=Z,15nm,0.3s						
OGRR				smax	smax		
	comp=E,134nm,0.4s						
BOD	**Bodaibo**	**3.12**	**41**	*e*Pn	**Pn**	**21 18 25.6**	**+1.4**
BOD				Pg	**Pb**	**21 18 30.8**	**+0.3**
BOD				*e*PgPg	**Sn**	**21 19 02.2**	**+0.8**
BOD				*e*Sg	**Sb**	**21 19 09.9**	**+1.4**
BOD				Pmax			
	comp=E,5.0nm,0.5s						
BOD				Smax			
	comp=E,39nm,1.0s						
ZRHB	**Zarechye**	**3.47**	**213**	*e*Sg	**Sg**	**21 19 26.7**	**+0.2**
ZRHB				Smax			
	comp=E,190nm,1.0s						
TRG	**Tyrgan**	**3.58**	**221**	*e*Pn	**Pb**	**21 18 35.0**	**-3.3**
TRG				*e*Pg	**Pg**	**21 18 42.6**	**-0.9**
TRG				*e*		21 19 20.1	
TRG				*e*Sg	**Sg**	**21 19 30.1**	**+0.3**
TRG				Pmax			
	comp=E,12nm,1.1s						
TRG				Smax			
	comp=E,61nm,0.5s						
UUDB	**Ulan-Yde**	**3.96**	**204**	*e*Pg	**Pg**	**21 18 49.4**	**-1.4**
UUDB				*e*Sg	**Sg**	**21 19 41.6**	**-0.4**
UUDB				*e*		21 19 46.8	
UUDB				Pmax			
	comp=E,16nm,0.8s						
UUDB				max			
	comp=E,48nm,1.3s						
HRMR	**Khuramsha**	**4.35**	**208**	*e*Pn	**Pn**	**21 18 44.7**	**+3.5**
HRMR				*e*Pg	**Pg**	**21 18 55.0**	**-3.3**
HRMR				*e*Sg	**Sg**	**21 19 53.2**	**-1.5**
HRMR				Pmax			
	comp=E,13nm,0.5s						
HRMR				Smax			
	comp=E,144nm,0.7s						
CRS	**Chara**	**4.71**	**70**	*e*Pg	**Pb**	**21 18 59.1**	**+1.5**
CRS				*e*		21 19 55.1	
CRS				*e*Sg	**Sb**	**21 19 58.5**	**+4.2**
CRS				Pmax			
	comp=E,23nm,1.1s						
CRS				Smax			
	comp=E,72nm,1.6s						
CRS	**Chara**	**4.71**	**70**	*e*PN	**Pb**	**21 19 00.0**	**+2.4**
CRS				*e*		21 19 57.7	
CRS				pmax	pmax		
	comp=Z,56nm,1.0s						
CRS				smax	smax		
	comp=E,71nm,1.6s						
IRK	**Irkutsk**	**4.81**	**229**	*e*Sg	**Sg**	**21 20 09.7**	**+0.5**
IRK				Smax			
	comp=E,178nm,0.2s						
IRK	**Irkutsk**	**4.81**	**229**	*e*PN	**Pg**	**21 19 06.5**	**-0.5**
IRK				*e*		21 20 08.6	
IRK				pmax	pmax		
	comp=Z,34nm,0.1s						
IRK				smax	smax		
	comp=E,178nm,0.2s						
LSTR	**Listvyanka**	**4.86**	**223**	*e*	**Pn**	**21 18 43.4**	**-4.7**
LSTR				Pg	**Pg**	**21 19 04.2**	**-3.7**
LSTR				*e*		21 19 50.5	
LSTR				*e*Sg	**Sg**	**21 20 08.4**	**-2.4**
LSTR				Pmax			
	comp=E,2.0nm,0.4s						
LSTR				Smax			
	comp=E,39nm,1.2s						
TLY	**Talaya**	**5.48**	**228**	Pg	**Pg**	**21 19 15.8**	**-4.1**
TLY				*e*Sn	**Sn**	**21 20 02.7**	**+3.0**
TLY				*e*Sg	**Sg**	**21 20 27.7**	**-3.1**
TLY				Pmax			
	comp=E,6.0nm,0.7s						
TLY				Smax			
	comp=E,25nm,1.0s						
TLY	**Talaya**	**5.48**	**228**	*e*PG	**Pg**	**21 19 21.2**	**+1.3**
TLY				*e*S	**Sn**	**21 20 01.0**	**+1.3**
TLY				*e*		21 20 28.4	
TLY				pmax	pmax		
	comp=Z,5.0nm,0.4s						
TLY				smax	smax		
	comp=E,13nm,0.4s						
TUP	**Tupik**	**5.72**	**97**	*e*Pn	**Pn**	**21 18 59.9**	**-0.1**
TUP				*e*		21 19 04.8	
TUP				Pg	**Pb**	**21 19 15.5**	**+0.7**
TUP				*e*Sn	**Sn**	**21 20 00.5**	**-5.1**
TUP				*e*Sg	**Sb**	**21 20 29.9**	**+6.5**
TUP				Pmax			
	comp=E,3.0nm,0.6s						
TUP				Smax			
	comp=E,35nm,0.8s						
ARS	**Arshan**	**5.86**	**235**	*e*Pn	**Pn**	**21 19 05.7**	**+3.8**
ARS				*e*Pg	**Pg**	**21 19 23.3**	**-3.9**
ARS				*e*Sn	**Sn**	**21 20 11.4**	**+2.3**
ARS				*e*Sg	**Sg**	**21 20 41.4**	**-1.6**
ARS				Pmax			
	comp=E,10.0nm,0.6s						
ARS				Smax			
	comp=E,105nm,0.6s						
KPC	**Khapcheranga**	**5.97**	**166**	*e*Pn	**Pn**	**21 19 04.7**	**+1.2**
KPC				*e*		21 19 09.4	
KPC				*e*		21 19 25.1	
KPC				*e*Sn	**Sn**	**21 20 09.6**	**-2.3**
KPC				*e*		21 20 24.5	
KPC				*e*Sg	**Sg**	**21 20 39.6**	**-7.0**
KPC				max			
	comp=E,1.0nm,0.3s						
KPC				Smax			
	comp=E,43nm,1.2s						
ZAK	**Zakamensk**	**6.63**	**222**	*e*Sg	**Sg**	**21 21 03.8**	**-3.9**
ZAK				Smax			
	comp=E,18nm,1.2s						
MOY	**Mondy**	**6.71**	**239**	*e*Pn	Pn	21 19 18.5	+4.9
MOY				*e*		21 19 27.7	
MOY				*e*Sn	**Sn**	**21 20 33.1**	**+3.1**
MOY				*e*Sg	**Sg**	**21 21 06.8**	**-3.3**
MOY				max			
	comp=E,7.0nm,0.6s						
MOY				Smax			
	comp=E,23nm,1.2s						
ORL	**Orlik**	**6.81**	**248**	⇑*i*Pn	Pn	21 19 20.5	+5.4
ORL				*e*		21 19 29.6	
ORL				*e*Sn	**Sn**	**21 20 34.9**	**+2.2**
ORL				*e*Sg	**Sg**	**21 21 10.0**	**-3.5**
ORL				max			
	comp=E,11nm,1.0s						
ORL				Smax			
	comp=E,39nm,1.1s						
ORL	**Orlik**	**6.81**	**248**	*e*PN	Pn	21 19 20.5	+5.4
ORL				*e*		21 19 41.6	
ORL				*e*S	**Sn**	**21 20 36.9**	**+4.2**
ORL				*e*		21 21 09.8	
ORL				pmax	pmax		
	comp=Z,4.0nm,0.7s						
ORL				smax	smax		
	comp=N,40nm,1.1s						

DDA 19 21:20:33.7,39°.20N×29°.07E,h7km,MI3.7,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.32**	**240**	*i* P	Pg	21 20 40.8	+0.8
DEMI				*i* S	Sg	21 20 45.4	+1.2
GDZ	**Gediz**	**0.34**	**109**	*i* P	Pg	21 20 41.0	+0.6
GDZ				*i* S	Sg	21 20 46.0	+1.0
MANT	**Manisa**	**0.81**	**209**	*i* P	Pg	21 20 49.0	-0.3
MANT				*i* S	Sg	21 20 58.4	-1.6
KHAL	**Karahalli**	**0.89**	**158**	*i* P	Pg	21 20 50.4	-0.5
KHAL				*i* S	Sg	21 21 00.9	-1.6
IGD	**Bursa**	**1.07**	**6**	*i* P	Pn	21 20 56.0	+0.9
IGD				*i* S	Sn	21 21 10.2	+0.1

IDC ***19*** *21:21:28.7±0.7,39°.05N×28°.95E,h0km,mb4.0/16, mb1 4.0/28,mb1mx4.0/47,mbtmp3.9/28,ML3.4/10,MS3.7/1, Ms1 3.5/1,ms1mx2.9/48,Error ellipse: s-maj=13.8km s-min=10.2km az=10.0*
MOS ***19*** *21:21:29.8±1.7,39°.06N×29°.04E,h8km,mb4.5/13,Error ellipse: s-maj=5.9km s-min=4.4km az=90.7*
ISK ***19*** *21:21:29.1,39°.11N×29°.03E,h5km,ML4.5*
DDA ***19*** *21:21:29.4,39°.11N×29°.03E,h7km,Ml4.3*
NEIC ***19*** *21:21:29.2,39°.11N×29°.01E,h5km,mb4.3/2,ML4.5(ISK), After ISK.*
ISCJB ***19*** *21:21:30.0±0.4,39°.09N±0°.01×29°.02E±0°.01,h9km±2km, mb4.0/27,MS4.2/1,Error ellipse: s-maj=2.1km s-min=1.9km az=10.1*
CSEM ***19*** *21:21:30.1±0.1,39°.11N×29°.03E,h2km,mb4.2/8,Error ellipse: s-maj=1.9km s-min=1.8km az=22.0*
THE ***19*** *21:21:31.1,39°.10N×29°.03E,h2km±1km,ML4.4/8,Error ellipse: s-maj=1.8km s-min=0.9km az=152.0*
NIC ***19*** *21:21:33.3±0.4,39°.20N×29°.01E,h50km,mb4.4,ML3.9*
ISC 19 21:21:29.9±1.1,39°.10N±0°.02×29°.04E±0°.01,h0km±7km,
n398,σ1§18/453,mb4.1/27,18C-13D,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**256**	P	**Pg**	**21 21 35.6**	**+0.8**
DEMI				S	**Sg**	**21 21 39.4**	**+1.2**
DEMI	**Demirci**	**0.26**	**256**	⇑*i*P	**Pg**	**21 21 35.6**	**+0.8**
DEMI				*i* S	**Sg**	**21 21 39.4**	**+1.2**
GDZ	**Gediz**	**0.35**	**92**	P	**Pg**	**21 21 37.0**	**+0.4**
GDZ				S	**Sg**	**21 21 41.9**	**+0.8**
GDZ	**Gediz**	**0.35**	**92**	⇑*i*P	**Pg**	**21 21 37.0**	**+0.4**
GDZ				*i* S	**Sg**	**21 21 41.9**	**+0.8**
TVSB	**Tavsanli**	**0.48**	**44**	PG	**Pg**	**21 21 39.3**	**+0.2**
TVSB	**Tavsanli**	**0.48**	**44**	*i* Pg	**Pg**	**21 21 39.3**	**+0.2**
KULA	**Kula-Manisa**	**0.66**	**207**	PG	**Pg**	**21 21 42.7**	**+0.2**
KULA	**Kula-Manisa**	**0.66**	**207**	P	**Pg**	**21 21 42.8**	**+0.2**
KULA	**Kula-Manisa**	**0.66**	**207**	P	**Pg**	**21 21 42.8**	**+0.2**
DURS	**Dursunbey**	**0.66**	**319**	P	**Pg**	**21 21 42.8**	**+0.2**
DURS				S	**Sg**	**21 21 51.9**	**+0.7**
DURS	**Dursunbey**	**0.66**	**319**	⇑*i*P	**Pg**	**21 21 42.8**	**+0.2**
DURS				*i* S	**Sg**	**21 21 51.9**	**+0.7**
MANT	**Manisa**	**0.72**	**211**	P	**Pg**	**21 21 43.8**	**+0.1**
MANT				S	**Sg**	**21 21 53.5**	**+0.5**
MANT	**Manisa**	**0.72**	**211**	⇑*i*P	**Pg**	**21 21 43.8**	**+0.1**
MANT				*i* S	**Sg**	**21 21 53.5**	**+0.5**
KHAL	**Karahalli**	**0.81**	**154**	P	**Pg**	**21 21 45.9**	**+0.4**
KHAL				S	**Sg**	**21 21 56.7**	**+0.6**
KHAL	**Karahalli**	**0.81**	**154**	⇑*i*P	**Pg**	**21 21 45.9**	**+0.4**
KHAL				*i* S	**Sg**	**21 21 56.6**	**+0.6**
KHL	**Karahalli**	**0.87**	**154**	PG	**Pg**	**21 21 47.2**	**+0.6**
KHL	**Karahalli**	**0.87**	**154**	*i* Pg	**Pg**	**21 21 47.2**	**+0.6**
ORLT	**Orhaneli**	**0.95**	**354**	*e*PG	**Pg**	**21 21 48.2**	**+0.1**
ORLT	**Orhaneli**	**0.95**	**354**	*e*Pg	**Pg**	**21 21 48.2**	**+0.1**
AKHS	**Akhisar**	**0.98**	**257**	P	**Pg**	**21 21 48.9**	**+0.2**
AKHS				S	**Sg**	**21 22 02.3**	**+0.9**
AKHS	**Akhisar**	**0.98**	**257**	⇑*i*P	**Pg**	**21 21 48.9**	**+0.2**
AKHS				*i* S	**Sg**	**21 22 02.3**	**+0.9**
AKS	**Akhisar**	**0.98**	**257**	*e*PG	**Pg**	**21 21 49.2**	**+0.5**
AKS	**Akhisar**	**0.98**	**257**	*e*Pg	**Pg**	**21 21 49.2**	**+0.5**
BALB	**Balikesir**	**1.04**	**301**	*e*PG	**Pg**	**21 21 50.2**	**+0.3**
BALB				*e*SG	**Sb**	**21 22 05.4**	**+0.3**
BALB	**Balikesir**	**1.04**	**301**	*e*Pg	**Pg**	**21 21 50.2**	**+0.3**
BALB				*e*Sg	**Sb**	**21 22 05.4**	**+0.3**
IGD	**Bursa**	**1.17**	**6**	⇑*i*P	**Pg**	**21 21 50.7**	**-1.6**
IGD				*i* S	**Sg**	**21 22 07.5**	**+0.1**
CAVI	**Cavuskoy**	**1.26**	**29**	*e*PN	**Pb**	**21 21 54.6**	**0.0**
CAVI	**Cavuskoy**	**1.26**	**29**	*e*Pn	**Pb**	**21 21 54.6**	**0.0**
BALY	**Balya**	**1.27**	**301**	P	**Pg**	**21 21 54.3**	**+0.1**
BALY				S	**Sb**	**21 22 11.6**	**0.0**
BALY	**Balya**	**1.27**	**301**	⇓*i*P	**Pg**	**21 21 54.3**	**+0.1**
BALY				*i* S	**Sb**	**21 22 11.6**	**0.0**
MDNY	**Mudanya-Bursa**	**1.27**	**355**	*e*PN	**Pg**	**21 21 53.9**	**-0.4**
MDNY				*e*SN	**Sn**	**21 22 12.7**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.27**	**355**	*e*Pn	**Pg**	**21 21 53.9**	**-0.4**
MDNY				*e*Sn	**Sn**	**21 22 12.7**	**+0.1**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*PN	**Pg**	**21 21 54.5**	**+0.2**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*Pn	**Pg**	**21 21 54.5**	**+0.2**
IZI	**Iznik**	**1.28**	**15**	*e*PN	**Pg**	**21 21 54.6**	**+0.2**
IZI	**Iznik**	**1.28**	**15**	*e*Pn	**Pg**	**21 21 54.6**	**+0.2**
GEMT	**Gemlik**	**1.33**	**5**	*e*PN	**Pg**	**21 21 55.3**	**-0.2**
GEMT	**Gemlik**	**1.33**	**5**	*e*Pn	**Pg**	**21 21 55.3**	**-0.2**
BORA	**Eskisehir**	**1.34**	**54**	P	**Pg**	**21 21 54.5**	**-1.2**
BORA				S	**Sg**	**21 22 13.6**	**+0.5**
BORA	**Eskisehir**	**1.34**	**54**	⇑*i*P	**Pg**	**21 21 54.5**	**-1.2**
BORA				*i* S	**Sg**	**21 22 13.6**	**+0.5**
DENT	**Denizli**	**1.35**	**180**	*e*PN	**Pn**	**21 21 55.5**	**-0.5**
DENT	**Denizli**	**1.35**	**180**	*e*Pn	**Pn**	**21 21 55.6**	**-0.5**
GONE	**Gonen-Balikesi**	**1.40**	**313**	*e*PN	**Pg**	**21 21 56.9**	**0.0**
GONE	**Gonen-Balikesi**	**1.40**	**313**	*e*Pn	**Pg**	**21 21 56.9**	**0.0**
DNZL	**Cakiroluk**	**1.41**	**180**	P	**Pn**	**21 21 56.1**	**-0.9**
DNZL	**Cakiroluk**	**1.41**	**180**	⇓*i*P	**Pn**	**21 21 56.1**	**-0.9**
DNZL				*i* S	**Sn**	**21 22 19.1**	**+2.7**
ADVT	**Abdulvahap**	**1.43**	**22**	*e*PN	**Pb**	**21 21 57.

AYVA S **Sg** **21 22 28.6 -0.2**
AYVA Ayvalik 1.83 277 ||*i*P **Pn** **21 22 02.1 -0.6**
AYVA *i* S **Sg** **21 22 28.6 -0.2**
KRBG Karabiga-Canak 1.86 314 *e*PN **Pn** **21 22 03.2 +0.2**
KRBG Karabiga-Canak 1.86 314 *e*Pn **Pn** **21 22 03.2 +0.2**
SPNC Sapanca-Adapaz 1.86 31 *e*PN **Pn** **21 22 03.4 +0.4**
SPNC Sapanca-Adapaz 1.86 31 *e*Pn **Pn** **21 22 03.4 +0.4**
MRMT Marmara Adasi 1.86 324 *e*PN **Pn** **21 22 02.6 -0.5**
MRMT Marmara Adasi 1.86 324 *e*Pn **Pn** **21 22 02.6 -0.5**
GOLH Golhisar 1.91 167 P **Pn** **21 22 03.7 -0.1**
GOLH Golhisar 1.91 167 ||*i*P **Pn** **21 22 03.7 -0.1**
GOLH *i* S Sg 21 22 37.9 +6.6
ISK Istanbul-Kandi 1.96 1 *e*PN **Pn** **21 22 05.0 +0.6**
ISK Istanbul-Kandi 1.96 1 P **Pn** **21 22 03.3 -1.1**
ISK S **Sn** **21 22 29.2 -0.5**
ISK Istanbul-Kandi 1.96 1 P **Pn** **21 22 03.3 -1.1**
ISK Istanbul-Kandi 1.96 1 *e*Pn **Pn** **21 22 05.0 +0.6**
ISK S **Sn** **21 22 29.2 -0.5**
SVRH Sivrihisar-ESK 1.96 79 *e*PN **Pn** **21 22 05.0 +0.5**
SVRH Sivrihisar-ESK 1.96 79 *e*Pn **Pn** **21 22 05.0 +0.5**
GLHS Glhisar (BURDU 1.98 169 *e*PN **Pn** **21 22 05.0 +0.3**
GLHS Glhisar (BURDU 1.98 169 *e*Pn **Pn** **21 22 05.1 +0.3**
DGB ˜zmir 1.99 239 ||*i*P **Pn** **21 22 05.0 +0.3**
DGB *i* S **Sg** **21 22 34.3 +0.5**
GCAM G?zelcaml? 1.99 226 P **Pn** **21 22 05.4 +0.6**
GCAM G?zelcaml? 1.99 226 ||*i*P **Pn** **21 22 05.4 +0.6**
GCAM *i* S **Sg** **21 22 34.2 +0.3**
BCK Bucak 2.05 143 *e*PN **Pn** **21 22 06.2 +0.5**
BCK Bucak 2.05 143 *e*Pn **Pn** **21 22 06.2 +0.5**
URLA Izmir 2.05 249 P **Pn** **21 22 04.6 -1.1**
URLA Izmir 2.05 249 *i* P **Pn** **21 22 04.6 -1.1**
URLA *i* S **Sb** **21 22 34.1 +0.1**
YER Yerkesik 2.05 197 *e*PN **Pn** **21 22 06.3 +0.5**
YER Yerkesik 2.05 197 P **Pn** **21 22 05.2 -0.6**
YER Yerkesik 2.05 197 P **Pn** **21 22 05.2 -0.6**
YER Yerkesik 2.05 197 *e*Pn **Pn** **21 22 06.3 +0.5**
BGKT Bogazkoy 2.08 355 *e*PN **Pn** **21 22 06.3 +0.2**
BGKT Bogazkoy 2.08 355 *e*Pn **Pn** **21 22 06.3 +0.2**
SILT Sile 2.10 13 *e*PN **Pn** **21 22 06.9 +0.6**
SILT Sile 2.10 13 *e*Pn **Pn** **21 22 06.9 +0.6**
RKY Sarkoy-Tekirda 2.13 318 *e*PN **Pn** **21 22 07.1 +0.3**
RKY Sarkoy-Tekirda 2.13 318 *e*Pn **Pn** **21 22 07.1 +0.3**
KLYT Kilyos 2.15 0 *e*PN **Pn** **21 22 07.2 +0.3**
KLYT Kilyos 2.15 0 *e*Pn **Pn** **21 22 07.2 +0.3**
PRK Paraskevi 2.15 275 P **Pn** **21 22 06.7 -0.3**
PRK S **Sn** **21 22 33.5 -0.9**
PRK Paraskevi 2.15 275 P **Pn** **21 22 06.7 -0.3**
PRK S **Sn** **21 22 33.5 -0.9**
MDUB Mudurnu 2.15 50 *e*PN **Pn** **21 22 07.5 +0.3**
MDUB Mudurnu 2.15 50 *e*Pn **Pn** **21 22 07.5 +0.3**
LPK Lapseki 2.16 307 *e*PN **Pn** **21 22 07.2 0.0**
LPK Lapseki 2.16 307 *e*Pn **Pn** **21 22 07.2 0.0**
CTKS Kestanelik-??a 2.17 349 *e*PN **Pn** **21 22 06.9 -0.3**
CTKS Kestanelik-??a 2.17 349 *e*Pn **Pn** **21 22 06.9 -0.3**
TKR Tekirdag 2.21 329 *e*PN **Pn** **21 22 08.0 +0.2**
TKR Tekirdag 2.21 329 *e*Pn **Pn** **21 22 08.0 +0.2**
EZN Ezine 2.22 290 *e*PN **Pn** **21 22 07.8 -0.2**
EZN Ezine 2.22 290 *e*Pn **Pn** **21 22 07.8 -0.2**
SMG Samos 2.22 232 P **Pn** **21 22 06.6 -1.4**
SMG S **Sn** **21 22 36.4 +0.3**
SMG Samos 2.22 232 P **Pn** **21 22 06.6 -1.4**
SMG S **Sn** **21 22 36.4 +0.3**
KIZT Kizilcal 2.23 95 *e*PN **Pn** **21 22 09.0 +0.8**
KIZT Kizilcal 2.23 95 *e*Pn **Pn** **21 22 09.0 +0.8**
SUTC Sutluce-Ispart 2.24 136 *e*PN **Pn** **21 22 09.2 +0.8**
SUTC Sutluce-Ispart 2.24 136 *e*Pn **Pn** **21 22 09.2 +0.8**
CRLT Corlu 2.25 334 *e*PN **Pn** **21 22 09.0 +0.5**
CRLT Corlu 2.25 334 *e*Pn **Pn** **21 22 09.0 +0.5**
GELI Tayfur-Gelibol 2.36 304 *e*PN **Pn** **21 22 10.1 +0.2**
GELI Tayfur-Gelibol 2.36 304 *e*Pn **Pn** **21 22 10.1 +0.2**
CTYL Yalikoy Yolu 2.44 347 *e*PN **Pn** **21 22 11.7 +0.7**
CTYL Yalikoy Yolu 2.44 347 *e*Pn **Pn** **21 22 11.7 +0.7**
CHOS Chios island 2.44 254 P **Pn** **21 22 10.3 -0.8**
CHOS S **Sn** **21 22 41.0 -0.6**
CHOS Chios island 2.44 254 P **Pn** **21 22 10.3 -0.8**
CHOS S **Sn** **21 22 41.0 -0.6**
BODT Bodrum 2.45 214 P **Pn** **21 22 10.3 -0.9**
BODT Bodrum 2.45 214 P **Pn** **21 22 10.3 -0.9**
FETY Fethiye 2.46 179 P **Pn** **21 22 10.5 -0.9**
FETY Fethiye 2.46 179 P **Pn** **21 22 10.5 -0.9**
SIGR SIGRI 2.47 273 P **Pn** **21 22 10.9 -0.6**
SIGR S **Sn** **21 22 41.5 -0.8**
SIGR SIGRI 2.47 273 P **Pn** **21 22 10.9 -0.6**
SIGR S **Sn** **21 22 41.5 -0.8**
ERIK Erikli-Kesan 2.49 310 *e*PN **Pn** **21 22 12.4 +0.7**
ERIK Erikli-Kesan 2.49 310 *e*Pn **Pn** **21 22 12.4 +0.7**
ENEZ Enez 2.75 307 P **Pn** **21 22 15.2 -0.1**
ENEZ S **Sn** **21 22 49.0 -0.2**
ENEZ Enez 2.75 307 P **Pn** **21 22 15.2 -0.1**
ENEZ S **Sn** **21 22 49.0 -0.2**
LADK Ladik-KONYA 2.76 108 *e*PN **Pn** **21 22 16.1 +0.6**
LADK Ladik-KONYA 2.76 108 *e*Pn **Pn** **21 22 16.1 +0.6**
PHSR Pinarhisar 2.77 336 *e*PN **Pn** **21 22 16.1 +0.5**
PHSR Pinarhisar 2.77 336 *e*Pn **Pn** **21 22 16.1 +0.5**
KDZE Karadeniz Ereo 2.88 39 *e*PN **Pn** **21 22 18.2 +1.2**
KDZE Karadeniz Ereo 2.88 39 *e*Pn **Pn** **21 22 18.2 +1.2**
NIS1 Nisyros Isl. 2.90 211 P **Pn** **21 22 16.9 -0.4**
NIS1 Nisyros Isl. 2.90 211 P **Pn** **21 22 16.9 -0.4**
ALN Alexandroupoli 2.91 309 P **Pn** **21 22 17.1 -0.4**
ALN S **Sn** **21 22 53.3 +0.1**
ALN Alexandroupoli 2.91 309 P **Pn** **21 22 17.1 -0.4**
ALN S **Sn** **21 22 53.3 +0.1**
ARG Arkhangelos 2.97 194 P **Pn** **21 22 19.2 +0.9**
ARG Arkhangelos 2.97 194 P **Pn** **21 22 19.2 +0.9**
SMTH Samothraki Isl 3.02 298 P **Pn** **21 22 19.0 -0.1**
SMTH S **Sn** **21 22 55.8 -0.2**
SMTH Samothraki Isl 3.02 298 P **Pn** **21 22 19.0 -0.1**
SMTH S **Sn** **21 22 55.8 -0.2**
LIA Limnos Island 3.08 286 P **Pn** **21 22 19.7 -0.1**
LIA S **Sn** **21 22 56.7 -0.7**
LIA Limnos Island 3.08 286 P **Pn** **21 22 19.7 -0.1**
LIA S **Sn** **21 22 56.7 -0.7**
EDRB Edirne 3.25 328 P **Pn** **21 22 21.9 -0.2**
EDRB S **Sn** **21 23 00.9 -0.6**
EDRB Edirne 3.25 328 P **Pn** **21 22 21.9 -0.2**
EDRB S **Sn** **21 23 00.9 -0.6**
APE Apeiranthos 3.43 235 P **Pn** **21 22 23.9 -0.7**
APE Apeiranthos 3.43 235 *i* P **Pn** **21 22 24.0 -0.7**
APE Apeiranthos 3.43 235 *i* P **Pn** **21 22 24.0 -0.7**
BRTR Keskin Array B 3.62 79 Pn **Pn** **21 22 27.7 +0.3**
3.3nm,0.3s,baz=252,slow=14,SNR=38
BRTR Pg **Pg** **21 22 38.7 -0.6**
7.9nm,0.3s,baz=256,slow=15,SNR=38
BRTR Sn **Sn** **21 23 09.4 -1.5**
3.6nm,0.3s,baz=250,slow=12,SNR=3.1
BRTR Lg Lg 21 23 29.7
3.5nm,0.3s,baz=264,slow=22,SNR=6.6
KDZ Kurdzhali 3.75 314 P **Pn** **21 22 29.0 -0.1**
JMB Yambol 3.84 332 P **Pn** **21 22 30.8 +0.5**
KAVA Kavala 3.95 300 P **Pn** **21 22 31.6 -0.2**
KAVA S **Sn** **21 23 18.0 -0.8**
KAVA Kavala 3.95 300 P **Pn** **21 22 31.6 -0.2**
KAVA S **Sn** **21 23 18.0 -0.8**
DIM Dimitrovgrad 3.97 319 P **Pn** **21 22 31.9 -0.1**
AOS Alonnisos 4.01 273 P **Pn** **21 22 32.6 0.0**
AOS Alonnisos 4.01 273 P **Pn** **21 22 32.6 0.0**
OUR Ouranopolis 4.09 289 P **Pn** **21 22 33.2 -0.4**
OUR Ouranopolis 4.09 289 P **Pn** **21 22 33.2 -0.4**
PAIG Paliouri 4.22 283 P **Pn** **21 22 35.0 -0.5**
PAIG Paliouri 4.22 283 P **Pn** **21 22 35.0 -0.5**
VLY Voula,Athens 4.30 255 P **Pn** **21 22 36.2 -0.4**
VLY Voula,Athens 4.30 255 P **Pn** **21 22 36.2 -0.4**
PLD Plovdiv 4.46 314 P **Pn** **21 22 38.7 0.0**
PLG Polygyros 4.49 288 P **Pn** **21 22 39.1 -0.2**
PLG Polygyros 4.49 288 P **Pn** **21 22 39.1 -0.2**
NVR Nevrokopi 4.55 301 P **Pn** **21 22 40.0 -0.1**
NVR Nevrokopi 4.55 301 P **Pn** **21 22 40.0 -0.1**
ZKR Zakros 4.58 210 P **Pn** **21 22 41.5 +1.1**
ZKR Zakros 4.58 210 P **Pn** **21 22 41.5 +1.1**
SRS Serrai 4.63 297 P **Pn** **21 22 41.0 -0.2**
SRS Serrai 4.63 297 P **Pn** **21 22 41.0 -0.2**
SOH Sokhos 4.69 293 P **Pn** **21 22 41.7 -0.3**
SOH Sokhos 4.69 293 P **Pn** **21 22 42.7 +0.7**
SOH Sokhos 4.69 293 P **Pn** **21 22 41.7 -0.3**
NPS Neapolis 4.71 217 P **Pn** **21 22 42.6 +0.4**
NPS Neapolis 4.71 217 P **Pn** **21 22 42.6 +0.4**
HORT Hortiatis 4.80 290 P **Pn** **21 22 43.4 -0.2**
HORT Hortiatis 4.80 290 P **Pn** **21 22 43.4 -0.2**
AKMC Akamas 4.85 146 P **Pn** **21 22 45.5 +1.4**
baz=328

AKMC Akamas 4.85 146 P **Pn** **21 22 45.5 +1.4**
LAST Lasithi 4.85 217 P **Pn** **21 22 44.5 +0.2**
LAST Lasithi 4.85 217 P **Pn** **21 22 44.5 +0.2**
ALFC Alefka 4.86 143 P **Pn** **21 22 44.9 +0.6**
baz=325
ALFC S **Sn** **21 23 41.2 -0.1**
ALFC Alefka 4.86 143 P **Pn** **21 22 44.9 +0.6**
ALFC S **Sn** **21 23 41.2 -0.1**
LTK Loutraki 4.88 259 P **Pn** **21 22 44.8 +0.3**
LTK Loutraki 4.88 259 P **Pn** **21 22 44.8 +0.3**
KRND KRANIDI 4.94 251 P **Pn** **21 22 45.1 -0.3**
KRND KRANIDI 4.94 251 P **Pn** **21 22 45.1 -0.3**
PPCY Paphos 4.97 147 P **Pn** **21 22 46.7 +0.9**
baz=329
PPCY Paphos 4.97 147 P **Pn** **21 22 46.7 +0.9**
IDI Anoyia 5.04 222 Pn **Pn** **21 22 44.6 -2.2**
1.1nm,0.3s,baz=43,slow=12,SNR=13
IDI Anoyia 5.04 222 P **Pn** **21 22 46.4 -0.5**
IDI Anoyia 5.04 222 P **Pn** **21 22 46.4 -0.5**
KNT Kendrikon 5.13 296 P **Pn** **21 22 48.4 +0.4**
KNT Kendrikon 5.13 296 P **Pn** **21 22 49.8 +1.8**
KNT pmax pmax
comp=Z,30nm,0.8s
KNT Kendrikon 5.13 296 P **Pn** **21 22 48.4 +0.4**
DSF Desfina 5.13 264 P **Pn** **21 22 48.3 +0.2**
DSF Desfina 5.13 264 P **Pn** **21 22 48.3 +0.2**
LIT Litokhoron 5.15 283 P **Pn** **21 22 48.5 +0.2**
LIT Litokhoron 5.15 283 P **Pn** **21 22 48.5 +0.2**
TIRR Tirgusor 5.37 355 *e*P **Pn** **21 22 50.9 -0.3**
TIRR *e* 21 23 50.7
TIRR pmax pmax
comp=Z,53nm,0.3s
TIRR Tirgusor 5.37 355 *e*P **Pn** **21 22 50.9 -0.3**
comp=Z,53nm,0.3s
TIRR *e*S **Sn** **21 23 50.7 -3.0**
TIRR Tirgusor 5.37 355 *e*Pn **Pn** **21 22 50.9 -0.3**
comp=Z,53nm,0.3s
TIRR *e*Sn **Sn** **21 23 50.7 -3.0**
CSS Mathiatis 5.38 139 P **Pn** **21 22 51.2 -0.2**
CSS Mathiatis 5.38 139 *e*Pn **Pn** **21 22 51.4 0.0**
comp=Z,6.2nm,0.4s
CSS Mathiatis 5.38 139 *e*Pn **Pn** **21 22 51.4 0.0**
comp=Z,6.2nm,0.4s
VLI Veliai 5.38 246 P **Pn** **21 22 50.9 -0.5**
VLI Veliai 5.38 246 P **Pn** **21 22 50.9 -0.5**
GRG Griva 5.42 292 P **Pn** **21 22 52.3 +0.3**
GRG Griva 5.42 292 P **Pn** **21 22 52.3 +0.3**
VAY Valandovo 5.42 296 *e*Pn Pn 21 22 47.6 -4.4
THL Klokotos Trika 5.46 277 P **Pn** **21 22 53.1 +0.6**
THL Klokotos Trika 5.46 277 P **Pn** **21 22 53.1 +0.6**
KLV Kalavryta, Ach 5.50 261 P **Pn** **21 22 53.2 +0.1**
KLV Kalavryta, Ach 5.50 261 P **Pn** **21 22 53.2 +0.1**
VLX Vlachokerasia 5.52 254 P **Pn** **21 22 54.0 +0.6**
VLX Vlachokerasia 5.52 254 P **Pn** **21 22 54.0 +0.6**
DRO Drossia 5.86 261 P **Pn** **21 22 59.2 +1.2**
DRO Drossia 5.86 261 P **Pn** **21 22 59.2 +1.2**
KPRO Kipourio 5.99 281 P **Pn** **21 23 01.0 +1.1**
KPRO Kipourio 5.99 281 P **Pn** **21 23 01.0 +1.1**
FNA Florina 6.12 288 P **Pn** **21 23 02.5 +0.9**
FNA Florina 6.12 288 P Pn 21 23 05.0 +3.4
FNA pmax pmax
comp=Z,10.0nm,0.4s
FNA Florina 6.12 288 P **Pn** **21 23 02.5 +0.9**
DSL Palaion Diasel 6.17 273 P **Pn** **21 23 03.7 +1.3**
DSL Palaion Diasel 6.17 273 P **Pn** **21 23 03.7 +1.3**
PENT Pentalofos 6.19 283 P **Pn** **21 23 03.6 +0.9**
PENT Pentalofos 6.19 283 P **Pn** **21 23 03.6 +0.9**
BIA Bitola 6.22 290 *e*Pn **Pn** **21 23 03.6 +0.6**
BIA Bitola 6.22 290 *e*Pn **Pn** **21 23 03.5 +0.6**
SEV Sevastopol' 6.44 31 *e*P **Pn** **21 23 04.7 -1.3**
SEV *e*S **Sn** **21 24 16.1 -4.1**
SEV Sevastopol' 6.44 31 *e*P **Pn** **21 23 04.7 -1.3**
SKO Skopje 6.46 299 *e*Pn **Pn** **21 23 04.5 -1.8**
SKO Skopje 6.46 299 *e*Pn **Pn** **21 23 04.4 -1.8**
YAL Yalta 6.60 34 *e*P **Pn** **21 23 08.2 +0.1**
YAL *e*S **Sn** **21 24 20.3 -3.7**
YAL Yalta 6.60 34 *e*P **Pn** **21 23 08.2 +0.1**
BARS Barje 6.60 306 ||*i*Pn **Pn** **21 23 08.7 +0.5**
MLR Muntele Rosu 6.78 341 Pn **Pn** **21 23 11.5 +0.8**
comp=Z,0.2nm,0.3s,baz=75,slow=2.5,SNR=14
ALU Alushta 6.86 34 *e*P **Pn** **21 23 11.0 -0.7**
ALU *e*S **Sn** **21 24 27.4 -3.1**
ALU Alushta 6.86 34 *e*P **Pn** **21 23 11.0 -0.7**
SIM Simferopol' 6.96 31 *e*P **Pn** **21 23 13.3 +0.2**
SIM *e*S **Sn** **21 24 30.6 -2.3**
SIM Simferopol' 6.96 31 *e*P **Pn** **21 23 13.3 +0.2**
SIM *e*S **Sn** **21 24 30.6 -2.3**
VRI Vrincioaia 6.97 347 P **Pn** **21 23 16.0 +2.7**
VRI pmax pmax
comp=Z,447nm,1.4s
VOIR 6.98 336 P **Pn** **21 23 15.3 +1.8**
VOIR pmax pmax
comp=Z,15nm,0.9s
VOIR 6.98 336 P **Pn** **21 23 15.3 +1.8**
comp=Z,15nm,0.9s
BOLS Boljevac 7.11 314 ||*i*Pn **Pn** **21 23 13.0 -2.2**
BOVS Bovan 7.13 312 *i* Pn **Pn** **21 23 14.1 -1.4**
SELS Selova 7.25 307 ||*i*Pn **Pn** **21 23 16.8 -0.3**
SUDU Sudak 7.29 36 *e*P **Pn** **21 23 15.8 -1.8**
SUDU *e*S **Sn** **21 24 37.4 -3.6**
SUDU Sudak 7.29 36 *e*P **Pn** **21 23 15.8 -1.8**
KUBS Kucevo 7.64 316 *i* Pn **Pn** **21 23 20.1 -2.3**
KIS Kishinev 7.89 359 *e*P **Pn** **21 23 27.0 +1.1**
KIS Kishinev 7.89 359 *e*P **Pn** **21 23 27.0 +1.1**
KIS *e* 21 25 04.0
KIS Kishinev 7.89 359 *e*P **Pn** **21 23 27.0 +1.1**
MMAI Mount Meron Ar 7.97 138 Pn **Pn** **21 23 26.9 -0.2**
comp=Z,7.8nm,0.3s,baz=327,slow=12,SNR=30
MMAI Sn **Sn** **21 24 54.9 -3.0**
comp=Z,0.6nm,0.3s,baz=320,slow=24,SNR=2.7
IVAS Ivanjica 8.04 307 *i* Pn **Pn** **21 23 28.1 +0.2**
TRUS Trudelj 8.24 311 ||*i*Pn **Pn** **21 23 31.1 +0.5**
DIVS Divibare 8.41 309 *e*Pn **Pn** **21 23 32.5 -0.6**
ANN Anapa 8.46 45 *e*P **Pn** **21 23 34.0 +0.4**
ANN *e*S **Sn** **21 25 11.4 +1.7**
ANN pmax pmax
comp=Z,28nm,1.3s
ANN Anapa 8.46 45 *e*P **Pn** **21 23 34.0 +0.4**
comp=Z,28nm,1.3s
ANN *e*S **Sn** **21 25 11.4 +1.7**
FGSL Fruska Gora 9.14 314 *i* Pn **Pn** **21 23 42.8 -0.2**
ASF Jabal al Asfar 9.42 135 Pn **Pn** **21 23 46.5 -0.4**
comp=Z,0.2nm,0.3s,baz=332,slow=15,SNR=2.2
TIP Timpagrande 9.54 274 *e*Pn **Pn** **21 23 49.0 +0.4**
comp=Z,13nm,1.1s
TIP Timpagrande 9.54 274 *e*Pn **Pn** **21 23 49.0 +0.4**
comp=Z,13nm,1.1s
CUC Castrocucco 10.25 279 *e*Pn **Pn** **21 23 59.4 +1.1**
comp=Z,9.0nm,0.9s
CUC Castrocucco 10.25 279 *e*Pn **Pn** **21 23 59.4 +1.1**
comp=Z,9.0nm,0.9s
EIL Elat 10.60 151 Pn **Pn** **21 24 01.4 -1.7**
comp=Z,1.1nm,0.3s,baz=278,slow=3.3,SNR=8.5
EIL Sn Sn 21 25 56.5 -6.0
comp=Z,0.5nm,0.3s,baz=66,slow=18,SNR=4.0
NEY Neytrino 11.11 64 *i* P Pn 21 24 14.4 +4.2
KECS Kecovo 11.22 329 *e*P Pn 21 24 20.7 +9.2
KECS Kecovo 11.22 329 *e*PN Pn 21 24 20.7 +9.2
LVV L'vov 11.29 343 *e*P Pn 21 24 20.6 +8.2
KIV Kislovodsk 11.32 60 *e*P Pn 21 24 17.0 +4.1
KIV pmax pmax
comp=Z,7.0nm,1.0s
KVAR Kislovodsk Arr 11.32 60 Pn Pn 21 24 16.4 +3.3
baz=46,slow=5.3,SNR=5.1
KBZ Khabaz 11.39 62 Pn Pn 21 24 17.5 +3.8
comp=Z,0.1nm,0.3s,baz=229,slow=18,SNR=2.8
KBZ LR LR 21 30 11.8
comp=Z,318nm,18.2s,baz=282,slow=46
AKASG Malin Array Be 11.60 1 Pn **Pn** **21 24 14.2 -2.4**
comp=Z,0.7nm,0.3s,baz=189,slow=13,SNR=4.2
AKASG Sn **Sn** **21 26 29.9 +3.1**
comp=Z,1.0nm,0.3s,baz=182,slow=26,SNR=5.1
STHS Stebnicka Huta 11.72 334 *e*P Pn 21 24 23.6 +5.3
STHS Stebnicka Huta 11.72 334 *e*PN Pn 21 24 23.6 +5.3
ZEI Tsey 11.83 67 *e*P Pn 21 24 24.9 +4.9
ZEI pmax pmax
comp=Z,19nm,1.3s
VYHS Vyhne 11.92 325 *e*P Pn 21 24 25.5 +4.4
VYHS Vyhne 11.92 325 *e*PN Pn 21 24 25.5 +4.4
GNI Garni 12.16 80 *e*P **Pn** **21 24 25.8 +1.3**
GNI Garni 12.16 80 *e*P **Pn** **21 24 25.8 +1.3**
OBKA Obir 12.95 310 P Pn 21 24 39.8 +4.6
comp=Z,4.3nm,0.9s

CONA Conrad Observa 12.99 317 *i* P **Pn** **21 24 38.5 +2.8**
comp=Z,1.9nm,0.7s
KBA Koelnbreinsper 13.95 310 *i* P **P** **21 24 56.2 -1.0**
comp=Z,7.6nm,1.2s
VSR Storozhevoye 14.04 27 *e*P Pn 21 24 46.7 -3.3
VSR pmax pmax
comp=Z,7.0nm,0.6s
GERES GERESS Array B 14.69 316 Pn **Pn** **21 24 58.1 -1.0**
comp=Z,0.1nm,0.3s,baz=123,slow=14,SNR=5.3
KHC Kasperske Hory 14.93 317 *e*P **Pn** **21 25 04.9 +2.7**
KHC Kasperske Hory 14.93 317 *e*P **Pn** **21 25 04.9 +2.7**
VRH Novokhopyorsk 15.02 32 *e*P **P** **21 25 06.8 -2.1**
VRH pmax pmax
comp=Z,10.0nm,0.7s
VRH Novokhopyorsk 15.02 32 *e*P **P** **21 25 06.8 -2.1**
comp=Z,10.0nm,0.7s
WATA Walderalm 15.13 309 *i* P **P** **21 25 12.9 +2.5**
comp=Z,12nm,1.2s
WATA Walderalm 15.13 309 P **P** **21 25 12.9 +2.5**
comp=Z,12nm,1.2s
LPSR Galich'ya Gora 15.13 24 *e*P **P** **21 25 08.1 -2.1**
LPSR pmax pmax
comp=Z,10.0nm,1.0s
LPSR Galich'ya Gora 15.13 24 *e*P **P** **21 25 08.1 -2.1**
comp=Z,10.0nm,1.0s
WET Wettzell 15.31 316 P **P** **21 25 16.8 +4.6**
WET pmax pmax
comp=Z,7.0nm,1.1s
MOTA Moosalm 15.42 308 *i* P **P** **21 25 11.9 -1.7**
comp=Z,4.1nm,0.8s
MOTA Moosalm 15.42 308 P **P** **21 25 11.9 -1.7**
comp=Z,4.1nm,0.8s
FETA Feichten 15.52 307 *i* pP **P** **21 25 13.2 -1.5**
comp=Z,13nm,1.2s
FETA Feichten 15.52 307 P **P** **21 25 13.2 -1.5**
comp=Z,13nm,1.2s
BRG Berggiesshubel 15.85 323 *e*P **P** **21 25 18.4 +0.2**
comp=Z,3.4nm,1.0s
BRG Berggiesshubel 15.85 323 *e*P **P** **21 25 18.4 +0.2**
BRG pmax pmax
comp=Z,3.0nm,1.0s
BRG Berggiesshubel 15.85 323 *e*P **P** **21 25 18.4 +0.2**
comp=Z,3.0nm,1.0s
DAVOX Davos/Dischmat 15.96 305 Pn **Pn** **21 25 13.7 -2.2**
comp=Z,0.1nm,0.3s,baz=326,slow=17,SNR=2.2
KEST Kesra 16.00 264 Pn **Pn** **21 25 13.4 -3.0**
baz=251,slow=18,SNR=3.3
DAVA Damuels 16.16 307 *i* P **P** **21 25 22.9 +1.1**
comp=Z,13nm,1.1s
DAVA Damuels 16.16 307 P **P** **21 25 22.9 +1.1**
comp=Z,13nm,1.1s
CLL Collm 16.58 323 *e*P **P** **21 25 31.0 +4.7**
CLL Collm 16.58 323 *e*P **P** **21 25 31.0 +4.7**
KLNR Kaliningrad 16.62 342 ||*e*P **P** **21 25 28.9 +2.3**
KLNR pmax pmax
comp=Z,43nm,1.5s
KLNR Kaliningrad 16.62 342 *e*P **P** **21 25 28.9 +2.3**
comp=Z,43nm,1.5s
OBN Obninsk 16.80 15 ||*e*P **P** **21 25 29.4 +0.8**
OBN pmax pmax
comp=Z,9.0nm,1.0s
OBN MLR MLR
comp=Z,238nm,16.0s
OBN Obninsk 16.80 15 *e*P **P** **21 25 29.4 +0.8**
comp=Z,238nm,16.0s
BFO Black Forest 17.53 308 *ce*P **P** **21 25 41.2 +4.3**
LPG La Plagne 17.65 298 *e*P **P** **21 25 40.3 +1.8**
LPG pmax pmax
comp=Z,12nm,1.0s
LPL La Plagne 17.67 298 *e*P **P** **21 25 39.1 +0.5**
LPL pmax pmax
comp=Z,17nm,1.4s
CDF Champ du Feu 18.21 308 *e*P **P** **21 25 44.9 +0.5**
CDF pmax pmax
comp=Z,9.0nm,1.0s
CDF Champ du Feu 18.21 308 *e*P **P** **21 25 44.9 +0.5**
comp=Z,9.0nm,1.0s
CABF La Chapelle 18.38 302 *e*P **Pn** **21 25 46.1 -0.1**
CABF pmax pmax
comp=Z,9.0nm,1.0s
CABF La Chapelle 18.38 302 *e*P **Pn** **21 25 46.1 -0.1**
comp=Z,9.0nm,1.0s
VIVF Saint-Julien-l 18.97 295 *e*P **Pn** **21 25 53.1 -0.2**
VIVF pmax pmax
comp=Z,5.0nm,0.9s
VIVF Saint-Julien-l 18.97 295 *e*P **Pn** **21 25 53.1 -0.2**
comp=Z,5.0nm,0.9s
VSU Vasula 19.43 356 ||*e*P **Pn** **21 26 01.0 +2.3**
VSU pmax pmax
comp=Z,71nm,1.0s
AVF Avril sur Loir 20.25 301 *e*P **P** **21 26 06.4 -0.2**
AVF pmax pmax
comp=Z,11nm,0.9s
AVF Avril sur Loir 20.25 301 *e*P **P** **21 26 06.4 -0.2**
comp=Z,11nm,0.9s
CAF Calviac 20.82 295 *e*P Pn 21 26 14.3 -0.9
CAF pmax pmax
comp=Z,8.0nm,1.0s
CAF Calviac 20.82 295 *e*P Pn 21 26 14.3 -0.9
comp=Z,8.0nm,1.0s
FINES FINESS Array B 22.44 356 P **P** **21 26 30.4 +0.3**
comp=Z,2.7nm,0.7s,baz=159,slow=12,SNR=3.5
KLMR Klimovskoe 22.74 13 *e*P **P** **21 26 32.2 -1.0**
KLMR pmax pmax
comp=Z,34nm,1.4s
KLMR Klimovskoe 22.74 13 *e*P **P** **21 26 32.2 -1.0**
comp=Z,34nm,1.4s
GEYT Alibeck 22.75 84 P **P** **21 26 33.6 0.0**
comp=Z,6.5nm,0.9s,baz=291,slow=12,SNR=13
HFS Hagfors 23.16 340 P **P** **21 26 37.5 -0.2**
comp=Z,4.2nm,0.8s,baz=141,slow=9.6,SNR=4.1
AKTK Aktyubinsk 23.34 51 P **P** **21 26 40.2 +0.6**
AKTO Aktyubinsk 23.34 51 P **P** **21 26 40.2 +0.6**
comp=Z,5.6nm,0.9s,baz=252,slow=10,SNR=7.2
NB2 NORSAR Subarra 24.59 339 P **P** **21 26 50.5 -1.0**
comp=Z,2.0nm,0.8s,baz=142,slow=10
NB2 NORSAR Subarra 24.59 339 P **P** **21 26 50.5 -1.0**
comp=Z,2.0nm,0.8s,SNR=7.6
NOA NORSAR Array B 24.59 339 P **P** **21 26 50.5 -1.0**
comp=Z,3.2nm,0.8s,baz=142,slow=9.2,SNR=8.0
ESDC Sonseca Array 25.43 282 P **P** **21 26 56.7 -2.6**
comp=Z,0.8nm,0.6s,baz=72,slow=10,SNR=5.9
ARU Arti 26.05 39 P **P** **21 27 05.3 +0.7**
comp=Z,8.3nm,0.7s,baz=248,slow=6.2,SNR=16
ARU Arti 26.05 39 *c i*P **P** **21 27 07.9 +3.3**
ARU 21 27 42.3
ARU S **S** **21 31 41.6 +5.2**
ARU SS **SnSn** **21 32 37.1 +4.0**
ARU pmax pmax
comp=Z,31nm,1.7s
ARU Arti 26.05 39 *e*P **P** **21 27 05.7 +1.0**
ARU Arti 26.05 39 *e*P **P** **21 27 05.7 +1.0**
EKA Eskdalemuir Ar 26.91 318 P **P** **21 27 11.7 -0.7**
comp=Z,1.2nm,0.6s,baz=114,slow=12,SNR=9.0
SVE Sverdlovsk 27.25 39 *e*P P 21 27 20.6 +5.1
KKAR Karatay Array 31.28 69 *e*P **P** **21 27 51.3 -0.2**
KKAR pmax pmax
comp=Z,4.0nm,1.1s
KKAR Karatay Array 31.28 69 *e*P **P** **21 27 51.3 -0.2**
comp=Z,3.9nm,1.1s
KKAR Karatay Array 31.28 69 *e*P **P** **21 27 51.3 -0.2**
comp=Z,3.9nm,1.1s
OTUK Ortayu 32.25 59 P **P** **21 28 02.0 +2.0**
OTUK pmax pmax
comp=Z,4.0nm,1.5s
OTUK Ortayu 32.25 59 P **P** **21 28 02.0 +2.0**
comp=Z,4.0nm,1.5s
FRU Bishkek 34.30 69 *e*P **P** **21 28 17.5 -0.4**
FRU Bishkek 34.30 69 *e*P **P** **21 28 17.5 -0.4**
TORD Torodi Ar. Bea 35.39 231 P **P** **21 28 26.5 -1.0**
comp=Z,1.6nm,0.8s,baz=38,slow=8.6,SNR=12
PDGK Podgornoye 37.72 67 P **P** **21 28 50.0 +2.9**
PDGK pmax pmax
comp=Z,4.0nm,1.0s
MKAR Makanchi Array 39.08 61 P **P** **21 28 58.0 -0.6**
comp=Z,1.8nm,0.7s,baz=288,slow=6.5,SNR=14
NVS Novosibirsk 39.13 48 ||*i*P **P** **21 28 59.7 +0.8**
NVS pmax pmax
comp=Z,10.0nm,1.1s
NVS pmax pmax
comp=N,3.0nm,1.0s
NVS pmax pmax
comp=E,7.0nm,1.2s
NVS Novosibirsk 39.13 48 *i* P **P** **21 28 59.7 +0.8**
comp=E,3.0nm,1.0s
ZALV Zalesovo Beam 40.07 49 P **P** **21 29 05.6 -1.1**

	comp=E,2.6nm,0.7s,baz=265,slow=8.9,SNR=9.0							
TLY	**Talaya**	**51.67**	**50**⇑	*e*P	P	21 30 42.7	+4.3
TLY				pmax	pmax		
	comp=Z,4.0nm,0.8s						
GTA	**Gaotai**	**53.44**	**66**	*e*P	**P**	**21 30 51.3**	**-0.5**
GTA				pP		21 30 55.3	
GTA				sP		21 30 57.9	
GTA				pmax	pmax		
	comp=Z,2.0nm,0.9s						
SONM	**Songino Array**	**54.63**	**54**	P	**P**	**21 30 59.2**	**-1.1**
	comp=Z,2.2nm,0.9s,baz=286,slow=8.2,SNR=9.6						
ULN	**Ulaanbaatar**	**55.03**	**53**	*e*P	**P**	**21 31 02.0**	**-1.2**
ULN				pmax	pmax		
	comp=Z,3.0nm,0.9s						
ULN	**Ulaanbaatar**	**55.03**	**53**	*e*P	**P**	**21 31 02.0**	**-1.2**
	comp=Z,3.1nm,0.9s						
ULN	**Ulaanbaatar**	**55.03**	**53**	*e*P	**P**	**21 31 02.0**	**-1.2**
	comp=Z,3.1nm,0.9s						
TIXI	**Tiksi**	**56.38**	**22**	*ce*P	**P**	**21 31 14.9**	**+2.6**
TIXI				pmax	pmax		
	comp=Z,3.0nm,2.5s						
TIXI	**Tiksi**	**56.38**	**22**	*e*P	**P**	**21 31 14.9**	**+2.6**
	comp=Z,3.0nm,2.5s						
CMAR	**Chiang Mai Arr**	**63.17**	**87**	P	**P**	**21 31 57.9**	**-2.1**
	comp=Z,0.4nm,0.7s,baz=302,slow=8.2,SNR=4.5						
CMAR	**Chiang Mai Arr**	**63.17**	**87**	*i* P	**P**	**21 32 01.0**	**+1.1**
CMAR	**Chiang Mai Arr**	**63.17**	**87**	*i* P	**P**	**21 32 01.0**	**+1.1**
BILL	**Bilibino**	**68.46**	**16**⇓	*e*P	**P**	**21 32 34.2**	**+0.9**
BILL				*e*		21 35 05.7	
BILL				*e*S	SKiKP	21 42 02.4	-26
BILL				pmax	pmax		
	comp=Z,5.0nm,1.7s						
BILL				MLR	MLR		
	comp=Z,119nm,17.0s						
BILL	**Bilibino**	**68.46**	**16**	*e*P	**P**	**21 32 34.2**	**+0.9**
	comp=Z,5.0nm,1.7s						
SEY	**Seymchan**	**68.72**	**24**	*ce*P	P	21 32 38.8	+3.8
USRK	**Ussuriysk Ar.**	**71.88**	**48**	P	**P**	**21 32 53.6**	**-1.0**
	comp=Z,1.0nm,0.7s,baz=268,slow=7.2,SNR=4.3						
KSAR	**Wonju Array Be**	**73.44**	**55**	P	**P**	**21 33 03.1**	**-1.0**
KSAR	**Wonju Array Be**	**73.44**	**55**	P	**P**	**21 33 03.0**	**-1.0**
KSRS	**Korea Array**	**73.46**	**55**	P	**P**	**21 33 03.0**	**-1.1**
	comp=Z,4.5nm,0.8s,baz=303,slow=4.8,SNR=13						
KSRS	**Korea Array**	**73.46**	**55**	P	**P**	**21 33 03.1**	**-1.1**
KSRS				pmax	pmax		
	comp=Z,4.0nm,0.9s						
YKA	**Yellowknife Ar**	**74.61**	**343**	P	**P**	**21 33 09.6**	**-0.8**
	comp=Z,0.5nm,0.9s,baz=21,slow=6.4,SNR=5.4						
MJAR	**Matsushiro Arr**	**80.41**	**50**	P	**P**	**21 33 42.1**	**-1.3**
	comp=Z,0.6nm,0.5s,baz=304,slow=5.0,SNR=5.1						

*DDA **19** 21:24:45.0,39°.11N×29°.03E,h34km, Ml3.9*
*ISK **19** 21:24:44.3,39°.11N×29°.01E,h5km, ML3.4*
*CSEM **19** 21:24:45.9±0.1,39°.08N×28°.99E,h10km,ML3.9, Error ellipse: s-maj=3.6km s-min=2.9km az=107.0*
ISC 19 21:24:45.1±1.2,39°.10N±0°.02×29°.08E±0°.03,h3km±13km, n59,σ0°47/72,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.29**	**259**	P	**Pg**	**21 24 50.6**	**0.0**
DEMI				S	**Sg**	**21 24 54.3**	**-0.1**
DEMI	**Demirci**	**0.29**	**259**	*i* P	**Pg**	**21 24 50.6**	**0.0**
DEMI				*i* S	**Sg**	**21 24 54.3**	**-0.1**
TVSB	**Tavsanli**	**0.46**	**40**	PG	**Pg**	**21 24 54.6**	**+0.6**
TVSB	**Tavsanli**	**0.46**	**40**	*i* Pg	**Pg**	**21 24 54.6**	**+0.6**
KULA	**Kula-Manisa**	**0.67**	**209**	PG	**Pg**	**21 24 57.6**	**-0.3**
KULA	**Kula-Manisa**	**0.67**	**209**	*i* Pg	**Pg**	**21 24 57.6**	**-0.3**
DURS	**Dursunbey**	**0.69**	**317**	P	**Pg**	**21 24 57.7**	**-0.6**
DURS	**Dursunbey**	**0.69**	**317**	*i* P	**Pg**	**21 24 57.7**	**-0.6**
MANT	**Manisa**	**0.73**	**214**	P	**Pg**	**21 24 59.1**	**0.0**
MANT				S	**Sg**	**21 25 08.6**	**0.0**
MANT	**Manisa**	**0.73**	**214**	*i* P	**Pg**	**21 24 59.1**	**0.0**
MANT				*i* S	**Sg**	**21 25 08.6**	**0.0**
KHAL	**Karahalli**	**0.80**	**156**	P	**Pb**	**21 25 01.5**	**-0.1**
KHAL				S	**Sb**	**21 25 12.1**	**-0.8**
KHAL	**Karahalli**	**0.80**	**156**	*i* P	**Pb**	**21 25 01.5**	**-0.1**
KHAL				*i* S	**Sb**	**21 25 12.1**	**-0.8**
KHL	**Karahalli**	**0.85**	**156**	*e*PG	**Pb**	**21 25 02.8**	**+0.3**
KHL	**Karahalli**	**0.85**	**156**	*e*Pg	**Pb**	**21 25 02.8**	**+0.3**
ORLT	**Orhaneli**	**0.96**	**352**	*e*PG	**Pg**	**21 25 03.0**	**-0.5**
ORLT	**Orhaneli**	**0.96**	**352**	*e*Pg	**Pg**	**21 25 03.0**	**-0.5**
AKHS	**Akhisar**	**1.01**	**258**	P	**Pg**	**21 25 04.4**	**0.0**
AKHS				S	**Sg**	**21 25 18.1**	**+0.6**
AKHS	**Akhisar**	**1.01**	**258**	*i* P	**Pg**	**21 25 04.4**	**0.0**
AKHS				*i* S	**Sg**	**21 25 18.1**	**+0.6**
AKS	**Akhisar**	**1.01**	**258**	*e*PG	**Pg**	**21 25 04.1**	**-0.4**
AKS	**Akhisar**	**1.01**	**258**	*e*Pg	**Pg**	**21 25 04.1**	**-0.4**
BALB	**Balikesir**	**1.07**	**301**	*e*PG	**Pg**	**21 25 05.5**	**-0.2**
BALB				*e*SG	**Sg**	**21 25 20.3**	**+0.6**
BALB	**Balikesir**	**1.07**	**301**	*e*Pg	**Pg**	**21 25 05.5**	**-0.2**
BALB				*e*Sg	**Sg**	**21 25 20.3**	**+0.6**
IGD	**Bursa**	**1.17**	**5**	*i* P	**Pg**	**21 25 05.8**	**-1.7**
IGD				*i* S	**Sg**	**21 25 23.0**	**+0.3**
CAVI	**Cavuskoy**	**1.25**	**28**	*e*PN	**Pn**	**21 25 09.8**	**+0.3**
CAVI	**Cavuskoy**	**1.25**	**28**	*e*Pn	**Pn**	**21 25 09.8**	**+0.3**
IZI	**Iznik**	**1.27**	**14**	*e*PN	**Pn**	**21 25 10.1**	**+0.2**
IZI	**Iznik**	**1.27**	**14**	*e*Pn	**Pn**	**21 25 10.1**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.28**	**353**	*e*PN	**Pb**	**21 25 09.8**	**0.0**
MDNY	**Mudanya-Bursa**	**1.28**	**353**	*e*Pn	**Pb**	**21 25 09.8**	**0.0**
KCTX	**Karacabey (Bur**	**1.29**	**335**	*e*PN	**Pg**	**21 25 09.3**	**-0.6**
KCTX				*e*SN	**Sb**	**21 25 27.3**	**+0.2**
KCTX	**Karacabey (Bur**	**1.29**	**335**	*e*Pn	**Pg**	**21 25 09.3**	**-0.6**
KCTX				*e*Sn	**Sb**	**21 25 27.3**	**+0.2**
GEMT	**Gemlik**	**1.34**	**4**	*e*PN	**Pn**	**21 25 10.7**	**0.0**
GEMT	**Gemlik**	**1.34**	**4**	*e*Pn	**Pn**	**21 25 10.7**	**0.0**
DENT	**Denizli**	**1.34**	**182**	*e*PN	**Pb**	**21 25 10.9**	**0.0**
DENT	**Denizli**	**1.34**	**182**	*e*Pn	**Pb**	**21 25 10.9**	**0.0**
ADVT	**Abdulvahap**	**1.43**	**21**	*e*PN	**Pb**	**21 25 12.3**	**-0.1**
ADVT	**Abdulvahap**	**1.43**	**21**	*e*Pn	**Pb**	**21 25 12.3**	**-0.1**
GONE	**Gonen-Balikesi**	**1.43**	**312**	*e*PN	**Pn**	**21 25 12.2**	**+0.2**
GONE	**Gonen-Balikesi**	**1.43**	**312**	*e*Pn	**Pn**	**21 25 12.2**	**+0.2**
ARMT	**Armutlu**	**1.48**	**354**	*e*PN	**Pn**	**21 25 12.8**	**+0.3**
ARMT	**Armutlu**	**1.48**	**354**	*e*Pn	**Pn**	**21 25 12.9**	**+0.3**
GPA	**Golpazari**	**1.52**	**38**	*e*PN	**Pg**	**21 25 14.2**	**-0.1**
GPA	**Golpazari**	**1.52**	**38**	*e*Pn	**Pg**	**21 25 14.2**	**-0.1**
EDC	**Edincik**	**1.56**	**323**	*e*PN	**Pn**	**21 25 13.9**	**+0.2**
EDC	**Edincik**	**1.56**	**323**	*e*Pn	**Pn**	**21 25 13.9**	**+0.2**
GULT	**Gulveren**	**1.73**	**39**	*e*PN	**Pb**	**21 25 17.3**	**-0.3**
GULT	**Gulveren**	**1.73**	**39**	*e*Pn	**Pb**	**21 25 17.3**	**-0.3**
HRT	**Hereke**	**1.78**	**15**	*e*PN	**Pb**	**21 25 18.3**	**-0.1**
HRT	**Hereke**	**1.78**	**15**	*e*Pn	**Pb**	**21 25 18.3**	**-0.1**
SPNC	**Sapanca-Adapaz**	**1.85**	**30**	*e*PN	**Pb**	**21 25 19.4**	**-0.1**
SPNC	**Sapanca-Adapaz**	**1.85**	**30**	*e*Pn	**Pb**	**21 25 19.4**	**-0.1**
SVRH	**Sivrihisar-ESK**	**1.93**	**79**	*e*PN	**Pb**	**21 25 20.6**	**-0.4**
SVRH	**Sivrihisar-ESK**	**1.93**	**79**	*e*Pn	**Pb**	**21 25 20.6**	**-0.4**
ISK	**Istanbul-Kandi**	**1.96**	**360**	*e*PN	**Pn**	**21 25 19.8**	**+0.5**
ISK	**Istanbul-Kandi**	**1.96**	**360**	*e*Pn	**Pn**	**21 25 19.8**	**+0.5**
SILT	**Sile**	**2.10**	**12**	*e*PN	**Pn**	**21 25 22.3**	**+1.2**
SILT	**Sile**	**2.10**	**12**	*e*Pn	**Pn**	**21 25 22.3**	**+1.2**
MDUB	**Mudurnu**	**2.13**	**49**	*e*PN	**Pb**	**21 25 23.6**	**-0.9**
MDUB	**Mudurnu**	**2.13**	**49**	*e*Pn	**Pb**	**21 25 23.6**	**-0.9**

*ISK **19** 21:25:27.9,39°.06N×29°.07E,h2km, ML3.2*
*ISCJB **19** 21:25:28.9±0.5,39°.07N±0°.03×29°.04E±0°.04,h4km±6km, Error ellipse: s-maj=5.9km s-min=4.6km az=161.7*
*DDA **19** 21:25:28.9,39°.06N×29°.05E,h7km, Ml3.7*
*CSEM **19** 21:25:29.0±0.1,39°.07N×29°.05E,h5km, ML3.7, Error ellipse: s-maj=2.7km s-min=2.1km az=108.0*
ISC 19 21:25:29.1±0.9,39°.06N±0°.02×29°.05E±0°.02,h12km±8km, n40,σ0°36/50,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**266**	P	**Pg**	**21 25 34.5**	**0.0**
DEMI				S	**Sg**	**21 25 38.3**	**+0.2**
DEMI	**Demirci**	**0.26**	**266**	*i* P	**Pg**	**21 25 34.5**	**0.0**
DEMI				*i* S	**Sg**	**21 25 38.3**	**+0.2**
GDZ	**Gediz**	**0.34**	**85**	P	**Pg**	**21 25 36.1**	**+0.1**
GDZ				S	**Sg**	**21 25 41.0**	**+0.3**
GDZ	**Gediz**	**0.34**	**85**	*i* P	**Pg**	**21 25 36.1**	**+0.1**
GDZ				*i* S	**Sg**	**21 25 41.0**	**+0.3**
TVSB	**Tavsanli**	**0.50**	**40**	PG	**Pg**	**21 25 38.2**	**-0.8**
TVSB	**Tavsanli**	**0.50**	**40**	*i* Pg	**Pg**	**21 25 38.2**	**-0.8**
KULA	**Kula-Manisa**	**0.62**	**209**	PG	**Pg**	**21 25 41.2**	**-0.1**
KULA	**Kula-Manisa**	**0.62**	**209**	*i* Pg	**Pg**	**21 25 41.2**	**-0.1**
MANT	**Manisa**	**0.69**	**214**	P	**Pb**	**21 25 42.8**	**-0.4**
MANT				S	**Sb**	**21 25 52.1**	**-0.6**
MANT	**Manisa**	**0.69**	**214**	*i* P	**Pb**	**21 25 42.8**	**-0.4**
MANT				*i* S	**Sb**	**21 25 52.1**	**-0.6**
KHL	**Karahalli**	**0.83**	**153**	*e*PG	**Pg**	**21 25 44.7**	**-0.4**
KHL				*e*SG	**Sb**	**21 25 56.7**	**+0.1**
KHL	**Karahalli**	**0.83**	**153**	*e*Pg	**Pg**	**21 25 44.7**	**-0.4**
KHL				*e*Sg	**Sb**	**21 25 56.7**	**+0.1**
AKS	**Akhisar**	**0.98**	**260**	*e*PG	**Pg**	**21 25 47.8**	**-0.2**
AKS	**Akhisar**	**0.98**	**260**	*e*Pg	**Pg**	**21 25 47.8**	**-0.2**
ORLT	**Orhaneli**	**0.99**	**353**	*e*PG	**Pg**	**21 25 47.5**	**-0.7**
ORLT	**Orhaneli**	**0.99**	**353**	*e*Pg	**Pg**	**21 25 47.5**	**-0.7**
BALB	**Balikesir**	**1.07**	**303**	*e*PN	**Pn**	**21 25 50.1**	**+0.1**
BALB				*e*SN	**Sn**	**21 26 05.5**	**+0.7**
BALB	**Balikesir**	**1.07**	**303**	*e*Pn	**Pn**	**21 25 50.1**	**+0.1**
BALB				*e*Sn	**Sn**	**21 26 05.5**	**+0.7**
CAVI	**Cavuskoy**	**1.29**	**28**	*e*PN	**Pb**	**21 25 53.6**	**+0.2**
CAVI	**Cavuskoy**	**1.29**	**28**	*e*Pn	**Pb**	**21 25 53.6**	**+0.2**
DENT	**Denizli**	**1.31**	**180**	*e*PN	**Pb**	**21 25 53.6**	**0.0**
DENT	**Denizli**	**1.31**	**180**	*e*Pn	**Pb**	**21 25 53.6**	**0.0**
MDNY	**Mudanya-Bursa**	**1.31**	**355**	*e*PN	**Pb**	**21 25 53.9**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.31**	**355**	*e*Pn	**Pb**	**21 25 53.9**	**+0.2**
KCTX	**Karacabey (Bur**	**1.31**	**336**	*e*PN	**Pg**	**21 25 54.4**	**0.0**
KCTX	**Karacabey (Bur**	**1.31**	**336**	*e*Pn	**Pg**	**21 25 54.4**	**0.0**
IZI	**Iznik**	**1.31**	**14**	*e*PN	**Pg**	**21 25 54.2**	**-0.2**
IZI	**Iznik**	**1.31**	**14**	*e*Pn	**Pg**	**21 25 54.2**	**-0.2**
GEMT	**Gemlik**	**1.38**	**5**	*e*PN	**Pn**	**21 25 54.1**	**0.0**
GEMT	**Gemlik**	**1.38**	**5**	*e*Pn	**Pn**	**21 25 54.1**	**0.0**
GONE	**Gonen-Balikesi**	**1.44**	**314**	*e*PN	**Pb**	**21 25 55.8**	**-0.1**
GONE	**Gonen-Balikesi**	**1.44**	**314**	*e*Pn	**Pb**	**21 25 55.8**	**-0.1**
ADVT	**Abdulvahap**	**1.47**	**21**	*e*PN	**Pb**	**21 25 56.5**	**+0.1**
ADVT	**Abdulvahap**	**1.47**	**21**	*e*Pn	**Pb**	**21 25 56.5**	**+0.1**
ARMT	**Armutlu**	**1.51**	**355**	*e*PN	**Pg**	**21 25 57.6**	**-0.5**
ARMT	**Armutlu**	**1.51**	**355**	*e*Pn	**Pg**	**21 25 57.6**	**-0.5**
GPA	**Golpazari**	**1.57**	**38**	*e*PN	**Pb**	**21 25 58.1**	**0.0**
GPA	**Golpazari**	**1.57**	**38**	*e*Pn	**Pb**	**21 25 58.1**	**0.0**
EDC	**Edincik**	**1.57**	**325**	*e*PN	**Pb**	**21 25 57.9**	**-0.3**
EDC	**Edincik**	**1.57**	**325**	*e*Pn	**Pb**	**21 25 57.9**	**-0.3**

*IDC **19** 21:33:10.0±0.8,39°.09N×29°.11E,h0km,mb4.1/13, mb1 4.1/21,mb1mx4.0/42,mbtmp4.0/21,ML3.6/8,Error ellipse: s-maj=15.7km s-min=11.5km az=9.0*
*ISCJB **19** 21:33:10.7±0.3,39°.14N±0°.01×29°.11E±0°.01,h8km±2km, mb4.1/23,Error ellipse: s-maj=1.9km s-min=1.8km az=149.2*
*ISK **19** 21:33:10.8,39°.15N×29°.11E,h4km,ML4.4*
*MOS **19** 21:33:10.9±1.3,39°.16N×29°.15E,h13km,mb4.4/12,Error ellipse: s-maj=6.8km s-min=4.5km az=88.5*
*DDA **19** 21:33:10.5,39°.13N×29°.12E,h21km, Ml4.3*
*THE **19** 21:33:11.4,39°.10N×29°.13E,h0km,ML4.2/7,Error ellipse: s-maj=1.2km s-min=0.7km az=67.0*
*NEIC **19** 21:33:11.4±0.4,39°.04N×29°.09E,h10km,mb4.4/3, ML4.3(DDA),Error ellipse: s-maj=7.9km s-min=6.3km az=51.0*
*CSEM **19** 21:33:11.4±0.1,39°.13N×29°.11E,h5km,mb4.3/7,Error ellipse: s-maj=1.8km s-min=1.6km az=63.0*
*NIC **19** 21:33:16.8±0.2,39°.07N×29°.44E,h25km,mb4.4,ML4.0*
ISC 19 21:33:12.0±0.7,39°.13N±0°.01×29°.12E±0°.01,h9km±4km, n476,σ1°32/577,mb4.1/23,43C-44D,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.29**	**99**	P	**Pg**	**21 33 17.2**	**-0.6**
GDZ				S	**Sg**	**21 33 21.3**	**-0.4**
GDZ	**Gediz**	**0.29**	**99**	*i* P	**Pg**	**21 33 17.1**	**-0.6**
GDZ				*i* S	**Sg**	**21 33 21.3**	**-0.4**
GDZ	**Gediz**	**0.29**	**99**⇓	*i*P	**Pg**	**21 33 17.2**	**-0.6**
GDZ				*i* S	**Sg**	**21 33 21.3**	**-0.4**
DEMI	**Demirci**	**0.32**	**254**	P	**Pg**	**21 33 17.9**	**-0.6**
DEMI				S	**Sg**	**21 33 22.3**	**-0.5**
DEMI	**Demirci**	**0.32**	**254**⇑	*i*P	**Pg**	**21 33 17.9**	**-0.6**
DEMI				*i* S	**Sg**	**21 33 22.3**	**-0.5**
TVSB	**Tavsanli**	**0.41**	**40**	PG	**Pg**	**21 33 19.4**	**-0.8**
TVSB	**Tavsanli**	**0.41**	**40**	*i* Pg	**Pg**	**21 33 19.4**	**-0.8**
DURS	**Dursunbey**	**0.68**	**313**	P	**Pg**	**21 33 24.6**	**-0.6**
DURS	**Dursunbey**	**0.68**	**313**⇑	*i*P	**Pg**	**21 33 24.6**	**-0.6**
DURS				*i* S	**Sn**	**21 33 37.6**	**-1.2**
KULA	**Kula-Manisa**	**0.71**	**210**	PG	**Pg**	**21 33 25.1**	**-0.6**
KULA	**Kula-Manisa**	**0.71**	**210**	P	**Pg**	**21 33 24.7**	**-1.1**
KULA				S	**Sg**	**21 33 35.7**	**+0.6**
KULA	**Kula-Manisa**	**0.71**	**210**	P	**Pg**	**21 33 24.7**	**-1.1**
KULA	**Kula-Manisa**	**0.71**	**210**	*i* Pg	**Pg**	**21 33 25.2**	**-0.6**
KULA				S	**Sg**	**21 33 35.7**	**+0.6**
MANT	**Manisa**	**0.78**	**214**	P	**Pg**	**21 33 25.7**	**-1.3**
MANT				S	**Sg**	**21 33 35.6**	**-1.5**
MANT	**Manisa**	**0.78**	**214**⇑	*i*P	**Pg**	**21 33 25.7**	**-1.3**
MANT				*i* S	**Sg**	**21 33 35.6**	**-1.5**
KHAL	**Karahalli**	**0.82**	**159**	P	**Pg**	**21 33 26.8**	**-0.9**
KHAL				S	**Sg**	**21 33 37.4**	**-0.9**
KHAL	**Karahalli**	**0.82**	**159**⇑	*i*P	**Pg**	**21 33 26.8**	**-0.9**
KHAL				*i* S	**Sg**	**21 33 37.4**	**-0.9**
KHL	**Karahalli**	**0.87**	**158**	*e*PG	**Pg**	**21 33 28.3**	**-0.4**
KHL				*e*SG	**Sb**	**21 33 41.0**	**-0.1**
KHL	**Karahalli**	**0.87**	**158**	*e*Pg	**Pg**	**21 33 28.3**	**-0.4**
KHL				*e*Sg	**Sb**	**21 33 41.0**	**-0.1**
ORLT	**Orhaneli**	**0.93**	**350**	*e*PG	**Pg**	**21 33 29.2**	**-0.6**
ORLT	**Orhaneli**	**0.93**	**350**	*e*Pg	**Pg**	**21 33 29.2**	**-0.6**
AKHS	**Akhisar**	**1.05**	**256**	P	**Pg**	**21 33 31.6**	**-0.5**
AKHS				S	**Sg**	**21 33 45.3**	**-0.4**
AKHS	**Akhisar**	**1.05**	**256**	*i* P	**Pg**	**21 33 31.6**	**-0.5**
AKHS				*i* S	**Sg**	**21 33 45.3**	**-0.4**
AKS	**Akhisar**	**1.05**	**256**	*e*PG	**Pg**	**21 33 31.8**	**-0.3**
AKS	**Akhisar**	**1.05**	**256**	*e*Pg	**Pg**	**21 33 31.8**	**-0.3**
BALB	**Balikesir**	**1.08**	**298**	*e*PG	**Pg**	**21 33 31.8**	**-1.0**
BALB				*e*SG	**Sb**	**21 33 47.6**	**+0.5**
BALB	**Balikesir**	**1.08**	**298**	*e*Pg	**Pg**	**21 33 31.8**	**-1.0**
BALB				*e*Sg	**Sb**	**21 33 47.6**	**+0.5**
IGD	**Bursa**	**1.13**	**3**⇑	*i*P	**Pg**	**21 33 31.4**	**-2.3**
IGD				*i* S	**Sg**	**21 33 47.9**	**-0.5**
CAVI	**Cavuskoy**	**1.21**	**27**	*e*PN	**Pb**	**21 33 34.3**	**-0.7**
CAVI				*e*SN	**Sb**	**21 33 51.3**	**+0.6**
CAVI	**Cavuskoy**	**1.21**	**27**	*e*Pn	**Pb**	**21 33 34.3**	**-0.7**
CAVI				*e*Sn	**Sb**	**21 33 51.3**	**+0.6**
IZI	**Iznik**	**1.23**	**13**	*e*PN	**Pb**	**21 33 35.1**	**-0.4**
IZI	**Iznik**	**1.23**	**13**	*e*Pn	**Pb**	**21 33 35.1**	**-0.4**
MDNY	**Mudanya-Bursa**	**1.25**	**352**	*e*PN	**Pn**	**21 33 35.1**	**-0.5**
MDNY	**Mudanya-Bursa**	**1.25**	**352**	*e*Pn	**Pn**	**21 33 35.1**	**-0.5**
KCTX	**Karacabey (Bur**	**1.27**	**333**	*e*PN	**Pn**	**21 33 35.5**	**-0.5**
KCTX	**Karacabey (Bur**	**1.27**	**333**	*e*Pn	**Pn**	**21 33 35.5**	**-0.5**
BORA	**Eskisehir**	**1.28**	**54**	P	**Pn**	**21 33 34.9**	**-1.2**
BORA				S	**Sb**	**21 33 52.7**	**-0.1**
BORA	**Eskisehir**	**1.28**	**54**	*i* P	**Pn**	**21 33 34.9**	**-1.2**
BORA				*i* S	**Sb**	**21 33 52.7**	**-0.1**
GEMT	**Gemlik**	**1.30**	**2**	*e*PN	**Pn**	**21 33 36.1**	**-0.3**
GEMT	**Gemlik**	**1.30**	**2**	*e*Pn	**Pn**	**21 33 36.1**	**-0.3**
BALY	**Balya**	**1.31**	**298**	P	**Pn**	**21 33 35.8**	**-0.7**
BALY				S	**Sn**	**21 33 54.2**	**+0.1**
BALY	**Balya**	**1.31**	**298**⇓	*i*P	**Pn**	**21 33 35.8**	**-0.7**
BALY				*i* S	**Sn**	**21 33 54.2**	**+0.1**
DENT	**Denizli**	**1.38**	**183**	*e*PN	**Pb**	**21 33 38.0**	**0.0**
DENT	**Denizli**	**1.38**	**183**	*e*Pn	**Pb**	**21 33 38.0**	**0.0**
ADVT	**Abdulvahap**	**1.38**	**20**	*e*PN	**Pn**	**21 33 37.6**	**+0.1**
ADVT	**Abdulvahap**	**1.38**	**20**	*e*Pn	**Pn**	**21 33 37.6**	**+0.1**
GONE	**Gonen-Balikesi**	**1.43**	**310**	*e*PN	**Pn**	**21 33 38.0**	**-0.2**
GONE	**Gonen-Balikesi**	**1.43**	**310**	*e*Pn	**Pn**	**21 33 38.0**	**-0.2**
DNZL	**Cakiroluk**	**1.44**	**182**	P	**Pn**	**21 33 36.6**	**-1.9**
DNZL				S	**Sg**	**21 33 58.9**	**+0.5**
DNZL	**Cakiroluk**	**1.44**	**182**	*i* P	**Pn**	**21 33 36.6**	**-1.9**
DNZL				*i* S	**Sg**	**21 33 58.9**	**+0.5**
ARMT	**Armutlu**	**1.44**	**352**	*e*PN	**Pn**	**21 33 38.3**	**0.0**
ARMT	**Armutlu**	**1.44**	**352**	*e*Pn	**Pn**	**21 33 38.3**	**0.0**
GPA	**Golpazari**	**1.48**	**38**	*e*PN	**Pn**	**21 33 38.9**	**+0.1**
GPA	**Golpazari**	**1.48**	**38**	*e*Pn	**Pn**	**21 33 38.9**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**1.52**	**219**	*e*PN	**Pb**	**21 33 40.2**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**1.52**	**219**	*e*Pn	**Pb**	**21 33 40.2**	**-0.3**
EDC	**Edincik**	**1.55**	**322**	*e*PN	**Pn**	**21 33 39.4**	**-0.4**
EDC	**Edincik**	**1.55**	**322**	*e*Pn	**Pn**	**21 33 39.4**	**-0.4**
KNL	**Bal¯-kesir**	**1.67**	**313**	*i* P	**Pn**	**21 33 39.2**	**-2.2**
KNL				*i* S	**Sb**	**21 34 04.5**	**+0.4**
GULT	**Gulveren**	**1.69**	**39**	*e*PN	**Pn**	**21 33 41.9**	**+0.1**
GULT	**Gulveren**	**1.69**	**39**	*e*Pn	**Pn**	**21 33 41.9**	**+0.1**
ISP	**Isparta**	**1.71**	**139**	*e*PN	**Pn**	**21 33 42.8**	**+0.7**
ISP	**Isparta**	**1.71**	**139**⇓	*i*P	**Pn**	**21 33 40.9**	**-1.1**
ISP				S	**Sn**	**21 34 03.3**	**-0.9**
ISP	**Isparta**	**1.71**	**139**	P	**Pn**	**21 33 41.0**	**-1.1**
ISP				S	**Sn**	**21 34 03.2**	**-0.9**
ISP	**Isparta**	**1.71**	**139**	*e*P	**Pn**	**21 33 41.0**	**-1.1**
ISP	**Isparta**	**1.71**	**139**	P	**Pn**	**21 33 41.0**	**-1.1**
ISP	**Isparta**	**1.71**	**139**	*e*Pn	**Pn**	**21 33 42.8**	**+0.7**
ISP				S	**Sn**	**21 34 03.2**	**-0.9**
ISP	**Isparta**	**1.71**	**139**	*e*Pn	**Pn**	**21 33 41.0**	**-1.1**
BUY	**Buyukada**	**1.72**	**0**	P	**Pn**	**21 33 41.0**	**-1.0**
BUY				S	**Sn**	**21 34 02.8**	**-1.3**
BUY	**Buyukada**	**1.72**	**0**⇑	*i*P	**Pn**	**21 33 41.0**	**-1.0**
BUY				*i* S	**Sn**	**21 34 02.8**	**-1.3**
DKL	**Dikili**	**1.72**	**269**	*e*PN	**Pn**	**21 33 42.4**	**+0.3**
DKL	**Dikili**	**1.72**	**269**	*e*Pn	**Pn**	**21 33 42.4**	**+0.3**
BAGO	**Egridir - ISPA**	**1.74**	**131**⇓	*i*P	**Pn**	**21 33 41.6**	**-0.8**
BAGO				*i* S	**Sg**	**21 34 08.0**	**+0.1**
HRT	**Hereke**	**1.74**	**14**	*e*PN	**Pn**	**21 33 42.5**	**+0.1**
HRT	**Hereke**	**1.74**	**14**	*e*Pn	**Pn**	**21 33 42.5**	**+0.1**
AYDN	**Tasoluk**	**1.76**	**214**	P	**Pn**	**21 33 41.4**	**-1.3**
AYDN				S	**Sg**	**21 34 08.2**	**-0.4**
AYDN	**Tasoluk**	**1.76**	**214**⇓	*i*P	**Pn**	**21 33 41.4**	**-1.3**
AYDN				*i* S	**Sg**	**21 34 08.2**	**-0.4**
SPNC	**Sapanca-Adapaz**	**1.80**	**30**	*e*PN	**Pn**	**21 33 43.7**	**+0.5**
SPNC	**Sapanca-Adapaz**	**1.80**	**30**	*e*Pn	**Pn**	**21 33 43.7**	**+0.5**
MRMT	**Marmara Adasi**	**1.88**	**322**	*e*PN	**Pn**	**21 33 44.8**	**+0.5**
MRMT	**Marmara Adasi**	**1.88**	**322**	*e*Pn	**Pn**	**21 33 44.8**	**+0.5**
KRBG	**Karabiga-Canak**	**1.88**	**312**	*e*PN	**Pn**	**21 33 44.6**	**+0.3**
KRBG	**Karabiga-Canak**	**1.88**	**312**	*e*Pn	**Pn**	**21 33 44.6**	**+0.3**
AYVA	**Ayvalik**	**1.89**	**276**	P	**Pn**	**21 33 43.6**	**-0.9**
AYVA	**Ayvalik**	**1.89**	**276**	*i* P	**Pn**	**21 33 43.6**	**-0.9**
AYVA				*i* S	**

ALN	**Alexandroupoli**	**2.94**	**308**	P	**Pn**	**21 33 58.6**	**-0.3**
ALN				S	**Sn**	**21 34 35.1**	**+0.7**
KKUL	**Konya-Kulu**	**2.96**	**88**	P	**Pn**	**21 33 59.8**	**+0.6**
KKUL	**Konya-Kulu**	**2.96**	**88**	*i* P	**Pn**	**21 33 59.8**	**+0.6**
KKUL				*i* S	**Sg**	**21 34 50.2**	**+3.3**
KKUL	**Konya-Kulu**	**2.96**	**88**	*i* P	**Pn**	**21 34 00.3**	**+1.0**
KSL	**Kastellorizon**	**3.00**	**173**	P	**Pn**	**21 33 57.8**	**-1.9**
ARG	**Arkhangelos**	**3.02**	**195**	P	**Pn**	**21 34 00.1**	**+0.2**
ARG				S	**Sn**	**21 34 36.4**	**+0.2**
ARG	**Arkhangelos**	**3.02**	**195**	P	**Pn**	**21 34 00.1**	**+0.2**
ARG				S	**Sn**	**21 34 36.4**	**+0.2**
SMTH	**Samothraki Isl**	**3.07**	**297**	P	**Pn**	**21 34 00.3**	**-0.4**
SMTH				S	**Sn**	**21 34 38.9**	**+1.4**
SMTH	**Samothraki Isl**	**3.07**	**297**	P	**Pn**	**21 34 00.3**	**-0.4**
SMTH				S	**Sn**	**21 34 38.9**	**+1.4**
BBAL	**Bala**	**3.13**	**81**	P	**Pn**	**21 34 03.2**	**+1.5**
BBAL	**Bala**	**3.13**	**81**	*i* P	**Pn**	**21 34 03.2**	**+1.5**
BBAL				*i* S	**Sg**	**21 34 57.6**	**+5.0**
BBAL	**Bala**	**3.13**	**81**	*i* P	**Pn**	**21 34 03.2**	**+1.5**
LIA	**Limnos Island**	**3.14**	**285**	P	**Pn**	**21 34 01.4**	**-0.2**
LIA	**Limnos Island**	**3.14**	**285**	P	**Pn**	**21 34 01.4**	**-0.2**
EDRB	**Edirne**	**3.26**	**327**	P	**Pn**	**21 34 02.9**	**-0.4**
EDRB	**Edirne**	**3.26**	**327**	P	**Pn**	**21 34 02.9**	**-0.4**
BTIN	**Bart¨–n**	**3.46**	**43**	P	**Pn**	**21 34 05.4**	**-0.6**
BTIN	**Bart¨–n**	**3.46**	**43**	*i* P	**Pn**	**21 34 05.4**	**-0.6**
BTIN				*i* S	**Sg**	**21 35 02.4**	**-0.8**
APE	**Apeiranthos**	**3.50**	**235**	⇓*i* P	**Pg**	**21 34 17.4**	**-1.6**
APE	**Apeiranthos**	**3.50**	**235**	*i* P	**Pn**	**21 34 05.2**	**-1.4**
APE	**Apeiranthos**	**3.50**	**235**	*i* P	**Pn**	**21 34 05.2**	**-1.4**
BRTR	**Keskin Array B**	**3.55**	**79**	Pn	**Pn**	**21 34 07.7**	**+0.2**
	3.6nm,0.3s,baz=253,slow=14,SNR=55						
BRTR				Pg	**Pb**	**21 34 17.6**	**+2.5**
	13nm,0.3s,baz=258,slow=16,SNR=62						
BRTR				Sn	**Sn**	**21 34 47.7**	**-2.0**
	19nm,0.3s,baz=282,slow=13,SNR=4.8						
BRTR				Lg	Lg	21 35 09.6	
	12nm,0.3s,baz=268,slow=23,SNR=11						
ELDT	**Eldivan**	**3.59**	**66**	P	**Pn**	**21 34 07.7**	**-0.2**
ELDT	**Eldivan**	**3.59**	**66**	*i* P	**Pn**	**21 34 07.7**	**-0.2**
ELDT				*i* S	**Sg**	**21 35 06.2**	**-1.0**
ELDT	**Eldivan**	**3.59**	**66**	*i* P	**Pn**	**21 34 08.0**	**+0.1**
AKSY	**AKSARAY - Alti**	**3.66**	**96**	*i* P	**Pg**	**21 34 22.4**	**+0.3**
ERMK	**Ermenek**	**3.90**	**128**	P	**Pn**	**21 34 13.6**	**+1.3**
ERMK				S	**Sn**	**21 34 58.5**	**+0.2**
ERMK	**Ermenek**	**3.90**	**128**	*i* P	**Pn**	**21 34 13.6**	**+1.3**
ERMK				*i* S	**Sn**	**21 34 58.5**	**+0.2**
KAVA	**Kavala**	**3.99**	**299**	P	**Pn**	**21 34 13.0**	**-0.3**
KAVA				S	**Sn**	**21 35 01.4**	**+1.2**
KAVA	**Kavala**	**3.99**	**299**	P	**Pn**	**21 34 13.0**	**-0.3**
KAVA				S	**Sn**	**21 35 01.4**	**+1.2**
ILGA	**Ilgaz**	**4.01**	**60**	P	**Pn**	**21 34 13.5**	**-0.4**
ILGA	**Ilgaz**	**4.01**	**60**	*i* P	**Pn**	**21 34 13.5**	**-0.4**
CDAG	**Cicekdag**	**4.10**	**81**	P	**Pn**	**21 34 15.5**	**+0.5**
CDAG	**Cicekdag**	**4.10**	**81**	*i* P	**Pn**	**21 34 15.5**	**+0.5**
OUR	**Ouranopolis**	**4.14**	**288**	P	**Pn**	**21 34 14.7**	**-0.6**
OUR	**Ouranopolis**	**4.14**	**288**	P	**Pn**	**21 34 14.7**	**-0.6**
PAIG	**Paliouri**	**4.28**	**282**	P	**Pn**	**21 34 17.0**	**-0.3**
PAIG	**Paliouri**	**4.28**	**282**	P	**Pn**	**21 34 17.0**	**-0.3**
KERG	**Konya-Eregli**	**4.30**	**112**	P	**Pn**	**21 34 17.6**	**-0.1**
KERG	**Konya-Eregli**	**4.30**	**112**	*i* P	**Pn**	**21 34 17.6**	**-0.1**
NVR	**Nevrokopi**	**4.59**	**301**	P	**Pn**	**21 34 21.5**	**-0.1**
NVR	**Nevrokopi**	**4.59**	**301**	P	**Pn**	**21 34 21.5**	**-0.1**
COAL	**Corum-Alaca**	**4.67**	**74**	P	**Pn**	**21 34 23.8**	**+1.1**
COAL	**Corum-Alaca**	**4.67**	**74**	*i* P	**Pn**	**21 34 23.8**	**+1.1**
SRS	**Serrai**	**4.67**	**297**	P	**Pn**	**21 34 22.5**	**-0.2**
SRS	**Serrai**	**4.67**	**297**	P	**Pn**	**21 34 22.5**	**-0.2**
MANR	**Mangalia**	**4.70**	**355**	⇑*i* P	**Pn**	**21 34 22.7**	**-0.3**
MANR	**Mangalia**	**4.70**	**355**	⇑*i* P	**Pn**	**21 34 22.7**	**-0.3**
SOH	**Sokhos**	**4.74**	**293**	P	**Pn**	**21 34 23.4**	**-0.2**
SOH	**Sokhos**	**4.74**	**293**	P	**Pn**	**21 34 24.6**	**+1.0**
SOH	**Sokhos**	**4.74**	**293**	P	**Pn**	**21 34 23.4**	**-0.2**
NPS	**Neapolis**	**4.77**	**217**	P	**Pn**	**21 34 24.4**	**+0.3**
NPS	**Neapolis**	**4.77**	**217**	P	**Pn**	**21 34 24.4**	**+0.3**
AKMC	**Akamas**	**4.84**	**147**	P	**Pn**	**21 34 25.8**	**+0.8**
	baz=331						
AKMC	**Akamas**	**4.84**	**147**	P	**Pn**	**21 34 25.8**	**+0.8**
ALFC	**Alefka**	**4.85**	**144**	P	**Pn**	**21 34 25.6**	**+0.5**
	baz=328						
ALFC				S	**Sn**	**21 35 19.7**	**-1.7**
ALFC	**Alefka**	**4.85**	**144**	P	**Pn**	**21 34 25.6**	**+0.5**
ALFC				S	**Sn**	**21 35 19.7**	**-1.7**
DID	**Didima**	**4.90**	**252**	P	**Pn**	**21 34 25.8**	**-0.1**
DID	**Didima**	**4.90**	**252**	P	**Pn**	**21 34 25.8**	**-0.1**
LAST	**Lasithi**	**4.92**	**217**	⇓*i* P	**Pn**	**21 34 27.0**	**+0.9**
LAST	**Lasithi**	**4.92**	**217**	⇓*i* P	**Pn**	**21 34 27.0**	**+0.9**
PPCY	**Paphos**	**4.96**	**148**	P	**Pn**	**21 34 27.1**	**+0.4**
	baz=331						
PPCY	**Paphos**	**4.96**	**148**	P	**Pn**	**21 34 27.1**	**+0.4**
BOYT	**Boyabat**	**4.98**	**61**	P	**Pn**	**21 34 27.0**	**0.0**
BOYT	**Boyabat**	**4.98**	**61**	*i* P	**Pn**	**21 34 27.0**	**0.0**
KRND	**KRANIDI**	**5.01**	**251**	P	**Pn**	**21 34 27.3**	**0.0**
KRND	**KRANIDI**	**5.01**	**251**	P	**Pn**	**21 34 27.3**	**0.0**
IDI	**Anoyia**	**5.11**	**223**	Pn	**Pn**	**21 34 27.1**	**-1.6**
	1.2nm,0.3s,baz=48,slow=16,SNR=11						
IDI	**Anoyia**	**5.11**	**223**	⇓*i* P	**Pn**	**21 34 28.6**	**-0.2**
IDI	**Anoyia**	**5.11**	**223**	*e*Pn	**Pn**	**21 34 27.5**	**-1.3**
IDI	**Anoyia**	**5.11**	**223**	⇓*i* P	**Pn**	**21 34 28.6**	**-0.2**
IDI	**Anoyia**	**5.11**	**223**	*e*Pn	**Pn**	**21 34 27.5**	**-1.3**
MAMC	**Mammari**	**5.13**	**139**	P	**Pn**	**21 34 29.3**	**+0.2**
	baz=323						
MAMC	**Mammari**	**5.13**	**139**	P	**Pn**	**21 34 29.3**	**+0.2**
KNT	**Kendrikon**	**5.18**	**295**	P	**Pn**	**21 34 29.7**	**+0.1**
KNT	**Kendrikon**	**5.18**	**295**	P	**Pn**	**21 34 29.7**	**+0.1**
ZIMR		**5.33**	**329**	⇑*i* P	**Pn**	**21 34 31.8**	**+0.1**
TIRR	**Tirgusor**	**5.35**	**355**	⇓*i* P	**Pn**	**21 34 31.6**	**-0.3**
TIRR	**Tirgusor**	**5.35**	**355**	S	**Sn**	**21 35 30.7**	**-2.9**
TIRR	**Tirgusor**	**5.35**	**355**	*e*P	**Pn**	**21 34 31.6**	**-0.3**
TIRR				*e*		21 35 31.5	
TIRR				pmax	pmax		
	comp=Z,95nm,0.4s						
TIRR	**Tirgusor**	**5.35**	**355**	*e*P	**Pn**	**21 34 31.6**	**-0.3**
	comp=Z,95nm,0.4s						
TIRR				*e*S	**Sn**	**21 35 31.5**	**-2.1**
TIRR	**Tirgusor**	**5.35**	**355**	*e*Pn	**Pn**	**21 34 31.6**	**-0.3**
	comp=Z,95nm,0.4s						
TIRR				*e*Sn	**Sn**	**21 35 31.5**	**-2.1**
CSS	**Mathiatis**	**5.36**	**140**	P	**Pn**	**21 34 29.8**	**-2.3**
CSS	**Mathiatis**	**5.36**	**140**	P	**Pn**	**21 34 29.8**	**-2.3**
SIVA	**Sivas**	**5.36**	**221**	⇑*i* P	**Pn**	**21 34 32.2**	**+0.1**
SIVA	**Sivas**	**5.36**	**221**	⇑*i* P	**Pn**	**21 34 32.2**	**+0.1**
HAVZ	**Havza**	**5.42**	**67**	P	**Pn**	**21 34 34.9**	**+1.9**
HAVZ	**Havza**	**5.42**	**67**	*i* P	**Pn**	**21 34 34.9**	**+1.9**
GRG	**Griva**	**5.46**	**292**	P	**Pn**	**21 34 34.5**	**+0.9**
GRG	**Griva**	**5.46**	**292**	P	**Pn**	**21 34 34.5**	**+0.9**
VAY	**Valandovo**	**5.46**	**296**	*e*Pn	**Pn**	**21 34 31.2**	**-2.4**
VAY	**Valandovo**	**5.46**	**296**	*e*Pn	**Pn**	**21 34 31.2**	**-2.4**
THL	**Klokotos Trika**	**5.52**	**277**	P	**Pn**	**21 34 34.8**	**+0.4**
THL	**Klokotos Trika**	**5.52**	**277**	P	**Pn**	**21 34 34.8**	**+0.4**
CUSAR	**Sarkisla-SIVAS**	**5.54**	**85**	*i* P	**Pn**	**21 34 39.5**	**+4.7**
VLX	**Vlachokerasia**	**5.59**	**254**	P	**Pn**	**21 34 35.5**	**+0.1**
VLX	**Vlachokerasia**	**5.59**	**254**	P	**Pn**	**21 34 35.5**	**+0.1**
HARR	**Harsova**	**5.62**	**351**	⇑*i* P	**Pn**	**21 34 35.4**	**-0.3**
HARR	**Harsova**	**5.62**	**351**	⇑*i* P	**Pn**	**21 34 35.4**	**-0.3**
TOKA	**Tokat**	**5.80**	**76**	P	**Pn**	**21 34 38.6**	**+0.4**
TOKA	**Tokat**	**5.80**	**76**	*i* P	**Pn**	**21 34 38.6**	**+0.4**
SULR		**5.94**	**340**	⇑*i* P	**Pn**	**21 34 40.1**	**+0.1**
SULR		**5.94**	**340**	⇑*i* P	**Pn**	**21 34 40.1**	**+0.1**
CUALT	**Altinyayla-SIV**	**5.94**	**86**	*i* P	**Pb**	**21 34 51.3**	**-4.4**
PGOR	**Pogoanele**	**5.99**	**345**	⇓*i* P	**Pn**	**21 34 42.4**	**+1.7**
PGOR	**Pogoanele**	**5.99**	**345**	⇓*i* P	**Pn**	**21 34 42.4**	**+1.7**
TLCR		**6.05**	**358**	⇑*i* P	**Pn**	**21 34 41.8**	**+0.2**
TLCR		**6.05**	**358**	⇑*i* P	**Pn**	**21 34 41.8**	**+0.2**
TLCR				S	**Sn**	**21 35 48.8**	**-2.2**
ERBA	**Erbaa**	**6.07**	**73**	P	**Pn**	**21 34 43.7**	**+1.7**
ERBA	**Erbaa**	**6.07**	**73**	*i* P	**Pn**	**21 34 43.7**	**+1.7**
CFR	**Carcaliu**	**6.08**	**353**	⇓*i* P	**Pn**	**21 34 41.1**	**-1.0**
CFR	**Carcaliu**	**6.08**	**353**	⇓*i* P	**Pn**	**21 34 41.1**	**-1.0**
FNA	**Florina**	**6.17**	**288**	P	**Pn**	**21 34 44.2**	**+0.9**
FNA	**Florina**	**6.17**	**288**	P	**Pn**	**21 34 43.8**	**+0.5**
FNA				pmax	pmax		
	comp=Z,12nm,0.7s						
FNA	**Florina**	**6.17**	**288**	P	**Pn**	**21 34 43.8**	**+0.5**
	comp=Z,12nm,0.7s						
DSL	**Palaion Diasel**	**6.24**	**273**	P	**Pn**	**21 34 44.6**	**+0.4**
DSL	**Palaion Diasel**	**6.24**	**273**	P	**Pn**	**21 34 44.6**	**+0.4**
ISR	**Istrita**	**6.28**	**343**	⇑*i* P	**Pn**	**21 34 43.4**	**-1.4**
ISR	**Istrita**	**6.28**	**343**	⇑*i* P	**Pn**	**21 34 43.4**	**-1.4**
SECR		**6.32**	**340**	⇑*i* P	**Pn**	**21 34 46.3**	**+1.0**
SECR		**6.32**	**340**	⇑*i* P	**Pn**	**21 34 46.3**	**+1.0**
GIUM	**Giurgiulesti**	**6.38**	**354**	⇓*i* P	**Pn**	**21 34 46.9**	**+0.7**
GIUM	**Giurgiulesti**	**6.38**	**354**	⇓*i* P	**Pn**	**21 34 46.9**	**+0.7**
SEV	**Sevastopol'**	**6.39**	**31**	*e*P	**Pn**	**21 34 44.5**	**-1.7**
SEV				*e*S	**Sn**	**21 35 54.2**	**-5.0**
SEV	**Sevastopol'**	**6.39**	**31**	*e*P	**Pn**	**21 34 44.5**	**-1.7**
CUKAN	**kangal_SIVAS**	**6.49**	**86**	*i* P	Pn	21 34 55.6	+7.8
SKO	**Skopje**	**6.50**	**298**	*e*Pn	**Pn**	**21 34 45.2**	**-2.5**
YAL	**Yalta**	**6.54**	**34**	*e*P	**Pn**	**21 34 47.6**	**-0.7**
YAL				*e*S	**Sn**	**21 35 59.2**	**-3.8**
YAL	**Yalta**	**6.54**	**34**	*e*P	**Pn**	**21 34 47.6**	**-0.7**
BARS	**Barje**	**6.64**	**306**	⇓*i*Pn	**Pn**	**21 34 50.1**	**+0.4**
MLR	**Muntele Rosu**	**6.77**	**341**	Pn	**Pn**	**21 34 52.4**	**+0.7**
	comp=Z,0.7nm,0.3s,baz=312,slow=1.3,SNR=54						
MLR	**Muntele Rosu**	**6.77**	**341**	⇓*i* P	**Pn**	**21 34 52.5**	**+0.8**
MTUR	**Matau**	**6.79**	**335**	⇑*i* P	**Pn**	**21 34 52.0**	**+0.1**
MTUR	**Matau**	**6.79**	**335**	⇑*i* P	**Pn**	**21 34 52.0**	**+0.1**
ODBI	**Odobesti**	**6.80**	**348**	⇓*i* P	**Pn**	**21 34 53.3**	**+1.4**
ODBI	**Odobesti**	**6.80**	**348**	⇓*i* P	**Pn**	**21 34 53.3**	**+1.4**
ALU	**Alushta**	**6.80**	**34**	*e*P	**Pn**	**21 34 50.9**	**-1.0**
ALU				*e*S	**Sn**	**21 36 04.3**	**-5.1**
ALU	**Alushta**	**6.80**	**34**	*e*P	**Pn**	**21 34 50.9**	**-1.0**
SIM	**Simferopol'**	**6.90**	**31**	*e*P	**Pn**	**21 34 53.1**	**-0.2**
SIM				*e*S	**Sn**	**21 36 08.1**	**-3.8**
SIM	**Simferopol'**	**6.90**	**31**	*e*P	**Pn**	**21 34 53.1**	**-0.2**
PLOR	**Plostina**	**6.96**	**346**	⇓*i* P	**Pn**	**21 34 54.7**	**+0.6**
PLOR	**Plostina**	**6.96**	**346**	⇓*i* P	**Pn**	**21 34 54.7**	**+0.6**
VRI	**Vrincioaia**	**6.96**	**346**	⇑*i* P	**Pn**	**21 34 54.4**	**+0.3**
VRI	**Vrincioaia**	**6.96**	**346**	P	**Pn**	**21 34 54.2**	**+0.1**
VRI				pmax	pmax		
	comp=Z,952nm,1.0s						
VRI	**Vrincioaia**	**6.96**	**346**	P	**Pn**	**21 34 54.2**	**+0.1**
	comp=Z,952nm,1.0s						
VOIR		**6.98**	**336**	⇑*i* P	**Pn**	**21 34 54.7**	**+0.2**
VOIR		**6.98**	**336**	P	**Pn**	**21 34 54.3**	**-0.2**
VOIR				pmax	pmax		
	comp=Z,35nm,0.5s						
VOIR		**6.98**	**336**	P	**Pn**	**21 34 54.3**	**-0.2**
	comp=Z,35nm,0.5s						
ARR	**Arges**	**7.06**	**333**	⇓*i* P	**Pn**	**21 34 55.8**	**+0.2**
ARR	**Arges**	**7.06**	**333**	⇓*i* P	**Pn**	**21 34 55.8**	**+0.2**
SRE	**Strehaia**	**7.07**	**323**	⇓*i* P	**Pn**	**21 34 56.4**	**+0.8**
SRE	**Strehaia**	**7.07**	**323**	⇓*i* P	**Pn**	**21 34 56.4**	**+0.8**
BOLS	**Boljevac**	**7.13**	**313**	⇓*i*Pn	**Pn**	**21 34 55.3**	**-1.2**
SUDU	**Sudak**	**7.23**	**35**	*e*P	**Pn**	**21 34 55.2**	**-2.6**
SUDU				*e*S	**Sn**	**21 36 18.3**	**-1.7**
SUDU	**Sudak**	**7.23**	**35**	*e*P	**Pn**	**21 34 55.2**	**-2.6**
SUDU				*e*S	**Sn**	**21 36 18.3**	**-1.7**
DOPR	**Dopca**	**7.36**	**339**	⇓*i* P	**Pn**	**21 34 59.8**	**+0.2**
DOPR	**Dopca**	**7.36**	**339**	⇓*i* P	**Pn**	**21 34 59.8**	**+0.2**
TESR	**Tescani**	**7.59**	**347**	⇓*i* P	**Pn**	**21 35 02.3**	**-0.5**
TESR	**Tescani**	**7.59**	**347**	⇓*i* P	**Pn**	**21 35 02.3**	**-0.5**
KUBS	**Kucevo**	**7.66**	**316**	*i* Pn	**Pn**	**21 35 01.7**	**-2.1**
MILM	**Milestii Mici**	**7.79**	**358**	⇓*i* P	**Pn**	**21 35 05.2**	**-0.2**
MILM	**Milestii Mici**	**7.79**	**358**	⇓*i* P	**Pn**	**21 35 05.2**	**-0.2**
MDB	**Medias**	**7.82**	**335**	⇓*i* P	**Pn**	**21 35 06.4**	**+0.4**
MDB	**Medias**	**7.82**	**335**	⇓*i* P	**Pn**	**21 35 06.4**	**+0.4**
KIS	**Kishinev**	**7.86**	**359**	*e*P	**Pn**	**21 35 06.0**	**-0.5**
KIS	**Kishinev**	**7.86**	**359**	*e*P	**Pn**	**21 35 06.0**	**-0.5**
KIS	**Kishinev**	**7.86**	**359**	*e*P	**Pn**	**21 35 06.0**	**-0.5**
MDVR	**Moldovita**	**7.89**	**318**	⇓*i* P	**Pn**	**21 35 06.0**	**-0.9**
MDVR	**Moldovita**	**7.89**	**318**	⇓*i* P	**Pn**	**21 35 06.0**	**-0.9**
MMAI	**Mount Meron Ar**	**7.95**	**138**	Pn	**Pn**	**21 35 07.3**	**-0.4**
	comp=Z,3.3nm,0.3s,baz=324,slow=12,SNR=28						
MMAI				Sn	**Sn**	**21 36 36.1**	**-1.7**
	comp=Z,1.7nm,0.3s,baz=313,slow=29,SNR=5.2						
IVAS	**Ivanjica**	**8.07**	**306**	*e*Pn	**Pn**	**21 35 09.4**	**0.0**
TRUS	**Trudelj**	**8.27**	**311**	*e*Pn	**Pn**	**21 35 12.4**	**+0.4**
ANN	**Anapa**	**8.39**	**45**	*e*P	**Pn**	**21 35 15.1**	**+1.4**
ANN				pmax	pmax		
	comp=Z,35nm,1.5s						
ANN	**Anapa**	**8.39**	**45**	*e*P	**Pn**	**21 35 15.1**	**+1.4**
	comp=Z,35nm,1.5s						
DIVS	**Divibare**	**8.44**	**309**	*e*Pn	**Pn**	**21 35 15.7**	**+1.2**
BZS	**Buzias**	**8.53**	**322**	⇑*i* P	**Pn**	**21 35 15.2**	**-0.4**
BZS	**Buzias**	**8.53**	**322**	⇑*i* P	**Pn**	**21 35 15.2**	**-0.4**
BURAR	**Bucovina Array**	**8.94**	**343**	⇓*i* P	**Pn**	**21 35 21.9**	**+0.6**
BURAR	**Bucovina Array**	**8.94**	**343**	P	**Pn**	**21 35 21.8**	**+0.5**
BURAR	**Bucovina Array**	**8.94**	**343**	⇓*i* P	**Pn**	**21 35 21.9**	**+0.6**
TEKS	**Tekeris**	**8.97**	**310**	*e*Pn	**Pn**	**21 35 21.3**	**-0.4**
DRGR		**8.98**	**331**	⇑*i* P	**Pn**	**21 35 21.3**	**-0.5**
DRGR		**8.98**	**331**	⇑*i* P	**Pn**	**21 35 21.3**	**-0.5**
SIRR	**Siria**	**8.99**	**325**	⇑*i* P	**Pn**	**21 35 21.5**	**-0.5**
SIRR	**Siria**	**8.99**	**325**	⇑*i* P	**Pn**	**21 35 21.5**	**-0.5**
SORM	**Soroca**	**9.02**	**357**	⇑*i* P	**Pn**	**21 35 21.3**	**-1.0**
SORM	**Soroca**	**9.02**	**357**	⇑*i* P	**Pn**	**21 35 21.3**	**-1.0**
TIP	**Timpagrande**	**9.60**	**274**	⇑*i* P	**Pn**	**21 35 31.1**	**+0.7**
TIP	**Timpagrande**	**9.60**	**274**	⇑*i* P	**Pn**	**21 35 31.1**	**+0.7**
EIL	**Elat**	**10.60**	**151**	Sn	**Sn**	**21 37 38.1**	**-4.7**
	comp=Z,0.6nm,0.3s,baz=63,slow=16,SNR=6.4						
UZH	**Uzhgorod**	**10.69**	**335**	*e*P	Pn	21 35 39.7	-5.5
KOLS	**Kolonicke sedl**	**10.96**	**336**	*e*P	**Pn**	**21 35 49.7**	**+0.8**
KOLS	**Kolonicke sedl**	**10.96**	**336**	*e*P	**Pn**	**21 35 49.7**	**+0.8**
KOLS	**Kolonicke sedl**	**10.96**	**336**	*e*PN	**Pn**	**21 35 49.7**	**+0.8**
NEY	**Neytrino**	**11.04**	**64**	*i* P	**Pn**	**21 35 54.0**	**+3.7**
KIV	**Kislovodsk**	**11.25**	**60**	*e*P	**Pn**	**21 35 57.3**	**+4.3**
KIV				pmax	pmax		
	comp=Z,8.0nm,1.1s						
KVAR	**Kislovodsk Arr**	**11.26**	**60**	Pn	**Pn**	**21 35 56.3**	**+3.2**
	baz=286,slow=10,SNR=5.8						
KWP	**Kalwaria Pacla**	**11.45**	**339**	⇓*i* P	**Pn**	**21 35 56.3**	**+0.7**
KWP	**Kalwaria Pacla**	**11.45**	**339**	P	**Pn**	**21 35 56.3**	**+0.7**
KWP	**Kalwaria Pacla**	**11.45**	**339**	P	**Pn**	**21 35 56.3**	**+0.7**
AKASG	**Malin Array Be**	**11.57**	**0**	Pn	**Pn**	**21 35 54.7**	**-2.5**
	comp=Z,1.2nm,0.3s,baz=177,slow=12,SNR=4.7						
AKASG				Sn	**Sn**	**21 38 11.5**	**+5.1**
	comp=Z,1.3nm,0.3s,baz=186,slow=25,SNR=4.8						
STHS	**Stebnicka Huta**	**11.72**	**334**	*e*P	**Pn**	**21 35 57.0**	**-2.3**
STHS	**Stebnicka Huta**	**11.72**	**334**	*e*P	**Pn**	**21 35 57.0**	**-2.3**
STHS	**Stebnicka Huta**	**11.72**	**334**	*e*PN	**Pn**	**21 35 57.0**	**-2.3**
ZEI	**Tsey**	**11.76**	**67**	*e*P	**Pn**	**21 36 00.8**	**+0.7**
ZEI				pmax	pmax		
	comp=Z,13nm,1.4s						
ZEI	**Tsey**	**11.76**	**67**	*e*P	**Pn**	**21 36 00.8**	**+0.7**
	comp=Z,13nm,1.4s						
VYHS	**Vyhne**	**11.93**	**325**	*e*P	**Pn**	**21 36 03.2**	**+1.0**
VYHS	**Vyhne**	**11.93**	**325**	*e*P	**Pn**	**21 36 03.2**	**+1.0**
VYHS	**Vyhne**	**11.93**	**325**	*e*PN	**Pn**	**21 36 03.2**	**+1.0**
ARSA	**Arzberg**	**12.80**	**314**	*i* P	Pn	21 36 19.0	+4.9
	comp=Z,3.9nm,0.9s						
CONA	**Conrad Observa**	**13.01**	**317**	*i* P	Pn	21 36 22.0	+4.9
	comp=Z,4.1nm,0.9s						
MOA	**Molln**	**13.84**	**314**	*i* P	**P**	**21 36 33.5**	**-3.2**
	comp=Z,5.8nm,1.1s						
VSR	**Storozhevoye**	**13.99**	**27**	*e*P	**Pn**	**21 36 29.2**	**-1.1**
VSR				pmax	pmax		
	comp=Z,10.0nm,1.0s						
VSR	**Storozhevoye**	**13.99**	**27**	*e*P	**Pn**	**21 36 29.2**	**-1.1**
	comp=Z,10.0nm,1.0s						
DPC	**Dobruska-Polom**	**14.41**	**325**	*e*P	**P**	**21 36 40.9**	**-2.2**
DPC				*e*pP	pP	21 36 47.9	
DPC	**Dobruska-Polom**	**14.41**	**325**	*e*P	**P**	**21 36 40.9**	**-2.2**
DPC	**Dobruska-Polom**	**14.41**	**325**	*e*P	**P**	**21 36 40.9**	**-2.2**
GERES	**GERESS Array B**	**14.72**	**316**	Pn	**Pn**	**21 36 41.2**	**+0.9**
	comp=Z,0.1nm,0.3s,baz=152,slow=3.9,SNR=8.3						
KHC	**Kasperske Hory**	**14.95**	**317**	*e*P	**P**	**21 36 47.0**	**-2.1**
KHC				*e*pP	Pn	21 36 51.8	+8.4
KHC	**Kasperske Hory**	**14.95**	**317**	*e*P	**P**	**21 36 47.0**	**-2.1**
KHC	**Kasperske Hory**	**14.95**	**317**	*e*P	**P**	**21 36 47.0**	**-2.1**
VRH	**Novokhopyorsk**	**14.96**	**32**	*e*P	**Pn**	**21 36 45.1**	**+1.6**
VRH				pmax	pmax		
	comp=Z,10.0nm,1.4s						
LPSR	**Galich'ya Gora**	**15.08**	**24**	*e*P	**Pn**	**21 36 46.6**	**+1.5**
LPSR				pmax	pmax		
	comp=Z,10.0nm,1.5s						
WTTA	**Wattenberg**	**15.10**	**308**	*i* P	**P**	**21 36 55.5**	**+4.7**
	comp=Z,5.9nm,1.0s						
WET	**Wettzell**	**15.33**	**316**	P	**Pn**	**21 36 50.8**	**+2.3**
WET				pmax	pmax		
	comp=Z,9.0nm,1.0s						
MOTA	**Moosalm**	**15.46**	**308**	*i* P	**P**	**21 36 55.8**	**+1.0**
	comp=Z,5.0nm,0.9s						
MOTA				*i* pP	**sP**	**21 37 00.2**	**+1.7**
	comp=Z,5.0nm,0.9s						
MOTA	**Moosalm**	**15.46**	**308**	P	**P**	**21 36 55.8**	**+1.0**
	comp=Z,5.0nm,0.9s						
FETA	**Feichten**	**15.55**	**306**	*i* P	**P**	**21 36 58.0**	**+2.1**
	comp=Z,14nm,1.2s						
FETA	**Feichten**	**15.55**	**306**	P	**P**	**21 36 58.0**	**+2.1**
	comp=Z,14nm,1.2s						
RETA	**Reutte**	**15.73**	**308**	*i* P	**P**	**21 37 03.3**	**+5.5**
	comp=Z,8.6nm,1.3s						
KEST	**Kesra**	**16.07**	**264**	Pn	**Pn**	**21 36 57.0**	**-1.1**
	comp=Z,0.1nm,0.3s,baz=274,slow=14,SNR=1.9						
DAVA	**Damuels**	**16.19**	**306**	*i* P	**P**	**21 37 04.2**	**+1.2**
	comp=Z,10.0nm,0.9s						
DAVA	**Damuels**	**16.19**	**306**	P	**P**	**21 37 04.2**	**+1.2**
	comp=Z,10.0nm,0.9s						
CLL	**Collm**	**16.60**	**322**	*e*(P)	P	21 37 15.0	+7.7
CLL	**Collm**	**16.60**	**322**	*e*P	P	21 37 15.0	+7.7
OBN	**Obninsk**	**16.75**	**15**	⇑*e*P	**Pn**	**21 37 07.7**	**+1.0**
OBN				pmax	pmax		
	comp=Z,6.0nm,0.8s						
OBN				MLR	MLR		
	comp=Z,262nm,17.0s						
OBN	**Obninsk**	**16.75**	**15**	*e*P	**Pn**	**21 37 07.7**	**+1.0**
	comp=Z,262nm,17.0s						
MOS	**Moscow**	**17.56**	**16**	*e*P	**P**	**21 37 21.1**	**+3.3

*DDA **19** 21:45:46.6, 39°.07N×29°.06E, h7km, Md2.5*
*ISK **19** 21:45:47.9, 38°.96N×28°.93E, h5km, ML2.6*
*CSEM **19** 21:45:49.0±0.2, 38°.96N×28°.95E, h2km, MD2.5, Error ellipse: s-maj=4.4km s-min=3.4km az=96.0*
ISC 19 21:45:47.5±1.1, 38°.93N±0°.03×29°.01E±0°.03, h8km±10km, n43, σ0s82/52, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**297**	P	**Pg**	**21 45 52.5**	**-0.1**
DEMI				S	**Sg**	**21 45 56.1**	**+0.1**
DEMI	**Demirci**	**0.25**	**297**	*i* P	**Pg**	**21 45 52.5**	**-0.1**
DEMI				*i* S	**Sg**	**21 45 56.1**	**+0.1**
GDZ	**Gediz**	**0.40**	**67**	*i* P	Pg	21 45 49.9	-5.5
GDZ				*i* S	**Sg**	**21 45 58.1**	**-2.6**
KULA	**Kula-Manisa**	**0.49**	**213**	*e*PG	**Pb**	**21 45 58.9**	**+0.4**
KULA				*e*SG	**Sb**	**21 46 06.1**	**+0.1**
KULA	**Kula-Manisa**	**0.49**	**213**	*e*Pg	**Pb**	**21 45 58.9**	**+0.4**
KULA				*e*Sg	**Sb**	**21 46 06.1**	**+0.1**
MANT	**Manisa**	**0.56**	**219**	P	**Pb**	**21 46 00.7**	**+0.9**
MANT	**Manisa**	**0.56**	**219**	*i* P	**Pb**	**21 46 00.7**	**+0.9**
MANT				*i* S	**Sn**	**21 46 10.0**	**-1.7**
KHAL	**Karahalli**	**0.68**	**146**	P	**Pb**	**21 46 01.8**	**+0.2**
KHAL				S	**Sb**	**21 46 12.5**	**+1.3**
KHAL	**Karahalli**	**0.68**	**146**	*i* P	**Pb**	**21 46 01.8**	**+0.2**
KHAL				*i* S	**Sb**	**21 46 12.5**	**+1.3**
KHL	**Karahalli**	**0.73**	**146**	*e*PG	**Pn**	**21 46 04.0**	**-0.2**
KHL	**Karahalli**	**0.73**	**146**	*e*Pg	**Pn**	**21 46 04.0**	**-0.2**
AKS	**Akhisar**	**0.93**	**267**	*e*PG	**Pg**	**21 46 05.7**	**+0.3**
AKS				*e*SG	**Sn**	**21 46 19.9**	**-0.7**
AKS	**Akhisar**	**0.93**	**267**	*e*Pg	**Pg**	**21 46 05.7**	**+0.3**
AKS				*e*Sg	**Sn**	**21 46 19.9**	**-0.7**
ORLT	**Orhaneli**	**1.12**	**356**	*e*PN	**Pg**	**21 46 09.7**	**+0.7**
ORLT	**Orhaneli**	**1.12**	**356**	*e*Pn	**Pg**	**21 46 09.7**	**+0.7**
BALB	**Balikesir**	**1.13**	**309**	*e*PG	**Pb**	**21 46 09.2**	**0.0**
BALB	**Balikesir**	**1.13**	**309**	*e*Pg	**Pb**	**21 46 09.2**	**0.0**
CAVI	**Cavuskoy**	**1.43**	**27**	*e*PN	**Pb**	**21 46 15.3**	**+0.9**
CAVI	**Cavuskoy**	**1.43**	**27**	*e*Pn	**Pb**	**21 46 15.3**	**+0.9**
KCTX	**Karacabey (Bur**	**1.43**	**340**	*e*PN	**Pb**	**21 46 15.0**	**+0.6**
KCTX	**Karacabey (Bur**	**1.43**	**340**	*e*Pn	**Pb**	**21 46 15.0**	**+0.6**
MDNY	**Mudanya-Bursa**	**1.44**	**356**	*e*PN	**Pg**	**21 46 15.8**	**+0.7**
MDNY	**Mudanya-Bursa**	**1.44**	**356**	*e*Pn	**Pg**	**21 46 15.8**	**+0.7**
IZI	**Iznik**	**1.45**	**14**	*e*PN	**Pg**	**21 46 16.6**	**+1.3**
IZI	**Iznik**	**1.45**	**14**	*e*Pn	**Pg**	**21 46 16.6**	**+1.3**
GONE	**Gonen-Balikesi**	**1.51**	**318**	*e*PN	**Pb**	**21 46 16.1**	**+0.3**
GONE	**Gonen-Balikesi**	**1.51**	**318**	*e*Pn	**Pb**	**21 46 16.1**	**+0.3**
ADVT	**Abdulvahap**	**1.60**	**20**	*e*PN	**Pg**	**21 46 18.8**	**+0.5**
ADVT	**Abdulvahap**	**1.60**	**20**	*e*Pn	**Pg**	**21 46 18.8**	**+0.5**
ARMT	**Armutlu**	**1.64**	**356**	*e*PN	**Pb**	**21 46 18.8**	**+0.8**
ARMT	**Armutlu**	**1.64**	**356**	*e*Pn	**Pb**	**21 46 18.8**	**+0.8**
EDC	**Edincik**	**1.67**	**328**	*e*PN	**Pb**	**21 46 18.8**	**+0.3**
EDC	**Edincik**	**1.67**	**328**	*e*Pn	**Pb**	**21 46 18.8**	**+0.3**
GULT	**Gulveren**	**1.90**	**37**	*e*PN	**Pb**	**21 46 23.3**	**+0.8**
GULT	**Gulveren**	**1.90**	**37**	*e*Pn	**Pb**	**21 46 23.3**	**+0.8**
HRT	**Hereke**	**1.96**	**15**	*e*PN	**Pb**	**21 46 23.6**	**+0.2**
HRT	**Hereke**	**1.96**	**15**	*e*Pn	**Pb**	**21 46 23.6**	**+0.2**
ISK	**Istanbul-Kandi**	**2.13**	**1**	*e*PN	**Pb**	**21 46 25.8**	**-0.6**
ISK	**Istanbul-Kandi**	**2.13**	**1**	*e*Pn	**Pb**	**21 46 25.8**	**-0.6**
SILT	**Sile**	**2.27**	**12**	*e*PN	**Pb**	**21 46 27.6**	**-1.2**
SILT	**Sile**	**2.27**	**12**	*e*Pn	**Pb**	**21 46 27.6**	**-1.2**
MDUB	**Mudurnu**	**2.29**	**47**	*e*PN	**Pb**	**21 46 28.7**	**-0.4**
MDUB	**Mudurnu**	**2.29**	**47**	*e*Pn	**Pb**	**21 46 28.7**	**-0.4**

*ISCJB **19** 21:55:23.0±0.5, 39°.12N±0°.02×29°.11E±0°.03, h2km±5km, Error ellipse: s-maj=4.2km s-min=3.4km az=153.6*
*ISK **19** 21:55:22.7, 39°.12N×29°.12E, h5km, ML2.8*
*DDA **19** 21:55:22.9, 39°.12N×29°.10E, h8km, Md2.8*
*CSEM **19** 21:55:23.2±0.1, 39°.13N×29°.11E, h5km, MD2.8, Error ellipse: s-maj=2.0km s-min=1.7km az=122.0*
ISC 19 21:55:23.2±0.9, 39°.13N±0°.02×29°.11E±0°.02, h14km±8km, n57, σ0s59/77, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.29**	**98**	P	**Pg**	**21 55 29.5**	**+0.2**
GDZ				S	**Sg**	**21 55 34.0**	**+0.5**
GDZ	**Gediz**	**0.29**	**98**	*i* P	**Pg**	**21 55 29.5**	**+0.2**
GDZ				*i* S	**Sg**	**21 55 34.0**	**+0.5**
DEMI	**Demirci**	**0.32**	**254**	P	**Pg**	**21 55 29.9**	**0.0**
DEMI				S	**Sg**	**21 55 34.3**	**0.0**
DEMI	**Demirci**	**0.32**	**254**	*i* P	**Pg**	**21 55 29.9**	**0.0**
DEMI				*i* S	**Sg**	**21 55 34.3**	**0.0**
TVSB	**Tavsanli**	**0.42**	**40**	*e*PG	**Pg**	**21 55 31.4**	**-0.2**
TVSB				*e*SG	**Sg**	**21 55 37.0**	**-0.3**
TVSB	**Tavsanli**	**0.42**	**40**	*e*Pg	**Pg**	**21 55 31.4**	**-0.2**
TVSB				*e*Sg	**Sg**	**21 55 37.0**	**-0.3**
DURS	**Dursunbey**	**0.68**	**314**	P	**Pb**	**21 55 37.3**	**+0.3**
DURS				S	**Sg**	**21 55 45.8**	**+0.2**
DURS	**Dursunbey**	**0.68**	**314**	*i* P	**Pb**	**21 55 37.3**	**+0.3**
DURS				*i* S	**Sg**	**21 55 45.8**	**+0.2**
KULA	**Kula-Manisa**	**0.71**	**210**	*e*PG	**Pg**	**21 55 36.5**	**-0.5**
KULA				*e*SG	**Sb**	**21 55 46.8**	**-0.3**
KULA	**Kula-Manisa**	**0.71**	**210**	*e*Pg	**Pg**	**21 55 36.6**	**-0.5**
KULA				*e*Sg	**Sb**	**21 55 46.8**	**-0.3**
MANT	**Manisa**	**0.77**	**214**	P	**Pb**	**21 55 38.3**	**-0.3**
MANT				S	**Sg**	**21 55 47.8**	**-0.6**
MANT	**Manisa**	**0.77**	**214**	*i* P	**Pb**	**21 55 38.3**	**-0.3**
MANT				*i* S	**Sg**	**21 55 47.8**	**-0.6**
KHAL	**Karahalli**	**0.82**	**159**	P	**Pb**	**21 55 39.2**	**-0.1**
KHAL				S	**Sg**	**21 55 49.4**	**-0.4**
KHAL	**Karahalli**	**0.82**	**159**	*i* P	**Pb**	**21 55 39.2**	**-0.1**
KHAL				*i* S	**Sg**	**21 55 49.4**	**-0.4**
KHL	**Karahalli**	**0.87**	**158**	*e*PG	**Pb**	**21 55 39.8**	**-0.4**
KHL	**Karahalli**	**0.87**	**158**	*e*Pg	**Pb**	**21 55 39.8**	**-0.4**
ORLT	**Orhaneli**	**0.93**	**350**	*e*PG	**Pb**	**21 55 40.8**	**-0.4**
ORLT	**Orhaneli**	**0.93**	**350**	*e*Pg	**Pb**	**21 55 40.8**	**-0.4**
AKHS	**Akhisar**	**1.04**	**256**	P	**Pb**	**21 55 42.9**	**-0.2**
AKHS				S	**Sn**	**21 55 58.0**	**+0.1**
AKHS	**Akhisar**	**1.04**	**256**	*i* P	**Pb**	**21 55 42.9**	**-0.2**
AKHS				*i* S	**Sn**	**21 55 58.0**	**+0.1**
AKS	**Akhisar**	**1.04**	**256**	*e*PG	**Pg**	**21 55 43.2**	**-0.2**
AKS	**Akhisar**	**1.04**	**256**	*e*Pg	**Pg**	**21 55 43.2**	**-0.2**
BALB	**Balikesir**	**1.08**	**298**	*e*PN	**Pg**	**21 55 44.0**	**-0.1**
BALB	**Balikesir**	**1.08**	**298**	*e*Pn	**Pg**	**21 55 44.0**	**-0.1**
CAVI	**Cavuskoy**	**1.21**	**28**	*e*PN	**Pg**	**21 55 46.2**	**-0.3**
CAVI	**Cavuskoy**	**1.21**	**28**	*e*Pn	**Pg**	**21 55 46.2**	**-0.3**
IZI	**Iznik**	**1.23**	**13**	*e*PN	**Pg**	**21 55 47.0**	**-0.1**
IZI	**Iznik**	**1.23**	**13**	*e*Pn	**Pg**	**21 55 47.0**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.25**	**352**	*e*PN	**Pg**	**21 55 47.3**	**0.0**
MDNY	**Mudanya-Bursa**	**1.25**	**352**	*e*Pn	**Pg**	**21 55 47.3**	**0.0**
KCTX	**Karacabey (Bur**	**1.27**	**333**	*e*PN	**Pg**	**21 55 47.8**	**0.0**
KCTX	**Karacabey (Bur**	**1.27**	**333**	*e*Pn	**Pg**	**21 55 47.8**	**0.0**
BORA	**Eskisehir**	**1.28**	**54**	P	**Pb**	**21 55 47.0**	**-0.2**
BORA				S	**Sg**	**21 56 05.1**	**+0.6**
BORA	**Eskisehir**	**1.28**	**54**	*i* P	**Pb**	**21 55 47.0**	**-0.2**
BORA				*i* S	**Sg**	**21 56 05.1**	**+0.6**
BALY	**Balya**	**1.31**	**298**	P	**Pg**	**21 55 48.0**	**-0.4**
BALY	**Balya**	**1.31**	**298**	*i* P	**Pg**	**21 55 48.0**	**-0.4**
ADVT	**Abdulvahap**	**1.39**	**20**	*e*PN	**Pg**	**21 55 49.9**	**0.0**
ADVT	**Abdulvahap**	**1.39**	**20**	*e*Pn	**Pg**	**21 55 49.9**	**0.0**
GONE	**Gonen-Balikesi**	**1.43**	**310**	*e*PN	**Pb**	**21 55 49.9**	**+0.2**
GONE	**Gonen-Balikesi**	**1.43**	**310**	*e*Pn	**Pb**	**21 55 49.9**	**+0.2**
DNZL	**Cakiroluk**	**1.44**	**182**	P	**Pg**	**21 55 50.6**	**-0.4**
DNZL	**Cakiroluk**	**1.44**	**182**	*i* P	**Pg**	**21 55 50.6**	**-0.4**
DNZL				*i* S	**Sg**	**21 56 13.0**	**+3.3**
ARMT	**Armutlu**	**1.45**	**352**	*e*PN	**Pb**	**21 55 50.2**	**+0.2**
ARMT	**Armutlu**	**1.45**	**352**	*e*Pn	**Pb**	**21 55 50.2**	**+0.2**
EDC	**Edincik**	**1.55**	**322**	*e*PN	**Pb**	**21 55 51.5**	**-0.2**
EDC	**Edincik**	**1.55**	**322**	*e*Pn	**Pb**	**21 55 51.5**	**-0.2**
KNL	**Bal¨–kesir**	**1.67**	**313**	*i* P	**Pb**	**21 55 53.4**	**-0.4**
KNL				*i* S	**Sg**	**21 56 16.8**	**-0.2**
GULT	**Gulveren**	**1.69**	**39**	*e*PN	**Pb**	**21 55 53.9**	**-0.3**
GULT	**Gulveren**	**1.69**	**39**	*e*Pn	**Pb**	**21 55 53.9**	**-0.3**
HRT	**Hereke**	**1.74**	**14**	*e*PN	**Pb**	**21 55 55.0**	**-0.1**
HRT	**Hereke**	**1.74**	**14**	*e*Pn	**Pb**	**21 55 55.0**	**-0.1**
SVRH	**Sivrihisar-ESK**	**1.90**	**80**	*e*PN	**Pn**	**21 55 56.0**	**+0.7**
SVRH	**Sivrihisar-ESK**	**1.90**	**80**	*e*Pn	**Pn**	**21 55 56.0**	**+0.7**
ISK	**Istanbul-Kandi**	**1.93**	**359**	*e*PN	**Pb**	**21 55 57.1**	**-1.2**
ISK	**Istanbul-Kandi**	**1.93**	**359**	*e*Pn	**Pb**	**21 55 57.1**	**-1.2**
MDUB	**Mudurnu**	**2.09**	**50**	*e*PN	**Pb**	**21 55 59.5**	**-1.6**
MDUB	**Mudurnu**	**2.09**	**50**	*e*Pn	**Pb**	**21 55 59.5**	**-1.6**

*ISK **19** 22:01:58.3, 39°.12N×28°.99E, h5km, ML2.9*
*ISCJB **19** 22:01:59.1±0.5, 39°.12N±0°.03×28°.99E±0°.04, h2km±7km, Error ellipse: s-maj=5.3km s-min=4.2km az=36.2*
*DDA **19** 22:01:59.1, 39°.13N×28°.99E, h7km, Md3.4*
*CSEM **19** 22:01:59.5±0.1, 39°.11N×28°.98E, h5km, ML3.4, Error ellipse: s-maj=2.6km s-min=2.4km az=97.0*
ISC 19 22:01:59.3±0.9, 39°.12N±0°.02×28°.98E±0°.02, h10km±8km, n59, σ0s44/69, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.22**	**251**	P	**Pg**	**22 02 03.9**	**0.0**
DEMI				S	**Sg**	**22 02 07.2**	**+0.2**
DEMI	**Demirci**	**0.22**	**251**	*i* P	**Pg**	**22 02 03.9**	**0.0**
DEMI				*i* S	**Sg**	**22 02 07.2**	**+0.2**
GDZ	**Gediz**	**0.39**	**94**	P	**Pg**	**22 02 07.1**	**0.0**
GDZ	**Gediz**	**0.39**	**94**	*i* P	**Pg**	**22 02 07.0**	**0.0**
TVSB	**Tavsanli**	**0.50**	**48**	*e*PG	**Pg**	**22 02 08.8**	**-0.3**
TVSB	**Tavsanli**	**0.50**	**48**	*e*Pg	**Pg**	**22 02 08.8**	**-0.3**
DURS	**Dursunbey**	**0.62**	**321**	P	**Pg**	**22 02 11.2**	**-0.3**
DURS	**Dursunbey**	**0.62**	**321**	*i* P	**Pg**	**22 02 11.2**	**-0.3**
KULA	**Kula-Manisa**	**0.65**	**203**	*e*PG	**Pg**	**22 02 11.9**	**0.0**
KULA	**Kula-Manisa**	**0.65**	**203**	*e*Pg	**Pg**	**22 02 11.9**	**0.0**
MANT	**Manisa**	**0.71**	**208**	P	**Pg**	**22 02 13.0**	**0.0**
MANT				S	**Sg**	**22 02 21.9**	**-0.4**
MANT	**Manisa**	**0.71**	**208**	*i* P	**Pg**	**22 02 13.0**	**0.0**
MANT				*i* S	**Sg**	**22 02 21.9**	**-0.4**
KHAL	**Karahalli**	**0.84**	**152**	P	**Pg**	**22 02 15.7**	**+0.1**
KHAL				S	**Sg**	**22 02 26.9**	**+0.3**
KHAL	**Karahalli**	**0.84**	**152**	*i* P	**Pg**	**22 02 15.7**	**+0.1**
KHAL				*i* S	**Sg**	**22 02 26.9**	**+0.3**
KHL	**Karahalli**	**0.90**	**152**	*e*PG	**Pg**	**22 02 16.6**	**0.0**
KHL				*e*SG	**Sn**	**22 02 30.5**	**-0.7**
KHL	**Karahalli**	**0.90**	**152**	*e*Pg	**Pg**	**22 02 16.6**	**0.0**
KHL				*e*Sg	**Sn**	**22 02 30.5**	**-0.7**
ORLT	**Orhaneli**	**0.93**	**356**	*e*PG	**Pg**	**22 02 17.2**	**-0.1**
ORLT	**Orhaneli**	**0.93**	**356**	*e*Pg	**Pg**	**22 02 17.2**	**-0.1**
AKHS	**Akhisar**	**0.94**	**256**	P	**Pb**	**22 02 17.6**	**-0.2**
AKHS	**Akhisar**	**0.94**	**256**	*i* P	**Pb**	**22 02 17.6**	**-0.2**
AKS	**Akhisar**	**0.94**	**256**	*e*PG	**Pb**	**22 02 17.7**	**-0.1**
AKS	**Akhisar**	**0.94**	**256**	*e*Pg	**Pb**	**22 02 17.7**	**-0.1**
BALB	**Balikesir**	**1.00**	**302**	*e*PG	**Pn**	**22 02 19.4**	**-0.1**
BALB				*e*SG	**Sn**	**22 02 33.8**	**+0.1**
BALB	**Balikesir**	**1.00**	**302**	*e*Pg	**Pn**	**22 02 19.4**	**-0.1**
BALB				*e*Sg	**Sn**	**22 02 33.8**	**+0.1**
IGD	**Bursa**	**1.16**	**8**	*i* P	**Pb**	**22 02 20.2**	**-1.3**
BALY	**Balya**	**1.23**	**301**	P	**Pg**	**22 02 22.9**	**0.0**
BALY	**Balya**	**1.23**	**301**	*i* P	**Pg**	**22 02 22.9**	**0.0**
KCTX	**Karacabey (Bur**	**1.25**	**337**	*e*PN	**Pb**	**22 02 22.9**	**-0.1**
KCTX	**Karacabey (Bur**	**1.25**	**337**	*e*Pn	**Pb**	**22 02 22.9**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.25**	**357**	*e*PN	**Pb**	**22 02 23.0**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.25**	**357**	*e*Pn	**Pb**	**22 02 23.0**	**-0.1**
CAVI	**Cavuskoy**	**1.27**	**31**	*e*PN	**Pg**	**22 02 24.0**	**+0.2**
CAVI	**Cavuskoy**	**1.27**	**31**	*e*Pn	**Pg**	**22 02 24.0**	**+0.2**
IZI	**Iznik**	**1.28**	**17**	*e*PN	**Pb**	**22 02 23.6**	**0.0**
IZI	**Iznik**	**1.28**	**17**	*e*Pn	**Pb**	**22 02 23.6**	**0.0**
GEMT	**Gemlik**	**1.33**	**7**	*e*PN	**Pg**	**22 02 25.0**	**+0.2**
GEMT	**Gemlik**	**1.33**	**7**	*e*Pn	**Pg**	**22 02 25.0**	**+0.2**
GONE	**Gonen-Balikesi**	**1.37**	**313**	*e*PN	**Pb**	**22 02 24.8**	**-0.2**
GONE	**Gonen-Balikesi**	**1.37**	**313**	*e*Pn	**Pb**	**22 02 24.8**	**-0.2**
ADVT	**Abdulvahap**	**1.44**	**24**	*e*PN	**Pg**	**22 02 26.7**	**-0.2**
ADVT	**Abdulvahap**	**1.44**	**24**	*e*Pn	**Pg**	**22 02 26.7**	**-0.2**
ARMT	**Armutlu**	**1.45**	**356**	*e*PN	**Pb**	**22 02 26.7**	**+0.2**
ARMT	**Armutlu**	**1.45**	**356**	*e*Pn	**Pb**	**22 02 26.7**	**+0.2**
EDC	**Edincik**	**1.50**	**325**	*e*PN	**Pg**	**22 02 28.1**	**-0.1**
EDC	**Edincik**	**1.50**	**325**	*e*Pn	**Pg**	**22 02 28.1**	**-0.1**
GPA	**Golpazari**	**1.56**	**41**	*e*PN	**Pb**	**22 02 28.1**	**-0.2**
GPA	**Golpazari**	**1.56**	**41**	*e*Pn	**Pb**	**22 02 28.1**	**-0.2**
GULT	**Gulveren**	**1.77**	**41**	*e*PN	**Pb**	**22 02 31.7**	**-0.2**
GULT	**Gulveren**	**1.77**	**41**	*e*Pn	**Pb**	**22 02 31.7**	**-0.2**
HRT	**Hereke**	**1.78**	**17**	*e*PN	**Pn**	**22 02 30.9**	**+0.6**
HRT	**Hereke**	**1.78**	**17**	*e*Pn	**Pn**	**22 02 30.9**	**+0.6**
SPNC	**Sapanca-Adapaz**	**1.87**	**33**	*e*PN	**Pn**	**22 02 32.2**	**+0.8**
SPNC	**Sapanca-Adapaz**	**1.87**	**33**	*e*Pn	**Pn**	**22 02 32.2**	**+0.8**
ISK	**Istanbul-Kandi**	**1.95**	**2**	*e*PN	**Pb**	**22 02 34.2**	**-0.7**
ISK	**Istanbul-Kandi**	**1.95**	**2**	*e*Pn	**Pb**	**22 02 34.3**	**-0.7**
SVRH	**Sivrihisar-ESK**	**2.00**	**80**	*e*PN	**Pn**	**22 02 34.2**	**+1.0**
SVRH	**Sivrihisar-ESK**	**2.00**	**80**	*e*Pn	**Pn**	**22 02 34.3**	**+1.0**
MDUB	**Mudurnu**	**2.18**	**51**	*e*PN	**Pb**	**22 02 37.6**	**-1.3**
MDUB	**Mudurnu**	**2.18**	**51**	*e*Pn	**Pb**	**22 02 37.6**	**-1.3**

*NIED **19** 22:02:00, 38°.80N×142°.40E, h35km, Mw4.1 Best double couple: $M_0$1.43000×10^{15} NP1:φ=97.00000°, δ24.00000°, λ37.00000°. NP2:φ=332.00000°, δ76.00000°, λ110.00000°.*
*ISCJB **19** 22:02:05.9±1.2, 38°.80N±0°.05×142°.5E±0°.1, h44km±10km, mb3.7/8, Error ellipse: s-maj=13.7km s-min=7.0km az=18.9*
*JMA **19** 22:02:06.3±0.1, 38°.83N×142°.41E, h34km±2km, M3.8*
JMA Felt I J1.
*IDC **19** 22:02:07.1±0.9, 38°.71N×142°.55E, h41km±8km, mb3.5/8, mb1 3.6/12, mb1mx3.3/58, mbtmp3.7/12, ML3.0/4, MS3.1/1, Ms1 3.1/1, ms1mx2.6/40, Error ellipse: s-maj=19.0km s-min=15.8km az=96.0*
ISC 19 22:02:05.7±0.8, 38°.80N±0°.05×142°.43E±0°.06, h26km±4km, n30, σ1s00/29, mb3.7/8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.66**	**295**	P	**Pb**	**22 02 18.8**	**+0.2**
OFUJ				S	**Sb**	**22 02 27.5**	**+0.1**
JIO	**Ouri**	**0.92**	**248**	P	**Pn**	**22 02 22.6**	**-0.3**
JIO				S	**Sb**	**22 02 33.5**	**-1.3**
JMK	**Ichinoseki**	**0.96**	**279**	P	**Pn**	**22 02 23.3**	**-0.2**
JMK				S	**Sb**	**22 02 35.7**	**-0.3**
JOM	**Ohasama**	**1.11**	**307**	P	**Pn**	**22 02 25.6**	**0.0**
JOM				S	**Sn**	**22 02 39.5**	**-0.5**
JTH	**Tanohata**	**1.22**	**339**	P	**Pn**	**22 02 26.5**	**-0.5**
JOU	**Okura**	**1.45**	**253**	P	**Pn**	**22 02 31.0**	**+0.7**
JRG	**Rokugo**	**1.52**	**293**	P	**Pn**	**22 02 31.7**	**+0.5**
JMM	**Marumori**	**1.59**	**235**	P	**Pn**	**22 02 32.3**	**+0.1**
JYK	**Kaneyama**	**1.62**	**275**	P	**Pn**	**22 02 33.3**	**+0.7**
JANG	**Nango**	**1.72**	**336**	P	**Pn**	**22 02 33.9**	**-0.1**
JANG				S	**Sn**	**22 02 55.3**	**+0.2**
MJAR	**Matsushiro Arr**	**4.04**	**237**	P	**Pn**	**22 03 07.2**	**+1.3**
	1.0nm,0.3s,baz=40,slow=12,SNR=20						
MAT	**Matsushiro**	**4.04**	**237**	P	Pn	22 03 09.8	+3.9
MAT				S	**Sn**	**22 03 55.3**	**+2.9**
ASAJ	**Asahikawa**	**5.31**	**1**	P	**Pn**	**22 03 25.9**	**+2.6**
	0.7nm,0.3s,baz=282,slow=14,SNR=4.7						
JHJ	**Hachijo jima 2**	**6.07**	**202**	LR	LR	22 05 54.0	
	comp=Z,165nm,18.6s,baz=81,slow=38						
USRK	**Ussuriysk Ar.**	**9.51**	**308**	P	Pn	22 04 24.4	+3.6
	0.2nm,0.3s,baz=117,slow=14,SNR=9.2						
KSRS	**Korea Array**	**11.51**	**268**	P	Pn	22 04 52.0	+3.7
	0.1nm,0.3s,baz=82,slow=14,SNR=3.1						
SONM	**Songino Array**	**27.52**	**301**	P	**P**	**22 07 49.9**	**-0.3**
	0.3nm,0.5s,baz=112,slow=11,SNR=2.4						
H11N2	**WAKE ISLAND Hy**	**28.43**	**125**	T	T	22 38 25.4	
	baz=317,slow=76,SNR=37						
H11N1	**WAKE ISLAND Hy**	**28.44**	**125**	T	T	22 38 25.5	
	baz=317,slow=76,SNR=47						
H11N3	**WAKE ISLAND Hy**	**28.45**	**125**	T	T	22 38 26.1	
	baz=317,slow=76,SNR=52						
H11S1	**WAKE ISLAND Hy**	**29.21**	**127**	T	T	22 39 25.3	
	baz=319,slow=76,SNR=3.6						
H11S3	**WAKE ISLAND Hy**	**29.21**	**127**	T	T	22 39 26.0	
	baz=319,slow=76,SNR=4.4						
H11S2	**WAKE ISLAND Hy**	**29.23**	**127**	T	T	22 39 27.1	
	baz=319,slow=76,SNR=4.4						
ZALV	**Zalesovo Beam**	**41.34**	**311**	P	**P**	**22 09 49.9**	**+0.8**
	0.8nm,0.6s,baz=79,slow=8.1,SNR=3.3						
MKAR	**Makanchi Array**	**43.89**	**301**	P	**P**	**22 10 10.4**	**+0.5**
	0.6nm,0.4s,baz=86,slow=10,SNR=7.4						
MKAR				pP	**sP**	**22 10 21.4**	**+0.3**
	0.6nm,0.6s,baz=89,slow=9.2,SNR=4.2						
KURBB	**Kurchatov Arra**	**45.57**	**307**	P	**P**	**22 10 22.9**	**-0.3**
	0.9nm,0.4s,baz=81,slow=8.3,SNR=4.6						
ILAR	**Eielson Array**	**47.57**	**33**	P	**P**	**22 10 38.4**	**-0.4**
	0.7nm,0.8s,baz=268,slow=6.8,SNR=7.2						
ILAR				pP	**sP**	**22 10 50.0**	**+0.1**
	0.5nm,0.7s,baz=261,slow=6.9,SNR=3.4						
WRA	**Warramunga Arr**	**58.93**	**189**	P	**P**	**22 12 01.1**	**-1.5**
	1.2nm,0.6s,baz=6.1,slow=7.1,SNR=25						
WRA				pP	**sP**	**22 12 13.4**	**-0.5**
	0.2nm,0.4s,baz=4.6,slow=6.9,SNR=1.6						
YKA	**Yellowknife Arr**	**61.88**	**31**	P	**P**	**22 12 22.1**	**-0.2**
	0.2nm,0.6s,baz=300,slow=5.9,SNR=3.3						
ASAR	**Alice Springs**	**62.65**	**189**	P	**P**	**22 12 27.1**	**-0.8**
	0.3nm,0.5s,baz=11,slow=15,SNR=5.1						

*ISK **19** 22:02:42.9, 39°.10N×29°.16E, h8km, ML2.9*
*ISCJB **19** 22:02:43.1±0.5, 39°.11N±0°.03×29°.11E±0°.04, h5km±6km, Error ellipse: s-maj=5.2km s-min=3.9km az=31.9*
*DDA **19** 22:02:43.2, 39°.13N×29°.10E, h7km, Ml3.3*
*CSEM **19** 22:02:43.5±0.1, 39°.10N×29°.13E, h8km, ML3.3, Error ellipse: s-maj=2.6km s-min=2.0km az=97.0*
ISC 19 22:02:43.4±0.9, 39°.11N±0°.02×29°.12E±0°.02, h12km±10km, n47, σ0s48/60, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.28**	**95**	P	**Pg**	**22 02 49.7**	**+0.3**
GDZ				S	**Sg**	**22 02 53.6**	**+0.3**
GDZ	**Gediz**	**0.28**	**95**	*i* P	**Pg**	**22 02 49.7**	**+0.3**
GDZ				*i* S	**Sg**	**22 02 53.6**	**+0.3**
DEMI	**Demirci**	**0.32**	**258**	P	**Pg**	**22 02 49.7**	**-0.2**
DEMI	**Demirci**	**0.32**	**258**	*i* P	**Pg**	**22 02 49.7**	**-0.2**
TVSB	**Tavsanli**	**0.43**	**38**	PG	**Pg**	**22 02 51.5**	**-0.5**
TVSB				*e*SG	**Sg**	**22 02 57.4**	**-0.4**
TVSB	**Tavsanli**	**0.43**	**38**	*i* Pg	**Pg**	**22 02 51.5**	**-0.5**
TVSB				*e*Sg	**Sg**	**22 02 57.4**	**-0.4**
KULA	**Kula-Manisa**	**0.69**	**211**	PG	**Pg**	**22 02 56.6**	**-0.3**
KULA	**Kula-Manisa**	**0.69**	**211**	*i* Pg	**Pg**	**22 02 56.6**	**-0.3**
DURS	**Dursunbey**	**0.70**	**315**	P	**Pg**	**22 02 56.9**	**-0.1**
DURS	**Dursunbey**	**0.70**	**315**	*i* P	**Pg**	**22 02 56.9**	**-0.1**
MANT	**Manisa**	**0.76**	**215**	P	**Pg**	**22 02 58.0**	**-0.1**
MANT				S	**Sg**	**22 03 07.6**	**-0.5**
MANT	**Manisa**	**0.76**	**215**	*i* P	**Pg**	**22 02 58.0**	**-0.1**
MANT				*i* S	**Sg**	**22 03 07.6**	**-0.5**
KHAL	**Karahalli**	**0.80**	**158**	P	**Pb**	**22 02 59.0**	**-0.3**
KHAL				S	**Sg**	**22

KNL			*i* S	Sb	22 06 44.5	+0.6
DKL	**Dikili**	1.71 269	*e*PN	Pb	22 06 22.7	-0.5
DKL	**Dikili**	1.71 269	*e*Pn	Pb	22 06 22.7	-0.5
GULT	**Gulveren**	1.71 39	*e*PN	Pn	22 06 22.0	+0.2
GULT	**Gulveren**	1.71 39	*e*Pn	Pn	22 06 22.0	+0.2
ISP	**Isparta**	1.71 139	*e*PN	Pn	22 06 22.2	+0.4
ISP	**Isparta**	1.71 139	S	Sg	22 06 49.9	+3.4
ISP	**Isparta**	1.71 139	P	Pn	22 06 21.2	-0.6
ISP			S	Sn	22 06 43.3	-0.7
ISP	**Isparta**	1.71 139	P	Pn	22 06 21.2	-0.6
ISP	**Isparta**	1.71 139	*e*Pn	Pn	22 06 22.2	+0.4
ISP			S	Sn	22 06 43.3	-0.7
BUY	**Buyukada**	1.73 0	P	Pn	22 06 21.3	-0.7
BUY	**Buyukada**	1.73 0	*i* P	Pn	22 06 21.3	-0.7
BAGO	**Egridir - ISPA**	1.74 130	*i* P	Pn	22 06 21.9	-0.3
AYDN	**Tasoluk**	1.74 214	P	Pn	22 06 21.7	-0.6
AYDN	**Tasoluk**	1.74 214	*i* P	Pn	22 06 21.7	-0.6
HRT	**Hereke**	1.76 14	*e*PN	Pn	22 06 23.0	+0.6
HRT	**Hereke**	1.76 14	*e*Pn	Pn	22 06 23.0	+0.6
SPNC	**Sapanca-Adapaz**	1.82 30	*e*PN	Pn	22 06 23.8	+0.5
SPNC	**Sapanca-Adapaz**	1.82 30	*e*Pn	Pn	22 06 23.8	+0.5
MRMT	**Marmara Adasi**	1.88 323	*e*PN	Pn	22 06 24.6	+0.4
MRMT	**Marmara Adasi**	1.88 323	*e*Pn	Pn	22 06 24.6	+0.4
KRBG	**Karabiga-Canak**	1.88 313	*e*PN	Pn	22 06 25.2	+1.1
KRBG	**Karabiga-Canak**	1.88 313	*e*Pn	Pn	22 06 25.2	+1.1
SVRH	**Sivrihisar-ESK**	1.91 79	*e*PN	Pn	22 06 25.4	+0.8
SVRH	**Sivrihisar-ESK**	1.91 79	*e*Pn	Pn	22 06 25.4	+0.8
GOLH	**Golhisar**	1.91 169	P	Pn	22 06 24.8	+0.2
GOLH	**Golhisar**	1.91 169	*i* P	Pn	22 06 24.8	+0.2
ISK	**Istanbul-Kandi**	1.94 359	*e*PN	Pn	22 06 26.2	+1.2
ISK	**Istanbul-Kandi**	1.94 359	P	Pn	22 06 23.5	-1.5
ISK	**Istanbul-Kandi**	1.94 359	P	Pn	22 06 23.5	-1.5
ISK	**Istanbul-Kandi**	1.94 359	*e*Pn	Pn	22 06 26.2	+1.2
GLHS	**Glhisar (BURDU**	1.98 171	*e*PN	Pn	22 06 26.2	+0.6
GLHS	**Glhisar (BURDU**	1.98 171	*e*Pn	Pn	22 06 26.2	+0.6
BCK	**Bucak**	2.03 144	*e*PN	Pn	22 06 26.8	+0.6
BCK	**Bucak**	2.03 144	*e*Pn	Pn	22 06 26.8	+0.6
BGKT	**Bogazkoy**	2.08 353	*e*PN	Pn	22 06 27.3	+0.5
BGKT	**Bogazkoy**	2.08 353	*e*Pn	Pn	22 06 27.3	+0.5
YER	**Yerkesik**	2.08 198	*e*PN	Pn	22 06 27.6	+0.7
YER	**Yerkesik**	2.08 198	P	Pn	22 06 26.6	-0.3
YER	**Yerkesik**	2.08 198	*e*Pn	Pn	22 06 27.6	+0.7
MDUB	**Mudurnu**	2.11 49	*e*PN	Pn	22 06 28.4	+1.1
MDUB	**Mudurnu**	2.11 49	*e*Pn	Pn	22 06 28.4	+1.1
KLYT	**Kilyos**	2.13 359	*e*PN	Pn	22 06 28.1	+0.6
KLYT	**Kilyos**	2.13 359	*e*Pn	Pn	22 06 28.1	+0.6
RKY	**Sarkoy-Tekirda**	2.15 317	*e*PN	Pn	22 06 29.2	+1.3
RKY	**Sarkoy-Tekirda**	2.15 317	*e*Pn	Pn	22 06 29.2	+1.3
CTKS	**Kestanelik-??a**	2.16 348	*e*PN	Pn	22 06 28.4	+0.4
CTKS	**Kestanelik-??a**	2.16 348	*e*Pn	Pn	22 06 28.4	+0.4
KIZT	**Kizilcal**	2.18 95	*e*PN	Pn	22 06 29.7	+1.4
KIZT	**Kizilcal**	2.18 95	*e*Pn	Pn	22 06 29.7	+1.4
LPK	**Lapseki**	2.19 306	*e*PN	Pn	22 06 29.4	+1.0
LPK	**Lapseki**	2.19 306	*e*Pn	Pn	22 06 29.4	+1.0
PRK	**Paraskevi**	2.20 274	P	Pn	22 06 28.0	-0.5
PRK			S	Sn	22 06 55.1	-0.8
PRK	**Paraskevi**	2.20 274	P	Pn	22 06 28.0	-0.5
PRK			S	Sn	22 06 55.1	-0.8
SUTC	**Sutluce-Ispart**	2.22 137	*e*PN	Pn	22 06 29.7	+0.8
SUTC	**Sutluce-Ispart**	2.22 137	*e*Pn	Pn	22 06 29.7	+0.8
TKR	**Tekirdag**	2.22 328	*e*PN	Pn	22 06 30.0	+1.2
TKR	**Tekirdag**	2.22 328	*e*Pn	Pn	22 06 30.0	+1.2
EZN	**Ezine**	2.26 289	*e*PN	Pn	22 06 30.2	+0.9
EZN	**Ezine**	2.26 289	*e*Pn	Pn	22 06 30.2	+0.9
CRLT	**Corlu**	2.26 333	*e*PN	Pn	22 06 30.2	+0.9
CRLT	**Corlu**	2.26 333	*e*Pn	Pn	22 06 30.2	+0.9
SMG	**Samos**	2.27 232	P	Pn	22 06 28.5	-0.9
SMG	**Samos**	2.27 232	P	Pn	22 06 28.5	-0.9
GELI	**Tayfur-Gelibol**	2.39 303	*e*PN	Pn	22 06 32.4	+1.3
GELI	**Tayfur-Gelibol**	2.39 303	*e*Pn	Pn	22 06 32.4	+1.3
CTYL	**Yalikoy Yolu**	2.43 346	*e*PN	Pn	22 06 32.2	+0.5
CTYL	**Yalikoy Yolu**	2.43 346	*e*Pn	Pn	22 06 32.2	+0.5
FETY	**Fethiye**	2.48 180	P	Pn	22 06 33.0	+0.7
FETY			S	Sn	22 07 02.6	-0.2
FETY	**Fethiye**	2.48 180	P	Pn	22 06 33.0	+0.7
FETY			S	Sn	22 07 02.6	-0.2
CHOS	**Chios island**	2.49 254	P	Pn	22 06 32.2	-0.3
CHOS			S	Sn	22 07 02.7	-0.5
CHOS	**Chios island**	2.49 254	P	Pn	22 06 32.2	-0.3
CHOS			S	Sn	22 07 02.7	-0.5
BODT	**Bodrum**	2.49 215	P	Pn	22 06 31.8	-0.7
BODT			S	Sn	22 07 01.4	-1.7
BODT	**Bodrum**	2.49 215	P	Pn	22 06 31.8	-0.7
BODT			S	Sn	22 07 01.4	-1.7
ERIK	**Erikli-Kesan**	2.52 309	*e*PN	Pn	22 06 33.2	+0.3
ERIK	**Erikli-Kesan**	2.52 309	*e*Pn	Pn	22 06 33.2	+0.3
SIGR	**SIGRI**	2.52 273	P	Pn	22 06 32.9	0.0
SIGR			S	Sn	22 07 04.6	+0.7
SIGR	**SIGRI**	2.52 273	P	Pn	22 06 32.9	0.0
SIGR			S	Sn	22 07 04.6	+0.7
LADK	**Ladik-KONYA**	2.72 109	*e*PN	Pn	22 06 36.4	+0.7
LADK	**Ladik-KONYA**	2.72 109	*e*Pn	Pn	22 06 36.4	+0.7
ENEZ	**Enez**	2.78 306	P	Pn	22 06 36.4	-0.1
ENEZ			S	Sn	22 07 09.7	-0.6
ENEZ	**Enez**	2.78 306	P	Pn	22 06 36.4	-0.1
ENEZ			S	Sn	22 07 09.7	-0.6
ALN	**Alexandroupoli**	2.94 308	P	Pn	22 06 38.7	0.0
ALN			S	Sn	22 07 14.2	0.0
ALN	**Alexandroupoli**	2.94 308	P	Pn	22 06 38.7	0.0
ALN			S	Sn	22 07 14.2	0.0
ARG	**Arkhangelos**	3.00 195	P	Pn	22 06 38.6	-0.8
ARG	**Arkhangelos**	3.00 195	P	Pn	22 06 38.6	-0.8
SMTH	**Samothraki Isl**	3.06 297	P	Pn	22 06 40.6	+0.2
SMTH			S	Sn	22 07 17.7	+0.5
SMTH	**Samothraki Isl**	3.06 297	P	Pn	22 06 40.6	+0.2
SMTH			S	Sn	22 07 17.7	+0.5
EDRB	**Edirne**	3.26 327	P	Pn	22 06 42.6	-0.5
EDRB	**Edirne**	3.26 327	P	Pn	22 06 42.6	-0.5
LAST	**Lasithi**	4.89 217 ⇑	*i*P	Pn	22 07 07.4	+1.8
LAST	**Lasithi**	4.89 217	P	Pn	22 07 07.0	+1.4
LAST	**Lasithi**	4.89 217	P	Pn	22 07 07.0	+1.4
TIRR	**Tirgusor**	5.36 355 ⇑	*i*P	Pn	22 07 11.8	-0.1
TIRR	**Tirgusor**	5.36 355 ⇑	*i*P	Pn	22 07 11.8	-0.1
TLCR		6.07 358 ⇑	*i*P	Pn	22 07 22.3	+0.7
CFR	**Carcaliu**	6.10 354 ⇓	*i*P	Pn	22 07 21.5	-0.5
MLR	**Muntele Rosu**	6.78 341 ⇓	*i*P	Pn	22 07 32.8	+1.2
PLOR	**Plostina**	6.97 346 ⇑	*i*P	Pn	22 07 34.7	+0.7
VRI	**Vrincioaia**	6.97 346 ⇓	*i*P	Pn	22 07 34.8	+0.8
VOI1		6.99 336 ⇓	*i*P	Pn	22 07 34.9	+0.5
ARR	**Arges**	7.07 334 ⇓	*i*P	Pn	22 07 35.9	+0.5
BURAR	**Bucovina Array**	8.95 343 ⇓	*i*P	Pn	22 08 02.8	+1.6
DRGR		8.98 331 ⇓	*i*P	Pn	22 08 02.9	+1.2
SORM	**Soroca**	9.03 357 ⇓	*i*P	Pn	22 08 01.8	-0.4

*ISCJB **19** 22:10:11.8±0.5, 39.°09N±0.°03×29.°12E±0.°04, h5km±6km,*
Error ellipse: s-maj=5.5km s-min=5.3km az=10.3
*DDA **19** 22:10:11.3, 39.°13N×29.°09E, h7km, Ml2.8*
*ISK **19** 22:10:11.4, 39.°11N×29.°16E, h4km, ML2.9*
*CSEM **19** 22:10:12.1±0.1, 39.°10N×29.°14E, h5km, ML2.9, Error*
ellipse: s-maj=3.7km s-min=2.8km az=99.0

ISC 19 22:10:11.4±1.5,**39.°07N**±0.°02×**29.°15E**±0.°03,**h5**km±13km,
n46, σ0º**49**/55,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.26**	**86**	*i* P	**Pb**	22 10 18.0	-0.7
GDZ				*i* S	**Sb**	22 10 22.3	-1.3
TVSB	**Tavsanli**	**0.45**	**33**	PG	**Pg**	22 10 20.1	0.0
TVSB	**Tavsanli**	**0.45**	**33**	*i* Pg	**Pg**	22 10 20.1	0.0
KULA	**Kula-Manisa**	**0.68**	**214**	PG	**Pb**	22 10 25.9	+0.1
KULA	**Kula-Manisa**	**0.68**	**214**	*i* Pg	**Pb**	22 10 25.9	+0.1
MANT	**Manisa**	**0.74**	**219**	P	**Pg**	22 10 25.7	0.0
MANT	**Manisa**	**0.74**	**219**	*i* P	**Pg**	22 10 25.7	0.0
KHAL	**Karahalli**	**0.75**	**159**	P	**Pb**	22 10 27.1	0.0
KHAL				S	**Sb**	22 10 37.6	-0.1
KHAL	**Karahalli**	**0.75**	**159**	*i* P	**Pb**	22 10 27.1	0.0
KHAL				*i* S	**Sb**	22 10 37.6	-0.1
KHL	**Karahalli**	**0.81**	**158**	PG	**Pb**	22 10 28.3	+0.3
KHL	**Karahalli**	**0.81**	**158**	*i* Pg	**Pb**	22 10 28.3	+0.3
ORLT	**Orhaneli**	**0.99**	**349**	*e*PG	**Pg**	22 10 29.9	-0.6
ORLT				*e*SG	**Sb**	22 10 44.5	0.0
ORLT	**Orhaneli**	**0.99**	**349**	*e*Pg	**Pg**	22 10 29.9	-0.6
ORLT				*e*Sg	**Sb**	22 10 44.6	0.0
AKS	**Akhisar**	**1.06**	**260**	*e*PG	**Pn**	22 10 32.8	-0.2
AKS	**Akhisar**	**1.06**	**260**	*e*Pg	**Pn**	22 10 32.8	-0.2
BALB	**Balikesir**	**1.13**	**300**	*e*PN	**Pb**	22 10 33.7	+0.1
BALB				*e*SN	**Sn**	22 10 49.6	-0.4
BALB	**Balikesir**	**1.13**	**300**	*e*Pn	**Pb**	22 10 33.7	+0.1
BALB				*e*Sn	**Sn**	22 10 49.6	-0.4
IGD	**Bursa**	**1.19**	**2**	*i* P	**Pg**	22 10 33.2	-1.1
CAVI	**Cavuskoy**	**1.25**	**25**	*e*PN	**Pg**	22 10 35.4	0.0
CAVI				*e*SN	**Sb**	22 10 52.5	+0.5
CAVI	**Cavuskoy**	**1.25**	**25**	*e*Pn	**Pg**	22 10 35.4	0.0
CAVI				*e*Sn	**Sb**	22 10 52.5	+0.5
IZI	**Iznik**	**1.29**	**11**	*e*PN	**Pg**	22 10 35.9	-0.2
IZI	**Iznik**	**1.29**	**11**	*e*Pn	**Pg**	22 10 35.9	-0.2
MDNY	**Mudanya-Bursa**	**1.31**	**351**	*e*PN	**Pg**	22 10 36.5	-0.1
MDNY	**Mudanya-Bursa**	**1.31**	**351**	*e*Pn	**Pg**	22 10 36.5	-0.1
KCTX	**Karacabey (Bur**	**1.34**	**333**	*e*PN	**Pb**	22 10 37.5	+0.4
KCTX	**Karacabey (Bur**	**1.34**	**333**	*e*Pn	**Pb**	22 10 37.5	+0.4
ADVT	**Abdulvahap**	**1.43**	**18**	*e*PN	**Pn**	22 10 38.5	+0.4
ADVT	**Abdulvahap**	**1.43**	**18**	*e*Pn	**Pn**	22 10 38.5	+0.4
GONE	**Gonen-Balikesi**	**1.49**	**311**	*e*PN	**Pg**	22 10 40.2	+0.2
GONE	**Gonen-Balikesi**	**1.49**	**311**	*e*Pn	**Pg**	22 10 40.2	+0.2
ARMT	**Armutlu**	**1.51**	**352**	*e*PN	**Pg**	22 10 40.3	-0.1
ARMT	**Armutlu**	**1.51**	**352**	*e*Pn	**Pg**	22 10 40.3	-0.1
GPA	**Golpazari**	**1.51**	**36**	*e*PN	**Pn**	22 10 39.4	+0.1
GPA	**Golpazari**	**1.51**	**36**	*e*Pn	**Pn**	22 10 39.4	+0.1
EDC	**Edincik**	**1.61**	**322**	*e*PN	**Pb**	22 10 41.2	-0.5
EDC	**Edincik**	**1.61**	**322**	*e*Pn	**Pb**	22 10 41.2	-0.5
GULT	**Gulveren**	**1.72**	**37**	*e*PN	**Pn**	22 10 42.3	+0.1
GULT	**Gulveren**	**1.72**	**37**	*e*Pn	**Pn**	22 10 42.3	+0.1
HRT	**Hereke**	**1.79**	**13**	*e*PN	**Pn**	22 10 43.3	+0.2
HRT	**Hereke**	**1.79**	**13**	*e*Pn	**Pn**	22 10 43.3	+0.2
SVRH	**Sivrihisar-ESK**	**1.88**	**78**	*e*PN	**Pn**	22 10 44.9	+0.5
SVRH	**Sivrihisar-ESK**	**1.88**	**78**	*e*Pn	**Pn**	22 10 44.9	+0.5
ISK	**Istanbul-Kandi**	**1.99**	**358**	*e*PN	**Pn**	22 10 46.5	+0.7
ISK	**Istanbul-Kandi**	**1.99**	**358**	*e*Pn	**Pn**	22 10 46.5	+0.7
MDUB	**Mudurnu**	**2.11**	**48**	*e*PN	**Pn**	22 10 48.9	+1.4
MDUB	**Mudurnu**	**2.11**	**48**	*e*Pn	**Pn**	22 10 48.9	+1.4

*DDA **19** 22:11:56.8, 39.°09N×29.°04E, h7km, Ml3.0*
*ISCJB **19** 22:11:57.2±0.4, 39.°09N±0.°03×29.°03E±0.°03, h4km±5km,*
Error ellipse: s-maj=4.8km s-min=3.9km az=159.4
*ISK **19** 22:11:57.3, 39.°10N×29.°04E, h6km, ML2.9*
*CSEM **19** 22:11:57.4±0.1, 39.°10N×29.°03E, h2km, ML3.0, Error*
ellipse: s-maj=2.0km s-min=1.7km az=129.0

ISC 19 22:11:57.0±0.9,**39.°09N**±0.°02×**29.°04E**±0.°02,**h13**km±8km,
n59, σ0º**42**/71,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**260**	P	**Pg**	22 12 02.5	0.0
DEMI				S	**Sg**	22 12 06.1	-0.1
DEMI	**Demirci**	**0.26**	**260**	*i* P	**Pg**	22 12 02.5	0.0
DEMI				*i* S	**Sg**	22 12 06.1	-0.1
GDZ	**Gediz**	**0.34**	**90**	P	**Pg**	22 12 04.3	+0.3
GDZ				S	**Sg**	22 12 08.9	+0.2
GDZ	**Gediz**	**0.34**	**90**	*i* P	**Pg**	22 12 04.3	+0.3
GDZ				*i* S	**Sg**	22 12 08.9	+0.2
TVSB	**Tavsanli**	**0.49**	**42**	PG	**Pg**	22 12 07.0	+0.3
TVSB	**Tavsanli**	**0.49**	**42**	*i* Pg	**Pg**	22 12 07.0	+0.3
KULA	**Kula-Manisa**	**0.65**	**208**	PG	**Pb**	22 12 10.1	0.0
KULA	**Kula-Manisa**	**0.65**	**208**	*i* Pg	**Pb**	22 12 10.1	0.0
DURS	**Dursunbey**	**0.68**	**320**	P	**Pg**	22 12 09.6	-0.5
DURS	**Dursunbey**	**0.68**	**320**	*i* P	**Pg**	22 12 09.7	-0.5
MANT	**Manisa**	**0.70**	**212**	P	**Pb**	22 12 11.1	-0.2
MANT				S	**Sg**	22 12 20.2	+0.1
MANT	**Manisa**	**0.70**	**212**	*i* P	**Pb**	22 12 11.1	-0.2
MANT				*i* S	**Sg**	22 12 20.2	+0.1
KHAL	**Karahalli**	**0.80**	**154**	P	**Pg**	22 12 12.5	0.0
KHAL	**Karahalli**	**0.80**	**154**	*i* P	**Pg**	22 12 12.5	0.0
KHL	**Karahalli**	**0.85**	**154**	*e*PG	**Pn**	22 12 14.6	-0.1
KHL	**Karahalli**	**0.85**	**154**	*e*Pg	**Pn**	22 12 14.6	-0.1
ORLT	**Orhaneli**	**0.96**	**353**	*e*PG	**Pg**	22 12 15.9	+0.3
ORLT				*e*SG	**Sn**	22 12 30.2	+0.4
ORLT	**Orhaneli**	**0.96**	**353**	*e*Pg	**Pg**	22 12 15.9	+0.3
ORLT				*e*Sg	**Sn**	22 12 30.2	+0.4
AKHS	**Akhisar**	**0.98**	**258**	P	**Pb**	22 12 15.8	0.0
AKHS				S	**Sg**	22 12 28.8	+0.2
AKHS	**Akhisar**	**0.98**	**258**	*i* P	**Pb**	22 12 15.8	0.0
AKHS				*i* S	**Sg**	22 12 28.8	+0.2
AKS	**Akhisar**	**0.98**	**258**	*e*PG	**Pn**	22 12 16.6	+0.2
AKS	**Akhisar**	**0.98**	**258**	*e*Pg	**Pn**	22 12 16.7	+0.2
BALB	**Balikesir**	**1.05**	**302**	*e*PG	**Pn**	22 12 17.6	+0.1
BALB				*e*SG	**Sn**	22 12 33.2	+1.2
BALB	**Balikesir**	**1.05**	**302**	*e*Pg	**Pn**	22 12 17.6	+0.1
IGD	**Bursa**	**1.18**	**6**	*i* P	**Pn**	22 12 18.4	-0.8
IGD				*i* S	**Sb**	22 12 33.3	-1.2
CAVI	**Cavuskoy**	**1.27**	**29**	*e*PN	**Pg**	22 12 21.8	+0.3
CAVI	**Cavuskoy**	**1.27**	**29**	*e*Pn	**Pg**	22 12 21.8	+0.3
BALY	**Balya**	**1.28**	**301**	P	**Pg**	22 12 21.4	-0.2
BALY	**Balya**	**1.28**	**301**	*i* P	**Pg**	22 12 21.4	-0.2
MDNY	**Mudanya-Bursa**	**1.28**	**355**	*e*PN	**Pg**	22 12 21.8	+0.1
MDNY	**Mudanya-Bursa**	**1.28**	**355**	*e*Pn	**Pg**	22 12 21.8	+0.1
KCTX	**Karacabey (Bur**	**1.29**	**336**	*e*PN	**Pg**	22 12 22.1	+0.3
KCTX	**Karacabey (Bur**	**1.29**	**336**	*e*Pn	**Pg**	22 12 22.1	+0.3
IZI	**Iznik**	**1.29**	**15**	*e*PN	**Pg**	22 12 22.2	+0.4
IZI	**Iznik**	**1.29**	**15**	*e*Pn	**Pg**	22 12 22.3	+0.4
GEMT	**Gemlik**	**1.35**	**5**	*e*PN	**Pg**	22 12 22.8	-0.2
GEMT	**Gemlik**	**1.35**	**5**	*e*Pn	**Pg**	22 12 22.8	-0.2
GONE	**Gonen-Balikesi**	**1.42**	**313**	*e*PN	**Pg**	22 12 24.2	-0.1
GONE	**Gonen-Balikesi**	**1.42**	**313**	*e*Pn	**Pg**	22 12 24.2	-0.1
ADVT	**Abdulvahap**	**1.45**	**22**	*e*PN	**Pb**	22 12 24.2	+0.4
ADVT	**Abdulvahap**	**1.45**	**22**	*e*Pn	**Pb**	22 12 24.2	+0.4
ARMT	**Armutlu**	**1.48**	**355**	*e*PN	**Pb**	22 12 24.7	+0.3
ARMT	**Armutlu**	**1.48**	**355**	*e*Pn	**Pb**	22 12 24.7	+0.3
GPA	**Golpazari**	**1.55**	**39**	*e*PN	**Pb**	22 12 26.1	+0.6
GPA	**Golpazari**	**1.55**	**39**	*e*Pn	**Pb**	22 12 26.1	+0.6
EDC	**Edincik**	**1.55**	**325**	*e*PN	**Pb**	22 12 26.1	+0.5
EDC	**Edincik**	**1.55**	**325**	*e*Pn	**Pb**	22 12 26.1	+0.5
GULT	**Gulveren**	**1.76**	**40**	*e*PN	**Pb**	22 12 29.6	+0.4
GULT	**Gulveren**	**1.76**	**40**	*e*Pn	**Pb**	22 12 29.6	+0.4
HRT	**Hereke**	**1.80**	**15**	*e*PN	**Pb**	22 12 29.6	-0.2
HRT	**Hereke**	**1.80**	**15**	*e*Pn	**Pb**	22 12 29.6	-0.2
SPNC	**Sapanca-Adapaz**	**1.87**	**31**	*e*PN	**Pb**	22 12 30.4	-0.6
SPNC	**Sapanca-Adapaz**	**1.87**	**31**	*e*Pn	**Pb**	22 12 30.4	-0.6
SVRH	**Sivrihisar-ESK**	**1.96**	**79**	*e*PN	**Pb**	22 12 32.5	-0.1
SVRH	**Sivrihisar-ESK**	**1.96**	**79**	*e*Pn	**Pb**	22 12 32.5	-0.1
ISK	**Istanbul-Kandi**	**1.98**	**0**	*e*PN	**Pb**	22 12 32.2	-0.5
ISK	**Istanbul-Kandi**	**1.98**	**0**	*e*Pn	**Pb**	22 12 32.3	-0.5
MDUB	**Mudurnu**	**2.16**	**50**	*e*PN	**Pb**	22 12 34.9	-1.1
MDUB	**Mudurnu**	**2.16**	**50**	*e*Pn	**Pb**	22 12 34.9	-1.1

*ISCJB **19** 22:18:19.8±0.8, 39.°03N±0.°06×29.°20E±0.°09, h9km, Error*
ellipse: s-maj=12.6km s-min=4.5km az=38.4
*ISK **19** 22:18:19.8, 39.°08N×29.°19E, h8km, MD2.7*
*DDA **19** 22:18:19.7, 39.°10N×29.°10E, h7km, Ml3.3*
*CSEM **19** 22:18:20.0±0.2, 39.°03N×29.°21E, h10km, MD2.7, Error*
ellipse: s-maj=7.3km s-min=2.8km az=126.0

ISC 19 22:18:19.9±1.0,**39.°06N**±0.°04×**29.°18E**±0.°05,**h9**km,**n28,**
σ0º**29**/34,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TVSB	**Tavsanli**	**0.45**	**29**	PG	**Pg**	22 18 28.6	0.0
TVSB	**Tavsanli**	**0.45**	**29**	*i* Pg	**Pg**	22 18 28.6	0.0
KULA	**Kula-Manisa**	**0.68**	**217**	PG	**Pb**	22 18 33.9	-0.1
KULA	**Kula-Manisa**	**0.68**	**217**	*i* Pg	**Pb**	22 18 33.9	-0.1
MANT	**Manisa**	**0.75**	**221**	P	**Pg**	22 18 34.2	-0.1
MANT				S	**Sg**	22 18 44.0	-0.1
MANT	**Manisa**	**0.75**	**221**	*i* P	**Pg**	22 18 34.2	-0.1
MANT				*i* S	**Sg**	22 18 44.0	-0.1
AKS	**Akhisar**	**1.08**	**261**	*e*PN	**Pg**	22 18 40.6	0.0
AKS				*e*SN	**Sn**	22 18 56.5	+0.2
AKS	**Akhisar**	**1.08**	**261**	*e*Pn	**Pg**	22 18 40.6	0.0
AKS				*e*Sn	**Sn**	22 18 56.5	+0.2
BALB	**Balikesir**	**1.16**	**300**	*e*PN	**Pn**	22 18 42.7	+0.4
BALB	**Balikesir**	**1.16**	**300**	*e*Pn	**Pn**	22 18 42.7	+0.4
CAVI	**Cavuskoy**	**1.25**	**24**	*e*PN	**Pg**	22 18 44.1	+0.2
CAVI				*e*SN	**Sn**	22 19 01.1	+0.5
CAVI	**Cavuskoy**	**1.25**	**24**	*e*Pn	**Pg**	22 18 44.1	+0.2
CAVI				*e*Sn	**Sn**	22 19 01.1	+0.5
IZI	**Iznik**	**1.29**	**10**	*e*PN	**Pg**	22 18 44.8	+0.1
IZI	**Iznik**	**1.29**	**10**	*e*Pn	**Pg**	22 18 44.8	+0.1
MDNY	**Mudanya-Bursa**	**1.33**	**350**	*e*PN	**Pn**	22 18 44.5	-0.1
MDNY	**Mudanya-Bursa**	**1.33**	**350**	*e*Pn	**Pn**	22 18 44.5	-0.1
KCTX	**Karacabey (Bur**	**1.36**	**332**	*e*PN	**Pb**	22 18 45.3	-0.3
KCTX	**Karacabey (Bur**	**1.36**	**332**	*e*Pn	**Pb**	22 18 45.3	-0.3
ADVT	**Abdulvahap**	**1.44**	**17**	*e*PN	**Pb**	22 18 46.5	-0.3
ADVT	**Abdulvahap**	**1.44**	**17**	*e*Pn	**Pb**	22 18 46.5	-0.3
GONE	**Gonen-Balikesi**	**1.52**	**311**	*e*PN	**Pb**	22 18 48.1	0.0
GONE	**Gonen-Balikesi**	**1.52**	**311**	*e*Pn	**Pb**	22 18 48.2	0.0
ARMT	**Armutlu**	**1.52**	**351**	*e*PN	**Pb**	22 18 47.7	-0.6
ARMT	**Armutlu**	**1.52**	**351**	*e*Pn	**Pb**	22 18 47.7	-0.6
EDC	**Edincik**	**1.64**	**322**	*e*PN	**Pb**	22 18 49.8	-0.5
EDC	**Edincik**	**1.64**	**322**	*e*Pn	**Pb**	22 18 49.8	-0.5
GULT	**Gulveren**	**1.71**	**37**	*e*PN	**Pn**	22 18 50.0	0.0
GULT	**Gulveren**	**1.71**	**37**	*e*Pn	**Pn**	22 18 50.0	0.0

*DDA **19** 22:19:03.8, 39.°12N×28.°99E, h7km, Ml4.0*
*ISCJB **19** 22:19:04.8±0.4, 39.°11N±0.°02×28.°95E±0.°02, h6km±3km,*
Error ellipse: s-maj=2.8km s-min=2.7km az=149.7
*ISK **19** 22:19:04.2, 39.°11N×28.°95E, h5km, ML3.6*
*THE **19** 22:19:04.8, 39.°11N×29.°01E, h1km±2km, ML3.3/5, Error*
ellipse: s-maj=3.6km s-min=1.4km az=87.0
*CSEM **19** 22:19:05.2±0.1, 39.°10N×28.°95E, h2km, ML4.0, Error*
ellipse: s-maj=2.7km s-min=2.4km az=58.0

ISC 19 22:19:04.9±1.0,**39.°12N**±0.°02×**28.°99E**±0.°02,**h5**km±9km,
n143, σ0º**96**/180,**9C-12D,Turkey**

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

ENEZ				S	Sn	22 20 23.6	+1.4	GDZ	Gediz	0.35	93
PHSR	Pinarhisar	2.74	336	ePN	Pn	22 19 51.0	+1.5	GDZ			
PHSR	Pinarhisar	2.74	336	ePn	Pn	22 19 51.0	+1.5	TVSB	Tavsanli	0.48	44
LADK	Ladik-KONYA	2.80	108	ePN	Pn	22 19 52.5	+2.1	TVSB			
ALN	Alexandroupoli	2.87	309	P	Pn	22 19 51.0	-0.3	TVSB	Tavsanli	0.48	44
ALN				S	Sn	22 20 25.9	-0.3	TVSB			
ALN	Alexandroupoli	2.87	309	P	Pn	22 19 51.0	-0.3	KULA	Kula-Manisa	0.66	206
ALN				S	Sn	22 20 25.9	-0.3	KULA	Kula-Manisa	0.66	206
KDZE	Karadeniz Ereo	2.89	40	ePN	Pn	22 19 53.8	+2.3	MANT	Manisa	0.72	211
KDZE	Karadeniz Ereo	2.89	40	ePn	Pn	22 19 53.8	+2.3	MANT			
SMTH	Samothraki Isl	2.98	298	P	Pn	22 19 52.8	-0.1	MANT	Manisa	0.72	211
SMTH				S	Sn	22 20 28.7	-0.3	MANT			
SMTH	Samothraki Isl	2.98	298	P	Pn	22 19 52.8	-0.1	ORLT	Orhaneli	0.94	354
LIA	Limnos Island	3.04	286	P	Pn	22 19 53.3	-0.3	ORLT	Orhaneli	0.94	354
LIA				S	Sn	22 20 31.5	+1.1	AKHS	Akhisar	0.98	257
LIA	Limnos Island	3.04	286	P	Pn	22 19 53.3	-0.3	AKHS			
LIA				S	Sn	22 20 31.5	+1.1	AKHS	Akhisar	0.98	257
EDRB	Edirne	3.21	329	P	Pn	22 19 55.6	-0.4	AKHS			
EDRB	Edirne	3.21	329	P	Pn	22 19 55.6	-0.4	AKS	Akhisar	0.98	257
APE	Apeiranthos	3.41	234	P	Pn	22 19 57.6	-1.2	AKS	Akhisar	0.98	257
NVR	Nevrokopi	4.51	301	P	Pn	22 20 14.1	+0.3	BALB	Balikesir	1.04	301
NVR	Nevrokopi	4.51	301	P	Pn	22 20 14.1	+0.3	BALB	Balikesir	1.04	301
SRS	Serrai	4.59	297	P	Pn	22 20 15.2	+0.3	CAVI	Cavuskoy	1.26	30
SRS	Serrai	4.59	297	P	Pn	22 20 15.2	+0.3	CAVI			
LAST	Lasithi	4.84	216	⇓iP	Pn	22 20 22.5	+4.0	CAVI	Cavuskoy	1.26	30
LAST	Lasithi	4.84	216	⇓iP	Pn	22 20 22.5	+4.0	CAVI			
TIRR	Tirgusor	5.35	356	⇓iP	Pn	22 20 25.1	-0.2	MDNY	Mudanya-Bursa	1.26	355
TIRR	Tirgusor	5.35	356	S	Sn	22 21 23.8	-3.5	MDNY			
TLCR		6.06	359	⇓iP	Pn	22 20 35.3	+0.2	MDNY	Mudanya-Bursa	1.26	355
CFR	Carcaliu	6.08	354	⇑iP	Pn	22 20 34.8	-0.6	MDNY			
MLR	Muntele Rosu	6.75	341	⇓iP	Pn	22 20 44.9	+0.2	KCTX	Karacabey (Bur	1.27	336
PLOR	Plostina	6.94	346	⇓iP	Pn	22 20 46.2	-1.1	KCTX	Karacabey (Bur	1.27	336
VRI	Vrincioaia	6.94	347	⇓iP	Pn	22 20 47.7	+0.4	IZI	Iznik	1.27	15
VOIR		6.95	336	⇓iP	Pn	22 20 47.8	+0.4	IZI	Iznik	1.27	15
ARR	Arges	7.03	334	⇑iP	Pn	22 20 48.5	+0.1	GONE	Gonen-Balikesi	1.40	312
DOPR	Dopca	7.34	340	⇑iP	Pn	22 20 53.1	+0.4	GONE	Gonen-Balikesi	1.40	312
TESR	Tescani	7.58	348	⇑iP	Pn	22 20 55.1	-0.9	ADVT	Abdulvahap	1.43	22
MILM	Milestii Mici	7.79	359	⇑iP	Pn	22 20 58.5	-0.4	ADVT	Abdulvahap	1.43	22
MDVR	Moldovita	7.83	319	⇓iP	Pn	22 20 59.4	-0.1	ARMT	Armutlu	1.46	355
BURAR	Bucovina Array	8.92	343	⇓iP	Pn	22 21 15.0	+0.6	ARMT	Armutlu	1.46	355
SORM	Soroca	9.02	357	⇑iP	Pn	22 21 14.3	-1.4	EDC	Edincik	1.53	324
								EDC	Edincik	1.53	324
								GULT	Gulveren	1.75	40
								GULT	Gulveren	1.75	40
								HRT	Hereke	1.78	16
								HRT	Hereke	1.78	16
								ISK	Istanbul-Kandi	1.95	1
								ISK	Istanbul-Kandi	1.95	1
								SVRH	Sivrihisar-ESK	1.96	79
								SVRH	Sivrihisar-ESK	1.96	79

IDC 19 22:20:36.3±2.3, 2°32N×126°75E, h0km, mb3.5/3, mb1 3.7/3, mb1mx3.4/36, mbtmp3.5/3, MS3.7/1, Ms1 3.7/1, ms1mx3.1/15, Error ellipse: s-maj=189.6km s-min=26.1km az=66.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	23.34	162	P	P	22 25 45.0	-1.5
	0.7nm,0.5s,baz=340,slow=11,SNR=15						
ASAR	Alice Springs	26.75	165	P	P	22 26 19.4	+1.5
	0.3nm,0.4s,baz=345,slow=11,SNR=3.1						
USRK	Ussuriysk Ar.	41.96	6	LR	LR	22 44 38.7	
	comp=Z,100nm,21.9s,baz=126,slow=34						
MKAR	Makanchi Array	58.72	326	P	P	22 30 35.8	-0.2
	0.3nm,0.4s,baz=120,slow=7.2,SNR=4.6						

ISCJB 19 22:25:09.8±0.5, 39°06N±0°03×28°99E±0°04, h9km, Error ellipse: s-maj=4.9km s-min=4.0km az=164.5
CSEM 19 22:25:09.9±0.1, 39°08N×28°99E, h5km, ML2.5, Error ellipse: s-maj=2.4km s-min=2.2km az=136.0
ISK 19 22:25:09.6, 39°07N×28°98E, h8km, ML2.5
ISC 19 22:25:10.1±0.9, 39°08N±0°03×28°98E±0°02, h9km, n32, σ0§29/40, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.21	260	P	Pg	22 25 14.1	-0.3
DEMI				S	Sg	22 25 17.9	+0.5
DEMI	Demirci	0.21	260	iP	Pg	22 25 14.1	-0.3
DEMI				iS	Sg	22 25 17.9	+0.5
GDZ	Gediz	0.39	89	P	Pg	22 25 17.6	-0.2
GDZ				S	Sg	22 25 22.8	-0.1
GDZ	Gediz	0.39	89	iP	Pg	22 25 17.6	-0.2
GDZ				iS	Sg	22 25 22.8	-0.1
TVSB	Tavsanli	0.53	45	PG	Pg	22 25 20.5	+0.2
TVSB	Tavsanli	0.53	45	iPg	Pg	22 25 20.5	+0.2
KULA	Kula-Manisa	0.62	204	PG	Pg	22 25 22.1	+0.1
KULA				eSG	Sg	22 25 30.4	+0.2
KULA	Kula-Manisa	0.62	204	iPg	Pg	22 25 22.2	+0.1
KULA				eSg	Sg	22 25 30.4	+0.2
KHL	Karahalli	0.87	151	ePG	Pg	22 25 26.4	-0.4
KHL	Karahalli	0.87	151	ePg	Pg	22 25 26.4	-0.4
AKS	Akhisar	0.93	258	ePG	Pg	22 25 27.8	-0.2
AKS	Akhisar	0.93	258	ePg	Pg	22 25 27.8	-0.2
ORLT	Orhaneli	0.97	356	ePG	Pg	22 25 28.2	-0.5
ORLT	Orhaneli	0.97	356	ePg	Pg	22 25 28.2	-0.5
BALB	Balikesir	1.02	304	ePG	Pg	22 25 29.6	-0.1
BALB				eSG	Sn	22 25 44.5	-0.4
BALB	Balikesir	1.02	304	ePg	Pg	22 25 29.6	-0.1
BALB				eSg	Sn	22 25 44.6	-0.4
KCTX	Karacabey (Bur	1.28	338	ePN	Pg	22 25 34.8	+0.2
KCTX	Karacabey (Bur	1.28	338	ePn	Pg	22 25 34.8	+0.2
MDNY	Mudanya-Bursa	1.29	357	ePN	Pb	22 25 34.5	0.0
MDNY	Mudanya-Bursa	1.29	357	ePn	Pb	22 25 34.5	0.0
CAVI	Cavuskoy	1.30	30	ePN	Pb	22 25 34.8	0.0
CAVI	Cavuskoy	1.30	30	ePn	Pb	22 25 34.8	0.0
IZI	Iznik	1.31	17	ePN	Pn	22 25 34.5	-0.1
IZI	Iznik	1.31	17	ePn	Pn	22 25 34.5	-0.1
GONE	Gonen-Balikesi	1.39	314	ePN	Pn	22 25 35.9	+0.3
GONE	Gonen-Balikesi	1.39	314	ePn	Pn	22 25 35.9	+0.3
ARMT	Armutlu	1.49	356	ePN	Pb	22 25 38.0	+0.1
ARMT	Armutlu	1.49	356	ePn	Pb	22 25 38.0	+0.1
EDC	Edincik	1.53	326	ePN	Pb	22 25 38.3	-0.3
EDC	Edincik	1.53	326	ePn	Pb	22 25 38.3	-0.3
GULT	Gulveren	1.79	41	ePN	Pn	22 25 41.8	+0.5
GULT	Gulveren	1.79	41	ePn	Pn	22 25 41.8	+0.5

CSEM 19 22:31:15.3, 39°07N×29°06E, h7km, MD2.1
DDA 19 22:31:15.3, 39.07N×29.06E, h7km, Md2.1, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.27	265	P	Pg	22 31 21.2	+0.6
DEMI				S	Sg	22 31 24.8	+0.7
DEMI	Demirci	0.27	265	iP	Pg	22 31 21.2	+0.7
DEMI				iS	Sg	22 31 24.8	+0.6
GDZ	Gediz	0.33	86	P	Pb	22 31 23.0	-0.6
GDZ				S	Sb	22 31 28.1	-1.0
GDZ	Gediz	0.33	86	iP	Pb	22 31 23.0	-0.6
GDZ				iS	Sb	22 31 28.1	-1.1
MANT	Manisa	0.70	214	P	Pg	22 31 26.9	-1.8
MANT				S	Sg	22 31 38.7	+0.9
MANT	Manisa	0.70	214	iP	Pg	22 31 26.9	-1.8
MANT				iS	Sg	22 31 38.7	+0.9
DURS	Dursunbey	0.70	320	P	Pb	22 31 30.2	+0.4
DURS				S	Sg	22 31 38.5	+0.7
DURS	Dursunbey	0.70	320	iP	Pb	22 31 30.2	+0.4
DURS				iS	Sg	22 31 38.5	+0.7
KHAL	Karahalli	0.78	154	P	Pg	22 31 29.1	-1.1
KHAL	Karahalli	0.78	154	iP	Pg	22 31 29.1	-1.1
IGD	Bursa	1.20	5	iP	Pg	22 31 37.8	-0.5
IGD				iS	Sg	22 31 53.4	-0.5

ISCJB 19 22:41:12.0±0.5, 39°11N±0°04×29°03E±0°04, h4km±6km, Error ellipse: s-maj=7.7km s-min=4.0km az=146.5
ISK 19 22:41:11.9, 39°13N×29°06E, h5km, ML2.6
DDA 19 22:41:12.0, 39.07N×29.04E, h7km, Md2.3
CSEM 19 22:41:12.3±0.1, 39°11N×29°04E, h5km, MD2.3, Error ellipse: s-maj=2.7km s-min=1.7km az=138.0
ISC 19 22:41:12.4±1.0, 39°11N±0°03×29°03E±0°02, h4km±10km, n44, σ1§58/59, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.25	255	P	Pg	22 41 17.7	+0.3
DEMI				S	Sg	22 41 21.5	+0.8
DEMI	Demirci	0.25	255	iP	Pg	22 41 17.7	+0.3
DEMI				iS	Sg	22 41 21.5	+0.8
DEMI	Demirci	0.25	255	iP	Pn	22 41 27.0	+4.0
DEMI				iS	Sb	22 41 31.9	+7.5
GDZ	Gediz	0.35	93	P	Pg	22 41 18.9	-0.3
GDZ				S	Sg	22 41 24.0	+0.2
GDZ	Gediz	0.35	93	iP	Pg	22 41 18.9	-0.3
GDZ				iS	Sg	22 41 24.1	+0.2
GDZ	Gediz	0.35	93	iP	Pn	22 41 27.6	+3.2
GDZ				iS	Sb	22 41 32.7	+5.5
TVSB	Tavsanli	0.48	44	PG	Pg	22 41 21.1	-0.5
TVSB				eSG	Sg	22 41 27.8	0.0
TVSB	Tavsanli	0.48	44	iPg	Pg	22 41 21.1	-0.5
TVSB				eSg	Sg	22 41 27.8	0.0
KULA	Kula-Manisa	0.66	206	PG	Pb	22 41 25.4	-1.1
KULA	Kula-Manisa	0.66	206	iPg	Pb	22 41 25.4	-1.1
MANT	Manisa	0.72	211	P	Pb	22 41 26.3	-1.3
MANT				S	Sb	22 41 35.5	-2.4
MANT	Manisa	0.72	211	iP	Pb	22 41 26.3	-1.3
MANT				iS	Sb	22 41 35.5	-2.4
ORLT	Orhaneli	0.94	354	ePG	Pg	22 41 29.4	-1.0
ORLT	Orhaneli	0.94	354	ePg	Pg	22 41 29.5	-1.0
AKHS	Akhisar	0.98	257	P	Pb	22 41 31.0	-0.9
AKHS				S	Sg	22 41 43.4	-0.3
AKHS	Akhisar	0.98	257	iP	Pb	22 41 31.0	-0.9
AKHS				iS	Sg	22 41 43.4	-0.3
AKS	Akhisar	0.98	257	ePG	Pb	22 41 31.4	-0.5
AKS	Akhisar	0.98	257	ePg	Pb	22 41 31.4	-0.5
BALB	Balikesir	1.04	301	ePG	Pn	22 41 33.1	-0.6
BALB	Balikesir	1.04	301	ePg	Pn	22 41 33.1	-0.6
CAVI	Cavuskoy	1.26	30	ePN	Pn	22 41 36.0	-0.8
CAVI				eSN	Sn	22 41 53.3	-0.8
CAVI	Cavuskoy	1.26	30	ePn	Pn	22 41 36.0	-0.8
CAVI				eSn	Sn	22 41 53.3	-0.8
MDNY	Mudanya-Bursa	1.26	355	ePN	Pn	22 41 36.1	-0.7
MDNY				eSN	Sn	22 41 53.7	-0.5
MDNY	Mudanya-Bursa	1.26	355	ePn	Pn	22 41 36.1	-0.7
MDNY				eSn	Sn	22 41 53.7	-0.5
KCTX	Karacabey (Bur	1.27	336	ePN	Pg	22 41 36.9	+0.2
KCTX	Karacabey (Bur	1.27	336	ePn	Pg	22 41 36.9	+0.2
IZI	Iznik	1.27	15	ePN	Pg	22 41 37.0	+0.2
IZI	Iznik	1.27	15	ePn	Pg	22 41 37.0	+0.2
GONE	Gonen-Balikesi	1.40	312	ePN	Pb	22 41 38.5	-0.5
GONE	Gonen-Balikesi	1.40	312	ePn	Pb	22 41 38.5	-0.5
ADVT	Abdulvahap	1.43	22	ePN	Pb	22 41 39.0	-0.6
ADVT	Abdulvahap	1.43	22	ePn	Pb	22 41 39.0	-0.6
ARMT	Armutlu	1.46	355	ePN	Pn	22 41 39.1	-0.5
ARMT	Armutlu	1.46	355	ePn	Pn	22 41 39.1	-0.5
EDC	Edincik	1.53	324	ePN	Pb	22 41 40.8	-0.5
EDC	Edincik	1.53	324	ePn	Pb	22 41 40.8	-0.5
GULT	Gulveren	1.75	40	ePN	Pn	22 41 43.6	0.0
GULT	Gulveren	1.75	40	ePn	Pn	22 41 43.6	0.0
HRT	Hereke	1.78	16	ePN	Pn	22 41 44.1	+0.2
HRT	Hereke	1.78	16	ePn	Pn	22 41 44.1	+0.2
ISK	Istanbul-Kandi	1.95	1	ePN	Pn	22 41 46.0	-0.3
ISK	Istanbul-Kandi	1.95	1	ePn	Pn	22 41 46.0	-0.3
SVRH	Sivrihisar-ESK	1.96	79	ePN	Pb	22 41 46.8	-2.0
SVRH	Sivrihisar-ESK	1.96	79	ePn	Pb	22 41 46.8	-2.0

ISCJB 19 22:42:42.3±0.5, 39°09N±0°03×29°09E±0°04, h1km±7km, Error ellipse: s-maj=6.4km s-min=4.6km az=140.0
CSEM 19 22:42:42.5±0.2, 39°10N×29°11E, h2km, MD2.3, Error ellipse: s-maj=4.5km s-min=3.2km az=105.0
ISK 19 22:42:42.6, 39°11N×29°11E, h5km, ML2.6
DDA 19 22:42:42.2, 39°11N×29°09E, h7km, Md2.3
ISC 19 22:42:42.5±1.1, 39°08N±0°02×29°11E±0°02, h4km±10km, n42, σ0§51/54, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	Gediz	0.29	88	P	Pg	22 42 46.6	-1.5
GDZ				S	Sg	22 42 53.3	+1.4
GDZ	Gediz	0.29	88	iP	Pg	22 42 46.6	-1.5
GDZ				iS	Sg	22 42 53.3	+1.4
DEMI	Demirci	0.31	264	P	Pg	22 42 48.7	+0.2
DEMI	Demirci	0.31	264	iP	Pg	22 42 48.7	+0.2
TVSB	Tavsanli	0.46	36	ePG	Pg	22 42 51.3	-0.1
TVSB				eSG	Sg	22 42 57.2	-0.2
TVSB	Tavsanli	0.46	36	ePg	Pg	22 42 51.3	-0.1
TVSB				eSg	Sg	22 42 57.2	-0.2
KULA	Kula-Manisa	0.66	212	ePG	Pb	22 42 56.3	-0.4
KULA	Kula-Manisa	0.66	212	ePg	Pb	22 42 56.3	-0.4
MANT	Manisa	0.73	217	P	Pg	22 42 56.5	0.0
MANT				S	Sg	22 43 05.7	-0.2
MANT	Manisa	0.73	217	iP	Pg	22 42 56.5	0.0
MANT				iS	Sg	22 43 05.7	-0.2
KHAL	Karahalli	0.77	157	P	Pg	22 42 57.7	+0.5
KHAL				S	Sb	22 43 08.8	-0.5
KHAL	Karahalli	0.77	157	iP	Pg	22 42 57.7	+0.5
KHAL				iS	Sb	22 43 08.8	-0.5
KHL	Karahalli	0.82	157	ePG	Pb	22 42 59.6	+0.2
KHL	Karahalli	0.82	157	ePg	Pb	22 42 59.6	+0.2
ORLT	Orhaneli	0.98	350	ePG	Pg	22 43 01.4	+0.1
ORLT	Orhaneli	0.98	350	ePg	Pg	22 43 01.4	+0.1
AKS	Akhisar	1.03	259	ePG	Pb	22 43 02.8	-0.2
AKS	Akhisar	1.03	259	ePg	Pb	22 43 02.8	-0.2
BALB	Balikesir	1.11	301	ePN	Pg	22 43 03.0	-0.7
BALB	Balikesir	1.11	301	ePn	Pg	22 43 03.0	-0.7
CAVI	Cavuskoy	1.26	26	ePN	Pg	22 43 06.7	+0.1
CAVI				eSN	Sb	22 43 23.6	+0.2
CAVI	Cavuskoy	1.26	26	ePn	Pg	22 43 06.7	+0.1
CAVI				eSn	Sb	22 43 23.6	+0.2
IZI	Iznik	1.29	12	ePN	Pn	22 43 07.8	+0.4
IZI	Iznik	1.29	12	ePn	Pn	22 43 07.8	+0.4
MDNY	Mudanya-Bursa	1.30	352	ePN	Pb	22 43 07.5	0.0
MDNY				eSN	Sn	22 43 25.3	-0.1
MDNY	Mudanya-Bursa	1.30	352	ePn	Pb	22 43 07.5	0.0
MDNY				eSn	Sn	22 43 25.3	-0.1
KCTX	Karacabey (Bur	1.32	334	ePN	Pb	22 43 07.8	-0.1
KCTX	Karacabey (Bur	1.32	334	ePn	Pb	22 43 07.8	-0.1
ADVT	Abdulvahap	1.44	19	ePN	Pb	22 43 09.9	0.0
ADVT	Abdulvahap	1.44	19	ePn	Pb	22 43 09.9	0.0
GONE	Gonen-Balikesi	1.47	312	ePN	Pb	22 43 10.2	-0.2
GONE	Gonen-Balikesi	1.47	312	ePn	Pb	22 43 10.2	-0.2
ARMT	Armutlu	1.50	353	ePN	Pn	22 43 10.5	+0.2
ARMT	Armutlu	1.50	353	ePn	Pn	22 43 10.5	+0.2
EDC	Edincik	1.59	323	ePN	Pb	22 43 12.3	-0.2
EDC	Edincik	1.59	323	ePn	Pb	22 43 12.3	-0.2
GULT	Gulveren	1.73	38	ePN	Pn	22 43 13.1	-0.4
GULT	Gulveren	1.73	38	ePn	Pn	22 43 13.1	-0.4
HRT	Hereke	1.79	14	ePN	Pn	22 43 15.0	+0.7
HRT	Hereke	1.79	14	ePn	Pn	22 43 15.0	+0.7
ISK	Istanbul-Kandi	1.99	359	ePN	Pn	22 43 17.1	+0.2
ISK	Istanbul-Kandi	1.99	359	ePn	Pn	22 43 17.1	+0.2

DDA 19 22:45:59.8, 39.12N×29.06E, h13km, Md2.8
ISK 19 22:45:59.8, 39.13N×29.06E, h5km, ML3.3
CSEM 19 22:46:00.7±0.1, 39.12N×29.07E, h2km, MD2.8, Error ellipse: s-maj=2.0km s-min=1.9km az=80.0
ISC 19 22:46:00.2±1.0, 39.14N±0.02×29.05E±0.02, h3km±9km, n127, σ1§00/157, 12C-6D, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.28	250	P	Pg	22 46 05.7	+0.2
DEMI				S	Sg	22 46 09.9	+0.7
DEMI	Demirci	0.28	250	iP	Pg	22 46 05.7	+0.2
DEMI				iS	Sg	22 46 09.8	+0.7
GDZ	Gediz	0.34	98	P	Pg	22 46 06.6	-0.1
GDZ				S	Sg	22 46 11.5	+0.3
GDZ	Gediz	0.34	98	iP	Pg	22 46 06.6	-0.1
GDZ				iS	Sg	22 46 11.5	+0.3
TVSB	Tavsanli	0.45	45	ePG	Pg	22 46 08.8	0.0
TVSB	Tavsanli	0.45	45	ePg	Pg	22 46 08.8	0.0
DURS	Dursunbey	0.64	316	P	Pg	22 46 13.2	+0.7
DURS	Dursunbey	0.64	316	iP	Pg	22 46 13.2	+0.7
KULA	Kula-Manisa	0.69	206	ePG	Pg	22 46 13.5	+0.1
KULA	Kula-Manisa	0.69	206	ePg	Pg	22 46 13.5	+0.1
MANT	Manisa	0.75	211	P	Pg	22 46 14.0	-0.6
MANT				S	Sg	22 46 23.3	-1.0
MANT	Manisa	0.75	211	iP	Pg	22 46 14.0	-0.6
MANT				iS	Sg	22 46 23.3	-1.0
KHAL	Karahalli	0.84	156	P	Pb	22 46 16.5	-0.9
KHAL				S	Sg	22 46 26.3	-0.8
KHAL	Karahalli	0.84	156	iP	Pb	22 46 16.5	-0.9
KHAL				iS	Sg	22 46 26.3	-0.8
KHL	Karahalli	0.89	155	ePG	Pb	22 46 18.1	-0.2
KHL	Karahalli	0.89	155	ePg	Pb	22 46 18.1	-0.2
ORLT	Orhaneli	0.92	353	ePG	Pb	22 46 18.2	-0.5
ORLT	Orhaneli	0.92	353	ePg	Pb	22 46 18.2	-0.5
AKHS	Akhisar	1.00	255	P	Pb	22 46 19.5	-0.6
AKHS				S	Sb	22 46 32.9	-0.7
AKHS	Akhisar	1.00	255	iP	Pb	22 46 19.5	-0.6
AKHS				iS	Sb	22 46 32.9	-0.7
AKS	Akhisar	1.00	255	ePG	Pb	22 46 19.5	-0.6
AKS	Akhisar	1.00	255	ePg	Pb	22 46 19.5	-0.6
BALB	Balikesir	1.04	299	ePG	Pn	22 46 21.1	-0.5
BALB				eSG	Sn	22 46 37.0	+0.4
BALB	Balikesir	1.04	299	ePg	Pn	22 46 21.1	-0.5
BALB				eSg	Sn	22 46 37.0	+0.4
IGD	Bursa	1.13	6	iP	Pg	22 46 21.0	-0.9
IGD				iS	Sb	22 46 37.3	-0.2
CAVI	Cavuskoy	1.23	30	ePN	Pn	22 46 24.8	+0.6
CAVI				eSN	Sn	22 46 42.0	+0.7
CAVI	Cavuskoy	1.23	30	ePn	Pn	22 46 24.8	+0.6
CAVI				eSn	Sn	22 46 42.0	+0.7
MDNY	Mudanya-Bursa	1.24	354	ePN	Pn	22 46 24.7	+0.4
MDNY	Mudanya-Bursa	1.24	354	ePn	Pn	22 46 24.7	+0.4
IZI	Iznik	1.24	15	ePN	Pn	22 46 24.6	+0.1
IZI	Iznik	1.24	15	ePn	Pn	22 46 24.6	+0.1
KCTX	Karacabey (Bur	1.25	335	ePN	Pn	22 46 25.2	+0.6
KCTX	Karacabey (Bur	1.25	335	ePn	Pn	22 46 25.2	+0.6
BALY	Balya	1.26	299	P	Pb	22 46 24.9	+0.3
BALY				S	Sb	22 46 41.5	+0.2
BALY	Balya	1.26	299	iP	Pb	22 46 24.9	+0.3
BALY				iS	Sb	22 46 41.5	+0.2
GEMT	Gemlik	1.30	5	ePN	Pg	22 46 25.8	+0.7
GEMT	Gemlik	1.30	5	ePn	Pg	22 46 25.8	+0.7
BORA	Eskisehir	1.31	55	P	Pn	22 46 24.8	-0.7
BORA				S	Sg	22 46 41.7	-0.8
BORA	Eskisehir	1.31	55	iP	Pn	22 46 24.8	-0.7
BORA				iS	Sg	22 46 41.6	-0.8
DENT	Denizli	1.38	181	ePN	Pg	22 46 26.7	+0.1
DENT	Denizli	1.38	181	ePn	Pg	22 46 26.7	+0.1
ADVT	Abdulvahap	1.40	22	ePN	Pg	22 46 27.6	+0.6
ADVT	Abdulvahap	1.40	22	ePn	Pg	22 46 27.6	+0.6
ARMT	Armutlu	1.44	354	ePN	Pg	22 46 28.0	+0.3
ARMT	Armutlu	1.44	354	ePn	Pg	22 46 28.0	+0.3
DNZL	Cakiroluk	1.45	180	P	Pg	22 46 28.1	+0.3
DNZL				S	Sn	22 46 47.1	+0.2
DNZL	Cakiroluk	1.45	180	iP	Pg	22 46 28.1	+0.3
DNZL				iS	Sn	22 46 47.1	+0.2
ESKT	Eskisehir	1.45	74	iP	Pb	22 46 27.1	-0.8
ESKT				iS	Sb	22 46 45.7	-1.0
SEYT	Eskypehyr	1.45	74	P	Pb	22 46 27.1	-0.7
SEYT				S	Sb	22 46 45.7	-1.0
AYDB	Zeytinkoy-Aydi	1.50	218	ePN	Pg	22 46 29.3	+0.4
AYDB	Zeytinkoy-Aydi	1.50	218	ePn	Pg	22 46 29.3	+0.4
GPA	Golpazari	1.51	40	ePN	Pg	22 46 29.4	+0.4
GPA	Golpazari	1.51	40	ePn	Pg	22 46 29.4	+0.4
EDC	Edincik	1.52	323	ePN	Pg	22 46 29.3	+0.1
EDC	Edincik	1.52	323	ePn	Pg	22 46 29.3	+0.1
BOLV	Bolvadin	1.54	105	P	Pb	22 46 28.7	-0.7
BOLV				S	Sg	22 46 50.1	+0.4
BOLV	Bolvadin	1.54	105	iP	Pb	22 46 28.7	-0.7
BOLV				iS	Sg	22 46 50.1	+0.4
DKL	Dikili	1.67	268

AKHS	**Akhisar**	**1.00 259**	*i* P	**Pn**	**22 47 38.4**	**-0.1**
AKHS			*i* S	**Sn**	**22 47 52.0**	**-0.6**
AKS	**Akhisar**	**1.00 259**	*e*PG	**Pn**	**22 47 38.2**	**-0.3**
AKS	**Akhisar**	**1.00 259**	*e*Pg	**Pn**	**22 47 38.2**	**-0.3**
BALB	**Balikesir**	**1.09 302**	*e*PN	**Pg**	**22 47 40.2**	**+0.8**
BALB			*e*SN	**Sn**	**22 47 56.0**	**+1.3**
BALB	**Balikesir**	**1.09 302**	*e*Pn	**Pg**	**22 47 40.2**	**+0.8**
BALB			*e*Sn	**Sn**	**22 47 56.0**	**+1.3**
IGD	**Bursa**	**1.20 5**	*i* P	**Pn**	**22 47 40.0**	**-1.1**
IGD			*i* S	**Sb**	**22 47 55.8**	**-0.8**
CAVI	**Cavuskoy**	**1.28 27**	*e*PN	**Pg**	**22 47 43.4**	**+0.4**
CAVI	**Cavuskoy**	**1.28 27**	*e*Pn	**Pg**	**22 47 43.4**	**+0.4**
IZI	**Iznik**	**1.30 14**	*e*PN	**Pg**	**22 47 43.8**	**+0.3**
IZI	**Iznik**	**1.30 14**	*e*Pn	**Pg**	**22 47 43.8**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.30 354**	*e*PN	**Pg**	**22 47 44.3**	**+0.7**
MDNY	**Mudanya-Bursa**	**1.30 354**	*e*Pn	**Pg**	**22 47 44.3**	**+0.7**
DENT	**Denizli**	**1.31 181**	*e*PN	**Pg**	**22 47 44.3**	**+0.5**
DENT	**Denizli**	**1.31 181**	*e*Pn	**Pg**	**22 47 44.3**	**+0.5**
KCTX	**Karacabey (Bur**	**1.32 335**	*e*PN	**Pg**	**22 47 44.3**	**+0.5**
KCTX	**Karacabey (Bur**	**1.32 335**	*e*Pn	**Pg**	**22 47 44.3**	**+0.5**
BORA	**Eskisehir**	**1.34 52**	P	**Pg**	**22 47 44.1**	**-0.1**
BORA			S	**Sg**	**22 48 01.3**	**-0.3**
BORA	**Eskisehir**	**1.34 52**	*i* P	**Pg**	**22 47 44.1**	**-0.1**
BORA			*i* S	**Sg**	**22 48 01.3**	**-0.3**
GEMT	**Gemlik**	**1.36 4**	*e*PN	**Pg**	**22 47 45.5**	**+0.8**
GEMT	**Gemlik**	**1.36 4**	*e*Pn	**Pg**	**22 47 45.5**	**+0.8**
DNZL	**Cakiroluk**	**1.38 181**	P	**Pg**	**22 47 44.8**	**-0.2**
DNZL	**Cakiroluk**	**1.38 181**	*i* P	**Pg**	**22 47 44.8**	**-0.2**
DNZL			*i* S	**Sg**	**22 48 06.1**	**+3.2**
ADVT	**Abdulvahap**	**1.45 20**	*e*PN	**Pg**	**22 47 46.4**	**0.0**
ADVT	**Abdulvahap**	**1.45 20**	*e*Pn	**Pg**	**22 47 46.4**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**1.46 220**	*e*PN	**Pg**	**22 47 46.2**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**1.46 220**	*e*Pn	**Pg**	**22 47 46.3**	**-0.2**
ARMT	**Armutlu**	**1.50 354**	*e*PN	**Pg**	**22 47 48.1**	**+0.8**
ARMT	**Armutlu**	**1.50 354**	*e*Pn	**Pg**	**22 47 48.1**	**+0.8**
GPA	**Golpazari**	**1.54 38**	*e*PN	**Pg**	**22 47 48.0**	**-0.1**
GPA	**Golpazari**	**1.54 38**	*e*Pn	**Pg**	**22 47 48.0**	**-0.1**
EDC	**Edincik**	**1.58 324**	*e*PN	**Pg**	**22 47 48.6**	**-0.2**
EDC	**Edincik**	**1.58 324**	*e*Pn	**Pg**	**22 47 48.6**	**-0.2**
ISP	**Isparta**	**1.69 137**	*e*PN	**Pb**	**22 47 49.6**	**0.0**
ISP	**Isparta**	**1.69 137**	⇑*i*P	**Pg**	**22 47 51.2**	**+0.3**
ISP			S	**Sg**	**22 48 17.1**	**+4.4**
ISP	**Isparta**	**1.69 137**	*e*Pn	**Pb**	**22 47 49.6**	**0.0**
ISP	**Isparta**	**1.69 137**	⇑*i*P	**Pg**	**22 47 51.2**	**+0.3**
DKL	**Dikili**	**1.69 271**	*e*PN	**Pb**	**22 47 49.7**	**+0.2**
DKL	**Dikili**	**1.69 271**	*e*Pn	**Pb**	**22 47 49.7**	**+0.2**
GULT	**Gulveren**	**1.75 39**	*e*PN	**Pg**	**22 47 51.5**	**-0.7**
GULT	**Gulveren**	**1.75 39**	*e*Pn	**Pg**	**22 47 51.5**	**-0.7**
HRT	**Hereke**	**1.81 14**	*e*PN	**Pb**	**22 47 52.3**	**+0.7**
HRT	**Hereke**	**1.81 14**	*e*Pn	**Pb**	**22 47 52.3**	**+0.7**
SPNC	**Sapanca-Adapaz**	**1.87 30**	*e*PN	**Pb**	**22 47 53.4**	**+0.7**
SPNC	**Sapanca-Adapaz**	**1.87 30**	*e*Pn	**Pb**	**22 47 53.4**	**+0.7**
KRBG	**Karabiga-Canak**	**1.90 314**	*e*PN	**Pb**	**22 47 53.1**	**-0.1**
KRBG	**Karabiga-Canak**	**1.90 314**	*e*Pn	**Pb**	**22 47 53.1**	**-0.1**
MRMT	**Marmara Adasi**	**1.91 324**	*e*PN	**Pb**	**22 47 53.4**	**+0.1**
MRMT	**Marmara Adasi**	**1.91 324**	*e*Pn	**Pb**	**22 47 53.4**	**+0.1**
SVRH	**Sivrihisar-ESK**	**1.94 78**	*e*PN	**Pb**	**22 47 53.7**	**-0.2**
SVRH	**Sivrihisar-ESK**	**1.94 78**	*e*Pn	**Pb**	**22 47 53.7**	**-0.2**
GLHS	**Glhisar (BURDU**	**1.94 170**	*e*PN	**Pb**	**22 47 53.7**	**-0.2**
GLHS	**Glhisar (BURDU**	**1.94 170**	*e*Pn	**Pb**	**22 47 53.7**	**-0.2**
ISK	**Istanbul-Kandi**	**1.99 360**	*e*PN	**Pb**	**22 47 55.0**	**+0.3**
ISK	**Istanbul-Kandi**	**1.99 360**	*e*Pn	**Pb**	**22 47 55.0**	**+0.3**
BGKT	**Bogazkoy**	**2.12 354**	*e*PN	**Pb**	**22 47 56.0**	**-0.8**
BGKT	**Bogazkoy**	**2.12 354**	*e*Pn	**Pb**	**22 47 56.1**	**-0.8**
MDUB	**Mudurnu**	**2.15 49**	*e*PN	**Pb**	**22 47 57.4**	**-0.1**
MDUB	**Mudurnu**	**2.15 49**	*e*Pn	**Pb**	**22 47 57.4**	**-0.1**
RKY	**Sarkoy-Tekirda**	**2.18 318**	*e*PN	**Pb**	**22 47 57.4**	**-0.5**
RKY	**Sarkoy-Tekirda**	**2.18 318**	*e*Pn	**Pb**	**22 47 57.4**	**-0.5**
KLYT	**Kilyos**	**2.18 359**	*e*PN	**Pb**	**22 47 57.6**	**-0.3**
KLYT	**Kilyos**	**2.18 359**	*e*Pn	**Pb**	**22 47 57.6**	**-0.3**
KIZT	**Kizilcal**	**2.19 94**	*e*PN	**Pb**	**22 47 57.2**	**-1.0**
KIZT	**Kizilcal**	**2.19 94**	*e*Pn	**Pb**	**22 47 57.2**	**-1.0**
SUTC	**Sutluce-Ispart**	**2.20 136**	*e*PN	**Pb**	**22 47 57.1**	**-1.2**
SUTC	**Sutluce-Ispart**	**2.20 136**	*e*Pn	**Pb**	**22 47 57.1**	**-1.2**
CTKS	**Kestanelik-??a**	**2.21 349**	*e*PN	**Pb**	**22 47 57.9**	**-0.5**
CTKS	**Kestanelik-??a**	**2.21 349**	*e*Pn	**Pb**	**22 47 57.9**	**-0.5**
LPK	**Lapseki**	**2.21 307**	*e*PN	**Pb**	**22 47 56.9**	**-1.5**
LPK	**Lapseki**	**2.21 307**	*e*Pn	**Pb**	**22 47 56.9**	**-1.5**
TKR	**Tekirdag**	**2.25 329**	*e*PN	**Pb**	**22 47 58.2**	**-1.0**
TKR	**Tekirdag**	**2.25 329**	*e*Pn	**Pb**	**22 47 58.2**	**-1.0**
EZN	**Ezine**	**2.26 290**	*e*PN	**Pb**	**22 47 57.6**	**-1.6**
CRLT	**Corlu**	**2.30 334**	*e*PN	**Pb**	**22 47 59.0**	**-1.0**
CRLT	**Corlu**	**2.30 334**	*e*Pn	**Pb**	**22 47 59.0**	**-1.0**
GELI	**Tayfur-Gelibol**	**2.40 304**	*e*PN	**Pb**	**22 48 00.2**	**-1.6**
CTYL	**Yalikoy Yolu**	**2.48 346**	*e*PN	**Pb**	**22 48 00.8**	**-2.1**
CTYL	**Yalikoy Yolu**	**2.48 346**	*e*Pn	**Pb**	**22 48 00.8**	**-2.1**
LADK	**Ladik-KONYA**	**2.72 108**	*e*PN	**Pb**	**22 48 04.5**	**-2.7**
LADK	**Ladik-KONYA**	**2.72 108**	*e*Pn	**Pb**	**22 48 04.5**	**-2.7**
CFR	**Carcaliu**	**6.14 354**	⇓*i*P	**Pn**	**22 48 48.9**	**-0.2**
CFR	**Carcaliu**	**6.14 354**	⇓*i*P	**Pn**	**22 48 48.9**	**-0.2**
MLR	**Muntele Rosu**	**6.82 341**	⇑*i*P	**Pn**	**22 48 59.1**	**+0.5**
MLR	**Muntele Rosu**	**6.82 341**	⇑*i*P	**Pn**	**22 48 59.1**	**+0.5**
PLOR	**Plostina**	**7.01 346**	⇓*i*P	**Pn**	**22 49 00.9**	**-0.1**
PLOR	**Plostina**	**7.01 346**	⇓*i*P	**Pn**	**22 49 00.9**	**-0.1**
VRI	**Vrincioaia**	**7.01 346**	⇑*i*P	**Pn**	**22 49 00.9**	**-0.1**
VRI	**Vrincioaia**	**7.01 346**	⇑*i*P	**Pn**	**22 49 00.9**	**-0.1**
VOIR		**7.03 336**	⇓*i*P	**Pn**	**22 49 01.9**	**+0.6**
VOIR		**7.03 336**	⇓*i*P	**Pn**	**22 49 01.9**	**+0.6**
DOPR	**Dopca**	**7.41 340**	⇓*i*P	**Pn**	**22 49 07.4**	**+0.9**
DOPR	**Dopca**	**7.41 340**	⇓*i*P	**Pn**	**22 49 07.4**	**+0.9**
TESR	**Tescani**	**7.65 347**	⇑*i*P	**Pn**	**22 49 10.0**	**+0.2**
TESR	**Tescani**	**7.65 347**	⇑*i*P	**Pn**	**22 49 10.0**	**+0.2**
MILM	**Milestii Mici**	**7.85 359**	⇑*i*P	**Pn**	**22 49 12.3**	**-0.2**
MILM	**Milestii Mici**	**7.85 359**	⇑*i*P	**Pn**	**22 49 12.3**	**-0.2**
BURAR	**Bucovina Array**	**8.99 343**	⇓*i*P	**Pn**	**22 49 30.0**	**+1.7**
BURAR	**Bucovina Array**	**8.99 343**	⇓*i*P	**Pn**	**22 49 30.0**	**+1.7**

*ISCJB **19** 22:48:38.6±0.5, 39.°08N±0.°03×29.°07E±0.°03, h3km±6km, Error ellipse: s-maj=5.8km s-min=3.8km az=160.5*
*CSEM **19** 22:48:38.8±0.1, 39.°08N×29.°09E, h2km, MD2.4, Error ellipse: s-maj=2.5km s-min=1.9km az=125.0*
*ISK **19** 22:48:38.5, 39.°07N×29.°16E, h5km, ML2.9*
*DDA **19** 22:48:38.3, 39.°14N×29.°06E, h7km, Md2.4*
ISC 19 22:48:38.9±1.0, 39.°07N±0.°02×29.°08E±0.°02, h7km±9km, n53, σ0.°47/70, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.29**	**264**	P	**Pg**	**22 48 44.2**	**-0.3**
DEMI				S	**Sg**	**22 48 47.9**	**-0.5**
DEMI	**Demirci**	**0.29**	**264**	*i* P	**Pg**	**22 48 44.2**	**-0.3**
DEMI				*i* S	**Sg**	**22 48 47.9**	**-0.5**
GDZ	**Gediz**	**0.31**	**87**	P	**Pg**	**22 48 45.2**	**+0.2**
GDZ				S	**Sg**	**22 48 50.2**	**+1.0**
GDZ	**Gediz**	**0.31**	**87**	*i* P	**Pg**	**22 48 45.2**	**+0.2**
GDZ				*i* S	**Sg**	**22 48 50.2**	**+1.0**
TVSB	**Tavsanli**	**0.48**	**38**	*e*PG	**Pg**	**22 48 47.8**	**-0.4**
TVSB	**Tavsanli**	**0.48**	**38**	*e*Pg	**Pg**	**22 48 47.8**	**-0.4**
KULA	**Kula-Manisa**	**0.65**	**211**	*e*PG	**Pg**	**22 48 51.6**	**+0.3**
KULA	**Kula-Manisa**	**0.65**	**211**	*e*Pg	**Pg**	**22 48 51.6**	**+0.3**
MANT	**Manisa**	**0.71**	**215**	P	**Pg**	**22 48 52.7**	**+0.1**
MANT				S	**Sg**	**22 49 02.1**	**+0.2**
MANT	**Manisa**	**0.71**	**215**	*i* P	**Pg**	**22 48 52.7**	**+0.1**
MANT				*i* S	**Sg**	**22 49 02.1**	**+0.2**
KHAL	**Karahalli**	**0.77**	**155**	P	**Pb**	**22 48 54.5**	**-0.2**
KHAL				S	**Sb**	**22 49 05.1**	**-0.3**
KHAL	**Karahalli**	**0.77**	**155**	*i* P	**Pb**	**22 48 54.5**	**-0.2**
KHAL				*i* S	**Sb**	**22 49 05.1**	**-0.3**
KHL	**Karahalli**	**0.82**	**155**	*e*PG	**Pg**	**22 48 54.4**	**-0.3**
KHL	**Karahalli**	**0.82**	**155**	*e*Pg	**Pg**	**22 48 54.4**	**-0.3**
ORLT	**Orhaneli**	**0.98**	**352**	*e*PG	**Pg**	**22 48 57.8**	**0.0**
ORLT	**Orhaneli**	**0.98**	**352**	*e*Pg	**Pg**	**22 48 57.8**	**0.0**
AKHS	**Akhisar**	**1.01**	**259**	P	**Pg**	**22 48 57.8**	**-0.4**
AKHS				S	**Sg**	**22 49 11.3**	**0.0**
AKHS	**Akhisar**	**1.01**	**259**	*i* P	**Pg**	**22 48 57.8**	**-0.4**
AKHS				*i* S	**Sg**	**22 49 11.3**	**0.0**
AKS	**Akhisar**	**1.01**	**259**	*e*PG	**Pb**	**22 48 58.6**	**-0.1**
AKS	**Akhisar**	**1.01**	**259**	*e*Pg	**Pb**	**22 48 58.6**	**-0.1**
BALB	**Balikesir**	**1.09**	**302**	*e*PN	**Pn**	**22 49 01.0**	**+0.4**
BALB	**Balikesir**	**1.09**	**302**	*e*Pn	**Pn**	**22 49 01.0**	**+0.4**
IGD	**Bursa**	**1.19**	**4**	*i* P	**Pg**	**22 48 59.6**	**-2.2**
IGD				*i* S	**Sg**	**22 49 16.1**	**-1.2**
CAVI	**Cavuskoy**	**1.27**	**27**	*e*PN	**Pn**	**22 49 02.7**	**-0.4**
CAVI				*e*SN	**Sg**	**22 49 20.1**	**+0.3**
CAVI	**Cavuskoy**	**1.27**	**27**	*e*Pn	**Pn**	**22 49 02.7**	**-0.4**
CAVI				*e*Sn	**Sg**	**22 49 20.1**	**+0.3**
IZI	**Iznik**	**1.30**	**13**	*e*PN	**Pn**	**22 49 03.5**	**+0.1**
IZI				*e*SN	**Sn**	**22 49 21.3**	**+0.1**
IZI	**Iznik**	**1.30**	**13**	*e*Pn	**Pn**	**22 49 03.6**	**+0.1**
IZI				*e*Sn	**Sn**	**22 49 21.3**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.30**	**353**	*e*PN	**Pg**	**22 49 04.0**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.30**	**353**	*e*Pn	**Pg**	**22 49 04.0**	**+0.1**
KCTX	**Karacabey (Bur**	**1.32**	**335**	*e*PN	**Pg**	**22 49 05.0**	**+0.8**
KCTX	**Karacabey (Bur**	**1.32**	**335**	*e*Pn	**Pg**	**22 49 05.0**	**+0.8**
BORA	**Eskisehir**	**1.33**	**52**	P	**Pn**	**22 49 03.5**	**-0.5**
BORA				S	**Sb**	**22 49 21.5**	**0.0**
BORA	**Eskisehir**	**1.33**	**52**	*i* P	**Pn**	**22 49 03.5**	**-0.5**
BORA				*i* S	**Sb**	**22 49 21.6**	**0.0**
GEMT	**Gemlik**	**1.36**	**3**	*e*PN	**Pg**	**22 49 05.0**	**0.0**
GEMT	**Gemlik**	**1.36**	**3**	*e*Pn	**Pg**	**22 49 05.0**	**0.0**
ADVT	**Abdulvahap**	**1.45**	**20**	*e*PN	**Pb**	**22 49 06.0**	**-0.2**
ADVT	**Abdulvahap**	**1.45**	**20**	*e*Pn	**Pb**	**22 49 06.0**	**-0.2**
GONE	**Gonen-Balikesi**	**1.45**	**312**	*e*PN	**Pg**	**22 49 07.0**	**+0.3**
GONE	**Gonen-Balikesi**	**1.45**	**312**	*e*Pn	**Pg**	**22 49 07.0**	**+0.3**
ARMT	**Armutlu**	**1.50**	**354**	*e*PN	**Pb**	**22 49 07.0**	**-0.1**
ARMT	**Armutlu**	**1.50**	**354**	*e*Pn	**Pb**	**22 49 07.0**	**-0.1**
EDC	**Edincik**	**1.58**	**324**	*e*PN	**Pb**	**22 49 08.5**	**+0.1**
EDC	**Edincik**	**1.58**	**324**	*e*Pn	**Pb**	**22 49 08.5**	**+0.1**
GULT	**Gulveren**	**1.75**	**39**	*e*PN	**Pn**	**22 49 09.9**	**+0.2**
GULT	**Gulveren**	**1.75**	**39**	*e*Pn	**Pn**	**22 49 09.9**	**+0.2**
HRT	**Hereke**	**1.80**	**14**	*e*PN	**Pn**	**22 49 10.4**	**0.0**
HRT	**Hereke**	**1.80**	**14**	*e*Pn	**Pn**	**22 49 10.5**	**0.0**
SPNC	**Sapanca-Adapaz**	**1.87**	**30**	*e*PN	**Pn**	**22 49 11.8**	**+0.5**
SPNC	**Sapanca-Adapaz**	**1.87**	**30**	*e*Pn	**Pn**	**22 49 11.8**	**+0.5**
SVRH	**Sivrihisar-ESK**	**1.93**	**78**	*e*PN	**Pn**	**22 49 12.0**	**-0.2**
SVRH	**Sivrihisar-ESK**	**1.93**	**78**	*e*Pn	**Pn**	**22 49 12.0**	**-0.2**
ISK	**Istanbul-Kandi**	**1.99**	**359**	*e*PN	**Pn**	**22 49 13.5**	**+0.6**
ISK	**Istanbul-Kandi**	**1.99**	**359**	*e*Pn	**Pn**	**22 49 13.5**	**+0.6**

*JMA **19** 22:54:30.0±0.4, 44.°02N×148.°05E, h0km, M4.1*
*SKHL **19** 22:54:30.7±0.3, 44.°35N×148.°25E, h33km±5km, mb4.5/3*
ISC 19 22:54:28.4±3.4, 44.°31N±0.°09×148.°5E±0.°2, h35km, n13, σ1.°53/19, 1C-1D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUR	**Kuril'sk**	**1.03**	**334**	⇓*i*P	**Pn**	**22 54 46.5**	**+0.2**
KUR				AMB	AMB	22 54 47.1	
	330nm,0.3s						
KUR				*i* S	**Sn**	**22 54 58.1**	**-1.4**
KUR				A	A	22 54 59.4	
	960nm,0.3s						
KUR				A	A	22 54 59.4	
	650nm,0.3s						
YUK	**Yuzh-Kuril'sk**	**1.93**	**263**	⇑*e*P	**Pn**	**22 54 58.8**	**+0.2**
YUK				AMB	AMB	22 55 02.1	
	320nm,0.4s						
YUK				*i* S	**Sn**	**22 55 20.1**	**-1.5**
YUK				A	A	22 55 25.1	
	260nm,0.4s						
YUK				A	A	22 55 25.1	
	560nm,0.4s						
NEM2	**Nemuro 2**	**2.22**	**246**	P	**Pn**	**22 55 02.4**	**-0.2**
NEM2				*e*S	**Sn**	**22 55 26.2**	**-2.5**
JRA	**Rausu**	**2.47**	**263**	P	**Pn**	**22 55 07.2**	**+1.1**
JRA				*e*S	**Sn**	**22 55 35.1**	**+0.1**
JNK	**Nakash**	**2.83**	**257**	P	**Pn**	**22 55 12.0**	**+0.9**
JAK	**Akkeshi**	**3.07**	**246**	P	**Pn**	**22 55 14.6**	**+0.3**
JTKR	**Abashiri--Toko**	**3.33**	**266**	P	**Pn**	**22 55 20.7**	**+2.8**
JAR	**Ashorobuto**	**3.58**	**255**	P	**Pn**	**22 55 22.9**	**+1.5**
JAR				*e*S	**Sn**	**22 56 02.6**	**+0.2**
JCH	**Churui**	**4.12**	**247**	P	**Pn**	**22 55 30.2**	**+1.5**
JNBK	**Urakawa-nobuka**	**4.67**	**246**	P	**Pn**	**22 55 37.8**	**+1.5**
YSS	**Yuzh-Sakhalins**	**4.83**	**305**	*e*P	**Pn**	**22 55 39.6**	**+1.1**
YSS				AMB	AMB	22 55 40.9	
	20nm,0.4s						
JKB	**Kayabe**	**5.99**	**249**	P	**Pn**	**22 55 55.7**	**+1.3**
JKB				*e*S	**Sn**	**22 56 59.2**	**-2.5**
JOT	**Ohata**	**6.22**	**245**	P	**Pn**	**22 55 58.5**	**+0.9**

*ISCJB **19** 22:54:35.5±0.8, 23.°94N±0.°02×122.°32E±0.°02, h12km±5km, Error ellipse: s-maj=2.8km s-min=2.2km az=148.7*
*TAP **19** 22:54:35.8, 23.°99N×122.°25E, h9km, ML3.6, D*
*JMA **19** 22:54:35.8±0.1, 23.°93N×122.°26E, h27km±3km, M3.0*
ISC 19 22:54:34.4±1.2, 23.°94N±0.°02×122.°32E±0.°02, h9km±10km, n57, σ0.°57/103, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HWA	**Hwalien**	**0.65**	**273**	*e*P	**Pb**	**22 54 48.3**	**+0.4**
	baz=268						
HWA				*e*S	**Sb**	**22 54 56.9**	**-0.2**
	baz=268						
TWD	**Chiawan**	**0.67**	**282**	P	**Pb**	**22 54 48.2**	**-0.1**
	baz=279						
TWD				S	**Sb**	**22 54 57.3**	**-0.4**
	baz=279						
ENA	**Nanau**	**0.71**	**313**	*e*P	**Pb**	**22 54 49.6**	**+0.6**
	baz=313						
ENA				*e*S	**Sb**	**22 54 59.9**	**+0.9**
	baz=313						
JYNG	**Yonagunijimaku**	**0.77**	**48**	P	**Pn**	**22 54 51.1**	**-0.3**
JYNG				*e*S	**Sb**	**22 55 01.0**	**+0.5**
TWC	**Suao**	**0.79**	**327**	P	**Pb**	**22 54 50.3**	**0.0**
	baz=330						
TWC				*e*S	**Sg**	**22 54 59.6**	**-0.2**
	baz=330						
ESL	**Shilin**	**0.82**	**261**	*e*S	**Sg**	**22 55 01.2**	**+0.4**
	baz=256						
YOJ	**Yonaguni jima**	**0.82**	**51**	P	**Pn**	**22 54 51.8**	**-0.4**
YOJ				S	**Sn**	**22 55 03.3**	**-1.1**
ILA	**Ilan**	**0.97**	**328**	*e*P	**Pn**	**22 54 53.8**	**-0.4**
	baz=329						
ILA				*e*S	**Sb**	**22 55 06.1**	**-0.2**
	baz=329						
ENTT	**Nioudou**	**0.97**	**316**	P	**Pb**	**22 54 53.8**	**+0.3**
	baz=316						
ENTT				*e*S	**Sb**	**22 55 06.7**	**+0.1**
	baz=316						
TWE	**Neicheng**	**0.97**	**323**	P	**Pb**	**22 54 53.6**	**+0.1**
	baz=324						
TWE				*e*S	**Sg**	**22 55 06.0**	**+0.1**
	baz=324						
WHF	**Hehuan Shan**	**0.98**	**282**	P	**Pb**	**22 54 54.0**	**+0.2**
	baz=279						
WHF				*e*S	**Sb**	**22 55 06.9**	**-0.2**
	baz=279						
NNS	**Nan Shan**	**0.99**	**300**	P	**Pb**	**22 54 54.2**	**+0.3**
	baz=299						
NNS				*e*S	**Sb**	**22 55 07.0**	**-0.1**
	baz=299						
EHY	**Hungye**	**1.01**	**245**	P	**Pn**	**22 54 54.5**	**-0.3**
	baz=240						
EHY				*e*S	**Sn**	**22 55 08.7**	**-0.5**
	baz=240						
TWT	**Tachien**	**1.09**	**287**	P	**Pn**	**22 54 55.9**	**-0.1**
	baz=284						
TWT				*e*S	**Sb**	**22 55 10.1**	**+0.2**
	baz=284						
TWB1	**Santiao Chiao**	**1.10**	**344**	*e*P	**Pg**	**22 54 55.3**	**-0.3**
	baz=347						
TWB1				*e*S	**Sb**	**22 55 10.2**	**+0.1**
	baz=347						
TWF1	**Yuli**	**1.10**	**238**	P	**Pn**	**22 54 56.1**	**0.0**
	baz=233						
TWF1				*e*S	**Sb**	**22 55 10.5**	**+0.3**
	baz=233						
NSK	**Sanguang**	**1.14**	**310**	P	**Pb**	**22 54 55.9**	**-0.5**
	baz=310						
NSK				*e*S	**Sg**	**22 55 09.8**	**-1.3**
	baz=310						
CHKT	**Chengkung**	**1.21**	**226**	*e*P	**Pn**	**22 54 56.8**	**-0.8**
	baz=222						
NWF	**Wu-fen Shan**	**1.23**	**337**	*i* P	**Pb**	**22 54 57.6**	**-0.2**
	baz=338						
NWF				*e*S	**Sn**	**22 55 14.5**	**-0.1**
	baz=338						
TWA	**Mucha**	**1.23**	**327**	P	**Pg**	**22 54 58.3**	**+0.3**
	baz=328						
TWA				*e*S	**Sn**	**22 55 14.8**	**+0.1**
	baz=328						
SMLT	**Sun Moon Lake**	**1.30**	**268**	P	**Pn**	**22 54 58.9**	**0.0**
	baz=265						
SMLT				*e*S	**Sn**	**22 55 16.4**	**0.0**
	baz=265						
TAP1	**Taipei**	**1.31**	**327**	*e*P	**Pg**	**22 55 00.1**	**+0.6**
	baz=327						
TAP1				*e*S	**Sg**	**22 55 16.6**	**0.0**
	baz=327						
YUS	**Yu-Shan**	**1.33**	**250**	P	**Pg**	**22 55 00.1**	**+0.2**
	baz=247						
YUS				*e*S	**Sb**	**22 55 16.2**	**-0.9**
	baz=247						
TYC	**Yuchr**	**1.33**	**269**	P	**Pb**	**22 54 59.5**	**-0.2**
	baz=266						
IRIF	**Iriomote-Funau**	**1.35**	**73**	*e*S	**Sn**	**22 55 17.4**	**-0.1**
HATJ	**Hateruma jima**	**1.37**	**85**	*e*S	**Sb**	**22 55 17.8**	**0.0**
NSTT	**Nanjuang**	**1.38**	**300**	*e*P	**Pg**	**22 55 01.0**	**+0.1**
	baz=299						
NSTT				*e*S	**Sn**	**22 55 18.1**	**-0.2**
	baz=299						
ELDTW	**Lidau**	**1.41**	**238**	*e*P	**Pn**	**22 54 59.9**	**-0.4**
	baz=234						
ELDTW				*e*S	**Sb**	**22 55 18.3**	**-0.8**
	baz=234						
TWS1	**Kuangyinshan**	**1.41**	**325**	*e*P	**Pb**	**22 55 00.8**	**-0.2**
	baz=325						
TWS1				*e*S	**Sn**	**22 55 18.4**	**-0.8**
	baz=325						
ALS	**Alishan**	**1.45**	**253**	P	**Pb**	**22 55 01.9**	**+0.2**
	baz=250						
ALS				*e*S	**Sn**	**22 55 19.2**	**-1.2**
	baz=250						
TWQ1	**Liyutan**	**1.47**	**286**	*e*P	**Pg**	**22 55 03.0**	**+0.5**
	baz=284						
TWQ1				*e*S	**Sb**	**22 55 20.7**	**+0.1**
	baz=284						
TWY	**Chenhua**	**1.48**	**334**	*e*P	**Pg**	**22 55 03.0**	**+0.2**
	baz=335						
TWY				*e*S	**Sg**	**22 55 21.7**	**-0.3**
	baz=335						
NSY	**Sanyi**	**1.50**	**289**	*e*P	**Pg**	**22 55 02.8**	**-0.3**
	baz=287						
NSY				*e*S	**Sb**	**22 55 21.6**	**+0.1**
	baz=287						
CHN5	**Tsauling**	**1.54**	**257**	P	**Pb**	**22 55 03.5**	**+0.3**
	baz=254						
CHN5				*e*S	**Sb**	**22 55 23.1**	**+0.2**
	baz=254						
JKRS	**Kuro-shima**	**1.58**	**79**	*e*S	**Sb**	**22 55 24.1**	**+0.3**
TTN	**Taitung**	**1.60**	**222**	*e*P	**Pb**	**22 55 03.7**	**-0.4**
	baz=219						
TTN				*e*S	**Sb**	**22 55 24.3**	**-0.1**
	baz=219						
TWG	**Pinlang**	**1.60**	**226**	*e*P	**Pn**	**22 55 02.6**	**-0.3**
	baz=222						
TWG				*e*S	**Sn**	**22 55 22.8**	**-0.9**
	baz=222						
STYT	**Tauyuan**	**1.63**	**242**	P	**Pb**	**22 55 04.2**	**-0.5**
	baz=238						
STYT				*e*S	**Sb**	**22 55 25.1**	**-0.2**
	baz=238						
CHN4	**Tsaushan**	**1.69**	**250**	*e*P	**Pb**	**22 55 06.0**	**+0.4**
	baz=247						
CHN4				*e*S	**Sg**	**22 55 27.8**	**-0.8**
	baz=247						
JIJ	**Ishigaki jima**	**1.72**	**76**	P	**Pb**	**22 55 05.8**	**-0.4**
JIJ				S	**Sn**	**22 55 25.5**	**-1.2**
CHN2

BALB	**Balikesir**	**1.06**	**303**	*e*PG	Pg	23 01 16.0	+0.1
BALB				*e*SG	Sn	23 01 30.5	-0.6
BALB	**Balikesir**	**1.06**	**303**	*e*Pg	Pg	23 01 16.0	+0.1
BALB				*e*Sg	Sn	23 01 30.5	-0.6
CAVI	**Cavuskoy**	**1.30**	**29**	*e*PN	Pb	23 01 20.1	0.0
CAVI				*e*SN	Sg	23 01 38.0	+0.5
CAVI	**Cavuskoy**	**1.30**	**29**	*e*Pn	Pb	23 01 20.1	+0.1
CAVI				*e*Sn	Sg	23 01 38.0	+0.5
KCTX	**Karacabey (Bur**	**1.31**	**337**	*e*PN	Pb	23 01 20.3	+0.2
KCTX	**Karacabey (Bur**	**1.31**	**337**	*e*Pn	Pb	23 01 20.3	+0.1
MDNY	**Mudanya-Bursa**	**1.31**	**355**	*e*PN	Pg	23 01 20.6	-0.1
MDNY	**Mudanya-Bursa**	**1.31**	**355**	*e*Pn	Pg	23 01 20.6	-0.1
IZI	**Iznik**	**1.32**	**15**	*e*PN	Pb	23 01 20.3	0.0
IZI	**Iznik**	**1.32**	**15**	*e*Pn	Pb	23 01 20.3	-0.1
GONE	**Gonen-Balikesi**	**1.43**	**314**	*e*PN	Pb	23 01 22.2	0.0
GONE	**Gonen-Balikesi**	**1.43**	**314**	*e*Pn	Pb	23 01 22.2	0.0
ADVT	**Abdulvahap**	**1.48**	**22**	*e*PN	Pb	23 01 22.7	-0.3
ADVT	**Abdulvahap**	**1.48**	**22**	*e*Pn	Pb	23 01 22.7	-0.3
ARMT	**Armutlu**	**1.51**	**355**	*e*PN	Pn	23 01 23.0	+0.5
ARMT	**Armutlu**	**1.51**	**355**	*e*Pn	Pn	23 01 23.0	+0.5
EDC	**Edincik**	**1.57**	**325**	*e*PN	Pb	23 01 24.0	-0.5
EDC	**Edincik**	**1.57**	**325**	*e*Pn	Pb	23 01 24.0	-0.5
GULT	**Gulveren**	**1.79**	**39**	*e*PN	Pn	23 01 27.2	+0.8
GULT	**Gulveren**	**1.79**	**39**	*e*Pn	Pn	23 01 27.2	+0.8

*SCB **19** 23:01:29.8±0.8, 22°.44S×68°.60W, h25km, Ml3.7/1, Error ellipse: s-maj=20.3km s-min=7.2km az=31.0*
*ISCJB **19** 23:01:34.6±0.3, 22°.56S±0°.03×68°.66W±0°.03, h128km±4km, mb4.5/5, Error ellipse: s-maj=5.4km s-min=4.4km az=10.0*
*IDC **19** 23:01:34.1±0.8, 22°.47S×68°.31W, h102km±8km, mb4.0/4, mb1 4.0/8, mb1mx3.7/24, mbtmp4.3/8, Error ellipse: s-maj=25.7km s-min=18.5km az=113.0*
*GUC **19** 23:01:35.4±0.7, 22°.48S×68°.67W, h123km±7km, ML4.5*
*SJA **19** 23:01:35.5±1.1, 22°.52S×68°.56W, h111km±16km, ML2.9, MW3.5*
*NEIC **19** 23:01:35.0, 22°.48S×68°.67W, h123km, mb4.2/3, After GUC.*
ISC 19 23:01:35.5±0.7, **22°.57S**±0°.04×**68°.62W**±0°.04, **h121**km±6km, **n41**, σ1°**18**/53, **mb4.2**/5, **2C-3D, Northern Chile**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LVC	**Limon Verde**	**0.27**	**261**	*e*P	**Pn**	**23 01 52.8**	**-0.1**
LVC				*e*S	**Sn**	**23 02 05.2**	**-0.9**
LVC	**Limon Verde**	**0.27**	**261**	P	**Pn**	**23 01 52.7**	**-0.2**
	24μm,0.3s,baz=272,slow=4.3,SNR=6584						
LVC				S	**Sn**	**23 02 04.9**	**-1.1**
	63μm,0.3s,baz=206,slow=20,SNR=178						
LVC				LR	LR	23 02 08.2	
	comp=Z,543nm,19.6s,baz=100,slow=59						
PB06	**IPOC Station P**	**0.89**	**261**	*i* P	**Pn**	**23 01 57.1**	**+0.4**
PB06				*i* S	**Sn**	**23 02 13.5**	**+0.7**
PB06				IAML		23 02 16.3	
	comp=E,7μm,0.2s						
PB09	**IPOC Station P**	**0.96**	**323**	⇓*i* P	**Pn**	**23 01 57.5**	**+0.1**
PB09				*i* S	**Sn**	**23 02 13.7**	**-0.2**
PB09				IAML		23 02 15.8	
	comp=N,23μm,0.2s						
PB04	**IPOC Station P**	**1.43**	**279**	*i* P	**Pn**	**23 02 02.8**	**+0.4**
PB04				*i* S	**Sn**	**23 02 23.1**	**+0.3**
PB04				IAML		23 02 25.6	
	comp=E,6μm,0.2s						
PB07	**IPOC Station P**	**1.44**	**305**	*i* P	**Pn**	**23 02 02.6**	**+0.1**
PB07				*i* S	**Sn**	**23 02 22.7**	**-0.3**
PB07				IAML		23 02 23.5	
	comp=N,11μm,0.5s						
PB01	**IPOC Station P**	**1.72**	**332**	*e*P	**Pn**	**23 02 05.0**	**-0.7**
PB01				*e*S	**Sn**	**23 02 26.8**	**-1.8**
PB01				IAML		23 02 28.0	
	comp=E,5μm,0.2s						
PB10	**IPOC Station P**	**2.02**	**242**	*e*P	**Pn**	**23 02 09.5**	**+0.3**
PB10				*e*S	**Sn**	**23 02 34.0**	**-0.9**
PB10				IAML		23 02 36.4	
	comp=E,6μm,0.4s						
PB08	**IPOC Station P**	**2.46**	**348**	*e*P	**Pn**	**23 02 14.8**	**-0.4**
PB08				*e*S	**Sn**	**23 02 44.3**	**-1.4**
PB08				IAML		23 02 48.8	
	comp=E,1μm,0.3s						
PB14	**IPOC Station P**	**2.62**	**218**	*e*P	**Pn**	**23 02 16.6**	**-0.6**
PB14				*e*S	**Sn**	**23 02 46.8**	**-2.5**
PB14				IAML		23 02 51.8	
	comp=E,980nm,0.5s						
YJA	**Yavi**	**2.90**	**83**	*e*P	**Pn**	**23 02 21.8**	**+0.9**
YJA				IAML		23 02 28.4	
	comp=Z,22nm,0.7s						
YJA				*e*S	**Sn**	**23 02 56.1**	**+0.2**
HJA	**Humahuaca**	**3.03**	**103**	*e*P	**Pn**	**23 02 23.9**	**+1.4**
HJA				IAML		23 02 27.1	
	comp=Z,26nm,0.5s						
MOCB	**Mochara**	**3.06**	**65**	⇑*i*Pn	**Pn**	**23 02 23.0**	**0.0**
MOCB				*e*Sn	**Sn**	**23 03 00.3**	**+0.6**
	comp=Z,185nm,0.9s						
SLA	**San Lorenzo**	**3.57**	**128**	*e*P	**Pn**	**23 02 31.4**	**+1.9**
AZAP	**Zapla**	**3.66**	**118**	*e*P	**Pn**	**23 02 31.2**	**+0.5**
AZAP				IAML		23 02 33.1	
	comp=Z,20nm,0.4s						
ASTB	**Santa Barbara**	**4.07**	**111**	*e*P	**Pn**	**23 02 36.0**	**-0.1**
FSA	**Cafayete**	**4.27**	**146**	*e*P	**Pn**	**23 02 40.5**	**+1.7**
FSA				IAML		23 03 32.6	
	comp=Z,8.1nm,1.6s						
ALOL	**LOMAS DE OLMED**	**4.45**	**107**	*e*P	**Pn**	**23 02 39.4**	**-1.6**
AHML	**Horco Molle**	**5.16**	**145**	*e*P	**Pn**	**23 02 51.5**	**+1.0**
AHML				IAML		23 02 52.7	
	comp=Z,22nm,3.8s						
BBOJ	**La Paz, Jacaqu**	**5.58**	**4**	*e*Pn	**Pn**	**23 02 57.0**	**+0.3**
BBOE	**La Paz, Chanca**	**5.75**	**6**	*e*Pn	**Pn**	**23 02 59.4**	**+0.3**
BBOD	**La Paz, Gloria**	**5.90**	**0**	⇑*i*Pn	**Pn**	**23 03 01.2**	**+0.1**
LPAZ	**La Paz**	**6.26**	**4**	P	**Pn**	**23 03 04.9**	**-1.1**
	comp=Z,11nm,0.3s,baz=175,slow=4.7,SNR=226						
LPAZ	**La Paz**	**6.26**	**4**	⇓*i*Pn	**Pn**	**23 03 06.1**	**0.0**
LPAZ				*e*Sn	**Sn**	**23 04 17.3**	**+0.7**
BBOB	**La Paz, Bander**	**6.41**	**4**	⇓*i*Pn	**Pn**	**23 03 07.6**	**-0.3**
LCO	**Las Campanas**	**6.69**	**196**	*e*Pn	**Pn**	**23 03 08.9**	**-2.5**
	comp=Z,38nm,0.5s						
LCO				*e*Sn	**Sn**	**23 04 27.7**	**+1.3**
AGUA	**GUANDACOL**	**6.89**	**179**	*e*P	**Pn**	**23 03 14.0**	**-0.1**
SIV	**San Ignacio**	**9.67**	**49**	P	Pn	23 03 46.4	-5.2
	comp=Z,8.8nm,0.3s,baz=243,slow=10.0,SNR=53						
SIV				S	Sn	23 05 25.9	-13
	comp=Z,0.7nm,0.3s,baz=311,slow=19,SNR=4.0						
CPUP	**Villa Florida**	**10.95**	**112**	P	**Pn**	**23 04 05.1**	**-3.5**
	comp=Z,0.0nm,0.3s,baz=295,slow=13,SNR=4.9						
SAML	**Samuel**	**14.51**	**22**	*e*Pn	Pn	23 04 50.5	-4.6
	comp=Z,4.3nm,0.6s						
TRQA	**Tornquist**	**16.46**	**161**	*e*Pn	**Pn**	**23 05 19.1**	**-0.2**
	comp=Z,6.1nm,0.6s						
PLCA	**Paso Flores**	**18.19**	**185**	P	**Pn**	**23 05 40.5**	**+0.3**
	comp=Z,0.3nm,0.3s,baz=22,slow=11,SNR=6.1						
PTGA	**Pitinga**	**23.28**	**22**	P	**P**	**23 06 29.9**	**-2.6**
	comp=Z,8.7nm,0.4s,baz=205,slow=15,SNR=29						
SNAA	**Sanae**	**61.19**	**161**	*e*P	**P**	**23 11 37.7**	**+0.7**
	comp=Z,451nm,1.1s						
SCHQ	**Schefferville**	**77.09**	**1**	P	**P**	**23 13 14.8**	**-0.2**
	comp=Z,1.6nm,0.7s,baz=226,slow=5.0,SNR=3.7						
BOSA	**Boshof**	**82.71**	**118**	P	**P**	**23 13 45.0**	**-1.2**
	comp=Z,4.4nm,1.1s,baz=269,slow=5.2,SNR=3.7						
YKA	**Yellowknife Ar**	**92.28**	**340**	P	**P**	**23 14 32.4**	**+1.2**
	comp=Z,0.4nm,0.7s,baz=133,slow=4.4,SNR=8.2						
ASAR	**Alice Springs**	**129.09**	**207**	PKP	**PKPdf**	**23 20 30.9**	**+1.0**
	comp=Z,1.2nm,0.8s,baz=159,slow=2.7,SNR=10						
WRA	**Warramunga Arr**	**132.17**	**210**	PKP	**PKPdf**	**23 20 37.1**	**+1.3**
	comp=Z,0.7nm,0.6s,baz=161,slow=1.8,SNR=12						
ZALV	**Zalesovo Beam**	**142.79**	**26**	PKP	**PKPdf**	**23 20 55.6**	**+1.4**
	comp=Z,0.3nm,0.2s,baz=278,slow=4.0,SNR=3.8						
MKAR	**Makanchi Array**	**146.33**	**37**	PKPbc	**PKPdf**	**23 21 01.9**	**+1.3**
	comp=Z,0.8nm,0.6s,baz=315,slow=3.1,SNR=10.0						

*ISCJB **19** 23:02:30.1±0.5, 39°.09N×0°.03×29°.01E±0°.03, h1km±6km, Error ellipse: s-maj=4.8km s-min=4.2km az=25.1*
*CSEM **19** 23:02:30.5±0.1, 39°.08N×29°.00E, h5km, ML3.2, Error ellipse: s-maj=1.8km s-min=1.5km az=101.0*
*ISK **19** 23:02:30.1, 39°.09N×29°.00E, h6km, ML3.0*
*DDA **19** 23:02:30.3, 39°.08N×29°.04E, h7km, Ml3.2*
ISC 19 23:02:30.7±1.0, **39°.09N**±0°.03×**29°.01E**±0°.02, **h6**km±10km, **n48**, σ0°**41**/62, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.23**	**258**	*i* P	**Pg**	**23 02 35.6**	**+0.3**
DEMI				*i* S	**Sg**	**23 02 39.2**	**+0.8**
DEMI	**Demirci**	**0.23**	**258**	*i* P	**Pg**	**23 02 35.6**	**+0.3**
DEMI				*i* S	**Sg**	**23 02 39.2**	**+0.8**
GDZ	**Gediz**	**0.37**	**91**	P	**Pg**	**23 02 37.5**	**-0.4**
GDZ				S	**Sg**	**23 02 42.4**	**-0.3**
GDZ	**Gediz**	**0.37**	**91**	*i* P	**Pg**	**23 02 37.5**	**-0.4**
GDZ				*i* S	**Sg**	**23 02 42.4**	**-0.3**
TVSB	**Tavsanli**	**0.50**	**44**	*e*PG	**Pg**	**23 02 40.0**	**-0.3**
TVSB	**Tavsanli**	**0.50**	**44**	*e*Pg	**Pg**	**23 02 40.0**	**-0.3**
KULA	**Kula-Manisa**	**0.64**	**205**	*e*PG	**Pg**	**23 02 42.7**	**-0.3**
KULA	**Kula-Manisa**	**0.64**	**205**	*e*Pg	**Pg**	**23 02 42.7**	**-0.3**
MANT	**Manisa**	**0.70**	**211**	P	**Pg**	**23 02 44.0**	**-0.1**
MANT				S	**Sg**	**23 02 52.7**	**-0.5**
MANT	**Manisa**	**0.70**	**211**	*i* P	**Pg**	**23 02 44.0**	**-0.1**
MANT				*i* S	**Sg**	**23 02 52.7**	**-0.5**
KHAL	**Karahalli**	**0.81**	**152**	P	**Pg**	**23 02 46.2**	**-0.1**
KHAL				S	**Sg**	**23 02 56.8**	**-0.1**
KHAL	**Karahalli**	**0.81**	**152**	*i* P	**Pg**	**23 02 46.2**	**-0.1**
KHAL				*i* S	**Sg**	**23 02 56.8**	**-0.1**
KHL	**Karahalli**	**0.87**	**152**	*e*PG	**Pg**	**23 02 47.3**	**-0.1**
KHL	**Karahalli**	**0.87**	**152**	*e*Pg	**Pg**	**23 02 47.3**	**-0.1**
ORLT	**Orhaneli**	**0.96**	**355**	*e*PG	**Pg**	**23 02 48.9**	**-0.2**
ORLT				*e*SG	**Sb**	**23 03 02.3**	**-0.4**
ORLT	**Orhaneli**	**0.96**	**355**	*e*Pg	**Pg**	**23 02 48.9**	**-0.2**
ORLT				*e*Sg	**Sb**	**23 03 02.3**	**-0.4**
AKS	**Akhisar**	**0.96**	**257**	*e*PG	**Pg**	**23 02 47.9**	**-1.2**
AKS	**Akhisar**	**0.96**	**257**	*e*Pg	**Pg**	**23 02 47.9**	**-1.2**
BALB	**Balikesir**	**1.03**	**302**	*e*PG	**Pg**	**23 02 50.2**	**-0.3**
BALB				*e*SG	**Sb**	**23 03 04.8**	**0.0**
BALB	**Balikesir**	**1.03**	**302**	*e*Pg	**Pg**	**23 02 50.2**	**-0.3**
BALB				*e*Sg	**Sb**	**23 03 04.8**	**0.0**
KCTX	**Karacabey (Bur**	**1.27**	**337**	*e*PN	**Pb**	**23 02 55.2**	**0.0**
KCTX	**Karacabey (Bur**	**1.27**	**337**	*e*Pn	**Pb**	**23 02 55.2**	**0.0**
MDNY	**Mudanya-Bursa**	**1.28**	**356**	*e*PN	**Pg**	**23 02 55.0**	**-0.1**
MDNY				*e*SN	**Sn**	**23 03 12.9**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.28**	**356**	*e*Pn	**Pg**	**23 02 55.1**	**-0.1**
MDNY				*e*Sn	**Sn**	**23 03 12.9**	**+0.3**
CAVI	**Cavuskoy**	**1.28**	**30**	*e*PN	**Pb**	**23 02 55.3**	**0.0**
CAVI	**Cavuskoy**	**1.28**	**30**	*e*Pn	**Pb**	**23 02 55.3**	**0.0**
IZI	**Iznik**	**1.29**	**16**	*e*PN	**Pn**	**23 02 55.9**	**+0.4**
IZI	**Iznik**	**1.29**	**16**	*e*Pn	**Pn**	**23 02 55.9**	**+0.4**
GONE	**Gonen-Balikesi**	**1.40**	**313**	*e*PN	**Pn**	**23 02 56.6**	**-0.1**
GONE	**Gonen-Balikesi**	**1.40**	**313**	*e*Pn	**Pn**	**23 02 56.7**	**-0.1**
ADVT	**Abdulvahap**	**1.45**	**23**	*e*PN	**Pn**	**23 02 57.7**	**+0.2**
ADVT	**Abdulvahap**	**1.45**	**23**	*e*Pn	**Pn**	**23 02 57.7**	**+0.2**
ARMT	**Armutlu**	**1.48**	**356**	*e*PN	**Pn**	**23 02 57.7**	**-0.2**
ARMT	**Armutlu**	**1.48**	**356**	*e*Pn	**Pn**	**23 02 57.7**	**-0.2**
EDC	**Edincik**	**1.53**	**325**	*e*PN	**Pn**	**23 02 58.8**	**+0.1**
EDC	**Edincik**	**1.53**	**325**	*e*Pn	**Pn**	**23 02 58.8**	**+0.1**
GPA	**Golpazari**	**1.56**	**40**	*e*PN	**Pn**	**23 02 59.0**	**-0.1**
GPA	**Golpazari**	**1.56**	**40**	*e*Pn	**Pn**	**23 02 59.0**	**-0.1**
GULT	**Gulveren**	**1.77**	**40**	*e*PN	**Pn**	**23 03 02.3**	**+0.3**
GULT	**Gulveren**	**1.77**	**40**	*e*Pn	**Pn**	**23 03 02.3**	**+0.3**
HRT	**Hereke**	**1.80**	**16**	*e*PN	**Pn**	**23 03 02.5**	**+0.2**
HRT	**Hereke**	**1.80**	**16**	*e*Pn	**Pn**	**23 03 02.5**	**+0.2**
SPNC	**Sapanca-Adapaz**	**1.88**	**32**	*e*PN	**Pn**	**23 03 03.9**	**+0.5**
SPNC	**Sapanca-Adapaz**	**1.88**	**32**	*e*Pn	**Pn**	**23 03 03.9**	**+0.5**
SVRH	**Sivrihisar-ESK**	**1.98**	**79**	*e*PN	**Pn**	**23 03 05.5**	**+0.6**
SVRH	**Sivrihisar-ESK**	**1.98**	**79**	*e*Pn	**Pn**	**23 03 05.5**	**+0.6**
MDUB	**Mudurnu**	**2.18**	**50**	*e*PN	**Pn**	**23 03 08.4**	**+0.8**
MDUB	**Mudurnu**	**2.18**	**50**	*e*Pn	**Pn**	**23 03 08.4**	**+0.8**

*DDA **19** 23:10:45.9, 39°.09N×29°.07E, h7km, Ml3.1*
*ISCJB **19** 23:10:46.2±0.5, 39°.07N±0°.03×29°.09E±0°.03, h4km±6km, Error ellipse: s-maj=5.6km s-min=4.1km az=173.4*
*CSEM **19** 23:10:46.4±0.1, 39°.07N×29°.11E, h5km, ML3.1, Error ellipse: s-maj=2.5km s-min=2.0km az=112.0*
*ISK **19** 23:10:46.1, 39°.07N×29°.15E, h7km, MD2.9*
ISC 19 23:10:46.4±1.0, **39°.06N**±0°.02×**29°.09E**±0°.02, **h7**km±9km, **n50**, σ0°**37**/64, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.29**	**268**	P	**Pg**	**23 10 51.9**	**-0.3**
DEMI				S	**Sg**	**23 10 55.9**	**-0.2**
DEMI	**Demirci**	**0.29**	**268**	*i* P	**Pg**	**23 10 51.9**	**-0.3**
DEMI				*i* S	**Sg**	**23 10 55.9**	**-0.2**
GDZ	**Gediz**	**0.31**	**84**	P	**Pg**	**23 10 52.8**	**+0.3**
GDZ				S	**Sg**	**23 10 57.5**	**+0.9**
GDZ	**Gediz**	**0.31**	**84**	*i* P	**Pg**	**23 10 52.8**	**+0.3**
GDZ				*i* S	**Sg**	**23 10 57.5**	**+0.9**
TVSB	**Tavsanli**	**0.49**	**36**	*e*PG	**Pg**	**23 10 55.1**	**-0.8**
TVSB	**Tavsanli**	**0.49**	**36**	*e*Pg	**Pg**	**23 10 55.1**	**-0.8**
KULA	**Kula-Manisa**	**0.64**	**212**	*e*PG	**Pb**	**23 10 59.6**	**-0.3**
KULA	**Kula-Manisa**	**0.64**	**212**	*e*Pg	**Pb**	**23 10 59.6**	**-0.3**
MANT	**Manisa**	**0.70**	**217**	P	**Pg**	**23 11 00.0**	**+0.1**
MANT				S	**Sg**	**23 11 09.6**	**+0.5**
MANT	**Manisa**	**0.70**	**217**	*i* P	**Pg**	**23 10 60.0**	**+0.1**
MANT				*i* S	**Sg**	**23 11 09.7**	**+0.5**
KHAL	**Karahalli**	**0.75**	**155**	P	**Pb**	**23 11 01.4**	**-0.5**
KHAL				S	**Sb**	**23 11 12.5**	**+0.1**
KHAL	**Karahalli**	**0.75**	**155**	*i* P	**Pb**	**23 11 01.4**	**-0.5**
KHAL				*i* S	**Sb**	**23 11 12.5**	**+0.1**
KHL	**Karahalli**	**0.81**	**155**	*e*PG	**Pg**	**23 11 01.7**	**-0.2**
KHL				*e*SG	**Sb**	**23 11 13.5**	**-0.4**
KHL	**Karahalli**	**0.81**	**155**	*e*Pg	**Pg**	**23 11 01.7**	**-0.2**
KHL				*e*Sg	**Sb**	**23 11 13.5**	**-0.4**
ORLT	**Orhaneli**	**1.00**	**351**	*e*PG	**Pb**	**23 11 06.0**	**-0.1**
ORLT	**Orhaneli**	**1.00**	**351**	*e*Pg	**Pb**	**23 11 06.0**	**-0.1**
AKS	**Akhisar**	**1.01**	**260**	*e*PG	**Pn**	**23 11 07.0**	**0.0**
AKS	**Akhisar**	**1.01**	**260**	*e*Pg	**Pn**	**23 11 07.0**	**0.0**
BALB	**Balikesir**	**1.11**	**302**	*e*PN	**Pn**	**23 11 08.1**	**-0.2**
BALB				*e*SN	**Sn**	**23 11 24.4**	**+0.7**
BALB	**Balikesir**	**1.11**	**302**	*e*Pn	**Pn**	**23 11 08.1**	**-0.2**
BALB				*e*Sn	**Sn**	**23 11 24.5**	**+0.7**
CAVI	**Cavuskoy**	**1.28**	**27**	*e*PN	**Pn**	**23 11 10.5**	**-0.3**
CAVI	**Cavuskoy**	**1.28**	**27**	*e*Pn	**Pn**	**23 11 10.5**	**-0.3**
IZI	**Iznik**	**1.31**	**13**	*e*PN	**Pg**	**23 11 11.6**	**-0.1**
IZI	**Iznik**	**1.31**	**13**	*e*Pn	**Pg**	**23 11 11.6**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.32**	**353**	*e*PN	**Pn**	**23 11 11.0**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.32**	**353**	*e*Pn	**Pn**	**23 11 11.0**	**-0.3**
KCTX	**Karacabey (Bur**	**1.33**	**335**	*e*PN	**Pn**	**23 11 11.4**	**-0.1**
KCTX	**Karacabey (Bur**	**1.33**	**335**	*e*Pn	**Pn**	**23 11 11.4**	**-0.1**
BORA	**Eskisehir**	**1.34**	**52**	P	**Pn**	**23 11 11.1**	**-0.5**
BORA				S	**Sb**	**23 11 28.9**	**-0.4**
BORA	**Eskisehir**	**1.34**	**52**	*i* P	**Pn**	**23 11 11.1**	**-0.5**
BORA				*i* S	**Sb**	**23 11 28.9**	**-0.4**
ADVT	**Abdulvahap**	**1.46**	**20**	*e*PN	**Pn**	**23 11 13.4**	**+0.2**
ADVT	**Abdulvahap**	**1.46**	**20**	*e*Pn	**Pn**	**23 11 13.4**	**+0.2**
GONE	**Gonen-Balikesi**	**1.47**	**313**	*e*PN	**Pb**	**23 11 14.2**	**+0.2**
GONE	**Gonen-Balikesi**	**1.47**	**313**	*e*Pn	**Pb**	**23 11 14.2**	**+0.2**
ARMT	**Armutlu**	**1.52**	**353**	*e*PN	**Pn**	**23 11 14.2**	**+0.2**
ARMT	**Armutlu**	**1.52**	**353**	*e*Pn	**Pn**	**23 11 14.2**	**+0.2**
GPA	**Golpazari**	**1.55**	**37**	*e*PN	**Pn**	**23 11 14.5**	**0.0**
GPA	**Golpazari**	**1.55**	**37**	*e*Pn	**Pn**	**23 11 14.5**	**0.0**
EDC	**Edincik**	**1.60**	**324**	*e*PN	**Pb**	**23 11 16.1**	**-0.2**
EDC	**Edincik**	**1.60**	**324**	*e*Pn	**Pb**	**23 11 16.1**	**-0.2**
GULT	**Gulveren**	**1.76**	**38**	*e*PN	**Pn**	**23 11 17.1**	**-0.3**
GULT	**Gulveren**	**1.76**	**38**	*e*Pn	**Pn**	**23 11 17.1**	**-0.3**
HRT	**Hereke**	**1.82**	**14**	*e*PN	**Pn**	**23 11 18.2**	**0.0**
HRT	**Hereke**	**1.82**	**14**	*e*Pn	**Pn**	**23 11 18.2**	**0.0**
SPNC	**Sapanca-Adapaz**	**1.88**	**30**	*e*PN	**Pn**	**23 11 19.0**	**+0.1**
SPNC	**Sapanca-Adapaz**	**1.88**	**30**	*e*Pn	**Pn**	**23 11 19.0**	**+0.1**
SVRH	**Sivrihisar-ESK**	**1.93**	**78**	*e*PN	**Pn**	**23 11 19.3**	**-0.4**
SVRH	**Sivrihisar-ESK**	**1.93**	**78**	*e*Pn	**Pn**	**23 11 19.3**	**-0.4**
ISK	**Istanbul-Kandi**	**2.01**	**359**	*e*PN	**Pn**	**23 11 20.9**	**+0.2**
ISK	**Istanbul-Kandi**	**2.01**	**359**	*e*Pn	**Pn**	**23 11 20.9**	**+0.2**

*CSEM **19** 23:11:14.4, 36°.46N×25°.51E, h2km, ML1.2/2*
THE 19 23:11:14.4, 36°.46N×25°.51E, h2km±5km, **ML1.2**/2, **Error ellipse: s-maj=5.9km s-min=0.7km az=56.0, Dodecanese Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THR2	**Thira island,**	**0.06**	**260**	P	Pg	23 11 15.8	+0.2
THR2	**Thira island,**	**0.06**	**260**	P	Pg	23 11 15.8	+0.2
THR7	**Fira-Santorini**	**0.07**	**241**	P	Pg	23 11 16.2	+0.4
THR7	**Fira-Santorini**	**0.07**	**241**	P	Pg	23 11 16.2	+0.4
CMBO	**Columbo, Santo**	**0.08**	**280**	P	Pg	23 11 16.1	+0.1
CMBO				S	Sg	23 11 17.8	+0.7
CMBO	**Columbo, Santo**	**0.08**	**280**	P	Pg	23 11 16.1	+0.1
CMBO				S	Sg	23 11 17.8	+0.7
SANT	**Santorini**	**0.09**	**204**	P	Pg	23 11 16.6	+0.4
SANT				S	Sg	23 11 17.9	+0.4
SANT	**Santorini**	**0.09**	**204**	P	Pg	23 11 16.6	+0.4
SANT				S	Sg	23 11 17.9	+0.4
THT1	**Athinios (Pele**	**0.09**	**221**	P	Pg	23 11 16.4	+0.2
THT1				S	Sg	23 11 18.4	+1.0
THT1	**Athinios (Pele**	**0.09**	**221**	P	Pg	23 11 16.4	+0.2
THT1				S	Sg	23 11 18.4	+1.0
THR3	**Thira Island,**	**0.10**	**241**	P	Pg	23 11 16.6	+0.3
THR3	**Thira Island,**	**0.10**	**241**	P	Pg	23 11 16.6	+0.3
THR5	**Thira Island,**	**0.13**	**253**	P	Pg	23 11 17.5	+0.5
THR5	**Thira Island,**	**0.13**	**253**	P	Pg	23 11 17.5	+0.5
THR6	**Thira Island,**	**0.13**	**221**	P	Pg	23 11 17.6	+0.6
THR6	**Thira Island,**	**0.13**	**221**	P	Pg	23 11 17.6	+0.6

*DDA **19** 23:11:51.5, 39°.11N×29°.10E, h7km, Ml3.2*
*ISK **19** 23:11:51.2, 39°.08N×29°.12E, h5km, ML3.2*
*CSEM **19** 23:11:52.5±0.1, 39°.08N×29°.12E, h2km, ML3.2, Error ellipse: s-maj=2.1km s-min=1.8km az=96.0*
ISC 19 23:11:52.1±1.0, **39°.09N**±0°.02×**29°.10E**±0°.02, **h6**km±9km, **n103**, σ0°**98**/120, **6C-1D, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.30**	**90**	P	**Pg**	**23 11 57.8**	**-0.1**
GDZ				S	**Sg**	**23 12 02.2**	**+0.3**
GDZ	**Gediz**	**0.30**	**90**	*i* P	**Pg**	**23 11 57.9**	**-0.1**
GDZ				*i* S	**Sg**	**23 12 02.2**	**+0.3**
DEMI	**Demirci**	**0.30**	**261**	P	**Pg**	**23 11 58.5**	**+0.5**
DEMI				S	**Sg**	**23 12 02.8**	**+0.8**
DEMI	**Demirci**	**0.30**	**261**	*i* P	**Pg**	**23 11 58.5**	**+0.5**
DEMI				*i* S	**Sg**	**23 12 02.8**	**+0.8**
TVSB	**Tavsanli**	**0.46**	**38**	*e*PG	**Pg**	**23 12 00.8**	**-0.1**
TVSB	**Tavsanli**	**0.46**	**38**	*e*Pg	**Pg**	**23 12 00.8**	**-0.1**
KULA	**Kula-Manisa**	**0.67**	**211**	*e*PG	**Pb**	**23 12 05.4**	**-0.9**
KULA	**Kula-Manisa**	**0.67**	**211**	*e*Pg	**Pb**	**23 12 05.4**	**-0.9**
DURS	**Dursunbey**	**0.70**	**317**	P	**Pg**	**23 12 05.3**	**-0.3**
DURS				S	**Sg**	**23 12 14.4**	**-0.4**
DURS	**Dursunbey**	**0.70**	**317**	*i* P	**Pg**	**23 12 05.3**	**-0.3**
DURS				*i* S	**Sg**	**23 12 14.4**	**-0.4**
MANT	**Manisa**	**0.73**	**215**	P	**Pg**	**23 12 06.3**	**+0.1**
MANT				S	**Sg**	**23 12 16.3**	**+0.5**
MANT	**Manisa**	**0.73**	**215**	*i* P	**Pg**	**23 12 06.3**	**+0.1**
MANT				*i* S	**Sg**

GDZ	Gediz	0.34	93	*i* P		Pg	23 17 15.7	+0.2
GDZ				*i* S		Sb	23 17 21.0	-0.5
TVSB	Tavsanli	0.47	43	*e*PG		Pg	23 17 17.9	+0.1
TVSB	Tavsanli	0.47	43	*e*Pg		Pg	23 17 18.0	+0.1
KULA	Kula-Manisa	0.66	207	*e*PG		Pb	23 17 21.9	+0.2
KULA	Kula-Manisa	0.66	207	*e*Pg		Pb	23 17 21.9	+0.2
MANT	Manisa	0.72	212	P		Pb	23 17 22.8	0.0
MANT				S		Sg	23 17 32.1	-0.1
MANT	Manisa	0.72	212	*i* P		Pb	23 17 22.8	0.0
MANT				*i* S		Sg	23 17 32.1	-0.1
KHL	Karahalli	0.87	154	*e*PG		Pn	23 17 26.2	+0.1
KHL	Karahalli	0.87	154	*e*Pg		Pn	23 17 26.2	+0.1
ORLT	Orhaneli	0.94	353	*e*PG		Pb	23 17 26.5	0.0
ORLT				*e*SG		Sg	23 17 39.5	+0.3
ORLT	Orhaneli	0.94	353	*e*Pg		Pb	23 17 26.5	0.0
ORLT				*e*Sg		Sg	23 17 39.5	+0.3
AKS	Akhisar	0.99	257	*e*PG		Pn	23 17 27.8	+0.1
AKS	Akhisar	0.99	257	*e*Pg		Pn	23 17 27.8	+0.1
BALB	Balikesir	1.05	301	*e*PG		Pb	23 17 28.1	-0.1
BALB				*e*SG		Sn	23 17 43.1	+0.2
BALB	Balikesir	1.05	301	*e*Pg		Pb	23 17 28.1	-0.1
BALB				*e*Sg		Sn	23 17 43.1	+0.2
IGD	Bursa	1.16	6	*i* P		Pn	23 17 29.2	-0.9
CAVI	Cavuskoy	1.25	29	*e*PN		Pg	23 17 32.6	0.0
CAVI	Cavuskoy	1.25	29	*e*Pn		Pg	23 17 32.6	0.0
MDNY	Mudanya-Bursa	1.27	354	*e*PN		Pg	23 17 32.7	-0.1
MDNY	Mudanya-Bursa	1.27	354	*e*Pn		Pg	23 17 32.7	-0.1
IZI	Iznik	1.27	15	*e*PN		Pb	23 17 32.2	+0.1
IZI	Iznik	1.27	15	*e*Pn		Pb	23 17 32.2	+0.1
KCTX	Karacabey (Bur	1.27	336	*e*PN		Pb	23 17 32.3	+0.2
KCTX				*e*SN		Sg	23 17 50.4	+0.8
KCTX	Karacabey (Bur	1.27	336	*e*Pn		Pb	23 17 32.3	+0.2
KCTX				*e*Sn		Sg	23 17 50.4	+0.8
BORA	Eskisehir	1.33	54	P		Pg	23 17 34.1	0.0
BORA	Eskisehir	1.33	54	*i* P		Pg	23 17 34.1	0.0
GONE	Gonen-Balikesi	1.41	312	*e*PN		Pb	23 17 34.7	+0.3
GONE	Gonen-Balikesi	1.41	312	*e*Pn		Pb	23 17 34.7	+0.3
ADVT	Abdulvahap	1.43	22	*e*PN		Pg	23 17 35.5	-0.4
ADVT	Abdulvahap	1.43	22	*e*Pn		Pg	23 17 35.5	-0.4
ARMT	Armutlu	1.46	354	*e*PN		Pb	23 17 35.4	+0.1
ARMT	Armutlu	1.46	354	*e*Pn		Pb	23 17 35.4	+0.1
EDC	Edincik	1.54	324	*e*PN		Pb	23 17 36.9	+0.3
EDC	Edincik	1.54	324	*e*Pn		Pb	23 17 36.9	+0.3
GULT	Gulveren	1.74	40	*e*PN		Pb	23 17 40.3	+0.2
GULT	Gulveren	1.74	40	*e*Pn		Pb	23 17 40.3	+0.2
HRT	Hereke	1.78	15	*e*PN		Pb	23 17 40.6	-0.1
HRT	Hereke	1.78	15	*e*Pn		Pb	23 17 40.6	-0.1

*ISCJB **19** 23:20:51.9±0.5, 39°.11N±0°.04×29°.01E±0°.04, h1km±7km,*
Error ellipse: s-maj=6.4km s-min=4.5km az=15.5
*DDA **19** 23:20:51.9, 39°.13N×29°.02E, h7km, Ml2.5*
*ISK **19** 23:20:51.1, 39°.06N×29°.05E, h5km, MD2.7*
*CSEM **19** 23:20:52.1±0.1, 39°.10N×29°.01E, h5km, ML2.5, Error*
ellipse: s-maj=3.0km s-min=2.7km az=105.0
ISC 19 23:20:52.3±1.0,**39°.08N**±0°.03×**29°.01E**±0°.02,**h7**km±9km,
n40, σ0°.**56**/52,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.23	261	P	Pg	23 20 57.2	+0.2
DEMI				S	Sg	23 21 00.6	+0.4
DEMI	Demirci	0.23	261	*i* P	Pg	23 20 57.2	+0.2
DEMI				*i* S	Sg	23 21 00.6	+0.4
GDZ	Gediz	0.36	89	P	Pg	23 20 59.4	-0.1
GDZ				S	Sg	23 21 05.0	+0.7
GDZ	Gediz	0.36	89	*i* P	Pg	23 20 59.4	-0.1
GDZ				*i* S	Sg	23 21 05.0	+0.7
TVSB	Tavsanli	0.51	43	*e*PG	Pg	23 21 01.1	-1.0
TVSB	Tavsanli	0.51	43	*e*Pg	Pg	23 21 01.1	-1.0
KULA	Kula-Manisa	0.63	206	*e*PG	Pg	23 21 03.5	-1.0
KULA	Kula-Manisa	0.63	206	*e*Pg	Pg	23 21 03.5	-1.0
DURS	Dursunbey	0.67	321	P	Pg	23 21 04.0	-1.2
DURS	Dursunbey	0.67	321	*i* P	Pg	23 21 04.0	-1.2
MANT	Manisa	0.69	211	P	Pb	23 21 06.1	-0.7
MANT	Manisa	0.69	211	*i* P	Pb	23 21 06.1	-0.7
KHAL	Karahalli	0.80	152	P	Pb	23 21 08.7	0.0
KHAL				S	Sb	23 21 20.0	+0.2
KHAL	Karahalli	0.80	152	*i* P	Pb	23 21 08.7	0.0
KHAL				*i* S	Sb	23 21 20.0	+0.2
AKS	Akhisar	0.96	258	*e*PG	Pg	23 21 09.9	-0.8
AKS	Akhisar	0.96	258	*e*Pg	Pg	23 21 09.9	-0.8
ORLT	Orhaneli	0.97	355	*e*PG	Pg	23 21 10.4	-0.5
ORLT	Orhaneli	0.97	355	*e*Pg	Pg	23 21 10.4	-0.5
BALB	Balikesir	1.04	303	*e*PG	Pb	23 21 12.5	-0.2
BALB				*e*SG	Sb	23 21 27.3	+0.8
BALB	Balikesir	1.04	303	*e*Pg	Pb	23 21 12.5	-0.2
BALB				*e*Sg	Sb	23 21 27.3	+0.8
KCTX	Karacabey (Bur	1.29	337	*e*PN	Pn	23 21 16.9	+0.2
KCTX	Karacabey (Bur	1.29	337	*e*Pn	Pn	23 21 17.0	+0.2
CAVI	Cavuskoy	1.29	30	*e*PN	Pg	23 21 16.4	-0.7
CAVI				*e*SN	Sn	23 21 34.4	+0.1
CAVI	Cavuskoy	1.29	30	*e*Pn	Pg	23 21 16.4	-0.7
CAVI				*e*Sn	Sn	23 21 34.4	+0.1
MDNY	Mudanya-Bursa	1.29	356	*e*PN	Pn	23 21 16.8	+0.1
MDNY				*e*SN	Sn	23 21 34.8	+0.6
MDNY	Mudanya-Bursa	1.29	356	*e*Pn	Pn	23 21 16.8	+0.1
MDNY				*e*Sn	Sn	23 21 34.8	+0.6
IZI	Iznik	1.30	16	*e*PN	Pb	23 21 16.9	-0.2
IZI	Iznik	1.30	16	*e*Pn	Pb	23 21 17.0	-0.2
GONE	Gonen-Balikesi	1.41	314	*e*PN	Pn	23 21 18.3	-0.1
GONE	Gonen-Balikesi	1.41	314	*e*Pn	Pn	23 21 18.3	-0.1
ADVT	Abdulvahap	1.46	22	*e*PN	Pn	23 21 18.8	-0.3
ADVT	Abdulvahap	1.46	22	*e*Pn	Pn	23 21 18.8	-0.3
ARMT	Armutlu	1.49	356	*e*PN	Pn	23 21 19.3	-0.2
ARMT	Armutlu	1.49	356	*e*Pn	Pn	23 21 19.3	-0.2
EDC	Edincik	1.54	325	*e*PN	Pn	23 21 20.6	+0.4
EDC	Edincik	1.54	325	*e*Pn	Pn	23 21 20.6	+0.4
GULT	Gulveren	1.78	40	*e*PN	Pn	23 21 23.5	0.0
GULT	Gulveren	1.78	40	*e*Pn	Pn	23 21 23.5	0.0
HRT	Hereke	1.81	16	*e*PN	Pn	23 21 24.1	+0.1
HRT	Hereke	1.81	16	*e*Pn	Pn	23 21 24.1	+0.1

*ISK **19** 23:23:30.0, 39°.10N×29°.08E, h5km, ML2.7*
*ISCJB **19** 23:23:31.7±0.4, 39°.08N±0°.03×29°.04E±0°.03, h9km, Error*
ellipse: s-maj=4.6km s-min=3.6km az=156.1
*DDA **19** 23:23:31.1, 39°.11N×28°.99E, h7km, Ml2.7*
*CSEM **19** 23:23:31.3±0.1, 39°.09N×29°.07E, h2km, ML2.7, Error*
ellipse: s-maj=3.5km s-min=2.6km az=125.0
ISC 19 23:23:31.5±0.8,**39°.10N**±0°.03×**29°.05E**±0°.02,**h9**km,**n68,**
σ0°.**85**/76,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.27	258	P	Pg	23 23 36.0	-0.9
DEMI				S	Sg	23 23 39.3	-1.2
DEMI	Demirci	0.27	258	*i* P	Pg	23 23 36.0	-0.9
DEMI				*i* S	Sg	23 23 39.3	-1.2
GDZ	Gediz	0.33	91	P	Pg	23 23 38.7	+0.5
GDZ				S	Sb	23 23 44.4	-0.8
GDZ	Gediz	0.33	91	*i* P	Pg	23 23 38.7	+0.5
GDZ				*i* S	Sb	23 23 44.4	-0.8
TVSB	Tavsanli	0.47	42	*e*PG	Pg	23 23 40.4	-0.4
TVSB	Tavsanli	0.47	42	*e*Pg	Pg	23 23 40.4	-0.4
KULA	Kula-Manisa	0.66	208	*e*PG	Pg	23 23 44.3	+0.1
KULA	Kula-Manisa	0.66	208	*e*Pg	Pg	23 23 44.3	+0.1
MANT	Manisa	0.72	213	P	Pg	23 23 45.2	-0.2
MANT	Manisa	0.72	213	*i* P	Pg	23 23 45.2	-0.2
ORLT	Orhaneli	0.95	353	*e*PG	Pg	23 23 49.1	-0.8
ORLT	Orhaneli	0.95	353	*e*Pg	Pg	23 23 49.1	-0.8
AKS	Akhisar	0.99	258	*e*PG	Pg	23 23 50.4	-0.1
AKS	Akhisar	0.99	258	*e*Pg	Pg	23 23 50.4	-0.1
BALB	Balikesir	1.06	301	*e*PG	Pg	23 23 51.7	-0.1
BALB				*e*SG	Sn	23 24 07.4	0.0
BALB	Balikesir	1.06	301	*e*Pg	Pg	23 23 51.7	-0.1
BALB				*e*Sg	Sn	23 24 07.4	0.0
CAVI	Cavuskoy	1.26	29	*e*PN	Pn	23 23 54.9	-0.4
CAVI				*e*SN	Sn	23 24 13.2	+0.8
CAVI	Cavuskoy	1.26	29	*e*Pn	Pn	23 23 54.9	-0.4
CAVI				*e*Sn	Sn	23 24 13.2	+0.8
MDNY	Mudanya-Bursa	1.28	354	*e*PN	Pn	23 23 55.6	+0.2
MDNY	Mudanya-Bursa	1.28	354	*e*Pn	Pn	23 23 55.7	+0.2
KCTX	Karacabey (Bur	1.28	335	*e*PN	Pn	23 23 55.4	-0.3
KCTX	Karacabey (Bur	1.28	335	*e*Pn	Pn	23 23 55.4	-0.3
DENT	Denizli	1.34	181	*e*PN	Pn	23 23 56.4	0.0
DENT	Denizli	1.34	181	*e*Pn	Pn	23 23 56.4	0.0
GONE	Gonen-Balikesi	1.42	312	*e*PN	Pb	23 23 58.3	+0.2
GONE	Gonen-Balikesi	1.42	312	*e*Pn	Pb	23 23 58.3	+0.2
ADVT	Abdulvahap	1.44	21	*e*PN	Pn	23 23 58.0	+0.3
ADVT	Abdulvahap	1.44	21	*e*Pn	Pn	23 23 58.0	+0.3
AYDB	Zeytinkoy-Aydi	1.47	219	*e*PN	Pb	23 23 59.1	+0.1
AYDB	Zeytinkoy-Aydi	1.47	219	*e*Pn	Pb	23 23 59.1	+0.1
ARMT	Armutlu	1.47	354	*e*PN	Pb	23 23 59.1	0.0
ARMT	Armutlu	1.47	354	*e*Pn	Pb	23 23 59.1	0.0
EDC	Edincik	1.55	324	*e*PN	Pb	23 24 00.4	0.0
EDC	Edincik	1.55	324	*e*Pn	Pb	23 24 00.4	0.0
DKL	Dikili	1.67	270	*e*PN	Pn	23 24 02.0	+1.1
DKL	Dikili	1.67	270	*e*Pn	Pn	23 24 02.0	+1.1
GULT	Gulveren	1.75	40	*e*PN	Pn	23 24 02.5	+0.4
GULT	Gulveren	1.75	40	*e*Pn	Pn	23 24 02.5	+0.4
HRT	Hereke	1.79	15	*e*PN	Pn	23 24 03.3	+0.7
HRT	Hereke	1.79	15	*e*Pn	Pn	23 24 03.3	+0.7
MRMT	Marmara Adasi	1.88	324	*e*PN	Pn	23 24 04.8	+1.0
MRMT	Marmara Adasi	1.88	324	*e*Pn	Pn	23 24 04.8	+1.0
ISK	Istanbul-Kandi	1.97	0	*e*PN	Pn	23 24 05.6	+0.6
ISK	Istanbul-Kandi	1.97	0	*e*Pn	Pn	23 24 05.6	+0.6
YER	Yerkesik	2.05	197	*e*PN	Pn	23 24 06.7	+0.5
YER	Yerkesik	2.05	197	*e*Pn	Pn	23 24 06.7	+0.5
BGKT	Bogazkoy	2.09	354	*e*PN	Pn	23 24 07.7	+1.0
BGKT	Bogazkoy	2.09	354	*e*Pn	Pn	23 24 07.7	+1.0
RKY	Sarkoy-Tekirda	2.15	318	*e*PN	Pn	23 24 08.8	+1.3
RKY	Sarkoy-Tekirda	2.15	318	*e*Pn	Pn	23 24 08.8	+1.3
MDUB	Mudurnu	2.15	50	*e*PN	Pn	23 24 08.3	+0.7
MDUB	Mudurnu	2.15	50	*e*Pn	Pn	23 24 08.3	+0.7
KLYT	Kilyos	2.15	360	*e*PN	Pn	23 24 08.5	+1.0
KLYT	Kilyos	2.15	360	*e*Pn	Pn	23 24 08.5	+1.0
CTKS	Kestanelik-??a	2.18	349	*e*PN	Pn	23 24 08.8	+0.9
CTKS	Kestanelik-??a	2.18	349	*e*Pn	Pn	23 24 08.8	+0.9
LPK	Lapseki	2.18	306	*e*PN	Pn	23 24 09.3	+1.4
LPK	Lapseki	2.18	306	*e*Pn	Pn	23 24 09.3	+1.4
TKR	Tekirdag	2.22	329	*e*PN	Pn	23 24 09.6	+1.1
TKR	Tekirdag	2.22	329	*e*Pn	Pn	23 24 09.6	+1.1
EZN	Ezine	2.23	290	*e*PN	Pn	23 24 10.4	+1.7
EZN	Ezine	2.23	290	*e*Pn	Pn	23 24 10.4	+1.7
GELI	Tayfur-Gelibol	2.38	304	*e*PN	Pn	23 24 12.2	+1.6
GELI	Tayfur-Gelibol	2.38	304	*e*Pn	Pn	23 24 12.2	+1.6
CTYL	Yalikoy Yolu	2.45	346	*e*PN	Pn	23 24 13.0	+1.4
CTYL	Yalikoy Yolu	2.45	346	*e*Pn	Pn	23 24 13.0	+1.4
ERIK	Erikli-Kesan	2.51	310	*e*PN	Pn	23 24 13.8	+1.4
ERIK	Erikli-Kesan	2.51	310	*e*Pn	Pn	23 24 13.8	+1.4

*ISK **19** 23:27:08.8, 39°.15N×29°.14E, h5km, ML3.2*
*ISCJB **19** 23:27:09.6±0.4, 39°.14N±0°.02×29°.11E±0°.02, h5km±3km,*
Error ellipse: s-maj=2.9km s-min=2.7km az=158.4
*THE **19** 23:27:09.6, 39°.12N×29°.12E, h2km±3km, ML3.0/3, Error*
ellipse: s-maj=4.1km s-min=1.6km az=101.0
*CSEM **19** 23:27:09.7±0.1, 39°.14N×29°.12E, h2km, ML3.7, Error*
ellipse: s-maj=2.2km s-min=1.9km az=85.0
*DDA **19** 23:27:09.1, 39°.15N×29°.14E, h7km, Ml3.7*
ISC 19 23:27:09.7±1.0,**39°.14N**±0°.02×**29°.13E**±0°.02,**h6**km±9km,
n141, σ0°.**76**/175,**5C-5D,Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	Gediz	0.28	100	P	Pg	23 27 15.2	+0.1
GDZ				S	Sg	23 27 19.0	+0.2
GDZ	Gediz	0.28	100	*i* P	Pg	23 27 15.2	+0.1
GDZ				*i* S	Sg	23 27 19.0	+0.2
DEMI	Demirci	0.34	254	P	Pg	23 27 16.5	+0.3
DEMI				S	Sg	23 27 21.3	+0.6
DEMI	Demirci	0.34	254	*i* P	Pg	23 27 16.5	+0.3
DEMI				*i* S	Sg	23 27 21.3	+0.6
TVSB	Tavsanli	0.41	39	*e*PG	Pg	23 27 17.6	+0.1
TVSB	Tavsanli	0.41	39	*e*Pg	Pg	23 27 17.6	+0.1
DURS	Dursunbey	0.69	313	P	Pg	23 27 23.0	+0.1
DURS	Dursunbey	0.69	313	*i* P	Pg	23 27 23.0	+0.1
DURS				*i* S	Sn	23 27 37.1	0.0
KULA	Kula-Manisa	0.72	211	*e*PG	Pg	23 27 23.4	-0.1
KULA	Kula-Manisa	0.72	211	P	Pg	23 27 23.1	-0.4
KULA				S	Sg	23 27 32.4	-0.5
KULA	Kula-Manisa	0.72	211	P	Pg	23 27 23.1	-0.4
KULA	Kula-Manisa	0.72	211	*e*Pg	Pg	23 27 23.4	-0.1
KULA				S	Sg	23 27 32.4	-0.5
MANT	Manisa	0.78	215	P	Pg	23 27 24.4	-0.4
MANT				S	Sg	23 27 34.4	-0.6
MANT	Manisa	0.78	215	*i* P	Pg	23 27 24.4	-0.4
MANT				*i* S	Sg	23 27 34.4	-0.6
KHAL	Karahalli	0.81	160	P	Pg	23 27 25.1	-0.2
KHAL				S	Sg	23 27 35.6	-0.3
KHAL	Karahalli	0.81	160	*i* P	Pg	23 27 25.1	-0.2
KHAL				*i* S	Sg	23 27 35.6	-0.3
KHL	Karahalli	0.87	159	*e*PG	Pg	23 27 26.7	+0.4
KHL	Karahalli	0.87	159	*e*Pg	Pg	23 27 26.7	+0.4
ORLT	Orhaneli	0.93	349	*e*PG	Pg	23 27 27.6	+0.1
ORLT				*e*SG	Sb	23 27 41.2	+0.4
ORLT	Orhaneli	0.93	349	*e*Pg	Pg	23 27 27.6	+0.1
ORLT				*e*Sg	Sb	23 27 41.2	+0.4
AKHS	Akhisar	1.06	256	P	Pg	23 27 29.8	-0.1
AKHS	Akhisar	1.06	256	*i* P	Pg	23 27 29.8	-0.1
AKS	Akhisar	1.06	256	*e*PG	Pb	23 27 30.6	+0.2
AKS				*e*SG	Sn	23 27 46.8	+0.6
AKS	Akhisar	1.06	256	*e*Pg	Pb	23 27 30.6	+0.2
AKS				*e*Sg	Sn	23 27 46.8	+0.6
BALB	Balikesir	1.09	298	*e*PN	Pb	23 27 31.0	0.0
BALB				*e*SN	Sn	23 27 46.4	-0.6
BALB	Balikesir	1.09	298	*e*Pn	Pb	23 27 31.0	0.0
BALB				*e*Sn	Sn	23 27 46.4	-0.6
IGD	Bursa	1.13	3	*i* P	Pg	23 27 30.0	-1.3
IGD				*i* S	Sg	23 27 45.3	-0.7
CAVI	Cavuskoy	1.20	27	*e*PN	Pg	23 27 32.5	-0.2
CAVI	Cavuskoy	1.20	27	*e*Pn	Pg	23 27 32.5	-0.2
IZI	Iznik	1.23	12	*e*PN	Pg	23 27 33.0	-0.2
IZI	Iznik	1.23	12	*e*Pn	Pg	23 27 33.0	-0.2
MDNY	Mudanya-Bursa	1.25	351	*e*PN	Pg	23 27 33.4	-0.2
MDNY				*e*SN	Sn	23 27 51.6	+0.8
MDNY	Mudanya-Bursa	1.25	351	*e*Pn	Pg	23 27 33.4	-0.2
MDNY				*e*Sn	Sn	23 27 51.6	+0.8
BORA	Eskisehir	1.27	54	P	Pg	23 27 33.3	-0.6
BORA	Eskisehir	1.27	54	*i* P	Pg	23 27 33.3	-0.6
KCTX	Karacabey (Bur	1.28	332	*e*PN	Pg	23 27 34.2	0.0
KCTX	Karacabey (Bur	1.28	332	*e*Pn	Pg	23 27 34.2	0.0
GEMT	Gemlik	1.30	2	*e*PN	Pn	23 27 34.5	+0.1
GEMT	Gemlik	1.30	2	*e*Pn	Pn	23 27 34.5	+0.1
BALY	Balya	1.32	298	P	Pn	23 27 34.0	-0.7
BALY	Balya	1.32	298	*i* P	Pn	23 27 34.0	-0.7
ADVT	Abdulvahap	1.38	20	*e*PN	Pb	23 27 35.9	+0.1
ADVT	Abdulvahap	1.38	20	*e*Pn	Pb	23 27 35.9	+0.1
DENT	Denizli	1.38	183	*e*PN	Pg	23 27 36.7	+0.5
DENT	Denizli	1.38	183	*e*Pn	Pg	23 27 36.7	+0.5
ESKT	Eskisehir	1.39	73	*i* P	Pg	23 27 36.7	+0.4
SEYT	Eskypehyr	1.39	73	P	Pg	23 27 36.7	+0.4
GONE	Gonen-Balikesi	1.44	310	*e*PN	Pb	23 27 36.7	-0.2
GONE	Gonen-Balikesi	1.44	310	*e*Pn	Pb	23 27 36.7	-0.2
ARMT	Armutlu	1.44	352	*e*PN	Pb	23 27 36.8	-0.2
ARMT	Armutlu	1.44	352	*e*Pn	Pb	23 27 36.8	-0.2
DNZL	Cakiroluk	1.45	183	P	Pn	23 27 36.4	-0.2
DNZL	Cakiroluk	1.45	183	*i* P	Pn	23 27 36.4	-0.2
GPA	Golpazari	1.47	38	*e*PN	Pn	23 27 37.1	+0.3
GPA	Golpazari	1.47	38	*e*Pn	Pn	23 27 37.1	+0.3
BOLV	Bolvadin	1.48	106	P	Pn	23 27 37.2	+0.2
BOLV				S	Sn	23 27 57.1	+0.4
BOLV	Bolvadin	1.48	106	*i* P	Pn	23 27 37.2	+0.2
BOLV				*i* S	Sn	23 27 57.1	+0.4
AYDB	Zeytinkoy-Aydi	1.54	220	*e*PN	Pb	23 27 38.8	+0.2
AYDB	Zeytinkoy-Aydi	1.54	220	*e*Pn	Pb	23 27 38.8	+0.2
EDC	Edincik	1.56	321	*e*PN	Pb	23 27 38.6	-0.3
EDC	Edincik	1.56	321	*e*Pn	Pb	23 27 38.6	-0.3
GULT	Gulveren	1.68	39	*e*PN	Pn	23 27 40.3	+0.6
GULT	Gulveren	1.68	39	*e*Pn	Pn	23 27 40.3	+0.6
ISP	Isparta	1.71	140	*e*PN	Pn	23 27 40.3	+0.2
ISP	Isparta	1.71	140	*i* P	Pb	23 27 41.5	0.0
ISP				S	Sb	23 28 03.5	+0.2
ISP	Isparta	1.71	140	P	Pn	23 27 37.9	-2.2
ISP	Isparta	1.71	140	P	Pn	23 27 37.9	-2.2
ISP	Isparta	1.71	140	*e*Pn	Pn	23 27 40.3	+0.2
ISP				S	Sb	23 28 03.5	+0.2
DKL	Dikili	1.73	269	*e*PN	Pb	23 27 41.7	-0.2
DKL	Dikili	1.73	269	*e*Pn	Pb	23 27 41.7	-0.2
HRT	Hereke	1.73	14	*e*PN	Pn	23 27 40.8	+0.4
HRT	Hereke	1.73	14	*e*Pn	Pn	23 27 40.8	+0.4
SPNC	Sapanca-Adapaz	1.79	30	*e*PN	Pn	23 27 41.7	+0.5
SPNC	Sapanca-Adapaz	1.79	30	*e*Pn	Pn	23 27 41.7	+0.5
MRMT	Marmara Adasi	1.88	322	*e*PN	Pn	23 27 43.4	+0.9
MRMT	Marmara Adasi	1.88	322	*e*Pn	Pn	23 27 43.4	+0.9
SVRH	Sivrihisar-ESK	1.88	80	*e*PN	Pn	23 27 43.6	+1.1
SVRH	Sivrihisar-ESK	1.88	80	*e*Pn	Pn	23 27 43.6	+1.1
KRBG	Karabiga-Canak	1.89	312	*e*PN	Pn	23 27 43.6	+1.1
KRBG	Karabiga-Canak	1.89	312	*e*Pn	Pn	23 27 43.6	+1.1
ISK	Istanbul-Kandi	1.93	358	*e*PN	Pn	23 27 43.8	+0.8
ISK	Istanbul-Kandi	1.93	358	P	Pn	23 27 41.6	-1.4
ISK				S	Sn	23 28 07.0	-0.6
ISK	Istanbul-Kandi	1.93	358	P	Pn	23 27 41.6	-1.4
ISK	Istanbul-Kandi	1.93	358	*e*Pn	Pn	23 27 43.8	+0.8
ISK				S	Sn	23 28 07.0	-0.6
GLHS	Gihisar (BURDU	2.00	172	*e*PN	Pn	23 27 45.3	+1.2
GLHS	Gihisar (BURDU	2.00	172	*e*Pn	Pn	23 27 45.3	+1.2
BGKT	Bogazkoy	2.06	352	*e*PN	Pn	23 27 45.7	+0.8
BGKT	Bogazkoy	2.06	352	*e*Pn	Pn	23 27 45.7	+0.8
MDUB	Mudurnu	2.08	49	*e*PN	Pn	23 27 46.1	+1.0
MDUB	Mudurnu	2.08	49	*e*Pn	Pn	23 27 46.2	+1.0
YER	Yerkesik	2.11	199	*e*PN	Pn	23 27 47.1	+1.5
YER	Yerkesik	2.11	199	*e*Pn	Pn	23 27 47.1	+1.5
KLYT	Kilyos	2.12	358	*e*PN	Pn	23 27 46.9	+1.3
KLYT	Kilyos	2.12	358	*e*Pn	Pn	23 27 46.9	+1.3
CTKS	Kestanelik-??a	2.15	347	*e*PN	Pn	23 27 46.9	+0.8
CTKS	Kestanelik-??a	2.15	347	*e*Pn	Pn	23 27 46.9	+0.8
KIZT	Kizilcal	2.16	96	*e*PN	Pn	23 27 47.8	+1.5
KIZT	Kizilcal	2.16	96	*e*Pn	Pn	23 27 47.8	+1.5
RKY	Sarkoy-Tekirda	2.16	317	*e*PN	Pn	23 27 47.3	+1.1
RKY	Sarkoy-Tekirda	2.16	317	*e*Pn	Pn	23 27 47.3	+1.1
LPK	Lapseki	2.21	305	*e*PN	Pn	23 27 48.3	+1.4
LPK	Lapseki	2.21	305	*e*Pn	Pn	23 27 48.3	+1.4
SUTC	Sutluce-Ispart	2.21	138	*e*PN	Pb	23 27 49.0	-1.2
SUTC	Sutluce-Ispart	2.21	138	*e*Pn	Pb	23 27 49.0	-1.2
TKR	Tekirdag	2.22	327	*e*PN	Pn	23 27 48.0	+1.0
TKR	Tekirdag	2.22	327	*e*Pn	Pn	23 27 48.0	+1.0
PRK	Paraskevi	2.23	274	P	Pn	23 27 46.5	-0.6
PRK				S	Sn	23 28 15.5	+0.6
PRK	Paraskevi	2.23	274	P	Pn	23 27 46.5	-0.6
PRK				S	Sn	23 28 15.5	+0.6
CRLT	Corlu	2.26	332	*e*PN	Pn	23 27 48.7	+1.1

DEMI				S		Sg		23 31 08.2	-0.2
DEMI	**Demirci**	**0.30**	**261**	*i* P		**Pg**		**23 31 04.3**	**0.0**
DEMI				*i* S		**Sg**		**23 31 08.2**	**-0.2**
TVSB	**Tavsanli**	**0.45**	**38**	*e*PG		**Pg**		**23 31 07.8**	**+0.6**
TVSB				*e*SG		**Sg**		**23 31 13.6**	**+0.4**
TVSB	**Tavsanli**	**0.45**	**38**	*e*Pg		**Pg**		**23 31 07.8**	**+0.6**
TVSB				*e*Sg		**Sg**		**23 31 13.6**	**+0.4**
KULA	**Kula-Manisa**	**0.67**	**211**	*e*PG		**Pg**		**23 31 11.7**	**+0.4**
KULA	**Kula-Manisa**	**0.67**	**211**	*e*Pg		**Pg**		**23 31 11.7**	**+0.4**
MANT	**Manisa**	**0.73**	**215**	P		**Pg**		**23 31 12.5**	**-0.1**
MANT				S		**Sg**		**23 31 22.1**	**0.0**
MANT	**Manisa**	**0.73**	**215**	*i* P		**Pg**		**23 31 12.5**	**-0.1**
MANT				*i* S		**Sg**		**23 31 22.1**	**0.0**
KHAL	**Karahalli**	**0.78**	**157**	P		**Pn**		**23 31 16.5**	**+0.3**
KHAL				S		**Sb**		**23 31 25.2**	**-0.3**
KHAL	**Karahalli**	**0.78**	**157**	*i* P		**Pn**		**23 31 16.5**	**+0.3**
KHAL				*i* S		**Sb**		**23 31 25.2**	**-0.3**
KHL	**Karahalli**	**0.84**	**157**	*e*PG		**Pb**		**23 31 15.4**	**-0.1**
KHL	**Karahalli**	**0.84**	**157**	*e*Pg		**Pb**		**23 31 15.4**	**-0.1**
ORLT	**Orhaneli**	**0.96**	**351**	*e*PG		**Pg**		**23 31 16.7**	**-0.2**
ORLT	**Orhaneli**	**0.96**	**351**	*e*Pg		**Pg**		**23 31 16.7**	**-0.2**
AKHS	**Akhisar**	**1.02**	**258**	P		**Pg**		**23 31 18.1**	**0.0**
AKHS				S		**Sb**		**23 31 32.0**	**-0.4**
AKHS	**Akhisar**	**1.02**	**258**	*i* P		**Pg**		**23 31 18.1**	**0.0**
AKHS				*i* S		**Sb**		**23 31 32.0**	**-0.4**
BALB	**Balikesir**	**1.09**	**300**	*e*PG		**Pg**		**23 31 19.4**	**0.0**
BALB				*e*SG		**Sb**		**23 31 34.4**	**0.0**
BALB	**Balikesir**	**1.09**	**300**	*e*Pg		**Pg**		**23 31 19.4**	**0.0**
BALB				*e*Sg		**Sb**		**23 31 34.4**	**0.0**
IGD	**Bursa**	**1.17**	**4**	*i* P		**Pg**		**23 31 19.7**	**-1.2**
IGD				*i* S		**Sb**		**23 31 36.5**	**-0.2**
CAVI	**Cavuskoy**	**1.25**	**27**	*e*PN		**Pg**		**23 31 22.5**	**+0.2**
CAVI	**Cavuskoy**	**1.25**	**27**	*e*Pn		**Pg**		**23 31 22.5**	**+0.2**
IZI	**Iznik**	**1.27**	**13**	*e*PN		**Pg**		**23 31 23.0**	**+0.1**
IZI	**Iznik**	**1.27**	**13**	*e*Pn		**Pg**		**23 31 23.0**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.29**	**353**	*e*PN		**Pb**		**23 31 23.0**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.29**	**353**	*e*Pn		**Pb**		**23 31 23.0**	**-0.1**
KCTX	**Karacabey (Bur**	**1.30**	**334**	*e*PN		**Pb**		**23 31 23.4**	**-0.1**
KCTX	**Karacabey (Bur**	**1.30**	**334**	*e*Pn		**Pb**		**23 31 23.4**	**-0.1**
BORA	**Eskisehir**	**1.31**	**53**	P		**Pb**		**23 31 23.6**	**+0.1**
BORA				S		**Sn**		**23 31 42.0**	**+0.7**
BORA	**Eskisehir**	**1.31**	**53**	*i* P		**Pb**		**23 31 23.6**	**+0.1**
BORA				*i* S		**Sn**		**23 31 42.0**	**+0.7**
ADVT	**Abdulvahap**	**1.43**	**20**	*e*PN		**Pb**		**23 31 25.4**	**-0.1**
ADVT	**Abdulvahap**	**1.43**	**20**	*e*Pn		**Pb**		**23 31 25.4**	**-0.1**
ARMT	**Armutlu**	**1.48**	**353**	*e*PN		**Pb**		**23 31 26.2**	**-0.3**
ARMT	**Armutlu**	**1.48**	**353**	*e*Pn		**Pb**		**23 31 26.2**	**-0.3**
GULT	**Gulveren**	**1.73**	**39**	*e*PN		**Pb**		**23 31 29.9**	**-0.8**
GULT	**Gulveren**	**1.73**	**39**	*e*Pn		**Pb**		**23 31 29.9**	**-0.8**

*DDA **19** 23:32:22.2, 39°.06N×29°.00E, h7km, Ml2.5*
*ISCJB **19** 23:32:24.0±0.5, 39°.03N±0°.03×28°.97E±0°.05, h9km, Error ellipse: s-maj=5.5km s-min=4.4km az=140.5*
*CSEM **19** 23:32:23.8±0.2, 39°.04N×29°.00E, h2km, MD2.6, Error ellipse: s-maj=5.6km s-min=4.6km az=89.0*
*ISK **19** 23:32:24.0, 39°.06N×29°.00E, h6km, MD2.6*
ISC 19 23:32:22.9±0.9, **38°.97N**±0°.03×**28°.98E**±0°.03, **h9**km, **n32, σ0**s**47/38, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.22**	**291**	P	**Pg**	**23 32 27.1**	**-0.3**
DEMI				S	**Sg**	**23 32 30.3**	**-0.2**
DEMI	**Demirci**	**0.22**	**291**	*i* P	**Pg**	**23 32 27.1**	**-0.3**
DEMI				*i* S	**Sg**	**23 32 30.3**	**-0.2**
GDZ	**Gediz**	**0.41**	**72**	P	**Pg**	**23 32 29.7**	**-1.2**
GDZ	**Gediz**	**0.41**	**72**	*i* P	**Pg**	**23 32 29.7**	**-1.2**
KULA	**Kula-Manisa**	**0.52**	**209**	*e*PG	**Pn**	**23 32 36.2**	**-0.3**
KULA	**Kula-Manisa**	**0.52**	**209**	*e*Pg	**Pn**	**23 32 36.2**	**-0.3**
MANT	**Manisa**	**0.58**	**215**	P	**Pb**	**23 32 35.4**	**+0.1**
MANT	**Manisa**	**0.58**	**215**	*i* P	**Pb**	**23 32 35.4**	**+0.1**
TVSB	**Tavsanli**	**0.61**	**37**	*e*PG	**Pg**	**23 32 34.7**	**-0.1**
TVSB	**Tavsanli**	**0.61**	**37**	*e*Pg	**Pg**	**23 32 34.7**	**-0.1**
KHL	**Karahalli**	**0.77**	**146**	*e*PG	**Pn**	**23 32 40.8**	**+0.8**
KHL				*e*SG	**Sn**	**23 32 52.4**	**+0.7**
KHL	**Karahalli**	**0.77**	**146**	*e*Pg	**Pn**	**23 32 40.8**	**+0.8**
KHL				*e*Sg	**Sn**	**23 32 52.4**	**+0.7**
ORLT	**Orhaneli**	**1.08**	**357**	*e*PG	**Pg**	**23 32 43.3**	**-0.4**
ORLT	**Orhaneli**	**1.08**	**357**	*e*Pg	**Pg**	**23 32 43.3**	**-0.4**
BALB	**Balikesir**	**1.09**	**309**	*e*PG	**Pb**	**23 32 44.2**	**+0.3**
BALB				*e*SG	**Sn**	**23 32 59.1**	**-0.4**
BALB	**Balikesir**	**1.09**	**309**	*e*Pg	**Pb**	**23 32 44.2**	**+0.3**
BALB				*e*Sg	**Sn**	**23 32 59.1**	**-0.4**
KCTX	**Karacabey (Bur**	**1.39**	**340**	*e*PN	**Pb**	**23 32 49.1**	**+0.2**
KCTX	**Karacabey (Bur**	**1.39**	**340**	*e*Pn	**Pb**	**23 32 49.2**	**+0.2**
CAVI	**Cavuskoy**	**1.40**	**28**	*e*PN	**Pg**	**23 32 49.7**	**-0.1**
CAVI	**Cavuskoy**	**1.40**	**28**	*e*Pn	**Pg**	**23 32 49.7**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.40**	**357**	*e*PN	**Pb**	**23 32 49.7**	**+0.4**
MDNY	**Mudanya-Bursa**	**1.40**	**357**	*e*Pn	**Pb**	**23 32 49.7**	**+0.4**
IZI	**Iznik**	**1.42**	**15**	*e*PN	**Pb**	**23 32 49.5**	**-0.1**
IZI	**Iznik**	**1.42**	**15**	*e*Pn	**Pb**	**23 32 49.5**	**-0.1**
GONE	**Gonen-Balikesi**	**1.47**	**318**	*e*PN	**Pg**	**23 32 51.0**	**-0.2**
GONE	**Gonen-Balikesi**	**1.47**	**318**	*e*Pn	**Pg**	**23 32 51.0**	**-0.2**
ADVT	**Abdulvahap**	**1.58**	**21**	*e*PN	**Pn**	**23 32 51.5**	**+0.4**
ADVT	**Abdulvahap**	**1.58**	**21**	*e*Pn	**Pn**	**23 32 51.5**	**+0.4**
ARMT	**Armutlu**	**1.60**	**357**	*e*PN	**Pb**	**23 32 52.3**	**-0.3**
ARMT	**Armutlu**	**1.60**	**357**	*e*Pn	**Pb**	**23 32 52.3**	**-0.3**
EDC	**Edincik**	**1.63**	**328**	*e*PN	**Pb**	**23 32 53.1**	**0.0**
EDC	**Edincik**	**1.63**	**328**	*e*Pn	**Pb**	**23 32 53.1**	**0.0**

*ISCJB **19** 23:34:14.9±0.4, 39°.08N±0°.03×29°.10E±0°.04, h6km±5km, Error ellipse: s-maj=5.0km s-min=4.4km az=44.4*
*ISK **19** 23:34:14.6, 39°.10N×29°.14E, h5km, MD2.8*
*CSEM **19** 23:34:15.2±0.1, 39°.08N×29°.11E, h8km, ML2.6, Error ellipse: s-maj=3.0km s-min=2.3km az=92.0*
*DDA **19** 23:34:15.2, 39°.06N×29°.11E, h7km, Ml2.6*
ISC 19 23:34:15.2±0.9, **39°.08N**±0°.02×**29°.10E**±0°.03, **h11**km±9km, **n40, σ0**s**42/53, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.29**	**88**	P	**Pg**	**23 34 21.4**	**+0.2**
GDZ				S	**Sg**	**23 34 25.8**	**+0.5**
GDZ	**Gediz**	**0.29**	**88**	*i* P	**Pg**	**23 34 21.4**	**+0.2**
GDZ				*i* S	**Sg**	**23 34 25.8**	**+0.5**
DEMI	**Demirci**	**0.30**	**263**	P	**Pg**	**23 34 21.3**	**-0.1**
DEMI	**Demirci**	**0.30**	**263**	*i* P	**Pg**	**23 34 21.3**	**-0.1**
TVSB	**Tavsanli**	**0.46**	**37**	*e*PG	**Pg**	**23 34 23.2**	**-1.1**
TVSB				*e*SG	**Sg**	**23 34 29.9**	**-0.7**
TVSB	**Tavsanli**	**0.46**	**37**	*e*Pg	**Pg**	**23 34 23.3**	**-1.1**
KULA	**Kula-Manisa**	**0.66**	**212**	*e*PG	**Pg**	**23 34 28.0**	**0.0**
KULA	**Kula-Manisa**	**0.66**	**212**	*e*Pg	**Pg**	**23 34 28.0**	**0.0**
DURS	**Dursunbey**	**0.71**	**317**	P	**Pb**	**23 34 29.4**	**-0.3**
DURS				S	**Sb**	**23 34 39.8**	**+0.2**
DURS	**Dursunbey**	**0.71**	**317**	*i* P	**Pb**	**23 34 29.4**	**-0.3**
DURS				*i* S	**Sb**	**23 34 39.8**	**+0.2**
MANT	**Manisa**	**0.72**	**216**	P	**Pg**	**23 34 29.0**	**-0.3**
MANT				S	**Sg**	**23 34 38.5**	**-0.3**
MANT	**Manisa**	**0.72**	**216**	*i* P	**Pg**	**23 34 29.0**	**-0.3**
MANT				*i* S	**Sg**	**23 34 38.5**	**-0.3**
KHAL	**Karahalli**	**0.77**	**157**	P	**Pb**	**23 34 30.8**	**+0.1**
KHAL				S	**Sb**	**23 34 40.7**	**-0.4**
KHAL	**Karahalli**	**0.77**	**157**	*i* P	**Pb**	**23 34 30.8**	**+0.1**
KHAL				*i* S	**Sb**	**23 34 40.7**	**-0.4**
KHL	**Karahalli**	**0.82**	**156**	*e*PG	**Pb**	**23 34 31.2**	**-0.4**
KHL	**Karahalli**	**0.82**	**156**	*e*Pg	**Pb**	**23 34 31.2**	**-0.4**
ORLT	**Orhaneli**	**0.98**	**351**	*e*PG	**Pg**	**23 34 33.5**	**-0.6**
ORLT	**Orhaneli**	**0.98**	**351**	*e*Pg	**Pg**	**23 34 33.5**	**-0.6**
AKS	**Akhisar**	**1.02**	**259**	*e*PG	**Pn**	**23 34 35.3**	**-0.2**
AKS	**Akhisar**	**1.02**	**259**	*e*Pg	**Pn**	**23 34 35.3**	**-0.2**
BALB	**Balikesir**	**1.10**	**301**	*e*PN	**Pb**	**23 34 36.2**	**0.0**
BALB				*e*SN	**Sn**	**23 34 52.1**	**+0.3**
BALB	**Balikesir**	**1.10**	**301**	*e*Pn	**Pb**	**23 34 36.2**	**0.0**
BALB				*e*Sn	**Sn**	**23 34 52.1**	**+0.3**
IZI	**Iznik**	**1.29**	**13**	*e*PN	**Pn**	**23 34 39.1**	**-0.1**
IZI				*e*SN	**Sg**	**23 34 57.5**	**+0.8**
IZI	**Iznik**	**1.29**	**13**	*e*Pn	**Pn**	**23 34 39.1**	**-0.1**
IZI				*e*Sn	**Sg**	**23 34 57.5**	**+0.8**
MDNY	**Mudanya-Bursa**	**1.30**	**353**	*e*PN	**Pg**	**23 34 40.0**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.30**	**353**	*e*Pn	**Pg**	**23 34 40.0**	**-0.2**
KCTX	**Karacabey (Bur**	**1.32**	**334**	*e*PN	**Pb**	**23 34 39.9**	**-0.1**
KCTX	**Karacabey (Bur**	**1.32**	**334**	*e*Pn	**Pb**	**23 34 39.9**	**-0.1**
ADVT	**Abdulvahap**	**1.44**	**20**	*e*PN	**Pb**	**23 34 41.8**	**-0.2**
ADVT	**Abdulvahap**	**1.44**	**20**	*e*Pn	**Pb**	**23 34 41.8**	**-0.2**
GONE	**Gonen-Balikesi**	**1.46**	**312**	*e*PN	**Pb**	**23 34 42.5**	**+0.1**
GONE	**Gonen-Balikesi**	**1.46**	**312**	*e*Pn	**Pb**	**23 34 42.5**	**+0.1**
ARMT	**Armutlu**	**1.50**	**353**	*e*PN	**Pb**	**23 34 42.8**	**-0.2**
ARMT	**Armutlu**	**1.50**	**353**	*e*Pn	**Pb**	**23 34 42.8**	**-0.2**
EDC	**Edincik**	**1.59**	**323**	*e*PN	**Pb**	**23 34 44.4**	**-0.1**
EDC	**Edincik**	**1.59**	**323**	*e*Pn	**Pb**	**23 34 44.4**	**-0.1**
GULT	**Gulveren**	**1.74**	**38**	*e*PN	**Pn**	**23 34 45.7**	**+0.3**
GULT	**Gulveren**	**1.74**	**38**	*e*Pn	**Pn**	**23 34 45.7**	**+0.3**
SILT	**Sile**	**2.11**	**11**	*e*PN	**Pn**	**23 34 51.3**	**+0.8**
SILT	**Sile**	**2.11**	**11**	*e*Pn	**Pn**	**23 34 51.3**	**+0.8**

*ISCJB **19** 23:38:56.9±0.6, 39°.09N±0°.05×28°.91E±0°.05, h6km±7km, Error ellipse: s-maj=7.8km s-min=6.9km az=27.9*
*ISK **19** 23:38:57.3, 39°.14N×28°.94E, h8km, MD2.7*
*CSEM **19** 23:38:57.3±0.2, 39°.14N×28°.94E, h2km, MD2.7, Error ellipse: s-maj=4.4km s-min=3.6km az=111.0*
ISC 19 23:38:56.7±1.1, **39°.05N**±0°.03×**28°.88E**±0°.03, **h12**km±8km, **n38, σ0**s**53/44, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.13**	**266**	P	**Pg**	**23 38 59.9**	**-0.1**
DEMI	**Demirci**	**0.13**	**266**	*i* P	**Pg**	**23 38 59.9**	**-0.1**
KULA	**Kula-Manisa**	**0.56**	**198**	*e*PG	**Pn**	**23 39 10.7**	**+0.2**
KULA	**Kula-Manisa**	**0.56**	**198**	*e*Pg	**Pn**	**23 39 10.7**	**+0.2**
TVSB	**Tavsanli**	**0.60**	**49**	*e*PG	**Pg**	**23 39 07.8**	**-0.6**
TVSB	**Tavsanli**	**0.60**	**49**	*e*Pg	**Pg**	**23 39 07.8**	**-0.6**
MANT	**Manisa**	**0.61**	**204**	P	**Pg**	**23 39 08.1**	**-0.6**
MANT	**Manisa**	**0.61**	**204**	*i* P	**Pg**	**23 39 08.1**	**-0.6**
AKHS	**Akhisar**	**0.85**	**259**	P	**Pg**	**23 39 11.9**	**-1.2**
AKHS	**Akhisar**	**0.85**	**259**	*i* P	**Pg**	**23 39 11.9**	**-1.2**
AKS	**Akhisar**	**0.85**	**259**	*e*PG	**Pn**	**23 39 15.2**	**+0.8**
AKS	**Akhisar**	**0.85**	**259**	*e*Pg	**Pn**	**23 39 15.2**	**+0.8**
KHL	**Karahalli**	**0.89**	**145**	*e*PG	**Pn**	**23 39 15.6**	**+0.6**
KHL	**Karahalli**	**0.89**	**145**	*e*Pg	**Pn**	**23 39 15.6**	**+0.6**
BALB	**Balikesir**	**0.97**	**307**	*e*PG	**Pn**	**23 39 16.0**	**-0.1**
BALB				*e*SG	**Sn**	**23 39 30.0**	**+0.2**
BALB	**Balikesir**	**0.97**	**307**	*e*Pg	**Pn**	**23 39 16.0**	**-0.1**
BALB				*e*Sg	**Sn**	**23 39 30.0**	**+0.2**
ORLT	**Orhaneli**	**0.99**	**1**	*e*PG	**Pg**	**23 39 15.0**	**-0.8**
ORLT	**Orhaneli**	**0.99**	**1**	*e*Pg	**Pg**	**23 39 15.0**	**-0.8**
KCTX	**Karacabey (Bur**	**1.28**	**342**	*e*PN	**Pb**	**23 39 20.6**	**0.0**
KCTX				*e*SN	**Sg**	**23 39 38.2**	**+0.4**
KCTX	**Karacabey (Bur**	**1.28**	**342**	*e*Pn	**Pb**	**23 39 20.6**	**0.0**
KCTX				*e*Sn	**Sg**	**23 39 38.2**	**+0.4**
MDNY	**Mudanya-Bursa**	**1.31**	**0**	*e*PN	**Pb**	**23 39 21.2**	**0.0**
MDNY				*e*SN	**Sg**	**23 39 38.8**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.31**	**0**	*e*Pn	**Pb**	**23 39 21.2**	**0.0**
MDNY				*e*Sn	**Sg**	**23 39 38.8**	**-0.2**
GONE	**Gonen-Balikesi**	**1.35**	**317**	*e*PN	**Pg**	**23 39 22.7**	**0.0**
GONE	**Gonen-Balikesi**	**1.35**	**317**	*e*Pn	**Pg**	**23 39 22.7**	**0.0**
IZI	**Iznik**	**1.36**	**19**	*e*PN	**Pn**	**23 39 21.6**	**+0.1**
IZI	**Iznik**	**1.36**	**19**	*e*Pn	**Pn**	**23 39 21.6**	**+0.1**
CAVI	**Cavuskoy**	**1.37**	**33**	*e*PN	**Pn**	**23 39 21.8**	**+0.2**
CAVI	**Cavuskoy**	**1.37**	**33**	*e*Pn	**Pn**	**23 39 21.8**	**+0.2**
ARMT	**Armutlu**	**1.51**	**360**	*e*PN	**Pb**	**23 39 24.3**	**-0.3**
ARMT	**Armutlu**	**1.51**	**360**	*e*Pn	**Pb**	**23 39 24.3**	**-0.3**
EDC	**Edincik**	**1.51**	**329**	*e*PN	**Pg**	**23 39 25.3**	**-0.4**
EDC	**Edincik**	**1.51**	**329**	*e*Pn	**Pg**	**23 39 25.3**	**-0.4**
ADVT	**Abdulvahap**	**1.53**	**25**	*e*PN	**Pb**	**23 39 24.9**	**0.0**
ADVT	**Abdulvahap**	**1.53**	**25**	*e*Pn	**Pb**	**23 39 24.9**	**0.0**
GULT	**Gulveren**	**1.87**	**42**	*e*PN	**Pn**	**23 39 29.3**	**+0.8**
GULT	**Gulveren**	**1.87**	**42**	*e*Pn	**Pn**	**23 39 29.3**	**+0.8**
HRT	**Hereke**	**1.87**	**19**	*e*PN	**Pn**	**23 39 29.1**	**+0.7**
HRT	**Hereke**	**1.87**	**19**	*e*Pn	**Pn**	**23 39 29.1**	**+0.7**

*ISCJB **19** 23:40:17.8±0.5, 39°.11N±0°.03×29°.12E±0°.04, h3km±7km, Error ellipse: s-maj=5.3km s-min=4.8km az=36.9*
*CSEM **19** 23:40:18.1±0.1, 39°.11N×29°.12E, h5km, ML3.2, Error ellipse: s-maj=3.0km s-min=2.3km az=107.0*
*ISK **19** 23:40:18.1, 39°.14N×29°.13E, h5km, ML3.0*
*DDA **19** 23:40:19.1, 39°.06N×29°.10E, h7km, Ml3.2*
ISC 19 23:40:18.3±1.0, **39°.11N**±0°.02×**29°.12E**±0°.02, **h9**km±11km, **n42, σ0**s**31/52, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.32**	**257**	P	**Pg**	**23 40 25.0**	**+0.3**
DEMI				S	**Sg**	**23 40 28.9**	**-0.1**
DEMI	**Demirci**	**0.32**	**257**	*i* P	**Pg**	**23 40 25.0**	**+0.3**
DEMI				*i* S	**Sg**	**23 40 28.9**	**-0.1**
TVSB	**Tavsanli**	**0.43**	**38**	PG	**Pg**	**23 40 26.7**	**0.0**
TVSB				*e*SG	**Sg**	**23 40 32.2**	**0.0**
TVSB	**Tavsanli**	**0.43**	**38**	*i* Pg	**Pg**	**23 40 26.7**	**0.0**
TVSB				*e*Sg	**Sg**	**23 40 32.3**	**0.0**
MANT	**Manisa**	**0.76**	**215**	P	**Pg**	**23 40 32.6**	**-0.4**
MANT				S	**Sg**	**23 40 42.7**	**-0.2**
MANT	**Manisa**	**0.76**	**215**	*i* P	**Pg**	**23 40 32.6**	**-0.4**
MANT				*i* S	**Sg**	**23 40 42.7**	**-0.2**
KHAL	**Karahalli**	**0.80**	**159**	P	**Pg**	**23 40 33.5**	**-0.1**
KHAL				S	**Sg**	**23 40 44.1**	**+0.1**
KHAL	**Karahalli**	**0.80**	**159**	*i* P	**Pg**	**23 40 33.5**	**-0.1**
KHAL				*i* S	**Sg**	**23 40 44.1**	**+0.1**
KHL	**Karahalli**	**0.85**	**158**	PG	**Pb**	**23 40 35.1**	**-0.1**
KHL	**Karahalli**	**0.85**	**158**	*i* Pg	**Pb**	**23 40 35.1**	**-0.1**
ORLT	**Orhaneli**	**0.95**	**350**	*e*PG	**Pg**	**23 40 36.5**	**0.0**
ORLT	**Orhaneli**	**0.95**	**350**	*e*Pg	**Pg**	**23 40 36.5**	**0.0**
AKS	**Akhisar**	**1.05**	**257**	*e*PN	**Pn**	**23 40 39.3**	**+0.2**
AKS	**Akhisar**	**1.05**	**257**	*e*Pn	**Pn**	**23 40 39.3**	**+0.2**
BALB	**Balikesir**	**1.10**	**299**	*e*PG	**Pg**	**23 40 39.3**	**0.0**
BALB				*e*SG	**Sb**	**23 40 54.1**	**+0.3**
BALB	**Balikesir**	**1.10**	**299**	*e*Pg	**Pg**	**23 40 39.3**	**0.0**
BALB				*e*Sg	**Sb**	**23 40 54.1**	**+0.3**
CAVI	**Cavuskoy**	**1.22**	**27**	*e*PN	**Pg**	**23 40 41.7**	**0.0**
CAVI	**Cavuskoy**	**1.22**	**27**	*e*Pn	**Pg**	**23 40 41.7**	**0.0**
IZI	**Iznik**	**1.25**	**12**	*e*PN	**Pn**	**23 40 41.5**	**-0.6**
IZI	**Iznik**	**1.25**	**12**	*e*Pn	**Pn**	**23 40 41.5**	**-0.6**
MDNY	**Mudanya-Bursa**	**1.27**	**352**	*e*PN	**Pn**	**23 40 41.7**	**-0.5**
MDNY	**Mudanya-Bursa**	**1.27**	**352**	*e*Pn	**Pn**	**23 40 41.7**	**-0.5**
KCTX	**Karacabey (Bur**	**1.29**	**333**	*e*PN	**Pn**	**23 40 42.4**	**-0.1**
KCTX	**Karacabey (Bur**	**1.29**	**333**	*e*Pn	**Pn**	**23 40 42.4**	**-0.1**
GEMT	**Gemlik**	**1.32**	**2**	*e*PN	**Pn**	**23 40 42.5**	**-0.4**
GEMT	**Gemlik**	**1.32**	**2**	*e*Pn	**Pn**	**23 40 42.5**	**-0.4**
ADVT	**Abdulvahap**	**1.40**	**20**	*e*PN	**Pg**	**23 40 44.9**	**-0.3**
ADVT	**Abdulvahap**	**1.40**	**20**	*e*Pn	**Pg**	**23 40 44.9**	**-0.3**
GONE	**Gonen-Balikesi**	**1.45**	**311**	*e*PN	**Pb**	**23 40 45.4**	**0.0**
GONE	**Gonen-Balikesi**	**1.45**	**311**	*e*Pn	**Pb**	**23 40 45.4**	**0.0**
ARMT	**Armutlu**	**1.46**	**352**	*e*PN	**Pb**	**23 40 45.7**	**0.0**
ARMT	**Armutlu**	**1.46**	**352**	*e*Pn	**Pb**	**23 40 45.7**	**0.0**
GPA	**Golpazari**	**1.49**	**38**	*e*PN	**Pb**	**23 40 45.9**	**-0.2**
GPA	**Golpazari**	**1.49**	**38**	*e*Pn	**Pb**	**23 40 45.9**	**-0.2**
EDC	**Edincik**	**1.57**	**322**	*e*PN	**Pb**	**23 40 47.5**	**0.0**
EDC	**Edincik**	**1.57**	**322**	*e*Pn	**Pb**	**23 40 47.5**	**0.0**
SPNC	**Sapanca-Adapaz**	**1.82**	**30**	*e*PN	**Pn**	**23 40 49.9**	**+0.1**
SPNC	**Sapanca-Adapaz**	**1.82**	**30**	*e*Pn	**Pn**	**23 40 49.9**	**+0.1**
SILT	**Sile**	**2.08**	**11**	*e*PN	**Pn**	**23 40 53.5**	**+0.2**
SILT	**Sile**	**2.08**	**11**	*e*Pn	**Pn**	**23 40 53.5**	**+0.2**
MDUB	**Mudurnu**	**2.10**	**49**	*e*PN	**Pn**	**23 40 54.6**	**+0.9**
MDUB	**Mudurnu**	**2.10**	**49**	*e*Pn	**Pn**	**23 40 54.6**	**+0.9**

MEX 19 23:40:32.7±0.4, **15°.06N×93°.39W, h58**km±8km, **MD3.8, Near coast of Chiapas**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		**0.67**	**15**	*e*P	Pn	23 40 45.2	-1.2
PCIG				*e*S	Sn	23 40 54.5	-2.0
THIG		**1.10**	**98**	*e*P	Pn	23 40 49.7	-2.3
THIG				*e*S	Sn	23 41 04.1	-2.2
CCIG	**Comitan**	**1.72**	**45**	*e*P	Pn	23 40 58.6	-1.9
CCIG				*e*S	Sn	23 41 19.6	-1.8

*DDA **19** 23:45:35.5, 39°.14N×29°.05E, h8km, Ml2.7*
*ISK **19** 23:45:35.1, 39°.11N×28°.99E, h5km, MD3.0*
*CSEM **19** 23:45:36.3±0.1, 39°.11N×29°.04E, h2km, ML2.7, Error ellipse: s-maj=3.3km s-min=3.1km az=151.0*
ISC 19 23:45:35.8±1.0, **39°.11N**±0°.02×**29°.05E**±0°.02, **h9**km±9km, **n74, σ0**s**59/89, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**255**	P	**Pg**	**23 45 41.3**	**0.0**
DEMI				S	**Sg**	**23 45 45.1**	**+0.2**
DEMI	**Demirci**	**0.27**	**255**	*i* P	**Pg**	**23 45 41.3**	**0.0**
DEMI				*i* S	**Sg**	**23 45 45.1**	**+0.2**
GDZ	**Gediz**	**0.34**	**94**	P	**Pg**	**23 45 42.7**	**+0.1**
GDZ				S	**Sg**	**23 45 47.5**	**+0.4**
GDZ	**Gediz**	**0.34**	**94**	*i* P	**Pg**	**23 45 42.7**	**+0.1**
GDZ				*i* S	**Sg**	**23 45 47.5**	**+0.4**
TVSB	**Tavsanli**	**0.47**	**43**	*e*PG	**Pb**	**23 45 45.8**	**-0.5**
TVSB	**Tavsanli**	**0.47**	**43**	*e*Pg	**Pb**	**23 45 45.8**	**-0.5**
DURS	**Dursunbey**	**0.66**	**318**	P	**Pb**	**23 45 49.5**	**-0.1**
DURS	**Dursunbey**	**0.66**	**318**	*i* P	**Pb**	**23 45 49.5**	**-0.1**
MANT	**Manisa**	**0.73**	**212**	P	**Pg**	**23 45 49.8**	**-0.2**
MANT	**Manisa**	**0.73**	**212**	*i* P	**Pg**	**23 45 49.8**	**-0.2**
KHAL	**Karahalli**	**0.82**	**155**	P	**Pb**	**23 45 51.8**	**-0.5**
KHAL	**Karahalli**	**0.82**	**155**	*i* P	**Pb**	**23 45 51.8**	**-0.5**
KHL	**Karahalli**	**0.87**	**155**	*e*PG	**Pb**	**23 45 53.0**	**-0.2**
KHL	**Karahalli**	**0.87**	**155**	*e*Pg	**Pb**	**23 45 53.0**	**-0.2**
ORLT	**Orhaneli**	**0.94**	**353**	*e*PG	**Pb**	**23 45 54.0**	**-0.3**
ORLT				*e*SG	**Sn**	**23 46 08.4**	**-0.4**
ORLT	**Orhaneli**	**0.94**	**353**	*e*Pg	**Pb**	**23 45 54.0**	**-0.3**
ORLT				*e*Sg	**Sn**	**23 46 08.4**	**-0.4**
AKHS	**Akhisar**	**0.99**	**257**	P	**Pb**	**23 45 54.9**	**-0.2**
AKHS	**Akhisar**	**0.99**	**257**	*i* P	**Pb**	**23 45 54.9**	**-0.2**
AKS	**Akhisar**	**0.99**	**257**	*e*PG	**Pg**	**23 45 54.6**	**-0.3**
AKS	**Akhisar**	**0.99**	**257**	*e*Pg	**Pg**	**23 45 54.6**	**-0.3**
BALB	**Balikesir**	**1.05**	**301**	*e*PG	**Pg**	**23 45 55.8**	**-0.2**
BALB				*e*SG	**Sb**	**23 46 10.3**

KHAL				*i* S		**Sg**	**23 49 25.6 -0.3**
KHL	**Karahalli**	**0.85**	**155**	*e*PG		**Pg**	**23 49 16.8 +0.3**
KHL	**Karahalli**	**0.85**	**155**	*e*Pg		**Pg**	**23 49 16.8 +0.3**
ORLT	**Orhaneli**	**0.95**	**352**	*e*PG		**Pg**	**23 49 18.4 0.0**
ORLT				*e*SG		**Sb**	**23 49 32.4 +0.1**
ORLT	**Orhaneli**	**0.95**	**352**	*e*Pg		**Pg**	**23 49 18.4 0.0**
ORLT				*e*Sg		**Sb**	**23 49 32.4 +0.1**
AKHS	**Akhisar**	**1.00**	**258**	P		**Pg**	**23 49 19.0 -0.4**
AKHS				S		**Sg**	**23 49 32.8 +0.3**
AKHS	**Akhisar**	**1.00**	**258**	*i* P		**Pg**	**23 49 19.0 -0.4**
AKHS				*i* S		**Sg**	**23 49 32.8 +0.3**
AKS	**Akhisar**	**1.01**	**258**	*e*PG		**Pb**	**23 49 20.0 -0.1**
AKS				*e*SG		**Sb**	**23 49 34.0 +0.4**
AKS	**Akhisar**	**1.01**	**258**	*e*Pg		**Pb**	**23 49 20.0 -0.1**
AKS				*e*Sg		**Sb**	**23 49 34.1 +0.4**
BALB	**Balikesir**	**1.07**	**301**	*e*PN		**Pb**	**23 49 21.3 +0.1**
BALB				*e*SN		**Sb**	**23 49 36.2 +0.7**
BALB	**Balikesir**	**1.07**	**301**	*e*Pn		**Pb**	**23 49 21.3 +0.1**
BALB				*e*Sn		**Sb**	**23 49 36.2 +0.7**
IGD	**Bursa**	**1.17**	**5**	*i* P		**Pg**	**23 49 20.6 -1.9**
CAVI	**Cavuskoy**	**1.25**	**28**	*e*PN		**Pg**	**23 49 24.0 -0.1**
CAVI				*e*SN		**Sb**	**23 49 41.2 +0.4**
CAVI	**Cavuskoy**	**1.25**	**28**	*e*Pn		**Pg**	**23 49 24.0 -0.1**
CAVI				*e*Sn		**Sb**	**23 49 41.2 +0.4**
IZI	**Iznik**	**1.27**	**14**	*e*PN		**Pg**	**23 49 24.0 -0.6**
IZI	**Iznik**	**1.27**	**14**	*e*Pn		**Pg**	**23 49 24.0 -0.6**
MDNY	**Mudanya-Bursa**	**1.27**	**354**	*e*PN		**Pb**	**23 49 24.8 +0.1**
MDNY	**Mudanya-Bursa**	**1.27**	**354**	*e*Pn		**Pb**	**23 49 24.8 +0.1**
KCTX	**Karacabey (Bur**	**1.29**	**335**	*e*PN		**Pn**	**23 49 25.2 +0.3**
KCTX	**Karacabey (Bur**	**1.29**	**335**	*e*Pn		**Pn**	**23 49 25.2 +0.3**
BALY	**Balya**	**1.29**	**300**	P		**Pg**	**23 49 24.7 -0.2**
BALY				S		**Sg**	**23 49 40.8 -0.9**
BALY	**Balya**	**1.29**	**300**	*i* P		**Pg**	**23 49 24.7 -0.2**
BALY				*i* S		**Sg**	**23 49 40.8 -0.9**
BORA	**Eskisehir**	**1.32**	**54**	P		**Pg**	**23 49 24.7 -0.8**
BORA				S		**Sg**	**23 49 41.5 -1.1**
BORA	**Eskisehir**	**1.32**	**54**	*i* P		**Pg**	**23 49 24.7 -0.8**
BORA				*i* S		**Sg**	**23 49 41.5 -1.1**
GEMT	**Gemlik**	**1.33**	**4**	*e*PN		**Pg**	**23 49 25.6 -0.2**
GEMT	**Gemlik**	**1.33**	**4**	*e*Pn		**Pg**	**23 49 25.6 -0.2**
DENT	**Denizli**	**1.35**	**181**	*e*PN		**Pg**	**23 49 25.8 -0.1**
DENT	**Denizli**	**1.35**	**181**	*e*Pn		**Pg**	**23 49 25.8 -0.1**
ADVT	**Abdulvahap**	**1.43**	**21**	*e*PN		**Pn**	**23 49 26.6 -0.2**
ADVT	**Abdulvahap**	**1.43**	**21**	*e*Pn		**Pn**	**23 49 26.6 -0.2**
ARMT	**Armutlu**	**1.47**	**354**	*e*PN		**Pg**	**23 49 28.2 -0.1**
ARMT	**Armutlu**	**1.47**	**354**	*e*Pn		**Pg**	**23 49 28.2 -0.1**
GPA	**Golpazari**	**1.52**	**38**	*e*PN		**Pb**	**23 49 28.8 -0.2**
GPA	**Golpazari**	**1.52**	**38**	*e*Pn		**Pb**	**23 49 28.8 -0.2**
BNT	**Bandirma**	**1.54**	**325**	*e*PN		**Pn**	**23 49 28.9 +0.5**
BNT	**Bandirma**	**1.54**	**325**	*e*Pn		**Pn**	**23 49 28.9 +0.5**
EDC	**Edincik**	**1.55**	**324**	*e*PN		**Pn**	**23 49 28.8 +0.2**
EDC	**Edincik**	**1.55**	**324**	*e*Pn		**Pn**	**23 49 28.8 +0.2**
KNL	**Bal¨–kesir**	**1.67**	**315**	*i* P		Pn	23 49 23.3 -6.9
AYDN	**Tasoluk**	**1.72**	**213**	P		**Pn**	**23 49 31.1 +0.2**
AYDN				S		**Sg**	**23 49 55.5 +0.2**
AYDN	**Tasoluk**	**1.72**	**213**	*i* P		**Pn**	**23 49 31.1 +0.2**
AYDN				*i* S		**Sg**	**23 49 55.5 +0.2**
GULT	**Gulveren**	**1.73**	**39**	*e*PN		**Pn**	**23 49 30.9 -0.2**
GULT	**Gulveren**	**1.73**	**39**	*e*Pn		**Pn**	**23 49 30.9 -0.2**
SPNC	**Sapanca-Adapaz**	**1.85**	**31**	*e*PN		**Pn**	**23 49 32.7 +0.1**
SPNC	**Sapanca-Adapaz**	**1.85**	**31**	*e*Pn		**Pn**	**23 49 32.7 +0.1**
AYVA	**Ayvalik**	**1.86**	**277**	P		**Pb**	**23 49 34.3 -0.4**
AYVA	**Ayvalik**	**1.86**	**277**	*i* P		**Pb**	**23 49 34.3 -0.4**
SVRH	**Sivrihisar-ESK**	**1.93**	**79**	*e*PN		**Pn**	**23 49 33.8 -0.1**
SVRH	**Sivrihisar-ESK**	**1.93**	**79**	*e*Pn		**Pn**	**23 49 33.8 -0.1**
ISK	**Istanbul-Kandi**	**1.96**	**360**	*e*PN		**Pn**	**23 49 35.1 +0.9**
ISK	**Istanbul-Kandi**	**1.96**	**360**	*e*Pn		**Pn**	**23 49 35.1 +0.9**
DGB	**¨zmir**	**2.01**	**239**	*i* P		**Pg**	**23 49 38.6 -0.1**
AUMIH	**MIHALICIK**	**2.02**	**67**	*i* P		**Pg**	**23 49 38.0 -0.8**
AUMIH				*i* S		**Sg**	**23 50 06.8 +1.8**
MDUB	**Mudurnu**	**2.13**	**49**	*e*PN		**Pn**	**23 49 36.7 +0.1**
MDUB	**Mudurnu**	**2.13**	**49**	*e*Pn		**Pn**	**23 49 36.7 +0.1**
KAND	**Kocaeli-Kandir**	**2.17**	**23**	P		**Pn**	**23 49 36.6 -0.4**
KAND	**Kocaeli-Kandir**	**2.17**	**23**	*i* P		**Pn**	**23 49 36.6 -0.4**
ZEY	**¨zmir**	**2.19**	**248**	*i* P		**Pb**	**23 49 40.6 +0.3**
ZEY				*i* S		**Sg**	**23 50 10.0 -0.4**

DJA 19 23:50:33.8±1.5, 9°S±27″×12°0E±1°6, h20km±27km, M3.5/3, MLv3.5/3, Sumba region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WSI	**Waingapu**	**0.79**	**130**	P	Pb	23 50 48.3	-0.6
WSI				S	Sb	23 50 59.9	+0.7
PLAI	**Plampang**	**1.91**	**280**	P	Pn	23 51 05.3	+0.1
PLAI				S	Sn	23 51 29.9	+1.2
TWSI	**Taliwang, Sumb**	**2.80**	**278**	P	Pn	23 51 17.6	+0.2
TWSI				S	Sn	23 51 52.0	+1.4

JMA 19 23:52:51.5, 36°.94N×140°.74E, h12km±1km, M3.5, 5C-2D Broadband fault plane solution: P waves. NP1: ϕ_s350.00000°, δ53.00000°, λ-109.00000°. **NP2:** ϕ_s199.00000°, δ41.00000°, λ-67.00000°. **Principal axes:** T Plg6.0000°, Azm93.0000°; N Plg15.0000°, Azm1.0000°; P Plg74.0000°, Azm204.0000°; **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.17**	**16**	⇓P	Pg	23 52 55.4	0.0
ONAJ				S	Sg	23 52 58.1	0.0
JHO	**Hitachi**	**0.36**	**203**	⇑P	Pg	23 52 58.4	-0.2
JHO				S	Sg	23 53 02.9	-0.5
JFK	**Kawauchi**	**0.44**	**14**	⇓P	Pg	23 52 59.9	-0.3
JFK				S	Sg	23 53 06.2	+0.1
JSB	**Shiboa**	**0.66**	**273**	⇑P	Pb	23 53 04.9	0.0
JSB				S	Sb	23 53 14.1	0.0
JFT	**Otama**	**0.66**	**331**	⇑P	Pg	23 53 04.3	-0.1
JFT				S	Sg	23 53 13.4	+0.3
JYT	**Yasato**	**0.84**	**212**	P	Pg	23 53 06.9	-0.7
JYT				S	Sg	23 53 18.5	-0.1
JMM	**Marumori**	**0.93**	**3**	⇑P	Pg	23 53 08.5	-0.9
JMM				S	Sg	23 53 20.8	-0.7
JFY	**Yanaizu**	**0.95**	**300**	⇑P	Pg	23 53 09.3	-0.5
JFY				S	Sg	23 53 21.8	-0.4
MAT	**Matsushiro**	**2.07**	**260**	P	Pn	23 53 27.5	+1.4
MAT				S	Sb	23 53 55.3	+0.5

MOS ***19*** *23:53:19.5±1.6, 33°.91N×23°.75E, h15km, mb4.3/4 Error ellipse: s-maj=12.9km s-min=5.9km az=85.0*
IDC ***19*** *23:53:20.6±2.1, 34°.19N×23°.75E, h0km, mb4.0/9, mb1 3.9/17, mb1mx3.8/55, mbtmp3.8/17, ML3.6/8, MS3.1/2, Ms1 3.1/2, ms1mx2.6/54, Error ellipse: s-maj=38.7km s-min=17.6km az=20.0*
CSEM ***19*** *23:53:20.3±0.4, 34°.01N×23°.69E, h5km, mb4.2/7, Error ellipse: s-maj=9.7km s-min=4.9km az=16.0*
ISCJB ***19*** *23:53:20.1±1.2, 33°.94N±0°.05×23°.68E±0°.03, h19km±8km, mb4.0/17, MS3.2/1, Error ellipse: s-maj=8.1km s-min=4.4km az=9.9*
ATH ***19*** *23:53:20.7, 34°.09N×23°.64E, h7km±2km, ML3.6/3, Error ellipse: s-maj=3.0km s-min=1.3km az=6.0*
NEIC ***19*** *23:53:21.4±0.8, 34°.06N×23°.77E, h10km, mb4.0/9, ML3.8(THE), Error ellipse: s-maj=15.2km s-min=6.2km az=197.0*
THE ***19*** *23:53:25.8, 34°.37N×23°.71E, h0km±2km, ML3.3/5, Error ellipse: s-maj=3.3km s-min=1.1km az=200.0*
VIE ***19*** *23:53:29.4, 33°.97N×23°.70E, h65km*
ISC 19 23:53:22.1±1.0, 34°.11N±0°.05×23°.71E±0°.03, h16km±4km, n208, σ1§42/221, mb4.0/17, Crete

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GVD	**Gavdhos**	**0.79**	**23**	P	**Pb**	**23 53 36.6**	**-0.8**
GVD				S	**Sg**	**23 53 45.9**	**-2.0**
GVD	**Gavdhos**	**0.79**	**23**	P	**Pb**	**23 53 36.7**	**-0.8**
GVD				S	**Sg**	**23 53 48.0**	**+0.1**
GVD	**Gavdhos**	**0.79**	**23**	P	**Pb**	**23 53 36.7**	**-0.8**
GVD				S	**Sg**	**23 53 48.0**	**+0.1**
GVD				AML	AML	23 53 53.6	
	comp=E,9572μm,0.4s						
GVD				AML	AML	23 53 53.7	
	comp=N,10669μm,0.6s						
SIVA	**Sivas**	**1.28**	**45**	P	**Pg**	**23 53 47.2**	**+0.5**
SIVA	**Sivas**	**1.28**	**45**	P	**Pg**	**23 53 47.2**	**+0.5**
SIVA				S	**Sg**	**23 54 04.8**	**+1.4**
SIVA	**Sivas**	**1.28**	**45**	P	**Pg**	**23 53 47.7**	**+0.9**
SIVA				S	**Sg**	**23 54 04.8**	**+1.4**
SIVA				AML	AML	23 54 14.3	
	comp=N,4561μm,0.7s						
SIVA				AML	AML	23 54 16.5	
	comp=E,6837μm,0.7s						
VAM	**Vamos**	**1.35**	**17**	P	**Pn**	**23 53 46.1**	**-0.2**
VAM	**Vamos**	**1.35**	**17**	P	**Pn**	**23 53 46.5**	**+0.2**
VAM	**Vamos**	**1.35**	**17**	P	**Pn**	**23 53 46.5**	**+0.2**
IMMV	**Iera Moni Meta**	**1.36**	**9**	P	**Pn**	**23 53 45.9**	**-0.6**
IMMV				S	**Sn**	**23 54 03.5**	**-0.7**
IMMV	**Iera Moni Meta**	**1.36**	**9**	P	**Pn**	**23 53 45.9**	**-0.6**
IMMV				S	**Sg**	**23 54 07.1**	**+1.0**
IMMV	**Iera Moni Meta**	**1.36**	**9**	P	**Pn**	**23 53 45.5**	**-0.9**
IMMV				S	**Sg**	**23 54 07.1**	**+1.0**
IMMV				AML	AML	23 54 13.6	
	comp=E,4743μm,1.0s						
IMMV				AML	AML	23 54 18.1	
	comp=N,3886μm,0.6s						
IDI	**Anoyia**	**1.52**	**39**	Pn	**Pn**	**23 53 49.5**	**+0.8**
	comp=N,4.3nm,0.3s,baz=234,slow=11,SNR=62						
IDI				LR	LR	23 53 56.9	
	comp=N,53nm,20.9s,baz=225,slow=25						
IDI	**Anoyia**	**1.52**	**39**	P	**Pb**	**23 53 50.6**	**+0.6**
IDI				S	**Sb**	**23 54 09.6**	**+0.5**
IDI	**Anoyia**	**1.52**	**39**	*e*Pn	**Pb**	**23 53 49.9**	**-0.1**
IDI	**Anoyia**	**1.52**	**39**	P	**Pb**	**23 53 50.6**	**+0.6**
IDI				S	**Sb**	**23 54 09.6**	**+0.5**
IDI	**Anoyia**	**1.52**	**39**	P	**Pb**	**23 53 50.0**	**-0.1**
IDI	**Anoyia**	**1.52**	**39**	*e*Pn	**Pb**	**23 53 49.9**	**-0.1**
ANKY	**Antikythira Is**	**1.78**	**349**	P	**Pb**	**23 53 53.6**	**-0.8**
ANKY				S	**Sn**	**23 54 14.4**	**-0.2**
ANKY	**Antikythira Is**	**1.78**	**349**	P	**Pb**	**23 53 53.6**	**-0.8**
ANKY				S	**Sn**	**23 54 14.4**	**-0.2**
ANKY	**Antikythira Is**	**1.78**	**349**	P	**Pg**	**23 53 55.6**	**-0.7**
LAST	**Lasithi**	**1.79**	**54**	P	**Pb**	**23 53 55.0**	**+0.4**
LAST				S	**Sb**	**23 54 17.3**	**+0.4**
LAST	**Lasithi**	**1.79**	**54**	P	**Pb**	**23 53 54.7**	**+0.1**
LAST				S	**Sb**	**23 54 17.3**	**+0.4**
LAST	**Lasithi**	**1.79**	**54**	P	**Pb**	**23 53 54.7**	**+0.1**
NPS	**Neapolis**	**1.94**	**53**	P	**Pb**	**23 53 57.5**	**+0.4**
NPS	**Neapolis**	**1.94**	**53**	P	**Pb**	**23 53 57.9**	**+0.8**
NPS	**Neapolis**	**1.94**	**53**	P	**Pb**	**23 53 57.5**	**+0.4**
NPS	**Neapolis**	**1.94**	**53**	P	**Pb**	**23 53 57.5**	**+0.4**
KYTH	**Kithira**	**2.22**	**346**	P	**Pn**	**23 54 00.0**	**+1.8**
KYTH	**Kithira**	**2.22**	**346**	P	**Pn**	**23 54 00.0**	**+1.8**
KYTH	**Kithira**	**2.22**	**346**	P	**Pb**	**23 54 01.6**	**-0.3**
ZKR	**Zakros**	**2.29**	**63**	P	**Pb**	**23 54 02.9**	**-0.2**
ZKR	**Zakros**	**2.29**	**63**	P	**Pb**	**23 54 02.9**	**-0.2**
ZKR	**Zakros**	**2.29**	**63**	P	**Pb**	**23 54 03.1**	**0.0**
THR6	**Thira Island,**	**2.63**	**31**	P	**Pn**	**23 54 05.9**	**+2.0**
THR6	**Thira Island,**	**2.63**	**31**	P	**Pn**	**23 54 05.9**	**+2.0**
MHLO	**Agia Marina, M**	**2.63**	**12**	P	**Pn**	**23 54 05.9**	**+2.0**
MHLO	**Agia Marina, M**	**2.63**	**12**	P	**Pn**	**23 54 05.9**	**+2.0**
THR5	**Thira Island,**	**2.66**	**30**	*e*PN	**Pn**	**23 54 06.5**	**+2.2**
THR5	**Thira Island,**	**2.66**	**30**	P	**Pn**	**23 54 05.3**	**+1.0**
THR5	**Thira Island,**	**2.66**	**30**	P	**Pn**	**23 54 05.3**	**+1.0**
THR5	**Thira Island,**	**2.66**	**30**	*e*Pn	**Pn**	**23 54 06.5**	**+2.2**
THR3	**Thira Island,**	**2.67**	**31**	P	**Pn**	**23 54 06.2**	**+1.7**
THR3	**Thira Island,**	**2.67**	**31**	P	**Pn**	**23 54 06.2**	**+1.7**
VLI	**Veliai**	**2.68**	**347**	P	**Pn**	**23 54 06.2**	**+1.7**
VLI	**Veliai**	**2.68**	**347**	P	**Pn**	**23 54 06.2**	**+1.7**
VLI	**Veliai**	**2.68**	**347**	P	**Pb**	**23 54 09.1**	**-0.5**
KARP	**Karpathos**	**3.18**	**62**	*e*PN	**Pn**	**23 54 13.3**	**+1.8**
KARP	**Karpathos**	**3.18**	**62**	*e*Pn	**Pn**	**23 54 13.3**	**+1.8**
PYL	**PYLOS**	**3.21**	**330**	P	**Pn**	**23 54 13.3**	**+1.4**
PYL	**PYLOS**	**3.21**	**330**	P	**Pn**	**23 54 13.0**	**+1.1**
PYL	**PYLOS**	**3.21**	**330**	P	**Pn**	**23 54 13.0**	**+1.1**
KRND	**KRANIDI**	**3.29**	**352**	P	**Pn**	**23 54 14.7**	**+1.7**
KRND	**KRANIDI**	**3.29**	**352**	P	**Pn**	**23 54 14.7**	**+1.7**
KRND	**KRANIDI**	**3.29**	**352**	P	**Pn**	**23 54 13.4**	**+0.4**
APE	**Apeiranthos**	**3.30**	**26**	*e*PN	**Pn**	**23 54 10.4**	**-2.8**
APE	**Apeiranthos**	**3.30**	**26**	*e*Pn	**Pn**	**23 54 10.4**	**-2.8**
ITM	**Ithomi**	**3.39**	**335**	P	**Pn**	**23 54 16.9**	**+2.5**
ITM	**Ithomi**	**3.39**	**335**	P	**Pn**	**23 54 16.9**	**+2.5**
ITM	**Ithomi**	**3.39**	**335**	P	**Pn**	**23 54 17.3**	**+3.0**
DID	**Didima**	**3.41**	**354**	P	**Pn**	**23 54 14.9**	**+0.3**
DID	**Didima**	**3.41**	**354**	P	**Pn**	**23 54 14.9**	**+0.3**
DID	**Didima**	**3.41**	**354**	P	**Pn**	**23 54 13.6**	**-1.1**
VLX	**Vlachokerasia**	**3.43**	**342**	P	**Pb**	**23 54 20.8**	**-1.7**
VLX	**Vlachokerasia**	**3.43**	**342**	P	**Pb**	**23 54 20.8**	**-1.7**
VLY	**Voula,Athens**	**3.73**	**1**	P	**Pn**	**23 54 18.9**	**-0.2**
VLY	**Voula,Athens**	**3.73**	**1**	P	**Pn**	**23 54 18.9**	**-0.2**
AMT	**Artemida-Makis**	**3.78**	**335**	P	**Pn**	**23 54 22.1**	**+2.3**
AMT	**Artemida-Makis**	**3.78**	**335**	P	**Pn**	**23 54 22.1**	**+2.3**
AMT	**Artemida-Makis**	**3.78**	**335**	P	**Pn**	**23 54 22.3**	**+2.5**
LTK	**Loutraki**	**3.95**	**351**	P	**Pn**	**23 54 22.8**	**+0.7**
LTK	**Loutraki**	**3.95**	**351**	P	**Pn**	**23 54 22.8**	**+0.7**
LTK	**Loutraki**	**3.95**	**351**	P	**Pn**	**23 54 20.9**	**-1.1**
KLV	**Kalavryta, Ach**	**4.12**	**343**	P	**Pn**	**23 54 27.0**	**+2.5**
KLV	**Kalavryta, Ach**	**4.12**	**343**	P	**Pn**	**23 54 26.4**	**+1.9**
KLV	**Kalavryta, Ach**	**4.12**	**343**	P	**Pn**	**23 54 26.4**	**+1.9**
BODT	**Bodrum**	**4.15**	**44**	*e*PN	**Pn**	**23 54 24.8**	**-0.1**
BODT	**Bodrum**	**4.15**	**44**	*e*Pn	**Pn**	**23 54 24.8**	**-0.1**
DRO	**Drossia**	**4.16**	**338**	P	**Pn**	**23 54 27.4**	**+2.4**
DRO	**Drossia**	**4.16**	**338**	P	**Pn**	**23 54 27.4**	**+2.4**
DRO	**Drossia**	**4.16**	**338**	P	**Pn**	**23 54 28.3**	**+3.4**
ARG	**Arkhangelos**	**4.18**	**59**	P	**Pn**	**23 54 25.9**	**+0.7**
ZKS	**Zakynthos**	**4.29**	**327**	P	**Pn**	**23 54 27.6**	**+0.8**
ZKS	**Zakynthos**	**4.29**	**327**	P	**Pn**	**23 54 27.6**	**+0.8**
RLS	**Riolos of Patr**	**4.34**	**336**	P	**Pn**	**23 54 29.2**	**+1.8**
RLS	**Riolos of Patr**	**4.34**	**336**	P	**Pn**	**23 54 29.2**	**+1.8**
DSF	**Desfina**	**4.39**	**348**	P	**Pn**	**23 54 29.3**	**+1.1**
DSF	**Desfina**	**4.39**	**348**	P	**Pn**	**23 54 29.3**	**+1.1**
DSF	**Desfina**	**4.39**	**348**	P	**Pn**	**23 54 27.9**	**-0.4**
LKR	**Lokris**	**4.56**	**353**	P	**Pn**	**23 54 30.6**	**+0.1**
LKR	**Lokris**	**4.56**	**353**	P	**Pn**	**23 54 30.6**	**+0.1**
ANX	**Ano Chora**	**4.70**	**343**	P	**Pn**	**23 54 34.7**	**+2.2**
VLS	**Valsamata**	**4.78**	**329**	P	**Pn**	**23 54 34.4**	**+0.9**
VLS	**Valsamata**	**4.78**	**329**	P	**Pn**	**23 54 34.4**	**+0.9**
YER	**Yerkesik**	**4.79**	**50**	*e*PN	**Pn**	**23 54 34.5**	**+0.8**
YER	**Yerkesik**	**4.79**	**50**	*e*Pn	**Pn**	**23 54 34.5**	**+0.8**
PVO	**Paravola**	**4.83**	**339**	P	Pn	23 54 39.5	+5.4
PVO	**Paravola**	**4.83**	**339**	P	Pn	23 54 39.5	+5.3
DALY	**Dalyan (Mu¨la**	**4.85**	**55**	*e*PN	**Pn**	**23 54 36.4**	**+2.0**
DALY	**Dalyan (Mu¨la**	**4.85**	**55**	*e*Pn	**Pn**	**23 54 36.4**	**+2.0**
PDO	**Prodromos**	**4.92**	**336**	P	Pn	23 54 40.6	+5.2
PDO	**Prodromos**	**4.92**	**336**	P	Pn	23 54 40.6	+5.2
AGG	**Agios Georgios**	**5.02**	**348**	*e*PN	**Pn**	**23 54 35.6**	**-1.3**
AGG	**Agios Georgios**	**5.02**	**348**	*e*Pn	**Pn**	**23 54 35.6**	**-1.3**
EVR	**Evrytania**	**5.03**	**343**	P	**Pn**	**23 54 39.5**	**+2.5**
EVR	**Evrytania**	**5.03**	**343**	P	**Pn**	**23 54 39.0**	**+2.0**
EVR	**Evrytania**	**5.03**	**343**	P	**Pn**	**23 54 39.0**	**+2.0**
FETY	**Fethiye**	**5.06**	**59**	*e*PN	**Pn**	**23 54 38.7**	**+1.4**
FETY	**Fethiye**	**5.06**	**59**	*e*Pn	**Pn**	**23 54 38.7**	**+1.4**
KSL	**Kastellorizon**	**5.22**	**65**	P	**Pn**	**23 54 39.7**	**+0.1**
LKD2	**Lefkada island**	**5.28**	**333**	P	**Pn**	**23 54 42.4**	**+2.1**
LKD2	**Lefkada island**	**5.28**	**333**	P	**Pn**	**23 54 41.6**	**+1.3**
LKD2	**Lefkada island**	**5.28**	**333**	P	**Pn**	**23 54 41.6**	**+1.3**
DSL	**Palaion Diasel**	**5.43**	**338**	P	**Pn**	**23 54 44.4**	**+1.9**
DSL	**Palaion Diasel**	**5.43**	**338**	P	**Pn**	**23 54 43.4**	**+0.9**
DSL	**Palaion Diasel**	**5.43**	**338**	P	**Pn**	**23 54 43.4**	**+0.9**
GLHS	**Glhisar (BURDU**	**5.60**	**56**	*e*PN	**Pn**	**23 54 45.2**	**+0.3**
GLHS	**Glhisar (BURDU**	**5.60**	**56**	*e*Pn	**Pn**	**23 54 45.2**	**+0.3**
ELL	**Elmali**	**5.70**	**61**	*e*PN	**Pn**	**23 54 47.8**	**+1.5**
ELL	**Elmali**	**5.70**	**61**	*e*Pn	**Pn**	**23 54 47.8**	**+1.5**
PAIG	**Paliouri**	**5.80**	**360**	P	**Pn**	**23 54 49.8**	**+2.3**
PAIG	**Paliouri**	**5.80**	**360**	P	**Pn**	**23 54 49.8**	**+2.3**
OUR	**Ouranopolis**	**6.21**	**2**	*e*PN	**Pn**	**23 54 50.6**	**-2.6**
KEK	**Kerkira**	**6.41**	**332**	P	**Pn**	**23 54 57.2**	**+1.4**
KEK	**Kerkira**	**6.41**	**332**	P	**Pn**	**23 54 57.2**	**+1.4**
PENT	**Pentalofos**	**6.41**	**342**	P	**Pn**	**23 54 57.2**	**+1.2**
PENT	**Pentalofos**	**6.41**	**342**	P	**Pn**	**23 54 57.2**	**+1.2**
GELI	**Tayfur-Gelibol**	**6.65**	**19**	*e*PN	Pn	23 54 49.3	-1.0
SOH	**Sokhos**	**6.70**	**358**	P	Pn	23 55 05.2	+5.3
FNA	**Florina**	**6.91**	**345**	P	**Pn**	**23 55 06.5**	**+3.7**
FNA	**Florina**	**6.91**	**345**	P	**Pn**	**23 55 06.5**	**+3.7**
ERIK	**Erikli-Kesan**	**6.92**	**18**	*e*PN	Pn	23 54 55.3	-7.4
TIP	**Timpagrande**	**7.54**	**314**	*e*Pn	**Pn**	**23 55 12.1**	**+0.7**
	comp=N,5.9nm,0.5s						
TIP	**Timpagrande**	**7.54**	**314**	*e*Pn	**Pn**	**23 55 12.1**	**+0.7**
	comp=N,5.9nm,0.5s						
CSS	**Mathiatis**	**7.98**	**81**	*e*Pn	**Pn**	**23 55 16.9**	**-0.6**
	comp=N,2.4nm,0.8s						
CSS	**Mathiatis**	**7.98**	**81**	*e*Pn	**Pn**	**23 55 16.9**	**-0.6**
	comp=N,2.4nm,0.8s						
CSS				*e*Sn	**Sn**	**23 56 44.6**	**-2.8**
VAE	**Valguarnera**	**8.27**	**297**	Pn	**Pn**	**23 55 23.9**	**+2.4**
	comp=N,0.7nm,0.3s,baz=353,slow=23,SNR=6.8						
VAE				Sn	**Sn**	**23 56 57.1**	**+2.6**
	comp=N,0.9nm,0.3s,baz=83,slow=18,SNR=3.5						
CUC	**Castrocucco**	**8.62**	**315**	*e*Pn	**Pn**	**23 55 27.6**	**+1.4**
	comp=N,3.3nm,0.6s						
CUC				*e*Sn	**Sn**	**23 57 02.4**	**-0.7**
CUC	**Castrocucco**	**8.62**	**315**	*e*Pn	**Pn**	**23 55 27.6**	**+1.4**
	comp=N,3.3nm,0.6s						
CUC				*e*Sn	**Sn**	**23 57 02.4**	**-0.7**
BARS	**Barje**	**8.82**	**351**	*e*Pn	**Pn**	**23 55 27.8**	**-1.1**
BRTR	**Keskin Array B**	**9.72**	**52**	Pn	**Pn**	**23 55 42.5**	**+1.1**
	comp=N,0.1nm,0.3s,baz=226,slow=14,SNR=8.4						
MMAI	**Mount Meron Ar**	**9.82**	**93**	Pn	**Pn**	**23 55 41.2**	**-1.5**
	comp=N,0.7nm,0.3s,baz=266,slow=11,SNR=7.5						
MMAI				Sn	**Sn**	**23 57 26.1**	**-6.5**
	comp=N,0.8nm,0.3s,baz=214,slow=29,SNR=5.1						
GRUS	**Gruza**	**10.04**	**347**	*e*Pn	**Pn**	**23 55 45.0**	**-0.6**
EIL	**Elat**	**10.53**	**112**	Pn	**Pn**	**23 55 53.4**	**+1.1**
	comp=N,0.2nm,0.3s,baz=353,slow=7.9,SNR=5.7						
UDBI	**Udbina**	**12.08**	**332**	*e*Pn	**Pn**	**23 56 13.2**	**-0.4**
UDBI	**Udbina**	**12.08**	**332**	*e*Pn	**Pn**	**23 56 13.1**	**-0.4**
NVLJ	**Novalja**	**12.47**	**329**	*e*Pn	**Pn**	**23 56 17.9**	**-1.0**
NVLJ	**Novalja**	**12.47**	**329**	*e*Pn	**Pn**	**23 56 17.8**	**-1.0**
VSL	**Villasalto**	**12.68**	**299**	*e*Pn	**Pn**	**23 56 23.7**	**+1.9**
VSL	**Villasalto**	**12.68**	**299**	*e*Pn	**Pn**	**23 56 23.7**	**+1.9**
SOKA	**Soboth**	**14.17**	**335**	*i* Pn	**Pn**	**23 56 41.4**	**-0.8**
	comp=N,0.7nm,0.4s						
SOKA	**Soboth**	**14.17**	**335**	Pn	**Pn**	**23 56 41.4**	**-0.8**
	comp=N,0.7nm,0.4s						
ABTA	**Abfaltersbach**	**15.21**	**329**	*i* Pn	**Pn**	**23 56 58.7**	**+2.4**
	comp=N,2.1nm,0.8s						
ABTA	**Abfaltersbach**	**15.21**	**329**	Pn	**Pn**	**23 56 58.7**	**+2.4**
	comp=N,2.1nm,0.8s						
MOA	**Molln**	**15.45**	**335**	*i* P	**P**	**23 57 05.7**

BALB	**Balikesir**	**1.07 297**	*e*Pg	Pb	23 57 31.1	+0.2
BALB			*e*Sg	Sn	23 57 46.1	-0.3
CAVI	**Cavuskoy**	**1.17 28**	*e*PN	Pn	23 57 33.0	0.0
CAVI			*e*SN	Sn	23 57 49.8	+0.6
CAVI	**Cavuskoy**	**1.17 28**	*e*Pn	Pn	23 57 33.0	0.0
CAVI			*e*Sn	Sn	23 57 49.8	+0.6
IZI	**Iznik**	**1.20 13**	*e*PN	Pn	23 57 33.7	+0.4
IZI	**Iznik**	**1.20 13**	*e*Pn	Pn	23 57 33.7	+0.4
MDNY	**Mudanya-Bursa**	**1.21 352**	*e*PN	Pg	23 57 34.0	+0.6
MDNY	**Mudanya-Bursa**	**1.21 352**	*e*Pn	Pg	23 57 34.0	+0.6
KCTX	**Karacabey (Bur**	**1.24 332**	*e*PN	Pg	23 57 34.3	+0.2
KCTX	**Karacabey (Bur**	**1.24 332**	*e*Pn	Pg	23 57 34.3	+0.3
ARMT	**Armutlu**	**1.41 352**	*e*PN	Pb	23 57 36.6	-0.1
ARMT	**Armutlu**	**1.41 352**	*e*Pn	Pb	23 57 36.6	-0.1
GONE	**Gonen-Balikesi**	**1.41 309**	*e*PN	Pb	23 57 36.9	+0.1
GONE	**Gonen-Balikesi**	**1.41 309**	*e*Pn	Pb	23 57 36.9	+0.2
EDC	**Edincik**	**1.52 321**	*e*PN	Pb	23 57 38.5	-0.2
EDC	**Edincik**	**1.52 321**	*e*Pn	Pb	23 57 38.5	-0.2
GULT	**Gulveren**	**1.66 40**	*e*PN	Pn	23 57 40.3	+0.6
GULT	**Gulveren**	**1.66 40**	*e*Pn	Pn	23 57 40.3	+0.6

*ISCJB **20** 00:00:28.4±0.5, 39°.11N±0'.03×29°.07E±0'.03, h4km±5km, Error ellipse: s-maj=5.0km s-min=3.9km az=169.9*
*DDA **20** 00:00:28.2, 39°.08N×29°.07E, h7km, Md2.2*
*ISK **20** 00:00:28.8, 39°.16N×29°.07E, h6km, MD2.7*
*CSEM **20** 00:00:28.8±0.2, 39°.13N×29°.07E, h5km, MD2.2, Error ellipse: s-maj=3.5km s-min=3.2km az=116.0*
ISC 20 00:00:28.4±1.0, 39°.10N±0'.03×29°.06E±0'.02, h9km±8km, n36, σ0°59/56, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**259**	P	**Pg**	**00 00 33.8**	**-0.2**
DEMI				S	**Sg**	**00 00 37.7**	**0.0**
DEMI	**Demirci**	**0.27**	**259**	*i* P	**Pg**	**00 00 33.9**	**-0.2**
DEMI				*i* S	**Sg**	**00 00 37.7**	**0.0**
GDZ	**Gediz**	**0.33**	**91**	P	**Pg**	**00 00 35.1**	**+0.1**
GDZ				S	**Sg**	**00 00 39.8**	**+0.4**
GDZ	**Gediz**	**0.33**	**91**	*i* P	**Pg**	**00 00 35.1**	**+0.1**
GDZ				*i* S	**Sg**	**00 00 39.8**	**+0.4**
TVSB	**Tavsanli**	**0.47**	**41**	*e*PG	**Pg**	**00 00 37.6**	**-0.1**
TVSB	**Tavsanli**	**0.47**	**41**	*e*Pg	**Pg**	**00 00 37.6**	**-0.1**
DURS	**Dursunbey**	**0.68**	**318**	*i* P	**Pn**	**00 00 47.7**	**+3.4**
DURS				*i* S	**Sn**	**00 00 55.3**	**+0.2**
MANT	**Manisa**	**0.72**	**213**	P	**Pg**	**00 00 42.2**	**-0.2**
MANT				S	**Sg**	**00 00 51.6**	**-0.2**
MANT	**Manisa**	**0.72**	**213**	*i* P	**Pg**	**00 00 42.2**	**-0.2**
MANT				*i* S	**Sg**	**00 00 51.6**	**-0.2**
KHAL	**Karahalli**	**0.80**	**155**	P	**Pn**	**00 00 46.2**	**+0.3**
KHAL				S	**Sg**	**00 00 54.8**	**+0.5**
KHAL	**Karahalli**	**0.80**	**155**	*i* P	**Pn**	**00 00 46.2**	**+0.3**
KHAL				*i* S	**Sg**	**00 00 54.8**	**+0.5**
KHL	**Karahalli**	**0.85**	**155**	*e*PG	**Pn**	**00 00 46.7**	**0.0**
KHL	**Karahalli**	**0.85**	**155**	*e*Pg	**Pn**	**00 00 46.7**	**0.0**
ORLT	**Orhaneli**	**0.96**	**352**	*e*PG	**Pg**	**00 00 45.9**	**-1.0**
ORLT	**Orhaneli**	**0.96**	**352**	*e*Pg	**Pg**	**00 00 45.9**	**-1.0**
AKHS	**Akhisar**	**1.00**	**258**	P	**Pn**	**00 00 48.3**	**-0.2**
AKHS				S	**Sb**	**00 01 01.2**	**+0.1**
AKHS	**Akhisar**	**1.00**	**258**	*i* P	**Pn**	**00 00 48.4**	**-0.2**
AKHS				*i* S	**Sb**	**00 01 01.2**	**+0.1**
AKS	**Akhisar**	**1.00**	**258**	*e*PG	**Pn**	**00 00 48.8**	**+0.2**
AKS				*e*SG	**Sn**	**00 01 02.9**	**+0.1**
AKS	**Akhisar**	**1.00**	**258**	*e*Pg	**Pn**	**00 00 48.8**	**+0.2**
AKS				*e*Sg	**Sn**	**00 01 02.9**	**+0.1**
BALB	**Balikesir**	**1.06**	**301**	*e*PG	**Pn**	**00 00 49.3**	**-0.2**
BALB				*e*SG	**Sn**	**00 01 04.1**	**-0.3**
BALB	**Balikesir**	**1.06**	**301**	*e*Pg	**Pn**	**00 00 49.3**	**-0.2**
BALB				*e*Sg	**Sn**	**00 01 04.1**	**-0.3**
IGD	**Bursa**	**1.17**	**5**	*i* P	**Pb**	**00 00 49.5**	**-1.4**
IGD				*i* S	**Sn**	**00 01 07.0**	**-0.1**
CAVI	**Cavuskoy**	**1.26**	**28**	*e*PN	**Pn**	**00 00 52.0**	**-0.2**
CAVI				*e*SN	**Sn**	**00 01 09.1**	**-0.2**
CAVI	**Cavuskoy**	**1.26**	**28**	*e*Pn	**Pn**	**00 00 52.0**	**-0.2**
CAVI				*e*Sn	**Sn**	**00 01 09.1**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.28**	**354**	*e*PN	**Pg**	**00 00 52.8**	**-0.2**
MDNY				*e*SN	**Sn**	**00 01 09.9**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.28**	**354**	*e*Pn	**Pg**	**00 00 52.8**	**-0.2**
MDNY				*e*Sn	**Sn**	**00 01 10.0**	**+0.3**
KCTX	**Karacabey (Bur**	**1.29**	**335**	*e*PN	**Pg**	**00 00 53.1**	**-0.1**
KCTX	**Karacabey (Bur**	**1.29**	**335**	*e*Pn	**Pg**	**00 00 53.1**	**-0.1**
GONE	**Gonen-Balikesi**	**1.43**	**312**	*e*PN	**Pb**	**00 00 55.2**	**0.0**
GONE	**Gonen-Balikesi**	**1.43**	**312**	*e*Pn	**Pb**	**00 00 55.2**	**0.0**
ADVT	**Abdulvahap**	**1.43**	**21**	*e*PN	**Pb**	**00 00 54.9**	**-0.4**
ADVT	**Abdulvahap**	**1.43**	**21**	*e*Pn	**Pb**	**00 00 54.9**	**-0.4**
ARMT	**Armutlu**	**1.48**	**354**	*e*PN	**Pb**	**00 00 56.0**	**0.0**
ARMT	**Armutlu**	**1.48**	**354**	*e*Pn	**Pb**	**00 00 56.0**	**0.0**
EDC	**Edincik**	**1.55**	**324**	*e*PN	**Pb**	**00 00 57.3**	**0.0**
EDC	**Edincik**	**1.55**	**324**	*e*Pn	**Pb**	**00 00 57.3**	**0.0**

*IDC **20** 00:02:03.9±2.3, 36°.47N×141°.18E, h0km, mb3.6/4, mb1 3.7/6, mb1mx3.4/53, mbtmp3.6/6, ML3.4/2, MS3.2/1, Ms1 3.2/1, ms1mx2.3/52, Error ellipse: s-maj=58.0km s-min=26.8km az=57.0*
*ISCJB **20** 00:02:12.3±0.9, 36°.22N±0'.06×140°.55E±0'.08, h59km±5km, mb3.5/4, Error ellipse: s-maj=12.3km s-min=8.4km az=137.7*
*JMA **20** 00:02:13.8±0.1, 36°.25N×140°.48E, h52km±1km, M3.1*
JMA Felt I J1.
ISC 20 00:02:13.3±1.3, 36°.23N±0'.08×140°.54E±0'.08, h53km±8km, n21, σ0°75/22, mb3.5/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JYT	**Yasato**	**0.28**	**270**	P	**Pn**	**00 02 22.7**	**+0.2**
JYT				S	**Sn**	**00 02 28.9**	**-0.2**
JHO	**Hitachi**	**0.39**	**3**	P	**Pn**	**00 02 23.6**	**+0.1**
JHO				S	**Sn**	**00 02 30.5**	**-0.3**
JAG	**Ashikaga**	**0.90**	**283**	P	**Pn**	**00 02 29.5**	**-0.2**
JAG				S	**Sn**	**00 02 40.7**	**-1.2**
JKT	**Katashina**	**1.17**	**298**	P	**Pn**	**00 02 33.5**	**0.0**
JKT				S	**Sn**	**00 02 48.3**	**-0.2**
JFT	**Otama**	**1.30**	**353**	P	**Pn**	**00 02 35.2**	**+0.1**
JFT				S	**Sn**	**00 02 51.5**	**0.0**
JRY	**Ryogami san**	**1.34**	**262**	P	**Pn**	**00 02 35.7**	**0.0**
JRY				S	**Sn**	**00 02 51.8**	**-0.7**
JFY	**Yanaizu**	**1.36**	**331**	P	**Pn**	**00 02 36.0**	**+0.1**
JFY				*e*S	**Sn**	**00 02 52.6**	**-0.2**
MJAR	**Matsushiro Arr**	**1.91**	**280**	Pn	**Pn**	**00 02 43.7**	**+0.3**
	11nm,0.3s,baz=102,slow=9.3,SNR=85						
MAT	**Matsushiro**	**1.91**	**280**	P	**Pn**	**00 02 44.2**	**+0.8**
MAT				*e*S	**Sn**	**00 03 06.5**	**+0.2**
JCJ	**Chichijima**	**9.21**	**171**	LR	LR	00 07 17.9	
	comp=Z,142nm,21.2s,baz=120,slow=34						
KSRS	**Korea Array**	**10.19**	**281**	Pn	**Pn**	**00 04 39.2**	**+2.4**
	0.2nm,0.3s,baz=93,slow=15,SNR=3.6						
SONM	**Songino Array**	**27.67**	**305**	P	**P**	**00 07 55.1**	**-1.0**
	0.5nm,0.5s,baz=39,slow=9.6,SNR=2.0						
H11N2	**WAKE ISLAND Hy**	**28.36**	**118**	T	T	00 38 01.2	
	baz=305						
H11N1	**WAKE ISLAND Hy**	**28.37**	**118**	T	T	00 38 10.7	
	baz=305						
H11N3	**WAKE ISLAND Hy**	**28.38**	**118**	T	T	00 37 54.4	
	baz=305						
H11S1	**WAKE ISLAND Hy**	**29.03**	**120**	T	T	00 38 57.5	
	baz=318						
H11S3	**WAKE ISLAND Hy**	**29.03**	**120**	T	T	00 38 57.9	
	baz=318						
H11S2	**WAKE ISLAND Hy**	**29.05**	**120**	T	T	00 39 00.4	
	baz=318						
ZALV	**Zalesovo Beam**	**41.95**	**313**	P	**P**	**00 09 58.4**	**-0.2**
	1.1nm,0.7s,baz=111,slow=8.1,SNR=4.9						
MKAR	**Makanchi Array**	**43.96**	**303**	P	**P**	**00 10 15.2**	**+0.2**
	0.6nm,0.7s,baz=84,slow=11,SNR=5.3						
WRA	**Warramunga Arr**	**56.17**	**187**	P	**P**	**00 11 47.6**	**-0.1**
	0.2nm,0.3s,baz=2.8,slow=7.6,SNR=9.7						

*ISCJB **20** 00:03:52.1±0.4, 39°.13N±0'.02×29°.03E±0'.02, h8km±3km, Error ellipse: s-maj=2.9km s-min=2.7km az=159.1*
*DDA **20** 00:03:52.3, 39°.10N×29°.02E, h7km, Ml3.7*
*ISK **20** 00:03:52.0, 39°.18N×29°.03E, h5km, ML3.6*
*CSEM **20** 00:03:52.5±0.1, 39°.12N×29°.06E, h5km, ML3.7, Error ellipse: s-maj=3.0km s-min=2.6km az=96.0*
*THE **20** 00:03:55.0, 39°.02N×28°.84E, h1km±1km, ML3.3/5, Error ellipse: s-maj=1.6km s-min=0.6km az=91.0*
ISC 20 00:03:52.6±1.0, 39°.13N±0'.02×29°.04E±0'.02, h7km±8km, n124, σ0°99/167, 20C-6D, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**252**	P	**Pg**	**00 03 58.0**	**+0.1**
DEMI				S	**Sg**	**00 04 01.5**	**+0.1**
DEMI	**Demirci**	**0.27**	**252**	*i* P	**Pg**	**00 03 58.0**	**+0.1**
DEMI				*i* S	**Sg**	**00 04 01.6**	**+0.1**
GDZ	**Gediz**	**0.34**	**96**	P	**Pg**	**00 03 59.8**	**+0.4**
GDZ				S	**Sg**	**00 04 04.7**	**+0.7**
GDZ	**Gediz**	**0.34**	**96**	*i* P	**Pg**	**00 03 59.8**	**+0.4**
GDZ				*i* S	**Sg**	**00 04 04.7**	**+0.7**
TVSB	**Tavsanli**	**0.46**	**45**	*e*PG	**Pg**	**00 04 00.8**	**-0.7**
TVSB	**Tavsanli**	**0.46**	**45**	*e*Pg	**Pg**	**00 04 00.8**	**-0.7**
DURS	**Dursunbey**	**0.65**	**317**	P	**Pb**	**00 04 06.4**	**+0.1**
DURS	**Dursunbey**	**0.65**	**317**	*i* P	**Pb**	**00 04 06.4**	**+0.1**
KULA	**Kula-Manisa**	**0.68**	**206**	P	**Pg**	**00 04 05.3**	**-0.4**
KULA				S	**Sg**	**00 04 13.8**	**-0.8**
KULA	**Kula-Manisa**	**0.68**	**206**	P	**Pg**	**00 04 05.3**	**-0.4**
KULA				S	**Sg**	**00 04 13.8**	**-0.8**
MANT	**Manisa**	**0.74**	**211**	P	**Pg**	**00 04 06.6**	**-0.3**
MANT				S	**Sg**	**00 04 15.6**	**-0.9**
MANT	**Manisa**	**0.74**	**211**	*i* P	**Pg**	**00 04 06.5**	**-0.3**
MANT				*i* S	**Sg**	**00 04 15.6**	**-0.9**
KHAL	**Karahalli**	**0.83**	**155**	P	**Pg**	**00 04 08.0**	**-0.7**
KHAL				S	**Sg**	**00 04 19.5**	**0.0**
KHAL	**Karahalli**	**0.83**	**155**	*i* P	**Pg**	**00 04 08.0**	**-0.7**
KHAL				*i* S	**Sg**	**00 04 19.5**	**0.0**
KHL	**Karahalli**	**0.89**	**155**	*e*PG	**Pb**	**00 04 10.4**	**0.0**
KHL	**Karahalli**	**0.89**	**155**	*e*Pg	**Pb**	**00 04 10.4**	**0.0**
ORLT	**Orhaneli**	**0.92**	**353**	*e*PG	**Pg**	**00 04 09.6**	**-0.8**
ORLT	**Orhaneli**	**0.92**	**353**	*e*Pg	**Pg**	**00 04 09.6**	**-0.8**
AKHS	**Akhisar**	**0.99**	**256**	P	**Pb**	**00 04 12.2**	**+0.1**
AKHS				S	**Sg**	**00 04 24.2**	**-0.2**
AKHS	**Akhisar**	**0.99**	**256**	*i* P	**Pb**	**00 04 12.2**	**+0.1**
AKHS				*i* S	**Sg**	**00 04 24.2**	**-0.2**
AKS	**Akhisar**	**0.99**	**256**	*e*PG	**Pg**	**00 04 11.7**	**+0.1**
AKS				*e*SG	**Sb**	**00 04 25.4**	**0.0**
AKS	**Akhisar**	**0.99**	**256**	*e*Pg	**Pg**	**00 04 11.7**	**+0.1**
AKS				*e*Sg	**Sb**	**00 04 25.4**	**0.0**
BALB	**Balikesir**	**1.03**	**300**	*e*PG	**Pg**	**00 04 11.7**	**-0.8**
BALB				*e*SG	**Sg**	**00 04 26.2**	**+0.3**
BALB	**Balikesir**	**1.03**	**300**	*e*Pg	**Pg**	**00 04 11.7**	**-0.8**
BALB				*e*Sg	**Sg**	**00 04 26.2**	**+0.3**
IGD	**Bursa**	**1.14**	**6**	*i* P	Pg	00 04 09.7	-4.9
IGD				*i* S	**Sn**	**00 04 31.1**	**+0.1**
CAVI	**Cavuskoy**	**1.24**	**30**	*e*PN	**Pb**	**00 04 14.7**	**-1.7**
CAVI				*e*SN	**Sg**	**00 04 32.1**	**-0.4**
CAVI	**Cavuskoy**	**1.24**	**30**	*e*Pn	**Pb**	**00 04 14.7**	**-1.7**
CAVI				*e*Sn	**Sg**	**00 04 32.1**	**-0.4**
MDNY	**Mudanya-Bursa**	**1.25**	**354**	*e*PN	**Pn**	**00 04 15.5**	**-1.0**
MDNY	**Mudanya-Bursa**	**1.25**	**354**	*e*Pn	**Pn**	**00 04 15.5**	**-1.0**
IZI	**Iznik**	**1.25**	**15**	*e*PN	**Pb**	**00 04 14.9**	**-1.7**
IZI	**Iznik**	**1.25**	**15**	*e*Pn	**Pb**	**00 04 14.9**	**-1.7**
KCTX	**Karacabey (Bur**	**1.25**	**335**	*e*PN	**Pn**	**00 04 16.0**	**-0.6**
KCTX	**Karacabey (Bur**	**1.25**	**335**	*e*Pn	**Pn**	**00 04 16.0**	**-0.6**
BALY	**Balya**	**1.26**	**300**	P	**Pg**	**00 04 17.0**	**+0.2**
BALY				S	**Sn**	**00 04 33.7**	**-0.3**
BALY	**Balya**	**1.26**	**300**	*i* P	**Pg**	**00 04 17.0**	**+0.2**
BALY				*i* S	**Sn**	**00 04 33.7**	**-0.3**
GEMT	**Gemlik**	**1.31**	**5**	*e*PN	**Pn**	**00 04 16.5**	**-0.9**
GEMT	**Gemlik**	**1.31**	**5**	*e*Pn	**Pn**	**00 04 16.5**	**-0.9**
DENT	**Denizli**	**1.37**	**180**	*e*PN	**Pg**	**00 04 19.2**	**+0.3**
DENT	**Denizli**	**1.37**	**180**	*e*Pn	**Pg**	**00 04 19.2**	**+0.3**
GONE	**Gonen-Balikesi**	**1.39**	**312**	*e*PN	**Pn**	**00 04 18.3**	**-0.2**
GONE	**Gonen-Balikesi**	**1.39**	**312**	*e*Pn	**Pn**	**00 04 18.3**	**-0.2**
ADVT	**Abdulvahap**	**1.41**	**22**	*e*PN	**Pn**	**00 04 18.3**	**-0.5**
ADVT	**Abdulvahap**	**1.41**	**22**	*e*Pn	**Pn**	**00 04 18.3**	**-0.5**
DNZL	**Cakiroluk**	**1.44**	**180**	P	**Pn**	**00 04 18.2**	**-1.1**
DNZL	**Cakiroluk**	**1.44**	**180**	*i* P	**Pn**	**00 04 18.2**	**-1.1**
DNZL				*i* S	**Sg**	**00 04 39.9**	**+1.1**
ARMT	**Armutlu**	**1.44**	**355**	*e*PN	**Pn**	**00 04 19.2**	**0.0**
ARMT	**Armutlu**	**1.44**	**355**	*e*Pn	**Pn**	**00 04 19.2**	**0.0**
BNT	**Bandirma**	**1.50**	**325**	*e*PN	**Pn**	**00 04 19.2**	**-0.8**
BNT	**Bandirma**	**1.50**	**325**	*e*Pn	**Pn**	**00 04 19.2**	**-0.8**
GPA	**Golpazari**	**1.52**	**40**	*e*PN	**Pn**	**00 04 20.7**	**+0.4**
GPA	**Golpazari**	**1.52**	**40**	*e*Pn	**Pn**	**00 04 20.7**	**+0.4**
EDC	**Edincik**	**1.52**	**324**	*e*PN	**Pn**	**00 04 20.0**	**-0.3**
EDC	**Edincik**	**1.52**	**324**	*e*Pn	**Pn**	**00 04 20.0**	**-0.3**
BOLV	**Bolvadin**	**1.54**	**105**	P	**Pb**	**00 04 22.0**	**+0.3**
BOLV				S	**Sn**	**00 04 39.8**	**-1.3**
BOLV	**Bolvadin**	**1.54**	**105**	*i* P	**Pb**	**00 04 22.0**	**+0.3**
BOLV				*i* S	**Sn**	**00 04 39.8**	**-1.3**
GULT	**Gulveren**	**1.73**	**41**	*e*PN	**Pn**	**00 04 23.5**	**+0.3**
GULT	**Gulveren**	**1.73**	**41**	*e*Pn	**Pn**	**00 04 23.5**	**+0.3**
ISP	**Isparta**	**1.75**	**138**	⇑*i*P	**Pn**	**00 04 23.1**	**-0.4**
ISP				S	**Sg**	**00 04 53.3**	**+4.6**
ISP	**Isparta**	**1.75**	**138**	P	**Pg**	**00 04 25.8**	**-0.3**
ISP	**Isparta**	**1.75**	**138**	⇑*i*P	**Pn**	**00 04 23.1**	**-0.4**
BAGO	**Egridir - ISPA**	**1.78**	**129**	*i* P	**Pn**	**00 04 24.2**	**+0.3**
BAGO				*i* S	**Sg**	**00 04 50.8**	**+0.9**
SPNC	**Sapanca-Adapaz**	**1.84**	**32**	*e*PN	**Pn**	**00 04 24.8**	**+0.2**
SPNC	**Sapanca-Adapaz**	**1.84**	**32**	*e*Pn	**Pn**	**00 04 24.8**	**+0.2**
ISK	**Istanbul-Kandi**	**1.94**	**0**	*e*PN	**Pn**	**00 04 25.9**	**-0.1**
ISK	**Istanbul-Kandi**	**1.94**	**0**	P	**Pg**	**00 04 29.6**	**-0.1**
ISK				S	**Sg**	**00 04 55.5**	**+0.7**
ISK	**Istanbul-Kandi**	**1.94**	**0**	*e*Pn	**Pn**	**00 04 25.9**	**-0.1**
ISK	**Istanbul-Kandi**	**1.94**	**0**	P	**Pg**	**00 04 29.6**	**-0.1**
ISK				S	**Sg**	**00 04 55.5**	**+0.7**
SVRH	**Sivrihisar-ESK**	**1.95**	**80**	*e*PN	**Pn**	**00 04 26.4**	**+0.1**
SVRH	**Sivrihisar-ESK**	**1.95**	**80**	*e*Pn	**Pn**	**00 04 26.4**	**+0.1**
SILT	**Sile**	**2.08**	**13**	*e*PN	**Pn**	**00 04 27.4**	**-0.4**
SILT	**Sile**	**2.08**	**13**	*e*Pn	**Pn**	**00 04 27.5**	**-0.4**
YER	**Yerkesik**	**2.08**	**197**	P	**Pn**	**00 04 27.8**	**-0.2**
YER	**Yerkesik**	**2.08**	**197**	P	**Pn**	**00 04 27.8**	**-0.2**
MDUB	**Mudurnu**	**2.13**	**50**	*e*PN	**Pn**	**00 04 29.1**	**+0.2**
MDUB	**Mudurnu**	**2.13**	**50**	*e*Pn	**Pn**	**00 04 29.1**	**+0.2**
PRK	**Paraskevi**	**2.15**	**274**	P	**Pn**	**00 04 29.2**	**+0.2**
PRK				S	**Sn**	**00 04 55.1**	**-0.9**
PRK	**Paraskevi**	**2.15**	**274**	P	**Pn**	**00 04 29.2**	**+0.2**
PRK				S	**Sn**	**00 04 55.1**	**-0.9**
EZN	**Ezine**	**2.21**	**289**	P	**Pn**	**00 04 30.0**	**+0.2**
EZN				S	**Sn**	**00 04 57.4**	**0.0**
EZN	**Ezine**	**2.21**	**289**	P	**Pn**	**00 04 30.0**	**+0.2**
EZN				S	**Sn**	**00 04 57.4**	**0.0**
SMG	**Samos**	**2.24**	**231**	P	**Pn**	**00 04 29.0**	**-1.1**
SMG				S	**Sn**	**00 04 56.1**	**-1.9**
SMG	**Samos**	**2.24**	**231**	P	**Pn**	**00 04 29.0**	**-1.1**
SMG				S	**Sn**	**00 04 56.1**	**-1.9**
CHOS	**Chios island**	**2.45**	**253**	P	**Pn**	**00 04 32.2**	**-0.9**
CHOS	**Chios island**	**2.45**	**253**	P	**Pn**	**00 04 32.2**	**-0.9**
BODT	**Bodrum**	**2.47**	**214**	P	**Pn**	**00 04 32.9**	**-0.5**
BODT				S	**Sn**	**00 05 01.9**	**-2.0**
BODT	**Bodrum**	**2.47**	**214**	P	**Pn**	**00 04 32.9**	**-0.5**
BODT				S	**Sn**	**00 05 01.9**	**-2.0**
FETY	**Fethiye**	**2.49**	**179**	P	**Pn**	**00 04 34.2**	**+0.6**
FETY	**Fethiye**	**2.49**	**179**	P	**Pn**	**00 04 34.2**	**+0.6**
ENEZ	**Enez**	**2.74**	**307**	P	**Pn**	**00 04 38.2**	**+1.2**
ENEZ				S	**Sn**	**00 05 11.6**	**+1.2**
ENEZ	**Enez**	**2.74**	**307**	P	**Pn**	**00 04 38.2**	**+1.2**
ENEZ				S	**Sn**	**00 05 11.6**	**+1.2**
ALN	**Alexandroupoli**	**2.90**	**308**	P	**Pn**	**00 04 40.0**	**+0.8**
ALN				S	**Sn**	**00 05 16.9**	**+2.5**
ALN	**Alexandroupoli**	**2.90**	**308**	P	**Pn**	**00 04 40.0**	**+0.8**
ALN				S	**Sn**	**00 05 16.9**	**+2.5**
SMTH	**Samothraki Isl**	**3.02**	**297**	P	**Pn**	**00 04 41.6**	**+0.7**
SMTH				S	**Sn**	**00 05 18.7**	**+1.4**
SMTH	**Samothraki Isl**	**3.02**	**297**	P	**Pn**	**00 04 41.6**	**+0.7**
SMTH				S	**Sn**	**00 05 18.7**	**+1.4**
LIA	**Limnos Island**	**3.08**	**286**	P	**Pn**	**00 04 42.7**	**+1.0**
LIA				S	**Sn**	**00 05 18.8**	**0.0**
LIA	**Limnos Island**	**3.08**	**286**	P	**Pn**	**00 04 42.7**	**+1.0**
LIA				S	**Sn**	**00 05 18.8**	**0.0**
EDRB	**Edirne**	**3.23**	**328**	P	**Pn**	**00 04 45.9**	**+2.1**
EDRB	**Edirne**	**3.23**	**328**	P	**Pn**	**00 04 45.9**	**+2.1**
LAST	**Lasithi**	**4.88**	**217**	⇑*i*P	**Pn**	**00 05 08.5**	**+2.0**
LAST	**Lasithi**	**4.88**	**217**	⇑*i*P	**Pn**	**00 05 08.5**	**+2.0**
TIRR	**Tirgusor**	**5.35**	**355**	⇑*i*P	**Pn**	**00 05 14.3**	**+1.5**
TIRR	**Tirgusor**	**5.35**	**355**	⇑*i*P	**Pn**	**00 05 14.3**	**+1.5**
SULR		**5.92**	**340**	⇓*i*P	**Pn**	**00 05 21.0**	**+0.3**
SULR		**5.92**	**340**	⇓*i*P	**Pn**	**00 05 21.0**	**+0.3**
TLCR		**6.06**	**358**	⇓*i*P	**Pn**	**00 05 23.7**	**+1.1**
TLCR		**6.06**	**358**	⇓*i*P	**Pn**	**00 05 23.7**	**+1.1**
CFR	**Carcaliu**	**6.08**	**354**	⇑*i*P	**Pn**	**00 05 23.6**	**+0.7**
CFR	**Carcaliu**	**6.08**	**354**	⇑*i*P	**Pn**	**00 05 23.6**	**+0.7**
MLR	**Muntele Rosu**	**6.76**	**341**	⇓*i*P	**Pn**	**00 05 34.3**	**+1.9**
MLR	**Muntele Rosu**	**6.76**	**341**	⇓*i*P	**Pn**	**00 05 34.3**	**+1.9**
PLOR	**Plostina**	**6.95**	**346**	⇑*i*P	**Pn**	**00 05 35.1**	**+0.2**
PLOR	**Plostina**	**6.95**	**346**	⇑*i*P	**Pn**	**00 05 35.1**	**+0.2**
VRI	**Vrincioaia**	**6.95**	**347**	⇑*i*P	**Pn**	**00 05 36.7**	**+1.8**
VRI	**Vrincioaia**	**6.95**	**347**	⇑*i*P	**Pn**	**00 05 36.7**	**+1.8**
VOIR		**6.96**	**336**	⇑*i*P	**Pn**	**00 05 36.5**	**+1.4**
VOIR		**6.96**	**336**	⇑*i*P	**Pn**	**00 05 36.5**	**+1.4**
VOIR		**6.96**	**336**	⇑*i*P	**Pn**	**00 05 36.5**	**+1.4**
BOLS	**Boljevac**	**7.10**	**314**	*e*Pn	**Pn**	**00 05 36.0**	**-0.9**
DOPR	**Dopca**	**7.35**	**340**	⇑*i*P	**Pn**	**00 05 41.6**	**+1.3**
DOPR	**Dopca**	**7.35**	**340**	⇑*i*P	**Pn**	**00 05 41.6**	**+1.3**
TESR	**Tescani**	**7.59**	**347**	⇑*i*P	**Pn**	**00 05 44.3**	**+0.7**
TESR	**Tescani**	**7.59**	**347**	⇑*i*P	**Pn**	**00 05 44.3**	**+0.7**
KUBS	**Kucevo**	**7.63**	**316**	*e*Pn	**Pn**	**00 05 43.2**	**-1.0**
IVAS	**Ivanjica**	**8.03**	**306**	*e*Pn	**Pn**	**00 05 50.7**	**+1.0**
SORM	**Soroca**	**9.02**	**357**	⇑*i*P	**Pn**	**00 06 02.8**	**-0.4**
SORM	**Soroca**	**9.02**	**357**	⇑*i*P	**Pn**	**00 06 02.8**	**-0.4**

*NEIC **20** 00:05:12.7, 15°.22N×93°.32W, h74km, mb4.4/108, MD4.8(MEX), After MEX.*
*MEX **20** 00:05:12.7±0.5, 15°.22N×93°.32W, h74km±6km, MD4.8*
*ISCJB **20** 00:05:13.3±0.4, 15°.39N±0'.03×93°.17W±0'.03, h83km±3km, mb4.3/98, Error ellipse: s-maj=6.1km s-min=3.1km az=37.1*
*IDC **20** 00:05:14.3±0.9, 15°.52N×93°.11W, h78km±5km, mb3.8/11, mb1 4.1/14, mb1mx3.8/46, mbtmp4.2/14, MS3.3/5, Ms1 3.3/5, ms1mx3.0/34, Error ellipse: s-maj=19.0km s-min=15.4km az=43.0*
ISC 20 00:05:13.7±0.5, 15°.32N±0'.05×93°.29W±0'.03, h77km±3km, h77km:pP-P, n333, σ1°38/371, mb4.4/98, 2D, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		**0.39**	**11**	*i* P	**Pn**	**00 05 24.7**	**-1.5**
PCIG				*e*S	**Sn**	**00 05 33.7**	**-1.9**
PCIG		**0.39**	**11**	*i* P	**Pn**	**00 05 24.7**	**-1.5**
PCIG				*e*S	**Sn**	**00 05 33.7**	**-1.9**
TGBT	**Tuxtla Gutierr**	**1.46**	**8**	*e*P	**Pn**	**00 05 37.8**	**-0.6

Z37A	Pogue Cattle C	17.93	354	P	Pn	00 09 19.2	+1.4
	baz=173						
133A	Hamilton Ranch	17.95	344	P	Pn	00 09 18.4	+0.2
	baz=162						
Z44A	Pea Ridge, Bel	18.07	8	P	Pn	00 09 20.2	+0.7
	baz=189						
Z36A	Blue Ridge	18.10	352	P	Pn	00 09 20.1	+0.3
	baz=170						
ABTX	Abilene, Hawle	18.17	343	eP	Pn	00 09 22.2	+1.4
	comp=Z,12nm,0.9s						
Z46A	Louisville	18.23	12	P	Pn	00 09 21.9	+0.4
	baz=194						
WLAR	White Oak Lake	18.29	0	eP	Pn	00 09 23.7	+1.5
	comp=Z,100nm,1.9s						
TIGA	Tifton	18.33	27	P	Pn	00 09 22.4	-0.3
	baz=211						
TIGA	Tifton	18.33	27	eP	P	00 09 21.7	-0.2
	comp=Z,22nm,0.9s						
Z47A	Carrollton	18.42	14	P	P	00 09 22.5	-0.4
	baz=196						
Z34A	Collier Ranch,	18.45	348	P	P	00 09 23.3	+0.1
	baz=166						
Y41A	Eaglette Beard	18.49	2	P	P	00 09 24.1	+0.5
	baz=182						
Y39A	Lockesburg	18.55	358	P	P	00 09 24.4	+0.2
	baz=178						
CCAR	Cane Creek	18.57	4	eP	Pn	00 09 25.9	+0.4
CCAR				esP	sP	00 09 52.1	+2.4
Y37A	Hugo	18.70	354	P	P	00 09 26.4	+0.6
	baz=173						
Z48A	Northport	18.71	15	P	P	00 09 26.5	+0.5
	baz=197						
Y45A	Yeager Farm, C	18.77	10	P	P	00 09 26.9	+0.2
	baz=191						
Y46A	Houston	18.91	11	P	Pn	00 09 29.5	-0.1
	baz=193,SNR=9.8						
X39A	Fountain Ranch	19.12	358	P	P	00 09 30.4	-0.1
	baz=178						
MIAR	Mount Ida	19.14	359	P	P	00 09 29.8	-1.0
	baz=179,SNR=26						
MIAR	Mount Ida	19.14	359	eP	P	00 09 30.1	-0.6
	comp=Z,29nm,0.9s						
X37A	Clayton	19.28	355	P	P	00 09 32.2	0.0
	baz=174,SNR=7.9						
X35A	Drake	19.29	351	P	P	00 09 31.7	-0.6
	baz=169						
X38A	Whitesboro	19.32	356	P	P	00 09 32.5	-0.2
	baz=176,SNR=8.8						
X36A	Centrahoma	19.37	352	P	P	00 09 33.0	-0.1
	baz=171,SNR=5.5						
UALR	University of	19.39	2	eP	Pn	00 09 35.0	-0.2
UALR				esP	sP	00 09 59.7	+0.9
OXF	Oxford	19.43	10	eP	Pn	00 09 35.2	-0.5
	comp=Z,35nm,1.2s						
GDL2	Guadalupe Moun	19.60	331	eP	Pn	00 09 38.1	+0.2
MNTX	Cornudas Mount	19.69	328	P	P	00 09 35.9	-0.8
	baz=144,SNR=5.7						
MNTX	Cornudas Mount	19.69	328	eP	Pn	00 09 38.8	-0.1
	comp=Z,7.8nm,0.8s						
X33A	Lawton	19.71	347	P	P	00 09 36.7	-0.2
	baz=165						
X32A	Elmer	19.77	345	P	P	00 09 37.4	-0.2
	baz=163						
W40A	Ferguson Farm,	19.79	1	P	P	00 09 37.7	-0.1
	baz=181						
W41B	Gary Mavity, V	19.79	3	P	P	00 09 37.8	0.0
	baz=183						
W39A	Magazine	19.80	359	P	P	00 09 37.7	-0.2
	baz=179						
W37B	Quinton	19.83	355	P	P	00 09 38.7	+0.5
	baz=174						
X301	Greenbrier Sit	19.85	2	eP	Pn	00 09 39.9	-0.8
	comp=Z,15nm,0.8s						
WHAR	Wooly Hollow	19.91	2	eP	P	00 09 40.2	+1.2
	comp=Z,22nm,0.9s						
X201	Greenbrier Sit	19.91	2	eP	Pn	00 09 40.5	-0.9
X201				esP	sP	00 10 03.5	-0.8
W36A	Wetumka	19.91	353	P	P	00 09 37.9	-1.2
	baz=172						
WMOK	Wichita Mounta	19.96	347	eP	Pn	00 09 41.6	-0.3
	comp=Z,8.1nm,0.8s						
W35A	Tecumseh	20.01	351	P	P	00 09 38.9	-1.2
	baz=170						
GOGA	Godfrey	20.09	25	eP	P	00 09 41.0	0.0
	comp=Z,9.0nm,0.8s						
PLAL	Pickwick Lake	20.13	13	eP	Pn	00 09 43.4	-0.6
	comp=Z,10.0nm,0.8s						
W34A	Bridge Creek,	20.24	349	P	P	00 09 41.7	-1.0
	baz=168						
W34A	Bridge Creek,	20.24	349	eP	Pn	00 09 45.4	+0.1
	comp=Z,34nm,0.8s						
V40A	Witts Springs	20.40	1	P	P	00 09 43.7	-0.8
	baz=181,SNR=8.7						
W32A	Sentinel	20.43	346	P	P	00 09 44.6	-0.2
	baz=164						
V39A	Pettigrew	20.44	359	P	P	00 09 44.3	-0.5
	baz=179,SNR=6.5						
MSTX	Muleshoe	20.45	337	P	P	00 09 44.9	-0.2
	baz=153						
MSTX	Muleshoe	20.45	337	eP	P	00 09 45.3	+0.2
	comp=Z,15nm,1.0s						
V38A	Canehill	20.48	357	P	P	00 09 44.7	-0.6
	baz=177						
V37A	Hulbert	20.55	356	P	P	00 09 45.8	-0.1
	baz=175						
V35A	Meyer Ranch, C	20.60	352	P	P	00 09 47.5	+0.9
	baz=170,SNR=5.8						
TUL1	Leonard	20.63	354	P	P	00 09 47.2	+0.4
	baz=173						
TUL1	Leonard	20.63	354	eP	P	00 09 48.1	+1.3
	comp=Z,24nm,1.3s						
V34A	Guthrie	20.78	350	eP	Pn	00 09 50.2	-1.3
	comp=Z,4.7nm,0.5s						
HHAR	Hobbs	20.88	359	eP	P	00 09 50.0	+0.4
	comp=Z,9.9nm,1.0s						
AMTX	Amarillo	20.89	340	P	P	00 09 49.5	-0.3
	baz=157						
AMTX	Amarillo	20.89	340	eP	P	00 09 50.1	+0.3
	comp=Z,36nm,0.6s						
V33A	Lossen Ranch,	20.90	349	P	P	00 09 49.6	-0.2
	baz=167						
U40A	Yellville	20.95	1	P	P	00 09 50.8	+0.4
	baz=181,SNR=5.4						
U39A	Green Forest	20.98	360	P	P	00 09 50.5	-0.1
	baz=180						
U38A	Gravette	21.06	358	P	P	00 09 51.9	+0.5
	baz=177						
U37A	Salina	21.06	356	P	P	00 09 51.7	+0.2
	baz=175,SNR=6.5						
U36A	Oologah	21.10	355	P	P	00 09 51.7	-0.2
	baz=174						
U35A	Pawnee	21.19	352	P	P	00 09 52.5	-0.3
	baz=171						
WVT	Waverly	21.29	12	eP	P	00 09 53.8	-0.1
WVT				epP	pP	00 10 08.7	-1.0
NHSC	New Hope	21.33	32	eP	P	00 09 54.7	+0.3
	comp=Z,41nm,1.1s						
SDDR	Presa de Saban	21.34	77	eP	P	00 09 54.1	-0.6
	comp=Z,17nm,1.3s						
U34A	Anderson Ranch	21.37	351	eP	P	00 09 56.8	+2.1
	comp=Z,21nm,0.9s						
U33A	Lingo Farm, Me	21.46	349	P	P	00 09 55.2	-0.6
	baz=167						
PBMO	Poplar Bluff	21.52	6	eP	P	00 09 54.4	-1.9
	comp=Z,45nm,0.9s						
CPCT	Cooper Cave	21.53	20	eP	P	00 09 57.6	+1.1
	comp=Z,2.9nm,0.9s						
121A	Cookes Peak, D	21.62	325	P	P	00 09 59.5	+1.9
	baz=139,SNR=15						
121A	Cookes Peak, D	21.62	325	eP	P	00 09 59.7	+2.0
	comp=Z,22nm,0.9s						
T39A	Clever	21.62	360	P	P	00 09 56.0	-1.4
	baz=180,SNR=8.4						
T38A	Diamond	21.65	358	P	P	00 09 56.5	-1.2
	baz=178						
319A	Douglas	21.66	320	eP	P	00 09 59.4	+1.4
	comp=Z,15nm,0.8s						
T41A	Mountain View	21.68	3	P	P	00 09 56.7	-1.3
	baz=184						
T40A	Mansfield	21.75	2	P	P	00 09 57.6	-1.3
	baz=182						
T37A	Cheneyville 18	21.76	356	P	P	00 09 58.5	-0.5
	baz=176,SNR=5.3						
T36A	Boggs Farm, Ca	21.77	354	P	P	00 09 57.5	-1.6
	baz=173						
JSC	Jenkinsville	21.78	28	eP	P	00 10 00.1	+1.0
	comp=Z,7.4nm,1.0s						
TKL	Tuckaleechee C	21.98	21	P	P	00 10 02.4	+1.1
	comp=Z,3.6nm,0.7s,baz=192,slow=12,SNR=7.3						
TKL	Tuckaleechee C	21.98	21	eP	P	00 10 03.4	+2.2
S38A	Stockton	22.23	359	P	P	00 10 01.9	-2.1
	baz=178,SNR=7.5						
BNM	Barren Site	22.28	330	eP	P	00 10 06.9	+2.1
S39A	Bolivar	22.28	360	P	P	00 10 02.2	-2.3
	baz=180,SNR=8.5						
S36A	Lake Cedric, C	22.41	355	P	P	00 10 03.7	-2.2
	baz=174,SNR=5.4						
LPM	Los Pinos Moun	22.41	330	eP	P	00 10 07.7	+1.5
S35A	Otter Creek Ra	22.43	354	P	P	00 10 05.3	-0.9
	baz=172,SNR=5.7						
LENM	Lemitar	22.46	329	eP	P	00 10 07.8	+1.1
KMSC	Kings Mountain	22.47	26	P	P	00 10 03.7	-2.9
	baz=211						
KMSC	Kings Mountain	22.47	26	eP	P	00 10 07.3	+0.7
	comp=Z,5.0nm,0.7s						
SIUC	Southern Illin	22.60	8	eP	P	00 10 09.1	+1.2
SIUC				epP	pP	00 10 25.1	+1.3
LAZ	Ladron	22.73	329	eP	P	00 10 09.2	-0.4
R38A	Fenwick Farm,	22.78	359	P	P	00 10 07.3	-2.6
	baz=179,SNR=11						
ANMO	Albuquerque	22.84	331	P	P	00 10 11.1	+0.4
	comp=Z,5.0nm,0.6s,baz=142,slow=11,SNR=19						
ANMO	Albuquerque	22.84	331	P	P	00 10 10.9	+0.2
	baz=146						
R39A	Chumby, Stover	22.91	1	P	P	00 10 08.8	-2.3
	baz=181						
R37A	Teagarden Farm	22.94	357	P	P	00 10 08.7	-2.8
	baz=176						
R36A	Gordon, Harris	23.00	356	P	P	00 10 09.6	-2.4
	baz=175						
R34A	Isabella, Hill	23.16	352	P	P	00 10 11.4	-2.1
	baz=170						
TUC	Tucson	23.23	320	P	P	00 10 15.1	+0.8
	baz=133						
TUC	Tucson	23.23	320	eP	P	00 10 15.5	+1.1
	comp=Z,7.4nm,0.9s						
Q38A	Cooks Store, C	23.55	359	P	P	00 10 15.2	-1.9
	baz=179,SNR=5.5						
Q40A	Laux Farm, Aux	23.61	2	P	P	00 10 15.2	-2.4
	baz=183						
Q39A	Willow Grove F	23.64	1	P	P	00 10 15.6	-2.3
	baz=181						
WCI	Wyandotte Cave	23.64	14	eP	P	00 10 19.1	+1.0
	comp=Z,75nm,1.9s						
Q34A	Chapman	23.73	353	P	P	00 10 17.2	-1.6
	baz=171						
OLIL	Olney	23.77	10	eP	P	00 10 19.1	+0.1
OLIL				epP	sP	00 10 44.6	-1.2
T25A	Trinidad	23.87	338	P	P	00 10 21.5	+1.2
	baz=153,SNR=9.4						
T25A	Trinidad	23.87	338	eP	P	00 10 21.4	+1.1
	comp=Z,14nm,0.8s						
Q32A	Meitler Ranch,	24.03	350	P	P	00 10 19.5	-2.0
	baz=168						
P39B	Salisbury	24.08	1	P	P	00 10 19.6	-2.3
	baz=181						
CBKS	Cedar Bluff	24.08	348	eP	P	00 10 23.2	+1.2
	comp=Z,19nm,1.0s						
P40A	Paris	24.14	2	P	P	00 10 20.0	-2.5
	baz=183						
P38A	Dawn	24.21	360	P	P	00 10 20.9	-2.2
	baz=180						
P35A	Duane Minner,	24.24	355	P	P	00 10 20.7	-2.6
	baz=174						
P36A	Good Intent, A	24.27	356	P	P	00 10 21.1	-2.5
	baz=176						
X18A	Snowflake	24.31	325	eP	P	00 10 25.2	+1.0
	comp=Z,4.6nm,0.9s						
P34A	Walnut Farm, R	24.33	353	P	P	00 10 22.3	-1.9
	baz=172						
BLO	Bloomington	24.50	13	eP	P	00 10 26.7	+1.1
	comp=Z,21nm,1.0s						
BLA	Blacksburg	24.62	25	eP	P	00 10 28.2	+1.4
	comp=Z,2.2nm,0.4s						
W18A	Petrified Fore	24.63	326	eP	P	00 10 28.4	+1.3
	comp=Z,12nm,0.8s						
P32A	Huiting Farm,	24.65	350	P	P	00 10 26.3	-0.9
	baz=168						
O37A	Wolven Farm, M	24.77	358	P	P	00 10 27.7	-0.4
	baz=178						
SDCO	Great Sand Dun	24.82	336	P	P	00 10 29.5	+0.6
	baz=151,SNR=9.1						
SDCO	Great Sand Dun	24.82	336	eP	P	00 10 29.9	+1.0
	comp=Z,12nm,1.4s						
O34A	Beatrice	24.95	354	P	P	00 10 27.9	-1.9
	baz=172,SNR=6.3						
KSCO	Kaye Shedlock'	24.99	343	eP	P	00 10 31.0	+0.7
	comp=Z,15nm,0.6s						
X16A	Lo Mia Camp, P	25.08	323	eP	P	00 10 33.2	+1.9
	comp=Z,6.0nm,0.9s						
S22A	4UR Ranch, Cre	25.35	334	P	P	00 10 35.0	+1.2
	baz=148,SNR=6.3						
S22A	4UR Ranch, Cre	25.35	334	eP	P	00 10 35.1	+1.3
	comp=Z,5.4nm,0.9s						
113A	Mohawk Valley,	25.44	317	eP	P	00 10 36.0	+1.6
113A				epP	pP	00 10 56.1	+4.0
N39A	Derby Farms, D	25.47	1	P	P	00 10 32.0	-2.6
	baz=182						
SFIN	Lafayette	25.55	11	eP	P	00 10 36.9	+1.7
	comp=Z,23nm,1.5s						
N34A	Lincoln	25.58	354	P	P	00 10 35.0	-0.5
	baz=173						
MVCO	Mesa Verde	25.64	331	P	P	00 10 37.6	+1.2
	baz=144,SNR=11						
MVCO	Mesa Verde	25.64	331	eP	P	00 10 38.1	+1.7
	comp=Z,9.5nm,0.8s						
Y14A	Wickenburg	25.70	320	eP	P	00 10 39.0	+2.3
	comp=Z,18nm,0.9s						
M37A	Trindle Farm,	26.00	359	P	P	00 10 37.4	-1.9
	baz=178						
M38A	Pleasantville	26.00	0	P	P	00 10 36.9	-2.4
	baz=180						
M36A	Felix, Anita	26.07	357	P	P	00 10 37.6	-2.4
	baz=177						
SJG	San Juan	26.14	80	eP	P	00 10 41.1	+0.3
	comp=Z,13nm,1.1s						
GLA	Glamis	26.32	316	eP	P	00 10 44.3	+1.9
	comp=Z,6.1nm,0.8s						
ACSO	Alum Creek Sta	26.40	18	eP	P	00 10 43.5	+0.6
PV01	Paradox Valley	26.43	332	eP	P	00 10 45.0	+1.5
Y12C	Blythe	26.55	318	eP	P	00 10 44.0	-0.3
	comp=Z,8.2nm,0.5s						
PV05	Paradox Valley	26.63	331	eP	P	00 10 46.7	+1.5
SMCO	Snowmass	26.63	336	eP	P	00 10 46.7	+1.2
	comp=Z,6.4nm,1.3s						
PDMCI	Parker Dam,Lak	26.65	319	P	P	00 10 47.0	+1.8
	baz=130						
ISCO	Idaho Springs	26.66	339	P	P	00 10 46.7	+1.0
	baz=153						
ISCO	Idaho Springs	26.66	339	eP	P	00 10 46.4	+0.7
	comp=Z,4.2nm,1.4s						
MTP	Monte Pirata	26.70	80	eP	P	00 10 46.6	+0.7
	comp=Z,28nm,1.2s						
PV04	Paradox Valley	26.79	332	eP	P	00 10 48.0	+1.3
PV10	Paradox Valley	26.84	332	eP	P	00 10 48.1	+0.9
PV09	Paradox Valley	26.98	332	eP	P	00 10 50.1	+1.6
W13A	Hualapai Mount	27.01	321	eP	P	00 10 49.8	+1.1
W13A				epP	sP	00 11 18.1	+2.3
BC3	Big Chuckawall	27.10	316	P	P	00 10 51.2	+1.8
	baz=127						
KNB	Kanab	27.71	325	eP	P	00 10 56.2	+1.3
	comp=Z,4.4nm,1.0s						
PFO	Pinyon Flats O	27.75	315	eP	P	00 10 56.9	+1.6
	comp=Z,9.1nm,1.3s						
N23A	Red Feather La	27.75	339	eP	P	00 10 56.5	+1.1
	comp=Z,3.4nm,1.0s						
ABVI	Anegada Island	27.88	79	eP	P	00 10 57.0	+0.5
	comp=Z,88nm,0.9s						
GMRC	Granite Mounta	27.92	318	P	P	00 10 58.2	+1.4
	baz=129						
PHWY	Pilot Hill	27.95	340	eP	P	00 10 58.1	+0.9
	comp=Z,5.8nm,1.4s						
O20A	White River Ci	27.96	335	P	P	00 10 58.4	+1.3
	baz=148						
O20A	White River Ci	27.96	335	eP	P	00 10 58.0	+0.9
	comp=Z,3.3nm,0.8s						
SRU	San Rafael Swe	28.12	331	eP	P	00 11 00.3	+1.8
	comp=Z,3.3nm,1.0s						
MTPU	Mount Pierson	28.12	327	eP	P	00 11 00.6	+1.8
	comp=Z,12nm,1.7s						
Q16A	Castle Valley	28.28	330	eP	P	00 11 01.2	+1.2
	comp=Z,3.2nm,1.0s						
CCUT	Cedar City	28.40	325	eP	P	00 11 01.6	+0.5
	comp=Z,6.0nm,1.4s						
P18A	Preston Nutter	28.40	332	eP	P	00 11 02.3	+1.0
	comp=Z,2.6nm,0.9s						
ECSD	EROS Data Cent	28.46	355	eP	P	00 11 01.4	+0.1
	comp=Z,17nm,1.8s						
P17A	Butcher Ranch,	28.51	331	eP	P	00 11 03.0	+1.0
	comp=Z,29nm,2.0s						
SSPA	Standing Stone	28.57	25	eP	P	00 11 02.0	-0.3
	comp=Z,13nm,1.4s						
TMUT	Trail Mountain	28.59	330	eP	P	00 11 04.2	+1.2
TMUT				epP	pP	00 11 17.0	-4.0
SHPR	Sheep Range	28.71	321	eP	P	00 11 05.2	+1.3
	comp=Z,3.2nm,1.1s						
PASC	Pasadena Art C	29.25	314	eP	P	00 11 10.5	+2.0
	comp=Z,34nm,1.4s						
PSUT	Pine Spring	29.37	326	eP	P	00 11 11.2	+1.4
	comp=Z,3.0nm,1.0s						
K22A	Casper	29.52	340	eP	P	00 11 11.8	+0.9
	comp=Z,8.0nm,1.0s						
TPNV	Topopah Spring	29.67	321	P	P	00 11 14.0	+1.7
	baz=131						
SNCC	San Nicolas Is	29.70	312	eP	P	00 11 13.5	+1.0
	comp=Z,146nm,1.0s						
JLU	Jordanelle	29.74	331	eP	P	00 11 13.5	+0.5
	comp=Z,20nm,2.0s						
JLU				ePcP	PcP	00 14 15.4	+0.1
SPMN	Marine on St.	29.81	1	P	P	00 11 14.4	+1.1
	baz=181						
OSI	Osito Audit: C	29.87	315	eP	P	00 11 15.6	+1.6
	comp=Z,40nm,1.6s						
MPMC	Manual Prospec	29.88	318	P	P	00 11 15.5	+1.3
	baz=128						
I25A	Rochford	29.95	345	P	P	00 11 15.2	+0.5
	baz=160						
DAC	Darwin (Calif)	30.08	318	eP	P	00 11 17.6	+1.6
	comp=Z,5.5nm,1.2s						
RSSD	Black Hills	30.13	344	P	P	00 11 16.4	0.0
	baz=159						
RSSD	Black Hills	30.13	344	eP	P	00 11 16.4	0.0
	comp=Z,2.5nm,0.7s						
TCUT	Toone Canyon	30.13	332	eP	P	00 11 18.4	+1.9
	comp=Z,13nm,0.8s						
ANWB	Willy Bob	30.28	81	eP	P	00 11 18.3	+0.6
	comp=Z,52nm,0.8s						
MMNY	Mt. Morris Dam	30.35	23	eP	P	00 11 17.9	-0.1
CPNY	Central Park	30.44	30	eP	P	00 11 19.0	+0.2
	comp=Z,57nm,1.5s						
BW06	Boulder Array	30.71	336	eP	P	00 11 24.2	+2.7
PD31	Pinedale Array	30.71	336	eP	P	00 11 21.8	+0.3
PDAR	Pinedale Array	30.71	336	P	P	00 11 21.6	+0.1
	comp=Z,0.7nm,0.6s,baz=138,slow=7.8,SNR=9.7						
PDAR				PcP	PcP	00 14 16.4	-1.4
	comp=Z,0.5nm,0.6s,baz=131,slow=4.9,SNR=4.9						
PDAR				LR	LR	00 25 59.8	
	comp=Z,50nm,19.9s,baz=64,slow=41						
HVU	Hansel Valley	31.28	331	eP	P	00 11 26.4	0.0
	comp=Z,6.1nm,1.1s						
AHID	Auburn Hatcher	31.33	334	eP	P	00 11 27.8	+0.8
	comp=Z,4.5nm,0.8s						
SADO	Sadowa	31.71	19	P	P	00 11 28.8	-1.2
	comp=Z,2.9nm,0.9s,baz=62,slow=0.8,SNR=3.1						
SADO	Sadowa	31.71	19	eP	P	00 11 30.1	+0.1
REDW	Red Top Meadow	31.73	335	eP	P	00 11 31.5	+1.1
	comp=Z,22nm,1.0s						
SNOW	Snow King Moun	31.77	335	eP	P	00 11 32.0	+1.2
	comp=Z,35nm,0.6s						
NV11	Mina Array Sit	31.78	321	eP	P	00 11 32.5	+1.6
	comp=Z,5.4nm,1.0s						
NV11				epP	pP	00 11 53.2	+4.2
LOHW	Long Hollow	31.84	336	eP	P	00 11 32.1	+0.7
	comp=Z,8.1nm,0.7s						
NV01	Mina Array Sit	31.86	321	eP	P	00 11 33.7	+2.0
NV01				epP	pP	00 11 51.9	+2.0
NVAR	Mina Array Bea	31.86	321	P	P	00 11 33.1	+1.3
	comp=Z,3.7nm,0.7s,baz=136,slow=8.8,SNR=24						
NVAR				pP	pP	00 11 51.7	+1.8
	comp=Z,2.1nm,0.8s,baz=136,slow=9.1,SNR=3.7						
NVAR				sP	sP	00 12 00.6	+1.6
	comp=Z,4.6nm,0.9s,baz=138,slow=9.1,SNR=5.2						
NVAR				PcP	PcP	00 14 21.5	+0.6
	comp=Z,0.4nm,0.3s,baz=164,slow=9.6,SNR=4.3						
TPAW	Teton Pass	31.87	335	eP	P	00 11 32.7	+1.0
	comp=Z,7.4nm,0.8s						
MOOW	Moose Ponds	32.01	336	eP	P	00 11 33.8	+0.9
MOOW				esP	sP	00 12 00.5	+0.4
FXWY	Fox Creek	32.02	335	eP	P	00 11 34.1	+1.0
	comp=Z,4.1nm,0.8s						
IMW	Indian Meadow	32.21	336	eP	P	00 11 35.3	+0.6
	comp=Z,6.8nm,0.6s						
FLWY	Flagg Ranch	32.27	336	eP	P	00 11 36.3	+1.2
	comp=Z,6.7nm,0.6s						
H17A	Grant Village	32.48	337	P	P	00 11 38.5	+1.4
	baz=148						
H17A	Grant Village	32.48	337	eP	P	00 11 38.0	+0.9
	comp=Z,3.9nm,0.8s						
LKWY	Lake	32.56	337	eP	P	00 11 38.1	+0.4
	comp=Z,5.0nm,0.7s						
RLMT	Red Lodge	32.63	339	P	P	00 11 38.2	-0.1
	baz=151,SNR=7.7						
RLMT	Red Lodge	32.63	339	eP	P	00 11 38.7	+0.4
	comp=Z,4.5nm,0.6s						
YFT	Old Faithful	32.63	336	eP	P	00 11 39.1	+0.8
	comp=Z,4.2nm,0.6s						
YMR	Madison River	32.86	336	eP	P	00 11 42.5	+2.1
	comp=Z,9.7nm,0.7s						
CMB	Columbia Colle	32.92	319	eP	P	00 11 42.7	+1.9
	comp=Z,3.0nm,0.9s						
LAO	LASA Array	33.09	344	eP	P	00 11 43.9	+1.7
	comp=Z,26nm,2.0s						
QLMT	Earthquake Lak	33.18	336	eP	P	00 11 45.2	+2.0
GCMT	Greycliff	33.35	339	eP	P	00 11 44.7	+0.2
HLID	Hailey	33.42	332	P	P	00 11 46.8	+1.6
	baz=141						
HLID	Hailey	33.42	332	eP	P	00 11 46.6	+1.4
	comp=Z,3.0nm,0.9s						
MCMT	McKenzie Canyo	33.75	335	eP	P	00 11 49.9	+1.8
A29A	Manning Farm,	33.86	353	P	P	00 11 49.7	+1.0
	baz=170						
BOZ	Bozeman (W)	33.94	337	P	P	00 11 49.9	+0.3
	baz=147,SNR=6.4						
BOZ	Bozeman (W)	33.94	337	eP	P	00 11 50.4	+0.7
	comp=Z,2.7nm,0.7s						
MFID	Camas Ranch	33.98	330	eP	P	00 11 47.8	-2.2
	comp=Z,22nm,1.0s						
MFID				eScP	ScP	00 18 06.3	+1.6
DLMT	Dillon	34.08	335	eP	P	00 11 52.6	+1.7
	comp=Z,7.7nm,0.8s						
LRM	Limekiln Ridge	34.40	336	eP	P	00 11 54.6	+0.8
ULM	Lac du Bonnet	34.90	357	LR	LR	00 28 38.3	
	comp=Z,47nm,18.9s,baz=260,slow=40						
EGMT	Eagleton	35.33	341	P	P	00 12 01.9	+0.4
	baz=152						
CHMT	Chamberlain Mo	35.62	336	eP	P	00 12 04.5	+0.4
MSO	Missoula	35.82	336	P	P	00 12 06.6	+0.8
	baz=145						
MSO	Missoula	35.82	336	eP	P	00 12 06.3	+0.6

comp=Z,19nm,19.4s,baz=21,slow=37
INK Inuvik 58.83 344 P **P 00 15 03.3 -0.5**
comp=Z,8.2nm,0.7s,baz=126,slow=5.8,SNR=36
INK Inuvik 58.83 344 *eP* **P 00 15 03.2 -0.5**
comp=Z,8.8nm,0.8s
IL1 Eielson Array 61.14 337 *eP* **P 00 15 18.9 -0.7**
ILAR Eielson Array 61.14 337 P **P 00 15 19.3 -0.4**
comp=Z,1.4nm,0.5s,baz=143,slow=5.0,SNR=16
ILAR pP **pP 00 15 38.8 -0.7**
comp=Z,0.2nm,0.5s,baz=322,slow=32,SNR=2.7
ILAR sP **sP 00 15 48.5 +0.4**
comp=Z,0.2nm,0.6s,baz=317,slow=33,SNR=1.9
RND Reindeer 61.31 335 *eP* **P 00 15 21.5 +0.6**
comp=Z,32nm,1.8s
TRF Thorofare Moun 61.92 335 *eP* **P 00 15 25.7 +0.5**
comp=Z,6.9nm,0.8s
MLY Manley 62.73 336 *eP* **P 00 15 30.2 -0.3**
comp=Z,3.9nm,0.9s
BILL Bilibino 79.77 338 *eP* **P 00 17 12.3 -0.8**
comp=Z,4.9nm,0.6s
FINES FINESS Array B 89.83 25 P **P 00 18 03.4 -0.3**
comp=Z,0.9nm,0.9s,baz=236,slow=5.8,SNR=4.3
CD2 Chengdu 131.20 340 PKP **PKPdf 00 24 16.9 -0.6**
WRA Warramunga Arr 134.49 257 PKP **PKPdf 00 24 23.4 -0.4**
comp=Z,0.4nm,0.7s,baz=82,slow=2.3,SNR=5.4
WRA pPKP **pPKPdf 00 24 47.0 +1.2**
comp=Z,0.4nm,0.9s,baz=89,slow=3.5,SNR=1.7
CMAR Chiang Mai Arr 144.34 340 PKP **PKPab 00 24 39.5 -0.5**
comp=Z,1.4nm,0.5s,baz=340,slow=3.7,SNR=9.7

DDA ***20*** *00:07:37.2, 39°.12N×29°.01E, h9km, Md2.7*
ISK ***20*** *00:07:37.7, 39°.19N×29°.15E, h5km, ML3.1*
CSEM ***20*** *00:07:37.2±0.1, 39°.16N×29°.04E, h2km, MD2.7, Error ellipse: s-maj=3.5km s-min=3.2km az=85.0*
ISC 20 00:07:36.7±1.1, 39°.13N±0°.02×29°.06E±0°.02, h5km±10km, n59, σ0.88/77, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**252**	P	**Pg**	**00 07 42.2**	**+0.1**
DEMI				S	**Sg**	**00 07 45.7**	**-0.1**
DEMI	**Demirci**	**0.28**	**252**	*i* P	**Pg**	**00 07 42.2**	**+0.1**
DEMI				*i* S	**Sg**	**00 07 45.7**	**-0.1**
GDZ	**Gediz**	**0.33**	**97**	P	**Pb**	**00 07 44.7**	**-0.5**
GDZ				S	**Sb**	**00 07 50.1**	**-0.8**
GDZ	**Gediz**	**0.33**	**97**	*i* P	**Pb**	**00 07 44.7**	**-0.5**
GDZ				*i* S	**Sb**	**00 07 50.1**	**-0.8**
TVSB	**Tavsanli**	**0.45**	**44**	*e*PG	**Pg**	**00 07 45.1**	**-0.2**
TVSB	**Tavsanli**	**0.45**	**44**	*e*Pg	**Pg**	**00 07 45.1**	**-0.2**
DURS	**Dursunbey**	**0.65**	**316**	P	**Pg**	**00 07 49.0**	**-0.2**
DURS	**Dursunbey**	**0.65**	**316**	*i* P	**Pg**	**00 07 49.0**	**-0.2**
MANT	**Manisa**	**0.75**	**212**	P	**Pg**	**00 07 51.4**	**+0.4**
MANT				S	**Sg**	**00 08 00.0**	**-0.8**
MANT	**Manisa**	**0.75**	**212**	*i* P	**Pg**	**00 07 51.4**	**+0.4**
MANT				*i* S	**Sg**	**00 07 60.0**	**-0.8**
KHAL	**Karahalli**	**0.83**	**156**	P	**Pn**	**00 07 53.9**	**-1.3**
KHAL	**Karahalli**	**0.83**	**156**	*i* P	**Pn**	**00 07 53.9**	**-1.3**
KHAL				*i* S	**Sn**	**00 08 08.1**	**+0.3**
KHL	**Karahalli**	**0.88**	**156**	*e*PG	**Pn**	**00 07 55.5**	**-0.3**
KHL				*e*SG	**Sn**	**00 08 08.6**	**-0.5**
KHL	**Karahalli**	**0.88**	**156**	*e*Pg	**Pn**	**00 07 55.5**	**-0.3**
KHL				*e*Sg	**Sn**	**00 08 08.6**	**-0.5**
ORLT	**Orhaneli**	**0.92**	**352**	*e*PG	**Pb**	**00 07 54.8**	**-0.4**
ORLT				*e*SG	**Sb**	**00 08 07.8**	**0.0**
ORLT	**Orhaneli**	**0.92**	**352**	*e*Pg	**Pb**	**00 07 54.8**	**-0.4**
ORLT				*e*Sg	**Sb**	**00 08 07.8**	**0.0**
AKHS	**Akhisar**	**1.00**	**256**	P	**Pg**	**00 07 55.9**	**0.0**
AKHS				S	**Sg**	**00 08 08.1**	**-0.7**
AKHS	**Akhisar**	**1.00**	**256**	*i* P	**Pg**	**00 07 55.9**	**0.0**
AKHS				*i* S	**Sg**	**00 08 08.1**	**-0.7**
BALB	**Balikesir**	**1.04**	**300**	*e*PN	**Pn**	**00 07 59.3**	**+1.4**
BALB				*e*SN	**Sn**	**00 08 14.1**	**+1.2**
BALB	**Balikesir**	**1.04**	**300**	*e*Pn	**Pn**	**00 07 59.3**	**+1.4**
BALB				*e*Sn	**Sn**	**00 08 14.1**	**+1.2**
IGD	**Bursa**	**1.14**	**6**	*i* P	**Pn**	**00 07 59.0**	**-0.3**
IGD				*i* S	**Sn**	**00 08 13.8**	**-1.5**
CAVI	**Cavuskoy**	**1.23**	**29**	*e*PN	**Pb**	**00 07 60.0**	**-0.4**
CAVI	**Cavuskoy**	**1.23**	**29**	*e*Pn	**Pb**	**00 08 00.0**	**-0.4**
MDNY	**Mudanya-Bursa**	**1.24**	**354**	*e*PN	**Pg**	**00 08 01.1**	**+0.6**
MDNY	**Mudanya-Bursa**	**1.24**	**354**	*e*Pn	**Pg**	**00 08 01.1**	**+0.6**
IZI	**Iznik**	**1.25**	**15**	*e*PN	**Pg**	**00 08 00.7**	**+0.1**
IZI	**Iznik**	**1.25**	**15**	*e*Pn	**Pg**	**00 08 00.7**	**+0.1**
KCTX	**Karacabey (Bur**	**1.26**	**335**	*e*PN	**Pg**	**00 08 01.7**	**+1.0**
KCTX	**Karacabey (Bur**	**1.26**	**335**	*e*Pn	**Pg**	**00 08 01.7**	**+1.0**
GEMT	**Gemlik**	**1.31**	**4**	*e*PN	**Pb**	**00 08 01.4**	**-0.2**
GEMT	**Gemlik**	**1.31**	**4**	*e*Pn	**Pb**	**00 08 01.5**	**-0.2**
DENT	**Denizli**	**1.37**	**181**	*e*PN	**Pg**	**00 08 05.2**	**+2.2**
DENT	**Denizli**	**1.37**	**181**	*e*Pn	**Pg**	**00 08 05.2**	**+2.2**
GONE	**Gonen-Balikesi**	**1.40**	**311**	*e*PN	**Pg**	**00 08 04.7**	**+1.2**
GONE	**Gonen-Balikesi**	**1.40**	**311**	*e*Pn	**Pg**	**00 08 04.7**	**+1.2**
ADVT	**Abdulvahap**	**1.40**	**22**	*e*PN	**Pb**	**00 08 03.1**	**-0.3**
ADVT	**Abdulvahap**	**1.40**	**22**	*e*Pn	**Pb**	**00 08 03.1**	**-0.3**
ARMT	**Armutlu**	**1.44**	**354**	*e*PN	**Pg**	**00 08 04.4**	**+0.1**
ARMT	**Armutlu**	**1.44**	**354**	*e*Pn	**Pg**	**00 08 04.4**	**+0.1**
BNT	**Bandirma**	**1.51**	**325**	*e*PN	**Pg**	**00 08 06.0**	**+0.5**
BNT	**Bandirma**	**1.51**	**325**	*e*Pn	**Pg**	**00 08 06.0**	**+0.5**
GPA	**Golpazari**	**1.51**	**39**	*e*PN	**Pb**	**00 08 04.7**	**-0.5**
GPA	**Golpazari**	**1.51**	**39**	*e*Pn	**Pb**	**00 08 04.7**	**-0.5**
EDC	**Edincik**	**1.52**	**323**	*e*PN	**Pg**	**00 08 06.1**	**+0.2**
EDC	**Edincik**	**1.52**	**323**	*e*Pn	**Pg**	**00 08 06.1**	**+0.2**
BOLV	**Bolvadin**	**1.53**	**105**	P	**Pb**	**00 08 05.3**	**-0.3**
BOLV				S	**Sg**	**00 08 28.3**	**+2.4**
BOLV	**Bolvadin**	**1.53**	**105**	*i* P	**Pb**	**00 08 05.3**	**-0.3**
BOLV				*i* S	**Sg**	**00 08 28.3**	**+2.4**
GULT	**Gulveren**	**1.72**	**40**	*e*PN	**Pb**	**00 08 07.9**	**-0.9**
GULT	**Gulveren**	**1.72**	**40**	*e*Pn	**Pb**	**00 08 07.9**	**-0.9**
SPNC	**Sapanca-Adapaz**	**1.83**	**31**	*e*PN	**Pb**	**00 08 09.5**	**-1.1**
SPNC	**Sapanca-Adapaz**	**1.83**	**31**	*e*Pn	**Pb**	**00 08 09.5**	**-1.1**
ISK	**Istanbul-Kandi**	**1.93**	**0**	*e*PN	**Pb**	**00 08 11.3**	**-1.1**
ISK	**Istanbul-Kandi**	**1.93**	**0**	*e*Pn	**Pb**	**00 08 11.3**	**-1.1**
SVRH	**Sivrihisar-ESK**	**1.94**	**80**	*e*PN	**Pb**	**00 08 11.1**	**-1.5**
SVRH	**Sivrihisar-ESK**	**1.94**	**80**	*e*Pn	**Pb**	**00 08 11.1**	**-1.5**
SILT	**Sile**	**2.07**	**12**	*e*PN	**Pn**	**00 08 12.7**	**+0.6**
SILT	**Sile**	**2.07**	**12**	*e*Pn	**Pn**	**00 08 12.7**	**+0.6**
MDUB	**Mudurnu**	**2.12**	**50**	*e*PN	**Pn**	**00 08 13.2**	**+0.3**
MDUB	**Mudurnu**	**2.12**	**50**	*e*Pn	**Pn**	**00 08 13.3**	**+0.3**

ISCJB ***20*** *00:09:10.8±0.5, 39°.12N±0°.03×29°.04E±0°.03, h1km±7km, Error ellipse: s-maj=5.4km s-min=3.8km az=162.9*
ISK ***20*** *00:09:10.9, 39°.14N×29°.06E, h7km, MD2.8*
CSEM ***20*** *00:09:11.2±0.1, 39°.12N×29°.05E, h5km, MD2.2, Error ellipse: s-maj=2.3km s-min=1.9km az=139.0*
DDA ***20*** *00:09:11.1, 39°.08N×29°.06E, h7km, Md2.2*
ISC 20 00:09:11.2±1.0, 39°.12N±0°.02×29°.04E±0°.02, h7km±9km, n43, σ0.30/58, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**254**	P	**Pg**	**00 09 16.5**	**+0.1**
DEMI				S	**Sg**	**00 09 20.3**	**+0.4**
DEMI	**Demirci**	**0.26**	**254**	*i* P	**Pg**	**00 09 16.5**	**+0.1**
DEMI				*i* S	**Sg**	**00 09 20.3**	**+0.4**
GDZ	**Gediz**	**0.34**	**94**	P	**Pg**	**00 09 17.8**	**-0.1**
GDZ				S	**Sg**	**00 09 22.6**	**+0.1**
GDZ	**Gediz**	**0.34**	**94**	*i* P	**Pg**	**00 09 17.8**	**-0.1**
GDZ				*i* S	**Sg**	**00 09 22.6**	**+0.1**
TVSB	**Tavsanli**	**0.47**	**44**	*e*PG	**Pg**	**00 09 20.3**	**+0.1**
TVSB				*e*SG	**Sg**	**00 09 26.5**	**+0.1**
TVSB	**Tavsanli**	**0.47**	**44**	*e*Pg	**Pg**	**00 09 20.3**	**+0.1**
TVSB				*e*Sg	**Sg**	**00 09 26.5**	**+0.1**
MANT	**Manisa**	**0.73**	**211**	P	**Pg**	**00 09 24.9**	**-0.3**
MANT				S	**Sg**	**00 09 34.4**	**-0.3**
MANT	**Manisa**	**0.73**	**211**	*i* P	**Pg**	**00 09 24.9**	**-0.3**
MANT				*i* S	**Sg**	**00 09 34.4**	**-0.3**
KHAL	**Karahalli**	**0.82**	**155**	P	**Pb**	**00 09 27.8**	**-0.1**
KHAL				S	**Sg**	**00 09 38.0**	**+0.3**
KHAL	**Karahalli**	**0.82**	**155**	*i* P	**Pb**	**00 09 27.8**	**-0.1**
KHAL				*i* S	**Sg**	**00 09 38.0**	**+0.3**
KHL	**Karahalli**	**0.88**	**154**	*e*PG	**Pb**	**00 09 28.4**	**-0.4**
KHL	**Karahalli**	**0.88**	**154**	*e*Pg	**Pb**	**00 09 28.4**	**-0.4**
ORLT	**Orhaneli**	**0.94**	**353**	*e*PG	**Pg**	**00 09 28.9**	**-0.3**
ORLT	**Orhaneli**	**0.94**	**353**	*e*Pg	**Pg**	**00 09 28.9**	**-0.3**
AKHS	**Akhisar**	**0.98**	**257**	P	**Pn**	**00 09 31.4**	**-0.1**
AKHS				S	**Sb**	**00 09 43.7**	**-0.1**
AKHS	**Akhisar**	**0.98**	**257**	*i* P	**Pn**	**00 09 31.4**	**-0.1**
AKHS				*i* S	**Sb**	**00 09 43.7**	**-0.1**
AKS	**Akhisar**	**0.99**	**257**	*e*PG	**Pb**	**00 09 30.5**	**-0.1**
AKS	**Akhisar**	**0.99**	**257**	*e*Pg	**Pb**	**00 09 30.5**	**-0.1**
BALB	**Balikesir**	**1.04**	**301**	*e*PG	**Pg**	**00 09 31.3**	**+0.1**
BALB	**Balikesir**	**1.04**	**301**	*e*Pg	**Pg**	**00 09 31.3**	**+0.1**
IGD	**Bursa**	**1.15**	**6**	*i* P	**Pg**	**00 09 32.7**	**-0.6**
IGD				*i* S	**Sn**	**00 09 49.7**	**-0.2**
CAVI	**Cavuskoy**	**1.25**	**29**	*e*PN	**Pn**	**00 09 34.5**	**-0.6**
CAVI	**Cavuskoy**	**1.25**	**29**	*e*Pn	**Pn**	**00 09 34.5**	**-0.6**
MDNY	**Mudanya-Bursa**	**1.26**	**355**	*e*PN	**Pn**	**00 09 35.1**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.26**	**355**	*e*Pn	**Pn**	**00 09 35.1**	**-0.1**
KCTX	**Karacabey (Bur**	**1.26**	**336**	*e*PN	**Pg**	**00 09 35.6**	**+0.2**
KCTX	**Karacabey (Bur**	**1.26**	**336**	*e*Pn	**Pg**	**00 09 35.6**	**+0.2**
IZI	**Iznik**	**1.27**	**15**	*e*PN	**Pb**	**00 09 35.3**	**-0.1**
IZI	**Iznik**	**1.27**	**15**	*e*Pn	**Pb**	**00 09 35.3**	**-0.1**
BORA	**Eskisehir**	**1.33**	**55**	P	**Pb**	**00 09 36.4**	**-0.2**
BORA				S	**Sn**	**00 09 55.2**	**+0.8**
BORA	**Eskisehir**	**1.33**	**55**	*i* P	**Pb**	**00 09 36.4**	**-0.2**
BORA				*i* S	**Sn**	**00 09 55.2**	**+0.8**
GONE	**Gonen-Balikesi**	**1.40**	**312**	*e*PN	**Pb**	**00 09 37.5**	**-0.2**
GONE	**Gonen-Balikesi**	**1.40**	**312**	*e*Pn	**Pb**	**00 09 37.5**	**-0.2**
ADVT	**Abdulvahap**	**1.42**	**22**	*e*PN	**Pb**	**00 09 37.7**	**-0.3**
ADVT	**Abdulvahap**	**1.42**	**22**	*e*Pn	**Pb**	**00 09 37.7**	**-0.3**
ARMT	**Armutlu**	**1.46**	**355**	*e*PN	**Pn**	**00 09 38.0**	**0.0**
ARMT	**Armutlu**	**1.46**	**355**	*e*Pn	**Pn**	**00 09 38.0**	**0.0**
EDC	**Edincik**	**1.53**	**324**	*e*PN	**Pn**	**00 09 38.8**	**-0.2**
EDC	**Edincik**	**1.53**	**324**	*e*Pn	**Pn**	**00 09 38.8**	**-0.2**
GULT	**Gulveren**	**1.74**	**40**	*e*PN	**Pn**	**00 09 42.0**	**+0.1**
GULT	**Gulveren**	**1.74**	**40**	*e*Pn	**Pn**	**00 09 42.0**	**+0.1**
SVRH	**Sivrihisar-ESK**	**1.96**	**79**	*e*PN	**Pn**	**00 09 45.2**	**+0.3**
SVRH	**Sivrihisar-ESK**	**1.96**	**79**	*e*Pn	**Pn**	**00 09 45.2**	**+0.3**

NIED ***20*** *00:10:00, 37°.80N×142°.10E, h38km, Mw4.3 Best double couple: M0=2.72000×10^15 NP1:φ0=84.00000°, δ3.00000°, λ-60.00000°. NP2:φ0=234.00000°, δ87.00000°, λ-92.00000°.*
ISCJB ***20*** *00:10:09.8±0.7, 37°.82N±0°.03×142°.23E±0°.05, h35km±5km, mb4.5/55, MS3.8/6, Error ellipse: s-maj=6.4km s-min=4.7km az=26.7*
JMA ***20*** *00:10:10.7±0.2, 37°.81N×142°.06E, h33km±4km, M4.4*
JMA Felt II J1.
IDC ***20*** *00:10:12.4±0.5, 37°.80N×142°.06E, h42km±4km, mb3.9/23, mb1 4.0/28, mb1mx3.8/62, mbtmp4.1/28, ML3.9/5, MS3.3/10, Ms1 3.3/10, ms1mx3.1/45, Error ellipse: s-maj=13.5km s-min=9.6km az=94.0*
NEIC ***20*** *00:10:12.6±0.6, 37°.83N×142°.24E, h46km±5km, mb4.7/23, Error ellipse: s-maj=6.0km s-min=3.9km az=124.0*
NEIC Recorded [2 JMA] in Miyagi.
ISC 20 00:10:12.2±0.5, 37°.81N±0°.04×142°.14E±0°.05, h41km±4km, h40km:pP-P, n105, σ1.25/118, mb4.4/55, MS3.7/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.90**	**316**	P	**Pn**	**00 10 26.5**	**-1.8**
JIO				S	**Sn**	**00 10 37.0**	**-3.1**
JMM	**Marumori**	**1.07**	**273**	P	**Pn**	**00 10 28.9**	**-1.8**
JMM				S	**Sn**	**00 10 41.5**	**-2.8**
JFK	**Kawauchi**	**1.10**	**247**	P	**Pn**	**00 10 29.2**	**-2.0**
JFK				S	**Sn**	**00 10 42.5**	**-2.7**
ONAJ	**Iwakimizuishiy**	**1.28**	**237**	P	**Pn**	**00 10 31.9**	**-1.8**
JOU	**Okura**	**1.29**	**296**	P	**Pn**	**00 10 32.6**	**-1.2**
JOU				S	**Sn**	**00 10 48.1**	**-1.7**
JMK	**Ichinoseki**	**1.35**	**328**	P	**Pn**	**00 10 33.1**	**-1.4**
MJAR	**Matsushiro Arr**	**3.39**	**249**	P	**Pn**	**00 11 03.0**	**+0.4**
	9.1nm,0.3s,baz=74,slow=13,SNR=30						
MJAR				LR	LR	00 12 29.9	
	comp=Z,264nm,18.0s,baz=65,slow=42						
MAJO	**Matsushiro**	**3.39**	**249**	*e*Pn	**Pn**	**00 11 03.9**	**+1.3**
MAT	**Matsushiro**	**3.39**	**249**	P	**Pn**	**00 11 02.0**	**-0.6**
MAT				*e*S	**Sn**	**00 11 42.8**	**+1.2**
MJB9	**Matsu-Tunnel**	**3.39**	**249**	*e*Pn	**Pn**	**00 11 04.7**	**+2.0**
ERM	**Erimo**	**4.27**	**10**	*e*Pn	**Pn**	**00 11 14.1**	**-0.6**
INU	**Inuyama**	**4.80**	**241**	*e*Pn	**Pn**	**00 11 23.5**	**+1.5**
JHJ2	**Mitsune**	**5.06**	**203**	*e*Pn	**Pn**	**00 11 26.5**	**+1.0**
JHJ	**Hachijo jima 2**	**5.06**	**203**	P	**Pn**	**00 11 25.8**	**+0.2**
	36nm,0.3s,baz=223,slow=19,SNR=2.0						
JHJ				S	**Sn**	**00 12 20.4**	**-2.3**
	50nm,0.3s,baz=36,slow=14,SNR=2.5						
JHJ				LR	LR	00 12 57.8	
	comp=Z,65nm,19.9s,baz=180,slow=33						
ASAJ	**Asahikawa**	**6.31**	**3**	P	**Pn**	**00 11 43.4**	**+0.8**
	4.8nm,0.3s,baz=202,slow=13,SNR=11						
ASAJ				S	**Sn**	**00 12 54.9**	**+1.5**
	3.8nm,0.3s,baz=9.3,slow=30,SNR=3.4						
ASAJ	**Asahikawa**	**6.31**	**3**	*e*Pn	**Pn**	**00 11 42.4**	**-0.3**
ASAJ				S	**Sn**	**00 12 54.9**	**+1.5**
USRK	**Ussuriysk Ar.**	**9.97**	**313**	P	**Pn**	**00 12 34.1**	**+1.2**
	3.8nm,0.3s,baz=125,slow=13,SNR=42						
USRK				LR	LR	00 16 11.4	
	comp=Z,252nm,18.6s,baz=79,slow=36						
JNU	**Nakatsue**	**10.31**	**246**	P	Pn	00 12 40.4	+2.9
	0.9nm,0.3s,baz=176,slow=9.6,SNR=5.8						
JNU				LR	LR	00 17 01.6	
	comp=Z,102nm,19.4s,baz=302,slow=40						
KSRS	**Korea Array**	**11.28**	**273**	P	Pn	00 12 54.5	+3.6
	0.4nm,0.3s,baz=88,slow=14,SNR=11						
KSRS				LR	LR	00 17 02.7	
	comp=Z,140nm,18.8s,baz=80,slow=36						
KSAR	**Wonju Array Be**	**11.31**	**272**	P	Pn	00 12 54.5	+3.2
MDJ	**Mudanjiang**	**11.63**	**310**	P	**Pn**	**00 12 56.6**	**+1.0**
MDJ				pmax	pmax		
	comp=Z,10.0nm,0.6s						
MDJ				pmax	pmax		
	comp=Z,58nm,5.0s						
MDJ				LR	LR		
	comp=N,39nm,6.4s						
MDJ				LR	LR		
	comp=E,150nm,12.8s						
MDJ				LR	LR		
	comp=Z,250nm,13.5s						
INCN	**Inchon**	**12.30**	**273**	*e*Pn	**Pn**	**00 13 06.2**	**+1.5**
KLR	**Kul'dur**	**13.66**	**330**	P	**Pn**	**00 13 22.7**	**-0.5**
	comp=Z,0.3nm,0.3s,baz=167,slow=15,SNR=6.1						
KLR				LR	LR	00 18 21.2	
	comp=Z,216nm,20.4s,baz=138,slow=36						
CN2	**Changchun**	**13.98**	**301**	*e*P	**Pn**	**00 13 29.9**	**+2.3**
CN2				*es*P	P	00 13 42.0	+7.2
CN2				*e*S	**Sn**	**00 16 05.0**	**+3.7**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.6s						
CN2				pmax	pmax		
	comp=Z,100nm,3.0s						
CN2				LR	LR		
	comp=N,300nm,11.0s						
CN2				LR	LR		
	comp=E,400nm,11.0s						
CN2				LR	LR		
	comp=Z,300nm,13.0s						
PETK	**Petropavlovsk-**	**18.72**	**30**	LR	LR	00 22 12.5	
	comp=Z,47nm,18.9s,baz=218,slow=38						
PET	**Petropavlovsk**	**19.05**	**32**	*e*P	**P**	**00 14 29.9**	**-0.9**
	comp=Z,12nm,0.6s						
NJ2	**Nanjing**	**19.92**	**260**	*e*P	**Pn**	**00 14 41.5**	**-0.8**
NJ2				pmax	pmax		
	comp=Z,11nm,0.6s						
BJI	**Beijing**	**20.30**	**284**	P	**P**	**00 14 44.3**	**-0.2**
BJI				pmax	pmax		
	comp=Z,7.0nm,1.3s						
TATO	**Taipei**	**21.73**	**240**	*e*P	**P**	**00 15 00.5**	**+0.6**
	comp=Z,70nm,1.4s						
YHNB	**Yeheng**	**22.00**	**239**	*e*P	**P**	**00 15 03.5**	**+0.5**
	comp=Z,48nm,1.7s						
NACB	**Ninganchiao**	**22.19**	**238**	*e*P	**P**	**00 15 05.8**	**+0.9**
	comp=Z,15nm,0.9s						
MA2	**Magadan**	**22.48**	**12**	P	**P**	**00 15 09.3**	**+1.5**
	comp=Z,3.1nm,0.3s,baz=56,slow=24,SNR=3.2						
MA2				pP	**pP**	**00 15 18.8**	**+0.9**
	comp=Z,8.0nm,0.6s,baz=218,slow=8.1,SNR=4.0						
MA2	**Magadan**	**22.48**	**12**	*e*P	**P**	**00 15 07.7**	**0.0**
	comp=Z,30nm,0.6s						
MA2				pP	**pP**	**00 15 18.8**	**+0.9**
SSLB	**Suanglung**	**22.88**	**238**	*e*P	**P**	**00 15 12.6**	**+0.2**
	comp=Z,41nm,1.9s						
YULB	**Yu-li**	**22.92**	**237**	*e*P	**P**	**00 15 13.7**	**+1.0**
	comp=Z,48nm,2.0s						
HHC	**Hu-ho-hao-te**	**23.79**	**287**	*e*P	**P**	**00 15 21.8**	**+0.6**
HHC				S	**S**	**00 19 31.1**	**-2.9**
HHC				pmax	pmax		
	comp=Z,38nm,0.8s						
HHC				pmax	pmax		
	comp=Z,320nm,5.0s						
HHC				LR	LR		
	comp=N,1μm,12.8s						
HHC				LR	LR		
	comp=E,1μm,13.7s						
HHC				LR	LR		
	comp=Z,1μm,12.9s						
SEY	**Seymchan**	**25.92**	**11**	P	**P**	**00 15 41.6**	**+1.4**
	comp=Z,1.7nm,0.4s						
SEY				pP	**pP**	**00 15 52.5**	**+1.2**
XAN	**Xi'an**	**27.08**	**272**	P	**P**	**00 15 52.3**	**+1.2**
XAN				pmax	pmax		
	comp=Z,7.0nm,0.6s						
XAN				pmax	pmax		
	comp=Z,56nm,6.1s						
ULN	**Ulaanbaatar**	**27.41**	**303**	*e*P	**P**	**00 15 54.1**	**+0.1**
	comp=Z,4.1nm,0.5s						
SONA1	**Songino Array**	**27.84**	**303**	*e*P	**P**	**00 15 58.0**	**+0.2**
SONM	**Songino Array**	**27.84**	**303**	P	**P**	**00 15 58.1**	**+0.2**
	comp=Z,3.2nm,0.8s,baz=102,slow=9.0,SNR=8.2						
H11N2	**WAKE ISLAND Hy**	**28.07**	**123**	T	T	00 45 24.9	
	baz=315,slow=75,SNR=923						
H11N1	**WAKE ISLAND Hy**	**28.07**	**123**	T	T	00 45 31.7	
	baz=315,slow=75,SNR=1414						
H11N3	**WAKE ISLAND Hy**	**28.09**	**123**	T	T	00 45 34.7	
	baz=315,slow=75,SNR=878						
H11S1	**WAKE ISLAND Hy**	**28.81**	**125**	T	T	00 46 22.3	
	baz=317,slow=76,SNR=476						
H11S3	**WAKE ISLAND Hy**	**28.82**	**125**	T	T	00 46 25.4	
	baz=317,slow=76,SNR=577						
H11S2	**WAKE ISLAND Hy**	**28.83**	**125**	T	T	00 46 24.2	
	baz=317,slow=76,SNR=432						
LZH	**Lanzhou**	**30.52**	**279**	*e*P	P	00 16 25.3	+3.6
LZH				pP	sP	00 16 36.1	-1.6
LZH				sP	pP	00 16 41.6	+8.7
LZH				pmax	pmax		
	comp=Z,26nm,1.1s						
GYA	**Guiyang**	**31.93**	**260**	P	**P**	**00 16 34.8**	**+0.6**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
CD2	**Chengdu**	**32.26**	**269**	P	P	00 16 41.3	+4.3
CD2				pmax	pmax		
	comp=Z,20nm,0.6s						
GTA	**Gaotai**	**32.90**	**286**	*e*P	P	00 16 45.9	+3.3
GTA				pP	pP	00 16 52.6	-1.1
GTA				sP	sP	00 16 55.3	-3.3
GTA				pmax	pmax		
	comp=Z,5.0nm,0.8s						
TIXI	**Tiksi**	**34.59**	**353**	*e*P	**P**	**00 16 57.0**	**+0.3**
	comp=Z,2.4nm,0.8s						
MIDW	**Midway**	**35.05**	**94**	*e*P	P	00 16 58.7	-2.5
	comp=Z,44nm,0.7s						
KMI	**Kunming**	**35.65**	**261**	P	**P**	**00 17 05.4**	**-1.3**
KMI				pmax	pmax		
	comp=Z,16nm,0.5s						
KMI				pmax	pmax		
	comp=Z,48nm,4.8s						
FALS	**False Pass**	**40.15**	**47**	*e*P	**P**	**00 17 42.8**	**-1.1**
	comp=Z,204nm,1.8s						
WMQ	**Urumqi**	**41.01**	**296**	*e*P	**P**	**00 17 54.3**	**+2.9**
WMQ				pmax	pmax		
	comp=Z,18nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,28nm,4.6s						
WMQ				LR	LR		
	comp=N,18nm,19.8s						
WMQ				LR	LR		
	comp=E,28nm,33.0s						
WMQ				LR	LR		
	comp=Z,21nm,24.2s						
ZAA0	**Zalesovo Array**	**41.82**	**312**	*e*P	**P**	**00 17 57.7**	**-0.1**
ZALV	**Zalesovo Beam**	**41.82**	**312**	P	**P**	**00 17 57.9**	**+0.2**
	comp=Z,2.1nm,0.4s,baz=85,slow=7.3,SNR=9.0						
ZALV				pP	**pP**	**00 18 08.8**	**-0.4**
	comp=Z,5.3nm,0.8s,baz=87,slow=6.4,SNR=9.0						
ZALV				PcP	**PcP**	**00 19 53.4**	**+0.3**
	comp=Z,0.5nm,0.3s,baz=98,slow=3.3,SNR=2.4						
ZALV				pPcP		00 20 06.2	
	comp=Z,0.8nm,0.3s,baz=109,slow=3.6,SNR=3.8						
ZALV				LR	LR	00 35 31.4	
	comp=Z,61nm,18.3s,baz=68,slow=36						
CHTO	**Chiang Mai**	**42.05**	**255**	*e*P	**P**	**00 18 00.5**	**+0.5

AKASG	Malin Array Be	74.03	322	P		P	00 21 42.8	-0.7
	comp=Z,0.4nm,0.3s,baz=45,slow=6.5,SNR=4.1							
AKASG				pP		pP	00 21 53.6	-2.1
	comp=Z,1.7nm,0.4s,baz=45,slow=6.4,SNR=7.5							
ELK	Elko	74.61	50	*e*P		P	00 21 42.9	-4.5
	comp=Z,45nm,0.6s							
DUG	Dugway, Tooele	76.41	50	*e*P		P	00 21 56.8	-0.8
	comp=Z,13nm,0.7s							
BW06	Boulder Array	76.71	46	*e*P		P	00 21 59.7	+0.3
PD31	Pinedale Array	76.71	46	*e*P		P	00 22 00.1	+0.7
PDAR	Pinedale Array	76.71	46	P		P	00 22 00.1	+0.7
	comp=Z,1.1nm,0.6s,baz=254,slow=1.2,SNR=19							
PDAR				pP		pP	00 22 11.8	+0.1
	comp=Z,1.1nm,0.5s,baz=277,slow=3.4,SNR=8.9							
PSUT	Pine Spring	76.79	51	*e*P		P	00 21 57.9	-2.0
	comp=Z,150nm,0.9s							
P17A	Butcher Ranch,	78.11	49	*e*P		P	00 22 08.8	+1.6
	comp=Z,14nm,1.1s							
BRTR	Keskin Array B	78.77	312	P		P	00 22 11.0	+0.2
	comp=Z,0.2nm,0.6s,baz=133,slow=3.9,SNR=3.1							
VRAC	Vranov	80.78	327	P		P	00 22 19.3	-2.0
	comp=Z,1.0nm,0.5s,baz=251,slow=7.7,SNR=2.2							
MMAI	Mount Meron Ar	81.98	306	P		P	00 22 28.0	-0.1
	comp=Z,0.3nm,0.2s,baz=360,slow=38,SNR=3.9							
MMAI				pP		pP	00 22 39.9	-0.5
	comp=Z,1.2nm,0.6s,baz=49,slow=7.8,SNR=4.1							
GERES	GERESS Array B	82.35	329	P		P	00 22 29.6	-0.1
	comp=Z,0.3nm,0.3s,baz=28,slow=6.0,SNR=5.2							
DAVOX	Davos/Dischmat	85.56	329	LR		LR	01 02 53.2	
	comp=Z,218nm,19.5s,baz=348,slow=37							
TX31	Lajitas Ar. Si	89.19	53	*e*P		P	00 23 03.3	-0.7
TXAR	Lajitas Array	89.19	53	P		P	00 23 04.5	+0.5
	comp=Z,0.8nm,0.6s,baz=305,slow=3.1,SNR=13							
TXAR				pP		pP	00 23 16.4	0.0
	comp=Z,0.6nm,0.7s,baz=305,slow=3.7,SNR=4.7							
KMSC	Kings Mountain	96.96	35	*e*P		P	00 23 39.5	-0.1
	comp=Z,14nm,0.3s							
LPAZ	La Paz	145.80	59	PKPbc		PKPbc	00 29 48.5	+0.4
	comp=Z,4.1nm,0.9s,baz=8.9,slow=6.8,SNR=16							

MEX 20 00:11:26.3±0.6, 15°09N×93°39W, h67km±11km, MD3.9, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		0.63	15	*e*P	Pn	00 11 38.7	-1.6
PCIG				*e*S	Sn	00 11 48.9	-1.5
CCIG	Comitan	1.69	45	*e*P	Pn	00 11 52.3	-1.6
CCIG				*i* S	Sn	00 12 13.6	-1.2
TGIG		1.70	9	*i* P	Pn	00 11 52.3	-1.6
TGIG				*e*S	Sn	00 12 13.2	-1.5

DDA **20** *00:13:07.7, 39°.14N×29°.11E, h17km, Ml4.1*
ISK **20** *00:13:07.4, 39°.12N×29°.14E, h5km, ML4.1*
CSEM **20** *00:13:08.4±0.1, 39°.11N×29°.09E, h5km, ML4.1, Error ellipse: s-maj=2.3km s-min=1.9km az=88.0*
ISCJB **20** *00:13:08.1±0.4, 39°.11N±0°.01×29°.07E±0°.02, h9km±3km, mb3.6/2, Error ellipse: s-maj=2.4km s-min=2.2km az=15.8*
THE **20** *00:13:09.6, 39°.09N×29°.07E, h9km±2km, ML3.8/5, Error ellipse: s-maj=2.2km s-min=0.7km az=106.0*
IDC **20** *00:13:11.5±3.3, 39°.11N×29°.23E, h25km±27km, mb3.5/2, mb1 3.6/8, mb1mx3.3/49, mbtmp3.5/8, ML3.4/6, Error ellipse: s-maj=21.7km s-min=14.4km az=35.0*
ISC 20 00:13:08.7±0.9, 39°.11N±0°.02×29°.08E±0°.01, h11km±7km, n229, σ0°92/287, 46C-15D, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.29	256	P	Pg	00 13 14.9	+0.2
DEMI				S	Sg	00 13 19.3	+0.6
DEMI	Demirci	0.29	256	⇑*i*P	Pg	00 13 14.9	+0.2
DEMI				*i* S	Sg	00 13 19.3	+0.6
GDZ	Gediz	0.31	94	P	Pg	00 13 14.6	-0.5
GDZ				S	Sg	00 13 19.2	-0.1
GDZ	Gediz	0.31	94	⇑*i*P	Pg	00 13 14.6	-0.5
GDZ				*i* S	Sg	00 13 19.2	-0.1
TVSB	Tavsanli	0.45	41	*e*PG	Pg	00 13 16.3	-1.3
TVSB	Tavsanli	0.45	41	*e*Pg	Pg	00 13 16.3	-1.3
DURS	Dursunbey	0.68	316	P	Pg	00 13 21.4	-0.5
DURS				S	Sg	00 13 31.1	+0.3
DURS	Dursunbey	0.68	316	⇑*i*P	Pg	00 13 21.4	-0.5
DURS				*i* S	Sg	00 13 31.1	+0.3
KULA	Kula-Manisa	0.68	209	*e*PG	Pg	00 13 22.1	+0.1
KULA	Kula-Manisa	0.68	209	P	Pg	00 13 21.8	-0.2
KULA				S	Sg	00 13 31.4	+0.5
KULA	Kula-Manisa	0.68	209	P	Pg	00 13 21.8	-0.2
KULA	Kula-Manisa	0.68	209	*e*Pg	Pg	00 13 22.1	+0.1
KULA				S	Sg	00 13 31.4	+0.5
MANT	Manisa	0.74	214	P	Pg	00 13 23.0	-0.1
MANT				S	Sg	00 13 33.1	+0.2
MANT	Manisa	0.74	214	⇑*i*P	Pg	00 13 23.0	-0.1
MANT				*i* S	Sg	00 13 33.1	+0.2
KHAL	Karahalli	0.81	157	P	Pg	00 13 24.2	-0.1
KHAL				S	Sg	00 13 35.0	+0.1
KHAL	Karahalli	0.81	157	⇑*i*P	Pg	00 13 24.2	-0.1
KHAL				*i* S	Sg	00 13 35.0	+0.1
KHL	Karahalli	0.86	156	*e*PG	Pg	00 13 24.9	-0.5
KHL	Karahalli	0.86	156	*e*Pg	Pg	00 13 24.9	-0.5
ORLT	Orhaneli	0.94	351	*e*PG	Pg	00 13 26.1	-0.8
ORLT	Orhaneli	0.94	351	*e*Pg	Pg	00 13 26.1	-0.8
AKHS	Akhisar	1.02	257	P	Pb	00 13 28.2	-0.1
AKHS				S	Sn	00 13 42.7	-0.5
AKHS	Akhisar	1.02	257	⇑*i*P	Pb	00 13 28.2	-0.1
AKHS				*i* S	Sn	00 13 42.7	-0.5
AKS	Akhisar	1.02	257	*e*PG	Pb	00 13 28.4	0.0
AKS	Akhisar	1.02	257	*e*Pg	Pb	00 13 28.4	0.0
BALB	Balikesir	1.07	300	*e*PN	Pn	00 13 29.7	0.0
BALB	Balikesir	1.07	300	*e*Pn	Pn	00 13 29.7	0.0
IGD	Bursa	1.15	5	⇑*i*P	Pg	00 13 28.6	-2.3
IGD				*i* S	Sb	00 13 45.9	+0.3
CAVI	Cavuskoy	1.23	28	*e*PN	Pb	00 13 31.6	-0.5
CAVI				*e*SN	Sn	00 13 49.2	+0.5
CAVI	Cavuskoy	1.23	28	*e*Pn	Pb	00 13 31.6	-0.5
CAVI				*e*Sn	Sn	00 13 49.2	+0.5
IZI	Iznik	1.26	14	*e*PN	Pn	00 13 31.9	-0.5
IZI				*e*SN	Sn	00 13 50.9	+1.6
IZI	Iznik	1.26	14	*e*Pn	Pn	00 13 31.9	-0.5
IZI				*e*Sn	Sn	00 13 50.9	+1.6
MDNY	Mudanya-Bursa	1.26	353	*e*PN	Pg	00 13 32.7	-0.3
MDNY				*e*SN	Sn	00 13 51.3	+2.0
MDNY	Mudanya-Bursa	1.26	353	*e*Pn	Pg	00 13 32.7	-0.3
MDNY				*e*Sn	Sn	00 13 51.3	+2.0
KCTX	Karacabey (Bur	1.28	334	*e*PN	Pg	00 13 33.1	-0.2
KCTX	Karacabey (Bur	1.28	334	*e*Pn	Pg	00 13 33.1	-0.2
BALY	Balya	1.29	299	P	Pn	00 13 32.6	-0.2
BALY				S	Sb	00 13 49.1	-0.7
BALY	Balya	1.29	299	*i* P	Pn	00 13 32.6	-0.2
BALY				*i* S	Sb	00 13 49.1	-0.7
BORA	Eskisehir	1.31	54	P	Pn	00 13 32.1	-1.0
BORA				S	Sb	00 13 49.8	-0.4
BORA	Eskisehir	1.31	54	⇑*i*P	Pn	00 13 32.1	-1.0
BORA				*i* S	Sb	00 13 49.8	-0.4
GEMT	Gemlik	1.32	4	*e*PN	Pn	00 13 33.1	0.0
GEMT	Gemlik	1.32	4	*e*Pn	Pn	00 13 33.1	0.0
DENT	Denizli	1.36	182	*e*PN	Pb	00 13 34.2	0.0
DENT	Denizli	1.36	182	*e*Pn	Pb	00 13 34.2	0.0
ADVT	Abdulvahap	1.41	21	*e*PN	Pb	00 13 34.9	-0.2
ADVT	Abdulvahap	1.41	21	*e*Pn	Pb	00 13 34.9	-0.2
DNZL	Cakiroluk	1.42	181	P	Pn	00 13 34.3	-0.4
DNZL	Cakiroluk	1.42	181	⇓*i*P	Pn	00 13 34.3	-0.4
DNZL				*i* S	Sg	00 13 57.2	+2.7
GONE	Gonen-Balikesi	1.43	311	*e*PN	Pg	00 13 36.2	+0.1
GONE	Gonen-Balikesi	1.43	311	*e*Pn	Pg	00 13 36.2	+0.1
ESKT	Eskisehir	1.43	73	*i* P	Pn	00 13 34.5	-0.3
SEYT	Eskypehyr	1.43	73	P	Pn	00 13 34.5	-0.3
ARMT	Armutlu	1.46	353	*e*PN	Pg	00 13 36.2	-0.6
ARMT	Armutlu	1.46	353	*e*Pn	Pg	00 13 36.2	-0.6
AYDB	Zeytinkoy-Aydi	1.49	219	*e*PN	Pb	00 13 36.6	0.0
AYDB	Zeytinkoy-Aydi	1.49	219	*e*Pn	Pb	00 13 36.6	0.0
GPA	Golpazari	1.51	38	*e*PN	Pb	00 13 36.8	+0.1
GPA	Golpazari	1.51	38	*e*Pn	Pb	00 13 36.8	+0.1
BOLV	Bolvadin	1.51	105	P	Pn	00 13 35.9	0.0
BOLV				S	Sn	00 13 54.6	-1.0
BOLV	Bolvadin	1.51	105	⇓*i*P	Pn	00 13 35.9	0.0
BOLV				*i* S	Sn	00 13 54.6	-1.0
EDC	Edincik	1.55	323	*e*PN	Pb	00 13 37.7	+0.2
EDC	Edincik	1.55	323	*e*Pn	Pb	00 13 37.7	+0.2
KNL	Bal¨–kesir	1.67	314	⇑*i*P	Pn	00 13 36.5	-1.4
KNL				*i* S	Sb	00 14 00.1	-0.4
DKL	Dikili	1.69	269	*e*PN	Pb	00 13 40.1	+0.2
DKL	Dikili	1.69	269	*e*Pn	Pb	00 13 40.1	+0.2
ISP	Isparta	1.71	138	*e*PN	Pn	00 13 39.1	+0.5
ISP	Isparta	1.71	138	P	Pn	00 13 37.8	-0.8
ISP	Isparta	1.71	138	P	Pn	00 13 37.8	-0.8
ISP	Isparta	1.71	138	*e*Pn	Pn	00 13 39.1	+0.5
GULT	Gulveren	1.72	40	*e*PN	Pn	00 13 39.4	+0.7
GULT	Gulveren	1.72	40	*e*Pn	Pn	00 13 39.4	+0.7
BUY	Buyukada	1.74	1	P	Pn	00 13 37.9	-0.9
BUY				S	Sb	00 14 02.4	-0.1
BUY	Buyukada	1.74	1	⇑*i*P	Pn	00 13 37.9	-0.9
BUY				*i* S	Sb	00 14 02.4	-0.1
BAGO	Egridir - ISPA	1.75	129	⇓*i*P	Pn	00 13 38.8	-0.3
BAGO				*i* S	Sg	00 14 08.8	+4.0
HRT	Hereke	1.76	15	*e*PN	Pb	00 13 40.5	-0.6
HRT	Hereke	1.76	15	*e*Pn	Pb	00 13 40.5	-0.6
SPNC	Sapanca-Adapaz	1.83	31	*e*PN	Pn	00 13 41.2	+1.0
SPNC	Sapanca-Adapaz	1.83	31	*e*Pn	Pn	00 13 41.2	+1.0
MRMT	Marmara Adasi	1.88	323	*e*PN	Pb	00 13 42.5	-0.6
MRMT	Marmara Adasi	1.88	323	*e*Pn	Pb	00 13 42.5	-0.6
KRBG	Karabiga-Canak	1.88	313	*e*PN	Pb	00 13 42.7	-0.3
KRBG	Karabiga-Canak	1.88	313	*e*Pn	Pb	00 13 42.7	-0.3
GOLH	Golhisar	1.91	168	P	Pn	00 13 41.6	+0.2
GOLH	Golhisar	1.91	168	⇓*i*P	Pn	00 13 41.6	+0.2
GOLH				*i* S	Sg	00 14 16.1	+5.9
SVRH	Sivrihisar-ESK	1.92	79	*e*PN	Pn	00 13 42.0	+0.5
SVRH	Sivrihisar-ESK	1.92	79	*e*Pn	Pn	00 13 42.0	+0.5
ISK	Istanbul-Kandi	1.95	359	*e*PN	Pn	00 13 42.8	+1.0
ISK	Istanbul-Kandi	1.95	359	P	Pn	00 13 40.8	-1.0
ISK				S	Sn	00 14 06.5	+0.2
ISK	Istanbul-Kandi	1.95	359	P	Pn	00 13 40.8	-1.0
ISK	Istanbul-Kandi	1.95	359	*e*Pn	Pn	00 13 42.8	+1.0
ISK				S	Sn	00 14 06.5	+0.2
GLHS	Glhisar (BURDU	1.98	170	*e*PN	Pn	00 13 43.5	+1.2
GLHS	Glhisar (BURDU	1.98	170	*e*Pn	Pn	00 13 43.5	+1.2
AUMIH	MIHALICIK	2.00	67	⇓*i*P	Pb	00 13 45.8	+0.5
AUMIH				*i* S	Sg	00 14 14.1	+0.9
BCK	Bucak	2.03	144	*e*PN	Pn	00 13 43.5	+0.5
BCK	Bucak	2.03	144	*e*Pn	Pn	00 13 43.5	+0.5
YER	Yerkesik	2.07	198	*e*PN	Pb	00 13 45.3	-1.1
YER	Yerkesik	2.07	198	P	Pn	00 13 43.4	-0.2
YER				S	Sn	00 14 08.4	-1.0
YER	Yerkesik	2.07	198	P	Pn	00 13 43.4	-0.2
YER	Yerkesik	2.07	198	*e*Pn	Pb	00 13 45.3	-1.1
YER				S	Sn	00 14 08.4	-1.0
BGKT	Bogazkoy	2.08	354	*e*PN	Pb	00 13 45.1	-1.4
BGKT	Bogazkoy	2.08	354	*e*Pn	Pb	00 13 45.1	-1.4
SILT	Sile	2.08	12	*e*PN	Pn	00 13 44.6	+1.1
SILT	Sile	2.08	12	*e*Pn	Pn	00 13 44.7	+1.1
MDUB	Mudurnu	2.12	50	*e*PN	Pn	00 13 45.1	+0.9
MDUB	Mudurnu	2.12	50	*e*Pn	Pn	00 13 45.1	+0.9
KLYT	Kilyos	2.14	359	*e*PN	Pn	00 13 45.8	+1.5
KLYT	Kilyos	2.14	359	*e*Pn	Pn	00 13 45.8	+1.5
RKY	Sarkoy-Tekirda	2.15	318	*e*PN	Pn	00 13 46.0	+1.4
RKY	Sarkoy-Tekirda	2.15	318	*e*Pn	Pn	00 13 46.0	+1.4
CTKS	Kestanelik-??a	2.17	348	*e*PN	Pn	00 13 46.1	+1.4
CTKS	Kestanelik-??a	2.17	348	*e*Pn	Pn	00 13 46.1	+1.4
LPK	Lapseki	2.19	306	*e*PN	Pb	00 13 47.0	-1.3
LPK	Lapseki	2.19	306	*e*Pn	Pb	00 13 47.0	-1.3
PRK	Paraskevi	2.19	274	P	Pn	00 13 44.7	-0.4
PRK				S	Sn	00 14 12.3	+0.2
PRK	Paraskevi	2.19	274	P	Pn	00 13 44.7	-0.4
PRK				S	Sn	00 14 12.3	+0.2
KIZT	Kizilcal	2.19	95	*e*PN	Pn	00 13 45.4	+0.2
KIZT	Kizilcal	2.19	95	*e*Pn	Pn	00 13 45.4	+0.2
SAHE	Sakarya_HENDEK	2.21	38	P	Pn	00 13 44.3	-1.0
SAHE	Sakarya_HENDEK	2.21	38	⇑*i*P	Pn	00 13 44.3	-1.0
SAHE				*i* S	Sb	00 14 16.5	+0.5
TKR	Tekirdag	2.22	328	*e*PN	Pb	00 13 47.3	-1.6
TKR	Tekirdag	2.22	328	*e*Pn	Pb	00 13 47.3	-1.6
SUTC	Sutluce-Ispart	2.22	137	*e*PN	Pn	00 13 46.5	+0.9
SUTC	Sutluce-Ispart	2.22	137	*e*Pn	Pn	00 13 46.6	+0.9
EZN	Ezine	2.25	289	*e*PN	Pb	00 13 47.7	-1.7
EZN	Ezine	2.25	289	P	Pn	00 13 46.0	+0.1
EZN				S	Sn	00 14 12.8	-0.8
EZN	Ezine	2.25	289	P	Pn	00 13 46.0	+0.1
EZN	Ezine	2.25	289	*e*Pn	Pb	00 13 47.7	-1.7
EZN				S	Sn	00 14 12.8	-0.8
SMG	Samos	2.25	232	P	Pn	00 13 45.1	-0.9
SMG				S	Sn	00 14 12.4	-1.4
SMG	Samos	2.25	232	P	Pn	00 13 45.1	-0.9
SMG				S	Sn	00 14 12.4	-1.4
CRLT	Corlu	2.26	333	*e*PN	Pn	00 13 47.7	+1.6
CRLT	Corlu	2.26	333	*e*Pn	Pn	00 13 47.7	+1.6
GELI	Tayfur-Gelibol	2.38	303	*e*PN	Pb	00 13 49.9	-1.8
GELI	Tayfur-Gelibol	2.38	303	*e*Pn	Pb	00 13 49.9	-1.8
CTYL	Yalikoy Yolu	2.44	346	*e*PN	Pn	00 13 49.9	+1.5
CTYL	Yalikoy Yolu	2.44	346	*e*Pn	Pn	00 13 49.9	+1.5
FETY	Fethiye	2.47	180	P	Pn	00 13 48.5	-0.5
FETY	Fethiye	2.47	180	P	Pn	00 13 48.5	-0.5
CHOS	Chios island	2.48	254	P	Pn	00 13 48.9	-0.2
CHOS				S	Sn	00 14 19.6	+0.2
CHOS	Chios island	2.48	254	P	Pn	00 13 48.9	-0.2
CHOS				S	Sn	00 14 19.6	+0.2
BODT	Bodrum	2.48	215	P	Pn	00 13 48.8	-0.3
BODT				S	Sn	00 14 18.8	-0.6
BODT	Bodrum	2.48	215	P	Pn	00 13 48.8	-0.3
BODT				S	Sn	00 14 18.8	-0.6
SIGR	SIGRI	2.51	273	P	Pn	00 13 49.4	-0.1
SIGR	SIGRI	2.51	273	P	Pn	00 13 49.4	-0.1
ERIK	Erikli-Kesan	2.52	309	*e*PN	Pn	00 13 51.6	+2.1
ERIK	Erikli-Kesan	2.52	309	*e*Pn	Pn	00 13 51.6	+2.1
LADK	Ladik-KONYA	2.73	109	*e*PN	Pn	00 13 53.4	+0.8
LADK	Ladik-KONYA	2.73	109	*e*Pn	Pn	00 13 53.4	+0.8
ENEZ	Enez	2.77	307	P	Pn	00 13 53.1	0.0
ENEZ				S	Sn	00 14 26.1	-0.5
ENEZ	Enez	2.77	307	P	Pn	00 13 53.1	0.0
ENEZ				S	Sn	00 14 26.1	-0.5
PHSR	Pinarhisar	2.78	335	*e*PN	Pn	00 13 55.3	+2.1
PHSR	Pinarhisar	2.78	335	*e*Pn	Pn	00 13 55.3	+2.1
KDZE	Karadeniz Ereo	2.84	39	*e*PN	Pn	00 13 55.7	+1.6
KDZE	Karadeniz Ereo	2.84	39	*e*Pn	Pn	00 13 55.7	+1.6
ALN	Alexandroupoli	2.94	308	P	Pn	00 13 55.3	0.0
ALN				S	Sn	00 14 31.1	+0.6
ALN	Alexandroupoli	2.94	308	P	Pn	00 13 55.3	0.0
ALN				S	Sn	00 14 31.1	+0.6
ARG	Arkhangelos	2.99	195	P	Pn	00 13 56.3	+0.2
ARG	Arkhangelos	2.99	195	P	Pn	00 13 56.3	+0.2
SMTH	Samothraki Isl	3.05	297	P	Pn	00 13 56.9	-0.1
SMTH	Samothraki Isl	3.05	297	P	Pn	00 13 56.9	-0.1
LIA	Limnos Island	3.12	286	P	Pn	00 13 58.1	+0.3
LIA				S	Sn	00 14 35.1	+0.1
LIA	Limnos Island	3.12	286	P	Pn	00 13 58.1	+0.3
LIA				S	Sn	00 14 35.1	+0.1
EDRB	Edirne	3.26	328	P	Pn	00 13 59.4	-0.4
EDRB				S	Sn	00 14 38.6	0.0
EDRB	Edirne	3.26	328	P	Pn	00 13 59.4	-0.4
EDRB				S	Sn	00 14 38.6	0.0
APE	Apeiranthos	3.47	235	⇑*i*P	Pg	00 14 19.4	+4.2
BRTR	Keskin Array B	3.58	79	Pn	Pn	00 14 04.4	0.0
	1.1nm,0.3s,baz=255,slow=14,SNR=49						
BRTR				Pg	Pg	00 14 16.6	-0.8
	1.9nm,0.3s,baz=260,slow=17,SNR=34						
BRTR				Sn	Sn	00 14 43.6	-3.1
	1.5nm,0.3s,baz=266,slow=17,SNR=6.1						
KAVA	Kavala	3.98	300	P	Pn	00 14 09.8	+0.1
KAVA	Kavala	3.98	300	P	Pn	00 14 09.8	+0.1
NVR	Nevrokopi	4.58	301	P	Pn	00 14 18.3	+0.4
NVR	Nevrokopi	4.58	301	P	Pn	00 14 18.3	+0.4
SRS	Serrai	4.66	297	P	Pn	00 14 19.0	-0.1
SRS	Serrai	4.66	297	P	Pn	00 14 19.0	-0.1
LAST	Lasithi	4.88	217	⇑*i*P	Pn	00 14 24.7	+2.5
LAST	Lasithi	4.88	217	⇑*i*P	Pn	00 14 24.7	+2.5
IDI	Anoyia	5.08	223	Pn	Pn	00 14 25.4	+0.5
	0.4nm,0.3s,baz=28,slow=7.3,SNR=5.6						
IDI	Anoyia	5.08	223	⇑*i*P	Pn	00 14 25.7	+0.9
IDI	Anoyia	5.08	223	⇑*i*P	Pn	00 14 25.7	+0.9
SIVA	Sivas	5.33	221	⇑*i*P	Pn	00 14 29.3	+1.1
SIVA	Sivas	5.33	221	⇑*i*P	Pn	00 14 29.3	+1.1
TIRR	Tirgusor	5.36	355	⇑*i*P	Pn	00 14 28.2	-0.5
TIRR	Tirgusor	5.36	355	⇑*i*P	Pn	00 14 28.2	-0.5
HARR	Harsova	5.64	352	⇓*i*P	Pn	00 14 33.0	+0.6
HARR	Harsova	5.64	352	⇓*i*P	Pn	00 14 33.0	+0.6
PGOR	Pogoanele	6.00	346	⇑*i*P	Pn	00 14 38.9	+1.5
PGOR	Pogoanele	6.00	346	⇑*i*P	Pn	00 14 38.9	+1.5
TLCR		6.07	358	⇑*i*P	Pn	00 14 38.2	-0.2
TLCR		6.07	358	⇑*i*P	Pn	00 14 38.2	-0.2
CFR	Carcaliu	6.10	354	⇑*i*P	Pn	00 14 39.0	+0.2
CFR	Carcaliu	6.10	354	⇑*i*P	Pn	00 14 39.0	+0.2
HUMR	Humele	6.22	332	⇑*i*P	Pn	00 14 40.5	+0.1
HUMR	Humele	6.22	332	⇑*i*P	Pn	00 14 40.5	+0.1
GIUM	Giurgiulesti	6.40	354	⇑*i*P	Pn	00 14 44.0	+1.1
GIUM	Giurgiulesti	6.40	354	⇑*i*P	Pn	00 14 44.0	+1.1
BARS	Barje	6.63	306	*e*Pn	Pn	00 14 46.9	+0.8
MLR	Muntele Rosu	6.78	341	Pn	Pn	00 14 49.3	+1.0
	0.3nm,0.3s,baz=106,slow=5.4,SNR=20						
MLR	Muntele Rosu	6.78	341	⇑*i*P	Pn	00 14 49.2	+0.9
MLR	Muntele Rosu	6.78	341	⇑*i*P	Pn	00 14 49.2	+0.9
MTUR	Matau	6.80	335	⇑*i*P	Pn	00 14 48.9	+0.4
MTUR	Matau	6.80	335	⇑*i*P	Pn	00 14 48.9	+0.4
ODBI	Odobesti	6.81	348	⇑*i*P	Pn	00 14 50.3	+1.7
ODBI	Odobesti	6.81	348	⇑*i*P	Pn	00 14 50.3	+1.7
PLOR	Plostina	6.97	346	⇑*i*P	Pn	00 14 51.4	+0.6
PLOR	Plostina	6.97	346	⇑*i*P	Pn	00 14 51.4	+0.6
VRI	Vrincioaia	6.97	346	⇓*i*P	Pn	00 14 51.4	+0.6
VRI	Vrincioaia	6.97	346	⇓*i*P	Pn	00 14 51.4	+0.6
VOIR		6.99	336	⇑*i*P	Pn	00 14 51.5	+0.4
VOIR		6.99	336	⇑*i*P	Pn	00 14 51.5	+0.4
ARR	Arges	7.07	334	⇓*i*P	Pn	00 14 52.7	+0.6
ARR	Arges	7.07	334	⇓*i*P	Pn	00 14 52.7	+0.6
BOLS	Boljevac	7.13	314	*e*Pn	Pn	00 14 52.0	-0.9
DOPR	Dopca	7.37	339	⇑*i*P	Pn	00 14 56.9	+0.6
DOPR	Dopca	7.37	339	⇑*i*P	Pn	00 14 56.9	+0.6
TESR	Tescani	7.61	347	⇓*i*P	Pn	00 14 59.2	-0.3
TESR	Tescani	7.61	347	⇓*i*P	Pn	00 14 59.2	-0.3
KUBS	Kucevo	7.66	316	*e*Pn	Pn	00 14 58.4	-1.8
GRUS	Gruza	7.88	310	*e*Pn	Pn	00 15 03.6	+0.3
MMAI	Mount Meron Ar	7.95	138	Pn	Pn	00 15 04.5	+0.2
	1.5nm,0.3s,baz=321,slow=13,SNR=15						
IVAS	Ivanjica	8.06	306	*e*Pn	Pn	00 15 06.1	+0.3
TRUS	Trudelj	8.26	311	*e*Pn	Pn	00 15 08.5	+0.1
DIVS	Divibare	8.44	309	*e*Pn	Pn	00 15 10.3	-0.6
BZS	Buzias	8.53	322	⇑*i*P	Pn	00 15 12.3	+0.2
BZS	Buzias	8.53	322	⇑*i*P	Pn	00 15 12.3	+0.2
BURAR	Bucovina Array	8.95	343	⇓*i*P	Pn	00 15 18.2	+0.2
BURAR	Bucovina Array	8.95	343	⇓*i*P	Pn	00 15 18.2	+0.2
TEKS	Tekeris	8.96	310	*e*Pn	Pn	00 15 18.2	+0.1
SORM	Soroca	9.03	357	⇑*i*P	Pn	00 15 18.5	-0.5
SORM	Soroca	9.03	357	⇑*i*P	P

AUMIH	**MIHALICIK**	**2.04**	**67**	P	**Pg**	**00 15 59.5**	**-0.9**
AUMIH				S	**Sg**	**00 16 26.0**	**-0.9**
AUMIH	**MIHALICIK**	**2.04**	**67**	*i* P	**Pg**	**00 15 59.5**	**-0.9**
AUMIH				*i* S	**Sg**	**00 16 26.0**	**-0.9**
YER	**Yerkesik**	**2.04**	**197**	*e*PN	**Pb**	**00 15 57.9**	**-0.2**
YER	**Yerkesik**	**2.04**	**197**	*e*Pn	**Pb**	**00 15 57.9**	**-0.2**
BGKT	**Bogazkoy**	**2.10**	**354**	*e*PN	**Pb**	**00 15 59.2**	**+0.1**
BGKT	**Bogazkoy**	**2.10**	**354**	*e*Pn	**Pb**	**00 15 59.2**	**+0.1**
BTAS	**Taskesti**	**2.11**	**45**	P	**Pb**	**00 15 59.0**	**-0.3**
BTAS	**Taskesti**	**2.11**	**45**	*i* P	**Pb**	**00 15 59.0**	**-0.3**
BTAS				*i* S	**Sg**	**00 16 29.9**	**+0.7**
SILT	**Sile**	**2.11**	**12**	*e*PN	**Pb**	**00 15 59.4**	**+0.1**
SILT	**Sile**	**2.11**	**12**	*e*Pn	**Pb**	**00 15 59.4**	**+0.1**
RKY	**Sarkoy-Tekirda**	**2.15**	**319**	*e*PN	**Pb**	**00 15 60.0**	**0.0**
RKY	**Sarkoy-Tekirda**	**2.15**	**319**	*e*Pn	**Pb**	**00 15 60.0**	**0.0**
MDUB	**Mudurnu**	**2.16**	**49**	*e*PN	**Pb**	**00 15 60.0**	**-0.2**
MDUB	**Mudurnu**	**2.16**	**49**	*e*Pn	**Pb**	**00 16 00.0**	**-0.2**
KLYT	**Kilyos**	**2.17**	**360**	*e*PN	**Pb**	**00 16 00.2**	**0.0**
KLYT	**Kilyos**	**2.17**	**360**	*e*Pn	**Pb**	**00 16 00.2**	**0.0**
LPK	**Lapseki**	**2.18**	**307**	*e*PN	**Pb**	**00 16 00.2**	**-0.3**
LPK	**Lapseki**	**2.18**	**307**	*e*Pn	**Pb**	**00 16 00.2**	**-0.3**
CTKS	**Kestanelik-??a**	**2.19**	**349**	*e*PN	**Pb**	**00 16 00.7**	**+0.2**
CTKS	**Kestanelik-??a**	**2.19**	**349**	*e*Pn	**Pb**	**00 16 00.7**	**+0.2**
KIZT	**Kizilcal**	**2.22**	**94**	*e*PN	**Pb**	**00 16 00.7**	**-0.4**
KIZT	**Kizilcal**	**2.22**	**94**	*e*Pn	**Pb**	**00 16 00.7**	**-0.4**
TKR	**Tekirdag**	**2.23**	**329**	*e*PN	**Pb**	**00 16 00.8**	**-0.5**
TKR	**Tekirdag**	**2.23**	**329**	*e*Pn	**Pb**	**00 16 00.8**	**-0.5**
EZN	**Ezine**	**2.23**	**290**	*e*PN	**Pb**	**00 16 01.3**	**-0.1**
EZN	**Ezine**	**2.23**	**290**	*e*Pn	**Pb**	**00 16 01.3**	**-0.1**
CRLT	**Corlu**	**2.27**	**334**	*e*PN	**Pb**	**00 16 01.8**	**-0.3**
CRLT	**Corlu**	**2.27**	**334**	*e*Pn	**Pb**	**00 16 01.8**	**-0.3**
GELI	**Tayfur-Gelibol**	**2.38**	**304**	*e*PN	**Pb**	**00 16 03.1**	**-0.7**
GELI	**Tayfur-Gelibol**	**2.38**	**304**	*e*Pn	**Pb**	**00 16 03.1**	**-0.7**
CTYL	**Yalikoy Yolu**	**2.46**	**347**	*e*PN	**Pb**	**00 16 04.2**	**-1.0**
CTYL	**Yalikoy Yolu**	**2.46**	**347**	*e*Pn	**Pb**	**00 16 04.2**	**-1.0**
ERIK	**Erikli-Kesan**	**2.51**	**310**	*e*PN	**Pb**	**00 16 04.7**	**-1.4**
ERIK	**Erikli-Kesan**	**2.51**	**310**	*e*Pn	**Pb**	**00 16 04.7**	**-1.4**

*DDA **20** 00:19:03.0, 39°.12N×29°.13E, h7km, Md2.5*
*CSEM **20** 00:19:03.7±0.1, 39°.14N×29°.08E, h2km, MD2.5, Error ellipse: s-maj=3.7km s-min=3.0km az=148.0*
*ISK **20** 00:19:03.6, 39°.16N×29°.03E, h4km, MD2.9*
ISC 20 00:19:03.1±0.9, **39°.14N**±0°.03×**29°.10E**±0°.02, **h12**km±**8**km, **n47**, σ0§**55**/59, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.30**	**99**	P	**Pg**	**00 19 09.1**	**-0.2**
GDZ				S	**Sg**	**00 19 13.4**	**-0.1**
GDZ	**Gediz**	**0.30**	**99**	*i* P	**Pg**	**00 19 09.1**	**-0.2**
GDZ				*i* S	**Sg**	**00 19 13.3**	**-0.1**
DEMI	**Demirci**	**0.31**	**253**	P	**Pg**	**00 19 09.8**	**+0.2**
DEMI				S	**Sg**	**00 19 14.4**	**+0.5**
DEMI	**Demirci**	**0.31**	**253**	*i* P	**Pg**	**00 19 09.8**	**+0.2**
DEMI				*i* S	**Sg**	**00 19 14.4**	**+0.5**
TVSB	**Tavsanli**	**0.42**	**42**	*e*PG	**Pb**	**00 19 12.3**	**-0.3**
TVSB	**Tavsanli**	**0.42**	**42**	*e*Pg	**Pb**	**00 19 12.3**	**-0.3**
DURS	**Dursunbey**	**0.67**	**314**	P	**Pb**	**00 19 16.7**	**-0.1**
DURS	**Dursunbey**	**0.67**	**314**	*i* P	**Pb**	**00 19 16.7**	**-0.1**
MANT	**Manisa**	**0.77**	**214**	P	**Pg**	**00 19 18.0**	**-0.1**
MANT				S	**Sg**	**00 19 27.6**	**-0.7**
MANT	**Manisa**	**0.77**	**214**	*i* P	**Pg**	**00 19 18.0**	**-0.1**
MANT				*i* S	**Sg**	**00 19 27.6**	**-0.7**
KHL	**Karahalli**	**0.88**	**158**	*e*PG	**Pn**	**00 19 21.7**	**+0.3**
KHL	**Karahalli**	**0.88**	**158**	*e*Pg	**Pn**	**00 19 21.7**	**+0.3**
ORLT	**Orhaneli**	**0.92**	**350**	*e*PG	**Pn**	**00 19 21.6**	**-0.4**
ORLT	**Orhaneli**	**0.92**	**350**	*e*Pg	**Pn**	**00 19 21.6**	**-0.4**
AKHS	**Akhisar**	**1.04**	**256**	P	**Pn**	**00 19 24.4**	**+0.9**
AKHS	**Akhisar**	**1.04**	**256**	*i* P	**Pn**	**00 19 24.4**	**+0.9**
AKHS				*i* S	**Sn**	**00 19 40.1**	**+2.2**
AKS	**Akhisar**	**1.04**	**256**	*e*PG	**Pn**	**00 19 23.3**	**-0.2**
AKS				*e*SG	**Sn**	**00 19 37.3**	**-0.6**
AKS	**Akhisar**	**1.04**	**256**	*e*Pg	**Pn**	**00 19 23.3**	**-0.2**
AKS				*e*Sg	**Sn**	**00 19 37.3**	**-0.6**
BALB	**Balikesir**	**1.07**	**298**	*e*PG	**Pg**	**00 19 23.8**	**0.0**
BALB				*e*SG	**Sn**	**00 19 38.0**	**-0.7**
BALB	**Balikesir**	**1.07**	**298**	*e*Pg	**Pg**	**00 19 23.8**	**0.0**
BALB				*e*Sg	**Sn**	**00 19 38.0**	**-0.7**
IGD	**Bursa**	**1.13**	**4**	*i* P	**Pb**	**00 19 23.8**	**-0.8**
IGD				*i* S	**Sn**	**00 19 41.1**	**+0.9**
CAVI	**Cavuskoy**	**1.21**	**28**	*e*PN	**Pg**	**00 19 27.1**	**+0.7**
CAVI	**Cavuskoy**	**1.21**	**28**	*e*Pn	**Pg**	**00 19 27.1**	**+0.7**
IZI	**Iznik**	**1.23**	**13**	*e*PN	**Pg**	**00 19 27.3**	**+0.5**
IZI	**Iznik**	**1.23**	**13**	*e*Pn	**Pg**	**00 19 27.3**	**+0.5**
MDNY	**Mudanya-Bursa**	**1.24**	**352**	*e*PN	**Pg**	**00 19 27.1**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.24**	**352**	*e*Pn	**Pg**	**00 19 27.1**	**+0.1**
KCTX	**Karacabey (Bur**	**1.27**	**333**	*e*PN	**Pg**	**00 19 27.3**	**-0.2**
KCTX	**Karacabey (Bur**	**1.27**	**333**	*e*Pn	**Pg**	**00 19 27.3**	**-0.2**
ADVT	**Abdulvahap**	**1.38**	**21**	*e*PN	**Pg**	**00 19 30.5**	**+0.8**
ADVT	**Abdulvahap**	**1.38**	**21**	*e*Pn	**Pg**	**00 19 30.5**	**+0.8**
GONE	**Gonen-Balikesi**	**1.42**	**310**	*e*PN	**Pg**	**00 19 30.4**	**-0.1**
GONE	**Gonen-Balikesi**	**1.42**	**310**	*e*Pn	**Pg**	**00 19 30.4**	**-0.1**
ARMT	**Armutlu**	**1.44**	**353**	*e*PN	**Pg**	**00 19 31.1**	**+0.3**
ARMT	**Armutlu**	**1.44**	**353**	*e*Pn	**Pg**	**00 19 31.1**	**+0.3**
EDC	**Edincik**	**1.54**	**322**	*e*PN	**Pb**	**00 19 31.6**	**0.0**
EDC	**Edincik**	**1.54**	**322**	*e*Pn	**Pb**	**00 19 31.6**	**0.0**
GULT	**Gulveren**	**1.69**	**40**	*e*PN	**Pg**	**00 19 35.4**	**-0.2**
GULT	**Gulveren**	**1.69**	**40**	*e*Pn	**Pg**	**00 19 35.4**	**-0.2**
SVRH	**Sivrihisar-ESK**	**1.90**	**80**	*e*PN	**Pb**	**00 19 38.0**	**+0.1**
SVRH	**Sivrihisar-ESK**	**1.90**	**80**	*e*Pn	**Pb**	**00 19 38.0**	**+0.1**
ISK	**Istanbul-Kandi**	**1.93**	**359**	*e*PN	**Pb**	**00 19 37.8**	**-0.4**
ISK	**Istanbul-Kandi**	**1.93**	**359**	*e*Pn	**Pb**	**00 19 37.8**	**-0.4**
SILT	**Sile**	**2.06**	**11**	*e*PN	**Pb**	**00 19 39.6**	**-0.7**
SILT	**Sile**	**2.06**	**11**	*e*Pn	**Pb**	**00 19 39.7**	**-0.7**
MDUB	**Mudurnu**	**2.09**	**50**	*e*PN	**Pb**	**00 19 41.0**	**-0.1**
MDUB	**Mudurnu**	**2.09**	**50**	*e*Pn	**Pb**	**00 19 41.0**	**-0.1**

*NNC **20** 00:19:03.5±3.1, 42°.15N×83°.28E, h0km, mb3.0, mpv2.6, Error ellipse: s-maj=23.9km s-min=11.7km az=145.0*
*SOME **20** 00:19:05.9, 41°.48N×82°.53E, h0km*
ISC 20 00:19:05.3±3.3, **42°.3N**±0°.2×**83°.29E**±0°.10, **h10**km, **n7**, σ1§**69**/12, **4C-1D, Northern Xinjiang**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KTMS	**Ketmen**	**2.47**	**300**	*e*P	**Pg**	**00 19 51.9**	**-0.7**
KTMS	7.3nm,0.3s						
KTMS				*e*S	**Sg**	**00 20 24.1**	**-0.5**
SHLS	22nm,0.3s						
SHLS	**Shalkode**	**2.67**	**291**	*e*P	**Pg**	**00 19 55.3**	**-1.1**
SHLS	6.0nm,0.3s						
SHLS				*e*S	**Sg**	**00 20 31.5**	**+0.5**
PDGK	**Podgornoye**	**3.00**	**292**	⇑Pg	**Pb**	**00 19 58.8**	**+0.1**
PDGK	14nm,0.4s						
PDGK				⇑Lg	Lg	00 20 39.7	
UZB	**Uzynbulak**	**3.27**	**287**	*e*P	**Pb**	**00 20 02.5**	**-1.0**
UZB	2.3nm,0.7s						
UZB				*e*S	**Sb**	**00 20 43.5**	**+0.1**
ARXS	**Arharly**	**4.45**	**298**	*e*P	**Pg**	**00 20 29.3**	**-1.2**
ARXS	5.2nm,0.5s						
ARXS				*e*S	**Sg**	**00 21 29.1**	**+1.0**
MK31	**Makanchi Array**	**4.60**	**351**	Pn	**Pn**	**00 20 16.6**	**+1.7**
MK31	4.0nm,0.4s						
MK31	0.1nm,0.1s,baz=180,slow=10,SNR=2.6			Pg	**Pg**	**00 20 29.7**	**-3.6**
MK31	0.4nm,0.4s,baz=167,slow=16,SNR=5.7			⇑Lg	Lg	00 21 32.5	
MAKZ	**Makanchi**	**4.65**	**349**	⇑Pg	**Pb**	**00 20 29.0**	**+2.1**
MAKZ	1.1nm,0.6s,baz=161,slow=26,SNR=5.3						
MAKZ	0.5nm,0.7s			⇓Lg	Lg	00 21 34.9	
MAKZ	1.2nm,0.9s						

*ISCJB **20** 00:20:20.6±1.1, 15°.6N±0°.1×95°.84W±0°.04, h24km±7km, mb3.6/3, Error ellipse: s-maj=17.0km s-min=6.3km az=8.6*
*IDC **20** 00:20:21.4±8.7, 16°.12N×94°.83W, h0km, mb3.6/3, mb1 3.9/4, mb1mx3.5/45, mbtmp3.5/4, ML3.4/1, Error ellipse: s-maj=263.4km s-min=129.0km az=44.0*
*MEX **20** 00:20:21.8±1.0, 15°.54N×95°.85W, h4km±6km, MD4.0*
*NEIC **20** 00:20:21.8, 15°.54N×95°.85W, h4km, MD4.0(MEX), After MEX.*
ISC 20 00:20:21.0±1.4, **15°.54N**±0°.10×**95°.85W**±0°.04, **h16**km±**8**km, **n15**, σ1§**05**/26, **mb3.6**/3, **Near coast of Oaxaca**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HUIG	**Huatulco**	**0.34**	**312**	*i* P	**Pg**	**00 20 28.1**	**+0.1**
HUIG				*e*S	**Sg**	**00 20 32.3**	**-0.4**
HUIG	**Huatulco**	**0.34**	**312**	*i* P	**Pg**	**00 20 28.1**	**+0.1**
HUIG				*e*S	**Sg**	**00 20 32.3**	**-0.4**
PANG	**Puerto Angel**	**0.61**	**282**	*e*P	**Pb**	**00 20 33.7**	**+0.3**
PANG				*e*S	**Sg**	**00 20 41.2**	**0.0**
VHO	**Vista Hermosa**	**1.74**	**331**	*e*P	**Pn**	**00 20 50.4**	**-0.4**
VHO				*e*S	**Sn**	**00 21 11.3**	**-1.5**
VHO	**Vista Hermosa**	**1.74**	**331**	*e*P	**Pn**	**00 20 50.4**	**-0.4**
VHO				*e*S	**Sn**	**00 21 11.3**	**-1.5**
PNIG	**Pinotepa**	**2.35**	**291**	*e*P	**Pn**	**00 20 58.8**	**-0.1**
PNIG				*i* S	**Sn**	**00 21 25.6**	**-2.0**
PNIG	**Pinotepa**	**2.35**	**291**	*e*P	**Pn**	**00 20 58.8**	**-0.1**
PNIG				*i* S	**Sn**	**00 21 25.6**	**-2.0**
PCIG		**2.54**	**86**	*e*P	**Pn**	**00 21 00.1**	**-1.5**
PCIG				*i* S	**Sn**	**00 21 31.2**	**-1.0**
PCIG		**2.54**	**86**	*e*P	**Pn**	**00 21 00.1**	**-1.5**
PCIG				*i* S	**Sn**	**00 21 31.2**	**-1.0**
TGIG		**2.90**	**65**	*i* P	**Pn**	**00 21 06.0**	**-0.5**
TGIG				*i* S	**Sn**	**00 21 41.0**	**0.0**
TGIG		**2.90**	**65**	*i* P	**Pn**	**00 21 06.0**	**-0.5**
TGIG				*i* S	**Sn**	**00 21 41.0**	**0.0**
TXAR	**Lajitas Array**	**15.50**	**334**	Pn	**P**	**00 24 04.0**	**+0.5**
	0.0nm,0.3s,baz=146,slow=14,SNR=5.8						
YKA	**Yellowknife Ar**	**48.73**	**349**	P	**P**	**00 29 04.8**	**+0.2**
	0.1nm,0.5s,baz=155,slow=7.3,SNR=3.6						
INK	**Inuvik**	**57.94**	**344**	P	**P**	**00 30 13.3**	**+1.2**
	1.5nm,0.7s,baz=132,slow=10,SNR=6.1						
ILAR	**Eielson Array**	**59.98**	**337**	P	**P**	**00 30 28.1**	**+1.6**
	0.4nm,0.8s,baz=132,slow=5.8,SNR=5.2						

*NEIC **20** 00:20:46.0, 38°.42N×118°.74W, h2km, ML3.6(REN), After REN.*
*IDC **20** 00:20:47.2±0.9, 38°.41N×118°.77W, h0km, mb3.1/1, mb1 3.4/6, mb1mx3.3/56, mbtmp3.2/6, ML3.2/4, MS3.0/3, Ms1 3.0/3, ms1mx2.8/11, Error ellipse: s-maj=8.2km s-min=6.4km az=25.0*
ISC 20 00:20:47.4±1.4, **38°.37N**±0°.03×**118°.66W**±0°.04, **h3**km±13km, **n22**, σ1§**33**/28, **California-Nevada border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NVAR	**Mina Array Bea**	**0.28**	**77**	Pg	**Pg**	**00 20 53.4**	**+0.5**
	864nm,0.3s,baz=260,slow=20						
NVAR				Lg	Lg	00 20 58.6	
	2μm,0.3s,baz=262,slow=25,SNR=61						
NVAR				Rg	Rg	00 21 02.1	
	957nm,0.3s,baz=258,slow=31,SNR=24						
NVAR				LR	LR	00 21 24.1	
	comp=Z,450nm,19.4s,baz=338,slow=76						
MLAC	**Mammoth, Mammo**	**0.75**	**191**	P	**Pb**	**00 21 02.0**	**-1.2**
	baz=5.4						
MLAC				S	**Sb**	**00 21 13.2**	**-0.7**
	baz=5.4						
TIN	**Tinemaha, Big**	**1.35**	**165**	S	**Sg**	**00 21 33.6**	**+2.8**
	baz=344						
GRAC	**Grapevine Rang**	**1.71**	**143**	Pb	**Pg**	**00 21 20.1**	**0.0**
	baz=323						
DAC	**Darwin (Calif)**	**2.25**	**158**	*e*Pn	**Pb**	**00 21 27.0**	**-1.8**
DAC				*e*Pb	**Pg**	**00 21 30.0**	**-0.5**
DAC				*e*Sb	**Sg**	**00 21 59.6**	**-0.1**
BMN	**Battle Mountai**	**2.34**	**28**	*e*Pn	**Pn**	**00 21 25.5**	**-1.5**
BMN				*e*Sn	**Sb**	**00 21 58.1**	**-1.7**
TPNV	**Topopah Spring**	**2.38**	**126**	Pb	**Pg**	**00 21 32.3**	**-0.7**
	baz=307						
R11A	**Troy Canyon, C**	**2.41**	**89**	Pb	**Pb**	**00 21 31.4**	**-0.2**
	baz=273						
R11A				Sb	**Sg**	**00 22 04.9**	**0.0**
	baz=273						
R11A	**Troy Canyon, C**	**2.41**	**89**	*e*Pn	**Pb**	**00 21 29.0**	**-2.6**
R11A				*e*Sb	**Sg**	**00 22 05.4**	**+0.5**
MPMC	**Manual Prospec**	**2.48**	**158**	Pb	**Pg**	**00 21 34.0**	**-1.0**
	baz=338						
MPMC				Sb	**Sg**	**00 22 07.5**	**+0.3**
	baz=338						
ISA	**Isabella, Lake**	**2.70**	**177**	Pb	**Pb**	**00 21 37.0**	**+0.5**
	baz=356						
ISA				Sb	**Sg**	**00 22 12.8**	**-1.4**
	baz=356						
O03D	**Paynes Creek**	**3.11**	**309**	P	**Pn**	**00 21 36.9**	**-0.5**
	baz=127						
ELK	**Elko**	**3.55**	**47**	Pn	**Pn**	**00 21 44.5**	**+0.8**
	3.6nm,0.3s,baz=130,slow=0.3,SNR=2.0						
ELK				Lg	Lg	00 22 39.1	
	12nm,0.3s,baz=42,slow=0.1,SNR=4.0						
YBH	**Yreka Blue Hor**	**4.58**	**318**	Pn	**Pn**	**00 21 57.7**	**0.0**
	0.6nm,0.3s,baz=203,slow=3.5,SNR=8.4						
YBH				Lg	Lg	00 23 09.6	
	0.2nm,0.3s,baz=229,slow=20,SNR=2.3						
YBH				LR	LR	00 23 48.0	
	comp=Z,160nm,20.6s,baz=170,slow=40						
YBH	**Yreka Blue Hor**	**4.58**	**318**	*e*Pn	**Pn**	**00 21 58.3**	**+0.6**
YBH				*e*Sg	**Sg**	**00 23 15.4**	**+0.9**
PFO	**Pinyon Flats O**	**5.07**	**159**	Pn	**Pn**	**00 22 05.7**	**+1.2**
	0.2nm,0.3s,baz=252,slow=6.4,SNR=2.0						
PFO				Lg	Lg	00 23 29.8	
	0.2nm,0.3s,baz=227,slow=19,SNR=2.0						
HWUT	**Hardware Ranch**	**6.33**	**57**	*e*Pn	**Pn**	**00 22 23.4**	**+1.6**
	4.0nm,1.0s						
PDAR	**Pinedale Array**	**8.20**	**55**	Pn	Pn	00 22 50.8	+3.3
	baz=236,slow=11,SNR=3.1						
PDAR				Lg	Lg	00 25 05.1	
	0.1nm,0.3s,baz=235,slow=28,SNR=3.7						
ANMO	**Albuquerque**	**10.38**	**105**	Pn	**Pn**	**00 23 19.9**	**+2.6**
	0.1nm,0.3s,baz=269,slow=0.5,SNR=3.3						
BBB	**Bella Bella**	**15.32**	**337**	LR	LR	00 30 56.0	
	comp=Z,55nm,21.9s,baz=200,slow=40						
YKA	**Yellowknife Ar**	**24.28**	**5**	P	**P**	**00 26 05.6**	**-0.1**
	0.4nm,0.7s,baz=178,slow=9.7,SNR=9.5						
TKL	**Tuckaleechee C**	**27.89**	**85**	LR	LR	00 38 15.3	
	comp=Z,49nm,19.6s,baz=340,slow=38						

*ISK **20** 00:23:30.7, 39°.13N×29°.08E, h5km, ML3.6*
*DDA **20** 00:23:31.0, 39°.12N×29°.11E, h16km, Ml3.8*
*ISCJB **20** 00:23:31.6±0.4, 39°.10N±0°.01×29°.04E±0°.02, h10km±3km, Error ellipse: s-maj=2.6km s-min=2.3km az=177.5*
*CSEM **20** 00:23:31.8±0.1, 39°.10N×29°.06E, h5km, ML3.8, Error ellipse: s-maj=2.3km s-min=1.9km az=84.0*
*THE **20** 00:23:32.9, 39°.07N×29°.01E, h8km±2km, ML3.4/7, Error ellipse: s-maj=2.1km s-min=0.7km az=102.0*
ISC 20 00:23:31.7±0.9, **39°.11N**±0°.02×**29°.08E**±0°.01, **h9**km±8km, **n188**, σ1§**02**/239, **19C-12D, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.29**	**256**	P	**Pg**	**00 23 37.8**	**+0.2**
DEMI				S	**Sg**	**00 23 42.1**	**+0.6**
DEMI	**Demirci**	**0.29**	**256**	*i* P	**Pg**	**00 23 37.8**	**+0.2**
DEMI				*i* S	**Sg**	**00 23 42.1**	**+0.6**
GDZ	**Gediz**	**0.31**	**94**	P	**Pg**	**00 23 37.6**	**-0.3**
GDZ				S	**Sg**	**00 23 41.9**	**-0.2**
GDZ	**Gediz**	**0.31**	**94**	*i* P	**Pg**	**00 23 37.6**	**-0.3**
GDZ				*i* S	**Sg**	**00 23 41.9**	**-0.2**
TVSB	**Tavsanli**	**0.45**	**41**	*e*PG	**Pg**	**00 23 40.1**	**-0.4**
TVSB	**Tavsanli**	**0.45**	**41**	*e*Pg	**Pg**	**00 23 40.1**	**-0.4**
DURS	**Dursunbey**	**0.68**	**316**	P	**Pg**	**00 23 44.7**	**-0.1**
DURS	**Dursunbey**	**0.68**	**316**	*i* P	**Pg**	**00 23 44.7**	**-0.1**
DURS				*i* S	**Sn**	**00 23 57.5**	**-0.9**
KULA	**Kula-Manisa**	**0.68**	**209**	*e*PG	**Pg**	**00 23 44.7**	**-0.2**
KULA	**Kula-Manisa**	**0.68**	**209**	P	**Pg**	**00 23 44.7**	**-0.2**
KULA				S	**Sg**	**00 23 53.4**	**-0.4**
KULA	**Kula-Manisa**	**0.68**	**209**	P	**Pg**	**00 23 44.7**	**-0.2**
KULA				S	**Sg**	**00 23 53.4**	**-0.4**
MANT	**Manisa**	**0.74**	**214**	P	**Pg**	**00 23 45.8**	**-0.2**
MANT				S	**Sg**	**00 23 55.6**	**-0.2**
MANT	**Manisa**	**0.74**	**214**	*i* P	**Pg**	**00 23 45.8**	**-0.2**
MANT				*i* S	**Sg**	**00 23 55.6**	**-0.2**
KHAL	**Karahalli**	**0.81**	**156**	P	**Pg**	**00 23 47.0**	**-0.2**
KHAL				S	**Sg**	**00 23 57.5**	**-0.3**
KHAL	**Karahalli**	**0.81**	**156**	*i* P	**Pg**	**00 23 47.0**	**-0.2**
KHAL				*i* S	**Sg**	**00 23 57.5**	**-0.3**
KHL	**Karahalli**	**0.86**	**156**	*e*PG	**Pg**	**00 23 48.2**	**-0.1**
KHL	**Karahalli**	**0.86**	**156**	*e*Pg	**Pg**	**00 23 48.2**	**-0.1**
ORLT	**Orhaneli**	**0.94**	**351**	*e*PG	**Pg**	**00 23 49.4**	**-0.4**
ORLT				*e*SG	**Sb**	**00 24 03.3**	**+0.4**
ORLT	**Orhaneli**	**0.94**	**351**	*e*Pg	**Pg**	**00 23 49.4**	**-0.4**
ORLT				*e*Sg	**Sb**	**00 24 03.3**	**+0.4**
AKHS	**Akhisar**	**1.01**	**257**	P	**Pg**	**00 23 51.3**	**+0.1**

AKHS				S	**Sg**	**00 24 04.9**	**+0.5**
AKHS	**Akhisar**	**1.01**	**257**	*i* P	**Pg**	**00 23 51.3**	**+0.1**
AKHS				*i* S	**Sg**	**00 24 05.0**	**+0.5**
AKS	**Akhisar**	**1.02**	**257**	*e*PG	**Pg**	**00 23 51.5**	**+0.3**
AKS	**Akhisar**	**1.02**	**257**	*e*Pg	**Pg**	**00 23 51.5**	**+0.3**
BALB	**Balikesir**	**1.07**	**300**	*e*PG	**Pb**	**00 23 52.6**	**+0.2**
BALB				*e*SG	**Sb**	**00 24 07.7**	**+1.1**
BALB	**Balikesir**	**1.07**	**300**	*e*Pg	**Pb**	**00 23 52.6**	**+0.2**
BALB				*e*Sg	**Sb**	**00 24 07.7**	**+1.1**
IGD	**Bursa**	**1.15**	**5**	*i* P	**Pg**	**00 23 51.8**	**-2.0**
IGD				*i* S	**Sb**	**00 24 09.6**	**+0.6**
CAVI	**Cavuskoy**	**1.24**	**28**	*e*PN	**Pg**	**00 23 55.1**	**-0.4**
CAVI	**Cavuskoy**	**1.24**	**28**	*e*Pn	**Pg**	**00 23 55.1**	**-0.4**
IZI	**Iznik**	**1.26**	**14**	*e*PN	**Pg**	**00 23 55.7**	**-0.2**
IZI	**Iznik**	**1.26**	**14**	*e*Pn	**Pg**	**00 23 55.7**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.26**	**353**	*e*PN	**Pg**	**00 23 55.2**	**-0.8**
MDNY				*e*SN	**Sn**	**00 24 14.2**	**+1.5**
MDNY	**Mudanya-Bursa**	**1.26**	**353**	*e*Pn	**Pg**	**00 23 55.2**	**-0.8**
MDNY				*e*Sn	**Sn**	**00 24 14.2**	**+1.5**
KCTX	**Karacabey (Bur**	**1.28**	**334**	*e*PN	**Pn**	**00 23 55.8**	**0.0**
KCTX	**Karacabey (Bur**	**1.28**	**334**	*e*Pn	**Pn**	**00 23 55.8**	**0.0**
BALY	**Balya**	**1.29**	**299**	P	**Pn**	**00 23 56.5**	**+0.4**
BALY				S	**Sg**	**00 24 12.9**	**-0.4**
BALY	**Balya**	**1.29**	**299**	*i* P	**Pn**	**00 23 56.5**	**+0.4**
BALY				*i* S	**Sg**	**00 24 12.9**	**-0.4**
GEMT	**Gemlik**	**1.32**	**4**	*e*PN	**Pg**	**00 23 57.3**	**+0.2**
GEMT	**Gemlik**	**1.32**	**4**	*e*Pn	**Pg**	**00 23 57.3**	**+0.2**
DENT	**Denizli**	**1.36**	**182**	*e*PN	**Pg**	**00 23 57.9**	**+0.2**
DENT	**Denizli**	**1.36**	**182**	*e*Pn	**Pg**	**00 23 57.9**	**+0.2**
ADVT	**Abdulvahap**	**1.41**	**21**	*e*PN	**Pn**	**00 23 57.9**	**+0.2**
ADVT	**Abdulvahap**	**1.41**	**21**	*e*Pn	**Pn**	**00 23 57.9**	**+0.2**
DNZL	**Cakiroluk**	**1.42**	**181**	P	**Pn**	**00 23 57.8**	**-0.1**
DNZL	**Cakiroluk**	**1.42**	**181**	*i* P	**Pn**	**00 23 57.8**	**-0.1**
DNZL				*i* S	**Sn**	**00 24 19.8**	**+2.9**
GONE	**Gonen-Balikesi**	**1.43**	**311**	*e*PN	**Pb**	**00 23 58.6**	**+0.1**
GONE	**Gonen-Balikesi**	**1.43**	**311**	*e*Pn	**Pb**	**00 23 58.6**	**+0.1**
ESKT	**Eskisehir**	**1.43**	**73**	*i* P	**Pn**	**00 23 57.9**	**-0.1**
ESKT				*i* S	**Sb**	**00 24 13.2**	**-3.8**
SEYT	**Eskypehyr**	**1.43**	**73**	P	**Pn**	**00 23 57.9**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**1.49**	**219**	*e*PN	**Pb**	**00 23 60.0**	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**1.49**	**219**	*e*Pn	**Pb**	**00 24 00.0**	**+0.3**
GPA	**Golpazari**	**1.51**	**38**	*e*PN	**Pg**	**00 24 00.2**	**-0.4**
GPA	**Golpazari**	**1.51**	**38**	*e*Pn	**Pg**	**00 24 00.3**	**-0.4**
BOLV	**Bolvadin**	**1.51**	**105**	P	**Pn**	**00 23 59.6**	**+0.5**
BOLV				S	**Sn**	**00 24 18.9**	**-0.1**
BOLV	**Bolvadin**	**1.51**	**105**	*i* P	**Pn**	**00 23 59.6**	**+0.

ALN			S		Sn	00 24 53.4	-0.5
ARG	**Arkhangelos**	**2.99 195**	P		Pn	00 24 19.1	-0.2
ARG			S		Sn	00 24 54.4	-0.9
ARG	**Arkhangelos**	**2.99 195**	P		Pn	00 24 19.1	-0.2
ARG			S		Sn	00 24 54.4	-0.9
SMTH	**Samothraki Isl**	**3.05 298**	P		Pn	00 24 20.1	-0.1
SMTH	**Samothraki Isl**	**3.05 298**	P		Pn	00 24 20.1	-0.1
LIA	**Limnos Island**	**3.12 286**	P		Pn	00 24 21.1	+0.1
LIA			S		Sn	00 24 57.9	-0.5
LIA	**Limnos Island**	**3.12 286**	P		Pn	00 24 21.1	+0.1
LIA			S		Sn	00 24 57.9	-0.5
EDRB	**Edirne**	**3.26 328**	P		Pn	00 24 23.3	+0.2
EDRB	**Edirne**	**3.26 328**	P		Pn	00 24 23.3	+0.2
KDZ	**Kurdzhali**	**3.78 313**	P		Pn	00 24 31.2	+1.0
JMB	**Yambol**	**3.85 331**	P		Pn	00 24 32.3	+1.2
RZN	**Rozhen**	**4.21 309**	P		Pn	00 24 36.8	+0.5
SZH	**Strazhica**	**4.78 331**	P		Pn	00 24 44.0	0.0
LAST	**Lasithi**	**4.88 217**	⇓	*i*P	Pn	00 24 47.4	+2.0
LAST	**Lasithi**	**4.88 217**	⇓	*i*P	Pn	00 24 47.4	+2.0
SIVA	**Sivas**	**5.33 221**	⇑	*i*P	Pn	00 24 54.6	+3.2
SIVA	**Sivas**	**5.33 221**	⇑	*i*P	Pn	00 24 54.6	+3.2
TIRR	**Tirgusor**	**5.37 355**	⇓	*i*P	Pn	00 24 52.0	+0.1
TIRR	**Tirgusor**	**5.37 355**	⇓	*i*P	Pn	00 24 52.0	+0.1
TLCR		**6.07 358**	⇑	*i*P	Pn	00 25 02.5	+0.8
TLCR		**6.07 358**	⇑	*i*P	Pn	00 25 02.5	+0.8
CFR	**Carcaliu**	**6.10 354**	⇓	*i*P	Pn	00 25 02.1	+0.1
CFR	**Carcaliu**	**6.10 354**	⇓	*i*P	Pn	00 25 02.1	+0.1
GIUM	**Giurgiulesti**	**6.40 354**	⇑	*i*P	Pn	00 25 07.8	+1.6
GIUM	**Giurgiulesti**	**6.40 354**	⇑	*i*P	Pn	00 25 07.8	+1.6
MLR	**Muntele Rosu**	**6.78 341**	⇑	*i*P	Pn	00 25 12.9	+1.3
MLR	**Muntele Rosu**	**6.78 341**	⇑	*i*P	Pn	00 25 12.9	+1.3
PLOR	**Plostina**	**6.97 346**	⇑	*i*P	Pn	00 25 15.8	+1.8
PLOR	**Plostina**	**6.97 346**	⇑	*i*P	Pn	00 25 15.8	+1.8
VRI	**Vrincioaia**	**6.97 346**	⇑	*i*P	Pn	00 25 14.9	+0.9
VRI	**Vrincioaia**	**6.97 346**	⇑	*i*P	Pn	00 25 14.9	+0.9
VOIR		**6.99 336**	⇓	*i*P	Pn	00 25 15.1	+0.7
VOIR		**6.99 336**	⇓	*i*P	Pn	00 25 15.1	+0.7
ARR	**Arges**	**7.07 334**	⇑	*i*P	Pn	00 25 15.8	+0.4
ARR	**Arges**	**7.07 334**	⇑	*i*P	Pn	00 25 15.8	+0.4
DOPR	**Dopca**	**7.37 340**	⇑	*i*P	Pn	00 25 19.9	+0.4
DOPR	**Dopca**	**7.37 340**	⇑	*i*P	Pn	00 25 19.9	+0.4
TESR	**Tescani**	**7.61 347**	⇓	*i*P	Pn	00 25 23.1	+0.3
TESR	**Tescani**	**7.61 347**	⇓	*i*P	Pn	00 25 23.1	+0.3
BZS	**Buzias**	**8.53 322**	⇓	*i*P	Pn	00 25 35.8	+0.4
BZS	**Buzias**	**8.53 322**	⇓	*i*P	Pn	00 25 35.8	+0.4
BURAR	**Bucovina Array**	**8.95 343**	⇑	*i*P	Pn	00 25 42.5	+1.2
BURAR	**Bucovina Array**	**8.95 343**	⇑	*i*P	Pn	00 25 42.5	+1.2

*DDA **20** 00:25:20.1,39.°10N×29.°10E, h7km, Md3.0*
*ISK **20** 00:25:21.7,39.°21N×29.°14E, h5km, ML3.5*
*CSEM **20** 00:25:21.6±0.2,39.°12N×29.°13E, h2km, MD3.0, Error ellipse: s-maj=4.3km s-min=3.8km az=133.0*
ISC 20 00:25:20.7±1.0,**39.°15N**±0.°02×**29.°11E**±0.°02, **h4km**±10km, **n94**, σ0s**79**/116, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.29**	**101**	P	**Pg**	**00 25 26.6**	**+0.1**
GDZ				S	**Sg**	**00 25 30.9**	**+0.5**
GDZ	**Gediz**	**0.29**	**101**	*i* P	**Pg**	**00 25 26.6**	**+0.1**
GDZ				*i* S	**Sg**	**00 25 30.9**	**+0.5**
DEMI	**Demirci**	**0.32**	**251**	P	**Pg**	**00 25 26.9**	**-0.1**
DEMI				S	**Sg**	**00 25 31.1**	**-0.1**
DEMI	**Demirci**	**0.32**	**251**	*i* P	**Pg**	**00 25 26.9**	**-0.1**
DEMI				*i* S	**Sg**	**00 25 31.1**	**-0.1**
TVSB	**Tavsanli**	**0.41**	**42**	*e*PG	**Pg**	**00 25 29.0**	**+0.4**
TVSB	**Tavsanli**	**0.41**	**42**	*e*Pg	**Pg**	**00 25 29.0**	**+0.4**
DURS	**Dursunbey**	**0.67**	**313**	P	**Pg**	**00 25 33.4**	**-0.2**
DURS	**Dursunbey**	**0.67**	**313**	*i* P	**Pg**	**00 25 33.4**	**-0.2**
MANT	**Manisa**	**0.78**	**214**	P	**Pg**	**00 25 35.1**	**-0.7**
MANT				S	**Sg**	**00 25 44.5**	**-1.5**
MANT	**Manisa**	**0.78**	**214**	*i* P	**Pg**	**00 25 35.1**	**-0.7**
MANT				*i* S	**Sg**	**00 25 44.5**	**-1.5**
KHAL	**Karahalli**	**0.83**	**159**	P	**Pg**	**00 25 36.2**	**-0.5**
KHAL				S	**Sg**	**00 25 46.1**	**-1.3**
KHAL	**Karahalli**	**0.83**	**159**	*i* P	**Pg**	**00 25 36.2**	**-0.5**
KHAL				*i* S	**Sg**	**00 25 46.1**	**-1.3**
KHL	**Karahalli**	**0.88**	**158**	*e*PG	**Pn**	**00 25 40.8**	**+0.7**
ORLT	**Orhaneli**	**0.91**	**350**	*e*PG	**Pn**	**00 25 39.5**	**-1.0**
ORLT	**Orhaneli**	**0.91**	**350**	*e*Pg	**Pn**	**00 25 39.5**	**-1.0**
AKHS	**Akhisar**	**1.04**	**256**	P	**Pg**	**00 25 40.0**	**-0.8**
AKHS				S	**Sg**	**00 25 54.0**	**-0.3**
AKHS	**Akhisar**	**1.04**	**256**	*i* P	**Pg**	**00 25 40.0**	**-0.8**
AKHS				*i* S	**Sg**	**00 25 54.0**	**-0.3**
AKS	**Akhisar**	**1.04**	**256**	*e*PN	**Pn**	**00 25 43.8**	**+1.5**
AKS	**Akhisar**	**1.04**	**256**	*e*Pn	**Pn**	**00 25 43.8**	**+1.5**
BALB	**Balikesir**	**1.07**	**298**	*e*PG	**Pn**	**00 25 43.2**	**+0.6**
BALB				*e*SG	**Sn**	**00 25 58.8**	**+0.8**
BALB	**Balikesir**	**1.07**	**298**	*e*Pg	**Pn**	**00 25 43.2**	**+0.6**
BALB				*e*Sg	**Sn**	**00 25 58.8**	**+0.8**
IGD	**Bursa**	**1.12**	**4**	*i* P	**Pb**	**00 25 41.5**	**-1.2**
IGD				*i* S	**Sn**	**00 25 58.5**	**-0.6**
CAVI	**Cavuskoy**	**1.20**	**28**	*e*Pn	**Pg**	**00 25 44.0**	**+0.3**
CAVI				*e*SN	**Sn**	**00 26 00.9**	**-0.2**
CAVI	**Cavuskoy**	**1.20**	**28**	*e*Pn	**Pg**	**00 25 44.0**	**+0.3**
CAVI				*e*Sn	**Sn**	**00 26 00.9**	**-0.2**
IZI	**Iznik**	**1.22**	**13**	*e*PN	**Pg**	**00 25 45.4**	**+1.2**
IZI	**Iznik**	**1.22**	**13**	*e*Pn	**Pg**	**00 25 45.4**	**+1.2**
MDNY	**Mudanya-Bursa**	**1.23**	**352**	*e*PN	**Pg**	**00 25 44.4**	**0.0**
MDNY	**Mudanya-Bursa**	**1.23**	**352**	*e*Pn	**Pg**	**00 25 44.4**	**0.0**
KCTX	**Karacabey (Bur**	**1.26**	**333**	*e*PN	**Pg**	**00 25 45.9**	**+1.0**
KCTX	**Karacabey (Bur**	**1.26**	**333**	*e*Pn	**Pg**	**00 25 45.9**	**+1.0**
GEMT	**Gemlik**	**1.29**	**3**	*e*PN	**Pg**	**00 25 45.6**	**+0.2**
GEMT	**Gemlik**	**1.29**	**3**	*e*Pn	**Pg**	**00 25 45.6**	**+0.2**
BALY	**Balya**	**1.30**	**298**	P	**Pb**	**00 25 45.4**	**-0.4**
BALY				S	**Sg**	**00 26 04.0**	**+1.5**
BALY	**Balya**	**1.30**	**298**	*i* P	**Pb**	**00 25 45.4**	**-0.4**
BALY				*i* S	**Sg**	**00 26 04.0**	**+1.5**
ADVT	**Abdulvahap**	**1.37**	**20**	*e*PN	**Pg**	**00 25 47.7**	**+0.6**
ADVT	**Abdulvahap**	**1.37**	**20**	*e*Pn	**Pg**	**00 25 47.7**	**+0.6**
ESKT	**Eskisehir**	**1.40**	**74**	*i* P	**Pb**	**00 25 47.1**	**-0.4**
ESKT				*i* S	**Sg**	**00 26 05.8**	**+0.1**
SEYT	**Eskypehyr**	**1.40**	**74**	P	**Pb**	**00 25 47.2**	**-0.4**
SEYT				S	**Sg**	**00 26 05.8**	**+0.1**
GONE	**Gonen-Balikesi**	**1.42**	**310**	*e*PN	**Pg**	**00 25 49.3**	**+1.3**
GONE	**Gonen-Balikesi**	**1.42**	**310**	*e*Pn	**Pg**	**00 25 49.3**	**+1.3**
ARMT	**Armutlu**	**1.43**	**352**	*e*PN	**Pg**	**00 25 48.8**	**+0.6**
ARMT	**Armutlu**	**1.43**	**352**	*e*Pn	**Pg**	**00 25 48.8**	**+0.6**
DNZL	**Cakiroluk**	**1.46**	**182**	P	**Pg**	**00 25 48.5**	**-0.1**
DNZL				S	**Sg**	**00 26 08.2**	**+0.7**
DNZL	**Cakiroluk**	**1.46**	**182**	*i* P	**Pg**	**00 25 48.5**	**-0.1**
DNZL				*i* S	**Sg**	**00 26 08.2**	**+0.7**
GPA	**Golpazari**	**1.47**	**39**	*e*PN	**Pg**	**00 25 49.5**	**+0.6**
GPA	**Golpazari**	**1.47**	**39**	*e*Pn	**Pg**	**00 25 49.5**	**+0.6**
AYDB	**Zeytinkoy-Aydi**	**1.53**	**219**	*e*PN	**Pg**	**00 25 52.2**	**+2.1**
AYDB	**Zeytinkoy-Aydi**	**1.53**	**219**	*e*Pn	**Pg**	**00 25 52.2**	**+2.1**
EDC	**Edincik**	**1.54**	**322**	*e*PN	**Pg**	**00 25 50.9**	**+0.7**
EDC	**Edincik**	**1.54**	**322**	*e*Pn	**Pg**	**00 25 50.9**	**+0.7**
GULT	**Gulveren**	**1.68**	**40**	*e*PN	**Pb**	**00 25 52.5**	**+0.2**
GULT	**Gulveren**	**1.68**	**40**	*e*Pn	**Pb**	**00 25 52.5**	**+0.2**
BUY	**Buyukada**	**1.70**	**0**	P	**Pg**	**00 25 53.4**	**0.0**
BUY	**Buyukada**	**1.70**	**0**	*i* P	**Pg**	**00 25 53.4**	**0.0**
BUY				*i* S	**Sb**	**00 26 13.2**	**-1.3**
DKL	**Dikili**	**1.72**	**268**	*e*PN	**Pg**	**00 25 53.8**	**+0.2**
DKL	**Dikili**	**1.72**	**268**	*e*Pn	**Pg**	**00 25 53.8**	**+0.2**
ISP	**Isparta**	**1.73**	**140**	*e*PN	**Pg**	**00 25 55.2**	**+1.4**
HRT	**Hereke**	**1.73**	**14**	*e*PN	**Pb**	**00 25 53.3**	**+0.2**
HRT	**Hereke**	**1.73**	**14**	*e*Pn	**Pb**	**00 25 53.3**	**+0.2**
SPNC	**Sapanca-Adapaz**	**1.79**	**31**	*e*PN	**Pb**	**00 25 54.1**	**-0.1**
SPNC	**Sapanca-Adapaz**	**1.79**	**31**	*e*Pn	**Pb**	**00 25 54.1**	**-0.1**
MRMT	**Marmara Adasi**	**1.86**	**322**	*e*PN	**Pb**	**00 25 55.6**	**+0.1**
MRMT	**Marmara Adasi**	**1.86**	**322**	*e*Pn	**Pb**	**00 25 55.6**	**+0.1**
KRBG	**Karabiga-Canak**	**1.87**	**312**	*e*PN	**Pg**	**00 25 55.9**	**-0.7**
KRBG	**Karabiga-Canak**	**1.87**	**312**	*e*Pn	**Pg**	**00 25 55.9**	**-0.7**
SVRH	**Sivrihisar-ESK**	**1.90**	**80**	*e*PN	**Pb**	**00 25 56.2**	**+0.2**
SVRH	**Sivrihisar-ESK**	**1.90**	**80**	*e*Pn	**Pb**	**00 25 56.2**	**+0.2**
ISK	**Istanbul-Kandi**	**1.92**	**359**	*e*PN	**Pb**	**00 25 55.7**	**-0.6**
ISK	**Istanbul-Kandi**	**1.92**	**359**	*e*Pn	**Pb**	**00 25 55.7**	**-0.6**
GLHS	**Glhisar (BURDU**	**2.01**	**171**	*e*PN	**Pg**	**00 25 58.9**	**-0.4**
SILT	**Sile**	**2.04**	**11**	*e*PN	**Pb**	**00 25 58.1**	**-0.4**
SILT	**Sile**	**2.04**	**11**	*e*Pn	**Pb**	**00 25 58.1**	**-0.4**
BGKT	**Bogazkoy**	**2.05**	**353**	*e*PN	**Pb**	**00 25 58.1**	**-0.5**
BGKT	**Bogazkoy**	**2.05**	**353**	*e*Pn	**Pb**	**00 25 58.1**	**-0.5**
MDUB	**Mudurnu**	**2.08**	**50**	*e*PN	**Pb**	**00 25 58.1**	**-1.1**
MDUB	**Mudurnu**	**2.08**	**50**	*e*Pn	**Pb**	**00 25 58.1**	**-1.1**
KLYT	**Kilyos**	**2.10**	**359**	*e*PN	**Pb**	**00 25 58.9**	**-0.6**
KLYT	**Kilyos**	**2.10**	**359**	*e*Pn	**Pb**	**00 25 58.9**	**-0.6**
YER	**Yerkesik**	**2.11**	**198**	*e*PN	**Pb**	**00 25 59.9**	**+0.2**
YER	**Yerkesik**	**2.11**	**198**	*e*Pn	**Pb**	**00 25 59.9**	**+0.2**
CTKS	**Kestanelik-??a**	**2.14**	**348**	*e*PN	**Pb**	**00 25 59.3**	**-0.8**
CTKS	**Kestanelik-??a**	**2.14**	**348**	*e*Pn	**Pb**	**00 25 59.3**	**-0.8**
RKY	**Sarkoy-Tekirda**	**2.14**	**317**	*e*PN	**Pb**	**00 25 59.6**	**-0.5**
RKY	**Sarkoy-Tekirda**	**2.14**	**317**	*e*Pn	**Pb**	**00 25 59.6**	**-0.5**
KIZT	**Kizilcal**	**2.17**	**96**	*e*PN	**Pb**	**00 26 00.4**	**-0.3**
KIZT	**Kizilcal**	**2.17**	**96**	*e*Pn	**Pb**	**00 26 00.4**	**-0.3**
LPK	**Lapseki**	**2.19**	**305**	*e*PN	**Pb**	**00 26 00.7**	**-0.2**
LPK	**Lapseki**	**2.19**	**305**	*e*Pn	**Pb**	**00 26 00.7**	**-0.2**
TKR	**Tekirdag**	**2.20**	**327**	*e*PN	**Pb**	**00 26 00.4**	**-0.7**
TKR	**Tekirdag**	**2.20**	**327**	*e*Pn	**Pb**	**00 26 00.4**	**-0.7**
CRLT	**Corlu**	**2.24**	**332**	*e*PN	**Pb**	**00 26 00.7**	**-1.2**
CRLT	**Corlu**	**2.24**	**332**	*e*Pn	**Pb**	**00 26 00.7**	**-1.2**
CTYL	**Yalikoy Yolu**	**2.41**	**345**	*e*PN	**Pb**	**00 26 03.1**	**-1.6**
CTYL	**Yalikoy Yolu**	**2.41**	**345**	*e*Pn	**Pb**	**00 26 03.1**	**-1.6**

*CSEM **20** 00:26:39.3,39.°12N×29.°02E, h7km, MD2.6*
DDA 20 00:26:39.3,39.°12N×29.°02E, h7km, Md2.6, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**252**	P	Pg	00 26 44.8	+0.5
DEMI				S	Sg	00 26 48.2	+0.6
DEMI	**Demirci**	**0.25**	**252**	*i* P	Pg	00 26 44.8	+0.5
DEMI				*i* S	Sg	00 26 48.2	+0.6
GDZ	**Gediz**	**0.36**	**95**	P	Pg	00 26 46.7	+0.3
GDZ				S	Sg	00 26 51.7	+0.5
GDZ	**Gediz**	**0.36**	**95**	*i* P	Pg	00 26 46.7	+0.3
GDZ				*i* S	Sg	00 26 51.7	+0.5
DURS	**Dursunbey**	**0.64**	**319**	P	Pn	00 26 59.6	+4.7
DURS	**Dursunbey**	**0.64**	**319**	*i* P	Pn	00 26 59.6	+4.7
MANT	**Manisa**	**0.73**	**210**	P	Pg	00 26 53.2	-0.1
MANT				S	Sg	00 27 02.5	-0.3
MANT	**Manisa**	**0.73**	**210**	*i* P	Pg	00 26 53.2	-0.1
MANT				*i* S	Sg	00 27 02.5	-0.3
KHAL	**Karahalli**	**0.84**	**154**	P	Pb	00 26 56.0	-0.2
KHAL				S	Sg	00 27 05.9	-0.4
KHAL	**Karahalli**	**0.84**	**154**	*i* P	Pb	00 26 56.0	-0.2
KHAL				*i* S	Sg	00 27 05.9	-0.3
AKHS	**Akhisar**	**0.97**	**256**	P	Pg	00 26 57.8	-0.1
AKHS				S	Sb	00 27 11.0	-0.5
AKHS	**Akhisar**	**0.97**	**256**	*i* P	Pg	00 26 57.8	-0.2
AKHS				*i* S	Sb	00 27 11.0	-0.4

*CSEM **20** 00:27:19.8,39.°17N×28.°99E, h10km, ML3.5*
*ISK **20** 00:27:19.8,39.°17N×28.°99E, h10km, ML3.5*
*ISCJB **20** 00:27:20.0±0.3,39.°17N±0.°02×28.°99E±0.°03, h9km, Error ellipse: s-maj=3.7km s-min=3.5km az=154.0*
ISC 20 00:27:20.6±0.9,**39.°17N**±0.°03×**28.°99E**±0.°03, **h9km**, **n96**, σ0s**77**/100, **8C-2D, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TVSB	**Tavsanli**	**0.46**	**52**	*e*PG	**Pg**	**00 27 29.0**	**-0.7**
TVSB	**Tavsanli**	**0.46**	**52**	*e*Pg	**Pg**	**00 27 29.0**	**-0.7**
KULA	**Kula-Manisa**	**0.70**	**202**	*e*PG	**Pg**	**00 27 33.8**	**-0.4**
KULA	**Kula-Manisa**	**0.70**	**202**	*e*Pg	**Pg**	**00 27 33.8**	**-0.4**
ORLT	**Orhaneli**	**0.88**	**355**	*e*PG	**Pg**	**00 27 36.7**	**-0.9**
ORLT	**Orhaneli**	**0.88**	**355**	*e*Pg	**Pg**	**00 27 36.7**	**-0.9**
KHL	**Karahalli**	**0.94**	**153**	*e*PG	**Pg**	**00 27 38.6**	**-0.2**
KHL	**Karahalli**	**0.94**	**153**	*e*Pg	**Pg**	**00 27 38.6**	**-0.2**
AKS	**Akhisar**	**0.96**	**253**	*e*PG	**Pg**	**00 27 38.8**	**-0.3**
AKS				*e*SG	**Sb**	**00 27 52.5**	**+0.2**
AKS	**Akhisar**	**0.96**	**253**	*e*Pg	**Pg**	**00 27 38.8**	**-0.3**
AKS				*e*Sg	**Sb**	**00 27 52.5**	**+0.2**
BALB	**Balikesir**	**0.98**	**299**	*e*PG	**Pb**	**00 27 39.6**	**-0.2**
BALB				*e*SG	**Sb**	**00 27 52.9**	**0.0**
BALB	**Balikesir**	**0.98**	**299**	*e*Pg	**Pb**	**00 27 39.6**	**-0.2**
BALB				*e*Sg	**Sb**	**00 27 52.9**	**0.0**
KCTX	**Karacabey (Bur**	**1.20**	**336**	*e*PN	**Pb**	**00 27 43.3**	**-0.3**
KCTX	**Karacabey (Bur**	**1.20**	**336**	*e*Pn	**Pb**	**00 27 43.3**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.20**	**356**	*e*PN	**Pb**	**00 27 43.1**	**-0.5**
MDNY	**Mudanya-Bursa**	**1.20**	**356**	*e*Pn	**Pb**	**00 27 43.1**	**-0.5**
CAVI	**Cavuskoy**	**1.23**	**32**	*e*PN	**Pn**	**00 27 43.3**	**-0.7**
CAVI	**Cavuskoy**	**1.23**	**32**	*e*Pn	**Pn**	**00 27 43.3**	**-0.7**
IZI	**Iznik**	**1.23**	**18**	*e*PN	**Pg**	**00 27 44.1**	**-0.1**
IZI	**Iznik**	**1.23**	**18**	*e*Pn	**Pg**	**00 27 44.1**	**-0.1**
GEMT	**Gemlik**	**1.27**	**7**	*e*PN	**Pn**	**00 27 44.4**	**-0.3**
GEMT	**Gemlik**	**1.27**	**7**	*e*Pn	**Pn**	**00 27 44.4**	**-0.3**
ADVT	**Abdulvahap**	**1.39**	**24**	*e*PN	**Pn**	**00 27 45.7**	**-0.5**
ADVT	**Abdulvahap**	**1.39**	**24**	*e*Pn	**Pn**	**00 27 45.7**	**-0.5**
ARMT	**Armutlu**	**1.40**	**356**	*e*PN	**Pn**	**00 27 46.0**	**-0.4**
ARMT	**Armutlu**	**1.40**	**356**	*e*Pn	**Pn**	**00 27 46.0**	**-0.4**
DENT	**Denizli**	**1.41**	**179**	*e*PN	**Pn**	**00 27 46.3**	**-0.3**
DENT	**Denizli**	**1.41**	**179**	*e*Pn	**Pn**	**00 27 46.3**	**-0.3**
EDC	**Edincik**	**1.46**	**324**	*e*PN	**Pn**	**00 27 46.6**	**-0.6**
EDC	**Edincik**	**1.46**	**324**	*e*Pn	**Pn**	**00 27 46.6**	**-0.6**
AYDB	**Zeytinkoy-Aydi**	**1.49**	**216**	*e*PN	**Pn**	**00 27 47.6**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**1.49**	**216**	*e*Pn	**Pn**	**00 27 47.6**	**-0.2**
GPA	**Golpazari**	**1.51**	**42**	*e*PN	**Pb**	**00 27 48.4**	**-0.5**
GPA	**Golpazari**	**1.51**	**42**	*e*Pn	**Pb**	**00 27 48.4**	**-0.5**
DKL	**Dikili**	**1.62**	**267**	*e*PN	**Pn**	**00 27 48.9**	**-0.5**
DKL	**Dikili**	**1.62**	**267**	*e*Pn	**Pn**	**00 27 48.9**	**-0.5**
HRT	**Hereke**	**1.73**	**17**	*e*PN	**Pn**	**00 27 51.0**	**0.0**
HRT	**Hereke**	**1.73**	**17**	*e*Pn	**Pn**	**00 27 51.0**	**0.0**
KRBG	**Karabiga-Canak**	**1.79**	**314**	*e*PN	**Pn**	**00 27 51.0**	**-0.7**
KRBG	**Karabiga-Canak**	**1.79**	**314**	*e*Pn	**Pn**	**00 27 51.0**	**-0.7**
MRMT	**Marmara Adasi**	**1.79**	**324**	*e*PN	**Pn**	**00 27 51.8**	**0.0**
MRMT	**Marmara Adasi**	**1.79**	**324**	*e*Pn	**Pn**	**00 27 51.8**	**0.0**
ISP	**Isparta**	**1.80**	**138**	*e*PN	**Pn**	**00 27 51.0**	**-1.0**
ISP	**Isparta**	**1.80**	**138**	*e*Pn	**Pn**	**00 27 51.0**	**-1.0**
SPNC	**Sapanca-Adapaz**	**1.82**	**33**	*e*PN	**Pn**	**00 27 52.0**	**-0.1**
SPNC	**Sapanca-Adapaz**	**1.82**	**33**	*e*Pn	**Pn**	**00 27 52.1**	**-0.1**
ISK	**Istanbul-Kandi**	**1.90**	**2**	*e*PN	**Pn**	**00 27 52.6**	**-0.6**
ISK	**Istanbul-Kandi**	**1.90**	**2**	*e*Pn	**Pn**	**00 27 52.6**	**-0.6**
SVRH	**Sivrihisar-ESK**	**1.98**	**81**	*e*PN	**Pn**	**00 27 53.9**	**-0.6**
SVRH	**Sivrihisar-ESK**	**1.98**	**81**	*e*Pn	**Pn**	**00 27 53.9**	**-0.6**
BGKT	**Bogazkoy**	**2.02**	**355**	*e*PN	**Pn**	**00 27 55.0**	**+0.1**
BGKT	**Bogazkoy**	**2.02**	**355**	*e*Pn	**Pn**	**00 27 55.0**	**+0.1**
SILT	**Sile**	**2.05**	**14**	*e*PN	**Pn**	**00 27 54.4**	**-0.8**
SILT	**Sile**	**2.05**	**14**	*e*Pn	**Pn**	**00 27 54.4**	**-0.8**
GLHS	**Glhisar (BURDU**	**2.05**	**169**	*e*PN	**Pn**	**00 27 55.1**	**-0.3**
GLHS	**Glhisar (BURDU**	**2.05**	**169**	*e*Pn	**Pn**	**00 27 55.1**	**-0.3**
RKY	**Sarkoy-Tekirda**	**2.06**	**318**	*e*PN	**Pn**	**00 27 55.5**	**0.0**
RKY	**Sarkoy-Tekirda**	**2.06**	**318**	*e*Pn	**Pn**	**00 27 55.5**	**0.0**
KLYT	**Kilyos**	**2.08**	**1**	*e*PN	**Pn**	**00 27 55.5**	**-0.3**
KLYT	**Kilyos**	**2.08**	**1**	*e*Pn	**Pn**	**00 27 55.5**	**-0.3**
LPK	**Lapseki**	**2.10**	**306**	*e*PN	**Pn**	**00 27 56.0**	**+0.1**
LPK	**Lapseki**	**2.10**	**306**	*e*Pn	**Pn**	**00 27 56.0**	**+0.1**
YER	**Yerkesik**	**2.10**	**196**	*e*PN	**Pn**	**00 27 55.5**	**-0.6**
YER	**Yerkesik**	**2.10**	**196**	*e*Pn	**Pn**	**00 27 55.5**	**-0.6**
BCK	**Bucak**	**2.12**	**143**	*e*PN	**Pn**	**00 27 56.5**	**+0.3**
BCK	**Bucak**	**2.12**	**143**	*e*Pn	**Pn**	**00 27 56.6**	**+0.3**
TKR	**Tekirdag**	**2.13**	**329**	*e*PN	**Pn**	**00 27 55.8**	**-0.7**
TKR	**Tekirdag**	**2.13**	**329**	*e*Pn	**Pn**	**00 27 55.8**	**-0.7**
MDUB	**Mudurnu**	**2.14**	**52**	*e*PN	**Pn**	**00 27 56.5**	**-0.1**
MDUB	**Mudurnu**	**2.14**	**52**	*e*Pn	**Pn**	**00 27 56.6**	**-0.1**
EZN	**Ezine**	**2.16**	**289**	*e*PN	**Pn**	**00 27 56.5**	**-0.3**
EZN	**Ezine**	**2.16**	**289**	*e*Pn	**Pn**	**00 27 56.6**	**-0.3**
KIZT	**Kizilcal**	**2.27**	**96**	*e*PN	**Pn**	**00 27 59.1**	**+0.7**
KIZT	**Kizilcal**	**2.27**	**96**	*e*Pn	**Pn**	**00 27 59.1**	**+0.7**
GELI	**Tayfur-Gelibol**	**2.29**	**303**	*e*PN	**Pn**	**00 27 58.1**	**-0.5**
GELI	**Tayfur-Gelibol**	**2.29**	**303**	*e*Pn	**Pn**	**00 27 58.1**	**-0.5**
SUTC	**Sutluce-Ispart**	**2.31**	**136**	*e*PN	**Pn**	**00 27 58.9**	**-0.1**
SUTC	**Sutluce-Ispart**	**2.31**	**136**	*e*Pn	**Pn**	**00 27 58.9**	**-0.1**
CTYL	**Yalikoy Yolu**	**2.37**	**347**	*e*PN	**Pn**	**00 27 59.7**	**+0.1**
CTYL	**Yalikoy Yolu**	**2.37**	**347**	*e*Pn	**Pn**	**00 27 59.7**	**+0.1**
ERIK	**Erikli-Kesan**	**2.42**	**309**	*e*PN	**Pn**	**00 28 00.2**	**-0.2**
ERIK	**Erikli-Kesan**	**2.42**	**309**	*e*Pn	**Pn**	**00 28 00.3**	**-0.2**
LADK	**Ladik-KONYA**	**2.81**	**109**	*e*PN	**Pn**	**00 28 06.1**	**+0.2**
LADK	**Ladik-KONYA**	**2.81**	**109**	*e*Pn	**Pn**	**00 28 06.1**	**+0.2**
KDZE	**Karadeniz Ereo**	**2.85**	**40**	*e*PN	**Pn**	**00 28 06.3**	**0.0**
KDZE	**Karadeniz Ereo**	**2.85**	**40**	*e*Pn	**Pn**	**00 28 06.3**	**0.0**
TIRR	**Tirgusor**	**5.30**	**356**	⇑ *i*P	**Pn**	**00 28 41.1**	**+1.1**
TLCR		**6.02**	**359**	⇑ *i*P	**Pn**	**00 28 51.6**	**+1.8**
CFR	**Carcaliu**	**6.04**	**354**	⇑ *i*P	**Pn**	**00 28 51.0**	**+0.9**
GIUM	**Giurgiulesti**	**6.34**	**355**	⇑ *i*P	**Pn**	**00 28 56.7**	**+2.5**
VRI	**Vrincioaia**	**6.90**	**347**	⇓ *i*P	**Pn**	**00 29 04.3**	**+2.3**
VOIR		**6.91**	**336**	⇓ *i*P	**Pn**	**00 29 04.1**	**+1.9**
ARR	**Arges**	**6.99**	**334**	⇑ *i*P	**Pn**	**00 29 05.7**	**+2.5**
DOPR	**Dopca**	**7.30**	**340**	⇑ *i*P	**Pn**	**00 29 09.7**	**+2.3**
TESR	**Tescani**	**7.54**	**348**	⇓ *i*P	**Pn**	**00 29 12.3**	**+1.6**
BURAR	**Bucovina Array**	**8.88**	**343**	⇑ *i*P	**Pn**	**00 29 31.5**	**+2.3**

*DD

KLR	Kul'dur	29.73	341	P		P	00 37 16.6 +1.5
	2.0nm,0.7s,baz=140,slow=7.7,SNR=9.5						
MA2	Magadan	38.12	4	*e*P		P	00 38 27.8 +0.1
	6.7nm,0.4s						
SONM	Songino Array	40.93	319	P		P	00 38 52.2 +0.7
	0.9nm,0.7s,baz=120,slow=7.5,SNR=2.4						
WRA	Warramunga Arr	42.74	196	P		P	00 39 06.0 -0.4
	0.7nm,0.5s,baz=15,slow=8.3,SNR=6.3						
ASAR	Alice Springs	46.42	195	P		P	00 39 35.0 -0.7
	0.4nm,0.6s,baz=8.7,slow=8.7,SNR=4.3						
BILL	Bilibino	48.19	10	*e*P		P	00 39 48.8 -0.1
	1.1nm,0.7s						
ZALV	Zalesovo Beam	55.75	321	P		P	00 40 45.0 -0.5
	0.7nm,0.5s,baz=106,slow=3.4,SNR=3.2						
MKAR	Makanchi Array	56.49	313	P		P	00 40 50.8 -0.2
	0.3nm,0.7s,baz=89,slow=9.0,SNR=4.3						
ILAR	Eielson Array	61.07	27	P		P	00 41 21.8 -0.6
	0.3nm,0.7s,baz=264,slow=4.8,SNR=3.3						
BVAR	Borovoye Array	64.27	320	P		P	00 41 44.3 +0.4
	1.1nm,0.5s,baz=101,slow=7.9,SNR=6.5						
YKA	Yellowknife Ar	75.45	28	P		P	00 42 52.1 -0.4
	0.1nm,0.6s,baz=296,slow=5.4,SNR=3.1						
FINES	FINESS Array B	84.27	335	P		P	00 43 40.8 +0.6
	1.2nm,0.8s,baz=60,slow=5.3,SNR=6.8						

DDA ***20*** *00:31:58.6,39.°11N×29.°08E, h7km, Md2.8*
ISCJB ***20*** *00:31:59.3±0.4,39.°10N±0.°03×29.°08E±0.°03, h6km±5km, Error ellipse: s-maj=4.5km s-min=3.9km az=28.7*
ISK ***20*** *00:31:59.5,39.°11N×29.°09E, h7km, MD2.7*
CSEM ***20*** *00:31:59.6±0.1,39.°09N×29.°08E, h5km, MD2.8, Error ellipse: s-maj=2.2km s-min=2.0km az=76.0*
ISC 20 00:31:59.7±1.1,39.°11N±0.°02×29.°08E±0.°02, h4km±12km, n41,σ0s45/58, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.29**	**258**	P	**Pg**	**00 32 05.4**	**+0.1**
DEMI				S	**Sg**	**00 32 09.7**	**+0.5**
DEMI	**Demirci**	**0.29**	**258**	*i* P	**Pg**	**00 32 05.4**	**+0.1**
DEMI				*i* S	**Sg**	**00 32 09.7**	**+0.5**
GDZ	**Gediz**	**0.31**	**93**	P	**Pg**	**00 32 05.7**	**0.0**
GDZ				S	**Sg**	**00 32 09.9**	**+0.1**
GDZ	**Gediz**	**0.31**	**93**	*i* P	**Pg**	**00 32 05.7**	**0.0**
GDZ				*i* S	**Sg**	**00 32 09.9**	**+0.1**
TVSB	**Tavsanli**	**0.45**	**40**	*e*PG	**Pg**	**00 32 08.4**	**0.0**
TVSB	**Tavsanli**	**0.45**	**40**	*e*Pg	**Pg**	**00 32 08.4**	**0.0**
DURS	**Dursunbey**	**0.69**	**317**	P	**Pg**	**00 32 12.6**	**-0.2**
DURS				S	**Sg**	**00 32 22.1**	**+0.4**
DURS	**Dursunbey**	**0.69**	**317**	*i* P	**Pg**	**00 32 12.6**	**-0.2**
DURS				*i* S	**Sg**	**00 32 22.1**	**+0.4**
MANT	**Manisa**	**0.74**	**214**	P	**Pg**	**00 32 13.7**	**-0.1**
MANT				S	**Sg**	**00 32 23.3**	**-0.1**
MANT	**Manisa**	**0.74**	**214**	*i* P	**Pg**	**00 32 13.7**	**-0.1**
MANT				*i* S	**Sg**	**00 32 23.3**	**-0.1**
KHAL	**Karahalli**	**0.80**	**156**	P	**Pg**	**00 32 14.6**	**-0.4**
KHAL				S	**Sg**	**00 32 24.9**	**-0.5**
KHAL	**Karahalli**	**0.80**	**156**	*i* P	**Pg**	**00 32 14.6**	**-0.4**
KHAL				*i* S	**Sg**	**00 32 24.9**	**-0.5**
KHL	**Karahalli**	**0.85**	**156**	*e*PG	**Pg**	**00 32 16.4**	**+0.4**
KHL				*e*SG	**Sb**	**00 32 29.0**	**+0.2**
KHL	**Karahalli**	**0.85**	**156**	*e*Pg	**Pg**	**00 32 16.4**	**+0.4**
KHL				*e*Sg	**Sb**	**00 32 29.0**	**+0.2**
AKHS	**Akhisar**	**1.01**	**258**	P	**Pg**	**00 32 18.0**	**-1.1**
AKHS				S	**Sg**	**00 32 31.9**	**-0.4**
AKHS	**Akhisar**	**1.01**	**258**	*i* P	**Pg**	**00 32 18.0**	**-1.1**
AKHS				*i* S	**Sg**	**00 32 31.9**	**-0.4**
AKS	**Akhisar**	**1.01**	**258**	*e*PG	**Pg**	**00 32 19.0**	**-0.1**
AKS	**Akhisar**	**1.01**	**258**	*e*Pg	**Pg**	**00 32 19.0**	**-0.1**
BALB	**Balikesir**	**1.07**	**300**	*e*PG	**Pb**	**00 32 20.6**	**-0.2**
BALB				*e*SG	**Sb**	**00 32 35.9**	**+0.7**
BALB	**Balikesir**	**1.07**	**300**	*e*Pg	**Pb**	**00 32 20.6**	**-0.2**
BALB				*e*Sg	**Sb**	**00 32 35.9**	**+0.7**
IGD	**Bursa**	**1.16**	**4**	*i* P	**Pg**	**00 32 19.9**	**-2.0**
IGD				*i* S	**Sg**	**00 32 36.3**	**-0.7**
CAVI	**Cavuskoy**	**1.24**	**28**	*e*PN	**Pg**	**00 32 23.3**	**-0.2**
CAVI	**Cavuskoy**	**1.24**	**28**	*e*Pn	**Pg**	**00 32 23.3**	**-0.2**
IZI	**Iznik**	**1.27**	**14**	*e*PN	**Pb**	**00 32 24.1**	**0.0**
IZI	**Iznik**	**1.27**	**14**	*e*Pn	**Pb**	**00 32 24.1**	**0.0**
MDNY	**Mudanya-Bursa**	**1.27**	**353**	*e*PN	**Pn**	**00 32 24.4**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.27**	**353**	*e*Pn	**Pn**	**00 32 24.4**	**+0.2**
KCTX	**Karacabey (Bur**	**1.29**	**334**	*e*PN	**Pg**	**00 32 24.3**	**0.0**
KCTX	**Karacabey (Bur**	**1.29**	**334**	*e*Pn	**Pg**	**00 32 24.3**	**0.0**
GEMT	**Gemlik**	**1.33**	**3**	*e*PN	**Pg**	**00 32 25.2**	**0.0**
GEMT	**Gemlik**	**1.33**	**3**	*e*Pn	**Pg**	**00 32 25.2**	**0.0**
ADVT	**Abdulvahap**	**1.42**	**21**	*e*PN	**Pn**	**00 32 26.3**	**+0.1**
ADVT	**Abdulvahap**	**1.42**	**21**	*e*Pn	**Pn**	**00 32 26.3**	**+0.1**
GONE	**Gonen-Balikesi**	**1.43**	**311**	*e*PN	**Pb**	**00 32 26.7**	**-0.2**
GONE	**Gonen-Balikesi**	**1.43**	**311**	*e*Pn	**Pb**	**00 32 26.7**	**-0.2**
ARMT	**Armutlu**	**1.47**	**353**	*e*PN	**Pn**	**00 32 27.0**	**+0.1**
ARMT	**Armutlu**	**1.47**	**353**	*e*Pn	**Pn**	**00 32 27.0**	**+0.1**
EDC	**Edincik**	**1.56**	**323**	*e*PN	**Pn**	**00 32 28.3**	**+0.2**
EDC	**Edincik**	**1.56**	**323**	*e*Pn	**Pn**	**00 32 28.3**	**+0.2**
ISK	**Istanbul-Kandi**	**1.96**	**359**	*e*PN	**Pn**	**00 32 33.7**	**+0.1**
ISK	**Istanbul-Kandi**	**1.96**	**359**	*e*Pn	**Pn**	**00 32 33.7**	**+0.1**

CSEM ***20*** *00:32:32.8,39.°09N×29.°03E, h7km, MD2.7*
DDA 20 00:32:32.8,39.°09N×29.°03E, h7km, Md2.7, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**260**	P	Pg	00 32 38.5	+0.8
DEMI				S	Sg	00 32 42.1	+1.1
DEMI	**Demirci**	**0.24**	**260**	*i* P	Pg	00 32 38.5	+0.8
DEMI				*i* S	Sg	00 32 42.1	+1.1
GDZ	**Gediz**	**0.35**	**89**	P	Pg	00 32 40.2	+0.4
GDZ				S	Sg	00 32 45.2	+0.7
GDZ	**Gediz**	**0.35**	**89**	*i* P	Pg	00 32 40.2	+0.4
GDZ				*i* S	Sg	00 32 45.2	+0.8
MANT	**Manisa**	**0.70**	**212**	P	Pb	00 32 46.9	-0.5
MANT				S	Sg	00 32 56.0	+0.6
MANT	**Manisa**	**0.70**	**212**	*i* P	Pb	00 32 46.9	-0.6
MANT				*i* S	Sg	00 32 56.0	+0.7
KHAL	**Karahalli**	**0.80**	**153**	P	Pb	00 32 49.4	+0.3
KHAL				S	Sb	00 32 59.8	-0.4
KHAL	**Karahalli**	**0.80**	**153**	*i* P	Pb	00 32 49.4	+0.2
KHAL				*i* S	Sb	00 32 59.8	-0.4
IGD	**Bursa**	**1.19**	**6**	*i* P	Pg	00 32 55.4	-0.1
IGD				*i* S	Sg	00 33 10.1	-0.8

IDC ***20*** *00:33:01.9±5.0,35.°82N×144.°18E, h0km, mb3.7/2, mb1 4.0/4, mb1mx3.5/35, mbtmp3.9/4, ML3.9/2, Error ellipse: s-maj=100.0km s-min=41.7km az=29.0*
ISCJB ***20*** *00:33:12.6±1.1,34.°96N±0.°06×142.°87E±0.°09, h33km, mb3.8/2, Error ellipse: s-maj=11.2km s-min=8.3km az=158.0*
JMA ***20*** *00:33:12.8±0.5,34.°87N×142.°84E, h74km, M3.2*
ISC 20 00:33:14.3±1.7,34.°96N±0.°08×142.°9E±0.°1, h35km, n15, σ0s88/14, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**1.58**	**260**	P	**Pn**	**00 33 38.6**	**-0.7**
BSO1				*e*S	**Sn**	**00 33 58.5**	**+0.3**
CHOJ	**Chosi**	**1.80**	**295**	P	**Pn**	**00 33 43.2**	**+0.4**
JFK	**Kawauchi**	**2.89**	**327**	P	**Pn**	**00 33 57.2**	**-0.7**
JFK				S	**Sn**	**00 34 30.3**	**-1.2**
JOD2	**Odawara 2**	**3.11**	**277**	P	**Pn**	**00 34 00.7**	**-0.1**
JOD2				*e*S	**Sn**	**00 34 35.5**	**-1.3**
JAG	**Ashikaga**	**3.14**	**299**	P	**Pn**	**00 34 01.6**	**+0.4**
JAG				S	**Sn**	**00 34 37.7**	**+0.2**
JHJ	**Hachijo jima 2**	**3.15**	**235**	Pn	Pn	00 34 11.6	+10
	72nm,0.3s,baz=71,slow=11,SNR=3.5						
JFT	**Otama**	**3.27**	**322**	P	**Pn**	**00 34 03.5**	**+0.4**
JFT				*e*S	**Sn**	**00 34 40.7**	**-0.1**
MJAR	**Matsushiro Arr**	**4.10**	**294**	Pn	**Pn**	**00 34 16.1**	**+1.6**
	1.2nm,0.3s,baz=95,slow=13,SNR=6.7						
H11N2	**WAKE ISLAND Hy**	**26.09**	**119**	T	T	01 05 57.8	
	baz=321,slow=76,SNR=5.7						
H11N3	**WAKE ISLAND Hy**	**26.11**	**119**	T	T	01 06 00.0	
	baz=313,slow=76,SNR=4.9						
H11S1	**WAKE ISLAND Hy**	**26.76**	**122**	T	T	01 06 48.1	
	baz=312,slow=75,SNR=6.1						
H11S3	**WAKE ISLAND Hy**	**26.76**	**122**	T	T	01 06 52.3	
	baz=312,slow=75,SNR=4.0						
H11S2	**WAKE ISLAND Hy**	**26.77**	**122**	T	T	01 06 45.2	
	baz=312,slow=75,SNR=5.1						
WRA	**Warramunga Arr**	**55.19**	**190**	P	**P**	**00 42 43.0**	**-0.7**
	0.7nm,0.6s,baz=5.1,slow=8.3,SNR=6.4						
ASAR	**Alice Springs**	**58.92**	**190**	P	**P**	**00 43 10.9**	**+1.0**
	0.6nm,0.8s,baz=21,slow=9.2,SNR=5.1						

DDA ***20*** *00:39:28.6,39.°11N×29.°08E, h7km, Md2.8*
CSEM ***20*** *00:39:30.5±0.3,39.°03N×29.°04E, h5km, MD2.8, Error ellipse: s-maj=8.4km s-min=4.5km az=171.0*
ISK ***20*** *00:39:31.6,39.°14N×28.°96E, h8km, MD2.8*
ISC 20 00:39:29.8±1.2,39.°07N±0.°03×29.°08E±0.°02, h1km±14km, n48,σ0s85/61, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**264**	P	**Pg**	**00 39 35.5**	**+0.3**
DEMI				S	**Sg**	**00 39 39.5**	**+0.6**
DEMI	**Demirci**	**0.28**	**264**	*i* P	**Pg**	**00 39 35.5**	**+0.3**
DEMI				*i* S	**Sg**	**00 39 39.5**	**+0.6**
GDZ	**Gediz**	**0.31**	**87**	P	**Pg**	**00 39 35.8**	**+0.1**
GDZ				S	**Sg**	**00 39 40.2**	**+0.4**
GDZ	**Gediz**	**0.31**	**87**	*i* P	**Pg**	**00 39 35.8**	**+0.1**
GDZ				*i* S	**Sg**	**00 39 40.2**	**+0.4**
TVSB	**Tavsanli**	**0.48**	**38**	*e*PG	**Pb**	**00 39 42.1**	**+1.0**
TVSB	**Tavsanli**	**0.48**	**38**	*e*Pg	**Pb**	**00 39 42.1**	**+1.0**
KHAL	**Karahalli**	**0.77**	**155**	*i* P	Pg	00 39 38.4	-6.1
KHAL				*i* S	**Sb**	**00 39 55.1**	**-2.0**
KHL	**Karahalli**	**0.82**	**155**	*e*PG	**Pn**	**00 39 49.9**	**+1.3**
KHL	**Karahalli**	**0.82**	**155**	*e*Pg	**Pn**	**00 39 49.9**	**+1.3**
AKHS	**Akhisar**	**1.01**	**259**	P	**Pg**	**00 39 48.6**	**-0.5**
AKHS				S	**Sb**	**00 40 03.8**	**0.0**
AKHS	**Akhisar**	**1.01**	**259**	*i* P	**Pg**	**00 39 48.6**	**-0.5**
AKHS				*i* S	**Sb**	**00 40 03.8**	**0.0**
AKS	**Akhisar**	**1.01**	**259**	*e*PG	**Pb**	**00 39 49.7**	**-0.3**
AKS				*e*SG	**Sb**	**00 40 03.0**	**-0.8**
AKS	**Akhisar**	**1.01**	**259**	*e*Pg	**Pb**	**00 39 49.7**	**-0.3**
AKS				*e*Sg	**Sb**	**00 40 03.0**	**-0.8**
BALB	**Balikesir**	**1.09**	**302**	*e*PG	**Pg**	**00 39 50.9**	**+0.2**
BALB				*e*SG	**Sg**	**00 40 05.1**	**+0.3**
BALB	**Balikesir**	**1.09**	**302**	*e*Pg	**Pg**	**00 39 50.9**	**+0.2**
BALB				*e*Sg	**Sg**	**00 40 05.1**	**+0.3**
IGD	**Bursa**	**1.20**	**4**	*i* P	**Pg**	**00 39 50.5**	**-2.2**
IGD				*i* S	**Sg**	**00 40 04.7**	**-3.5**
CAVI	**Cavuskoy**	**1.27**	**27**	*e*PN	**Pn**	**00 39 55.8**	**+1.0**
CAVI	**Cavuskoy**	**1.27**	**27**	*e*Pn	**Pn**	**00 39 55.8**	**+1.0**
IZI	**Iznik**	**1.30**	**13**	*e*PN	**Pn**	**00 39 56.0**	**+0.8**
IZI	**Iznik**	**1.30**	**13**	*e*Pn	**Pn**	**00 39 56.0**	**+0.8**
MDNY	**Mudanya-Bursa**	**1.30**	**353**	*e*PN	**Pn**	**00 39 55.3**	**+0.5**
MDNY	**Mudanya-Bursa**	**1.30**	**353**	*e*Pn	**Pg**	**00 39 55.3**	**+0.5**
KCTX	**Karacabey (Bur**	**1.32**	**335**	*e*PN	**Pg**	**00 39 55.3**	**+0.3**
KCTX	**Karacabey (Bur**	**1.32**	**335**	*e*Pn	**Pg**	**00 39 55.3**	**+0.3**
GEMT	**Gemlik**	**1.36**	**3**	*e*PN	**Pb**	**00 39 56.5**	**+0.4**
GEMT	**Gemlik**	**1.36**	**3**	*e*Pn	**Pb**	**00 39 56.5**	**+0.4**
ESKT	**Eskisehir**	**1.44**	**71**	*i* P	**Pn**	**00 39 56.0**	**-1.3**
ESKT				*i* S	**Sg**	**00 40 16.1**	**-0.1**
SEYT	**Eskypehyr**	**1.44**	**71**	P	**Pn**	**00 39 56.0**	**-1.2**
SEYT				S	**Sg**	**00 40 16.1**	**-0.1**
ADVT	**Abdulvahap**	**1.45**	**20**	*e*PN	**Pg**	**00 39 58.7**	**+1.1**
ADVT	**Abdulvahap**	**1.45**	**20**	*e*Pn	**Pg**	**00 39 58.7**	**+1.1**
GONE	**Gonen-Balikesi**	**1.45**	**313**	*e*PN	**Pn**	**00 39 57.2**	**+0.1**
GONE	**Gonen-Balikesi**	**1.45**	**313**	*e*Pn	**Pn**	**00 39 57.3**	**+0.1**
ARMT	**Armutlu**	**1.50**	**354**	*e*PN	**Pn**	**00 39 58.5**	**+0.6**
ARMT	**Armutlu**	**1.50**	**354**	*e*Pn	**Pn**	**00 39 58.5**	**+0.6**
BNT	**Bandirma**	**1.56**	**325**	*e*PN	**Pb**	**00 39 59.5**	**-0.1**
BNT	**Bandirma**	**1.56**	**325**	*e*Pn	**Pb**	**00 39 59.5**	**-0.1**
EDC	**Edincik**	**1.58**	**324**	*e*PN	**Pn**	**00 39 59.2**	**+0.2**
EDC	**Edincik**	**1.58**	**324**	*e*Pn	**Pn**	**00 39 59.2**	**+0.2**
GULT	**Gulveren**	**1.75**	**39**	*e*PN	**Pg**	**00 40 03.6**	**+0.2**
GULT	**Gulveren**	**1.75**	**39**	*e*Pn	**Pg**	**00 40 03.6**	**+0.2**
SPNC	**Sapanca-Adapaz**	**1.87**	**30**	*e*PN	**Pb**	**00 40 04.8**	**+0.1**
SPNC	**Sapanca-Adapaz**	**1.87**	**30**	*e*Pn	**Pb**	**00 40 04.8**	**+0.1**
SVRH	**Sivrihisar-ESK**	**1.93**	**78**	*e*PN	**Pg**	**00 40 06.9**	**+0.1**
SVRH	**Sivrihisar-ESK**	**1.93**	**78**	*e*Pn	**Pg**	**00 40 06.9**	**+0.1**
ISK	**Istanbul-Kandi**	**1.99**	**360**	*e*PN	**Pn**	**00 40 05.6**	**+1.0**
ISK	**Istanbul-Kandi**	**1.99**	**360**	*e*Pn	**Pn**	**00 40 05.6**	**+1.0**
MDUB	**Mudurnu**	**2.15**	**49**	*e*PN	**Pb**	**00 40 09.5**	**-0.1**
MDUB	**Mudurnu**	**2.15**	**49**	*e*Pn	**Pb**	**00 40 09.5**	**-0.1**

GUC ***20*** *00:41:19.6±0.4,27.°59S×71.°09W, h61km±6km, ML3.5*
ISC 20 00:41:19.1±2.1,27.°60S±0.°04×71.°16W±0.°09, h4km±14km, n13,σ1s87/21, Near coast of northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CDCH	**Caldera**	**0.61**	**30**	*e*P	**Pb**	**00 41 31.9**	**-0.4**
CDCH				*e*S	**Sb**	**00 41 41.4**	**+0.2**
CPCH	**Copiapo**	**0.76**	**71**	*e*P	**Pb**	**00 41 34.0**	**-0.8**
CPCH				*e*S	**Sb**	**00 41 44.6**	**-0.9**
VACH	**Vallenar**	**1.03**	**160**	*e*P	**Pg**	**00 41 38.5**	**-0.4**
VACH				*e*S	**Sg**	**00 41 52.4**	**+0.1**
TLL	**Tololo Astrono**	**2.58**	**173**	*e*P	**Pn**	**00 42 00.4**	**-1.4**
TLL				*e*S	**Sn**	**00 42 31.0**	**-2.6**
TLL				IAML		00 42 48.8	
	comp=E,228nm,0.6s						
VCA	**Vinchina**	**2.84**	**114**	*e*P	**Pn**	**00 42 08.0**	**+2.6**
VCA				*e*S	**Sg**	**00 42 49.8**	**-0.7**
VCA				IAML		00 42 56.1	
	comp=Z,75nm,0.7s						
AGUA	**GUANDACOL**	**3.01**	**129**	*e*P	**Pb**	**00 42 11.7**	**-1.5**
AGUA				*e*S	**Sg**	**00 42 56.8**	**+1.1**
AMOG	**MOGNA**	**4.06**	**146**	*e*P	**Pn**	**00 42 24.7**	**+2.7**
AMOG				*e*S	**Sb**	**00 43 20.1**	**-0.5**
RTLL	**Cerro Villicun**	**4.39**	**148**	*e*P	**Pn**	**00 42 27.6**	**+1.0**
RTLS	**Leoncito**	**4.49**	**159**	*e*P	**Pn**	**00 42 30.5**	**+2.4**
RTLS				*e*S	**Sb**	**00 43 35.2**	**+2.2**
CYA	**Choya**	**4.81**	**101**	*e*P	**Pn**	**00 42 32.6**	**+0.3**
CYA				IAML		00 43 57.8	
	comp=Z,9.9nm,0.4s						
RTCV	**Cerro Valdivia**	**4.82**	**152**	*e*P	**Pn**	**00 42 35.2**	**+2.7**
AUSP	**Uspallata**	**4.86**	**162**	*e*P	**Pn**	**00 42 35.7**	**+2.5**
ASAL	**Salagasta**	**5.36**	**159**	*e*P	**Pn**	**00 42 42.3**	**+2.4**

JMA 20 00:45:46.0±0.2,37.°76N×142.°06E, h12km, M2.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.89**	**321**	P	Pg	00 46 02.8	-0.4
JIO				S	Sg	00 46 14.7	-0.2
JMM	**Marumori**	**1.01**	**276**	P	Pb	00 46 04.9	-0.5
JMM				S	Sb	00 46 18.7	+0.1
JFK	**Kawauchi**	**1.02**	**248**	P	Pb	00 46 04.6	-1.0
JFK				*e*S	Sg	00 46 18.7	-0.3
ONAJ	**Iwakimizuishiy**	**1.20**	**237**	*e*S	Sb	00 46 23.1	-1.1
JFT	**Otama**	**1.39**	**261**	S	Sb	00 46 29.8	+0.2

NIED ***20*** *00:46:00,35.°80N×141.°30E, h32km, Mw5.7 Best double couple: M0 3.95000×10^17 NP1:φ=183.00000°, δ17.00000°, λ80.00000°. NP2:φ=13.00000°, δ74.00000°, λ93.00000°.*
IDC ***20*** *00:46:12.4±0.3,35.°78N×141.°03E, h0km, mb5.5/46, mb1 5.5/50, mb1mx5.5/55, mbtmp5.5/50, ML5.2/4, MS5.4/35, Ms1 5.4/35, ms1mx5.4/38, Error ellipse: s-maj=11.0km s-min=8.8km az=89.0*
BJI ***20*** *00:46:14.1,35.°73N×141.°02E, h35km, mb5.5/90, mB5.5/69, Ms5.7/99, Ms7 5.6/90*
MOS ***20*** *00:46:15.6±0.9,35.°78N×140.°99E, h33km, mb6.0/143, MS5.5/106, Error ellipse: s-maj=7.7km s-min=5.1km az=111.4*
JMA ***20*** *00:46:15.4±0.1,35.°80N×141.°18E, h36km±1km, M5.8*
JMA Felt IV J1.
NEIC ***20*** *00:46:16.9±0.1,35.°76N×140.°84E, h29km, mb5.7/291, ME5.7, MS5.4/297, MW5.6, MW5.8, Error ellipse: s-maj=3.3km s-min=2.3km az=147.0, Moment Tensor Solution. s52 Moment tensor: Scale 10^17Nm; Mrr2.68; Mθθ-1.21; Mφφ-1.46; Mrθ1.03; Mrφ0.35; Mθφ2.59; Best double couple: M0 3.60000×10^17 NP1:φ=168.00000°, δ20.00000°, λ67.00000°. NP2:φ=13.00000°, δ72.00000°, λ98.00000°. Principal axes: T 4.1400, Plg62.0000°, Azm295.0000°; N -1.4200, Plg8.0000°, Azm190.0000°; P -2.7200, Plg26.0000°, Azm96.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from CMT mechanism.*
NEIC Felt [II] at Tokyo. Felt widely in southeastern Honshu. Recorded [4 JMA] in Chiba and Ibaraki.
NEIC ***20*** *00:46:16.0±0.0,35.°94N×141.°38E, h26km, Moment Tensor Solution. s31 Moment tensor: Scale 10^17Nm; Mrr3.00; Mθθ-0.10; Mφφ-2.80; Mrθ2.90; Mθφ-0.70; Mφr5.70; Best double couple: M0 7.00000×10^17 NP1:φ=25.00000°, δ77.00000°, λ95.00000°. NP2:φ=183.00000°, δ13.00000°, λ68.00000°. Principal axes: T 7.1000, Plg57.0000°, Azm301.0000°; N -0.1000, Plg4.0000°, Azm204.0000°; P -7.0000, Plg32.0000°, Azm111.0000°;*
ISCJB ***20*** *00:46:17.0±0.2,35.°73N±0.°01×140.°91E±0.°01, h43km±2km, mb5.7/476, MS5.4/431 Error ellipse: s-maj=2.5km s-min=1.9km az=161.5*
GCMT ***20*** *00:46:17.0±0.1,35.°74N×141.°22E, h37km, MW5.8/130, Moment Tensor Solution. s115,c236; s130,c345; Duration: 1s9 Moment tensor: Scale 10^17Nm; Mrr4.38±.05; Mθθ-0.50±.04; Mφφ-3.88±.04; Mrθ1.02±.05; Mθφ-1.34±.03; Mrφ3.63±.06; Best double couple: M0 5.76700×10^17 NP1:φ=17.00000°, δ65.00000°, λ88.00000°. NP2:φ=201.00000°, δ25.00000°, λ94.00000°. Principal axes: T 5.7870, Plg70.0000°, Azm283.0000°; N -0.0370, Plg2.0000°, Azm18.0000°; P -5.7460, Plg20.0000°, Azm108.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*
ISC 20 00:46:16.4±0.3,35.°82N±0.°02×141.°05E±0.°03, h28km±1km, h27km: pP-P, n1991,σ1s47/1986, mb5.7/502, MS5.4/437, 187C-39D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.20**	**232**	‖P	**Pn**	**00 46 22.9**	**-0.6**
CHOJ				S	**Sb**	**00 46 28.3**	**+2.0**
I30JP	**ISUMI INFRASON**	**0.79**	**229**	Pn	**Pb**	**00 46 30.0**	**-1.5**
	baz=60,slow=16,SNR=3.3						
I30JP				*i*		00 50 10.0	
	baz=49,slow=327,SNR=1.1						
JCN	**Nagara**	**0.80**	**240**	P	**Pn**	**00 46 32.7**	**+0.9**
JYT	**Yasato**	**0.80**	**300**	‖P	**Pn**	**00 46 31.7**	**-0.1**
JYT				*e*S	**Sn**	**00 46 43.6**	**+0.8**
JHO	**Hitachi**	**0.88**	**334**	‖P	**Pb**	**00 46 32.5**	**-0.5**
JHO				S	**Sn**	**00 46 46.4**	**+1.7**
BSO4	**Boso 4**	**1.01**	**215**	P	**Pn**	**00 46 34.5**	**-0.2**
TOK	**Tokyo**	**1.06**	**263**	P	**Pb**	**00 46 37.6**	**+1.6**
BSO3	**Boso 3**	**1.11**	**203**	P	**Pn**	**00 46 35.1**	**-0.8**
BSO1	**Boso 1**	**1.17**	**183**	P	**Pn**	**00 46 35.5**	**-0.9**
ONAJ	**Iwakimizuishiy**	**1.29**	**351**	‖P	**Pn**	**00 46 38.1**	**-0.6**
JAG	**Ashikaga**	**1.42**	**295**	‖P	**Pn**	**00 46 40.5**	**+0.1**
JSB	**Shiboa**	**1.46**	**322**	P	**Pb**	**00 46 42.0**	**-0.9**
JFK	**Kawauchi**	**1.54**	**355**	‖P	**Pn**	**00 46 41.4**	**-0.8**
JOD2	**Odawara 2**	**1.69**	**251**	⇑P	**Pb**	**00 46 45.3**	**-1.6**
JRY	**Ryogami san**	**1.75**	**277**	P	**Pn**	**00 46 45.6**	**+0.6**
JMM	**Marumori**	**2.05**	**354**	P	**Pn**	**00 46 49.2**	**+0.2**
JYN	**Shimob**	**2.06**	**262**	⇑P	**Pb**	**00 46 50.9**	**-2.3**
JIZS	**Izushimoda**	**2.09**	**239**	P	**Pn**	**00 46 50.0**	**+0.4**
JKO	**Kozu shima**	**2.26**	**224**	P	**Pn**	**00 46 52.4**	**+0.4**
MJAR	**Matsushiro Arr**	**2.41**	**288**	Pn	**Pn**	**00 46 54.4**	**+0.5**
	314nm,0.3s,baz=96,slow=11,SNR=2581						
MJAR				Sn	**Sn**	**00 47 21.5**	**-1.0**
	304nm,0.3s,baz=102,slow=12,SNR=7.6						
MJAR				LR	LR	00 48 01.7	
	comp=Z,107μm,20.3s,baz=115,slow=46						
MJAR	**Matsushiro Arr**	**2.41**	**288**	P	**Pn**	**00 46 54.4**	**+0.5**
MJAR						00 47 21.5	
MAJO	**Matsushiro**	**2.41**	**288**	*d* P	**Pb**	**00 46 56.4**	**-2.6**
MAJO	**Matsushiro**	**2.41**	**288**	*e*Pn	**Pn**	**00 46 55.9**	**+1.9**
MAT	**Matsushiro**	**2.41**	**288**	P	**Pn**	**00 46 55.4**	**+1.4**
MAT				*e*S	**Sb**	**00 47 29.7**	**+1.4**
MJB9	**Matsu-Tunnel**	**2.41**	**288**	*e*Pn	**Pb**	**00 46 56.5**	**-2.6**
JYS	**Shirataka**	**2.52**	**342**	P	**Pn**	**00 46 57.2**	**+1.7**
JNY	**Yasuok**	**2.64**	**261**	P	**Pn**	**00 46 59.6**	**+2.4**
JHJ2

MDJ				ScP	**ScP**	**00 58 23.1 +1.4**
MDJ				PcS	**PcS**	**00 58 26.9 +2.2**
MDJ				ScS	**ScS**	**01 01 58.5 +0.9**
MDJ				pmax	pmax	
	comp=E,57nm,0.9s					
MDJ				pmax	pmax	
	comp=E,4μm,8.6s					
MDJ				LR	LR	
	comp=E,22μm,16.4s					
MDJ				LR	LR	
	comp=E,13μm,18.8s					
MDJ				LR	LR	
	comp=E,33μm,18.4s					
MDJ	**Mudanjiang**	**12.39**	**319**	*e*Pn	**Pn**	**00 49 11.4 +0.5**
UGL	**Uglegorsk**	**13.27**	**3**	*e*P	**Pn**	**00 49 20.0 -2.8**
UGL				pmax	pmax	
	comp=Z,450nm,4.0s					
UGL				pmax	pmax	
	comp=Z,79nm,0.6s					
UGL				MLR	MLR	
	comp=Z,20μm,16.0s					
UGL				MLR	MLR	
	comp=N,17μm,18.0s					
UGL				MLR	MLR	
	comp=E,25μm,18.0s					
HABR	**Khabarovsk**	**13.39**	**343**	*de*P	**Pn**	**00 49 22.0 -2.5**
HABR				*e*S	**Sn**	**00 51 48.8 -3.5**
HABR				pmax	pmax	
	comp=Z,92nm,1.2s					
HABR				MLR	MLR	
	comp=E,6μm,16.0s					
HABR				MLR	MLR	
	comp=N,11μm,16.0s					
HABR				MLR	MLR	
	comp=Z,16μm,16.0s					
JOW	**Kunigami**	**14.11**	**234**	*e*Pn	**Pn**	**00 49 34.9 +0.4**
CN2	**Changchun**	**14.38**	**308**	⇑P	**Pn**	**00 49 38.8 +0.8**
CN2				*es*P	P	00 49 51.0 +6.3
CN2				*e*S	**Sn**	**00 52 17.6 +1.1**
CN2				pmax	pmax	
	comp=Z,40nm,0.8s					
CN2				pmax	pmax	
	comp=Z,2μm,5.0s					
CN2				LR	LR	
	comp=Z,11μm,13.0s					
CN2				LR	LR	
	comp=Z,16μm,13.0s					
CN2				LR	LR	
	comp=Z,18μm,15.0s					
SNY	**Shenyang**	**14.87**	**299**	⇑P	**Pn**	**00 49 46.1 +1.5**
SNY				pmax	pmax	
	comp=Z,140nm,1.0s					
SNY				pmax	pmax	
	comp=Z,2μm,5.5s					
SNY				LR	LR	
	comp=Z,10μm,13.7s					
SNY				LR	LR	
	comp=Z,19μm,17.8s					
SNY				LR	LR	
	comp=Z,27μm,20.1s					
KLR	**Kul'dur**	**15.03**	**336**	Pn	**Pn**	**00 49 44.3 -2.5**
	comp=Z,2.8nm,0.3s,baz=140,slow=10,SNR=93					
KLR				LR	LR	00 55 38.3
	comp=Z,19μm,18.7s,baz=147,slow=38					
KLR	**Kul'dur**	**15.03**	**336**	P	**Pn**	**00 49 44.3 -2.5**
TYV	**Tymovskoe**	**15.08**	**4**	*e*P	**Pn**	**00 49 45.0 -2.4**
TYV				*e*S	**Sn**	**00 52 34.0 +0.6**
TYV				pmax	pmax	
	comp=N,2μm,5.0s					
TYV				pmax	pmax	
	comp=Z,2μm,6.0s					
TYV				pmax	pmax	
	comp=Z,700nm,1.0s					
TYV				smax	smax	
	comp=E,3μm,8.0s					
TYV				MLR	MLR	
	comp=E,18μm,20.0s					
TYV				MLR	MLR	
	comp=Z,17μm,22.0s					
DL2	**Dalian**	**15.74**	**287**	⇑P	**P**	**00 49 58.1 -1.8**
DL2				S	**Sn**	**00 52 53.3 +3.6**
DL2				pmax	pmax	
	comp=Z,480nm,1.2s					
DL2				pmax	pmax	
	comp=Z,4μm,5.8s					
DL2				LR	LR	
	comp=Z,20μm,20.6s					
DL2				LR	LR	
	comp=Z,30μm,24.7s					
SSE	**Sheshan**	**17.22**	**260**	P	**Pn**	**00 50 14.0 -1.0**
SSE				pP	**pP**	**00 50 20.3 -3.5**
SSE				pmax	pmax	
	comp=Z,130nm,1.0s					
SSE				pmax	pmax	
	comp=Z,2μm,9.1s					
SSE				LR	LR	
	comp=Z,5μm,16.5s					
SSE				LR	LR	
	comp=Z,14μm,16.1s					
SSE				LR	LR	
	comp=Z,18μm,20.7s					
NKL	**Nikolayevsk**	**17.32**	**359**	*e*P	**Pn**	**00 50 11.0 -5.0**
NKL				*e*		00 53 18.0
NKL				pmax	pmax	
	comp=N,39nm,1.0s					
NKL				pmax	pmax	
	comp=Z,86nm,1.0s					
NKL				pmax	pmax	
	comp=N,1μm,14.0s					
NKL				pmax	pmax	
	comp=Z,1μm,14.0s					
NKL				MLR	MLR	
	comp=N,12μm,16.0s					
NKL				MLR	MLR	
	comp=E,6μm,16.0s					
NKL				MLR	MLR	
	comp=Z,20μm,16.0s					
SKR	**Severo-Kuril's**	**18.41**	**32**	*e*P	**P**	**00 50 22.5 -6.8**
SKR				*e*S	**Sn**	**00 53 48.0 -6.2**
SKR				pmax	pmax	
	comp=E,270nm,1.0s					
SKR				pmax	pmax	
	comp=Z,450nm,1.0s					
SKR				pmax	pmax	
	comp=N,160nm,0.8s					
SKR				pmax	pmax	
	comp=N,2μm,4.0s					
SKR				pmax	pmax	
	comp=E,1μm,4.0s					
SKR				pmax	pmax	
	comp=Z,2μm,4.0s					
SKR				MLR	MLR	
	comp=N,6μm,16.0s					
SKR				MLR	MLR	
	comp=E,3μm,16.0s					
SKR				MLR	MLR	
	comp=Z,8μm,16.0s					
NJ2	**Nanjing**	**18.79**	**265**	*e*P	**P**	**00 50 31.9 -1.6**
NJ2				pmax	pmax	
	comp=Z,31nm,1.2s					
NJ2				pmax	pmax	
	comp=Z,5μm,4.9s					
NJ2				LR	LR	
	comp=Z,11μm,21.7s					
NJ2				LR	LR	
	comp=Z,21μm,22.8s					
NJ2				LR	LR	
	comp=Z,16μm,24.9s					
YOJ	**Yonaguni jima**	**19.24**	**239**	*e*P	**P**	**00 50 36.0 -2.5**
YOJ				pmax	pmax	
	comp=Z,221nm,0.7s					
YOJ	**Yonaguni jima**	**19.24**	**239**	*e*P	**P**	**00 50 36.0 -2.5**
	comp=Z,221nm,0.7s					
TIA	**Tai'an**	**19.35**	**278**	⇑P	**P**	**00 50 38.3 -1.4**
TIA				pmax	pmax	
	comp=Z,150nm,1.1s					
TIA				pmax	pmax	
	comp=Z,3μm,8.0s					
TIA				LR	LR	
	comp=Z,10μm,15.2s					
TIA				LR	LR	
	comp=Z,19μm,15.2s					
TIA				LR	LR	
	comp=Z,21μm,16.1s					
TATO	**Taipei**	**20.00**	**243**	*e*P	**P**	**00 50 46.2 -0.7**
	comp=Z,444nm,1.7s					
BJI	**Beijing**	**20.04**	**290**	P	**P**	**00 50 45.6 -1.6**
BJI				S	**S**	**00 54 30.5 -0.5**
BJI				sS	**sS**	**00 54 40.8 -2.1**
BJI				pmax	pmax	
	comp=Z,150nm,1.8s					
BJI				pmax	pmax	
	comp=Z,1μm,3.3s					
BJI				LR	LR	
	comp=Z,5μm,26.0s					
BJI				LR	LR	
	comp=Z,7μm,22.1s					
BJI				LR	LR	
	comp=Z,14μm,28.4s					
BJT	**Baijiatuau**	**20.05**	**290**	*e*P	**P**	**00 50 45.6 -1.7**
BJT				pmax	pmax	
	comp=Z,353nm,1.0s					
BJT	**Baijiatuau**	**20.05**	**290**	*e*P	**P**	**00 50 45.6 -1.7**
	comp=Z,353nm,1.0s					
YHNB	**Yeheng**	**20.27**	**242**	*e*P	**P**	**00 50 47.7 -2.2**
	comp=Z,68nm,0.8s					
YHNB				LR	LR	
	comp=Z,6μm,19.0s					
NACB	**Ninganchiao**	**20.42**	**241**	*e*P	**P**	**00 50 48.8 -2.7**
	comp=Z,64nm,0.8s					
NACB				LR	LR	
	comp=Z,7μm,22.0s					
HIA	**Hailar**	**20.57**	**317**	*e*P	**P**	**00 50 50.5 -2.4**
HIA				pmax	pmax	
	comp=Z,118nm,1.0s					
HIA				MLR	MLR	
	comp=Z,21μm,20.0s					
HIA	**Hailar**	**20.57**	**317**	*e*P	**P**	**00 50 50.5 -2.4**
	comp=Z,118nm,1.0s					
HIA				LR	LR	
	comp=Z,21μm,20.0s					
PEA0	**Petropavlovsk-**	**20.88**	**29**	*e*P	Pn	00 50 57.6 -1.2
PEA0B	**Petropavlovsk-**	**20.88**	**29**	*e*P	Pn	00 50 58.2 -0.6
	comp=Z,265nm,1.2s					
PEA0B				LR	LR	
	comp=Z,4μm,19.0s					
PETK	**Petropavlovsk-**	**20.88**	**29**	P	Pn	00 50 58.1 -0.8
	comp=Z,129nm,0.9s,baz=208,slow=7.9,SNR=92					
PETK				LR	LR	00 59 13.9
	comp=Z,3μm,19.6s,baz=220,slow=37					
PETK	**Petropavlovsk-**	**20.88**	**29**	P	Pn	00 50 58.1 -0.7
SSLB	**Suanglung**	**21.12**	**241**	*e*P	**P**	**00 50 56.0 -3.0**
	comp=Z,92nm,0.8s					
SSLB				*e*S	Sn	00 55 02.7 +2.9
SSLB				LR	LR	
	comp=Z,6μm,22.0s					
YULB	**Yu-li**	**21.12**	**239**	*e*P	**P**	**00 50 54.7 -4.4**
	comp=Z,66nm,0.8s					
YULB				LR	LR	
	comp=Z,5μm,20.0s					
PET	**Petropavlovsk**	**21.20**	**30**	*c i*P	**P**	**00 50 59.9 +0.3**
PET				*i* S	**S**	**00 54 50.0 -3.8**
PET				pmax	pmax	
	comp=Z,600nm,5.5s					
PET				pmax	pmax	
	comp=Z,223nm,1.1s					
PET				pmax	pmax	
	comp=Z,800nm,13.8s					
PET				MLR	MLR	
	comp=Z,8μm,18.0s					
PET				MLR	MLR	
	comp=Z,6μm,18.0s					
PET	**Petropavlovsk**	**21.20**	**30**	*e*P	**P**	**00 51 00.3 +0.7**
	comp=Z,549nm,1.3s					
PET				LR	LR	
	comp=Z,7μm,20.0s					
TPUB	**Ta-pu**	**21.65**	**240**	*e*P	**P**	**00 51 01.0 -3.8**
	comp=Z,85nm,0.7s					
TPUB				LR	LR	
	comp=Z,8μm,18.0s					
TWG	**Pinlang**	**21.65**	**239**	*e*P	**P**	**00 51 01.6 -3.2**
	comp=Z,898nm,1.3s					
TWG				LR	LR	
	comp=Z,21μm,20.0s					
QZH	**Quanzhou**	**22.15**	**247**	⇑*i*P	P	00 51 00.5 -10
QZH				PP	sP	00 51 25.5 +4.4
QZH				S	S	00 54 56.1 -17
QZH				SS	**SnSn**	**00 55 37.0 -3.1**
QZH				pmax	pmax	
	comp=Z,230nm,1.0s					
QZH				pmax	pmax	
	comp=Z,860nm,3.1s					
QZH				LR	LR	
	comp=N,14μm,18.2s					
QZH				LR	LR	
	comp=E,27μm,16.9s					
QZH				LR	LR	
	comp=Z,37μm,19.4s					
GUMO	**Guam**	**22.41**	**170**	LR	LR	00 58 38.9
	comp=Z,5μm,21.3s,baz=346,slow=33					
GUMO	**Guam**	**22.41**	**170**	*e*P	**P**	**00 51 12.4 -0.4**
GUMO				pmax	pmax	
	comp=Z,1μm,1.4s					
GUMO	**Guam**	**22.41**	**170**	*e*P	**P**	**00 51 12.4 -0.4**
	comp=Z,1μm,1.4s					
WHN	**Wuhan**	**22.92**	**264**	⇑*i*P	**P**	**00 51 15.5 -2.7**
WHN				sP	**sP**	**00 51 31.8 +2.5**
WHN				S	**S**	**00 55 17.3 -9.2**
WHN				pmax	pmax	
	comp=Z,2μm,4.3s					
WHN				LR	LR	
	comp=Z,16μm,16.0s					
WHN				LR	LR	
	comp=Z,32μm,15.0s					
WHN				LR	LR	
	comp=Z,56μm,21.7s					
TIY	**Taiyuan**	**22.96**	**283**	*e*P	**P**	**00 51 14.5 -4.2**
TIY				PP	**PnPn**	**00 51 49.8 +6.1**
TIY				S	**S**	**00 55 23.0 -4.3**
TIY				SS	**SnSn**	**00 56 08.6 +8.7**
TIY				pmax	pmax	
	comp=Z,39nm,0.5s					
TIY				pmax	pmax	
	comp=Z,1μm,8.9s					
TIY				LR	LR	
	comp=Z,4μm,15.8s					
TIY				LR	LR	
	comp=Z,12μm,16.7s					
TIY				LR	LR	
	comp=Z,21μm,19.0s					
HHC	**Hu-ho-hao-te**	**23.60**	**291**	*e*P	**P**	**00 51 21.1 -4.0**
HHC				pP	pP	00 51 31.1 -1.9
HHC				sP	sP	00 51 34.3 -2.1
HHC				PP	**PnPn**	**00 52 00.9 +8.4**
HHC				S	**S**	**00 55 32.4 -5.4**
HHC				sS	sS	00 55 45.8 -5.4
HHC				pmax	pmax	
	comp=Z,120nm,1.0s					
HHC				pmax	pmax	
	comp=Z,1μm,4.3s					
HHC				LR	LR	
	comp=Z,5μm,14.0s					
HHC				LR	LR	
	comp=Z,6μm,13.7s					
HHC				LR	LR	
	comp=Z,8μm,13.5s					
CLNS	**Chul'man**	**23.68**	**338**	*e*P	**P**	**00 51 24.0 -1.5**
CLNS				*e**PP	**pP**	**00 51 32.4 -1.1**
CLNS				*e*		00 51 51.2
CLNS				*e*		00 55 06.8
CLNS				*e*S	**S**	**00 55 36.0 -2.5**
CLNS				pmax	pmax	
	comp=Z,407nm,1.2s					
CLNS				pmax	pmax	
	comp=N,238nm,1.1s					
CLNS				pmax	pmax	
	comp=E,80nm,1.1s					
CLNS				pmax	pmax	
	comp=Z,145nm,0.9s					
CLNS				pmax	pmax	
	comp=N,111nm,1.1s					
CLNS				pmax	pmax	
	comp=E,100nm,0.9s					
CLNS				smax	smax	
	comp=E,1μm,10.0s					
CLNS				smax	smax	
	comp=N,1μm,9.3s					
CLNS				MLR	MLR	
	comp=Z,2μm,10.0s					
CLNS				MLR	MLR	
	comp=E,12μm,17.0s					
CLNS				MLR	MLR	
	comp=N,8μm,15.0s					
MA2	**Magadan**	**24.60**	**12**	P	**P**	**00 51 34.9 +1.0**
	comp=N,116nm,0.8s,baz=223,slow=9.0,SNR=78					
MA2				LR	LR	01 03 32.6
	comp=N,2μm,18.0s,baz=218,slow=42					
MA2	**Magadan**	**24.60**	**12**	P	**P**	**00 51 34.9 +1.0**
MA2				pmax	pmax	
	comp=Z,116nm,0.8s					
MA2				MLR	MLR	
	comp=Z,2μm,18.0s					
MA2	**Magadan**	**24.60**	**12**	*e*P	**P**	**00 51 35.0 +1.0**
	comp=Z,3μm,1.5s					
CIT	**Chita**	**25.36**	**318**	*e*P	**P**	**00 51 39.9 -1.2**
CIT				*e*		00 51 50.0
CIT				*e*		00 52 24.7
CIT				pmax	pmax	
	comp=Z,412nm,2.2s					
XAN	**Xi'an**	**26.34**	**276**	P	**P**	**00 51 48.8 -1.3**
XAN				pP	pP	00 51 57.8 -0.3
XAN				sP	sP	00 52 01.8 +0.2
XAN				PP	**PnPn**	**00 52 31.9 +2.0**
XAN				S	**S**	**00 56 17.0 -4.4**
XAN				sS	sS	00 56 31.8 -3.0
XAN				SS	**SnSn**	**00 57 25.8 +3.3**
XAN				pmax	pmax	
	comp=Z,77nm,1.1s					
XAN				pmax	pmax	
	comp=Z,1μm,9.9s					
XAN				LR	LR	
	comp=Z,9μm,20.0s					
XAN				LR	LR	
	comp=Z,12μm,21.7s					
XAN				LR	LR	
	comp=Z,14μm,21.7s					
ENH	**Enshi**	**26.96**	**267**	*e*P	**P**	**00 51 54.1 -1.6**
	comp=Z,216nm,0.8s					
ENH				LR	LR	
	comp=Z,16μm,20.0s					
GZH	**Guangzhou**	**27.16**	**250**	P	**P**	**00 51 51.1 -6.3**
GZH				S	S	00 56 22.3 -12
GZH				LR	LR	
	comp=Z,21μm,18.2s					
GZH				LR	LR	
	comp=Z,25μm,18.6s					
YAK	**Yakutsk**	**27.19**	**348**	P	**P**	**00 51 58.0 +0.7**
	comp=Z,13nm,0.5s,baz=339,slow=23,SNR=53					
YAK				LR	LR	01 03 01.8
	comp=Z,11μm,19.1s,baz=162,slow=37					
YAK	**Yakutsk**	**27.19**	**348**	*c i*P	**P**	**00 51 57.4 +0.1**
YAK				*e**PP	**sP**	**00 52 06.1 -2.7**
YAK				*e*		00 52 40.6
YAK				*e*		00 55 16.6
YAK				*e*S	**S**	**00 56 31.0 -3.1**
YAK				*e**SS	**sS**	**00 56 46.2 -1.3**
YAK				*e*SSS	SSS	00 57 55.3
YAK				pmax	pmax	
	comp=Z,344nm,1.0s					
YAK				pmax	pmax	
	comp=N,803nm,1.5s					
YAK				pmax	pmax	
	comp=E,183nm,1.2s					
YAK				pmax	pmax	
	comp=Z,196nm,1.1s					
YAK				pmax	pmax	
	comp=N,101nm,0.9s					
YAK				pmax	pmax	
	comp=E,91nm,1.1s					
YAK				smax	smax	
	comp=E,577nm,2.8s					
YAK				smax	smax	
	comp=N,791nm,2.5s					
YAK				MLR	MLR	
	comp=E,7μm,23.0s					
YAK				MLR	MLR	
	comp=N,13μm,22.0s					
YAK				MLR	MLR	
	comp=Z,11μm,20.0s					
YAK	**Yakutsk**	**27.19**	**348**	*e*P	**P**	**00 51 57.5 +0.2**
	comp=Z,341nm,1.0s					
ULN	**Ulaanbaatar**	**27.81**	**306**	*c i*P	**P**	**00 52 03.2 -0.1**
ULN				pmax	pmax	
	comp=Z,164nm,1.7s					
ULN				MLR	MLR	
	comp=Z,12μm,17.0s					
ULN	**Ulaanbaatar**	**27.81**	**306**	P	**P**	**00 52 02.5 -0.8**
	SNR=71					
ULN	**Ulaanbaatar**	**27.81**	**306**	P	**P**	**00 52 02.5 -0.8**
	SNR=71					
ULN	**Ulaanbaatar**	**27.81**	**306**	*e*P	**P**	**00 52 03.0 -0.3**
	comp=Z,63nm,0.7s					
ULN				LR	LR	
	comp=Z,14μm,18.0s					
H11N2	**WAKE ISLAND Hy**	**27.81**	**118**	P	**P**	**00 52 06.1 +3.0**
H11N2				T	T	01 21 07.3
	baz=311,slow=75,SNR=805					
H11N1	**WAKE ISLAND Hy**	**27.82**	**118**	P	**P**	**00 52 06.1 +3.0**
H11N1				T	T	01 21 04.1
	baz=311,slow=75,SNR=990					
H11N3	**WAKE ISLAND Hy**	**27.83**	**118**	P	**P**	**00 52 06.2 +3.0**
H11N3				T	T	01 21 08.6
	baz=311,slow=75,SNR=930					
SEY	**Seymchan**	**28.03**	**11**	⇓*i*P	**P**	**00 52 06.4 +1.5**
SONA1	**Songino Array**	**28.23**	**306**	*e*P	**P**	**00 52 05.8 -1.2**
SONM	**Songino Array**	**28.23**	**306**	P	**P**	**00 52 07.6 +0.6**
	comp=Z,49nm,0.6s,baz=104,slow=8.8,SNR=113					
SONM				LR	LR	01 03 59.7
	comp=Z,16μm,18.5s,baz=97,slow=38					
SONM	**Songino Array**	**28.23**	**306**	P	**P**	**00 52 07.6 +0.6**
BOD	**Bodaibo**	**28.40**	**329**	⇓*i*P	**P**	**00 52 08.4 +0.1**
BOD				pmax	pmax	
	comp=Z,223nm,1.1s					
H11S1	**WAKE ISLAND Hy**	**28.48**	**121**	T	T	01 21 59.6
	baz=312,slow=75,SNR=775					
H11S3	**WAKE ISLAND Hy**	**28.48**	**121**	T	T	01 21 59.6
	baz=312,slow=75,SNR=399					
H11S2	**WAKE ISLAND Hy**	**28.49**	**121**	T	T	01 22 00.8
	baz=312,slow=75,SNR=339					
SMY	**Shemya**	**28.74**	**44**	PFAKE		00 52 30.0 +19
SMY				LR	LR	
	comp=Z,4μm,20.0s					
LZH	**Lanzhou**	**30.00**	**282**	*e*P	**P**	**00 52 22.8 -0.1**
LZH				pP	pP	00 52 30.4 -0.6
LZH				sP	sP	00 52 34.6 +0.2
LZH				*e*S	**S**	**00 57 18.6 -0.7**
LZH				sS	sS	00 57 36.8 +4.1
LZH				SS	**SnSn**	**00 58 52.0 0.0**
LZH				pmax	pmax	
	comp=Z,120nm,1.1s					
LZH				pmax	pmax	
	comp=Z,600nm,4.6s					
LZH				LR	LR	
	comp=Z,7μm,19.9s					
LZH				LR	LR	
	comp=Z,18μm,15.5s					
LZH				LR	LR	
	comp=Z,23μm,16.9s					
IRK	**Irkutsk**	**30.71**	**314**	*e*P	**P**	**00 52 27.9 -0.9**
IRK				pmax	pmax	
	comp=Z,158nm,1.9s					
GYA	**Guiyang**	**30.74**	**262**	⇑*i*P	**P**	**00 52 27.4 -2.1**
GYA				pP	sP	00 52 39.4 -1.6
GYA				PP	**PnPn**	**00 53 31.0 +1.2**
GYA				PcP	**PcP**	**00 55 28.6 +1.9**
GYA				S	**S**	**00 57 35.1 +4.1**
GYA				sS	sS	00 57 43.4 -1.0
GYA				ScP	**ScP**	**00 59 07.0 -0.4**
GYA				SS	**SnSn**	**00 59 12.3 +2.1**
GYA				ScS	**ScS**	**01 03 01.8 -2.4**
GYA				pmax	pmax	
	comp=Z,110nm,1.1s					
GYA				pmax	pmax	
	comp=Z,510nm,9.9s					
GYA				LR	LR	
	comp=Z,7μm,19.3s					
GYA				LR	LR	
	comp=Z,7μm,21.8s					
GYA				LR	LR	
	comp=Z,10μm,21.1s					
ZAK	**Zakamensk**	**30.80**	**310**	*e*P	**P**	**00 52 29.5 -0.2**
ZAK				pmax	pmax	
	comp=Z,46nm,1.2s					
TLY	**Talaya**	**30.91**	**313**	P	**P**	**00 52 30.9 +0.3**
	comp=Z,37nm,0.7s,baz=116,slow=6.8,SNR=35					
TLY				LR	LR	01 05 51.8
	comp=Z,14μm,18.0s,baz=112,slow=38					
TLY	**Talaya**	**30.91**	**313**	*c i*P	**P**	**00 52 29.8 -0.8**
TLY				*e*		00 53 33.5
TLY				*e*PPP	PPP	00 53 48.0

TLY			*e*S	S	00 57 36.7	+3.7
TLY			*e*SS	SnSn	00 59 11.4	-2.3
TLY			pmax	pmax		
	comp=Z,56nm,1.0s					
TLY			MLR	MLR		
	comp=Z,9μm,15.0s					
TLY	**Talaya**	**30.91 313**	*e*P	**P**	**00 52 31.0**	**+0.3**
	comp=Z,44nm,0.8s					
CD2	**Chengdu**	**31.40 272**	P	**P**	**00 52 33.6**	**-1.5**
CD2			sP	sP	00 52 46.0	-0.7
CD2			PcP	**PcP**	**00 55 27.3**	**-1.0**
CD2			S	**S**	**00 57 35.8**	**-5.2**
CD2			sS	sS	00 57 54.0	-0.5
CD2			pmax	pmax		
	comp=Z,120nm,0.8s					
CD2			pmax	pmax		
	comp=Z,750nm,8.4s					
CD2			LR	LR		
	comp=Z,15μm,16.8s					
CD2			LR	LR		
	comp=Z,21μm,21.6s					
DAV	**Davao City (W)**	**31.94 210**⇑	*e*P	P	00 52 32.3	-7.6
DAV	**Davao City (W)**	**31.94 210**	PFAKE		00 52 50.0	+10
DAV			LR	LR		
	comp=Z,6μm,22.0s					
QIZ	**Qiongzhong**	**32.17 247**	P	**P**	**00 52 41.3**	**-0.7**
QIZ			pP	**pP**	**00 52 48.6**	**-1.5**
QIZ			S	**S**	**00 57 56.8**	**+3.6**
QIZ			LR	LR		
	comp=Z,3μm,13.5s					
QIZ			LR	LR		
	comp=Z,2μm,17.2s					
QIZ	**Qiongzhong**	**32.17 247**	PFAKE		00 52 50.0	+8.0
QIZ			LR	LR		
	comp=Z,8μm,20.0s					
MOY	**Mondy**	**32.51 312**	*e*P	**P**	**00 52 44.7**	**0.0**
MOY			pmax	pmax		
	comp=Z,107nm,2.6s					
GTA	**Gaotai**	**32.65 289**	⇑P	**P**	**00 52 45.4**	**-0.8**
GTA			pP	pP	00 52 53.8	-0.5
GTA			sP	sP	00 52 57.3	-0.4
GTA			PP	**PnPn**	**00 53 55.3**	**+1.0**
GTA			PcP	**PcP**	**00 55 32.5**	**+0.8**
GTA			S	**S**	**00 57 59.1**	**-1.5**
GTA			sS	sS	00 58 12.3	-1.8
GTA			ScP	**ScP**	**00 59 14.4**	**+0.7**
GTA			PcS	**PcS**	**00 59 17.3**	**+0.3**
GTA			SS	**SnSn**	**00 59 57.9**	**+1.5**
GTA			pmax	pmax		
	comp=Z,11nm,1.1s					
GTA			pmax	pmax		
	comp=Z,940nm,6.9s					
GTA			LR	LR		
	comp=Z,4μm,19.0s					
GTA			LR	LR		
	comp=Z,6μm,20.9s					
GTA			LR	LR		
	comp=Z,8μm,23.3s					
KMI	**Kunming**	**34.50 263**	P	**P**	**00 53 01.9**	**-0.6**
KMI			pP	pP	00 53 09.6	-1.1
KMI			sP	sP	00 53 12.8	-1.3
KMI			PP	**PnPn**	**00 54 19.1**	**+1.2**
KMI			PcP	**PcP**	**00 55 38.5**	**+1.2**
KMI			S	**S**	**00 58 28.5**	**-1.2**
KMI			sS	sS	00 58 42.8	-0.4
KMI			pmax	pmax		
	comp=Z,80nm,0.9s					
KMI			pmax	pmax		
	comp=Z,490nm,3.1s					
KMI			LR	LR		
	comp=Z,8μm,21.5s					
KMI			LR	LR		
	comp=Z,5μm,23.9s					
KMI			LR	LR		
	comp=Z,11μm,23.9s					
BILL	**Bilibino**	**35.27 16***c*	*i*P	**P**	**00 53 08.3**	**-0.1**
BILL			*e*		00 54 25.5	
BILL			*i*S	**S**	**00 58 36.8**	**-3.3**
BILL			pmax	pmax		
	comp=Z,147nm,1.7s					
BILL			MLR	MLR		
	comp=Z,5μm,21.0s					
BILL	**Bilibino**	**35.27 16**	*e*P	**P**	**00 53 08.9**	**+0.5**
	comp=Z,105nm,1.2s					
BILL			LR	LR		
	comp=Z,5μm,20.0s					
KDM	**Kudat**	**36.34 223**	⇑P	**P**	**00 53 17.0**	**-1.0**
TIXI	**Tiksi**	**36.45 354**	P	**P**	**00 53 18.4**	**0.0**
	comp=Z,80nm,0.8s,baz=150,slow=6.9,SNR=227					
TIXI	**Tiksi**	**36.45 354***ce*	*e*P	**P**	**00 53 18.7**	**+0.3**
TIXI			pmax	pmax		
	comp=Z,102nm,0.8s					
TIXI			MLR	MLR		
	comp=Z,5μm,19.0s					
TIXI	**Tiksi**	**36.45 354**	*e*P	**P**	**00 53 17.9**	**-0.6**
	comp=Z,100nm,0.9s					
TIXI			LR	LR		
	comp=Z,6μm,20.0s					
MYLDM	**Lahad Datu**	**36.89 220**	⇑P	**P**	**00 53 23.0**	**+0.3**
MYLDM	**Lahad Datu**	**36.89 220**	*e*P	**P**	**00 53 22.1**	**-0.6**
MYLDM			*e*pP	**P**	**00 53 22.3**	**-0.5**
MYLDM			LR	LR		
	comp=Z,6μm,20.0s					
SDKM	**Sandakan**	**37.19 222**	⇓P	**P**	**00 53 23.9**	**-1.5**
KKM	**Kota Kinabalu**	**37.40 223**	⇓P	**P**	**00 53 26.4**	**-0.8**
KKM	**Kota Kinabalu**	**37.40 223**	*e*P	**P**	**00 53 26.4**	**-0.8**
	comp=Z,35nm,1.0s					
KKM			LR	LR		
	comp=Z,3μm,20.0s					
SWI	**Sorong**	**37.62 196**	P	**P**	**00 53 28.0**	**-0.9**
	comp=Z,150nm,1.0s,comp=Z,5μm					
SKNT	**Sakonnakorn**	**37.85 250**	P	**P**	**00 53 29.5**	**-1.4**
	comp=Z,155nm,1.2s					
MANU	**Manus Island**	**38.13 170**	*e*P	**P**	**00 53 30.6**	**-2.7**
	comp=Z,125nm,1.6s					
MANU			LR	LR		
	comp=Z,3μm,22.0s					
KRAR	**Krasnoyarsk**	**38.14 317**⇑	*i*P	**P**	**00 53 33.9**	**+1.0**
KRAR			pmax	pmax		
	comp=Z,474nm,2.1s					
KRAR			MLR	MLR		
	comp=Z,8μm,16.0s					
GENI	**Genyem**	**38.23 181**	P	**P**	**00 53 36.2**	**+2.2**
	comp=Z,168nm,0.9s,comp=Z,4μm					
CRAI	**Chiangrai**	**38.82 258**	P	**P**	**00 53 38.8**	**-0.3**
	comp=Z,304nm,0.9s,comp=Z,19μm					
KHON	**Khomkaen**	**39.11 250**	P	**P**	**00 53 40.4**	**-1.1**
	comp=Z,36nm,0.9s					
MRSI	**Marisa**	**39.40 211**	P	**P**	**00 53 42.6**	**-1.3**
	comp=Z,268nm,1.2s					
FAKI	**Fak Fak**	**39.41 194**	P	**P**	**00 53 42.5**	**-1.5**
	comp=Z,165nm,1.3s,comp=Z,3μm					
FAKI	**Fak Fak**	**39.41 194**	*e*P	**P**	**00 53 42.6**	**-1.3**
	comp=Z,259nm,1.3s					
FAKI			LR	LR		
	comp=Z,7μm,20.0s					
GAMB	**Gambell**	**39.90 31**	PFAKE		00 54 00.0	+12
GAMB			LR	LR		
	comp=Z,2μm,20.0s					
UTTA	**Uttaradit**	**40.05 254**	P	**P**	**00 53 48.4**	**-0.9**
	comp=Z,14nm,1.2s,comp=Z,117nm					
SANI	**Sanana**	**40.22 204**	P	**P**	**00 53 50.4**	**-0.3**
	comp=Z,241nm,1.3s,comp=Z,3μm					
LAMP	**Lampang**	**40.33 256**	P	**P**	**00 53 52.2**	**+0.5**
	comp=Z,15nm,0.7s					
PBKT	**Sadao Pong**	**40.40 252**	P	**P**	**00 53 51.1**	**-1.1**
	comp=Z,72nm,0.9s,comp=Z,1μm					
LUWI	**Luwuk**	**40.44 209**	P	**P**	**00 53 52.0**	**-0.6**
	comp=Z,135nm,1.2s,comp=Z,3μm					
LUWI	**Luwuk**	**40.44 209**	*e*P	**P**	**00 53 49.6**	**-3.0**
	comp=Z,134nm,1.0s					
LUWI			LR	LR		
	comp=Z,4μm,22.0s					
CMMT	**Chiang Mai**	**40.72 257**	P	**P**	**00 53 54.7**	**-0.2**
	comp=Z,36nm,1.1s,comp=Z,1μm					
CHTO	**Chiang Mai**	**40.72 257**	P	**P**	**00 53 54.7**	**-0.2**
	comp=Z,218nm,0.9s,comp=Z,4μm					
CHTO	**Chiang Mai**	**40.72 257**	*e*P	**P**	**00 53 54.4**	**-0.5**
CHTO			pmax	pmax		
	comp=Z,50nm,1.3s					
CHTO			MLR	MLR		
	comp=Z,10μm,19.0s					
CHTO	**Chiang Mai**	**40.72 257**	P	**P**	**00 53 53.5**	**-1.4**
	SNR=22					
CHTO	**Chiang Mai**	**40.72 257**	P	**P**	**00 53 53.5**	**-1.4**
	SNR=22					
CHTO	**Chiang Mai**	**40.72 257**	*e*P	**P**	**00 53 54.4**	**-0.5**
	comp=Z,50nm,1.3s					
CHTO			LR	LR		
	comp=Z,10μm,19.0s					
CM31	**Chiang Mai Arr**	**40.91 256**	*e*P	**P**	**00 53 57.5**	**+1.0**
CMAR	**Chiang Mai Arr**	**40.91 256**	P	**P**	**00 53 56.1**	**-0.3**
	comp=Z,9.1nm,0.7s,baz=48,slow=7.4,SNR=39					
CMAR			PcP	**PcP**	**00 55 58.3**	**+1.6**
	comp=Z,17nm,1.0s,baz=13,slow=2.1,SNR=10					
CMAR			ScP	**ScP**	**00 59 45.2**	**+0.7**
	comp=Z,0.5nm,0.3s,baz=34,slow=3.0,SNR=5.1					
CMAR			LR	LR	01 12 33.1	
	comp=Z,11μm,18.8s,baz=62,slow=39					
CMAR	**Chiang Mai Arr**	**40.91 256**	P	**P**	**00 53 56.2**	**-0.3**
CMAR					00 55 58.3	
SUKH	**Sukhothai**	**40.92 255**	P	**P**	**00 53 56.1**	**-0.4**
	comp=Z,18nm,0.9s,comp=Z,127nm					
CM01	**Chiang Mai Arr**	**40.92 256**	*e*P	**P**	**00 53 55.0**	**-1.5**
SRAK	**Srakaew**	**41.13 248**	P	P	00 53 53.5	-4.8
	comp=Z,198nm,1.1s,comp=Z,2μm					
WMQ	**Urumqi**	**41.13 298**⇑	*i*P	**P**	**00 53 58.5**	**+0.4**
WMQ			pP	sP	00 54 08.9	-0.9
WMQ			sP	pP	00 54 11.6	+5.2
WMQ			S	**S**	**01 00 07.3**	**-2.2**
WMQ			SS	**SS**	**01 03 10.5**	**-2.0**
WMQ			pmax	pmax		
	comp=Z,290nm,0.8s					
WMQ			pmax	pmax		
	comp=Z,970nm,3.6s					
WMQ			LR	LR		
	comp=Z,2μm,18.4s					
WMQ			LR	LR		
	comp=Z,2μm,21.2s					
WMQ			LR	LR		
	comp=Z,3μm,26.8s					
RABL	**Rabaul**	**41.15 163**	PFAKE		00 54 10.0	+12
RABL			LR	LR		
	comp=Z,2μm,20.0s					
BNDI	**Bandanaira**	**41.47 197**	P	P	00 54 11.7	+11
BTM	**Bintulu**	**41.50 225**	⇓P	**P**	**00 54 00.2**	**-1.1**
PCI	**Palu**	**41.55 213**	P	**P**	**00 54 00.5**	**-1.2**
	comp=Z,245nm,1.3s,comp=Z,2μm					
PCI	**Palu**	**41.55 213**	P	**P**	**00 54 00.2**	**-1.5**
PCI			pmax	pmax		
	comp=Z,245nm,1.3s					
CHBT	**CHBT**	**41.72 246**	P	**P**	**00 54 02.1**	**-1.0**
	comp=Z,115nm,1.3s,comp=Z,3μm					
LSA	**Lhasa**	**42.04 276**	P	**P**	**00 54 07.3**	**+1.2**
LSA			pmax	pmax		
	comp=Z,110nm,1.3s					
LSA			pmax	pmax		
	comp=Z,1μm,8.7s					
LSA			LR	LR		
	comp=Z,1μm,15.6s					
LSA			LR	LR		
	comp=Z,6μm,19.2s					
LSA			LR	LR		
	comp=Z,11μm,20.2s					
LSA	**Lhasa**	**42.04 276**	*e*P	**P**	**00 54 07.4**	**+1.2**
LSA			pmax	pmax		
	comp=Z,101nm,0.8s					
LSA			MLR	MLR		
	comp=Z,11μm,19.0s					
LSA	**Lhasa**	**42.04 276**	*e*P	**P**	**00 54 07.4**	**+1.2**
	comp=Z,101nm,0.8s					
LSA			LR	LR		
	comp=Z,11μm,19.0s					
TNA	**Tin City**	**42.05 29**	*e*P	**P**	**00 54 06.9**	**+1.7**
	comp=Z,32nm,0.8s					
FALS	**False Pass**	**42.16 45**	*e*P	**P**	**00 54 03.7**	**-2.5**
	comp=Z,39nm,0.7s					
ZAA0	**Zalesovo Array**	**42.52 313**	*e*P	**P**	**00 54 08.7**	**-0.5**
ZALV	**Zalesovo Beam**	**42.52 313**	P	**P**	**00 54 10.2**	**+1.0**
	comp=Z,176nm,0.7s,baz=91,slow=6.5,SNR=604					
ZALV			PcP	**PcP**	**00 56 02.0**	**+0.5**
	comp=Z,26nm,0.9s,baz=116,slow=3.4,SNR=4.2					
ZALV			ScP	**ScP**	**00 59 51.1**	**+0.9**
	comp=Z,2.8nm,0.8s,baz=151,slow=4.2,SNR=3.1					
ZALV			LR	LR	01 12 42.1	
	comp=Z,6μm,18.4s,baz=82,slow=37					
ZALV	**Zalesovo Beam**	**42.52 313**	P	**P**	**00 54 10.2**	**+1.0**
ZALV					00 56 02.0	
SBUM	**Sibu**	**42.60 225**	⇑P	**P**	**00 54 09.1**	**-1.2**
SBUM	**Sibu**	**42.60 225**	*e*P	**P**	**00 54 08.1**	**-2.2**
	comp=Z,31nm,1.1s					
SBUM			LR	LR		
	comp=Z,2μm,19.0s					
ZSN	**Zaisan**	**43.01 304**	*i*P	**P**	**00 54 11.6**	**-1.8**
	comp=Z,7μm,0.9s					
ZSN			*e*S	**S**	**01 00 34.9**	**-2.2**
ZSN			LR	LR	01 12 16.3	
	comp=Z,4μm,15.5s					
SHL	**Shillong**	**43.11 270**	*e*P	**P**	**00 54 13.6**	**-1.0**
SHL			IAmb	IAmb	00 54 20.5	
	comp=Z,538nm,0.1s					
SHL			*e*S	**S**	**01 00 38.0**	**-1.3**
KDI	**Kendari**	**43.18 207**	P	**P**	**00 54 14.5**	**-0.4**
	comp=Z,77nm,1.2s,comp=Z,1μm					
NVS	**Novosibirsk**	**43.47 315**⇑	*i*P	**P**	**00 54 17.8**	**+0.9**
NVS			*i* *PP	**sP**	**00 54 29.6**	**+1.1**
NVS			*e*		00 56 02.7	
NVS			*i*S	**S**	**01 00 44.5**	**+1.0**
NVS			*e*SS	**ScS**	**01 04 15.0**	**+0.7**
NVS			pmax	pmax		
	comp=N,39nm,1.0s					
NVS			pmax	pmax		
	comp=E,203nm,1.0s					
NVS			pmax	pmax		
	comp=Z,275nm,1.0s					
NVS			smax	smax		
	comp=N,47nm,2.0s					
NVS			smax	smax		
	comp=E,62nm,2.0s					
TTSI	**Tana Toraja**	**43.47 212**	P	**P**	**00 54 17.6**	**+0.3**
	comp=E,49nm,1.1s,comp=E,2μm					
PHET	**Kaeng Krachan**	**43.65 249**	P	**P**	**00 54 18.2**	**-0.6**
	comp=E,29nm,1.0s,comp=E,298nm					
SDPT	**Sand Point**	**43.86 45**	*e*P	**P**	**00 54 20.4**	**+0.4**
	comp=E,97nm,0.7s					
SDPT			LR	LR		
	comp=Z,3μm,20.0s					
MTKI	**Muara Teweh, K**	**43.96 219**	P	**P**	**00 54 25.0**	**+3.8**
	comp=Z,149nm,0.9s					
NRIK	**Noril'sk**	**44.24 336**	P	**P**	**00 54 23.4**	**+0.5**
	comp=Z,87nm,0.9s,baz=108,slow=9.2,SNR=146					
NRIK			PcP	**PcP**	**00 56 07.5**	**+0.6**
	comp=Z,43nm,0.9s,baz=347,slow=3.2,SNR=3.4					
NRIK			LR	LR	01 13 53.6	
	comp=Z,6μm,18.8s,baz=110,slow=38					
NRIK	**Noril'sk**	**44.24 336**	P	**P**	**00 54 23.4**	**+0.5**
NRIK					00 56 07.5	
NRIK			pmax	pmax		
	comp=Z,87nm,0.9s					
NRIK			MLR	MLR		
	comp=Z,6μm,18.8s					
KSM	**Kuching**	**44.51 227**	*e*P	**P**	**00 54 24.7**	**-1.0**
	comp=Z,52nm,0.9s					
KSM			LR	LR		
	comp=Z,1μm,21.0s					
MK01	**Makanchi Array**	**44.52 303**	*e*P	**P**	**00 54 24.9**	**-0.6**
MK01			*e*pP	**P**	**00 54 26.6**	**+1.1**
MK31	**Makanchi Array**	**44.52 303**	*i*P	**P**	**00 54 26.3**	**+0.8**
MK31			pmax	pmax		
	comp=Z,390nm,0.8s					
MK31	**Makanchi Array**	**44.52 303**	*e*P	**P**	**00 54 25.6**	**+0.1**
MK31			*e*pP	**P**	**00 54 26.0**	**+0.5**
MKAR	**Makanchi Array**	**44.52 303**	P	**P**	**00 54 26.4**	**+0.9**
	comp=Z,323nm,0.7s,baz=88,slow=9.4,SNR=1939					
MKAR			PcP	**PP**	**00 56 08.9**	**-0.5**
	comp=Z,9.9nm,0.8s,baz=166,slow=21,SNR=1.5					
MKAR			LR	LR	01 13 45.5	
	comp=Z,8μm,19.4s,baz=90,slow=37					
MKAR	**Makanchi Array**	**44.52 303**	P	**P**	**00 54 26.4**	**+0.9**
MKAR					00 56 08.9	
MKAR			pmax	pmax		
	comp=Z,323nm,0.7s					
MKAR			MLR	MLR		
	comp=Z,8μm,19.4s					
MKAR	**Makanchi Array**	**44.52 303**	*e*P	**P**	**00 54 27.1**	**+1.6**
MKAR			PcP	**PP**	**00 56 08.9**	**-0.5**
SAUI	**Saumlaki**	**44.53 194**	*e*P	**P**	**00 54 25.4**	**-0.4**
	comp=Z,625nm,1.0s					
MAKZ	**Makanchi**	**44.73 303**	*e*P	**P**	**00 54 27.2**	**0.0**
MAKZ			pmax	pmax		
	comp=Z,353nm,0.8s					
MAKZ			MLR	MLR		
	comp=Z,12μm,18.0s					
MAKZ	**Makanchi**	**44.73 303**	*e*P	**P**	**00 54 27.2**	**0.0**
	comp=Z,353nm,0.8s					
MAKZ			LR	LR		
	comp=Z,12μm,18.0s					
STKI	**Sintang**	**44.97 224**	P	**P**	**00 54 28.9**	**-0.4**
	comp=Z,90nm,0.9s					
CHGN	**Chignik**	**45.04 43**	*e*P	**P**	**00 54 30.0**	**+0.6**
KAPI	**Kappang**	**45.27 211**	P	**P**	**00 54 31.8**	**+0.1**
	comp=Z,258nm,1.2s,baz=24,slow=5.4,SNR=44					
KAPI			PcP	**PcP**	**00 56 11.6**	**+0.3**
	comp=Z,47nm,1.1s,baz=72,slow=3.2,SNR=1.9					
KAPI	**Kappang**	**45.27 211**	*e*P	**P**	**00 54 32.4**	**+0.7**
KAPI			PcP	**PcP**	**00 56 11.6**	**+0.3**
KAPI			LR	LR		
	comp=Z,2μm,20.0s					
TARA	**Tarawa**	**45.28 132**	*e*P	**P**	**00 54 33.0**	**+1.2**
	comp=Z,267nm,1.2s					
TARA			LR	LR		
	comp=Z,7μm,21.0s					
PMG	**Port Moresby**	**45.35 172**⇑	*e*P	**P**	**00 54 33.5**	**+1.2**
PMG			pmax	pmax		
	comp=Z,363nm,1.2s					
PMG	**Port Moresby**	**45.35 172**	*e*P	**P**	**00 54 31.4**	**-0.9**
	comp=Z,61nm,0.9s					
SEM	**Semipalatinsk**	**45.45 308**	*i*P	**P**	**00 54 31.3**	**-1.5**
	comp=Z,2μm,1.1s					
SEM			*e*S	**S**	**01 01 10.7**	**-1.7**
SEM			LR	LR	01 13 50.8	
	comp=Z,5μm,16.8s					
BSSI	**Bau Bau, Buton**	**46.00 209**	P	**P**	**00 54 35.3**	**-2.1**
	comp=Z,103nm,1.6s,comp=Z,2μm					
KTGM	**Kuala Trenggan**	**46.20 238**	⇑P	**P**	**00 54 38.8**	**-0.3**
KURK	**Kurchatov**	**46.45 309**	P	**P**	**00 54 40.9**	**+0.2**
KURK			pmax	pmax		
	comp=Z,179nm,0.5s					
KURK	**Kurchatov**	**46.45 309**	*e*P	**P**	**00 54 40.4**	**-0.2**
	comp=Z,816nm,0.8s					
KURBB	**Kurchatov Arra**	**46.52 309**	P	**P**	**00 54 40.9**	**-0.3**
	comp=Z,179nm,0.5s,baz=84,slow=7.9,SNR=1301					
TT01	**Tatalina**	**46.58 34**	*e*P	**P**	**00 54 42.6**	**+1.1**
TT01			*e*pP	**P**	**00 54 43.3**	**+1.8**
TTA	**Tatalina**	**46.58 34**	*e*P	**P**	**00 54 42.1**	**+0.4**
TTA	**Tatalina**	**46.58 34**	*e*P	**P**	**00 54 42.1**	**+0.4**
TTA			*e*pP	**P**	**00 54 43.4**	**+1.8**
SVW2	**Sparrevohn**	**46.66 37**	*e*P	**P**	**00 54 42.6**	**+0.4**
	comp=Z,62nm,1.0s					
SKLT	**Songkhla**	**46.68 242**	P	**P**	**00 54 42.5**	**-0.3**
	comp=Z,94nm,0.9s,comp=Z,1μm					
SURT	**Suratani**	**46.81 246**	P	**P**	**00 54 43.3**	**-0.6**
	comp=Z,29nm,1.5s,comp=Z,498nm					
SHLS	**Shalkode**	**46.84 299**	*i*P	**P**	**00 54 43.0**	**-1.2**
	comp=Z,2μm,1.0s					
SHLS			LR	LR	01 14 37.5	
	comp=Z,2μm,15.2s					
TRTT	**Trang**	**46.90 244**	P	**P**	**00 54 43.7**	**-0.9**
	comp=Z,70nm,1.0s,comp=Z,1μm					
GUN	**Gumba**	**46.99 277**	*e*Pn	**P**	**00 54 45.9**	**+0.3**
	comp=Z,393nm,1.0s					
KRAB	**Krabi**	**47.00 245**	P	**P**	**00 54 44.5**	**-0.9**
	comp=Z,110nm,1.0s					
PDGK	**Podgornoye**	**47.09 299**	P	**P**	**00 54 45.9**	**+0.2**
PDGK			pmax	pmax		
	comp=Z,278nm,0.8s					
UZB	**Uzynbulak**	**47.46 299**	*i*P	**P**	**00 54 47.8**	**-1.1**
	comp=Z,1μm,1.2s					
UZB			*e*S	**S**	**01 01 40.2**	**-1.6**
UZB			LR	LR	01 14 56.6	
	comp=Z,3μm,15.8s					
PKIN	**Phulchoki**	**47.52 276**	*e*Pn	**P**	**00 54 49.3**	**-0.3**
	comp=Z,149nm,0.7s					
KKN	**Kakani**	**47.52 277**	*e*Pn	**P**	**00 54 49.8**	**+0.2**
	comp=Z,239nm,0.8s					
KPKS	**Kokpek**	**47.63 299**	*i*P	**P**	**00 54 49.3**	**-0.8**
	comp=Z,2μm,1.1s					
KPKS			*e*S	**S**	**01 01 43.0**	**-1.0**
KPKS			LR	LR	01 15 08.9	
	comp=Z,6μm,17.5s					
MMRI	**Maumere**	**47.64 206**	P	**P**	**00 54 49.9**	**-0.3**
	comp=Z,243nm,1.2s					
MMRI	**Maumere**	**47.64 206**	*e*P	**P**	**00 54 50.0**	**-0.3**
	comp=Z,322nm,1.2s					
JOHN	**Johnston Islan**	**47.68 100**	*e*P	**P**	**00 54 47.5**	**-3.1**
	comp=Z,221nm,1.1s					
JOHN			LR	LR		
	comp=Z,5μm,19.0s					
DMN	**Daman**	**47.74 277**	*e*Pn	**P**	**00 54 51.4**	**+0.1**
	comp=Z,169nm,0.8s					
OHAK	**Old Harbor**	**47.85 42**	*e*P	**P**	**00 54 52.4**	**+0.9**
	comp=Z,117nm,1.0s					
OHAK			LR	LR		
	comp=Z,4μm,22.0s					
PKDT	**Phuket**	**47.85 245**	P	**P**	**00 54 51.4**	**-0.6**
	comp=Z,92nm,1.1s					
ZHN	**Zhinishke**	**47.88 299**	*i*P	**P**	**00 54 51.1**	**-0.9**
	comp=Z,701nm,1.1s					
ZHN			*e*S	**S**	**01 01 46.4**	**-1.1**
ZHN			LR	LR	01 15 08.1	
	comp=Z,2μm,14.9s					
SATY	**Saty**	**47.92 299**	*i*P	**P**	**00 54 51.7**	**-0.7**
	comp=Z,1μm,0.9s					
SATY			*e*S	**S**	**01 01 47.3**	**-0.9**
SATY			LR	LR	01 15 15.2	
	comp=Z,3μm,14.5s					
GKN	**Gorkha**	**47.95 277**	*e*Pn	**P**	**00 54 53.1**	**+0.2**
	comp=Z,453nm,1.0s					
KULM	**Kulim**	**47.96 240**	⇓P	**P**	**00 54 52.9**	**+0.1**
KULM	**Kulim**	**47.96 240**	*e*P	**P**	**00 54 51.2**	**-1.6**
	comp=Z,46nm,1.3s					
KULM			LR	LR		
	comp=Z,4μm,18.0s					
SOEI	**Soe**	**48.02 203**	P	**P**	**00 54 52.5**	**-0.8**
	comp=Z,726nm,1.2s,comp=Z,7μm					
SOEI	**Soe**	**48.02 203**	*e*P	**P**	**00 54 51.5**	**-1.8**
	comp=Z,960nm,1.2s					
SOEI			LR	LR		
	comp=Z,5μm,22.0s					
RSO	**Redoubt South**	**48.04 38**	*e*P	**P**	**00 54 54.9**	**+1.8**
KDAK	**Kodiak Island**	**48.20 41**	*e*P	**P**	**00 54 56.3**	**+2.2**
KDAK			pmax	pmax		
	comp=Z,201nm,1.1s					
KDAK	**Kodiak Island**	**48.20 41**	*e*P	**P**	**00 54 56.3**	**+2.2**
	comp=Z,201nm,1.1s					
IPM	**Ipoh**	**48.27 239**	⇓P	**P**	**00 54 54.5**	**-0.7**
IPM	**Ipoh**	**48.27 239**	*e*P	**P**	**00 54 53.4**	**-1.8**
	comp=Z,45nm,0.8s					
IPM			LR	LR		
	comp=Z,5μm,19.0s					
MYKOM	**Kota Tinggi**	**48.31 234**	⇓P	**P**	**00 54 55.6**	**+0.1**
MYKOM	**Kota Tinggi**	**48.31 234**	*e*P	**P**	**00 54 55.3**	**-0.2**
	comp=Z,33nm,1.0s					
MYKOM			LR	LR		
	comp=Z,2μm,18.0s					
PPLA	**Purkeypile**	**48.33 34**	*e*P	**P**	**00 54 58.0**	**+2.7**
	comp=Z,204nm,1.4s					
SPU	**Mount Spurr**	**48.38 37**	*e*P	**P**	**00 54 57.4**	**+1.8**
CAST	**Castle Rocks**	**48.39 34**	*e*P	**P**	**00 54 57.8**	**+2.2**
	comp=Z,213nm,1.8s					
TPRI	**Tanjung Pinang**	**48.52 233**	P	**P**	**00 54 57.1**	**-0.1**
	comp=Z,146nm,0.4s,comp=Z,13μm					
DGPR	**DIGLIPUR**	**48.66 255**	*e*P	**P**	**00 54 57.4**	**-0.8**
BOK	**Bokaro**	**48.77 272**	*e*P	**P**	**00 54 58.3**	**-0.7**
BOK			IAmb	IAmb	00 55 01.4	
	comp=Z,31nm,0.7s					
MDOK	**Medeo**	**48.86 299**	*i*P	**P**	**00 54 58.4**	**-1.3**
	comp=Z,2μm,1.1s					
MDOK			*e*S	**S**	**01 01 59.7**	**-1.9**
MDOK			LR	LR	01 15 33.8	
	comp=Z,5μm,18.9s					
KOLN	**Koldanda**	**48.89 278**	*e*Pn	**P**	**00 55 00.5**	**+0.4**
	comp=Z,112nm,0.7s					
BPAW	**Bear Paw Mtn.**	**48.90 33**	*e*P	**P**	**00 55 01.3**	**+1.8**
	comp=Z,71nm,1.5s					
BPAW			LR	LR		
	comp=Z,2μm,20.0s					
AAA	**Alma-Ata**	**48.91 299**	*i*P	**P**	**00 55 00.9**	**+1.0**
AAA			*e*S	**S**	**01 02 00.8**	**-1.2**
AAA		

BRLK	**Bradley Lake**	**48.99**	**38**	*e*P	**P**	**00 55 01.9**	**+1.6**
	comp=Z,126nm,1.1s						
MLY	**Manley**	**49.03**	**31**	*e*P	**P**	**00 55 02.7**	**+2.2**
	comp=Z,73nm,1.1s						
MLY				LR	LR		
	comp=Z,1μm,20.0s						
KUU	**Kurty**	**49.19**	**300**	*i* P	**P**	**00 55 01.0**	**-1.0**
	comp=Z,2μm,1.5s						
KUU				*e*S	**S**	**01 02 04.5**	**-1.4**
KUU				LR	LR	01 16 03.7	
KUU				LRM	MLR	01 18 03.2	
	comp=Z,4μm,15.1s						
TRF	**Thorofare Moun**	**49.20**	**34**	*e*P	**P**	**00 55 03.5**	**+1.5**
	comp=Z,37nm,1.0s						
PYUN	**Piuthan**	**49.24**	**278**	*e*Pn	**P**	**00 55 02.9**	**0.0**
	comp=Z,1μm,1.2s						
MTN	**Manton Dam**	**49.30**	**193**	P	**P**	**00 55 02.4**	**-0.6**
	baz=49,SNR=21						
MTN	**Manton Dam**	**49.30**	**193**	*e*P	**P**	**00 55 02.2**	**-0.8**
	comp=Z,138nm,1.0s						
MTN				LR	LR		
	comp=Z,2μm,20.0s						
COLD	**Coldfoot**	**49.35**	**29**	*e*P	**P**	**00 55 05.0**	**+2.1**
	comp=Z,28nm,1.0s						
RC01	**Rabbit Creek A**	**49.50**	**37**	*e*P	**P**	**00 55 05.4**	**+1.3**
	comp=Z,94nm,0.9s						
RC01				LR	LR		
	comp=Z,3μm,21.0s						
PLAI	**Plampang**	**49.53**	**211**	P	**P**	**00 55 02.6**	**-2.2**
	comp=Z,178nm,1.1s,comp=Z,2μm						
COEN	**Coen**	**49.55**	**177**	P	**P**	**00 55 05.5**	**+0.6**
	baz=50,SNR=11						
COEN	**Coen**	**49.55**	**177**	*e*P	**P**	**00 55 05.8**	**+0.8**
	comp=Z,80nm,1.0s						
COEN				LR	LR		
	comp=Z,2μm,20.0s						
BWN	**Browne**	**49.57**	**33**	*e*P	**P**	**00 55 07.6**	**+3.0**
	comp=Z,278nm,1.2s						
BWN				LR	LR		
	comp=Z,2μm,19.0s						
SEW	**Seward**	**49.69**	**38**	*e*P	**P**	**00 55 07.1**	**+1.6**
	comp=Z,177nm,1.1s						
SEW				LR	LR		
	comp=Z,3μm,22.0s						
PBA	**Port Blair**	**49.72**	**254**	*e*P	P	00 55 06.3	0.0
PMR	**Palmer**	**49.77**	**36**	*e*P	**P**	**00 55 07.2**	**+1.1**
PMR				pmax	pmax		
	comp=Z,97nm,1.0s						
PMR				MLR	MLR		
	comp=Z,2μm,22.0s						
PMR	**Palmer**	**49.77**	**36**	*e*P	**P**	**00 55 07.2**	**+1.1**
	comp=Z,96nm,1.0s						
PMR				LR	LR		
	comp=Z,2μm,22.0s						
MCK	**McKinley**	**49.80**	**33**	*e*P	**P**	**00 55 07.7**	**+1.3**
MCK				pmax	pmax		
	comp=Z,74nm,1.1s						
MCK				MLR	MLR		
	comp=Z,2μm,21.0s						
MCK	**McKinley**	**49.80**	**33**	*e*P	**P**	**00 55 07.7**	**+1.3**
	comp=Z,74nm,1.1s						
MCK				LR	LR		
	comp=Z,2μm,21.0s						
TWSI	**Taliwang, Sumb**	**49.83**	**212**	P	**P**	**00 55 05.2**	**-1.9**
	comp=Z,189nm,1.1s,comp=Z,2μm						
RND	**Reindeer**	**49.84**	**34**	*e*P	**P**	**00 55 07.8**	**+1.0**
RND				pmax	pmax		
	comp=Z,56nm,1.0s						
RND				MLR	MLR		
	comp=Z,2μm,20.0s						
RND	**Reindeer**	**49.84**	**34**	*e*P	**P**	**00 55 07.8**	**+1.0**
	comp=Z,56nm,1.0s						
RND				LR	LR		
	comp=Z,2μm,20.0s						
BMNS	**Besmoynak**	**49.85**	**299**	*i* P	**P**	**00 55 06.9**	**-0.4**
	comp=Z,13μm,0.7s						
BMNS				*e*S	**S**	**01 02 14.6**	**-0.9**
BMNS				LR	LR	01 16 25.9	
	comp=Z,6μm,16.8s						
TKM2	**Tokmak 2**	**49.95**	**299**	*e*P	**P**	**00 55 08.9**	**+0.8**
TKM2				pmax	pmax		
	comp=Z,726nm,1.6s						
TKM2				MLR	MLR		
	comp=Z,14μm,19.0s						
TKM2	**Tokmak 2**	**49.95**	**299**	*e*P	**P**	**00 55 08.9**	**+0.8**
	comp=Z,726nm,1.6s						
TKM2				LR	LR		
	comp=Z,14μm,19.0s						
SRBI	**Singaraja**	**49.99**	**214**	P	**P**	**00 55 08.3**	**0.0**
	comp=Z,233nm,0.9s,comp=Z,3μm						
MDM	**Murphy Dome**	**50.10**	**32**	PFAKE		00 55 20.0	+11
MDM				LR	LR		
	comp=Z,300nm,21.0s						
SML	**Sawmill**	**50.14**	**36**	*e*P	**P**	**00 55 10.7**	**+1.7**
SML				pmax	pmax		
	comp=Z,75nm,0.8s						
SML				MLR	MLR		
	comp=Z,2μm,21.0s						
SML	**Sawmill**	**50.14**	**36**	*e*P	**P**	**00 55 10.7**	**+1.7**
	comp=Z,75nm,0.8s						
SML				LR	LR		
	comp=Z,2μm,21.0s						
WRH	**Wood River Hil**	**50.16**	**32**	*e*P	**P**	**00 55 10.6**	**+1.5**
	comp=Z,44nm,1.0s						
WRH				LR	LR		
	comp=Z,2μm,19.0s						
ABJI	**Asem Bagus**	**50.20**	**216**	P	**P**	**00 55 10.2**	**+0.3**
	comp=Z,193nm,1.1s,comp=Z,3μm						
COLA	**College**	**50.26**	**32***c*	*i* P	**P**	**00 55 11.1**	**+1.3**
COLA				pmax	pmax		
	comp=Z,44nm,0.9s						
COLA				MLR	MLR		
	comp=Z,1μm,19.0s						
COLA	**College**	**50.26**	**32**	PFAKE		00 55 20.0	+10
COLA				LR	LR		
	comp=Z,2μm,18.0s						
CCB	**Clear Creek Bu**	**50.28**	**32**	*e*P	**P**	**00 55 11.3**	**+1.3**
	comp=Z,26nm,1.0s						
BRZS	**Berezniki**	**50.33**	**309**	*i* P	**P**	**00 55 08.8**	**-1.7**
	comp=Z,214nm,0.9s						
BRZS				*e*S	**S**	**01 02 19.4**	**-2.1**
BRZS				LR	LR	01 16 52.9	
	comp=Z,852nm,14.0s						
BWNR	**Bhubaneshwar**	**50.52**	**268**	*e*P	**P**	**00 55 11.4**	**-0.9**
DNP	**Denpasar**	**50.52**	**214**	P	**P**	**00 55 12.5**	**+0.2**
	comp=Z,501nm,1.0s						
SCM	**Sheep Creek Mo**	**50.62**	**36**	*e*P	**P**	**00 55 14.5**	**+1.8**
SCM				pmax	pmax		
	comp=Z,106nm,1.0s						
SCM				MLR	MLR		
	comp=Z,2μm,21.0s						
SCM	**Sheep Creek Mo**	**50.62**	**36**	*e*P	**P**	**00 55 14.5**	**+1.8**
	comp=Z,106nm,1.0s						
SCM				LR	LR		
	comp=Z,2μm,21.0s						
KSH	**Kashi**	**50.64**	**295**	P	**P**	**00 55 17.6**	**+4.4**
KSH				*e*pP	sP	00 55 27.8	+2.8
KSH				*e*PcP	**PcP**	**00 56 33.8**	**+3.3**
KSH				PcS	**PcS**	**01 00 30.4**	**+2.5**
KSH				S	**S**	**01 02 31.4**	**+5.0**
KSH				ScS	**ScS**	**01 05 03.3**	**+1.0**
KSH				pmax	pmax		
	comp=Z,100nm,1.2s						
KSH				pmax	pmax		
	comp=Z,1μm,5.2s						
KSH				LR	LR		
	comp=Z,7μm,19.7s						
KSH				LR	LR		
	comp=Z,4μm,15.4s						
KSH				LR	LR		
	comp=Z,9μm,19.8s						
LHMI	**Lhok Sumawe**	**50.66**	**244**	P	**P**	**00 55 14.0**	**+0.5**
	comp=Z,156nm,0.7s,comp=Z,2μm						
LHMI	**Lhok Sumawe**	**50.66**	**244**	*e*P	**P**	**00 55 14.0**	**+0.5**
	comp=Z,105nm,0.7s						
LHMI				LR	LR		
	comp=Z,3μm,19.0s						
HDA	**Harding Lake**	**50.66**	**32**	*e*P	**P**	**00 55 13.9**	**+1.1**
	comp=Z,103nm,1.2s						
HDA				LR	LR		
	comp=Z,2μm,22.0s						
FRU	**Bishkek**	**50.67**	**299**	⇑*i* P	**P**	**00 55 13.5**	**+0.2**
FRU				*e*		00 57 06.0	
FRU				*e*S	**S**	**01 02 27.0**	**+0.4**
FRU				pmax	pmax		
	comp=Z,550nm,2.0s						
FRU				smax	smax		
	comp=E,270nm,2.5s						
IL1	**Eielson Array**	**50.67**	**32**	*e*P	**P**	**00 55 12.7**	**-0.2**
ILAR	**Eielson Array**	**50.67**	**32**	P	**P**	**00 55 13.2**	**+0.2**
	comp=E,35nm,0.8s,baz=267,slow=5.7,SNR=270						
ILAR	**Eielson Array**	**50.67**	**32**	P	**P**	**00 55 13.2**	**+0.2**
ILB	**Eielson Array**	**50.67**	**32**	*e*P	**P**	**00 55 13.2**	**+0.2**
AAK	**Ala-Archa**	**50.81**	**299**	*i* P	**P**	**00 55 14.9**	**+0.4**
AAK				pmax	pmax		
	comp=Z,90nm,0.9s						
AAK	**Ala-Archa**	**50.81**	**299**	*e*P	**P**	**00 55 14.8**	**+0.2**
	comp=Z,70nm,0.8s						
AAK				LR	LR		
	comp=Z,13μm,20.0s						
JAGI	**Jajag, Banyuwa**	**50.82**	**215**	P	**P**	**00 55 14.1**	**-0.5**
	comp=Z,102nm,1.0s						
JAGI	**Jajag, Banyuwa**	**50.82**	**215**	*e*P	**P**	**00 55 11.8**	**-2.8**
	comp=Z,94nm,1.0s						
OTUK	**Ortayu**	**50.90**	**307**	P	**P**	**00 55 15.5**	**+0.5**
OTUK				pmax	pmax		
	comp=Z,280nm,0.9s						
PSI	**Prapat**	**50.92**	**240**	*e*P	**P**	**00 55 13.9**	**-1.7**
PSI				pmax	pmax		
	comp=Z,37nm,0.6s						
PSI				MLR	MLR		
	comp=Z,4μm,18.0s						
PSI	**Prapat**	**50.92**	**240**	*e*P	**P**	**00 55 13.9**	**-1.7**
	comp=Z,37nm,0.6s						
PSI				LR	LR		
	comp=Z,4μm,18.0s						
CHKZ	**Chkalovo**	**50.93**	**314**	*i* P	**P**	**00 55 15.4**	**+0.4**
CHKZ				pmax	pmax		
	comp=Z,271nm,0.7s						
GMJI	**Gumukmas**	**50.99**	**216**	P	**P**	**00 55 13.9**	**-1.9**
	comp=Z,102nm,1.0s						
BVA0	**Borovoye Array**	**51.17**	**313**	*i* P	**P**	**00 55 17.0**	**+0.1**
BVA0				pmax	pmax		
	comp=Z,208nm,1.1s						
BVAR	**Borovoye Array**	**51.17**	**313**	P	**P**	**00 55 17.4**	**+0.5**
	comp=Z,176nm,0.9s,baz=79,slow=7.7,SNR=488						
BVAR	**Borovoye Array**	**51.17**	**313**	P	**P**	**00 55 17.4**	**+0.5**
NGJI	**Ngawi**	**51.19**	**219**	P	**P**	**00 55 19.1**	**+1.7**
	comp=Z,131nm,1.0s						
BRVK	**Borovoye**	**51.23**	**313***c*	*i* P	**P**	**00 55 17.6**	**+0.3**
BRVK				pmax	pmax		
	comp=Z,391nm,1.2s						
BRVK				MLR	MLR		
	comp=Z,7μm,18.0s						
BRVK	**Borovoye**	**51.23**	**313**	*e*P	**P**	**00 55 17.1**	**-0.2**
	comp=Z,260nm,0.9s						
BRVK				LR	LR		
	comp=Z,8μm,18.0s						
KCSI	**Kotacane, Aceh**	**51.23**	**241**	P	**P**	**00 55 14.8**	**-3.0**
	comp=Z,32nm,0.5s,comp=Z,2μm						
BKNI	**Bangkinang**	**51.26**	**236**	P	**P**	**00 55 17.8**	**-0.2**
	comp=Z,264nm,1.0s,comp=Z,5μm						
BKNI	**Bangkinang**	**51.26**	**236**	*e*P	**P**	**00 55 17.6**	**-0.4**
	comp=Z,159nm,0.8s						
BKNI				LR	LR		
	comp=Z,2μm,19.0s						
FYU	**Fort Yukon**	**51.30**	**29**	*e*P	**P**	**00 55 20.1**	**+2.5**
	comp=Z,211nm,1.2s						
EKS2	**Erkin-Say**	**51.31**	**299**	*e*P	**P**	**00 55 18.6**	**+0.4**
EKS2				pmax	pmax		
	comp=Z,62nm,0.8s						
EKS2				MLR	MLR		
	comp=Z,12μm,19.0s						
EKS2	**Erkin-Say**	**51.31**	**299**	*e*P	**P**	**00 55 18.6**	**+0.4**
	comp=Z,62nm,0.8s						
EKS2				LR	LR		
	comp=Z,12μm,19.0s						
KLU	**Klutina**	**51.31**	**36**	*e*P	**P**	**00 55 19.4**	**+1.5**
	comp=Z,98nm,1.2s						
KLU				LR	LR		
	comp=Z,2μm,19.0s						
PMBI	**Palembang**	**51.34**	**229**	P	**P**	**00 55 20.4**	**+1.9**
	comp=Z,388nm,1.1s,comp=Z,20μm						
PAX	**Paxson**	**51.40**	**34**	*e*P	**P**	**00 55 20.3**	**+1.8**
PAX				pmax	pmax		
	comp=Z,54nm,1.3s						
PAX				MLR	MLR		
	comp=Z,2μm,20.0s						
PAX	**Paxson**	**51.40**	**34**	*e*P	**P**	**00 55 20.3**	**+1.8**
	comp=Z,54nm,1.3s						
PAX				LR	LR		
	comp=Z,2μm,20.0s						
DIV	**Divide**	**51.42**	**36**	*e*P	**P**	**00 55 20.8**	**+2.1**
	comp=Z,115nm,1.0s						
DIV				LR	LR		
	comp=Z,2μm,20.0s						
EYAK	**Cordova Ski Ar**	**51.49**	**37**	*e*P	**P**	**00 55 21.7**	**+2.6**
	comp=Z,99nm,1.0s						
EYAK				LR	LR		
	comp=Z,3μm,21.0s						
PWJI	**Pagerwojo**	**51.58**	**218**	P	**P**	**00 55 18.4**	**-1.9**
	comp=Z,243nm,1.0s,comp=Z,3μm						
MLSI	**Meulaboh, Aceh**	**51.70**	**243**	P	**P**	**00 55 18.9**	**-2.4**
	comp=Z,92nm,0.7s						
MNSI	**Mandailing Nat**	**51.91**	**237**	P	**P**	**00 55 21.6**	**-1.2**
	comp=Z,58nm,0.6s,comp=Z,1μm						
DOT	**Dot Lake**	**51.98**	**33**	*e*P	**P**	**00 55 23.7**	**+0.9**
	comp=Z,107nm,1.0s						
BMRM	**Bremner River**	**52.00**	**37**	*e*P	**P**	**00 55 25.2**	**+2.1**
	comp=Z,97nm,1.0s						
BMRM				LR	LR		
	comp=Z,3μm,22.0s						
ZRNK	**Zerenda**	**52.01**	**313**	*i* P	**P**	**00 55 23.8**	**+0.7**
ZRNK				pmax	pmax		
	comp=Z,353nm,0.9s						
ZRNK	**Zerenda**	**52.01**	**313**	*e*P	**P**	**00 55 23.1**	**0.0**
	comp=Z,394nm,0.9s						
ZRNK				LR	LR		
	comp=Z,6μm,18.0s						
UGM	**Wanagama**	**52.14**	**220**	P	**P**	**00 55 23.5**	**-1.0**
	comp=Z,666nm,1.2s,comp=Z,7μm						
UGM	**Wanagama**	**52.14**	**220**	*e*P	**P**	**00 55 23.2**	**-1.3**
	comp=Z,773nm,1.1s						
UGM				LR	LR		
	comp=Z,2μm,20.0s						
MENT	**Mentasta**	**52.20**	**34**	*e*P	**P**	**00 55 26.5**	**+2.1**
	comp=Z,59nm,0.9s						
MENT				LR	LR		
	comp=Z,2μm,22.0s						
MNAS	**Manas**	**52.26**	**299**	P	**P**	**00 55 26.4**	**+1.0**
MNAS				pmax	pmax		
	comp=Z,172nm,1.0s						
PPI	**Padang Panjang**	**52.27**	**235**	P	**P**	**00 55 24.6**	**-0.9**
	comp=Z,35nm,1.2s,comp=Z,974nm						
DDI	**Dehra Dun**	**52.28**	**283**	*e*P	**P**	**00 55 25.4**	**-0.1**
KNRA	**Kununurra**	**52.52**	**195**	P	**P**	**00 55 27.3**	**+0.1**
	baz=53						
SMLA	**Simla**	**52.66**	**284**	*e*P	**P**	**00 55 27.2**	**-1.0**
CHLP	**Challavanipeta**	**52.84**	**267**	*e*P	**P**	**00 55 29.8**	**0.0**
CHLP				IAmb	IAmb	00 55 31.2	
	comp=Z,128nm,1.0s						
CHLP				*e*S	**S**	**01 02 54.0**	**-2.9**
CHLP				IVMs_BB	IVMs_BB	01 19 09.9	
	comp=Z,2μm,21.6s						
CBJI	**Citeko**	**52.89**	**224**	P	**P**	**00 55 30.7**	**+0.6**
	comp=Z,428nm,1.1s,comp=Z,28μm						
DHRM	**DHARAMSHALA**	**52.90**	**286**	*e*P	**P**	**00 55 29.9**	**-0.4**
GSI	**Gunungsitoli**	**52.93**	**240**	P	**P**	**00 55 29.4**	**-1.0**
	comp=Z,261nm,1.3s,comp=Z,3μm						
GSI	**Gunungsitoli**	**52.93**	**240**	*e*P	**P**	**00 55 29.1**	**-1.3**
	comp=Z,648nm,1.6s						
GSI				LR	LR		
	comp=Z,4μm,19.0s						
BLSI	**Bandar Lampung**	**52.98**	**227**	P	**P**	**00 55 30.1**	**-0.6**
	comp=Z,405nm,0.8s						
BALM	**Baldy**	**53.08**	**36**	*e*P	**P**	**00 55 33.0**	**+1.9**
BALM				pmax	pmax		
	comp=Z,54nm,1.0s						
BALM				MLR	MLR		
	comp=Z,1μm,21.0s						
BALM	**Baldy**	**53.08**	**36**	*e*P	**P**	**00 55 33.0**	**+1.9**
	comp=Z,54nm,1.0s						
BALM				LR	LR		
	comp=Z,1μm,21.0s						
MASI	**Maura Aman, Be**	**53.09**	**232**	P	**P**	**00 55 30.6**	**-1.0**
	comp=Z,307nm,0.9s,comp=Z,7μm						
EGAK	**Eagle**	**53.12**	**32**	*e*P	**P**	**00 55 32.2**	**+1.0**
	comp=Z,39nm,0.8s						
EGAK				LR	LR		
	comp=Z,1μm,18.0s						
THN	**Thein Dam**	**53.28**	**287**	*e*P	**P**	**00 55 28.8**	**-4.0**
CISI	**Cisompet, Garu**	**53.28**	**223**	P	**P**	**00 55 32.4**	**-0.6**
	comp=Z,108nm,1.2s						
CISI	**Cisompet, Garu**	**53.28**	**223**	*e*P	**P**	**00 55 32.0**	**-1.0**
	comp=Z,100nm,1.0s						
LWLI	**Liwa**	**53.41**	**228**	P	**P**	**00 55 34.2**	**+0.1**
	comp=Z,159nm,0.8s,comp=Z,9μm						
CNJI	**Cibinong**	**53.46**	**224**	P	P	00 55 39.3	+5.0
KK31	**Karatay Array**	**53.48**	**301**	*i* P	**P**	**00 55 34.7**	**+0.5**
KK31				pmax	pmax		
	comp=Z,124nm,0.9s						
KKAR	**Karatay Array**	**53.48**	**301**	*e*P	**P**	**00 55 34.4**	**+0.2**
KKAR	**Karatay Array**	**53.48**	**301**	*e*P	**P**	**00 55 34.4**	**+0.2**
SKJI	**Sukabumi**	**53.54**	**224**	P	**P**	**00 55 36.2**	**+1.4**
	comp=Z,177nm,1.2s						
KASI	**Kota Agung**	**53.55**	**227**	P	**P**	**00 55 31.8**	**-3.1**
	comp=Z,166nm,1.1s,comp=Z,2μm						
MNAI	**Manna**	**53.58**	**230**	PFAKE		00 55 50.0	+15
MNAI				LR	LR		
	comp=Z,2μm,21.0s						
CGJI	**Cibinong**	**53.72**	**225**	P	**P**	**00 55 33.9**	**-2.2**
	comp=Z,61nm,0.9s						
MTSU	**Mount Surprise**	**53.75**	**176**	P	**P**	**00 55 36.7**	**+0.4**
	baz=54,SNR=12						
VIS	**Vishakhapatnam**	**53.84**	**266**	*e*P	**P**	**00 55 36.9**	**-0.2**
VIS				IAMs_20	IAMs_20	01 21 26.9	
	comp=Z,5μm,15.5s						
DAWY	**Dawson**	**53.98**	**32**	PFAKE		00 55 50.0	+12
DAWY				LR	LR		
	comp=Z,3μm,20.0s						
IUG	**Iuzhnay**	**54.11**	**300**	*i* P	**P**	**00 55 37.1**	**-1.9**
	comp=Z,3μm,1.0s						
IUG				*e*S	**S**	**01 03 11.1**	**-2.8**
IUG				LR	LR	01 18 53.1	
	comp=Z,2μm,16.0s						
BRLS	**Borolday**	**54.16**	**301**	*i* P	**P**	**00 55 37.7**	**-1.5**
	comp=Z,111nm,1.1s						
BRLS				*e*S	**S**	**01 03 11.1**	**-3.2**
BRLS				LR	LR	01 19 00.3	
	comp=Z,310nm,16.0s						
PPSI	**Pulau Pagai**	**54.24**	**234**	P	**P**	**00 55 39.0**	**-1.0**
	comp=Z,222nm,0.9s,comp=Z,3μm						
OPA	**Opana**	**54.47**	**88**	*e*P	**P**	**00 55 44.4**	**+2.8**
OPA				pmax	pmax		
	comp=Z,433nm,1.5s						
OPA	**Opana**	**54.47**	**88**	*e*P	**P**	**00 55 44.4**	**+2.8**
	comp=Z,433nm,1.5s						
KIP	**Kipapa**	**54.59**	**88**⇑	*i* P	**P**	**00 55 44.2**	**+1.7**
KIP				pmax	pmax		
	comp=Z,590nm,1.7s						
KIP				MLR	MLR		
	comp=Z,6μm,19.0s						
PVM	**Polavaram**	**55.47**	**267**	*e*P	**P**	**00 55 48.2**	**-0.7**
PVM				IAmb	IAmb	00 55 50.1	
	comp=Z,116nm,0.9s						
PVM				*e*S	**S**	**01 03 29.4**	**-3.0**
PVM				IVMs_BB	IVMs_BB	01 20 37.2	
	comp=Z,1μm,22.0s						
FITZ	**Fitzroy Crossi**	**55.58**	**198**	P	**P**	**00 55 49.5**	**0.0**
	baz=56						
NGP	**Nagpur**	**55.58**	**273**	*e*P	**P**	**00 55 48.0**	**-1.8**
NGP				IAmb	IAmb	00 55 49.9	
	comp=Z,185nm,1.0s						
NGP				IAMs_20	IAMs_20	01 21 24.8	
	comp=Z,5μm,17.3s						
INK	**Inuvik**	**55.60**	**27**	P	**P**	**00 55 49.9**	**+0.8**
	comp=Z,25nm,0.7s,baz=282,slow=7.0,SNR=57						
INK				LR	LR	01 22 12.1	
	comp=Z,1μm,20.4s,baz=266,slow=39						
INK	**Inuvik**	**55.60**	**27**	P	**P**	**00 55 49.9**	**+0.8**
INK				pmax	pmax		
	comp=Z,25nm,0.7s						
INK				MLR	MLR		
	comp=Z,1μm,20.4s						
INK	**Inuvik**	**55.60**	**27**	*e*P	**P**	**00 55 50.0**	**+0.8**
	comp=Z,52nm,1.1s						
WB0	**Warramunga Arr**	**55.65**	**188**	PFAKE		00 56 00.0	+10
WB0				LR	LR		
	comp=Z,3μm,22.0s						
WB9	**Warramunga Arr**	**55.67**	**188**	PFAKE		00 56 00.0	+10
WB9				LR	LR		
	comp=Z,8μm,22.0s						
WB8	**Warramunga Arr**	**55.69**	**188**	PFAKE		00 56 00.0	+10
WB8				LR	LR		
	comp=Z,3μm,22.0s						
WB6	**Warramunga Arr**	**55.73**	**188**	PFAKE		00 56 00.0	+9.4
WB6				LR	LR		
	comp=Z,2μm,22.0s						
WB5	**Warramunga Arr**	**55.76**	**188**	PFAKE		00 56 00.0	+9.2
WB5				LR	LR		
	comp=Z,4μm,22.0s						
WB4	**Warramunga Arr**	**55.78**	**188**	PFAKE		00 56 00.0	+9.0
WB4				LR	LR		
	comp=Z,2μm,21.0s						
WB3	**Warramunga Arr**	**55.80**	**188**	PFAKE		00 56 00.0	+8.9
WB3				LR	LR		
	comp=Z,4μm,22.0s						
WC2	**Warramunga Arr**	**55.80**	**188**	PFAKE		00 56 00.0	+8.9
WC2				LR	LR		
	comp=Z,4μm,21.0s						
WC1	**Warramunga Arr**	**55.81**	**188**	PFAKE		00 56 00.0	+8.9
WC1				LR	LR		
	comp=Z,3μm,22.0s						
WRAB	**Tennant Creek**	**55.81**	**188***c*	*i* P	**P**	**00 55 50.5**	**-0.7**
WRAB				pmax	pmax		
	comp=Z,377nm,1.1s						
WRAB				MLR	MLR		
	comp=Z,7μm,21.0s						
WRAB	**Tennant Creek**	**55.81**	**188**	*e*P	**P**	**00 55 50.3**	**-0.9**
	comp=Z,251nm,1.3s						
WRAB				LR	LR		
	comp=Z,3μm,21.0s						
WR0	**Warramunga Arr**	**55.82**	**187**	PFAKE		00 56 00.0	+8.8
WR0				LR	LR		
	comp=Z,3μm,22.0s						
WR8	**Warramunga Arr**	**55.82**	**187**	PFAKE		00 56 00.0	+8.8
WR8				LR	LR		
	comp=Z,4μm,22.0s						
WR9	**Warramunga Arr**	**55.82**	**187**	PFAKE		00 56 00.0	+8.8
WR9				LR	LR		
	comp=Z,3μm,21.0s						
WR7	**Warramunga Arr**	**55.82**	**187**	PFAKE		00 56 00.0	+8.7
WR7				LR	LR		
	comp=Z,4μm,22.0s						
WB2	**Warramunga Arr**	**55.82**	**188**	*e*P	**P**	**00 55 50.4**	**-0.9**
	comp=Z,190nm,1.1s						
WB2				LR	LR		
	comp=Z,3μm,20.0s						
WR1	**Warramunga Arr**	**55.82**	**188**	PFAKE		00 56 00.0	+8.7
WR1				LR	LR		
	comp=Z,4μm,22.0s						
WR5	**Warramunga Arr**	**55.82**	**188**	PFAKE		00 56 00.0	+8.7
WR5				LR	LR		
	comp=Z,4μm,22.0s						
WR6	**Warramunga Arr**	**55.82**	**188**	PFAKE		00 56 00.0	+8.7
WR6				LR	LR		
	comp=Z,4μm,22.0s						
CTAO	**Charters Tower**	**55.83**	**174**	*e*P	**P**	**00 55 51.8**	**+0.5**
CTAO				pmax	pmax		
	comp=Z,38nm,0.9s						
CTAO				MLR	MLR		
	comp=Z,3μm,22.0s						
CTAO	**Charters Tower**	**55.83**	**174**	*e*P	**P**	**00 55 51.8**	**+0.5**
	comp=Z,38nm,0.9s						
CTAO				LR	LR		
	comp=Z,3μm,22.0s						
WR3	**Warramunga Arr**	**55.83**	**188**	PFAKE		00 56 00.0	+8.7
WR3				LR	LR		
	comp=Z,3μm,22.0s						
WR4	**Warramunga Arr**	**55.83**	**188**	PFAKE		00 56 00.0	+8.7
WR4				LR	LR		
	comp=Z,4μm,21.0s						
WRA	**Warramunga Arr**	**55.83**	**188**	P	**P**	**00 55 50.5**	**-0.8**
	comp=Z,140nm,1.1s,baz=6.2,slow=7.4,SNR=138						
WRA				S	**S**	**01 03 33.7**	**-3.1**
	comp=Z,2.0nm,1.0s,baz=9.3,slow=14,SNR=6.6						
WRA				LR	LR	01 17 08.1	
	comp=Z,2μm,21.4s,baz=10.0,slow=33						
WRA	

SVE			pmax	pmax		
	comp=Z,465nm,1.0s					
SVE			MLR	MLR		
	comp=N,3μm,18.0s					
SVE			MLR	MLR		
	comp=Z,8μm,18.0s					
SVE			MLR	MLR		
	comp=E,5μm,17.0s					
BHPL	**Bhopal**	**55.89 276**	*e*P	**P**	**00 55 50.6**	**-1.4**
BHPL			IAmb	IAmb	00 55 51.8	
	comp=Z,134nm,1.3s					
QIS	**Mount Isa**	**56.09 182**	P	**P**	**00 55 52.4**	**-0.7**
	baz=56,SNR=11					
DZET	**Dzherino**	**56.11 296**	P	**P**	**00 55 53.9**	**+0.5**
DZET			pmax	pmax		
	comp=Z,164nm,0.8s					
RPR	**Rampur**	**56.53 270**	*e*P	**P**	**00 55 55.8**	**-0.7**
RPR			IAmb	IAmb	00 55 57.9	
	comp=Z,140nm,0.8s					
RPR			*e*S	**S**	**01 03 43.0**	**-3.5**
RPR			IVMs_BB	IVMs_BB	01 22 32.9	
	comp=Z,1μm,22.4s					
SKAG	**Skagway**	**56.83 37**	*e*P	**P**	**00 56 00.7**	**+2.7**
	comp=Z,69nm,1.1s					
XMIS	**Christmas Isla**	**56.89 223**	PFAKE		00 56 10.0	+11
XMIS			LR	LR		
	comp=Z,1μm,20.0s					
ARU	**Arti**	**57.07 319***c*	*i*P	**P**	**00 56 00.4**	**+0.6**
ARU					00 56 53.8	
ARU					00 58 05.3	
ARU			S	**S**	**01 03 54.1**	**+1.4**
ARU					01 05 48.2	
ARU			SS	**SS**	**01 07 40.2**	**-0.8**
ARU			pmax	pmax		
	comp=Z,528nm,1.0s					
ARU			MLR	MLR		
	comp=Z,6μm,17.0s					
ARU	**Arti**	**57.07 319**	*e*P	**P**	**00 55 59.5**	**-0.3**
	comp=Z,391nm,0.8s					
ARU			LR	LR		
	comp=Z,6μm,18.0s					
SOKR	**Solikamsk**	**57.11 323***c*	*i*P	**P**	**00 55 58.0**	**-1.9**
SOKR			S	**S**	**01 03 49.1**	**-3.8**
SOKR			SS	**SS**	**01 07 47.9**	**+6.6**
SOKR			SSS	SSS	01 10 04.5	
SOKR			pmax	pmax		
	comp=Z,230nm,1.5s					
SOKR			MLR	MLR		
	comp=Z,9μm,21.0s					
SRSP	**Sriramsagar**	**57.27 271**	*e*P	**P**	**00 56 00.5**	**-1.3**
SRSP			IAmb	IAmb	00 56 03.0	
	comp=Z,313nm,1.1s					
SRSP			*e*S	**S**	**01 03 53.3**	**-3.0**
SRSP			IVMs_BB	IVMs_BB	01 22 45.5	
	comp=Z,1μm,18.2s					
MLOA	**Mauna Loa Obse**	**57.51 88**	*e*P	**P**	**00 56 01.6**	**-2.4**
MLOA			*e*pP	**sP**	**00 56 13.7**	**-2.1**
ADKI	**Addanki**	**57.56 267**	*e*P	**P**	**00 56 03.7**	**-0.1**
ADKI			IAmb	IAmb	00 56 05.2	
	comp=Z,95nm,1.0s					
ADKI			*e*S	**S**	**01 03 56.9**	**-3.2**
ADKI			IVMs_BB	IVMs_BB	01 21 40.2	
	comp=Z,2μm,23.9s					
KBL	**Kabul**	**57.58 292**	*e*P	**P**	**00 56 03.9**	**-0.1**
KBL			pmax	pmax		
	comp=Z,45nm,0.7s					
KBL			MLR	MLR		
	comp=Z,3μm,22.0s					
KBL	**Kabul**	**57.58 292**	*e*P	**P**	**00 56 03.9**	**-0.1**
	comp=Z,45nm,0.7s					
KBL			LR	LR		
	comp=Z,3μm,22.0s					
NJS	**Nagarjunasagar**	**57.72 268**	*e*P	**P**	**00 56 04.1**	**-0.9**
NJS			IAmb	IAmb	00 56 06.2	
	comp=Z,97nm,0.9s					
NJS			*e*S	**S**	**01 03 59.2**	**-3.1**
NJS			IVMs_BB	IVMs_BB	01 25 18.8	
	comp=Z,985nm,17.4s					
HYB	**Hyderabad**	**57.88 269**	*i* P	**P**	**00 56 07.0**	**+0.9**
	comp=Z,150nm,1.0s					
HYB			*e*S	**S**	**01 04 04.0**	**-0.4**
HYB	**Hyderabad**	**57.88 269**	*e*P	**P**	**00 56 04.6**	**-1.5**
HYBB	**Hyderabad (bro**	**57.88 269**	*e*P	**P**	**00 56 05.2**	**-0.9**
HYBB			IAmb	IAmb	00 56 07.2	
	comp=Z,152nm,0.9s					
HYBB			*e*S	**S**	**01 04 02.8**	**-1.6**
HYBB			IVMs_BB	IVMs_BB	01 22 41.7	
	comp=Z,2μm,21.4s					
SRLM	**Srisailam**	**58.30 267**	*e*P	**P**	**00 56 07.6**	**-1.5**
SRLM			IAmb	IAmb	00 56 10.1	
	comp=Z,133nm,1.1s					
SRLM			*e*S	**S**	**01 04 07.0**	**-2.8**
SRLM			IVMs_BB	IVMs_BB	01 20 09.4	
	comp=Z,964nm,27.6s					
KNTN	**Kanton**	**58.46 121**	*e*P	**P**	**00 56 14.2**	**+4.2**
	comp=Z,227nm,1.3s					
KNTN			LR	LR		
	comp=Z,5μm,21.0s					
AB31	**Akbulak array**	**58.50 311**	*i* P	**P**	**00 56 10.1**	**+0.2**
AB31			pmax	pmax		
	comp=Z,62nm,0.7s					
ABKAR	**Akbulak array**	**58.50 311**	*e*P	**P**	**00 56 09.8**	**-0.1**
RCLA	**Racherla**	**58.59 267**	*e*P	**P**	**00 56 09.9**	**-1.1**
RCLA			IAmb	IAmb	00 56 12.4	
	comp=Z,148nm,0.9s					
RCLA			*e*S	**S**	**01 04 11.8**	**-1.8**
RCLA			IVMs_BB	IVMs_BB	01 22 31.9	
	comp=Z,1μm,25.1s					
MDRS	**Chennai**	**58.85 264**	*e*P	**P**	**00 56 12.6**	**-0.3**
MDRS			IAmb	IAmb	00 56 14.4	
	comp=Z,140nm,1.0s					
SKHT	**Srikalahasti**	**58.91 265**	*e*P	**P**	**00 56 12.7**	**-0.6**
SKHT			IAmb	IAmb	00 56 14.8	
	comp=Z,199nm,0.8s					
SKHT			*e*S	**S**	**01 04 13.9**	**-3.9**
SKHT			IVMs_BB	IVMs_BB	01 22 52.4	
	comp=Z,1μm,24.7s					
KLRI	**Killari**	**59.13 271**	*e*P	**P**	**00 56 13.7**	**-1.1**
KLRI			IAmb	IAmb	00 56 15.1	
	comp=Z,191nm,0.8s					
KLRI			*e*S	**S**	**01 04 18.3**	**-2.4**
KLRI			IVMs_BB	IVMs_BB	01 23 59.9	
	comp=Z,2μm,23.4s					
CRAG	**Craig**	**59.16 41**	PFAKE		00 56 30.0	+16
CRAG			LR	LR		
	comp=Z,2μm,20.0s					
AKTO	**Aktyubinsk**	**59.27 312**	P	**P**	**00 56 14.8**	**-0.5**
AKTO			pmax	pmax		
	comp=Z,78nm,1.1s					
AS01	**Alice Springs**	**59.55 188**	*e*P	**P**	**00 56 15.6**	**-1.8**
AS01		⇑*e*			01 25 54.2	
AS31	**Alice Springs**	**59.55 188**	*e*P	**P**	**00 56 17.2**	**-0.3**
	comp=Z,13nm,0.6s					
AS31		⇑*e*			01 25 56.6	
AS31			LR	LR		
	comp=Z,100nm,22.0s					
ASAR	**Alice Springs**	**59.55 188**	P	**P**	**00 56 16.9**	**-0.6**
	comp=Z,31nm,1.0s,baz=18,slow=8.2,SNR=106					
ASAR			S	**S**	**01 04 29.8**	**+4.2**
	comp=Z,1.1nm,0.9s,baz=17,slow=18,SNR=5.1					
ASAR			LR	LR	01 19 13.3	
	comp=Z,2μm,21.6s,baz=10.0,slow=33					
ASAR			PKP2bc		01 25 59.0	
	comp=Z,4.1nm,0.9s,baz=170,slow=2.5,SNR=13					
ASAR	**Alice Springs**	**59.55 188**	P	**P**	**00 56 16.9**	**-0.6**
ASAR			S	**S**	**01 04 29.8**	**+4.2**
DLBC	**Dease Lake**	**59.76 37**	*e*P	**P**	**00 56 20.9**	**+2.3**
	comp=Z,62nm,1.1s					
MBWA	**Marble Bar**	**60.16 203**	P	**P**	**00 56 21.3**	**-0.3**
	SNR=13					
MBWA	**Marble Bar**	**60.16 203**	P	**P**	**00 56 21.3**	**-0.3**
	SNR=13					
MBWA	**Marble Bar**	**60.16 203**	PFAKE		00 56 30.0	+8.4
MBWA			LR	LR		
	comp=Z,3μm,20.0s					
POO	**Poona**	**61.12 273**	*e*P	**P**	**00 56 28.6**	**+0.1**
HOPEN	**Hopen**	**61.14 346**	*e*P	**P**	**00 56 28.7**	**+1.0**
HOPEN			*e*		00 59 03.2	
HOPEN			*e*S	**S**	**01 04 45.4**	**+0.6**
HOPEN			IVMs_BB	IVMs_BB	01 26 21.8	
	comp=Z,2μm,15.9s					
EIDS	**Eidsvold**	**61.60 170**	P	**P**	**00 56 32.2**	**+0.9**
	baz=62,SNR=4.6					
EIDS	**Eidsvold**	**61.60 170**	PFAKE		00 56 40.0	+8.7
EIDS			LR	LR		
	comp=Z,2μm,22.0s					
SPA0	**Spitsbergen Ar**	**61.65 349**	*e*P	**P**	**00 56 31.8**	**+0.6**
SPA0			*e*S	**S**	**01 04 51.3**	**0.0**
SPA0	**Spitsbergen Ar**	**61.65 349**	*e*P	**P**	**00 56 32.4**	**+1.3**
WRKA	**Warakurna**	**61.72 193**	P	**P**	**00 56 31.5**	**-0.8**
	baz=62,SNR=91					
BOM	**Bombay**	**61.78 274**	*i* x	P	00 56 27.0	-5.9
BOM			AMb	AMB	00 56 38.0	
	comp=Z,96nm,9.4s					
BOM			*e*x	x	01 04 56.2	
KBS	**Kingsbay**	**61.80 350**	*e*P	**P**	**00 56 33.1**	**+1.0**
KBS			IAmb	IAmb	00 56 34.0	
	comp=Z,118nm,0.8s					
KBS			*e*S	**S**	**01 04 56.4**	**+3.3**
KBS	**Kingsbay**	**61.80 350**	*e*P	**P**	**00 56 33.6**	**+1.5**
KBS			pmax	pmax		
	comp=Z,118nm,0.8s					
KBS			MLR	MLR		
	comp=Z,2μm,20.0s					
KBS	**Kingsbay**	**61.80 350**	*e*P	**P**	**00 56 33.6**	**+1.5**
	comp=Z,118nm,0.8s					
KBS			LR	LR		
	comp=Z,2μm,20.0s					
PALK	**Pallekele**	**61.82 258**	*i* P	**P**	**00 56 33.6**	**+0.3**
	SNR=23					
PALK	**Pallekele**	**61.82 258**	*e*P	**P**	**00 56 33.9**	**+0.7**
PALK			pmax	pmax		
	comp=Z,118nm,0.8s					
PALK			MLR	MLR		
	comp=Z,3μm,20.0s					
PALK	**Pallekele**	**61.82 258**	*e*P	**P**	**00 56 33.9**	**+0.7**
	comp=Z,118nm,0.8s					
PALK			LR	LR		
	comp=Z,3μm,20.0s					
BHJ	**Bhuj**	**62.14 280**	*e*P	**P**	**00 56 33.2**	**-2.0**
RMQ	**Roma**	**62.40 172**	P	**P**	**00 56 37.9**	**+1.1**
	baz=62,SNR=15					
HSPB	**Hornsund (broa**	**62.57 348**	*e*P	**P**	**00 56 38.7**	**+1.5**
HSPB			*e*S	**S**	**01 05 00.7**	**-2.1**
HSPB			IVMs_BB	IVMs_BB	01 26 25.5	
	comp=Z,1μm,18.5s					
HSPB	**Hornsund (broa**	**62.57 348**	*e*P	**P**	**00 56 37.7**	**+0.5**
HSPB			*e*S	**S**	**01 05 03.4**	**+0.6**
HSPB			*e**SS	**sS**	**01 05 22.3**	**+5.3**
HSPB			MLR	MLR		
	comp=Z,3μm,19.3s					
GOA	**Goa**	**62.74 270**	*e*P	**P**	**00 56 39.6**	**+0.3**
LVZ	**Lovozero**	**63.09 336***c*	*i*P	**P**	**00 56 41.3**	**+0.4**
LVZ			pmax	pmax		
	comp=Z,87nm,1.0s					
LVZ			MLR	MLR		
	comp=Z,8μm,18.0s					
LVZ	**Lovozero**	**63.09 336**	*e*P	**P**	**00 56 41.1**	**+0.1**
	comp=Z,91nm,1.1s					
LVZ			LR	LR		
	comp=Z,9μm,19.0s					
COCO	**West Island**	**63.43 230**	*e*P	**P**	**00 56 44.4**	**+0.6**
COCO			pmax	pmax		
	comp=Z,301nm,1.0s					
COCO			MLR	MLR		
	comp=Z,1μm,18.0s					
COCO	**West Island**	**63.43 230**	*e*P	**P**	**00 56 44.4**	**+0.6**
	comp=Z,301nm,1.0s					
COCO			LR	LR		
	comp=Z,1μm,18.0s					
GIRL	**Giralia**	**63.45 208**	P	**P**	**00 56 44.5**	**+0.8**
	baz=64,SNR=11					
BJO	**Bjornoya**	**63.52 345**	*e*P	**P**	**00 56 43.8**	**+0.2**
BJO			IAmb	IAmb	00 56 45.7	
	comp=Z,100nm,1.0s					
BJO		⇑*e*			00 58 39.3	
TMCR	**Tamitsa**	**63.66 332**	*e*P	**P**	**00 56 45.6**	**+0.9**
TMCR			pmax	pmax		
	comp=Z,273nm,1.0s					
APA	**Apatity**	**63.67 336**⇓	*i*P	**P**	**00 56 44.6**	**-0.1**
APA			*i* S	**S**	**01 05 15.0**	**-1.8**
APA			pmax	pmax		
	comp=Z,13nm,1.0s					
MSVF	**Nonsavu**	**63.76 140**	*e*P	**P**	**00 56 47.2**	**+1.2**
MSVF			pmax	pmax		
	comp=Z,68nm,1.2s					
MSVF	**Nonsavu**	**63.76 140**	*e*P	**P**	**00 56 47.2**	**+1.2**
	comp=Z,68nm,1.2s					
RES	**Resolute Bay**	**63.84 14**	*e*P	**P**	**00 56 46.6**	**+0.9**
RES			pmax	pmax		
	comp=Z,96nm,0.9s					
RES			MLR	MLR		
	comp=Z,1μm,19.0s					
RES	**Resolute Bay**	**63.84 14**	*e*P	**P**	**00 56 46.6**	**+0.9**
	comp=Z,96nm,0.9s					
RES			LR	LR		
	comp=Z,1μm,19.0s					
TRD	**Trivandrum**	**64.09 262**	*e*P	**P**	**00 56 48.2**	**0.0**
GEYT	**Alibeck**	**64.16 299**	P	**P**	**00 56 49.3**	**+0.8**
	comp=Z,48nm,1.0s,baz=49,slow=2.9,SNR=108					
GEYT			LR	LR	01 26 45.9	
	comp=Z,4μm,18.1s,baz=60,slow=38					
KEV	**Kevo**	**64.47 339**	PFAKE		00 57 00.0	+10
KEV			LR	LR		
	comp=Z,5μm,19.0s					
KLMR	**Klimovskoe**	**64.62 328***c*	*i*P	**P**	**00 56 51.0**	**0.0**
KLMR			*e*		00 59 12.5	
KLMR			pmax	pmax		
	comp=Z,151nm,0.9s					
HAMF	**Hammerfest**	**64.86 341**	*e*P	**P**	**00 56 53.1**	**+0.7**
HAMF			IVMs_BB	IVMs_BB	01 31 06.1	
	comp=Z,2μm,14.7s					
YKW3	**Yellowknife Ar**	**64.96 30**	*e*P	**P**	**00 56 53.5**	**+0.2**
	comp=Z,38nm,1.0s					
YKA	**Yellowknife Ar**	**65.00 30**	P	**P**	**00 56 53.7**	**+0.3**
	comp=Z,15nm,0.7s,baz=296,slow=6.5,SNR=130					
YKA			PKPPKP	P'P'df	01 25 33.1	-10
	comp=Z,3.4nm,1.1s,baz=100,slow=2.7,SNR=4.6					
YKA	**Yellowknife Ar**	**65.00 30**	P	**P**	**00 56 53.8**	**+0.3**
YKB5	**Yellowknife Ar**	**65.00 30**	*e*P	**P**	**00 56 52.9**	**-0.6**
ARA0	**ARCESS Array S**	**65.02 340**	*e*P	**P**	**00 56 54.0**	**+0.4**
ARCES	**ARCESS Array B**	**65.02 340**	P	**P**	**00 56 54.1**	**+0.5**
	comp=Z,46nm,0.9s,baz=57,slow=8.8,SNR=54					
ARCES			LR	LR	01 28 39.5	
	comp=Z,3μm,19.9s,baz=44,slow=39					
ARCES	**ARCESS Array B**	**65.02 340**	P	**P**	**00 56 54.1**	**+0.5**
ARE0	**ARCESS Array S**	**65.02 340**	*e*P	**P**	**00 56 54.1**	**+0.5**
ARE0			*e*S	**S**	**01 05 33.5**	**-0.1**
ARE0			IVMs_BB	IVMs_BB	01 29 26.4	
	comp=Z,2μm,12.0s					
ARE0	**ARCESS Array S**	**65.02 340**	*e*P	**P**	**00 56 54.4**	**+0.8**
	comp=Z,68nm,1.0s					
ARE0			LR	LR		
	comp=Z,4μm,18.0s					
XMAS	**Kiritimati**	**65.92 106**	PFAKE		00 57 10.0	+10
XMAS			LR	LR		
	comp=Z,4μm,21.0s					
KTK1	**Kautokeino**	**65.98 340**	*e*P	**P**	**00 57 00.1**	**+0.3**
ARMA	**Armidale**	**66.64 170**	P	**P**	**00 57 05.5**	**+1.0**
	baz=67,SNR=6.5					
ARMA	**Armidale**	**66.64 170**	*e*P	**P**	**00 57 05.6**	**+1.1**
	comp=Z,44nm,1.0s					
ARMA			LR	LR		
	comp=Z,2μm,20.0s					
TRO	**Tromso**	**66.76 341**	*e*P	**P**	**00 57 05.2**	**+0.5**
TRO			IVMs_BB	IVMs_BB	01 30 53.0	
	comp=Z,3μm,16.6s					
DAG	**Danmarks Havn**	**66.95 355**⇑	*i*P	**P**	**00 57 06.3**	**+0.5**
	comp=Z,76nm,1.1s					
DAG	**Danmarks Havn**	**66.95 355**⇑	*i*P	**P**	**00 57 06.3**	**+0.5**
DAG			pmax	pmax		
	comp=Z,96nm,1.1s					
CMSA	**Cobar Meteorol**	**67.15 176**	P	**P**	**00 57 08.2**	**+0.6**
	baz=67,SNR=25					
OBC	**Olympics--Boni**	**67.32 46**	P	**P**	**00 57 11.0**	**+2.3**
STKA	**Stephens Creek**	**67.35 179**	P	**P**	**00 57 08.7**	**-0.1**
	comp=Z,24nm,0.8s,baz=346,slow=7.6,SNR=31					
STKA			LR	LR	01 26 10.5	
	comp=Z,2μm,21.7s,baz=356,slow=36					
STKA	**Stephens Creek**	**67.35 179**	P	**P**	**00 57 08.9**	**+0.1**
	baz=68,SNR=26					
STKA	**Stephens Creek**	**67.35 179**	*e*P	**P**	**00 57 08.7**	**-0.1**
STKA			pmax	pmax		
	comp=Z,8.0nm,1.0s					
STKA	**Stephens Creek**	**67.35 179**	*e*P	**P**	**00 57 08.7**	**-0.1**
	comp=Z,8.0nm,1.0s					
PGC	**Sidney**	**67.39 46**	*e*P	**P**	**00 57 10.6**	**+1.6**
	comp=Z,96nm,1.2s					
NLWA	**Neilton Lookou**	**67.75 47**	*e*P	**P**	**00 57 14.0**	**+2.5**
	comp=Z,205nm,1.1s					
A04D	**Lummi Island**	**67.79 45**	P	**P**	**00 57 12.8**	**+1.3**
	baz=299					
MOS	**Moscow**	**68.04 324**	*e*P	**P**	**00 57 13.0**	**0.0**
MOS			*e*		00 57 39.8	
MOS			*e*		00 59 41.6	
MOS			*e*S	**S**	**01 06 07.7**	**-2.8**
MOS			pmax	pmax		
	comp=Z,600nm,1.7s					
MOS			pmax	pmax		
	comp=Z,279nm,1.2s					
MOS			pmax	pmax		
	comp=N,105nm,1.0s					
MOS			pmax	pmax		
	comp=E,89nm,1.0s					
MOS			MLR	MLR		
	comp=E,4μm,16.0s					
MOS			MLR	MLR		
	comp=Z,6μm,16.0s					
VRH	**Novokhopyorsk**	**68.28 318**	*e*P	**P**	**00 57 14.5**	**-0.1**
VRH			*e*		00 59 42.6	
VRH			*e*S	**S**	**01 06 07.9**	**-5.5**
VRH			pmax	pmax		
	comp=Z,160nm,0.9s					
VRH			smax	smax		
	comp=N,350nm,2.9s					
VRH			MLR	MLR		
	comp=Z,6μm,21.0s					
E03A	**Lebam**	**68.35 48**	*e*P	**P**	**00 57 17.9**	**+2.8**
	comp=Z,144nm,1.0s					
B05A	**Bryant**	**68.36 46**	P	**P**	**00 57 16.7**	**+1.5**
	baz=300					
BBOO	**Buckleboo**	**68.44 185**	P	**P**	**00 57 15.4**	**-0.2**
	baz=69,SNR=17					
BBOO	**Buckleboo**	**68.44 185**	*e*P	**P**	**00 57 15.6**	**-0.1**
	comp=Z,69nm,1.1s					
BBOO			LR	LR		
	comp=Z,2μm,21.0s					
JCW	**Jim Creek**	**68.50 46**	P	**P**	**00 57 17.9**	**+1.8**
B06A	**Marblemount**	**68.59 45**	*e*P	**P**	**00 57 18.2**	**+1.7**
	comp=Z,117nm,1.2s					
MORW	**Morawa**	**68.71 203**	P	**P**	**00 57 17.5**	**0.0**
	baz=69,SNR=14					
OBN	**Obninsk**	**68.89 323***c*	*i*P	**P**	**00 57 18.4**	**+0.1**
OBN			*e*		00 57 42.7	
OBN			*e*		00 59 47.7	
OBN			*e*PPP	PPP	01 01 33.5	
OBN			pmax	pmax		
	comp=Z,226nm,1.2s					
OBN			MLR	MLR		
	comp=Z,5μm,22.0s					
OBN	**Obninsk**	**68.89 323**	*e*P	**P**	**00 57 18.8**	**+0.5**
	comp=Z,188nm,1.1s					
OBN			LR	LR		
	comp=Z,5μm,19.0s					
F04D	**Rainier, OR**	**68.91 48**	P	**P**	**00 57 20.2**	**+1.5**
	baz=300					
HTT	**Hallett**	**68.92 182**	P	**P**	**00 57 19.2**	**+0.5**
	baz=69,SNR=6.4					
D05A	**Enumclaw**	**68.97 46**	*e*P	**P**	**00 57 21.5**	**+2.5**
	comp=Z,139nm,1.2s					
GPW	**Glacier Peak**	**68.99 45**	P	**P**	**00 57 21.1**	**+1.6**
LPSR	**Galich'ya Gora**	**69.04 320**	*e*P	**P**	**00 57 19.5**	**+0.2**
LPSR			*e*		00 59 49.8	
LPSR			*e*S	**S**	**01 06 18.2**	**-4.2**
LPSR			pmax	pmax		
	comp=Z,210nm,1.3s					
LPSR			smax	smax		
	comp=N,340nm,4.7s					
LPSR			MLR	MLR		
	comp=Z,13μm,25.0s					
PUL	**Pulkovo**	**69.08 330***d*	*i*P	**P**	**00 57 20.4**	**+1.0**
PUL			pmax	pmax		
	comp=Z,206nm,1.2s					
PUL			MLR	MLR		
	comp=Z,5μm,19.0s					
G03D	**McMinnville, O**	**69.19 49**	P	**P**	**00 57 21.6**	**+1.1**
	baz=300					
KULLO	**Kullorsuaq**	**69.21 5**⇑	*i*P	**P**	**00 57 20.4**	**+0.4**
	comp=Z,128nm,1.2s					
KULLO	**Kullorsuaq**	**69.21 5**⇑	*i*P	**P**	**00 57 20.4**	**+0.4**
KULLO			pmax	pmax		
	comp=Z,130nm,1.2s					
LOF	**Lofoten**	**69.21 341**	*e*P	**P**	**00 57 20.7**	**+0.6**
KMBL	**Kambalda**	**69.22 197**	P	**P**	**00 57 20.4**	**-0.1**
	baz=69,SNR=6.9					
C06D	**Leavenworth**	**69.23 45**	P	**P**	**00 57 22.0**	**+1.3**
	baz=301					
TDL	**Tradedollar La**	**69.25 47**	P	**P**	**00 57 23.0**	**+2.0**
LON	**Longmire**	**69.29 47**	*e*P	**P**	**00 57 22.6**	**+1.5**
LON			pmax	pmax		
	comp=Z,31nm,1.1s					
LON	**Longmire**	**69.29 47**	*e*P	**P**	**00 57 22.6**	**+1.5**
	comp=Z,31nm,1.1s					
MGCD	**Mangrove Creek**	**69.32 171**	P	**P**	**00 57 21.8**	**+0.7**
	baz=69,SNR=7.0					
F04A	**Amboy**	**69.34 48**	*e*P	**P**	**00 57 23.2**	**+1.9**
	comp=Z,134nm,1.1s					
COR	**Corvallis**	**69.48 49**	*e*P	**P**	**00 57 25.3**	**+3.1**
COR			pmax	pmax		
	comp=Z,185nm,1.1s					
COR	**Corvallis**	**69.48 49**	*e*P	**P**	**00 57 25.3**	**+3.1**
	comp=Z,185nm,1.1s					
VSR	**Storozhevoye**	**69.65 319**	*e*P	**P**	**00 57 23.4**	**+0.3**
VSR			*e*		00 59 55.2	
VSR			*e*S	**S**	**01 06 25.6**	**-4.0**
VSR			pmax	pmax		
	comp=Z,160nm,0.9s					
VSR			smax	smax		
	comp=E,330nm,3.5s					
VSR			MLR	MLR		
	comp=Z,6μm,20.0s					
FIA1	**FINESS Array S**	**69.74 332**	*e*P	**P**	**00 57 24.1**	**+0.5**
FINES	**FINESS Array B**	**69.75 332**	P	**P**	**00 57 23.9**	**+0.4**
	comp=Z,89nm,0.8s,baz=60,slow=7.5,SNR=169					
FINES			PP	**PP**	**00 59 56.2**	**-1.1**
	comp=Z,19nm,1.0s,baz=70,slow=11,SNR=5.1					
FINES			LR	LR	01 30 12.9	
	comp=Z,5μm,18.4s,baz=36,slow=38					
FINES	**FINESS Array B**	**69.75 332**	P	**P**	**00 57 23.9**	**+0.4**
FINES					00 59 56.2	
WTV	**Waterville**	**69.89 45**	P	**P**	**00 57 26.0**	**+1.2**
B08A	**Colville Reser**	**69.90 44**	*e*P	**P**	**00 57 26.2**	**+1.4**
	comp=Z,103nm,1.2s					
B08A			LR	LR		
	comp=Z,900nm,20.0s					
I03D	**Drain, OR**	**69.91 50**	P	**P**	**00 57 26.6**	**+1.8**
	baz=301,SNR=5.8					
BLDU	**Ballidu**	**69.94 202**	P	**P**	**00 57 25.0**	**0.0**
	baz=70,SNR=9.8					
EBG	**Ellensburg**	**69.94 46**	P	**P**	**00 57 27.0**	**+1.9**
YNG	**Young**	**70.10 174**	P	**P**	**00 57 26.4**	**+0.4**
	baz=70,SNR=7.3					
H04A	**Detroit Lake**	**70.12 49**	*e*P	**P**	**00 57 27.6**	**+1.4**
	comp=Z,134nm,1.1s					
G05D	**Wamic, OR**	**70.36 48**	P	**P**	**00 57 28.5**	**+0.8**
	baz=301					
I04A	**Tendick Farm,**	**70.44 50**	P	**P**	**00 57 29.2**	**+1.0**
	baz=301,SNR=6.3					
KONS	**Konsvik**	**70.52 340**	*e*P	**P**	**00 57 28.9**	**+0.7**
L02D	**Cave Junction,**	**70.53 52**	P	**P**	**00 57 29.9**	**+1.2**
	baz=301					
KLBR	**Kellerberrin**	**70.54 201**	P	**P**	**00 57 28.8**	**+0.2**
	baz=71,SNR=5.0					
GOF	**Gofitskoye**	**70.68 312**⇑	*e*P	**P**	**00 57 30.1**	**+0.5**
GOF			pmax	pmax		
	comp=Z,255nm,1.4s					
G06A	**Carlson Farm,**	**70.78 48**	*e*P	**P**	**00 57 32.6**	**+2.4**
	comp=Z,80nm,1.1s					
C09A	**Chrisman Ranch**	**70.80 45**	*e*P	**P**	**00 57 31.8**	**+1.5**
	comp=Z,108nm,1.1s					
C09A			LR	LR		
	comp=Z,800nm,20.0s					
I05D	**Terrebonne, OR**	**70.82 49**	P	**P**	**00 57 31.9**	**+1.4**
	baz=302					
HAWA	**Hanford**	**70.82 46**	*e*P	**P**	**00 57 32.7**	**+2.3**
	comp=Z,72nm,1.1s					
D08A	**Wollman Farm,**	**70.83 45**	*e*P	**P**	**00 57 31.9**	**+1.4**
	comp=Z,84nm,1.1s					
VTHM	**Trough**	**70.85 48**	P	**P**	**00 57 32.4**	**+1.8**
HEL	**Helsinki**	**70.97 332**	PFAKE		00 57 40.0	+9.0
HEL			LR	LR		
	comp=Z,1μm,22.0s					
KHMM	**Horse Mountain**	**71.11 53**	*e*P	P	00 57 38.2	+5.7
	comp=Z,125nm,1.1s					

GUDG	Gudauri	71.14	309	P	P	00 57 34.3 +1.5
NCK	Nalchik	71.16	310	⇓iP	P	00 57 33.5 +1.0
NCK				pmax	pmax	
	comp=Z,90nm,1.0s					
NCK				MLR	MLR	
	comp=Z,5μm,17.0s					
CAN	Canberra	71.17	173	eP	P	00 57 33.0 +0.5
CAN				pmax	pmax	
	comp=Z,134nm,1.7s					
CAN				MLR	MLR	
	comp=Z,3μm,22.0s					
CAN	Canberra	71.17	173	eP	P	00 57 33.0 +0.5
	comp=Z,134nm,1.7s					
CAN				LR	LR	
	comp=Z,3μm,22.0s					
DUS	Dusheti	71.20	309	P	P	00 57 34.9 +1.9
DUS	Dusheti	71.20	309	P	P	00 57 34.8 +1.9
NEW	Newport	71.20	44	P	P	00 57 33.0 +0.3
	baz=303					
NEW	Newport	71.20	44	PFAKE		00 57 50.0 +17
NEW				LR	LR	
	comp=Z,800nm,21.0s					
BANOM	Banah	71.31	289	iP	P	00 57 34.7 +0.9
	SNR=8.1					
BANOM	Banah	71.31	289	P	P	00 57 34.6 +0.8
	SNR=15					
BANOM	Banah	71.31	289	P	P	00 57 34.6 +0.8
	SNR=15					
BANOM				S	S	01 06 50.7 +0.7
YBH	Yreka Blue Hor	71.32	52	eP	P	00 57 36.0 +2.3
YBH				pmax	pmax	
	comp=Z,73nm,1.1s					
YBH	Yreka Blue Hor	71.32	52	eP	P	00 57 36.0 +2.3
	comp=Z,73nm,1.1s					
ZEI	Tsey	71.34	310	eP	P	00 57 32.8 -1.1
ZEI				eS	S	01 06 51.8 +1.7
ZEI				pmax	pmax	
	comp=Z,136nm,0.8s					
ZEI				pmax	pmax	
	comp=N,67nm,0.8s					
ZEI				pmax	pmax	
	comp=E,123nm,0.9s					
ZEI				MLR	MLR	
	comp=Z,9μm,15.0s					
ZEI				MLR	MLR	
	comp=N,1μm,13.0s					
ZEI				MLR	MLR	
	comp=E,872nm,12.0s					
VSU	Vasula	71.34	330c	iP	P	00 57 33.9 +0.6
VSU				pmax	pmax	
	comp=Z,574nm,1.2s					
VSU				MLR	MLR	
	comp=Z,13μm,20.0s					
TBLG	Delisi	71.36	308	P	P	00 57 34.5 +0.7
TBLG	Delisi	71.36	308	P	P	00 57 34.5 +0.7
M02C	Callahan	71.41	52	P	P	00 57 34.8 +0.6
	baz=302,SNR=7.7					
J05D	Fort Rock, OR	71.43	50	P	P	00 57 35.4 +1.0
	baz=302,SNR=7.1					
SMDO	Samad	71.45	285	P	P	00 57 35.1 +0.4
	SNR=12					
SMDO	Samad	71.45	285	P	P	00 57 35.1 +0.4
	SNR=12					
K04D	Chiloquin, OR	71.46	51	P	P	00 57 35.1 +0.6
	baz=302					
KBZ	Khabaz	71.47	311	P	P	00 57 35.2 +0.9
	comp=Z,88nm,1.0s,baz=63,slow=4.4,SNR=146					
KBZ				LR	LR	01 32 46.0
	comp=Z,3μm,18.3s,baz=36,slow=39					
KBZ	Khabaz	71.47	311	P	P	00 57 35.2 +0.9
KVAR	Kislovodsk Arr	71.47	311	P	P	00 57 35.5 +0.9
	comp=Z,140nm,1.0s,baz=251,slow=1.8,SNR=92					
KIV	Kislovodsk	71.47	311	iP	P	00 57 35.3 +0.8
	SNR=36					
KIV	Kislovodsk	71.47	311c	iP	P	00 57 34.6 +0.1
KIV				e		00 57 52.2
KIV				e		01 00 15.3
KIV				ePPP	PPP	01 01 56.3
KIV				iS	SKiKP	01 07 15.1 +3.0
KIV				pmax	pmax	
	comp=Z,294nm,1.0s					
KIV	Kislovodsk	71.47	311	eP	P	00 57 34.4 -0.1
	comp=Z,194nm,0.8s					
KIV				LR	LR	
	comp=Z,5μm,18.0s					
E09A	Wood Farm, Sta	71.57	46	eP	P	00 57 37.2 +2.3
	comp=Z,140nm,1.1s					
E09A				LR	LR	
	comp=Z,1μm,22.0s					
N02D	Trinity Center	71.72	52	P	P	00 57 37.3 +1.2
	baz=302,SNR=6.9					
ONI	Oni	71.72	310	P	P	00 57 37.2 +1.2
ONI	Oni	71.72	310	P	P	00 57 37.2 +1.2
G08A	Pilot Rock	71.75	47	eP	P	00 57 37.9 +1.7
	comp=Z,49nm,1.4s					
NEY	Neytrino	71.83	310	⇓iP	P	00 57 38.0 +1.2
NEY				pmax	pmax	
	comp=Z,10.0nm,1.0s					
NEY				MLR	MLR	
	comp=Z,3μm,18.0s					
M04C	Macdoel	71.85	51	P	P	00 57 37.9 +1.0
	baz=302,SNR=6.2					
SUMG	Summit	71.89	360	⇑iP	P	00 57 38.5 +1.6
	comp=Z,175nm,1.0s					
	comp=Z,4μm,17.0s					
SUMG	Summit	71.89	360	⇑iP	P	00 57 38.5 +1.6
SUMG				pmax	pmax	
	comp=Z,180nm,1.0s					
SUMG				MLR	MLR	
	comp=Z,4μm,17.0s					
SUMG	Summit	71.89	360	eP	P	00 57 37.6 +0.7
	comp=Z,159nm,0.9s					
UOSS	Minazif	71.90	288	eP	P	00 57 37.2 0.0
	comp=Z,6.3nm,0.9s					
UOSS				LR	LR	
	comp=Z,3μm,22.0s					
NWAO	Narrogin (SRO)	71.94	201	P	P	00 57 37.6 +0.6
	baz=72,SNR=4.2					
NWAO	Narrogin (SRO)	71.94	201	eP	P	00 57 37.8 +0.7
NWAO				pmax	pmax	
	comp=Z,90nm,1.0s					
NWAO	Narrogin (SRO)	71.94	201	eP	P	00 57 37.8 +0.7
	comp=Z,90nm,1.0s					
K05A	Summer Lake	71.94	50	eP	P	00 57 39.8 +2.3
	comp=Z,196nm,1.1s					
K05A				LR	LR	
	comp=Z,1μm,20.0s					
HATD	Hatta, Dubai	72.02	288	iP	P	00 57 38.5 +0.5
	SNR=53					
WDC	Whiskeytown Da	72.03	53	eP	P	00 57 39.6 +1.8
WDC				pmax	pmax	
	comp=Z,80nm,1.2s					
WDC	Whiskeytown Da	72.03	53	eP	P	00 57 39.6 +1.8
	comp=Z,80nm,1.2s					
ASHO	Ashiyiah	72.15	288	iP	P	00 57 39.1 +0.3
	SNR=15					
ASHO	Ashiyiah	72.15	288	P	P	00 57 39.3 +0.4
	SNR=21					
ASHO	Ashiyiah	72.15	288	P	P	00 57 39.3 +0.4
	SNR=21					
ASHO				S	S	01 06 57.4 -2.2
GNI	Garni	72.19	307	P	P	00 57 40.5 +1.5
	comp=Z,126nm,1.0s,baz=350,slow=1.0,SNR=54					
GNI	Garni	72.19	307	iP	P	00 57 40.4 +1.5
	SNR=44					
GNI	Garni	72.19	307c	iP	P	00 57 40.6 +1.5
GNI				pmax	pmax	
	comp=Z,628nm,1.7s					
GNI				MLR	MLR	
	comp=Z,12μm,18.0s					
GNI	Garni	72.19	307	P	P	00 57 40.2 +1.2
	SNR=38					
GNI	Garni	72.19	307	P	P	00 57 40.2 +1.2
	SNR=38					
GNI	Garni	72.19	307	eP	P	00 57 40.3 +1.3
	comp=Z,124nm,0.9s					
GNI				LR	LR	
	comp=Z,5μm,19.0s					
ARPS	Mount Arapiles	72.23	179	P	P	00 57 39.0 +0.3
	baz=72,SNR=14					
NAZ	Nazwa, Dubai	72.29	288	iP	P	00 57 39.9 +0.2
	SNR=7.4					
NSS	Namsos	72.31	339	eP	P	00 57 39.6 +0.6
NSS				e		00 58 09.4
NSS				IVMs_BB	IVMs_BB	01 32 28.4
	comp=Z,3μm,4.3s					
AKH	Akhalkalaki	72.33	308	⇑iP	P	00 57 41.5 +1.7
AKH	Akhalkalaki	72.33	308	P	P	00 57 41.1 +1.3
AKH	Akhalkalaki	72.33	308	P	P	00 57 41.1 +1.3
BGD	Bogdanovka	72.33	308	P	P	00 57 41.4 +1.5
F10A	Beach Ranch, E	72.40	46	eP	P	00 57 41.7 +1.7
	comp=Z,37nm,1.0s					
F10A				LR	LR	
	comp=Z,1μm,22.0s					
FAQ	Al Faqa, Dubai	72.47	288	iP	P	00 57 40.8 +0.1
	SNR=25					
ARQ	Araqi	72.49	286	P	P	00 57 41.4 +0.5
	SNR=18					
ARQ	Araqi	72.49	286	P	P	00 57 41.4 +0.5
	SNR=18					
CHVG	Ch'k'valeri	72.51	310	⇑iP	P	00 57 41.5 +0.9
CHVG	Ch'k'valeri	72.51	310	P	P	00 57 41.3 +0.6
HOPS	Hopland Field	72.53	54	PFAKE		00 57 50.0 +9.2
HOPS				LR	LR	
	comp=Z,2μm,20.0s					
WALA	Waterton Lakes	72.53	42	PFAKE		00 57 50.0 +9.2
WALA				LR	LR	
	comp=Z,1μm,20.0s					
O03D	Paynes Creek	72.66	53	P	P	00 57 42.4 +0.7
	baz=302					
BSMT	Bassoo Peak	72.74	43	eP	P	00 57 43.8 +1.6
MOD	Modoc Plateau	72.75	51	eP	P	00 57 44.0 +1.7
	comp=Z,67nm,1.1s					
BLMT	Blacktail Moun	72.88	43	eP	P	00 57 44.7 +1.7
BMO	Blue Mountains	72.97	47	eP	P	00 57 45.0 +1.5
	comp=Z,63nm,1.1s					
JTMT	Jette	73.08	43	eP	P	00 57 45.4 +1.3
MCCM	Marconi Confer	73.11	55	PFAKE		00 58 00.0 +16
MCCM				LR	LR	
	comp=Z,2μm,18.0s					
TOO	Toolangi	73.14	176	P	P	00 57 45.6 +1.4
	baz=73,SNR=6.0					
YBMT	Yellow Bay	73.16	43	eP	P	00 57 46.2 +1.6
ORV	Oroville	73.26	53	eP	P	00 57 46.8 +1.6
ORV				pmax	pmax	
	comp=Z,71nm,1.1s					
ORV				MLR	MLR	
	comp=Z,1μm,20.0s					
ORV	Oroville	73.26	53	eP	P	00 57 46.8 +1.6
	comp=Z,71nm,1.1s					
ORV				LR	LR	
	comp=Z,1μm,20.0s					
IZAR	Zarasai	73.27	328	eP	P	00 57 45.5 +0.7
IZAR				IAmb	IAmb	00 57 46.3
	comp=Z,32nm,0.8s					
SCO	Scoresbysund	73.28	354	iP	P	00 57 46.0 +1.3
	comp=Z,85nm,1.3s					
SCO	Scoresbysund	73.28	354	iP	P	00 57 46.0 +1.3
SCO				pmax	pmax	
	comp=Z,85nm,1.3s					
IDID	Didziasalis	73.33	327	eP	P	00 57 45.7 +0.5
IDID				IAmb	IAmb	00 57 46.7
	comp=Z,37nm,0.8s					
MICGM	Minsk	73.33	326	⇑iP	P	00 57 45.0 -0.2
MICGM				PM		00 57 46.0
	comp=Z,0.3nm,1.5s					
MICGM				PM		00 57 48.0
	comp=N,0.3nm,1.5s					
MICGM				PM		00 57 48.0
	comp=E,0.2nm,1.5s					
MICGM				eS	S	01 07 10.0 -2.0
MICGM				eLR	LR	01 27 32.0
MICGM				LRM	MLR	01 33 08.0
	comp=Z,6.3nm,15.0s					
MNK	Minsk	73.33	326	⇑iP	P	00 57 45.0 -0.2
MNK				eS	S	01 07 10.0 -2.0
MNK				pmax	pmax	
	comp=Z,330nm,1.5s					
MNK				pmax	pmax	
	comp=N,340nm,1.5s					
MNK				pmax	pmax	
	comp=E,230nm,1.5s					
MNK				MLR	MLR	
	comp=Z,6μm,15.0s					
SWMT	Swartz Lake	73.37	43	eP	P	00 57 47.0 +1.2
ISAL	Salakas	73.43	327	eP	P	00 57 46.5 +0.6
ISAL				IAmb	IAmb	00 57 48.4
	comp=Z,113nm,1.2s					
SOC	Sochi	73.48	312c	iP	P	00 57 46.2 -0.2
SOC				e*SP	PcP	00 58 00.8 -1.6
SOC				e		01 00 28.8
SOC				ePPP	PPP	01 02 11.4
SOC				eSS	SS	01 12 03.7 +7.5
SOC				pmax	pmax	
	comp=Z,78nm,0.8s					
SOC				MLR	MLR	
	comp=Z,3μm,17.0s					
WVOR	Wild Horse Val	73.50	49	eP	P	00 57 48.3 +1.6
WVOR				pmax	pmax	
	comp=Z,74nm,1.3s					
WVOR	Wild Horse Val	73.50	49	eP	P	00 57 48.3 +1.6
	comp=Z,74nm,1.3s					
NACGM	Naroch	73.57	327	eP	P	00 57 46.0 -0.7
NACGM				eP	P	00 57 46.0 -0.7
NACGM				PM		00 57 48.0
	comp=Z,0.4nm,1.0s					
NACGM				ePP	PP	01 00 14.0 -16
NACGM				ePPP	PPP	01 02 14.0
NACGM				eS	S	01 07 14.0 -0.7
NACGM				eSS	SS	01 12 06.0 +9.1
NACGM				eSSS	SSS	01 15 36.0
NACGM				eLQ	LQ	01 23 06.0
NACGM				eLR	LR	01 26 38.0
NACGM				LRM	MLR	01 33 16.0
	comp=Z,6.1nm,16.0s					
TBLU	Trondheim	73.77	339	eP	P	00 57 47.1 -0.6
TBLU				e		00 59 15.2
TBLU				IVMs_BB	IVMs_BB	01 33 05.1
	comp=Z,2μm,8.6s					
MSO	Missoula	73.79	44	P	P	00 57 48.8 +0.5
	baz=305					
MSO	Missoula	73.79	44	eP	P	00 57 49.0 +0.6
	comp=Z,61nm,1.2s					
MSO				LR	LR	
	comp=Z,1μm,19.0s					
AFDM	Forest Hills D	73.93	53	eP	P	00 57 51.1 +2.0
	comp=Z,66nm,1.3s					
AFDM				LR	LR	
	comp=Z,1μm,20.0s					
CHMT	Chamberlain Mo	74.13	43	eP	P	00 57 51.2 +0.8
ANN	Anapa	74.16	314c	iP	P	00 57 48.2 -2.1
ANN				e*PP	pP	00 57 57.3 -1.7
ANN				i		00 58 01.5
ANN				ePPP	PPP	01 02 16.1
ANN				eS	SKiKP	01 07 18.2 +2.3
ANN				eSS	SS	01 12 03.8 -2.5
ANN				eSSS	SSS	01 15 25.1
ANN				pmax	pmax	
	comp=Z,225nm,1.5s					
ANN				pmax	pmax	
	comp=E,60nm,1.5s					
PAHR	Pah Rah Range	74.54	52	eP	P	00 57 54.3 +1.5
	comp=E,85nm,1.1s					
PAHR				LR	LR	
	comp=Z,1μm,20.0s					
MFID	Camas Ranch	74.66	47	eP	P	00 57 55.1 +1.7
	comp=Z,101nm,1.3s					
CMB	Columbia Colle	74.81	54	eP	P	00 57 55.7 +1.4
CMB				pmax	pmax	
	comp=Z,83nm,1.1s					
CMB	Columbia Colle	74.81	54	eP	P	00 57 55.7 +1.4
	comp=Z,83nm,1.1s					
FFC	Flin Flon	74.88	32	eP	P	00 57 54.9 +0.6
FFC				pmax	pmax	
	comp=Z,101nm,1.0s					
FFC				MLR	MLR	
	comp=Z,1μm,19.0s					
FFC	Flin Flon	74.88	32	eP	P	00 57 54.9 +0.6
	comp=Z,101nm,1.0s					
FFC				LR	LR	
	comp=Z,1μm,19.0s					
ILULI	Ilulissat	74.89	4	⇑iP	P	00 57 55.1 +1.0
	comp=Z,86nm,1.0s					
ILULI	Ilulissat	74.89	4	⇑iP	P	00 57 55.1 +1.0
ILULI				pmax	pmax	
	comp=Z,86nm,1.0s					
NC405	NORSAR Array S	74.97	337	eP	P	00 57 54.9 +0.1
NC303	NORSAR Array S	75.00	337	eP	P	00 57 55.4 +0.5
HRY	Holter Researc	75.04	43	eP	P	00 57 57.1 +1.6
HFS	Hagfors	75.07	336	P	P	00 57 55.3 0.0
	comp=Z,43nm,0.8s,baz=79,slow=3.1					
HFS	Hagfors	75.07	336	P	P	00 57 55.3 0.0
AKASG	Malin Array Be	75.07	322	P	P	00 57 55.4 -0.1
	comp=Z,68nm,0.7s,baz=47,slow=6.1,SNR=262					
AKASG				PP	PP	01 00 43.7 +0.6
	comp=Z,5.1nm,0.8s,baz=42,slow=9.0,SNR=4.1					
AKASG				LR	LR	01 33 37.1
	comp=Z,11μm,20.1s,baz=50,slow=38					
AKASG	Malin Array Be	75.07	322	P	P	00 57 55.4 -0.1
AKASG						01 00 43.7
AKBB	Malin Array Si	75.07	322	eP	P	00 57 55.8 +0.3
AKBB				pmax	pmax	
	comp=Z,99nm,0.8s					
AKBB				MLR	MLR	
	comp=Z,11μm,20.0s					
AKBB	Malin Array Si	75.07	322	eP	P	00 57 55.8 +0.3
	comp=Z,99nm,0.8s					
AKBB				LR	LR	
	comp=Z,11μm,20.0s					
MOL	Molde	75.08	340	eP	P	00 57 55.9 +0.6
MOL				e		00 58 33.3
MOL				IVMs_BB	IVMs_BB	01 33 45.2
	comp=Z,2μm,5.9s					
AK11	Malin Array Si	75.11	322	eP	P	00 57 55.8 0.0
NC204	NORSAR Array S	75.14	338	eP	P	00 57 56.4 +0.6
NB201	NORSAR Array S	75.15	337	eP	P	00 57 55.8 -0.1
WAKR	Walker	75.17	53	eP	P	00 57 58.5 +1.9
NB2	NORSAR Subarra	75.19	337	P	P	00 57 56.1 0.0
	comp=Z,75nm,0.8s,baz=40,slow=5.9					
NB2	NORSAR Subarra	75.19	337	P	P	00 57 56.1 0.0
	baz=40,slow=5.9					
NB2	NORSAR Subarra	75.19	337	P	P	00 57 55.9 -0.1
NB2				pmax	pmax	
	comp=Z,67nm,0.8s					
NOA	NORSAR Array B	75.19	337	P	P	00 57 56.0 0.0
	comp=Z,60nm,0.8s,baz=42,slow=5.4,SNR=138					
NOA				PP	PP	01 00 45.1 +1.2
	comp=Z,7.3nm,0.9s,baz=45,slow=8.7,SNR=4.3					
NOA				LR	LR	01 34 10.8
	comp=Z,6μm,19.4s,baz=45,slow=38					
NOA	NORSAR Array B	75.19	337	P	P	00 57 56.0 0.0
NOA						01 00 45.1
FCC	Fort Churchill	75.21	26	eP	P	00 57 56.3 +0.2
FCC				pmax	pmax	
	comp=Z,86nm,1.1s					
FCC				MLR	MLR	
	comp=Z,1μm,21.0s					
FCC	Fort Churchill	75.21	26	eP	P	00 57 56.3 +0.2
	comp=Z,86nm,1.1s					
FCC				LR	LR	
	comp=Z,1μm,21.0s					
LRM	Limekiln Ridge	75.22	44	eP	P	00 57 57.5 +0.7
NBO02	NORSAR Array S	75.29	337	eP	P	00 57 56.5 -0.1
NC602	NORSAR Array S	75.31	337	eP	P	00 57 56.6 -0.1
NC602	NORSAR Array S	75.31	337	eP	P	00 57 56.9 +0.2
NBO00	NORSAR Array S	75.33	337	eP	P	00 57 57.5 +0.7
EGMT	Eagleton	75.38	41	P	P	00 57 58.1 +0.7
	baz=308					
EGMT	Eagleton	75.38	41	eP	P	00 57 58.4 +1.0
	comp=Z,145nm,1.1s					
EGMT				LR	LR	
	comp=Z,2μm,22.0s					
DLMT	Dillon	75.41	44	eP	P	00 57 59.5 +1.7
	comp=Z,104nm,1.1s					
HLID	Hailey	75.41	47	P	P	00 57 58.9 +1.1
	baz=306					
HLID	Hailey	75.41	47	eP	P	00 57 59.3 +1.4
	comp=Z,42nm,1.3s					
HLID				LR	LR	
	comp=Z,900nm,20.0s					
NAO01	NORSAR Array S	75.44	337	eP	P	00 57 57.9 +0.4
AKN	Aaknes	75.55	340	eP	P	00 57 58.5 +0.4
MCMT	McKenzie Canyo	75.58	45	eP	P	00 57 60.0 +1.1
BOZ	Bozeman (W)	75.79	44	P	P	00 58 01.0 +1.1
	baz=307					
BOZ	Bozeman (W)	75.79	44	eP	P	00 58 01.3 +1.4
BOZ				pmax	pmax	
	comp=Z,87nm,1.1s					
BOZ				MLR	MLR	
	comp=Z,800nm,20.0s					
BOZ	Bozeman (W)	75.79	44	eP	P	00 58 01.2 +1.4
	comp=Z,87nm,1.1s					
BOZ				LR	LR	
	comp=Z,800nm,20.0s					
NV01	Mina Array Sit	75.95	53	eP	P	00 58 01.0 -0.1
NVAR	Mina Array Bea	75.95	53	P	P	00 58 01.6 +0.5
	comp=Z,10nm,0.8s,baz=283,slow=6.2,SNR=43					
NVAR				LR	LR	01 27 41.1
	comp=Z,1μm,19.0s,baz=300,slow=33					
SIM	Simferopol'	75.98	316ce	P	P	00 58 01.0 +0.2
SIM				pmax	pmax	
	comp=Z,110nm,0.7s					
SIM				MLR	MLR	
	comp=Z,2μm,17.0s					
NV11	Mina Array Sit	76.05	53	eP	P	00 58 03.2 +1.6
	comp=Z,68nm,1.3s					
NV11				LR	LR	
	comp=Z,2μm,19.0s					
MLAC	Mammoth, Mammo	76.06	54	P	P	00 58 02.7 +1.0
	baz=305					
OSL	Oslo	76.19	337	eP	P	00 58 02.3 +0.6
OSL				IVMs_BB	IVMs_BB	01 34 27.1
	comp=Z,3μm,15.0s					
QLMT	Earthquake Lak	76.39	44	eP	P	00 58 05.2 +1.8
RCTC	Rector, Farmer	76.54	55	P	P	00 58 04.6 +0.5
	baz=305					
ELK	Elko	76.56	49	eP	P	00 58 06.2 +1.7
ELK				pmax	pmax	
	comp=Z,47nm,1.1s					
ELK				MLR	MLR	
	comp=Z,1μm,19.0s					
ELK	Elko	76.56	49	eP	P	00 58 06.2 +1.7
	comp=Z,47nm,1.1s					
ELK				LR	LR	
	comp=Z,1μm,19.0s					
SMMC	Simmler	76.59	56	P	P	00 58 04.7 +0.1
	baz=305					
HYA	Hoyanger	76.60	339	eP	P	00 58 04.5 +0.5
HYA				e		00 58 27.3
KLNR	Kaliningrad	76.61	329	P	P	00 58 04.1 -0.1
YMR	Madison River	76.75	44	eP	P	00 58 07.7 +2.1
	comp=Z,77nm,1.2s					
YMR				LR	LR	
	comp=Z,800nm,19.0s					
KONO	Kongsberg	76.77	337	eP	P	00 58 05.5 +0.5
KONO				eS	S	01 07 51.9 +1.8
KONO				IVMs_BB	IVMs_BB	01 34 45.5
	comp=Z,3μm,14.6s					
KONO	Kongsberg	76.77	337	eP	P	00 58 05.7 +0.7
KONO				pmax	pmax	
	comp=Z,41nm,0.9s					
KONO				MLR	MLR	
	comp=Z,8μm,19.0s					
KONO	Kongsberg	76.77	337	eP	P	00 58 05.7 +0.7
	comp=Z,41nm,0.9s					
KONO				LR	LR	
	comp=Z,8μm,19.0s					
TIN	Tinemaha, Big	76.78	54	P	P	00 58 06.0 +0.3
	baz=305					
GCMT	Greycliff	76.79	43	eP	P	00 58 07.4 +1.8
VES	Vestal, Richgr	76.91	55	P	P	00 58 07.4 +1.2
	baz=305					
OUZ	Omahuta	76.92	153	PFAKE		00 58 20.0 +14
OUZ				LR	LR	
	comp=Z,3μm,21.0s					
PKM	Mcpherson Peak	76.96	56	P	P	00 58 08.0 +1.2
	baz=305					
YFT	Old Faithful	76.96	44	eP	P	00 58 10.1 +3.4
	comp=Z,65nm,1.0s					
SFJD	Kangerlussuaq	77.11	5	⇑iP	P	00 58 07.8 +1.0
	comp=Z,56nm,1.1s					
SFJD	Kangerlussuaq	77.11	5	⇑iP	P	00 58 07.8 +1.0
SFJD				pmax	pmax	
	comp=Z,56nm,1.1s					
SFJD	Kangerlussuaq	77.11	5	eP	P	00 58 08.1 +1.3
	comp=Z,59nm,1.1s					
LKWY	Lake	77.13	44	eP	P	00 58 11.1 +3.4
LKWY				pmax	pmax	
	comp=Z,84nm,1.1s					
LKWY	Lake	77.13	44	eP	P	00 58 11.1 +3.4
	comp=Z,84nm,1.1s					
SORM	Soroca	77.14	321	⇑iP	P	00 58 07.3 0.0
SORM	Soroca	77.14	321	⇑P	P	00 58 07.3 0.0
H17A	Grant Village	77.14	44	P	P	00 58 10.3 +2.5
	baz=308					
H17A	Grant Village	77.14	44	eP	P	00 58 10.8 +3.1
	comp=Z,132nm,1.1s					
CWC	Cottonwood Cre	77.23	54	P	P	00 58 09.2 +1.0

baz=305
IMW Indian Meadow 77.24 45 eP P 00 58 10.3 +2.0
comp=Z,94nm,1.3s
FLWY Flagg Ranch 77.26 45 eP P 00 58 11.0 +2.6
comp=Z,86nm,1.1s
MZRK Al-Mazaregh 77.27 305 eP P 00 58 09.6 +1.3
SFNV Sufian 77.29 306 eP P 00 58 09.9 +1.5
DGAR Diego Garcia 77.32 251 PFAKE 00 58 20.0 +11
DGAR LR LR
comp=Z,2μm,21.0s
FXWY Fox Creek 77.34 45 eP P 00 58 10.5 +1.7
comp=Z,69nm,1.3s
GRAC Grapevine Rang 77.38 53 P **P 00 58 10.2 +1.2**
baz=306
ISA Isabella, Lake 77.42 55 P **P 00 58 09.9 +0.7**
baz=305
ISA Isabella, Lake 77.42 55 PFAKE 00 58 20.0 +11
ISA LR LR
comp=Z,2μm,20.0s
RLMT Red Lodge 77.42 43 P **P 00 58 10.3 +1.0**
baz=309
RLMT Red Lodge 77.42 43 eP P 00 58 10.7 +1.4
comp=Z,64nm,1.1s
ASK Askoy 77.44 339 eP P 00 58 09.4 +0.7
MOOW Moose Ponds 77.44 45 eP P 00 58 11.1 +1.7
comp=Z,84nm,1.5s
HVU Hansel Valley 77.44 47 eP P 00 58 11.3 +1.9
HVU pmax pmax
comp=Z,50nm,1.1s
HVU Hansel Valley 77.44 47 eP P 00 58 11.3 +1.9
comp=Z,50nm,1.1s
TPAW Teton Pass 77.48 45 eP P 00 58 11.5 +1.8
comp=Z,75nm,1.4s
BER Bergen 77.48 339 eP P 00 58 09.2 +0.3
BER IVMs_BB IVMs_BB 01 36 25.2
comp=Z,3μm,3.9s
ODD1 Odda 77.48 338 eP P 00 58 09.4 +0.3
ARVC Arvin 77.48 56 P **P 00 58 11.2 +1.7**
baz=305
SNOW Snow King Moun 77.61 45 eP P 00 58 12.5 +2.1
comp=Z,40nm,1.0s
REDW Red Top Meadow 77.61 45 eP P 00 58 12.0 +1.6
comp=Z,64nm,1.2s
KIS Kishinev 77.62 320⇑iP P 00 58 10.0 0.0
comp=Z,200nm,1.8s
KIS Kishinev 77.62 320 ePcP PcP 00 58 22.0 +1.8
KIS Kishinev 77.62 320 ePP PP 01 01 16.0 +11
KIS Kishinev 77.62 320 ePPP PPP 01 02 52.0
KIS Kishinev 77.62 320 ePsP 01 03 52.0
KIS eS **S 01 07 56.0 -3.8**
KIS eScS **SKSac 01 08 18.0 -3.5**
KIS Kishinev 77.62 320 ePS PnS 01 08 42.0 +0.5
KIS eLR LR 01 25 14.0
comp=Z,11μm,18.0s
KIS Kishinev 77.62 320α iP P 00 58 10.1 0.0
KIS e 00 58 22.0
KIS ePPP PPP 01 02 52.0
KIS eS **S 01 07 56.0 -3.8**
KIS e 01 08 18.0
KIS ePS **PnS 01 08 42.0 +0.5**
KIS pmax pmax
comp=Z,230nm,1.8s
KIS pmax pmax
comp=Z,600nm,5.0s
KIS MLR MLR
comp=Z,11μm,17.5s
KIS MLR MLR
comp=N,7μm,16.0s
KIS MLR MLR
comp=E,6μm,16.0s
KIS MLR MLR
comp=Z,11μm,18.0s
DAC Darwin (Calif) 77.65 54 eP P 00 58 11.9 +1.3
DAC pmax pmax
comp=Z,34nm,1.1s
DAC MLR MLR
comp=Z,1μm,19.0s
DAC Darwin (Calif) 77.65 54 eP P 00 58 11.9 +1.3
comp=Z,34nm,1.1s
DAC LR LR
comp=Z,1μm,19.0s
MILM Milestii Mici 77.67 319⇓iP P 00 58 10.0 -0.3
R11A Troy Canyon, C 77.74 52 P **P 00 58 11.9 +0.8**
baz=306
R11A Troy Canyon, C 77.74 52 eP P 00 58 12.4 +1.3
comp=Z,68nm,1.1s
BGU Big Grassy Mou 77.80 48 eP P 00 58 13.1 +1.8
comp=Z,45nm,1.2s
BGU LR LR
comp=Z,800nm,20.0s
AHID Auburn Hatcher 77.83 46 eP P 00 58 13.1 +1.5
comp=Z,65nm,1.4s
MPMC Manual Prospec 77.84 54 P **P 00 58 12.5 +0.8**
baz=306
OSI Osito Audit: C 77.85 56 PFAKE 00 58 20.0 +8.4
OSI LR LR
comp=Z,3μm,22.0s
BLS5 Blasjo 77.93 338 eP P 00 58 12.0 +0.5
DGMT Dagmar 77.97 38 P **P 00 58 13.0 +1.0**
baz=311
DGMT Dagmar 77.97 38 eP P 00 58 13.2 +1.1
comp=Z,108nm,1.1s
DGMT LR LR
comp=Z,1μm,20.0s
FURC Furnace Creek, 78.02 54 P **P 00 58 13.7 +1.3**
baz=306
LRMC Laurel Mtn Rad 78.05 55 P **P 00 58 13.2 +0.4**
baz=306
LAO LASA Array 78.08 40 P **P 00 58 13.6 +0.9**
baz=310
LAO LASA Array 78.08 40 eP P 00 58 13.9 +1.2
comp=Z,116nm,1.1s
LAO LR LR
comp=Z,1μm,21.0s
SNCC San Nicolas Is 78.09 58 P **P 00 58 14.1 +1.2**
baz=305
MNKR ALMNKUR 78.11 306 eP P 00 58 13.9 +0.9
TPNV Topopah Spring 78.14 53 P **P 00 58 14.0 +0.7**
baz=306
TPNV Topopah Spring 78.14 53 eP P 00 58 14.7 +1.4
TPNV pmax pmax
comp=Z,53nm,1.0s
TPNV MLR MLR
comp=Z,2μm,20.0s
TPNV Topopah Spring 78.14 53 eP P 00 58 14.7 +1.4
comp=Z,53nm,1.0s
TPNV LR LR
comp=Z,2μm,20.0s
IAS Iasi 78.15 320⇑iP P 00 58 13.5 +0.5
IAS Iasi 78.15 320 ⇑P P 00 58 13.5 +0.5
LVV L'vov 78.18 324 eP P 00 58 12.3 -0.8
LVV e 01 01 12.0
LVV eS **S 01 08 03.0 -2.8**
LVV MLR MLR
comp=Z,3μm,18.0s
EDW2 Edwards Air Fo 78.19 56 P **P 00 58 14.1 +0.6**
baz=306
HOMB Homborsund 78.21 337 eP P 00 58 13.4 +0.4
HOMB IVMs_BB IVMs_BB 01 35 30.9
comp=Z,2μm,9.3s
LEOM Leova 78.26 319⇑iP P 00 58 14.1 +0.6
LEOM Leova 78.26 319 ⇑P P 00 58 14.1 +0.6
HWUT Hardware Ranch 78.27 47 eP P 00 58 15.8 +1.8
comp=Z,117nm,1.2s
BEL Belsk 78.29 327 eP P 00 58 14.8 +1.1
BEL LMZ LR 01 34 34.7
comp=Z,4μm,21.3s
BEL Belsk 78.29 327⇑eP P 00 58 14.8 +1.1
BEL MLR MLR
comp=Z,4μm,21.3s
DECC Green Verdugo 78.32 56 P **P 00 58 15.1 +0.9**
baz=306
KSRV Kasrt alli 78.34 306 eP P 00 58 15.6 +1.3
BSD Bornholm Skovb 78.37 332⇑iP P 00 58 14.1 +0.1
comp=Z,115nm,0.9s
comp=Z,4μm,20.0s
BSD Bornholm Skovb 78.37 332⇑iP P 00 58 14.1 +0.1
BSD pmax pmax
comp=Z,120nm,0.9s
BSD MLR MLR
comp=Z,4μm,20.0s
DUG Dugway, Tooele 78.37 49 P **P 00 58 15.5 +0.9**
baz=307
DUG Dugway, Tooele 78.37 49 eP P 00 58 15.8 +1.2
DUG pmax pmax
comp=Z,104nm,1.1s
DUG MLR MLR
comp=Z,1μm,19.0s
DUG Dugway, Tooele 78.37 49 eP P 00 58 15.8 +1.2
comp=Z,104nm,1.1s
DUG LR LR
comp=Z,1μm,19.0s
KMY Karmoy 78.46 339 eP P 00 58 15.1 +0.7
STAV Stavanger 78.55 338 eP P 00 58 15.2 +0.3
SNART Snartemo 78.57 337 eP P 00 58 15.2 +0.1
TAU Tasmania Unive 78.57 175 PFAKE 00 58 30.0 +15
TAU LR LR
comp=Z,2μm,22.0s
B25A Knox Farm, Ray 78.62 38 P **P 00 58 16.4 +0.8**
baz=312
TCUT Toone Canyon 78.66 47 eP P 00 58 17.7 +1.5
comp=Z,136nm,1.2s
FMP Fort Macarthur 78.66 57 P **P 00 58 17.0 +1.0**
baz=306
BW06 Boulder Array 78.73 45 P **P 00 58 17.0 +0.4**
baz=309
BW06 Boulder Array 78.73 45 eP P 00 58 17.1 +0.6
comp=Z,25nm,1.1s
BW06 LR LR
comp=Z,1μm,22.0s
PD31 Pinedale Array 78.73 45 eP P 00 58 16.9 +0.3
PDAR Pinedale Array 78.73 45 P **P 00 58 16.8 +0.2**
comp=Z,3.9nm,0.6s,baz=275,slow=2.2,SNR=48
PDAR PKPPKP P'P'df 01 25 09.9 -9.4
comp=Z,0.1nm,0.4s,baz=113,slow=3.4,SNR=3.8
PDAR LR LR 01 28 40.1
comp=Z,911nm,21.8s,baz=330,slow=32
PSUT Pine Spring 78.73 51 eP P 00 58 18.2 +1.6
comp=Z,50nm,1.1s
SHOC Shoshone, Teco 78.73 54 P **P 00 58 17.6 +1.1**
baz=306
GSC Goldstone, Bar 78.73 55 P **P 00 58 17.6 +1.0**
baz=306
A26A Wade Farm, Ken 78.75 37 P **P 00 58 17.3 +1.0**
baz=313
BFSC Mount Baldy Ra 78.78 56 P **P 00 58 17.8 +0.9**
baz=306
BORG Borgarnes 78.81 352 eP P 00 58 19.4 +3.2
BORG pmax pmax
comp=Z,109nm,0.8s
BORG Borgarnes 78.81 352 eP P 00 58 19.4 +3.2
comp=Z,109nm,0.8s
RRX Edison Barstow 78.86 55 P **P 00 58 18.0 +0.9**
baz=306
COP Copenhagen 78.87 333⇑iP P 00 58 17.6 +0.9
comp=Z,2μm,18.0s
COP Copenhagen 78.87 333⇑iP P 00 58 17.6 +0.9
COP MLR MLR
comp=Z,2μm,18.0s
SCI2 San Clemente I 78.91 57 P **P 00 58 18.3 +0.8**
baz=306
KWP Kalwaria Pacla 78.94 324 eP P 00 58 18.4 +1.1
KWP LMZ LR 01 33 47.6
comp=Z,3μm,23.6s
KWP Kalwaria Pacla 78.94 324⇑iP P 00 58 18.7 +1.4
KWP Kalwaria Pacla 78.94 324⇑eP P 00 58 18.4 +1.1
KWP MLR MLR
comp=Z,3μm,23.6s
C25A Freed Ranch, W 78.94 38 P **P 00 58 18.1 +0.7**
baz=312
JLU Jordanelle 78.95 48 eP P 00 58 19.6 +1.7
comp=Z,61nm,1.2s
NLU North Lily Min 78.97 49 eP P 00 58 19.6 +1.7
comp=Z,30nm,1.0s
B26A Jensen Ranch, 79.01 37 P **P 00 58 18.6 +0.8**
baz=312
BUR08 Bucovina Ar. S 79.06 322 eP P 00 58 18.4 +0.2
TESR Tescani 79.07 320⇓iP P 00 58 18.4 +0.3
BURAR Bucovina Array 79.08 322⇓iP P 00 58 18.9 +0.7
BURAR Bucovina Array 79.08 322 ⇓P P 00 58 18.9 +0.7
A27A Ledoux Ranch, 79.10 36 P **P 00 58 19.2 +1.0**
baz=313
SHPR Sheep Range 79.10 53 eP P 00 58 20.5 +1.8
comp=Z,37nm,1.1s
CFR Carcaliu 79.15 318⇑iP P 00 58 18.9 +0.4
CFR Carcaliu 79.15 318 ⇑P P 00 58 18.9 +0.4
O16A Springville 79.16 48 eP P 00 58 19.9 +1.0
TUQ Turquoise Moun 79.24 54 P **P 00 58 20.1 +0.7**
baz=306
BBRC Big Bear Solar 79.27 56 P **P 00 58 20.0 +0.4**
baz=306
PETR Petresti 79.28 319⇑iP P 00 58 21.0 +1.8
D25A Fairfield 79.28 39 P **P 00 58 20.1 +0.8**
baz=312
HEC Hector,Ludlow 79.32 55 P **P 00 58 20.6 +0.8**
baz=306
RGN Rugen 79.40 332 eP P 00 58 20.7 +1.0
comp=Z,137nm,0.9s
RGN LR LR
comp=Z,4μm,18.0s
DRWC Darouich 79.41 308 eP P 00 58 21.3 +1.1
MUD Monsted U'grnd 79.42 335 iP P 00 58 20.5 +0.7
comp=Z,71nm,1.0s
comp=Z,5μm,20.0s
MUD Monsted U'grnd 79.42 335 iP P 00 58 20.5 +0.7
MUD pmax pmax
comp=Z,71nm,1.0s
MUD MLR MLR
comp=Z,6μm,20.0s
BR131 Keskin Array S 79.43 312 eP P 00 58 20.4 0.0
BRTR Keskin Array B 79.43 312 P **P 00 58 20.4 +0.1**
comp=Z,46nm,0.9s,baz=93,slow=3.9,SNR=179
BRTR LR LR 01 38 03.4
comp=Z,2μm,19.5s,baz=57,slow=39
BRTR Keskin Array B 79.43 312 P **P 00 58 20.5 +0.1**
C26A Wahner Farm, P 79.45 38 P **P 00 58 21.0 +0.8**
baz=313
VRI Vrincioaia 79.45 320⇑iP P 00 58 21.0 +0.8
VRI Vrincioaia 79.45 320 ⇑P P 00 58 21.0 +0.8
B27A Peters Farms, 79.47 37 P **P 00 58 21.2 +1.0**
baz=313
TIRR Tirgusor 79.47 318⇑iP P 00 58 20.7 +0.5
TIRR Tirgusor 79.47 318 eP P 00 58 20.7 +0.5
TIRR pmax pmax
comp=Z,115nm,0.6s
TIRR MLR MLR
comp=Z,3μm,18.0s
TIRR Tirgusor 79.47 318 eP P 00 58 20.7 +0.5
comp=Z,115nm,0.6s
TIRR LR LR
comp=Z,3μm,18.0s
MURC Murrieta 79.47 56 P **P 00 58 21.3 +0.7**
baz=306
PLOR Plostina 79.51 320⇑iP P 00 58 21.5 +1.0
PLOR Plostina 79.51 320 ⇑P P 00 58 21.5 +1.0
A28A Rude Farm, Bot 79.60 36 P **P 00 58 21.5 +0.5**
baz=314
E25A Miller Ranch, 79.68 39 P **P 00 58 22.0 +0.5**
baz=312
STHS Stebnicka Huta 79.78 325 eP P 00 58 23.0 +1.1
STHS pmax pmax
comp=Z,41nm,0.9s
STHS Stebnicka Huta 79.78 325 eP P 00 58 23.0 +1.1
MSU Marysvale 79.78 50 eP P 00 58 24.2 +1.8
MSU Marysvale 79.78 50 eP P 00 58 24.1 +1.8
GMRC Granite Mounta 79.80 54 P **P 00 58 23.1 +0.7**
baz=307
D26A Manning 79.81 38 P **P 00 58 22.6 +0.4**
baz=313
C27A Sayler Ranch, 79.82 38 P **P 00 58 22.6 +0.4**
baz=313
UZH Uzhgorod 79.82 324d iP P 00 58 22.0 -0.1
UZH eS **S 01 08 21.0 -2.3**
UZH MLR MLR
comp=Z,1μm,20.0s
ANTO Ankara 79.85 312 eP P 00 58 23.4 +0.9
ANTO Ankara 79.85 312 eP P 00 58 23.4 +0.9
comp=Z,1μm,1.1s
ARCR ARCALIA 79.86 322⇓iP P 00 58 24.1 +1.7
B28A Dugan Ranch, T 79.87 36 P **P 00 58 23.0 +0.6**
baz=314
OJC Ojcow 79.88 326 eP P 00 58 23.1 +0.7
OJC LMZ LR 01 34 46.4
comp=Z,3μm,24.2s
OJC Ojcow 79.88 326 eP P 00 58 23.1 +0.7
OJC pmax pmax
comp=Z,141nm,1.0s
OJC Ojcow 79.88 326 eP P 00 58 23.1 +0.7
comp=Z,141nm,1.0s
BR231 Keskin MP Arra 79.88 312 eP P 00 58 23.6 +0.8
BMR Baia Mare 79.89 323⇑iP P 00 58 23.8 +1.3
BMR Baia Mare 79.89 323 ⇑P P 00 58 23.8 +1.3
TMUT Trail Mountain 79.90 49 eP P 00 58 24.8 +1.7
comp=Z,57nm,1.3s
PGOR Pogoanele 79.95 319⇑iP P 00 58 24.5 +1.7
109C Camp Elliot, M 79.95 57 P **P 00 58 24.0 +0.9**
baz=306
PFO Pinyon Flats O 79.96 56 P **P 00 58 23.9 +0.6**
baz=306
PFO Pinyon Flats O 79.96 56 eP P 00 58 24.5 +1.2
PFO pmax pmax
comp=Z,104nm,1.3s
PFO MLR MLR
comp=Z,3μm,19.0s
PFO Pinyon Flats O 79.96 56 eP P 00 58 24.5 +1.2
comp=Z,104nm,1.3s
PFO LR LR
comp=Z,3μm,19.0s
TPFO Pinon Flats 79.97 56 P **P 00 58 24.1 +0.7**
baz=306
LCMT Little Creek M 80.03 51 eP P 00 58 25.5 +1.8
comp=Z,45nm,1.1s
LCMT LR LR
comp=Z,2μm,19.0s
F25A Bowman 80.03 40 P **P 00 58 24.3 +0.9**
baz=312
CRVS Cervenica-Dubn 80.03 324 eP P 00 58 24.3 +1.0
CRVS Cervenica-Dubn 80.03 324 eP P 00 58 24.3 +1.0
BELC Belle Mtn. Jos 80.04 55 P **P 00 58 24.5 +0.7**
baz=307
ISR Istrita 80.05 319⇑iP P 00 58 24.7 +1.2
ISR Istrita 80.05 319 ⇑P P 00 58 24.7 +1.2
TRPA Tarpa 80.05 323⇑eP P 00 58 24.6 +1.3
MTPU Mount Pierson 80.07 50 eP P 00 58 26.0 +1.9
comp=Z,40nm,1.1s
P17A Butcher Ranch, 80.08 48 eP P 00 58 25.7 +1.8
comp=Z,115nm,1.2s
P17A LR LR
comp=Z,900nm,20.0s
A29A Manning Farm, 80.08 36 P **P 00 58 24.0 +0.4**
baz=314
DOPR Dopca 80.09 320⇑iP P 00 58 25.2 +1.6
MLR Muntele Rosu 80.11 320 P **P 00 58 24.4 +0.5**
comp=Z,4.3nm,0.9s,baz=18,slow=5.0,SNR=22
MLR Muntele Rosu 80.11 320⇑iP P 00 58 24.5 +0.5
MLR Muntele Rosu 80.11 320 P **P 00 58 24.4 +0.5**
MLR Muntele Rosu 80.11 320 eP P 00 58 24.3 +0.3
comp=Z,274nm,1.5s
Q16A Castle Valley 80.16 49 eP P 00 58 26.2 +1.9
comp=Z,64nm,1.2s
E26A Carlson Angus 80.18 39 P **P 00 58 25.3 +1.1**
baz=313
NIE Niedzica 80.21 325 eP P 00 58 25.5 +1.3
NIE LMZ LR 01 36 48.7
comp=Z,3μm,20.7s
NIE Niedzica 80.21 325⇑eP P 00 58 25.5 +1.3
NIE MLR MLR
comp=Z,3μm,20.7s
D27A Center 80.22 38 P **P 00 58 25.0 +0.7**
baz=313
P18A Preston Nutter 80.28 48 eP P 00 58 26.4 +1.3
comp=Z,48nm,0.9s
P18A LR LR
comp=Z,1μm,19.0s
KNB Kanab 80.29 51 eP P 00 58 27.2 +2.1
KNB pmax pmax
comp=Z,99nm,1.3s
KNB MLR MLR
comp=Z,1μm,20.0s
KNB Kanab 80.29 51 eP P 00 58 27.2 +2.1
comp=Z,99nm,1.3s
KNB LR LR
comp=Z,1μm,20.0s
HIZ Hauiti 80.31 154 PFAKE 00 58 40.0 +15
HIZ LR LR
comp=Z,3μm,22.0s
B29A Wagenman Farm, 80.34 36 P **P 00 58 25.7 +0.7**
baz=314
SECR 80.35 319⇓iP P 00 58 26.2 +1.1
C28A Hausauer Farms 80.36 37 P **P 00 58 26.0 +0.9**
baz=314
BAR Barrett 80.37 57 eP P 00 58 27.2 +1.8
comp=Z,79nm,1.3s
BAR LR LR
comp=Z,2μm,19.0s
MONP2 Monument Peak 80.41 56 P **P 00 58 26.4 +0.5**
baz=307
SRU San Rafael Swe 80.43 48 eP P 00 58 27.0 +1.1
SRU pmax pmax
comp=Z,61nm,1.0s
SRU San Rafael Swe 80.43 48 eP P 00 58 27.0 +1.1
comp=Z,61nm,1.0s
F26A Lodgepole 80.49 39 P **P 00 58 26.2 +0.4**
baz=313
SULR 80.49 319⇑iP P 00 58 26.7 +0.9
NEE2 Needles Airpor 80.50 54 P **P 00 58 26.8 +0.8**
baz=307
CJR Cluj-Napoca 80.50 322⇓iP P 00 58 27.1 +1.2
CJR Cluj-Napoca 80.50 322 ⇓P P 00 58 27.2 +1.3
A30A Hoffart Farm, 80.51 35 P **P 00 58 26.3 +0.4**
baz=315
IRM Iron Mountain 80.51 55 P **P 00 58 26.9 +0.7**
baz=307
K22A Casper 80.53 44 P **P 00 58 27.0 +0.7**
baz=311
MMU Miners Mountai 80.53 50 eP P 00 58 28.1 +1.6
G25A Newell 80.54 40 P **P 00 58 26.7 +0.5**
baz=312
BC3 Big Chuckawall 80.61 55 P **P 00 58 27.5 +0.8**
baz=307
VOIR 80.62 320⇑iP P 00 58 27.5 +0.9
VOIR 80.62 320 ⇑P P 00 58 27.5 +0.9
D28A Regan 80.64 37 P **P 00 58 26.7 +0.2**
baz=314
MDND Maddock 80.65 37 P **P 00 58 27.2 +0.6**
baz=314
MDND Maddock 80.65 37 eP P 00 58 27.8 +1.2
comp=Z,178nm,1.2s
MDND LR LR
comp=Z,2μm,22.0s
E27A Carson 80.66 38 P **P 00 58 27.5 +0.8**
baz=313
ULM Lac du Bonnet 80.67 33 P **P 00 58 27.1 +0.4**
comp=Z,13nm,0.9s,baz=314,slow=6.6,SNR=14
ULM LR LR 01 33 44.7
comp=Z,983nm,21.4s,baz=328,slow=35
ULM Lac du Bonnet 80.67 33 P **P 00 58 27.1 +0.4**
ULM pmax pmax
comp=Z,13nm,0.9s
ULM MLR MLR
comp=Z,983nm,21.4s
ULM Lac du Bonnet 80.67 33 eP P 00 58 26.6 0.0
comp=Z,64nm,1.3s
RAC Raciborz 80.69 327 eP P 00 58 28.0 +1.2
RAC MLR MLR
comp=Z,4μm,22.2s
IKP In-Ko-Pah, Jac 80.77 56 P **P 00 58 28.4 +0.8**
baz=307
W13A Hualapai Mount 80.78 53 eP P 00 58 28.8 +1.0
comp=Z,34nm,1.3s
MXZ Matakaoa Point 80.78 151 PFAKE 00 58 40.0 +13
MXZ LR LR
comp=Z,2μm,21.0s
KECS Kecovo 80.79 325 eP P 00 58 29.0 +1.7
KECS pmax pmax
comp=Z,18nm,1.0s
KECS Kecovo 80.79 325 eP P 00 58 29.0 +1.7
KECS ePP **PP 01 01 33.2 +2.3**
LANS Liptovska Anna 80.79 325 eP P 00 58 29.0 +1.6
LANS Liptovska Anna 80.79 325 eP P 00 58 29.0 +1.6
SWSC Sam W. Stewart 80.80 56 P **P 00 58 28.6 +0.9**
baz=307
H25A Fruitdale 80.83 41 P **P 00 58 28.1 +0.4**
baz=312
B30A Myrvik Farm, E 80.84 35 P **P 00 58 27.9 +0.3**
baz=315
PRD Provadia 80.84 317 P **P 00 58 28.0 +0.3**
ARR Arges 80.88 320⇑iP P 00 58 29.5 +1.5
DRGR 80.89 322⇑iP P 00 58 28.9 +0.9
DRGR 80.89 322 ⇑P P 00 58 28.9 +0.9
OKC Ostrava-Krasne 80.89 327 eP P 00 58 28.5 +0.7
OKC ePP **PP 01 01 25.8 -6.0**
OKC ex x 01 06 08.8
OKC AMS AMS 01 38 00.0
comp=Z,4μm,16.1s
OKC Ostrava-Krasne 80.89 327 eP P 00 58 28.5 +0.7
OKC MLR MLR
comp=Z,4μm,16.1s

G26A	**Maurine**	**80.90**	**40**	P	**P**	**00 58 28.5 +0.4**
	baz=313					
URZ	**Urewera**	**80.92**	**152**	PFAKE		00 58 40.0 +12
URZ				LR	LR	
	comp=Z,2μm,21.0s					
RSSD	**Black Hills**	**80.93**	**41**	P	**P**	**00 58 28.7 +0.3**
	baz=312					
RSSD	**Black Hills**	**80.93**	**41**	*e*P	**P**	**00 58 29.2 +0.7**
RSSD				pmax	pmax	
	comp=Z,55nm,1.3s					
RSSD				MLR	MLR	
	comp=Z,1μm,21.0s					
RSSD	**Black Hills**	**80.93**	**41**	*e*P	**P**	**00 58 29.2 +0.7**
	comp=Z,55nm,1.3s					
RSSD				LR	LR	
	comp=Z,1μm,21.0s					
KSP	**Ksiaz**	**80.97**	**328**	*e*P	**P**	**00 58 29.2 +0.9**
KSP				LMZ	LR	01 37 24.0
	comp=Z,4μm,17.5s					
KSP	**Ksiaz**	**80.97**	**328⇑**	*e*P	**P**	**00 58 29.2 +0.9**
KSP				MLR	MLR	
	comp=Z,4μm,17.5s					
U15A	**North Rim**	**80.99**	**51**	*e*P	**P**	**00 58 30.9 +1.9**
	comp=Z,39nm,1.2s					
U15A				LR	LR	
	comp=Z,2μm,19.0s					
E28A	**Huff**	**81.00**	**38**	P	**P**	**00 58 29.2 +0.7**
	baz=314					
PDMCI	**Parker Dam,Lak**	**81.09**	**54**	P	**P**	**00 58 30.1 +0.9**
	baz=308					
O20A	**White River Ci**	**81.15**	**47**	P	**P**	**00 58 30.3 +0.6**
	baz=310					
O20A	**White River Ci**	**81.15**	**47**	*e*P	**P**	**00 58 30.9 +1.2**
	comp=Z,37nm,1.0s					
I25A	**Rochford**	**81.16**	**41**	P	**P**	**00 58 29.8 +0.2**
	baz=312					
Y12C	**Blythe**	**81.17**	**55**	P	**P**	**00 58 30.3 +0.6**
	baz=307					
Y12C	**Blythe**	**81.17**	**55**	*e*P	**P**	**00 58 31.1 +1.5**
	comp=Z,91nm,1.2s					
Y12C				LR	LR	
	comp=Z,2μm,21.0s					
B31A	**Greenbush Farm**	**81.18**	**35**	P	**P**	**00 58 30.0 +0.6**
	baz=316					
ZALF	**Zalf**	**81.19**	**304**	*e*P	**P**	**00 58 30.8 +1.0**
G27A	**Dupree**	**81.19**	**39**	P	**P**	**00 58 30.1 +0.5**
	baz=313					
D29A	**Pettibone, Tap**	**81.21**	**37**	P	**P**	**00 58 30.0 +0.4**
	baz=314					
MORC	**Moravsky Berou**	**81.21**	**327**	*e*P	**P**	**00 58 30.3 +0.7**
MORC				pmax	pmax	
	comp=Z,273nm,1.0s					
MORC				MLR	MLR	
	comp=Z,14μm,21.0s					
MORC	**Moravsky Berou**	**81.21**	**327**	*e*P	**P**	**00 58 30.3 +0.7**
	comp=Z,273nm,1.0s					
MORC				LR	LR	
	comp=Z,14μm,21.0s					
H26A	**Fairpoint**	**81.27**	**40**	P	**P**	**00 58 30.0 0.0**
	baz=313					
LOT	**Lotru**	**81.28**	**321⇑**	*i*P	**P**	**00 58 30.9 +0.8**
C30A	**Mose, Pekin**	**81.30**	**36**	P	**P**	**00 58 30.2 +0.2**
	baz=315					
DPC	**Dobruska-Polom**	**81.32**	**328**	*e*P	**P**	**00 58 31.2 +1.0**
DPC				*e*PP	**PP**	**01 01 32.9 -2.5**
DPC				*e*S	**S**	**01 08 35.5 -3.6**
DPC				AMS	AMS	01 39 00.0
	comp=Z,4μm,16.8s					
DPC	**Dobruska-Polom**	**81.32**	**328**	*e*P	**P**	**00 58 31.2 +1.0**
DPC				*e*		01 01 32.9
DPC				*e*		01 08 35.5
DPC				MLR	MLR	
	comp=Z,4μm,16.8s					
KRLC	**Kraliky**	**81.33**	**327**	*e*P	**P**	**00 58 30.9 +0.7**
KRLC	**Kraliky**	**81.33**	**327**	*e*P	**P**	**00 58 30.9 +0.7**
UPC	**Upice**	**81.34**	**328**	*e*P	**P**	**00 58 31.0 +0.8**
UPC				*e*pP	**pP**	**00 58 37.7 -1.4**
UPC				*e*PP	**PP**	**01 01 32.2 -3.2**
UPC				AMS	AMS	01 37 30.0
	comp=Z,5μm,17.8s					
UPC	**Upice**	**81.34**	**328**	*e*P	**P**	**00 58 31.0 +0.8**
UPC				*e*		00 58 37.7
UPC				*e*		01 01 32.2
UPC				MLR	MLR	
	comp=Z,5μm,17.8s					
A32A	**Rocking H Ranc**	**81.36**	**34**	P	**P**	**00 58 30.2 -0.2**
	baz=316					
GLA	**Glamis**	**81.39**	**55**	P	**P**	**00 58 31.4 +0.6**
	baz=307					
GLA	**Glamis**	**81.39**	**55**	*e*P	**P**	**00 58 32.6 +1.7**
GLA				pmax	pmax	
	comp=Z,96nm,1.0s					
GLA				MLR	MLR	
	comp=Z,3μm,19.0s					
GLA	**Glamis**	**81.39**	**55**	*e*P	**P**	**00 58 32.6 +1.7**
	comp=Z,96nm,1.0s					
GLA				LR	LR	
	comp=Z,3μm,19.0s					
PSZ	**Piszkesteto**	**81.47**	**324⇑**	*e*P	**P**	**00 58 32.1 +1.1**
PSZ	**Piszkesteto**	**81.47**	**324**	*e*P	**P**	**00 58 32.2 +1.1**
PSZ				pmax	pmax	
	comp=Z,103nm,0.9s					
PSZ				MLR	MLR	
	comp=Z,8μm,18.0s					
PSZ	**Piszkesteto**	**81.47**	**324**	*e*P	**P**	**00 58 32.2 +1.1**
	comp=Z,103nm,0.9s					
PSZ				LR	LR	
	comp=Z,8μm,18.0s					
BKZ	**Black Stump Fm**	**81.48**	**153**	PFAKE		00 58 40.0 +9.1
BKZ				LR	LR	
	comp=Z,3μm,22.0s					
E29A	**Napoleon**	**81.53**	**37**	P	**P**	**00 58 31.6 +0.3**
	baz=314					
VYHS	**Vyhne**	**81.55**	**325**	*e*P	**P**	**00 58 32.5 +1.1**
VYHS				pmax	pmax	
	comp=Z,37nm,1.0s					
VYHS	**Vyhne**	**81.55**	**325**	*e*P	**P**	**00 58 32.5 +1.1**
VYHS				*e*PP	**PP**	**01 01 38.5 +1.3**
VYHS				*e*L	L	01 38 45.9
D30A	**Buchanan**	**81.58**	**37**	P	**P**	**00 58 31.8 +0.2**
	baz=315					
C31A	**Landman Farms,**	**81.59**	**36**	P	**P**	**00 58 31.8 +0.2**
	baz=316					
SZH	**Strazhica**	**81.60**	**318**	P	**P**	**00 58 31.6 -0.2**
H27A	**Howes**	**81.62**	**40**	P	**P**	**00 58 32.4 +0.5**
	baz=313					
PV09	**Paradox Valley**	**81.66**	**48**	*e*P	**P**	**00 58 34.2 +1.7**
B32A	**Ashes, Strandq**	**81.72**	**35**	P	**P**	**00 58 31.7 -0.6**
	baz=316					
SIRR	**Siria**	**81.78**	**322⇑**	*i*P	**P**	**00 58 33.6 +1.0**
JMB	**Yambol**	**81.78**	**317**	P	**P**	**00 58 33.9 +1.2**
PV10	**Paradox Valley**	**81.80**	**48**	*e*P	**P**	**00 58 34.8 +1.6**
BRBR	**Barbar**	**81.82**	**305**	*e*P	**P**	**00 58 34.1 +0.8**
A33A	**Warroad**	**81.85**	**34**	P	**P**	**00 58 32.6 -0.3**
	baz=317					
PV04	**Paradox Valley**	**81.87**	**48**	*e*P	**P**	**00 58 34.8 +1.3**
ASF	**Jabal al Asfar**	**81.93**	**304**	P	**P**	**00 58 34.9 +1.1**
	comp=Z,26nm,0.8s,baz=359,slow=3.2,SNR=83					
ASF	**Jabal al Asfar**	**81.93**	**304**	P	**P**	**00 58 34.9 +1.1**
E30A	**Jud**	**81.94**	**37**	P	**P**	**00 58 33.5 0.0**
	baz=315					
PVCC	**Panska Ves**	**81.94**	**329**	*e*P	**P**	**00 58 34.2 +0.8**
PVCC				*e*PP	**PP**	**01 01 40.4 +0.1**
PVCC				AMS	AMS	01 37 30.0
	comp=Z,4μm,18.8s					
PVCC	**Panska Ves**	**81.94**	**329**	*e*P	**P**	**00 58 34.2 +0.8**
PVCC				*e*		01 01 40.4
PVCC				MLR	MLR	
	comp=Z,4μm,18.8s					
BRG	**Berggiesshubel**	**81.94**	**329⇑**	*i*P	**P**	**00 58 33.9 +0.6**
	comp=Z,78nm,0.9s					
BRG				*e*PP	**PP**	**01 01 40.2 -0.1**
	comp=Z,26nm,1.1s					
BRG				S	**S**	**01 08 48.0 +2.7**
BRG				SS	**SS**	**01 14 04.0 +1.1**
	comp=N,4μm,15.5s					
	comp=E,2μm,16.0s					
	comp=Z,5μm,15.4s					
BRG	**Berggiesshubel**	**81.94**	**329⇑**	*i*P	**P**	**00 58 33.9 +0.6**
BRG				*e*		01 01 40.2
BRG				S	**S**	**01 08 48.0 +2.7**
BRG				SS	**SS**	**01 14 04.0 +1.1**
BRG				pmax	pmax	
	comp=Z,78nm,0.9s					
BRG				MLR	MLR	
	comp=N,4μm,15.5s					
BRG				MLR	MLR	
	comp=E,2μm,16.0s					
BRG				MLR	MLR	
	comp=Z,5μm,15.4s					
F29A	**Eureka**	**81.95**	**38**	P	**P**	**00 58 33.7 +0.2**
	baz=314					
PV05	**Paradox Valley**	**81.95**	**49**	*e*P	**P**	**00 58 35.4 +1.4**
VRAC	**Vranov**	**81.97**	**327**	P	**P**	**00 58 34.7 +1.1**
	comp=Z,52nm,0.8s,baz=46,slow=4.3,SNR=67					
VRAC	**Vranov**	**81.97**	**327⇑**	*i*P	**P**	**00 58 34.7 +1.1**
VRAC	**Vranov**	**81.97**	**327**	P	**P**	**00 58 34.7 +1.1**
J26A	**Sides Ranch, S**	**81.99**	**42**	P	**P**	**00 58 34.2 +0.3**
	baz=313					
CLL	**Collm**	**82.00**	**330⇑**	*i*P	**P**	**00 58 34.0 +0.4**
	comp=Z,157nm,0.9s					
CLL				*e*Pmax		00 58 35.0
CLL				*i*		00 58 45.7
CLL				*e*		00 59 21.0
CLL				*e*PP	**PP**	**01 01 41.0 +0.2**
CLL				*e*PPP	PPP	01 03 29.0
CLL				*e*		01 07 42.0
CLL				*e*S	**S**	**01 08 44.0 -1.8**
CLL				*e*PS	**PnS**	**01 09 35.0 -1.1**
CLL				*e*SS	**SS**	**01 14 12.0 +8.3**
CLL				*e*		01 14 48.0
CLL				*e*SSS	SSS	01 17 30.0
CLL				*e*		01 18 24.0
CLL				*e*SSSS		01 20 24.0
CLL				LmH		01 37 00.0
	comp=N,2μm,21.4s					
CLL				LmH		01 37 00.0
	comp=E,3μm,19.1s					
CLL				Lmax		01 37 00.0
CLL	**Collm**	**82.00**	**330⇑**	*i*P	**P**	**00 58 34.0 +0.4**
CLL				*i*		00 58 45.7
CLL				*e*S	**S**	**01 08 44.0 -1.8**
CLL				pmax	pmax	
	comp=Z,157nm,0.9s					
CLL	**Collm**	**82.00**	**330**	*e*P	**P**	**00 58 32.9 -0.8**
	comp=Z,150nm,0.9s					
CLL				*e*PP	**PP**	**01 01 41.7 +0.9**
CLL				LR	LR	
	comp=Z,3μm,18.0s					
N23A	**Red Feather La**	**82.00**	**45**	P	**P**	**00 58 35.3 +1.1**
	baz=311					
N23A	**Red Feather La**	**82.00**	**45**	*e*P	**P**	**00 58 36.0 +1.8**
	comp=Z,91nm,1.2s					
N23A				LR	LR	
	comp=Z,1μm,22.0s					
PHWY	**Pilot Hill**	**82.01**	**44**	PFAKE		00 58 50.0 +16
PHWY				LR	LR	
	comp=Z,700nm,20.0s					
Y14A	**Wickenburg**	**82.06**	**54**	*e*P	**P**	**00 58 35.7 +1.3**
	comp=Z,284nm,1.4s					
Y14A				LR	LR	
	comp=Z,5μm,20.0s					
EDRB	**Edirne**	**82.10**	**317**	P	**P**	**00 58 33.2 -1.2**
EDRB	**Edirne**	**82.10**	**317**	P	**P**	**00 58 33.2 -1.2**
SRE	**Strehaia**	**82.11**	**320⇑**	*i*P	**P**	**00 58 34.0 -0.4**
SRE	**Strehaia**	**82.11**	**320** ⇑	P	**P**	**00 58 34.0 -0.4**
D31A	**Mcclaflin, Tow**	**82.12**	**36**	P	**P**	**00 58 34.6 +0.2**
	baz=316					
C32A	**Crookston**	**82.13**	**35**	P	**P**	**00 58 34.1 -0.3**
	baz=316					
WUAZ	**Wupatki**	**82.14**	**52**	P	**P**	**00 58 35.4 +0.5**
	baz=309					
WUAZ	**Wupatki**	**82.14**	**52**	*e*P	**P**	**00 58 36.8 +1.9**
	comp=Z,53nm,1.3s					
WUAZ				LR	LR	
	comp=Z,1μm,20.0s					
MVH1	**Achvaich**	**82.15**	**342**	*e*P	**P**	**00 58 36.2 +1.9**
SMOL	**Smolenice**	**82.18**	**326**	*e*P	**P**	**00 58 36.1 +1.4**
SMOL	**Smolenice**	**82.18**	**326**	*e*P	**P**	**00 58 36.1 +1.4**
BUD	**Budapest**	**82.19**	**325⇓**	*e*P	**P**	**00 58 35.3 +0.6**
MCD	**Coleburn Disti**	**82.21**	**342**	*e*P	**P**	**00 58 35.0 +0.3**
PV01	**Paradox Valley**	**82.23**	**48**	*e*P	**P**	**00 58 37.0 +1.5**
B33A	**Robert and Kas**	**82.24**	**34**	P	**P**	**00 58 34.7 -0.3**
	baz=317					
BZS	**Buzias**	**82.25**	**322⇓**	*i*P	**P**	**00 58 35.3 +0.2**
BZS	**Buzias**	**82.25**	**322⇓**	P	**P**	**00 58 35.3 +0.2**
113A	**Mohawk Valley,**	**82.27**	**55**	*e*P	**P**	**00 58 38.3 +2.8**
	comp=Z,49nm,1.3s					
113A				LR	LR	
	comp=Z,2μm,20.0s					
GOPC	**GO Pecny, Ondr**	**82.31**	**328**	*e*P	**P**	**00 58 36.3 +0.9**
GOPC				AMS	AMS	01 39 40.0
	comp=Z,4μm,16.6s					
GOPC	**GO Pecny, Ondr**	**82.31**	**328**	*e*P	**P**	**00 58 36.3 +0.9**
GOPC				MLR	MLR	
	comp=Z,4μm,16.6s					
G29A	**Hoven**	**82.35**	**39**	P	**P**	**00 58 35.8 +0.1**
	baz=314					
F30A	**Leola**	**82.35**	**38**	P	**P**	**00 58 35.7 0.0**
	baz=315					
PRU	**Pruhonice**	**82.36**	**328**	*i* P	**P**	**00 58 36.3 +0.7**
PRU				*e*pP	**sP**	**00 58 46.9 -0.8**
PRU				*e*PP	**PP**	**01 01 44.3 +0.5**
PRU				*e*x	x	01 07 13.6
PRU				AMS	AMS	01 38 00.0
	comp=Z,4μm,18.0s					
PRU	**Pruhonice**	**82.36**	**328**	*i* P	**P**	**00 58 36.3 +0.7**
PRU				*e*		00 58 46.9
PRU				*e*		01 01 44.3
PRU				MLR	MLR	
	comp=Z,4μm,18.0s					
E31A	**Nome**	**82.39**	**37**	P	**P**	**00 58 35.9 0.0**
	baz=316					
D32A	**Dogwood Acres,**	**82.40**	**36**	P	**P**	**00 58 35.3 -0.6**
	baz=316					
MMAI	**Mount Meron Ar**	**82.42**	**305**	P	**P**	**00 58 37.4 +1.0**
	comp=Z,13nm,0.6s,baz=41,slow=6.6,SNR=82					
TREC	**Trest**	**82.47**	**328**	*e*P	**P**	**00 58 36.8 +0.6**
TREC				*e*pP	**sP**	**00 58 48.4 +0.1**
TREC				AMS	AMS	01 39 10.0
	comp=Z,5μm,18.2s					
TREC	**Trest**	**82.47**	**328**	*e*P	**P**	**00 58 36.8 +0.6**
TREC				*e*		00 58 48.4
TREC				MLR	MLR	
	comp=Z,5μm,18.2s					
B34A	**Aery, Baudette**	**82.51**	**34**	P	**P**	**00 58 36.0 -0.4**
	baz=318					
SMCO	**Snowmass**	**82.52**	**47**	*e*P	**P**	**00 58 38.7 +1.5**
	comp=Z,42nm,1.4s					
C33A	**Trail**	**82.53**	**35**	P	**P**	**00 58 36.0 -0.6**
	baz=317					
I28A	**Midland**	**82.53**	**40**	P	**P**	**00 58 37.3 +0.6**
	baz=314					
THZ	**Tophouse**	**82.55**	**157**	*e*P	**P**	**00 58 36.6 +0.2**
	comp=Z,77nm,1.2s					
THZ				LR	LR	
	comp=Z,2μm,22.0s					
CSS	**Mathiatis**	**82.57**	**308**	P	**P**	**00 58 36.3 -0.7**
CSS	**Mathiatis**	**82.57**	**308**	*e*P	**P**	**00 58 37.0 0.0**
	comp=Z,16nm,0.7s					
CSS				LR	LR	
	comp=Z,500nm,19.0s					
H29A	**Onida**	**82.59**	**39**	P	**P**	**00 58 36.7 -0.2**
	baz=314					
CSKK	**Cs˘tkako**	**82.64**	**325⇓**	*e*P	**P**	**00 58 37.8 +0.7**
BANR	**Banloc**	**82.66**	**322⇑**	*i*P	**P**	**00 58 38.4 +1.2**
F31A	**Hecla**	**82.71**	**37**	P	**P**	**00 58 37.3 -0.2**
	baz=315					
MPEP	**Malo Peshtene**	**82.72**	**319**	P	**P**	**00 58 38.7 +1.1**
SNZO	**South Karori**	**82.74**	**155**	PFAKE		00 58 50.0 +13
SNZO				LR	LR	
	comp=Z,2μm,22.0s					
RRH	**Rhenigidale**	**82.76**	**343**	*e*P	**P**	**00 58 38.2 +0.8**
X16A	**Lo Mia Camp, P**	**82.78**	**53**	*e*P	**P**	**00 58 40.0 +1.7**
	comp=Z,63nm,1.3s					
X16A				LR	LR	
	comp=Z,1μm,20.0s					
G30A	**Faulkton**	**82.78**	**38**	P	**P**	**00 58 37.8 -0.1**
	baz=315					
MDVR	**Moldovita**	**82.79**	**321⇑**	*i*P	**P**	**00 58 38.6 +0.6**
KAC	**Achnashellach**	**82.80**	**342⇑**	*e*P	**P**	**00 58 38.5 +0.8**
MVCO	**Mesa Verde**	**82.87**	**49**	P	**P**	**00 58 39.3 +0.5**
	baz=310					
ISCO	**Idaho Springs**	**82.91**	**45**	P	**P**	**00 58 40.1 +1.0**
	baz=311					
ISCO	**Idaho Springs**	**82.91**	**45**	*e*P	**P**	**00 58 40.5 +1.4**
ISCO				pmax	pmax	
	comp=Z,20nm,1.0s					
ISCO				MLR	MLR	
	comp=Z,700nm,21.0s					
ISCO	**Idaho Springs**	**82.91**	**45**	*e*P	**P**	**00 58 40.5 +1.4**
	comp=Z,20nm,1.0s					
ISCO				LR	LR	
	comp=Z,700nm,21.0s					
D33A	**AnnSam, Waubun**	**82.95**	**35**	P	**P**	**00 58 38.4 -0.4**
	baz=317					
I29A	**Vivian Onida**	**82.97**	**40**	P	**P**	**00 58 39.1 +0.1**
	baz=314					
KDZ	**Kurdzhali**	**82.97**	**317**	P	**P**	**00 58 40.3 +1.3**
C34A	**RKJ Ranch, Bem**	**83.01**	**34**	P	**P**	**00 58 38.6 -0.5**
	baz=318					
B35A	**Bob, Littlefor**	**83.02**	**33**	P	**P**	**00 58 38.6 -0.5**
	baz=318					
KPL	**Plockton**	**83.03**	**343⇑**	*e*P	**P**	**00 58 39.9 +1.0**
NKC	**Novy Kostel**	**83.05**	**330**	*e*P	**P**	**00 58 39.6 +0.4**
NKC				AMS	AMS	01 38 50.0
	comp=Z,5μm,17.6s					
NKC	**Novy Kostel**	**83.05**	**330**	*e*P	**P**	**00 58 39.6 +0.4**
NKC				MLR	MLR	
	comp=Z,5μm,17.6s					
EDU	**Dundee**	**83.06**	**341⇑**	*e*P	**P**	**00 58 39.7 +0.6**
KSB	**Sheil Bridge**	**83.09**	**342⇑**	*e*P	**P**	**00 58 39.9 +0.7**
ALN	**Alexandroupoli**	**83.13**	**316**	P	**P**	**00 58 39.1 -0.6**
ALN	**Alexandroupoli**	**83.13**	**316**	P	**P**	**00 58 39.1 -0.6**
ALN	**Alexandroupoli**	**83.13**	**316**	P	**P**	**00 58 39.1 -0.6**
ENEZ	**Enez**	**83.17**	**316**	P	**P**	**00 58 39.9 -0.1**
G31A	**Conde**	**83.18**	**38**	P	**P**	**00 58 40.4 +0.4**
	baz=316					
SOP	**Sopron**	**83.19**	**326⇑**	*e*P	**P**	**00 58 41.1 +1.2**
SOP				*e*PP	**PP**	**01 01 53.2 +2.5**
SOP	**Sopron**	**83.19**	**326**	P	**P**	**00 58 40.8 +0.9**
LTZ	**Lake Taylor**	**83.26**	**157**	PFAKE		00 58 50.0 +10
LTZ				LR	LR	
	comp=Z,3μm,22.0s					
D34A	**Park Rapids**	**83.29**	**35**	P	**P**	**00 58 40.5 0.0**
	baz=317					
CONA	**Conrad Observa**	**83.32**	**326**	*i* PcP	**P**	**00 58 41.8 +1.1**
	comp=Z,34nm,1.0s,SNR=46					
CONA	**Conrad Observa**	**83.32**	**326**	*i* PcP	**P**	**00 58 41.8 +1.1**
	comp=Z,34nm,1.0s,SNR=46					
RZN	**Rozhen**	**83.33**	**317**	P	**P**	**00 58 41.6 +0.6**
E33A	**Westby DABS, E**	**83.33**	**36**	P	**P**	**00 58 40.8 0.0**
	baz=317					
SUSD	**Miller**	**83.36**	**39**	P	**P**	**00 58 41.1 +0.1**
	baz=315					
C35A	**Jirik Farms, M**	**83.40**	**34**	P	**P**	**00 58 40.6 -0.5**
	baz=318					
214A	**Organ Pipe Nat**	**83.40**	**55**	P	**P**	**00 58 42.2 +0.8**
	baz=308					
214A	**Organ Pipe Nat**	**83.40**	**55**	*e*P	**P**	**00 58 43.0 +1.6**
	comp=Z,349nm,1.2s					
KHC	**Kasperske Hory**	**83.42**	**328**	*e*P	**P**	**00 58 41.6 +0.5**
KHC				*e*pP	**sP**	**00 58 53.4 +0.1**
KHC				*e*PP	**PP**	**01 01 47.2 -5.3**
KHC				*e*x	x	01 06 46.6
KHC				*e*S	**S**	**01 09 00.5 0.0**
KHC				AMS	AMS	01 39 00.0
	comp=Z,4μm,16.7s					
KHC	**Kasperske Hory**	**83.42**	**328**	*e*P	**P**	**00 58 41.6 +0.5**
KHC				*e*		00 58 53.4
KHC				*e*		01 09 00.5
KHC				MLR	MLR	
	comp=Z,4μm,16.7s					
KHC	**Kasperske Hory**	**83.42**	**328**	*e*P	**P**	**00 58 41.0 -0.1**
	comp=Z,39nm,1.0s					
KHC				LR	LR	
	comp=Z,2μm,18.0s					
W18A	**Petrified Fore**	**83.43**	**51**	P	**P**	**00 58 42.4 +0.7**
	baz=310					
W18A	**Petrified Fore**	**83.43**	**51**	*e*P	**P**	**00 58 42.8 +1.1**
	comp=Z,45nm,1.3s					
W18A				LR	LR	
	comp=Z,1μm,19.0s					
I30A	**Oacoma**	**83.50**	**39**	P	**P**	**00 58 41.8 +0.1**
	baz=315					
ESY	**Stoneypath**	**83.51**	**340⇑**	*e*P	**P**	**00 58 42.0 +0.5**
G32A	**Webster**	**83.51**	**37**	P	**P**	**00 58 41.8 +0.1**
	baz=316					
S22A	**4UR Ranch, Cre**	**83.53**	**48**	P	**P**	**00 58 43.5 +1.2**
	baz=311					
S22A	**4UR Ranch, Cre**	**83.53**	**48**	*e*P	**P**	**00 58 43.9 +1.6**
	comp=Z,36nm,1.1s					
H31A	**Wolsey**	**83.58**	**38**	P	**P**	**00 58 41.8 -0.2**
	baz=315					
GEC2	**GERESS Array S**	**83.58**	**328**	*e*P	**P**	**00 58 42.3 +0.2**
GEC2				pmax	pmax	
	comp=Z,51nm,1.0s					
GEC2				MLR	MLR	
	comp=Z,5μm,18.0s					
GEC2	**GERESS Array S**	**83.58**	**328**	*e*P	**P**	**00 58 42.3 +0.2**
	comp=Z,51nm,1.0s					
GEC2				LR	LR	
	comp=Z,5μm,18.0s					
GERES	**GERESS Array B**	**83.58**	**328**	P	**P**	**00 58 42.2 +0.1**
	comp=Z,30nm,0.8s,baz=36,slow=5.0,SNR=174					
GERES				PP	**PP**	**01 01 54.4 +0.5**
	comp=Z,3.9nm,0.9s,baz=46,slow=7.6,SNR=3.8					
GERES				PKKPbc	**PKKPbc**	**01 16 58.2 -1.0**
	comp=Z,0.6nm,0.8s,baz=236,slow=6.3,SNR=6.0					
GERES				LR	LR	01 40 05.7
	comp=Z,2μm,18.1s,baz=24,slow=39					
GERES	**GERESS Array B**	**83.58**	**328**	P	**P**	**00 58 42.2 +0.1**
GERES						01 01 54.4
GEA0	**GERESS Array S**	**83.59**	**328**	*e*P	**P**	**00 58 41.2 -0.8**
GEA0				*e*PP	**PP**	**01 01 54.3 +0.3**
X18A	**Snowflake**	**83.67**	**52**	*e*P	**P**	**00 58 44.6 +1.7**
	comp=Z,46nm,1.2s					
X18A				LR	LR	
	comp=Z,1μm,19.0s					
F33A	**5 Mile Ranch,**	**83.68**	**36**	P	**P**	**00 58 42.7 +0.2**
	baz=317					
EZN	**Ezine**	**83.69**	**315**	P	**P**	**00 58 42.5 -0.1**
EZN	**Ezine**	**83.69**	**315**	P	**P**	**00 58 42.5 -0.1**
EZN	**Ezine**	**83.69**	**315**	P	**P**	**00 58 42.5 -0.1**
SMTH	**Samothraki Isl**	**83.70**	**316**	P	**P**	**00 58 42.0 -0.7**
SMTH	**Samothraki Isl**	**83.70**	**316**	P	**P**	**00 58 42.0 -0.7**
WET	**Wettzell**	**83.70**	**329**	P	**P**	**00 58 43.4 +0.8**
E34A	**Wadena**	**83.72**	**35**	P	**P**	**00 58 43.0 +0.3**
	baz=317					
EAB	**Aberfoyle**	**83.73**	**341⇑**	*e*P	**P**	**00 58 43.3 +0.8**
Q24A	**Divide**	**83.73**	**46**	P	**P**	**00 58 43.6 +0.3**
	baz=312					
Q24A	**Divide**	**83.73**	**46**	PFAKE		00 59 00.0 +17
Q24A				LR	LR	
	comp=Z,900nm,22.0s					
D35A	**Remer**	**83.82**	**34**	P	**P**	**00 58 42.7 -0.5**
	baz=318					
WTSB	**Winterswijk**	**83.86**	**334**	*i* P	**P**	**00 58 43.4 +0.2**
	comp=Z,60nm,1.0s					
C36A	**Pine Crest Far**	**83.86**	**33**	P	**P**	**00 58 43.1 -0.4**
	baz=319					
I31A	**Royce, Wessing**	**83.87**	**39**	P	**P**	**00 58 43.4 -0.1**
	baz=315					
J30A	**Dallas**	**83.88**	**40**	P	**P**	**00 58 43.7 +0.1**
	baz=315					
KAVA	**Kavala**	**83.91**	**317**	P	**P**	**00 58 43.0 -0.8**
KAVA	**Kavala**	**83.91**	**317**	P	**P**	**00 58 43.0 -0.8**
KAVA	**Kavala**	**83.91**	**317**	P	**P**	**00 58 43.0 -0.8**
MMB	**Musomiste**	**83.94**	**318**	P	**P**	**00 58 44.4 +0.4**
GRF	**Grafenberg Arr**	**83.97**	**330**	P	**P**	**00 58 45.1 +1.2**
ARSA	**Arzberg**	**83.98**	**326**	*i* P	**P**	**00 58 44.5 +0.5**
	comp=Z,24nm,0.8s,SNR=32					
ARSA	**Arzberg**	**83.98**	**326**	*i* P	**P**	**00 58 44.5 +0.5**
	comp=Z,24nm,0.8s,SNR=32					
BEHE	**Becsehely**	**83.98**	**325⇓**	*e*P	**P**	**00 58 44.8 +0.8**
NVR	**Nevrokopi**	**84.03**	**318**	P	**P**	**00 58 43.8 -0.6**
NVR	**Nevrokopi**	**84.03**	**318**	P	**P**	**00 58 43.

FETY Fethiye 84.16 311 P P 00 58 44.0 -1.2
FETY Fethiye 84.16 311 P P 00 58 44.0 -1.2
OGNE Ogallala 84.16 43 P P 00 58 45.4 +0.2
baz=313
OGNE Ogallala 84.16 43 *e*P **P 00 58 46.1 +0.9**
comp=Z,71nm,1.1s
EKA Eskdalemuir Ar 84.17 340 P **P 00 58 45.6 +0.9**
comp=Z,13nm,0.7s
EKA PP **PP 01 01 58.3 -0.1**
comp=Z,6.0nm,0.8s,baz=39,slow=8.1,SNR=4.2
EKA Eskdalemuir Ar 84.17 340 P **P 00 58 45.7 +0.9**
EKA 01 01 58.3
KSL Kastellorizon 84.17 311 P **P 00 58 44.3 -0.9**
KSL Kastellorizon 84.17 311 P **P 00 58 44.3 -0.9**
C37A Embarrass 84.18 33 P **P 00 58 45.0 0.0**
baz=319
ESK Eskdalemuir 84.20 340⇑ *e*P **P 00 58 45.4 +0.5**
ESK AMS AMS 01 39 27.2
comp=Z,3μm,17.7s
ESK Eskdalemuir 84.20 340 *i* P **P 00 58 46.5 +1.6**
ESK Eskdalemuir 84.20 340 PFAKE 00 59 00.0 +15
ESK LR LR
comp=Z,4μm,19.0s
F34A Alexandria 84.21 36 P **P 00 58 45.2 0.0**
baz=317
MQZ McQueen's Vall 84.22 158 PFAKE 00 59 00.0 +15
MQZ LR LR
comp=Z,2μm,19.0s
K30A Basset 84.27 40 P **P 00 58 46.1 +0.5**
baz=315
ECK Cauldkaine Hil 84.30 340⇑ *e*P **P 00 58 46.1 +0.6**
H33A Prehn Over Nor 84.30 37 P **P 00 58 46.0 +0.2**
baz=316
EYMN Ely 84.31 32 P **P 00 58 45.8 +0.1**
baz=320
EYMN Ely 84.31 32 PFAKE 00 59 00.0 +14
EYMN LR LR
comp=Z,1μm,22.0s
YER Yerkesik 84.32 312 P **P 00 58 46.3 +0.3**
YER Yerkesik 84.32 312 P **P 00 58 46.3 +0.3**
YER Yerkesik 84.32 312 P **P 00 58 46.3 +0.3**
SDCO Great Sand Dun 84.33 47 P **P 00 58 47.4 +1.1**
baz=312
SDCO Great Sand Dun 84.33 47 *e*P **P 00 58 47.4 +1.1**
comp=Z,59nm,1.4s
SDCO LR LR
comp=Z,1μm,19.0s
SRS Serrai 84.34 318 P **P 00 58 44.3 -1.7**
SRS Serrai 84.34 318 P **P 00 58 44.3 -1.7**
SRS Serrai 84.34 318 P **P 00 58 44.3 -1.7**
PPT Papeete 84.36 116 LR LR 01 30 52.4
comp=Z,2μm,20.1s,baz=299,slow=32
SIGR SIGRI 84.37 315 P **P 00 58 45.5 -0.6**
SIGR SIGRI 84.37 315 P **P 00 58 45.5 -0.6**
PPT2 Papeete2 84.38 116 *e*S **S 01 09 07.9 -3.0**
comp=Z,4μm,32.2s
PPT2 *e*SS **SS 01 14 42.5 +0.7**
comp=Z,751nm,25.5s
PPT2 Papeete2 84.38 116 *e*LR LR 01 25 18.5
comp=Z,7μm,25.5s,baz=311
I32A Karley and Nic 84.41 38 P **P 00 58 46.2 -0.1**
baz=316
G34A Benson 84.43 36 P **P 00 58 46.1 -0.2**
baz=317
F35A Swanville 84.48 35 P **P 00 58 46.3 -0.4**
baz=318
D37A Cotton 84.50 33 P **P 00 58 46.2 -0.5**
baz=319
TUC Tucson 84.53 54 P **P 00 58 47.9 +0.7**
baz=309
TUC Tucson 84.53 54 *e*P **P 00 58 48.6 +1.4**
TUC pmax pmax
comp=Z,61nm,1.1s
TUC MLR MLR
comp=Z,2μm,19.0s
TUC Tucson 84.53 54 *e*P **P 00 58 48.6 +1.4**
comp=Z,61nm,1.1s
TUC LR LR
comp=Z,2μm,19.0s
GROS Grobnik 84.58 326 *i* P **P 00 58 47.4 +0.2**
C38A Sawbill Land. 84.58 32 P **P 00 58 46.7 -0.4**
baz=320
E36A McGregor 84.61 34 P **P 00 58 47.2 0.0**
baz=319
PERS Pernice 84.62 326 *i* P **P 00 58 47.8 +0.4**
SOKA Soboth 84.63 326 *i* PcP **P 00 58 47.9 +0.4**
comp=Z,79nm,0.9s,SNR=123
SOKA Soboth 84.63 326 *i* PcP **P 00 58 47.9 +0.4**
comp=Z,79nm,0.9s,SNR=123
OUR Ouranopolis 84.66 317 P **P 00 58 46.8 -0.8**
OUR Ouranopolis 84.66 317 P **P 00 58 46.8 -0.8**
OUR Ouranopolis 84.66 317 P **P 00 58 46.8 -0.8**
OUR Ouranopolis 84.66 317 P **P 00 58 46.8 -0.8**
SOH Sokhos 84.67 318 P **P 00 58 46.1 -1.6**
SOH Sokhos 84.67 318 P **P 00 58 46.1 -1.6**
SOH Sokhos 84.67 318 P **P 00 58 46.1 -1.6**
J32A Parkston 84.69 39 P **P 00 58 47.3 -0.4**
baz=316
KNT Kendrikon 84.69 318 P **P 00 58 47.1 -0.6**
KNT Kendrikon 84.69 318 P **P 00 58 47.1 -0.6**
KNT Kendrikon 84.69 318 P **P 00 58 47.1 -0.6**
I33A Coleman 84.73 38 P **P 00 58 47.9 0.0**
baz=316
K31A O'Neill 84.75 40 P **P 00 58 48.4 +0.3**
baz=315
VAY Valandovo 84.75 318 P **P 00 58 46.8 -1.2**
VAY Valandovo 84.75 318 *i* P **P 00 58 48.9 +0.9**
VAY Valandovo 84.75 318 P **P 00 58 46.8 -1.2**
VAY Valandovo 84.75 318 P **P 00 58 46.8 -1.2**
H34A Spellman Lake, 84.78 37 P **P 00 58 48.2 0.0**
baz=317
EIL Elat 84.78 303 P **P 00 58 49.0 +0.5**
comp=Z,57nm,0.8s,baz=23,slow=3.7,SNR=75
SMG Samos 84.80 313 P **P 00 58 47.9 -0.5**
SMG Samos 84.80 313 P **P 00 58 47.9 -0.5**
GMK Mull of Kintyr 84.80 342⇑ *e*P **P 00 58 48.8 +0.8**
SKO Skopje 84.90 319 P **P 00 58 49.1 +0.3**
SKO Skopje 84.90 319 *i* P **P 00 58 50.1 +1.3**
SKO Skopje 84.90 319 P **P 00 58 49.1 +0.3**
SKO Skopje 84.90 319 P **P 00 58 49.1 +0.3**
SISC Sisak 84.91 324 P **P 00 58 49.5 +0.8**
PLG Polygyros 84.93 317 P **P 00 58 48.1 -0.9**
PLG Polygyros 84.93 317 P **P 00 58 48.1 -0.9**
PLG Polygyros 84.93 317 P **P 00 58 48.1 -0.9**
PLG Polygyros 84.93 317 P **P 00 58 48.1 -0.9**
BODT Bodrum 84.95 313 P **P 00 58 47.9 -1.2**
BODT Bodrum 84.95 313 P **P 00 58 47.9 -1.2**
E37A Wrenshall 84.96 34 P **P 00 58 48.4 -0.6**
baz=319
HORT Hortiatis 84.97 318 P **P 00 58 48.4 -0.9**
HORT Hortiatis 84.97 318 P **P 00 58 48.4 -0.9**
F36A Milaca 84.97 35 P **P 00 58 48.5 -0.6**
baz=318
OBKA Obir 84.98 326 *i* P **P 00 58 49.1 -0.1**
comp=Z,24nm,0.7s,SNR=39
OBKA Obir 84.98 326 *i* P **P 00 58 49.1 -0.1**
comp=Z,24nm,0.7s,SNR=39
PLE Pljevlja 85.00 321⇑ *i*P **P 00 58 50.0 +0.6**
G35A Watkins 85.00 36 P **P 00 58 49.1 -0.1**
baz=318
GAL1 Galloway 85.00 341⇑ *e*P **P 00 58 49.5 +0.5**
GAL1 AMB AMB 00 58 50.9
comp=Z,55nm,1.1s
C39A Grand Marais 85.00 32 P **P 00 58 48.7 -0.5**
baz=321
THE Thessaloniki 85.02 318 P **P 00 58 48.4 -1.0**
THE Thessaloniki 85.02 318 P **P 00 58 48.4 -1.0**
THE Thessaloniki 85.02 318 P **P 00 58 48.4 -1.0**
ARG Arkhangelos 85.02 312 P **P 00 58 48.9 -0.6**
ARG Arkhangelos 85.02 312 P **P 00 58 48.9 -0.6**
ARG Arkhangelos 85.02 312 P **P 00 58 48.9 -0.6**
L31A Butterfield Fa 85.03 40 P **P 00 58 49.5 +0.1**
baz=315
ECSD EROS Data Cent 85.05 38 P **P 00 58 49.5 0.0**
baz=317
ECSD EROS Data Cent 85.05 38 *e*P **P 00 58 49.6 +0.1**
comp=Z,50nm,1.1s
ECSD LR LR
comp=Z,1μm,20.0s
BLY Banja Luka 85.06 324⇑ *i*P **P 00 58 49.9 +0.4**
IVA Berane 85.07 321⇑ *i*P **P 00 58 50.5 +0.8**
KBA Koelnbreinsper 85.08 327 *i* P **P 00 58 49.8 0.0**
comp=Z,26nm,0.7s,SNR=36
KBA Koelnbreinsper 85.08 327 *i* P **P 00 58 49.8 0.0**
comp=Z,26nm,0.7s,SNR=36
KBA Koelnbreinsper 85.08 327 P **P 00 58 49.9 +0.1**
GRG Griva 85.10 318 P **P 00 58 48.4 -1.4**
GRG Griva 85.10 318 P **P 00 58 48.4 -1.4**
GRG Griva 85.10 318 P **P 00 58 48.4 -1.4**
PAIG Paliouri 85.11 317 P **P 00 58 48.6 -1.2**
PAIG Paliouri 85.11 317 P **P 00 58 48.6 -1.2**
PAIG Paliouri 85.11 317 P **P 00 58 48.6 -1.2**
PAIG Paliouri 85.11 317 P **P 00 58 48.6 -1.2**
K32A Verdigre 85.13 39 P **P 00 58 49.6 -0.4**
baz=316
KSCO Kaye Shedlock' 85.15 44 P **P 00 58 50.3 0.0**
baz=313
KSCO Kaye Shedlock' 85.15 44 *e*P **P 00 58 51.4 +1.1**
comp=Z,98nm,1.3s
KSCO LR LR
comp=Z,1μm,18.0s
HGN Heimansgroeve 85.16 333 *i* P **P 00 58 49.4 -0.5**
comp=Z,111nm,1.2s
HGN Heimansgroeve 85.16 333 *e*S S 01 09 05.8 -12
HGN *e*SS **SS 01 14 43.4 -6.8**
J33A Davis 85.17 38 P **P 00 58 50.0 -0.1**
baz=316
H35A Sunnyside Ranc 85.22 36 P **P 00 58 50.6 +0.2**
baz=318
BEBN Eben Emael 85.22 333 P **P 00 58 50.4 +0.2**
PVY Plav 85.23 321 *e*P **P 00 58 50.8 +0.2**
MEM Membach 85.25 333 P **P 00 58 50.4 0.0**
comp=Z,47nm,1.1s
MYKA Terra Mystica 85.29 327 *i* P **P 00 58 50.0 -0.8**
comp=Z,29nm,0.6s,SNR=31
MYKA Terra Mystica 85.29 327 *i* P **P 00 58 50.0 -0.8**
comp=Z,29nm,0.6s,SNR=31
UPM Unac-Piva 85.33 322⇑ *i*P **P 00 58 51.1 -0.1**
G36A St. Michael 85.34 35 P **P 00 58 50.8 -0.1**
baz=318
LJU Ljubljana 85.34 326⇑ *e*P **P 00 58 51.0 +0.1**
VISS Visnje 85.38 326 *i* P **P 00 58 51.0 -0.1**
T25A Trinidad 85.38 47 P **P 00 58 52.7 +1.1**
baz=312
T25A Trinidad 85.38 47 *e*P **P 00 58 53.1 +1.5**
comp=Z,86nm,1.2s
BOJS Bojanci 85.41 325 *i* P **P 00 58 51.5 +0.2**
STU Stuttgart 85.51 330 *e*P **P 00 58 51.7 0.0**
STU pmax pmax
comp=Z,154nm,0.8s
STU MLR MLR
comp=Z,3μm,18.0s
STU Stuttgart 85.51 330 *e*P **P 00 58 51.7 0.0**
comp=Z,154nm,0.8s
STU LR LR
comp=Z,3μm,18.0s
AOS Alonnisos 85.52 316 P **P 00 58 51.5 -0.4**
AOS Alonnisos 85.52 316 P **P 00 58 51.5 -0.4**
LAZ Ladron 85.53 50 *e*P **P 00 58 53.9 +1.6**
M31A Lambtescht Ranc 85.54 41 P **P 00 58 52.1 +1.0**
baz=315
NKY Niksic 85.57 321⇑ *i*P **P 00 58 52.3 0.0**
L32A Elgin 85.58 40 P **P 00 58 52.4 +0.2**
baz=316
ANMO Albuquerque 85.59 50 P **P 00 58 53.7 +1.0**
baz=311
ANMO Albuquerque 85.59 50 *e*P **P 00 58 54.2 +1.6**
ANMO pmax pmax
comp=Z,38nm,1.1s
ANMO MLR MLR
comp=Z,1μm,20.0s
ANMO Albuquerque 85.59 50 *e*P **P 00 58 54.2 +1.6**
comp=Z,38nm,1.1s
ANMO LR LR
comp=Z,1μm,20.0s
NKME Niksic 85.62 321⇑ *i*P **P 00 58 52.6 +0.1**
BIA Bitola 85.64 319 *e*P **P 00 58 52.1 -0.4**
LIT Litokhoron 85.65 317 P **P 00 58 51.5 -1.1**
LIT Litokhoron 85.65 317 P **P 00 58 51.5 -1.1**
LIT Litokhoron 85.65 317 P **P 00 58 51.5 -1.1**
WATA Walderalm 85.65 328 *i* PcP **P 00 58 52.7 0.0**
comp=Z,8.5nm,0.6s,SNR=11
WATA Walderalm 85.65 328 *i* PcP **P 00 58 52.7 0.0**
comp=Z,8.5nm,0.6s,SNR=11
JAVS Javornik 85.66 326 *i* P **P 00 58 52.0 -0.6**
BCLA Clavier 85.67 333 P **P 00 58 52.5 +0.1**
K33A Hardington 85.67 39 P **P 00 58 52.7 +0.1**
baz=316
WTTA Wattenberg 85.68 328 *i* PcP **P 00 58 52.9 +0.1**
comp=Z,8.6nm,0.7s,SNR=7.4
WTTA Wattenberg 85.68 328 *i* PcP **P 00 58 52.9 +0.1**
comp=Z,8.6nm,0.7s,SNR=7.4
UCC Uccle 85.69 334 P **P 00 58 52.5 0.0**
ABTA Abfaltersbach 85.70 327 *i* P **P 00 58 52.0 -0.9**
comp=Z,24nm,0.9s,SNR=35
ABTA Abfaltersbach 85.70 327 *i* P **P 00 58 52.0 -0.9**
comp=Z,24nm,0.9s,SNR=35
J34A George 85.70 38 P **P 00 58 52.8 0.0**
baz=317
PDG Podgorica 85.71 321⇑ *i*P **P 00 58 53.3 +0.4**
PDG Podgorica 85.71 321 P **P 00 58 51.5 -1.3**
TTG Podgorica 85.71 321⇑ *i*P **P 00 58 53.2 +0.4**
TTG Podgorica 85.71 321 P **P 00 58 51.5 -1.3**
TTG Podgorica 85.71 321 P **P 00 58 51.5 -1.3**
BRY Bratogost 85.74 322⇑ *i*P **P 00 58 52.9 -0.2**
H36A Jessenland, He 85.74 36 P **P 00 58 53.8 +0.9**
baz=318
I35A Creekview Farm 85.77 37 P **P 00 58 53.4 +0.3**
baz=318
XOR Xorichti 85.77 317 P **P 00 58 51.5 -1.7**
XOR Xorichti 85.77 317 P **P 00 58 51.5 -1.7**
XOR Xorichti 85.77 317 P **P 00 58 51.5 -1.7**
FNA Florina 85.77 319 P **P 00 58 52.5 -0.7**
FNA Florina 85.77 319 P **P 00 58 52.5 -0.7**
FNA Florina 85.77 319 P **P 00 58 52.5 -0.7**
SPMN Marine on St. 85.79 35 P **P 00 58 53.1 0.0**
baz=319
SPMN Marine on St. 85.79 35 *e*P **P 00 58 53.7 +0.6**
comp=Z,40nm,1.1s
SPMN LR LR
comp=Z,2μm,22.0s
NEO Neokhori 85.79 317 P **P 00 58 52.2 -1.1**
NEO Neokhori 85.79 317 P **P 00 58 52.2 -1.1**
NEO Neokhori 85.79 317 P **P 00 58 52.2 -1.1**
CEME Cevo 85.80 321⇑ *i*P **P 00 58 53.4 0.0**
L33A Hoskins 85.85 39 P **P 00 58 53.8 +0.2**
baz=316
MOTA Moosalm 85.85 328 *i* PcP **P 00 58 53.7 +0.1**
comp=Z,11nm,0.7s,SNR=16
MOTA Moosalm 85.85 328 *i* PcP **P 00 58 53.7 +0.1**
comp=Z,11nm,0.7s,SNR=16
OHR Ohrid 85.85 319 *i* P **P 00 58 53.8 +0.2**
STNC Stoke 85.87 339⇑ *e*P **P 00 58 54.2 +0.8**
STNC AMB AMB 00 58 54.9
comp=Z,82nm,1.1s
STNC AMS AMS 01 39 02.5
comp=Z,3μm,26.3s
Y22D IRIS PASSCAL I 85.88 50 P **P 00 58 54.7 +0.7**
baz=311
Y22D IRIS PASSCAL I 85.88 50 PFAKE 00 59 10.0 +16
Y22D LR LR
comp=Z,2μm,20.0s
RETA Reutte 85.88 329 *i* PcP **P 00 58 53.7 +0.1**
comp=Z,44nm,0.9s,SNR=50
RETA Reutte 85.88 329 *i* PcP **P 00 58 53.7 +0.1**
comp=Z,44nm,0.9s,SNR=50
FYTO Fytoko, Volos 85.88 317 P **P 00 58 51.5 -2.2**
FYTO Fytoko, Volos 85.88 317 P **P 00 58 51.5 -2.2**
FYTO Fytoko, Volos 85.88 317 P **P 00 58 51.5 -2.2**
GMM Mts of Mourne 85.89 341⇑ *e*P **P 00 58 53.9 +0.5**
LANF Langenberg 85.89 331⇑ *e*P **P 00 58 54.2 +0.6**
KZN Kozani 85.90 318 P **P 00 58 52.0 -1.9**
KZN Kozani 85.90 318 P **P 00 58 52.0 -1.9**
KZN Kozani 85.90 318 P **P 00 58 52.0 -1.9**
UDBI Udbina 85.90 324 P **P 00 58 53.7 -0.1**
LPM Los Pinos Moun 85.90 50 *e*P **P 00 58 55.6 +1.4**
N31A Bailey Ranch, 85.92 41 P **P 00 58 53.5 -0.4**
baz=315
DRME Dracevica, Mon 85.93 321⇑ *i*P **P 00 58 54.3 +0.4**
BGNE Belgrade 85.93 40 P **P 00 58 53.6 -0.4**
baz=316
BGNE Belgrade 85.93 40 *e*P **P 00 58 55.0 +1.0**
comp=Z,104nm,1.0s
BGNE LR LR
comp=Z,1μm,20.0s
TRI Trieste 85.94 326 *e*P **P 00 58 53.1 -0.7**
TRI pmax pmax
comp=Z,61nm,0.9s
TRI MLR MLR
comp=Z,4μm,18.0s
TRI Trieste 85.94 326 *e*P **P 00 58 53.1 -0.7**
comp=Z,61nm,0.9s
TRI LR LR
comp=Z,4μm,18.0s
SNF Seneffe 85.96 334 P **P 00 58 54.1 +0.2**
WLF Walferdange 85.97 333 P **P 00 58 54.8 +0.8**
comp=Z,70nm,2.0s
WLF Walferdange 85.97 333 *e*P **P 00 58 54.5 +0.5**
WLF pmax pmax
comp=Z,82nm,1.2s
WLF MLR MLR
comp=Z,3μm,21.0s
WLF Walferdange 85.97 333 *e*P **P 00 58 54.5 +0.5**
comp=Z,82nm,1.2s
WLF LR LR
comp=Z,3μm,21.0s
BUM Brajici-Budva 85.99 321⇑ *i*P **P 00 58 54.4 +0.1**
APE Apeiranthos 86.00 314⇑ *i*P **P 00 58 52.5 -1.9**
APE Apeiranthos 86.00 314⇓ *i*P **P 00 58 53.3 -1.1**
APE pmax pmax
comp=Z,35nm,0.6s
BNM Barren Site 86.01 50 *e*P **P 00 58 56.2 +1.4**
J35A Milford 86.02 37 P **P 00 58 53.9 -0.4**
baz=318
KARP Karpathos 86.05 312 *e*P **P 00 58 55.2 +0.5**
comp=Z,80nm,0.9s
KARP LR LR
comp=Z,500nm,20.0s
ULC Ulcinj 86.06 321⇑ *i*P **P 00 58 54.5 -0.1**
K34A Le Mars 86.07 38 P **P 00 58 54.6 0.0**
baz=317
HCY Herceg Novi 86.09 321⇑ *i*P **P 00 58 54.5 -0.2**
SMIA Simia 86.10 316 P **P 00 58 53.5 -1.3**
319A Douglas 86.11 54 *e*P **P 00 58 56.6 +1.5**
comp=Z,57nm,1.1s
319A LR LR
comp=Z,2μm,20.0s
I36A Fitzsimmons Fa 86.11 36 P **P 00 58 55.0 +0.2**
baz=318
TAOE Nuku Hiva Isla 86.17 104 *e*S **S 01 09 25.2 -3.7**
comp=Z,2μm,31.0s
TAOE Nuku Hiva Isla 86.17 104 *e*LR LR 01 26 15.5
comp=Z,6μm,26.0s,baz=314
TIR Tirane 86.17 320⇓ *i*P **P 00 58 55.9 +0.8**
TIR Tirane 86.17 320 *e*P **P 00 58 55.5 +0.4**
TIR pmax pmax
comp=Z,195nm,1.6s
TIR MLR MLR
comp=Z,11μm,20.0s
TIR Tirane 86.17 320 *e*P **P 00 58 55.5 +0.4**
comp=Z,195nm,1.6s
TIR LR LR
comp=Z,11μm,20.0s
DOU Dourbes 86.19 334 P **P 00 58 55.1 0.0**
DOU ⇑PCP **PcP 00 58 57.1 -0.5**
O31A Woolen Ranch, 86.20 42 P **P 00 58 54.9 -0.4**
baz=315
BFO Black Forest 86.21 331 *c*eP **P 00 58 55.3 +0.1**
BFO Black Forest 86.21 331 *e*P **P 00 58 55.4 +0.1**
comp=Z,139nm,1.0s
BFO LR LR
comp=Z,2μm,19.0s
NEST Nestorio 86.21 318 P **P 00 58 54.3 -1.2**
H37A Dierke Farm, C 86.22 35 P **P 00 58 55.4 +0.1**
baz=319
STR Strasbourg 86.23 331⇑ *e*P **P 00 58 56.0 +0.8**
FETA Feichten 86.26 328 *i* PcP **P 00 58 55.8 +0.1**
comp=Z,24nm,0.8s,SNR=24
FETA Feichten 86.26 328 *i* PcP **P 00 58 55.8 +0.1**
comp=Z,24nm,0.8s,SNR=24
THL Klokotos Trika 86.28 317 P **P 00 58 52.7 -3.0**
M33A Taylor Creek F 86.31 40 P **P 00 58 55.3 -0.5**
baz=316
N32A Stulken Farm, 86.32 41 P **P 00 58 55.1 -0.8**
baz=316
PENT Pentalofos 86.32 318 P **P 00 58 54.0 -2.0**
121A Cookes Peak, D 86.33 52 P **P 00 58 57.0 +0.7**
baz=311
121A Cookes Peak, D 86.33 52 *e*P **P 00 58 57.3 +1.0**
comp=Z,39nm,1.1s
FOEL Foel Wylfa 86.33 339⇑ *e*P **P 00 58 56.5 +0.8**
FOEL AMB AMB 00 58 57.2
comp=Z,197nm,0.9s
FOEL AMS AMS 01 42 00.6
comp=Z,3μm,17.3s
KPRO Kipourio 86.37 318 P **P 00 58 54.0 -2.2**
LKR Lokris 86.37 316 P **P 00 58 54.3 -1.9**
LKR Lokris 86.37 316 P **P 00 58 54.3 -1.9**
DAVA Damuels 86.41 329 *i* PcP **P 00 58 56.7 +0.3**
comp=Z,64nm,1.0s,SNR=53
DAVA Damuels 86.41 329 *i* PcP **P 00 58 56.7 +0.3**
comp=Z,64nm,1.0s,SNR=53
I37A Lemond, Waseca 86.41 36 P **P 00 58 56.7 +0.5**
baz=319
L34A Svendsen Farm, 86.45 39 P **P 00 58 56.5 0.0**
baz=317
J36A Seneca 1, Swea 86.47 37 P **P 00 58 56.7 +0.1**
baz=318
AGG Agios Georgios 86.49 317 *e*P **P 00 58 55.5 -1.3**
AGG pmax pmax
comp=Z,291nm,1.7s
AGG MLR MLR
comp=Z,8μm,18.0s
AGG Agios Georgios 86.49 317 *e*P **P 00 58 55.5 -1.3**
comp=Z,291nm,1.7s
AGG LR LR
comp=Z,8μm,18.0s
ELSH Elham, Standar 86.50 336⇑ *e*P **P 00 58 56.8 +0.3**
ELSH AMB AMB 00 58 58.0
comp=Z,240nm,0.8s
SANT Santorini 86.52 313 PFAKE 00 59 10.0 +13
SANT LR LR
comp=Z,2μm,20.0s
WLS Welschbruch 86.53 331 *e*P **P 00 58 56.9 +0.1**
CDF Champ du Feu 86.56 331 *e*P **P 00 58 56.8 -0.2**
CDF pmax pmax
comp=Z,92nm,0.9s
HLM1 Long Mynd 86.57 339⇑ *e*P **P 00 58 57.2 +0.3**
HLM1 AMS AMS 01 36 10.4
comp=Z,3μm,24.4s
SCHQ Schefferville 86.58 16 P **P 00 58 57.5 +0.7**
comp=Z,25nm,0.9s,baz=346,slow=5.2,SNR=30
SCHQ LR LR 01 39 43.6
comp=Z,815nm,20.7s,baz=348,slow=37
SCHQ Schefferville 86.58 16 *e*P **P 00 58 57.4 +0.5**
comp=Z,40nm,1.0s
MENF Mencas 86.66 335⇑ *e*P **P 00 58 54.8 -2.5**
SRIG Santa Rosalia 86.67 59 PFAKE 00 59 10.0 +12
SRIG LR LR
comp=Z,2μm,20.0s
M34A Aspy Farms, Fr 86.68 39 P **P 00 58 57.7 +0.1**
baz=317
O32A Brockman Farm, 86.69 41 P **P 00 58 56.7 -1.0**
baz=316
SSW Stow on the Wo 86.74 338⇑ *e*P **P 00 58 58.2 +0.5**
COWI Conover 86.77 32 *e*P **P 00 58 57.7 -0.3**
comp=Z,27nm,1.0s
COWI LR LR
comp=Z,1μm,22.0s
ECH Echery 86.77 331⇑ *e*P **P 00 58 58.1 +0.2**
L35A Bielow Farm, R 86.77 38 P **P 00 58 57.5 -0.5**
baz=317
FUORN Ofenpass-Fuorn 86.77 328 *e*P **P 00 58 58.4 0.0**
comp=Z,78nm,0.8s
FUORN LR LR
comp=Z,6μm,19.0s
N33A J Bar K, Exete 86.78 40 P **P 00 58 57.1 -1.0**
baz=316
DSF Desfina 86.81 316 P **P 00 58 56.1 -2.3**
DSF Desfina 86.81 316 P **P 00 58 56.1 -2.3**
DAVOX Davos/Dischmat 86.81 329 P **P 00 58 58.7 +0.3**
comp=Z,24nm,0.8s,baz=9.3,slow=2.7,SNR=28
DAVOX PP **PP 01 02 24.3 +4.0**
comp=Z,3.9nm,0.8s,baz=354,slow=7.5,SNR=4.4
DAVOX Davos/Dischmat 86.81 329 P **P 00 58 58.7 +0.3**
DAVOX 01 02 24.3
JAN Janina 86.86 318 P **P 00 58 57.6 -1.0**
JAN Janina 86.86 318 P **P 00 58 57.6 -1.0**
JAN Janina 86.86 318 P **P 00 58 57.6 -1.0**
J37A Redenius Farm, 86.87 37 P **P 00 58 58.8 +0.3**
baz=319
DAMY Dhamar 86.88 286 *e*P **P 00 59 00.5 +1.1**
comp=Z,127nm,1.5s
DAMY LR LR
comp=Z,3μm,20.0s
DSB Dublin 86.89 341 *e*P **P 00 58 59.6 +1.2**

comp=Z,38nm,0.9s
DSB LR LR
comp=Z,2μm,21.0s
I38A Scanlan Farm, 86.90 35 P P 00 58 58.6 0.0
baz=319
CBKS Cedar Bluff 86.91 43 P P 00 58 58.3 -0.6
baz=315
K36A Gilmore City 86.93 38 P P 00 58 59.2 +0.3
baz=318
P32A Huiting Farm, 86.97 42 P P 00 58 58.5 -0.5
baz=316
STRD Stroud 87.00 338⇑ eP P 00 58 59.5 +0.6
STRD AMB AMB 00 59 00.2
comp=Z,290nm,0.9s
STRD AMS AMS 01 38 10.6
comp=Z,4μm,27.3s
HMNX Herstmonceux 87.01 336⇑ eP P 00 58 59.9 +0.9
HMNX AMB AMB 00 59 00.6
comp=Z,239nm,0.9s
HMNX AMS AMS 01 41 30.0
comp=Z,4μm,18.9s
ANX Ano Chora 87.02 317 P P 00 58 57.6 -1.8
MCH1 Michaelchurch 87.06 339⇑ eP P 00 58 59.3 +0.1
MCH1 AMB AMB 00 59 00.8
comp=Z,128nm,0.8s
MCH1 AMS AMS 01 39 39.7
comp=Z,3μm,19.5s
SERG Sergoula 87.07 317 P P 00 58 57.9 -1.7
MOF Molkenrain 87.07 331⇑ eP P 00 58 59.6 +0.1
DSL Palaion Diasel 87.09 318 P P 00 58 56.8 -2.9
DSL Palaion Diasel 87.09 318 P P 00 58 56.8 -2.9
WOL Wolverton 87.12 337⇑ eP P 00 58 59.5 0.0
WOL AMB AMB 00 59 00.5
comp=Z,121nm,1.0s
WOL AMS AMS 01 41 52.1
comp=Z,3μm,19.3s
SWN1 Swindon 87.12 338⇑ eP P 00 59 00.2 +0.6
SWN1 AMB AMB 00 59 01.0
comp=Z,243nm,1.1s
SWN1 AMS AMS 01 38 41.6
comp=Z,3μm,22.1s
M35A Neola 87.17 39 P P 00 58 60.0 0.0
baz=317
O33A Hebron 87.19 41 P P 00 58 59.6 -0.5
baz=316
N34A Lincoln 87.21 40 P P 00 58 59.7 -0.5
baz=317
HINF Hinteralfeld 87.21 331 eP P 00 58 59.5 -0.6
HINF pmax pmax
comp=Z,29nm,1.0s
L36A Harm Buss Farm 87.22 38 P P 00 59 00.1 -0.2
baz=318
PVO Paravola 87.22 317 P P 00 58 59.4 -0.9
SGD Sagiada 87.22 318 P P 00 58 58.4 -1.9
IGT Igoumenitsa 87.22 318 P P 00 58 58.9 -1.4
IGT Igoumenitsa 87.22 318 P P 00 58 58.9 -1.4
IGT Igoumenitsa 87.22 318 P P 00 58 58.9 -1.4
K37A Belmond 87.23 37 P P 00 59 00.1 -0.2
baz=319
LPW Lampeter 87.27 339⇑ eP P 00 59 00.6 +0.4
LPW AMB AMB 00 59 01.4
comp=Z,94nm,0.9s
LPW AMS AMS 01 42 20.0
comp=Z,3μm,18.1s
KLV Kalavryta, Ach 87.27 316 P P 00 58 58.4 -2.3
KLV Kalavryta, Ach 87.27 316 P P 00 58 58.4 -2.3
TUE Stuetta 87.28 329 eP P 00 59 00.6 -0.1
comp=Z,47nm,1.3s
TUE LR LR
comp=Z,5μm,20.0s
LAST Lasithi 87.32 312⇑ iP P 00 59 01.2 +0.2
LAST Lasithi 87.32 312 P P 00 58 59.4 -1.6
LAST Lasithi 87.32 312 P P 00 58 59.4 -1.6
LAST Lasithi 87.32 312 eP P 00 59 01.2 +0.2
comp=Z,138nm,1.2s
LAST LR LR
comp=Z,1μm,20.0s
J38A Wedel Dairy, R 87.38 36 P P 00 59 00.8 -0.2
baz=319
KEK Kerkira 87.38 319 P P 00 58 59.9 -1.2
KEK Kerkira 87.38 319 P P 00 58 59.9 -1.2
Q32A Meitler Ranch, 87.44 42 P P 00 59 01.1 -0.3
baz=316
LKD2 Lefkada island 87.58 318 P P 00 58 59.7 -2.4
LKD2 Lefkada island 87.58 318 P P 00 58 59.7 -2.4
O34A Beatrice 87.58 40 P P 00 59 01.1 -0.9
baz=317
DRO Drossia 87.59 316 P P 00 59 00.4 -1.7
P33A Williams Farm, 87.59 41 P P 00 59 01.9 -0.2
baz=316
IDI Anoyia 87.59 313 P P 00 59 01.7 -0.5
comp=Z,41nm,1.0s,baz=31,slow=12,SNR=21
IDI Anoyia 87.59 313⇑ iP P 00 59 01.7 -0.5
IDI Anoyia 87.59 313 P P 00 59 00.4 -1.8
IDI Anoyia 87.59 313 P P 00 59 00.4 -1.8
IDI Anoyia 87.59 313 eP P 00 59 01.2 -1.0
comp=Z,41nm,1.0s
IDI LR LR
comp=Z,1μm,21.0s
LOMF Lomont 87.60 331⇑ eP P 00 59 02.1 0.0
M36A Felix, Anita 87.63 39 P P 00 59 02.2 0.0
baz=318
N35A Tabor 87.64 39 P P 00 59 02.4 +0.1
baz=317
RLS Riolos of Patr 87.65 317 P P 00 59 01.5 -0.8
RLS Riolos of Patr 87.65 317 P P 00 59 01.5 -0.8
L37A Phoenix Point, 87.66 37 P P 00 59 02.2 -0.2
baz=318
K38A Parkersburg 87.74 37 P P 00 59 02.5 -0.3
baz=319
VLI Veliai 87.75 315 P P 00 59 00.2 -2.7
VLI Veliai 87.75 315 P P 00 59 00.2 -2.7
VLI Veliai 87.75 315 P P 00 59 00.2 -2.7
R32A Long Quarter, 87.76 43 P P 00 59 02.8 -0.2
baz=316
SIVA Sivas 87.82 313⇑ iP P 00 59 01.9 -1.3
SIVA Sivas 87.82 313⇑ iP P 00 59 01.9 -1.3
Q33A Connelly Farm, 87.83 42 P P 00 59 02.9 -0.3
baz=316
VAM Vamos 87.92 313 P P 00 59 02.0 -1.7
VAM Vamos 87.92 313 P P 00 59 02.0 -1.7
VAM Vamos 87.92 313 P P 00 59 02.0 -1.7
VAM Vamos 87.92 313 P P 00 59 02.0 -1.7
O35A Humboldt 87.93 40 P P 00 59 03.2 -0.5
baz=317
P34A Walnut Farm, R 87.97 41 P P 00 59 03.6 -0.3
baz=317
IMMV Iera Moni Meta 88.01 313 P P 00 59 02.7 -1.5
N36A Muff Farm, Cla 88.02 39 P P 00 59 04.2 +0.1
baz=318
L38A Oak Wood Farm, 88.03 37 P P 00 59 04.1 0.0
baz=319
M37A Trindle Farm, 88.04 38 P P 00 59 04.9 +0.7
baz=318
VLS Valsamata 88.05 317 P P 00 59 03.0 -1.3
VLS Valsamata 88.05 317 P P 00 59 03.0 -1.3
VLS Valsamata 88.05 317 P P 00 59 03.0 -1.3
HEX Exmoor 88.12 339⇑ eP P 00 59 04.7 +0.3
ANKY Antikythira Is 88.13 314 P P 00 59 03.3 -1.4
ANKY Antikythira Is 88.13 314 P P 00 59 03.3 -1.4
S32A Newby Ranch, P 88.14 43 P P 00 59 04.7 -0.1
baz=315
TBI Tubuai 88.17 121 eS S 01 09 42.1 -5.4
comp=Z,1μm,33.2s
TBI eSS SS 01 15 34.5 -2.7
comp=Z,563nm,27.8s
TBI Tubuai 88.17 121 eLR LR 01 27 10.5
comp=Z,6μm,26.2s,baz=309
SENIN Lac Senin/Sane 88.21 330 eP P 00 59 04.6 -0.6
comp=Z,19nm,0.8s
SENIN LR LR
comp=Z,3μm,20.0s
R33A Olander Ranch, 88.24 42 P P 00 59 04.8 -0.4
baz=316
ZKS Zakynthos 88.28 317 P P 00 59 03.3 -2.1
MATE Matera 88.32 321⇑ iP P 00 59 05.5 0.0
Q34A Chapman 88.36 41 P P 00 59 05.6 -0.2
baz=317
KSU1 Kansas State U 88.41 41 P P 00 59 05.7 -0.3
baz=317
KSU1 Kansas State U 88.41 41 eP P 00 59 06.7 +0.7
comp=Z,75nm,1.0s
KSU1 LR LR
comp=Z,900nm,20.0s
MNTX Cornudas Mount 88.41 51 P P 00 59 06.8 +0.6
baz=312
MNTX Cornudas Mount 88.41 51 eP P 00 59 07.1 +1.0
comp=Z,29nm,1.6s
MNTX LR LR
comp=Z,900nm,18.0s
P35A Duane Minner, 88.41 40 P P 00 59 05.6 -0.4
baz=317
N37A Lee Faris, Mou 88.44 39 P P 00 59 06.8 +0.7
baz=318
M38A Pleasantville 88.46 38 P P 00 59 06.0 -0.2
baz=319
CABF La Chapelle 88.50 331 eP P 00 59 05.9 -0.5
CABF pmax pmax
comp=Z,24nm,1.0s
MSTX Muleshoe 88.50 48 P P 00 59 06.5 -0.2
baz=313
MSTX Muleshoe 88.50 48 eP P 00 59 03.4 -3.2
comp=Z,14nm,1.1s
MSTX LR LR
comp=Z,1μm,18.0s
T32A Huddler Ranch, 88.52 44 P P 00 59 06.9 +0.3
baz=316
O36A Bolckow 88.52 39 P P 00 59 07.1 +0.6
baz=318
AMTX Amarillo 88.53 47 P P 00 59 07.2 +0.5
baz=314
AMTX Amarillo 88.53 47 eP P 00 59 06.0 -0.7
AMTX e 00 59 17.7
AMTX LR LR
comp=Z,1μm,18.0s
R34A Isabella, Hill 88.65 42 P P 00 59 07.4 +0.3
baz=316
VLC Villacollemand 88.66 327 eP P 00 59 07.8 +0.7
comp=Z,16nm,1.1s
VLC LR LR
comp=Z,2μm,22.0s
AQU L'Aquila 88.67 324 eP P 00 59 06.9 -0.3
AQU pmax pmax
comp=Z,131nm,0.8s
AQU MLR MLR
comp=Z,6μm,20.0s
AQU L'Aquila 88.67 324 eP P 00 59 06.9 -0.3
comp=Z,131nm,0.8s
AQU ePP PP 01 02 28.1 -7.1
AQU LR LR
comp=Z,6μm,20.0s
DYA Yadsworthy 88.72 338⇑ eP P 00 59 07.1 -0.1
DYA AMS AMS 01 39 51.2
comp=Z,2μm,28.1s
DYA Yadsworthy 88.72 338 PFAKE 00 59 20.0 +13
DYA LR LR
comp=Z,2μm,20.0s
JFWS Jewell Farm 88.74 35 eP P 00 59 07.5 0.0
JFWS pmax pmax
comp=Z,24nm,0.9s
JFWS MLR MLR
comp=Z,2μm,22.0s
JFWS Jewell Farm 88.74 35 eP P 00 59 07.5 0.0
comp=Z,24nm,0.9s
JFWS LR LR
comp=Z,2μm,22.0s
P36A Good Intent, A 88.77 40 P P 00 59 07.8 +0.1
baz=318
Q35A Mercer Eighty, 88.89 41 P P 00 59 08.5 +0.2
baz=317
N38A Joes South For 88.91 38 P P 00 59 08.6 +0.3
baz=319
O37A Wolven Farm, M 88.92 39 P P 00 59 08.8 +0.4
baz=318
T33A Patterson Ranc 88.97 43 P P 00 59 09.4 +0.7
baz=316
U32A Winter Ranch, 89.04 44 P P 00 59 09.6 +0.5
baz=315
VAL Valentia 89.06 343 eP P 00 59 06.7 -2.0
VAL Valentia 89.06 343 ⇓ iS S 01 09 58.6 +3.3
FLN La Foliniere 89.09 336 eP P 00 59 07.8 -1.2
FLN pmax pmax
comp=Z,68nm,1.4s
Q36A Arnold C. Orve 89.12 41 P P 00 59 09.4 +0.1
baz=318
LPL La Plagne 89.13 330 eP P 00 59 09.3 -0.2
LPL pmax pmax
comp=Z,51nm,1.0s
LPG La Plagne 89.14 330 eP P 00 59 09.4 -0.2
LPG pmax pmax
comp=Z,30nm,0.8s
S34A Willow Spring 89.15 42 P P 00 59 09.7 +0.2
baz=316
R35A Emporia Munici 89.20 41 P P 00 59 10.3 +0.6
baz=317
N39A Derby Farms, D 89.21 38 P P 00 59 10.3 +0.6
baz=319
JQE Queens East 89.22 337⇑ eP P 00 59 09.7 +0.2
P37A Lathrop 89.24 40 P P 00 59 10.0 +0.1
baz=318
CUC Castrocucco 89.26 321 eP P 00 59 08.9 -1.2
comp=Z,18nm,1.0s
CUC LR LR
comp=Z,4μm,19.0s
JSA Saint Aubin 89.27 337⇑ eP P 00 59 09.6 -0.2
O38A Galt 89.29 39 P P 00 59 10.4 +0.3
baz=319
TIP Timpagrande 89.38 320⇑ iP P 00 59 10.0 -0.7
TIP Timpagrande 89.38 320 P P 00 59 09.4 -1.2
TIP Timpagrande 89.38 320 eP P 00 59 09.9 -0.7
comp=Z,49nm,1.3s
TIP LR LR
comp=Z,6μm,21.0s
AVF Avril sur Loir 89.40 332 eP P 00 59 09.4 -1.1
AVF pmax pmax
comp=Z,78nm,0.9s
V32A Arapaho 89.49 45 P P 00 59 12.3 +1.2
baz=315
U33A Lingo Farm, Me 89.51 44 P P 00 59 11.5 +0.3
baz=316
GRR Gorron 89.54 336 eP P 00 59 11.1 0.0
GRR pmax pmax
comp=Z,55nm,1.0s
R36A Gordon, Harris 89.57 41 P P 00 59 11.6 +0.2
baz=318
S35A Otter Creek Ra 89.60 42 P P 00 59 12.0 +0.4
baz=317
T34A McClaskey Farm 89.60 43 P P 00 59 12.1 +0.4
baz=316
P38A Dawn 89.64 39 P P 00 59 12.2 +0.4
baz=319
O39A Kirksville 89.66 38 P P 00 59 12.0 +0.2
baz=319
Q37A Longview Farm, 89.72 40 P P 00 59 11.9 -0.2
baz=318
W32A Sentinel 89.79 45 P P 00 59 13.6 +1.0
baz=315
U34A Anderson Ranch 89.83 43 P P 00 59 13.4 +0.7
baz=316
V33A Lossen Ranch, 89.85 44 P P 00 59 13.4 +0.6
baz=316
ATD Arta Tunnel 89.88 284 P P 00 59 13.7 +0.4
comp=Z,12nm,1.0s
R37A Teagarden Farm 89.94 41 P P 00 59 13.0 -0.2
baz=318
S36A Lake Cedric, C 89.96 41 P P 00 59 13.6 +0.3
baz=318
ORIF Oris-en-Rattie 89.97 330 eP P 00 59 13.0 -0.3
ORIF pmax pmax
comp=Z,25nm,0.9s
PLDF La Plantade 89.99 332 eP P 00 59 13.7 +0.4
T35A Sooner Cattle 90.05 43 P P 00 59 14.0 +0.3
baz=317
Q38A Cooks Store, C 90.09 39 P P 00 59 13.8 -0.1
baz=319
O40A La Belle 90.10 38 P P 00 59 14.0 +0.2
baz=320
AGO Saint Agoulin 90.11 332⇑ eP P 00 59 14.4 +0.6
P39B Salisbury 90.14 39 P P 00 59 14.0 -0.1
baz=319
LUCF Luceram 90.19 328 eP P 00 59 13.7 -0.7
SSB Saint Sauveur 90.20 331⇑ eP P 00 59 14.4 +0.1
SSB Saint Sauveur 90.20 331 eP P 00 59 14.3 0.0
SSB pmax pmax
comp=Z,27nm,1.1s
SSB MLR MLR
comp=Z,3μm,19.0s
SSB Saint Sauveur 90.20 331 eP P 00 59 14.3 0.0
comp=Z,27nm,1.1s
SSB LR LR
comp=Z,3μm,19.0s
W33A Caddo, Fort Co 90.22 45 P P 00 59 15.2 +0.7
baz=316
X32A Elmer 90.27 46 P P 00 59 15.5 +0.7
baz=315
MVIF Mont Vial 90.27 329⇑ eP P 00 59 14.3 -0.5
V34A Guthrie 90.27 44 P P 00 59 15.5 +0.7
baz=316
V34A Guthrie 90.27 44 eP P 00 59 16.0 +1.2
comp=Z,93nm,1.1s
T36A Boggs Farm, Ca 90.29 42 P P 00 59 15.4 +0.6
baz=317
REVF Revere 90.31 328⇑ eP P 00 59 14.4 -0.4
U35A Pawnee 90.33 43 P P 00 59 15.4 +0.4
baz=317
WMOK Wichita Mounta 90.33 45 P P 00 59 15.4 +0.3
baz=316
S37A Fort Scott 90.34 41 P P 00 59 15.3 +0.2
baz=318
Q39A Willow Grove F 90.35 39 P P 00 59 15.1 +0.1
baz=319
PYM Petit Puy Mans 90.41 332⇑ eP P 00 59 15.9 +0.6
P40A Paris 90.46 38 P P 00 59 15.7 +0.2
baz=320
CALN Calern 90.50 329⇑ eP P 00 59 15.7 -0.2
VIVF Saint-Julien-l 90.50 331 eP P 00 59 14.3 -1.4
VIVF pmax pmax
comp=Z,36nm,0.8s
CEL Celeste 90.52 320 eP P 00 59 15.2 -0.7
comp=Z,71nm,0.9s
CEL LR LR
comp=Z,6μm,19.0s
R38A Fenwick Farm, 90.52 40 P P 00 59 15.3 -0.6
baz=318
W34A Bridge Creek, 90.56 44 P P 00 59 16.7 +0.5
baz=316
W34A Bridge Creek, 90.56 44 eP P 00 59 18.1 +2.0
comp=Z,83nm,1.2s
W34A LR LR
comp=Z,1μm,19.0s
X33A Lawton 90.64 45 P P 00 59 16.3 -0.2
baz=316
QUIF Quistinic 90.70 337 eP P 00 59 16.4 -0.1
QUIF pmax pmax
comp=Z,23nm,0.8s
V35A Meyer Ranch, C 90.71 44 P P 00 59 16.9 +0.1
baz=317
LBL Lubilhac 90.75 332 eP P 00 59 17.4 +0.5
T37A Cheneyville 18 90.77 41 P P 00 59 16.9 -0.2
baz=318
Q40A Laux Farm, Aux 90.85 39 P P 00 59 17.4 0.0
baz=320
U36A Oologah 90.86 42 P P 00 59 17.9 +0.4
baz=317
R39A Chumby, Stover 90.87 40 P P 00 59 17.2 -0.3
baz=319
FRNF Fournols 90.88 332 eP P 00 59 18.4 +0.9
S38A Stockton 90.93 41 P P 00 59 17.2 -0.6
baz=318
Y33A Hilltop Ranch, 90.94 46 P P 00 59 18.0 +0.1
baz=316
X34A Smith Ranch, M 90.98 45 P P 00 59 18.2 0.0
baz=316
HDIL Hopedale 91.02 36 P P 00 59 18.4 +0.3
baz=322
HDIL Hopedale 91.02 36 eP P 00 59 19.0 +0.9
comp=Z,45nm,1.0s
HDIL LR LR
comp=Z,1μm,22.0s
TX31 Lajitas Ar. Si 91.09 52 eP P 00 59 20.1 +1.2
TXAR Lajitas Array 91.09 52 P P 00 59 20.0 +1.1
comp=Z,5.5nm,0.7s,baz=293,slow=3.6,SNR=58
TXAR PP PP 01 02 53.2 -1.8
comp=Z,0.9nm,0.9s,baz=328,slow=4.5,SNR=2.5
TXAR PKKPbc PKKPbc 01 16 43.9 +3.0
comp=Z,0.5nm,0.8s,baz=139,slow=5.8,SNR=5.1
TXAR PKPPKP P'P'df 01 24 52.5 -3.4
comp=Z,0.6nm,0.9s,baz=162,slow=5.0,SNR=4.2
TXAR LR LR 01 37 20.7
comp=Z,1μm,19.4s,baz=0.0,slow=34
TXAR Lajitas Array 91.09 52 P P 00 59 20.0 +1.1
TXAR 01 02 53.2
W35A Tecumseh 91.13 44 P P 00 59 19.1 +0.3
baz=317
T38A Diamond 91.17 41 P P 00 59 19.1 +0.2
baz=318
TUL1 Leonard 91.18 43 P P 00 59 19.0 +0.1
baz=317
TUL1 Leonard 91.18 43 eP P 00 59 19.9 +0.9
comp=Z,59nm,1.0s
U37A Salina 91.19 42 P P 00 59 19.4 +0.4
baz=318
V36A Jenks 91.19 43 P P 00 59 19.2 +0.2
baz=317
S39A Bolivar 91.19 40 P P 00 59 18.4 -0.6
baz=319
R40A Maddies Statio 91.29 39 P P 00 59 19.0 -0.5
baz=320
ABTX Abilene, Hawle 91.32 47 P P 00 59 20.0 +0.3
baz=315
ABTX Abilene, Hawle 91.32 47 PFAKE 00 59 30.0 +10
ABTX LR LR
comp=Z,1μm,20.0s
Z33A Whitaker Ranch 91.38 46 P P 00 59 20.4 +0.4
baz=316
CAF Calviac 91.46 332 eP P 00 59 20.7 +0.5
CAF pmax pmax
comp=Z,57nm,1.0s
Y34A Reagan Ranch, 91.48 45 P P 00 59 20.5 +0.1
baz=316
W36A Wetumka 91.50 44 P P 00 59 20.9 +0.4
baz=317
U38A Gravette 91.56 42 P P 00 59 20.7 -0.1
baz=318
V37A Hulbert 91.56 42 P P 00 59 20.8 0.0
baz=318
X35A Drake 91.62 45 P P 00 59 21.0 -0.1
baz=317
T39A Clever 91.66 41 P P 00 59 21.0 -0.2
baz=319
Q42A Golden Eagle 91.69 38 P P 00 59 21.6 +0.3
baz=321
S40A Lebanon 91.69 40 P P 00 59 21.0 -0.4
baz=319
133A Hamilton Ranch 91.77 47 P P 00 59 22.1 +0.3
baz=316
Z34A Collier Ranch, 91.81 46 P P 00 59 22.3 +0.3
baz=316
X36A Centrahoma 91.84 44 P P 00 59 22.4 +0.3
baz=317
SADO Sadowa 91.90 27 eP P 00 59 22.6 +0.4
comp=Z,36nm,1.6s
SADO LR LR
comp=Z,700nm,20.0s
HHAR Hobbs 91.92 41 eP P 00 59 22.8 +0.4
comp=Z,30nm,1.0s
HHAR LR LR
comp=Z,1μm,21.0s
Y35A Marietta 91.94 45 P P 00 59 22.7 +0.2
baz=317
W37B Quinton 91.94 43 P P 00 59 23.3 +0.8
baz=318
V38A Canehill 91.97 42 P P 00 59 23.0 +0.3
baz=318
T40A Mansfield 92.02 40 P P 00 59 22.7 -0.1
baz=319
SLM Saint Louis 92.05 38 PFAKE 00 59 40.0 +17
SLM LR LR
comp=Z,1μm,22.0s
U39A Green Forest 92.09 41 P P 00 59 22.8 -0.4
baz=319
AAM Ann Arbor 92.17 31 PFAKE 00 59 40.0 +17
AAM LR LR
comp=Z,1μm,21.0s
SFIN Lafayette 92.19 35 P P 00 59 23.6 0.0
baz=323
233A Rising Star 92.19 47 P P 00 59 24.1 +0.3
baz=316
Z35A Perchaven, San 92.23 45 P P 00 59 24.1 +0.2
baz=316
TRQ Mont Tremblant 92.26 24 eP P 00 59 24.5 +0.6
134A White-Moore Ra 92.29 46 P P 00 59 24.7 +0.5
baz=316
Y36A Durant 92.37 44 P P 00 59 24.6 +0.1
baz=317
LMQ La Malbaie 92.37 21 eP P 00 59 24.9 +0.6
comp=Z,43nm,1.0s
LMQ LR LR
comp=Z,2μm,22.0s
X37A Clayton 92.38 43 P P 00 59 24.9 +0.3
baz=318

V39A	Pettigrew	92.41	42	P	P	00 59 24.6	-0.2
	baz=319						
CLTB	Caltabellotta	92.42	321	PFAKE		00 59 40.0	+15
CLTB				LR	LR		
	comp=Z,6μm,20.0s						
U40A	Yellville	92.44	41	P	P	00 59 25.0	+0.1
	baz=319						
T41A	Mountain View	92.49	40	P	P	00 59 24.8	-0.3
	baz=320						
W38A	Poteau	92.50	43	P	P	00 59 25.6	+0.5
	baz=318						
X38A	Whitesboro	92.63	43	P	P	00 59 26.2	+0.5
	baz=318						
333A	Richland Sprin	92.63	48	P	P	00 59 26.4	+0.5
	baz=315						
234A	Clairette	92.66	47	P	P	00 59 26.2	+0.3
	baz=316						
Y37A	Hugo	92.69	44	P	P	00 59 26.3	+0.3
	baz=317						
135A	Vickery Place,	92.69	46	P	P	00 59 26.7	+0.7
	baz=316						
JCT	Junction City	92.73	49	P	P	00 59 26.6	+0.3
	baz=315						
JCT	Junction City	92.73	49	eP	P	00 59 27.1	+0.8
JCT				e		01 03 18.9	
JCT				pmax	pmax		
	comp=Z,36nm,1.1s						
JCT				MLR	MLR		
	comp=Z,1μm,21.0s						
JCT	Junction City	92.73	49	eP	P	00 59 27.1	+0.8
	comp=Z,36nm,1.1s						
JCT				ePP	PP	01 03 18.9	+11
JCT				LR	LR		
	comp=Z,1μm,21.0s						
Z36A	Blue Ridge	92.74	45	P	P	00 59 26.5	+0.3
	baz=317						
VSL	Villasalto	92.80	325	PFAKE		00 59 40.0	+14
VSL				LR	LR		
	comp=Z,4μm,18.0s						
W39A	Magazine	92.81	42	P	P	00 59 26.6	0.0
	baz=318						
V40A	Witts Springs	92.87	41	P	P	00 59 26.9	+0.1
	baz=319						
H06N1	SOCORRO T-PHAS	92.87	64	T	T	02 42 58.2	
	SNR=6.4						
LRDF	Laroque-de-Fa	92.95	331⇑	eP	P	00 59 27.8	+0.7
H06E1	SOCORRO T-PHAS	92.97	64	T	T	02 42 57.8	
	SNR=8.3						
433A	Art	92.97	48	P	P	00 59 27.4	0.0
	baz=315						
OLIL	Olney	93.02	36	eP	P	00 59 28.4	+1.0
	comp=Z,55nm,1.1s						
OLIL				LR	LR		
	comp=Z,1μm,22.0s						
WDD	Wied Dalam	93.03	319	PFAKE		00 59 40.0	+12
WDD				LR	LR		
	comp=Z,3μm,22.0s						
WHTX	Lake Whitney,	93.07	47	P	P	00 59 28.5	+0.7
	baz=316						
WHTX	Lake Whitney,	93.07	47	eP	P	00 59 29.1	+1.3
	comp=Z,117nm,1.1s						
WHTX				LR	LR		
	comp=Z,2μm,19.0s						
334A	Lometa	93.08	47	P	P	00 59 28.3	+0.4
	baz=316						
X39A	Fountain Ranch	93.14	43	P	P	00 59 28.2	+0.1
	baz=318						
W40A	Ferguson Farm,	93.20	42	P	P	00 59 28.6	+0.3
	baz=319						
Y38A	Idabel	93.23	44	P	P	00 59 28.7	+0.3
	baz=318						
Z37A	Pogue Cattle C	93.26	45	P	P	00 59 28.9	+0.3
	baz=317						
FILF	Fillols	93.26	331⇑	eP	P	00 59 29.0	+0.4
136A	Ennis	93.26	46	P	P	00 59 29.0	+0.3
	baz=317						
SIUC	Southern Illin	93.27	38	eP	P	00 59 29.3	+0.7
	comp=Z,53nm,1.0s						
SIUC				LR	LR		
	comp=Z,1μm,22.0s						
CARF	Carcanieres	93.31	331⇑	eP	P	00 59 29.0	+0.1
PBMO	Poplar Bluff	93.38	39	eP	P	00 59 29.7	+0.6
	comp=Z,46nm,1.1s						
MIAR	Mount Ida	93.41	42	P	P	00 59 29.8	+0.6
	baz=319						
MIAR	Mount Ida	93.41	42	eP	P	00 59 29.9	+0.6
MIAR				pmax	pmax		
	comp=Z,82nm,1.1s						
MIAR				MLR	MLR		
	comp=Z,1μm,22.0s						
MIAR	Mount Ida	93.41	42	eP	P	00 59 29.9	+0.6
	comp=Z,82nm,1.1s						
MIAR				LR	LR		
	comp=Z,1μm,22.0s						
434A	Burnet	93.43	48	P	P	00 59 29.8	+0.3
	baz=316						
533A	Kerrville	93.49	49	P	P	00 59 30.1	+0.2
	baz=315						
X201	Greenbrier Sit	93.50	41	eP	P	00 59 30.2	+0.5
	comp=Z,55nm,1.2s						
X201				LR	LR		
	comp=Z,1μm,19.0s						
X301	Greenbrier Sit	93.53	41	eP	P	00 59 30.8	+1.0
	comp=Z,41nm,1.2s						
X301				LR	LR		
	comp=Z,1μm,19.0s						
WHAR	Wooly Hollow	93.55	41	eP	P	00 59 30.4	+0.5
	comp=Z,68nm,1.1s						
WHAR				LR	LR		
	comp=Z,1μm,22.0s						
Y39A	Lockesburg	93.58	43	P	P	00 59 30.3	+0.3
	baz=318						
Z38A	Mt. Pleasant	93.58	44	P	P	00 59 30.1	0.0
	baz=318						
335A	Moody	93.60	47	P	P	00 59 30.6	+0.4
	baz=316						
236A	Katherine and	93.61	46	P	P	00 59 30.8	+0.5
	baz=317						
VALF	Valcebollere	93.61	331⇑	eP	P	00 59 30.9	+0.6
137A	Heron Place, G	93.62	45	P	P	00 59 30.6	+0.3
	baz=317						
W41B	Gary Mavity, V	93.66	41	P	P	00 59 30.7	+0.3
	baz=319						
LONY	Lake Ozonia	93.66	25	PFAKE		00 59 40.0	+10
LONY				LR	LR		
	comp=Z,1μm,21.0s						
MELF	Melles	93.70	332⇑	eP	P	00 59 30.6	0.0
DRLN	Deer Lake	93.70	12	PFAKE		00 59 40.0	+10
DRLN				LR	LR		
	comp=Z,2μm,20.0s						
FRNY	Flat Rock	93.80	24	PFAKE		00 59 40.0	+9.1
FRNY				LR	LR		
	comp=Z,2μm,22.0s						
ERPA	Erie	93.83	29	eP	P	00 59 34.9	+3.8
	comp=Z,31nm,1.3s						
ERPA				LR	LR		
	comp=Z,1μm,19.0s						
USIN	University of	93.83	37	PFAKE		00 59 40.0	+8.8
USIN				LR	LR		
	comp=Z,900nm,22.0s						
633A	Saathoff Ranch	93.83	49	P	P	00 59 31.8	+0.4
	baz=315						
X40A	Basin Creek Fa	93.86	42	P	P	00 59 31.6	+0.2
	baz=319						
435B	Jarrell	93.86	47	P	P	00 59 31.9	+0.4
	baz=316						
534A	Blanco	93.86	49	P	P	00 59 31.9	+0.4
	baz=316						
336A	Riesel	93.87	47	P	P	00 59 31.5	0.0
	baz=317						
UALR	University of	93.91	41	PFAKE		00 59 40.0	+8.4
UALR				LR	LR		
	comp=Z,900nm,20.0s						
RESF	Ens	93.92	332⇑	eP	P	00 59 32.9	+1.3
138A	Matatall Enter	93.96	45	P	P	00 59 32.6	+0.8
	baz=318						
Y40A	Okolona	93.97	43	P	P	00 59 32.0	+0.1
	baz=319						
VIEF	Viey	93.97	332⇑	eP	P	00 59 32.8	+0.9
X41A	Kaden, Bauxite	94.03	42	P	P	00 59 32.5	+0.4
	baz=319						
237A	Washetta, Mont	94.03	45	P	P	00 59 32.6	+0.4
	baz=317						
PVMO	Portageville	94.04	39	PFAKE		00 59 40.0	+7.9
PVMO				LR	LR		
	comp=Z,1μm,22.0s						
Z39A	Irene McRaven,	94.04	44	P	P	00 59 32.9	+0.6
	baz=318						
ACSO	Alum Creek Sta	94.15	32	eP	P	00 59 33.3	+0.7
	comp=Z,27nm,0.9s						
ACSO				LR	LR		
	comp=Z,1μm,19.0s						
832A	Faith Ranch, C	94.16	51	P	P	00 59 33.8	+0.9
	baz=315						
WCI	Wyandotte Cave	94.28	36	eP	P	00 59 34.0	+0.7
WCI				pmax	pmax		
	comp=Z,22nm,0.9s						
WCI				MLR	MLR		
	comp=Z,1μm,20.0s						
WCI	Wyandotte Cave	94.28	36	eP	P	00 59 34.0	+0.7
	comp=Z,22nm,0.9s						
WCI				LR	LR		
	comp=Z,1μm,20.0s						
733A	Divot King Ran	94.28	50	P	P	00 59 34.5	+1.0
	baz=315						
WLAR	White Oak Lake	94.30	43	eP	P	00 59 36.1	+2.7
	comp=Z,42nm,1.1s						
WLAR				LR	LR		
	comp=Z,900nm,19.0s						
139A	Bunkhouse Ranc	94.34	44	P	P	00 59 34.2	+0.6
	baz=318						
238A	Jacksonville	94.42	45	P	P	00 59 34.6	+0.6
	baz=318						
Y41A	Eaglette Beard	94.43	42	P	P	00 59 34.6	+0.6
	baz=319						
Z40A	Long Farm, Mag	94.47	43	P	P	00 59 35.0	+0.9
	baz=319						
M54A	Oil Creek Stat	94.47	29	P	P	00 59 35.1	+1.0
	baz=328						
337A	Centerville	94.48	46	P	P	00 59 35.4	+1.1
	baz=317						
833A	Chaparral WMA,	94.50	50	P	P	00 59 35.2	+0.8
	baz=315						
HALT	Halls	94.61	39	PFAKE		00 59 50.0	+15
HALT				LR	LR		
	comp=Z,961μm,19.0s						
437A	Phantom Ranch,	94.69	46	P	P	00 59 36.6	+1.4
	baz=317						
FURI	Furi	94.73	284	PFAKE		00 59 50.0	+14
FURI				LR	LR		
	comp=Z,2μm,20.0s						
635A	Leesville	94.74	49	P	P	00 59 36.2	+0.7
	baz=316						
PKME	Peaks-Kenny Pk	94.75	21	eP	P	00 59 36.6	+1.4
	comp=Z,33nm,1.1s						
PKME				LR	LR		
	comp=Z,2μm,19.0s						
239A	Gary	94.78	45	P	P	00 59 36.1	+0.5
	baz=318						
N54A	Moraine State	94.80	30	P	P	00 59 36.0	+0.4
	baz=328						
CCAR	Cane Creek	94.86	42	PFAKE		00 59 50.0	+14
CCAR				LR	LR		
	comp=Z,2μm,20.0s						
NATX	Nacogdoches	94.86	45	PFAKE		00 59 50.0	+14
NATX				LR	LR		
	comp=Z,1μm,19.0s						
LBNH	Lisbon	94.87	23	PFAKE		00 59 50.0	+14
LBNH				LR	LR		
	comp=Z,1μm,20.0s						
MET	Memphis--Engin	94.92	40	PFAKE		00 59 50.0	+14
MET				LR	LR		
	comp=Z,900nm,20.0s						
Y42A	Garnett, Star	94.92	42	P	P	00 59 36.9	+0.7
	baz=320						
ACCN	Adirondack Com	95.06	25	PFAKE		00 59 50.0	+13
ACCN				LR	LR		
	comp=Z,1μm,20.0s						
933A	Laredo	95.07	51	P	P	00 59 38.7	+1.6
	baz=315						
735A	Kenedy	95.10	49	P	P	00 59 38.9	+1.8
	baz=316						
636A	Smotters Creek	95.11	48	P	P	00 59 39.1	+1.9
	baz=316						
438A	Sam Houston St	95.13	46	P	P	00 59 38.6	+1.4
	baz=317						
WVT	Waverly	95.20	38	eP	P	00 59 38.0	+0.5
WVT				pmax	pmax		
	comp=Z,11nm,1.0s						
WVT				MLR	MLR		
	comp=Z,1μm,21.0s						
WVT	Waverly	95.20	38	eP	P	00 59 38.0	+0.5
	comp=Z,10nm,1.0s						
WVT				LR	LR		
	comp=Z,1μm,21.0s						
HNH	Hanover	95.23	24	PFAKE		00 59 50.0	+13
HNH				LR	LR		
	comp=Z,3μm,20.0s						
WVL	Waterville	95.28	22	PFAKE		00 59 50.0	+12
WVL				LR	LR		
	comp=Z,2μm,19.0s						
BINY	Binghamton	95.28	27	PFAKE		00 59 50.0	+12
BINY				LR	LR		
	comp=Z,2μm,19.0s						
LMN	Caledonia Moun	95.42	18	eP	P	00 59 39.0	+0.7
	comp=Z,21nm,1.0s						
LMN				LR	LR		
	comp=Z,1μm,19.0s						
HKT	Hockley	95.50	47	PFAKE		00 59 50.0	+11
HKT				LR	LR		
	comp=Z,1μm,19.0s						
637A	Eagle Lake	95.58	48	P	P	00 59 40.4	+1.1
	baz=317						
TRY	Troy	95.64	25	PFAKE		00 59 50.0	+11
TRY				LR	LR		
	comp=Z,3μm,21.0s						
OXF	Oxford	95.66	40	eP	P	00 59 40.6	+1.0
OXF				e		00 59 50.7	
OXF				MLR	MLR		
	comp=Z,1μm,20.0s						
OXF	Oxford	95.66	40	eP	P	00 59 40.6	+1.0
OXF				e		00 59 50.7	
OXF				LR	LR		
	comp=Z,1μm,20.0s						
Y44A	Strider, Charl	95.66	41	P	P	00 59 40.2	+0.6
	baz=321						
KEST	Kesra	95.80	322	P	P	00 59 40.2	-0.2
	comp=Z,13nm,0.9s,baz=258,slow=2.0,SNR=14						
KEST				PP	PP	01 03 30.8	-0.7
	comp=Z,8.5nm,0.9s,baz=324,slow=5.8,SNR=3.8						
KEST				LR	LR	01 46 41.3	
	comp=Z,3μm,20.9s,baz=354,slow=38						
KEST	Kesra	95.80	322	eP	P	00 59 40.5	+0.2
	comp=Z,18nm,0.9s						
KEST				PP	PP	01 03 30.8	-0.7
034A	Hebbronville	95.83	51	P	P	00 59 42.0	+1.5
	baz=315						
SSPA	Standing Stone	95.92	29	PFAKE		00 59 50.0	+9.3
SSPA				LR	LR		
	comp=Z,800nm,20.0s						
KSPA	Keystone Colle	95.92	27	PFAKE		00 59 50.0	+9.3
KSPA				LR	LR		
	comp=Z,2μm,19.0s						
MCWV	Mont Chateau	95.96	31	PFAKE		00 59 50.0	+9.1
MCWV				LR	LR		
	comp=Z,800nm,22.0s						
O56A	Blue Knob Stat	95.96	29	P	P	00 59 41.8	+0.9
	baz=329						
PLAL	Pickwick Lake	95.98	39	PFAKE		00 59 50.0	+8.9
PLAL				LR	LR		
	comp=Z,1μm,22.0s						
341A	Kurthwood	96.03	44	P	P	00 59 42.6	+1.2
	baz=319						
ZAIG	Zacatecas	96.27	56	eP	P	00 59 45.3	+2.4
	comp=Z,14nm,1.0s						
ZAIG				LR	LR		
	comp=Z,2μm,20.0s						
035A	Encino	96.28	50	P	P	00 59 43.0	+0.4
	baz=316						
Y46A	Houston	96.44	40	P	P	00 59 43.1	-0.1
	baz=322						
N59A	State Game Lan	96.48	27	P	P	00 59 43.3	0.0
	baz=331						
QUA2	Belchertown	96.48	24	PFAKE		01 00 00.0	+17
QUA2				LR	LR		
	comp=Z,2μm,20.0s						
HRV	Adam Dziewonsk	96.54	24	PFAKE		01 00 00.0	+17
HRV				LR	LR		
	comp=Z,1μm,19.0s						
WES	Weston	96.73	24	PFAKE		01 00 00.0	+16
WES				LR	LR		
	comp=Z,2μm,20.0s						
ODNJ	Ogdensburg	96.76	26	PFAKE		01 00 00.0	+16
ODNJ				LR	LR		
	comp=Z,900nm,20.0s						
BCX	Boston College	96.82	23	PFAKE		01 00 00.0	+15
BCX				LR	LR		
	comp=Z,4μm,22.0s						
VBMS	Vicksburg	96.84	42	PFAKE		01 00 00.0	+15
VBMS				LR	LR		
	comp=Z,1μm,19.0s						
145A	Houston Renfro	96.86	41	P	P	00 59 46.2	+1.1
	baz=321						
SWET	Sewanee	96.86	37	PFAKE		01 00 00.0	+15
SWET				LR	LR		
	comp=Z,300nm,22.0s						
244A	Avery, Jackson	96.88	42	P	P	00 59 45.6	+0.4
	baz=320						
LUPA	Lehigh Univers	96.91	27	PFAKE		01 00 00.0	+15
LUPA				LR	LR		
	comp=Z,2μm,19.0s						
Z46A	Louisville	96.93	40	P	P	00 59 45.4	0.0
	baz=321						
MVL	Millersville	97.06	28	PFAKE		01 00 00.0	+14
MVL				LR	LR		
	comp=Z,1μm,19.0s						
BRYW	Bryant College	97.08	24	PFAKE		01 00 00.0	+14
BRYW				LR	LR		
	comp=Z,3μm,20.0s						
PAL	Palisades	97.08	26	PFAKE		01 00 00.0	+14
PAL				LR	LR		
	comp=Z,2μm,21.0s						
BRNJ	Basking Ridge	97.13	27	PFAKE		01 00 00.0	+14
BRNJ				LR	LR		
	comp=Z,1μm,20.0s						
YLE	Yale	97.14	25	PFAKE		01 00 00.0	+14
YLE				LR	LR		
	comp=Z,2μm,19.0s						
PBRG	Braganca	97.30	336	ePP	PP	01 03 40.1	-2.6
PBRG	Braganca	97.30	336	eLR	LR	01 33 27.5	
	comp=Z,3μm,20.0s						
CPCT	Cooper Cave	97.36	36	eP	Pdif	00 59 48.0	+0.6
	comp=Z,7.9nm,1.1s						
CPCT				LR	LR		
	comp=Z,800nm,22.0s						
Z48A	Northport	97.50	39	P	Pdif	00 59 48.4	+0.3
	baz=322						
TKL	Tuckaleechee C	97.54	35	eP	Pdif	00 59 48.6	+0.4
TKL				pmax	pmax		
	comp=Z,16nm,0.9s						
TKL				MLR	MLR		
	comp=Z,1μm,20.0s						
TKL	Tuckaleechee C	97.54	35	eP	Pdif	00 59 48.5	+0.3
	comp=Z,16nm,0.9s						
TKL				LR	LR		
	comp=Z,1μm,20.0s						
PGAV	Gavieira, Arco	97.64	337	ePP	PP	01 03 44.0	-1.4
PGAV	Gavieira, Arco	97.64	337	eSS	SS	01 17 51.9	+1.5
PGAV	Gavieira, Arco	97.64	337	eLR	LR	01 32 01.7	
	comp=Z,2μm,22.0s						
BLA	Blacksburg	97.78	32	PFAKE		01 00 00.0	+11
BLA				LR	LR		
	comp=Z,1μm,20.0s						
MVO	Moncorvo	97.97	336	ePP	PP	01 03 42.3	-5.6
MVO	Moncorvo	97.97	336	eSS	SS	01 18 06.6	+12
MVO	Moncorvo	97.97	336	eLR	LR	01 33 15.8	
	comp=Z,3μm,20.0s						
POLO	Lamas de Olo	98.03	337	ePP	PP	01 03 44.1	-4.2
POLO	Lamas de Olo	98.03	337	eSS	SS	01 18 00.2	+4.4
POLO	Lamas de Olo	98.03	337	eLR	LR	01 34 45.3	
	comp=Z,1μm,20.0s						
LRAL	Lakeview Retre	98.06	39	PFAKE		01 00 00.0	+9.5
LRAL				LR	LR		
	comp=Z,900nm,21.0s						
ES19	SONSECA Array	98.19	333	eP	P	00 59 51.0	-0.1
CBN	Corbin Frederi	98.20	30	PFAKE		01 00 00.0	+8.9
CBN				LR	LR		
	comp=Z,1μm,21.0s						
ESDC	Sonseca Array	98.24	333	P	Pdif	00 59 51.4	+0.1
	comp=Z,4.7nm,0.9s,baz=18,slow=4.3,SNR=22						
ESDC				PP	PP	01 03 50.6	+0.7
	comp=Z,1.6nm,0.7s,baz=27,slow=7.2,SNR=4.8						
ESDC				LR	LR	01 48 25.2	
	comp=Z,3μm,21.5s,baz=50,slow=38						
ESLA	Sonseca Array	98.24	333	PFAKE		01 00 00.0	+8.7
ESLA				LR	LR		
	comp=Z,4μm,22.0s						
PAB	San Pablo	98.49	334	eP	Pdif	00 59 52.6	+0.1
PAB				pmax	pmax		
	comp=Z,10.0nm,1.1s						
PAB				MLR	MLR		
	comp=Z,4μm,22.0s						
PAB	San Pablo	98.49	334	eP	Pdif	00 59 52.6	+0.2
	comp=Z,10nm,1.1s						
PAB				LR	LR		
	comp=Z,4μm,22.0s						
RKT	Rikitea	98.57	112	eSKSac	SKSac	01 10 26.8	-2.2
	comp=Z,696nm,30.0s						
RKT				eSP	SP	01 12 42.9	-2.3
	comp=Z,744nm,32.5s						
RKT				eSS	SS	01 18 03.7	-2.5
	comp=Z,891nm,28.5s						
RKT	Rikitea	98.57	112	eLR	LR	01 31 55.0	
	comp=Z,5μm,24.0s,baz=306						
KMSC	Kings Mountain	99.09	34	Pdiff	Pdif	00 59 55.1	0.0
	baz=326						
KMSC	Kings Mountain	99.09	34	eP	Pdif	00 59 55.9	+0.8
	comp=Z,18nm,1.3s						
KMSC				LR	LR		
	comp=Z,2μm,20.0s						
MOIG	Morelia	99.31	58	PFAKE		01 00 10.0	+13
MOIG				LR	LR		
	comp=Z,1μm,19.0s						
PCAS	Casmilo, Conde	99.45	337	ePP	PP	01 03 56.5	-2.6
PCAS	Casmilo, Conde	99.45	337	eSS	SS	01 18 32.0	+16
PCAS	Casmilo, Conde	99.45	337	eLR	LR	01 33 29.7	
	comp=Z,3μm,20.0s						
GOGA	Godfrey	99.52	36	PFAKE		01 00 10.0	+13
GOGA				LR	LR		
	comp=Z,1μm,22.0s						
PMRV	Marv??o	99.66	336	ePP	PP	01 03 55.1	-5.6
PMRV	Marv??o	99.66	336	eSS	SS	01 18 27.8	+9.3
PMRV	Marv??o	99.66	336	eLR	LR	01 33 30.1	
	comp=Z,2μm,18.0s						
JSC	Jenkinsville	99.84	34	PFAKE		01 00 10.0	+12
JSC				LR	LR		
	comp=Z,1μm,21.0s						
PESTR	Estremoz	100.23	336	ePP	PP	01 03 58.8	-6.2
PESTR	Estremoz	100.23	336	eLR	LR	01 33 47.9	
	comp=Z,2μm,22.0s						
PMTG	Montargil	100.25	336	ePP	PP	01 03 59.3	-5.9
PMTG	Montargil	100.25	336	eSS	SS	01 18 35.5	+8.7
PMTG	Montargil	100.25	336	eLR	LR	01 33 54.5	
	comp=Z,3μm,18.0s						
CNNC	Cliffs of the	100.53	32	PFAKE		01 00 10.0	+8.5
CNNC				LR	LR		
	comp=Z,1μm,21.0s						
PBAR	Barrancos	100.66	335	ePP	PP	01 04 06.9	-1.4
PBAR	Barrancos	100.66	335	eSS	SS	01 18 38.1	+5.6
PBAR	Barrancos	100.66	335	eLR	LR	01 34 35.9	
	comp=Z,11μm,20.0s						
PMAFR	Mafra	100.70	337	ePP	PP	01 04 07.2	-1.4
PMAFR	Mafra	100.70	337	eSS	SS	01 18 42.2	+9.2
PMAFR	Mafra	100.70	337	eLR	LR	01 33 24.7	
	comp=Z,2μm,20.0s						
TIGA	Tifton	101.06	38	PFAKE		01 00 20.0	+16
TIGA				LR	LR		
	comp=Z,1μm,22.0s						
PNCL	Nicolau / Gran	101.22	336	ePP	PP	01 03 56.8	-16
PNCL	Nicolau / Gran	101.22	336	eLR	LR	01 34 08.2	
	comp=Z,2μm,22.0s						
NHSC	New Hope	101.32	34	PFAKE		01 00 20.0	+15
NHSC				LR	LR		
	comp=Z,1μm,21.0s						
PCVE	Castro Verde	101.49	335	ePP	PP	01 04 08.1	-6.5
PCVE	Castro Verde	101.49	335	eSS	SS	01 19 07.7	+24
PCVE	Castro Verde	101.49	335	eLR	LR	01 34 35.3	
	comp=Z,3μm,20.0s						
PVAQ	Vaqueiros	101.59	335	ePP	PP	01 03 54.6	-21
PBDV	Barranco-do-Ve	101.81	335	ePP	PP	01 04 10.8	-6.2
PBDV	Barranco-do-Ve	101.81	335	eSS	SS	01 18 57.1	+8.6
PBDV	Barranco-do-Ve	101.81	335	eLR	LR	01 35 57.7	
	comp=Z,5μm,20.0s						
KMBO	Kilima Mbogo	101.84	277	eP	Pdif	01 00 08.2	+0.2
KMBO				e		01 04 18.0	
KMBO				MLR	MLR		
	comp=Z,1μm,20.0s						
KMBO	Kilima Mbogo	101.84	277	ePdif	Pdif	01 00 08.2	+0.2
KMBO				ePP	PP	01 04 18.0	-1.0
KMBO				LR	LR		

comp=Z,1μm,20.0s
MORF Marmelete 101.99 336 *e*SS SS 01 19 05.8 +15
MORF Marmelete 101.99 336 *e*LR LR 01 36 00.2
comp=Z,3μm,20.0s
PFVI Vila Bisbo 102.21 336 *e*PP PP 01 04 15.5 -4.5
PFVI Vila Bisbo 102.21 336 *e*SS SS 01 19 00.7 +6.7
PFVI Vila Bisbo 102.21 336 *e*LR LR 01 34 04.1
comp=Z,2μm,20.0s
PFVI Vila Bisbo 102.21 336 PFAKE 01 00 20.0 +11
PFVI LR LR
comp=Z,3μm,19.0s
RTC Rabat Centre 104.35 333 PFAKE 01 00 30.0 +12
RTC LR LR
comp=Z,6μm,19.0s
CASY Casey 104.46 192 *e*PP PP 01 04 37.9 +0.3
DWPF Disney Wildern 104.85 38 PFAKE 01 04 50.0
DWPF LR LR
comp=Z,800nm,22.0s
PMOZ Porto Moniz, M 108.73 341 *e*LR LR 01 36 27.2
comp=Z,1μm,18.0s
TGUH Tegucigalpa,Un 112.57 52 PFAKE 01 05 00.0
TGUH LR LR
comp=Z,900nm,18.0s
VNDA Vanda 113.80 175 PKiKP **PKiKP 01 04 50.5 -0.7**
comp=Z,2.4nm,1.0s,baz=300,slow=2.8,SNR=6.9
VNDA PP **PP 01 05 44.6 -0.5**
comp=Z,2.4nm,1.1s,baz=309,slow=8.7,SNR=3.3
VNDA PKKPab **PKKPab 01 15 42.4 +4.4**
comp=Z,1.8nm,1.1s,baz=197,slow=4.3,SNR=4.1
VNDA Vanda 113.80 175 PKIKP **PKiKP 01 04 50.5 -0.7**
VNDA 01 05 44.7
GTBY Guantanamo Bay 114.83 38 PFAKE 01 05 10.0 +15
GTBY LR LR
comp=Z,600nm,21.0s
MTDJ Mount Denham 115.00 41 PFAKE 01 05 10.0 +15
MTDJ LR LR
comp=Z,500nm,20.0s
GRTK Grand Turk 115.34 33 PFAKE 01 05 10.0 +14
GRTK LR LR
comp=Z,1μm,20.0s
LSZ Lusaka 117.21 270 *e*PKIKP **PKPdf 01 05 00.3 +0.6**
LSZ MLR MLR
comp=Z,2μm,19.0s
LSZ Lusaka 117.21 270 *e*PKPdf **PKPdf 01 05 00.3 +0.6**
LSZ LR LR
comp=Z,2μm,19.0s
PUCM Santiago 117.36 34 PFAKE 01 05 10.0 +10
PUCM LR LR
comp=Z,2μm,20.0s
PAPH Port-au-Prince 117.40 36 PFAKE 01 05 10.0 +10
PAPH LR LR
comp=Z,900nm,20.0s
SDDR Presa de Saban 117.48 35 PFAKE 01 05 10.0 +10
SDDR LR LR
comp=Z,2μm,20.0s
MAW Mawson 118.32 205 PKP **PKPdf 01 04 59.8 -0.2**
comp=Z,6.1nm,1.0s,baz=44,slow=2.1,SNR=6.9
MAW Mawson 118.32 205 PKIKP **PKPdf 01 04 59.8 -0.2**
MAW pmax pmax
comp=Z,6.0nm,1.0s
MAW Mawson 118.32 205 *e*PKPdf **PKPdf 01 05 00.8 +0.8**
MPR Mayaguez 119.99 31 PFAKE 01 05 20.0 +15
MPR LR LR
comp=Z,700nm,22.0s
CBYP Canovanas 120.47 30 PFAKE 01 05 20.0 +14
CBYP LR LR
comp=Z,1μm,22.0s
SJG San Juan 120.49 30 PFAKE 01 05 20.0 +14
SJG LR LR
comp=Z,900nm,20.0s
HUMP Col San Antoni 120.59 30 PFAKE 01 05 20.0 +14
HUMP LR LR
comp=Z,800nm,19.0s
ABVI Anegada Island 120.65 28 PFAKE 01 05 20.0 +14
ABVI LR LR
comp=Z,700nm,19.0s
BCIP Isla Barro Col 120.96 49 PFAKE 01 05 20.0 +13
BCIP LR LR
comp=Z,900nm,22.0s
SMRT St. Maarten 121.75 27 PFAKE 01 05 20.0 +12
SMRT LR LR
comp=Z,800nm,20.0s
SABA Saba 122.08 28 PFAKE 01 05 20.0 +11
SABA LR LR
comp=Z,700nm,22.0s
SEUS St. Eustatius 122.29 27 PFAKE 01 05 20.0 +11
SEUS LR LR
comp=Z,700nm,19.0s
ANWB Willy Bob 122.57 26 PFAKE 01 05 20.0 +10
ANWB LR LR
comp=Z,900nm,22.0s
MOTC Monteria, Cord 123.75 45 *e*P **PKPdf 01 05 11.8 -0.4**
LBTB Lobatse 124.19 262 *e*PKIKP **PKPdf 01 05 13.0 +0.2**
LBTB Lobatse 124.19 262 *e*PKPdf **PKPdf 01 05 13.0 +0.2**
FDF Fort de France 125.50 27 PFAKE 01 05 30.0 +14
FDF LR LR
comp=Z,900nm,20.0s
QSPA South Pole Qui 125.57 180 *e*PKPdf **PKPdf 01 05 13.6 -0.5**
BOSA Boshof 126.05 258 PKP **PKPdf 01 05 16.6 +0.3**
comp=Z,11nm,0.9s,baz=45,slow=1.6,SNR=11
BOSA PP **PP 01 07 10.9 +0.3**
comp=Z,7.4nm,0.9s,baz=116,slow=4.2,SNR=3.9
BOSA Boshof 126.05 258 PKIKP **PKPdf 01 05 16.6 +0.3**
BOSA 01 07 10.9
BOSA pmax pmax
comp=Z,11nm,0.9s
BOSA pmax pmax
comp=Z,7.0nm,1.0s
SDV Santo Domingo 126.44 40 PFAKE 01 05 30.0 +12
SDV LR LR
comp=Z,1μm,21.0s
GUYC Guyana, Colomb 126.76 48 *e*P **PKPdf 01 05 19.0 +0.4**
NORC Norcasia 126.80 47 *e*P **PKPdf 01 05 17.6 -0.6**
DBIC Dimbokro 126.96 316 PKP **PKPdf 01 05 18.2 -0.1**
comp=Z,15nm,1.0s,baz=26,slow=2.2,SNR=11
DBIC PP **PP 01 07 13.5 -2.0**
comp=Z,9.4nm,0.9s,baz=351,slow=4.4,SNR=4.6
DBIC Dimbokro 126.96 316 PKIKP **PKPdf 01 05 18.2 -0.1**
DBIC 01 07 13.5
DBIC pmax pmax
comp=Z,15nm,1.0s
DBIC pmax pmax
comp=Z,9.0nm,0.9s
DBIC Dimbokro 126.96 316 *e*PKPdf **PKPdf 01 05 18.6 +0.2**
DBIC PP **PP 01 07 13.5 -2.0**
SYO Syowa Base 126.99 206 ‖ *e*PKPdf **PKPdf 01 05 15.6 -1.0**
SYO Syowa Base 126.99 206 ‖ *ep*PKPdf pPKPdf 01 05 25.0 -0.8
TIC Toumodi 127.07 316 *e*PKP1 **PKPdf 01 05 18.2 -0.4**
KIC Kosan Boka 127.14 315 *e*PKP1 **PKPdf 01 05 18.4 -0.3**
comp=Z,66nm,1.2s
LIC Lamto 127.42 316 *e*PKP1 **PKPdf 01 05 17.5 -1.7**
RUSC La Rusia 127.57 45 *e*P **PKPdf 01 05 20.0 -0.2**
ROSC El Rosal 127.70 47 PKP **PKPdf 01 05 21.4 +1.1**
comp=Z,11nm,0.9s,baz=84,slow=9.5,SNR=11
ROSC El Rosal 127.70 47 *e*PKPdf **PKPdf 01 05 25.0 +4.7**
ROSC LR LR
comp=Z,200nm,18.0s
TSUM Tsumeb 127.88 273 *e*PKPdf **PKPdf 01 05 20.8 +0.7**
TSUM LR LR
comp=Z,2μm,22.0s
POPC Popayan, Colom 128.06 51 *e*P **PKPdf 01 05 21.0 +0.2**
OTAV Otavalo 128.66 55 *e*PKPdf **PKPdf 01 05 23.1 +0.9**
OTAV *e*PP PP 01 07 39.3 +12
OTAV LR LR
comp=Z,800nm,18.0s
OTAV Otavalo 128.66 55 *e*P **PKPdf 01 05 22.4 +0.2**
FLOC Florencia 129.45 51 *e*P **PKPdf 01 05 23.4 +0.2**
SUR Sutherland 131.06 256 PFAKE 01 05 40.0 +14
SUR LR LR
comp=Z,2μm,22.0s
NVL N'lazarevskaya 136.06 202 *e*PKIKP **PKPdf 01 05 34.4 +0.7**
NVL *e* 01 08 14.9
NVL *e*SS SS 01 26 17.3 +5.8
NVL pmax pmax
comp=Z,3.0nm,1.3s
NVL MLR MLR
comp=Z,1μm,24.0s
PTGA Pitinga 139.99 34 PFAKE 01 06 00.0 +17
PTGA LR LR
comp=Z,700nm,20.0s
VNA2 Neumayer--Watz 141.08 196 PKP **PKPdf 01 05 43.2 +0.2**
baz=98,slow=2.4
VNA3 Neumayer Olymp 141.32 195 PKP **PKPdf 01 05 43.9 +0.5**
VNA1 Neumayer--Stat 141.47 196 PKP **PKPdf 01 05 42.1 -1.6**
SAML Samuel 145.31 45 *e*PKPbc **PKPdf 01 05 52.4 +0.2**
SAML LR LR
comp=Z,300nm,19.0s
LPAZ La Paz 147.55 61 PKP **PKPdf 01 05 57.7 +1.1**
comp=Z,25nm,0.8s,baz=347,slow=3.5,SNR=62
LPAZ PKPbc **PKPab 01 06 00.4 -0.9**
comp=Z,23nm,0.7s,baz=316,slow=3.4,SNR=74
LPAZ La Paz 147.55 61 PKIKP **PKPdf 01 05 57.7 +1.1**
LPAZ 01 06 00.4
LPAZ pmax pmax
comp=Z,25nm,0.8s
LPAZ pmax pmax
comp=Z,23nm,0.7s
PB11 IPOC Station P 148.65 68 *e*PKPdf **PKPdf 01 05 58.8 +1.1**
PB01 IPOC Station P 149.53 69 *e*PKPdf **PKPdf 01 06 01.0 +1.9**
PB04 IPOC Station P 149.75 72 *e*PKPbc **PKPbc 01 06 05.2 +1.0**
RCBR Riachuelo 150.01 354 PKPbc **PKPbc 01 06 05.3 +0.3**
comp=Z,44nm,0.9s,baz=8.7,slow=1.5,SNR=13
RCBR Riachuelo 150.01 354 *e*PKPbc **PKPbc 01 06 05.3 +0.3**
RCBR LR LR
comp=Z,1μm,21.0s
PB10 IPOC Station P 150.06 75 *e*PKPbc **PKPbc 01 06 06.1 +1.4**
LVC Limon Verde 150.85 71 PKP **PKPdf 01 06 02.2 +0.7**
comp=Z,21nm,0.9s
LVC PKPbc **PKiKP 01 06 08.8 +1.1**
LVC Limon Verde 150.85 71 *e*PKPdf **PKPdf 01 06 03.2 +1.8**
LVC PKPbc **PKiKP 01 06 08.8 +1.1**
SIV San Ignacio 152.09 51 PKP **PKPdf 01 06 04.1 +1.0**
comp=Z,4.1nm,0.9s,baz=55,slow=1.1,SNR=7.6
SIV PKPbc **PKiKP 01 06 10.4 +0.3**
comp=Z,40nm,0.8s,baz=320,slow=2.0,SNR=48
LCO Las Campanas 152.43 85 *e*PKPbc **PKPbc 01 06 10.9 +0.4**
CHRN Cochrane 152.56 125 *ep*PKPab pPKPab 01 06 28.5 -0.9
PLCA Paso Flores 154.79 111 PKPab **PKPab 01 06 30.9 +0.8**
comp=Z,6.0nm,0.8s,baz=297,slow=4.0,SNR=6.4
PLCA Paso Flores 154.79 111 PKP2 **PKPab 01 06 31.0 +0.8**
PLCA pmax pmax
comp=Z,6.0nm,0.8s
PLCA Paso Flores 154.79 111 *e*PKPab **PKPab 01 06 32.8 +2.6**
TRQA Tornquist 161.47 104 *e*PKPab **PKPab 01 07 03.6 +4.5**
CPUP Villa Florida 161.66 64 PKP **PKPdf 01 06 14.9 -0.1**
comp=Z,7.0nm,1.2s,baz=37,slow=2.4,SNR=5.5
CPUP PKPab **PKPab 01 07 00.4 +0.2**
comp=Z,3.0nm,1.0s,baz=337,slow=6.7,SNR=2.2
CPUP Villa Florida 161.66 64 PKIKP **PKPdf 01 06 14.9 -0.1**
CPUP 01 07 00.4
CPUP pmax pmax
comp=Z,9.0nm,1.2s
CPUP pmax pmax
comp=Z,3.0nm,1.0s
CPUP Villa Florida 161.66 64 *e*PKPdf **PKPdf 01 06 15.6 +0.6**
CPUP PKPab **PKPab 01 07 00.4 +0.2**

MEX 20 00:50:08.9±0.7, 15°.33N×93°.11W, h69km±10km, MD3.9,
Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		**0.39**	**344**	*e*P	Pn	00 50 18.7	-2.0
PCIG				*e*S	Sn	00 50 27.7	-1.7
THIG		**0.91**	**117**	*e*P	Pn	00 50 24.0	-2.2
THIG				*i* S	Sn	00 50 37.5	-1.7
CCIG	**Comitan**	**1.33**	**44**	*e*P	Pn	00 50 30.1	-1.7
CCIG				*i* S	Sn	00 50 46.7	-2.3
TGIG		**1.45**	**359**	*e*P	Pn	00 50 31.6	-1.6
TGIG				*i* S	Sn	00 50 50.5	-1.0

*ISCJB **20** 00:50:37.0±0.5, 39°.09N±0°.03×29°.03E±0°.03, h5km±6km,*
Error ellipse: s-maj=5.9km s-min=3.8km az=166.1
*ISK **20** 00:50:36.8, 39°.06N×29°.05E, h7km, MD2.9*
*DDA **20** 00:50:36.9, 39°.12N×29°.03E, h7km, Md2.6*
*CSEM **20** 00:50:37.2±0.1, 39°.08N×29°.03E, h5km, MD2.6, Error*
ellipse: s-maj=2.0km s-min=1.8km az=151.0
ISC 20 00:50:37.2±1.0, 39°.09N±0°.02×29°.04E±0°.02, h7km±9km,
n43, σ0°.61/58, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**260**	P	**Pg**	**00 50 42.4**	**+0.1**
DEMI				S	**Sg**	**00 50 45.8**	**+0.1**
DEMI	**Demirci**	**0.26**	**260**	*i* P	**Pg**	**00 50 42.4**	**+0.1**
DEMI				*i* S	**Sg**	**00 50 45.8**	**+0.1**
GDZ	**Gediz**	**0.34**	**90**	P	**Pg**	**00 50 44.4**	**+0.4**
GDZ				S	**Sg**	**00 50 49.3**	**+0.7**
GDZ	**Gediz**	**0.34**	**90**	*i* P	**Pg**	**00 50 44.4**	**+0.4**
GDZ				*i* S	**Sg**	**00 50 49.3**	**+0.7**
TVSB	**Tavsanli**	**0.49**	**42**	*e*PG	**Pg**	**00 50 46.7**	**0.0**
TVSB	**Tavsanli**	**0.49**	**42**	*e*Pg	**Pg**	**00 50 46.7**	**0.0**
DURS	**Dursunbey**	**0.67**	**320**	P	**Pg**	**00 50 49.5**	**-0.8**
DURS	**Dursunbey**	**0.67**	**320**	*i* P	**Pg**	**00 50 49.5**	**-0.8**
MANT	**Manisa**	**0.70**	**212**	P	**Pg**	**00 50 50.9**	**+0.1**
MANT				S	**Sg**	**00 50 59.4**	**-0.6**
MANT	**Manisa**	**0.70**	**212**	*i* P	**Pg**	**00 50 50.9**	**+0.1**
MANT				*i* S	**Sg**	**00 50 59.4**	**-0.6**
KHAL	**Karahalli**	**0.80**	**154**	P	**Pb**	**00 50 53.3**	**-0.2**
KHAL				S	**Sb**	**00 51 03.5**	**-1.1**
KHAL	**Karahalli**	**0.80**	**154**	*i* P	**Pb**	**00 50 53.3**	**-0.2**
KHAL				*i* S	**Sb**	**00 51 03.5**	**-1.1**
KHL	**Karahalli**	**0.85**	**153**	*e*PG	**Pg**	**00 50 53.1**	**-0.5**
KHL	**Karahalli**	**0.85**	**153**	*e*Pg	**Pg**	**00 50 53.1**	**-0.5**
AKHS	**Akhisar**	**0.98**	**258**	P	**Pg**	**00 50 55.9**	**-0.1**
AKHS				S	**Sg**	**00 51 08.4**	**-0.3**
AKHS	**Akhisar**	**0.98**	**258**	*i* P	**Pg**	**00 50 55.9**	**-0.1**
AKHS				*i* S	**Sg**	**00 51 08.4**	**-0.3**
AKS	**Akhisar**	**0.98**	**258**	*e*PG	**Pg**	**00 50 55.9**	**-0.1**
AKS				*e*SG	**Sb**	**00 51 10.1**	**+0.5**
AKS	**Akhisar**	**0.98**	**258**	*e*Pg	**Pg**	**00 50 55.9**	**-0.1**
AKS				*e*Sg	**Sb**	**00 51 10.1**	**+0.5**
BALB	**Balikesir**	**1.05**	**302**	*e*PN	**Pb**	**00 50 58.0**	**+0.2**
BALB				*e*SN	**Sn**	**00 51 13.9**	**+0.5**
BALB	**Balikesir**	**1.05**	**302**	*e*Pn	**Pb**	**00 50 58.0**	**+0.2**
BALB				*e*Sn	**Sn**	**00 51 13.9**	**+0.5**
IGD	**Bursa**	**1.18**	**6**	*i* P	**Pg**	**00 50 58.0**	**-1.9**
IGD				*i* S	**Sg**	**00 51 12.8**	**-2.5**
CAVI	**Cavuskoy**	**1.27**	**29**	*e*PN	**Pg**	**00 51 01.9**	**+0.2**
CAVI	**Cavuskoy**	**1.27**	**29**	*e*Pn	**Pg**	**00 51 01.9**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.29**	**355**	*e*PN	**Pn**	**00 51 01.9**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.29**	**355**	*e*Pn	**Pn**	**00 51 01.9**	**+0.3**
KCTX	**Karacabey (Bur**	**1.29**	**336**	*e*PN	**Pb**	**00 51 02.2**	**+0.3**
KCTX	**Karacabey (Bur**	**1.29**	**336**	*e*Pn	**Pb**	**00 51 02.2**	**+0.3**
IZI	**Iznik**	**1.29**	**15**	*e*PN	**Pg**	**00 51 02.3**	**+0.3**
IZI	**Iznik**	**1.29**	**15**	*e*Pn	**Pg**	**00 51 02.3**	**+0.3**
GONE	**Gonen-Balikesi**	**1.42**	**313**	*e*PN	**Pn**	**00 51 03.8**	**+0.3**
GONE	**Gonen-Balikesi**	**1.42**	**313**	*e*Pn	**Pn**	**00 51 03.8**	**+0.3**
ADVT	**Abdulvahap**	**1.45**	**22**	*e*PN	**Pn**	**00 51 04.3**	**+0.4**
ADVT	**Abdulvahap**	**1.45**	**22**	*e*Pn	**Pn**	**00 51 04.3**	**+0.4**
ARMT	**Armutlu**	**1.48**	**355**	*e*PN	**Pb**	**00 51 05.2**	**0.0**
ARMT	**Armutlu**	**1.48**	**355**	*e*Pn	**Pb**	**00 51 05.2**	**0.0**
EDC	**Edincik**	**1.55**	**325**	*e*PN	**Pn**	**00 51 05.7**	**+0.4**
EDC	**Edincik**	**1.55**	**325**	*e*Pn	**Pn**	**00 51 05.7**	**+0.4**
GULT	**Gulveren**	**1.76**	**40**	*e*PN	**Pn**	**00 51 08.6**	**+0.3**
GULT	**Gulveren**	**1.76**	**40**	*e*Pn	**Pn**	**00 51 08.6**	**+0.3**
SVRH	**Sivrihisar-ESK**	**1.96**	**79**	*e*PN	**Pn**	**00 51 11.2**	**+0.2**
SVRH	**Sivrihisar-ESK**	**1.96**	**79**	*e*Pn	**Pn**	**00 51 11.2**	**+0.2**
ISK	**Istanbul-Kandi**	**1.98**	**0**	*e*PN	**Pn**	**00 51 12.0**	**+0.9**
ISK	**Istanbul-Kandi**	**1.98**	**0**	*e*Pn	**Pn**	**00 51 12.0**	**+0.9**

*ISCJB **20** 00:51:21.6±0.5, 39°.08N±0°.04×29°.03E±0°.03, h1km±8km,*
Error ellipse: s-maj=6.2km s-min=4.2km az=7.2
*CSEM **20** 00:51:21.9±0.1, 39°.08N×29°.04E, h2km, MD2.5, Error*
ellipse: s-maj=2.2km s-min=2.1km az=103.0
*ISK **20** 00:51:21.6, 39°.09N×29°.01E, h4km, MD2.8*
*DDA **20** 00:51:21.3, 39°.09N×29°.03E, h7km, Md2.5*
ISC 20 00:51:21.9±1.2, 39°.09N±0°.02×29°.02E±0°.02, h0km±14km,
n39, σ0°.35/52, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**258**	P	**Pg**	**00 51 26.8**	**+0.2**
DEMI				S	**Sg**	**00 51 30.4**	**+0.7**
DEMI	**Demirci**	**0.24**	**258**	*i* P	**Pg**	**00 51 26.8**	**+0.2**
DEMI				*i* S	**Sg**	**00 51 30.4**	**+0.7**
GDZ	**Gediz**	**0.36**	**91**	P	**Pg**	**00 51 28.7**	**-0.1**
GDZ				S	**Sg**	**00 51 33.8**	**+0.4**
GDZ	**Gediz**	**0.36**	**91**	*i* P	**Pg**	**00 51 28.7**	**-0.1**
GDZ				*i* S	**Sg**	**00 51 33.8**	**+0.4**
TVSB	**Tavsanli**	**0.49**	**44**	*e*PG	**Pg**	**00 51 31.1**	**-0.3**
TVSB	**Tavsanli**	**0.49**	**44**	*e*Pg	**Pg**	**00 51 31.1**	**-0.3**
MANT	**Manisa**	**0.70**	**211**	P	**Pg**	**00 51 35.2**	**-0.2**
MANT				S	**Sg**	**00 51 43.7**	**-0.7**
MANT	**Manisa**	**0.70**	**211**	*i* P	**Pg**	**00 51 35.2**	**-0.2**
MANT				*i* S	**Sg**	**00 51 43.7**	**-0.7**
KHAL	**Karahalli**	**0.81**	**153**	P	**Pg**	**00 51 37.2**	**-0.2**
KHAL				S	**Sg**	**00 51 47.9**	**0.0**
KHAL	**Karahalli**	**0.81**	**153**	*i* P	**Pg**	**00 51 37.2**	**-0.2**
KHAL				*i* S	**Sg**	**00 51 47.9**	**0.0**
KHL	**Karahalli**	**0.86**	**153**	*e*PG	**Pg**	**00 51 38.9**	**+0.4**
KHL	**Karahalli**	**0.86**	**153**	*e*Pg	**Pg**	**00 51 38.9**	**+0.4**
AKS	**Akhisar**	**0.97**	**258**	*e*PG	**Pg**	**00 51 40.7**	**+0.3**
AKS				*e*SG	**Sb**	**00 51 54.6**	**-0.1**
AKS	**Akhisar**	**0.97**	**258**	*e*Pg	**Pg**	**00 51 40.7**	**+0.3**
AKS				*e*Sg	**Sb**	**00 51 54.7**	**-0.1**
BALB	**Balikesir**	**1.04**	**302**	*e*PG	**Pb**	**00 51 42.3**	**-0.4**
BALB				*e*SG	**Sb**	**00 51 56.8**	**-0.1**
BALB	**Balikesir**	**1.04**	**302**	*e*Pg	**Pb**	**00 51 42.3**	**-0.4**
BALB				*e*Sg	**Sb**	**00 51 56.8**	**-0.1**
IGD	**Bursa**	**1.18**	**7**	*i* P	**Pg**	**00 51 43.5**	**-1.0**
IGD				*i* S	**Sg**	**00 51 59.6**	**-0.1**
CAVI	**Cavuskoy**	**1.28**	**30**	*e*PN	**Pn**	**00 51 47.0**	**0.0**
CAVI	**Cavuskoy**	**1.28**	**30**	*e*Pn	**Pn**	**00 51 47.0**	**0.0**
KCTX	**Karacabey (Bur**	**1.28**	**337**	*e*PN	**Pg**	**00 51 46.4**	**0.0**
KCTX	**Karacabey (Bur**	**1.28**	**337**	*e*Pn	**Pg**	**00 51 46.4**	**0.0**
MDNY	**Mudanya-Bursa**	**1.28**	**355**	*e*PN	**Pb**	**00 51 46.8**	**0.0**
MDNY	**Mudanya-Bursa**	**1.28**	**355**	*e*Pn	**Pb**	**00 51 46.8**	**0.0**
IZI	**Iznik**	**1.29**	**16**	*e*PN	**Pg**	**00 51 46.8**	**+0.2**
IZI	**Iznik**	**1.29**	**16**	*e*Pn	**Pg**	**00 51 46.8**	**+0.2**
GEMT	**Gemlik**	**1.35**	**5**	*e*PN	**Pb**	**00 51 48.0**	**0.0**
GEMT	**Gemlik**	**1.35**	**5**	*e*Pn	**Pb**	**00 51 48.0**	**0.0**
GONE	**Gonen-Balikesi**	**1.40**	**313**	*e*PN	**Pn**	**00 51 48.6**	**-0.1**
GONE	**Gonen-Balikesi**	**1.40**	**313**	*e*Pn	**Pn**	**00 51 48.6**	**-0.1**
ADVT	**Abdulvahap**	**1.45**	**22**	*e*PN	**Pg**	**00 51 49.6**	**0.0**
ADVT	**Abdulvahap**	**1.45**	**22**	*e*Pn	**Pg**	**00 51 49.6**	**0.0**
ARMT	**Armutlu**	**1.48**	**355**	*e*PN	**Pn**	**00 51 49.9**	**+0.2**
ARMT	**Armutlu**	**1.48**	**355**	*e*Pn	**Pn**	**00 51 49.9**	**+0.2**
EDC	**Edincik**	**1.54**	**325**	*e*PN	**Pn**	**00 51 50.5**	**-0.1**
EDC	**Edincik**	**1.54**	**325**	*e*Pn	**Pn**	**00 51 50.5**	**-0.1**
GULT	**Gulveren**	**1.76**	**40**	*e*PN	**Pn**	**00 51 54.1**	**+0.4**
GULT	**Gulveren**	**1.76**	**40**	*e*Pn	**Pn**	**00 51 54.2**	**+0.4**
ISK	**Istanbul-Kandi**	**1.97**	**1**	*e*PN	**Pn**	**00 51 57.0**	**+0.6**
ISK	**Istanbul-Kandi**	**1.97**	**1**	*e*Pn	**Pn**	**00 51 57.1**	**+0.6**

*DDA **20** 00:53:03.7, 39°.12N×29°.12E, h7km, Md2.4*
*ISCJB **20** 00:53:04.0±0.5, 39°.13N±0°.03×29°.08E±0°.03, h2km±7km,*
Error ellipse: s-maj=5.9km s-min=4.1km az=25.2
*CSEM **20** 00:53:04.2±0.2, 39°.13N×29°.09E, h2km, MD2.4, Error*
ellipse: s-maj=5.1km s-min=5.0km az=41.0
*ISK **20** 00:53:04.9, 39°.22N×29°.02E, h4km, ML2.6*
ISC 20 00:53:03.9±1.2, 39°.15N±0°.02×29°.13E±0°.02, h1km±14km,
n42, σ0°.53/56, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.28**	**103**	P	**Pg**	**00 53 08.2**	**-1.1**
GDZ				S	**Sg**	**00 53 14.1**	**+1.1**
GDZ	**Gediz**	**0.28**	**103**	*i* P	**Pg**	**00 53 08.2**	**-1.1**
GDZ				*i* S	**Sg**	**00 53 14.1**	**+1.1**
DEMI	**Demirci**	**0.34**	**251**	P	**Pg**	**00 53 10.9**	**+0.5**
DEMI				S	**Sg**	**00 53 15.0**	**+0.2**
DEMI	**Demirci**	**0.34**	**251**	*i* P	**Pg**	**00 53 10.9**	**+0.5**
DEMI				*i* S	**Sg**	**00 53 15.0**	**+0.2**
TVSB	**Tavsanli**	**0.39**	**41**	*e*PG	**Pb**	**00 53 13.3**	**-0.5**
TVSB	**Tavsanli**	**0.39**	**41**	*e*Pg	**Pb**	**00 53 13.3**	**-0.5**
DURS	**Dursunbey**	**0.68**	**312**	P	**Pb**	**00 53 18.4**	**-0.2**
DURS				S	**Sg**	**00 53 26.7**	**+1.1**
DURS	**Dursunbey**	**0.68**	**312**	*i* P	**Pb**	**00 53 18.4**	**-0.2**
DURS				*i* S	**Sg**	**00 53 26.7**	**+1.1**
MANT	**Manisa**	**0.80**	**214**	P	**Pg**	**00 53 18.9**	**-0.3**
MANT				S	**Sg**	**00 53 29.2**	**-0.3**
MANT	**Manisa**	**0.80**	**214**	*i* P	**Pg**	**00 53 18.9**	**-0.3**
MANT				*i* S	**Sg**	**00 53 29.2**	**-0.3**
KHAL	**Karahalli**	**0.83**	**160**	P	**Pg**	**00 53 19.8**	**-0.1**
KHAL				S	**Sg**	**00 53 30.5**	**-0.1**
KHAL	**Karahalli**	**0.83**	**160**	*i* P	**Pg**	**00 53 19.8**	**-0.1**
KHAL				*i* S	**Sg**	**00 53 30.5**	**-0.1**
KHL	**Karahalli**	**0.89**	**159**	*e*PG	**Pn**	**00 53 24.4**	**+0.8**
KHL	**Karahalli**	**0.89**	**159**	*e*Pg	**Pn**	**00 53 24.4**	**+0.8**
BALB	**Balikesir**	**1.08**	**297**	*e*PG	**Pg**	**00 53 24.2**	**-0.5**
BALB				*e*SG	**Sg**	**00 53 38.3**	**-0.4**
BALB	**Balikesir**	**1.08**	**297**	*e*Pg	**Pg**	**00 53 24.2**	**-0.5**
BALB				*e*Sg	**Sg**	**00 53 38.3**	**-0.4**
CAVI	**Cavuskoy**	**1.18**	**28**	*e*PN	**Pn**	**00 53 27.9**	**+0.2**
CAVI	**Cavuskoy**	**1.18**	**28**	*e*Pn	**Pn**	**00 53 27.9**	**+0.2**
IZI	**Iznik**	**1.21**	**13**	*e*PN	**Pn**	**00 53 27.9**	**-0.2**
IZI	**Iznik**	**1.21**	**13**	*e*Pn	**Pn**	**00 53 27.9**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.23**	**351**	*e*PN	**Pb**	**00 53 27.6**	**-0.3**
MDNY				*e*SN	**Sb**	**00 53 44.1**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.23**	**351**	*e*Pn	**Pb**	**00 53 27.6**	**-0.3**
MDNY				*e*Sn	**Sb**	**00 53 44.1**	**-0.2**
KCTX	**Karacabey (Bur**	**1.26**	**332**	*e*PN	**Pg**	**00 53 27.9**	**-0.1**
KCTX	**Karacabey (Bur**	**1.26**	**332**	*e*Pn	**Pg**	**00 53 27.9**	**-0.1**
ADVT	**Abdulvahap**	**1.36**	**20**	*e*PN	**Pb**	**00 53 31.1**	**+0.9**
ADVT	**Abdulvahap**	**1.36**	**20**	*e*Pn	**Pb**	**00 53 31.1**	**+0.9**
ARMT	**Armutlu**	**1.43**	**352**	*e*PN	**Pb**	**00 53 31.4**	**+0.1**
ARMT	**Armutlu**	**1.43**	**352**	*e*Pn	**Pb**	**00 53 31.4**	**+0.1**
GONE	**Gonen-Balikesi**	**1.43**	**309**	*e*PN	**Pn**	**00 53 30.6**	**-0.4**
GONE	**Gonen-Balikesi**	**1.43**	**309**	*e*Pn	**Pn**	**00 53 30.6**	**-0.4**
EDC	**Edincik**	**1.54**	**321**	*e*PN	**Pb**	**00 53 32.9**	**-0.4**
EDC	**Edincik**	**1.54**	**321**	*e*Pn	**Pb**	**00 53 32.9**	**-0.4**
GULT	**Gulveren**	**1.67**	**39**	*e*PN	**Pg**	**00 53 35.6**	**-0.1**
GULT	**Gulveren**	**1.67**	**39**	*e*Pn	**Pg**	**00 53 35.7**	**-0.1**
SPNC	**Sapanca-Adapaz**	**1.78**	**30**	*e*PN	**Pb**	**00 53 37.0**	**-0.3**
SPNC	**Sapanca-Adapaz**	**1.78**	**30**	*e*Pn	**Pb**	**00 53 37.0**	**-0.3**
SVRH	**Sivrihisar-ESK**	**1.88**	**80**	*e*PN	**Pg**	**00 53 40.2**	**+0.2**
SVRH	**Sivrihisar-ESK**	**1.88**	**80**	*e*Pn	**Pg**	**00 53 40.2**	**+0.2**
ISK	**Istanbul-Kandi**	**1.91**	**358**	*e*PN	**Pn**	**00 53 38.0**	**+0.5**
ISK	**Istanbul-Kandi**	**1.91**	**358**	*e*Pn	**Pn**	**00 53 38.1**	**+0.5**
MDUB	**Mudurnu**	**2.07**	**50**	*e*PN	**Pb**	**00 53 41.8**	**-0.5**
MDUB	**Mudurnu**	**2.07**	**50**	*e*Pn	**Pb**	**00 53 41.8**	**-0.5**

*CSEM **20** 00:56:05.3, 39°.10N×29°.01E, h7km, MD2.2*
**DD

KHAL				*i* S	Sg	00 58 07.3	+0.2
IGD	**Bursa**	**1.18**	**7**	*i* P	Pg	00 58 03.0	-0.4
IGD				*i* S	Sn	00 58 20.0	+0.1
BORA	**Eskisehir**	**1.36**	**54**	P	Pg	00 58 07.0	+0.1
BORA				S	Sn	00 58 25.7	+1.1
BORA	**Eskisehir**	**1.36**	**54**	*i* P	Pg	00 58 07.0	+0.1
BORA				*i* S	Sn	00 58 25.7	+1.1

*IDC **20** 00:58:32.8±0.9, 39°.03N×29°.15E, h0km, mb4.2/16, mb1 4.3/21, mb1mx4.1/59, mbtmp4.2/21, ML4.0/5, Error ellipse: s-maj=18.7km s-min=11.8km az=40.0*
*ISK **20** 00:58:32.7, 39°.10N×29°.09E, h2km, ML4.5*
*DDA **20** 00:58:33.0, 39°.12N×29°.08E, h17km, Ml4.3*
*CSEM **20** 00:58:33.7±0.1, 39°.10N×29°.08E, h5km, ML4.3, Error ellipse: s-maj=1.9km s-min=1.5km az=65.0*
*NEIC **20** 00:58:33.2, 39°.10N×29°.09E, h5km, mb4.5/2, ML4.5(ISK), After ISK.*
*ISCJB **20** 00:58:33.4±0.4, 39°.11N±0°.01×29°.08E±0°.02, h10km±2km, mb4.1/18, Error ellipse: s-maj=2.3km s-min=2.0km az=142.7*
*THE **20** 00:58:35.2, 39°.05N×28°.96E, h1km±1km, ML4.0/4, Error ellipse: s-maj=2.8km s-min=0.8km az=77.0*
*NIC **20** 00:58:37.1±0.4, 39°.07N×29°.22E, h16km, mb4.7, ML4.4*
ISC 20 00:58:33.9±1.0, 39°.11N±0°.02×29°.08E±0°.02, h4km±7km, n263, σ0.95/320, mb4.3/18, 40C-16D, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.29**	**257**	P	**Pg**	**00 58 39.8**	**+0.2**
DEMI				S	**Sg**	**00 58 44.1**	**+0.7**
DEMI	**Demirci**	**0.29**	**257**	⇑*i* P	**Pg**	**00 58 39.8**	**+0.2**
DEMI				*i* S	**Sg**	**00 58 44.1**	**+0.7**
GDZ	**Gediz**	**0.31**	**93**	P	**Pg**	**00 58 39.9**	**0.0**
GDZ				S	**Sg**	**00 58 44.3**	**+0.3**
GDZ	**Gediz**	**0.31**	**93**	⇑*i* P	**Pg**	**00 58 39.9**	**0.0**
GDZ				*i* S	**Sg**	**00 58 44.3**	**+0.3**
TVSB	**Tavsanli**	**0.45**	**41**	*e*PG	**Pg**	**00 58 42.5**	**0.0**
TVSB	**Tavsanli**	**0.45**	**41**	*e*Pg	**Pg**	**00 58 42.6**	**0.0**
KULA	**Kula-Manisa**	**0.68**	**209**	*e*PG	**Pg**	**00 58 46.6**	**-0.3**
KULA	**Kula-Manisa**	**0.68**	**209**	P	**Pg**	**00 58 46.6**	**-0.3**
KULA				S	**Sg**	**00 58 55.9**	**+0.2**
KULA	**Kula-Manisa**	**0.68**	**209**	P	**Pg**	**00 58 46.6**	**-0.3**
KULA				S	**Sg**	**00 58 55.9**	**+0.2**
DURS	**Dursunbey**	**0.68**	**316**	P	**Pg**	**00 58 46.7**	**-0.3**
DURS				S	**Sg**	**00 58 55.0**	**-0.8**
DURS	**Dursunbey**	**0.68**	**316**	⇑*i* P	**Pg**	**00 58 46.6**	**-0.3**
DURS				*i* S	**Sg**	**00 58 55.0**	**-0.8**
MANT	**Manisa**	**0.74**	**214**	P	**Pg**	**00 58 47.9**	**-0.2**
MANT				S	**Sg**	**00 58 57.2**	**-0.5**
MANT	**Manisa**	**0.74**	**214**	⇑*i* P	**Pg**	**00 58 47.9**	**-0.2**
MANT				*i* S	**Sg**	**00 58 57.2**	**-0.5**
KHAL	**Karahalli**	**0.80**	**156**	P	**Pg**	**00 58 49.2**	**0.0**
KHAL				S	**Sg**	**00 59 00.4**	**+0.7**
KHAL	**Karahalli**	**0.80**	**156**	⇑*i* P	**Pg**	**00 58 49.2**	**0.0**
KHAL				*i* S	**Sg**	**00 59 00.4**	**+0.7**
KHL	**Karahalli**	**0.86**	**156**	*e*PG	**Pg**	**00 58 50.3**	**0.0**
KHL	**Karahalli**	**0.86**	**156**	*e*Pg	**Pg**	**00 58 50.3**	**0.0**
ORLT	**Orhaneli**	**0.95**	**351**	*e*PG	**Pg**	**00 58 51.4**	**-0.7**
ORLT	**Orhaneli**	**0.95**	**351**	*e*Pg	**Pg**	**00 58 51.4**	**-0.7**
AKHS	**Akhisar**	**1.01**	**257**	P	**Pg**	**00 58 53.3**	**0.0**
AKHS				S	**Sb**	**00 59 07.1**	**-0.6**
AKHS	**Akhisar**	**1.01**	**257**	⇑*i* P	**Pg**	**00 58 53.3**	**0.0**
AKHS				*i* S	**Sb**	**00 59 07.1**	**-0.6**
AKS	**Akhisar**	**1.01**	**257**	*e*PG	**Pg**	**00 58 53.5**	**+0.2**
AKS				*e*SG	**Sb**	**00 59 08.2**	**+0.6**
AKS	**Akhisar**	**1.01**	**257**	*e*Pg	**Pg**	**00 58 53.5**	**+0.2**
BALB	**Balikesir**	**1.07**	**300**	*e*PN	**Pg**	**00 58 54.4**	**0.0**
BALB	**Balikesir**	**1.07**	**300**	*e*Pn	**Pg**	**00 58 54.4**	**0.0**
IGD	**Bursa**	**1.16**	**5**	⇑*i* P	**Pg**	**00 58 53.7**	**-2.4**
IGD				*i* S	**Sb**	**00 59 11.4**	**-0.5**
CAVI	**Cavuskoy**	**1.24**	**28**	*e*PN	**Pb**	**00 58 56.9**	**-1.0**
CAVI				*e*SN	**Sn**	**00 59 15.3**	**+0.1**
CAVI	**Cavuskoy**	**1.24**	**28**	*e*Pn	**Pb**	**00 58 56.9**	**-1.0**
CAVI				*e*Sn	**Sn**	**00 59 15.3**	**+0.1**
IZI	**Iznik**	**1.26**	**14**	*e*PN	**Pn**	**00 58 57.1**	**-1.3**
IZI	**Iznik**	**1.26**	**14**	*e*Pn	**Pn**	**00 58 57.1**	**-1.3**
MDNY	**Mudanya-Bursa**	**1.27**	**353**	*e*PN	**Pn**	**00 58 58.0**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.27**	**353**	*e*Pn	**Pn**	**00 58 58.1**	**-0.3**
KCTX	**Karacabey (Bur**	**1.28**	**334**	*e*PN	**Pn**	**00 58 57.8**	**-0.8**
KCTX	**Karacabey (Bur**	**1.28**	**334**	*e*Pn	**Pn**	**00 58 57.8**	**-0.8**
BALY	**Balya**	**1.30**	**300**	P	**Pn**	**00 58 58.1**	**-0.7**
BALY				S	**Sb**	**00 59 15.3**	**-0.6**
BALY	**Balya**	**1.30**	**300**	⇑*i* P	**Pn**	**00 58 58.1**	**-0.7**
BALY				*i* S	**Sb**	**00 59 15.3**	**-0.6**
BORA	**Eskisehir**	**1.31**	**54**	P	**Pn**	**00 58 58.1**	**-1.0**
BORA				S	**Sb**	**00 59 15.8**	**-0.5**
BORA	**Eskisehir**	**1.31**	**54**	⇑*i* P	**Pn**	**00 58 58.1**	**-1.0**
BORA				*i* S	**Sb**	**00 59 15.8**	**-0.5**
GEMT	**Gemlik**	**1.33**	**4**	*e*PN	**Pn**	**00 58 58.7**	**-0.5**
GEMT	**Gemlik**	**1.33**	**4**	*e*Pn	**Pn**	**00 58 58.7**	**-0.5**
DENT	**Denizli**	**1.35**	**182**	*e*PN	**Pn**	**00 58 58.3**	**-1.2**
DENT	**Denizli**	**1.35**	**182**	*e*Pn	**Pn**	**00 58 58.3**	**-1.2**
DNZL	**Cakiroluk**	**1.42**	**181**	P	**Pn**	**00 58 59.5**	**-1.0**
DNZL	**Cakiroluk**	**1.42**	**181**	⇓*i* P	**Pn**	**00 58 59.5**	**-1.0**
DNZL				*i* S	**Sg**	**00 59 22.0**	**+2.6**
ADVT	**Abdulvahap**	**1.42**	**21**	*e*PN	**Pn**	**00 58 59.6**	**-0.8**
ADVT	**Abdulvahap**	**1.42**	**21**	*e*Pn	**Pn**	**00 58 59.6**	**-0.8**
GONE	**Gonen-Balikesi**	**1.43**	**311**	*e*PN	**Pn**	**00 59 00.3**	**-0.2**
GONE	**Gonen-Balikesi**	**1.43**	**311**	*e*Pn	**Pn**	**00 59 00.3**	**-0.2**
ESKT	**Eskisehir**	**1.43**	**73**	*i* P	**Pn**	**00 59 00.4**	**-0.3**
SEYT	**Eskypehyr**	**1.43**	**73**	P	**Pn**	**00 59 00.4**	**-0.3**
ARMT	**Armutlu**	**1.47**	**353**	*e*PN	**Pn**	**00 59 01.2**	**+0.1**
ARMT	**Armutlu**	**1.47**	**353**	*e*Pn	**Pn**	**00 59 01.2**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**1.49**	**219**	*e*PN	**Pn**	**00 59 01.0**	**-0.5**
AYDB	**Zeytinkoy-Aydi**	**1.49**	**219**	*e*Pn	**Pn**	**00 59 01.0**	**-0.5**
BOLV	**Bolvadin**	**1.51**	**104**	P	**Pn**	**00 59 01.5**	**-0.3**
BOLV				S	**Sn**	**00 59 19.9**	**-2.0**
BOLV	**Bolvadin**	**1.51**	**104**	⇓*i* P	**Pn**	**00 59 01.5**	**-0.3**
BOLV				*i* S	**Sn**	**00 59 19.9**	**-2.0**
GPA	**Golpazari**	**1.51**	**38**	*e*PN	**Pb**	**00 59 02.4**	**-0.1**
GPA	**Golpazari**	**1.51**	**38**	*e*Pn	**Pb**	**00 59 02.4**	**-0.1**
EDC	**Edincik**	**1.55**	**323**	*e*PN	**Pb**	**00 59 02.8**	**-0.4**
EDC	**Edincik**	**1.55**	**323**	*e*Pn	**Pb**	**00 59 02.8**	**-0.4**
KNL	**Bal¨–kesir**	**1.67**	**315**	*i* P	**Pn**	**00 59 03.7**	**-0.2**
KNL				*i* S	**Sb**	**00 59 26.0**	**-0.6**
DKL	**Dikili**	**1.69**	**269**	*e*PN	**Pn**	**00 59 04.4**	**+0.2**
DKL	**Dikili**	**1.69**	**269**	*e*Pn	**Pn**	**00 59 04.4**	**+0.2**
ISP	**Isparta**	**1.71**	**138**	*e*PN	**Pn**	**00 59 04.6**	**+0.1**
ISP	**Isparta**	**1.71**	**138**	⇑*i* P	**Pn**	**00 59 04.0**	**-0.5**
ISP	**Isparta**	**1.71**	**138**	⇑*i* P	**Pn**	**00 59 04.0**	**-0.5**
ISP	**Isparta**	**1.71**	**138**	*e*PN	**Pn**	**00 59 04.6**	**+0.1**
ISP				*e*SN	**Sn**	**00 59 25.9**	**-1.0**
ISP	**Isparta**	**1.71**	**138**	*e*Pn	**Pn**	**00 59 03.5**	**-1.0**
ISP				*e*Sn	**Sn**	**00 59 25.9**	**-1.0**
GULT	**Gulveren**	**1.72**	**39**	*e*PN	**Pn**	**00 59 05.0**	**+0.3**
GULT	**Gulveren**	**1.72**	**39**	*e*Pn	**Pn**	**00 59 05.0**	**+0.3**
AYDN	**Tasoluk**	**1.73**	**214**	P	**Pn**	**00 59 05.1**	**+0.4**
AYDN	**Tasoluk**	**1.73**	**214**	*i* P	**Pn**	**00 59 05.1**	**+0.4**
AYDN				*i* S	**Sg**	**00 59 30.9**	**+1.6**
BAGO	**Egridir - ISPA**	**1.74**	**129**	*i* P	**Pn**	**00 59 03.6**	**-1.3**
BAGO				*i* S	**Sg**	**00 59 29.9**	**+0.1**
BUY	**Buyukada**	**1.74**	**1**	P	**Pn**	**00 59 03.6**	**-1.2**
BUY				S	**Sn**	**00 59 27.0**	**-0.5**
BUY	**Buyukada**	**1.74**	**1**	⇑*i* P	**Pn**	**00 59 03.6**	**-1.2**
BUY				*i* S	**Sn**	**00 59 27.0**	**-0.5**
HRT	**Hereke**	**1.77**	**15**	*e*PN	**Pn**	**00 59 05.5**	**+0.2**
HRT	**Hereke**	**1.77**	**15**	*e*Pn	**Pn**	**00 59 05.5**	**+0.2**
SPNC	**Sapanca-Adapaz**	**1.84**	**30**	*e*PN	**Pn**	**00 59 06.2**	**0.0**
SPNC	**Sapanca-Adapaz**	**1.84**	**30**	*e*Pn	**Pn**	**00 59 06.2**	**0.0**
AYVA	**Ayvalik**	**1.87**	**277**	P	**Pn**	**00 59 06.4**	**-0.2**
AYVA	**Ayvalik**	**1.87**	**277**	*i* P	**Pn**	**00 59 06.4**	**-0.2**
AYVA				*i* S	**Sg**	**00 59 34.0**	**+0.1**
KRBG	**Karabiga-Canak**	**1.88**	**314**	*e*PN	**Pn**	**00 59 06.6**	**-0.2**
KRBG	**Karabiga-Canak**	**1.88**	**314**	*e*Pn	**Pn**	**00 59 06.6**	**-0.2**
MRMT	**Marmara Adasi**	**1.88**	**323**	*e*PN	**Pn**	**00 59 07.4**	**+0.5**
MRMT	**Marmara Adasi**	**1.88**	**323**	*e*Pn	**Pn**	**00 59 07.4**	**+0.5**
GOLH	**Golhisar**	**1.91**	**168**	P	**Pn**	**00 59 06.7**	**-0.5**
GOLH	**Golhisar**	**1.91**	**168**	*i* P	**Pn**	**00 59 06.7**	**-0.5**
GOLH				*i* S	**Sg**	**00 59 40.4**	**+5.3**
SVRH	**Sivrihisar-ESK**	**1.92**	**79**	*e*PN	**Pn**	**00 59 07.3**	**-0.2**
SVRH	**Sivrihisar-ESK**	**1.92**	**79**	*e*Pn	**Pn**	**00 59 07.3**	**-0.2**
ISK	**Istanbul-Kandi**	**1.96**	**359**	*e*PN	**Pn**	**00 59 08.2**	**+0.4**
ISK	**Istanbul-Kandi**	**1.96**	**359**	*e*Pn	**Pn**	**00 59 08.2**	**+0.4**
GLHS	**Glhisar (BURDU**	**1.98**	**170**	*e*PN	**Pn**	**00 59 08.1**	**-0.1**
GLHS	**Glhisar (BURDU**	**1.98**	**170**	*e*Pn	**Pn**	**00 59 08.1**	**-0.1**
AUMIH	**MIHALICIK**	**2.01**	**67**	*i* P	**Pb**	**00 59 11.2**	**+0.2**
AUMIH				*i* S	**Sg**	**00 59 39.2**	**+0.8**
BCK	**Bucak**	**2.03**	**144**	*e*PN	**Pn**	**00 59 08.5**	**-0.3**
BCK	**Bucak**	**2.03**	**144**	*e*Pn	**Pn**	**00 59 08.5**	**-0.3**
YER	**Yerkesik**	**2.07**	**198**	*e*PN	**Pn**	**00 59 09.4**	**0.0**
YER	**Yerkesik**	**2.07**	**198**	P	**Pn**	**00 59 08.8**	**-0.6**
YER				S	**Sn**	**00 59 33.7**	**-1.9**
YER	**Yerkesik**	**2.07**	**198**	P	**Pn**	**00 59 08.8**	**-0.6**
YER	**Yerkesik**	**2.07**	**198**	*e*Pn	**Pn**	**00 59 09.4**	**0.0**
BGKT	**Bogazkoy**	**2.08**	**354**	*e*PN	**Pn**	**00 59 09.5**	**0.0**
BGKT	**Bogazkoy**	**2.08**	**354**	*e*Pn	**Pn**	**00 59 09.5**	**0.0**
MDUB	**Mudurnu**	**2.12**	**49**	*e*PN	**Pn**	**00 59 10.2**	**0.0**
MDUB	**Mudurnu**	**2.12**	**49**	*e*Pn	**Pn**	**00 59 10.2**	**0.0**
KLYT	**Kilyos**	**2.14**	**359**	*e*PN	**Pn**	**00 59 10.4**	**+0.1**
KLYT	**Kilyos**	**2.14**	**359**	*e*Pn	**Pn**	**00 59 10.4**	**+0.1**
RKY	**Sarkoy-Tekirda**	**2.15**	**318**	*e*PN	**Pn**	**00 59 10.9**	**+0.3**
RKY	**Sarkoy-Tekirda**	**2.15**	**318**	*e*Pn	**Pn**	**00 59 10.9**	**+0.3**
PRK	**Paraskevi**	**2.19**	**275**	P	**Pn**	**00 59 10.4**	**-0.6**
PRK	**Paraskevi**	**2.19**	**275**	P	**Pn**	**00 59 10.4**	**-0.6**
LPK	**Lapseki**	**2.19**	**306**	*e*PN	**Pn**	**00 59 11.1**	**+0.1**
LPK	**Lapseki**	**2.19**	**306**	*e*Pn	**Pn**	**00 59 11.1**	**+0.1**
KIZT	**Kizilcal**	**2.19**	**95**	*e*PN	**Pn**	**00 59 11.7**	**+0.5**
KIZT	**Kizilcal**	**2.19**	**95**	*e*Pn	**Pn**	**00 59 11.7**	**+0.5**
SUTC	**Sutluce-Ispart**	**2.22**	**137**	*e*PN	**Pn**	**00 59 11.0**	**-0.5**
SUTC	**Sutluce-Ispart**	**2.22**	**137**	*e*Pn	**Pn**	**00 59 11.0**	**-0.5**
TKR	**Tekirdag**	**2.22**	**328**	*e*PN	**Pn**	**00 59 11.6**	**+0.1**
TKR	**Tekirdag**	**2.22**	**328**	*e*Pn	**Pn**	**00 59 11.6**	**+0.1**
SMG	**Samos**	**2.25**	**232**	P	**Pn**	**00 59 10.3**	**-1.6**
SMG	**Samos**	**2.25**	**232**	P	**Pn**	**00 59 10.3**	**-1.6**
EZN	**Ezine**	**2.25**	**289**	*e*PN	**Pn**	**00 59 12.5**	**+0.6**
EZN	**Ezine**	**2.25**	**289**	P	**Pn**	**00 59 11.3**	**-0.5**
EZN				S	**Sn**	**00 59 39.8**	**-0.2**
EZN	**Ezine**	**2.25**	**289**	P	**Pn**	**00 59 11.3**	**-0.5**
EZN	**Ezine**	**2.25**	**289**	*e*Pn	**Pn**	**00 59 12.5**	**+0.6**
EZN				S	**Sn**	**00 59 39.8**	**-0.2**
CRLT	**Corlu**	**2.27**	**333**	*e*PN	**Pn**	**00 59 12.9**	**+0.8**
CRLT	**Corlu**	**2.27**	**333**	*e*Pn	**Pn**	**00 59 12.9**	**+0.8**
GELI	**Tayfur-Gelibol**	**2.39**	**303**	*e*PN	**Pn**	**00 59 14.1**	**+0.3**
GELI	**Tayfur-Gelibol**	**2.39**	**303**	*e*Pn	**Pn**	**00 59 14.1**	**+0.3**
CTYL	**Yalikoy Yolu**	**2.44**	**346**	*e*PN	**Pn**	**00 59 15.3**	**+0.8**
CTYL	**Yalikoy Yolu**	**2.44**	**346**	*e*Pn	**Pn**	**00 59 15.3**	**+0.8**
FETY	**Fethiye**	**2.47**	**180**	P	**Pn**	**00 59 15.0**	**+0.1**
FETY	**Fethiye**	**2.47**	**180**	P	**Pn**	**00 59 15.0**	**+0.1**
CHOS	**Chios island**	**2.47**	**254**	P	**Pn**	**00 59 14.3**	**-0.7**
CHOS				S	**Sn**	**00 59 44.2**	**-1.5**
CHOS	**Chios island**	**2.47**	**254**	P	**Pn**	**00 59 14.3**	**-0.7**
CHOS				S	**Sn**	**00 59 44.2**	**-1.5**
BODT	**Bodrum**	**2.48**	**215**	P	**Pn**	**00 59 13.9**	**-1.1**
BODT				S	**Sn**	**00 59 44.6**	**-1.0**
BODT	**Bodrum**	**2.48**	**215**	P	**Pn**	**00 59 13.9**	**-1.1**
BODT				S	**Sn**	**00 59 44.6**	**-1.0**
SIGR	**SIGRI**	**2.51**	**273**	P	**Pn**	**00 59 15.0**	**-0.4**
SIGR	**SIGRI**	**2.51**	**273**	P	**Pn**	**00 59 15.0**	**-0.4**
ERIK	**Erikli-Kesan**	**2.52**	**309**	*e*PN	**Pn**	**00 59 15.4**	**-0.1**
ERIK	**Erikli-Kesan**	**2.52**	**309**	*e*Pn	**Pn**	**00 59 15.4**	**-0.1**
LADK	**Ladik-KONYA**	**2.73**	**108**	*e*PN	**Pn**	**00 59 18.6**	**+0.1**
LADK	**Ladik-KONYA**	**2.73**	**108**	*e*Pn	**Pn**	**00 59 18.6**	**+0.1**
ENEZ	**Enez**	**2.78**	**307**	P	**Pn**	**00 59 18.9**	**-0.2**
ENEZ				S	**Sn**	**00 59 52.5**	**-0.6**
ENEZ	**Enez**	**2.78**	**307**	P	**Pn**	**00 59 18.9**	**-0.2**
ENEZ				S	**Sn**	**00 59 52.5**	**-0.6**
PHSR	**Pinarhisar**	**2.79**	**335**	*e*PN	**Pn**	**00 59 19.9**	**+0.7**
PHSR	**Pinarhisar**	**2.79**	**335**	*e*Pn	**Pn**	**00 59 19.9**	**+0.7**
KDZE	**Karadeniz Ereo**	**2.85**	**39**	*e*PN	**Pn**	**00 59 20.6**	**+0.5**
KDZE	**Karadeniz Ereo**	**2.85**	**39**	*e*Pn	**Pn**	**00 59 20.6**	**+0.5**
NIS1	**Nisyros Isl.**	**2.92**	**212**	P	**Pn**	**00 59 20.3**	**-0.8**
NIS1	**Nisyros Isl.**	**2.92**	**212**	P	**Pn**	**00 59 20.3**	**-0.8**
ALN	**Alexandroupoli**	**2.94**	**308**	P	**Pn**	**00 59 20.8**	**-0.5**
ALN				S	**Sn**	**00 59 57.0**	**0.0**
ALN	**Alexandroupoli**	**2.94**	**308**	P	**Pn**	**00 59 20.8**	**-0.5**
ALN				S	**Sn**	**00 59 57.0**	**0.0**
KSL	**Kastellorizon**	**2.98**	**172**	P	**Pn**	**00 59 22.3**	**+0.4**
ARG	**Arkhangelos**	**2.98**	**195**	P	**Pn**	**00 59 22.4**	**+0.5**
ARG	**Arkhangelos**	**2.98**	**195**	P	**Pn**	**00 59 22.4**	**+0.5**
SMTH	**Samothraki Isl**	**3.06**	**298**	P	**Pn**	**00 59 22.7**	**-0.3**
SMTH				S	**Sn**	**01 00 00.5**	**+0.5**
SMTH	**Samothraki Isl**	**3.06**	**298**	P	**Pn**	**00 59 22.7**	**-0.3**
SMTH				S	**Sn**	**01 00 00.5**	**+0.5**
LIA	**Limnos Island**	**3.12**	**286**	P	**Pn**	**00 59 23.5**	**-0.3**
LIA				S	**Sn**	**01 00 00.6**	**-0.8**
LIA	**Limnos Island**	**3.12**	**286**	P	**Pn**	**00 59 23.5**	**-0.3**
LIA				S	**Sn**	**01 00 00.6**	**-0.8**
EDRB	**Edirne**	**3.27**	**328**	P	**Pn**	**00 59 25.2**	**-0.6**
EDRB	**Edirne**	**3.27**	**328**	P	**Pn**	**00 59 25.2**	**-0.6**
BRTR	**Keskin Array B**	**3.58**	**79**	Pn	**Pn**	**00 59 30.4**	**0.0**
	5.2nm,0.3s,baz=256,slow=13,SNR=70						
BRTR				Pg	**Pb**	**00 59 39.9**	**+2.0**
	8.2nm,0.3s,baz=254,slow=14,SNR=24						
BRTR				Sn	**Sn**	**01 00 11.8**	**-1.4**
	27nm,0.3s,baz=253,slow=23,SNR=19						
KDZ	**Kurdzhali**	**3.78**	**313**	P	**Pn**	**00 59 32.7**	**-0.2**
JMB	**Yambol**	**3.85**	**331**	P	**Pn**	**00 59 34.3**	**+0.4**
RZN	**Rozhen**	**4.21**	**309**	P	**Pn**	**00 59 39.1**	**+0.1**
PRD	**Provadia**	**4.28**	**343**	P	**Pn**	**00 59 38.6**	**-1.1**
NVR	**Nevrokopi**	**4.58**	**301**	P	**Pn**	**00 59 43.4**	**-0.5**
NVR	**Nevrokopi**	**4.58**	**301**	P	**Pn**	**00 59 43.4**	**-0.5**
SRS	**Serrai**	**4.66**	**297**	P	**Pn**	**00 59 44.4**	**-0.6**
SRS	**Serrai**	**4.66**	**297**	P	**Pn**	**00 59 44.4**	**-0.6**
MANR	**Mangalia**	**4.72**	**356**	⇑*i* P	**Pn**	**00 59 45.5**	**-0.3**
MANR	**Mangalia**	**4.72**	**356**	⇑*i* P	**Pn**	**00 59 45.5**	**-0.3**
SOH	**Sokhos**	**4.72**	**293**	P	**Pn**	**00 59 45.7**	**-0.2**
SOH	**Sokhos**	**4.72**	**293**	P	**Pn**	**00 59 45.7**	**-0.2**
SZH	**Strazhica**	**4.79**	**331**	P	**Pn**	**00 59 45.7**	**-1.0**
AKMC	**Akamas**	**4.83**	**146**	P	**Pn**	**00 59 48.3**	**+1.0**
	baz=329						
AKMC	**Akamas**	**4.83**	**146**	P	**Pn**	**00 59 48.3**	**+1.0**
ALFC	**Alefka**	**4.84**	**143**	P	**Pn**	**00 59 47.3**	**-0.2**
	baz=326						
ALFC				S	**Sn**	**01 00 44.0**	**0.0**
ALFC	**Alefka**	**4.84**	**143**	P	**Pn**	**00 59 47.3**	**-0.2**
ALFC				S	**Sn**	**01 00 44.0**	**0.0**
PPCY	**Paphos**	**4.96**	**147**	P	**Pn**	**00 59 50.0**	**+0.9**
	baz=329						
PPCY	**Paphos**	**4.96**	**147**	P	**Pn**	**00 59 50.0**	**+0.9**
MAMC	**Mammari**	**5.13**	**139**	P	**Pn**	**00 59 52.4**	**+0.9**
	baz=321						
MAMC	**Mammari**	**5.13**	**139**	P	**Pn**	**00 59 52.4**	**+0.9**
CVDA	**Cernavoda**	**5.28**	**352**	⇑*i* P	**Pn**	**00 59 53.1**	**-0.4**
CVDA	**Cernavoda**	**5.28**	**352**	⇑*i* P	**Pn**	**00 59 53.1**	**-0.4**
SZAC	**Souni**	**5.30**	**144**	P	**Pn**	**00 59 54.8**	**+0.9**
	baz=326						
SZAC	**Souni**	**5.30**	**144**	P	**Pn**	**00 59 54.8**	**+0.9**
TIRR	**Tirgusor**	**5.37**	**355**	⇓*i* P	**Pn**	**00 59 54.4**	**-0.3**
TIRR	**Tirgusor**	**5.37**	**355**	⇓*i* P	**Pn**	**00 59 54.4**	**-0.3**
HARR	**Harsova**	**5.64**	**352**	⇑*i* P	**Pn**	**00 59 59.1**	**+0.6**
HARR	**Harsova**	**5.64**	**352**	⇑*i* P	**Pn**	**00 59 59.1**	**+0.6**
BUC1	**Bucharest**	**5.71**	**337**	⇑*i* P	**Pn**	**00 59 59.7**	**+0.3**
BUC1	**Bucharest**	**5.71**	**337**	⇑*i* P	**Pn**	**00 59 59.7**	**+0.3**
SULR		**5.95**	**340**	⇑*i* P	**Pn**	**01 00 02.6**	**-0.1**
SULR		**5.95**	**340**	⇑*i* P	**Pn**	**01 00 02.6**	**-0.1**
PGOR	**Pogoanele**	**6.00**	**346**	⇑*i* P	**Pn**	**01 00 04.5**	**+1.1**
PGOR	**Pogoanele**	**6.00**	**346**	⇑*i* P	**Pn**	**01 00 04.5**	**+1.1**
TLCR		**6.08**	**358**	⇓*i* P	**Pn**	**01 00 04.3**	**-0.1**
TLCR		**6.08**	**358**	⇓*i* P	**Pn**	**01 00 04.3**	**-0.1**
CFR	**Carcaliu**	**6.11**	**354**	⇓*i* P	**Pn**	**01 00 03.6**	**-1.2**
CFR	**Carcaliu**	**6.11**	**354**	⇓*i* P	**Pn**	**01 00 03.6**	**-1.2**
ISR	**Istrita**	**6.30**	**343**	⇑*i* P	**Pn**	**01 00 08.8**	**+1.3**
ISR	**Istrita**	**6.30**	**343**	⇑*i* P	**Pn**	**01 00 08.8**	**+1.3**
GIUM	**Giurgiulesti**	**6.41**	**354**	⇓*i* P	**Pn**	**01 00 09.6**	**+0.7**
GIUM	**Giurgiulesti**	**6.41**	**354**	⇓*i* P	**Pn**	**01 00 09.6**	**+0.7**
MLR	**Muntele Rosu**	**6.79**	**341**	Pn	**Pn**	**01 00 14.8**	**+0.5**
	0.7nm,0.3s,baz=236,slow=1.2,SNR=52						
MLR	**Muntele Rosu**	**6.79**	**341**	⇑*i* P	**Pn**	**01 00 14.7**	**+0.4**
MLR	**Muntele Rosu**	**6.79**	**341**	⇑*i* P	**Pn**	**01 00 14.7**	**+0.4**
MTUR	**Matau**	**6.80**	**335**	⇓*i* P	**Pn**	**01 00 14.8**	**+0.3**
MTUR	**Matau**	**6.80**	**335**	⇓*i* P	**Pn**	**01 00 14.8**	**+0.3**
ODBI	**Odobesti**	**6.82**	**348**	⇓*i* P	**Pn**	**01 00 15.7**	**+1.1**
ODBI	**Odobesti**	**6.82**	**348**	⇓*i* P	**Pn**	**01 00 15.7**	**+1.1**
PLOR	**Plostina**	**6.97**	**346**	⇑*i* P	**Pn**	**01 00 17.0**	**+0.2**
PLOR	**Plostina**	**6.97**	**346**	⇑*i* P	**Pn**	**01 00 17.0**	**+0.2**
VRI	**Vrincioaia**	**6.97**	**346**	⇑*i* P	**Pn**	**01 00 16.6**	**-0.2**
VRI	**Vrincioaia**	**6.97**	**346**	⇑*i* P	**Pn**	**01 00 16.6**	**-0.2**
VOIR		**7.00**	**336**	⇑*i* P	**Pn**	**01 00 17.0**	**-0.1**
VOIR		**7.00**	**336**	⇑*i* P	**Pn**	**01 00 17.0**	**-0.1**
ARR	**Arges**	**7.07**	**334**	⇑*i* P	**Pn**	**01 00 18.5**	**+0.3**
ARR	**Arges**	**7.07**	**334**	⇑*i* P	**Pn**	**01 00 18.5**	**+0.3**
BOLS	**Boljevac**	**7.13**	**314**	*e*Pn	**Pn**	**01 00 17.4**	**-1.5**
SELS	**Selova**	**7.28**	**307**	*e*Pn	**Pn**	**01 00 20.9**	**0.0**
DOPR	**Dopca**	**7.38**	**340**	⇑*i* P	**Pn**	**01 00 22.7**	**+0.4**
DOPR	**Dopca**	**7.38**	**340**	⇑*i* P	**Pn**	**01 00 22.7**	**+0.4**
TESR	**Tescani**	**7.61**	**347**	⇓*i* P	**Pn**	**01 00 24.4**	**-1.1**
TESR	**Tescani**	**7.61**	**347**	⇓*i* P	**Pn**	**01 00 24.4**	**-1.1**
KUBS	**Kucevo**	**7.66**	**316**	*e*Pn	**Pn**	**01 00 24.1**	**-2.1**
GRUS	**Gruza**	**7.89**	**310**	*e*Pn	**Pn**	**01 00 29.1**	**-0.2**
MMAI	**Mount Meron Ar**	**7.94**	**138**	Pn	**

DNZL	Cakiroluk	1.42	181	*i* P	Pn	01 03 26.1 +0.1
DNZL				*i* S	Sg	01 03 48.3 +3.1
ESKT	Eskisehir	1.43	73	*i* P	Pb	01 03 26.5 0.0
ESKT				*i* S	Sn	01 03 45.0 -0.1
GONE	Gonen-Balikesi	1.43	311	*e*PN	Pg	01 03 28.0 +1.1
GONE	Gonen-Balikesi	1.43	311	*e*Pn	Pg	01 03 28.0 +1.1
ARMT	Armutlu	1.46	353	*e*PN	Pg	01 03 27.8 +0.3
ARMT	Armutlu	1.46	353	*e*Pn	Pg	01 03 27.8 +0.3
AYDB	Zeytinkoy-Aydi	1.50	219	*e*PN	Pg	01 03 28.0 -0.2
AYDB	Zeytinkoy-Aydi	1.50	219	*e*Pn	Pg	01 03 28.0 -0.2
BOLV	Bolvadin	1.50	105	P	Pg	01 03 29.2 +0.9
BOLV	Bolvadin	1.50	105	*i* P	Pg	01 03 28.5 +0.1
BOLV				*i* S	Sg	01 03 49.2 +1.4
BOLV	Bolvadin	1.50	105	*i* P	Pg	01 03 29.2 +0.9
GPA	Golpazari	1.51	38	*e*PN	Pg	01 03 28.3 0.0
GPA	Golpazari	1.51	38	*e*Pn	Pg	01 03 28.3 -0.1
EDC	Edincik	1.55	323	*e*PN	Pg	01 03 29.6 +0.3
EDC	Edincik	1.55	323	*e*Pn	Pg	01 03 29.6 +0.3
KNL	Bal¨–kesir	1.67	314	*i* P	Pb	01 03 30.4 -0.2
KNL				*i* S	Sg	01 03 52.6 -0.6
DKL	Dikili	1.70	269	*e*PN	Pg	01 03 31.7 -0.4
DKL	Dikili	1.70	269	*e*Pn	Pg	01 03 31.7 -0.4
ISP	Isparta	1.71	138	*e*PN	Pb	01 03 31.1 -0.2
ISP	Isparta	1.71	138	||*i*P	Pg	01 03 32.1 -0.2
ISP				S	Sg	01 03 54.7 +0.3
ISP	Isparta	1.71	138	*e*Pn	Pb	01 03 31.1 -0.2
GULT	Gulveren	1.72	39	*e*PN	Pb	01 03 31.6 +0.1
GULT	Gulveren	1.72	39	*e*Pn	Pb	01 03 31.6 +0.2
AYDN	Tasoluk	1.73	214	P	Pb	01 03 32.1 +0.4
AYDN				S	Sg	01 03 57.1 +1.9
AYDN	Tasoluk	1.73	214	*i* P	Pb	01 03 32.1 +0.5
AYDN				*i* S	Sg	01 03 57.1 +1.9
BUY	Buyukada	1.74	1	P	Pb	01 03 32.2 +0.4
BUY				S	Sb	01 03 54.5 +0.7
BUY	Buyukada	1.74	1	*i* P	Pb	01 03 32.2 +0.4
BUY				*i* S	Sb	01 03 54.5 +0.7
HRT	Hereke	1.77	14	*e*PN	Pb	01 03 32.4 +0.1
HRT	Hereke	1.77	14	*e*Pn	Pb	01 03 32.4 +0.2
SPNC	Sapanca-Adapaz	1.83	30	*e*PN	Pb	01 03 33.5 +0.2
SPNC	Sapanca-Adapaz	1.83	30	*e*Pn	Pb	01 03 33.6 +0.3
MRMT	Marmara Adasi	1.88	323	*e*PN	Pb	01 03 34.1 -0.2
MRMT	Marmara Adasi	1.88	323	*e*Pn	Pb	01 03 34.1 -0.1
KRBG	Karabiga-Canak	1.88	313	*e*PN	Pb	01 03 34.6 +0.4
KRBG	Karabiga-Canak	1.88	313	*e*Pn	Pb	01 03 34.6 +0.4
SVRH	Sivrihisar-ESK	1.92	79	*e*PN	Pb	01 03 34.5 -0.4
SVRH	Sivrihisar-ESK	1.92	79	*e*Pn	Pb	01 03 34.5 -0.4
ISK	Istanbul-Kandi	1.95	359	*e*PN	Pb	01 03 35.4 0.0
ISK	Istanbul-Kandi	1.95	359	*e*Pn	Pb	01 03 35.4 0.0
GLHS	Glhisar (BURDU	1.98	170	*e*PN	Pb	01 03 35.1 -0.8
GLHS	Glhisar (BURDU	1.98	170	*e*Pn	Pb	01 03 35.1 -0.8
DGB	¨zmir	2.03	239	*i* P	Pb	01 03 37.0 +0.3
DGB				*i* S	Sb	01 04 02.8 +0.7
YER	Yerkesik	2.07	198	*e*PN	Pb	01 03 36.9 -0.6
YER	Yerkesik	2.07	198	*e*Pn	Pb	01 03 36.9 -0.6
BGKT	Bogazkoy	2.08	353	*e*PN	Pb	01 03 37.2 -0.3
BGKT	Bogazkoy	2.08	353	*e*Pn	Pb	01 03 37.3 -0.3
MDUB	Mudurnu	2.12	49	*e*PN	Pb	01 03 37.5 -0.8
MDUB	Mudurnu	2.12	49	*e*Pn	Pb	01 03 37.5 -0.8
KLYT	Kilyos	2.14	359	*e*PN	Pb	01 03 37.5 -1.1
KLYT	Kilyos	2.14	359	*e*Pn	Pb	01 03 37.5 -1.1
SART	Tekirdag	2.15	318	P	Pg	01 03 41.0 +0.2
SART				S	Sg	01 04 08.4 -0.3
SART	Tekirdag	2.15	318	*i* P	Pg	01 03 41.0 +0.2
SART				*i* S	Sg	01 04 08.4 -0.3
RKY	Sarkoy-Tekirda	2.15	318	*e*PN	Pb	01 03 37.6 -1.2
RKY	Sarkoy-Tekirda	2.15	318	*e*Pn	Pb	01 03 37.6 -1.3
CTKS	Kestanelik-??a	2.17	348	*e*PN	Pb	01 03 38.6 -0.5
CTKS	Kestanelik-??a	2.17	348	*e*Pn	Pb	01 03 38.6 -0.5
KIZT	Kizilcal	2.19	95	*e*PN	Pb	01 03 38.3 -1.2
KIZT	Kizilcal	2.19	95	*e*Pn	Pb	01 03 38.3 -1.2
LPK	Lapseki	2.19	306	*e*PN	Pb	01 03 38.8 -0.7
LPK	Lapseki	2.19	306	*e*Pn	Pb	01 03 38.8 -0.7
SUTC	Sutluce-Ispart	2.22	137	*e*PN	Pb	01 03 38.6 -1.5
SUTC	Sutluce-Ispart	2.22	137	*e*Pn	Pb	01 03 38.6 -1.4
TKR	Tekirdag	2.22	328	*e*PN	Pb	01 03 38.8 -1.2
TKR	Tekirdag	2.22	328	*e*Pn	Pb	01 03 38.8 -1.2
EZN	Ezine	2.25	289	*e*PN	Pb	01 03 39.6 -0.9
EZN	Ezine	2.25	289	*e*Pn	Pb	01 03 39.6 -0.9
CRLT	Corlu	2.27	333	*e*PN	Pb	01 03 39.6 -1.1
CRLT	Corlu	2.27	333	*e*Pn	Pb	01 03 39.6 -1.2
GELI	Tayfur-Gelibol	2.39	303	*e*PN	Pb	01 03 41.8 -1.1
GELI	Tayfur-Gelibol	2.39	303	*e*Pn	Pb	01 03 41.8 -1.1
CTYL	Yalikoy Yolu	2.44	346	*e*PN	Pb	01 03 42.3 -1.4
CTYL	Yalikoy Yolu	2.44	346	*e*Pn	Pb	01 03 42.3 -1.4
ERIK	Erikli-Kesan	2.52	309	*e*PN	Pb	01 03 43.9 -1.2
ERIK	Erikli-Kesan	2.52	309	*e*Pn	Pb	01 03 43.9 -1.2
LADK	Ladik-KONYA	2.72	109	*e*PN	Pn	01 03 46.0 +2.2
LADK	Ladik-KONYA	2.72	109	*e*Pn	Pn	01 03 46.0 +2.2
KDZE	Karadeniz Ereo	2.84	39	*e*PN	Pn	01 03 47.6 +2.2
KDZE	Karadeniz Ereo	2.84	39	*e*Pn	Pn	01 03 47.6 +2.2
TIRR	Tirgusor	5.37	355	||*i*P	Pn	01 04 20.1 +0.1
TLCR		6.07	358	||*i*P	Pn	01 04 30.4 +0.7
CFR	Carcaliu	6.10	354	||*i*P	Pn	01 04 30.0 -0.1

DDA ***20*** *01:06:13.6,39.°13N×29.°03E,h7km,Md3.0*
ISK ***20*** *01:06:13.8,39.°11N×29.°03E,h5km,ML3.0*
CSEM ***20*** *01:06:14.8±0.1,39.°10N×29.°04E,h2km,MD3.0,Error ellipse: s-maj=2.3km s-min=2.1km az=56.0*
ISC 20 01:06:14.1±1.0,39.°12N±0.°02×29.°03E±0.°02,h5km±9km, n109,σ0§88/137,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.26	254	P	Pb	01 06 20.0	-1.3
DEMI				S	Sg	01 06 23.7	+1.2
DEMI	Demirci	0.26	254	*i* P	Pb	01 06 19.9	-1.3
DEMI				*i* S	Sg	01 06 23.7	+1.2
GDZ	Gediz	0.35	94	P	Pg	01 06 21.2	+0.3
GDZ				S	Sg	01 06 26.0	+0.5
GDZ	Gediz	0.35	94	*i* P	Pg	01 06 21.2	+0.3
GDZ				*i* S	Sg	01 06 26.0	+0.5
TVSB	Tavsanli	0.47	45	*e*PG	Pg	01 06 23.6	+0.4
TVSB	Tavsanli	0.47	45	*e*Pg	Pg	01 06 23.6	+0.4
DURS	Dursunbey	0.65	318	P	Pg	01 06 26.7	+0.1
DURS				S	Sg	01 06 35.5	+0.4
DURS	Dursunbey	0.65	318	*i* P	Pg	01 06 26.7	+0.1
DURS				*i* S	Sg	01 06 35.5	+0.4
KULA	Kula-Manisa	0.67	206	*e*PG	Pb	01 06 27.4	-0.8
KULA	Kula-Manisa	0.67	206	*e*Pg	Pb	01 06 27.4	-0.8
MANT	Manisa	0.73	211	P	Pb	01 06 28.4	-1.0
MANT				S	Sg	01 06 37.7	+0.2
MANT	Manisa	0.73	211	*i* P	Pb	01 06 28.4	-1.0
MANT				*i* S	Sg	01 06 37.7	+0.2
KHAL	Karahalli	0.83	154	P	Pb	01 06 30.4	-0.6
KHAL				S	Sg	01 06 41.0	+0.3
KHAL	Karahalli	0.83	154	*i* P	Pb	01 06 30.4	-0.6
KHAL				*i* S	Sg	01 06 41.0	+0.3
KHL	Karahalli	0.88	154	*e*PG	Pb	01 06 32.0	+0.2
KHL	Karahalli	0.88	154	*e*Pg	Pb	01 06 32.0	+0.2
ORLT	Orhaneli	0.94	354	*e*PG	Pb	01 06 32.9	+0.1
ORLT	Orhaneli	0.94	354	*e*Pg	Pb	01 06 32.9	+0.1
AKHS	Akhisar	0.98	256	P	Pb	01 06 33.4	-0.1
AKHS				S	Sb	01 06 46.7	0.0
AKHS	Akhisar	0.98	256	*i* P	Pb	01 06 33.4	-0.1
AKHS				*i* S	Sb	01 06 46.7	0.0
AKS	Akhisar	0.98	256	*e*PG	Pb	01 06 33.6	+0.1
AKS	Akhisar	0.98	256	*e*Pg	Pb	01 06 33.6	+0.1
BALB	Balikesir	1.04	301	*e*PG	Pn	01 06 35.1	-0.1
BALB				*e*SG	Sn	01 06 50.0	-0.1
BALB	Balikesir	1.04	301	*e*Pg	Pn	01 06 35.1	-0.1
BALB				*e*Sg	Sn	01 06 50.0	-0.1
IGD	Bursa	1.15	6	*i* P	Pg	01 06 34.7	-1.5
IGD				*i* S	Sb	01 06 51.3	-0.5
CAVI	Cavuskoy	1.25	30	*e*PN	Pn	01 06 38.4	+0.2
CAVI				*e*SN	Sn	01 06 57.1	+1.6
CAVI	Cavuskoy	1.25	30	*e*Pn	Pn	01 06 38.4	+0.2
CAVI				*e*Sn	Sn	01 06 57.1	+1.6
MDNY	Mudanya-Bursa	1.26	355	*e*PN	Pn	01 06 38.7	+0.4
MDNY	Mudanya-Bursa	1.26	355	*e*Pn	Pn	01 06 38.7	+0.4
BALY	Balya	1.26	300	P	Pn	01 06 38.2	-0.2
BALY				S	Sg	01 06 53.5	-1.1
BALY	Balya	1.26	300	*i* P	Pn	01 06 38.2	-0.2
BALY				*i* S	Sg	01 06 53.5	-1.1
KCTX	Karacabey (Bur	1.26	336	*e*PN	Pn	01 06 38.4	0.0
KCTX	Karacabey (Bur	1.26	336	*e*Pn	Pn	01 06 38.4	0.0
IZI	Iznik	1.27	15	*e*PN	Pn	01 06 38.9	+0.4
IZI	Iznik	1.27	15	*e*Pn	Pn	01 06 38.9	+0.4
GEMT	Gemlik	1.32	5	*e*PN	Pg	01 06 39.7	+0.3
GEMT				*e*SN	Sn	01 06 58.8	+1.6
GEMT	Gemlik	1.32	5	*e*Pn	Pg	01 06 39.7	+0.3
GEMT				*e*Sn	Sn	01 06 58.8	+1.6
BORA	Eskisehir	1.34	55	P	Pn	01 06 39.0	-0.5
BORA				S	Sg	01 06 56.8	-0.3
BORA	Eskisehir	1.34	55	*i* P	Pn	01 06 39.0	-0.5
BORA				*i* S	Sg	01 06 56.8	-0.3
DENT	Denizli	1.36	180	*e*PN	Pg	01 06 40.5	+0.4
DENT	Denizli	1.36	180	*e*Pn	Pg	01 06 40.6	+0.4
GONE	Gonen-Balikesi	1.40	312	*e*PN	Pg	01 06 41.4	+0.5
GONE	Gonen-Balikesi	1.40	312	*e*Pn	Pg	01 06 41.4	+0.5
ADVT	Abdulvahap	1.42	22	*e*PN	Pg	01 06 42.4	+1.0
ADVT	Abdulvahap	1.42	22	*e*Pn	Pg	01 06 42.4	+1.0
DNZL	Cakiroluk	1.42	180	P	Pg	01 06 41.0	-0.4
DNZL				S	Sn	01 07 00.8	+0.9
DNZL	Cakiroluk	1.42	180	*i* P	Pg	01 06 41.0	-0.4
DNZL				*i* S	Sn	01 07 00.8	+0.9
ARMT	Armutlu	1.45	355	*e*PN	Pg	01 06 42.4	+0.4
ARMT	Armutlu	1.45	355	*e*Pn	Pg	01 06 42.4	+0.4
ESKT	Eskisehir	1.47	73	*i* P	Pn	01 06 40.3	-1.0
ESKT				*i* S	Sb	01 06 58.3	-2.6
SEYT	Eskypehyr	1.47	73	P	Pn	01 06 40.3	-1.0
AYDB	Zeytinkoy-Aydi	1.47	218	*e*PN	Pg	01 06 41.9	-0.4
AYDB	Zeytinkoy-Aydi	1.47	218	*e*Pn	Pg	01 06 41.9	-0.4
EDC	Edincik	1.52	324	*e*PN	Pb	01 06 42.7	-0.1
EDC	Edincik	1.52	324	*e*Pn	Pb	01 06 42.7	-0.1
GPA	Golpazari	1.53	40	*e*PN	Pg	01 06 44.0	+0.6
GPA	Golpazari	1.53	40	*e*Pn	Pg	01 06 44.0	+0.6
BOLV	Bolvadin	1.55	104	P	Pb	01 06 42.6	-0.7
BOLV				S	Sg	01 07 03.8	0.0
BOLV	Bolvadin	1.55	104	*i* P	Pb	01 06 42.6	-0.7
BOLV				*i* S	Sg	01 07 03.8	0.0
DKL	Dikili	1.66	269	*e*PN	Pb	01 06 44.8	-0.2
DKL	Dikili	1.66	269	*e*Pn	Pb	01 06 44.8	-0.2
GULT	Gulveren	1.74	41	*e*PN	Pb	01 06 46.4	-0.2
GULT	Gulveren	1.74	41	*e*Pn	Pb	01 06 46.4	-0.2
ISP	Isparta	1.74	137	*e*PN	Pb	01 06 46.1	-0.4
ISP	Isparta	1.74	137	*e*Pn	Pb	01 06 46.2	-0.4
HRT	Hereke	1.77	16	*e*PN	Pg	01 06 47.5	-0.6
HRT	Hereke	1.77	16	*e*Pn	Pg	01 06 47.5	-0.6
KRBG	Karabiga-Canak	1.85	314	*e*PN	Pb	01 06 48.0	-0.3
KRBG	Karabiga-Canak	1.85	314	*e*Pn	Pb	01 06 48.0	-0.3
SPNC	Sapanca-Adapaz	1.85	32	*e*PN	Pb	01 06 47.7	-0.6
SPNC	Sapanca-Adapaz	1.85	32	*e*Pn	Pb	01 06 47.7	-0.6
MRMT	Marmara Adasi	1.85	324	*e*PN	Pb	01 06 48.2	-0.2
MRMT	Marmara Adasi	1.85	324	*e*Pn	Pb	01 06 48.3	-0.2
ISK	Istanbul-Kandi	1.95	1	*e*PN	Pb	01 06 49.9	-0.1
ISK	Istanbul-Kandi	1.95	1	*e*Pn	Pb	01 06 49.9	-0.1
SVRH	Sivrihisar-ESK	1.96	80	*e*PN	Pb	01 06 49.9	-0.4
SVRH	Sivrihisar-ESK	1.96	80	*e*Pn	Pb	01 06 49.9	-0.4
GLHS	Glhisar (BURDU	1.99	169	*e*PN	Pb	01 06 50.1	-0.7
GLHS	Glhisar (BURDU	1.99	169	*e*Pn	Pb	01 06 50.1	-0.7
BGKT	Bogazkoy	2.07	355	*e*PN	Pb	01 06 51.2	-1.0
BGKT	Bogazkoy	2.07	355	*e*Pn	Pb	01 06 51.2	-1.0
RKY	Sarkoy-Tekirda	2.12	318	*e*PN	Pb	01 06 52.1	-0.9
RKY	Sarkoy-Tekirda	2.12	318	*e*Pn	Pb	01 06 52.1	-0.9
KLYT	Kilyos	2.13	0	*e*PN	Pb	01 06 52.1	-1.1
KLYT	Kilyos	2.13	0	*e*Pn	Pb	01 06 52.1	-1.1
MDUB	Mudurnu	2.15	50	*e*PN	Pb	01 06 52.2	-1.3
MDUB	Mudurnu	2.15	50	*e*Pn	Pb	01 06 52.2	-1.3
LPK	Lapseki	2.15	306	*e*PN	Pb	01 06 52.9	-0.7
LPK	Lapseki	2.15	306	*e*Pn	Pb	01 06 52.9	-0.7
CTKS	Kestanelik-??a	2.16	349	*e*PN	Pb	01 06 52.8	-0.8
CTKS	Kestanelik-??a	2.16	349	*e*Pn	Pb	01 06 52.8	-0.8
TKR	Tekirdag	2.20	329	*e*PN	Pb	01 06 52.8	-1.5
TKR	Tekirdag	2.20	329	*e*Pn	Pb	01 06 52.8	-1.5
EZN	Ezine	2.21	290	*e*PN	Pb	01 06 53.1	-1.4
EZN	Ezine	2.21	290	*e*Pn	Pb	01 06 53.2	-1.4
KIZT	Kizilcal	2.23	95	*e*PN	Pb	01 06 53.3	-1.6
KIZT	Kizilcal	2.23	95	*e*Pn	Pb	01 06 53.3	-1.6
CRLT	Corlu	2.24	334	*e*PN	Pb	01 06 54.1	-1.0
CRLT	Corlu	2.24	334	*e*Pn	Pb	01 06 54.1	-1.0
SUTC	Sutluce-Ispart	2.25	136	*e*PN	Pb	01 06 53.5	-1.7
SUTC	Sutluce-Ispart	2.25	136	*e*Pn	Pb	01 06 53.6	-1.7
GELI	Tayfur-Gelibol	2.35	304	*e*PN	Pb	01 06 55.1	-1.8
GELI	Tayfur-Gelibol	2.35	304	*e*Pn	Pb	01 06 55.1	-1.8
CTYL	Yalikoy Yolu	2.42	347	*e*PN	Pb	01 06 56.5	-1.6
CTYL	Yalikoy Yolu	2.42	347	*e*Pn	Pb	01 06 56.5	-1.6
ERIK	Erikli-Kesan	2.48	309	*e*PN	Pn	01 06 56.5	+1.4
ERIK	Erikli-Kesan	2.48	309	*e*Pn	Pn	01 06 56.5	+1.4
LADK	Ladik-KONYA	2.76	108	*e*PN	Pn	01 07 01.0	+1.9
LADK	Ladik-KONYA	2.76	108	*e*Pn	Pn	01 07 01.0	+1.9

JMA ***20*** *01:08:02.5±0.2,36.°28N×142.°41E,h85km,M2.9*
IDC ***20*** *01:08:05.6±2.9,36.°69N×142.°10E,h0km,mb3.6/3, mb1 3.7/4,mb1mx3.3/37,mbtmp3.5/4,ML3.1/1,Error ellipse: s-maj=75.3km s-min=30.1km az=58.0*
ISC 20 01:08:04.2±1.9,36.°28N±0.°09×142.°3E±0.°1,h15km,n9, σ1§02/11,mb3.5/3,Off east of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	1.29	244	P	Pn	01 08 26.9	-0.8
CHOJ				S	Sg	01 08 45.9	-0.1
JHO	Hitachi	1.43	284	P	Pn	01 08 28.4	-1.1
JHO				S	Sb	01 08 48.2	-0.3
ONAJ	Iwakimizuishiy	1.45	305	P	Pn	01 08 28.4	-1.6
BSO1	Boso 1	1.94	214	P	Pn	01 08 35.2	-0.9
MJAR	Matsushiro Arr	3.30	276	Pn	Pn	01 08 55.9	+0.6
	2.5nm,0.3s,baz=100,slow=8.1,SNR=11						
MAT	Matsushiro	3.30	276	P	Pn	01 08 55.5	+0.1
MAT				*e*S	Sn	01 09 34.5	+0.1
SONM	Songino Array	28.79	305	P	P	01 14 03.1	+1.6
	0.5nm,0.5s,baz=106,slow=5.2,SNR=3.2						
MKAR	Makanchi Array	45.12	303	P	P	01 16 19.5	-0.4
	0.7nm,0.6s,baz=89,slow=8.7,SNR=6.2						
WRA	Warramunga Arr	56.42	189	P	P	01 17 51.7	+6.5
	0.2nm,0.4s,baz=4.7,slow=8.1,SNR=4.1						

ISCJB ***20*** *01:09:07.0±0.5,39.°08N±0.°03×29.°04E±0.°04,h1km±8km, Error ellipse: s-maj=5.8km s-min=4.6km az=14.7*
DDA ***20*** *01:09:06.6,39.°09N×29.°04E,h7km,Md2.3*
CSEM ***20*** *01:09:07.4±0.1,39.°07N×29.°04E,h2km,MD2.3,Error ellipse: s-maj=4.0km s-min=3.2km az=81.0*
ISK ***20*** *01:09:07.4,39.°09N×29.°05E,h5km,MD2.6*
ISC 20 01:09:07.0±1.2,39.°07N±0.°02×29.°04E±0.°02,h1km±13km, n31,σ0§40/44,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.25	265	P	Pg	01 09 12.0	+0.1
DEMI				S	Sg	01 09 15.4	+0.3
DEMI	Demirci	0.25	265	*i* P	Pg	01 09 12.0	+0.1
DEMI				*i* S	Sg	01 09 15.4	+0.3
GDZ	Gediz	0.34	86	P	Pg	01 09 13.4	-0.2
GDZ				S	Sg	01 09 18.5	+0.5
GDZ	Gediz	0.34	86	*i* P	Pg	01 09 13.4	-0.2
GDZ				*i* S	Sg	01 09 18.6	+0.5
TVSB	Tavsanli	0.51	40	*e*PG	Pg	01 09 16.5	-0.2
TVSB	Tavsanli	0.51	40	*e*Pg	Pg	01 09 16.5	-0.2
MANT	Manisa	0.69	214	P	Pg	01 09 19.9	-0.2
MANT				S	Sg	01 09 29.2	+0.2
MANT	Manisa	0.69	214	*i* P	Pg	01 09 19.9	-0.2
MANT				*i* S	Sg	01 09 29.2	+0.2
KHAL	Karahalli	0.78	153	P	Pb	01 09 23.6	+0.3
KHAL				S	Sb	01 09 33.6	-0.8
KHAL	Karahalli	0.78	153	*i* P	Pb	01 09 23.6	+0.3
KHAL				*i* S	Sb	01 09 33.6	-0.8
KHL	Karahalli	0.83	153	*e*PG	Pb	01 09 24.2	-0.1
KHL	Karahalli	0.83	153	*e*Pg	Pb	01 09 24.2	-0.1
ORLT	Orhaneli	0.99	354	*e*PG	Pb	01 09 26.6	-0.3
ORLT	Orhaneli	0.99	354	*e*Pg	Pb	01 09 26.6	-0.3
BALB	Balikesir	1.07	303	*e*PG	Pb	01 09 28.2	0.0
BALB				*e*SG	Sb	01 09 42.6	-0.1
BALB	Balikesir	1.07	303	*e*Pg	Pb	01 09 28.2	0.0
BALB				*e*Sg	Sb	01 09 42.6	-0.1
IGD	Bursa	1.20	6	*i* P	Pg	01 09 28.4	-1.7
IGD				*i* S	Sg	01 09 45.1	-0.6
CAVI	Cavuskoy	1.29	28	*e*PN	Pb	01 09 32.2	+0.1
CAVI				*e*SN	Sb	01 09 49.5	+0.3
CAVI	Cavuskoy	1.29	28	*e*Pn	Pb	01 09 32.2	+0.1
CAVI				*e*Sn	Sb	01 09 49.5	+0.3
MDNY	Mudanya-Bursa	1.31	355	*e*PN	Pn	01 09 32.7	+0.4
MDNY	Mudanya-Bursa	1.31	355	*e*Pn	Pn	01 09 32.7	+0.4
KCTX	Karacabey (Bur	1.31	336	*e*PN	Pn	01 09 32.5	+0.1
KCTX	Karacabey (Bur	1.31	336	*e*Pn	Pn	01 09 32.5	+0.1
IZI	Iznik	1.31	15	*e*PN	Pg	01 09 32.3	+0.1
IZI	Iznik	1.31	15	*e*Pn	Pg	01 09 32.3	+0.1
ADVT	Abdulvahap	1.47	21	*e*PN	Pg	01 09 35.4	+0.2
ADVT	Abdulvahap	1.47	21	*e*Pn	Pg	01 09 35.4	+0.2
ARMT	Armutlu	1.51	355	*e*PN	Pg	01 09 35.9	+0.1
ARMT	Armutlu	1.51	355	*e*Pn	Pg	01 09 35.9	+0.1
EDC	Edincik	1.57	325	*e*PN	Pb	01 09 36.7	-0.1
EDC	Edincik	1.57	325	*e*Pn	Pb	01 09 36.7	-0.1

ISCJB ***20*** *01:12:18.6±0.5,39.°11N±0.°03×29.°09E±0.°03,h1km±7km, Error ellipse: s-maj=5.3km s-min=4.2km az=174.6*
CSEM ***20*** *01:12:18.9±0.1,39.°11N×29.°09E,h2km,MD2.4,Error ellipse: s-maj=2.2km s-min=1.9km az=80.0*
ISK ***20*** *01:12:18.2,39.°11N×29.°13E,h2km,MD2.7*
DDA ***20*** *01:12:18.3,39.°11N×29.°09E,h7km,Md2.4*
ISC 20 01:12:19.0±1.0,39.°11N±0.°02×29.°09E±0.°02,h6km±9km, n43,σ0§45/61,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.30	257	P	Pg	01 12 25.0	+0.1
DEMI				S	Sg	01 12 29.4	+0.5
DEMI	Demirci	0.30	257	*i* P	Pg	01 12 25.0	+0.1
DEMI				*i* S	Sg	01 12 29.4	+0.5
GDZ	Gediz	0.31	94	P	Pg	01 12 25.0	-0.1
GDZ				S	Sg	01 12 29.4	+0.3
GDZ	Gediz	0.31	94	*i* P	Pg	01 12 24.9	-0.1
GDZ				*i* S	Sg	01 12 29.4	+0.3
TVSB	Tavsanli	0.44	40	*e*PG	Pg	01 12 27.2	-0.4
TVSB	Tavsanli	0.44	40	*e*Pg	Pg	01 12 27.2	-0.4
DURS	Dursunbey	0.68	316	P	Pg	01 12 31.8	-0.4
DURS	Dursunbey	0.68	316	*i* P	Pg	01 12 31.8	-0.4
DURS				*i* S	Sn	01 12 46.1	-0.3
MANT	Manisa	0.75	214	P	Pg	01 12 33.0	-0.4
MANT				S	Sg	01 12 42.3	-0.8
MANT	Manisa	0.75	214	*i* P	Pg	01 12 33.0	-0.4
MANT				*i* S	Sg	01 12 42.3	-0.8
KHAL	Karahalli	0.81	157	P	Pg	01 12 34.5	0.0
KHAL				S	Sg	01 12 44.8	-0.1
KHAL	Karahalli	0.81	157	*i* P	Pg	01 12 34.5	0.0
KHAL				*i* S	Sg	01 12 44.8	-0.1
KHL	Karahalli	0.86	157	*e*PG	Pg	01 12 35.1	-0.4
KHL				*e*SG	Sb	01 12 47.9	-0.3
KHL	Karahalli	0.86	157	*e*Pg	Pg	01 12 35.1	-0.4
KHL				*e*Sg	Sb	01 12 47.9	-0.3
ORLT	Orhaneli	0.94	351	*e*PG	Pg	01 12 37.2	0.0
ORLT	Orhaneli	0.94	351	*e*Pg	Pg	01 12 37.2

MDNY				*e*SN	Sg	01 17 08.9	+0.9
MDNY	**Mudanya-Bursa**	**1.27**	**354**	*e*Pn	Pg	01 16 51.5	0.0
MDNY				*e*Sn	Sg	01 17 08.9	+0.9
KCTX	**Karacabey (Bur**	**1.28**	**335**	*e*PN	Pg	01 16 51.5	-0.3
KCTX	**Karacabey (Bur**	**1.28**	**335**	*e*Pn	Pg	01 16 51.5	-0.3
BORA	**Eskisehir**	**1.32**	**54**	P	Pb	01 16 51.7	-0.1
BORA				S	Sg	01 17 09.6	-0.1
BORA	**Eskisehir**	**1.32**	**54**	*i* P	Pb	01 16 51.7	-0.1
BORA				*i* S	Sg	01 17 09.6	-0.1
ADVT	**Abdulvahap**	**1.42**	**21**	*e*PN	Pg	01 16 54.4	0.0
ADVT	**Abdulvahap**	**1.42**	**21**	*e*Pn	Pg	01 16 54.4	0.0
GONE	**Gonen-Balikesi**	**1.42**	**312**	*e*PN	Pg	01 16 54.7	+0.2
GONE	**Gonen-Balikesi**	**1.42**	**312**	*e*Pn	Pg	01 16 54.7	+0.2
ESKT	**Eskisehir**	**1.44**	**73**	*i* P	Pb	01 16 54.0	+0.1
ESKT				*i* S	Sn	01 17 11.1	-0.7
SEYT	**Eskypehyr**	**1.44**	**73**	P	Pb	01 16 54.0	+0.1
SEYT				S	Sn	01 17 11.1	-0.7
ARMT	**Armutlu**	**1.46**	**354**	*e*PN	Pb	01 16 54.7	+0.5
ARMT	**Armutlu**	**1.46**	**354**	*e*Pn	Pb	01 16 54.7	+0.5
EDC	**Edincik**	**1.55**	**323**	*e*PN	Pg	01 16 56.5	-0.4
EDC	**Edincik**	**1.55**	**323**	*e*Pn	Pg	01 16 56.5	-0.4
GULT	**Gulveren**	**1.73**	**40**	*e*PN	Pb	01 16 58.9	+0.1
GULT	**Gulveren**	**1.73**	**40**	*e*Pn	Pb	01 16 58.9	+0.1
SVRH	**Sivrihisar-ESK**	**1.94**	**79**	*e*PN	Pb	01 17 01.8	-0.5
SVRH	**Sivrihisar-ESK**	**1.94**	**79**	*e*Pn	Pb	01 17 01.8	-0.5
ISK	**Istanbul-Kandi**	**1.95**	**360**	*e*PN	Pb	01 17 02.1	-0.4
ISK	**Istanbul-Kandi**	**1.95**	**360**	*e*Pn	Pb	01 17 02.1	-0.4

*DDA **20** 01:22:02.6, 39.°10N×29.°03E, h7km, Md3.1*
*ISK **20** 01:22:03.2, 39.°11N×29.°02E, h5km, ML3.5*
*CSEM **20** 01:22:04.1±0.1, 39.°09N×29.°04E, h2km, MD3.1, Error ellipse: s-maj=2.7km s-min=2.3km az=76.0*
ISC 20 01:22:03.6±1.0, **39.°11N**±0.°02×**29.°03E**±0.°02, **h5**km±9km, **n126**, σ1§10/152, **10C-7D, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**254**	P	Pg	01 22 08.4	-0.1
DEMI				S	Sg	01 22 12.1	+0.3
DEMI	**Demirci**	**0.25**	**254**	*i* P	Pg	01 22 08.4	-0.1
DEMI				*i* S	Sg	01 22 12.1	+0.3
GDZ	**Gediz**	**0.35**	**93**	P	Pg	01 22 10.3	-0.3
GDZ				S	Sg	01 22 15.4	+0.2
GDZ	**Gediz**	**0.35**	**93**	*i* P	Pg	01 22 10.3	-0.3
GDZ				*i* S	Sg	01 22 15.4	+0.2
TVSB	**Tavsanli**	**0.48**	**45**	*e*PG	Pg	01 22 13.6	+0.7
TVSB	**Tavsanli**	**0.48**	**45**	*e*Pg	Pg	01 22 13.6	+0.7
DURS	**Dursunbey**	**0.65**	**319**	P	Pg	01 22 15.6	-0.5
DURS				S	Sg	01 22 24.7	+0.1
DURS	**Dursunbey**	**0.65**	**319**	*i* P	Pg	01 22 15.6	-0.5
DURS				*i* S	Sg	01 22 24.7	+0.1
KULA	**Kula-Manisa**	**0.66**	**206**	*e*PG	Pg	01 22 16.6	+0.3
KULA	**Kula-Manisa**	**0.66**	**206**	*e*Pg	Pg	01 22 16.6	+0.3
MANT	**Manisa**	**0.72**	**211**	P	Pg	01 22 17.0	-0.5
MANT				S	Sg	01 22 26.3	-0.5
MANT	**Manisa**	**0.72**	**211**	*i* P	Pg	01 22 17.0	-0.5
MANT				*i* S	Sg	01 22 26.3	-0.5
KHAL	**Karahalli**	**0.82**	**154**	P	Pg	01 22 19.0	-0.5
KHAL				S	Sg	01 22 30.0	-0.2
KHAL	**Karahalli**	**0.82**	**154**	*i* P	Pg	01 22 19.0	-0.5
KHAL				*i* S	Sg	01 22 29.9	-0.2
KHL	**Karahalli**	**0.88**	**154**	*e*PG	Pg	01 22 20.9	+0.4
KHL	**Karahalli**	**0.88**	**154**	*e*Pg	Pg	01 22 20.9	+0.4
ORLT	**Orhaneli**	**0.94**	**354**	*e*PG	Pb	01 22 22.4	-0.1
ORLT	**Orhaneli**	**0.94**	**354**	*e*Pg	Pb	01 22 22.4	-0.1
AKHS	**Akhisar**	**0.97**	**257**	P	Pg	01 22 22.0	-0.3
AKHS				S	Sg	01 22 35.7	+0.8
AKHS	**Akhisar**	**0.97**	**257**	*i* P	Pg	01 22 22.0	-0.3
AKHS				*i* S	Sg	01 22 35.6	+0.8
AKS	**Akhisar**	**0.97**	**257**	*e*PG	Pg	01 22 22.3	0.0
AKS	**Akhisar**	**0.97**	**257**	*e*Pg	Pg	01 22 22.3	0.0
BALB	**Balikesir**	**1.03**	**301**	*e*PG	Pg	01 22 24.0	+0.5
BALB				*e*SG	Sn	01 22 39.6	0.0
BALB	**Balikesir**	**1.03**	**301**	*e*Pg	Pg	01 22 24.0	+0.5
BALB				*e*Sg	Sn	01 22 39.7	0.0
IGD	**Bursa**	**1.16**	**7**	*i* P	Pb	01 22 23.8	-2.4
IGD				*i* S	Sb	01 22 38.8	-2.8
CAVI	**Cavuskoy**	**1.26**	**30**	*e*PN	Pg	01 22 28.0	+0.2
CAVI				*e*SN	Sn	01 22 47.1	+1.7
CAVI	**Cavuskoy**	**1.26**	**30**	*e*Pn	Pg	01 22 28.0	+0.2
CAVI				*e*Sn	Sn	01 22 47.1	+1.7
MDNY	**Mudanya-Bursa**	**1.26**	**355**	*e*PN	Pn	01 22 27.7	-0.3
MDNY	**Mudanya-Bursa**	**1.26**	**355**	*e*Pn	Pn	01 22 27.7	-0.3
KCTX	**Karacabey (Bur**	**1.26**	**336**	*e*PN	Pb	01 22 28.0	0.0
KCTX				*e*SN	Sn	01 22 46.2	+0.7
KCTX	**Karacabey (Bur**	**1.26**	**336**	*e*Pn	Pb	01 22 28.0	0.0
KCTX				*e*Sn	Sn	01 22 46.2	+0.7
IZI	**Iznik**	**1.27**	**16**	*e*PN	Pg	01 22 28.5	+0.5
IZI	**Iznik**	**1.27**	**16**	*e*Pn	Pg	01 22 28.5	+0.5
GEMT	**Gemlik**	**1.33**	**5**	*e*PN	Pb	01 22 29.3	+0.2
GEMT	**Gemlik**	**1.33**	**5**	*e*Pn	Pb	01 22 29.3	+0.2
BORA	**Eskisehir**	**1.34**	**55**	P	Pn	01 22 28.2	-1.1
BORA	**Eskisehir**	**1.34**	**55**	*i* P	Pn	01 22 28.2	-1.1
BORA				*i* S	Sb	01 22 43.0	-4.1
DENT	**Denizli**	**1.35**	**180**	*e*PN	Pb	01 22 29.7	+0.2
DENT	**Denizli**	**1.35**	**180**	*e*Pn	Pb	01 22 29.7	+0.2
GONE	**Gonen-Balikesi**	**1.40**	**312**	*e*PN	Pg	01 22 30.9	+0.5
GONE	**Gonen-Balikesi**	**1.40**	**312**	*e*Pn	Pg	01 22 30.9	+0.5
DNZL	**Cakiroluk**	**1.42**	**179**	P	Pn	01 22 29.3	-1.0
DNZL				S	Sg	01 22 49.5	+0.3
DNZL	**Cakiroluk**	**1.42**	**179**	*i* P	Pn	01 22 29.3	-1.0
DNZL				*i* S	Sg	01 22 49.5	+0.3
ADVT	**Abdulvahap**	**1.43**	**22**	*e*PN	Pb	01 22 30.9	+0.1
ADVT	**Abdulvahap**	**1.43**	**22**	*e*Pn	Pb	01 22 30.9	+0.1
ARMT	**Armutlu**	**1.46**	**355**	*e*PN	Pg	01 22 31.7	+0.1
ARMT	**Armutlu**	**1.46**	**355**	*e*Pn	Pg	01 22 31.7	+0.1
AYDB	**Zeytinkoy-Aydi**	**1.46**	**218**	*e*PN	Pb	01 22 31.3	-0.2
AYDB	**Zeytinkoy-Aydi**	**1.46**	**218**	*e*Pn	Pb	01 22 31.3	-0.2
ESKT	**Eskisehir**	**1.47**	**73**	*i* P	Pn	01 22 30.3	-0.7
ESKT				*i* S	Sn	01 22 47.9	-2.9
SEYT	**Eskypehyr**	**1.47**	**73**	P	Pn	01 22 30.3	-0.7
EDC	**Edincik**	**1.52**	**324**	*e*PN	Pg	01 22 33.0	+0.1
EDC	**Edincik**	**1.52**	**324**	*e*Pn	Pg	01 22 33.0	+0.1
GPA	**Golpazari**	**1.54**	**40**	*e*PN	Pb	01 22 32.9	+0.2
GPA	**Golpazari**	**1.54**	**40**	*e*Pn	Pb	01 22 32.9	+0.2
BOLV	**Bolvadin**	**1.55**	**104**	P	Pn	01 22 31.6	-0.5
BOLV				S	Sb	01 22 52.8	-0.2
BOLV	**Bolvadin**	**1.55**	**104**	*i* P	Pn	01 22 31.6	-0.5
BOLV				*i* S	Sb	01 22 52.8	-0.2
DKL	**Dikili**	**1.65**	**269**	*e*PN	Pb	01 22 34.7	+0.1
DKL	**Dikili**	**1.65**	**269**	*e*Pn	Pb	01 22 34.7	+0.1
ISP	**Isparta**	**1.74**	**137**	*e*PN	Pb	01 22 36.0	-0.2
ISP	**Isparta**	**1.74**	**137** ⇑	*i*P	Pg	01 22 38.7	+1.7
ISP				S	Sg	01 23 03.1	+3.5
ISP	**Isparta**	**1.74**	**137**	*e*Pn	Pb	01 22 36.0	-0.2
ISP	**Isparta**	**1.74**	**137** ⇑	*i*P	Pg	01 22 38.7	+1.7
GULT	**Gulveren**	**1.75**	**41**	*e*PN	Pb	01 22 35.9	-0.4
GULT	**Gulveren**	**1.75**	**41**	*e*Pn	Pb	01 22 35.9	-0.4
HRT	**Hereke**	**1.78**	**16**	*e*PN	Pb	01 22 36.6	-0.2
HRT	**Hereke**	**1.78**	**16**	*e*Pn	Pb	01 22 36.6	-0.2
KRBG	**Karabiga-Canak**	**1.85**	**314**	*e*PN	Pb	01 22 37.3	-0.7
KRBG	**Karabiga-Canak**	**1.85**	**314**	*e*Pn	Pb	01 22 37.3	-0.7
MRMT	**Marmara Adasi**	**1.85**	**324**	*e*PN	Pn	01 22 36.8	+0.6
MRMT	**Marmara Adasi**	**1.85**	**324**	*e*Pn	Pn	01 22 36.8	+0.6
SPNC	**Sapanca-Adapaz**	**1.86**	**32**	*e*PN	Pb	01 22 37.5	-0.6
SPNC	**Sapanca-Adapaz**	**1.86**	**32**	*e*Pn	Pb	01 22 37.5	-0.6
ISK	**Istanbul-Kandi**	**1.95**	**1**	*e*PN	Pb	01 22 38.6	-1.1
ISK	**Istanbul-Kandi**	**1.95**	**1**	*e*Pn	Pb	01 22 38.6	-1.1
SVRH	**Sivrihisar-ESK**	**1.97**	**79**	*e*PN	Pb	01 22 39.4	-0.6
SVRH	**Sivrihisar-ESK**	**1.97**	**79**	*e*Pn	Pb	01 22 39.4	-0.6
GLHS	**Glhisar (BURDU**	**1.99**	**169**	*e*PN	Pb	01 22 39.1	-1.3
GLHS	**Glhisar (BURDU**	**1.99**	**169**	*e*Pn	Pb	01 22 39.1	-1.3
YER	**Yerkesik**	**2.06**	**197**	*e*PN	Pb	01 22 40.5	-1.1
YER	**Yerkesik**	**2.06**	**197**	*e*Pn	Pb	01 22 40.5	-1.1
BGKT	**Bogazkoy**	**2.08**	**355**	*e*PN	Pb	01 22 40.7	-1.1
BGKT	**Bogazkoy**	**2.08**	**355**	*e*Pn	Pb	01 22 40.7	-1.1
RKY	**Sarkoy-Tekirda**	**2.12**	**319**	*e*PN	Pb	01 22 41.5	-1.1
RKY	**Sarkoy-Tekirda**	**2.12**	**319**	*e*Pn	Pb	01 22 41.5	-1.1
KLYT	**Kilyos**	**2.14**	**0**	*e*PN	Pb	01 22 42.0	-0.9
KLYT	**Kilyos**	**2.14**	**0**	*e*Pn	Pb	01 22 42.0	-0.9
LPK	**Lapseki**	**2.15**	**307**	*e*PN	Pb	01 22 41.8	-1.4
LPK	**Lapseki**	**2.15**	**307**	*e*Pn	Pb	01 22 41.8	-1.4
MDUB	**Mudurnu**	**2.15**	**50**	*e*PN	Pn	01 22 41.5	+1.1
MDUB	**Mudurnu**	**2.15**	**50**	*e*Pn	Pn	01 22 41.5	+1.1
CTKS	**Kestanelik-??a**	**2.16**	**350**	*e*PN	Pb	01 22 42.6	-0.7
CTKS	**Kestanelik-??a**	**2.16**	**350**	*e*Pn	Pb	01 22 42.6	-0.7
TKR	**Tekirdag**	**2.20**	**329**	*e*PN	Pb	01 22 42.6	-1.3
TKR	**Tekirdag**	**2.20**	**329**	*e*Pn	Pb	01 22 42.6	-1.3
EZN	**Ezine**	**2.21**	**290**	*e*PN	Pb	01 22 42.8	-1.3
EZN	**Ezine**	**2.21**	**290**	*e*Pn	Pb	01 22 42.8	-1.3
CRLT	**Corlu**	**2.25**	**334**	*e*PN	Pb	01 22 43.5	-1.2
CRLT	**Corlu**	**2.25**	**334**	*e*Pn	Pb	01 22 43.5	-1.2
SUTC	**Sutluce-Ispart**	**2.25**	**136**	*e*PN	Pn	01 22 42.7	+1.0
SUTC	**Sutluce-Ispart**	**2.25**	**136**	*e*Pn	Pn	01 22 42.7	+1.0
GELI	**Tayfur-Gelibol**	**2.35**	**304**	*e*PN	Pn	01 22 44.2	+1.2
GELI	**Tayfur-Gelibol**	**2.35**	**304**	*e*Pn	Pn	01 22 44.2	+1.2
CTYL	**Yalikoy Yolu**	**2.43**	**347**	*e*PN	Pb	01 22 46.0	-1.8
CTYL	**Yalikoy Yolu**	**2.43**	**347**	*e*Pn	Pb	01 22 46.0	-1.8
ERIK	**Erikli-Kesan**	**2.48**	**310**	*e*PN	Pn	01 22 46.5	+1.8
ERIK	**Erikli-Kesan**	**2.48**	**310**	*e*Pn	Pn	01 22 46.5	+1.8
LADK	**Ladik-KONYA**	**2.77**	**108**	*e*PN	Pn	01 22 50.2	+1.5
LADK	**Ladik-KONYA**	**2.77**	**108**	*e*Pn	Pn	01 22 50.3	+1.5
KDZE	**Karadeniz Ereo**	**2.88**	**39**	*e*PN	Pn	01 22 52.4	+2.2
KDZE	**Karadeniz Ereo**	**2.88**	**39**	*e*Pn	Pn	01 22 52.4	+2.2
APE	**Apeiranthos**	**3.43**	**235**	⇓ *i*P	Pg	01 23 10.5	+1.1
TIRR	**Tirgusor**	**5.36**	**355** ⇑	*i*P	Pn	01 23 24.3	0.0
TIRR	**Tirgusor**	**5.36**	**355** ⇑	*i*P	Pn	01 23 24.3	0.0
CFR	**Carcaliu**	**6.10**	**354** ⇑	*i*P	Pn	01 23 35.7	+1.3
CFR	**Carcaliu**	**6.10**	**354** ⇑	*i*P	Pn	01 23 35.7	+1.3
MLR	**Muntele Rosu**	**6.77**	**341** ⇓	*i*P	Pn	01 23 46.7	+2.9
MLR	**Muntele Rosu**	**6.77**	**341** ⇓	*i*P	Pn	01 23 46.7	+2.9
VRI	**Vrincioaia**	**6.96**	**347** ⇓	*i*P	Pn	01 23 47.7	+1.4
VRI	**Vrincioaia**	**6.96**	**347** ⇓	*i*P	Pn	01 23 47.7	+1.4
VOIR		**6.97**	**336** ⇓	*i*P	Pn	01 23 48.6	+2.0
VOIR		**6.97**	**336** ⇓	*i*P	Pn	01 23 48.6	+2.0
DOPR	**Dopca**	**7.36**	**340** ⇑	*i*P	Pn	01 23 52.9	+1.1
DOPR	**Dopca**	**7.36**	**340** ⇑	*i*P	Pn	01 23 52.9	+1.1
MILM	**Milestii Mici**	**7.80**	**359** ⇑	*i*P	Pn	01 23 58.5	+0.6
MILM	**Milestii Mici**	**7.80**	**359** ⇑	*i*P	Pn	01 23 58.5	+0.6

IDC 20 01:26:13.8±2.4, **3.°20N**×**129.°22E**, **h0**km, **mb3.4**/3, **mb1 3.7**/3, **mb1mx3.4**/23, **mbtmp3.5**/3, **Error ellipse: s-maj=158.5km s-min=25.4km az=69.0, North of Halmahera**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**23.54**	**168**	P	P	01 31 26.2	+0.3
	1.0nm,0.5s,baz=348,slow=10,SNR=9.1						
ASAR	**Alice Springs**	**27.09**	**171**	P	P	01 31 57.9	-0.6
	0.3nm,0.6s,baz=360,slow=8.7,SNR=4.3						
MKAR	**Makanchi Array**	**59.42**	**324**	P	P	01 36 18.5	+0.1
	0.2nm,0.5s,baz=133,slow=8.1,SNR=2.5						

*ISK **20** 01:28:15.7, 39.°13N×28.°97E, h5km, ML2.8*
*CSEM **20** 01:28:16.6±0.1, 39.°12N×28.°98E, h2km, MD2.4, Error ellipse: s-maj=2.5km s-min=2.2km az=78.0*
*DDA **20** 01:28:16.0, 39.°12N×28.°99E, h7km, Md2.4*
ISC 20 01:28:16.1±0.9, **39.°11N**±0.°02×**28.°98E**±0.°02, **h15**km±7km, **n47**, σ0§58/62, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.21**	**251**	P	Pg	01 28 21.2	+0.1
DEMI				S	Sg	01 28 24.4	+0.1
DEMI	**Demirci**	**0.21**	**251**	*i* P	Pg	01 28 21.2	+0.1
DEMI				*i* S	Sg	01 28 24.4	+0.1
GDZ	**Gediz**	**0.39**	**93**	P	Pg	01 28 24.2	0.0
GDZ				S	Sg	01 28 29.7	0.0
GDZ	**Gediz**	**0.39**	**93**	*i* P	Pg	01 28 24.2	0.0
GDZ				*i* S	Sg	01 28 29.7	0.0
TVSB	**Tavsanli**	**0.51**	**48**	*e*PG	Pg	01 28 26.1	-0.1
TVSB	**Tavsanli**	**0.51**	**48**	*e*Pg	Pg	01 28 26.1	-0.1
MANT	**Manisa**	**0.70**	**208**	P	Pb	01 28 30.2	-0.1
MANT				S	Sg	01 28 39.2	0.0
MANT	**Manisa**	**0.70**	**208**	*i* P	Pb	01 28 30.2	-0.1
MANT				*i* S	Sg	01 28 39.2	0.0
KHAL	**Karahalli**	**0.84**	**151**	P	Pb	01 28 32.9	+0.3
KHAL				S	Sg	01 28 43.8	+0.1
KHAL	**Karahalli**	**0.84**	**151**	*i* P	Pb	01 28 32.9	+0.3
KHAL				*i* S	Sg	01 28 43.8	+0.1
KHL	**Karahalli**	**0.90**	**151**	*e*PG	Pn	01 28 34.4	+0.1
KHL	**Karahalli**	**0.90**	**151**	*e*Pg	Pn	01 28 34.4	+0.1
ORLT	**Orhaneli**	**0.93**	**356**	*e*PG	Pg	01 28 34.4	+0.2
ORLT	**Orhaneli**	**0.93**	**356**	*e*Pg	Pg	01 28 34.4	+0.2
BALB	**Balikesir**	**1.00**	**302**	*e*PG	Pg	01 28 35.4	-0.1
BALB				*e*SG	Sn	01 28 50.5	+1.0
BALB	**Balikesir**	**1.00**	**302**	*e*Pg	Pg	01 28 35.4	-0.1
BALB				*e*Sg	Sn	01 28 50.5	+1.0
IGD	**Bursa**	**1.16**	**9**	*i* P	Pn	01 28 37.4	-0.5
IGD				*i* S	Sb	01 28 51.1	-1.8
KCTX	**Karacabey (Bur**	**1.25**	**338**	*e*PN	Pg	01 28 40.1	0.0
KCTX	**Karacabey (Bur**	**1.25**	**338**	*e*Pn	Pg	01 28 40.2	0.0
MDNY	**Mudanya-Bursa**	**1.26**	**357**	*e*PN	Pg	01 28 40.3	-0.1
MDNY	**Mudanya-Bursa**	**1.26**	**357**	*e*Pn	Pg	01 28 40.3	-0.1
CAVI	**Cavuskoy**	**1.28**	**31**	*e*PN	Pg	01 28 41.2	+0.4
CAVI				*e*SN	Sg	01 28 59.4	+2.0
CAVI	**Cavuskoy**	**1.28**	**31**	*e*Pn	Pg	01 28 41.2	+0.4
CAVI				*e*Sn	Sg	01 28 59.4	+2.0
IZI	**Iznik**	**1.28**	**17**	*e*PN	Pg	01 28 41.0	+0.1
IZI	**Iznik**	**1.28**	**17**	*e*Pn	Pg	01 28 41.0	+0.1
GEMT	**Gemlik**	**1.33**	**7**	*e*PN	Pg	01 28 41.5	-0.3
GEMT	**Gemlik**	**1.33**	**7**	*e*Pn	Pg	01 28 41.5	-0.3
GONE	**Gonen-Balikesi**	**1.36**	**313**	*e*PN	Pg	01 28 43.1	+0.7
GONE	**Gonen-Balikesi**	**1.36**	**313**	*e*Pn	Pg	01 28 43.1	+0.7
BORA	**Eskisehir**	**1.38**	**56**	P	Pb	01 28 42.0	+0.4
BORA				S	Sn	01 28 59.0	+0.1
BORA	**Eskisehir**	**1.38**	**56**	*i* P	Pb	01 28 42.0	+0.4
BORA				*i* S	Sn	01 28 59.0	+0.1
ADVT	**Abdulvahap**	**1.44**	**24**	*e*PN	Pg	01 28 44.0	+0.1
ADVT	**Abdulvahap**	**1.44**	**24**	*e*Pn	Pg	01 28 44.0	+0.1
ARMT	**Armutlu**	**1.45**	**357**	*e*PN	Pg	01 28 44.0	-0.1
ARMT	**Armutlu**	**1.45**	**357**	*e*Pn	Pg	01 28 44.0	-0.1
EDC	**Edincik**	**1.50**	**326**	*e*PN	Pg	01 28 44.8	-0.2
EDC	**Edincik**	**1.50**	**326**	*e*Pn	Pg	01 28 44.8	-0.2
GULT	**Gulveren**	**1.77**	**42**	*e*PN	Pb	01 28 48.6	+0.2
GULT	**Gulveren**	**1.77**	**42**	*e*Pn	Pb	01 28 48.6	+0.2
SPNC	**Sapanca-Adapaz**	**1.88**	**33**	*e*PN	Pb	01 28 49.9	-0.2
SPNC	**Sapanca-Adapaz**	**1.88**	**33**	*e*Pn	Pb	01 28 49.9	-0.2
ISK	**Istanbul-Kandi**	**1.95**	**2**	*e*PN	Pb	01 28 51.0	-0.4
ISK	**Istanbul-Kandi**	**1.95**	**2**	*e*Pn	Pb	01 28 51.0	-0.4
SVRH	**Sivrihisar-ESK**	**2.00**	**80**	*e*PN	Pb	01 28 52.3	-0.1
SVRH	**Sivrihisar-ESK**	**2.00**	**80**	*e*Pn	Pb	01 28 52.3	-0.1
MDUB	**Mudurnu**	**2.18**	**51**	*e*PN	Pb	01 28 54.2	-1.3
MDUB	**Mudurnu**	**2.18**	**51**	*e*Pn	Pb	01 28 54.2	-1.3

*ISK **20** 01:33:48.5, 39.°12N×29.°03E, h8km, ML3.4*
*ISCJB **20** 01:33:52.2±0.6, 39.°37N±0.°03×29.°05E±0.°04, h6km±6km, Error ellipse: s-maj=5.1km s-min=4.4km az=146.7*
*CSEM **20** 01:33:52.4±0.2, 39.°38N×29.°05E, h8km, MD3.1, Error ellipse: s-maj=5.6km s-min=4.9km az=173.0*
*DDA **20** 01:33:58.4, 39.°08N×29.°00E, h7km, Md3.1*
ISC 20 01:33:51.7±1.2, **39.°38N**±0.°02×**29.°06E**±0.°02, **h1**km±11km, **n41**, σ1§17/50, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TVSB	**Tavsanli**	**0.32**	**77**	*e*PG	Pg	01 33 58.0	+0.2
TVSB				*e*SG	Sb	01 34 04.7	-1.3
TVSB	**Tavsanli**	**0.32**	**77**	*e*Pg	Pg	01 33 58.0	+0.2
TVSB				*e*Sg	Sb	01 34 04.7	-1.3
DEMI	**Demirci**	**0.43**	**218**	*i* P	Pn	01 34 03.5	-1.6
DEMI				*i* S	Sg	01 34 06.6	+1.0
GDZ	**Gediz**	**0.44**	**132**	*i* P	Pn	01 34 05.8	+0.5
GDZ				*i* S	Sb	01 34 10.8	+1.3
DURS	**Dursunbey**	**0.50**	**296**	P	Pg	01 34 01.8	+0.4
DURS	**Dursunbey**	**0.50**	**296**	*i* P	Pg	01 34 01.8	+0.4
IGD	**Bursa**	**0.89**	**7**	*i* P	Sg	01 34 20.6	+0.4
IGD				*i* S	Sn	01 34 35.7	+11
BALB	**Balikesir**	**0.95**	**286**	*e*PG	Pg	01 34 09.3	-0.6
BALB				*e*SG	Sb	01 34 23.1	-0.9
BALB	**Balikesir**	**0.95**	**286**	*e*Pg	Pg	01 34 09.3	-0.6
BALB				*e*Sg	Sb	01 34 23.1	-0.9
MANT	**Manisa**	**0.97**	**204**	P	Pb	01 34 11.4	-0.1
MANT	**Manisa**	**0.97**	**204**	*i* P	Pb	01 34 11.4	-0.1
MANT				*i* S	Sg	01 34 21.0	-2.0
MDNY	**Mudanya-Bursa**	**1.00**	**352**	*e*PN	Pn	01 34 12.9	+0.1
MDNY	**Mudanya-Bursa**	**1.00**	**352**	*e*Pn	Pn	01 34 12.9	+0.1
KCTX	**Karacabey (Bur**	**1.04**	**329**	*e*PN	Pn	01 34 13.1	-0.3
KCTX				*e*SN	Sn	01 34 30.6	+2.0
KCTX	**Karacabey (Bur**	**1.04**	**329**	*e*Pn	Pn	01 34 13.1	-0.3
KCTX				*e*Sn	Sn	01 34 30.6	+2.0
KHAL	**Karahalli**	**1.06**	**161**	P	Pn	01 34 14.7	+0.8
KHAL				S	Sg	01 34 25.6	-0.3
KHAL	**Karahalli**	**1.06**	**161**	*i* P	Pn	01 34 14.7	+0.8
KHAL				*i* S	Sg	01 34 25.6	-0.3
AKHS	**Akhisar**	**1.09**	**243**	*i* P	Pn	01 34 17.9	+3.7
AKHS				*i* S	Sn	01 34 29.2	-0.7
AKS	**Akhisar**	**1.09**	**243**	*e*PG	Pg	01 34 07.9	-4.7
KHL	**Karahalli**	**1.12**	**161**	*e*PG	Pb	01 34 05.8	-8.0
ADVT	**Abdulvahap**	**1.17**	**26**	*e*PN	Pg	01 34 15.6	+1.4
ADVT	**Abdulvahap**	**1.17**	**26**	*e*Pn	Pg	01 34 15.6	+1.4
ARMT	**Armutlu**	**1.19**	**353**	*e*PN	Pg	01 34 16.1	+1.5
ARMT	**Armutlu**	**1.19**	**353**	*e*Pn	Pg	01 34 16.1	+1.5
GONE	**Gonen-Balikesi**	**1.25**	**303**	*e*PN	Pn	01 34 14.8	-1.6
GONE	**Gonen-Balikesi**	**1.25**	**303**	*e*Pn	Pn	01 34 14.8	-1.6
GPA	**Golpazari**	**1.32**	**46**	*e*PN	Pg	01 34 17.7	+0.7
GPA	**Golpazari**	**1.32**	**46**	*e*Pn	Pg	01 34 17.7	+0.7
EDC	**Edincik**	**1.33**	**317**	*e*PN	Pn	01 34 17.1	-0.3
EDC	**Edincik**	**1.33**	**317**	*e*Pn	Pn	01 34 17.2	-0.3
GULT	**Gulveren**	**1.53**	**46**	*e*PN	Pn	01 34 20.1	-0.2
GULT	**Gulveren**	**1.53**	**46**	*e*Pn	Pn	01 34 20.1	-0.2
SPNC	**Sapanca-Adapaz**	**1.62**	**36**	*e*PN	Pb	01 34 21.9	-0.5
SPNC	**Sapanca-Adapaz**	**1.62**	**36**	*e*Pn	Pb	01 34 21.9	-0.5
DENT	**Denizli**	**1.62**	**181**	*e*PN	Pn	01 34 13.9	-7.6
**IS

ERIK	**Erikli-Kesan**	**2.45**	**310**	*e*PN	**Pn**	**01 36 56.3**	**+1.4**
ERIK	**Erikli-Kesan**	**2.45**	**310**	*e*Pn	**Pn**	**01 36 56.3**	**+1.4**
PHSR	**Pinarhisar**	**2.74**	**336**	*e*PN	**Pn**	**01 37 00.2**	**+1.2**
PHSR	**Pinarhisar**	**2.74**	**336**	*e*Pn	**Pn**	**01 37 00.2**	**+1.2**
KDZE	**Karadeniz Ereo**	**2.88**	**40**	*e*PN	**Pn**	**01 37 02.8**	**+1.8**
KDZE	**Karadeniz Ereo**	**2.88**	**40**	*e*Pn	**Pn**	**01 37 02.8**	**+1.8**
TIRR	**Tirgusor**	**5.34**	**356**	⇑*i*P	**Pn**	**01 37 34.4**	**-0.3**
TIRR	**Tirgusor**	**5.34**	**356**	⇑*i*P	**Pn**	**01 37 34.4**	**-0.3**
CFR	**Carcaliu**	**6.08**	**354**	⇑*i*P	**Pn**	**01 37 43.9**	**-0.9**
CFR	**Carcaliu**	**6.08**	**354**	⇑*i*P	**Pn**	**01 37 43.9**	**-0.9**

GUC ***20*** *01:39:20.3±0.3, 30°.91S×71°.57W, h40km±1km, ML3.5*

ISC 20 01:39:14.5±2.0, 30°.98S±0°.03×71°.83W±0°.08, h3km±13km, n18, σ1º63/30, 9D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LSCH	**La Serena**	**1.18**	**25**	*e*P	**Pg**	**01 39 39.0**	**+1.9**
LSCH				*e*S	**Sn**	**01 39 53.0**	**-1.5**
TLL	**Tololo Astrono**	**1.20**	**48**	*e*P	**Pn**	**01 39 38.8**	**+0.4**
TLL				*e*S	**Sg**	**01 39 53.0**	**+0.1**
TLL				IAML		01 39 58.0	
	comp=E,3μm,0.4s						
LCO	**Las Campanas**	**2.19**	**27**	⇓*e*P	**Pb**	**01 39 54.2**	**-0.8**
LCO				⇓*e*S	**Sb**	**01 40 20.4**	**-2.2**
LCO	**Las Campanas**	**2.19**	**27**	*e*P	**Pb**	**01 39 53.7**	**-1.2**
LCO				*e*S	**Sn**	**01 40 19.4**	**-0.5**
LCO				IAML		01 40 26.0	
	comp=E,361nm,0.6s						
RTLS	**Leoncito**	**2.31**	**111**	*e*P	**Pg**	**01 39 58.8**	**0.0**
RTLS				⇓*e*S	**Sg**	**01 40 29.0**	**+0.2**
PEL	**Peldehue**	**2.36**	**156**	*e*P	**Pb**	**01 39 57.7**	**-0.1**
PEL				*e*S	**Sb**	**01 40 25.9**	**-1.5**
AUSP	**Uspallata**	**2.42**	**121**	⇓*e*P	**Pg**	**01 40 00.4**	**-0.5**
AUSP				⇓*e*S	**Sb**	**01 40 29.9**	**+0.6**
SJA	**San Juan**	**2.85**	**102**	⇓*e*P	**Sg**	**01 40 45.3**	**-0.8**
SJA				IAML		01 40 55.0	
	comp=Z,248nm,0.3s						
AMOG	**MOGNA**	**2.86**	**90**	⇓*e*P	**Pb**	**01 40 06.3**	**0.0**
AMOG				⇓*e*S	**Sg**	**01 40 46.1**	**-0.4**
RTLL	**Cerro Villicun**	**2.89**	**98**	*e*P	**Pb**	**01 40 07.0**	**+0.2**
RTCV	**Cerro Valdivia**	**2.94**	**108**	*e*P	**Pb**	**01 40 08.4**	**+0.8**
ASAL	**Salagasta**	**3.01**	**123**	*e*P	**Pb**	**01 40 09.2**	**+0.3**
ARCO	**CERRO ARCO**	**3.08**	**128**	*e*P	**Pb**	**01 40 10.7**	**+0.6**
ARCO				IAML		01 40 17.5	
	comp=Z,103nm,0.3s						
ARCO				*e*S	**Sg**	**01 40 51.5**	**-2.1**
AGUA	**GUANDACOL**	**3.25**	**64**	*e*P	**Pb**	**01 40 12.3**	**-0.6**
AGUA				*e*S	**Sb**	**01 40 52.7**	**-0.1**
AAGR	**Agrelo**	**3.30**	**130**	*e*P	**Pb**	**01 40 13.7**	**-0.1**
AAGR				⇓*e*S	**Sb**	**01 40 56.4**	**+2.0**
VCA	**Vinchina**	**3.86**	**55**	*e*P	**Pb**	**01 40 20.5**	**-2.8**
VCA				*e*S	**Sb**	**01 41 13.0**	**+2.5**
VCA				IAML		01 41 19.7	
	comp=Z,208nm,0.4s						
ACAN	**Cantantal**	**4.16**	**109**	*e*P	**Pb**	**01 40 23.9**	**-4.5**
CYA	**Choya**	**5.82**	**66**	*e*P	**Pn**	**01 40 44.4**	**+2.7**
CYA				IAML		01 42 15.8	
	comp=Z,17nm,0.6s						

JMA 20 01:40:30.6±0.2, 37°.39N×141°.96E, h26km±3km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.86**	**269**	P	Pb	01 40 46.7	-0.3
JFK				S	Sb	01 40 57.9	-0.3
ONAJ	**Iwakimizuishiy**	**0.97**	**253**	P	Pn	01 40 48.0	-0.6
ONAJ				S	Sb	01 41 00.6	-0.6
JMM	**Marumori**	**1.04**	**298**	P	Pn	01 40 49.5	0.0
JMM				S	Sb	01 41 01.3	-1.9
JIO	**Ouri**	**1.17**	**336**	P	Pn	01 40 51.1	-0.1
JIO				S	Sn	01 41 05.5	-0.8
JFT	**Otama**	**1.30**	**276**	P	Pb	01 40 53.9	-0.4
JFT				S	Sb	01 41 10.4	-0.2
JHO	**Hitachi**	**1.36**	**235**	P	Pn	01 40 53.7	-0.2
JOU	**Okura**	**1.41**	**314**	P	Pn	01 40 55.5	+0.8
JOU				S	Sb	01 41 14.2	+0.3
MAT	**Matsushiro**	**3.12**	**255**	P	Pn	01 41 21.1	+2.9
MAT				*e*S	Sn	01 41 53.7	-0.9

ISK ***20*** *01:41:38.6, 39°.17N×29°.04E, h5km, MD2.9*
ISCJB ***20*** *01:41:39.8±0.5, 39°.16N±0°.03×29°.03E±0°.03, h3km±7km, Error ellipse: s-maj=5.3km s-min=4.0km az=170.6*
DDA ***20*** *01:41:40.0, 39°.13N×29°.07E, h7km, Md2.6*
CSEM ***20*** *01:41:40.0±0.1, 39°.16N×29°.03E, h8km, MD2.6, Error ellipse: s-maj=3.4km s-min=3.3km az=126.0*

ISC 20 01:41:39.0±1.1, 39°.14N±0°.02×29°.11E±0°.02, h6km±10km, n44, σ0º79/59, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.29**	**101**	P	**Pb**	**01 41 47.1**	**+0.2**
GDZ				S	**Sb**	**01 41 52.2**	**+0.1**
GDZ	**Gediz**	**0.29**	**101**	*i* P	**Pb**	**01 41 47.1**	**+0.2**
GDZ				*i* S	**Sb**	**01 41 52.2**	**+0.1**
DEMI	**Demirci**	**0.32**	**252**	P	**Pg**	**01 41 45.9**	**+0.6**
DEMI				S	**Sg**	**01 41 49.6**	**0.0**
DEMI	**Demirci**	**0.32**	**252**	*i* P	**Pg**	**01 41 45.9**	**+0.6**
DEMI				*i* S	**Sg**	**01 41 49.6**	**0.0**
TVSB	**Tavsanli**	**0.41**	**42**	*e*PG	**Pb**	**01 41 48.3**	**-0.5**
TVSB				*e*SG	**Sb**	**01 41 54.9**	**-0.5**
TVSB	**Tavsanli**	**0.41**	**42**	*e*Pg	**Pb**	**01 41 48.3**	**-0.5**
TVSB				*e*Sg	**Sb**	**01 41 54.9**	**-0.5**
DURS	**Dursunbey**	**0.67**	**313**	*i* P	Pn	01 41 59.4	+4.2
DURS				*i* S	**Sn**	**01 42 07.2**	**+1.1**
MANT	**Manisa**	**0.78**	**214**	P	**Pg**	**01 41 53.8**	**-0.2**
MANT				S	**Sg**	**01 42 03.9**	**-0.3**
MANT	**Manisa**	**0.78**	**214**	*i* P	**Pg**	**01 41 53.8**	**-0.2**
MANT				*i* S	**Sg**	**01 42 03.9**	**-0.3**
KHAL	**Karahalli**	**0.83**	**159**	P	**Pn**	**01 41 58.1**	**+0.7**
KHAL	**Karahalli**	**0.83**	**159**	*i* P	**Pn**	**01 41 58.1**	**+0.7**
KHAL				*i* S	**Sn**	**01 42 11.2**	**+1.2**
KHL	**Karahalli**	**0.88**	**158**	*e*PG	**Pn**	**01 41 57.6**	**-0.5**
KHL	**Karahalli**	**0.88**	**158**	*e*Pg	**Pn**	**01 41 57.6**	**-0.5**
ORLT	**Orhaneli**	**0.92**	**350**	*e*PG	**Pb**	**01 41 56.7**	**-0.7**
ORLT	**Orhaneli**	**0.92**	**350**	*e*Pg	**Pb**	**01 41 56.7**	**-0.7**
AKS	**Akhisar**	**1.04**	**256**	*e*PG	**Pg**	**01 41 58.7**	**-0.4**
AKS	**Akhisar**	**1.04**	**256**	*e*Pg	**Pg**	**01 41 58.7**	**-0.4**
BALB	**Balikesir**	**1.07**	**298**	*e*PG	**Pg**	**01 41 59.4**	**-0.2**
BALB				*e*SG	**Sn**	**01 42 14.6**	**-1.3**
BALB	**Balikesir**	**1.07**	**298**	*e*Pg	**Pg**	**01 41 59.4**	**-0.2**
BALB				*e*Sg	**Sn**	**01 42 14.6**	**-1.3**
IGD	**Bursa**	**1.12**	**4**	*i* P	**Pn**	**01 42 00.8**	**-0.5**
IGD				*i* S	**Sn**	**01 42 17.6**	**+0.5**
CAVI	**Cavuskoy**	**1.20**	**28**	*e*PN	**Pg**	**01 42 02.8**	**+0.8**
CAVI				*e*SN	**Sn**	**01 42 20.9**	**+1.8**
CAVI	**Cavuskoy**	**1.20**	**28**	*e*Pn	**Pg**	**01 42 02.8**	**+0.8**
CAVI				*e*Sn	**Sn**	**01 42 20.9**	**+1.8**
IZI	**Iznik**	**1.22**	**13**	*e*PN	**Pg**	**01 42 03.1**	**+0.6**
IZI	**Iznik**	**1.22**	**13**	*e*Pn	**Pg**	**01 42 03.1**	**+0.6**
MDNY	**Mudanya-Bursa**	**1.24**	**352**	*e*PN	**Pg**	**01 42 02.5**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.24**	**352**	*e*Pn	**Pg**	**01 42 02.5**	**-0.2**
KCTX	**Karacabey (Bur**	**1.26**	**333**	*e*PN	**Pb**	**01 42 02.8**	**-0.5**
KCTX	**Karacabey (Bur**	**1.26**	**333**	*e*Pn	**Pb**	**01 42 02.8**	**-0.5**
BALY	**Balya**	**1.30**	**298**	P	**Pg**	**01 42 04.8**	**+0.9**
BALY	**Balya**	**1.30**	**298**	*i* P	**Pg**	**01 42 04.8**	**+0.9**
BALY				*i* S	**Sg**	**01 42 23.1**	**+2.4**
ADVT	**Abdulvahap**	**1.38**	**20**	*e*PN	**Pg**	**01 42 06.0**	**+0.6**
ADVT	**Abdulvahap**	**1.38**	**20**	*e*Pn	**Pg**	**01 42 06.0**	**+0.6**
GONE	**Gonen-Balikesi**	**1.42**	**310**	*e*PN	**Pb**	**01 42 05.7**	**-0.3**
GONE	**Gonen-Balikesi**	**1.42**	**310**	*e*Pn	**Pb**	**01 42 05.7**	**-0.3**
ARMT	**Armutlu**	**1.43**	**352**	*e*PN	**Pg**	**01 42 06.2**	**-0.3**
ARMT	**Armutlu**	**1.43**	**352**	*e*Pn	**Pg**	**01 42 06.2**	**-0.3**
EDC	**Edincik**	**1.54**	**322**	*e*PN	**Pb**	**01 42 07.5**	**-0.4**
EDC	**Edincik**	**1.54**	**322**	*e*Pn	**Pb**	**01 42 07.5**	**-0.4**
GULT	**Gulveren**	**1.68**	**40**	*e*PN	**Pg**	**01 42 10.5**	**-0.8**
GULT	**Gulveren**	**1.68**	**40**	*e*Pn	**Pg**	**01 42 10.5**	**-0.8**
SVRH	**Sivrihisar-ESK**	**1.90**	**80**	*e*PN	**Pg**	**01 42 14.4**	**-1.0**
SVRH	**Sivrihisar-ESK**	**1.90**	**80**	*e*Pn	**Pg**	**01 42 14.4**	**-1.0**
ISK	**Istanbul-Kandi**	**1.92**	**359**	*e*PN	**Pb**	**01 42 13.3**	**-1.1**
ISK	**Istanbul-Kandi**	**1.92**	**359**	*e*Pn	**Pb**	**01 42 13.3**	**-1.1**

DDA ***20*** *01:48:26.1, 39°.10N×29°.00E, h7km, Md3.0*
ISK ***20*** *01:48:26.1, 39°.10N×29°.02E, h5km, ML3.3*
CSEM ***20*** *01:48:27.2±0.1, 39°.09N×29°.02E, h2km, MD3.0, Error ellipse: s-maj=2.3km s-min=2.0km az=74.0*

ISC 20 01:48:26.5±1.0, 39°.11N±0°.02×29°.02E±0°.02, h5km±9km, n121, σ1º13/141, 8C-6D, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**255**	P	**Pg**	**01 48 30.8**	**-0.4**
DEMI				S	**Sg**	**01 48 34.3**	**-0.1**
DEMI	**Demirci**	**0.24**	**255**	*i* P	**Pg**	**01 48 30.8**	**-0.4**
DEMI				*i* S	**Sg**	**01 48 34.3**	**-0.1**
GDZ	**Gediz**	**0.36**	**92**	P	**Pg**	**01 48 33.9**	**+0.3**
GDZ				S	**Sg**	**01 48 39.2**	**+0.8**
GDZ	**Gediz**	**0.36**	**92**	*i* P	**Pg**	**01 48 33.9**	**+0.3**
GDZ				*i* S	**Sg**	**01 48 39.1**	**+0.8**
TVSB	**Tavsanli**	**0.49**	**45**	*e*PG	**Pg**	**01 48 36.5**	**+0.6**
TVSB	**Tavsanli**	**0.49**	**45**	*e*Pg	**Pg**	**01 48 36.5**	**+0.6**
KULA	**Kula-Manisa**	**0.65**	**205**	*e*PG	**Pb**	**01 48 40.0**	**-0.4**
KULA	**Kula-Manisa**	**0.65**	**205**	*e*Pg	**Pb**	**01 48 40.0**	**-0.4**
MANT	**Manisa**	**0.71**	**210**	P	**Pg**	**01 48 40.1**	**0.0**
MANT				S	**Sg**	**01 48 48.9**	**-0.4**
MANT	**Manisa**	**0.71**	**210**	*i* P	**Pg**	**01 48 40.1**	**0.0**
MANT				*i* S	**Sg**	**01 48 48.9**	**-0.4**
KHAL	**Karahalli**	**0.82**	**153**	P	**Pg**	**01 48 42.4**	**+0.2**
KHAL				S	**Sg**	**01 48 53.6**	**+0.7**
KHAL	**Karahalli**	**0.82**	**153**	*i* P	**Pg**	**01 48 42.4**	**+0.2**
KHAL				*i* S	**Sg**	**01 48 53.6**	**+0.7**
KHL	**Karahalli**	**0.88**	**153**	*e*PG	**Pb**	**01 48 43.9**	**-0.3**
KHL	**Karahalli**	**0.88**	**153**	*e*Pg	**Pb**	**01 48 43.9**	**-0.3**
ORLT	**Orhaneli**	**0.94**	**354**	*e*PG	**Pn**	**01 48 45.8**	**-0.6**
ORLT	**Orhaneli**	**0.94**	**354**	*e*Pg	**Pn**	**01 48 45.8**	**-0.6**
AKHS	**Akhisar**	**0.96**	**257**	P	**Pg**	**01 48 45.3**	**+0.4**
AKHS				S	**Sg**	**01 48 57.2**	**-0.2**
AKHS	**Akhisar**	**0.96**	**257**	*i* P	**Pg**	**01 48 45.3**	**+0.4**
AKHS				*i* S	**Sg**	**01 48 57.2**	**-0.2**
AKS	**Akhisar**	**0.96**	**257**	*e*PG	**Pg**	**01 48 45.3**	**+0.4**
AKS	**Akhisar**	**0.96**	**257**	*e*Pg	**Pg**	**01 48 45.3**	**+0.4**
BALB	**Balikesir**	**1.03**	**302**	*e*PG	**Pb**	**01 48 46.8**	**+0.1**
BALB	**Balikesir**	**1.03**	**302**	*e*Pg	**Pb**	**01 48 46.8**	**+0.1**
IGD	**Bursa**	**1.17**	**7**	*i* P	**Pb**	**01 48 47.3**	**-1.8**
IGD				*i* S	**Sb**	**01 49 00.2**	**-4.3**
KCTX	**Karacabey (Bur**	**1.27**	**337**	*e*PN	**Pg**	**01 48 51.6**	**+0.9**
KCTX	**Karacabey (Bur**	**1.27**	**337**	*e*Pn	**Pg**	**01 48 51.6**	**+0.9**
MDNY	**Mudanya-Bursa**	**1.27**	**355**	*e*PN	**Pg**	**01 48 51.6**	**+0.9**
MDNY				*e*SN	**Sn**	**01 49 09.5**	**+1.3**
MDNY	**Mudanya-Bursa**	**1.27**	**355**	*e*Pn	**Pg**	**01 48 51.6**	**+0.9**
MDNY				*e*Sn	**Sn**	**01 49 09.5**	**+1.3**
CAVI	**Cavuskoy**	**1.27**	**30**	*e*PN	**Pg**	**01 48 51.3**	**+0.5**
CAVI				*e*SN	**Sn**	**01 49 09.8**	**+1.5**
CAVI	**Cavuskoy**	**1.27**	**30**	*e*Pn	**Pg**	**01 48 51.3**	**+0.5**
CAVI				*e*Sn	**Sn**	**01 49 09.8**	**+1.5**
IZI	**Iznik**	**1.28**	**16**	*e*PN	**Pg**	**01 48 51.8**	**+0.8**
IZI	**Iznik**	**1.28**	**16**	*e*Pn	**Pg**	**01 48 51.8**	**+0.8**
GEMT	**Gemlik**	**1.33**	**6**	*e*PN	**Pg**	**01 48 52.7**	**+0.6**
GEMT	**Gemlik**	**1.33**	**6**	*e*Pn	**Pg**	**01 48 52.7**	**+0.6**
DENT	**Denizli**	**1.35**	**179**	*e*PN	**Pg**	**01 48 53.3**	**+1.0**
DENT	**Denizli**	**1.35**	**179**	*e*Pn	**Pg**	**01 48 53.3**	**+1.0**
BORA	**Eskisehir**	**1.36**	**55**	P	**Pn**	**01 48 51.7**	**-0.4**
BORA	**Eskisehir**	**1.36**	**55**	*i* P	**Pn**	**01 48 51.7**	**-0.4**
GONE	**Gonen-Balikesi**	**1.39**	**313**	*e*PN	**Pg**	**01 48 54.0**	**+0.8**
GONE	**Gonen-Balikesi**	**1.39**	**313**	*e*Pn	**Pg**	**01 48 54.0**	**+0.8**
DNZL	**Cakiroluk**	**1.41**	**179**	P	**Pb**	**01 48 53.6**	**+0.2**
DNZL	**Cakiroluk**	**1.41**	**179**	*i* P	**Pb**	**01 48 53.6**	**+0.2**
ADVT	**Abdulvahap**	**1.44**	**23**	*e*PN	**Pg**	**01 48 54.4**	**+0.4**
ADVT	**Abdulvahap**	**1.44**	**23**	*e*Pn	**Pg**	**01 48 54.4**	**+0.4**
AYDB	**Zeytinkoy-Aydi**	**1.45**	**218**	*e*PN	**Pb**	**01 48 54.2**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**1.45**	**218**	*e*Pn	**Pb**	**01 48 54.2**	**+0.1**
ARMT	**Armutlu**	**1.46**	**355**	*e*PN	**Pb**	**01 48 54.5**	**+0.3**
ARMT	**Armutlu**	**1.46**	**355**	*e*Pn	**Pb**	**01 48 54.5**	**+0.3**
ESKT	**Eskisehir**	**1.48**	**73**	*i* P	**Pn**	**01 48 53.9**	**0.0**
ESKT				*i* S	**Sn**	**01 49 10.4**	**-3.3**
SEYT	**Eskypehyr**	**1.48**	**73**	P	**Pn**	**01 48 53.9**	**0.0**
EDC	**Edincik**	**1.53**	**325**	*e*PN	**Pb**	**01 48 55.1**	**-0.1**
EDC	**Edincik**	**1.53**	**325**	*e*Pn	**Pb**	**01 48 55.1**	**-0.1**
GPA	**Golpazari**	**1.55**	**40**	*e*PN	**Pg**	**01 48 56.0**	**-0.2**
GPA	**Golpazari**	**1.55**	**40**	*e*Pn	**Pg**	**01 48 56.0**	**-0.2**
BOLV	**Bolvadin**	**1.56**	**104**	P	**Pg**	**01 48 56.2**	**-0.1**
BOLV				S	**Sg**	**01 49 17.2**	**+0.7**
BOLV	**Bolvadin**	**1.56**	**104**	*i* P	**Pg**	**01 48 56.2**	**-0.1**
BOLV				*i* S	**Sg**	**01 49 17.2**	**+0.7**
ISP	**Isparta**	**1.74**	**137**	*e*PN	**Pb**	**01 48 58.8**	**-0.2**
ISP	**Isparta**	**1.74**	**137**	⇑*i*P	**Pb**	**01 48 59.4**	**+0.4**
ISP				S	**Sb**	**01 49 20.1**	**-1.1**
ISP	**Isparta**	**1.74**	**137**	*e*Pn	**Pb**	**01 48 58.8**	**-0.2**
ISP	**Isparta**	**1.74**	**137**	⇑*i*P	**Pb**	**01 48 59.4**	**+0.4**
ISP				S	**Sb**	**01 49 20.1**	**-1.1**
GULT	**Gulveren**	**1.76**	**41**	*e*PN	**Pb**	**01 48 59.0**	**-0.3**
GULT	**Gulveren**	**1.76**	**41**	*e*Pn	**Pb**	**01 48 59.0**	**-0.3**
HRT	**Hereke**	**1.79**	**16**	*e*PN	**Pb**	**01 48 59.4**	**-0.3**
HRT	**Hereke**	**1.79**	**16**	*e*Pn	**Pb**	**01 48 59.4**	**-0.3**
KRBG	**Karabiga-Canak**	**1.85**	**315**	*e*PN	**Pb**	**01 49 00.3**	**-0.4**
KRBG	**Karabiga-Canak**	**1.85**	**315**	*e*Pn	**Pb**	**01 49 00.3**	**-0.4**
MRMT	**Marmara Adasi**	**1.85**	**324**	*e*PN	**Pb**	**01 49 00.8**	**0.0**
MRMT	**Marmara Adasi**	**1.85**	**324**	*e*Pn	**Pb**	**01 49 00.8**	**0.0**
SPNC	**Sapanca-Adapaz**	**1.87**	**32**	*e*PN	**Pb**	**01 49 00.7**	**-0.3**
SPNC	**Sapanca-Adapaz**	**1.87**	**32**	*e*Pn	**Pb**	**01 49 00.7**	**-0.3**
ISK	**Istanbul-Kandi**	**1.96**	**1**	*e*PN	**Pb**	**01 49 02.0**	**-0.6**
ISK	**Istanbul-Kandi**	**1.96**	**1**	*e*Pn	**Pb**	**01 49 02.0**	**-0.6**
SVRH	**Sivrihisar-ESK**	**1.98**	**79**	*e*PN	**Pb**	**01 49 01.9**	**-1.0**
SVRH	**Sivrihisar-ESK**	**1.98**	**79**	*e*Pn	**Pb**	**01 49 01.9**	**-1.0**
GLHS	**Glhisar (BURDU**	**1.98**	**169**	*e*PN	**Pb**	**01 49 02.0**	**-1.0**
GLHS	**Glhisar (BURDU**	**1.98**	**169**	*e*Pn	**Pb**	**01 49 02.0**	**-1.0**
YER	**Yerkesik**	**2.05**	**197**	*e*PN	**Pb**	**01 49 02.9**	**-1.3**
YER	**Yerkesik**	**2.05**	**197**	*e*Pn	**Pb**	**01 49 02.9**	**-1.3**
BGKT	**Bogazkoy**	**2.08**	**355**	*e*PN	**Pb**	**01 49 03.8**	**-0.9**
BGKT	**Bogazkoy**	**2.08**	**355**	*e*Pn	**Pb**	**01 49 03.8**	**-0.9**
RKY	**Sarkoy-Tekirda**	**2.12**	**319**	*e*PN	**Pb**	**01 49 04.6**	**-0.8**
RKY	**Sarkoy-Tekirda**	**2.12**	**319**	*e*Pn	**Pb**	**01 49 04.6**	**-0.8**
KLYT	**Kilyos**	**2.15**	**1**	*e*PN	**Pb**	**01 49 04.6**	**-1.2**
KLYT	**Kilyos**	**2.15**	**1**	*e*Pn	**Pb**	**01 49 04.6**	**-1.2**
LPK	**Lapseki**	**2.15**	**307**	*e*PN	**Pb**	**01 49 04.6**	**-1.2**
LPK	**Lapseki**	**2.15**	**307**	*e*Pn	**Pb**	**01 49 04.6**	**-1.2**
CTKS	**Kestanelik-??a**	**2.17**	**350**	*e*PN	**Pb**	**01 49 04.8**	**-1.3**
CTKS	**Kestanelik-??a**	**2.17**	**350**	*e*Pn	**Pb**	**01 49 04.8**	**-1.3**
MDUB	**Mudurnu**	**2.17**	**50**	*e*PN	**Pn**	**01 49 04.4**	**+1.2**
MDUB	**Mudurnu**	**2.17**	**50**	*e*Pn	**Pn**	**01 49 04.4**	**+1.2**
TKR	**Tekirdag**	**2.20**	**329**	*e*PN	**Pb**	**01 49 05.5**	**-1.2**
TKR	**Tekirdag**	**2.20**	**329**	*e*Pn	**Pb**	**01 49 05.5**	**-1.2**
EZN	**Ezine**	**2.20**	**290**	*e*PN	**Pb**	**01 49 05.5**	**-1.2**
EZN	**Ezine**	**2.20**	**290**	*e*Pn	**Pb**	**01 49 05.5**	**-1.2**
KIZT	**Kizilcal**	**2.24**	**95**	*e*PN	**Pb**	**01 49 06.2**	**-1.3**
KIZT	**Kizilcal**	**2.24**	**95**	*e*Pn	**Pb**	**01 49 06.2**	**-1.3**
CRLT	**Corlu**	**2.25**	**335**	*e*PN	**Pb**	**01 49 06.2**	**-1.3**
CRLT	**Corlu**	**2.25**	**335**	*e*Pn	**Pb**	**01 49 06.2**	**-1.3**
SUTC	**Sutluce-Ispart**	**2.25**	**136**	*e*PN	**Pn**	**01 49 05.7**	**+1.2**
SUTC	**Sutluce-Ispart**	**2.25**	**136**	*e*Pn	**Pn**	**01 49 05.7**	**+1.2**
GELI	**Tayfur-Gelibol**	**2.35**	**304**	*e*PN	**Pn**	**01 49 07.2**	**+1.6**
GELI	**Tayfur-Gelibol**	**2.35**	**304**	*e*Pn	**Pn**	**01 49 07.2**	**+1.6**
CTYL	**Yalikoy Yolu**	**2.43**	**347**	*e*PN	**Pb**	**01 49 08.8**	**-1.9**
CTYL	**Yalikoy Yolu**	**2.43**	**347**	*e*Pn	**Pb**	**01 49 08.8**	**-1.9**
ERIK	**Erikli-Kesan**	**2.48**	**310**	*e*PN	**Pb**	**01 49 09.4**	**-2.1**
ERIK	**Erikli-Kesan**	**2.48**	**310**	*e*Pn	**Pb**	**01 49 09.4**	**-2.1**
LADK	**Ladik-KONYA**	**2.77**	**108**	*e*PN	**Pn**	**01 49 13.3**	**+1.7**
LADK	**Ladik-KONYA**	**2.77**	**108**	*e*Pn	**Pn**	**01 49 13.3**	**+1.7**
KDZE	**Karadeniz Ereo**	**2.88**	**39**	*e*PN	**Pn**	**01 49 14.8**	**+1.8**
KDZE	**Karadeniz Ereo**	**2.88**	**39**	*e*Pn	**Pn**	**01 49 14.8**	**+1.8**
TIRR	**Tirgusor**	**5.37**	**355**	⇓*i*P	**Pn**	**01 49 46.8**	**-0.3**
TIRR	**Tirgusor**	**5.37**	**355**	⇓*i*P	**Pn**	**01 49 46.8**	**-0.3**
CFR	**Carcaliu**	**6.10**	**354**	⇑*i*P	**Pn**	**01 49 56.8**	**-0.4**
CFR	**Carcaliu**	**6.10**	**354**	⇑*i*P	**Pn**	**01 49 56.8**	**-0.4**
MLR	**Muntele Rosu**	**6.78**	**341**	⇑*i*P	**Pn**	**01 50 09.1**	**+2.5**
MLR	**Muntele Rosu**	**6.78**	**341**	⇑*i*P	**Pn**	**01 50 09.1**	**+2.5**
PLOR	**Plostina**	**6.96**	**346**	⇓*i*P	**Pn**	**01 50 10.9**	**+1.8**
PLOR	**Plostina**	**6.96**	**346**	⇓*i*P	**Pn**	**01 50 10.9**	**+1.8**
VRI	**Vrincioaia**	**6.96**	**347**	⇓*i*P	**Pn**	**01 50 11.5**	**+2.4**
VRI	**Vrincioaia**	**6.96**	**347**	⇓*i*P	**Pn**	**01 50 11.5**	**+2.4**
DOPR	**Dopca**	**7.36**	**340**	⇑*i*P	**Pn**	**01 50 17.0**	**+2.5**
DOPR	**Dopca**	**7.36**	**340**	⇑*i*P	**Pn**	**01 50 17.0**	**+2.5**

DDA ***20*** *01:55:40.8, 39°.12N×29°.01E, h7km, Md2.4*
ISK ***20*** *01:55:40.6, 39°.12N×28°.96E, h5km, MD2.8*
CSEM ***20*** *01:55:41.0±0.1, 39°.12N×28°.97E, h2km, MD2.4, Error ellipse: s-maj=2.6km s-min=2.3km az=53.0*

ISC 20 01:55:40.7±0.9, 39°.12N±0°.02×28°.97E±0°.02, h15km±7km, n41, σ0º45/56, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.21**	**249**	P	**Pg**	**01 55 45.8**	**+0.3**
DEMI				S	**Sg**	**01 55 49.0**	**+0.3**
DEMI	**Demirci**	**0.21**	**249**	*i* P	**Pg**	**01 55 45.8**	**+0.3**
DEMI				*i* S	**Sg**	**01 55 49.0**	**+0.3**
GDZ	**Gediz**	**0.40**	**94**	P	**Pg**	**01 55 48.2**	**-0.6**
GDZ				S	**Sg**	**01 55 53.8**	**-0.6**
GDZ	**Gediz**	**0.40**	**94**	*i* P	**Pg**	**01 55 48.2**	**-0.6**
GDZ				*i* S	**Sg**	**01 55 53.8**	**-0.6**
TVSB	**Tavsanli**	**0.51**	**49**	*e*PG	**Pg**	**01 55 50.6**	**-0.2**
TVSB	**Tavsanli**	**0.51**	**49**	*e*Pg	**Pg**	**01 55 50.6**	**-0.2**
DURS	**Dursunbey**	**0.61**	**322**	P	**Pb**	**01 55 53.1**	**-0.2**
DURS				S	**Sb**	**01 56 01.6**	**-0.2**
DURS	**Dursunbey**	**0.61**	**322**	*i* P	**Pb**	**01 55 53.1**	**-0.2**
DURS				*i* S	**Sb**	**01 56 01.6**	**-0.2**
MANT	**Manisa**	**0.70**	**207**	P	**Pb**	**01 55 54.8**	**-0.1**
MANT				S	**Sg**	**01 56 03.6**	**-0.2**
MANT	**Manisa**	**0.70**	**207**	*i* P	**Pb**	**01 55 54.8**	**-0.1**
MANT				*i* S	**Sg**	**01 56 03.6**	**-0.2**
KHAL	**Karahalli**	**0.85**	**151**	P	**Pb**	**01 55 57.5**	**+0.1**
KHAL	

MANT					S		Sg	02 04 14.3	-0.8
MANT	**Manisa**	**0.63**	**163**	*i*	P		Pg	02 04 06.7	-0.3
MANT					*i* S		Sg	02 04 14.3	-0.8
BALB	**Balikesir**	**0.65**	**328**	*e*	PG		Pg	02 04 07.2	-0.3
BALB					*e*SG		Sg	02 04 16.7	+0.8
BALB	**Balikesir**	**0.65**	**328**	*e*	Pg		Pg	02 04 07.2	-0.3
BALB					*e*Sg		Sg	02 04 16.7	+0.8
GDZ	**Gediz**	**0.90**	**90**		P		Pg	02 04 11.7	-0.4
GDZ					S		Sg	02 04 23.8	0.0
GDZ	**Gediz**	**0.90**	**90**	*i*	P		Pg	02 04 11.7	-0.4
GDZ					*i* S		Sg	02 04 23.8	0.0
TVSB	**Tavsanli**	**0.95**	**68**	*e*	PG		Pg	02 04 13.5	+0.3
TVSB	**Tavsanli**	**0.95**	**68**	*e*	Pg		Pg	02 04 13.5	+0.3
GONE	**Gonen-Balikesi**	**1.08**	**333**	*e*	PG		Pg	02 04 15.2	-0.4
GONE	**Gonen-Balikesi**	**1.08**	**333**	*e*	Pg		Pg	02 04 15.2	-0.4
KCTX	**Karacabey (Bur**	**1.17**	**1**	*e*	PN		Pg	02 04 17.1	-0.4
KCTX	**Karacabey (Bur**	**1.17**	**1**	*e*	Pn		Pg	02 04 17.1	-0.4
KHL	**Karahalli**	**1.21**	**129**	*e*	PN		Pb	02 04 19.8	+0.9
KHL	**Karahalli**	**1.21**	**129**	*e*	Pn		Pn	02 04 19.8	+0.9
EDC	**Edincik**	**1.30**	**344**	*e*	PN		Pg	02 04 19.2	-0.8
EDC	**Edincik**	**1.30**	**344**	*e*	Pn		Pg	02 04 19.2	-0.8
MDNY	**Mudanya-Bursa**	**1.34**	**18**	*e*	PN		Pg	02 04 20.1	-0.7
MDNY	**Mudanya-Bursa**	**1.34**	**18**	*e*	Pn		Pg	02 04 20.1	-0.7
AYDN	**Tasoluk**	**1.47**	**194**		P		Pn	02 04 22.1	-0.4
AYDN					S		Sg	02 04 41.5	-0.8
AYDN	**Tasoluk**	**1.47**	**194**	*i*	P		Pn	02 04 22.1	-0.4
AYDN					*i* S		Sg	02 04 41.5	-0.8
IZI	**Iznik**	**1.52**	**35**	*e*	PN		Pg	02 04 23.8	-0.4
IZI	**Iznik**	**1.52**	**35**	*e*	Pn		Pg	02 04 23.8	-0.4
ARMT	**Armutlu**	**1.53**	**15**	*e*	PN		Pn	02 04 23.5	+0.2
ARMT	**Armutlu**	**1.53**	**15**	*e*	Pn		Pn	02 04 23.5	+0.2
CAVI	**Cavuskoy**	**1.61**	**46**	*e*	PN		Pn	02 04 24.6	+0.2
CAVI				*e*	SN		Sn	02 04 45.4	-0.3
CAVI	**Cavuskoy**	**1.61**	**46**	*e*	Pn		Pn	02 04 24.6	+0.2
CAVI				*e*	Sn		Sn	02 04 45.4	-0.3
ADVT	**Abdulvahap**	**1.72**	**39**	*e*	PN		Pn	02 04 26.7	+0.8
ADVT	**Abdulvahap**	**1.72**	**39**	*e*	Pn		Pn	02 04 26.7	+0.8
ISK	**Istanbul-Kandi**	**2.05**	**16**	*e*	PN		Pn	02 04 30.4	0.0
ISK	**Istanbul-Kandi**	**2.05**	**16**	*e*	Pn		Pn	02 04 30.4	0.0
GULT	**Gulveren**	**2.15**	**51**	*e*	PN		Pn	02 04 32.5	+0.6
GULT	**Gulveren**	**2.15**	**51**	*e*	Pn		Pn	02 04 32.5	+0.6
SPNC	**Sapanca-Adapaz**	**2.20**	**43**	*e*	PN		Pn	02 04 33.0	+0.5
SPNC	**Sapanca-Adapaz**	**2.20**	**43**	*e*	Pn		Pn	02 04 33.0	+0.5
SVRH	**Sivrihisar-ESK**	**2.50**	**81**	*e*	PN		Pn	02 04 38.2	+1.5
SVRH	**Sivrihisar-ESK**	**2.50**	**81**	*e*	Pn		Pn	02 04 38.2	+1.5

*DDA **20** 02:07:03.4, 39°.11N×29°.07E, h7km, Md2.2*
*ISCJB **20** 02:07:04.0±0.5, 39°.08N±0°.03×28°.98E±0°.04, h9km±5km,*
Error ellipse: s-maj=5.2km s-min=4.8km az=44.9
*ISK **20** 02:07:04.1, 39°.08N×28°.95E, h13km, MD2.7*
*CSEM **20** 02:07:04.2±0.1, 39°.08N×28°.97E, h10km, MD2.2, Error*
ellipse: s-maj=2.5km s-min=2.2km az=107.0
ISC 20 02:07:04.1±0.9, **39°.06N**±0°.03×**28°.98E**±0°.02, **h14**km±8km,
n40, σ0°**38**/50, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.21**	**265**	P	**Pg**	**02 07 09.1**	**+0.2**
DEMI				S	**Sg**	**02 07 12.1**	**0.0**
DEMI	**Demirci**	**0.21**	**265**	*i* P	**Pg**	**02 07 09.1**	**+0.2**
DEMI				*i* S	**Sg**	**02 07 12.1**	**0.0**
GDZ	**Gediz**	**0.39**	**86**	S	**Sg**	**02 07 17.0**	**-0.4**
GDZ	**Gediz**	**0.39**	**86**	*i* P	Pg	02 07 02.8	-9.2
GDZ				*i* S	**Sg**	**02 07 17.0**	**-0.4**
TVSB	**Tavsanli**	**0.54**	**43**	*e* PG	**Pb**	**02 07 15.4**	**+0.1**
TVSB	**Tavsanli**	**0.54**	**43**	*e* Pg	**Pb**	**02 07 15.5**	**+0.1**
MANT	**Manisa**	**0.66**	**211**	P	**Pb**	**02 07 17.8**	**+0.3**
MANT				S	**Sb**	**02 07 26.5**	**-0.1**
MANT	**Manisa**	**0.66**	**211**	*i* P	**Pb**	**02 07 17.8**	**+0.3**
MANT				*i* S	**Sb**	**02 07 26.4**	**-0.1**
DURS	**Dursunbey**	**0.67**	**324**	P	**Pg**	**02 07 16.3**	**-0.9**
DURS	**Dursunbey**	**0.67**	**324**	*i* P	**Pg**	**02 07 16.3**	**-0.9**
KHAL	**Karahalli**	**0.80**	**150**	P	**Pg**	**02 07 19.3**	**-0.3**
KHAL				S	**Sb**	**02 07 30.6**	**+0.2**
KHAL	**Karahalli**	**0.80**	**150**	*i* P	**Pg**	**02 07 19.3**	**-0.3**
KHAL				*i* S	**Sb**	**02 07 30.6**	**+0.2**
KHL	**Karahalli**	**0.85**	**150**	*e* PG	**Pn**	**02 07 21.7**	**0.0**
KHL	**Karahalli**	**0.85**	**150**	*e* Pg	**Pn**	**02 07 21.7**	**0.0**
AKHS	**Akhisar**	**0.93**	**259**	P	**Pn**	**02 07 22.7**	**-0.1**
AKHS	**Akhisar**	**0.93**	**259**	*i* P	**Pn**	**02 07 22.7**	**-0.1**
AKS	**Akhisar**	**0.93**	**259**	*e* PG	**Pb**	**02 07 21.7**	**-0.3**
AKS	**Akhisar**	**0.93**	**259**	*e* Pg	**Pb**	**02 07 21.7**	**-0.3**
BALB	**Balikesir**	**1.03**	**304**	*e* PG	**Pg**	**02 07 24.0**	**-0.1**
BALB				*e*SG	**Sg**	**02 07 37.8**	**+0.2**
BALB	**Balikesir**	**1.03**	**304**	*e* Pg	**Pg**	**02 07 24.0**	**-0.1**
BALB				*e*Sg	**Sg**	**02 07 37.8**	**+0.2**
KCTX	**Karacabey (Bur**	**1.30**	**338**	*e* PN	**Pb**	**02 07 28.5**	**+0.2**
KCTX	**Karacabey (Bur**	**1.30**	**338**	*e* Pn	**Pb**	**02 07 28.5**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.31**	**357**	*e* PN	**Pn**	**02 07 28.0**	**0.0**
MDNY	**Mudanya-Bursa**	**1.31**	**357**	*e* Pn	**Pn**	**02 07 28.0**	**0.0**
CAVI	**Cavuskoy**	**1.32**	**30**	*e* PN	**Pn**	**02 07 28.5**	**+0.3**
CAVI				*e*SN	**Sg**	**02 07 47.1**	**+0.4**
CAVI	**Cavuskoy**	**1.32**	**30**	*e* Pn	**Pn**	**02 07 28.5**	**+0.3**
CAVI				*e*Sn	**Sg**	**02 07 47.1**	**+0.4**
IZI	**Iznik**	**1.33**	**16**	*e* PN	**Pn**	**02 07 28.2**	**-0.1**
IZI	**Iznik**	**1.33**	**16**	*e* Pn	**Pn**	**02 07 28.2**	**-0.1**
GEMT	**Gemlik**	**1.38**	**6**	*e* PN	**Pn**	**02 07 29.3**	**+0.3**
GEMT	**Gemlik**	**1.38**	**6**	*e* Pn	**Pn**	**02 07 29.3**	**+0.3**
ADVT	**Abdulvahap**	**1.49**	**23**	*e* PN	**Pb**	**02 07 31.1**	**-0.5**
ADVT	**Abdulvahap**	**1.49**	**23**	*e* Pn	**Pb**	**02 07 31.1**	**-0.5**
ARMT	**Armutlu**	**1.51**	**356**	*e* PN	**Pn**	**02 07 31.1**	**+0.4**
ARMT	**Armutlu**	**1.51**	**356**	*e* Pn	**Pn**	**02 07 31.1**	**+0.4**
EDC	**Edincik**	**1.55**	**326**	*e* PN	**Pn**	**02 07 31.7**	**+0.4**
EDC	**Edincik**	**1.55**	**326**	*e* Pn	**Pn**	**02 07 31.7**	**+0.4**
GULT	**Gulveren**	**1.81**	**40**	*e* PN	**Pn**	**02 07 35.8**	**+0.9**
GULT	**Gulveren**	**1.81**	**40**	*e* Pn	**Pn**	**02 07 35.8**	**+0.9**
SPNC	**Sapanca-Adapaz**	**1.92**	**32**	*e* PN	**Pn**	**02 07 36.8**	**+0.5**
SPNC	**Sapanca-Adapaz**	**1.92**	**32**	*e* Pn	**Pn**	**02 07 36.8**	**+0.5**

*IDC **20** 02:07:08.5±0.9, 23°.01S×175°.14W, h0km, mb4.0/10,*
mb1 4.2/10, mb1mx4.0/31, mbtmp4.0/10, Error ellipse:
s-maj=47.3km s-min=18.6km az=150.0
*ISCJB **20** 02:07:13.1±0.6, 22°.7S±0°.2×175°.4W±0°.1, h34km, mb4.0/11,*
Error ellipse: s-maj=26.4km s-min=15.4km az=148.6
*NEIC **20** 02:07:24.1±2.7, 22°.74S×175°.45W, h118km±22km, mb4.4/1,*
Error ellipse: s-maj=23.0km s-min=13.8km az=137.0
ISC 20 02:07:14.4±0.6, **22°.7S**±0°.2×**175°.4W**±0°.2, **h34**km, **n21,**
σ1°**12**/20, **mb3.9**/11, **1C, Tonga Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSVF	**Nonsavu**	**7.92**	**307**	*e* Pn	Pn	02 09 15.9	+8.7
	23nm,0.6s						
CTA	**Charters Tower**	**35.77**	**267**	P	**P**	**02 14 12.6**	**+2.1**
	4.5nm,0.9s,baz=75,slow=17,SNR=2.4						
CTAO	**Charters Tower**	**35.77**	**267**	*e* P	**P**	**02 14 12.1**	**+1.6**
	7.0nm,0.4s						
STKA	**Stephens Creek**	**39.12**	**247**	P	**P**	**02 14 37.0**	**-1.8**
	0.9nm,0.4s,baz=159,slow=15,SNR=2.8						
ASAR	**Alice Springs**	**46.44**	**258**	P	**P**	**02 15 38.7**	**+0.4**
	0.9nm,0.7s,baz=100,slow=7.6,SNR=8.2						
WRA	**Warramunga Arr**	**46.76**	**263**	P	**P**	**02 15 41.4**	**+0.6**
	0.3nm,0.4s,baz=92,slow=8.4,SNR=15						
QSPA	**South Pole Qui**	**67.38**	**180**	*e* P	**P**	**02 18 07.8**	**+1.7**
	2.7nm,0.5s						
MAW	**Mawson**	**80.32**	**199**	P	**P**	**02 19 20.0**	**-1.6**
	2.4nm,0.8s,baz=227,slow=20,SNR=2.7						
MNAI	**Manna**	**80.67**	**269**	*e* P	**P**	**02 19 23.6**	**-0.9**
NVAR	**Mina Array Bea**	**80.97**	**42**	P	**P**	**02 19 26.6**	**+0.8**
	0.5nm,0.5s,baz=224,slow=9.1,SNR=4.3						
SNAA	**Sanae**	**85.74**	**178**	*e* P	**P**	**02 19 49.9**	**+0.1**
TXAR	**Lajitas Array**	**86.20**	**56**	P	**P**	**02 19 53.1**	**+0.4**
	0.8nm,0.9s,baz=223,slow=8.5,SNR=8.8						
PDAR	**Pinedale Array**	**88.91**	**42**	P	**P**	**02 20 05.0**	**-0.5**
	0.2nm,0.4s,baz=227,slow=5.5,SNR=3.9						
ILAR	**Eielson Array**	**89.93**	**12**	P	**P**	**02 20 09.5**	**-0.1**
	0.7nm,1.0s,baz=199,slow=7.6,SNR=3.6						
YKA	**Yellowknife Ar**	**97.49**	**24**	P	**P**	**02 20 43.6**	**-0.7**
	0.3nm,0.8s,baz=238,slow=3.5,SNR=4.9						
EKS2	**Erkin-Say**	**120.11**	**307**	*e*PKPdf	**PKPdf**	**02 26 00.7**	**-1.2**
AKASG	**Malin Array Be**	**146.11**	**332**	PKPbc	**PKPbc**	**02 26 50.4**	**-0.3**
	0.4nm,0.3s,baz=38,slow=4.1,SNR=4.9						
BRTR	**Keskin Array B**	**150.13**	**311**	PKPbc	**PKPbc**	**02 27 02.1**	**+0.1**
	0.8nm,0.8s,baz=114,slow=3.1,SNR=4.9						
CLL	**Collm**	**150.72**	**349**	⇑*i* P	**PKPbc**	**02 27 03.3**	**+0.5**
	comp=Z,6.0nm,0.9s						
CLL				*i*		02 27 16.6	
BRG	**Berggiesshubel**	**150.96**	**348**	*e* P	**PKPbc**	**02 27 04.4**	**+1.0**
	comp=Z,4.3nm,0.8s						
GERES	**GERESS Array B**	**152.94**	**347**	PKPbc	**PKPbc**	**02 27 08.3**	**+0.1**
	comp=Z,0.5nm,0.6s,baz=42,slow=2.2,SNR=6.4						

*ISCJB **20** 02:07:38.8±0.5, 39°.13N±0°.03×29°.00E±0°.03, h9km±5km,*
Error ellipse: s-maj=5.1km s-min=4.4km az=154.9
*DDA **20** 02:07:38.0, 39°.20N×28°.98E, h7km, Md2.2*
*CSEM **20** 02:07:38.3±0.2, 39°.06N×29°.03E, h10km, MD2.2, Error*
ellipse: s-maj=5.2km s-min=3.4km az=146.0
*ISK **20** 02:07:39.9, 39°.23N×29°.04E, h6km, MD2.7*
ISC 20 02:07:38.7±0.9, **39°.12N**±0°.03×**28°.99E**±0°.02, **h10**km±8km,
n26, σ0°**60**/39, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.23**	**250**	P	**Pg**	**02 07 43.7**	**+0.2**
DEMI				S	**Sg**	**02 07 46.9**	**+0.2**
DEMI	**Demirci**	**0.23**	**250**	*i* P	**Pg**	**02 07 43.7**	**+0.2**
DEMI				*i* S	**Sg**	**02 07 46.9**	**+0.2**
GDZ	**Gediz**	**0.38**	**95**	P	**Pg**	**02 07 46.1**	**-0.2**
GDZ				S	**Sg**	**02 07 51.7**	**+0.3**
GDZ	**Gediz**	**0.38**	**95**	*i* P	**Pg**	**02 07 46.1**	**-0.2**
GDZ				*i* S	**Sg**	**02 07 51.7**	**+0.3**
TVSB	**Tavsanli**	**0.49**	**48**	*e* PG	**Pg**	**02 07 47.8**	**-0.5**
TVSB				*e*SG	**Sg**	**02 07 54.0**	**-0.8**
TVSB	**Tavsanli**	**0.49**	**48**	*e* Pg	**Pg**	**02 07 47.8**	**-0.5**
TVSB				*e*Sg	**Sg**	**02 07 54.0**	**-0.8**
MANT	**Manisa**	**0.72**	**208**	P	**Sg**	**02 07 50.9**	**-1.7**
MANT				S	**Sg**	**02 08 02.2**	**+0.2**
MANT	**Manisa**	**0.72**	**208**	*i* P	**Pg**	**02 07 50.9**	**-1.7**
MANT				*i* S	**Sg**	**02 08 02.2**	**+0.2**
KHAL	**Karahalli**	**0.85**	**152**	*i* P	**Pn**	**02 07 56.8**	**0.0**
KHAL				*i* S	**Sb**	**02 08 06.7**	**-0.4**
KHL	**Karahalli**	**0.90**	**152**	*e* PG	**Pn**	**02 07 59.4**	**+1.8**
AKHS	**Akhisar**	**0.95**	**255**	P	**Pg**	**02 07 56.5**	**-0.5**
AKHS	**Akhisar**	**0.95**	**255**	*i* P	**Pg**	**02 07 56.5**	**-0.5**
BALB	**Balikesir**	**1.00**	**301**	*e* PG	**Pn**	**02 07 59.1**	**+0.2**
BALB				*e*SG	**Sn**	**02 08 13.3**	**+0.3**
BALB	**Balikesir**	**1.00**	**301**	*e* Pg	**Pn**	**02 07 59.1**	**+0.2**
BALB				*e*Sg	**Sn**	**02 08 13.4**	**+0.3**
KCTX	**Karacabey (Bur**	**1.24**	**337**	*e* PN	**Pn**	**02 08 02.3**	**+0.1**
KCTX	**Karacabey (Bur**	**1.24**	**337**	*e* Pn	**Pn**	**02 08 02.3**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.25**	**356**	*e* PN	**Pb**	**02 08 02.6**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.25**	**356**	*e* Pn	**Pb**	**02 08 02.6**	**+0.2**
CAVI	**Cavuskoy**	**1.26**	**31**	*e* PN	**Pb**	**02 08 02.8**	**+0.2**
CAVI				*e*SN	**Sb**	**02 08 18.9**	**-0.1**
CAVI	**Cavuskoy**	**1.26**	**31**	*e* Pn	**Pb**	**02 08 02.8**	**+0.2**
CAVI				*e*Sn	**Sb**	**02 08 18.9**	**-0.1**
ADVT	**Abdulvahap**	**1.43**	**23**	*e* PN	**Pb**	**02 08 05.5**	**0.0**
ADVT	**Abdulvahap**	**1.43**	**23**	*e* Pn	**Pb**	**02 08 05.5**	**0.0**
ARMT	**Armutlu**	**1.44**	**356**	*e* PN	**Pb**	**02 08 05.9**	**+0.2**
ARMT	**Armutlu**	**1.44**	**356**	*e* Pn	**Pb**	**02 08 05.9**	**+0.2**
EDC	**Edincik**	**1.50**	**325**	*e* PN	**Pb**	**02 08 06.8**	**+0.1**
EDC	**Edincik**	**1.50**	**325**	*e* Pn	**Pb**	**02 08 06.8**	**+0.1**

*ISK **20** 02:10:26.9, 39°.13N×29°.01E, h6km, ML3.4*
*DDA **20** 02:10:26.7, 39°.12N×29°.02E, h15km, Ml3.9*
*ISCJB **20** 02:10:27.1±0.3, 39°.13N±0°.01×29°.00E±0°.02, h7km±3km,*
Error ellipse: s-maj=2.6km s-min=2.3km az=36.8
*CSEM **20** 02:10:27.2±0.1, 39°.12N×29°.01E, h5km, ML3.9, Error*
ellipse: s-maj=2.0km s-min=1.8km az=101.0
*THE **20** 02:10:28.0, 39°.10N×28°.96E, h3km±2km, ML3.1/5, Error*
ellipse: s-maj=3.2km s-min=0.9km az=108.0
ISC 20 02:10:27.5±0.9, **39°.12N**±0°.02×**29°.00E**±0°.01, **h10**km±7km,
n152, σ0°**84**/202, **12C-9D, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**251**	P	**Pg**	**02 10 32.6**	**+0.2**
DEMI				S	**Sg**	**02 10 35.9**	**+0.2**
DEMI	**Demirci**	**0.24**	**251**	*i* P	**Pg**	**02 10 32.6**	**+0.2**
DEMI				*i* S	**Sg**	**02 10 35.9**	**+0.2**
GDZ	**Gediz**	**0.37**	**95**	P	**Sg**	**02 10 34.7**	**-0.2**
GDZ				S	**Sg**	**02 10 39.9**	**0.0**
GDZ	**Gediz**	**0.37**	**95**	*i* P	**Sg**	**02 10 34.7**	**-0.2**
GDZ				*i* S	**Sg**	**02 10 39.9**	**0.0**
TVSB	**Tavsanli**	**0.48**	**47**	*e* PG	**Pg**	**02 10 36.6**	**-0.3**
TVSB				*e*SG	**Sg**	**02 10 43.0**	**-0.3**
TVSB	**Tavsanli**	**0.48**	**47**	*e* Pg	**Pg**	**02 10 36.6**	**-0.3**
TVSB				*e*Sg	**Sg**	**02 10 43.0**	**-0.3**
DURS	**Dursunbey**	**0.63**	**319**	P	**Pg**	**02 10 39.5**	**-0.2**
DURS				S	**Sg**	**02 10 48.4**	**+0.4**
DURS	**Dursunbey**	**0.63**	**319**	*i* P	**Pg**	**02 10 39.5**	**-0.2**
DURS				*i* S	**Sg**	**02 10 48.4**	**+0.4**
KULA	**Kula-Manisa**	**0.66**	**204**	*e* PG	**Pg**	**02 10 40.1**	**-0.3**
KULA	**Kula-Manisa**	**0.66**	**204**	P	**Pg**	**02 10 40.0**	**-0.3**
KULA				S	**Sg**	**02 10 48.9**	**-0.1**
KULA	**Kula-Manisa**	**0.66**	**204**	*e* Pg	**Pg**	**02 10 40.1**	**-0.3**
KULA				S	**Sg**	**02 10 48.9**	**-0.1**
MANT	**Manisa**	**0.72**	**209**	P	**Pg**	**02 10 41.1**	**-0.3**
MANT				S	**Sg**	**02 10 50.4**	**-0.5**
MANT	**Manisa**	**0.72**	**209**	*i* P	**Pg**	**02 10 41.1**	**-0.3**
MANT				*i* S	**Sg**	**02 10 50.4**	**-0.5**
KHAL	**Karahalli**	**0.84**	**153**	P	**Pg**	**02 10 43.5**	**-0.2**
KHAL				S	**Sg**	**02 10 54.1**	**-0.6**
KHAL	**Karahalli**	**0.84**	**153**	*i* P	**Pg**	**02 10 43.5**	**-0.2**
KHAL				*i* S	**Sg**	**02 10 54.1**	**-0.6**
KHL	**Karahalli**	**0.90**	**153**	*e* PG	**Pg**	**02 10 44.8**	**+0.1**
KHL				*e*SG	**Sb**	**02 10 57.4**	**+0.3**
KHL	**Karahalli**	**0.90**	**153**	*e* Pg	**Pg**	**02 10 44.8**	**+0.1**
KHL				*e*Sg	**Sb**	**02 10 57.4**	**+0.3**
ORLT	**Orhaneli**	**0.93**	**355**	*e* PG	**Pg**	**02 10 44.6**	**-0.7**
ORLT	**Orhaneli**	**0.93**	**355**	*e* Pg	**Pg**	**02 10 44.6**	**-0.7**
AKHS	**Akhisar**	**0.96**	**256**	P	**Pg**	**02 10 45.8**	**-0.1**
AKHS				S	**Sg**	**02 10 58.5**	**+0.1**
AKHS	**Akhisar**	**0.96**	**256**	*i* P	**Pg**	**02 10 45.8**	**-0.1**
AKHS				*i* S	**Sg**	**02 10 58.5**	**+0.1**
AKS	**Akhisar**	**0.96**	**256**	*e* PG	**Pb**	**02 10 46.1**	**-0.1**
AKS	**Akhisar**	**0.96**	**256**	*e* Pg	**Pb**	**02 10 46.1**	**-0.1**
BALB	**Balikesir**	**1.01**	**301**	*e* PG	**Pn**	**02 10 47.7**	**0.0**
BALB				*e*SG	**Sb**	**02 11 01.0**	**+0.5**
BALB	**Balikesir**	**1.01**	**301**	*e* Pg	**Pn**	**02 10 47.7**	**0.0**
BALB				*e*Sg	**Sb**	**02 11 01.0**	**+0.5**
IGD	**Bursa**	**1.15**	**8**	*i* P	**Pb**	**02 10 48.2**	**-1.2**
IGD				*i* S	**Sb**	**02 11 02.8**	**-1.6**
BALY	**Balya**	**1.24**	**300**	P	**Pb**	**02 10 51.1**	**+0.2**
BALY				S	**Sn**	**02 11 08.1**	**+0.4**
BALY	**Balya**	**1.24**	**300**	*i* P	**Pb**	**02 10 51.1**	**+0.2**
BALY				*i* S	**Sn**	**02 11 08.1**	**+0.4**
KCTX	**Karacabey (Bur**	**1.25**	**337**	*e* PN	**Pn**	**02 10 51.0**	**0.0**
KCTX	**Karacabey (Bur**	**1.25**	**337**	*e* Pn	**Pn**	**02 10 51.0**	**0.0**
MDNY	**Mudanya-Bursa**	**1.25**	**356**	*e* PN	**Pn**	**02 10 50.7**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.25**	**356**	*e* Pn	**Pn**	**02 10 50.7**	**-0.3**
CAVI	**Cavuskoy**	**1.26**	**31**	*e* PN	**Pn**	**02 10 50.9**	**-0.3**
CAVI				*e*SN	**Sn**	**02 11 09.5**	**+1.4**
CAVI	**Cavuskoy**	**1.26**	**31**	*e* Pn	**Pn**	**02 10 50.9**	**-0.3**
CAVI				*e*Sn	**Sn**	**02 11 09.5**	**+1.4**
IZI	**Iznik**	**1.27**	**16**	*e* PN	**Pg**	**02 10 51.7**	**-0.1**
IZI	**Iznik**	**1.27**	**16**	*e* Pn	**Pg**	**02 10 51.7**	**-0.1**
GEMT	**Gemlik**	**1.32**	**6**	*e* PN	**Pg**	**02 10 52.9**	**+0.1**
GEMT	**Gemlik**	**1.32**	**6**	*e* Pn	**Pg**	**02 10 52.9**	**+0.1**
BORA	**Eskisehir**	**1.35**	**56**	P	**Pn**	**02 10 52.2**	**-0.3**
BORA				S	**Sg**	**02 11 11.1**	**+0.1**
BORA	**Eskisehir**	**1.35**	**56**	*i* P	**Pn**	**02 10 52.2**	**-0.3**
BORA				*i* S	**Sg**	**02 11 11.1**	**+0.1**
DENT	**Denizli**	**1.37**	**179**	*e* PN	**Pg**	**02 10 53.5**	**-0.2**
DENT	**Denizli**	**1.37**	**179**	*e* Pn	**Pg**	**02 10 53.5**	**-0.2**
ADVT	**Abdulvahap**	**1.43**	**23**	*e* PN	**Pb**	**02 10 53.8**	**-0.3**
ADVT	**Abdulvahap**	**1.43**	**23**	*e* Pn	**Pb**	**02 10 53.8**	**-0.3**
DNZL	**Cakiroluk**	**1.43**	**179**	P	**Pn**	**02 10 52.5**	**-1.1**
DNZL				S	**Sb**	**02 11 13.0**	**+0.3**
DNZL	**Cakiroluk**	**1.43**	**179**	*i* P	**Pn**	**02 10 52.5**	**-1.1**
DNZL				*i* S	**Sb**	**02 11 13.0**	**+0.3**
ARMT	**Armutlu**	**1.45**	**356**	*e* PN	**Pn**	**02 10 53.2**	**-0.5**
ARMT	**Armutlu**	**1.45**	**356**	*e* Pn	**Pn**	**02 10 53.2**	**-0.5**
AYDB	**Zeytinkoy-Aydi**	**1.46**	**217**	*e* PN	**Pb**	**02 10 54.9**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**1.46**	**217**	*e* Pn	**Pb**	**02 10 54.9**	**0.0**
ESKT	**Eskisehir**	**1.49**	**74**	*i* P	**Pn**	**02 10 54.2**	**-0.1**
ESKT				*i* S	**Sb**	**02 11 14.6**	**+0.4**
SEYT	**Eskypehyr**	**1.49**	**74**	P	**Pn**	**02 10 54.2**	**-0.1**
SEYT				S	**Sb**	**02 11 14.6**	**+0.4**
EDC	**Edincik**	**1.51**	**325**	*e* PN	**Pb**	**02 10 55.1**	**-0.4**
EDC	**Edincik**	**1.51**	**325**	*e* Pn	**Pb**	**02 10 55.1**	**-0.4**
GPA	**Golpazari**	**1.54**	**40**	*e* PN	**Pn**	**02 10 55.5**	**+0.5**
GPA	**Golpazari**	**1.54**	**40**	*e* Pn	**Pn**	**02 10 55.5**	**+0.5**
DKL	**Dikili**	**1.63**	**269**	*e* PN	**Pb**	**02 10 57.2**	**-0.5**
DKL	**Dikili**	**1.63**	**269**	*e* Pn	**Pb**	**02 10 57.2**	**-0.5**
AYDN	**Tasoluk**	**1.71**	**212**	P	**Pn**	**02 10 56.6**	**-0.7**
AYDN				S	**Sg**	**02 11 21.8**	**-0.5**
AYDN	**Tasoluk**	**1.71**	**212**	*i* P	**Pn**	**02 10 56.6**	**-0.7**
AYDN				*i* S	**Sg**	**02 11 21.8**	**-0.5**
BUY	**Buyukada**	**1.73**	**3**	P	**Pn**	**02 10 57.1**	**-0.5**
BUY	**Buyukada**	**1.73**	**3**	*i* P	**Pn**	**02 10 57.1**	**-0.5**
BUY				*i* S	**Sn**	**02 11 17.4**	**-2.3**
GULT	**Gulveren**	**1.75**	**41**	*e* PN	**Pn**	**02 10 58.8**	**+0.8**
GULT	**Gulveren**	**1.75**	**41**	*e* Pn	**Pn**	**02 10 58.8**	**+0.8**
ISP	**Isparta**	**1.76**	**137**	*e* PN	**Pn**	**02 10 58.6**	**+0.5**
ISP	**Isparta**	**1.76**	**137**	⇓*i* P	**Pb**	**02 10 59.7**	**-0.2**
ISP				S	**Sn**	**02 11 20.5**	**-0.2**
ISP	**Isparta**	**1.76**	**137**	P	**Pn**	**02 10 57.6**	**-0.5**
ISP	**Isparta**	**1.76**	**137**	P	**Pn**	**02 10 57.6**	**-0.5**
ISP	**Isparta**	**1.76**	**137**	*e* Pn	**Pn**	**02 10 58.7**	**+0.5**
ISP				S	**Sn**	**02 11 20.5**	**-0.2**
HRT	**Hereke**	**1.77**	**17**	*e* PN	**Pn**	**02 10 58.6**	**+0.4**
HRT	**Hereke**	**1.77**	**17**	*e* Pn	**Pn**	**02 10 58.6**	**+0.4**
AYVA	**Ayvalik**	**1.81**	**277**	*i* P	**Pg**	**02 11 02.2**	**+0.1**
AYVA				*i* S	**Sg**	**02 11 24.8**	**-0.7**
KRBG	**Karabiga-Canak**	**1.83**	**315**	*e* PN	**Pn**	**02 10 59.4**	**+0.5**
KRBG	**Karabiga-Canak**	**1.83**	**315**	*e* Pn	**Pn**	**02 10 59.4**	**+0.5**
MRMT	**Marmara Adasi**	**1.83**	**324**	*e* PN

MDNY	Mudanya-Bursa	1.28	355	*e*PN	Pg	02 14 04.7	-0.7
MDNY	Mudanya-Bursa	1.28	355	*e*Pn	Pg	02 14 04.7	-0.7
KCTX	Karacabey (Bur	1.28	336	*e*PN	Pg	02 14 05.3	-0.2
KCTX	Karacabey (Bur	1.28	336	*e*Pn	Pg	02 14 05.3	-0.2
IZI	Iznik	1.29	15	*e*PN	Pg	02 14 05.3	-0.3
IZI	Iznik	1.29	15	*e*Pn	Pg	02 14 05.3	-0.3
GONE	Gonen-Balikesi	1.41	313	*e*PN	Pb	02 14 07.7	0.0
GONE	Gonen-Balikesi	1.41	313	*e*Pn	Pb	02 14 07.7	0.0
ADVT	Abdulvahap	1.44	22	*e*PN	Pn	02 14 07.4	-0.3
ADVT	Abdulvahap	1.44	22	*e*Pn	Pn	02 14 07.4	-0.3
ARMT	Armutlu	1.47	355	*e*PN	Pn	02 14 08.2	0.0
ARMT	Armutlu	1.47	355	*e*Pn	Pn	02 14 08.2	0.0
EDC	Edincik	1.54	325	*e*PN	Pn	02 14 09.2	+0.1
EDC	Edincik	1.54	325	*e*Pn	Pn	02 14 09.2	+0.1
GULT	Gulveren	1.76	40	*e*PN	Pn	02 14 12.7	+0.5
GULT	Gulveren	1.76	40	*e*Pn	Pn	02 14 12.7	+0.5
SVRH	Sivrihisar-ESK	1.97	79	*e*PN	Pn	02 14 15.4	+0.4
SVRH	Sivrihisar-ESK	1.97	79	*e*Pn	Pn	02 14 15.4	+0.4
ISK	Istanbul-Kandi	1.97	1	*e*PN	Pn	02 14 15.3	+0.4
ISK	Istanbul-Kandi	1.97	1	*e*Pn	Pn	02 14 15.3	+0.4
SILT	Sile	2.11	13	*e*PN	Pn	02 14 17.4	+0.5
SILT	Sile	2.11	13	*e*Pn	Pn	02 14 17.4	+0.5

IDC 20 02:18:01.8±7.1, 15°.35S×174°.82W, h99km±89km, mb3.2/2, mb1 3.5/3, mb1mx3.2/40, mbtmp3.7/3, ML4.1/1, Error ellipse: s-maj=185.0km s-min=26.8km az=174.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	Afiamalu	3.28	64	P	Pn	02 18 52.0	+0.7
	22nm,0.3s,baz=142,slow=2.4,SNR=19						
AFI				S	Sn	02 19 29.8	+0.3
	12nm,0.3s,baz=224,slow=23,SNR=4.0						
WRA	Warramunga Arr	48.52	257	P	P	02 26 35.3	+0.1
	0.4nm,0.8s,baz=94,slow=6.8,SNR=3.3						
ASAR	Alice Springs	48.82	252	P	P	02 26 36.8	-0.6
	0.4nm,0.6s,baz=89,slow=8.2,SNR=5.7						
TORD	Torodi Ar. Bea	175.97	123	PKPab	PKPab	02 39 40.7	-0.2
	0.8nm,1.1s,baz=224,slow=4.0,SNR=3.5						

*ISCJB **20** 02:18:14.4±0.5, 39°.11N×0°.03×29°.01E±0°.03, h5km±6km, Error ellipse: s-maj=5.2km s-min=4.4km az=163.7*
*DDA **20** 02:18:14.4, 39°.09N×28°.99E, h7km, Md2.4*
*CSEM **20** 02:18:14.7±0.1, 39°.10N×29°.03E, h8km, MD2.4, Error ellipse: s-maj=3.2km s-min=3.0km az=141.0*
*ISK **20** 02:18:15.2, 39°.19N×29°.03E, h8km, MD2.7*
ISC 20 02:18:14.6±1.0, 39°.10N±0°.03×29°.01E±0°.02, h8km±10km, n30, σ0s33/42, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.24	257	P	Pg	02 18 19.5	+0.1
DEMI				S	Sg	02 18 22.5	-0.1
DEMI	Demirci	0.24	257	*i* P	Pg	02 18 19.5	+0.1
DEMI				*i* S	Sg	02 18 22.5	-0.1
GDZ	Gediz	0.36	91	P	Pg	02 18 21.8	0.0
GDZ				S	Sg	02 18 27.4	+0.8
GDZ	Gediz	0.36	91	*i* P	Pg	02 18 21.8	0.0
GDZ				*i* S	Sg	02 18 27.4	+0.8
TVSB	Tavsanli	0.50	44	*e*PG	Pg	02 18 24.4	+0.1
TVSB				*e*SG	Sg	02 18 30.1	-0.6
TVSB	Tavsanli	0.50	44	*e*Pg	Pg	02 18 24.4	+0.1
TVSB				*e*Sg	Sg	02 18 30.2	-0.6
MANT	Manisa	0.70	211	P	Pg	02 18 28.0	-0.1
MANT				S	Sg	02 18 36.9	-0.4
MANT	Manisa	0.70	211	*i* P	Pg	02 18 28.0	-0.1
MANT				*i* S	Sg	02 18 36.9	-0.4
KHAL	Karahalli	0.81	153	P	Pb	02 18 31.0	-0.1
KHAL				S	Sb	02 18 42.5	+0.2
KHAL	Karahalli	0.81	153	*i* P	Pb	02 18 31.0	-0.1
KHAL				*i* S	Sb	02 18 42.5	+0.2
AKS	Akhisar	0.96	257	*e*PG	Pn	02 18 34.6	+0.1
AKS	Akhisar	0.96	257	*e*Pg	Pn	02 18 34.6	+0.1
BALB	Balikesir	1.03	302	*e*PG	Pb	02 18 34.9	+0.1
BALB				*e*SG	Sb	02 18 48.9	+0.3
BALB	Balikesir	1.03	302	*e*Pg	Pb	02 18 34.9	+0.1
BALB				*e*Sg	Sb	02 18 48.9	+0.3
KCTX	Karacabey (Bur	1.27	337	*e*PN	Pn	02 18 38.3	-0.5
KCTX	Karacabey (Bur	1.27	337	*e*Pn	Pn	02 18 38.3	-0.5
MDNY	Mudanya-Bursa	1.28	356	*e*PN	Pn	02 18 38.3	-0.5
MDNY	Mudanya-Bursa	1.28	356	*e*Pn	Pn	02 18 38.3	-0.5
CAVI	Cavuskoy	1.28	30	*e*PN	Pn	02 18 38.6	-0.3
CAVI	Cavuskoy	1.28	30	*e*Pn	Pn	02 18 38.6	-0.3
GONE	Gonen-Balikesi	1.40	313	*e*PN	Pb	02 18 41.0	0.0
GONE	Gonen-Balikesi	1.40	313	*e*Pn	Pb	02 18 41.0	0.0
ADVT	Abdulvahap	1.45	22	*e*PN	Pn	02 18 41.3	+0.1
ADVT	Abdulvahap	1.45	22	*e*Pn	Pn	02 18 41.3	+0.1
ARMT	Armutlu	1.47	356	*e*PN	Pn	02 18 41.5	0.0
ARMT	Armutlu	1.47	356	*e*Pn	Pn	02 18 41.5	0.0
EDC	Edincik	1.53	325	*e*PN	Pn	02 18 42.5	+0.1
EDC	Edincik	1.53	325	*e*Pn	Pn	02 18 42.5	+0.1
GULT	Gulveren	1.77	40	*e*PN	Pn	02 18 45.4	-0.2
GULT	Gulveren	1.77	40	*e*Pn	Pn	02 18 45.4	-0.2

*CSEM **20** 02:19:02.8±0.4, 50°.16N×19°.15E, h1km, Error ellipse: s-maj=9.2km s-min=5.1km az=179.0*
PRU 20 02:19:03.4, 50°.16N×19°.15E, h0km, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OJC	Ojcow	0.42	82	*e*Pg	Pg	02 19 10.9	-0.6
OJC				*e*Sg	Sg	02 19 16.9	0.0
OJC	Ojcow	0.42	82	*e*Pg	Pg	02 19 10.9	-0.6
OJC				*e*Sg	Sg	02 19 16.9	0.0
OKC	Ostrava-Krasne	0.72	244	*e*SG	Sg	02 19 27.8	+1.2
OKC	Ostrava-Krasne	0.72	244	Sg	Sg	02 19 27.8	+1.2
LANS	Liptovska Anna	1.03	168	*e*Pg	Pg	02 19 23.0	-0.1
LANS				*e*Sg	Sg	02 19 36.0	-0.5
LANS	Liptovska Anna	1.03	168	*e*PG	Pg	02 19 23.0	-0.1
LANS				*e*SG	Sg	02 19 36.0	-0.5
MORC	Moravsky Berou	1.11	250	*e*Pg	Pg	02 19 24.9	+0.3
MORC				*e*Sg	Sg	02 19 39.2	+0.3
STHS	Stebnicka Huta	1.55	118	*e*Pn	Pn	02 19 32.5	+0.3
STHS	Stebnicka Huta	1.55	118	*e*PN	Pn	02 19 32.5	+0.3
VYHS	Vyhne	1.68	187	*e*Pn	Pn	02 19 32.5	-1.5
VYHS				*e*Sn	Sn	02 19 54.0	-2.3
VYHS	Vyhne	1.68	187	*e*PN	Pn	02 19 32.5	-1.5
VYHS				*e*SN	Sn	02 19 54.0	-2.3
DPC	Dobruska-Polom	1.82	277	*e*PG	Pn	02 19 36.8	+0.7
DPC				*e*SG	Sb	02 20 00.7	-0.4
DPC	Dobruska-Polom	1.82	277	Pg	Pn	02 19 36.8	+0.7
DPC				Sg	Sb	02 20 00.7	-0.4

*DDA **20** 02:21:55.1, 39°.13N×29°.10E, h7km, Md2.3*
*ISK **20** 02:21:55.0, 39°.13N×29°.09E, h3km, MD2.8*
*CSEM **20** 02:21:55.8±0.1, 39°.14N×29°.10E, h2km, MD2.3, Error ellipse: s-maj=3.0km s-min=2.6km az=83.0*
ISC 20 02:21:55.9±1.1, 39°.14N±0°.02×29°.10E±0°.02, h4km±11km, n42, σ0s49/54, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	Gediz	0.30	100	P	Pg	02 22 01.5	-0.3
GDZ				S	Sg	02 22 05.8	+0.1
GDZ	Gediz	0.30	100	*i* P	Pg	02 22 01.4	-0.3
GDZ				*i* S	Sg	02 22 05.8	+0.1
DEMI	Demirci	0.31	252	P	Pg	02 22 02.4	+0.4
DEMI				S	Sg	02 22 07.0	+0.9
DEMI	Demirci	0.31	252	*i* P	Pg	02 22 02.4	+0.4
DEMI				*i* S	Sg	02 22 07.0	+0.9
TVSB	Tavsanli	0.42	42	*e*PG	Pg	02 22 03.4	-0.6
TVSB	Tavsanli	0.42	42	*e*Pg	Pg	02 22 03.4	-0.6
DURS	Dursunbey	0.67	314	P	Pg	02 22 08.0	-0.8
DURS	Dursunbey	0.67	314	*i* P	Pg	02 22 08.0	-0.8
MANT	Manisa	0.77	213	P	Pb	02 22 11.4	-0.7
MANT				S	Sg	02 22 20.4	-0.4
MANT	Manisa	0.77	213	*i* P	Pb	02 22 11.4	-0.7
MANT				*i* S	Sg	02 22 20.4	-0.4
KHAL	Karahalli	0.83	158	P	Pg	02 22 11.4	-0.3
KHAL				S	Sg	02 22 22.5	+0.1
KHAL	Karahalli	0.83	158	*i* P	Pg	02 22 11.4	-0.3
KHAL				*i* S	Sg	02 22 22.5	+0.1
KHL	Karahalli	0.88	158	*e*PG	Pg	02 22 12.5	-0.3
KHL	Karahalli	0.88	158	*e*Pg	Pg	02 22 12.5	-0.3
BALB	Balikesir	1.07	298	*e*PG	Pg	02 22 15.7	-0.7
BALB				*e*SG	Sb	02 22 31.4	+0.1
BALB	Balikesir	1.07	298	*e*Pg	Pg	02 22 15.7	-0.7
BALB				*e*Sg	Sb	02 22 31.4	+0.1
CAVI	Cavuskoy	1.21	28	*e*PN	Pg	02 22 18.7	-0.3
CAVI				*e*SN	Sn	02 22 36.4	0.0
CAVI	Cavuskoy	1.21	28	*e*Pn	Pg	02 22 18.7	-0.3
CAVI				*e*Sn	Sn	02 22 36.4	0.0
IZI	Iznik	1.23	13	*e*PN	Pn	02 22 19.8	-0.1
IZI	Iznik	1.23	13	*e*Pn	Pn	02 22 19.8	-0.1
MDNY	Mudanya-Bursa	1.24	352	*e*PN	Pb	02 22 19.8	0.0
MDNY	Mudanya-Bursa	1.24	352	*e*Pn	Pb	02 22 19.8	0.0
KCTX	Karacabey (Bur	1.26	333	*e*PN	Pg	02 22 20.0	-0.1
KCTX	Karacabey (Bur	1.26	333	*e*Pn	Pg	02 22 20.0	-0.1
ADVT	Abdulvahap	1.38	21	*e*PN	Pg	02 22 22.3	-0.1
ADVT	Abdulvahap	1.38	21	*e*Pn	Pg	02 22 22.3	-0.1
GONE	Gonen-Balikesi	1.42	310	*e*PN	Pn	02 22 22.4	-0.1
GONE	Gonen-Balikesi	1.42	310	*e*Pn	Pn	02 22 22.4	-0.1
ARMT	Armutlu	1.44	353	*e*PN	Pb	02 22 23.0	-0.2
ARMT	Armutlu	1.44	353	*e*Pn	Pb	02 22 23.0	-0.2
GPA	Golpazari	1.48	39	*e*PN	Pb	02 22 23.7	-0.3
GPA	Golpazari	1.48	39	*e*Pn	Pb	02 22 23.7	-0.3
EDC	Edincik	1.54	322	*e*PN	Pb	02 22 24.5	-0.4
EDC	Edincik	1.54	322	*e*Pn	Pb	02 22 24.5	-0.4
GULT	Gulveren	1.69	40	*e*PN	Pb	02 22 27.2	-0.4
GULT	Gulveren	1.69	40	*e*Pn	Pb	02 22 27.2	-0.4
SVRH	Sivrihisar-ESK	1.91	80	*e*PN	Pn	02 22 30.1	+0.9
SVRH	Sivrihisar-ESK	1.91	80	*e*Pn	Pn	02 22 30.1	+0.9
ISK	Istanbul-Kandi	1.92	359	*e*PN	Pn	02 22 30.1	+0.7
ISK	Istanbul-Kandi	1.92	359	*e*Pn	Pn	02 22 30.1	+0.7
SILT	Sile	2.05	12	*e*PN	Pn	02 22 32.2	+1.0
SILT	Sile	2.05	12	*e*Pn	Pn	02 22 32.2	+1.0

*ISCJB **20** 02:24:24.6±0.5, 39°.09N±0°.03×29°.03E±0°.03, h2km±6km, Error ellipse: s-maj=5.4km s-min=3.8km az=179.5*
*DDA **20** 02:24:24.5, 39°.08N×29°.03E, h4km, Md2.6*
*ISK **20** 02:24:24.5, 39°.11N×29°.04E, h5km, MD2.9*
*CSEM **20** 02:24:24.8±0.1, 39°.10N×29°.04E, h2km, MD2.6, Error ellipse: s-maj=2.0km s-min=1.9km az=173.0*
ISC 20 02:24:25.0±1.1, 39°.09N±0°.03×29°.03E±0°.02, h4km±12km, n46, σ0s35/62, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.25	258	P	Pg	02 24 29.8	-0.1
DEMI				S	Sg	02 24 33.3	+0.1
DEMI	Demirci	0.25	258	*i* P	Pg	02 24 29.8	-0.1
DEMI				*i* S	Sg	02 24 33.3	+0.1
GDZ	Gediz	0.35	91	P	Pg	02 24 31.5	-0.3
GDZ				S	Sg	02 24 36.7	+0.3
GDZ	Gediz	0.35	91	*i* P	Pg	02 24 31.5	-0.3
GDZ				*i* S	Sg	02 24 36.7	+0.3
TVSB	Tavsanli	0.49	43	*e*PG	Pg	02 24 33.8	-0.6
TVSB	Tavsanli	0.49	43	*e*Pg	Pg	02 24 33.8	-0.6
DURS	Dursunbey	0.67	320	P	Pg	02 24 38.4	+0.6
DURS	Dursunbey	0.67	320	*i* P	Pg	02 24 38.4	+0.6
MANT	Manisa	0.71	212	P	Pg	02 24 38.3	-0.3
MANT				S	Sg	02 24 48.0	+0.2
MANT	Manisa	0.71	212	*i* P	Pg	02 24 38.3	-0.3
MANT				*i* S	Sg	02 24 48.0	+0.2
KHAL	Karahalli	0.81	153	P	Pb	02 24 41.3	-0.3
KHAL				S	Sg	02 24 51.6	+0.7
KHAL	Karahalli	0.81	153	*i* P	Pb	02 24 41.3	-0.3
KHAL				*i* S	Sg	02 24 51.6	+0.7
KHL	Karahalli	0.86	153	*e*PG	Pg	02 24 41.4	-0.1
KHL	Karahalli	0.86	153	*e*Pg	Pg	02 24 41.4	-0.1
AKHS	Akhisar	0.97	258	P	Pg	02 24 43.4	-0.3
AKHS				S	Sb	02 24 57.1	-0.5
AKHS	Akhisar	0.97	258	*i* P	Pg	02 24 43.4	-0.3
AKHS				*i* S	Sb	02 24 57.1	-0.5
AKS	Akhisar	0.97	258	*e*PG	Pg	02 24 43.5	-0.2
AKS	Akhisar	0.97	258	*e*Pg	Pg	02 24 43.5	-0.2
BALB	Balikesir	1.05	302	*e*PG	Pg	02 24 45.2	+0.1
BALB				*e*SG	Sb	02 24 59.6	-0.1
BALB	Balikesir	1.05	302	*e*Pg	Pg	02 24 45.2	+0.1
BALB				*e*Sg	Sb	02 24 59.6	-0.1
BALY	Balya	1.27	301	P	Pg	02 24 49.0	-0.4
BALY				S	Sb	02 25 06.3	+0.1
BALY	Balya	1.27	301	*i* P	Pg	02 24 49.0	-0.4
BALY				*i* S	Sb	02 25 06.3	+0.1
CAVI	Cavuskoy	1.27	29	*e*PN	Pg	02 24 49.2	-0.2
CAVI				*e*SN	Sb	02 25 06.2	-0.1
CAVI	Cavuskoy	1.27	29	*e*Pn	Pg	02 24 49.2	-0.2
CAVI				*e*Sn	Sb	02 25 06.2	-0.1
MDNY	Mudanya-Bursa	1.28	355	*e*PN	Pg	02 24 49.2	-0.3
MDNY	Mudanya-Bursa	1.28	355	*e*Pn	Pg	02 24 49.2	-0.3
KCTX	Karacabey (Bur	1.28	336	*e*PN	Pg	02 24 49.2	-0.4
KCTX	Karacabey (Bur	1.28	336	*e*Pn	Pg	02 24 49.2	-0.4
IZI	Iznik	1.29	15	*e*PN	Pg	02 24 49.5	-0.2
IZI	Iznik	1.29	15	*e*Pn	Pg	02 24 49.5	-0.2
GONE	Gonen-Balikesi	1.41	313	*e*PN	Pn	02 24 51.6	+0.2
GONE	Gonen-Balikesi	1.41	313	*e*Pn	Pn	02 24 51.7	+0.2
ADVT	Abdulvahap	1.44	22	*e*PN	Pn	02 24 51.9	0.0
ADVT	Abdulvahap	1.44	22	*e*Pn	Pn	02 24 51.9	0.0
ARMT	Armutlu	1.48	355	*e*PN	Pn	02 24 52.2	-0.2
ARMT	Armutlu	1.48	355	*e*Pn	Pn	02 24 52.2	-0.2
EDC	Edincik	1.54	325	*e*PN	Pn	02 24 53.4	+0.2
EDC	Edincik	1.54	325	*e*Pn	Pn	02 24 53.4	+0.2
GULT	Gulveren	1.76	40	*e*PN	Pn	02 24 56.6	+0.4
GULT	Gulveren	1.76	40	*e*Pn	Pn	02 24 56.7	+0.4
SVRH	Sivrihisar-ESK	1.96	79	*e*PN	Pn	02 24 59.6	+0.4
SVRH	Sivrihisar-ESK	1.96	79	*e*Pn	Pn	02 24 59.6	+0.4
ISK	Istanbul-Kandi	1.97	1	*e*PN	Pn	02 24 59.6	+0.5
ISK	Istanbul-Kandi	1.97	1	*e*Pn	Pn	02 24 59.6	+0.5
SILT	Sile	2.11	13	*e*PN	Pn	02 25 01.7	+0.7
SILT	Sile	2.11	13	*e*Pn	Pn	02 25 01.7	+0.7

*DDA **20** 02:27:28.5, 39°.10N×29°.04E, h7km, Md2.8*
*ISK **20** 02:27:28.4, 39°.09N×29°.05E, h5km, MD2.8*
*ISCJB **20** 02:27:29.0±0.5, 39°.08N±0°.03×29°.04E±0°.03, h2km±6km, Error ellipse: s-maj=5.7km s-min=4.0km az=176.8*
*CSEM **20** 02:27:29.3±0.1, 39°.09N×29°.05E, h2km, MD2.8, Error ellipse: s-maj=2.3km s-min=2.1km az=144.0*
ISC 20 02:27:29.0±1.0, 39°.10N±0°.03×29°.04E±0°.02, h6km±10km, n40, σ0s55/54, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.25	258	P	Pg	02 27 34.2	+0.2
DEMI				S	Sg	02 27 37.7	+0.3
DEMI	Demirci	0.25	258	*i* P	Pg	02 27 34.2	+0.2
DEMI				*i* S	Sg	02 27 37.7	+0.3
GDZ	Gediz	0.35	91	P	Pg	02 27 35.8	-0.1
GDZ				S	Sg	02 27 40.7	+0.3
GDZ	Gediz	0.35	91	*i* P	Pg	02 27 35.8	-0.1
GDZ				*i* S	Sg	02 27 40.7	+0.3
TVSB	Tavsanli	0.48	43	*e*PG	Pg	02 27 38.0	-0.4
TVSB	Tavsanli	0.48	43	*e*Pg	Pg	02 27 38.0	-0.4
MANT	Manisa	0.71	212	P	Pg	02 27 42.8	+0.1
MANT				S	Sg	02 27 52.0	+0.1
MANT	Manisa	0.71	212	*i* P	Pg	02 27 42.8	+0.1
MANT				*i* S	Sg	02 27 52.0	+0.1
KHAL	Karahalli	0.81	154	P	Pg	02 27 45.0	+0.4
KHAL				S	Sg	02 27 55.8	+0.8
KHAL	Karahalli	0.81	154	*i* P	Pg	02 27 45.0	+0.4
KHAL				*i* S	Sg	02 27 55.8	+0.8
KHL	Karahalli	0.86	154	*e*PG	Pg	02 27 46.0	+0.4
KHL	Karahalli	0.86	154	*e*Pg	Pg	02 27 46.0	+0.4
AKHS	Akhisar	0.98	258	P	Pg	02 27 47.6	-0.1
AKHS				S	Sg	02 28 01.1	+0.7
AKHS	Akhisar	0.98	258	*i* P	Pg	02 27 47.6	-0.1
AKHS				*i* S	Sg	02 28 01.1	+0.7
AKS	Akhisar	0.98	258	*e*PG	Pg	02 27 48.0	+0.2
AKS	Akhisar	0.98	258	*e*Pg	Pg	02 27 48.0	+0.2
BALB	Balikesir	1.05	302	*e*PG	Pn	02 27 50.0	-0.3
BALB				*e*SG	Sn	02 28 05.1	-0.1
BALB	Balikesir	1.05	302	*e*Pg	Pn	02 27 50.0	-0.3
BALB				*e*Sg	Sn	02 28 05.1	-0.1
CAVI	Cavuskoy	1.27	29	*e*PN	Pg	02 27 53.5	+0.1
CAVI				*e*SN	Sn	02 28 11.8	+1.1
CAVI	Cavuskoy	1.27	29	*e*Pn	Pg	02 27 53.5	+0.1
CAVI				*e*Sn	Sn	02 28 11.8	+1.1
MDNY	Mudanya-Bursa	1.28	355	*e*PN	Pg	02 27 54.2	+0.7
MDNY	Mudanya-Bursa	1.28	355	*e*Pn	Pg	02 27 54.2	+0.7
KCTX	Karacabey (Bur	1.28	336	*e*PN	Pg	02 27 53.9	+0.3
KCTX	Karacabey (Bur	1.28	336	*e*Pn	Pg	02 27 53.9	+0.3
IZI	Iznik	1.28	15	*e*PN	Pg	02 27 54.5	+0.8
IZI	Iznik	1.28	15	*e*Pn	Pg	02 27 54.5	+0.8
GONE	Gonen-Balikesi	1.41	313	*e*PN	Pg	02 27 56.2	+0.1
GONE	Gonen-Balikesi	1.41	313	*e*Pn	Pg	02 27 56.2	+0.1
ADVT	Abdulvahap	1.44	22	*e*PN	Pb	02 27 56.3	0.0
ADVT	Abdulvahap	1.44	22	*e*Pn	Pb	02 27 56.3	0.0
ARMT	Armutlu	1.47	355	*e*PN	Pg	02 27 57.5	+0.2
ARMT	Armutlu	1.47	355	*e*Pn	Pg	02 27 57.5	+0.2
EDC	Edincik	1.54	324	*e*PN	Pg	02 27 58.6	0.0
EDC	Edincik	1.54	324	*e*Pn	Pg	02 27 58.6	0.0
GULT	Gulveren	1.76	40	*e*PN	Pb	02 28 00.8	-0.9
GULT	Gulveren	1.76	40	*e*Pn	Pb	02 28 00.8	-0.9
SVRH	Sivrihisar-ESK	1.96	79	*e*PN	Pb	02 28 04.1	-1.1
SVRH	Sivrihisar-ESK	1.96	79	*e*Pn	Pb	02 28 04.1	-1.1
ISK	Istanbul-Kandi	1.97	1	*e*PN	Pb	02 28 04.3	-0.9
ISK	Istanbul-Kandi	1.97	1	*e*Pn	Pb	02 28 04.3	-0.9

*ISCJB **20** 02:27:34.1±0.6, 33°.87N±0°.08×137°.1E±0°.1, h373km±4km, mb3.3/5, Error ellipse: s-maj=15.2km s-min=12.3km az=3.8*
*IDC **20** 02:27:34.2±0.8, 33°.79N×137°.27E, h360km±11km, mb3.2/5, mb1 3.2/11, mb1mx3.0/38, mbtmp4.0/11, Error ellipse: s-maj=24.6km s-min=12.6km az=70.0*
*JMA **20** 02:27:35.1±0.2, 33°.89N×136°.98E, h367km±2km, M3.2*
ISC 20 02:27:34.7±0.9, 33°.83N±0°.09×137°.14E±0°.10, h364km±7km, n23, σ1s19/27, mb3.5/5, Near south coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TTO2	TONANKAI O.B.S	0.13	225	P	Pn	02 28 21.2	+1.5
TTO4	TONANKAI O.B.S	0.38	61	P	Pn	02 28 21.5	+1.6
TK02	Tokai 2	0.53	77	P	Pn	02 28 21.9	+1.7
TTO5	TONANKAI O.B.S	0.64	48	P	Pn	02 28 22.3	+1.7
JIE	Ise	0.67	328	P	Pn	02 28 21.7	+0.9
JKN2	Miekihoku	0.83	300	P	Pn	02 28 21.7	+0.4
JKN2				S	S	02 28 58.5	-0.3
HMMJ	Hamamatsu 2	1.14	25	P	Pn	02 28 23.2	+0.8
JAO	Obara	1.44	4	P	Pn	02 28 24.8	+0.9
JNY	Yasuok	1.64	21	P	Pn	02 28 25.9	+0.8
JGM	Miyama	1.90	350	P	Pn	02 28 27.3	+0.7
JWT	Wachi	2.04	316	P	Pn	02 28 27.9	+0.4
JWT				S	S	02 29 08.5	-1.5
MAT	Matsushiro	2.85	18	P	Pn	02 28 33.6	-0.1
MAT				*e*S	S	02 29 20.0	-1.4
MJAR	Matsushiro Arr	2.85	18	P	Pn	02 28 34.1	+0.4
	6.7nm,0.3s,baz=197,slow=9.6,SNR=61						
MJAR				S	S	02 29 20.6	-0.8
	baz=151,slow=16,SNR=2.3						
JNU	Nakatsue	5.28	264	P	Pn	02 28 58.0	-0.1
	1.5nm,0.3s,baz=104,slow=2.7,SNR=12						
JCJ	Chichijima	8.00	146	P	Pn	02 29 26.2	-2.9
KSRS	Korea Array	8.33	298	P	Pn	02 29 33.2	+0.4
	0.8nm,0.3s,baz=111,slow=13,SNR=14						
USRK	Ussuriysk Ar.	11.10	340	P	Pn	02 30 05.8	+0.3
	0.7nm,0.3s,baz=145,slow=9.1,SNR=9.8						
KLR	Kul'dur	15.90	347	P	P	02 30 57.4	-0.8
	0.1nm,0.3s,baz=154,slow=8.5,SNR=3.5						
SONM	Songino Array	26.94	311	P	P	02 32 46.0	+1.9
	1.5nm,0.6s,baz=128,slow=9.4,SNR=7.4						
MKAR	Makanchi Array	42.95	304	P	P	02 34 59.2	0.0
	0.3nm,0.3s,baz=84,slow=13,SNR=3.5						
WRA	Warramunga Arr	53.53	183	P	P	02 36 18.8	-0.5
	1.6nm,0.3s,baz=0.2,slow=7.6,SNR=89						
ASAR	Alice Springs	57.26	184	P	P	02 36 45.9	+0.4
	0.3nm,0.4s,baz=22,slow=11,SNR=7.7						
FINES	FINESS Array B	69.99	331	P	P	02 38 07.1	-0.3
	0.5nm,0.4s,baz=64,slow=5.7,SNR=8.8						

*ISCJB **20** 02:29:48.8±0

*ISK **20** 02:31:55.4, 39.′11N×29.′01E, h5km, ML3.3*
*DDA **20** 02:31:56.0, 39.′10N×28.′97E, h7km, Ml3.8*
*CSEM **20** 02:31:56.5±0.1, 39.′11N×29.′00E, h2km, ML3.8, Error ellipse: s-maj=2.2km s-min=1.9km az=66.0*
ISC 20 02:31:56.6±1.1, **39.′12N**±0.′02×**28.′98E**±0.′02, **h4**km±10km, **n110**, σ0°**72**/130, **8D, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.22**	**250**	P	**Pg**	**02 32 01.0**	**+0.1**
DEMI				S	**Sg**	**02 32 04.1**	**+0.3**
DEMI	**Demirci**	**0.22**	**250**	*i* P	**Pg**	**02 32 01.0**	**+0.1**
DEMI				*i* S	**Sg**	**02 32 03.9**	**+0.1**
DEMI				*i* S	**Sg**	**02 32 04.1**	**+0.3**
GDZ	**Gediz**	**0.39**	**94**	P	**Pg**	**02 32 04.1**	**+0.1**
GDZ				S	**Sg**	**02 32 09.9**	**+0.8**
GDZ	**Gediz**	**0.39**	**94**	*i* P	**Pg**	**02 32 04.1**	**+0.1**
GDZ				*i* S	**Sg**	**02 32 09.9**	**+0.8**
TVSB	**Tavsanli**	**0.50**	**48**	*e*PG	**Pg**	**02 32 05.5**	**-0.6**
TVSB	**Tavsanli**	**0.50**	**48**	*e*Pg	**Pg**	**02 32 05.5**	**-0.6**
DURS	**Dursunbey**	**0.62**	**321**	P	**Pg**	**02 32 08.2**	**-0.4**
DURS	**Dursunbey**	**0.62**	**321**	*i* P	**Pg**	**02 32 08.2**	**-0.4**
KULA	**Kula-Manisa**	**0.65**	**203**	*e*PG	**Pg**	**02 32 09.1**	**0.0**
KULA	**Kula-Manisa**	**0.65**	**203**	*e*Pg	**Pg**	**02 32 09.1**	**0.0**
MANT	**Manisa**	**0.71**	**208**	P	**Pg**	**02 32 09.9**	**-0.2**
MANT				S	**Sg**	**02 32 18.9**	**-0.5**
MANT	**Manisa**	**0.71**	**208**	*i* P	**Pg**	**02 32 09.9**	**-0.2**
MANT				*i* S	**Sg**	**02 32 18.9**	**-0.5**
KHAL	**Karahalli**	**0.84**	**152**	P	**Pg**	**02 32 12.7**	**0.0**
KHAL				S	**Sg**	**02 32 24.0**	**+0.3**
KHAL	**Karahalli**	**0.84**	**152**	*i* P	**Pg**	**02 32 12.7**	**0.0**
KHAL				*i* S	**Sg**	**02 32 24.0**	**+0.3**
KHL	**Karahalli**	**0.90**	**152**	*e*PG	**Pg**	**02 32 13.1**	**-0.7**
KHL				*e*SG	**Sb**	**02 32 26.5**	**-0.6**
KHL	**Karahalli**	**0.90**	**152**	*e*Pg	**Pg**	**02 32 13.1**	**-0.7**
KHL				*e*Sg	**Sb**	**02 32 26.5**	**-0.6**
ORLT	**Orhaneli**	**0.93**	**356**	*e*PG	**Pg**	**02 32 13.8**	**-0.6**
ORLT	**Orhaneli**	**0.93**	**356**	*e*Pg	**Pg**	**02 32 13.8**	**-0.6**
AKHS	**Akhisar**	**0.94**	**256**	P	**Pg**	**02 32 14.4**	**-0.2**
AKHS				S	**Sg**	**02 32 26.4**	**-0.4**
AKHS	**Akhisar**	**0.94**	**256**	*i* P	**Pg**	**02 32 14.4**	**-0.2**
AKHS				*i* S	**Sg**	**02 32 26.4**	**-0.4**
AKS	**Akhisar**	**0.94**	**256**	*e*PG	**Pg**	**02 32 14.1**	**-0.5**
AKS	**Akhisar**	**0.94**	**256**	*e*Pg	**Pg**	**02 32 14.1**	**-0.5**
BALB	**Balikesir**	**1.00**	**302**	*e*PG	**Pb**	**02 32 16.2**	**-0.3**
BALB				*e*SG	**Sb**	**02 32 30.9**	**+0.8**
BALB	**Balikesir**	**1.00**	**302**	*e*Pg	**Pb**	**02 32 16.2**	**-0.3**
BALB				*e*Sg	**Sb**	**02 32 30.9**	**+0.8**
BALY	**Balya**	**1.23**	**301**	P	**Pg**	**02 32 19.7**	**-0.4**
BALY				S	**Sb**	**02 32 36.8**	**+0.2**
BALY	**Balya**	**1.23**	**301**	*i* P	**Pg**	**02 32 19.7**	**-0.4**
BALY				*i* S	**Sb**	**02 32 36.8**	**+0.2**
KCTX	**Karacabey (Bur**	**1.25**	**337**	*e*PN	**Pg**	**02 32 20.3**	**-0.1**
KCTX	**Karacabey (Bur**	**1.25**	**337**	*e*Pn	**Pg**	**02 32 20.3**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.25**	**356**	*e*PN	**Pg**	**02 32 20.3**	**-0.3**
MDNY				*e*SN	**Sn**	**02 32 38.7**	**+0.5**
MDNY	**Mudanya-Bursa**	**1.25**	**356**	*e*Pn	**Pg**	**02 32 20.3**	**-0.3**
MDNY				*e*Sn	**Sn**	**02 32 38.7**	**+0.5**
CAVI	**Cavuskoy**	**1.27**	**31**	*e*PN	**Pb**	**02 32 21.1**	**0.0**
CAVI	**Cavuskoy**	**1.27**	**31**	*e*Pn	**Pb**	**02 32 21.1**	**0.0**
IZI	**Iznik**	**1.27**	**17**	*e*PN	**Pg**	**02 32 20.7**	**-0.3**
IZI	**Iznik**	**1.27**	**17**	*e*Pn	**Pg**	**02 32 20.7**	**-0.3**
GEMT	**Gemlik**	**1.32**	**7**	*e*PN	**Pn**	**02 32 21.3**	**-0.6**
GEMT	**Gemlik**	**1.32**	**7**	*e*Pn	**Pn**	**02 32 21.3**	**-0.6**
DENT	**Denizli**	**1.36**	**178**	*e*PN	**Pn**	**02 32 22.4**	**0.0**
DENT	**Denizli**	**1.36**	**178**	*e*Pn	**Pn**	**02 32 22.4**	**0.0**
GONE	**Gonen-Balikesi**	**1.37**	**313**	*e*PN	**Pg**	**02 32 22.9**	**+0.2**
GONE	**Gonen-Balikesi**	**1.37**	**313**	*e*Pn	**Pg**	**02 32 22.9**	**+0.2**
ADVT	**Abdulvahap**	**1.44**	**24**	*e*PN	**Pn**	**02 32 23.2**	**-0.2**
ADVT	**Abdulvahap**	**1.44**	**24**	*e*Pn	**Pn**	**02 32 23.2**	**-0.2**
ARMT	**Armutlu**	**1.45**	**356**	*e*PN	**Pb**	**02 32 24.0**	**-0.1**
ARMT	**Armutlu**	**1.45**	**356**	*e*Pn	**Pb**	**02 32 24.0**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**1.45**	**217**	*e*PN	**Pn**	**02 32 23.7**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**1.45**	**217**	*e*Pn	**Pn**	**02 32 23.7**	**0.0**
EDC	**Edincik**	**1.50**	**325**	*e*PN	**Pb**	**02 32 24.8**	**-0.2**
EDC	**Edincik**	**1.50**	**325**	*e*Pn	**Pb**	**02 32 24.8**	**-0.2**
GPA	**Golpazari**	**1.55**	**41**	*e*PN	**Pn**	**02 32 25.3**	**+0.2**
GPA	**Golpazari**	**1.55**	**41**	*e*Pn	**Pn**	**02 32 25.3**	**+0.2**
DKL	**Dikili**	**1.62**	**269**	*e*PN	**Pn**	**02 32 26.4**	**+0.5**
DKL	**Dikili**	**1.62**	**269**	*e*Pn	**Pn**	**02 32 26.4**	**+0.5**
GULT	**Gulveren**	**1.77**	**41**	*e*PN	**Pn**	**02 32 28.2**	**+0.2**
GULT	**Gulveren**	**1.77**	**41**	*e*Pn	**Pn**	**02 32 28.2**	**+0.2**
ISP	**Isparta**	**1.77**	**136**	*e*PN	**Pn**	**02 32 27.9**	**-0.2**
ISP	**Isparta**	**1.77**	**136**	‖ *i*P	**Pn**	**02 32 27.3**	**-0.8**
ISP				S	**Sg**	**02 32 54.7**	**+1.3**
ISP	**Isparta**	**1.77**	**136**	‖ *i*P	**Pn**	**02 32 27.3**	**-0.8**
ISP	**Isparta**	**1.77**	**136**	*e*Pn	**Pn**	**02 32 27.9**	**-0.2**
ISP				S	**Sg**	**02 32 54.7**	**+1.3**
HRT	**Hereke**	**1.78**	**17**	*e*PN	**Pn**	**02 32 29.0**	**+0.8**
HRT	**Hereke**	**1.78**	**17**	*e*Pn	**Pn**	**02 32 29.0**	**+0.8**
KRBG	**Karabiga-Canak**	**1.82**	**315**	*e*PN	**Pn**	**02 32 29.3**	**+0.6**
KRBG	**Karabiga-Canak**	**1.82**	**315**	*e*Pn	**Pn**	**02 32 29.3**	**+0.6**
MRMT	**Marmara Adasi**	**1.83**	**325**	*e*PN	**Pb**	**02 32 30.1**	**-0.5**
MRMT	**Marmara Adasi**	**1.83**	**325**	*e*Pn	**Pb**	**02 32 30.1**	**-0.5**
SPNC	**Sapanca-Adapaz**	**1.87**	**33**	*e*PN	**Pn**	**02 32 29.4**	**+0.1**
SPNC	**Sapanca-Adapaz**	**1.87**	**33**	*e*Pn	**Pn**	**02 32 29.4**	**+0.1**
ISK	**Istanbul-Kandi**	**1.95**	**2**	*e*PN	**Pn**	**02 32 30.6**	**+0.2**
ISK	**Istanbul-Kandi**	**1.95**	**2**	*e*Pn	**Pn**	**02 32 30.6**	**+0.2**
SVRH	**Sivrihisar-ESK**	**2.00**	**80**	*e*PN	**Pn**	**02 32 31.7**	**+0.5**
SVRH	**Sivrihisar-ESK**	**2.00**	**80**	*e*Pn	**Pn**	**02 32 31.7**	**+0.5**
GLHS	**Glhisar (BURDU**	**2.00**	**168**	*e*PN	**Pn**	**02 32 31.4**	**+0.2**
GLHS	**Glhisar (BURDU**	**2.00**	**168**	*e*Pn	**Pn**	**02 32 31.4**	**+0.2**
YER	**Yerkesik**	**2.06**	**196**	*e*PN	**Pn**	**02 32 32.5**	**+0.5**
YER	**Yerkesik**	**2.06**	**196**	*e*Pn	**Pn**	**02 32 32.5**	**+0.5**
BGKT	**Bogazkoy**	**2.07**	**356**	*e*PN	**Pn**	**02 32 32.7**	**+0.7**
BGKT	**Bogazkoy**	**2.07**	**356**	*e*Pn	**Pn**	**02 32 32.7**	**+0.7**
RKY	**Sarkoy-Tekirda**	**2.10**	**319**	*e*PN	**Pn**	**02 32 33.5**	**+1.0**
RKY	**Sarkoy-Tekirda**	**2.10**	**319**	*e*Pn	**Pn**	**02 32 33.5**	**+1.0**
LPK	**Lapseki**	**2.12**	**307**	*e*PN	**Pn**	**02 32 33.8**	**+0.9**
LPK	**Lapseki**	**2.12**	**307**	*e*Pn	**Pn**	**02 32 33.8**	**+0.9**
KLYT	**Kilyos**	**2.13**	**1**	*e*PN	**Pn**	**02 32 33.3**	**+0.3**
KLYT	**Kilyos**	**2.13**	**1**	*e*Pn	**Pn**	**02 32 33.3**	**+0.3**
EZN	**Ezine**	**2.18**	**290**	*e*PN	**Pn**	**02 32 34.3**	**+0.8**
EZN	**Ezine**	**2.18**	**290**	*e*Pn	**Pn**	**02 32 34.3**	**+0.8**
MDUB	**Mudurnu**	**2.18**	**51**	*e*PN	**Pn**	**02 32 34.1**	**+0.4**
MDUB	**Mudurnu**	**2.18**	**51**	*e*Pn	**Pn**	**02 32 34.1**	**+0.4**
TKR	**Tekirdag**	**2.18**	**330**	*e*PN	**Pn**	**02 32 34.3**	**+0.7**
TKR	**Tekirdag**	**2.18**	**330**	*e*Pn	**Pn**	**02 32 34.3**	**+0.7**
CRLT	**Corlu**	**2.23**	**335**	*e*PN	**Pn**	**02 32 35.4**	**+1.1**
CRLT	**Corlu**	**2.23**	**335**	*e*Pn	**Pn**	**02 32 35.4**	**+1.1**
KIZT	**Kizilcal**	**2.27**	**95**	*e*PN	**Pn**	**02 32 35.7**	**+0.7**
KIZT	**Kizilcal**	**2.27**	**95**	*e*Pn	**Pn**	**02 32 35.7**	**+0.7**
GELI	**Tayfur-Gelibol**	**2.32**	**304**	*e*PN	**Pn**	**02 32 37.0**	**+1.5**
GELI	**Tayfur-Gelibol**	**2.32**	**304**	*e*Pn	**Pn**	**02 32 37.0**	**+1.5**
CTYL	**Yalikoy Yolu**	**2.41**	**347**	*e*PN	**Pn**	**02 32 37.8**	**+1.0**
CTYL	**Yalikoy Yolu**	**2.41**	**347**	*e*Pn	**Pn**	**02 32 37.8**	**+1.0**
ERIK	**Erikli-Kesan**	**2.45**	**310**	*e*PN	**Pn**	**02 32 38.6**	**+1.2**
ERIK	**Erikli-Kesan**	**2.45**	**310**	*e*Pn	**Pn**	**02 32 38.6**	**+1.2**
PHSR	**Pinarhisar**	**2.75**	**337**	*e*PN	**Pn**	**02 32 43.1**	**+1.7**
PHSR	**Pinarhisar**	**2.75**	**337**	*e*Pn	**Pn**	**02 32 43.1**	**+1.7**
LADK	**Ladik-KONYA**	**2.80**	**108**	*e*PN	**Pn**	**02 32 43.1**	**+0.8**
LADK	**Ladik-KONYA**	**2.80**	**108**	*e*Pn	**Pn**	**02 32 43.1**	**+0.8**
KDZE	**Karadeniz Ereo**	**2.89**	**40**	*e*PN	**Pn**	**02 32 43.9**	**+0.5**
KDZE	**Karadeniz Ereo**	**2.89**	**40**	*e*Pn	**Pn**	**02 32 43.9**	**+0.5**
TIRR	**Tirgusor**	**5.35**	**356**	‖ *i*P	**Pn**	**02 33 16.1**	**-1.1**
TIRR	**Tirgusor**	**5.35**	**356**	‖ *i*P	**Pn**	**02 33 16.1**	**-1.1**
CFR	**Carcaliu**	**6.09**	**354**	‖ *i*P	**Pn**	**02 33 26.1**	**-1.2**
MLR	**Muntele Rosu**	**6.75**	**342**	‖ *i*P	**Pn**	**02 33 34.0**	**-2.6**
VRI	**Vrincioaia**	**6.95**	**347**	‖ *i*P	Pn	02 33 34.3	-4.8
VOIR		**6.96**	**336**	‖ *i*P	**Pn**	**02 33 36.5**	**-2.8**

*ISCJB **20** 02:38:48.9±0.6, 6.′84N±0.′05×73.′10W±0.′05, h160km±5km, Error ellipse: s-maj=11.1km s-min=4.6km az=42.9*
*FUNV **20** 02:38:48.8, 6.′81N×73.′19W, h177km, MW3.1*
*RSNC **20** 02:38:51.8±0.8, 6.′81N×73.′14W, h143km±4km, ML2.6*
ISC 20 02:38:48.8±1.4, **6.′84N**±0.′05×**73.′09W**±0.′06, **h163**km±8km, **n22**, σ1°**26**/37, **1C, Northern Colombia**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BTLC	**Betulia, Santa**	**0.19**	**295**	*e*P	**Pn**	**02 39 11.3**	**+0.4**
BARC	**Barichara**	**0.26**	**201**	*i* P	**Pn**	**02 39 11.1**	**+0.1**
BARC				*e*S	**Sn**	**02 39 25.9**	**-2.2**
BARC				*i*		02 39 27.2	
	comp=Z,98nm,0.4s						
GIRC	**Giron, Santand**	**0.26**	**337**	*e*P	**Pn**	**02 39 11.3**	**+0.3**
GIRC				*e*S	**Sn**	**02 39 25.8**	**-2.1**
PAMC	**Pamplona, Colo**	**0.63**	**38**	*e*P	**Pn**	**02 39 14.0**	**+1.1**
PAMC				*e*S	**Sn**	**02 39 30.5**	**-0.7**
BRRC	**Barranca, Sant**	**0.67**	**294**	*e*P	**Pn**	**02 39 12.9**	**+0.4**
BRRC				*e*S	**Sn**	**02 39 29.7**	**-0.9**
BRRC				*i*		02 39 33.5	
	comp=Z,55nm,0.2s						
GRMC	**Gramalote, San**	**0.92**	**18**	*e*P	**Pn**	**02 39 16.9**	**+2.5**
GRMC				*e*S	**Sn**	**02 39 36.1**	**+2.1**
GRMC				*i*		02 39 39.6	
	comp=Z,59nm,0.3s						
CBRI	**Barrientos, No**	**0.92**	**18**	*e*P	**Pn**	**02 39 15.6**	**+1.2**
CBRI				*e*S	**Sn**	**02 39 33.3**	**-0.8**
RUSC	**La Rusia**	**0.94**	**180**	*e*P	**Pn**	**02 39 15.2**	**+0.2**
RUSC				*e*S	**Sn**	**02 39 33.9**	**-1.0**
RUSC				*i*		02 39 35.6	
	comp=Z,45nm,0.5s						
CAPV	**Capacho**	**1.28**	**37**	*e*P	**Pn**	**02 39 19.1**	**+1.6**
CAPV				*e*S	**Sn**	**02 39 40.2**	**+0.7**
OCAC	**Ocana**	**1.41**	**351**	*e*P	**Pn**	**02 39 19.4**	**+0.8**
OCAC				*e*S	**Sn**	**02 39 41.6**	**-0.1**
OCAC				*i*		02 39 46.6	
	comp=Z,61nm,0.3s						
NORC	**Norcasia**	**2.17**	**235**	*e*P	**Pn**	**02 39 27.3**	**+0.5**
NORC				*e*S	**Sn**	**02 39 55.2**	**-0.9**
HELC	**Santa Helena**	**2.51**	**255**	*e*P	**Pn**	**02 39 32.3**	**+1.3**
HELC				*e*S	**Sn**	**02 40 02.5**	**-1.1**
HELC				*i*		02 40 10.3	
	comp=Z,36nm,0.4s						
VIGV	**El Vigia**	**2.62**	**41**	*e*P	**Pn**	**02 39 33.5**	**+1.3**
VIGV				*e*S	**Sn**	**02 40 06.1**	**+0.4**
SOCV	**Socops**	**2.64**	**57**	*e*P	**Pn**	**02 39 33.7**	**+1.4**
SOCV				*e*S	**Sn**	**02 40 06.1**	**+0.1**
TOLC	**Tolima**	**3.15**	**225**	*e*P	**Pn**	**02 39 40.9**	**+2.0**
PRAC	**Prado**	**3.58**	**210**	*e*P	**Pn**	**02 39 45.4**	**+1.3**
PRAC				*e*S	**Sn**	**02 40 26.7**	**-0.4**
VIRV	**Villa del Rosa**	**3.71**	**10**	*e*P	**Pn**	**02 39 45.5**	**-0.1**
VIRV				*e*S	**Sn**	**02 40 27.4**	**-2.6**
SANV	**Sanarito**	**4.40**	**53**	*e*P	**Pn**	**02 39 55.5**	**+0.7**
CURV	**Curarigua**	**4.42**	**44**	*e*P	**Pn**	**02 39 55.1**	**+0.1**
TEPV	**Terepaima**	**4.95**	**51**	*e*P	**Pn**	**02 40 01.0**	**-0.9**
SIQV	**Siquisique**	**4.99**	**40**	*e*P	**Pn**	**02 40 01.6**	**-0.8**
BAUV	**El Baul**	**5.42**	**67**	*e*P	**Pn**	**02 40 07.5**	**-0.5**

*DDA **20** 02:39:34.0, 39.′27N×28.′99E, h7km, Md2.6*
*ISCJB **20** 02:39:35.6±0.5, 39.′14N±0.′03×29.′02E±0.′03, h3km±6km, Error ellipse: s-maj=4.9km s-min=3.8km az=158.1*
*CSEM **20** 02:39:35.9±0.1, 39.′15N×29.′04E, h5km, MD2.6, Error ellipse: s-maj=2.7km s-min=2.3km az=126.0*
*ISK **20** 02:39:35.7, 39.′17N×29.′03E, h6km, MD2.8*
ISC 20 02:39:35.8±1.0, **39.′15N**±0.′02×**29.′04E**±0.′02, **h7**km±10km, **n45**, σ0°**54**/59, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**247**	P	**Pg**	**02 39 41.2**	**0.0**
DEMI				S	**Sg**	**02 39 44.7**	**-0.1**
DEMI	**Demirci**	**0.27**	**247**	*i* P	**Pg**	**02 39 41.2**	**0.0**
DEMI				*i* S	**Sg**	**02 39 44.7**	**-0.1**
GDZ	**Gediz**	**0.35**	**100**	P	**Pg**	**02 39 42.1**	**-0.6**
GDZ				S	**Sg**	**02 39 48.6**	**+1.2**
GDZ	**Gediz**	**0.35**	**100**	*i* P	**Pg**	**02 39 42.1**	**-0.6**
GDZ				*i* S	**Sg**	**02 39 48.6**	**+1.2**
TVSB	**Tavsanli**	**0.44**	**48**	*e*PG	**Pg**	**02 39 44.3**	**-0.2**
TVSB				*e*SG	**Sb**	**02 39 51.5**	**-1.4**
TVSB	**Tavsanli**	**0.44**	**48**	*e*Pg	**Pg**	**02 39 44.3**	**-0.2**
TVSB				*e*Sg	**Sb**	**02 39 51.5**	**-1.4**
KULA	**Kula-Manisa**	**0.70**	**205**	*e*PG	**Pg**	**02 39 49.4**	**+0.1**
KULA	**Kula-Manisa**	**0.70**	**205**	*e*Pg	**Pg**	**02 39 49.4**	**+0.1**
MANT	**Manisa**	**0.76**	**210**	P	**Pg**	**02 39 50.3**	**-0.1**
MANT				S	**Sg**	**02 39 59.3**	**-1.0**
MANT	**Manisa**	**0.76**	**210**	*i* P	**Pg**	**02 39 50.3**	**-0.1**
MANT				*i* S	**Sg**	**02 39 59.3**	**-1.0**
KHAL	**Karahalli**	**0.86**	**155**	P	**Pb**	**02 39 53.7**	**+0.7**
KHAL				S	**Sg**	**02 40 02.9**	**-0.5**
KHAL	**Karahalli**	**0.86**	**155**	*i* P	**Pb**	**02 39 53.7**	**+0.7**
KHAL				*i* S	**Sg**	**02 40 02.9**	**-0.5**
KHL	**Karahalli**	**0.91**	**155**	*e*PG	**Pb**	**02 39 54.2**	**+0.2**
KHL	**Karahalli**	**0.91**	**155**	*e*Pg	**Pb**	**02 39 54.2**	**+0.2**
AKHS	**Akhisar**	**0.99**	**254**	P	**Pb**	**02 39 55.5**	**+0.2**
AKHS				S	**Sg**	**02 40 08.1**	**+0.4**
AKHS	**Akhisar**	**0.99**	**254**	*i* P	**Pb**	**02 39 55.5**	**+0.2**
AKHS				*i* S	**Sg**	**02 40 08.1**	**+0.4**
AKS	**Akhisar**	**0.99**	**254**	*e*PG	**Pb**	**02 39 55.5**	**+0.2**
AKS	**Akhisar**	**0.99**	**254**	*e*Pg	**Pb**	**02 39 55.5**	**+0.2**
BALB	**Balikesir**	**1.02**	**299**	*e*PG	**Pb**	**02 39 55.8**	**0.0**
BALB				*e*SG	**Sg**	**02 40 09.1**	**+0.4**
BALB	**Balikesir**	**1.02**	**299**	*e*Pg	**Pb**	**02 39 55.8**	**0.0**
BALB				*e*Sg	**Sg**	**02 40 09.1**	**+0.4**
IGD	**Bursa**	**1.12**	**6**	*i* P	Pg	02 39 53.1	-4.2
IGD				*i* S	**Sn**	**02 40 13.8**	**+0.2**
CAVI	**Cavuskoy**	**1.22**	**30**	*e*PN	**Pg**	**02 39 59.0**	**-0.2**
CAVI	**Cavuskoy**	**1.22**	**30**	*e*Pn	**Pg**	**02 39 59.0**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.22**	**355**	*e*PN	**Pn**	**02 39 59.5**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.22**	**355**	*e*Pn	**Pn**	**02 39 59.5**	**+0.2**
KCTX	**Karacabey (Bur**	**1.23**	**335**	*e*PN	**Pg**	**02 39 59.2**	**-0.2**
KCTX	**Karacabey (Bur**	**1.23**	**335**	*e*Pn	**Pg**	**02 39 59.2**	**-0.2**
IZI	**Iznik**	**1.23**	**16**	*e*PN	**Pb**	**02 39 59.5**	**+0.1**
IZI	**Iznik**	**1.23**	**16**	*e*Pn	**Pb**	**02 39 59.5**	**+0.1**
GONE	**Gonen-Balikesi**	**1.37**	**311**	*e*PN	**Pn**	**02 40 01.6**	**+0.3**
GONE	**Gonen-Balikesi**	**1.37**	**311**	*e*Pn	**Pn**	**02 40 01.6**	**+0.3**
ADVT	**Abdulvahap**	**1.39**	**23**	*e*PN	**Pg**	**02 40 02.2**	**-0.3**
ADVT	**Abdulvahap**	**1.39**	**23**	*e*Pn	**Pg**	**02 40 02.2**	**-0.3**
ARMT	**Armutlu**	**1.42**	**355**	*e*PN	**Pb**	**02 40 02.7**	**+0.1**
ARMT	**Armutlu**	**1.42**	**355**	*e*Pn	**Pb**	**02 40 02.7**	**+0.1**
EDC	**Edincik**	**1.50**	**323**	*e*PN	**Pb**	**02 40 04.0**	**+0.2**
EDC	**Edincik**	**1.50**	**323**	*e*Pn	**Pb**	**02 40 04.1**	**+0.2**
GULT	**Gulveren**	**1.71**	**41**	*e*PN	**Pn**	**02 40 06.7**	**+0.6**
GULT	**Gulveren**	**1.71**	**41**	*e*Pn	**Pn**	**02 40 06.7**	**+0.6**
HRT	**Hereke**	**1.74**	**16**	*e*PN	**Pn**	**02 40 06.7**	**+0.3**
HRT	**Hereke**	**1.74**	**16**	*e*Pn	**Pn**	**02 40 06.7**	**+0.3**
ISK	**Istanbul-Kandi**	**1.91**	**1**	*e*PN	**Pn**	**02 40 09.7**	**+0.9**
ISK	**Istanbul-Kandi**	**1.91**	**1**	*e*Pn	**Pn**	**02 40 09.7**	**+0.9**
SVRH	**Sivrihisar-ESK**	**1.95**	**81**	*e*PN	**Pn**	**02 40 09.9**	**+0.5**
SVRH	**Sivrihisar-ESK**	**1.95**	**81**	*e*Pn	**Pn**	**02 40 09.9**	**+0.5**

*ISCJB **20** 02:40:54.5±0.7, 23.′62N±0.′05×126.′51E±0.′03, h33km, mb3.4/5, Error ellipse: s-maj=6.8km s-min=4.2km az=162.8*
*IDC **20** 02:40:54.8±1.1, 23.′02N×125.′54E, h0km, mb3.5/5, mb1 3.7/5, mb1mx3.4/37, mbtmp3.5/5, Error ellipse: s-maj=59.1km s-min=20.8km az=69.0*
*JMA **20** 02:40:55.6±0.2, 23.′53N×126.′35E, h30km, M3.8*
ISC 20 02:40:56.4±1.1, **23.′60N**±0.′08×**126.′50E**±0.′05, **h35**km, **n23**, σ1°**50**/34, **mb3.4/5, Southeast of Ryukyu Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JMJ	**Miyako jima 2**	**1.64**	**318**	S	**Sn**	**02 41 42.4**	**-0.2**
JIRB	**Irabujima**	**1.72**	**316**	P	**Pn**	**02 41 23.8**	**-0.1**
JIRB				S	**Sn**	**02 41 44.9**	**+0.2**
JIKM	**Ikemajima**	**1.75**	**319**	P	**Pn**	**02 41 24.2**	**0.0**
JIKM				S	**Sn**	**02 41 45.7**	**+0.5**
JISG	**Ishigakijimahi**	**2.23**	**297**	P	**Pn**	**02 41 30.5**	**-0.4**
JISG				S	**Sn**	**02 41 56.2**	**-1.0**
JIJ	**Ishigaki jima**	**2.29**	**290**	P	**Pn**	**02 41 31.1**	**-0.5**
JIJ				S	**Sn**	**02 41 56.5**	**-2.1**
JKRS	**Kuro-shima**	**2.37**	**286**	P	**Pn**	**02 41 32.5**	**-0.2**
JKRS				S	**Sn**	**02 41 59.0**	**-1.6**
HATJ	**Hateruma jima**	**2.51**	**281**	P	**Pn**	**02 41 34.0**	**-0.7**
HATJ				S	**Sn**	**02 42 01.3**	**-2.8**
IRIF	**Iriomote-Funau**	**2.64**	**287**	P	**Pn**	**02 41 36.1**	**-0.4**
IRIF				S	**Sn**	**02 42 05.4**	**-1.9**
JKE	**Kume jima 2**	**2.73**	**5**	P	**Pn**	**02 41 37.0**	**-0.7**
JKE				S	**Sn**	**02 42 07.5**	**-2.0**
JAGN	**Aguni-jima**	**3.05**	**13**	P	**Pn**	**02 41 41.6**	**-0.6**
JAGN				S	**Sn**	**02 42 15.6**	**-1.9**
JNTH	**Nagotoyohara**	**3.22**	**25**	P	**Pn**	**02 41 43.3**	**-1.2**
JNTH				S	**Sn**	**02 42 20.0**	**-1.6**
YOJ	**Yonaguni jima**	**3.31**	**286**	P	**Pn**	**02 41 45.4**	**-0.2**
YOJ				S	**Sn**	**02 42 21.3**	**-2.4**
JYNG	**Yonagunijimaku**	**3.36**	**285**	P	**Pn**	**02 41 45.4**	**-1.0**
JYNG				S	**Sn**	**02 42 21.3**	**-3.8**
JOW	**Kunigami**	**3.60**	**26**	P	**Pn**	**02 41 48.9**	**-0.8**
JOKE	**Okinoerabujima**	**4.19**	**26**	P	**Pn**	**02 41 57.4**	**-0.4**
JTK	**Tokunoshima**	**4.72**	**27**	P	**Pn**	**02 42 04.0**	**-1.1**
JAMN	**Amaminishikomi**	**5.21**	**27**	P	**Pn**	**02 42 11.3**	**-0.6**
JAM	**Amami Oshima**	**5.55**	**30**	P	**Pn**	**02 42 15.2**	**-1.3**
MKAR	**Makanchi Array**	**42.18**	**314**	P	**P**	**02 48 48.2**	**+2.5**
	0.3nm,0.4s,baz=91,slow=12,SNR=3.1						
ZALV	**Zalesovo Beam**	**43.44**	**325**	P	**P**	**02 48 58.2**	**+2.4**
	0.5nm,0.4s,baz=116,slow=9.8,SNR=2.3						
WRA	**Warramunga Arr**	**43.95**	**169**	P	**P**	**02 49 00.4**	**+0.2**
	0.6nm,0.3s,baz=348,slow=8.8,SNR=14						
ASAR	**Alice Springs**	**47.53**	**171**	P	**P**	**02 49 28.8**	**+0.3**
	0.2nm,0.4s,baz=355,slow=14,SNR=3.0						
YKA	**Yellowknife Ar**	**81.56**	**24**	P	P	02 53 18.8	+8.6
	0.1nm,0.6s,baz=304,slow=4.4,SNR=2.6						

*ISCJB **20** 02:42:06.7±0.4, 39.′09N±0.′03×29.′01E±0.′03, h4km±6km, Error ellipse: s-maj=5.1km s-min=4.0km az=179.5*
*ISK **20** 02:42:06.6, 39.′10N×29.′03E, h7km, MD3.0*
*DDA **20** 02:42:06.3, 39.′11N×29.′01E, h7km, Md2.3*
*CSEM **20** 02:42:07.0±0.1, 39.′10N×29.′01E, h5km, MD2.3, Error ellipse: s-maj=2.2km s-min=2.1km az=114.0*
ISC 20 02:42:06.9±0.9, **39.′11N**±0.′02×**29.′00E**±0.′02, **h9**km±9km, **n54**, σ0°**50**/66, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.23**	**254**	P	**Pg**	**02 42 11.8**	**+0.2**
DEMI				S	**Sg**	**02 42 15.0**	**+0.3**
**DEM

MANT	**Manisa**	**0.72**	**210**	P	Pb	02 45 36.0	-0.3
MANT				S	Sg	02 45 45.3	+0.7
MANT	**Manisa**	**0.72**	**210**	*i* P	Pb	02 45 36.0	-0.3
MANT				*i* S	Sg	02 45 45.3	+0.7

ISK ***20*** *02:45:51.1,39°.13N×29°.04E, h5km, ML3.2*
DDA ***20*** *02:45:51.1,39°.13N×28°.98E, h7km, Md2.7*
CSEM ***20*** *02:45:52.2±0.1,39°.12N×29°.02E, h2km, MD2.7, Error ellipse: s-maj=2.7km s-min=2.5km az=89.0*
ISC 20 02:45:52.0±1.0, 39°.12N±0°.02×29°.00E±0°.02, h5km±10km, n91, σ0s79/106, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**251**	P	**Pg**	**02 45 56.5**	**-0.1**
DEMI				S	**Sg**	**02 45 59.7**	**-0.1**
DEMI	**Demirci**	**0.24**	**251**	*i* P	**Pg**	**02 45 56.5**	**-0.1**
DEMI				*i* S	**Sg**	**02 45 59.7**	**-0.1**
GDZ	**Gediz**	**0.37**	**94**	P	**Pg**	**02 45 59.7**	**+0.5**
GDZ				S	**Sg**	**02 46 05.4**	**+1.3**
GDZ	**Gediz**	**0.37**	**94**	*i* P	**Pg**	**02 45 59.7**	**+0.5**
GDZ				*i* S	**Sg**	**02 46 05.4**	**+1.3**
TVSB	**Tavsanli**	**0.48**	**47**	*e*PG	**Pg**	**02 46 01.6**	**+0.2**
TVSB				*e*SG	**Sg**	**02 46 07.7**	**0.0**
TVSB	**Tavsanli**	**0.48**	**47**	*e*Pg	**Pg**	**02 46 01.6**	**+0.2**
TVSB				*e*Sg	**Sg**	**02 46 07.7**	**0.0**
DURS	**Dursunbey**	**0.63**	**320**	P	**Pg**	**02 46 03.4**	**-0.7**
DURS	**Dursunbey**	**0.63**	**320**	*i* P	**Pg**	**02 46 03.4**	**-0.7**
KULA	**Kula-Manisa**	**0.66**	**204**	*e*PG	**Pg**	**02 46 04.5**	**-0.2**
KULA	**Kula-Manisa**	**0.66**	**204**	*e*Pg	**Pg**	**02 46 04.5**	**-0.2**
MANT	**Manisa**	**0.72**	**209**	P	**Pg**	**02 46 05.5**	**-0.3**
MANT				S	**Sg**	**02 46 14.6**	**-0.5**
MANT	**Manisa**	**0.72**	**209**	*i* P	**Pg**	**02 46 05.5**	**-0.3**
MANT				*i* S	**Sg**	**02 46 14.6**	**-0.5**
KHAL	**Karahalli**	**0.84**	**153**	P	**Pb**	**02 46 08.9**	**-0.2**
KHAL				S	**Sg**	**02 46 19.0**	**+0.1**
KHAL	**Karahalli**	**0.84**	**153**	*i* P	**Pb**	**02 46 08.9**	**-0.2**
KHAL				*i* S	**Sg**	**02 46 19.1**	**+0.1**
KHL	**Karahalli**	**0.89**	**153**	*e*PG	**Pg**	**02 46 08.4**	**-0.7**
KHL	**Karahalli**	**0.89**	**153**	*e*Pg	**Pg**	**02 46 08.4**	**-0.7**
AKHS	**Akhisar**	**0.96**	**256**	P	**Pg**	**02 46 10.0**	**-0.3**
AKHS	**Akhisar**	**0.96**	**256**	*i* P	**Pg**	**02 46 10.0**	**-0.3**
AKS	**Akhisar**	**0.96**	**256**	*e*PG	**Pg**	**02 46 10.4**	**+0.1**
AKS	**Akhisar**	**0.96**	**256**	*e*Pg	**Pg**	**02 46 10.4**	**+0.1**
BALB	**Balikesir**	**1.01**	**301**	*e*PG	**Pb**	**02 46 12.3**	**+0.3**
BALB				*e*SG	**Sn**	**02 46 26.7**	**-0.7**
BALB	**Balikesir**	**1.01**	**301**	*e*Pg	**Pb**	**02 46 12.3**	**+0.3**
BALB				*e*Sg	**Sn**	**02 46 26.7**	**-0.7**
IGD	**Bursa**	**1.15**	**8**	*i* P	**Pg**	**02 46 13.4**	**-0.7**
IGD				*i* S	**Sg**	**02 46 26.9**	**-2.1**
KCTX	**Karacabey (Bur**	**1.25**	**337**	*e*PN	**Pn**	**02 46 15.8**	**-0.3**
KCTX	**Karacabey (Bur**	**1.25**	**337**	*e*Pn	**Pn**	**02 46 15.8**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.25**	**356**	*e*PN	**Pn**	**02 46 15.8**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.25**	**356**	*e*Pn	**Pn**	**02 46 15.8**	**-0.3**
CAVI	**Cavuskoy**	**1.26**	**31**	*e*PN	**Pn**	**02 46 16.0**	**-0.3**
CAVI				*e*SN	**Sn**	**02 46 34.0**	**+0.4**
CAVI	**Cavuskoy**	**1.26**	**31**	*e*Pn	**Pn**	**02 46 16.0**	**-0.3**
CAVI				*e*Sn	**Sn**	**02 46 34.0**	**+0.4**
IZI	**Iznik**	**1.27**	**16**	*e*PN	**Pn**	**02 46 15.7**	**-0.7**
IZI	**Iznik**	**1.27**	**16**	*e*Pn	**Pn**	**02 46 15.7**	**-0.7**
GEMT	**Gemlik**	**1.32**	**6**	*e*PN	**Pn**	**02 46 17.1**	**0.0**
GEMT	**Gemlik**	**1.32**	**6**	*e*Pn	**Pn**	**02 46 17.1**	**0.0**
GONE	**Gonen-Balikesi**	**1.38**	**313**	*e*PN	**Pg**	**02 46 19.3**	**+0.9**
GONE	**Gonen-Balikesi**	**1.38**	**313**	*e*Pn	**Pg**	**02 46 19.3**	**+0.9**
ADVT	**Abdulvahap**	**1.43**	**23**	*e*PN	**Pn**	**02 46 18.7**	**+0.2**
ADVT	**Abdulvahap**	**1.43**	**23**	*e*Pn	**Pn**	**02 46 18.7**	**+0.2**
ARMT	**Armutlu**	**1.45**	**356**	*e*PN	**Pb**	**02 46 19.3**	**-0.2**
ARMT	**Armutlu**	**1.45**	**356**	*e*Pn	**Pb**	**02 46 19.3**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**1.46**	**217**	*e*PN	**Pg**	**02 46 20.3**	**+0.4**
AYDB	**Zeytinkoy-Aydi**	**1.46**	**217**	*e*Pn	**Pg**	**02 46 20.3**	**+0.4**
EDC	**Edincik**	**1.51**	**325**	*e*PN	**Pb**	**02 46 20.6**	**+0.2**
EDC	**Edincik**	**1.51**	**325**	*e*Pn	**Pb**	**02 46 20.6**	**+0.2**
GPA	**Golpazari**	**1.54**	**40**	*e*PN	**Pn**	**02 46 19.5**	**-0.6**
GPA	**Golpazari**	**1.54**	**40**	*e*Pn	**Pn**	**02 46 19.5**	**-0.6**
DKL	**Dikili**	**1.63**	**269**	*e*PN	**Pb**	**02 46 22.5**	**0.0**
DKL	**Dikili**	**1.63**	**269**	*e*Pn	**Pb**	**02 46 22.5**	**0.0**
GULT	**Gulveren**	**1.75**	**41**	*e*PN	**Pn**	**02 46 23.6**	**+0.5**
GULT	**Gulveren**	**1.75**	**41**	*e*Pn	**Pn**	**02 46 23.6**	**+0.5**
ISP	**Isparta**	**1.76**	**137**	*e*PN	**Pb**	**02 46 24.1**	**-0.6**
ISP	**Isparta**	**1.76**	**137**	*e*Pn	**Pb**	**02 46 24.1**	**-0.6**
HRT	**Hereke**	**1.78**	**16**	*e*PN	**Pn**	**02 46 24.1**	**+0.7**
HRT	**Hereke**	**1.78**	**16**	*e*Pn	**Pn**	**02 46 24.1**	**+0.7**
KRBG	**Karabiga-Canak**	**1.83**	**315**	*e*PN	**Pn**	**02 46 24.9**	**+0.9**
KRBG	**Karabiga-Canak**	**1.83**	**315**	*e*Pn	**Pn**	**02 46 24.9**	**+0.9**
SPNC	**Sapanca-Adapaz**	**1.86**	**32**	*e*PN	**Pn**	**02 46 24.9**	**+0.5**
SPNC	**Sapanca-Adapaz**	**1.86**	**32**	*e*Pn	**Pn**	**02 46 24.9**	**+0.5**
ISK	**Istanbul-Kandi**	**1.94**	**1**	*e*PN	**Pb**	**02 46 27.0**	**-0.8**
ISK	**Istanbul-Kandi**	**1.94**	**1**	*e*Pn	**Pb**	**02 46 27.0**	**-0.8**
SVRH	**Sivrihisar-ESK**	**1.98**	**80**	*e*PN	**Pn**	**02 46 26.5**	**+0.3**
SVRH	**Sivrihisar-ESK**	**1.98**	**80**	*e*Pn	**Pn**	**02 46 26.5**	**+0.3**
GLHS	**Glhisar (BURDU**	**2.00**	**169**	*e*PN	**Pb**	**02 46 28.1**	**-0.7**
GLHS	**Glhisar (BURDU**	**2.00**	**169**	*e*Pn	**Pb**	**02 46 28.1**	**-0.7**
YER	**Yerkesik**	**2.06**	**196**	*e*PN	**Pb**	**02 46 28.9**	**-1.0**
YER	**Yerkesik**	**2.06**	**196**	*e*Pn	**Pb**	**02 46 28.9**	**-1.0**
BGKT	**Bogazkoy**	**2.07**	**355**	*e*PN	**Pn**	**02 46 28.4**	**+1.1**
BGKT	**Bogazkoy**	**2.07**	**355**	*e*Pn	**Pn**	**02 46 28.4**	**+1.1**
RKY	**Sarkoy-Tekirda**	**2.10**	**319**	*e*PN	**Pn**	**02 46 29.3**	**+1.4**
RKY	**Sarkoy-Tekirda**	**2.10**	**319**	*e*Pn	**Pn**	**02 46 29.3**	**+1.4**
KLYT	**Kilyos**	**2.13**	**1**	*e*PN	**Pn**	**02 46 28.9**	**+0.7**
KLYT	**Kilyos**	**2.13**	**1**	*e*Pn	**Pn**	**02 46 28.9**	**+0.7**
LPK	**Lapseki**	**2.13**	**307**	*e*PN	**Pn**	**02 46 29.7**	**+1.5**
LPK	**Lapseki**	**2.13**	**307**	*e*Pn	**Pn**	**02 46 29.7**	**+1.5**
MDUB	**Mudurnu**	**2.16**	**51**	*e*PN	**Pn**	**02 46 29.5**	**+0.7**
MDUB	**Mudurnu**	**2.16**	**51**	*e*Pn	**Pn**	**02 46 29.5**	**+0.7**
TKR	**Tekirdag**	**2.18**	**329**	*e*PN	**Pn**	**02 46 30.0**	**+1.1**
TKR	**Tekirdag**	**2.18**	**329**	*e*Pn	**Pn**	**02 46 30.0**	**+1.1**
EZN	**Ezine**	**2.19**	**290**	*e*PN	**Pn**	**02 46 30.5**	**+1.5**
EZN	**Ezine**	**2.19**	**290**	*e*Pn	**Pn**	**02 46 30.5**	**+1.5**
CRLT	**Corlu**	**2.23**	**335**	*e*PN	**Pn**	**02 46 31.1**	**+1.5**
CRLT	**Corlu**	**2.23**	**335**	*e*Pn	**Pn**	**02 46 31.1**	**+1.5**
KIZT	**Kizilcal**	**2.25**	**95**	*e*PN	**Pn**	**02 46 30.8**	**+0.8**
KIZT	**Kizilcal**	**2.25**	**95**	*e*Pn	**Pn**	**02 46 30.8**	**+0.8**
SUTC	**Sutluce-Ispart**	**2.27**	**136**	*e*PN	**Pn**	**02 46 30.5**	**+0.3**
SUTC	**Sutluce-Ispart**	**2.27**	**136**	*e*Pn	**Pn**	**02 46 30.5**	**+0.3**
GELI	**Tayfur-Gelibol**	**2.33**	**304**	*e*PN	**Pb**	**02 46 32.8**	**-1.6**
GELI	**Tayfur-Gelibol**	**2.33**	**304**	*e*Pn	**Pb**	**02 46 32.8**	**-1.6**
CTYL	**Yalikoy Yolu**	**2.42**	**347**	*e*PN	**Pn**	**02 46 33.5**	**+1.4**
CTYL	**Yalikoy Yolu**	**2.42**	**347**	*e*Pn	**Pn**	**02 46 33.5**	**+1.4**
ERIK	**Erikli-Kesan**	**2.46**	**310**	*e*PN	**Pn**	**02 46 33.8**	**+1.0**
ERIK	**Erikli-Kesan**	**2.46**	**310**	*e*Pn	**Pn**	**02 46 33.8**	**+1.0**

ISCJB ***20*** *02:46:28.5±0.5,39°.10N±0°.03×28°.99E±0°.03, h5km±5km, Error ellipse: s-maj=4.7km s-min=4.3km az=156.7*
CSEM ***20*** *02:46:28.7±0.1,39°.10N×29°.00E, h5km, MD2.7, Error ellipse: s-maj=3.0km s-min=2.6km az=94.0*
ISK ***20*** *02:46:28.4,39°.12N×29°.02E, h5km, MD3.0*
DDA ***20*** *02:46:28.4,39°.10N×28°.99E, h7km, Md2.7*
ISC 20 02:46:28.2±0.9, 39°.07N±0°.03×29°.03E±0°.02, h12km±8km, n36, σ0s33/48, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**265**	P	**Pg**	**02 46 33.5**	**+0.1**
DEMI				S	**Sg**	**02 46 36.8**	**-0.1**
DEMI	**Demirci**	**0.24**	**265**	*i* P	**Pg**	**02 46 33.5**	**+0.1**
DEMI				*i* S	**Sg**	**02 46 36.8**	**-0.1**
GDZ	**Gediz**	**0.35**	**86**	P	**Pb**	**02 46 36.4**	**-0.1**
GDZ				S	**Sb**	**02 46 42.3**	**+0.1**
GDZ	**Gediz**	**0.35**	**86**	*i* P	**Pb**	**02 46 36.4**	**-0.1**
GDZ				*i* S	**Sb**	**02 46 42.3**	**+0.1**
TVSB	**Tavsanli**	**0.51**	**41**	*e*PG	**Pg**	**02 46 38.4**	**+0.2**
TVSB				*e*SG	**Sg**	**02 46 44.8**	**-0.3**
TVSB	**Tavsanli**	**0.51**	**41**	*e*Pg	**Pg**	**02 46 38.4**	**+0.2**
TVSB				*e*Sg	**Sg**	**02 46 44.8**	**-0.3**
KULA	**Kula-Manisa**	**0.62**	**208**	*e*PG	**Pb**	**02 46 41.4**	**+0.4**
KULA	**Kula-Manisa**	**0.62**	**208**	*e*Pg	**Pb**	**02 46 41.4**	**+0.4**
MANT	**Manisa**	**0.68**	**213**	P	**Pb**	**02 46 42.3**	**+0.2**
MANT				S	**Sb**	**02 46 51.2**	**-0.4**
MANT	**Manisa**	**0.68**	**213**	*i* P	**Pb**	**02 46 42.3**	**+0.2**
MANT				*i* S	**Sb**	**02 46 51.2**	**-0.4**
DURS	**Dursunbey**	**0.69**	**321**	P	**Pg**	**02 46 40.5**	**-1.1**
DURS	**Dursunbey**	**0.69**	**321**	*i* P	**Pg**	**02 46 40.5**	**-1.1**
KHAL	**Karahalli**	**0.78**	**152**	P	**Pb**	**02 46 43.8**	**0.0**
KHAL				S	**Sn**	**02 46 57.0**	**+0.1**
KHAL	**Karahalli**	**0.78**	**152**	*i* P	**Pb**	**02 46 43.8**	**0.0**
KHAL				*i* S	**Sn**	**02 46 57.0**	**+0.1**
KHL	**Karahalli**	**0.84**	**152**	*e*PG	**Pn**	**02 46 45.9**	**0.0**
KHL	**Karahalli**	**0.84**	**152**	*e*Pg	**Pn**	**02 46 45.9**	**0.0**
AKHS	**Akhisar**	**0.96**	**259**	P	**Pb**	**02 46 47.2**	**+0.3**
AKHS	**Akhisar**	**0.96**	**259**	*i* P	**Pb**	**02 46 47.2**	**+0.3**
BALB	**Balikesir**	**1.06**	**303**	*e*PG	**Pn**	**02 46 49.1**	**+0.2**
BALB				*e*SG	**Sg**	**02 47 02.5**	**+0.1**
BALB	**Balikesir**	**1.06**	**303**	*e*Pg	**Pn**	**02 46 49.1**	**+0.2**
BALB				*e*Sg	**Sg**	**02 47 02.5**	**+0.1**
CAVI	**Cavuskoy**	**1.30**	**29**	*e*PN	**Pb**	**02 46 52.8**	**+0.2**
CAVI	**Cavuskoy**	**1.30**	**29**	*e*Pn	**Pb**	**02 46 52.8**	**+0.2**
KCTX	**Karacabey (Bur**	**1.31**	**337**	*e*PN	**Pn**	**02 46 52.2**	**-0.1**
KCTX	**Karacabey (Bur**	**1.31**	**337**	*e*Pn	**Pn**	**02 46 52.2**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.31**	**355**	*e*PN	**Pb**	**02 46 53.0**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.31**	**355**	*e*Pn	**Pb**	**02 46 53.0**	**+0.3**
IZI	**Iznik**	**1.32**	**15**	*e*PN	**Pn**	**02 46 52.8**	**+0.3**
IZI	**Iznik**	**1.32**	**15**	*e*Pn	**Pn**	**02 46 52.8**	**+0.3**
GEMT	**Gemlik**	**1.37**	**5**	*e*PN	**Pn**	**02 46 53.5**	**+0.4**
GEMT	**Gemlik**	**1.37**	**5**	*e*Pn	**Pn**	**02 46 53.6**	**+0.4**
ADVT	**Abdulvahap**	**1.47**	**22**	*e*PN	**Pb**	**02 46 55.7**	**+0.2**
ADVT	**Abdulvahap**	**1.47**	**22**	*e*Pn	**Pb**	**02 46 55.7**	**+0.2**
ARMT	**Armutlu**	**1.50**	**355**	*e*PN	**Pb**	**02 46 56.5**	**+0.4**
ARMT	**Armutlu**	**1.50**	**355**	*e*Pn	**Pb**	**02 46 56.5**	**+0.4**
EDC	**Edincik**	**1.56**	**325**	*e*PN	**Pb**	**02 46 57.2**	**+0.1**
EDC	**Edincik**	**1.56**	**325**	*e*Pn	**Pb**	**02 46 57.2**	**+0.1**

DDA 20 02:50:22.7, 39°.10N×29°.08E, h7km, Md1.9, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**259**	*i* P	Pg	02 50 29.0	+0.7
DEMI				*i* S	Sb	02 50 33.8	-1.4
GDZ	**Gediz**	**0.32**	**92**	*i* P	Pg	02 50 24.1	-4.9
GDZ				*i* S	Sg	02 50 34.2	+1.1
MANT	**Manisa**	**0.73**	**214**	*i* P	Pg	02 50 34.2	-2.5
MANT				*i* S	Sb	02 50 47.3	-0.8

ISCJB ***20*** *02:51:12.6±0.6,39°.10N±0°.04×29°.11E±0°.05, h9km, Error ellipse: s-maj=6.8km s-min=4.1km az=135.7*
ISK ***20*** *02:51:12.6,39°.14N×29°.11E, h7km, MD2.6*
CSEM ***20*** *02:51:12.8±0.1,39°.11N×29°.10E, h8km, MD2.6, Error ellipse: s-maj=3.8km s-min=2.7km az=126.0*
DDA ***20*** *02:51:14.8,39°.04N×28°.65E, h27km, Md2.5*
ISC 20 02:51:12.7±0.9, 39°.11N±0°.03×29°.10E±0°.03, h9km, n30, σ0s30/38, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.30**	**257**	P	**Pg**	**02 51 19.3**	**+0.5**
DEMI				S	**Sg**	**02 51 23.2**	**+0.3**
DEMI	**Demirci**	**0.30**	**257**	*i* P	**Pg**	**02 51 19.3**	**+0.5**
DEMI				*i* S	**Sg**	**02 51 23.2**	**+0.3**
TVSB	**Tavsanli**	**0.44**	**40**	*e*PG	**Pg**	**02 51 21.3**	**-0.1**
TVSB				*e*SG	**Sg**	**02 51 27.0**	**-0.2**
TVSB	**Tavsanli**	**0.44**	**40**	*e*Pg	**Pg**	**02 51 21.3**	**-0.1**
TVSB				*e*Sg	**Sg**	**02 51 27.0**	**-0.2**
DURS	**Dursunbey**	**0.69**	**315**	P	**Pb**	**02 51 26.5**	**-0.5**
DURS	**Dursunbey**	**0.69**	**315**	*i* P	**Pb**	**02 51 26.5**	**-0.5**
MANT	**Manisa**	**0.75**	**214**	P	**Pg**	**02 51 27.1**	**-0.2**
MANT				S	**Sg**	**02 51 36.8**	**-0.2**
MANT	**Manisa**	**0.75**	**214**	*i* P	**Pg**	**02 51 27.1**	**-0.2**
MANT				*i* S	**Sg**	**02 51 36.8**	**-0.2**
KHL	**Karahalli**	**0.86**	**157**	*e*PG	**Pb**	**02 51 30.0**	**+0.2**
KHL	**Karahalli**	**0.86**	**157**	*e*Pg	**Pb**	**02 51 30.0**	**+0.2**
AKS	**Akhisar**	**1.03**	**257**	*e*PG	**Pg**	**02 51 32.3**	**-0.2**
AKS	**Akhisar**	**1.03**	**257**	*e*Pg	**Pg**	**02 51 32.3**	**-0.2**
BALB	**Balikesir**	**1.08**	**300**	*e*PN	**Pn**	**02 51 33.9**	**-0.1**
BALB				*e*SN	**Sn**	**02 51 49.2**	**0.0**
BALB	**Balikesir**	**1.08**	**300**	*e*Pn	**Pn**	**02 51 33.9**	**-0.1**
BALB				*e*Sn	**Sn**	**02 51 49.2**	**0.0**
CAVI	**Cavuskoy**	**1.23**	**28**	*e*PN	**Pn**	**02 51 36.0**	**-0.2**
CAVI	**Cavuskoy**	**1.23**	**28**	*e*Pn	**Pn**	**02 51 36.0**	**-0.2**
IZI	**Iznik**	**1.26**	**13**	*e*PN	**Pn**	**02 51 36.3**	**-0.3**
IZI	**Iznik**	**1.26**	**13**	*e*Pn	**Pn**	**02 51 36.3**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.27**	**353**	*e*PN	**Pg**	**02 51 37.6**	**+0.6**
MDNY	**Mudanya-Bursa**	**1.27**	**353**	*e*Pn	**Pg**	**02 51 37.7**	**+0.7**
KCTX	**Karacabey (Bur**	**1.28**	**334**	*e*PN	**Pb**	**02 51 37.0**	**-0.1**
KCTX	**Karacabey (Bur**	**1.28**	**334**	*e*Pn	**Pb**	**02 51 37.0**	**-0.1**
GONE	**Gonen-Balikesi**	**1.44**	**311**	*e*PN	**Pb**	**02 51 39.8**	**+0.2**
GONE	**Gonen-Balikesi**	**1.44**	**311**	*e*Pn	**Pb**	**02 51 39.8**	**+0.2**
ARMT	**Armutlu**	**1.46**	**353**	*e*PN	**Pb**	**02 51 39.8**	**-0.3**
ARMT	**Armutlu**	**1.46**	**353**	*e*Pn	**Pb**	**02 51 39.8**	**-0.3**
EDC	**Edincik**	**1.56**	**323**	*e*PN	**Pb**	**02 51 41.6**	**-0.1**
EDC	**Edincik**	**1.56**	**323**	*e*Pn	**Pb**	**02 51 41.6**	**-0.1**
GULT	**Gulveren**	**1.71**	**39**	*e*PN	**Pn**	**02 51 43.3**	**+0.4**
GULT	**Gulveren**	**1.71**	**39**	*e*Pn	**Pn**	**02 51 43.3**	**+0.4**

CSEM ***20*** *02:52:03.2,39°.21N×29°.14E, h5km, MD2.7*
ISK 20 02:52:03.2, 39°.21N×29°.14E, h5km, MD2.7, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KHL	**Karahalli**	**0.93**	**161**	*e*PG	Pb	02 52 22.4	+0.5
KHL	**Karahalli**	**0.93**	**161**	*e*Pg	Pb	02 52 22.4	+0.5
BALB	**Balikesir**	**1.07**	**294**	*e*PG	Pn	02 52 24.8	0.0
BALB				*e*SG	Sn	02 52 41.0	+1.0
BALB	**Balikesir**	**1.07**	**294**	*e*Pg	Pn	02 52 24.8	0.0
BALB				*e*Sg	Sn	02 52 41.0	+1.0
AKS	**Akhisar**	**1.08**	**253**	*e*PN	Pn	02 52 25.0	0.0
AKS	**Akhisar**	**1.08**	**253**	*e*Pn	Pn	02 52 25.0	-0.1
CAVI	**Cavuskoy**	**1.13**	**28**	*e*PN	Pn	02 52 26.1	+0.4
CAVI				*e*SN	Sn	02 52 42.7	+1.0
CAVI	**Cavuskoy**	**1.13**	**28**	*e*Pn	Pn	02 52 26.1	+0.4
CAVI				*e*Sn	Sn	02 52 42.7	+1.1
IZI	**Iznik**	**1.16**	**13**	*e*PN	Pn	02 52 26.2	+0.1
IZI	**Iznik**	**1.16**	**13**	*e*Pn	Pn	02 52 26.2	+0.1
MDNY	**Mudanya-Bursa**	**1.18**	**350**	*e*PN	Pn	02 52 26.9	+0.6
MDNY	**Mudanya-Bursa**	**1.18**	**350**	*e*Pn	Pn	02 52 26.9	+0.6
KCTX	**Karacabey (Bur**	**1.22**	**330**	*e*PN	Pn	02 52 27.7	+0.8
KCTX	**Karacabey (Bur**	**1.22**	**330**	*e*Pn	Pn	02 52 27.7	+0.8
ARMT	**Armutlu**	**1.37**	**351**	*e*PN	Pg	02 52 30.4	+0.8
ARMT	**Armutlu**	**1.37**	**351**	*e*Pn	Pg	02 52 30.4	+0.9
GONE	**Gonen-Balikesi**	**1.40**	**307**	*e*PN	Pg	02 52 30.9	+0.8
GONE	**Gonen-Balikesi**	**1.40**	**307**	*e*Pn	Pg	02 52 30.9	+0.8
EDC	**Edincik**	**1.50**	**320**	*e*PN	Pg	02 52 32.5	+0.4
EDC	**Edincik**	**1.50**	**320**	*e*Pn	Pg	02 52 32.5	+0.5
GULT	**Gulveren**	**1.62**	**40**	*e*PN	Pg	02 52 34.1	-0.1
GULT	**Gulveren**	**1.62**	**40**	*e*Pn	Pg	02 52 34.1	-0.1
ISK	**Istanbul-Kandi**	**1.85**	**358**	*e*PN	Pb	02 52 37.5	-0.1
ISK	**Istanbul-Kandi**	**1.85**	**358**	*e*Pn	Pb	02 52 37.5	-0.1

ISCJB ***20*** *02:53:10.7±0.6,39°.14N±0°.04×28°.98E±0°.04, h3km±7km, Error ellipse: s-maj=6.8km s-min=4.9km az=170.2*
CSEM ***20*** *02:53:10.8±0.2,39°.13N×28°.99E, h5km, MD2.2, Error ellipse: s-maj=5.2km s-min=4.2km az=162.0*
DDA ***20*** *02:53:11.3,39°.02N×29°.03E, h7km, Md2.2*
ISK ***20*** *02:53:11.9,39°.23N×29°.00E, h6km, MD2.7*
ISC 20 02:53:10.7±1.0, 39°.15N±0°.03×28°.96E±0°.03, h7km±10km, n32, σ0s68/41, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.22**	**240**	P	**Pg**	**02 53 16.1**	**+1.0**
DEMI	**Demirci**	**0.22**	**240**	*i* P	**Pg**	**02 53 16.1**	**+1.0**
GDZ	**Gediz**	**0.41**	**99**	P	**Pg**	**02 53 18.7**	**0.0**
GDZ				*i* S	**Sg**	**02 53 24.0**	**-0.1**
GDZ	**Gediz**	**0.41**	**99**	*i* P	**Pg**	**02 53 18.7**	**0.0**
GDZ				*i* S	**Sg**	**02 53 24.0**	**-0.1**
TVSB	**Tavsanli**	**0.49**	**52**	*e*PG	**Pg**	**02 53 20.6**	**+0.4**
TVSB				*e*SG	**Sg**	**02 53 26.6**	**0.0**
TVSB	**Tavsanli**	**0.49**	**52**	*e*Pg	**Pg**	**02 53 20.6**	**+0.4**
TVSB				*e*Sg	**Sg**	**02 53 26.6**	**0.0**
DURS	**Dursunbey**	**0.59**	**320**	P	**Pg**	**02 53 21.4**	**-0.7**
DURS	**Dursunbey**	**0.59**	**320**	*i* P	**Pg**	**02 53 21.4**	**-0.7**
DURS				*i* S	**Sn**	**02 53 36.1**	**+0.6**
MANT	**Manisa**	**0.73**	**206**	P	**Pg**	**02 53 24.9**	**+0.1**
MANT				S	**Sg**	**02 53 32.7**	**-1.7**
MANT	**Manisa**	**0.73**	**206**	*i* P	**Pg**	**02 53 24.9**	**+0.1**
MANT				*i* S	**Sg**	**02 53 32.7**	**-1.7**
KHL	**Karahalli**	**0.94**	**152**	*e*PG	**Pn**	**02 53 31.4**	**+1.0**
KHL	**Karahalli**	**0.94**	**152**	*e*Pg	**Pn**	**02 53 31.4**	**+1.0**
BALB	**Balikesir**	**0.97**	**301**	*e*PG	**Pn**	**02 53 31.1**	**+0.3**
BALB				*e*SG	**Sn**	**02 53 44.1**	**-0.7**
BALB	**Balikesir**	**0.97**	**301**	*e*Pg	**Pn**	**02 53 31.1**	**+0.3**
BALB				*e*Sg	**Sn**	**02 53 44.1**	**-0.7**
KCTX	**Karacabey (Bur**	**1.21**	**337**	*e*PN	**Pg**	**02 53 34.3**	**+0.4**
KCTX	**Karacabey (Bur**	**1.21**	**337**	*e*Pn	**Pg**	**02 53 34.3**	**+0.4**
MDNY	**Mudanya-Bursa**	**1.22**	**357**	*e*PN	**Pg**	**02 53 34.3**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.22**	**357**	*e*Pn	**Pg**	**02 53 34.3**	**+0.2**
IZI	**Iznik**	**1.25**	**18**	*e*PN	**Pg**	**02 53 34.8**	**+0.1**
IZI	**Iznik**	**1.25**	**18**	*e*Pn	**Pg**	**02 53 34.8**	**+0.1**
CAVI	**Cavuskoy**	**1.25**	**33**	*e*PN	**Pb**	**02 53 34.5**	**-0.1**
CAVI	**Cavuskoy**	**1.25**	**33**	*e*Pn	**Pb**	**02 53 34.5**	**-0.1**
GONE	**Gonen-Balikesi**	**1.33**	**313**	*e*PN	**Pg**	**02 53 37.5**	**+1.3**
GONE	**Gonen-Balikesi**	**1.33**	**313**	*e*Pn	**Pg**	**02 53 37.5**	**+1.3**
ADVT	**Abdulvahap**	**1.41**	**25**	*e*PN	**Pg**	**02 53 37.7**	**-0.1**
ADVT	**Abdulvahap**	**1.41**	**25**	*e*Pn	**Pg**	**02 53 37.7**	**-0.1**
ARMT	**Armutlu**	**1.41**	**357**	*e*PN	**Pb**	**02 53 37.5**	**0.0**
ARMT	**Armutlu**	**1.41**	**357**	*e*Pn	**Pb**	**02 53 37.5**	**0.0**
EDC	**Edincik**	**1.46**	**325**	*e*PN	**Pg**	**02 53 38.8**	**0.0**
EDC	**Edincik**	**1.46**	**325**	*e*Pn	**Pg**	**02 53 38.8**	**0.0**
GULT	**Gulveren**	**1.75**	**43**	*e*PN	**Pb**	**02 53 42.5**	**-0.7**
GULT	**Gulveren**	**1.75**	**43**	*e*Pn	**Pb**	**02 53 42.5**	**-0.7**

DDA ***20*** *02:54:39.7,39°.00N×29°.17E, h8km, Md2.7*
ISK ***20***

JYNG				S	Sn	02 56 25.4	+2.9
HATJ	**Hateruma jima**	**3.79**	**48**	P	Pn	02 55 44.6	-0.4
HATJ				S	Sn	02 56 27.3	-1.1
IRIF	**Iriomote-Funau**	**3.93**	**44**	P	Pn	02 55 46.6	-0.3
IRIF				S	Sn	02 56 31.7	-0.1
JKRS	**Kuro-shima**	**4.05**	**48**	P	Pn	02 55 49.0	+0.4
JKRS				S	Sn	02 56 33.9	-0.8
JIJ	**Ishigaki jima**	**4.22**	**47**	P	Pn	02 55 50.9	-0.1
JIJ				*e*S	Sn	02 56 37.6	-1.4
JISG	**Ishigakijimahi**	**4.49**	**47**	P	Pn	02 55 54.1	-0.4
JISG				*e*S	Sn	02 56 45.4	-0.1
MKAR	**Makanchi Array**	**39.99**	**318**	P	P	03 02 20.1	+0.7
	0.2nm,0.4s,baz=114,slow=11,SNR=3.8						
ZALV	**Zalesovo Beam**	**42.26**	**329**	P	P	03 02 38.1	+0.2
	0.6nm,0.3s,baz=125,slow=7.6,SNR=1.7						
KURBB	**Kurchatov Arra**	**43.89**	**322**	P	P	03 02 52.3	+1.2
	0.1nm,0.3s,baz=121,slow=7.3,SNR=3.6						

ISCJB ***20*** *02:57:35.5±0.5,39°.10N±0°.03×29°.05E±0°.03,h10km±5km,*
Error ellipse: s-maj=5.1km s-min=4.5km az=162.7
CSEM ***20*** *02:57:35.6±0.1,39°.10N×29°.05E,h10km,MD2.6,Error*
ellipse: s-maj=3.0km s-min=2.7km az=99.0
ISK ***20*** *02:57:35.5,39°.12N×29°.06E,h13km,MD2.7*
DDA ***20*** *02:57:35.4,39°.08N×29°.05E,h7km,Md2.6*

ISC 20 02:57:35.1±1.0,39°.08N±0°.03×29°.08E±0°.03,h12km±8km,
n30,σ0s28/42,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.29**	**263**	P	**Pg**	**02 57 41.1**	**0.0**
DEMI				S	**Sg**	**02 57 44.9**	**-0.1**
DEMI	**Demirci**	**0.29**	**263**	*i* P	**Pg**	**02 57 41.1**	**0.0**
DEMI				*i* S	**Sg**	**02 57 44.9**	**-0.1**
GDZ	**Gediz**	**0.31**	**88**	P	**Pb**	**02 57 42.5**	**-0.2**
GDZ				S	**Sb**	**02 57 47.3**	**-0.5**
GDZ	**Gediz**	**0.31**	**88**	*i* P	**Pb**	**02 57 42.5**	**-0.2**
GDZ				*i* S	**Sb**	**02 57 47.3**	**-0.5**
TVSB	**Tavsanli**	**0.47**	**38**	*e*PG	**Pb**	**02 57 45.2**	**-0.3**
TVSB				*e*SG	**Sg**	**02 57 51.2**	**+0.3**
TVSB	**Tavsanli**	**0.47**	**38**	*e*Pg	**Pb**	**02 57 45.2**	**-0.3**
TVSB				*e*Sg	**Sg**	**02 57 51.2**	**+0.3**
MANT	**Manisa**	**0.71**	**215**	P	**Pg**	**02 57 49.0**	**0.0**
MANT				S	**Sb**	**02 57 59.2**	**-0.3**
MANT	**Manisa**	**0.71**	**215**	*i* P	**Pg**	**02 57 49.0**	**0.0**
MANT				*i* S	**Sb**	**02 57 59.2**	**-0.3**
KHAL	**Karahalli**	**0.78**	**155**	P	**Pn**	**02 57 52.4**	**+0.4**
KHAL				S	**Sb**	**02 58 01.4**	**+0.3**
KHAL	**Karahalli**	**0.78**	**155**	*i* P	**Pn**	**02 57 52.4**	**+0.4**
KHAL				*i* S	**Sb**	**02 58 01.4**	**+0.3**
KHL	**Karahalli**	**0.83**	**155**	*e*PG	**Pn**	**02 57 52.7**	**0.0**
KHL	**Karahalli**	**0.83**	**155**	*e*Pg	**Pn**	**02 57 52.7**	**0.0**
AKS	**Akhisar**	**1.01**	**259**	*e*PG	**Pn**	**02 57 55.1**	**0.0**
AKS	**Akhisar**	**1.01**	**259**	*e*Pg	**Pn**	**02 57 55.1**	**0.0**
BALB	**Balikesir**	**1.09**	**301**	*e*PG	**Pn**	**02 57 56.4**	**+0.2**
BALB				*e*SG	**Sn**	**02 58 11.3**	**+0.1**
BALB	**Balikesir**	**1.09**	**301**	*e*Pg	**Pn**	**02 57 56.4**	**+0.2**
BALB				*e*Sg	**Sn**	**02 58 11.3**	**+0.1**
CAVI	**Cavuskoy**	**1.27**	**27**	*e*PN	**Pb**	**02 57 59.0**	**0.0**
CAVI	**Cavuskoy**	**1.27**	**27**	*e*Pn	**Pb**	**02 57 59.0**	**0.0**
IZI	**Iznik**	**1.29**	**13**	*e*PN	**Pn**	**02 57 59.0**	**-0.1**
IZI	**Iznik**	**1.29**	**13**	*e*Pn	**Pn**	**02 57 59.0**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.30**	**353**	*e*PN	**Pb**	**02 57 59.5**	**0.0**
MDNY	**Mudanya-Bursa**	**1.30**	**353**	*e*Pn	**Pb**	**02 57 59.5**	**0.0**
KCTX	**Karacabey (Bur**	**1.31**	**335**	*e*PN	**Pb**	**02 57 59.5**	**-0.2**
KCTX	**Karacabey (Bur**	**1.31**	**335**	*e*Pn	**Pb**	**02 57 59.5**	**-0.2**
ADVT	**Abdulvahap**	**1.45**	**20**	*e*PN	**Pb**	**02 58 01.9**	**-0.1**
ADVT	**Abdulvahap**	**1.45**	**20**	*e*Pn	**Pb**	**02 58 01.9**	**-0.1**
ARMT	**Armutlu**	**1.50**	**354**	*e*PN	**Pb**	**02 58 02.4**	**-0.5**
ARMT	**Armutlu**	**1.50**	**354**	*e*Pn	**Pb**	**02 58 02.4**	**-0.5**
EDC	**Edincik**	**1.58**	**324**	*e*PN	**Pn**	**02 58 03.4**	**+0.5**
EDC	**Edincik**	**1.58**	**324**	*e*Pn	**Pn**	**02 58 03.4**	**+0.5**

JMA 20 02:59:23.1±0.3,38°.17N×142°.99E,h15km±4km,M3.6,
Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.32**	**283**	P	Pn	02 59 46.3	-0.7
JIO				S	Sb	03 00 04.4	+0.1
OFUJ	**Ofunato**	**1.38**	**312**	P	Pn	02 59 47.7	-0.1
JMM	**Marumori**	**1.76**	**261**	P	Pn	02 59 53.3	+0.2
JMM				S	Sn	03 00 15.5	+0.3
JOU	**Okura**	**1.84**	**277**	P	Pn	02 59 55.1	+0.9
JOU				*e*S	Sb	03 00 18.3	-1.0
JOM	**Ohasama**	**1.86**	**315**	P	Pn	02 59 55.5	+1.1
JOM				S	Sb	03 00 19.1	-0.7
JYK	**Kaneyama**	**2.19**	**291**	P	Pn	03 00 00.2	+1.2
JFT	**Otama**	**2.20**	**254**	P	Pn	03 00 00.4	+1.3
JRG	**Rokugo**	**2.21**	**304**	P	Pn	03 00 01.0	+1.7
JANG	**Nango**	**2.48**	**333**	P	Pb	03 00 05.5	-1.9
JANG				S	Sb	03 00 35.5	-2.2

ISCJB ***20*** *03:00:32.6±0.5,39°.11N±0°.04×29°.09E±0°.04,h5km±7km,*
Error ellipse: s-maj=6.6km s-min=4.3km az=149.4
ISK ***20*** *03:00:32.8,39°.14N×29°.12E,h6km,MD2.8*
DDA ***20*** *03:00:32.9,39°.07N×29°.10E,h7km,Md2.3*
CSEM ***20*** *03:00:32.8±0.1,39°.11N×29°.10E,h5km,MD2.3,Error*
ellipse: s-maj=3.0km s-min=2.5km az=113.0

ISC 20 03:00:32.9±1.0,39°.10N±0°.02×29°.11E±0°.02,h6km±11km,
n28,σ0s42/39,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.29**	**93**	P	**Pg**	**03 00 38.8**	**+0.2**
GDZ				S	**Sg**	**03 00 43.2**	**+0.7**
GDZ	**Gediz**	**0.29**	**93**	*i* P	**Pg**	**03 00 38.9**	**+0.2**
GDZ				*i* S	**Sg**	**03 00 43.2**	**+0.7**
DEMI	**Demirci**	**0.31**	**259**	P	**Pg**	**03 00 38.9**	**-0.1**
DEMI				S	**Sg**	**03 00 43.1**	**0.0**
DEMI	**Demirci**	**0.31**	**259**	*i* P	**Pg**	**03 00 38.9**	**-0.1**
DEMI				*i* S	**Sg**	**03 00 43.1**	**0.0**
TVSB	**Tavsanli**	**0.44**	**38**	*e*PG	**Pg**	**03 00 41.2**	**-0.3**
TVSB				*e*SG	**Sg**	**03 00 47.1**	**-0.2**
TVSB	**Tavsanli**	**0.44**	**38**	*e*Pg	**Pg**	**03 00 41.2**	**-0.3**
TVSB				*e*Sg	**Sg**	**03 00 47.1**	**-0.2**
MANT	**Manisa**	**0.75**	**215**	P	**Pg**	**03 00 47.3**	**0.0**
MANT				S	**Sg**	**03 00 56.3**	**-0.7**
MANT	**Manisa**	**0.75**	**215**	*i* P	**Pg**	**03 00 47.3**	**0.0**
MANT				*i* S	**Sg**	**03 00 56.3**	**-0.7**
KHAL	**Karahalli**	**0.79**	**158**	P	**Pg**	**03 00 47.5**	**-0.6**
KHAL				S	**Sb**	**03 00 59.7**	**-0.4**
KHAL	**Karahalli**	**0.79**	**158**	*i* P	**Pg**	**03 00 47.5**	**-0.6**
KHAL				*i* S	**Sb**	**03 00 59.7**	**-0.4**
KHL	**Karahalli**	**0.84**	**157**	*e*PG	**Pb**	**03 00 50.1**	**+0.1**
KHL	**Karahalli**	**0.84**	**157**	*e*Pg	**Pb**	**03 00 50.1**	**+0.1**
AKS	**Akhisar**	**1.03**	**258**	*e*PG	**Pg**	**03 00 52.8**	**+0.1**
AKS	**Akhisar**	**1.03**	**258**	*e*Pg	**Pg**	**03 00 52.8**	**+0.1**
BALB	**Balikesir**	**1.09**	**300**	*e*PN	**Pb**	**03 00 54.3**	**+0.1**
BALB				*e*SN	**Sb**	**03 01 09.1**	**+0.5**
IGD	**Bursa**	**1.16**	**4**	*i* S	**Sg**	**03 01 08.9**	**-1.4**
CAVI	**Cavuskoy**	**1.24**	**27**	*e*PN	**Pg**	**03 00 56.3**	**-0.3**
CAVI	**Cavuskoy**	**1.24**	**27**	*e*Pn	**Pg**	**03 00 56.3**	**-0.3**
IZI	**Iznik**	**1.26**	**13**	*e*PN	**Pb**	**03 00 57.2**	**0.0**
IZI	**Iznik**	**1.26**	**13**	*e*Pn	**Pb**	**03 00 57.2**	**0.0**
MDNY	**Mudanya-Bursa**	**1.28**	**352**	*e*PN	**Pg**	**03 00 57.1**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.28**	**352**	*e*Pn	**Pg**	**03 00 57.1**	**-0.3**
KCTX	**Karacabey (Bur**	**1.30**	**334**	*e*PN	**Pb**	**03 00 57.9**	**+0.2**
GONE	**Gonen-Balikesi**	**1.45**	**311**	*e*PN	**Pn**	**03 01 00.0**	**+0.5**
GONE	**Gonen-Balikesi**	**1.45**	**311**	*e*Pn	**Pn**	**03 01 00.0**	**+0.5**
ARMT	**Armutlu**	**1.47**	**353**	*e*PN	**Pn**	**03 01 00.3**	**+0.4**
EDC	**Edincik**	**1.57**	**323**	*e*PN	**Pn**	**03 01 01.4**	**+0.2**
EDC	**Edincik**	**1.57**	**323**	*e*Pn	**Pn**	**03 01 01.4**	**+0.2**

MEX 20 03:06:00.1±0.3,15°.12N×93°.36W,h66km±8km,MD3.7,
Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		**0.60**	**13**	*e*P	Pn	03 06 12.3	-1.4
PCIG				*i* S	Sn	03 06 21.8	-1.8
CCIG	**Comitan**	**1.65**	**45**	*e*P	Pn	03 06 26.3	-0.9
CCIG				*e*S	Sn	03 06 45.9	-1.8
TGIG		**1.67**	**8**	*e*P	Pn	03 06 25.2	-2.1
TGIG				*e*S	Sn	03 06 45.8	-2.0

DDA ***20*** *03:08:57.6,39°.10N×29°.10E,h7km,Md2.7*
ISK ***20*** *03:08:57.3,39°.12N×29°.14E,h5km,MD3.0*
CSEM ***20*** *03:08:58.3±0.1,39°.11N×29°.14E,h2km,MD2.7,Error*
ellipse: s-maj=3.1km s-min=2.6km az=118.0

ISC 20 03:08:58.3±1.0,39°.11N±0°.02×29°.13E±0°.02,h6km±9km,
n72,σ0s69/86,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.27**	**95**	P	**Pg**	**03 09 03.9**	**+0.2**
GDZ				S	**Sg**	**03 09 08.3**	**+1.0**
GDZ	**Gediz**	**0.27**	**95**	*i* P	**Pg**	**03 09 03.9**	**+0.2**
GDZ				*i* S	**Sg**	**03 09 08.3**	**+1.0**
DEMI	**Demirci**	**0.33**	**258**	P	**Pg**	**03 09 04.3**	**-0.4**
DEMI				S	**Sg**	**03 09 09.2**	**+0.1**
DEMI	**Demirci**	**0.33**	**258**	*i* P	**Pg**	**03 09 04.3**	**-0.4**
DEMI				*i* S	**Sg**	**03 09 09.2**	**+0.1**
TVSB	**Tavsanli**	**0.42**	**37**	*e*PG	**Pg**	**03 09 06.1**	**-0.4**
TVSB	**Tavsanli**	**0.42**	**37**	*e*Pg	**Pg**	**03 09 06.1**	**-0.4**
KULA	**Kula-Manisa**	**0.70**	**212**	*e*PG	**Pg**	**03 09 12.2**	**+0.4**
KULA	**Kula-Manisa**	**0.70**	**212**	*e*Pg	**Pg**	**03 09 12.2**	**+0.4**
DURS	**Dursunbey**	**0.71**	**314**	P	**Pg**	**03 09 11.1**	**-0.8**
DURS				S	**Sg**	**03 09 20.9**	**-0.2**
DURS	**Dursunbey**	**0.71**	**314**	*i* P	**Pg**	**03 09 11.1**	**-0.8**
DURS				*i* S	**Sg**	**03 09 20.9**	**-0.2**
MANT	**Manisa**	**0.77**	**216**	P	**Pg**	**03 09 12.2**	**-0.8**
MANT	**Manisa**	**0.77**	**216**	*i* P	**Pg**	**03 09 12.2**	**-0.8**
KHAL	**Karahalli**	**0.79**	**159**	P	**Pg**	**03 09 12.2**	**-1.3**
KHAL				S	**Sg**	**03 09 24.1**	**+0.3**
KHAL	**Karahalli**	**0.79**	**159**	*i* P	**Pg**	**03 09 12.2**	**-1.3**
KHAL				*i* S	**Sg**	**03 09 24.1**	**+0.3**
AKS	**Akhisar**	**1.05**	**258**	*e*PG	**Pb**	**03 09 19.0**	**0.0**
AKS				*e*SG	**Sn**	**03 09 34.5**	**-0.2**
AKS	**Akhisar**	**1.05**	**258**	*e*Pg	**Pb**	**03 09 19.0**	**0.0**
AKS				*e*Sg	**Sn**	**03 09 34.5**	**-0.2**
BALB	**Balikesir**	**1.10**	**299**	*e*PN	**Pb**	**03 09 19.6**	**-0.2**
BALB				*e*SN	**Sn**	**03 09 35.8**	**-0.1**
BALB	**Balikesir**	**1.10**	**299**	*e*Pn	**Pb**	**03 09 19.6**	**-0.2**
BALB				*e*Sn	**Sn**	**03 09 35.8**	**-0.1**
CAVI	**Cavuskoy**	**1.22**	**27**	*e*PN	**Pn**	**03 09 21.7**	**-0.3**
CAVI				*e*SN	**Sn**	**03 09 39.1**	**+0.3**
CAVI	**Cavuskoy**	**1.22**	**27**	*e*Pn	**Pn**	**03 09 21.7**	**-0.3**
CAVI				*e*Sn	**Sn**	**03 09 39.1**	**+0.3**
IZI	**Iznik**	**1.25**	**12**	*e*PN	**Pn**	**03 09 22.0**	**-0.5**
IZI	**Iznik**	**1.25**	**12**	*e*Pn	**Pn**	**03 09 22.0**	**-0.5**
MDNY	**Mudanya-Bursa**	**1.27**	**351**	*e*PN	**Pb**	**03 09 22.4**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.27**	**351**	*e*Pn	**Pb**	**03 09 22.5**	**-0.2**
KCTX	**Karacabey (Bur**	**1.30**	**333**	*e*PN	**Pn**	**03 09 22.7**	**-0.3**
KCTX	**Karacabey (Bur**	**1.30**	**333**	*e*Pn	**Pn**	**03 09 22.7**	**-0.3**
DENT	**Denizli**	**1.36**	**183**	*e*PN	**Pb**	**03 09 24.1**	**-0.1**
DENT	**Denizli**	**1.36**	**183**	*e*Pn	**Pb**	**03 09 24.1**	**-0.1**
ADVT	**Abdulvahap**	**1.40**	**19**	*e*PN	**Pg**	**03 09 25.1**	**0.0**
ADVT	**Abdulvahap**	**1.40**	**19**	*e*Pn	**Pg**	**03 09 25.1**	**0.0**
GONE	**Gonen-Balikesi**	**1.46**	**310**	*e*PN	**Pb**	**03 09 25.7**	**-0.1**
GONE	**Gonen-Balikesi**	**1.46**	**310**	*e*Pn	**Pb**	**03 09 25.7**	**-0.1**
ARMT	**Armutlu**	**1.47**	**352**	*e*PN	**Pb**	**03 09 25.7**	**-0.3**
ARMT	**Armutlu**	**1.47**	**352**	*e*Pn	**Pb**	**03 09 25.7**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**1.52**	**220**	*e*PN	**Pb**	**03 09 26.9**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**1.52**	**220**	*e*Pn	**Pb**	**03 09 27.0**	**0.0**
EDC	**Edincik**	**1.57**	**322**	*e*PN	**Pb**	**03 09 27.7**	**-0.1**
EDC	**Edincik**	**1.57**	**322**	*e*Pn	**Pb**	**03 09 27.7**	**-0.1**
GULT	**Gulveren**	**1.70**	**39**	*e*PN	**Pb**	**03 09 29.3**	**-0.7**
GULT	**Gulveren**	**1.70**	**39**	*e*Pn	**Pb**	**03 09 29.3**	**-0.7**
DKL	**Dikili**	**1.73**	**269**	*e*PN	**Pb**	**03 09 29.9**	**-0.6**
DKL	**Dikili**	**1.73**	**269**	*e*Pn	**Pb**	**03 09 29.9**	**-0.6**
HRT	**Hereke**	**1.76**	**13**	*e*PN	**Pb**	**03 09 30.1**	**-0.9**
HRT	**Hereke**	**1.76**	**13**	*e*Pn	**Pb**	**03 09 30.1**	**-0.9**
SVRH	**Sivrihisar-ESK**	**1.89**	**79**	*e*PN	**Pb**	**03 09 32.2**	**-1.0**
SVRH	**Sivrihisar-ESK**	**1.89**	**79**	*e*Pn	**Pb**	**03 09 32.2**	**-1.0**
MRMT	**Marmara Adasi**	**1.90**	**322**	*e*PN	**Pn**	**03 09 32.0**	**+0.6**
MRMT	**Marmara Adasi**	**1.90**	**322**	*e*Pn	**Pn**	**03 09 32.0**	**+0.6**
ISK	**Istanbul-Kandi**	**1.95**	**358**	*e*PN	**Pn**	**03 09 32.7**	**+0.7**
ISK	**Istanbul-Kandi**	**1.95**	**358**	*e*Pn	**Pn**	**03 09 32.7**	**+0.7**
SILT	**Sile**	**2.08**	**11**	*e*PN	**Pn**	**03 09 34.6**	**+0.9**
SILT	**Sile**	**2.08**	**11**	*e*Pn	**Pn**	**03 09 34.6**	**+0.9**
YER	**Yerkesik**	**2.08**	**199**	*e*PN	**Pb**	**03 09 35.4**	**-1.2**
YER	**Yerkesik**	**2.08**	**199**	*e*Pn	**Pb**	**03 09 35.4**	**-1.2**
BGKT	**Bogazkoy**	**2.08**	**353**	*e*PN	**Pn**	**03 09 34.6**	**+0.8**
BGKT	**Bogazkoy**	**2.08**	**353**	*e*Pn	**Pn**	**03 09 34.6**	**+0.8**
MDUB	**Mudurnu**	**2.09**	**49**	*e*PN	**Pn**	**03 09 34.9**	**+0.8**
MDUB	**Mudurnu**	**2.09**	**49**	*e*Pn	**Pn**	**03 09 34.9**	**+0.8**
KLYT	**Kilyos**	**2.14**	**358**	*e*PN	**Pn**	**03 09 35.4**	**+0.8**
KLYT	**Kilyos**	**2.14**	**358**	*e*Pn	**Pn**	**03 09 35.4**	**+0.8**
RKY	**Sarkoy-Tekirda**	**2.18**	**317**	*e*PN	**Pn**	**03 09 35.9**	**+0.8**
RKY	**Sarkoy-Tekirda**	**2.18**	**317**	*e*Pn	**Pn**	**03 09 35.9**	**+0.8**
LPK	**Lapseki**	**2.22**	**305**	*e*PN	**Pn**	**03 09 36.7**	**+1.0**
LPK	**Lapseki**	**2.22**	**305**	*e*Pn	**Pn**	**03 09 36.7**	**+1.0**
EZN	**Ezine**	**2.29**	**289**	*e*PN	**Pn**	**03 09 37.8**	**+1.2**
EZN	**Ezine**	**2.29**	**289**	*e*Pn	**Pn**	**03 09 37.8**	**+1.2**
GELI	**Tayfur-Gelibol**	**2.42**	**303**	*e*PN	**Pn**	**03 09 39.4**	**+1.0**
GELI	**Tayfur-Gelibol**	**2.42**	**303**	*e*Pn	**Pn**	**03 09 39.4**	**+1.0**
CTYL	**Yalikoy Yolu**	**2.45**	**345**	*e*PN	**Pn**	**03 09 40.2**	**+1.4**
CTYL	**Yalikoy Yolu**	**2.45**	**345**	*e*Pn	**Pn**	**03 09 40.2**	**+1.4**
ERIK	**Erikli-Kesan**	**2.55**	**309**	*e*PN	**Pn**	**03 09 40.7**	**+0.5**
ERIK	**Erikli-Kesan**	**2.55**	**309**	*e*Pn	**Pn**	**03 09 40.7**	**+0.5**

DDA 20 03:09:31.4,39°.06N×28°.98E,h7km,Md2.7,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.21**	**265**	*i* P	Pg	03 09 35.9	+0.3
GDZ	**Gediz**	**0.39**	**86**	*i* P	Pg	03 09 39.3	+0.2
GDZ				*i* S	Sg	03 09 45.2	+1.0
MANT	**Manisa**	**0.66**	**210**	*i* P	Pb	03 09 46.1	+0.7
MANT				*i* S	Sb	03 09 54.0	-0.9

DDA ***20*** *03:10:26.2,39°.09N×29°.08E,h7km,Md2.5*
ISK ***20*** *03:10:27.3,39°.12N×29°.14E,h5km,MD2.7*
CSEM ***20*** *03:10:27.2±0.2,39°.11N×29°.09E,h2km,MD2.5,Error*
ellipse: s-maj=5.6km s-min=4.2km az=115.0

ISC 20 03:10:26.0±1.3,39°.06N±0°.03×29°.10E±0°.03,h5km±12km,
n30,σ0s68/38,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.29**	**83**	S	**Sb**	**03 10 38.8**	**-0.4**
GDZ	**Gediz**	**0.29**	**83**	*i* P	**Pg**	**03 10 31.2**	**-0.6**
GDZ				*i* S	**Sb**	**03 10 38.8**	**-0.4**
DEMI	**Demirci**	**0.30**	**268**	S	**Sb**	**03 10 37.3**	**-2.0**
DEMI	**Demirci**	**0.30**	**268**	*i* P	**Pg**	**03 10 31.2**	**-0.7**
DEMI				*i* S	**Sb**	**03 10 37.3**	**-2.0**
TVSB	**Tavsanli**	**0.48**	**35**	*e*PG	**Pg**	**03 10 35.8**	**+0.5**
TVSB				*e*SG	**Sg**	**03 10 41.5**	**-0.1**
TVSB	**Tavsanli**	**0.48**	**35**	*e*Pg	**Pg**	**03 10 35.8**	**+0.5**
TVSB				*e*Sg	**Sg**	**03 10 41.5**	**-0.1**
MANT	**Manisa**	**0.71**	**217**	P	**Pg**	**03 10 40.3**	**+0.7**
MANT				S	**Sb**	**03 10 51.2**	**+0.1**
MANT	**Manisa**	**0.71**	**217**	*i* P	**Pg**	**03 10 40.3**	**+0.7**
MANT				*i* S	**Sb**	**03 10 51.2**	**+0.1**
KHL	**Karahalli**	**0.80**	**156**	*e*PG	**Pn**	**03 10 44.2**	**+0.1**
KHL				*e*SG	**Sn**	**03 10 56.3**	**-0.1**
KHL	**Karahalli**	**0.80**	**156**	*e*Pg	**Pn**	**03 10 44.2**	**+0.1**
KHL				*e*Sg	**Sn**	**03 10 56.3**	**-0.1**
AKS	**Akhisar**	**1.02**	**260**	*e*PG	**Pn**	**03 10 47.8**	**+0.7**
AKS	**Akhisar**	**1.02**	**260**	*e*Pg	**Pn**	**03 10 47.8**	**+0.7**
BALB	**Balikesir**	**1.11**	**302**	*e*PN	**Pn**	**03 10 48.8**	**+0.5**
BALB	**Balikesir**	**1.11**	**302**	*e*Pn	**Pn**	**03 10 48.8**	**+0.5**
CAVI	**Cavuskoy**	**1.28**	**26**	*e*PN	**Pg**	**03 10 50.7**	**+0.2**
CAVI	**Cavuskoy**	**1.28**	**26**	*e*Pn	**Pg**	**03 10 50.7**	**+0.2**
IZI	**Iznik**	**1.31**	**12**	*e*PN	**Pg**	**03 10 51.3**	**+0.1**
IZI	**Iznik**	**1.31**	**12**	*e*Pn	**Pg**	**03 10 51.3**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.32**	**353**	*e*PN	**Pg**	**03 10 52.1**	**+0.7**
MDNY	**Mudanya-Bursa**	**1.32**	**353**	*e*Pn	**Pg**	**03 10 52.1**	**+0.7**
KCTX	**Karacabey (Bur**	**1.34**	**335**	*e*PN	**Pg**	**03 10 52.6**	**+0.9**
KCTX	**Karacabey (Bur**	**1.34**	**335**	*e*Pn	**Pg**	**03 10 52.6**	**+0.9**
ADVT	**Abdulvahap**	**1.46**	**19**	*e*PN	**Pg**	**03 10 54.0**	**0.0**
ADVT	**Abdulvahap**	**1.46**	**19**	*e*Pn	**Pg**	**03 10 54.0**	**0.0**
GONE	**Gonen-Balikesi**	**1.48**	**313**	*e*PN	**Pg**	**03 10 54.8**	**+0.5**
GONE	**Gonen-Balikesi**	**1.48**	**313**	*e*Pn	**Pg**	**03 10 54.8**	**+0.5**
ARMT	**Armutlu**	**1.52**	**353**	*e*PN	**Pg**	**03 10 55.1**	**-0.1**
ARMT	**Armutlu**	**1.52**	**353**	*e*Pn	**Pg**	**03 10 55.1**	**-0.1**
EDC	**Edincik**	**1.61**	**324**	*e*PN	**Pg**	**03 10 56.7**	**-0.1**
EDC	**Edincik**	**1.61**	**324**	*e*Pn	**Pg**	**03 10 56.7**	**-0.1**

ISK ***20*** *03:11:05.8,39°.15N×29°.06E,h5km,MD2.7*
ISCJB ***20*** *03:11:06.5±0.5,39°.11N±0°.04×29°.08E±0°.03,h6km±7km,*
Error ellipse: s-maj=6.9km s-min=4.5km az=173.3

DDA ***20*** *03:11:06.6,39°.07N×29°.10E,h7km,Md2.5*
CSEM ***20*** *03:11:06.7±0.2,39°.12N×29°.09E,h5km,MD2.5,Error*
ellipse: s-maj=4.1km s-min=3.5km az=142.0

ISC 20 03:11:06.2±1.0,39°.11N±0°.03×29°.12E±0°.03,h12km±8km,
n34,σ0s33/44,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.28**	**93**	P	**Pg**	**03 11 11.9**	**-0.2**
GDZ				S	**Sb**	**03 11 17.8**	**-0.2**
GDZ	**Gediz**	**0.28**	**93**	*i* P	**Pg**	**03 11 11.9**	**-0.2**
GDZ				*i* S	**Sb**	**03 11 17.8**	**-0.2**
DEMI	**Demirci**	**0.32**	**259**	P	**Pg**	**03 11 13.0**	**+0.3**
DEMI				S	**Sg**	**03 11 17.4**	**+0.3**
DEMI	**Demirci**	**0.32**	**259**	*i* P	**Pg**	**03 11 13.0**	**+0.3**
DEMI				*i* S	**Sg**	**03 11 17.4**	**+0.3**
TVSB	**Tavsanli**	**0.43**	**38**	*e*PG	**Pb**	**03 11 15.8**	**-0.1**
TVSB	**Tavsanli**	**0.43**	**38**	*e*Pg	**Pb**	**03 11 15.8**	**-0.1**
DURS	**Dursunbey**	**0.70**	**315**	P	**Pb**	**03 11 20.9**	**+0.5**
DURS	**Dursunbey**	**0.70**	**315**	*i* P	**Pb**	**03 11 20.9**	**+0.5**
MANT	**Manisa**	**0.76**	**216**	P	**Pg**	**03 11 20.9**	**+0.1**
MANT				S	**Sg**	**03 11 30.0**	**-0.8**
MANT	**Manisa**	**0.76**	**216**	*i* P	**Pg**	**03 11 20.9**	**+0.1**
MANT				*i* S	**Sg**	**03 11 30.0**	**-0.8**
KHL	**Karahalli**	**0.84**	**158**	*e*PG	**Pn**	**03 11 24.2**	**+0.3**
KHL	**Karahalli**	**0.84**	**158**	*e*Pg	**Pn**	**03 11 24.2**	**+0.3**
ORLT	**Orhaneli**	**0.95**	**350**	*e*PG	**Pg**	**03 11 24.0**	**-0.6**
ORLT	**Orhaneli**	**0.95**	**350**	*e*Pg	**Pg**	**03 11 24.0**	**-0.6**
AKS	**Akhisar**	**1.04**	**258**	*e*PG	**Pb**	**03 11 26.2**	**0.0**
AKS				*e*SG	**Sn**	**03 11 41.1**	**0.0**
AKS	**Akhisar**	**1.04**	**258**	*e*Pg	**Pb**	**03 11 26.2**	**0.0**
AKS				*e*Sg	**Sn**	**03 11 41.1**	**0.0**
BALB	**Balikesir**	**1.10**	**299**	*e*PG	**Pb**	**03 11 26.9**	**-0.2**
BALB				*e*SG	**Sn**	**03 11 42.5**	**+0.1**
BALB	**Balikesir**	**1.10**	**299**	*e*Pg	**Pb**	**03 11 26.9**	**-0.2**
BALB				*e*Sg	**Sn**	**03 11 42.5**	**+0.1**
**C

MERV Las Mercedes 7.07 69 eP Pn 03 16 30.3 -0.8
FUNV FUNVISIS 7.12 58 eP Pn 03 16 31.3 -0.6
BCIP Isla Barro Col 7.20 290 ePn Pn 03 16 29.5 -3.3
BCIP eSn Sn 03 17 55.0 +1.4
BIRV Birongo 7.59 60 eP Pn 03 16 37.4 -0.7
CUPV Cœpira 7.83 65 eP Pn 03 16 40.7 -0.6
OTAV Otavalo 8.48 220 ePn Pn 03 16 49.2 -1.1
PRGV PARIAGUAN 8.49 76 eP Pn 03 16 49.5 -0.6
PCRV Puerto La Cruz 8.92 67 P Pn 03 16 55.2 -0.5
comp=Z,9.4nm,0.3s,baz=322,slow=2.5,SNR=24
PCRV Puerto La Cruz 8.92 67 eP Pn 03 16 55.1 -0.7
ORIV Oritupano 9.75 76 eP Pn 03 17 05.6 -1.1
GURV El Guri 9.87 84 eP Pn 03 17 07.7 -0.6
CRUV Carupano 10.38 67 eP Pn 03 17 15.1 0.0
GUNV Guanoco 10.49 71 eP Pn 03 17 15.8 -0.6
GUIV Guiria 11.31 69 eP Pn 03 17 26.3 -0.9
YHJ Yallahs 11.58 343 ⇓iP Pn 03 17 32.8 +2.1
YHJ iS Sn 03 19 28.4 -10
PCJ Portland Cotta 11.64 340 eP Pn 03 17 32.9 +1.4
PAPH Port-au-Prince 11.70 3 ePn Pn 03 17 34.3 +2.0
PAPH eSn Sn 03 19 38.5 -3.4
STH Stony Hill 11.85 342 eP Pn 03 17 35.4 +1.3
STH iPA 03 17 36.1
TPP Pointe-a-Pierr 11.94 72 e P 03 17 45.4 +3.7
MCJ Malvern 12.00 338 ⇓iP Pn 03 17 38.0 +1.8
MCJ eS Sn 03 19 36.9 -12
MCJ ⇑eS Sn 03 19 42.3 -6.9
TRN Trinidad (W) 12.08 71 e P 03 17 45.3 +2.1
BNJ Bonny Gate 12.12 342 iP Pn 03 17 39.7 +2.1
CVJ Coleyville 12.22 339 ⇑iP Pn 03 17 41.4 +2.2
MTDJ Mount Denham 12.22 339 ePn Pn 03 17 40.1 +1.0
MTDJ eSn Sn 03 19 54.7 +0.1
SDDR Presa de Saban 12.25 8 ePn Pn 03 17 40.0 +0.5
SDDR eSn Sn 03 19 47.5 -7.7
BBJ Bamboo Saint A 12.28 341 iP Pn 03 17 42.2 +2.5
BBJ eS Sn 03 19 44.6 -11
JTS JuntasAbangare 12.34 287 ePn Pn 03 17 41.4 +0.7
TBH Brigand Hill 12.35 72 e P 03 17 50.0 +3.8
TBH Brigand Hill 12.35 72 e P 03 17 50.4 +4.2
GRGR Grenville 12.38 64 eP P 03 17 44.4 -2.2
GRGR Grenville 12.38 64 e P 03 17 47.2 +0.6
GRGR Grenville 12.38 64 ePn Pn 03 17 40.2 -0.9
MPR Mayaguez 12.72 26 ePn Pn 03 17 44.1 -1.3
CELP Cerrillos 12.86 28 ePn Pn 03 17 45.8 -1.4
TOSP Speyside 13.09 69 e P 03 17 54.6 +0.1
SJG San Juan 13.10 30 P Pn 03 17 49.4 -0.8
comp=Z,8.8nm,0.3s,baz=33,slow=19,SNR=23
SJG San Juan 13.10 30 ePn Pn 03 17 47.3 -2.9
SJG eSn Sn 03 20 03.3 -12
SVB Belmont 13.23 60 e Pn 03 17 51.5 -0.5
SVB Belmont 13.23 60 ePn Pn 03 17 51.3 -0.7
GTBY Guantanamo Bay 13.24 351 ePn Pn 03 17 54.0 +2.0
GTBY eSn Sn 03 20 11.6 -7.3
HUMP Col San Antoni 13.27 31 ePn Pn 03 17 51.3 -1.1
CBYP Canovanas 13.38 31 ePn Pn 03 17 53.6 -0.3
MTP Monte Pirata 13.39 32 ePn Pn 03 17 54.3 +0.3
MCLT Moule a Chique 13.71 59 e P 03 18 04.0 +2.6
STVI Saint Thomas 13.92 33 ePn Pn 03 18 00.9 +0.2
PCM Pelee Case Pet 14.05 54 eP P 03 18 05.6 +0.4
PCM Pelee Case Pet 14.05 54 eP P 03 18 08.2 +3.0
FDF Fort de France 14.06 55 eP Pn 03 18 02.2 -0.2
FDF Fort de France 14.06 55 e P 03 18 06.5 +1.2
FDF Fort de France 14.06 55 ePn Pn 03 18 01.1 -1.4
CXM Morne La Croix 14.09 54 eP P 03 18 11.2 +5.5
BAMF Morne Balai 14.10 54 eP Pn 03 18 04.4 +1.4
MVM Montagne Vaucl 14.17 56 eP P 03 18 08.9 +2.4
GRTK Grand Turk 14.77 7 ePn P 03 18 12.7 -0.4
ATAH Atahualpa 14.83 201 P P 03 18 13.4 -0.8
comp=Z,2.0nm,0.3s,baz=18,slow=9.2,SNR=4.8
PTGA Pitinga 14.97 119 P P 03 18 14.5 -1.0
comp=Z,1.5nm,0.3s,baz=307,slow=17,SNR=15
PTGA S Sn 03 20 59.3 -1.2
comp=Z,2.9nm,0.3s,baz=11,slow=4.8,SNR=4.5
TGUH Tegucigalpa,Un 15.80 298 ePn Pn 03 18 23.6 -0.5
comp=Z,58nm,0.9s
SAML Samuel 18.41 148 eP P 03 18 53.5 +0.2
comp=Z,41nm,1.1s
NNA Nana 19.02 192 P Pn 03 19 01.2 -1.3
comp=Z,1.2nm,0.3s,baz=1.0,slow=12,SNR=5.1
NNA Nana 19.02 192 eP P 03 18 59.3 -0.7
comp=Z,53nm,1.0s
TEIG Tepich 19.98 314 P P 03 19 11.2 +1.1
comp=Z,24nm,0.5s,baz=92,slow=23,SNR=35
TEIG Tepich 19.98 314 eP P 03 19 11.3 +1.1
comp=Z,30nm,0.6s
CCIG Comitan 21.00 298 eP P 03 19 22.0 +0.7
comp=Z,21nm,0.9s
LPAZ La Paz 23.41 168 P P 03 19 46.0 +0.5
comp=Z,5.3nm,0.7s,baz=344,slow=8.5,SNR=31
LPAZ S S 03 23 46.2 -1.0
comp=Z,5.7nm,1.2s,baz=104,slow=20,SNR=4.0
LPAZ La Paz 23.41 168 eP P 03 19 45.6 +0.1
comp=Z,19nm,0.8s
LPAZ eS S 03 23 48.8 +1.6
SIV San Ignacio 25.50 153 P P 03 20 04.4 +0.6
comp=Z,3.1nm,0.8s,baz=335,slow=7.6,SNR=5.8
TIGA Tifton 26.48 339 P P 03 20 13.7 +1.2
baz=156
TLIG Tlapa 27.17 296 eP P 03 20 25.6 +6.6
comp=Z,52nm,1.8s
447A Lucedale 28.06 330 P P 03 20 27.7 +1.1
baz=145
348A Jackson 28.21 332 P P 03 20 29.3 +1.4
baz=147
GOGA Godfrey 28.24 341 eP P 03 20 30.0 +1.8
comp=Z,8.2nm,0.6s
JSC Jenkinsville 28.43 345 eP P 03 20 31.4 +1.6
comp=Z,12nm,0.7s
347A Saraland 28.50 331 P P 03 20 32.3 +1.8
baz=146,SNR=7.3
248A Dixon Mills 28.71 333 P P 03 20 34.2 +1.8
baz=148
445A Amite 28.87 328 P P 03 20 35.7 +1.9
baz=142
346A Big Creek Wild 28.94 330 P P 03 20 36.1 +1.7
baz=144,SNR=7.1
247A Quitman 29.08 332 P P 03 20 36.9 +1.3
baz=147
345A Thompson Farm, 29.16 329 P P 03 20 37.9 +1.6
baz=143
LRAL Lakeview Retre 29.20 335 eP P 03 20 37.6 +1.0
comp=Z,9.9nm,0.7s
KMSC Kings Mountain 29.27 346 P P 03 20 38.4 +1.2
baz=163
KMSC Kings Mountain 29.27 346 eP P 03 20 38.0 +0.7
comp=Z,3.8nm,0.5s
147A Livingston 29.44 333 P P 03 20 40.0 +1.2
baz=148
LVC Limon Verde 29.47 172 P P 03 20 40.3 +0.8
comp=Z,6.4nm,0.6s,baz=304,slow=5.7,SNR=3.0
LVC Limon Verde 29.47 172 eP P 03 20 38.5 -1.1
comp=Z,1.9nm,0.5s
344A Westbrook Farm 29.64 328 P P 03 20 42.2 +1.6
baz=142,SNR=6.4
245A Little AP, Sta 29.68 330 P P 03 20 42.7 +1.8
baz=144
Z48A Northport 29.73 335 P P 03 20 42.5 +1.2
baz=150,SNR=5.8
Z47A Carrollton 29.80 334 P P 03 20 43.3 +1.3
baz=149,SNR=9.4
244A Avery, Jackson 30.09 329 P P 03 20 45.7 +1.2
baz=143,SNR=7.5
VBMS Vicksburg 30.14 329 P P 03 20 46.3 +1.3
baz=144
145A Houston Renfro 30.16 331 P P 03 20 46.6 +1.5
baz=145
Z46A Louisville 30.18 333 P P 03 20 47.0 +1.7
baz=147,SNR=5.0
Y47A UCPARC, Winfie 30.31 335 P P 03 20 47.7 +1.3
baz=150,SNR=9.2
TKL Tuckaleechee C 30.41 342 P P 03 20 48.1 +0.7
comp=Z,3.9nm,0.6s,baz=141,slow=7.7,SNR=6.7
TKL Tuckaleechee C 30.41 342 eP P 03 20 48.9 +1.5
comp=Z,4.7nm,0.8s
144A Alexander Plac 30.42 330 P P 03 20 48.8 +1.3
baz=144
CPCT Cooper Cave 30.45 341 eP P 03 20 49.6 +1.9
comp=Z,7.2nm,0.7s
Z45A Winona 30.68 332 P P 03 20 51.1 +1.4
baz=146
Y46A Houston 30.73 334 P P 03 20 51.3 +1.2
baz=148,SNR=19
242A Grayson 30.87 327 P P 03 20 52.5 +1.1
baz=141
440A Kirbyville 30.92 323 P P 03 20 52.7 +0.8
baz=136
Z44A Pea Ridge, Bel 30.95 331 P P 03 20 53.3 +1.2
baz=145,SNR=5.3
Y45A Yeager Farm, C 31.02 333 P P 03 20 54.1 +1.4
baz=147,SNR=7.0
142A Monroe 31.14 328 P P 03 20 54.8 +1.1
baz=141
035A Encino 31.19 313 P P 03 20 54.9 +0.6
baz=126
PLAL Pickwick Lake 31.33 336 eP P 03 20 56.6 +1.1
comp=Z,20nm,0.7s
Y44A Strider, Charl 31.41 332 P P 03 20 57.1 +1.0
baz=146
637A Eagle Lake 31.51 319 P P 03 20 58.0 +0.9
baz=131
034A Hebbronville 31.68 313 P P 03 20 59.1 +0.5
baz=125,SNR=5.3
736A Circle Diamond 31.68 317 P P 03 20 59.4 +0.8
baz=130
Y43A Makayla and Ka 31.71 331 P P 03 20 59.9 +1.2
baz=144,SNR=5.6
934A Benavides 31.88 314 P P 03 21 00.9 +0.6
baz=126
537A Green Hill Far 31.92 320 P P 03 21 01.4 +0.7
baz=132
EBZ Ebenezer Churc 32.01 334 eP P 03 21 02.8 +1.5
636A Smothers Creek 32.01 318 P P 03 21 01.9 +0.4
baz=130
NATX Nacogdoches 32.06 324 P P 03 21 02.6 +0.7
baz=136
Y42A Garnett, Star 32.07 330 P P 03 21 02.8 +0.9
baz=143,SNR=9.5
140A Cam and Jess, 32.09 326 P P 03 21 03.0 +0.9
baz=139
735A Kenedy 32.13 316 P P 03 21 02.9 +0.4
baz=128
CCAR Cane Creek 32.13 330 eP P 03 21 03.9 +1.5
comp=Z,31nm,0.8s
239A Gary 32.14 324 P P 03 21 03.3 +0.7
baz=137
Z41A Richland Creek 32.14 328 P P 03 21 03.0 +0.5
baz=141
338A Crockett 32.16 322 P P 03 21 03.7 +0.9
baz=135,SNR=5.5
WVT Waverly 32.23 337 eP P 03 21 04.0 +0.7
comp=Z,39nm,1.1s
WVT eS S 03 26 06.2 +1.4
933A Laredo 32.43 313 P P 03 21 04.8 -0.4
baz=125,SNR=5.5
238A Jacksonville 32.51 323 P P 03 21 06.6 +0.8
baz=136
Y41A Eaglette Beard 32.53 329 P P 03 21 06.4 +0.5
baz=142
WLAR White Oak Lake 32.64 328 eP P 03 21 08.1 +1.2
comp=Z,10nm,0.7s
734A La Parita Cree 32.64 315 P P 03 21 07.0 0.0
baz=128
436A Wall Ranch, Ga 32.69 320 P P 03 21 07.9 +0.5
baz=132,SNR=8.7
535A Dale 32.71 318 P P 03 21 07.5 0.0
baz=130
237A Washetta, Mont 32.92 323 P P 03 21 09.9 +0.6
baz=135
833A Chaparral WMA, 32.92 314 P P 03 21 09.2 -0.2
baz=126
HBAR Harrisburg 32.93 333 eP P 03 21 10.2 +0.8
X41A Kaden, Bauxite 32.96 329 P P 03 21 09.9 +0.3
baz=142
138A Matatall Enter 32.96 324 P P 03 21 10.2 +0.5
baz=137
Y40A Okolona 32.98 328 P P 03 21 10.0 +0.2
baz=141,SNR=6.6
733A Divot King Ran 33.08 314 P P 03 21 10.6 -0.3
baz=126
X40A Basin Creek Fa 33.12 329 P P 03 21 11.0 0.0
baz=142,SNR=9.6
336A Riesel 33.13 321 P P 03 21 11.4 +0.1
baz=133
435B Jarrell 33.20 319 P P 03 21 11.7 -0.1
baz=131
MVL Millersville 33.23 355 eP P 03 21 13.7 +1.8
comp=Z,5.2nm,0.5s
137A Heron Place, G 33.31 323 P P 03 21 13.1 +0.4
baz=136
534A Blanco 33.31 317 P P 03 21 12.3 -0.5
baz=129
832A Faith Ranch, C 33.32 313 P P 03 21 12.7 -0.2
baz=125
Z38A Mt. Pleasant 33.34 325 P P 03 21 13.2 +0.3
baz=138
Y39A Lockesburg 33.35 327 P P 03 21 13.2 +0.1
baz=140,SNR=6.6
236A Katherine and 33.36 322 P P 03 21 13.3 +0.2
baz=134
W41B Gary Mavity, V 33.37 331 P P 03 21 13.3 +0.1
baz=144,SNR=8.4
335A Moody 33.43 320 P P 03 21 13.8 -0.1
baz=132
WHAR Wooly Hollow 33.48 331 eP P 03 21 14.7 +0.6
comp=Z,19nm,0.5s
X301 Greenbrier Sit 33.49 330 eP P 03 21 14.9 +0.6
comp=Z,16nm,0.5s
X201 Greenbrier Sit 33.52 331 eP P 03 21 15.1 +0.6
comp=Z,18nm,0.6s
MIAR Mount Ida 33.54 328 P P 03 21 14.3 -0.5
baz=141,SNR=6.5
MIAR Mount Ida 33.54 328 eP P 03 21 14.0 -0.7
comp=Z,6.3nm,0.8s
MIAR ePcP PcP 03 23 52.3 +0.6
WCI Wyandotte Cave 33.56 341 eP P 03 21 15.5 +0.6
comp=Z,25nm,0.6s
Z37A Pogue Cattle C 33.66 324 P P 03 21 15.8 0.0
baz=136
434A Burnet 33.67 318 P P 03 21 15.6 -0.4
baz=130
136A Ennis 33.69 322 P P 03 21 15.6 -0.3
baz=134
Y38A Idabel 33.69 326 P P 03 21 16.0 -0.1
baz=138,SNR=6.6
533A Kerrville 33.72 317 P P 03 21 16.5 +0.1
baz=128
O56A Blue Knob Stat 33.73 352 P P 03 21 17.1 +0.8
baz=170,SNR=5.7
LUPA Lehigh Univers 33.75 357 eP P 03 21 18.7 +2.3
comp=Z,15nm,0.7s
W40A Ferguson Farm, 33.79 330 P P 03 21 17.4 +0.6
baz=142,SNR=21
USIN University of 33.80 339 eP P 03 21 17.9 +1.0
comp=Z,41nm,0.8s
X39A Fountain Ranch 33.80 328 P P 03 21 17.4 +0.4
baz=140,SNR=8.1
PBMO Poplar Bluff 33.85 334 eP P 03 21 17.9 +0.5
comp=Z,38nm,0.8s
WHTX Lake Whitney, 33.92 321 P P 03 21 18.6 +0.5
baz=133
334A Lometa 33.99 319 P P 03 21 18.3 -0.4
baz=131
SSPA Standing Stone 34.01 353 eP P 03 21 20.7 +2.0
comp=Z,11nm,1.0s
N59A State Game Lan 34.09 356 P P 03 21 21.0 +1.6
baz=175,SNR=8.4
V40A Witts Springs 34.15 331 P P 03 21 20.2 +0.1
baz=143,SNR=29
W39A Magazine 34.16 329 P P 03 21 20.3 +0.3
baz=141,SNR=22
SIUC Southern Illin 34.16 337 eP P 03 21 20.8 +0.9
comp=Z,43nm,0.6s
433A Art 34.18 318 P P 03 21 19.9 -0.5
baz=129,SNR=28
Y37A Hugo 34.23 325 P P 03 21 20.7 +0.1
baz=137,SNR=6.6
135A Vickery Place, 34.28 322 P P 03 21 21.2 +0.1
baz=133
X38A Whitesboro 34.30 327 P P 03 21 21.3 0.0
baz=139,SNR=8.8
234A Clairette 34.36 320 P P 03 21 21.6 -0.2
baz=132,SNR=5.9
W38A Poteau 34.44 328 P P 03 21 22.7 +0.2
baz=140
333A Richland Sprin 34.47 318 P P 03 21 22.4 -0.4
baz=130,SNR=17
BLO Bloomington 34.50 341 eP P 03 21 24.2 +1.3
comp=Z,46nm,0.6s
ACSO Alum Creek Sta 34.51 346 eP P 03 21 24.8 +1.8
comp=Z,13nm,0.7s
X37A Clayton 34.54 326 P P 03 21 23.7 +0.4
baz=138
Y36A Durant 34.55 325 P P 03 21 23.9 +0.5
baz=136
V39A Pettigrew 34.59 330 P P 03 21 23.8 0.0
baz=142,SNR=22
U40A Yellville 34.61 331 P P 03 21 24.3 +0.4
baz=144,SNR=63
N54A Moraine State 34.62 351 P P 03 21 25.5 +1.5
baz=168,SNR=8.4
OLIL Olney 34.63 339 eP P 03 21 24.8 +0.7
comp=Z,39nm,0.5s
T41A Mountain View 34.66 333 P P 03 21 24.5 +0.1
baz=146,SNR=26
134A White-Moore Ra 34.71 321 P P 03 21 24.7 -0.1
baz=132,SNR=5.3
Z35A Perchaven, San 34.72 323 P P 03 21 25.2 +0.3
baz=134
233A Rising Star 34.86 319 P P 03 21 26.0 -0.2
baz=131,SNR=7.4
U39A Green Forest 34.93 330 P P 03 21 26.4 -0.4
baz=143,SNR=16
W37B Quinton 34.98 327 P P 03 21 27.2 +0.1
baz=139
V38A Canehill 34.99 329 P P 03 21 26.5 -0.7
baz=141,SNR=35
Y35A Marietta 34.99 324 P P 03 21 27.5 +0.3
baz=135
X36A Centrahoma 35.07 325 P P 03 21 27.5 -0.4
baz=137,SNR=7.2
HHAR Hobbs 35.08 330 eP P 03 21 27.9 -0.1
comp=Z,13nm,0.5s
T40A Mansfield 35.09 332 P P 03 21 28.3 +0.2
baz=145,SNR=21
M54A Oil Creek Stat 35.10 351 P P 03 21 29.4 +1.4
baz=168,SNR=9.3
Z34A Collier Ranch, 35.15 322 P P 03 21 28.7 +0.2
baz=133
133A Hamilton Ranch 35.26 320 P P 03 21 29.6 +0.1
baz=131
X35A Drake 35.30 324 P P 03 21 29.6 -0.4
baz=136,SNR=5.4
BINY Binghamton 35.39 356 eP P 03 21 32.4 +1.9
comp=Z,15nm,0.7s
V37A Hulbert 35.39 328 P P 03 21 30.3 -0.2
baz=140,SNR=6.9
T39A Clever 35.40 331 P P 03 21 30.3 -0.3
baz=143,SNR=11
W36A Wetumka 35.42 326 P P 03 21 30.1 -0.7
baz=138,SNR=7.7
U38A Gravette 35.43 329 P P 03 21 30.1 -0.8
baz=141,SNR=10
S40A Lebanon 35.45 333 P P 03 21 31.4 +0.3
baz=145,SNR=75
Y34A Reagan Ranch, 35.45 323 P P 03 21 31.0 -0.1
baz=134,SNR=8.2
Z33A Whitaker Ranch 35.61 321 P P 03 21 32.5 0.0
baz=132,SNR=6.1
Q42A Golden Eagle 35.71 336 P P 03 21 33.3 +0.1
baz=149
ABTX Abilene, Hawle 35.73 320 P P 03 21 33.6 0.0
baz=130
ABTX Abilene, Hawle 35.73 320 eP P 03 21 34.0 +0.3
comp=Z,21nm,1.1s
ABTX ePcP PcP 03 23 58.3 +0.1
V36A Jenks 35.74 327 P P 03 21 33.1 -0.5
baz=138,SNR=6.7
TUL1 Leonard 35.76 327 P P 03 21 33.2 -0.5
baz=139,SNR=8.4
TUL1 Leonard 35.76 327 eP P 03 21 33.2 -0.5
comp=Z,14nm,0.6s
TUL1 ePcP PcP 03 23 58.3 +0.1
U37A Salina 35.78 329 P P 03 21 33.2 -0.7
baz=140,SNR=6.8
SFIN Lafayette 35.78 341 P P 03 21 34.5 +0.7
baz=156,SNR=32
SFIN Lafayette 35.78 341 eP P 03 21 34.5 +0.7
comp=Z,67nm,0.5s
W35A Tecumseh 35.79 325 P P 03 21 33.6 -0.5
baz=137,SNR=5.6
T38A Diamond 35.85 330 P P 03 21 33.9 -0.6
baz=142,SNR=15
S39A Bolivar 35.91 332 P P 03 21 34.6 -0.4
baz=144,SNR=24
R40A Maddies Statio 35.92 334 P P 03 21 34.9 -0.2
baz=146,SNR=25
X34A Smith Ranch, M 35.95 324 P P 03 21 35.9 +0.5
baz=135
Y33A Hilltop Ranch, 36.01 322 P P 03 21 35.8 -0.1
baz=133,SNR=8.4
U36A Oologah 36.09 328 P P 03 21 36.0 -0.6
baz=139,SNR=6.1
S38A Stockton 36.13 331 P P 03 21 36.3 -0.6
baz=143,SNR=25
V35A Meyer Ranch, C 36.21 326 P P 03 21 37.0 -0.6
baz=137
T37A Cheneyville 18 36.23 330 P P 03 21 37.0 -0.7
baz=141,SNR=31
R39A Chumby, Stover 36.28 333 P P 03 21 37.8 -0.3
baz=145,SNR=30
X33A Lawton 36.30 323 P P 03 21 38.0 -0.4
baz=134
W34A Bridge Creek, 36.36 325 P P 03 21 38.3 -0.6
baz=135
W34A Bridge Creek, 36.36 325 eP P 03 21 38.9 0.0
comp=Z,37nm,0.5s
Q40A Laux Farm, Aux 36.42 335 P P 03 21 39.3 0.0
baz=147,SNR=25
R38A Fenwick Farm, 36.58 332 P P 03 21 40.1 -0.5
baz=144,SNR=27
TXAR Lajitas Array 36.60 312 P P 03 21 41.3 +0.2
comp=Z,5.7nm,0.6s,baz=127,slow=9.1,SNR=80
TXAR pP pP 03 22 14.3 -1.1
comp=Z,0.9nm,0.6s,baz=127,slow=9.6,SNR=1.6
TXAR PcP PcP 03 24 02.3 +1.3
comp=Z,2.9nm,0.6s,baz=134,slow=5.9,SNR=13
TX31 Lajitas Ar. Si 36.60 312 eP P 03 21 41.5 +0.3
TX31 ePcP PcP 03 24 02.1 +1.1
U35A Pawnee 36.60 327 P P 03 21 40.5 -0.5
baz=138,SNR=9.1
WMOK Wichita Mounta 36.60 323 P P 03 21 40.0 -1.0
baz=134,SNR=8.6
AAM Ann Arbor 36.63 347 eP P 03 21 42.9 +1.9
comp=Z,14nm,0.6s
V34A Guthrie 36.65 326 P P 03 21 41.0 -0.3
baz=136
V34A Guthrie 36.65 326 eP P 03 21 41.7 +0.5
comp=Z,31nm,1.2s
T36A Boggs Farm, Ca 36.67 329 P P 03 21 40.6 -0.8
baz=140,SNR=7.7
HDIL Hopedale 36.67 339 P P 03 21 41.1 -0.4
baz=152
S37A Fort Scott 36.68 330 P P 03 21 41.0 -0.6
baz=142,SNR=21
X32A Elmer 36.69 322 P P 03 21 41.4 -0.4
baz=133,SNR=5.7
W33A Caddo, Fort Co 36.71 324 P P 03 21 42.3 +0.5
baz=134
Q39A Willow Grove F 36.85 334 P P 03 21 42.7 -0.3
baz=146,SNR=30
P40A Paris 36.86 335 P P 03 21 42.7 -0.3
baz=147,SNR=18
T35A Sooner Cattle 36.89 328 P P 03 21 43.1 -0.3
baz=139
S36A Lake Cedric, C 37.03 330 P P 03 21 44.1 -0.4
baz=141
Q38A Cooks Store, C 37.07 333 P P 03 21 44.8 0.0
baz=144,SNR=33
V33A Lossen Ranch, 37.07 325 P P 03 21 44.3 -0.6
baz=135,SNR=11
U34A Anderson Ranch 37.09 326 P P 03 21 44.5 -0.5
baz=137
U34A Anderson Ranch 37.09 326 eP P 03 21 44.9 -0.2
comp=Z,30nm,0.6s
R37A Teagarden Farm 37.12 331 P P 03 21 44.6 -0.7
baz=142,SNR=5.1
P39B Salisbury 37.12 334 P P 03 21 44.9 -0.4
baz=146,SNR=12
W32A Sentinel 37.15 323 P P 03 21 45.1 -0.5
baz=133,SNR=18
O40A La Belle 37.28 336 P P 03 21 46.3 -0.3
baz=148
T34A McClaskey Farm 37.33 327 P P 03 21 46.8 -0.3
baz=138
S35A Otter Creek Ra 37.37 329 P P 03 21 46.7 -0.7
baz=140
Q37A Longview Farm, 37.38 332 P P 03 21 47.1 -0.4
baz=143,SNR=14
U33A Lingo Farm, Me 37.41 326 P P 03 21 47.0 -0.7
baz=136
V32A Arapaho 37.44 324 P P 03 21 47.7 -0.3

baz=134
R36A Gordon, Harris 37.45 330 P P 03 21 47.9 -0.2
baz=141
P38A Dawn 37.57 334 P P 03 21 48.8 -0.2
baz=145,SNR=29
O39A Kirksville 37.67 335 P P 03 21 49.7 -0.2
baz=147,SNR=5.6
WVL Waterville 37.76 4 eP P 03 21 52.4 +1.9
comp=Z,123nm,1.7s
S34A Willow Spring 37.80 328 P P 03 21 50.4 -0.6
baz=139
R35A Emporia Munici 37.80 330 P P 03 21 50.3 -0.7
baz=140
U32A Winter Ranch, 37.88 325 P P 03 21 51.0 -0.6
baz=135
P37A Lathrop 37.91 333 P P 03 21 51.2 -0.7
baz=144,SNR=6.4
Q36A Arnold C. Orve 37.93 331 P P 03 21 51.8 -0.3
baz=142
O38A Galt 37.96 334 P P 03 21 51.9 -0.3
baz=146,SNR=13
Q35A Mercer Eighty, 38.13 330 P P 03 21 53.0 -0.7
baz=141,SNR=7.4
N39A Derby Farms, D 38.18 336 P P 03 21 53.6 -0.5
baz=148,SNR=7.9
S33A Kaszmaul Farm, 38.19 327 P P 03 21 53.6 -0.7
baz=137
SADO Sadowa 38.23 353 eP P 03 21 55.4 +0.9
comp=Z,14nm,0.7s
O37A Wolven Farm, M 38.29 333 P P 03 21 54.5 -0.5
baz=145
R34A Isabella, Hill 38.32 329 P P 03 21 54.8 -0.5
baz=139,SNR=5.8
P36A Good Intent, A 38.33 332 P P 03 21 54.7 -0.7
baz=143,SNR=9.4
T32A Huddler Ranch, 38.40 326 P P 03 21 55.5 -0.5
baz=136
N38A Joes South For 38.41 335 P P 03 21 55.7 -0.3
baz=146,SNR=8.2
AMTX Amarillo 38.48 321 P P 03 21 56.8 -0.1
baz=130
AMTX Amarillo 38.48 321 eP P 03 21 57.6 +0.8
comp=Z,41nm,1.1s
PKME Peaks-Kenny Pk 38.48 4 eP P 03 21 58.2 +1.7
comp=Z,18nm,0.9s
KSU1 Kansas State U 38.60 330 P P 03 21 56.8 -0.9
baz=140,SNR=9.7
KSU1 Kansas State U 38.60 330 eP P 03 21 57.1 -0.6
comp=Z,25nm,0.7s
MSTX Muleshoe 38.61 319 P P 03 21 57.3 -0.7
baz=128
MSTX Muleshoe 38.61 319 eP P 03 21 57.9 -0.1
comp=Z,18nm,1.0s
MSTX ePcP PcP 03 24 07.9 +0.8
O36A Bolckow 38.63 333 P P 03 21 57.1 -0.8
baz=144,SNR=7.0
Q34A Chapman 38.63 330 P P 03 21 57.1 -0.8
baz=140,SNR=8.9
P35A Duane Minner, 38.64 331 P P 03 21 57.3 -0.8
baz=142
R33A Olander Ranch, 38.71 328 P P 03 21 58.2 -0.4
baz=138
S32A Newby Ranch, P 38.78 326 P P 03 21 58.8 -0.4
baz=136
N37A Lee Faris, Mou 38.80 334 P P 03 21 58.8 -0.5
baz=145,SNR=11
M38A Pleasantville 38.91 336 P P 03 21 59.8 -0.5
baz=147,SNR=6.2
P34A Walnut Farm, R 39.05 330 P P 03 22 00.6 -0.8
baz=140,SNR=8.6
JFWS Jewell Farm 39.09 340 eP P 03 22 01.6 0.0
comp=Z,51nm,0.6s
MNTX Cornudas Mount 39.11 314 P P 03 22 02.2 +0.1
baz=123
MNTX Cornudas Mount 39.11 314 eP P 03 22 02.5 +0.5
comp=Z,13nm,0.8s
Q33A Connelly Farm, 39.14 329 P P 03 22 01.8 -0.4
baz=139
O35A Humboldt 39.17 332 P P 03 22 01.4 -1.0
baz=142
N36A Muff Farm, Cla 39.18 333 P P 03 22 02.0 -0.4
baz=144,SNR=6.8
R32A Long Quarter, 39.18 327 P P 03 22 01.6 -0.9
baz=137
M37A Trindle Farm, 39.26 335 P P 03 22 02.5 -0.7
baz=146
TRQ Mont Tremblant 39.33 358 eP P 03 22 04.7 +1.0
SCIA State Center 39.33 336 eP P 03 22 04.0 +0.3
comp=Z,48nm,0.6s
L38A Oak Wood Farm, 39.43 336 P P 03 22 04.0 -0.5
baz=148,SNR=6.4
O34A Beatrice 39.48 331 P P 03 22 04.4 -0.6
baz=141,SNR=9.3
Q32A Meitler Ranch, 39.52 328 P P 03 22 04.5 -0.8
baz=138
N35A Tabor 39.52 333 P P 03 22 04.5 -0.8
baz=143,SNR=5.9
LMN Caledonia Moun 39.58 9 eP P 03 22 06.5 +0.8
comp=Z,43nm,0.8s
L37A Phoenix Point, 39.73 336 P P 03 22 06.3 -0.8
baz=147,SNR=6.1
K38A Parkersburg 39.78 337 P P 03 22 07.1 -0.4
baz=148
O33A Hebron 39.83 330 P P 03 22 07.1 -0.8
baz=140
N34A Lincoln 39.90 332 P P 03 22 07.8 -0.6
baz=142
CBKS Cedar Bluff 40.02 327 P P 03 22 08.8 -0.7
baz=136
M35A Neola 40.03 333 P P 03 22 09.1 -0.4
baz=143,SNR=10
K37A Belmond 40.23 336 P P 03 22 10.8 -0.3
baz=147
J38A Wedel Dairy, R 40.24 338 P P 03 22 10.5 -0.7
baz=149
K36A Gilmore City 40.45 335 P P 03 22 13.0 +0.1
baz=146
M34A Aspy Farms, Fr 40.46 332 P P 03 22 12.5 -0.6
baz=142
L35A Bielow Farm, R 40.48 334 P P 03 22 12.8 -0.4
baz=144
J37A Redenius Farm, 40.65 337 P P 03 22 14.6 +0.1
baz=148
LMQ La Malbaie 40.70 3 eP P 03 22 16.4 +1.6
comp=Z,20nm,0.8s
N32A Stulken Farm, 40.71 330 P P 03 22 15.0 -0.1
baz=139
O31A Woolen Ranch, 40.77 329 P P 03 22 15.3 -0.4
baz=138
M33A Taylor Creek F 40.80 332 P P 03 22 15.2 -0.6
baz=142
I38A Scanlan Farm, 40.81 339 P P 03 22 15.2 -0.7
baz=150,SNR=8.2
K35A Storm Lake 40.84 335 P P 03 22 15.4 -0.8
baz=145
BGNE Belgrade 41.13 331 P P 03 22 18.0 -0.5
baz=140,SNR=6.4
BGNE Belgrade 41.13 331 eP P 03 22 18.0 -0.5
comp=Z,44nm,0.3s
I37A Lemond, Waseca 41.19 338 P P 03 22 18.7 -0.2
baz=148
K34A Le Mars 41.19 334 P P 03 22 18.4 -0.5
baz=144,SNR=13
121A Cookes Peak, D 41.28 313 P P 03 22 20.9 +0.8
baz=121
121A Cookes Peak, D 41.28 313 eP P 03 22 20.9 +0.8
comp=Z,4.3nm,0.7s
L33A Hoskins 41.30 332 P P 03 22 19.4 -0.5
baz=142
J35A Milford 41.36 335 P P 03 22 20.5 +0.1
baz=145
I36A Fitzsimmons Fa 41.43 337 P P 03 22 20.7 -0.1
baz=147
M31A Lambtecht Ranc 41.48 330 P P 03 22 21.4 0.0
baz=139
H37A Dierke Farm, C 41.49 338 P P 03 22 21.3 -0.1
baz=149
L32A Elgin 41.52 332 P P 03 22 21.4 -0.3
baz=141
K33A Hardington 41.52 333 P P 03 22 21.2 -0.5
baz=142,SNR=7.3
COWI Conover 41.60 343 eP P 03 22 22.6 +0.3
comp=Z,17nm,0.8s
J34A George 41.61 335 P P 03 22 21.9 -0.5
baz=144,SNR=11
T25A Trinidad 41.62 321 P P 03 22 23.3 +0.5
baz=129
T25A Trinidad 41.62 321 eP P 03 22 24.4 +1.5
comp=Z,7.7nm,0.6s
ANMO Albuquerque 41.65 317 P P 03 22 23.8 +0.8
comp=Z,3.3nm,0.8s,baz=136,slow=7.0,SNR=7.5
ANMO Albuquerque 41.65 317 P P 03 22 23.7 +0.6
baz=125
I35A Creekview Farm 41.67 336 P P 03 22 22.6 -0.3
baz=146
KSCO Kaye Shedlock' 41.77 325 P P 03 22 23.8 -0.1
baz=133
LAZ Ladron 41.81 316 eP P 03 22 25.6 +1.2
319A Douglas 41.82 311 eP P 03 22 25.8 +1.4
comp=Z,9.9nm,0.7s
H36A Jessenland, He 41.87 337 P P 03 22 24.0 -0.4
baz=148,SNR=6.6
SPMN Marine on St. 42.01 339 P P 03 22 25.0 -0.5
baz=150,SNR=6.7
SPMN Marine on St. 42.01 339 eP P 03 22 25.6 +0.1
comp=Z,8.8nm,0.5s
K32A Verdigre 42.01 332 P P 03 22 24.7 -0.9
baz=141,SNR=10
L31A Butterfield Fa 42.05 331 P P 03 22 25.1 -0.9
baz=140
J33A Davis 42.08 334 P P 03 22 25.6 -0.6
baz=143
ECSD EROS Data Cent 42.26 334 P P 03 22 26.7 -0.9
baz=144,SNR=18
ECSD EROS Data Cent 42.26 334 eP P 03 22 27.0 -0.6
comp=Z,15nm,1.0s
ECSD ePcP PcP 03 24 18.1 -0.5
H35A Sunnyside Ranc 42.31 337 P P 03 22 27.5 -0.6
baz=147
K31A O'Neill 42.35 332 P P 03 22 27.6 -0.8
baz=140,SNR=8.1
G36A St. Michael 42.36 338 P P 03 22 28.3 -0.1
baz=148
J32A Parkston 42.51 333 P P 03 22 29.0 -0.7
baz=142,SNR=12
G35A Watkins 42.62 338 P P 03 22 30.2 -0.3
baz=148,SNR=5.9
H34A Spellman Lake, 42.67 336 P P 03 22 30.4 -0.5
baz=145
SDCO Great Sand Dun 42.68 321 P P 03 22 32.4 +1.0
baz=128,SNR=20
SDCO Great Sand Dun 42.68 321 eP P 03 22 32.5 +1.0
comp=Z,8.2nm,0.7s
OGNE Ogallala 42.77 327 P P 03 22 31.8 -0.2
baz=135
K30A Basset 42.80 331 P P 03 22 31.7 -0.3
baz=139,SNR=23
F36A Milaca 42.81 339 P P 03 22 31.5 -0.6
baz=149,SNR=12
I32A Karley and Nic 42.86 334 P P 03 22 32.1 -0.4
baz=143
H33A Prehn Over Nor 43.08 335 P P 03 22 34.2 0.0
baz=144
F35A Swanville 43.19 338 P P 03 22 34.6 -0.5
baz=148,SNR=8.1
Q24A Divide 43.22 323 P P 03 22 35.8 0.0
baz=130
H32A Carlson Farm, 43.23 334 P P 03 22 34.6 -0.8
baz=143
J30A Dallas 43.23 332 P P 03 22 34.7 -0.8
baz=140
E36A McGregor 43.28 340 P P 03 22 35.6 -0.3
baz=150,SNR=35
I31A Royce, Wessing 43.34 333 P P 03 22 35.7 -0.6
baz=141,SNR=6.7
G33A Ortonville 43.37 336 P P 03 22 36.0 -0.5
baz=145
TUC Tucson 43.39 311 P P 03 22 37.0 0.0
baz=118
TUC Tucson 43.39 311 eP P 03 22 37.6 +0.6
comp=Z,6.5nm,0.8s
TUC ePcP PcP 03 24 23.4 +0.7
C39A Grand Marais 43.44 343 P P 03 22 36.8 -0.3
baz=155,SNR=27
S22A 4UR Ranch, Cre 43.51 320 P P 03 22 39.1 +0.9
baz=127
S22A 4UR Ranch, Cre 43.51 320 eP P 03 22 39.3 +1.1
comp=Z,6.5nm,0.7s
D37A Cotton 43.56 341 P P 03 22 38.1 +0.1
baz=151,SNR=16
I30A Oacoma 43.65 332 P P 03 22 38.0 -0.8
baz=140,SNR=6.0
H31A Wolsey 43.66 333 P P 03 22 38.7 -0.3
baz=142
C38A Sawbill Land. 43.69 342 P P 03 22 38.6 -0.5
baz=153,SNR=21
E35A Pequot Lakes 43.72 339 P P 03 22 39.3 -0.1
baz=148,SNR=11
D36A Goodland 43.82 340 P P 03 22 39.8 -0.4
baz=150,SNR=17
F33A 5 Mile Ranch, 43.84 336 P P 03 22 39.7 -0.6
baz=145
SUSD Miller 43.85 333 P P 03 22 39.8 -0.6
baz=141,SNR=12
X18A Snowflake 43.85 314 eP P 03 22 41.7 +0.9
comp=Z,11nm,1.1s
EYMN Ely 43.96 342 P P 03 22 41.1 -0.1
baz=153,SNR=65
EYMN Ely 43.96 342 eP P 03 22 41.2 -0.1
comp=Z,48nm,0.6s
E34A Wadena 43.97 338 P P 03 22 41.2 -0.1
baz=147,SNR=11
C37A Embarrass 43.98 341 P P 03 22 41.3 -0.1
baz=152,SNR=16
ISCO Idaho Springs 44.03 323 P P 03 22 43.0 +0.7
baz=130,SNR=19
ISCO Idaho Springs 44.03 323 eP P 03 22 43.3 +1.0
comp=Z,11nm,0.9s
ISCO ePcP PcP 03 24 25.6 +0.5
D35A Remer 44.05 339 P P 03 22 41.3 -0.6
baz=149,SNR=11
G31A Conde 44.13 334 P P 03 22 41.9 -0.8
baz=143
I29A Vivian Onida 44.14 332 P P 03 22 41.5 -1.3
baz=139,SNR=5.1
C36A Pine Crest Far 44.22 341 P P 03 22 43.2 -0.1
baz=151,SNR=21
E33A Westby DABS, E 44.27 337 P P 03 22 43.1 -0.6
baz=146
MVCO Mesa Verde 44.29 318 P P 03 22 44.5 +0.2
baz=124,SNR=7.4
MVCO Mesa Verde 44.29 318 eP P 03 22 44.8 +0.4
comp=Z,21nm,1.4s
MVCO ePcP PcP 03 24 26.2 +0.3
D34A Park Rapids 44.46 338 P P 03 22 44.5 -0.7
baz=148,SNR=18
G30A Faulkton 44.47 334 P P 03 22 44.5 -0.9
baz=141,SNR=7.7
SMCO Snowmass 44.47 322 eP P 03 22 46.8 +0.9
comp=Z,4.4nm,0.6s
I28A Midland 44.54 331 P P 03 22 45.0 -1.0
baz=138,SNR=7.6
C35A Jirik Farms, M 44.55 340 P P 03 22 45.6 -0.3
baz=150,SNR=28
H29A Onida 44.56 332 P P 03 22 45.2 -0.8
baz=140,SNR=5.3
F31A Hecla 44.66 335 P P 03 22 45.9 -0.9
baz=143
D33A AnnSam, Waubun 44.75 338 P P 03 22 47.4 -0.1
baz=147,SNR=29
E32A Braaten, Kindr 44.77 336 P P 03 22 47.3 -0.3
baz=145
214A Organ Pipe Nat 44.77 309 P P 03 22 48.6 +0.7
baz=116
C34A RKJ Ranch, Bem 44.84 339 P P 03 22 48.1 -0.1
baz=148,SNR=7.0
PV01 Paradox Valley 44.86 319 eP P 03 22 50.1 +1.3
X16A Lo Mia Camp, P 44.87 313 eP P 03 22 50.0 +1.1
comp=Z,5.9nm,0.9s
PHWY Pilot Hill 44.91 325 eP P 03 22 49.8 +0.6
comp=Z,5.5nm,0.7s
PHWY ePcP PcP 03 24 28.0 -0.1
N23A Red Feather La 44.93 324 P P 03 22 49.9 +0.6
baz=130,SNR=11
N23A Red Feather La 44.93 324 eP P 03 22 50.5 +1.1
comp=Z,13nm,1.0s
F30A Leola 44.97 334 P P 03 22 48.8 -0.5
baz=142,SNR=5.4
J26A Sides Ranch, S 44.99 329 P P 03 22 49.3 -0.3
baz=135,SNR=5.9
B35A Bob, Littlefor 45.04 340 P P 03 22 49.4 -0.3
baz=150,SNR=26
E31A Nome 45.07 336 P P 03 22 49.3 -0.8
baz=144,SNR=5.4
PV05 Paradox Valley 45.17 319 eP P 03 22 51.8 +0.6
PV04 Paradox Valley 45.22 319 eP P 03 22 51.8 +0.1
C33A Trail 45.24 338 P P 03 22 50.9 -0.5
baz=147,SNR=23
PV10 Paradox Valley 45.30 319 eP P 03 22 53.5 +1.1
F29A Eureka 45.31 334 P P 03 22 51.6 -0.4
baz=141
WUAZ Wupatki 45.36 315 P P 03 22 53.5 +0.8
baz=120
WUAZ Wupatki 45.36 315 eP P 03 22 54.0 +1.2
comp=Z,24nm,0.9s
D31A Mcclaflin, Tow 45.40 336 P P 03 22 52.4 -0.2
baz=144
PV09 Paradox Valley 45.43 319 eP P 03 22 54.2 +0.8
H27A Howes 45.45 331 P P 03 22 52.6 -0.6
baz=137
B34A Aery, Baudette 45.46 340 P P 03 22 53.0 -0.1
baz=149,SNR=58
B33A Robert and Kas 45.60 339 P P 03 22 54.0 -0.2
baz=148
H26A Fairpoint 45.78 330 P P 03 22 55.2 -0.5
baz=136
Y14A Wickenburg 45.79 312 eP P 03 22 56.6 +0.7
comp=Z,49nm,0.8s
E29A Napoleon 45.81 334 P P 03 22 55.9 0.0
baz=142
O20A White River Ci 45.82 322 P P 03 22 57.3 +0.9
baz=127
O20A White River Ci 45.82 322 eP P 03 22 57.5 +1.1
comp=Z,7.7nm,0.6s
I25A Rochford 45.83 329 P P 03 22 56.5 +0.2
baz=135,SNR=12
D30A Buchanan 45.86 336 P P 03 22 56.0 -0.3
baz=143
G27A Dupree 45.93 332 P P 03 22 56.5 -0.4
baz=138,SNR=12
C31A Landman Farms, 46.01 337 P P 03 22 57.0 -0.4
baz=145,SNR=6.7
B32A Ashes, Strandq 46.05 338 P P 03 22 57.7 0.0
baz=147,SNR=14
RSSD Black Hills 46.06 329 P P 03 22 58.7 +0.5
baz=135
RSSD Black Hills 46.06 329 eP P 03 22 58.8 +0.7
comp=Z,6.1nm,0.6s
A33A Warroad 46.10 340 P P 03 22 57.9 -0.2
baz=148,SNR=14
D29A Pettibone, Tap 46.17 335 P P 03 22 58.4 -0.3
baz=142,SNR=8.7
G26A Maurine 46.19 331 P P 03 22 58.0 -0.9
baz=137,SNR=7.0
H25A Fruitdale 46.19 330 P P 03 22 58.4 -0.6
baz=136
C30A Mose, Pekin 46.23 336 P P 03 22 58.9 -0.2
baz=144,SNR=11
E28A Huff 46.27 334 P P 03 22 59.5 0.0
baz=140,SNR=12
K22A Casper 46.39 326 P P 03 23 01.0 +0.3
baz=131
K22A Casper 46.39 326 eP P 03 23 01.1 +0.4
comp=Z,6.1nm,0.6s
A32A Rocking H Ranc 46.47 339 P P 03 23 00.7 -0.3
baz=147,SNR=6.7
B31A Greenbush Farm 46.49 337 P P 03 23 01.2 0.0
baz=145
G25A Newell 46.51 330 P P 03 23 00.8 -0.6
baz=136,SNR=11
E27A Carson 46.55 333 P P 03 23 02.0 +0.3
baz=139,SNR=15
F26A Lodgepole 46.63 332 P P 03 23 01.9 -0.4
baz=137,SNR=5.9
SRU San Rafael Swe 46.67 319 eP P 03 23 04.1 +1.1
comp=Z,14nm,1.0s
A31A Linda, St. Vin 46.74 338 P P 03 23 02.4 -0.6
baz=146
GLA Glamis 46.77 310 P P 03 23 04.1 +0.5
baz=115
B30A Myrvik Farm, E 46.77 337 P P 03 23 02.8 -0.6
baz=144,SNR=8.1
P18A Preston Nutter 46.78 320 eP P 03 23 05.0 +1.0
comp=Z,15nm,1.3s
PDMCI Parker Dam,Lak 46.79 312 P P 03 23 04.2 +0.5
baz=116
MDND Maddock 46.80 336 P P 03 23 03.8 +0.2
baz=142
MDND Maddock 46.80 336 eP P 03 23 03.7 +0.2
comp=Z,60nm,0.8s
Q16A Castle Valley 46.99 319 eP P 03 23 06.3 +0.8
comp=Z,3.7nm,0.8s
E26A Carlson Angus 46.99 332 P P 03 23 04.9 -0.2
baz=138,SNR=11
P17A Butcher Ranch, 47.01 320 eP P 03 23 06.5 +0.9
comp=Z,12nm,0.8s
C28A Hausauer Farms 47.02 335 P P 03 23 05.2 -0.1
baz=141
D27A Center 47.05 334 P P 03 23 05.8 +0.3
baz=140
F25A Bowman 47.06 331 P P 03 23 06.0 +0.3
baz=137
KNB Kanab 47.12 316 eP P 03 23 07.8 +1.4
comp=Z,21nm,1.0s
A30A Hoffart Farm, 47.16 337 P P 03 23 06.4 0.0
baz=145
B29A Wagenman Farm, 47.19 336 P P 03 23 06.7 +0.1
baz=143
MTPU Mount Pierson 47.20 317 eP P 03 23 08.3 +1.1
comp=Z,5.0nm,0.7s
TMUT Trail Mountain 47.22 319 eP P 03 23 08.1 +0.7
comp=Z,6.0nm,0.8s
PLCA Paso Flores 47.32 177 P P 03 23 06.9 -0.8
comp=Z,1.1nm,0.6s,baz=16,slow=10,SNR=6.5
PLCA ScP ScP 03 28 14.7 -0.6
comp=Z,1.9nm,0.9s,baz=325,slow=9.8,SNR=3.0
ULM Lac du Bonnet 47.38 340 P P 03 23 07.5 -0.6
comp=Z,31nm,0.5s,baz=145,slow=7.5,SNR=32
ULM pP pP 03 23 44.5 +0.7
comp=Z,2.5nm,0.4s,baz=127,slow=6.8,SNR=1.2
ULM PcP PcP 03 24 35.7 -0.4
comp=Z,6.4nm,0.7s,baz=154,slow=3.3,SNR=3.3
ULM Lac du Bonnet 47.38 340 eP P 03 23 07.5 -0.6
comp=Z,29nm,0.7s
ULM pP pP 03 23 44.5 +0.7
ULM PcP PcP 03 24 35.7 -0.4
D26A Manning 47.40 333 P P 03 23 08.3 0.0
baz=138
LCMT Little Creek M 47.41 315 eP P 03 23 09.8 +1.2
comp=Z,15nm,0.9s
MSU Marysvale 47.44 318 eP P 03 23 10.2 +1.2
E25A Miller Ranch, 47.45 332 P P 03 23 08.7 0.0
baz=137
SWSC Sam W. Stewart 47.48 309 P P 03 23 09.8 +0.8
baz=114
IRM Iron Mountain 47.48 311 P P 03 23 09.9 +0.8
baz=115
C27A Sayler Ranch, 47.50 334 P P 03 23 09.5 +0.4
baz=140
A29A Manning Farm, 47.51 337 P P 03 23 08.6 -0.5
baz=143,SNR=13
B28A Dugan Ranch, T 47.59 335 P P 03 23 09.7 0.0
baz=142
C26A Wahner Farm, P 47.84 334 P P 03 23 11.8 +0.1
baz=139,SNR=5.7
D25A Fairfield 47.89 332 P P 03 23 12.3 +0.2
baz=138,SNR=5.4
A28A Rude Farm, Bot 47.91 336 P P 03 23 11.9 -0.3
baz=142
BELC Belle Mtn. Jos 48.06 310 P P 03 23 13.2 -0.5
baz=114
JLU Jordanelle 48.09 320 eP P 03 23 14.8 +0.8
comp=Z,5.3nm,0.7s
GMRC Granite Mounta 48.13 311 P P 03 23 14.3 +0.1
baz=115
NLU North Lily Min 48.14 319 eP P 03 23 15.2 +0.9
comp=Z,7.1nm,0.8s
SCHQ Schefferville 48.18 5 P P 03 23 14.7 +0.6
comp=Z,42nm,0.5s,baz=192,slow=7.0,SNR=125
SCHQ ScP ScP 03 28 17.4 -1.1
comp=Z,3.8nm,0.8s,baz=230,slow=4.4,SNR=4.5
SCHQ Schefferville 48.18 5 eP P 03 23 14.7 +0.6
comp=Z,45nm,0.8s
SCHQ ScP ScP 03 28 17.4 -1.1
BW06 Boulder Array 48.20 324 P P 03 23 14.6 -0.2
baz=128,SNR=11
BW06 Boulder Array 48.20 324 eP P 03 23 14.8 0.0
comp=Z,14nm,1.3s
BW06 ePcP PcP 03 24 38.8 -0.8
PD31 Pinedale Array 48.20 324 eP P 03 23 14.8 0.0
PDAR Pinedale Array 48.20 324 P P 03 23 14.8 0.0
comp=Z,4.0nm,0.5s,baz=119,slow=8.5,SNR=41
PDAR pP pP 03 23 51.4 +0.7
comp=Z,0.5nm,0.6s,baz=238,slow=41,SNR=1.7

PDAR PcP **PcP** 03 24 39.1 -0.5
comp=Z,1.4nm,0.4s,baz=108,slow=7.0,SNR=5.8
PDAR ScP **ScP** 03 28 18.7 -0.6
comp=Z,0.3nm,0.7s,baz=94,slow=4.5,SNR=3.1
C25A Freed Ranch, W 48.27 333 P **P** 03 23 15.9 +0.9
baz=138
B26A Jensen Ranch, 48.32 334 P **P** 03 23 16.2 +0.9
baz=140
A27A Ledoux Ranch, 48.34 335 P **P** 03 23 16.3 +0.8
baz=141
TCUT Toone Canyon 48.35 321 *e*P **P** 03 23 16.9 +0.9
comp=Z,40nm,0.6s
SHPR Sheep Range 48.52 314 *e*P **P** 03 23 18.7 +1.4
comp=Z,4.7nm,1.1s
PSUT Pine Spring 48.58 317 *e*P **P** 03 23 18.9 +1.1
comp=Z,6.0nm,0.7s
TUQ Turquoise Moun 48.60 312 P **P** 03 23 18.2 +0.3
baz=116
A26A Wade Farm, Ken 48.64 335 P **P** 03 23 18.0 +0.3
baz=140,SNR=6.4
B25A Knox Farm, Ray 48.65 333 P **P** 03 23 18.6 +0.7
baz=138
RSUT Red Spur Mount 48.65 322 *e*P **P** 03 23 18.4 +0.1
BMUT Black Mountain 48.73 322 *e*P **P** 03 23 18.9 +0.1
HWUT Hardware Ranch 48.73 322 *e*P **P** 03 23 18.9 +0.2
comp=Z,8.9nm,0.7s
DUG Dugway, Tooele 48.74 319 P **P** 03 23 19.2 +0.4
baz=122,SNR=10.0
DUG Dugway, Tooele 48.74 319 *e*P **P** 03 23 19.3 +0.4
comp=Z,8.2nm,0.8s
MURC Murrieta 48.81 309 P **P** 03 23 19.7 +0.4
baz=113
LAO LASA Array 48.95 330 P **P** 03 23 20.2 0.0
baz=134,SNR=11
LAO LASA Array 48.95 330 *e*P **P** 03 23 20.2 0.0
comp=Z,9.4nm,0.6s
HDU Hyde Park 48.96 322 *e*P **P** 03 23 20.0 -0.6
SHOC Shoshone, Teco 49.06 313 P **P** 03 23 22.2 +1.0
baz=116
AHID Auburn Hatcher 49.11 323 *e*P **P** 03 23 21.9 +0.3
comp=Z,12nm,0.9s
GSC Goldstone, Bar 49.20 312 P **P** 03 23 22.8 +0.5
baz=115
DGMT Dagmar 49.26 333 P **P** 03 23 23.1 +0.6
baz=137,SNR=24
DGMT Dagmar 49.26 333 *e*P **P** 03 23 23.4 +0.9
comp=Z,79nm,0.6s
BGU Big Grassy Mou 49.27 320 *e*P **P** 03 23 23.6 +0.7
comp=Z,19nm,0.6s
REDW Red Top Meadow 49.32 324 *e*P **P** 03 23 23.9 +0.6
comp=Z,25nm,1.0s
SNOW Snow King Moun 49.32 324 *e*P **P** 03 23 23.9 +0.6
comp=Z,11nm,0.7s
LOHW Long Hollow 49.32 324 *e*P **P** 03 23 23.8 +0.5
comp=Z,10nm,0.6s
MOOW Moose Ponds 49.49 324 *e*P **P** 03 23 23.9 -0.6
comp=Z,6.3nm,0.7s
RLMT Red Lodge 49.50 327 P **P** 03 23 25.0 +0.4
baz=129
RLMT Red Lodge 49.50 327 *e*P **P** 03 23 24.4 -0.2
comp=Z,5.7nm,0.4s
TPNV Topopah Spring 49.51 314 P **P** 03 23 25.5 +0.7
baz=116
TPNV Topopah Spring 49.51 314 *e*P **P** 03 23 26.0 +1.2
comp=Z,6.3nm,0.9s
HVU Hansel Valley 49.58 321 *e*P **P** 03 23 25.8 +0.6
comp=Z,6.2nm,0.7s
FXWY Fox Creek 49.58 324 *e*P **P** 03 23 25.4 +0.1
comp=Z,5.0nm,0.8s
FLWY Flagg Ranch 49.66 325 *e*P **P** 03 23 26.1 +0.3
comp=Z,3.9nm,0.5s
R11A Troy Canyon, C 49.68 316 P **P** 03 23 26.6 +0.6
baz=118,SNR=11
R11A Troy Canyon, C 49.68 316 *e*P **P** 03 23 26.8 +0.8
comp=Z,4.6nm,0.8s
R11A *e*PcP **PcP** 03 24 45.4 +0.5
IMW Indian Meadow 49.69 324 *e*P **P** 03 23 26.6 +0.5
comp=Z,10nm,0.7s
H17A Grant Village 49.78 325 P **P** 03 23 27.5 +0.8
baz=128
EDW2 Edwards Air Fo 49.92 311 P **P** 03 23 28.1 +0.3
baz=113
LRMC Laurel Mtn Rad 49.93 311 P **P** 03 23 28.2 +0.3
baz=114
MPMC Manual Prospec 50.02 312 P **P** 03 23 28.7 0.0
baz=115
GCMT Greycliff 50.14 327 *e*P **P** 03 23 30.1 +0.7
YMR Madison River 50.17 325 *e*P **P** 03 23 31.2 +1.5
comp=Z,8.2nm,0.6s
GRAC Grapevine Rang 50.33 313 P **P** 03 23 31.5 +0.7
baz=116
QLMT Earthquake Lak 50.53 325 *e*P **P** 03 23 34.0 +1.6
ELK Elko 50.61 319 *e*P **P** 03 23 33.4 +0.3
comp=Z,3.3nm,0.6s
CWC Cottonwood Cre 50.62 312 P **P** 03 23 34.0 +0.9
baz=114
BOZ Bozeman (W) 51.13 326 P **P** 03 23 37.0 +0.2
baz=127,SNR=19
BOZ Bozeman (W) 51.13 326 *e*P **P** 03 23 37.0 +0.2
comp=Z,8.1nm,0.6s
MCMT McKenzie Canyo 51.34 324 *e*P **P** 03 23 39.7 +1.2
RCTC Rector, Farmer 51.42 312 P **P** 03 23 39.5 +0.7
baz=114
HLID Hailey 51.56 322 P **P** 03 23 40.3 +0.2
baz=123,SNR=11
HLID Hailey 51.56 322 *e*P **P** 03 23 40.7 +0.7
comp=Z,6.7nm,0.7s
SMMC Simmler 51.60 310 P **P** 03 23 40.3 0.0
baz=112
NV01 Mina Array Sit 51.62 315 *e*P **P** 03 23 40.9 +0.3
NVAR Mina Array Bea 51.62 315 P **P** 03 23 41.3 +0.7
comp=Z,4.1nm,0.7s,baz=121,slow=7.1,SNR=31
NVAR pP **pP** 03 24 17.9 +0.9
comp=Z,0.4nm,0.7s,baz=354,slow=40,SNR=1.7
NVAR PcP **PcP** 03 24 52.8 +0.6
comp=Z,2.0nm,0.5s,baz=135,slow=4.7,SNR=11
EGMT Eagleton 51.63 329 P **P** 03 23 40.6 +0.3
baz=131,SNR=10.0
EGMT Eagleton 51.63 329 *e*P **P** 03 23 40.6 +0.3
comp=Z,8.1nm,0.6s
MLAC Mammoth, Mammo 51.66 313 P **P** 03 23 40.9 0.0
baz=115
LRM Limekiln Ridge 51.70 325 *e*P **P** 03 23 41.5 +0.4
BMN Battle Mountai 51.78 317 *e*P **P** 03 23 42.1 +0.4
comp=Z,6.9nm,1.0s
MFID Camas Ranch 52.35 321 *e*P **P** 03 23 46.5 +0.6
comp=Z,14nm,0.6s
PAHR Pah Rah Range 52.93 316 *e*P **P** 03 23 50.6 +0.5
comp=Z,4.3nm,0.7s
MSO Missoula 53.13 326 P **P** 03 23 51.7 +0.2
baz=126
MSO Missoula 53.13 326 *e*P **P** 03 23 51.8 +0.4
comp=Z,6.8nm,1.3s
FFC Flin Flon 53.19 339 *e*P **P** 03 23 51.3 -0.3
comp=Z,9.1nm,0.5s
WVOR Wild Horse Val 53.66 319 *e*P **P** 03 23 55.5 +0.1
comp=Z,28nm,0.8s
YBMT Yellow Bay 53.77 327 *e*P **P** 03 23 57.5 +1.4
JTMT Jette 53.85 327 *e*P **P** 03 23 57.6 +0.9
BLMT Blacktail Moun 54.05 327 *e*P **P** 03 23 58.3 0.0
BSMT Bassoo Peak 54.19 326 *e*P **P** 03 23 59.8 +0.6
FCC Fort Churchill 54.36 347 *e*P **P** 03 23 59.5 -0.4
comp=Z,12nm,0.8s
WALA Waterton Lakes 54.43 328 *e*P **P** 03 24 00.9 0.0
comp=Z,5.3nm,1.0s
O03D Paynes Creek 54.86 315 P **P** 03 24 03.8 -0.3
baz=114
G08A Pilot Rock 55.24 322 *e*P **P** 03 24 07.3 +0.6
comp=Z,18nm,0.6s
M04C Macdoel 55.50 317 P **P** 03 24 08.4 -0.3
baz=115,SNR=6.8
NEW Newport 55.72 326 P **P** 03 24 10.0 -0.1
baz=123
NEW Newport 55.72 326 *e*P **P** 03 24 09.5 -0.5
comp=Z,9.8nm,1.4s
J05D Fort Rock, OR 55.75 319 P **P** 03 24 10.8 +0.3
baz=116,SNR=13
M02C Callahan 56.03 316 P **P** 03 24 11.7 -0.7
baz=114
YBH Yreka Blue Hor 56.07 317 *e*P **P** 03 24 11.7 -1.1
comp=Z,5.5nm,0.6s
I05D Terrebonne, OR 56.28 320 P **P** 03 24 14.4 +0.3
baz=117
I04A Tendick Farm, 56.74 319 P **P** 03 24 17.2 -0.2
baz=116
L02D Cave Junction, 56.85 317 P **P** 03 24 18.0 -0.2
baz=114
H04A Detroit Lake 56.98 320 *e*P **P** 03 24 19.6 +0.5
comp=Z,14nm,0.8s
TDH Tom, Dick, Har 57.00 321 P **P** 03 24 20.6 +1.3
EBG Ellensburg 57.01 323 P **P** 03 24 20.2 +0.9
B08A Colville Reser 57.02 325 *e*P **P** 03 24 19.4 +0.2
comp=Z,8.3nm,0.7s
I03D Drain, OR 57.31 318 P **P** 03 24 21.7 +0.4
baz=115
RNO Roman Nose 57.66 319 P **P** 03 24 24.6 +0.8
G03D McMinnville, O 57.90 320 P **P** 03 24 26.5 +1.1
baz=116
JCW Jim Creek 58.44 324 P **P** 03 24 28.7 -0.4
B05A Bryant 58.57 324 P **P** 03 24 29.7 -0.3
baz=118
A04D Lummi Island 59.14 324 P **P** 03 24 34.2 +0.3
baz=118
OSD Olympics--Snow 59.32 323 P **P** 03 24 36.5 +1.0
PGC Sidney 59.55 324 *e*P **P** 03 24 37.3 +0.6
YKA Yellowknife Ar 63.36 340 P **P** 03 25 01.8 -0.2
comp=Z,21nm,0.5s,baz=133,slow=6.6,SNR=749
YKA PcP **PcP** 03 25 36.7 -0.9
comp=Z,1.3nm,0.7s,baz=125,slow=4.3,SNR=4.9
YKA pP **pP** 03 25 41.2 +1.4
comp=Z,2.4nm,0.6s,baz=130,slow=6.7,SNR=1.9
BBB Bella Bella 63.78 326 P **P** 03 25 05.8 +0.8
comp=Z,11nm,1.0s,baz=77,slow=2.0,SNR=4.2
DLBC Dease Lake 67.44 331 *e*P **P** 03 25 29.6 +1.2
comp=Z,8.4nm,0.6s
TIC Toumodi 67.44 86 *e*P **P** 03 25 28.1 -1.1
LIC Lamto 67.47 86 *e*P **P** 03 25 28.6 -0.7
comp=Z,36nm,0.6s
DBIC Dimbokro 67.60 86 P **P** 03 25 29.5 -0.7
comp=Z,21nm,0.6s,baz=269,slow=5.9,SNR=48
KIC Kosan Boka 67.74 86 *e*P **P** 03 25 30.5 -0.6
comp=Z,69nm,0.6s
SUMG Summit 69.02 11⇑ *i*P **P** 03 25 38.7 +0.3
comp=Z,61nm,0.8s
SUMG Summit 69.02 11 *e*P **P** 03 25 38.3 0.0
comp=Z,59nm,0.7s
ESDC Sonseca Array 69.58 50 P **P** 03 25 40.6 -1.5
comp=Z,0.4nm,0.4s,baz=265,slow=6.9,SNR=5.2
INK Inuvik 73.13 340 *e*P **P** 03 26 02.9 +0.3
comp=Z,9.0nm,0.6s
TORD Torodi Ar. Bea 73.61 78 P **P** 03 26 05.5 -1.1
comp=Z,2.5nm,0.4s,baz=284,slow=6.4,SNR=119
TORD pP **pP** 03 26 47.3 +1.9
comp=Z,0.5nm,0.5s,baz=287,slow=6.9,SNR=1.5
DOT Dot Lake 75.61 334 *e*P **P** 03 26 18.2 +1.0
comp=Z,37nm,0.6s
DAG Danmarks Havn 75.68 11⇑ *i*P **P** 03 26 16.9 -0.4
comp=Z,13nm,0.8s
SCM Sheep Creek Mo 76.69 332 *e*P **P** 03 26 24.6 +1.2
IL1 Eielson Array 77.07 335 *e*P **P** 03 26 25.1 -0.3
ILAR Eielson Array 77.07 335 P **P** 03 26 25.2 -0.1
comp=Z,3.0nm,0.7s,baz=109,slow=4.5,SNR=29
ILAR pP **pP** 03 27 04.4 -0.1
comp=Z,0.7nm,0.6s,baz=97,slow=4.6,SNR=1.7
ILB Eielson Array 77.07 335 *e*P **P** 03 26 25.5 +0.1
COLA College 77.50 335 *e*P **P** 03 26 27.5 -0.1
comp=Z,2.6nm,0.5s
MCK McKinley 77.75 334 *e*P **P** 03 26 29.3 +0.1
comp=Z,37nm,1.7s
TRF Thorofare Moun 78.31 333 *e*P **P** 03 26 32.4 0.0
comp=Z,7.6nm,0.7s
BPAW Bear Paw Mtn. 78.71 334 *e*P **P** 03 26 34.8 +0.3
comp=Z,2.1nm,0.8s
MLY Manley 78.73 335 *e*P **P** 03 26 34.8 +0.2
COLD Coldfoot 78.85 337 *e*P **P** 03 26 36.5 +1.4
comp=Z,7.2nm,0.8s
PPLA Purkeypile 79.09 333 *e*P **P** 03 26 36.9 +0.2
comp=Z,20nm,0.5s
CAST Castle Rocks 79.10 333 *e*P **P** 03 26 36.8 +0.1
TTA Tatalina 80.84 333 *e*P **P** 03 26 46.0 0.0
NB2 NORSAR Subarra 81.31 29 P **P** 03 26 48.8 +0.3
comp=Z,6.2nm,0.7s,baz=267,slow=5.3
NOA NORSAR Array B 81.31 29 P **P** 03 26 48.9 +0.4
comp=Z,4.7nm,0.7s,baz=268,slow=5.3,SNR=18
KHC Kasperske Hory 82.68 41 *e*P **P** 03 26 56.0 +0.1
GEC2 GERESS Array S 82.77 42 *e*P **P** 03 26 56.4 0.0
GERES GERESS Array B 82.77 42 P **P** 03 26 56.3 -0.2
comp=Z,2.2nm,0.6s,baz=264,slow=3.4,SNR=26
GEA0 GERESS Array S 82.77 42 *e*P **P** 03 26 55.3 -1.1
TIP Timpagrande 85.58 51 *e*P **P** 03 27 08.8 -2.0
comp=Z,3.2nm,1.0s
ARCES ARCESS Array B 86.67 20 P **P** 03 27 15.4 -0.1
comp=Z,3.2nm,0.5s,baz=272,slow=3.9,SNR=36
FINES FINESS Array B 88.42 28 P **P** 03 27 23.9 0.0
comp=Z,2.2nm,0.8s,baz=285,slow=4.3,SNR=8.0
BRTR Keskin Array B 98.31 48 PP PP 03 32 00.8 -11
comp=Z,2.2nm,0.5s,baz=258,slow=16,SNR=5.5
ZALV Zalesovo Beam 116.69 14 PKP **PKPdf** 03 33 15.0 -0.3
comp=Z,3.2nm,0.4s,baz=255,slow=2.3,SNR=13
EKS2 Erkin-Say 122.25 29 *e*PKPdf **PKPdf** 03 33 27.2 +0.6
MKAR Makanchi Array 122.33 20 PKP **PKPdf** 03 33 25.9 -0.5
comp=Z,2.9nm,0.4s,baz=297,slow=2.8,SNR=43
MKAR pPKP **pPKPdf** 03 34 08.4 -0.1
comp=Z,0.2nm,0.4s,baz=216,slow=48,SNR=1.2
TKM2 Tokmak 2 122.90 27 *e*PKPdf **PKPdf** 03 33 27.8 -0.1
USRK Ussuriysk Ar. 124.49 338 PKP **PKPdf** 03 33 29.9 -0.7
comp=Z,1.9nm,0.7s,baz=70,slow=2.6,SNR=4.5
USRK pPKP **pPKPdf** 03 34 10.7 -2.0
comp=Z,3.2nm,0.7s,baz=147,slow=42,SNR=2.7
ULN Ulaanbaatar 125.60 360 *e*PKPdf **PKPdf** 03 33 32.9 0.0
SONM Songino Array 125.63 1 PKP **PKPdf** 03 33 33.3 +0.4
comp=Z,2.7nm,0.6s,baz=336,slow=1.0,SNR=14
MJAR Matsushiro Arr 127.94 328 PKP **PKPdf** 03 33 37.4 0.0
comp=Z,0.8nm,0.6s,baz=2.8,slow=16,SNR=4.0
KSRS Korea Array 131.87 338 PKP **PKPdf** 03 33 46.0 +1.1
comp=Z,1.0nm,0.5s,baz=46,slow=2.5,SNR=4.1
KSRS pPKP **pPKPdf** 03 34 25.8 -1.1
comp=Z,0.6nm,0.3s,baz=166,slow=40,SNR=1.6
KSAR Wonju Array Be 131.89 338 PKP **PKPdf** 03 33 46.0 +1.1
KSAR pPKP **pPKPdf** 03 34 25.8 -1.2
CAN Canberra 132.15 228 *e*PKPdf **PKPdf** 03 33 45.7 +0.2
LZH Lanzhou 137.27 4 *e*PKP **PKPdf** 03 33 57.3 +2.1
LZH sPKP 03 34 57.4
STKA Stephens Creek 139.22 228 PKP **PKPdf** 03 33 58.5 -0.2
comp=Z,2.0nm,0.6s,baz=146,slow=6.4,SNR=4.1
CD2 Chengdu 142.41 5 PKP **PKPdf** 03 34 02.9 -1.7
COEN Coen 143.76 256 *e*PKPdf PKPbc 03 34 05.2 0.0
SHL Shillong 144.65 24 *i*P **PKPab** 03 34 07.5 -0.3
ASAR Alice Springs 149.19 234 PKP **PKPdf** 03 34 16.1 -0.2
comp=Z,9.9nm,0.6s,baz=118,slow=3.1,SNR=52
ASAR PKPbc **PKPbc** 03 34 20.1 -0.6
comp=Z,10nm,0.5s,baz=119,slow=3.6,SNR=109
ASAR pPKPbc **pPKPbc** 03 35 00.4 -2.1
comp=Z,3.4nm,0.8s,baz=122,slow=2.8,SNR=3.2
PALK Pallekele 150.28 62 *e*PKPbc **PKPbc** 03 34 23.3 -0.2
WRAB Tennant Creek 150.43 241 *e*PKPdf **PKPdf** 03 34 18.0 -0.2
WRAB *e*PKPbc **PKPbc** 03 34 22.9 -0.8
WRAB *e*PKPab **PKPab** 03 34 30.2 -0.4
WRA Warramunga Arr 150.43 241 PKP **PKPdf** 03 34 18.2 -0.1
comp=Z,12nm,0.6s,baz=108,slow=2.6,SNR=208
WRA PKPbc **PKPbc** 03 34 23.2 -0.5
comp=Z,11nm,0.5s,baz=108,slow=2.6,SNR=203
WRA pPKPbc **pPKPbc** 03 35 05.9 +0.3
comp=Z,4.8nm,0.5s,baz=107,slow=2.7,SNR=4.1
CHTO Chiang Mai 153.36 17 *e*PKPdf **PKPdf** 03 34 21.9 -0.8
CHTO *e*PKPbc **PKPbc** 03 34 29.6 -0.7
CMAR Chiang Mai Arr 153.70 18 PKP **PKPdf** 03 34 23.6 +0.5
comp=Z,2.4nm,0.7s,baz=301,slow=1.7,SNR=15
CMAR PKPbc **PKiKP** 03 34 31.4 +0.3
comp=Z,8.0nm,0.6s,baz=324,slow=3.5,SNR=26

IDC 20 03:16:40.0±2.8, 18°.47S×179°.95E, h0km, mb3.5/3, mb1 3.9/3, mb1mx3.5/27, mbtmp3.5/3, Error ellipse: s-maj=324.5km s-min=31.8km az=160.0, Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**43.00**	**260**	P	P	03 24 41.5	0.0
0.3nm,0.7s,baz=94,slow=8.3,SNR=2.7							
ASAR	**Alice Springs**	**43.14**	**255**	P	P	03 24 42.2	-0.3
1.0nm,0.8s,baz=88,slow=7.8,SNR=9.0							
TXAR	**Lajitas Array**	**87.61**	**58**	P	P	03 29 30.6	0.0
0.3nm,0.7s,baz=211,slow=3.2,SNR=2.9							

*DDA **20** 03:17:36.8, 39°.08N×29°.03E, h7km, Md2.6*
*ISCJB **20** 03:17:37.5±0.8, 39°.07N±0°.03×29°.04E±0°.05, h0km±10km, Error ellipse: s-maj=6.7km s-min=5.8km az=163.7*
*ISK **20** 03:17:37.9, 39°.06N×29°.04E, h8km, MD3.0*
*CSEM **20** 03:17:38.0±0.2, 39°.07N×29°.03E, h2km, MD3.0, Error ellipse: s-maj=4.3km s-min=3.2km az=120.0*
ISC 20 03:17:37.5±1.1, 39°.07N±0°.02×29°.03E±0°.03, h8km±10km, n41, σ0s69/50, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**263**	P	Pg	03 17 42.6	+0.1
DEMI				S	Sg	03 17 46.4	+0.6
DEMI	**Demirci**	**0.25**	**263**	*i* P	Pg	03 17 42.6	+0.1
DEMI				*i* S	Sg	03 17 46.4	+0.6
TVSB	**Tavsanli**	**0.50**	**41**	*e*PG	Pb	03 17 48.4	-0.3
TVSB	**Tavsanli**	**0.50**	**41**	*e*Pg	Pb	03 17 48.4	-0.3
KULA	**Kula-Manisa**	**0.63**	**208**	*e*PG	Pb	03 17 50.8	0.0
KULA				*e*SG	Sb	03 17 58.9	-0.9
KULA	**Kula-Manisa**	**0.63**	**208**	*e*Pg	Pb	03 17 50.8	0.0
KULA				*e*Sg	Sb	03 17 58.9	-0.9
DURS	**Dursunbey**	**0.68**	**321**	P	Pg	03 17 49.4	-1.3
DURS	**Dursunbey**	**0.68**	**321**	*i* P	Pg	03 17 49.4	-1.3
MANT	**Manisa**	**0.69**	**213**	P	Pg	03 17 50.5	-0.3
MANT				S	Sg	03 17 59.5	-0.3
MANT	**Manisa**	**0.69**	**213**	*i* P	Pg	03 17 50.5	-0.3
MANT				*i* S	Sg	03 17 59.5	-0.3
KHL	**Karahalli**	**0.84**	**153**	*e*PG	Pb	03 17 54.4	0.0
KHL	**Karahalli**	**0.84**	**153**	*e*Pg	Pb	03 17 54.4	0.0
AKS	**Akhisar**	**0.97**	**259**	*e*PG	Pb	03 17 56.8	+0.2
AKS	**Akhisar**	**0.97**	**259**	*e*Pg	Pb	03 17 56.8	+0.2
BALB	**Balikesir**	**1.06**	**303**	*e*PG	Pn	03 17 58.9	+0.3
BALB				*e*SG	Sn	03 18 14.0	+0.4
BALB	**Balikesir**	**1.06**	**303**	*e*Pg	Pn	03 17 58.9	+0.3
BALB				*e*Sg	Sn	03 18 14.0	+0.4
IGD	**Bursa**	**1.20**	**6**	*i* P	Pb	03 17 59.5	-0.9
IGD				*i* S	Sb	03 18 14.2	-1.9
CAVI	**Cavuskoy**	**1.29**	**29**	*e*PN	Pg	03 18 02.7	+0.4
CAVI	**Cavuskoy**	**1.29**	**29**	*e*Pn	Pg	03 18 02.7	+0.4
MDNY	**Mudanya-Bursa**	**1.30**	**355**	*e*PN	Pg	03 18 02.9	+0.4
MDNY	**Mudanya-Bursa**	**1.30**	**355**	*e*Pn	Pg	03 18 02.9	+0.4
KCTX	**Karacabey (Bur**	**1.30**	**337**	*e*PN	Pg	03 18 03.4	+0.9
KCTX	**Karacabey (Bur**	**1.30**	**337**	*e*Pn	Pg	03 18 03.4	+0.9
IZI	**Iznik**	**1.31**	**15**	*e*PN	Pg	03 18 03.1	+0.5
IZI	**Iznik**	**1.31**	**15**	*e*Pn	Pg	03 18 03.1	+0.5
GONE	**Gonen-Balikesi**	**1.43**	**313**	*e*PN	Pg	03 18 05.1	+0.3
GONE	**Gonen-Balikesi**	**1.43**	**313**	*e*Pn	Pg	03 18 05.1	+0.3
ADVT	**Abdulvahap**	**1.46**	**22**	*e*PN	Pb	03 18 05.5	+0.5
ADVT	**Abdulvahap**	**1.46**	**22**	*e*Pn	Pb	03 18 05.5	+0.5
ARMT	**Armutlu**	**1.50**	**355**	*e*PN	Pb	03 18 06.0	+0.4
ARMT	**Armutlu**	**1.50**	**355**	*e*Pn	Pb	03 18 06.0	+0.4
EDC	**Edincik**	**1.56**	**325**	*e*PN	Pg	03 18 07.3	-0.1
EDC	**Edincik**	**1.56**	**325**	*e*Pn	Pg	03 18 07.3	-0.1
GULT	**Gulveren**	**1.77**	**40**	*e*PN	Pb	03 18 10.0	-0.4
GULT	**Gulveren**	**1.77**	**40**	*e*Pn	Pb	03 18 10.0	-0.4
SVRH	**Sivrihisar-ESK**	**1.97**	**78**	*e*PN	Pn	03 18 12.3	+1.1
SVRH	**Sivrihisar-ESK**	**1.97**	**78**	*e*Pn	Pn	03 18 12.3	+1.1
ISK	**Istanbul-Kandi**	**1.99**	**1**	*e*PN	Pb	03 18 13.4	-0.6
ISK	**Istanbul-Kandi**	**1.99**	**1**	*e*Pn	Pb	03 18 13.4	-0.6
MDUB	**Mudurnu**	**2.18**	**49**	*e*PN	Pb	03 18 15.8	-1.4
MDUB	**Mudurnu**	**2.18**	**49**	*e*Pn	Pb	03 18 15.8	-1.4

*ISK **20** 03:19:02.9, 39°.06N×28°.96E, h2km, MD2.8*
*DDA **20** 03:19:02.2, 39°.06N×29°.08E, h7km, Md2.3*
*CSEM **20** 03:19:03.8±0.1, 39°.05N×28°.97E, h5km, MD2.3, Error ellipse: s-maj=3.1km s-min=2.3km az=89.0*
ISC 20 03:19:03.3±0.9, 39°.05N±0°.02×29°.02E±0°.03, h12km±8km, n41, σ0s71/53, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.23**	**269**	P	Pg	03 19 08.4	+0.1
DEMI				S	Sg	03 19 12.3	+0.6
DEMI	**Demirci**	**0.23**	**269**	*i* P	Pg	03 19 08.4	+0.1
DEMI				*i* S	Sg	03 19 12.3	+0.6
GDZ	**Gediz**	**0.36**	**83**	*i* P	Pg	03 19 08.4	-2.3
TVSB	**Tavsanli**	**0.53**	**41**	*e*PG	Pb	03 19 14.5	-0.2
TVSB	**Tavsanli**	**0.53**	**41**	*e*Pg	Pb	03 19 14.5	-0.2
KULA	**Kula-Manisa**	**0.60**	**208**	*e*PG	Pb	03 19 15.1	-0.7
KULA				*e*SG	Sb	03 19 24.2	-0.1
KULA	**Kula-Manisa**	**0.60**	**208**	*e*Pg	Pb	03 19 15.1	-0.7
KULA				*e*Sg	Sb	03 19 24.2	-0.1
MANT	**Manisa**	**0.66**	**213**	P	Pb	03 19 16.3	-0.6
MANT				S	Sb	03 19 25.4	-0.8
MANT	**Manisa**	**0.66**	**213**	*i* P	Pb	03 19 16.3	-0.6
MANT				*i* S	Sb	03 19 25.4	-0.8
DURS	**Dursunbey**	**0.69**	**323**	P	Pg	03 19 16.3	-0.5
DURS				S	Sb	03 19 26.5	-0.5
DURS	**Dursunbey**	**0.69**	**323**	*i* P	Pg	03 19 16.3	-0.5
DURS				*i* S	Sb	03 19 26.5	-0.5
KHAL	**Karahalli**	**0.77**	**151**	P	Pg	03 19 18.6	+0.3
KHAL				S	Sg	03 19 27.6	-0.8
KHAL	**Karahalli**	**0.77**	**151**	*i* P	Pg	03 19 18.6	+0.3
KHAL				*i* S	Sg	03 19 27.6	-0.8
KHL	**Karahalli**	**0.82**	**151**	*e*PG	Pb	03 19 20.2	+0.5
KHL	**Karahalli**	**0.82**	**151**	*e*Pg	Pb	03 19 20.2	+0.5
BALB	**Balikesir**	**1.06**	**304**	*e*PG	Pb	03 19 23.3	-0.3
BALB				*e*SG	Sn	03 19 38.3	-0.4
BALB	**Balikesir**	**1.06**	**304**	*e*Pg	Pb	03 19 23.3	-0.3
BALB				*e*Sg	Sn	03 19 38.3	-0.4
CAVI	**Cavuskoy**	**1.32**	**29**	*e*PN	Pg	03 19 29.0	+0.3
CAVI	**Cavuskoy**	**1.32**	**29**	*e*Pn	Pg	03 19 29.0	+0.3
KCTX	**Karacabey (Bur**	**1.32**	**338**	*e*PN	Pb	03 19 28.5	+0.5
KCTX	**Karacabey (Bur**	**1.32**	**338**	*e*Pn	Pb	03 19 28.5	+0.5
MDNY	**Mudanya-Bursa**	**1.32**	**356**	*e*PN	Pn	03 19 27.9	+0.2
MDNY	**Mudanya-Bursa**	**1.32**	**356**	*e*Pn	Pn	03 19 27.9	+0.2
IZI	**Iznik**	**1.34**	**15**	*e*PN	Pg	03 19 29.2	+0.2
IZI	**Iznik**	**1.34**	**15**	*e*Pn	Pg	03 19 29.2	+0.2
ADVT	**Abdulvahap**	**1.49**	**22**	*e*PN	Pg	03 19 31.6	-0.4
ADVT	**Abdulvahap**	**1.49**	**22**	*e*Pn	Pg	03 19 31.6	-0.4
ARMT	**Armutlu**	**1.52**	**356**	*e*PN	Pb	03 19 31.6	+0.1
ARMT	**Armutlu**	**1.52**	**356**	*e*Pn	Pb	03 19 31.6	+0.1
EDC	**Edincik**	**1.57**	**326**	*e*PN	Pb	03 19 31.8	-0.6
EDC	**Edincik**	**1.57**	**326**	*e*Pn	Pb	03 19 31.8	-0.6
GULT	**Gulveren**	**1.80**	**39**	*e*PN	Pb	03 19 36.3	0.0
GULT	**Gulveren**	**1.80**	**39**	*e*Pn	Pb	03 19 36.3	0.0
HRT	**Hereke**	**1.84**	**16**	*e*PN	Pb	03 19 36.9	-0.1
HRT	**Hereke**	**1.84**	**16**	*e*Pn	Pb	03 19 36.9	-0.1
SVRH	**Sivrihisar-ESK**	**1.99**	**78**	*e*PN	Pb	03 19 39.2	-0.3
SVRH	**Sivrihisar-ESK**	**1.99**	**78**	*e*Pn	Pb	03 19 39.2	-0.3
ISK	**Istanbul-Kandi**	**2.02**	**1**	*e*PN	Pb	03 19 39.0	-0.9
ISK	**Istanbul-Kandi**	**2.02**	**1**	*e*Pn	Pb	03 19 39.0	-0.9
MDUB	**Mudurnu**	**2.20**	**49**	*e*PN	Pn	03 19 41.9	+2.1
MDUB	**Mudurnu**	**2.20**	**49**	*e*Pn	Pn	03 19 41.9	+2.1

DDA 20 03:24:38.9, 39°.03N×28°.64E, h30km, Md2.1, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.06**	**80**	*i* P	Pb	03 24 43.8	-0.3
DEMI				*i* S	Sb	03 24 48.3	+0.7
MANT	**Manisa**	**0.55**	**187**	*i* P	Pn	03 24 52.9	+1.9
MANT				*i* S	Sn	03 25 03.0	+3.9
DURS	**Dursunbey**	**0.58**	**347**	*i* P	Pn	03 24 51.7	+0.4
DURS				*i* S	Sn	03 24 59.6	-0.3

*CSEM **20** 03:25:34.3, 39°.11N×29°.02E, h7km, MD2.3*
**DDA 20 03:

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.32**	**267**	P	**Pg**	**03 26 00.6**	**-1.5**
DEMI	**Demirci**	**0.32**	**267**	*i* P	**Pg**	**03 26 00.6**	**-1.5**
TVSB	**Tavsanli**	**0.47**	**34**	*e*PG	**Pg**	**03 26 04.0**	**-1.0**
TVSB	**Tavsanli**	**0.47**	**34**	*e*Pg	**Pg**	**03 26 04.0**	**-1.0**
KULA	**Kula-Manisa**	**0.65**	**214**	*e*PG	**Pg**	**03 26 07.8**	**-0.6**
KULA				*e*SG	**Sg**	**03 26 17.3**	**+0.4**
KULA	**Kula-Manisa**	**0.65**	**214**	*e*Pg	**Pg**	**03 26 07.8**	**-0.6**
KULA				*e*Sg	**Sg**	**03 26 17.3**	**+0.4**
ORLT	**Orhaneli**	**1.00**	**350**	*e*PG	**Pg**	**03 26 14.6**	**-0.4**
ORLT	**Orhaneli**	**1.00**	**350**	*e*Pg	**Pg**	**03 26 14.6**	**-0.4**
AKS	**Akhisar**	**1.03**	**260**	*e*PG	**Pg**	**03 26 15.4**	**-0.2**
AKS	**Akhisar**	**1.03**	**260**	*e*Pg	**Pg**	**03 26 15.4**	**-0.2**
BALB	**Balikesir**	**1.12**	**302**	*e*PN	**Pg**	**03 26 16.8**	**-0.5**
BALB				*e*SN	**Sn**	**03 26 32.8**	**-0.4**
BALB	**Balikesir**	**1.12**	**302**	*e*Pn	**Pg**	**03 26 16.8**	**-0.5**
BALB				*e*Sn	**Sn**	**03 26 32.8**	**-0.4**
IZI	**Iznik**	**1.30**	**12**	*e*PN	**Pb**	**03 26 20.5**	**0.0**
IZI	**Iznik**	**1.30**	**12**	*e*Pn	**Pb**	**03 26 20.5**	**0.0**
MDNY	**Mudanya-Bursa**	**1.32**	**352**	*e*PN	**Pb**	**03 26 20.8**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.32**	**352**	*e*Pn	**Pb**	**03 26 20.8**	**+0.1**
KCTX	**Karacabey (Bur**	**1.34**	**334**	*e*PN	**Pn**	**03 26 20.7**	**0.0**
KCTX	**Karacabey (Bur**	**1.34**	**334**	*e*Pn	**Pn**	**03 26 20.7**	**0.0**
ADVT	**Abdulvahap**	**1.45**	**19**	*e*PN	**Pb**	**03 26 22.9**	**-0.1**
ADVT	**Abdulvahap**	**1.45**	**19**	*e*Pn	**Pb**	**03 26 22.9**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**221**	*e*PN	**Pb**	**03 26 22.9**	**-0.4**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**221**	*e*Pn	**Pb**	**03 26 22.9**	**-0.4**
GONE	**Gonen-Balikesi**	**1.48**	**312**	*e*PN	**Pb**	**03 26 23.2**	**-0.3**
GONE	**Gonen-Balikesi**	**1.48**	**312**	*e*Pn	**Pb**	**03 26 23.2**	**-0.3**
ARMT	**Armutlu**	**1.52**	**353**	*e*PN	**Pb**	**03 26 24.1**	**0.0**
ARMT	**Armutlu**	**1.52**	**353**	*e*Pn	**Pb**	**03 26 24.1**	**0.0**
EDC	**Edincik**	**1.61**	**323**	*e*PN	**Pb**	**03 26 25.1**	**-0.6**
EDC	**Edincik**	**1.61**	**323**	*e*Pn	**Pb**	**03 26 25.1**	**-0.6**
GULT	**Gulveren**	**1.74**	**38**	*e*PN	**Pn**	**03 26 26.9**	**+0.6**
GULT	**Gulveren**	**1.74**	**38**	*e*Pn	**Pn**	**03 26 26.9**	**+0.6**
HRT	**Hereke**	**1.81**	**13**	*e*PN	**Pn**	**03 26 28.1**	**+0.9**
HRT	**Hereke**	**1.81**	**13**	*e*Pn	**Pn**	**03 26 28.1**	**+0.9**
SVRH	**Sivrihisar-ESK**	**1.91**	**78**	*e*PN	**Pn**	**03 26 29.1**	**+0.6**
SVRH	**Sivrihisar-ESK**	**1.91**	**78**	*e*Pn	**Pn**	**03 26 29.1**	**+0.6**
MRMT	**Marmara Adasi**	**1.94**	**323**	*e*PN	**Pn**	**03 26 29.6**	**+0.7**
MRMT	**Marmara Adasi**	**1.94**	**323**	*e*Pn	**Pn**	**03 26 29.6**	**+0.7**
SILT	**Sile**	**2.13**	**11**	*e*PN	**Pn**	**03 26 31.8**	**+0.3**
SILT	**Sile**	**2.13**	**11**	*e*Pn	**Pn**	**03 26 31.8**	**+0.3**
MDUB	**Mudurnu**	**2.13**	**48**	*e*PN	**Pn**	**03 26 32.6**	**+0.9**
MDUB	**Mudurnu**	**2.13**	**48**	*e*Pn	**Pn**	**03 26 32.6**	**+0.9**
KLYT	**Kilyos**	**2.19**	**358**	*e*PN	**Pn**	**03 26 33.4**	**+1.0**
KLYT	**Kilyos**	**2.19**	**358**	*e*Pn	**Pn**	**03 26 33.4**	**+1.0**
RKY	**Sarkoy-Tekirda**	**2.21**	**318**	*e*PN	**Pn**	**03 26 33.6**	**+1.0**
RKY	**Sarkoy-Tekirda**	**2.21**	**318**	*e*Pn	**Pn**	**03 26 33.6**	**+1.0**
LPK	**Lapseki**	**2.24**	**307**	*e*PN	**Pn**	**03 26 34.2**	**+1.1**
LPK	**Lapseki**	**2.24**	**307**	*e*Pn	**Pn**	**03 26 34.2**	**+1.1**
EZN	**Ezine**	**2.30**	**290**	*e*PN	**Pn**	**03 26 35.0**	**+1.2**
EZN	**Ezine**	**2.30**	**290**	*e*Pn	**Pn**	**03 26 35.0**	**+1.2**
GELI	**Tayfur-Gelibol**	**2.44**	**304**	*e*PN	**Pn**	**03 26 37.4**	**+1.6**
GELI	**Tayfur-Gelibol**	**2.44**	**304**	*e*Pn	**Pn**	**03 26 37.4**	**+1.6**
CTYL	**Yalikoy Yolu**	**2.50**	**346**	*e*PN	**Pn**	**03 26 37.4**	**+0.9**
CTYL	**Yalikoy Yolu**	**2.50**	**346**	*e*Pn	**Pn**	**03 26 37.4**	**+0.9**
ERIK	**Erikli-Kesan**	**2.57**	**310**	*e*PN	**Pn**	**03 26 38.5**	**+0.9**
ERIK	**Erikli-Kesan**	**2.57**	**310**	*e*Pn	**Pn**	**03 26 38.5**	**+0.9**

*CSEM **20** 03:28:54.0, 42.°95N×13.°13E, h10km, MD1.7/4*
ROM 20 03:28:54.0±0.1, 42.°95N×13.°13E, h10km, Md1.7/4, Error ellipse: s-maj=2.6km s-min=0.9km az=72.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FDMO	**Fiordimonte**	**0.09**	**339**	Pg	Pg	03 28 57.0	+0.4
FDMO				Sg	Sg	03 28 59.1	+0.7
FDMO	**Fiordimonte**	**0.09**	**339**	Pg	Pg	03 28 57.0	+0.4
FDMO				Sg	Sg	03 28 59.1	+0.7
NRCA	**Norcia**	**0.12**	**186**	Pg	Pg	03 28 57.4	+0.4
NRCA				Sg	Sg	03 28 59.9	+0.8
NRCA	**Norcia**	**0.12**	**186**	Pg	Pg	03 28 57.4	+0.4
NRCA				Sg	Sg	03 28 59.9	+0.8
CESI	**CESI - Serrava**	**0.17**	**288**	Pg	Pg	03 28 58.3	+0.4
CESI				Sg	Sg	03 29 01.7	+1.2
CESI	**CESI - Serrava**	**0.17**	**288**	Pg	Pg	03 28 58.3	+0.4
CESI				Sg	Sg	03 29 01.7	+1.2
SNTG	**Esanatoglia**	**0.33**	**335**	Pg	Pg	03 29 00.8	+0.1
SNTG				Sg	Sb	03 29 06.4	-1.1
SNTG	**Esanatoglia**	**0.33**	**335**	Pg	Pg	03 29 00.8	+0.1
SNTG				Sg	Sb	03 29 06.4	-1.1
SMA1	**SAN MARTINO**	**0.35**	**155**	Pg	Pg	03 29 01.3	+0.2
SMA1				Sg	Sb	03 29 07.4	-0.7
SMA1	**SAN MARTINO**	**0.35**	**155**	Pg	Pg	03 29 01.3	+0.2
SMA1				Sg	Sb	03 29 07.4	-0.7
LNSS	**Leonessa**	**0.35**	**191**	Pg	Pg	03 29 01.2	+0.1
LNSS				Sg	Sb	03 29 07.1	-1.0
LNSS	**Leonessa**	**0.35**	**191**	Pg	Pg	03 29 01.2	+0.1
LNSS				Sg	Sb	03 29 07.1	-1.0
RM29	**Verrico (Monte**	**0.40**	**172**	Pg	Pg	03 29 02.1	+0.3
RM29				Sg	Sb	03 29 08.9	-0.4
RM29	**Verrico (Monte**	**0.40**	**172**	Pg	Pg	03 29 02.1	+0.3
RM29				Sg	Sb	03 29 08.9	-0.4
SSFR	**Montelago di S**	**0.55**	**332**	Pg	Pg	03 29 04.8	+0.1
SSFR				Sg	Sb	03 29 13.8	+0.2
SSFR	**Montelago di S**	**0.55**	**332**	Pg	Pg	03 29 04.8	+0.1
SSFR				Sg	Sb	03 29 13.8	+0.2

*CSEM **20** 03:29:26.7, 40.°70N×15.°45E, h6km±1km, MD2.8/20*
ROM 20 03:29:26.7±0.1, 40.°70N×15.°45E, h6km±1km, Md2.8/20, MI2.1/17, 2C, Error ellipse: s-maj=1.3km s-min=1.3km az=150.0, Southern Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MRLC	**Muro Lucano**	**0.07**	**29⇑**	*i*Pg	Pg	03 29 28.3	-0.2
MRLC				Sg	Sg	03 29 29.4	-0.3
MRLC	**Muro Lucano**	**0.07**	**29⇑**	*i*Pg	Pg	03 29 28.3	-0.2
MRLC				Sg	Sg	03 29 29.4	-0.3
MCRV	**Calabrutti - M**	**0.23**	**292**	Pg	Pg	03 29 31.9	+0.7
MCRV				Sg	Sg	03 29 35.5	+1.2
MCRV	**Calabrutti - M**	**0.23**	**292**	Pg	Pg	03 29 31.9	+0.7
MCRV				Sg	Sg	03 29 35.5	+1.2
CDRU	**Civita di Ruta**	**0.23**	**207**	Pg	Pg	03 29 32.3	+1.0
CDRU				Sg	Sg	03 29 36.3	+1.9
	297nm,0.5s						
CDRU	**Civita di Ruta**	**0.23**	**207**	Pg	Pg	03 29 32.3	+1.0
CDRU				Sg	Sg	03 29 36.3	+1.9
	297nm,0.5s						
PZUN	**Potenza**	**0.28**	**100**	Pg	Pb	03 29 34.1	0.0
	456nm,0.6s						
PZUN	**Potenza**	**0.28**	**100**	Pg	Pb	03 29 34.1	0.0
	456nm,0.6s						
VULT	**Monte Vulture**	**0.29**	**27**	Pg	Pg	03 29 33.4	+1.0
	620nm,0.8s						
VULT	**Monte Vulture**	**0.29**	**27**	Pg	Pg	03 29 33.4	+1.0
	620nm,0.8s						
SNAL	**S. Angelo Dei**	**0.29**	**322**	Pg	Pg	03 29 33.3	+0.9
SNAL				Sg	Sg	03 29 37.9	+1.6
SNAL	**S. Angelo Dei**	**0.29**	**322**	Pg	Pg	03 29 33.3	+0.9
SNAL				Sg	Sg	03 29 37.9	+1.6
CAFE	**Carife**	**0.37**	**335**	Pg	Pg	03 29 34.7	+0.8
CAFE				Sg	Sb	03 29 42.1	+0.3
CAFE	**Carife**	**0.37**	**335**	Pg	Pg	03 29 34.7	+0.8
CAFE				Sg	Sb	03 29 42.1	+0.3
ACER	**Acerenza**	**0.39**	**76**	Pg	Pb	03 29 35.4	-0.6
ACER				Sg	Sb	03 29 42.0	-0.3
	431nm,0.5s						
ACER	**Acerenza**	**0.39**	**76**	Pg	Pb	03 29 35.4	-0.6
ACER				Sg	Sb	03 29 42.0	-0.3
	431nm,0.5s						
CMPR	**Campora**	**0.39**	**196**	Pg	Pg	03 29 35.1	+0.8
	147nm,0.4s						
CMPR	**Campora**	**0.39**	**196**	Pg	Pg	03 29 35.1	+0.8
	147nm,0.4s						
SGTA	**Sant Agata di**	**0.44**	**352**	Pg	Pg	03 29 36.0	+0.7
SGTA	**Sant Agata di**	**0.44**	**352**	Pg	Pg	03 29 36.0	+0.7
MCEL	**Monticello**	**0.46**	**144**	Pg	Pb	03 29 36.6	-0.7
	106nm,0.3s						
MCEL	**Monticello**	**0.46**	**144**	Pg	Pb	03 29 36.6	-0.7
	106nm,0.3s						
PALZ	**Palazzo San Ge**	**0.46**	**57**	Pg	Pg	03 29 36.3	+0.6
PALZ				Sg	Sb	03 29 43.8	-0.6
	580nm,1.5s						
PALZ	**Palazzo San Ge**	**0.46**	**57**	Pg	Pg	03 29 36.3	+0.6
PALZ				Sg	Sb	03 29 43.8	-0.6
	580nm,1.5s						
MTSN	**Montesano sull**	**0.49**	**151**	Pg	Pb	03 29 37.1	-0.7
	56nm,0.6s						
MTSN	**Montesano sull**	**0.49**	**151**	Pg	Pb	03 29 37.1	-0.7
	56nm,0.6s						
PTRP	**Pietrapertosa**	**0.50**	**110**	Pg	Pb	03 29 38.2	+0.2
	107nm,0.5s						
PTRP	**Pietrapertosa**	**0.50**	**110**	Pg	Pb	03 29 38.2	+0.2
	107nm,0.5s						
MRB1	**Monte Rocchett**	**0.56**	**320**	Pg	Pb	03 29 38.6	-0.4
MRB1	**Monte Rocchett**	**0.56**	**320**	Pg	Pb	03 29 38.6	-0.4
MGR	**Morigerati**	**0.56**	**172**	Pg	Pg	03 29 38.0	+0.5
	68nm,0.6s						
MGR	**Morigerati**	**0.56**	**172**	Pg	Pg	03 29 38.0	+0.5
	68nm,0.6s						
SIRI	**Monte Sirino -**	**0.61**	**148**	Pg	Pg	03 29 38.6	+0.2
	81nm,0.4s						
SIRI	**Monte Sirino -**	**0.61**	**148**	Pg	Pg	03 29 38.6	+0.2
	81nm,0.4s						
BULG	**Bulgheria - Ca**	**0.62**	**185**	Pg	Pg	03 29 39.1	+0.5
	156nm,0.6s						
BULG	**Bulgheria - Ca**	**0.62**	**185**	Pg	Pg	03 29 39.1	+0.5
	156nm,0.6s						
MRVN	**Minervino Murg**	**0.68**	**57**	Pg	Pb	03 29 40.5	-0.4
	62nm,0.4s						
MRVN	**Minervino Murg**	**0.68**	**57**	Pg	Pb	03 29 40.5	-0.4
	62nm,0.4s						
SCHR	**S. Chirico Rap**	**0.69**	**136**	Pg	Pg	03 29 40.4	+0.4
	27nm,0.5s						
PAOL	**Paolisi**	**0.74**	**297**	Pg	Pb	03 29 42.6	+0.5
PAOL	**Paolisi**	**0.74**	**297**	Pg	Pb	03 29 42.6	+0.5
CUC	**Castrocucco**	**0.76**	**158**	Pg	Pg	03 29 41.5	+0.3
	60nm,0.8s						
CUC	**Castrocucco**	**0.76**	**158**	Pg	Pg	03 29 41.5	+0.3
	60nm,0.8s						
MIGL	**Miglionico**	**0.76**	**97**	Pg	Pb	03 29 41.9	-0.5
	150nm,0.7s						
MIGL	**Miglionico**	**0.76**	**97**	Pg	Pb	03 29 41.9	-0.5
	150nm,0.7s						
AMUR	**Altamura**	**0.91**	**76**	Pg	Pb	03 29 45.0	+0.2
	48nm,0.7s						
AMUR	**Altamura**	**0.91**	**76**	Pg	Pb	03 29 45.0	+0.2
	48nm,0.7s						
MSAG	**Monte S. Angel**	**1.07**	**19**	Pg	Pg	03 29 47.4	+0.1
MSAG	**Monte S. Angel**	**1.07**	**19**	Pg	Pg	03 29 47.4	+0.1

*CSEM **20** 03:29:29.1, 41.°76N×13.°74E, h11km, MD1.9/5*
ROM 20 03:29:29.1±0.2, 41.°76N×13.°74E, h11km±4km, Md1.9/5, MI1.1/3, Error ellipse: s-maj=9.7km s-min=1.9km az=68.0, Southern Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
POFI	**Posta Fibreno**	**0.05**	**207**	Pg	Pg	03 29 31.7	+0.4
POFI				Sg	Sg	03 29 33.4	+0.5
POFI	**Posta Fibreno**	**0.05**	**207**	Pg	Pg	03 29 31.7	+0.4
POFI				Sg	Sg	03 29 33.4	+0.5
VVLD	**Villa Vallelon**	**0.14**	**321**	Pg	Pg	03 29 32.8	+0.3
VVLD				Sg	Sg	03 29 35.6	+0.7
VVLD	**Villa Vallelon**	**0.14**	**321**	Pg	Pg	03 29 32.8	+0.3
VVLD				Sg	Sg	03 29 35.6	+0.7
CERA	**Filignano**	**0.26**	**128**	Pg	Pg	03 29 34.8	+0.3
CERA				Sg	Sg	03 29 39.1	+0.9
	14nm,0.5s						
CERA	**Filignano**	**0.26**	**128**	Pg	Pg	03 29 34.8	+0.3
CERA				Sg	Sg	03 29 39.1	+0.9
	14nm,0.5s						
INTR	**Introdacqua**	**0.28**	**26**	Pg	Pg	03 29 35.3	+0.5
INTR				Sg	Sb	03 29 39.9	-1.1
INTR	**Introdacqua**	**0.28**	**26**	Pg	Pg	03 29 35.3	+0.5
INTR				Sg	Sb	03 29 39.9	-1.1
RNI2	**Rionero Sannit**	**0.31**	**100**	Pg	Pb	03 29 36.6	-0.2
	18nm,0.2s						
RNI2	**Rionero Sannit**	**0.31**	**100**	Pg	Pb	03 29 36.6	-0.2
	18nm,0.2s						
FAGN	**Fagnano**	**0.52**	**347**	Pg	Pb	03 29 40.2	-0.1
	16nm,0.5s						
FAGN	**Fagnano**	**0.52**	**347**	Pg	Pb	03 29 40.2	-0.1
	16nm,0.5s						

*CSEM **20** 03:30:30.6±0.5, 50.°25N×19.°25E, h1km, Error ellipse: s-maj=10.9km s-min=4.3km az=7.0*
PRU 20 03:30:31.6, 50.°25N×19.°25E, h0km, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OJC	**Ojcow**	**0.35**	**95**	*e*Pg	Pg	03 30 37.6	-0.7
OJC				*e*Sg	Sg	03 30 42.2	-0.8
OJC	**Ojcow**	**0.35**	**95**	*e*Pg	Pg	03 30 37.6	-0.8
OJC				*e*Sg	Sg	03 30 42.2	-0.7
OKC	**Ostrava-Krasne**	**0.82**	**240**	*e*PG	Pg	03 30 47.9	+0.6
OKC				*e*SG	Sg	03 30 57.6	-0.4
	comp=Z,6.7nm,0.5s						
OKC	**Ostrava-Krasne**	**0.82**	**240**	Pg	Pg	03 30 47.9	+0.6
OKC				Sg	Sg	03 30 57.6	-0.4
	6.7nm,0.5s						
NIE	**Niedzica**	**1.07**	**140**	*e*Pg	Pg	03 30 52.4	+0.2
NIE				*e*Sg	Sb	03 31 07.9	+0.3
NIE	**Niedzica**	**1.07**	**140**	*e*Pg	Pg	03 30 52.4	+0.2
NIE				*e*Sg	Sb	03 31 07.9	+0.2
LANS	**Liptovska Anna**	**1.11**	**173**	*e*Pg	Pg	03 30 52.2	-0.6
LANS	**Liptovska Anna**	**1.11**	**173**	*e*PG	Pg	03 30 52.2	-0.6
LANS				*e*SG	Sg	03 31 07.1	-0.1
MORC	**Moravsky Berou**	**1.20**	**247**	*e*Sg	Sb	03 31 10.9	-0.4
STHS	**Stebnicka Huta**	**1.54**	**122**	*e*PG	Pn	03 31 00.2	-0.1
STHS				*e*SN	Sb	03 31 21.2	+0.2
STHS				*e*LG	Lg	03 31 25.5	
VYHS	**Vyhne**	**1.78**	**189**	*e*Pn	Pn	03 31 02.0	-1.6
VYHS	**Vyhne**	**1.78**	**189**	*e*PN	Pn	03 31 02.0	-1.6
VYHS				*e*SN	Sn	03 31 25.0	-1.9
VYHS				*e*LG	Lg	03 31 27.8	
DPC	**Dobruska-Polom**	**1.88**	**274**	*e*PG	Pb	03 31 06.5	-0.3
DPC				*e*SG	Sg	03 31 31.5	-0.5
	comp=Z,3.6nm,0.4s						
DPC	**Dobruska-Polom**	**1.88**	**274**	Pg	Pb	03 31 06.5	-0.3
DPC				Sg	Sg	03 31 31.5	-0.5
	3.6nm,0.4s						

*ISK **20** 03:30:47.3, 39.°11N×29.°07E, h5km, ML3.0*
*DDA **20** 03:30:47.8, 39.°11N×29.°00E, h7km, Md2.9*
*CSEM **20** 03:30:48.5±0.1, 39.°10N×29.°04E, h2km, MD2.9, Error ellipse: s-maj=2.3km s-min=1.9km az=74.0*
ISC 20 03:30:48.4±1.1, 39.°11N±0.°02×29.°02E±0.°02, h4km±12km, n80, σ0.°78/100, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**254**	P	**Pg**	**03 30 53.2**	**0.0**
DEMI				S	**Sg**	**03 30 56.7**	**+0.2**
DEMI	**Demirci**	**0.25**	**254**	*i* P	**Pg**	**03 30 53.2**	**0.0**
DEMI				*i* S	**Sg**	**03 30 56.7**	**+0.2**
GDZ	**Gediz**	**0.36**	**94**	P	**Pg**	**03 30 55.2**	**-0.1**
GDZ				S	**Sg**	**03 31 00.3**	**+0.2**
GDZ	**Gediz**	**0.36**	**94**	*i* P	**Pg**	**03 30 55.2**	**-0.1**
GDZ				*i* S	**Sg**	**03 31 00.3**	**+0.2**
TVSB	**Tavsanli**	**0.48**	**45**	*e*PG	**Pg**	**03 30 56.8**	**-0.8**
TVSB	**Tavsanli**	**0.48**	**45**	*e*Pg	**Pg**	**03 30 56.8**	**-0.8**
DURS	**Dursunbey**	**0.65**	**319**	P	**Pg**	**03 31 01.4**	**+0.6**
DURS				S	**Sb**	**03 31 11.7**	**0.0**
DURS	**Dursunbey**	**0.65**	**319**	*i* P	**Pg**	**03 31 01.4**	**+0.6**
DURS				*i* S	**Sb**	**03 31 11.7**	**0.0**
KULA	**Kula-Manisa**	**0.66**	**205**	*e*PG	**Pg**	**03 31 01.1**	**0.0**
KULA	**Kula-Manisa**	**0.66**	**205**	*e*Pg	**Pg**	**03 31 01.1**	**0.0**
MANT	**Manisa**	**0.72**	**210**	P	**Pg**	**03 31 02.0**	**-0.2**
MANT				S	**Sg**	**03 31 11.2**	**-0.3**
MANT	**Manisa**	**0.72**	**210**	*i* P	**Pg**	**03 31 02.0**	**-0.2**
MANT				*i* S	**Sg**	**03 31 11.2**	**-0.3**
KHAL	**Karahalli**	**0.83**	**153**	P	**Pg**	**03 31 04.6**	**+0.3**
KHAL				S	**Sg**	**03 31 15.4**	**+0.4**
KHAL	**Karahalli**	**0.83**	**153**	*i* P	**Pg**	**03 31 04.5**	**+0.3**
KHAL				*i* S	**Sg**	**03 31 15.4**	**+0.4**
KHL	**Karahalli**	**0.88**	**153**	*e*PG	**Pg**	**03 31 05.2**	**-0.1**
KHL				*e*SG	**Sg**	**03 31 17.2**	**+0.5**
KHL	**Karahalli**	**0.88**	**153**	*e*Pg	**Pg**	**03 31 05.2**	**-0.1**
KHL				*e*Sg	**Sg**	**03 31 17.2**	**+0.5**
ORLT	**Orhaneli**	**0.94**	**354**	*e*PG	**Pg**	**03 31 06.3**	**-0.1**
ORLT				*e*SG	**Sb**	**03 31 20.5**	**+0.4**
ORLT	**Orhaneli**	**0.94**	**354**	*e*Pg	**Pg**	**03 31 06.3**	**-0.1**
ORLT				*e*Sg	**Sb**	**03 31 20.5**	**+0.4**
AKHS	**Akhisar**	**0.97**	**256**	P	**Pg**	**03 31 07.0**	**0.0**
AKHS				S	**Sg**	**03 31 19.5**	**-0.1**
AKHS	**Akhisar**	**0.97**	**256**	*i* P	**Pg**	**03 31 07.0**	**0.0**
AKHS				*i* S	**Sg**	**03 31 19.5**	**-0.1**
AKS	**Akhisar**	**0.97**	**256**	*e*PG	**Pb**	**03 31 07.6**	**-0.2**
BALB	**Balikesir**	**1.03**	**301**	*e*PG	**Pn**	**03 31 08.9**	**-0.7**
BALB	**Balikesir**	**1.03**	**301**	*e*Pg	**Pn**	**03 31 08.9**	**-0.7**
IGD	**Bursa**	**1.16**	**7**	*i* P	**Pg**	**03 31 08.8**	**-1.8**
IGD				*i* S	**Sg**	**03 31 25.7**	**0.0**
BALY	**Balya**	**1.25**	**300**	P	**Pn**	**03 31 12.2**	**-0.5**
BALY				S	**Sb**	**03 31 29.0**	**-0.2**
BALY	**Balya**	**1.25**	**300**	*i* P	**Pn**	**03 31 12.2**	**-0.5**
BALY				*i* S	**Sb**	**03 31 29.0**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.26**	**355**	*e*PN	**Pg**	**03 31 13.1**	**+0.5**
MDNY	**Mudanya-Bursa**	**1.26**	**355**	*e*Pn	**Pg**	**03 31 13.1**	**+0.5**
KCTX	**Karacabey (Bur**	**1.26**	**336**	*e*PN	**Pg**	**03 31 12.7**	**+0.1**
KCTX	**Karacabey (Bur**	**1.26**	**336**	*e*Pn	**Pg**	**03 31 12.7**	**+0.1**
IZI	**Iznik**	**1.27**	**16**	*e*PN	**Pg**	**03 31 12.9**	**+0.1**
GEMT	**Gemlik**	**1.33**	**6**	*e*PN	**Pg**	**03 31 14.0**	**+0.2**
GEMT	**Gemlik**	**1.33**	**6**	*e*Pn	**Pg**	**03 31 14.0**	**+0.2**
DENT	**Denizli**	**1.36**	**180**	*e*PN	**Pg**	**03 31 14.6**	**+0.2**
DENT	**Denizli**	**1.36**	**180**	*e*Pn	**Pg**	**03 31 14.6**	**+0.2**
GONE	**Gonen-Balikesi**	**1.39**	**313**	*e*PN	**Pg**	**03 31 15.4**	**+0.4**
DNZL	**Cakiroluk**	**1.42**	**179**	P	**Pn**	**03 31 14.4**	**-0.8**
DNZL	**Cakiroluk**	**1.42**	**179**	*i* P	**Pn**	**03 31 14.4**	**-0.8**
DNZL				*i* S	**Sg**	**03 31 38.3**	**+4.2**
ADVT	**Abdulvahap**	**1.43**	**22**	*e*PN	**Pb**	**03 31 15.4**	**-0.2**
ARMT	**Armutlu**	**1.46**	**355**	*e*PN	**Pn**	**03 31 15.4**	**-0.1**
ARMT	**Armutlu**	**1.46**	**355**	*e*Pn	**Pn**	**03 31 15.4**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**1.46**	**218**	*e*PN	**Pb**	**03 31 16.2**	**-0.1**
EDC	**Edincik**	**1.52**	**324**	*e*PN	**Pb**	**03 31 17.0**	**-0.2**
GPA	**Golpazari**	**1.54**	**40**	*e*PN	**Pb**	**03 31 17.1**	**-0.3**
GPA	**Golpazari**	**1.54**	**40**	*e*Pn	**Pb**	**03 31 17.2**	**-0.3**
DKL	**Dikili**	**1.65**	**269**	*e*PN	**Pb**	**03 31 19.1**	**-0.2**
DKL	**Dikili**	**1.65**	**269**	*e*Pn	**Pb**	**03 31 19.1**	**-0.2**
ISP	**Isparta**	**1.75**	**137**	*e*PN	**Pn**	**03 31 19.3**	**-0.3**
ISP	**Isparta**	**1.75**	**137**	*e*Pn	**Pn**	**03 31 19.3**	**-0.3**
GULT	**Gulveren**	**1.75**	**41**	*e*PN	**Pn**	**03 31 19.6**	**0.0**
GULT	**Gulveren**	**1.75**	**41**	*e*Pn	**Pn**	**03 31 19.6**	**0.0**
HRT	**Hereke**	**1.78**	**16**	*e*PN	**Pb**	**03 31 20.6**	**-0.9**
HRT	**Hereke**	**1.78**	**16**	*e*Pn	**Pb**	**03 31 20.7**	**-0.9**
KRBG	**Karabiga-Canak**	**1.84**	**314**	*e*PN	**Pb**	**03 31 22.2**	**-0.5**
KRBG	**Karabiga-Canak**	**1.84**	**314**	*e*Pn	**Pb**	**03 31 22.2**	**-0.5**
MRMT	**Marmara Adasi**	**1.85**	**324**	*e*PN	**Pb**	**03 31 21.9**	**-0.9**
MRMT	**Marmara Adasi**	**1.85**	**324**	*e*Pn	**Pb**	**03 31 21.9**	**-0.9**
SPNC	**Sapanca-Adapaz**	**1.86**	**32**	*e*PN	**Pn**	**03 31 21.2**	**+0.2**
ISK	**Istanbul-Kandi**	**1.95**	**1**	*e*PN	**Pn**	**03 31 23.0**	**+0.7**
SVRH	**Sivrihisar-ESK**	**1.97**	**79**	*e*PN	**Pn**	**03 31 23.0**	**+0.4**
SVRH	**Sivrihisar-ESK**	**1.97**	**79**	*e*Pn	**Pn**	**03 31 23.0**	**+0.4**
YER	**Yerkesik**	**2.06**	**197**	*e*PN	**Pb**	**03 31 24.8**	**-1.5**

MDUB	Mudurnu	2.12	49	ePn	Pb	03 33 24.0	-0.6

MEX 20 03:32:55.9±0.6, 15°.26N×93°.27W, h89km±8km, MD3.9, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		0.45	6	eP	Pn	03 33 09.3	-0.8
PCIG				eS	Sn	03 33 18.7	-1.9
THIG		1.03	110	iP	Pn	03 33 15.0	-0.8
THIG				eS	Sn	03 33 28.5	-2.3
CCIG	Comitan	1.49	47	eP	Pn	03 33 20.0	-1.7
CCIG				eS	Sn	03 33 39.9	-1.2
TGIG		1.52	5	eP	Pn	03 33 20.4	-1.6
TGIG				iS	Sn	03 33 39.9	-1.6

*ISCJB **20** 03:35:03.2±0.5, 39°.11N±0°.03×29°.06E±0°.03, h3km±7km, Error ellipse: s-maj=4.9km s-min=4.2km az=31.3*
*DDA **20** 03:35:03.0, 39°.09N×29°.05E, h7km, Md2.5*
*ISK **20** 03:35:03.2, 39°.13N×29°.06E, h6km, MD2.7*
*CSEM **20** 03:35:03.4±0.1, 39°.12N×29°.05E, h5km, MD2.5, Error ellipse: s-maj=3.3km s-min=2.9km az=106.0*

ISC 20 03:35:03.2±0.9, 39°.11N±0°.02×29°.05E±0°.02, h13km±8km, n41, σ0s57/54, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.27	255	P	Pg	03 35 09.1	+0.2
DEMI				S	Sg	03 35 13.3	+0.6
DEMI	Demirci	0.27	255	iP	Pg	03 35 09.1	+0.2
DEMI				iS	Sg	03 35 13.3	+0.6
GDZ	Gediz	0.34	94	P	Pg	03 35 10.0	-0.1
GDZ				S	Sg	03 35 14.7	0.0
GDZ	Gediz	0.34	94	iP	Pg	03 35 10.0	-0.1
GDZ				iS	Sg	03 35 14.7	0.0
TVSB	Tavsanli	0.46	43	ePG	Pg	03 35 12.1	-0.3
TVSB	Tavsanli	0.46	43	ePg	Pg	03 35 12.1	-0.3
DURS	Dursunbey	0.66	318	P	Pg	03 35 14.2	-1.9
DURS				S	Sb	03 35 25.9	+0.1
DURS	Dursunbey	0.66	318	iP	Pg	03 35 14.2	-1.9
DURS				iS	Sb	03 35 25.9	+0.1
DURS	Dursunbey	0.66	318	iP	Pg	03 35 15.7	-0.4
KULA	Kula-Manisa	0.67	207	ePG	Pb	03 35 16.8	-0.1
KULA				eSG	Sb	03 35 25.9	-0.2
KULA	Kula-Manisa	0.67	207	ePg	Pb	03 35 16.8	-0.1
KULA				eSg	Sb	03 35 25.9	-0.2
MANT	Manisa	0.73	212	P	Pg	03 35 17.1	-0.3
MANT				S	Sg	03 35 25.9	-1.2
MANT	Manisa	0.73	212	iP	Pg	03 35 17.1	-0.3
MANT				iS	Sg	03 35 25.9	-1.2
MANT	Manisa	0.73	212	iP	Pg	03 35 17.6	+0.1
MANT				iS	Sb	03 35 27.8	-0.2
KHAL	Karahalli	0.82	155	iP	Pg	03 35 13.9	-5.1
KHAL				iS	Sb	03 35 30.6	+0.2
KHL	Karahalli	0.87	155	ePG	Pb	03 35 20.6	+0.3
KHL	Karahalli	0.87	155	ePg	Pb	03 35 20.6	+0.3
ORLT	Orhaneli	0.94	353	ePG	Pb	03 35 21.4	0.0
ORLT	Orhaneli	0.94	353	ePg	Pb	03 35 21.4	0.0
AKS	Akhisar	0.99	257	ePG	Pn	03 35 22.8	-0.1
AKS	Akhisar	0.99	257	ePg	Pn	03 35 22.8	-0.1
BALB	Balikesir	1.05	300	ePG	Pn	03 35 23.8	+0.2
BALB				eSG	Sn	03 35 39.1	+1.0
BALB	Balikesir	1.05	300	ePg	Pn	03 35 23.8	+0.2
BALB				eSg	Sn	03 35 39.1	+1.0
MDNY	Mudanya-Bursa	1.26	354	ePN	Pg	03 35 27.3	-0.1
MDNY	Mudanya-Bursa	1.26	354	ePn	Pg	03 35 27.3	-0.1
IZI	Iznik	1.26	15	ePN	Pg	03 35 27.7	+0.2
IZI	Iznik	1.26	15	ePn	Pg	03 35 27.7	+0.2
KCTX	Karacabey (Bur	1.27	335	ePN	Pg	03 35 27.7	+0.1
KCTX	Karacabey (Bur	1.27	335	ePn	Pg	03 35 27.7	+0.1
GONE	Gonen-Balikesi	1.41	312	ePN	Pg	03 35 29.9	-0.3
GONE	Gonen-Balikesi	1.41	312	ePn	Pg	03 35 29.9	-0.3
ADVT	Abdulvahap	1.42	22	ePN	Pb	03 35 29.9	+0.3
ADVT	Abdulvahap	1.42	22	ePn	Pb	03 35 29.9	+0.3
ARMT	Armutlu	1.46	354	ePN	Pb	03 35 30.4	+0.2
ARMT	Armutlu	1.46	354	ePn	Pb	03 35 30.4	+0.2
GULT	Gulveren	1.73	40	ePN	Pb	03 35 34.6	-0.4
GULT	Gulveren	1.73	40	ePn	Pb	03 35 34.6	-0.4
HRT	Hereke	1.77	15	ePN	Pb	03 35 35.1	-0.4
HRT	Hereke	1.77	15	ePn	Pb	03 35 35.1	-0.4
SVRH	Sivrihisar-ESK	1.95	79	ePN	Pb	03 35 37.8	-0.8
SVRH	Sivrihisar-ESK	1.95	79	ePn	Pb	03 35 37.8	-0.8

DDA 20 03:35:47.1, 39°.21N×28°.72E, h7km, Md2.5, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.16	181	iP	Pg	03 35 50.6	+0.1
DEMI				iS	Sg	03 35 54.2	+1.4
DEMI	Demirci	0.16	181	iP	Pg	03 35 50.6	+0.1
DEMI				iS	Sg	03 35 54.1	+1.3
DURS	Dursunbey	0.44	334	iS	Sb	03 36 06.6	+2.5
GDZ	Gediz	0.60	101	iP	Pg	03 35 52.0	-6.7
GDZ				iS	Sg	03 35 58.7	-8.0
KHAL	Karahalli	1.03	144	iP	Pg	03 36 02.2	-4.6
KHAL				iS	Sg	03 36 12.4	-7.8

*DDA **20** 03:48:22.7, 39°.03N×29°.13E, h29km, Md2.2*
*ISCJB **20** 03:48:26.4±0.7, 39°.11N±0°.05×28°.91E±0°.05, h9km, Error ellipse: s-maj=6.6km s-min=5.2km az=179.1*
*CSEM **20** 03:48:26.5±0.1, 39°.12N×28°.92E, h5km, MD2.6, Error ellipse: s-maj=3.3km s-min=3.1km az=1.0*
*ISK **20** 03:48:26.2, 39°.13N×28°.92E, h5km, MD2.6*

ISC 20 03:48:26.9±1.0, 39°.15N±0°.03×28°.93E±0°.03, h9km, n27, σ0s91/32, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.20	238	P	Pg	03 48 30.0	-1.1
DEMI				S	Sg	03 48 36.8	+2.9
DEMI	Demirci	0.20	238	iP	Pg	03 48 30.0	-1.1
DEMI				iS	Sg	03 48 36.8	+2.9
GDZ	Gediz	0.43	98	iP	Pg	03 48 30.0	-5.3
TVSB	Tavsanli	0.51	54	ePG	Pg	03 48 37.1	+0.3
TVSB				eSG	Sb	03 48 44.5	-1.1
TVSB	Tavsanli	0.51	54	ePg	Pg	03 48 37.1	+0.3
TVSB				eSg	Sb	03 48 44.5	-1.1
DURS	Dursunbey	0.57	322	S	Sg	03 48 45.8	+0.2
DURS	Dursunbey	0.57	322	iS	Sg	03 48 45.9	+0.2
ORLT	Orhaneli	0.90	358	ePG	Pg	03 48 44.1	0.0
ORLT	Orhaneli	0.90	358	ePg	Pg	03 48 44.2	0.0
AKS	Akhisar	0.91	253	ePG	Pg	03 48 44.2	-0.3
AKS	Akhisar	0.91	253	ePg	Pg	03 48 44.2	-0.3
KHL	Karahalli	0.94	151	ePG	Pg	03 48 44.4	-0.7
KHL	Karahalli	0.94	151	ePg	Pg	03 48 44.4	-0.7
BALB	Balikesir	0.95	301	ePG	Pg	03 48 44.7	-0.5
BALB				eSG	Sg	03 48 58.1	+0.5
BALB	Balikesir	0.95	301	ePg	Pg	03 48 44.7	-0.5
BALB				eSg	Sg	03 48 58.1	+0.5
KCTX	Karacabey (Bur	1.20	338	ePN	Pb	03 48 49.9	0.0
KCTX	Karacabey (Bur	1.20	338	ePn	Pb	03 48 49.9	0.0
MDNY	Mudanya-Bursa	1.22	358	ePN	Pn	03 48 50.1	0.0
MDNY	Mudanya-Bursa	1.22	358	ePn	Pn	03 48 50.1	0.0
GONE	Gonen-Balikesi	1.32	313	ePN	Pg	03 48 52.2	0.0
GONE	Gonen-Balikesi	1.32	313	ePn	Pg	03 48 52.2	0.0
ARMT	Armutlu	1.42	358	ePN	Pb	03 48 53.7	+0.2
ARMT	Armutlu	1.42	358	ePn	Pb	03 48 53.7	+0.2
ADVT	Abdulvahap	1.42	26	ePN	Pg	03 48 54.0	-0.3
ADVT	Abdulvahap	1.42	26	ePn	Pg	03 48 54.0	-0.3
EDC	Edincik	1.45	326	ePN	Pb	03 48 54.0	-0.2
EDC	Edincik	1.45	326	ePn	Pb	03 48 54.0	-0.2

*ISCJB **20** 03:49:58.2±0.6, 39°.11N±0°.04×29°.04E±0°.03, h9km, Error ellipse: s-maj=6.2km s-min=3.9km az=173.6*
*CSEM **20** 03:49:58.4±0.1, 39°.11N×29°.06E, h10km, MD2.6, Error ellipse: s-maj=3.5km s-min=2.9km az=175.0*
*ISK **20** 03:49:58.2, 39°.12N×29°.07E, h12km, MD2.6*
*DDA **20** 03:49:58.1, 39°.11N×29°.02E, h7km, Md2.0*

ISC 20 03:49:57.9±0.8, 39°.11N±0°.03×29°.05E±0°.03, h9km, n30, σ0s33/38, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.27	256	P	Pg	03 50 03.5	+0.2
DEMI				S	Sg	03 50 06.9	-0.1
DEMI	Demirci	0.27	256	iP	Pg	03 50 03.5	+0.2
DEMI				iS	Sg	03 50 06.9	-0.1
GDZ	Gediz	0.33	93	P	Pb	03 50 06.0	-0.1
GDZ				S	Sb	03 50 10.5	-1.1
GDZ	Gediz	0.33	93	iP	Pb	03 50 06.0	-0.1
GDZ				iS	Sb	03 50 10.5	-1.1
TVSB	Tavsanli	0.47	43	ePG	Pg	03 50 07.6	+0.6
TVSB				eSG	Sg	03 50 13.3	+0.2
TVSB	Tavsanli	0.47	43	ePg	Pg	03 50 07.6	+0.6
TVSB				eSg	Sg	03 50 13.3	+0.2
KHL	Karahalli	0.87	155	ePG	Pb	03 50 15.4	+0.3
KHL	Karahalli	0.87	155	ePg	Pb	03 50 15.4	+0.3
ORLT	Orhaneli	0.94	353	ePG	Pb	03 50 16.7	+0.2
ORLT	Orhaneli	0.94	353	ePg	Pb	03 50 16.7	+0.2
AKS	Akhisar	0.99	257	ePG	Pn	03 50 18.1	+0.1
AKS	Akhisar	0.99	257	ePg	Pn	03 50 18.1	+0.1
BALB	Balikesir	1.05	301	ePG	Pn	03 50 18.8	0.0
BALB				eSG	Sn	03 50 33.7	+0.1
BALB	Balikesir	1.05	301	ePg	Pn	03 50 18.8	0.0
BALB				eSg	Sn	03 50 33.7	+0.1
CAVI	Cavuskoy	1.25	29	ePN	Pb	03 50 21.7	0.0
CAVI	Cavuskoy	1.25	29	ePn	Pb	03 50 21.7	0.0
MDNY	Mudanya-Bursa	1.27	354	ePN	Pb	03 50 21.9	0.0
MDNY	Mudanya-Bursa	1.27	354	ePn	Pb	03 50 21.9	0.0
IZI	Iznik	1.27	15	ePN	Pg	03 50 22.2	0.0
IZI	Iznik	1.27	15	ePn	Pg	03 50 22.2	0.0
KCTX	Karacabey (Bur	1.27	335	ePN	Pb	03 50 22.2	+0.1
KCTX	Karacabey (Bur	1.27	335	ePn	Pb	03 50 22.2	+0.1
GONE	Gonen-Balikesi	1.41	312	ePN	Pb	03 50 24.6	+0.2
GONE	Gonen-Balikesi	1.41	312	ePn	Pb	03 50 24.6	+0.2
ARMT	Armutlu	1.46	354	ePN	Pb	03 50 25.1	-0.2
ARMT	Armutlu	1.46	354	ePn	Pb	03 50 25.1	-0.2
EDC	Edincik	1.54	324	ePN	Pb	03 50 26.4	-0.2
EDC	Edincik	1.54	324	ePn	Pb	03 50 26.4	-0.2
GULT	Gulveren	1.74	40	ePN	Pn	03 50 28.5	+0.2
GULT	Gulveren	1.74	40	ePn	Pn	03 50 28.5	+0.2

*NIED **20** 03:50:00, 37°.10N×141°.20E, h59km, Mw3.9 Best double couple: M0 7.40000×10^14 NP1:φs 188.00000°, δ18.00000°, λ85.00000°. NP2:φs 13.00000°, δ72.00000°, λ92.00000°.*
*ISCJB **20** 03:50:17.1±0.7, 37°.05N±0°.04×141°.34E±0°.07, h50km±5km, mb4.0/13, Error ellipse: s-maj=10.0km s-min=5.4km az=17.0*
*NEIC **20** 03:50:18.4±0.8, 37°.03N×141°.30E, h44km±7km, mb4.3/6, Error ellipse: s-maj=11.2km s-min=7.8km az=105.0*
*IDC **20** 03:50:19.2±1.8, 37°.04N×141°.26E, h46km±17km, mb3.5/6, mb1 3.7/9, mb1mx3.4/59, mbtmp3.8/9, ML3.8/3, MS2.5/1, Ms1 2.5/1, ms1mx2.3/50, Error ellipse: s-maj=16.6km s-min=12.5km az=100.0*
*JMA **20** 03:50:19.2±0.1, 37°.07N×141°.17E, h50km±1km, M3.9*
JMA Felt II J1.

ISC 20 03:50:17.9±0.8, 37°.04N±0°.04×141°.34E±0°.07, h39km±3km, n35, σ0s92/38, mb4.2/13, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.44	278	P	Pn	03 50 28.3	+0.6
ONAJ				S	Sn	03 50 34.6	-0.1
JFK	Kawauchi	0.49	311	P	Pn	03 50 28.9	+0.4
JFK				S	Sn	03 50 35.6	-0.3
JHO	Hitachi	0.75	235	P	Pn	03 50 32.1	+0.1
JHO				S	Sn	03 50 41.0	-1.2
JFT	Otama	0.93	301	P	Pn	03 50 35.2	+0.7
JFT				eS	Sn	03 50 46.1	-0.5
JMM	Marumori	0.93	332	P	Pn	03 50 34.7	+0.3
JMM				S	Sn	03 50 45.9	-0.6
JFY	Yanaizu	1.35	286	P	Pn	03 50 40.4	+0.1
JOU	Okura	1.42	338	P	Pn	03 50 41.8	+0.5
MJAR	Matsushiro Arr	2.56	260	P	Pn	03 50 57.8	+0.9
	12nm,0.3s,baz=82,slow=16,SNR=41						
MJAR				S	Sn	03 51 27.1	+0.3
	8.8nm,0.3s,baz=90,slow=26,SNR=8.4						
MJAR				LR	LR	03 52 14.0	
	comp=Z,116nm,22.0s,baz=310,slow=46						
MAJO	Matsushiro	2.56	260	ePn	Pn	03 50 57.7	+0.8
MAT	Matsushiro	2.56	260	P	Pn	03 50 57.6	+0.7
MAT				eS	Sn	03 51 28.3	+1.5
JHJ2	Mitsune	4.12	198	ePn	Pn	03 51 19.3	+1.1
JHJ	Hachijo jima 2	4.12	198	P	Pn	03 51 20.9	+2.6
	34nm,0.3s,baz=320,slow=22,SNR=8.7						
JHJ				S	Sn	03 52 05.3	+0.2
	33nm,0.3s,baz=84,slow=23,SNR=3.8						
ERM	Erimo	5.16	15	ePn	Pn	03 51 33.0	+0.4
ASAJ	Asahikawa	7.13	7	P	Pn	03 52 00.2	+0.7
	1.4nm,0.3s,baz=214,slow=8.5,SNR=5.8						
ASAJ				S	Sn	03 53 20.4	+1.2
	0.4nm,0.3s,baz=261,slow=11,SNR=1.9						
CBIJ	Chichi jima	9.94	176	ePn	Pn	03 52 36.7	-1.5
SONM	Songino Array	27.73	304	P	P	03 56 02.0	-0.7
	0.7nm,0.5s,baz=97,slow=6.2,SNR=3.3						
H11N2	WAKE ISLAND Hy 28.20	121		T	T	04 26 11.4	
	baz=314,slow=75,SNR=66						
H11N1	WAKE ISLAND Hy 28.21	121		T	T	04 26 27.0	
	baz=314,slow=75,SNR=82						
H11N3	WAKE ISLAND Hy 28.22	121		T	T	04 26 27.3	
	baz=314,slow=75,SNR=92						
H11S1	WAKE ISLAND Hy 28.91	123		T	T	04 27 08.2	
	baz=315,slow=76,SNR=64						
H11S3	WAKE ISLAND Hy 28.91	123		T	T	04 26 52.7	
	baz=315,slow=76,SNR=43						
H11S2	WAKE ISLAND Hy 28.93	123		T	T	04 27 07.2	
	baz=315,slow=76,SNR=44						
ZALV	Zalesovo Beam	41.86	312	P	P	03 58 04.0	+0.1
	2.2nm,0.5s,baz=110,slow=8.1,SNR=6.1						
MKAR	Makanchi Array	44.06	302	P	P	03 58 21.4	-0.5
	0.8nm,0.6s,baz=92,slow=8.6,SNR=5.5						
KURK	Kurchatov	45.88	308	eP	P	03 58 34.7	-1.5
	3.6nm,0.6s						
ILAR	Eielson Array	49.52	32	P	P	03 59 05.8	+1.5
	0.4nm,0.7s,baz=266,slow=7.1,SNR=4.6						
TKM2	Tokmak 2	49.57	298	eP	P	03 59 04.9	-0.4
	1.4nm,0.6s						
AAK	Ala-Archa	50.43	298	eP	P	03 59 11.3	-0.4
	1.7nm,0.5s						
BRVK	Borovoye	50.58	312	eP	P	03 59 11.1	-1.3
	1.8nm,0.5s						
WRA	Warramunga Arr	57.06	188	P	P	04 00 00.1	0.0
	0.4nm,0.5s,baz=6.0,slow=7.3,SNR=4.7						
ABKAR	Akbulak array	57.89	310	eP	P	04 00 04.9	-0.8
	0.8nm,0.4s						
SUMG	Summit	70.67	360	eP	P	04 01 29.6	+0.1
	3.8nm,0.7s						
HFS	Hagfors	74.06	336	P	P	04 01 49.6	+0.2
	0.8nm,0.7s,baz=12,slow=7.9,SNR=3.2						
PSZ	Piszkesteto	80.61	324	eP	P	04 02 27.2	+0.8
	3.1nm,0.9s						
LPAZ	La Paz	146.74	59	PKPbc	PKPab	04 09 57.7	-0.3
	0.6nm,0.3s,baz=244,slow=4.9,SNR=5.7						

*JMA **20** 03:50:42.5±0.3, 27°.81N×129°.78E, h59km±5km, M3.7*
*IDC **20** 03:50:44.4±6.5, 27°.80N×129°.67E, h36km±54km, mb3.5/4, mb1 3.8/5, mb1mx3.4/57, mbtmp3.8/5, ML4.1/1, MS3.5/4, Ms1 3.5/4, ms1mx2.9/45, Error ellipse: s-maj=72.5km s-min=21.3km az=88.0*

ISC 20 03:50:42.1±1.5, 27°.72N±0°.04×129°.88E±0°.05, h24km±12km, n24, σ1s01/33, mb3.8/4, MS3.5/4, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JJK	Kikaishima	0.60	8	P	Pb	03 50 54.7	+0.8
JZK				eS	Sn	03 51 04.3	+0.3
JAM	Amami Oshima	0.73	341	P	Pb	03 50 55.9	-0.2
JAM				eS	Sb	03 51 05.4	-0.3
JAMN	Amaminishikomi	0.81	310	P	Pn	03 50 56.6	-1.4
JAMN				eS	Sb	03 51 08.0	0.0
JTK	Tokunoshima	0.82	275	P	Pn	03 50 57.4	-0.8
JTK				eS	Sn	03 51 09.9	+0.3
JOKE	Okinoerabujima	1.22	253	P	Pn	03 51 03.3	-0.3
JTAJ	Takarajima	1.54	338	P	Pn	03 51 07.0	-1.1
JTAJ				S	Sn	03 51 25.4	-2.0
JOW	Kunigami	1.68	239	P	Pn	03 51 09.7	-0.3
JIH	Iheya	1.83	248	P	Pn	03 51 11.7	-0.3
JNTH	Nagotoyohara	2.04	234	P	Pn	03 51 14.6	-0.3
JNTH				eS	Sn	03 51 39.3	-0.4
JNN	Nakanoshima	2.11	360	P	Pn	03 51 15.2	-0.7
JMZ	Minamidaito 2	2.24	147	P	Pn	03 51 16.7	-1.0
JMZ				eS	Sn	03 51 42.2	-2.4
JJT2	Tamagusuku 2	2.47	231	P	Pn	03 51 20.8	0.0
JJT2				eS	Sn	03 51 49.6	-0.6
JYAK	Yakushimahirau	2.57	12	P	Pn	03 51 21.5	-0.6
JYAK				eS	Sn	03 51 51.3	-1.3
JAGN	Aguni-jima	2.61	245	P	Pn	03 51 22.1	-0.6
JAGN				eS	Sn	03 51 52.1	-1.5
JTN	Tanegashima 3	3.08	18	P	Pn	03 51 28.8	-0.4
JTN				eS	Sn	03 52 04.7	-0.5
JKE	Kume jima 2	3.09	244	P	Pn	03 51 29.0	-0.3
JNU	Nakatsue	5.45	9	Pn	Pn	03 52 02.9	+1.1
	6.1nm,0.3s,baz=165,slow=5.2,SNR=57						
JNU				Sn	Sn	03 53 02.5	-1.3
	0.5nm,0.3s,baz=85,slow=23,SNR=2.0						
CMAR	Chiang Mai Arr	29.84	259	LR	LR	04 08 19.2	
	comp=Z,32nm,21.4s,baz=35,slow=36						
WRA	Warramunga Arr	47.58	174	P	P	03 59 16.3	+0.3
	0.7nm,0.5s,baz=353,slow=8.3,SNR=5.0						
NRIK	Noril'sk	48.30	341	LR	LR	04 20 40.9	
	comp=Z,59nm,18.1s,baz=106,slow=37						
ASAR	Alice Springs	51.24	175	P	P	03 59 45.9	+2.0
	0.2nm,0.4s,baz=6.8,slow=14,SNR=9.6						
FINES	FINESS Array B	72.29	331	P	P	04 02 04.9	-0.3
	1.2nm,0.7s,baz=85,slow=5.0,SNR=5.8						
FINES				LR	LR	04 36 20.6	
	comp=Z,77nm,18.3s,baz=359,slow=38						
YKA	Yellowknife Ar	76.55	26	P	P	04 02 30.7	+0.7
	0.6nm,0.8s,baz=305,slow=5.8,SNR=7.2						
EIL	Elat	80.70	299	LR	LR	04 43 23.1	
	comp=Z,17nm,18.7s,baz=309,slow=39						

*IDC **20** 03:54:50.4±0.9, 17°.83N×65°.76W, h0km, mb3.4/5, mb1 3.7/6, mb1mx3.5/58, mbtmp3.4/6, ML4.0/1, MS2.9/1, Ms1 2.9/1, ms1mx2.5/24, Error ellipse: s-maj=32.3km s-min=11.5km az=39.0*
*ISCJB **20** 03:54:52.9±0.5, 17°.81N±0°.04×65°.60W±0°.02, h25km±4km, mb3.6/9, Error ellipse: s-maj=6.7km s-min=3.3km az=16.9*
*RSPR **20** 03:54:54.2, 17°.88N×65°.60W, h6km±1km, MD3.9/16*
*NEIC **20** 03:54:54.2, 17°.88N×65°.60W, h6km, mb4.0/4, MD3.9(RSPR). After RSPR.*
NEIC Felt at Aguadilla, Aguas Buenas, Gurabo, Humacao, Isabela, Mayaguez, Naguabo, Rio Grande, Sabana Grande and San Juan.

ISC 20 03:54:53.4±0.9, 17°.85N±0°.04×65°.59W±0°.02, h19km±3km, n93, σ0s89/114, mb3.7/9, 49C-14D, Puerto Rico region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MTP	Monte Pirata	0.25	9	∥eP	Pg	03 54 59.4	+0.1
MTP	Monte Pirata	0.25	9	∥eP	Pg	03 54 59.4	+0.1
MTP				eS	Sg	03 55 03.3	0.0
MTP	Monte Pirata	0.25	9	∥eP	Pg	03 54 59.4	+0.1
MTP				eS	Sg	03 55 03.3	0.0
HUMP	Col San Antoni	0.38	321	∥eP	Pg	03 55 01.3	-0.1
HUMP				eS	Sg	03 55 06.7	-0.2
HUMP	Col San Antoni	0.38	321	∥eP	Pg	03 55 01.3	-0.1
HUMP	Col San Antoni	0.38	321	∥eP	Pg	03 55 01.3	-0.1
HUMP				eS	Sg	03 55 06.6	-0.3
HUMP				eS	Sg	03 55 06.7	-0.2
HUMP	Col San Antoni	0.38	321	∥eP	Pg	03 55 01.3	-0.1
HUMP				eS	Sg	03 55 06.6	-0.3
CBYP	Canovanas	0.49	330	∥eP	Pg	03 55 03.3	-0.2
CBYP				eS	Sg	03 55 10.5	+0.3
CBYP	Canovanas	0.49	330	∥eP	Pg	03 55 03.2	-0.2
CBYP	Canovanas	0.49	330	∥eP	Pg	03 55 03.2	-0.2
CBYP	Canovanas	0.49	330	∥eP	Pg	03 55 03.3	-0.2
CBYP				eS	Sg	03 55 10.5	+0.3
CBYP				eS	Sg	03 55 10.6	+0.3
CBYP	Canovanas	0.49	330	∥eP	Pg	03 55 03.2	-0.2
CBYP				eS	Sg	03 55 10.6	+0.3
SJG	San Juan	0.59	297	∥eP	Pb	03 55 04.8	-0.4
SJG	San Juan	0.59	297	Pn	Pb	03 55 04.4	-0.7
	327nm,0.3s,baz=121,slow=17,SNR=601						
SJG				Sn	Sb	03 55 12.7	-0.4
	1μm,0.3s,baz=27,slow=23,SNR=55						
SJG	San Juan	0.59	297	∥eP	Pb	03 55 04.8	-0.4
STVI	Saint Thomas	0.79	50	∥eP	Pb	03 55 08.1	-0.5
STVI				eS	Sb	03 55 18.8	-0.1
STVI	Saint Thomas	0.79	50	∥eP	Pb	03 55 08.0	-0.5
STVI	Saint Thomas	0.79	50	∥eP	Pb	03 55 08.0	-0.5
STVI	Saint Thomas	0.79	50	∥eP	Pb	03 55 08.1	-0.5
STVI				eS	Sb	03 55 18.6	-0.3
STVI				eS	Sb	03 55 18.8	-0.1
STVI	Saint Thomas	0.79	50	∥eP	Pb	03 55 08.0	-0.5
STVI				eS	Sb	03 55 18.6	-0.3
CDVI	St. Croix	0.79	97	∥eP	Pb	03 55 08.6	-0.1
CDVI				eS	Sn	03 55 20.3	-0.7
CDVI	St. Croix	0.79	97	∥eP	Pb	03 55 08.6	-0.1
CDVI	St. Croix	0.79	97	∥eP	Pb	03 55 08.6	-0.1
CDVI				eS	Sg	03 55 19.9	+0.4
CDVI				eS	Sn	03 55 20.3	-0.7
CDVI	St. Croix	0.79	97	∥eP	Pb	03 55 08.6	-0.1
CDVI				eS	Sg	03 55 19.9	+0.4
ICMP	Isla Caja de M	0.89	273	∥eP	Pb	03 55 10.0	-0.2
ICMP	Isla Caja de M	0.89	273	∥eP	Pb	03 55 10.0	-0.2
ICMP				eS	Sg	03 55 23.0	+0.4
ICMP	Isla Caja de M	0.89	273	∥eP	Pb	03 55 10.0	-0.2
ICMP				eS	Sg	03 55 23.0	+0.4
CELP	Cerrillos	0

RUSC	La Rusia	13.95	213	*e*P	Pn	03 58 09.3	-1.4
ROSC	El Rosal	15.49	214	LR	LR	04 05 03.8	
	comp=Z,42nm,19.3s,baz=180,slow=40						
PTGA	Pitinga	19.27	163	P	Pn	03 59 18.8	+0.6
	0.4nm,0.3s,baz=336,slow=21,SNR=3.7						
OTAV	Otavalo	21.59	217	*e*P	P	03 59 43.8	+1.0
	4.1nm,0.7s						
WMOK	Wichita Mounta	33.98	306	*e*P	P	04 01 38.3	+2.3
	3.4nm,0.8s						
LPAZ	La Paz	34.01	184	P	P	04 01 35.5	-1.5
	0.9nm,0.8s,baz=35,slow=1.5,SNR=5.7						
TXAR	Lajitas Array	36.56	295	P	P	04 01 57.3	-1.2
	0.2nm,0.5s,baz=99,slow=12,SNR=3.5						
SDCO	Great Sand Dun	40.11	308	*e*P	P	04 02 29.5	+1.1
	0.7nm,0.5s						
RSSD	Black Hills	41.53	318	*e*P	P	04 02 42.5	+2.6
	3.1nm,1.0s						
PDAR	Pinedale Array	44.69	313	P	P	04 03 05.7	+0.2
	0.1nm,0.5s,baz=106,slow=5.7,SNR=2.2						
YKA	Yellowknife Ar	55.96	335	P	P	04 04 30.5	+0.2
	0.2nm,0.6s,baz=111,slow=7.3,SNR=3.8						
TORD	Torodi Ar. Bea	64.72	84	P	P	04 05 31.0	0.0
	0.4nm,0.6s,baz=264,slow=6.7,SNR=7.6						

*IDC **20** 03:58:41.3±0.7,25°.38N×143°.11E,h0km,mb3.9/12, mb1 4.1/12,mb1mx3.8/55,mbtmp3.9/12,Error ellipse: s-maj=28.9km s-min=15.6km az=80.0*
*ISCJB **20** 03:58:44.8±0.6,25°.29N±0°.08×143°.1E±0°.2,h40km, mb4.0/16,Error ellipse: s-maj=22.9km s-min=8.4km az=158.8*
*NEIC **20** 03:58:47.3±2.3,25°.44N×142°.85E,h44km±19km,mb4.3/4, Error ellipse: s-maj=22.4km s-min=14.8km az=88.0*

ISC 20 03:58:46.8±0.8,25°.3N±0°.1×143°.0E±0°.2,h40km,n22, σ1§48/23,mb4.1/16,Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCJ	Chichijima	1.92	338	Pn	Pn	03 59 15.2	-1.8
	49nm,0.3s,baz=283,slow=23,SNR=50						
JCJ				Sn	Sn	03 59 42.1	+2.2
	155nm,0.3s,baz=120,slow=23,SNR=7.1						
CBIJ	Chichi jima	1.92	338	Pn	Pn	03 59 15.2	-1.8
CBIJ				Sn	Sn	03 59 42.1	+2.2
USRK	Ussuriysk Ar.	20.86	337	P	P	04 03 26.0	+0.8
	1.3nm,0.6s,baz=132,slow=8.4,SNR=3.5						
KLR	Kul'dur	25.44	343	P	P	04 04 10.6	-0.1
	1.6nm,0.5s,baz=172,slow=12,SNR=8.4						
WRA	Warramunga Arr	45.77	191	P	P	04 07 04.5	0.0
	3.3nm,0.7s,baz=9.0,slow=8.8,SNR=15						
ASAR	Alice Springs	49.48	191	P	P	04 07 35.3	+1.9
	0.4nm,0.8s,baz=243,slow=14,SNR=3.4						
ZALV	Zalesovo Beam	51.31	320	P	P	04 07 47.6	+0.8
	0.9nm,0.3s,baz=93,slow=8.7,SNR=5.2						
KURK	Kurchatov	54.75	315	*e*P	P	04 08 10.0	-2.2
	5.8nm,1.0s						
ILAR	Eielson Array	58.93	28	P	P	04 08 40.5	-1.1
	0.6nm,0.7s,baz=265,slow=5.5,SNR=6.6						
BRVK	Borovoye	59.91	318	*e*P	P	04 08 45.2	-3.3
	2.0nm,0.5s						
INK	Inuvik	64.34	24	P	P	04 09 16.9	-1.1
	1.5nm,1.0s,baz=301,slow=12,SNR=2.5						
ABKAR	Akbulak array	66.86	315	*e*P	P	04 09 33.3	-1.3
	1.1nm,0.6s						
YKA	Yellowknife Ar	73.36	28	P	P	04 10 14.7	+0.5
	0.3nm,0.7s,baz=294,slow=6.2,SNR=5.8						
ARCES	ARCESS Array B	75.45	341	P	P	04 10 29.3	+3.0
	2.8nm,1.1s,baz=70,slow=7.1,SNR=5.5						
FINES	FINESS Array B	79.86	334	P	P	04 10 50.8	-0.1
	1.8nm,0.6s,baz=75,slow=5.1,SNR=21						
FFC	Flin Flon	82.86	32	*e*P	P	04 11 06.2	-0.8
	1.2nm,0.8s						
PDAR	Pinedale Array	84.96	45	P	P	04 11 19.6	+1.3
	0.1nm,0.5s,baz=251,slow=5.6,SNR=3.2						
HFS	Hagfors	85.34	337	P	P	04 11 18.7	-0.8
	3.8nm,0.9s,baz=87,slow=7.6,SNR=4.2						
NB2	NORSAR Subarra	85.53	339	P	P	04 11 21.1	+0.6
	comp=Z,0.9nm,0.6s,baz=44,slow=5.3						
NOA	NORSAR Array B	85.53	339	P	P	04 11 20.1	-0.3
	comp=Z,0.9nm,0.6s,baz=45,slow=4.5,SNR=3.9						
PLCA	Paso Flores	148.18	127	PKPbc	PKPbc	04 18 29.0	+0.4
	comp=Z,1.6nm,0.8s,baz=347,slow=3.1,SNR=3.3						
LPAZ	La Paz	149.61	79	PKPbc	PKPbc	04 18 33.4	-0.2
	comp=Z,0.7nm,0.6s,baz=199,slow=3.8,SNR=3.8						

*IDC **20** 03:59:35.4±0.9,38°.16N×144°.76E,h0km,mb3.6/8, mb1 3.8/10,mb1mx3.6/59,mbtmp3.7/10,ML3.8/2,Error ellipse: s-maj=24.5km s-min=17.9km az=110.0*
*ISCJB **20** 03:59:38.2±0.7,38°.26N±0°.05×144°.57E±0°.05,h29km, mb3.7/8,Error ellipse: s-maj=7.1km s-min=5.3km az=176.3*
*JMA **20** 03:59:40.2±0.2,38°.27N×144°.45E,h36km,M4.5*

ISC 20 03:59:40.1±0.9,38°.29N±0°.06×144°.61E±0°.07,h29km,n27, σ1§40/32,mb3.7/8,Off east of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	2.43	290	P	Pn	04 00 17.6	-0.2
OFUJ				S	Sn	04 00 45.2	-1.4
JIO	Ouri	2.56	275	S	Sn	04 00 48.0	-1.9
JTH	Tanohata	2.69	308	P	Pn	04 00 21.7	+0.2
JTH				S	Sn	04 00 52.1	-1.0
JMK	Ichinoseki	2.73	285	*e*S	Sn	04 00 53.1	-1.0
JOM	Ohasama	2.84	296	P	Pn	04 00 23.9	+0.4
JOM				S	Sn	04 00 56.5	-0.3
JMM	Marumori	3.04	263	P	Pn	04 00 25.3	-0.9
JMM				S	Sn	04 00 59.4	-2.2
JFK	Kawauchi	3.10	254	S	Sn	04 01 00.1	-3.0
JOU	Okura	3.10	273	S	Sn	04 01 02.2	-1.0
JANG	Nango	3.17	312	S	Sn	04 01 03.8	-1.1
JRG	Rokugo	3.29	291	*e*S	Sn	04 01 08.0	+0.1
JYK	Kaneyama	3.38	282	P	Pn	04 00 32.1	+1.1
JYK				*e*S	Sn	04 01 09.7	-0.5
JFT	Otama	3.46	258	S	Sn	04 01 10.8	-1.4
JTM	Tenmabayashi	3.70	313	P	Pn	04 00 35.3	0.0
JTM				*e*S	Sn	04 01 16.5	-1.4
MJAR	Matsushiro Arr	5.38	253	Pn	Pn	04 00 58.6	+0.1
	1.9nm,0.3s,baz=79,slow=15,SNR=20						
MJAR				Sn	Sn	04 02 02.2	+2.7
	0.7nm,0.3s,baz=304,slow=49,SNR=3.3						
MAT	Matsushiro	5.38	253	P	Pn	04 00 58.5	0.0
MAT				*e*S	Sn	04 01 50.5	-9.0
ASAJ	Asahikawa	6.01	346	Pn	Pn	04 01 06.4	-0.7
	2.9nm,0.3s,baz=201,slow=15,SNR=9.0						
ASAJ				Sn	Sn	04 02 12.8	-2.1
	0.8nm,0.3s,baz=12,slow=19,SNR=3.8						
SEY	Seymchan	25.12	8	P	P	04 05 04.0	+1.8
	0.9nm,0.4s,baz=210,slow=11,SNR=7.5						
H11N2	WAKE ISLAND Hy	26.75	127	T	T	04 32 57.1	
	baz=320						
H11N1	WAKE ISLAND Hy	26.76	127	T	T	04 33 01.2	
	baz=320						
H11N3	WAKE ISLAND Hy	26.77	127	T	T	04 33 02.1	
	baz=320						
MKAR	Makanchi Array	45.61	302	P	P	04 07 57.6	-0.1
	0.5nm,0.6s,baz=81,slow=9.1,SNR=4.6						
ILAR	Eielson Array	47.07	33	P	P	04 08 08.7	-0.1
	0.2nm,0.6s,baz=269,slow=5.2,SNR=2.4						
KURBB	Kurchatov Arra	47.23	308	P	P	04 08 10.0	-0.3
	2.0nm,0.5s,baz=87,slow=7.6,SNR=18						
BVAR	Borovoye Array	51.60	312	P	P	04 08 46.4	+2.8
	1.3nm,0.5s,baz=71,slow=9.0,SNR=6.8						
WRA	Warramunga Arr	58.72	191	P	P	04 09 33.5	-1.8
	0.6nm,0.7s,baz=14,slow=7.1,SNR=4.3						
YKA	Yellowknife Ar	61.43	31	P	P	04 09 52.9	-0.5
	0.1nm,0.8s,baz=195,slow=35,SNR=2.5						
ASAR	Alice Springs	62.45	191	P	P	04 10 00.1	-0.5
	0.3nm,0.5s,baz=15,slow=30,SNR=3.0						

*ISK **20** 04:00:34.8,39°.13N×29°.02E,h5km,ML3.9*
*IDC **20** 04:00:35.1±1.1,39°.03N×29°.06E,h0km,mb3.5/5, mb1 3.6/11,mb1mx3.4/51,mbtmp3.5/11,ML3.1/6,MS2.9/1, Ms1 3.0/1,ms1mx2.1/54,Error ellipse: s-maj=16.2km s-min=13.9km az=49.0*
*ISCJB **20** 04:00:35.9±0.4,39°.11N±0°.01×28°.98E±0°.02,h10km±2km, mb3.5/5,MS2.7/1,Error ellipse: s-maj=2.6km s-min=2.3km az=172.9*
*DDA **20** 04:00:35.4,39°.14N×29°.00E,h7km,Ml4.0*
*THE **20** 04:00:36.6,39°.09N×28°.92E,h2km±1km,ML3.5/7,Error ellipse: s-maj=1.8km s-min=0.7km az=90.0*
*CSEM **20** 04:00:36.1±0.1,39°.10N×28°.98E,h5km,ML4.0,Error ellipse: s-maj=2.5km s-min=2.1km az=78.0*

ISC 20 04:00:36.1±1.0,39°.11N±0°.01×28°.98E±0°.02,h7km±7km, n176,σ0§96/227,mb3.5/5,22C-7D,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.22	251	P	Pg	04 00 40.8	+0.3
DEMI				S	Sg	04 00 44.0	+0.5
DEMI	Demirci	0.22	251	⇑*i*P	Pg	04 00 40.8	+0.3
DEMI				*i* S	Sg	04 00 44.0	+0.5
GDZ	Gediz	0.39	93	P	Pg	04 00 43.3	-0.5
GDZ				S	Sg	04 00 48.8	-0.1
GDZ	Gediz	0.39	93	⇑*i*P	Pg	04 00 43.3	-0.5
GDZ				*i* S	Sg	04 00 48.8	-0.1
TVSB	Tavsanli	0.50	48	*e*PG	Pg	04 00 45.0	-0.8
TVSB	Tavsanli	0.50	48	*e*Pg	Pg	04 00 45.0	-0.8
DURS	Dursunbey	0.63	321	P	Pg	04 00 47.6	-0.6
DURS				S	Sg	04 00 56.1	-0.3
DURS	Dursunbey	0.63	321	⇑*i*P	Pg	04 00 47.6	-0.6
DURS				*i* S	Sg	04 00 56.1	-0.3
KULA	Kula-Manisa	0.65	203	*e*PG	Pg	04 00 48.6	-0.1
KULA	Kula-Manisa	0.65	203	P	Pg	04 00 48.5	-0.1
KULA				S	Sb	04 00 57.7	-1.4
KULA	Kula-Manisa	0.65	203	P	Pg	04 00 48.5	-0.1
KULA				S	Sb	04 00 57.7	-1.4
MANT	Manisa	0.70	208	P	Pg	04 00 49.7	0.0
MANT				S	Sg	04 00 59.0	+0.1
MANT	Manisa	0.70	208	⇑*i*P	Pg	04 00 49.6	0.0
MANT				*i* S	Sg	04 00 59.0	+0.1
KHAL	Karahalli	0.84	152	P	Pg	04 00 52.1	-0.2
KHAL				S	Sg	04 01 03.3	0.0
KHAL	Karahalli	0.84	152	⇑*i*P	Pg	04 00 52.1	-0.2
KHAL				*i* S	Sg	04 01 03.3	0.0
KHL	Karahalli	0.90	152	*e*PG	Pb	04 00 53.7	-0.3
KHL	Karahalli	0.90	152	*e*Pg	Pb	04 00 53.7	-0.3
ORLT	Orhaneli	0.93	356	*e*PG	Pg	04 00 53.1	-1.0
ORLT				*e*SG	Sb	04 01 07.5	+0.2
ORLT	Orhaneli	0.93	356	*e*Pg	Pg	04 00 53.1	-1.0
ORLT				*e*Sg	Sb	04 01 07.5	+0.2
AKHS	Akhisar	0.94	256	P	Pb	04 00 54.2	-0.5
AKHS				S	Sb	04 01 07.2	-0.2
AKHS	Akhisar	0.94	256	⇑*i*P	Pb	04 00 54.2	-0.5
AKHS				*i* S	Sb	04 01 07.2	-0.2
AKS	Akhisar	0.94	256	*e*PG	Pb	04 00 54.3	-0.4
AKS	Akhisar	0.94	256	*e*Pg	Pb	04 00 54.3	-0.4
BALB	Balikesir	1.00	302	*e*PG	Pn	04 00 56.3	-0.3
BALB				*e*SG	Sn	04 01 11.1	+0.2
BALB	Balikesir	1.00	302	*e*Pg	Pn	04 00 56.3	-0.3
BALB				*e*Sg	Sn	04 01 11.1	+0.2
IGD	Bursa	1.16	8	⇑*i*P	Pg	04 00 55.7	-2.7
IGD				*i* S	Sg	04 01 13.2	-0.3
BALY	Balya	1.23	301	P	Pb	04 00 59.2	-0.4
BALY				S	Sg	04 01 14.6	-1.0
BALY	Balya	1.23	301	⇓*i*P	Pb	04 00 59.2	-0.4
BALY				*i* S	Sg	04 01 14.6	-1.0
KCTX	Karacabey (Bur	1.25	337	*e*PN	Pn	04 00 59.2	-0.8
KCTX	Karacabey (Bur	1.25	337	*e*Pn	Pn	04 00 59.2	-0.8
MDNY	Mudanya-Bursa	1.26	357	*e*PN	Pn	04 00 58.9	-1.2
MDNY				*e*SN	Sn	04 01 18.4	+1.2
MDNY	Mudanya-Bursa	1.26	357	*e*Pn	Pn	04 00 58.9	-1.2
MDNY				*e*Sn	Sn	04 01 18.4	+1.2
IZI	Iznik	1.28	17	*e*PN	Pn	04 00 59.8	-0.7
IZI	Iznik	1.28	17	*e*Pn	Pn	04 00 59.8	-0.7
GEMT	Gemlik	1.33	7	*e*PN	Pb	04 01 01.4	0.0
GEMT	Gemlik	1.33	7	*e*Pn	Pb	04 01 01.4	0.0
DENT	Denizli	1.36	178	*e*PN	Pg	04 01 02.2	0.0
DENT	Denizli	1.36	178	*e*Pn	Pg	04 01 02.2	0.0
GONE	Gonen-Balikesi	1.37	313	*e*PN	Pn	04 01 01.7	+0.1
GONE	Gonen-Balikesi	1.37	313	*e*Pn	Pn	04 01 01.7	+0.1
DNZL	Cakiroluk	1.42	178	P	Pn	04 01 02.1	-0.4
DNZL	Cakiroluk	1.42	178	⇓*i*P	Pn	04 01 02.1	-0.4
DNZL				*i* S	Sg	04 01 24.9	+3.0
ADVT	Abdulvahap	1.44	24	*e*PN	Pn	04 01 02.0	-0.6
ADVT	Abdulvahap	1.44	24	*e*Pn	Pn	04 01 02.0	-0.6
AYDB	Zeytinkoy-Aydi	1.45	217	*e*PN	Pg	04 01 03.6	-0.2
AYDB	Zeytinkoy-Aydi	1.45	217	*e*Pn	Pg	04 01 03.6	-0.2
ARMT	Armutlu	1.45	356	*e*PN	Pn	04 01 02.9	+0.1
ARMT	Armutlu	1.45	356	*e*Pn	Pn	04 01 02.9	+0.1
EDC	Edincik	1.50	325	*e*PN	Pn	04 01 03.3	-0.2
EDC	Edincik	1.50	325	*e*Pn	Pn	04 01 03.3	-0.2
GPA	Golpazari	1.56	41	*e*PN	Pb	04 01 05.2	-0.1
GPA	Golpazari	1.56	41	*e*Pn	Pb	04 01 05.2	-0.1
KNL	Bal¨–kesir	1.61	316	*i* P	Pn	04 01 03.5	-1.5
KNL				*i* S	Sb	04 01 26.8	+0.1
DKL	Dikili	1.62	269	*e*PN	Pg	04 01 06.5	-0.6
DKL	Dikili	1.62	269	*e*Pn	Pg	04 01 06.5	-0.6
AYDN	Tasoluk	1.69	211	P	Pn	04 01 05.7	-0.4
AYDN	Tasoluk	1.69	211	*i* P	Pn	04 01 05.7	-0.4
AYDN				*i* S	Sg	04 01 32.9	+2.5
ISP	Isparta	1.77	136	*e*PN	Pn	04 01 07.8	+0.6
ISP	Isparta	1.77	136	⇑*i*P	Pg	04 01 10.2	+0.2
ISP	Isparta	1.77	136	P	Pn	04 01 06.4	-0.8
ISP	Isparta	1.77	136	P	Pn	04 01 06.4	-0.8
ISP	Isparta	1.77	136	*e*Pn	Pn	04 01 07.8	+0.6
GULT	Gulveren	1.77	41	*e*PN	Pn	04 01 06.9	-0.3
GULT	Gulveren	1.77	41	*e*Pn	Pn	04 01 06.9	-0.3
HRT	Hereke	1.79	17	*e*PN	Pn	04 01 08.3	+0.9
HRT	Hereke	1.79	17	*e*Pn	Pn	04 01 08.3	+0.9
BAGO	Egridir - ISPA	1.81	128	⇓*i*P	Pn	04 01 07.4	-0.4
BAGO				*i* S	Sg	04 01 37.2	+3.0
KRBG	Karabiga-Canak	1.82	315	*e*PN	Pn	04 01 08.7	+0.8
KRBG	Karabiga-Canak	1.82	315	*e*Pn	Pn	04 01 08.7	+0.8
MRMT	Marmara Adasi	1.83	325	*e*PN	Pn	04 01 07.8	-0.3
MRMT	Marmara Adasi	1.83	325	*e*Pn	Pn	04 01 07.8	-0.3
SPNC	Sapanca-Adapaz	1.87	33	*e*PN	Pn	04 01 08.6	0.0
SPNC	Sapanca-Adapaz	1.87	33	*e*Pn	Pn	04 01 08.6	0.0
ISK	Istanbul-Kandi	1.95	2	*e*PN	Pb	04 01 10.9	-1.1
ISK	Istanbul-Kandi	1.95	2	P	Pn	04 01 08.7	-0.9
ISK				S	Sb	04 01 35.9	-0.6
ISK	Istanbul-Kandi	1.95	2	P	Pn	04 01 08.7	-0.9
ISK	Istanbul-Kandi	1.95	2	*e*Pn	Pb	04 01 10.9	-1.1
ISK				S	Sb	04 01 35.9	-0.6
GLHS	Glhisar (BURDU	2.00	168	*e*PN	Pb	04 01 11.6	-1.2
GLHS	Glhisar (BURDU	2.00	168	*e*Pn	Pb	04 01 11.6	-1.2
SVRH	Sivrihisar-ESK	2.00	80	*e*PN	Pn	04 01 10.4	0.0
SVRH	Sivrihisar-ESK	2.00	80	*e*Pn	Pn	04 01 10.4	0.0
YER	Yerkesik	2.05	196	*e*PN	Pn	04 01 11.8	+0.8
YER	Yerkesik	2.05	196	P	Pn	04 01 10.7	-0.4
YER				S	Sn	04 01 36.9	0.0
YER	Yerkesik	2.05	196	P	Pn	04 01 10.7	-0.4
YER	Yerkesik	2.05	196	*e*Pn	Pn	04 01 11.8	+0.8
YER				S	Sn	04 01 36.9	0.0
BGKT	Bogazkoy	2.07	356	*e*PN	Pn	04 01 12.2	+0.9
BGKT	Bogazkoy	2.07	356	*e*Pn	Pn	04 01 12.2	+0.9
BCK	Bucak	2.08	142	*e*PN	Pn	04 01 12.2	+0.7
BCK	Bucak	2.08	142	*e*Pn	Pn	04 01 12.2	+0.7
RKY	Sarkoy-Tekirda	2.10	319	*e*PN	Pn	04 01 12.3	+0.6
RKY	Sarkoy-Tekirda	2.10	319	*e*Pn	Pn	04 01 12.3	+0.6
PRK	Paraskevi	2.11	274	P	Pn	04 01 10.8	-1.0
PRK				S	Sn	04 01 38.0	-0.3
PRK	Paraskevi	2.11	274	P	Pn	04 01 10.8	-1.0
LPK	Lapseki	2.12	307	*e*PN	Pn	04 01 12.2	+0.2
LPK	Lapseki	2.12	307	*e*Pn	Pn	04 01 12.2	+0.2
KLYT	Kilyos	2.14	1	*e*PN	Pn	04 01 13.1	+0.9
KLYT	Kilyos	2.14	1	*e*Pn	Pn	04 01 13.1	+0.9
EZN	Ezine	2.18	290	*e*PN	Pb	04 01 14.8	-1.0
EZN	Ezine	2.18	290	P	Pn	04 01 12.2	-0.5
EZN				S	Sn	04 01 39.1	-0.8
EZN	Ezine	2.18	290	P	Pn	04 01 12.2	-0.5
EZN	Ezine	2.18	290	*e*Pn	Pb	04 01 14.8	-1.0
TKR	Tekirdag	2.18	330	*e*PN	Pn	04 01 14.0	+1.2
TKR	Tekirdag	2.18	330	*e*Pn	Pn	04 01 14.0	+1.2
MDUB	Mudurnu	2.18	51	*e*PN	Pn	04 01 14.0	+1.1
MDUB	Mudurnu	2.18	51	*e*Pn	Pn	04 01 14.0	+1.1
SMG	Samos	2.19	231	P	Pn	04 01 12.3	-0.7
SMG				S	Sn	04 01 39.4	-0.9
SMG	Samos	2.19	231	P	Pn	04 01 12.3	-0.7
SMG				S	Sn	04 01 39.4	-0.9
CRLT	Corlu	2.23	335	*e*PN	Pn	04 01 14.3	+0.9
CRLT	Corlu	2.23	335	*e*Pn	Pn	04 01 14.3	+0.9
KIZT	Kizilcal	2.27	95	*e*PN	Pn	04 01 14.2	+0.1
KIZT	Kizilcal	2.27	95	*e*Pn	Pn	04 01 14.2	+0.1
SUTC	Sutluce-Ispart	2.28	135	*e*PN	Pn	04 01 15.0	+0.8
SUTC	Sutluce-Ispart	2.28	135	*e*Pn	Pn	04 01 15.0	+0.8
GELI	Tayfur-Gelibol	2.32	304	*e*PN	Pn	04 01 15.4	+0.8
GELI	Tayfur-Gelibol	2.32	304	*e*Pn	Pn	04 01 15.5	+0.8
CHOS	Chios island	2.40	253	P	Pn	04 01 15.0	-0.9
CHOS				S	Sn	04 01 44.2	-1.4
CHOS	Chios island	2.40	253	P	Pn	04 01 15.0	-0.9
CHOS				S	Sn	04 01 44.2	-1.4
CTYL	Yalikoy Yolu	2.42	348	*e*PN	Pn	04 01 16.8	+0.8
CTYL	Yalikoy Yolu	2.42	348	*e*Pn	Pn	04 01 16.8	+0.8
SIGR	SIGRI	2.43	273	P	Pn	04 01 15.7	-0.5
SIGR				S	Sn	04 01 45.5	-0.7
SIGR	SIGRI	2.43	273	P	Pn	04 01 15.7	-0.5
SIGR				S	Sn	04 01 45.5	-0.7
BODT	Bodrum	2.44	213	P	Pn	04 01 15.8	-0.5
BODT				S	Sn	04 01 46.2	-0.2
BODT	Bodrum	2.44	213	P	Pn	04 01 15.8	-0.5
BODT				S	Sn	04 01 46.2	-0.2
ERIK	Erikli-Kesan	2.46	310	*e*PN	Pn	04 01 17.9	+1.4
ERIK	Erikli-Kesan	2.46	310	*e*Pn	Pn	04 01 17.9	+1.4
FETY	Fethiye	2.48	178	P	Pn	04 01 16.4	-0.5
FETY	Fethiye	2.48	178	P	Pn	04 01 16.4	-0.5
ENEZ	Enez	2.71	308	P	Pn	04 01 19.4	-0.7
ENEZ				S	Sn	04 01 53.1	0.0
ENEZ	Enez	2.71	308	P	Pn	04 01 19.4	-0.7
ENEZ				S	Sn	04 01 53.1	0.0
LADK	Ladik-KONYA	2.80	108	*e*PN	Pn	04 01 21.4	0.0
LADK	Ladik-KONYA	2.80	108	*e*Pn	Pn	04 01 21.5	0.0
ALN	Alexandroupoli	2.87	309	P	Pn	04 01 21.9	-0.4
ALN				S	Sn	04 01 57.0	-0.1
ALN	Alexandroupoli	2.87	309	P	Pn	04 01 21.9	-0.4
ALN				S	Sn	04 01 57.0	-0.1
KDZE	Karadeniz Ereo	2.90	40	*e*PN	Pn	04 01 24.0	+1.4
KDZE	Karadeniz Ereo	2.90	40	*e*Pn	Pn	04 01 24.0	+1.4
SMTH	Samothraki Isl	2.98	298	P	Pn	04 01 23.6	-0.3
SMTH				S	Sn	04 02 00.6	+0.7
SMTH	Samothraki Isl	2.98	298	P	Pn	04 01 23.6	-0.3
SMTH				S	Sn	04 02 00.6	+0.7
LIA	Limnos Island	3.04	286	P	Pn	04 01 24.4	-0.2
LIA				S	Sn	04 02 00.1	-1.1
LIA	Limnos Island	3.04	286	P	Pn	04 01 24.4	-0.2
LIA				S	Sn	04 02 00.1	-1.1
EDRB	Edirne	3.22	329	P	Pn	04 01 26.2	-0.9
EDRB	Edirne	3.22	329	P	Pn	04 01 26.2	-0.9
BRTR	Keskin Array B	3.66	79	Pn	Pn	04 01 33.4	+0.1
	2.6nm,0.3s,baz=260,slow=13,SNR=45						
BRTR				Pg	Pg	04 01 43.8	-2.5
	4.3nm,0.3s,baz=262,slow=16,SNR=42						
BRTR				Sn	Sn	04 02 15.9	-0.8
	4.7nm,0.3s,baz=260,slow=26,SNR=7.8						
KDZ	Kurdzhali	3.72	314	P	Pn	04 01 34.2	+0.2
PRD	Provadia	4.25	344	P	Pb	04 01 53.9	+2.7
MMB	Musomiste	4.71	303	P	Pn	04 01 48.0	+0.3
IDI	Anoyia	5.02	222	Pn	Pn	04 01 53.1	+1.1
	0.2nm,0.3s,baz=62,slow=15,SNR=2.7						
KKB	Krupnik	5.27	303	P	Pg	04 02 19.9	+2.8
TIRR	Tirgusor	5.36	356	⇑*i*P	Pn	04 01 56.8	+0.4
TIRR	Tirgusor	5.36	356	⇑*i*P	Pn	04 01 56.8	+0.4
MPEP	Malo Peshtene	5.79	319	P	Pn	04 02 03.2	+0.7
CFR	Carcaliu	6.09	354	⇑*i*P	Pn	04 02 07.0	+0.5
CFR	Carcaliu	6.09	354	⇑*i*P	Pn	04 02 07.0	+0.5
MLR	Muntele Rosu	6.76	342	Pn	Pn	04 02 17.4	+1.6
	0.1nm,0.3s,baz=144,slow=4.7,SNR=12						
MLR				Sn	Sn	04 03 35.6	+2.5
	0.1nm,0.3s,baz=40,slow=22,SNR=2.5						
MLR	Muntele Rosu	6.76	342	⇓*i*P	Pn	04 02 16.3	+0.5
MLR	Muntele Rosu	6.76	342	⇓*i*P	Pn	04 02 16.3	+0.5
PLOR	Plostina	6.95	346	⇑*i*P	Pn	04 02 20.2	+1.8
PLOR	Plostina	6.95

IZI	**Iznik**	**1.28**	**14**	*e*PN	**Pg**	**04 04 34.3**	**+0.1**
KCTX	**Karacabey (Bur**	**1.29**	**335**	*e*PN	**Pn**	**04 04 34.0**	**0.0**
KCTX	**Karacabey (Bur**	**1.29**	**335**	*e*PN	**Pn**	**04 04 34.0**	**0.0**
GONE	**Gonen-Balikesi**	**1.42**	**312**	*e*PN	**Pg**	**04 04 36.7**	**-0.3**
GONE	**Gonen-Balikesi**	**1.42**	**312**	*e*Pn	**Pg**	**04 04 36.7**	**-0.3**
ADVT	**Abdulvahap**	**1.43**	**21**	*e*PN	**Pb**	**04 04 36.7**	**+0.1**
ADVT	**Abdulvahap**	**1.43**	**21**	*e*Pn	**Pb**	**04 04 36.7**	**+0.1**
ARMT	**Armutlu**	**1.47**	**354**	*e*PN	**Pb**	**04 04 37.2**	**-0.1**
ARMT	**Armutlu**	**1.47**	**354**	*e*Pn	**Pb**	**04 04 37.3**	**-0.1**
EDC	**Edincik**	**1.55**	**324**	*e*PN	**Pb**	**04 04 38.6**	**-0.1**
EDC	**Edincik**	**1.55**	**324**	*e*Pn	**Pb**	**04 04 38.6**	**-0.1**
GULT	**Gulveren**	**1.74**	**40**	*e*PN	**Pn**	**04 04 41.0**	**+0.7**
GULT	**Gulveren**	**1.74**	**40**	*e*Pn	**Pn**	**04 04 41.0**	**+0.7**
SVRH	**Sivrihisar-ESK**	**1.94**	**79**	*e*PN	**Pb**	**04 04 44.6**	**-0.7**
SVRH	**Sivrihisar-ESK**	**1.94**	**79**	*e*Pn	**Pb**	**04 04 44.7**	**-0.7**

DDA ***20*** *04:05:15.6,39.°09N×29.°02E, h7km, Md2.5*
CSEM ***20*** *04:05:17.0±0.1,39.°04N×28.°99E, h2km, MD2.5, Error ellipse: s-maj=3.5km s-min=3.3km az=66.0*
ISK ***20*** *04:05:17.1,39.°05N×28.°95E, h6km, MD2.8*
ISC 20 04:05:16.3±1.0,**39.°04N**±0.°02×**29.°01E**±0.°02,**h13**km±8km,
n41,σ0°**60**/54,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.23**	**271**	P	**Pg**	**04 05 21.5**	**+0.2**
DEMI				S	**Sb**	**04 05 25.7**	**-0.7**
DEMI	**Demirci**	**0.23**	**271**	*i* P	**Pg**	**04 05 21.5**	**+0.2**
DEMI				*i* S	**Sb**	**04 05 25.7**	**-0.7**
GDZ	**Gediz**	**0.37**	**82**	P	**Pg**	**04 05 22.9**	**-1.0**
GDZ				S	**Sg**	**04 05 28.2**	**-0.8**
GDZ	**Gediz**	**0.37**	**82**	*i* P	**Pg**	**04 05 22.9**	**-1.0**
GDZ				*i* S	**Sg**	**04 05 28.2**	**-0.8**
TVSB	**Tavsanli**	**0.54**	**40**	*e*PG	**Pb**	**04 05 28.3**	**+0.6**
TVSB	**Tavsanli**	**0.54**	**40**	*e*Pg	**Pb**	**04 05 28.3**	**+0.6**
MANT	**Manisa**	**0.65**	**213**	P	**Pg**	**04 05 28.8**	**-0.3**
MANT				S	**Sb**	**04 05 38.7**	**+0.1**
MANT	**Manisa**	**0.65**	**213**	*i* P	**Pg**	**04 05 28.8**	**-0.3**
MANT				*i* S	**Sb**	**04 05 38.7**	**+0.1**
KHAL	**Karahalli**	**0.77**	**150**	P	**Pb**	**04 05 32.0**	**+0.5**
KHAL				S	**Sb**	**04 05 42.7**	**+0.8**
KHAL	**Karahalli**	**0.77**	**150**	*i* P	**Pb**	**04 05 32.0**	**+0.5**
KHAL				*i* S	**Sb**	**04 05 42.7**	**+0.8**
KHL	**Karahalli**	**0.82**	**150**	*e*PG	**Pn**	**04 05 33.8**	**+0.2**
KHL	**Karahalli**	**0.82**	**150**	*e*Pg	**Pn**	**04 05 33.8**	**+0.2**
AKS	**Akhisar**	**0.94**	**261**	*e*PG	**Pb**	**04 05 34.6**	**+0.1**
AKS				*e*SG	**Sn**	**04 05 47.9**	**-0.7**
AKS	**Akhisar**	**0.94**	**261**	*e*Pg	**Pb**	**04 05 34.6**	**+0.1**
AKS				*e*Sg	**Sn**	**04 05 47.9**	**-0.7**
ORLT	**Orhaneli**	**1.01**	**355**	*e*PG	**Pn**	**04 05 37.0**	**+0.8**
ORLT	**Orhaneli**	**1.01**	**355**	*e*Pg	**Pn**	**04 05 37.0**	**+0.8**
BALB	**Balikesir**	**1.06**	**305**	*e*PG	**Pn**	**04 05 37.0**	**+0.2**
BALB				*e*SG	**Sn**	**04 05 51.3**	**-0.2**
BALB	**Balikesir**	**1.06**	**305**	*e*Pg	**Pn**	**04 05 37.0**	**+0.2**
BALB				*e*Sg	**Sn**	**04 05 51.3**	**-0.2**
IGD	**Bursa**	**1.23**	**7**	*i* P	**Pn**	**04 05 38.1**	**-1.1**
IGD				*i* S	**Sb**	**04 05 54.4**	**-0.8**
KCTX	**Karacabey (Bur**	**1.33**	**338**	*e*PN	**Pg**	**04 05 42.0**	**+0.2**
KCTX	**Karacabey (Bur**	**1.33**	**338**	*e*Pn	**Pg**	**04 05 42.0**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.33**	**356**	*e*PN	**Pg**	**04 05 42.5**	**+0.5**
MDNY	**Mudanya-Bursa**	**1.33**	**356**	*e*Pn	**Pg**	**04 05 42.5**	**+0.5**
IZI	**Iznik**	**1.35**	**15**	*e*PN	**Pg**	**04 05 43.1**	**+0.9**
IZI	**Iznik**	**1.35**	**15**	*e*Pn	**Pg**	**04 05 43.1**	**+0.9**
GEMT	**Gemlik**	**1.40**	**6**	*e*PN	**Pg**	**04 05 43.6**	**+0.3**
GEMT	**Gemlik**	**1.40**	**6**	*e*Pn	**Pg**	**04 05 43.6**	**+0.3**
GONE	**Gonen-Balikesi**	**1.44**	**315**	*e*PN	**Pg**	**04 05 43.9**	**0.0**
GONE	**Gonen-Balikesi**	**1.44**	**315**	*e*Pn	**Pg**	**04 05 43.9**	**0.0**
ADVT	**Abdulvahap**	**1.50**	**22**	*e*PN	**Pg**	**04 05 45.2**	**0.0**
ADVT	**Abdulvahap**	**1.50**	**22**	*e*Pn	**Pg**	**04 05 45.2**	**0.0**
ARMT	**Armutlu**	**1.53**	**356**	*e*PN	**Pg**	**04 05 45.5**	**-0.3**
ARMT	**Armutlu**	**1.53**	**356**	*e*Pn	**Pg**	**04 05 45.5**	**-0.3**
EDC	**Edincik**	**1.58**	**326**	*e*PN	**Pb**	**04 05 45.7**	**+0.4**
EDC	**Edincik**	**1.58**	**326**	*e*Pn	**Pb**	**04 05 45.7**	**+0.4**
GULT	**Gulveren**	**1.81**	**39**	*e*PN	**Pb**	**04 05 50.3**	**+0.9**
GULT	**Gulveren**	**1.81**	**39**	*e*Pn	**Pb**	**04 05 50.3**	**+0.9**
SVRH	**Sivrihisar-ESK**	**2.00**	**77**	*e*PN	**Pb**	**04 05 53.4**	**+0.9**
SVRH	**Sivrihisar-ESK**	**2.00**	**77**	*e*Pn	**Pb**	**04 05 53.4**	**+0.9**
ISK	**Istanbul-Kandi**	**2.03**	**1**	*e*PN	**Pb**	**04 05 52.3**	**-0.6**
ISK	**Istanbul-Kandi**	**2.03**	**1**	*e*Pn	**Pb**	**04 05 52.3**	**-0.6**

ISK ***20*** *04:08:26.7,39.°10N×29.°03E, h5km, MD2.9*
CSEM ***20*** *04:08:26.9±0.1,39.°09N×29.°04E, h2km, MD2.7, Error ellipse: s-maj=1.8km s-min=1.7km az=110.0*
ISC 20 04:08:26.4±0.9,**39.°10N**±0.°02×**29.°05E**±0.°02,**h14**km±7km,
n41,σ0°**41**/56,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**258**	P	**Pg**	**04 08 31.9**	**-0.2**
DEMI				S	**Sg**	**04 08 36.1**	**+0.1**
DEMI	**Demirci**	**0.27**	**258**	*i* P	**Pg**	**04 08 31.9**	**-0.2**
DEMI				*i* S	**Sg**	**04 08 36.1**	**+0.1**
GDZ	**Gediz**	**0.33**	**91**	P	**Pg**	**04 08 33.5**	**+0.2**
GDZ				S	**Sg**	**04 08 38.1**	**+0.1**
GDZ	**Gediz**	**0.33**	**91**	*i* P	**Pg**	**04 08 33.5**	**+0.2**
GDZ				*i* S	**Sg**	**04 08 38.1**	**+0.1**
TVSB	**Tavsanli**	**0.47**	**42**	*e*PG	**Pg**	**04 08 36.2**	**+0.4**
TVSB	**Tavsanli**	**0.47**	**42**	*e*Pg	**Pg**	**04 08 36.2**	**+0.4**
MANT	**Manisa**	**0.72**	**213**	P	**Pg**	**04 08 40.5**	**+0.1**
MANT				S	**Sg**	**04 08 49.8**	**-0.1**
MANT	**Manisa**	**0.72**	**213**	*i* P	**Pg**	**04 08 40.5**	**+0.1**
MANT				*i* S	**Sg**	**04 08 49.8**	**-0.1**
KHAL	**Karahalli**	**0.80**	**154**	P	**Pb**	**04 08 42.5**	**+0.3**
KHAL				S	**Sb**	**04 08 52.8**	**-0.2**
KHAL	**Karahalli**	**0.80**	**154**	*i* P	**Pb**	**04 08 42.5**	**+0.3**
KHAL				*i* S	**Sb**	**04 08 52.8**	**-0.2**
KHL	**Karahalli**	**0.86**	**154**	*e*PG	**Pn**	**04 08 43.9**	**-0.3**
KHL	**Karahalli**	**0.86**	**154**	*e*Pg	**Pn**	**04 08 43.9**	**-0.3**
ORLT	**Orhaneli**	**0.96**	**353**	*e*PG	**Pg**	**04 08 45.1**	**+0.2**
ORLT				*e*SG	**Sn**	**04 08 59.0**	**+0.1**
ORLT	**Orhaneli**	**0.96**	**353**	*e*Pg	**Pg**	**04 08 45.1**	**+0.2**
ORLT				*e*Sg	**Sn**	**04 08 59.0**	**+0.1**
AKHS	**Akhisar**	**0.99**	**258**	P	**Pb**	**04 08 45.5**	**+0.2**
AKHS				S	**Sn**	**04 09 00.2**	**+0.5**
AKHS	**Akhisar**	**0.99**	**258**	*i* P	**Pb**	**04 08 45.5**	**+0.2**
AKHS				*i* S	**Sn**	**04 09 00.2**	**+0.5**
AKS	**Akhisar**	**0.99**	**258**	*e*PG	**Pn**	**04 08 45.9**	**0.0**
AKS	**Akhisar**	**0.99**	**258**	*e*Pg	**Pn**	**04 08 45.9**	**0.0**
BALB	**Balikesir**	**1.06**	**301**	*e*PG	**Pg**	**04 08 47.0**	**+0.2**
BALB				*e*SG	**Sn**	**04 09 01.8**	**+0.5**
BALB	**Balikesir**	**1.06**	**301**	*e*Pg	**Pg**	**04 08 47.0**	**+0.2**
BALB				*e*Sg	**Sn**	**04 09 01.8**	**+0.5**
IGD	**Bursa**	**1.17**	**6**	*i* P	**Pn**	**04 08 47.3**	**-1.1**
IGD				*i* S	**Sb**	**04 09 02.9**	**-0.7**
MDNY	**Mudanya-Bursa**	**1.28**	**354**	*e*PN	**Pg**	**04 08 51.5**	**+0.5**
MDNY	**Mudanya-Bursa**	**1.28**	**354**	*e*Pn	**Pg**	**04 08 51.5**	**+0.5**
IZI	**Iznik**	**1.28**	**15**	*e*PN	**Pg**	**04 08 52.0**	**+0.9**
IZI	**Iznik**	**1.28**	**15**	*e*Pn	**Pg**	**04 08 52.0**	**+0.9**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*PN	**Pg**	**04 08 51.5**	**+0.4**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*Pn	**Pg**	**04 08 51.5**	**+0.4**
GONE	**Gonen-Balikesi**	**1.42**	**312**	*e*PN	**Pg**	**04 08 53.4**	**-0.3**
GONE	**Gonen-Balikesi**	**1.42**	**312**	*e*Pn	**Pg**	**04 08 53.4**	**-0.3**
ADVT	**Abdulvahap**	**1.44**	**21**	*e*PN	**Pg**	**04 08 54.2**	**+0.2**
ADVT	**Abdulvahap**	**1.44**	**21**	*e*Pn	**Pg**	**04 08 54.2**	**+0.2**
ARMT	**Armutlu**	**1.47**	**354**	*e*PN	**Pg**	**04 08 54.4**	**-0.3**
ARMT	**Armutlu**	**1.47**	**354**	*e*Pn	**Pg**	**04 08 54.4**	**-0.3**
EDC	**Edincik**	**1.55**	**324**	*e*PN	**Pb**	**04 08 55.5**	**+0.6**
EDC	**Edincik**	**1.55**	**324**	*e*Pn	**Pb**	**04 08 55.5**	**+0.6**
GULT	**Gulveren**	**1.75**	**40**	*e*PN	**Pb**	**04 08 58.9**	**+0.6**
GULT	**Gulveren**	**1.75**	**40**	*e*Pn	**Pb**	**04 08 58.9**	**+0.6**
SVRH	**Sivrihisar-ESK**	**1.95**	**79**	*e*PN	**Pb**	**04 09 01.3**	**-0.5**
SVRH	**Sivrihisar-ESK**	**1.95**	**79**	*e*Pn	**Pb**	**04 09 01.3**	**-0.5**
ISK	**Istanbul-Kandi**	**1.97**	**0**	*e*PN	**Pb**	**04 09 01.6**	**-0.4**
ISK	**Istanbul-Kandi**	**1.97**	**0**	*e*Pn	**Pb**	**04 09 01.6**	**-0.4**

ISCJB ***20*** *04:11:59.4±0.5,39.°08N±0.°03×29.°22E±0.°05, h9km, Error ellipse: s-maj=5.6km s-min=4.2km az=6.6*
CSEM ***20*** *04:11:59.2±0.2,39.°09N×29.°25E, h5km, MD2.3, Error ellipse: s-maj=5.6km s-min=4.2km az=109.0*
ISK ***20*** *04:11:59.2,39.°12N×29.°32E, h8km, MD2.7*
DDA ***20*** *04:12:01.6,39.°07N×29.°05E, h7km, Md2.3*
ISC 20 04:11:58.4±0.9,**39.°06N**±0.°03×**29.°30E**±0.°03,**h9**km,**n29**,
σ0°**61**/36,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.15**	**80**	*i* P	Pg	04 12 08.6	+6.9
GDZ				*i* S	Sg	04 12 13.6	+10
TVSB	**Tavsanli**	**0.41**	**18**	*e*PG	**Pg**	**04 12 05.9**	**-0.6**
TVSB	**Tavsanli**	**0.41**	**18**	*e*Pg	**Pg**	**04 12 05.9**	**-0.6**
DEMI	**Demirci**	**0.45**	**268**	P	**Pg**	**04 12 07.3**	**0.0**
DEMI				S	**Sg**	**04 12 11.6**	**-1.6**
DEMI	**Demirci**	**0.45**	**268**	*i* P	**Pg**	**04 12 07.3**	**0.0**
DEMI				*i* S	**Sg**	**04 12 11.6**	**-1.6**
KHL	**Karahalli**	**0.76**	**166**	*e*PG	**Pn**	**04 12 15.8**	**+0.4**
KHL				*e*SG	**Sn**	**04 12 26.9**	**-0.1**
KHL	**Karahalli**	**0.76**	**166**	*e*Pg	**Pn**	**04 12 15.8**	**+0.4**
KHL				*e*Sg	**Sn**	**04 12 26.9**	**-0.1**
MANT	**Manisa**	**0.81**	**226**	P	**Pg**	**04 12 13.9**	**-0.2**
MANT				S	**Sg**	**04 12 24.8**	**+0.1**
MANT	**Manisa**	**0.81**	**226**	*i* P	**Pg**	**04 12 13.9**	**-0.2**
MANT				*i* S	**Sg**	**04 12 24.8**	**+0.1**
ORLT	**Orhaneli**	**1.03**	**343**	*e*PG	**Pb**	**04 12 18.6**	**+0.1**
ORLT				*e*SG	**Sn**	**04 12 33.5**	**-0.2**
ORLT	**Orhaneli**	**1.03**	**343**	*e*Pg	**Pb**	**04 12 18.6**	**+0.1**
ORLT				*e*Sg	**Sn**	**04 12 33.5**	**-0.2**
AKS	**Akhisar**	**1.17**	**261**	*e*PN	**Pn**	**04 12 21.9**	**+0.9**
AKS	**Akhisar**	**1.17**	**261**	*e*Pn	**Pn**	**04 12 21.9**	**+0.9**
BALB	**Balikesir**	**1.24**	**298**	*e*PN	**Pg**	**04 12 23.0**	**+0.8**
BALB	**Balikesir**	**1.24**	**298**	*e*Pn	**Pg**	**04 12 23.0**	**+0.8**
IZI	**Iznik**	**1.28**	**6**	*e*PN	**Pg**	**04 12 23.3**	**+0.3**
IZI	**Iznik**	**1.28**	**6**	*e*Pn	**Pg**	**04 12 23.3**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.34**	**346**	*e*PN	**Pg**	**04 12 24.3**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.34**	**346**	*e*Pn	**Pg**	**04 12 24.3**	**+0.1**
KCTX	**Karacabey (Bur**	**1.40**	**329**	*e*PN	**Pg**	**04 12 25.4**	**0.0**
KCTX	**Karacabey (Bur**	**1.40**	**329**	*e*Pn	**Pg**	**04 12 25.4**	**0.0**
ARMT	**Armutlu**	**1.54**	**348**	*e*PN	**Pb**	**04 12 26.9**	**-0.2**
ARMT	**Armutlu**	**1.54**	**348**	*e*Pn	**Pb**	**04 12 26.9**	**-0.2**
GONE	**Gonen-Balikesi**	**1.59**	**309**	*e*PN	**Pb**	**04 12 27.4**	**-0.4**
GONE	**Gonen-Balikesi**	**1.59**	**309**	*e*Pn	**Pb**	**04 12 27.5**	**-0.4**
GULT	**Gulveren**	**1.66**	**34**	*e*PN	**Pb**	**04 12 29.0**	**-0.2**
GULT	**Gulveren**	**1.66**	**34**	*e*Pn	**Pb**	**04 12 29.0**	**-0.2**
SVRH	**Sivrihisar-ESK**	**1.77**	**77**	*e*PN	**Pn**	**04 12 30.4**	**+1.0**
SVRH	**Sivrihisar-ESK**	**1.77**	**77**	*e*Pn	**Pn**	**04 12 30.4**	**+1.0**

DDA ***20*** *04:12:43.7,39.°11N×29.°08E, h7km, Md2.3*
ISK ***20*** *04:12:44.2,39.°16N×29.°10E, h6km, MD2.8*
CSEM ***20*** *04:12:44.0±0.1,39.°13N×29.°10E, h2km, MD2.3, Error ellipse: s-maj=3.0km s-min=2.6km az=93.0*
ISC 20 04:12:43.9±0.9,**39.°10N**±0.°02×**29.°10E**±0.°02,**h15**km±7km,
n38,σ0°**86**/52,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.30**	**92**	P	**Pg**	**04 12 50.1**	**-0.1**
GDZ				S	**Sg**	**04 12 54.8**	**+0.2**
GDZ	**Gediz**	**0.30**	**92**	*i* P	**Pg**	**04 12 50.1**	**-0.1**
GDZ				*i* S	**Sg**	**04 12 54.8**	**+0.2**
DEMI	**Demirci**	**0.30**	**259**	P	**Pg**	**04 12 50.3**	**+0.1**
DEMI				S	**Sg**	**04 12 54.2**	**-0.4**
DEMI	**Demirci**	**0.30**	**259**	*i* P	**Pg**	**04 12 50.3**	**+0.1**
DEMI				*i* S	**Sg**	**04 12 54.2**	**-0.4**
TVSB	**Tavsanli**	**0.45**	**39**	*e*PG	**Pg**	**04 12 52.6**	**-0.3**
TVSB				*e*SG	**Sg**	**04 12 58.3**	**-0.7**
TVSB	**Tavsanli**	**0.45**	**39**	*e*Pg	**Pg**	**04 12 52.6**	**-0.3**
TVSB				*e*Sg	**Sg**	**04 12 58.3**	**-0.7**
DURS	**Dursunbey**	**0.69**	**316**	P	**Pg**	**04 12 57.0**	**-0.4**
DURS	**Dursunbey**	**0.69**	**316**	*i* P	**Pg**	**04 12 57.0**	**-0.4**
MANT	**Manisa**	**0.74**	**215**	P	**Pg**	**04 12 58.2**	**-0.2**
MANT				S	**Sg**	**04 13 07.5**	**-0.6**
MANT	**Manisa**	**0.74**	**215**	*i* P	**Pg**	**04 12 58.2**	**-0.2**
MANT				*i* S	**Sg**	**04 13 07.5**	**-0.6**
KHAL	**Karahalli**	**0.79**	**157**	P	**Pg**	**04 12 59.4**	**+0.1**
KHAL				S	**Sg**	**04 13 10.2**	**+0.4**
KHAL	**Karahalli**	**0.79**	**157**	*i* P	**Pg**	**04 12 59.4**	**+0.1**
KHAL				*i* S	**Sg**	**04 13 10.2**	**+0.4**
KHL	**Karahalli**	**0.85**	**157**	*e*PG	**Pn**	**04 13 01.9**	**+0.6**
KHL	**Karahalli**	**0.85**	**157**	*e*Pg	**Pn**	**04 13 01.9**	**+0.6**
ORLT	**Orhaneli**	**0.96**	**351**	*e*PG	**Pg**	**04 13 01.8**	**-0.6**
ORLT	**Orhaneli**	**0.96**	**351**	*e*Pg	**Pg**	**04 13 01.8**	**-0.6**
AKS	**Akhisar**	**1.02**	**258**	*e*PG	**Pn**	**04 13 04.5**	**+0.8**
AKS	**Akhisar**	**1.02**	**258**	*e*Pg	**Pn**	**04 13 04.5**	**+0.8**
BALB	**Balikesir**	**1.08**	**300**	*e*PG	**Pb**	**04 13 04.9**	**+0.6**
BALB				*e*SG	**Sn**	**04 13 19.9**	**+0.6**
BALB	**Balikesir**	**1.08**	**300**	*e*Pg	**Pb**	**04 13 04.9**	**+0.6**
BALB				*e*Sg	**Sn**	**04 13 19.9**	**+0.6**
IGD	**Bursa**	**1.16**	**4**	*i* P	**Pg**	**04 13 05.2**	**-1.1**
IGD				*i* S	**Sn**	**04 13 22.6**	**+1.4**
IZI	**Iznik**	**1.27**	**13**	*e*PN	**Pn**	**04 13 07.6**	**+0.5**
IZI	**Iznik**	**1.27**	**13**	*e*Pn	**Pn**	**04 13 07.6**	**+0.5**
MDNY	**Mudanya-Bursa**	**1.28**	**353**	*e*PN	**Pb**	**04 13 07.9**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.28**	**353**	*e*Pn	**Pb**	**04 13 07.9**	**+0.3**
KCTX	**Karacabey (Bur**	**1.29**	**334**	*e*PN	**Pg**	**04 13 08.4**	**-0.4**
KCTX	**Karacabey (Bur**	**1.29**	**334**	*e*Pn	**Pg**	**04 13 08.4**	**-0.4**
ADVT	**Abdulvahap**	**1.42**	**20**	*e*PN	**Pb**	**04 13 10.4**	**+0.4**
ADVT	**Abdulvahap**	**1.42**	**20**	*e*Pn	**Pb**	**04 13 10.4**	**+0.4**
GONE	**Gonen-Balikesi**	**1.44**	**311**	*e*PN	**Pg**	**04 13 11.2**	**-0.4**
GONE	**Gonen-Balikesi**	**1.44**	**311**	*e*Pn	**Pg**	**04 13 11.2**	**-0.4**
ARMT	**Armutlu**	**1.47**	**353**	*e*PN	**Pn**	**04 13 10.8**	**+0.9**
ARMT	**Armutlu**	**1.47**	**353**	*e*Pn	**Pn**	**04 13 10.8**	**+0.9**
EDC	**Edincik**	**1.56**	**323**	*e*PN	**Pb**	**04 13 12.6**	**+0.1**
EDC	**Edincik**	**1.56**	**323**	*e*Pn	**Pb**	**04 13 12.6**	**+0.1**
GULT	**Gulveren**	**1.72**	**39**	*e*PN	**Pb**	**04 13 14.8**	**-0.4**
GULT	**Gulveren**	**1.72**	**39**	*e*Pn	**Pb**	**04 13 14.9**	**-0.4**
AYDN	**Tasoluk**	**1.73**	**214**	*i* P	**Sn**	**04 13 30.6**	**-4.6**
AYDN				*i* S	**Sg**	**04 13 40.1**	**+0.6**

ISK ***20*** *04:16:33.4,39.°11N×29.°16E, h4km, ML3.0*
DDA ***20*** *04:16:33.3,39.°16N×29.°11E, h2km, Ml3.5*
CSEM ***20*** *04:16:34.0±0.1,39.°13N×29.°14E, h2km, ML3.5, Error ellipse: s-maj=2.5km s-min=2.3km az=108.0*
ISC 20 04:16:33.7±0.9,**39.°14N**±0.°02×**29.°13E**±0.°02,**h14**km±7km,
n91,σ0°**63**/122,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.28**	**101**	P	**Pg**	**04 16 39.7**	**0.0**
GDZ				S	**Sg**	**04 16 43.9**	**+0.1**
GDZ	**Gediz**	**0.28**	**101**	*i* P	**Pg**	**04 16 39.7**	**0.0**
GDZ				*i* S	**Sg**	**04 16 43.9**	**+0.1**
DEMI	**Demirci**	**0.33**	**253**	P	**Pg**	**04 16 40.5**	**-0.1**
DEMI				S	**Sg**	**04 16 45.2**	**-0.1**
DEMI	**Demirci**	**0.33**	**253**	*i* P	**Pg**	**04 16 40.5**	**-0.1**
DEMI				*i* S	**Sg**	**04 16 45.2**	**-0.1**
DURS	**Dursunbey**	**0.68**	**312**	P	**Pg**	**04 16 47.1**	**0.0**
DURS				S	**Sg**	**04 16 56.5**	**+0.4**
DURS	**Dursunbey**	**0.68**	**312**	*i* P	**Pg**	**04 16 47.1**	**0.0**
DURS				*i* S	**Sg**	**04 16 56.5**	**+0.4**
KULA	**Kula-Manisa**	**0.72**	**210**	*e*PG	**Pg**	**04 16 47.6**	**-0.2**
KULA				*e*SG	**Sb**	**04 16 58.1**	**+0.1**
KULA	**Kula-Manisa**	**0.72**	**210**	*e*Pg	**Pg**	**04 16 47.6**	**-0.2**
KULA				*e*Sg	**Sb**	**04 16 58.1**	**+0.1**
MANT	**Manisa**	**0.79**	**215**	P	**Pg**	**04 16 48.7**	**-0.3**
MANT				S	**Sg**	**04 16 58.7**	**-0.7**
MANT	**Manisa**	**0.79**	**215**	*i* P	**Pg**	**04 16 48.7**	**-0.3**
MANT				*i* S	**Sg**	**04 16 58.7**	**-0.7**
KHAL	**Karahalli**	**0.82**	**160**	P	**Pb**	**04 16 49.7**	**-0.1**
KHAL				S	**Sb**	**04 17 00.5**	**-0.3**
KHAL	**Karahalli**	**0.82**	**160**	*i* P	**Pb**	**04 16 49.7**	**-0.1**
KHAL				*i* S	**Sb**	**04 17 00.5**	**-0.3**
KHL	**Karahalli**	**0.87**	**159**	*e*PG	**Pb**	**04 16 50.3**	**-0.4**
KHL				*e*SG	**Sg**	**04 17 01.9**	**-0.2**
KHL	**Karahalli**	**0.87**	**159**	*e*Pg	**Pb**	**04 16 50.3**	**-0.4**
KHL				*e*Sg	**Sg**	**04 17 01.9**	**-0.2**
ORLT	**Orhaneli**	**0.92**	**349**	*e*PG	**Pg**	**04 16 51.9**	**+0.3**
ORLT	**Orhaneli**	**0.92**	**349**	*e*Pg	**Pg**	**04 16 51.9**	**+0.3**
AKHS	**Akhisar**	**1.05**	**256**	P	**Pg**	**04 16 54.2**	**+0.1**
AKHS				S	**Sn**	**04 17 08.2**	**-0.4**
AKHS	**Akhisar**	**1.05**	**256**	*i* P	**Pg**	**04 16 54.2**	**+0.1**
AKHS				*i* S	**Sn**	**04 17 08.2**	**-0.4**
AKS	**Akhisar**	**1.06**	**256**	*e*PG	**Pg**	**04 16 54.7**	**+0.6**
AKS	**Akhisar**	**1.06**	**256**	*e*Pg	**Pg**	**04 16 54.7**	**+0.6**
BALB	**Balikesir**	**1.09**	**298**	*e*PN	**Pg**	**04 16 55.5**	**+0.9**
BALB	**Balikesir**	**1.09**	**298**	*e*Pn	**Pg**	**04 16 55.5**	**+0.9**
IGD	**Bursa**	**1.12**	**3**	*i* P	**Pn**	**04 16 53.8**	**-1.1**
IGD				*i* S	**Sg**	**04 17 10.3**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.24**	**351**	*e*PN	**Pg**	**04 16 58.1**	**+0.5**
MDNY	**Mudanya-Bursa**	**1.24**	**351**	*e*Pn	**Pg**	**04 16 58.1**	**+0.5**
KCTX	**Karacabey (Bur**	**1.27**	**332**	*e*PN	**Pg**	**04 16 58.6**	**+0.4**
KCTX	**Karacabey (Bur**	**1.27**	**332**	*e*Pn	**Pg**	**04 16 58.6**	**+0.4**
GEMT	**Gemlik**	**1.29**	**2**	*e*PN	**Pg**	**04 16 59.2**	**+0.6**
GEMT	**Gemlik**	**1.29**	**2**	*e*Pn	**Pg**	**04 16 59.2**	**+0.6**
BALY	**Balya**	**1.31**	**298**	P	**Pg**	**04 16 58.7**	**-0.2**
BALY				S	**Sb**	**04 17 14.6**	**-0.2**
BALY	**Balya**	**1.31**	**298**	*i* P	**Pg**	**04 16 58.7**	**-0.2**
BALY				*i* S	**Sb**	**04 17 14.6**	**-0.2**
ADVT	**Abdulvahap**	**1.37**	**20**	*e*PN	**Pg**	**04 17 00.3**	**+0.2**
ADVT	**Abdulvahap**	**1.37**	**20**	*e*Pn	**Pg**	**04 17 00.3**	**+0.2**
ESKT	**Eskisehir**	**1.39**	**74**	*i* P	**Pb**	**04 16 59.7**	**+0.2**
ESKT				*i* S	**Sg**	**04 17 19.6**	**+1.1**
SEYT	**Eskypehyr**	**1.39**	**74**	P	**Pb**	**04 16 59.7**	**+0.2**
SEYT				S	**Sg**	**04 17 19.6**	**+1.1**
GONE	**Gonen-Balikesi**	**1.43**	**310**	*e*PN	**Pg**	**04 17 01.4**	**+0.1**
GONE	**Gonen-Balikesi**	**1.43**	**310**	*e*Pn	**Pg**	**04 17 01.4**	**+0.1**
ARMT	**Armutlu**	**1.44**	**352**	*e*PN	**Pg**	**04 17 01.3**	**0.0**
ARMT	**Armutlu**	**1.44**	**352**	*e*Pn	**Pg**	**04 17 01.3**	**0.0**
DNZL	**Cakiroluk**	**1.45**	**182**	P	**Pg**	**04 17 01.2**	**-0.4**
DNZL	**Cakiroluk**	**1.45**	**182**	*i* P	**Pg**	**04 17 01.2**	**-0.4**
DNZL				*i* S	**Sg**	**04 17 23.2**	**+2.7**
GPA	**Golpazari**	**1.47**	**38**	*e*PN	**Pg**	**04 17 01.7**	**-0.2**
GPA	**Golpazari**	**1.47**	**38**	*e*Pn	**Pg**	**04 17 01.7**	**-0.2**
BOLV	**Bolvadin**	**1.48**	**106**	P

SEYT				S		Sn	04 28 35.5	-1.3
EDC	**Edincik**	**1.54**	**325**	*e*PN		**Pg**	**04 28 19.8**	**+0.1**
EDC	**Edincik**	**1.54**	**325**	*e*Pn		**Pg**	**04 28 19.8**	**+0.1**
BOLV	**Bolvadin**	**1.55**	**103**	P		**Pg**	**04 28 19.8**	**-0.2**
BOLV				S		**Sb**	**04 28 39.2**	**+0.2**
BOLV	**Bolvadin**	**1.55**	**103**	*i* P		**Pg**	**04 28 19.8**	**-0.2**
BOLV				*i* S		**Sb**	**04 28 39.2**	**+0.2**
GPA	**Golpazari**	**1.56**	**39**	*e*PN		**Pb**	**04 28 19.1**	**-0.1**
GPA	**Golpazari**	**1.56**	**39**	*e*Pn		**Pb**	**04 28 19.1**	**-0.1**
DKL	**Dikili**	**1.65**	**270**	*e*PN		**Pb**	**04 28 20.4**	**-0.3**
DKL	**Dikili**	**1.65**	**270**	*e*Pn		**Pb**	**04 28 20.4**	**-0.3**
ISP	**Isparta**	**1.73**	**137**	*e*PN		**Pb**	**04 28 22.1**	**-0.1**
ISP	**Isparta**	**1.73**	**137**	‖*i*P		**Pg**	**04 28 23.0**	**-0.4**
ISP	**Isparta**	**1.73**	**137**	*e*Pn		**Pb**	**04 28 22.1**	**-0.1**
ISP	**Isparta**	**1.73**	**137**	‖*i*P		**Pg**	**04 28 23.0**	**-0.4**
GULT	**Gulveren**	**1.77**	**40**	*e*PN		**Pb**	**04 28 22.4**	**-0.5**
GULT	**Gulveren**	**1.77**	**40**	*e*Pn		**Pb**	**04 28 22.4**	**-0.5**
HRT	**Hereke**	**1.80**	**16**	*e*PN		**Pn**	**04 28 22.3**	**+0.8**
HRT	**Hereke**	**1.80**	**16**	*e*Pn		**Pn**	**04 28 22.3**	**+0.8**
MRMT	**Marmara Adasi**	**1.86**	**324**	*e*PN		**Pb**	**04 28 23.9**	**-0.6**
MRMT	**Marmara Adasi**	**1.86**	**324**	*e*Pn		**Pb**	**04 28 23.9**	**-0.6**
ISK	**Istanbul-Kandi**	**1.97**	**1**	*e*PN		**Pb**	**04 28 25.1**	**-1.2**
ISK	**Istanbul-Kandi**	**1.97**	**1**	*e*Pn		**Pb**	**04 28 25.1**	**-1.2**
SVRH	**Sivrihisar-ESK**	**1.98**	**79**	*e*PN		**Pb**	**04 28 25.5**	**-0.9**
SVRH	**Sivrihisar-ESK**	**1.98**	**79**	*e*Pn		**Pb**	**04 28 25.5**	**-0.9**
RKY	**Sarkoy-Tekirda**	**2.13**	**319**	*e*PN		**Pn**	**04 28 27.4**	**+1.3**
RKY	**Sarkoy-Tekirda**	**2.13**	**319**	*e*Pn		**Pn**	**04 28 27.4**	**+1.3**
KLYT	**Kilyos**	**2.16**	**0**	*e*PN		**Pn**	**04 28 27.8**	**+1.4**
KLYT	**Kilyos**	**2.16**	**0**	*e*Pn		**Pn**	**04 28 27.8**	**+1.4**
MDUB	**Mudurnu**	**2.17**	**50**	*e*PN		**Pn**	**04 28 27.8**	**+1.1**
MDUB	**Mudurnu**	**2.17**	**50**	*e*Pn		**Pn**	**04 28 27.8**	**+1.1**
KIZT	**Kizilcal**	**2.24**	**95**	*e*PN		**Pn**	**04 28 28.6**	**+1.0**
KIZT	**Kizilcal**	**2.24**	**95**	*e*Pn		**Pn**	**04 28 28.6**	**+1.0**
CTYL	**Yalikoy Yolu**	**2.44**	**347**	*e*PN		**Pn**	**04 28 31.7**	**+1.4**
CTYL	**Yalikoy Yolu**	**2.44**	**347**	*e*Pn		**Pn**	**04 28 31.7**	**+1.4**
TIRR	**Tirgusor**	**5.38**	**355**	‖*i*P		**Pn**	**04 29 11.3**	**+0.7**
TIRR	**Tirgusor**	**5.38**	**355**	‖*i*P		**Pn**	**04 29 11.3**	**+0.7**
CFR	**Carcaliu**	**6.12**	**354**	‖*i*P		**Pn**	**04 29 21.0**	**+0.3**
CFR	**Carcaliu**	**6.12**	**354**	‖*i*P		**Pn**	**04 29 21.0**	**+0.3**
MLR	**Muntele Rosu**	**6.79**	**341**	‖*i*P		**Pn**	**04 29 32.2**	**+2.1**
MLR	**Muntele Rosu**	**6.79**	**341**	‖*i*P		**Pn**	**04 29 32.2**	**+2.1**
VRI	**Vrincioaia**	**6.98**	**347**	‖*i*P		**Pn**	**04 29 34.0**	**+1.4**
VRI	**Vrincioaia**	**6.98**	**347**	‖*i*P		**Pn**	**04 29 34.0**	**+1.4**

*ISCJB **20** 04:28:51.8±0.5, 39°.15N±0°.03×29°.01E±0°.03, h4km±6km, Error ellipse: s-maj=6.0km s-min=3.9km az=151.0*
*DDA **20** 04:28:51.8, 39°.13N×29°.02E, h7km, Md2.3*
*ISK **20** 04:28:52.2, 39°.19N×29°.03E, h8km, MD2.8*
*CSEM **20** 04:28:52.0±0.1, 39°.15N×29°.02E, h8km, MD2.3, Error ellipse: s-maj=3.4km s-min=2.8km az=140.0*
ISC 20 04:28:51.4±1.1, **39°.14N**±0°.02×**29°.06E**±0°.02, **h5**km±10km, **n34**, σ0^{s}**48**/47, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**251**	P	**Pg**	**04 28 56.9**	**0.0**
DEMI				S	**Sg**	**04 29 00.6**	**0.0**
DEMI	**Demirci**	**0.28**	**251**	*i* P	**Pg**	**04 28 56.9**	**0.0**
DEMI				*i* S	**Sg**	**04 29 00.6**	**0.0**
GDZ	**Gediz**	**0.33**	**98**	P	**Pb**	**04 28 59.3**	**-0.6**
GDZ				S	**Sb**	**04 29 05.0**	**-0.7**
GDZ	**Gediz**	**0.33**	**98**	*i* P	**Pb**	**04 28 59.3**	**-0.6**
GDZ				*i* S	**Sb**	**04 29 05.0**	**-0.7**
TVSB	**Tavsanli**	**0.44**	**45**	*e*PG	**Pb**	**04 29 01.3**	**-0.5**
TVSB				*e*SG	**Sg**	**04 29 07.0**	**+1.2**
TVSB	**Tavsanli**	**0.44**	**45**	*e*Pg	**Pb**	**04 29 01.3**	**-0.5**
TVSB				*e*Sg	**Sg**	**04 29 07.0**	**+1.2**
MANT	**Manisa**	**0.75**	**211**	P	**Pg**	**04 29 06.1**	**+0.2**
MANT				S	**Sg**	**04 29 15.2**	**-0.5**
MANT	**Manisa**	**0.75**	**211**	*i* P	**Pg**	**04 29 06.0**	**+0.2**
MANT				*i* S	**Sg**	**04 29 15.2**	**-0.5**
KHAL	**Karahalli**	**0.84**	**156**	*i* P	Pn	04 29 19.4	+9.4
KHAL				*i* S	**Sn**	**04 29 24.5**	**+1.7**
KHL	**Karahalli**	**0.89**	**156**	*e*PG	**Pn**	**04 29 10.8**	**+0.1**
KHL	**Karahalli**	**0.89**	**156**	*e*Pg	**Pn**	**04 29 10.8**	**+0.1**
ORLT	**Orhaneli**	**0.92**	**352**	*e*PG	**Pg**	**04 29 09.2**	**+0.2**
ORLT	**Orhaneli**	**0.92**	**352**	*e*Pg	**Pg**	**04 29 09.2**	**+0.2**
AKHS	**Akhisar**	**1.00**	**256**	P	**Pb**	**04 29 10.9**	**-0.4**
AKHS				S	**Sb**	**04 29 24.5**	**-0.3**
AKHS	**Akhisar**	**1.00**	**256**	*i* P	**Pb**	**04 29 10.8**	**-0.4**
AKHS				*i* S	**Sb**	**04 29 24.4**	**-0.3**
AKS	**Akhisar**	**1.00**	**256**	*e*PG	**Pb**	**04 29 11.4**	**+0.1**
AKS	**Akhisar**	**1.00**	**256**	*e*Pg	**Pb**	**04 29 11.4**	**+0.1**
BALB	**Balikesir**	**1.04**	**299**	*e*PG	**Pb**	**04 29 11.9**	**0.0**
BALB				*e*SG	**Sb**	**04 29 25.9**	**0.0**
BALB	**Balikesir**	**1.04**	**299**	*e*Pg	**Pb**	**04 29 11.9**	**0.0**
BALB				*e*Sg	**Sb**	**04 29 25.9**	**0.0**
IGD	**Bursa**	**1.13**	**6**	*i* P	**Pg**	**04 29 12.8**	**-0.4**
IGD				*i* S	**Sn**	**04 29 29.5**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.24**	**354**	*e*PN	**Pg**	**04 29 14.9**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.24**	**354**	*e*Pn	**Pg**	**04 29 14.9**	**-0.3**
IZI	**Iznik**	**1.24**	**15**	*e*PN	**Pg**	**04 29 15.2**	**0.0**
IZI	**Iznik**	**1.24**	**15**	*e*Pn	**Pg**	**04 29 15.2**	**0.0**
KCTX	**Karacabey (Bur**	**1.25**	**335**	*e*PN	**Pn**	**04 29 15.4**	**-0.2**
KCTX	**Karacabey (Bur**	**1.25**	**335**	*e*Pn	**Pn**	**04 29 15.4**	**-0.2**
GONE	**Gonen-Balikesi**	**1.40**	**311**	*e*PN	**Pb**	**04 29 17.6**	**-0.4**
GONE	**Gonen-Balikesi**	**1.40**	**311**	*e*Pn	**Pb**	**04 29 17.6**	**-0.4**
ADVT	**Abdulvahap**	**1.40**	**22**	*e*PN	**Pb**	**04 29 17.9**	**-0.1**
ADVT	**Abdulvahap**	**1.40**	**22**	*e*Pn	**Pb**	**04 29 17.9**	**-0.1**
ARMT	**Armutlu**	**1.44**	**354**	*e*PN	**Pn**	**04 29 18.2**	**+0.1**
ARMT	**Armutlu**	**1.44**	**354**	*e*Pn	**Pn**	**04 29 18.2**	**+0.1**
EDC	**Edincik**	**1.52**	**323**	*e*PN	**Pb**	**04 29 19.8**	**-0.3**
EDC	**Edincik**	**1.52**	**323**	*e*Pn	**Pb**	**04 29 19.8**	**-0.3**

*IDC **20** 04:38:56.9±0.7, 41°.62S×89°.21W, h0km, mb4.4/13, mb1 4.6/13, mb1mx4.4/28, mbtmp4.4/13, MS4.3/12, Ms1 4.2/12, ms1mx4.1/21, Error ellipse: s-maj=25.3km s-min=20.3km az=91.0*
*ISCJB **20** 04:38:58.2±0.3, 41°.36S±0°.06×89°.13W±0°.08, h10km, mb4.8/83, MS4.2/11, Error ellipse: s-maj=10.4km s-min=6.5km az=44.5*
*GCMT **20** 04:38:59.0±0.2, 41°.25S×89°.14W, h14km, MW5.0/85, Moment Tensor Solution. s41,c50; s85,c132; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-4.17±.21; $M_{\theta\theta}$-0.03±.12; $M_{\phi\phi}$4.20±.14; $M_{r\theta}$0.23±.33; $M_{\theta\phi}$-1.14±.09; $M_{r\phi}$0.12±.25; Best double couple: $M_0$4.33700×10^{16} NP1:ϕ_s169.00000°, δ45.00000°, λ-85.00000°. NP2: ϕ_s342.00000°, δ45.00000°, λ-95.00000°. Principal axes: T 4.4880, Plg0.0000°, Azm256.0000°; N -0.2980, Plg4.0000°, Azm346.0000°; P -4.1860, Plg86.0000°, Azm160.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **20** 04:38:59.0±0.3, 41°.46S×89°.01W, h10km, mb4.9/72 Error ellipse: s-maj=8.8km s-min=6.9km az=63.0*
ISC 20 04:38:59.7±0.4, **41°.30S**±0°.07×**89°.10W**±0°.08, **h10**km, **n142**, σ1^{s}**49**/139, **mb4.9**/82, **MS4.2**/11, **2C-1D, Southeast of Easter Island**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
COYC	**Coyhaique**	**13.08**	**115**	*e*P	**Pn**	**04 42 08.3**	**+2.8**
CHRN	**Cochrane**	**13.23**	**122**	*e*P	**Pn**	**04 42 09.7**	**+2.1**
CHRN	**Cochrane**	**13.23**	**122**	*e*Pn	**Pn**	**04 42 09.3**	**+1.8**
GO08	**Villa O'Higgin**	**13.73**	**127**	*e*P	**Pn**	**04 42 16.5**	**+2.2**
PLCA	**Paso Flores**	**14.02**	**94**	Pn	**Pn**	**04 42 21.1**	**+2.7**
PLCA	0.1nm,0.3s,baz=285,slow=14,SNR=9.8			LR	LR	04 46 29.9	
	comp=Z,3μm,19.2s,baz=303,slow=32						
PLCA	**Paso Flores**	**14.02**	**94**	*e*P	**Pn**	**04 42 22.4**	**+4.0**
PLCA	**Paso Flores**	**14.02**	**94**	*e*Pn	**Pn**	**04 42 22.4**	**+4.0**
LCO	**Las Campanas**	**19.36**	**57**	*e*P	**Pn**	**04 43 26.9**	**+0.1**
TRQA	**Tornquist**	**21.09**	**90**	*e*P	**P**	**04 43 45.1**	**+0.8**
PB04	**IPOC Station P**	**24.74**	**46**	*e*P	**P**	**04 44 23.8**	**+2.2**
LVC	**Limon Verde**	**25.20**	**48**	P	**P**	**04 44 26.9**	**+1.0**
LVC	**Limon Verde**	**25.20**	**48**	*e*P	**P**	**04 44 26.8**	**+0.8**
LPA	**La Plata**	**25.25**	**86**	*e*P	**P**	**04 44 28.0**	**+2.1**
LPA				sS	sS	04 49 06.0	+10
LPA				SSS	SSS	04 50 01.0	
PMSA	**Palmer Station**	**27.56**	**157**	P	**P**	**04 44 50.7**	**+4.4**
CPUP	**Villa Florida**	**30.12**	**70**	P	**P**	**04 45 09.2**	**-0.4**

CPUP				LR		LR	04 56 10.8	
	comp=Z,1μm,19.7s,baz=257,slow=34							
LPAZ	**La Paz**	**30.80**	**42**	*e*P		**P**	**04 45 17.7**	**+1.4**
	2.1nm,0.7s,baz=201,slow=4.9,SNR=13							
LPAZ				LR		LR	04 54 48.9	
	comp=Z,957nm,21.9s,baz=202,slow=31							
LPAZ	**La Paz**	**30.80**	**42**	*e*P		**P**	**04 45 17.2**	**+0.9**
	9.9nm,1.3s							
ATAH	**Atahualpa**	**35.33**	**19**	P		**P**	**04 45 57.8**	**+2.2**
	16nm,0.8s,baz=238,slow=6.0,SNR=12							
SAML	**Samuel**	**39.54**	**43**	*e*P		**P**	**04 46 30.2**	**-0.6**
	18nm,0.8s							
RKT	**Rikitea**	**42.30**	**281**	*e*LR		LR	04 58 44.5	
	1μm,27.2s,baz=127							
OTAV	**Otavalo**	**42.45**	**16**	*e*P		**P**	**04 46 56.2**	**+0.8**
	16nm,1.3s							
OTAV	**Otavalo**	**42.45**	**16**	*e*P		**P**	**04 46 55.0**	**-0.4**
POPC	**Popayan, Colom**	**45.07**	**18**	*e*P		**P**	**04 47 15.2**	**-0.9**
ROSC	**El Rosal**	**47.86**	**20**	P		**P**	**04 47 41.0**	**+2.7**
	3.9nm,0.4s,baz=144,slow=6.0,SNR=14							
ROSC				LR		LR	05 04 51.8	
	comp=Z,308nm,21.6s,baz=182,slow=32							
ROSC	**El Rosal**	**47.86**	**20**	*e*P		**P**	**04 47 40.4**	**+2.1**
	21nm,1.1s							
QSPA	**South Pole Qui**	**48.94**	**180**	*e*P		**P**	**04 47 45.0**	**-0.8**
	60nm,1.3s							
RUSC	**La Rusia**	**49.20**	**21**	*e*P		**P**	**04 47 48.1**	**-0.6**
SNAA	**Sanae**	**50.27**	**156**	*e*P		**P**	**04 47 54.0**	**-1.7**
	1μm,1.4s							
BCIP	**Isla Barro Col**	**50.93**	**12**	*e*P		**P**	**04 48 00.8**	**-0.4**
	7.8nm,0.7s							
SJCC	**San Jacinto, C**	**52.53**	**17**	*e*P		**P**	**04 48 12.1**	**-1.1**
TBI	**Tubuai**	**53.02**	**270**	*e*S		**S**	**04 55 52.5**	**+5.8**
	301nm,25.8s							
TBI				*e*LR		LR	05 03 35.0	
	1μm,29.8s,baz=128							
VNDA	**Vanda**	**53.97**	**195**	P		**P**	**04 48 23.7**	**+0.6**
	8.3nm,1.0s,baz=122,slow=8.1,SNR=15							
VNDA				LR		LR	05 06 15.5	
	comp=Z,114nm,21.4s,baz=112,slow=30							
VNDA	**Vanda**	**53.97**	**195**	*e*P		**P**	**04 48 23.7**	**+0.6**
	8.5nm,1.0s							
TAOE	**Nuku Hiva Isla**	**55.34**	**291**	*e*LR		LR	05 05 10.8	
	564nm,24.6s							
PPT2	**Papeete2**	**56.52**	**276**	*e*S		**S**	**04 56 37.8**	**+3.8**
	410nm,26.5s							
PPT2				*e*LR		LR	05 05 07.8	
	1μm,28.0s,baz=131							
PPT	**Papeete**	**56.53**	**276**	LR		LR	05 06 31.8	
	comp=Z,139nm,21.2s,baz=139,slow=29							
SYO	**Syowa Base**	**63.67**	**162**	‖*e*P		**P**	**04 49 27.8**	**-2.8**
SYO	**Syowa Base**	**63.67**	**162**	‖*e*sP		**P**	**04 49 31.0**	**+0.4**
MAW	**Mawson**	**69.37**	**169**	P		**P**	**04 50 05.7**	**-1.4**
	5.2nm,1.0s,baz=191,slow=7.4,SNR=4.7							
MAW				LR		LR	05 19 33.2	
	comp=Z,114nm,18.1s,baz=242,slow=35							
MAW	**Mawson**	**69.37**	**169**	*e*P		**P**	**04 50 05.6**	**-1.4**
	3.1nm,1.3s							
HPIG		**69.60**	**344**	*e*P		**P**	**04 50 08.7**	**-0.5**
	10.0nm,0.9s							
TXAR	**Lajitas Array**	**71.56**	**347**	P		**P**	**04 50 20.9**	**0.0**
	1.9nm,0.6s,baz=172,slow=8.2,SNR=25							
TX31	**Lajitas Ar. Si**	**71.56**	**347**	*e*P		**P**	**04 50 21.1**	**+0.2**
JCT	**Junction City**	**72.10**	**350**	*e*P		**P**	**04 50 24.1**	**+0.1**
	43nm,1.8s							
LRAL	**Lakeview Retre**	**73.99**	**2**	*e*P		**P**	**04 50 35.0**	**-0.2**
	16nm,1.4s							
GOGA	**Godfrey**	**74.52**	**5**	*e*P		**P**	**04 50 37.0**	**-1.2**
	11nm,1.1s							
319A	**Douglas**	**74.67**	**342**	*e*P		**P**	**04 50 41.3**	**+2.0**
AFI	**Afiamalu**	**75.50**	**264**	LR		LR	05 17 48.9	
	comp=Z,208nm,18.7s,baz=223,slow=31							
JSC	**Jenkinsville**	**75.55**	**7**	*e*P		**P**	**04 50 44.0**	**-0.2**
	40nm,1.8s							
TUC	**Tucson**	**75.92**	**341**	*e*P		**P**	**04 50 47.4**	**+0.9**
	9.0nm,1.1s							
MSTX	**Muleshoe**	**75.95**	**348**	*e*P		**P**	**04 50 46.4**	**-0.2**
	63nm,2.0s							
214A	**Organ Pipe Nat**	**76.10**	**339**	*e*P		**P**	**04 50 47.9**	**+0.4**
	59nm,1.2s							
X301	**Greenbrier Sit**	**76.22**	**357**	*e*P		**P**	**04 50 47.6**	**-0.3**
	20nm,1.6s							
WHAR	**Wooly Hollow**	**76.27**	**357**	*e*P		**P**	**04 50 47.8**	**-0.4**
	8.8nm,1.0s							
X201	**Greenbrier Sit**	**76.28**	**357**	*e*P		**P**	**04 50 48.0**	**-0.3**
	8.9nm,1.0s							
CPCT	**Cooper Cave**	**76.49**	**4**	*e*P		**P**	**04 50 49.2**	**-0.3**
	4.8nm,0.8s							
AMTX	**Amarillo**	**76.69**	**349**	*e*P		**P**	**04 50 50.5**	**-0.3**
	11nm,0.9s							
TKL	**Tuckaleechee C**	**76.74**	**4**	P		**P**	**04 50 51.3**	**+0.4**
	3.4nm,0.9s,baz=156,slow=11,SNR=4.4							
WVT	**Waverly**	**77.06**	**1**	*e*P		**P**	**04 50 51.6**	**-1.1**
	17nm,1.6s							
TUL1	**Leonard**	**77.08**	**354**	*e*P		**P**	**04 50 51.1**	**-1.7**
	19nm,1.1s							
LAZ	**Ladron**	**77.14**	**345**	*e*P		**P**	**04 50 54.4**	**+0.9**
V34A	**Guthrie**	**77.14**	**353**	*e*P		**P**	**04 50 51.2**	**-2.0**
	29nm,0.8s							
HHAR	**Hobbs**	**77.33**	**356**	*e*P		**P**	**04 50 53.6**	**-0.6**
	4.4nm,1.0s							
ANMO	**Albuquerque**	**77.53**	**345**	P		**P**	**04 50 55.8**	**+0.2**
	2.6nm,0.9s,baz=156,slow=7.1,SNR=8.8							
ANMO	**Albuquerque**	**77.53**	**345**	*e*P		**P**	**04 50 55.8**	**+0.2**
	7.7nm,1.0s							
X18A	**Snowflake**	**77.85**	**343**	*e*P		**P**	**04 50 59.4**	**+1.9**
Y14A	**Wickenburg**	**78.03**	**340**	*e*P		**P**	**04 50 59.4**	**+1.1**
	28nm,0.9s							
X16A	**Lo Mia Camp, P**	**78.10**	**341**	*e*P		**P**	**04 50 59.8**	**+1.0**
	7.6nm,1.0s							
WUAZ	**Wupatki**	**79.13**	**342**	*e*P		**P**	**04 51 05.5**	**+1.1**
	18nm,1.4s							
WCI	**Wyandotte Cave**	**79.19**	**2**	*e*P		**P**	**04 51 03.2**	**-1.3**
	8.9nm,1.0s							
T25A	**Trinidad**	**79.31**	**348**	*e*P		**P**	**04 51 06.3**	**+0.9**
	11nm,1.3s							
W13A	**Hualapai Mount**	**79.36**	**340**	*e*P		**P**	**04 51 06.8**	**+1.0**
	4.4nm,1.0s							
SDCO	**Great Sand Dun**	**80.08**	**347**	*e*P		**P**	**04 51 09.9**	**+0.2**
	5.0nm,1.3s							
MVCO	**Mesa Verde**	**80.12**	**344**	*e*P		**P**	**04 51 10.5**	**+0.6**
	32nm,1.8s							
U15A	**North Rim**	**80.22**	**341**	*e*P		**P**	**04 51 10.9**	**+0.5**
U15A				*e*PcP		**PcP**	**04 51 20.5**	**+2.8**
S22A	**4UR Ranch, Cre**	**80.32**	**346**	*e*P		**P**	**04 51 11.6**	**+0.6**
	11nm,1.1s							
KNB	**Kanab**	**80.91**	**341**	*e*P		**P**	**04 51 15.1**	**+1.1**
	16nm,1.2s							
SHPR	**Sheep Range**	**81.03**	**339**	*e*P		**P**	**04 51 15.8**	**+1.1**
	7.7nm,1.3s							
PV01	**Paradox Valley**	**81.03**	**345**	*e*P		**P**	**04 51 14.9**	**+0.2**
PV05	**Paradox Valley**	**81.08**	**344**	*e*P		**P**	**04 51 15.8**	**+0.8**
Q24A	**Divide**	**81.21**	**347**	*e*P		**P**	**04 51 17.3**	**+1.6**
	11nm,0.9s							
PV10	**Paradox Valley**	**81.36**	**344**	*e*P		**P**	**04 51 16.5**	**0.0**
BTU	**Barney Top**	**81.38**	**342**	*e*P		**P**	**04 51 18.0**	**+1.3**
BHU	**Blowhard Mount**	**81.46**	**341**	*e*P		**P**	**04 51 18.1**	**+0.9**
PV09	**Paradox Valley**	**81.50**	**344**	*e*P		**P**	**04 51 16.0**	**-1.3**
MTPU	**Mount Pierson**	**81.73**	**342**	*e*P		**P**	**04 51 19.4**	**+0.8**
	6.1nm,1.2s							
SMCO	**Snowmass**	**81.73**	**346**	*e*P		**P**	**04 51 19.2**	**+0.6**
	8.8nm,1.3s							
MSU	**Marysvale**	**82.18**	**342**	*e*P		**P**	**04 51 21.8**	**+1.0**
Q16A	**Castle Valley**	**82.33**	**343**	*e*P		**P**	**04 51 22.5**	**+1.0**
	32nm,1.4s							
SRU	**San Rafael Swe**	**82.38**	**343**	*e*P		**P**	**04 51 22.2**	**+0.5**
	8.4nm,1.2s							
PSUT	**Pine Spring**	**82.60**	**341**	*e*P		**P**	**04 51 23.8**	**+0.9**
	5.9nm,1.1s							
TMUT	**Trail Mountain**	**82.70**	**343**	*e*P		**P**	**04 51 24.6**	**+1.0**
	15nm,1.2s							
P17A	**Butcher Ranch,**	**82.77**	**343**	*e*P		**P**	**04 51 24.2**	**+0.5**
	10nm,1.1s							
P18A	**Preston Nutter**	**82.81**	**344**	*e*P		**P**	**04 51 24.7**	**+0.6**
	10nm,1.3s							
R11A	**Troy Canyon, C**	**82.87**	**339**	*e*P		**P**	**04 51 24.9**	**+0.6**
	8.3nm,1.4s							
N23A	**Red Feather La**	**83.23**	**347**	*e*P		**P**	**04 51 27.1**	**+0.9**
	21nm,1.5s							
NLU	**North Lily Min**	**83.53**	**342**	*e*P		**P**	**04 51 28.9**	**+1.2**
	20nm,1.2s							
PHWY	**Pilot Hill**	**83.54**	**348**	*e*P		**P**	**04 51 28.1**	**+0.3**
	33nm,2.0s							
NV11	**Mina Array Sit**	**83.67**	**337**	*e*P		**P**	**04 51 29.1**	**+0.7**
	9.7nm,1.4s							
NV01	**Mina Array Sit**	**83.71**	**337**	*e*P		**P**	**04 51 28.9**	**+0.2**
NVAR	**Mina Array Bea**	**83.71**	**337**	P		**P**	**04 51 29.3**	**+0.6**

	1.5nm,0.7s,baz=170,slow=5.5,SNR=11							
DUG	**Dugway, Tooele**	**83.93**	**342**	*e*P		**P**	**04 51 30.1**	**+0.4**
	18nm,1.2s							
CMB	**Columbia Colle**	**83.97**	**336**	*e*P		**P**	**04 51 29.8**	**0.0**
	44nm,1.3s							
JLU	**Jordanelle**	**84.01**	**343**	*e*P		**P**	**04 51 30.5**	**+0.3**
	20nm,1.9s							
ECSD	**EROS Data Cent**	**84.92**	**355**	*e*P		**P**	**04 51 33.7**	**-0.7**
	47nm,1.8s							
HWUT	**Hardware Ranch**	**84.99**	**343**	*e*P		**P**	**04 51 35.2**	**+0.1**
	7.1nm,1.1s							
K22A	**Casper**	**85.03**	**347**	*e*P		**P**	**04 51 35.6**	**+0.3**
	28nm,1.4s							
HVU	**Hansel Valley**	**85.43**	**342**	*e*P		**P**	**04 51 37.3**	**+0.1**
	9.3nm,1.2s							
BW06	**Boulder Array**	**85.69**	**345**	*e*P		**P**	**04 51 37.8**	**-0.9**
	10nm,1.3s							
PD31	**Pinedale Array**	**85.69**	**345**	*e*P		**P**	**04 51 38.5**	**-0.1**
PDAR	**Pinedale Array**	**85.69**	**345**	P		**P**	**04 51 38.8**	**+0.1**
	1.2nm,0.7s,baz=151,slow=3.4,SNR=7.7							
DZM	**Mont Dzumac**	**85.92**	**244**	*e*LR		LR	05 18 58.0	
	543nm,25.6s							
RSSD	**Black Hills**	**86.09**	**349**	*e*P		**P**	**04 51 39.9**	**-0.7**
	7.7nm,1.1s							
SADO	**Sadowa**	**86.15**	**7**	P		**P**	**04 51 37.2**	**-3.3**
	3.7nm,0.7s,baz=242,slow=7.6,SNR=6.8							
REDW	**Red Top Meadow**	**86.53**	**344**	*e*P		**P**	**04 51 43.0**	**+0.3**
	15nm,1.4s							
LOHW	**Long Hollow**	**86.72**	**345**	*e*P		**P**	**04 51 43.8**	**+0.1**
	6.8nm,1.3s							
FXWY	**Fox Creek**	**86.83**	**344**	*e*P		**P**	**04 51 44.6**	**+0.4**
	7.4nm,1.3s							
IMW	**Indian Meadow**	**87.06**	**344**	*e*P		**P**	**04 51 45.8**	**+0.4**
	15nm,1.6s							
FLWY	**Flagg Ranch**	**87.19**	**345**	*e*P		**P**	**04 51 46.7**	**+0.8**
	7.7nm,0.9s							
HLID	**Hailey**	**87.50**	**342**	*e*P		**P**	**04 51 48.0**	**+0.7**
	6.0nm,1.2s							
BOSA	**Boshof**	**87.71**	**127**	P		**P**	**04 51 46.2**	**-2.7**
	4.0nm,0.9s,baz=205,slow=6.6,SNR=5.5							
BOSA				LR		LR	05 26 53.1	
	comp=Z,50nm,18.1s,baz=206,slow=33							
RLMT	**Red Lodge**	**87.91**	**346**	*e*P		**P**	**04 51 49.8**	**+0.4**
	11nm,1.4s							
LMQ	**La Malbaie**	**90.02**	**13**	*e*P		**P**	**04 51 58.1**	**-0.8**
	41nm,1.7s							
DBIC	**Dimbokro**	**90.05**	**81**	LR		LR	05 28 13.8	
	comp=Z,152nm,19.9s,baz=206,slow=33							
LBTB	**Lobatse**	**90.53**	**124**	*e*P		**P**	**04 52 00.2**	**-2.0**
	12nm,1.1s							
SCHQ	**Schefferville**	**97.63**	**13**	LR		LR	05 34 00.6	
	comp=Z,72nm,20.8s,baz=31,slow=34							
**TOR

GPA	**Golpazari**	**1.52**	**39**	*e*Pn	**Pg**	**04 39 32.2**	**+0.1**
EDC	**Edincik**	**1.54**	**324**	*e*PN	**Pg**	**04 39 33.0**	**+0.5**
EDC	**Edincik**	**1.54**	**324**	*e*Pn	**Pg**	**04 39 33.0**	**+0.5**
DKL	**Dikili**	**1.68**	**269**	*e*PN	**Pg**	**04 39 34.9**	**-0.1**
DKL	**Dikili**	**1.68**	**269**	*e*Pn	**Pg**	**04 39 34.9**	**-0.1**
ISP	**Isparta**	**1.72**	**138**	*e*PN	**Pb**	**04 39 34.5**	**-0.6**
ISP	**Isparta**	**1.72**	**138**	⇑*i*P	**Pg**	**04 39 35.8**	**-0.1**
ISP	**Isparta**	**1.72**	**138**	*e*Pn	**Pb**	**04 39 34.5**	**-0.6**
ISP	**Isparta**	**1.72**	**138**	⇑*i*P	**Pg**	**04 39 35.8**	**-0.1**
GULT	**Gulveren**	**1.73**	**40**	*e*PN	**Pb**	**04 39 34.6**	**-0.8**
GULT	**Gulveren**	**1.73**	**40**	*e*Pn	**Pb**	**04 39 34.6**	**-0.8**
HRT	**Hereke**	**1.77**	**15**	*e*PN	**Pb**	**04 39 35.3**	**-0.7**
HRT	**Hereke**	**1.77**	**15**	*e*Pn	**Pb**	**04 39 35.3**	**-0.7**
SPNC	**Sapanca-Adapaz**	**1.85**	**31**	*e*PN	**Pb**	**04 39 36.5**	**-0.7**
SPNC	**Sapanca-Adapaz**	**1.85**	**31**	*e*Pn	**Pb**	**04 39 36.5**	**-0.7**
KRBG	**Karabiga-Canak**	**1.87**	**314**	*e*PN	**Pb**	**04 39 37.0**	**-0.6**
KRBG	**Karabiga-Canak**	**1.87**	**314**	*e*Pn	**Pb**	**04 39 37.0**	**-0.6**
MRMT	**Marmara Adasi**	**1.87**	**323**	*e*PN	**Pb**	**04 39 37.5**	**-0.2**
MRMT	**Marmara Adasi**	**1.87**	**323**	*e*Pn	**Pb**	**04 39 37.5**	**-0.2**
SVRH	**Sivrihisar-ESK**	**1.94**	**79**	*e*PN	**Pb**	**04 39 37.5**	**-1.4**
SVRH	**Sivrihisar-ESK**	**1.94**	**79**	*e*Pn	**Pb**	**04 39 37.5**	**-1.4**
ISK	**Istanbul-Kandi**	**1.96**	**360**	*e*PN	**Pb**	**04 39 38.0**	**-1.0**
ISK	**Istanbul-Kandi**	**1.96**	**360**	*e*Pn	**Pb**	**04 39 38.1**	**-1.0**
BGKT	**Bogazkoy**	**2.08**	**354**	*e*PN	**Pb**	**04 39 40.7**	**-0.5**
BGKT	**Bogazkoy**	**2.08**	**354**	*e*Pn	**Pb**	**04 39 40.7**	**-0.5**
SILT	**Sile**	**2.09**	**12**	*e*PN	**Pb**	**04 39 40.2**	**-1.2**
SILT	**Sile**	**2.09**	**12**	*e*Pn	**Pb**	**04 39 40.2**	**-1.2**
MDUB	**Mudurnu**	**2.14**	**50**	*e*PN	**Pb**	**04 39 40.7**	**-1.5**
MDUB	**Mudurnu**	**2.14**	**50**	*e*Pn	**Pb**	**04 39 40.7**	**-1.5**
RKY	**Sarkoy-Tekirda**	**2.14**	**318**	*e*PN	**Pb**	**04 39 41.5**	**-0.8**
RKY	**Sarkoy-Tekirda**	**2.14**	**318**	*e*Pn	**Pb**	**04 39 41.5**	**-0.8**
KLYT	**Kilyos**	**2.14**	**360**	*e*PN	**Pb**	**04 39 41.0**	**-1.3**
KLYT	**Kilyos**	**2.14**	**360**	*e*Pn	**Pb**	**04 39 41.0**	**-1.3**
CTKS	**Kestanelik-??a**	**2.17**	**349**	*e*PN	**Pb**	**04 39 41.0**	**-1.7**
CTKS	**Kestanelik-??a**	**2.17**	**349**	*e*Pn	**Pb**	**04 39 41.0**	**-1.7**
KIZT	**Kizilcal**	**2.21**	**95**	*e*PN	**Pb**	**04 39 41.5**	**-2.0**
KIZT	**Kizilcal**	**2.21**	**95**	*e*Pn	**Pb**	**04 39 41.5**	**-2.0**
TKR	**Tekirdag**	**2.21**	**329**	*e*PN	**Pb**	**04 39 42.3**	**-1.2**
TKR	**Tekirdag**	**2.21**	**329**	*e*Pn	**Pb**	**04 39 42.3**	**-1.2**
CRLT	**Corlu**	**2.26**	**334**	*e*PN	**Pb**	**04 39 43.1**	**-1.1**
CRLT	**Corlu**	**2.26**	**334**	*e*Pn	**Pb**	**04 39 43.1**	**-1.1**
CTYL	**Yalikoy Yolu**	**2.44**	**346**	*e*PN	**Pb**	**04 39 45.8**	**-1.5**
CTYL	**Yalikoy Yolu**	**2.44**	**346**	*e*Pn	**Pb**	**04 39 45.8**	**-1.5**
TIRR	**Tirgusor**	**5.37**	**355**	⇓*i*P	**Pn**	**04 40 24.2**	**+0.5**
TIRR	**Tirgusor**	**5.37**	**355**	⇓*i*P	**Pn**	**04 40 24.2**	**+0.5**
CFR	**Carcaliu**	**6.10**	**354**	⇓*i*P	**Pn**	**04 40 34.8**	**+1.0**
CFR	**Carcaliu**	**6.10**	**354**	⇓*i*P	**Pn**	**04 40 34.8**	**+1.0**
MLR	**Muntele Rosu**	**6.78**	**341**	⇑*i*P	**Pn**	**04 40 46.8**	**+3.5**
MLR	**Muntele Rosu**	**6.78**	**341**	⇑*i*P	**Pn**	**04 40 46.8**	**+3.5**

SKO ***20*** *04:40:36.7, 40°.73N×22°.93E, h15km, M1.8, ML2.3*
ATH ***20*** *04:40:38.2, 40°.85N×22°.91E, h13km±4km, ML1.9/5, Error ellipse: s-maj=4.1km s-min=0.9km az=224.0*
CSEM ***20*** *04:40:38.2±0.1, 40°.84N×22°.91E, h10km, ML1.9, Error ellipse: s-maj=2.7km s-min=2.1km az=49.0*
THE 20 04:40:38.7, 40°.87N×22°.94E, h2km±24km, ML1.9/8, 2D, Error ellipse: s-maj=24.3km s-min=0.4km az=0.0, Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THE	**Thessaloniki**	**0.23**	**176**	P	Pg	04 40 43.0	-0.2
THE				S	Sg	04 40 46.7	+0.5
THE	**Thessaloniki**	**0.23**	**176**	P	Pg	04 40 43.2	0.0
THE				S	Sg	04 40 46.7	+0.5
THE	**Thessaloniki**	**0.23**	**176**	P	Pg	04 40 43.2	+0.1
THE				S	Sg	04 40 45.9	-0.3
THE				AML	AML	04 40 47.4	
	comp=E,699μm,0.1s						
THE				AML	AML	04 40 47.7	
	comp=N,775μm,0.1s						
HORT	**Hortiatis**	**0.29**	**156**	P	Pg	04 40 44.4	+0.1
HORT				S	Sg	04 40 48.6	+0.5
HORT	**Hortiatis**	**0.29**	**156**	P	Pg	04 40 44.6	+0.3
HORT				S	Sg	04 40 48.6	+0.5
HORT	**Hortiatis**	**0.29**	**156**	P	Pg	04 40 44.6	+0.3
HORT				S	Sg	04 40 48.9	+0.8
HORT				AML	AML	04 40 49.5	
	comp=N,333μm,0.2s						
HORT				AML	AML	04 40 50.2	
	comp=E,494μm,0.2s						
KNT	**Kendrikon**	**0.30**	**354**	P	Pg	04 40 44.8	+0.3
KNT				S	Sg	04 40 48.6	+0.3
KNT	**Kendrikon**	**0.30**	**354**	P	Pg	04 40 44.8	+0.3
KNT				S	Sg	04 40 48.6	+0.3
KNT	**Kendrikon**	**0.30**	**354**	P	Pg	04 40 45.0	+0.6
KNT				S	Sg	04 40 48.6	+0.3
KNT				AML	AML	04 40 49.5	
	comp=E,674μm,0.1s						
KNT				AML	AML	04 40 50.4	
	comp=N,719μm,0.1s						
SOH	**Sokhos**	**0.32**	**98**	P	Pg	04 40 45.2	+0.4
SOH				S	Sg	04 40 49.1	+0.2
SOH	**Sokhos**	**0.32**	**98**	P	Pg	04 40 45.2	+0.4
SOH				S	Sg	04 40 49.1	+0.2
SOH	**Sokhos**	**0.32**	**98**	P	Pg	04 40 45.2	+0.5
SOH				S	Sg	04 40 49.9	+1.0
SOH				AML	AML	04 40 52.5	
	comp=N,732μm,0.3s						
SOH				AML	AML	04 40 52.9	
	comp=E,600μm,0.1s						
GRG	**Griva**	**0.42**	**283**	P	Pg	04 40 46.6	-0.1
GRG				S	Sg	04 40 52.5	+0.3
GRG	**Griva**	**0.42**	**283**	P	Pg	04 40 46.6	-0.1
GRG				S	Sg	04 40 51.7	-0.5
GRG	**Griva**	**0.42**	**283**	P	Pg	04 40 47.2	+0.5
GRG				S	Sg	04 40 51.7	-0.5
GRG				AML	AML	04 40 53.8	
	comp=N,877μm,0.2s						
GRG				AML	AML	04 40 54.6	
	comp=E,560μm,0.2s						
VAY	**Valandovo**	**0.54**	**329**	P	Pg	04 40 49.1	+0.1
VAY				S	Sg	04 40 56.7	+0.8
VAY	**Valandovo**	**0.54**	**329**	⇓*i*Pg	Pg	04 40 49.3	+0.3
VAY				*i* Sg	Sg	04 40 56.8	+0.8
VAY				*e*Lg	Lg	04 40 57.0	
	comp=E,91nm,0.4s						
VAY				*e*Lg	Lg	04 40 57.1	
	comp=N,80nm,0.3s						
VAY	**Valandovo**	**0.54**	**329**	⇓*i*Pg	Pg	04 40 49.3	+0.3
VAY				S	Sg	04 40 56.7	+0.8
VAY				*e*Lg	Lg	04 40 57.0	
	comp=N,91nm,0.4s						
SRS	**Serrai**	**0.55**	**63**	P	Pg	04 40 49.2	-0.1
SRS				S	Sg	04 40 56.8	+0.3
SRS	**Serrai**	**0.55**	**63**	P	Pg	04 40 49.5	+0.2
SRS				S	Sg	04 40 56.8	+0.3
SRS	**Serrai**	**0.55**	**63**	P	Pg	04 40 49.5	+0.2
SRS				S	Sg	04 40 56.8	+0.3
PLG	**Polygyros**	**0.62**	**142**	P	Pg	04 40 50.6	0.0
PLG				S	Sg	04 40 59.8	+1.1
PLG	**Polygyros**	**0.62**	**142**	P	Pg	04 40 50.6	0.0
PLG				S	Sg	04 40 59.5	+0.8
PLG	**Polygyros**	**0.62**	**142**	P	Pg	04 40 49.5	-1.1
PLG				S	Sg	04 40 59.5	+0.8
LIT	**Litokhoron**	**0.84**	**204**	P	Pg	04 40 52.6	-2.1
LIT	**Litokhoron**	**0.84**	**204**	P	Pg	04 40 52.6	-2.1
NVR	**Nevrokopi**	**0.85**	**55**	P	Pg	04 40 54.9	-0.1
NVR				S	Sg	04 41 07.0	+1.0
NVR	**Nevrokopi**	**0.85**	**55**	P	Pg	04 40 54.9	-0.1
NVR	**Nevrokopi**	**0.85**	**55**	S	Sg	04 41 07.0	+1.0
OUR	**Ouranopolis**	**0.95**	**123**	P	Pg	04 40 56.7	-0.3
OUR	**Ouranopolis**	**0.95**	**123**	P	Pg	04 40 56.7	-0.2
PAIG	**Paliouri**	**1.09**	**149**	P	Pg	04 40 58.6	-1.0
PAIG	**Paliouri**	**1.09**	**149**	P	Pg	04 40 58.6	-1.0
PAIG	**Paliouri**	**1.09**	**149**	P	Pg	04 40 57.8	-1.8
KAVA	**Kavala**	**1.20**	**83**	P	Pg	04 41 01.6	-0.1
KAVA	**Kavala**	**1.20**	**83**	P	Pg	04 41 01.6	-0.1

DDA ***20*** *04:44:14.9, 39°.23N×28°.97E, h7km, Md2.4*
ISK ***20*** *04:44:16.3, 39°.12N×29°.00E, h5km, MD2.9*
CSEM ***20*** *04:44:16.5±0.1, 39°.12N×28°.98E, h2km, MD2.4, Error ellipse: s-maj=2.3km s-min=1.9km az=133.0*
ISC 20 04:44:16.5±1.1, 39°.12N±0°.02×28°.98E±0°.02, h1km±14km, n48, σ0$26/60, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.22**	**250**	P	**Pg**	**04 44 20.7**	**0.0**
DEMI				S	Sg	04 44 24.0	+0.5
DEMI	**Demirci**	**0.22**	**250**	*i* P	**Pg**	**04 44 20.7**	**0.0**
DEMI				*i* S	Sg	04 44 24.0	+0.5
GDZ	**Gediz**	**0.39**	**94**	P	**Pg**	**04 44 23.6**	**-0.4**
GDZ				S	Sg	04 44 29.1	-0.1
GDZ	**Gediz**	**0.39**	**94**	*i* P	**Pg**	**04 44 23.6**	**-0.4**
GDZ				*i* S	Sg	04 44 29.1	-0.1
TVSB	**Tavsanli**	**0.50**	**48**	*e*PG	**Pg**	**04 44 25.9**	**-0.2**
TVSB				*e*SG	Sg	04 44 33.0	+0.5
TVSB	**Tavsanli**	**0.50**	**48**	*e*Pg	**Pg**	**04 44 25.9**	**-0.2**
TVSB				*e*Sg	Sg	04 44 33.1	+0.5
KULA	**Kula-Manisa**	**0.65**	**203**	*e*PG	**Pg**	**04 44 29.1**	**+0.1**
KULA	**Kula-Manisa**	**0.65**	**203**	*e*Pg	**Pg**	**04 44 29.1**	**+0.1**
MANT	**Manisa**	**0.71**	**208**	P	**Pg**	**04 44 29.6**	**-0.5**
MANT				S	Sg	04 44 38.9	-0.4
MANT	**Manisa**	**0.71**	**208**	*i* P	**Pg**	**04 44 29.6**	**-0.5**
MANT				*i* S	Sg	04 44 38.9	-0.4
KHAL	**Karahalli**	**0.85**	**152**	P	**Pb**	**04 44 34.1**	**0.0**
KHAL	**Karahalli**	**0.85**	**152**	*i* P	**Pb**	**04 44 34.1**	**0.0**
KHL	**Karahalli**	**0.90**	**152**	*e*PG	**Pg**	**04 44 34.0**	**+0.2**
KHL	**Karahalli**	**0.90**	**152**	*e*Pg	**Pg**	**04 44 34.0**	**+0.2**
ORLT	**Orhaneli**	**0.93**	**356**	*e*PG	**Pg**	**04 44 34.2**	**-0.1**
ORLT	**Orhaneli**	**0.93**	**356**	*e*Pg	**Pg**	**04 44 34.2**	**-0.1**
AKHS	**Akhisar**	**0.94**	**256**	P	**Pg**	**04 44 34.5**	**0.0**
AKHS				S	Sg	04 44 46.8	+0.1
AKHS	**Akhisar**	**0.94**	**256**	*i* P	**Pg**	**04 44 34.5**	**0.0**
AKHS				*i* S	Sg	04 44 46.8	+0.1
AKS	**Akhisar**	**0.94**	**256**	*e*PG	**Pb**	**04 44 35.4**	**-0.2**
AKS	**Akhisar**	**0.94**	**256**	*e*Pg	**Pb**	**04 44 35.4**	**-0.2**
BALB	**Balikesir**	**1.00**	**302**	*e*PG	**Pg**	**04 44 35.8**	**+0.1**
BALB				*e*SG	Sb	04 44 50.4	+0.1
BALB	**Balikesir**	**1.00**	**302**	*e*Pg	**Pg**	**04 44 35.8**	**+0.1**
BALB				*e*Sg	Sb	04 44 50.4	+0.1
KCTX	**Karacabey (Bur**	**1.24**	**337**	*e*PN	**Pb**	**04 44 40.7**	**-0.1**
KCTX	**Karacabey (Bur**	**1.24**	**337**	*e*Pn	**Pb**	**04 44 40.7**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.25**	**357**	*e*PN	**Pb**	**04 44 40.8**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.25**	**357**	*e*Pn	**Pb**	**04 44 40.8**	**-0.1**
IZI	**Iznik**	**1.27**	**17**	*e*PN	**Pb**	**04 44 41.2**	**-0.2**
IZI	**Iznik**	**1.27**	**17**	*e*Pn	**Pb**	**04 44 41.2**	**-0.2**
GEMT	**Gemlik**	**1.32**	**7**	*e*PN	**Pb**	**04 44 42.2**	**0.0**
GEMT	**Gemlik**	**1.32**	**7**	*e*Pn	**Pb**	**04 44 42.2**	**0.0**
GONE	**Gonen-Balikesi**	**1.36**	**313**	*e*PN	**Pg**	**04 44 42.5**	**-0.1**
GONE	**Gonen-Balikesi**	**1.36**	**313**	*e*Pn	**Pg**	**04 44 42.5**	**-0.1**
ADVT	**Abdulvahap**	**1.44**	**24**	*e*PN	**Pn**	**04 44 43.3**	**-0.4**
ADVT	**Abdulvahap**	**1.44**	**24**	*e*Pn	**Pn**	**04 44 43.3**	**-0.4**
ARMT	**Armutlu**	**1.45**	**356**	*e*PN	**Pn**	**04 44 43.7**	**-0.2**
ARMT	**Armutlu**	**1.45**	**356**	*e*Pn	**Pn**	**04 44 43.7**	**-0.2**
EDC	**Edincik**	**1.50**	**325**	*e*PN	**Pn**	**04 44 44.4**	**-0.2**
EDC	**Edincik**	**1.50**	**325**	*e*Pn	**Pn**	**04 44 44.4**	**-0.2**
GULT	**Gulveren**	**1.77**	**42**	*e*PN	**Pn**	**04 44 48.7**	**+0.4**
GULT	**Gulveren**	**1.77**	**42**	*e*Pn	**Pn**	**04 44 48.7**	**+0.4**
HRT	**Hereke**	**1.78**	**17**	*e*PN	**Pn**	**04 44 48.4**	**-0.1**
HRT	**Hereke**	**1.78**	**17**	*e*Pn	**Pn**	**04 44 48.4**	**-0.1**
SPNC	**Sapanca-Adapaz**	**1.87**	**33**	*e*PN	**Pn**	**04 44 49.6**	**0.0**
SPNC	**Sapanca-Adapaz**	**1.87**	**33**	*e*Pn	**Pn**	**04 44 49.7**	**0.0**
SVRH	**Sivrihisar-ESK**	**2.00**	**80**	*e*PN	**Pn**	**04 44 51.9**	**+0.3**
SVRH	**Sivrihisar-ESK**	**2.00**	**80**	*e*Pn	**Pn**	**04 44 51.9**	**+0.3**
MDUB	**Mudurnu**	**2.18**	**51**	*e*PN	**Pn**	**04 44 54.3**	**+0.3**
MDUB	**Mudurnu**	**2.18**	**51**	*e*Pn	**Pn**	**04 44 54.3**	**+0.3**

ISCJB ***20*** *04:45:56.7±0.5, 39°.09N±0°.02×29°.00E±0°.03, h3km±5km, Error ellipse: s-maj=3.9km s-min=3.5km az=3.7*
DDA ***20*** *04:45:56.5, 39°.09N×29°.02E, h7km, Md3.0*
ISK ***20*** *04:45:56.6, 39°.07N×29°.00E, h8km, ML3.1*
CSEM ***20*** *04:45:57.0±0.1, 39°.08N×29°.00E, h5km, MD3.0, Error ellipse: s-maj=1.5km s-min=1.3km az=103.0*
ISC 20 04:45:57.1±1.0, 39°.08N±0°.02×29°.01E±0°.02, h6km±9km, n75, σ0$34/92, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.23**	**260**	P	**Pg**	**04 46 01.7**	**-0.1**
DEMI				S	**Sg**	**04 46 05.2**	**+0.3**
DEMI	**Demirci**	**0.23**	**260**	*i* P	**Pg**	**04 46 01.7**	**-0.1**
DEMI				*i* S	**Sg**	**04 46 05.2**	**+0.3**
GDZ	**Gediz**	**0.37**	**89**	P	**Pg**	**04 46 04.2**	**-0.1**
GDZ				S	**Sg**	**04 46 09.1**	**-0.1**
GDZ	**Gediz**	**0.37**	**89**	*i* P	**Pg**	**04 46 04.2**	**-0.1**
GDZ				*i* S	**Sg**	**04 46 09.1**	**-0.1**
TVSB	**Tavsanli**	**0.51**	**44**	*e*PG	**Pg**	**04 46 07.0**	**0.0**
TVSB	**Tavsanli**	**0.51**	**44**	*e*Pg	**Pg**	**04 46 07.0**	**0.0**
KULA	**Kula-Manisa**	**0.63**	**206**	*e*PG	**Pg**	**04 46 09.2**	**0.0**
KULA				*e*SG	**Sg**	**04 46 17.6**	**+0.1**
KULA	**Kula-Manisa**	**0.63**	**206**	*e*Pg	**Pg**	**04 46 09.3**	**0.0**
KULA				*e*Sg	**Sg**	**04 46 17.6**	**+0.1**
DURS	**Dursunbey**	**0.66**	**321**	P	**Pg**	**04 46 10.4**	**+0.5**
DURS				S	**Sg**	**04 46 18.3**	**-0.3**
DURS	**Dursunbey**	**0.66**	**321**	*i* P	**Pg**	**04 46 10.4**	**+0.5**
DURS				*i* S	**Sg**	**04 46 18.3**	**-0.3**
MANT	**Manisa**	**0.69**	**211**	P	**Pg**	**04 46 10.4**	**0.0**
MANT				S	**Sg**	**04 46 19.4**	**0.0**
MANT	**Manisa**	**0.69**	**211**	*i* P	**Pg**	**04 46 10.4**	**0.0**
MANT				*i* S	**Sg**	**04 46 19.4**	**0.0**
KHL	**Karahalli**	**0.86**	**152**	*e*PG	**Pg**	**04 46 13.9**	**+0.3**
KHL	**Karahalli**	**0.86**	**152**	*e*Pg	**Pg**	**04 46 13.9**	**+0.3**
AKS	**Akhisar**	**0.95**	**258**	*e*PG	**Pg**	**04 46 15.5**	**0.0**
AKS	**Akhisar**	**0.95**	**258**	*e*Pg	**Pg**	**04 46 15.5**	**0.0**
ORLT	**Orhaneli**	**0.97**	**355**	*e*PG	**Pg**	**04 46 15.2**	**-0.5**
ORLT	**Orhaneli**	**0.97**	**355**	*e*Pg	**Pg**	**04 46 15.2**	**-0.5**
BALB	**Balikesir**	**1.04**	**303**	*e*PG	**Pg**	**04 46 17.0**	**0.0**
BALB				*e*SG	**Sb**	**04 46 31.6**	**+0.3**
BALB	**Balikesir**	**1.04**	**303**	*e*Pg	**Pg**	**04 46 17.0**	**0.0**
BALB				*e*Sg	**Sb**	**04 46 31.6**	**+0.3**
IGD	**Bursa**	**1.19**	**7**	*i* P	**Pg**	**04 46 18.7**	**-1.2**
IGD				*i* S	**Sg**	**04 46 35.2**	**-0.2**
KCTX	**Karacabey (Bur**	**1.28**	**337**	*e*PN	**Pn**	**04 46 21.3**	**-0.3**
KCTX	**Karacabey (Bur**	**1.28**	**337**	*e*Pn	**Pn**	**04 46 21.3**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.29**	**356**	*e*PN	**Pn**	**04 46 21.6**	**0.0**
MDNY	**Mudanya-Bursa**	**1.29**	**356**	*e*Pn	**Pn**	**04 46 21.6**	**0.0**
IZI	**Iznik**	**1.30**	**16**	*e*PN	**Pg**	**04 46 22.4**	**+0.3**
IZI	**Iznik**	**1.30**	**16**	*e*Pn	**Pg**	**04 46 22.4**	**+0.3**
DENT	**Denizli**	**1.33**	**179**	*e*PN	**Pn**	**04 46 21.6**	**-0.6**
DENT	**Denizli**	**1.33**	**179**	*e*Pn	**Pn**	**04 46 21.6**	**-0.6**
GEMT	**Gemlik**	**1.36**	**6**	*e*PN	**Pn**	**04 46 22.6**	**+0.1**
GEMT	**Gemlik**	**1.36**	**6**	*e*Pn	**Pn**	**04 46 22.7**	**+0.1**
BORA	**Eskisehir**	**1.37**	**54**	P	**Pb**	**04 46 23.2**	**0.0**
BORA				S	**Sb**	**04 46 41.1**	**0.0**
BORA	**Eskisehir**	**1.37**	**54**	*i* P	**Pb**	**04 46 23.2**	**0.0**
BORA				*i* S	**Sb**	**04 46 41.1**	**0.0**
DNZL	**Cakiroluk**	**1.39**	**179**	P	**Pn**	**04 46 23.2**	**0.0**
DNZL				S	**Sn**	**04 46 42.1**	**+0.1**
DNZL	**Cakiroluk**	**1.39**	**179**	*i* P	**Pn**	**04 46 23.2**	**0.0**
DNZL				*i* S	**Sn**	**04 46 42.1**	**+0.1**
GONE	**Gonen-Balikesi**	**1.41**	**314**	*e*PN	**Pn**	**04 46 22.6**	**-0.5**
GONE	**Gonen-Balikesi**	**1.41**	**314**	*e*Pn	**Pn**	**04 46 22.7**	**-0.5**
AYDB	**Zeytinkoy-Aydi**	**1.43**	**218**	*e*PN	**Pn**	**04 46 23.2**	**-0.5**
AYDB	**Zeytinkoy-Aydi**	**1.43**	**218**	*e*Pn	**Pn**	**04 46 23.2**	**-0.5**
ADVT	**Abdulvahap**	**1.46**	**22**	*e*PN	**Pb**	**04 46 24.5**	**-0.2**
ADVT	**Abdulvahap**	**1.46**	**22**	*e*Pn	**Pb**	**04 46 24.5**	**-0.2**
ARMT	**Armutlu**	**1.49**	**356**	*e*PN	**Pn**	**04 46 24.2**	**-0.1**
ARMT	**Armutlu**	**1.49**	**356**	*e*Pn	**Pn**	**04 46 24.2**	**-0.1**
ESKT	**Eskisehir**	**1.49**	**72**	*i* P	Pn	04 46 18.1	-6.5
ESKT				*i* S	**Sn**	**04 46 44.4**	**-0.1**
SEYT	**Eskypehyr**	**1.49**	**72**	S	**Sn**	**04 46 44.3**	**-0.1**
EDC	**Edincik**	**1.54**	**325**	*e*PN	**Pn**	**04 46 25.6**	**+0.5**
EDC	**Edincik**	**1.54**	**325**	*e*Pn	**Pn**	**04 46 25.6**	**+0.5**
GPA	**Golpazari**	**1.57**	**39**	*e*PN	**Pb**	**04 46 26.2**	**-0.3**
GPA	**Golpazari**	**1.57**	**39**	*e*Pn	**Pb**	**04 46 26.2**	**-0.3**
ISP	**Isparta**	**1.73**	**136**	*e*PN	**Pn**	**04 46 27.5**	**-0.3**
ISP	**Isparta**	**1.73**	**136**	*e*Pn	**Pn**	**04 46 27.5**	**-0.3**
GULT	**Gulveren**	**1.78**	**40**	*e*PN	**Pn**	**04 46 28.5**	**0.0**
GULT	**Gulveren**	**1.78**	**40**	*e*Pn	**Pn**	**04 46 28.5**	**0.0**
HRT	**Hereke**	**1.81**	**16**	*e*PN	**Pn**	**04 46 29.3**	**+0.5**
HRT	**Hereke**	**1.81**	**16**	*e*Pn	**Pn**	**04 46 29.3**	**+0.5**
KRBG	**Karabiga-Canak**	**1.86**	**315**	*e*PN	**Pn**	**04 46 29.6**	**+0.1**
KRBG	**Karabiga-Canak**	**1.86**	**315**	*e*Pn	**Pn**	**04 46 29.6**	**+0.1**
SPNC	**Sapanca-Adapaz**	**1.89**	**32**	*e*PN	**Pn**	**04 46 30.4**	**+0.5**
SPNC	**Sapanca-Adapaz**	**1.89**	**32**	*e*Pn	**Pn**	**04 46 30.4**	**+0.5**
ISK	**Istanbul-Kandi**	**1.98**	**1**	*e*PN	**Pn**	**04 46 31.4**	**+0.3**
ISK	**Istanbul-Kandi**	**1.98**	**1**	*e*Pn	**Pn**	**04 46 31.4**	**+0.3**
SVRH	**Sivrihisar-ESK**	**1.98**	**79**	*e*PN	**Pn**	**04 46 31.7**	**+0.4**
SVRH	**Sivrihisar-ESK**	**1.98**	**79**	*e*Pn	**Pn**	**04 46 31.7**	**+0.4**
BGKT	**Bogazkoy**	**2.10**	**355**	*e*PN	**Pn**	**04 46 32.5**	**-0.3**
BGKT	**Bogazkoy**	**2.10**	**355**	*e*Pn	**Pn**	**04 46 32.5**	**-0.3**
RKY	**Sarkoy-Tekirda**	**2.13**	**319**	*e*PN	**Pn**	**04 46 33.5**	**+0.2**
RKY	**Sarkoy-Tekirda**	**2.13**	**319**	*e*Pn	**Pn**	**04 46 33.5**	**+0.2**
KLYT	**Kilyos**	**2.17**	**1**	*e*PN	**Pn**	**04 46 33.8**	**+0.1**
KLYT	**Kilyos**	**2.17**	**1**	*e*Pn	**Pn**	**04 46 33.8**	**+0.1**
MDUB	**Mudurnu**	**2.18**	**50**	*e*PN	**Pn**	**04 46 34.6**	**+0.6**
MDUB	**Mudurnu**	**2.18**	**50**	*e*Pn	**Pn**	**04 46 34.6**	**+0.6**
TKR	**Tekirdag**	**2.22**	**330**	*e*PN	**Pn**	**04 46 34.9**	**+0.5**
TKR	**Tekirdag**	**2.22**	**330**	*e*Pn	**Pn**	**04 46 34.9**	**+0.5**
CTYL	**Yalikoy Yolu**	**2.45**	**347**	*e*PN	**Pn**	**04 46 38.0**	**+0.5**
CTYL	**Yalikoy Yolu**	**2.45**	**347**	*e*Pn	**Pn**	**04 46 38.1**	**+0.5**

ISCJB ***20*** *04:48:01.7±1.1, 36°.62N±0°.07×140°.70E±0°.09, h12km±4km, mb3.6/5, Error ellipse: s-maj=14.7km s-min=7.0km az=41.0*
IDC ***20*** *04:48:02.1±1.1, 36°.73N×140°.56E, h0km, mb3.5/5, mb1 3.7/6, mb1mx3.5/56, mbtmp3.6/6, ML3.6/1, MS2.6/2, Ms1 2.6/2, ms1mx2.2/41, Error ellipse: s-maj=22.1km s-min=14.2km az=161.0*
JMA ***20*** *04:48:03.0, 36°.68N×140°.56E, h3km±1km, M3.4*
JMA Felt II J1.
ISC 20 04:48:02.8±1.0, 36°.66N±0°.05×140°.48E±0°.06, h6km±8km, n20, σ0$64/15, mb3.7/5, 3C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.08**	**123**	⇑P	**Pg**	**04 48 04.7**	**0.0**
JHO				S	**Sg**	**04 48 06.2**	**+0.2**
JYT	**Yasato**	**0.49**	**209**	⇑P	**Pb**	**04 48 13.4**	**-0.3**
ONAJ	**Iwakimizuishiy**	**0.51**	**29**	⇑P	**Pg**	**04 48 12.4**	**-0.3**
ONAJ				S	**Sg**	**04 48 18.8**	**-0.6**
JSB	**Shiboa**	**0.55**	**305**	P	**Pb**	**04 48 15.2**	**+0.4**
MJAR	**Matsushiro Arr**	**1.83**	**267**	Pg	**Pb**	**04 48 36.5**	**-0.2**
	22nm,0.3s,baz=82,slow=10,SNR=73			

YAK Sn **Sn** **04 56 25.0 -7.6**
NRIK Noril'sk 11.39 269 Pn **Pn** **04 54 24.8 -2.7**
comp=E,4.9nm,0.3s,baz=61,slow=12,SNR=20
NRIK Sn **Sn** **04 56 29.7 -4.8**
comp=E,14nm,0.3s,baz=220,slow=18,SNR=9.7
NRIK Lg Lg 04 57 43.1
comp=E,18nm,0.3s,baz=156,slow=22,SNR=6.5
TBGR Tabaga 11.52 160 *e*S 04 57 46.4
ATKR Artyk 12.20 123 *e*S 04 57 58.0
OLMR Olekminsk 12.54 182 *e*S 04 58 24.6
ALDR Aldan 14.40 171 *e*S S 04 59 19.3 +71
CGD Chagda 14.63 161 *e*S S 04 59 23.1 +70
SEY Seymchan 15.10 115 Pn **Pn** **04 55 20.2 +2.2**
comp=E,0.1nm,0.3s,baz=307,slow=16,SNR=4.7
SEY Lg Lg 04 59 56.5
comp=E,0.2nm,0.3s,baz=40,slow=20,SNR=4.5
SEY Seymchan 15.10 115⇓ *e*P **Pn** **04 55 20.6 +2.6**
BOD Bodaibo 15.39 195 *e*P Pn 04 55 13.8 -8.1
BOD pmax pmax
comp=Z,46nm,1.0s
BILL Bilibino 15.45 86*d i*P **P** **04 55 25.2 -2.0**
BILL pmax pmax
comp=Z,44nm,1.7s
BILL MLR MLR
comp=Z,737nm,15.0s
BILL Bilibino 15.45 86 *e*Pn **P** **04 55 25.1 -2.0**
comp=Z,21nm,0.8s
KHN Khani 16.01 183 *e*S S 05 00 12.3 +91
CLNS Chul'man 16.15 173 *e*P **Pn** **04 55 26.6 -5.2**
CLNS *e*SS **Sn** **04 58 29.2 -1.4**
CLNS pmax pmax
comp=Z,37nm,1.0s
CLNS pmax pmax
comp=N,55nm,1.2s
CLNS pmax pmax
comp=E,25nm,0.9s
CLNS MLR MLR
comp=Z,1μm,11.0s
CLNS MLR MLR
comp=N,1μm,10.0s
CLNS MLR MLR
comp=E,322nm,9.0s
CLNS Chul'man 16.15 173 *e*S S 05 00 13.6 +90
YKLR Yuktali 16.33 179 *e*S S 05 00 21.7 +94
MA2 Magadan 17.53 124 Pn **P** **04 55 50.2 -0.1**
comp=E,0.8nm,0.3s,baz=191,slow=8.8,SNR=3.5
MA2 Lg Lg 05 01 00.9
comp=E,0.2nm,0.3s,baz=269,slow=20,SNR=3.9
KRAR Krasnoyarsk 20.51 230⇓ *i*P **P** **04 56 21.9 -1.0**
KRAR pmax pmax
comp=Z,90nm,0.6s
CIT Chita 21.18 193 *e*P **P** **04 56 32.8 +2.6**
CIT *e* 04 56 54.7
NKL Nikolayevsk 21.42 147 *e*P **P** **04 56 31.0 -1.7**
NKL *e* 05 00 28.0
NKL pmax pmax
comp=N,22nm,0.8s
NKL pmax pmax
comp=Z,38nm,0.8s
NKL MLR MLR
comp=N,1μm,11.0s
NKL MLR MLR
comp=Z,2μm,11.0s
IRK Irkutsk 21.96 209 *e*P **P** **04 56 39.5 +1.0**
IRK *e*S S 05 00 27.4 -13
IRK pmax pmax
comp=Z,88nm,0.9s
TLY Talaya 22.60 210 P **P** **04 56 44.2 -1.2**
comp=Z,8.9nm,0.7s,baz=54,slow=14,SNR=13
TLY S **S** **05 00 48.9 -3.5**
comp=Z,12nm,0.6s,baz=206,slow=15,SNR=3.1
TLY Lg Lg 05 03 18.1
comp=Z,17nm,0.8s,baz=159,slow=5.7,SNR=2.4
TLY Talaya 22.60 210*c i*P **P** **04 56 44.0 -1.3**
TLY *e*S **S** **05 00 47.9 -4.6**
TLY pmax pmax
comp=Z,19nm,1.0s
TLY MLR MLR
comp=Z,900nm,11.0s
TLY Talaya 22.60 210 *e*P **P** **04 56 44.2 -1.2**
comp=Z,16nm,0.9s
TLY S **S** **05 00 48.9 -3.5**
TLY Lg Lg 05 03 18.1
MOY Mondy 23.02 214 *e*P **P** **04 56 49.1 -0.8**
MOY pmax pmax
comp=Z,34nm,1.2s
SPA0 Spitsbergen Ar 23.27 330 *e*P **P** **04 56 52.3 +0.2**
SPITS Spitsbergen Ar 23.27 330 P **P** **04 56 51.4 -0.7**
comp=Z,6.2nm,0.5s,baz=78,slow=10,SNR=43
SPITS LR LR 05 06 14.8
comp=Z,119nm,20.8s,baz=35,slow=37
KBS Kingsbay 23.38 333 *e*P **P** **04 56 53.2 +0.1**
KBS pmax pmax
comp=Z,25nm,1.0s
KBS Kingsbay 23.38 333 *e*P **P** **04 56 53.2 +0.1**
comp=Z,25nm,1.0s
ZAK Zakamensk 23.91 209 *e*P **P** **04 56 57.3 -1.4**
ZAK pmax pmax
comp=Z,13nm,1.4s
NVS Novosibirsk 23.94 242⇑ *i*P **P** **04 56 58.1 -0.6**
NVS *e*S **S** **05 01 14.1 -0.6**
NVS pmax pmax
comp=N,54nm,1.6s
NVS pmax pmax
comp=Z,73nm,1.6s
NVS pmax pmax
comp=E,47nm,1.4s
NVS smax smax
comp=E,26nm,1.6s
TYV Tymovskoe 23.95 145 *e*P **P** **04 57 02.5 +3.5**
TYV pmax pmax
comp=Z,7.0nm,0.5s
KLR Kul'dur 24.16 163 P **P** **04 57 00.5 -0.4**
comp=Z,3.1nm,0.5s,baz=343,slow=7.9,SNR=12
KLR Lg Lg 05 04 30.1
comp=Z,18nm,1.3s,baz=85,slow=21,SNR=4.6
KLR LR LR 05 06 32.1
comp=Z,242nm,19.7s,baz=335,slow=37
ZAA0 Zalesovo Array 24.33 239 *e*P **P** **04 57 02.2 -0.2**
ZALV Zalesovo Beam 24.33 239 P **P** **04 57 02.4 -0.1**
comp=Z,20nm,0.8s,baz=13,slow=7.8,SNR=51
ZALV Lg Lg 05 04 31.5
comp=Z,2.8nm,0.7s,baz=33,slow=19,SNR=2.6
ZALV LR LR 05 07 04.0
comp=Z,316nm,18.4s,baz=130,slow=38
PEA0 Petropavlovsk- 25.05 122 *e*P **P** **04 57 09.1 +0.2**
PEA0B Petropavlovsk- 25.05 122 *e*P **P** **04 57 09.7 +0.8**
comp=Z,54nm,1.2s
PETK Petropavlovsk- 25.05 122 P **P** **04 57 09.6 +0.6**
comp=Z,20nm,0.9s,baz=32,slow=6.1,SNR=17
PETK LR LR 05 08 27.7
comp=Z,177nm,20.8s,baz=151,slow=40
HABR Khabarovsk 25.23 158 *e*P **P** **04 57 06.0 -4.6**
HABR *e*S **S** **05 01 29.7 -5.8**
HABR *e*SSS SSS 05 02 38.2
HABR *e* 05 08 04.2
HABR pmax pmax
comp=Z,31nm,1.5s
HABR MLR MLR
comp=Z,175nm,14.0s
PET Petropavlovsk 25.37 121 *e*P **P** **04 57 10.7 -1.1**
PET *e*S **S** **05 01 32.4 -5.2**
PET pmax pmax
comp=Z,49nm,1.3s
PET pmax pmax
comp=Z,200nm,3.5s
PET MLR MLR
comp=Z,400nm,11.0s
PET MLR MLR
comp=Z,200nm,14.0s
ULN Ulaanbaatar 25.90 202*c i*P **P** **04 57 17.9 +1.0**
ULN pmax pmax
comp=Z,17nm,0.9s
ULN Ulaanbaatar 25.90 202 *e*P **P** **04 57 17.4 +0.5**
comp=Z,15nm,0.9s
SONA1 Songino Array 25.99 203 *e*P **P** **04 57 18.1 +0.4**
SONM Songino Array 26.00 203 P **P** **04 57 18.9 +1.1**
comp=Z,21nm,0.8s,baz=6.8,slow=11,SNR=18
SONM Lg Lg 05 05 28.2
comp=Z,12nm,1.1s,baz=11,slow=17,SNR=5.6
SONM LR LR 05 08 09.9
comp=Z,364nm,20.3s,baz=341,slow=38
ARCES ARCESS Array B 27.95 312 P **P** **04 57 35.2 +0.3**
comp=Z,1.8nm,0.7s,baz=38,slow=11,SNR=3.2
ARCES LR LR 05 09 39.0
comp=Z,136nm,20.3s,baz=34,slow=38

COLD Coldfoot 28.02 56 *e*P **P** **04 57 36.3 +0.7**
comp=Z,4.8nm,1.0s
MDJ Mudanjiang 28.59 168 P **P** **04 57 40.9 +0.1**
MDJ pP pP 04 57 43.9 -0.4
MDJ sP sP 04 57 45.3 -0.4
MDJ PcP **PcP** **05 00 52.5 +1.0**
MDJ S **S** **05 02 29.6 +1.1**
MDJ sS sS 05 02 34.6 +0.3
MDJ ScP **ScP** **05 04 33.3 +1.2**
MDJ PcS **PcS** **05 04 34.8 +1.0**
MDJ pmax pmax
comp=Z,7.0nm,1.0s
MDJ pmax pmax
comp=Z,49nm,4.3s
MDJ LR LR
comp=N,180nm,12.0s
MDJ LR LR
comp=E,1μm,16.8s
MDJ LR LR
comp=Z,880nm,9.6s
KURK Kurchatov 28.87 243 P **P** **04 57 43.6 +0.3**
KURK Kurchatov 28.87 243 P **P** **04 57 43.5 +0.3**
KURK Lg Lg 05 07 04.5
KURBB Kurchatov Arra 28.98 243 P **P** **04 57 43.5 -0.7**
comp=Z,20nm,0.8s,baz=26,slow=8.5,SNR=28
KURBB Lg Lg 05 07 04.5
comp=Z,0.7nm,0.4s,baz=26,slow=28,SNR=3.2
BVAR Borovoye Array 29.08 255 P **P** **04 57 44.1 -1.0**
comp=Z,1.5nm,0.6s,baz=50,slow=2.3,SNR=6.0
BRVK Borovoye 29.08 255⇑ *e*P **P** **04 57 45.7 +0.5**
BRVK pmax pmax
comp=Z,3.0nm,0.8s
USRK Ussuriysk Ar. 29.17 164 P **P** **04 57 46.3 +0.3**
comp=Z,4.3nm,0.9s,baz=291,slow=4.7,SNR=5.1
USRK LR LR 05 10 53.1
comp=Z,62nm,21.4s,baz=318,slow=40
CN2 Changchun 29.20 174 *e*P **P** **04 57 46.6 +0.3**
CN2 *es*P sP 04 57 53.6 +2.4
CN2 *e*S **S** **05 02 35.4 -2.8**
CN2 pmax pmax
comp=Z,10.0nm,0.6s
CN2 pmax pmax
comp=Z,100nm,3.0s
CN2 LR LR
comp=N,200nm,13.0s
CN2 LR LR
comp=E,200nm,13.0s
CN2 LR LR
comp=Z,300nm,14.0s
ARU Arti 29.61 270 LR LR 05 10 51.9
comp=Z,38nm,21.3s,baz=110,slow=39
MLY Manley 29.62 59 *e*P **P** **04 57 50.3 +0.3**
comp=Z,6.8nm,1.2s
VLA Vladivostok 30.24 165⇑ *e*P **P** **04 57 54.2 -1.2**
VLA *e**SP **pP** **04 57 58.4 -0.5**
VLA *e* 04 58 51.6
VLA pmax pmax
comp=Z,25nm,0.8s
COLA College 30.48 57 *e*P **P** **04 57 57.7 +0.3**
COLA pmax pmax
comp=Z,3.0nm,0.5s
COLA College 30.48 57 *e*P **P** **04 57 57.7 +0.3**
comp=Z,2.8nm,0.5s
CCB Clear Creek Bu 30.68 58 *e*P **P** **04 58 00.1 +1.0**
comp=Z,7.4nm,1.2s
KTH Kantishna Hill 30.77 61 *e*P **P** **04 58 00.6 +0.5**
comp=Z,55nm,1.8s
IL1 Eielson Array 30.80 57 *e*P **P** **04 58 00.4 +0.1**
ILAR Eielson Array 30.80 57 P **P** **04 58 01.0 +0.7**
comp=Z,3.9nm,0.9s,baz=322,slow=9.1,SNR=36
ILAR LR LR 05 13 30.7
comp=Z,180nm,18.7s,baz=310,slow=42
ILB Eielson Array 30.80 57 *e*P **P** **04 58 01.4 +1.1**
INK Inuvik 30.93 44 P **P** **04 58 02.0 +0.7**
comp=Z,1.5nm,0.6s,baz=325,slow=8.2,SNR=7.4
INK Inuvik 30.93 44 *e*P **P** **04 58 01.1 -0.3**
comp=Z,8.4nm,1.1s
MCK McKinley 31.14 59 *e*P **P** **04 58 02.7 -0.6**
MCK pmax pmax
comp=Z,7.0nm,1.0s
MCK McKinley 31.14 59 *e*P **P** **04 58 02.7 -0.6**
comp=Z,7.0nm,1.0s
KLMR Klimovskoe 31.42 292 *e*P **P** **04 58 04.3 -1.4**
KLMR pmax pmax
comp=Z,30nm,1.0s
MK31 Makanchi Array 31.56 236 *e*P **P** **04 58 06.2 -0.9**
MK31 Makanchi Array 31.56 236 *e*P **P** **04 58 06.2 -0.9**
MKAR Makanchi Array 31.56 236 P **P** **04 58 06.0 -1.1**
comp=Z,10nm,1.0s,baz=36,slow=6.3,SNR=39
MK01 Makanchi Array 31.57 236 *e*P **P** **04 58 05.6 -1.7**
MAKZ Makanchi 31.62 236 *e*P **P** **04 58 06.7 -0.9**
MAKZ pmax pmax
comp=Z,10.0nm,0.8s
MAKZ Makanchi 31.62 236 *e*P **P** **04 58 06.7 -0.9**
comp=Z,10nm,0.8s
DOT Dot Lake 32.43 56 *e*P **P** **04 58 14.4 -0.2**
comp=Z,10nm,0.9s
HHC Hu-ho-hao-te 32.44 194 *e*P **P** **04 58 15.0 0.0**
HHC S **S** **05 03 25.5 -3.6**
HHC SS **SnSn** **05 05 23.9 +2.2**
HHC pmax pmax
comp=Z,38nm,1.0s
HHC pmax pmax
comp=Z,210nm,5.3s
HHC LR LR
comp=N,1μm,13.9s
HHC LR LR
comp=E,1μm,13.9s
HHC LR LR
comp=Z,1μm,13.6s
OTUK Ortayu 32.83 249 P **P** **04 58 18.0 -0.2**
OTUK pmax pmax
comp=Z,6.0nm,0.9s
BJI Beijing 32.99 187 P **P** **04 58 20.3 +0.6**
BJI S **S** **05 03 36.8 -0.7**
BJI SS **SS** **05 06 01.1 +1.8**
BJI pmax pmax
comp=Z,11nm,1.0s
BJI pmax pmax
comp=Z,64nm,4.0s
BJI LR LR
comp=N,360nm,10.4s
BJI LR LR
comp=E,910nm,11.4s
BJI LR LR
comp=Z,160nm,23.0s
WMQ Urumqi 33.11 227 P **P** **04 58 21.6 +0.8**
WMQ pP pP 04 58 25.4 +1.1
WMQ sP sP 04 58 31.0 +5.3
WMQ PP **PnPn** **04 59 30.4 +0.2**
WMQ S **S** **05 03 43.4 +4.0**
WMQ SS **SnSn** **05 05 30.5 -7.3**
WMQ pmax pmax
comp=Z,15nm,1.2s
WMQ pmax pmax
comp=Z,60nm,3.8s
WMQ LR LR
comp=N,490nm,6.4s
WMQ LR LR
comp=E,710nm,6.8s
WMQ LR LR
comp=Z,140nm,18.6s
DAWY Dawson 33.20 52 *e*P **P** **04 58 21.8 +0.4**
comp=Z,6.9nm,0.9s
DL2 Dalian 34.03 180 *e*P P 04 58 37.8 +9.1
DL2 *e*S S 05 04 07.0 +13
DL2 pmax pmax
comp=Z,21nm,0.6s
DL2 LR LR
comp=N,1μm,10.0s
DL2 LR LR
comp=E,500nm,10.2s
DL2 LR LR
comp=Z,1μm,12.5s
SUMG Summit 34.23 349 *i*P **P** **04 58 31.8 +1.2**
comp=Z,20nm,1.1s
SUMG Summit 34.23 349 *i*P **P** **04 58 31.8 +1.2**
SUMG pmax pmax
comp=Z,20nm,1.1s
SUMG Summit 34.23 349 *e*P **P** **04 58 31.7 +1.1**
comp=Z,9.7nm,1.1s
FIA1 FINESS Array S 34.47 302 *e*P **P** **04 58 32.5 +0.2**
comp=Z,22nm,0.8s
FINES FINESS Array B 34.47 302 P **P** **04 58 32.3 0.0**
comp=Z,15nm,0.7s,baz=38,slow=8.9,SNR=19
FINES LR LR 05 15 05.5
comp=Z,237nm,19.8s,baz=14,slow=41
FINES FINESS Array B 34.47 302 *i*P **P** **04 58 32.2 -0.1**
FINES pmax pmax
comp=Z,15nm,0.7s
AKTO Aktyubinsk 34.98 265 P **P** **04 58 36.0 -0.9**
comp=Z,2.1nm,0.6s,baz=32,slow=9.7,SNR=6.7
AKTO Aktyubinsk 34.98 265 P **P** **04 58 36.0 -0.9**
GTA Gaotai 35.15 210 *e*P **P** **04 58 41.0 +2.4**
GTA pP sP 04 58 45.3 +1.8
GTA sP pP 04 58 48.1 +6.0
GTA PP **PP** **04 59 58.8 +0.6**
GTA PcP **PcP** **05 01 12.8 +3.2**
GTA S **S** **05 04 12.4 +1.2**
GTA sS sS 05 04 19.8 +2.8
GTA SS **SnSn** **05 06 27.5 -0.1**
GTA pmax pmax
comp=Z,6.0nm,1.1s
GTA pmax pmax
comp=Z,60nm,6.7s
GTA LR LR
comp=N,690nm,14.3s
GTA LR LR
comp=E,890nm,13.3s
GTA LR LR
comp=Z,730nm,11.4s
ABKAR Akbulak array 35.47 263 *e*P **P** **04 58 40.4 -0.6**
comp=Z,11nm,0.7s
PDGK Podgornoye 35.50 237 P **P** **04 58 41.7 +0.4**
PDGK pmax pmax
comp=Z,27nm,1.3s
KSRS Korea Array 35.63 171 P **P** **04 58 42.8 +0.3**
comp=Z,2.3nm,0.7s,baz=358,slow=8.4,SNR=7.8
KSRS LR LR 05 12 58.5
comp=Z,144nm,18.6s,baz=130,slow=36
KSAR Wonju Array Be 35.64 171 P **P** **04 58 42.8 +0.2**
KSAR Wonju Array Be 35.64 171 P **P** **04 58 42.8 +0.2**
TJN Taejon 36.68 172*ce*P **P** **04 58 51.3 -0.2**
TKM2 Tokmak 2 36.87 241 *e*P **P** **04 58 53.7 +0.3**
TKM2 pmax pmax
comp=Z,29nm,1.1s
TKM2 Tokmak 2 36.87 241 *e*P **P** **04 58 53.7 +0.3**
comp=Z,29nm,1.1s
VSU Vasula 36.88 299 *i*P **P** **04 58 53.3 +0.3**
VSU pmax pmax
comp=Z,61nm,0.8s
OBN Obninsk 37.14 289⇑ *e*P **P** **04 58 55.4 +0.2**
OBN *e* 05 00 16.6
OBN *e*PPP PPP 05 00 36.0
OBN *e*S **S** **05 04 43.1 +2.1**
OBN *e*SS **SnSn** **05 07 13.0 -1.9**
OBN pmax pmax
comp=Z,32nm,1.1s
OBN MLR MLR
comp=Z,469nm,16.0s
FRU Bishkek 37.21 242 *e*P **P** **04 58 55.0 -1.0**
FRU *i* 04 58 58.0
FRU *e* 05 04 50.0
MJAR Matsushiro Arr 37.37 157 P **P** **04 58 57.0 -0.4**
comp=Z,1.0nm,0.3s,baz=350,slow=9.1,SNR=7.8
AAK Ala-Archa 37.42 242 *e*P **P** **04 58 58.3 +0.2**
AAK pmax pmax
comp=Z,24nm,0.9s
AAK Ala-Archa 37.42 242 *e*P **P** **04 58 58.3 +0.2**
comp=Z,24nm,0.9s
EKS2 Erkin-Say 37.59 243 *e*P **P** **04 59 00.4 +1.0**
EKS2 pmax pmax
comp=Z,8.0nm,0.9s
EKS2 Erkin-Say 37.59 243 *e*P **P** **04 59 00.4 +1.0**
comp=Z,8.2nm,0.9s
LZH Lanzhou 37.89 203 *e*PKP **P** **04 59 06.3 +4.3**
LZH Lanzhou 37.89 203 *e*P **P** **04 59 06.6 +4.6**
LZH pP sP 04 59 10.4 +3.4
LZH sP pP 04 59 12.4 +6.8
LZH pPKP 04 59 17.1
LZH sPKP 04 59 21.3
LZH PP **PnPn** **05 00 33.1 +3.5**
LZH *e*S **S** **05 04 56.3 +3.2**
LZH sS sS 05 05 00.6 +1.7
LZH SS **SnSn** **05 07 32.4 -1.5**
LZH pmax pmax
comp=Z,41nm,1.2s
LZH pmax pmax
comp=Z,170nm,4.8s
LZH LR LR
comp=N,2μm,14.3s
LZH LR LR
comp=E,2μm,14.4s
LZH LR LR
comp=Z,2μm,15.4s
KKAR Karatay Array 38.06 247 *e*P **P** **04 59 02.5 -0.7**
KKAR pmax pmax
comp=Z,15nm,0.9s
KKAR Karatay Array 38.06 247 *e*P **P** **04 59 02.5 -0.7**
comp=Z,15nm,0.9s
MNAS Manas 38.09 245 P **P** **04 59 05.9 +2.3**
MNAS pmax pmax
comp=Z,8.0nm,1.2s
NC405 NORSAR Array S 38.14 312 *e*P **P** **04 59 04.0 +0.3**
NB2 NORSAR Subarra 38.32 313 P **P** **04 59 05.0 -0.2**
comp=Z,5.3nm,0.7s,baz=28,slow=8.6
NOA NORSAR Array B 38.32 313 P **P** **04 59 04.5 -0.7**
comp=Z,4.7nm,0.8s,baz=28,slow=8.4,SNR=10.0
NOA PcP **PcP** **05 01 17.5 -1.1**
comp=Z,2.4nm,0.9s,baz=16,slow=4.5,SNR=3.4
NOA LR LR 05 15 34.5
comp=Z,128nm,21.5s,baz=15,slow=37
NBO02 NORSAR Array S 38.39 313 *e*P **P** **04 59 06.2 +0.4**
NAO01 NORSAR Array S 38.57 313 *e*P **P** **04 59 07.5 +0.3**
IZAR Zarasai 39.40 297 *e*P **P** **04 59 15.0 +0.8**
IZAR IAmb IAmb 04 59 15.7
comp=Z,8.1nm,0.7s
XAN Xi'an 39.41 196 P **P** **04 59 17.3 +2.7**
XAN pP sP 04 59 21.8 +2.2
XAN sP pP 04 59 24.3 +6.1
XAN PP **PnPn** **05 00 52.3 +4.6**
XAN S **S** **05 05 18.8 +3.0**
XAN sS sS 05 05 26.3 +4.7
XAN SS **SS** **05 08 05.8 -3.7**
XAN pmax pmax
comp=Z,7.0nm,1.1s
XAN pmax pmax
comp=Z,36nm,3.4s
XAN LR LR
comp=N,790nm,10.2s
XAN LR LR
comp=E,610nm,8.6s
XAN LR LR
comp=Z,840nm,11.0s
ISAL Salakas 39.59 297 *e*P **P** **04 59 16.6 +0.8**
ISAL IAmb IAmb 04 59 21.2
comp=Z,23nm,1.0s
IDID Didziasalis 39.65 297 *e*P **P** **04 59 17.2 +0.9**
IDID IAmb IAmb 04 59 21.6
comp=Z,16nm,1.0s
YKW3 Yellowknife Ar 39.70 37 *e*P **P** **04 59 17.1 +0.4**
comp=Z,4.9nm,0.8s
YKA Yellowknife Ar 39.76 37 P **P** **04 59 17.2 0.0**
comp=Z,3.0nm,0.5s,baz=336,slow=8.1,SNR=41
YKA LR LR 05 16 08.2
comp=Z,7.8nm,21.7s,baz=0.0,slow=37
YKB5 Yellowknife Ar 39.76 37 *e*P **P** **04 59 16.7 -0.4**
KSH Kashi 39.97 239 *e*P **P** **04 59 23.8 +4.5**
KSH *es*P sP 04 59 31.3 +7.0
KSH *e*PP **PnPn** **05 01 00.1 +5.7**
KSH *e*ScP **ScP** **05 05 15.1 +2.4**
KSH S **S** **05 05 30.1 +5.8**
KSH pmax pmax
comp=Z,46nm,3.0s
KSH LR LR
comp=N,400nm,5.7s
KSH LR LR
comp=E,440nm,6.3s
KSH LR LR
comp=Z,550nm,6.0s
NACGM Naroch 40.01 296 *e* **P** **04 59 19.0 -0.3**
MICGM Minsk 40.07 295 *e* **P** **04 59 21.0 +1.2**
MNK Minsk 40.07 295 *e*P **P** **04 59 21.0 +1.2**
NJ2 Nanjing 40.89 183 *e*P **P** **04 59 27.3 +0.5**
NJ2 pmax pmax
comp=Z,10.0nm,0.8s
SUW Suwalki 41.75 299 *e*P **P** **04 59 34.0 +0.3**
SUW *e*pP **pP** **04 59 37.4 +0.2**
SUW Suwalki 41.75 299 *e*P **P** **04 59 34.0 +0.3**
SUW *e**PP **pP** **04 59 37.4 +0.2**
KLNR Kaliningrad 41.98 301⇑ *i*P **P** **04 59 36.4 +0.9**

KLNR pmax pmax
comp=Z,69nm,1.0s
DZET Dzherino 42.52 247 P **P 04 59 42.1 +1.8**
DZET pmax pmax
comp=Z,19nm,1.2s
WHN Wuhan 42.53 189 ⇑P **P 04 59 42.4 +2.1**
WHN S **S 05 06 04.8 +2.7**
WHN LR LR
comp=N,2μm,10.5s
WHN LR LR
comp=E,590nm,6.3s
WHN LR LR
comp=Z,2μm,11.4s
BSD Bornholm Skovb 42.83 306 *i* P **P 04 59 42.6 +0.2**
BSD *i* 04 59 46.0
BSD Bornholm Skovb 42.83 306 *i* P **P 04 59 42.6 +0.2**
BSD *i* 04 59 46.0
CD2 Chengdu 43.02 202 P **P 04 59 42.8 -1.5**
CD2 pmax pmax
comp=Z,8.0nm,0.6s
AKASG Malin Array Be 43.11 292 P **P 04 59 44.2 -0.6**
comp=Z,4.1nm,0.6s,baz=28,slow=9.0,SNR=7.9
AKASG PP **PP 05 01 24.8 +0.2**
comp=Z,2.0nm,0.6s,baz=22,slow=11,SNR=5.8
AKASG LR LR 05 21 02.6
comp=Z,127nm,18.5s,baz=20,slow=41
RGN Rugen 43.72 307 *e*P **P 04 59 50.1 +0.4**
comp=Z,53nm,1.1s
KIV Kislovodsk 45.36 276⇓*e*P **P 05 00 02.0 -1.0**
KIV *e* 05 01 47.1
KIV *e*PPP PPP 05 02 24.7
KIV *e*S S 05 07 02.7 +19
KIV *e*SS **ScS 05 09 50.7 -8.3**
KIV pmax pmax
comp=Z,20nm,1.0s
KIV MLR MLR
comp=Z,133nm,20.0s
KIV Kislovodsk 45.36 276 *e*P **P 05 00 02.2 -0.8**
comp=Z,13nm,0.7s
KBZ Khabaz 45.50 275 P **P 05 00 05.1 +1.1**
comp=Z,8.0nm,0.9s,baz=307,slow=4.2,SNR=3.4
KWP Kalwaria Pacla 45.85 296 *e*P **P 05 00 07.5 +0.8**
KWP *e*pP **pP 05 00 10.8 +0.5**
KWP Kalwaria Pacla 45.85 296⇑*i*P **P 05 00 07.9 +1.2**
KWP Kalwaria Pacla 45.85 296 ⇑P **P 05 00 07.9 +1.2**
NEY Neytrino 45.99 275 *i* P **P 05 00 11.1 +3.0**
ZEI Tsey 46.07 274 *e*P **P 05 00 07.1 -1.6**
ZEI pmax pmax
comp=Z,12nm,0.9s
OJC Ojcow 46.07 299 *e*P **P 05 00 09.3 +0.8**
OJC *e*pP **pP 05 00 12.8 +0.8**
OJC Ojcow 46.07 299 *e*P **P 05 00 09.3 +0.8**
OJC *e**PP **pP 05 00 12.8 +0.8**
OJC Ojcow 46.07 299 *e*P **P 05 00 08.7 +0.2**
comp=Z,19nm,1.1s
ANN Anapa 46.13 281 *e*P **P 05 00 05.7 -3.2**
ANN *e**PP **pP 05 00 09.4 -3.1**
ANN *e*S **S 05 06 50.5 -3.7**
ANN *e*SS **SS 05 10 17.2 -1.6**
ANN pmax pmax
comp=Z,21nm,1.1s
GEYT Alibeck 46.35 257 P **P 05 00 11.0 +0.1**
comp=Z,6.9nm,0.7s,baz=327,slow=7.1,SNR=6.5
GEYT LR LR 05 20 29.1
comp=Z,128nm,18.9s,baz=30,slow=37
KSP Ksiaz 46.40 302 *e*P **P 05 00 11.5 +0.5**
KSP *e*pP **pP 05 00 15.3 +0.7**
KSP Ksiaz 46.40 302 *e*P **P 05 00 11.5 +0.5**
KSP *e**PP **pP 05 00 15.3 +0.7**
STHS Stebnicka Huta 46.43 297 *e*P **P 05 00 12.3 +1.0**
STHS *e* 05 00 16.1
STHS *e* 05 02 06.1
STHS pmax pmax
comp=Z,9.0nm,1.1s
STHS Stebnicka Huta 46.43 297 *e*P **P 05 00 12.3 +1.0**
STHS *e* 05 00 16.1
STHS *e*PP **PP 05 02 06.1 +6.1**
FCC Fort Churchill 46.44 25 *e*P **P 05 00 10.8 -0.4**
FCC pmax pmax
comp=Z,9.0nm,0.8s
FCC Fort Churchill 46.44 25 *e*P **P 05 00 10.8 -0.4**
comp=Z,8.6nm,0.8s
KBL Kabul 46.47 244 *e*P **P 05 00 12.4 +0.4**
KBL pmax pmax
comp=Z,20nm,0.8s
KBL Kabul 46.47 244 *e*P **P 05 00 12.4 +0.4**
comp=Z,20nm,0.8s
SOC Sochi 46.57 278 *e*P **P 05 00 12.2 -0.2**
SOC *e* 05 01 55.9
SOC *e*PPP PPP 05 02 46.1
SOC *e*S **S 05 07 00.9 +0.3**
SOC pmax pmax
comp=Z,15nm,0.8s
NIE Niedzica 46.68 298 *e*P **P 05 00 14.2 +0.9**
NIE *e*pP **pP 05 00 17.6 +0.8**
NIE Niedzica 46.68 298 *e*P **P 05 00 14.2 +0.9**
NIE *e**PP **pP 05 00 17.6 +0.8**
CLL Collm 46.78 305⇓*i*P **P 05 00 13.9 -0.1**
comp=Z,6.0nm,0.6s
CLL *i* 05 00 17.2
comp=Z,13nm,0.9s
CLL *e*SS SS 05 10 35.0 +5.9
CLL LmH 05 19 00.0
comp=N,100nm,19.2s
CLL LmH 05 19 00.0
comp=E,400nm,18.7s
CLL Collm 46.78 305⇓*i*P **PcP 05 01 46.9 0.0**
comp=Z,9.0nm,0.9s
CLL *i* 05 01 50.7
comp=Z,10.0nm,0.9s
CLL Collm 46.78 305 *e*P **P 05 00 14.1 +0.1**
CLL *e* 05 01 46.4
CLL pmax pmax
comp=Z,10.0nm,0.8s
CLL Collm 46.78 305 *e*P **P 05 00 14.1 +0.1**
comp=Z,9.7nm,0.8s
CLL *e*PcP **PcP 05 01 46.4 -0.5**
DPC Dobruska-Polom 46.84 302 *e*P **P 05 00 15.1 +0.6**
DPC *e*x x 05 00 18.6
DPC Dobruska-Polom 46.84 302 *e*P **P 05 00 15.1 +0.6**
DPC *e* 05 00 18.6
CRVS Cervenica-Dubn 46.84 297 *e*P **P 05 00 15.0 +0.5**
CRVS *e* 05 00 18.1
CRVS Cervenica-Dubn 46.84 297 *e*P **P 05 00 15.0 +0.5**
CRVS *e* 05 00 18.1
OKC Ostrava-Krasne 46.85 300 *e*P **P 05 00 15.4 +0.9**
OKC *e*x x 05 00 18.8
OKC Ostrava-Krasne 46.85 300 *e*P **P 05 00 15.4 +0.9**
OKC *e* 05 00 18.8
UZH Uzhgorod 46.87 296 *e*P **P 05 00 17.6 +2.9**
UZH *e* 05 00 20.2
BRG Berggiesshubel 46.95 304 *e*P **P 05 00 15.5 +0.2**
comp=Z,4.5nm,0.9s
BRG *e* 05 00 19.0
comp=Z,12nm,1.3s
BRG *e* 05 02 10.0
comp=Z,3.8nm,0.8s
BRG Berggiesshubel 46.95 304 *e*P **P 05 00 15.5 +0.2**
BRG *e* 05 00 19.0
BRG *e* 05 02 10.0
BRG pmax pmax
comp=Z,5.0nm,0.9s
BUR08 Bucovina Ar. S 46.99 293 *e*P **P 05 00 16.1 +0.3**
BURAR Bucovina Array 47.02 293⇓*i*P **P 05 00 15.8 -0.2**
BURAR Bucovina Array 47.02 293 ⇓P **P 05 00 15.8 -0.2**
MORC Moravsky Berou 47.06 301⇓*i*P **P 05 00 16.8 +0.5**
MORC Moravsky Berou 47.06 301 *e*P **P 05 00 17.3 +1.0**
MORC pmax pmax
comp=Z,61nm,1.0s
MORC Moravsky Berou 47.06 301 *e*P **P 05 00 17.3 +1.0**
comp=Z,61nm,1.0s
LANS Liptovska Anna 47.14 299 *e*P **P 05 00 18.3 +1.4**
LANS *e* 05 00 22.2
LANS Liptovska Anna 47.14 299 *e*P **P 05 00 18.3 +1.4**
LANS *e* 05 00 22.2
KECS Kecovo 47.49 298 *e*P **P 05 00 20.5 +1.0**
KECS *e* 05 00 24.4
KECS pmax pmax
comp=Z,6.0nm,1.1s
KECS Kecovo 47.49 298 *e*P **P 05 00 20.5 +1.0**
KECS *e* 05 00 24.4
PRU Pruhonice 47.62 303 *e*P **P 05 00 20.5 0.0**
PRU *e*x x 05 00 24.7
PRU Pruhonice 47.62 303 *e*P **P 05 00 20.5 0.0**
PRU *e* 05 00 24.7
GOPC GO Pecny, Ondr 47.63 303 *e*P **P 05 00 21.2 +0.6**
GOPC *e*x x 05 00 24.9
GOPC GO Pecny, Ondr 47.63 303 *e*P **P 05 00 21.2 +0.6**
GOPC *e* 05 00 24.9
TESR Tescani 47.63 291⇑*i*P **P 05 00 20.8 +0.1**
VRAC Vranov 47.73 301⇓*i*P **P 05 00 21.9 +0.4**
VRAC Vranov 47.73 301 ⇓P **P 05 00 21.9 +0.4**
ARCR ARCALIA 47.74 294⇓*i*P **P 05 00 24.1 +2.6**
NKC Novy Kostel 47.91 305 *e*P **P 05 00 23.3 +0.5**
NKC *e*x x 05 00 27.1
NKC Novy Kostel 47.91 305 *e*P **P 05 00 23.3 +0.5**
NKC *e* 05 00 27.1
VYHS Vyhne 47.91 299 *e*P **P 05 00 23.9 +1.1**
VYHS *e* 05 00 26.6
VYHS pmax pmax
comp=Z,11nm,1.2s
VYHS Vyhne 47.91 299 *e*P **P 05 00 23.9 +1.1**
VYHS *e* 05 00 26.5
PSZ Piszkesteto 48.16 298⇑*i*P **P 05 00 26.3 +1.4**
PSZ Piszkesteto 48.16 298 ⇑P **P 05 00 26.3 +1.4**
PSZ Piszkesteto 48.16 298 *e*P **P 05 00 26.2 +1.4**
comp=Z,30nm,1.1s
DRGR 48.45 295⇓*i*P **P 05 00 27.8 +0.7**
DRGR 48.45 295 ⇓P **P 05 00 27.8 +0.7**
KHC Kasperske Hory 48.65 304 *e*P **P 05 00 29.3 +0.7**
KHC *e*x x 05 00 33.0
KHC Kasperske Hory 48.65 304 *e*P **P 05 00 29.5 +0.9**
KHC pmax pmax
comp=Z,3.0nm,1.0s
KHC Kasperske Hory 48.65 304 *e*P **P 05 00 29.4 +0.9**
comp=Z,3.0nm,1.0s
MLR Muntele Rosu 48.77 291⇑*i*P **P 05 00 30.6 +1.0**
MLR Muntele Rosu 48.77 291 ⇑P **P 05 00 30.6 +1.0**
MLR Muntele Rosu 48.77 291 *e*P **P 05 00 29.9 +0.3**
comp=Z,10nm,0.8s
GUN Gumba 48.82 223 *e*P **P 05 00 30.8 +0.3**
comp=Z,135nm,0.9s
KMI Kunming 48.85 203 P **P 05 00 33.3 +2.7**
KMI pmax pmax
comp=Z,17nm,0.5s
KMI pmax pmax
comp=Z,57nm,4.1s
GEC2 GERESS Array S 48.89 303 *e*P **P 05 00 31.4 +0.9**
GEC2 pmax pmax
comp=Z,10.0nm,1.0s
GEC2 GERESS Array S 48.89 303 *e*P **P 05 00 31.4 +0.9**
comp=Z,10.0nm,1.0s
GERES GERESS Array B 48.89 303 P **P 05 00 31.1 +0.6**
comp=Z,5.7nm,0.9s,baz=35,slow=8.1,SNR=24
GERES LR LR 05 22 34.0
comp=Z,84nm,21.8s,baz=5.5,slow=38
GEA0 GERESS Array S 48.89 303 *e*P **P 05 00 30.9 +0.4**
GKN Gorkha 48.98 224 *e*P **P 05 00 31.8 +0.3**
comp=Z,160nm,0.8s
KKN Kakani 49.06 224 *e*P **P 05 00 32.5 +0.4**
comp=Z,69nm,0.6s
SIRR Siria 49.22 295⇓*i*P **P 05 00 37.6 +4.7**
PYUN Piuthan 49.24 226 *e*P **P 05 00 33.4 -0.1**
PKIN Phulchoki 49.24 223 *e*P **P 05 00 33.7 +0.1**
FFC Flin Flon 49.25 32 *e*P **P 05 00 32.5 -0.6**
FFC pmax pmax
comp=Z,7.0nm,1.1s
FFC Flin Flon 49.25 32 *e*P **P 05 00 32.5 -0.6**
comp=Z,6.9nm,1.1s
DMN Daman 49.27 224 *e*P **P 05 00 34.3 +0.5**
comp=Z,64nm,0.8s
KOLN Koldanda 49.43 226 *e*P **P 05 00 34.8 -0.1**
comp=Z,26nm,0.6s
BZS Buzias 49.83 295⇓*i*P **P 05 00 38.0 +0.4**
BZS Buzias 49.83 295 ⇓P **P 05 00 38.0 +0.4**
SHL Shillong 49.98 215 *e*P **P 05 00 38.0 -1.1**
NDI New Delhi 49.98 233 *e*P **P** 05 00 33.0 -5.9
MDVR Moldovita 50.58 295⇑*i*P **P 05 00 43.6 +0.3**
BFO Black Forest 50.66 307 *i* P **P** 05 00 49.8 +5.9
B05A Bryant 51.54 50 P **P 05 00 49.8 -0.7**
baz=340
BRTR Keskin Array B 51.90 282 P **P 05 00 54.0 +0.6**
comp=Z,3.1nm,0.9s,baz=35,slow=4.5,SNR=6.6
BR231 Keskin MP Arra 52.04 283 *e*P **P 05 00 54.2 -0.2**
B08A Colville Reser 52.07 48 *e*P **P 05 00 55.0 +0.6**
comp=Z,20nm,1.5s
TUE Stuetta 52.16 306 *e*P **P 05 00 56.4 +1.0**
comp=Z,13nm,1.1s
LON Longmire 53.04 50 *e*P **P 05 01 01.9 +0.3**
LON pmax pmax
comp=Z,6.0nm,1.1s
LON Longmire 53.04 50 *e*P **P 05 01 01.9 +0.3**
comp=Z,6.0nm,1.1s
BSMT Bassoo Peak 53.52 44 *e*P **P 05 01 05.7 +0.3**
QIZ Qiongzhong 54.23 193 P **P 05 01 11.1 +0.5**
QIZ S **S 05 08 48.6 +1.1**
QIZ Qiongzhong 54.23 193 SS **SS 05 12 34.0 +4.8**
QIZ pmax pmax
comp=Z,5.0nm,0.9s
QIZ LR LR
comp=N,82nm,11.0s
QIZ LR LR
comp=E,180nm,7.5s
EGMT Eagleton 54.35 40 *e*P **P 05 01 12.3 +1.0**
comp=E,13nm,1.4s
ULM Lac du Bonnet 54.51 28 P **P 05 01 11.9 -0.3**
comp=E,11nm,0.7s,baz=343,slow=6.8,SNR=12
ULM Lac du Bonnet 54.51 28 P **P 05 01 12.0 -0.3**
ULM pmax pmax
comp=Z,11nm,0.7s
ULM Lac du Bonnet 54.51 28 *e*P **P 05 01 11.6 -0.6**
comp=Z,12nm,0.8s
MSO Missoula 54.67 44 P **P 05 01 13.4 -0.2**
baz=343
MSO Missoula 54.67 44 *e*P **P 05 01 14.4 +0.7**
comp=Z,7.5nm,1.1s
A26A Wade Farm, Ken 54.88 34 P **P 05 01 14.4 -0.6**
baz=346
DGMT Dagmar 54.93 35 P **P 05 01 15.8 +0.3**
baz=345
DGMT Dagmar 54.93 35 *e*P **P 05 01 16.4 +1.0**
comp=Z,19nm,0.8s
A27A Ledoux Ranch, 54.95 33 P **P 05 01 15.3 -0.3**
baz=346
AQU L'Aquila 55.02 301 *e*P **P 05 01 17.3 +1.1**
AQU pmax pmax
comp=Z,40nm,0.9s
AQU L'Aquila 55.02 301 *e*P **P 05 01 17.3 +1.1**
comp=Z,40nm,0.9s
A28A Rude Farm, Bot 55.15 32 P **P 05 01 16.7 -0.3**
baz=346
A29A Manning Farm, 55.30 31 P **P 05 01 17.9 -0.1**
baz=346,SNR=14
B26A Jensen Ranch, 55.35 34 P **P 05 01 17.7 -0.8**
baz=346
A30A Hoffart Farm, 55.43 31 P **P 05 01 19.0 0.0**
baz=347,SNR=7.1
B27A Peters Farms, 55.48 33 P **P 05 01 19.3 -0.1**
baz=346
B28A Dugan Ranch, T 55.59 32 P **P 05 01 20.2 +0.1**
baz=346
I04A Tendick Farm, 55.69 52 P **P 05 01 20.9 -0.1**
baz=341
A32A Rocking H Ranc 55.72 29 P **P 05 01 20.5 -0.5**
baz=347,SNR=10
B29A Wagenman Farm, 55.73 32 P **P 05 01 21.3 +0.1**
baz=346
LAMP Lampang 55.74 205 P P 05 01 27.1 +5.6
comp=Z,5.4nm,0.7s
BMO Blue Mountains 55.84 47 *e*P **P 05 01 23.9 +1.9**
comp=Z,8.1nm,1.1s
A33A Warroad 55.86 28 P **P 05 01 21.3 -0.7**
baz=348,SNR=15
CMAR Chiang Mai Arr 55.89 206 P **P 05 01 21.7 -0.9**
comp=Z,1.3nm,0.6s,baz=354,slow=8.0,SNR=9.1
CMAR PP **PP 05 03 23.8 -3.3**
comp=Z,0.5nm,0.4s,baz=197,slow=34,SNR=2.0
B30A Myrvik Farm, E 55.90 31 P **P 05 01 22.0 -0.4**
baz=347,SNR=7.3
C26A Wahner Farm, P 55.91 34 P **P 05 01 22.8 +0.3**
baz=346
CM01 Chiang Mai Arr 55.92 206 *e*P **P 05 01 21.8 -1.0**
B31A Greenbush Farm 56.03 30 P **P 05 01 22.8 -0.5**
baz=347,SNR=9.8
C27A Sayler Ranch, 56.12 34 P **P 05 01 23.8 -0.2**
baz=346
B32A Ashes, Strandq 56.22 29 P **P 05 01 23.9 -0.7**
baz=347,SNR=13
BOZ Bozeman (W) 56.27 42 P **P 05 01 25.4 +0.3**
baz=344,SNR=7.6
BOZ Bozeman (W) 56.27 42 *e*P **P 05 01 25.5 +0.3**
BOZ pmax pmax
comp=Z,23nm,1.8s
BOZ Bozeman (W) 56.27 42 *e*P **P 05 01 25.5 +0.3**
comp=Z,23nm,1.8s
MDND Maddock 56.29 32 P **P 05 01 25.4 +0.2**
baz=346,SNR=5.9
MDND Maddock 56.29 32 *e*P **P 05 01 25.0 -0.2**
comp=Z,30nm,0.9s
LAO LASA Array 56.29 38 P **P 05 01 25.8 +0.5**
baz=345,SNR=6.1
LAO LASA Array 56.29 38 *e*P **P 05 01 25.8 +0.5**
comp=Z,13nm,1.0s
C28A Hausauer Farms 56.30 33 P **P 05 01 25.9 +0.7**
baz=346
D25A Fairfield 56.36 35 P **P 05 01 26.1 +0.4**
baz=346
B34A Aery, Baudette 56.40 28 P **P 05 01 25.1 -0.9**
baz=348,SNR=5.3
J05D Fort Rock, OR 56.45 51 P **P 05 01 25.9 -0.6**
baz=342
B33A Robert and Kas 56.48 29 P **P 05 01 25.7 -0.7**
baz=348,SNR=5.4
GCMT Greycliff 56.51 41 *e*P **P 05 01 27.9 +0.9**
C30A Mose, Pekin 56.61 31 P **P 05 01 26.7 -0.8**
baz=347
CUC Castrocucco 56.61 298 *e*P **P 05 01 27.1 -0.4**
comp=Z,6.2nm,1.1s
C31A Landman Farms, 56.63 31 P **P 05 01 26.7 -0.9**
baz=347
B35A Bob, Littlefor 56.65 27 P **P 05 01 27.0 -0.7**
baz=348,SNR=13
D27A Center 56.70 34 P **P 05 01 28.3 +0.2**
baz=346
SUKH Sukhothai 56.76 205 P **P 05 01 33.0 +4.2**
comp=Z,3.3nm,0.9s,comp=Z,208nm
SKNT Sakolnakorn 56.77 200 P **P 05 01 30.6 +1.7**
comp=Z,14nm,1.3s,comp=Z,3μm
D28A Regan 56.77 33 P **P 05 01 28.9 +0.2**
baz=346
C32A Crookston 56.78 30 P **P 05 01 27.9 -0.7**
baz=348
MCMT McKenzie Canyo 56.80 44 *e*P **P 05 01 30.1 +0.9**
C33A Trail 56.95 29 P **P 05 01 28.8 -1.1**
baz=348,SNR=5.4
D29A Pettibone, Tap 57.06 32 P **P 05 01 30.1 -0.5**
baz=347
TIP Timpagrande 57.13 296⇑*i*P **P 05 01 31.9 +0.6**
TIP Timpagrande 57.13 296 *e*P **P 05 01 31.3 +0.1**
comp=Z,30nm,1.2s
D30A Buchanan 57.14 32 P **P 05 01 30.5 -0.8**
baz=347,SNR=6.1
E26A Carlson Angus 57.16 35 P **P 05 01 31.7 +0.3**
baz=346,SNR=5.3
C34A RKJ Ranch, Bem 57.18 28 P **P 05 01 30.5 -1.0**
baz=348,SNR=9.1
RLMT Red Lodge 57.23 41 P **P 05 01 32.5 +0.4**
baz=344,SNR=10
RLMT Red Lodge 57.23 41 *e*P **P 05 01 32.4 +0.3**
comp=Z,17nm,1.3s
C35A Jirik Farms, M 57.27 28 P **P 05 01 30.8 -1.3**
baz=348,SNR=19
YMR Madison River 57.34 42 *e*P **P 05 01 34.5 +1.6**
comp=Z,7.2nm,1.1s
E27A Carson 57.35 34 P **P 05 01 33.5 +0.7**
baz=346,SNR=8.9
E28A Huff 57.35 33 P **P 05 01 32.8 +0.1**
baz=346
EYMN Ely 57.35 26 P **P 05 01 31.7 -1.0**
baz=349,SNR=14
EYMN Ely 57.35 26 *e*P **P 05 01 31.7 -1.0**
comp=Z,9.2nm,0.7s
D31A Mcclaflin, Tow 57.36 31 P **P 05 01 32.1 -0.6**
baz=347,SNR=5.3
C36A Pine Crest Far 57.36 27 P **P 05 01 31.6 -1.1**
baz=349
C37A Embarrass 57.48 26 P **P 05 01 32.3 -1.3**
baz=349
PBKT Sadao Pong 57.50 203 P **P 05 01 36.0 +2.0**
comp=Z,11nm,1.1s,comp=Z,2μm
F25A Bowman 57.52 36 P **P 05 01 34.3 +0.3**
baz=346
MFID Camas Ranch 57.53 47 *e*P **P 05 01 33.9 -0.3**
comp=Z,22nm,1.7s
E29A Napoleon 57.53 32 P **P 05 01 33.5 -0.5**
baz=347
LKWY Lake 57.55 42 *e*P **P 05 01 35.5 +1.1**
LKWY pmax pmax
comp=Z,5.0nm,0.8s
LKWY Lake 57.55 42 *e*P **P 05 01 35.5 +1.1**
comp=Z,4.6nm,0.8s
D33A AnnSam, Waubun 57.55 29 P **P 05 01 32.7 -1.4**
baz=348
YBH Yreka Blue Hor 57.57 53 LR LR 05 27 59.3
comp=Z,107nm,21.6s,baz=338,slow=38
C38A Sawbill Land. 57.61 26 P **P 05 01 33.0 -1.5**
baz=349,SNR=12
MMAI Mount Meron Ar 57.62 277 P **P 05 01 35.0 +0.1**
comp=Z,3.4nm,0.6s,baz=23,slow=6.5,SNR=9.0
C39A Grand Marais 57.65 25 P **P 05 01 33.1 -1.7**
baz=350,SNR=7.6
H17A Grant Village 57.68 42 P **P 05 01 37.0 +1.7**
baz=344
H17A Grant Village 57.68 42 *e*P **P 05 01 36.9 +1.6**
comp=Z,8.8nm,1.2s
D34A Park Rapids 57.70 29 P **P 05 01 34.0 -1.1**
baz=348,SNR=22
E30A Jud 57.71 32 P **P 05 01 34.4 -0.9**
baz=347
F26A Lodgepole 57.73 35 P **P 05 01 35.7 +0.3**
baz=346,SNR=6.0
E31A Nome 57.81 31 P **P 05 01 35.3 -0.6**
baz=347,SNR=8.7
D35A Remer 57.86 28 P **P 05 01 34.9 -1.4**
baz=348,SNR=9.1
D36A Goodland 57.89 27 P **P 05 01 35.2 -1.3**
baz=349,SNR=10
E32A Braaten, Kindr 57.90 30 P **P 05 01 35.7 -0.9**
baz=348
FLWY Flagg Ranch 57.95 42 *e*P **P 05 01 36.8 -0.4**
comp=Z,5.8nm,1.0s
MOD Modoc Plateau 57.97 51 *e*P **P 05 01 37.7 +0.4**
comp=Z,4.7nm,1.0s
D37A Cotton 58.01 27 P **P 05 01 35.9 -1.4**
baz=349,SNR=7.5
IMW Indian Meadow 58.08 42 *e*P **P 05 01 37.8 -0.4**
comp=Z,5.8nm,1.2s
E33A Westby DABS, E 58.15 30 P **P 05 01 37.4 -0.9**
baz=348,SNR=7.5
F29A Eureka 58.22 33 P **P 05 01 38.5 -0.3**
baz=347
G25A Newell 58.24 36 P **P 05 01 39.2 +0.2**
baz=346
E34A Wadena 58.26 29 P **P 05 01 38.3 -0.8**
baz=348,SNR=8.8
MOOW Moose Ponds 58.26 42 *e*P **P 05 01 39.8 +0.4**
comp=Z,17nm,1.6s
G26A Maurine 58.28 35 P **P 05 01 39.1 -0.2**
baz=346
N02D Trinity Center 58.29 53 P **P 05 01 39.7 +0.2**
baz=342
G27A Dupree 58.31 35 P **P 05 01 39.6 +0.1**
baz=346
FXWY Fox Creek 58.31 43 *e*P **P 05 01 40.9 +1.1**
comp=Z,5.4nm,1.4s
E35A Pequot Lakes 58.33 28 P **P 05 01 38.4 -1.1**
baz=348,SNR=5.9
F30A Leola 58.34 32 P **P 05 01 39.4 -0.3**
baz=347
LOHW Long Hollow 58.42 42 *e*P **P 05 01 42.2 +1.7**
comp=Z,9.3nm,1.6s
F31A Hecla 58.44 32 P **P 05 01 39.3 -1.0**
baz=347
E36A McGregor 58.52 27 P **P 05 01 40.2 -0.7**
baz=349,SNR=34
F33A 5 Mile Ranch, 58.76 30 P **P 05 01 41.7 -0.9**
baz=348
H25A Fruitdale 58.76 36 P **P 05 01 42.6 -0.1**
baz=346,SNR=8.0
H26A Fairpoint 58.91 35 P **P 05 01 43.6 -0.1**
baz=346,SNR=7.5
F34A Alexandria 58.95 29 P **P 05 01 42.7 -1.2**
baz=348
F35A Swanville 58.99 29 P **P 05 01 43.4 -0.7**
baz=348,SNR=7.2
G30A Faulkton 59.01 32 P **P 05 01 43.8 -0.5**
baz=347
H27A Howes 59.01 35 P **P 05 01 44.5 +0.1**

baz=346,SNR=5.2
F36A Milaca 59.13 28 P P 05 01 44.1 -1.0
baz=349,SNR=6.2
O03D Paynes Creek 59.15 53 P P 05 01 45.8 +0.4
baz=342
RSSD Black Hills 59.17 37 P P 05 01 45.0 -0.7
baz=346
RSSD Black Hills 59.17 37 eP P 05 01 45.0 -0.7
RSSD pmax pmax
comp=Z,5.0nm,0.9s
RSSD Black Hills 59.17 37 eP P 05 01 45.0 -0.7
comp=Z,5.2nm,0.9s
I25A Rochford 59.32 36 P P 05 01 46.4 -0.3
baz=346
G33A Ortonville 59.36 30 P P 05 01 46.3 -0.5
baz=348
BW06 Boulder Array 59.44 42 P P 05 01 47.3 -0.4
baz=344
BW06 Boulder Array 59.44 42 eP P 05 01 47.2 -0.4
comp=Z,1.8nm,0.8s
PD31 Pinedale Array 59.44 42 eP P 05 01 47.5 -0.1
PDAR Pinedale Array 59.44 42 P P 05 01 47.2 -0.4
comp=Z,1.0nm,0.6s,baz=8.1,slow=2.8,SNR=10
PDAR PP PP 05 03 58.2 -0.2
comp=Z,0.3nm,0.6s,baz=8.2,slow=7.6,SNR=2.7
PDAR LR LR 05 30 31.0
comp=Z,55nm,20.2s,baz=340,slow=39
COWI Conover 59.47 24 eP P 05 01 46.1 -1.4
comp=Z,6.2nm,0.6s
G35A Watkins 59.62 29 P P 05 01 47.6 -1.0
baz=348
SUSD Miller 59.71 32 P P 05 01 48.7 -0.5
baz=347
G36A St. Michael 59.71 28 P P 05 01 48.3 -0.8
baz=349
H31A Wolsey 59.75 32 P P 05 01 48.7 -0.7
baz=347
I28A Midland 59.78 34 P P 05 01 49.7 0.0
baz=347,SNR=8.0
H33A Prehn Over Nor 59.82 31 P P 05 01 49.2 -0.8
baz=348
SPMN Marine on St. 59.85 27 P P 05 01 49.2 -1.0
baz=349,SNR=6.7
SPMN Marine on St. 59.85 27 eP P 05 01 49.7 -0.4
comp=Z,12nm,0.7s
H32A Carlson Farm, 59.89 31 P P 05 01 49.9 -0.5
baz=348
I29A Vivian Onida 59.90 34 P P 05 01 50.1 -0.4
baz=347,SNR=5.2
H34A Spellman Lake, 59.98 30 P P 05 01 50.6 -0.3
baz=348
H35A Sunnyside Ranc 60.09 29 P P 05 01 50.6 -1.1
baz=348
J26A Sides Ranch, S 60.12 36 P P 05 01 51.3 -0.8
baz=346
K22A Casper 60.14 39 P P 05 01 51.2 -1.2
baz=345,SNR=7.0
K22A Casper 60.14 39 eP P 05 01 51.6 -0.7
comp=Z,9.9nm,0.8s
H36A Jessenland, He 60.33 28 P P 05 01 53.1 -0.3
baz=349,SNR=5.4
H37A Dierke Farm, C 60.47 28 P P 05 01 53.6 -0.7
baz=349
J30A Dallas 60.71 33 P P 05 01 55.1 -1.0
baz=347
ECSD EROS Data Cent 60.77 31 P P 05 01 55.4 -1.0
baz=348,SNR=17
ECSD EROS Data Cent 60.77 31 eP P 05 01 55.8 -0.6
comp=Z,14nm,0.9s
I36A Fitzsimmons Fa 60.87 29 P P 05 01 56.2 -0.8
baz=349
J32A Parkston 60.93 32 P P 05 01 56.6 -1.0
baz=348
I37A Lemond, Waseca 60.96 28 P P 05 01 57.1 -0.6
baz=349
I38A Scanlan Farm, 61.08 27 P P 05 01 57.8 -0.7
baz=349,SNR=12
J33A Davis 61.12 31 P P 05 01 57.8 -1.0
baz=348
JLU Jordanelle 61.15 44 eP P 05 01 60.0 +0.6
comp=Z,12nm,1.4s
DUG Dugway, Tooele 61.25 45 P P 05 02 00.4 +0.4
baz=344,SNR=8.2
DUG Dugway, Tooele 61.25 45 eP P 05 02 00.2 +0.2
DUG pmax pmax
comp=Z,16nm,1.4s
DUG Dugway, Tooele 61.25 45 eP P 05 02 00.1 +0.2
comp=Z,16nm,1.4s
J34A George 61.30 30 P P 05 01 58.8 -1.2
baz=348
K30A Basset 61.33 33 P P 05 02 00.3 0.0
baz=347,SNR=5.6
J35A Milford 61.34 30 P P 05 01 59.2 -1.1
baz=348
J36A Seneca 1, Swea 61.50 29 P P 05 02 00.9 -0.5
baz=349
K31A O'Neill 61.52 33 P P 05 02 00.9 -0.6
baz=348
ES19 SONSECA Array 61.60 314 eP P 05 02 03.1 +0.9
K32A Verdigre 61.60 32 P P 05 02 01.1 -1.0
baz=348
J37A Redenius Farm, 61.63 28 P P 05 02 01.5 -0.7
baz=349
NLU North Lily Min 61.64 45 eP P 05 02 03.2 +0.6
comp=Z,12nm,1.4s
PHWY Pilot Hill 61.64 39 eP P 05 02 02.8 0.0
comp=Z,10nm,1.5s
ESDC Sonseca Array 61.64 314 P P 05 02 03.1 +0.6
comp=Z,2.4nm,0.5s,baz=11,slow=6.5,SNR=18
ESDC PP PP 05 04 17.0 -0.7
comp=Z,0.1nm,0.2s,baz=237,slow=26,SNR=2.6
NV01 Mina Array Sit 61.74 50 eP P 05 02 03.6 +0.3
NVAR Mina Array Bea 61.74 50 P P 05 02 03.8 +0.4
comp=Z,0.9nm,0.6s,baz=341,slow=5.7,SNR=9.0
NVAR PP PP 05 04 18.4 -0.3
comp=Z,0.2nm,0.5s,baz=236,slow=14,SNR=2.4
NVAR LR LR 05 35 09.0
comp=Z,117nm,20.3s,baz=342,slow=42
J38A Wedel Dairy, R 61.77 27 P P 05 02 02.1 -1.1
baz=349
SADO Sadowa 61.81 16 P P 05 02 02.7 -0.7
comp=Z,4.7nm,0.7s,baz=341,slow=4.5,SNR=9.1
SADO Sadowa 61.81 16 eP P 05 02 03.5 +0.1
comp=Z,4.7nm,0.7s
PAB San Pablo 61.85 315 eP P 05 02 04.8 +0.9
PAB pmax pmax
comp=Z,9.0nm,0.9s
PAB San Pablo 61.85 315 eP P 05 02 04.8 +0.9
comp=Z,8.6nm,0.9s
K34A Le Mars 61.87 31 P P 05 02 02.9 -1.0
baz=348
L31A Butterfield Fa 61.94 33 P P 05 02 03.9 -0.5
baz=348
N23A Red Feather La 61.95 39 P P 05 02 04.5 -0.3
baz=346,SNR=5.6
N23A Red Feather La 61.95 39 eP P 05 02 05.0 +0.2
comp=Z,14nm,1.4s
K37A Belmond 62.15 29 P P 05 02 04.8 -1.0
baz=349
K36A Gilmore City 62.16 29 P P 05 02 04.6 -1.2
baz=349
O20A White River Ci 62.24 41 P P 05 02 06.4 -0.3
baz=345
O20A White River Ci 62.24 41 eP P 05 02 06.5 -0.1
comp=Z,28nm,1.8s
KEST Kesra 62.30 302 P P 05 02 07.5 +0.6
comp=Z,4.9nm,0.8s,baz=317,slow=5.6,SNR=5.1
PTN Potsdam (NY) 62.32 13 eP P 05 02 08.3 +1.4
PTN pmax pmax
comp=Z,17nm,1.2s
PTN Potsdam (NY) 62.32 13 eP P 05 02 08.3 +1.4
comp=Z,17nm,1.2s
P18A Preston Nutter 62.33 43 eP P 05 02 08.1 +0.7
comp=Z,9.6nm,1.1s
P17A Butcher Ranch, 62.38 44 eP P 05 02 08.1 +0.5
comp=Z,22nm,1.5s
R11A Troy Canyon, C 62.43 48 P P 05 02 08.1 +0.1
baz=344,SNR=6.8
R11A Troy Canyon, C 62.43 48 eP P 05 02 07.9 -0.1
comp=Z,7.4nm,1.4s
TMUT Trail Mountain 62.45 44 eP P 05 02 08.7 +0.5
comp=Z,3.6nm,0.8s
JFWS Jewell Farm 62.46 26 eP P 05 02 07.2 -0.7
JFWS pmax pmax
comp=Z,19nm,0.8s
JFWS Jewell Farm 62.46 26 eP P 05 02 07.2 -0.7
comp=Z,19nm,0.8s
L35A Bielow Farm, R 62.51 30 P P 05 02 07.0 -1.2
baz=348
L34A Svendsen Farm, 62.53 31 P P 05 02 06.7 -1.6
baz=348
OGNE Ogallala 62.60 36 P P 05 02 08.6 -0.3
baz=347
PSUT Pine Spring 62.63 46 eP P 05 02 10.1 +0.8
comp=Z,7.9nm,1.1s
L36A Harm Buss Farm 62.65 30 P P 05 02 08.1 -1.1
baz=349
M31A Lambtecht Ranc 62.73 33 P P 05 02 09.0 -0.7
baz=348
L37A Phoenix Point, 62.76 29 P P 05 02 09.0 -0.8
baz=349
SRU San Rafael Swe 62.77 43 eP P 05 02 10.3 +0.1
SRU pmax pmax
comp=Z,6.0nm,0.7s
SRU San Rafael Swe 62.77 43 eP P 05 02 10.3 +0.1
comp=Z,6.3nm,0.7s
BGNE Belgrade 62.80 33 P P 05 02 09.8 -0.3
baz=348
Q16A Castle Valley 62.83 44 eP P 05 02 11.1 +0.6
comp=Z,44nm,1.7s
L38A Oak Wood Farm, 62.86 28 P P 05 02 09.6 -0.9
baz=349,SNR=6.2
MSU Marysvale 63.01 45 eP P 05 02 12.5 +0.7
MSU Marysvale 63.01 45 eP P 05 02 12.5 +0.7
SCIA State Center 63.05 28 eP P 05 02 11.7 -0.1
comp=Z,26nm,1.0s
ISCO Idaho Springs 63.07 39 P P 05 02 12.5 +0.2
baz=346,SNR=8.5
ISCO Idaho Springs 63.07 39 eP P 05 02 12.8 +0.5
ISCO pmax pmax
comp=Z,7.0nm,1.2s
ISCO Idaho Springs 63.07 39 eP P 05 02 12.8 +0.5
comp=Z,7.3nm,1.2s
N31A Bailey Ranch, 63.24 33 P P 05 02 13.0 -0.1
baz=348
GRAC Grapevine Rang 63.33 50 P P 05 02 14.4 +0.7
baz=344
SMCO Snowmass 63.41 40 eP P 05 02 14.8 +0.1
comp=Z,16nm,1.2s
M37A Trindle Farm, 63.43 29 P P 05 02 13.6 -0.7
baz=349
MTPU Mount Pierson 63.46 45 eP P 05 02 16.1 +1.2
comp=Z,14nm,1.6s
M38A Pleasantville 63.53 28 P P 05 02 14.1 -0.9
baz=349
N33A J Bar K, Exete 63.56 32 P P 05 02 14.5 -0.7
baz=348
PV09 Paradox Valley 63.64 42 eP P 05 02 16.3 +0.2
N35A Tabor 63.72 31 P P 05 02 16.2 -0.1
baz=349
PV10 Paradox Valley 63.78 42 eP P 05 02 17.9 +0.9
O31A Woolen Ranch, 63.83 34 P P 05 02 16.3 -0.7
baz=348
FURC Furnace Creek, 63.95 50 P P 05 02 17.7 0.0
baz=344
Q24A Divide 63.96 39 P P 05 02 17.6 -0.7
baz=346
VES Vestal, Richgr 64.03 52 P P 05 02 17.3 -1.0
baz=343
N37A Lee Faris, Mou 64.04 29 P P 05 02 17.8 -0.6
baz=349
PV05 Paradox Valley 64.06 43 eP P 05 02 18.6 -0.2
PV01 Paradox Valley 64.11 42 eP P 05 02 19.3 +0.2
N38A Joes South For 64.14 29 P P 05 02 18.1 -0.9
baz=349
N39A Derby Farms, D 64.16 28 P P 05 02 18.2 -0.9
baz=350
MPMC Manual Prospec 64.20 50 P P 05 02 19.8 +0.2
baz=344,SNR=5.4
LCMT Little Creek M 64.22 46 eP P 05 02 20.3 +0.6
O34A Beatrice 64.22 32 P P 05 02 18.9 -0.7
baz=348,SNR=19
O35A Humboldt 64.27 31 P P 05 02 18.8 -1.0
baz=348
SHPR Sheep Range 64.29 48 eP P 05 02 21.0 +0.8
comp=Z,14nm,1.5s
KNB Kanab 64.31 46 eP P 05 02 21.4 +1.1
KNB pmax pmax
comp=Z,24nm,1.3s
KNB Kanab 64.31 46 eP P 05 02 21.4 +1.1
comp=Z,24nm,1.3s
KSCO Kaye Shedlock' 64.38 37 P P 05 02 20.8 +0.1
baz=347
KSCO Kaye Shedlock' 64.38 37 eP P 05 02 21.1 +0.4
comp=Z,20nm,1.0s
O36A Bolckow 64.54 30 P P 05 02 21.1 -0.5
baz=349
O37A Wolven Farm, M 64.63 30 P P 05 02 21.6 -0.5
baz=349
LRMC Laurel Mtn Rad 64.71 51 P P 05 02 22.4 -0.5
baz=344
O39A Kirksville 64.77 28 P P 05 02 22.3 -0.8
baz=350
S22A 4UR Ranch, Cre 64.83 41 P P 05 02 24.3 +0.4
baz=346,SNR=8.4
S22A 4UR Ranch, Cre 64.83 41 eP P 05 02 24.3 +0.4
comp=Z,9.2nm,1.3s
P34A Walnut Farm, R 64.83 32 P P 05 02 23.0 -0.5
baz=348,SNR=5.8
HDIL Hopedale 64.91 25 P P 05 02 22.9 -1.0
baz=350,SNR=6.6
HDIL Hopedale 64.91 25 eP P 05 02 23.2 -0.8
comp=Z,16nm,0.7s
P35A Duane Minner, 64.97 31 P P 05 02 23.9 -0.5
baz=349
O40A La Belle 64.99 28 P P 05 02 23.5 -1.0
baz=350,SNR=14
M54A Oil Creek Stat 65.00 17 P P 05 02 24.0 -0.6
baz=353,SNR=5.5
P36A Good Intent, A 65.00 31 P P 05 02 24.2 -0.4
baz=349
MVCO Mesa Verde 65.02 42 P P 05 02 25.1 +0.1
baz=346
MVCO Mesa Verde 65.02 42 eP P 05 02 25.4 +0.4
comp=Z,20nm,1.7s
CBKS Cedar Bluff 65.07 34 P P 05 02 25.2 +0.1
baz=348
GSC Goldstone, Bar 65.08 50 P P 05 02 24.7 -0.5
baz=344
SDCO Great Sand Dun 65.08 40 P P 05 02 25.3 -0.2
baz=346,SNR=13
SDCO Great Sand Dun 65.08 40 eP P 05 02 25.3 -0.2
comp=Z,14nm,1.3s
Q32A Meitler Ranch, 65.09 33 P P 05 02 24.1 -1.2
baz=348
P37A Lathrop 65.16 30 P P 05 02 25.0 -0.7
baz=349
Q33A Connelly Farm, 65.20 33 P P 05 02 25.2 -0.8
baz=348,SNR=5.1
EDW2 Edwards Air Fo 65.21 51 P P 05 02 26.0 -0.1
baz=344
P38A Dawn 65.25 29 P P 05 02 25.2 -1.0
baz=349,SNR=5.2
SURT Suratani 65.27 205 P P 05 02 30.1 +3.5
comp=Z,6.2nm,1.6s
KSU1 Kansas State U 65.30 32 P P 05 02 25.8 -0.8
baz=348,SNR=6.1
KSU1 Kansas State U 65.30 32 eP P 05 02 26.1 -0.5
comp=Z,17nm,0.8s
SFIN Lafayette 65.35 24 P P 05 02 26.5 -0.4
baz=351
SFIN Lafayette 65.35 24 eP P 05 02 26.5 -0.4
comp=Z,13nm,0.6s
Q34A Chapman 65.42 32 P P 05 02 26.5 -0.9
baz=348,SNR=6.3
P39B Salisbury 65.49 28 P P 05 02 26.7 -1.1
baz=350,SNR=5.3
N54A Moraine State 65.52 18 P P 05 02 27.5 -0.5
baz=353
P40A Paris 65.55 28 P P 05 02 27.3 -0.9
baz=350,SNR=16
Q36A Arnold C. Orve 65.61 31 P P 05 02 27.8 -0.8
baz=349
Q35A Mercer Eighty, 65.62 31 P P 05 02 27.9 -0.8
baz=349
R32A Long Quarter, 65.62 34 P P 05 02 27.8 -0.9
baz=348
HEC Hector,Ludlow 65.64 50 P P 05 02 28.9 0.0
baz=344
GMRC Granite Mounta 65.83 49 P P 05 02 29.9 -0.3
baz=344
Q37A Longview Farm, 65.85 30 P P 05 02 29.8 -0.3
baz=349
R33A Olander Ranch, 65.85 33 P P 05 02 29.0 -1.2
baz=348
T25A Trinidad 65.87 39 P P 05 02 29.3 -1.3
baz=347
Q38A Cooks Store, C 65.89 29 P P 05 02 29.3 -1.0
baz=349,SNR=7.5
Q39A Willow Grove F 65.89 29 P P 05 02 29.4 -1.0
baz=350,SNR=5.9
ACSO Alum Creek Sta 65.95 20 eP P 05 02 30.4 -0.3
comp=Z,24nm,0.7s
WUAZ Wupatki 66.06 45 P P 05 02 31.3 -0.4
baz=345
Q40A Laux Farm, Aux 66.07 28 P P 05 02 30.7 -0.9
baz=350,SNR=8.7
R36A Gordon, Harris 66.23 31 P P 05 02 31.8 -0.8
baz=349
TRTT Trang 66.27 204 P P 05 02 36.5 +3.5
comp=Z,12nm,1.0s,comp=Z,460nm
S32A Newby Ranch, P 66.29 34 P P 05 02 32.2 -0.8
baz=348
O56A Blue Knob Stat 66.33 17 P P 05 02 32.6 -0.6
baz=354
R37A Teagarden Farm 66.34 30 P P 05 02 32.7 -0.6
baz=349
Q42A Golden Eagle 66.36 27 P P 05 02 32.2 -1.2
baz=350,SNR=6.4
BELC Belle Mtn. Jos 66.51 50 P P 05 02 34.1 -0.5
baz=344
IRM Iron Mountain 66.55 49 P P 05 02 35.0 +0.3
baz=344
S33A Kaszmaul Farm, 66.55 33 P P 05 02 34.3 -0.4
baz=348
S34A Willow Spring 66.59 33 P P 05 02 34.4 -0.5
baz=348
R38A Fenwick Farm, 66.60 30 P P 05 02 33.8 -1.1
baz=349,SNR=14
R39A Chumby, Stover 66.60 29 P P 05 02 34.3 -0.6
baz=350
BLO Bloomington 66.61 23 eP P 05 02 34.6 -0.4
BLO pmax pmax
comp=Z,15nm,0.8s
BLO Bloomington 66.61 23 eP P 05 02 34.6 -0.4
comp=Z,15nm,0.8s
S35A Otter Creek Ra 66.73 32 P P 05 02 34.9 -0.9
baz=349,SNR=5.9
R40A Maddies Statio 66.74 28 P P 05 02 34.8 -1.0
baz=350,SNR=7.6
S36A Lake Cedric, C 66.80 31 P P 05 02 35.4 -0.9
baz=349,SNR=8.9
S37A Fort Scott 66.88 31 P P 05 02 35.8 -1.0
baz=349,SNR=5.8
BC3 Big Chuckawall 66.96 49 P P 05 02 36.8 -0.7
baz=344
T33A Patterson Ranc 67.01 34 P P 05 02 37.0 -0.6
baz=348
Y12C Blythe 67.08 48 P P 05 02 38.3 +0.2
baz=345
S38A Stockton 67.15 30 P P 05 02 37.1 -1.4
baz=349,SNR=7.2
S39A Bolivar 67.17 29 P P 05 02 37.6 -1.0
baz=350,SNR=19
T34A McClaskey Farm 67.24 33 P P 05 02 38.5 -0.5
baz=348
S40A Lebanon 67.38 29 P P 05 02 39.1 -0.9
baz=350,SNR=20
T36A Boggs Farm, Ca 67.41 32 P P 05 02 40.1 0.0
baz=349
T37A Cheneyville 18 67.49 31 P P 05 02 39.4 -1.2
baz=349,SNR=15
WCI Wyandotte Cave 67.57 23 eP P 05 02 40.6 -0.5
WCI pmax pmax
comp=Z,21nm,0.7s
WCI Wyandotte Cave 67.57 23 eP P 05 02 40.6 -0.5
comp=Z,21nm,0.7s
ANMO Albuquerque 67.61 41 P P 05 02 41.5 -0.2
baz=346
ANMO Albuquerque 67.61 41 eP P 05 02 41.4 -0.2
ANMO pmax pmax
comp=Z,6.0nm,1.2s
ANMO Albuquerque 67.61 41 eP P 05 02 41.4 -0.2
comp=Z,5.8nm,1.2s
T38A Diamond 67.67 30 P P 05 02 40.4 -1.4
baz=349,SNR=8.2
SIUC Southern Illin 67.71 26 eP P 05 02 41.8 -0.2
comp=Z,24nm,0.8s
T39A Clever 67.82 29 P P 05 02 41.7 -1.0
baz=350,SNR=8.0
T40A Mansfield 67.82 29 P P 05 02 41.6 -1.1
baz=350,SNR=5.5
U35A Pawnee 67.95 32 P P 05 02 43.2 -0.4
baz=349
T41A Mountain View 68.03 28 P P 05 02 43.2 -0.9
baz=350,SNR=17
U36A Oologah 68.08 32 P P 05 02 43.6 -0.7
baz=349
U37A Salina 68.17 31 P P 05 02 43.8 -1.1
baz=349,SNR=9.0
V33A Lossen Ranch, 68.23 34 P P 05 02 44.6 -0.7
baz=348
U38A Gravette 68.25 30 P P 05 02 44.4 -1.0
baz=349
U39A Green Forest 68.44 30 P P 05 02 45.3 -1.2
baz=350,SNR=11
HHAR Hobbs 68.47 30 eP P 05 02 46.0 -0.8
comp=Z,5.8nm,1.1s
TUL1 Leonard 68.55 32 P P 05 02 46.6 -0.7
baz=349,SNR=6.7
TUL1 Leonard 68.55 32 eP P 05 02 47.1 -0.2
comp=Z,17nm,0.9s
U40A Yellville 68.55 29 P P 05 02 46.3 -1.0
baz=350,SNR=6.9
AMTX Amarillo 68.56 37 P P 05 02 46.7 -0.8
baz=348
AMTX Amarillo 68.56 37 eP P 05 02 47.0 -0.5
comp=Z,15nm,0.9s
V36A Jenks 68.65 32 P P 05 02 47.4 -0.5
baz=349
KULM Kulim 68.67 202 eP P 05 02 47.7 -0.5
comp=Z,12nm,1.0s
V37A Hulbert 68.67 31 P P 05 02 47.5 -0.6
baz=349
PARMO Parma 68.68 26 eP P 05 02 48.6 +0.5
W32A Sentinel 68.75 35 P P 05 02 48.9 +0.3
baz=348
V38A Canehill 68.81 31 P P 05 02 47.8 -1.1
baz=349,SNR=14
W33A Caddo, Fort Co 68.86 34 P P 05 02 49.1 -0.1
baz=348
W34A Bridge Creek, 68.89 34 P P 05 02 49.0 -0.5
baz=348
V39A Pettigrew 68.94 30 P P 05 02 48.9 -0.9
baz=350,SNR=7.9
V40A Witts Springs 69.10 29 P P 05 02 49.9 -0.9
baz=350,SNR=18
W35A Tecumseh 69.12 33 P P 05 02 50.0 -0.8
baz=349
214A Organ Pipe Nat 69.18 47 P P 05 02 50.9 -0.4
baz=345
BLA Blacksburg 69.19 18 eP P 05 02 51.0 -0.4
BLA pmax pmax
comp=Z,11nm,0.8s
BLA Blacksburg 69.19 18 eP P 05 02 51.0 -0.4
comp=Z,11nm,0.8s
WMOK Wichita Mounta 69.21 35 P P 05 02 51.1 -0.3
baz=348,SNR=12
WMOK Wichita Mounta 69.21 35 eP P 05 02 51.1 -0.3
WMOK pmax pmax
comp=Z,13nm,0.8s
WMOK Wichita Mounta 69.21 35 eP P 05 02 51.1 -0.3
comp=Z,13nm,0.8s
W36A Wetumka 69.23 32 P P 05 02 50.9 -0.7
baz=349
MSTX Muleshoe 69.25 38 P P 05 02 50.7 -1.2
baz=347
MSTX Muleshoe 69.25 38 eP P 05 02 51.2 -0.6
comp=Z,5.8nm,0.8s
TUC Tucson 69.28 46 P P 05 02 50.9 -1.1
baz=346
W37B Quinton 69.36 32 P P 05 02 51.9 -0.5
baz=349,SNR=8.8
X33A Lawton 69.45 34 P P 05 02 52.5 -0.5
baz=348
WVT Waverly 69.45 25 eP P 05 02 52.6 -0.3
WVT pmax pmax
comp=Z,18nm,0.8s
WVT Waverly 69.45 25 eP P 05 02 52.6 -0.3
comp=Z,18nm,0.8s
W39A Magazine 69.55 30 P P 05 02 52.8 -0.7
baz=350,SNR=8.3
W38A Poteau 69.57 31 P P 05 02 53.0 -0.6
baz=349,SNR=6.0

W40A	Ferguson Farm,	69.66	30	P		P	05 02 53.8 -0.4
	baz=350,SNR=12						
X201	Greenbrier Sit	69.67	29	eP		P	05 02 54.0 -0.2
	comp=Z,15nm,0.9s						
WHAR	Wooly Hollow	69.68	29	eP		P	05 02 53.9 -0.4
	comp=Z,23nm,0.9s						
121A	Cookes Peak, D	69.68	43	P		P	05 02 54.6 0.0
	baz=346						
X301	Greenbrier Sit	69.72	29	eP		P	05 02 54.4 -0.2
	comp=Z,15nm,1.0s						
X36A	Centrahoma	69.77	33	P		P	05 02 54.6 -0.3
	baz=349,SNR=7.9						
W41B	Gary Mavity, V	69.80	29	P		P	05 02 54.6 -0.4
	baz=350,SNR=18						
X35A	Drake	69.84	33	P		P	05 02 55.0 -0.3
	baz=349,SNR=8.9						
X37A	Clayton	69.91	32	P		P	05 02 55.0 -0.7
	baz=349						
X38A	Whitesboro	69.91	31	P		P	05 02 55.8 +0.1
	baz=349,SNR=6.7						
X39A	Fountain Ranch	70.18	31	P		P	05 02 56.8 -0.6
	baz=350						
MIAR	Mount Ida	70.22	30	P		P	05 02 56.7 -0.9
	baz=350						
MIAR	Mount Ida	70.22	30	eP		P	05 02 57.5 -0.2
MIAR				pmax		pmax	
	comp=Z,5.0nm,1.0s						
MIAR	Mount Ida	70.22	30	eP		P	05 02 57.5 -0.2
	comp=Z,4.8nm,1.0s						
Y35A	Marietta	70.31	33	P		P	05 02 57.9 -0.3
	baz=349						
X40A	Basin Creek Fa	70.39	30	P		P	05 02 58.2 -0.4
	baz=350,SNR=6.6						
TKL	Tuckaleechee C	70.39	22	P		P	05 02 58.2 -0.4
	comp=Z,5.4nm,0.7s,baz=6.8,slow=2.5,SNR=11						
TKL	Tuckaleechee C	70.39	22	eP		P	05 02 58.0 -0.7
	comp=Z,6.2nm,0.8s						
Y36A	Durant	70.44	33	P		P	05 02 59.3 +0.3
	baz=349						
Y37A	Hugo	70.47	32	P		P	05 02 59.5 +0.3
	baz=349						
319A	Douglas	70.50	45	eP		P	05 03 00.0 +0.5
CPCT	Cooper Cave	70.52	22	eP		P	05 02 59.1 -0.3
	comp=Z,3.7nm,0.9s						
SBUM	Sibu	70.54	190	eP		P	05 03 00.1 +0.3
	comp=Z,11nm,1.0s						
PLAL	Pickwick Lake	70.55	25	eP		P	05 02 59.5 -0.1
	comp=Z,7.1nm,0.7s						
Y39A	Lockesburg	70.74	31	P		P	05 03 00.8 0.0
	baz=350						
X44A	Crenshaw	70.76	27	P		P	05 03 00.8 0.0
	baz=351						
Y40A	Okolona	70.79	30	P		P	05 03 01.1 0.0
	baz=350						
Z35A	Perchaven, San	70.84	34	P		P	05 03 00.6 -0.8
	baz=349						
OXF	Oxford	70.84	27	eP		P	05 03 01.6 +0.2
OXF				pmax		pmax	
	comp=Z,30nm,0.8s						
OXF	Oxford	70.84	27	eP		P	05 03 01.6 +0.2
	comp=Z,30nm,0.8s						
MNTX	Cornudas Mount	70.97	41	P		P	05 03 02.1 -0.2
	baz=347,SNR=11						
MNTX	Cornudas Mount	70.97	41	eP		P	05 03 02.0 -0.2
	comp=Z,9.3nm,1.2s						
Y41A	Eaglette Beard	71.02	29	P		P	05 03 02.6 +0.1
	baz=350,SNR=6.0						
Z36A	Blue Ridge	71.03	33	P		P	05 03 01.7 -0.9
	baz=349						
CCAR	Cane Creek	71.10	29	eP		P	05 03 03.8 +0.8
	comp=Z,47nm,0.8s						
ABTX	Abilene, Hawle	71.12	36	P		P	05 03 02.5 -0.7
	baz=348						
ABTX	Abilene, Hawle	71.12	36	eP		P	05 03 02.4 -0.8
	comp=Z,10nm,0.8s						
WLAR	White Oak Lake	71.14	30	eP		P	05 03 03.9 +0.7
	comp=Z,11nm,0.8s						
KMSC	Kings Mountain	71.16	20	P		P	05 03 02.6 -0.7
	baz=353						
KMSC	Kings Mountain	71.16	20	eP		P	05 03 02.7 -0.6
	comp=Z,15nm,1.1s						
Y42A	Garnett, Star	71.18	29	P		P	05 03 03.3 -0.2
	baz=350						
Y43A	Makayla and Ka	71.23	28	P		P	05 03 04.1 +0.3
	baz=350						
Y44A	Strider, Charl	71.28	27	P		P	05 03 04.0 0.0
	baz=351						
134A	White-Moore Ra	71.44	34	P		P	05 03 04.3 -0.8
	baz=349						
Y45A	Yeager Farm, C	71.46	27	P		P	05 03 04.8 -0.4
	baz=351						
Y46A	Houston	71.54	26	P		P	05 03 05.2 -0.4
	baz=351,SNR=14						
135A	Vickery Place,	71.57	34	P		P	05 03 05.3 -0.5
	baz=349						
Z41A	Richland Creek	71.60	30	P		P	05 03 06.0 0.0
	baz=350						
KSM	Kuching	71.61	192	eP		P	05 03 06.5 +0.3
	comp=Z,18nm,0.9s						
Y47A	UCPARC, Winfie	71.65	25	P		P	05 03 05.6 -0.7
	baz=351,SNR=12						
Z42A	Norrel Spur, H	71.71	29	P		P	05 03 06.8 +0.1
	baz=350						
137A	Heron Place, G	71.80	32	P		P	05 03 07.2 0.0
	baz=349						
233A	Rising Star	71.84	35	P		P	05 03 06.9 -0.7
	baz=348						
JSC	Jenkinsville	72.02	20	eP		P	05 03 08.5 0.0
JSC				pmax		pmax	
	comp=Z,9.0nm,0.9s						
JSC	Jenkinsville	72.02	20	eP		P	05 03 08.5 0.0
	comp=Z,8.6nm,0.9s						
WHTX	Lake Whitney,	72.11	34	P		P	05 03 08.5 -0.6
	baz=349						
Z48A	Northport	72.20	25	P		P	05 03 08.7 -0.9
	baz=351,SNR=5.9						
Z46A	Louisville	72.20	26	P		P	05 03 09.0 -0.7
	baz=351						
Z47A	Carrollton	72.31	26	P		P	05 03 09.6 -0.6
	baz=351,SNR=14						
143A	Socs Landing,	72.35	29	P		P	05 03 10.5 0.0
	baz=350						
237A	Washetta, Mont	72.37	33	P		P	05 03 10.2 -0.5
	baz=349						
333A	Richland Sprin	72.51	36	P		P	05 03 10.6 -0.9
	baz=348,SNR=8.0						
239A	Gary	72.57	31	P		P	05 03 11.6 -0.2
	baz=350						
LRAL	Lakeview Retre	72.61	25	eP		P	05 03 11.2 -0.8
	comp=Z,7.1nm,0.7s						
GOGA	Godfrey	72.65	22	eP		P	05 03 11.3 -1.0
GOGA				pmax		pmax	
	comp=Z,12nm,0.9s						
GOGA	Godfrey	72.65	22	eP		P	05 03 11.3 -1.0
	comp=Z,12nm,0.9s						
147A	Livingston	72.80	26	P		P	05 03 12.9 -0.3
	baz=351						
GSI	Gunungsitoli	72.97	205	eP		P	05 03 13.8 -0.6
	comp=Z,39nm,1.3s						
433A	Art	73.05	36	P		P	05 03 13.8 -0.9
	baz=348,SNR=6.2						
244A	Avery, Jackson	73.10	28	P		P	05 03 14.5 -0.5
	baz=351						
JCT	Junction City	73.19	36	P		P	05 03 15.2 -0.4
	baz=348,SNR=7.9						
JCT	Junction City	73.19	36	eP		P	05 03 15.3 -0.4
JCT				pmax		pmax	
	comp=Z,14nm,0.8s						
JCT	Junction City	73.19	36	eP		P	05 03 15.3 -0.3
	comp=Z,14nm,0.8s						
248A	Dixon Mills	73.44	26	P		P	05 03 17.0 0.0
	baz=351						
TX31	Lajitas Ar. Si	73.60	40	eP		P	05 03 18.0 -0.1
TXAR	Lajitas Array	73.60	40	P		P	05 03 18.0 -0.1
	comp=Z,8.8nm,0.8s,baz=4.4,slow=3.6,SNR=68						
TXAR				LR		LR	05 38 53.2
	comp=Z,38nm,19.0s,baz=0.0,slow=38						
347A	Saraland	74.02	26	P		P	05 03 20.4 0.0
	baz=351						
348A	Jackson	74.09	26	P		P	05 03 21.0 +0.1
	baz=351						
BRAL	Brewton	74.44	25	eP		P	05 03 23.1 +0.2
TIGA	Tifton	74.58	22	P		P	05 03 23.4 -0.2
	baz=353						
TAM	Tamanrasset	75.61	301	eP		P	05 03 28.9 -1.0
TAM				pmax		pmax	
	comp=Z,4.0nm,1.2s						
TAM	Tamanrasset	75.61	301	eP		P	05 03 28.9 -1.0
	comp=Z,3.8nm,1.2s						
933A	Laredo	76.08	37	P		P	05 03 32.2 -0.2
	baz=349						
TORD	Torodi Ar. Bea	85.82	302	P		P	05 04 23.2 -1.2
	comp=Z,16nm,1.0s,baz=5.5,slow=3.8,SNR=45						
TORD				PP		PP	05 07 45.0 +1.6
	comp=Z,2.3nm,1.2s,baz=11,slow=7.4,SNR=4.5						
COEN	Coen	87.80	159	eP		P	05 04 32.5 -1.4
	comp=Z,20nm,1.2s						
WRAB	Tennant Creek	92.97	168	eP		P	05 04 56.3 -1.6
WRAB				pmax		pmax	
	comp=Z,8.0nm,0.7s						
WRAB	Tennant Creek	92.97	168	eP		P	05 04 56.3 -1.6
	comp=Z,8.2nm,0.7s						
WRA	Warramunga Arr	92.98	168	P		P	05 04 56.8 -1.2
	comp=Z,6.6nm,0.6s,baz=353,slow=5.4,SNR=91						
ASAR	Alice Springs	96.65	168	P		P	05 05 13.2 -1.6
	comp=Z,0.8nm,0.8s,baz=1.8,slow=4.7,SNR=4.3						
AS01	Alice Springs	96.65	168	eP		P	05 05 13.5 -1.2
TRQA	Tornquist	145.08	5	ePKPbc		PKPbc	05 11 19.6 -1.3
MAW	Mawson	145.35	215	PKPbc		PKPbc	05 11 19.9 -0.9
	comp=Z,1.9nm,0.8s,baz=236,slow=20,SNR=2.9						
PLCA	Paso Flores	147.28	17	PKPbc		PKPbc	05 11 26.5 -1.0
	comp=Z,4.4nm,1.0s,baz=49,slow=2.6,SNR=6.3						

DDA ***20*** *04:58:14.6, 39°.23N×29°.06E, h7km, Md2.7*
ISK ***20*** *04:58:14.9, 39°.14N×29°.00E, h17km, MD2.8*
CSEM ***20*** *04:58:15.5±0.2, 39°.11N×29°.06E, h20km, MD2.7, Error ellipse: s-maj=5.4km s-min=3.9km az=163.0*
ISC 20 04:58:12.3±1.1,**39°.09N**±0°.03×**29°.07E**±0°.02,**h1**km±10km, **n43,**σ1$**28/62,Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.28	261	P	Pn	04 58 22.4	-1.2
DEMI				S	Sb	04 58 26.2	+0.8
DEMI	Demirci	0.28	261	P	Pg	04 58 18.7	+1.0
DEMI				S	Sg	04 58 22.5	+1.2
DEMI	Demirci	0.28	261	*i* P	Pg	04 58 18.7	+1.0
DEMI				*i* S	Sg	04 58 22.5	+1.2
DEMI	Demirci	0.28	261	*i* P	Pn	04 58 22.4	-1.2
DEMI				*i* S	Sb	04 58 26.2	+0.8
GDZ	Gediz	0.32	89	P	Pb	04 58 22.0	+1.1
GDZ				S	Sb	04 58 28.2	+1.6
GDZ	Gediz	0.32	89	P	Pg	04 58 18.0	-0.5
GDZ				S	Sg	04 58 22.5	-0.1
GDZ	Gediz	0.32	89	*i* P	Pg	04 58 17.9	-0.5
GDZ				*i* S	Sg	04 58 22.5	-0.1
GDZ	Gediz	0.32	89	*i* P	Pb	04 58 22.0	+1.1
GDZ				*i* S	Sb	04 58 28.2	+1.6
TVSB	Tavsanli	0.47	40	*e*PG	Pn	04 58 24.8	-1.5
TVSB				*e*SG	Sb	04 58 32.0	+1.1
TVSB	Tavsanli	0.47	40	*e*Pg	Pn	04 58 24.8	-1.5
TVSB				*e*Sg	Sb	04 58 32.1	+1.1
DURS	Dursunbey	0.69	318	P	Pn	04 58 29.7	+0.4
DURS				S	Sn	04 58 38.8	-1.9
DURS	Dursunbey	0.69	318	*i* P	Pn	04 58 29.7	+0.4
DURS				*i* S	Sn	04 58 38.8	-1.9
MANT	Manisa	0.72	214	P	Pn	04 58 30.7	+1.0
MANT	Manisa	0.72	214	P	Pg	04 58 26.5	+0.4
MANT				S	Sg	04 58 30.9	-4.4
MANT	Manisa	0.72	214	*i* P	Pg	04 58 26.5	+0.4
MANT				*i* S	Sg	04 58 30.9	-4.4
MANT	Manisa	0.72	214	*i* P	Pn	04 58 30.7	+1.0
AKHS	Akhisar	1.00	258	*i* P	Pb	04 58 32.8	+0.4
AKHS				*i* S	Sn	04 58 48.1	-0.1
AKS	Akhisar	1.00	259	*e*PG	Pn	04 58 33.7	+0.2
AKS	Akhisar	1.00	259	*e*Pg	Pn	04 58 33.7	+0.2
BALB	Balikesir	1.08	301	*e*PG	Pn	04 58 34.9	+0.4
BALB				*e*SG	Sn	04 58 49.1	-0.9
BALB	Balikesir	1.08	301	*e*Pg	Pn	04 58 34.9	+0.4
BALB				*e*Sg	Sn	04 58 49.1	-0.9
IGD	Bursa	1.18	5	*i* P	Pb	04 58 33.8	-1.7
IGD				*i* S	Sn	04 58 54.8	+2.2
IGD	Bursa	1.18	5	*i* P	Pb	04 58 33.9	-1.6
IGD				*i* S	Sn	04 58 52.8	+0.1
IZI	Iznik	1.29	14	*e*PN	Pg	04 58 37.9	+0.9
IZI	Iznik	1.29	14	*e*Pn	Pg	04 58 37.9	+0.9
MDNY	Mudanya-Bursa	1.29	354	*e*PN	Pg	04 58 38.0	+1.0
MDNY	Mudanya-Bursa	1.29	354	*e*Pn	Pg	04 58 38.0	+1.0
KCTX	Karacabey (Bur	1.30	335	*e*PN	Pg	04 58 37.9	+0.7
KCTX	Karacabey (Bur	1.30	335	*e*Pn	Pg	04 58 37.9	+0.7
GONE	Gonen-Balikesi	1.44	312	*e*PN	Pb	04 58 39.7	-0.1
GONE	Gonen-Balikesi	1.44	312	*e*Pn	Pb	04 58 39.7	-0.1
ADVT	Abdulvahap	1.44	21	*e*PN	Pg	04 58 40.3	+0.4
ADVT	Abdulvahap	1.44	21	*e*Pn	Pg	04 58 40.3	+0.4
ARMT	Armutlu	1.49	354	*e*PN	Pb	04 58 40.8	+0.1
ARMT	Armutlu	1.49	354	*e*Pn	Pb	04 58 40.8	+0.1
EDC	Edincik	1.57	324	*e*PN	Pn	04 58 41.3	+0.1
EDC	Edincik	1.57	324	*e*Pn	Pn	04 58 41.3	+0.1
GULT	Gulveren	1.75	39	*e*PN	Pb	04 58 44.7	-0.5
GULT	Gulveren	1.75	39	*e*Pn	Pb	04 58 44.7	-0.5
SVRH	Sivrihisar-ESK	1.94	78	*e*PN	Pb	04 58 48.9	+0.5
SVRH	Sivrihisar-ESK	1.94	78	*e*Pn	Pb	04 58 48.9	+0.5
SILT	Sile	2.11	12	*e*PN	Pb	04 58 50.0	-1.4
SILT	Sile	2.11	12	*e*Pn	Pb	04 58 50.0	-1.4

CSEM ***20*** *04:59:54.5±0.5, 34°.86N×26°.30E, h8km, ML2.7, Error ellipse: s-maj=10.4km s-min=4.2km az=165.0*
ATH ***20*** *04:59:54.8, 34°.88N×26°.28E, h16km±3km, ML2.6/2, Error ellipse: s-maj=4.8km s-min=1.3km az=348.0*
THE ***20*** *04:59:54.9, 34°.90N×26°.30E, h2km±2km, ML2.7/5, Error ellipse: s-maj=2.4km s-min=0.8km az=173.0*
ISC 20 04:59:55.7±1.6,**34°.94N**±0°.08×**26°.29E**±0°.04,**h16**km±7km, **n30,**σ0$**67/43,1C-2D,Crete**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZKR	Zakros	0.19	341	P	Pg	05 00 00.0	-0.3
ZKR				S	Sg	05 00 03.7	+0.3
ZKR	Zakros	0.19	341	P	Pg	05 00 00.4	+0.1
ZKR				S	Sg	05 00 03.8	+0.3
ZKR	Zakros	0.19	341	P	Pg	05 00 00.4	+0.1
ZKR				S	Sg	05 00 03.8	+0.3
NPS	Neapolis	0.65	300	P	Pg	05 00 08.0	-0.5
NPS				S	Sb	05 00 18.2	+0.7
NPS	Neapolis	0.65	300	P	Pg	05 00 08.2	-0.2
NPS				S	Sg	05 00 16.9	-0.2
NPS	Neapolis	0.65	300	P	Pg	05 00 08.2	-0.2
NPS				S	Sg	05 00 16.9	-0.2
NPS				AML	AML	05 00 19.6	
	comp=N,1220μm,0.3s						
NPS				AML	AML	05 00 22.4	
	comp=E,1277μm,0.5s						
LAST	Lasithi	0.71	289	⇓*i* P	Pg	05 00 08.9	-0.7
LAST	Lasithi	0.71	289	P	Pg	05 00 08.5	-1.1
LAST				S	Sb	05 00 20.0	+0.8
LAST	Lasithi	0.71	289	P	Pg	05 00 08.4	-1.1
LAST				S	Sg	05 00 18.8	-0.1
LAST	Lasithi	0.71	289	P	Pg	05 00 08.4	-1.1
KARP	Karpathos	0.94	49	P	Pb	05 00 13.2	-0.4
KARP				S	Sn	05 00 27.2	-0.2
KARP	Karpathos	0.94	49	P	Pb	05 00 13.2	-0.4
KARP				S	Sn	05 00 28.1	+0.7
KARP	Karpathos	0.94	49	P	Pb	05 00 12.4	-1.2
KARP				S	Sn	05 00 28.1	+0.7
KARP				AML	AML	05 00 31.4	
	comp=N,704μm,0.2s						
KARP				AML	AML	05 00 34.6	
	comp=E,970μm,0.6s						
IDI	Anoyia	1.20	287	⇓*i* P	Pb	05 00 18.2	0.0
IDI	Anoyia	1.20	287	P	Pn	05 00 17.4	-0.6
IDI				S	Sg	05 00 35.2	+0.5
IDI	Anoyia	1.20	287	P	Pg	05 00 18.4	-0.6
IDI				S	Sg	05 00 35.2	+0.5
IDI	Anoyia	1.20	287	P	Pg	05 00 18.4	-0.6
SIVA	Sivas	1.22	274	⇑*i* P	Pg	05 00 21.4	+2.1
SIVA	Sivas	1.22	274	P	Pn	05 00 17.6	-0.5
SIVA	Sivas	1.22	274	P	Pn	05 00 17.6	-0.5
SANT	Santorini	1.59	335	P	Pb	05 00 24.5	-0.2
SANT	Santorini	1.59	335	P	Pb	05 00 24.5	-0.2
THR3	Thira Island,	1.64	334	P	Pn	05 00 24.1	+0.2
THR3	Thira Island,	1.64	334	P	Pn	05 00 24.1	+0.2
THR5	Thira Island,	1.67	333	P	Pn	05 00 24.3	0.0
THR5	Thira Island,	1.67	333	P	Pn	05 00 24.3	0.0
GVD	Gavdhos	1.82	268	P	Pn	05 00 26.7	+0.4
GVD	Gavdhos	1.82	268	P	Pn	05 00 26.7	+0.4
ANKY	Antikythira Is	2.62	292	P	Pb	05 00 41.3	-0.9
ANKY	Antikythira Is	2.62	292	P	Pb	05 00 41.3	-0.9

ISK ***20*** *05:00:35.8, 39°.11N×29°.09E, h5km, ML3.9*
CSEM ***20*** *05:00:36.7±0.1, 39°.08N×29°.07E, h2km, ML4.2, Error ellipse: s-maj=2.8km s-min=2.4km az=88.0*
ISCJB ***20*** *05:00:36.7±0.4, 39°.08N±0°.02×29°.05E±0°.02, h8km±3km, mb3.6/3, Error ellipse: s-maj=2.7km s-min=2.5km az=5.4*
DDA ***20*** *05:00:36.2, 39°.12N×29°.09E, h7km, Ml4.2*
IDC ***20*** *05:00:36.5±1.3, 38°.96N×29°.05E, h0km, mb3.6/3, mb1 3.7/5, mb1mx3.5/43, mbtmp3.7/5, ML3.6/2, Error ellipse: s-maj=25.4km s-min=16.0km az=171.0*
THE ***20*** *05:00:38.7, 39°.04N×28°.85E, h1km±1km, ML3.6/6, Error ellipse: s-maj=2.7km s-min=0.8km az=80.0*
ISC 20 05:00:36.6±1.0,**39°.10N**±0°.01×**29°.10E**±0°.02,**h8**km±8km, **n147,**σ1$**09/190,mb3.6/3,7C-1D,Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	Gediz	0.30	91	P	Pg	05 00 42.6	+0.1
GDZ				S	Sg	05 00 47.1	+0.6
GDZ	Gediz	0.30	91	⇑*i* P	Pg	05 00 42.6	+0.1
GDZ				*i* S	Sg	05 00 47.1	+0.6
DEMI	Demirci	0.30	260	P	Pg	05 00 42.6	0.0
DEMI				S	Sg	05 00 46.7	+0.1
DEMI	Demirci	0.30	260	⇑*i* P	Pg	05 00 42.6	0.0
DEMI				*i* S	Sg	05 00 46.7	+0.1
TVSB	Tavsanli	0.45	38	*e*PG	Pg	05 00 45.0	-0.4
TVSB	Tavsanli	0.45	38	*e*Pg	Pg	05 00 45.0	-0.4
KULA	Kula-Manisa	0.67	211	*e*PG	Pg	05 00 49.6	-0.1
KULA	Kula-Manisa	0.67	211	P	Pg	05 00 49.5	-0.1
KULA				S	Sg	05 00 57.8	-0.6
KULA	Kula-Manisa	0.67	211	P	Pg	05 00 49.5	-0.1
KULA				S	Sg	05 00 57.8	-0.6
DURS	Dursunbey	0.70	316	P	Pg	05 00 49.5	-0.6
DURS				S	Sg	05 00 59.0	-0.3
DURS	Dursunbey	0.70	316	⇑*i* P	Pg	05 00 49.5	-0.6
DURS				*i* S	Sg	05 00 59.0	-0.3
MANT	Manisa	0.74	215	P	Pg	05 00 50.7	-0.2
MANT				S	Sg	05 01 00.1	-0.3
MANT	Manisa	0.74	215	⇑*i* P	Pg	05 00 50.7	-0.2
MANT				*i* S	Sg	05 01 00.1	-0.3
KHAL	Karahalli	0.79	157	P	Pb	05 00 52.0	-0.6
KHAL				S	Sb	05 01 02.9	-0.6
KHAL	Karahalli	0.79	157	⇑*i* P	Pb	05 00 52.0	-0.6
KHAL				*i* S	Sb	05 01 02.9	-0.6
KHL	Karahalli	0.84	157	*e*PG	Pb	05 00 53.2	-0.3
KHL	Karahalli	0.84	157	*e*Pg	Pb	05 00 53.2	-0.3
ORLT	Orhaneli	0.96	351	*e*PG	Pg	05 00 54.6	-0.5
ORLT				*e*SG	Sb	05 01 08.6	+0.1
ORLT	Orhaneli	0.96	351	*e*Pg	Pg	05 00 54.6	-0.5
ORLT				*e*Sg	Sb	05 01 08.6	+0.1
AKHS	Akhisar	1.02	258	P	Pg	05 00 56.2	-0.1
AKHS				S	Sg	05 01 09.9	+0.3
AKHS	Akhisar	1.02	258	⇑*i* P	Pg	05 00 56.1	-0.1
AKHS				*i* S	Sg	05 01 09.9	+0.3
AKS	Akhisar	1.02	258	*e*PG	Pg	05 00 56.5	+0.2
AKS	Akhisar	1.02	258	*e*Pg	Pg	05 00 56.5	+0.2
BALB	Balikesir	1.09	300	*e*PG	Pn	05 00 58.0	-0.2
BALB				*e*SG	Sn	05 01 14.0	+0.5
BALB	Balikesir	1.09	300	*e*Pg	Pn	05 00 58.0	-0.2
BALB				*e*Sg	Sn	05 01 14.0	+0.5
IGD	Bursa	1.17	4	⇑*i* P	Pg	05 00 56.8	-2.3
IGD				*i* S	Sg	05 01 14.0	-0.2
IZI	Iznik	1.27	13	*e*PN	Pn	05 01 00.5	-0.3
IZI	Iznik	1.27	13	*e*Pn	Pn	05 01 00.5	-0.3
MDNY	Mudanya-Bursa	1.28	353	*e*PN	Pn	05 01 00.2	-0.7
MDNY	Mudanya-Bursa	1.28	353	*e*Pn	Pn	05 01 00.2	-0.7
KCTX	Karacabey (Bur	1.30	334	*e*PN	Pn	05 01 00.7	-0.5
KCTX	Karacabey (Bur	1.30	334	*e*Pn	Pn	05 01 00.7	-0.5
BORA	Eskisehir	1.31	53	P	Pn	05 01 00.2	-1.1
BORA				S	Sn	05 01 18.4	-0.7
BORA	Eskisehir	1.31	53	*i* P	Pn	05 01 00.2	-1.1
BORA				*i* S	Sn	05 01 18.4	-0.7
BALY	Balya	1.31	300	P	Pn	05 01 01.3	-0.1
BALY				S	Sg	05 01 19.1	+0.2
BALY	Balya	1.31	300	*i* P	Pn	05 01 01.3	-0.1
BALY				*i* S	Sg	05 01 19.1	+0.2
GEMT	Gemlik	1.34	3	*e*PN	Pn	05 01 01.4	-0.3
GEMT	Gemlik	1.34	3	*e*Pn	Pn	05 01 01.4	-0.3
DENT	Denizli	1.34	182	*e*PN	Pb	05 01 01.9	-0.2
DENT	Denizli	1.34	182	*e*Pn	Pb	05 01 01.9	-0.2
DNZL	Cakiroluk	1.40	182	P	Pn	05 01 02.3	-0.4
DNZL	Cakiroluk	1.40	182	⇓*i* P	Pn	05 01 02.4	-0.4
DNZL				*i* S	Sg	05 01 25.1	+3.4
ADVT	Abdulvahap	1.42	20	*e*PN	Pg	05 01 03.4	-0.6
ADVT	Abdulvahap	1.42	20	*e*Pn	Pg	05 01 03.4	-0.6
ARMT	Armutlu	1.48	353	*e*PN	Pb	05 01 04.4	0.0
ARMT	Armutlu	1.48	353	*e*Pn	Pb	05 01 04.4	0.0
AYDB	Zeytinkoy-Aydi	1.49	220	*e*PN	Pg	05 01 05.1	-0.1
AYDB	Zeytinkoy-Aydi	1.49	220	*e*Pn	Pg	05 01 05.1	-0.1
GPA	Golpazari	1.51	38	*e*PN	Pg	05 01 05.6	-0.1
GPA	Golpazari	1.51	38	*e*Pn	Pg	05 01 05.6	-0.1
EDC	Edincik	1.57	323	*e*PN	Pb	05 01 05.8	-0.2
EDC	Edincik	1.57	323	*e*Pn	Pb	05 01 05.8	-0.2
KNL	Bal¯-kesir	1.69	315	*i* P	Pn	05 01 06.5	+0.1
KNL				*i* S	Sb	05 01 29.5	+0.1
ISP	Isparta	1.69	138	*e*PN	Pb	05 01 07.7	-0.4
ISP	Isparta	1.69	138	*e*Pn	Pb	05 01 07.7	-0.4
DKL	Dikili	1.71	270	*e*PN	Pb	05 01 07.7	-0.6
DKL	Dikili	1.71

CTYL	**Yalikoy Yolu**	**2.46 346**	*e*Pn	**Pn**	**05 01 18.3**	**+1.3**
FETY	**Fethiye**	**2.46 180**	P	**Pn**	**05 01 18.0**	**+1.0**
FETY	**Fethiye**	**2.46 180**	P	**Pn**	**05 01 18.0**	**+1.0**
BODT	**Bodrum**	**2.47 215**	P	**Pn**	**05 01 17.0**	**-0.3**
BODT			S	**Sn**	**05 01 46.2**	**-1.5**
BODT	**Bodrum**	**2.47 215**	P	**Pn**	**05 01 17.0**	**-0.3**
BODT			S	**Sn**	**05 01 46.2**	**-1.5**
CHOS	**Chios island**	**2.48 254**	P	**Pn**	**05 01 16.2**	**-1.3**
CHOS			S	**Sn**	**05 01 45.4**	**-2.6**
CHOS	**Chios island**	**2.48 254**	P	**Pn**	**05 01 16.2**	**-1.3**
CHOS			S	**Sn**	**05 01 45.4**	**-2.6**
SIGR	**SIGRI**	**2.52 274**	P	**Pn**	**05 01 17.0**	**-0.9**
SIGR			S	**Sn**	**05 01 46.5**	**-2.4**
SIGR	**SIGRI**	**2.52 274**	P	**Pn**	**05 01 17.0**	**-0.9**
SIGR			S	**Sn**	**05 01 46.5**	**-2.4**
ERIK	**Erikli-Kesan**	**2.54 309**	*e*PN	**Pn**	**05 01 19.3**	**+1.2**
ERIK	**Erikli-Kesan**	**2.54 309**	*e*Pn	**Pn**	**05 01 19.3**	**+1.2**
LADK	**Ladik-KONYA**	**2.71 108**	*e*PN	**Pb**	**05 01 22.9**	**-2.6**
LADK	**Ladik-KONYA**	**2.71 108**	*e*Pn	**Pb**	**05 01 22.9**	**-2.5**
PHSR	**Pinarhisar**	**2.80 335**	*e*PN	**Pn**	**05 01 23.4**	**+1.6**
PHSR	**Pinarhisar**	**2.80 335**	*e*Pn	**Pn**	**05 01 23.4**	**+1.6**
KDZE	**Karadeniz Ereo**	**2.85 38**	*e*PN	**Pn**	**05 01 24.4**	**+1.9**
KDZE	**Karadeniz Ereo**	**2.85 38**	*e*Pn	**Pn**	**05 01 24.4**	**+1.9**
ALN	**Alexandroupoli**	**2.96 308**	P	**Pn**	**05 01 23.2**	**-0.7**
ALN			S	**Sn**	**05 01 59.0**	**-0.5**
ALN	**Alexandroupoli**	**2.96 308**	P	**Pn**	**05 01 23.2**	**-0.7**
ALN			S	**Sn**	**05 01 59.0**	**-0.5**
SMTH	**Samothraki Isl**	**3.07 298**	P	**Pn**	**05 01 25.3**	**-0.2**
SMTH			S	**Sn**	**05 02 02.6**	**+0.1**
SMTH	**Samothraki Isl**	**3.07 298**	P	**Pn**	**05 01 25.3**	**-0.2**
SMTH			S	**Sn**	**05 02 02.6**	**+0.1**
LIA	**Limnos Island**	**3.13 286**	P	**Pn**	**05 01 26.5**	**+0.2**
LIA			S	**Sn**	**05 02 02.4**	**-1.5**
LIA	**Limnos Island**	**3.13 286**	P	**Pn**	**05 01 26.5**	**+0.2**
LIA			S	**Sn**	**05 02 02.4**	**-1.5**
EDRB	**Edirne**	**3.28 328**	P	**Pn**	**05 01 28.4**	**0.0**
EDRB	**Edirne**	**3.28 328**	P	**Pn**	**05 01 28.4**	**0.0**
BRTR	**Keskin Array B**	**3.57 78**	Pn	**Pn**	**05 01 35.7**	**+3.2**
	2.0nm,0.3s,baz=254,slow=13,SNR=19					
BRTR			Pg	**Pg**	**05 01 43.6**	**-1.5**
	4.3nm,0.3s,baz=257,slow=16,SNR=34					
BRTR			Lg	Lg	05 02 32.5	
	2.4nm,0.3s,baz=264,slow=22,SNR=6.1					
KDZ	**Kurdzhali**	**3.80 313**	P	**Pn**	**05 01 35.9**	**+0.4**
PRD	**Provadia**	**4.30 343**	P	**Pb**	**05 01 54.7**	**+2.3**
MMB	**Musomiste**	**4.80 303**	P	**Pn**	**05 01 50.0**	**+0.7**
MPEP	**Malo Peshtene**	**5.87 318**	P	**Pn**	**05 02 04.8**	**+0.9**
BARS	**Barje**	**6.65 306**	*e*Pn	**Pn**	**05 02 15.4**	**+0.8**
MMAI	**Mount Meron Ar**	**7.93 138**	Pn	**Pn**	**05 02 33.0**	**+0.7**
	2.3nm,0.3s,baz=321,slow=14,SNR=11					
FINES	**FINESS Array B**	**22.45 356**	P	**P**	**05 05 39.4**	**+3.6**
	1.7nm,0.8s,baz=153,slow=13,SNR=3.7					
NOA	**NORSAR Array B**	**24.62 339**	P	**P**	**05 05 59.0**	**+1.7**
	1.2nm,0.7s,baz=142,slow=9.5,SNR=2.8					
TORD	**Torodi Ar. Bea**	**35.42 231**	P	**P**	**05 07 33.1**	**-0.2**
	0.6nm,0.7s,baz=34,slow=8.1,SNR=4.2					

IDC ***20*** *05:09:58.4±0.8, 0.°96S×127.°34E, h0km, mb4.1/10, mb1 4.3/12, mb1mx4.0/48, mbtmp4.2/12, ML4.1/2, Error ellipse: s-maj=34.7km s-min=14.5km az=80.0*

ISCJB ***20*** *05:10:02.1±0.4, 0.°95S±0.°05×126.°90E±0.°04, h34km, mb4.2/11, Error ellipse: s-maj=7.2km s-min=5.0km az=175.2*

NEIC ***20*** *05:10:03.4±0.6, 1.°02S×127.°05E, h35km, mb4.4/5, Error ellipse: s-maj=14.1km s-min=10.6km az=59.0*

DJA ***20*** *05:10:04.6±1.5, 1.°S±4.°×12.°7E±.°, h24km±17km, M4.8/5, mb5.0/5, mB5.0/4, MLv4.8/4, Mw(mB)4.4/4*

ISC 20 05:10:02.6±0.6, 0.°92S±0.°07×127.°06E±0.°05, h34km, n31, σ2°32/36, mb4.1/11, Halmahera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SANI	**Sanana**	**1.55**	**224**	P	**Pn**	**05 10 27.4**	**-0.5**
SANI				S	**Sn**	**05 10 47.7**	**+0.9**
SWI	**Sorong**	**4.20**	**89**	P	**Pb**	**05 11 11.2**	**-4.6**
SWI				S	**Sb**	**05 12 04.6**	**-1.5**
SIJI	**Sorong**	**4.21**	**89**	Pn	**Pn**	**05 11 08.2**	**+3.8**
	14nm,0.3s,baz=8.6,slow=9.9,SNR=1.8						
SIJI				Sn	**Sb**	**05 12 01.7**	**-4.7**
	21nm,0.3s,baz=107,slow=4.5,SNR=2.4						
LUWI	**Luwuk**	**4.29**	**268**	P	**Pn**	**05 11 04.6**	**-1.0**
LUWI				S	**Sn**	**05 11 52.4**	**-2.1**
LUWI	**Luwuk**	**4.29**	**268**	*e*Pn	**Pn**	**05 11 04.4**	**-1.2**
SGSI	**Sangihe**	**4.83**	**342**	P	**Pn**	**05 11 14.6**	**+1.6**
MRSI	**Marisa**	**5.30**	**285**	P	**Pn**	**05 11 18.4**	**-1.1**
KDI	**Kendari**	**5.37**	**236**	P	**Pn**	**05 11 19.7**	**-0.7**
	40nm,0.5s,1μm0.2nm						
FAKI	**Fak Fak**	**5.55**	**111**	P	Pn	05 11 29.8	+6.9
	84nm,0.7s						
FAKI	**Fak Fak**	**5.55**	**111**	*e*Pn	**Pn**	**05 11 24.6**	**+1.6**
	45nm,0.5s						
FAKI				*e*S	**Sn**	**05 12 33.5**	**+7.9**
PCI	**Palu**	**7.22**	**270**	P	**Pn**	**05 11 46.2**	**+0.3**
	136nm,0.5s,2μm0.6nm						
TTSI	**Tana Toraja**	**7.54**	**254**	P	**Pn**	**05 11 49.7**	**-0.5**
	87nm,0.7s,1μm						
KAPI	**Kappang**	**8.35**	**241**	Pn	**Pn**	**05 12 02.2**	**+0.7**
	9.9nm,0.3s,baz=78,slow=4.7,SNR=54						
KAPI				Sn	**Sn**	**05 13 34.2**	**-0.5**
	1.6nm,0.3s,baz=230,slow=23,SNR=2.7						
KAPI	**Kappang**	**8.35**	**241**	*e*Pn	**Pn**	**05 12 02.2**	**+0.7**
	54nm,0.6s						
KAPI				Sn	**Sn**	**05 13 34.2**	**-0.5**
FITZ	**Fitzroy Crossi**	**17.13**	**185**	Pn	**P**	**05 13 59.8**	**-1.1**
	0.2nm,0.3s,baz=23,slow=7.7,SNR=5.1						
FITZ	**Fitzroy Crossi**	**17.13**	**185**	*e*P	**P**	**05 14 00.2**	**-0.7**
	3.9nm,1.0s						
WRAB	**Tennant Creek**	**20.20**	**160**	*e*P	**P**	**05 14 32.7**	**-2.0**
	4.6nm,0.7s						
WRA	**Warramunga Arr**	**20.20**	**160**	P	**P**	**05 14 33.0**	**-1.7**
	6.3nm,0.7s,baz=340,slow=11,SNR=52						
COEN	**Coen**	**20.54**	**130**	*e*P	Pn	05 14 39.3	-1.5
	27nm,0.9s						
ASAR	**Alice Springs**	**23.56**	**164**	P	**P**	**05 15 08.9**	**-1.4**
	7.4nm,0.8s,baz=340,slow=8.7,SNR=44						
STKA	**Stephens Creek**	**33.71**	**157**	P	**P**	**05 16 41.4**	**+0.5**
	12nm,0.7s,baz=325,slow=9.5,SNR=23						
KSAR	**Wonju Array Be**	**38.18**	**1**	P	**P**	**05 17 20.3**	**+1.3**
KSRS	**Korea Array**	**38.19**	**1**	P	**P**	**05 17 20.3**	**+1.2**
	1.6nm,0.7s,baz=178,slow=9.6,SNR=7.8						
MJAR	**Matsushiro Arr**	**38.69**	**14**	P	**P**	**05 17 22.7**	**-0.6**
	1.1nm,0.5s,baz=182,slow=9.2,SNR=4.3						
USRK	**Ussuriysk Ar.**	**45.14**	**5**	P	**P**	**05 18 16.7**	**+0.8**
	1.5nm,0.6s,baz=168,slow=9.8,SNR=4.4						
KLR	**Kul'dur**	**50.12**	**4**	P	**P**	**05 18 54.4**	**0.0**
	0.8nm,0.5s,baz=202,slow=6.1,SNR=4.3						
MKAR	**Makanchi Array**	**61.57**	**327**	P	**P**	**05 20 19.7**	**+3.1**
	0.7nm,0.4s,baz=116,slow=8.4,SNR=7.3						
KURBB	**Kurchatov Arra**	**65.83**	**328**	P	**P**	**05 20 46.3**	**+1.7**
	1.2nm,0.7s,baz=127,slow=5.6,SNR=8.1						
KURK	**Kurchatov**	**65.84**	**329**	*e*P	**P**	**05 20 46.5**	**+1.9**
	4.1nm,0.7s						
BVAR	**Borovoye Array**	**71.39**	**328**	P	**P**	**05 21 22.1**	**+2.8**
	0.4nm,0.4s,baz=141,slow=7.1,SNR=2.6						
QSPA	**South Pole Qui**	**89.02**	**180**	*e*P	**P**	**05 22 53.8**	**-0.2**
	25nm,1.7s						

IDC ***20*** *05:16:37.7±0.5, 25.°49N×142.°74E, h0km, mb4.6/28, mb1 4.7/29, mb1mx4.6/42, mbtmp4.6/29, ML4.3/1, MS4.1/24, Ms1 4.1/24, ms1mx4.0/40, Error ellipse: s-maj=16.8km s-min=12.6km az=80.0*

ISCJB ***20*** *05:16:41.3±1.0, 25.°52N±0.°02×142.°63E±0.°03, h28km±6km, mb4.9/216, MS4.4/55, Error ellipse: s-maj=4.2km s-min=3.7km az=158.6*

MOS ***20*** *05:16:42.8±1.3, 25.°54N×142.°58E, h42km, mb5.2/65, MS4.3/12, Error ellipse: s-maj=8.1km s-min=4.3km az=105.2*

BJI ***20*** *05:16:45.8, 25.°50N×142.°60E, h53km, mb4.8/60, mB5.1/54, Ms4.7/69, Ms7 4.5/66*

NEIC ***20*** *05:16:45.7±0.7, 25.°52N×142.°64E, h52km±6km, mb5.0/149, Error ellipse: s-maj=4.7km s-min=3.6km az=130.0*

ISC 20 05:16:45.3±0.5, 25.°53N±0.°04×142.°71E±0.°05, h49km±3km, h49km; pP-P, n468, σ1°52/491, mb5.0/216, MS4.3/56, 14C-4D, Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCJ	**Chichijima**	**1.63**	**343**	Pn	**Pn**	**05 17 10.0**	**-1.5**
JCJ				Sn	**Sn**	**05 17 34.8**	**+3.5**
	603nm,0.3s,baz=287,slow=23,SNR=12						
CBIJ	**Chichi jima**	**1.63**	**343**	*e*Pn	**Pn**	**05 17 10.3**	**-1.3**
CBIJ				Sn	**Sn**	**05 17 34.8**	**+3.5**
JHJ	**Hachijo jima 2**	**7.98**	**342**	LR	LR	05 21 47.6	
	comp=Z,3μm,18.0s,baz=145,slow=39						
INU	**Inuyama**	**10.95**	**335**	*e*Pn	**Pn**	**05 19 20.2**	**+1.0**
MJAR	**Matsushiro Arr**	**11.63**	**342**	Pn	**Pn**	**05 19 27.4**	**-1.2**
	1.7nm,0.3s,baz=152,slow=10,SNR=8.5						
MJAR				LR	LR	05 23 55.0	
	comp=Z,1μm,18.2s,baz=180,slow=38						
MAJO	**Matsushiro**	**11.63**	**342**	*i* P	**Pn**	**05 19 28.2**	**-0.4**
MAJO	**Matsushiro**	**11.63**	**342**	*e*Pn	**Pn**	**05 19 28.6**	**-0.1**
MAT	**Matsushiro**	**11.63**	**342**	P	**Pn**	**05 19 28.1**	**-0.5**
MAT				*e*S	**Sn**	**05 21 37.3**	**+0.2**
MJB9	**Matsu-Tunnel**	**11.64**	**342**	*e*Pn	**Pn**	**05 19 28.5**	**-0.2**
GUMO	**Guam**	**12.05**	**170**	*e*P	**Pn**	**05 19 35.1**	**+0.7**
GUMO	**Guam**	**12.05**	**170**	*e*Pn	**Pn**	**05 19 35.1**	**+0.7**
JNU	**Nakatsue**	**12.79**	**309**	*e*Pn	**Pn**	**05 19 44.8**	**+0.3**
JOW	**Kunigami**	**13.03**	**279**	*e*Pn	**Pn**	**05 19 48.8**	**+1.1**
ERM	**Erimo**	**16.45**	**1**	*ce*P	**P**	**05 20 34.2**	**-0.4**
ERM				pmax	pmax		
	comp=Z,46nm,1.0s						
ERM	**Erimo**	**16.45**	**1**	*e*Pn	**Pn**	**05 20 31.5**	**-1.1**
	comp=Z,36nm,0.9s						
TJN	**Taejon**	**17.01**	**313**	*ce*P	**Pn**	**05 20 40.0**	**+0.3**
KSRS	**Korea Array**	**17.30**	**317**	Pn	**P**	**05 20 43.9**	**-0.2**
	comp=Z,0.6nm,0.3s,baz=127,slow=12,SNR=14						
KSRS				LR	LR	05 27 03.5	
	comp=Z,950nm,19.3s,baz=132,slow=36						
KS15	**Wonju Array Si**	**17.32**	**317**	*e*Pn	**P**	**05 20 44.4**	**+0.1**
KSAR	**Wonju Array Be**	**17.32**	**317**	P	**P**	**05 20 43.9**	**-0.4**
KSAR	**Wonju Array Be**	**17.32**	**317**	Pn	**P**	**05 20 43.9**	**-0.4**
KS01	**Wonju Array Si**	**17.34**	**317**	*e*Pn	**P**	**05 20 44.5**	**0.0**
YOJ	**Yonaguni jima**	**17.89**	**271**	*e*P	**P**	**05 20 53.6**	**+2.9**
YOJ				pmax	pmax		
	comp=Z,165nm,1.5s						
YOJ	**Yonaguni jima**	**17.89**	**271**	*e*Pn	**P**	**05 20 53.6**	**+2.9**
	comp=Z,165nm,1.5s						
ASAJ	**Asahikawa**	**18.54**	**360**	*e*P	**Pn**	**05 20 59.5**	**+1.1**
	comp=Z,20nm,0.8s						
SHO	**Shikotan**	**18.60**	**9**	*e*P	**P**	**05 20 57.0**	**-1.4**
SHO				*e*S	**Sn**	**05 24 22.0**	**-4.1**
SHO				pmax	pmax		
	comp=E,13nm,0.9s						
SHO				pmax	pmax		
	comp=Z,58nm,0.9s						
SHO				pmax	pmax		
	comp=N,22nm,0.6s						
YUK	**Yuzh-Kuril'sk**	**18.64**	**7**	*c i*P	**P**	**05 20 56.5**	**-2.3**
YUK				*i* S	**Sn**	**05 24 20.3**	**-6.7**
YUK				pmax	pmax		
	comp=Z,458nm,3.4s						
YUK				pmax	pmax		
	comp=Z,204nm,1.3s						
YUK				pmax	pmax		
	comp=N,98nm,0.5s						
YUK				pmax	pmax		
	comp=E,105nm,0.8s						
YUK				MLR	MLR		
	comp=Z,597nm,19.0s						
YUK				MLR	MLR		
	comp=N,648nm,15.0s						
YUK				MLR	MLR		
	comp=E,774nm,21.0s						
NACB	**Ninganchiao**	**19.21**	**270**	*e*P	**Pn**	**05 21 05.9**	**-0.6**
	comp=E,20nm,0.8s						
YHNB	**Yeheng**	**19.34**	**272**	*e*P	**Pn**	**05 21 08.8**	**+0.5**
	comp=E,27nm,1.0s						
YULB	**Yu-li**	**19.61**	**268**	*e*P	**Pn**	**05 21 11.0**	**-0.3**
	comp=E,27nm,0.8s						
VLA	**Vladivostok**	**19.66**	**336**	⇑*e*P	**P**	**05 21 07.8**	**-2.2**
VLA				*e*S	**S**	**05 24 49.7**	**+0.7**
VLA				pmax	pmax		
	comp=Z,44nm,1.1s						
SSLB	**Suanglung**	**19.85**	**270**	*e*P	**Pn**	**05 21 13.8**	**-0.4**
	comp=Z,49nm,0.9s						
TWG	**Pinlang**	**19.93**	**267**	*e*P	**Pn**	**05 21 15.3**	**+0.3**
	comp=Z,376nm,1.5s						
KUR	**Kuril'sk**	**20.09**	**11**	*e*P	Pn	05 21 16.5	-0.3
KUR				*i* S	Sn	05 25 02.1	+0.1
KUR				pmax	pmax		
	comp=Z,182nm,1.4s						
KUR				pmax	pmax		
	comp=N,135nm,1.2s						
KUR				pmax	pmax		
	comp=E,88nm,1.3s						
KUR				pmax	pmax		
	comp=Z,733nm,6.7s						
USRK	**Ussuriysk Ar.**	**20.57**	**338**	P	**P**	**05 21 19.1**	**-0.7**
	comp=Z,9.4nm,0.7s,baz=159,slow=12,SNR=17						
USRK				LR	LR	05 28 42.6	
	comp=Z,345nm,19.0s,baz=143,slow=35						
YSS	**Yuzh-Sakhalins**	**21.38**	**0**	*c i*P	**P**	**05 21 28.2**	**-0.3**
YSS				*e*S	**S**	**05 25 22.5**	**-0.6**
YSS				*e*SS	SS	05 26 09.0	
YSS				pmax	pmax		
	comp=Z,20nm,0.8s						
YSS				pmax	pmax		
	comp=Z,300nm,5.4s						
YSS				MLR	MLR		
	comp=N,600nm,14.0s						
YSS				MLR	MLR		
	comp=Z,400nm,14.0s						
YSS				MLR	MLR		
	comp=E,800nm,15.0s						
MDJ	**Mudanjiang**	**21.81**	**334**	P	**P**	**05 21 34.4**	**+1.3**
MDJ				pP	pP	05 21 44.8	+0.1
MDJ				sP	sP	05 21 48.8	-2.1
MDJ				S	**S**	**05 25 33.8**	**+2.3**
MDJ				sS	sS	05 25 49.8	-0.4
MDJ				ScP	**ScP**	**05 29 05.4**	**+0.6**
MDJ				PcS	**PcS**	**05 29 10.3**	**+0.4**
MDJ				ScS	**ScS**	**05 32 50.4**	**+1.2**
MDJ				pmax	pmax		
	comp=E,22nm,1.1s						
MDJ				pmax	pmax		
	comp=E,170nm,5.2s						
MDJ				LR	LR		
	comp=E,700nm,19.3s						
MDJ				LR	LR		
	comp=E,1μm,15.7s						
MDJ				LR	LR		
	comp=E,2μm,15.7s						
MDJ	**Mudanjiang**	**21.81**	**334**	*e*P	**P**	**05 21 34.4**	**+1.3**
	comp=E,37nm,1.0s						
QZH	**Quanzhou**	**21.82**	**274**	P	**P**	**05 21 38.0**	**+4.5**
QZH				S	**S**	**05 25 27.3**	**-4.8**
QZH				LR	LR		
	comp=E,880nm,14.2s						
QZH				LR	LR		
	comp=E,510nm,7.1s						
QZH				LR	LR		
	comp=E,800nm,11.5s						
NJ2	**Nanjing**	**21.87**	**293**	*e*P	**P**	**05 21 35.8**	**+1.9**
NJ2				pmax	pmax		
	comp=E,8.0nm,1.0s						
NJ2				LR	LR		
	comp=E,820nm,21.1s						
NJ2				LR	LR		
	comp=E,1μm,17.9s						
NJ2				LR	LR		
	comp=E,880nm,16.3s						
PLP	**Palo**	**22.04**	**233**	⇓*e*P	**P**	**05 21 35.3**	**-0.5**
DL2	**Dalian**	**22.20**	**312**	*e*P	**P**	**05 21 40.5**	**+3.1**
DL2				sP	**sP**	**05 21 59.8**	**+4.6**
DL2				pmax	pmax		
	comp=E,21nm,0.7s						
DL2				pmax	pmax		
	comp=E,190nm,3.6s						
DL2				LR	LR		
	comp=E,940nm,15.2s						
DL2				LR	LR		
	comp=E,1μm,16.3s						
DL2				LR	LR		
	comp=E,1μm,16.3s						
SNY	**Shenyang**	**22.67**	**321**	⇑P	**P**	**05 21 43.6**	**+1.2**
SNY				S	**S**	**05 25 51.3**	**+4.2**
SNY				pmax	pmax		
	comp=E,20nm,0.5s						
SNY				pmax	pmax		
	comp=E,130nm,3.5s						
SNY				LR	LR		
	comp=E,830nm,12.2s						
SNY				LR	LR		
	comp=E,610nm,10.6s						
SNY				LR	LR		
	comp=E,980nm,12.2s						
CN2	**Changchun**	**23.02**	**327**	*e*P	**P**	**05 21 47.1**	**+1.1**
CN2				*es*P	sP	05 22 05.0	+1.1
CN2				*e*S	**S**	**05 25 50.3**	**-2.7**
CN2				pmax	pmax		
	comp=E,10.0nm,0.7s						
CN2				pmax	pmax		
	comp=E,200nm,3.0s						
CN2				LR	LR		
	comp=E,300nm,11.0s						
CN2				LR	LR		
	comp=E,500nm,11.0s						
CN2				LR	LR		
	comp=E,300nm,13.0s						
H11N2	**WAKE ISLAND Hy**	**23.04**	**100**	T	T	05 45 12.7	
	baz=290,slow=75,SNR=16						
H11N1	**WAKE ISLAND Hy**	**23.04**	**100**	T	T	05 45 08.3	
	baz=290,slow=75,SNR=15						
H11N3	**WAKE ISLAND Hy**	**23.06**	**100**	T	T	05 45 38.0	
	baz=290,slow=75,SNR=15						
H11S3	**WAKE ISLAND Hy**	**23.28**	**103**	T	T	05 45 30.4	
	baz=292,slow=75,SNR=8.9						
H11S1	**WAKE ISLAND Hy**	**23.29**	**103**	T	T	05 45 33.2	
	baz=292,slow=75,SNR=13						
H11S2	**WAKE ISLAND Hy**	**23.30**	**103**	T	T	05 45 39.9	
	baz=292,slow=75,SNR=14						
TGY	**Tagaytay City**	**23.39**	**245**	LR	LR	05 28 58.8	
	comp=E,406nm,20.5s,baz=198,slow=32						
HABR	**Khabarovsk**	**23.68**	**347**	*e*P	**P**	**05 21 50.3**	**-1.9**
HABR				*e**PP	**pP**	**05 22 02.8**	**-1.8**
HABR				*e**SP	**sP**	**05 22 09.1**	**-1.5**
HABR				*e*		05 22 20.1	
HABR				*e*		05 25 32.4	
HABR				*e*S	**S**	**05 26 03.3**	**-0.2**
HABR				*e**SS	**sS**	**05 26 25.5**	**+0.7**
HABR				*e*SS	**SnSn**	**05 26 47.0**	**+2.1**
HABR				pmax	pmax		
	comp=Z,218nm,2.3s						
HABR				pmax	pmax		
	comp=N,120nm,2.3s						
HABR				pmax	pmax		
	comp=E,77nm,2.2s						
HABR				MLR	MLR		
	comp=Z,749nm,19.0s						
TIA	**Tai'an**	**24.34**	**302**	⇑P	**P**	**05 21 56.5**	**-2.0**
TIA				pmax	pmax		
	comp=Z,60nm,0.5s						
TIA				pmax	pmax		
	comp=Z,450nm,6.2s						
TIA				LR	LR		
	comp=Z,460nm,12.6s						
TIA				LR	LR		
	comp=Z,830nm,17.7s						
TIA				LR	LR		
	comp=Z,830nm,16.2s						
DAV	**Davao City (W)**	**24.59**	**225**	LR	LR	05 29 50.6	
	comp=Z,550nm,21.0s,baz=14,slow=32						
KLR	**Kul'dur**	**25.16**	**343**	P	**P**	**05 22 06.1**	**+0.4**
	comp=Z,16nm,0.5s,baz=163,slow=7.6,SNR=67						
TYV	**Tymovskoe**	**25.29**	**360**	*e*P	**P**	**05 22 08.5**	**+1.6**
TYV				pmax	pmax		
	comp=Z,6.0nm,0.6s						
WHN	**Wuhan**	**25.49**	**288**	P	**P**	**05 22 05.4**	**-3.6**
WHN				LR	LR		
	comp=Z,1μm,11.8s						
WHN				LR	LR		
	comp=Z,3μm,24.2s						
WHN				LR	LR		
	comp=Z,2μm,13.5s						
BJI	**Beijing**	**26.46**	**310**	P	**P**	**05 22 16.1**	**-1.6**
BJI				S	**S**	**05 26 50.8**	**+2.7**
BJI				sS	**sS**	**05 27 08.8**	**-0.8**
BJI				pmax	pmax		
	comp=Z,7.0nm,0.7s						
BJI				pmax	pmax		
	comp=Z,300nm,9.7s						
BJI				LR	LR		
	comp=Z,710nm,13.7s						
BJI				LR	LR		
	comp=Z,540nm,14.4s						
BJI				LR	LR		
	comp=Z,480nm,14.8s						
NKL	**Nikolayevsk**	**27.63**	**357**	*e*P	**P**	**05 22 27.0**	**-0.9**
NKL				*e*		05 27 10.0	
NKL				MLR	MLR		
	comp=Z,600nm,14.0s						
SIJI	**Sorong**	**28.48**	**205**	LR	LR	05 31 47.0	
	comp=Z,30μm,21.6s,baz=128,slow=32						
ENH	**Enshi**	**29.68**	**287**	*e*P	**P**	**05 22 46.3**	**-0.3**
	comp=Z,17nm,0.8s						
HIA	**Hailar**	**29.68**	**329**	*e*P	**P**	**05 22 45.6**	**-0.8**
HIA				pmax	pmax		
	comp=Z,14nm,0.9s						
HIA	**Hailar**	**29.68**	**329**	*e*P	**P**	**05 22 45.6**	**-0.8**
	comp=Z,14nm,0.9s						
PETK	**Petropavlovsk-**	**29.76**	**18**	LR	LR	05 37 34.0	
	comp=Z,97nm,18.7s,baz=194,slow=42						
HHC	**Hu-ho-hao-te**	**30.02**	**308**	*e*P	**P**	**05 22 50.0**	**+0.5**
HHC				PP	**PnPn**	**05 23 51.8**	**+4.0**
HHC				S	**S**	**05 27 40.4**	**-3.9**
HHC				sS	sS	05 28 08.1	+2.2
HHC				pmax	pmax		
	comp=Z,29nm,1.0s						
HHC				pmax	pmax		
	comp=Z,210nm,5.6s						
HHC				LR	LR		
	comp=Z,720nm,12.9s						
HHC				LR	LR		
	comp=Z,710nm,13.8s						
HHC				LR	LR		
	comp=Z,990nm,14.3s						
XAN	**Xi'an**	**30.42**	**294**	P	**P**	**05 22 50.9**	**-2.2**
XAN				pP	pP	05 23 03.0	-2.9
XAN				PP	**PnPn**	**05 23 53.9**	**+0.8**
XAN				S	**S**	**05 27 50.5**	**-0.1**
XAN				sS	sS	05 28 10.9	-1.3
XAN				SS	**ScP**	**05 29 36.0**	**+5.8**
XAN				pmax	pmax		
	comp=Z,16nm,0.6s						
XAN				pmax	pmax		
	comp=Z,110nm,4.5s						
XAN				LR	LR		
	comp=Z,400nm,13.0s						
XAN				LR	LR		
	comp=Z,540nm,13.0s						
XAN				LR	LR		
	comp=Z,640nm,14.1s						
MYLDM	**Lahad Datu**	**30.78**	**233**	*e*P	**P**	**05 22 55.6**	**-0.8**
	comp=Z,29nm,1.2s						
KKM	**Kota Kinabalu**	**31.90**	**237**	*e*P	**P**	**05 23 05.1**	**-1.2**
	comp=Z,18nm,1.1s						
MRSI	**Marisa**	**31.98**	**222**	P	**P**	**05 23 06.8**	**0.0**
GYA	**Guiyang**	**32.35**	**280**	P	**P**	**05 23 11.0**	**+0.8**
GYA				pP	pP	05 23 23.3	+0.2
GYA				PP	**PnPn**	**05 24 19.0**	**+0.8**
GYA				PcP	**PcP**	**05 25

LZH			sP	sP	05 23 49.3	-1.0
LZH			eS	S	05 28 55.0	-3.9
LZH			sS	sS	05 29 16.8	-3.9
LZH			SS	SnSn	05 31 10.8	-5.2
LZH			pmax	pmax		
	comp=Z,27nm,1.2s					
LZH			pmax	pmax		
	comp=Z,200nm,4.4s					
LZH			LR	LR		
	comp=Z,1μm,13.8s					
LZH			LR	LR		
	comp=Z,2μm,13.6s					
LZH			LR	LR		
	comp=Z,2μm,14.0s					
KDI	Kendari	35.20 216	P	P	05 23 38.0	+3.1
	comp=Z,32nm,1.3s					
ULN	Ulaanbaatar	35.79 318	d iP	P	05 23 39.6	-0.2
ULN			pmax	pmax		
	comp=Z,14nm,1.2s					
ULN	Ulaanbaatar	35.79 318	eP	P	05 23 38.2	-1.6
	comp=Z,12nm,1.0s					
KMI	Kunming	36.04 278	P	P	05 23 42.3	0.0
KMI			pP	pP	05 23 57.3	+2.0
KMI			sP	sP	05 24 04.8	+3.7
KMI			pmax	pmax		
	comp=Z,14nm,0.5s					
KMI			pmax	pmax		
	comp=Z,310nm,9.8s					
KMI			LR	LR		
	comp=Z,200nm,13.6s					
KMI			LR	LR		
	comp=Z,270nm,17.9s					
KMI			LR	LR		
	comp=Z,260nm,19.7s					
TTSI	Tana Toraja	36.05 221	P	P	05 23 45.5	+3.3
SONA1	Songino Array	36.17 317	eP	P	05 23 41.9	-1.2
SONM	Songino Array	36.17 317	P	P	05 23 41.0	-2.1
	comp=Z,2.9nm,0.5s,baz=122,slow=8.2,SNR=7.2					
SONM			LR	LR	05 38 24.0	
	comp=Z,478nm,20.7s,baz=106,slow=36					
SONM	Songino Array	36.17 317	P	P	05 23 41.0	-2.1
SKNT	Sakolnakorn	36.98 264	P	P	05 23 55.1	+4.9
	comp=Z,20nm,1.2s					
YAK	Yakutsk	37.53 350	eP	P	05 23 55.9	+1.7
YAK			e*PP	pP	05 24 06.6	-0.7
YAK			e		05 25 22.1	
YAK			e		05 26 05.3	
YAK			eS	S	05 29 41.5	+1.9
YAK			e		05 34 02.5	
YAK			pmax	pmax		
	comp=Z,12nm,0.9s					
YAK			pmax	pmax		
	comp=E,4.0nm,0.4s					
YAK			pmax	pmax		
	comp=N,5.0nm,0.5s					
YAK			pmax	pmax		
	comp=Z,7.0nm,0.4s					
YAK			smax	smax		
	comp=E,77nm,2.8s					
YAK			smax	smax		
	comp=N,51nm,2.0s					
YAK			MLR	MLR		
	comp=E,274nm,16.0s					
YAK			MLR	MLR		
	comp=Z,305nm,17.0s					
YAK			MLR	MLR		
	comp=N,346nm,19.0s					
YAK	Yakutsk	37.53 350	eP	P	05 23 55.2	+0.9
	comp=N,22nm,0.8s					
KAPI	Kappang	37.67 219	eP	P	05 23 56.1	+0.2
	comp=N,203nm,1.8s					
SEY	Seymchan	37.95 7	P	P	05 23 57.8	+0.1
	comp=N,5.9nm,0.7s,baz=194,slow=7.2,SNR=13					
SEY	Seymchan	37.95 7	‖eP	P	05 23 58.2	+0.5
BOD	Bodaibo	38.17 335	eP	P	05 23 58.7	-1.0
BOD			pmax	pmax		
	comp=Z,20nm,1.6s					
GTA	Gaotai	38.39 302	eP	P	05 24 04.1	+2.1
GTA			pP	sP	05 24 18.1	-2.8
GTA			sP	pP	05 24 23.3	+8.2
GTA			PcP	PcP	05 26 18.6	+3.9
GTA			S	S	05 29 55.4	+1.9
GTA			sS	sS	05 30 15.4	-0.1
GTA			SS	SnSn	05 32 35.3	-7.4
GTA			pmax	pmax		
	comp=Z,6.0nm,1.3s					
GTA			pmax	pmax		
	comp=Z,160nm,5.5s					
GTA			LR	LR		
	comp=Z,340nm,14.7s					
GTA			LR	LR		
	comp=Z,540nm,13.3s					
GTA			LR	LR		
	comp=Z,560nm,14.3s					
ZAK	Zakamensk	39.10 320	eP	P	05 24 04.8	-3.0
ZAK			pmax	pmax		
	comp=Z,9.0nm,1.5s					
CRAI	Chiangrai	39.24 271	P	P	05 24 11.0	+1.8
	comp=Z,80nm,1.3s,comp=Z,6μm					
COEN	Coen	39.25 179	eP	P	05 24 09.7	+0.5
	comp=Z,93nm,1.6s					
TLY	Talaya	39.45 322	P	P	05 24 12.3	+1.7
	comp=Z,4.1nm,0.6s,baz=229,slow=4.6,SNR=4.2					
TLY	Talaya	39.45 322	eP	P	05 24 11.5	+0.9
TLY			e		05 25 54.6	
TLY			eS	S	05 30 11.0	+2.0
TLY			pmax	pmax		
	comp=Z,11nm,1.6s					
TLY	Talaya	39.45 322	eP	P	05 24 11.5	+0.9
	comp=Z,5.3nm,0.9s					
MTN	Manton Dam	39.78 198	eP	P	05 24 11.0	-2.5
	comp=Z,72nm,1.6s					
SRAK	Srakaew	39.80 261	P	P	05 24 13.6	-0.3
	comp=Z,49nm,1.0s,comp=Z,668nm					
UTTA	Uttaradit	39.81 267	P	P	05 24 16.4	+2.4
	comp=Z,4.0nm,0.8s,comp=Z,41nm					
PBKT	Sadao Pong	39.83 265	P	P	05 24 17.9	+3.8
	comp=Z,22nm,1.1s					
CMMT	Chiang Mai	40.94 270	P	P	05 24 28.5	+5.2
	comp=Z,12nm,1.1s,comp=Z,568nm					
CHTO	Chiang Mai	40.94 270	P	P	05 24 28.6	+5.3
	comp=Z,37nm,1.3s					
CHTO	Chiang Mai	40.94 270	eP	P	05 24 23.7	+0.4
CHTO			pmax	pmax		
	comp=Z,10.0nm,1.0s					
CHTO	Chiang Mai	40.94 270	eP	P	05 24 23.7	+0.4
	comp=Z,10nm,1.0s					
CM01	Chiang Mai Arr	41.04 269	eP	P	05 24 24.7	+0.5
CM31	Chiang Mai Arr	41.05 269	eP	P	05 24 25.0	+0.8
CMAR	Chiang Mai Arr	41.05 269	P	P	05 24 24.6	+0.5
	comp=Z,2.8nm,0.6s,baz=58,slow=8.1,SNR=13					
CMAR			LR	LR	05 41 15.6	
	comp=Z,134nm,18.8s,baz=78,slow=36					
SKLT	Songkhla	44.08 253	P	P	05 24 53.4	+4.6
	comp=Z,20nm,1.5s					
MYKOM	Kota Tinggi	44.24 244	eP	P	05 24 50.6	+0.5
	comp=Z,29nm,1.3s					
TRTT	Trang	44.56 254	P	P	05 24 59.2	+6.5
	comp=Z,18nm,1.2s,comp=Z,721nm					
SURT	Suratani	44.82 256	P	P	05 25 00.8	+6.1
	comp=Z,7.0nm,1.3s					
BILL	Bilibino	44.87 12	ceP	P	05 24 53.4	-1.0
BILL			e		05 26 40.3	
BILL			ePPP	PPP	05 27 16.7	
BILL			pmax	pmax		
	comp=Z,23nm,1.5s					
BILL			MLR	MLR		
	comp=Z,221nm,17.0s					
BILL	Bilibino	44.87 12	eP	P	05 24 55.0	+0.6
	comp=Z,36nm,1.6s					
KULM	Kulim	44.99 251	eP	P	05 24 56.1	0.0
	comp=Z,32nm,1.2s					
IPM	Ipoh	45.10 249	eP	P	05 24 57.5	+0.5
	comp=Z,13nm,0.8s					
SHL	Shillong	45.62 282	eP	P	05 25 00.0	-1.2
UGM	Wanagama	45.67 228	eP	P	05 25 00.1	-1.4
	comp=Z,425nm,1.6s					
PKDT	Phuket	45.72 255	P	P	05 25 07.9	+6.1
WRAB	Tennant Creek	45.92 191	ceP	P	05 25 02.7	-0.5
WRAB			pmax	pmax		
	comp=Z,60nm,0.5s					
WRAB	Tennant Creek	45.92 191	eP	P	05 25 01.3	-2.0
	comp=Z,35nm,0.6s					
WB2	Warramunga Arr	45.93 191	eP	P	05 25 01.1	-2.2
	comp=Z,33nm,0.8s					
WRA	Warramunga Arr	45.93 191	P	P	05 25 01.1	-2.2
	comp=Z,25nm,0.6s,baz=9.5,slow=8.5,SNR=96					
FITZ	Fitzroy Crossi	46.44 203	eP	P	05 25 07.0	-0.3
	comp=Z,19nm,1.1s					
TIXI	Tiksi	46.81 354	P	P	05 25 09.4	-0.2
	comp=Z,2.3nm,0.5s,baz=144,slow=8.7,SNR=4.6					
TIXI	Tiksi	46.81 354	ceP	P	05 25 09.1	-0.5
TIXI			pmax	pmax		
	comp=Z,7.0nm,1.2s					
TIXI	Tiksi	46.81 354	eP	P	05 25 09.9	+0.3
	comp=Z,5.5nm,0.6s					
PSI	Prapat	47.76 249	eP	P	05 25 17.3	-0.6
PSI			pmax	pmax		
	comp=Z,13nm,0.7s					
PSI	Prapat	47.76 249	eP	P	05 25 17.3	-0.6
	comp=Z,13nm,0.7s					
WMQ	Urumqi	47.88 307	P	P	05 25 19.4	+0.9
WMQ			pP	pP	05 25 31.8	-0.1
WMQ			sP	sP	05 25 37.6	0.0
WMQ			S	S	05 32 15.5	+3.2
WMQ			pmax	pmax		
	comp=Z,7.0nm,1.4s					
WMQ			pmax	pmax		
	comp=Z,91nm,5.2s					
WMQ			LR	LR		
	comp=Z,130nm,17.6s					
WMQ			LR	LR		
	comp=Z,90nm,20.0s					
WMQ			LR	LR		
	comp=Z,120nm,21.2s					
AS01	Alice Springs	49.64 191	eP	P	05 25 32.0	0.0
AS31	Alice Springs	49.64 191	eP	P	05 25 31.8	-0.3
	comp=Z,2.5nm,0.6s					
ASAR	Alice Springs	49.65 191	P	P	05 25 31.0	-1.1
	comp=Z,1.5nm,0.6s,baz=10.0,slow=7.5,SNR=13					
GSI	Gunungsitoli	49.70 248	eP	P	05 25 32.1	-0.5
	comp=Z,18nm,0.7s					
GUN	Gumba	50.43 286	eP	P	05 25 38.2	-0.4
	comp=Z,47nm,0.5s					
TNA	Tin City	50.61 24	eP	P	05 25 40.1	+1.2
	comp=Z,49nm,1.6s					
PKIN	Phulchoki	50.92 286	eP	P	05 25 41.0	-1.1
	comp=Z,12nm,0.5s					
KKN	Kakani	50.98 286	eP	P	05 25 42.4	-0.1
	comp=Z,40nm,0.9s					
ZAA0	Zalesovo Array	50.98 320	eP	P	05 25 40.1	-1.8
ZALV	Zalesovo Beam	50.98 320	P	P	05 25 40.5	-1.4
	comp=Z,2.5nm,0.4s,baz=117,slow=8.3,SNR=11					
ZALV			PcP	PcP	05 26 56.9	-0.5
	comp=Z,4.6nm,0.8s,baz=98,slow=3.0,SNR=4.3					
DMN	Daman	51.16 286	eP	P	05 25 43.1	-0.9
	comp=Z,26nm,0.6s					
GKN	Gorkha	51.49 286	eP	P	05 25 46.1	-0.2
MBWA	Marble Bar	51.50 208	eP	P	05 25 44.5	-1.6
	comp=Z,266nm,1.8s					
MK01	Makanchi Array	51.83 311	eP	P	05 25 46.5	-1.9
MK31	Makanchi Array	51.84 311	eP	P	05 25 46.3	-2.2
MK31			pmax	pmax		
	comp=Z,2.0nm,0.6s					
MK31	Makanchi Array	51.84 311	eP	P	05 25 47.1	-1.3
MKAR	Makanchi Array	51.84 311	P	P	05 25 47.4	-1.0
	comp=Z,1.8nm,0.5s,baz=90,slow=9.0,SNR=18					
MKAR			PcP	PcP	05 27 00.1	-0.8
	comp=Z,2.7nm,0.7s,baz=87,slow=5.4,SNR=3.1					
MKAR			LR	LR	05 49 19.7	
	comp=Z,385nm,18.0s,baz=86,slow=38					
MKAR	Makanchi Array	51.84 311	eP	P	05 25 47.1	-1.3
MKAR			PcP	PcP	05 27 00.1	-0.8
NVS	Novosibirsk	52.04 321	eP	P	05 25 49.4	-0.4
NVS			i		05 28 49.5	
NVS			pmax	pmax		
	comp=N,17nm,1.9s					
NVS			pmax	pmax		
	comp=E,41nm,1.9s					
NVS			pmax	pmax		
	comp=Z,56nm,1.9s					
MAKZ	Makanchi	52.06 311	P	P	05 25 49.1	-1.0
MAKZ			pmax	pmax		
	comp=Z,9.0nm,1.4s					
MAKZ	Makanchi	52.06 311	eP	P	05 25 48.5	-1.5
	comp=Z,14nm,1.3s					
KOLN	Koldanda	52.44 286	eP	P	05 25 52.8	-0.6
	comp=Z,42nm,0.9s					
DZM	Mont Dzumac	52.62 152	eLR	LR	05 40 57.9	
	comp=Z,226nm,25.1s					
PYUN	Piuthan	52.90 287	eP	P	05 25 56.5	-0.3
	comp=Z,62nm,0.6s					
PDGK	Podgornoye	53.84 306	P	P	05 26 02.8	-0.4
PDGK			pmax	pmax		
	comp=Z,9.0nm,0.9s					
NRIK	Noril'sk	54.27 339	P	P	05 26 06.5	+0.5
	comp=Z,8.9nm,0.5s,baz=102,slow=15,SNR=12					
NRIK			LR	LR	05 50 17.9	
	comp=Z,712nm,18.8s,baz=112,slow=37					
KURK	Kurchatov	54.42 315	P	P	05 26 05.8	-1.5
KURK			pmax	pmax		
	comp=Z,11nm,0.5s					
KURK	Kurchatov	54.42 315	eP	P	05 26 05.4	-1.9
	comp=Z,71nm,1.6s					
KURBB	Kurchatov Arra	54.47 315	P	P	05 26 05.8	-1.9
	comp=Z,11nm,0.5s,baz=92,slow=7.9,SNR=135					
TT01	Tatalina	54.55 30	eP	P	05 26 08.1	0.0
TTA	Tatalina	54.56 30	eP	P	05 26 08.6	+0.3
TTA			pmax	pmax		
	comp=Z,22nm,1.4s					
TTA	Tatalina	54.56 30	eP	P	05 26 08.6	+0.3
	comp=Z,22nm,1.4s					
OHAK	Old Harbor	54.89 37	eP	P	05 26 09.5	-1.1
	comp=Z,130nm,1.9s					
KDAK	Kodiak Island	55.34 36	eP	P	05 26 13.0	-0.8
KDAK			pmax	pmax		
	comp=Z,158nm,1.8s					
KDAK	Kodiak Island	55.34 36	eP	P	05 26 13.0	-0.8
	comp=Z,158nm,1.8s					
SPU	Mount Spurr	56.06 32	eP	P	05 26 19.1	0.0
PPLA	Purkeypile	56.27 30	eP	P	05 26 20.4	-0.2
	comp=Z,28nm,1.3s					
ARMA	Armidale	56.28 171	eP	P	05 26 19.9	-1.0
	comp=Z,80nm,1.9s					
CAST	Castle Rocks	56.41 29	eP	P	05 26 21.4	0.0
	comp=Z,12nm,0.8s					
BRLK	Briley Lake	56.45 34	eP	P	05 26 20.5	-1.3
	comp=Z,150nm,1.7s					
TKM2	Tokmak 2	56.71 306	eP	P	05 26 24.5	+0.3
TKM2			pmax	pmax		
	comp=Z,10.0nm,1.1s					
TKM2	Tokmak 2	56.71 306	eP	P	05 26 24.5	+0.3
	comp=Z,10nm,1.1s					
KSH	Kashi	56.79 302	eP	P	05 26 28.0	+3.3
KSH			epP	pP	05 26 40.8	+2.4
KSH			PcS	PcS	05 31 22.8	+1.8
KSH			S	S	05 34 16.1	+1.6
KSH			ScS	ScS	05 36 09.8	-0.3
KSH			pmax	pmax		
	comp=Z,130nm,4.1s					
KSH			LR	LR		
	comp=Z,140nm,7.3s					
KSH			LR	LR		
	comp=Z,140nm,6.5s					
KSH			LR	LR		
	comp=Z,290nm,15.1s					
MLOA	Mauna Loa Obse	56.89 83	eP	P	05 26 26.6	+0.6
KTH	Kantishna Hill	56.94 29	eP	P	05 26 25.2	-0.1
	comp=Z,66nm,1.9s					
BPAW	Bear Paw Mtn.	57.01 29	eP	P	05 26 26.1	+0.4
	comp=Z,39nm,1.6s					
STKA	Stephens Creek	57.10 181	P	P	05 26 27.0	+0.4
	comp=Z,8.2nm,0.9s,baz=19,slow=8.8,SNR=7.0					
STKA			LR	LR	05 52 28.4	
	comp=Z,104nm,18.0s,baz=19,slow=38					
STKA	Stephens Creek	57.10 181	eP	P	05 26 26.5	-0.1
	comp=Z,10nm,1.5s					
SEW	Seward	57.20 34	eP	P	05 26 25.6	-1.5
	comp=Z,124nm,1.5s					
TRF	Thorofare Moun	57.21 29	eP	P	05 26 27.0	-0.3
	comp=Z,92nm,1.8s					
MLY	Manley	57.27 28	eP	P	05 26 27.3	-0.2
	comp=Z,42nm,2.0s					
FRU	Bishkek	57.43 306	eP	P	05 26 33.0	+3.9
FRU			pmax	pmax		
	comp=Z,50nm,2.0s					
PMR	Palmer	57.51 32	eP	P	05 26 28.3	-0.9
PMR			pmax	pmax		
	comp=Z,50nm,1.6s					
PMR	Palmer	57.51 32	eP	P	05 26 28.3	-0.9
	comp=Z,50nm,1.6s					
AAK	Ala-Archa	57.54 306	eP	P	05 26 29.6	-0.4
AAK			pmax	pmax		
	comp=Z,5.0nm,0.8s					
AAK	Ala-Archa	57.54 306	eP	P	05 26 29.6	-0.4
	comp=Z,4.6nm,0.8s					
BWN	Browne	57.67 29	eP	P	05 26 30.5	+0.2
	comp=Z,104nm,1.8s					
NDI	New Delhi	57.73 289	ex	P	05 26 24.0	-7.3
RND	Reindeer	57.84 30	eP	P	05 26 31.2	-0.5
RND			pmax	pmax		
	comp=Z,12nm,1.0s					
RND	Reindeer	57.84 30	eP	P	05 26 31.2	-0.5
	comp=Z,12nm,1.0s					
MCK	McKinley	57.85 29	eP	P	05 26 32.9	+1.3
MCK			pmax	pmax		
	comp=Z,34nm,1.5s					
MCK	McKinley	57.85 29	eP	P	05 26 32.9	+1.3
	comp=Z,34nm,1.5s					
COLD	Coldfoot	57.88 25	eP	P	05 26 32.3	+0.6
	comp=Z,14nm,1.2s					
SML	Sawmill	57.91 32	eP	P	05 26 31.1	-1.0
SML			pmax	pmax		
	comp=Z,32nm,1.2s					
SML	Sawmill	57.91 32	eP	P	05 26 31.1	-1.0
	comp=Z,32nm,1.2s					
WRH	Wood River Hil	58.31 28	eP	P	05 26 35.0	+0.2
	comp=Z,11nm,1.2s					
BBOO	Buckleboo	58.36 187	eP	P	05 26 34.4	-1.1
	comp=Z,21nm,1.0s					
SCM	Sheep Creek Mo	58.38 32	eP	P	05 26 34.9	-0.6
SCM			pmax	pmax		
	comp=Z,122nm,1.8s					
SCM	Sheep Creek Mo	58.38 32	eP	P	05 26 34.9	-0.6
	comp=Z,122nm,1.8s					
CCB	Clear Creek Bu	58.45 28	eP	P	05 26 35.5	-0.2
	comp=Z,21nm,1.6s					
OTUK	Ortayu	58.56 312	P	P	05 26 37.1	+0.3
OTUK			pmax	pmax		
	comp=Z,12nm,1.6s					
HDA	Harding Lake	58.79 29	eP	P	05 26 38.7	+0.5
	comp=Z,18nm,1.3s					
ILAR	Eielson Array	58.86 28	P	P	05 26 37.2	-1.4
	comp=Z,3.2nm,0.8s,baz=262,slow=5.3,SNR=23					
ILAR			LR	LR	05 53 36.3	
	comp=Z,51nm,18.9s,baz=262,slow=38					
ILB	Eielson Array	58.86 28	eP	P	05 26 37.2	-1.4
IL1	Eielson Array	58.86 28	eP	P	05 26 36.9	-1.7
KLU	Klutina	59.03 32	eP	P	05 26 39.4	-0.6
	comp=Z,87nm,1.7s					
DIV	Divide	59.08 32	eP	P	05 26 40.0	-0.3
	comp=Z,70nm,1.6s					
PAX	Paxson	59.33 30	eP	P	05 26 41.9	-0.1
PAX			pmax	pmax		
	comp=Z,48nm,1.8s					
PAX	Paxson	59.33 30	eP	P	05 26 41.9	-0.1
	comp=Z,48nm,1.8s					
BVA0	Borovoye Array	59.52 318	i P	P	05 26 42.2	-1.2
BVA0			pmax	pmax		
	comp=Z,35nm,1.2s					
BVAR	Borovoye Array	59.52 318	P	P	05 26 42.3	-1.1
	comp=Z,12nm,0.4s,baz=90,slow=8.9,SNR=52					
BRVK	Borovoye	59.58 318	c iP	P	05 26 42.6	-1.2
BRVK			pmax	pmax		
	comp=Z,33nm,1.2s					
BRVK			pmax	pmax		
	comp=Z,48nm,1.1s					
BRVK	Borovoye	59.58 318	eP	P	05 26 42.8	-1.0
	comp=Z,21nm,0.9s					
BMRM	Bremner River	59.65 33	eP	P	05 26 44.2	0.0
	comp=Z,27nm,1.1s					
FYU	Fort Yukon	59.72 26	eP	P	05 26 46.8	+2.3
	comp=Z,32nm,1.4s					
DOT	Dot Lake	60.00 30	eP	P	05 26 46.6	+0.1
	comp=Z,140nm,2.0s					
ZRNK	Zerenda	60.35 318	eP	P	05 26 48.0	-1.1
ZRNK			pmax	pmax		
	comp=Z,15nm,0.9s					
ZRNK	Zerenda	60.35 318	eP	P	05 26 48.0	-1.1
	comp=Z,15nm,0.9s					
KK31	Karatay Array	60.39 307	eP	P	05 26 48.1	-1.4
KK31			pmax	pmax		
	comp=Z,30nm,1.4s					
KKAR	Karatay Array	60.39 307	eP	P	05 26 49.0	-0.6
KKAR	Karatay Array	60.39 307	eP	P	05 26 49.0	-0.6
CAN	Canberra	60.81 174	eP	P	05 26 53.0	+0.6
CAN			pmax	pmax		
	comp=Z,21nm,1.2s					
CAN	Canberra	60.81 174	eP	P	05 26 53.0	+0.6
	comp=Z,21nm,1.2s					
PALK	Pallekele	61.67 264	LR	LR	05 55 02.6	
	comp=Z,33nm,19.2s,baz=116,slow=37					
DAWY	Dawson	62.08 29	eP	P	05 27 00.4	-0.2
	comp=Z,24nm,1.6s					
KBL	Kabul	63.15 297	eP	P	05 27 08.3	-0.2
KBL			pmax	pmax		
	comp=Z,17nm,0.7s					
KBL	Kabul	63.15 297	eP	P	05 27 08.3	-0.2
	comp=Z,17nm,0.7s					
POO	Poona	63.61 279	ex	P	05 27 12.0	+0.5
INK	Inuvik	64.25 24	P	P	05 27 14.6	-0.3
	comp=Z,4.5nm,0.5s,baz=305,slow=6.6,SNR=25					
INK	Inuvik	64.25 24	eP	P	05 27 14.2	-0.7
	comp=Z,5.5nm,0.6s					
ARU	Arti	65.95 323	LR	LR	05 59 13.4	
	comp=Z,451nm,18.6s,baz=139,slow=39					
ARU	Arti	65.95 323	c iP	P	05 27 25.3	-0.8
ARU			*PP	pP	05 27 40.7	+0.7
ARU					05 27 57.3	
ARU			S	S	05 36 12.1	+2.3
ARU			pmax	pmax		
	comp=Z,32nm,1.2s					
ARU			MLR	MLR		
	comp=Z,522nm,18.0s					
ARU	Arti	65.95 323	eP	P	05 27 25.2	-0.8
	comp=Z,18nm,0.6s					
AB31	Akbulak array	66.53 315	i P	P	05 27 28.1	-1.8
AB31			pmax	pmax		
	comp=Z,8.0nm,0.6s					
ABKAR	Akbulak array	66.53 315	eP	P	05 27 28.2	-1.7
H02N1	VAN INLET T-PH	66.90 41	T	T	06 40 22.2	
H02S1	DAWSON INLET T	66.95 41	T	T	06 40 27.9	
DLBC	Dease Lake	67.22 35	eP	P	05 27 34.6	+0.3
	comp=Z,28nm,1.6s					
GEYT	Alibeck	70.75 304	P	P	05 27 56.9	+0.4
	comp=Z,2.3nm,0.4s,baz=47,slow=6.5,SNR=5.9					
GEYT			LR	LR	06 02 51.5	
	comp=Z,181nm,18.5s,baz=140,slow=39					
SPA0	Spitsbergen Ar	72.00 350	eP	P	05 28 03.4	+0.1
YKW3	Yellowknife Ar	73.26 28	eP	P	05 28 11.5	+0.5
	comp=Z,19nm,1.7s					
YKA	Yellowknife Ar	73.29 28	P	P	05 28 09.6	-1.5
	comp=Z,1.4nm,0.5s,baz=291,slow=6.2,SNR=28					
YKB5	Yellowknife Ar	73.29 28	eP	P	05 28 09.5	-1.7
PGC	Sidney	73.69 44	eP	P	05 28 14.5	+0.7
	comp=Z,42nm,1.5s					
KLMR	Klimovskoe	74.17 330	eP	P	05 28 14.5	-1.9
KLMR			pmax	pmax		
	comp=Z,7.0nm,0.8s					
B05A	Bryant	74.67 44	P	P	05 28 20.7	+1.1
	baz=291					
ARA0	ARCESS Array S	75.17 341	eP	P	05 28 23.5	+1.4
ARCES	ARCESS Array B	75.17 341	P	P	05 28 22.4	+0.4
	comp=Z,3.8nm,0.5s,baz=66,slow=7.3,SNR=42					
ARE0	ARCESS Array S	75.17 341	eP	P	05 28 23.6	+1.5
	comp=Z,80nm,1.8s					
LON	Longmire	75.41 45	eP	P	05 28 24.9	+1.0
LON			pmax	pmax		
	comp=Z,5.0nm,1.2s					
LON	Longmire	75.41 45	eP	P	05 28 24.9	+1.0
	comp=Z,5.4nm,1.2s					
H04A	Detroit Lake	75.93 47	eP	P	05 28 27.1	+0.1
	comp=Z,14nm,1.1s					
I04A	Tendick Farm,	76.11 48	P	P	05 28 28.9	+0.9
	baz=292					
B08A	Colville Reser	76.35 43	eP	P	05 28 28.5	-0.7
	comp=Z,8.9nm,0.8s					
UOSS	Minazif	76.72 291	eP	P	05 28 31.2	-0.5
	comp=Z,0.7nm,1.1s					
VRH	Novokhopyorsk	77.01 321	eP	P	05 28 32.9	+0.1
VRH			pmax	pmax		
	comp=Z,20nm,0.7s					
VRH			MLR	MLR		
	comp=Z,320nm,12.0s					
J05D	Fort Rock, OR	77.10 48	P	P	05 28 34.0	+0.3
	baz=293					
MOS	Moscow	77.26 326	eP	P	05 28 33.4	-0.7
MOS			MLR	MLR		
	comp=Z,1μm,18.0s					
NEW	Newport	77.74 42	P	P	05 28 38.1	+1.1

baz=295
NEW Newport 77.74 42 *e*P **P 05 28 38.5 +1.4**
NEW pmax pmax
comp=Z,7.0nm,0.8s
NEW Newport 77.74 42 *e*P **P 05 28 38.5 +1.4**
comp=Z,6.7nm,0.8s
O03D Paynes Creek 77.87 51 P **P 05 28 38.3 +0.3**
baz=293
LPSR Galich'ya Gora 77.97 323 *e*P **P 05 28 38.3 +0.1**
LPSR pmax pmax
comp=Z,10.0nm,1.5s
LPSR MLR MLR
comp=Z,200nm,12.0s
VSR Storozhevoye 78.45 321 *e*P **P 05 28 40.6 -0.3**
VSR pmax pmax
comp=Z,20nm,1.0s
VSR MLR MLR
comp=Z,670nm,19.0s
PPT2 Papeete2 78.57 116 *e*LR LR 05 53 02.1
comp=Z,134nm,20.8s
ZEI Tsey 79.15 312 *e*P **P 05 28 43.9 -1.2**
ZEI pmax pmax
comp=Z,35nm,1.4s
BSMT Bassoo Peak 79.33 42 *e*P **P 05 28 47.2 +1.2**
KBZ Khabaz 79.42 313 P **P 05 28 46.9 +0.6**
comp=Z,5.5nm,0.5s,baz=162,slow=4.7,SNR=13
KIV Kislovodsk 79.46 314‖ *e*P **P 05 28 47.1 +0.4**
KIV *e* 05 31 46.4
KIV *e*PPP PPP 05 33 31.4
KIV pmax pmax
comp=Z,41nm,1.9s
KIV MLR MLR
comp=Z,293nm,18.0s
FIA1 FINESS Array S 79.55 334 *e*P **P 05 28 45.8 -0.9**
FINES FINESS Array B 79.55 334 P **P 05 28 45.9 -0.8**
comp=Z,13nm,0.5s,baz=67,slow=5.0,SNR=124
NEY Neytrino 79.74 313 *i* P **P 05 28 46.8 -1.5**
NEY pmax pmax
comp=Z,2.0nm,1.6s
CMB Columbia Colle 79.79 53 *e*P **P 05 28 49.5 +1.0**
CMB pmax pmax
comp=Z,9.0nm,0.9s
CMB Columbia Colle 79.79 53 *e*P **P 05 28 49.5 +1.0**
comp=Z,9.0nm,0.9s
PAHR Pah Rah Range 79.81 51 *e*P **P 05 28 49.5 +0.8**
comp=Z,24nm,1.8s
SWMT Swartz Lake 79.96 42 *e*P **P 05 28 49.3 -0.1**
WAKR Walker 80.27 52 *e*P **P 05 28 51.4 0.0**
MSO Missoula 80.30 43 P **P 05 28 51.8 +0.6**
baz=297
MFID Camas Ranch 80.63 46 *e*P **P 05 28 54.2 +1.1**
comp=Z,52nm,2.0s
VSU Vasula 80.99 331 *ce*P **P 05 28 54.4 0.0**
VSU pmax pmax
comp=Z,55nm,1.2s
BMN Battle Mountai 81.00 50 *e*P **P 05 28 55.8 +0.7**
BMN pmax pmax
comp=Z,18nm,1.6s
BMN Battle Mountai 81.00 50 *e*P **P 05 28 55.8 +0.7**
comp=Z,18nm,1.6s
NV01 Mina Array Sit 81.11 52 *e*P **P 05 28 56.0 +0.2**
NVAR Mina Array Bea 81.11 52 P **P 05 28 55.1 -0.7**
comp=Z,2.6nm,0.8s,baz=286,slow=3.6,SNR=21
NVAR LR LR 06 00 43.3
comp=Z,182nm,18.7s,baz=302,slow=33
NV11 Mina Array Sit 81.22 52 *e*P **P 05 28 57.2 +0.9**
comp=Z,27nm,1.9s
HLID Hailey 81.49 46 P **P 05 28 59.0 +1.3**
baz=297
VES Vestal, Richgr 81.65 54 P **P 05 28 58.9 +0.4**
baz=296
LRM Limekiln Ridge 81.68 43 *e*P **P 05 28 59.7 +1.0**
TBI Tubuai 81.69 121 *e*LR LR 05 54 27.5
comp=Z,191nm,24.5s
DLMT Dillon 81.81 44 *e*P **P 05 28 59.6 +0.4**
comp=Z,12nm,1.4s
SUMG Summit 82.15 0 *e*P **P 05 29 00.5 -0.4**
SUMG pmax pmax
comp=Z,45nm,1.8s
SUMG Summit 82.15 0 *e*P **P 05 29 00.5 -0.4**
comp=Z,45nm,1.8s
ELK Elko 82.22 49 *e*P **P 05 29 01.9 +0.2**
ELK pmax pmax
comp=Z,8.0nm,1.4s
ELK Elko 82.22 49 *e*P **P 05 29 01.9 +0.2**
comp=Z,7.8nm,1.4s
EGMT Eagleton 82.24 40 P **P 05 29 01.9 +0.4**
baz=300
EGMT Eagleton 82.24 40 *e*P **P 05 29 02.8 +1.3**
comp=Z,35nm,1.8s
BOZ Bozeman (W) 82.27 43 P **P 05 29 01.4 -0.4**
baz=299
BOZ Bozeman (W) 82.27 43 *e*P **P 05 29 02.8 +1.1**
BOZ pmax pmax
comp=Z,3.0nm,0.9s
BOZ Bozeman (W) 82.27 43 *e*P **P 05 29 02.8 +1.1**
comp=Z,3.0nm,0.9s
TAOE Nuku Hiva Isla 82.35 104 *e*LR LR 05 54 49.1
comp=Z,232nm,24.3s
GRAC Grapevine Rang 82.40 53 P **P 05 29 02.9 +0.5**
baz=296
ANN Anapa 82.44 316 *e*P **P 05 28 59.3 -3.1**
ANN *e**PP **pP 05 29 13.8 -2.9**
ANN *e*S **S 05 39 11.5 -3.6**
ANN pmax pmax
comp=Z,17nm,1.0s
MICGM Minsk 82.71 328 *e* **P 05 29 05.0 +1.4**
MNK Minsk 82.71 328 *e*P **P 05 29 05.0 +1.4**
FFC Flin Flon 82.81 32 *e*P **P 05 29 04.0 -0.1**
FFC pmax pmax
comp=Z,58nm,1.8s
FFC Flin Flon 82.81 32 *e*P **P 05 29 04.0 -0.1**
comp=Z,58nm,1.8s
FURC Furnace Creek, 83.00 53 P **P 05 29 06.0 +0.6**
baz=297
R11A Troy Canyon, C 83.06 51 P **P 05 29 05.1 -0.9**
baz=297
R11A Troy Canyon, C 83.06 51 *e*P **P 05 29 06.2 +0.2**
comp=Z,18nm,1.7s
YMR Madison River 83.16 44 *e*P **P 05 29 07.6 +1.1**
comp=Z,7.6nm,0.9s
TPNV Topopah Spring 83.22 52 *e*P **P 05 29 08.1 +1.2**
TPNV pmax pmax
comp=Z,24nm,1.5s
TPNV Topopah Spring 83.22 52 *e*P **P 05 29 08.1 +1.2**
comp=Z,24nm,1.5s
YFT Old Faithful 83.34 44 *e*P **P 05 29 10.1 +2.6**
comp=Z,19nm,1.5s
HVU Hansel Valley 83.39 47 *e*P **P 05 29 09.5 +1.9**
HVU pmax pmax
comp=Z,44nm,2.0s
HVU Hansel Valley 83.39 47 *e*P **P 05 29 09.5 +1.9**
comp=Z,44nm,2.0s
GCMT Greycliff 83.40 42 *e*P **P 05 29 08.9 +1.4**
H17A Grant Village 83.53 44 *e*P **P 05 29 09.6 +1.1**
comp=Z,28nm,1.8s
IMW Indian Meadow 83.55 44 *e*P **P 05 29 10.3 +1.7**
comp=Z,4.4nm,0.9s
GSC Goldstone, Bar 83.56 54 P **P 05 29 09.1 +0.6**
baz=297
GSC Goldstone, Bar 83.56 54 *e*P **P 05 29 08.3 -0.2**
GSC pmax pmax
comp=Z,13nm,1.4s
GSC Goldstone, Bar 83.56 54 *e*P **P 05 29 08.3 -0.2**
comp=Z,13nm,1.4s
LKWY Lake 83.56 43 *e*P **P 05 29 11.0 +2.5**
LKWY pmax pmax
comp=Z,6.0nm,1.0s
LKWY Lake 83.56 43 *e*P **P 05 29 11.0 +2.5**
comp=Z,6.2nm,1.0s
FLWY Flagg Ranch 83.61 44 *e*P **P 05 29 10.5 +1.7**
comp=Z,14nm,1.1s
BGU Big Grassy Mou 83.62 48 *e*P **P 05 29 10.0 +1.2**
comp=Z,14nm,1.7s
FXWY Fox Creek 83.62 45 *e*P **P 05 29 10.0 +1.2**
comp=Z,19nm,1.8s
MOOW Moose Ponds 83.75 44 *e*P **P 05 29 10.6 +1.1**
comp=Z,14nm,1.7s
FCC Fort Churchill 83.80 26 *e*P **P 05 29 10.7 +1.6**
FCC pmax pmax
comp=Z,20nm,1.7s
FCC Fort Churchill 83.80 26 *e*P **P 05 29 10.7 +1.6**
comp=Z,20nm,1.7s
REDW Red Top Meadow 83.87 45 *e*P **P 05 29 10.3 +0.2**
comp=Z,20nm,1.7s
SNOW Snow King Moun 83.88 45 *e*P **P 05 29 11.6 +1.4**
comp=Z,12nm,1.5s

RLMT Red Lodge 83.98 43 P **P 05 29 10.8 +0.1**
baz=300
RLMT Red Lodge 83.98 43 *e*P **P 05 29 11.2 +0.6**
comp=Z,7.9nm,0.6s
AHID Auburn Hatcher 84.00 45 *e*P **P 05 29 11.3 +0.6**
comp=Z,10nm,1.4s
DUG Dugway, Tooele 84.11 48 P **P 05 29 11.7 +0.4**
baz=299
DUG Dugway, Tooele 84.11 48 *e*P **P 05 29 12.2 +0.9**
DUG pmax pmax
comp=Z,4.0nm,0.8s
DUG Dugway, Tooele 84.11 48 *e*P **P 05 29 12.2 +0.9**
comp=Z,4.3nm,0.8s
AKASG Malin Array Be 84.16 324 P **P 05 29 10.5 -0.6**
comp=Z,5.8nm,0.5s,baz=51,slow=5.4,SNR=18
AKBB Malin Array Si 84.16 324 *e*P **P 05 29 10.8 -0.3**
AKBB pmax pmax
comp=Z,54nm,1.7s
AKBB Malin Array Si 84.16 324 *e*P **P 05 29 10.8 -0.3**
comp=Z,54nm,1.7s
PSUT Pine Spring 84.18 50 *e*P **P 05 29 11.7 -0.1**
comp=Z,4.7nm,1.0s
AK11 Malin Array Si 84.20 324 *e*P **P 05 29 11.0 -0.3**
SHPR Sheep Range 84.20 52 *e*P **P 05 29 12.8 +1.0**
comp=Z,18nm,1.9s
HWUT Hardware Ranch 84.26 47 *e*P **P 05 29 13.0 +0.9**
comp=Z,28nm,1.6s
GMRC Granite Mounta 84.63 54 P **P 05 29 14.7 +0.6**
baz=297
NLU North Lily Min 84.72 48 *e*P **P 05 29 16.0 +1.5**
comp=Z,21nm,1.9s
JLU Jordanelle 84.83 47 *e*P **P 05 29 16.0 +0.9**
comp=Z,26nm,1.6s
BW06 Boulder Array 84.99 45 *e*P **P 05 29 16.5 +0.7**
comp=Z,3.7nm,1.1s
PD31 Pinedale Array 84.99 45 *e*P **P 05 29 15.8 0.0**
PDAR Pinedale Array 84.99 45 P **P 05 29 16.1 +0.3**
comp=Z,0.5nm,0.5s,baz=339,slow=3.2,SNR=8.0
PDAR LR LR 06 01 19.2
comp=Z,121nm,20.6s,baz=300,slow=32
LAO LASA Array 84.99 40 P **P 05 29 17.1 +1.6**
baz=302
LAO LASA Array 84.99 40 *e*P **P 05 29 16.8 +1.3**
comp=Z,29nm,1.4s
MPU Maple Canyon 84.99 48 *e*P **P 05 29 16.5 +0.7**
NC405 NORSAR Array S 85.01 338 *e*P **P 05 29 14.1 -1.2**
NB201 NORSAR Array S 85.20 339 *e*P **P 05 29 15.6 -0.7**
NC204 NORSAR Array S 85.21 339 *e*P **P 05 29 16.5 +0.2**
NB2 NORSAR Subarra 85.23 339 P **P 05 29 14.7 -1.7**
comp=Z,5.3nm,0.6s,baz=44,slow=4.8
NB2 NORSAR Subarra 85.23 339 P **P 05 29 14.6 -1.8**
NB2 pmax pmax
comp=Z,5.0nm,0.6s
NOA NORSAR Array B 85.23 339 P **P 05 29 15.6 -0.8**
comp=Z,4.9nm,0.5s,baz=54,slow=6.1,SNR=20
NOA LR LR 06 11 40.4
comp=Z,121nm,18.5s,baz=45,slow=39
IRM Iron Mountain 85.30 54 P **P 05 29 17.4 +0.1**
baz=298
LCMT Little Creek M 85.33 51 *e*P **P 05 29 17.9 +0.4**
comp=Z,4.7nm,0.9s
NBO02 NORSAR Array S 85.34 339 *e*P **P 05 29 17.2 +0.3**
NBO00 NORSAR Array S 85.38 339 *e*P **P 05 29 17.4 +0.3**
NAO01 NORSAR Array S 85.49 339 *e*P **P 05 29 16.0 -1.6**
MTPU Mount Pierson 85.57 50 *e*P **P 05 29 20.8 +1.8**
comp=Z,9.0nm,1.5s
KNB Kanab 85.62 51 *e*P **P 05 29 20.2 +1.2**
KNB pmax pmax
comp=Z,14nm,1.1s
KNB Kanab 85.62 51 *e*P **P 05 29 20.2 +1.2**
comp=Z,14nm,1.1s
Q16A Castle Valley 85.84 49 *e*P **P 05 29 21.3 +1.2**
comp=Z,7.7nm,0.9s
P17A Butcher Ranch, 85.86 48 *e*P **P 05 29 20.7 +0.6**
comp=Z,11nm,1.3s
P18A Preston Nutter 86.11 48 *e*P **P 05 29 22.6 +1.1**
comp=Z,31nm,1.8s
SRU San Rafael Swe 86.18 48 *e*P **P 05 29 22.2 +0.4**
SRU pmax pmax
comp=Z,5.0nm,0.8s
SRU San Rafael Swe 86.18 48 *e*P **P 05 29 22.1 +0.4**
comp=Z,4.7nm,0.8s
K22A Casper 86.96 44 *e*P **P 05 29 27.2 +1.7**
comp=Z,24nm,1.8s
113A Mohawk Valley, 86.97 55 *e*P **P 05 29 26.1 +0.7**
comp=Z,36nm,2.0s
Y14A Wickenburg 86.97 54 *e*P **P 05 29 26.3 +0.8**
comp=Z,25nm,0.8s
O20A White River Ci 87.18 47 P **P 05 29 26.9 +0.3**
baz=301
E26A Carlson Angus 87.27 39 P **P 05 29 28.3 +1.6**
baz=305
WUAZ Wupatki 87.37 52 P **P 05 29 28.7 +1.1**
baz=300
WUAZ Wupatki 87.37 52 *e*P **P 05 29 28.1 +0.5**
comp=Z,9.1nm,1.3s
BR131 Keskin Array S 87.41 313 *e*P **P 05 29 27.4 -0.2**
BRTR Keskin Array B 87.41 313 P **P 05 29 26.4 -1.3**
comp=Z,1.5nm,0.7s,baz=97,slow=3.8,SNR=7.1
PV09 Paradox Valley 87.43 48 *e*P **P 05 29 28.9 +0.9**
G25A Newell 87.44 40 P **P 05 29 28.3 +0.7**
baz=304
F26A Lodgepole 87.51 39 P **P 05 29 28.2 +0.3**
baz=305
PV10 Paradox Valley 87.56 48 *e*P **P 05 29 29.9 +1.4**
A29A Manning Farm, 87.60 36 P **P 05 29 28.5 +0.3**
baz=307
H25A Fruitdale 87.66 41 P **P 05 29 28.7 +0.1**
baz=304
RSSD Black Hills 87.68 41 *e*P **P 05 29 30.1 +1.2**
RSSD pmax pmax
comp=Z,18nm,1.6s
RSSD Black Hills 87.68 41 *e*P **P 05 29 30.1 +1.2**
comp=Z,18nm,1.6s
X16A Lo Mia Camp, P 87.87 53 *e*P **P 05 29 31.4 +1.4**
comp=Z,11nm,1.5s
BR231 Keskin MP Arra 87.92 314 *e*P **P 05 29 26.6 -3.4**
PV01 Paradox Valley 88.00 48 *e*P **P 05 29 31.2 +0.6**
MDND Maddock 88.05 37 *e*P **P 05 29 31.6 +1.2**
comp=Z,48nm,1.5s
214A Organ Pipe Nat 88.06 55 P **P 05 29 32.1 +1.3**
baz=299
BUR08 Bucovina Ar. S 88.08 323 *e*P **P 05 29 30.0 -0.6**
N23A Red Feather La 88.27 45 P **P 05 29 33.9 +2.0**
baz=303
N23A Red Feather La 88.27 45 *e*P **P 05 29 33.2 +1.3**
comp=Z,40nm,2.0s
PHWY Pilot Hill 88.35 44 *e*P **P 05 29 33.9 +1.6**
comp=Z,24nm,2.0s
ULM Lac du Bonnet 88.49 33 LR LR 06 08 39.3
comp=Z,72nm,20.4s,baz=342,slow=35
SMCO Snowmass 88.52 47 *e*P **P 05 29 34.1 +0.8**
comp=Z,19nm,1.9s
C30A Mose, Pekin 88.74 36 P **P 05 29 33.5 -0.2**
baz=308
D30A Buchanan 88.95 37 P **P 05 29 35.5 +0.9**
baz=308
STHS Stebnicka Huta 89.05 326 *e*P **P 05 29 36.6 +1.5**
STHS pmax pmax
comp=Z,4.0nm,0.9s
STHS Stebnicka Huta 89.05 326 *e*P **P 05 29 36.6 +1.5**
C31A Landman Farms, 89.08 36 P **P 05 29 36.2 +1.0**
baz=308
OJC Ojcow 89.25 327 *e*P **P 05 29 35.2 -0.7**
OJC pmax pmax
comp=Z,35nm,1.7s
OJC Ojcow 89.25 327 *e*P **P 05 29 35.2 -0.7**
comp=Z,35nm,1.7s
CRVS Cervenica-Dubn 89.27 326 *e*P **P 05 29 36.6 +0.5**
CRVS Cervenica-Dubn 89.27 326 *e*P **P 05 29 36.6 +0.5**
S22A 4UR Ranch, Cre 89.37 48 P **P 05 29 37.6 +0.4**
baz=302
S22A 4UR Ranch, Cre 89.37 48 *e*P **P 05 29 37.8 +0.6**
comp=Z,19nm,2.0s
TUC Tucson 89.39 54 *e*P **P 05 29 38.3 +1.2**
TUC pmax pmax
comp=Z,24nm,1.9s
TUC Tucson 89.39 54 *e*P **P 05 29 38.2 +1.2**
comp=Z,24nm,1.9s
I28A Midland 89.44 40 P **P 05 29 36.9 -0.1**
baz=306
KECS Kecovo 90.03 326 *e*P **P 05 29 40.8 +1.1**
KECS pmax pmax
comp=Z,3.0nm,1.0s
KECS Kecovo 90.03 326 *e*P **P 05 29 40.8 +1.1**
LANS Liptovska Anna 90.11 327 *e*P **P 05 29 41.1 +1.0**
LANS Liptovska Anna 90.11 327 *e*P **P 05 29 41.1 +1.0**

B34A Aery, Baudette 90.24 34 P **P 05 29 40.3 -0.4**
baz=311
SDCO Great Sand Dun 90.26 47 *e*P **P 05 29 41.8 +0.5**
comp=Z,9.0nm,1.6s
PSZ Piszkesteto 90.70 326 *e*P **P 05 29 43.0 +0.1**
PSZ pmax pmax
comp=Z,11nm,1.1s
PSZ Piszkesteto 90.70 326 *e*P **P 05 29 43.0 +0.1**
comp=Z,11nm,1.1s
B35A Bob, Littlefor 90.79 34 P **P 05 29 43.0 -0.2**
baz=311
E33A Westby DABS, E 90.81 36 P **P 05 29 43.0 -0.3**
baz=310
DPC Dobruska-Polom 90.82 329 *e*P **P 05 29 42.4 -0.9**
DPC *ex* x 05 29 50.1
DPC Dobruska-Polom 90.82 329 *e*P **P 05 29 42.4 -0.9**
DPC *e* 05 29 50.1
UPC Upice 90.85 329 AMS AMS 06 15 00.0
comp=Z,400nm,16.2s
VYHS Vyhne 90.86 326 *e*P **P 05 29 43.9 +0.4**
VYHS pmax pmax
comp=Z,8.0nm,1.2s
VYHS Vyhne 90.86 326 *e*P **P 05 29 43.9 +0.4**
LAZ Ladron 90.93 51 *e*P **P 05 29 45.8 +1.4**
C35A Jirik Farms, M 91.09 34 P **P 05 29 43.8 -0.8**
baz=311
ANMO Albuquerque 91.12 50 P **P 05 29 46.3 +1.1**
baz=302
ANMO Albuquerque 91.12 50 *e*P **P 05 29 46.4 +1.1**
ANMO pmax pmax
comp=Z,9.0nm,1.4s
ANMO Albuquerque 91.12 50 *e*P **P 05 29 46.4 +1.1**
comp=Z,8.8nm,1.4s
T25A Trinidad 91.32 47 *e*P **P 05 29 48.1 +1.9**
comp=Z,19nm,1.7s
G33A Ortonville 91.40 37 P **P 05 29 45.8 -0.3**
baz=309
BNM Barren Site 91.42 51 *e*P **P 05 29 48.2 +1.5**
PVCC Panska Ves 91.50 330 AMS AMS 06 15 50.0
comp=Z,300nm,18.6s
CLL Collm 91.64 331 *e*P **P 05 29 51.0 +4.0**
CLL *e*PP **PP 05 33 29.0 +3.9**
CLL *e*S **S 05 40 39.0 -4.5**
CLL Lm MLR 05 51 00.0
comp=Z,100nm,19.3s
CLL Collm 91.64 331 *e*P **P 05 29 51.0 +4.0**
CLL *e*S **S 05 40 39.0 -4.5**
GOPC GO Pecny, Ondr 91.83 329 AMS AMS 06 15 50.0
comp=Z,400nm,17.9s
PRU Pruhonice 91.89 329 AMS AMS 06 15 30.0
comp=Z,400nm,17.8s
EYMN Ely 92.17 33 P **P 05 29 50.5 +0.9**
baz=313
EYMN Ely 92.17 33 *e*P **P 05 29 51.1 +1.5**
comp=Z,18nm,1.7s
ECSD EROS Data Cent 92.22 39 P **P 05 29 50.5 +0.6**
baz=309
ECSD EROS Data Cent 92.22 39 *e*P **P 05 29 50.6 +0.7**
comp=Z,16nm,1.6s
C38A Sawbill Land. 92.44 33 P **P 05 29 51.4 +0.5**
baz=313
F36A Milaca 92.54 36 P **P 05 29 50.1 -1.2**
baz=311
KHC Kasperske Hory 92.94 329 *e*P **P 05 29 52.7 -0.5**
KHC AMS AMS 06 16 10.0
comp=Z,500nm,17.7s
KHC Kasperske Hory 92.94 329 *e*P **P 05 29 52.7 -0.5**
KHC MLR MLR
comp=Z,500nm,17.7s
GERES GERESS Array B 93.09 329 P **P 05 29 53.7 -0.2**
comp=Z,0.6nm,0.4s,baz=45,slow=4.0,SNR=6.1
GERES LR LR 06 15 39.8
comp=Z,126nm,18.3s,baz=42,slow=38
GEA0 GERESS Array S 93.09 329 *e*P **P 05 29 53.9 -0.1**
SPMN Marine on St. 93.34 36 *e*P **P 05 29 56.1 +1.1**
comp=Z,5.4nm,0.9s
MNTX Cornudas Mount 93.62 52 P **P 05 29 57.2 +0.6**
baz=303
MNTX Cornudas Mount 93.62 52 *e*P **P 05 29 57.0 +0.3**
comp=Z,13nm,1.6s
LAST Lasithi 95.34 313 *e*P **P 05 30 04.8 +0.3**
comp=Z,104nm,1.7s
SCHQ Schefferville 96.03 17 LR LR 06 14 39.4
comp=Z,62nm,22.0s,baz=322,slow=36
TX31 Lajitas Ar. Si 96.15 54 *e*P **P 05 30 09.6 +1.2**
TXAR Lajitas Array 96.15 54 P **P 05 30 09.1 +0.7**
comp=Z,0.6nm,0.8s,baz=105,slow=1.4,SNR=4.4
TXAR LR LR 06 09 48.0
comp=Z,71nm,19.5s,baz=0.0,slow=33
FUORN Ofenpass-Fuorn 96.30 329 *e*P **P 05 30 09.2 +0.3**
comp=Z,6.9nm,1.1s
SYO Syowa Base 118.28 203‖ *e*X **Pdif 05 31 43.2 -2.5**
TOA0 Torodi Ar. Sit 125.96 311 *e*PKPdf **PKPdf 05 35 41.9 -0.8**
TORD Torodi Ar. Bea 125.96 311 PKP **PKPdf 05 35 42.6 -0.1**
comp=Z,0.5nm,0.6s,baz=34,slow=1.4,SNR=6.1
PTGA Pitinga 147.03 45 *e*PKPdf **PKPdf 05 36 22.4 +1.0**
PLCA Paso Flores 148.51 127 PKPbc **PKPbc 05 36 25.8 -1.0**
comp=Z,4.6nm,0.5s,baz=266,slow=3.9,SNR=31
LPAZ La Paz 149.82 78 PKPbc **PKPbc 05 36 31.1 -0.2**
comp=Z,5.6nm,0.7s,baz=32,slow=4.0,SNR=31
LPAZ La Paz 149.82 78 *e*PKP2 **PKPbc 05 36 30.6 -0.8**
LPAZ La Paz 149.82 78 *e*PKPbc **PKPbc 05 36 30.6 -0.8**
PB01 IPOC Station P 150.13 88 *e*PKPbc **PKPbc 05 36 30.8 -0.6**
LCO Las Campanas 150.16 104 *e*PKPbc **PKPbc 05 36 30.7 -0.8**
LVC Limon Verde 151.02 91 *e*PKPbc **PKPbc 05 36 34.3 +0.5**

ISCJB ***20*** *05:18:11.3±0.5, 39°.14N±0°.03×28°.98E±0°.03, h5km±5km,*
Error ellipse: s-maj=4.9km s-min=4.3km az=150.2
CSEM ***20*** *05:18:11.5±0.1, 39°.13N×28°.98E, h5km, MD2.5, Error*
ellipse: s-maj=2.0km s-min=1.9km az=142.0
DDA ***20*** *05:18:11.1, 39°.15N×28°.99E, h7km, Md2.5*
ISK ***20*** *05:18:11.1, 39°.15N×28°.97E, h6km, MD2.7*
ISC 20 05:18:10.9±0.9, 39°.13N±0°.02×29°.03E±0°.02, h13km±9km,
n49, σ0.936/62, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**250**	P	**Pg**	**05 18 16.6**	**+0.2**
DEMI				S	**Sg**	**05 18 20.0**	**-0.1**
DEMI	**Demirci**	**0.26**	**250**	*i* P	**Pg**	**05 18 16.6**	**+0.2**
DEMI				*i* S	**Sg**	**05 18 20.0**	**-0.1**
GDZ	**Gediz**	**0.36**	**97**	P	**Pg**	**05 18 18.4**	**+0.2**
GDZ				S	**Sb**	**05 18 25.4**	**+0.6**
GDZ	**Gediz**	**0.36**	**97**	*i* P	**Pg**	**05 18 18.4**	**+0.2**
GDZ				*i* S	**Sb**	**05 18 25.4**	**+0.6**
TVSB	**Tavsanli**	**0.46**	**47**	*e*PG	**Pb**	**05 18 21.1**	**+0.1**
TVSB				*e*SG	**Sb**	**05 18 27.6**	**-0.2**
TVSB	**Tavsanli**	**0.46**	**47**	*e*Pg	**Pb**	**05 18 21.1**	**+0.1**
TVSB				*e*Sg	**Sb**	**05 18 27.7**	**-0.2**
DURS	**Dursunbey**	**0.63**	**318**	P	**Pb**	**05 18 23.6**	**-0.3**
DURS				S	**Sg**	**05 18 31.7**	**0.0**
DURS	**Dursunbey**	**0.63**	**318**	*i* P	**Pb**	**05 18 23.6**	**-0.3**
DURS				*i* S	**Sg**	**05 18 31.7**	**0.0**
MANT	**Manisa**	**0.74**	**210**	P	**Pb**	**05 18 25.7**	**-0.1**
MANT				S	**Sg**	**05 18 34.7**	**-0.4**
MANT	**Manisa**	**0.74**	**210**	*i* P	**Pb**	**05 18 25.7**	**-0.1**
MANT				*i* S	**Sg**	**05 18 34.7**	**-0.4**
KHL	**Karahalli**	**0.90**	**154**	*e*PG	**Pn**	**05 18 29.5**	**+0.2**
KHL	**Karahalli**	**0.90**	**154**	*e*Pg	**Pn**	**05 18 29.5**	**+0.2**
ORLT	**Orhaneli**	**0.92**	**354**	*e*PG	**Pb**	**05 18 29.0**	**+0.2**
ORLT				*e*SG	**Sb**	**05 18 41.3**	**+0.4**
ORLT	**Orhaneli**	**0.92**	**354**	*e*Pg	**Pb**	**05 18 29.0**	**+0.2**
ORLT				*e*Sg	**Sb**	**05 18 41.3**	**+0.4**
AKS	**Akhisar**	**0.98**	**255**	*e*PG	**Pb**	**05 18 29.5**	**-0.3**
AKS	**Akhisar**	**0.98**	**255**	*e*Pg	**Pb**	**05 18 29.5**	**-0.3**
BALB	**Balikesir**	**1.02**	**300**	*e*PG	**Pb**	**05 18 30.0**	**-0.5**
BALB	**Balikesir**	**1.02**	**300**	*e*Pg	**Pb**	**05 18 30.0**	**-0.5**
IGD	**Bursa**	**1.14**	**7**	*i* P	**Pg**	**05 18 32.8**	**-0.1**
IGD				*i* S	**Sg**	**05 18 47.6**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.24**	**355**	*e*PN	**Pg**	**05 18 34.9**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.24**	**355**	*e*Pn	**Pg**	**05 18 34.9**	**+0.1**
KCTX	**Karacabey (Bur**	**1.24**	**336**	*e*PN	**Pg**	**05 18 34.9**	**0.0**
KCTX	**Karacabey (Bur**	**1.24**	**336**	*e*Pn	**Pg**	**05 18 34.9**	**0.0**
IZI	**Iznik**	**1.25**	**16**	*e*PN	**Pg**	**05 18 35.7**	**+0.7**
IZI	**Iznik**	**1.25**	**16**	*e*Pn	**Pg**	**05 18 35.7**	**+0.7**
GEMT	**Gemlik**	**1.31**	**5**	*e*PN	**Pg**	**05 18 36.1**	**0.0**
GEMT	**Gemlik**	**1.31**	**5**	*e*Pn	**Pg**	**05 18 36.1**	**0.0**
GONE	**Gonen-Balikesi**	**1.38**	**312**	*e*PN	**Pb**	**05 18 36.9**	**+0.3**
GONE	**Gonen-Balikesi**	**1.38**	**312**	*e*Pn	**Pb**	**05 18 36.9**	**+0.3**
ADVT	**Abdulvahap**	**1.41**	**23**	*e*PN	**Pg**	**05 18 38.0**	**0.0**
ADVT	**Abdulvahap**	**1.41**	**23**	*e*Pn	**Pg**	**05 18 38.0**	**0.0**
ARMT	**Armutlu**	**1.44**	**355**	*e*PN	**Pg**	**05 18 38.3**	**-0.3**

ARMT	Armutlu	1.44	355	ePn	Pg	05	18	38.3	-0.3
BNT	Bandirma	1.49	325	ePN	Pb	05	18	38.4	-0.1
BNT	Bandirma	1.49	325	ePn	Pb	05	18	38.4	-0.1
EDC	Edincik	1.51	324	ePN	Pb	05	18	38.8	0.0
EDC	Edincik	1.51	324	ePn	Pb	05	18	38.8	0.0
GPA	Golpazari	1.52	40	ePN	Pg	05	18	39.8	-0.4
GPA	Golpazari	1.52	40	ePn	Pg	05	18	39.8	-0.4
GULT	Gulveren	1.73	41	ePN	Pb	05	18	42.9	+0.2
GULT	Gulveren	1.73	41	ePn	Pb	05	18	42.9	+0.2
SPNC	Sapanca-Adapaz	1.84	32	ePN	Pb	05	18	44.0	-0.4
SPNC	Sapanca-Adapaz	1.84	32	ePn	Pb	05	18	44.0	-0.4
ISK	Istanbul-Kandi	1.93	1	ePN	Pb	05	18	46.0	0.0
ISK	Istanbul-Kandi	1.93	1	ePn	Pb	05	18	46.0	0.0
SVRH	Sivrihisar-ESK	1.96	80	ePN	Pb	05	18	46.0	-0.6
SVRH	Sivrihisar-ESK	1.96	80	ePn	Pb	05	18	46.0	-0.6
SILT	Sile	2.07	13	ePN	Pb	05	18	47.3	-1.1
SILT	Sile	2.07	13	ePn	Pb	05	18	47.3	-1.1

*CSEM **20** 05:19:59.5, 39°.15N×29°.10E, h5km, MD2.7*
ISK 20 05:19:59.5, 39°.15N±29°.10E, h5km, MD2.7, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TVSB	Tavsanli	0.41	43	ePG	Pg	05 20 07.9	+0.4
TVSB				eSG	Sg	05 20 13.8	+0.9
TVSB	Tavsanli	0.41	43	ePg	Pg	05 20 07.9	+0.4
TVSB				eSg	Sg	05 20 13.8	+0.9
KHL	Karahalli	0.89	158	ePG	Pg	05 20 16.9	+0.4
KHL	Karahalli	0.89	158	ePg	Pg	05 20 16.9	+0.4
ORLT	Orhaneli	0.91	350	ePG	Pb	05 20 17.5	-0.4
ORLT	Orhaneli	0.91	350	ePg	Pb	05 20 17.5	-0.4
AKS	Akhisar	1.04	256	ePG	Pb	05 20 19.8	-0.2
AKS	Akhisar	1.04	256	ePg	Pb	05 20 19.8	-0.2
BALB	Balikesir	1.07	298	ePG	Pb	05 20 20.2	-0.2
BALB				eSG	Sn	05 20 35.5	-0.8
BALB	Balikesir	1.07	298	ePg	Pg	05 20 20.2	+0.2
BALB				eSg	Sb	05 20 35.5	+0.8
IZI	Iznik	1.22	13	ePN	Pn	05 20 23.3	0.0
IZI	Iznik	1.22	13	ePn	Pn	05 20 23.3	-0.1
MDNY	Mudanya-Bursa	1.23	352	ePN	Pn	05 20 23.6	+0.2
MDNY	Mudanya-Bursa	1.23	352	ePn	Pn	05 20 23.6	+0.2
KCTX	Karacabey (Bur	1.26	333	ePN	Pn	05 20 24.0	+0.3
KCTX	Karacabey (Bur	1.26	333	ePn	Pn	05 20 24.0	+0.2
GEMT	Gemlik	1.29	3	ePN	Pb	05 20 24.7	+0.4
GEMT	Gemlik	1.29	3	ePn	Pb	05 20 24.7	+0.5
ADVT	Abdulvahap	1.38	21	ePN	Pg	05 20 26.0	+0.1
ADVT	Abdulvahap	1.38	21	ePn	Pg	05 20 26.0	+0.1
GONE	Gonen-Balikesi	1.42	310	ePN	Pg	05 20 26.6	-0.1
GONE	Gonen-Balikesi	1.42	310	ePn	Pg	05 20 26.6	0.0
ARMT	Armutlu	1.43	353	ePN	Pn	05 20 26.3	+0.2
ARMT	Armutlu	1.43	353	ePn	Pn	05 20 26.3	+0.2
GPA	Golpazari	1.47	39	ePN	Pg	05 20 27.6	-0.1
GPA	Golpazari	1.47	39	ePn	Pg	05 20 27.6	-0.2
BNT	Bandirma	1.51	323	ePN	Pb	05 20 27.9	-0.1
BNT	Bandirma	1.51	323	ePn	Pb	05 20 27.9	-0.2
EDC	Edincik	1.53	322	ePN	Pb	05 20 28.2	-0.2
EDC	Edincik	1.53	322	ePn	Pb	05 20 28.2	-0.2
GULT	Gulveren	1.68	40	ePN	Pb	05 20 30.6	-0.4
GULT	Gulveren	1.68	40	ePn	Pb	05 20 30.6	-0.4

*ISK **20** 05:20:36.6, 39°.10N×28°.96E, h5km, ML3.7*
*DDA **20** 05:20:36.8, 39°.12N×29°.02E, h7km, Ml3.9*
*ISCJB **20** 05:20:37.5±0.4, 39°.09N±0°.02×28°.96E±0°.02, h7km±3km, Error ellipse: s-maj=2.9km s-min=2.8km az=18.5*
*CSEM **20** 05:20:37.9±0.1, 39°.08N×28°.95E, h5km, ML3.9, Error ellipse: s-maj=2.4km s-min=2.0km az=81.0*
*THE **20** 05:20:38.9, 39°.04N×28°.92E, h6km±2km, ML3.5/5, Error ellipse: s-maj=2.6km s-min=0.8km az=108.0*
ISC 20 05:20:37.4±0.9, 39°.11N±0°.02×29°.00E±0°.02, h10km±7km, n146, σ0°86/175, 5C-7D, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.23	254	P	Pg	05 20 42.4	+0.3
DEMI				S	Sg	05 20 45.8	+0.4
DEMI	Demirci	0.23	254	*i* P	Pg	05 20 42.4	+0.3
DEMI				*i* S	Sg	05 20 45.8	+0.4
GDZ	Gediz	0.38	93	*i* P	Pg	05 20 44.2	-0.6
GDZ				*i* S	Sg	05 20 49.4	-0.5
TVSB	Tavsanli	0.50	46	ePG	Pg	05 20 47.0	-0.1
TVSB	Tavsanli	0.50	46	ePg	Pg	05 20 47.0	-0.1
DURS	Dursunbey	0.64	321	P	Pg	05 20 49.4	-0.4
DURS				S	Sg	05 20 58.4	+0.2
DURS	Dursunbey	0.64	321	*i* P	Pg	05 20 49.4	-0.4
DURS				*i* S	Sg	05 20 58.4	+0.2
KULA	Kula-Manisa	0.65	204	ePG	Pg	05 20 50.0	+0.1
KULA	Kula-Manisa	0.65	204	P	Pg	05 20 49.7	-0.2
KULA				S	Sg	05 20 58.3	-0.1
KULA	Kula-Manisa	0.65	204	P	Pg	05 20 49.7	-0.2
KULA	Kula-Manisa	0.65	204	ePg	Pg	05 20 50.0	+0.1
KULA				S	Sg	05 20 58.3	-0.1
MANT	Manisa	0.70	209	P	Pg	05 20 50.9	-0.1
MANT				S	Sg	05 21 00.2	-0.1
MANT	Manisa	0.70	209	*i* P	Pg	05 20 50.9	-0.1
MANT				*i* S	Sg	05 21 00.2	-0.1
KHAL	Karahalli	0.83	152	P	Pg	05 20 53.3	-0.1
KHAL				S	Sg	05 21 03.7	-0.6
KHAL	Karahalli	0.83	152	*i* P	Pg	05 20 53.3	-0.1
KHAL				*i* S	Sg	05 21 03.7	-0.6
KHL	Karahalli	0.88	152	ePG	Pb	05 20 55.1	+0.3
KHL	Karahalli	0.88	152	ePg	Pb	05 20 55.1	+0.3
ORLT	Orhaneli	0.94	355	ePG	Pb	05 20 55.9	+0.1
ORLT	Orhaneli	0.94	355	ePg	Pb	05 20 55.9	+0.1
AKHS	Akhisar	0.95	257	P	Pb	05 20 56.1	+0.2
AKHS				S	Sb	05 21 08.8	+0.2
AKHS	Akhisar	0.95	257	*i* P	Pb	05 20 56.1	+0.2
AKHS				*i* S	Sb	05 21 08.8	+0.2
AKS	Akhisar	0.95	257	ePG	Pg	05 20 54.8	-0.9
AKS				eSG	Sb	05 21 09.3	+0.7
AKS	Akhisar	0.95	257	ePg	Pg	05 20 54.8	-0.9
AKS				eSg	Sb	05 21 09.3	+0.7
BALB	Balikesir	1.02	302	ePG	Pb	05 20 57.1	0.0
BALB				eSG	Sn	05 21 11.6	-0.4
BALB	Balikesir	1.02	302	ePg	Pb	05 20 57.1	0.0
BALB				eSg	Sn	05 21 11.6	-0.4
IGD	Bursa	1.17	8	*i* P	Pg	05 20 57.9	-1.9
IGD				*i* S	Sb	05 21 15.0	+0.2
BALY	Balya	1.24	301	P	Pn	05 21 00.9	+0.1
BALY				S	Sn	05 21 17.7	+0.1
BALY	Balya	1.24	301	*i* P	Pn	05 21 00.9	+0.1
BALY				*i* S	Sn	05 21 17.7	+0.1
KCTX	Karacabey (Bur	1.26	337	ePN	Pg	05 21 01.9	+0.3
KCTX	Karacabey (Bur	1.26	337	ePn	Pg	05 21 01.9	+0.3
MDNY	Mudanya-Bursa	1.26	356	ePN	Pg	05 21 01.9	+0.2
MDNY	Mudanya-Bursa	1.26	356	ePn	Pg	05 21 01.9	+0.2
IZI	Iznik	1.28	16	ePN	Pg	05 21 02.0	0.0
IZI	Iznik	1.28	16	ePn	Pg	05 21 02.0	0.0
GEMT	Gemlik	1.33	6	ePN	Pg	05 21 02.8	-0.2
GEMT	Gemlik	1.33	6	ePn	Pg	05 21 02.8	-0.2
DENT	Denizli	1.35	179	ePN	Pb	05 21 03.0	+0.2
DENT	Denizli	1.35	179	ePn	Pb	05 21 03.0	+0.2
DNZL	Cakiroluk	1.42	178	P	Pb	05 21 04.3	+0.3
DNZL	Cakiroluk	1.42	178	*i* P	Pb	05 21 04.3	+0.3
DNZL				*i* S	Sg	05 21 25.8	+2.9
ADVT	Abdulvahap	1.44	23	ePN	Pg	05 21 04.8	-0.3
ADVT	Abdulvahap	1.44	23	ePn	Pg	05 21 04.8	-0.3
AYDB	Zeytinkoy-Aydi	1.45	217	ePN	Pb	05 21 04.8	+0.3
AYDB	Zeytinkoy-Aydi	1.45	217	ePn	Pb	05 21 04.8	+0.3
ARMT	Armutlu	1.46	356	ePN	Pg	05 21 05.1	-0.3
ARMT	Armutlu	1.46	356	ePn	Pg	05 21 05.1	-0.3
EDC	Edincik	1.52	325	ePN	Pg	05 21 05.9	-0.6
EDC	Edincik	1.52	325	ePn	Pg	05 21 05.9	-0.6
GPA	Golpazari	1.56	40	ePN	Pb	05 21 06.5	+0.2
GPA	Golpazari	1.56	40	ePn	Pb	05 21 06.5	+0.2
DKL	Dikili	1.63	269	ePN	Pb	05 21 07.0	-0.5
DKL	Dikili	1.63	269	ePn	Pb	05 21 07.0	-0.5
ISP	Isparta	1.75	137	ePN	Pb	05 21 09.6	-0.1
ISP	Isparta	1.75	137	*i* P	Pb	05 21 10.4	+0.7
ISP	Isparta	1.75	137	P	Pn	05 21 07.8	-0.1
ISP	Isparta	1.75	137	P	Pn	05 21 07.8	-0.1
ISP	Isparta	1.75	137	ePn	Pb	05 21 09.6	-0.1
GULT	Gulveren	1.77	41	ePN	Pb	05 21 10.2	+0.3
GULT	Gulveren	1.77	41	ePn	Pb	05 21 10.2	+0.3
HRT	Hereke	1.79	17	ePN	Pb	05 21 10.2	-0.1
HRT	Hereke	1.79	17	ePn	Pb	05 21 10.2	-0.1
KRBG	Karabiga-Canak	1.83	315	ePN	Pb	05 21 10.6	-0.4
KRBG	Karabiga-Canak	1.83	315	ePn	Pb	05 21 10.6	-0.4
MRMT	Marmara Adasi	1.84	325	ePN	Pb	05 21 11.0	-0.2
MRMT	Marmara Adasi	1.84	325	ePn	Pb	05 21 11.0	-0.2
SPNC	Sapanca-Adapaz	1.87	32	ePN	Pb	05 21 11.5	-0.1
SPNC	Sapanca-Adapaz	1.87	32	ePn	Pb	05 21 11.5	-0.1
ISK	Istanbul-Kandi	1.96	1	ePN	Pb	05 21 12.8	-0.3
ISK	Istanbul-Kandi	1.96	1	P	Pb	05 21 12.7	-0.4
ISK	Istanbul-Kandi	1.96	1	P	Pb	05 21 12.7	-0.4
GLHS	Gihisar (BURDU	1.99	168	ePN	Pb	05 21 12.8	-0.9
GLHS	Gihisar (BURDU	1.99	168	ePn	Pb	05 21 12.8	-0.9
SVRH	Sivrihisar-ESK	1.99	79	ePN	Pb	05 21 13.6	-0.1
SVRH	Sivrihisar-ESK	1.99	79	ePn	Pb	05 21 13.6	-0.1
YER	Yerkesik	2.05	196	ePN	Pn	05 21 13.0	+1.1
YER	Yerkesik	2.05	196	P	Pn	05 21 11.8	-0.1
YER	Yerkesik	2.05	196	P	Pn	05 21 11.8	-0.1
YER	Yerkesik	2.05	196	ePn	Pn	05 21 13.0	+1.1
BGKT	Bogazkoy	2.08	355	ePN	Pb	05 21 14.0	-1.2
BGKT	Bogazkoy	2.08	355	ePn	Pb	05 21 14.0	-1.2
SILT	Sile	2.10	13	ePN	Pb	05 21 15.3	-0.3
SILT	Sile	2.10	13	ePn	Pb	05 21 15.3	-0.3
RKY	Sarkoy-Tekirda	2.11	319	ePN	Pb	05 21 14.9	-0.8
RKY	Sarkoy-Tekirda	2.11	319	ePn	Pb	05 21 14.9	-0.8
PRK	Paraskevi	2.12	275	P	Pn	05 21 13.0	+0.1
PRK				S	Sn	05 21 39.6	+0.3
PRK	Paraskevi	2.12	275	P	Pn	05 21 13.0	+0.1
PRK				S	Sn	05 21 39.6	+0.3
LPK	Lapseki	2.14	307	ePN	Pb	05 21 14.7	-1.5
LPK	Lapseki	2.14	307	ePn	Pb	05 21 14.7	-1.5
KLYT	Kilyos	2.14	1	ePN	Pb	05 21 15.3	-1.0
KLYT	Kilyos	2.14	1	ePn	Pb	05 21 15.3	-1.0
CTKS	Kestanelik-??a	2.16	350	ePN	Pb	05 21 15.5	-1.1
CTKS	Kestanelik-??a	2.16	350	ePn	Pb	05 21 15.5	-1.1
MDUB	Mudurnu	2.17	51	ePN	Pb	05 21 15.7	-1.2
MDUB	Mudurnu	2.17	51	ePn	Pb	05 21 15.7	-1.2
EZN	Ezine	2.19	290	ePN	Pn	05 21 14.9	+1.1
EZN	Ezine	2.19	290	ePn	Pn	05 21 14.9	+1.1
TKR	Tekirdag	2.19	330	ePN	Pb	05 21 15.7	-1.4
TKR	Tekirdag	2.19	330	ePn	Pb	05 21 15.7	-1.4
SMG	Samos	2.20	231	P	Pn	05 21 13.4	-0.5
SMG				S	Sn	05 21 39.7	-1.5
SMG	Samos	2.20	231	P	Pn	05 21 13.4	-0.5
SMG				S	Sn	05 21 39.7	-1.5
KIZT	Kizilcal	2.26	95	ePN	Pb	05 21 17.0	-1.3
KIZT	Kizilcal	2.26	95	ePn	Pb	05 21 17.0	-1.3
SUTC	Sutluce-Ispart	2.27	135	ePN	Pn	05 21 16.8	+1.8
SUTC	Sutluce-Ispart	2.27	135	ePn	Pn	05 21 16.8	+1.8
GELI	Tayfur-Gelibol	2.33	304	ePN	Pb	05 21 17.7	-1.8
GELI	Tayfur-Gelibol	2.33	304	ePn	Pb	05 21 17.7	-1.8
CHOS	Chios island	2.41	254	P	Pn	05 21 16.8	-0.1
CHOS				S	Sn	05 21 46.0	-0.5
CHOS	Chios island	2.41	254	P	Pn	05 21 16.8	-0.1
CHOS				S	Sn	05 21 46.0	-0.5
CTYL	Yalikoy Yolu	2.43	347	ePN	Pn	05 21 19.0	+2.0
CTYL	Yalikoy Yolu	2.43	347	ePn	Pn	05 21 19.0	+2.0
BODT	Bodrum	2.44	214	P	Pn	05 21 16.9	-0.3
BODT	Bodrum	2.44	214	P	Pn	05 21 16.9	-0.3
SIGR	SIGRI	2.45	273	P	Pn	05 21 17.5	+0.2
SIGR	SIGRI	2.45	273	P	Pn	05 21 17.5	+0.2
FETY	Fethiye	2.47	178	P	Pn	05 21 17.7	0.0
FETY	Fethiye	2.47	178	P	Pn	05 21 17.7	0.0
ERIK	Erikli-Kesan	2.47	310	ePN	Pn	05 21 19.4	+1.8
ERIK	Erikli-Kesan	2.47	310	ePn	Pn	05 21 19.4	+1.8
ENEZ	Enez	2.73	308	P	Pn	05 21 21.7	+0.5
ENEZ	Enez	2.73	308	P	Pn	05 21 21.7	+0.5
LADK	Ladik-KONYA	2.79	108	ePN	Pn	05 21 24.7	+2.5
LADK	Ladik-KONYA	2.79	108	ePn	Pn	05 21 24.7	+2.5
ALN	Alexandroupoli	2.89	309	P	Pn	05 21 23.5	+0.1
ALN				S	Sn	05 21 58.3	+0.1
ALN	Alexandroupoli	2.89	309	P	Pn	05 21 23.5	+0.1
ALN				S	Sn	05 21 58.3	+0.1
KDZE	Karadeniz Ereo	2.89	40	ePN	Pb	05 21 26.5	-2.5
KDZE	Karadeniz Ereo	2.89	40	ePn	Pb	05 21 26.5	-2.5
SMTH	Samothraki Isl	3.00	298	P	Pn	05 21 25.4	+0.4
SMTH				S	Sn	05 22 02.1	+1.1
SMTH	Samothraki Isl	3.00	298	P	Pn	05 21 25.4	+0.4
SMTH				S	Sn	05 22 02.1	+1.1
LIA	Limnos Island	3.06	286	P	Pn	05 21 26.1	+0.4
LIA	Limnos Island	3.06	286	P	Pn	05 21 26.1	+0.4
EDRB	Edirne	3.23	329	P	Pn	05 21 28.6	+0.5
EDRB	Edirne	3.23	329	P	Pn	05 21 28.6	+0.5
KDZ	Kurdzhali	3.73	314	P	Pn	05 21 35.6	+0.6
RZN	Rozhen	4.16	310	P	Pn	05 21 41.5	+0.4
SZH	Strazhica	4.75	332	P	Pn	05 21 50.0	+0.9
TIRR	Tirgusor	5.37	356	‖ *i*P	Pn	05 21 57.9	+0.5
TIRR	Tirgusor	5.37	356	‖ *i*P	Pn	05 21 57.9	+0.5
CFR	Carcaliu	6.10	354	‖ *i*P	Pn	05 22 12.7	+5.2
BARS	Barje	6.58	307	‖ *i*Pn	Pn	05 22 15.1	+1.0
MLR	Muntele Rosu	6.77	341	‖ *i*P	Pn	05 22 19.1	+2.3
MLR	Muntele Rosu	6.77	341	‖ *i*P	Pn	05 22 19.1	+2.3
VRI	Vrincioaia	6.96	347	‖ *i*P	Pn	05 22 23.9	+4.5
VOIR		6.97	336	‖ *i*P	Pn	05 22 19.9	+0.3
VOIR		6.97	336	‖ *i*P	Pn	05 22 19.9	+0.3
MDVR	Moldovita	7.85	319	‖ *i*P	Pn	05 22 31.5	-0.1
MDVR	Moldovita	7.85	319	‖ *i*P	Pn	05 22 31.5	-0.1

*ISK **20** 05:22:17.8, 39°.18N×28°.95E, h5km, ML3.3*
*CSEM **20** 05:22:18.6±0.1, 39°.15N×28°.96E, h2km, MD2.5, Error ellipse: s-maj=3.2km s-min=2.8km az=150.0*
*DDA **20** 05:22:18.1, 39°.11N×28°.99E, h7km, Md2.5*
ISC 20 05:22:18.0±0.9, 39°.14N±0°.03×28°.97E±0°.02, h14km±7km, n52, σ0°39/64, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.22	243	P	Pg	05 22 23.1	+0.2
DEMI				S	Sg	05 22 26.4	+0.1
DEMI	Demirci	0.22	243	*i* P	Pg	05 22 23.1	+0.2
DEMI				*i* S	Sg	05 22 26.4	+0.1
GDZ	Gediz	0.41	97	P	Pg	05 22 25.8	-0.4
GDZ				S	Sg	05 22 31.6	-0.2
GDZ	Gediz	0.41	97	*i* P	Pg	05 22 25.8	-0.4
GDZ				*i* S	Sg	05 22 31.6	-0.2
TVSB	Tavsanli	0.49	51	ePG	Pg	05 22 27.8	0.0
TVSB	Tavsanli	0.49	51	ePg	Pg	05 22 27.8	0.0
DURS	Dursunbey	0.60	320	P	Pb	05 22 30.2	-0.1
DURS	Dursunbey	0.60	320	*i* P	Pb	05 22 30.2	-0.1
MANT	Manisa	0.72	206	P	Pg	05 22 32.0	-0.1
MANT				S	Sg	05 22 40.9	-0.8
MANT	Manisa	0.72	206	*i* P	Pg	05 22 32.0	-0.1
MANT				*i* S	Sg	05 22 40.9	-0.8
ORLT	Orhaneli	0.91	357	ePG	Pb	05 22 35.5	0.0
ORLT				eSG	Sn	05 22 48.5	-0.8
ORLT	Orhaneli	0.91	357	ePg	Pb	05 22 35.5	0.0
ORLT				eSg	Sn	05 22 48.5	-0.8
KHL	Karahalli	0.93	152	ePG	Pn	05 22 37.4	+0.7
KHL	Karahalli	0.93	152	ePg	Pn	05 22 37.4	+0.7
AKHS	Akhisar	0.94	254	P	Pn	05 22 36.7	0.0
AKHS				S	Sn	05 22 49.9	0.0
AKHS	Akhisar	0.94	254	*i* P	Pn	05 22 36.7	0.0
AKHS				*i* S	Sn	05 22 49.9	0.0
AKS	Akhisar	0.94	254	ePG	Pn	05 22 36.8	+0.1
AKS	Akhisar	0.94	254	ePg	Pn	05 22 36.8	+0.1
BALB	Balikesir	0.98	301	ePG	Pg	05 22 37.0	+0.1
BALB				eSG	Sn	05 22 51.5	+0.6
BALB	Balikesir	0.98	301	ePg	Pg	05 22 37.0	+0.1
BALB				eSg	Sn	05 22 51.5	+0.6
KCTX	Karacabey (Bur	1.22	337	ePN	Pg	05 22 41.6	+0.1
KCTX	Karacabey (Bur	1.22	337	ePn	Pg	05 22 41.6	+0.1
MDNY	Mudanya-Bursa	1.23	357	ePN	Pg	05 22 42.1	+0.5
MDNY	Mudanya-Bursa	1.23	357	ePn	Pg	05 22 42.1	+0.5
IZI	Iznik	1.26	18	ePN	Pg	05 22 42.5	+0.3
IZI	Iznik	1.26	18	ePn	Pg	05 22 42.6	+0.3
GEMT	Gemlik	1.30	8	ePN	Pg	05 22 42.9	-0.2
GEMT	Gemlik	1.30	8	ePn	Pg	05 22 42.9	-0.2
GONE	Gonen-Balikesi	1.34	313	ePN	Pg	05 22 44.1	+0.3
GONE	Gonen-Balikesi	1.34	313	ePn	Pg	05 22 44.1	+0.3
ADVT	Abdulvahap	1.42	25	ePN	Pg	05 22 45.4	+0.1
ADVT	Abdulvahap	1.42	25	ePn	Pg	05 22 45.4	+0.1
ARMT	Armutlu	1.42	357	ePN	Pg	05 22 45.4	0.0
ARMT	Armutlu	1.42	357	ePn	Pg	05 22 45.4	0.0
BNT	Bandirma	1.46	327	ePN	Pg	05 22 46.1	+0.1
BNT	Bandirma	1.46	327	ePn	Pg	05 22 46.1	+0.1
EDC	Edincik	1.47	325	ePN	Pg	05 22 46.1	-0.2
EDC	Edincik	1.47	325	ePn	Pg	05 22 46.1	-0.2
GPA	Golpazari	1.54	42	ePN	Pg	05 22 47.8	+0.1
GPA	Golpazari	1.54	42	ePn	Pg	05 22 47.8	+0.1
GULT	Gulveren	1.76	42	ePN	Pb	05 22 50.7	+0.6
GULT	Gulveren	1.76	42	ePn	Pb	05 22 50.7	+0.6
SPNC	Sapanca-Adapaz	1.86	33	ePN	Pb	05 22 52.0	+0.3
SPNC	Sapanca-Adapaz	1.86	33	ePn	Pb	05 22 52.0	+0.3
ISK	Istanbul-Kandi	1.92	2	ePN	Pb	05 22 52.5	-0.3
ISK	Istanbul-Kandi	1.92	2	ePn	Pb	05 22 52.5	-0.3
SVRH	Sivrihisar-ESK	2.01	80	ePN	Pb	05 22 54.9	+0.6
SVRH	Sivrihisar-ESK	2.01	80	ePn	Pb	05 22 54.9	+0.6
SILT	Sile	2.08	14	ePN	Pb	05 22 54.9	-0.5
SILT	Sile	2.08	14	ePn	Pb	05 22 54.9	-0.5
MDUB	Mudurnu	2.17	52	ePN	Pb	05 22 56.5	-0.7
MDUB	Mudurnu	2.17	52	ePn	Pb	05 22 56.5	-0.7

MEX 20 05:29:42.2±0.7, 15°.22N×93°.30W, h83km±8km, MD3.8, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		0.49	9	eP	Pn	05 29 55.2	-1.0
PCIG				eS	Sn	05 30 04.6	-1.9
THIG		1.05	107	*i* P	Pn	05 29 59.7	-2.2
THIG				*i* S	Sn	05 30 15.2	-1.6
CCIG	Comitan	1.54	46	eP	Pn	05 30 07.3	-1.0
CCIG				*i* S	Sn	05 30 26.6	-1.4
TGIG		1.56	6	eP	Pn	05 30 06.4	-2.1
TGIG				eS	Sn	05 30 27.0	-1.4

*ISK **20** 05:29:58.9, 39°.11N×29°.08E, h5km, ML2.9*
*ISCJB **20** 05:30:00.0±0.5, 39°.10N±0°.03×29°.08E±0°.03, h2km±6km, Error ellipse: s-maj=4.8km s-min=4.0km az=155.4*
*DDA **20** 05:30:00.2, 39°.10N×29°.06E, h7km, Md2.7*
*CSEM **20** 05:30:00.4±0.1, 39°.10N×29°.09E, h5km, MD2.7, Error ellipse: s-maj=2.9km s-min=2.5km az=105.0*
ISC 20 05:30:00.5±1.0, 39°.11N±0°.02×29°.08E±0°.02, h5km±12km, n48, σ0°47/62, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.29	257	P	Pg	05 30 06.3	+0.2
DEMI				S	Sg	05 30 10.0	+0.1
DEMI	Demirci	0.29	257	*i* P	Pg	05 30 06.3	+0.2
DEMI				*i* S	Sg	05 30 10.0	+0.1
GDZ	Gediz	0.32	93	P	Pg	05 30 06.7	+0.1
GDZ				S	Sg	05 30 11.3	+0.5
GDZ	Gediz	0.32	93	*i* P	Pg	05 30 06.7	+0.1
GDZ				*i* S	Sg	05 30 11.3	+0.5
TVSB	Tavsanli	0.45	41	ePG	Pg	05 30 08.9	-0.3
TVSB	Tavsanli	0.45	41	ePg	Pg	05 30 08.9	-0.3
KULA	Kula-Manisa	0.68	209	ePG	Pg	05 30 13.2	-0.2
KULA	Kula-Manisa	0.68	209	ePg	Pg	05 30 13.2	-0.2
DURS	Dursunbey	0.68	317	P	Pb	05 30 14.4	-0.4
DURS	Dursunbey	0.68	317	*i* P	Pb	05 30 14.4	-0.4
MANT	Manisa	0.74	213	P	Pg	05 30 14.3	-0.3
MANT				S	Sg	05 30 23.8	-0.4
MANT	Manisa	0.74	213	*i* P	Pg	05 30 14.3	-0.3
MANT				*i* S	Sg	05 30 23.8	-0.4
KHAL	Karahalli	0.81	156	P	Pb	05 30 17.0	0.0
KHAL	Karahalli	0.81	156	*i* P	Pb	05 30 17.0	0.0
KHL	Karahalli	0.86	156

BALB				*e*SG	**Sb**	**05 38 27.0**	**+0.4**
BALB	**Balikesir**	**1.04**	**302**	*e*Pg	**Pg**	**05 38 12.4**	**-0.2**
BALB				*e*Sg	**Sb**	**05 38 27.0**	**+0.4**
IGD	**Bursa**	**1.18**	**6**	*i* P	**Pb**	**05 38 13.4**	**-1.7**
IGD				*i* S	**Sb**	**05 38 30.9**	**+0.4**
BALY	**Balya**	**1.27**	**301**	P	**Pg**	**05 38 16.8**	**-0.1**
BALY	**Balya**	**1.27**	**301**	*i* P	**Pg**	**05 38 16.8**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.28**	**355**	*e*PN	**Pg**	**05 38 17.0**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.28**	**355**	*e*Pn	**Pg**	**05 38 17.0**	**-0.1**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*PN	**Pg**	**05 38 17.0**	**-0.1**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*Pn	**Pg**	**05 38 17.0**	**-0.1**
IZI	**Iznik**	**1.29**	**15**	*e*PN	**Pn**	**05 38 17.0**	**+0.1**
IZI	**Iznik**	**1.29**	**15**	*e*Pn	**Pn**	**05 38 17.0**	**+0.1**
GEMT	**Gemlik**	**1.35**	**5**	*e*PN	**Pg**	**05 38 18.6**	**+0.2**
GEMT	**Gemlik**	**1.35**	**5**	*e*Pn	**Pg**	**05 38 18.6**	**+0.2**
DNZL	**Cakiroluk**	**1.40**	**179**	P	**Pb**	**05 38 18.9**	**-0.1**
DNZL	**Cakiroluk**	**1.40**	**179**	*i* P	**Pb**	**05 38 18.9**	**-0.1**
DNZL				*i* S	**Sg**	**05 38 40.5**	**+3.0**
GONE	**Gonen-Balikesi**	**1.41**	**313**	*e*PN	**Pb**	**05 38 18.9**	**-0.1**
GONE	**Gonen-Balikesi**	**1.41**	**313**	*e*Pn	**Pb**	**05 38 18.9**	**-0.1**
ADVT	**Abdulvahap**	**1.45**	**22**	*e*PN	**Pb**	**05 38 19.8**	**+0.1**
ADVT	**Abdulvahap**	**1.45**	**22**	*e*Pn	**Pb**	**05 38 19.8**	**+0.1**
ARMT	**Armutlu**	**1.48**	**355**	*e*PN	**Pb**	**05 38 20.1**	**-0.1**
ARMT	**Armutlu**	**1.48**	**355**	*e*Pn	**Pb**	**05 38 20.1**	**-0.1**
EDC	**Edincik**	**1.54**	**325**	*e*PN	**Pb**	**05 38 21.0**	**-0.3**
EDC	**Edincik**	**1.54**	**325**	*e*Pn	**Pb**	**05 38 21.0**	**-0.3**
GPA	**Golpazari**	**1.55**	**39**	*e*PN	**Pb**	**05 38 21.5**	**0.0**
GPA	**Golpazari**	**1.55**	**39**	*e*Pn	**Pb**	**05 38 21.5**	**0.0**
ISP	**Isparta**	**1.73**	**137**	P	**Pn**	**05 38 22.1**	**-0.8**
ISP	**Isparta**	**1.73**	**137**	P	**Pn**	**05 38 22.1**	**-0.8**
GULT	**Gulveren**	**1.76**	**40**	*e*PN	**Pb**	**05 38 25.2**	**+0.1**
GULT	**Gulveren**	**1.76**	**40**	*e*Pn	**Pb**	**05 38 25.2**	**+0.1**
HRT	**Hereke**	**1.80**	**16**	*e*PN	**Pb**	**05 38 25.1**	**-0.6**
HRT	**Hereke**	**1.80**	**16**	*e*Pn	**Pb**	**05 38 25.1**	**-0.6**
SPNC	**Sapanca-Adapaz**	**1.87**	**31**	*e*PN	**Pb**	**05 38 26.9**	**-0.1**
SPNC	**Sapanca-Adapaz**	**1.87**	**31**	*e*Pn	**Pb**	**05 38 26.9**	**-0.1**
SVRH	**Sivrihisar-ESK**	**1.97**	**79**	*e*PN	**Pb**	**05 38 28.0**	**-0.6**
SVRH	**Sivrihisar-ESK**	**1.97**	**79**	*e*Pn	**Pb**	**05 38 28.0**	**-0.6**
ISK	**Istanbul-Kandi**	**1.97**	**1**	*e*PN	**Pb**	**05 38 27.4**	**-1.2**
ISK	**Istanbul-Kandi**	**1.97**	**1**	P	**Pn**	**05 38 26.4**	**+0.2**
ISK	**Istanbul-Kandi**	**1.97**	**1**	P	**Pn**	**05 38 26.4**	**+0.2**
ISK	**Istanbul-Kandi**	**1.97**	**1**	*e*Pn	**Pb**	**05 38 27.4**	**-1.2**
YER	**Yerkesik**	**2.04**	**197**	P	**Pn**	**05 38 27.0**	**-0.1**
YER				S	**Sn**	**05 38 52.0**	**-0.8**
YER	**Yerkesik**	**2.04**	**197**	P	**Pn**	**05 38 27.0**	**-0.1**
YER				S	**Sn**	**05 38 52.0**	**-0.8**
SILT	**Sile**	**2.11**	**13**	*e*PN	**Pb**	**05 38 29.9**	**-1.1**
SILT	**Sile**	**2.11**	**13**	*e*Pn	**Pb**	**05 38 29.9**	**-1.1**
PRK	**Paraskevi**	**2.15**	**275**	P	**Pn**	**05 38 28.8**	**+0.2**
PRK				S	**Sb**	**05 38 56.6**	**-1.8**
PRK	**Paraskevi**	**2.15**	**275**	P	**Pn**	**05 38 28.8**	**+0.2**
PRK				S	**Sb**	**05 38 56.6**	**-1.8**
MDUB	**Mudurnu**	**2.17**	**50**	*e*PN	**Pb**	**05 38 31.0**	**-1.0**
MDUB	**Mudurnu**	**2.17**	**50**	*e*Pn	**Pb**	**05 38 31.0**	**-1.0**
SMG	**Samos**	**2.21**	**232**	P	**Pn**	**05 38 29.2**	**-0.2**
SMG	**Samos**	**2.21**	**232**	P	**Pn**	**05 38 29.2**	**-0.2**
CHOS	**Chios island**	**2.43**	**254**	P	**Pn**	**05 38 32.4**	**-0.1**
CHOS				S	**Sn**	**05 39 02.2**	**-0.2**
CHOS	**Chios island**	**2.43**	**254**	P	**Pn**	**05 38 32.4**	**-0.1**
CHOS				S	**Sn**	**05 39 02.2**	**-0.2**
FETY	**Fethiye**	**2.45**	**179**	P	**Pn**	**05 38 31.8**	**-1.0**
FETY	**Fethiye**	**2.45**	**179**	P	**Pn**	**05 38 31.8**	**-1.0**
SIGR	**SIGRI**	**2.47**	**274**	P	**Pn**	**05 38 33.0**	**0.0**
SIGR				S	**Sn**	**05 39 03.8**	**+0.5**
SIGR	**SIGRI**	**2.47**	**274**	P	**Pn**	**05 38 33.0**	**0.0**
SIGR				S	**Sn**	**05 39 03.8**	**+0.5**
ALN	**Alexandroupoli**	**2.92**	**309**	P	**Pn**	**05 38 39.0**	**-0.1**
ALN				S	**Sn**	**05 39 15.4**	**+1.1**
ALN	**Alexandroupoli**	**2.92**	**309**	P	**Pn**	**05 38 39.0**	**-0.1**
ALN				S	**Sn**	**05 39 15.4**	**+1.1**
SMTH	**Samothraki Isl**	**3.03**	**298**	P	**Pn**	**05 38 41.2**	**+0.5**
SMTH	**Samothraki Isl**	**3.03**	**298**	P	**Pn**	**05 38 41.2**	**+0.5**
BRTR	**Keskin Array B**	**3.63**	**78**	Pn	**Pn**	**05 38 50.8**	**+1.7**
	0.5nm,0.3s,baz=259,slow=14,SNR=14						
BRTR				Pg	**Pg**	**05 39 00.2**	**-1.8**
	1.6nm,0.3s,baz=260,slow=17,SNR=28						
BRTR				Lg	Lg	05 39 51.0	
	1.2nm,0.3s,baz=263,slow=25,SNR=4.4						
MLR	**Muntele Rosu**	**6.79**	**341**	Pg	Pb	05 39 44.9	-5.9
	0.1nm,0.3s,baz=222,slow=13,SNR=4.3						
MMAI	**Mount Meron Ar**	**7.96**	**138**	Pn	**Pn**	**05 39 50.2**	**+1.7**
	1.1nm,0.3s,baz=326,slow=13,SNR=5.3						
TORD	**Torodi Ar. Bea**	**35.38**	**231**	P	**P**	**05 44 48.4**	**-0.3**
	0.2nm,0.7s,baz=49,slow=9.7,SNR=2.2						
MKAR	**Makanchi Array**	**39.09**	**61**	P	**P**	**05 45 20.7**	**+0.7**
	0.3nm,0.6s,baz=265,slow=11,SNR=3.0						

*ISCJB **20** 05:46:40.6±0.4,2°.67S±0°.06×103°.17E±0°.07,h250km, mb3.7/17, Error ellipse: s-maj=10.9km s-min=6.7km az=138.7*
*IDC **20** 05:46:43.0±5.1,2°.70S×102°.99E,h258km±49km,mb3.5/17, mb1 3.5/17,mb1mx3.4/43,mbtmp4.1/17, Error ellipse: s-maj=23.1km s-min=10.4km az=63.0*
*DJA **20** 05:46:44.5±0.5,2°S±3°×10°3E±°,h10km,M4.2/3,mb4.5/1, MLv4.1/3*

ISC 20 05:46:42.1±0.6,2°.68S±0°.08×103°.14E±0°.09,h250km,n26, σ1§34/29,mb3.6/17,Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MNAI	**Manna**	**1.68**	**186**	P	Pn	05 47 17.2	-4.7
MNAI				S	S	05 47 43.1	-10
KASI	**Kota Agung**	**3.13**	**155**	P	**Pn**	**05 47 34.0**	**-2.0**
KASI				S	**S**	**05 48 17.1**	**-1.7**
PPSI	**Pulau Pagai**	**3.13**	**268**	P	**Pn**	**05 47 37.0**	**+1.0**
PPSI				S	**S**	**05 48 19.3**	**+0.6**
PPI	**Padang Panjang**	**3.52**	**309**	P	**Pn**	**05 47 39.8**	**-0.6**
BKNI	**Bangkinang**	**3.65**	**325**	P	**Pn**	**05 47 40.8**	**-1.1**
MNSI	**Mandailing Nat**	**4.96**	**314**	P	**Pn**	**05 47 56.1**	**-1.4**
MNSI				S	**S**	**05 48 59.4**	**+1.9**
GSI	**Gunungsitoli**	**6.83**	**305**	P	**Pn**	**05 48 18.4**	**-2.3**
CMAR	**Chiang Mai Arr**	**21.41**	**349**	P	**P**	**05 51 11.4**	**+0.7**
	1.2nm,0.5s,baz=181,slow=9.0,SNR=6.1						
WRA	**Warramunga Arr**	**34.95**	**122**	P	**P**	**05 53 11.0**	**+0.1**
	0.7nm,0.6s,baz=305,slow=8.6,SNR=16						
WRA				PcP	**PcP**	**05 55 37.9**	**+0.3**
	0.2nm,0.4s,baz=316,slow=2.4,SNR=6.3						
ASAR	**Alice Springs**	**36.33**	**128**	P	**P**	**05 53 23.1**	**+0.5**
	1.0nm,0.5s,baz=303,slow=7.9,SNR=19						
ASAR				PcP	**PcP**	**05 55 42.0**	**+0.4**
	0.4nm,0.4s,baz=303,slow=2.0,SNR=5.7						
KSRS	**Korea Array**	**46.08**	**28**	P	**P**	**05 54 42.8**	**+1.4**
	1.0nm,0.4s,baz=210,slow=7.4,SNR=5.8						
STKA	**Stephens Creek**	**46.37**	**133**	P	**P**	**05 54 45.6**	**+1.8**
	0.7nm,0.3s,baz=332,slow=6.3,SNR=3.5						
SONM	**Songino Array**	**50.38**	**3**	P	**P**	**05 55 16.0**	**+1.8**
	3.5nm,0.5s,baz=185,slow=9.3,SNR=6.9						
MKAR	**Makanchi Array**	**52.58**	**342**	P	**P**	**05 55 29.9**	**-0.4**
	0.7nm,0.5s,baz=145,slow=7.6,SNR=10						
USRK	**Ussuriysk Ar.**	**53.34**	**26**	P	**P**	**05 55 37.1**	**+1.3**
	2.8nm,0.7s,baz=172,slow=3.3,SNR=7.0						
KURBB	**Kurchatov Arra**	**57.13**	**342**	P	**P**	**05 56 01.8**	**-0.9**
	0.5nm,0.5s,baz=154,slow=7.3,SNR=4.4						
KLR	**Kul'dur**	**57.33**	**22**	P	**P**	**05 56 05.2**	**+1.2**
	0.7nm,0.5s,baz=271,slow=5.2,SNR=4.9						
ZALV	**Zalesovo Beam**	**58.46**	**347**	P	**P**	**05 56 11.6**	**-0.3**
	3.1nm,0.4s,baz=172,slow=5.2,SNR=9.9						
BVAR	**Borovoye Array**	**61.94**	**338**	P	**P**	**05 56 34.0**	**-1.4**
	0.7nm,0.5s,baz=222,slow=38,SNR=4.9						
TIXI	**Tiksi**	**76.05**	**8**	P	**P**	**05 58 00.1**	**-1.6**
	1.8nm,0.6s,baz=14,slow=4.4,SNR=4.5						
BRTR	**Keskin Array B**	**76.10**	**312**	P	**P**	**05 58 00.6**	**-2.2**
	0.5nm,0.7s,baz=150,slow=5.3,SNR=3.1						
BOSA	**Boshof**	**78.09**	**241**	P	**P**	**05 58 14.1**	**0.0**
	1.7nm,0.5s,baz=96,slow=2.5,SNR=6.8						
FINES	**FINESS Array B**	**86.17**	**332**	P	**P**	**05 58 54.9**	**-0.1**
	3.6nm,1.2s,baz=314,slow=32,SNR=3.9						
ARCES	**ARCESS Array B**	**88.18**	**340**	P	**P**	**05 59 03.0**	**-1.5**
	2.0nm,0.8s,baz=74,slow=6.7,SNR=4.1						
TXAR	**Lajitas Array**	**143.24**	**41**	PKP	PKPab	06 05 45.4	+1.7
	0.3nm,0.4s,baz=292,slow=0.6,SNR=9.9						
CPUP	**Villa Florida**	**145.53**	**212**	PKPbc	**PKPdf**	**06 05 52.0**	**+0.8**
	2.3nm,0.6s,baz=122,slow=3.1,SNR=11						

IDC 20 05:50:44.7±3.5,58°.52S×25°.27W,h0km,mb3.8/2, mb1 3.9/2,mb1mx3.4/17,mbtmp3.8/2,Error ellipse: s-maj=120.6km s-min=48.2km az=170.0,South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H10S2	**ASCENSION HYDR**	**50.11**	**14**	T	T	06 54 01.1	
	baz=192,SNR=7.4						
H10S3	**ASCENSION HYDR**	**50.12**	**14**	T	T	06 54 00.6	
	baz=192						
H10S1	**ASCENSION HYDR**	**50.13**	**14**	T	T	06 54 02.7	
	baz=192						
H10N1	**ASCENSION HYDR**	**51.23**	**14**	T	T	06 55 25.8	
	baz=208						
H10N3	**ASCENSION HYDR**	**51.23**	**14**	T	T	06 55 37.4	
	baz=208						
H10N2	**ASCENSION HYDR**	**51.25**	**14**	T	T	06 55 37.0	
	baz=208						
LPAZ	**La Paz**	**52.65**	**305**	P	P	06 00 01.1	-0.1
	0.5nm,0.7s,baz=160,slow=6.1,SNR=3.4						
TORD	**Torodi Ar. Bea**	**74.73**	**27**	P	P	06 02 26.2	0.0
	0.6nm,0.3s,baz=199,slow=6.5,SNR=11						
YKA	**Yellowknife Ar**	**138.69**	**315**	PKP	PKPdf	06 10 10.6	-0.3
	0.2nm,0.6s,baz=125,slow=2.9,SNR=6.1						
ILAR	**Eielson Array**	**152.50**	**308**	PKPbc	PKPbc	06 10 41.2	-0.1
	0.2nm,0.5s,baz=140,slow=4.7,SNR=4.1						

*ISCJB **20** 06:04:53.8±0.6,32°.26N±0°.03×115°.27W±0°.05,h22km±6km, Error ellipse: s-maj=7.1km s-min=4.6km az=158.1*
*ECX **20** 06:04:55.1±0.7,32°.23N×115°.29W,h6km,MD2.5,ML2.7*
*MEX **20** 06:04:55.3±0.4,32°.29N×115°.14W,h20km±11km,MD3.8*

ISC 20 06:04:53.4±1.0,32°.26N±0°.04×115°.25W±0°.05,h24km±8km, n21,σ0§50/32,1C-5D,California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MBIG	**Mexicali**	**0.15**	**16**	*e*P	**Pb**	**06 04 58.8**	**+0.4**
MBIG				*e*S	**Sb**	**06 05 01.4**	**-0.3**
MBIG	**Mexicali**	**0.15**	**16**	*e*P	**Pb**	**06 04 58.8**	**+0.4**
CPBX	**Cerro Prieto**	**0.16**	**343**	⇓*e*P	**Pb**	**06 04 58.4**	**-0.2**
CPBX				*e*S	**Sb**	**06 05 01.7**	**-0.3**
CPBX				AML	AML	06 05 02.8	
	comp=N,8μm,0.4s						
CPBX				⇓*e*		06 05 02.8	
EMSC	**East Mesa**	**0.52**	**25**	⇓*i*P	**Pn**	**06 05 05.5**	**+0.1**
SGL	**Mount Signal**	**0.56**	**314**	⇓*i*P	**Pb**	**06 05 04.8**	**+0.2**
DREC	**Desert Rsrch C**	**0.57**	**343**	*e*P	**Pn**	**06 05 05.7**	**-0.3**
ERPC	**Ernies Place**	**0.59**	**324**	*e*P	**Pb**	**06 05 05.9**	**+0.7**
WESC	**Westside Schoo**	**0.64**	**321**	*e*P	**Pb**	**06 05 06.5**	**+0.6**
YUH	**Yuha Desert**	**0.69**	**304**	⇓*i*P	**Pb**	**06 05 06.7**	**0.0**
RMX	**La Rumorosa**	**0.78**	**296**	*e*P	**Pb**	**06 05 07.9**	**-0.5**
RMX				*e*S	**Sb**	**06 05 18.0**	**-0.6**
RMX				⇑*e*		06 05 18.5	
RMX				AML	AML	06 05 18.5	
	comp=E,275nm,0.1s						
ECBX	**El Chinero**	**0.81**	**168**	*e*P	**Pb**	**06 05 08.6**	**-0.2**
ECBX				*e*S	**Sb**	**06 05 19.4**	**+0.2**
IKP	**In-Ko-Pah, Jac**	**0.82**	**298**	*e*P	**Pb**	**06 05 09.3**	**+0.2**
ZAX	**El Zacaton**	**1.15**	**230**	*e*P	**Pn**	**06 05 13.9**	**-0.1**
ZAX				*e*S	**Sb**	**06 05 29.1**	**-0.1**
CBX	**Cerro Bola**	**1.20**	**273**	*e*P	**Pn**	**06 05 15.0**	**+0.1**
CBX				*i* S	**Sn**	**06 05 30.5**	**+0.1**
CBX	**Cerro Bola**	**1.20**	**273**	*e*P	**Pn**	**06 05 15.2**	**+0.4**
CBX				*e*S	**Sb**	**06 05 30.8**	**+0.2**
TJIG	**Tijuana**	**1.22**	**278**	*e*P	**Pn**	**06 05 15.3**	**+0.3**
TJIG				*e*S	**Sn**	**06 05 30.8**	**+0.1**
TJIG	**Tijuana**	**1.22**	**278**	*e*P	**Pn**	**06 05 15.0**	**0.0**
SPIG	**San Pedro Mart**	**1.23**	**189**	*e*P	**Pn**	**06 05 15.4**	**0.0**
SPIG				*i* S	**Sn**	**06 05 29.9**	**-1.5**
SPIG	**San Pedro Mart**	**1.23**	**189**	*e*P	**Pn**	**06 05 15.4**	**0.0**
SPIG				*e*S	**Sb**	**06 05 32.1**	**+0.5**
SPX	**San Pedro Mart**	**1.23**	**189**	*e*P	**Pn**	**06 05 15.7**	**+0.3**
SPX				*e*S	**Sb**	**06 05 32.9**	**+1.2**
ECNX	**Esteban Cantu**	**1.30**	**243**	*e*P	**Pn**	**06 05 16.4**	**+0.2**

*DDA **20** 06:06:12.8,39°.12N×29°.12E,h8km,Md2.6*
*ISCJB **20** 06:06:13.3±0.5,39°.13N±0°.03×29°.12E±0°.04,h3km±6km, Error ellipse: s-maj=5.2km s-min=4.6km az=33.5*
*CSEM **20** 06:06:13.6±0.1,39°.13N×29°.13E,h5km,MD2.6,Error ellipse: s-maj=4.0km s-min=3.0km az=82.0*
*ISK **20** 06:06:13.5,39°.18N×29°.16E,h3km,MD2.6*

ISC 20 06:06:13.7±1.0,39°.14N±0°.02×29°.13E±0°.02,h8km±10km, n35,σ0§65/49,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.28**	**100**	P	**Pg**	**06 06 19.4**	**+0.1**
GDZ				S	**Sg**	**06 06 23.6**	**+0.5**
GDZ	**Gediz**	**0.28**	**100**	*i* P	**Pg**	**06 06 19.4**	**+0.1**
GDZ				*i* S	**Sg**	**06 06 23.6**	**+0.5**
DEMI	**Demirci**	**0.33**	**253**	P	**Pg**	**06 06 20.5**	**+0.2**
DEMI				S	**Sg**	**06 06 25.3**	**+0.6**
DEMI	**Demirci**	**0.33**	**253**	*i* P	**Pg**	**06 06 20.5**	**+0.2**
DEMI				*i* S	**Sg**	**06 06 25.3**	**+0.6**
TVSB	**Tavsanli**	**0.41**	**40**	*e*PG	**Pg**	**06 06 21.5**	**-0.2**
TVSB	**Tavsanli**	**0.41**	**40**	*e*Pg	**Pg**	**06 06 21.5**	**-0.2**
DURS	**Dursunbey**	**0.68**	**313**	P	**Pg**	**06 06 26.2**	**-0.7**
DURS	**Dursunbey**	**0.68**	**313**	*i* P	**Pg**	**06 06 26.2**	**-0.7**
DURS				*i* S	**Sn**	**06 06 40.7**	**-0.1**
MANT	**Manisa**	**0.79**	**215**	P	**Pg**	**06 06 28.5**	**-0.3**
MANT				S	**Sg**	**06 06 37.5**	**-1.5**
MANT	**Manisa**	**0.79**	**215**	*i* P	**Pg**	**06 06 28.5**	**-0.3**
MANT				*i* S	**Sg**	**06 06 37.5**	**-1.5**
KHAL	**Karahalli**	**0.82**	**159**	P	**Pg**	**06 06 28.5**	**-1.0**
KHAL				S	**Sg**	**06 06 39.8**	**-0.3**
KHAL	**Karahalli**	**0.82**	**159**	*i* P	**Pg**	**06 06 28.5**	**-1.0**
KHAL				*i* S	**Sg**	**06 06 39.8**	**-0.3**
KHL	**Karahalli**	**0.87**	**159**	*e*PG	**Pb**	**06 06 31.2**	**0.0**
KHL	**Karahalli**	**0.87**	**159**	*e*Pg	**Pb**	**06 06 31.2**	**0.0**
ORLT	**Orhaneli**	**0.92**	**349**	*e*PG	**Pg**	**06 06 31.1**	**-0.4**
ORLT				*e*SG	**Sb**	**06 06 44.7**	**+0.2**
ORLT	**Orhaneli**	**0.92**	**349**	*e*Pg	**Pg**	**06 06 31.1**	**-0.4**
ORLT				*e*Sg	**Sb**	**06 06 44.7**	**+0.2**
AKS	**Akhisar**	**1.05**	**256**	*e*PN	**Pn**	**06 06 35.9**	**+1.0**
AKS	**Akhisar**	**1.05**	**256**	*e*Pn	**Pn**	**06 06 35.9**	**+1.0**
BALB	**Balikesir**	**1.09**	**298**	*e*PN	**Pn**	**06 06 35.2**	**0.0**
BALB				*e*SN	**Sn**	**06 06 51.0**	**+0.5**
BALB	**Balikesir**	**1.09**	**298**	*e*Pn	**Pn**	**06 06 35.2**	**0.0**
BALB				*e*Sn	**Sn**	**06 06 51.0**	**+0.5**
IGD	**Bursa**	**1.12**	**3**	*i* P	**Pg**	**06 06 33.0**	**-2.3**
IGD				*i* S	**Sg**	**06 06 49.8**	**-0.1**
IZI	**Iznik**	**1.23**	**13**	*e*PN	**Pn**	**06 06 37.4**	**+0.1**
IZI	**Iznik**	**1.23**	**13**	*e*Pn	**Pn**	**06 06 37.4**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.24**	**351**	*e*PN	**Pb**	**06 06 36.9**	**-0.5**
MDNY	**Mudanya-Bursa**	**1.24**	**351**	*e*Pn	**Pb**	**06 06 36.9**	**-0.5**
KCTX	**Karacabey (Bur**	**1.27**	**332**	*e*PN	**Pn**	**06 06 38.0**	**+0.1**
KCTX	**Karacabey (Bur**	**1.27**	**332**	*e*Pn	**Pn**	**06 06 38.0**	**+0.1**
ADVT	**Abdulvahap**	**1.38**	**20**	*e*PN	**Pg**	**06 06 40.3**	**+0.2**
ADVT	**Abdulvahap**	**1.38**	**20**	*e*Pn	**Pg**	**06 06 40.3**	**+0.2**
GONE	**Gonen-Balikesi**	**1.44**	**310**	*e*PN	**Pb**	**06 06 40.9**	**+0.2**
GONE	**Gonen-Balikesi**	**1.44**	**310**	*e*Pn	**Pb**	**06 06 40.9**	**+0.2**
ARMT	**Armutlu**	**1.44**	**352**	*e*PN	**Pb**	**06 06 40.9**	**+0.1**
ARMT	**Armutlu**	**1.44**	**352**	*e*Pn	**Pb**	**06 06 40.9**	**+0.1**
EDC	**Edincik**	**1.55**	**322**	*e*PN	**Pb**	**06 06 42.9**	**+0.2**
EDC	**Edincik**	**1.55**	**322**	*e*Pn	**Pb**	**06 06 42.9**	**+0.2**

*ISK **20** 06:07:03.3,39°.11N×29°.07E,h5km,ML2.8*
*DDA **20** 06:07:04.4,39°.13N×29°.11E,h7km,Ml3.5*
*CSEM **20** 06:07:04.6±0.2,39°.13N×29°.10E,h0km±1km,ML3.5,Error ellipse: s-maj=3.2km s-min=2.4km az=114.0*

ISC 20 06:07:04.7±1.0,39°.13N±0°.02×29°.11E±0°.02,h7km±10km, n78,σ0§81/99,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.32**	**254**	P	**Pg**	**06 07 11.1**	**+0.1**
DEMI				S	**Sg**	**06 07 15.7**	**+0.4**
DEMI	**Demirci**	**0.32**	**254**	*i* P	**Pg**	**06 07 11.1**	**+0.1**
DEMI				*i* S	**Sg**	**06 07 15.7**	**+0.4**
TVSB	**Tavsanli**	**0.42**	**40**	*e*PG	**Pg**	**06 07 12.9**	**0.0**
TVSB	**Tavsanli**	**0.42**	**40**	*e*Pg	**Pg**	**06 07 12.9**	**0.0**
DURS	**Dursunbey**	**0.68**	**314**	P	**Pg**	**06 07 17.8**	**-0.1**
DURS	**Dursunbey**	**0.68**	**314**	*i* P	**Pg**	**06 07 17.8**	**-0.1**
KULA	**Kula-Manisa**	**0.71**	**210**	*e*PG	**Pg**	**06 07 17.4**	**-1.0**
KULA				*e*SG	**Sg**	**06 07 26.9**	**-0.7**
KULA	**Kula-Manisa**	**0.71**	**210**	*e*Pg	**Pg**	**06 07 17.4**	**-1.0**
KULA				*e*Sg	**Sg**	**06 07 27.0**	**-0.7**
MANT	**Manisa**	**0.77**	**214**	P	**Pg**	**06 07 19.2**	**-0.4**
MANT				S	**Sg**	**06 07 29.4**	**-0.3**
MANT	**Manisa**	**0.77**	**214**	*i* P	**Pg**	**06 07 19.2**	**-0.4**
MANT				*i* S	**Sg**	**06 07 29.4**	**-0.3**
KHAL	**Karahalli**	**0.82**	**159**	P	**Pg**	**06 07 20.4**	**0.0**
KHAL				S	**Sg**	**06 07 30.9**	**-0.1**
KHAL	**Karahalli**	**0.82**	**159**	*i* P	**Pg**	**06 07 20.4**	**0.0**
KHAL				*i* S	**Sg**	**06 07 30.9**	**-0.1**
KHL	**Karahalli**	**0.87**	**158**	*e*PG	**Pg**	**06 07 21.2**	**-0.2**
KHL	**Karahalli**	**0.87**	**158**	*e*Pg	**Pg**	**06 07 21.2**	**-0.2**
ORLT	**Orhaneli**	**0.93**	**350**	*e*PG	**Pg**	**06 07 22.7**	**+0.1**
ORLT				*e*SG	**Sb**	**06 07 36.4**	**+0.6**
ORLT	**Orhaneli**	**0.93**	**350**	*e*Pg	**Pg**	**06 07 22.7**	**+0.1**
ORLT				*e*Sg	**Sb**	**06 07 36.4**	**+0.6**
AKHS	**Akhisar**	**1.04**	**256**	P	**Pg**	**06 07 24.8**	**+0.1**
AKHS				S	**Sn**	**06 07 39.8**	**-0.7**
AKHS	**Akhisar**	**1.04**	**256**	*i* P	**Pg**	**06 07 24.8**	**+0.1**
AKHS				*i* S	**Sn**	**06 07 39.9**	**-0.7**
AKS	**Akhisar**	**1.04**	**256**	*e*PG	**Pg**	**06 07 23.2**	**-1.5**
AKS	**Akhisar**	**1.04**	**256**	*e*Pg	**Pg**	**06 07 23.3**	**-1.5**
BALB	**Balikesir**	**1.08**	**298**	*e*PG	**Pg**	**06 07 25.1**	**-0.4**
BALB	**Balikesir**	**1.08**	**298**	*e*Pg	**Pg**	**06 07 25.1**	**-0.4**
IGD	**Bursa**	**1.13**	**4**	*i* P	**Pb**	**06 07 23.8**	**-2.9**
IGD				*i* S	**Sg**	**06 07 41.8**	**+0.6**
IZI	**Iznik**	**1.23**	**13**	*e*PN	**Pn**	**06 07 28.1**	**-0.4**
IZI	**Iznik**	**1.23**	**13**	*e*Pn	**Pn**	**06 07 28.1**	**-0.4**
MDNY	**Mudanya-Bursa**	**1.25**	**352**	*e*PN	**Pb**	**06 07 28.5**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.25**	**352**	*e*Pn	**Pb**	**06 07 28.5**	**-0.1**
KCTX	**Karacabey (Bur**	**1.27**	**333**	*e*PN	**Pn**	**06 07 28.6**	**-0.4**
KCTX	**Karacabey (Bur**	**1.27**	**333**	*e*Pn	**Pn**	**06 07 28.6**	**-0.4**
BORA	**Eskisehir**	**1.28**	**54**	P	**Pn**	**06 07 28.3**	**-0.8**
BORA				S	**Sn**	**06 07 46.5**	**-0.1**
BORA	**Eskisehir**	**1.28**	**54**	*i* P	**Pn**	**06 07 28.3**	**-0.8**
BORA				*i* S	**Sn**	**06 07 46.5**	**-0.1**
BALY	**Balya**	**1.30**	**298**	P	**Pg**	**06 07 29.8**	**0.0**
BALY	**Balya**	**1.30**	**298**	*i* P	**Pg**	**06 07 29.8**	**0.0**
ADVT	**Abdulvahap**	**1.39**	**20**	*e*PN	**Pb**	**06 07 31.2**	**+0.2**
ADVT	**Abdulvahap**	**1.39**	**20**	*e*Pn	**Pb**	**06 07 31.2**	**+0.2**
GONE	**Gonen-Balikesi**	**1.43**	**310**	*e*PN	**Pb**	**06 07 31.8**	**+0.1**
GONE	**Gonen-Balikesi**	**1.43**	**310**	*e*Pn	**Pb**	**06 07 31.8**	**+0.1**
DNZL	**Cakiroluk**	**1.44**	**182**	P

GONE				*e*SN		**Sg**	**06 37 43.9**	**+0.5**
GONE	**Gonen-Balikesi**	**1.38**	**313**	*e*Pn		**Pg**	**06 37 25.2**	**-0.3**
GONE				*e*Sn		**Sg**	**06 37 43.9**	**+0.5**
ADVT	**Abdulvahap**	**1.44**	**23**	*e*PN		**Pg**	**06 37 26.6**	**0.0**
ADVT	**Abdulvahap**	**1.44**	**23**	*e*Pn		**Pg**	**06 37 26.6**	**0.0**
ARMT	**Armutlu**	**1.45**	**356**	*e*PN		**Pg**	**06 37 26.8**	**-0.1**
ARMT	**Armutlu**	**1.45**	**356**	*e*Pn		**Pg**	**06 37 26.8**	**-0.1**
EDC	**Edincik**	**1.51**	**325**	*e*PN		**Pb**	**06 37 27.1**	**+0.2**
EDC				*e*SN		**Sg**	**06 37 47.8**	**+0.1**
EDC	**Edincik**	**1.51**	**325**	*e*Pn		**Pb**	**06 37 27.1**	**+0.2**
EDC				*e*Sn		**Sg**	**06 37 47.8**	**+0.1**
GULT	**Gulveren**	**1.76**	**41**	*e*PN		**Pb**	**06 37 31.5**	**+0.3**
GULT	**Gulveren**	**1.76**	**41**	*e*Pn		**Pb**	**06 37 31.5**	**+0.3**
SVRH	**Sivrihisar-ESK**	**1.99**	**80**	*e*PN		**Pb**	**06 37 35.4**	**+0.3**
SVRH	**Sivrihisar-ESK**	**1.99**	**80**	*e*Pn		**Pb**	**06 37 35.4**	**+0.3**
SILT	**Sile**	**2.10**	**13**	*e*PN		**Pb**	**06 37 35.9**	**-0.9**
SILT	**Sile**	**2.10**	**13**	*e*Pn		**Pb**	**06 37 35.9**	**-0.9**

*NNC **20** 06:40:18.7±1.8, 44°.70N×82°.26E, h0km, mb3.0, mpv2.5, Error ellipse: s-maj=24.4km s-min=3.8km az=116.0*
*SOME **20** 06:40:19.1, 44°.80N×82°.15E, h15km*
*ISCJB **20** 06:40:20.4±1.2, 44°.71N±0°.05×82°.3E±0°.1, h10km, Error ellipse: s-maj=13.3km s-min=4.6km az=27.0*
ISC 20 06:40:17.8±1.6, 44°.71N±0°.05×82°.16E±0°.08, h10km, n11, σ1§33/22, 3C-3D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DJR	**Jarkent**	**1.73**	**258**	*e*P		**Pb**	**06 40 50.0**	**+0.2**
DJR	5.3nm,0.2s			*e*S		**Sg**	**06 41 12.0**	**-1.6**
	3.9nm,0.5s							
KTMS	**Ketmen**	**1.81**	**226**	*e*P		**Pb**	**06 40 52.2**	**+1.0**
KTMS	1.3nm,0.1s			*e*S		**Sg**	**06 41 16.0**	**-0.2**
	16nm,0.5s							
KAPS	**Kapalarasan**	**2.07**	**287**	*e*P		**Pb**	**06 40 56.1**	**+0.7**
KAPS	1.9nm,0.2s			*e*S		**Sg**	**06 41 23.5**	**-0.7**
	5.5nm,0.5s							
MK31	**Makanchi Array**	**2.08**	**3**	⇑Pn		**Pb**	**06 40 55.6**	**-0.1**
MK31	1.3nm,0.2s,baz=181,slow=14,SNR=76			⇓Sn		**Sb**	**06 41 23.4**	**+1.8**
	1.2nm,0.3s,baz=188,slow=28,SNR=19							
MAKZ	**Makanchi**	**2.10**	**357**	⇑Pn		**Pb**	**06 40 55.3**	**-0.7**
MAKZ	1.2nm,0.6s			⇓Sn		**Sb**	**06 41 23.3**	**+1.2**
	2.9nm,0.8s							
SHLS	**Shalkode**	**2.26**	**227**	*e*P		**Pg**	**06 41 00.5**	**-0.6**
SHLS	3.2nm,0.2s			*e*S		**Sg**	**06 41 29.6**	**-0.9**
	9.1nm,0.3s							
PDGK	**Podgornoye**	**2.37**	**235**	⇑Pn		**Pb**	**06 40 59.1**	**-1.5**
PDGK	2.7nm,0.6s			⇓Sn		**Sb**	**06 41 31.4**	**+1.5**
	3.5nm,0.5s							
UZB	**Uzynbulak**	**2.75**	**236**	*e*P		**Pb**	**06 41 07.2**	**0.0**
UZB	1.1nm,0.2s			*e*S		**Sb**	**06 41 42.0**	**+0.9**
	1.7nm,0.3s							
MNBS	**Baschi**	**2.77**	**258**	*e*P		**Pb**	**06 41 07.2**	**-0.2**
MNBS	0.3nm,0.2s			*e*S		**Sb**	**06 41 41.6**	**+0.3**
	8.1nm,0.4s							
ARXS	**Arharly**	**3.14**	**262**	*e*P		**Pb**	**06 41 15.5**	**+1.8**
ARXS	1.6nm,0.3s			*e*S		**Sg**	**06 41 55.7**	**-2.9**
	4.4nm,0.3s							
MDOK	**Medeo**	**4.00**	**249**	*e*P		**Pb**	**06 41 29.2**	**+0.7**
MDOK	3.7nm,0.6s			*e*S		**Sb**	**06 42 19.3**	**+2.4**
	3.9nm,0.2s							

*CSEM **20** 06:40:29.8, 39°.07N×29°.04E, h7km, MD2.1*
DDA 20 06:40:29.8, 39°.07N×29°.04E, h7km, Md2.1, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**263**	P		Pg	06 40 34.9	0.0
DEMI				S		Sg	06 40 39.2	+0.9
DEMI	**Demirci**	**0.25**	**263**	*i* P		Pg	06 40 34.9	+0.1
DEMI				*i* S		Sg	06 40 39.2	+1.0
GDZ	**Gediz**	**0.34**	**87**	P		Pg	06 40 35.6	-1.0
GDZ	**Gediz**	**0.34**	**87**	*i* P		Pg	06 40 35.6	-1.0
DURS	**Dursunbey**	**0.68**	**320**	P		Pg	06 40 43.2	+0.2
DURS	**Dursunbey**	**0.68**	**320**	*i* P		Pg	06 40 43.2	+0.1
MANT	**Manisa**	**0.69**	**213**	P		Pg	06 40 43.4	+0.2
MANT				S		Sg	06 40 53.2	+1.0
MANT	**Manisa**	**0.69**	**213**	*i* P		Pg	06 40 43.4	+0.2
MANT				*i* S		Sg	06 40 53.2	+1.0
KHAL	**Karahalli**	**0.79**	**153**	P		Pg	06 40 44.9	-0.1
KHAL	**Karahalli**	**0.79**	**153**	*i* P		Pg	06 40 44.9	0.0
AKHS	**Akhisar**	**0.97**	**259**	P		Pb	06 40 48.9	-0.1
AKHS	**Akhisar**	**0.97**	**259**	*i* P		Pb	06 40 48.9	-0.2
BALY	**Balya**	**1.28**	**302**	P		Pn	06 40 54.1	-0.2
BALY	**Balya**	**1.28**	**302**	*i* P		Pn	06 40 54.1	-0.2

*DDA **20** 06:40:44.5, 39°.12N×29°.12E, h7km, Md2.7*
*ISK **20** 06:40:44.1, 39°.05N×29°.07E, h5km, ML2.8*
*ISCJB **20** 06:40:45.1±0.6, 39°.06N±0°.03×29°.08E±0°.03, h5km±5km, Error ellipse: s-maj=5.4km s-min=4.0km az=155.3*
*CSEM **20** 06:40:45.0±0.2, 39°.05N×29°.07E, h2km, MD2.7, Error ellipse: s-maj=5.6km s-min=3.6km az=148.0*
ISC 20 06:40:44.4±1.1, 39°.05N±0°.02×29°.08E±0°.02, h6km±10km, n54, σ0§80/71, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.29**	**268**	P		**Pb**	**06 40 51.6**	**-0.4**
DEMI				S		**Sg**	**06 40 55.1**	**+1.3**
DEMI	**Demirci**	**0.29**	**268**	*i* P		**Pb**	**06 40 51.6**	**-0.4**
DEMI				*i* S		**Sg**	**06 40 55.1**	**+1.3**
TVSB	**Tavsanli**	**0.49**	**36**	*e*PG		**Pb**	**06 40 55.1**	**-0.4**
TVSB	**Tavsanli**	**0.49**	**36**	*e*Pg		**Pb**	**06 40 55.1**	**-0.4**
KULA	**Kula-Manisa**	**0.63**	**212**	*e*PG		**Pg**	**06 40 57.0**	**+0.5**
KULA	**Kula-Manisa**	**0.63**	**212**	*e*Pg		**Pg**	**06 40 57.0**	**+0.5**
MANT	**Manisa**	**0.69**	**216**	P		**Pb**	**06 40 59.5**	**+0.5**
MANT				S		**Sb**	**06 41 08.5**	**-0.4**
MANT	**Manisa**	**0.69**	**216**	*i* P		**Pb**	**06 40 59.5**	**+0.5**
MANT				*i* S		**Sb**	**06 41 08.5**	**-0.4**
ORLT	**Orhaneli**	**1.00**	**352**	*e*PG		**Pb**	**06 41 04.2**	**+0.1**
ORLT				*e*SG		**Sb**	**06 41 18.8**	**+1.2**
ORLT	**Orhaneli**	**1.00**	**352**	*e*Pg		**Pb**	**06 41 04.2**	**+0.1**
ORLT				*e*Sg		**Sb**	**06 41 18.8**	**+1.2**
AKHS	**Akhisar**	**1.00**	**260**	P		**Pg**	**06 41 01.7**	**-1.9**
AKHS				S		**Sb**	**06 41 18.7**	**+1.1**
AKHS	**Akhisar**	**1.00**	**260**	*i* P		**Pg**	**06 41 01.7**	**-1.9**
AKHS				*i* S		**Sb**	**06 41 18.7**	**+1.1**
AKS	**Akhisar**	**1.00**	**261**	*e*PG		**Pb**	**06 41 04.3**	**+0.1**
AKS				*e*SG		**Sn**	**06 41 19.2**	**-0.2**
AKS	**Akhisar**	**1.00**	**261**	*e*Pg		**Pb**	**06 41 04.3**	**+0.1**
AKS				*e*Sg		**Sn**	**06 41 19.2**	**-0.2**
BALB	**Balikesir**	**1.10**	**303**	*e*PN		**Pb**	**06 41 06.2**	**+0.4**
BALB				*e*SN		**Sn**	**06 41 22.5**	**+0.7**
BALB	**Balikesir**	**1.10**	**303**	*e*Pn		**Pb**	**06 41 06.2**	**+0.4**
BALB				*e*Sn		**Sn**	**06 41 22.5**	**+0.7**
IGD	**Bursa**	**1.21**	**4**	*i* P		**Pg**	**06 41 06.5**	**-1.1**
IGD	**Bursa**	**1.21**	**4**	*i* P		**Pg**	**06 41 07.4**	**-0.3**
IGD				*i* S		**Sg**	**06 41 20.9**	**-2.6**
IZI	**Iznik**	**1.32**	**13**	*e*PN		**Pg**	**06 41 10.5**	**+0.8**
IZI	**Iznik**	**1.32**	**13**	*e*Pn		**Pg**	**06 41 10.5**	**+0.8**
MDNY	**Mudanya-Bursa**	**1.32**	**353**	*e*PN		**Pg**	**06 41 10.6**	**+0.8**
MDNY	**Mudanya-Bursa**	**1.32**	**353**	*e*Pn		**Pg**	**06 41 10.6**	**+0.8**
BALY	**Balya**	**1.33**	**302**	P		**Pn**	**06 41 08.5**	**-0.9**
BALY	**Balya**	**1.33**	**302**	*i* P		**Pn**	**06 41 08.5**	**-0.9**
KCTX	**Karacabey (Bur**	**1.33**	**335**	*e*PN		**Pg**	**06 41 10.7**	**+0.7**
KCTX	**Karacabey (Bur**	**1.33**	**335**	*e*Pn		**Pg**	**06 41 10.7**	**+0.7**
BORA	**Eskisehir**	**1.34**	**52**	P		**Pn**	**06 41 09.6**	**-0.1**
BORA				S		**Sg**	**06 41 26.6**	**-1.0**
BORA	**Eskisehir**	**1.34**	**52**	*i* P		**Pn**	**06 41 09.6**	**-0.1**
BORA				*i* S		**Sg**	**06 41 26.6**	**-1.0**
GEMT	**Gemlik**	**1.38**	**3**	*e*PN		**Pg**	**06 41 11.3**	**+0.4**
GEMT	**Gemlik**	**1.38**	**3**	*e*Pn		**Pg**	**06 41 11.3**	**+0.4**
ESKT	**Eskisehir**	**1.45**	**71**	*i* P		**Pn**	**06 41 10.8**	**-0.4**
SEYT	**Eskypehyr**	**1.45**	**71**	P		**Pn**	**06 41 10.8**	**-0.4**
ADVT	**Abdulvahap**	**1.47**	**20**	*e*PN		**Pg**	**06 41 13.3**	**+0.8**
ADVT	**Abdulvahap**	**1.47**	**20**	*e*Pn		**Pg**	**06 41 13.3**	**+0.8**
BOLV	**Bolvadin**	**1.50**	**102**	P		**Pb**	**06 41 13.0**	**+0.4**
BOLV				S		**Sn**	**06 41 32.2**	**+0.5**
BOLV	**Bolvadin**	**1.50**	**102**	P		**Pb**	**06 41 13.0**	**+0.4**
BOLV	**Bolvadin**	**1.50**	**102**	*i* P		**Pb**	**06 41 13.0**	**+0.4**
BOLV	**Bolvadin**	**1.50**	**102**	*i* P		**Pb**	**06 41 13.0**	**+0.4**
BOLV				*i* S		**Sn**	**06 41 32.2**	**+0.5**
ARMT	**Armutlu**	**1.52**	**354**	*e*PN		**Pb**	**06 41 13.4**	**+0.4**
ARMT	**Armutlu**	**1.52**	**354**	*e*Pn		**Pb**	**06 41 13.4**	**+0.4**
GPA	**Golpazari**	**1.56**	**37**	*e*PN		**Pb**	**06 41 14.2**	**+0.6**
GPA	**Golpazari**	**1.56**	**37**	*e*Pn		**Pb**	**06 41 14.2**	**+0.6**
EDC	**Edincik**	**1.60**	**324**	*e*PN		**Pg**	**06 41 15.1**	**+0.1**
EDC	**Edincik**	**1.60**	**324**	*e*Pn		**Pg**	**06 41 15.1**	**+0.1**
GULT	**Gulveren**	**1.77**	**38**	*e*PN		**Pb**	**06 41 17.1**	**-0.1**
GULT	**Gulveren**	**1.77**	**38**	*e*Pn		**Pb**	**06 41 17.1**	**-0.1**
HRT	**Hereke**	**1.82**	**14**	*e*PN		**Pb**	**06 41 18.4**	**+0.2**
HRT	**Hereke**	**1.82**	**14**	*e*Pn		**Pb**	**06 41 18.4**	**+0.2**
SVRH	**Sivrihisar-ESK**	**1.94**	**77**	*e*PN		**Pb**	**06 41 19.6**	**-0.5**
SVRH	**Sivrihisar-ESK**	**1.94**	**77**	*e*Pn		**Pb**	**06 41 19.6**	**-0.5**
SILT	**Sile**	**2.14**	**11**	*e*PN		**Pb**	**06 41 22.8**	**-0.7**
SILT	**Sile**	**2.14**	**11**	*e*Pn		**Pb**	**06 41 22.8**	**-0.7**
MDUB	**Mudurnu**	**2.16**	**48**	*e*PN		**Pb**	**06 41 22.9**	**-1.0**
MDUB	**Mudurnu**	**2.16**	**48**	*e*Pn		**Pb**	**06 41 22.9**	**-1.0**

*ISCJB **20** 06:52:56.9±1.4, 37°.82N±0°.06×143°.6E±0°.1, h33km, mb3.4/3, MS2.8/1, Error ellipse: s-maj=13.0km s-min=7.2km az=31.7*
*JMA **20** 06:52:57.9±0.5, 37°.90N×143°.49E, h29km, M3.0*
*IDC **20** 06:52:59.8±1.2, 36°.77N×143°.48E, h0km, mb3.3/3, mb1 3.6/4, mb1mx3.4/38, mbtmp3.2/4, ML3.1/1, MS2.8/1, Ms1 3.0/1, ms1mx2.2/26, Error ellipse: s-maj=40.2km s-min=24.1km az=134.0*
ISC 20 06:52:58.2±1.7, 37°.82N±0°.07×143°.6E±0°.1, h35km, n16, σ0§84/18, mb3.5/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.89**	**290**	P		**Pn**	**06 53 27.6**	**-0.3**
OFUJ	**Ofunato**	**1.97**	**310**	P		**Pn**	**06 53 28.5**	**-0.6**
JMK	**Ichinoseki**	**2.19**	**302**	P		**Pn**	**06 53 31.9**	**-0.2**
JMM	**Marumori**	**2.23**	**272**	P		**Pn**	**06 53 32.4**	**-0.2**
JMM				*e*S		**Sn**	**06 53 57.3**	**-1.5**
JOU	**Okura**	**2.38**	**284**	P		**Pn**	**06 53 35.2**	**+0.4**
JOM	**Ohasama**	**2.45**	**313**	P		**Pn**	**06 53 35.8**	**+0.1**
JOM				*e*S		**Sn**	**06 54 04.6**	**+0.2**
JFT	**Otama**	**2.61**	**264**	P		**Pn**	**06 53 38.3**	**+0.4**
JFT				*e*S		**Sn**	**06 54 08.1**	**-0.3**
JYK	**Kaneyama**	**2.77**	**294**	P		**Pn**	**06 53 40.7**	**+0.5**
JRG	**Rokugo**	**2.81**	**305**	P		**Pn**	**06 53 41.8**	**+1.2**
JRY	**Ryogami san**	**4.17**	**246**	P		**Pn**	**06 53 59.3**	**-0.1**
MJAR	**Matsushiro Arr**	**4.49**	**255**	Pn		**Pn**	**06 54 05.3**	**+1.5**
MJAR	1.0nm,0.3s,baz=82,slow=16,SNR=6.5			Sn		**Sn**	**06 54 56.3**	**+1.5**
	0.2nm,0.3s,baz=68,slow=24,SNR=2.5							
JNBK	**Urakawa-nobuka**	**4.50**	**352**	P		**Pn**	**06 54 04.5**	**+0.6**
JNBK				*e*S		**Sn**	**06 54 55.1**	**+0.1**
CMAR	**Chiang Mai Arr**	**43.38**	**256**	LR		LR	07 20 18.0	
	comp=Z,12nm,18.2s,baz=295,slow=38							
ILAR	**Eielson Array**	**47.89**	**33**	P		P	07 01 45.8	+13
	0.4nm,0.8s,baz=266,slow=6.0,SNR=3.9							
WRA	**Warramunga Arr**	**58.11**	**190**	P		**P**	**07 02 47.6**	**-0.7**
	0.4nm,0.7s,baz=7.8,slow=7.5,SNR=2.3							
YKA	**Yellowknife Ar**	**62.25**	**31**	P		P	07 03 29.9	+14
	0.1nm,0.7s,baz=302,slow=5.8,SNR=2.6							

*ISCJB **20** 06:53:13.6±0.4, 60°.51S±0°.07×44°.0W±0°.1, h10km, mb4.3/17, MS3.7/4, Error ellipse: s-maj=11.2km s-min=9.4km az=145.9*
*IDC **20** 06:53:13.4±0.7, 60°.61S×44°.25W, h0km, mb4.3/12, mb1 4.4/13, mb1mx4.2/23, mbtmp4.4/13, ML5.3/1, MS3.8/6, Ms1 3.7/6, ms1mx3.4/23, Error ellipse: s-maj=24.9km s-min=16.3km az=41.0*
*NEIC **20** 06:53:16.2±4.0, 60°.47S×44°.08W, h17km±25km, mb4.8/5, Error ellipse: s-maj=10.6km s-min=9.4km az=58.0*
ISC 20 06:53:15.2±0.5, 60°.50S±0°.08×44°.15W±0°.07, h10km, n39, σ1§25/33, mb4.3/17, MS3.8/4, Scotia Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HOPE	**Hope Point**	**7.47**	**37**	*e*Pn		**Pn**	**06 55 02.4**	**-1.7**
PMSA	**Palmer Station**	**10.09**	**236**	Pn		**Pn**	**06 55 42.8**	**+2.9**
	0.7nm,0.3s,baz=61,slow=12,SNR=4.6							
PMSA				Sn		**Sn**	**06 57 30.9**	**-2.0**
	0.5nm,0.3s,baz=134,slow=9.3,SNR=2.2							
PMSA				LR		LR	06 59 14.6	
	comp=Z,236nm,18.5s,baz=50,slow=36							
PMSA	**Palmer Station**	**10.09**	**236**	*e*Pn		**Pn**	**06 55 42.4**	**+2.5**
PMSA				Sn		**Sn**	**06 57 30.9**	**-2.0**
USHA	**Ushuaia**	**14.13**	**283**	Pn		**Pn**	**06 56 33.4**	**-1.7**
	14nm,0.3s,baz=1.5,slow=8.0,SNR=2.6							
USHA				LR		LR	07 01 03.5	
	comp=Z,1μm,18.4s,baz=108,slow=33							
SNAA	**Sanae**	**19.63**	**142**	*e*P		**P**	**06 57 43.7**	**+0.3**
	1μm,1.1s							
TRQA	**Tornquist**	**25.13**	**325**	*e*P		**P**	**06 58 41.2**	**+1.1**
	17nm,1.2s							
PLCA	**Paso Flores**	**25.61**	**309**	P		**P**	**06 58 45.3**	**+0.8**
	6.4nm,0.9s,baz=172,slow=8.1,SNR=9.9							
PLCA				LR		LR	07 08 48.8	
	comp=Z,71nm,18.1s,baz=160,slow=36							
QSPA	**South Pole Qui**	**29.74**	**180**	*e*P		**P**	**06 59 22.4**	**+1.0**
	50nm,1.1s							
VNDA	**Vanda**	**41.30**	**188**	P		**P**	**07 00 59.8**	**-0.2**
	0.5nm,0.4s,baz=15,slow=6.4,SNR=4.8							
LVC	**Limon Verde**	**41.63**	**324**	P		**P**	**07 01 03.0**	**-0.7**
	13nm,0.7s,baz=241,slow=8.0,SNR=5.6							
MAW	**Mawson**	**41.66**	**147**	P		**P**	**07 01 02.0**	**-1.1**
	2.7nm,0.8s,baz=232,slow=12,SNR=4.6							
MAW				LR		LR	07 17 45.7	
	comp=Z,114nm,18.1s,baz=240,slow=35							
SIV	**San Ignacio**	**46.10**	**337**	P		**P**	**07 01 38.5**	**-0.9**
	1.5nm,0.4s,baz=216,slow=9.7,SNR=7.3							
LPAZ	**La Paz**	**47.43**	**328**	P		**P**	**07 01 51.6**	**+1.3**
	2.3nm,0.7s,baz=194,slow=5.6,SNR=14							
CASY	**Casey**	**52.15**	**167**	*e*P		**P**	**07 02 25.4**	**+0.4**
	1.7nm,0.8s							
BOSA	**Boshof**	**55.45**	**88**	P		**P**	**07 02 50.2**	**+0.4**
	1.7nm,0.6s,baz=207,slow=4.9,SNR=4.8							
BOSA				LR		LR	07 21 51.6	
	comp=Z,90nm,19.0s,baz=234,slow=31							
H10S2	**ASCENSION HYDR**	**55.94**	**36**	T		T	08 04 12.2	
	baz=200,slow=74,SNR=4.8							
H10S3	**ASCENSION HYDR**	**55.94**	**36**	T		T	08 04 13.9	
	baz=200,slow=74,SNR=6.1							
H10S1	**ASCENSION HYDR**	**55.96**	**36**	T		T	08 04 16.3	
	baz=200,slow=74,SNR=5.3							
H10N3	**ASCENSION HYDR**	**57.05**	**36**	T		T	08 05 35.0	
	baz=203							
H10N1	**ASCENSION HYDR**	**57.05**	**36**	T		T	08 05 34.7	
	baz=203							
H10N2	**ASCENSION HYDR**	**57.06**	**36**	T		T	08 05 35.4	
	baz=203							
LBTB	**Lobatse**	**58.61**	**86**	P		**P**	**07 03 12.2**	**0.0**
	2.9nm,0.6s,baz=235,slow=7.8,SNR=5.6							
TSUM	**Tsumeb**	**59.63**	**75**	P		**P**	**07 03 19.9**	**+0.5**
	1.7nm,0.6s,baz=98,slow=18,SNR=4.6							
OTAV	**Otavalo**	**66.09**	**322**	*e*P		**P**	**07 04 03.8**	**+1.1**
	7.0nm,0.8s							
LSZ	**Lusaka**	**68.13**	**82**	*e*P		**P**	**07 04 15.4**	**0.0**
	12nm,1.2s							
DBIC	**Dimbokro**	**73.72**	**41**	P		**P**	**07 04 49.8**	**+0.7**
	6.0nm,0.9s,baz=150,slow=2.5,SNR=4.4							
TORD	**Torodi Ar. Bea**	**81.98**	**45**	P		**P**	**07 05 36.2**	**+1.2**
	6.1nm,0.9s,baz=209,slow=6.3,SNR=30							
ASAR	**Alice Springs**	**96.13**	**178**	P		**P**	**07 06 41.0**	**-2.1**
	0.3nm,0.6s,baz=191,slow=0.5,SNR=3.4							
ATD	**Arta Tunnel**	**98.46**	**82**	LR		LR	07 50 27.9	
	comp=Z,44nm,18.1s,slow=35							
FINES	**FINESS Array B**	**132.97**	**38**	PKP		**PKPdf**	**07 12 28.3**	**-0.7**
	1.2nm,0.6s,baz=224,slow=5.3,SNR=4.5							
YKA	**Yellowknife Ar**	**133.84**	**323**	PKP		**PKPdf**	**07 12 30.0**	**-0.6**
	0.6nm,0.5s,baz=140,slow=1.9,SNR=18							
YKA				SKPbc		**SKPbc**	**07 15 59.5**	**+0.3**
	0.2nm,0.7s,baz=141,slow=3.0,SNR=4.0							
SPITS	**Spitsbergen Ar**	**143.13**	**17**	PKhKP		PKPpre	07 12 42.7	
	1.0nm,0.5s,baz=167,slow=4.2,SNR=12							
EGAK	**Eagle**	**144.19**	**313**	*e*PKPdf		**PKPab**	**07 12 47.5**	**+0.2**
BVAR	**Borovoye Array**	**144.75**	**72**	PKP		PKPbc	07 12 50.1	+0.3
	1.8nm,0.7s,baz=259,slow=1.5,SNR=13							
SML	**Sawmill**	**145.31**	**306**	*e*PKPdf		**PKPab**	**07 12 52.0**	**+0.4**
MKAR	**Makanchi Array**	**146.44**	**89**	PKPbc		**PKPdf**	**07 12 54.4**	**+0.4**
	5.4nm,0.6s,baz=235,slow=2.9,SNR=67							
KURBB	**Kurchatov Arra**	**147.15**	**81**	PKPbc		**PKPbc**	**07 12 56.6**	**-0.5**
	4.5nm,0.7s,baz=235,slow=3.9,SNR=31							
KURK	**Kurchatov**	**147.25**	**81**	*e*PKPbc		**PKPbc**	**07 12 56.8**	**-0.7**
ZALV	**Zalesovo Beam**	**152.23**	**81**	PKPbc		**PKPbc**	**07 13 08.4**	**-1.2**
	0.7nm,0.5s,baz=199,slow=3.1,SNR=2.7							

*OBM **20** 06:56:11.5±0.2, 52°.06N×98°.41E, h2km, Ml3.8/2, Error ellipse: s-maj=3.1km s-min=1.5km az=158.0*
*ASRS **20** 06:56:17.9±3.7, 51°.93N×98°.16E, h15km, Ms3.4/3*
*MOS **20** 06:56:18.9±2.3, 52°.01N×98°.82E, h14km, mb4.1/4, Error ellipse: s-maj=10.0km s-min=7.7km az=32.8*
*IDC **20** 06:56:19.4±0.8, 52°.31N×98°.87E, h0km, mb3.5/7, mb1 3.6/12, mb1mx3.5/41, mbtmp3.5/12, ML3.0/5, MS3.0/6, Ms1 3.1/6, ms1mx2.7/46, Error ellipse: s-maj=20.8km s-min=8.6km az=7.0*
*ISCJB **20** 06:56:19.1±0.5, 52°.19N±0°.08×98°.78E±0°.05, h10km, mb3.7/7, MS3.2/2, Error ellipse: s-maj=11.6km s-min=4.4km az=3.1*
*NNC **20** 06:56:45.5±4.5, 52°.30N×96°.46E, h0km, mb3.8, Error ellipse: s-maj=43.3km s-min=39.4km az=48.0*
ISC 20 06:56:19.6±0.6, 52°.22N±0°.07×98°.82E±0°.04, h10km, n49, σ2§29/44, mb3.8/7, 10C-4D, Tuva-Buryatia-Mongolia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ORL	**Orlik**	**0.69**	**62**	*e*PG		**Pn**	**06 56 35.9**	**+0.3**
ORL				*e*			06 56 49.4	
ORL				pmax	pmax			
	comp=Z,213nm,0.3s							
ORL				smax	smax			
	comp=E,1μm,0.4s							
MOY	**Mondy**	**1.45**	**111**	*e*PG		**Pn**	**06 56 44.0**	**-2.1**
MOY				*e*			06 57 06.0	
MOY				pmax	pmax			
	comp=Z,359nm,0.4s							
MOY				smax	smax			
	comp=N,2μm,0.9s							
HTG	**Hatgal**	**1.84**	**141**	*e*Pg		Pb	06 56 47.0	+0.3
HTG				*e*Sg		Sg	06 57 13.1	+1.1
	comp=N,888nm,0.2s							
ARS	**Arshan**	**2.24**	**96**	⇑*e*PN		**Pn**	**06 56 57.4**	**+0.5**
ARS				*i*			06 57 01.7	
ARS				*e*			06 57 33.3	
ARS				pmax	pmax			
	comp=Z,461nm,0.5s							
ARS				smax	smax			
	comp=E,2μm,0.5s							
TLY	**Talaya**	**3.03**	**98**	Pg		**Pb**	**06 57 13.6**	**-0.1**
	comp=E,0.2nm,0.3s,baz=270,slow=11,SNR=41							
TLY				Lg		Lg	06 57 56.2	
	comp=E,0.8nm,0.3s,baz=27,slow=20,SNR=17							
TLY	**Talaya**	**3.03**	**98**	*c i*PN		**Pb**	**06 57 13.1**	**-0.6**
TLY				*i*			06 57 55.2	
TLY				pmax	pmax			
	comp=Z,23nm,0.4s							
TSC	**Tosontsengel**	**3.14**	**181**	*e*Pg		Pg	06 57 13.0	0.0
TSC				*e*Sg		Sg	06 57 54.8	+1.1
	comp=Z,342nm,0.2s							
ZAK	**Zakamensk**	**3.35**	**121**	*e*PN		**Pn**	**06 57 15.4**	**+3.3**
ZAK				*e*			06 58 01.2	
ZAK				pmax	pmax			
	comp=Z,186nm,0.8s							
ZAK				smax	smax			
	comp=N,724nm,1.4s							
IRK	**Irkutsk**	**3.35**	**87**	*e*PN		**Pn**	**06 57 12.9**	**+0.8**
IRK				*e*			06 57 20.8	
IRK				*e*			06 58 06.6	
IRK				pmax	pmax			
	comp=Z,184nm,0.3s							
IRK				smax	smax			
	comp=N,1μm,0.5s							
TBRR	**Tiberkul'**	**3.49**	**301**	*i* PN		**Pn**	**06 57 15.9**	**+2.0**
TBRR				*i*			06 58 02.3	
LSTR	**Listvyanka

ZALV Sn **Sn** **07 00 04.4 +3.2**
comp=Z,0.5nm,0.3s,baz=94,slow=21,SNR=3.8
ZALV Lg Lg 07 00 35.3
comp=Z,0.9nm,0.3s,baz=104,slow=23,SNR=10
ZALV LR LR 07 01 40.6
comp=Z,83nm,18.9s,baz=66,slow=37
UKR Ust'-Kan 8.84 267 *e*Sg Sg 07 00 38.9 -24
DZBM 9.08 151 *e*Sg Sn 07 00 59.0 +53
comp=Z,56nm,0.9s
NVS Novosibirsk 9.65 292 *e*Sg Sn 07 01 08.2 +42
MK31 Makanchi Array 12.03 250 ⇑Pn Pn 06 59 21.0 +10
comp=Z,0.6nm,0.6s,baz=58,slow=12,SNR=4.4
MK31 ⇓Lg Lg 07 02 24.5
comp=Z,9.7nm,0.8s,baz=54,slow=30,SNR=4.1
MKAR Makanchi Array 12.03 250 Pn **Pn** **06 59 11.7 +0.7**
comp=Z,0.1nm,0.3s,baz=70,slow=14,SNR=4.5
MKAR Lg Lg 07 02 25.6
comp=Z,0.1nm,0.3s,baz=60,slow=27,SNR=4.1
MKAR LR LR 07 03 40.8
comp=Z,96nm,18.6s,baz=53,slow=36
MAKZ Makanchi 12.20 250 ⇑Lg Lg 07 02 32.7
comp=Z,20nm,1.4s
KURK Kurchatov 12.68 271 ⇓Pn Pn 06 59 26.4 +6.5
comp=Z,3.1nm,1.0s
KURK ⇓Lg Lg 07 02 42.2
comp=Z,47nm,0.9s
KURK Kurchatov 12.68 271 P **Pn** **06 59 22.3 +2.4**
KURBB Kurchatov Arra 12.76 271 Pn **Pn** **06 59 22.3 +1.3**
comp=Z,0.1nm,0.3s,baz=75,slow=14,SNR=7.9
KURBB Lg Lg 07 02 53.0
comp=Z,0.0nm,0.3s,baz=320,slow=30,SNR=6.9
KURBB Kurchatov Arra 12.76 271 ⇓Pn Pn 06 59 28.1 +7.1
comp=Z,1.7nm,0.9s
KURBB ⇑Lg Lg 07 02 44.3
comp=Z,57nm,1.5s
BRVK Borovoye 17.30 284 *i* P **Pn** **07 00 14.8 -6.2**
BRVK pmax pmax
comp=Z,3.0nm,1.9s
NRIK Noril'sk 17.98 347 P **P** **07 00 30.9 +1.0**
comp=Z,0.2nm,0.3s,baz=120,slow=4.4,SNR=3.2
NRIK S **S** **07 03 55.9 0.0**
comp=Z,0.2nm,0.3s,baz=341,slow=21,SNR=2.3
NRIK Lg Lg 07 05 48.4
comp=Z,0.3nm,0.3s,baz=72,slow=10.0,SNR=2.8
NRIK LR LR 07 08 46.7
comp=Z,16nm,18.6s,baz=76,slow=42
YAK Yakutsk 19.23 47 LR LR 07 08 27.8
comp=Z,46nm,18.2s,baz=116,slow=38
YAK Yakutsk 19.23 47⇑ *e*P **Pn** **07 00 45.3 +0.8**
YAK pmax pmax
comp=Z,4.0nm,0.7s
KLR Kul'dur 20.96 85 P Pn 07 01 03.3 -1.8
comp=Z,0.9nm,0.5s,baz=246,slow=5.3,SNR=4.0
USRK Ussuriysk Ar. 23.35 97 P **P** **07 01 28.9 +1.0**
comp=Z,1.1nm,0.5s,baz=147,slow=37,SNR=2.9
TIXI Tiksi 23.59 23 P **P** **07 01 30.0 -0.1**
comp=Z,1.0nm,0.3s,baz=236,slow=9.9,SNR=5.6
TIXI LR LR 07 11 06.3
comp=Z,81nm,18.7s,baz=206,slow=38
TIXI Tiksi 23.59 23 *ce*P **P** **07 01 29.1 -1.0**
TIXI pmax pmax
comp=Z,2.0nm,0.7s
TIXI MLR MLR
comp=Z,78nm,17.0s
VLA Vladivostok 23.87 99⇑ *e*P **P** **07 01 29.4 -3.6**
VLA *i* *PP **pP** **07 01 33.4 -2.6**
VLA *e*SP **sP** **07 01 36.5 -0.8**
VLA *i* 07 05 10.8
VLA pmax pmax
comp=Z,12nm,0.7s
AKTO Aktyubinsk 25.33 282 P **P** **07 01 47.5 +1.2**
comp=Z,1.3nm,0.6s,baz=101,slow=10,SNR=4.0
SEY Seymchan 29.75 48 *e*P **P** **07 02 24.8 -1.0**
NOA NORSAR Array B 45.48 317 LR LR 07 24 16.3
comp=Z,23nm,18.4s,baz=260,slow=37
BRTR Keskin Array B 45.49 281 P **P** **07 04 41.4 +2.4**
comp=Z,0.5nm,0.7s,baz=52,slow=2.4,SNR=2.4
ILAR Eielson Array 52.86 29 P **P** **07 05 35.1 +0.2**
comp=Z,1.8nm,1.1s,baz=321,slow=4.6,SNR=8.3
YKA Yellowknife Ar 62.63 17 P **P** **07 06 43.1 -0.4**
comp=Z,0.2nm,1.0s,baz=325,slow=6.1,SNR=3.6

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*ISK **20** 07:01:35.8, 39.°07N×29.°05E, h5km, ML2.6*
*DDA **20** 07:01:37.1, 39.°11N×29.°03E, h8km, Md2.8*
*CSEM **20** 07:01:37.2±0.1, 39.°07N×29.°04E, h5km, ML2.6, Error ellipse: s-maj=3.2km s-min=2.9km az=93.0*
ISC 20 07:01:36.9±1.1, **39.08**N±0.02×**29.03E**±0.02, **h8**km±10km, **n43**, σ0**41**/56, **Turkey**

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
TVSB	**Tavsanli**	**0.50**	**43**	*e*PG	**Pg**		**07 01 46.0**	**-0.5**
TVSB	**Tavsanli**	**0.50**	**43**	*e*Pg	**Pg**		**07 01 46.1**	**-0.5**
DURS	**Dursunbey**	**0.67**	**321**	P	**Pb**		**07 01 50.5**	**-0.4**
DURS				S	**Sg**		**07 01 58.6**	**0.0**
DURS	**Dursunbey**	**0.67**	**321**	*i* P	**Pb**		**07 01 50.5**	**-0.4**
DURS				*i* S	**Sg**		**07 01 58.6**	**0.0**
MANT	**Manisa**	**0.70**	**212**	P	**Pb**		**07 01 51.0**	**-0.5**
MANT				S	**Sg**		**07 01 59.8**	**+0.4**
MANT	**Manisa**	**0.70**	**212**	*i* P	**Pb**		**07 01 51.0**	**-0.5**
MANT				*i* S	**Sg**		**07 01 59.8**	**+0.4**
KHAL	**Karahalli**	**0.80**	**153**	P	**Pb**		**07 01 53.3**	**+0.1**
KHAL	**Karahalli**	**0.80**	**153**	*i* P	**Pb**		**07 01 53.3**	**+0.1**
KHL	**Karahalli**	**0.85**	**153**	*e*PG	**Pg**		**07 01 53.1**	**-0.2**
KHL	**Karahalli**	**0.85**	**153**	*e*Pg	**Pg**		**07 01 53.1**	**-0.2**
AKS	**Akhisar**	**0.97**	**258**	*e*PG	**Pg**		**07 01 55.3**	**-0.2**
AKS	**Akhisar**	**0.97**	**258**	*e*Pg	**Pg**		**07 01 55.3**	**-0.2**
ORLT	**Orhaneli**	**0.97**	**354**	*e*PG	**Pg**		**07 01 55.6**	**+0.1**
ORLT				*e*SG	**Sn**		**07 02 10.2**	**-0.5**
ORLT	**Orhaneli**	**0.97**	**354**	*e*Pg	**Pg**		**07 01 55.6**	**+0.1**
ORLT				*e*Sg	**Sn**		**07 02 10.3**	**-0.5**
BALB	**Balikesir**	**1.05**	**302**	*e*PG	**Pn**		**07 01 58.0**	**+0.1**
BALB				*e*SG	**Sn**		**07 02 13.0**	**+0.3**
BALB	**Balikesir**	**1.05**	**302**	*e*Pg	**Pn**		**07 01 58.0**	**+0.1**
BALB				*e*Sg	**Sn**		**07 02 13.0**	**+0.3**
IGD	**Bursa**	**1.19**	**7**	*i* P	**Pb**		**07 01 59.3**	**-0.4**
IGD				*i* S	**Sb**		**07 02 14.2**	**-1.0**
BALY	**Balya**	**1.27**	**301**	P	**Pg**		**07 02 01.6**	**+0.3**
BALY	**Balya**	**1.27**	**301**	*i* P	**Pg**		**07 02 01.6**	**+0.3**
CAVI	**Cavuskoy**	**1.28**	**29**	*e*PN	**Pb**		**07 02 01.2**	**-0.1**
CAVI	**Cavuskoy**	**1.28**	**29**	*e*Pn	**Pb**		**07 02 01.2**	**-0.1**
KCTX	**Karacabey (Bur**	**1.29**	**337**	*e*PN	**Pg**		**07 02 01.6**	**0.0**
KCTX	**Karacabey (Bur**	**1.29**	**337**	*e*Pn	**Pg**		**07 02 01.6**	**0.0**
MDNY	**Mudanya-Bursa**	**1.29**	**355**	*e*PN	**Pg**		**07 02 02.0**	**+0.4**
MDNY	**Mudanya-Bursa**	**1.29**	**355**	*e*Pn	**Pg**		**07 02 02.0**	**+0.4**
IZI	**Iznik**	**1.30**	**15**	*e*PN	**Pg**		**07 02 02.2**	**+0.3**
IZI	**Iznik**	**1.30**	**15**	*e*Pn	**Pg**		**07 02 02.2**	**+0.3**
BORA	**Eskisehir**	**1.36**	**54**	P	**Pb**		**07 02 02.3**	**-0.4**
BORA				S	**Sg**		**07 02 21.2**	**+0.5**
BORA	**Eskisehir**	**1.36**	**54**	*i* P	**Pb**		**07 02 02.3**	**-0.4**
BORA				*i* S	**Sg**		**07 02 21.2**	**+0.5**
GONE	**Gonen-Balikesi**	**1.41**	**313**	*e*PN	**Pg**		**07 02 04.2**	**+0.2**
GONE	**Gonen-Balikesi**	**1.41**	**313**	*e*Pn	**Pg**		**07 02 04.2**	**+0.2**
ADVT	**Abdulvahap**	**1.46**	**22**	*e*PN	**Pg**		**07 02 04.9**	**+0.1**
ADVT	**Abdulvahap**	**1.46**	**22**	*e*Pn	**Pg**		**07 02 04.9**	**+0.1**
ARMT	**Armutlu**	**1.48**	**355**	*e*PN	**Pg**		**07 02 05.6**	**+0.2**
ARMT	**Armutlu**	**1.48**	**355**	*e*Pn	**Pg**		**07 02 05.6**	**+0.2**
EDC	**Edincik**	**1.55**	**325**	*e*PN	**Pb**		**07 02 05.7**	**-0.1**
EDC	**Edincik**	**1.55**	**325**	*e*Pn	**Pb**		**07 02 05.7**	**-0.1**
GULT	**Gulveren**	**1.77**	**40**	*e*PN	**Pb**		**07 02 09.1**	**-0.6**
GULT	**Gulveren**	**1.77**	**40**	*e*Pn	**Pb**		**07 02 09.1**	**-0.6**
SILT	**Sile**	**2.12**	**13**	*e*PN	**Pn**		**07 02 13.7**	**+1.1**
SILT	**Sile**	**2.12**	**13**	*e*Pn	**Pn**		**07 02 13.7**	**+1.1**
SART	**Tekirdag**	**2.14**	**319**	P	**Pg**		**07 02 17.7**	**-0.3**
SART				S	**Sg**		**07 02 45.9**	**+0.2**
SART	**Tekirdag**	**2.14**	**319**	*i* P	**Pg**		**07 02 17.7**	**-0.3**
SART				*i* S	**Sg**		**07 02 45.9**	**+0.2**

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*NIED **20** 07:08:00.37, 37.°40N×141.°60E, h5km, Mw3.6 Best double couple: M0=2.44000×10^14 NP1:φ=244.00000°, δ45.00000°, λ-55.00000°. NP2:φ=19.00000°, δ55.00000°, λ-120.00000°.*
*IDC **20** 07:08:48.3±1.0, 37.°18N×141.°86E, h0km, mb3.7/10, mb1 3.8/11, mb1mx3.6/50, mbtmp3.6/11, ML3.3/1, MS2.2/3, Ms1 2.2/3, ms1mx2.0/47, Error ellipse: s-maj=26.1km s-min=21.8km az=168.0*
*ISCJB **20** 07:08:49.2±0.7, 37.°38N±0.°04×141.°65E±0.°05, h10km, mb3.6/10, Error ellipse: s-maj=6.3km s-min=4.5km az=41.7*
*JMA **20** 07:08:49.9±0.2, 37.°40N×141.°62E, h21km±2km, M3.6*

ISC 20 07:08:50.3±0.8, **37.39**N±0.°04×**141.62E**±0.°06, **h10**km, **n27**, σ1**42**/28, **mb3.7**/10, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.59**	**268**	P	**Pg**		**07 09 01.2**	**-0.6**
JFK				S	**Sg**		**07 09 09.4**	**-0.2**
ONAJ	**Iwakimizuishiy**	**0.71**	**247**	P	**Pg**		**07 09 03.4**	**-0.7**
ONAJ				S	**Sg**		**07 09 13.2**	**-0.2**
JMM	**Marumori**	**0.81**	**307**	P	**Pg**		**07 09 04.8**	**-1.2**
JMM				S	**Sg**		**07 09 15.8**	**-0.7**
JFT	**Otama**	**1.03**	**278**	P	**Pg**		**07 09 09.1**	**-1.0**
JFT				S	**Sg**		**07 09 22.7**	**-0.7**
JIO	**Ouri**	**1.09**	**349**	P	**Pb**		**07 09 09.4**	**-1.8**
JIO				S	**Sg**		**07 09 23.4**	**-2.0**
JHO	**Hitachi**	**1.14**	**228**	P	**Pb**		**07 09 09.5**	**-2.6**
JHO				S	**Sb**		**07 09 25.9**	**-1.1**
JOU	**Okura**	**1.23**	**323**	P	**Pb**		**07 09 12.5**	**-1.3**
JOU				S	**Sg**		**07 09 29.0**	**-1.1**
MJAR	**Matsushiro Arr**	**2.85**	**254**	Pn	**Pn**		**07 09 37.3**	**+1.3**
	3.8nm,0.3s,baz=82,slow=16,SNR=15							
MJAR				Sn	**Sn**		**07 10 09.9**	**-0.5**
	3.6nm,0.3s,baz=83,slow=16,SNR=5.6							
MJAR				LR	LR		07 10 31.3	
	comp=Z,15nm,21.5s,baz=35,slow=35							
MAT	**Matsushiro**	**2.86**	**254**	P	**Pn**		**07 09 37.2**	**+1.2**
MAT				S	**Sn**		**07 10 11.9**	**+1.5**
JNU	**Nakatsue**	**9.75**	**247**	LR	LR		07 14 43.3	
	comp=Z,17nm,18.8s,baz=119,slow=36							
KLR	**Kul'dur**	**13.83**	**332**	LR	LR		07 17 26.8	
	comp=Z,15nm,18.8s,baz=355,slow=37							
SONM	**Songino Array**	**27.73**	**303**	P	**P**		**07 14 40.5**	**+1.5**
	1.4nm,0.8s,baz=69,slow=7.9,SNR=3.3							
H11N2	**WAKE ISLAND Hy 28.19**	**122**		T	T		07 44 09.1	
	baz=314,slow=75,SNR=626							
H11N1	**WAKE ISLAND Hy 28.20**	**122**		T	T		07 44 11.2	
	baz=314,slow=75,SNR=692							
H11N3	**WAKE ISLAND Hy 28.21**	**122**		T	T		07 44 11.6	
	baz=314,slow=75,SNR=713							
H11S1	**WAKE ISLAND Hy 28.92**	**124**		T	T		07 45 05.8	
	baz=316,slow=76,SNR=174							
H11S3	**WAKE ISLAND Hy 28.92**	**124**		T	T		07 45 07.1	
	baz=316,slow=76,SNR=100							
H11S2	**WAKE ISLAND Hy 28.93**	**124**		T	T		07 45 06.7	
	baz=316,slow=76,SNR=114							
ZALV	**Zalesovo Beam**	**41.80**	**312**	P	**P**		**07 16 41.4**	**+1.5**
	1.2nm,0.3s,baz=108,slow=9.3,SNR=3.5							
MKAR	**Makanchi Array**	**44.07**	**302**	P	**P**		**07 17 00.6**	**+2.2**
	0.7nm,0.8s,baz=82,slow=12,SNR=4.9							
KURBB	**Kurchatov Arra**	**45.91**	**308**	P	**P**		**07 17 15.1**	**+2.1**
	0.8nm,0.4s,baz=84,slow=8.1,SNR=9.7							
ILAR	**Eielson Array**	**49.11**	**33**	P	**P**		**07 17 37.6**	**-0.1**
	0.2nm,0.7s,baz=262,slow=6.1,SNR=2.8							
WRA	**Warramunga Arr**	**57.43**	**188**	P	**P**		**07 18 37.5**	**-1.8**
	0.3nm,0.6s,baz=5.4,slow=7.0,SNR=7.7							
YKA	**Yellowknife Ar**	**63.42**	**30**	P	**P**		**07 19 20.7**	**+0.9**
	0.1nm,0.6s,baz=340,slow=27,SNR=4.0							
FINES	**FINESS Array B**	**68.58**	**332**	P	**P**		**07 19 52.9**	**0.0**
	1.0nm,0.7s,baz=31,slow=14,SNR=2.6							
AKASG	**Malin Array Be**	**74.12**	**322**	P	**P**		**07 20 28.2**	**+1.6**
	0.8nm,0.4s,baz=48,slow=6.3,SNR=4.3							
TXAR	**Lajitas Array**	**89.78**	**52**	P	**P**		**07 21 48.3**	**-1.1**
	0.1nm,0.4s,baz=320,slow=15,SNR=2.9							

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*DDA **20** 07:14:39.8, 39.°10N×29.°04E, h7km, Ml3.1*
*ISK **20** 07:14:39.7, 39.°09N×29.°02E, h5km, ML2.9*
*ISCJB **20** 07:14:40.1±0.4, 39.°08N±0.°03×29.°00E±0.°04, h9km, Error ellipse: s-maj=4.3km s-min=4.0km az=142.3*
*CSEM **20** 07:14:40.1±0.1, 39.°10N×29.°02E, h2km, ML3.1, Error ellipse: s-maj=2.0km s-min=1.7km az=92.0*
ISC 20 07:14:40.3±0.8, **39.09**N±0.°03×**29.04E**±0.°02, **h9**km, **n48**, σ0**37**/54, **Turkey**

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**259**	P	**Pg**		**07 14 45.2**	**-0.2**
DEMI				S	**Sg**		**07 14 48.5**	**-0.3**
DEMI	**Demirci**	**0.25**	**259**	*i* P	**Pg**		**07 14 45.2**	**-0.2**
DEMI				*i* S	**Sg**		**07 14 48.5**	**-0.3**
GDZ	**Gediz**	**0.35**	**90**	P	**Pg**		**07 14 46.9**	**-0.3**
GDZ	**Gediz**	**0.35**	**90**	*i* P	**Pg**		**07 14 46.9**	**-0.3**
TVSB	**Tavsanli**	**0.49**	**42**	*e*PG	**Pg**		**07 14 49.6**	**-0.2**
TVSB	**Tavsanli**	**0.49**	**42**	*e*Pg	**Pg**		**07 14 49.6**	**-0.2**
KULA	**Kula-Manisa**	**0.65**	**207**	*e*PG	**Pg**		**07 14 52.4**	**-0.3**
KULA	**Kula-Manisa**	**0.65**	**207**	*e*Pg	**Pg**		**07 14 52.4**	**-0.3**
DURS	**Dursunbey**	**0.67**	**320**	P	**Pg**		**07 14 52.8**	**-0.4**
DURS	**Dursunbey**	**0.67**	**320**	*i* P	**Pg**		**07 14 52.8**	**-0.4**
MANT	**Manisa**	**0.70**	**212**	P	**Pg**		**07 14 53.5**	**-0.4**
MANT	**Manisa**	**0.70**	**212**	*i* P	**Pg**		**07 14 53.5**	**-0.4**
KHAL	**Karahalli**	**0.80**	**153**	P	**Pg**		**07 14 55.8**	**+0.1**
KHAL	**Karahalli**	**0.80**	**153**	*i* P	**Pg**		**07 14 55.8**	**+0.1**
KHL	**Karahalli**	**0.85**	**153**	*e*PG	**Pg**		**07 14 56.9**	**+0.2**
KHL				*e*SG	**Sb**		**07 15 09.1**	**+0.2**
KHL	**Karahalli**	**0.85**	**153**	*e*Pg	**Pg**		**07 14 56.9**	**+0.2**
KHL				*e*Sg	**Sb**		**07 15 09.1**	**+0.2**
ORLT	**Orhaneli**	**0.96**	**354**	*e*PG	**Pg**		**07 14 58.2**	**-0.5**
ORLT	**Orhaneli**	**0.96**	**354**	*e*Pg	**Pg**		**07 14 58.2**	**-0.5**
AKS	**Akhisar**	**0.98**	**258**	*e*PG	**Pg**		**07 14 58.8**	**-0.2**
AKS	**Akhisar**	**0.98**	**258**	*e*Pg	**Pg**		**07 14 58.8**	**-0.2**
BALB	**Balikesir**	**1.05**	**302**	*e*PG	**Pg**		**07 15 00.3**	**-0.1**
BALB				*e*SG	**Sb**		**07 15 14.6**	**+0.1**
BALB	**Balikesir**	**1.05**	**302**	*e*Pg	**Pg**		**07 15 00.3**	**-0.1**
BALB				*e*Sg	**Sb**		**07 15 14.6**	**+0.1**
CAVI	**Cavuskoy**	**1.27**	**29**	*e*PN	**Pb**		**07 15 04.7**	**+0.3**
CAVI	**Cavuskoy**	**1.27**	**29**	*e*Pn	**Pb**		**07 15 04.7**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.28**	**355**	*e*PN	**Pb**		**07 15 04.7**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.28**	**355**	*e*Pn	**Pb**		**07 15 04.7**	**+0.1**
KCTX	**Karacabey (Bur**	**1.29**	**336**	*e*PN	**Pb**		**07 15 04.6**	**0.0**
KCTX	**Karacabey (Bur**	**1.29**	**336**	*e*Pn	**Pb**		**07 15 04.6**	**0.0**
IZI	**Iznik**	**1.29**	**15**	*e*PN	**Pb**		**07 15 04.9**	**+0.2**
IZI	**Iznik**	**1.29**	**15**	*e*Pn	**Pb**		**07 15 04.9**	**+0.2**
GEMT	**Gemlik**	**1.35**	**5**	*e*PN	**Pb**		**07 15 05.8**	**+0.1**
GEMT	**Gemlik**	**1.35**	**5**	*e*Pn	**Pb**		**07 15 05.8**	**+0.1**
ADVT	**Abdulvahap**	**1.45**	**22**	*e*PN	**Pb**		**07 15 07.4**	**0.0**
ADVT	**Abdulvahap**	**1.45**	**22**	*e*Pn	**Pb**		**07 15 07.4**	**0.0**
ARMT	**Armutlu**	**1.48**	**355**	*e*PN	**Pb**		**07 15 08.0**	**0.0**
ARMT	**Armutlu**	**1.48**	**355**	*e*Pn	**Pb**		**07 15 08.0**	**0.0**
EDC	**Edincik**	**1.55**	**325**	*e*PN	**Pn**		**07 15 08.2**	**+0.3**
EDC	**Edincik**	**1.55**	**325**	*e*Pn	**Pn**		**07 15 08.3**	**+0.3**
GPA	**Golpazari**	**1.55**	**39**	*e*PN	**Pn**		**07 15 08.3**	**+0.2**
GPA	**Golpazari**	**1.55**	**39**	*e*Pn	**Pn**		**07 15 08.3**	**+0.2**
GULT	**Gulveren**	**1.76**	**40**	*e*PN	**Pb**		**07 15 12.2**	**-0.6**
GULT	**Gulveren**	**1.76**	**40**	*e*Pn	**Pb**		**07 15 12.2**	**-0.6**
HRT	**Hereke**	**1.80**	**15**	*e*PN	**Pn**		**07 15 11.9**	**+0.4**
HRT	**Hereke**	**1.80**	**15**	*e*Pn	**Pn**		**07 15 11.9**	**+0.4**
SVRH	**Sivrihisar-ESK**	**1.96**	**79**	*e*PN	**Pb**		**07 15 15.4**	**-0.7**
SVRH	**Sivrihisar-ESK**	**1.96**	**79**	*e*Pn	**Pb**		**07 15 15.5**	**-0.7**
SILT	**Sile**	**2.11**	**13**	*e*PN	**Pn**		**07 15 16.8**	**+1.1**
SILT	**Sile**	**2.11**	**13**	*e*Pn	**Pn**		**07 15 16.8**	**+1.1**

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*ISK **20** 07:19:22.6, 39.°11N×29.°00E, h5km, ML3.0*
*DDA **20** 07:19:23.4, 39.°12N×29.°00E, h7km, Md2.9*
*CSEM **20** 07:19:23.7±0.1, 39.°11N×28.°99E, h2km, MD2.9, Error ellipse: s-maj=2.8km s-min=2.3km az=96.0*
ISC 20 07:19:23.3±0.9, **39.12**N±0.°02×**29.00E**±0.°02, **h14**km±7km, **n71**, σ0**64**/81, **Turkey**

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.23**	**251**	P	**Pg**		**07 19 28.6**	**+0.2**
DEMI				S	**Sg**		**07 19 31.8**	**-0.1**
DEMI	**Demirci**	**0.23**	**251**	*i* P	**Pg**		**07 19 28.6**	**+0.2**
DEMI				*i* S	**Sg**		**07 19 31.8**	**-0.1**
GDZ	**Gediz**	**0.38**	**94**	P	**Pg**		**07 19 31.1**	**+0.1**
GDZ				S	**Sg**		**07 19 36.7**	**+0.4**
GDZ	**Gediz**	**0.38**	**94**	*i* P	**Pg**		**07 19 31.1**	**+0.1**
GDZ				*i* S	**Sg**		**07 19 36.7**	**+0.4**
TVSB	**Tavsanli**	**0.49**	**47**	*e*PG	**Pg**		**07 19 32.7**	**-0.4**
TVSB	**Tavsanli**	**0.49**	**47**	*e*Pg	**Pg**		**07 19 32.7**	**-0.4**
DURS	**Dursunbey**	**0.63**	**320**	P	**Pg**		**07 19 35.6**	**-0.1**
DURS	**Dursunbey**	**0.63**	**320**	*i* P	**Pg**		**07 19 35.6**	**-0.1**
KULA	**Kula-Manisa**	**0.66**	**204**	*e*PG	**Pg**		**07 19 35.9**	**-0.2**
KULA				*e*SG	**Sb**		**07 19 46.0**	**+0.4**
KULA	**Kula-Manisa**	**0.66**	**204**	*e*Pg	**Pg**		**07 19 35.9**	**-0.2**
KULA				*e*Sg	**Sb**		**07 19 46.0**	**+0.4**
MANT	**Manisa**	**0.71**	**209**	P	**Pb**		**07 19 37.4**	**-0.2**
MANT	**Manisa**	**0.71**	**209**	*i* P	**Pb**		**07 19 37.4**	**-0.2**
KHAL	**Karahalli**	**0.84**	**152**	P	**Pn**		**07 19 40.1**	**-0.7**
KHAL				S	**Sb**		**07 19 51.6**	**+0.6**
KHAL	**Karahalli**	**0.84**	**152**	*i* P	**Pn**		**07 19 40.1**	**-0.7**
KHAL				*i* S	**Sb**		**07 19 51.6**	**+0.6**
KHL	**Karahalli**	**0.89**	**152**	*e*PG	**Pn**		**07 19 41.1**	**-0.5**
KHL	**Karahalli**	**0.89**	**152**	*e*Pg	**Pn**		**07 19 41.1**	**-0.5**
ORLT	**Orhaneli**	**0.93**	**355**	*e*PG	**Pn**		**07 19 41.7**	**-0.4**
ORLT				*e*SG	**Sn**		**07 19 55.6**	**+0.3**
ORLT	**Orhaneli**	**0.93**	**355**	*e*Pg	**Pn**		**07 19 41.7**	**-0.4**
ORLT				*e*Sg	**Sn**		**07 19 55.6**	**+0.3**
AKS	**Akhisar**	**0.95**	**256**	*e*PG	**Pb**		**07 19 41.2**	**-0.4**
AKS	**Akhisar**	**0.95**	**256**	*e*Pg	**Pb**		**07 19 41.2**	**-0.4**
BALB	**Balikesir**	**1.01**	**302**	*e*PG	**Pn**		**07 19 43.5**	**+0.5**
BALB	**Balikesir**	**1.01**	**302**	*e*Pg	**Pn**		**07 19 43.6**	**+0.5**
IGD	**Bursa**	**1.16**	**8**	*i* P	**Pn**		**07 19 42.6**	**-2.5**
BALY	**Balya**	**1.23**	**301**	P	**Pg**		**07 19 47.0**	**-0.1**
BALY	**Balya**	**1.23**	**301**	*i* P	**Pg**		**07 19 47.0**	**-0.1**
KCTX	**Karacabey (Bur**	**1.25**	**337**	*e*PN	**Pg**		**07 19 47.9**	**+0.5**
KCTX	**Karacabey (Bur**	**1.25**	**337**	*e*Pn	**Pg**		**07 19 47.9**	**+0.5**
MDNY	**Mudanya-Bursa**	**1.25**	**356**	*e*PN	**Pg**		**07 19 48.2**	**+0.7**
MDNY	**Mudanya-Bursa**	**1.25**	**356**	*e*Pn	**Pg**		**07 19 48.2**	**+0.7**
CAVI	**Cavuskoy**	**1.27**	**31**	*e*PN	**Pg**		**07 19 47.5**	**-0.2**
CAVI	**Cavuskoy**	**1.27**	**31**	*e*Pn	**Pg**		**07 19 47.5**	**-0.2**
IZI	**Iznik**	**1.27**	**17**	*e*PN	**Pg**		**07 19 48.1**	**+0.2**
IZI	**Iznik**	**1.27**	**17**	*e*Pn	**Pg**		**07 19 48.1**	**+0.2**
GEMT	**Gemlik**	**1.33**	**6**	*e*PN	**Pg**		**07 19 49.3**	**+0.5**
GEMT	**Gemlik**	**1.33**	**6**	*e*Pn	**Pg**		**07 19 49.3**	**+0.5**
DNZL	**Cakiroluk**	**1.43**	**178**	P	**Pg**		**07 19 50.4**	**-0.4**
DNZL	**Cakiroluk**	**1.43**	**178**	*i* P	**Pg**		**07 19 50.4**	**-0.4**
ADVT	**Abdulvahap**	**1.44**	**23**	*e*PN	**Pg**		**07 19 50.8**	**-0.1**
ADVT	**Abdulvahap**	**1.44**	**23**	*e*Pn	**Pg**		**07 19 50.8**	**-0.1**
ARMT	**Armutlu**	**1.45**	**356**	*e*PN	**Pb**		**07 19 50.4**	**+0.2**
ARMT	**Armutlu**	**1.45**	**356**	*e*Pn	**Pb**		**07 19 50.4**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**1.45**	**217**	*e*PN	**Pg**		**07 19 51.0**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**1.45**	**217**	*e*Pn	**Pg**		**07 19 51.0**	**-0.3**
EDC	**Edincik**	**1.51**	**325**	*e*PN	**Pb**		**07 19 51.4**	**+0.3**
EDC	**Edincik**	**1.51**	**325**	*e*Pn	**Pb**		**07 19 51.4**	**+0.3**
GPA	**Golpazari**	**1.55**	**40**	*e*PN	**Pg**		**07 19 52.8**	**-0.3**
GPA	**Golpazari**	**1.55**	**40**	*e*Pn	**Pg**		**07 19 52.8**	**-0.3**
AYDN	**Tasoluk**	**1.70**	**211**	P	**Pg**		**07 19 55.7**	**-0.2**
AYDN	**Tasoluk**	**1.70**	**211**	*i* P	**Pg**		**07 19 55.7**	**-0.2**
GULT	**Gulveren**	**1.76**	**41**	*e*PN	**Pb**		**07 19 55.0**	**-0.5**
GULT	**Gulveren**	**1.76**	**41**	*e*Pn	**Pb**		**07 19 55.0**	**-0.5**
HRT	**Hereke**	**1.78**	**17**	*e*PN	**Pb**		**07 19 55.9**	**+0.1**
HRT	**Hereke**	**1.78**	**17**	*e*Pn	**Pb**		**07 19 55.9**	**+0.1**
MRMT	**Marmara Adasi**	**1.83**	**324**	*e*PN	**Pb**		**07 19 56.6**	**0.0**
MRMT	**Marmara Adasi**	**1.83**	**324**	*e*Pn	**Pb**		**07 19 56.7**	**0.0**
SPNC	**Sapanca-Adapaz**	**1.86**	**32**	*e*PN	**Pb**		**07 19 57.1**	**-0.1**
SPNC	**Sapanca-Adapaz**	**1.86**	**32**	*e*Pn	**Pb**		**07 19 57.1**	**-0.1**
SVRH	**Sivrihisar-ESK**	**1.99**	**80**	*e*PN	**Pb**		**07 19 59.3**	**-0.1**

comp=E,29510μm,0.3s
PDO AML AML 07 20 23.6
comp=N,37644μm,0.3s
ANX Ano Chora 0.76 24 P **Pg 07 20 09.1 -0.8**
ANX S **Sb 07 20 21.0 +0.6**
ANX Ano Chora 0.76 24 P **Pg 07 20 09.1 -0.8**
ANX S **Sb 07 20 21.0 +0.6**
ITM Ithomi 0.78 156 P **Pg 07 20 09.8 -0.4**
ITM S **Sb 07 20 21.7 +0.9**
ITM Ithomi 0.78 156 P **Pg 07 20 09.8 -0.4**
ITM S **Sb 07 20 21.7 +0.9**
ITM Ithomi 0.78 156 P **Pg 07 20 09.7 -0.4**
ITM S **Sn 07 20 21.9 -1.2**
VLS Valsamata 0.80 291 P **Pg 07 20 09.4 -1.1**
VLS S **Sb 07 20 21.6 +0.3**
VLS Valsamata 0.80 291 P **Pg 07 20 09.4 -1.1**
VLS S **Sb 07 20 21.6 +0.3**
VLX Vlachokerasia 0.85 128 P **Pg 07 20 11.2 -0.3**
VLX S **Sn 07 20 24.6 -0.4**
VLX Vlachokerasia 0.85 128 P **Pg 07 20 11.2 -0.3**
VLX S **Sb 07 20 23.4 +0.4**
VLX Vlachokerasia 0.85 128 P **Pg 07 20 10.8 -0.7**
VLX S **Sb 07 20 23.4 +0.4**
VLX AML AML 07 20 27.2
comp=N,6926μm,0.5s
VLX AML AML 07 20 27.4
comp=E,5600μm,0.6s
DSF Desfina 0.94 56 P **Pb 07 20 12.3 -0.8**
DSF S **Sn 07 20 27.3 +0.2**
DSF Desfina 0.94 56 P **Pb 07 20 12.3 -0.8**
DSF S **Sn 07 20 27.3 +0.2**
DSF Desfina 0.94 56 P **Pb 07 20 12.0 -1.2**
PYL PYLOS 1.01 170 P **Pb 07 20 13.8 -0.5**
PYL PYLOS 1.01 170 P **Pb 07 20 13.8 -0.5**
PYL PYLOS 1.01 170 P **Pb 07 20 12.6 -1.7**
EVR Evrytania 1.04 12 P **Pb 07 20 14.2 -0.8**
EVR Evrytania 1.04 12 P **Pb 07 20 14.2 -0.8**
EVR Evrytania 1.04 12 P **Pb 07 20 14.2 -0.8**
LKD2 Lefkada island 1.13 323 P **Pb 07 20 15.4 -0.9**
LKD2 S **Sn 07 20 32.5 +0.8**
LKD2 Lefkada island 1.13 323 P **Pb 07 20 15.4 -0.9**
LKD2 S **Sn 07 20 32.5 +0.8**
LKD2 Lefkada island 1.13 323 P **Pb 07 20 14.7 -1.6**
LTK Loutraki 1.14 83 P **Pn 07 20 16.7 +0.2**
LTK S **Sn 07 20 33.7 +1.6**
LTK Loutraki 1.14 83 P **Pn 07 20 16.8 +0.2**
LTK S **Sn 07 20 33.7 +1.6**
LTK Loutraki 1.14 83 P **Pn 07 20 16.8 +0.2**
DSL Palaion Diasel 1.28 345 P **Pn 07 20 18.3 -0.3**
DSL S **Sg 07 20 36.8 +0.3**
DSL Palaion Diasel 1.28 345 P **Pn 07 20 18.3 -0.3**
DSL S **Sg 07 20 36.8 +0.3**
DSL Palaion Diasel 1.28 345 P **Pn 07 20 17.5 -1.1**
AGG Agios Georgios 1.29 29 P **Pn 07 20 18.5 -0.2**
AGG S **Sg 07 20 37.9 +1.2**
AGG Agios Georgios 1.29 29 P **Pn 07 20 18.5 -0.2**
AGG S **Sg 07 20 37.9 +1.2**
AGG Agios Georgios 1.29 29 P **Pn 07 20 18.0 -0.6**
LKR Lokris 1.38 56 P **Pn 07 20 20.1 +0.2**
LKR S **Sg 07 20 39.6 +0.1**
LKR Lokris 1.38 56 P **Pn 07 20 20.1 +0.2**
LKR S **Sg 07 20 39.6 +0.1**
LKR Lokris 1.38 56 P **Pn 07 20 19.9 0.0**
KRND KRANIDI 1.38 111 P **Pb 07 20 20.7 +0.1**
KRND KRANIDI 1.38 111 P **Pb 07 20 20.7 +0.1**
KRND KRANIDI 1.38 111 P **Pb 07 20 20.8 +0.1**
DID Didima 1.41 105 P **Pb 07 20 21.3 +0.2**
DID S **Sg 07 20 41.4 +1.0**
DID Didima 1.41 105 P **Pb 07 20 21.1 0.0**
DID S **Sg 07 20 41.4 +1.0**
DID Didima 1.41 105 P **Pb 07 20 21.1 0.0**
VLI Veliai 1.62 136 P **Pb 07 20 24.4 -0.3**
VLI Veliai 1.62 136 P **Pb 07 20 24.4 -0.3**
VLI Veliai 1.62 136 P **Pg 07 20 25.7 -0.4**
SMIA Simia 1.65 53 P **Pn 07 20 24.2 +0.7**
SMIA Simia 1.65 53 P **Pn 07 20 24.2 +0.7**
THL Klokotos Trika 1.71 13 P **Pb 07 20 25.5 -0.7**
THL Klokotos Trika 1.71 13 P **Pb 07 20 25.5 -0.7**
ATH Athens Observa 1.73 87 P **Pb 07 20 26.1 -0.4**
VLY Voula,Athens 1.79 91 P **Pn 07 20 26.1 +0.6**
VLY Voula,Athens 1.79 91 P **Pn 07 20 26.1 +0.6**
VLY Voula,Athens 1.79 91 P **Pb 07 20 26.8 -0.8**
JAN Janina 1.84 343 P **Pb 07 20 28.6 +0.2**
PTL Penteli 1.85 84 P **Pn 07 20 26.6 +0.2**
PTL Penteli 1.85 84 P **Pb 07 20 28.4 -0.3**
PTL Penteli 1.85 84 P **Pn 07 20 26.6 +0.2**
PTL Penteli 1.85 84 P **Pb 07 20 28.4 -0.3**
FYTO Fytoko, Volos 1.87 36 P **Pn 07 20 27.2 +0.6**
FYTO Fytoko, Volos 1.87 36 P **Pn 07 20 27.2 +0.6**
NEO Neokhori 1.94 43 P **Pn 07 20 28.1 +0.6**
NEO Neokhori 1.94 43 P **Pn 07 20 28.1 +0.6**
NEO Neokhori 1.94 43 P **Pn 07 20 27.8 +0.3**
XOR Xorichti 1.96 41 P **Pn 07 20 28.4 +0.5**
XOR Xorichti 1.96 41 P **Pn 07 20 28.4 +0.5**
XOR Xorichti 1.96 41 P **Pn 07 20 28.1 +0.2**
SGD Sagiada 1.99 330 P **Pn 07 20 28.9 +0.6**
SGD Sagiada 1.99 330 P **Pn 07 20 28.9 +0.6**
KYTH Kithira 2.03 143 P **Pg 07 20 32.8 -1.1**
KPRO Kipourio 2.06 356 P **Pb 07 20 30.9 -1.4**
KPRO Kipourio 2.06 356 P **Pb 07 20 30.9 -1.4**
AOS Alonnisos 2.24 55 P **Pn 07 20 31.8 +0.1**
AOS Alonnisos 2.24 55 P **Pn 07 20 31.8 +0.1**
KEK Kerkira 2.27 324 P **Pn 07 20 32.9 +0.9**
KEK Kerkira 2.27 324 P **Pn 07 20 32.9 +0.9**
SERI Serifos 2.46 106 P **Pn 07 20 35.1 +0.4**
SERI Serifos 2.46 106 P **Pn 07 20 35.1 +0.4**
ANKY Antikythira Is 2.47 144 P **Pb 07 20 38.2 -1.0**
MHLO Agia Marina, M 2.58 117 P **Pb 07 20 39.0 -2.1**
MHLO Agia Marina, M 2.58 117 P **Pb 07 20 39.0 -2.1**
OHR Ohrid 3.26 350 *e*Pn **Pb 07 20 54.6 +1.9**
VAY Valandovo 3.52 13 *e*Pn **Pb 07 20 54.6 -2.4**

ISCJB ***20*** *07:22:13.5±0.5, 39°.10N±0°.02×29°.07E±0°.03, h1km±5km, Error ellipse: s-maj=3.9km s-min=3.5km az=172.0*
DDA ***20*** *07:22:13.4, 39°.12N×29°.09E, h18km, MI3.8*
ISK ***20*** *07:22:13.0, 39°.12N×29°.07E, h5km, ML3.4*
CSEM ***20*** *07:22:13.9±0.1, 39°.11N×29°.07E, h2km, ML3.8, Error ellipse: s-maj=3.2km s-min=2.7km az=102.0*
ISC 20 07:22:13.4±1.0,**39°.13N**±0°.02×**29°.05E**±0°.02,**h6**km±10km,
n85,σ0s**87**/98,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**253**	S	**Sg**	**07 22 23.4**	**+1.0**
DEMI	**Demirci**	**0.27**	**253**	*i* S	**Sg**	**07 22 18.1**	**-4.3**
DEMI				*i* S	**Sg**	**07 22 23.4**	**+1.0**
DEMI				*i* P	**Pn**	**07 22 28.7**	**+4.7**
GDZ	**Gediz**	**0.34**	**96**	P	**Pg**	**07 22 20.4**	**+0.4**
GDZ				S	**Sg**	**07 22 25.2**	**+0.8**
GDZ	**Gediz**	**0.34**	**96**	*i* P	**Pg**	**07 22 20.4**	**+0.4**
GDZ				*i* S	**Sg**	**07 22 25.2**	**+0.8**
TVSB	**Tavsanli**	**0.45**	**44**	*e*PG	**Pg**	**07 22 22.6**	**+0.4**
TVSB	**Tavsanli**	**0.45**	**44**	*e*Pg	**Pg**	**07 22 22.6**	**+0.4**
DURS	**Dursunbey**	**0.65**	**317**	P	**Pg**	**07 22 26.5**	**+0.5**
DURS	**Dursunbey**	**0.65**	**317**	*i* P	**Pg**	**07 22 26.5**	**+0.5**
KULA	**Kula-Manisa**	**0.68**	**207**	*e*PG	**Pg**	**07 22 26.8**	**+0.3**
KULA	**Kula-Manisa**	**0.68**	**207**	*e*Pg	**Pg**	**07 22 26.8**	**+0.3**
MANT	**Manisa**	**0.74**	**212**	P	**Pg**	**07 22 27.9**	**+0.2**
MANT				S	**Sg**	**07 22 36.3**	**-1.0**
MANT	**Manisa**	**0.74**	**212**	*i* P	**Pg**	**07 22 27.9**	**+0.2**
MANT				*i* S	**Sg**	**07 22 36.4**	**-1.0**
KHAL	**Karahalli**	**0.83**	**155**	P	**Pb**	**07 22 29.7**	**-0.5**
KHAL				S	**Sg**	**07 22 39.8**	**-0.2**
KHAL	**Karahalli**	**0.83**	**155**	*i* P	**Pb**	**07 22 29.7**	**-0.5**
KHAL				*i* S	**Sg**	**07 22 39.9**	**-0.2**
KHL	**Karahalli**	**0.88**	**155**	*e*PG	**Pb**	**07 22 30.8**	**-0.4**
KHL	**Karahalli**	**0.88**	**155**	*e*Pg	**Pb**	**07 22 30.8**	**-0.4**
ORLT	**Orhaneli**	**0.93**	**353**	*e*PG	**Pg**	**07 22 31.6**	**+0.4**
ORLT				*e*SG	**Sn**	**07 22 46.0**	**-0.7**
ORLT	**Orhaneli**	**0.93**	**353**	*e*Pg	**Pg**	**07 22 31.6**	**+0.4**
ORLT				*e*Sg	**Sn**	**07 22 46.0**	**-0.7**
AKHS	**Akhisar**	**1.00**	**256**	P	**Pb**	**07 22 33.3**	**+0.3**
AKHS	**Akhisar**	**1.00**	**256**	*i* P	**Pb**	**07 22 33.3**	**+0.3**
AKS	**Akhisar**	**1.00**	**256**	*e*PG	**Pn**	**07 22 33.5**	**-0.4**
AKS	**Akhisar**	**1.00**	**256**	*e*Pg	**Pn**	**07 22 33.5**	**-0.4**
BALB	**Balikesir**	**1.04**	**300**	*e*PG	**Pn**	**07 22 34.5**	**0.0**
BALB				*e*SG	**Sn**	**07 22 49.6**	**+0.2**
BALB	**Balikesir**	**1.04**	**300**	*e*Pg	**Pn**	**07 22 34.5**	**0.0**
BALB				*e*Sg	**Sn**	**07 22 49.6**	**+0.2**
IGD	**Bursa**	**1.14**	**6**	*i* P	**Pg**	**07 22 34.4**	**-0.9**
CAVI	**Cavuskoy**	**1.24**	**29**	*e*PN	**Pb**	**07 22 37.2**	**0.0**
CAVI				*e*SN	**Sn**	**07 22 55.0**	**+0.7**
CAVI	**Cavuskoy**	**1.24**	**29**	*e*PN	**Pb**	**07 22 37.2**	**0.0**
MDNY	**Mudanya-Bursa**	**1.25**	**354**	*e*PN	**Pg**	**07 22 38.1**	**+0.7**
MDNY	**Mudanya-Bursa**	**1.25**	**354**	*e*PN	**Pg**	**07 22 38.1**	**+0.7**
IZI	**Iznik**	**1.25**	**15**	*e*PN	**Pg**	**07 22 38.1**	**+0.7**
IZI	**Iznik**	**1.25**	**15**	*e*PN	**Pg**	**07 22 38.1**	**+0.7**
KCTX	**Karacabey (Bur**	**1.26**	**335**	*e*PN	**Pg**	**07 22 38.0**	**+0.5**
KCTX	**Karacabey (Bur**	**1.26**	**335**	*e*PN	**Pg**	**07 22 38.0**	**+0.5**
BALY	**Balya**	**1.27**	**299**	P	**Pn**	**07 22 37.6**	**-0.1**
BALY	**Balya**	**1.27**	**299**	*i* P	**Pn**	**07 22 37.6**	**-0.1**
GEMT	**Gemlik**	**1.31**	**5**	*e*PN	**Pg**	**07 22 39.9**	**+1.3**
GEMT	**Gemlik**	**1.31**	**5**	*e*Pn	**Pg**	**07 22 39.9**	**+1.3**
BORA	**Eskisehir**	**1.32**	**55**	P	**Pn**	**07 22 37.9**	**-0.5**
BORA	**Eskisehir**	**1.32**	**55**	*i* P	**Pn**	**07 22 37.9**	**-0.5**
GONE	**Gonen-Balikesi**	**1.40**	**312**	*e*PN	**Pg**	**07 22 40.4**	**+0.1**
GONE	**Gonen-Balikesi**	**1.40**	**312**	*e*Pn	**Pg**	**07 22 40.4**	**+0.1**
ADVT	**Abdulvahap**	**1.41**	**22**	*e*PN	**Pg**	**07 22 40.7**	**+0.3**
ADVT	**Abdulvahap**	**1.41**	**22**	*e*Pn	**Pg**	**07 22 40.7**	**+0.3**
DNZL	**Cakiroluk**	**1.43**	**180**	P	**Pn**	**07 22 39.7**	**-0.4**
DNZL	**Cakiroluk**	**1.43**	**180**	*i* P	**Pn**	**07 22 39.7**	**-0.4**
ARMT	**Armutlu**	**1.45**	**354**	*e*PN	**Pg**	**07 22 41.9**	**+0.8**
ARMT	**Armutlu**	**1.45**	**354**	*e*Pn	**Pg**	**07 22 41.9**	**+0.8**
GPA	**Golpazari**	**1.51**	**39**	*e*PN	**Pn**	**07 22 41.5**	**+0.4**
GPA	**Golpazari**	**1.51**	**39**	*e*Pn	**Pn**	**07 22 41.5**	**+0.4**
EDC	**Edincik**	**1.53**	**323**	*e*PN	**Pg**	**07 22 42.7**	**0.0**
EDC	**Edincik**	**1.53**	**323**	*e*Pn	**Pg**	**07 22 42.7**	**0.0**
BOLV	**Bolvadin**	**1.54**	**105**	P	**Pb**	**07 22 42.0**	**-0.3**
BOLV	**Bolvadin**	**1.54**	**105**	*i* P	**Pb**	**07 22 42.0**	**-0.3**
GULT	**Gulveren**	**1.73**	**40**	*e*PN	**Pb**	**07 22 46.0**	**+0.5**
GULT	**Gulveren**	**1.73**	**40**	*e*Pn	**Pb**	**07 22 46.0**	**+0.5**
BUY	**Buyukada**	**1.73**	**2**	P	**Pn**	**07 22 43.8**	**-0.1**
BUY	**Buyukada**	**1.73**	**2**	*i* P	**Pn**	**07 22 43.8**	**-0.1**
AYDN	**Tasoluk**	**1.73**	**213**	P	**Pn**	**07 22 44.0**	**0.0**
AYDN	**Tasoluk**	**1.73**	**213**	*i* P	**Pn**	**07 22 44.0**	**0.0**
HRT	**Hereke**	**1.76**	**15**	*e*PN	**Pb**	**07 22 46.2**	**+0.1**
HRT	**Hereke**	**1.76**	**15**	*e*Pn	**Pb**	**07 22 46.2**	**+0.1**
BAGO	**Egridir - ISPA**	**1.77**	**129**	*i* P	**Pn**	**07 22 45.3**	**+0.7**
SPNC	**Sapanca-Adapaz**	**1.83**	**31**	*e*PN	**Pb**	**07 22 47.3**	**0.0**
SPNC	**Sapanca-Adapaz**	**1.83**	**31**	*e*Pn	**Pb**	**07 22 47.3**	**0.0**
GOLH	**Golhisar**	**1.93**	**168**	P	**Pn**	**07 22 46.7**	**-0.1**
GOLH	**Golhisar**	**1.93**	**168**	*i* P	**Pn**	**07 22 46.7**	**-0.1**
ISK	**Istanbul-Kandi**	**1.94**	**0**	*e*PN	**Pb**	**07 22 48.9**	**-0.2**
ISK	**Istanbul-Kandi**	**1.94**	**0**	*e*Pn	**Pb**	**07 22 48.9**	**-0.2**
SVRH	**Sivrihisar-ESK**	**1.94**	**80**	*e*PN	**Pb**	**07 22 48.4**	**-0.9**
SVRH	**Sivrihisar-ESK**	**1.94**	**80**	*e*Pn	**Pb**	**07 22 48.4**	**-0.9**
DGB	**˜zmir**	**2.01**	**238**	*i* P	**Pg**	**07 22 51.6**	**-0.3**
GCAM	**G?zelcaml?**	**2.02**	**226**	P	**Pb**	**07 22 51.1**	**+0.7**
GCAM	**G?zelcaml?**	**2.02**	**226**	*i* P	**Pb**	**07 22 51.1**	**+0.7**
URLA	**Izmir**	**2.07**	**249**	P	**Pb**	**07 22 51.2**	**-0.1**
URLA	**Izmir**	**2.07**	**249**	*i* P	**Pb**	**07 22 51.2**	**-0.1**
SILT	**Sile**	**2.08**	**12**	*e*PN	**Pb**	**07 22 50.2**	**-1.2**
SILT	**Sile**	**2.08**	**12**	*e*Pn	**Pb**	**07 22 50.2**	**-1.2**
MDUB	**Mudurnu**	**2.13**	**50**	*e*PN	**Pb**	**07 22 51.3**	**-1.2**
MDUB	**Mudurnu**	**2.13**	**50**	*e*Pn	**Pb**	**07 22 51.3**	**-1.2**
ZEY	**˜zmir**	**2.18**	**247**	*i* P	**Pg**	**07 22 55.3**	**+0.1**
KDHN	**Kadinhani**	**2.47**	**103**	P	**Pn**	**07 22 55.2**	**+0.9**
KDHN	**Kadinhani**	**2.47**	**103**	*i* P	**Pn**	**07 22 55.2**	**+0.9**
KESN	**Edirne-Kesan**	**2.49**	**314**	*i* S	**Pg**	**07 23 00.8**	**-0.3**
AKAS	**Kas**	**2.92**	**171**	P	**Pn**	**07 23 01.1**	**+0.6**
AKAS	**Kas**	**2.92**	**171**	*i* P	**Pn**	**07 23 01.1**	**+0.6**

NIED ***20*** *07:24:00, 37°.30N×141°.60E, h47km, Mw3.6 Best double couple: M0=2.55000×10^14 NP1:φs=144.00000°, δ=11.00000°, λ=18.00000°. NP2:φs=36.00000°, δ=87.00000°, λ=100.00000°.*
IDC ***20*** *07:24:39.4±2.0, 37°.44N×142°.08E, h0km, mb3.6/4, mb1 3.6/5, mb1mx3.4/63, mbtmp3.5/5, ML3.2/1, Error ellipse: s-maj=42.4km s-min=29.2km az=71.0*
JMA ***20*** *07:24:46.3±0.1, 37°.29N×141°.61E, h45km=2km, M3.7*
ISC 20 07:24:40.7±2.4,**37°.26N**±0°.06×**141°.78E**±0°.08,**h2**km±13km,
n19,σ0s**95**/21,**mb3.6**/4,**Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.73**	**279**	P	**Pn**	**07 24 58.4**	**+0.3**
JFK				S	**Sb**	**07 25 06.6**	**0.0**
ONAJ	**Iwakimizuishiy**	**0.80**	**259**	P	**Pn**	**07 24 59.6**	**+0.5**
ONAJ				S	**Sb**	**07 25 08.6**	**-0.1**
JMM	**Marumori**	**0.99**	**308**	P	**Pn**	**07 25 02.0**	**+0.3**
JHO	**Hitachi**	**1.17**	**237**	P	**Pn**	**07 25 04.6**	**+0.5**
JHO				S	**Sg**	**07 25 17.8**	**-0.3**
JFT	**Otama**	**1.18**	**283**	P	**Pn**	**07 25 05.4**	**+1.1**
JFT				S	**Sg**	**07 25 18.5**	**-0.1**
JIO	**Ouri**	**1.24**	**344**	P	**Pn**	**07 25 06.2**	**+1.1**
JIO				S	**Sg**	**07 25 20.1**	**-0.5**
JOU	**Okura**	**1.41**	**322**	P	**Pg**	**07 25 08.8**	**+1.0**
JOU				S	**Sg**	**07 25 25.9**	**-0.3**
MJAR	**Matsushiro Arr**	**2.95**	**257**	Pn	**Pn**	**07 25 31.0**	**+2.3**
	2.9nm,0.3s,baz=73,slow=15,SNR=15						
MJAR				Sn	**Sb**	**07 26 10.9**	**+0.4**
	4.0nm,0.3s,baz=75,slow=14,SNR=5.1						
MAT	**Matsushiro**	**2.95**	**257**	P	**Pb**	**07 25 32.2**	**-1.9**
MAT				*e*S	**Sn**	**07 26 05.4**	**+0.7**
H11N2	**WAKE ISLAND Hy 28.02**	**122**		T	T	08 00 11.6	
	baz=314,slow=75,SNR=6.8						
H11N1	**WAKE ISLAND Hy 28.02**	**122**		T	T	08 00 12.1	
	baz=314,slow=75,SNR=10.0						
H11N3	**WAKE ISLAND Hy 28.03**	**122**		T	T	08 00 32.4	
	baz=314,slow=75,SNR=9.2						
H11S1	**WAKE ISLAND Hy 28.74**	**124**		T	T	08 01 02.6	
	baz=316,slow=76,SNR=10						
H11S3	**WAKE ISLAND Hy 28.74**	**124**		T	T	08 01 06.3	
	baz=316,slow=76,SNR=8.8						
H11S2	**WAKE ISLAND Hy 28.76**	**124**		T	T	08 01 04.9	
	baz=316,slow=76,SNR=9.8						
MKAR	**Makanchi Array**	**44.25**	**302**	P	**P**	**07 32 51.1**	**-0.4**
	0.4nm,0.6s,baz=84,slow=10,SNR=7.4						
KURBB	**Kurchatov Arra**	**46.09**	**308**	P	**P**	**07 33 05.6**	**-0.5**
	0.9nm,0.4s,baz=82,slow=7.8,SNR=13						
BVAR	**Borovoye Array**	**50.64**	**312**	P	**P**	**07 33 40.3**	**-0.8**
	0.4nm,0.4s,baz=88,slow=10,SNR=2.7						
WRA	**Warramunga Arr**	**57.32**	**188**	P	**P**	**07 34 30.6**	**+0.4**
	0.2nm,0.4s,baz=6.4,slow=7.2,SNR=5.9						

NIED ***20*** *07:28:00, 37°.50N×141°.50E, h41km, Mw5.0 Best double couple: M0=3.92000×10^16 NP1:φs=199.00000°, δ=64.00000°, λ=-20.00000°. NP2:φs=298.00000°, δ=72.00000°, λ=-152.00000°.*
BJI ***20*** *07:28:43.2, 37°.12N×141°.51E, h37km, mb5.1/75, mB4.9/50, Ms4.5/72, Ms7 4.3/71*
MOS ***20*** *07:28:44.4±1.1, 37°.49N×141°.53E, h33km, mb5.3/89, MS4.2/19, Error ellipse: s-maj=6.7km s-min=4.5km az=95.4*
ISCJB ***20*** *07:28:45.8±0.4, 37°.43N±0°.02×141°.46E±0°.02, h38km±3km, mb5.1/304, MS4.4/57, Error ellipse: s-maj=3.5km s-min=2.5km az=138.5*
JMA ***20*** *07:28:46.4±0.1, 37°.45N×141°.48E, h41km±2km, M5.2*
JMA Felt IV J1.
IDC ***20*** *07:28:47.2±0.3, 37°.45N×141°.51E, h40km±2km, mb4.5/45, mb1 4.5/51, mb1mx4.5/63, mbtmp4.7/51, ML4.1/6, MS4.2/39, Ms1 4.2/39, ms1mx4.2/48, Error ellipse: s-maj=7.9km s-min=6.2km az=109.0*
NEIC ***20*** *07:28:48.1±0.5, 37°.44N×141°.41E, h43km±4km, mb5.2/211, Error ellipse: s-maj=3.6km s-min=2.4km az=134.0*
NEIC Felt at Fuchu, Narita and Tsukuba. Recorded [4 JMA] in Fukushima.
GCMT ***20*** *07:28:48.2±0.2, 37°.49N×141°.54E, h41km±1km, MW5.1/100, Moment Tensor Solution. s43,c51; s100,c162; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr=1.51±.20; Mθθ=1.83±.13; Mφφ=3.34±.14; Mrθ=2.85±.13; Mθφ=-2.72±.09; Mφr0.13±.11; Best double couple: M0=4.88200×10^16 NP1:φs=298.00000°, δ=73.00000°, λ=-144.00000°. NP2:φs=195.00000°, δ=56.00000°, λ=-21.00000°. Principal axes: T 4.6980, Plg11.0000°, Azm63.0000°; N 0.3660, Plg50.0000°, Azm320.0000°; P -5.0650, Plg38.0000°, Azm161.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
ISC 20 07:28:45.6±0.2,**37°.46N**±0°.03×**141°.59E**±0°.03,**h28**km±1km,
h28km:**pP-P**,**n880**,σ1s**48**/916,**mb5.2**/309,**MS4.4**/58,
43C-34D,**Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.57**	**261**	⇑P	**Pb**	**07 28 57.0**	**-0.2**
JFK				S	**Sb**	**07 29 04.2**	**-0.8**
ONAJ	**Iwakimizuishiy**	**0.72**	**241**	⇑P	**Pb**	**07 28 59.1**	**-0.5**
ONAJ				S	**Sb**	**07 29 07.8**	**-1.4**
JMM	**Marumori**	**0.75**	**303**	⇓P	**Pb**	**07 28 59.6**	**-0.5**
JMM				S	**Sb**	**07 29 08.8**	**-1.1**
JFT	**Otama**	**0.99**	**274**	⇑P	**Pn**	**07 29 03.7**	**0.0**
JFT				S	**Sb**	**07 29 15.6**	**-1.4**
JIO	**Ouri**	**1.01**	**349**	⇓P	**Pn**	**07 29 03.9**	**0.0**
JIO				S	**Sb**	**07 29 16.1**	**-1.3**
JHO	**Hitachi**	**1.17**	**224**	⇑P	**Pn**	**07 29 05.0**	**-1.1**
JHO				S	**Sn**	**07 29 17.9**	**-3.2**
MJAR	**Matsushiro Arr**	**2.85**	**252**	P	**Pn**	**07 29 29.9**	**+0.6**
	129nm,0.3s,baz=76,slow=15,SNR=844						
MJAR				S	**Sn**	**07 30 05.9**	**+3.3**
	150nm,0.3s,baz=149,slow=32,SNR=4.9						
MJAR				LR	LR	07 30 49.2	
	comp=Z,7μm,18.1s,baz=75,slow=44						
MAJO	**Matsushiro**	**2.85**	**252**	*c i*P	**Pn**	**07 29 30.2**	**+1.0**
MAJO	**Matsushiro**	**2.85**	**252**	*e*Pn	**Pn**	**07 29 30.3**	**+1.0**
MAT	**Matsushiro**	**2.85**	**252**	P	**Pn**	**07 29 29.9**	**+0.7**
MAT				S	**Sn**	**07 30 06.8**	**+4.1**
MJB9	**Matsu-Tunnel**	**2.85**	**252**	*e*Pn	**Pn**	**07 29 30.3**	**+1.0**
INU	**Inuyama**	**4.24**	**242**	*e*Pn	**Pn**	**07 29 49.4**	**+1.1**
JHJ2	**Mitsune**	**4.57**	**199**	*e*Pn	**Pn**	**07 29 53.2**	**+0.4**
JHJ2				*e*Sn	**Sn**	**07 30 42.9**	**-2.1**
JHJ	**Hachijo jima 2**	**4.57**	**199**	P	**Pn**	**07 29 53.6**	**+0.8**
	139nm,0.3s,baz=186,slow=4.6,SNR=14						
JHJ				S	**Sn**	**07 30 43.0**	**-2.0**
	608nm,0.3s,baz=300,slow=23,SNR=22						
JHJ				LR	LR	07 31 22.2	
	comp=Z,1μm,21.8s,baz=61,slow=34						
ERM	**Erimo**	**4.71**	**14**	*d i*P	**Pn**	**07 29 54.7**	**0.0**
ERM				pmax	pmax		
	comp=Z,286nm,1.2s						
ERM	**Erimo**	**4.71**	**14**	*e*Pn	**Pn**	**07 29 55.2**	**+0.5**
ERM				*e*Sn	**Sn**	**07 30 49.5**	**+1.1**
ASAJ	**Asahikawa**	**6.70**	**6**	P	**Pn**	**07 30 22.3**	**+0.3**
	comp=Z,7.2nm,0.3s,baz=218,slow=11,SNR=22						
ASAJ				S	**Sn**	**07 31 38.9**	**+1.6**
	comp=Z,15nm,0.3s,baz=276,slow=33,SNR=6.3						
YUK	**Yuzh-Kuril'sk**	**7.33**	**25**	*e*P	**Pn**	**07 30 29.3**	**-1.3**
YUK				*e*S	**Sn**	**07 31 48.7**	**-4.1**
YUK				pmax	pmax		
	comp=N,498nm,0.5s						
YUK				pmax	pmax		
	comp=E,558nm,0.5s						
YUK				pmax	pmax		
	comp=Z,622nm,0.5s						
YUK				MLR	MLR		
	comp=Z,2μm,18.0s						
YUK				MLR	MLR		
	comp=N,3μm,16.0s						
SHO	**Shikotan**	**7.54**	**30**	*e*P	**Pn**	**07 30 31.1**	**-2.5**
SHO				*e*S	**Sn**	**07 31 52.0**	**-6.1**
SHO				pmax	pmax		
	comp=Z,314nm,0.6s						
SHO				pmax	pmax		
	comp=N,53nm,0.2s						
SHO				pmax	pmax		
	comp=E,70nm,0.3s						
KUR	**Kuril'sk**	**9.09**	**29**	*e*P	**Pn**	**07 30 54.6**	**-0.2**
KUR				*e*S	**Sn**	**07 32 32.3**	**-3.8**
KUR				pmax	pmax		
	comp=Z,81nm,0.9s						
KUR				smax	smax		
	comp=E,489nm,0.7s						
KUR				smax	smax		
	comp=N,241nm,0.4s						
VLA	**Vladivostok**	**9.32**	**310**	⇑*i*P	**Pn**	**07 31 01.4**	**+3.4**
YSS	**Yuzh-Sakhalins**	**9.53**	**5**	⇑*e*P	**Pn**	**07 31 00.4**	**-0.4**
YSS				*e*S	**Sn**	**07 32 46.0**	**-0.9**
YSS				pmax	pmax		
	comp=Z,20nm,0.6s						
YSS				MLR	MLR		
	comp=Z,1μm,17.0s						
YSS				MLR	MLR		
	comp=N,1μm,13.0s						
YSS				MLR	MLR		
	comp=E,1μm,16.0s						
JNU	**Nakatsue**	**9.76**	**247**	P	**Pn**	**07 31 06.1**	**+2.0**
	comp=E,1.6nm,0.3s,baz=46,slow=15,SNR=44						
JNU				LR	LR	07 35 11.4	
	comp=E,2μm,20.4s,baz=74,slow=40						
USRK	**Ussuriysk Ar.**	**9.91**	**316**	P	**Pn**	**07 31 07.1**	**+1.1**
	comp=E,2.6nm,0.3s,baz=123,slow=14,SNR=25						
USRK				LR	LR	07 34 32.9	
	comp=E,2μm,20.7s,baz=122,slow=35						
CBIJ	**Chichi jima**	**10.34**	**177**	*e*Pn	**Pn**	**07 31 09.8**	**-2.3**
CBIJ				*e*Sn	Sn	07 32 57.8	-9.3
JCJ	**Chichijima**	**10.34**	**177**	P	**Pn**	**07 31 09.9**	**-2.1**
	comp=E,51nm,0.3s,baz=75,slow=6.3,SNR

DL2				pmax	pmax	
	comp=Z,90nm,0.7s					
DL2				pmax	pmax	
	comp=Z,190nm,4.3s					
DL2				LR	LR	
	comp=Z,1μm,17.6s					
DL2				LR	LR	
	comp=Z,360nm,18.4s					
DL2				LR	LR	
	comp=Z,1μm,18.7s					
SKR	**Severo-Kuril's**	**16.80**	**34**	*e*P	Pn	07 32 30.0 -8.7
SKR				pmax	pmax	
	comp=N,220nm,1.0s					
SKR				pmax	pmax	
	comp=E,220nm,1.0s					
SKR				pmax	pmax	
	comp=Z,220nm,1.0s					
SSE	**Sheshan**	**18.00**	**255**	P	**Pn**	**07 32 52.8 -0.8**
SSE				sP	**pP**	**07 33 00.8 -0.7**
SSE				pmax	pmax	
	comp=Z,41nm,0.8s					
SSE				pmax	pmax	
	comp=Z,130nm,4.0s					
SSE				LR	LR	
	comp=Z,670nm,15.8s					
SSE				LR	LR	
	comp=Z,710nm,15.8s					
SSE				LR	LR	
	comp=Z,670nm,13.6s					
PEA0	**Petropavlovsk-**	**19.25**	**30**	*e*P	**P**	**07 33 08.6 +1.0**
PEA0B	**Petropavlovsk-**	**19.25**	**30**	*e*P	**P**	**07 33 09.2 +1.6**
	comp=Z,116nm,1.1s					
PETK	**Petropavlovsk-**	**19.25**	**30**	P	**P**	**07 33 09.1 +1.5**
	comp=Z,0.7nm,0.3s,baz=205,slow=8.6,SNR=31					
PETK				LR	LR	07 40 58.3
	comp=Z,373nm,18.9s,baz=216,slow=38					
NJ2	**Nanjing**	**19.42**	**261**	*e*P	**P**	**07 33 07.6 -2.0**
NJ2				S	S	07 36 35.1 -12
NJ2				pmax	pmax	
	comp=Z,47nm,0.8s					
NJ2				LR	LR	
	comp=Z,670nm,18.4s					
NJ2				LR	LR	
	comp=Z,2μm,16.8s					
NJ2				LR	LR	
	comp=Z,1μm,15.2s					
PET	**Petropavlovsk**	**19.59**	**32**	⇓*i*P	**P**	**07 33 12.9 +1.7**
PET				*e*S	**S**	**07 36 48.5 -2.1**
PET				pmax	pmax	
	comp=Z,600nm,5.0s					
PET				pmax	pmax	
	comp=Z,200nm,12.6s					
PET				pmax	pmax	
	comp=Z,97nm,1.1s					
PET				MLR	MLR	
	comp=Z,500nm,19.0s					
PET				MLR	MLR	
	comp=Z,600nm,18.0s					
PET	**Petropavlovsk**	**19.59**	**32**	*e*P	**P**	**07 33 11.3 +0.1**
	comp=Z,100nm,1.1s					
TIA	**Tai'an**	**19.61**	**274**	⇓P	**P**	**07 33 10.0 -1.7**
TIA				pmax	pmax	
	comp=Z,170nm,2.1s					
TIA				LR	LR	
	comp=Z,760nm,13.5s					
TIA				LR	LR	
	comp=Z,770nm,15.2s					
BJI	**Beijing**	**19.97**	**285**	P	**P**	**07 33 12.5 -3.0**
BJI				S	**S**	**07 36 59.8 +1.2**
BJI				sS	**sS**	**07 37 13.1 +2.4**
BJI				PcP	**PcP**	**07 37 33.1 +2.0**
BJI				pmax	pmax	
	comp=Z,26nm,1.8s					
BJI				LR	LR	
	comp=Z,850nm,21.9s					
BJI				LR	LR	
	comp=Z,220nm,25.2s					
BJI				LR	LR	
	comp=Z,360nm,33.2s					
BJT	**Baijiatuau**	**19.97**	**285**	*e*P	**P**	**07 33 14.0 -1.6**
BJT				pmax	pmax	
	comp=Z,41nm,0.7s					
BJT	**Baijiatuau**	**19.97**	**285**	*e*P	**P**	**07 33 14.0 -1.6**
	comp=Z,41nm,0.7s					
YOJ	**Yonaguni jima**	**20.48**	**236**	*e*P	**P**	**07 33 17.3 -3.9**
YOJ				pmax	pmax	
	comp=Z,121nm,1.3s					
YOJ	**Yonaguni jima**	**20.48**	**236**	*e*P	**P**	**07 33 17.3 -3.9**
	comp=Z,121nm,1.3s					
TATO	**Taipei**	**21.17**	**240**	*e*P	**P**	**07 33 28.2 -0.4**
	comp=Z,97nm,1.2s					
YHNB	**Yeheng**	**21.44**	**239**	*e*P	**P**	**07 33 29.2 -2.4**
	comp=Z,36nm,0.7s					
NACB	**Ninganchiao**	**21.62**	**238**	*e*P	**P**	**07 33 32.8 -0.7**
	comp=Z,26nm,0.7s					
SSLB	**Suanglung**	**22.32**	**238**	*e*P	**P**	**07 33 36.9 -4.1**
	comp=Z,30nm,0.8s					
CLNS	**Chul'man**	**22.35**	**335**	*e*P	**P**	**07 33 43.1 +2.0**
CLNS				pmax	pmax	
	comp=Z,13nm,1.0s					
CLNS				pmax	pmax	
	comp=N,13nm,0.9s					
CLNS				pmax	pmax	
	comp=E,8.0nm,0.9s					
CLNS				MLR	MLR	
	comp=Z,610nm,16.0s					
CLNS				MLR	MLR	
	comp=E,440nm,16.0s					
CLNS				MLR	MLR	
	comp=N,401nm,14.0s					
YULB	**Yu-li**	**22.35**	**237**	*e*P	**P**	**07 33 35.9 -5.4**
	comp=N,19nm,0.7s					
TPUB	**Ta-pu**	**22.86**	**238**	*e*P	**P**	**07 33 42.5 -4.3**
	comp=N,68nm,0.7s					
TWG	**Pinlang**	**22.90**	**236**	*e*P	**P**	**07 33 44.6 -2.5**
	comp=N,230nm,0.9s					
MA2	**Magadan**	**22.91**	**12**	P	**P**	**07 33 46.5 -0.5**
	comp=N,16nm,0.6s,baz=224,slow=8.7,SNR=14					
MA2				LR	LR	07 42 32.5
	comp=N,483nm,21.6s,baz=216,slow=36					
MA2	**Magadan**	**22.91**	**12**	*e*P	**P**	**07 33 46.7 -0.3**
	comp=N,195nm,0.8s					
QZH	**Quanzhou**	**23.22**	**244**	⇑*i*P	P	07 33 41.8 -8.6
QZH				S	S	07 37 48.3 -12
QZH				pmax	pmax	
	comp=N,100nm,1.0s					
QZH				LR	LR	
	comp=N,2μm,19.9s					
QZH				LR	LR	
	comp=N,900nm,16.6s					
QZH				LR	LR	
	comp=N,1μm,22.8s					
HHC	**Hu-ho-hao-te**	**23.47**	**288**	*e*P	**P**	**07 33 50.3 -2.6**
HHC				S	**S**	**07 37 58.3 -6.4**
HHC				SS	**SnSn**	**07 38 51.0 +10**
HHC				pmax	pmax	
	comp=N,57nm,0.8s					
HHC				pmax	pmax	
	comp=N,360nm,4.0s					
HHC				LR	LR	
	comp=N,5μm,13.4s					
WHN	**Wuhan**	**23.56**	**261**	⇑*i*P	**P**	**07 33 53.0 -0.7**
WHN				S	**S**	**07 38 05.0 -1.0**
WHN				pmax	pmax	
	comp=N,88nm,0.6s					
WHN				LR	LR	
	comp=N,710nm,15.7s					
WHN				LR	LR	
	comp=N,2μm,14.4s					
WHN				LR	LR	
	comp=N,2μm,16.0s					
GUMO	**Guam**	**23.95**	**172**	P	**P**	**07 33 56.6 -0.8**
	comp=N,85nm,0.9s,baz=187,slow=18,SNR=3.1					
GUMO				pP	**sP**	**07 34 08.1 -1.0**
	comp=N,452nm,1.2s,baz=18,slow=5.4,SNR=6.6					
GUMO	**Guam**	**23.95**	**172**	*e*P	**P**	**07 33 53.8 -3.7**
	comp=N,527nm,1.2s					
GUMO				pP	**sP**	**07 34 08.1 -1.0**
YAK	**Yakutsk**	**25.69**	**347**	P	**P**	**07 34 12.0 -0.9**
	comp=N,2.6nm,0.4s,baz=348,slow=22,SNR=7.2					
YAK				pP	**sP**	**07 34 22.9 -1.7**
	comp=N,6.6nm,0.7s,baz=350,slow=21,SNR=2.7					
YAK				S	**S**	**07 38 36.5 -3.0**
	comp=N,1.3nm,0.3s,baz=153,slow=24,SNR=6.2					
YAK				LR	LR	07 44 35.5
	comp=N,812nm,18.0s,baz=146,slow=37					
YAK	**Yakutsk**	**25.69**	**347**	*e*P	**P**	**07 34 12.1 -0.8**
YAK				*e**PP	**pP**	**07 34 21.7 +0.6**
YAK				*e*PPP	PPP	07 34 55.2
YAK				*e*S	**S**	**07 38 34.0 -5.5**
YAK				*e**SS	**sS**	**07 38 48.7 -4.4**
YAK				*e*SSS	SSS	07 39 42.5
YAK				pmax	pmax	
	comp=E,7.0nm,0.9s					
YAK				pmax	pmax	
	comp=N,24nm,1.0s					
YAK				pmax	pmax	
	comp=Z,40nm,0.8s					
YAK				smax	smax	
	comp=E,88nm,1.5s					
YAK				smax	smax	
	comp=N,212nm,1.7s					
YAK				MLR	MLR	
	comp=E,851nm,22.0s					
YAK				MLR	MLR	
	comp=N,1μm,19.0s					
YAK				MLR	MLR	
	comp=Z,1μm,17.0s					
YAK	**Yakutsk**	**25.69**	**347**	*e*P	**P**	**07 34 12.9 0.0**
	comp=Z,105nm,0.7s					
YAK				pP	**sP**	**07 34 22.9 -1.7**
YAK				S	**S**	**07 38 36.5 -3.0**
SEY	**Seymchan**	**26.35**	**11**	P	**P**	**07 34 20.6 +1.8**
	comp=Z,54nm,1.1s,baz=199,slow=8.0,SNR=43					
SEY				pP	**sP**	**07 34 31.3 +0.8**
	comp=Z,62nm,1.0s,baz=202,slow=6.7,SNR=20					
SEY	**Seymchan**	**26.35**	**11**	⇓*i*P	**P**	**07 34 20.3 +1.4**
XAN	**Xi'an**	**26.66**	**273**	P	**P**	**07 34 20.3 -1.7**
XAN				pP	pP	07 34 30.5 +0.3
XAN				sP	sP	07 34 34.8 +1.1
XAN				PP	**PnPn**	**07 35 02.3 -1.0**
XAN				S	S	07 38 43.0 -12
XAN				pmax	pmax	
	comp=Z,34nm,0.8s					
XAN				pmax	pmax	
	comp=Z,38nm,2.7s					
XAN				LR	LR	
	comp=Z,410nm,17.9s					
XAN				LR	LR	
	comp=Z,300nm,16.0s					
XAN				LR	LR	
	comp=Z,280nm,16.9s					
ULN	**Ulaanbaatar**	**27.23**	**303**	*e*P	**P**	**07 34 26.8 -0.4**
ULN				pmax	pmax	
	comp=Z,12nm,0.6s					
ULN	**Ulaanbaatar**	**27.23**	**303**	*e*P	**P**	**07 34 26.8 -0.4**
	comp=Z,12nm,0.6s					
BOD	**Bodaibo**	**27.25**	**327**	⇑*i*P	**P**	**07 34 26.2 -0.8**
BOD				pmax	pmax	
	comp=Z,28nm,0.8s					
ENH	**Enshi**	**27.51**	**264**	*e*P	**P**	**07 34 28.4 -1.3**
	comp=Z,142nm,0.8s					
SONA1	**Songino Array**	**27.66**	**303**	*e*P	**P**	**07 34 30.5 -0.6**
SONM	**Songino Array**	**27.66**	**303**	P	**P**	**07 34 29.8 -1.3**
	comp=Z,9.9nm,0.6s,baz=102,slow=8.8,SNR=22					
SONM				LR	LR	07 45 53.6
	comp=Z,362nm,18.1s,baz=98,slow=37					
H11N2	**WAKE ISLAND Hy**	**28.25**	**122**	T	T	08 04 50.4
	baz=315,slow=75,SNR=544					
H11N1	**WAKE ISLAND Hy**	**28.26**	**122**	T	T	08 04 51.1
	baz=315,slow=75,SNR=2101					
H11N3	**WAKE ISLAND Hy**	**28.27**	**122**	T	T	08 04 51.8
	baz=315,slow=75,SNR=1970					
H11S1	**WAKE ISLAND Hy**	**28.98**	**124**	T	T	08 05 44.1
	baz=316,slow=76,SNR=1395					
H11S3	**WAKE ISLAND Hy**	**28.98**	**124**	T	T	08 05 54.8
	baz=316,slow=76,SNR=1206					
H11S2	**WAKE ISLAND Hy**	**28.99**	**124**	T	T	08 05 31.2
	baz=316,slow=76,SNR=1020					
ZAK	**Zakamensk**	**30.12**	**308**	*e*P	P	07 34 48.0 -4.8
ZAK				pmax	pmax	
	comp=Z,7.0nm,1.0s					
LZH	**Lanzhou**	**30.13**	**279**	*e*P	**P**	**07 34 51.9 -1.2**
LZH				pP	pP	07 35 02.8 +1.4
LZH				sP	sP	07 35 08.1 +3.2
LZH				PP	**PnPn**	**07 35 52.5 +1.7**
LZH				PcP	PcP	07 37 47.3 -6.8
LZH				*e*S	**S**	**07 39 45.1 -5.3**
LZH				sS	sS	07 40 06.1 +2.0
LZH				pmax	pmax	
	comp=Z,50nm,1.2s					
LZH				pmax	pmax	
	comp=Z,120nm,4.8s					
LZH				LR	LR	
	comp=Z,1μm,14.1s					
LZH				LR	LR	
	comp=Z,1μm,12.4s					
LZH				LR	LR	
	comp=Z,2μm,15.1s					
TLY	**Talaya**	**30.16**	**310**	P	**P**	**07 34 54.7 +1.7**
	comp=Z,7.8nm,0.7s,baz=34,slow=2.2,SNR=3.1					
TLY				LR	LR	07 47 35.5
	comp=Z,521nm,18.1s,baz=102,slow=38					
TLY	**Talaya**	**30.16**	**310**	*e*P	**P**	**07 34 55.9 +2.9**
TLY				*e*		07 36 04.7
TLY				*e*S	**S**	**07 39 55.2 +5.0**
TLY				pmax	pmax	
	comp=Z,7.0nm,0.7s					
TLY				MLR	MLR	
	comp=Z,383nm,16.0s					
TLY	**Talaya**	**30.16**	**310**	*e*P	**P**	**07 34 53.2 +0.1**
	comp=Z,7.8nm,0.8s					
GYA	**Guiyang**	**31.43**	**260**	P	**P**	**07 35 05.8 +1.2**
GYA				pP	sP	07 35 17.0 +0.7
GYA				PP	**PnPn**	**07 36 11.3 +3.5**
GYA				PcP	**PcP**	**07 38 00.8 +3.2**
GYA				S	**S**	**07 40 10.0 -0.7**
GYA				sS	sS	07 40 28.9 +4.5
GYA				ScP	**ScP**	**07 41 39.3 +0.6**
GYA				SS	**SnSn**	**07 41 58.0 +2.1**
GYA				ScS	**ScS**	**07 45 34.4 -2.2**
GYA				pmax	pmax	
	comp=Z,30nm,0.8s					
GYA				pmax	pmax	
	comp=Z,140nm,5.2s					
GYA				LR	LR	
	comp=Z,720nm,17.4s					
GYA				LR	LR	
	comp=Z,660nm,18.2s					
GYA				LR	LR	
	comp=Z,680nm,17.8s					
MOY	**Mondy**	**31.77**	**310**	*e*P	**P**	**07 35 06.8 -0.6**
CD2	**Chengdu**	**31.81**	**270**	P	**P**	**07 35 07.0 -0.8**
CD2				sP	sP	07 35 22.6 +3.0
CD2				PcP	**PcP**	**07 37 57.8 -0.7**
CD2				S	**S**	**07 40 14.8 -1.7**
CD2				sS	sS	07 40 33.3 +3.1
CD2				pmax	pmax	
	comp=Z,70nm,0.9s					
CD2				pmax	pmax	
	comp=Z,80nm,3.6s					
CD2				LR	LR	
	comp=Z,780nm,19.2s					
CD2				LR	LR	
	comp=Z,420nm,13.2s					
GTA	**Gaotai**	**32.57**	**287**	*e*P	**P**	**07 35 12.6 -1.9**
GTA				pP	pP	07 35 24.4 +1.6
GTA				sP	sP	07 35 28.5 +2.2
GTA				PcP	**PcP**	**07 38 04.4 +3.9**
GTA				S	**S**	**07 40 22.8 -5.6**
GTA				sS	sS	07 40 39.0 -3.1
GTA				pmax	pmax	
	comp=Z,6.0nm,0.8s					
GTA				pmax	pmax	
	comp=Z,63nm,6.9s					
GTA				LR	LR	
	comp=Z,710nm,19.0s					
GTA				LR	LR	
	comp=Z,440nm,20.9s					
GTA				LR	LR	
	comp=Z,470nm,20.0s					
QIZ	**Qiongzhong**	**33.23**	**245**	*e*P	**P**	**07 35 21.1 +0.9**
	comp=Z,29nm,1.1s					
BILL	**Bilibino**	**33.58**	**16**	⇓*e*P	**P**	**07 35 22.8 -0.1**
BILL				*e*		07 36 38.6
BILL				*e*PPP	PPP	07 36 49.0
BILL				pmax	pmax	
	comp=Z,30nm,2.5s					
BILL				MLR	MLR	
	comp=Z,481nm,23.0s					
BILL	**Bilibino**	**33.58**	**16**	*e*P	**P**	**07 35 22.9 +0.1**
	comp=Z,28nm,1.0s					
PATS	**Pohnpei**	**34.07**	**149**	*e*P	**P**	**07 35 29.2 +1.6**
	comp=Z,271nm,1.6s					
TIXI	**Tiksi**	**34.89**	**353**	P	**P**	**07 35 33.1 -1.0**
	comp=Z,3.6nm,0.6s,baz=144,slow=6.7,SNR=10					
TIXI				pP	**sP**	**07 35 45.1 -0.8**
	comp=Z,9.3nm,0.7s,baz=143,slow=5.9,SNR=9.2					
KMI	**Kunming**	**35.16**	**261**	P	**P**	**07 35 36.3 -1.0**
KMI				sP	sP	07 35 51.1 +2.0
KMI				PP	**PnPn**	**07 36 56.4 +1.2**
KMI				S	**S**	**07 41 04.3 -4.6**
KMI				sS	sS	07 41 23.3 +0.7
KMI				pmax	pmax	
	comp=Z,120nm,1.0s					
KMI				pmax	pmax	
	comp=Z,190nm,3.1s					
KMI				LR	LR	
	comp=Z,140nm,13.8s					
KMI				LR	LR	
	comp=Z,470nm,17.3s					
KMI				LR	LR	
	comp=Z,470nm,21.3s					
MYLDM	**Lahad Datu**	**38.43**	**219**	*e*P	**P**	**07 36 06.5 +1.7**
	comp=Z,71nm,0.9s					
SDKM	**Sandakan**	**38.70**	**221**	⇑P	**P**	**07 36 08.0 +0.8**
SKNT	**Sakolnakorn**	**38.83**	**249**	P	**P**	**07 36 07.7 -0.5**
	comp=Z,28nm,0.8s,comp=Z,5μm					
KKM	**Kota Kinabalu**	**38.88**	**223**	⇑P	**P**	**07 36 10.2 +1.4**
TSM	**Tawau**	**39.50**	**219**	⇓P	**P**	**07 36 15.6 +1.8**
CRAI	**Chiangrai**	**39.62**	**256**	P	**P**	**07 36 14.4 -0.4**
	comp=Z,227nm,0.8s,comp=Z,5μm					
GENI	**Genyem**	**39.87**	**182**	P	**P**	**07 36 18.3 +1.5**
	comp=Z,128nm,1.0s,comp=Z,5μm					
KHON	**Khomkaen**	**40.09**	**249**	P	**P**	**07 36 19.2 +0.5**
	comp=Z,19nm,0.8s					
TNA	**Tin City**	**40.42**	**30**	*e*P	**P**	**07 36 23.1 +2.2**
	comp=Z,64nm,1.0s					
WMQ	**Urumqi**	**40.77**	**296**	⇓*i*P	**P**	**07 36 24.8 +0.6**
WMQ				pP	sP	07 36 35.8 -0.3
WMQ				sP	pP	07 36 41.8 +9.1
WMQ				S	**S**	**07 42 30.4 -2.8**
WMQ				sS	sS	07 42 50.3 +3.2
WMQ				SS	**SS**	**07 45 34.8 +0.5**
WMQ				ScS	**ScS**	**07 46 26.6 -0.8**
WMQ				pmax	pmax	
	comp=Z,18nm,0.8s					
WMQ				pmax	pmax	
	comp=Z,70nm,4.0s					
WMQ				LR	LR	
	comp=Z,680nm,21.6s					
WMQ				LR	LR	
	comp=Z,220nm,21.6s					
WMQ				LR	LR	
	comp=Z,150nm,24.0s					
UTTA	**Uttaradit**	**40.93**	**253**	P	**P**	**07 36 25.1 -0.6**
	comp=Z,6.6nm,0.9s,comp=Z,51nm					
MRSI	**Marisa**	**41.02**	**211**	P	**P**	**07 36 26.1 -0.3**
	comp=Z,120nm,1.2s					
FAKI	**Fak Fak**	**41.10**	**194**	*e*P	**P**	**07 36 27.3 +0.3**
	comp=Z,61nm,1.0s					
LAMP	**Lampang**	**41.17**	**254**	P	**P**	**07 36 28.6 +0.9**
	comp=Z,7.1nm,0.7s					
PBKT	**Sadao Pong**	**41.33**	**251**	P	**P**	**07 36 32.9 +4.0**
	comp=Z,19nm,1.0s,comp=Z,1μm					
CHTO	**Chiang Mai**	**41.53**	**255**	P	**P**	**07 36 30.1 -0.5**
	comp=Z,66nm,0.8s					
CHTO	**Chiang Mai**	**41.53**	**255**	*e*P	**P**	**07 36 30.2 -0.5**
CHTO				pmax	pmax	
	comp=Z,10.0nm,0.8s					
CHTO	**Chiang Mai**	**41.53**	**255**	*e*P	**P**	**07 36 30.2 -0.5**
	comp=Z,9.9nm,0.8s					
ZAA0	**Zalesovo Array**	**41.73**	**312**	*e*P	**P**	**07 36 32.0 +0.1**
ZALV	**Zalesovo Beam**	**41.73**	**312**	P	**P**	**07 36 31.4 -0.5**
	comp=Z,12nm,0.7s,baz=91,slow=7.4,SNR=30					
ZALV				pP	**sP**	**07 36 42.3 -1.4**
	comp=Z,25nm,0.8s,baz=91,slow=6.4,SNR=11					
ZALV				LR	LR	07 54 32.7
	comp=Z,420nm,19.3s,baz=68,slow=37					
CM31	**Chiang Mai Arr**	**41.74**	**255**	*e*P	**P**	**07 36 31.4 -0.9**
CMAR	**Chiang Mai Arr**	**41.74**	**255**	P	**P**	**07 36 31.8 -0.6**
	comp=Z,3.7nm,0.3s,baz=44,slow=7.5,SNR=25					
CMAR				LR	LR	07 55 23.0
	comp=Z,90nm,18.7s,baz=59,slow=38					
CM01	**Chiang Mai Arr**	**41.75**	**255**	*e*P	**P**	**07 36 31.6 -0.8**
SANI	**Sanana**	**41.89**	**204**	P	**P**	**07 36 33.9 +0.4**
	comp=Z,128nm,1.0s,comp=Z,1μm					
SRAK	**Srakaew**	**42.15**	**247**	P	**P**	**07 36 32.2 -3.5**
	comp=Z,70nm,1.1s,comp=Z,617nm					
LSA	**Lhasa**	**42.31**	**275**	*e*P	**P**	**07 36 38.1 +0.6**
LSA				pmax	pmax	
	comp=Z,14nm,0.8s					
LSA	**Lhasa**	**42.31**	**275**	*e*P	**P**	**07 36 38.1 +0.6**
	comp=Z,14nm,0.8s					
RABL	**Rabaul**	**42.59**	**164**	*e*P	**P**	**07 36 39.4 +0.1**
	comp=Z,102nm,0.3s					
NVS	**Novosibirsk**	**42.65**	**313**	*e*P	**P**	**07 36 37.3 -2.0**
CHBT	**CHBT**	**42.78**	**245**	P	**P**	**07 36 44.8 +4.0**
	comp=Z,38nm,0.8s,comp=Z,3μm					
NRIK	**Noril'sk**	**42.94**	**335**	P	**P**	**07 36 40.3 -1.2**
	comp=Z,1.9nm,0.6s,baz=123,slow=6.8,SNR=6.4					
NRIK				pP	**sP**	**07 36 52.0 -1.4**
	comp=Z,5.4nm,0.5s,baz=110,slow=9.4,SNR=7.4					
NRIK				LR	LR	07 55 41.9
	comp=Z,567nm,19.3s,baz=108,slow=38					
PCI	**Palu**	**43.15**	**213**	P	**P**	**07 36 43.9 +0.1**
	comp=Z,97nm,1.3s,comp=Z,1μm					
SHL	**Shillong**	**43.55**	**269**	*e*P	**P**	**07 36 46.0 -1.2**
MK01	**Makanchi Array**	**44.01**	**302**	*e*P	**P**	**07 36 49.6 -0.9**
MK31	**Makanchi Array**	**44.01**	**302**	*e*P	**P**	**07 36 49.7 -0.8**
MK31				pmax	pmax	
	comp=Z,25nm,0.8s					
MK31	**Makanchi Array**	**44.01**	**302**	*e*P	**P**	**07 36 49.9 -0.6**
MKAR	**Makanchi Array**	**44.01**	**302**	P	**P**	**07 36 49.8 -0.7**
	comp=Z,19nm,0.7s,baz=88,slow=9.3,SNR=157					
MKAR				LR	LR	07 56 15.9
	comp=Z,156nm,19.6s,baz=85,slow=38					
SBUM	**Sibu**	**44.06**	**225**	⇑P	**P**	**07 36 52.1 +0.9**
SBUM	**Sibu**	**44.06**	**225**	*e*P	**P**	**07 36 51.3 +0.2**
	comp=Z,35nm,1.1s					
SRDT	**SRDT**	**44.10**	**250**	P	P	07 36 57.0 +5.5
	comp=Z,59nm,1.1s					
MAKZ	**Makanchi**	**44.22**	**302**	*e*P	**P**	**07 36 51.6 -0.5**
MAKZ				pmax	pmax	
	comp=Z,22nm,0.8s					
MAKZ	**Makanchi**	**44.22**	**302**	*e*P	**P**	**07 36 51.6 -0.5**
	comp=Z,22nm,0.8s					
PHET	**Kaeng Krachan**	**44.65**	**248**	P	**P**	**07 36 56.2 +0.4**
	comp=Z,26nm,0.8s,comp=Z,183nm					
KDI	**Kendari**	**44.82**	**207**	P	sP	07 37 10.8 +1.7
TT01	**Tatalina**	**44.99**	**35**	*e*P	**P**	**07 36 59.6 +1.5**
TTA	**Tatalina**	**45.00**	**35**	*e*P	**P**	**07 36 59.7 +1.5**
TTA				pmax	pmax	
	comp=Z,23nm,1.1s					
TTA	**Tatalina**	**45.00**	**35**	*e*P	**P**	**07 36 59.7 +1.5**
	comp=Z,22nm,1.1s					
TTSI	**Tana Toraja**	**45.09**	**212**	P	sP	07 37 16.2 +5.0
SVW2	**Sparrevohn**	**45.10**	**38**	*e*P	**P**	**07 36 59.9 +0.9**
	comp=Z,24nm,1.0s					
KURK	**Kurchatov**	**45.78**	**308**	P	**P**	**07 37 04.2 -0.2**
KURK				*PP	**sP**	**07 37 15.3 -1.1**
KURK				pmax	pmax	
	comp=Z,24nm,0.7s					
KURK				pmax	pmax	
	comp=Z,45nm,0.6s					
KURK	**Kurchatov**	**45.78**	**308**	*e*P	**P**	**07 37 03.8 -0.6**
	comp=Z,73nm,0.7s					
KURK				pP	**sP**	**07 37 15.2 -1.1**
KURBB	**Kurchatov Arra**	**45.85**	**308**	P	**P**	**07 37 04.2 -0.9**
	comp=Z,24nm,0.7s,baz=83,slow=8.3,SNR=193					
KURBB				pP	**sP**	**07 37 15.2 -1.7**
	comp=Z,45nm,0.6s,baz=81,slow=7.9,SNR=25					
KSM	**Kuching**	**45.94**	**226**	⇑P	**P**	**07 37 07.3 +1.2**
KSM	**Kuching**	**45.94**	**226**	*e*P	**P**	**07 37 06.8 +0.6**
	comp=Z,52nm,1.2s					
OHAK	**Old Harbor**	**46.35**	**43**	*e*P	**P**	**07 37 09.7 +0.9**
	comp=Z,48nm,0.9s					
RSO	**Redoubt South**	**46.49**	**39**	*e*P	**P**	**07 37 12.1 +2.0**
KDAK	**Kodiak Island**	**46.69**	**42**	*e*P	**P**	**07 37 12.6 +1.1**
KDAK				pmax	pmax	
	comp=Z,46nm,0.8s					
KDAK	**Kodiak Island**	**46.69**	**42**	*e*P	**P**	**07 37 12.6 +1.1**
	comp=Z,46nm,0.8s					
PDGK	**Podgornoye**	**46.70**	**298**	P	**P**	**07 37 11.1 -0.7**
PDGK				pmax	pmax	
	comp=Z,35nm,1.1s					
PPLA	**Purkeypile**	**46.74**	**35**	*e*P	**P**	**07 37 14.6 +2.5**
	comp=Z,52nm,1.1s					

CAST	Castle Rocks	46.80	34	eP	P	07 37 14.2	+1.8
	comp=Z,23nm,0.9s						
SPU	Mount Spurr	46.81	37	eP	P	07 37 13.2	+0.7
KAPI	Kappang	46.90	210	P	P	07 37 13.7	+0.2
	comp=Z,20nm,0.6s,baz=355,slow=13,SNR=9.8						
KAPI	Kappang	46.90	210	eP	P	07 37 13.7	+0.2
	comp=Z,191nm,1.5s						
PMG	Port Moresby	46.91	172	P	P	07 37 13.3	-0.3
	comp=Z,22nm,0.9s,baz=272,slow=1.6,SNR=4.0						
PMG	Port Moresby	46.91	172⇑	eP	P	07 37 13.7	+0.1
PMG				pmax	pmax		
	comp=Z,237nm,1.7s						
PMG	Port Moresby	46.91	172	eP	P	07 37 13.3	-0.3
	comp=Z,115nm,1.5s						
BPAW	Bear Paw Mtn.	47.30	33	eP	P	07 37 17.8	+1.6
	comp=Z,15nm,1.0s						
KTH	Kantishna Hill	47.32	34	eP	P	07 37 18.5	+2.0
	comp=Z,62nm,1.0s						
MLY	Manley	47.42	32	eP	P	07 37 19.0	+1.8
	comp=Z,37nm,0.9s						
KTGM	Kuala Trenggan	47.44	237	⇑P	P	07 37 17.4	-0.4
TRF	Thorofare Moun	47.61	34	eP	P	07 37 21.2	+2.4
	comp=Z,27nm,0.9s						
COLD	Coldfoot	47.72	29	eP	P	07 37 21.2	+1.8
	comp=Z,19nm,1.0s						
KKN	Kakani	47.78	276	eP	P	07 37 20.4	-0.3
	comp=Z,50nm,0.7s						
PKIN	Phulchoki	47.78	275	eP	P	07 37 20.1	-0.7
	comp=Z,26nm,0.7s						
SKLT	Songkhla	47.83	241	P	P	07 37 22.7	+1.8
	comp=Z,23nm,0.8s,comp=Z,485nm						
SURT	Suratani	47.88	245	P	P	07 37 22.5	+1.2
	comp=Z,13nm,1.0s						
RC01	Rabbit Creek A	47.94	38	eP	P	07 37 22.1	+0.9
	comp=Z,55nm,1.0s						
BWN	Browne	47.96	33	eP	P	07 37 22.0	+0.6
	comp=Z,199nm,1.2s						
DMN	Daman	48.00	275	eP	P	07 37 21.6	-0.8
	comp=Z,26nm,0.6s						
TRTT	Trang	48.02	243	P	P	07 37 23.6	+1.3
	comp=Z,16nm,0.9s						
KRAB	Krabi	48.10	244	P	P	07 37 23.3	+0.3
	comp=Z,64nm,0.7s,comp=Z,574nm						
GKN	Gorkha	48.19	276	eP	P	07 37 23.3	-0.5
PMR	Palmer	48.20	37	eP	P	07 37 24.2	+1.0
PMR				pmax	pmax		
	comp=Z,40nm,1.0s						
PMR	Palmer	48.20	37	eP	P	07 37 24.2	+1.0
	comp=Z,40nm,1.0s						
MCK	McKinley	48.21	34	eP	P	07 37 24.6	+1.3
MCK				pmax	pmax		
	comp=Z,36nm,1.0s						
MCK	McKinley	48.21	34	eP	P	07 37 24.6	+1.3
	comp=Z,36nm,1.0s						
RND	Reindeer	48.25	34	eP	P	07 37 24.7	+1.0
RND				pmax	pmax		
	comp=Z,48nm,1.0s						
RND	Reindeer	48.25	34	eP	P	07 37 24.7	+1.0
	comp=Z,48nm,1.0s						
WRH	Wood River Hil	48.56	33	eP	P	07 37 27.2	+1.3
	comp=Z,20nm,0.9s						
SML	Sawmill	48.57	37	eP	P	07 37 27.6	+1.5
SML				pmax	pmax		
	comp=Z,37nm,0.8s						
SML	Sawmill	48.57	37	eP	P	07 37 27.6	+1.5
	comp=Z,37nm,0.8s						
COLA	College	48.65	32c	iP	P	07 37 28.0	+1.4
COLA				pmax	pmax		
	comp=Z,23nm,1.2s						
COLA	College	48.65	32	eP	P	07 37 28.1	+1.6
	comp=Z,20nm,0.8s						
CCB	Clear Creek Bu	48.67	33	eP	P	07 37 27.9	+1.1
	comp=Z,30nm,1.2s						
PKDT	Phuket	48.94	244	P	P	07 37 31.0	+1.5
	comp=Z,52nm,0.7s,comp=Z,9μm						
SCM	Sheep Creek Mo	49.05	36	eP	P	07 37 31.4	+1.6
SCM				pmax	pmax		
	comp=Z,73nm,1.2s						
SCM	Sheep Creek Mo	49.05	36	eP	P	07 37 31.4	+1.6
	comp=Z,73nm,1.2s						
HDA	Harding Lake	49.05	33	eP	P	07 37 30.6	+0.9
	comp=Z,43nm,0.9s						
IL1	Eielson Array	49.06	33	eP	P	07 37 30.6	+0.8
ILAR	Eielson Array	49.06	33	P	P	07 37 30.3	+0.5
	comp=Z,12nm,0.8s,baz=269,slow=6.2,SNR=116						
ILAR				pP	sP	07 37 42.5	+0.7
	comp=Z,27nm,0.8s,baz=267,slow=5.8,SNR=22						
ILAR				LR	LR	07 58 58.5	
	comp=Z,127nm,20.5s,baz=289,slow=37						
ILB	Eielson Array	49.06	33	eP	P	07 37 30.7	+0.9
KOLN	Koldanda	49.12	276	eP	P	07 37 30.4	-0.6
	comp=Z,54nm,0.9s						
KULM	Kulim	49.15	240	⇓P	P	07 37 30.5	-0.6
MMRI	Maumere	49.30	206	eP	P	07 37 33.2	+1.1
	comp=Z,75nm,1.1s						
PYUN	Piuthan	49.45	277	eP	P	07 37 33.0	-0.5
	comp=Z,256nm,1.0s						
IPM	Ipoh	49.48	239	⇑P	P	07 37 33.0	-0.5
IPM	Ipoh	49.48	239	eP	P	07 37 33.1	-0.5
	comp=Z,14nm,0.7s						
TKM2	Tokmak 2	49.55	298	iP	P	07 37 33.7	-0.4
TKM2				pmax	pmax		
	comp=Z,28nm,0.7s						
TKM2	Tokmak 2	49.55	298	eP	P	07 37 34.2	+0.1
	comp=Z,26nm,0.7s						
FYU	Fort Yukon	49.67	30	eP	P	07 37 37.0	+2.6
	comp=Z,105nm,1.1s						
SOEI	Soe	49.69	203	P	P	07 37 43.5	+8.3
SOEI	Soe	49.69	203	eP	P	07 37 35.4	+0.1
	comp=Z,123nm,1.0s						
HNR	Honiara	49.72	156	LR	LR	07 57 41.3	
	comp=Z,325nm,20.3s,baz=339,slow=35						
KLU	Klutina	49.74	37	eP	P	07 37 36.9	+1.8
	comp=Z,30nm,0.8s						
PAX	Paxson	49.81	35	eP	P	07 37 36.0	+0.4
PAX				pmax	pmax		
	comp=Z,13nm,0.9s						
PAX	Paxson	49.81	35	eP	P	07 37 36.0	+0.4
	comp=Z,13nm,0.9s						
DIV	Divide	49.86	37	eP	P	07 37 37.1	+1.2
	comp=Z,69nm,1.0s						
CHKZ	Chkalovo	50.12	313	iP	P	07 37 37.0	-1.0
CHKZ				pmax	pmax		
	comp=Z,28nm,1.3s						
FRU	Bishkek	50.26	298	eP	pP	07 37 50.0	+2.1
FRU				e		07 38 00.0	
FRU				pmax	pmax		
	comp=Z,45nm,1.9s						
KSH	Kashi	50.36	294	P	P	07 37 43.8	+3.6
KSH				eP	sP	07 37 54.0	+1.8
KSH				eS	pP	07 37 57.8	+9.0
KSH				eP	PP	07 39 39.3	+3.7
KSH				S	S	07 44 53.3	+1.8
KSH				ScS	ScS	07 47 29.5	+0.1
KSH				pmax	pmax		
	comp=Z,68nm,3.7s						
KSH				LR	LR		
	comp=Z,370nm,13.3s						
KSH				LR	LR		
	comp=Z,450nm,17.1s						
KSH				LR	LR		
	comp=Z,540nm,16.8s						
DOT	Dot Lake	50.38	34	eP	P	07 37 40.8	+1.0
	comp=Z,58nm,1.0s						
BVA0	Borovoye Array	50.39	312	iP	P	07 37 39.5	-0.6
BVA0				pmax	pmax		
	comp=Z,9.0nm,0.8s						
BVAR	Borovoye Array	50.39	312	P	P	07 37 39.5	-0.6
	comp=Z,7.9nm,0.6s,baz=78,slow=9.9,SNR=29						
BVAR				pP	sP	07 37 50.9	-1.1
	comp=Z,6.3nm,0.6s,baz=81,slow=7.8,SNR=8.8						
AAK	Ala-Archa	50.41	298	eP	P	07 37 40.4	-0.2
AAK				pmax	pmax		
	comp=Z,10.0nm,0.8s						
AAK	Ala-Archa	50.41	298	eP	P	07 37 40.4	-0.2
	comp=Z,9.8nm,0.8s						
BMRM	Bremner River	50.44	37	eP	P	07 37 42.3	+1.9
	comp=Z,47nm,1.0s						
BRVK	Borovoye	50.45	312	P	P	07 37 38.6	-1.9
BRVK				pmax	pmax		
	comp=Z,23nm,0.9s						
BRVK	Borovoye	50.45	312	eP	P	07 37 40.2	-0.2
	comp=Z,19nm,1.0s						
RAGM	Ragged Mountai	50.48	38	eP	P	07 37 42.7	+2.0
	comp=Z,543nm,0.5s						
MENT	Mentasta	50.61	35	eP	P	07 37 43.6	+1.9
	comp=Z,40nm,1.0s						
EKS2	Erkin-Say	50.91	298	eP	P	07 37 44.0	-0.3
EKS2				pmax	pmax		
	comp=Z,11nm,0.8s						
EKS2	Erkin-Say	50.91	298	eP	P	07 37 44.0	-0.3
	comp=Z,11nm,0.8s						
MTN	Manton Dam	50.99	193	eP	P	07 37 44.3	-0.6
	comp=Z,40nm,0.9s						
COEN	Coen	51.16	178	eP	P	07 37 46.6	+0.4
	comp=Z,58nm,0.8s						
ZRNK	Zerenda	51.22	312	iP	P	07 37 45.4	-0.9
ZRNK				pmax	pmax		
	comp=Z,34nm,1.2s						
ZRNK	Zerenda	51.22	312	eP	P	07 37 45.6	-0.8
	comp=Z,38nm,1.3s						
TWSI	Taliwang, Sumb	51.45	212	P	P	07 37 47.8	-0.5
	comp=Z,45nm,0.8s						
EGAK	Eagle	51.51	32	eP	P	07 37 49.3	+1.1
	comp=Z,84nm,1.8s						
MNAS	Manas	51.85	299	P	P	07 37 51.1	-0.3
MNAS				pmax	pmax		
	comp=Z,35nm,0.8s						
PSI	Prapat	52.13	239	eP	P	07 37 53.2	-0.5
PSI				pmax	pmax		
	comp=Z,16nm,0.8s						
PSI	Prapat	52.13	239	eP	P	07 37 53.2	-0.5
	comp=Z,16nm,0.8s						
DAWY	Dawson	52.37	33	eP	P	07 37 56.4	+1.6
	comp=Z,36nm,1.5s						
BKNI	Bangkinang	52.55	235	P	sP	07 38 09.9	+1.3
BKNI	Bangkinang	52.55	235	eP	P	07 37 56.8	+0.2
	comp=Z,96nm,1.0s						
MLSI	Meulaboh, Aceh	52.83	243	P	P	07 37 59.8	+1.0
	comp=Z,55nm,0.8s						
KKAR	Karatay Array	53.03	300	eP	P	07 37 59.5	-0.5
KKAR	Karatay Array	53.03	300	eP	P	07 37 59.5	-0.5
MNSI	Mandailing Nat	53.16	237	P	sP	07 38 14.8	+1.7
THN	Thein Dam	53.25	286	eP	P	07 37 57.0	-4.6
UGM	Wanagama	53.67	219	eP	P	07 38 04.4	-0.5
	comp=Z,140nm,1.0s						
INK	Inuvik	53.95	27	P	P	07 38 07.4	+1.2
	comp=Z,16nm,0.9s,baz=291,slow=6.4,SNR=29						
INK				pP	sP	07 38 18.9	+0.6
	comp=Z,57nm,0.9s,baz=286,slow=7.4,SNR=36						
INK	Inuvik	53.95	27	eP	P	07 38 07.4	+1.2
INK				*PP	sP	07 38 18.9	+0.6
INK				pmax	pmax		
	comp=Z,67nm,0.9s						
INK	Inuvik	53.95	27	eP	P	07 38 07.4	+1.2
	comp=Z,68nm,0.9s						
INK				pP	sP	07 38 18.9	+0.6
GSI	Gunungsitoli	54.13	239	P	P	07 38 08.5	+0.2
	comp=Z,100nm,1.1s,comp=Z,825nm						
GSI	Gunungsitoli	54.13	239	eP	P	07 38 07.9	-0.4
	comp=Z,84nm,0.9s						
SVE	Sverdlovsk	54.92	318	eP	P	07 38 12.4	-1.1
SVE				pmax	pmax		
	comp=Z,30nm,1.0s						
SOKR	Solikamsk	56.07	322⇑	iP	P	07 38 30.8	+9.1
SOKR				pmax	pmax		
	comp=Z,21nm,1.4s						
ARU	Arti	56.13	318	P	P	07 38 22.0	-0.2
	comp=Z,9.2nm,0.5s,baz=72,slow=3.9,SNR=15						
ARU				LR	LR	08 03 43.7	
	comp=Z,905nm,20.2s,baz=147,slow=37						
ARU	Arti	56.13	318c	iP	P	07 38 21.6	-0.6
ARU						07 39 13.5	
ARU						07 40 22.4	
ARU				S	S	07 46 09.7	+0.4
ARU				SS	SS	07 49 52.3	-3.0
ARU				pmax	pmax		
	comp=Z,26nm,1.0s						
ARU				MLR	MLR		
	comp=Z,495nm,18.0s						
ARU	Arti	56.13	318	eP	P	07 38 21.8	-0.4
	comp=Z,43nm,1.2s						
FITZ	Fitzroy Crossi	57.27	198	eP	P	07 38 31.1	+0.5
	comp=Z,22nm,0.9s						
KBL	Kabul	57.39	291	eP	P	07 38 31.0	-0.8
KBL				pmax	pmax		
	comp=Z,16nm,1.0s						
KBL	Kabul	57.39	291	eP	P	07 38 31.0	-0.8
	comp=Z,16nm,1.0s						
CTA	Charters Tower	57.41	175	P	P	07 38 31.1	-0.4
	comp=Z,9.8nm,0.8s,baz=356,slow=7.6,SNR=6.3						
CTAO	Charters Tower	57.41	175	eP	P	07 38 31.5	0.0
CTAO				pmax	pmax		
	comp=Z,112nm,1.9s						
CTAO	Charters Tower	57.41	175	eP	P	07 38 31.5	0.0
	comp=Z,112nm,1.9s						
WRAB	Tennant Creek	57.49	188d	iP	P	07 38 31.2	-1.0
WRAB				pmax	pmax		
	comp=Z,122nm,1.0s						
WRAB	Tennant Creek	57.49	188	eP	P	07 38 31.5	-0.7
	comp=Z,145nm,1.6s						
WB2	Warramunga Arr	57.50	188	eP	P	07 38 31.5	-0.7
	comp=Z,174nm,1.6s						
WRA	Warramunga Arr	57.50	188	P	P	07 38 31.4	-0.8
	comp=Z,30nm,0.6s,baz=6.6,slow=7.5,SNR=293						
WRA				pP	sP	07 38 44.7	+0.4
	comp=Z,9.6nm,0.5s,baz=4.4,slow=7.5,SNR=5.4						
WRA				LR	LR	08 02 15.1	
	comp=Z,96nm,21.6s,baz=30,slow=35						
WRA	Warramunga Arr	57.50	188	iP	P	07 38 31.3	-0.9
WRA				pmax	pmax		
	comp=Z,30nm,0.6s						
AB31	Akbulak array	57.77	310	iP	P	07 38 33.0	-0.9
AB31				pmax	pmax		
	comp=Z,6.0nm,0.5s						
ABKAR	Akbulak array	57.77	310	eP	P	07 38 33.0	-0.9
DLBC	Dease Lake	58.21	38	P	P	07 38 39.8	+2.8
	comp=Z,8.1nm,0.9s,baz=282,slow=8.4,SNR=9.2						
DLBC				pP	sP	07 38 51.5	+2.5
	comp=Z,22nm,1.0s,baz=291,slow=8.0,SNR=15						
DLBC	Dease Lake	58.21	38	eP	P	07 38 39.8	+2.8
	comp=Z,44nm,1.1s						
DLBC				pP	sP	07 38 51.5	+2.5
AKTO	Aktyubinsk	58.49	312	P	P	07 38 38.7	-0.3
	comp=Z,13nm,0.9s,baz=72,slow=9.8,SNR=24						
AKTO				LR	LR	08 04 59.1	
	comp=Z,308nm,18.9s,baz=67,slow=37						
AKTO	Aktyubinsk	58.49	312	P	P	07 38 38.0	-1.0
AKTO				pmax	pmax		
	comp=Z,13nm,0.9s						
SPA0	Spitsbergen Ar	60.13	349	eP	P	07 38 52.0	+2.0
SPITS	Spitsbergen Ar	60.13	349	P	P	07 38 51.0	+1.1
	comp=Z,3.6nm,0.8s,baz=81,slow=5.2,SNR=6.4						
AS01	Alice Springs	61.22	188	eP	P	07 38 57.9	-0.1
AS31	Alice Springs	61.22	188	eP	P	07 38 57.5	-0.4
	comp=Z,7.0nm,0.8s						
ASAR	Alice Springs	61.23	188	P	P	07 38 57.5	-0.4
	comp=Z,20nm,0.8s,baz=11,slow=6.2,SNR=143						
ASAR				LR	LR	08 04 47.6	
	comp=Z,94nm,19.5s,baz=6.5,slow=35						
ASAR				PKP2ab		08 08 37.4	
	comp=Z,1.0nm,1.0s,baz=193,slow=3.1,SNR=6.9						
MBWA	Marble Bar	61.83	203	eP	P	07 39 01.6	-0.4
	comp=Z,277nm,1.4s						
EIDS	Eidsvold	63.13	170	eP	P	07 39 11.6	+1.0
	comp=Z,34nm,0.8s						
YKW3	Yellowknife Ar	63.34	30	eP	P	07 39 12.3	+0.6
	comp=Z,22nm,0.8s						
YKA	Yellowknife Ar	63.37	30	P	P	07 39 12.2	+0.3
	comp=Z,3.6nm,0.7s,baz=304,slow=6.6,SNR=67						
YKA				pP	sP	07 39 24.7	+0.7
	comp=Z,19nm,0.7s,baz=304,slow=6.8,SNR=60						
YKA				LR	LR	08 10 54.5	
	comp=Z,9.5nm,18.7s,baz=0.0,slow=40						
YKB5	Yellowknife Ar	63.37	30	eP	P	07 39 11.5	-0.4
KLMR	Klimovskoe	63.47	328	eP	P	07 39 10.9	-1.7
KLMR				e		07 39 48.7	
KLMR				pmax	pmax		
	comp=Z,16nm,0.9s						
ARCES	ARCESS Array B	63.65	339	P	P	07 39 12.6	-1.0
	comp=Z,5.0nm,0.8s,baz=49,slow=11,SNR=12						
ARCES				LR	LR	08 09 58.8	
	comp=Z,213nm,21.2s,baz=34,slow=39						
DZM	Mont Dzumac	63.67	154	eLR	LR	07 58 23.7	
	comp=Z,421nm,21.5s						
DZM	Mont Dzumac	63.67	154	eP	P	07 39 15.5	+1.1
	comp=Z,102nm,1.2s						
GEYT	Alibeck	63.75	299	P	P	07 39 14.9	0.0
	comp=Z,4.4nm,0.6s,baz=62,slow=3.5,SNR=5.2						
GEYT				pP	sP	07 39 26.1	-1.0
	comp=Z,15nm,0.8s,baz=58,slow=3.7,SNR=4.3						
GEYT				LR	LR	08 08 19.5	
	comp=Z,117nm,19.4s,baz=335,slow=37						
DAG	Danmarks Havn	65.36	355	iP	P	07 39 24.2	-0.5
	comp=Z,12nm,1.0s						
DAG				i		07 39 35.5	
DAG	Danmarks Havn	65.36	355	iP	P	07 39 24.2	-0.5
DAG				i		07 39 35.5	
DAG				pmax	pmax		
	comp=Z,12nm,1.0s						
NLWA	Neilton Lookou	66.33	48	eP	P	07 39 34.0	+2.5
	comp=Z,70nm,1.4s						
B05A	Bryant	66.92	46	P	P	07 39 36.7	+1.5
	baz=301						
B06A	Marblemount	67.14	46	eP	P	07 39 37.5	+1.0
	comp=Z,25nm,1.1s						
VRH	Novokhopyorsk	67.36	318	eP	pP	07 39 47.6	+0.9
VRH				pmax	pmax		
	comp=Z,20nm,0.9s						
VRH				MLR	MLR		
	comp=Z,360nm,13.0s						
KULLO	Kullorsuaq	67.54	5	iP	P	07 39 38.2	-0.5
	comp=Z,9.3nm,0.9s						
KULLO				i		07 39 50.1	
KULLO	Kullorsuaq	67.54	5	iP	P	07 39 38.2	-0.5
KULLO				i		07 39 50.1	
KULLO				pmax	pmax		
	comp=Z,9.0nm,0.9s						
OBN	Obninsk	67.84	323⇑	eP	P	07 39 42.2	+1.4
OBN				e		07 42 09.4	
OBN				pmax	pmax		
	comp=Z,12nm,0.6s						
OBN				MLR	MLR		
	comp=Z,231nm,16.0s						
F04A	Amboy	67.93	49	eP	P	07 39 43.5	+1.9
	comp=Z,20nm,1.1s						
LPSR	Galich'ya Gora	68.06	320	eP	pP	07 39 51.3	+0.1
LPSR				pmax	pmax		
	comp=Z,30nm,0.9s						
LPSR				MLR	MLR		
	comp=Z,600nm,19.0s						
COR	Corvallis	68.10	50	eP	P	07 39 44.6	+1.9
COR				pmax	pmax		
	comp=Z,59nm,1.1s						
COR	Corvallis	68.10	50	eP	P	07 39 44.6	+1.9
	comp=Z,59nm,1.1s						
ARMA	Armidale	68.17	171	eP	P	07 39 44.5	+1.3
	comp=Z,35nm,1.0s						
B08A	Colville Reser	68.44	45	eP	P	07 39 45.9	+1.0
	comp=Z,27nm,1.3s						
FIA1	FINESS Array S	68.50	332	eP	P	07 39 44.6	-0.3
FINES	FINESS Array B	68.50	332	P	P	07 39 44.5	-0.3
	comp=Z,5.8nm,0.8s,baz=33,slow=9.7,SNR=17						
FINES				pP	sP	07 39 56.4	-0.7
	comp=Z,10nm,0.7s,baz=40,slow=8.5,SNR=8.0						
FINES				LR	LR	08 11 53.0	
	comp=Z,303nm,19.8s,baz=7.5,slow=38						
I03D	Drain, OR	68.53	51	P	P	07 39 47.1	+1.7
	baz=302						
VSR	Storozhevoye	68.70	319	eP	pP	07 39 56.0	+0.8
VSR				pmax	pmax		
	comp=Z,50nm,1.6s						
VSR				MLR	MLR		
	comp=Z,490nm,16.0s						
H04A	Detroit Lake	68.73	50	eP	P	07 39 48.5	+1.8
	comp=Z,12nm,0.8s						
G05D	Wamic, OR	68.95	49	P	P	07 39 49.5	+1.4
	baz=302						
STKA	Stephens Creek	68.98	180	P	P	07 39 48.2	+0.1
	comp=Z,30nm,0.9s,baz=347,slow=7.0,SNR=56						
STKA				pP	sP	07 40 00.7	+0.4
	comp=Z,16nm,0.8s,baz=333,slow=9.1,SNR=8.0						
STKA				LR	LR	08 09 19.7	
	comp=Z,145nm,22.0s,baz=22,slow=35						
STKA	Stephens Creek	68.98	180	eP	P	07 39 48.2	+0.1
STKA				*PP	sP	07 40 00.7	+0.4
STKA				pmax	pmax		
	comp=Z,7.0nm,0.9s						
STKA	Stephens Creek	68.98	180	eP	P	07 39 48.2	+0.1
	comp=Z,6.5nm,0.9s						
STKA				pP	sP	07 40 00.7	+0.4
I04A	Tendick Farm,	69.06	50	P	P	07 39 50.2	+1.4
	baz=302						
C09A	Chrisman Ranch	69.34	45	eP	P	07 39 51.2	+0.8
	comp=Z,25nm,1.1s						
I05D	Terrebonne, OR	69.42	50	P	P	07 39 52.1	+1.0
	baz=303						
NEW	Newport	69.73	44	P	P	07 39 53.9	+1.1
	baz=304						
NEW	Newport	69.73	44	eP	P	07 39 53.9	+1.1
NEW				pmax	pmax		
	comp=Z,19nm,1.0s						
NEW	Newport	69.73	44	eP	P	07 39 53.9	+1.1
	comp=Z,19nm,1.0s						
GOF	Gofitskoye	69.91	312⇑	eP	pP	07 40 04.4	+1.6
YBH	Yreka Blue Hor	69.98	52	eP	P	07 39 55.7	+1.2
YBH				pmax	pmax		
	comp=Z,14nm,1.3s						
YBH	Yreka Blue Hor	69.98	52	eP	P	07 39 55.7	+1.2
	comp=Z,14nm,1.3s						
J05D	Fort Rock, OR	70.06	50	P	P	07 39 56.6	+1.5
	baz=303						
M02C	Callahan	70.07	53	P	P	07 39 56.7	+1.6
	baz=303						
BBOO	Buckleboo	70.10	185	eP	P	07 39 55.4	+0.4
	comp=Z,63nm,1.1s						
VSU	Vasula	70.16	330	P	P	07 39 57.0	+1.8
VSU				pmax	pmax		
	comp=Z,42nm,1.0s						
SUMG	Summit	70.26	0	iP	P	07 39 56.7	+0.6
	comp=Z,17nm,1.1s						
SUMG				i		07 40 08.6	
SUMG	Summit	70.26	0	iP	P	07 39 56.7	+0.6
SUMG				i		07 40 08.6	
SUMG				pmax	pmax		
	comp=Z,17nm,1.1s						
SUMG	Summit	70.26	0	eP	P	07 39 56.5	+0.4
	comp=Z,56nm,1.1s						
N02D	Trinity Center	70.39	53	P	P	07 39 58.4	+1.4
	baz=303						
M04C	Macdoel	70.50	52	P	P	07 39 58.8	+1.1
	baz=303						
K05A	Summer Lake	70.57	51	eP	P	07 40 00.4	+2.1
	comp=Z,113nm,1.8s						
ZEI	Tsey	70.64	309	eP	P	07 39 58.3	-0.4
ZEI				pmax	pmax		
	comp=Z,41nm,0.7s						
KVAR	Kislovodsk Arr	70.73	311	P	P	07 39 59.8	+0.7
	comp=Z,5.1nm,0.4s,baz=91,slow=22,SNR=9.7						
KVAR				pP	sP	07 40 10.7	-0.6
	comp=Z,39nm,0.7s,baz=274,slow=2.6,SNR=7.8						
KVAR				LR	LR	08 13 35.3	
	comp=Z,239nm,18.1s,slow=38						
KBZ	Khabaz	70.73	311	P	P	07 39 59.7	+0.8
	comp=Z,8.6nm,1.0s,baz=152,slow=1.6,SNR=9.0						
KBZ				pP	sP	07 40 10.7	-0.4
	comp=Z,28nm,0.8s,baz=55,slow=3.5,SNR=26						
KBZ				LR	LR	08 13 42.1	
	comp=Z,188nm,18.4s,baz=52,slow=38						
KIV	Kislovodsk	70.73	311⇑	iP	P	07 40 00.2	+1.1
KIV				eS	S	07 49 12.4	+0.6
KIV				pmax	pmax		
	comp=Z,13nm,0.8s						
KIV				MLR	MLR		
	comp=Z,223nm,18.0s						
KIV	Kislovodsk	70.73	311	eP	P	07 40 01.8	+2.7
	comp=Z,74nm,0.8s						
WSAR	Wadi Sarin	70.89	285	P	P	07 40 03.0	+2.7
	comp=Z,6.1nm,0.9s,baz=55,slow=4.7,SNR=4.2		

SWMT **Swartz Lake** 71.89 44 eP P 07 40 07.5 +1.4
WVOR **Wild Horse Val** 72.12 50 eP P 07 40 09.0 +1.5
WVOR pmax pmax
comp=Z,10.0nm,0.8s
WVOR **Wild Horse Val** 72.12 50 eP P 07 40 09.0 +1.5
comp=Z,9.9nm,0.8s
MSO **Missoula** 72.32 44 P P 07 40 08.9 +0.3
baz=306
MSO **Missoula** 72.32 44 eP P 07 40 09.8 +1.1
comp=Z,16nm,1.3s
NACGM **Naroch** 72.45 327 e P 07 40 18.0 +8.9
CAN **Canberra** 72.74 174 eP P 07 40 11.8 +0.8
CAN pmax pmax
comp=Z,52nm,1.4s
CAN **Canberra** 72.74 174 eP P 07 40 11.8 +0.8
comp=Z,52nm,1.4s
PAHR **Pah Rah Range** 73.20 53 eP P 07 40 15.7 +1.6
comp=Z,11nm,0.9s
MFID **Camas Ranch** 73.24 48 eP P 07 40 15.6 +1.4
comp=Z,45nm,1.7s
FFC **Flin Flon** 73.28 33 eP P 07 40 14.9 +0.9
FFC pmax pmax
comp=Z,50nm,0.9s
FFC **Flin Flon** 73.28 33 eP P 07 40 14.9 +0.9
comp=Z,50nm,0.9s
ANN **Anapa** 73.34 314 eP P 07 40 09.4 -5.1
ANN e*PP pP 07 40 20.6 -2.9
ANN e 07 40 24.9
ANN ePPP PPP 07 44 40.8
ANN eS S 07 49 32.9 -8.5
ANN eSSS SSS 07 57 44.3
ANN pmax pmax
comp=Z,21nm,1.5s
CMB **Columbia Colle** 73.51 55 eP P 07 40 17.5 +1.7
CMB pmax pmax
comp=Z,7.0nm,0.9s
CMB **Columbia Colle** 73.51 55 eP P 07 40 17.5 +1.7
comp=Z,6.8nm,0.9s
FCC **Fort Churchill** 73.56 27 eP P 07 40 15.8 +0.2
FCC pmax pmax
comp=Z,59nm,0.9s
FCC **Fort Churchill** 73.56 27 eP P 07 40 15.8 +0.2
comp=Z,59nm,0.9s
NWAO **Narrogin (SRO)** 73.61 201 eP P 07 40 16.4 +0.3
NWAO pmax pmax
comp=Z,383nm,2.0s
NWAO **Narrogin (SRO)** 73.61 201 eP P 07 40 16.4 +0.3
comp=Z,383nm,2.0s
NC405 **NORSAR Array S** 73.64 337 eP P 07 40 16.4 +0.4
LRM **Limekiln Ridge** 73.75 44 eP P 07 40 18.8 +1.5
HFS **Hagfors** 73.76 336 P P 07 40 16.8 +0.1
comp=Z,1.6nm,0.4s,baz=62,slow=4.2,SNR=17
HFS pP sP 07 40 28.6 -0.5
comp=Z,12nm,0.9s,baz=46,slow=6.4,SNR=8.0
NC204 **NORSAR Array S** 73.80 338 eP P 07 40 17.7 +0.6
NB201 **NORSAR Array S** 73.82 337 eP P 07 40 17.0 -0.2
NB2 **NORSAR Subarra** 73.85 337 P P 07 40 17.0 -0.3
comp=Z,19nm,1.0s,baz=39,slow=6.2
NB2 **NORSAR Subarra** 73.85 337 P P 07 40 17.0 -0.3
baz=39,slow=6.2
NOA **NORSAR Array B** 73.85 337 P P 07 40 17.1 -0.3
comp=Z,2.2nm,0.7s,baz=38,slow=6.0,SNR=7.0
NOA pP sP 07 40 28.4 -1.2
comp=Z,7.8nm,0.8s,baz=38,slow=5.8,SNR=12
NOA LR LR 08 16 06.9
comp=Z,353nm,20.7s,baz=45,slow=38
EGMT **Eagleton** 73.86 41 P P 07 40 18.5 +0.8
baz=308,SNR=11
EGMT **Eagleton** 73.86 41 eP P 07 40 18.5 +0.8
comp=Z,60nm,1.1s
DLMT **Dillon** 73.94 45 eP P 07 40 20.1 +1.8
comp=Z,52nm,1.4s
NBO02 **NORSAR Array S** 73.95 337 eP P 07 40 18.0 +0.1
HLID **Hailey** 73.98 47 P P 07 40 20.0 +1.3
baz=307,SNR=6.5
HLID **Hailey** 73.98 47 eP P 07 40 20.4 +1.8
comp=Z,14nm,1.3s
AKASG **Malin Array Be** 74.05 322 P P 07 40 17.7 -0.9
comp=Z,2.3nm,0.4s,baz=46,slow=6.1,SNR=17
AKASG pP sP 07 40 29.6 -1.2
comp=Z,18nm,0.7s,baz=47,slow=6.0,SNR=14
AKASG LR LR 08 15 53.5
comp=Z,321nm,18.1s,baz=50,slow=38
AKASG **Malin Array Be** 74.05 322 i P P 07 40 16.3 -2.3
AKASG pmax pmax
comp=Z,4.0nm,0.5s
AKBB **Malin Array Si** 74.05 322 eP P 07 40 19.9 +1.3
AKBB pmax pmax
comp=Z,26nm,0.8s
AKBB **Malin Array Si** 74.05 322 eP P 07 40 19.9 +1.3
comp=Z,26nm,0.8s
AK11 **Malin Array Si** 74.09 322 eP P 07 40 20.2 +1.4
MCMT **McKenzie Canyo** 74.13 45 eP P 07 40 20.3 +0.7
BMN **Battle Mountai** 74.14 51 eP P 07 40 21.7 +2.1
BMN pmax pmax
comp=Z,7.0nm,0.8s
BMN **Battle Mountai** 74.14 51 eP P 07 40 21.7 +2.1
comp=Z,7.4nm,0.8s
BOZ **Bozeman (W)** 74.31 44 P P 07 40 21.4 +1.0
baz=308,SNR=14
BOZ **Bozeman (W)** 74.31 44 eP P 07 40 21.8 +1.3
BOZ pmax pmax
comp=Z,40nm,1.4s
BOZ **Bozeman (W)** 74.31 44 eP P 07 40 21.8 +1.3
comp=Z,40nm,1.4s
NV01 **Mina Array Sit** 74.62 53 eP P 07 40 23.9 +1.4
NVAR **Mina Array Bea** 74.62 53 P P 07 40 23.9 +1.4
comp=Z,3.9nm,0.8s,baz=295,slow=5.8,SNR=27
NVAR pP sP 07 40 35.8 +1.0
comp=Z,6.3nm,0.8s,baz=295,slow=5.4,SNR=14
NVAR LR LR 08 06 05.5
comp=Z,102nm,21.8s,baz=303,slow=30
NV11 **Mina Array Sit** 74.72 53 eP P 07 40 24.8 +1.8
comp=Z,28nm,1.8s
QLMT **Earthquake Lak** 74.92 45 eP P 07 40 25.4 +1.2
SIM **Simferopol'** 75.12 316 P pP 07 40 36.0 +2.1
SIM pmax pmax
comp=Z,30nm,0.7s
ELK **Elko** 75.17 50 eP P 07 40 26.9 +1.3
ELK pmax pmax
comp=Z,19nm,1.8s
ELK **Elko** 75.17 50 eP P 07 40 26.9 +1.3
comp=Z,19nm,1.8s
RCTC **Rector, Farmer** 75.25 56 P P 07 40 27.4 +1.5
baz=306
YMR **Madison River** 75.28 45 eP P 07 40 28.2 +2.0
comp=Z,42nm,1.5s
GCMT **Greycliff** 75.30 43 eP P 07 40 27.9 +1.8
YFT **Old Faithful** 75.49 45 eP P 07 40 30.8 +3.3
comp=Z,22nm,1.0s
YPP **Pitchstone Pla** 75.62 45 eP P 07 40 29.7 +1.5
VES **Vestal, Richgr** 75.63 56 P P 07 40 29.2 +1.1
baz=306
LKWY **Lake** 75.67 45 eP P 07 40 31.5 +3.1
LKWY pmax pmax
comp=Z,15nm,0.8s
LKWY **Lake** 75.67 45 eP P 07 40 31.5 +3.1
comp=Z,15nm,0.8s
H17A **Grant Village** 75.67 45 P P 07 40 31.3 +2.8
baz=309,SNR=16
H17A **Grant Village** 75.67 45 eP P 07 40 31.6 +3.1
comp=Z,57nm,1.4s
IMW **Indian Meadow** 75.78 45 eP P 07 40 31.5 +2.4
comp=Z,53nm,1.5s
FLWY **Flagg Ranch** 75.80 45 eP P 07 40 31.9 +2.7
comp=Z,19nm,1.0s
MOOW **Moose Ponds** 75.98 45 eP P 07 40 32.0 +1.8
comp=Z,29nm,1.4s
KBSD **Kabsdagh** 76.06 306 eP pP 07 40 42.3 +2.8
GRAC **Grapevine Rang** 76.07 54 P P 07 40 31.6 +1.0
baz=307
LOHW **Long Hollow** 76.15 45 eP P 07 40 32.4 +1.3
comp=Z,18nm,1.4s
SORM **Soroca** 76.15 321 ⇑iP pP 07 40 41.8 +2.1
SORM **Soroca** 76.15 321 ⇑P pP 07 40 41.8 +2.1
SNOW **Snow King Moun** 76.15 46 eP P 07 40 33.0 +1.7
comp=Z,37nm,1.5s
REDW **Red Top Meadow** 76.16 46 eP P 07 40 33.3 +2.0
comp=Z,28nm,1.4s
DAC **Darwin (Calif)** 76.35 55 eP P 07 40 32.9 +0.5
DAC pmax pmax
comp=Z,7.0nm,1.3s
DAC **Darwin (Calif)** 76.35 55 eP P 07 40 32.9 +0.5
comp=Z,6.6nm,1.3s
AHID **Auburn Hatcher** 76.39 46 eP P 07 40 34.1 +1.6
comp=Z,34nm,1.5s

R11A **Troy Canyon, C** 76.39 52 P P 07 40 33.5 +0.8
baz=307,SNR=12
R11A **Troy Canyon, C** 76.39 52 eP P 07 40 33.8 +1.2
comp=Z,36nm,1.7s
DGMT **Dagmar** 76.42 39 P P 07 40 33.1 +0.7
baz=312,SNR=6.8
DGMT **Dagmar** 76.42 39 eP P 07 40 33.5 +1.1
comp=Z,48nm,1.0s
MPMC **Manual Prospec** 76.55 55 P P 07 40 34.5 +1.0
baz=307,SNR=5.6
LAO **LASA Array** 76.56 41 P P 07 40 34.2 +0.9
baz=311,SNR=5.7
LAO **LASA Array** 76.56 41 eP P 07 40 34.7 +1.4
comp=Z,54nm,1.1s
SFNV **Sufian** 76.69 306 eP pP 07 40 44.8 +1.7
FURC **Furnace Creek,** 76.71 54 P P 07 40 35.5 +1.4
baz=307,SNR=5.8
LRMC **Laurel Mtn Rad** 76.76 55 P P 07 40 35.4 +0.7
baz=307
TPNV **Topopah Spring** 76.81 54 P P 07 40 35.9 +0.9
baz=307,SNR=6.4
TPNV **Topopah Spring** 76.81 54 eP P 07 40 36.6 +1.6
TPNV pmax pmax
comp=Z,13nm,1.0s
TPNV **Topopah Spring** 76.81 54 eP P 07 40 36.6 +1.6
comp=Z,12nm,1.0s
HWUT **Hardware Ranch** 76.84 47 eP P 07 40 37.0 +1.9
comp=Z,26nm,1.1s
EDW2 **Edwards Air Fo** 76.91 56 P P 07 40 36.4 +0.9
baz=307
DUG **Dugway, Tooele** 76.97 49 P P 07 40 36.9 +1.1
baz=308,SNR=6.3
DUG **Dugway, Tooele** 76.97 49 eP P 07 40 37.7 +1.9
DUG pmax pmax
comp=Z,51nm,1.6s
DUG **Dugway, Tooele** 76.97 49 eP P 07 40 37.7 +1.9
comp=Z,51nm,1.6s
B25A **Knox Farm, Ray** 77.07 38 P P 07 40 36.7 +0.7
baz=313
BSD **Bornholm Skovb** 77.14 332 i P P 07 40 37.5 +1.3
BSD e 07 40 46.1
BSD **Bornholm Skovb** 77.14 332 i P P 07 40 37.5 +1.3
BSD e 07 40 46.1
A26A **Wade Farm, Ken** 77.19 37 P P 07 40 37.8 +1.1
baz=313,SNR=8.5
BW06 **Boulder Array** 77.27 46 P P 07 40 38.3 +0.7
baz=310,SNR=5.3
BW06 **Boulder Array** 77.27 46 eP P 07 40 38.6 +1.0
comp=Z,31nm,1.4s
PD31 **Pinedale Array** 77.27 46 eP P 07 40 38.6 +1.0
PDAR **Pinedale Array** 77.27 46 P P 07 40 38.5 +1.0
comp=Z,3.4nm,0.9s,baz=271,slow=2.7,SNR=19
PDAR pP sP 07 40 50.9 +1.0
comp=Z,7.7nm,0.7s,baz=269,slow=2.6,SNR=16
PDAR LR LR 08 10 53.8
comp=Z,93nm,22.0s,baz=326,slow=33
PSUT **Pine Spring** 77.36 51 eP P 07 40 39.8 +1.7
comp=Z,36nm,1.7s
C25A **Freod Ranch, W** 77.40 39 P P 07 40 38.1 +0.2
baz=313
GSC **Goldstone, Bar** 77.44 55 P P 07 40 39.3 +0.9
baz=307
B26A **Jensen Ranch,** 77.45 38 P P 07 40 39.1 +0.9
baz=313,SNR=6.4
JLU **Jordanelle** 77.54 48 eP P 07 40 40.9 +1.8
comp=Z,9.7nm,1.0s
NLU **North Lily Min** 77.57 49 eP P 07 40 40.8 +1.6
comp=Z,31nm,1.7s
KSRV **Kasrt alli** 77.74 306 eP pP 07 40 51.4 +2.5
D25A **Fairfield** 77.75 39 P P 07 40 40.7 +0.8
baz=313
SHPR **Sheep Range** 77.78 53 eP P 07 40 41.4 +1.0
comp=Z,33nm,1.7s
TLCR 77.86 318 ⇓iP pP 07 40 52.1 +2.7
TLCR 77.86 318 ⇓P pP 07 40 52.1 +2.7
KWP **Kalwaria Pacla** 77.86 324 eP P 07 40 42.8 +2.4
KWP **Kalwaria Pacla** 77.86 324 eP P 07 40 42.8 +2.4
C26A **Wahner Farm, P** 77.89 38 P P 07 40 40.7 +0.1
baz=313
TUQ **Turquoise Moun** 77.94 55 P P 07 40 41.8 +0.5
baz=308
A28A **Rude Farm, Bot** 78.03 36 P P 07 40 42.2 +0.8
baz=314,SNR=6.9
HEC **Hector,Ludlow** 78.03 55 P P 07 40 42.6 +0.9
baz=308
BUR08 **Bucovina Ar. S** 78.05 322 eP P 07 40 41.9 +0.3
BURAR **Bucovina Array** 78.06 322 ⇑iP P 07 40 41.8 +0.1
BURAR **Bucovina Array** 78.06 322 ⇑P P 07 40 41.8 +0.1
TESR **Tescani** 78.10 320 ⇑iP pP 07 40 53.7 +2.9
E25A **Miller Ranch,** 78.14 40 P P 07 40 43.0 +0.9
baz=313,SNR=5.9
CFR **Carcaliu** 78.22 318 ⇓iP pP 07 40 51.7 +0.3
CFR **Carcaliu** 78.22 318 ⇓P pP 07 40 51.7 +0.3
C27A **Sayler Ranch,** 78.26 38 P P 07 40 41.4 -1.3
baz=314
D26A **Manning** 78.27 39 P P 07 40 43.2 +0.4
baz=313
B28A **Dugan Ranch, T** 78.31 37 P P 07 40 43.4 +0.5
baz=314,SNR=7.8
ODBI **Odobesti** 78.39 319 ⇓iP pP 07 40 56.7 +4.3
VRI **Vrincioaia** 78.49 320 ⇑iP pP 07 40 56.9 +3.9
VRI **Vrincioaia** 78.49 320 ⇑P pP 07 40 56.9 +3.9
TMUT **Trail Mountain** 78.50 49 eP P 07 40 46.8 +2.2
comp=Z,7.8nm,0.9s
GMRC **Granite Mounta** 78.50 55 P P 07 40 44.8 +0.4
baz=308
F25A **Bowman** 78.50 40 P P 07 40 44.8 +0.7
baz=313
A29A **Manning Farm,** 78.51 36 P P 07 40 44.6 +0.6
baz=315,SNR=16
TIRR **Tirgusor** 78.55 318 ⇓iP pP 07 40 55.7 +2.4
TIRR **Tirgusor** 78.55 318 ⇓P pP 07 40 55.7 +2.4
KOLS **Kolonicke sedl** 78.56 324 eP P 07 40 46.4 +2.1
KOLS e 07 40 56.3
KOLS pmax pmax
comp=Z,7.0nm,1.0s
KOLS **Kolonicke sedl** 78.56 324 eP P 07 40 46.4 +2.1
KOLS e 07 40 56.3
E26A **Carlson Angus** 78.64 39 P P 07 40 45.4 +0.5
baz=313,SNR=6.2
HARR **Harsova** 78.66 318 ⇓iP P 07 40 42.9 -1.9
HARR **Harsova** 78.66 318 ⇓P P 07 40 42.9 -1.9
P17A **Butcher Ranch,** 78.67 49 eP P 07 40 47.0 +1.6
comp=Z,70nm,1.5s
BRTR **Keskin Array B** 78.67 312 P P 07 40 45.4 +0.1
comp=Z,1.7nm,0.9s,baz=106,slow=4.4,SNR=7.0
BRTR pP sP 07 40 56.8 -0.8
comp=Z,12nm,1.0s,baz=69,slow=4.3,SNR=20
BRTR LR LR 08 20 02.0
comp=Z,82nm,19.4s,baz=26,slow=39
BRTR **Keskin Array B** 78.67 312 i P P 07 40 44.5 -0.8
BRTR pmax pmax
comp=Z,2.0nm,0.7s
LCMT **Little Creek M** 78.68 52 eP P 07 40 47.3 +1.9
comp=Z,35nm,1.6s
PFO **Pinyon Flats O** 78.69 56 P P 07 40 45.4 0.0
baz=308
PFO **Pinyon Flats O** 78.69 56 eP P 07 40 49.4 +4.0
PFO pmax pmax
comp=Z,12nm,1.3s
PFO **Pinyon Flats O** 78.69 56 eP P 07 40 49.4 +4.0
comp=Z,12nm,1.3s
STHS **Stebnicka Huta** 78.69 325 eP P 07 40 47.7 +2.7
STHS e 07 40 57.5
STHS e 07 41 00.0
STHS pmax pmax
comp=Z,11nm,0.9s
STHS **Stebnicka Huta** 78.69 325 eP P 07 40 47.7 +2.7
STHS e 07 40 57.5
STHS e 07 41 00.0
MTPU **Mount Pierson** 78.70 51 eP P 07 40 48.0 +2.3
comp=Z,63nm,1.8s
TPFO **Pinon Flats** 78.70 56 P P 07 40 45.1 -0.4
baz=308
BELC **Belle Mtn. Jos** 78.76 56 P P 07 40 46.0 +0.2
baz=308
DRWC **Darouich** 78.76 308 eP pP 07 40 57.0 +2.2
OJC **Ojcow** 78.76 326 eP P 07 40 45.8 +0.4
OJC **Ojcow** 78.76 326 eP P 07 40 47.0 +1.6
OJC pmax pmax
comp=Z,23nm,0.8s
OJC **Ojcow** 78.76 326 eP P 07 40 47.0 +1.6
comp=Z,23nm,0.8s
UZH **Uzhgorod** 78.76 324 eP P 07 40 51.4 +6.0
UZH e 07 40 54.8
B29A **Wagenman Farm,** 78.77 36 P P 07 40 45.8 +0.3
baz=315,SNR=6.3
P18A **Preston Nutter** 78.87 48 eP P 07 40 49.0 +2.4
comp=Z,34nm,1.5s
A30A **Hoffart Farm,** 78.93 36 P P 07 40 46.8 +0.5
baz=316,SNR=9.9
KNB **Kanab** 78.94 52 eP P 07 40 49.0 +2.2
KNB pmax pmax
comp=Z,39nm,1.5s
KNB **Kanab** 78.94 52 eP P 07 40 49.0 +2.2
comp=Z,39nm,1.5s
F26A **Lodgepole** 78.96 40 P P 07 40 47.0 +0.4
baz=313
CRVS **Cervenica-Dubn** 78.96 324 eP P 07 40 48.3 +1.8
CRVS e 07 41 00.2
CRVS **Cervenica-Dubn** 78.96 324 eP P 07 40 48.3 +1.8
CRVS e 07 41 00.2
G25A **Newell** 79.02 41 P P 07 40 47.4 +0.4
baz=313
SRU **San Rafael Swe** 79.03 49 eP P 07 40 48.9 +1.6
SRU pmax pmax
comp=Z,51nm,1.5s
SRU **San Rafael Swe** 79.03 49 eP P 07 40 48.9 +1.6
comp=Z,51nm,1.5s
K22A **Casper** 79.05 44 P P 07 40 47.6 +0.3
baz=311
K22A **Casper** 79.05 44 eP P 07 40 48.2 +0.9
comp=Z,32nm,1.3s
ULM **Lac du Bonnet** 79.07 33 P P 07 40 47.2 +0.2
comp=Z,2.8nm,0.6s,baz=315,slow=6.7,SNR=4.9
ULM pP sP 07 40 59.2 -0.1
comp=Z,20nm,0.9s,baz=321,slow=6.4,SNR=13
ULM **Lac du Bonnet** 79.07 33 eP P 07 40 47.4 +0.3
ULM *PP sP 07 40 59.2 -0.1
ULM pmax pmax
comp=Z,52nm,1.2s
ULM **Lac du Bonnet** 79.07 33 eP P 07 40 47.4 +0.3
comp=Z,52nm,1.2s
ULM pP sP 07 40 59.2 -0.1
D28A **Regan** 79.08 38 P P 07 40 47.9 +0.7
baz=314
BR231 **Keskin MP Arra** 79.11 312 eP P 07 40 45.8 -1.8
E27A **Carson** 79.12 39 P P 07 40 48.1 +0.7
baz=314,SNR=6.9
NIE **Niedzica** 79.12 325 eP P 07 40 48.2 +0.8
NIE **Niedzica** 79.12 325 eP P 07 40 48.2 +0.8
MLR **Muntele Rosu** 79.15 320 P P 07 40 46.7 -1.1
comp=Z,0.5nm,0.7s,baz=198,slow=16,SNR=2.8
MLR pP sP 07 41 00.0 0.0
comp=Z,0.9nm,0.6s,baz=130,slow=19,SNR=6.5
MLR **Muntele Rosu** 79.15 320 ⇑iP pP 07 40 59.8 +3.0
MLR **Muntele Rosu** 79.15 320 eP P 07 40 50.1 +2.3
MLR *PP sP 07 41 00.0 0.0
MLR pmax pmax
comp=Z,12nm,1.0s
MLR **Muntele Rosu** 79.15 320 eP P 07 40 50.1 +2.3
comp=Z,12nm,1.0s
MLR pP sP 07 41 00.0 0.0
IRM **Iron Mountain** 79.22 55 P P 07 40 48.8 +0.5
baz=308
B30A **Myrvik Farm, E** 79.26 36 P P 07 40 48.5 +0.3
baz=316,SNR=13
H25A **Fruitdale** 79.31 41 P P 07 40 49.1 +0.5
baz=313
BC3 **Big Chuckawall** 79.33 56 P P 07 40 49.8 +0.8
baz=308
G26A **Maurine** 79.38 40 P P 07 40 50.3 +1.4
baz=313,SNR=6.3
RSSD **Black Hills** 79.42 42 P P 07 40 49.7 +0.3
baz=313
RSSD **Black Hills** 79.42 42 eP P 07 40 50.1 +0.7
RSSD pmax pmax
comp=Z,43nm,1.5s
RSSD **Black Hills** 79.42 42 eP P 07 40 50.1 +0.7
comp=Z,43nm,1.5s
E28A **Huff** 79.45 38 P P 07 40 49.9 +0.7
baz=314
W13A **Hualapai Mount** 79.46 54 eP P 07 40 50.9 +1.2
comp=Z,4.4nm,0.9s
B31A **Greenbush Farm** 79.60 36 P P 07 40 50.2 +0.2
baz=316,SNR=5.7
U15A **North Rim** 79.64 52 eP P 07 40 52.8 +2.0
comp=Z,55nm,1.7s
VOIR 79.65 320 ⇑iP P 07 40 52.5 +2.1
VOIR 79.65 320 ⇑P P 07 40 52.5 +2.1
D29A **Pettibone, Tap** 79.65 38 P P 07 40 50.6 +0.3
baz=315
I25A **Rochford** 79.65 42 P P 07 40 51.0 +0.4
baz=313
G27A **Dupree** 79.66 40 P P 07 40 51.1 +0.7
baz=314,SNR=6.1
ARNB **Al Arnab** 79.67 307 eP P 07 40 58.6 +7.9
LANS **Liptovska Anna** 79.69 326 eP pP 07 41 03.2 +3.7
LANS **Liptovska Anna** 79.69 326 e pP 07 41 03.2 +3.7
KECS **Kecovo** 79.71 325 eP pP 07 40 57.8 -1.8
KECS **Kecovo** 79.71 325 e pP 07 40 57.8 -1.8
O20A **White River Ci** 79.72 47 P P 07 40 50.1 -1.0
baz=311
O20A **White River Ci** 79.72 47 eP P 07 40 52.6 +1.5
comp=Z,17nm,1.0s
C30A **Mose, Pekin** 79.73 37 P P 07 40 50.8 +0.1
baz=316,SNR=6.0
H26A **Fairpoint** 79.75 41 P P 07 40 49.9 -1.1
baz=313,SNR=6.8
A32A **Rocking H Ranc** 79.77 35 P P 07 40 51.2 +0.3
baz=317,SNR=5.9
OKC **Ostrava-Krasne** 79.77 327 epP pP 07 41 02.7 +2.8
OKC AMS AMS 08 19 20.0
comp=Z,400nm,21.4s
OKC **Ostrava-Krasne** 79.77 327 eP pP 07 41 02.7 +2.8
OKC MLR MLR
comp=Z,400nm,21.4s
PDMCI **Parker Dam,Lak** 79.79 55 P P 07 40 51.6 +0.4
baz=309
KSP **Ksiaz** 79.81 328 eP P 07 40 53.3 +2.2
KSP **Ksiaz** 79.81 328 eP P 07 40 53.3 +2.2
DRGR 79.86 322 ⇓iP P 07 40 53.6 +2.1
DRGR 79.86 322 ⇓P P 07 40 53.6 +2.1
Y12C **Blythe** 79.88 55 P P 07 40 52.4 +0.6
baz=308
Y12C **Blythe** 79.88 55 eP P 07 40 52.5 +0.8
comp=Z,39nm,1.6s
E29A **Napoleon** 79.97 38 P P 07 40 52.0 -0.1
baz=315
BIDA **Albida** 79.98 306 eP P 07 41 00.4 +8.0
C31A **Landman Farms,** 80.01 36 P P 07 40 52.6 +0.3
baz=316,SNR=5.5
D30A **Buchanan** 80.02 37 P P 07 40 52.6 +0.3
baz=316,SNR=7.1
MORC **Moravsky Berou** 80.08 327 eP P 07 40 53.2 +0.6
MORC pmax pmax
comp=Z,55nm,0.9s
MORC **Moravsky Berou** 80.08 327 eP P 07 40 53.1 +0.6
comp=Z,55nm,0.9s
H27A **Howes** 80.10 41 P P 07 40 53.5 +0.7
baz=314,SNR=6.2
GLA **Glamis** 80.11 56 P P 07 40 52.8 -0.3
baz=308
DPC **Dobruska-Polom** 80.17 328 eP P 07 40 55.2 +2.1
DPC ePCP PcP 07 41 00.2 -0.1
DPC epP sP 07 41 05.4 0.0
DPC **Dobruska-Polom** 80.17 328 eP P 07 40 55.2 +2.1
DPC e 07 41 05.4
UPC **Upice** 80.18 328 AMS AMS 08 20 00.0
comp=Z,300nm,20.4s
HAWK **Haweek** 80.24 306 eP P 07 41 00.4 +6.6
A33A **Warroad** 80.25 34 P P 07 40 53.5 0.0
baz=318,SNR=9.4
PV09 **Paradox Valley** 80.26 49 eP P 07 40 56.3 +2.2
LOT **Lotru** 80.29 321 ⇓iP pP 07 41 05.0 +2.1
E30A **Jud** 80.38 38 P P 07 40 54.1 -0.2
baz=316
PSZ **Piszkesteto** 80.39 325 ⇑iP P 07 40 56.9 +2.5
PSZ **Piszkesteto** 80.39 325 ⇑P P 07 40 56.9 +2.5
PSZ **Piszkesteto** 80.39 325 eP P 07 40 56.5 +2.1
comp=Z,21nm,1.1s
PV10 **Paradox Valley** 80.39 49 eP P 07 40 56.7 +1.9
VYHS **Vyhne** 80.45 325 eP P 07 40 56.5 +1.9
VYHS e 07 41 06.5
VYHS pmax pmax
comp=Z,5.0nm,1.0s
VYHS **Vyhne** 80.45 325 eP P 07 40 56.5 +1.9
VYHS e 07 41 06.5
PV04 **Paradox Valley** 80.46 49 eP P 07 40 56.5 +1.4
N23A **Red Feather La** 80.54 45 P P 07 40 56.6 +1.0
baz=312,SNR=6.9
N23A **Red Feather La** 80.54 45 eP P 07 40 57.2 +1.7

comp=Z,43nm,1.3s
PHWY Pilot Hill 80.54 45 *e*P **P 07 40 56.1 +0.5**
comp=Z,31nm,1.6s
D31A Mcclaflin, Tow 80.56 37 P **P 07 40 55.2 +0.1**
baz=316
ZALF Zalf 80.63 304 *e*P P 07 41 01.8 +5.9
SIRR Siria 80.75 322 ⇓*i*P pP 07 41 08.5 +3.2
BRG Berggiesshubel 80.76 329 *e*P **P 07 40 57.4 +1.3**
comp=Z,5.8nm,0.9s
BRG *e* 07 41 07.2
comp=Z,7.2nm,0.8s
comp=N,222nm,14.9s
comp=E,273nm,18.0s
comp=Z,398nm,16.7s
BRG Berggiesshubel 80.76 329 *e*P **P 07 40 57.4 +1.3**
BRG *e* 07 41 07.2
BRG pmax pmax
comp=Z,6.0nm,0.9s
BRG MLR MLR
comp=N,222nm,14.9s
BRG MLR MLR
comp=E,273nm,18.0s
BRG MLR MLR
comp=Z,398nm,16.7s
PVCC Panska Ves 80.77 329 AMS AMS 08 19 40.0
comp=Z,300nm,19.0s
WUAZ Wupatki 80.79 52 P **P 07 40 55.8 -1.0**
baz=310
WUAZ Wupatki 80.79 52 *e*P **P 07 40 59.1 +2.2**
comp=Z,14nm,1.0s
CLL Collm 80.80 330 *i* P **P 07 40 57.8 +1.4**
comp=Z,14nm,1.0s
CLL *e* 07 41 01.0
CLL *e* 07 41 07.0
CLL *e* 07 41 21.0
CLL *e*S **S 07 50 59.0 -3.4**
CLL *e*(SS) 07 56 48.0
CLL *e*SSS SSS 07 59 48.0
CLL LmV 08 24 00.0
comp=Z,300nm,18.4s
CLL Collm 80.80 330 *i* P **P 07 40 57.8 +1.4**
CLL *e* 07 41 07.0
CLL *e*S **S 07 50 59.0 -3.4**
CLL pmax pmax
comp=Z,14nm,1.0s
CLL MLR MLR
comp=Z,300nm,18.4s
CLL Collm 80.80 330 *e*P **P 07 40 57.3 +0.9**
comp=Z,11nm,0.8s
E31A Nome 80.83 37 P **P 07 40 56.6 -0.1**
baz=316,SNR=7.1
PV01 Paradox Valley 80.83 49 *e*P **P 07 40 58.3 +1.2**
VRAC Vranov 80.84 327 ⇓*i*P pP 07 41 08.1 +2.4
VRAC Vranov 80.84 327 ⇓P pP 07 41 08.1 +2.4
B34A Aery, Baudette 80.92 34 P **P 07 40 56.6 -0.4**
baz=318,SNR=9.0
C33A Trail 80.95 35 P **P 07 40 57.2 -0.1**
baz=317,SNR=9.4
I28A Midland 81.01 41 P **P 07 40 58.5 +0.8**
baz=314,SNR=6.6
H29A Onida 81.06 40 P **P 07 40 58.5 +0.5**
baz=315
SMCO Snowmass 81.09 47 *e*P **P 07 40 59.9 +1.2**
comp=Z,17nm,1.3s
GOPC GO Pecny, Ondr 81.15 328 *e*P **P 07 41 00.1 +1.8**
GOPC AMS AMS 08 19 50.0
comp=Z,300nm,17.9s
GOPC GO Pecny, Ondr 81.15 328 *e*P **P 07 41 00.1 +1.8**
GOPC MLR MLR
comp=Z,300nm,17.9s
F31A Hecla 81.16 38 P **P 07 40 58.6 +0.2**
baz=316,SNR=7.0
PRU Pruhonice 81.19 329 *e*P **P 07 41 00.3 +1.8**
PRU *e*pP **sP 07 41 10.6 -0.2**
PRU AMS AMS 08 19 50.0
comp=Z,300nm,18.0s
PRU Pruhonice 81.19 329 *e*P **P 07 41 00.3 +1.8**
PRU *e* 07 41 10.6
PRU MLR MLR
comp=Z,300nm,18.0s
E32A Braaten, Kindr 81.19 37 P **P 07 40 58.4 -0.2**
baz=317
BZS Buzias 81.23 322 ⇓*i*P pP 07 41 10.3 +2.5
BZS Buzias 81.23 322 ⇓P pP 07 41 10.3 +2.5
G30A Faulkton 81.24 39 P **P 07 40 58.9 +0.1**
baz=316,SNR=6.9
TREC Trest 81.33 328 *e*P **P 07 41 01.2 +1.9**
TREC *e*pP **sP 07 41 11.3 -0.3**
TREC Trest 81.33 328 *e*P **P 07 41 01.2 +1.9**
TREC *e* 07 41 11.3
D33A AnnSam, Waubun 81.37 36 P **P 07 40 58.7 -0.8**
baz=318
ASF Jabal al Asfar 81.39 304 P **P 07 40 60.0 0.0**
comp=Z,2.0nm,0.7s,baz=352,slow=9.5,SNR=3.6
ASF pP **sP 07 41 12.1 -0.2**
comp=Z,6.6nm,0.8s,baz=340,slow=3.7,SNR=8.7
B35A Bob, Littlefor 81.42 34 P **P 07 40 59.3 -0.4**
baz=319,SNR=8.6
C34A RKJ Ranch, Bem 81.42 35 P **P 07 40 59.6 -0.2**
baz=318,SNR=8.6
X16A Lo Mia Camp, P 81.45 53 *e*P **P 07 41 02.3 +1.9**
comp=Z,9.4nm,1.0s
ISCO Idaho Springs 81.46 46 P **P 07 41 00.5 0.0**
baz=312
ISCO Idaho Springs 81.46 46 *e*P **P 07 41 02.1 +1.6**
ISCO pmax pmax
comp=Z,40nm,1.8s
ISCO Idaho Springs 81.46 46 *e*P **P 07 41 02.1 +1.6**
comp=Z,40nm,1.8s
MVCO Mesa Verde 81.47 49 P **P 07 41 00.6 +0.1**
baz=311
MVCO Mesa Verde 81.47 49 *e*P **P 07 41 02.1 +1.5**
comp=Z,56nm,1.6s
F32A Veblen 81.69 37 P **P 07 41 01.2 -0.1**
baz=317,SNR=5.3
D34A Park Rapids 81.71 35 P **P 07 41 01.2 -0.1**
baz=318,SNR=9.5
E33A Westby DABS, E 81.76 36 P **P 07 41 01.9 +0.3**
baz=317,SNR=8.3
MDVR Moldovita 81.79 321 ⇓*i*P **P 07 41 01.6 -0.2**
C35A Jirik Farms, M 81.80 34 P **P 07 41 01.3 -0.5**
baz=319,SNR=10
MMAI Mount Meron Ar 81.83 305 P **P 07 41 02.5 +0.1**
comp=Z,0.7nm,0.3s,baz=58,slow=6.3,SNR=4.0
MMAI pP **sP 07 41 14.3 -0.3**
comp=Z,24nm,0.8s,baz=46,slow=7.1,SNR=12
CSS Mathiatis 81.91 308 *e*P **P 07 41 02.2 -0.4**
comp=Z,4.7nm,0.7s
F33A 5 Mile Ranch, 82.11 37 P **P 07 41 03.6 +0.2**
baz=317,SNR=8.3
S22A 4UR Ranch, Cre 82.12 48 P **P 07 41 05.3 +1.2**
baz=312
S22A 4UR Ranch, Cre 82.12 48 *e*P **P 07 41 06.0 +2.0**
comp=Z,21nm,1.3s
URZ Urewera 82.16 152 P **P 07 41 02.7 -0.8**
comp=Z,7.5nm,0.8s,baz=334,slow=3.4,SNR=6.2
URZ Urewera 82.16 152 *e*P **P 07 41 02.5 -0.9**
comp=Z,12nm,1.0s
CONA Conrad Observa 82.20 327 *i* P **P 07 41 04.4 +0.4**
comp=Z,3.9nm,0.8s
D35A Remer 82.23 35 P **P 07 41 03.5 -0.6**
baz=319,SNR=7.9
KHC Kasperske Hory 82.25 329 *e*P **P 07 41 05.2 +1.0**
KHC *e*PCP **PcP 07 41 09.5 0.0**
KHC *e*pP **sP 07 41 16.0 -0.5**
KHC Kasperske Hory 82.25 329 *e*P **P 07 41 05.2 +1.0**
KHC *e* 07 41 16.0
KHC Kasperske Hory 82.25 329 *e*P **P 07 41 04.1 -0.1**
comp=Z,4.1nm,0.7s
C36A Pine Crest Far 82.27 34 P **P 07 41 03.9 -0.3**
baz=319
Q24A Divide 82.29 46 P **P 07 41 04.2 -0.7**
baz=313
J30A Dallas 82.35 40 P **P 07 41 04.9 +0.1**
baz=316
GEC2 GERESS Array S 82.42 328 *e*P **P 07 41 06.1 +0.9**
GEC2 pmax pmax
comp=Z,6.0nm,0.7s
GEC2 GERESS Array S 82.42 328 *e*P **P 07 41 06.1 +0.9**
comp=Z,6.3nm,0.7s
GERES GERESS Array B 82.42 328 P **P 07 41 04.4 -0.7**
comp=Z,2.9nm,0.9s,baz=28,slow=6.0,SNR=14
GERES pP **sP 07 41 16.7 -0.8**
comp=Z,4.4nm,0.6s,baz=35,slow=7.4,SNR=12
GERES LR LR 08 22 01.4
comp=Z,274nm,18.4s,baz=20,slow=39
GEA0 GERESS Array S 82.43 328 *e*P **P 07 41 04.8 -0.3**

E35A Pequot Lakes 82.46 35 P **P 07 41 05.1 -0.2**
baz=318,SNR=6.7
G33A Ortonville 82.52 37 P **P 07 41 05.7 +0.2**
baz=317,SNR=7.2
D36A Goodland 82.56 34 P **P 07 41 05.6 -0.2**
baz=319,SNR=6.8
C37A Embarrass 82.58 33 P **P 07 41 05.7 -0.1**
baz=320,SNR=8.5
OGNE Ogallala 82.68 43 P **P 07 41 06.8 +0.2**
baz=314
OGNE Ogallala 82.68 43 *e*P **P 07 41 07.6 +1.0**
comp=Z,136nm,1.8s
EYMN Ely 82.71 33 P **P 07 41 06.5 0.0**
baz=320
EYMN Ely 82.71 33 *e*P **P 07 41 06.8 +0.3**
comp=Z,43nm,1.0s
H33A Prehn Over Nor 82.74 38 P **P 07 41 07.6 +0.8**
baz=317,SNR=6.9
K30A Basset, 82.75 41 P **P 07 41 07.5 +0.6**
baz=316,SNR=5.4
G34A Benson 82.86 37 P **P 07 41 07.5 +0.2**
baz=318,SNR=7.2
ARSA Arzberg 82.86 326 *i* PcP **P 07 41 09.0 +1.6**
comp=Z,5.6nm,1.1s
D37A Cotton 82.90 34 P **P 07 41 08.4 +0.9**
baz=320,SNR=6.9
SDCO Great Sand Dun 82.90 47 P **P 07 41 09.1 +1.0**
baz=313,SNR=5.5
SDCO Great Sand Dun 82.90 47 *e*P **P 07 41 09.8 +1.6**
comp=Z,11nm,1.1s
F35A Swanville 82.91 36 P **P 07 41 08.1 +0.5**
baz=318,SNR=7.0
MOA Molln 82.95 327 *i* PcP **P 07 41 10.2 +2.4**
comp=Z,9.3nm,1.5s
E36A McGregor 83.02 35 P **P 07 41 08.3 +0.1**
baz=319
J32A Parkston 83.15 39 P **P 07 41 08.9 0.0**
baz=317
TUC Tucson 83.22 54 P **P 07 41 10.4 +0.8**
baz=310
K31A O'Neill 83.23 40 P **P 07 41 09.7 +0.4**
baz=316,SNR=5.9
F36A Milaca 83.39 35 P **P 07 41 10.9 +0.8**
baz=319,SNR=5.2
C39A Grand Marais 83.39 32 P **P 07 41 09.8 -0.2**
baz=321
G35A Watkins 83.42 36 P **P 07 41 10.8 +0.5**
baz=318,SNR=8.1
ECSD EROS Data Cent 83.50 38 P **P 07 41 11.1 +0.4**
baz=317,SNR=5.7
ECSD EROS Data Cent 83.50 38 *e*P **P 07 41 10.9 +0.2**
comp=Z,21nm,0.8s
L31A Butterfield Fa 83.50 41 P **P 07 41 11.0 +0.2**
baz=316,SNR=5.6
SOKA Soboth 83.52 326 *i* P **P 07 41 11.3 +0.5**
comp=Z,14nm,1.4s
K32A Verdigre 83.60 40 P **P 07 41 11.5 +0.3**
baz=316
J33A Davis 83.63 39 P **P 07 41 11.5 +0.2**
baz=317
H35A Sunnyside Ranc 83.65 37 P **P 07 41 12.1 +0.7**
baz=318,SNR=5.2
KSCO Kaye Shedlock' 83.69 45 P **P 07 41 12.9 +1.0**
baz=314
KSCO Kaye Shedlock' 83.69 45 *e*P **P 07 41 12.8 +0.9**
comp=Z,28nm,1.3s
OBKA Obir 83.86 326 *i* PcP **P 07 41 15.8 +3.2**
comp=Z,4.9nm,0.9s
KBA Koelnbreinsper 83.95 327 *i* PcP **P 07 41 14.0 +0.9**
comp=Z,3.4nm,0.7s
T25A Trinidad 83.95 47 P **P 07 41 14.5 +1.1**
baz=313
T25A Trinidad 83.95 47 *e*P **P 07 41 14.9 +1.5**
comp=Z,27nm,1.1s
LAZ Ladron 84.16 51 *e*P **P 07 41 16.3 +1.8**
MYKA Terra Mystica 84.17 327 *i* pP pP 07 41 24.9 +1.7
comp=Z,8.3nm,0.6s
H36A Jessenland, He 84.17 36 P **P 07 41 14.5 +0.4**
baz=319,SNR=9.5
SPMN Marine on St. 84.20 35 P **P 07 41 14.3 0.0**
baz=320,SNR=7.6
SPMN Marine on St. 84.20 35 *e*P **P 07 41 14.5 +0.3**
comp=Z,44nm,1.3s
ANMO Albuquerque 84.21 50 P **P 07 41 15.5 +0.7**
baz=312
ANMO Albuquerque 84.21 50 ⇓*e*P **P 07 41 16.5 +1.8**
ANMO pmax pmax
comp=Z,8.0nm,1.3s
ANMO Albuquerque 84.21 50 *e*P **P 07 41 16.1 +1.3**
comp=Z,20nm,1.1s
EIL Elat 84.26 303 P **P 07 41 14.2 -0.6**
comp=Z,8.4nm,1.1s,baz=9.7,slow=8.9,SNR=4.7
EIL pP **sP 07 41 26.4 -0.8**
comp=Z,20nm,0.8s,baz=332,slow=5.1,SNR=14
ABTA Abfaltersbach 84.56 328 *i* pP pP 07 41 27.3 +2.1
comp=Z,6.1nm,0.6s
BNM Barren Site 84.64 51 *e*P **P 07 41 18.6 +1.6**
H37A Dierke Farm, C 84.64 36 P **P 07 41 17.9 +1.4**
baz=320,SNR=8.6
PPT Papeete 84.70 117 LR LR 08 13 49.2
comp=Z,116nm,19.7s,baz=318,slow=32
RETA Reute 84.71 329 *i* P **P 07 41 17.0 +0.1**
comp=Z,9.3nm,0.9s
PPT2 Papeete2 84.72 117 *e*LR LR 08 07 58.5
PPT2 Papeete2 84.72 117 *e*T T 09 14 33.5
comp=Z,3.2nm,0.3s
PDG Podgorica 84.72 321 ⇑*i*P pP 07 41 28.2 +2.2
319A Douglas 84.80 54 *e*P **P 07 41 19.4 +1.7**
comp=Z,20nm,1.1s
I37A Lemond, Waseca 84.84 36 P **P 07 41 18.0 +0.5**
baz=319,SNR=11
TIAR Tiarei 84.86 117 *e*T T 09 14 43.9
comp=Z,3.6nm,0.2s
SCHQ Schefferville 84.89 16 P **P 07 41 16.7 -0.9**
comp=Z,3.0nm,0.8s,baz=350,slow=8.2,SNR=4.2
SCHQ pP **sP 07 41 29.8 -0.1**
comp=Z,16nm,0.7s,baz=357,slow=5.9,SNR=21
SCHQ LR LR 08 20 18.7
comp=Z,160nm,21.7s,baz=329,slow=36
121A Cookes Peak, D 84.99 53 P **P 07 41 18.6 -0.1**
baz=312
121A Cookes Peak, D 84.99 53 *e*P **P 07 41 20.4 +1.7**
comp=Z,16nm,1.1s
BFO Black Forest 85.00 331 *e*P **P 07 41 18.9 +0.6**
BFO pmax pmax
comp=Z,23nm,0.9s
BFO Black Forest 85.00 331 *e*P **P 07 41 18.9 +0.6**
comp=Z,23nm,0.9s
FETA Feichten 85.09 329 *i* PcP **P 07 41 19.9 +0.9**
comp=Z,6.0nm,1.0s
COWI Conover 85.16 33 *e*P **P 07 41 19.3 +0.2**
comp=Z,22nm,0.8s
APE Apeiranthos 85.19 314 ⇑*i*P pP 07 41 30.1 +1.6
APE Apeiranthos 85.19 314 ⇑P pP 07 41 30.1 +1.6
DAVA Damuels 85.23 329 *i* P **P 07 41 18.5 -1.1**
comp=Z,12nm,1.1s
J37A Redenius Farm, 85.30 37 P **P 07 41 20.3 +0.5**
baz=319,SNR=8.6
I38A Scanlan Farm, 85.32 36 P **P 07 41 20.3 +0.4**
baz=320,SNR=8.7
K36A Gilmore City 85.37 38 P **P 07 41 20.7 +0.5**
baz=319,SNR=6.3
CBKS Cedar Bluff 85.43 43 P **P 07 41 20.6 0.0**
baz=316,SNR=5.2
CBKS Cedar Bluff 85.43 43 *e*P **P 07 41 20.6 0.0**
CBKS pmax pmax
comp=Z,23nm,1.1s
CBKS Cedar Bluff 85.43 43 *e*P **P 07 41 20.6 0.0**
comp=Z,23nm,1.1s
P32A Huiting Farm, 85.46 42 P **P 07 41 20.6 -0.1**
baz=316
FUORN Ofenpass-Fuorn 85.61 329 *e*P **P 07 41 21.7 +0.1**
comp=Z,27nm,0.6s
M35A Neola 85.63 39 P **P 07 41 22.0 +0.5**
baz=318
K37A Belmond 85.67 37 P **P 07 41 21.6 -0.1**
baz=319,SNR=6.7
O33A Hebron 85.67 41 P **P 07 41 21.9 +0.1**
baz=317
J38A Wedel Dairy, R 85.81 36 P **P 07 41 22.3 0.0**
baz=320,SNR=7.0
Q32A Meitler Ranch, 85.94 43 P **P 07 41 23.3 +0.1**
baz=316
MEH Mehetia 85.98 116 *e*T T 09 16 09.1
comp=Z,26nm,0.2s
O34A Beatrice 86.06 41 P **P 07 41 23.7 0.0**
baz=318

L37A Phoenix Point, 86.10 38 P **P 07 41 23.7 -0.1**
baz=319,SNR=5.4
TUE Stuetta 86.10 329 *e*P **P 07 41 25.8 +1.8**
comp=Z,8.3nm,0.9s
N35A Tabor 86.10 40 P **P 07 41 23.9 0.0**
baz=318
TAOE Nuku Hiva Isla 86.14 104 *e*LR LR 08 08 29.7
comp=Z,221nm,23.7s
Q33A Connelly Farm, 86.33 42 P **P 07 41 25.1 +0.1**
baz=317
P34A Walnut Farm, R 86.46 41 P **P 07 41 25.7 0.0**
baz=317
L38A Oak Wood Farm, 86.47 37 P **P 07 41 26.6 +1.0**
baz=320,SNR=8.0
N36A Muff Farm, Cla 86.48 39 P **P 07 41 25.9 +0.1**
baz=318
SCIA State Center 86.53 38 *e*P **P 07 41 27.1 +1.2**
comp=Z,220nm,1.8s
LAST Lasithi 86.55 313 ⇑*i*P pP 07 41 37.8 +2.5
R33A Olander Ranch, 86.75 43 P **P 07 41 27.2 +0.1**
baz=317
IDI Anoyia 86.80 313 P **P 07 41 28.2 +0.8**
comp=Z,19nm,1.1s,baz=248,slow=6.5,SNR=3.6
IDI pP **sP 07 41 38.8 -1.0**
comp=Z,28nm,0.7s,baz=17,slow=5.9,SNR=9.1
IDI Anoyia 86.80 313 ⇓*i*P pP 07 41 38.2 +1.6
IDI Anoyia 86.80 313 *e*P **P 07 41 28.0 +0.5**
comp=Z,31nm,0.7s
IDI pP **sP 07 41 38.8 -1.0**
P35A Duane Minner, 86.89 41 P **P 07 41 28.3 +0.5**
baz=318
KSU1 Kansas State U 86.90 41 P **P 07 41 28.1 +0.3**
baz=318
KSU1 Kansas State U 86.90 41 *e*P **P 07 41 28.1 +0.3**
comp=Z,30nm,0.9s
N37A Lee Faris, Mou 86.90 39 P **P 07 41 28.4 +0.6**
baz=319,SNR=5.5
M38A Pleasantville 86.91 38 P **P 07 41 27.9 +0.1**
baz=320,SNR=6.7
SIVA Sivas 87.04 313 ⇓*i*P pP 07 41 40.4 +2.8
T32A Huddler Ranch, 87.05 44 P **P 07 41 29.3 +0.7**
baz=316
MNTX Cornudas Mount 87.06 52 P **P 07 41 29.7 +1.0**
baz=313
MNTX Cornudas Mount 87.06 52 *e*P **P 07 41 30.3 +1.6**
comp=Z,13nm,1.4s
MSTX Muleshoe 87.10 49 P **P 07 41 29.3 +0.3**
baz=314
AMTX Amarillo 87.11 47 P **P 07 41 28.9 -0.1**
baz=315
AMTX Amarillo 87.11 47 *e*P **P 07 41 30.4 +1.4**
comp=Z,32nm,1.0s
R34A Isabella, Hill 87.15 42 P **P 07 41 29.0 0.0**
baz=317
P36A Good Intent, A 87.25 40 P **P 07 41 29.1 -0.4**
baz=318,SNR=6.7
N38A Joes South For 87.36 38 P **P 07 41 30.4 +0.4**
baz=320,SNR=6.1
Q35A Mercer Eighty, 87.38 41 P **P 07 41 30.2 0.0**
baz=318,SNR=5.5
T33A Patterson Ranc 87.49 44 P **P 07 41 32.0 +1.3**
baz=317
N39A Derby Farms, D 87.66 38 P **P 07 41 31.4 0.0**
baz=320,SNR=8.2
S34A Willow Spring 87.66 43 P **P 07 41 32.4 +0.9**
baz=317
R35A Emporia Munici 87.69 42 P **P 07 41 32.1 +0.5**
baz=318
P37A Lathrop 87.71 40 P **P 07 41 31.8 +0.1**
baz=319,SNR=6.9
P38A Dawn 88.10 39 P **P 07 41 33.8 +0.2**
baz=319,SNR=7.8
S35A Otter Creek Ra 88.10 42 P **P 07 41 34.0 +0.4**
baz=318,SNR=6.5
O39A Kirksville 88.11 38 P **P 07 41 34.6 +1.0**
baz=320,SNR=5.3
T34A McClaskey Farm 88.11 43 P **P 07 41 34.4 +0.7**
baz=317
W32A Sentinel 88.34 46 P **P 07 41 34.8 0.0**
baz=316
U34A Anderson Ranch 88.35 44 *e*P **P 07 41 36.0 +1.1**
comp=Z,36nm,1.1s
V33A Lossen Ranch, 88.38 45 P **P 07 41 35.2 +0.2**
baz=317
TIP Timpagrande 88.41 320 ⇓*i*P pP 07 41 46.7 +2.5
TIP Timpagrande 88.41 320 *e*P **P 07 41 37.5 +2.4**
comp=Z,38nm,1.6s
R37A Teagarden Farm 88.42 41 P **P 07 41 35.5 +0.4**
baz=319,SNR=5.3
O40A La Belle 88.54 38 P **P 07 41 36.0 +0.4**
baz=320,SNR=7.3
Q38A Cooks Store, C 88.56 40 P **P 07 41 36.7 +1.0**
baz=319,SNR=6.7
T35A Sooner Cattle 88.56 43 P **P 07 41 36.5 +0.7**
baz=318
P39B Salisbury 88.59 39 P **P 07 41 36.2 +0.4**
baz=320,SNR=8.5
TBI Tubuai 88.62 121 *e*LR LR 08 09 33.7
comp=Z,182nm,30.5s
TBI Tubuai 88.62 121 *e*T T 09 19 22.2
comp=Z,59nm,0.3s
T36A Boggs Farm, Ca 88.79 42 P **P 07 41 36.6 -0.2**
baz=318
Q39A Willow Grove F 88.82 39 P **P 07 41 37.2 +0.2**
baz=320,SNR=9.3
X32A Elmer 88.82 46 P **P 07 41 36.5 -0.6**
baz=316
S37A Fort Scott 88.83 41 P **P 07 41 36.9 -0.1**
baz=319,SNR=7.9
WMOK Wichita Mounta 88.88 46 P **P 07 41 37.3 -0.1**
baz=316
P40A Paris 88.91 39 P **P 07 41 37.4 0.0**
baz=320,SNR=9.8
R38A Fenwick Farm, 88.99 40 P **P 07 41 38.8 +1.0**
baz=319,SNR=6.6
T37A Cheneyville 18 89.26 42 P **P 07 41 39.4 +0.4**
baz=319,SNR=6.5
Q40A Laux Farm, Aux 89.31 39 P **P 07 41 39.9 +0.6**
baz=320,SNR=7.0
R39A Chumby, Stover 89.34 40 P **P 07 41 39.9 +0.5**
baz=320,SNR=8.1
S38A Stockton 89.41 41 P **P 07 41 40.6 +0.8**
baz=319,SNR=5.5
HDIL Hopedale 89.45 36 P **P 07 41 40.2 +0.3**
baz=322
HDIL Hopedale 89.45 36 *e*P **P 07 41 41.8 +1.9**
comp=Z,48nm,0.8s
Y33A Hilltop Ranch, 89.50 46 P **P 07 41 40.7 +0.4**
baz=316
X34A Smith Ranch, M 89.52 45 P **P 07 41 41.2 +0.9**
baz=317
CEL Celeste 89.54 320 *e*P **P 07 41 41.2 +0.8**
comp=Z,34nm,1.0s
W35A Tecumseh 89.66 44 P **P 07 41 41.3 +0.4**
baz=318
T38A Diamond 89.66 41 P **P 07 41 41.2 +0.2**
baz=319,SNR=7.0
S39A Bolivar 89.67 40 P **P 07 41 41.7 +0.7**
baz=320,SNR=7.9
U37A Salina 89.69 42 P **P 07 41 42.8 +1.7**
baz=318,SNR=5.5
TUL1 Leonard 89.69 43 P **P 07 41 41.5 +0.4**
baz=318
TUL1 Leonard 89.69 43 *e*P **P 07 41 42.0 +0.9**
comp=Z,30nm,1.4s
V36A Jenks 89.70 43 P **P 07 41 41.7 +0.5**
baz=318
R40A Maddies Statio 89.75 39 P **P 07 41 42.2 +0.8**
baz=320,SNR=9.1
TX31 Lajitas Ar. Si 89.75 52 *e*P **P 07 41 42.8 +1.1**
TXAR Lajitas Array 89.75 52 P **P 07 41 42.6 +1.0**
comp=Z,1.2nm,0.6s,baz=306,slow=3.1,SNR=15
TXAR pP **sP 07 41 54.7 +0.6**
comp=Z,5.0nm,0.7s,baz=300,slow=3.2,SNR=17
TXAR LR LR 08 16 26.6
comp=Z,75nm,21.1s,baz=0.0,slow=32
ATD Arta Tunnel 89.90 284 P **P 07 41 43.1 +0.7**
comp=Z,1.5nm,0.3s,baz=88,slow=21,SNR=2.4
Z33A Whitaker Ranch 89.94 47 P **P 07 41 42.7 +0.4**
baz=316
U38A Gravette 90.06 42 P **P 07 41 42.4 -0.4**
baz=319
V37A Hulbert 90.07 43 P **P 07 41 43.4 +0.5**
baz=318,SNR=5.3
T39A Clever 90.14 41 P **P 07 41 43.6 +0.3**
baz=320,SNR=5.3
X35A Drake 90.15 45 P **P 07 41 44.2 +0.9**
baz=317,SNR=6.2

S40A	Lebanon	90.16	40	P	P	07 41 44.1	+0.8
	baz=320,SNR=7.3						
SADO	Sadowa	90.26	28	eP	P	07 41 44.5	+0.9
	comp=Z,21nm,1.1s						
Z34A	Collier Ranch,	90.37	46	P	P	07 41 44.7	+0.4
	baz=317						
X36A	Centrahoma	90.37	44	P	P	07 41 45.3	+1.0
	baz=318,SNR=5.4						
W37B	Quinton	90.46	43	P	P	07 41 45.6	+0.9
	baz=318						
V38A	Canehill	90.48	42	P	P	07 41 45.6	+0.8
	baz=319,SNR=5.9						
T40A	Mansfield	90.49	40	P	P	07 41 45.7	+0.8
	baz=320						
U39A	Green Forest	90.58	41	P	P	07 41 45.2	-0.1
	baz=320						
SFIN	Lafayette	90.61	35	P	P	07 41 45.6	+0.3
	baz=324						
233A	Rising Star	90.77	48	P	P	07 41 47.3	+1.0
	baz=316,SNR=5.7						
Z35A	Perchaven, San	90.78	46	P	P	07 41 46.4	+0.1
	baz=317						
134A	White-Moore Ra	90.85	47	P	P	07 41 46.7	+0.1
	baz=317						
V39A	Pettigrew	90.90	42	P	P	07 41 46.7	-0.1
	baz=319,SNR=6.4						
Y36A	Durant	90.91	45	P	P	07 41 47.8	+1.0
	baz=318,SNR=6.4						
U40A	Yellville	90.93	41	P	P	07 41 47.2	+0.3
	baz=320,SNR=6.1						
T41A	Mountain View	90.96	40	P	P	07 41 46.7	-0.3
	baz=320,SNR=7.0						
W38A	Poteau	91.01	43	P	P	07 41 48.2	+1.0
	baz=319,SNR=5.5						
X38A	Whitesboro	91.14	43	P	P	07 41 48.5	+0.6
	baz=319,SNR=5.7						
Y37A	Hugo	91.22	44	P	P	07 41 48.6	+0.4
	baz=318						
333A	Richland Sprin	91.22	48	P	P	07 41 48.6	+0.2
	baz=316,SNR=6.1						
234A	Clairette	91.23	47	P	P	07 41 48.7	+0.4
	baz=317,SNR=6.0						
135A	Vickery Place,	91.25	46	P	P	07 41 48.3	-0.1
	baz=317						
Z36A	Blue Ridge	91.28	45	P	P	07 41 47.7	-0.9
	baz=318						
W39A	Magazine	91.31	42	P	P	07 41 48.1	-0.5
	baz=319						
JCT	Junction City	91.34	49	P	P	07 41 50.2	+1.2
	baz=316,SNR=5.1						
V40A	Witts Springs	91.36	41	P	P	07 41 48.2	-0.7
	baz=320						
433A	Art	91.57	49	P	P	07 41 50.2	+0.2
	baz=316						
X39A	Fountain Ranch	91.65	43	P	P	07 41 51.8	+1.6
	baz=319,SNR=7.2						
334A	Lometa	91.66	48	P	P	07 41 50.7	+0.4
	baz=317						
PBMO	Poplar Bluff	91.84	39	eP	P	07 41 52.6	+1.5
	comp=Z,20nm,1.1s						
MIAR	Mount Ida	91.91	43	P	P	07 41 51.7	+0.2
	baz=319,SNR=7.4						
MIAR	Mount Ida	91.91	43	eP	P	07 41 52.4	+0.9
MIAR				pmax	pmax		
	comp=Z,20nm,0.9s						
MIAR	Mount Ida	91.91	43	eP	P	07 41 52.4	+0.9
	comp=Z,20nm,0.9s						
434A	Burnet	92.01	48	P	P	07 41 52.4	+0.3
	baz=317						
WHAR	Wooly Hollow	92.03	41	eP	P	07 41 52.8	+0.8
	comp=Z,22nm,1.0s						
Y39A	Lockesburg	92.09	43	P	P	07 41 53.5	+1.2
	baz=319,SNR=6.7						
W41B	Gary Mavity, V	92.14	41	P	P	07 41 52.5	0.0
	baz=320,SNR=5.2						
X40A	Basin Creek Fa	92.36	42	P	P	07 41 54.2	+0.7
	baz=320						
534A	Blanco	92.46	49	P	P	07 41 55.3	+1.2
	baz=317,SNR=5.3						
KEST	Kesra	94.77	323	LR	LR	08 29 46.4	
	comp=Z,185nm,19.2s,baz=360,slow=39						
ESDC	Sonseca Array	96.97	334	P	P	07 42 14.4	-0.2
	comp=Z,0.2nm,0.3s,baz=29,slow=3.4,SNR=4.5						
ESDC				pP	sP	07 42 25.9	-1.1
	comp=Z,0.3nm,0.4s,baz=344,slow=27,SNR=2.4						
ESDC				LR	LR	08 30 22.4	
	comp=Z,264nm,21.2s,baz=50,slow=38						
RKT	Rikitea	98.79	112	eLR	LR	08 14 31.9	
	comp=Z,229nm,27.8s						
VNDA	Vanda	115.39	175	PKP	PKPdf	07 47 22.2	-1.0
	comp=Z,1.1nm,0.8s,baz=317,slow=4.4,SNR=4.5						
TORD	Torodi Ar. Bea	117.13	315	PKP	PKPdf	07 47 27.4	-1.1
	comp=Z,0.7nm,1.0s,baz=19,slow=1.6,SNR=3.6						
TORD				pPKP	pPKPdf	07 47 41.0	+3.1
	comp=Z,0.7nm,0.7s,baz=31,slow=1.8,SNR=3.7						
LPAZ	La Paz	146.36	59	PKPbc	PKPdf	07 48 24.6	+0.9
	comp=Z,3.3nm,0.5s,baz=5.1,slow=2.8,SNR=32						
LPAZ				pPKPbc	pPKPbc	07 48 37.9	+3.7
	comp=Z,27nm,1.0s,baz=350,slow=2.9,SNR=19						
LPAZ	La Paz	146.36	59	ePKPdf	PKPdf	07 48 25.0	+1.4
LPAZ				pPKPbc	pPKPbc	07 48 37.9	+3.7
LVC	Limon Verde	149.90	69	ePKPbc	PKPbc	07 48 34.9	+1.1

JMA 20 07:32:36.9±0.4, 39°.34N×143°.73E, h35km, M3.8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	Miyakonagasawa	1.50	280	P	Pn	07 33 02.2	+0.9
JTH	Tanohata	1.56	293	P	Pn	07 33 02.8	+0.7
OFUJ	Ofunato	1.62	261	P	Pn	07 33 04.3	+1.3
JOM	Ohasama	1.89	275	P	Pn	07 33 08.2	+1.5
JMK	Ichinoseki	1.99	260	P	Pn	07 33 09.6	+1.6
JANG	Nango	1.99	302	P	Pn	07 33 09.1	+1.0
JRG	Rokugo	2.40	272	P	Pn	07 33 15.7	+2.0
JAH	Hinai	2.53	291	P	Pn	07 33 17.2	+1.7
JOU	Okura	2.58	249	P	Pn	07 33 18.0	+1.8
JOU				eS	Sn	07 33 46.8	+0.4
JAR	Ashorobuto	3.95	0	P	Pn	07 33 34.6	-0.4
JAR				S	Sn	07 34 17.5	-2.6
NEM2	Nemuro 2	4.30	20	P	Pn	07 33 38.6	-1.1
NEM2				S	Sn	07 34 24.8	-3.8
JTKR	Abashiri--Toko	4.63	2	P	Pn	07 33 44.3	0.0
JTKR				S	Sn	07 34 35.0	-1.8

DDA ***20*** *07:35:38.8, 39°.13N×29°.11E, h11km, Ml3.6*
ISK ***20*** *07:35:38.6, 39°.12N×29°.11E, h5km, ML2.8*
ISCJB ***20*** *07:35:39.1±0.3, 39°.12N±0°.02×29°.10E±0°.03, h9km, Error ellipse: s-maj=3.9km s-min=3.0km az=24.5*
CSEM ***20*** *07:35:39.0±0.1, 39°.12N×29°.10E, h5km, ML3.6, Error ellipse: s-maj=2.3km s-min=1.9km az=111.0*
ISC 20 07:35:39.0±0.8, 39°.12N±0°.02×29°.11E±0°.02, h9km, n77, σ0°76/85, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	Gediz	0.29	97	P	Pg	07 35 45.4	+0.4
GDZ	Gediz	0.29	97	*i* P	Pg	07 35 45.4	+0.4
DEMI	Demirci	0.31	255	P	Pg	07 35 45.4	+0.1
DEMI				S	Sg	07 35 49.8	+0.3
DEMI	Demirci	0.31	255	*i* P	Pg	07 35 45.4	+0.1
DEMI				*i* S	Sg	07 35 49.8	+0.3
TVSB	Tavsanli	0.43	40	*e*PG	Pg	07 35 47.5	+0.1
TVSB				*e*SG	Sg	07 35 53.4	+0.3
TVSB	Tavsanli	0.43	40	*e*Pg	Pg	07 35 47.5	+0.1
TVSB				*e*Sg	Sg	07 35 53.4	+0.3
DURS	Dursunbey	0.68	314	P	Pg	07 35 52.3	+0.1
DURS	Dursunbey	0.68	314	*i* P	Pg	07 35 52.3	+0.1
KULA	Kula-Manisa	0.70	210	*e*PG	Pg	07 35 52.2	-0.4
KULA	Kula-Manisa	0.70	210	*e*Pg	Pg	07 35 52.2	-0.4
MANT	Manisa	0.76	214	P	Pg	07 35 53.5	-0.3
MANT				S	Sg	07 36 02.8	-0.9
MANT	Manisa	0.76	214	*i* P	Pg	07 35 53.5	-0.3
MANT				*i* S	Sg	07 36 02.8	-0.9
KHAL	Karahalli	0.81	158	P	Pg	07 35 54.8	+0.2
KHAL	Karahalli	0.81	158	*i* P	Pg	07 35 54.8	+0.2
KHL	Karahalli	0.86	158	*e*PG	Pg	07 35 55.7	0.0
KHL				*e*SG	Sb	07 36 08.0	+0.1
KHL	Karahalli	0.86	158	*e*Pg	Pg	07 35 55.7	0.0
KHL				*e*Sg	Sb	07 36 08.0	+0.1
ORLT	Orhaneli	0.94	350	*e*PG	Pg	07 35 57.0	-0.1
ORLT	Orhaneli	0.94	350	*e*Pg	Pg	07 35 57.0	-0.1
AKHS	Akhisar	1.04	257	P	Pg	07 35 59.0	+0.1
AKHS	Akhisar	1.04	257	*i* P	Pg	07 35 59.0	+0.1
AKS	Akhisar	1.04	257	*e*PG	Pb	07 35 59.5	+0.4
AKS	Akhisar	1.04	257	*e*Pg	Pb	07 35 59.5	+0.4
BALB	Balikesir	1.08	299	*e*PN	Pg	07 35 59.8	0.0
BALB	Balikesir	1.08	299	*e*Pn	Pg	07 35 59.8	0.0
IGD	Bursa	1.14	4	*i* P	Pb	07 35 59.5	-1.4
CAVI	Cavuskoy	1.22	28	*e*PN	Pg	07 36 02.6	+0.2
CAVI	Cavuskoy	1.22	28	*e*Pn	Pg	07 36 02.6	+0.2
IZI	Iznik	1.24	13	*e*PN	Pg	07 36 03.2	+0.3
IZI	Iznik	1.24	13	*e*Pn	Pg	07 36 03.2	+0.3
MDNY	Mudanya-Bursa	1.25	352	*e*PN	Pn	07 36 02.8	0.0
MDNY	Mudanya-Bursa	1.25	352	*e*Pn	Pn	07 36 02.8	0.0
KCTX	Karacabey (Bur	1.28	333	*e*PN	Pg	07 36 03.6	0.0
KCTX	Karacabey (Bur	1.28	333	*e*Pn	Pg	07 36 03.6	0.0
BORA	Eskisehir	1.29	54	P	Pn	07 36 02.9	-0.4
BORA	Eskisehir	1.29	54	*i* P	Pn	07 36 02.9	-0.4
BALY	Balya	1.30	299	P	Pb	07 36 03.8	+0.1
BALY	Balya	1.30	299	*i* P	Pb	07 36 03.8	+0.1
GEMT	Gemlik	1.31	3	*e*PN	Pn	07 36 03.7	+0.2
GEMT	Gemlik	1.31	3	*e*Pn	Pn	07 36 03.7	+0.2
ADVT	Abdulvahap	1.40	20	*e*PN	Pb	07 36 05.3	+0.1
ADVT	Abdulvahap	1.40	20	*e*Pn	Pb	07 36 05.3	+0.1
ESKT	Eskisehir	1.41	73	*i* P	Pn	07 36 05.0	0.0
SEYT	Eskypehyr	1.41	73	P	Pn	07 36 05.0	0.0
GONE	Gonen-Balikesi	1.43	310	*e*PN	Pb	07 36 06.0	+0.1
GONE	Gonen-Balikesi	1.43	310	*e*Pn	Pb	07 36 06.0	+0.1
DNZL	Cakiroluk	1.43	182	P	Pb	07 36 05.9	-0.1
DNZL	Cakiroluk	1.43	182	*i* P	Pb	07 36 06.0	-0.1
ARMT	Armutlu	1.45	353	*e*PN	Pb	07 36 06.1	-0.1
ARMT	Armutlu	1.45	353	*e*Pn	Pb	07 36 06.1	-0.1
GPA	Golpazari	1.49	38	*e*PN	Pn	07 36 06.6	+0.6
GPA	Golpazari	1.49	38	*e*Pn	Pn	07 36 06.6	+0.6
AYDB	Zeytinkoy-Aydi	1.51	219	*e*PN	Pb	07 36 07.4	+0.1
AYDB	Zeytinkoy-Aydi	1.51	219	*e*Pn	Pb	07 36 07.4	+0.1
EDC	Edincik	1.55	322	*e*PN	Pn	07 36 07.4	+0.5
EDC	Edincik	1.55	322	*e*Pn	Pn	07 36 07.4	+0.5
GULT	Gulveren	1.70	39	*e*PN	Pb	07 36 10.0	-0.5
GULT	Gulveren	1.70	39	*e*Pn	Pb	07 36 10.0	-0.5
BUY	Buyukada	1.73	0	*i* P	Pn	07 36 07.0	-2.2
BAGO	Egridir - ISPA	1.74	130	*i* P	Pn	07 36 09.2	-0.3
AYDN	Tasoluk	1.75	214	P	Pb	07 36 11.9	+0.6
AYDN	Tasoluk	1.75	214	*i* P	Pb	07 36 11.9	+0.6
HRT	Hereke	1.75	14	*e*PN	Pb	07 36 10.8	-0.6
HRT	Hereke	1.75	14	*e*Pn	Pb	07 36 10.8	-0.6
SVRH	Sivrihisar-ESK	1.90	79	*e*PN	Pn	07 36 12.7	+0.9
SVRH	Sivrihisar-ESK	1.90	79	*e*Pn	Pn	07 36 12.7	+0.9
GOLH	Golhisar	1.92	169	P	Pn	07 36 12.0	0.0
GOLH	Golhisar	1.92	169	*i* P	Pn	07 36 12.0	0.0
ISK	Istanbul-Kandi	1.94	359	*e*PN	Pn	07 36 13.4	+1.2
ISK	Istanbul-Kandi	1.94	359	*e*Pn	Pn	07 36 13.4	+1.2
AUMIH	MIHALICIK	1.98	67	*i* P	Pg	07 36 17.2	+0.1
SILT	Sile	2.07	11	*e*PN	Pn	07 36 15.4	+1.5
SILT	Sile	2.07	11	*e*Pn	Pn	07 36 15.4	+1.5
KAND	Kocaeli-Kandir	2.14	23	*i* P	Pn	07 36 10.5	-4.4
SART	Tekirdag	2.15	317	P	Pn	07 36 14.4	-0.8
SART	Tekirdag	2.15	317	*i* P	Pn	07 36 14.4	-0.8
CTKS	Kestanelik-??a	2.16	348	*e*PN	Pn	07 36 16.4	+1.2
CTKS	Kestanelik-??a	2.16	348	*e*Pn	Pn	07 36 16.4	+1.2

NNC 20 07:38:31.6±4.6, 37°.06N×71°.60E, h0km, mb3.6, mpv3.2, 4C-1D, Error ellipse: s-maj=36.8km s-min=20.1km az=161.0, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	Dzherino	2.80	309	⇑Pn	Pn	07 39 17.0	-0.7
	3.1nm,0.3s						
DZET				⇑Sn	Sn	07 39 53.8	+1.5
	30nm,0.5s						
MNAS	Manas	5.46	7	⇑Pn	Pn	07 39 55.7	+1.3
	3.7nm,1.0s						
MNAS				⇑Sn	Sn	07 41 00.0	+2.0
	3.8nm,0.5s						
KK31	Karatay Array	6.09	352	Pn	Pn	07 40 02.9	+0.1
	1.2nm,0.4s,baz=176,slow=12,SNR=16						
KK31				⇓Sn	Sn	07 41 12.3	-1.0
	0.6nm,0.3s,baz=181,slow=24,SNR=5.1						

CSEM ***20*** *07:39:38.4, 44°.25N×21°.90E, h0km, ML1.2*
BEO 20 07:39:38.4±0.5, 44°.25N×21°.90E, h0km, M1.2/5, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUBS	Kucevo	0.23	315	*e*Pg	Pg	07 39 41.5	-1.3
KUBS				*e*Sg	Sg	07 39 45.2	-0.6
KUBS	Kucevo	0.23	315	*e*Pg	Pg	07 39 41.5	-1.3
KUBS				*e*Sg	Sg	07 39 45.2	-0.6
GRUS	Gruza	0.93	247	*e*Pg	Pg	07 39 55.9	-0.3
GRUS				*e*Sg	Sg	07 40 08.9	+0.7
GRUS	Gruza	0.93	247	*e*Pg	Pg	07 39 55.9	-0.3
GRUS				*e*Sg	Sg	07 40 08.9	+0.7
TRUS	Trudelj	1.07	269	*e*Pg	Pg	07 39 58.2	-0.8
TRUS				*e*Sg	Sg	07 40 13.6	+0.7
TRUS	Trudelj	1.07	269	*e*Pg	Pg	07 39 58.2	-0.8
TRUS				*e*Sg	Sg	07 40 13.6	+0.7
ZAPS	Zavoj	1.11	151	*e*Pg	Pg	07 39 59.5	-0.2
ZAPS				*e*Sg	Sg	07 40 14.8	+0.7
SELS	Selova	1.18	209	*e*Pg	Pg	07 39 59.2	-1.7
IVAS	Ivanjica	1.43	243	*e*Sg	Sg	07 40 23.5	-0.9
IVAS	Ivanjica	1.43	243	*e*Sg	Sg	07 40 23.5	-0.9
BARS	Barje	1.43	182	*e*Pg	Pn	07 40 03.3	-2.4
BARS				*e*Sg	Sg	07 40 22.8	-1.6
BARS	Barje	1.43	182	*e*Pg	Pn	07 40 03.3	-2.4
BARS				*e*Sg	Sg	07 40 22.8	-1.6

ISCJB ***20*** *07:43:10.8±0.5, 39°.10N±0°.02×29°.08E±0°.03, h2km±5km, Error ellipse: s-maj=4.3km s-min=3.6km az=152.1*
DDA ***20*** *07:43:10.5, 39°.13N×29°.10E, h6km, Ml3.6*
ISK ***20*** *07:43:10.2, 39°.10N×29°.10E, h5km, ML3.1*
CSEM ***20*** *07:43:11.0±0.1, 39°.10N×29°.08E, h2km, ML3.6, Error ellipse: s-maj=3.2km s-min=2.6km az=129.0*
ISC 20 07:43:10.7±0.9, 39°.10N±0°.02×29°.08E±0°.02, h10km±8km, n85, σ0°58/98, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.29	260	P	Pg	07 43 17.1	+0.6
DEMI				S	Sg	07 43 21.3	+0.8
DEMI	Demirci	0.29	260	*i* P	Pg	07 43 17.1	+0.6
DEMI				*i* S	Sg	07 43 17.3	-3.1
DEMI				*i* S	Sg	07 43 21.3	+0.8
GDZ	Gediz	0.31	91	P	Pg	07 43 17.2	+0.2
GDZ				S	Sg	07 43 21.5	+0.3
GDZ	Gediz	0.31	91	*i* P	Pg	07 43 17.2	+0.2
GDZ				*i* S	Sg	07 43 21.5	+0.3
TVSB	Tavsanli	0.46	40	*e*PG	Pg	07 43 19.6	-0.2
TVSB	Tavsanli	0.46	40	*e*Pg	Pg	07 43 19.6	-0.2
KULA	Kula-Manisa	0.67	210	*e*PG	Pb	07 43 24.1	-0.4
KULA	Kula-Manisa	0.67	210	*e*Pg	Pb	07 43 24.1	-0.4
DURS	Dursunbey	0.69	317	P	Pg	07 43 24.1	0.0
DURS	Dursunbey	0.69	317	*i* P	Pg	07 43 24.1	0.0
MANT	Manisa	0.73	214	P	Pg	07 43 25.1	+0.3
MANT				S	Sg	07 43 34.7	+0.3
MANT	Manisa	0.73	214	*i* P	Pg	07 43 25.1	+0.3
MANT				*i* S	Sg	07 43 34.7	+0.3
KHAL	Karahalli	0.79	156	P	Pb	07 43 26.6	-0.1
KHAL	Karahalli	0.79	156	*i* P	Pb	07 43 26.6	-0.1
ORLT	Orhaneli	0.96	352	*e*PG	Pb	07 43 29.5	0.0
ORLT				*e*SG	Sn	07 43 44.0	-0.1
ORLT	Orhaneli	0.96	352	*e*Pg	Pb	07 43 29.5	0.0
ORLT				*e*Sg	Sn	07 43 44.0	-0.1
AKHS	Akhisar	1.01	258	P	Pn	07 43 30.8	-0.2
AKHS	Akhisar	1.01	258	*i* P	Pn	07 43 30.8	-0.2
AKS	Akhisar	1.01	258	*e*PG	Pn	07 43 30.9	-0.1
AKS	Akhisar	1.01	258	*e*Pg	Pn	07 43 30.9	-0.1
BALB	Balikesir	1.08	301	*e*PN	Pn	07 43 32.6	+0.7
BALB				*e*SN	Sn	07 43 48.1	+1.2
BALB	Balikesir	1.08	301	*e*Pn	Pn	07 43 32.6	+0.7
BALB				*e*Sn	Sn	07 43 48.1	+1.2
IGD	Bursa	1.17	5	*i* P	Pb	07 43 31.9	-1.2
CAVI	Cavuskoy	1.25	28	*e*PN	Pg	07 43 35.1	+0.3
CAVI	Cavuskoy	1.25	28	*e*Pn	Pg	07 43 35.1	+0.3
IZI	Iznik	1.28	14	*e*PN	Pg	07 43 35.9	+0.7
IZI	Iznik	1.28	14	*e*Pn	Pg	07 43 35.9	+0.7
MDNY	Mudanya-Bursa	1.28	353	*e*PN	Pg	07 43 35.8	+0.5
MDNY	Mudanya-Bursa	1.28	353	*e*Pn	Pg	07 43 35.8	+0.5
KCTX	Karacabey (Bur	1.29	335	*e*PN	Pg	07 43 36.2	+0.6
KCTX	Karacabey (Bur	1.29	335	*e*Pn	Pg	07 43 36.2	+0.6
BALY	Balya	1.30	300	P	Pg	07 43 35.7	0.0
BALY	Balya	1.30	300	*i* P	Pg	07 43 35.7	0.0
BORA	Eskisehir	1.32	53	P	Pn	07 43 35.0	-0.3
BORA				S	Sn	07 43 52.8	-0.3
BORA	Eskisehir	1.32	53	*i* P	Pn	07 43 35.0	-0.3
BORA				*i* S	Sn	07 43 52.8	-0.3
GEMT	Gemlik	1.34	4	*e*PN	Pg	07 43 36.8	+0.3
GEMT	Gemlik	1.34	4	*e*Pn	Pg	07 43 36.8	+0.3
DNZL	Cakiroluk	1.40	181	P	Pn	07 43 36.1	-0.5
DNZL	Cakiroluk	1.40	181	*i* P	Pn	07 43 36.1	-0.5
ADVT	Abdulvahap	1.43	21	*e*PN	Pg	07 43 38.3	+0.1
ADVT	Abdulvahap	1.43	21	*e*Pn	Pg	07 43 38.3	+0.1
ESKT	Eskisehir	1.44	72	*i* P	Pb	07 43 37.4	-0.3
SEYT	Eskypehyr	1.44	72	P	Pb	07 43 37.4	-0.3
ARMT	Armutlu	1.48	354	*e*PN	Pg	07 43 39.1	0.0
ARMT	Armutlu	1.48	354	*e*Pn	Pg	07 43 39.1	0.0
BOLV	Bolvadin	1.51	104	P	Pg	07 43 40.1	+0.4
BOLV	Bolvadin	1.51	104	*i* P	Pg	07 43 40.1	+0.4
GPA	Golpazari	1.52	38	*e*PN	Pb	07 43 39.3	+0.2
GPA	Golpazari	1.52	38	*e*Pn	Pb	07 43 39.3	+0.2
EDC	Edincik	1.56	323	*e*PN	Pg	07 43 40.9	+0.2
EDC	Edincik	1.56	323	*e*Pn	Pg	07 43 40.9	+0.2
KNL	Bal¨–kesir	1.68	315	*i* P	Pn	07 43 39.8	-0.3
AYDN	Tasoluk	1.72	214	P	Pb	07 43 41.9	-0.5
AYDN	Tasoluk	1.72	214	*i* P	Pb	07 43 41.9	-0.5
GULT	Gulveren	1.73	39	*e*PN	Pb	07 43 42.9	+0.2
GULT	Gulveren	1.73	39	*e*Pn	Pb	07 43 42.9	+0.2
BAGO	Egridir - ISPA	1.74	129	*i* P	Pn	07 43 41.6	+0.6
BUY	Buyukada	1.75	1	P	Pn	07 43 40.7	-0.5
BUY	Buyukada	1.75	1	*i* P	Pn	07 43 40.7	-0.5
HRT	Hereke	1.78	15	*e*PN	Pb	07 43 43.4	-0.1
HRT	Hereke	1.78	15	*e*Pn	Pb	07 43 43.4	-0.1
SPNC	Sapanca-Adapaz	1.85	30	*e*PN	Pb	07 43 44.2	-0.4
SPNC	Sapanca-Adapaz	1.85	30	*e*Pn	Pb	07 43 44.2	-0.4
GOLH	Golhisar	1.89	168	P	Pb	07 43 45.4	-0.1
GOLH	Golhisar	1.89	168	*i* P	Pb	07 43 45.4	-0.1
SVRH	Sivrihisar-ESK	1.93	79	*e*PN	Pb	07 43 45.4	-0.6
SVRH	Sivrihisar-ESK	1.93	79	*e*Pn	Pb	07 43 45.4	-0.6
ISK	Istanbul-Kandi	1.97	360	*e*PN	Pb	07 43 46.3	-0.4
ISK	Istanbul-Kandi	1.97	360	*e*Pn	Pb	07 43 46.3	-0.4
AUMIH	MIHALICIK	2.01	67	P	Pb	07 43 46.8	-0.7
AUMIH	MIHALICIK	2.01	67	*i* P	Pb	07 43 46.8	-0.7
DGB	¨zmir	2.01	240	*i* P	Pg	07 43 49.4	+0.1
URLA	Izmir	2.08	250	*i* P	Pg	07 43 50.9	+0.4
SILT	Sile	2.10	12	*e*PN	Pb	07 43 48.1	-0.8
SILT	Sile	2.10	12	*e*Pn	Pb	07 43 48.1	-0.8
MDUB	Mudurnu	2.13	49	*e*PN	Pb	07 43 48.6	-0.9
MDUB	Mudurnu	2.13	49	*e*Pn	Pb	07 43 48.6	-0.9
SART	Tekirdag	2.16	318	P	Pn	07 43 47.2	+0.3
SART	Tekirdag	2.16	318	*i* P	Pn	07 43 47.2	+0.3
KAND	Kocaeli-Kandir	2.17	23	P	Pn	07 43 46.9	-0.1
KAND	Kocaeli-Kandir	2.17	23	*i* P	Pn	07 43 46.9	-0.1
ZEY	¨zmir	2.19	248	*i* P	Pg	07 43 52.1	-0.6
SAHE	Sakarya_HENDEK	2.22	37	P	Pn	07 43 48.5	+0.8
SAHE	Sakarya_HENDEK	2.22	37	*i* P	Pn	07 43 48.5	+0.8
BDRM	Kayabasi	2.40	213	*i* P	Pg	07 43 56.4	-0.4

NNC ***20*** *07:44:25.2±4.7, 53°.61N×90°.87E, h0km, mb3.7, mpv3.4, Error ellipse: s-maj=35.8km s-min=31.2km az=30.0*
IDC 20 07:44:25.2±4.1, 53°.79N×90°.88E, h0km, mb1 3.2/2, mb1mx3.0/36, mbtmp3.2/2, ML2.9/2, 7C-5D, Error ellipse: s-maj=40.8km s-min=25.5km az=28.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	ZALESOVO INFRA	3.59	275	*i*		08 06 40.0	
	baz=91,slow=319,SNR=7.2						
ZALV	Zalesovo Beam	3.59	275	Pg	Pb	07 45 29.1	-0.5
	1.0nm,0.3s,baz=93,slow=15,SNR=12						
ZALV				Lg	Lg	07 46 19.9	
	2.1nm,0.3s,baz=88,slow=28,SNR=16						
KURK	Kurchatov	8.13	253	⇑Pn	Pn	07 46 23.4	-1.0
	7.4nm,1.4s						
KURK				⇓Sn	Sn	07 47 54.

PXZ	Pawanui	0.12	90	⇓PN	Pn	07 54 02.0	0.0
PXZ				AML	AML	07 54 08.3	
PXZ				AML	AML	07 54 08.3	
PXZ				AML	AML	07 54 08.3	
PXZ				AML	AML	07 54 08.3	
WPHZ	Waipukurau	0.20	261	PN	Pn	07 54 02.3	-0.2
WPHZ				SN	Sn	07 54 08.4	+0.4
PRHZ	Porangahau	0.24	192	⇓PN	Pn	07 54 03.0	+0.2
KAHZ	Kahuranaki	0.27	30	˜PN	Pn	07 54 03.1	0.0
PNHZ	Pukenui	0.40	287	⇑PN	Pn	07 54 03.7	-0.8
PNHZ				SN	Sn	07 54 10.8	-0.7
ANWZ	Angora Road	0.46	202	PN	Pn	07 54 05.3	+0.1
ANWZ				SN	Sn	07 54 14.0	+1.4
KRHZ	Kereru	0.46	327	PN	Pn	07 54 04.2	-1.0
DVHZ	Dannevirke	0.49	237	PN	Pn	07 54 05.1	-0.4
DVHZ				SN	Sn	07 54 13.5	+0.2
TSZ	Takapari Road	0.57	267	PN	Pn	07 54 05.8	-0.8
TSZ				AML	AML	07 54 14.3	
TSZ				AML	AML	07 54 15.0	
MCHZ	McNeill Hill	0.59	360	⇑PN	Pn	07 54 06.5	-0.3
KWHZ	Kaweka Forest	0.64	340	⇑PN	Pn	07 54 06.6	-0.9
BHHZ	Black Hill Sta	0.73	317	⇑PN	Pn	07 54 08.0	-0.8
BHHZ				SN	Sn	07 54 17.5	-1.3
PRWZ	Pori Road	0.77	227	PN	Pn	07 54 09.1	0.0
ARHZ	Aropaoanui	0.80	17	PN	Pn	07 54 09.4	-0.2
ARHZ				SN	Sn	07 54 21.0	+0.7
BKZ	Black Stump Fm	0.88	349	⇑PN	Pn	07 54 09.9	-0.8
NMHZ	Naumai	0.94	5	⇓PN	Pn	07 54 11.3	-0.2
MOVZ	Moawhango	0.96	310	⇑PN	Pn	07 54 11.5	-0.3
TIWZ	Tintock	0.97	220	PN	Pn	07 54 11.5	-0.4
MRZ	Mangatainoka R	1.06	233	PN	Pn	07 54 12.4	-0.8
WNVZ	Wahianoa	1.10	309	PN	Pn	07 54 14.0	+0.1
TUVZ	Tukino	1.11	313	PN	Pn	07 54 14.3	+0.3
WHVZ	Whangaehu Hut	1.14	311	PN	Pn	07 54 14.4	0.0
MTVZ	Mangateitei	1.15	304	PN	Pn	07 54 14.8	+0.4
TRVZ	Turoa	1.15	309	PN	Pn	07 54 14.6	+0.1
FWVZ	Far West T-bar	1.18	311	PN	Pn	07 54 15.0	0.0
OTVZ	Oturere	1.18	317	PN	Pn	07 54 15.0	+0.1
NGZ	Ngauruhoe	1.21	315	PN	Pn	07 54 15.3	0.0
MRHZ	Matea Rd	1.22	349	PN	Pn	07 54 14.9	-0.4
KRVZ	Karewarewa	1.24	318	PN	Pn	07 54 16.0	+0.3
HOWZ	Holdsworth Sta	1.25	226	PN	Pn	07 54 14.7	-1.0
WTVZ	West Tongariro	1.25	316	PN	Pn	07 54 16.3	+0.4
PKVZ	Pokaka	1.28	305	PN	Pn	07 54 16.4	+0.2
URZ	Urewera	1.80	10	PN	Pn	07 54 21.9	-1.3
MWZ	Matawai	1.81	21	PN	Pn	07 54 22.0	-1.4

IDC 20 07:57:44.1±36.0, 19°43S×169°68E, h0km, mb3.9/4, mb1 4.1/4, mb1mx3.7/33, mbtmp3.9/4, Error ellipse: s-maj=626.0km s-min=104.8km az=79.0, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	Stephens Creek	28.09	238	P	P	08 03 37.5	-0.2
	1.6nm,0.8s,baz=77,slow=14,SNR=5.3						
WRA	Warramunga Arr	33.24	263	P	P	08 04 22.3	-1.0
	0.4nm,0.5s,baz=91,slow=8.5,SNR=10						
ASAR	Alice Springs	33.48	256	P	P	08 04 24.4	-0.9
	1.4nm,0.7s,baz=87,slow=8.7,SNR=18						
FITZ	Fitzroy Crossi	41.63	264	P	P	08 05 36.2	+1.8
	2.1nm,0.7s,baz=90,slow=7.1,SNR=3.7						

*IDC **20** 08:03:43.6±1.2, 39°10N×29°02E, h0km, mb3.5/6, mb1 3.5/8, mb1mx3.4/43, mbtmp3.4/8, ML3.5/2, Error ellipse: s-maj=26.0km s-min=15.6km az=169.0*
*ISK **20** 08:03:43.5, 39°10N×29°02E, h9km, ML3.9*
*CSEM **20** 08:03:43.7±0.1, 39°08N×29°03E, h5km, ML3.9, Error ellipse: s-maj=1.8km s-min=1.5km az=81.0*
*DDA **20** 08:03:43.3, 39°09N×29°03E, h5km, Ml3.9*
*ISCJB **20** 08:03:43.4±0.4, 39°10N±0°01×29°01E±0°02, h7km±3km, mb3.5/6, Error ellipse: s-maj=2.5km s-min=2.5km az=5.4*
*THE **20** 08:03:44.2, 39°04N×29°02E, h2km±1km, ML3.8/5, Error ellipse: s-maj=2.3km s-min=0.8km az=89.0*

ISC 20 08:03:43.9±1.0, 39°08N±0°02×29°03E±0°02, h5km±8km, n206, σ0°62/241, mb3.4/6, 14C-18D, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.25	261	P	Pg	08 03 48.8	+0.1
DEMI				S	Sg	08 03 52.3	+0.3
DEMI	Demirci	0.25	261	*i* P	Pg	08 03 48.8	+0.1
DEMI				*i* S	Sg	08 03 52.3	+0.3
GDZ	Gediz	0.35	89	P	Pg	08 03 50.9	+0.1
GDZ				S	Sg	08 03 56.0	+0.6
GDZ	Gediz	0.35	89	*i* P	Pg	08 03 50.9	+0.1
GDZ				*i* S	Sg	08 03 56.0	+0.6
TVSB	Tavsanli	0.50	42	*e*PG	Pg	08 03 53.4	-0.1
TVSB	Tavsanli	0.50	42	*e*Pg	Pg	08 03 53.4	-0.1
KULA	Kula-Manisa	0.64	207	*e*PG	Pg	08 03 56.1	0.0
KULA	Kula-Manisa	0.64	207	P	Pg	08 03 56.0	-0.1
KULA				S	Sg	08 04 04.7	+0.3
KULA	Kula-Manisa	0.64	207	P	Pg	08 03 56.0	-0.1
KULA				S	Sg	08 04 04.7	+0.3
DURS	Dursunbey	0.67	320	P	Pg	08 03 56.5	-0.4
DURS	Dursunbey	0.67	320	*i* P	Pg	08 03 56.5	-0.4
MANT	Manisa	0.70	212	P	Pg	08 03 57.2	-0.1
MANT				S	Sg	08 04 06.2	-0.2
MANT	Manisa	0.70	212	*i* P	Pg	08 03 57.2	-0.1
MANT				*i* S	Sg	08 04 06.2	-0.2
KHAL	Karahalli	0.80	153	P	Pg	08 03 59.4	+0.2
KHAL	Karahalli	0.80	153	*i* P	Pg	08 03 59.4	+0.2
KHL	Karahalli	0.85	153	*e*PG	Pb	08 04 00.8	-0.5
KHL				*e*SG	Sb	08 04 13.1	+0.1
KHL	Karahalli	0.85	153	*e*Pg	Pb	08 04 00.8	-0.5
KHL				*e*Sg	Sb	08 04 13.1	+0.1
ORLT	Orhaneli	0.97	354	*e*PG	Pg	08 04 02.6	+0.1
ORLT	Orhaneli	0.97	354	*e*Pg	Pg	08 04 02.6	+0.1
AKHS	Akhisar	0.97	258	P	Pg	08 04 02.4	-0.1
AKHS	Akhisar	0.97	258	*i* P	Pg	08 04 02.4	-0.1
AKS	Akhisar	0.97	258	*e*PG	Pg	08 04 02.7	+0.2
AKS	Akhisar	0.97	258	*e*Pg	Pg	08 04 02.7	+0.2
BALB	Balikesir	1.05	302	*e*PG	Pg	08 04 03.8	-0.3
BALB				*e*SG	Sb	08 04 18.4	-0.3
BALB	Balikesir	1.05	302	*e*Pg	Pg	08 04 03.8	-0.3
BALB				*e*Sg	Sb	08 04 18.4	-0.3
IGD	Bursa	1.19	6	*i* P	Pg	08 04 05.5	-1.2
IGD				*i* S	Sg	08 04 22.2	+0.1
BALY	Balya	1.27	301	P	Pg	08 04 07.9	-0.5
BALY	Balya	1.27	301	*i* P	Pg	08 04 07.9	-0.5
MDNY	Mudanya-Bursa	1.29	355	*e*PN	Pn	08 04 08.3	-0.4
MDNY	Mudanya-Bursa	1.29	355	*e*Pn	Pn	08 04 08.3	-0.4
KCTX	Karacabey (Bur	1.29	336	*e*PN	Pg	08 04 08.1	-0.6
KCTX	Karacabey (Bur	1.29	336	*e*Pn	Pg	08 04 08.1	-0.6
IZI	Iznik	1.30	15	*e*PN	Pg	08 04 08.4	-0.4
IZI	Iznik	1.30	15	*e*Pn	Pg	08 04 08.4	-0.4
DENT	Denizli	1.33	180	*e*PN	Pn	08 04 09.0	-0.2
DENT	Denizli	1.33	180	*e*Pn	Pn	08 04 09.0	-0.2
GEMT	Gemlik	1.36	5	*e*PN	Pn	08 04 09.2	-0.3
GEMT	Gemlik	1.36	5	*e*Pn	Pn	08 04 09.2	-0.3
DNZL	Cakiroluk	1.39	179	P	Pn	08 04 09.5	-0.7
DNZL	Cakiroluk	1.39	179	*i* P	Pn	08 04 09.5	-0.7
AYDB	Zeytinkoy-Aydi	1.44	219	*e*PN	Pn	08 04 10.2	-0.7
AYDB	Zeytinkoy-Aydi	1.44	219	*e*Pn	Pn	08 04 10.2	-0.7
ADVT	Abdulvahap	1.46	22	*e*PN	Pn	08 04 10.5	-0.4
ADVT	Abdulvahap	1.46	22	*e*Pn	Pn	08 04 10.5	-0.4
ESKT	Eskisehir	1.48	72	*i* P	Pn	08 04 10.8	-0.6
SEYT	Eskypehyr	1.48	72	P	Pn	08 04 10.8	-0.5
ARMT	Armutlu	1.49	355	*e*PN	Pn	08 04 10.4	-1.0
ARMT	Armutlu	1.49	355	*e*Pn	Pn	08 04 10.4	-1.0
BOLV	Bolvadin	1.54	103	P	Pn	08 04 12.1	-0.1
BOLV				S	Sg	08 04 33.9	+0.5
BOLV	Bolvadin	1.54	103	*i* P	Pn	08 04 12.1	-0.1
BOLV				*i* S	Sg	08 04 33.9	+0.5
EDC	Edincik	1.55	325	*e*PN	Pn	08 04 11.6	-0.6
EDC	Edincik	1.55	325	*e*Pn	Pn	08 04 11.6	-0.6
GPA	Golpazari	1.56	39	*e*PN	Pn	08 04 12.3	-0.1
GPA	Golpazari	1.56	39	*e*Pn	Pn	08 04 12.3	-0.1
DKL	Dikili	1.65	270	*e*PN	Pn	08 04 13.3	-0.3
DKL				*e*SN	Sn	08 04 35.3	+0.1
DKL	Dikili	1.65	270	*e*Pn	Pn	08 04 13.3	-0.3
DKL				*e*Sn	Sn	08 04 35.3	+0.1
KNL	Bal˜–kesir	1.66	316	*i* P	Pn	08 04 12.8	-0.9
KNL				*i* S	Sn	08 04 35.5	0.0
AYDN	Tasoluk	1.68	213	P	Pn	08 04 13.3	-0.8
AYDN				S	Sb	08 04 37.1	+0.1
AYDN	Tasoluk	1.68	213	*i* P	Pn	08 04 13.3	-0.8
AYDN				*i* S	Sb	08 04 37.1	+0.1
ISP	Isparta	1.72	137	*e*PN	Pn	08 04 14.3	-0.3
ISP	Isparta	1.72	137	⇓*i*P	Pg	08 04 16.8	-0.1
ISP	Isparta	1.72	137	P	Pn	08 04 13.2	-1.4
ISP	Isparta	1.72	137	P	Pn	08 04 13.2	-1.4
ISP	Isparta	1.72	137	*e*Pn	Pn	08 04 14.3	-0.3
BAGO	Egridir - ISPA	1.76	128	*i* P	Pn	08 04 15.2	0.0
GULT	Gulveren	1.77	40	*e*PN	Pn	08 04 15.1	-0.2
GULT	Gulveren	1.77	40	*e*Pn	Pn	08 04 15.1	-0.2
BUY	Buyukada	1.77	2	P	Pn	08 04 14.3	-0.9
BUY	Buyukada	1.77	2	*i* P	Pn	08 04 14.3	-0.9
HRT	Hereke	1.81	16	*e*PN	Pn	08 04 15.1	-0.7
HRT	Hereke	1.81	16	*e*Pn	Pn	08 04 15.1	-0.7
KRBG	Karabiga-Canak	1.87	315	*e*PN	Pn	08 04 17.0	+0.4
KRBG	Karabiga-Canak	1.87	315	*e*Pn	Pn	08 04 17.0	+0.4
MRMT	Marmara Adasi	1.88	324	*e*PN	Pn	08 04 16.3	-0.5
MRMT	Marmara Adasi	1.88	324	*e*Pn	Pn	08 04 16.3	-0.5
SPNC	Sapanca-Adapaz	1.88	31	*e*PN	Pn	08 04 16.3	-0.5
SPNC	Sapanca-Adapaz	1.88	31	*e*Pn	Pn	08 04 16.3	-0.5
GOLH	Golhisar	1.89	167	P	Pn	08 04 16.5	-0.5
GOLH	Golhisar	1.89	167	*i* P	Pn	08 04 16.5	-0.5
SVRH	Sivrihisar-ESK	1.97	79	*e*PN	Pn	08 04 18.7	+0.6
SVRH	Sivrihisar-ESK	1.97	79	*e*Pn	Pn	08 04 18.7	+0.6
DGB	˜zmir	1.97	239	*i* P	Pn	08 04 16.6	-1.5
GCAM	G?zelcaml?	1.97	226	*i* P	Pb	08 04 20.5	+0.1
ISK	Istanbul-Kandi	1.98	1	*e*PN	Pn	08 04 17.1	-1.0
ISK	Istanbul-Kandi	1.98	1	P	Pn	08 04 17.1	-1.0
ISK	Istanbul-Kandi	1.98	1	P	Pn	08 04 17.1	-1.0
YER	Yerkesik	2.03	197	*e*PN	Pn	08 04 19.7	+0.8
YER	Yerkesik	2.03	197	P	Pn	08 04 17.7	-1.2
YER				S	Sn	08 04 43.1	-1.6
YER	Yerkesik	2.03	197	P	Pn	08 04 17.7	-1.2
YER	Yerkesik	2.03	197	*e*Pn	Pn	08 04 19.7	+0.8
YER				S	Sn	08 04 43.1	-1.6
URLA	Izmir	2.04	250	P	Pn	08 04 19.2	+0.3
URLA	Izmir	2.04	250	*i* P	Pn	08 04 19.2	+0.3
URLA				*i* S	Sg	08 04 50.1	+0.8
AUMIH	MIHALICIK	2.05	67	*i* P	Pg	08 04 23.6	+0.3
BGKT	Bogazkoy	2.10	355	*e*PN	Pn	08 04 19.0	-0.9
BGKT	Bogazkoy	2.10	355	*e*Pn	Pn	08 04 19.0	-0.9
SILT	Sile	2.12	13	*e*PN	Pn	08 04 19.8	-0.3
SILT	Sile	2.12	13	*e*Pn	Pn	08 04 19.8	-0.3
BTAS	Taskesti	2.12	45	P	Pn	08 04 20.3	+0.1
BTAS	Taskesti	2.12	45	*i* P	Pn	08 04 20.3	+0.1
RKY	Sarkoy-Tekirda	2.15	319	*e*PN	Pn	08 04 21.1	+0.6
RKY	Sarkoy-Tekirda	2.15	319	*e*Pn	Pn	08 04 21.1	+0.6
SART	Tekirdag	2.15	319	P	Pn	08 04 20.1	-0.4
SART	Tekirdag	2.15	319	*i* P	Pn	08 04 20.1	-0.4
ZEY	˜zmir	2.15	248	*i* P	Pn	08 04 20.8	+0.4
PRK	Paraskevi	2.15	275	P	Pn	08 04 20.1	-0.4
PRK				S	Sn	08 04 46.6	-0.9
PRK	Paraskevi	2.15	275	P	Pn	08 04 20.1	-0.4
PRK				S	Sn	08 04 46.6	-0.9
KLYT	Kilyos	2.17	0	*e*PN	Pn	08 04 19.9	-0.8
KLYT	Kilyos	2.17	0	*e*Pn	Pn	08 04 19.9	-0.8
MDUB	Mudurnu	2.17	50	*e*PN	Pn	08 04 20.9	+0.1
MDUB	Mudurnu	2.17	50	*e*Pn	Pn	08 04 21.0	+0.1
LPK	Lapseki	2.17	307	*e*PN	Pn	08 04 20.6	-0.2
LPK	Lapseki	2.17	307	*e*Pn	Pn	08 04 20.6	-0.2
CTKS	Kestanelik-??a	2.19	350	*e*PN	Pn	08 04 20.6	-0.4
CTKS	Kestanelik-??a	2.19	350	*e*Pn	Pn	08 04 20.6	-0.4
KAND	Kocaeli-Kandir	2.20	24	P	Pn	08 04 20.5	-0.6
KAND	Kocaeli-Kandir	2.20	24	*i* P	Pn	08 04 20.5	-0.6
EZN	Ezine	2.22	290	*e*PN	Pn	08 04 21.8	+0.4
EZN	Ezine	2.22	290	*e*Pn	Pn	08 04 21.8	+0.4
TKR	Tekirdag	2.22	329	*e*PN	Pn	08 04 21.6	+0.1
TKR	Tekirdag	2.22	329	*e*Pn	Pn	08 04 21.6	+0.1
KIZT	Kizilcal	2.23	94	*e*PN	Pn	08 04 22.3	+0.6
KIZT	Kizilcal	2.23	94	*e*Pn	Pn	08 04 22.3	+0.6
SUTC	Sutluce-Ispart	2.23	135	*e*PN	Pn	08 04 22.1	+0.4
SUTC	Sutluce-Ispart	2.23	135	*e*Pn	Pn	08 04 22.1	+0.4
TURN	Turunc	2.23	189	*i* P	Pb	08 04 23.2	-1.6
SAHE	Sakarya_HENDEK	2.26	38	P	Pn	08 04 21.4	-0.6
SAHE	Sakarya_HENDEK	2.26	38	*i* P	Pn	08 04 21.4	-0.6
KORT	Korkueli	2.33	153	P	Pn	08 04 23.2	+0.2
KORT	Korkueli	2.33	153	*i* P	Pn	08 04 23.2	+0.2
GELI	Tayfur-Gelibol	2.37	304	*e*PN	Pn	08 04 24.1	+0.6
GELI	Tayfur-Gelibol	2.37	304	*e*Pn	Pn	08 04 24.1	+0.6
BDRM	Kayabasi	2.37	212	P	Pn	08 04 22.0	-1.5
BDRM	Kayabasi	2.37	212	*i* P	Pn	08 04 22.0	-1.5
BOZC	Bozcaada	2.43	289	*i* P	Pn	08 04 24.1	-0.2
CHOS	Chios island	2.43	254	P	Pn	08 04 23.5	-0.9
CHOS				S	Sn	08 04 53.6	-0.9
CHOS	Chios island	2.43	254	P	Pn	08 04 23.5	-0.9
BODT	Bodrum	2.43	214	P	Pn	08 04 23.4	-1.0
BODT	Bodrum	2.43	214	P	Pn	08 04 23.4	-1.0
FETY	Fethiye	2.44	179	P	Pn	08 04 23.3	-1.2
FETY	Fethiye	2.44	179	P	Pn	08 04 23.3	-1.2
CTYL	Yalikoy Yolu	2.46	347	*e*PN	Pn	08 04 24.3	-0.3
CTYL	Yalikoy Yolu	2.46	347	*e*Pn	Pn	08 04 24.3	-0.3
SIGR	SIGRI	2.47	274	P	Pn	08 04 24.4	-0.5
SIGR				S	Sn	08 04 55.9	+0.4
SIGR	SIGRI	2.47	274	P	Pn	08 04 24.4	-0.5
SIGR				S	Sn	08 04 55.9	+0.4
ERIK	Erikli-Kesan	2.50	310	*e*PN	Pn	08 04 25.4	+0.1
ERIK	Erikli-Kesan	2.50	310	*e*Pn	Pn	08 04 25.4	+0.1
KESN	Edirne-Kesan	2.51	315	P	Pn	08 04 25.2	-0.5
KESN	Edirne-Kesan	2.51	315	*i* P	Pn	08 04 25.2	-0.5
ENEZ	Enez	2.76	308	P	Pn	08 04 28.8	-0.1
ENEZ				S	Sn	08 05 03.1	+0.5
ENEZ	Enez	2.76	308	P	Pn	08 04 28.8	-0.1
ENEZ				S	Sn	08 05 03.1	+0.5
AKAS	Kas	2.88	171	P	Pn	08 04 31.5	+0.8
AKAS	Kas	2.88	171	*i* P	Pn	08 04 31.5	+0.8
ALN	Alexandroupoli	2.92	309	P	Pn	08 04 30.5	-0.6
ALN				S	Sn	08 05 06.8	+0.2
ALN	Alexandroupoli	2.92	309	P	Pn	08 04 30.5	-0.6
ALN				S	Sn	08 05 06.8	+0.2
SMTH	Samothraki Isl	3.03	298	P	Pn	08 04 32.2	-0.4
SMTH	Samothraki Isl	3.03	298	P	Pn	08 04 32.2	-0.4
LIA	Limnos Island	3.09	287	P	Pn	08 04 32.5	-0.8
LIA				S	Sn	08 05 11.5	+0.9
LIA	Limnos Island	3.09	287	P	Pn	08 04 32.5	-0.8
LIA				S	Sn	08 05 11.5	+0.9
BRTR	Keskin Array B	3.63	78	Pn	Pn	08 04 41.7	+0.8
	1.1nm,0.3s,baz=254,slow=14,SNR=29						
BRTR				Pg	Pg	08 04 52.5	-1.0
	1.6nm,0.3s,baz=257,slow=16,SNR=22						
BRTR				Lg	Lg	08 05 39.6	
	0.6nm,0.3s,baz=289,slow=18,SNR=2.5						
ELDT	Eldivan	3.67	66	*i* P	Pg	08 04 53.8	-0.4
JMB	Yambol	3.86	332	P	Pn	08 04 44.7	+0.8
DIM	Dimitrovgrad	3.98	319	P	Pn	08 04 45.6	-0.1
PRD	Provadia	4.29	344	P	Pn	08 04 49.2	-0.7
MMB	Musomiste	4.76	303	P	Pn	08 04 57.1	+0.7
LAST	Lasithi	4.83	217	⇓*i*P	Pn	08 04 58.4	+0.9
LAST	Lasithi	4.83	217	⇓*i*P	Pn	08 04 58.4	+0.9
PGB	Panagyurishte	5.06	315	P	Pn	08 05 00.4	-0.1
TIRR	Tirgusor	5.39	355	⇑*i*P	Pn	08 05 04.7	-0.3
TIRR	Tirgusor	5.39	355	⇑*i*P	Pn	08 05 04.7	-0.3
HARR	Harsova	5.66	352	⇓*i*P	Pn	08 05 09.5	+0.8
HARR	Harsova	5.66	352	⇓*i*P	Pn	08 05 09.5	+0.8
TLCR		6.10	359	⇑*i*P	Pn	08 05 15.0	+0.3
TLCR		6.10	359	⇑*i*P	Pn	08 05 15.0	+0.3
CFR	Carcaliu	6.13	354	⇑*i*P	Pn	08 05 14.4	-0.7
CFR	Carcaliu	6.13	354	⇑*i*P	Pn	08 05 14.4	-0.7
ISR	Istrita	6.31	344	⇓*i*P	Pn	08 05 17.9	+0.2
ISR	Istrita	6.31	344	⇓*i*P	Pn	08 05 17.9	+0.2
MLR	Muntele Rosu	6.80	341	⇑*i*P	Pn	08 05 25.5	+1.0
MLR	Muntele Rosu	6.80	341	⇑*i*P	Pn	08 05 25.5	+1.0
VRI	Vrincioaia	6.99	347	⇑*i*P	Pn	08 05 27.5	+0.5
VRI	Vrincioaia	6.99	347	⇑*i*P	Pn	08 05 27.5	+0.5
VOIR		7.00	336	⇓*i*P	Pn	08 05 27.5	+0.3
VOIR		7.00	336	⇓*i*P	Pn	08 05 27.5	+0.3
BOLS	Boljevac	7.12	314	⇓*i*Pn	Pn	08 05 27.7	-1.1
SELS	Selova	7.26	307	*e*Pn	Pn	08 05 30.1	-0.6
DOPR	Dopca	7.39	340	⇓*i*P	Pn	08 05 33.4	+1.0
DOPR	Dopca	7.39	340	⇓*i*P	Pn	08 05 33.4	+1.0
LOT	Lotru	7.46	330	⇓*i*P	Pn	08 05 34.0	+0.5
LOT	Lotru	7.46	330	⇓*i*P	Pn	08 05 34.0	+0.5
TESR	Tescani	7.63	348	⇓*i*P	Pn	08 05 35.5	-0.2
TESR	Tescani	7.63	348	⇓*i*P	Pn	08 05 35.5	-0.2
GRUS	Gruza	7.87	310	*e*Pn	Pn	08 05 38.9	-0.2
MDVR	Moldovita	7.88	319	⇓*i*P	Pn	08 05 38.3	-1.0
MDVR	Moldovita	7.88	319	⇓*i*P	Pn	08 05 38.3	-1.0
IVAS	Ivanjica	8.05	307	*e*Pn	Pn	08 05 41.7	+0.2
BURAR	Bucovina Array	8.97	343	⇑*i*P	Pn	08 05 55.3	+1.1
BURAR	Bucovina Array	8.97	343	⇑*i*P	Pn	08 05 55.3	+1.1
SORM	Soroca	9.06	357	⇑*i*P	Pn	08 05 55.0	-0.4
SORM	Soroca	9.06	357	⇑*i*P	Pn	08 05 55.0	-0.4
AKASG	Malin Array Be	11.62	1	Pn	Pn	08 06 30.0	-0.4
	0.9nm,0.3s,baz=170,slow=11,SNR=4.5						
AKTO	Aktyubinsk	23.35	51	P	P	08 08 53.3	+0.2
	1.3nm,0.6s,baz=250,slow=3.3,SNR=4.6						
TORD	Torodi Ar. Bea	35.37	231	P	P	08 10 41.4	+0.8
	0.2nm,0.4s,baz=36,slow=9.4,SNR=3.2						
KURBB	Kurchatov Arra	36.29	55	P	P	08 10 48.6	+0.3
	0.3nm,0.2s,baz=276,slow=8.5,SNR=3.6						
MKAR	Makanchi Array	39.10	61	P	P	08 11 12.2	+0.2
	0.6nm,0.6s,baz=285,slow=6.1,SNR=5.4						
ZALV	Zalesovo Beam	40.08	49	P	P	08 11 20.1	0.0
	0.5nm,0.5s,baz=267,slow=8.1,SNR=2.4						
YKA	Yellowknife Ar	74.63	343	P	P	08 15 23.9	+0.1
	0.2nm,0.8s,baz=27,slow=4.8,SNR=3.1						

*SOME **20** 08:04:26.9, 41°63N×82°70E, h5km*
*NNC **20** 08:04:29.1±4.9, 42°37N×83°29E, h0km, mb3.2, mpv2.8, Error ellipse: s-maj=38.6km s-min=17.4km az=145.0*

ISC 20 08:04:28.3±2.7, 42°2N±0°1×83°20E±0°09, h10km, n12, σ2°14/23, 5C-3D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KTMS	Ketmen	2.45	302	*e*P	Pb	08 05 12.4	-0.2
	13nm,0.2s						
KTMS				*e*S	Sg	08 05 45.4	-1.7
	69nm,0.3s						
SHLS	Shalkode	2.64	293	*e*P	Pb	08 05 15.0	-0.8
	9.6nm,0.3s						
SHLS				*e*S	Sb	08 05 49.9	+1.6
	46nm,0.3s						
PDGK	Podgornoye	2.97	294	⇑Pn	Pn	08 05 18.8	+3.3
	3.5nm,0.7s						
PDGK				⇑Sn	Sn	08 05 53.6	+2.5
	8.7nm,0.6s						
UZB	Uzynbulak	3.23	289	*e*P	Pb	08 05 23.5	-2.4
	2.5nm,0.2s						
UZB				*e*S	Sb	08 06 04.3	-1.1
	14nm,0.3s						
KPKS	Kokpek	3.57	293	*e*P	Pb	08 05 31.1	-0.5
	7.0nm,0.1s						
KPKS				*e*S	Sb	08 06 17.3	+2.4
	27nm,0.3s						
SATY	Saty	3.65	286	*e*P	Pb	08 05 31.0	-2.0
	9.8nm,0.5s						
SATY				*e*S	Sb	08 06 17.2	-0.1
	14nm,0.3s						
MNBS	Baschi	4.00	300	*e*P	Pb	08 05 39.5	+0.6
	1.0nm,0.4s						
MNBS				*e*S	Sg	08 06 32.5	-4.2
	17nm,0.5s						
KAPS	Kapalarasan	4.18	320	*e*P	Pg	08 05 46.9	-1

GDZ	**Gediz**	**0.27**	**83**	*i* P	Pb	08 26 23.6	+0.4
GDZ				*i* S	Sb	08 26 28.4	+0.4
DEMI	**Demirci**	**0.33**	**267**	P	Pg	08 26 22.4	-0.3
DEMI				S	Sg	08 26 26.0	-1.1
DEMI	**Demirci**	**0.33**	**267**	*i* P	Pg	08 26 22.4	-0.3
DEMI				*i* S	Sg	08 26 26.0	-1.1
TVSB	**Tavsanli**	**0.46**	**32**	*e*PG	Pg	08 26 25.8	+0.6
TVSB				*e*SG	Sg	08 26 32.2	+1.0
TVSB	**Tavsanli**	**0.46**	**32**	*e*Pg	Pg	08 26 25.8	+0.7
TVSB				*e*Sg	Sg	08 26 32.3	+1.1
KULA	**Kula-Manisa**	**0.66**	**215**	*e*PG	Pb	08 26 29.5	-0.4
KULA	**Kula-Manisa**	**0.66**	**215**	*e*Pg	Pb	08 26 29.5	-0.4
MANT	**Manisa**	**0.73**	**219**	P	Pb	08 26 30.7	-0.5
MANT	**Manisa**	**0.73**	**219**	*i* P	Pb	08 26 30.7	-0.5
MANT				*i* S	Sn	08 26 45.0	+0.7
DURS	**Dursunbey**	**0.75**	**316**	P	Pg	08 26 30.6	+0.1
DURS	**Dursunbey**	**0.75**	**316**	*i* P	Pg	08 26 30.6	+0.1
DURS	**Dursunbey**	**0.75**	**316**	*i* P	Pg	08 26 30.5	0.0
KHL	**Karahalli**	**0.79**	**158**	*e*PG	Pb	08 26 31.9	-0.3
KHL				*e*SG	Sb	08 26 43.1	0.0
KHL	**Karahalli**	**0.79**	**158**	*e*Pg	Pb	08 26 31.9	-0.3
KHL				*e*Sg	Sb	08 26 43.1	0.0
ORLT	**Orhaneli**	**1.00**	**349**	*e*PG	Pg	08 26 35.4	0.0
ORLT	**Orhaneli**	**1.00**	**349**	*e*Pg	Pg	08 26 35.4	0.0
AKHS	**Akhisar**	**1.05**	**261**	P	Pg	08 26 36.1	-0.2
AKHS				S	Sg	08 26 49.3	-0.6
AKHS	**Akhisar**	**1.05**	**261**	*i* P	Pg	08 26 36.1	-0.2
AKHS				*i* S	Sg	08 26 49.3	-0.6
AKS	**Akhisar**	**1.05**	**261**	*e*PG	Pg	08 26 36.2	-0.1
AKS	**Akhisar**	**1.05**	**261**	*e*Pg	Pg	08 26 36.2	-0.1
BALB	**Balikesir**	**1.14**	**301**	*e*PN	Pn	08 26 38.6	+0.2
BALB	**Balikesir**	**1.14**	**301**	*e*Pn	Pn	08 26 38.6	+0.3
CAVI	**Cavuskoy**	**1.26**	**25**	*e*PN	Pb	08 26 40.2	0.0
CAVI	**Cavuskoy**	**1.26**	**25**	*e*Pn	Pb	08 26 40.2	0.0
IZI	**Iznik**	**1.30**	**11**	*e*PN	Pg	08 26 41.6	+0.5
IZI	**Iznik**	**1.30**	**11**	*e*Pn	Pg	08 26 41.6	+0.5
MDNY	**Mudanya-Bursa**	**1.32**	**351**	*e*PN	Pn	08 26 41.0	+0.1
MDNY	**Mudanya-Bursa**	**1.32**	**351**	*e*Pn	Pn	08 26 41.0	+0.1
KCTX	**Karacabey (Bur**	**1.35**	**334**	*e*PN	Pb	08 26 41.6	-0.1
KCTX	**Karacabey (Bur**	**1.35**	**334**	*e*Pn	Pb	08 26 41.6	0.0
GEMT	**Gemlik**	**1.38**	**1**	*e*PN	Pg	08 26 42.8	+0.3
GEMT	**Gemlik**	**1.38**	**1**	*e*Pn	Pg	08 26 42.8	+0.3
ADVT	**Abdulvahap**	**1.45**	**18**	*e*PN	Pg	08 26 44.0	+0.1
ADVT	**Abdulvahap**	**1.45**	**18**	*e*Pn	Pg	08 26 44.0	+0.1
GONE	**Gonen-Balikesi**	**1.50**	**312**	*e*PN	Pb	08 26 43.8	-0.4
GONE	**Gonen-Balikesi**	**1.50**	**312**	*e*Pn	Pb	08 26 43.8	-0.3
ARMT	**Armutlu**	**1.52**	**352**	*e*PN	Pb	08 26 44.8	+0.2
ARMT	**Armutlu**	**1.52**	**352**	*e*Pn	Pb	08 26 44.8	+0.2
GPA	**Golpazari**	**1.52**	**36**	*e*PN	Pb	08 26 44.4	-0.3
GPA	**Golpazari**	**1.52**	**36**	*e*Pn	Pb	08 26 44.4	-0.2
EDC	**Edincik**	**1.62**	**323**	*e*PN	Pb	08 26 45.9	-0.3
EDC	**Edincik**	**1.62**	**323**	*e*Pn	Pb	08 26 45.9	-0.4
GULT	**Gulveren**	**1.73**	**37**	*e*PN	Pn	08 26 47.3	+0.7
GULT	**Gulveren**	**1.73**	**37**	*e*Pn	Pn	08 26 47.3	+0.7
SVRH	**Sivrihisar-ESK**	**1.89**	**77**	*e*PN	Pn	08 26 48.9	+0.2
SVRH	**Sivrihisar-ESK**	**1.89**	**77**	*e*Pn	Pn	08 26 48.9	+0.2
SILT	**Sile**	**2.13**	**10**	*e*PN	Pn	08 26 53.3	+1.4
SILT	**Sile**	**2.13**	**10**	*e*Pn	Pn	08 26 53.3	+1.4
RKY	**Sarkoy-Tekirda**	**2.22**	**318**	*e*PN	Pn	08 26 53.3	0.0
RKY	**Sarkoy-Tekirda**	**2.22**	**318**	*e*Pn	Pn	08 26 53.3	0.0

*DDA **20** 08:27:29.9, 39.°10N×29.°03E, h7km, Md2.4*
*ISCJB **20** 08:27:30.4±0.6, 39.°04N±0.°05×29.°03E±0.°04, h3km±8km, Error ellipse: s-maj=9.6km s-min=4.8km az=159.5*
*ISK **20** 08:27:30.1, 39.°03N×29.°07E, h7km, ML2.5*
*CSEM **20** 08:27:30.4±0.2, 39.°04N×29.°03E, h2km, MD2.4, Error ellipse: s-maj=4.4km s-min=3.0km az=139.0*

ISC 20 08:27:30.7±1.1, 39.°04N±0.°04×29.°04E±0.°03, h5km±10km, n30, σ0°29/40, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**271**	P	**Pg**	**08 27 35.4**	**-0.2**
DEMI				S	**Sg**	**08 27 38.8**	**-0.2**
DEMI	**Demirci**	**0.25**	**271**	*i* P	**Pg**	**08 27 35.4**	**-0.2**
DEMI				*i* S	**Sg**	**08 27 38.8**	**-0.2**
GDZ	**Gediz**	**0.35**	**81**	P	**Pg**	**08 27 37.3**	**-0.2**
GDZ				S	**Sg**	**08 27 42.3**	**+0.3**
GDZ	**Gediz**	**0.35**	**81**	*i* P	**Pg**	**08 27 37.3**	**-0.2**
GDZ				*i* S	**Sg**	**08 27 42.3**	**+0.3**
TVSB	**Tavsanli**	**0.53**	**38**	*e*PG	**Pg**	**08 27 40.5**	**-0.3**
TVSB	**Tavsanli**	**0.53**	**38**	*e*Pg	**Pg**	**08 27 40.5**	**-0.3**
MANT	**Manisa**	**0.67**	**215**	P	**Pg**	**08 27 43.5**	**+0.1**
MANT				S	**Sg**	**08 27 52.7**	**+0.6**
MANT	**Manisa**	**0.67**	**215**	*i* P	**Pg**	**08 27 43.5**	**+0.1**
MANT				*i* S	**Sg**	**08 27 52.7**	**+0.6**
ORLT	**Orhaneli**	**1.01**	**354**	*e*PG	**Pg**	**08 27 50.2**	**+0.1**
ORLT	**Orhaneli**	**1.01**	**354**	*e*Pg	**Pg**	**08 27 50.3**	**+0.1**
BALB	**Balikesir**	**1.08**	**304**	*e*PN	**Pg**	**08 27 51.4**	**-0.1**
BALB				*e*SN	**Sn**	**08 28 07.8**	**-0.1**
BALB	**Balikesir**	**1.08**	**304**	*e*Pn	**Pg**	**08 27 51.4**	**-0.1**
BALB				*e*Sn	**Sn**	**08 28 07.8**	**-0.1**
CAVI	**Cavuskoy**	**1.32**	**28**	*e*PN	**Pn**	**08 27 55.6**	**-0.1**
CAVI				*e*SN	**Sn**	**08 28 13.5**	**-0.2**
CAVI	**Cavuskoy**	**1.32**	**28**	*e*Pn	**Pn**	**08 27 55.6**	**-0.1**
CAVI				*e*Sn	**Sn**	**08 28 13.5**	**-0.2**
KCTX	**Karacabey (Bur**	**1.33**	**337**	*e*PN	**Pn**	**08 27 55.6**	**-0.4**
KCTX	**Karacabey (Bur**	**1.33**	**337**	*e*Pn	**Pn**	**08 27 55.6**	**-0.4**
MDNY	**Mudanya-Bursa**	**1.33**	**355**	*e*PN	**Pg**	**08 27 56.8**	**+0.5**
MDNY	**Mudanya-Bursa**	**1.33**	**355**	*e*Pn	**Pg**	**08 27 56.8**	**+0.5**
IZI	**Iznik**	**1.34**	**14**	*e*PN	**Pg**	**08 27 56.8**	**+0.4**
IZI	**Iznik**	**1.34**	**14**	*e*Pn	**Pg**	**08 27 56.8**	**+0.4**
GEMT	**Gemlik**	**1.40**	**5**	*e*PN	**Pn**	**08 27 57.0**	**+0.1**
GEMT	**Gemlik**	**1.40**	**5**	*e*Pn	**Pn**	**08 27 57.0**	**+0.1**
GONE	**Gonen-Balikesi**	**1.45**	**314**	*e*PN	**Pn**	**08 27 57.6**	**0.0**
GONE	**Gonen-Balikesi**	**1.45**	**314**	*e*Pn	**Pn**	**08 27 57.6**	**0.0**
ADVT	**Abdulvahap**	**1.49**	**21**	*e*PN	**Pn**	**08 27 57.8**	**-0.3**
ADVT	**Abdulvahap**	**1.49**	**21**	*e*Pn	**Pn**	**08 27 57.8**	**-0.3**
ARMT	**Armutlu**	**1.53**	**355**	*e*PN	**Pb**	**08 27 59.5**	**-0.1**
ARMT	**Armutlu**	**1.53**	**355**	*e*Pn	**Pb**	**08 27 59.5**	**-0.1**
EDC	**Edincik**	**1.59**	**326**	*e*PN	**Pn**	**08 27 59.8**	**+0.3**
EDC	**Edincik**	**1.59**	**326**	*e*Pn	**Pn**	**08 27 59.8**	**+0.3**

BUC 20 08:29:47.8±1.6, 46.°95N×22.°30E, h2km, MD2.3/1, 5C-4D, Error ellipse: s-maj=14.3km s-min=5.7km az=356.0, Romania

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DRGR		**0.32**	**119**	⇑*i* P	Pg	08 29 54.5	+0.5
DRGR				S	Sg	08 29 59.3	+1.1
DRGR		**0.32**	**119**	⇑*i* P	Pg	08 29 54.5	+0.5
DRGR				*i* S	Sg	08 29 59.3	+1.1
SIRR	**Siria**	**0.81**	**213**	⇓*i* P	Pb	08 30 04.1	-0.6
SIRR				S	Sb	08 30 15.8	-0.3
SIRR	**Siria**	**0.81**	**213**	⇓*i* P	Pb	08 30 04.1	-0.6
BZS	**Buzias**	**1.42**	**200**	⇑*i* P	Pg	08 30 16.7	+1.8
BZS	**Buzias**	**1.42**	**200**	S	Sn	08 30 34.4	+0.6
BZS	**Buzias**	**1.42**	**200**	*i* S	Sn	08 30 34.4	+0.6
GZR	**Gura Zlata**	**1.59**	**168**	⇓*i* P	Pg	08 30 18.3	0.0
GZR	**Gura Zlata**	**1.59**	**168**	⇓*i* P	Pg	08 30 18.3	0.0
GZR				*i* S	Sg	08 30 40.3	+1.4
MDVR	**Moldovita**	**2.21**	**191**	⇑*i* P	Pb	08 30 27.7	-0.8
MDVR	**Moldovita**	**2.21**	**191**	⇑*i* P	Pb	08 30 27.7	-0.8

*ISCJB **20** 08:30:53.8±0.5, 39.°08N±0.°02×29.°03E±0.°03, h3km±4km, Error ellipse: s-maj=3.6km s-min=3.1km az=147.1*
*ISK **20** 08:30:53.8, 39.°10N×29.°08E, h3km, ML3.3*
*DDA **20** 08:30:53.1, 39.°10N×29.°00E, h16km, Md3.1*
*CSEM **20** 08:30:54.6±0.2, 39.°06N×29.°06E, h10km, MD3.1, Error ellipse: s-maj=4.3km s-min=3.6km az=121.0*

ISC 20 08:30:53.6±1.0, 39.°09N±0.°02×29.°05E±0.°02, h7km±9km, n89, σ0°73/109, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.34**	**91**	P	**Pg**	**08 30 59.6**	**-0.7**
GDZ				S	**Sg**	**08 31 05.5**	**+0.8**
GDZ	**Gediz**	**0.34**	**91**	*i* P	**Pg**	**08 30 59.6**	**-0.7**
GDZ				*i* S	**Sg**	**08 31 05.5**	**+0.8**
TVSB	**Tavsanli**	**0.48**	**42**	*e*PG	**Pg**	**08 31 03.2**	**+0.3**
TVSB				*e*SG	**Sg**	**08 31 10.0**	**+0.8**
TVSB	**Tavsanli**	**0.48**	**42**	*e*Pg	**Pg**	**08 31 03.2**	**+0.3**
TVSB				*e*Sg	**Sg**	**08 31 10.0**	**+0.8**
KULA	**Kula-Manisa**	**0.65**	**208**	*e*PG	**Pb**	**08 31 07.7**	**+0.3**
KULA	**Kula-Manisa**	**0.65**	**208**	*e*Pg	**Pb**	**08 31 07.7**	**+0.3**
DURS	**Dursunbey**	**0.67**	**319**	P	**Pg**	**08 31 05.9**	**-0.7**
DURS	**Dursunbey**	**0.67**	**319**	*i* P	**Pg**	**08 31 05.9**	**-0.7**
MANT	**Manisa**	**0.71**	**213**	P	**Pg**	**08 31 06.9**	**-0.4**
MANT				S	**Sg**	**08 31 16.0**	**-0.6**
MANT	**Manisa**	**0.71**	**213**	*i* P	**Pg**	**08 31 06.9**	**-0.4**
MANT				*i* S	**Sg**	**08 31 16.0**	**-0.6**
KHL	**Karahalli**	**0.85**	**154**	*e*PG	**Pb**	**08 31 10.6**	**-0.2**
KHL	**Karahalli**	**0.85**	**154**	*e*Pg	**Pb**	**08 31 10.6**	**-0.2**
ORLT	**Orhaneli**	**0.96**	**353**	*e*PG	**Pn**	**08 31 13.2**	**-0.3**
ORLT				*e*SG	**Sn**	**08 31 26.6**	**-0.8**
ORLT	**Orhaneli**	**0.96**	**353**	*e*Pg	**Pn**	**08 31 13.2**	**-0.3**
ORLT				*e*Sg	**Sn**	**08 31 26.6**	**-0.8**
AKHS	**Akhisar**	**0.98**	**258**	P	**Pg**	**08 31 12.4**	**-0.1**
AKHS				S	**Sg**	**08 31 25.2**	**-0.1**
AKHS	**Akhisar**	**0.98**	**258**	*i* P	**Pg**	**08 31 12.4**	**-0.1**
AKHS				*i* S	**Sg**	**08 31 25.2**	**-0.1**
AKS	**Akhisar**	**0.98**	**258**	*e*PG	**Pn**	**08 31 13.8**	**0.0**
AKS				*e*SG	**Sn**	**08 31 28.4**	**+0.4**
AKS	**Akhisar**	**0.98**	**258**	*e*Pg	**Pn**	**08 31 13.8**	**0.0**
AKS				*e*Sg	**Sn**	**08 31 28.4**	**+0.4**
BALB	**Balikesir**	**1.06**	**301**	*e*PG	**Pn**	**08 31 14.9**	**+0.1**
BALB	**Balikesir**	**1.06**	**301**	*e*Pg	**Pn**	**08 31 14.9**	**+0.1**
IGD	**Bursa**	**1.18**	**6**	*i* P	**Pb**	**08 31 15.1**	**-1.1**
IGD				*i* S	**Sb**	**08 31 31.2**	**-0.4**
CAVI	**Cavuskoy**	**1.27**	**29**	*e*PN	**Pg**	**08 31 18.6**	**+0.7**
MDNY	**Mudanya-Bursa**	**1.28**	**354**	*e*PN	**Pg**	**08 31 18.7**	**+0.5**
BALY	**Balya**	**1.28**	**301**	P	**Pn**	**08 31 17.7**	**-0.2**
BALY	**Balya**	**1.28**	**301**	*i* P	**Pn**	**08 31 17.7**	**-0.2**
BALY				*i* S	**Sb**	**08 31 33.0**	**-1.7**
IZI	**Iznik**	**1.28**	**15**	*e*PN	**Pg**	**08 31 19.2**	**+1.0**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*PN	**Pg**	**08 31 18.7**	**+0.5**
GEMT	**Gemlik**	**1.34**	**5**	*e*PN	**Pg**	**08 31 19.7**	**+0.4**
DNZL	**Cakiroluk**	**1.40**	**180**	P	**Pn**	**08 31 19.4**	**-0.3**
DNZL	**Cakiroluk**	**1.40**	**180**	*i* P	**Pn**	**08 31 19.4**	**-0.3**
ADVT	**Abdulvahap**	**1.44**	**22**	*e*PN	**Pg**	**08 31 21.5**	**+0.3**
ADVT	**Abdulvahap**	**1.44**	**22**	*e*Pn	**Pg**	**08 31 21.5**	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**1.46**	**219**	*e*PN	**Pg**	**08 31 21.9**	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**1.46**	**219**	*e*Pn	**Pg**	**08 31 21.9**	**+0.3**
ESKT	**Eskisehir**	**1.46**	**73**	*i* P	**Pg**	**08 31 22.1**	**+0.5**
ESKT				*i* S	**Sg**	**08 31 41.7**	**+1.1**
SEYT	**Eskypehyr**	**1.46**	**73**	P	**Pg**	**08 31 22.1**	**+0.5**
SEYT				S	**Sg**	**08 31 41.7**	**+1.1**
ARMT	**Armutlu**	**1.48**	**355**	*e*PN	**Pg**	**08 31 22.4**	**+0.5**
ARMT	**Armutlu**	**1.48**	**355**	*e*Pn	**Pg**	**08 31 22.4**	**+0.5**
BOLV	**Bolvadin**	**1.53**	**104**	P	**Pb**	**08 31 22.3**	**-0.1**
BOLV	**Bolvadin**	**1.53**	**104**	*i* P	**Pb**	**08 31 22.3**	**-0.1**
GPA	**Golpazari**	**1.54**	**39**	*e*PN	**Pb**	**08 31 22.6**	**+0.1**
EDC	**Edincik**	**1.55**	**324**	*e*PN	**Pb**	**08 31 23.0**	**+0.4**
EDC	**Edincik**	**1.55**	**324**	*e*Pn	**Pb**	**08 31 23.0**	**+0.4**
KNL	**Bal¨–kesir**	**1.66**	**316**	*i* P	**Pb**	**08 31 23.8**	**-0.7**
KNL				*i* S	**Sb**	**08 31 46.2**	**+0.6**
DKL	**Dikili**	**1.67**	**270**	*e*PN	**Pb**	**08 31 25.3**	**+0.7**
DKL	**Dikili**	**1.67**	**270**	*e*Pn	**Pb**	**08 31 25.3**	**+0.7**
AYDN	**Tasoluk**	**1.70**	**213**	P	**Pn**	**08 31 23.7**	**0.0**
AYDN	**Tasoluk**	**1.70**	**213**	*i* P	**Pn**	**08 31 23.7**	**0.0**
ISP	**Isparta**	**1.72**	**137**	*e*PN	**Pb**	**08 31 25.3**	**-0.2**
ISP	**Isparta**	**1.72**	**137**	*e*Pn	**Pb**	**08 31 25.3**	**-0.2**
GULT	**Gulveren**	**1.75**	**40**	*e*PN	**Pb**	**08 31 26.0**	**-0.1**
GULT	**Gulveren**	**1.75**	**40**	*e*Pn	**Pb**	**08 31 26.0**	**-0.1**
BAGO	**Egridir - ISPA**	**1.75**	**128**	*i* P	**Pn**	**08 31 23.8**	**-0.7**
BAGO				*i* S	**Sg**	**08 31 52.5**	**+2.5**
BUY	**Buyukada**	**1.76**	**2**	P	**Pn**	**08 31 23.9**	**-0.5**
BUY				S	**Sn**	**08 31 47.2**	**+0.2**
BUY	**Buyukada**	**1.76**	**2**	*i* P	**Pn**	**08 31 23.9**	**-0.5**
BUY				*i* S	**Sn**	**08 31 47.2**	**+0.2**
HRT	**Hereke**	**1.79**	**15**	*e*PN	**Pb**	**08 31 26.2**	**-0.5**
HRT	**Hereke**	**1.79**	**15**	*e*Pn	**Pb**	**08 31 26.3**	**-0.5**
KRBG	**Karabiga-Canak**	**1.87**	**314**	*e*PN	**Pb**	**08 31 27.6**	**-0.5**
KRBG	**Karabiga-Canak**	**1.87**	**314**	*e*Pn	**Pb**	**08 31 27.6**	**-0.5**
MRMT	**Marmara Adasi**	**1.88**	**324**	*e*PN	**Pb**	**08 31 28.1**	**-0.1**
MRMT	**Marmara Adasi**	**1.88**	**324**	*e*Pn	**Pb**	**08 31 28.1**	**-0.1**
GOLH	**Golhisar**	**1.90**	**167**	P	**Pn**	**08 31 26.3**	**-0.2**
GOLH	**Golhisar**	**1.90**	**167**	*i* P	**Pn**	**08 31 26.3**	**-0.2**
SVRH	**Sivrihisar-ESK**	**1.95**	**79**	*e*PN	**Pb**	**08 31 28.7**	**-0.9**
ISK	**Istanbul-Kandi**	**1.97**	**0**	*e*PN	**Pb**	**08 31 28.9**	**-0.8**
ISK	**Istanbul-Kandi**	**1.97**	**0**	*e*Pn	**Pb**	**08 31 28.9**	**-0.8**
AUMIH	**MIHALICIK**	**2.04**	**67**	*i* P	**Pg**	**08 31 32.5**	**-0.1**
URLA	**Izmir**	**2.05**	**250**	P	**Pn**	**08 31 29.5**	**+1.0**
URLA	**Izmir**	**2.05**	**250**	*i* P	**Pn**	**08 31 29.5**	**+1.0**
SILT	**Sile**	**2.11**	**12**	*e*PN	**Pb**	**08 31 31.0**	**-1.1**
SILT	**Sile**	**2.11**	**12**	*e*Pn	**Pb**	**08 31 31.0**	**-1.1**
RKY	**Sarkoy-Tekirda**	**2.15**	**318**	*e*PN	**Pb**	**08 31 31.9**	**-0.8**
RKY	**Sarkoy-Tekirda**	**2.15**	**318**	*e*Pn	**Pb**	**08 31 31.9**	**-0.9**
MDUB	**Mudurnu**	**2.15**	**50**	*e*PN	**Pb**	**08 31 31.4**	**-1.6**
MDUB	**Mudurnu**	**2.15**	**50**	*e*Pn	**Pb**	**08 31 31.4**	**-1.6**
KLYT	**Kilyos**	**2.16**	**360**	*e*PN	**Pb**	**08 31 31.9**	**-1.0**
KLYT	**Kilyos**	**2.16**	**360**	*e*Pn	**Pb**	**08 31 31.9**	**-1.0**
ZEY	**¨zmir**	**2.17**	**248**	*i* P	**Pg**	**08 31 35.2**	**+0.1**
CTKS	**Kestanelik-??a**	**2.18**	**349**	*e*PN	**Pb**	**08 31 32.5**	**-0.8**
CTKS	**Kestanelik-??a**	**2.18**	**349**	*e*Pn	**Pb**	**08 31 32.5**	**-0.8**
KAND	**Kocaeli-Kandir**	**2.18**	**23**	P	**Pn**	**08 31 30.4**	**+0.2**
KAND	**Kocaeli-Kandir**	**2.18**	**23**	*i* P	**Pn**	**08 31 30.4**	**+0.2**
KIZT	**Kizilcal**	**2.22**	**95**	*e*PN	**Pb**	**08 31 32.7**	**-1.4**
TKR	**Tekirdag**	**2.22**	**329**	*e*PN	**Pb**	**08 31 33.1**	**-1.0**
TKR	**Tekirdag**	**2.22**	**329**	*e*Pn	**Pb**	**08 31 33.1**	**-0.9**
SAHE	**Sakarya_HENDEK**	**2.24**	**38**	P	**Pn**	**08 31 31.1**	**0.0**
SAHE	**Sakarya_HENDEK**	**2.24**	**38**	*i* P	**Pn**	**08 31 31.1**	**0.0**
CTYL	**Yalikoy Yolu**	**2.45**	**347**	*e*PN	**Pn**	**08 31 35.7**	**+1.8**
CTYL	**Yalikoy Yolu**	**2.45**	**347**	*e*Pn	**Pn**	**08 31 35.7**	**+1.8**

DDA 20 08:33:10.4, 39.°15N×28.°99E, h6km, Md2.3, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**243**	*i* P	Pg	08 33 15.4	+0.3
DEMI				*i* S	Sg	08 33 19.1	+0.9
AKHS	**Akhisar**	**0.95**	**254**	*i* P	Pg	08 33 28.8	+0.1
AKHS				*i* S	Sb	08 33 42.8	+0.6
IGD	**Bursa**	**1.12**	**8**	*i* P	Pg	08 33 31.2	-0.7
IGD				*i* S	Sn	08 33 48.3	-0.1
BALY	**Balya**	**1.21**	**299**	*i* P	Pn	08 33 34.2	+0.4
BALY				*i* S	Sn	08 33 50.2	-0.4

*IDC **20** 08:35:32.1±1.1, 6.°56S×148.°07E, h0km, mb4.2/11, mb1 4.3/14, mb1mx4.1/53, mbtmp4.2/14, ML4.0/2, MS3.3/2, Ms1 3.3/2, ms1mx2.8/30, Error ellipse: s-maj=39.2km s-min=14.1km az=102.0*
*ISCJB **20** 08:35:37.7±0.6, 6.°57S±0.°05×147.°9E±0.°1, h51km, mb4.4/17, MS3.1/2, Error ellipse: s-maj=15.6km s-min=6.8km az=8.7*
*NEIC **20** 08:35:39.4±1.3, 6.°58S×147.°94E, h51km±12km, mb4.9/8, Error ellipse: s-maj=12.9km s-min=9.3km az=81.0*

ISC 20 08:35:39.1±0.8, 6.°53S±0.°07×148.°0E±0.°2, h51km, n33, σ1°10/33, mb4.2/17, 1D, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.98**	**196**	Pn	**Pn**	**08 36 22.6**	**-1.3**
	26nm,0.3s,baz=5.0,slow=6.9,SNR=90						
PMG				Sn	**Sn**	**08 37 00.7**	**+2.4**
	23nm,0.3s,baz=336,slow=18.3,SNR=4.1						
PMG	**Port Moresby**	**2.98**	**196**	*e*Pn	**Pn**	**08 36 23.6**	**-0.3**
PMG				*e*Sn	**Sn**	**08 37 01.7**	**+3.4**
COEN	**Coen**	**8.77**	**212**	*e*Pn	**Pn**	**08 37 43.0**	**-0.5**
COEN				*e*Sn	**Sn**	**08 39 21.4**	**+0.4**
CTA	**Charters Tower**	**13.58**	**187**	Pn	**Pn**	**08 38 47.9**	**-1.3**
	0.3nm,0.3s,baz=27,slow=14,SNR=5.0						
CTAO	**Charters Tower**	**13.58**	**187**	*e*Pn	**Pn**	**08 38 49.4**	**+0.1**
WRAB	**Tennant Creek**	**18.79**	**224**	*e*P	**P**	**08 39 54.3**	**-0.2**
	3.9nm,0.6s						
WRA	**Warramunga Arr**	**18.81**	**224**	P	**P**	**08 39 53.2**	**-1.5**
	0.8nm,0.3s,baz=53,slow=10,SNR=48						
EIDS	**Eidsvold**	**18.96**	**171**	*e*P	**Pn**	**08 39 56.9**	**-0.5**
	9.4nm,1.1s						
GUMO	**Guam**	**20.23**	**351**	LR	LR	08 46 20.8	
	comp=Z,111nm,21.6s,baz=158,slow=32						
ASAR	**Alice Springs**	**21.77**	**217**	P	**P**	**08 40 25.6**	**-1.2**
	3.0nm,0.5s,baz=51,slow=9.3,SNR=60						
ARMA	**Armidale**	**24.01**	**172**	*e*P	**P**	**08 40 50.0**	**+0.7**
	7.4nm,0.9s						
FITZ	**Fitzroy Crossi**	**24.65**	**240**	P	**P**	**08 40 54.8**	**-0.5**
	14nm,0.4s,baz=55,slow=8.2,SNR=94						
FITZ	**Fitzroy Crossi**	**24.65**	**240**	*e*P	**P**	**08 40 54.6**	**-0.6**
	14nm,0.4s						
STKA	**Stephens Creek**	**25.92**	**193**	P	**P**	**08 41 05.5**	**-1.1**
	3.4nm,0.6s,baz=356,slow=7.6,SNR=16						
DAV	**Davao City (W)**	**26.13**	**301**	LR	LR	08 52 43.4	
	comp=Z,52nm,18.1s,baz=285,slow=39						
MBWA	**Marble Bar**	**30.98**	**239**	*e*P	**P**	**08 41 51.5**	**-0.4**
	21nm,0.6s						
NWAO	**Narrogin (SRO)**	**38.82**	**223**	P	**P**	**08 42 58.7**	**-0.6**
	15nm,1.0s,baz=291,slow=9.2,SNR=5.2						
MJAR	**Matsushiro Arr**	**43.82**	**349**	P	**P**	**08 43 40.8**	**+0.6**
	4.8nm,1.0s,baz=174,slow=8.1,SNR=7.2						
KSRS	**Korea Array**	**47.61**	**338**	P	**P**	**08 44 10.8**	**+0.8**
	2.1nm,0.8s,baz=163,slow=9.1,SNR=7.3						
KSAR	**Wonju Array Be**	**47.61**	**338**	P	**P**	**08 44 10.8**	**+0.8**
IPM	**Ipoh**	**48.15**	**282**	*e*P	**P**	**08 44 15.7**	**+1.0**
	14nm,0.8s						
KULM	**Kulim**	**48.70**	**283**	*e*P	**P**	**08 44 19.4**	**+0.4**
	9.0nm,0.6s						
GSI	**Gunungsitoli**	**50.93**	**277**	*e*P	**P**	**08 44 34.9**	**-1.0**
	9.4nm,0.5s						
USRK	**Ussuriysk Ar.**	**52.53**	**346**	P	**P**	**08 44 48.4**	**+1.2**
	0.6nm,0.4s,baz=145,slow=7.0,SNR=4.6						
CMAR	**Chiang Mai Arr**	**54.38**	**298**	P	**P**	**08 45 02.3**	**+1.0**
	1.7nm,0.6s,baz=118,slow=6.0,SNR=7.8						
SONM	**Songino Array**	**65.35**	**331**	P	**P**	**08 46 16.1**	**-0.2**
	1.4nm,0.7s,baz=114,slow=9.9,SNR=4.7						
MKAR	**Makanchi Array**	**78.54**	**320**	P	**P**	**08 47 34.4**	**-0.8**
	0.6nm,0.6s,baz=101,slow=6.5,SNR=6.9						
QSPA	**South Pole Qui**	**83.44**	**180**	*e*P	**P**	**08 48 01.1**	**0.0**
	26nm,1.1s						
ILAR	**Eielson Array**	**85.58**	**23**	P	**P**	**08 48 11.2**	**-0.5**
	0.5nm,0.8s,baz=260,slow=5.2,SNR=3.5						
SYO	**Syowa Base**	**90.44**	**200**	‖*e*pP	P	08 48 42.0	+7.

TVSB	**Tavsanli**	**0.51**	**47**	*e*PG	**Pg**	**08 48 29.1**	**-0.1**
TVSB	**Tavsanli**	**0.51**	**47**	*e*Pg	**Pg**	**08 48 29.1**	**-0.1**
DURS	**Dursunbey**	**0.64**	**321**	P	**Pg**	**08 48 31.3**	**-0.4**
DURS	**Dursunbey**	**0.64**	**321**	*i* P	**Pg**	**08 48 31.3**	**-0.4**
KULA	**Kula-Manisa**	**0.64**	**203**	*e*PG	**Pg**	**08 48 31.5**	**-0.3**
KULA	**Kula-Manisa**	**0.64**	**203**	*e*Pg	**Pg**	**08 48 31.5**	**-0.3**
MANT	**Manisa**	**0.70**	**209**	P	**Pg**	**08 48 32.6**	**-0.3**
MANT				S	**Sg**	**08 48 41.7**	**-0.3**
MANT	**Manisa**	**0.70**	**209**	*i* P	**Pg**	**08 48 32.6**	**-0.3**
MANT				*i* S	**Sg**	**08 48 41.7**	**-0.3**
KHL	**Karahalli**	**0.89**	**152**	*e*PG	**Pg**	**08 48 36.5**	**0.0**
KHL	**Karahalli**	**0.89**	**152**	*e*Pg	**Pg**	**08 48 36.5**	**0.0**
AKHS	**Akhisar**	**0.94**	**257**	P	**Pg**	**08 48 37.4**	**-0.1**
AKHS				S	**Sb**	**08 48 50.7**	**-0.5**
AKHS	**Akhisar**	**0.94**	**257**	*i* P	**Pg**	**08 48 37.4**	**-0.1**
AKHS				*i* S	**Sb**	**08 48 50.7**	**-0.5**
AKS	**Akhisar**	**0.94**	**257**	*e*PG	**Pg**	**08 48 37.3**	**-0.2**
AKS				*e*SG	**Sb**	**08 48 51.4**	**+0.1**
AKS	**Akhisar**	**0.94**	**257**	*e*Pg	**Pg**	**08 48 37.3**	**-0.2**
AKS				*e*Sg	**Sb**	**08 48 51.4**	**+0.1**
ORLT	**Orhaneli**	**0.94**	**356**	*e*PG	**Pg**	**08 48 37.4**	**-0.2**
ORLT	**Orhaneli**	**0.94**	**356**	*e*Pg	**Pg**	**08 48 37.4**	**-0.2**
BALB	**Balikesir**	**1.01**	**302**	*e*PG	**Pg**	**08 48 38.6**	**-0.3**
BALB				*e*SG	**Sb**	**08 48 53.8**	**+0.5**
BALB	**Balikesir**	**1.01**	**302**	*e*Pg	**Pg**	**08 48 38.6**	**-0.3**
BALB				*e*Sg	**Sb**	**08 48 53.8**	**+0.5**
KCTX	**Karacabey (Bur**	**1.26**	**337**	*e*PN	**Pg**	**08 48 43.3**	**-0.3**
KCTX	**Karacabey (Bur**	**1.26**	**337**	*e*Pn	**Pg**	**08 48 43.3**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.27**	**356**	*e*PN	**Pg**	**08 48 43.5**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.27**	**356**	*e*Pn	**Pg**	**08 48 43.5**	**-0.3**
CAVI	**Cavuskoy**	**1.28**	**31**	*e*PN	**Pg**	**08 48 43.7**	**-0.3**
CAVI	**Cavuskoy**	**1.28**	**31**	*e*Pn	**Pg**	**08 48 43.7**	**-0.3**
IZI	**Iznik**	**1.29**	**17**	*e*PN	**Pg**	**08 48 43.9**	**-0.3**
IZI	**Iznik**	**1.29**	**17**	*e*Pn	**Pg**	**08 48 43.9**	**-0.3**
GEMT	**Gemlik**	**1.34**	**7**	*e*PN	**Pn**	**08 48 44.8**	**-0.2**
GEMT	**Gemlik**	**1.34**	**7**	*e*Pn	**Pn**	**08 48 44.8**	**-0.2**
GONE	**Gonen-Balikesi**	**1.38**	**314**	*e*PN	**Pn**	**08 48 45.4**	**-0.1**
GONE	**Gonen-Balikesi**	**1.38**	**314**	*e*Pn	**Pn**	**08 48 45.4**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**1.44**	**217**	*e*PN	**Pn**	**08 48 46.5**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**1.44**	**217**	*e*Pn	**Pn**	**08 48 46.5**	**0.0**
ADVT	**Abdulvahap**	**1.45**	**23**	*e*PN	**Pn**	**08 48 46.5**	**0.0**
ADVT	**Abdulvahap**	**1.45**	**23**	*e*Pn	**Pn**	**08 48 46.5**	**0.0**
ARMT	**Armutlu**	**1.46**	**356**	*e*PN	**Pn**	**08 48 46.7**	**0.0**
ARMT	**Armutlu**	**1.46**	**356**	*e*Pn	**Pn**	**08 48 46.7**	**0.0**
EDC	**Edincik**	**1.51**	**325**	*e*PN	**Pn**	**08 48 47.4**	**0.0**
EDC	**Edincik**	**1.51**	**325**	*e*Pn	**Pn**	**08 48 47.4**	**0.0**
GPA	**Golpazari**	**1.56**	**40**	*e*PN	**Pn**	**08 48 48.2**	**+0.1**
GPA	**Golpazari**	**1.56**	**40**	*e*Pn	**Pn**	**08 48 48.2**	**+0.1**
GULT	**Gulveren**	**1.77**	**41**	*e*PN	**Pn**	**08 48 51.0**	**-0.1**
GULT	**Gulveren**	**1.77**	**41**	*e*Pn	**Pn**	**08 48 51.0**	**-0.1**
HRT	**Hereke**	**1.79**	**17**	*e*PN	**Pn**	**08 48 51.4**	**+0.1**
HRT	**Hereke**	**1.79**	**17**	*e*Pn	**Pn**	**08 48 51.4**	**+0.1**
MRMT	**Marmara Adasi**	**1.84**	**325**	*e*PN	**Pn**	**08 48 52.1**	**+0.1**
MRMT	**Marmara Adasi**	**1.84**	**325**	*e*Pn	**Pn**	**08 48 52.1**	**+0.1**
SVRH	**Sivrihisar-ESK**	**2.00**	**79**	*e*PN	**Pn**	**08 48 54.4**	**+0.3**
SVRH	**Sivrihisar-ESK**	**2.00**	**79**	*e*Pn	**Pn**	**08 48 54.4**	**+0.3**
RKY	**Sarkoy-Tekirda**	**2.11**	**319**	*e*PN	**Pn**	**08 48 56.0**	**+0.4**
RKY	**Sarkoy-Tekirda**	**2.11**	**319**	*e*Pn	**Pn**	**08 48 56.0**	**+0.4**
CTKS	**Kestanelik-??a**	**2.16**	**350**	*e*PN	**Pn**	**08 48 56.8**	**+0.5**
CTKS	**Kestanelik-??a**	**2.16**	**350**	*e*Pn	**Pn**	**08 48 56.8**	**+0.5**

ISK ***20*** *08:50:37.6, 39.°11N×29.°05E, h2km, MD2.3*
ISCJB ***20*** *08:50:38.1±0.6, 39.°09N±0.°03×29.°06E±0.°04, h2km±6km, Error ellipse: s-maj=5.7km s-min=4.5km az=32.1*
CSEM ***20*** *08:50:38.5±0.1, 39.°09N×29.°04E, h5km, MD2.9, Error ellipse: s-maj=2.4km s-min=1.8km az=123.0*
DDA ***20*** *08:50:38.9, 39.°06N×29.°00E, h7km, Md2.9*
ISC 20 08:50:37.9±1.0,**39.°07N**±0.°03×**29.°08E**±0.°03,**h12**km±8km, **n46**,σ0**s27**/56,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.29**	**265**	P	**Pg**	**08 50 43.8**	**0.0**
DEMI				S	**Sg**	**08 50 47.8**	**+0.1**
DEMI	**Demirci**	**0.29**	**265**	*i* P	**Pg**	**08 50 43.8**	**0.0**
DEMI				*i* S	**Sg**	**08 50 47.8**	**+0.1**
TVSB	**Tavsanli**	**0.48**	**38**	*e*PG	**Pg**	**08 50 47.4**	**0.0**
TVSB	**Tavsanli**	**0.48**	**38**	*e*Pg	**Pg**	**08 50 47.4**	**0.0**
KULA	**Kula-Manisa**	**0.64**	**211**	*e*PG	**Pb**	**08 50 51.0**	**-0.1**
KULA	**Kula-Manisa**	**0.64**	**211**	*e*Pg	**Pb**	**08 50 51.0**	**-0.1**
MANT	**Manisa**	**0.71**	**216**	P	**Pb**	**08 50 52.2**	**-0.1**
MANT				S	**Sg**	**08 51 01.2**	**+0.3**
MANT	**Manisa**	**0.71**	**216**	*i* P	**Pb**	**08 50 52.2**	**-0.1**
MANT				*i* S	**Sg**	**08 51 01.2**	**+0.3**
DURS	**Dursunbey**	**0.71**	**319**	P	**Pb**	**08 50 52.2**	**-0.1**
DURS	**Dursunbey**	**0.71**	**319**	*i* P	**Pb**	**08 50 52.2**	**-0.1**
KHL	**Karahalli**	**0.82**	**155**	*e*PG	**Pn**	**08 50 55.5**	**+0.1**
KHL	**Karahalli**	**0.82**	**155**	*e*Pg	**Pn**	**08 50 55.5**	**+0.1**
ORLT	**Orhaneli**	**0.99**	**352**	*e*PG	**Pg**	**08 50 56.6**	**-0.3**
ORLT				*e*SG	**Sb**	**08 51 10.2**	**+0.2**
ORLT	**Orhaneli**	**0.99**	**352**	*e*Pg	**Pg**	**08 50 56.6**	**-0.3**
ORLT				*e*Sg	**Sb**	**08 51 10.2**	**+0.2**
AKHS	**Akhisar**	**1.01**	**260**	P	**Pg**	**08 50 56.8**	**-0.5**
AKHS				S	**Sb**	**08 51 10.8**	**+0.3**
AKHS	**Akhisar**	**1.01**	**260**	*i* P	**Pg**	**08 50 56.8**	**-0.5**
AKHS				*i* S	**Sb**	**08 51 10.8**	**+0.3**
AKS	**Akhisar**	**1.01**	**260**	*e*PG	**Pn**	**08 50 57.6**	**-0.3**
AKS	**Akhisar**	**1.01**	**260**	*e*Pg	**Pn**	**08 50 57.6**	**-0.3**
BALB	**Balikesir**	**1.09**	**302**	*e*PG	**Pb**	**08 50 58.5**	**-0.2**
BALB				*e*SG	**Sn**	**08 51 14.2**	**+0.1**
BALB	**Balikesir**	**1.09**	**302**	*e*Pg	**Pb**	**08 50 58.5**	**-0.2**
BALB				*e*Sg	**Sn**	**08 51 14.2**	**+0.1**
CAVI	**Cavuskoy**	**1.28**	**27**	*e*PN	**Pg**	**08 51 02.5**	**+0.1**
CAVI	**Cavuskoy**	**1.28**	**27**	*e*Pn	**Pg**	**08 51 02.5**	**+0.1**
IZI	**Iznik**	**1.30**	**13**	*e*PN	**Pg**	**08 51 02.8**	**-0.1**
IZI	**Iznik**	**1.30**	**13**	*e*Pn	**Pg**	**08 51 02.8**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.31**	**353**	*e*PN	**Pg**	**08 51 02.8**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.31**	**353**	*e*Pn	**Pg**	**08 51 02.8**	**-0.2**
KCTX	**Karacabey (Bur**	**1.32**	**335**	*e*PN	**Pg**	**08 51 02.9**	**-0.3**
KCTX	**Karacabey (Bur**	**1.32**	**335**	*e*Pn	**Pg**	**08 51 02.9**	**-0.3**
GEMT	**Gemlik**	**1.37**	**3**	*e*PN	**Pg**	**08 51 03.9**	**-0.3**
GEMT	**Gemlik**	**1.37**	**3**	*e*Pn	**Pg**	**08 51 03.9**	**-0.3**
ADVT	**Abdulvahap**	**1.45**	**20**	*e*PN	**Pb**	**08 51 05.3**	**+0.4**
ADVT	**Abdulvahap**	**1.45**	**20**	*e*Pn	**Pb**	**08 51 05.3**	**+0.4**
GONE	**Gonen-Balikesi**	**1.46**	**313**	*e*PN	**Pb**	**08 51 05.0**	**+0.1**
GONE	**Gonen-Balikesi**	**1.46**	**313**	*e*Pn	**Pb**	**08 51 05.0**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**1.46**	**220**	*e*PN	**Pg**	**08 51 06.0**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**1.46**	**220**	*e*Pn	**Pg**	**08 51 06.0**	**+0.1**
ARMT	**Armutlu**	**1.50**	**354**	*e*PN	**Pb**	**08 51 05.8**	**0.0**
ARMT	**Armutlu**	**1.50**	**354**	*e*Pn	**Pb**	**08 51 05.8**	**0.0**
EDC	**Edincik**	**1.59**	**324**	*e*PN	**Pb**	**08 51 06.9**	**-0.2**
EDC	**Edincik**	**1.59**	**324**	*e*Pn	**Pb**	**08 51 06.9**	**-0.2**
GULT	**Gulveren**	**1.75**	**39**	*e*PN	**Pb**	**08 51 10.1**	**0.0**
GULT	**Gulveren**	**1.75**	**39**	*e*Pn	**Pb**	**08 51 10.1**	**0.0**
SVRH	**Sivrihisar-ESK**	**1.93**	**78**	*e*PN	**Pb**	**08 51 12.8**	**-0.3**
SVRH	**Sivrihisar-ESK**	**1.93**	**78**	*e*Pn	**Pb**	**08 51 12.8**	**-0.3**
KIZT	**Kizilcal**	**2.19**	**94**	*e*PN	**Pb**	**08 51 16.7**	**-0.8**
KIZT	**Kizilcal**	**2.19**	**94**	*e*Pn	**Pb**	**08 51 16.7**	**-0.8**

NIED ***20*** *08:53:00, 36.°00N×140.°10E, h68km, Mw4.7 Best double couple: M0=1.41000×10^16 NP1:φ=185.00000°, δ=22.00000°, λ=91.00000°. NP2:φ=4.00000°, δ=68.00000°, λ=90.00000°.*
JMA ***20*** *08:53:03.9±0.1, 35.°99N×140.°09E, h64km±1km, M4.6 Broadband fault plane solution: P waves. NP1: φ=359.00000°, δ=61.00000°, λ=86.00000°. NP2: φ=187.00000°, δ=29.00000°, λ=98.00000°. Principal axes: T Plg74.0000°, Azm258.0000°; N Plg4.0000°, Azm1.0000°; P Plg16.0000°, Azm92.0000°;*
JMA Felt IV J1.
ISCJB ***20*** *08:53:03.3±0.2, 35.°90N±0.°02×139.°96E±0.°02, h78km±2km, mb4.7/214 Error ellipse: s-maj=3.5km s-min=3.1km az=38.0*
IDC ***20*** *08:53:03.1±1.6, 35.°93N×140.°06E, h66km±13km, mb4.4/42, mb1 4.4/46, mb1mx4.3/69, mbtmp4.7/46, MS3.5/20, Ms1 3.6/20, ms1mx3.4/46, Error ellipse: s-maj=11.4km s-min=8.8km az=102.0*
MOS ***20*** *08:53:05.5±0.9, 36.°33N×139.°91E, h81km, mb4.9/67, Error ellipse: s-maj=6.5km s-min=4.2km az=110.9*
NEIC ***20*** *08:53:05.2±0.5, 35.°91N×139.°93E, h81km±4km, mb4.7/121, Error ellipse: s-maj=3.9km s-min=2.9km az=137.0*
NEIC Felt [II] at Tokyo. Also felt in Chiba, Kanagawa, Saitama and Tokyo. Recorded [4 JMA] in Ibaraki.
ISC 20 08:53:03.2±0.5,**35.°91N**±0.°03×**140.°09E**±0.°03,**h71**km±3km, **n476**,σ1**s72**/529,**mb4.8**/218,**21C-25D**,**Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JYT	**Yasato**	**0.33**	**15**	⇑P	**Pn**	**08 53 14.2**	**-0.5**
JYT				S	**Sn**	**08 53 21.7**	**-1.3**
TOK	**Tokyo**	**0.35**	**231**	P	**Pn**	**08 53 16.5**	**+1.7**
TOK				S	**Sn**	**08 53 24.2**	**+1.0**
JAG	**Ashikaga**	**0.73**	**315**	⇓P	**Pn**	**08 53 18.3**	**-0.2**
JAG				S	**Sn**	**08 53 28.8**	**-1.0**
JRY	**Ryogami san**	**0.97**	**277**	⇓P	**Pn**	**08 53 21.7**	**+0.3**
JRY				S	**Sn**	**08 53 35.3**	**+0.4**
JOD2	**Odawara 2**	**1.04**	**232**	⇓P	**Pn**	**08 53 22.7**	**+0.4**
JOD2				S	**Sn**	**08 53 36.4**	**-0.1**
JKT	**Katashina**	**1.09**	**322**	⇓P	**Pn**	**08 53 22.5**	**-0.5**
JKT				S	**Sn**	**08 53 37.5**	**-0.3**
BSO3	**Boso 3**	**1.16**	**163**	⇑P	**Pn**	**08 53 24.1**	**+0.6**
BSO3				S	**Sn**	**08 53 43.2**	**+4.5**
JIM2	**Oshima 3**	**1.30**	**205**	P	**Pn**	**08 53 25.6**	**-0.1**
JIM2				S	**Sn**	**08 53 42.1**	**-0.4**
JYN	**Shimob**	**1.32**	**252**	⇓P	**Pn**	**08 53 26.8**	**+0.8**
JYN				S	**Sn**	**08 53 44.1**	**+1.1**
JFY	**Yanaizu**	**1.53**	**348**	⇓P	**Pn**	**08 53 28.6**	**0.0**
JFY				S	**Sn**	**08 53 47.8**	**+0.1**
MJAR	**Matsushiro Arr**	**1.65**	**293**	P	**Pn**	**08 53 30.2**	**0.0**
432nm,0.3s,baz=96,slow=11,SNR=3875							
MJAR				LR	LR	08 54 20.2	
comp=Z,2μm,21.4s,baz=135,slow=49							
MAJO	**Matsushiro**	**1.65**	**293**	*d i*P	**Pn**	**08 53 30.9**	**+0.7**
MAJO	**Matsushiro**	**1.65**	**293**	*e*Pn	**Pn**	**08 53 31.2**	**+1.0**
MAT	**Matsushiro**	**1.65**	**293**	P	**Pn**	**08 53 30.1**	**-0.1**
MAT				S	**Sn**	**08 53 53.3**	**+2.7**
MJB9	**Matsu-Tunnel**	**1.65**	**293**	*e*Pn	**Pn**	**08 53 31.2**	**+0.9**
INU	**Inuyama**	**2.56**	**258**	*e*Pn	**Pn**	**08 53 43.7**	**+1.2**
JHJ	**Hachijo jima 2**	**2.79**	**185**	P	**Pn**	**08 53 45.9**	**+0.2**
171nm,0.3s,baz=62,slow=2.6,SNR=55							
JHJ				S	**Sn**	**08 54 17.8**	**-0.5**
384nm,0.3s,baz=257,slow=21,SNR=11							
JHJ				LR	LR	08 54 38.3	
comp=Z,446nm,21.5s,baz=43,slow=34							
JHJ2	**Mitsune**	**2.80**	**185**	*e*Pn	**Pn**	**08 53 46.3**	**+0.6**
ERM	**Erimo**	**6.55**	**20**	*c i*P	**Pn**	**08 54 35.0**	**-1.8**
ERM				pmax	pmax		
comp=Z,59nm,0.7s							
ERM	**Erimo**	**6.55**	**20**	*e*Pn	**Pn**	**08 54 35.1**	**-1.8**
ERM				*e*Sn	**Sn**	**08 55 46.1**	**-3.9**
JNU	**Nakatsue**	**8.10**	**253**	P	**Pn**	**08 54 59.4**	**+1.3**
comp=Z,2.4nm,0.3s,baz=56,slow=3.9,SNR=26							
JNU	**Nakatsue**	**8.10**	**253**	*e*Pn	**Pn**	**08 55 00.1**	**+2.0**
ASAJ	**Asahikawa**	**8.42**	**12**	P	**Pn**	**08 55 00.4**	**-2.0**
comp=Z,9.5nm,0.3s,baz=224,slow=9.7,SNR=30							
ASAJ				S	**Sn**	**08 56 31.6**	**-4.2**
comp=Z,2.4nm,0.3s,baz=53,slow=28,SNR=3.9							
ASAJ	**Asahikawa**	**8.42**	**12**	*e*Pn	**Pn**	**08 55 00.1**	**-2.3**
ASAJ				S	**Sn**	**08 56 31.6**	**-4.2**
CBIJ	**Chichi jima**	**8.97**	**168**	*e*Pn	**Pn**	**08 55 07.8**	**-2.2**
CBIJ				*e*Sn	**Sn**	**08 56 43.8**	**-5.6**
JCJ	**Chichijima**	**8.97**	**168**	P	**Pn**	**08 55 07.6**	**-2.4**
JCJ				S	**Sn**	**08 56 41.8**	**-7.6**
comp=Z,11nm,0.3s,baz=288,slow=22,SNR=4.7							
YUK	**Yuzh-Kuril'sk**	**9.24**	**27**	*e*P	**Pn**	**08 55 10.6**	**-3.0**
YUK				*e*S	**Sn**	**08 56 48.0**	**-7.9**
YUK				pmax	pmax		
comp=Z,87nm,0.6s							
YUK				pmax	pmax		
comp=N,45nm,0.5s							
YUK				pmax	pmax		
comp=E,59nm,0.5s							
SHO	**Shikotan**	**9.48**	**31**	*e*P	**Pn**	**08 55 12.9**	**-4.0**
SHO				*i* S	Sn	08 56 51.9	-10
SHO				pmax	pmax		
comp=Z,57nm,0.8s							
VLA	**Vladivostok**	**9.59**	**321**	⇓*i*P	**Pn**	**08 55 20.0**	**+1.6**
VLA				*i* S	**Sn**	**08 57 07.2**	**+2.8**
VLA				pmax	pmax		
comp=Z,118nm,1.3s							
KSRS	**Korea Array**	**9.89**	**283**	P	**Pn**	**08 55 25.6**	**+3.0**
comp=Z,1.7nm,0.3s,baz=96,slow=14,SNR=44							
KSRS				LR	LR	08 59 06.1	
comp=Z,467nm,20.2s,baz=114,slow=37							
KS01	**Wonju Array Si**	**9.92**	**283**	*e*Pn	**Pn**	**08 55 25.4**	**+2.4**
KS15	**Wonju Array Si**	**9.92**	**282**	*e*Pn	**Pn**	**08 55 26.2**	**+3.3**
KSAR	**Wonju Array Be**	**9.92**	**282**	P	**Pn**	**08 55 25.6**	**+2.6**
KSAR	**Wonju Array Be**	**9.92**	**282**	P	**Pn**	**08 55 25.6**	**+2.6**
TJN	**Taejon**	**10.30**	**276**	⇑*e*P	**Pn**	**08 55 31.6**	**+3.4**
USRK	**Ussuriysk Ar.**	**10.34**	**326**	P	**Pn**	**08 55 30.7**	**+2.0**
comp=Z,1.0nm,0.3s,baz=139,slow=12,SNR=112							
USRK				LR	LR	08 59 10.1	
comp=Z,129nm,20.1s,baz=129,slow=36							
KUR	**Kuril'sk**	**11.03**	**30**	P	**Pn**	**08 55 36.2**	**-1.8**
KUR				*i* S	Sn	08 57 30.0	-9.5
KUR				smax	smax		
comp=N,61nm,0.6s							
KUR				smax	smax		
comp=E,18nm,0.6s							
KUR				smax	smax		
comp=N,242nm,2.3s							
YSS	**Yuzh-Sakhalins**	**11.21**	**9**	*e*P	**Pn**	**08 55 39.1**	**-1.4**
YSS				pmax	pmax		
comp=Z,30nm,0.9s							
YSS				MLR	MLR		
comp=Z,300nm,16.0s							
MDJ	**Mudanjiang**	**11.82**	**321**	P	**Pn**	**08 55 50.3**	**+1.5**
MDJ				S	**Sn**	**08 57 59.3**	**+0.4**
MDJ				PcP	**PcP**	**09 01 31.8**	**+0.5**
MDJ				ScP	**ScP**	**09 04 57.8**	**-0.1**
MDJ				PcS	**PcS**	**09 05 05.3**	**+0.1**
MDJ	**Mudanjiang**	**11.82**	**321**	ScS	ScS	09 08 33.9	+0.4
MDJ				pmax	pmax		
comp=Z,18nm,1.2s							
MDJ				pmax	pmax		
comp=Z,55nm,3.7s							
MDJ				LR	LR		
comp=N,260nm,9.1s							
MDJ				LR	LR		
comp=E,79nm,12.2s							
MDJ				LR	LR		
comp=Z,250nm,14.2s							
MDJ	**Mudanjiang**	**11.82**	**321**	*e*Pn	**Pn**	**08 55 50.9**	**+2.1**
CN2	**Changchun**	**13.72**	**309**	*e*P	**Pn**	**08 56 17.5**	**+3.0**
CN2				pmax	pmax		
comp=Z,10.0nm,0.7s							
SNY	**Shenyang**	**14.15**	**300**	⇑P	**P**	**08 56 23.8**	**-1.7**
SNY				S	**S**	**08 59 16.5**	**+4.1**
SNY				pmax	pmax		
comp=Z,29nm,1.3s							
SNY				pmax	pmax		
comp=Z,140nm,3.5s							
SNY				LR	LR		
comp=N,280nm,13.1s							
SNY				LR	LR		
comp=E,270nm,15.3s							
SNY				LR	LR		
comp=Z,370nm,14.9s							
KLR	**Kul'dur**	**14.65**	**338**	P	**Pn**	**08 56 24.9**	**-1.6**
comp=Z,0.9nm,0.3s,baz=132,slow=12,SNR=25							
KLR				LR	LR	09 02 11.8	
comp=Z,139nm,18.2s,baz=127,slow=38							
KLR	**Kul'dur**	**14.65**	**338**	P	**Pn**	**08 56 25.0**	**-1.6**
DL2	**Dalian**	**14.97**	**287**	P	**P**	**08 56 35.3**	**+0.6**
DL2				pP	pP	08 56 44.5	
DL2				sP	sP	08 56 56.8	
DL2				S	**S**	**08 59 23.9**	**-5.4**
DL2				pmax	pmax		
comp=Z,110nm,1.1s							
DL2				pmax	pmax		
comp=Z,150nm,3.6s							
DL2				LR	LR		
comp=N,640nm,17.5s							
DL2				LR	LR		
comp=E,320nm,17.0s							
DL2				LR	LR		
comp=Z,430nm,15.7s							
TYV	**Tymovskoe**	**15.06**	**6**	*e*P	**Pn**	**08 56 31.8**	**-0.1**
TYV				pmax	pmax		
comp=Z,22nm,0.8s							
NJ2	**Nanjing**	**18.02**	**264**	*e*P	**P**	**08 57 08.9**	**+0.4**
NJ2				pmax	pmax		
comp=Z,19nm,0.7s							
TIA	**Tai'an**	**18.57**	**278**	⇑P	**P**	**08 57 14.5**	**0.0**
TIA				S	**S**	**09 00 32.5**	**-10**
TIA				pmax	pmax		
comp=Z,20nm,1.1s							
TIA				LR	LR		
comp=N,260nm,16.0s							
TIA				LR	LR		
comp=E,440nm,12.6s							
TIA				LR	LR		
comp=Z,390nm,13.6s							
BJI	**Beijing**	**19.28**	**290**	P	**P**	**08 57 21.9**	**-0.3**
BJI				pP	**pP**	**08 57 36.0**	**-0.7**
BJI				sP	**sP**	**08 57 45.9**	**+0.3**
BJI				S	**S**	**09 00 53.0**	**-3.8**
BJI				sS	**sS**	**09 01 20.6**	**+0.2**
BJI				PcP	**PcP**	**09 01 42.5**	**+0.3**
BJI				pmax	pmax		
comp=Z,28nm,1.2s							
BJI				LR	LR		
comp=N,120nm,13.0s							
BJI				LR	LR		
comp=E,150nm,13.0s							
BJI				LR	LR		
comp=Z,73nm,20.5s							
BJT	**Baijiatuau**	**19.29**	**289**	*e*P	**P**	**08 57 21.9**	**-0.3**
BJT				pmax	pmax		
comp=Z,29nm,0.9s							
BJT	**Baijiatuau**	**19.29**	**289**	*e*P	**P**	**08 57 21.9**	**-0.3**
comp=Z,29nm,0.9s							
YHNB	**Yeheng**	**19.63**	**240**	*e*P	**P**	**08 57 27.0**	**+0.8**
comp=Z,19nm,0.9s							
NACB	**Ninganchiao**	**19.79**	**239**	*e*P	**P**	**08 57 28.0**	**+0.1**
comp=Z,15nm,0.8s							
HIA	**Hailar**	**19.98**	**318**	*e*P	**P**	**08 57 27.7**	**-2.1**
HIA				pmax	pmax		
comp=Z,32nm,1.1s							
HIA	**Hailar**	**19.98**	**318**	*e*P	**P**	**08 57 27.7**	**-2.1**
comp=Z,32nm,1.1s							
SSLB	**Suanglung**	**20.48**	**239**	*e*P	**P**	**08 57 34.5**	**-1.0**
comp=Z,13nm,0.7s							
YULB	**Yu-li**	**20.51**	**238**	*e*P	**P**	**08 57 35.0**	**-0.6**
comp=Z,12nm,0.8s							
TPUB	**Ta-pu**	**21.03**	**239**	*e*P	**P**	**08 57 39.9**	**-1.4**
comp=Z,42nm,1.0s							
TWG	**Pinlang**	**21.04**	**237**	*e*P	**P**	**08 57 40.8**	**-0.6**
comp=Z,102nm,0.8s							
PEA0	**Petropavlovsk-**	**21.19**	**30**	*e*P	**P**	**08 57 43.9**	**+1.1**
PETK	**Petropavlovsk-**	**21.19**	**30**	P	**P**	**08 57 42.0**	**-0.8**
comp=Z,7.3nm,1.0s,baz=230,slow=12,SNR=5.4							
PET	**Petropavlovsk**	**21.53**	**32**	*e*P	**P**	**08 57 47.4**	**+1.1**
PET				*e*S	**S**	**09 01 37.6**	**-3.4**
PET						09 02 18.6	
PET				pmax	pmax		
comp=Z,26nm,1.0s							
PET				MLR	MLR		
comp=Z,100nm,19.0s							
WHN	**Wuhan**	**22.16**	**263**	⇓P	**P**	**08 57 53.9**	**+0.6**
WHN				S	**S**	**09 01 52.9**	**-0.2**
WHN				pmax	pmax		
comp=Z,100nm,0.6s							
WHN				LR	LR		
comp=N,460nm,18.3s							
WHN				LR	LR		
comp=E,550nm,11.4s							
WHN				LR	LR		
comp=Z,780nm,13.2s							
HHC	**Hu-ho-hao-te**	**22.85**	**291**	*e*P	**P**	**08 57 59.1**	**-1.6**
HHC				pP	pP	08 58 11.6	-4.0
HHC				PP	**PnPn**	**08 58 30.5**	**+2.5**
HHC				S	S	09 01 50.3	-14
HHC				pmax	pmax		
comp=Z,30nm,0.8s							
HHC				pmax	pmax		
comp=Z,320nm,4.4s							
HHC				LR	LR		
comp=N,1μm,12.3s							
HHC				LR	LR		
comp=E,1μm,12.5s							
HHC				LR	LR		
comp=Z,1μm,11.8s							
CLNS	**Chul'man**	**23.31**	**339**	*e*P	**P**	**08 58 02.5**	**-2.4**
CLNS				pmax	pmax		
comp=Z,73nm,1.0s							
CLNS				pmax	pmax		
comp=N,32nm,0.8s							
CLNS				pmax	pmax		
comp=E,16nm,0.7s							
MA2	**Magadan**	**24.68**	**13**	P	**P**	**08 58 17.0**	**-0.3**
comp=E,18nm,0.7s,baz=206,slow=7.9,SNR=9.4							
MA2				LR	LR	09 08 32.

GYA			pP	pP		08 59 23.4 +1.3
GYA			PP	**PnPn**		**09 00 05.6 +1.0**
GYA			PcP	**PcP**		**09 02 07.0 +0.9**
GYA			S	**S**		**09 03 56.8 -1.5**
GYA			sS	sS		09 04 28.0 +0.9
GYA			SS	**SnSn**		**09 05 37.6 +1.2**
GYA	**Guiyang**	**29.99 261**	ScS	ScS		09 09 35.3 -2.5
GYA			pmax	pmax		
comp=Z,20nm,0.8s						
GYA			pmax	pmax		
comp=Z,120nm,5.2s						
GYA			LR	LR		
comp=N,520nm,17.6s						
GYA			LR	LR		
comp=E,460nm,18.0s						
GYA			LR	LR		
comp=Z,480nm,17.9s						
ZAK	**Zakamensk**	**30.15 310**	*e*P	**P**		**08 59 03.7 -2.8**
ZAK			pmax	pmax		
comp=Z,5.0nm,1.0s						
TLY	**Talaya**	**30.29 313**	LR	LR		09 12 30.3
comp=Z,72nm,18.5s,baz=106,slow=39						
TLY	**Talaya**	**30.29 313**	*e*P	**P**		**08 59 08.6 +1.0**
TLY			pmax	pmax		
comp=Z,9.0nm,0.9s						
TLY			MLR	MLR		
comp=Z,61nm,13.0s						
CD2	**Chengdu**	**30.62 271**	P	**P**		**08 59 09.8 -1.0**
CD2			pP	pP		08 59 27.3 -0.3
CD2			sP	sP		08 59 36.3 +0.5
CD2			PP	**PP**		**09 00 19.8 -1.1**
CD2			S	**S**		**09 04 06.5 -1.5**
CD2			sS	sS		09 04 37.3 +0.5
CD2			SS	**SS**		**09 06 19.8 -1.1**
CD2			pmax	pmax		
comp=Z,30nm,0.7s						
CD2			pmax	pmax		
comp=Z,110nm,3.6s						
CD2			LR	LR		
comp=E,620nm,26.4s						
CD2			LR	LR		
comp=Z,270nm,15.6s						
QIZ	**Qiongzhong**	**31.50 246**	P	**P**		**08 59 16.8 -1.7**
QIZ			S	**S**		**09 04 17.3 -4.4**
QIZ			pmax	pmax		
comp=Z,7.0nm,1.5s						
QIZ			LR	LR		
comp=N,39nm,13.5s						
QIZ			LR	LR		
comp=E,44nm,10.9s						
GTA	**Gaotai**	**31.89 289**	*e*P	**P**		**08 59 21.8 -0.2**
GTA			pP	pP		08 59 39.3 +0.5
GTA			sP	sP		08 59 48.4 +1.3
GTA			PcP	**PcP**		**09 02 12.3 +1.3**
GTA			S	**S**		**09 04 27.3 -0.6**
GTA			sS	sS		09 04 58.4 +1.6
GTA			SS	**SnSn**		**09 06 24.6 +2.2**
GTA			pmax	pmax		
comp=Z,9.0nm,1.1s						
GTA			pmax	pmax		
comp=Z,51nm,5.2s						
GTA			LR	LR		
comp=N,69nm,20.0s						
GTA			LR	LR		
comp=E,140nm,17.6s						
GTA			LR	LR		
comp=Z,140nm,20.4s						
KMI	**Kunming**	**33.74 262**	P	**P**		**08 59 38.8 +0.4**
KMI			PP	**PP**		**09 00 55.3 -0.5**
KMI			S	**S**		**09 04 54.3 -2.7**
KMI			sS	sS		09 05 27.0 +1.0
KMI			pmax	pmax		
comp=Z,22nm,0.5s						
KMI			pmax	pmax		
comp=Z,48nm,4.3s						
KMI			LR	LR		
comp=N,73nm,7.4s						
KMI			LR	LR		
comp=E,76nm,7.9s						
KMI			LR	LR		
comp=Z,130nm,24.8s						
BILL	**Bilibino**	**35.41 17⇑**	*e*P	**P**		**08 59 51.4 -0.5**
BILL			*e*			09 01 08.8
BILL			pmax	pmax		
comp=Z,4.0nm,1.2s						
BILL			MLR	MLR		
comp=Z,70nm,22.0s						
BILL	**Bilibino**	**35.41 17**	*e*P	**P**		**08 59 52.1 +0.1**
comp=Z,15nm,1.5s						
TIXI	**Tiksi**	**36.29 354**	P	**P**		**08 59 58.0 -1.4**
comp=Z,2.0nm,0.3s,baz=137,slow=7.8,SNR=9.0						
TIXI	**Tiksi**	**36.29 354⇑**	*e*P	**P**		**08 59 58.6 -0.8**
TIXI			pmax	pmax		
comp=Z,5.0nm,1.0s						
TIXI			MLR	MLR		
comp=Z,74nm,19.0s						
TIXI	**Tiksi**	**36.29 354**	*e*P	**P**		**08 59 58.5 -0.8**
comp=Z,4.1nm,0.7s						
UBPT	**Khong Chiam**	**37.09 245**	P	**P**		**09 00 06.8 -0.1**
comp=Z,24nm,0.9s						
SKNT	**Sakolnakorn**	**37.15 249**	P	**P**		**09 00 07.5 +0.1**
comp=Z,23nm,1.1s						
KRAR	**Krasnoyarsk**	**37.55 317⇓**	*e*P	**P**		**09 00 11.7 +1.4**
KRAR			pmax	pmax		
comp=Z,15nm,0.3s						
CRAI	**Chiangrai**	**38.08 257**	P	**P**		**09 00 15.4 +0.1**
comp=Z,54nm,1.1s,comp=Z,25μm						
MRSI	**Marisa**	**39.08 210**	P	**P**		**09 00 25.7 +2.1**
UTTA	**Uttaradit**	**39.33 253**	P	**P**		**09 00 29.5 +3.9**
comp=Z,2.2nm,1.0s						
PBKT	**Sadao Pong**	**39.69 251**	P	**P**		**09 00 28.7 0.0**
comp=Z,15nm,1.1s,comp=Z,2μm						
CHTO	**Chiang Mai**	**39.98 256**	P	**P**		**09 00 33.1 +2.0**
comp=Z,30nm,1.2s						
CHTO	**Chiang Mai**	**39.98 256**	*e*P	**P**		**09 00 30.7 -0.4**
CHTO			pmax	pmax		
comp=Z,9.0nm,1.3s						
CHTO	**Chiang Mai**	**39.98 256**	*e*P	**P**		**09 00 30.7 -0.4**
comp=Z,8.9nm,1.3s						
CMAR	**Chiang Mai Arr**	**40.18 255**	P	**P**		**09 00 32.6 -0.1**
comp=Z,4.5nm,0.8s,baz=51,slow=8.2,SNR=14						
CMAR			PcP	**PcP**		**09 02 36.2 +0.4**
comp=Z,3.6nm,1.0s,baz=22,slow=2.6,SNR=7.3						
CMAR			LR	LR		09 18 58.4
comp=Z,82nm,18.3s,baz=70,slow=39						
CM01	**Chiang Mai Arr**	**40.19 255**	*e*P	**P**		**09 00 32.3 -0.6**
SUKH	**Sukhothai**	**40.20 254**	P	**P**		**09 00 36.9 +4.0**
comp=Z,2.8nm,1.1s						
WMQ	**Urumqi**	**40.41 298**	P	**P**		**09 00 36.8 +2.3**
WMQ			pP	pP		09 00 52.5 +0.8
WMQ			sP	sP		09 01 01.3 +1.4
WMQ			S	**S**		**09 06 40.4 +2.8**
WMQ			SS	**SS**		**09 09 37.4 -1.4**
WMQ			pmax	pmax		
comp=Z,10.0nm,1.2s						
WMQ			pmax	pmax		
comp=Z,71nm,9.4s						
WMQ			LR	LR		
comp=N,38nm,26.6s						
WMQ			LR	LR		
comp=E,45nm,31.8s						
WMQ			LR	LR		
comp=Z,24nm,31.8s						
SRAK	**Srakaew**	**40.45 247**	P	**P**		**09 00 31.7 -3.3**
comp=Z,69nm,1.0s,comp=Z,479nm						
CHBT	**CHBT**	**41.04 245**	P	**P**		**09 00 40.5 +0.7**
comp=Z,40nm,0.9s						
LSA	**Lhasa**	**41.25 276**	*e*P	**P**		**09 00 43.4 +1.3**
LSA			pmax	pmax		
comp=Z,24nm,0.9s						
LSA	**Lhasa**	**41.25 276**	*e*P	**P**		**09 00 43.4 +1.3**
comp=Z,24nm,0.9s						
ZAA0	**Zalesovo Array**	**41.90 313**	*e*P	**P**		**09 00 46.5 +0.1**
ZALV	**Zalesovo Beam**	**41.90 313**	P	**P**		**09 00 46.5 0.0**
comp=Z,34nm,1.0s,baz=94,slow=6.3,SNR=48						
ZALV			PcP	**PcP**		**09 02 40.0 -0.8**
comp=Z,4.1nm,0.7s,baz=108,slow=3.6,SNR=3.6						
SBUM	**Sibu**	**42.12 224**	*e*P	**P**		**09 00 47.6 -1.1**
comp=Z,5.3nm,1.1s						
SHL	**Shillong**	**42.33 270**	*e*P	**P**		**09 00 49.0 -1.5**
TNA	**Tin City**	**42.35 29**	*e*P	**P**		**09 00 50.6 +0.6**
comp=Z,7.3nm,0.8s						
NVS	**Novosibirsk**	**42.86 315⇓**	*i*P	**P**		**09 00 54.7 +0.5**
NVS			pmax	pmax		
comp=Z,42nm,1.2s						
NVS			pmax	pmax		
comp=N,9.0nm,1.0s						
NVS			pmax	pmax		
comp=E,26nm,1.2s						
PHET	**Kaeng Krachan**	**42.95 248**	P	**P**		**09 00 56.8 +1.4**
comp=E,6.4nm,1.2s						
MK01	**Makanchi Array**	**43.82 303**	*e*P	**P**		**09 01 02.0 -0.1**
MK31	**Makanchi Array**	**43.82 303**	*e*P	**P**		**09 01 02.7 +0.5**
MK31	**Makanchi Array**	**43.82 303**	*e*P	**P**		**09 01 02.7 +0.5**
MKAR	**Makanchi Array**	**43.82 303**	P	**P**		**09 01 02.2 +0.1**
comp=E,26nm,0.9s,baz=89,slow=9.8,SNR=113						
MKAR	**Makanchi Array**	**43.82 303**	*e*P	**P**		**09 01 02.7 +0.5**
NRIK	**Noril'sk**	**43.85 336**	LR	LR		09 20 37.6
comp=E,66nm,18.5s,baz=96,slow=38						
KSM	**Kuching**	**44.01 226**	*e*P	**P**		**09 01 03.9 0.0**
comp=E,9.9nm,0.6s						
MAKZ	**Makanchi**	**44.03 303**	P	**P**		**09 01 03.7 -0.1**
MAKZ			pmax	pmax		
comp=Z,37nm,1.0s						
MAKZ	**Makanchi**	**44.03 303**	*e*P	**P**		**09 01 04.0 +0.2**
comp=Z,35nm,1.0s						
KAPI	**Kappang**	**44.96 209**	P	**P**		**09 01 11.1 -0.4**
comp=Z,10nm,0.9s,baz=41,slow=6.2,SNR=4.6						
KURK	**Kurchatov**	**45.80 309**	*e*P	**P**		**09 01 17.7 0.0**
KURK			pmax	pmax		
comp=Z,50nm,0.9s						
KURK	**Kurchatov**	**45.80 309**	*e*P	**P**		**09 01 17.7 0.0**
comp=Z,50nm,0.9s						
KURBB	**Kurchatov Arra**	**45.86 309**	P	**P**		**09 01 17.1 -1.2**
comp=Z,18nm,0.5s,baz=85,slow=7.9,SNR=99						
SKLT	**Songkhla**	**46.03 241**	P	**P**		**09 01 21.2 +1.2**
comp=Z,26nm,0.8s						
SURT	**Suratani**	**46.14 245**	P	**P**		**09 01 21.8 +1.0**
comp=Z,10nm,1.0s						
GUN	**Gumba**	**46.21 276**	*e*P	**P**		**09 01 21.6 -0.1**
TRTT	**Trang**	**46.24 243**	P	**P**		**09 01 23.0 +1.4**
comp=Z,16nm,1.0s						
KRAB	**Krabi**	**46.34 244**	P	**P**		**09 01 23.0 +0.6**
comp=Z,40nm,0.8s,comp=Z,1μm						
PDGK	**Podgornoye**	**46.37 299**	P	**P**		**09 01 22.7 +0.4**
PDGK			pmax	pmax		
comp=Z,28nm,0.9s						
PKIN	**Phulchoki**	**46.73 276**	*e*P	**P**		**09 01 25.4 -0.3**
comp=Z,25nm,0.7s						
KKN	**Kakani**	**46.74 276**	*e*P	**P**		**09 01 25.7 0.0**
TT01	**Tatalina**	**46.95 34**	*e*P	**P**		**09 01 28.4 +1.9**
GKN	**Gorkha**	**47.17 277**	*e*P	**P**		**09 01 29.1 +0.1**
comp=Z,118nm,0.9s						
KULM	**Kulim**	**47.33 239**	*e*P	**P**		**09 01 29.3 -0.9**
comp=Z,28nm,1.3s						
SOEI	**Soe**	**47.81 201**	P	**P**		**09 01 31.6 -2.3**
comp=Z,44nm,1.2s,comp=Z,1μm						
KOLN	**Koldanda**	**48.10 277**	*e*P	**P**		**09 01 36.4 +0.1**
PYUN	**Piuthan**	**48.46 278**	*e*P	**P**		**09 01 39.3 +0.3**
comp=Z,207nm,1.0s						
KDAK	**Kodiak Island**	**48.65 41**	*i* P	**P**		**09 01 41.5 +1.8**
KDAK	**Kodiak Island**	**48.65 41**	*e*P	**P**		**09 01 41.1 +1.4**
comp=Z,150nm,1.8s						
CAST	**Castle Rocks**	**48.75 34**	*e*P	**P**		**09 01 42.8 +2.3**
comp=Z,23nm,1.7s						
HNR	**Honiara**	**48.83 154**	LR	LR		09 19 02.9
comp=Z,94nm,21.0s,baz=318,slow=32						
MTN	**Manton Dam**	**49.22 192**	*e*P	**P**		**09 01 44.6 0.0**
comp=Z,18nm,0.9s						
TKM2	**Tokmak 2**	**49.23 299**	*i* P	**P**		**09 01 44.9 +0.1**
TKM2			pmax	pmax		
comp=Z,24nm,1.0s						
TKM2	**Tokmak 2**	**49.23 299**	*e*P	**P**		**09 01 45.7 +0.9**
comp=Z,18nm,0.8s						
BPAW	**Bear Paw Mtn.**	**49.25 33**	*e*P	**P**		**09 01 46.3 +1.9**
comp=Z,29nm,1.9s						
KTH	**Kantishna Hill**	**49.27 33**	*e*P	**P**		**09 01 47.0 +2.5**
comp=Z,32nm,1.6s						
MLY	**Manley**	**49.37 32**	*e*P	**P**		**09 01 47.5 +2.2**
comp=Z,7.6nm,0.7s						
COEN	**Coen**	**49.68 176**	*e*P	**P**		**09 01 49.3 +1.3**
comp=Z,77nm,1.9s						
KSH	**Kashi**	**49.90 295**	P	**P**		**09 01 54.0 +4.3**
KSH			*e*pP	sP		09 02 13.3 -2.3
KSH			*e*ScP	**ScP**		**09 06 59.8 +1.2**
KSH			S	**S**		**09 08 59.3 +4.6**
KSH			ScS	**ScS**		**09 11 35.0 +0.4**
KSH			pmax	pmax		
comp=Z,87nm,6.0s						
KSH			LR	LR		
comp=N,230nm,8.8s						
KSH			LR	LR		
comp=E,180nm,6.4s						
KSH			LR	LR		
comp=Z,120nm,7.7s						
RC01	**Rabbit Creek A**	**49.90 37**	*e*P	**P**		**09 01 51.1 +1.8**
comp=Z,23nm,0.9s						
AAK	**Ala-Archa**	**50.09 299**	*e*P	**P**		**09 01 51.9 +0.7**
AAK			pmax	pmax		
comp=Z,15nm,1.2s						
AAK	**Ala-Archa**	**50.09 299**	*e*P	**P**		**09 01 51.9 +0.7**
comp=Z,15nm,1.2s						
SEW	**Seward**	**50.10 38**	*e*P	**P**		**09 01 51.6 +0.8**
comp=Z,69nm,1.3s						
MCK	**McKinley**	**50.16 33**	*e*P	**P**		**09 01 51.9 +0.7**
MCK			pmax	pmax		
comp=Z,7.0nm,0.9s						
MCK	**McKinley**	**50.16 33**	*e*P	**P**		**09 01 51.9 +0.7**
comp=Z,7.5nm,0.9s						
PMR	**Palmer**	**50.16 36**	*e*P	**P**		**09 01 52.4 +1.2**
PMR			pmax	pmax		
comp=Z,50nm,1.8s						
PMR	**Palmer**	**50.16 36**	*e*P	**P**		**09 01 52.4 +1.2**
comp=Z,50nm,1.8s						
RND	**Reindeer**	**50.20 34**	*e*P	**P**		**09 01 52.9 +1.3**
RND			pmax	pmax		
comp=Z,9.0nm,0.8s						
RND	**Reindeer**	**50.20 34**	*e*P	**P**		**09 01 52.9 +1.3**
comp=Z,8.8nm,0.8s						
OTUK	**Ortayu**	**50.23 306**	P	**P**		**09 01 52.3 +0.3**
OTUK			pmax	pmax		
comp=Z,26nm,1.1s						
PSI	**Prapat**	**50.30 239**	*e*P	**P**		**09 01 53.2 +0.2**
PSI			pmax	pmax		
comp=Z,8.0nm,0.8s						
PSI	**Prapat**	**50.30 239**	*e*P	**P**		**09 01 53.2 +0.2**
comp=Z,8.3nm,0.8s						
CHKZ	**Chkalovo**	**50.31 314**	*i* P	**P**		**09 01 51.9 -0.5**
CHKZ			pmax	pmax		
comp=Z,36nm,1.1s						
WRH	**Wood River Hil**	**50.51 32**	*e*P	**P**		**09 01 55.1 +1.3**
comp=Z,8.6nm,1.0s						
SML	**Sawmill**	**50.53 36**	*e*P	**P**		**09 01 56.0 +1.9**
SML			pmax	pmax		
comp=Z,83nm,1.9s						
SML	**Sawmill**	**50.53 36**	*e*P	**P**		**09 01 56.0 +1.9**
comp=Z,83nm,1.9s						
BVA0	**Borovoye Array**	**50.55 313**	P	**P**		**09 01 53.4 -0.9**
BVA0			pmax	pmax		
comp=Z,11nm,1.0s						
BVAR	**Borovoye Array**	**50.55 313**	P	**P**		**09 01 54.0 -0.3**
comp=Z,7.1nm,0.7s,baz=79,slow=7.7,SNR=18						
BVAR	**Borovoye Array**	**50.55 313**	P	**P**		**09 01 54.0 -0.3**
EKS2	**Erkin-Say**	**50.59 299**	*e*P	**P**		**09 01 55.1 +0.2**
EKS2			pmax	pmax		
comp=Z,5.0nm,0.8s						
EKS2	**Erkin-Say**	**50.59 299**	*e*P	**P**		**09 01 55.1 +0.2**
comp=Z,5.4nm,0.8s						
COLA	**College**	**50.60 32**	*d i*P	**P**		**09 01 56.1 +1.7**
COLA			pmax	pmax		
comp=Z,8.0nm,0.7s						
COLA	**College**	**50.60 32**	*e*P	**P**		**09 01 55.2 +0.8**
comp=Z,11nm,0.8s						
BRVK	**Borovoye**	**50.60 313⇑**	*e*P	**P**		**09 01 53.8 -0.9**
BRVK			pmax	pmax		
comp=Z,21nm,1.2s						
BRVK	**Borovoye**	**50.60 313**	*e*P	**P**		**09 01 55.6 +0.9**
comp=Z,17nm,1.0s						
CCB	**Clear Creek Bu**	**50.62 32**	*e*P	**P**		**09 01 56.4 +1.7**
comp=Z,7.7nm,1.3s						
SCM	**Sheep Creek Mo**	**51.00 36**	*e*P	**P**		**09 01 59.2 +1.5**
SCM			pmax	pmax		
comp=Z,64nm,1.5s						
SCM	**Sheep Creek Mo**	**51.00 36**	*e*P	**P**		**09 01 59.1 +1.5**
comp=Z,64nm,1.5s						
HDA	**Harding Lake**	**51.00 32**	*e*P	**P**		**09 01 58.4 +0.8**
comp=Z,8.4nm,0.8s						
IL1	**Eielson Array**	**51.01 32**	*e*P	**P**		**09 01 57.8 +0.2**
ILAR	**Eielson Array**	**51.01 32**	P	**P**		**09 01 58.1 +0.5**
comp=Z,8.0nm,0.8s,baz=271,slow=6.2,SNR=73						
ILB	**Eielson Array**	**51.01 32**	*e*P	**P**		**09 01 58.5 +0.8**
ZRNK	**Zerenda**	**51.38 313**	*i* P	**P**		**09 02 00.4 -0.2**
ZRNK			pmax	pmax		
comp=Z,22nm,0.7s						
ZRNK	**Zerenda**	**51.38 313**	*e*P	**P**		**09 02 00.6 +0.1**
comp=Z,24nm,0.8s						
MNAS	**Manas**	**51.54 299**	P	**P**		**09 02 03.1 +1.0**
MNAS			pmax	pmax		
comp=Z,16nm,1.2s						
FYU	**Fort Yukon**	**51.61 29**	*e*P	**P**		**09 02 03.0 +1.0**
comp=Z,10nm,1.0s						
UGM	**Wanagama**	**51.71 219**	*e*P	**P**		**09 02 02.6 -0.9**
comp=Z,254nm,1.4s						
GSI	**Gunungsitoli**	**52.31 239**	P	**P**		**09 02 05.1 -2.8**
comp=Z,77nm,1.1s,comp=Z,869nm						
GSI	**Gunungsitoli**	**52.31 239**	*e*P	**P**		**09 02 07.4 -0.5**
comp=Z,60nm,0.9s						
DOT	**Dot Lake**	**52.33 33**	*e*P	**P**		**09 02 08.9 +1.4**
comp=Z,15nm,0.7s						
THN	**Thein Dam**	**52.51 286**	*e*P	**P**		**09 02 06.0 -3.2**
MENT	**Mentasta**	**52.56 34**	*e*P	**P**		**09 02 11.3 +2.0**
comp=Z,9.8nm,0.7s						
KKAR	**Karatay Array**	**52.77 300**	*e*P	**P**		**09 02 11.5 +0.5**
KKAR	**Karatay Array**	**52.77 300**	*e*P	**P**		**09 02 11.5 +0.5**
EGAK	**Eagle**	**53.45 32**	*e*P	**P**		**09 02 17.1 +1.4**
comp=Z,9.9nm,1.1s						
BALM	**Baldy**	**53.48 36**	*e*P	**P**		**09 02 16.6 +0.5**
BALM			pmax	pmax		
comp=Z,29nm,1.3s						
BALM	**Baldy**	**53.48 36**	*e*P	**P**		**09 02 16.6 +0.5**
comp=Z,29nm,1.3s						
DZET	**Dzherino**	**55.38 296**	P	**P**		**09 02 30.6 +0.4**
DZET			pmax	pmax		
comp=Z,11nm,1.3s						
FITZ	**Fitzroy Crossi**	**55.43 197**	P	**P**		**09 02 30.7 +0.2**
comp=Z,20nm,1.0s,baz=26,slow=7.1,SNR=19						
FITZ	**Fitzroy Crossi**	**55.43 197**	*e*P	**P**		**09 02 31.2 +0.8**
comp=Z,37nm,1.1s						
WRAB	**Tennant Creek**	**55.80 187⇓**	*i*P	**P**		**09 02 33.0 -0.2**
WRAB			pmax	pmax		
comp=Z,41nm,1.7s						
WRAB	**Tennant Creek**	**55.80 187**	*e*P	**P**		**09 02 33.2 +0.1**
comp=Z,13nm,0.9s						
WB2	**Warramunga Arr**	**55.81 187**	*e*P	**P**		**09 02 33.4 +0.1**
comp=Z,10nm,0.8s						
WRA	**Warramunga Arr**	**55.81 187**	P	**P**		**09 02 32.9 -0.3**
comp=Z,5.8nm,0.5s,baz=1.7,slow=7.6,SNR=152						
INK	**Inuvik**	**55.87 27**	P	**P**		**09 02 34.0 +1.0**
comp=Z,6.5nm,0.7s,baz=299,slow=7.0,SNR=22						
INK	**Inuvik**	**55.87 27**	*e*P	**P**		**09 02 34.5 +1.4**
INK			pmax	pmax		
comp=Z,7.0nm,0.8s						
INK	**Inuvik**	**55.87 27**	*e*P	**P**		**09 02 34.5 +1.4**
comp=Z,7.4nm,0.8s						
ARU	**Arti**	**56.50 319**	P	**P**		**09 02 37.8 0.0**
comp=Z,12nm,0.6s,baz=82,slow=5.3,SNR=11						
ARU	**Arti**	**56.50 319**	*i* P	**P**		**09 02 37.4 -0.4**
ARU			pmax	pmax		
comp=Z,33nm,1.5s						
ARU	**Arti**	**56.50 319**	*e*P	**P**		**09 02 37.7 0.0**
comp=Z,16nm,0.7s						
SOKR	**Solikamsk**	**56.57 323⇑**	*i*P	**P**		**09 02 36.9 -1.3**
SOKR			pmax	pmax		
comp=Z,24nm,1.1s						
KBL	**Kabul**	**56.82 291**	*e*P	**P**		**09 02 40.5 -0.2**
KBL			pmax	pmax		
comp=Z,7.0nm,0.8s						
KBL	**Kabul**	**56.82 291**	*e*P	**P**		**09 02 40.5 -0.2**
comp=Z,6.6nm,0.8s						
AB31	**Akbulak array**	**57.85 310**	P	**P**		**09 02 47.2 -0.2**
AB31			pmax	pmax		
comp=Z,13nm,1.0s						
ABKAR	**Akbulak array**	**57.85 310**	*e*P	**P**		**09 02 47.5 +0.1**
AKTO	**Aktyubinsk**	**58.63 312**	P	**P**		**09 02 52.8 -0.1**
comp=Z,7.3nm,0.9s,baz=70,slow=12,SNR=10.0						
AS01	**Alice Springs**	**59.53 187**	*e*P	**P**		**09 02 59.7 +0.4**
AS31	**Alice Springs**	**59.54 187**	*e*P	**P**		**09 02 60.0 +0.6**
comp=Z,1.6nm,0.6s						
ASAR	**Alice Springs**	**59.54 187**	P	**P**		**09 02 59.6 +0.3**
comp=Z,2.8nm,0.8s,baz=20,slow=12,SNR=24						
MBWA	**Marble Bar**	**59.94 202**	*e*P	**P**		**09 03 02.2 +0.1**
comp=Z,142nm,0.8s						
PALK	**Pallekele**	**61.08 257**	P	**P**		**09 03 10.8 +0.6**
comp=Z,12nm,0.9s,baz=115,slow=4.7,SNR=5.6						
PALK	**Pallekele**	**61.08 257**	*e*P	**P**		**09 03 11.4 +1.2**
PALK			pmax	pmax		
comp=Z,19nm,0.9s						
PALK	**Pallekele**	**61.08 257**	*e*P	**P**		**09 03 11.4 +1.2**
comp=Z,19nm,0.9s						
SPA0	**Spitsbergen Ar**	**61.42 349**	*e*P	**P**		**09 03 13.0 +1.5**
SPITS	**Spitsbergen Ar**	**61.42 349**	P	**P**		**09 03 13.2 +1.7**
comp=Z,3.6nm,0.8s,baz=131,slow=11,SNR=10.0						
SPITS			LR	LR		09 32 07.9
comp=Z,39nm,18.1s,baz=160,slow=38						
EIDS	**Eidsvold**	**61.83 169**	*e*P	**P**		**09 03 15.7 +0.9**
comp=Z,58nm,1.7s						
GEYT	**Alibeck**	**63.44 299**	P	**P**		**09 03 26.2 +0.5**
comp=Z,7.6nm,0.8s,baz=36,slow=2.8,SNR=8.5						
GEYT			LR	LR		09 33 36.8
comp=Z,42nm,18.4s,baz=0.0,slow=38						
KLMR	**Klimovskoe**	**64.14 328⇑**	*e*P	**P**		**09 03 27.0 -2.8**
KLMR			*e*			09 04 02.7
KLMR			pmax	pmax		
comp=Z,14nm,0.9s						
ARA0	**ARCESS Array S**	**64.67 339**	*e*P	**P**		**09 03 33.1 -0.1**
ARCES	**ARCESS Array B**	**64.67 339**	P	**P**		**09 03 32.6 -0.6**
comp=Z,2.7nm,0.4s,baz=52,slow=7.9,SNR=11						
ARCES			LR	LR		09 37 02.4
comp=Z,28nm,18.3s,baz=297,slow=41						
ARE0	**ARCESS Array S**	**64.67 339**	*e*P	**P**		**09 03 33.1 -0.1**
comp=Z,134nm,2.0s						
YKA	**Yellowknife Ar**	**65.31 30**	P	**P**		**09 03 37.2 -0.2**
comp=Z,1.7nm,0.8s,baz=301,slow=6.5,SNR=24						
YKB5	**Yellowknife Ar**	**65.31 30**	*e*P	**P**		**09 03 36.9 -0.5**
DAG	**Danmarks Havn**	**66.80 355**	*i* P	**P**		**09 03 46.9 +0.2**
comp=Z,6.2nm,0.8s						
DAG	**Danmarks Havn**	**66.80 355**	*i* P	**P**		**09 03 46.9 +0.2**
DAG			pmax	pmax		
comp=Z,5.0nm,0.8s						
STKA	**Stephens Creek**	**67.45 179**	P	**P**		**09 03 51.4 +0.1**
comp=Z,5.4nm,0.7s,baz=344,slow=8.3,SNR=14						
STKA			LR	LR		09 35 48.8
comp=Z,59nm,18.2s,baz=26,slow=38						
STKA	**Stephens Creek**	**67.45 179**	*e*P	**P**		**09 03 52.1 +0.8**
STKA			pmax	pmax		
comp=Z,3.0nm,1.4s						
STKA	**Stephens Creek**	**67.45 179**	*e*P	**P**		**09 03 52.1 +0.8**
comp=Z,3.0nm,1.4s						
VRH	**Novokhopyorsk**	**67.69 318**	*e*P	**P**		**09 03 52.1 -0.7**
VRH			pmax	pmax		
comp=Z,10.0nm,1.0s						
OBN	**Obninsk**	**68.35 323**	*c e*P	**P**		**09 03 56.4 -0.4**
OBN			*e*			09 04 23.1
OBN			*e*			09 06 26.4
OBN			*e*PPP	PPP		09 08 06.0
OBN			*e*S	**S**		**09 12 54.3 +2.0**
OBN			*e*SSS	SSS		09 20 19.6
OBN			pmax	pmax		
comp=Z,29nm,1.2s						
OBN			MLR	MLR		
comp=Z,49nm,14.0s						
LPSR	**Galich'ya Gora**	**68.48 320**	*e*P	**P**

KIV	Kislovodsk	70.83	311	eP	P	09 04 13.3 +0.9
	comp=Z,33nm,1.0s					
VSU	Vasula	70.88	329	⇓eP	P	09 04 12.7 +0.4
VSU				pmax	pmax	
	comp=Z,32nm,1.0s					
UOSS	Minazif	71.13	287	eP	P	09 04 14.9 +0.5
	comp=Z,0.5nm,0.9s					
NEY	Neytrino	71.18	310	⇑eP	P	09 04 16.2 +1.5
NEY				pmax	pmax	
	comp=Z,3.0nm,1.3s					
GNI	Garni	71.52	306	P	P	09 04 17.3 +0.6
	comp=Z,5.5nm,0.5s,baz=117,slow=24,SNR=3.9					
GNI	Garni	71.52	306	deP	P	09 04 18.2 +1.4
GNI				pmax	pmax	
	comp=Z,57nm,1.2s					
AKH	Akhalkalaki	71.66	308	⇓iP	P	09 04 18.9 +1.3
SUMG	Summit	71.80	360	iP	P	09 04 19.0 +0.8
	comp=Z,14nm,1.0s					
SUMG	Summit	71.80	360	eP	P	09 04 19.6 +1.4
SUMG				pmax	pmax	
	comp=Z,12nm,0.9s					
SUMG	Summit	71.80	360	eP	P	09 04 19.6 +1.4
	comp=Z,12nm,0.9s					
ANN	Anapa	73.54	314	eP	P	09 04 31.7 +3.3
ANN				e*PP	PcP	09 04 43.3 -0.8
ANN				e		09 07 08.9
ANN				pmax	pmax	
	comp=Z,28nm,1.4s					
SWMT	Swartz Lake	73.84	43	eP	P	09 04 31.8 +1.5
AKASG	Malin Array Be	74.53	322	P	P	09 04 33.7 -0.4
	comp=Z,9.8nm,0.7s,baz=47,slow=6.3,SNR=41					
AKBB	Malin Array Si	74.53	322	eP	P	09 04 34.2 +0.1
AKBB				pmax	pmax	
	comp=Z,16nm,0.8s					
AKBB	Malin Array Si	74.53	322	eP	P	09 04 34.1 +0.1
	comp=Z,16nm,0.8s					
KIEV	Kiev	74.54	322	eP	P	09 04 33.6 -0.6
KIEV				pmax	pmax	
	comp=Z,16nm,0.8s					
KIEV	Kiev	74.54	322	eP	P	09 04 33.6 -0.6
	comp=Z,16nm,0.8s					
AK11	Malin Array Si	74.57	322	eP	P	09 04 34.2 -0.1
NC405	NORSAR Array S	74.59	337	eP	P	09 04 34.7 +0.4
HFS	Hagfors	74.67	335	P	P	09 04 34.6 -0.2
	comp=Z,5.6nm,0.8s,baz=49,slow=4.7,SNR=6.7					
NC204	NORSAR Array S	74.77	337	eP	P	09 04 36.3 +0.9
NB201	NORSAR Array S	74.77	337	eP	P	09 04 35.8 +0.4
NB2	NORSAR Subarra	74.80	337	P	P	09 04 35.5 -0.1
	comp=Z,3.4nm,0.7s,baz=40,slow=6.2					
NOA	NORSAR Array B	74.80	337	P	P	09 04 35.8 +0.2
	comp=Z,7.4nm,0.8s,baz=40,slow=5.8,SNR=18					
NOA				LR	LR	09 40 25.9
	comp=Z,36nm,20.2s,baz=35,slow=38					
NBO02	NORSAR Array S	74.91	337	eP	P	09 04 36.2 0.0
NBO00	NORSAR Array S	74.95	337	eP	P	09 04 36.8 +0.4
PAHR	Pah Rah Range	75.10	52	eP	P	09 04 39.9 +2.1
	comp=Z,5.7nm,1.2s					
FFC	Flin Flon	75.22	32	eP	P	09 04 38.8 +0.8
FFC				pmax	pmax	
	comp=Z,6.0nm,0.8s					
FFC	Flin Flon	75.22	32	eP	P	09 04 38.8 +0.8
	comp=Z,5.7nm,0.8s					
SIM	Simferopol'	75.38	315	P	P	09 04 39.1 0.0
SIM				pmax	pmax	
	comp=Z,18nm,0.7s					
FCC	Fort Churchill	75.48	26	eP	P	09 04 40.0 +0.6
FCC				pmax	pmax	
	comp=Z,12nm,1.4s					
FCC	Fort Churchill	75.48	26	eP	P	09 04 40.0 +0.6
	comp=Z,12nm,1.4s					
LRM	Limekiln Ridge	75.69	44	eP	P	09 04 42.6 +1.4
EGMT	Eagleton	75.82	41	eP	P	09 04 41.9 +0.2
	comp=Z,12nm,1.3s					
DLMT	Dillon	75.89	44	eP	P	09 04 44.0 +1.7
	comp=Z,6.3nm,1.0s					
HLID	Hailey	75.92	46	eP	P	09 04 44.4 +1.9
	comp=Z,11nm,1.8s					
MCMT	McKenzie Canyo	76.07	44	eP	P	09 04 41.9 -1.5
KLNR	Kaliningrad	76.14	329	⇓eP	P	09 04 42.1 -1.1
KLNR				pmax	pmax	
	comp=Z,45nm,1.3s					
BOZ	Bozeman (W)	76.26	43	eP	P	09 04 46.1 +1.8
BOZ				pmax	pmax	
	comp=Z,4.0nm,1.0s					
BOZ	Bozeman (W)	76.26	43	eP	P	09 04 46.1 +1.8
	comp=Z,3.8nm,1.0s					
NV01	Mina Array Sit	76.52	52	eP	P	09 04 47.0 +1.0
NVAR	Mina Array Bea	76.52	52	P	P	09 04 47.5 +1.4
	comp=Z,2.1nm,0.8s,baz=281,slow=6.1,SNR=15					
SORM	Soroca	76.58	320	⇑iP	P	09 04 45.5 -0.4
SFNV	Sufian	76.60	305	eP	P	09 04 46.4 0.0
GCMT	Greycliff	77.25	42	eP	P	09 04 51.0 +1.0
MCID	Moose Creek	77.40	44	eP	P	09 04 51.2 +0.3
YPP	Pitchstone Pla	77.57	44	eP	P	09 04 51.0 -0.9
LKWY	Lake	77.61	44	eP	P	09 04 54.5 +2.4
LKWY				pmax	pmax	
	comp=Z,4.0nm,1.0s					
LKWY	Lake	77.61	44	eP	P	09 04 54.5 +2.4
	comp=Z,4.4nm,1.0s					
H17A	Grant Village	77.62	44	eP	P	09 04 54.9 +2.8
	comp=Z,5.5nm,0.9s					
KSRV	Kasrt alli	77.66	305	eP	P	09 04 53.2 +1.0
IMW	Indian Meadow	77.72	44	eP	P	09 04 54.5 +1.7
	comp=Z,3.0nm,0.8s					
BSD	Bornholm Skovb	77.92	331	iP	P	09 04 53.0 -0.2
	comp=Z,12nm,0.8s					
BSD	Bornholm Skovb	77.92	331	iP	P	09 04 53.0 -0.2
BSD				pmax	pmax	
	comp=Z,12nm,0.8s					
MOOW	Moose Ponds	77.92	44	eP	P	09 04 55.5 +1.7
	comp=Z,9.9nm,1.8s					
HVU	Hansel Valley	77.95	47	eP	P	09 04 55.2 +1.3
HVU				pmax	pmax	
	comp=Z,5.0nm,0.8s					
HVU	Hansel Valley	77.95	47	eP	P	09 04 55.2 +1.3
	comp=Z,5.0nm,0.8s					
SNOW	Snow King Moun	78.09	45	eP	P	09 04 57.0 +2.2
	comp=Z,16nm,1.8s					
PTU	Portage	78.13	47	eP	P	09 04 55.8 +0.8
R11A	Troy Canyon, C	78.30	51	eP	P	09 04 57.8 +1.9
	comp=Z,3.6nm,1.1s					
KWP	Kalwaria Pacla	78.41	324	eP	P	09 04 56.9 +0.8
KWP	Kalwaria Pacla	78.41	324	eP	P	09 04 56.9 +0.8
BUR08	Bucovina Ar. S	78.51	321	eP	P	09 04 57.5 +0.6
BURAR	Bucovina Array	78.52	321	⇑iP	P	09 04 57.0 +0.1
BURAR	Bucovina Array	78.52	321	P	P	09 04 56.9 0.0
DRWC	Darouich	78.74	307	eP	P	09 04 59.4 +1.1
BR131	Keskin Array S	78.79	311	eP	P	09 04 59.1 +0.6
BRTR	Keskin Array B	78.79	311	P	P	09 04 59.0 +0.5
	comp=Z,6.2nm,0.9s,baz=97,slow=3.9,SNR=23					
BRTR				PP	PP	09 07 57.8 +0.6
	comp=Z,4.0nm,1.2s,baz=74,slow=5.5,SNR=4.6					
VRI	Vrincioaia	78.89	319	⇑iP	P	09 04 59.2 +0.4
VRI	Vrincioaia	78.89	319	P	P	09 04 59.1 +0.3
DUG	Dugway, Tooele	78.90	48	eP	P	09 05 01.0 +1.8
DUG				pmax	pmax	
	comp=Z,7.0nm,1.0s					
DUG	Dugway, Tooele	78.90	48	eP	P	09 05 01.0 +1.8
	comp=Z,7.4nm,1.0s					
PLOR	Plostina	78.94	319	⇓iP	P	09 04 58.8 -0.3
PLOR	Plostina	78.94	319	P	P	09 04 58.8 -0.3
KOLS	Kolonicke sedl	79.10	324	eP	P	09 05 00.5 +0.6
KOLS				pmax	pmax	
	comp=Z,7.0nm,1.0s					
KOLS	Kolonicke sedl	79.10	324	eP	P	09 05 00.5 +0.6
TCUT	Toone Canyon	79.17	47	eP	P	09 05 03.1 +2.4
	comp=Z,7.1nm,0.6s					
BW06	Boulder Array	79.21	45	eP	P	09 05 02.0 +1.1
	comp=Z,8.9nm,1.8s					
PD31	Pinedale Array	79.21	45	eP	P	09 05 02.0 +1.0
PDAR	Pinedale Array	79.21	45	P	P	09 05 01.9 +1.0
	comp=Z,1.4nm,0.7s,baz=267,slow=2.2,SNR=18					
ANTO	Ankara	79.22	312	eP	P	09 05 02.1 +1.3
ANTO				pmax	pmax	
	comp=Z,12nm,0.6s					
ANTO	Ankara	79.22	312	eP	P	09 05 02.1 +1.3
	comp=Z,12nm,0.6s					
BR231	Keskin MP Arra	79.25	312	eP	P	09 04 59.6 -1.4
STHS	Stebnicka Huta	79.26	324	eP	P	09 05 01.4 +0.6
STHS				pmax	pmax	
	comp=Z,8.0nm,0.9s					
STHS	Stebnicka Huta	79.26	324	eP	P	09 05 01.4 +0.6
PSUT	Pine Spring	79.27	50	eP	P	09 05 02.8 +1.5
	comp=Z,3.6nm,1.1s					
OJC	Ojcow	79.37	326	eP	P	09 05 01.9 +0.6
OJC	Ojcow	79.37	326	eP	P	09 05 02.2 +0.8
OJC				pmax	pmax	
	comp=Z,23nm,1.0s					
OJC	Ojcow	79.37	326	eP	P	09 05 02.2 +0.8
	comp=Z,23nm,1.0s					
CRVS	Cervenica-Dubn	79.51	324	eP	P	09 05 02.6 +0.5
CRVS	Cervenica-Dubn	79.51	324	eP	P	09 05 02.6 +0.5
MLR	Muntele Rosu	79.55	319	⇑iP	P	09 05 03.0 +0.4
WMUT	West Mountain	79.56	48	eP	P	09 05 06.1 +3.2
WRDH	Warideh	79.57	306	eP	P	09 05 07.3 +4.6
ARNB	Al Arnab	79.65	307	eP	P	09 05 04.6 +1.4
NIE	Niedzica	79.70	325	eP	P	09 05 04.1 +0.9
NIE	Niedzica	79.70	325	eP	P	09 05 04.1 +0.9
MPU	Maple Canyon	79.72	48	eP	P	09 05 05.5 +1.8
	comp=Z,4.2nm,0.8s					
BIDA	Albida	79.92	306	eP	P	09 05 05.2 +0.4
VOIR		80.05	320	⇑iP	P	09 05 06.2 +1.0
VOIR		80.05	320	P	P	09 05 06.1 +0.9
KECS	Kecovo	80.27	324	eP	P	09 05 07.4 +1.2
KECS				pmax	pmax	
	comp=Z,3.0nm,1.0s					
KECS	Kecovo	80.27	324	eP	P	09 05 07.4 +1.2
LANS	Liptovska Anna	80.28	325	eP	P	09 05 07.6 +1.3
LANS	Liptovska Anna	80.28	325	eP	P	09 05 07.6 +1.3
ARR	Arges	80.32	320	⇓iP	P	09 05 08.1 +1.5
DRGR		80.34	322	⇓iP	P	09 05 07.6 +0.8
OKC	Ostrava-Krasne	80.39	326	eP	P	09 05 07.6 +0.7
OKC	Ostrava-Krasne	80.39	326	eP	P	09 05 07.6 +0.7
KSP	Ksiaz	80.49	328	eP	P	09 05 08.0 +0.6
KSP	Ksiaz	80.49	328	eP	P	09 05 08.0 +0.6
ZALF	Zalf	80.50	304	eP	P	09 05 08.4 +0.6
LCMT	Little Creek M	80.58	51	eP	P	09 05 10.5 +2.2
	comp=Z,3.7nm,0.9s					
P17A	Butcher Ranch,	80.60	48	eP	P	09 05 10.4 +2.0
	comp=Z,6.9nm,0.8s					
MTPU	Mount Pierson	80.61	50	eP	P	09 05 11.2 +2.5
	comp=Z,2.7nm,0.8s					
MORC	Moravsky Berou	80.71	326	⇓iP	P	09 05 09.6 +0.9
MORC	Moravsky Berou	80.71	326	eP	P	09 05 09.5 +0.9
MORC				pmax	pmax	
	comp=Z,41nm,1.0s					
MORC	Moravsky Berou	80.71	326	eP	P	09 05 09.4 +0.8
	comp=Z,41nm,1.0s					
P18A	Preston Nutter	80.80	47	eP	P	09 05 11.5 +1.9
	comp=Z,20nm,0.3s					
KRLC	Kraliky	80.83	327	eP	P	09 05 09.9 +0.6
KRLC	Kraliky	80.83	327	eP	P	09 05 09.9 +0.6
DPC	Dobruska-Polom	80.83	327	eP	P	09 05 10.2 +0.9
DPC	Dobruska-Polom	80.83	327	eP	P	09 05 10.2 +0.9
TOTH	TOTAH	80.84	305	eP	P	09 05 00.9 -8.8
KNB	Kanab	80.84	51	eP	P	09 05 11.4 +1.6
KNB				pmax	pmax	
	comp=Z,6.0nm,1.1s					
KNB	Kanab	80.84	51	eP	P	09 05 11.4 +1.6
	comp=Z,6.0nm,1.1s					
PSZ	Piszkesteto	80.94	324	⇓iP	P	09 05 10.9 +1.0
PSZ	Piszkesteto	80.94	324	eP	P	09 05 10.6 +0.7
PSZ				pmax	pmax	
	comp=Z,15nm,1.0s					
PSZ	Piszkesteto	80.94	324	eP	P	09 05 10.6 +0.7
	comp=Z,15nm,1.0s					
SRU	San Rafael Swe	80.95	48	eP	P	09 05 12.0 +1.7
SRU				pmax	pmax	
	comp=Z,6.0nm,0.7s					
SRU	San Rafael Swe	80.95	48	eP	P	09 05 12.0 +1.7
	comp=Z,5.7nm,0.7s					
BAR	Barrett	80.97	56	eP	P	09 05 12.0 +1.7
	comp=Z,23nm,1.5s					
ULM	Lac du Bonnet	81.03	33	P	P	09 05 10.4 +0.2
	comp=Z,3.6nm,0.7s,baz=324,slow=4.8,SNR=4.0					
ULM				LR	LR	09 41 39.0
	comp=Z,114nm,20.7s,baz=310,slow=36					
VYHS	Vyhne	81.04	325	eP	P	09 05 10.8 +0.5
VYHS				pmax	pmax	
	comp=Z,6.0nm,1.1s					
VYHS	Vyhne	81.04	325	eP	P	09 05 10.8 +0.5
ASF	Jabal al Asfar	81.24	303	P	P	09 05 12.5 +0.7
	comp=Z,6.6nm,0.9s,baz=196,slow=1.7,SNR=11					
W13A	Hualapai Mount	81.34	53	eP	P	09 05 14.5 +2.0
	comp=Z,2.2nm,0.9s					
PVCC	Panska Ves	81.46	328	eP	P	09 05 13.0 +0.5
PVCC	Panska Ves	81.46	328	eP	P	09 05 13.0 +0.5
BRG	Berggiesshubel	81.47	329	eP	P	09 05 12.6 0.0
	comp=Z,7.8nm,1.0s					
BRG	Berggiesshubel	81.47	329	eP	P	09 05 12.6 0.0
BRG				pmax	pmax	
	comp=Z,8.0nm,1.0s					
VRAC	Vranov	81.47	327	P	P	09 05 13.5 +0.9
	comp=Z,6.1nm,0.9s,baz=46,slow=5.1,SNR=6.8					
VRAC	Vranov	81.47	327	⇓iP	P	09 05 13.7 +1.0
CLL	Collm	81.53	330	iP	P	09 05 13.0 +0.1
	comp=Z,16nm,0.9s					
CLL				e		09 05 30.0
CLL	Collm	81.53	330	eP	P	09 05 13.3 +0.4
CLL				pmax	pmax	
	comp=Z,14nm,0.9s					
CLL	Collm	81.53	330	eP	P	09 05 13.2 +0.4
	comp=Z,14nm,0.9s					
U15A	North Rim	81.54	51	eP	P	09 05 14.4 +0.8
	comp=Z,3.9nm,0.7s					
MMAI	Mount Meron Ar	81.74	305	P	P	09 05 15.2 +0.8
	comp=Z,3.9nm,0.6s,baz=71,slow=10,SNR=8.0					
MMAI				LR	LR	09 44 44.5
	comp=Z,32nm,18.4s,baz=250,slow=38					
GOPC	GO Pecny, Ondr	81.82	328	eP	P	09 05 15.3 +0.8
GOPC	GO Pecny, Ondr	81.82	328	eP	P	09 05 15.3 +0.8
PRU	Pruhonice	81.88	328	eP	P	09 05 15.3 +0.6
PRU	Pruhonice	81.88	328	eP	P	09 05 15.3 +0.6
TREC	Trest	81.98	327	eP	P	09 05 15.8 +0.5
TREC	Trest	81.98	327	eP	P	09 05 15.8 +0.5
PV09	Paradox Valley	82.18	48	eP	P	09 05 19.2 +2.3
MDVR	Moldovita	82.23	321	⇓iP	P	09 05 17.0 +0.2
PV10	Paradox Valley	82.32	48	eP	P	09 05 19.7 +2.1
PV05	Paradox Valley	82.47	48	eP	P	09 05 20.4 +2.0
N23A	Red Feather La	82.48	44	eP	P	09 05 20.3 +1.8
	comp=Z,4.7nm,1.0s					
WUAZ	Wupatki	82.69	51	eP	P	09 05 21.2 +1.7
	comp=Z,8.0nm,1.1s					
PV01	Paradox Valley	82.75	48	eP	P	09 05 21.3 +1.5
CONA	Conrad Observa	82.82	326	iP	P	09 05 20.6 +0.8
	comp=Z,4.2nm,0.8s					
KHC	Kasperske Hory	82.93	328	eP	P	09 05 20.5 +0.2
KHC	Kasperske Hory	82.93	328	eP	P	09 05 20.6 +0.2
KHC				pmax	pmax	
	comp=Z,4.0nm,1.1s					
KHC	Kasperske Hory	82.93	328	eP	P	09 05 20.6 +0.3
	comp=Z,3.6nm,1.1s					
SMCO	Snowmass	83.02	46	eP	P	09 05 22.8 +1.4
	comp=Z,2.9nm,0.8s					
GERES	GERESS Array B	83.09	328	P	P	09 05 21.4 +0.2
	comp=Z,2.1nm,0.8s,baz=43,slow=4.5,SNR=16					
GEA0	GERESS Array S	83.10	328	eP	P	09 05 20.9 -0.3
X16A	Lo Mia Camp, P	83.34	52	eP	P	09 05 25.1 +2.1
	comp=Z,4.6nm,0.9s					
MVCO	Mesa Verde	83.40	48	eP	P	09 05 24.9 +1.7
	comp=Z,6.7nm,1.1s					
ISCO	Idaho Springs	83.40	45	eP	P	09 05 25.0 +1.7
ISCO				pmax	pmax	
	comp=Z,2.0nm,0.8s					
ISCO	Idaho Springs	83.40	45	eP	P	09 05 25.0 +1.7
	comp=Z,1.7nm,0.8s					
ARSA	Arzberg	83.47	326	iP	P	09 05 20.6 -2.5
	comp=Z,3.7nm,0.7s					
MOA	Molln	83.59	327	iPcP	P	09 05 25.1 +1.4
	comp=Z,5.1nm,1.1s					
214A	Organ Pipe Nat	83.99	55	eP	P	09 05 26.9 +0.8
	comp=Z,10nm,0.8s					
S22A	4UR Ranch, Cre	84.05	47	eP	P	09 05 28.7 +2.1
	comp=Z,3.4nm,0.9s					
EIL	Elat	84.08	302	P	P	09 05 27.2 +0.7
	comp=Z,15nm,0.8s,baz=27,slow=4.8,SNR=15					
SOKA	Soboth	84.12	325	iP	P	09 05 26.7 +0.2
	comp=Z,15nm,0.9s					
VAY	Valandovo	84.17	318	iP	P	09 05 26.8 0.0
X18A	Snowflake	84.22	51	eP	P	09 05 29.3 +1.9
	comp=Z,3.9nm,0.8s					
KBA	Koelnbreinsper	84.59	327	iP	P	09 05 28.9 -0.1
	comp=Z,3.7nm,1.0s					
PDKS	Podkum	84.60	325	iP	P	09 05 28.9 +0.1
EYMN	Ely	84.66	32	eP	P	09 05 29.5 +0.4
	comp=Z,3.9nm,0.8s					
MYKA	Terra Mystica	84.79	326	iP	P	09 05 29.5 -0.4
	comp=Z,5.0nm,0.7s					
SDCO	Great Sand Dun	84.84	46	eP	P	09 05 32.0 +1.4
	comp=Z,1.9nm,0.8s					
PPT	Papeete	85.10	116	LR	LR	09 34 34.8
	comp=Z,58nm,21.2s,baz=325,slow=29					
TUC	Tucson	85.10	53	eP	P	09 05 33.4 +1.7
TUC				pmax	pmax	
	comp=Z,3.0nm,0.8s					
TUC	Tucson	85.10	53	eP	P	09 05 33.4 +1.7
	comp=Z,3.4nm,0.8s					
RETA	Reutte	85.40	328	iPcP	P	09 05 33.3 +0.4
	comp=Z,6.2nm,0.9s					
ECSD	EROS Data Cent	85.46	37	eP	P	09 05 33.8 +0.6
	comp=Z,3.2nm,0.8s					
BFO	Black Forest	85.75	330	iP	P	09 05 35.1 +0.5
BFO	Black Forest	85.75	330	eP	P	09 05 34.8 +0.2
	comp=Z,6.7nm,1.0s					
FETA	Feichten	85.78	328	iP	P	09 05 34.2 -0.7
	comp=Z,5.0nm,1.1s					
T25A	Trinidad	85.89	46	eP	P	09 05 37.2 +1.5
	comp=Z,4.4nm,0.8s					
DAVA	Damuels	85.93	329	iP	P	09 05 35.5 -0.2
	comp=Z,5.4nm,0.8s					
ANMO	Albuquerque	86.13	49	eP	P	09 05 38.7 +1.8
ANMO				pmax	pmax	
	comp=Z,3.0nm,0.9s					
ANMO	Albuquerque	86.13	49	eP	P	09 05 38.7 +1.8
	comp=Z,2.5nm,0.9s					
FUORN	Ofenpass-Fuorn	86.29	328	eP	P	09 05 38.0 +0.4
	comp=Z,12nm,1.1s					
BNM	Barren Site	86.55	50	eP	P	09 05 40.5 +1.4
SCHQ	Schefferville	86.70	15	P	P	09 05 39.9 +0.8
	comp=Z,4.8nm,0.8s,baz=5.8,slow=7.8,SNR=7.5					
SCHQ	Schefferville	86.70	15	eP	P	09 05 40.0 +0.9
	comp=Z,20nm,1.6s					
ATD	Arta Tunnel	89.10	283	LR	LR	09 49 06.1
	comp=Z,17nm,18.3s,baz=316,slow=38					
V34A	Guthrie	90.75	43	eP	P	09 05 59.8 +1.2
	comp=Z,9.8nm,0.8s					
TX31	Lajitas Ar. Si	91.65	52	eP	P	09 06 04.5 +1.4
TXAR	Lajitas Array	91.65	52	P	P	09 06 04.3 +1.3
	comp=Z,1.3nm,0.6s,baz=300,slow=3.0,SNR=24					
TOA0	Torodi Ar. Sit	117.34	313	ePKPdf	PKPdf	09 11 40.9 -0.3
TORD	Torodi Ar. Bea	117.34	313	PKP	PKPdf	09 11 41.0 -0.2
	comp=Z,0.6nm,0.5s,baz=40,slow=1.9,SNR=10					
LBTB	Lobatse	123.43	262	ePKIKP	PKPdf	09 11 53.4 +0.7
LBTB	Lobatse	123.43	262	ePKPdf	PKPdf	09 11 53.4 +0.7
BOSA	Boshof	125.31	258	PKP	PKPdf	09 11 56.8 +0.6
	comp=Z,3.3nm,0.9s,baz=115,slow=5.9,SNR=5.5					
QSPA	South Pole Qui	125.65	180	ePKPdf	PKPdf	09 11 56.0 +0.4
SAML	Samuel	145.79	44	ePKPdf	PKPbc	09 12 35.3 +0.4
LPAZ	La Paz	148.18	59	PKPbc	PKPbc	09 12 41.0 -1.3
	comp=Z,4.2nm,0.8s,baz=294,slow=2.7,SNR=18					
LVC	Limon Verde	151.56	70	ePKPbc	PKPbc	09 12 52.0 +1.9

NNC ***20*** *08:54:19.6±2.7,53°.14N×87°.48E,h0km,mb3.6,mpv3.2, Error ellipse: s-maj=23.1km s-min=19.3km az=67.0*

IDC 20 08:54:14.2±3.1,53°.59N×87°.76E,h0km,mb1 3.2/2, mb1mx3.0/64,mbtmp3.2/2,ML2.7/2,3C-6D,Error ellipse: s-maj=27.3km s-min=16.4km az=57.0,Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	ZALESOVO INFRA	1.78	283	i		09 05 43.5	
	baz=100,slow=319,SNR=2.6						
ZALV	Zalesovo Beam	1.78	283	Pg	Pn	08 54 46.2	0.0
	2.0nm,0.3s,baz=102,slow=16,SNR=16						
ZALV				Lg	Lg	08 55 10.4	
	2.5nm,0.3s,baz=103,slow=28,SNR=8.3						
KURK	Kurchatov	6.32	247	⇓Pn	Pn	08 55 48.7	+0.2
	2.5nm,0.6s						
KURK				⇑Lg	Lg	08 57 33.1	
	8.1nm,1.0s						
KURBB	Kurchatov Arra	6.42	246	Pn	Pn	08 55 50.5	+0.7
	0.1nm,0.3s,baz=62,slow=14,SNR=5.2						
KURBB				Lg	Lg	08 57 37.4	
	0.1nm,0.3s,baz=66,slow=32,SNR=5.5						
KURBB	Kurchatov Arra	6.42	246	⇓Pn	Pn	08 55 50.4	+0.6
	2.2nm,0.5s						
KURBB				⇓Lg	Lg	08 57 34.4	
	3.8nm,0.7s						
MK31	Makanchi Array	7.66	209	⇓Pn	Pn	08 56 06.9	0.0
	0.2nm,0.5s,baz=29,slow=12,SNR=4.8						
MK31				⇑Lg	Lg	08 58 08.2	
	1.1nm,0.8s,baz=25,slow=30						
MKAR	Makanchi Array	7.66	209	Pn	Pn	08 56 08.0	+1.1
	0.1nm,0.3s,baz=27,slow=12,SNR=5.4						
MKAR				Lg	Lg	08 58 19.5	
	0.2nm,0.3s,baz=30,slow=29,SNR=5.3						
MAKZ	Makanchi	7.74	211	⇑Pn	Pn	08 56 07.5	-0.4
	0.9nm,0.6s						
MAKZ				⇓Sn	Sn	08 57 30.1	-6.1
	1.3nm,0.5s						
MAKZ				⇓Lg	Lg	08 58 10.8	
	1.2nm,0.8s						

NNC 20 08:54:17.8±3.5,36°.30N×69°.91E,h0km,mb3.9,mpv3.5, 2C-6D,Error ellipse: s-maj=26.8km s-min=20.6km az=22.0,Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	Dzherino	2.65	341	⇓Pn	Pn	08 55 01.2	-0.6
	22nm,0.6s						
DZET				⇓Sn	Sn	08 55 36.3	+1.6
	41nm,0.4s						
MNAS	Manas	6.50	17	⇓Pn	Pn	08 55 56.3	+1.5
	1.5nm,0.3s						
MNAS				⇓Sn	Sn	08 57 10.0	+0.4
	4.1nm,0.6s						
KK31	Karatay Array	6.81	4	Pn	Pn	08 55 58.2	-0.8
	0.4nm,0.2s,baz=196,slow=15,SNR=17						
KK31				⇑Sn	Sn	08 57 15.7	-1.5
	1.0nm,0.3s,baz=195,slow=24,SNR=4.5						
KK31				⇓Lg	Lg	08 57 54.2	
	2.8nm,0.5s,baz=191,slow=29,SNR=3.8						
AAK	Ala-Archa	7.25	28	⇓Pn	Pn	08 56 05.8	+0

BALB	Balikesir	1.10	298	ePn	Pg	08 56 07.3	-0.4
BALB				eSn	Sb	08 56 23.1	+0.6
CAVI	Cavuskoy	1.20	27	ePN	Pg	08 56 09.0	-0.6
CAVI	Cavuskoy	1.20	27	ePn	Pg	08 56 09.0	-0.6
MDNY	Mudanya-Bursa	1.25	351	ePN	Pn	08 56 10.2	-0.3
MDNY	Mudanya-Bursa	1.25	351	ePn	Pn	08 56 10.2	-0.3
KCTX	Karacabey (Bur	1.28	332	ePN	Pn	08 56 10.7	-0.3
KCTX	Karacabey (Bur	1.28	332	ePn	Pn	08 56 10.7	-0.3
GEMT	Gemlik	1.30	2	ePN	Pn	08 56 11.1	-0.1
GEMT	Gemlik	1.30	2	ePn	Pn	08 56 11.1	-0.1
ADVT	Abdulvahap	1.38	19	ePN	Pn	08 56 12.3	0.0
ADVT	Abdulvahap	1.38	19	ePn	Pn	08 56 12.3	0.0
GONE	Gonen-Balikesi	1.45	310	ePN	Pn	08 56 13.4	+0.2
GONE	Gonen-Balikesi	1.45	310	ePn	Pn	08 56 13.4	+0.2
ARMT	Armutlu	1.45	352	ePN	Pn	08 56 13.4	+0.1
ARMT	Armutlu	1.45	352	ePn	Pn	08 56 13.4	+0.1
GPA	Golpazari	1.47	38	ePN	Pn	08 56 13.6	0.0
GPA	Golpazari	1.47	38	ePn	Pn	08 56 13.6	0.0
AYDB	Zeytinkoy-Aydi	1.53	220	ePN	Pn	08 56 14.5	0.0
AYDB	Zeytinkoy-Aydi	1.53	220	ePn	Pn	08 56 14.5	0.0
EDC	Edincik	1.56	321	ePN	Pn	08 56 15.1	+0.3
EDC	Edincik	1.56	321	ePn	Pn	08 56 15.1	+0.3
GULT	Gulveren	1.68	39	ePN	Pn	08 56 16.6	+0.1
GULT	Gulveren	1.68	39	ePn	Pn	08 56 16.6	+0.1
SVRH	Sivrihisar-ESK	1.88	80	ePN	Pn	08 56 19.3	+0.1
SVRH	Sivrihisar-ESK	1.88	80	ePn	Pn	08 56 19.3	+0.1
MRMT	Marmara Adasi	1.89	322	ePN	Pn	08 56 19.8	+0.4
MRMT	Marmara Adasi	1.89	322	ePn	Pn	08 56 19.8	+0.4
MDUB	Mudurnu	2.08	49	ePN	Pn	08 56 22.2	+0.2
MDUB	Mudurnu	2.08	49	ePn	Pn	08 56 22.2	+0.2
CTKS	Kestanelik-??a	2.16	347	ePN	Pn	08 56 23.5	+0.5
CTKS	Kestanelik-??a	2.16	347	ePn	Pn	08 56 23.5	+0.5
RKY	Sarkoy-Tekirda	2.17	317	ePN	Pn	08 56 23.6	+0.5
RKY	Sarkoy-Tekirda	2.17	317	ePn	Pn	08 56 23.6	+0.5

*IDC **20** 08:57:20.2±2.0, 37°32N×144°38E, h0km, mb3.7/3, mb1 3.9/5, mb1mx3.5/54, mbtmp3.7/5, ML3.3/2, Error ellipse: s-maj=37.9km s-min=29.4km az=52.0*
*ISCJB **20** 08:57:21.7±0.9, 37°68N±0°04×144°42E±0°06, h33km, mb3.8/3, Error ellipse: s-maj=6.9km s-min=6.0km az=178.3*
*JMA **20** 08:57:24.2±0.2, 37°71N×144°28E, h40km, M3.7*
ISC 20 08:57:23.8±1.5, 37°60N±0°05×144°4E±0°1, h35km, n20, σ1°71/31, mb3.8/3, Off east of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	2.54	291	P	Pn	08 58 03.2	+0.6
JIO				S	Sn	08 58 31.5	-0.8
OFUJ	Ofunato	2.60	306	P	Pn	08 58 03.6	+0.3
OFUJ				S	Sn	08 58 32.3	-1.3
JFK	Kawauchi	2.80	266	P	Pn	08 58 06.4	+0.2
JFK				eS	Sn	08 58 38.0	-0.7
JMK	Ichinoseki	2.83	299	P	Pn	08 58 06.9	+0.4
JMK				S	Sn	08 58 38.6	-0.8
JMM	Marumori	2.86	276	P	Pn	08 58 07.4	+0.5
JMM				eS	Sn	08 58 39.2	-0.9
JOU	Okura	3.04	286	eS	Sn	08 58 44.8	+0.3
JTH	Tanohata	3.06	321	S	Sn	08 58 42.8	-2.1
JOM	Ohasama	3.06	309	S	Sn	08 58 44.5	-0.6
JFT	Otama	3.22	270	S	Sn	08 58 49.9	+0.9
JRG	Rokugo	3.45	303	P	Pn	08 58 16.2	+1.2
JRG				eS	Sn	08 58 54.4	-0.2
JANG	Nango	3.56	322	P	Pn	08 58 17.1	+0.6
JANG				S	Sn	08 58 54.8	-2.6
JTM	Tenmabayashi	4.09	322	eS	Sn	08 59 07.9	-2.6
JRY	Ryogami san	4.67	252	P	Pn	08 58 32.0	+0.1
JRY				S	Sn	08 59 22.5	-2.4
JNBK	Urakawa-nobuka	4.84	345	P	Pn	08 58 34.1	0.0
JNBK				eS	Sn	08 59 26.0	-2.9
MJAR	Matsushiro Arr	5.05	260	Pn	Pn	08 58 37.5	+0.4
	1.1nm,0.3s,baz=89,slow=15,SNR=7.8						
MJAR				Sn	Sn	08 59 35.6	+1.4
	0.8nm,0.3s,baz=90,slow=27,SNR=4.1						
JCH	Churui	5.07	351	P	Pn	08 58 36.0	-1.3
JCH				eS	Sn	08 59 30.1	-4.5
JHJ	Hachijo jima 2	5.84	221	Pn	Pn	08 58 46.1	-1.8
	2.4nm,0.3s,baz=360,slow=12,SNR=5.7						
JHJ				Sn	Sn	08 59 48.4	-5.2
	34nm,0.3s,baz=260,slow=23,SNR=12						
MKAR	Makanchi Array	45.83	302	P	P	09 05 44.6	+2.4
	0.2nm,0.4s,baz=97,slow=7.4,SNR=2.8						
WRA	Warramunga Arr	58.01	191	P	P	09 07 12.2	-0.9
	1.2nm,0.5s,baz=11,slow=7.1,SNR=9.0						
ASAR	Alice Springs	61.73	191	P	P	09 07 38.9	+0.3
	0.5nm,0.6s,baz=7.5,slow=7.2,SNR=6.3						

*ISCJB **20** 08:58:58.5±0.4, 39°10N±0°02×29°02E±0°03, h4km±5km, Error ellipse: s-maj=4.1km s-min=3.7km az=164.5*
*CSEM **20** 08:58:58.7±0.1, 39°10N×29°03E, h5km, ML2.9, Error ellipse: s-maj=1.8km s-min=1.6km az=110.0*
*ISK **20** 08:58:58.2, 39°10N×29°05E, h6km, MD2.8*
*DDA **20** 08:58:58.3, 39°13N×29°01E, h7km, Ml2.9*
ISC 20 08:58:58.8±1.1, 39°12N±0°02×29°02E±0°02, h3km±11km, n59, σ0°44/78, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.25	252	P	Pg	08 59 03.6	0.0
DEMI				S	Sg	08 59 07.1	+0.2
DEMI	Demirci	0.25	252	i P	Pg	08 59 03.6	0.0
DEMI				i S	Sg	08 59 07.0	+0.2
GDZ	Gediz	0.36	95	P	Pg	08 59 06.0	+0.2
GDZ				S	Sg	08 59 11.1	+0.6
GDZ	Gediz	0.36	95	i P	Pg	08 59 06.0	+0.2
GDZ				i S	Sg	08 59 11.1	+0.6
TVSB	Tavsanli	0.48	46	ePG	Pg	08 59 07.9	-0.1
TVSB	Tavsanli	0.48	46	ePg	Pg	08 59 07.9	-0.1
DURS	Dursunbey	0.64	319	P	Pg	08 59 10.7	-0.4
DURS	Dursunbey	0.64	319	i P	Pg	08 59 10.7	-0.4
KULA	Kula-Manisa	0.67	205	ePG	Pg	08 59 11.4	-0.2
KULA	Kula-Manisa	0.67	205	ePg	Pg	08 59 11.4	-0.2
MANT	Manisa	0.72	210	P	Pg	08 59 12.4	-0.3
MANT				S	Sg	08 59 20.6	-1.5
MANT	Manisa	0.72	210	i P	Pg	08 59 12.4	-0.3
MANT				i S	Sg	08 59 20.6	-1.5
KHAL	Karahalli	0.83	154	P	Pg	08 59 14.9	+0.1
KHAL				S	Sg	08 59 26.3	+0.7
KHAL	Karahalli	0.83	154	i P	Pg	08 59 14.9	+0.1
KHAL				i S	Sg	08 59 26.3	+0.7
KHL	Karahalli	0.89	153	ePG	Pg	08 59 15.3	-0.5
KHL	Karahalli	0.89	153	ePg	Pg	08 59 15.4	-0.5
ORLT	Orhaneli	0.93	354	ePG	Pg	08 59 16.8	+0.1
ORLT				eSG	Sb	08 59 30.9	+0.4
ORLT	Orhaneli	0.93	354	ePg	Pg	08 59 16.8	+0.1
ORLT				eSg	Sb	08 59 30.9	+0.4
AKHS	Akhisar	0.97	256	P	Pg	08 59 17.5	+0.1
AKHS				S	Sg	08 59 30.6	+0.6
AKHS	Akhisar	0.97	256	i P	Pg	08 59 17.5	+0.1
AKHS				i S	Sg	08 59 30.6	+0.6
AKS	Akhisar	0.97	256	ePG	Pg	08 59 17.5	+0.1
AKS	Akhisar	0.97	256	ePg	Pg	08 59 17.5	+0.1
BALB	Balikesir	1.02	301	ePG	Pg	08 59 18.7	+0.2
BALB				eSG	Sb	08 59 33.9	+0.7
BALB	Balikesir	1.02	301	ePg	Pg	08 59 18.7	+0.2
BALB				eSg	Sb	08 59 33.9	+0.7
IGD	Bursa	1.15	7	i P	Pg	08 59 20.0	-0.9
IGD				i S	Sg	08 59 34.6	-1.2
BALY	Balya	1.25	300	P	Pg	08 59 22.7	-0.1
BALY				S	Sg	08 59 38.4	-0.6
BALY	Balya	1.25	300	i P	Pg	08 59 22.7	-0.1
BALY				i S	Sg	08 59 38.4	-0.6
MDNY	Mudanya-Bursa	1.25	355	ePN	Pg	08 59 22.9	0.0
MDNY	Mudanya-Bursa	1.25	355	ePn	Pg	08 59 22.9	0.0
CAVI	Cavuskoy	1.25	30	ePN	Pg	08 59 22.6	-0.3
CAVI				eSN	Sn	08 59 40.7	-0.1
CAVI	Cavuskoy	1.25	30	ePn	Pg	08 59 22.6	-0.3
CAVI				eSn	Sn	08 59 40.7	-0.1
KCTX	Karacabey (Bur	1.25	336	ePN	Pg	08 59 23.0	+0.1
KCTX	Karacabey (Bur	1.25	336	ePn	Pg	08 59 23.0	+0.1
IZI	Iznik	1.27	16	ePN	Pg	08 59 22.9	-0.2
IZI	Iznik	1.27	16	ePn	Pg	08 59 22.9	-0.2
GEMT	Gemlik	1.32	6	ePN	Pg	08 59 24.0	-0.2
GEMT	Gemlik	1.32	6	ePn	Pg	08 59 24.0	-0.2
GONE	Gonen-Balikesi	1.39	312	ePN	Pn	08 59 25.1	0.0
GONE	Gonen-Balikesi	1.39	312	ePn	Pn	08 59 25.2	0.0
ADVT	Abdulvahap	1.42	23	ePN	Pn	08 59 25.5	-0.2
ADVT	Abdulvahap	1.42	23	ePn	Pn	08 59 25.5	-0.2
ARMT	Armutlu	1.45	355	ePN	Pn	08 59 26.1	0.0
ARMT	Armutlu	1.45	355	ePn	Pn	08 59 26.1	0.0
AYDB	Zeytinkoy-Aydi	1.47	217	ePN	Pn	08 59 26.1	-0.3
AYDB	Zeytinkoy-Aydi	1.47	217	ePn	Pn	08 59 26.1	-0.3
ESKT	Eskisehir	1.48	74	i P	Pn	08 59 26.3	-0.2
SEYT	Eskypehyr	1.48	74	P	Pn	08 59 26.3	-0.2
EDC	Edincik	1.52	324	ePN	Pn	08 59 27.1	+0.1
EDC	Edincik	1.52	324	ePn	Pn	08 59 27.1	+0.1
HRT	Hereke	1.77	16	ePN	Pn	08 59 30.2	-0.3
HRT	Hereke	1.77	16	ePn	Pn	08 59 30.2	-0.3
KRBG	Karabiga-Canak	1.84	314	ePN	Pn	08 59 31.5	+0.2
KRBG	Karabiga-Canak	1.84	314	ePn	Pn	08 59 31.5	+0.2
RKY	Sarkoy-Tekirda	2.11	318	ePN	Pn	08 59 35.4	+0.2
RKY	Sarkoy-Tekirda	2.11	318	ePn	Pn	08 59 35.4	+0.2
KLYT	Kilyos	2.13	0	ePN	Pn	08 59 35.6	+0.2
KLYT	Kilyos	2.13	0	ePn	Pn	08 59 35.6	+0.2
MDUB	Mudurnu	2.15	50	ePN	Pn	08 59 35.4	-0.4
MDUB	Mudurnu	2.15	50	ePn	Pn	08 59 35.4	-0.4

*ISCJB **20** 09:00:44.6±0.4, 39°10N±0°03×29°05E±0°03, h5km±5km, Error ellipse: s-maj=5.1km s-min=3.7km az=142.4*
*CSEM **20** 09:00:44.8±0.1, 39°10N×29°06E, h8km, ML2.9, Error ellipse: s-maj=2.5km s-min=2.2km az=119.0*
*ISK **20** 09:00:44.5, 39°12N×29°06E, h9km, ML2.5*
*DDA **20** 09:00:44.3, 39°12N×29°04E, h17km, Ml2.9*
ISC 20 09:00:44.0±1.0, 39°10N±0°02×29°11E±0°02, h10km±10km, n46, σ0°34/62, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	Gediz	0.29	92	P	Pb	09 00 51.5	+0.1
GDZ				S	Sb	09 00 56.3	0.0
GDZ	Gediz	0.29	92	i P	Pb	09 00 51.5	+0.1
GDZ				i S	Sb	09 00 56.3	0.0
DEMI	Demirci	0.31	259	P	Pg	09 00 50.2	0.0
DEMI				S	Sg	09 00 54.0	-0.4
DEMI	Demirci	0.31	259	i P	Pg	09 00 50.2	0.0
DEMI				i S	Sg	09 00 54.0	-0.4
TVSB	Tavsanli	0.44	38	ePG	Pb	09 00 53.9	-0.1
TVSB				eSG	Sb	09 01 00.9	+0.2
TVSB	Tavsanli	0.44	38	ePg	Pb	09 00 53.9	-0.1
TVSB				eSg	Sb	09 01 00.9	+0.2
KULA	Kula-Manisa	0.68	211	ePG	Pg	09 00 57.6	+0.4
KULA	Kula-Manisa	0.68	211	ePg	Pg	09 00 57.6	+0.4
DURS	Dursunbey	0.70	316	P	Pb	09 00 58.6	+0.3
DURS	Dursunbey	0.70	316	i P	Pb	09 00 58.6	+0.3
MANT	Manisa	0.75	215	P	Pg	09 00 58.4	0.0
MANT				S	Sg	09 01 07.8	-0.4
MANT	Manisa	0.75	215	i P	Pg	09 00 58.4	0.0
MANT				i S	Sg	09 01 07.8	-0.4
KHAL	Karahalli	0.79	158	P	Pn	09 01 01.1	-0.2
KHAL	Karahalli	0.79	158	i P	Pn	09 01 01.1	-0.2
KHL	Karahalli	0.84	157	ePG	Pn	09 01 02.0	+0.1
KHL	Karahalli	0.84	157	ePg	Pn	09 01 02.0	+0.1
ORLT	Orhaneli	0.96	350	ePG	Pg	09 01 02.2	-0.2
ORLT				eSG	Sn	09 01 16.8	-0.5
ORLT	Orhaneli	0.96	350	ePg	Pg	09 01 02.2	-0.2
ORLT				eSg	Sn	09 01 16.8	-0.5
AKHS	Akhisar	1.03	258	P	Pb	09 01 04.1	+0.2
AKHS				S	Sg	09 01 17.4	+0.1
AKHS	Akhisar	1.03	258	i P	Pb	09 01 04.1	+0.2
AKHS				i S	Sg	09 01 17.4	+0.1
AKS	Akhisar	1.03	258	ePG	Pb	09 01 04.2	+0.3
AKS	Akhisar	1.03	258	ePg	Pb	09 01 04.2	+0.3
BALB	Balikesir	1.09	300	ePG	Pb	09 01 05.1	+0.2
BALB	Balikesir	1.09	300	ePg	Pb	09 01 05.1	+0.2
IGD	Bursa	1.16	4	i P	Pb	09 01 06.0	-0.2
IGD				i S	Sb	09 01 20.9	-0.4
CAVI	Cavuskoy	1.24	27	ePN	Pg	09 01 08.0	+0.3
CAVI	Cavuskoy	1.24	27	ePn	Pg	09 01 08.0	+0.3
IZI	Iznik	1.27	13	ePN	Pg	09 01 08.8	+0.5
IZI	Iznik	1.27	13	ePn	Pg	09 01 08.8	+0.5
MDNY	Mudanya-Bursa	1.28	352	ePN	Pn	09 01 08.4	+0.3
MDNY	Mudanya-Bursa	1.28	352	ePn	Pb	09 01 08.4	+0.3
KCTX	Karacabey (Bur	1.30	334	ePN	Pg	09 01 09.2	+0.3
KCTX	Karacabey (Bur	1.30	334	ePn	Pg	09 01 09.2	+0.3
BALY	Balya	1.32	299	P	Pg	09 01 09.5	+0.2
BALY				S	Sb	09 01 25.8	0.0
BALY	Balya	1.32	299	i P	Pg	09 01 09.5	+0.2
BALY				i S	Sb	09 01 25.8	0.0
ADVT	Abdulvahap	1.42	20	ePN	Pg	09 01 11.8	+0.6
ADVT	Abdulvahap	1.42	20	ePn	Pg	09 01 11.8	+0.6
GONE	Gonen-Balikesi	1.45	311	ePN	Pb	09 01 11.3	+0.3
GONE	Gonen-Balikesi	1.45	311	ePn	Pb	09 01 11.3	+0.3
ARMT	Armutlu	1.48	353	ePN	Pb	09 01 11.9	+0.4
ARMT	Armutlu	1.48	353	ePn	Pb	09 01 11.9	+0.4
EDC	Edincik	1.57	323	ePN	Pb	09 01 13.2	+0.1
EDC	Edincik	1.57	323	ePn	Pb	09 01 13.2	+0.1
GULT	Gulveren	1.72	39	ePN	Pb	09 01 15.8	+0.2
GULT	Gulveren	1.72	39	ePn	Pb	09 01 15.8	+0.2
SART	Tekirdag	2.17	318	i P	Pb	09 01 24.6	+1.2
SART				i S	Sg	09 01 52.9	-0.8

*ISCJB **20** 09:03:36.9±0.4, 39°16N±0°03×29°09E±0°05, h23km±6km, Error ellipse: s-maj=6.4km s-min=5.0km az=36.1*
*CSEM **20** 09:03:36.8±0.2, 39°16N×29°12E, h20km, ML2.6, Error ellipse: s-maj=6.0km s-min=4.5km az=99.0*
*ISK **20** 09:03:36.1, 39°17N×29°05E, h20km, ML2.5*
*DDA **20** 09:03:37.4, 39°11N×29°10E, h7km, Ml2.6*
ISC 20 09:03:36.5±1.1, 39°15N±0°02×29°10E±0°02, h18km±3km, n33, σ0°64/47, 1C, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	Gediz	0.30	102	P	Pb	09 03 43.6	+0.2
GDZ				S	Sb	09 03 48.1	+0.1
GDZ	Gediz	0.30	102	i P	Pb	09 03 43.6	+0.2
GDZ				i S	Sb	09 03 48.1	+0.1
DEMI	Demirci	0.32	250	P	Pb	09 03 43.8	+0.1
DEMI				S	Sg	09 03 48.0	-0.1
DEMI	Demirci	0.32	250	i P	Pb	09 03 43.9	+0.1
DEMI				i S	Sg	09 03 48.0	-0.1
TVSB	Tavsanli	0.41	43	ePG	Pg	09 03 45.2	+0.2
TVSB				eSG	Sb	09 03 52.0	+0.7
TVSB	Tavsanli	0.41	43	ePg	Pg	09 03 45.2	+0.2
TVSB				eSg	Sb	09 03 52.0	+0.7
DURS	Dursunbey	0.66	313	P	Pn	09 03 51.2	+0.2
DURS	Dursunbey	0.66	313	i P	Pn	09 03 51.2	+0.2
KULA	Kula-Manisa	0.72	208	ePG	Pg	09 03 50.8	+0.1
KULA	Kula-Manisa	0.72	208	ePg	Pg	09 03 50.8	+0.1
MANT	Manisa	0.79	213	P	Pb	09 03 51.7	0.0
MANT				S	Sb	09 04 01.8	-0.3
MANT	Manisa	0.79	213	i P	Pb	09 03 51.7	0.0
MANT				i S	Sb	09 04 01.8	-0.3
KHAL	Karahalli	0.84	158	P	Pg	09 03 53.0	+0.1
KHAL				S	Sb	09 04 03.5	0.0
KHAL	Karahalli	0.84	158	i P	Pg	09 03 53.0	+0.1
KHAL				i S	Sb	09 04 03.5	0.0
KHL	Karahalli	0.89	158	ePG	Pn	09 03 54.3	+0.1
KHL	Karahalli	0.89	158	ePg	Pn	09 03 54.3	+0.1
ORLT	Orhaneli	0.91	350	ePG	Pb	09 03 53.6	-0.1
ORLT	Orhaneli	0.91	350	ePg	Pb	09 03 53.6	-0.1
AKHS	Akhisar	1.04	255	P	Pg	09 03 58.8	+2.1
AKHS	Akhisar	1.04	255	i P	Pg	09 03 58.8	+2.1
IZI	Iznik	1.22	14	ePN	Pn	09 03 58.6	-0.1
IZI				eSN	Sn	09 04 14.6	-0.1
IZI	Iznik	1.22	14	ePn	Pn	09 03 58.6	-0.1
IZI				eSn	Sn	09 04 14.6	-0.1
MDNY	Mudanya-Bursa	1.23	352	ePN	Pn	09 03 58.6	-0.1
MDNY	Mudanya-Bursa	1.23	352	ePn	Pn	09 03 58.6	-0.1
KCTX	Karacabey (Bur	1.25	333	ePN	Pn	09 03 58.6	-0.5
KCTX				eSN	Sb	09 04 14.9	-0.5
KCTX	Karacabey (Bur	1.25	333	ePn	Pn	09 03 58.6	-0.5
KCTX				eSn	Sb	09 04 14.9	-0.5
GONE	Gonen-Balikesi	1.41	310	ePN	Pn	09 04 00.4	-0.9
GONE	Gonen-Balikesi	1.41	310	ePn	Pn	09 04 00.4	-0.9
GULT	Gulveren	1.68	40	ePN	Pn	09 04 05.3	+0.3
GULT	Gulveren	1.68	40	ePn	Pn	09 04 05.3	+0.3
SKO	Skopje	6.48	298	i P	Pb	09 05 28.2	-0.4
OHR	Ohrid	6.66	290	i P	Pb	09 05 32.4	+0.8
PDG	Podgorica	8.15	297	i P	Pn	09 05 32.0	-1.9

*DDA **20** 09:06:53.4, 39°12N×29°00E, h7km, Ml2.8*
*CSEM **20** 09:06:53.7±0.2, 39°10N×29°02E, h2km, ML2.8, Error ellipse: s-maj=3.9km s-min=2.9km az=143.0*
*ISK **20** 09:06:53.2, 39°09N×29°04E, h5km, ML2.4*
ISC 20 09:06:53.5±0.9, 39°08N±0°02×29°01E±0°02, h14km±7km, n45, σ0°44/62, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.23	260	P	Pg	09 06 58.9	+0.2
DEMI				S	Sg	09 07 02.0	-0.2
DEMI	Demirci	0.23	260	i P	Pg	09 06 58.9	+0.2
DEMI				i S	Sg	09 07 02.0	-0.2
GDZ	Gediz	0.36	89	P	Pg	09 07 00.9	-0.1
GDZ				S	Sg	09 07 06.7	+0.6
GDZ	Gediz	0.36	89	i P	Pg	09 07 00.8	-0.1
GDZ				i S	Sg	09 07 06.7	+0.6
TVSB	Tavsanli	0.51	44	ePG	Pg	09 07 03.5	-0.1
TVSB				eSG	Sg	09 07 10.1	-0.2
TVSB	Tavsanli	0.51	44	ePg	Pg	09 07 03.5	-0.1
TVSB				eSg	Sg	09 07 10.1	-0.2
KULA	Kula-Manisa	0.63	206	ePG	Pg	09 07 05.8	-0.1
KULA	Kula-Manisa	0.63	206	ePg	Pg	09 07 05.8	-0.1
DURS	Dursunbey	0.66	321	P	Pg	09 07 05.9	-0.6
DURS	Dursunbey	0.66	321	i P	Pg	09 07 05.9	-0.6
MANT	Manisa	0.69	211	P	Pb	09 07 07.5	0.0
MANT				S	Sg	09 07 16.4	+0.2
MANT	Manisa	0.69	211	i P	Pb	09 07 07.5	0.0
MANT				i S	Sg	09 07 16.4	+0.2
KHL	Karahalli	0.86	152	ePG	Pg	09 07 10.1	-0.1
KHL	Karahalli	0.86	152	ePg	Pg	09 07 10.1	-0.1
AKHS	Akhisar	0.96	258	P	Pn	09 07 12.8	+0.3
AKHS				S	Sn	09 07 26.0	+0.1
AKHS	Akhisar	0.96	258	i P	Pn	09 07 12.8	+0.3
AKHS				i S	Sn	09 07 26.1	+0.1
AKS	Akhisar	0.96	258	ePG	Pb	09 07 12.0	+0.2
AKS				eSG	Sn	09 07 26.3	+0.4
AKS	Akhisar	0.96	258	ePg	Pb	09 07 12.0	+0.2
AKS				eSg	Sn	09 07 26.3	+0.4
ORLT	Orhaneli	0.96	355	ePG	Pb	09 07 12.0	0.0
ORLT	Orhaneli	0.96	355	ePg	Pb	09 07 12.0	0.0
IGD	Bursa	1.19	7	i P	Pn	09 07 14.9	-0.7
IGD				i S	Sb	09 07 31.2	+0.2
BALY	Balya	1.26	302	P	Pn	09 07 16.9	+0.2
BALY				S	Sb	09 07 31.8	-1.4
BALY	Balya	1.26	302	i P	Pn	09 07 16.9	+0.2
BALY				i S	Sb	09 07 31.8	-1.4
KCTX	Karacabey (Bur	1.28	337	ePN	Pg	09 07 18.7	+0.4
KCTX	Karacabey (Bur	1.28	337	ePn	Pg	09 07 18.7	+0.4
MDNY	Mudanya-Bursa	1.29	356	ePN	Pb	09 07 17.7	+0.2
MDNY	Mudanya-Bursa	1.29	356	ePn	Pb	09 07 17.7	+0.2
CAVI	Cavuskoy	1.29	30	ePN	Pb	09 07 17.5	0.0
CAVI	Cavuskoy	1.29	30	ePn	Pb	09 07 17.5	0.0
IZI	Iznik	1.30	16	ePN	Pg	09 07 19.1	+0.5
IZI	Iznik	1.30	16	ePn	Pg	09 07 19.1	+0.5
BORA	Eskisehir	1.37	54	P	Pb	09 07 19.5	+0.6
BORA				S	Sg	09 07 37.5	-0.3
BORA	Eskisehir	1.37	54	i P	Pb	09 07 19.6	+0.6
BORA				i S	Sg	09 07 37.5	-0.3
GONE	Gonen-Balikesi	1.41	314	ePN	Pg	09 07 21.0	+0.4
GONE	Gonen-Balikesi	1.41	314	ePn	Pg	09 07 21.0	+0.4
ADVT	Abdulvahap	1.46	22	ePN	Pb	09 07 20.8	+0.4
ADVT	Abdulvahap	1.46	22	ePn	Pb	09 07 20.8	+0.4
ARMT	Armutlu	1.48	356	ePN	Pb	09 07 21.4	+0.5
ARMT	Armutlu	1.48	356	ePn	Pb	09 07 21.4	+0.5
EDC	Edincik	1.54	325	ePN	Pb	09 07 21.9	+0.1
EDC	Edincik	1.54	325	ePn	Pb	09 07 21.9	+0.1
GULT	Gulveren	1.78	40	ePN	Pb	09 07 25.6	-0.3
GULT	Gulveren	1.78	40	ePn	Pb	09 07 25.6	-0.3
SART	Tekirdag	2.13	319	P	Pb	09 07 32.6	+0.6
SART	Tekirdag	2.13	319	i P	Pb	09 07 32.6	+0.6

*CSEM **20** 09:09:56.3, 34°38N×9°59E, h37km, MD3.1*
*TUN **20** 09:09:56.3, 34°38N×9°59E, h37km, MD3.1*
*IDC **20** 09:09:59.4±2.2, 34°49N×10°23E, h0km, mb3.3/2, mb1 3.7/2, mb1mx3.2/40, mbtmp3.4/2, Error ellipse: s-maj=70.5km s-min=17.0km az=72.0*
*ISCJB **20** 09:10:00.7±0.9, 34°41N±0°08×9°6E±0°1, h10km, mb3.3/

KCTX	Karacabey (Bur	1.29	336	*e*PN	Pb	09 18 51.6 +0.1
KCTX	Karacabey (Bur	1.29	336	*e*Pn	Pb	09 18 51.6 +0.1
BORA	Eskisehir	1.34	54	*i* P	Pn	09 18 50.0 -2.1
BORA				*i* S	Sg	09 19 10.2 -0.3
GEMT	Gemlik	1.35	5	*e*PN	Pb	09 18 52.5 0.0
GEMT	Gemlik	1.35	5	*e*Pn	Pb	09 18 52.5 0.0
DNZL	Cakiroluk	1.40	180	P	Pn	09 18 52.8 -0.1
DNZL	Cakiroluk	1.40	180	*i* P	Pn	09 18 52.9 -0.1
ADVT	Abdulvahap	1.45	21	*e*PN	Pb	09 18 54.4 +0.2
ADVT	Abdulvahap	1.45	21	*e*Pn	Pb	09 18 54.4 +0.2
ESKT	Eskisehir	1.46	72	*i* P	Pg	09 18 55.1 -0.1
ESKT				*i* S	Sg	09 19 14.4 +0.2
SEYT	Eskypehyr	1.46	72	P	Pg	09 18 55.1 -0.1
SEYT				S	Sg	09 19 14.4 +0.2
ARMT	Armutlu	1.48	355	*e*PN	Pb	09 18 54.9 +0.1
ARMT	Armutlu	1.48	355	*e*Pn	Pb	09 18 54.9 +0.1
GPA	Golpazari	1.54	39	*e*PN	Pb	09 18 55.5 -0.4
GPA	Golpazari	1.54	39	*e*Pn	Pb	09 18 55.5 -0.4
EDC	Edincik	1.55	324	*e*PN	Pg	09 18 56.8 -0.2
EDC	Edincik	1.55	324	*e*Pn	Pg	09 18 56.8 -0.2
GULT	Gulveren	1.75	40	*e*PN	Pn	09 18 58.5 +0.8
GULT	Gulveren	1.75	40	*e*Pn	Pn	09 18 58.6 +0.8
SVRH	Sivrihisar-ESK	1.96	79	*e*PN	Pn	09 19 01.4 +0.9
SVRH	Sivrihisar-ESK	1.96	79	*e*Pn	Pn	09 19 01.4 +0.9

IDC 20 09:33:08.7±58.0, 20.04S×169.70E, h0km, mb4.0/3, mb1 4.2/3, mb1mx3.7/30, mbtmp4.0/3, Error ellipse: s-maj=989.1km s-min=112.5km az=76.0, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	Stephens Creek	27.80	239	P	P	09 39 00.2	+0.5
	1.7nm,0.6s,baz=67,slow=9.5,SNR=7.8						
WRA	Warramunga Arr	33.19	264	P	P	09 39 46.6	-0.8
	0.3nm,0.5s,baz=95,slow=9.1,SNR=11						
ASAR	Alice Springs	33.37	257	P	P	09 39 49.1	+0.2
	2.9nm,0.7s,baz=92,slow=8.7,SNR=52						

DDA ***20*** *09:34:32.4, 39.10N×29.00E, h7km, Ml3.0*
ISK ***20*** *09:34:32.3, 39.07N×29.04E, h2km, ML2.8*
CSEM ***20*** *09:34:33.2±0.1, 39.08N×29.02E, h2km, ML3.0, Error ellipse: s-maj=3.0km s-min=2.6km az=89.0*
ISC 20 09:34:32.8±1.0, 39.10N±0.02×29.01E±0.02, h8km±9km, n49, σ0.63/63, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.23	256	P	Pg	09 34 37.6	+0.1
DEMI				S	Sg	09 34 40.9	+0.2
DEMI	Demirci	0.23	256	*i* P	Pg	09 34 37.6	+0.1
DEMI				*i* S	Sg	09 34 40.9	+0.2
TVSB	Tavsanli	0.50	45	*e*PG	Pg	09 34 42.3	-0.1
TVSB	Tavsanli	0.50	45	*e*Pg	Pg	09 34 42.3	-0.1
DURS	Dursunbey	0.65	321	P	Pg	09 34 45.1	-0.2
DURS				S	Sg	09 34 53.6	-0.3
DURS	Dursunbey	0.65	321	*i* P	Pg	09 34 45.1	-0.2
DURS				*i* S	Sg	09 34 53.6	-0.3
MANT	Manisa	0.70	210	P	Pg	09 34 46.1	-0.2
MANT	Manisa	0.70	210	*i* P	Pg	09 34 46.1	-0.2
KHAL	Karahalli	0.82	152	P	Pg	09 34 48.2	-0.3
KHAL	Karahalli	0.82	152	*i* P	Pg	09 34 48.2	-0.3
KHL	Karahalli	0.87	152	*e*PG	Pg	09 34 49.3	-0.3
KHL				*e*SG	Sb	09 35 01.9	-0.1
KHL	Karahalli	0.87	152	*e*Pg	Pg	09 34 49.3	-0.3
KHL				*e*Sg	Sb	09 35 01.9	-0.1
ORLT	Orhaneli	0.95	355	*e*PG	Pn	09 34 52.4	-0.1
ORLT	Orhaneli	0.95	355	*e*Pg	Pn	09 34 52.4	-0.1
AKHS	Akhisar	0.96	257	P	Pg	09 34 51.6	+0.5
AKHS				S	Sg	09 35 03.9	+0.3
AKHS	Akhisar	0.96	257	*i* P	Pg	09 34 51.6	+0.5
AKHS				*i* S	Sg	09 35 03.9	+0.3
AKS	Akhisar	0.96	257	*e*PG	Pb	09 34 52.0	+0.4
AKS				*e*SG	Sn	09 35 06.2	-0.1
AKS	Akhisar	0.96	257	*e*Pg	Pb	09 34 52.0	+0.4
AKS				*e*Sg	Sn	09 35 06.2	-0.1
BALB	Balikesir	1.03	302	*e*PG	Pn	09 34 53.9	+0.4
BALB	Balikesir	1.03	302	*e*Pg	Pn	09 34 53.9	+0.4
IGD	Bursa	1.17	7	*i* P	Pb	09 34 53.7	-1.6
BALY	Balya	1.25	301	P	Pg	09 34 57.2	+0.4
BALY				S	Sb	09 35 12.4	-0.6
BALY	Balya	1.25	301	*i* P	Pg	09 34 57.2	+0.4
BALY				*i* S	Sb	09 35 12.4	-0.6
KCTX	Karacabey (Bur	1.27	337	*e*PN	Pg	09 34 57.9	+0.8
KCTX	Karacabey (Bur	1.27	337	*e*Pn	Pg	09 34 57.9	+0.8
MDNY	Mudanya-Bursa	1.27	356	*e*PN	Pg	09 34 58.3	+1.1
MDNY	Mudanya-Bursa	1.27	356	*e*Pn	Pg	09 34 58.3	+1.1
CAVI	Cavuskoy	1.28	30	*e*PN	Pg	09 34 58.1	+0.8
CAVI	Cavuskoy	1.28	30	*e*Pn	Pg	09 34 58.1	+0.8
IZI	Iznik	1.29	16	*e*PN	Pg	09 34 58.5	+1.0
IZI	Iznik	1.29	16	*e*Pn	Pg	09 34 58.5	+1.0
GONE	Gonen-Balikesi	1.39	313	*e*PN	Pg	09 35 00.3	+0.8
GONE	Gonen-Balikesi	1.39	313	*e*Pn	Pg	09 35 00.3	+0.8
DNZL	Cakiroluk	1.41	179	P	Pg	09 35 00.2	+0.5
DNZL				S	Sg	09 35 18.8	+0.8
DNZL	Cakiroluk	1.41	179	*i* P	Pg	09 35 00.2	+0.5
DNZL				*i* S	Sg	09 35 18.8	+0.8
ADVT	Abdulvahap	1.45	23	*e*PN	Pg	09 35 01.4	+0.9
ADVT	Abdulvahap	1.45	23	*e*Pn	Pg	09 35 01.4	+0.9
ARMT	Armutlu	1.47	356	*e*PN	Pg	09 35 01.4	+0.5
ARMT	Armutlu	1.47	356	*e*Pn	Pg	09 35 01.4	+0.5
EDC	Edincik	1.53	325	*e*PN	Pg	09 35 02.3	+0.2
EDC	Edincik	1.53	325	*e*Pn	Pg	09 35 02.3	+0.2
GULT	Gulveren	1.77	41	*e*PN	Pb	09 35 05.6	+0.1
GULT	Gulveren	1.77	41	*e*Pn	Pb	09 35 05.6	+0.1
HRT	Hereke	1.79	16	*e*PN	Pb	09 35 06.0	+0.1
HRT	Hereke	1.79	16	*e*Pn	Pb	09 35 06.0	+0.1
SPNC	Sapanca-Adapaz	1.87	32	*e*PN	Pb	09 35 06.3	-0.9
SPNC	Sapanca-Adapaz	1.87	32	*e*Pn	Pb	09 35 06.3	-0.9
RKY	Sarkoy-Tekirda	2.12	319	*e*PN	Pb	09 35 10.2	-1.3
RKY	Sarkoy-Tekirda	2.12	319	*e*Pn	Pb	09 35 10.2	-1.3

BUC 20 09:34:52.4±1.2, 45.19N×25.05E, h7km±5km, MD2.3/2, 6C-2D, Error ellipse: s-maj=11.5km s-min=4.2km az=11.0, Romania

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MTUR	Matau	0.04	13	↑*i* P	Pg	09 34 54.1	+0.1
MTUR	Matau	0.04	13	↑*i* P	Pg	09 34 54.1	+0.1
VOIR		0.25	360	↑*i* P	Pg	09 34 57.7	+0.3
VOIR		0.25	360	S	Sg	09 35 02.0	+1.2
VOIR		0.25	360	↑*i* P	Pg	09 34 57.7	+0.3
VOIR				*i* S	Sg	09 35 02.0	+1.2
ARR	Arges	0.35	302	↑*i* P	Pg	09 34 59.7	+0.5
ARR	Arges	0.35	302	S	Sg	09 35 04.8	+1.0
ARR	Arges	0.35	302	↑*i* P	Pg	09 34 59.7	+0.5
ARR				*i* S	Sg	09 35 04.8	+1.0
MLR	Muntele Rosu	0.70	64	⇓*i* P	Pb	09 35 06.8	-0.3
MLR				S	Sb	09 35 16.6	-0.4
MLR	Muntele Rosu	0.70	64	⇓*i* P	Pb	09 35 06.8	-0.3
MLR				*i* S	Sb	09 35 16.6	-0.4

ISCJB ***20*** *09:36:02.7±0.4, 39.13N±0.03×29.04E±0.03, h4km±5km, Error ellipse: s-maj=4.6km s-min=3.7km az=145.8*
DDA ***20*** *09:36:02.6, 39.10N×29.04E, h7km, Ml2.9*
ISK ***20*** *09:36:03.4, 39.20N×29.03E, h5km, ML2.5*
CSEM ***20*** *09:36:03.1±0.1, 39.14N×29.05E, h5km, ML2.9, Error ellipse: s-maj=3.2km s-min=3.0km az=122.0*
ISC 20 09:36:02.8±0.9, 39.13N±0.02×29.04E±0.02, h10km±9km, n41, σ0.37/57, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.27	252	P	Pg	09 36 08.3	0.0
DEMI				S	Sg	09 36 12.1	+0.1
DEMI	Demirci	0.27	252	*i* P	Pg	09 36 08.3	0.0
DEMI				*i* S	Sg	09 36 12.1	+0.1
GDZ	Gediz	0.34	96	P	Pg	09 36 09.6	-0.1
GDZ				S	Sg	09 36 14.5	+0.2
GDZ	Gediz	0.34	96	*i* P	Pg	09 36 09.6	-0.1
GDZ				*i* S	Sg	09 36 14.5	+0.2
TVSB	Tavsanli	0.46	45	*e*PG	Pg	09 36 11.8	0.0
TVSB				*e*SG	Sg	09 36 18.3	+0.4
TVSB	Tavsanli	0.46	45	*e*Pg	Pg	09 36 11.8	0.0
TVSB				*e*Sg	Sg	09 36 18.3	+0.4
DURS	Dursunbey	0.65	317	P	Pg	09 36 15.8	+0.4
DURS	Dursunbey	0.65	317	*i* P	Pg	09 36 15.8	+0.4
MANT	Manisa	0.74	211	P	Pg	09 36 16.8	-0.3
MANT				S	Sg	09 36 26.0	-0.8
MANT	Manisa	0.74	211	*i* P	Pg	09 36 16.8	-0.3
MANT				*i* S	Sg	09 36 26.0	-0.8
KHAL	Karahalli	0.83	155	P	Pb	09 36 19.4	-0.1
KHAL				S	Sg	09 36 29.4	-0.4
KHAL	Karahalli	0.83	155	*i* P	Pb	09 36 19.4	-0.1
KHAL				*i* S	Sg	09 36 29.4	-0.4
KHL	Karahalli	0.89	155	*e*PG	Pn	09 36 22.4	+0.9
KHL	Karahalli	0.89	155	*e*Pg	Pn	09 36 22.4	+0.9
ORLT	Orhaneli	0.93	353	*e*PG	Pg	09 36 20.0	-0.7
ORLT				*e*SG	Sg	09 36 32.5	-0.2
ORLT	Orhaneli	0.93	353	*e*Pg	Pg	09 36 20.0	-0.7
ORLT				*e*Sg	Sg	09 36 32.5	-0.2
AKHS	Akhisar	0.99	256	P	Pb	09 36 22.1	0.0
AKHS				S	Sg	09 36 34.5	-0.2
AKHS	Akhisar	0.99	256	*i* P	Pb	09 36 22.1	0.0
AKHS				*i* S	Sg	09 36 34.5	-0.2
AKS	Akhisar	0.99	256	*e*PG	Pn	09 36 23.1	+0.3
AKS				*e*SG	Sn	09 36 36.9	0.0
AKS	Akhisar	0.99	256	*e*Pg	Pn	09 36 23.1	+0.3
AKS				*e*Sg	Sn	09 36 36.9	0.0
BALB	Balikesir	1.04	300	*e*PG	Pb	09 36 22.8	-0.1
BALB	Balikesir	1.04	300	*e*Pg	Pb	09 36 22.8	-0.1
IGD	Bursa	1.14	6	*i* P	Pb	09 36 23.6	-1.1
CAVI	Cavuskoy	1.24	30	*e*PN	Pn	09 36 26.4	+0.1
CAVI	Cavuskoy	1.24	30	*e*Pn	Pn	09 36 26.4	+0.1
MDNY	Mudanya-Bursa	1.25	354	*e*PN	Pb	09 36 26.6	+0.1
MDNY	Mudanya-Bursa	1.25	354	*e*Pn	Pb	09 36 26.6	+0.1
IZI	Iznik	1.25	15	*e*PN	Pn	09 36 26.6	+0.1
IZI	Iznik	1.25	15	*e*Pn	Pn	09 36 26.6	+0.1
KCTX	Karacabey (Bur	1.25	335	*e*PN	Pg	09 36 27.0	+0.1
KCTX	Karacabey (Bur	1.25	335	*e*Pn	Pg	09 36 27.0	+0.1
BALY	Balya	1.26	300	P	Pg	09 36 26.9	-0.1
BALY	Balya	1.26	300	*i* P	Pg	09 36 26.9	-0.1
GONE	Gonen-Balikesi	1.39	312	*e*PN	Pg	09 36 29.6	0.0
GONE	Gonen-Balikesi	1.39	312	*e*Pn	Pg	09 36 29.6	0.0
ARMT	Armutlu	1.44	355	*e*PN	Pb	09 36 29.8	-0.1
ARMT	Armutlu	1.44	355	*e*Pn	Pb	09 36 29.8	-0.1
EDC	Edincik	1.52	324	*e*PN	Pb	09 36 31.1	0.0
EDC	Edincik	1.52	324	*e*Pn	Pb	09 36 31.2	0.0
GULT	Gulveren	1.73	41	*e*PN	Pb	09 36 34.3	-0.4
GULT	Gulveren	1.73	41	*e*Pn	Pb	09 36 34.3	-0.4

ISK ***20*** *09:56:58.9, 39.15N×28.98E, h6km, ML2.8*
ISCJB ***20*** *09:56:59.5±0.4, 39.14N±0.03×28.98E±0.04, h9km, Error ellipse: s-maj=4.7km s-min=3.2km az=135.3*
DDA ***20*** *09:56:59.7, 39.09N×28.96E, h7km, Ml3.0*
CSEM ***20*** *09:56:59.1±0.1, 39.14N×29.00E, h2km, ML3.0, Error ellipse: s-maj=2.3km s-min=1.9km az=125.0*
ISC 20 09:56:59.6±0.8, 39.14N±0.02×28.99E±0.03, h9km, n62, σ0.46/70, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.23	245	P	Pg	09 57 04.2	-0.1
DEMI				S	Sg	09 57 07.5	-0.1
DEMI	Demirci	0.23	245	*i* P	Pg	09 57 04.2	-0.1
DEMI				*i* S	Sg	09 57 07.5	-0.1
TVSB	Tavsanli	0.48	50	*e*PG	Pg	09 57 08.1	-0.9
TVSB	Tavsanli	0.48	50	*e*Pg	Pg	09 57 08.1	-0.9
KULA	Kula-Manisa	0.68	202	*e*PG	Pg	09 57 11.9	-0.7
KULA	Kula-Manisa	0.68	202	*e*Pg	Pg	09 57 11.9	-0.7
MANT	Manisa	0.73	208	P	Pg	09 57 13.0	-0.7
MANT	Manisa	0.73	208	*i* P	Pg	09 57 13.0	-0.7
KHAL	Karahalli	0.86	153	P	Pg	09 57 15.8	-0.4
KHAL	Karahalli	0.86	153	*i* P	Pg	09 57 15.8	-0.4
ORLT	Orhaneli	0.91	356	*e*PG	Pg	09 57 16.9	-0.2
ORLT				*e*SG	Sb	09 57 29.6	-0.1
ORLT	Orhaneli	0.91	356	*e*Pg	Pg	09 57 16.9	-0.2
ORLT				*e*Sg	Sb	09 57 29.6	-0.1
KHL	Karahalli	0.92	153	*e*PG	Pg	09 57 17.1	-0.1
KHL	Karahalli	0.92	153	*e*Pg	Pg	09 57 17.1	-0.1
AKHS	Akhisar	0.95	254	P	Pg	09 57 17.9	0.0
AKHS				S	Sg	09 57 30.2	-0.1
AKHS	Akhisar	0.95	254	*i* P	Pg	09 57 17.9	0.0
AKHS				*i* S	Sg	09 57 30.2	-0.1
AKS	Akhisar	0.95	254	*e*PG	Pg	09 57 17.6	-0.3
AKS				*e*SG	Sb	09 57 31.4	+0.4
AKS	Akhisar	0.95	254	*e*Pg	Pg	09 57 17.6	-0.3
AKS				*e*Sg	Sb	09 57 31.4	+0.4
BALB	Balikesir	0.99	301	*e*PG	Pg	09 57 18.4	-0.3
BALB	Balikesir	0.99	301	*e*Pg	Pg	09 57 18.4	-0.3
BALY	Balya	1.22	300	P	Pg	09 57 23.0	0.0
BALY	Balya	1.22	300	*i* P	Pg	09 57 23.0	0.0
KCTX	Karacabey (Bur	1.22	337	*e*PN	Pn	09 57 22.6	-0.3
KCTX	Karacabey (Bur	1.22	337	*e*Pn	Pn	09 57 22.6	-0.3
MDNY	Mudanya-Bursa	1.23	356	*e*PN	Pn	09 57 22.2	-0.8
MDNY	Mudanya-Bursa	1.23	356	*e*Pn	Pn	09 57 22.2	-0.8
CAVI	Cavuskoy	1.25	32	*e*PN	Pn	09 57 23.2	-0.1
CAVI	Cavuskoy	1.25	32	*e*Pn	Pn	09 57 23.2	-0.1
IZI	Iznik	1.25	17	*e*PN	Pg	09 57 23.6	0.0
IZI	Iznik	1.25	17	*e*Pn	Pg	09 57 23.6	0.0
GEMT	Gemlik	1.30	7	*e*PN	Pg	09 57 24.8	+0.2
GEMT	Gemlik	1.30	7	*e*Pn	Pg	09 57 24.8	+0.2
GONE	Gonen-Balikesi	1.35	312	*e*PN	Pb	09 57 25.0	-0.1
GONE	Gonen-Balikesi	1.35	312	*e*Pn	Pb	09 57 25.0	-0.1
ADVT	Abdulvahap	1.42	24	*e*PN	Pb	09 57 25.9	-0.3
ADVT	Abdulvahap	1.42	24	*e*Pn	Pb	09 57 25.9	-0.3
ARMT	Armutlu	1.43	356	*e*PN	Pn	09 57 25.3	-0.4
ARMT	Armutlu	1.43	356	*e*Pn	Pn	09 57 25.3	-0.4
AYDB	Zeytinkoy-Aydi	1.47	216	*e*PN	Pb	09 57 27.0	-0.1
AYDB	Zeytinkoy-Aydi	1.47	216	*e*Pn	Pb	09 57 27.0	-0.1
EDC	Edincik	1.48	325	*e*PN	Pn	09 57 26.6	+0.1
EDC	Edincik	1.48	325	*e*Pn	Pn	09 57 26.6	+0.1
GPA	Golpazari	1.53	41	*e*PN	Pn	09 57 27.6	+0.4
GPA	Golpazari	1.53	41	*e*Pn	Pn	09 57 27.6	+0.4
AYDN	Tasoluk	1.71	211	P	Pg	09 57 32.1	-0.4
AYDN	Tasoluk	1.71	211	*i* P	Pg	09 57 32.1	-0.4
GULT	Gulveren	1.75	42	*e*PN	Pn	09 57 30.6	+0.5
GULT	Gulveren	1.75	42	*e*Pn	Pn	09 57 30.7	+0.5
HRT	Hereke	1.76	17	*e*PN	Pn	09 57 31.0	+0.7
HRT	Hereke	1.76	17	*e*Pn	Pn	09 57 31.0	+0.7
MRMT	Marmara Adasi	1.81	324	*e*PN	Pn	09 57 30.9	-0.1
MRMT	Marmara Adasi	1.81	324	*e*Pn	Pn	09 57 30.9	-0.1
SVRH	Sivrihisar-ESK	1.99	80	*e*PN	Pn	09 57 34.2	+0.7
SVRH	Sivrihisar-ESK	1.99	80	*e*Pn	Pn	09 57 34.2	+0.7
SILT	Sile	2.07	14	*e*PN	Pn	09 57 35.1	+0.6
SILT	Sile	2.07	14	*e*Pn	Pn	09 57 35.1	+0.6
RKY	Sarkoy-Tekirda	2.08	319	*e*PN	Pn	09 57 35.4	+0.7
RKY	Sarkoy-Tekirda	2.08	319	*e*Pn	Pn	09 57 35.4	+0.7
MDUB	Mudurnu	2.16	51	*e*PN	Pn	09 57 36.5	+0.7
MDUB	Mudurnu	2.16	51	*e*Pn	Pn	09 57 36.5	+0.7
KIZT	Kizilcal	2.27	96	*e*PN	Pn	09 57 38.2	+0.9
KIZT	Kizilcal	2.27	96	*e*Pn	Pn	09 57 38.2	+0.9

IDC 20 10:00:53.3±24.0, 54.44S×141.29E, h0km, mb3.9/3, mb1 4.1/3, mb1mx3.8/29, mbtmp3.9/3, MS3.4/4, Ms1 3.4/4, ms1mx3.0/27, Error ellipse: s-maj=435.1km s-min=142.1km az=144.0, West of Macquarie Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RPZ	Rata Peaks	22.09	73	LR	LR	10 11 55.5	
	comp=Z,168nm,21.8s,baz=336,slow=30						
STKA	Stephens Creek	22.56	1	P	P	10 05 54.0	-0.9
	3.7nm,0.9s,baz=170,slow=14,SNR=6.8						
H01W1	Cape Leeuwin H	27.19	305	T	T	10 34 17.3	
	baz=143,slow=76,SNR=11						
H01W2	Cape Leeuwin H	27.19	305	T	T	10 34 17.4	
	baz=143,slow=76,SNR=11						
H01W3	Cape Leeuwin H	27.20	305	T	T	10 34 18.8	
	baz=143,slow=76,SNR=12						
URZ	Urewera	29.15	71	LR	LR	10 16 27.1	
	comp=Z,90nm,18.2s,baz=326,slow=32						
ASAR	Alice Springs	31.23	347	P	P	10 07 14.8	+0.4
	0.9nm,0.6s,baz=171,slow=8.8,SNR=20						
WRA	Warramunga Arr	34.85	349	P	P	10 07 46.0	0.0
	1.8nm,0.9s,baz=172,slow=7.5,SNR=14						
MAW	Mawson	37.38	218	LR	LR	10 22 34.0	
	comp=Z,62nm,18.2s,baz=60,slow=35						
KAPI	Kappang	52.28	332	LR	LR	10 31 53.7	
	comp=Z,19nm,19.5s,baz=100,slow=36						
H08S2	Diego Garcia H	71.54	283	T	T	11 29 56.8	
	baz=144,slow=76,SNR=5.8						
H08S1	Diego Garcia H	71.55	283	T	T	11 29 56.9	
	baz=144,slow=76,SNR=8.2						
H08S3	Diego Garcia H	71.56	283	T	T	11 30 01.4	
	baz=144,slow=76,SNR=6.1						

CSEM 20 10:07:12.7±0.2, 41.46N×1.42E, h19km, ML1.8, Error ellipse: s-maj=3.9km s-min=2.5km az=152.0, Mining explosion., Spain

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EPOB	Poblet	0.28	247	Pg	Pg	10 07 17.6	-1.4
	22nm,0.4s,SNR=14						
CFON	Fontmartina	0.82	68	Pg	Pn	10 07 30.9	+1.6
	4.6nm,0.3s,SNR=17						
CSOR	Sort	0.94	347	Pg	Pg	10 07 31.3	+0.3
	2.6nm,0.3s,SNR=11						
CSOR				Lg	Lg	10 07 44.6	
	6.8nm,0.4s,SNR=8.4						
ERTA	Horta de San J	0.96	239	Pg	Pg	10 07 31.6	+0.2
	7.7nm,0.3s,SNR=16						
CLLI	Llivia	1.10	22	Pg	Pg	10 07 34.0	-0.1
	1.7nm,0.3s,SNR=8.8						
ESAC	San Caprasio	1.44	281	Pg	Pg	10 07 39.8	-0.7
	14nm,0.3s,SNR=7.5						
EJON	La Jonquera	1.48	48	Pg	Pg	10 07 40.7	-0.5
	SNR=7.9						
SJAF	Saint Jean de	1.50	46	Pg	Pg	10 07 40.8	-0.7
	SNR=7.9						
EMOS	Mosqueruela	1.80	233	Pg	Pg	10 07 47.0	-0.4
	SNR=7.9						
ATE	Arette	2.26	317	Pg	Pg	10 07 54.9	-1.2
	SNR=7.9						
IELO	Elcoad	2.41	306	Pg	Pg	10 07 58.0	-1.0
	SNR=7.9						
EALK	Alkurruntz	2.79	310	Pg	Pg	10 08 04.7	-1.5
	SNR=7.9						

HEL ***20*** *10:07:13.9±1.2, 67.63N×33.97E, h0km, ML2.3, Explosion*
CSEM ***20*** *10:07:13.2±1.1, 67.56N×33.72E, h2km, ML2.3, Error ellipse: s-maj=20.9km s-min=11.3km az=113.0, Mining explosion.*
NAO ***20*** *10:07:15.9±2.4, 67.57N×33.25E, ML2.5*
ISC 20 10:07:12.9±1.8, 67.57N±0.05×33.81E±0.09, h0km, n29, σ1.38/44, Baltic States-Belarus-Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VRF	Varrio	1.61	278	PG	Pb	10 07 43.5	0.0
	baz=88						
VRF				MSG		10 08 03.7	
	comp=Z,24nm,0.2s						
VRF				SN	Sg	10 08 05.7	+1.0
VRF	Varrio	1.61	278	Pg	Pb	10 07 43.5	0.0
VRF				Sn	Sg	10 08 05.7	+1.0
KU6	Riekki	2.20	227	PG	Pg	10 07 54.4	-0.5
KU6				MSG		10 08 21.5	
	comp=Z,15nm,0.2s						
KU6				SG	Sg	10 08 23.4	0.0
KU6	Riekki	2.20	227	Pg	Pg	10 07 54.4	-0.5
KU6				Sg	Sg	10 08 23.4	0.0
MSF	Maaselka	2.52	231	SG	Sg	10 08 33.9	0.0
MSF	Maaselka	2.52	231	Sg	Sg	10 08 33.8	0.0
SGF	Sodankyl	2.80	271	PG	Pb	10 08 04.1	+0.3
SGF				SG	Sg	10 08 43.0	+0.1
SGF	Sodankyl	2.80	271	Pg	Pb	10 08 04.1	+0.3
SGF				Sg	Sg	10 08 42.9	+0.1
RNF	Rovaniemi	3.20	256	PN	Pn	10 08 06.4	+2.0
RNF				SB	Sb	10 08 48.1	-1.9
RNF	Rovaniemi	3.20	256	Pn	Pn	10 08 06.4	+2.0
RNF				Sb	Sb	10 08 48.1	-1.9
KEV	Kevo	3.31	314	PN	Pn	10 08 07.2	+1.2
KEV				SB	Sn	10 08 48.5	+2.6
KEV	Kevo	3.31	314	Pn	Pn	10 08 07.1	+1.2
KEV				Sb	Sn	10 08 48.5	+2.6
ARA0	ARCESS Array S	3.63	307	Pn	Pn	10 08 10.9	+0.6
	baz=124,slow=16						
ARA0				Sn	Sn	10 08 52.4	-1.4
	baz=122,slow=28						
ARA0				Lg	Lg	10 09 03.6	
	baz=117,slow=37						
ARA0	ARCESS Array S	3.63	307	Pn	Pn	10 08 10.9	+0.6
	baz=124,slow=16						
ARA0				Sn	Sn	10 08 52.4	-1.4
	baz=122,slow=

41nm,0.6s
MAJO eSn Sn 10 12 39.7 +3.4
MAT Matsushiro 5.30 255 P Pn 10 11 37.9 +1.5
MAT S Sn 10 12 31.9 -4.4
ASAJ Asahikawa 6.20 347 Pn Pn 10 11 47.6 -1.0
2.1nm,0.3s,baz=221,slow=14,SNR=12
ASAJ Sn Sn 10 12 54.5 -3.7
1.7nm,0.3s,baz=64,slow=14,SNR=7.4
ASAJ Asahikawa 6.20 347 ePn Pn 10 11 47.8 -0.9
ASAJ eSn Sn 10 12 59.9 +1.6
JHJ2 Mitsune 6.30 219 ePn Pn 10 11 48.8 -1.3
JHJ2 eSn Sn 10 12 56.9 -3.9
JHJ Hachijo jima 2 6.31 220 Pn Pn 10 11 49.0 -1.2
10nm,0.3s,baz=68,slow=22,SNR=10
JHJ Sn Sn 10 12 56.0 -5.1
35nm,0.3s,baz=81,slow=22,SNR=11
USRK Ussuriysk Ar. 11.27 307 Pn Pn 10 12 59.5 +1.3
0.3nm,0.3s,baz=106,slow=13,SNR=6.3
JNU Nakatsue 12.19 250 LR LR 10 18 09.2
comp=Z,43nm,18.2s,baz=116,slow=38
KSRS Korea Array 13.19 272 Pn Pn 10 13 26.4 +2.0
0.2nm,0.3s,baz=82,slow=14,SNR=5.0
KSRS LR LR 10 17 50.4
comp=Z,33nm,19.4s,baz=52,slow=34
KSAR Wonju Array Be 13.22 272 Pn Pn 10 13 26.4 +1.5
KLR Kul'dur 14.47 324 Pn Pn 10 13 40.3 -1.5
0.1nm,0.3s,baz=12,slow=8.1,SNR=2.6
KLR LR LR 10 18 55.8
comp=Z,50nm,19.3s,baz=116,slow=36
ZALV Zalesovo Beam 43.07 312 P P 10 18 17.5 +1.5
0.7nm,0.4s,baz=107,slow=5.1,SNR=2.6
ZALV PcP PcP 10 20 05.1 -0.3
0.9nm,0.5s,baz=106,slow=2.2,SNR=3.7
MKAR Makanchi Array 45.69 302 P P 10 18 37.7 +0.7
0.4nm,0.4s,baz=70,slow=10,SNR=3.8
ILAR Eielson Array 47.25 33 P P 10 18 48.6 -0.3
0.5nm,0.7s,baz=252,slow=7.1,SNR=6.0
KURK Kurchatov 47.26 308 eP P 10 18 50.1 +0.9
4.7nm,0.6s
KURBB Kurchatov Arra 47.34 308 P P 10 18 51.0 +1.1
1.9nm,0.5s,baz=81,slow=8.1,SNR=14
WRA Warramunga Arr 58.52 191 P P 10 20 12.3 -0.3
0.5nm,0.6s,baz=8.5,slow=6.9,SNR=13
ABKAR Abkulak array 59.17 311 eP P 10 20 18.0 +1.2
0.3nm,0.4s
YKA Yellowknife Ar 61.62 31 P P 10 20 33.1 -0.2
0.5nm,0.8s,baz=301,slow=6.6,SNR=6.2
ASAR Alice Springs 62.24 191 P P 10 20 37.9 -0.1
0.3nm,0.7s,baz=219,slow=39,SNR=3.8
FINES FINESS Array B 69.03 333 P P 10 21 22.3 +1.0
1.5nm,0.7s,baz=165,slow=3.7,SNR=4.0
FFC Flin Flon 71.44 34 eP P 10 21 36.5 +0.3
1.5nm,0.6s
FCC Fort Churchill 71.91 28 eP P 10 21 38.3 -0.6
1.3nm,0.6s
NVAR Mina Array Bea 72.34 55 P P 10 21 41.9 -0.3
0.8nm,0.7s,baz=290,slow=6.0,SNR=8.0
NOA NORSAR Array B 74.15 338 P P 10 21 52.7 +0.5
0.9nm,0.8s,baz=32,slow=6.2,SNR=3.0
AKASG Malin Array Be 74.97 323 P P 10 21 57.7 +0.7
0.8nm,0.5s,baz=46,slow=5.4,SNR=3.2
PDAR Pinedale Array 75.12 47 P P 10 21 58.4 -0.1
0.8nm,0.6s,baz=255,slow=2.4,SNR=11
WUAZ Wupatki 78.52 54 eP P 10 22 17.4 -0.2
1.1nm,0.4s
TXAR Lajitas Array 87.48 54 P P 10 23 04.2 +0.2
0.2nm,0.6s,baz=280,slow=1.6,SNR=3.2

*DDA **20** 10:14:58.0, 39°.11N×29°.08E, h6km, Ml3.5*
*ISK **20** 10:14:57.3, 39°.09N×29°.07E, h5km, ML3.1*
*CSEM **20** 10:14:58.5±0.1, 39°.08N×29°.06E, h2km, ML3.5, Error ellipse: s-maj=3.4km s-min=3.1km az=140.0*
ISC 20 10:14:58.6±1.0, 39°.10N±0°.02×29°.07E±0°.01, h8km±8km, n87, σ0°87/123, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**259**	P	**Pg**		**10 15 04.2**	**-0.1**
DEMI				S	**Sg**		10 15 08.1	+0.1
DEMI	**Demirci**	**0.28**	**259**	*i* P	**Pg**		**10 15 04.2**	**-0.1**
DEMI				*i* S	**Sg**		10 15 08.1	+0.1
GDZ	**Gediz**	**0.32**	**91**	P	**Pg**		**10 15 04.7**	**-0.3**
GDZ				S	**Sg**		10 15 09.4	+0.2
GDZ	**Gediz**	**0.32**	**91**	*i* P	**Pg**		**10 15 04.7**	**-0.3**
GDZ				*i* S	**Sg**		10 15 09.4	+0.2
TVSB	**Tavsanli**	**0.47**	**40**	*e*PG	**Pg**		**10 15 07.0**	**-0.7**
TVSB	**Tavsanli**	**0.47**	**40**	*e*Pg	**Pg**		**10 15 07.0**	**-0.7**
DURS	**Dursunbey**	**0.69**	**318**	P	**Pg**		**10 15 11.9**	**+0.1**
DURS	**Dursunbey**	**0.69**	**318**	*i* P	**Pg**		**10 15 11.9**	**+0.1**
DURS				*i* S	**Sb**		10 15 23.9	+1.3
MANT	**Manisa**	**0.72**	**214**	P	**Pg**		**10 15 10.0**	**-2.6**
MANT				S	**Sg**		10 15 21.8	-0.3
MANT	**Manisa**	**0.72**	**214**	*i* P	**Pg**		**10 15 10.0**	**-2.6**
MANT				*i* S	**Sg**		10 15 21.8	-0.3
KHAL	**Karahalli**	**0.80**	**155**	P	**Pg**		**10 15 13.6**	**-0.3**
KHAL				S	**Sg**		10 15 24.6	+0.3
KHAL	**Karahalli**	**0.80**	**155**	*i* P	**Pg**		**10 15 13.6**	**-0.3**
KHAL				*i* S	**Sg**		10 15 24.6	+0.3
KHL	**Karahalli**	**0.85**	**155**	*e*PG	**Pg**		**10 15 14.3**	**-0.7**
KHL	**Karahalli**	**0.85**	**155**	*e*Pg	**Pg**		**10 15 14.3**	**-0.7**
ORLT	**Orhaneli**	**0.96**	**352**	*e*PG	**Pg**		**10 15 16.2**	**-0.9**
ORLT				*e*SG	**Sb**		10 15 30.8	+0.3
ORLT	**Orhaneli**	**0.96**	**352**	*e*Pg	**Pg**		**10 15 16.2**	**-0.9**
ORLT				*e*Sg	**Sb**		10 15 30.8	+0.3
AKHS	**Akhisar**	**1.00**	**258**	P	**Pg**		**10 15 17.8**	**-0.1**
AKHS				S	**Sb**		10 15 31.6	-0.1
AKHS	**Akhisar**	**1.00**	**258**	*i* P	**Pg**		**10 15 17.8**	**-0.1**
AKHS				*i* S	**Sb**		10 15 31.6	-0.1
AKS	**Akhisar**	**1.00**	**258**	*e*PG	**Pg**		**10 15 18.0**	**+0.1**
AKS	**Akhisar**	**1.00**	**258**	*e*Pg	**Pg**		**10 15 18.0**	**+0.1**
BALB	**Balikesir**	**1.07**	**301**	*e*PG	**Pg**		**10 15 19.1**	**-0.1**
BALB				*e*SG	**Sn**		10 15 34.7	-0.4
BALB	**Balikesir**	**1.07**	**301**	*e*Pg	**Pg**		**10 15 19.1**	**-0.1**
BALB	**Balikesir**	**1.07**	**301**	*e*Sg	**Sn**		**10 15 34.7**	**-0.4**
IGD	**Bursa**	**1.17**	**5**	*i* P	**Pg**		**10 15 18.7**	**-2.4**
IGD				*i* S	**Sg**		10 15 34.9	-1.4
CAVI	**Cavuskoy**	**1.25**	**28**	*e*PN	**Pn**		**10 15 22.6**	**0.0**
CAVI	**Cavuskoy**	**1.25**	**28**	*e*Pn	**Pn**		**10 15 22.6**	**0.0**
IZI	**Iznik**	**1.28**	**14**	*e*PN	**Pg**		**10 15 23.3**	**+0.1**
IZI	**Iznik**	**1.28**	**14**	*e*Pn	**Pg**		**10 15 23.3**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.28**	**354**	*e*PN	**Pb**		**10 15 23.2**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.28**	**354**	*e*Pn	**Pb**		**10 15 23.2**	**+0.2**
KCTX	**Karacabey (Bur**	**1.29**	**335**	*e*PN	**Pn**		**10 15 22.5**	**-0.6**
KCTX	**Karacabey (Bur**	**1.29**	**335**	*e*Pn	**Pn**		**10 15 22.5**	**-0.6**
BALY	**Balya**	**1.30**	**300**	P	**Pn**		**10 15 23.1**	**0.0**
BALY				S	**Sn**		10 15 41.8	+1.1
BALY	**Balya**	**1.30**	**300**	*i* P	**Pn**		**10 15 23.1**	**0.0**
BALY				*i* S	**Sn**		10 15 41.8	+1.1
BORA	**Eskisehir**	**1.32**	**53**	P	**Pn**		**10 15 22.7**	**-0.9**
BORA				S	**Sb**		10 15 41.2	+0.1
BORA	**Eskisehir**	**1.32**	**53**	*i* P	**Pn**		**10 15 22.7**	**-0.9**
BORA				*i* S	**Sb**		10 15 41.2	+0.1
GEMT	**Gemlik**	**1.34**	**4**	*e*PN	**Pg**		**10 15 24.6**	**+0.3**
GEMT	**Gemlik**	**1.34**	**4**	*e*Pn	**Pg**		**10 15 24.6**	**+0.3**
DNZL	**Cakiroluk**	**1.40**	**181**	P	**Pn**		**10 15 24.4**	**-0.4**
DNZL	**Cakiroluk**	**1.40**	**181**	*i* P	**Pn**		**10 15 24.4**	**-0.4**
DNZL				*i* S	**Sg**		10 15 46.5	+2.7
ADVT	**Abdulvahap**	**1.43**	**21**	*e*PN	**Pb**		**10 15 25.7**	**+0.1**
ADVT	**Abdulvahap**	**1.43**	**21**	*e*Pn	**Pb**		**10 15 25.7**	**+0.1**
GONE	**Gonen-Balikesi**	**1.43**	**312**	*e*PN	**Pn**		**10 15 25.3**	**+0.3**
GONE	**Gonen-Balikesi**	**1.43**	**312**	*e*Pn	**Pn**		**10 15 25.3**	**+0.3**
ESKT	**Eskisehir**	**1.44**	**72**	*i* P	**Pn**		**10 15 25.1**	**-0.2**
ESKT				*i* S	**Sn**		10 15 44.3	-0.2
SEYT	**Eskypehyr**	**1.44**	**72**	P	**Pn**		**10 15 25.1**	**-0.2**
SEYT				S	**Sn**		10 15 44.3	-0.2
ARMT	**Armutlu**	**1.48**	**354**	*e*PN	**Pb**		**10 15 26.4**	**0.0**
ARMT	**Armutlu**	**1.48**	**354**	*e*Pn	**Pb**		**10 15 26.4**	**0.0**
BOLV	**Bolvadin**	**1.51**	**104**	P	**Pb**		**10 15 27.1**	**0.0**
BOLV				S	**Sg**		10 15 47.8	+0.5
BOLV	**Bolvadin**	**1.51**	**104**	*i* P	**Pb**		**10 15 27.1**	**0.0**
BOLV				*i* S	**Sg**		10 15 47.8	+0.5
BOLV				*i* S	**Sb**		10 15 49.6	+3.1
GPA	**Golpazari**	**1.53**	**38**	*e*PN	**Pb**		**10 15 27.4**	**+0.1**
GPA	**Golpazari**	**1.53**	**38**	*e*Pn	**Pb**		**10 15 27.4**	**+0.1**
EDC	**Edincik**	**1.56**	**324**	*e*PN	**Pn**		**10 15 26.9**	**+0.2**
EDC	**Edincik**	**1.56**	**324**	*e*Pn	**Pn**		**10 15 26.9**	**+0.2**
KNL	**Bal¨–kesir**	**1.67**	**315**	*i* P	**Pn**		**10 15 28.8**	**+0.5**
KNL				*i* S	**Sb**		10 15 51.4	+0.5
AYDN	**Tasoluk**	**1.71**	**214**	P	**Pb**		**10 15 30.2**	**-0.2**
AYDN				S	**Sb**		10 15 52.0	-0.1
AYDN	**Tasoluk**	**1.71**	**214**	*i* P	**Pb**		**10 15 30.2**	**-0.2**
AYDN				*i* S	**Sb**		10 15 52.0	-0.1
GULT	**Gulveren**	**1.74**	**39**	*e*PN	**Pb**		**10 15 30.4**	**-0.5**
GULT	**Gulveren**	**1.74**	**39**	*e*Pn	**Pb**		**10 15 30.4**	**-0.5**
BAGO	**Egridir - ISPA**	**1.74**	**129**	*i* P	**Pn**		**10 15 29.2**	**-0.1**
BAGO				*i* S	**Sg**		10 15 55.8	+1.2
BUY	**Buyukada**	**1.75**	**1**	*i* P	**Pb**		**10 15 31.5**	**+0.4**
BUY				S	**Sn**		10 15 51.4	-0.6
BUY	**Buyukada**	**1.75**	**1**	*i* P	**Pb**		**10 15 31.5**	**+0.4**
BUY				*i* S	**Sn**		10 15 51.4	-0.6
HRT	**Hereke**	**1.78**	**15**	*e*PN	**Pn**		**10 15 30.2**	**+0.4**
HRT	**Hereke**	**1.78**	**15**	*e*Pn	**Pn**		**10 15 30.2**	**+0.4**
SPNC	**Sapanca-Adapaz**	**1.85**	**31**	*e*PN	**Pn**		**10 15 31.6**	**+0.9**
SPNC	**Sapanca-Adapaz**	**1.85**	**31**	*e*Pn	**Pn**		**10 15 31.6**	**+0.9**
SVRH	**Sivrihisar-ESK**	**1.94**	**79**	*e*PN	**Pb**		**10 15 33.5**	**-0.7**
SVRH	**Sivrihisar-ESK**	**1.94**	**79**	*e*Pn	**Pb**		**10 15 33.5**	**-0.7**
ISK	**Istanbul-Kandi**	**1.97**	**360**	*e*PN	**Pb**		**10 15 33.6**	**-1.1**
ISK	**Istanbul-Kandi**	**1.97**	**360**	*e*Pn	**Pb**		**10 15 33.6**	**-1.1**
DGB	**¨zmir**	**2.01**	**239**	*i* P	**Pg**		**10 15 37.0**	**-0.1**
AUMIH	**MIHALICIK**	**2.02**	**67**	P	**Pb**		**10 15 36.1**	**+0.4**
AUMIH	**MIHALICIK**	**2.02**	**67**	*i* P	**Pb**		**10 15 36.1**	**+0.4**
AUMIH				*i* S	**Sg**		10 16 04.8	+1.2
URLA	**Izmir**	**2.07**	**250**	*i* P	**Pb**		**10 15 37.4**	**+0.9**
URLA				*i* S	**Sg**		10 16 05.8	+0.6
BTAS	**Taskesti**	**2.09**	**45**	P	**Pb**		**10 15 37.1**	**+0.2**
BTAS	**Taskesti**	**2.09**	**45**	*i* P	**Pb**		**10 15 37.1**	**+0.2**
SILT	**Sile**	**2.10**	**12**	*e*PN	**Pn**		**10 15 34.8**	**+0.7**
SILT	**Sile**	**2.10**	**12**	*e*Pn	**Pn**		**10 15 34.8**	**+0.7**
MDUB	**Mudurnu**	**2.14**	**49**	*e*PN	**Pn**		**10 15 35.6**	**+0.8**
MDUB	**Mudurnu**	**2.14**	**49**	*e*Pn	**Pn**		**10 15 35.6**	**+0.8**
SART	**Tekirdag**	**2.16**	**318**	*i* P	**Pb**		**10 15 38.4**	**+0.4**
SART				*i* S	**Sg**		10 16 07.0	-0.9
KAND	**Kocaeli-Kandir**	**2.17**	**23**	P	**Pn**		**10 15 35.5**	**+0.4**
KAND	**Kocaeli-Kandir**	**2.17**	**23**	*i* P	**Pn**		**10 15 35.5**	**+0.4**
KAND				*i* S	**Sn**		**10 15 57.7**	**-4.6**
ZEY	**¨zmir**	**2.19**	**248**	*i* P	**Pg**		**10 15 40.5**	**0.0**
ZEY				*i* S	**Sg**		10 16 09.1	+0.3
SAHE	**Sakarya_HENDEK**	**2.23**	**37**	P	**Pn**		**10 15 35.4**	**-0.5**
SAHE	**Sakarya_HENDEK**	**2.23**	**37**	*i* P	**Pn**		**10 15 35.4**	**-0.5**
BCAM	**Yenicaga**	**2.87**	**52**	*i* P	**Pb**		**10 15 51.9**	**+1.7**

IDC 20 10:20:54.7±544.0, 51°.12N×114°.82E, h0km, Error ellipse: s-maj=204.8km s-min=133.1km az=62.0, East of Lake Baykal

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
I34MN	**SONGINO INFRAS**	**6.41**	**242**	*i*			11 05 04.0	
baz=54,slow=323								
I45RU	**USSURIYSK INFR**	**13.46**	**114**	*i*			11 41 00.0	
baz=302,slow=320,SNR=2.1								
I46RU	**ZALESOVO INFRA**	**18.40**	**291**	*i*			12 11 20.0	
baz=88,slow=318,SNR=1.0								

*NIED **20** 10:32:00, 37°.10N×142°.50E, h26km, Mw3.5 Best double couple: M0=1.76000×10^14 NP1:φ=27.00000°, δ=36.00000°, λ=-94.00000°. NP2:φ=213.00000°, δ=55.00000°, λ=-87.00000°.*
*ISCJB **20** 10:32:15.5±0.7, 37°.00N±0°.04×142°.51E±0°.06, h9km, mb3.5/2, Error ellipse: s-maj=6.8km s-min=5.9km az=144.4*
*JMA **20** 10:32:15.9±0.3, 37°.07N×142°.47E, h8km±4km, M3.5*
*IDC **20** 10:32:16.6±1.9, 37°.00N×142°.67E, h0km, mb3.4/2, mb1 3.7/6, mb1mx3.4/57, mbtmp3.8/6, ML3.4/4, Error ellipse: s-maj=46.5km s-min=29.3km az=88.0*
ISC 20 10:32:16.5±1.1, 37°.08N±0°.05×142°.39E±0°.06, h9km, n22, σ1§56/22, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.25**	**284**	P	**Pg**		**10 32 40.3**	**-0.2**
JFK				*e*S	**Sn**		**10 32 57.8**	**+0.7**
ONAJ	**Iwakimizuishiy**	**1.28**	**272**	P	**Pn**		**10 32 40.3**	**-0.3**
ONAJ				*e*S	**Sn**		**10 32 58.6**	**+0.7**
JMM	**Marumori**	**1.50**	**302**	P	**Pn**		**10 32 43.7**	**+0.1**
JMM				*e*S	**Sg**		**10 33 04.4**	**-0.3**
JHO	**Hitachi**	**1.54**	**253**	*e*S	**Sg**		**10 33 05.2**	**-0.7**
JIO	**Ouri**	**1.61**	**329**	P	**Pn**		**10 32 45.4**	**+0.3**
JFT	**Otama**	**1.70**	**286**	P	**Pb**		**10 32 47.6**	**-0.3**
JFT				*e*S	**Sg**		**10 33 10.5**	**-0.7**
JOU	**Okura**	**1.88**	**314**	P	**Pn**		**10 32 50.1**	**+1.2**
JMK	**Ichinoseki**	**2.09**	**334**	P	**Pn**		**10 32 52.9**	**+1.2**
JYK	**Kaneyama**	**2.44**	**319**	P	**Pn**		**10 32 58.2**	**+1.6**
MJAR	**Matsushiro Arr**	**3.40**	**262**	Pn	Pb		10 33 13.6	-3.4
2.5nm,0.3s,baz=89,slow=15,SNR=19								
MAT	**Matsushiro**	**3.40**	**262**	P	**Pb**		**10 33 13.8**	**-3.2**
MAT				S	**Sn**		**10 33 52.6**	**+2.3**
JHJ	**Hachijo jima 2**	**4.49**	**209**	Pn	**Pn**		**10 33 26.2**	**+1.5**
3.9nm,0.3s,baz=332,slow=24,SNR=6.1								
JHJ				Sn	**Sn**		**10 34 16.4**	**-0.7**
3.6nm,0.3s,baz=95,slow=22,SNR=3.5								
ASAJ	**Asahikawa**	**7.04**	**1**	Pn	**Pn**		**10 34 01.7**	**+2.1**
0.5nm,0.3s,baz=229,slow=16,SNR=5.6								
ASAJ				Sn	**Sn**		**10 35 16.1**	**-3.6**
0.2nm,0.3s,baz=262,slow=30,SNR=2.8								
JCJ	**Chichijima**	**9.95**	**181**	Pn	**Pn**		**10 34 39.6**	**-0.1**
1.6nm,0.3s,baz=270,slow=20,SNR=2.6								
H11N2	**WAKE ISLAND Hy**	**27.50**	**122**	T	T		11 06 57.9	
baz=315,slow=75,SNR=10								
H11N1	**WAKE ISLAND Hy**	**27.51**	**122**	T	T		11 06 55.9	
baz=315,slow=75,SNR=8.9								
H11N3	**WAKE ISLAND Hy**	**27.52**	**122**	T	T		11 07 01.5	
baz=315,slow=75,SNR=7.1								
H11S1	**WAKE ISLAND Hy**	**28.23**	**124**	T	T		11 07 53.7	
baz=316,slow=76,SNR=7.4								
H11S3	**WAKE ISLAND Hy**	**28.23**	**124**	T	T		11 07 49.3	
baz=316,slow=76,SNR=7.3								
H11S2	**WAKE ISLAND Hy**	**28.25**	**124**	T	T		11 07 48.1	
baz=316,slow=76,SNR=6.0								
WRA	**Warramunga Arr**	**57.22**	**189**	P	**P**		**10 42 05.0**	**+0.9**
0.3nm,0.4s,baz=6.8,slow=7.0,SNR=9.4								
ASAR	**Alice Springs**	**60.94**	**189**	P	**P**		**10 42 31.5**	**+1.6**
0.3nm,0.8s,baz=356,slow=5.1,SNR=5.3								

BJI 20 10:32:31.8, 36°.21N×118°.95E, h6km, ML3.8/10, Southeastern China

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
TIA	**Tai'an**	**1.48**	**271**	Pg	Pn		10 32 57.9	-1.0
TIA				Sg	Sn		10 33 15.9	-2.7
TIA				smax	smax			
comp=N,990nm,0.5s								
TIA				smax	smax			
comp=E,790nm,0.5s								
DL2	**Dalian**	**3.43**	**38**	Pg	Pg		10 33 37.3	-0.2
DL2				Sg	Sb		10 34 15.8	+0.9
DL2				smax	smax			
comp=N,300nm,0.6s								
DL2				smax	smax			
comp=E,530nm,0.6s								
NJ2	**Nanjing**	**4.15**	**181**	*e*Pg	Pb		10 33 45.6	+0.4
NJ2				Sg	Sg		10 34 40.8	-4.3
NJ2				smax	smax			
comp=N,170nm,0.8s								
NJ2				smax	smax			
comp=E,160nm,0.3s								
WMQ	**Urumqi**	**25.01**	**297**	*e*P	P		10 37 59.6	+3.1
WMQ				pmax	pmax			
comp=Z,110nm,0.6s								
WMQ				pmax	pmax			
comp=Z,130nm,11.4s								

*SCB **20** 10:34:17.3±0.7, 24°.00S×67°.43W, h150km, Ml3.5/1, Error ellipse: s-maj=17.5km s-min=11.6km az=10.0*
*SJA **20** 10:34:18.1±0.9, 24°.18S×67°.13W, h191km±8km, ML3.4, MW4.0*
*ISCJB **20** 10:34:18.5±0.2, 24°.22S±0°.02×67°.19W±0°.03, h181km±2km, mb4.2/22, Error ellipse: s-maj=4.6km s-min=3.6km az=152.0*
*NEIC **20** 10:34:18.7±0.8, 24°.24S×67°.03W, h168km±8km, mb4.3/12, MD4.1(SJA), Error ellipse: s-maj=15.3km s-min=10.8km az=68.0*
*IDC **20** 10:34:19.6±1.3, 24°.12S×67°.00W, h173km±10km, mb3.7/9, mb1 3.9/13, mb1mx3.7/30, mbtmp4.1/13, Error ellipse: s-maj=17.6km s-min=12.8km az=10.0*
*GUC **20** 10:34:20.9±0.3, 23°.95S×67°.58W, h218km±4km, ML4.9*
ISC 20 10:34:19.0±0.7, 24°.22S±0°.04×67°.20W±0°.04, h171km±5km, n69, σ1§54/99, mb4.2/22, 6C-3D, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
SLA	**San Lorenzo**	**1.62**	**108**	*i* P	**Pn**		**10 34 52.8**	**+1.2**
SLA				IAML			10 34 55.1	
comp=Z,394nm,0.6s								
SLA				*i* S	**Sn**		**10 35 18.0**	**+1.1**
HJA	**Humahuaca**	**1.92**	**59**	*i* P	**Pn**		**10 34 55.9**	**+0.8**
HJA				*i* S	**Sn**		**10 35 23.6**	**+0.8**
HJA				IAML			10 35 29.1	
comp=Z,100nm,0.5s								
AZAP	**Zapla**	**1.95**	**91**	*i* P	**Pn**		**10 34 55.8**	**+0.7**
AZAP				IAML			10 34 57.8	
comp=Z,358nm,0.5s								
FSA	**Cafayete**	**2.19**	**150**	*i* P	**Pn**		**10 34 59.1**	**+1.3**
FSA				IAML			10 35 04.0	
comp=Z,29nm,0.2s								
FSA				*i* S	**Sn**		**10 35 28.8**	**+0.9**
LVC	**Limon Verde**	**2.24**	**315**	*i* P	**Pn**		**10 34 59.9**	**+1.3**
LVC				*i* S	**Sn**		**10 35 30.4**	**+1.2**
LVC	**Limon Verde**	**2.24**	**315**	P	**Pn**		**10 35 01.0**	**+2.4**
comp=Z,5μm,0.3s,baz=130,slow=7.3,SNR=1385								
LVC				S	**Sn**		**10 35 31.3**	**+2.1**
comp=Z,2μm,0.3s,baz=156,slow=5.9,SNR=4.7								
LVC	**Limon Verde**	**2.24**	**315**	*e*P	**Pn**		**10 35 00.6**	**+2.0**
LVC				*e*S	**Sn**		**10 35 31.0**	**+1.9**
LVC	**Limon Verde**	**2.24**	**315**	*e*Pn	**Pn**		**10 35 00.7**	**+2.1**
LVC				*e*Sn	**Sn**		**10 35 30.4**	**+1.2**
YJA	**Yavi**	**2.55**	**38**	*i* P	**Pn**		**10 35 03.6**	**+1.3**
YJA				*i* S	**Sn**		**10 35 35.6**	**-0.3**
YJA				IAML			10 35 41.3	
PB06	**IPOC Station P**	**2.65**	**304⇑**	*e*P	**Pn**		**10 35 04.4**	**+1.3**
PB06				*e*S	**Sn**		**10 35 37.8**	**+0.4**
PB06				IAML			10 35 39.3	
comp=N,2μm,0.2s								
PB14	**IPOC Station P**	**2.95**	**261**	*e*P	**Pn**		**10 35 08.3**	**+1.4**
PB14				*e*S	**Sn**		**10 35 45.4**	**+1.2**
PB14				IAML			10 35 46.1	
comp=E,2μm,0.5s								
PB09	**IPOC Station P**	**3.06**	**322**	*e*P	**Pn**		**10 35 09.5**	**+1.4**
PB09				*e*S	**Sn**		**10 35 46.4**	**+0.1**
PB09				IAML			10 35 52.6	
comp=E,3μm,0.5s								
AHML	**Horco Molle**	**3.06**	**147**	*i* P	**Pn**		**10 35 08.9**	**+0.8**
AHML				IAML			10 35 10.5	
comp=Z,34nm,0.7s								
AHML				*i* S	**Sn**		**10 35 46.5**	**+0.2**
PB10	**IPOC Station P**	**3.15**	**282**	*e*P	**Pn**		**10 35 10.5**	**+1.4**
PB10				*e*S	**Sn**		**10 35 48.4**	**+0.3**
PB10				IAML			10 35 52.0	
comp=E,4μm,0.4s								
PB10	**IPOC Station P**	**3.15**	**282**	*e*Pn	**Pn**		**10 35 10.7**	**+1.6**
PB10				*e*Sn	**Sn**		**10 35 48.5**	**+0.5**
MOCB	**Mochara**	**3.28**	**26⇑**	*i*Pn	**Pn**		**10 35 12.5**	**+1.2**
MOCB				*e*Sn	**Sn**		**10 35 53.2**	**+1.3**
comp=E,114nm,0.9s								
PB04	**IPOC Station P**	**3.30**	**304⇑**	*e*P	**Pn**		**10 35 12.1**	**+1.0**
PB04				*e*S	**Sn**		**10 35 51.0**	**-0.7**
PB04				IAML			10 35 53.6	
comp=E,2μm,0.3s								
PB04	**IPOC Station P**	**3.30**	**304**	*e*Pn	**Pn**		**10 35 12.3**	**+1.1**
PB04				*e*Sn	**Sn**		**10 35 51.2**	**-0.5**
PB07	**IPOC Station P**	**3.50**	**314⇑**	*e*P	**Pn**		**10 35 14.7**	**+1.0**
PB07				*e*S	**Sn**		**10 35 55.2**	**-1.1**
PB07				IAML			10 35 57.0	
comp=E,1μm,0.4s								
PB01	**IPOC Station P**	**3.80**	**326**	*e*P	**Pn**		**10 35 18.3**	**+0.9**
PB01				*e*S	**Sn**		**10 36 01.9**	**-1.0**
PB01				IAML			10 36 04.5	
comp=N,613nm,0.4s								
PB01	**IPOC Station P**	**3.80**	**326**	*e*Pn	**Pn**		**10 35 17.9**	**+0.5**
PB01				*e*Sn	**Sn**		**10 36 02.4**	**-0.6**
PB08	**IPOC Station P**	**4.44**	**336**	*e*P	**Pn**		**10 35 27.2**	**+1.3**
PB08				*e*S	**Sn**		**10 36 18.1**	**-0.1**
PB08				IAML			10 36 19.7	
comp=E,240nm,2.0s								
VCA	**Vinchina**	**4.59**	**191**	*i* P	**Pn**		**10 35 29.1**	**+1.4**
VCA				IAML			10 35 31.6	
comp=Z,22nm,0.3s								
AGUA	**GUANDACOL**	**5.38**	**192**	*i* P	**Pn**		**10 35 38.7**	**+1.0**
MNMC	**Minye Minye**	**5.53**	**336**	*e*P	**Pn**		**10 35 39.4**	**-0.6**
MNMC				*e*S	**Sn**		**10 36 40.8**	**-2.7**
LCO	**Las Campanas**	**5.71**	**213**	*e*Pn	**Pn**		**10 35 41.6**	**-0.7**
LCO				*e*S

KSH				*e*PP	**PP**	**10 57 04.6**	**+5.5**
KSH				SKS	**SKSdf**	**11 00 28.5**	**-1.6**
KSH				SKKS	**SKKSac**	**11 03 36.8**	**+2.4**
KSH				AMB	AMB		
	comp=Z,55nm,7.4s						
MKAR	**Makanchi Array**	**146.81**	**40**	PKPbc	**PKPdf**	**10 53 39.4**	**+0.5**
	comp=Z,5.2nm,0.8s,baz=357,slow=2.1,SNR=31						
KLR	**Kul'dur**	**150.94**	**334**	PKPbc	**PKPbc**	**10 53 51.6**	**+0.4**
	comp=Z,3.5nm,0.7s,baz=53,slow=2.3,SNR=9.3						
CD2	**Chengdu**	**169.57**	**48**	PKP	**PKPdf**	**10 54 05.0**	**-1.4**

*ISCJB **20** 10:35:03.6±0.7, 59°.32N±0°.03×27°.19E±0°.07, h0km, Error ellipse: s-maj=5.7km s-min=3.5km az=24.3*
*CSEM **20** 10:35:04.8±0.4, 59°.32N×27°.10E, h2km, ML1.9, Error ellipse: s-maj=10.5km s-min=6.1km az=106.0, Mining explosion.*
*NAO **20** 10:35:04.8±1.1, 59°.31N×27°.04E, ML2.2*
*HEL **20** 10:35:05.5±0.1, 59°.32N×27°.16E, h0km, ML1.9, Explosion*
*BER **20** 10:35:06.0±1.6, 59°.33N×27°.07E, h0km, ML2.2(NAO), Suspected explosion*

ISC 20 10:35:04.5±0.8, 59°.33N±0°.02×27°.17E±0°.04, h0km, n32, σ1°.37/48, Baltic States-Belarus-Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ARBE	**Arbavere**	**0.62**	**281**	Sg	**Sg**	**10 35 24.0**	**-0.3**
VSU	**Vasula**	**0.90**	**195**	Pg	**Pg**	**10 35 22.2**	**+0.5**
VSU				Lg	Lg	10 35 33.2	
VSU	**Vasula**	**0.90**	**195**	Pg	**Pg**	**10 35 22.2**	**+0.5**
VSU				Lg	Lg	10 35 33.2	
VSU	**Vasula**	**0.90**	**195**	*e*P	**Pg**	**10 35 21.6**	**-0.2**
VSU				*e*S	**Sg**	**10 35 32.8**	**-0.6**
VSU	**Vasula**	**0.90**	**195**	Pg	**Pg**	**10 35 22.2**	**+0.5**
	SNR=90						
VSU				*e*S	**Sg**	**10 35 32.2**	**-1.2**
	186nm,0.7s,SNR=90						
VSU				Sb	**Sg**	**10 35 32.8**	**-0.6**
VSU				Lg	Lg	10 35 33.2	
VJF	**Virojoki**	**1.23**	**9**	*e*P	**Pg**	**10 35 27.6**	**-0.5**
VJF				*e*SB	**Sg**	**10 35 44.2**	**+0.2**
VJF	**Virojoki**	**1.23**	**9**	Pg	**Pg**	**10 35 27.6**	**-0.5**
VJF				Sb	**Sg**	**10 35 44.2**	**+0.2**
PVF	**Pernaja**	**1.39**	**332**	*e*P	**Pg**	**10 35 30.4**	**-0.7**
PVF				MSG		10 35 47.5	
	comp=Z,15nm,0.2s						
PVF				*e*S	**Sg**	**10 35 48.4**	**-0.6**
PVF	**Pernaja**	**1.39**	**332**	Pg	**Pg**	**10 35 30.4**	**-0.7**
PVF				Sg	**Sg**	**10 35 48.4**	**-0.6**
MEF	**Metsahovi**	**1.66**	**304**	*e*PG	**Pn**	**10 35 35.4**	**+0.5**
MEF				*e*SN	**Sb**	**10 35 57.5**	**+0.1**
MEF				MSG		10 35 58.1	
	comp=Z,6.1nm,0.1s						
MEF	**Metsahovi**	**1.66**	**304**	*e*P	**Pn**	**10 35 35.5**	**+0.6**
	SNR=90						
MEF				*e*S	**Sn**	**10 35 56.7**	**-0.2**
	comp=Z,9.7nm,0.8s,SNR=90						
MEF				Sn	**Sb**	**10 35 57.5**	**+0.1**
MTSE	**Matsula**	**1.84**	**252**	*e*PG	**Pb**	**10 35 38.4**	**-0.6**
MTSE				*e*S	**Sn**	**10 36 01.5**	**+0.2**
MTSE	**Matsula**	**1.84**	**252**	Pg	**Pb**	**10 35 38.4**	**-0.6**
MTSE				*e*S	**Sn**	**10 36 01.3**	**0.0**
	SNR=68						
FIA0	**FINESS Array S**	**2.19**	**346**	Pn	**Pn**	**10 35 42.8**	**+0.6**
	baz=163,slow=18						
FIA0				Lg	Lg	10 36 13.6	
	baz=164,slow=37						
FIA0				Rg	Rg	10 36 26.6	
	baz=164,slow=37						
FIA0	**FINESS Array S**	**2.19**	**346**	Pn	**Pn**	**10 35 42.8**	**+0.6**
	baz=163,slow=18						
FIA0				Lg	Lg	10 36 13.6	
	baz=164,slow=37						
FIA0				Rg	Rg	10 36 26.6	
	baz=164,slow=37						
FIA0	**FINESS Array S**	**2.19**	**346**	*e*PB	**Pb**	**10 35 44.5**	**-0.5**
FIA0				*e*SB	**Sb**	**10 36 11.6**	**-1.0**
FIA0				*e*SG	**Sg**	**10 36 13.6**	**-1.2**
FIA0	**FINESS Array S**	**2.19**	**346**	Pn	**Pn**	**10 35 42.8**	**+0.6**
	SNR=50						
FIA0				Lg	Lg	10 36 13.6	
KAF	**Kangasniemi**	**2.83**	**352**	*e*PB	**Pb**	**10 35 55.0**	**-0.8**
KAF				MSG		10 36 28.9	
	comp=Z,2.8nm,0.2s						
KAF				*e*SG	**Sb**	**10 36 32.8**	**+1.9**
SLIT	**Slitere, Latvi**	**3.08**	**238**	*e*SB	**Sb**	**10 36 37.8**	**-0.4**
RAF	**Rauma**	**3.19**	**304**	*e*P	**Pn**	**10 35 57.9**	**+2.0**
RAF				MSG		10 36 39.0	
	comp=Z,3.1nm,0.2s						
RAF	**Rauma**	**3.19**	**304**	*e*P	**Pn**	**10 35 57.0**	**+1.1**
	SNR=46						
RAF				*e*S	**Sn**	**10 36 37.9**	**+3.3**
	comp=Z,5.2nm,0.9s,SNR=46						
SUF	**Sumiainen**	**3.44**	**352**	Sn	**Sn**	**10 36 42.4**	**+1.7**
AAL	**Aland**	**3.73**	**286**	*e*SG	**Sb**	**10 36 59.7**	**+2.8**
JOF	**Joensuu**	**4.12**	**27**	*e*P	**Pn**	**10 36 09.8**	**+1.1**
JOF				*e*S	**Sn**	**10 36 57.8**	**+0.3**
JOF	**Joensuu**	**4.12**	**27**	Pn	**Pn**	**10 36 11.5**	**+2.8**
JOF				Sn	**Sn**	**10 36 58.5**	**+1.0**
VAF	**Ylistaro**	**4.31**	**332**	*e*SG	**Sg**	**10 37 19.2**	**-3.8**
NACGM	**Naroch**	**4.44**	**183**	*e*	**Sg**	**10 37 24.0**	**-3.1**
HFS	**Hagfors**	**6.86**	**283**	Lg	Lg	10 38 35.6	
	baz=94,slow=37						
HFS	**Hagfors**	**6.86**	**283**	Lg	Lg	10 38 35.6	
	baz=94,slow=37						
ARA0	**ARCESS Array S**	**10.27**	**357**	Pn	**Pn**	**10 37 31.3**	**-1.7**
	baz=176,slow=14						
ARA0	**ARCESS Array S**	**10.27**	**357**	Pn	**Pn**	**10 37 31.3**	**-1.7**
	baz=176,slow=14						
ARA0	**ARCESS Array S**	**10.27**	**357**	Pn	**Pn**	**10 37 31.3**	**-1.7**
	SNR=50						

IDC 20 10:48:27.6±65.0, 19°.65S×169°.80E, h0km, mb4.1/3, mb1 4.2/3, mb1mx3.7/32, mbtmp4.1/3, MS3.5/3, Ms1 3.5/3, ms1mx2.9/35, Error ellipse: s-maj=1104.0km s-min=119.1km az=76.0, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**28.08**	**239**	P	P	10 54 21.4	+0.4
	2.3nm,0.6s,baz=63,slow=11,SNR=4.5						
STKA				LR	LR	11 04 21.9	
	comp=Z,85nm,18.9s,baz=24,slow=34						
WRA	**Warramunga Arr**	**33.33**	**263**	P	P	10 55 07.2	-0.3
	0.4nm,0.5s,baz=94,slow=8.9,SNR=12						
ASAR	**Alice Springs**	**33.55**	**257**	P	P	10 55 09.3	-0.1
	3.5nm,0.7s,baz=90,slow=8.9,SNR=50						
ASAR				LR	LR	11 08 44.9	
	comp=Z,53nm,18.0s,baz=86,slow=36						
PPT	**Papeete**	**38.49**	**94**	LR	LR	11 10 57.3	
	comp=Z,87nm,19.2s,baz=282,slow=35						

*ISCJB **20** 10:49:17.9±1.0, 39°.09N±0°.04×29°.32E±0°.07, h4km±7km, Error ellipse: s-maj=10.5km s-min=4.6km az=31.5*
*ISK **20** 10:49:17.2, 39°.08N×29°.39E, h7km, ML2.4*
*CSEM **20** 10:49:18.2±0.3, 39°.09N×29°.35E, h10km, ML2.4, Error ellipse: s-maj=8.4km s-min=3.3km az=125.0*
*DDA **20** 10:49:22.6, 39°.10N×29°.04E, h7km, Ml2.9*

ISC 20 10:49:18.3±1.3, 39°.07N±0°.04×29°.30E±0°.05, h12km±10km, n31, σ0°.99/40, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TVSB	**Tavsanli**	**0.40**	**18**	*e*PG	**Pg**	**10 49 25.7**	**-0.6**
TVSB	**Tavsanli**	**0.40**	**18**	*e*Pg	**Pg**	**10 49 25.7**	**-0.6**
DEMI	**Demirci**	**0.45**	**267**	P	**Pb**	**10 49 28.3**	**0.0**
DEMI				S	**Sg**	**10 49 31.9**	**-1.4**
DEMI	**Demirci**	**0.45**	**267**	*i* P	**Pb**	**10 49 28.3**	**0.0**
DEMI				*i* S	**Sg**	**10 49 31.9**	**-1.4**
KULA	**Kula-Manisa**	**0.75**	**222**	*e*PG	**Pb**	**10 49 33.2**	**-0.1**
KULA				*e*SG	**Sb**	**10 49 44.1**	**+0.7**
KULA	**Kula-Manisa**	**0.75**	**222**	*e*Pg	**Pb**	**10 49 33.2**	**-0.1**
KULA				*e*Sg	**Sb**	**10 49 44.1**	**+0.7**
MANT	**Manisa**	**0.82**	**225**	P	**Pn**	**10 49 35.3**	**-0.5**
MANT				S	**Sb**	**10 49 46.2**	**+0.5**
MANT	**Manisa**	**0.82**	**225**	*i* P	**Pn**	**10 49 35.3**	**-0.5**
MANT				*i* S	**Sb**	**10 49 46.1**	**+0.5**
ORLT	**Orhaneli**	**1.02**	**342**	*e*PG	**Pb**	**10 49 37.3**	**-0.6**
ORLT				*e*SG	**Sn**	**10 49 52.4**	**-0.3**
ORLT	**Orhaneli**	**1.02**	**342**	*e*Pg	**Pb**	**10 49 37.3**	**-0.6**
ORLT				*e*Sg	**Sn**	**10 49 52.4**	**-0.3**
AKHS	**Akhisar**	**1.17**	**261**	P	**Pg**	**10 49 42.1**	**+1.3**
AKHS				S	**Sb**	**10 49 55.3**	**-0.3**
AKHS	**Akhisar**	**1.17**	**261**	*i* P	**Pg**	**10 49 42.1**	**+1.3**
AKHS				*i* S	**Sb**	**10 49 55.3**	**-0.3**
AKS	**Akhisar**	**1.17**	**261**	*e*PN	**Pg**	**10 49 41.7**	**+0.9**
AKS	**Akhisar**	**1.17**	**261**	*e*Pn	**Pg**	**10 49 41.7**	**+0.9**
IGD	**Bursa**	**1.19**	**356**	*i* P	**Pg**	**10 49 44.8**	**+3.5**
IGD				*i* S	**Sg**	**10 49 59.1**	**+2.3**
BORA	**Eskisehir**	**1.21**	**48**	P	Pg	10 49 48.2	+6.7
BORA				S	Sg	10 50 06.1	+8.9
BORA	**Eskisehir**	**1.21**	**48**	*i* P	Pg	10 49 48.2	+6.7
BORA				*i* S	Sg	10 50 06.1	+9.0
CAVI	**Cavuskoy**	**1.21**	**20**	*e*PN	**Pn**	**10 49 40.0**	**-1.0**
CAVI	**Cavuskoy**	**1.21**	**20**	*e*Pn	**Pn**	**10 49 40.0**	**-1.0**
BALB	**Balikesir**	**1.24**	**298**	*e*PN	**Pg**	**10 49 42.4**	**+0.3**
BALB	**Balikesir**	**1.24**	**298**	*e*Pn	**Pg**	**10 49 42.4**	**+0.3**
IZI	**Iznik**	**1.27**	**6**	*e*PN	**Pn**	**10 49 41.2**	**-0.7**
IZI	**Iznik**	**1.27**	**6**	*e*Pn	**Pn**	**10 49 41.2**	**-0.7**
MDNY	**Mudanya-Bursa**	**1.33**	**346**	*e*PN	**Pb**	**10 49 43.0**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.33**	**346**	*e*Pn	**Pb**	**10 49 43.0**	**-0.2**
KCTX	**Karacabey (Bur**	**1.40**	**329**	*e*PN	**Pb**	**10 49 44.4**	**+0.1**
KCTX	**Karacabey (Bur**	**1.40**	**329**	*e*Pn	**Pb**	**10 49 44.4**	**+0.1**
ARMT	**Armutlu**	**1.53**	**347**	*e*PN	**Pb**	**10 49 45.9**	**-0.7**
ARMT	**Armutlu**	**1.53**	**347**	*e*Pn	**Pb**	**10 49 45.9**	**-0.7**
GULT	**Gulveren**	**1.65**	**34**	*e*PN	**Pn**	**10 49 46.9**	**-0.3**
GULT	**Gulveren**	**1.65**	**34**	*e*Pn	**Pn**	**10 49 46.9**	**-0.3**

*NNC **20** 10:59:24.3±2.2, 53°.35N×87°.63E, h0km, mb3.6, mpv3.2, Error ellipse: s-maj=16.3km s-min=13.5km az=39.0*

IDC 20 10:59:21.6±2.8, 53°.57N×87°.86E, h0km, mb1 3.3/2, mb1mx3.1/51, mbtmp3.3/2, ML3.0/2, 5C-8D, Error ellipse: s-maj=24.0km s-min=15.0km az=58.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZALV	**Zalesovo Beam**	**1.84**	**283**	Pg	Pn	10 59 54.1	-0.4
	4.1nm,0.3s,baz=102,slow=15,SNR=11						
ZALV				Lg	Lg	11 00 20.9	
	8.6nm,0.3s,baz=101,slow=30,SNR=14						
ZALV				Rg	Rg	11 00 30.6	
	6.9nm,0.3s,baz=96,slow=39,SNR=6.7						
I46RU	**ZALESOVO INFRA**	**1.84**	**283**	*i*		11 11 13.7	
	baz=100,slow=321,SNR=16						
KURK	**Kurchatov**	**6.37**	**247**	⇓Pn	Pn	11 00 56.7	+0.1
	2.2nm,0.6s						
KURK				⇑Pg	Pb	11 01 16.8	+3.6
	7.8nm,0.6s						
KURK				⇑Sn	Sn	11 02 07.0	-2.9
	4.2nm,0.7s						
KURK				⇓Lg	Lg	11 02 41.7	
	13nm,0.9s						
KURBB	**Kurchatov Arra**	**6.46**	**247**	Pn	Pn	11 00 58.6	+0.8
	0.3nm,0.3s,baz=61,slow=14,SNR=21						
KURBB				Sn	Sn	11 02 10.9	-1.3
	0.1nm,0.3s,baz=46,slow=21,SNR=3.5						
KURBB				Lg	Lg	11 02 45.9	
	0.1nm,0.3s,baz=63,slow=30,SNR=6.0						
KURBB	**Kurchatov Arra**	**6.46**	**247**	⇓Pn	Pn	11 00 58.5	+0.6
	4.1nm,0.7s						
KURBB				⇓Sn	Sn	11 02 11.3	-1.0
	4.9nm,0.5s						
KURBB				⇓Lg	Lg	11 02 43.7	
	4.7nm,0.7s						
MK31	**Makanchi Array**	**7.67**	**210**	⇑Pn	Pn	11 01 13.2	-1.3
	0.1nm,0.3s,baz=31,slow=12,SNR=7.5						
MK31				⇓Sn	Sn	11 02 39.9	-2.1
	0.7nm,0.7s						
MK31				⇑Lg	Lg	11 03 21.7	
	2.2nm,0.8s,baz=42,slow=30,SNR=4.0						
MKAR	**Makanchi Array**	**7.67**	**210**	Pn	Pn	11 01 15.6	+1.1
	0.3nm,0.3s,baz=33,slow=14,SNR=8.7						
MKAR				Sn	Sn	11 02 42.1	0.0
	0.1nm,0.3s,baz=25,slow=24,SNR=4.2						
MKAR				Lg	Lg	11 03 25.1	
	0.2nm,0.3s,baz=23,slow=30,SNR=6.0						
MAKZ	**Makanchi**	**7.75**	**211**	⇓Pn	Pn	11 01 14.0	-1.6
	0.1nm,0.3s						
MAKZ				⇑Sn	Sn	11 02 41.5	-2.6
	1.7nm,1.0s						
MAKZ				⇓Lg	Lg	11 03 22.2	
	2.2nm,0.9s						

*ISCJB **20** 11:00:39.3±0.4, 24°.82N±0°.02×122°.02E±0°.02, h5km±4km, Error ellipse: s-maj=4.0km s-min=3.0km az=144.7*
*TAP **20** 11:00:40.0, 24°.81N×121°.99E, h3km±1km, ML3.0, D*
*JMA **20** 11:00:39.8±0.2, 24°.82N×121°.88E, h36km, M2.2*

ISC 20 11:00:39.4±0.9, 24°.84N±0°.02×121°.98E±0°.02, h13km±6km, n34, σ0°.56/58, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWB1	**Santiao Chiao**	**0.16**	**3**	*i* P	**Pg**	**11 00 43.5**	**+0.3**
	baz=2.0						
TWB1				*i* S	**Sg**	**11 00 46.6**	**+0.7**
	baz=2.0						
ILA	**Ilan**	**0.23**	**250**	*e*P	**Pg**	**11 00 43.7**	**-0.6**
	baz=256						
TWC	**Suao**	**0.26**	**207**	*i* P	**Pg**	**11 00 44.7**	**-0.2**
	baz=209						
TWC				*i* S	**Sg**	**11 00 47.9**	**-0.8**
	baz=209						
NWF	**Wu-fen Shan**	**0.29**	**321**	*e*P	**Pb**	**11 00 46.0**	**-0.5**
	baz=323						
NWF				*i* S	**Sb**	**11 00 50.5**	**-0.8**
	baz=323						
TWE	**Neicheng**	**0.31**	**247**	*i* P	**Pg**	**11 00 45.6**	**-0.1**
	baz=251						
TWE				S	**Sg**	**11 00 49.8**	**-0.2**
	baz=251						
TWA	**Mucha**	**0.39**	**291**	*i* P	**Pb**	**11 00 47.6**	**-0.5**
	baz=294						
TWA				S	**Sb**	**11 00 53.1**	**-0.8**
	baz=294						
ENTT	**Nioudou**	**0.43**	**242**	*i* P	**Pg**	**11 00 47.7**	**-0.2**
	baz=244						
ENA	**Nanau**	**0.47**	**208**	P	**Pg**	**11 00 48.4**	**-0.2**
	baz=209						
ENA				*e*S	**Sb**	**11 00 56.4**	**+0.1**
	baz=209						
TWY	**Chenhua**	**0.55**	**321**	*e*P	**Pb**	**11 00 51.0**	**+0.1**
	baz=322						
TWY				*e*S	**Sb**	**11 00 59.3**	**+0.6**
	baz=322						
TWS1	**Kuangyinshan**	**0.57**	**297**	*e*P	**Pb**	**11 00 51.4**	**+0.1**
	baz=299						
TWS1				*e*S	**Sb**	**11 01 00.3**	**+1.0**
	baz=299						
NSK	**Sanguang**	**0.59**	**254**	*i* P	**Pg**	**11 00 50.6**	**-0.4**
	baz=256						
NSK				*e*S	**Sb**	**11 00 60.0**	**+0.1**
	baz=256						
NNS	**Nan Shan**	**0.68**	**234**	*e*P	**Pg**	**11 00 52.2**	**-0.5**
	baz=235						
NNS				*e*S	**Sb**	**11 01 02.4**	**-0.3**
	baz=235						
PCYT	**Pengchaiyu**	**0.79**	**6**	*e*P	**Pn**	**11 00 56.2**	**0.0**
	baz=5.0						
TWD	**Chiawan**	**0.84**	**205**	*e*P	**Pg**	**11 00 55.3**	**-0.3**
	baz=205						
TWD				*e*S	**Sb**	**11 01 07.1**	**+0.1**
	baz=205						
NSTT	**Nanjuang**	**0.92**	**257**	*e*P	**Pb**	**11 00 57.2**	**+0.1**
	baz=258						
NSTT				*e*S	**Sn**	**11 01 10.5**	**-0.5**
	baz=258						
TWT	**Tachien**	**0.94**	**231**	*e*P	**Pb**	**11 00 57.9**	**+0.3**
	baz=233						
TWT				*e*S	**Sn**	**11 01 11.1**	**-0.7**
	baz=233						
WHF	**Hehuan Shan**	**0.95**	**223**	*e*P	**Pg**	**11 00 57.2**	**-0.7**
	baz=224						
WHF				*e*S	**Sb**	**11 01 11.6**	**+0.9**
	baz=224						
JYNG	**Yonagunijimaku**	**0.96**	**114**	P	**Pg**	**11 00 57.8**	**-0.1**
JYNG				S	**Sb**	**11 01 10.9**	**+0.4**
YOJ	**Yonaguni jima**	**1.01**	**112**	P	**Pb**	**11 00 58.7**	**-0.1**
YOJ				S	**Sb**	**11 01 12.2**	**+0.2**
ESL	**Shilin**	**1.14**	**206**	*e*P	**Pg**	**11 01 01.3**	**-0.1**
	baz=206						
NSY	**Sanyi**	**1.19**	**249**	*e*P	**Pn**	**11 01 01.8**	**0.0**
	baz=250						
TWQ1	**Liyutan**	**1.21**	**246**	*e*P	**Pg**	**11 01 02.3**	**-0.3**
	baz=247						
WDT	**Danda**	**1.33**	**216**	*e*P	**Pb**	**11 01 04.4**	**0.0**
	baz=216						
WDT				*e*S	**Sg**	**11 01 22.1**	**-0.3**
	baz=216						
SMLT	**Sun Moon Lake**	**1.37**	**226**	*e*P	**Pb**	**11 01 05.0**	**0.0**
	baz=226						
SMLT				*e*S	**Sg**	**11 01 24.1**	**+0.3**
	baz=226						
TYC	**Yuchr**	**1.39**	**228**	*e*P	**Pg**	**11 01 06.0**	**-0.1**
	baz=228						
TYC				*e*S	**Sg**	**11 01 24.3**	**+0.2**
	baz=228						
TWF1	**Yuli**	**1.61**	**203**	*e*P	**Pn**	**11 01 07.5**	**0.0**
	baz=203						
TWF1				*e*S	**Sn**	**11 01 28.2**	**0.0**
	baz=203						
IRIF	**Iriomote-Funau**	**1.67**	**107**	P	**Pn**	**11 01 08.0**	**-0.3**
CHN5	**Tsauling**	**1.72**	**224**	*e*P	**Pb**	**11 01 10.9**	**0.0**
	baz=224						
CHN5				*e*S	**Sn**	**11 01 31.1**	**+0.1**
	baz=224						
ELDTW	**Lidau**	**1.87**	**208**	*e*P	**Pn**	**11 01 12.2**	**+1.0**
	baz=208						
JKRS	**Kuro-shima**	**1.94**	**108**	P	**Pn**	**11 01 10.7**	**-1.4**
JKRS				S	**Sn**	**11 01 35.8**	**-0.6**
CHN4	**Tsaushan**	**1.95**	**221**	*e*P	**Pb**	**11 01 14.0**	**-0.8**
	baz=221						
CHN4				*e*S	**Sn**	**11 01 37.9**	**+1.3**
	baz=221						
STYT	**Tauyuan**	**2.01**	**214**	*e*P	**Pn**	**11 01 14.0**	**+0.9**
	baz=214						
WTP	**Ta-pu**	**2.02**	**218**	*e*P	**Pn**	**11 01 14.6**	**+1.4**
	baz=218						
JIJ	**Ishigaki jima**	**2.03**	**103**	P	**Pn**	**11 01 13.6**	**+0.4**
JIJ				S	**Sn**	**11 01 39.3**	**+0.9**

*NEIC **20** 11:02:49.7±0.5, 29°.28S×69°.28W, h98km±4km, mb4.3/30, MD4.2(SJA), Error ellipse: s-maj=8.0km s-min=5.2km az=72.0*
*ISCJB **20** 11:02:50.4±0.3, 29°.23S±0°.03×69°.38W±0°.05, h116km±2km, mb4.3/38, Error ellipse: s-maj=6.9km s-min=4.2km az=160.6*
*SJA **20** 11:02:50.9±0.9, 29°.36S×69°.54W, h127km±9km, ML4.2, MW4.3*
*GUC **20** 11:02:52.4±0.3, 29°.30S×69°.67W, h127km±8km, ML4.2*
*IDC **20** 11:02:53.3±0.8, 29°.43S×69°.40W, h131km±5km, mb4.0/9, mb1 4.1/9, mb1mx3.9/28, mbtmp4.3/9, MS2.8/2, Ms1 2.8/2, ms1mx2.7/20, Error ellipse: s-maj=30.5km s-min=17.0km az=35.0*

ISC 20 11:02:52.2±0.5, 29°.31S±0°.04×69°.53W±0°.04, h124km±4km, h124km:pP-P, n251, σ1°.31/270, mb4.3/38, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AGUA	**GUANDACOL**	**0.92**	**101**	*e*P	**Pn**	**11 03 13.7**	**-0.2**
LCO	**Las Campanas**	**1.07**	**286**	*e*P	**Pn**	**11 03 15.2**	**-0.3**
LCO				*i* S	**Sn**	**11 03 33.1**	**0.0**
LCO	**Las Campanas**	**1.07**	**286**	*e*Pn	**Pn**	**11 03 15.1**	**-0.4**
LCO				*e*Sn	**Sn**	**11 03 32.7**	**-0.5**
VCA	**Vinchina**	**1.29**	**64**	*e*P	**Pn**	**11 03 18.4**	**+0.7**
VCA				*e*S	**Sn**	**11 03 38.0**	**+0.9**
VCA				IAML		11 03 38.7	
	comp=Z,21μm,0.4s						
TLL	**Tololo Astrono**	**1.40**	**232**	*e*P	**Pn**	**11 03 18.3**	**-0.7**
TLL				*e*S	**Sn**	**11 03 38.4**	**-1.1**
TLL				IAML		11 03 41.1	
	comp=N,7μm,0.6s						
LSCH	**La Serena**	**1.61**	**248**	*e*P	**Pn**	**11 03 19.7**	**-1.4**
LSCH				*e*S	**Sn**	**11 03 40.5**	**-2.7**
LSCH				IAML		11 03 42.5	
	comp=N,3μm,0.3s						
AMOG	**MOGNA**	**1.86**	**151**	*e*P	**Pn**	**11 03 23.2**	**-0.9**
CPCH	**Copiapo**	**2.07**	**339**	*e*P	**Pn**	**11 03 26.3**	**-0.5**
CPCH				*e*S	**Sn**	**11 03 51.8**	**-1.4**
RTLL	**Cerro Villicun**	**2.21**	**156**	*i* P	**Pn**	**11 03 27.8**	**-0.7**
RTLL				*e*S	**Sn**	**11 03 55.2**	**-1.2**
SJA	**San Juan**	**2.37**	**160**	*e*P	**Pn**	**11 03 29.9**	**-0.6**
SJA				IAML		11 04 02.2	
	comp=Z,1μm,0.2s						
RTLS	**Leoncito**	**2.49**	**175**	*i* P	**Pn**	**11 03 32.2**	**-0.1**
CDCH	**Caldera**	**2.51**	**333**	*e*P	**Pn**	**11 03 31.4**	**-0.8**
CDCH				*e*S	**Sn**	**11 04 01.0**	**-1.9**
RTCV	**Cerro Valdivia**	**2.69**	**162**	*i* P	**Pn**	**11 03 34.1**	**-0.4**
RTCV				*e*S	**Sn**	**11 04 05.1**	**-2.1**
AUSP	**Uspallata**	**2.91**	**178**	*i* P	**Pn**	**11 03 37.5**	**-0.1**
CYA	**Choya**	**3.38**	**76**	*e*P	**Pn**	**11 03 42.4**	**-1.2**
CYA				IAML		11 04 22.9	
	comp=Z,308nm,0.3s						
FSA	**Cafayete**	**4.48**	**46**	*e*P	**Pn**	**11 03 58.2**	**-0.2**
AHML	**Horco Molle**	**4.48**	**57**	IAML		11 05 21.2	
	comp=Z,50nm,0.6s						
MRA	**San Martin**	**4.51**	**134**	IAML		11 05 08.4	
	comp=Z,403nm,0.6s						
PB10	**IPOC Station P**	**5.84**	**351**	*e*Pn	**Pn**	**11 04 13.3**	**-3.3**
AZAP	**Zapla**	**6.44**	**39**	IAML		11 05 49.4	
	comp=Z,14nm,0.3s						
LVC	**Limon Verde**	**6.69**	**5**	P	**Pn**	**11 04 25.9**	**-2.5**
	comp=Z,715nm,0.3s,baz=180,slow=8.7,SNR=155						
LVC				S	**Sn**	**11 05 39.4**	**-4.0**
	comp=Z,321nm,0.3s,baz=24,slow=18,SNR=3.6						
LVC	**Limon Verde**	**6.69**	**5**	*e*Pn	**Pn**	**11 04 25.8**	**-2.5**
LVC				S	**Sn**	**11 05 39.4**	**-4.0**
LVC				*e*Sn	Sn	11 05 40.4	-3.0
PB04	**IPOC Station P**	**6.97**	**355**	*e*Pn	**Pn**	**11 04 27.9**	**-4.0**
PB01	**IPOC Station P**	**8.23**	**0**	*e*Pn	**Pn**	**11 04 44.9**	**-4.0**
TRQA	**Tornquist**	**10.75**	**146**	*e*Pn	**Pn**	**11 05 19.8**	**-2.8**
CPUP	**Villa Florida**	**11.20**	**78**	P	**Pn**	**11 05 24.9**	**-3.7**
	comp=Z,0.4nm,0.3s,baz=253,slow=11,SNR=4.3						
CPUP				LR	LR	11 09 34.2	

comp=Z,12nm,0.7s
MIAR Mount Ida 67.45 339 P P 11 13 35.4 +1.1
baz=157
X39A Fountain Ranch 67.59 338 P P 11 13 36.3 +1.0
baz=157
W41B Gary Mavity, V 67.62 340 P P 11 13 35.8 +0.3
baz=158
Z34A Collier Ranch, 67.89 335 P P 11 13 38.3 +1.1
baz=153
X38A Whitesboro 67.97 338 P P 11 13 39.0 +1.3
baz=156
X37A Clayton 68.08 337 P P 11 13 39.8 +1.4
baz=156
W39A Magazine 68.11 339 P P 11 13 39.7 +1.2
baz=157
Z33A Whitaker Ranch 68.14 334 P P 11 13 39.8 +1.1
baz=152
Y34A Reagan Ranch, 68.36 335 P P 11 13 41.3 +1.2
baz=154
X36A Centrahoma 68.40 336 P P 11 13 40.8 +0.5
baz=155
X35A Drake 68.47 336 P P 11 13 41.5 +0.7
baz=154
W37B Quinton 68.60 337 P P 11 13 42.3 +0.7
baz=156
PBMO Poplar Bluff 68.61 342 eP P 11 13 41.7 +0.2
comp=Z,17nm,0.8s
V39A Pettigrew 68.66 339 P P 11 13 42.4 +0.4
baz=157,SNR=5.2
W36A Wetumka 68.87 337 P P 11 13 43.5 +0.2
baz=155
U40A Yellville 68.90 340 P P 11 13 43.7 +0.3
baz=158
V38A Canehill 68.93 339 P P 11 13 44.0 +0.4
baz=157
U39A Green Forest 69.11 339 P P 11 13 44.9 +0.2
baz=158
SIUC Southern Illin 69.18 343 eP P 11 13 45.2 +0.2
comp=Z,16nm,0.5s
V37A Hulbert 69.18 338 P P 11 13 45.6 +0.5
baz=156
T41A Mountain View 69.22 341 P P 11 13 45.5 +0.1
baz=159,SNR=7.2
V36A Jenks 69.36 337 P P 11 13 46.6 +0.3
baz=155
TUL1 Leonard 69.42 337 P P 11 13 47.1 +0.5
baz=156
WMOK Wichita Mounta 69.43 335 P P 11 13 47.2 +0.4
baz=153
U38A Gravette 69.45 339 P P 11 13 47.5 +0.7
baz=157
MNTX Cornudas Mount 69.59 328 P P 11 13 48.0 +0.2
baz=147
V35A Meyer Ranch, C 69.65 337 P P 11 13 48.5 +0.5
baz=155
U37A Salina 69.65 338 P P 11 13 48.6 +0.6
baz=156
T39A Clever 69.68 340 P P 11 13 48.9 +0.7
baz=158
W32A Sentinel 69.95 334 P P 11 13 50.6 +0.7
baz=152
S40A Lebanon 69.95 341 P P 11 13 50.2 +0.4
baz=159,SNR=6.1
T38A Diamond 69.97 339 P P 11 13 50.3 +0.4
baz=157,SNR=5.8
N59A State Game Lan 70.11 355 P P 11 13 51.5 +0.7
baz=174
V33A Lossen Ranch, 70.21 335 P P 11 13 52.2 +0.7
baz=153
T37A Cheneyville 18 70.24 339 P P 11 13 52.1 +0.5
baz=156
S39A Bolivar 70.28 340 P P 11 13 52.5 +0.6
baz=158,SNR=6.3
MSTX Muleshoe 70.35 331 P P 11 13 53.1 +0.6
baz=149
MSTX Muleshoe 70.35 331 eP P 11 13 53.4 +0.8
comp=Z,8.3nm,0.8s
S38A Stockton 70.40 340 P P 11 13 53.0 +0.4
baz=157,SNR=8.0
V32A Arapaho 70.40 335 P P 11 13 53.2 +0.6
baz=153
R40A Maddies Statio 70.53 341 P P 11 13 53.7 +0.4
baz=159,SNR=15
Q42A Golden Eagle 70.64 343 P P 11 13 54.5 +0.5
baz=160
R39A Chumby, Stover 70.77 341 P P 11 13 54.8 0.0
baz=158,SNR=5.4
S37A Fort Scott 70.80 339 P P 11 13 55.5 +0.5
baz=157
R38A Fenwick Farm, 70.91 340 P P 11 13 55.9 +0.2
baz=157
U32A Winter Ranch, 70.97 335 P P 11 13 56.4 +0.3
baz=153
M54A Oil Creek Stat 71.08 352 P P 11 13 56.8 +0.2
baz=170
Q40A Laux Farm, Aux 71.13 342 P P 11 13 57.3 +0.4
baz=159
S35A Otter Creek Ra 71.21 338 P P 11 13 57.8 +0.4
baz=155
319A Douglas 71.21 325 eP P 11 14 00.3 +2.5
121A Cookes Peak, D 71.42 327 P P 11 14 00.4 +1.4
baz=145
Q39A Willow Grove F 71.43 341 P P 11 13 59.1 +0.3
baz=158,SNR=6.6
Q38A Cooks Store, C 71.54 340 P P 11 13 59.8 +0.4
baz=158,SNR=8.2
P40A Paris 71.62 342 P P 11 14 00.3 +0.4
baz=159,SNR=6.7
DBIC Dimbokro 71.64 71 P P 11 14 00.7 +0.1
comp=Z,3.9nm,0.5s,baz=214,slow=6.0,SNR=11
P39B Salisbury 71.78 341 P P 11 14 01.0 +0.1
baz=159
O40A La Belle 72.13 342 P P 11 14 02.9 0.0
baz=159
P37A Lathrop 72.33 340 P P 11 14 04.3 +0.1
baz=157
O39A Kirksville 72.44 342 P P 11 14 05.1 +0.4
baz=159
TUC Tucson 72.72 324 P P 11 14 06.7 0.0
baz=143
TUC Tucson 72.72 324 eP P 11 14 07.2 +0.4
comp=Z,9.8nm,1.9s
ANMO Albuquerque 72.79 329 P P 11 14 09.1 +1.9
baz=147
P35A Duane Minner, 72.79 339 P P 11 14 07.0 +0.1
baz=156
N39A Derby Farms, D 73.01 342 P P 11 14 08.5 +0.4
baz=159
P34A Walnut Farm, R 73.07 338 P P 11 14 09.5 +1.0
baz=155
CBKS Cedar Bluff 73.40 336 P P 11 14 11.6 +1.1
baz=153
214A Organ Pipe Nat 73.50 323 P P 11 14 13.0 +1.8
baz=141
214A Organ Pipe Nat 73.50 323 eP P 11 14 13.7 +2.5
comp=Z,36nm,1.1s
O34A Beatrice 73.60 339 P P 11 14 12.0 +0.4
baz=155
M38A Pleasantville 73.70 342 P P 11 14 12.3 +0.1
baz=158
P32A Huiting Farm, 73.72 337 P P 11 14 12.9 +0.5
baz=154
T25A Trinidad 73.75 332 P P 11 14 14.2 +1.3
baz=149
T25A Trinidad 73.75 332 eP P 11 14 14.2 +1.3
comp=Z,3.4nm,0.8s
O33A Hebron 73.79 338 P P 11 14 13.6 +0.9
baz=154
N35A Tabor 73.89 340 P P 11 14 14.1 +0.8
baz=156
M37A Trindle Farm, 73.92 341 P P 11 14 14.9 +1.4
baz=158
N34A Lincoln 74.14 339 P P 11 14 15.4 +0.6
baz=156
L37A Phoenix Point, 74.51 342 P P 11 14 17.1 +0.3
baz=158
SDCO Great Sand Dun 74.72 331 P P 11 14 20.0 +1.4
baz=148
L36A Harm Buss Farm 74.74 341 P P 11 14 18.5 +0.3
baz=157
L35A Bielow Farm, R 75.01 340 P P 11 14 20.4 +0.6
baz=156
Y14A Wickenburg 75.15 324 eP P 11 14 22.9 +2.1
K36A Gilmore City 75.18 341 P P 11 14 21.2 +0.5
baz=158
S22A 4UR Ranch, Cre 75.29 330 P P 11 14 23.1 +1.3
baz=147
GLA Glamis 75.43 322 P P 11 14 24.2 +1.8
baz=140
WUAZ Wupatki 75.57 326 P P 11 14 25.5 +2.1
baz=143
WUAZ Wupatki 75.57 326 eP P 11 14 24.9 +1.5
comp=Z,5.6nm,0.8s
MVCO Mesa Verde 75.59 329 P P 11 14 24.6 +1.1
baz=145
MVCO Mesa Verde 75.59 329 eP P 11 14 25.2 +1.7
comp=Z,4.8nm,0.9s
Q24A Divide 75.61 332 P P 11 14 25.0 +1.4
baz=148
Y12C Blythe 75.80 323 P P 11 14 25.8 +1.3
baz=140
IKP In-Ko-Pah, Jac 75.82 321 P P 11 14 26.3 +1.6
baz=139
I38A Scanlan Farm, 75.92 343 P P 11 14 25.3 +0.4
baz=159
I37A Lemond, Waseca 76.17 343 P P 11 14 26.8 +0.5
baz=158
BC3 Big Chuckawall 76.22 322 P P 11 14 28.7 +1.7
baz=140
I36A Fitzsimmons Fa 76.34 342 P P 11 14 27.9 +0.7
baz=158
PV01 Paradox Valley 76.38 329 eP P 11 14 29.5 +1.5
IRM Iron Mountain 76.44 322 P P 11 14 30.0 +1.9
baz=140
ISCO Idaho Springs 76.51 332 P P 11 14 30.1 +1.4
baz=148
ISCO Idaho Springs 76.51 332 eP P 11 14 30.0 +1.3
comp=Z,2.4nm,1.0s
SMCO Snowmass 76.55 331 eP P 11 14 30.9 +1.8
comp=Z,3.2nm,0.8s
TPFO Pinon Flats 76.73 321 P P 11 14 31.7 +1.8
baz=139
PFO Pinyon Flats O 76.74 321 P P 11 14 31.8 +1.9
baz=139
BELC Belle Mtn. Jos 76.78 322 P P 11 14 31.9 +1.8
baz=139
K30A Basset 76.79 338 P P 11 14 31.9 +2.0
baz=153
ECSD EROS Data Cent 76.81 340 P P 11 14 30.4 +0.5
baz=156
ECSD EROS Data Cent 76.81 340 eP P 11 14 30.3 +0.3
comp=Z,7.6nm,0.9s
H36A Jessenland, He 76.83 342 P P 11 14 30.8 +0.8
baz=158
J32A Parkston 76.85 339 P P 11 14 31.1 +0.9
baz=155
MAW Mawson 77.05 163 P P 11 14 31.4 +0.3
comp=Z,1.8nm,0.6s,baz=227,slow=12,SNR=3.6
SPMN Marine on St. 77.15 343 P P 11 14 32.0 +0.3
baz=159
H35A Sunnyside Ranc 77.19 342 P P 11 14 32.7 +0.7
baz=157
GMRC Granite Mounta 77.19 323 P P 11 14 34.1 +1.7
baz=140
N23A Red Feather La 77.57 333 P P 11 14 35.9 +1.3
baz=148
LCMT Little Creek M 77.68 326 eP P 11 14 36.3 +1.2
comp=Z,3.5nm,1.0s
H33A Prehn Over Nor 77.71 340 P P 11 14 35.6 +0.6
baz=156
TUQ Turquoise Moun 77.83 323 P P 11 14 37.5 +1.5
baz=140
BFSC Mount Baldy Ra 77.87 321 P P 11 14 38.0 +1.8
baz=138
O20A White River Ci 77.89 331 P P 11 14 37.8 +1.5
baz=146
O20A White River Ci 77.89 331 eP P 11 14 37.4 +1.1
comp=Z,4.7nm,0.9s
F36A Milaca 77.92 343 P P 11 14 36.2 +0.2
baz=159
MTPU Mount Pierson 77.98 327 eP P 11 14 38.6 +1.6
comp=Z,3.5nm,0.9s
SRU San Rafael Swe 78.06 329 eP P 11 14 38.4 +1.1
comp=Z,3.9nm,0.7s
GSC Goldstone, Bar 78.20 322 P P 11 14 39.5 +1.6
baz=139
SHPR Sheep Range 78.25 324 eP P 11 14 39.5 +1.2
comp=Z,3.0nm,1.0s
MSU Marysvale 78.35 327 eP P 11 14 41.0 +2.1
P18A Preston Nutter 78.35 329 eP P 11 14 40.5 +1.5
comp=Z,5.0nm,0.8s
TSUM Tsumeb 78.42 106 P P 11 14 39.4 -0.3
comp=Z,2.4nm,0.8s,baz=225,slow=6.0,SNR=7.0
E36A McGregor 78.47 344 P P 11 14 39.8 +0.8
baz=159
EDW2 Edwards Air Fo 78.53 321 P P 11 14 40.7 +1.0
baz=138
J26A Sides Ranch, S 78.55 336 P P 11 14 41.8 +2.0
baz=156
G30A Faulkton 78.84 339 P P 11 14 42.2 +1.0
baz=154
C39A Grand Marais 78.97 346 P P 11 14 41.9 +0.1
baz=162
FURC Furnace Creek, 79.11 323 P P 11 14 44.8 +2.0
baz=139
C38A Sawbill Land. 79.13 345 P P 11 14 42.6 0.0
baz=161
TPNV Topopah Spring 79.15 324 P P 11 14 44.9 +1.6
baz=140
TPNV Topopah Spring 79.15 324 eP P 11 14 43.7 +0.4
comp=Z,5.0nm,1.0s
PSUT Pine Spring 79.17 326 eP P 11 14 44.9 +1.6
comp=Z,3.7nm,0.9s
F31A Hecla 79.23 340 P P 11 14 44.0 +0.8
baz=155
K22A Casper 79.29 333 P P 11 14 45.5 +1.7
baz=148
C37A Embarrass 79.34 345 P P 11 14 44.1 +0.2
baz=160
H27A Howes 79.36 337 P P 11 14 45.1 +1.1
baz=151
EYMN Ely 79.39 345 P P 11 14 44.6 +0.5
baz=160
I25A Rochford 79.40 336 P P 11 14 45.5 +1.0
baz=150
F30A Leola 79.44 340 P P 11 14 45.9 +1.5
baz=154
PKM Mcpherson Peak 79.54 320 P P 11 14 46.6 +1.2
baz=137
RSSD Black Hills 79.60 335 P P 11 14 46.8 +1.2
baz=150
RSSD Black Hills 79.60 335 eP P 11 14 46.2 +0.6
comp=Z,2.6nm,0.6s
C35A Jirik Farms, M 79.75 343 P P 11 14 46.4 +0.4
baz=158
E31A Nome 79.75 341 P P 11 14 47.0 +0.9
baz=155
GRAC Grapevine Rang 79.77 323 P P 11 14 47.8 +1.4
baz=139
VES Vestal, Richgr 79.84 321 P P 11 14 48.2 +1.4
baz=138
H25A Fruitdale 79.88 336 P P 11 14 48.2 +1.3
baz=150
R11A Troy Canyon, C 79.88 325 P P 11 14 48.2 +1.0
baz=140
E30A Jud 80.00 340 P P 11 14 48.8 +1.4
baz=154
G26A Maurine 80.11 337 P P 11 14 48.7 +0.6
baz=151
B35A Bob, Littlefor 80.30 344 P P 11 14 49.3 +0.4
baz=158
G25A Newell 80.31 336 P P 11 14 49.9 +0.7
baz=150
BOSA Boshof 80.33 117 P P 11 14 49.2 -0.7
comp=Z,2.3nm,0.5s,baz=254,slow=3.5,SNR=9.7
D30A Buchanan 80.50 340 P P 11 14 50.9 +0.8
baz=154
HWUT Hardware Ranch 80.54 329 eP P 11 14 51.5 +0.9
comp=Z,3.1nm,0.6s
TORD Torodi Ar. Bea 80.57 69 P P 11 14 51.1 -0.1
comp=Z,7.4nm,0.6s,baz=272,slow=5.7,SNR=103
TORD pP pP 11 15 23.3 +0.7
comp=Z,3.5nm,0.8s,baz=253,slow=5.5,SNR=5.6
BW06 Boulder Array 80.62 331 P P 11 14 51.9 +0.8
baz=145
BW06 Boulder Array 80.62 331 eP P 11 14 51.4 +0.3
comp=Z,1.7nm,0.9s
PD31 Pinedale Array 80.62 331 eP P 11 14 51.1 0.0
PDAR Pinedale Array 80.62 331 P P 11 14 51.8 +0.7
comp=Z,1.1nm,0.6s,baz=122,slow=6.2,SNR=14
PDAR pP pP 11 15 26.1 +3.5
comp=Z,0.6nm,0.8s,baz=92,slow=4.5,SNR=2.7
B34A Aery, Baudette 80.65 343 P P 11 14 51.2 +0.4
baz=158
C31A Landman Farms, 80.83 341 P P 11 14 52.6 +0.8
baz=155
C30A Mose, Pekin 80.96 341 P P 11 14 53.4 +0.9
baz=154
F25A Bowman 80.96 337 P P 11 14 53.4 +0.8
baz=150
B32A Ashes, Strandq 81.05 342 P P 11 14 53.5 +0.5
baz=156
A33A Warroad 81.25 343 P P 11 14 54.6 +0.6
baz=157
NVAR Mina Array Bea 81.34 323 P P 11 14 56.5 +1.5
comp=Z,1.8nm,0.8s,baz=156,slow=6.2,SNR=11
NVAR pP pP 11 15 30.4 +3.9
comp=Z,0.8nm,0.9s,baz=182,slow=8.0,SNR=3.1
MDND Maddock 81.42 340 P P 11 14 55.8 +0.9
baz=154
MDND Maddock 81.42 340 eP P 11 14 55.7 +0.7
comp=Z,13nm,0.6s
E25A Miller Ranch, 81.44 337 P P 11 14 56.1 +0.9
baz=150
B30A Myrvik Farm, E 81.59 341 P P 11 14 56.8 +1.0
baz=155
LOHW Long Hollow 81.75 331 eP P 11 14 57.8 +0.7
comp=Z,1.5nm,0.7s
D25A Fairfield 81.98 337 P P 11 14 59.1 +1.2
baz=150
IMW Indian Meadow 82.12 331 eP P 11 15 00.0 +0.9
comp=Z,3.7nm,1.0s
A29A Manning Farm, 82.28 341 P P 11 14 59.9 +0.5
baz=154
YMR Madison River 82.76 332 eP P 11 15 03.6 +1.3
comp=Z,4.2nm,0.7s
HLID Hailey 83.37 329 P P 11 15 07.0 +1.6
baz=142
HLID Hailey 83.37 329 eP P 11 15 06.8 +1.4
comp=Z,4.6nm,1.3s
DGMT Dagmar 83.42 338 P P 11 15 06.3 +0.9
baz=150
BOZ Bozeman (W) 83.83 332 P P 11 15 08.4 +0.8
baz=144
M04C Macdoel 85.64 324 P P 11 15 18.4 +1.6
baz=136
J05D Fort Rock, OR 86.41 325 P P 11 15 22.0 +1.4
baz=136
I05D Terrebonne, OR 87.23 326 P P 11 15 26.2 +1.8
baz=136
YKA Yellowknife Ar 98.33 341 P P 11 16 14.7 -0.4
comp=Z,0.3nm,0.7s,baz=138,slow=3.9,SNR=8.5
ASAR Alice Springs 122.71 206 PKP PKPdf 11 21 33.1 -0.8
comp=Z,0.3nm,0.5s,baz=134,slow=1.5,SNR=4.3
WRA Warramunga Arr 125.89 208 PKP PKPdf 11 21 39.8 -0.2
comp=Z,0.7nm,0.5s,baz=152,slow=1.8,SNR=13
KURBB Kurchatov Arra 147.94 39 PKPbc PKPbc 11 22 22.9 +0.5
comp=Z,3.0nm,0.5s,baz=302,slow=3.1,SNR=28
KURBB pPKPbc pPKPbc 11 22 56.9 +1.3
comp=Z,1.0nm,0.6s,baz=300,slow=3.0,SNR=3.2
KURK Kurchatov 147.95 39 PKPbc PKPbc 11 22 22.9 +0.5
KURK pPKPbc pPKPbc 11 22 56.9 +1.3
AAK Ala-Archa 148.24 55 ePKPdf PKPdf 11 22 21.1 +0.8
AAK ePKPbc PKPbc 11 22 24.6 +0.9
AAK ePKPab PKPab 11 22 27.6 +0.5
TKM2 Tokmak 2 148.96 55 ePKPdf PKPdf 11 22 21.8 +0.3
TKM2 ePKPbc PKPbc 11 22 26.1 +0.4
TKM2 ePKPab PKPab 11 22 30.6 +0.5
ZALV Zalesovo Beam 149.11 30 PKPbc PKPbc 11 22 25.8 +0.4
comp=Z,8.1nm,0.5s,baz=300,slow=3.5,SNR=26
ZALV pPKPbc pPKPbc 11 22 59.8 +1.1
comp=Z,2.3nm,0.5s,baz=297,slow=3.6,SNR=3.3
MKAR Makanchi Array 151.98 44 PKPbc PKPbc 11 22 32.5 0.0
comp=Z,2.3nm,0.8s,baz=332,slow=2.1,SNR=13
MKAR PKPab PKPab 11 22 43.2 +0.9
comp=Z,2.1nm,0.5s,baz=284,slow=3.7,SNR=10
CD2 Chengdu 173.97 73 PKP PKPdf 11 22 47.0 -0.2

*IDC **20** 11:04:19.6±1.8,35°.72N×141°.09E,h0km,mb3.4/2,*
mb1 3.6/6,mb1mx3.3/52,mbtmp3.6/6,ML3.3/3,MS2.3/2,
Ms1 2.3/2,ms1mx2.1/42,Error ellipse: s-maj=42.4km
s-min=23.5km az=83.0
*ISCJB **20** 11:04:21.5±1.0,35°.81N±0°.04×141°.1E±0°.1,h34km±10km,*
mb3.6/2,Error ellipse: s-maj=14.5km s-min=7.0km
az=167.5
*JMA **20** 11:04:24.0±0.1,35°.82N×140°.92E,h30km±1km,M3.1*
JMA Felt I J1.

ISC 20 11:04:23.0±1.2,35°.84N±0°.05×141°.04E±0°.09,h28km±8km,
n12,σ1§12/16,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time (h m s)	Res (ISC)
CHOJ	Chosi	0.20	228	P		Pb	11 04 29.3	+0.4
CHOJ				S		Sb	11 04 33.1	+0.1
JYT	Yasato	0.79	300	P		Pb	11 04 37.4	-0.7
JYT				eS		Sb	11 04 46.9	-1.5
JHO	Hitachi	0.86	334	P		Pn	11 04 39.3	+0.1
JHO				S		Sb	11 04 50.2	-0.4
BSO3	Boso 3	1.12	203	P		Pb	11 04 44.0	+0.5
MJAR	Matsushiro Arr	2.39	288	Pn		Pn	11 05 00.9	+0.6
	3.0nm,0.3s,baz=94,slow=8.8,SNR=26							
MJAR				LR		LR	11 06 06.1	
	comp=Z,57nm,18.9s,baz=240,slow=44							
MAT	Matsushiro	2.39	288	P		Pn	11 05 00.7	+0.4
MAT				S		Sn	11 05 30.6	+1.9
JHJ	Hachijo jima 2	2.90	201	Pn		Pn	11 05 06.0	-1.2
	4.2nm,0.3s,baz=81,slow=19,SNR=2.2							
JHJ				Sn		Sn	11 05 41.6	+0.5
	9.8nm,0.3s,baz=73,slow=19,SNR=2.9							
ASAJ	Asahikawa	8.36	8	Pn		Pn	11 06 23.6	+1.4
	0.8nm,0.3s,baz=226,slow=7.8,SNR=7.9							
JCJ	Chichijima	8.77	173	Pn		Pn	11 06 26.1	-1.7
	baz=270,slow=20							
JCJ				Sn		Sn	11 08 00.4	-5.3
	0.3nm,0.3s,baz=229,slow=20,SNR=2.7							
KSRS	Korea Array	10.66	283	LR		LR	11 10 42.1	
	comp=Z,20nm,21.7s,baz=160,slow=36							
WRA	Warramunga Arr	55.83	188	P		P	11 13 57.1	-0.7
	0.6nm,1.0s,baz=3.0,slow=7.5,SNR=5.7							
ASAR	Alice Springs	59.56	188	P		P	11 14 24.8	+0.8
	0.5nm,0.9s,baz=15,slow=8.1,SNR=3.8							

*ISCJB **20** 11:10:10.2±0.4,53°.62S±0°.05×140°.8E±0°.1,h10km,*
mb4.7/26,MS3.8/11,Error ellipse: s-maj=10.8km
s-min=7.5km az=12.6
*IDC **20** 11:10:10.0±0.6,53°.65S×140°.72E,h0km,mb4.5/9,*
mb1 4.7/9,mb1mx4.4/30,mbtmp4.5/9,MS3.8/11,
Ms1 3.8/11,ms1mx3.6/30,Error ellipse: s-maj=24.4km
s-min=19.3km az=88.0
*NEIC **20** 11:10:11.4±0.3,53°.65S×140°.80E,h10km,mb4.8/17,Error*
ellipse: s-maj=9.0km s-min=7.2km az=86.0

ISC 20 11:10:11.9±0.4,53°.62S±0°.07×141°.0E±0°.1,h10km,n86,
σ1§12/73,mb4.7/26,MS3.8/11,West of Macquarie Island

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time (h m s)	Res (ISC)
CAN	Canberra	19.15	20	eP		Pn	11 14 36.6	+0.5
	16nm,0.9s							
CAN				eSn		Sn	11 18 07.8	-2.7
CASY	Casey	19.56	218	eP		P	11 14 39.0	-0.4
	77nm,1.8s							
BBOO	Buckleboo	21.10	348	eP		P	11 14 57.8	+1.5
	7.3nm,0.6s							
LBZ	Lake Benmore	21.14	76	eP		P	11 14 56.9	+0.1
	67nm,1.4s							
STKA	Stephens Creek	21.73	1	P		P	11 15 04.2	+0.9
	15nm,0.8s,baz=169,slow=11,SNR=25							
STKA				LR		LR	11 22 04.8	
	comp=Z,410nm,20.6s,baz=192,slow=33							
STKA	Stephens Creek	21.73	1	eP		P	11 15 04.3	+1.1
	7.4nm,1.2s							
RPZ	Rata Peaks	22.04	76	P		P	11 15 09.0	+2.5
	18nm,0.9s,baz=280,slow=9.8,SNR=4.5							
RPZ				LR		LR	11 20 49.0	
	comp=Z,268nm,19.7s,baz=50,slow=29							
RPZ	Rata Peaks	22.04	76	P		P	11 15 09.0	+2.5
KHZ	Kahutara	24.28	76	eP		P	11 15 30.2	+1.2
	49nm,1.3s							
VNDA	Vanda	25.17	170	P		P	11 15 37.1	+0.2
	4.5nm,0.9s,baz=316,slow=8.1,SNR=8.4							
VNDA				LR		LR	11 24 54.5	
	comp=Z,312nm,18.8s,baz=341,slow=35							
VNDA	Vanda	25.17	170	eP		P	11 15 37.0	+0.2
	11nm,1.0s							
H01W1	Cape Leeuwin H	26.57	304	T		T	11 43 30.3	
	baz=143,slow=76,SNR=34							
H01W2	Cape Leeuwin H	26.57	304	T		T	11 43 30.5	
	baz=143,slow=76,SNR=28							

H01W3 Cape Leeuwin H 26.59 304 T T 11 43 35.8
baz=143,slow=76,SNR=31
NWAO Narrogin (SRO) 26.73 311 LR LR 11 23 43.3
comp=Z,226nm,20.9s,baz=12,slow=30
URZ Urewera 29.07 73 P **P 11 16 11.6 -0.6**
12nm,0.9s,baz=257,slow=6.3,SNR=6.5
URZ LR LR 11 25 11.2
comp=Z,112nm,19.3s,baz=237,slow=31
URZ Urewera 29.07 73 *eP* **P 11 16 12.4 +0.2**
AS01 Alice Springs 30.38 347 *eP* **P 11 16 23.2 -0.8**
ASAR Alice Springs 30.39 347 P **P 11 16 23.5 -0.5**
6.8nm,0.6s,baz=165,slow=10.0,SNR=145
ASAR PcP **PcP 11 19 22.4 -1.4**
0.7nm,0.6s,baz=178,slow=2.8,SNR=6.2
ASAR LR LR 11 27 07.8
comp=Z,125nm,21.5s,baz=172,slow=34
AS31 Alice Springs 30.39 347 *eP* **P 11 16 22.4 -1.6**
3.0nm,0.6s
WB2 Warramunga Arr 34.00 349 *eP* **P 11 16 54.9 -0.9**
14nm,0.9s
WRA Warramunga Arr 34.00 349 P **P 11 16 55.0 -0.8**
7.6nm,0.6s,baz=173,slow=7.5,SNR=103
WRA PcP **PcP 11 19 32.5 -1.1**
1.9nm,0.8s,baz=180,slow=3.4,SNR=6.0
WRAB Tennant Creek 34.01 349 *eP* **P 11 16 55.0 -0.8**
13nm,0.8s
QSPA South Pole Qui 36.49 180 *eP* **P 11 17 17.3 +0.3**
48nm,0.9s
DZM Mont Dzumac 36.97 42 *eLR* LR 11 27 19.0
420nm,26.6s
FITZ Fitzroy Crossi 37.40 336 LR LR 11 32 41.6
comp=Z,74nm,18.4s,slow=36
FITZ Fitzroy Crossi 37.40 336 *eP* **P 11 17 24.6 -0.2**
16nm,1.1s
MAW Mawson 37.91 218 LR LR 11 31 52.2
comp=Z,252nm,18.7s,baz=68,slow=34
MTN Manton Dam 41.42 345 *eP* **P 11 17 58.3 -0.1**
15nm,0.9s
HNR Honiara 46.64 26 LR LR 11 37 59.6
comp=Z,174nm,18.5s,baz=170,slow=36
SNAA Sanae 52.42 194 *eP* **P 11 19 23.8 -0.2**
11nm,1.2s
SPSI Sidrap Palu 52.47 333 P **P 11 19 26.0 +1.2**
11nm,1.1s
LEM Lembang 53.92 317 P P 11 19 43.8 +8.1
AFI Afiamalu 54.23 61 LR LR 11 37 08.7
comp=Z,117nm,21.5s,baz=200,slow=30
FUNA Funafuti 54.46 49 *eP* **P 11 19 39.1 -0.4**
TBI Tubuai 59.49 88 *eLR* LR 11 37 55.3
121nm,27.2s
MYKOM Kota Tinggi 63.27 318 *eP* **P 11 20 40.3 -0.3**
8.0nm,0.9s
GSI Gunungsitoli 65.51 311 P **P 11 20 56.9 +1.6**
28nm,1.0s
GSI Gunungsitoli 65.51 311 *eP* **P 11 20 55.2 -0.1**
26nm,1.1s
GUMO Guam 67.02 4 LR LR 11 47 22.2
comp=Z,61nm,20.0s,baz=174,slow=33
KULM Kulim 67.75 316 *eP* **P 11 21 07.7 -1.9**
15nm,0.9s
H08S2 Diego Garcia H 71.17 283 T T 12 39 05.1
baz=144,slow=76,SNR=6.3
H08S1 Diego Garcia H 71.18 283 T T 12 39 06.6
baz=144,slow=76,SNR=11
H08S3 Diego Garcia H 71.19 283 T T 12 39 07.8
baz=144,slow=76,SNR=10
CMAR Chiang Mai Arr 80.37 320 P **P 11 22 23.3 0.0**
0.7nm,0.3s,baz=169,slow=4.0,SNR=6.7
BOSA Boshof 81.06 233 P **P 11 22 26.7 -0.5**
2.8nm,0.7s,baz=109,slow=7.3,SNR=5.1
NJ2 Nanjing 87.45 341 *eP* **P 11 23 01.3 +2.2**
NJ2 pmax pmax
comp=Z,7.0nm,0.5s
MJAR Matsushiro Arr 89.83 358 P **P 11 23 10.9 +0.7**
comp=Z,3.3nm,0.9s,baz=172,slow=6.6,SNR=6.7
CD2 Chengdu 90.16 329 P **P 11 23 12.8 +0.8**
CD2 pmax pmax
comp=Z,2.0nm,0.6s
HHC Hu-ho-hao-te 97.45 338 *eP* Pdif 11 23 46.9 +1.5
HHC pmax pmax
comp=Z,31nm,1.3s
HHC pmax pmax
comp=Z,100nm,7.7s
NVAR Mina Array Bea 125.75 72 PKP **PKPdf 11 29 13.6 +0.3**
comp=Z,0.8nm,0.9s,baz=228,slow=4.5,SNR=4.1
TORD Torodi Ar. Bea 128.42 234 PKP **PKPdf 11 29 18.4 -0.5**
comp=Z,0.5nm,0.7s,baz=180,slow=0.6,SNR=2.8
YKA Yellowknife Ar 141.28 46 PKhKP PKPpre 11 29 36.2
comp=Z,0.5nm,0.6s,baz=239,slow=3.6,SNR=9.9
VYHS Vyhne 144.15 286 *e*PKP **PKPab 11 29 44.2 -0.4**
VYHS *e* 11 29 50.1
FFC Flin Flon 144.23 62 *e*PKPdf PKPbc 11 29 44.9 -0.2
WCI Wyandotte Cave 144.42 96 *e*PKPdf **PKPab 11 29 45.2 -0.8**
SPMN Marine on St. 144.79 81 *e*PKPdf PKPbc 11 29 47.4 +0.3
JFWS Jewell Farm 144.99 87 *e*PKPbc PKPbc 11 29 46.8 -1.1
KMSC Kings Mountain 145.21 105 *e*PKPbc **PKPbc 11 29 48.5 -0.4**
SOKA Soboth 145.41 281 *i* PKPdf **PKPbc 11 29 49.0 -0.2**
comp=Z,11nm,1.0s,SNR=8.3
ARSA Arzberg 145.43 282 *i* PKPbc **PKPdf 11 29 48.7 -0.5**
comp=Z,31nm,1.2s,SNR=8.4
FINES FINESS Array B 145.58 310 PKPbc **PKPdf 11 29 48.9 0.0**
comp=Z,1.2nm,0.5s,baz=114,slow=5.4,SNR=8.4
MYKA Terra Mystica 146.20 280 *i* PKPbc **PKPbc 11 29 51.5 -0.1**
comp=Z,17nm,1.0s,SNR=6.7
TREC Trest 146.47 285 *e*PKP **PKPbc 11 29 52.6 +0.3**
TREC *e*pPKP **PkiKP 11 29 58.6 +3.4**
DPC Dobruska-Polom 146.49 287 *e*PKP **PKPbc 11 29 51.9 -0.5**
DPC *e*pPKP **PkiKP 11 29 58.2 +3.0**
KBA Koelnbreinsper 146.61 280 *i* PKPdf **PKPdf 11 29 51.5 +0.1**
comp=Z,4.1nm,0.7s
UPC Upice 146.73 287 *e*PKP **PKPbc 11 29 53.1 +0.1**
ABTA Abfaltersbach 146.93 279 *i* PKPbc **PKPbc 11 29 53.1 -0.7**
comp=Z,11nm,1.0s
EYMN Ely 146.99 78 *e*PKPbc **PKPbc 11 29 53.2 -0.7**
GERES GÉRESS Array B 147.28 283 PKPbc **PKPdf 11 29 52.7 +0.4**
comp=Z,2.6nm,0.9s,baz=130,slow=2.1,SNR=15
ARCES ARCESS Array B 147.35 324 PKPbc **PKPdf 11 29 52.7 +1.0**
comp=Z,3.2nm,0.7s,baz=92,slow=4.0,SNR=11
COWI Conover 147.41 83 *e*PKPbc **PKPbc 11 29 54.3 -0.8**
KHC Kasperske Hory 147.49 284 *e*PKP **PKPdf 11 29 53.4 +0.8**
KHC *ex* x 11 29 55.9
KHC Kasperske Hory 147.49 284 *e*PKPdf **PKPdf 11 29 52.0 -0.6**
KHC *e*PKPbc **PKPbc 11 29 55.6 +0.4**
WTTA Wattenberg 147.71 280 *i* PKPab **PKPab 11 29 57.9 -0.5**
comp=Z,9.4nm,0.9s
WATA Walderalm 147.78 280 *i* PKPab **PKPab 11 29 58.3 -0.3**
comp=Z,7.0nm,0.7s
MOTA Moosalm 148.06 279 *i* pPKPdf **PKPbc 11 29 56.9 0.0**
comp=Z,5.1nm,0.6s
BRG Berggiesshubel 148.07 287 *eP* **PKPab 11 29 59.2 -0.4**
comp=Z,5.1nm,0.8s
FETA Feichten 148.12 279 *i* PKPbc **PKPbc 11 29 56.4 -0.7**
comp=Z,8.3nm,0.9s
RETA Reutte 148.33 279 *i* pPKPdf **PKPbc 11 29 56.7 -0.9**
comp=Z,9.4nm,1.3s
DAVA Damuels 148.75 279 *i* PKPbc **PKPbc 11 29 58.3 -0.5**
comp=Z,19nm,1.2s
CLL Collm 148.80 287 *i* P **PKPab 11 30 01.9 -0.5**
comp=Z,9.0nm,1.1s
CLL *e* 11 30 08.0
CLL LmV 18 02 00.0
comp=Z,300nm,21.1s
SPITS Spitsbergen Ar 148.84 341 PKPbc **PKPbc 11 29 57.6 -0.3**
comp=Z,7.2nm,0.6s,baz=119,slow=6.8,SNR=24
FCC Fort Churchill 149.69 58 *e*PKPbc **PKPbc 11 29 59.6 -0.8**
FCC *e*PKPab **PKPab 11 30 05.1 -0.7**
HFS Hagfors 151.16 304 PKPab **PKPab 11 30 09.7 -2.2**
comp=Z,0.4nm,0.5s,baz=124,slow=47,SNR=3.0
ESDC Sonseca Array 152.51 254 PKPbc **PKPbc 11 30 05.7 -2.1**
comp=Z,0.6nm,0.4s,baz=64,slow=1.9,SNR=7.9

IDC 20 11:12:24.4±72.0, 20°26S×167°76E, h0km, mb4.0/3, mb1 4.1/3, mb1mx3.8/36, mbtmp4.0/3, Error ellipse: s-maj=1206.0km s-min=109.0km az=76.0, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**26.13**	**238**	P	P	11 18 00.8	+0.6
	0.6nm,0.3s,baz=50,slow=10,SNR=3.8						
WRA	**Warramunga Arr**	**31.36**	**265**	P	P	11 18 46.5	-0.5
	0.4nm,0.4s,baz=97,slow=8.7,SNR=6.0						
ASAR	**Alice Springs**	**31.54**	**258**	P	P	11 18 48.4	-0.2
	3.4nm,0.7s,baz=88,slow=9.1,SNR=25						

NIED ***20*** *11:16:00, 36°30N×141°00E, h38km, Mw3.9 Best double couple: M0=6.83000×10^14 NP1:φ=260.00000°, δ=16.00000°, λ=153.00000°. NP2:φ=17.00000°, δ=83.00000°, λ=76.00000°.*
JMA ***20*** *11:16:03.7±0.1, 36°32N×141°05E, h45km±2km, M3.9*
JMA Felt II J1.
IDC ***20*** *11:16:04.7±1.9, 36°31N×141°14E, h42km±18km, mb3.6/8, mb1 3.7/13, mb1mx3.4/77, mbtmp3.8/13, ML3.5/4, MS2.9/7, Ms1 2.9/7, ms1mx2.7/57, Error ellipse: s-maj=23.9km s-min=10.1km az=92.0*
ISC 20 11:16:02.0±1.5, 36°29N±0°04×141°17E±0°06, h24km±11km, n34, σ1°59/35, mb3.9/9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.58**	**304**	P	**Pb**	**11 16 14.2**	**+0.6**
JHO				S	**Sb**	**11 16 21.6**	**+0.1**
CHOJ	**Chosi**	**0.64**	**203**	P	**Pn**	**11 16 16.4**	**+0.9**
CHOJ				S	**Sn**	**11 16 25.0**	**+0.1**
JYT	**Yasato**	**0.79**	**266**	P	**Pb**	**11 16 17.3**	**+0.2**
JYT				S	**Sb**	**11 16 26.2**	**-1.2**
ONAJ	**Iwakimizuishiy**	**0.86**	**340**	P	**Pb**	**11 16 18.5**	**+0.1**
ONAJ				S	**Sb**	**11 16 28.7**	**-0.9**
JFK	**Kawauchi**	**1.10**	**348**	P	**Pn**	**11 16 21.8**	**-0.2**
JFK				S	**Sb**	**11 16 34.4**	**-2.0**
JAG	**Ashikaga**	**1.39**	**276**	P	**Pn**	**11 16 25.9**	**0.0**
JAG				S	**Sn**	**11 16 41.6**	**-2.0**
JFT	**Otama**	**1.40**	**332**	P	**Pb**	**11 16 27.2**	**-0.2**
JFT				S	**Sn**	**11 16 43.6**	**-0.1**
JFY	**Yanaizu**	**1.62**	**314**	P	**Pn**	**11 16 29.7**	**+0.6**
MJAR	**Matsushiro Arr**	**2.40**	**277**	P	**Pn**	**11 16 40.6**	**+0.7**
	11nm,0.3s,baz=114,slow=8.5,SNR=88						
MJAR				LR	LR	11 17 44.7	
	comp=Z,140nm,19.7s,baz=130,slow=43						
MAT	**Matsushiro**	**2.40**	**277**	P	**Pn**	**11 16 40.4**	**+0.5**
MAT				S	**Sn**	**11 17 07.5**	**-1.1**
JHJ	**Hachijo jima 2**	**3.36**	**200**	P	**Pn**	**11 16 55.6**	**+2.5**
	20nm,0.3s,baz=307,slow=22,SNR=8.9						
JHJ				S	**Sn**	**11 17 33.9**	**+1.7**
	25nm,0.3s,baz=75,slow=22,SNR=8.9						
ASAJ	**Asahikawa**	**7.89**	**8**	P	**Pn**	**11 17 57.4**	**+2.2**
	0.8nm,0.3s,baz=194,slow=6.3,SNR=6.2						
ASAJ				S	**Sn**	**11 19 24.1**	**+0.3**
	0.1nm,0.3s,baz=288,slow=31,SNR=2.0						
JNU	**Nakatsue**	**9.04**	**253**	LR	LR	11 21 59.0	
	comp=Z,71nm,18.4s,baz=121,slow=39						
JCJ	**Chichijima**	**9.21**	**174**	P	**Pn**	**11 18 12.8**	**-0.6**
	10nm,0.3s,baz=101,slow=22,SNR=5.6						
JCJ				S	**Sn**	**11 19 49.4**	**-6.8**
	4.8nm,0.3s,baz=303,slow=22,SNR=3.8						
USRK	**Ussuriysk Ar.**	**10.56**	**321**	P	**Pn**	**11 18 31.8**	**0.0**
	0.2nm,0.3s,baz=122,slow=14,SNR=2.2						
USRK				LR	LR	11 22 09.3	
	comp=Z,55nm,20.9s,baz=96,slow=35						
KSRS	**Korea Array**	**10.68**	**280**	P	**Pn**	**11 18 35.1**	**+1.8**
	0.1nm,0.3s,baz=96,slow=14,SNR=2.9						
KSRS				LR	LR	11 22 57.8	
	comp=Z,28nm,18.5s,baz=103,slow=39						
KLR	**Kul'dur**	**14.65**	**335**	LR	LR	11 24 51.0	
	comp=Z,31nm,18.5s,baz=130,slow=36						
H11N2	**WAKE ISLAND Hy**	**27.95**	**119**	T	T	11 51 07.1	
	baz=312,slow=75,SNR=40						
H11N1	**WAKE ISLAND Hy**	**27.95**	**119**	T	T	11 51 11.3	
	baz=312,slow=75,SNR=43						
H11N3	**WAKE ISLAND Hy**	**27.96**	**119**	T	T	11 51 12.4	
	baz=312,slow=75,SNR=34						
SONM	**Songino Array**	**28.05**	**305**	P	**P**	**11 21 51.8**	**+0.4**
	1.0nm,0.7s,baz=110,slow=11,SNR=3.9						
H11S1	**WAKE ISLAND Hy**	**28.63**	**121**	T	T	11 52 06.4	
	baz=314,slow=76,SNR=43						
H11S3	**WAKE ISLAND Hy**	**28.63**	**121**	T	T	11 52 02.9	
	baz=314,slow=76,SNR=28						
H11S2	**WAKE ISLAND Hy**	**28.65**	**121**	T	T	11 52 04.1	
	baz=314,slow=76,SNR=28						
TLY	**Talaya**	**30.68**	**312**	P	**P**	**11 22 15.3**	**+0.7**
	2.1nm,0.5s,baz=356,slow=5.7,SNR=3.1						
KMI	**Kunming**	**34.66**	**262**	P	**P**	**11 22 50.0**	**0.0**
KMI				pmax	pmax		
	comp=Z,12nm,0.5s						
KMI				pmax	pmax		
	comp=Z,43nm,5.4s						
TIXI	**Tiksi**	**36.00**	**353**	LR	LR	11 41 21.5	
	comp=Z,24nm,18.6s,baz=124,slow=42						
ZALV	**Zalesovo Beam**	**42.27**	**313**	P	**P**	**11 23 53.7**	**+0.4**
	comp=Z,1.9nm,0.5s,baz=92,slow=5.8,SNR=3.7						
MKAR	**Makanchi Array**	**44.35**	**303**	P	**P**	**11 24 10.7**	**+0.4**
	comp=Z,1.1nm,0.7s,baz=89,slow=9.0,SNR=4.8						
KURBB	**Kurchatov Arra**	**46.31**	**309**	P	**P**	**11 24 25.3**	**-0.3**
	comp=Z,4.1nm,0.6s,baz=85,slow=7.7,SNR=19						
ILAR	**Eielson Array**	**50.23**	**32**	P	**P**	**11 24 56.0**	**+0.3**
	comp=Z,0.3nm,0.7s,baz=268,slow=6.2,SNR=3.6						
WRA	**Warramunga Arr**	**56.30**	**188**	P	**P**	**11 25 41.0**	**+0.3**
	comp=Z,0.4nm,0.5s,baz=5.4,slow=7.3,SNR=10						
ASAR	**Alice Springs**	**60.03**	**188**	P	**P**	**11 26 07.2**	**+0.4**
	comp=Z,0.3nm,0.9s,baz=4.6,slow=6.1,SNR=3.9						
WSAR	**Wadi Sarin**	**70.87**	**285**	LR	LR	12 03 38.2	
	comp=Z,60nm,19.0s,baz=141,slow=40						

IDC 20 11:23:39.8±2.1, 22°06N×12°68W, h0km, mb1 3.6/2, mb1mx3.3/52, mbtmp3.7/2, ML3.1/2, Error ellipse: s-maj=67.8km s-min=37.0km az=38.0, Mauritania

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TORD	**Torodi Ar. Bea**	**16.31**	**121**	Pn	Pn	11 27 29.6	-0.7
	0.1nm,0.3s,baz=314,slow=12,SNR=3.7						
TORD				Sn	Sn	11 30 33.9	+1.8
	0.1nm,0.3s,baz=304,slow=23,SNR=3.3						
TORD				Lg	Lg	11 32 20.3	
	baz=309,slow=25,SNR=2.3						
DBIC	**Dimbokro**	**17.07**	**153**	Pn	Pn	11 27 38.8	-1.2
	0.1nm,0.3s,baz=318,slow=6.1,SNR=2.7						
DBIC				Sn	Sn	11 30 44.3	-6.1
	0.1nm,0.3s,baz=202,slow=16,SNR=1.9						
I42PT	**GRACIOSA ISLAN**	**21.41**	**326**	*i*		13 34 10.0	
	baz=138,slow=325,SNR=0.7						
WRA	**Warramunga Arr**	**149.17**	**92**	PKPbc	PKPbc	11 43 29.5	-1.5
	0.3nm,0.8s,baz=300,slow=3.5,SNR=3.2						
ASAR	**Alice Springs**	**149.21**	**99**	PKPbc	PKPbc	11 43 31.6	+0.5
	0.3nm,0.7s,baz=278,slow=2.6,SNR=4.8						

ISCJB ***20*** *11:26:40.0±1.0, 5°41S±0°08×147°6E±0°2, h170km, mb3.7/6, Error ellipse: s-maj=25.3km s-min=10.4km az=9.2*
IDC ***20*** *11:26:43.5±1.9, 5°61S×147°57E, h192km±22km, mb3.5/6, mb1 3.7/8, mb1mx3.3/42, mbtmp4.1/8, Error ellipse: s-maj=41.9km s-min=13.5km az=119.0*
ISC 20 11:26:41.7±1.1, 5°43S±0°10×147°4E±0°2, h170km, n9, σ1°25/11, mb3.8/6, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**3.95**	**183**	P	**Pn**	**11 27 43.2**	**+1.3**
	18nm,0.3s,baz=334,slow=6.4,SNR=54						
PMG				S	**Sn**	**11 28 28.2**	**-0.8**
	38nm,0.3s,baz=243,slow=21,SNR=23						
WRA	**Warramunga Arr**	**19.21**	**220**	P	**P**	**11 30 53.9**	**+1.1**
	2.6nm,0.3s,baz=48,slow=12,SNR=172						
WRA				S	**S**	**11 34 19.5**	**-1.9**
	0.1nm,0.3s,baz=43,slow=20,SNR=4.5						
ASAR	**Alice Springs**	**22.30**	**214**	P	**P**	**11 31 26.2**	**+0.9**
	5.9nm,0.6s,baz=48,slow=8.9,SNR=84						
FITZ	**Fitzroy Crossi**	**24.68**	**238**	P	**P**	**11 31 48.5**	**+1.3**
	3.0nm,0.5s,baz=57,slow=8.7,SNR=19						
STKA	**Stephens Creek**	**26.86**	**191**	P	**P**	**11 32 05.1**	**-1.4**
	1.0nm,0.5s,baz=16,slow=11,SNR=3.6						
MKAR	**Makanchi Array**	**77.30**	**320**	P	**P**	**11 38 17.6**	**+0.1**
	0.5nm,0.4s,baz=97,slow=9.1,SNR=4.2						
ZALV	**Zalesovo Beam**	**78.74**	**328**	P	**P**	**11 38 24.9**	**-0.3**
	0.8nm,0.4s,baz=106,slow=8.0,SNR=3.1						
ILAR	**Eielson Array**	**84.82**	**23**	P	**P**	**11 38 56.4**	**-0.3**
	0.2nm,0.4s,baz=243,slow=6.0,SNR=3.4						
TORD	**Torodi Ar. Bea**	**145.31**	**285**	PKPbc	**PKPdf**	**11 45 59.7**	**-0.6**
	0.8nm,0.4s,baz=80,slow=3.3,SNR=12						

ISCJB ***20*** *11:29:11.0±0.6, 53°62S±0°07×140°7E±0°2, h10km, mb4.7/15, MS3.8/11, Error ellipse: s-maj=19.3km s-min=10.3km az=177.5*
IDC ***20*** *11:29:10.8±0.7, 53°64S×140°56E, h0km, mb4.5/9, mb1 4.7/9, mb1mx4.4/30, mbtmp4.6/9, MS3.8/11, Ms1 3.8/11, ms1mx3.7/17, Error ellipse: s-maj=31.0km s-min=18.3km az=77.0*
NEIC ***20*** *11:29:12.5±0.3, 53°62S×140°66E, h10km, mb4.9/4, Error ellipse: s-maj=14.7km s-min=7.7km az=88.0*
ISC 20 11:29:12.5±0.6, 53°64S±0°09×140°7E±0°2, h10km, n56, σ0°67/44, mb4.7/15, MS3.7/11, West of Macquarie Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CASY	**Casey**	**19.43**	**218**	*eP*	**Pn**	**11 33 39.8**	**-0.1**
	2.4nm,0.5s						
STKA	**Stephens Creek**	**21.76**	**2**	P	**P**	**11 34 04.4**	**+0.2**
	13nm,0.8s,baz=166,slow=11,SNR=20						
STKA				LR	LR	11 40 53.8	
	comp=Z,314nm,21.2s,baz=187,slow=32						
RPZ	**Rata Peaks**	**22.22**	**76**	LR	LR	11 40 54.2	
	comp=Z,399nm,20.5s,baz=236,slow=32						
VNDA	**Vanda**	**25.18**	**169**	P	**P**	**11 34 37.7**	**+0.1**
	16nm,1.1s,baz=335,slow=11,SNR=14						
VNDA				LR	LR	11 43 23.9	
	comp=Z,283nm,19.6s,baz=336,slow=34						
H01W1	**Cape Leeuwin H**	**26.43**	**304**	T	T	12 02 28.6	
	baz=143,slow=76,SNR=22						
H01W2	**Cape Leeuwin H**	**26.44**	**304**	T	T	12 02 25.2	
	baz=143,slow=76,SNR=21						
H01W3	**Cape Leeuwin H**	**26.45**	**304**	T	T	12 02 29.9	
	baz=143,slow=76,SNR=20						
NWAO	**Narrogin (SRO)**	**26.61**	**312**	LR	LR	11 43 04.6	
	comp=Z,264nm,19.3s,baz=353,slow=31						
URZ	**Urewera**	**29.24**	**73**	P	**P**	**11 35 15.1**	**+0.8**
	4.7nm,0.7s,baz=270,slow=11,SNR=3.8						
URZ				LR	LR	11 45 11.5	
	comp=Z,238nm,20.3s,baz=234,slow=33						
ASAR	**Alice Springs**	**30.37**	**348**	P	**P**	**11 35 24.1**	**-0.4**
	6.0nm,0.7s,baz=166,slow=9.9,SNR=50						
ASAR				PcP	**PcP**	**11 38 23.1**	**-1.2**
	0.4nm,0.7s,baz=159,slow=2.0,SNR=4.6						
ASAR				LR	LR	11 47 00.6	
	comp=Z,123nm,18.4s,baz=168,slow=35						
WRA	**Warramunga Arr**	**33.99**	**349**	P	**P**	**11 35 55.3**	**-1.0**
	11nm,0.8s,baz=173,slow=7.6,SNR=47						
WRA				PcP	**PcP**	**11 38 33.1**	**-1.0**
	1.3nm,1.0s,baz=137,slow=2.1,SNR=4.2						
WRA				LR	LR	11 48 55.9	
	comp=Z,126nm,19.3s,baz=225,slow=35						
QSPA	**South Pole Qui**	**36.47**	**180**	*eP*	**P**	**11 36 17.7**	**+0.3**
	91nm,1.3s						
DZM	**Mont Dzumac**	**37.10**	**42**	*eLR*	LR	11 46 47.8	
	608nm,26.2s						
FITZ	**Fitzroy Crossi**	**37.34**	**336**	P	**P**	**11 36 24.9**	**-0.1**
	11nm,0.9s,baz=167,slow=9.3,SNR=14						
MAW	**Mawson**	**37.79**	**218**	LR	LR	11 50 53.2	
	comp=Z,324nm,19.0s,baz=68,slow=34						
KAPI	**Kappang**	**51.41**	**333**	P	**P**	**11 38 18.0**	**+0.5**
	14nm,1.0s,baz=190,slow=11,SNR=3.8						
SNAA	**Sanae**	**52.36**	**194**	*eP*	**P**	**11 38 24.2**	**+0.1**
	109nm,0.7s						
LEM	**Lembang**	**53.81**	**318**	LR	LR	11 58 40.2	
	comp=Z,71nm,21.0s,slow=33						
TBI	**Tubuai**	**59.67**	**89**	*eLR*	LR	11 57 33.8	
	89nm,24.8s						
KSM	**Kuching**	**60.46**	**324**	*eP*	**P**	**11 39 22.9**	**+0.5**
	4.1nm,0.7s						
MNSI	**Mandailing Nat**	**64.05**	**313**	P	**P**	**11 39 47.0**	**+0.6**
	15nm,1.1s						
GSI	**Gunungsitoli**	**65.39**	**311**	P	**P**	**11 39 57.5**	**+2.3**
KULM	**Kulim**	**67.64**	**316**	*eP*	**P**	**11 40 09.7**	**+0.1**
	15nm,1.1s						
H08S2	**Diego Garcia H**	**71.00**	**283**	T	T	12 58 05.2	
	baz=144,slow=76,SNR=6.6						
H08S1	**Diego Garcia H**	**71.02**	**283**	T	T	12 58 05.8	
	baz=144,slow=76,SNR=8.5						
H08S3	**Diego Garcia H**	**71.02**	**283**	T	T	12 58 15.3	
	baz=144,slow=76,SNR=6.1						
CMAR	**Chiang Mai Arr**	**80.27**	**320**	P	**P**	**11 41 23.6**	**+0.3**
	1.0nm,0.8s,baz=177,slow=4.4,SNR=9.1						
CMAR				LR	LR	12 14 53.2	
	comp=Z,39nm,20.8s,baz=295,slow=34						
CHTO	**Chiang Mai**	**80.60**	**320**	*eP*	**P**	**11 41 26.0**	**+0.9**
	0.9nm,0.4s						
MJAR	**Matsushiro Arr**	**89.84**	**358**	P	**P**	**11 42 10.9**	**0.0**
	2.3nm,1.0s,baz=154,slow=6.7,SNR=4.6						
KSRS	**Korea Array**	**91.39**	**350**	LR	LR	12 20 50.4	
	comp=Z,24nm,21.7s,baz=152,slow=34						
NVAR	**Mina Array Bea**	**125.92**	**72**	PKP	**PKPdf**	**11 48 14.5**	**+0.2**
	0.1nm,0.3s,baz=248,slow=4.2,SNR=2.8						
TORD	**Torodi Ar. Bea**	**128.26**	**235**	PKP	**PKPdf**	**11 48 18.6**	**-0.5**
	0.3nm,0.7s,baz=116,slow=3.4,SNR=3.6						
YKA	**Yellowknife Ar**	**141.42**	**46**	PKhKP	PKPpre	11 48 36.8	
	0.2nm,0.6s,baz=245,slow=2.8,SNR=4.2						
SOKA	**Soboth**	**145.24**	**281**	*i* PKPbc	**PKPab**	**11 48 49.5**	**0.0**
	8.5nm,1.0s						
ARSA	**Arzberg**	**145.25**	**282**	*i* PKPbc	**PKPab**	**11 48 49.5**	**+0.1**
	21nm,1.1s						
OBKA	**Obir**	**145.44**	**281**	*i* PKPdf	**PKPab**	**11 48 50.3**	**+0.1**
	1.4nm,0.4s						
FINES	**FINESS Array B**	**145.46**	**310**	PKPbc	**PKPdf**	**11 48 48.4**	**-0.9**
	3.0nm,1.0s,baz=56,slow=4.8,SNR=4.6						
MYKA	**Terra Mystica**	**146.03**	**280**	*i* PKPab	**PKPab**	**11 48 52.5**	**+0.1**
	13nm,1.0s						
TREC	**Trest**	**146.30**	**285**	*e*PKP	**PKPbc**	**11 48 52.7**	**+0.3**
DPC	**Dobruska-Polom**	**146.32**	**288**	*e*PKP	**PKPab**	**11 48 53.3**	**0.0**
DPC				*ex*	x	11 49 05.4	
KBA	**Koelnbreinsper**	**146.44**	**281**	*i* PKPdf	**PKPdf**	**11 48 52.2**	**+0.5**
	5.7nm,1.1s						
UPC	**Upice**	**146.57**	**288**	*e*PKP	**PKPab**	**11 48 53.9**	**-0.3**
ABTA	**Abfaltersbach**	**146.75**	**280**	*i* PKPbc	**PKPbc**	**11 48 53.8**	**-0.1**
	8.7nm,1.2s						
GERES	**GERESS Array B**	**147.11**	**284**	PKPbc	**PKPdf**	**11 48 53.3**	**+0.6**
	1.6nm,0.8s,baz=145,slow=3.3,SNR=9.9						
ARCES	**ARCESS Array B**	**147.26**	**324**	PKPbc	**PKPbc**	**11 48 53.8**	**-0.8**
	3.0nm,0.8s,baz=105,slow=7.6,SNR=4.8						
KHC	**Kasperske Hory**	**147.32**	**284**	*e*PKP	**PKPbc**	**11 48 54.8**	**-0.6**
WTTA	**Wattenberg**	**147.53**	**280**	*i* sPKPdf	**PKPab**	**11 48 58.0**	**-0.4**
	7.2nm,1.0s						
MOTA	**Moosalm**	**147.89**	**280**	*i* PKPbc	**PKPbc**	**11 48 57.2**	**+0.1**
	8.9nm,1.0s						
BRG	**Berggiesshubel**	**147.91**	**287**	*eP*	**PKPab**	**11 49 00.0**	**+0.5**
	7.0nm,1.1s						
FETA	**Feichten**	**147.94**	**279**

DURS	Dursunbey	0.62	328	*i* P	Pg	11 30 19.1	-0.8
DURS				*i* S	Sg	11 30 27.9	-0.2
MANT	Manisa	0.64	205	*i* P	Pb	11 30 20.1	-0.9
MANT				S	Sb	11 30 29.6	-0.3
MANT	Manisa	0.64	205	*i* P	Pb	11 30 20.1	-0.9
MANT				*i* S	Sb	11 30 29.6	-0.3
KHAL	Karahalli	0.84	146	P	Pb	11 30 23.7	-0.7
KHAL	Karahalli	0.84	146	*i* P	Pb	11 30 23.7	-0.7
KHAL				*i* S	Sn	11 30 38.6	+0.9
AKHS	Akhisar	0.87	257	P	Pn	11 30 25.7	0.0
AKHS	Akhisar	0.87	257	*i* P	Pn	11 30 25.7	0.0
AKHS				*i* S	Sn	11 30 39.9	+1.8
AKS	Akhisar	0.87	257	*e*PG	Pb	11 30 24.8	+0.1
AKS	Akhisar	0.87	257	*e*Pg	Pb	11 30 24.8	+0.1
KHL	Karahalli	0.90	147	*e*PG	Pg	11 30 22.5	-2.6
KHL	Karahalli	0.90	147	*e*Pg	Pg	11 30 22.5	-2.6
ORLT	Orhaneli	0.97	360	*e*PG	Pb	11 30 25.2	-1.2
ORLT				*e*SG	Sg	11 30 40.4	+1.2
ORLT	Orhaneli	0.97	360	*e*Pg	Pb	11 30 25.2	-1.2
BALB	Balikesir	0.97	306	*e*PG	Pb	11 30 26.0	-0.4
BALB	Balikesir	0.97	306	*e*Pg	Pb	11 30 26.0	-0.4
IGD	Bursa	1.21	11	*i* P	Pn	11 30 27.5	-2.8
IGD				*i* S	Sb	11 30 44.5	-1.6
KCTX	Karacabey (Bur	1.26	341	*e*PN	Pn	11 30 31.0	0.0
KCTX	Karacabey (Bur	1.26	341	*e*Pn	Pn	11 30 31.0	0.0
MDNY	Mudanya-Bursa	1.29	360	*e*PN	Pn	11 30 30.9	-0.6
MDNY	Mudanya-Bursa	1.29	360	*e*Pn	Pn	11 30 30.9	-0.6
CAVI	Cavuskoy	1.34	33	*e*PN	Pn	11 30 31.2	-1.0
CAVI	Cavuskoy	1.34	33	*e*Pn	Pn	11 30 31.2	-1.0
GEMT	Gemlik	1.38	9	*e*PN	Pn	11 30 33.2	+0.5
GEMT	Gemlik	1.38	9	*e*Pn	Pn	11 30 33.2	+0.5
AYDB	Zeytinkoy-Aydi	1.38	215	*e*PN	Pb	11 30 32.7	-0.7
AYDB	Zeytinkoy-Aydi	1.38	215	*e*Pn	Pb	11 30 32.7	-0.7
DNZL	Cakiroluk	1.39	175	P	Pg	11 30 33.8	-0.7
DNZL	Cakiroluk	1.39	175	*i* P	Pg	11 30 33.8	-0.7
DNZL				*i* S	Sg	11 30 56.8	+4.2
BORA	Eskisehir	1.45	56	P	Pg	11 30 36.1	+0.5
BORA				S	Sn	11 30 51.5	-1.1
BORA	Eskisehir	1.45	56	*i* P	Pg	11 30 36.1	+0.5
BORA				*i* S	Sn	11 30 51.5	-1.1
ARMT	Armutlu	1.49	359	*e*PN	Pn	11 30 34.3	+0.1
ARMT	Armutlu	1.49	359	*e*Pn	Pn	11 30 34.3	+0.1
EDC	Edincik	1.50	328	*e*PN	Pb	11 30 35.5	+0.1
EDC	Edincik	1.50	328	*e*Pn	Pb	11 30 35.5	+0.1
ADVT	Abdulvahap	1.50	25	*e*PN	Pn	11 30 34.4	0.0
ADVT	Abdulvahap	1.50	25	*e*Pn	Pn	11 30 34.4	0.0
ESKT	Eskisehir	1.58	73	*i* P	Pn	11 30 34.4	-1.2
SEYT	Eskypehyr	1.58	73	P	Pn	11 30 34.4	-1.1
AYDN	Tasoluk	1.62	210	*i* P	Pg	11 30 39.6	+0.6
AYDN				*i* S	Sg	11 31 03.6	+3.5
GPA	Golpazari	1.63	42	*e*PN	Pb	11 30 36.1	0.0
GPA	Golpazari	1.63	42	*e*Pn	Pb	11 30 36.2	0.0
BOLV	Bolvadin	1.64	102	*i* P	Pg	11 30 42.5	+3.2
BOLV				*i* S	Sn	11 30 57.3	-0.2
ISP	Isparta	1.79	134	⇑*i* P	Pg	11 30 46.4	+4.3
ISP				S	Sg	11 31 10.0	+4.7
MRMT	Marmara Adasi	1.82	327	*e*PN	Pn	11 30 39.7	+0.8
MRMT	Marmara Adasi	1.82	327	*e*Pn	Pn	11 30 39.7	+0.8
GULT	Gulveren	1.84	42	*e*PN	Pn	11 30 39.1	0.0
GULT	Gulveren	1.84	42	*e*Pn	Pn	11 30 39.1	0.0
HRT	Hereke	1.84	19	*e*PN	Pn	11 30 39.3	+0.2
HRT	Hereke	1.84	19	*e*Pn	Pn	11 30 39.3	+0.2
SPNC	Sapanca-Adapaz	1.94	34	*e*PN	Pn	11 30 40.8	+0.4
SPNC	Sapanca-Adapaz	1.94	34	*e*Pn	Pn	11 30 40.8	+0.4
ISK	Istanbul-Kandi	1.99	4	*e*PN	Pn	11 30 42.1	+1.0
ISK	Istanbul-Kandi	1.99	4	P	Pn	11 30 42.6	+1.5
ISK	Istanbul-Kandi	1.99	4	*e*Pn	Pn	11 30 42.1	+1.0
ISK	Istanbul-Kandi	1.99	4	P	Pn	11 30 42.6	+1.5
PRK	Paraskevi	2.05	276	P	Pn	11 30 41.7	-0.2
PRK				S	Sn	11 31 06.9	-0.4
PRK	Paraskevi	2.05	276	P	Pn	11 30 41.7	-0.2
PRK				S	Sn	11 31 06.9	-0.4
SVRH	Sivrihisar-ESK	2.07	79	*e*PN	Pn	11 30 41.3	-1.0
SVRH	Sivrihisar-ESK	2.07	79	*e*Pn	Pn	11 30 41.3	-1.0
RKY	Sarkoy-Tekirda	2.08	321	*e*PN	Pn	11 30 43.2	+0.8
RKY	Sarkoy-Tekirda	2.08	321	*e*Pn	Pn	11 30 43.2	+0.8
BGKT	Bogazkoy	2.10	357	*e*PN	Pn	11 30 43.8	+1.1
BGKT	Bogazkoy	2.10	357	*e*Pn	Pn	11 30 43.8	+1.1
EZN	Ezine	2.13	291	P	Pn	11 30 42.8	-0.1
EZN	Ezine	2.13	291	P	Pn	11 30 42.8	-0.1
SILT	Sile	2.15	15	*e*PN	Pn	11 30 44.2	+0.9
SILT	Sile	2.15	15	*e*Pn	Pn	11 30 44.2	+0.9
KLYT	Kilyos	2.18	3	*e*PN	Pn	11 30 44.3	+0.7
KLYT	Kilyos	2.18	3	*e*Pn	Pn	11 30 44.3	+0.7
CTKS	Kestanelik-??a	2.18	352	*e*PN	Pn	11 30 44.6	+1.0
CTKS	Kestanelik-??a	2.18	352	*e*Pn	Pn	11 30 44.6	+1.0
MDUB	Mudurnu	2.25	51	*e*PN	Pn	11 30 44.9	+0.1
MDUB	Mudurnu	2.25	51	*e*Pn	Pn	11 30 44.9	+0.1
CHOS	Chios island	2.33	254	P	Pn	11 30 44.2	-1.6
CHOS				S	Sn	11 31 11.6	-2.7
CHOS	Chios island	2.33	254	P	Pn	11 30 44.2	-1.6
KIZT	Kizilcal	2.33	94	*e*PN	Pn	11 30 45.2	-0.7
KIZT	Kizilcal	2.33	94	*e*Pn	Pn	11 30 45.2	-0.7
SIGR	SIGRI	2.37	274	P	Pn	11 30 44.5	-1.8
SIGR				S	Sn	11 31 13.5	-1.7
SIGR	SIGRI	2.37	274	P	Pn	11 30 44.5	-1.8
SIGR				S	Sn	11 31 13.5	-1.7
CTYL	Yalikoy Yolu	2.44	349	*e*PN	Pn	11 30 48.4	+1.1
CTYL	Yalikoy Yolu	2.44	349	*e*Pn	Pn	11 30 48.4	+1.1
ALN	Alexandroupoli	2.85	311	P	Pn	11 30 51.4	-1.5
ALN				S	Sn	11 31 28.3	+1.3
ALN	Alexandroupoli	2.85	311	P	Pn	11 30 51.4	-1.5
ALN				S	Sn	11 31 28.3	+1.3
SMTH	Samothraki Isl	2.94	299	P	Pn	11 30 53.1	-1.2
SMTH	Samothraki Isl	2.94	299	P	Pn	11 30 53.0	-1.2
EDRB	Edirne	3.22	330	P	Pn	11 30 58.1	+0.1
EDRB	Edirne	3.22	330	P	Pn	11 30 58.1	+0.1
APE	Apeiranthos	3.33	234	⇑*i* P	Pg	11 31 21.3	+10
LAST	Lasithi	4.77	216	⇓*i* P	Pb	11 31 26.5	-4.7
TIRR	Tirgusor	5.39	356	⇓*i* P	Pn	11 31 28.3	+0.5
TIRR	Tirgusor	5.39	356	⇓*i* P	Pn	11 31 28.3	+0.5
MLR	Muntele Rosu	6.77	342	⇓*i* P	Pn	11 31 49.9	+3.0
MLR	Muntele Rosu	6.77	342	⇓*i* P	Pn	11 31 49.9	+3.0
VOIR		6.97	337	⇑*i* P	Pn	11 31 52.8	+3.3
PLOR	Plostina	6.97	347	⇓*i* P	Pn	11 31 51.8	+2.2
PLOR	Plostina	6.97	347	⇓*i* P	Pn	11 31 51.8	+2.2
VRI	Vrincioaia	6.97	347	⇑*i* P	Pn	11 31 52.7	+3.2
ARR	Arges	7.04	335	⇑*i* P	Pn	11 31 53.8	+3.3
TESR	Tescani	7.61	348	⇑*i* P	Pn	11 32 00.5	+2.2
TESR	Tescani	7.61	348	⇑*i* P	Pn	11 32 00.5	+2.2
GZR	Gura Zlata	7.77	326	⇓*i* P	Pn	11 32 04.5	+3.7
MDVR	Moldovita	7.82	319	⇑*i* P	Pn	11 32 02.5	+1.3
MDVR	Moldovita	7.82	319	⇑*i* P	Pn	11 32 02.5	+1.3
BURAR	Bucovina Array	8.95	344	⇓*i* P	Pn	11 32 18.6	+1.9
BURAR	Bucovina Array	8.95	344	⇓*i* P	Pn	11 32 18.6	+1.9

NIED **20** *11:42:00,38.°20N×141.°70E, h56km, Mw4.0 Best double couple: M₀1.25000×10¹⁵ NP1:φ=191.00000°, δ=22.00000°, λ=90.00000°. NP2:φ=12.00000°, δ=68.00000°, λ=90.00000°.*
ISCJB **20** *11:42:14.8±0.7, 38.°17N±0.°04×141.°79E±0.°08, h56km±5km, mb4.0/13, MS3.3/2, Error ellipse: s-maj=11.4km s-min=4.6km az=21.7*
IDC **20** *11:42:16.6±2.2, 38.°21N×141.°86E, h56km±19km, mb3.7/13, mb1 3.8/19, mb1mx3.6/58, mbtmp3.9/19, ML3.3/6, MS3.0/6, Ms1 3.0/6, ms1mx2.6/58, Error ellipse: s-maj=22.9km s-min=13.7km az=88.0*
JMA **20** *11:42:16.3±0.1, 38.°18N×141.°70E, h51km±1km, M3.9*
JMA Felt II J1.

ISC 20 11:42:15.8±1.4, 38.°16N±0.°05×141.°80E±0.°09, h48km±11km, n40, σ0°85/43, mb4.0/13, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.46	310	P	Pn	11 42 26.5	+0.1
JIO				S	Sn	11 42 33.3	-0.7
JMM	Marumori	0.85	250	P	Pn	11 42 30.9	-0.5
JMM				S	Sn	11 42 41.2	-1.6
JMK	Ichinoseki	0.91	330	P	Pn	11 42 32.4	+0.1
JMK				S	Sn	11 42 43.6	-0.7
JOU	Okura	0.92	283	P	Pn	11 42 32.1	-0.3
JOU				S	Sn	11 42 43.6	-0.9
OFUJ	Ofunato	0.92	354	P	Pn	11 42 32.6	+0.1
OFUJ				S	Sn	11 42 44.0	-0.6
JFK	Kawauchi	1.08	223	P	Pn	11 42 34.4	-0.2
JFK				S	Sn	11 42 47.6	-0.9
JFT	Otama	1.32	241	P	Pn	11 42 38.1	+0.2
JFT				S	Sn	11 42 54.1	-0.3
JYK	Kaneyama	1.36	304	P	Pn	11 42 38.2	-0.2
JOM	Ohasama	1.37	343	P	Pn	11 42 38.9	+0.4
JOM				S	Sn	11 42 55.7	+0.2
JYS	Shiratake	1.37	273	P	Pn	11 42 38.4	-0.1
JYS				*e*S	Sn	11 42 54.5	-1.0
JRG	Rokugo	1.54	324	P	Pn	11 42 41.3	+0.6
MJAR	Matsushiro Arr	3.29	242	P	Pn	11 43 06.1	+1.3
	3.8nm,0.3s,baz=56,slow=11,SNR=30						
MJAR				LR	LR	11 44 36.7	
	comp=Z,130nm,21.0s,baz=65,slow=42						
MAT	Matsushiro	3.29	242	P	Pn	11 43 05.8	+1.0
MAT				*e*S	Sn	11 43 44.7	+2.0
JHJ	Hachijo jima 2	5.29	199	P	Pn	11 43 33.9	+1.5
	14nm,0.3s,baz=105,slow=23,SNR=11						
JHJ				S	Sn	11 44 30.5	-1.5
	28nm,0.3s,baz=277,slow=22,SNR=7.8						
ASAJ	Asahikawa	5.98	6	P	Pn	11 43 41.5	-0.2
	0.7nm,0.3s,baz=214,slow=19,SNR=10						
ASAJ				S	Sn	11 44 49.8	+1.0
	0.5nm,0.3s,baz=259,slow=28,SNR=2.4						
USRK	Ussuriysk Ar.	9.54	312	P	Pn	11 44 31.1	+0.6
	0.6nm,0.3s,baz=121,slow=14,SNR=15						
JNU	Nakatsue	10.21	244	LR	LR	11 48 58.7	
	comp=Z,82nm,21.1s,baz=304,slow=39						
KSRS	Korea Array	11.01	271	P	Pn	11 44 52.5	+2.0
	0.2nm,0.3s,baz=78,slow=14,SNR=4.4						
KSRS				LR	LR	11 48 45.4	
	comp=Z,48nm,20.2s,baz=45,slow=35						
KLR	Kul'dur	13.23	330	P	Pn	11 45 21.5	+0.7
	0.1nm,0.3s,baz=184,slow=12,SNR=2.3						
KLR				LR	LR	11 50 08.4	
	comp=Z,47nm,20.9s,baz=108,slow=36						
SEY	Seymchan	25.63	11	P	P	11 47 40.3	-0.2
	1.3nm,0.8s,baz=199,slow=10,SNR=3.9						
SONM	Songino Array	27.43	302	P	P	11 47 57.4	+0.3
	0.9nm,0.6s,baz=113,slow=9.8,SNR=4.5						
H11N2	WAKE ISLAND Hy 28.48	123		T	T	12 18 19.3	
	baz=316,slow=75,SNR=529						
H11N1	WAKE ISLAND Hy 28.49	123		T	T	12 18 18.9	
	baz=316,slow=75,SNR=558						
H11N3	WAKE ISLAND Hy 28.50	123		T	T	12 18 20.6	
	baz=316,slow=75,SNR=340						
H11S1	WAKE ISLAND Hy 29.23	125		T	T	12 19 18.7	
	baz=318,slow=76,SNR=289						
H11S3	WAKE ISLAND Hy 29.23	125		T	T	12 19 21.2	
	baz=318,slow=76,SNR=346						
H11S2	WAKE ISLAND Hy 29.25	125		T	T	12 19 20.9	
	baz=318,slow=76,SNR=164						
ZALV	Zalesovo Beam	41.39	311	P	P	11 49 56.9	-0.2
	2.8nm,0.5s,baz=71,slow=6.5,SNR=8.9						
NRIK	Noril'sk	42.38	335	LR	LR	12 10 54.6	
	comp=Z,17nm,18.9s,baz=70,slow=41						
MKAR	Makanchi Array	43.79	301	P	P	11 50 16.6	-0.2
	1.6nm,0.6s,baz=84,slow=11,SNR=8.6						
KURBB	Kurchatov Arra	45.56	307	P	P	11 50 30.2	-0.5
	4.1nm,0.7s,baz=82,slow=8.4,SNR=35						
ILAR	Eielson Array	48.38	33	P	P	11 50 51.8	-0.7
	0.5nm,1.0s,baz=208,slow=12,SNR=3.5						
BVAR	Borovoye Array	50.05	312	P	P	11 51 05.0	-0.4
	0.8nm,0.5s,baz=95,slow=8.1,SNR=5.5						
AKTO	Aktyubinsk	58.16	312	P	P	11 52 04.8	+0.3
	0.6nm,0.3s,baz=40,slow=8.4,SNR=3.6						
WRA	Warramunga Arr	58.22	188	P	P	11 52 05.0	-0.2
	0.8nm,0.5s,baz=5.9,slow=7.2,SNR=16						
ASAR	Alice Springs	61.95	188	P	P	11 52 31.1	+0.4
	0.7nm,0.7s,baz=10,slow=4.8,SNR=11						
ARCES	ARCESS Array B	63.05	339	P	P	11 52 36.5	-1.1
	3.5nm,0.8s,baz=59,slow=7.6,SNR=5.0						
HFS	Hagfors	73.19	336	P	P	11 53 41.0	-0.2
	1.3nm,0.4s,baz=58,slow=5.6,SNR=9.0						
NOA	NORSAR Array B	73.27	337	P	P	11 53 41.9	+0.2
	0.9nm,0.5s,baz=39,slow=5.9,SNR=3.2						
EIL	Elat	84.02	303	LR	LR	12 35 54.2	
	comp=Z,30nm,18.1s,baz=40,slow=38						

ISK **20** *11:50:49.2, 39.°13N×29.°04E, h5km, ML3.7*
ISCJB **20** *11:50:49.6±0.4, 39.°12N±0.°01×28.°99E±0.°02, h1km±3km, mb3.4/3, MS2.6/1, Error ellipse: s-maj=2.6km s-min=2.3km az=40.8*
IDC **20** *11:50:49.9±1.1, 39.°09N×29.°17E, h0km, mb3.5/3, mb1 3.5/7, mb1mx3.4/46, mbtmp3.5/7, ML3.1/4, MS2.7/1, Ms1 2.8/1, ms1mx2.2/43, Error ellipse: s-maj=22.3km s-min=17.4km az=156.0*
DDA **20** *11:50:49.5, 39.°10N×29.°00E, h12km, Ml3.8*
CSEM **20** *11:50:50.0±0.1, 39.°09N×29.°00E, h2km, ML3.8, Error ellipse: s-maj=3.0km s-min=2.6km az=83.0*
THE **20** *11:50:50.8, 39.°05N×28.°98E, h8km±2km, ML3.4/2, Error ellipse: s-maj=2.7km s-min=0.9km az=99.0*

ISC 20 11:50:50.2±1.0, 39.°11N±0.°01×28.°99E±0.°01, h5km±8km, n182, σ1°04/229, mb3.4/3, 8C-11D, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.22	253	P	Pg	11 50 54.8	+0.3
DEMI				S	Sg	11 50 58.0	+0.7
DEMI	Demirci	0.22	253	*i* P	Pg	11 50 54.8	+0.3
DEMI				*i* S	Sg	11 50 58.0	+0.7
GDZ	Gediz	0.39	93	P	Pg	11 50 57.3	-0.4
GDZ				S	Sg	11 51 02.5	-0.2
GDZ	Gediz	0.39	93	*i* P	Pg	11 50 57.3	-0.4
GDZ				*i* S	Sg	11 51 02.5	-0.2
TVSB	Tavsanli	0.50	47	*e*PG	Pg	11 50 59.2	-0.6
TVSB	Tavsanli	0.50	47	*e*Pg	Pg	11 50 59.2	-0.6
DURS	Dursunbey	0.63	321	P	Pg	11 51 01.9	-0.4
DURS				S	Sg	11 51 10.4	-0.1
DURS	Dursunbey	0.63	321	*i* P	Pg	11 51 01.9	-0.4
DURS				*i* S	Sg	11 51 10.4	-0.1
KULA	Kula-Manisa	0.65	203	*e*PG	Pb	11 51 03.3	-0.7
KULA	Kula-Manisa	0.65	203	P	Pg	11 51 02.3	-0.3
KULA				S	Sg	11 51 10.9	0.0
KULA	Kula-Manisa	0.65	203	P	Pg	11 51 02.3	-0.3
KULA	Kula-Manisa	0.65	203	*e*Pg	Pb	11 51 03.3	-0.7
KULA				S	Sg	11 51 10.9	0.0
MANT	Manisa	0.70	209	P	Pg	11 51 03.5	-0.2
MANT				S	Sg	11 51 12.8	0.0
MANT	Manisa	0.70	209	*i* P	Pg	11 51 03.5	-0.2
MANT				*i* S	Sg	11 51 12.8	0.0
KHAL	Karahalli	0.84	152	P	Pg	11 51 06.0	-0.2
KHAL				S	Sg	11 51 17.5	+0.4
KHAL	Karahalli	0.84	152	*i* P	Pg	11 51 06.0	-0.2
KHAL				*i* S	Sg	11 51 17.5	+0.4
KHL	Karahalli	0.89	152	*e*PG	Pg	11 51 07.4	+0.2
KHL	Karahalli	0.89	152	*e*Pg	Pg	11 51 07.4	+0.2
ORLT	Orhaneli	0.94	356	*e*PG	Pg	11 51 08.2	0.0
ORLT	Orhaneli	0.94	356	*e*Pg	Pg	11 51 08.2	0.0
AKHS	Akhisar	0.94	256	P	Pg	11 51 08.3	+0.1
AKHS				S	Sb	11 51 21.5	-0.3
AKHS	Akhisar	0.94	256	*i* P	Pg	11 51 08.3	+0.1
AKHS				*i* S	Sb	11 51 21.5	-0.3
AKS	Akhisar	0.94	256	*e*PG	Pg	11 51 08.6	+0.4
AKS				*e*SG	Sn	11 51 24.1	+0.1
AKS	Akhisar	0.94	256	*e*Pg	Pg	11 51 08.6	+0.4
AKS				*e*Sg	Sn	11 51 24.1	+0.1
BALB	Balikesir	1.01	302	*e*PG	Pb	11 51 10.4	+0.3
BALB				*e*SG	Sn	11 51 25.7	+0.2
BALB	Balikesir	1.01	302	*e*Pg	Pb	11 51 10.4	+0.3
BALB				*e*Sg	Sn	11 51 25.7	+0.2
IGD	Bursa	1.17	8	*i* P	Pg	11 51 10.6	-1.9
IGD				*i* S	Sg	11 51 27.9	+0.2
BALY	Balya	1.23	301	P	Pg	11 51 13.5	-0.3
BALY				S	Sn	11 51 30.8	-0.4
BALY	Balya	1.23	301	*i* P	Pg	11 51 13.5	-0.3
BALY				*i* S	Sn	11 51 30.8	-0.4
KCTX	Karacabey (Bur	1.25	337	*e*PN	Pn	11 51 14.5	+0.1
KCTX	Karacabey (Bur	1.25	337	*e*Pn	Pn	11 51 14.5	+0.1
MDNY	Mudanya-Bursa	1.26	356	*e*PN	Pg	11 51 14.3	-0.1
MDNY	Mudanya-Bursa	1.26	356	*e*Pn	Pg	11 51 14.3	-0.1
CAVI	Cavuskoy	1.28	31	*e*PN	Pg	11 51 14.0	-0.6
CAVI	Cavuskoy	1.28	31	*e*Pn	Pg	11 51 14.0	-0.6
IZI	Iznik	1.28	17	*e*PN	Pg	11 51 14.1	-0.7
IZI	Iznik	1.28	17	*e*Pn	Pg	11 51 14.1	-0.7
GEMT	Gemlik	1.33	7	*e*PN	Pn	11 51 15.4	-0.1
GEMT	Gemlik	1.33	7	*e*Pn	Pn	11 51 15.4	-0.1
DENT	Denizli	1.35	178	*e*PN	Pg	11 51 16.5	+0.4
DENT	Denizli	1.35	178	*e*Pn	Pg	11 51 16.5	+0.4
BORA	Eskisehir	1.37	55	P	Pn	11 51 15.1	-1.0
BORA				S	Sb	11 51 33.8	-0.5
BORA	Eskisehir	1.37	55	*i* P	Pn	11 51 15.1	-1.0
BORA				*i* S	Sb	11 51 33.8	-0.5
DNZL	Cakiroluk	1.42	178	P	Pn	11 51 15.9	-0.9
DNZL	Cakiroluk	1.42	178	*i* P	Pn	11 51 15.9	-0.9
DNZL				*i* S	Sn	11 51 39.5	+3.6
ADVT	Abdulvahap	1.44	23	*e*PN	Pn	11 51 16.8	-0.2
ADVT	Abdulvahap	1.44	23	*e*Pn	Pn	11 51 16.8	-0.2
AYDB	Zeytinkoy-Aydi	1.44	217	*e*PN	Pg	11 51 18.4	+0.6
AYDB	Zeytinkoy-Aydi	1.44	217	*e*Pn	Pg	11 51 18.4	+0.6
ARMT	Armutlu	1.46	356	*e*PN	Pn	11 51 17.4	+0.3
ARMT	Armutlu	1.46	356	*e*Pn	Pn	11 51 17.5	+0.3
ESKT	Eskisehir	1.50	74	*i* P	Pn	11 51 17.1	-0.8
ESKT				*i* S	Sg	11 51 38.9	+0.4
SEYT	Eskypehyr	1.50	74	P	Pn	11 51 17.1	-0.8
SEYT				S	Sg	11 51 38.9	+0.4
EDC	Edincik	1.51	325	*e*PN	Pn	11 51 18.0	+0.1
EDC	Edincik	1.51	325	*e*Pn	Pn	11 51 18.0	+0.1
GPA	Golpazari	1.56	41	*e*PN	Pb	11 51 19.2	-0.3
GPA	Golpazari	1.56	41	*e*Pn	Pb	11 51 19.3	-0.3
BOLV	Bolvadin	1.58	104	P	Pn	11 51 18.7	-0.3
BOLV				S	Sg	11 51 41.5	+0.5
BOLV	Bolvadin	1.58	104	*i* P	Pn	11 51 18.7	-0.3
BOLV				*i* S	Sg	11 51 41.5	+0.5
KNL	Bal¯–kesir	1.62	316	*i* P	Pn	11 51 19.4	0.0
KNL				*i* S	Sn	11 51 40.6	0.0
DKL	Dikili	1.62	269	*e*PN	Pg	11 51 20.9	-0.3
DKL	Dikili	1.62	269	*e*Pn	Pg	11 51 20.9	-0.3
AYDN	Tasoluk	1.69	211	P	Pn	11 51 19.7	-0.7
AYDN				S	Sg	11 51 45.3	+0.9
AYDN	Tasoluk	1.69	211	*i* P	Pn	11 51 19.7	-0.7
AYDN				*i* S	Sg	11 51 45.3	+0.9
BUY	Buyukada	1.74	3	P	Pn	11 51 19.9	-1.2
BUY				S	Sn	11 51 43.3	-0.4
BUY	Buyukada	1.74	3	*i* P	Pn	11 51 19.9	-1.2
BUY				*i* S	Sn	11 51 43.3	-0.4
ISP	Isparta	1.76	136	⇑*i* P	Pb	11 51 23.1	+0.1
ISP	Isparta	1.76	136	⇑*i* P	Pb	11 51 23.1	+0.1
ISP				S	Sg	11 51 46.4	-0.4
GULT	Gulveren	1.77	41	*e*PN	Pn	11 51 21.6	0.0
GULT	Gulveren	1.77	41	*e*Pn	Pn	11 51 21.6	0.0
HRT	Hereke	1.79	17	*e*PN	Pn	11 51 22.2	+0.5
HRT	Hereke	1.79	17	*e*Pn	Pn	11 51 22.3	+0.5
BAGO	Egridir - ISPA	1.80	128	*i* P	Pn	11 51 21.4	-0.6
BAGO				*i* S	Sg	11 51 47.5	-0.5
KRBG	Karabiga-Canak	1.83	315	*e*PN	Pb	11 51 23.2	-0.8
KRBG	Karabiga-Canak	1.83	315	*e*Pn	Pb	11 51 23.3	-0.8
MRMT	Marmara Adasi	1.84	325	*e*PN	Pn	11 51 23.2	+0.8
MRMT	Marmara Adasi	1.84	325	*e*Pn	Pn	11 51 23.3	+0.8
SPNC	Sapanca-Adapaz	1.88	32	*e*PN	Pn	11 51 23.9	+1.0
SPNC	Sapanca-Adapaz	1.88	32	*e*Pn	Pn	11 51 23.9	+1.0
GOLH	Golhisar	1.92	166	P	Pn	11 51 23.4	-0.3
GOLH	Golhisar	1.92	166	*i* P	Pn	11 51 23.4	-0.3
ISK	Istanbul-Kandi	1.96	2	*e*PN	Pn	11 51 24.5	+0.5
ISK	Istanbul-Kandi	1.96	2	P	Pn	11 51 22.9	-1.1
ISK	Istanbul-Kandi	1.96	2	P	Pn	11 51 22.9	-1.1
ISK	Istanbul-Kandi	1.96	2	*e*Pn	Pn	11 51 24.5	+0.5
DGB	¯zmir	1.96	238	*i* P

VOIR		6.96	337 ⇑	*i* P	Pn	11 52 34.5	+1.6
ARR	Arges	7.04	334 ⇑	*i* P	Pn	11 52 36.1	+2.2
ARR	Arges	7.04	334 ⇑	*i* P	Pn	11 52 36.1	+2.2
GZR	Gura Zlata	7.79	326 ⇓	*i* P	Pn	11 52 36.3	-7.8
MMAI	Mount Meron Ar	8.00	138	Pn	Pn	11 52 46.2	-0.9
	1.7nm,0.3s,baz=327,slow=12,SNR=7.2						
BURAR	Bucovina Array	8.93	343 ⇓	*i* P	Pn	11 53 02.0	+2.1
BURAR	Bucovina Array	8.93	343 ⇓	*i* P	Pn	11 53 02.0	+2.1
NOA	NORSAR Array B	24.58	339	LR	LR	12 06 14.5	
	comp=Z,19nm,19.8s,baz=45,slow=38						
TORD	Torodi Ar. Bea	35.36	231	P	P	11 57 48.5	+1.7
	0.2nm,0.7s,baz=39,slow=9.6,SNR=2.4						
MKAR	Makanchi Array	39.11	61	P	P	11 58 18.0	-0.4
	0.5nm,0.5s,baz=278,slow=7.5,SNR=5.1						
ZALV	Zalesovo Beam	40.09	49	P	P	11 58 26.2	-0.2
	0.5nm,0.4s,baz=291,slow=9.7,SNR=3.1						

IDC 20 11:58:19.7±1.6, 13°32S×72°67W, h0km, mb3.6/2, mb1 3.8/5, mb1mx3.6/35, mbtmp3.7/5, ML3.3/3, Error ellipse: s-maj=47.1km s-min=18.1km az=30.0, Central Peru

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NNA	Nana	4.28	288	Pn	Pn	11 59 25.9	-0.3
	4.3nm,0.3s,baz=138,slow=12,SNR=9.5						
NNA				Sn	Sn	12 00 18.6	+1.6
	1.6nm,0.3s,baz=230,slow=18,SNR=1.7						
LPAZ	La Paz	5.29	125	Pn	Pn	11 59 40.8	+0.2
	0.1nm,0.3s,baz=310,slow=8.9,SNR=3.8						
LPAZ				Pg	Pb	11 59 56.9	+3.5
	0.5nm,0.3s,baz=301,slow=16,SNR=6.7						
LPAZ				Lg	Lg	12 01 09.6	
	baz=200,slow=16,SNR=1.2						
PTGA	Pitinga	17.74	46	P	P	12 02 29.2	-0.1
	0.8nm,0.3s,baz=227,slow=16,SNR=8.4						
TORD	Torodi Ar. Bea	78.24	73	P	P	12 10 20.5	-1.4
	0.8nm,0.8s,baz=257,slow=4.5,SNR=4.1						
YKA	Yellowknife Ar	82.33	342	P	P	12 10 43.9	+0.9
	0.3nm,0.8s,baz=133,slow=4.8,SNR=5.9						

*ISK **20** 12:04:52.0, 39°12N×28°96E, h5km, ML2.6*
*ISCJB **20** 12:04:53.2±0.6, 39°08N±0°04×29°00E±0°05, h9km, Error ellipse: s-maj=5.9km s-min=5.2km az=20.6*
*DDA **20** 12:04:53.2, 39°11N×29°03E, h7km, Ml3.1*
*CSEM **20** 12:04:53.2±0.1, 39°12N×29°00E, h2km, ML3.1, Error ellipse: s-maj=2.8km s-min=2.6km az=22.0*
ISC 20 12:04:53.5±0.9, 39°11N±0°03×28°99E±0°03, h9km, n30, σ0s71/35, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.22	252	*i* P	Pg	12 04 50.7	-7.4
GDZ	Gediz	0.38	93	P	Pg	12 05 00.5	-0.6
GDZ				S	Sg	12 05 05.8	-0.4
GDZ	Gediz	0.38	93	*i* P	Pg	12 05 00.5	-0.6
GDZ				*i* S	Sg	12 05 05.8	-0.4
TVSB	Tavsanli	0.50	47	*e*PG	Pg	12 05 02.8	-0.5
TVSB	Tavsanli	0.50	47	*e*Pg	Pg	12 05 02.8	-0.5
KHAL	Karahalli	0.84	152	P	Pg	12 05 09.4	-0.3
KHAL	Karahalli	0.84	152	*i* P	Pg	12 05 09.4	-0.3
KHL	Karahalli	0.89	152	*e*PG	Pg	12 05 10.5	-0.2
KHL	Karahalli	0.89	152	*e*Pg	Pg	12 05 10.5	-0.2
ORLT	Orhaneli	0.94	356	*e*PG	Pg	12 05 10.9	-0.6
ORLT	Orhaneli	0.94	356	*e*Pg	Pg	12 05 10.9	-0.6
AKHS	Akhisar	0.94	256	P	Pg	12 05 12.0	+0.3
AKHS	Akhisar	0.94	256	*i* P	Pg	12 05 12.0	+0.3
AKS	Akhisar	0.94	256	*e*PG	Pg	12 05 11.1	-0.6
AKS	Akhisar	0.94	256	*e*Pg	Pg	12 05 11.1	-0.6
IGD	Bursa	1.16	8	*i* P	Pb	12 05 13.9	-1.9
BALY	Balya	1.23	301	P	Pg	12 05 17.3	+0.1
BALY	Balya	1.23	301	*i* P	Pg	12 05 17.3	+0.1
KCTX	Karacabey (Bur	1.25	337	*e*PN	Pn	12 05 16.6	-0.6
KCTX				*e*SN	Sn	12 05 34.9	+0.7
KCTX	Karacabey (Bur	1.25	337	*e*Pn	Pn	12 05 16.7	-0.6
KCTX				*e*Sn	Sn	12 05 34.9	+0.7
CAVI	Cavuskoy	1.27	31	*e*PN	Pb	12 05 17.7	0.0
CAVI				*e*SN	Sn	12 05 36.5	+1.8
CAVI	Cavuskoy	1.27	31	*e*Pn	Pb	12 05 17.7	0.0
CAVI				*e*Sn	Sn	12 05 36.6	+1.8
IZI	Iznik	1.28	17	*e*PN	Pg	12 05 18.1	0.0
IZI	Iznik	1.28	17	*e*Pn	Pg	12 05 18.1	0.0
ADVT	Abdulvahap	1.44	23	*e*PN	Pb	12 05 20.6	+0.1
ADVT	Abdulvahap	1.44	23	*e*Pn	Pb	12 05 20.6	+0.1
ARMT	Armutlu	1.46	356	*e*PN	Pb	12 05 20.4	-0.3
ARMT	Armutlu	1.46	356	*e*Pn	Pb	12 05 20.5	-0.3
GULT	Gulveren	1.77	41	*e*PN	Pn	12 05 25.0	+0.6
GULT	Gulveren	1.77	41	*e*Pn	Pn	12 05 25.0	+0.6

*DDA **20** 12:06:06.7, 39°14N×29°22E, h7km, Ml3.0*
*ISCJB **20** 12:06:07.8±0.5, 39°12N±0°03×29°15E±0°04, h9km, Error ellipse: s-maj=4.9km s-min=4.2km az=167.5*
*CSEM **20** 12:06:07.7±0.1, 39°15N×29°17E, h2km, ML3.0, Error ellipse: s-maj=4.0km s-min=2.8km az=84.0*
*ISK **20** 12:06:07.7, 39°15N×29°15E, h9km, ML2.9*
ISC 20 12:06:07.6±0.9, 39°14N±0°02×29°16E±0°03, h9km, n39, σ0s50/45, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	Gediz	0.26	100	S	Sg	12 06 16.7	+0.4
GDZ	Gediz	0.26	100	*i* S	Sg	12 06 16.7	+0.4
DEMI	Demirci	0.36	255	S	Sg	12 06 18.4	-0.9
DEMI	Demirci	0.36	255	*i* S	Sg	12 06 18.4	-0.9
TVSB	Tavsanli	0.39	37	*e*PG	Pg	12 06 15.0	-0.4
TVSB	Tavsanli	0.39	37	*e*Pg	Pg	12 06 15.0	-0.4
KHAL	Karahalli	0.81	161	P	Pg	12 06 22.8	-0.4
KHAL				S	Sg	12 06 33.2	-0.5
KHAL	Karahalli	0.81	161	*i* P	Pg	12 06 22.8	-0.4
KHAL				*i* S	Sg	12 06 33.1	-0.5
KHL	Karahalli	0.86	160	*e*PG	Pb	12 06 25.0	+0.3
KHL	Karahalli	0.86	160	*e*Pg	Pb	12 06 25.0	+0.3
ORLT	Orhaneli	0.93	348	*e*PG	Pb	12 06 26.0	0.0
ORLT	Orhaneli	0.93	348	*e*Pg	Pb	12 06 26.0	0.0
IGD	Bursa	1.13	2	*i* P	Pb	12 06 27.7	-1.6
CAVI	Cavuskoy	1.19	26	*e*PN	Pg	12 06 30.6	+0.1
CAVI				*e*SN	Sn	12 06 47.4	+0.6
CAVI	Cavuskoy	1.19	26	*e*Pn	Pg	12 06 30.6	+0.1
CAVI				*e*Sn	Sn	12 06 47.4	+0.6
IZI	Iznik	1.23	11	*e*PN	Pg	12 06 31.5	+0.4
IZI	Iznik	1.23	11	*e*Pn	Pg	12 06 31.5	+0.4
MDNY	Mudanya-Bursa	1.25	350	*e*PN	Pb	12 06 31.4	0.0
MDNY				*e*SN	Sn	12 06 49.2	+1.0
MDNY	Mudanya-Bursa	1.25	350	*e*Pn	Pb	12 06 31.4	0.0
MDNY				*e*Sn	Sn	12 06 49.2	+1.0
KCTX	Karacabey (Bur	1.29	332	*e*PN	Pb	12 06 32.0	0.0
KCTX	Karacabey (Bur	1.29	332	*e*Pn	Pb	12 06 32.1	0.0
GEMT	Gemlik	1.30	1	*e*PN	Pg	12 06 32.7	+0.1
GEMT	Gemlik	1.30	1	*e*Pn	Pg	12 06 32.7	+0.1
BALY	Balya	1.34	297	P	Pg	12 06 33.7	+0.4
BALY	Balya	1.34	297	*i* P	Pg	12 06 33.7	+0.4
ADVT	Abdulvahap	1.37	19	*e*PN	Pg	12 06 33.8	-0.1
ADVT	Abdulvahap	1.37	19	*e*Pn	Pg	12 06 33.8	-0.1
ARMT	Armutlu	1.45	351	*e*PN	Pg	12 06 35.2	-0.2
ARMT	Armutlu	1.45	351	*e*Pn	Pg	12 06 35.2	-0.2
GPA	Golpazari	1.46	37	*e*PN	Pg	12 06 35.5	-0.1
GPA	Golpazari	1.46	37	*e*Pn	Pg	12 06 35.5	-0.1
GONE	Gonen-Balikesi	1.46	309	*e*PN	Pb	12 06 34.5	-0.3
GONE	Gonen-Balikesi	1.46	309	*e*Pn	Pb	12 06 34.6	-0.3
EDC	Edincik	1.57	321	*e*PN	Pb	12 06 36.4	-0.4
EDC	Edincik	1.57	321	*e*Pn	Pb	12 06 36.4	-0.4
GULT	Gulveren	1.67	38	*e*PN	Pb	12 06 37.9	-0.6
GULT	Gulveren	1.67	38	*e*Pn	Pb	12 06 37.9	-0.6
AYDN	Tasoluk	1.78	215	P	Pb	12 06 40.5	0.0
AYDN	Tasoluk	1.78	215	*i* P	Pb	12 06 40.5	0.0

IDC 20 12:10:32.8±2.2, 6°00S×130°26E, h0km, mb3.7/1, mb1 3.5/4, mb1mx3.3/43, mbtmp3.3/4, ML3.2/3, MS2.9/1, Ms1 2.9/1, ms1mx2.4/35, Error ellipse: s-maj=92.7km s-min=27.9km az=77.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	Fitzroy Crossi	12.85	200	Pn	Pn	12 13 36.6	-0.2
	0.1nm,0.3s,baz=22,slow=9.4,SNR=9.6						
FITZ				Sn	Sn	12 15 43.1	-18
	0.2nm,0.3s,baz=101,slow=16,SNR=3.7						
FITZ				LR	LR	12 18 39.7	
	comp=Z,56nm,19.1s,baz=102,slow=38						
WRA	Warramunga Arr	14.42	164	Pn	Pn	12 13 58.5	+0.1
	0.1nm,0.3s,baz=348,slow=13,SNR=10						
WRA				Sn	Sn	12 16 25.2	-14
	0.4nm,0.3s,baz=342,slow=22,SNR=8.8						
ASAR	Alice Springs	17.91	169	P	Pn	12 14 43.5	-0.1
	0.1nm,0.3s,baz=350,slow=11,SNR=7.1						
ASAR				S	Sn	12 17 50.2	-14
	0.1nm,0.3s,baz=352,slow=27,SNR=4.8						
MKAR	Makanchi Array	67.53	326	P	P	12 21 31.1	+0.1
	0.4nm,0.5s,baz=134,slow=8.3,SNR=3.7						

*DDA **20** 12:11:45.7, 39°06N×29°04E, h7km, Ml2.8*
*ISK **20** 12:11:45.8, 39°10N×29°20E, h5km, ML2.4*
*ISCJB **20** 12:11:46.6±0.7, 39°06N±0°04×29°19E±0°07, h9km, Error ellipse: s-maj=8.4km s-min=5.9km az=10.9*
*CSEM **20** 12:11:46.4±0.3, 39°08N×29°16E, h2km, ML2.4, Error ellipse: s-maj=8.0km s-min=5.6km az=75.0*
ISC 20 12:11:46.5±0.9, 39°07N±0°03×29°16E±0°04, h9km, n27, σ0s55/31, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TVSB	Tavsanli	0.44	32	*e*PG	Pg	12 11 54.8	-0.4
TVSB				*e*SG	Sg	12 12 01.5	+0.5
TVSB	Tavsanli	0.44	32	*e*Pg	Pg	12 11 54.8	-0.4
TVSB				*e*Sg	Sg	12 12 01.5	+0.5
KHAL	Karahalli	0.75	160	P	Pg	12 12 00.8	-0.1
KHAL	Karahalli	0.75	160	*i* P	Pg	12 12 00.8	-0.1
KHL	Karahalli	0.80	159	*e*PG	Pb	12 12 02.6	0.0
KHL	Karahalli	0.80	159	*e*Pg	Pb	12 12 02.6	0.0
ORLT	Orhaneli	0.99	348	*e*PG	Pg	12 12 05.0	-0.6
ORLT	Orhaneli	0.99	348	*e*Pg	Pg	12 12 05.0	-0.6
BALB	Balikesir	1.14	300	*e*PN	Pn	12 12 08.8	+0.2
BALB	Balikesir	1.14	300	*e*Pn	Pn	12 12 08.8	+0.2
IGD	Bursa	1.19	2	*i* P	Pb	12 12 08.2	-1.1
CAVI	Cavuskoy	1.25	25	*e*PN	Pn	12 12 10.0	-0.1
CAVI				*e*SN	Sn	12 12 27.8	+0.7
CAVI	Cavuskoy	1.25	25	*e*Pn	Pn	12 12 10.0	-0.1
CAVI				*e*Sn	Sn	12 12 27.8	+0.7
IZI	Iznik	1.29	11	*e*PN	Pb	12 12 10.8	-0.1
IZI	Iznik	1.29	11	*e*Pn	Pb	12 12 10.8	-0.1
KCTX	Karacabey (Bur	1.34	333	*e*PN	Pg	12 12 12.6	+0.3
KCTX	Karacabey (Bur	1.34	333	*e*Pn	Pg	12 12 12.6	+0.3
BALY	Balya	1.37	300	P	Pn	12 12 10.4	-1.4
BALY	Balya	1.37	300	*i* P	Pn	12 12 10.4	-1.4
GONE	Gonen-Balikesi	1.50	311	*e*PN	Pg	12 12 15.3	+0.1
GONE	Gonen-Balikesi	1.50	311	*e*Pn	Pg	12 12 15.3	+0.1
ARMT	Armutlu	1.51	351	*e*PN	Pb	12 12 14.9	+0.2
ARMT	Armutlu	1.51	351	*e*Pn	Pb	12 12 14.9	+0.2
BNT	Bandirma	1.60	324	*e*PN	Pb	12 12 16.1	-0.1
BNT	Bandirma	1.60	324	*e*Pn	Pb	12 12 16.1	-0.1
EDC	Edincik	1.62	322	*e*PN	Pb	12 12 16.9	+0.4
EDC	Edincik	1.62	322	*e*Pn	Pb	12 12 16.9	+0.4

*ISCJB **20** 12:17:41.9±0.7, 18°7S±0°1×169°35E±0°10, h246km, mb4.3/12, Error ellipse: s-maj=19.6km s-min=11.8km az=160.6*
*NEIC **20** 12:17:42.0±1.0, 18°63S×169°33E, h231km±11km, mb4.3/4, Error ellipse: s-maj=19.0km s-min=8.8km az=158.0*
*IDC **20** 12:17:42.5±12.0, 18°63S×169°29E, h233km±110km, mb3.9/7, mb1 4.0/7, mb1mx3.5/37, mbtmp4.4/7, Error ellipse: s-maj=45.5km s-min=21.1km az=79.0*
ISC 20 12:17:43.3±0.7, 18°8S±0°2×169°4E±0°1, h246km, n18, σ0s92/17, mb4.3/12, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	Mont Dzumac	4.30	219	*e*Pn	Pn	12 18 49.2	-1.3
MSVF	Nonsavu	8.31	84	*e*Pn	Pn	12 19 39.8	-0.7
CTA	Charters Tower	21.84	263	P	P	12 22 16.7	+0.4
	3.6nm,0.4s,baz=83,slow=11,SNR=7.0						
PMG	Port Moresby	23.44	290	P	P	12 22 28.9	-2.0
	20nm,0.8s,baz=187,slow=17,SNR=3.1						
STKA	Stephens Creek	28.21	237	P	P	12 23 14.4	+0.9
	6.2nm,0.6s,baz=63,slow=9.1,SNR=26						
BBOO	Buckleboo	32.95	238	*e*P	P	12 23 55.2	+0.1
	3.1nm,0.4s						
WRAB	Tennant Creek	33.03	262	*e*P	P	12 23 55.2	-0.7
	2.6nm,0.3s						
WRA	Warramunga Arr	33.04	262	P	P	12 23 55.5	-0.5
	4.1nm,0.6s,baz=82,slow=6.6,SNR=116						
ASAR	Alice Springs	33.37	255	P	P	12 23 59.0	+0.1
	35nm,0.5s,baz=83,slow=8.9,SNR=798						
FITZ	Fitzroy Crossi	41.42	264	*e*P	P	12 25 06.9	+0.7
	9.0nm,0.6s						
MBWA	Marble Bar	46.58	258	*e*P	P	12 25 47.7	+0.6
	37nm,0.4s						
VNDA	Vanda	58.92	182	P	P	12 27 17.2	+1.0
	0.9nm,0.4s,baz=29,slow=16,SNR=9.7						
PETK	Petropavlovsk-	72.27	353	P	P	12 28 42.5	+0.9
	4.5nm,0.8s,baz=142,slow=7.5,SNR=4.0						
ILAR	Eielson Array	89.73	17	P	P	12 30 12.9	-0.2
	0.6nm,0.7s,baz=239,slow=4.9,SNR=8.4						
YKA	Yellowknife Ar	100.18	27	P	Pdif	12 31 01.6	+0.9
	0.5nm,0.7s,baz=253,slow=4.6,SNR=7.1						
ARCES	ARCESS Array B	124.63	345	PKP	PKPdf	12 36 12.3	-0.4
	2.4nm,1.0s,baz=60,slow=5.8,SNR=6.2						
GERES	GERESS Array B	144.12	332	PKP	PKPbc	12 36 49.0	+0.6
	0.7nm,0.7s,baz=36,slow=2.5,SNR=4.6						
DAVOX	Davos/Dischmat	147.36	333	PKPbc	PKPbc	12 36 58.5	+0.3
	3.1nm,0.5s,baz=13,slow=16,SNR=4.2						

IDC 20 12:18:55.3±548.0, 51°36N×111°57E, h0km, Error ellipse: s-maj=203.3km s-min=104.0km az=46.0, Lake Baykal region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I34MN	SONGINO INFRAS	4.89	225	*i*		12 52 50.0	
	baz=41,slow=320,SNR=4.1						
I45RU	USSURIYSK INFR	15.45	110	*i*		13 51 30.0	
	baz=299,slow=324,SNR=1.2						
I46RU	ZALESOVO INFRA	16.40	290	*i*		13 55 50.0	
	baz=88,slow=326,SNR=2.1						

*IDC **20** 12:23:22.3±0.7, 25°44N×143°00E, h0km, mb3.8/11, mb1 4.0/11, mb1mx3.7/58, mbtmp3.8/11, MS3.5/2, Ms1 3.5/2, ms1mx2.6/46, Error ellipse: s-maj=31.1km s-min=15.2km az=83.0*
*ISCJB **20** 12:23:26.3±0.6, 25°37N±0°06×143°0E±0°2, h40km, mb3.9/15, MS4.1/1, Error ellipse: s-maj=22.7km s-min=6.9km az=165.2*
*NEIC **20** 12:23:27.7±0.4, 25°47N×142°90E, h35km, mb4.0/4, Error ellipse: s-maj=17.9km s-min=7.9km az=86.0*
ISC 20 12:23:28.2±0.7, 25°42N±0°09×143°0E±0°2, h40km, n20, σ0s95/20, mb4.0/15, Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCJ	Chichijima	1.81	337	Pn	Pn	12 23 56.2	-0.7
	baz=107,slow=20						
JCJ				Sn	Sn	12 24 20.6	+1.9
	baz=73,slow=19						
CBIJ	Chichi jima	1.81	337	*e*Pn	Pn	12 23 56.1	-0.8
CBIJ				*e*Sn	Sn	12 24 19.9	+1.2
KSRS	Korea Array	17.55	317	LR	LR	12 33 58.2	
	comp=Z,40nm,18.4s,baz=108,slow=36						
KLR	Kul'dur	25.33	343	P	P	12 28 52.2	+1.1
	1.1nm,0.7s,baz=143,slow=11,SNR=5.1						
WRAB	Tennant Creek	45.85	191	*e*P	P	12 31 46.9	+0.4
	0.6nm,0.5s						
WRA	Warramunga Arr	45.86	191	P	P	12 31 46.9	+0.2
	1.1nm,0.4s,baz=9.1,slow=8.5,SNR=32						
FITZ	Fitzroy Crossi	46.43	203	*e*P	P	12 31 52.0	+0.9
	1.8nm,0.7s						
ASAR	Alice Springs	49.58	191	P	P	12 32 16.1	+0.6
	0.4nm,0.6s,baz=18,slow=13,SNR=8.5						
KURK	Kurchatov	54.66	315	*e*P	P	12 32 51.7	-1.3
	1.6nm,0.4s						
STKA	Stephens Creek	56.99	181	P	P	12 33 10.4	+0.7
	1.7nm,0.9s,baz=348,slow=14,SNR=3.4						
ILAR	Eielson Array	58.85	28	P	P	12 33 22.0	-0.4
	0.3nm,0.7s,baz=279,slow=6.5,SNR=4.2						
BVAR	Borovoye Array	59.76	318	P	P	12 33 27.9	-1.0
	1.9nm,0.5s,baz=88,slow=7.7,SNR=9.0						
ABKAR	Akbulak array	66.77	315	*e*P	P	12 34 14.3	-1.1
	0.6nm,0.6s						
YKA	Yellowknife Ar	73.28	28	P	P	12 34 55.9	+0.8
	0.4nm,0.6s,baz=291,slow=6.3,SNR=5.4						
FINES	FINESS Array B	79.76	334	P	P	12 35 31.6	-0.1
	1.1nm,0.6s,baz=67,slow=5.1,SNR=7.4						
NVAR	Mina Array Bea	81.00	52	P	P	12 35 39.2	0.0
	0.2nm,0.6s,baz=265,slow=4.5,SNR=2.7						
PFO	Pinyon Flats O	84.45	56	LR	LR	13 03 49.8	
	comp=Z,84nm,21.6s,baz=222,slow=29						
HFS	Hagfors	85.24	337	P	P	12 35 59.7	-0.7
	0.8nm,0.6s,baz=56,slow=8.8,SNR=3.6						
NOA	NORSAR Array B	85.42	339	P	P	12 36 00.5	-0.8
	0.9nm,0.7s,baz=44,slow=5.0,SNR=2.4						
LPAZ	La Paz	149.61	79	PKPbc	PKPbc	12 43 14.5	-0.4
	0.9nm,0.4s,baz=338,slow=5.4,SNR=15						

*ISK **20** 12:24:16.8, 38°85N×29°31E, h2km, ML2.7*
*CSEM **20** 12:24:20.9±0.3, 39°09N×29°11E, h2km, ML2.7, Error ellipse: s-maj=9.2km s-min=6.1km az=99.0*
*ISCJB **20** 12:24:21.5±0.5, 39°07N±0°03×29°12E±0°06, h9km, Error ellipse: s-maj=6.6km s-min=4.7km az=7.7*
*DDA **20** 12:24:21.6, 39°05N×29°04E, h7km, Ml2.8*
ISC 20 12:24:21.4±0.8, 39°07N±0°03×29°14E±0°04, h9km, n32, σ0s91/39, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TVSB	Tavsanli	0.46	33	*e*PG	Pg	12 24 29.4	-1.0
TVSB	Tavsanli	0.46	33	*e*Pg	Pg	12 24 29.4	-1.0
MANT	Manisa	0.73	219	P	Pg	12 24 34.6	-1.0
MANT	Manisa	0.73	219	*i* P	Pg	12 24 34.6	-1.0
KHAL	Karahalli	0.75	158	P	Pb	12 24 36.8	+0.2
KHAL				S	Sb	12 24 47.0	0.0
KHAL	Karahalli	0.75	158	*i* P	Pb	12 24 36.9	+0.2
KHAL				*i* S	Sb	12 24 47.0	0.0
ORLT	Orhaneli	1.00	349	*e*PN	Pn	12 24 41.5	-0.2
ORLT	Orhaneli	1.00	349	*e*Pn	Pn	12 24 41.5	-0.2
AKS	Akhisar	1.05	260	*e*PN	Pg	12 24 40.0	-1.6
AKS				*e*SN	Sn	12 24 57.1	-0.1
AKS	Akhisar	1.05	260	*e*Pn	Pg	12 24 40.0	-1.6
AKS				*e*Sn	Sn	12 24 57.1	-0.1
CAVI	Cavuskoy	1.26	25	*e*PN	Pn	12 24 44.4	-0.8
CAVI				*e*SN	Sn	12 25 04.3	+2.0
CAVI	Cavuskoy	1.26	25	*e*Pn	Pn	12 24 44.4	-0.8
CAVI				*e*Sn	Sn	12 25 04.3	+2.0
IZI	Iznik	1.29	11	*e*PN	Pn	12 24 45.3	-0.5
IZI	Iznik	1.29	11	*e*Pn	Pn	12 24 45.3	-0.5
MDNY	Mudanya-Bursa	1.32	351	*e*PN	Pb	12 24 46.4	+0.1
MDNY	Mudanya-Bursa	1.32	351	*e*Pn	Pb	12 24 46.4	+0.1
KCTX	Karacabey (Bur	1.34	333	*e*PN	Pb	12 24 47.1	+0.3
KCTX	Karacabey (Bur	1.34	333	*e*Pn	Pb	12 24 47.1	+0.3
BALY	Balya	1.36	300	P	Pn	12 24 45.6	-1.0
BALY	Balya	1.36	300	*i* P	Pn	12 24 45.6	-1.0
DNZL	Cakiroluk	1.38	183	P	Pn	12 24 46.6	-0.4
DNZL	Cakiroluk	1.38	183	*i* P	Pn	12 24 46.6	-0.4
GONE	Gonen-Balikesi	1.49	312	*e*PN	Pn	12 24 48.9	+0.5
GONE	Gonen-Balikesi	1.49	312	*e*Pn	Pn	12 24 48.9	+0.5
ARMT	Armutlu	1.51	352	*e*PN	Pb	12 24 49.5	-0.2
ARMT	Armutlu	1.51	352	*e*Pn	Pb	12 24 49.5	-0.2
EDC	Edincik	1.61	323	*e*PN	Pn	12 24 50.8	+0.7
EDC	Edincik	1.61	323	*e*Pn	Pn	12 24 50.8	+0.7
AYDN	Tasoluk	1.72	216	P	Pg	12 24 54.0	-0.4
AYDN	Tasoluk	1.72	216	*i* P	Pg	12 24 54.0	-0.4
AYDN				*i* S	Sg	12 25 18.6	+1.9
GULT	Gulveren	1.73	37	*e*PN	Pn	12 24 50.6	-1.1
GULT	Gulveren	1.73	37	*e*Pn	Pn	12 24 50.6	-1.1

*ISK **20** 12:27:24.8, 39°15N×29°11E, h5km, ML3.4*
*DDA **20** 12:27:25.5, 39°15N×29°09E, h3km, Ml3.3*
*ISCJB **20** 12:27:26.1±0.4, 39°13N±0°03×29°11E±0°04, h9km, Error ellipse: s-maj=4.5km s-min=4.2km az=158.9*
*CSEM **20** 12:27:26.2±0.1, 39°11N×29°09E, h10km, ML3.3, Error ellipse: s-maj=3.9km s-min=3.7km az=93.0*
ISC 20 12:27:26.0±0.9, 39°16N±0°02×29°10E±0°03, h9km, n56, σ0s51/60, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MANT	Manisa	0.79	213	P	Pg	12 27 40.6	-0.6
MANT	Manisa	0.79	213	*i* P	Pg	12 27 40.6	-0.6
KHAL	Karahalli	0.84	159	P	Pg	12 27 41.7	-0.5
KHAL	Karahalli	0.84	159	*i* P	Pg	12 27 41.6	-0.5
KHL	Karahalli	0.90	158	*e*PG	Pg	12 27 42.9	-0.3
KHL	Karahalli	0.90	158	*e*Pg	Pg	12 27 42.9	-0.3
ORLT	Orhaneli	0.90	350	*e*PG	Pg	12 27 42.9	-0.5
AKS	Akhisar	1.04	255	*e*PG	Pg	12 27 46.0	+0.1
AKS				*e*SG	Sn	12 28 01

BRY					eSg	Sn	12 29 15.2	-0.7
DOB	**Doboj**	1.04	15		ePg	Pg	12 29 00.2	-0.2
DOB					eSg	Sg	12 29 13.8	-0.2
BLY	**Banja Luka**	1.09	340		ePg	Pg	12 29 01.1	-0.2
BLY					eSg	Sn	12 29 16.3	-1.0
BLY	**Banja Luka**	1.09	340		ePg	Pg	12 29 01.1	-0.2
BLY					eSg	Sb	12 29 15.7	-0.2
TREB	**Trebinje**	1.11	155		eSg	Sb	12 29 16.3	-0.3
BBLS	**Lazići**	1.23	83		ePg	Pb	12 29 03.8	-0.2
BBLS					eSg	Sn	12 29 21.0	0.0
BBLS	**Lazići**	1.23	83	⇑	iPg	Pg	12 29 03.9	-0.2
BBLS					eSg	Sn	12 29 20.6	-0.4
PLE	**Pljevlja**	1.28	107	⇓	iPg	Pn	12 29 04.4	-0.4
PLE					eSg	Sn	12 29 24.7	+2.4
PLE	**Pljevlja**	1.28	107	⇓	iPg	Pn	12 29 04.4	-0.4
PLE					eSg	Sn	12 29 24.7	+2.4
NKY	**Niksic**	1.31	134		ePg	Pn	12 29 04.2	-0.9
NKY					eSg	Sg	12 29 24.9	+2.4
NKY	**Niksic**	1.31	134		ePg	Pn	12 29 04.2	-0.9
NKY					eSg	Sg	12 29 24.9	+2.4
NKME	**Niksic**	1.32	136	⇓	iPg	Pn	12 29 04.7	-0.5
NKME					eSg	Sg	12 29 25.1	+2.2
NKME	**Niksic**	1.32	136	⇓	iPg	Pn	12 29 04.7	-0.5
NKME					eSg	Sg	12 29 25.1	+2.2
HCY	**Herceg Novi**	1.40	156	⇑	iPg	Pb	12 29 06.5	-0.3
HCY					eSg	Sg	12 29 27.1	+1.6
HCY	**Herceg Novi**	1.40	156	⇑	iPg	Pb	12 29 06.5	-0.3
HCY					eSg	Sg	12 29 27.1	+1.6
CEME	**Cevo**	1.48	143		ePg	Pn	12 29 07.1	-0.2
CEME					eSg	Sg	12 29 29.9	+2.1
CEME	**Cevo**	1.48	143		ePg	Pn	12 29 07.1	-0.2
CEME					eSg	Sg	12 29 29.9	+2.1
BLJ	**Bijeljina**	1.54	46		eSn	Sb	12 29 28.5	-0.3
TEKS	**Tekeris**	1.55	57		ePn	Pg	12 29 11.4	+1.4
TEKS					eSg	Sg	12 29 29.4	-0.7
TEKS	**Tekeris**	1.55	57		ePn	Pb	12 29 09.1	-0.2
TEKS					eSg	Sg	12 29 29.4	-0.7
TEKS					eSn	Sb	12 29 30.4	+1.3
BUM	**Brajici-Budva**	1.67	148	⇑	iPn	Pb	12 29 11.2	-0.2
BUM					eSn	Sg	12 29 36.0	+2.0
BUM	**Brajici-Budva**	1.67	148	⇑	iPn	Pb	12 29 11.2	-0.2
BUM					eSn	Sg	12 29 36.0	+2.0
DIVS	**Divibare**	1.69	77		ePn	Pg	12 29 12.2	-0.6
DIVS					eSg	Sg	12 29 34.9	+0.2
DIVS	**Divibare**	1.69	77		ePn	Pb	12 29 11.5	-0.3
DIVS					eSn	Sb	12 29 33.6	+0.3
DIVS					eSg	Sg	12 29 34.9	+0.2
PDG	**Podgorica**	1.72	138		ePg	Pg	12 29 12.9	-0.5
PDG	**Podgorica**	1.72	138		ePn	Pb	12 29 11.5	-0.8
PDG					eSn	Sb	12 29 34.1	0.0
TTG	**Podgorica**	1.72	138	⇑	iPn	Pb	12 29 12.5	+0.2
TTG					eSn	Sg	12 29 37.1	+1.4
IVAS	**Ivanjica**	1.78	94		ePn	Pb	12 29 12.3	-1.0
IVAS					eSn	Sb	12 29 35.4	-0.4
BEY	**Berane**	1.81	117	⇑	iPn	Pb	12 29 13.6	-0.2
BEY					eSn	Sg	12 29 39.6	+1.1
IVA	**Berane**	1.81	117	⇑	iPn	Pb	12 29 13.6	-0.2
IVA					eSn	Sg	12 29 39.6	+1.1
DRME	**Dracevica, Mon**	1.88	144	⇑	iPn	Pb	12 29 14.9	-0.1
DRME					eSn	Sg	12 29 41.2	+0.3
DRME	**Dracevica, Mon**	1.88	144		ePn	Pb	12 29 14.0	-1.0
DRME					eSn	Sb	12 29 37.7	-1.0
PVY	**Plav**	2.00	124		ePn	Pb	12 29 16.7	-0.4
PVY					eSn	Sg	12 29 44.0	-0.6
TRUS	**Trudelj**	2.01	75		ePn	Pn	12 29 15.4	+0.8
FGSL	**Fruska Gora**	2.08	46		ePn	Pb	12 29 17.6	-0.7
FGSL					eSn	Sb	12 29 43.1	-1.2
FRGS	**Fruska Gora**	2.08	46		ePn	Pb	12 29 17.6	-0.7
FRGS					eSn	Sb	12 29 43.1	-1.2
ULC	**Ulcinj**	2.09	147	⇓	iPn	Pb	12 29 17.3	-1.3
ULC					eSn	Sg	12 29 46.1	-1.5
ULC	**Ulcinj**	2.09	147	⇓	iPn	Pb	12 29 17.3	-1.3
ULC					eSn	Sg	12 29 46.1	-1.5
GRUS	**Gruza**	2.18	85		ePg	Pb	12 29 19.1	-1.0
GRUS	**Gruza**	2.18	85		ePg	Pb	12 29 19.1	-1.0
NVLJ	**Novalja**	2.21	293		iPn	Pb	12 29 18.8	-1.8
NVLJ					Sn	Sb	12 29 49.3	+1.3
NVLJ	**Novalja**	2.21	293		iPn	Pb	12 29 18.7	-1.8
NVLJ					Sn	Sb	12 29 49.3	+1.3
SELS	**Selova**	2.53	100		ePn	Pn	12 29 22.5	+0.6
SELS	**Selova**	2.53	100		ePn	Pn	12 29 22.5	+0.6
CRES	**Cresnjev**	2.64	323		ePn	Pn	12 29 24.4	+1.1
CRES					eSn	Sn	12 29 56.6	+1.0
CEY	**Cerknica**	3.08	312		ePn	Pn	12 29 30.5	+1.0
CEY					eSn	Sn	12 30 06.9	+0.3

*ISCJB **20** 12:29:10.7±0.9, 14°.6S±0°.1×70°.8W±0°.1, h100km, mb3.3/4, Error ellipse: s-maj=20.3km s-min=13.9km az=145.8*
*IDC **20** 12:29:13.7±3.3, 14°.67S×70°.77W, h114km±38km, mb3.1/4, mb1 3.5/8, mb1mx3.4/34, mbtmp3.7/8, Error ellipse: s-maj=40.9km s-min=35.3km az=172.0*
ISC 20 12:29:12.1±0.9, **14°.7S**±0°.1×**70°.9W**±0°.1, **h100**km, **n9**, σ1§**41**/9, **mb3.4/4, Central Peru**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LPAZ	**La Paz**	**3.11**	**121**	P	**Pn**	**12 30 02.2**	**+2.3**
	4.1nm,0.3s,baz=308,slow=11,SNR=43						
LPAZ				S	Sn	12 30 51.4	+15
	baz=61,slow=20,SNR=2.3						
LVC	**Limon Verde**	**8.10**	**167**	P	**Pn**	**12 31 06.9**	**-0.4**
	5.9nm,0.3s,baz=80,slow=11,SNR=3.1						
SIV	**San Ignacio**	**9.58**	**99**	P	**Pn**	**12 31 26.1**	**-1.0**
	0.9nm,0.3s,baz=313,slow=11,SNR=9.7						
PTGA	**Pitinga**	**17.59**	**39**	P	**P**	**12 33 08.8**	**-1.8**
	0.3nm,0.3s,baz=211,slow=19,SNR=3.6						
TXAR	**Lajitas Array**	**54.00**	**324**	P	**P**	**12 38 27.4**	**+1.3**
	0.4nm,0.7s,baz=138,slow=9.6,SNR=2.7						
PDAR	**Pinedale Array**	**67.29**	**330**	P	**P**	**12 39 56.3**	**-0.1**
	0.1nm,0.3s,baz=120,slow=3.6,SNR=3.0						
TORD	**Torodi Ar. Bea**	**77.00**	**73**	P	**P**	**12 40 54.1**	**-0.4**
	0.4nm,0.7s,baz=258,slow=5.3,SNR=2.2						
YKA	**Yellowknife Ar**	**84.17**	**341**	P	**P**	**12 41 31.6**	**-0.2**
	0.3nm,0.6s,baz=135,slow=5.1,SNR=7.2						
MJAR	**Matsushiro Arr**	**146.12**	**315**	PKPbc	**PKPdf**	**12 48 40.7**	**+0.7**
	1.3nm,0.8s,baz=42,slow=2.0,SNR=5.2						

*ISCJB **20** 12:30:22.9±0.7, 39°.11N±0°.03×29°.03E±0°.04, h1km±6km, Error ellipse: s-maj=5.3km s-min=4.2km az=23.4*
*ISK **20** 12:30:22.6, 39°.13N×29°.01E, h5km, ML3.4*
*DDA **20** 12:30:22.6, 39°.12N×29°.00E, h3km, Ml3.4*
*CSEM **20** 12:30:23.1±0.1, 39°.09N×29°.03E, h2km, ML3.4, Error ellipse: s-maj=3.9km s-min=3.1km az=119.0*
ISC 20 12:30:22.3±1.2, **39°.07N**±0°.02×**29°.03E**±0°.03, **h2**km±12km, **n57**, σ0§**58**/67, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TVSB	**Tavsanli**	**0.50**	**41**	ePG	**Pg**	**12 30 32.0**	**+0.1**
TVSB	**Tavsanli**	**0.50**	**41**	ePg	**Pg**	**12 30 32.0**	**+0.1**
MANT	**Manisa**	**0.69**	**213**	P	**Pb**	**12 30 36.8**	**-0.3**
MANT	**Manisa**	**0.69**	**213**	iP	**Pb**	**12 30 36.8**	**-0.3**
KHAL	**Karahalli**	**0.79**	**153**	P	**Pb**	**12 30 38.8**	**+0.1**
KHAL	**Karahalli**	**0.79**	**153**	iP	**Pb**	**12 30 38.8**	**+0.1**
AKS	**Akhisar**	**0.97**	**259**	ePG	**Pb**	**12 30 42.0**	**+0.3**
AKS				eSG	Sn	12 30 56.4	-0.8
AKS	**Akhisar**	**0.97**	**259**	ePg	**Pb**	**12 30 42.0**	**+0.3**
AKS				eSg	Sn	12 30 56.4	-0.8
ORLT	**Orhaneli**	**0.98**	**354**	ePG	**Pg**	**12 30 40.8**	**-0.2**
ORLT				eSG	Sb	12 30 54.9	-0.4
ORLT	**Orhaneli**	**0.98**	**354**	ePg	**Pg**	**12 30 40.8**	**-0.2**
ORLT				eSg	Sb	12 30 54.9	-0.4
BALB	**Balikesir**	**1.06**	**303**	ePG	**Pb**	**12 30 43.4**	**+0.2**
BALB				eSG	Sb	12 30 57.8	+0.3
BALB	**Balikesir**	**1.06**	**303**	ePg	**Pb**	**12 30 43.4**	**+0.2**
BALB				eSg	Sb	12 30 57.8	+0.3
IGD	**Bursa**	**1.20**	**6**	iP	**Pg**	**12 30 43.8**	**-1.4**
IGD				iS	Sg	12 30 59.6	-1.1
BALY	**Balya**	**1.28**	**302**	P	**Pg**	**12 30 47.0**	**+0.2**
BALY	**Balya**	**1.28**	**302**	iP	**Pg**	**12 30 47.0**	**+0.2**
CAVI	**Cavuskoy**	**1.29**	**29**	ePN	**Pb**	**12 30 47.3**	**0.0**
CAVI	**Cavuskoy**	**1.29**	**29**	ePn	**Pb**	**12 30 47.3**	**0.0**
MDNY	**Mudanya-Bursa**	**1.30**	**355**	ePN	**Pg**	**12 30 47.4**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.30**	**355**	ePn	**Pg**	**12 30 47.4**	**+0.2**
KCTX	**Karacabey (Bur**	**1.30**	**337**	ePN	**Pg**	**12 30 47.4**	**+0.2**
KCTX	**Karacabey (Bur**	**1.30**	**337**	ePn	**Pg**	**12 30 47.4**	**+0.2**
IZI	**Iznik**	**1.31**	**15**	ePN	**Pn**	**12 30 48.0**	**+0.5**
IZI	**Iznik**	**1.31**	**15**	ePn	**Pn**	**12 30 48.1**	**+0.5**
GEMT	**Gemlik**	**1.37**	**5**	ePN	**Pb**	**12 30 49.1**	**+0.6**
GEMT	**Gemlik**	**1.37**	**5**	ePn	**Pb**	**12 30 49.1**	**+0.6**
DNZL	**Cakiroluk**	**1.38**	**180**	P	**Pb**	**12 30 49.5**	**+0.6**
DNZL	**Cakiroluk**	**1.38**	**180**	iP	**Pb**	**12 30 49.5**	**+0.6**
ADVT	**Abdulvahap**	**1.46**	**22**	ePN	**Pg**	**12 30 50.5**	**+0.2**
ADVT	**Abdulvahap**	**1.46**	**22**	ePn	**Pg**	**12 30 50.5**	**+0.2**
ESKT	**Eskisehir**	**1.48**	**72**	iP	**Pn**	**12 30 49.7**	**-0.3**
SEYT	**Eskypehyr**	**1.48**	**72**	P	**Pn**	**12 30 49.7**	**-0.3**
ARMT	**Armutlu**	**1.50**	**355**	ePN	**Pn**	**12 30 50.1**	**0.0**
ARMT	**Armutlu**	**1.50**	**355**	ePn	**Pn**	**12 30 50.1**	**0.0**
EDC	**Edincik**	**1.56**	**325**	ePN	**Pb**	**12 30 51.9**	**+0.1**
EDC	**Edincik**	**1.56**	**325**	ePn	**Pb**	**12 30 51.9**	**+0.1**
GPA	**Golpazari**	**1.56**	**39**	ePN	**Pg**	**12 30 52.4**	**+0.1**
GPA	**Golpazari**	**1.56**	**39**	ePn	**Pg**	**12 30 52.4**	**+0.1**
KNL	**Bal¨–kesir**	**1.67**	**316**	iP	**Pn**	**12 30 52.7**	**+0.3**
KNL				iS	Sn	12 31 13.7	-0.7
AYDN	**Tasoluk**	**1.68**	**213**	P	**Pn**	**12 30 53.1**	**+0.5**
AYDN				S	Sg	12 31 16.0	-0.1
AYDN	**Tasoluk**	**1.68**	**213**	iP	**Pn**	**12 30 53.1**	**+0.5**
AYDN				iS	Sg	12 31 16.1	-0.1
GULT	**Gulveren**	**1.77**	**40**	ePN	**Pn**	**12 30 54.6**	**+0.6**
GULT	**Gulveren**	**1.77**	**40**	ePn	**Pn**	**12 30 54.6**	**+0.6**
BUY	**Buyukada**	**1.78**	**2**	P	**Pb**	**12 30 56.0**	**+0.5**
BUY	**Buyukada**	**1.78**	**2**	iP	**Pb**	**12 30 56.0**	**+0.5**
HRT	**Hereke**	**1.81**	**15**	ePN	**Pn**	**12 30 54.6**	**+0.1**
HRT	**Hereke**	**1.81**	**15**	ePn	**Pn**	**12 30 54.6**	**+0.1**
SPNC	**Sapanca-Adapaz**	**1.89**	**31**	ePN	**Pb**	**12 30 57.1**	**-0.3**
SPNC	**Sapanca-Adapaz**	**1.89**	**31**	ePn	**Pb**	**12 30 57.1**	**-0.3**
SVRH	**Sivrihisar-ESK**	**1.97**	**78**	ePN	**Pb**	**12 30 58.8**	**-0.1**
SVRH	**Sivrihisar-ESK**	**1.97**	**78**	ePn	**Pb**	**12 30 58.8**	**-0.1**
ISK	**Istanbul-Kandi**	**1.99**	**1**	ePN	**Pn**	**12 30 57.8**	**+0.9**
ISK	**Istanbul-Kandi**	**1.99**	**1**	ePn	**Pn**	**12 30 57.8**	**+0.9**
SILT	**Sile**	**2.13**	**13**	ePN	**Pn**	**12 31 00.2**	**+1.4**
SILT	**Sile**	**2.13**	**13**	ePn	**Pn**	**12 31 00.2**	**+1.4**
ZEY	**¨zmir**	**2.15**	**248**	iP	**Pg**	**12 31 03.0**	**-0.4**
MDUB	**Mudurnu**	**2.18**	**49**	ePN	**Pn**	**12 31 01.1**	**+1.5**
MDUB	**Mudurnu**	**2.18**	**49**	ePn	**Pn**	**12 31 01.1**	**+1.5**

*ISCJB **20** 12:31:20.4±0.8, 38°.72N±0°.04×141°.74E±0°.07, h68km±6km, mb3.9/1, Error ellipse: s-maj=10.0km s-min=6.1km az=18.1*
*IDC **20** 12:31:20.4±3.4, 38°.64N×142°.19E, h58km±39km, mb3.5/1, mb1 3.6/5, mb1mx3.2/51, mbtmp3.7/5, ML3.2/4, Error ellipse: s-maj=61.6km s-min=27.7km az=110.0*
*JMA **20** 12:31:21.7, 38°.73N×141°.65E, h64km±1km, M3.4*
JMA Felt I J1.
ISC 20 12:31:21.5±1.3, **38°.71N**±0°.04×**141°.76E**±0°.08, **h63**km±9km, **n23**, σ1§**36**/29, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.38**	**349**	P	**Pn**	**12 31 32.7**	**+0.1**
OFUJ				eS	Sn	12 31 40.4	-0.2
JIO	**Ouri**	**0.41**	**232**	P	**Pn**	**12 31 32.7**	**-0.1**
JIO				eS	Sn	12 31 40.4	-0.7
JMK	**Ichinoseki**	**0.49**	**300**	P	**Pn**	**12 31 33.1**	**-0.5**
JMK				eS	Sn	12 31 41.4	-1.0
JOM	**Ohasama**	**0.85**	**334**	P	**Pn**	**12 31 37.4**	**-0.3**
JOM				S	Sn	12 31 48.9	-0.8
JOU	**Okura**	**0.93**	**249**	S	**Sn**	**12 31 50.4**	**-1.1**
JRG	**Rokugo**	**1.12**	**308**	P	**Pn**	**12 31 40.4**	**-0.7**
JRG				eS	Sn	12 31 54.3	-1.5
JYK	**Kaneyama**	**1.12**	**281**	P	**Pn**	**12 31 40.5**	**-0.6**
JYK				eS	Sn	12 31 54.1	-1.7
JMM	**Marumori**	**1.14**	**223**	P	**Pn**	**12 31 41.1**	**-0.3**
JMM				eS	Sn	12 31 55.0	-1.2
JYS	**Shiratake**	**1.42**	**250**	P	**Pn**	**12 31 44.8**	**-0.3**
JYS				eS	Sn	12 32 02.1	-0.8
JFK	**Kawauchi**	**1.51**	**208**	P	**Pn**	**12 31 46.4**	**0.0**
JFK				eS	Sn	12 32 04.5	-0.7
JYA	**Atsumi**	**1.61**	**267**	P	**Pn**	**12 31 47.0**	**-0.7**
JYA				eS	Sn	12 32 06.5	-1.0
MJAR	**Matsushiro Arr**	**3.56**	**234**	P	**Pn**	**12 32 16.0**	**+1.8**
	2.3nm,0.3s,baz=42,slow=12,SNR=24						
MAT	**Matsushiro**	**3.56**	**234**	P	**Pn**	**12 32 15.7**	**+1.5**
MAT				eS	Sn	12 32 55.8	+0.8
ASAJ	**Asahikawa**	**5.44**	**6**	P	**Pn**	**12 32 39.5**	**-0.5**
	0.5nm,0.3s,baz=234,slow=11,SNR=3.7						
JHJ	**Hachijo jima 2**	**5.80**	**197**	P	**Pn**	**12 32 44.4**	**-0.5**
	3.6nm,0.3s,baz=342,slow=20,SNR=7.3						
JHJ				S	Sn	12 33 47.2	-2.9
	7.5nm,0.3s,baz=263,slow=22,SNR=6.5						
KSRS	**Korea Array**	**10.98**	**268**	P	**Pn**	**12 33 59.8**	**+4.0**
	0.2nm,0.3s,baz=82,slow=14,SNR=4.8						
H11N2	**WAKE ISLAND Hy**	**28.81**	**124**	T	T	13 07 35.7	
	baz=317,slow=75,SNR=94						
H11N1	**WAKE ISLAND Hy**	**28.82**	**124**	T	T	13 07 35.1	
	baz=317,slow=75,SNR=40						
H11N3	**WAKE ISLAND Hy**	**28.82**	**124**	T	T	13 07 34.6	
	baz=317,slow=75,SNR=44						
H11S1	**WAKE ISLAND Hy**	**29.57**	**126**	T	T	13 08 32.6	
	baz=318,slow=76,SNR=26						
H11S3	**WAKE ISLAND Hy**	**29.58**	**126**	T	T	13 08 30.4	
	baz=318,slow=76,SNR=32						
H11S2	**WAKE ISLAND Hy**	**29.59**	**126**	T	T	13 08 31.0	
	baz=318,slow=76,SNR=28						
WRA	**Warramunga Arr**	**58.75**	**188**	P	**P**	**12 41 12.2**	**-0.7**
	0.5nm,0.4s,baz=6.1,slow=6.7,SNR=12						

*DDA **20** 12:41:55.8, 39°.11N×29°.01E, h7km, Md3.0*
*ISK **20** 12:41:55.4, 39°.08N×29°.08E, h5km, ML3.0*
*CSEM **20** 12:41:56.5±0.2, 39°.08N×29°.05E, h2km, ML3.0, Error ellipse: s-maj=6.2km s-min=4.1km az=142.0*
ISC 20 12:41:55.9±1.2, **39°.04N**±0°.04×**29°.08E**±0°.03, **h16**km±10km, **n44**, σ0§**63**/51, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TVSB	**Tavsanli**	**0.51**	**36**	ePG	**Pg**	**12 42 05.7**	**-0.4**
TVSB	**Tavsanli**	**0.51**	**36**	ePg	**Pg**	**12 42 05.7**	**-0.4**
KULA	**Kula-Manisa**	**0.62**	**212**	ePG	**Pb**	**12 42 08.4**	**0.0**
KULA	**Kula-Manisa**	**0.62**	**212**	ePg	**Pb**	**12 42 08.4**	**0.0**
AKS	**Akhisar**	**1.00**	**261**	ePG	**Pn**	**12 42 16.3**	**+0.9**
AKS	**Akhisar**	**1.00**	**261**	ePg	**Pn**	**12 42 16.3**	**+0.9**
ORLT	**Orhaneli**	**1.02**	**352**	ePG	**Pb**	**12 42 15.0**	**-0.3**
ORLT	**Orhaneli**	**1.02**	**352**	ePg	**Pb**	**12 42 15.0**	**-0.3**
BALB	**Balikesir**	**1.11**	**303**	ePN	**Pg**	**12 42 17.4**	**+0.1**
BALB	**Balikesir**	**1.11**	**303**	ePn	**Pg**	**12 42 17.4**	**+0.1**
IGD	**Bursa**	**1.23**	**4**	iP	**Pn**	**12 42 17.1**	**-1.4**
IGD				iS	Sb	12 42 33.9	-0.5
CAVI	**Cavuskoy**	**1.30**	**27**	ePN	**Pg**	**12 42 20.8**	**-0.3**
CAVI				eSN	Sg	12 42 39.0	+0.9
CAVI	**Cavuskoy**	**1.30**	**27**	ePn	**Pg**	**12 42 20.8**	**-0.3**
CAVI				eSn	Sg	12 42 39.0	+0.9
BALY	**Balya**	**1.33**	**302**	P	**Pb**	**12 42 20.5**	**-0.1**
BALY	**Balya**	**1.33**	**302**	iP	**Pb**	**12 42 20.5**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.34**	**354**	ePN	**Pb**	**12 42 21.0**	**+0.3**
MDNY				eSN	Sg	12 42 39.7	+0.5
MDNY	**Mudanya-Bursa**	**1.34**	**354**	ePn	**Pb**	**12 42 21.0**	**+0.3**
MDNY				eSn	Sg	12 42 39.7	+0.5
DNZL	**Cakiroluk**	**1.35**	**181**	iP	Pn	12 42 15.3	-5.0
KCTX	**Karacabey (Bur**	**1.35**	**336**	ePN	**Pb**	**12 42 21.3**	**+0.4**
KCTX	**Karacabey (Bur**	**1.35**	**336**	ePn	**Pb**	**12 42 21.3**	**+0.4**
GONE	**Gonen-Balikesi**	**1.48**	**314**	ePN	**Pg**	**12 42 24.0**	**-0.3**
GONE	**Gonen-Balikesi**	**1.48**	**314**	ePn	**Pg**	**12 42 24.0**	**-0.3**
ADVT	**Abdulvahap**	**1.48**	**20**	ePN	**Pb**	**12 42 23.4**	**+0.3**
ADVT	**Abdulvahap**	**1.48**	**20**	ePn	**Pb**	**12 42 23.4**	**+0.3**
ARMT	**Armutlu**	**1.54**	**354**	ePN	**Pb**	**12 42 24.7**	**+0.7**
ARMT	**Armutlu**	**1.54**	**354**	ePn	**Pb**	**12 42 24.7**	**+0.7**
GPA	**Golpazari**	**1.57**	**37**	ePN	**Pb**	**12 42 24.7**	**+0.1**
GPA	**Golpazari**	**1.57**	**37**	ePn	**Pb**	**12 42 24.7**	**+0.1**
EDC	**Edincik**	**1.61**	**325**	ePN	**Pb**	**12 42 25.6**	**+0.3**
EDC	**Edincik**	**1.61**	**325**	ePn	**Pb**	**12 42 25.6**	**+0.3**
KNL	**Bal¨–kesir**	**1.72**	**316**	iP	**Pn**	**12 42 23.4**	**-1.8**
KNL				iS	Sn	12 42 47.5	+0.6
GULT	**Gulveren**	**1.78**	**38**	ePN	**Pb**	**12 42 28.4**	**+0.2**
GULT	**Gulveren**	**1.78**	**38**	ePn	**Pb**	**12 42 28.5**	**+0.2**
BUY	**Buyukada**	**1.81**	**1**	P	**Pb**	**12 42 29.1**	**+0.4**
BUY				S	Sn	12 42 50.1	+0.9
BUY	**Buyukada**	**1.81**	**1**	iP	**Pb**	**12 42 29.1**	**+0.4**
BUY				iS	Sn	12 42 50.1	+0.9
HRT	**Hereke**	**1.84**	**14**	ePN	**Pb**	**12 42 29.5**	**+0.3**
HRT	**Hereke**	**1.84**	**14**	ePn	**Pb**	**12 42 29.5**	**+0.3**
SVRH	**Sivrihisar-ESK**	**1.94**	**77**	ePN	**Pb**	**12 42 31.3**	**+0.3**
SVRH	**Sivrihisar-ESK**	**1.94**	**77**	ePn	**Pb**	**12 42 31.3**	**+0.3**
ISK	**Istanbul-Kandi**	**2.03**	**360**	ePN	**Pb**	**12 42 32.1**	**-0.3**
ISK	**Istanbul-Kandi**	**2.03**	**360**	ePn	**Pb**	**12 42 32.1**	**-0.3**
SILT	**Sile**	**2.16**	**11**	ePN	**Pb**	**12 42 33.7**	**-0.9**
SILT	**Sile**	**2.16**	**11**	ePn	**Pb**	**12 42 33.7**	**-0.9**
ZEY	**¨zmir**	**2.17**	**249**	iP	**Pg**	**12 42 36.1**	**-1.4**

*NIED **20** 12:49:00.37°.40N×141°.50E, h50km, Mw3.5 Best double couple: M0:1.90000×10^14 NP1:φ0=196.00000°, δ47.00000°, λ-14.00000°. NP2:φ0=296.00000°, δ80.00000°, λ-136.00000°.*
JMA 20 12:49:50.2±0.1, **37°.44N×141°.49E, h40**km±2km, **M3.6, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.50**	**262**	P	**Pn**	**12 50 00.9**	**0.0**
JFK				S	Sn	12 50 08.1	-0.4
ONAJ	**Iwakimizuishiy**	**0.65**	**239**	P	**Pn**	**12 50 03.0**	**0.0**
ONAJ				S	Sn	12 50 11.6	-0.5
JMM	**Marumori**	**0.70**	**308**	P	**Pn**	**12 50 03.5**	**-0.1**
JMM				S	Sn	12 50 12.9	-0.3
JFT	**Otama**	**0.92**	**275**	P	**Pn**	**12 50 07.6**	**+0.9**
JFT				S	Sn	12 50 19.6	+0.9
JIO	**Ouri**	**1.02**	**354**	P	**Pn**	**12 50 07.9**	**-0.1**
JIO				S	Sn	12 50 20.1	-1.0
JHO	**Hitachi**	**1.11**	**222**	P	**Pn**	**12 50 09.1**	**-0.1**
JHO				S	Sn	12 50 22.1	-1.2
JOU	**Okura**	**1.13**	**325**	P	**Pn**	**12 50 10.2**	**+0.6**
JOU				eS	Sn	12 50 25.2	+1.3

*ISCJB **20** 12:51:49.2±0.2, 59°.94N±0°.02×153°.33W±0°.04, h138km±2km, mb4.1/17, Error ellipse: s-maj=4.2km s-min=2.7km az=136.6*
*NEIC **20** 12:51:51.2, 59°.89N×153°.27W, h137km, mb4.8/8, After AEIC.*
NEIC Felt at Anchorage.
*IDC **20** 12:51:51.6±2.1, 60°.15N×153°.36W, h135km±19km, mb3.8/12, mb1 3.9/16, mb1mx3.7/40, mbtmp4.2/16, Error ellipse: s-maj=19.4km s-min=10.6km az=16.0*
ISC 20 12:51:50.6±0.6, **59°.94N**±0°.04×**153°.30W**±0°.04, **h135**km±5km, **n126**, σ1§**14**/147, **mb4.2**/17, **Southern Alaska**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ILW	**Iliamna West**	**0.14**	**33**	P	**Pn**	**12 52 09.2**	**0.0**
AUL	**Augustine Lava**	**0.56**	**187**	P	**Pn**	**12 52 10.7**	**+0.1**
AUL				S	Sn	12 52 25.9	+0.1
AUE	**Augustine Isla**	**0.58**	**184**	P	**Pn**	**12 52 10.7**	**0.0**
RDWB	**Redoubt West**	**0.60**	**22**	P	**Pn**	**12 52 11.0**	**0.0**
RDWB				S	Sn	12 52 26.4	-0.2
AUSE	**Augustine SEas**	**0.60**	**185**	P	**Pn**	**12 52 10.8**	**-0.1**
AUI	**Augustine Isla**	**0.61**	**186**	P	**Pn**	**12 52 10.8**	**-0.1**
NCT	**North Crescent**	**0.65**	**16**	P	**Pn**	**12 52 11.7**	**+0.4**
RDJH	**Redoubt Jeurge**	**0.70**	**20**	P	**Pn**	**12 52 12.0**	**+0.3**
RDJH				S	Sn	12 52 27.9	+0.2
HOM	**

SKAG				*e*Sn	**Sn**	12 55 40.4	+1.3		
WHY	**Whitehorse**	9.17	78	P	**Pn**	12 53 58.7	-1.0		
MTBL	**Makushin Table**	9.44	237	P	**Pn**	12 54 00.9	-2.3		
UNV	**Unalaska Valle**	9.45	236	P	**Pn**	12 54 02.1	-1.2		
WRAK	**Wrangell Islan**	11.59	99	*e*Pn	**Pn**	12 54 33.2	+1.5		
	16nm,0.4s								
WRAK				*e*Sn	**Sn**	12 56 40.9	+1.6		
CRAG	**Craig**	11.66	104	*e*Pn	**Pn**	12 54 32.9	+0.3		
	19nm,0.4s								
CRAG				*e*Sn	**Sn**	12 56 39.6	-1.5		
INK	**Inuvik**	11.98	37	P	**Pn**	12 54 35.9	-0.8		
	1.8nm,0.3s,baz=222,slow=7.3,SNR=34								
DLBC	**Dease Lake**	12.01	87	P	**Pn**	12 54 40.6	+3.3		
	5.9nm,0.3s,baz=235,slow=5.8,SNR=39								
DLBC				S	**Sn**	12 56 45.7	-3.8		
	0.3nm,0.3s,baz=228,slow=16,SNR=2.3								
BBB	**Bella Bella**	15.98	108	P	**P**	12 55 30.8	+2.4		
	0.2nm,0.3s,baz=303,slow=6.0,SNR=5.6								
BBB				S	**S**	12 58 26.6	-0.4		
	0.2nm,0.3s,baz=300,slow=16,SNR=4.1								
YKA	**Yellowknife Ar**	18.61	65	P	**Pn**	12 55 58.1	-0.9		
	0.9nm,0.3s,baz=278,slow=11,SNR=81								
YKA				PcP	**PcP**	13 00 19.6	0.0		
	0.1nm,0.3s,baz=275,slow=1.3,SNR=4.1								
YKA				ScP	**ScP**	13 03 42.1	-0.1		
	0.1nm,0.3s,baz=295,slow=2.0,SNR=9.9								
SEY	**Seymchan**	25.49	300	P	**P**	12 57 05.2	-0.6		
	2.6nm,0.9s,baz=88,slow=7.4,SNR=8.5								
PETK	**Petropavlovsk-**	27.32	278	P	**P**	12 57 22.3	0.0		
	5.2nm,0.6s,baz=73,slow=15,SNR=10.0								
LOHW	**Long Hollow**	30.38	103	*e*P	**P**	12 57 51.6	+1.8		
	1.2nm,0.4s								
NVAR	**Mina Array Bea**	30.82	118	P	**P**	12 57 55.8	+2.1		
	0.3nm,0.6s,baz=337,slow=8.0,SNR=3.3								
NVAR				PcP	**PcP**	13 00 47.2	-0.2		
	0.3nm,0.6s,baz=305,slow=3.2,SNR=3.3								
PDAR	**Pinedale Array**	31.52	103	P	**P**	12 58 01.6	+1.7		
	0.2nm,0.4s,baz=301,slow=6.2,SNR=2.4								
SCHQ	**Schefferville**	43.72	57	P	**P**	12 59 42.4	+0.6		
	2.5nm,0.5s,baz=293,slow=15,SNR=2.4								
NRIK	**Noril'sk**	43.88	333	P	**P**	12 59 42.1	-0.8		
	3.6nm,0.5s,baz=78,slow=5.2,SNR=5.4								
USRK	**Ussuriysk Ar.**	45.91	285	P	**P**	12 59 58.9	-0.4		
	1.6nm,0.7s,baz=43,slow=4.9,SNR=4.3								
JCT	**Junction City**	46.00	105	*e*P	**P**	13 00 01.9	+1.7		
	5.3nm,0.7s								
KSRS	**Korea Array**	53.05	282	P	**P**	13 00 54.5	+1.1		
	5.7nm,0.5s,baz=38,slow=6.7,SNR=30								
KSAR	**Wonju Array Be**	53.08	282	P	**P**	13 00 54.5	+0.9		
SONM	**Songino Array**	54.70	306	P	**P**	13 01 06.6	+1.1		
	3.6nm,0.5s,baz=39,slow=6.0,SNR=28								
ZALV	**Zalesovo Beam**	57.34	323	P	**P**	13 01 24.2	+0.4		
	21nm,0.5s,baz=29,slow=6.8,SNR=69								
FINES	**FINESS Array B**	58.95	0	P	**P**	13 01 35.4	+0.5		
	0.7nm,0.5s,baz=357,slow=7.0,SNR=3.9								
KURK	**Kurchatov**	61.99	325	*e*P	**P**	13 01 54.9	-0.9		
	12nm,0.8s								
MKAR	**Makanchi Array**	64.39	321	P	**P**	13 02 11.3	-0.4		
	1.8nm,0.5s,baz=38,slow=6.7,SNR=18								
ABKAR	**Akbulak array**	67.86	337	*e*P	**P**	13 02 33.6	-0.2		
	2.1nm,0.6s								
CMAR	**Chiang Mai Arr**	82.75	294	P	**P**	13 03 59.1	-0.2		
	1.9nm,0.5s,baz=12,slow=5.6,SNR=11								

NIED ***20*** *12:59:00,37.°50N×141.°50E, h44km, Mw3.5 Best double couple: M₀2.03000×10¹⁴ NP1:φs.314.00000°, δ55.00000°, λ171.00000°. NP2:φs.49.00000°, δ83.00000°, λ35.00000°.*

JMA 20 12:59:02.4±0.1, 37.°45N×141.°47E, h39km±2km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	0.48	260	P	Pn	12 59 12.9	0.0
JFK				*e*S	Sn	12 59 20.0	-0.2
ONAJ	**Iwakimizuishiy**	0.64	237	P	Pn	12 59 15.0	-0.1
ONAJ				S	Sn	12 59 23.5	-0.6
JMM	**Marumori**	0.68	308	P	Pn	12 59 15.5	-0.1
JMM				*e*S	Sn	12 59 24.6	-0.3
JFT	**Otama**	0.90	275	P	Pn	12 59 19.5	+0.9
JFT				*e*S	Sn	12 59 31.3	+0.8
JIO	**Ouri**	1.01	355	P	Pn	12 59 19.9	-0.1
JIO				*e*S	Sn	12 59 32.0	-1.0
JHO	**Hitachi**	1.10	221	P	Pn	12 59 20.9	-0.5
JHO				*e*S	Sn	12 59 34.1	-1.3
JOU	**Okura**	1.11	325	P	Pn	12 59 22.1	+0.6
MAT	**Matsushiro**	2.77	252	P	Pn	12 59 46.1	+1.9
MAT				S	Sn	13 00 21.5	+5.2

MEX 20 13:07:11.1±0.5, 18.°13N×104.°62W, h16km±110km, MD3.5, Near coast of Jalisco

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
R15V		1.20	30	*e*P	Pn	13 07 29.5	-3.8
R15V				*i*S	Sb	13 07 43.6	-5.3
MMIG	**Aquila**	1.22	82	*e*P	Pn	13 07 30.1	-3.4
MMIG				*i*S	Sb	13 07 44.3	-5.1
EZ5V		1.65	35	*i*P	Pn	13 07 36.1	-3.7
EZ5V				*i*S	Sn	13 07 56.6	-4.2
ARIG	**Puente Sto Nin**	4.06	87	*e*P	Pn	13 08 09.9	-2.8
ARIG				*e*S	Sn	13 08 56.9	-3.0

DDA ***20*** *13:19:37.2, 39.°14N×29.°10E, h7km, Md2.9*
CSEM ***20*** *13:19:38.0±0.2, 39.°11N×29.°10E, h2km, MD2.9, Error ellipse: s-maj=4.5km s-min=3.4km az=97.0*
ISK ***20*** *13:19:41.2, 39.°35N×29.°08E, h10km, ML3.1*

ISC 20 13:19:37.7±1.1, 39.°13N±0.°02×29.°10E±0.°03, h3km±11km, n46, σ0.88/61, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	0.30	98	P	**Pg**	13 19 43.6	0.0
GDZ				S	**Sg**	13 19 47.8	+0.2
GDZ	**Gediz**	0.30	98	*i*P	**Pg**	13 19 43.6	0.0
GDZ				*i*S	**Sg**	13 19 47.8	+0.2
TVSB	**Tavsanli**	0.43	42	*e*PG	**Pb**	13 19 47.7	-0.2
TVSB	**Tavsanli**	0.43	42	*e*Pg	**Pb**	13 19 47.7	-0.2
MANT	**Manisa**	0.77	213	P	**Pg**	13 19 51.9	-0.5
MANT				S	**Sg**	13 20 01.5	-0.8
MANT	**Manisa**	0.77	213	*i*P	**Pg**	13 19 51.9	-0.5
MANT				*i*S	**Sg**	13 20 01.5	-0.8
KHAL	**Karahalli**	0.82	158	P	**Pg**	13 19 53.0	-0.4
KHAL				S	**Sg**	13 20 03.2	-0.9
KHAL	**Karahalli**	0.82	158	*i*P	**Pg**	13 19 53.0	-0.4
KHAL				*i*S	**Sg**	13 20 03.2	-0.9
ORLT	**Orhaneli**	0.93	351	*e*PG	**Pg**	13 19 55.4	-0.1
ORLT	**Orhaneli**	0.93	351	*e*Pg	**Pg**	13 19 55.4	-0.1
AKS	**Akhisar**	1.03	256	*e*PN	**Pn**	13 20 02.7	+3.7
AKS	**Akhisar**	1.03	256	*e*Pn	**Pn**	13 20 02.7	+3.7
BALB	**Balikesir**	1.07	299	*e*PG	**Pn**	13 20 00.7	+1.1
BALB				*e*SG	**Sn**	13 20 14.2	-0.7
BALB	**Balikesir**	1.07	299	*e*Pg	**Pn**	13 20 00.7	+1.1
BALB				*e*Sg	**Sn**	13 20 14.2	-0.7
IGD	**Bursa**	1.13	4	*i*P	**Pb**	13 19 58.9	-1.0
IGD				*i*S	**Sn**	13 20 15.1	-1.5
CAVI	**Cavuskoy**	1.22	28	*e*PG	**Pg**	13 20 01.0	0.0
CAVI				*e*SG	**Sb**	13 20 16.6	-0.9
CAVI	**Cavuskoy**	1.22	28	*e*Pg	**Pg**	13 20 01.0	0.0
CAVI				*e*Sg	**Sb**	13 20 16.6	-0.9
IZI	**Iznik**	1.24	13	*e*PG	**Pg**	13 20 01.8	+0.4
IZI	**Iznik**	1.24	13	*e*Pg	**Pg**	13 20 01.8	+0.4
MDNY	**Mudanya-Bursa**	1.25	353	*e*PG	**Pg**	13 20 01.8	+0.2
MDNY	**Mudanya-Bursa**	1.25	353	*e*Pg	**Pg**	13 20 01.8	+0.2
KCTX	**Karacabey (Bur**	1.27	334	*e*PN	**Pg**	13 20 02.0	0.0
KCTX	**Karacabey (Bur**	1.27	334	*e*Pn	**Pg**	13 20 02.0	0.0
BALY	**Balya**	1.29	298	P	**Pb**	13 20 02.1	-0.6
BALY	**Balya**	1.29	298	*i*P	**Pb**	13 20 02.1	-0.6
ADVT	**Abdulvahap**	1.39	21	*e*PN	**Pg**	13 20 04.7	+0.3
ADVT	**Abdulvahap**	1.39	21	*e*Pn	**Pg**	13 20 04.7	+0.3
ESKT	**Eskisehir**	1.42	74	*i*P	**Pg**	13 20 05.0	+0.2
SEYT	**Eskypehyr**	1.42	74	P	**Pg**	13 20 05.0	+0.2
GONE	**Gonen-Balikesi**	1.42	310	*e*PN	**Pg**	13 20 05.5	+0.5
GONE	**Gonen-Balikesi**	1.42	310	*e*Pn	**Pg**	13 20 05.5	+0.5
DNZL	**Cakiroluk**	1.44	182	P	**Pg**	13 20 04.9	-0.4
DNZL				S	**Sg**	13 20 24.8	+0.8
DNZL	**Cakiroluk**	1.44	182	*i*P	**Pg**	13 20 04.9	-0.4
DNZL				*i*S	**Sg**	13 20 24.8	+0.8
ARMT	**Armutlu**	1.44	353	*e*PN	**Pg**	13 20 05.1	-0.3
ARMT	**Armutlu**	1.44	353	*e*Pn	**Pg**	13 20 05.1	-0.3
BNT	**Bandirma**	1.52	324	*e*PN	**Pb**	13 20 06.3	-0.3
BNT	**Bandirma**	1.52	324	*e*Pn	**Pb**	13 20 06.3	-0.3
EDC	**Edincik**	1.54	322	*e*PN	**Pb**	13 20 06.5	-0.4
EDC	**Edincik**	1.54	322	*e*Pn	**Pb**	13 20 06.5	-0.4
KNL	**Bal¨–kesir**	1.66	314	*i*P	**Pn**	13 20 07.5	-0.2
GULT	**Gulveren**	1.70	40	*e*PN	**Pg**	13 20 09.9	-0.4
GULT	**Gulveren**	1.70	40	*e*Pn	**Pg**	13 20 09.9	-0.4
AYDN	**Tasoluk**	1.75	213	P	**Pb**	13 20 10.0	-0.5
AYDN				S	**Sg**	13 20 33.4	-0.5
AYDN	**Tasoluk**	1.75	213	*i*P	**Pb**	13 20 10.0	-0.5
AYDN				*i*S	**Sg**	13 20 33.4	-0.5
SPNC	**Sapanca-Adapaz**	1.81	31	*e*PN	**Pb**	13 20 11.5	0.0
SPNC	**Sapanca-Adapaz**	1.81	31	*e*Pn	**Pb**	13 20 11.5	0.0

SOME ***20*** *13:20:17.1, 44.°63N×82.°32E, h15km*
NNC ***20*** *13:20:19.4±1.1, 44.°68N×82.°25E, h0km, mb3.0, mpv2.5, Error ellipse: s-maj=14.8km s-min=2.4km az=116.0*

ISC 20 13:20:16.5±3.5, 44.°6N±0.°1×82.°3E±0.°2, h4km±21km, n5, σ0.83/10, 1C-6D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DJR	**Jarkent**	1.81	262	⇓*i*P	**Pg**	13 20 51.1	-0.1
	4.6nm,0.6s						
DJR				⇓*i*S	**Sg**	13 21 15.3	+0.7
	5.1nm,0.3s						
MK31	**Makanchi Array**	2.17	0	Pn	**Pb**	13 20 56.4	-0.1
	2.4nm,0.3s,baz=181,slow=14,SNR=71						
MK31				⇓Sn	**Sb**	13 21 23.9	+0.2
	1.2nm,0.2s,baz=182,slow=26,SNR=23						
MAKZ	**Makanchi**	2.20	354	⇓Pn	**Pb**	13 20 56.5	-0.3
	2.2nm,0.6s						
MAKZ				⇓Sn	**Sb**	13 21 24.6	+0.1
	1.4nm,0.3s						
PDGK	**Podgornoye**	2.40	238	⇓Pn	**Pb**	13 20 59.6	-0.6
	1.2nm,0.6s						
PDGK				⇑Sn	**Sb**	13 21 31.7	+1.5
	1.1nm,0.4s						
MNBS	**Baschi**	2.84	260	*e*P	**Pb**	13 21 06.9	-0.9
	0.4nm,0.2s						
MNBS				*e*S	**Sb**	13 21 42.8	-0.2
	5.9nm,0.4s						

ISCJB ***20*** *13:33:04.1±0.9, 10.°15N±0.°03×73.°06W±0.°03, h7km±6km, mb3.4/3, Error ellipse: s-maj=5.8km s-min=3.8km az=139.9*
FUNV ***20*** *13:33:04.3, 10.°19N×73.°15W, h3km, MW4.0*
RSNC ***20*** *13:33:05.8±0.8, 10.°13N×73.°00W, h3km±4km, ML4.0*
IDC ***20*** *13:33:13.1±2.1, 9.°95N×72.°64W, h97km±22km, mb3.0/3, mb1 3.5/6, mb1mx3.3/31, mbtmp3.7/6, MS2.5/1, Ms1 2.5/1, ms1mx2.3/10, Error ellipse: s-maj=27.4km s-min=17.0km az=112.0*

ISC 20 13:33:04.5±3.4, 10.°12N±0.°03×73.°03W±0.°04, h3km±23km, n43, σ1.34/56, mb3.5/3, 2C-2D, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VIRV	**Villa del Rosa**	0.72	58	⇑*e*P	**Pb**	13 33 20.1	+0.3
VIRV				*e*S	**Sb**	13 33 30.4	+0.2
URIC	**Uribia, Colomb**	1.87	33	*e*P	**Pn**	13 33 37.1	-0.5
URIC				*e*S	**Sn**	13 34 01.3	-0.5
URIC				*i*		13 34 06.4	
	comp=Z,3μm,0.3s						
OCAC	**Ocana**	1.89	189	*e*P	**Pn**	13 33 38.1	+0.1
OCAC				*e*S	**Sb**	13 34 03.7	-0.3
OCAC				*i*		13 34 07.1	
	comp=Z,5μm,0.3s						
VIGV	**El Vigia**	2.08	128	*e*P	**Pn**	13 33 41.9	+1.5
VIGV				*e*S	**Sb**	13 34 08.7	-0.5
SJCC	**San Jacinto, C**	2.13	264	*e*P	**Pn**	13 33 41.8	+0.6
SJCC				*e*S	**Sn**	13 34 08.8	+0.6
SJCC				*i*		13 34 12.7	
	comp=Z,373nm,0.7s						
CAPV	**Capacho**	2.35	162	*e*P	**Pn**	13 33 44.2	-0.1
CAPV				*e*S	**Sn**	13 34 14.6	+0.8
GRMC	**Gramalote, San**	2.40	175	*e*P	**Pn**	13 33 42.0	-2.9
GRMC				*e*S	**Sn**	13 34 11.4	-3.5
GRMC				*i*		13 34 19.0	
	comp=Z,2μm,0.3s						
CBRI	**Barrientos, No**	2.40	175	*e*P	**Pn**	13 33 44.7	-0.3
DABV	**Dabajuro**	2.48	71	*e*P	**Pn**	13 33 46.2	+0.3
DABV				*e*S	**Sn**	13 34 17.4	+0.6
SDV	**Santo Domingo**	2.66	117	P	**Pn**	13 33 49.0	+0.4
	comp=Z,12nm,0.3s,baz=302,slow=5.6,SNR=29						
SDV				S	**Sb**	13 34 27.9	+1.7
	comp=Z,29nm,0.3s,baz=199,slow=21,SNR=6.3						
SDV	**Santo Domingo**	2.66	117	*e*P	**Pn**	13 33 48.9	+0.3
SDV				*e*S	**Sn**	13 34 21.0	-0.5
SDV				*i*		13 34 43.8	
	comp=Z,341nm,0.5s						
PAMC	**Pamplona, Colo**	2.78	173	*e*P	**Pn**	13 33 50.2	-0.3
PAMC				*e*S	**Sn**	13 34 24.6	-0.2
SOCV	**Socops**	2.81	130	*e*P	**Pn**	13 33 51.1	+0.6
MOTC	**Monteria, Cord**	2.92	243	⇑*i*P	**Pn**	13 33 51.6	-0.4
CURV	**Curarigua**	3.02	92	*e*P	**Pn**	13 33 54.0	+0.6
BRRC	**Barranca, Sant**	3.07	193	⇓*i*P	**Pn**	13 33 53.8	-0.2
BRRC				*i*		13 34 03.3	
	comp=Z,303nm,0.3s						
BRRC				*e*S	**Sn**	13 34 31.9	+0.7
BTLC	**Betulia, Santa**	3.19	184	*e*P	**Pn**	13 33 56.1	+0.2
SIQV	**Siquisique**	3.21	80	*e*P	**Pn**	13 33 55.5	-0.5
SANV	**Sanarito**	3.50	100	*e*P	**Pn**	13 34 00.8	+0.8
BARC	**Barichara**	3.51	182	*e*P	**Pn**	13 34 00.1	-0.2
BARC				*i*		13 35 07.9	
	comp=Z,541nm,0.6s						
MONV	**Montecano**	3.51	58	*e*P	**Pn**	13 33 59.7	-0.4
TEPV	**Terepaima**	3.78	92	*e*P	**Pn**	13 34 04.3	+0.4
RUSC	**La Rusia**	4.20	181	*e*P	**Pn**	13 34 09.5	-0.5
DBBC	**Dabeiba**	4.40	226	*e*P	**Pn**	13 34 12.9	+0.5
MAPV	**Macapo**	4.51	93	⇓*e*P	**Pn**	13 34 14.7	+0.8
HELC	**Santa Helena**	4.62	213	*e*P	**Pn**	13 34 16.6	+0.9
HELC				*e*S	**Sn**	13 35 10.7	+0.5
HELC				*i*		13 35 36.9	
	comp=Z,137nm,0.6s						
NORC	**Norcasia**	4.88	202	*e*P	**Pn**	13 34 19.3	+0.4
BAUV	**El Baul**	5.06	103	*e*P	**Pn**	13 34 20.7	-0.6
TURV	**Turiamo**	5.12	86	*e*P	**Pn**	13 34 21.2	-0.9
GUYC	**Guyana, Colomb**	5.40	206	*e*P	**Pn**	13 34 27.2	+0.8
GUYC				*i*		13 34 34.1	
	comp=Z,140nm,0.6s						
ROSC	**El Rosal**	5.40	194	P	**Pn**	13 34 29.1	+2.7
	comp=Z,9.4nm,0.3s,baz=66,slow=4.4,SNR=15						
ROSC				S	**Sn**	13 35 33.0	+3.6
	comp=Z,3.1nm,0.3s,baz=0.0,slow=20,SNR=2.1						
ROSC	**El Rosal**	5.40	194	*e*P	**Pn**	13 34 27.6	+1.2
ROSC				*i*		13 35 59.5	
	comp=Z,52nm,0.4s						
TOLC	**Tolima**	5.95	203	*e*P	**Pn**	13 34 36.5	+2.6
VILC	**Villavicencio,**	6.00	186	*e*P	**Pn**	13 34 34.4	-0.1
PRAC	**Prado**	6.63	196	*e*P	**Pn**	13 34 43.8	+0.9
PRAC				*i*		13 36 49.3	
	comp=Z,86nm,0.7s						
BCIP	**Isla Barro Col**	6.78	263	*e*P	**Pn**	13 34 44.8	-0.3
BCIP				*i*		13 34 52.4	
	comp=Z,22nm,0.3s						
PCRV	**Puerto La Cruz**	8.26	89	P	**Pn**	13 35 05.9	+0.4
	comp=Z,2.9nm,0.3s,baz=294,slow=1.2,SNR=10						
SJG	**San Juan**	10.37	39	LR	LR	13 39 30.2	
	comp=Z,27nm,21.9s,baz=250,slow=37						
LPAZ	**La Paz**	26.68	169	P	**P**	13 38 41.5	-4.2
	comp=Z,0.6nm,0.3s,baz=346,slow=4.2,SNR=4.4						
PDAR	**Pinedale Array**	45.51	322	P	**P**	13 41 25.5	-0.3
	comp=Z,0.2nm,0.4s,baz=106,slow=8.5,SNR=2.7						
YKA	**Yellowknife Ar**	60.23	339	P	**P**	13 43 13.4	-0.4
	comp=Z,0.1nm,0.4s,baz=129,slow=7.4,SNR=3.0						
ASAR	**Alice Springs**	150.99	239	PKPbc	**PKPdf**	13 52 55.5	+1.4
	comp=Z,0.7nm,0.6s,baz=122,slow=3.2,SNR=11						
WRA	**Warramunga Arr**	151.86	247	PKPbc	**PKPdf**	13 52 58.2	+2.7
	comp=Z,0.7nm,0.4s,baz=103,slow=2.7,SNR=36						

IDC 20 13:41:52.1±3.0, 6.°46S×147.°78E, h0km, mb3.8/3, mb1 3.9/5, mb1mx3.6/34, mbtmp3.7/5, ML3.5/1, MS3.4/2, Ms1 3.4/2, ms1mx2.6/38, Error ellipse: s-maj=59.8km s-min=39.3km az=91.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	3.00	192	Pn	Pn	13 42 42.1	+1.2
	5.9nm,0.3s,baz=17,slow=11,SNR=16						
PMG				Sn	Sb	13 43 21.8	-1.8
	7.1nm,0.3s,baz=339,slow=16,SNR=8.2						
WRA	**Warramunga Arr**	18.71	223	P	P	13 46 11.8	-0.6
	0.2nm,0.3s,baz=49,slow=11,SNR=18						
ASAR	**Alice Springs**	21.70	216	P	P	13 46 44.4	-0.5
	0.7nm,0.5s,baz=52,slow=8.9,SNR=31						
ASAR				LR	LR	13 56 41.7	
	comp=Z,64nm,18.5s,baz=66,slow=41						
FITZ	**Fitzroy Crossi**	24.50	240	P	P	13 47 13.5	+0.1
	3.2nm,0.5s,baz=56,slow=8.9,SNR=27						
STKA	**Stephens Creek**	25.95	192	P	P	13 47 26.2	-0.1
	1.5nm,0.8s,baz=10,slow=11,SNR=3.1						
MAW	**Mawson**	82.13	203	LR	LR	14 30 30.2	
	comp=Z,31nm,18.0s,baz=68,slow=36						
TORD	**Torodi Ar. Bea**	145.96	284	PKPbc	PKPdf	14 01 34.0	-0.2
	0.5nm,0.6s,baz=68,slow=3.6,SNR=3.4						

ISK ***20*** *13:44:19.3, 39.°07N×29.°05E, h6km, ML2.7*
DDA ***20*** *13:44:19.7, 39.°10N×29.°06E, h7km, Md2.6*
CSEM ***20*** *13:44:20.0±0.1, 39.°08N×29.°05E, h5km, ML2.7, Error ellipse: s-maj=2.5km s-min=1.8km az=71.0*

ISC 20 13:44:19.4±1.1, 39.°06N±0.°03×29.°09E±0.°03, h16km±10km, n37, σ0.48/51, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	0.30	83	P	**Pb**	13 44 27.2	+0.6
GDZ	**Gediz**	0.30	83	*i*P	**Pb**	13 44 27.2	+0.6
KULA	**Kula-Manisa**	0.64	212	*e*PG	**Pg**	13 44 31.6	-0.3
KULA				*e*SG	**Sb**	13 44 41.0	+0.1
KULA	**Kula-Manisa**	0.64	212	*e*Pg	**Pg**	13 44 31.6	-0.3
KULA				*e*Sg	**Sb**	13 44 41.0	+0.1
KHAL	**Karahalli**	0.75	155	P	**Pn**	13 44 36.0	+0.5
KHAL				S	**Sn**	13 44 46.3	-0.3
KHAL	**Karahalli**	0.75	155	*i*P	**Pn**	13 44 36.0	+0.5
KHAL				*i*S	**Sn**	13 44 46.3	-0.3
KHL	**Karahalli**	0.81	155	*e*PG	**Pn**	13 44 36.2	0.0
KHL				*e*SG	**Sn**	13 44 47.6	-0.3
KHL	**Karahalli**	0.81	155	*e*Pg	**Pn**	13 44 36.2	0.0
KHL				*e*Sg	**Sn**	13 44 47.6	-0.3
ORLT	**Orhaneli**	1.00	351	*e*PG	**Pb**	13 44 38.3	-0.1
ORLT	**Orhaneli**	1.00	351	*e*Pg	**Pb**	13 44 38.3	-0.1
AKS	**Akhisar**	1.01	260	*e*PG	**Pn**	13 44 39.1	+0.2
AKS	**Akhisar**	1.01	260	*e*Pg	**Pn**	13 44 39.2	+0.2
BALB	**Balikesir**	1.11	302	*e*PG	**Pb**	13 44 40.2	0.0
BALB				*e*SG	**Sg**	13 44 55.3	0.0
BALB	**Balikesir**	1.11	302	*e*Pg	**Pb**	13 44 40.2	0.0
BALB				*e*Sg	**Sg**	13 44 55.3	0.0
IGD	**Bursa**	1.21	4	*i*P	**Pn**	13 44 41.5	-0.2
CAVI	**Cavuskoy**	1.28	27	*e*PN	**Pg**	13 44 44.7	+0.5
CAVI	**Cavuskoy**	1.28	27	*e*Pn	**Pg**	13 44 44.7	+0.5
IZI	**Iznik**	1.31	13	*e*PN	**Pg**	13 44 44.5	-0.3
IZI	**Iznik**	1.31	13	*e*Pn	**Pg**	13 44 44.5	-0.3
MDNY	**Mudanya-Bursa**	1.32	353	*e*PN	**Pg**	13 44 44.8	-0.1
MDNY				*e*SN	**Sg**	13 45 02.9	+0.8
MDNY	**Mudanya-Bursa**	1.32	353	*e*Pn	**Pg**	13 44 44.8	-0.1
MDNY				*e*Sn	**Sg**	13 45 02.9	+0.8
BALY	**Balya**	1.33	301	P	**Pg**	13 44 44.7	-0.4
BALY	**Balya**	1.33	301	*i*P	**Pg**	13 44 44.7	-0.4
KCTX	**Karacabey (Bur**	1.34	335	*e*PN	**Pg**	13 44 45.1	-0.1
KCTX	**Karacabey (Bur**	1.34	335	*e*Pn	**Pg**	13

*DDA **20** 13:49:28.1, 39.°11N×29.°04E, h16km, Md2.5*
*ISK **20** 13:49:28.1, 39.°13N×29.°01E, h5km, ML2.5*
*CSEM **20** 13:49:29.1±0.2, 39.°14N×29.°03E, h2km, ML2.5, Error ellipse: s-maj=5.0km s-min=3.6km az=128.0*
ISC 20 13:49:29.2±1.0, 39.°13N±0.°03×29.°01E±0.°03, h9km, n26, σ0s66/32, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**249**	P	**Pg**	**13 49 34.2**	**+0.1**
DEMI				S	**Sg**	**13 49 38.2**	**+0.8**
DEMI	**Demirci**	**0.24**	**249**	*i* P	**Pg**	**13 49 34.2**	**+0.1**
DEMI				*i* S	**Sg**	**13 49 38.2**	**+0.8**
TVSB	**Tavsanli**	**0.47**	**48**	*e*PG	**Pg**	**13 49 38.6**	**+0.2**
TVSB	**Tavsanli**	**0.47**	**48**	*e*Pg	**Pg**	**13 49 38.6**	**+0.2**
KHAL	**Karahalli**	**0.85**	**153**	*i* P	Pn	13 49 55.3	+7.9
KHL	**Karahalli**	**0.90**	**153**	*e*PG	**Pg**	**13 49 46.5**	**0.0**
KHL	**Karahalli**	**0.90**	**153**	*e*Pg	**Pg**	**13 49 46.5**	**0.0**
ORLT	**Orhaneli**	**0.92**	**355**	*e*PG	**Pg**	**13 49 46.1**	**-0.7**
ORLT	**Orhaneli**	**0.92**	**355**	*e*Pg	**Pg**	**13 49 46.1**	**-0.7**
AKS	**Akhisar**	**0.96**	**255**	*e*PG	**Pg**	**13 49 47.7**	**0.0**
AKS				*e*SG	**Sn**	13 50 02.4	-0.4
AKS	**Akhisar**	**0.96**	**255**	*e*Pg	**Pg**	**13 49 47.7**	**0.0**
AKS				*e*Sg	**Sn**	13 50 02.4	-0.4
IGD	**Bursa**	**1.14**	**7**	*i* P	**Pb**	**13 49 49.0**	**-2.1**
IGD				*i* S	**Sg**	**13 50 05.7**	**-0.2**
KCTX	**Karacabey (Bur**	**1.24**	**336**	*e*PN	**Pg**	**13 49 53.7**	**+0.2**
KCTX	**Karacabey (Bur**	**1.24**	**336**	*e*Pn	**Pg**	**13 49 53.2**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.24**	**356**	*e*PN	**Pn**	**13 49 52.7**	**0.0**
MDNY				*e*SN	**Sn**	**13 50 11.2**	**+1.7**
MDNY	**Mudanya-Bursa**	**1.24**	**356**	*e*Pn	**Pn**	**13 49 52.7**	**0.0**
MDNY				*e*Sn	**Sn**	**13 50 11.2**	**+1.7**
CAVI	**Cavuskoy**	**1.25**	**31**	*e*PN	**Pg**	**13 49 53.1**	**-0.1**
CAVI	**Cavuskoy**	**1.25**	**31**	*e*Pn	**Pg**	**13 49 53.1**	**-0.1**
IZI	**Iznik**	**1.26**	**16**	*e*PN	**Pg**	**13 49 53.5**	**+0.2**
IZI	**Iznik**	**1.26**	**16**	*e*Pn	**Pg**	**13 49 53.5**	**+0.2**
GONE	**Gonen-Balikesi**	**1.37**	**312**	*e*PN	**Pg**	**13 49 55.6**	**+0.1**
GONE	**Gonen-Balikesi**	**1.37**	**312**	*e*Pn	**Pg**	**13 49 55.6**	**+0.1**
ADVT	**Abdulvahap**	**1.42**	**23**	*e*PN	**Pb**	**13 49 55.6**	**-0.2**
ADVT	**Abdulvahap**	**1.42**	**23**	*e*Pn	**Pb**	**13 49 55.6**	**-0.2**
ARMT	**Armutlu**	**1.44**	**356**	*e*PN	**Pg**	**13 49 57.0**	**+0.3**
ARMT	**Armutlu**	**1.44**	**356**	*e*Pn	**Pg**	**13 49 57.0**	**+0.3**

IDC 20 13:54:55.0±2.1, 3.°51N×125.°60E, h0km, mb3.4/3, mb1 3.6/3, mb1mx3.3/50, mbtmp3.4/3, Error ellipse: s-maj=201.0km s-min=25.7km az=65.0, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**24.84**	**160**	P	P	14 00 19.4	+0.2
	0.6nm,0.7s,baz=338,slow=10,SNR=6.3						
ASAR	**Alice Springs**	**28.20**	**164**	P	P	14 00 49.4	-0.2
	0.5nm,1.0s,baz=348,slow=7.5,SNR=3.5						
MKAR	**Makanchi Array**	**57.10**	**326**	P	P	14 04 43.2	-0.1
	0.2nm,0.5s,baz=123,slow=6.5,SNR=4.8						

*DDA **20** 13:55:16.0, 39.°12N×29.°10E, h7km, Md2.7*
*CSEM **20** 13:55:17.2±0.3, 39.°12N×29.°11E, h2km, ML2.2, Error ellipse: s-maj=6.0km s-min=5.3km az=95.0*
*ISK **20** 13:55:20.9, 39.°38N×29.°22E, h5km, ML2.2*
ISC 20 13:55:16.2±1.0, 39.°11N±0.°03×29.°09E±0.°03, h13km±8km, n28, σ0s72/40, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.30**	**258**	P	**Pg**	**13 55 22.4**	**+0.1**
DEMI				S	**Sg**	**13 55 26.2**	**-0.3**
DEMI	**Demirci**	**0.30**	**258**	*i* P	**Pg**	**13 55 22.4**	**+0.1**
DEMI				*i* S	**Sg**	**13 55 26.2**	**-0.3**
TVSB	**Tavsanli**	**0.45**	**40**	*e*PG	**Pg**	**13 55 25.6**	**+0.5**
TVSB	**Tavsanli**	**0.45**	**40**	*e*Pg	**Pg**	**13 55 25.6**	**+0.5**
DURS	**Dursunbey**	**0.69**	**316**	P	**Pg**	**13 55 29.8**	**+0.2**
DURS				S	**Sn**	**13 55 42.2**	**-0.2**
DURS	**Dursunbey**	**0.69**	**316**	*i* P	**Pg**	**13 55 29.8**	**+0.2**
DURS				*i* S	**Sn**	**13 55 42.2**	**-0.2**
KHAL	**Karahalli**	**0.80**	**157**	P	**Pn**	**13 55 33.5**	**+0.2**
KHAL				S	**Sb**	**13 55 42.6**	**-0.1**
KHAL	**Karahalli**	**0.80**	**157**	*i* P	**Pn**	**13 55 33.5**	**+0.2**
KHAL				*i* S	**Sb**	**13 55 42.6**	**-0.1**
KHL	**Karahalli**	**0.85**	**156**	*e*PN	Pn	13 55 43.0	+9.1
ORLT	**Orhaneli**	**0.95**	**351**	*e*PG	**Pn**	**13 55 35.3**	**0.0**
ORLT				*e*SG	**Sg**	**13 55 46.5**	**-0.5**
ORLT	**Orhaneli**	**0.95**	**351**	*e*Pg	**Pn**	**13 55 35.3**	**0.0**
ORLT				*e*Sg	**Sg**	**13 55 46.5**	**-0.5**
IGD	**Bursa**	**1.16**	**4**	*i* P	**Pb**	**13 55 37.6**	**-0.5**
IGD				*i* S	**Sn**	**13 55 53.9**	**0.0**
CAVI	**Cavuskoy**	**1.24**	**28**	*e*PG	**Pg**	**13 55 40.4**	**+0.4**
CAVI				*e*SG	**Sb**	**13 55 54.3**	**-1.1**
CAVI	**Cavuskoy**	**1.24**	**28**	*e*Pg	**Pg**	**13 55 40.4**	**+0.4**
CAVI				*e*Sg	**Sb**	**13 55 54.3**	**-1.1**
IZI	**Iznik**	**1.27**	**13**	*e*PG	**Pg**	**13 55 41.0**	**+0.5**
IZI	**Iznik**	**1.27**	**13**	*e*Pg	**Pg**	**13 55 41.0**	**+0.5**
MDNY	**Mudanya-Bursa**	**1.27**	**353**	*e*PG	**Pg**	**13 55 41.9**	**+1.2**
MDNY	**Mudanya-Bursa**	**1.27**	**353**	*e*Pg	**Pg**	**13 55 41.9**	**+1.2**
KCTX	**Karacabey (Bur**	**1.29**	**334**	*e*PN	**Pg**	**13 55 43.0**	**+2.0**
KCTX	**Karacabey (Bur**	**1.29**	**334**	*e*Pn	**Pg**	**13 55 43.0**	**+2.0**
BORA	**Eskisehir**	**1.31**	**53**	P	**Pb**	**13 55 40.9**	**+0.2**
BORA				S	**Sg**	**13 55 58.4**	**0.0**
BORA	**Eskisehir**	**1.31**	**53**	*i* P	**Pb**	**13 55 40.9**	**+0.2**
BORA				*i* S	**Sg**	**13 55 58.4**	**0.0**
ADVT	**Abdulvahap**	**1.42**	**20**	*e*PN	**Pg**	**13 55 43.8**	**+0.4**
ADVT	**Abdulvahap**	**1.42**	**20**	*e*Pn	**Pg**	**13 55 43.8**	**+0.4**
ARMT	**Armutlu**	**1.47**	**353**	*e*PN	**Pg**	**13 55 45.3**	**+0.9**
ARMT	**Armutlu**	**1.47**	**353**	*e*Pn	**Pg**	**13 55 45.3**	**+0.9**
GULT	**Gulveren**	**1.72**	**39**	*e*PN	**Pg**	**13 55 49.5**	**+0.3**
GULT	**Gulveren**	**1.72**	**39**	*e*Pn	**Pg**	**13 55 49.5**	**+0.3**

*ATH **20** 13:57:59.3, 34.°61N×23.°75E, h11km±5km, ML3.0/5, Error ellipse: s-maj=6.0km s-min=1.8km az=49.0*
*CSEM **20** 13:57:59.1±0.6, 34.°59N×23.°75E, h2km, ML3.5, Error ellipse: s-maj=10.9km s-min=6.1km az=9.0*
*THE **20** 13:58:00.6, 34.°68N×23.°80E, h0km±3km, ML3.5/4, Error ellipse: s-maj=4.9km s-min=1.1km az=214.0*
ISC 20 13:57:59.9±2.2, 34.°7N±0.°1×23.°76E±0.°07, h15km±13km, n25, σ0s48/38, Crete

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GVD	**Gavdhos**	**0.30**	**61**	P	**Pb**	**13 58 07.0**	**-0.1**
GVD				S	**Sb**	**13 58 11.3**	**-0.7**
GVD	**Gavdhos**	**0.30**	**61**	P	**Pb**	**13 58 07.0**	**-0.1**
GVD				S	**Sb**	**13 58 11.8**	**-0.2**
GVD	**Gavdhos**	**0.30**	**61**	P	**Pb**	**13 58 07.5**	**+0.3**
GVD				S	**Sb**	**13 58 11.8**	**-0.2**
GVD				AML	AML	13 58 13.0	
	comp=N,28066μm,0.3s						
GVD				AML	AML	13 58 13.9	
	comp=E,18644μm,0.2s						
IMMV	**Iera Moni Meta**	**0.79**	**13**	P	**Pb**	**13 58 15.5**	**+0.1**
IMMV				S	**Sn**	**13 58 28.0**	**-0.1**
IMMV	**Iera Moni Meta**	**0.79**	**13**	P	**Pb**	**13 58 15.5**	**+0.1**
IMMV				S	**Sn**	**13 58 28.0**	**-0.1**
IMMV	**Iera Moni Meta**	**0.79**	**13**	P	**Pg**	**13 58 15.2**	**0.0**
IMMV				S	**Sn**	**13 58 28.3**	**+0.2**
IMMV				AML	AML	13 58 28.9	
	comp=N,3019μm,0.3s						
IMMV				AML	AML	13 58 28.9	
	comp=E,6085μm,0.3s						
VAM	**Vamos**	**0.80**	**27**	P	**Pb**	**13 58 15.7**	**+0.1**
VAM				S	**Sn**	**13 58 28.5**	**+0.1**
VAM	**Vamos**	**0.80**	**27**	P	**Pb**	**13 58 15.7**	**+0.1**
VAM				S	**Sn**	**13 58 28.5**	**+0.1**
SIVA	**Sivas**	**0.92**	**69**	P	**Pn**	**13 58 18.0**	**-0.3**
SIVA				S	**Sn**	**13 58 31.1**	**-0.2**
SIVA	**Sivas**	**0.92**	**69**	P	**Pn**	**13 58 18.0**	**-0.3**
SIVA				S	**Sn**	**13 58 31.1**	**-0.2**
SIVA	**Sivas**	**0.92**	**69**	P	**Pn**	**13 58 18.4**	**0.0**
SIVA				AML	AML	13 58 41.4	
	comp=E,1548μm,0.5s						
SIVA				AML	AML	13 58 48.2	
	comp=N,1258μm,0.4s						
IDI	**Anoyia**	**1.10**	**57**	P	**Pb**	**13 58 20.3**	**-0.4**
IDI				S	**Sn**	**13 58 37.3**	**+1.4**
IDI	**Anoyia**	**1.10**	**57**	P	**Pb**	**13 58 20.3**	**-0.4**
IDI				S	**Sn**	**13 58 37.3**	**+1.4**
IDI	**Anoyia**	**1.10**	**57**	P	**Pb**	**13 58 19.9**	**-0.9**
IDI				S	**Sn**	**13 58 36.7**	**+0.8**
IDI				AML	AML	13 58 43.2	
	comp=E,387μm,0.5s						
IDI				AML	AML	13 58 46.0	
	comp=N,342μm,0.4s						
ANKY	**Antikythira Is**	**1.23**	**342**	P	**Pg**	**13 58 24.0**	**+0.3**
ANKY	**Antikythira Is**	**1.23**	**342**	P	**Pg**	**13 58 24.1**	**+0.3**
ANKY	**Antikythira Is**	**1.23**	**342**	P	**Pg**	**13 58 24.1**	**+0.3**
ANKY				AML	AML	13 58 55.4	
	comp=N,290μm,0.5s						
ANKY				AML	AML	13 58 57.1	
	comp=E,282μm,0.6s						
LAST	**Lasithi**	**1.49**	**71**	P	**Pb**	**13 58 27.5**	**+0.2**
LAST	**Lasithi**	**1.49**	**71**	P	**Pb**	**13 58 27.5**	**+0.2**
LAST	**Lasithi**	**1.49**	**71**	P	**Pb**	**13 58 27.5**	**+0.2**
KYTH	**Kithira**	**1.69**	**340**	P	**Pb**	**13 58 31.0**	**+0.2**
KYTH	**Kithira**	**1.69**	**340**	P	**Pb**	**13 58 31.0**	**+0.2**
KYTH	**Kithira**	**1.69**	**340**	P	**Pg**	**13 58 32.5**	**0.0**
VLI	**Veliai**	**2.13**	**342**	P	**Pb**	**13 58 37.8**	**-0.5**
VLI	**Veliai**	**2.13**	**342**	P	**Pb**	**13 58 37.8**	**-0.5**

*ISK **20** 13:58:39.4, 38.°99N×28.°63E, h2km, ML2.7*
*ISCJB **20** 13:58:42.6±0.8, 39.°08N±0.°04×29.°08E±0.°05, h10km±6km, Error ellipse: s-maj=8.0km s-min=5.6km az=28.5*
*CSEM **20** 13:58:42.8±0.5, 39.°11N×29.°07E, h5km, MD2.6, Error ellipse: s-maj=11.4km s-min=8.9km az=31.0*
*DDA **20** 13:58:42.6, 39.°16N×29.°11E, h7km, Md2.6*
ISC 20 13:58:42.4±1.2, 39.°10N±0.°03×29.°07E±0.°03, h7km±11km, n23, σ0s79/34, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.32**	**92**	P	**Pg**	**13 58 48.8**	**+0.1**
GDZ				S	**Sg**	**13 58 53.0**	**0.0**
GDZ	**Gediz**	**0.32**	**92**	*i* P	**Pg**	**13 58 48.8**	**+0.1**
GDZ				*i* S	**Sg**	**13 58 53.0**	**0.0**
DURS	**Dursunbey**	**0.68**	**318**	P	**Pg**	**13 58 55.7**	**+0.2**
DURS				S	**Sb**	**13 59 07.0**	**+0.7**
DURS	**Dursunbey**	**0.68**	**318**	*i* P	**Pg**	**13 58 55.7**	**+0.2**
DURS				*i* S	**Sb**	**13 59 07.0**	**+0.7**
KHL	**Karahalli**	**0.85**	**155**	*e*PG	**Pg**	**13 58 59.0**	**+0.3**
KHL	**Karahalli**	**0.85**	**155**	*e*Pg	**Pg**	**13 58 59.0**	**+0.3**
ORLT	**Orhaneli**	**0.96**	**352**	*e*PG	**Pg**	**13 59 00.4**	**-0.3**
ORLT				*e*SG	**Sn**	**13 59 16.6**	**+0.5**
ORLT	**Orhaneli**	**0.96**	**352**	*e*Pg	**Pg**	**13 59 00.4**	**-0.3**
ORLT				*e*Sg	**Sn**	**13 59 16.6**	**+0.5**
AKHS	**Akhisar**	**1.00**	**258**	P	**Pn**	**13 59 03.1**	**+0.3**
AKHS	**Akhisar**	**1.00**	**258**	*i* P	**Pn**	**13 59 03.1**	**+0.3**
IGD	**Bursa**	**1.17**	**5**	*i* P	**Pb**	**13 59 04.0**	**-0.9**
IGD				*i* S	**Sg**	**13 59 20.1**	**+0.2**
CAVI	**Cavuskoy**	**1.25**	**28**	*e*PN	**Pg**	**13 59 08.6**	**+2.2**
CAVI	**Cavuskoy**	**1.25**	**28**	*e*Pn	**Pg**	**13 59 08.6**	**+2.2**
MDNY	**Mudanya-Bursa**	**1.28**	**354**	*e*PN	**Pn**	**13 59 06.2**	**-0.4**
MDNY	**Mudanya-Bursa**	**1.28**	**354**	*e*Pn	**Pn**	**13 59 06.2**	**-0.4**
KCTX	**Karacabey (Bur**	**1.29**	**335**	*e*PN	**Pn**	**13 59 05.2**	**-1.6**
KCTX				*e*SN	**Sg**	**13 59 23.7**	**-0.1**
KCTX	**Karacabey (Bur**	**1.29**	**335**	*e*Pn	**Pn**	**13 59 05.2**	**-1.6**
KCTX				*e*Sn	**Sg**	**13 59 23.7**	**-0.1**
BORA	**Eskisehir**	**1.33**	**53**	P	**Pn**	**13 59 07.0**	**-0.4**
BORA				S	**Sb**	**13 59 24.4**	**-0.4**
BORA	**Eskisehir**	**1.33**	**53**	*i* P	**Pn**	**13 59 07.0**	**-0.4**
BORA				*i* S	**Sb**	**13 59 24.4**	**-0.4**
ARMT	**Armutlu**	**1.47**	**354**	*e*PN	**Pb**	**13 59 10.0**	**-0.1**
ARMT	**Armutlu**	**1.47**	**354**	*e*Pn	**Pb**	**13 59 10.0**	**-0.1**
GULT	**Gulveren**	**1.74**	**39**	*e*PN	**Pg**	**13 59 16.1**	**+0.5**
GULT	**Gulveren**	**1.74**	**39**	*e*Pn	**Pg**	**13 59 16.1**	**+0.5**

*IDC **20** 14:00:48.2±0.8, 0.°59N×79.°74W, h0km, mb3.9/11, mb1 4.2/12, mb1mx4.0/37, mbtmp4.0/12, ML3.7/1, MS3.4/12, Ms1 3.4/12, ms1mx3.2/39, Error ellipse: s-maj=33.9km s-min=16.0km az=65.0*
*NEIC **20** 14:00:49.0, 0.°51N×79.°87W, h17km, mb4.1/2, MD4.5(IGQ), After IGQ.*
ISC 20 14:00:51.0±0.6, 0.°62N±0.°06×79.°82W±0.°07, h17km, n45, σ1s85/30, mb4.1/11, MS3.6/9, Near coast of Ecuador

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OTAV	**Otavalo**	**1.42**	**106**	*e*Pn	**Pb**	**14 01 17.1**	**-0.2**
OTAV				*e*Sn	**Sg**	**14 01 38.3**	**+1.3**
OTAV	**Otavalo**	**1.42**	**106**	*e*P	**Pn**	**14 01 16.5**	**0.0**
GRGC	**Isla de Gorgon**	**2.88**	**35**	*e*P	**Pn**	**14 01 36.3**	**+0.1**
CRUC	**La Cruz**	**3.02**	**72**	*e*P	**Pb**	**14 01 42.0**	**-2.6**
POPC	**Popayan, Colom**	**3.67**	**59**	*e*P	**Pb**	**14 01 52.1**	**-3.5**
MALC	**Bahia Malaga**	**4.18**	**36**	*e*P	**Pb**	**14 02 01.8**	**-2.5**
FLOC	**Florencia**	**4.27**	**77**	*e*P	Pb	14 02 00.6	-5.2
PRAC	**Prado**	**5.81**	**58**	*e*P	Pn	14 02 22.7	+6.2
TOLC	**Tolima**	**5.97**	**49**	*e*P	Pn	14 02 24.9	+5.9
GUYC	**Guyana, Colomb**	**6.36**	**44**	*e*P	Pn	14 02 31.7	+7.3
ROSC	**El Rosal**	**6.91**	**53**	Pn	**Pn**	**14 02 36.2**	**+4.2**
	0.5nm,0.3s,baz=316,slow=8.2,SNR=1.8						
ROSC				Sn	Sn	14 04 00.8	+10
	2.2nm,0.3s,baz=224,slow=16,SNR=1.6						
ROSC				LR	LR	14 05 27.8	
	comp=Z,196nm,20.2s,baz=222,slow=41						
ROSC	**El Rosal**	**6.91**	**53**	*e*P	Pn	14 02 38.0	+6.0
NORC	**Norcasia**	**6.96**	**45**	*e*P	Pn	14 02 40.8	+8.4
HELC	**Santa Helena**	**6.99**	**38**	*e*P	Pb	14 02 42.5	-10
VILC	**Villavicencio,**	**7.03**	**60**	*e*P	Pn	14 02 38.5	+5.1
DBBC	**Dabeiba**	**7.30**	**29**	*e*P	Pb	14 02 47.0	-10
ATAH	**Atahualpa**	**7.83**	**170**	Pn	**Pn**	**14 02 44.6**	**-0.1**
	1.1nm,0.3s,baz=18,slow=4.9,SNR=8.0						
ATAH				Sn	**Sn**	**14 04 11.0**	**-2.2**
	0.8nm,0.3s,baz=288,slow=20,SNR=2.8						
ATAH				LR	LR	14 06 03.4	
	comp=Z,286nm,21.9s,baz=345,slow=40						
BARC	**Barichara**	**8.89**	**48**	*e*P	Pn	14 03 05.7	+6.7
NNA	**Nana**	**12.87**	**167**	LR	LR	14 09 57.4	
	comp=Z,58nm,19.1s,baz=339,slow=43						
SAML	**Samuel**	**19.11**	**120**	*e*P	**P**	**14 05 11.9**	**-1.4**
	5.8nm,0.7s						
PTGA	**Pitinga**	**19.90**	**94**	P	**Pn**	**14 05 24.3**	**+0.7**
	0.4nm,0.3s,baz=288,slow=13,SNR=3.6						
PTGA				LR	LR	14 13 47.8	
	comp=Z,70nm,21.0s,baz=279,slow=39						
SDDR	**Presa de Saban**	**20.07**	**24**	P	Pn	14 05 27.0	+1.4
	15nm,1.0s						
LPAZ	**La Paz**	**20.38**	**146**	P	**P**	**14 05 28.5**	**+0.7**
	3.2nm,0.6s,baz=333,slow=12,SNR=14						
LPAZ				LR	LR	14 14 59.9	
	comp=Z,219nm,18.6s,baz=298,slow=42						
TEIG	**Tepich**	**21.17**	**338**	LR	LR	14 13 34.2	
	comp=Z,50nm,18.5s,baz=38,slow=36						
SIV	**San Ignacio**	**24.80**	**133**	P	**P**	**14 06 11.3**	**-1.2**
	1.3nm,0.4s,baz=312,slow=13,SNR=6.2						
SIV				LR	LR	14 17 32.7	
	comp=Z,209nm,19.1s,baz=3.5,slow=41						
CPUP	**Villa Florida**	**34.47**	**143**	LR	LR	14 24 58.6	
	comp=Z,160nm,18.0s,baz=328,slow=42						
TKL	**Tuckaleechee C**	**35.05**	**354**	LR	LR	14 21 10.1	
	comp=Z,49nm,21.6s,baz=190,slow=35						
TXAR	**Lajitas Array**	**36.50**	**324**	PcP	**PcP**	**14 10 20.1**	**+0.6**
	0.7nm,0.8s,baz=126,slow=4.6,SNR=3.9						
PLCA	**Paso Flores**	**42.02**	**169**	P	**P**	**14 08 40.4**	**-1.3**
	1.7nm,0.7s,baz=23,slow=8.9,SNR=5.6						
PDAR	**Pinedale Array**	**49.71**	**331**	P	**P**	**14 09 43.2**	**+0.6**
	0.4nm,0.8s,baz=129,slow=7.2,SNR=2.1						
NVAR	**Mina Array Bea**	**51.58**	**321**	P	**P**	**14 09 58.5**	**+1.7**
	2.4nm,0.9s,baz=128,slow=8.6,SNR=4.4						
YKA	**Yellowknife Ar**	**66.99**	**343**	P	**P**	**14 11 42.7**	**0.0**
	0.9nm,0.7s,baz=137,slow=6.1,SNR=19						
LIC	**Lamto**	**74.81**	**84**	*e*P	**P**	**14 12 34.7**	**+3.5**
TIC	**Toumodi**	**74.83**	**83**	*e*P	**P**	**14 12 35.5**	**+4.2**
DBIC	**Dimbokro**	**74.99**	**83**	P	**P**	**14 12 31.7**	**-0.5**
	2.5nm,0.7s,baz=219,slow=5.1,SNR=3.9						
DBIC				LR	LR	14 43 21.1	
	comp=Z,29nm,19.0s,baz=272,slow=34						
KIC	**Kosan Boka**	**75.10**	**84**	*e*P	**P**	**14 12 32.5**	**-0.4**
	21nm,0.9s						
ESDC	**Sonseca Array**	**78.73**	**50**	P	**P**	**14 12 53.4**	**+0.5**
	1.2nm,0.7s,baz=266,slow=5.0,SNR=7.1						
ILAR	**Eielson Array**	**79.82**	**336**	P	**P**	**14 12 58.0**	**-0.3**
	0.5nm,0.9s,baz=113,slow=6.9,SNR=3.3						
RAR	**Rarotonga**	**80.86**	**249**	LR	LR	14 40 11.4	
	comp=Z,301nm,20.5s,baz=108,slow=29						
TORD	**Torodi Ar. Bea**	**81.59**	**77**	P	**P**	**14 13 08.3**	**-0.5**
	1.6nm,0.6s,baz=279,slow=6.2,SNR=12						
TORD				LR	LR	14 49 35.5	
	comp=Z,24nm,18.4s,baz=290,slow=36						
EKA	**Eskdalemuir Ar**	**81.91**	**34**	P	**P**	**14 13 09.3**	**-0.3**
	2.7nm,0.7s,baz=247,slow=4.5,SNR=4.8						
VRAC	**Vranov**	**93.72**	**41**	LR	LR	14 53 52.0	
	comp=Z,15nm,22.0s,baz=358,slow=34						
ZALV	**Zalesovo Beam**	**124.14**	**11**	PKP	**PKPdf**	**14 19 47.7**	**-1.0**
	0.5nm,0.4s,baz=320,slow=1.9,SNR=3.4						
MKAR	**Makanchi Array**	**130.24**	**16**	PKP	**PKPdf**	**14 19 59.9**	**-0.8**
	0.2nm,0.4s,baz=270,slow=1.4,SNR=3.0						
WRA	**Warramunga Arr**	**141.45**	**238**	PKP	**PKPdf**	**14 20 21.4**	**-0.8**
	0.8nm,0.9s,baz=112,slow=2.5,SNR=5.5						

*DDA **20** 14:08:05.9, 39.°11N×29.°01E, h7km, Ml3.0*
*CSEM **20** 14:08:06.9±0.2, 39.°05N×29.°04E, h2km, ML3.0, Error ellipse: s-maj=4.0km s-min=3.5km az=131.0*
*ISK **20** 14:08:06.5, 39.°02N×29.°09E, h6km, MD2.8*
ISC 20 14:08:06.6±1.1, 39.°04N±0.°02×29.°02E±0.°02, h5km±10km, n48, σ0s76/57, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**272**	*i* P	**Pg**	**14 08 11.4**	**+0.1**
DEMI				*i* S	**Sg**	**14 08 14.4**	**-0.1**
GDZ	**Gediz**	**0.36**	**81**	P	**Pg**	**14 08 13.5**	**-0.2**
GDZ				S	**Sg**	**14 08 18.9**	**+0.4**
GDZ	**Gediz**	**0.36**	**81**	*i* P	**Pg**	**14 08 13.5**	**-0.2**
GDZ				*i* S	**Sg**	**14 08 18.9**	**+0.4**
TVSB	**Tavsanli**	**0.54**	**39**	*e*PG	**Pg**	**14 08 17.0**	**0.0**
TVSB	**Tavsanli**	**0.54**	**39**	*e*Pg	**Pg**	**14 08 17.0**	**0.0**
KULA	**Kula-Manisa**	**0.59**	**208**	*e*PG	**Pg**	**14 08 18.4**	**+0.4**
KULA				*e*SG	**Sb**	**14 08 27.4**	**-0.8**
KULA	**Kula-Manisa**	**0.59**	**208**	*e*Pg	**Pg**	**14 08 18.4**	**+0.4**
KULA				*e*Sg	**Sb**	**14 08 27.4**	**-0.8**
DURS	**Dursunbey**	**0.71**	**323**	P	**Pg**	**14 08 18.5**	**-1.7**
DURS	**Dursunbey**	**0.71**	**323**	*i* P	**Pg**	**14 08 18.5**	**-1.7**
KHAL	**Karahalli**	**0.76**	**151**	P	**Pb**	**14 08 23.0**	**+0.6**
KHAL	**Karahalli**	**0.76**	**151**	*i* P	**Pb**	**14 08 23.0**	**+0.6**
KHL	**Karahalli**	**0.81**	**151**	*e*PG	**Pg**	**14 08 21.6**	**-0.6**
KHL	**Karahalli**	**0.81**	**151**	*e*Pg	**Pg**	**14 08 21.6**	**-0.6**
AKHS	**Akhisar**	**0.95**	**261**	P	**Pb**	**14 08 25.6**	**0.0**
AKHS	**Akhisar**	**0.95**	**261**	*i* P	**Pb**	**14 08 25.6**	**0.0**
AKS	**Akhisar**	**0.95**	**261**	*e*PG	**Pn**	**14 08 26.3**	**-0.4**
AKS	**Akhisar**	**0.95**	**261**	*e*Pg	**Pn**	**14 08 26.3**	**-0.4**
ORLT	**Orhaneli**	**1.01**	**355**	*e*PG	**Pg**	**14 08 26.4**	**+0.3**
ORLT	**Orhaneli**	**1.01**	**355**	*e*Pg	**Pg**	**14 08 26.4**	**+0.3**
BALB	**Balikesir**	**1.07**	**305**	*e*PN	**Pn**	**14 08 28.4**	**+0.1**
BALB				*e*SN	**Sn**	**14 08 44.3**	**+0.8**
BALB	**Balikesir**	**1.07**	**305**	*e*Pn	**Pn**	**14 08 28.4**	**+0.1**
BALB				*e*Sn	**Sn**	**14 08 44.3**	**+0.8**
IGD	**Bursa**	**1.23**	**6**	*i* P	**Pn**	**14 08 27.6**	**-2.9**
CAVI	**Cavuskoy**	**1.33**	**28**	*e*PN	**Pb**	**14 08 32.0**	**0.0**
CAVI				*e*SN	**Sg**	**14 08 50.1**	**+0.8**
CAVI	**Cavuskoy**	**1.33**	**28**	*e*Pn	**Pb**	**14 08 32.1**	**0.0**
CAVI				*e*Sn	**Sg**	**14 08 50.1**	**+0.8**
KCTX	**Karacabey (Bur**	**1.33**	**338**	*e*PN	**Pg**	**14 08 33.0**	**+0.8**
KCTX	**Karacabey (Bur**	**1.33**	**338**	*e*Pn	**Pg**	**14 08 33.0**	**+0.8**
MDNY	**Mudanya-Bursa**	**1.34**	**356**	*e*PN	**Pg**	**14 08 32.8**	**+0.5**
MDNY	**Mudanya-Bursa**	**1

PFO	**Pinyon Flats O**	**84.78**	**55**	LR	LR	14 59 07.1
	comp=Z,50nm,18.2s,baz=38,slow=33					
PDAR	**Pinedale Array**	**85.19**	**45**	P	**P**	**14 25 04.8 +0.6**
	0.3nm,0.7s,baz=254,slow=3.4,SNR=2.5					
NB2	**NORSAR Subarra**	**85.28**	**338**	P	**P**	**14 25 03.5 -0.5**
	comp=Z,0.7nm,0.5s,baz=43,slow=4.8					
NOA	**NORSAR Array B**	**85.28**	**338**	P	**P**	**14 25 03.8 -0.2**
	comp=Z,0.9nm,0.5s,baz=53,slow=6.5,SNR=4.7					
BRTR	**Keskin Array B**	**87.37**	**313**	P	**P**	**14 25 14.9 0.0**
	comp=Z,0.5nm,0.6s,baz=67,slow=4.2,SNR=3.7					
EIL	**Elat**	**91.58**	**304**	LR	LR	15 10 49.0
	comp=Z,13nm,18.9s,baz=56,slow=38					
GERES	**GERESS Array B**	**93.11**	**329**	P	**P**	**14 25 42.5 +1.1**
	comp=Z,0.3nm,0.5s,baz=42,slow=2.2,SNR=3.5					
LPAZ	**La Paz**	**150.00**	**78**	PKPbc	**PKPbc**	**14 32 19.0 -0.3**
	comp=Z,1.0nm,0.7s,baz=215,slow=4.4,SNR=3.9					

*ISCJB **20** 14:18:27.7±0.7, 19°.35N±0°.09×69°.40W±0°.08, h50km, mb3.8/9, MS2.8/2, Error ellipse: s-maj=14.9km s-min=9.2km az=31.3*
*IDC **20** 14:18:31.1±0.8, 19°.23N×69°.48W, h67km±8km, mb3.5/9, mb1 3.8/11, mb1mx3.6/46, mbtmp3.8/11, MS2.8/2, Ms1 2.9/2, ms1mx2.5/36, Error ellipse: s-maj=21.9km s-min=13.9km az=44.0*

ISC 20 14:18:30.3±0.7, 19°.23N×69°.51W±0°.08, h50km, n14, σ2°.22/17, mb3.8/9, Dominican Republic region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SJG	**San Juan**	**3.38**	**109**	P	**Pn**	**14 19 23.0**	**+2.5**
	13nm,0.3s,baz=311,slow=14,SNR=7.7						
SJG				S	**Sn**	**14 19 57.5**	**-1.8**
	73nm,0.3s,baz=252,slow=20,SNR=53						
SJG	**San Juan**	**3.38**	**109**	*e*P	**Pn**	**14 19 24.6**	**+4.1**
PCRV	**Puerto La Cruz**	**10.16**	**152**	P	**Pn**	**14 20 55.7**	**+2.1**
	2.2nm,0.3s,baz=347,slow=13,SNR=7.2						
PCRV				S	Sn	14 22 39.0	-7.2
	1.0nm,0.3s,baz=34,slow=11,SNR=2.3						
RUSC	**La Rusia**	**13.71**	**195**	*e*P	**Pn**	**14 21 44.5**	**+2.0**
PTGA	**Pitinga**	**21.94**	**154**	P	**P**	**14 23 18.6**	**-1.2**
	1.2nm,0.4s,baz=2.0,slow=9.8,SNR=3.8						
PTGA				LR	LR	14 31 13.6	
	comp=Z,19nm,20.6s,baz=5.5,slow=35						
TXAR	**Lajitas Array**	**32.61**	**295**	P	**P**	**14 24 57.0**	**-0.6**
	0.5nm,0.7s,baz=111,slow=10.0,SNR=3.0						
LPAZ	**La Paz**	**35.32**	**178**	P	**P**	**14 25 21.9**	**+0.4**
	1.3nm,0.6s,baz=331,slow=6.6,SNR=6.7						
PDAR	**Pinedale Array**	**41.05**	**314**	P	**P**	**14 26 10.2**	**+1.0**
	0.3nm,0.5s,baz=110,slow=9.8,SNR=3.7						
PDAR				pP	**pP**	**14 26 24.8**	**+2.3**
	0.1nm,0.4s,baz=97,slow=7.5,SNR=1.7						
NVAR	**Mina Array Bea**	**46.25**	**305**	P	**P**	**14 26 50.1**	**-1.0**
	0.2nm,0.3s,baz=120,slow=5.3,SNR=4.2						
NVAR				pP	**pP**	**14 27 05.7**	**+1.2**
	0.1nm,0.3s,baz=101,slow=8.4,SNR=2.1						
CPUP	**Villa Florida**	**46.81**	**165**	P	**P**	**14 26 52.6**	**-2.6**
	1.3nm,0.4s,baz=350,slow=6.9,SNR=4.9						
YKA	**Yellowknife Ar**	**53.15**	**336**	pP	pP	14 27 59.9	+3.3
	0.4nm,0.6s,baz=116,slow=7.4,SNR=5.3						
ESDC	**Sonseca Array**	**59.33**	**55**	P	**P**	**14 28 25.7**	**-1.7**
	0.4nm,0.5s,baz=246,slow=7.7,SNR=3.3						
ESDC				LR	LR	14 50 03.8	
	comp=Z,12nm,20.1s,baz=145,slow=32						
PLCA	**Paso Flores**	**59.66**	**181**	P	**P**	**14 28 27.7**	**-1.8**
	2.7nm,0.9s,baz=34,slow=12,SNR=4.2						
TORD	**Torodi Ar. Bea**	**68.25**	**83**	P	**P**	**14 29 24.8**	**-1.6**
	0.9nm,0.7s,baz=298,slow=6.9,SNR=7.4						
TORD				pP	**pP**	**14 29 43.6**	**+3.0**
	0.5nm,1.0s,baz=282,slow=7.2,SNR=1.7						

IDC 20 14:23:16.9±2.4, 7°.59S×146°.96E, h0km, mb3.2/2, mb1 3.4/3, mb1mx3.2/36, mbtmp3.2/3, ML3.0/1, Error ellipse: s-maj=69.7km s-min=27.8km az=85.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**1.82**	**174**	Pn	Pb	14 23 50.6	-0.4
	1.4nm,0.3s,baz=37,slow=20,SNR=5.6						
PMG				Sn	Sg	14 24 23.5	+8.2
	0.9nm,0.3s,baz=353,slow=8.1,SNR=2.4						
WRA	**Warramunga Arr**	**17.34**	**224**	P	Pn	14 27 20.8	+0.4
	0.1nm,0.3s,baz=50,slow=11,SNR=4.9						
ASAR	**Alice Springs**	**20.31**	**217**	P	P	14 27 52.7	-1.9
	0.2nm,0.5s,baz=54,slow=9.0,SNR=5.2						
MKAR	**Makanchi Array**	**78.69**	**321**	P	P	14 35 21.4	+0.3
	0.4nm,0.5s,baz=98,slow=5.5,SNR=4.0						

*DDA **20** 14:38:06.9, 39°.11N×29°.00E, h7km, Ml2.7*
*CSEM **20** 14:38:07.8±0.2, 39°.09N×29°.01E, h2km, ML2.7, Error ellipse: s-maj=3.7km s-min=3.6km az=35.0*
*ISK **20** 14:38:07.3, 39°.12N×29°.00E, h5km, MD2.8*

ISC 20 14:38:07.4±0.9, 39°.08N±0°.02×28°.99E±0°.02, h10km±8km, n46, σ0°.54/60, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.22**	**260**	P	**Pg**	**14 38 12.1**	**+0.1**
DEMI				S	**Sg**	**14 38 15.3**	**+0.2**
DEMI	**Demirci**	**0.22**	**260**	*i* P	**Pg**	**14 38 12.1**	**+0.1**
DEMI				*i* S	**Sg**	**14 38 15.3**	**+0.2**
GDZ	**Gediz**	**0.38**	**89**	P	**Pg**	**14 38 14.7**	**-0.3**
GDZ				S	**Sg**	**14 38 20.1**	**0.0**
GDZ	**Gediz**	**0.38**	**89**	*i* P	**Pg**	**14 38 14.7**	**-0.3**
GDZ				*i* S	**Sg**	**14 38 20.1**	**0.0**
TVSB	**Tavsanli**	**0.52**	**45**	*e*PG	**Pg**	**14 38 17.7**	**+0.1**
TVSB	**Tavsanli**	**0.52**	**45**	*e*Pg	**Pg**	**14 38 17.7**	**+0.1**
DURS	**Dursunbey**	**0.66**	**323**	P	**Pg**	**14 38 19.3**	**-0.9**
DURS				S	**Sg**	**14 38 28.7**	**-0.1**
DURS	**Dursunbey**	**0.66**	**323**	*i* P	**Pg**	**14 38 19.3**	**-0.9**
DURS				*i* S	**Sg**	**14 38 28.7**	**-0.1**
MANT	**Manisa**	**0.68**	**210**	P	**Pg**	**14 38 20.7**	**+0.1**
MANT				S	**Sg**	**14 38 29.8**	**+0.2**
MANT	**Manisa**	**0.68**	**210**	*i* P	**Pg**	**14 38 20.7**	**+0.1**
MANT				*i* S	**Sg**	**14 38 29.8**	**+0.2**
KHAL	**Karahalli**	**0.81**	**151**	P	**Pg**	**14 38 23.3**	**+0.2**
KHAL				S	**Sb**	**14 38 34.8**	**+0.1**
KHAL	**Karahalli**	**0.81**	**151**	*i* P	**Pg**	**14 38 23.3**	**+0.2**
KHAL				*i* S	**Sb**	**14 38 34.8**	**+0.1**
KHL	**Karahalli**	**0.86**	**151**	*e*PG	**Pn**	**14 38 25.8**	**+0.1**
KHL	**Karahalli**	**0.86**	**151**	*e*Pg	**Pn**	**14 38 25.8**	**+0.1**
AKS	**Akhisar**	**0.94**	**258**	*e*PG	**Pn**	**14 38 26.7**	**0.0**
AKS	**Akhisar**	**0.94**	**258**	*e*Pg	**Pn**	**14 38 26.7**	**0.0**
BALB	**Balikesir**	**1.03**	**303**	*e*PG	**Pn**	**14 38 27.9**	**0.0**
BALB				*e*SG	**Sn**	**14 38 42.5**	**+0.2**
BALB	**Balikesir**	**1.03**	**303**	*e*Pg	**Pn**	**14 38 27.9**	**0.0**
BALB				*e*Sg	**Sn**	**14 38 42.5**	**+0.2**
KCTX	**Karacabey (Bur**	**1.28**	**338**	*e*PN	**Pg**	**14 38 32.5**	**+0.5**
KCTX	**Karacabey (Bur**	**1.28**	**338**	*e*Pn	**Pg**	**14 38 32.5**	**+0.5**
MDNY	**Mudanya-Bursa**	**1.29**	**356**	*e*PN	**Pg**	**14 38 32.5**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.29**	**356**	*e*Pn	**Pg**	**14 38 32.5**	**+0.3**
CAVI	**Cavuskoy**	**1.30**	**30**	*e*PN	**Pb**	**14 38 32.0**	**0.0**
CAVI				*e*SN	**Sg**	**14 38 51.3**	**+2.0**
CAVI	**Cavuskoy**	**1.30**	**30**	*e*Pn	**Pb**	**14 38 32.0**	**0.0**
CAVI				*e*Sn	**Sg**	**14 38 51.3**	**+2.0**
IZI	**Iznik**	**1.31**	**16**	*e*PN	**Pg**	**14 38 32.8**	**+0.2**
IZI	**Iznik**	**1.31**	**16**	*e*Pn	**Pg**	**14 38 32.8**	**+0.2**
BORA	**Eskisehir**	**1.39**	**54**	P	**Pn**	**14 38 32.7**	**-0.2**
BORA	**Eskisehir**	**1.39**	**54**	*i* P	**Pn**	**14 38 32.7**	**-0.2**
GONE	**Gonen-Balikesi**	**1.40**	**314**	*e*PN	**Pg**	**14 38 34.5**	**+0.3**
GONE	**Gonen-Balikesi**	**1.40**	**314**	*e*Pn	**Pg**	**14 38 34.5**	**+0.3**
ADVT	**Abdulvahap**	**1.47**	**23**	*e*PN	**Pg**	**14 38 35.4**	**-0.2**
ADVT	**Abdulvahap**	**1.47**	**23**	*e*Pn	**Pg**	**14 38 35.4**	**-0.2**
ARMT	**Armutlu**	**1.49**	**356**	*e*PN	**Pg**	**14 38 35.8**	**-0.2**
ARMT	**Armutlu**	**1.49**	**356**	*e*Pn	**Pg**	**14 38 35.8**	**-0.2**
ESKT	**Eskisehir**	**1.51**	**73**	*i* P	**Pn**	**14 38 33.8**	**-0.8**
SEYT	**Eskypehyr**	**1.51**	**73**	P	**Pn**	**14 38 33.8**	**-0.8**
EDC	**Edincik**	**1.54**	**326**	*e*PN	**Pg**	**14 38 36.5**	**-0.4**
EDC	**Edincik**	**1.54**	**326**	*e*Pn	**Pg**	**14 38 36.5**	**-0.4**
GULT	**Gulveren**	**1.79**	**41**	*e*PN	**Pb**	**14 38 40.4**	**+0.1**
GULT	**Gulveren**	**1.79**	**41**	*e*Pn	**Pb**	**14 38 40.4**	**+0.1**
HRT	**Hereke**	**1.81**	**16**	*e*PN	**Pb**	**14 38 40.5**	**-0.3**
HRT	**Hereke**	**1.81**	**16**	*e*Pn	**Pb**	**14 38 40.5**	**-0.3**
SILT	**Sile**	**2.13**	**13**	*e*PN	**Pb**	**14 38 45.3**	**-0.8**
SILT	**Sile**	**2.13**	**13**	*e*Pn	**Pb**	**14 38 45.3**	**-0.8**
MDUB	**Mudurnu**	**2.19**	**50**	*e*PN	**Pb**	**14 38 46.3**	**-1.0**
MDUB	**Mudurnu**	**2.19**	**50**	*e*Pn	**Pb**	**14 38 46.3**	**-1.0**

*ISCJB **20** 14:44:38.5±0.5, 32°.15N±0°.03×115°.13W±0°.05, h28km±4km,*

Error ellipse: s-maj=6.9km s-min=4.7km az=159.2
*ECX **20** 14:44:40.0±0.3, 32°.12N×115°.20W, h7km, MD3.4, ML3.6*
*MEX **20** 14:44:40.1±0.5, 32°.21N×115°.03W, h35km±7km, MD3.5*

ISC 20 14:44:38.4±1.0, 32°.14N±0°.03×115°.13W±0°.04, h28km±8km, n19, σ0°.42/30, 7D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MBIG	**Mexicali**	**0.27**	**349**	*e*P	**Pb**	**14 44 45.3**	**+0.1**
MBIG				*e*S	**Sb**	**14 44 50.1**	**+0.2**
MBIG	**Mexicali**	**0.27**	**349**	⇓*e*P	**Pb**	**14 44 45.4**	**+0.1**
CPBX	**Cerro Prieto**	**0.31**	**333**	⇓*e*P	**Pb**	**14 44 45.8**	**-0.1**
CPBX				⇓*e*P	**Pb**	**14 44 45.9**	**-0.1**
CPBX				*e*S	**Sb**	**14 44 50.4**	**-0.6**
CPBX				⇓*e*		14 44 52.0	
CPBX				AML	AML	14 44 52.0	
	comp=E,21μm,0.2s						
CPBX				*e*		14 44 52.1	
CPBX				AML	AML	14 44 52.1	
	comp=N,21μm,0.1s						
ECBX	**El Chinero**	**0.67**	**174**	⇓*e*P	**Pb**	**14 44 51.4**	**-0.1**
ECBX				*e*S	**Sb**	**14 45 00.3**	**-0.2**
ECBX				*e*S	**Sn**	**14 45 00.5**	**-1.1**
ECBX				AML	AML	14 45 01.4	
	comp=N,2μm,0.2s						
ECBX				AML	AML	14 45 02.0	
	comp=E,2μm,0.5s						
GLA	**Glamis**	**0.94**	**16**	P	**Pb**	**14 44 55.8**	**-0.5**
	baz=197						
GLA				S	**Sn**	**14 45 08.9**	**+0.4**
	baz=197						
IKP	**In-Ko-Pah, Jac**	**0.97**	**302**	P	**Pn**	**14 44 55.9**	**-0.3**
	baz=123						
IKP				S	**Sn**	**14 45 08.9**	**-0.2**
	baz=123						
SWSC	**Sam W. Stewart**	**0.98**	**325**	P	**Pn**	**14 44 55.6**	**-0.8**
	baz=147						
SPIG	**San Pedro Mart**	**1.13**	**195**	*e*P	**Pb**	**14 44 59.3**	**-0.2**
SPIG				*e*S	**Sb**	**14 45 14.2**	**+0.3**
SPIG	**San Pedro Mart**	**1.13**	**195**	⇓*e*P	**Pn**	**14 44 59.1**	**+0.4**
SPX	**San Pedro Mart**	**1.13**	**195**	⇓*e*P	**Pn**	**14 44 59.0**	**+0.4**
CBX	**Cerro Bola**	**1.31**	**278**	*e*P	**Pn**	**14 45 01.1**	**+0.2**
CBX				*e*S	**Sn**	**14 45 17.7**	**+0.2**
CBX	**Cerro Bola**	**1.31**	**278**	*e*P	**Pn**	**14 45 01.5**	**+0.5**
CBX				AML	AML	14 45 20.3	
	comp=N,1μm,0.3s						
MONP2	**Monument Peak**	**1.32**	**305**	P	**Pn**	**14 45 01.1**	**-0.1**
	baz=125						
MONP2				S	**Sb**	**14 45 19.5**	**+0.2**
	baz=125						
TJIG	**Tijuana**	**1.34**	**283**	*e*P	**Pn**	**14 45 01.5**	**+0.3**
TJIG				*e*S	**Sn**	**14 45 18.3**	**+0.1**
BC3	**Big Chuckawall**	**1.53**	**350**	P	**Pn**	**14 45 04.3**	**+0.2**
	baz=171						
109C	**Camp Elliot, M**	**1.82**	**295**	Sb	**Sb**	**14 45 33.9**	**+0.4**
	baz=114						
PFO	**Pinyon Flats O**	**1.84**	**323**	P	**Pn**	**14 45 08.2**	**-0.1**
	baz=143						
214A	**Organ Pipe Nat**	**1.98**	**95**	P	**Pn**	**14 45 10.6**	**+0.4**
	baz=276						
GMRC	**Granite Mounta**	**2.67**	**351**	P	**Pn**	**14 45 20.4**	**+0.7**
	baz=171						

IDC 20 14:49:32.2±1.3, 6°.13S×130°.37E, h0km, mb4.0/3, mb1 4.0/6, mb1mx3.7/44, mbtmp3.9/6, ML3.7/3, MS2.8/1, Ms1 2.8/1, ms1mx2.2/37, Error ellipse: s-maj=78.5km s-min=19.8km az=73.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**12.76**	**201**	Pn	Pn	14 52 35.7	+0.6
	0.4nm,0.3s,baz=21,slow=12,SNR=14						
FITZ				Sn	Sn	14 54 40.7	-17
	0.5nm,0.3s,baz=96,slow=22,SNR=7.7						
DAV	**Davao City (W)**	**13.96**	**340**	LR	LR	14 59 00.5	
	comp=Z,36nm,19.8s,baz=183,slow=41						
WRA	**Warramunga Arr**	**14.26**	**165**	Pn	Pn	14 52 57.8	+2.2
	0.2nm,0.3s,baz=346,slow=12,SNR=20						
WRA				Sn	Sn	14 55 24.0	-11
	0.7nm,0.3s,baz=332,slow=23,SNR=8.3						
ASAR	**Alice Springs**	**17.76**	**169**	P	P	14 53 42.8	+0.8
	0.6nm,0.3s,baz=347,slow=11,SNR=45						
ASAR				S	Sn	14 56 50.2	-10
	0.2nm,0.3s,baz=356,slow=27,SNR=5.6						
STKA	**Stephens Creek**	**27.68**	**159**	P	P	14 55 20.8	-1.3
	0.7nm,0.3s,baz=323,slow=8.8,SNR=10						
SONM	**Songino Array**	**57.74**	**341**	P	P	14 59 25.9	+0.8
	0.5nm,0.4s,baz=140,slow=7.5,SNR=2.9						
MKAR	**Makanchi Array**	**67.71**	**326**	P	P	15 00 31.1	-0.4
	1.6nm,0.4s,baz=116,slow=8.2,SNR=22						

*ISK **20** 14:49:45.1, 39°.10N×29°.24E, h6km, MD2.7*
*CSEM **20** 14:49:45.3±0.2, 39°.11N×29°.16E, h2km, MD2.3, Error ellipse: s-maj=5.5km s-min=3.1km az=99.0*
*DDA **20** 14:49:46.2, 39°.06N×29°.09E, h7km, Md2.3*

ISC 20 14:49:45.1±1.2, 39°.09N±0°.02×29°.17E±0°.04, h3km±11km, n23, σ0°.32/33, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.36**	**263**	*i* S	**Sg**	**14 49 56.8**	**+0.2**
TVSB	**Tavsanli**	**0.43**	**32**	*e*PG	**Pg**	**14 49 53.1**	**-0.2**
TVSB				*e*SG	**Sg**	**14 49 58.6**	**-0.3**
TVSB	**Tavsanli**	**0.43**	**32**	*e*Pg	**Pg**	**14 49 53.1**	**-0.2**
TVSB				*e*Sg	**Sg**	**14 49 58.6**	**-0.3**
KULA	**Kula-Manisa**	**0.70**	**215**	*e*PG	**Pb**	**14 49 59.9**	**0.0**
KULA	**Kula-Manisa**	**0.70**	**215**	*e*Pg	**Pb**	**14 49 59.9**	**0.0**
KHAL	**Karahalli**	**0.76**	**161**	P	**Pb**	**14 50 01.2**	**+0.2**
KHAL				S	**Sb**	**14 50 11.5**	**-0.2**
KHAL	**Karahalli**	**0.76**	**161**	*i* P	**Pb**	**14 50 01.2**	**+0.2**
KHAL				*i* S	**Sb**	**14 50 11.5**	**-0.2**
MANT	**Manisa**	**0.76**	**219**	P	**Pg**	**14 49 59.2**	**-0.5**
MANT				S	**Sg**	**14 50 10.1**	**+0.4**
MANT	**Manisa**	**0.76**	**219**	*i* P	**Pg**	**14 49 59.2**	**-0.5**
MANT				*i* S	**Sg**	**14 50 10.1**	**+0.4**
KHL	**Karahalli**	**0.81**	**160**	*e*PG	**Pg**	**14 50 00.9**	**+0.3**
KHL				*e*SG	**Sb**	**14 50 12.8**	**-0.4**
KHL	**Karahalli**	**0.81**	**160**	*e*Pg	**Pg**	**14 50 00.9**	**+0.3**
KHL				*e*Sg	**Sb**	**14 50 12.8**	**-0.4**
CAVI	**Cavuskoy**	**1.23**	**25**	*e*PN	**Pg**	**14 50 08.5**	**-0.1**
CAVI				*e*SN	**Sn**	**14 50 26.2**	**-0.2**
CAVI	**Cavuskoy**	**1.23**	**25**	*e*Pn	**Pg**	**14 50 08.5**	**-0.1**
CAVI				*e*Sn	**Sn**	**14 50 26.2**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.30**	**350**	*e*PN	**Pb**	**14 50 10.7**	**+0.5**
MDNY	**Mudanya-Bursa**	**1.30**	**350**	*e*Pn	**Pb**	**14 50 10.7**	**+0.5**
KCTX	**Karacabey (Bur**	**1.33**	**332**	*e*PN	**Pb**	**14 50 11.1**	**+0.3**
KCTX	**Karacabey (Bur**	**1.33**	**332**	*e*Pn	**Pb**	**14 50 11.1**	**+0.3**
ADVT	**Abdulvahap**	**1.41**	**18**	*e*PN	**Pn**	**14 50 11.9**	**+0.1**
ADVT	**Abdulvahap**	**1.41**	**18**	*e*Pn	**Pn**	**14 50 11.9**	**+0.1**
GONE	**Gonen-Balikesi**	**1.50**	**310**	*e*PN	**Pn**	**14 50 13.1**	**+0.2**
GONE	**Gonen-Balikesi**	**1.50**	**310**	*e*Pn	**Pn**	**14 50 13.1**	**+0.2**
ARMT	**Armutlu**	**1.50**	**351**	*e*PN	**Pn**	**14 50 13.1**	**+0.2**
ARMT	**Armutlu**	**1.50**	**351**	*e*Pn	**Pn**	**14 50 13.1**	**+0.2**

IDC 20 14:58:28.6±2.8, 19°.76S×177°.51W, h544km±30km, mb3.0/6, mb1 3.2/7, mb1mx2.9/39, mbtmp4.0/7, Error ellipse: s-maj=89.9km s-min=16.9km az=149.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**7.99**	**44**	P	P	15 00 26.2	-0.1
	2.2nm,0.3s,baz=202,slow=11,SNR=4.5						
CTA	**Charters Tower**	**34.03**	**263**	P	P	15 04 28.2	+0.4
	7.2nm,1.1s,baz=113,slow=7.7,SNR=3.5						
STKA	**Stephens Creek**	**38.53**	**243**	P	P	15 05 04.4	-0.4
	0.9nm,0.5s,baz=100,slow=10,SNR=8.1						
ASAR	**Alice Springs**	**45.14**	**256**	P	P	15 05 57.5	+0.5
	1.1nm,0.5s,baz=87,slow=8.7,SNR=50						
WRA	**Warramunga Arr**	**45.17**	**261**	P	P	15 05 56.3	-1.0
	0.6nm,0.3s,baz=97,slow=7.5,SNR=44						
ILAR	**Eielson Array**	**87.49**	**13**	P	P	15 10 18.5	+0.4
	0.1nm,0.4s,baz=218,slow=6.0,SNR=4.2						
PDAR	**Pinedale Array**	**88.11**	**43**	P	P	15 10 21.4	-0.4
	0.2nm,0.5s,baz=246,slow=3.8,SNR=2.5						

*KRNET **20** 15:01:35.2±0.1, 39°.41N×72°.11E, mb3.0*
*NNC **20** 15:01:41.0±3.8, 39°.41N×72°.08E, h0km, mb3.6, mpv3.2,*

Error ellipse: s-maj=41.8km s-min=14.9km az=138.0

ISC 20 15:01:38.4±1.7, 39°.59N±0°.07×72°.01E±0°.05, h1km±12km, n14, σ1°.51/30, 24C-7D, Kyrgyzstan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BTK	**Batken**	**1.03**	**297**	⇑*e*P	**Pb**	**15 01 59.0**	**-0.2**
	baz=304						
BTK				⇑*e*S	**Sn**	**15 02 15.2**	**-0.1**
	baz=304						
OHH	**Osh**	**1.10**	**32**	⇓*e*P	**Pg**	**15 01 58.7**	**-0.9**
	baz=24						
OHH				⇓*e*S	**Sn**	**15 02 17.2**	**0.0**
	baz=24						
ARSB	**Arslanbob**	**1.88**	**23**	⇑*e*P	**Pn**	**15 02 12.5**	**+0.5**
	baz=19						
ARSB				⇑*e*S	**Sg**	**15 02 40.0**	**+1.1**
	baz=19						
TOKL	**Toktogul**	**2.44**	**15**	⇑*e*P	**Pn**	**15 02 20.9**	**+1.4**
	baz=13						
TOKL				⇑*e*S	**Sb**	**15 02 54.5**	**+0.8**
	baz=13						
DZET	**Dzherino**	**2.59**	**253**	⇑Pn	**Pb**	**15 02 25.0**	**-0.9**
	14nm,0.6s						
DZET				⇑Sn	**Sb**	**15 02 57.0**	**-1.3**
	71nm,0.4s						
AML	**Almayashu**	**2.84**	**26**	⇑*i*P	**Pb**	**15 02 30.6**	**+0.4**
	baz=23						
AML				⇑*i*S	**Sg**	**15 03 09.0**	**-0.7**
	baz=23						
MNAS	**Manas**	**2.92**	**7**	⇑*e*P	**Pn**	**15 02 28.1**	**+1.9**
	baz=5.0						
MNAS				⇑*e*S	**Sb**	**15 03 05.9**	**-1.7**
	baz=5.0						
MNAS	**Manas**	**2.92**	**7**	⇑Pn	**Pb**	**15 02 30.6**	**-0.7**
MNAS				⇑Sn	**Sg**	**15 03 11.6**	**-0.5**
	11nm,0.5s						
UCH	**Uchtor**	**3.25**	**35**	⇑*i*P	**Pb**	**15 02 35.9**	**-1.2**
	baz=32						
UCH				⇑*i*S	**Sb**	**15 03 19.3**	**+1.9**
	baz=32						
EKS2	**Erkin-Say**	**3.34**	**23**	⇑*i*P	**Pb**	**15 02 37.6**	**-1.0**
	baz=21						
EKS2				⇑*i*S	**Sg**	**15 03 24.1**	**-1.8**
	baz=21						
AAK	**Ala-Archa**	**3.57**	**31**	⇑Pn	**Pb**	**15 02 40.9**	**-1.6**
	2.3nm,0.4s						
AAK				⇑Pg	**Pg**	**15 02 48.4**	**+1.6**
	2.6nm,0.5s						
AAK				⇓Sn	**Sb**	**15 03 26.2**	**-0.2**
	5.5nm,0.8s						
AAK				⇓Lg	Lg	15 03 36.6	
	7.5nm,0.5s						
KK31	**Karatay Array**	**3.69**	**343**	Pn	**Pb**	**15 02 41.6**	**-2.8**
	1.5nm,0.3s,baz=156,slow=12,SNR=19						
KK31				Pg	**Pg**	**15 02 51.0**	**+2.0**
	3.3nm,0.4s,baz=153,slow=11,SNR=7.2						
KK31				⇑Sn	**Sb**	**15 03 27.8**	**-1.8**
	3.5nm,0.6s						
KK31				⇓Lg	Lg	15 03 41.9	
	3.4nm,0.5s,baz=145,slow=30,SNR=4.3						
TKM2	**Tokmak 2**	**4.29**	**38**	⇓Pn	**Pb**	**15 02 51.5**	**-3.2**
TKM2				⇑Pg	**Pg**	**15 03 02.4**	**+1.8**
TKM2				⇓Lg	Lg	15 03 59.0	
	3.4nm,0.5s						
AB31	**Akbulak array**	**12.94**	**322**	⇑Pn	**Pn**	**15 04 42.8**	**-0.5**
	0.4nm,0.5s,baz=133,slow=14,SNR=12						
AB31				⇑Sn	**Sn**	**15 07 08.7**	**+0.8**
	1.4nm,0.8s						

*ISCJB **20** 15:05:19.8±1.1, 17°.5S±0°.5×178°.8W±0°.3, h539km, mb3.8/8, Error ellipse: s-maj=76.0km s-min=13.3km az=154.2*
*IDC **20** 15:05:19.5±2.1, 17°.34S×178°.89W, h515km±29km, mb3.4/8, mb1 3.7/9, mb1mx3.2/33, mbtmp4.3/9, Error ellipse: s-maj=71.9km s-min=13.0km az=152.0*

ISC 20 15:05:20.6±1.2, 17°.5S±0°.5×178°.8W±0°.3, h539km, n10, σ0°.94/10, mb3.7/8, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**7.62**	**63**	P	**P**	**15 07 12.9**	**-1.4**
	3.9nm,0.3s,baz=98,slow=13,SNR=5.4						
CTA	**Charters Tower**	**33.19**	**260**	P	**P**	**15 11 13.3**	**+0.2**
	12nm,1.1s,baz=101,slow=12,SNR=3.5						
STKA	**Stephens Creek**	**38.53**	**241**	P	**P**	**15 11 57.1**	**-0.1**
	3.2n

*JMA **20** 15:30:24.2±0.2, 35°.56N×141°.45E, h11km±2km, M3.0*
*ISCJB **20** 15:30:26.1±1.2, 35°.49N±0°.05×141°.3E±0°.1, h25km, mb3.6/2, Error ellipse: s-maj=14.2km s-min=6.3km az=161.4*
*IDC **20** 15:30:27.4±2.7, 35°.31N×140°.96E, h0km, mb3.4/2, mb1 3.6/3, mb1mx3.2/57, mbtmp3.4/3, ML2.7/2, Error ellipse: s-maj=56.6km s-min=30.6km az=67.0*
ISC 20 15:30:27.3±1.5, 35°.51N±0°.05×141°.3E±0°.1, h25km, n11, σ1°34/14, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.41**	**298**	P	**Pb**	**15 30 34.1**	**-1.9**
CHOJ				S	**Sb**	**15 30 42.0**	**+0.1**
KTR	**Katsuura**	**0.88**	**246**	P	**Pn**	**15 30 43.1**	**-1.1**
BSO1	**Boso 1**	**0.90**	**197**	P	**Pb**	**15 30 42.8**	**-1.1**
JCN	**Nagara**	**0.90**	**264**	P	**Pb**	**15 30 44.6**	**+0.3**
BSO3	**Boso 3**	**0.96**	**223**	P	**Pb**	**15 30 44.4**	**-0.8**
JYT	**Yasato**	**1.15**	**309**	P	**Pn**	**15 30 46.9**	**-0.9**
JYT				*e*S	**Sn**	**15 31 02.6**	**-0.1**
JHO	**Hitachi**	**1.25**	**332**	P	**Pn**	**15 30 48.0**	**-1.2**
JHJ	**Hachijo jima 2**	**2.70**	**208**	Pn	**Pn**	**15 31 07.9**	**-1.2**
	4.8nm,0.3s,baz=348,slow=22,SNR=9.1						
JHJ				Sn	**Sn**	**15 31 40.4**	**-0.6**
	8.5nm,0.3s,baz=264,slow=24,SNR=7.5						
MJAR	**Matsushiro Arr**	**2.71**	**293**	Pn	**Pn**	**15 31 10.2**	**+0.9**
	1.2nm,0.3s,baz=93,slow=8.9,SNR=9.9						
WRA	**Warramunga Arr**	**55.55**	**188**	P	**P**	**15 40 02.2**	**+1.6**
	0.4nm,0.4s,baz=1.0,slow=7.5,SNR=12						
ASAR	**Alice Springs**	**59.27**	**188**	P	**P**	**15 40 29.2**	**+2.4**
	0.3nm,0.8s,baz=359,slow=6.3,SNR=4.5						

*IDC **20** 15:35:20.6±0.9, 25°.42N×142°.97E, h0km, mb3.9/10, mb1 4.1/10, mb1mx3.7/60, mbtmp3.9/10, Error ellipse: s-maj=38.7km s-min=16.8km az=84.0*
*ISCJB **20** 15:35:24.3±0.8, 25°.38N±0°.09×143°.0E±0°.2, h40km, mb3.9/10, Error ellipse: s-maj=30.6km s-min=10.4km az=164.1*
ISC 20 15:35:26.4±0.9, 25°.4N±0°.1×143°.0E±0°.2, h40km, n11, σ0°66/12, mb3.9/10, Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCJ	**Chichijima**	**1.81**	**338**	Pn	**Pn**	**15 35 54.1**	**-0.9**
	32nm,0.3s,baz=38,slow=4.1,SNR=164						
JCJ				Sn	**Sn**	**15 36 17.8**	**+1.0**
	54nm,0.3s,baz=291,slow=23,SNR=10						
KLR	**Kul'dur**	**25.33**	**343**	P	**P**	**15 40 49.9**	**+0.6**
	2.4nm,0.7s,baz=136,slow=7.9,SNR=12						
WRA	**Warramunga Arr**	**45.85**	**191**	P	**P**	**15 43 44.7**	**-0.1**
	0.6nm,0.4s,baz=7.6,slow=8.7,SNR=18						
ASAR	**Alice Springs**	**49.57**	**191**	P	**P**	**15 44 14.2**	**+0.6**
	0.4nm,0.8s,baz=18,slow=9.3,SNR=5.4						
NRIK	**Noril'sk**	**54.46**	**339**	P	**P**	**15 44 49.6**	**+0.2**
	0.8nm,0.4s,baz=98,slow=8.1,SNR=4.7						
ILAR	**Eielson Array**	**58.86**	**28**	P	**P**	**15 45 20.9**	**+0.1**
	0.7nm,0.8s,baz=263,slow=6.5,SNR=6.7						
BVAR	**Borovoye Array**	**59.74**	**318**	P	**P**	**15 45 26.7**	**-0.3**
	1.2nm,0.6s,baz=76,slow=6.6,SNR=6.3						
YKA	**Yellowknife Ar**	**73.29**	**28**	P	**P**	**15 46 53.4**	**+0.1**
	0.3nm,0.7s,baz=292,slow=5.8,SNR=4.5						
KBZ	**Khabaz**	**79.65**	**313**	P	**P**	**15 47 30.2**	**+0.5**
	1.1nm,0.7s,baz=142,slow=12,SNR=3.5						
FINES	**FINESS Array B**	**79.75**	**334**	P	**P**	**15 47 29.1**	**-0.9**
	2.6nm,1.0s,baz=64,slow=4.4,SNR=3.6						
NOA	**NORSAR Array B**	**85.42**	**339**	P	**P**	**15 47 59.0**	**-0.5**
	1.1nm,0.8s,baz=28,slow=6.9,SNR=2.9						

*DDA **20** 15:35:45.0, 39°.13N×29°.04E, h6km, Ml3.7*
*ISK **20** 15:35:45.9, 39°.11N×28°.99E, h10km, ML3.6*
*CSEM **20** 15:35:45.6±0.1, 39°.11N×29°.02E, h2km, ML3.7, Error ellipse: s-maj=2.0km s-min=1.8km az=83.0*
*SOF **20** 15:35:48.7, 39°.37N×28°.61E, h2km, MD3.4*
ISC 20 15:35:45.7±1.1, 39°.12N±0°.02×29°.04E±0°.01, h2km±10km, n127, σ0°53/159, 3C-2D, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**253**	P	**Pg**	**15 35 50.8**	**+0.1**
DEMI				S	**Sg**	**15 35 54.5**	**+0.4**
DEMI	**Demirci**	**0.26**	**253**	*i* P	**Pg**	**15 35 50.8**	**+0.1**
DEMI				*i* S	**Sg**	**15 35 54.5**	**+0.4**
GDZ	**Gediz**	**0.35**	**95**	P	**Pg**	**15 35 52.4**	**0.0**
GDZ				S	**Sg**	**15 35 57.2**	**+0.3**
GDZ	**Gediz**	**0.35**	**95**	*i* P	**Pg**	**15 35 52.4**	**0.0**
GDZ				*i* S	**Sg**	**15 35 57.2**	**+0.3**
DURS	**Dursunbey**	**0.65**	**318**	P	**Pg**	**15 35 58.1**	**0.0**
DURS	**Dursunbey**	**0.65**	**318**	*i* P	**Pg**	**15 35 58.1**	**0.0**
KULA	**Kula-Manisa**	**0.67**	**206**	*e*PG	**Pg**	**15 35 58.6**	**+0.1**
KULA	**Kula-Manisa**	**0.67**	**206**	*e*Pg	**Pg**	**15 35 58.6**	**+0.1**
MANT	**Manisa**	**0.73**	**211**	P	**Pg**	**15 35 59.2**	**-0.5**
MANT				S	**Sg**	**15 36 08.9**	**-0.2**
MANT	**Manisa**	**0.73**	**211**	*i* P	**Pg**	**15 35 59.2**	**-0.5**
MANT				*i* S	**Sg**	**15 36 08.9**	**-0.2**
KHAL	**Karahalli**	**0.83**	**154**	P	**Pg**	**15 36 01.3**	**-0.2**
KHAL				S	**Sg**	**15 36 12.3**	**+0.1**
KHAL	**Karahalli**	**0.83**	**154**	*i* P	**Pg**	**15 36 01.3**	**-0.2**
KHAL				*i* S	**Sg**	**15 36 12.3**	**+0.1**
KHL	**Karahalli**	**0.88**	**154**	*e*PG	**Pb**	**15 36 04.0**	**+0.3**
KHL	**Karahalli**	**0.88**	**154**	*e*Pg	**Pb**	**15 36 04.0**	**+0.3**
ORLT	**Orhaneli**	**0.93**	**353**	*e*PG	**Pg**	**15 36 03.9**	**+0.3**
ORLT	**Orhaneli**	**0.93**	**353**	*e*Pg	**Pg**	**15 36 03.9**	**+0.3**
AKHS	**Akhisar**	**0.98**	**256**	P	**Pg**	**15 36 04.4**	**-0.1**
AKHS				S	**Sg**	**15 36 17.8**	**+0.6**
AKHS	**Akhisar**	**0.98**	**256**	*i* P	**Pg**	**15 36 04.4**	**-0.1**
AKHS				*i* S	**Sg**	**15 36 17.8**	**+0.6**
AKS	**Akhisar**	**0.98**	**256**	*e*PG	**Pg**	**15 36 04.7**	**+0.2**
AKS				*e*SG	**Sg**	**15 36 17.8**	**+0.5**
AKS	**Akhisar**	**0.98**	**256**	*e*Pg	**Pg**	**15 36 04.7**	**+0.2**
AKS				*e*Sg	**Sg**	**15 36 17.8**	**+0.5**
BALB	**Balikesir**	**1.04**	**300**	*e*PG	**Sb**	**15 36 05.8**	**+0.3**
BALB				*e*SG	**Sb**	**15 36 20.2**	**-0.1**
BALB	**Balikesir**	**1.04**	**300**	*e*Pg	**Pg**	**15 36 05.8**	**+0.3**
BALB				*e*Sg	**Sb**	**15 36 20.3**	**-0.1**
IGD	**Bursa**	**1.15**	**6**	*i* P	**Pg**	**15 36 06.2**	**-1.6**
IGD				*i* S	**Sb**	**15 36 23.6**	**-0.1**
CAVI	**Cavuskoy**	**1.25**	**30**	*e*PN	**Pn**	**15 36 10.2**	**+0.1**
CAVI	**Cavuskoy**	**1.25**	**30**	*e*Pn	**Pn**	**15 36 10.2**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.25**	**355**	*e*PN	**Pn**	**15 36 10.4**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.25**	**355**	*e*Pn	**Pn**	**15 36 10.4**	**+0.2**
KCTX	**Karacabey (Bur**	**1.26**	**336**	*e*PN	**Pg**	**15 36 09.8**	**0.0**
KCTX	**Karacabey (Bur**	**1.26**	**336**	*e*Pn	**Pg**	**15 36 09.8**	**0.0**
BALY	**Balya**	**1.26**	**300**	P	**Pg**	**15 36 09.5**	**-0.3**
BALY				S	**Sn**	**15 36 27.9**	**0.0**
BALY	**Balya**	**1.26**	**300**	*i* P	**Pg**	**15 36 09.5**	**-0.3**
BALY				*i* S	**Sn**	**15 36 27.9**	**0.0**
IZI	**Iznik**	**1.26**	**15**	*e*PN	**Pg**	**15 36 09.9**	**0.0**
IZI	**Iznik**	**1.26**	**15**	*e*Pn	**Pg**	**15 36 09.9**	**0.0**
GEMT	**Gemlik**	**1.32**	**5**	*e*PN	**Pb**	**15 36 11.3**	**+0.2**
GEMT	**Gemlik**	**1.32**	**5**	*e*Pn	**Pb**	**15 36 11.3**	**+0.2**
BORA	**Eskisehir**	**1.33**	**55**	P	**Pg**	**15 36 10.2**	**-1.0**
BORA				S	**Sg**	**15 36 28.8**	**+0.3**
BORA	**Eskisehir**	**1.33**	**55**	*i* P	**Pg**	**15 36 10.2**	**-1.0**
BORA				*i* S	**Sg**	**15 36 28.8**	**+0.3**
DENT	**Denizli**	**1.36**	**180**	*e*PN	**Pn**	**15 36 11.6**	**-0.1**
DENT	**Denizli**	**1.36**	**180**	*e*Pn	**Pn**	**15 36 11.6**	**-0.1**
GONE	**Gonen-Balikesi**	**1.40**	**312**	*e*PN	**Pn**	**15 36 12.0**	**-0.1**
GONE	**Gonen-Balikesi**	**1.40**	**312**	*e*Pn	**Pn**	**15 36 12.0**	**-0.1**
ADVT	**Abdulvahap**	**1.42**	**22**	*e*PN	**Pg**	**15 36 13.0**	**+0.1**
ADVT	**Abdulvahap**	**1.42**	**22**	*e*Pn	**Pg**	**15 36 13.0**	**+0.1**
DNZL	**Cakiroluk**	**1.43**	**180**	P	**Pn**	**15 36 11.9**	**-0.8**
DNZL				S	**Sn**	**15 36 33.3**	**+1.2**
DNZL	**Cakiroluk**	**1.43**	**180**	*i* P	**Pn**	**15 36 11.9**	**-0.8**
DNZL				*i* S	**Sn**	**15 36 33.3**	**+1.2**
ARMT	**Armutlu**	**1.45**	**355**	*e*PN	**Pn**	**15 36 12.3**	**-0.6**
ARMT	**Armutlu**	**1.45**	**355**	*e*Pn	**Pn**	**15 36 12.3**	**-0.6**
ESKT	**Eskisehir**	**1.46**	**74**	*i* P	**Pn**	**15 36 12.7**	**-0.5**
ESKT				*i* S	**Sg**	**15 36 32.8**	**+0.1**
SEYT	**Eskypehyr**	**1.46**	**74**	P	**Pn**	**15 36 12.7**	**-0.4**
SEYT				S	**Sg**	**15 36 32.8**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**1.48**	**218**	*e*PN	**Pn**	**15 36 12.2**	**-1.1**
AYDB	**Zeytinkoy-Aydi**	**1.48**	**218**	*e*Pn	**Pn**	**15 36 12.2**	**-1.1**
EDC	**Edincik**	**1.52**	**324**	*e*PN	**Pn**	**15 36 13.7**	**-0.2**
EDC	**Edincik**	**1.52**	**324**	*e*Pn	**Pn**	**15 36 13.7**	**-0.2**
GPA	**Golpazari**	**1.53**	**40**	*e*PN	**Pb**	**15 36 14.4**	**-0.3**
GPA	**Golpazari**	**1.53**	**40**	*e*Pn	**Pb**	**15 36 14.4**	**-0.3**
BOLV	**Bolvadin**	**1.54**	**104**	P	**Pb**	**15 36 14.8**	**-0.2**
BOLV				S	**Sg**	**15 36 35.3**	**0.0**
BOLV	**Bolvadin**	**1.54**	**104**	*i* P	**Pb**	**15 36 14.8**	**-0.2**
BOLV				*i* S	**Sg**	**15 36 35.3**	**0.0**
KNL	**Bal¨--kesir**	**1.64**	**315**	*i* P	**Pn**	**15 36 15.4**	**0.0**
KNL				*i* S	**Sg**	**15 36 38.1**	**-0.2**
DKL	**Dikili**	**1.66**	**269**	*e*PN	**Pn**	**15 36 15.3**	**-0.4**
DKL	**Dikili**	**1.66**	**269**	*e*Pn	**Pn**	**15 36 15.3**	**-0.4**
AYDN	**Tasoluk**	**1.72**	**212**	P	**Pn**	**15 36 15.5**	**-1.1**
AYDN	**Tasoluk**	**1.72**	**212**	*i* P	**Pn**	**15 36 15.5**	**-1.1**
AYDN				*i* S	**Sg**	**15 36 41.9**	**+1.1**
BUY	**Buyukada**	**1.73**	**2**	P	**Pn**	**15 36 15.8**	**-0.9**
BUY	**Buyukada**	**1.73**	**2**	*i* P	**Pn**	**15 36 15.8**	**-0.9**
GULT	**Gulveren**	**1.74**	**40**	*e*PN	**Pn**	**15 36 17.3**	**+0.4**
GULT	**Gulveren**	**1.74**	**40**	*e*Pn	**Pn**	**15 36 17.3**	**+0.4**
ISP	**Isparta**	**1.74**	**138**	*e*PN	**Pn**	**15 36 17.0**	**0.0**
ISP	**Isparta**	**1.74**	**138**	‖ *i* P	Pn	15 36 05.6	-11
ISP				S	**Sn**	**15 36 40.0**	**+0.2**
ISP	**Isparta**	**1.74**	**138**	*e*Pn	**Pn**	**15 36 17.0**	**0.0**
ISP				S	**Sn**	**15 36 40.0**	**+0.2**
HRT	**Hereke**	**1.77**	**16**	*e*PN	**Pn**	**15 36 17.5**	**+0.2**
HRT	**Hereke**	**1.77**	**16**	*e*Pn	**Pn**	**15 36 17.5**	**+0.2**
AYVA	**Ayvalik**	**1.83**	**277**	*i* P	**Pg**	**15 36 21.0**	**+0.2**
AYVA				*i* S	**Sg**	**15 36 45.1**	**+0.6**
SPNC	**Sapanca-Adapaz**	**1.85**	**32**	*e*PN	**Pn**	**15 36 19.2**	**+0.9**
SPNC	**Sapanca-Adapaz**	**1.85**	**32**	*e*Pn	**Pn**	**15 36 19.2**	**+0.9**
KRBG	**Karabiga-Canak**	**1.85**	**314**	*e*PN	**Pn**	**15 36 18.3**	**0.0**
KRBG	**Karabiga-Canak**	**1.85**	**314**	*e*Pn	**Pn**	**15 36 18.3**	**0.0**
MRMT	**Marmara Adasi**	**1.85**	**324**	*e*PN	**Pn**	**15 36 18.7**	**+0.2**
MRMT	**Marmara Adasi**	**1.85**	**324**	*e*Pn	**Pn**	**15 36 18.7**	**+0.2**
GOLH	**Golhisar**	**1.92**	**167**	P	**Pn**	**15 36 19.3**	**-0.2**
GOLH	**Golhisar**	**1.92**	**167**	*i* P	**Pn**	**15 36 19.3**	**-0.2**
ISK	**Istanbul-Kandi**	**1.94**	**0**	*e*PN	**Pn**	**15 36 20.1**	**+0.4**
ISK	**Istanbul-Kandi**	**1.94**	**0**	*e*Pn	**Pn**	**15 36 20.1**	**+0.4**
SVRH	**Sivrihisar-ESK**	**1.96**	**80**	*e*PN	**Pn**	**15 36 20.8**	**+0.9**
SVRH	**Sivrihisar-ESK**	**1.96**	**80**	*e*Pn	**Pn**	**15 36 20.8**	**+0.9**
DGB	**¨zmir**	**2.00**	**238**	*i* P	**Pg**	**15 36 23.3**	**-0.7**
DGB				*i* S	**Sg**	**15 36 49.6**	**-0.2**
GCAM	**G?zelcaml?**	**2.00**	**226**	*i* P	**Pg**	**15 36 24.0**	**-0.1**
AUMIH	**MIHALICIK**	**2.04**	**68**	P	**Pb**	**15 36 23.5**	**+0.1**
AUMIH	**MIHALICIK**	**2.04**	**68**	*i* P	**Pb**	**15 36 23.5**	**+0.1**
AUMIH				*i* S	**Sg**	**15 36 51.5**	**+0.5**
URLA	**Izmir**	**2.05**	**249**	*i* P	**Pg**	**15 36 24.9**	**-0.1**
URLA				*i* S	**Sg**	**15 36 52.5**	**+0.8**
BGKT	**Bogazkoy**	**2.07**	**354**	*e*PN	**Pn**	**15 36 21.7**	**+0.3**
BGKT	**Bogazkoy**	**2.07**	**354**	*e*Pn	**Pn**	**15 36 21.7**	**+0.3**
SILT	**Sile**	**2.08**	**13**	*e*PN	**Pn**	**15 36 21.3**	**-0.3**
SILT	**Sile**	**2.08**	**13**	*e*Pn	**Pn**	**15 36 21.3**	**-0.3**
BTAS	**Taskesti**	**2.09**	**46**	P	**Pb**	**15 36 23.4**	**-1.0**
BTAS	**Taskesti**	**2.09**	**46**	*i* P	**Pb**	**15 36 23.4**	**-1.0**
RKY	**Sarkoy-Tekirda**	**2.12**	**318**	*e*PN	**Pn**	**15 36 22.2**	**0.0**
RKY	**Sarkoy-Tekirda**	**2.12**	**318**	*e*Pn	**Pn**	**15 36 22.2**	**0.0**
SART	**Tekirdag**	**2.12**	**318**	P	**Pn**	**15 36 22.9**	**+0.7**
SART	**Tekirdag**	**2.12**	**318**	*i* P	**Pn**	**15 36 22.9**	**+0.7**
SART				*i* S	**Sg**	**15 36 53.8**	**0.0**
KLYT	**Kilyos**	**2.13**	**0**	*e*PN	**Pn**	**15 36 22.6**	**+0.3**
KLYT	**Kilyos**	**2.13**	**0**	*e*Pn	**Pn**	**15 36 22.6**	**+0.3**
MDUB	**Mudurnu**	**2.14**	**50**	*e*PN	**Pn**	**15 36 23.2**	**+0.8**
MDUB	**Mudurnu**	**2.14**	**50**	*e*Pn	**Pn**	**15 36 23.3**	**+0.8**
CTKS	**Kestanelik-??a**	**2.15**	**349**	*e*PN	**Pn**	**15 36 22.9**	**+0.4**
CTKS	**Kestanelik-??a**	**2.15**	**349**	*e*Pn	**Pn**	**15 36 22.9**	**+0.4**
KAND	**Kocaeli-Kandir**	**2.16**	**24**	P	**Pn**	**15 36 22.1**	**-0.6**
KAND	**Kocaeli-Kandir**	**2.16**	**24**	*i* P	**Pn**	**15 36 22.1**	**-0.6**
ZEY	**¨zmir**	**2.17**	**247**	*i* P	**Pg**	**15 36 27.1**	**-0.2**
TKR	**Tekirdag**	**2.20**	**329**	*e*PN	**Pn**	**15 36 23.2**	**+0.1**
TKR	**Tekirdag**	**2.20**	**329**	*e*Pn	**Pn**	**15 36 23.3**	**+0.1**
SAHE	**Sakarya_HENDEK**	**2.22**	**38**	P	**Pn**	**15 36 22.9**	**-0.7**
SAHE	**Sakarya_HENDEK**	**2.22**	**38**	*i* P	**Pn**	**15 36 22.9**	**-0.7**
KIZT	**Kizilcal**	**2.23**	**95**	*e*PN	**Pn**	**15 36 24.7**	**+1.0**
KIZT	**Kizilcal**	**2.23**	**95**	*e*Pn	**Pn**	**15 36 24.7**	**+1.0**
CTYL	**Yalikoy Yolu**	**2.42**	**347**	*e*PN	**Pn**	**15 36 27.1**	**+0.9**
CTYL	**Yalikoy Yolu**	**2.42**	**347**	*e*Pn	**Pn**	**15 36 27.1**	**+0.9**
KDHN	**Kadinhani**	**2.48**	**103**	P	**Pn**	**15 36 27.4**	**+0.3**
KDHN	**Kadinhani**	**2.48**	**103**	*i* P	**Pn**	**15 36 27.4**	**+0.3**
KDZ	**Kurdzhali**	**3.75**	**314**	P	Pn	15 36 38.6	-5.9
RZN	**Rozhen**	**4.18**	**309**	P	**Pn**	**15 36 50.6**	**0.0**
PRD	**Provadia**	**4.26**	**344**	P	**Pn**	**15 36 51.6**	**+0.1**
MMB	**Musomiste**	**4.75**	**303**	P	**Pn**	**15 36 56.9**	**-1.4**
MSAB	**Monastry St. A**	**5.05**	**350**	‖ *i*P	**Pn**	**15 37 01.2**	**-1.1**
MSAB	**Monastry St. A**	**5.05**	**350**	‖ *i*P	**Pn**	**15 37 01.2**	**-1.1**
TIRR	**Tirgusor**	**5.36**	**355**	‖ *i*P	**Pn**	**15 37 06.4**	**-0.1**
TIRR	**Tirgusor**	**5.36**	**355**	‖ *i*P	**Pn**	**15 37 06.4**	**-0.1**
MPEP	**Malo Peshtene**	**5.82**	**318**	P	**Pn**	**15 37 12.5**	**-0.4**

*ISCJB **20** 15:36:13.7±1.0, 53°.6S±0°.1×141°.1E±0°.4, h10km, mb4.0/6, MS3.4/6, Error ellipse: s-maj=33.0km s-min=16.6km az=161.4*
*IDC **20** 15:36:13.8±1.1, 53°.59S×141°.06E, h0km, mb4.1/6, mb1 4.3/6, mb1mx4.0/29, mbtmp4.2/6, MS3.5/6, Ms1 3.4/6, ms1mx3.2/23, Error ellipse: s-maj=40.4km s-min=21.1km az=75.0*
ISC 20 15:36:15.2±1.1, 53°.6S±0°.2×141°.0E±0°.2, h10km, n16, σ0°81/9, mb4.0/6, MS3.4/6, West of Macquarie Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**21.73**	**1**	P	**P**	**15 41 07.9**	**+1.4**
	5.0nm,0.7s,baz=165,slow=10,SNR=14						
STKA				LR	LR	15 48 08.4	
	comp=Z,108nm,19.2s,baz=201,slow=33						
VNDA	**Vanda**	**25.17**	**170**	P	**P**	**15 41 40.9**	**+0.7**
	2.0nm,1.0s,baz=317,slow=12,SNR=3.2						
VNDA				LR	LR	15 51 06.8	
	comp=Z,102nm,18.3s,baz=360,slow=35						
H01W1	**Cape Leeuwin H**	**26.58**	**304**	T	T	16 09 39.1	
	baz=143,slow=76,SNR=6.5						
H01W2	**Cape Leeuwin H**	**26.59**	**304**	T	T	16 09 36.6	
	baz=143,slow=76,SNR=6.8						
H01W3	**Cape Leeuwin H**	**26.60**	**304**	T	T	16 09 39.7	
	baz=143,slow=76,SNR=6.0						
URZ	**Urewera**	**29.05**	**73**	P	**P**	**15 42 14.9**	**-0.4**
	5.7nm,0.9s,baz=211,slow=5.6,SNR=4.2						
ASAR	**Alice Springs**	**30.38**	**347**	P	**P**	**15 42 26.9**	**-0.3**
	1.9nm,0.6s,baz=166,slow=9.9,SNR=37						
WRA	**Warramunga Arr**	**34.00**	**349**	P	**P**	**15 42 58.5**	**-0.5**
	2.3nm,0.7s,baz=172,slow=7.6,SNR=28						
FITZ	**Fitzroy Crossi**	**37.40**	**335**	P	**P**	**15 43 28.1**	**0.0**
	1.3nm,0.5s,baz=151,slow=13,SNR=7.6						
MAW	**Mawson**	**37.93**	**218**	LR	LR	15 57 15.5	
	comp=Z,73nm,21.4s,baz=63,slow=33						
HNR	**Honiara**	**46.63**	**26**	LR	LR	16 02 42.8	
	comp=Z,154nm,18.6s,baz=236,slow=34						
GUMO	**Guam**	**67.02**	**4**	LR	LR	16 16 08.0	
	comp=Z,22nm,18.5s,baz=152,slow=36						
CMAR	**Chiang Mai Arr**	**80.38**	**320**	LR	LR	16 21 57.1	
	comp=Z,7.3nm,20.7s,baz=170,slow=34						
DPC	**Dobruska-Polom**	**146.50**	**287**	*e*P	**PKPab**	**15 55 56.6**	**0.0**
DPC				*ex*	x	15 56 01.2	
GERES	**GERESS Array B**	**147.29**	**283**	PKPbc	**PKPbc**	**15 55 57.2**	**-0.8**
	0.7nm,0.8s,baz=116,slow=4.5,SNR=6.1						
KHC	**Kasperske Hory**	**147.50**	**284**	*e*P	**PKPdf**	**15 55 55.9**	**0.0**
KHC				*ex*	x	15 56 00.4	

*IDC **20** 15:41:57.0±1.1, 46°.70N×155°.39E, h0km, mb3.8/4, mb1 3.9/8, mb1mx3.5/52, mbtmp3.8/8, ML3.2/4, MS3.1/3, Ms1 3.1/3, ms1mx2.5/45, Error ellipse: s-maj=29.2km s-min=24.5km az=166.0*
*ISCJB **20** 15:41:58.9±0.8, 46°.41N±0°.07×155°.16E±0°.09, h18km, mb3.6/6, MS3.2/2, Error ellipse: s-maj=11.1km s-min=6.8km az=141.5*
*SKHL **20** 15:42:01.9±0.2, 46°.28N×155°.28E, h54km±5km, mb4.5/7*
*MOS **20** 15:42:02.9±1.1, 46°.54N×155°.00E, h57km, mb3.9/5, Error ellipse: s-maj=13.3km s-min=11.1km az=170.8*
ISC 20 15:41:59.5±1.0, 46°.36N±0°.08×155°.34E±0°.07, h18km, n48, σ1°84/52, mb3.7/6, 2C-4D, East of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**4.35**	**6**	*e*PN	**Pn**	**15 43 07.2**	**+2.5**
SKR	**Severo-Kuril's**	**4.35**	**6**	*e*P	**Pn**	**15 43 07.2**	**+2.5**
KUR	**Kuril'sk**	**5.35**	**260**	*d i*PN	**Pn**	**15 43 20.3**	**+1.9**
KUR				*e*S	**Sn**	**15 44 18.3**	**-1.2**
KUR				pmax	pmax		
	comp=Z,124nm,0.4s						
KUR				pmax	pmax		
	comp=N,36nm,0.2s						
KUR				pmax	pmax		
	comp=E,52nm,0.2s						
KUR				smax	smax		
	comp=E,74nm,0.6s						
KUR				smax	smax		
	comp=N,104nm,0.5s						
KUR	**Kuril'sk**	**5.35**	**260**	*e*P	**Pn**	**15 43 19.9**	**+1.5**
KUR				AMB	AMB	15 43 20.9	
	comp=N,30nm,0.7s						
KUR				AMB	AMB	15 43 20.9	
	comp=N,10.0nm,0.7s						
KUR				AMB	AMB	15 43 20.9	
	comp=N,80nm,0.7s						
KUR				*e*S	**Sn**	**15 44 18.3**	**-1.2**
KUR				A	A	15 44 19.6	
	comp=N,50nm,0.5s						
KUR				A	A	15 44 19.6	
	comp=N,40nm,0.5s						
SHO	**Shikotan**	**6.52**	**251**	*e*PN	**Pn**	**15 43 34.2**	**-0.3**
SHO				pmax	pmax		
	comp=N,28nm,0.9s						
SHO				pmax	pmax		
	comp=Z,41nm,0.9s						
SHO				pmax	pmax		
	comp=E,38nm,0.4s						
SHO	**Shikotan**	**6.52**	**251**	*e*P	**Pn**	**15 43 34.2**	**-0.3**
SHO				AMB	AMB	15 43 38.4	
	comp=E,30nm,0.9s						
SHO				AMB	AMB	15 43 38.4	
	comp=E,40nm,0.9s						
SHO				AMB	AMB	15 43 38.4	
	comp=E,40nm,0.4s						
PETK	**Petropavlovsk-**	**6.92**	**12**	Pn	Pn	15 43 35.0	-5.0
	comp=E,0.3nm,0.3s,baz=191,slow=13,SNR=10						
PETK				Sn	**Sn**	**15 44 55.9**	**-2.3**
	comp=E,0.4nm,0.3s,baz=258,slow=11,SNR=3.6						
PETK	**Petropavlovsk-**	**6.92**	**12**	PN	Pn	15 43 35.0	-5.0
YUK	**Yuzh-Kuril'sk**	**7.09**	**254**	*e*PN	**Pn**	**15 43 43.7**	**+1.4**
YUK				pmax	pmax		
	comp=Z,111nm,0.6s						
YUK				pmax	pmax		
	comp=N,35nm,0.4s						
YUK				pmax	pmax		
	comp=E,58nm,0.4s						
YUK	**Yuzh-Kuril'sk**	**7.09**	**254**	*e*P	**Pn**	**15 43 43.7**	**+1.4**
YUK				AMB	AMB	15 43 44.4	
	comp=E,40nm,0.7s						
YUK				AMB	AMB	15 43 44.4	
	comp=E,60nm,0.7s						
YUK				AMB	AMB	15 43 44.4	
	comp=E,110nm,0.7s						
YUK				*e*S	**Sn**	**15 45 00.2**	**-2.2**
YUK				A	A	15 45 06.6	
	comp=E,40nm,0.5s						
YUK				A	A	15 45 06.6	
	comp=E,90nm,0.5s						
JRA	**Rausu**	**7.62**	**255**	P	**Pn**	**15 43 51.9**	**+2.3**
JNK	**Nakash**	**8.03**	**254**	P	**Pn**	**15 43 56.7**	**+1.5**
JNK				*e*S	**Sn**	**15 45 22.0**	**-3.5**
JAK	**Akkeshi**	**8.30**	**250**	P	**Pn**	**15 43 58.9**	**0.0**
JAK				*e*S	**Sn**	**15 45 27.2**	**-4.9**
JTKR	**Abashiri--Toko**

comp=N,46nm,0.4s
BRBR Barbar 0.43 148 *e*P **Pg 15 45 58.3 -0.4**
BRBR *e*S **Sb 15 46 05.4 -0.8**
comp=N,46nm,0.4s
HWQ Hawqa 0.54 24 *e*P **Pg 15 45 59.5 -1.2**
HWQ Hawqa 0.54 24 *e*P **Pg 15 45 59.5 -1.2**
MARH Ras Al Marh 0.71 70 *e*P **Pb 15 46 04.8 +0.3**
MARH *e*S **Sb 15 46 14.2 -0.1**
MARH AML AML 15 46 17.4
comp=N,31nm,0.4s
MARH AML AML 15 46 21.9
comp=E,68nm,0.5s
MARH Ras Al Marh 0.71 70 *e*P **Pb 15 46 04.8 +0.3**
MARH *e*S **Sb 15 46 14.2 -0.1**
comp=E,69nm,0.5s
TOTH TOTAH 0.76 124 *e*P **Pg 15 46 04.6 -0.1**
TOTH *e*S **Sn 15 46 16.7 -1.0**
TOTH AML AML 15 46 22.3
comp=E,11nm,0.5s
TOTH AML AML 15 46 23.5
comp=N,15nm,0.3s
TOTH TOTAH 0.76 124 *e*P **Pg 15 46 04.6 -0.1**
TOTH *e*S **Sn 15 46 16.7 -1.0**
comp=N,15nm,0.3s
HAWK Haweek 0.95 39 *e*P **Pb 15 46 08.2 -0.2**
HAWK *e*S **Sb 15 46 21.4 +0.4**
HAWK AML AML 15 46 26.8
comp=N,18nm,0.4s
HAWK AML AML 15 46 29.8
comp=E,11nm,0.3s
HAWK Haweek 0.95 39 *e*P **Pb 15 46 08.2 -0.2**
HAWK *e*S **Sb 15 46 21.4 +0.4**
comp=E,11nm,0.3s
BIDA Albida 1.34 23 *e*P **Pg 15 46 15.4 -0.4**
BIDA *e*S **Sg 15 46 34.6 +1.4**
BIDA AML AML 15 46 38.2
comp=E,77nm,0.3s
BIDA AML AML 15 46 44.1
comp=N,47nm,0.5s
BIDA Albida 1.34 23 *e*P **Pg 15 46 15.4 -0.4**
BIDA *e*S **Sg 15 46 34.6 +1.4**
comp=N,47nm,0.5s
RABH Abou Rabah 1.43 62 *e*P **Pg 15 46 17.6 +0.2**
RABH *e*S **Sg 15 46 37.8 +1.8**
RABH AML AML 15 46 46.3
comp=E,7.4nm,0.5s
RABH AML AML 15 46 50.5
comp=N,5.7nm,0.6s
RABH Abou Rabah 1.43 62 *e*P **Pg 15 46 17.6 +0.2**
RABH *e*S **Sg 15 46 37.8 +1.8**
comp=N,6.0nm,0.6s
ZALF Zalf 1.63 121 *e*P **Pb 15 46 19.7 -0.3**
ZALF *e*S **Sb 15 46 41.1 +0.6**
ZALF AML AML 15 46 44.6
comp=E,8.1nm,0.3s
ZALF AML AML 15 46 44.6
comp=N,7.9nm,0.4s
ZALF Zalf 1.63 121 *e*P **Pb 15 46 19.7 -0.3**
ZALF *e*S **Sb 15 46 41.1 +0.6**
comp=N,8.0nm,0.4s

IDC 20 15:49:55.4±4.2, 12°.02N×145°.51E, $h0^{km}$, mb3.4/3, mb1 3.6/3, mb1mx3.2/44, mbtmp3.4/3, Error ellipse: s-maj=178.0km s-min=23.5km az=81.0, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**1.68**	**338**	Pn	Pn	15 50 26.1	0.0
	19nm,0.3s,baz=270,slow=5.2,SNR=22						
GUMO				Sn	Sn	15 50 45.2	-3.2
	37nm,0.3s,baz=138,slow=22,SNR=13						
WRA	**Warramunga Arr**	**33.61**	**199**	P	P	15 56 38.1	+0.4
	0.2nm,0.5s,baz=20,slow=9.3,SNR=10.0						
ASAR	**Alice Springs**	**37.24**	**198**	P	P	15 57 08.4	-0.5
	0.2nm,0.7s,baz=33,slow=11,SNR=3.9						
STKA	**Stephens Creek**	**43.81**	**185**	P	P	15 58 03.0	-0.1
	2.2nm,1.1s,baz=0.7,slow=9.8,SNR=3.3						

*IDC **20** 15:59:13.0±0.9, 37°.69N×142°.77E, $h0^{km}$, mb3.6/8, mb1 3.7/11, mb1mx3.5/45, mbtmp3.6/11, ML3.1/3, Error ellipse: s-maj=26.2km s-min=16.9km az=103.0*

ISC 20 15:59:16.4±0.9, 37°.73N±0°.08×142°.6E±0°.1, $h24^{km}$, n19, σ1^{s}65/13, mb3.7/8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**3.70**	**253**	Pn	**Pn**	**16 00 10.9**	**-1.2**
	2.1nm,0.3s,baz=40,slow=9.7,SNR=18						
JHJ	**Hachijo jima 2**	**5.14**	**207**	Pn	**Pn**	**16 00 32.5**	**+0.6**
	8.1nm,0.3s,baz=70,slow=20,SNR=11						
JHJ				Sn	**Sn**	**16 01 27.8**	**-2.7**
	12nm,0.3s,baz=234,slow=22,SNR=7.0						
ASAJ	**Asahikawa**	**6.38**	**360**	Pn	**Pn**	**16 00 48.0**	**-0.8**
	0.2nm,0.3s,baz=306,slow=18,SNR=3.0						
ASAJ				Sn	**Sn**	**16 01 57.8**	**-3.1**
	0.3nm,0.3s,baz=155,slow=17,SNR=2.7						
USRK	**Ussuriysk Ar.**	**10.30**	**312**	Pn	Pn	16 01 49.0	+6.5
	0.2nm,0.3s,baz=116,slow=13,SNR=8.0						
KSRS	**Korea Array**	**11.65**	**273**	Pn	Pn	16 02 06.8	+5.7
	0.2nm,0.3s,baz=86,slow=13,SNR=4.7						
SEY	**Seymchan**	**25.93**	**10**	P	**P**	**16 04 46.8**	**+0.3**
	0.8nm,0.7s,baz=192,slow=18,SNR=4.4						
H11N2	**WAKE ISLAND Hy**	**27.72**	**124**	T	T	16 33 56.1	
	baz=316,slow=76,SNR=21						
H11N1	**WAKE ISLAND Hy**	**27.73**	**124**	T	T	16 33 59.1	
	baz=316,slow=76,SNR=9.8						
H11N3	**WAKE ISLAND Hy**	**27.74**	**124**	T	T	16 34 02.9	
	baz=316,slow=76,SNR=13						
SONM	**Songino Array**	**28.19**	**303**	P	**P**	**16 05 09.1**	**+1.9**
	0.6nm,0.7s,baz=72,slow=6.2,SNR=3.9						
H11S1	**WAKE ISLAND Hy**	**28.47**	**126**	T	T	16 34 56.8	
	baz=318,slow=76,SNR=10						
H11S3	**WAKE ISLAND Hy**	**28.47**	**126**	T	T	16 34 56.5	
	baz=318,slow=76,SNR=10						
H11S2	**WAKE ISLAND Hy**	**28.49**	**126**	T	T	16 34 56.8	
	baz=318,slow=76,SNR=10						
MKAR	**Makanchi Array**	**44.55**	**302**	P	**P**	**16 07 27.6**	**+1.4**
	0.8nm,0.6s,baz=88,slow=10,SNR=7.2						
KURBB	**Kurchatov Arra**	**46.32**	**308**	P	**P**	**16 07 41.4**	**+1.3**
	0.6nm,0.2s,baz=83,slow=8.1,SNR=3.8						
ILAR	**Eielson Array**	**48.40**	**33**	P	**P**	**16 07 56.1**	**0.0**
	0.4nm,0.5s,baz=261,slow=5.3,SNR=5.2						
WRA	**Warramunga Arr**	**57.89**	**189**	P	**P**	**16 09 06.4**	**0.0**
	0.9nm,0.6s,baz=7.5,slow=7.2,SNR=16						
ASAR	**Alice Springs**	**61.61**	**189**	P	**P**	**16 09 32.2**	**+0.3**
	0.5nm,0.8s,baz=2.1,slow=6.4,SNR=7.0						
YKA	**Yellowknife Ar**	**62.73**	**31**	P	**P**	**16 09 38.8**	**-0.2**
	0.2nm,0.6s,baz=304,slow=6.3,SNR=3.8						

*NIED **20** 16:04:00, 35°.50N×139°.10E, $h17^{km}$, Mw3.8 Best double couple: M0:5.25000×10^{14} NP1:φ$_s$=353.00000°, δ24.00000°, λ-150.00000°. NP2:φ$_s$=235.00000°, δ78.00000°, λ-69.00000°.*

*IDC **20** 16:04:42.1±0.8, 35°.26N×138°.56E, $h0^{km}$, mb3.8/8, mb1 3.9/10, mb1mx3.6/48, mbtmp3.8/10, ML3.5/2, MS2.6/3, Ms1 2.6/3, ms1mx2.4/40, Error ellipse: s-maj=34.5km s-min=10.9km az=77.0*

*ISCJB **20** 16:04:43.8±0.7, 35°.47N±0°.03×139°.17E±0°.07, $h29^{km}$±5^{km}, mb3.8/8, Error ellipse: s-maj=9.6km s-min=5.6km az=167.5*

*JMA **20** 16:04:44.6, 35°.49N×139°.13E, $h17^{km}$±1^{km}, M3.8 Broadband fault plane solution: P waves. NP1: φ$_s$76.00000°, δ70.00000°, λ74.00000°. NP2:φ$_s$295.00000°, δ25.00000°, λ126.00000°. Principal axes: T Plg62.0000°, Azm322.0000°; N Plg15.0000°, Azm82.0000°; P Plg23.0000°, Azm178.0000°;*

JMA Felt III J1.

ISC 20 16:04:42.8±1.4, 35°.53N±0°.03×139°.18E±0°.07, $h15^{km}$±9^{km}, n28, σ0^{s}96/25, mb3.9/8, 2C-4D, Near south coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JOD2	**Odawara 2**	**0.28**	**196**	⇑P	**Pb**	**16 04 49.6**	**+0.1**
JYN	**Shimob**	**0.52**	**267**	⇑P	**Pb**	**16 04 54.0**	**+0.3**
JYN				S	**Sb**	**16 05 01.3**	**+0.2**
JRY	**Ryogami san**	**0.54**	**335**	⇓P	**Pn**	**16 04 55.3**	**-0.6**
JRY				S	**Sb**	**16 05 03.0**	**+1.5**
JIM2	**Oshima 3**	**0.84**	**166**	P	**Pg**	**16 04 58.8**	**-0.2**
JIZS	**Izushimoda**	**0.85**	**197**	⇓P	**Pg**	**16 04 58.7**	**-0.5**
JAG	**Ashikaga**	**0.92**	**14**	⇓P	**Pn**	**16 05 02.0**	**+0.8**
SHZ3	**Shizuoka 3**	**0.92**	**240**	⇓P	**Pb**	**16 05 00.7**	**+0.2**
SHZ3				S	**Sb**	**16 05 12.8**	**+0.3**
MJAR	**Matsushiro Arr**	**1.28**	**322**	Pn	**Pg**	**16 05 07.5**	**0.0**
	183nm,0.3s,baz=153,slow=15,SNR=1033						
MJAR				Lg	Lg	16 05 23.2	
	202nm,0.3s,baz=78,slow=9.1,SNR=36						
MJAR				LR	LR	16 05 53.1	
	comp=Z,352nm,18.7s,baz=140,slow=55						
MAT	**Matsushiro**	**1.28**	**322**	P	**Pg**	**16 05 07.9**	**+0.4**
MAT				S	**Sg**	**16 05 24.5**	**+0.3**
JHJ	**Hachijo jima 2**	**2.46**	**168**	Pn	**Pn**	**16 05 23.8**	**+1.5**
	66nm,0.3s,baz=333,slow=11,SNR=66						
JHJ				Sn	**Sn**	**16 05 53.7**	**+1.6**
	40nm,0.3s,baz=67,slow=22,SNR=11						
JHJ				LR	LR	16 06 02.0	
	comp=Z,41nm,19.2s,baz=108,slow=34						
JNU	**Nakatsue**	**7.28**	**253**	Pn	**Pn**	**16 06 29.0**	**+0.4**
	0.2nm,0.3s,baz=280,slow=11,SNR=3.0						
KSRS	**Korea Array**	**9.27**	**285**	Pn	**Pn**	**16 06 54.6**	**-1.2**
	0.1nm,0.3s,baz=82,slow=13,SNR=3.0						
KSRS				LR	LR	16 10 20.5	
	comp=Z,45nm,20.0s,baz=90,slow=38						
USRK	**Ussuriysk Ar.**	**10.27**	**330**	Pn	Pn	16 07 16.7	+7.2
	0.1nm,0.3s,baz=142,slow=14,SNR=10						
KLR	**Kul'dur**	**14.74**	**341**	Pn	**P**	**16 08 14.6**	**-2.1**
	0.1nm,0.3s,baz=135,slow=12,SNR=5.1						
KLR				LR	LR	16 13 57.6	
	comp=Z,42nm,19.1s,baz=150,slow=37						
H11N2	**WAKE ISLAND Hy**	**29.03**	**115**	T	T	16 41 06.7	
	baz=308,slow=75,SNR=21						
H11N1	**WAKE ISLAND Hy**	**29.04**	**116**	T	T	16 41 12.1	
	baz=308,slow=75,SNR=14						
H11N3	**WAKE ISLAND Hy**	**29.05**	**115**	T	T	16 41 17.9	
	baz=308,slow=75,SNR=16						
H11S3	**WAKE ISLAND Hy**	**29.66**	**118**	T	T	16 42 02.0	
	baz=310						
H11S1	**WAKE ISLAND Hy**	**29.66**	**118**	T	T	16 41 23.3	
	baz=310						
H11S2	**WAKE ISLAND Hy**	**29.68**	**118**	T	T	16 42 02.5	
	baz=310						
ZALV	**Zalesovo Beam**	**41.62**	**314**	P	**P**	**16 12 31.3**	**+1.3**
	0.5nm,0.3s,baz=90,slow=8.6,SNR=2.2						
MKAR	**Makanchi Array**	**43.41**	**303**	P	**P**	**16 12 45.1**	**+0.3**
	0.4nm,0.6s,baz=93,slow=10,SNR=4.1						
KURBB	**Kurchatov Arra**	**45.52**	**309**	P	**P**	**16 13 01.8**	**+0.3**
	1.0nm,0.5s,baz=85,slow=7.7,SNR=9.2						
ILAR	**Eielson Array**	**51.72**	**32**	P	P	16 13 55.4	+6.4
	0.4nm,0.8s,baz=267,slow=8.1,SNR=4.7						
WRA	**Warramunga Arr**	**55.36**	**186**	P	**P**	**16 14 14.8**	**-1.3**
	0.5nm,0.4s,baz=0.7,slow=7.6,SNR=18						
ASAR	**Alice Springs**	**59.09**	**186**	P	**P**	**16 14 41.8**	**-0.7**
	0.6nm,0.8s,baz=22,slow=12,SNR=14						
ARCES	**ARCESS Array B**	**64.76**	**339**	P	**P**	**16 15 20.5**	**+0.3**
	2.0nm,0.9s,baz=52,slow=7.3,SNR=3.0						
FINES	**FINESS Array B**	**69.29**	**332**	P	**P**	**16 15 49.2**	**+0.2**
	3.3nm,1.0s,baz=52,slow=7.5,SNR=6.5						

WEL 20 16:08:55.5±0.8, 36°.33S×177°.38E, $h191^{km}$±9^{km}, ML3.6/9, 3C-5D, Error ellipse: s-maj=9.8km s-min=8.4km az=90.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MXZ	**Matakaoa Point**	**1.44**	**149**	PN	Pn	16 09 28.3	+0.6
MXZ				SN	Sn	16 09 52.7	-0.3
HAZ	**Te Kaha**	**1.46**	**167**	PN	Pn	16 09 28.4	+0.5
HAZ				SN	Sn	16 09 55.0	+1.6
WMGZ	**Waiomatatini S**	**1.70**	**151**	PN	Pn	16 09 30.9	+0.6
PUZ	**Puketiti**	**1.88**	**158**	⇑PN	Pn	16 09 32.2	+0.2
PUZ				SN	Sn	16 09 59.9	-0.7
TWGZ	**Tauwhareparae**	**1.91**	**166**	⇑PN	Pn	16 09 33.2	+0.9
URZ	**Urewera**	**1.94**	**186**	PN	Pn	16 09 33.0	+0.4
MWZ	**Matawai**	**2.00**	**177**	PN	Pn	16 09 33.7	+0.3
MWZ				SN	Sn	16 10 02.6	-0.4
MWZ				AML	AML	16 10 05.3	
TKGZ	**Te Karaka**	**2.14**	**170**	⇓PN	Pn	16 09 34.8	+0.1
RAGZ	**Rawiri**	**2.16**	**179**	PN	Pn	16 09 35.4	+0.3
CNGZ	**Carnagh Statio**	**2.25**	**163**	PN	Pn	16 09 36.2	+0.2
RTZ	**Ruatahuna**	**2.30**	**188**	⇓PN	Pn	16 09 36.4	-0.3
RIGZ	**Rimuhau**	**2.39**	**173**	PN	Pn	16 09 37.3	-0.3
RIGZ				SN	Sn	16 10 09.6	-0.9
SNGZ	**Shannon Statio**	**2.45**	**181**	⇑PN	Pn	16 09 37.9	-0.3
RAHZ	**Arahi**	**2.59**	**185**	PN	Pn	16 09 39.7	-0.1
MRHZ	**Matea Rd**	**2.61**	**197**	⇓PN	Pn	16 09 39.9	-0.2
KNZ	**Kokohu**	**2.70**	**175**	PN	Pn	16 09 40.1	-0.9
NMHZ	**Naumai**	**2.80**	**189**	PN	Pn	16 09 42.4	+0.1
MHGZ	**Mahia Peninsul**	**2.85**	**172**	PN	Pn	16 09 42.0	-0.8
BKZ	**Black Stump Fm**	**2.92**	**194**	PN	Pn	16 09 41.8	-1.8
ARHZ	**Aropaoanui**	**2.94**	**186**	PN	Pn	16 09 43.3	-0.6
MCHZ	**McNeill Hill**	**3.16**	**190**	⇓PN	Pn	16 09 45.7	-0.8
WNVZ	**Wahianoa**	**3.31**	**205**	⇓PN	Pn	16 09 47.7	-0.7
BHHZ	**Black Hill Sta**	**3.32**	**198**	PN	Pn	16 09 47.0	-1.5
KRHZ	**Kereru**	**3.40**	**193**	PN	Pn	16 09 47.8	-1.7
KAHZ	**Kahuranaki**	**3.48**	**186**	PN	Pn	16 09 48.9	-1.6
PNHZ	**Pukenui**	**3.70**	**194**	PN	Pn	16 09 50.9	-2.2
PXZ	**Pawanui**	**3.72**	**186**	PN	Pn	16 09 50.9	-2.4
TSZ	**Takapari Road**	**3.89**	**196**	PN	Pn	16 09 52.9	-2.6
PRHZ	**Porangahau**	**3.97**	**188**	PN	Pn	16 09 54.2	-2.3
MRZ	**Mangatainoka R**	**4.55**	**198**	PN	Pn	16 10 00.3	-3.5
TIWZ	**Tintock**	**4.59**	**194**	AML	AML	16 10 56.1	
OGWZ	**Otaki Gorge**	**4.80**	**200**	PN	Pn	16 10 03.4	-3.7
KIW	**Kapiti Island**	**4.92**	**202**	PN	Pn	16 10 04.7	-3.9
CAW	**Cannon Point**	**5.10**	**200**	PN	Pn	16 10 06.6	-4.3

*IDC **20** 16:12:04.0±1.0, 22°.98N×44°.97W, $h0^{km}$, mb3.7/9, mb1 4.0/9, mb1mx3.7/44, mbtmp3.7/9, MS3.6/18, Ms1 3.6/18, ms1mx3.4/35, Error ellipse: s-maj=29.0km s-min=21.9km az=169.0*

*ISCJB **20** 16:12:05.4±0.8, 23°.0N±0°.2×45°.0W±0°.1, $h21^{km}$, mb3.8/10, MS3.5/18, Error ellipse: s-maj=23.2km s-min=17.0km az=165.9*

ISC 20 16:12:07.2±0.9, 23°.0N±0°.2×45°.0W±0°.1, $h21^{km}$, n28, σ0^{s}86/10, mb3.8/10, MS3.5/18, Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SJG	**San Juan**	**20.41**	**260**	LR	LR	16 22 52.3	
	comp=Z,120nm,21.6s,baz=94,slow=32						
PTGA	**Pitinga**	**27.70**	**214**	LR	LR	16 27 46.6	
	comp=Z,107nm,18.9s,baz=46,slow=34						
BBTS	**Babate**	**28.11**	**102**	LR	LR	16 25 53.1	
	comp=Z,109nm,19.9s,baz=297,slow=30						
ROSC	**El Rosal**	**33.58**	**242**	LR	LR	16 34 14.9	
	comp=Z,36nm,18.2s,baz=225,slow=40						
DBIC	**Dimbokro**	**41.84**	**106**	LR	LR	16 34 29.9	
	comp=Z,63nm,19.6s,baz=270,slow=32						
H10N2	**ASCENSION HYDR**	**42.73**	**132**	T	T	17 05 43.4	
	baz=316,slow=75,SNR=176						
H10N3	**ASCENSION HYDR**	**42.73**	**132**	T	T	17 05 43.3	
	baz=316,slow=75,SNR=228						
H10N1	**ASCENSION HYDR**	**42.74**	**132**	T	T	17 05 44.7	
	baz=316,slow=75,SNR=212						
H10S3	**ASCENSION HYDR**	**43.42**	**134**	T	T	17 06 37.2	
	baz=318,slow=75,SNR=122						
H10S1	**ASCENSION HYDR**	**43.43**	**133**	T	T	17 06 37.3	
	baz=318,slow=75,SNR=135						
H10S2	**ASCENSION HYDR**	**43.44**	**134**	T	T	17 06 35.1	
	baz=318,slow=75,SNR=121						
LPAZ	**La Paz**	**45.11**	**212**	P	**P**	**16 20 23.4**	**+0.5**
	1.3nm,0.8s,baz=19,slow=8.7,SNR=6.2						
LPAZ				LR	LR	16 38 36.3	
	comp=Z,73nm,20.7s,baz=344,slow=35						
TORD	**Torodi Ar. Bea**	**45.26**	**94**	P	**P**	**16 20 22.9**	**-0.7**
	1.4nm,1.1s,baz=297,slow=6.5,SNR=5.5						
TORD				LR	LR	16 37 16.8	
	comp=Z,87nm,19.8s,baz=285,slow=33						
CPUP	**Villa Florida**	**50.44**	**194**	LR	LR	16 41 53.9	
	comp=Z,37nm,18.1s,baz=3.5,slow=36						
LVC	**Limon Verde**	**50.94**	**209**	LR	LR	16 42 27.7	
	comp=Z,260nm,19.3s,baz=38,slow=36						
GERES	**GERESS Array B**	**52.57**	**45**	P	**P**	**16 21 20.9**	**+1.5**
	0.2nm,0.5s,baz=283,slow=5.8,SNR=4.1						
GERES				LR	LR	16 40 02.8	
	comp=Z,39nm,18.6s,baz=292,slow=32						
TXAR	**Lajitas Array**	**52.62**	**290**	P	**P**	**16 21 20.1**	**+0.1**
	0.4nm,0.7s,baz=100,slow=10,SNR=3.6						
TXAR				LR	LR	16 42 31.7	
	comp=Z,42nm,20.9s,baz=0.0,slow=35						
NOA	**NORSAR Array B**	**53.95**	**30**	LR	LR	16 40 18.0	
	comp=Z,72nm,19.9s,baz=250,slow=31						
HFS	**Hagfors**	**54.85**	**32**	P	**P**	**16 21 35.3**	**-0.5**
	2.4nm,0.8s,baz=271,slow=6.8,SNR=3.4						
PDAR	**Pinedale Array**	**56.38**	**307**	P	**P**	**16 21 46.5**	**-0.8**
	0.6nm,0.8s,baz=74,slow=12,SNR=4.5						
PDAR				LR	LR	16 43 34.7	
	comp=Z,25nm,20.1s,baz=286,slow=34						
YKA	**Yellowknife Ar**	**60.50**	**330**	P	**P**	**16 22 15.0**	**-0.4**
	0.5nm,0.7s,baz=97,slow=7.4,SNR=12						
FINES	**FINESS Array B**	**61.05**	**31**	LR	LR	16 44 28.2	
	comp=Z,84nm,18.5s,baz=284,slow=32						
ARCES	**ARCESS Array B**	**61.88**	**22**	P	**P**	**16 22 25.3**	**+0.6**
	1.9nm,0.8s,baz=262,slow=6.3,SNR=3.9						
ARCES				LR	LR	16 44 14.4	
	comp=Z,41nm,20.5s,baz=279,slow=31						
AKASG	**Malin Array Be**	**62.68**	**44**	LR	LR	16 46 16.8	
	comp=Z,25nm,19.6s,baz=25,slow=33						
NVAR	**Mina Array Bea**	**63.41**	**303**	LR	LR	16 47 47.0	
	comp=Z,76nm,20.7s,baz=79,slow=34						
BRTR	**Keskin Array B**	**67.21**	**55**	P	**P**	**16 22 59.5**	**-0.8**
	0.8nm,0.9s,baz=256,slow=5.8,SNR=5.0						
PLCA	**Paso Flores**	**67.69**	**201**	LR	LR	16 53 58.1	
	comp=Z,26nm,18.0s,baz=58,slow=37						
ILAR	**Eielson Array**	**74.41**	**334**	P	**P**	**16 23 43.8**	**+0.4**
	0.6nm,0.8s,baz=84,slow=4.6,SNR=4.4						

*SJA **20** 16:35:30.6±0.7, 36°.92S×70°.22W, $h464^{km}$±17^{km}, ML4.5*
*GUC **20** 16:35:33.4±0.3, 35°.15S×70°.19W, $h104^{km}$±11^{km}, ML2.5*

ISC 20 16:35:41.7±2.8, 35°.38S±0°.07×73°.2W±0°.2, $h17^{km}$, n10, σ1^{s}85/15, 1C, Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TALC	**Talca**	**1.24**	**91**	⇑*i*P	**Pb**	**16 36 02.9**	**-1.7**
TALC				*e*S	**Sn**	**16 36 20.9**	**+0.3**
CHPI	**Pichilemu**	**1.37**	**44**	*e*P	**Pn**	**16 36 02.8**	**-3.1**
CHPI				*e*S	**Sg**	**16 36 25.0**	**-0.8**
CLCH	**Cerro Calan**	**2.93**	**48**	*e*P	**Pn**	**16 36 26.4**	**-1.1**
CLCH				*i* S	**Sg**	**16 37 14.9**	**-1.0**
CANA	**Caviahue**	**3.02**	**147**	*e*P	**Pn**	**16 36 29.3**	**+0.5**
CANA				*e*S	**Sb**	**16 37 12.8**	**+1.2**
AUSP	**Uspallata**	**4.44**	**46**	*e*P	**Pn**	**16 36 51.1**	**+2.5**
AUSP				*e*S	**Sg**	**16 38 07.3**	**+3.0**
RTLS	**Leoncito**	**4.81**	**43**	*e*P	**Pn**	**16 36 55.6**	**+2.1**
RTCV	**Cerro Valdivia**	**5.21**	**49**	*e*P	**Pn**	**16 37 00.5**	**+1.7**
AMOG	**MOGNA**	**5.91**	**43**	*e*P	**Pn**	**16 37 09.3**	**+0.9**
AGUA	**GUANDACOL**	**7.07**	**35**	*e*P	**Pn**	**16 37 25.2**	**+0.7**
VCA	**Vinchina**	**7.84**	**34**	*e*P	**Pn**	**16 37 35.6**	**+0.5**
VCA				IAML		16 37 40.1	
	comp=Z,18nm,0.2s						

*IDC **20** 16:43:19.9±2.5, 35°.83N×141°.44E, $h0^{km}$, mb3.4/2, mb1 3.5/5, mb1mx3.3/45, mbtmp3.6/5, ML2.7/2, Error ellipse: s-maj=46.6km s-min=21.4km az=62.0*

*ISCJB **20** 16:43:20.9±1.4, 35°.84N±0°.07×141°.6E±0°.1, $h26^{km}$, mb3.3/2, Error ellipse: s-maj=15.9km s-min=6.6km az=145.5*

ISC 20 16:43:23.2±1.7, 35°.9N±0°.1×141°.5E±0°.1, $h26^{km}$, n12, σ0^{s}98/10, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**2.74**	**285**	Pn	**Pn**	**16 44 04.1**	**-1.3**
	1.5nm,0.3s,baz=94,slow=9.7,SNR=16						
MJAR				Sn	**Sn**	**16 44 39.0**	**+1.3**
	0.6nm,0.3s,baz=314,slow=35,SNR=3.3						
MAT	**Matsushiro**	**2.74**	**285**	P	**Pn**	**16 44 05.1**	**-0.4**
MAT				S	**Sn**	**16 44 38.1**	**+0.4**
JHJ	**Hachijo jima 2**	**3.08**	**208**	Pn	**Pn**	**16 44 10.1**	**0.0**
	1.9nm,0.3s,baz=153,slow=23,SNR=6.2						
JHJ				Sn	**Sn**	**16 44 45.0**	**-1.1**
	8.9nm,0.3s,baz=121,slow=23,SNR=5.6						
JCJ	**Chichijima**	**8.76**	**176**	Pn	**Pn**	**16 45 27.9**	**-0.3**
	baz=280,slow=19						
JCJ				Sn	**Sn**	**16 47 07.4**	**+1.2**
	3.9nm,0.3s,baz=289,slow=23,SNR=6.7						
H11N2	**WAKE ISLAND Hy**	**27.51**	**119**	T	T	17 18 11.4	
	baz=311,slow=75,SNR=24						
H11N1	**WAKE ISLAND Hy**	**27.52**	**119**	T	T	17 18 08.1	
	baz=311,slow=75,SNR=30						
H11N3	**WAKE ISLAND Hy**	**27.53**	**119**	T	T	17 18 08.9	
	baz=311,slow=75,SNR=28						
H11S1	**WAKE ISLAND Hy**	**28.19**	**121**	T	T	17 19 01.8	
	baz=313,slow=75,SNR=8.3						
H11S3	**WAKE ISLAND Hy**	**28.19**	**121**	T	T	17 19 06.5	
	baz=313,slow=75,SNR=9.2						
H11S2	**WAKE ISLAND Hy**	**28.20**	**121**	T	T	17 19 04.3	
	baz=313,slow=75,SNR=9.0						
MKAR	**Makanchi Array**	**44.80**	**303**	P	**P**	**16 51 35.1**	**+0.4**
	0.2nm,0.7s,baz=89,slow=8.6,SNR=4.9						
WRA	**Warramunga Arr**	**55.91**	**188**	P	**P**	**16 52 59.0**	**+0.1**
	0.4nm,0.8s,baz=4.3,slow=7.6,SNR=4.1						

*ISK **20** 16:46:47.6, 39°.05N×29°.11E, $h8^{km}$, MD2.6*

*ISCJB **20** 16:46:48.3±0.7, 39°.09N±0°.04×29°.04E±0°.05, $h1^{km}$±10^{km}, Error ellipse: s-maj=7.7km s-min=5.1km az=135.1*

*CSEM **20** 16:46:48.5±0.1, 39°.11N×29°.04E, $h2^{km}$, MD1.9, Error ellipse: s-maj=4.2km s-min=2.6km az=107.0*

*DDA **20** 16:46:49.6, 39°.04N×28°.97E, $h7^{km}$, Md1.9*

ISC 20 16:46:47.9±1.1, 39°.04N±0°.03×29°.09E±0°.04, $h9^{km}$±10^{km}, n19, σ0^{s}30/30, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.29**	**271**	P	**Pg**	**16 46 53.9**	**+0.1

KHAL S **Sg** **16 48 37.1 -0.1**
KHAL Karahalli 0.83 151 *i* P **Pn** **16 48 26.9 -0.1**
KHAL *i* S **Sg** **16 48 37.1 -0.1**
KHL Karahalli 0.89 151 *e*PG **Pg** **16 48 27.2 0.0**
KHL *e*SG **Sn** **16 48 40.0 -0.2**
KHL Karahalli 0.89 151 *e*Pg **Pg** **16 48 27.2 0.0**
KHL *e*Sg **Sn** **16 48 40.0 -0.2**
AKS Akhisar 0.94 257 *e*PG **Pn** **16 48 28.3 -0.1**
AKS Akhisar 0.94 257 *e*Pg **Pn** **16 48 28.3 -0.1**
BALB Balikesir 1.01 302 *e*PG **Pn** **16 48 29.3 0.0**
BALB Balikesir 1.01 302 *e*Pg **Pn** **16 48 29.3 0.0**
KCTX Karacabey (Bur 1.26 338 *e*PN **Pg** **16 48 34.4 +0.2**
KCTX Karacabey (Bur 1.26 338 *e*Pn **Pg** **16 48 34.4 +0.2**
CAVI Cavuskoy 1.28 31 *e*PN **Pg** **16 48 34.8 +0.1**
CAVI Cavuskoy 1.28 31 *e*Pn **Pg** **16 48 34.8 +0.1**
IZI Iznik 1.29 17 *e*PN **Pg** **16 48 34.9 +0.1**
IZI Iznik 1.29 17 *e*Pn **Pg** **16 48 34.9 +0.1**
GONE Gonen-Balikesi 1.38 314 *e*PN **Pg** **16 48 36.5 0.0**
GONE Gonen-Balikesi 1.38 314 *e*Pn **Pg** **16 48 36.5 0.0**
ARMT Armutlu 1.46 356 *e*PN **Pg** **16 48 38.0 0.0**
ARMT Armutlu 1.46 356 *e*Pn **Pg** **16 48 38.1 0.0**
EDC Edincik 1.51 325 *e*PN **Pg** **16 48 38.6 -0.5**
EDC Edincik 1.51 325 *e*Pn **Pg** **16 48 38.6 -0.5**
GULT Gulveren 1.77 41 *e*PN **Pb** **16 48 42.3 +0.2**
GULT Gulveren 1.77 41 *e*Pn **Pb** **16 48 42.3 +0.2**

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*IDC **20** 16:49:43.5±0.7, 6°.54S×148°.15E, h0km, mb4.4/16, mb1 4.5/19, mb1mx4.4/32, mbtmp4.4/19, ML4.3/2, MS4.3/27, Ms1 4.3/27, ms1mx4.2/41, Error ellipse: s-maj=26.5km s-min=12.2km az=93.0*
*ISCJB **20** 16:49:48.6±0.4, 6°.61S±0°.05×148°.02E±0°.07, h51km, mb4.5/28, MS4.3/27, Error ellipse: s-maj=10.2km s-min=6.6km az=172.3*
*NEIC **20** 16:49:50.9±1.0, 6°.62S×147°.96E, h56km±9km, mb4.8/10, Error ellipse: s-maj=9.8km s-min=7.6km az=76.0*
*DJA **20** 16:49:51.2±2.5, 7°.5S±5°×14°.8E±1°.0, h39km±18km, M4.7/13, mb4.4/13, mB5.0/3, MLv4.9/1, Mw(mB)4.3/3*
ISC 20 16:49:50.8±0.5, 6°.57S±0°.06×148°.03E±0°.08, h51km, n71, σ1§69/51, mb4.4/28, MS4.3/27, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.94**	**197**	Pn	**Pn**	**16 50 34.5**	**-0.6**
	77nm,0.3s,baz=44,slow=8.7,SNR=124						
PMG				Sn	**Sn**	**16 51 13.7**	**+4.4**
	70nm,0.3s,baz=282,slow=16,SNR=9.9						
PMG	**Port Moresby**	**2.94**	**197**	*e*Pn	**Pn**	**16 50 33.8**	**-1.4**
JAY	**Jayapura**	**8.34**	**299**	Pn	**Pn**	**16 51 49.7**	**+0.5**
	0.1nm,0.3s,baz=87,slow=21,SNR=6.0						
JAY	**Jayapura**	**8.34**	**299**	P	**Pn**	**16 51 51.2**	**+2.0**
	24nm,1.4s,412nm						
GENI	**Genyem**	**8.77**	**296**	P	Pn	16 52 03.1	+8.0
HNR	**Honiara**	**12.14**	**104**	Pn	**Pn**	**16 52 43.0**	**+1.8**
	6.4nm,0.3s,baz=190,slow=4.7,SNR=13						
HNR	**Honiara**	**12.14**	**104**	*e*P	**Pn**	**16 52 45.0**	**+3.8**
HNR	**Honiara**	**12.14**	**104**	*e*Pn	**Pn**	**16 52 42.4**	**+1.2**
	382nm,1.2s						
CTA	**Charters Tower**	**13.54**	**187**	Pn	**Pn**	**16 52 59.5**	**-0.9**
	0.7nm,0.3s,baz=332,slow=11,SNR=9.0						
CTAO	**Charters Tower**	**13.54**	**187**	*e*Pn	**Pn**	**16 52 59.4**	**-0.9**
SWI	**Sorong**	**17.66**	**288**	P	**Pn**	**16 53 52.7**	**-0.7**
	31nm,1.6s,896nm						
WRAB	**Tennant Creek**	**18.78**	**224**	*e*P	**P**	**16 54 05.6**	**-0.4**
	11nm,0.7s						
WRA	**Warramunga Arr**	**18.79**	**224**	P	**P**	**16 54 05.4**	**-0.8**
	1.4nm,0.3s,baz=52,slow=10,SNR=35						
WRA				LR	LR	17 02 34.1	
	comp=Z,2μm,18.2s,baz=50,slow=41						
EIDS	**Eidsvold**	**18.92**	**171**	*e*P	**P**	**16 54 06.6**	**-0.9**
GUMO	**Guam**	**20.27**	**351**	LR	LR	17 02 10.4	
	comp=Z,906nm,18.0s,baz=172,slow=37						
ASAR	**Alice Springs**	**21.75**	**217**	P	**P**	**16 54 37.1**	**-1.1**
	8.7nm,0.8s,baz=56,slow=9.2,SNR=96						
ASAR				S	**S**	**16 58 37.0**	**+0.7**
	1.6nm,0.9s,baz=37,slow=23,SNR=3.6						
ASAR				LR	LR	17 03 45.7	
	comp=Z,1μm,18.6s,baz=41,slow=38						
DZM	**Mont Dzumac**	**23.53**	**133**	*e*LR	LR	17 00 50.8	
	2μm,26.8s						
ARMA	**Armidale**	**23.96**	**172**	*e*P	**P**	**16 54 58.5**	**-2.1**
	11nm,0.8s						
FITZ	**Fitzroy Crossi**	**24.65**	**240**	P	**P**	**16 55 06.4**	**-0.6**
	31nm,0.7s,baz=53,slow=8.2,SNR=120						
FITZ				LR	LR	17 06 12.2	
	comp=Z,973nm,18.1s,baz=60,slow=40						
FITZ	**Fitzroy Crossi**	**24.65**	**240**	*e*P	**P**	**16 55 05.4**	**-1.5**
	28nm,0.6s						
STKA	**Stephens Creek**	**25.88**	**193**	P	**P**	**16 55 17.2**	**-0.7**
	9.4nm,0.8s,baz=6.2,slow=9.0,SNR=22						
STKA				LR	LR	17 06 46.6	
	comp=Z,2μm,18.4s,baz=9.2,slow=39						
DAV	**Davao City (W)**	**26.18**	**301**	LR	LR	17 05 14.2	
	comp=Z,430nm,20.0s,baz=356,slow=35						
MRSI	**Marisa**	**26.96**	**284**	P	**P**	**16 55 31.8**	**+3.9**
KAPI	**Kappang**	**28.17**	**272**	LR	LR	17 09 16.4	
	comp=Z,559nm,20.8s,baz=112,slow=42						
PCI	**Palu**	**28.68**	**280**	P	**P**	**16 55 45.5**	**+2.2**
	25nm,1.9s,420nm						
MBWA	**Marble Bar**	**30.98**	**239**	*e*P	**P**	**16 56 01.9**	**-1.6**
	32nm,0.6s						
JCJ	**Chichijima**	**33.94**	**351**	LR	LR	17 08 19.9	
	comp=Z,330nm,20.3s,baz=164,slow=33						
KSM	**Kuching**	**38.49**	**281**	*e*P	**P**	**16 57 06.7**	**-1.7**
	9.1nm,1.0s						
URZ	**Urewera**	**41.09**	**144**	LR	LR	17 13 55.2	
	comp=Z,1μm,18.3s,baz=342,slow=35						
RPZ	**Rata Peaks**	**42.16**	**155**	P	**P**	**16 57 37.8**	**-0.6**
	11nm,0.8s,baz=293,slow=2.7,SNR=7.7						
JNU	**Nakatsue**	**42.71**	**339**	LR	LR	17 14 12.2	
	comp=Z,330nm,20.6s,baz=132,slow=34						
MJAR	**Matsushiro Arr**	**43.87**	**349**	P	**P**	**16 57 51.2**	**-1.1**
	6.9nm,1.0s,baz=174,slow=8.0,SNR=14						
MAT	**Matsushiro**	**43.87**	**349**	P	**P**	**16 57 51.1**	**-1.2**
KSRS	**Korea Array**	**47.65**	**338**	P	**P**	**16 58 22.0**	**-0.1**
	3.3nm,0.9s,baz=154,slow=9.3,SNR=14						
KSRS				LR	LR	17 17 02.1	
	comp=Z,399nm,19.6s,baz=154,slow=34						
KSAR	**Wonju Array Be**	**47.66**	**338**	P	**P**	**16 58 22.0**	**-0.1**
KULM	**Kulim**	**48.73**	**283**	*e*P	**P**	**16 58 28.1**	**-2.8**
	11nm,0.7s						
GSI	**Gunungsitoli**	**50.96**	**277**	*e*P	**P**	**16 58 47.0**	**-0.8**
	14nm,0.6s						
SURT	**Suratani**	**51.44**	**287**	P	**P**	**16 58 53.0**	**+1.6**
	5.7nm,0.7s,123nm						
RAR	**Rarotonga**	**52.48**	**112**	LR	LR	17 17 08.2	
	comp=Z,105nm,21.0s,baz=284,slow=31						
USRK	**Ussuriysk Ar.**	**52.57**	**346**	P	**P**	**16 58 59.4**	**+0.1**
	1.7nm,0.7s,baz=176,slow=7.6,SNR=6.7						
USRK				LR	LR	17 19 55.9	
	comp=Z,199nm,19.3s,baz=145,slow=34						
UTTA	**Uttaradit**	**52.73**	**298**	P	**P**	**16 59 04.4**	**+3.5**
	2.0nm,0.9s						
NANT	**Nan**	**53.02**	**299**	P	**P**	**16 59 05.6**	**+2.5**
	2.1nm,1.0s						
CMAR	**Chiang Mai Arr**	**54.42**	**298**	P	**P**	**16 59 14.9**	**+1.6**
	2.3nm,0.8s,baz=121,slow=5.6,SNR=16						
KLR	**Kul'dur**	**57.36**	**347**	LR	LR	17 21 32.9	
	comp=Z,189nm,21.4s,baz=179,slow=33						
PETK	**Petropavlovsk-**	**60.02**	**7**	P	**P**	**16 59 52.0**	**-0.1**
	2.2nm,0.5s,baz=157,slow=6.0,SNR=14						
PETK				LR	LR	17 22 44.3	
	comp=Z,186nm,20.6s,baz=192,slow=33						
PPT2	**Papeete2**	**61.76**	**106**	*e*LR	LR	17 18 27.4	
	191nm,21.5s						
TBI	**Tubuai**	**62.21**	**113**	*e*LR	LR	17 18 41.1	
	162nm,33.8s						
SHL	**Shillong**	**63.18**	**303**	*ex*	**P**	**17 00 16.0**	**+1.7**
SONM	**Songino Array**	**65.40**	**331**	P	**P**	**17 00 28.6**	**+0.3**
	2.8nm,0.9s,baz=152,slow=6.7,SNR=9.8						
SONM				LR	LR	17 28 26.9	
	comp=Z,415nm,20.0s,baz=135,slow=36						
TLY	**Talaya**	**69.32**	**332**	LR	LR	17 33 24.0	
	comp=Z,197nm,18.9s,baz=132,slow=38						
TAOE	**Nuku Hiva Isla**	**71.12**	**97**	*e*LR	LR	17 23 03.5	
	301nm,20.9s						
VNDA	**Vanda**	**71.28**	**177**	P	**P**	**17 01 04.8**	**+0.3**
	2.6nm,0.8s,baz=327,slow=6.6,SNR=13						
VNDA				LR	LR	17 31 27.7	
	comp=Z,283nm,18.1s,baz=346,slow=35						
RKT	**Rikitea**	**75.51**	**112**	*e*LR	LR	17 25 04.2	
	350nm,22.5s						
MKAR	**Makanchi Array**	**78.59**	**320**	P	**P**	**17 01 47.3**	**+0.2**
	2.0nm,0.8s,baz=101,slow=5.5,SNR=12						
MKAR				LR	LR	17 36 08.0	
	comp=Z,93nm,21.4s,baz=114,slow=35						
TIXI	**Tiksi**	**79.08**	**354**	*e*P	**P**	**17 01 48.9**	**-0.4**
	2.9nm,1.0s						
ZALV	**Zalesovo Beam**	**80.04**	**328**	P	**P**	**17 01 53.7**	**-1.2**
	1.2nm,0.5s,baz=110,slow=6.8,SNR=6.2						
ZALV				LR	LR	17 36 40.8	
	comp=Z,304nm,20.3s,baz=70,slow=35						
MAW	**Mawson**	**82.11**	**203**	LR	LR	17 36 58.1	
	comp=Z,218nm,20.4s,baz=62,slow=34						
QSPA	**South Pole Qui**	**83.40**	**180**	*e*P	**P**	**17 02 12.4**	**-0.2**
	33nm,0.6s						
ILAR	**Eielson Array**	**85.61**	**23**	P	**P**	**17 02 22.3**	**-1.2**
	1.3nm,0.9s,baz=253,slow=5.1,SNR=10.0						
NRIK	**Noril'sk**	**86.13**	**342**	P	**P**	**17 02 26.1**	**+0.1**
	1.9nm,0.4s,baz=116,slow=5.9,SNR=3.8						
NRIK				LR	LR	17 43 11.1	
	comp=Z,136nm,18.4s,baz=118,slow=37						
BVAR	**Borovoye Array**	**87.83**	**324**	P	**P**	**17 02 33.5**	**-1.1**
	2.8nm,0.9s,baz=103,slow=4.7,SNR=13						
WSAR	**Wadi Sarin**	**92.00**	**293**	LR	LR	17 51 52.1	
	comp=Z,22nm,18.2s,slow=40						
ABKAR	**Akbulak array**	**93.68**	**319**	*e*P	**P**	**17 02 59.0**	**-3.0**
	2.5nm,0.9s						
GEYT	**Alibeck**	**93.92**	**308**	LR	LR	17 48 54.6	
	comp=Z,84nm,20.1s,baz=125,slow=38						
AKTO	**Aktyubinsk**	**95.02**	**320**	LR	LR	17 48 06.4	
	comp=Z,106nm,18.8s,baz=83,slow=37						
ARU	**Arti**	**95.13**	**326**	LR	LR	17 45 54.8	
	comp=Z,164nm,21.4s,baz=89,slow=35						
NVAR	**Mina Array Bea**	**96.91**	**52**	LR	LR	17 40 41.6	
	comp=Z,219nm,21.8s,baz=266,slow=32						
YKA	**Yellowknife Ar**	**99.20**	**28**	LR	LR	17 45 42.9	
	comp=Z,8.9nm,20.9s,baz=0.0,slow=34						
GERES	**GERESS Array B**	**122.95**	**326**	PKP	**PKPdf**	**17 08 42.4**	**+0.6**
	0.4nm,0.4s,baz=46,slow=11,SNR=4.5						
TORD	**Torodi Ar. Bea**	**146.22**	**284**	PKPbc	**PKPab**	**17 09 27.4**	**-0.1**
	4.6nm,0.5s,baz=65,slow=3.7,SNR=59						
DBIC	**Dimbokro**	**153.06**	**272**	PKPbc	**PKPbc**	**17 09 44.5**	**+0.6**
	1.9nm,0.6s,baz=61,slow=2.2,SNR=6.3						

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*ISCJB **20** 16:53:46.3±0.7, 39°.14N±0°.04×31°.44E±0°.06, h9km, Error ellipse: s-maj=7.2km s-min=5.2km az=6.9*
*CSEM **20** 16:53:46.4±0.2, 39°.14N×31°.47E, h8km, MD2.7, Error ellipse: s-maj=4.9km s-min=3.7km az=84.0*
*ISK **20** 16:53:46.8, 39°.17N×31°.58E, h7km, MD2.7*
ISC 20 16:53:45.1±1.2, 39°.18N±0°.04×31°.39E±0°.07, h9km, n14, σ0§28/22, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SVRH	**Sivrihisar-ESK**	**0.29**	**21**	*e*PG	**Pb**	**16 53 52.8**	**+0.3**
SVRH				*e*SG	**Sb**	**16 53 57.2**	**-0.3**
SVRH	**Sivrihisar-ESK**	**0.29**	**21**	*e*Pg	**Pb**	**16 53 52.8**	**+0.3**
SVRH				*e*Sg	**Sb**	**16 53 57.2**	**-0.3**
KIZT	**Kizilcal**	**0.49**	**128**	*e*PG	**Pg**	**16 53 54.5**	**-0.1**
KIZT	**Kizilcal**	**0.49**	**128**	*e*Pg	**Pg**	**16 53 54.5**	**-0.1**
BOLV	**Bolvadin**	**0.57**	**217**	P	**Pb**	**16 53 57.7**	**+0.3**
BOLV				S	**Sb**	**16 54 05.5**	**-0.3**
BOLV	**Bolvadin**	**0.57**	**217**	*i* P	**Pb**	**16 53 57.7**	**+0.3**
BOLV				*i* S	**Sb**	**16 54 05.5**	**-0.3**
KDHN	**Kadinhani**	**0.87**	**139**	P	**Pg**	**16 54 01.4**	**-0.5**
KDHN				S	**Sg**	**16 54 13.5**	**+0.3**
KDHN	**Kadinhani**	**0.87**	**139**	*i* P	**Pg**	**16 54 01.4**	**-0.5**
KDHN				*i* S	**Sg**	**16 54 13.5**	**+0.3**
LADK	**Ladik-KONYA**	**1.24**	**142**	*e*PN	**Pg**	**16 54 09.1**	**+0.1**
LADK				*e*SN	**Sn**	**16 54 25.4**	**-0.3**
LADK	**Ladik-KONYA**	**1.24**	**142**	*e*Pn	**Pg**	**16 54 09.1**	**+0.1**
LADK				*e*Sn	**Sn**	**16 54 25.4**	**-0.3**
CHBY	**Cihanbeyli**	**1.31**	**117**	*e*PN	**Pn**	**16 54 09.9**	**+0.1**
CHBY	**Cihanbeyli**	**1.31**	**117**	*e*Pn	**Pn**	**16 54 09.9**	**+0.1**
KONT	**Konya--Tatoy**	**1.45**	**148**	*e*PN	**Pg**	**16 54 12.9**	**-0.1**
KONT	**Konya--Tatoy**	**1.45**	**148**	*e*Pn	**Pg**	**16 54 12.9**	**-0.1**

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*ISCJB **20** 16:56:09.0±0.4, 39°.11N±0°.03×29°.02E±0°.03, h5km±5km, Error ellipse: s-maj=4.5km s-min=3.6km az=156.4*
*ISK **20** 16:56:08.9, 39°.10N×29°.03E, h9km, MD2.8*
*DDA **20** 16:56:09.0, 39°.09N×29°.01E, h7km, Md2.1*
*CSEM **20** 16:56:09.2±0.1, 39°.11N×29°.03E, h5km, MD2.1, Error ellipse: s-maj=1.9km s-min=1.7km az=120.0*
ISC 20 16:56:09.3±1.0, 39°.11N±0°.02×29°.01E±0°.02, h8km±9km, n41, σ0§35/58, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**253**	P	**Pg**	**16 56 14.2**	**+0.1**
DEMI				S	**Sg**	**16 56 17.5**	**+0.1**
DEMI	**Demirci**	**0.24**	**253**	*i* P	**Pg**	**16 56 14.2**	**+0.1**
DEMI				*i* S	**Sg**	**16 56 17.5**	**+0.1**
GDZ	**Gediz**	**0.36**	**94**	P	**Pg**	**16 56 16.6**	**+0.1**
GDZ				S	**Sg**	**16 56 21.8**	**+0.5**
GDZ	**Gediz**	**0.36**	**94**	*i* P	**Pg**	**16 56 16.6**	**+0.1**
GDZ				*i* S	**Sg**	**16 56 21.8**	**+0.5**
TVSB	**Tavsanli**	**0.48**	**46**	*e*PG	**Pg**	**16 56 18.7**	**0.0**
TVSB				*e*SG	**Sg**	**16 56 24.9**	**-0.2**
TVSB	**Tavsanli**	**0.48**	**46**	*e*Pg	**Pg**	**16 56 18.7**	**0.0**
TVSB				*e*Sg	**Sg**	**16 56 24.9**	**-0.2**
DURS	**Dursunbey**	**0.64**	**320**	P	**Pg**	**16 56 21.2**	**-0.5**
DURS	**Dursunbey**	**0.64**	**320**	*i* P	**Pg**	**16 56 21.2**	**-0.5**
KULA	**Kula-Manisa**	**0.66**	**205**	*e*PG	**Pg**	**16 56 21.8**	**-0.1**
KULA	**Kula-Manisa**	**0.66**	**205**	*e*Pg	**Pg**	**16 56 21.8**	**-0.1**
MANT	**Manisa**	**0.71**	**210**	P	**Pg**	**16 56 22.9**	**-0.2**
MANT				S	**Sg**	**16 56 32.0**	**-0.4**
MANT	**Manisa**	**0.71**	**210**	*i* P	**Pg**	**16 56 22.9**	**-0.2**
MANT				*i* S	**Sg**	**16 56 32.0**	**-0.4**
KHAL	**Karahalli**	**0.83**	**153**	P	**Pg**	**16 56 25.3**	**+0.1**
KHAL				S	**Sb**	**16 56 36.7**	**-0.6**
KHAL	**Karahalli**	**0.83**	**153**	*i* P	**Pg**	**16 56 25.3**	**+0.1**
KHAL				*i* S	**Sb**	**16 56 36.7**	**-0.6**
KHL	**Karahalli**	**0.88**	**153**	*e*PG	**Pg**	**16 56 26.3**	**0.0**
KHL	**Karahalli**	**0.88**	**153**	*e*Pg	**Pg**	**16 56 26.3**	**0.0**
ORLT	**Orhaneli**	**0.94**	**354**	*e*PG	**Pg**	**16 56 27.4**	**+0.1**
ORLT	**Orhaneli**	**0.94**	**354**	*e*Pg	**Pg**	**16 56 27.4**	**+0.1**
AKHS	**Akhisar**	**0.96**	**256**	P	**Pb**	**16 56 28.1**	**-0.1**
AKHS				S	**Sb**	**16 56 41.2**	**+0.1**
AKHS	**Akhisar**	**0.96**	**256**	*i* P	**Pb**	**16 56 28.1**	**-0.1**
AKHS				*i* S	**Sb**	**16 56 41.2**	**+0.1**
AKS	**Akhisar**	**0.96**	**256**	*e*PG	**Pb**	**16 56 28.2**	**0.0**
AKS				*e*SG	**Sb**	**16 56 41.6**	**+0.5**
AKS	**Akhisar**	**0.96**	**256**	*e*Pg	**Pb**	**16 56 28.2**	**0.0**
AKS				*e*Sg	**Sb**	**16 56 41.6**	**+0.5**
BALB	**Balikesir**	**1.02**	**301**	*e*PG	**Pb**	**16 56 29.5**	**+0.3**
BALB				*e*SG	**Sn**	**16 56 44.5**	**+0.1**
BALB	**Balikesir**	**1.02**	**301**	*e*Pg	**Pb**	**16 56 29.5**	**+0.3**
BALB				*e*Sg	**Sn**	**16 56 44.5**	**+0.1**
IGD	**Bursa**	**1.16**	**7**	*i* P	**Pb**	**16 56 29.7**	**-1.9**
IGD				*i* S	**Sg**	**16 56 46.4**	**-0.2**
KCTX	**Karacabey (Bur**	**1.26**	**336**	*e*PN	**Pb**	**16 56 33.3**	**0.0**
KCTX	**Karacabey (Bur**	**1.26**	**336**	*e*Pn	**Pb**	**16 56 33.3**	**0.0**
MDNY	**Mudanya-Bursa**	**1.26**	**356**	*e*PN	**Pb**	**16 56 33.3**	**0.0**
MDNY	**Mudanya-Bursa**	**1.26**	**356**	*e*Pn	**Pb**	**16 56 33.3**	**0.0**
CAVI	**Cavuskoy**	**1.26**	**30**	*e*PN	**Pg**	**16 56 33.5**	**+0.1**
CAVI	**Cavuskoy**	**1.26**	**30**	*e*Pn	**Pg**	**16 56 33.6**	**+0.1**
IZI	**Iznik**	**1.27**	**16**	*e*PN	**Pb**	**16 56 33.6**	**+0.1**
IZI	**Iznik**	**1.27**	**16**	*e*Pn	**Pb**	**16 56 33.6**	**+0.1**
GONE	**Gonen-Balikesi**	**1.39**	**313**	*e*PN	**Pb**	**16 56 35.4**	**0.0**
GONE	**Gonen-Balikesi**	**1.39**	**313**	*e*Pn	**Pb**	**16 56 35.4**	**0.0**
ARMT	**Armutlu**	**1.46**	**355**	*e*PN	**Pn**	**16 56 36.0**	**+0.1**
ARMT	**Armutlu**	**1.46**	**355**	*e*Pn	**Pn**	**16 56 36.0**	**+0.1**
EDC	**Edincik**	**1.52**	**325**	*e*PN	**Pb**	**16 56 37.6**	**-0.1**
EDC	**Edincik**	**1.52**	**325**	*e*Pn	**Pb**	**16 56 37.6**	**-0.1**
GULT	**Gulveren**	**1.75**	**41**	*e*PN	**Pn**	**16 56 40.3**	**+0.3**
GULT	**Gulveren**	**1.75**	**41**	*e*Pn	**Pn**	**16 56 40.3**	**+0.3**

IDC 20 17:08:43.2±2.9, 35°.86N×141°.95E, h0km, mb3.2/3, mb1 3.3/4, mb1mx3.1/53, mbtmp3.2/4, ML2.9/1, Error ellipse: s-maj=82.7km s-min=29.1km az=60.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**3.10**	**284**	Pn	Pn	17 09 32.6	-0.9
	1.5nm,0.3s,baz=99,slow=14,SNR=14						
H11S1	**WAKE ISLAND Hy**	**27.87**	**122**	T	T	17 43 49.8	
	baz=314,slow=76,SNR=6.0						
H11S3	**WAKE ISLAND Hy**	**27.87**	**122**	T	T	17 43 49.4	
	baz=314,slow=76,SNR=5.0						
H11S2	**WAKE ISLAND Hy**	**27.88**	**122**	T	T	17 43 50.2	
	baz=314,slow=76,SNR=4.2						
MKAR	**Makanchi Array**	**45.12**	**303**	P	P	17 17 02.6	+1.4
	0.1nm,0.7s,baz=82,slow=10,SNR=2.7						
KURBB	**Kurchatov Arra**	**47.07**	**309**	P	P	17 17 15.0	-1.5
	0.3nm,0.5s,baz=83,slow=7.7,SNR=6.2						
WRA	**Warramunga Arr**	**55.97**	**189**	P	P	17 18 23.2	-0.2
	0.3nm,0.9s,baz=5.3,slow=7.3,SNR=3.7						

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*ISCJB **20** 17:15:26.1±0.9, 29°.74S±0°.04×68°.85W±0°.04, h124km±8km, Error ellipse: s-maj=6.4km s-min=5.8km az=146.5*
*SJA **20** 17:15:27.0±1.2, 29°.81S×68°.69W, h119km±7km, ML3.3, MW3.4*
*GUC **20** 17:15:27.1±0.4, 29°.68S×69°.16W, h154km±13km, ML3.6*
ISC 20 17:15:26.0±1.7, 29°.73S±0°.04×68°.85W±0°.04, h128km±13km, n14, σ0§96/24, 2C-3D, San Juan Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AGUA	**GUANDACOL**	**0.40**	**52**	*e*P	**Pn**	**17 15 44.8**	**+0.3**
AGUA				*e*S	**Sn**	**17 15 57.9**	**-0.6**
VCA	**Vinchina**	**1.14**	**30**	*e*P	**Pn**	**17 15 51.2**	**+0.9**
VCA				*e*S	**Sn**	**17 16 10.0**	**+1.2**
VCA				IAML		17 16 11.4	
	comp=Z,996nm,0.2s						
AMOG	**MOGNA**	**1.24**	**166**	*e*P	**Pn**	**17 15 51.2**	**0.0**
AMOG				*e*S	**Sn**	**17 16 09.5**	**-1.1**
RTLL	**Cerro Villicun**	**1.63**	**169**	*e*P	**Pn**	**17 15 56.2**	**+0.7**
RTLL				*e*S	**Sn**	**17 16 16.1**	**-2.0**
TLL	**Tololo Astrono**	**1.75**	**255**	⇓*i* P	**Pn**	**17 15 57.9**	**+0.7**
TLL				*i* S	**Sn**	**17 16 21.6**	**+0.6**
TLL				IAML		17 16 23.4	
	comp=N,785nm,0.5s						
LCO	**Las Campanas**	**1.77**	**293**	*e*P	Pn	17 16 10.5	+13
LCO	**Las Campanas**	**1.77**	**293**	⇑*i* P	**Pn**	**17 15 57.9**	**+0.6**
LCO				*i* S	**Sn**	**17 16 21.0**	**-0.3**
LCO				IAML		17 16 22.1	
	comp=N,602nm,0.4s						
VACH	**Vallenar**	**2.03**	**304**	⇑*i* P	**Pn**	**17 16 00.2**	**-0.1**
VACH				*i* S	**Sn**	**17 16 25.6**	**-0.8**
LSCH	**La Serena**	**2.09**	**265**	*e*P	**Pn**	**17 16 00.8**	**-0.2**
LSCH				*i* S	**Sn**	**17 16 26.2**	**-1.5**
RTLS	**Leoncito**	**2.10**	**190**	*e*P	**Pn**	**17 16 02.2**	**+0.8**
RTLS				*e*S	**Sn**	**17 16 29.0**	**+0.5**
RTCV	**Cerro Valdivia**	**2.14**	**173**	*e*P	**Pn**	**17 16 02.6**	**+0.9**
RTCV				⇓*e*S	**Sn**	**17 16 28.5**	**-0.6**
AUSP	**Uspallata**	**2.53**	**190**	*e*P	**Pn**	**17 16 07.6**	**+0.8**
CYA	**Choya**	**2.96**	**65**	⇓*e*P	**Pn**	**17 16 12.3**	**+0.3**
CYA				IAML		17 16 24.1	
	comp=Z,33nm,0.4s						
CYA				*e*S	**Sn**	**17 16 46.0**	**-1.6**
MRA	**San Martin**	**3.80**	**136**	*e*P	**Pn**	**17 16 23.8**	**+0.7**

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*IDC **20** 17:17:39.7±0.8, 36°.96N×144°.06E, h0km, mb3.8/11, mb1 4.0/14, mb1mx3.7/57, mbtmp3.8/14, ML3.6/3, Error ellipse: s-maj=24.1km s-min=17.2km az=90.0*
*ISCJB **20** 17:17:42.6±0.4, 37°.01N±0°.04×143°.95E±0°.04, h33km, mb4.2/20, Error ellipse: s-maj=5.9km s-min=4.8km az=10.7*
*NEIC **20** 17:17:44.2±0.4, 36°.96N×144°.12E, h35km, mb4.5/8, Error ellipse: s-maj=8.5km s-min=7.9km az=110.0*
*JMA **20** 17:17:45.0±0.3, 37°.22N×143°.82E, h39km, M4.0*
ISC 20 17:17:45.2±0.7, 37°.18N±0°.07×143°.97E±0°.07, h35km, n68, σ1§25/59, mb4.1/20, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.44**	**302**	P	**Pn**	**17 18 22.2**	**-0.3**
JIO				*e*S	**Sn**	**17 18 49.6**	**-1.5**
JFK	**Kawauchi**	**2.48**	**275**	S	**Sn**	**17 18 49.7**	**-2.5**
JMM	**Marumori**	**2.62**	**286**	P	**Pn**	**17 18 24.4**	**-0.6**
JMM				S	**Sn**	**17 18 54.1**	**-1.5**
OFUJ	**Ofunato**	**2.63**	**317**	P	**Pn

1.2nm,0.6s,baz=9.6,slow=7.2,SNR=10
ABKAR **Akbulak array** 59.40 311 *e*P P 17 27 44.2 +0.2
AS01 **Alice Springs** 61.25 190 *e*P P 17 27 54.9 -1.9
AS31 **Alice Springs** 61.26 191 *e*P P 17 27 56.3 -0.5
4.5nm,1.8s
ASAR **Alice Springs** 61.26 191 P P 17 27 55.2 -1.7
0.6nm,0.7s,baz=7.1,slow=6.5,SNR=12
FIA1 **FINESS Array S** 69.62 333 *e*P P 17 28 50.2 -0.3
29nm,1.7s
FIA0 **FINESS Array S** 69.63 333 *e*P P 17 28 50.6 +0.1
FINES **FINESS Array B** 69.63 333 P P 17 28 50.6 +0.1
3.8nm,1.1s,baz=112,slow=13,SNR=5.5
F10A **Beach Ranch, E** 69.75 47 *e*P P 17 28 50.1 -1.7
4.7nm,1.0s
KBZ **Khabaz** 72.35 312 P P 17 29 08.7 +1.4
0.6nm,0.3s,baz=345,slow=1.4,SNR=4.8
NV01 **Mina Array Sit** 73.25 54 *e*P P 17 29 13.5 +0.4
NVAR **Mina Array Bea** 73.25 54 P P 17 29 14.4 +1.2
0.5nm,0.8s,baz=270,slow=6.3,SNR=4.3
NB200 **NORSAR Array S** 74.83 338 *e*P P 17 29 22.7 +1.0
NOA **NORSAR Array B** 74.83 338 P P 17 29 22.7 +1.0
1.7nm,0.8s,baz=25,slow=8.3,SNR=3.3

IDC 20 17:24:31.3±410.0, 47°.46N×48°.29E, h0km, Error ellipse: s-maj=162.0km s-min=136.0km az=25.0, Western Kazakhstan

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
I31KZ	**AKTYUBINSK INF**	7.07	62	*i*			18 08 30.0	
baz=249,slow=319,SNR=0.7								
I43RU	**DUBNA INFRASONI**	1.49	328	*i*			18 33 40.0	
baz=140,slow=318,SNR=3.2								
I26DE	**FREYUNG INFRAS**	23.00	286	*i*			19 46 20.0	
baz=81,slow=322,SNR=0.5								

KRSC 20 17:29:41.4±1.4, 55°.40N×166°.24E, h36km±11km, ML3.8, Komandorsky Islands region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
BKI	**Bering**	0.24	218	*e*P		Pn	17 29 49.3	-0.4
BKI				*e*S		Sn	17 29 54.4	-2.9
KBG	**Krutoberegovo**	2.17	295	*e*P		Pn	17 30 15.9	+1.0
KBG				*e*S		Sn	17 30 42.3	+1.8
MKZ	**Mys Kozlova**	2.73	254	*e*P		Pn	17 30 25.7	+3.1
MKZ				*e*S		Sn	17 30 58.4	+4.1
SMKR	**Semkarok**	2.93	296	*e*P		Pn	17 30 28.7	+3.3
SMKR				*e*S		Sn	17 31 04.5	+5.2
BDR	**Baidarnaya**	3.06	295	*e*P		Pn	17 30 30.5	+3.3
BDR				*e*S		Sn	17 31 08.3	+5.8
SRKR	**Sorokina**	3.11	296	*e*P		Pn	17 30 30.8	+2.9
ZLN	**Zelenaya**	3.14	284	*e*P		Pn	17 30 32.2	+3.9
ZLN				*e*S		Sn	17 31 10.6	+6.1
KLY	**Klyuchi**	3.28	289	*e*P		Pn	17 30 31.8	+1.7
KLY				*e*S		Sn	17 31 09.0	+1.2
BZMR	**Bezymyannaya**	3.30	282	*e*P		Pn	17 30 35.0	+4.5
KRSR	**Krestovskiy**	3.31	287	*e*P		Pn	17 30 33.7	+3.1
KMNR	**Kamenistaya**	3.42	279	*e*P		Pn	17 30 37.2	+5.0
KPT	**Kopyto**	3.45	282	*e*P		Pn	17 30 36.4	+3.8
TUMR	**Tumrok**	3.48	271	*e*P		Pn	17 30 38.0	+5.0
KOZ	**Kozyrevsk**	3.66	283	*e*P		Pn	17 30 40.7	+5.3
ESO	**Esso**	4.30	280	*e*P		Pn	17 30 50.0	+5.8
SDLR	**Sedlovina**	4.80	247	*e*P		Pn	17 30 55.8	+4.7
SDLR				*e*S		Sn	17 31 50.4	+5.0
SMAR	**Somma**	4.85	247	*e*P		Pn	17 30 56.0	+4.1
SMAR				*e*S		Sn	17 31 51.4	+4.6
KRER	**Koryakskii**	4.86	248	*e*P		Pn	17 30 56.5	+4.5
KRER				*e*S		Sn	17 31 51.9	+4.9
UGLR	**Uglovaya**	4.86	246	*e*P		Pn	17 30 56.9	+4.9
AVH	**Avacha**	4.88	247	*e*P		Pn	17 30 57.1	+4.9
AVH				*e*S		Sn	17 31 53.4	+6.0
KRX	**Arik**	4.88	248	*e*P		Pn	17 30 56.9	+4.6
KRX				*e*S		Sn	17 31 51.8	+4.2
PET	**Petropavlovsk**	5.04	245	*e*P		Pn	17 30 59.1	+4.7
GNL	**Ganaly**	5.12	254	*e*P		Pn	17 31 00.5	+5.0
KRMR	**Karymshinskiy**	5.42	245	*e*P		Pn	17 31 04.7	+5.2
KRMR				*e*S		Sn	17 32 05.0	+4.5
RUS	**Russkaya**	5.44	240	*e*P		Pn	17 31 04.0	+4.2
ASAK	**Asacha**	5.78	242	*e*P		Pn	17 31 10.2	+5.7

*IDC **20** 17:34:28.8±2.0, 6°.28N×126°.58E, h0km, mb3.3/4, mb1 3.5/4, mb1mx3.3/48, mbtmp3.3/4, Error ellipse: s-maj=68.5km s-min=12.7km az=51.0*
*ISCJB **20** 17:34:34.3±0.8, 6°.31N±0°.05×126°.42E±0°.07, h68km, mb3.3/4, Error ellipse: s-maj=10.4km s-min=7.0km az=161.3*
*MAN **20** 17:34:38, 6°.66N×126°.20E, h17km, mb4.6, ML3.5, MS3.5*
ISC 20 17:34:37.0±1.5, 6°.37N±0°.09×126°.39E±0°.10, h68km, n13, σ1°.79/12, mb3.2/4, 3C-1D, Mindanao

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
MATI	**Mati**	0.59	347	*e*P		Pn	17 34 45.0	-5.6
MATI				*e*S		Sn	17 34 52.4	-8.1
DAV	**Davao City (W)**	1.07	311	Pg		Pn	17 34 53.1	-3.2
120nm,0.3s,baz=297,slow=2.4,SNR=3.7								
DAV				Lg		Lg	17 35 09.7	
102nm,0.3s,baz=98,slow=23,SNR=12								
DMPH	**Davao City--Mi**	1.13	309	↑*e*P		**Pn**	**17 34 58.3**	**+1.2**
DMPH				*e*S		**Sn**	**17 35 13.3**	**+1.2**
GSPH	**General Santos**	1.46	259	*e*P		Pn	17 34 57.9	-3.6
GSPH				*e*S		**Sn**	**17 35 17.3**	**-2.7**
BIPH	**Bislig**	1.81	359	↑*e*P		**Pn**	**17 35 05.4**	**-0.6**
BIPH				*i* S		**Sn**	**17 35 25.2**	**-2.8**
BUKP	**Musuan**	2.00	319	*e*P		**Pn**	**17 35 06.8**	**-1.9**
CTBH	**Cotabato--PC H**	2.30	292	↑*i*P		**Pn**	**17 35 11.3**	**-1.3**
CGP	**Cagayan de Oro**	2.67	321	↓*e*P		**Pn**	**17 35 16.5**	**-1.2**
CGP				*e*S		**Sn**	**17 35 49.8**	**+0.8**
CUYO	**Cuyo Island**	6.94	310	*e*P		**Pn**	**17 36 15.8**	**-0.3**
FITZ	**Fitzroy Crossi**	24.32	182	P		P	17 39 46.8	-1.6
2.6nm,1.1s,baz=5.7,slow=9.0,SNR=5.4								
WRA	**Warramunga Arr**	27.29	164	P		**P**	**17 40 15.6**	**+0.3**
0.4nm,0.5s,baz=347,slow=10,SNR=5.7								
ASAR	**Alice Springs**	30.74	166	P		P	17 40 44.3	-1.7
0.2nm,0.5s,baz=343,slow=7.4,SNR=8.7								
MKAR	**Makanchi Array**	55.22	324	P		**P**	**17 44 04.9**	**+1.9**
0.1nm,0.4s,baz=110,slow=7.8,SNR=3.6								

*IDC **20** 17:44:31.7±0.6, 34°.31N×89°.62E, h0km, mb4.0/14, mb1 4.1/18, mb1mx3.9/57, mbtmp4.0/18, ML3.0/5, MS3.6/3, Ms1 3.6/3, ms1mx2.9/52, Error ellipse: s-maj=22.0km s-min=13.9km az=46.0*
*BJI **20** 17:44:33.6, 34°.44N×89°.62E, h8km, mb4.1/25, mB4.3/17, Ms3.9/18, Ms7 3.5/16*
*ISCJB **20** 17:44:34.0±0.2, 34°.34N±0°.03×89°.56E±0°.04, h25km, mb4.1/32, MS3.6/3, Error ellipse: s-maj=4.5km s-min=4.2km az=26.4*
*MOS **20** 17:44:35.6±1.5, 34°.38N×89°.61E, h33km, mb4.5/16, Error ellipse: s-maj=10.4km s-min=6.5km az=114.4*
*NEIC **20** 17:44:36.0±2.1, 34°.40N×89°.58E, h26km±15km, mb4.1/24, Error ellipse: s-maj=8.4km s-min=5.4km az=49.0*
ISC 20 17:44:36.4±0.4, 34°.35N±0°.05×89°.51E±0°.04, h25km, n115, σ2°.09/113, mb4.2/32, MS3.6/3, 5C-2D, Xizang

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
LSA	**Lhasa**	4.84	163	Pn		**Pn**	**17 45 51.9**	**+3.8**
LSA				Sg		**Sb**	**17 47 00.4**	**+1.6**
LSA	**Lhasa**	4.84	163	*e*P		**Pn**	**17 45 49.9**	**+1.8**
LSA	**Lhasa**	4.84	163	*e*Pn		**Pn**	**17 45 49.9**	**+1.8**
GUN	**Gumba**	7.13	207	*e*P		**Pn**	**17 46 20.2**	**+0.7**
29nm,0.7s								
GKN	**Gorkha**	7.58	215	*e*P		**Pn**	**17 46 25.1**	**-0.3**
14nm,0.6s								
PKIN	**Phulchoki**	7.62	209	*e*P		**Pn**	**17 46 26.7**	**+0.6**
11nm,0.5s								
DMN	**Daman**	7.71	211	*e*P		**Pn**	**17 46 28.0**	**+0.7**
16nm,0.3s								
KOLN	**Koldanda**	8.29	219	*e*P		**Pn**	**17 46 35.4**	**+0.2**
6.9nm,0.5s								
PYUN	**Piuthan**	8.36	224	*e*P		**Pn**	**17 46 35.5**	**-0.8**
SHL	**Shillong**	8.99	166	*ex*		**Pn**	**17 46 45.0**	**+0.1**
WMQ	**Urumqi**	9.56	352	*e*P		**Pn**	**17 46 52.8**	**+0.3**
WMQ				smax		smax		
comp=N,6.0nm,0.6s								
WMQ				smax		smax		
comp=E,7.0nm,0.6s								
WMQ				LR		LR		
comp=N,160nm,9.0s								
WMQ				LR		LR		
comp=E,320nm,6.0s								
GTA	**Gaotai**	9.67	56	*e*P		**Pn**	**17 46 56.3**	**+2.2**
GTA				pP			17 46 59.5	
GTA				sP			17 47 02.6	
GTA				S		**Sn**	**17 48 44.6**	**+2.6**
GTA				sS			17 48 51.0	
GTA				pmax		pmax		
comp=Z,3.0nm,1.0s								
GTA				pmax		pmax		
comp=Z,92nm,5.0s								
GTA				LR		LR		
comp=N,420nm,15.7s								
GTA				LR		LR		
comp=E,400nm,12.4s								
GTA				LR		LR		
comp=Z,320nm,13.3s								
KSH	**Kashi**	11.99	299	*e*P		Pn	17 47 30.8	+5.0
KSH				*e*pP			17 47 34.9	
KSH				*e*PP		**PnPn**	**17 47 40.9**	**+7.3**
KSH				S		Sn	17 49 47.8	+9.0
KSH				SS		**SnSn**	**17 50 02.1**	**+11**
KSH				pmax		pmax		
comp=Z,88nm,4.6s								
KSH				LR		LR		
comp=N,130nm,6.8s								
KSH				LR		LR		
comp=E,160nm,6.0s								
KSH				LR		LR		
comp=Z,130nm,9.0s								
CD2	**Chengdu**	12.49	102	P		**Pn**	**17 47 30.9**	**-1.7**
CD2				PP		**PnPn**	**17 47 42.3**	**+2.0**
CD2				S		**Sn**	**17 49 50.6**	**-0.4**
CD2				SS		**SnSn**	**17 50 06.5**	**+3.6**
CD2				pmax		pmax		
comp=Z,20nm,0.4s								
CD2				pmax		pmax		
comp=Z,60nm,6.0s								
CD2				LR		LR		
comp=N,420nm,13.2s								
CD2				LR		LR		
comp=Z,400nm,9.6s								
MK01	**Makanchi Array**	13.55	338	*e*Pn		**Pn**	**17 47 46.9**	**-0.1**
MK31	**Makanchi Array**	13.58	338	*e*P		Pn	17 47 40.9	-6.5
MK31	**Makanchi Array**	13.58	338	*e*Pn		Pn	17 47 40.9	-6.4
MK32	**Makanchi Array**	13.58	338	*e*Pn		**Pn**	**17 47 44.2**	**-3.1**
MKAR	**Makanchi Array**	13.58	338	Pn		**Pn**	**17 47 44.3**	**-3.1**
0.0nm,0.3s,baz=150,slow=14,SNR=2.7								
MKAR	**Makanchi Array**	13.58	338	*e*Pn		Pn	17 47 42.1	-5.2
MAKZ	**Makanchi**	13.69	338	*e*P		Pn	17 47 43.4	-5.4
MAKZ	**Makanchi**	13.69	338	*e*Pn		Pn	17 47 43.4	-5.5
TKM2	**Tokmak 2**	13.82	312	*e*P		**Pn**	**17 47 51.4**	**+0.5**
TKM2	**Tokmak 2**	13.82	312	*e*Pn		**Pn**	**17 47 51.4**	**+0.5**
AAK	**Ala-Archa**	14.36	310	*e*P		**Pn**	**17 47 59.3**	**+1.1**
AAK	**Ala-Archa**	14.36	310	*e*Pn		**Pn**	**17 47 59.3**	**+1.1**
EKS2	**Erkin-Say**	14.84	309	*e*P		**P**	**17 48 08.3**	**-1.9**
EKS2	**Erkin-Say**	14.84	309	*e*Pn		**P**	**17 48 08.3**	**-1.9**
XAN	**Xi'an**	16.07	86	P		**Pn**	**17 48 21.3**	**+0.6**
XAN				pmax		pmax		
comp=Z,9.0nm,0.7s								
XAN				pmax		pmax		
comp=Z,18nm,3.7s								
KBL	**Kabul**	16.89	276	*e*P		**Pn**	**17 48 31.5**	**+0.2**
KBL				pmax		pmax		
comp=Z,13nm,1.5s								
KBL	**Kabul**	16.89	276	*e*Pn		**Pn**	**17 48 31.5**	**+0.2**
comp=Z,13nm,1.5s								
KKAR	**Karatay Array**	17.18	306	*e*P		**P**	**17 48 35.4**	**-0.8**
KKAR	**Karatay Array**	17.18	306	*e*Pn		**P**	**17 48 35.4**	**-0.8**
ENH	**Enshi**	17.37	98	*e*Pn		**Pn**	**17 48 32.3**	**-4.8**
comp=Z,9.9nm,1.1s								
CHTO	**Chiang Mai**	17.61	149	*e*P		**Pn**	**17 48 39.8**	**-0.3**
CHTO				pmax		pmax		
comp=Z,3.0nm,0.8s								
CHTO	**Chiang Mai**	17.61	149	*e*Pn		**Pn**	**17 48 39.8**	**-0.3**
comp=Z,2.6nm,0.8s								
CM31	**Chiang Mai Arr**	17.93	150	*e*Pn		**Pn**	**17 48 43.1**	**-0.9**
CMAR	**Chiang Mai Arr**	17.93	150	P		**Pn**	**17 48 42.3**	**-1.7**
comp=Z,0.1nm,0.3s,baz=330,slow=12,SNR=17								
CM01	**Chiang Mai Arr**	17.96	150	*e*Pn		**Pn**	**17 48 43.6**	**-0.9**
KURBB	**Kurchatov Arra**	18.13	337	P		**Pn**	**17 48 44.1**	**-2.2**
comp=Z,0.0nm,0.3s,baz=148,slow=12,SNR=6.2								
KURK	**Kurchatov**	18.18	337	*e*P		**Pn**	**17 48 43.9**	**-3.0**
KURK				pmax		pmax		
comp=Z,2.0nm,0.9s								
KURK	**Kurchatov**	18.18	337	*e*Pn		**Pn**	**17 48 43.9**	**-3.0**
comp=Z,2.4nm,0.9s								
SONA0	**Songino Array**	18.48	38	*e*P		**P**	**17 48 47.2**	**-3.3**
comp=Z,4.1nm,1.0s								
SONM	**Songino Array**	18.48	38	P		**P**	**17 48 47.2**	**-3.3**
comp=Z,0.1nm,0.3s,baz=224,slow=12,SNR=14								
SONA1	**Songino Array**	18.49	38	*e*P		**P**	**17 48 47.1**	**-3.6**
HHC	**Hu-ho-hao-te**	18.62	63	*e*P		**P**	**17 48 51.1**	**-1.0**
HHC				pmax		pmax		
comp=Z,27nm,0.8s								
HHC				pmax		pmax		
comp=Z,45nm,3.5s								
ULN	**Ulaanbaatar**	18.84	39	↓*i*P		**Pn**	**17 48 57.3**	**+2.2**
ULN				pmax		pmax		
comp=Z,5.0nm,1.0s								
ULN	**Ulaanbaatar**	18.84	39	*e*P		**P**	**17 48 53.2**	**-1.3**
comp=Z,3.8nm,0.9s								
ZALV	**Zalesovo Beam**	19.87	352	P		**P**	**17 49 05.7**	**+0.2**
comp=Z,0.3nm,0.3s,baz=165,slow=12,SNR=20								
ZAA1	**Zalesovo Array**	19.88	352	*e*P		**P**	**17 49 05.7**	**+0.1**
NVS	**Novosibirsk**	20.95	350	*e*P		**P**	**17 49 16.5**	**-0.7**
KRAR	**Krasnoyarsk**	21.79	5	↑*e*P		**P**	**17 49 30.3**	**+4.1**
KRAR				pmax		pmax		
comp=Z,5.0nm,0.3s								
BJT	**Baijiatuau**	21.94	67	*e*P		**P**	**17 49 27.9**	**-0.1**
BJT				pmax		pmax		
comp=Z,9.0nm,1.1s								
BJT	**Baijiatuau**	21.94	67	*e*P		**P**	**17 49 27.9**	**-0.1**
comp=Z,9.4nm,1.1s								
BVAR	**Borovoye Array**	23.10	330	P		**P**	**17 49 40.2**	**0.0**
comp=Z,1.8nm,0.7s,baz=128,slow=9.6,SNR=14								
BRVK	**Borovoye**	23.17	330	↑*i*P		**P**	**17 49 41.6**	**+0.7**
BRVK				pmax		pmax		
comp=Z,7.0nm,1.7s								
BRVK	**Borovoye**	23.17	330	*e*P		**P**	**17 49 40.7**	**-0.2**
comp=Z,3.0nm,0.7s								
ZRNK	**Zerenda**	23.64	328	*e*P		**P**	**17 49 45.6**	**+0.1**
ZRNK				pmax		pmax		
comp=Z,3.0nm,0.9s								
ZRNK	**Zerenda**	23.64	328	*e*P		**P**	**17 49 45.6**	**+0.1**
comp=Z,2.8nm,0.9s								
GEYT	**Alibeck**	25.54	287	P		**P**	**17 50 04.5**	**+1.4**
comp=Z,2.6nm,0.7s,baz=105,slow=9.3,SNR=5.7								
ABKAR	**Akbulak array**	26.39	313	*e*P		**P**	**17 50 11.2**	**+0.6**
KSAR	**Wonju Array Be**	31.10	73	P		**P**	**17 50 52.2**	**-0.5**
KSAR	**Wonju Array Be**	31.10	73	P		**P**	**17 50 52.2**	**-0.5**
KS01	**Wonju Array Si**	31.10	73	*e*P		**P**	**17 50 54.0**	**+1.3**
KSRS	**Korea Array**	31.13	73	P		**P**	**17 50 52.2**	**-0.7**
comp=Z,1.0nm,0.7s,baz=275,slow=10,SNR=6.1								
USRK	**Ussuriysk Ar.**	33.99	60	LR		LR	18 06 16.5	
comp=Z,122nm,18.9s,baz=239,slow=38								
KLR	**Kul'dur**	34.34	51	LR		LR	18 06 43.2	
comp=Z,101nm,18.1s,baz=241,slow=39								
YAK	**Yakutsk**	37.50	30	*e*P		**P**	**17 51 46.1**	**-1.7**
YAK				pmax		pmax		
comp=Z,4.0nm,0.7s								
YAK	**Yakutsk**	37.50	30	*e*P		**P**	**17 51 46.1**	**-1.7**
comp=Z,4.1nm,0.7s								
MJB9	**Matsu-Tunnel**	39.40	72	*e*P		**P**	**17 52 05.2**	**+1.1**
comp=Z,3.1nm,1.4s								
MAJO	**Matsushiro**	39.40	72	*e*P		**P**	**17 52 04.9**	**+0.8**
MAJO				pmax		pmax		
comp=Z,10.0nm,1.4s								
MAJO	**Matsushiro**	39.40	72	*e*P		**P**	**17 52 04.9**	**+0.8**
comp=Z,10nm,1.4s								
MYLDM	**Lahad Datu**	39.54	131	*e*P		**P**	**17 52 06.3**	**+0.8**
comp=Z,13nm,1.0s								
KLMR	**Klimovskoe**	41.40	325	*e*P		**P**	**17 52 19.3**	**-1.0**
KLMR				pmax		pmax		
comp=Z,8.0nm,1.4s								
TIXI	**Tiksi**	42.66	17	↓*i*P		**P**	**17 52 34.0**	**+3.5**
TIXI				pmax		pmax		
comp=Z,2.0nm,1.2s								
TIXI	**Tiksi**	42.66	17	*e*P		**P**	**17 52 30.2**	**-0.3**
comp=Z,2.3nm,1.0s								
BR101	**Keskin Array S**	44.31	294	*e*P		**P**	**17 52 43.8**	**-0.7**
BR131	**Keskin Array S**	44.31	294	*e*P		**P**	**17 52 43.1**	**-1.4**
BRTR	**Keskin Array B**	44.31	294	P		**P**	**17 52 43.8**	**-0.7**
comp=Z,0.8nm,0.7s,baz=96,slow=10,SNR=6.1								
BR231	**Keskin MP Arra**	44.94	294	*e*P		**P**	**17 52 44.9**	**-4.5**
KIEV	**Kiev**	46.04	310	↑*e*P		**P**	**17 53 00.2**	**+2.4**
KIEV				pmax		pmax		
comp=Z,8.0nm,2.1s								
SEY	**Seymchan**	47.78	33	↑*e*P		**P**	**17 53 13.5**	**+2.3**
MLR	**Muntele Rosu**	48.83	303	*e*P		**P**	**17 53 20.2**	**+0.5**
MLR				pmax		pmax		
comp=Z,6.0nm,1.0s								
MLR	**Muntele Rosu**	48.83	303	*e*P		**P**	**17 53 20.2**	**+0.5**
comp=Z,5.8nm,1.0s								
PETK	**Petropavlovsk-**	50.70	46	LR		LR	18 16 17.9	
comp=Z,42nm,20.1s,baz=63,slow=38								
BILL	**Bilibino**	53.72	27	↑*e*P		**P**	**17 53 55.6**	**-0.3**
BILL				*e*			17 56 03.7	
BILL				pmax		pmax		
comp=Z,5.0nm,1.2s								
BILL	**Bilibino**	53.72	27	*e*P		**P**	**17 53 56.0**	**0.0**
comp=Z,2.6nm,0.8s								
NB200	**NORSAR Array S**	55.09	324	*e*P		**P**	**17 54 05.7**	**-0.3**
NOA	**NORSAR Array B**	55.09	324	P		**P**	**17 54 05.7**	**-0.3**
comp=Z,0.8nm,0.7s,baz=69,slow=7.4,SNR=2.9								
GEC2	**GERESS Array S**	56.24	310	*e*P		**P**	**17 54 14.9**	**+0.3**
GEC2				pmax		pmax		
comp=Z,10.0nm,1.6s								
GEC2	**GERESS Array S**	56.24	310	*e*P		**P**	**17 54 14.9**	**+0.3**
comp=Z,9.7nm,1.6s								
GERES	**GERESS Array B**	56.24	310	P		**P**	**17 54 15.2**	**+0.6**
comp=Z,0.9nm,0.7s,baz=77,slow=7.0,SNR=9.1								
GEA0	**GERESS Array S**	56.25	310	*e*P		**P**	**17 54 14.9**	**+0.3**
CUC	**Castrocucco**	57.45	299	*e*P		**P**	**17 54 23.5**	**+0.2**
comp=Z,2.9nm,0.9s								
WRA	**Warramunga Arr**	68.80	135	P		**P**	**17 55 36.9**	**-1.7**
comp=Z,3.9nm,0.9s,baz=328,slow=6.4,SNR=9.6								
WRA	**Warramunga Arr**	68.80	135	*i* P		**P**	**17 55 36.5**	**-2.1**
WRA				pmax		pmax		
comp=Z,4.0nm,0.9s								
WR1	**Warramunga Arr**	68.80	135	*e*P		**P**	**17 55 37.0**	**-1.7**
comp=Z,13nm,1.3s								
WB2	**Warramunga Arr**	68.81	135	*e*P		**P**	**17 55 40.6**	**+2.0**
comp=Z,12nm,1.1s								
ES19	**SONSECA Array**	71.37	306	*e*P		**P**	**17 55 54.2**	**-0.2**
ESDC	**Sonseca Array**	71.43	306	P		**P**	**17 55 54.5**	**-0.2**
comp=Z,1.1nm,0.6s,baz=61,slow=7.1,SNR=8.2								
AS31	**Alice Springs**	71.47	137	*e*P		**P**	**17 55 52.5**	**-2.4**
comp=Z,2.1nm,1.3s								
ASAR	**Alice Springs**	71.47	137	P		**P**	**17 55 53.8**	**-1.2**
comp=Z,2.1nm,0.9s,baz=320,slow=5.4,SNR=14								
AS01	**Alice Springs**	71.49	137	*e*P		**P**	**17 55 53.6**	**-1.5**
INK	**Inuvik**	72.75	15	P		**P**	**17 56 00.7**	**-1.2**
comp=Z,2.7nm,1.1s,baz=317,slow=6.3,SNR=3.1								
INK	**Inuvik**	72.75	15	*e*P		**P**	**17 56 00.8**	**-1.2**
INK				pmax		pmax		
comp=Z,7.0nm,1.4s								
INK	**Inuvik**	72.75	15	*e*P		**P**	**17 56 00.8**	**-1.2**
comp=Z,6.6nm,1.4s								
TOA1	**Torodi Ar. Sit**	80.93	280	*e*P		**P**	**17 56 47.5**	**-1.6**
comp=Z,19nm,1.9s								
TORD	**Torodi Ar. Bea**	80.93	280	P		**P**	**17 56 47.5**	**-1.6**
comp=Z,0.8nm,0.9s,baz=54,slow=5.2,SNR=4.2								
YKA	**Yellowknife Ar**	81.56	11	P		**P**	**17 56 50.5**	**-1.0**
comp=Z,0.5nm,0.5s,baz=340,slow=5.0,SNR=10.0								
YKB5	**Yellowknife Ar**	81.56	11	*e*P		**P**	**17 56 50.0**	**-1.5**
STKA	**Stephens Creek**	82.11	137	P		**P**	**17 56 54.4**	**-0.3**
comp=Z,2.7nm,1.0s,baz=325,slow=13,SNR=3.1								
STKA	**Stephens Creek**	82.11	137	*e*P		**P**	**17 56 55.5**	**+0.7**
comp=Z,4.1nm,1.6s								
BOSA	**Boshof**	87.23	232	P		**P**	**17 57 20.0**	**-0.9**
comp=Z,3.3nm,0.8s,baz=34,slow=7.3,SNR=6.7								
BOSA	**Boshof**	87.23	232	*e*P		**P**	**17 57 20.0**	**-0.9**
BDFB	**Brasilia**	137.60	285	PKP		**PKPdf**	**18 03 58.3**	**-0.5**
comp=Z,4μm,0.3s,baz=256,slow=0.0,SNR=2.4								

*ISCJB **20** 17:45:45.8±0.5, 39°.12N±0°.03×29°.00E±0°.03, h1km±6km, Error ellipse: s-maj=4.3km s-min=3.6km az=171.7*
*DDA **20** 17:45:45.7, 39°.11N×29°.01E, h7km, Ml2.9*
*ISK **20** 17:45:45.9, 39°.12N×29°.04E, h7km, MD2.8*
*CSEM **20** 17:45:46.2±0.1, 39°.11N×29°.01E, h5km, ML2.9, Error ellipse: s-maj=1.4km s-min=1.3km az=135.0*
ISC 20 17:45:46.3±1.0, 39°.12N±0°.02×29°.00E±0°.02, h6km±10km, n51, σ0°.32/71, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	0.24	250	P		**Pg**	**17 45 51.0**	**+0.1**
DEMI				S		**Sg**	**17 45 54.3**	**+0.2**
DEMI	**Demirci**	0.24	250	*i* P		**Pg**	**17 45 51.0**	**+0.1**
DEMI				*i* S		**Sg**	**17 45 54.3**	**+0.2**
GDZ	**Gediz**	0.37	95	P		**Pg**	**17 45 53.0**	**-0.6**
GDZ				S		**Sg**	**17 45 59.1**	**+0.6**
GDZ	**Gediz**	0

*ISCJB **20** 17:45:55.9±0.4, 25°.35N±0°.05×142°.60E±0°.09, h38km, mb4.2/32, MS3.5/1, Error ellipse: s-maj=11.2km s-min=6.3km az=169.5*
*NEIC **20** 17:45:56.6±3.2, 25°.46N×142°.67E, h28km±22km, mb4.5/17, Error ellipse: s-maj=10.8km s-min=8.1km az=92.0*
ISC 20 17:45:57.6±0.6, 25°.37N±0°.07×142°.61E±0°.10, h38km±3km, n68, σ1§54/61, mb4.2/32, Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCJ	**Chichijima**	**1.76**	**347**	Pn	**Pn**	**17 46 25.4**	**-0.1**
	baz=127,slow=20						
JCJ				Sn	**Sn**	**17 46 50.0**	**+3.3**
	baz=270,slow=20						
CBIJ	**Chichi jima**	**1.76**	**347**	*e*Pn	**Pn**	**17 46 25.6**	**+0.1**
CBIJ				*e*Sn	**Sn**	**17 46 47.6**	**+0.9**
MJAR	**Matsushiro Arr**	**11.76**	**342**	LR	LR	17 53 09.4	
	comp=Z,69nm,18.4s,baz=100,slow=37						
JNU	**Nakatsue**	**12.82**	**310**	LR	LR	17 53 08.3	
	comp=Z,44nm,21.8s,baz=120,slow=34						
ERM	**Erimo**	**16.61**	**1**	*e*Pn	**Pn**	**17 49 43.9**	**-3.6**
	57nm,1.5s						
KSRS	**Korea Array**	**17.36**	**317**	P	**P**	**17 49 58.1**	**+0.2**
	0.3nm,0.3s,baz=18,slow=28,SNR=5.6						
KS15	**Wonju Array Si**	**17.38**	**317**	*e*Pn	**Pn**	**17 49 56.8**	**-0.3**
KSAR	**Wonju Array Be**	**17.38**	**317**	P	**P**	**17 49 58.1**	**0.0**
KS01	**Wonju Array Si**	**17.40**	**317**	*e*Pn	**Pn**	**17 49 56.9**	**-0.4**
NACB	**Ninganchiao**	**19.12**	**271**	*e*P	**P**	**17 50 12.3**	**-5.1**
	14nm,0.8s						
YHNB	**Yeheng**	**19.26**	**272**	*e*P	**P**	**17 50 14.8**	**-4.2**
	20nm,1.2s						
YULB	**Yu-li**	**19.52**	**269**	*e*P	**P**	**17 50 17.0**	**-4.7**
	24nm,1.8s						
TWG	**Pinlang**	**19.83**	**267**	*e*P	**P**	**17 50 23.9**	**-1.2**
	21nm,0.7s						
USRK	**Ussuriysk Ar.**	**20.68**	**338**	P	**P**	**17 50 34.7**	**+0.5**
	2.4nm,0.9s,baz=156,slow=9.5,SNR=5.3						
H11N1	**WAKE ISLAND Hy 23.10**		**99**	T	T	18 14 25.8	
	baz=359,slow=76,SNR=42						
H11N2	**WAKE ISLAND Hy 23.10**		**99**	T	T	18 14 23.3	
	baz=359,slow=76,SNR=47						
H11N3	**WAKE ISLAND Hy 23.12**		**99**	T	T	18 14 26.1	
	baz=359,slow=76,SNR=34						
H11S3	**WAKE ISLAND Hy 23.33**		**102**	T	T	18 14 48.3	
	baz=292,slow=75,SNR=5.6						
H11S1	**WAKE ISLAND Hy 23.34**		**102**	T	T	18 14 46.9	
	baz=292,slow=75,SNR=6.2						
H11S2	**WAKE ISLAND Hy 23.35**		**102**	T	T	18 14 49.9	
	baz=292,slow=75,SNR=7.3						
KLR	**Kul'dur**	**25.29**	**343**	P	**P**	**17 51 20.8**	**+0.6**
	1.9nm,0.5s,baz=152,slow=7.1,SNR=9.8						
KLR	**Kul'dur**	**25.29**	**343**	P	**P**	**17 51 20.8**	**+0.6**
KLR				pmax	pmax		
	comp=Z,2.0nm,0.5s						
ENH	**Enshi**	**29.64**	**287**	*e*P	**P**	**17 52 01.5**	**+2.0**
	comp=Z,9.7nm,1.3s						
MYLDM	**Lahad Datu**	**30.61**	**233**	*e*P	**P**	**17 52 08.0**	**-0.2**
	comp=Z,13nm,1.0s						
SONA0	**Songino Array**	**36.23**	**318**	*e*P	**P**	**17 52 56.3**	**-0.7**
	comp=Z,7.1nm,1.8s						
SONM	**Songino Array**	**36.23**	**318**	P	**P**	**17 52 56.3**	**-0.7**
	comp=Z,0.4nm,0.4s,baz=123,slow=10,SNR=3.6						
SEY	**Seymchan**	**38.12**	**261**	P	**P**	**17 53 12.5**	**-0.1**
	comp=Z,3.1nm,0.8s,baz=198,slow=20,SNR=8.5						
CMAR	**Chiang Mai Arr**	**40.96**	**269**	P	**P**	**17 53 39.1**	**+2.3**
	comp=Z,0.5nm,0.6s,baz=72,slow=5.5,SNR=4.3						
CTA	**Charters Tower**	**45.32**	**175**	P	**P**	**17 54 11.6**	**-0.4**
	comp=Z,2.5nm,0.7s,baz=330,slow=17,SNR=2.3						
WR1	**Warramunga Arr**	**45.75**	**191**	*e*P	**P**	**17 54 16.3**	**+1.0**
	comp=Z,26nm,1.6s						
WRA	**Warramunga Arr**	**45.75**	**191**	P	**P**	**17 54 16.3**	**+1.0**
	comp=Z,3.1nm,0.4s,baz=10,slow=8.6,SNR=25						
AS01	**Alice Springs**	**49.46**	**190**	*e*P	**P**	**17 54 46.2**	**+2.1**
AS31	**Alice Springs**	**49.47**	**191**	*e*P	**P**	**17 54 45.3**	**+1.1**
	comp=Z,2.3nm,1.4s						
ASAR	**Alice Springs**	**49.47**	**191**	P	**P**	**17 54 45.3**	**+1.2**
	comp=Z,0.3nm,0.6s,baz=15,slow=12,SNR=7.8						
ZAA0	**Zalesovo Array**	**51.05**	**320**	*e*P	**P**	**17 54 55.1**	**-0.7**
ZAA1	**Zalesovo Array**	**51.05**	**320**	*e*P	**P**	**17 54 54.9**	**-1.0**
ZALV	**Zalesovo Beam**	**51.05**	**320**	P	**P**	**17 54 54.8**	**-1.0**
	comp=Z,0.5nm,0.4s,baz=93,slow=9.1,SNR=3.3						
MK01	**Makanchi Array**	**51.87**	**311**	*e*P	**P**	**17 55 02.0**	**-0.1**
MK31	**Makanchi Array**	**51.88**	**311**	*e*P	**P**	**17 55 02.1**	**-0.1**
MK32	**Makanchi Array**	**51.88**	**311**	*e*P	**P**	**17 55 02.4**	**+0.2**
MKAR	**Makanchi Array**	**51.88**	**311**	P	**P**	**17 55 02.4**	**+0.2**
	comp=Z,0.5nm,0.5s,baz=90,slow=8.9,SNR=6.8						
MKAR	**Makanchi Array**	**51.88**	**311**	*e*P	**P**	**17 55 02.1**	**-0.1**
MAKZ	**Makanchi**	**52.09**	**311**	*e*P	**P**	**17 55 03.9**	**+0.1**
	comp=Z,8.7nm,1.8s						
KEKH	**Kekaha**	**52.59**	**81**	*e*P	**P**	**17 55 07.6**	**-0.2**
	comp=Z,425nm,1.9s						
COLD	**Coldfoot**	**58.06**	**25**	*e*P	**P**	**17 55 45.7**	**-0.8**
	comp=Z,6.2nm,1.4s						
BRVK	**Borovoye**	**59.64**	**318**	*e*P	**P**	**17 55 58.1**	**+0.4**
	comp=Z,3.4nm,0.8s						
KKAR	**Karatay Array**	**60.41**	**307**	*e*P	**P**	**17 56 02.6**	**-0.6**
ZRNK	**Zerenda**	**60.42**	**318**	*e*P	**P**	**17 56 01.5**	**-1.5**
	comp=Z,2.7nm,0.8s						
NWAO	**Narrogin (SRO)**	**62.81**	**204**	LR	LR	18 24 16.2	
	comp=Z,34nm,19.4s,slow=37						
KBL	**Kabul**	**63.15**	**297**	*e*P	**P**	**17 56 21.6**	**-0.4**
	comp=Z,4.4nm,0.6s						
ARU	**Arti**	**66.02**	**323**	P	**P**	**17 56 40.9**	**+0.8**
	comp=Z,2.7nm,0.5s,baz=291,slow=3.4,SNR=6.3						
ARU	**Arti**	**66.02**	**323**	*e*P	**P**	**17 56 39.0**	**-1.1**
	comp=Z,4.4nm,0.7s						
ABKAR	**Akbulak array**	**66.58**	**315**	*e*P	**P**	**17 56 43.8**	**+0.1**
AKTO	**Aktyubinsk**	**67.54**	**316**	P	**P**	**17 56 50.0**	**+0.2**
	comp=Z,1.5nm,0.7s,baz=75,slow=8.3,SNR=7.3						
GEYT	**Alibeck**	**70.77**	**304**	P	**P**	**17 57 10.6**	**+0.4**
	comp=Z,0.7nm,0.6s,baz=324,slow=9.1,SNR=3.7						
YKA	**Yellowknife Ar**	**73.47**	**28**	P	**P**	**17 57 24.8**	**-1.0**
	comp=Z,1.0nm,0.7s,baz=294,slow=5.3,SNR=3.7						
ARA0	**ARCESS Array S**	**75.29**	**341**	*e*P	**P**	**17 57 38.7**	**+2.4**
ARCES	**ARCESS Array B**	**75.29**	**341**	P	**P**	**17 57 38.7**	**+2.4**
	comp=Z,2.9nm,1.1s,baz=61,slow=7.5,SNR=5.7						
KBZ	**Khabaz**	**79.47**	**313**	P	**P**	**17 58 01.8**	**+1.7**
	comp=Z,1.8nm,0.6s,baz=135,slow=3.8,SNR=5.3						
FIA0	**FINESS Array S**	**79.66**	**334**	*e*P	**P**	**17 58 01.3**	**+0.5**
FINES	**FINESS Array B**	**79.66**	**334**	P	**P**	**17 58 01.3**	**+0.5**
	comp=Z,2.3nm,0.5s,baz=69,slow=5.2,SNR=22						
MFID	**Camas Ranch**	**80.81**	**46**	*e*P	**P**	**17 58 06.7**	**-0.9**
	comp=Z,15nm,1.6s						
NVAR	**Mina Array Bea**	**81.28**	**52**	P	**P**	**17 58 10.6**	**+0.3**
	comp=Z,0.3nm,0.7s,baz=257,slow=8.1,SNR=2.8						
AKASG	**Malin Array Be**	**84.23**	**324**	P	**P**	**17 58 25.2**	**+0.1**
	comp=Z,0.4nm,0.4s,baz=53,slow=5.8,SNR=3.8						
NB200	**NORSAR Array S**	**85.35**	**339**	*e*P	**P**	**17 58 29.9**	**-0.6**
NOA	**NORSAR Array B**	**85.35**	**339**	P	**P**	**17 58 30.0**	**-0.6**
	comp=Z,0.9nm,0.6s,baz=45,slow=5.0,SNR=3.5						
BR101	**Keskin Array S**	**87.46**	**313**	*e*P	**P**	**17 58 41.9**	**+0.4**
BRTR	**Keskin Array B**	**87.46**	**313**	P	**P**	**17 58 41.9**	**+0.4**
	comp=Z,0.3nm,0.5s,baz=118,slow=4.8,SNR=2.8						

*IDC **20** 17:47:56.1±1.6, 26°.61N×143°.63E, h0km, mb3.7/5, mb1 3.8/7, mb1mx3.5/45, mbtmp3.7/7, ML3.2/2, Error ellipse: s-maj=42.0km s-min=19.6km az=61.0*
*ISCJB **20** 17:47:59.4±1.1, 26°.6N±0°.1×143°.7E±0°.1, h38km, mb3.7/5, Error ellipse: s-maj=24.4km s-min=12.3km az=40.3*
ISC 20 17:48:01.4±1.3, 26°.7N±0°.1×143°.6E±0°.2, h38km, n8, σ0§92/9, mb3.8/5, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCJ	**Chichijima**	**1.35**	**288**	Pn	**Pn**	**17 48 23.0**	**-0.6**
	13nm,0.3s,baz=294,slow=20,SNR=3.8						
JCJ				Sn	**Sn**	**17 48 40.6**	**+0.3**
	69nm,0.3s,baz=294,slow=19,SNR=8.1						
MJAR	**Matsushiro Arr**	**10.85**	**336**	Pn	**Pn**	**17 50 33.0**	**-1.1**
	0.3nm,0.3s,baz=155,slow=10,SNR=3.7						
KSRS	**Korea Array**	**17.08**	**313**	Pn	**P**	**17 51 58.2**	**-0.3**
	0.1nm,0.3s,baz=118,slow=14,SNR=4.8						
SONM	**Songino Array**	**35.90**	**316**	P	**P**	**17 54 59.3**	**+1.4**
	0.4nm,0.5s,baz=110,slow=7.8,SNR=3.5						
WRA	**Warramunga Arr**	**47.22**	**192**	P	**P**	**17 56 30.3**	**-0.3**
	1.7nm,0.7s,baz=11,slow=8.5,SNR=4.8						
ASAR	**Alice Springs**	**50.93**	**192**	P	**P**	**17 56 58.6**	**-0.5**
	0.2nm,0.5s,baz=354,slow=7.5,SNR=2.9						
MKAR	**Makanchi Array**	**51.73**	**310**	P	**P**	**17 57 05.9**	**+1.0**
	0.8nm,0.5s,baz=88,slow=8.7,SNR=8.8						
FINES	**FINESS Array B**	**78.88**	**334**	P	**P**	**18 00 00.4**	**0.0**
	0.7nm,0.7s,baz=52,slow=9.0,SNR=3.5						

*ISCJB **20** 17:59:32.8±0.5, 39°.09N±0°.03×29°.05E±0°.03, h3km±6km, Error ellipse: s-maj=5.8km s-min=4.4km az=178.5*
*DDA **20** 17:59:33.0, 39°.07N×29°.05E, h7km, Ml2.5*
*ISK **20** 17:59:32.5, 39°.08N×29°.11E, h5km, MD2.8*
*CSEM **20** 17:59:33.1±0.1, 39°.09N×29°.06E, h5km, ML2.5, Error ellipse: s-maj=2.1km s-min=2.0km az=139.0*
ISC 20 17:59:33.2±1.0, 39°.09N±0°.03×29°.05E±0°.02, h6km±10km, n32, σ0§32/44, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**260**	P	**Pg**	**17 59 38.4**	**-0.1**
DEMI				S	**Sg**	**17 59 42.1**	**+0.1**
DEMI	**Demirci**	**0.27**	**260**	*i* P	**Pg**	**17 59 38.4**	**-0.1**
DEMI				*i* S	**Sg**	**17 59 42.1**	**+0.1**
GDZ	**Gediz**	**0.33**	**90**	P	**Pg**	**17 59 39.7**	**0.0**
GDZ				S	**Sg**	**17 59 44.9**	**+0.8**
GDZ	**Gediz**	**0.33**	**90**	*i* P	**Pg**	**17 59 39.7**	**0.0**
GDZ				*i* S	**Sg**	**17 59 44.9**	**+0.8**
TVSB	**Tavsanli**	**0.48**	**41**	*e*PG	**Pg**	**17 59 42.2**	**-0.3**
TVSB				*e*SG	**Sg**	**17 59 48.3**	**-0.4**
TVSB	**Tavsanli**	**0.48**	**41**	*e*Pg	**Pg**	**17 59 42.2**	**-0.3**
TVSB				*e*Sg	**Sg**	**17 59 48.3**	**-0.4**
KULA	**Kula-Manisa**	**0.65**	**208**	*e*PG	**Pg**	**17 59 45.7**	**-0.1**
KULA	**Kula-Manisa**	**0.65**	**208**	*e*Pg	**Pg**	**17 59 45.7**	**-0.1**
DURS	**Dursunbey**	**0.68**	**319**	P	**Pg**	**17 59 46.8**	**+0.5**
DURS				S	**Sg**	**17 59 54.9**	**-0.2**
DURS	**Dursunbey**	**0.68**	**319**	*i* P	**Pg**	**17 59 46.8**	**+0.5**
DURS				*i* S	**Sg**	**17 59 54.9**	**-0.2**
KHAL	**Karahalli**	**0.80**	**154**	P	**Pg**	**17 59 48.8**	**+0.3**
KHAL				S	**Sg**	**17 59 58.8**	**0.0**
KHAL	**Karahalli**	**0.80**	**154**	*i* P	**Pg**	**17 59 48.8**	**+0.3**
KHAL				*i* S	**Sg**	**17 59 58.9**	**0.0**
AKS	**Akhisar**	**0.99**	**258**	*e*PG	**Pb**	**17 59 52.5**	**-0.3**
AKS	**Akhisar**	**0.99**	**258**	*e*Pg	**Pb**	**17 59 52.5**	**-0.3**
BALB	**Balikesir**	**1.06**	**301**	*e*PN	**Pb**	**17 59 53.9**	**-0.1**
BALB				*e*SN	**Sn**	**18 00 09.9**	**+0.2**
BALB	**Balikesir**	**1.06**	**301**	*e*Pn	**Pb**	**17 59 53.9**	**-0.1**
BALB				*e*Sn	**Sn**	**18 00 09.9**	**+0.2**
CAVI	**Cavuskoy**	**1.27**	**28**	*e*PN	**Pn**	**17 59 57.1**	**-0.4**
CAVI	**Cavuskoy**	**1.27**	**28**	*e*Pn	**Pn**	**17 59 57.1**	**-0.4**
MDNY	**Mudanya-Bursa**	**1.28**	**354**	*e*PN	**Pn**	**17 59 57.6**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.28**	**354**	*e*Pn	**Pn**	**17 59 57.6**	**-0.1**
IZI	**Iznik**	**1.28**	**14**	*e*PN	**Pn**	**17 59 57.3**	**-0.5**
IZI	**Iznik**	**1.28**	**14**	*e*Pn	**Pn**	**17 59 57.3**	**-0.5**
KCTX	**Karacabey (Bur**	**1.29**	**336**	*e*PN	**Pg**	**17 59 58.4**	**+0.5**
KCTX	**Karacabey (Bur**	**1.29**	**336**	*e*Pn	**Pg**	**17 59 58.4**	**+0.5**
GONE	**Gonen-Balikesi**	**1.42**	**312**	*e*PN	**Pb**	**18 00 00.0**	**-0.1**
GONE	**Gonen-Balikesi**	**1.42**	**312**	*e*Pn	**Pb**	**18 00 00.0**	**-0.1**
ADVT	**Abdulvahap**	**1.44**	**21**	*e*PN	**Pn**	**17 59 59.8**	**-0.1**
ADVT	**Abdulvahap**	**1.44**	**21**	*e*Pn	**Pn**	**17 59 59.8**	**-0.1**
ARMT	**Armutlu**	**1.48**	**354**	*e*PN	**Pn**	**18 00 00.5**	**+0.1**
ARMT	**Armutlu**	**1.48**	**354**	*e*Pn	**Pn**	**18 00 00.5**	**+0.1**
GULT	**Gulveren**	**1.75**	**40**	*e*PN	**Pn**	**18 00 04.2**	**0.0**
GULT	**Gulveren**	**1.75**	**40**	*e*Pn	**Pn**	**18 00 04.2**	**0.0**

*IDC **20** 18:01:23.5±1.7, 36°.87N×140°.72E, h0km, mb3.4/2, mb1 3.5/5, mb1mx3.2/51, mbtmp3.5/5, ML3.0/3, Error ellipse: s-maj=30.5km s-min=22.1km az=85.0*
*ISCJB **20** 18:01:24.6±0.7, 36°.91N±0°.04×140°.75E±0°.06, h19km±6km, mb3.5/2, Error ellipse: s-maj=8.2km s-min=5.9km az=14.8*
*JMA **20** 18:01:25.5, 36°.93N×140°.62E, h9km±1km, M3.4*
Broadband fault plane solution: P waves. NP1: φs=217.00000°, δ72.00000°, λ-88.00000°. NP2:φs=32.00000°, δ18.00000°, λ-95.00000°. Principal axes: T Plg27.0000°, Azm306.0000°; N Plg2.0000°, Azm37.0000°; P Plg63.0000°, Azm130.0000°;
JMA Felt I J1.
ISC 20 18:01:25.4±1.0, 36°.92N±0°.03×140°.62E±0°.05, h12km±8km, n17, σ0§62/18, 3C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.23**	**39**	⇓P	**Pg**	**18 01 30.1**	**-0.2**
ONAJ				*e*S	**Sg**	**18 01 33.4**	**-0.2**
JHO	**Hitachi**	**0.32**	**187**	⇑P	**Pg**	**18 01 31.8**	**0.0**
JHO				*e*S	**Sg**	**18 01 36.1**	**+0.1**
JFK	**Kawauchi**	**0.49**	**25**	P	**Pg**	**18 01 34.6**	**-0.4**
JSB	**Shiboa**	**0.56**	**275**	⇑P	**Pb**	**18 01 37.1**	**-0.1**
JSB				*e*S	**Sb**	**18 01 45.1**	**-0.1**
JFT	**Otama**	**0.63**	**339**	⇑P	**Pg**	**18 01 37.7**	**0.0**
JFT				*e*S	**Sg**	**18 01 46.1**	**0.0**
MJAR	**Matsushiro Arr**	**1.97**	**260**	Pn	**Pn**	**18 01 59.6**	**+0.9**
	6.5nm,0.3s,baz=78,slow=16,SNR=39						
MJAR				Sn	**Sb**	**18 02 25.0**	**-0.8**
	17nm,0.3s,baz=78,slow=30,SNR=22						
MAT	**Matsushiro**	**1.97**	**260**	P	**Pn**	**18 01 59.6**	**+0.9**
MAT				S	**Sb**	**18 02 25.5**	**-0.3**
JHJ	**Hachijo jima 2**	**3.86**	**190**	Pn	**Pn**	**18 02 25.1**	**+0.5**
	1.7nm,0.3s,baz=66,slow=20,SNR=3.9						
JHJ				Sn	**Sn**	**18 03 09.9**	**0.0**
	2.5nm,0.3s,baz=72,slow=20,SNR=2.4						
ASAJ	**Asahikawa**	**7.34**	**11**	Pn	**Pn**	**18 03 13.6**	**+1.2**
	0.2nm,0.3s,baz=198,slow=20,SNR=4.0						
H11N2	**WAKE ISLAND Hy 28.64**		**120**	T	T	18 37 09.8	
	baz=313,slow=75,SNR=46						
H11N1	**WAKE ISLAND Hy 28.65**		**120**	T	T	18 37 10.2	
	baz=313,slow=75,SNR=46						
H11N3	**WAKE ISLAND Hy 28.66**		**120**	T	T	18 37 09.0	
	baz=313,slow=75,SNR=42						
H11S1	**WAKE ISLAND Hy 29.34**		**122**	T	T	18 38 00.4	
	baz=314,slow=76,SNR=126						
H11S3	**WAKE ISLAND Hy 29.34**		**122**	T	T	18 38 00.6	
	baz=314,slow=76,SNR=92						
H11S2	**WAKE ISLAND Hy 29.36**		**122**	T	T	18 38 02.8	
	baz=314,slow=76,SNR=76						
WRA	**Warramunga Arr**	**56.87**	**187**	P	**P**	**18 11 09.4**	**-0.7**
	0.4nm,0.6s,baz=3.7,slow=7.4,SNR=5.6						
ASAR	**Alice Springs**	**60.60**	**187**	P	**P**	**18 11 35.2**	**-0.8**
	0.3nm,0.8s,baz=6.0,slow=8.5,SNR=3.1						

NNC 20 18:06:04.0±1.7, 36°.95N×71°.05E, h0km, mb3.6, mpv3.3, 2C-4D, Error ellipse: s-maj=13.6km s-min=8.0km az=171.0, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**2.56**	**317**	⇓Pn	Pn	18 06 46.6	-0.2
	4.7nm,0.5s						
DZET				⇓Sn	Sn	18 07 19.9	+1.2
	22nm,0.4s						
MNAS	**Manas**	**5.65**	**11**	⇓Pn	Pn	18 07 29.7	+0.4
	1.9nm,0.7s						
MNAS				⇓Sn	Sn	18 08 36.6	+1.7
	2.7nm,0.5s						
KK31	**Karatay Array**	**6.17**	**356**	⇑Pn	Pn	18 07 36.5	+0.2
	1.9nm,0.3s,baz=182,slow=13,SNR=22						
KK31				⇑Sn	Sn	18 08 47.8	+0.3
	1.2nm,0.6s,baz=175,slow=20,SNR=4.1						

IDC 20 18:12:14.8±3.9, 11°.49S×167°.85E, h0km, mb3.8/6, mb1 3.9/6, mb1mx3.6/38, mbtmp3.8/6, Error ellipse: s-maj=120.1km s-min=28.4km az=122.0, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**31.58**	**226**	P	P	18 18 39.9	+0.6
	0.5nm,0.5s,baz=45,slow=7.1,SNR=6.3						
WRA	**Warramunga Arr**	**33.28**	**251**	P	P	18 18 53.9	-0.5
	0.2nm,0.7s,baz=84,slow=8.9,SNR=4.7						
ASAR	**Alice Springs**	**34.45**	**245**	P	P	18 19 03.6	-1.1
	0.3nm,0.6s,baz=75,slow=10,SNR=8.8						
FITZ	**Fitzroy Crossi**	**41.27**	**256**	P	P	18 20 02.6	+0.4
	1.7nm,0.8s,baz=65,slow=6.2,SNR=5.0						
PETK	**Petropavlovsk-**	**64.92**	**353**	P	P	18 22 55.3	-0.7
	4.9nm,1.0s,baz=144,slow=5.4,SNR=4.1						
MKAR	**Makanchi Array**	**95.25**	**317**	P	P	18 25 41.5	+0.8
	0.2nm,0.5s,baz=105,slow=5.5,SNR=3.1						

GUC 20 18:13:36.1±0.6, 34°.74S×72°.59W, h21km±3km, ML3.7, 2C, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHPI	**Pichilemu**	**0.60**	**54**	⇑*i*P	Pb	18 13 47.3	-0.6
CHPI				*i* S	Sb	18 13 55.6	-0.4
TALC	**Talca**	**1.02**	**130**	*e*P	Pb	18 13 54.2	-0.9
TALC				*i* S	Sb	18 14 07.7	-0.3
RCDM	**Rinconada Maip**	**1.94**	**50**	*e*P	Pn	18 14 06.5	-1.3
RCDM				*i* S	Sn	18 14 31.2	-0.4
RCDM				IAML		18 14 39.6	
	comp=N,687nm,0.6s						
ANTU	**Antumapu**	**2.00**	**55**	*e*P	Pn	18 14 10.2	+1.5
ANTU				*i* S	Sb	18 14 35.5	-0.8
ANTU				IAML		18 14 40.6	
	comp=E,1μm,0.4s						
CLCH	**Cerro Calan**	**2.17**	**52**	*e*P	Pn	18 14 12.2	+1.1
CLCH				*i* S	Sb	18 14 40.2	-1.0
CLCH				IAML		18 14 54.1	
	comp=N,935nm,0.7s						
PEL	**Peldehue**	**2.25**	**45**	⇑*i*P	Pn	18 14 13.2	+1.0
PEL				*i* S	Sb	18 14 41.4	-2.0
PEL				IAML		18 14 49.9	
	comp=N,675nm,0.6s						

*IDC **20** 19:50.7±2.4, 6°.51S×147°.71E, h0km, mb3.4/3, mb1 3.6/5, mb1mx3.4/35, mbtmp3.5/5, ML2.9/2, Error ellipse: s-maj=67.5km s-min=23.4km az=99.0*
*ISCJB **20** 19:59.6±3.2, 6°.5S±0°.1×147°.7E±0°.4, h63km, mb3.4/3, Error ellipse: s-maj=63.4km s-min=14.3km az=178.5*
ISC 20 18:19:59.6±3.2, 6°.5S±0°.1×147°.5E±0°.6, h63km, n6, σ0§92/6, mb3.4/3, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.87**	**187**	Pn	Pn	18 20 38.6	-4.4
	18nm,0.3s,baz=354,slow=7.8,SNR=42						
PMG				Sn	**Sn**	**18 21 16.6**	**+0.3**
	4.2nm,0.3s,baz=2.1,slow=22,SNR=7.1						
WRA	**Warramunga Arr**	**18.46**	**223**	P	**P**	**18 24 09.7**	**-0.8**
	0.1nm,0.3s,baz=49,slow=11,SNR=9.1						
ASAR	**Alice Springs**	**21.47**	**216**	P	**P**	**18 24 42.2**	**-0.9**
	0.7nm,0.4s,baz=53,slow=8.7,SNR=39						
FITZ	**Fitzroy Crossi**	**24.22**	**240**	P	**P**	**18 25 11.6**	**+1.0**
	2.3nm,0.6s,baz=54,slow=8.0,SNR=7.0						
MKAR	**Makanchi Array**	**78.22**	**320**	P	**P**	**18 31 52.4**	**-0.2**
	0.1nm,0.5s,baz=126,slow=5.2,SNR=2.2						
TORD	**Torodi Ar. Bea**	**145.70**	**284**	PKPbc	**PKPab**	**18 39 33.3**	**+0.4**
	0.2nm,0.3s,baz=73,slow=3.5,SNR=3.1						

IDC 20 18:23:33.0±5.0, 24°.54S×179°.71W, h538km±56km, mb3.1/6, mb1 3.2/7, mb1mx3.0/37, mbtmp4.1/7, Error ellipse: s-maj=136.8km s-min=32.6km az=64.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**4.96**	**162**	P	P	18 25 01.8	+0.2
	162nm,0.3s,baz=342,slow=20,SNR=5.3						
URZ	**Urewera**	**13.94**	**190**	P	P	18 26 31.1	-0.4
	0.3nm,0.3s,baz=59,slow=5.9,SNR=3.4						
RPZ	**Rata Peaks**	**20.57**	**199**	P	P	18 27 34.5	-0.1
	8.1nm,0.9s,baz=40,slow=6.6,SNR=3.8						
CTA	**Charters Tower**	**31.75**	**271**	P	P	18 29 13.4	+0.1
	1.9nm,0.3s,baz=89,slow=11,SNR=7.0						
STKA	**Stephens Creek**	**34.74**	**249**	P	P	18 29 38.5	+0.1
	1.9nm,1.0s,baz=110,slow=12,SNR=2.9						
ASAR	**Alice Springs**	**42.26**	**201**	P	P	18 30 38.7	-0.3
	0.3nm,0.5s,baz=97,slow=7.0,SNR=20						
WRA	**Warramunga Arr**	**42.63**	**267**	P	P	18 30 41.9	-0.6
	1.0nm,0.4s,baz=103,slow=8.2,SNR=41						
FITZ	**Fitzroy Crossi**	**51.05**	**266**	P	P	18 31 46.3	+0.4
	2.2nm,1.0s,baz=104,slow=8.3,SNR=4.9						

IDC 20 18:24:11.8±358.0, 57°.54N×29°.85E, h0km, Error ellipse: s-maj=151.7km s-min=109.9km az=118.0, Baltic States-Belarus-Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I43RU	**DUBNA INFRASON 4.10**		**98**	*i*		18 50 10.0	
	baz=285,slow=317,SNR=1.6						
I26DE	**FREYUNG INFRAS12.98**		**235**	*i

H11S2	**WAKE ISLAND Hy**	**29.27 127**	T	T	19 09 19.0
	baz=318,slow=76,SNR=28				
MKAR	**Makanchi Array**	**43.86 301**	P	**P**	**18 40 07.7 +0.5**
	0.5nm,0.7s,baz=82,slow=9.6,SNR=5.5				
PMG	**Port Moresby**	**48.29 174**	LR	LR	19 01 35.5
	comp=Z,80nm,19.6s,baz=36,slow=37				
WRA	**Warramunga Arr**	**59.07 189**	P	**P**	**18 42 01.1 0.0**
	0.3nm,0.3s,baz=6.6,slow=6.9,SNR=12				
ASAR	**Alice Springs**	**62.80 189**	P	**P**	**18 42 26.8 +0.4**
	0.3nm,0.8s,baz=9.0,slow=8.9,SNR=5.2				

MAN 20 18:45:12.17°.77N×120°.84E,h14km,mb4.3,ML3.2,MS3.0, 1C,Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ABRA	**Dolores**	**0.17**	**224**	*eP*	Pb	18 45 17.2	+0.3
ABRA				*eS*	Sb	18 45 20.6	+0.4
APYP	**Conner**	**0.40**	**77**	*eP*	Pb	18 45 21.2	+0.4
APYP				*eS*	Sb	18 45 26.9	+0.1
CVP	**Callao Caves**	**0.94**	**94**	*i* P	Pb	18 45 29.7	-0.4
CVP				*i* S	Sb	18 45 41.2	-1.2
SGCP	**Mt. Cagua**	**1.24**	**68**	*eP*	Pn	18 45 35.0	0.0
SGCP				*eS*	Sg	18 45 52.2	0.0
CAUP	**Cauayan**	**1.25**	**131**	*eP*	Pn	18 45 34.3	-0.8
CAUP				*eS*	Sg	18 45 53.8	+1.4
BALP	**Baler**	**2.14**	**161**	*eP*	Pn	18 45 47.1	-0.2
BALP				*eS*	Sn	18 46 13.5	-0.2
PCPH	**Palayan**	**2.21**	**173⇑**	*eP*	Pn	18 45 50.0	+1.7

NIED ***20*** *18:46:00,46°.40N×152°.80E,h59km,Mw5.1 Best double couple: M₀4.22000×10¹⁶ NP1:φ₀84.00000°,δ37.00000°, λ112.00000°. NP2:φ₀237.00000°,δ56.00000°,λ74.00000°.*
JMA ***20*** *18:46:19.8±0.7,46°.42N×152°.75E,h30km,M5.3*
ISCJB ***20*** *18:46:21.0±0.3,46°.49N±0°.02×152°.38E±0°.02,h49km±3km, mb5.0/326,MS4.1/59,Error ellipse: s-maj=3.7km s-min=1.9km az=155.4*
BJI ***20*** *18:46:21.6,46°.56N×152°.40E,h61km,mb4.9/70,mB4.8/49, Ms4.3/58,Ms7 4.2/55*
SKHL ***20*** *18:46:22.7±0.8,46°.35N×152°.59E,h70km±5km,mbh5.7/3, Ms4.5/1,msh5.3/5*
MOS ***20*** *18:46:24.1±1.2,46°.56N×152°.21E,h78km,mb5.2/102, Error ellipse: s-maj=6.1km s-min=5.2km az=105.5*
NEIC ***20*** *18:46:24.4±0.5,46°.57N×152°.23E,h64km±4km,mb5.0/224, Error ellipse: s-maj=3.8km s-min=2.0km az=158.0*
GCMT ***20*** *18:46:24.4±0.3,46°.48N×152°.46E,h53km±2km,MW5.0/92, Moment Tensor Solution. s32,c38; s92,c132; Duration: 0 Moment tensor: Scale 10¹⁶Nm; Mrr1.88±.19; Mθθ-3.10±.16; Mφφ1.22±.17; Mrθ-0.21±.09; Mrφ-1.36±.09; Mθφ-2.35±.09; Best double couple: M₀3.82600×10¹⁶ NP1:φ₀219.00000°,δ67.00000°,λ45.00000°. NP2: φ₀108.00000°,δ50.00000°,λ149.00000°. Principal axes: T 4.0020, Plg47.0000°, Azm81.0000°; N -0.3520, Plg41.0000°, Azm240.0000°; P -3.6500, Plg10.0000°, Azm339.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
IDC ***20*** *18:46:24.3±0.5,46°.53N×152°.21E,h63km±5km,mb4.4/45, mb1 4.5/51,mb1mx4.5/59,mbtmp4.7/51,MS4.1/44, Ms1 4.1/44,ms1mx3.9/68 Error ellipse: s-maj=9.7km s-min=8.7km az=144.0*

ISC 20 18:46:23.8±0.4,46°.50N±0°.04×152°.32E±0°.03,h60km±3km, h60km:pP-P,n1101,σ1°.45/1184,mb5.0/326,47C-23D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUR	**Kuril'sk**	**3.36**	**249**	*c i* PN	**Pn**	**18 47 15.0**	**+1.2**
KUR				*i* S	**Sn**	**18 47 54.1**	**+1.7**
KUR	comp=N,675nm,0.4s			pmax	pmax		
KUR	comp=Z,2μm,0.4s			pmax	pmax		
KUR	comp=E,387nm,0.2s			pmax	pmax		
KUR	comp=E,3μm,0.4s			smax	smax		
KUR	comp=N,7μm,0.5s			smax	smax		
KUR	comp=Z,6μm,14.0s			MLR	MLR		
KUR	**Kuril'sk**	**3.36**	**249⇑**	*i* P	**Pn**	**18 47 14.9**	**+1.2**
KUR				AMB	AMB	18 47 15.9	
KUR	comp=Z,150nm,0.5s			AMB	AMB	18 47 15.9	
KUR	comp=Z,60nm,0.5s			AMB	AMB	18 47 15.9	
KUR	comp=Z,900nm,0.5s			*e*S	**Sn**	**18 47 53.8**	**+1.4**
KUR				A	A	18 47 59.8	
KUR	comp=Z,6μm,2.0s			A	A	18 47 59.8	
KUR	comp=Z,3μm,2.0s			A	A	18 48 01.3	
KUR	comp=Z,3μm,0.6s			A	A	18 48 01.3	
KUR	comp=Z,3μm,0.6s			AMS	AMS	18 48 30.0	
KUR	comp=Z,6μm,14.0s						
SHO	**Shikotan**	**4.69**	**238**	*d i* PN	**Pn**	**18 47 31.0**	**-0.9**
SHO				*i* S	**Sn**	**18 48 22.5**	**-2.5**
SHO	comp=Z,995nm,0.5s			pmax	pmax		
SHO	comp=N,407nm,0.4s			pmax	pmax		
SHO	comp=E,390nm,0.6s			pmax	pmax		
SHO	comp=N,6μm,0.5s			smax	smax		
SHO	comp=E,4μm,0.5s			smax	smax		
SHO	**Shikotan**	**4.69**	**238⇓**	*i* P	**Pn**	**18 47 31.0**	**-0.9**
SHO				AMB	AMB	18 47 34.7	
SHO	comp=E,410nm,0.5s			AMB	AMB	18 47 34.7	
SHO	comp=E,390nm,0.5s			AMB	AMB	18 47 34.7	
SHO	comp=E,1μm,0.5s			*i* S	**Sn**	**18 48 22.5**	**-2.5**
SHO				A	A	18 48 47.7	
SHO	comp=E,6μm,0.5s			A	A	18 48 47.7	
SHO	comp=E,4μm,0.5s						
SKR	**Severo-Kuril's**	**4.88**	**30**	*e*PN	Pn	18 47 26.0	-8.6
SKR				pmax	pmax		
SKR	comp=N,220nm,0.5s			pmax	pmax		
SKR	comp=E,150nm,0.5s			pmax	pmax		
SKR	comp=Z,660nm,0.5s			pmax	pmax		
SKR	comp=N,2μm,4.0s			pmax	pmax		
SKR	comp=E,2μm,4.0s			pmax	pmax		
SKR	comp=Z,2μm,4.0s			MLR	MLR		
SKR	comp=E,2μm,20.0s			MLR	MLR		
SKR	comp=Z,2μm,20.0s						
SKR	**Severo-Kuril's**	**4.88**	**30**	*e*P	**Pn**	**18 47 34.5**	**-0.1**
SKR				AMB	AMB	18 47 36.8	
SKR	comp=Z,1μm,0.6s			AMB	AMB	18 47 39.0	
SKR	comp=Z,2μm,4.0s			AMB	AMB	18 47 39.0	
SKR	comp=Z,2μm,4.0s			AMB	AMB	18 47 39.0	
SKR	comp=Z,2μm,4.0s						
SKR				*e*S	**Sn**	**18 48 27.6**	**-2.1**
SKR				A	A	18 48 35.8	
SKR	comp=Z,1μm,0.4s			A	A	18 48 35.8	
SKR	comp=Z,760nm,0.4s			AMS	AMS	18 49 30.0	
SKR	comp=Z,2μm,20.0s			AMS	AMS	18 49 30.0	
SKR	comp=Z,2μm,20.0s						
YUK	**Yuzh-Kuril'sk**	**5.18**	**244**	*d i* PN	**Pn**	**18 47 40.0**	**+1.3**
YUK				*i* S	**Sn**	**18 48 38.5**	**+1.4**
YUK				pmax	pmax		
YUK	comp=Z,1μm,0.5s			pmax	pmax		
YUK	comp=E,454nm,0.2s			pmax	pmax		
YUK	comp=N,326nm,0.4s			smax	smax		
YUK	comp=N,3μm,0.5s			smax	smax		
YUK	comp=E,2μm,0.4s			MLR	MLR		
YUK	comp=Z,4μm,12.0s						
YUK	**Yuzh-Kuril'sk**	**5.18**	**244⇓**	*i* P	**Pn**	**18 47 40.0**	**+1.3**
YUK				AMB	AMB	18 47 43.8	
YUK	comp=Z,330nm,0.5s			AMB	AMB	18 47 43.8	
YUK	comp=Z,1μm,0.5s			AMB	AMB	18 47 43.8	
YUK	comp=Z,450nm,0.2s			*i* S	**Sn**	**18 48 38.6**	**+1.4**
YUK				A	A	18 48 59.0	
YUK	comp=Z,3μm,0.5s			A	A	18 48 59.0	
YUK	comp=Z,2μm,0.5s			AMS	AMS	18 49 36.0	
YUK	comp=Z,4μm,12.0s						
NEM2	**Nemuro 2**	**5.62**	**238**	P	**Pn**	**18 47 43.5**	**-1.2**
NEM2				*e*S	**Sn**	**18 48 45.5**	**-2.4**
JRA	**Rausu**	**5.69**	**246**	P	**Pn**	**18 47 47.5**	**+1.8**
PAU	**Pauzhetka**	**5.78**	**29**	*e*P	**Pn**	**18 47 46.1**	**-0.8**
PAU				AMB	AMB	18 47 46.5	
PAU	comp=Z,410nm,0.4s			*e*S	**Sn**	**18 48 50.0**	**-1.8**
PAU				A	A	18 48 56.8	
PAU	comp=Z,1μm,0.3s			AMS	AMS	18 49 50.0	
PAU	comp=Z,6μm,15.0s			AMS	AMS	18 49 50.0	
PAU	comp=Z,7μm,15.0s			AMS	AMS	18 49 50.0	
PAU	comp=Z,7μm,15.0s						
JNK	**Nakash**	**6.12**	**244**	P	**Pn**	**18 47 52.4**	**+0.8**
JNK				*e*S	**Sn**	**18 49 00.1**	**-0.1**
JTKR	**Abashiri--Toko**	**6.46**	**250**	P	**Pn**	**18 47 58.1**	**+2.0**
JAK	**Akkeshi**	**6.46**	**240**	P	**Pn**	**18 47 55.1**	**-1.1**
JAK				*e*S	**Sn**	**18 49 06.4**	**-2.1**
YSS	**Yuzh-Sakhalins**	**6.59**	**277⇑**	*i* PN	**Pn**	**18 48 01.0**	**+3.0**
YSS				*e*S	**Sn**	**18 49 11.5**	**-0.2**
YSS	comp=Z,300nm,3.0s			pmax	pmax		
YSS	comp=Z,90nm,0.8s			pmax	pmax		
YSS	comp=N,430nm,0.4s			smax	smax		
YSS	comp=E,650nm,0.5s			smax	smax		
YSS	comp=Z,2μm,17.0s			MLR	MLR		
YSS	comp=N,700nm,12.0s			MLR	MLR		
YSS	comp=E,2μm,18.0s			MLR	MLR		
YSS	**Yuzh-Sakhalins**	**6.59**	**277⇑**	*i* P	**Pn**	**18 48 01.2**	**+3.2**
YSS				AMB	AMB	18 48 01.5	
YSS	comp=E,300nm,3.0s			AMB	AMB	18 48 04.8	
YSS	comp=E,170nm,0.7s			*e*S	**Sn**	**18 49 13.1**	**+1.4**
YSS				A	A	18 49 17.4	
YSS	comp=E,430nm,0.5s			A	A	18 49 17.4	
YSS	comp=E,660nm,0.5s			AMS	AMS	18 50 13.0	
YSS	comp=E,2μm,18.0s			AMS	AMS	18 50 13.0	
YSS	comp=E,2μm,18.0s						
JMP	**Maruseppu**	**6.80**	**252**	P	**Pn**	**18 48 03.0**	**+2.1**
JAR	**Ashorobuto**	**6.87**	**245**	P	**Pn**	**18 48 02.8**	**+1.0**
JAR				*e*S	**Sn**	**18 49 20.0**	**+1.6**
JSE	**Soyaes**	**6.99**	**261**	P	Pn	18 48 08.2	+4.8
JOB	**Onbets**	**7.03**	**242**	P	**Pn**	**18 48 04.0**	**-0.1**
JOB				*e*S	**Sn**	**18 49 21.1**	**-1.4**
HRK	**Horoka**	**7.19**	**248**	*e*P	**Pn**	**18 48 08.1**	**+1.9**
JKK2	**Kamakawa 2**	**7.25**	**252**	P	**Pn**	**18 48 09.4**	**+2.3**
JKA	**Kamikawa-asahi**	**7.26**	**254**	*e*P	**Pn**	**18 48 09.0**	**+1.9**
ASAJ	**Asahikawa**	**7.26**	**254**	P	**Pn**	**18 48 08.9**	**+1.8**
ASAJ	comp=E,15nm,0.3s,baz=74,slow=23,SNR=105			S	**Sn**	**18 49 30.9**	**+2.8**
ASAJ	comp=E,6.2nm,0.3s,baz=176,slow=12,SNR=1.5						
ASAJ	**Asahikawa**	**7.26**	**254**	P	**Pn**	**18 48 10.1**	**+3.0**
ASAJ	**Asahikawa**	**7.26**	**254**	*e*Pn	**Pn**	**18 48 10.1**	**+3.0**
ASAJ				*e*Sn	**Sn**	**18 49 30.8**	**+2.8**
ASAJ	**Asahikawa**	**7.26**	**254**	*e*P	**Pn**	**18 48 10.1**	**+3.0**
JWK2	**Keihoku**	**7.37**	**265**	P	Pn	18 48 14.4	+5.8
UGL	**Uglegorsk**	**7.37**	**294**	*e*PN	**Pn**	**18 48 12.8**	**+4.2**
UGL				*e*S	**Sn**	**18 49 32.5**	**+1.7**
UGL	comp=Z,1μm,2.0s			pmax	pmax		
UGL	comp=Z,120nm,0.5s			pmax	pmax		
UGL	comp=N,290nm,0.5s			smax	smax		
UGL	comp=E,400nm,0.6s			smax	smax		
UGL	comp=N,700nm,0.8s			smax	smax		
UGL	comp=E,600nm,1.0s			smax	smax		
UGL	comp=Z,1μm,14.0s			MLR	MLR		
UGL	comp=N,500nm,13.0s			MLR	MLR		
UGL	comp=E,1μm,15.0s			MLR	MLR		
UGL	**Uglegorsk**	**7.37**	**294**	*e*P	**Pn**	**18 48 12.8**	**+4.2**
UGL				AMB	AMB	18 48 15.0	
UGL	comp=E,500nm,2.5s			AMB	AMB	18 48 15.0	
UGL	comp=E,800nm,2.5s			AMB	AMB	18 48 15.0	
UGL	comp=E,1μm,2.5s			*e*S	**Sn**	**18 49 32.5**	**+1.7**
UGL				A	A	18 49 34.0	
UGL	comp=E,290nm,0.6s			A	A	18 49 34.0	
UGL	comp=E,400nm,0.6s			A	A	18 49 48.0	
UGL	comp=E,700nm,2.0s			A	A	18 49 48.0	
UGL	comp=E,1μm,2.0s			AMS	AMS	18 51 19.0	
UGL	comp=E,500nm,14.0s			AMS	AMS	18 51 19.0	
UGL	comp=E,1μm,14.0s			AMS	AMS	18 51 19.0	
UGL	comp=E,1μm,14.0s						
PEA0	**Petropavlovsk-**	**7.47**	**26**	*e*Pn	**Pn**	**18 48 09.9**	**-0.1**
PEA0B	**Petropavlovsk-**	**7.47**	**26**	*e*Pn	**Pn**	**18 48 10.2**	**+0.2**
PETK	**Petropavlovsk-**	**7.47**	**26**	P	**Pn**	**18 48 09.9**	**-0.1**
PETK	comp=E,6.7nm,0.3s,baz=183,slow=11,SNR=87			S	**Sn**	**18 49 34.4**	**+1.2**
PETK	baz=195,slow=16,SNR=1.4			LR	LR	18 51 09.5	
PETK	comp=E,909nm,18.6s,baz=224,slow=38						
PEA1	**Petropavlovsk-**	**7.48**	**26**	*e*Pn	**Pn**	**18 48 09.9**	**-0.2**
PEA1				*e*Sn	**Sn**	**18 49 34.4**	**+1.1**
JCH	**Churui**	**7.48**	**242**	P	**Pn**	**18 48 09.0**	**-1.2**
JCH				*e*S	**Sn**	**18 49 30.2**	**-3.4**
JSS	**Shosan**	**7.66**	**258**	P	Pn	18 48 19.2	+6.7
JFR	**Furan**	**7.68**	**248**	P	**Pn**	**18 48 14.3**	**+1.4**
PET	**Petropavlovsk**	**7.71**	**30**	*e*PN	**Pn**	**18 48 11.3**	**-1.9**
PET	comp=Z,100nm,6.7s			pmax	pmax		
PET	comp=Z,600nm,17.0s			MLR	MLR		
PET	comp=Z,400nm,19.0s			MLR	MLR		
PET	**Petropavlovsk**	**7.71**	**30**	*e*Pn	**Pn**	**18 48 11.6**	**-1.6**
PET	**Petropavlovsk**	**7.71**	**30**	*e*P	**Pn**	**18 48 12.3**	**-0.9**
PET				AMB	AMB	18 48 16.9	
PET	comp=Z,100nm,2.0s			AMB	AMB	18 48 21.5	
PET	comp=Z,60nm,0.7s			*e*S	**Sn**	**18 49 36.7**	**-2.3**
PET				A	A	18 49 44.2	
PET	comp=Z,900nm,3.0s			A	A	18 49 58.1	
PET	comp=Z,260nm,0.8s			A	A	18 49 58.1	
PET	comp=Z,230nm,0.8s			AMS	AMS	18 51 10.0	
PET	comp=Z,600nm,17.0s						
MYR	**Moyori**	**7.72**	**240**	*e*P	**Pn**	**18 48 12.4**	**-1.0**
TYV	**Tymovskoe**	**7.74**	**308**	*e*PN	**Pn**	**18 48 15.0**	**+1.3**
TYV				*e*S	**Sn**	**18 49 38.5**	**-1.3**
TYV	comp=E,53nm,0.8s			pmax	pmax		
TYV	comp=Z,99nm,0.8s			pmax	pmax		
TYV	comp=Z,79nm,0.6s			smax	smax		
TYV	comp=E,1μm,6.0s			smax	smax		
TYV	comp=E,2μm,20.0s			MLR	MLR		
TYV	**Tymovskoe**	**7.74**	**308**	*e*P	**Pn**	**18 48 17.3**	**+3.6**
TYV				AMB	AMB	18 48 19.5	
TYV	comp=E,50nm,0.8s			AMB	AMB	18 48 19.5	
TYV	comp=E,100nm,0.8s			AMB	AMB	18 48 20.6	
TYV	comp=E,600nm,2.0s			*e*S	**Sn**	**18 49 40.3**	**+0.5**
TYV				A	A	18 49 47.5	
TYV	comp=E,80nm,0.6s			A	A	18 49 56.0	
TYV	comp=E,1μm,6.0s			AMS	AMS	18 50 44.0	
TYV	comp=E,1μm,20.0s			AMS	AMS	18 50 44.0	
TYV	comp=E,2μm,20.0s						
JAB	**Ashibetsu**	**7.76**	**251**	P	**Pn**	**18 48 16.5**	**+2.5**
JEM	**Erimo**	**7.96**	**239**	P	**Pn**	**18 48 16.9**	**+0.2**
ERM	**Erimo**	**7.96**	**239⇑**	*e*PN	**Pn**	**18 48 17.7**	**+1.0**
ERM	**Erimo**	**7.96**	**239**	*e*Pn	**Pn**	**18 48 17.2**	**+0.6**
ERM	**Erimo**	**7.96**	**239**	*e*P	**Pn**	**18 48 17.3**	**+0.6**
JBT2	**Biratori 2**	**8.02**	**246**	P	**Pn**	**18 48 18.0**	**+0.5**
JNBK	**Urakawa-nobuka**	**8.04**	**242**	P	**Pn**	**18 48 16.6**	**-1.3**
JEW	**Eniwo**	**8.57**	**249**	P	**Pn**	**18 48 27.1**	**+2.1**
JNB	**Noboribetsu**	**9.01**	**247**	P	**Pn**	**18 48 31.6**	**+0.5**
JNB				*e*S	**Sn**	**18 50 09.0**	**-2.1**
OKH	**Okha**	**9.28**	**323**	*e*PN	**Pn**	**18 48 38.2**	**+3.5**
OKH	comp=Z,2μm,4.0s			pmax	pmax		
OKH	**Okha**	**9.28**	**323**	*e*P	**Pn**	**18 48 38.4**	**+3.7**
OKH				*e*P	**Pn**	**18 48 38.6**	**+3.9**
OKH	comp=Z,260nm,0.7s			AMB	AMB	18 48 39.4	
OKH	comp=Z,2μm,2.0s			AMB	AMB	18 48 39.6	
OKH	comp=Z,4μm,17.0s			AMS	AMS	18 52 32.0	
OKH	comp=Z,1μm,17.0s			AMS	AMS	18 52 32.0	
JKB	**Kayabe**	**9.32**	**244**	P	**Pn**	**18 48 33.8**	**-1.6**
JKB				*e*S	**Sn**	**18 50 13.4**	**-5.3**
JSH	**Shimam**	**9.57**	**251**	P	**Pn**	**18 48 41.0**	**+2.3**
JYM2	**Yakumo 2**	**9.62**	**247**	P	**Pn**	**18 48 39.1**	**-0.3**
JYM2				*e*S	**Sn**	**18 50 23.3**	**-2.6**
JSR	**Shiriuchi**	**9.91**	**244**	P	**Pn**	**18 48 42.4**	**-0.9**
JSR				*e*S	**Sn**	**18 50 27.1**	**-5.8**
JTM	**Tenmabayashi**	**9.95**	**239**	P	**Pn**	**18 48 41.3**	**-2.7**
JANG	**Nango**	**9.96**	**236**	P	**Pn**	**18 48 40.3**	**-3.8**
JANG				*e*S	Sn	18 50 22.8	-11
NKL	**Nikolayevsk**	**10.04**	**316**	*i* PN	**Pn**	**18 48 47.0**	**+2.0**
NKL	comp=N,55nm,1.1s			pmax	pmax		
NKL	comp=E,83nm,1.1s			pmax	pmax		
NKL	comp=Z,130nm,1.1s			pmax	pmax		
NKL	comp=N,500nm,4.0s			pmax	pmax		
NKL	comp=E,700nm,4.0s			pmax	pmax		
NKL	comp=Z,900nm,4.0s			MLR	MLR		
NKL	comp=N,900nm,17.0s			MLR	MLR		
NKL	comp=E,900nm,17.0s			MLR	MLR		
NKL	comp=Z,1μm,17.0s						
NKL	**Nikolayevsk**	**10.04**	**316**	*e*P	**Pn**	**18 48 47.2**	**+2.2**
NKL				*i e*P	**Pn**	**18 48 47.2**	**+2.2**
NKL				AMB	AMB	18 48 49.0	
NKL	comp=Z,500nm,3.0s			AMB	AMB	18 48 49.0	
NKL	comp=Z,700nm,3.0s			AMB	AMB	18 48 49.0	
NKL	comp=Z,900nm,3.0s			AMB	AMB	18 48 50.0	
NKL	comp=Z,60nm,1.1s			AMB	AMB	18 48 50.0	
NKL	comp=Z,80nm,1.1s			AMB	AMB	18 48 50.0	
NKL	comp=Z,130nm,1.1s			*e*S	**Sn**	**18 50 38.0**	**+2.1**
NKL				AMS	AMS	18 53 05.0	
NKL	comp=Z,900nm,17.0s			AMS	AMS	18 53 05.0	
NKL	comp=Z,1μm,17.0s						
JTH	**Tanohata**	**10.06**	**233**	P	**Pn**	**18 48 41.7**	**-3.7**
JOSM	**Okushiri--Mats**	**10.21**	**249**	P	**Pn**	**18 48 47.7**	**+0.2**
OFUJ	**Ofunato**	**10.77**	**230**	P	**Pn**	**18 48 51.8**	**-3.4**
TEY	**Ternei**	**11.08**	**268**	*e*P	**Pn**	**18 49 03.7**	**+4.4**
TEY	comp=Z,60nm,1.0s			AMB	AMB	18 49 06.9	
TEY	comp=Z,1μm,19.0s			AMS	AMS	18 52 30.0	
TEY	comp=Z,2μm,19.0s			AMS	AMS	18 52 30.0	
TEY	comp=Z,2μm,17.0s			AMS	AMS	18 52 30.0	
JRG	**Rokugo**	**11.12**	**234**	*e*S	**Sn**	**18 50 54.9**	**-7.6**
GRNR	**Gornyy**	**11.35**	**298**	*e*P	**Pn**	**18 49 05.3**	**+2.3**
GRNR				AMB	AMB	18 49 08.9	
JIO	**Ouri**	**11.40**	**229**	P	**Pn**	**18 49 00.6**	**-3.2**
JIO				*e*S	**Sn**	**18 51 01.2**	**-8.3**
HABR	**Khabarovsk**	**11.85**	**286**	*d e*PN	**Pn**	**18 49 09.1**	**-0.7**
HABR	comp=N,3.0nm,1.0s			pmax	pmax		
HABR	comp=E,36nm,1.0s			pmax	pmax		
HABR	comp=Z,43nm,1.0s			MLR	MLR		
HABR	comp=Z,913nm,16.0s						
HABR	**Khabarovsk**	**11.85**	**286⇓**	*e*P	**Pn**	**18 49 09.1**	**-0.7**
HABR				AMB	AMB	18 49 16.9	
HABR	comp=Z,40nm,1.0s			AMS	AMS	18 54 13.0	
HABR	comp=Z,900nm,16.0s						
JYA	**Atsumi**	**12.19**	**234**	P	**Pn**	**18 49 12.4**	**-2.1**
JYA				*e*S	**Sn**	**18 51 21.5**	**-7.2**
JFY	**Yanaizu**	**13.05**	**230**	P	**Pn**	**18 49 24.3**	**-2.0**
MA2	**Magadan**	**13.13**	**357**	P	**Pn**	**18 49 28.4**	**+1.2**
MA2	comp=Z,8.2nm,0.3s,baz=192,slow=12,SNR=41			S	**Sn**	**18 51 46.6**	**-4.8**
MA2	comp=Z,0.4nm,0.3s,baz=241,slow=19,SNR=2.1			LR	LR	18 54 55.9	
MA2	comp=Z,507nm,18.4s,baz=198,slow=39						
KLR	**Kul'dur**	**14.07**	**289**	P	**Pn**	**18 49 40.9**	**+1.0**
KLR	comp=Z,0.3nm,0.3s,baz=96,slow=16,SNR=34			PcP	**PcP**	**18 54 56.4**	**+0.8**
KLR	baz=157,slow=3.7			LR	LR	18 55 22.5	
KLR	comp=Z,1μm,20.2s,baz=104,slow=38						
EKMR	**Ekimchan**	**14.11**	**305**	*e*P	**Pn**	**18 49 43.1**	**+2.6**
EKMR				AMB	AMB	18 49 50.5	
EKMR	comp=Z,50nm,0.8s						
USRK	**Ussuriysk Ar.**	**14.48**	**268**	P	**Pn**	**18 49 45.7**	**+0.4**
USRK	comp=Z,1.9nm,0.3s,baz=79,slow=13,SNR=26			LR	LR	18 54 58.9	
USRK	comp=Z,975nm,21.0s,baz=72,slow=36						
MJB9	**Matsu-Tunnel**	**14.49**	**232**	*e*Pn	**Pn**	**18 49 42.1**	**-3.5**
MAJO	**Matsushiro**	**14.49**	**232⇑**	*e*P	**Pn**	**18 49 42.6**	**-3.0**
MAJO	**Matsushiro**	**14.49**	**232**	*e*Pn	**Pn**	**18 49 42.0**	**-3.6**
MAT	**Matsushiro**	**14.49**	**232**	P	**Pn**	**18 49 42.0**	**-3.6**
MAT				S	**Sn**	**18 52 27.8**	**+2.9**
MJAR	**Matsushiro Arr**	**14.49**	**232**	P	**Pn**	**18 49 42.3**	**-3.3**
	comp=Z,1.2nm,0.3s,baz=27,slow=14,SNR=37						

JNG	**Nsakai**	**14.65 232**	P	**Pn**	**18 49 45.0 -2.7**
VLA	**Vladivostok**	**14.89 264**	P	**Pn**	**18 49 52.0 +1.5**
VLA	**Vladivostok**	**14.89 264**	*e*P	**Pn**	**18 49 52.1 +1.5**
SMY	**Shemya**	**15.40 58**	*e*P	**Pn**	**18 49 55.8 -1.3**
SMY			pmax	pmax	
comp=Z,333nm,1.4s					
SMY	**Shemya**	**15.40 58**	*e*Pn	**Pn**	**18 49 55.8 -1.3**
comp=Z,333nm,1.4s					
SMY	**Shemya**	**15.40 58**	*e*P	**Pn**	**18 49 55.8 -1.3**
JNY	**Yasuok**	**15.57 229**	P	**Pn**	**18 49 58.4 -1.1**
MDJ	**Mudanjiang**	**16.02 271**	P	**Pn**	**18 50 05.3 +0.2**
MDJ			S	**Sn**	**18 53 01.3 -0.5**
MDJ			PcP	**PcP**	**18 54 58.8 +0.4**
MDJ			ScP	**ScP**	**18 58 27.9 +0.5**
MDJ			PcS	**PcS**	**18 58 35.3 +1.4**
MDJ			ScS	**ScS**	**19 02 07.1 +1.0**
MDJ			pmax	pmax	
comp=Z,49nm,1.0s					
MDJ			pmax	pmax	
comp=Z,100nm,5.2s					
MDJ			LR	LR	
comp=Z,240nm,18.4s					
MDJ			LR	LR	
comp=Z,560nm,23.5s					
MDJ			LR	LR	
comp=Z,780nm,18.4s					
MDJ	**Mudanjiang**	**16.02 271**	*e*Pn	**Pn**	**18 50 05.9 +0.8**
comp=Z,82nm,1.2s					
MDJ	**Mudanjiang**	**16.02 271**	*e*P	**Pn**	**18 50 05.9 +0.8**
INU	**Inuyama**	**16.03 231**	*e*Pn	**Pn**	**18 50 03.4 -1.8**
comp=Z,21nm,0.9s					
JHJ2	**Mitsune**	**16.44 220**	*e*Pn	**Pn**	**18 50 09.1 -1.2**
comp=Z,430nm,1.5s					
JHJ	**Hachijo jima 2**	**16.44 220**	P	**Pn**	**18 50 09.8 -0.7**
comp=Z,2.8nm,0.3s,baz=90,slow=20,SNR=2.6					
JHJ			S	Sn	18 52 57.6 -15
comp=Z,8.9nm,0.3s,baz=73,slow=19,SNR=5.0					
JHJ			LR	LR	19 00 18.5
comp=Z,65nm,18.3s,baz=68,slow=51					
SEY	**Seymchan**	**16.47 0**	P	**P**	**18 50 11.6 -0.8**
comp=Z,2.0nm,0.3s,baz=180,slow=8.9,SNR=23					
SEY	**Seymchan**	**16.47 0⇑**	*e*P	**P**	**18 50 11.7 -0.6**
SEY	**Seymchan**	**16.47 0⇑**	*e*P	**P**	**18 50 11.7 -0.6**
BMKR	**Bomnak**	**16.95 308⇑**	*e*P	**P**	**18 50 19.0 +1.2**
BMKR			AMB	AMB	18 50 22.6
comp=Z,60nm,0.6s					
ZEA	**Zeya**	**17.57 303**	*e*P	**P**	**18 50 25.5 +0.9**
ZEA			AMB	AMB	18 50 27.6
comp=Z,500nm,2.0s					
ZEA			AMB	AMB	18 50 29.3
comp=Z,50nm,0.9s					
ZEA			AMB	AMB	18 50 29.3
comp=Z,60nm,0.9s					
ZEA			*e*S	**Sn**	**18 53 32.0 -7.0**
ZEA			A	A	18 53 57.0
comp=Z,300nm,8.0s					
ZEA			A	A	18 53 57.0
comp=Z,400nm,8.0s					
ZEA			AMS	AMS	18 57 38.0
comp=Z,200nm,15.0s					
ZEA			AMS	AMS	18 57 38.0
comp=Z,300nm,15.0s					
ZEA			AMS	AMS	18 57 38.0
comp=Z,600nm,15.0s					
KROS	**Kirovskiy**	**17.91 306⇑**	*e*P	**Pn**	**18 50 28.8 +0.4**
KROS			AMB	AMB	18 50 33.2
comp=Z,20nm,0.9s					
KROS			AMB	AMB	18 50 33.2
comp=Z,70nm,0.9s					
KROS			AMB	AMB	18 50 33.2
comp=Z,90nm,0.9s					
CN2	**Changchun**	**19.11 272**	⇑P	**P**	**18 50 41.5 -0.1**
CN2			*e*pP	pP	18 50 54.8 +0.3
CN2			*e*S	**S**	**18 54 07.6 -7.4**
CN2			pmax	pmax	
comp=Z,20nm,0.7s					
CN2			pmax	pmax	
comp=Z,100nm,4.0s					
CN2			LR	LR	
comp=Z,400nm,16.0s					
CN2			LR	LR	
comp=Z,500nm,16.0s					
CN2			LR	LR	
comp=Z,600nm,17.0s					
CLNS	**Chul'man**	**19.77 312**	*e*P	**Pn**	**18 50 50.4 -0.3**
CLNS			pmax	pmax	
comp=Z,37nm,0.9s					
CLNS			pmax	pmax	
comp=N,16nm,0.8s					
CLNS			pmax	pmax	
comp=E,24nm,1.0s					
CLNS	**Chul'man**	**19.77 312**	*e*P	**Pn**	**18 50 50.4 -0.3**
KSRS	**Korea Array**	**20.20 252**	P	**P**	**18 50 54.3 +0.9**
comp=E,24nm,0.8s,baz=56,slow=11,SNR=46					
KSRS			LR	LR	18 57 44.3
comp=E,450nm,20.9s,baz=62,slow=34					
KSRS	**Korea Array**	**20.20 252**	P	**P**	**18 50 54.3 +0.9**
KSRS			pmax	pmax	
comp=Z,18nm,1.0s					
KSRS			MLR	MLR	
comp=Z,450nm,20.9s					
KS01	**Wonju Array Si**	**20.21 252**	*e*P	**P**	**18 50 53.2 -0.3**
KS15	**Wonju Array Si**	**20.23 252**	*e*P	Pn	18 50 55.4 -0.8
KSAR	**Wonju Array Be**	**20.23 252**	P	**P**	**18 50 54.3 +0.5**
KSAR	**Wonju Array Be**	**20.23 252**	P	**P**	**18 50 54.3 +0.5**
KSAR	**Wonju Array Be**	**20.23 252**	*e*P	**P**	**18 50 54.3 +0.5**
YAK	**Yakutsk**	**20.24 328**	P	**P**	**18 50 53.8 +0.1**
comp=Z,23nm,0.5s,baz=118,slow=19,SNR=31					
YAK			LR	LR	18 58 47.3
comp=Z,355nm,19.1s,baz=116,slow=37					
YAK	**Yakutsk**	**20.24 328**	*e*P	**P**	**18 50 53.7 +0.1**
YAK			*e**PP	**sP**	**18 51 12.7 -1.7**
YAK			*e*S	**S**	**18 54 32.8 -4.3**
YAK			*e**SS	**sS**	**18 54 59.8 +1.4**
YAK			*e*		18 55 13.5
YAK			*e*		19 02 15.9
YAK			pmax	pmax	
comp=N,51nm,1.0s					
YAK			pmax	pmax	
comp=E,57nm,0.8s					
YAK			pmax	pmax	
comp=Z,227nm,0.8s					
YAK			smax	smax	
comp=E,149nm,1.7s					
YAK			MLR	MLR	
comp=N,300nm,18.0s					
YAK			MLR	MLR	
comp=Z,510nm,24.0s					
YAK			MLR	MLR	
comp=E,317nm,16.0s					
YAK	**Yakutsk**	**20.24 328**	*e*P	**P**	**18 50 53.9 +0.2**
comp=E,301nm,0.7s					
YAK	**Yakutsk**	**20.24 328**	*e*P	**P**	**18 50 53.9 +0.2**
CBIJ	**Chichi jima**	**20.97 206**	*e*P	**P**	**18 51 02.5 +0.7**
comp=E,138nm,1.0s					
CBIJ			*e*S	**S**	**18 54 42.7 -9.2**
JCJ	**Chichijima**	**20.97 206**	P	**P**	**18 51 01.6 -0.2**
comp=E,64nm,0.7s,baz=284,slow=20,SNR=4.1					
JCJ			S	**S**	**18 54 42.7 -9.2**
comp=E,36nm,0.7s,baz=287,slow=19,SNR=4.9					
JCJ			LR	LR	18 58 19.7
comp=E,120nm,21.6s,baz=14,slow=34					
INCN	**Inchon**	**21.04 254**	*e*P	**P**	**18 51 03.6 +1.1**
comp=E,75nm,1.0s					
INCN	**Inchon**	**21.04 254**	*e*P	**P**	**18 51 03.6 +1.1**
SNY	**Shenyang**	**21.08 268**	⇓P	**P**	**18 51 05.4 +2.5**
SNY			S	**S**	**18 54 58.1 +4.0**
SNY			pmax	pmax	
comp=E,94nm,0.5s					
SNY			pmax	pmax	
comp=E,160nm,4.9s					
SNY			LR	LR	
comp=E,410nm,18.4s					
SNY			LR	LR	
comp=E,640nm,17.1s					
SNY			LR	LR	
comp=E,960nm,18.2s					
JNU	**Nakatsue**	**21.12 238**	P	**P**	**18 51 04.2 +0.7**
comp=E,5.3nm,0.5s,baz=42,slow=11,SNR=11					
JNU	**Nakatsue**	**21.12 238**	*e*P	**P**	**18 51 04.9 +1.4**
comp=E,21nm,0.9s					
TJN	**Taejon**	**21.19 250⇓**	*i*P	**P**	**18 51 05.8 +1.7**
BILL	**Bilibino**	**22.76 14⇓**	*i*P	**P**	**18 51 20.4 -0.3**
BILL			*e*		18 51 47.6
BILL			*e*S	**S**	**18 55 15.7 -9.0**
BILL			pmax	pmax	
comp=Z,11nm,0.8s					
BILL			MLR	MLR	
comp=Z,594nm,19.0s					
BILL	**Bilibino**	**22.76 14**	*e*P	**P**	**18 51 20.9 +0.2**
comp=Z,14nm,0.9s					
BILL	**Bilibino**	**22.76 14**	*e*P	**P**	**18 51 20.9 +0.2**
DL2	**Dalian**	**23.69 262**	P	**P**	**18 51 30.3 +0.4**
DL2			sP	**sP**	**18 51 51.0 -0.4**
DL2			S	**S**	**18 55 44.0 +3.7**
DL2			pmax	pmax	
comp=Z,57nm,1.1s					
DL2			pmax	pmax	
comp=Z,160nm,3.7s					
DL2			LR	LR	
comp=Z,260nm,18.0s					
DL2			LR	LR	
comp=Z,260nm,19.6s					
DL2			LR	LR	
comp=Z,480nm,26.9s					
BOD	**Bodaibo**	**25.73 310**	*e*P	**P**	**18 51 46.2 -2.0**
BOD			pmax	pmax	
comp=Z,14nm,1.0s					
GAMB	**Gambell**	**26.34 36**	*e*P	**P**	**18 51 53.2 -0.4**
comp=Z,19nm,1.1s					
BJI	**Beijing**	**26.93 269**	P	**P**	**18 52 01.3 +2.1**
BJI			S	**S**	**18 56 32.5 +0.8**
BJI			pmax	pmax	
comp=Z,11nm,0.8s					
BJI			pmax	pmax	
comp=Z,79nm,3.8s					
BJI			LR	LR	
comp=Z,220nm,15.9s					
BJI			LR	LR	
comp=Z,680nm,19.0s					
BJI			LR	LR	
comp=Z,590nm,19.7s					
BJT	**Baijiatuau**	**26.94 269**	*e*P	**P**	**18 52 00.4 +1.0**
BJT	**Baijiatuau**	**26.94 269**	*e*P	**P**	**18 52 00.3 +1.0**
BJT	**Baijiatuau**	**26.94 269**	*e*P	**P**	**18 52 00.4 +1.0**
JOW	**Kunigami**	**27.34 232**	*e*P	**P**	**18 52 03.9 +0.9**
comp=Z,42nm,0.8s					
AKUT	**Akutan**	**27.48 58**	*e*P	**P**	**18 52 03.2 -0.8**
comp=Z,176nm,1.4s					
TIXI	**Tiksi**	**27.56 344**	P	**P**	**18 52 02.8 -1.7**
comp=Z,3.3nm,0.3s,baz=139,slow=8.3,SNR=17					
TIXI			PcP	**PcP**	**18 55 20.5 -0.1**
comp=Z,3.6nm,0.6s,baz=66,slow=4.3,SNR=4.4					
TIXI			LR	LR	19 03 26.3
comp=Z,406nm,19.8s,baz=118,slow=37					
TIXI	**Tiksi**	**27.56 344**	*e*P	**P**	**18 52 03.9 -0.6**
TIXI			pmax	pmax	
comp=Z,3.0nm,0.6s					
TIXI	**Tiksi**	**27.56 344**	*e*P	**P**	**18 52 02.9 -1.6**
comp=Z,6.0nm,0.9s					
TIXI	**Tiksi**	**27.56 344**	*e*P	**P**	**18 52 03.9 -0.6**
SSE	**Sheshan**	**28.50 248**	P	**P**	**18 52 12.4 -0.9**
SSE			S	**S**	**18 56 57.1 +0.5**
SSE			pmax	pmax	
comp=Z,28nm,0.8s					
SSE			pmax	pmax	
comp=Z,62nm,4.9s					
SSE			LR	LR	
comp=Z,330nm,25.0s					
SSE			LR	LR	
comp=Z,160nm,25.2s					
SSE			LR	LR	
comp=Z,360nm,28.5s					
TNA	**Tin City**	**28.54 34**	*e*P	**P**	**18 52 13.3 0.0**
comp=Z,63nm,2.0s					
TNA	**Tin City**	**28.54 34**	*e*P	**P**	**18 52 13.3 0.0**
H11N2	**WAKE ISLAND Hy**	**29.26 151**	T	T	19 23 43.1
baz=339,slow=76,SNR=9004					
H11N1	**WAKE ISLAND Hy**	**29.27 151**	T	T	19 23 44.1
baz=339,slow=76,SNR=5224					
H11N3	**WAKE ISLAND Hy**	**29.27 151**	T	T	19 23 48.3
baz=339,slow=76,SNR=6382					
NJ2	**Nanjing**	**29.40 253**	*e*P	**P**	**18 52 24.1 +2.8**
NJ2			S	**S**	**18 57 12.5 +1.7**
NJ2			pmax	pmax	
comp=Z,12nm,0.9s					
NJ2			LR	LR	
comp=Z,2μm,15.6s					
NJ2			LR	LR	
comp=Z,3μm,12.4s					
NJ2			LR	LR	
comp=Z,420nm,16.8s					
HHC	**Hu-ho-hao-te**	**29.77 274**	*e*P	**P**	**18 52 25.8 +1.2**
HHC			PP	**PnPn**	**18 53 21.9 -0.4**
HHC			S	**S**	**18 57 10.1 -6.5**
HHC			pmax	pmax	
comp=Z,37nm,0.9s					
HHC			pmax	pmax	
comp=Z,230nm,4.4s					
HHC			LR	LR	
comp=Z,900nm,14.6s					
HHC			LR	LR	
comp=Z,900nm,13.2s					
HHC			LR	LR	
comp=Z,1μm,13.5s					
H11S1	**WAKE ISLAND Hy**	**30.33 152**	T	T	19 25 05.9
baz=339,slow=76					
H11S3	**WAKE ISLAND Hy**	**30.34 152**	T	T	19 25 16.6
baz=339					
H11S2	**WAKE ISLAND Hy**	**30.35 152**	T	T	19 25 13.3
baz=339,slow=76					
ULN	**Ulaanbaatar**	**30.46 289⇓**	*e*P	**P**	**18 52 30.0 -0.8**
ULN			pmax	pmax	
comp=Z,6.0nm,0.8s					
ULN	**Ulaanbaatar**	**30.46 289**	*e*P	**P**	**18 52 31.2 +0.4**
comp=Z,8.7nm,0.8s					
ULN	**Ulaanbaatar**	**30.46 289**	*e*P	**P**	**18 52 31.2 +0.4**
SDPT	**Sand Point**	**30.51 56**	*e*P	**P**	**18 52 31.2 +0.4**
comp=Z,68nm,0.9s					
SONA1	**Songino Array**	**30.89 290**	*e*P	**P**	**18 52 33.6 -0.9**
SONA0	**Songino Array**	**30.90 290**	*e*P	**P**	**18 52 33.2 -1.3**
comp=Z,14nm,1.3s					
SONA0			*e*ScP	**ScP**	**18 59 06.0 -1.1**
SONM	**Songino Array**	**30.90 290**	P	**P**	**18 52 33.2 -1.3**
comp=Z,3.0nm,0.6s,baz=74,slow=8.4,SNR=22					
SONM			ScP	**ScP**	**18 59 06.0 -1.1**
comp=Z,1.1nm,0.7s,baz=94,slow=1.9,SNR=5.3					
SONM			LR	LR	19 05 58.5
comp=Z,561nm,19.1s,baz=80,slow=38					
TLY	**Talaya**	**31.81 297**	*e*P	**P**	**18 52 43.2 +0.8**
TLY			pmax	pmax	
comp=Z,9.0nm,0.8s					
TLY			MLR	MLR	
comp=Z,438nm,14.0s					
TLY	**Talaya**	**31.81 297**	*e*P	**P**	**18 52 39.6 -2.8**
comp=Z,10nm,0.9s					
ZAK	**Zakamensk**	**32.29 295**	*e*P	**P**	**18 52 44.2 -2.5**
ZAK			pmax	pmax	
comp=Z,10.0nm,1.1s					
TT01	**Tatalina**	**32.96 41**	*e*P	**P**	**18 52 52.5 +0.2**
TTA	**Tatalina**	**32.97 41**	*e*P	**P**	**18 52 52.6 +0.1**
TTA			pmax	pmax	
comp=Z,12nm,1.0s					
TTA	**Tatalina**	**32.97 41**	*e*P	**P**	**18 52 52.6 +0.1**
comp=Z,12nm,1.0s					
WHN	**Wuhan**	**33.34 255**	P	**P**	**18 52 56.8 +0.9**
WHN			pP	**pP**	**18 53 12.4 +1.5**
WHN			S	**S**	**18 58 19.1 +6.8**
WHN			LR	LR	
comp=Z,420nm,18.7s					
GUMO	**Guam**	**33.40 193**	LR	LR	19 06 48.8
comp=Z,156nm,18.7s,baz=345,slow=37					
MOY	**Mondy**	**33.43 298**	*e*P	**P**	**18 52 58.0 +1.3**
OHAK	**Old Harbor**	**34.36 52**	*e*P	**P**	**18 53 03.7 -0.7**
comp=Z,42nm,0.9s					
TPUB	**Ta-pu**	**34.43 239**	*e*P	**P**	**18 53 06.0 +0.6**
comp=Z,17nm,0.7s					
QZH	**Quanzhou**	**34.43 243**	*e*P	**P**	**18 53 04.1 -1.3**
QZH			S	S	18 58 20.3 -9.0
QZH			LR	LR	
comp=Z,640nm,29.8s					
RSO	**Redoubt South**	**34.44 46**	*e*P	**P**	**18 53 06.0 +0.7**
TWG	**Pinlang**	**34.54 238**	*e*P	**P**	**18 53 06.2 -0.3**
comp=Z,96nm,0.5s					
KDAK	**Kodiak Island**	**34.68 51**	*e*P	**P**	**18 53 06.6 -0.7**
KDAK			pmax	pmax	
comp=Z,43nm,0.8s					
KDAK	**Kodiak Island**	**34.68 51**	*e*P	**P**	**18 53 06.6 -0.7**
comp=Z,43nm,0.8s					
PPLA	**Purkeypile**	**34.71 42**	*e*P	**P**	**18 53 07.2 -0.4**
comp=Z,98nm,1.6s					
SPU	**Mount Spurr**	**34.77 45**	*e*P	**P**	**18 53 08.6 +0.5**
CAST	**Castle Rocks**	**34.78 41**	*e*P	**P**	**18 53 08.8 +0.6**
comp=Z,18nm,1.2s					
XAN	**Xi'an**	**34.95 265**	P	**P**	**18 53 10.0 +0.1**
XAN			pP	pP	18 53 25.1 +0.2
XAN			sP	sP	18 53 32.4 +0.4
XAN			PP	**PP**	**18 54 31.3 +1.3**
XAN			S	**S**	**18 58 38.9 +1.7**
XAN			sS	sS	18 59 03.3 +0.6
XAN			SS	**SnSn**	**19 00 59.0 +1.9**
XAN			pmax	pmax	
comp=Z,24nm,1.1s					
XAN			pmax	pmax	
comp=Z,22nm,2.7s					
XAN			LR	LR	
comp=Z,250nm,15.0s					
XAN			LR	LR	
comp=Z,160nm,15.4s					
XAN			LR	LR	
comp=Z,310nm,17.5s					
BPAW	**Bear Paw Mtn.**	**35.30 39**	*e*P	**P**	**18 53 12.8 +0.2**
comp=Z,34nm,1.6s					
KTH	**Kantishna Hill**	**35.30 40**	*e*P	**P**	**18 53 13.3 +0.6**
comp=Z,61nm,1.2s					
BRLK	**Bradley Lake**	**35.40 47**	*e*P	**P**	**18 53 13.1 -0.5**
comp=Z,26nm,0.9s					
MLY	**Manley**	**35.45 38**	*e*P	**P**	**18 53 13.9 +0.1**
comp=Z,65nm,1.8s					
TRF	**Thorofare Moun**	**35.59 41**	*e*P	**P**	**18 53 15.4 +0.2**
comp=Z,70nm,1.9s					
COLD	**Coldfoot**	**35.84 34**	*e*P	**P**	**18 53 17.2 +0.1**
comp=Z,8.6nm,1.0s					
RC01	**Rabbit Creek A**	**35.89 45**	*e*P	**P**	**18 53 17.3 -0.4**
comp=Z,40nm,1.2s					
BWN	**Browne**	**35.96 39**	*e*P	**P**	**18 53 19.5 +1.3**
comp=Z,135nm,1.2s					
PMR	**Palmer**	**36.16 44**	*e*P	**P**	**18 53 20.0 +0.1**
PMR			pmax	pmax	
comp=Z,19nm,1.0s					
PMR	**Palmer**	**36.16 44**	*e*P	**P**	**18 53 20.0 +0.1**
comp=Z,19nm,1.0s					
MCK	**McKinley**	**36.19 40**	*e*P	**P**	**18 53 20.1 -0.1**
MCK			pmax	pmax	
comp=Z,25nm,1.2s					
MCK	**McKinley**	**36.19 40**	*e*P	**P**	**18 53 20.1 -0.1**
comp=Z,25nm,1.2s					
MCK	**McKinley**	**36.19 40**	*e*P	**P**	**18 53 20.1 -0.1**
RND	**Reindeer**	**36.23 41**	*e*P	**P**	**18 53 19.9 -0.7**
RND			pmax	pmax	
comp=Z,30nm,1.1s					
RND	**Reindeer**	**36.23 41**	*e*P	**P**	**18 53 19.9 -0.7**
comp=Z,30nm,1.1s					
SML	**Sawmill**	**36.53 43**	*e*P	**P**	**18 53 23.0 -0.1**
SML			pmax	pmax	
comp=Z,72nm,0.8s					
SML	**Sawmill**	**36.53 43**	*e*P	**P**	**18 53 22.5 -0.6**
comp=Z,72nm,0.8s					
WRH	**Wood River Hil**	**36.57 39**	*e*P	**P**	**18 53 23.4 +0.1**
comp=Z,12nm,0.8s					
COLA	**College**	**36.67 38**	*c i*P	**P**	**18 53 24.6 +0.4**
COLA			pmax	pmax	
comp=Z,64nm,1.8s					
COLA	**College**	**36.67 38**	*e*P	**P**	**18 53 24.4 +0.2**
comp=Z,23nm,0.8s					
COLA	**College**	**36.67 38⇑**	*i*P	**P**	**18 53 24.4 +0.2**
CCB	**Clear Creek Bu**	**36.69 39**	*e*P	**P**	**18 53 24.1 -0.3**
comp=Z,50nm,1.9s					
ENH	**Enshi**	**36.78 259**	*e*P	**P**	**18 53 25.2 -0.4**
comp=Z,16nm,0.9s					
HDA	**Harding Lake**	**37.06 39**	*e*P	**P**	**18 53 27.3 -0.2**
comp=Z,20nm,1.2s					
KRAR	**Krasnoyarsk**	**37.30 307⇑**	*e*P	**P**	**18 53 30.0 +0.4**
KRAR			pmax	pmax	
comp=Z,19nm,1.3s					
LZH	**Lanzhou**	**37.35 272**	*e*P	**P**	**18 53 31.6 +1.1**
LZH			pP	pP	18 53 44.1 -1.5
LZH			sP	sP	18 53 52.5 -0.2
LZH			PP	**PnPn**	**18 54 58.5 +0.8**
LZH			PcP	**PcP**	**18 55 50.8 +2.3**
LZH			*e*S	**S**	**18 59 12.6 -1.5**
LZH			sS	sS	18 59 38.8 -0.9
LZH			SS	**SnSn**	**19 01 50.0 -5.2**
LZH			pmax	pmax	
comp=Z,25nm,1.2s					
LZH			pmax	pmax	
comp=Z,95nm,4.1s					
LZH			LR	LR	
comp=Z,1μm,15.2s					
LZH			LR	LR	
comp=Z,1μm,15.5s					
LZH			LR	LR	
comp=Z,1μm,16.2s					
KLU	**Klutina**	**37.70 44**	*e*P	**P**	**18 53 33.4 +0.3**
comp=Z,32nm,1.0s					
PAX	**Paxson**	**37.78 41**	*e*P	**P**	**18 53 35.2 +1.4**
PAX			pmax	pmax	
comp=Z,16nm,1.1s					
PAX	**Paxson**	**37.78 41**	*e*P	**P**	**18 53 34.6 +0.8**
comp=Z,16nm,1.2s					
DIV	**Divide**	**37.81 44**	*e*P	**P**	**18 53 34.0 0.0**
comp=Z,38nm,1.0s					
DIV	**Divide**	**37.81 44**	*e*P	**P**	**18 53 34.0 0.0**
DOT	**Dot Lake**	**38.37 40**	*e*P	**P**	**18 53 37.9 -0.8**
comp=Z,23nm,0.8s					
BMRM	**Bremner River**	**38.39 44**	*e*P	**P**	**18 53 39.1 +0.2**
comp=Z,31nm,0.9s					
GTA	**Gaotai**	**38.47 279**	*e*P	**P**	**18 53 40.4 +0.5**
GTA			pP	pP	18 53 52.8 -2.3
GTA			sP	sP	18 53 58.0 -4.1
GTA			PcP	**PcP**	**18 55 53.5 +1.7**
GTA			S	**S**	**18 59 31.9 +1.0**
GTA			ScP	**ScP**	**18 59 35.8 +1.4**
GTA			SS	**SS**	**19 02 11.8 -10**
GTA			pmax	pmax	
comp=Z,3.0nm,0.9s					
GTA			pmax	pmax	
comp=Z,83nm,5.2s					
GTA			LR	LR	
comp=Z,210nm,16.6s					
GTA			LR	LR	
comp=Z,210nm,16.6s					
GTA			LR	LR	
comp=Z,300nm,17.1s					
MENT	**Mentasta**	**38.58 41**	*e*P	**P**	**18 53 40.6 +0.2**
comp=Z,23nm,1.5s					
NRIK	**Noril'sk**	**38.69 329**	P	**P**	**18 53 42.6 +1.4**
comp=Z,3.5nm,0.5s,baz=129,slow=2.4,SNR=6.4					
NRIK			LR	LR	19 10 36.2
comp=Z,224nm,18.1s,baz=106,slow=38					
CRQM	**Cirque**	**39.13 45**	*e*P	**P**	**18 53 46.4 +1.1**
BALM	**Baldy**	**39.47 44**	*e*P	**P**	**18 53 49.1 +1.1**
BALM			pmax	pmax	
comp=Z,19nm,0.9s					
BALM	**Baldy**	**39.47 44**	*e*P	**P**	**18 53 49.1 +1.1**
comp=Z,19nm,0.9s					
EGAK	**Eagle**	**39.53 38**	*e*P	**P**	**18 53 47.8 -0.5**
comp=Z,95nm,1.9s					
CD2	**Chengdu**	**40.31 265**	P	**P**	**18 53 55.9 +0.7**
CD2			pP	pP	18 54 11.6 +1.1
CD2			sP	sP	18 54 19.1 +1.6
CD2			PP	**PP**	**18 55 29.5 +0.7**
CD2			S	**S**	**18 59 58.9 +0.4**
CD2			sS	sS	19 00 26.1 +1.7
CD2			SS	**SS**	**19 02 58.3 -0.6**
CD2			pmax	pmax	
comp=Z,80nm,1.1s					
CD2			pmax	pmax	
comp=Z,110nm,4.1s					
CD2			LR	LR	
comp=Z,240nm,14.4s					
CD2			LR	LR	
comp=Z,300nm,18.0s					
DAWY	**Dawson**	**40.38 39**	*e*P	**P**	**18 53 55.6 +0.2**
comp=Z,30nm,1.9s					
INK	**Inuvik**	**42.16 32**	P	**P**	**18 54 10.4 +0.7**
comp=Z,9.2nm,0.5s,baz=289,slow=6.3,SNR=56					
INK	**Inuvik**	**42.16 32**	*e*P	**P**	**18 54 10.2 +0.5**
comp=Z,12nm,0.6s					
INK	**Inuvik**	**42.16 32**	*e*P	**P**	**18 54 10.3 +0.5**
ZAA1	**Zalesovo Array**	**42.31 306**	*e*P	**P**	**18 54 08.8 -2.4**
ZAA1			*e*PcP	**PcP**	**18 56 03.6 -0.2**
ZAA1			*e*ScP	**ScP**	**18 59 48.4 -0.6**
ZAA0	**Zalesovo Array**	**42.31 306**	*e*P	**P**	**18 54 10.9 -0.4**
ZAA0			*e*P	**P**	**18 54 11.2 -0.1**
ZALV	**Zalesovo Beam**	**42.31 306**	P	**P**	**18 54 08.8 -2.4**
comp=Z,2.6nm,0.4s,baz=65,slow=6.9,SNR=16					
ZALV			PcP	**PcP**	**18 56 03.6 -0.2**

comp=Z,4.5nm,0.7s,baz=62,slow=3.7,SNR=7.3
ZALV ScP **ScP** 18 59 48.4 -0.6
comp=Z,0.3nm,0.3s,baz=52,slow=3.6,SNR=2.3
ZALV LR LR 19 13 01.1
comp=Z,550nm,18.5s,baz=70,slow=38
NVS Novosibirsk 42.91 307 *e*P **P** 18 54 13.6 -2.5
NVS pmax pmax
comp=E,5.0nm,0.8s
NVS pmax pmax
comp=Z,7.0nm,0.8s
NVS Novosibirsk 42.91 307 *e*P **P** 18 54 13.6 -2.5
QIZ Qiongzhong 44.25 246 P **P** 18 54 26.3 -1.0
QIZ S **S** 19 00 59.9 +3.3
QIZ pmax pmax
comp=Z,6.0nm,1.9s
QIZ LR LR
comp=Z,110nm,20.6s
QIZ LR LR
comp=Z,58nm,21.6s
WMQ Urumqi 44.51 291 P **P** 18 54 31.0 +1.8
WMQ pP pP 18 54 45.3 +0.7
WMQ sP sP 18 54 53.0 +1.4
WMQ S **S** 19 01 02.8 +2.8
WMQ sS sS 19 01 24.8 -1.3
WMQ ScS **SS** 19 04 19.3 -1.6
WMQ pmax pmax
comp=Z,7.0nm,0.6s
WMQ pmax pmax
comp=Z,74nm,7.4s
WMQ LR LR
comp=Z,200nm,14.8s
WMQ LR LR
comp=Z,120nm,18.2s
WMQ LR LR
comp=Z,140nm,21.6s
KMI Kunming 44.66 259 P **P** 18 54 33.4 +2.6
KMI pmax pmax
comp=Z,19nm,0.9s
KMI pmax pmax
comp=Z,50nm,4.7s
WRAK Wrangell Islan 45.71 49 *e*P **P** 18 54 40.4 +2.0
comp=Z,70nm,1.7s
DLBC Dease Lake 46.16 45 P **P** 18 54 43.9 +1.8
comp=Z,15nm,0.8s,baz=290,slow=7.4,SNR=31
DLBC LR LR 19 17 17.3
comp=Z,125nm,18.7s,baz=272,slow=40
DLBC Dease Lake 46.16 45 *e*P **P** 18 54 43.8 +1.7
comp=Z,22nm,1.0s
MK31 Makanchi Array 46.57 297 *e*P **P** 18 54 44.1 -1.3
MK31 Makanchi Array 46.57 297 *e*P **P** 18 54 44.0 -1.3
MK32 Makanchi Array 46.57 297 *e*P **P** 18 54 44.0 -1.3
MK32 *e*PcP **PcP** 18 56 18.6 0.0
MK32 *e*ScP **ScP** 19 00 06.2 -0.5
MKAR Makanchi Array 46.57 297 P **P** 18 54 44.0 -1.3
comp=Z,16nm,0.6s,baz=71,slow=7.3,SNR=142
MKAR PcP **PcP** 18 56 18.6 0.0
comp=Z,2.2nm,0.5s,baz=58,slow=4.3,SNR=5.5
MKAR ScP **ScP** 19 00 06.2 -0.5
comp=Z,2.5nm,0.9s,baz=57,slow=4.5,SNR=7.2
MKAR LR LR 19 15 24.8
comp=Z,611nm,19.0s,baz=62,slow=37
MKAR Makanchi Array 46.57 297 *e*P **P** 18 54 43.5 -1.9
MKAR PcP **PcP** 18 56 18.6 0.0
MKAR ScP **ScP** 19 00 06.2 -0.5
MK01 Makanchi Array 46.57 297 *e*P **P** 18 54 44.0 -1.4
MAKZ Makanchi 46.76 297 *e*P **P** 18 54 45.3 -1.5
MAKZ pmax pmax
comp=Z,10.0nm,0.8s
MAKZ Makanchi 46.76 297 *e*P **P** 18 54 45.3 -1.5
comp=Z,9.9nm,0.8s
KURK Kurchatov 47.05 304 P **P** 18 54 47.6 -1.4
KURK 18 56 20.7
KURK pmax pmax
comp=Z,16nm,1.0s
KURK Kurchatov 47.05 304 *e*P **P** 18 54 47.4 -1.5
comp=Z,22nm,1.1s
KURK *e*P **P** 18 54 47.6 -1.4
KURK *e*PcP **PcP** 18 56 20.7 +0.6
KURBB Kurchatov Arra 47.14 303 P **P** 18 54 47.6 -2.1
comp=Z,7.7nm,0.5s,baz=69,slow=8.7,SNR=62
KURBB PcP **PcP** 18 56 20.7 +0.2
comp=Z,2.6nm,0.8s,baz=66,slow=3.4,SNR=3.8
PANO Nakornpanom 48.98 250 P **P** 18 55 06.8 +2.5
comp=Z,49nm,1.1s
NONG Nongkai 49.27 252 P **P** 18 55 08.0 +1.5
comp=Z,20nm,0.8s
SKNT Sakolnakorn 49.52 250 P **P** 18 55 09.7 +1.3
comp=Z,19nm,1.2s
CRAI Chiangrai 49.58 256 P **P** 18 55 10.1 +1.2
comp=Z,219nm,0.8s,comp=Z,80µm
BBB Bella Bella 49.70 53 LR LR 19 13 08.5
comp=Z,65nm,21.5s,baz=283,slow=32
LSA Lhasa 49.74 273 *e*P **P** 18 55 11.2 +0.7
LSA pmax pmax
comp=Z,23nm,1.2s
LSA Lhasa 49.74 273 *e*P **P** 18 55 11.2 +0.7
comp=Z,23nm,1.2s
PDGK Podgornoye 49.97 294 P **P** 18 55 09.7 -1.8
PDGK pmax pmax
comp=Z,7.0nm,0.7s
CHKZ Chkalovo 50.17 310 P **P** 18 55 11.2 -1.7
CHKZ pmax pmax
comp=Z,29nm,0.6s
MYLDM Lahad Datu 50.47 226 *e*P **P** 18 55 16.7 +1.1
comp=Z,23nm,1.3s
BVA0 Borovoye Array 50.59 309 *i* P **P** 18 55 14.2 -1.9
BVA0 pmax pmax
comp=Z,9.0nm,0.5s
BVAR Borovoye Array 50.59 309 P **P** 18 55 14.4 -1.8
comp=Z,14nm,0.5s,baz=45,slow=6.3,SNR=98
BVAR PcP **PcP** 18 56 33.1 +0.2
comp=Z,2.5nm,0.4s,baz=68,slow=3.6,SNR=4.0
BRVK Borovoye 50.63 309 *d i* P **P** 18 55 16.1 -0.3
BRVK pmax pmax
comp=Z,21nm,0.8s
BRVK Borovoye 50.63 309 *e*P **P** 18 55 15.4 -1.0
comp=Z,19nm,0.6s
SWI Sorong 50.67 208 P **P** 18 55 17.6 +0.5
SWI pmax pmax
comp=Z,28nm,1.2s
KHON Khomkaen 50.73 251 P **P** 18 55 19.9 +2.3
comp=Z,11nm,0.8s
LOEI Loei 50.91 253 P **P** 18 55 17.9 -1.0
comp=Z,72nm,1.1s
UTTA Uttaradit 51.21 254 P **P** 18 55 22.8 +1.6
comp=Z,4.0nm,0.9s
RES Resolute Bay 51.24 18 P **P** 18 55 22.1 +1.4
comp=Z,7.4nm,0.5s,baz=347,slow=12,SNR=9.8
RES Resolute Bay 51.24 18 *e*P **P** 18 55 22.1 +1.4
RES pmax pmax
comp=Z,19nm,1.1s
RES Resolute Bay 51.24 18 *e*P **P** 18 55 22.1 +1.4
comp=Z,19nm,1.1s
LAMP Lampang 51.27 255 P **P** 18 55 23.6 +2.0
comp=Z,8.4nm,0.9s
ZRNK Zerenda 51.37 310 P **P** 18 55 20.1 -1.8
ZRNK pmax pmax
comp=Z,12nm,0.6s
ZRNK Zerenda 51.37 310 *e*P **P** 18 55 20.5 -1.4
comp=Z,19nm,0.5s
YKW3 Yellowknife Ar 51.41 36 *e*P **P** 18 55 22.1 0.0
comp=Z,36nm,1.9s
YKA Yellowknife Ar 51.45 36 P **P** 18 55 22.5 +0.2
comp=Z,3.0nm,0.6s,baz=297,slow=7.1,SNR=17
YKA PcP **PcP** 18 56 35.2 -0.7
comp=Z,2.2nm,0.7s,baz=295,slow=3.7,SNR=5.3
YKA LR LR 19 18 08.7
comp=Z,5.0nm,19.6s,baz=0.0,slow=37
YKB5 Yellowknife Ar 51.45 36 *e*P **P** 18 55 22.6 +0.2
YKB5 *e*PcP **PcP** 18 56 35.2 -0.7
CHTO Chiang Mai 51.53 256 P **P** 18 55 24.9 +1.4
comp=Z,90nm,0.8s,comp=Z,1µm
CHTO Chiang Mai 51.53 256 *e*P **P** 18 55 25.0 +1.4
CHTO pmax pmax
comp=Z,16nm,0.7s
CHTO Chiang Mai 51.53 256 *e*P **P** 18 55 24.6 +1.1
comp=Z,16nm,0.6s
CM31 Chiang Mai Arr 51.78 256 *e*P **P** 18 55 26.8 +1.4
CMAR Chiang Mai Arr 51.78 256 P **P** 18 55 26.2 +0.8
comp=Z,7.9nm,1.0s,baz=35,slow=7.4,SNR=40
CMAR pP **pP** 18 55 42.2 +1.0
comp=Z,6.4nm,0.6s,baz=39,slow=7.2,SNR=9.8
CMAR LR LR 19 20 18.4
comp=Z,111nm,18.2s,baz=56,slow=39
PBKT Sadao Pong 51.78 252 P **P** 18 55 27.6 +2.2
comp=Z,11nm,0.9s

CM01 Chiang Mai Arr 51.80 256 *e*P **P** 18 55 26.8 +1.2
OTUK Ortayu 51.82 303 P **P** 18 55 23.3 -2.1
OTUK pmax pmax
comp=Z,8.0nm,0.8s
SUKH Sukhothai 52.01 254 P **P** 18 55 30.0 +2.9
comp=Z,4.4nm,0.6s,comp=Z,51nm
TKM2 Tokmak 2 52.62 296 P **P** 18 55 30.9 -0.7
TKM2 pmax pmax
comp=Z,6.0nm,0.6s
TKM2 Tokmak 2 52.62 296 *e*P **P** 18 55 31.5 -0.1
comp=Z,6.9nm,0.7s
FRU Bishkek 53.27 296 ⇑ *i*P **P** 18 55 36.0 -0.2
FRU pmax pmax
comp=Z,25nm,1.0s
FRU Bishkek 53.27 296 ⇑ *i*P **P** 18 55 36.0 -0.2
AAK Ala-Archa 53.45 296 *e*P **P** 18 55 38.3 +0.6
AAK pmax pmax
comp=Z,15nm,0.8s
AAK Ala-Archa 53.45 296 *e*P **P** 18 55 38.0 +0.3
comp=Z,15nm,0.8s
AAK Ala-Archa 53.45 296 *e*P **P** 18 55 38.0 +0.3
SVE Sverdlovsk 53.64 317 *e*P **P** 18 55 38.2 -0.5
SVE pmax pmax
comp=Z,23nm,0.7s
SVE Sverdlovsk 53.64 317 *e*P **P** 18 55 38.2 -0.5
CHBT CHBT 53.71 248 P **P** 18 55 42.9 +3.3
comp=Z,20nm,1.1s
EKS2 Erkin-Say 53.88 297 *e*P **P** 18 55 40.6 -0.2
EKS2 pmax pmax
comp=Z,18nm,0.7s
EKS2 Erkin-Say 53.88 297 *e*P **P** 18 55 40.3 -0.6
comp=Z,18nm,0.7s
SOKR Solikamsk 53.94 321 ⇑ *i*P **P** 18 55 38.4 -2.3
SOKR pmax pmax
comp=Z,22nm,1.2s
SOKR MLR MLR
comp=Z,307nm,20.0s
KSH Kashi 54.24 292 *e*P P 18 55 48.4 +4.9
KSH *es*P sP 18 56 11.6 +5.4
KSH *e*PcP **PcP** 18 56 50.6 +3.5
KSH *e*PP **PP** 18 57 51.9 +6.4
KSH PcS **PcS** 19 00 47.8 +1.1
KSH S **S** 19 03 20.5 +4.1
KSH SS **SS** 19 07 02.5 +4.0
KSH pmax pmax
comp=Z,72nm,5.4s
KSH LR LR
comp=Z,120nm,7.0s
KSH LR LR
comp=Z,140nm,6.7s
KSH LR LR
comp=Z,670nm,20.6s
A04D Lummi Island 54.42 54 P **P** 18 55 44.9 +0.5
baz=302
NLWA Neilton Lookou 54.47 56 *e*P **P** 18 55 45.3 +0.4
comp=Z,16nm,1.0s
MNAS Manas 54.77 297 P **P** 18 55 47.2 -0.1
MNAS pmax pmax
comp=Z,9.0nm,0.7s
ARU Arti 54.83 317 P **P** 18 55 46.5 -0.8
comp=Z,19nm,0.5s,baz=58,slow=3.9,SNR=57
ARU LR LR 19 21 42.2
comp=Z,184nm,18.6s,baz=46,slow=39
ARU Arti 54.83 317 *e*P **P** 18 55 46.6 -0.7
ARU pmax pmax
comp=Z,47nm,1.3s
ARU Arti 54.83 317 *e*P **P** 18 55 45.8 -1.5
comp=Z,29nm,0.8s
KKN Kakani 54.97 275 *e*P **P** 18 55 49.6 +0.6
comp=Z,45nm,0.6s
B05A Bryant 55.01 54 P **P** 18 55 49.4 +0.7
baz=303
PKIN Phulchoki 55.02 275 *e*P **P** 18 55 50.0 +0.6
comp=Z,34nm,0.6s
DMN Daman 55.20 275 *e*P **P** 18 55 51.4 +0.7
comp=Z,73nm,0.8s
GKN Gorkha 55.27 276 *e*P **P** 18 55 51.8 +0.7
comp=Z,63nm,0.6s
PHET Kaeng Krachan 55.34 251 P **P** 18 55 55.1 +3.6
comp=Z,7.4nm,0.8s
KKAR Karatay Array 55.64 299 *e*P **P** 18 55 54.1 +0.7
KKAR Karatay Array 55.64 299 *e*P **P** 18 55 52.5 -0.8
HNR Honiara 56.09 171 LR LR 19 17 29.0
comp=Z,72nm,21.0s,baz=346,slow=33
KOLN Koldanda 56.13 276 *e*P **P** 18 55 58.1 +0.8
comp=Z,37nm,0.6s
PYUN Piuthan 56.34 277 *e*P **P** 18 55 59.4 +0.6
comp=Z,174nm,1.0s
B08A Colville Reser 56.49 53 *e*P **P** 18 55 59.1 -0.3
comp=Z,36nm,1.6s
I03D Drain, OR 56.82 60 P **P** 18 56 03.3 +1.6
baz=305
DAG Danmarks Havn 56.87 358 *i* P **P** 18 56 00.9 -0.7
comp=Z,7.6nm,1.0s
DAG Danmarks Havn 56.87 358 *i* P **P** 18 56 00.9 -0.7
DAG pmax pmax
comp=Z,8.0nm,1.0s
DAG Danmarks Havn 56.87 358 *i* P **P** 18 56 00.9 -0.7
H04A Detroit Lake 56.95 58 *e*P **P** 18 56 03.1 +0.4
comp=Z,24nm,1.1s
G05D Wamic, OR 57.13 57 P **P** 18 56 05.1 +1.1
baz=305
I04A Tendick Farm, 57.32 59 P **P** 18 56 06.3 +1.0
baz=305,SNR=8.1
L02D Cave Junction, 57.55 61 P **P** 18 56 07.9 +1.0
baz=306
I05D Terrebonne, OR 57.64 58 P **P** 18 56 08.6 +1.0
baz=306
NEW Newport 57.76 52 P **P** 18 56 08.2 -0.1
comp=Z,3.5nm,0.5s,baz=314,slow=6.4,SNR=7.4
NEW Newport 57.76 52 P **P** 18 56 08.5 +0.1
baz=305
NEW Newport 57.76 52 *e*P **P** 18 56 09.1 +0.7
NEW pmax pmax
comp=Z,10.0nm,1.0s
NEW Newport 57.76 52 *e*P **P** 18 56 08.1 -0.3
comp=Z,10.0nm,1.0s
ARA0 ARCESS Array S 57.91 341 *e*P **P** 18 56 08.4 -0.6
ARCES ARCESS Array B 57.91 341 P **P** 18 56 08.4 -0.6
comp=Z,1.8nm,0.4s,baz=32,slow=6.1,SNR=26
ARCES LR LR 19 26 03.1
comp=Z,142nm,18.4s,baz=29,slow=41
AB31 Akbulak array 58.16 310 *e*P **P** 18 56 10.2 -0.9
AB31 pmax pmax
comp=Z,20nm,0.8s
ABKAR Akbulak array 58.16 310 *e*P **P** 18 56 09.8 -1.3
TMCR Tamitsa 58.30 332 *e*P **P** 18 56 13.0 +1.2
TMCR pmax pmax
comp=Z,11nm,0.4s
J05D Fort Rock, OR 58.31 59 P **P** 18 56 13.8 +1.4
baz=306,SNR=5.4
YBH Yreka Blue Hor 58.34 61 P **P** 18 56 13.6 +1.0
comp=Z,3.0nm,0.9s,baz=12,slow=5.1,SNR=4.7
YBH Yreka Blue Hor 58.34 61 *e*P **P** 18 56 13.6 +1.0
YBH pmax pmax
comp=Z,6.0nm,1.1s
YBH Yreka Blue Hor 58.34 61 *e*P **P** 18 56 13.6 +1.0
comp=Z,6.0nm,1.1s
M02C Callahan 58.46 62 P **P** 18 56 14.4 +1.0
baz=306
G08A Pilot Rock 58.46 56 *e*P **P** 18 56 13.0 -0.4
comp=Z,9.4nm,0.9s
AKTO Aktyubinsk 58.48 312 P **P** 18 56 12.9 -0.5
comp=Z,3.4nm,0.6s,baz=57,slow=9.2,SNR=15
AKTO LR LR 19 23 50.1
comp=Z,454nm,18.7s,baz=46,slow=38
N02D Trinity Center 58.79 62 P **P** 18 56 17.1 +1.4
baz=307
M04C Macdoel 58.84 61 P **P** 18 56 17.0 +0.9
baz=307
K05A Summer Lake 58.84 59 *e*P **P** 18 56 17.3 +1.1
comp=Z,14nm,1.0s
F10A Beach Ranch, E 59.04 54 *e*P **P** 18 56 17.7 +0.3
comp=Z,28nm,1.7s
WDC Whiskeytown Da 59.13 62 *e*P **P** 18 56 19.3 +1.4
WDC pmax pmax
comp=Z,8.0nm,1.1s
WDC Whiskeytown Da 59.13 62 *e*P **P** 18 56 18.6 +0.7
comp=Z,7.7nm,1.1s
BSMT Bassoo Peak 59.27 51 *e*P **P** 18 56 19.0 -0.1
BLMT Blacktail Moun 59.40 51 *e*P **P** 18 56 20.7 +0.7
JTMT Jette 59.61 51 *e*P **P** 18 56 21.6 +0.3
BMO Blue Mountains 59.67 55 *e*P **P** 18 56 22.6 +0.8
comp=Z,6.9nm,0.8s
YBMT Yellow Bay 59.68 51 *e*P **P** 18 56 22.0 +0.1
MOD Modoc Plateau 59.69 60 *e*P **P** 18 56 21.9 0.0

comp=Z,13nm,1.1s
O03D Paynes Creek 59.75 62 P **P** 18 56 23.0 +0.7
baz=307,SNR=5.6
SWMT Swartz Lake 59.90 51 *e*P **P** 18 56 23.6 +0.3
KLMR Klimovskoe 60.04 329 *e*P **P** 18 56 21.4 -2.4
KLMR *e* 18 58 34.5
KLMR pmax pmax
comp=Z,10.0nm,0.7s
MSO Missoula 60.35 52 P **P** 18 56 26.9 +0.6
baz=308,SNR=17
MSO Missoula 60.35 52 *e*P **P** 18 56 27.0 +0.6
comp=Z,21nm,1.0s
WVOR Wild Horse Val 60.35 58 *e*P **P** 18 56 27.9 +1.4
WVOR pmax pmax
comp=Z,12nm,1.0s
WVOR Wild Horse Val 60.35 58 *e*P **P** 18 56 26.5 0.0
comp=Z,12nm,0.9s
KULM Kulim 60.47 244 *e*P **P** 18 56 28.1 +0.7
comp=Z,8.2nm,0.6s
CHMT Chamberlain Mo 60.67 52 *e*P **P** 18 56 28.8 +0.1
SUMG Summit 60.99 4 *i* P **P** 18 56 30.7 +0.1
comp=Z,15nm,0.8s
SUMG Summit 60.99 4 *i* P **P** 18 56 30.7 +0.1
SUMG pmax pmax
comp=Z,15nm,0.8s
SUMG Summit 60.99 4 *e*P **P** 18 56 30.0 -0.7
comp=Z,17nm,0.8s
FFC Flin Flon 61.28 40 *e*P **P** 18 56 32.9 +0.5
FFC pmax pmax
comp=Z,15nm,0.9s
FFC Flin Flon 61.28 40 *e*P **P** 18 56 32.6 +0.2
comp=Z,15nm,0.8s
FFC Flin Flon 61.28 40 *e*P **P** 18 56 32.6 +0.2
SOEI Soe 61.37 212 *e*P **P** 18 56 33.0 -0.5
comp=Z,42nm,0.8s
MFID Camas Ranch 61.38 56 *e*P **P** 18 56 34.0 +0.5
comp=Z,6.6nm,0.9s
PAHR Pah Rah Range 61.58 61 *e*P **P** 18 56 36.0 +1.1
comp=Z,21nm,1.5s
KBL Kabul 61.65 291 *e*P **P** 18 56 35.3 -0.2
KBL pmax pmax
comp=Z,13nm,0.6s
KBL Kabul 61.65 291 *e*P **P** 18 56 35.1 -0.4
comp=Z,13nm,0.6s
FCC Fort Churchill 61.77 33 *e*P **P** 18 56 35.4 -0.2
FCC pmax pmax
comp=Z,65nm,1.7s
FCC Fort Churchill 61.77 33 *e*P **P** 18 56 34.9 -0.7
comp=Z,65nm,1.8s
FCC Fort Churchill 61.77 33 *e*P **P** 18 56 34.9 -0.7
LRM Limekiln Ridge 61.78 52 *e*P **P** 18 56 36.6 +0.4
EGMT Eagleton 61.84 49 P **P** 18 56 36.6 +0.2
baz=309,SNR=5.6
EGMT Eagleton 61.84 49 *e*P **P** 18 56 36.3 -0.1
comp=Z,42nm,1.2s
DLMT Dillon 61.99 53 *e*P **P** 18 56 37.6 +0.1
comp=Z,24nm,1.5s
CMB Columbia Colle 62.00 63 *e*P **P** 18 56 38.8 +1.2
CMB pmax pmax
comp=Z,25nm,1.7s
CMB Columbia Colle 62.00 63 *e*P **P** 18 56 38.6 +1.0
comp=Z,25nm,1.8s
HLID Hailey 62.10 55 P **P** 18 56 39.1 +0.8
baz=309,SNR=6.9
HLID Hailey 62.10 55 *e*P **P** 18 56 39.2 +0.8
comp=Z,12nm,1.3s
HLID *e*PcP **PcP** 18 57 19.5 +1.4
MCMT McKenzie Canyo 62.19 53 *e*P **P** 18 56 39.4 +0.4
WAKR Walker 62.29 62 *e*P **P** 18 56 40.6 +0.8
BOZ Bozeman (W) 62.34 52 P **P** 18 56 40.8 +1.0
baz=309,SNR=28
BOZ Bozeman (W) 62.34 52 *e*P **P** 18 56 40.9 +1.0
BOZ pmax pmax
comp=Z,16nm,0.7s
BOZ Bozeman (W) 62.34 52 *e*P **P** 18 56 40.9 +1.0
comp=Z,16nm,0.7s
BOZ Bozeman (W) 62.34 52 *e*P **P** 18 56 40.9 +1.0
BMN Battle Mountai 62.43 59 *e*P **P** 18 56 41.7 +1.1
BMN pmax pmax
comp=Z,9.0nm,0.9s
BMN Battle Mountai 62.43 59 *e*P **P** 18 56 41.4 +0.9
comp=Z,8.9nm,0.8s
QLMT Earthquake Lak 62.97 53 *e*P **P** 18 56 45.0 +0.8
NV01 Mina Array Sit 63.03 62 *e*P **P** 18 56 44.6 -0.1
NVAR Mina Array Bea 63.03 62 P **P** 18 56 45.2 +0.5
comp=Z,2.7nm,0.7s,baz=295,slow=7.1,SNR=19
NVAR LR LR 19 21 54.0
comp=Z,53nm,19.4s,baz=268,slow=34
NV11 Mina Array Sit 63.12 62 *e*P **P** 18 56 45.3 +0.1
comp=Z,6.3nm,1.0s
MLAC Mammoth, Mammo 63.21 63 P **P** 18 56 46.9 +1.0
baz=310
GCMT Greycliff 63.31 51 *e*P **P** 18 56 47.2 +0.9
YMR Madison River 63.32 52 *e*P **P** 18 56 47.5 +0.9
comp=Z,10nm,0.8s
ELK Elko 63.40 58 *e*P **P** 18 56 48.3 +1.2
ELK pmax pmax
comp=Z,4.0nm,1.0s
ELK Elko 63.40 58 *e*P **P** 18 56 48.0 +0.9
comp=Z,3.8nm,1.0s
YFT Old Faithful 63.53 53 *e*P **P** 18 56 49.8 +1.8
comp=Z,11nm,0.8s
LKWY Lake 63.70 52 *e*P **P** 18 56 51.7 +2.6
LKWY pmax pmax
comp=Z,10.0nm,0.9s
LKWY Lake 63.70 52 *e*P **P** 18 56 50.9 +1.8
comp=Z,10nm,0.8s
H17A Grant Village 63.71 53 P **P** 18 56 50.5 +1.3
baz=310
H17A Grant Village 63.71 53 *e*P **P** 18 56 51.2 +2.1
comp=Z,14nm,0.9s
IMW Indian Meadow 63.83 53 *e*P **P** 18 56 51.4 +1.4
comp=Z,13nm,1.1s
FLWY Flagg Ranch 63.85 53 *e*P **P** 18 56 51.5 +1.5
comp=Z,8.6nm,0.9s
FXWY Fox Creek 63.95 53 *e*P **P** 18 56 51.6 +0.9
comp=Z,37nm,1.8s
RLMT Red Lodge 63.95 51 *e*P **P** 18 56 51.6 +0.9
comp=Z,30nm,1.4s
SMMC Simmler 63.96 65 P **P** 18 56 51.6 +1.0
baz=310
FIA1 FINESS Array S 64.03 334 *e*P **P** 18 56 49.7 -0.8
comp=Z,35nm,1.6s
FIA0 FINESS Array S 64.03 334 *e*P **P** 18 56 49.7 -0.9
FIA0 FINESS Array S 64.03 334 *e*P **P** 18 56 49.7 -0.9
FINES FINESS Array B 64.03 334 P **P** 18 56 49.7 -0.9
comp=Z,6.7nm,0.4s,baz=39,slow=6.3,SNR=67
FINES LR LR 19 27 53.2
comp=Z,206nm,19.3s,baz=30,slow=39
MOOW Moose Ponds 64.04 53 *e*P **P** 18 56 52.1 +0.9
comp=Z,27nm,1.5s
TPAW Teton Pass 64.09 53 *e*P **P** 18 56 52.8 +1.1
comp=Z,23nm,0.8s
HVU Hansel Valley 64.17 56 *e*P **P** 18 56 53.3 +1.3
HVU pmax pmax
comp=Z,8.0nm,0.9s
HVU Hansel Valley 64.17 56 *e*P **P** 18 56 52.6 +0.6
comp=Z,8.3nm,0.9s
LOHW Long Hollow 64.20 53 *e*P **P** 18 56 53.5 +1.2
comp=Z,30nm,1.4s
SNOW Snow King Moun 64.22 53 *e*P **P** 18 56 53.9 +1.4
comp=Z,21nm,1.0s
REDW Red Top Meadow 64.23 54 *e*P **P** 18 56 53.7 +1.2
comp=Z,24nm,1.0s
PKM Mcpherson Peak 64.35 66 P **P** 18 56 53.6 +0.2
baz=310
DGMT Dagmar 64.37 46 P **P** 18 56 53.3 +0.1
baz=312,SNR=5.2
DGMT Dagmar 64.37 46 *e*P **P** 18 56 53.7 +0.5
comp=Z,36nm,0.6s
AHID Auburn Hatcher 64.48 54 *e*P **P** 18 56 54.8 +0.7
comp=Z,15nm,1.1s
GRAC Grapevine Rang 64.52 62 P **P** 18 56 54.8 +0.5
baz=310,SNR=9.6
R11A Troy Canyon, C 64.73 60 P **P** 18 56 56.3 +0.5
baz=310
R11A Troy Canyon, C 64.73 60 *e*P **P** 18 56 56.1 +0.3
comp=Z,6.8nm,0.9s
DAC Darwin (Calif) 64.84 63 *e*P **P** 18 56 57.5 +0.9
DAC pmax pmax
comp=Z,11nm,1.6s
DAC Darwin (Calif) 64.84 63 *e*P **P** 18 56 56.7 +0.1
comp=Z,11nm,1.6s
HWUT Hardware Ranch 64.97 55 *e*P **P** 18 56 57.7 +0.4
comp=Z,30nm,1.4s
MPMC Manual Prospec 65.05 63 P **P** 18 56 58.3 +0.3
baz=311,SNR=8.6

DUG	Dugway, Tooele	65.17	57	P		P	18 56 59.6	+1.0
	baz=311,SNR=14							
DUG	Dugway, Tooele	65.17	57	*e*P		P	18 56 59.5	+1.0
DUG				pmax	pmax			
	comp=Z,18nm,1.0s							
DUG	Dugway, Tooele	65.17	57	*e*P		P	18 56 59.3	+0.7
	comp=Z,18nm,1.0s							
DUG	Dugway, Tooele	65.17	57	*e*P		P	18 56 59.3	+0.7
OBN	Obninsk	65.20	325	LR		LR	19 27 21.7	
	comp=Z,176nm,19.5s,baz=89,slow=38							
OBN	Obninsk	65.20	325⇑	*e*P		P	18 56 59.2	+0.9
OBN				*e*			18 57 29.5	
OBN				*e*			18 59 22.8	
OBN				*e*PPP	PPP		19 00 56.1	
OBN				*e*S	S		19 05 31.1	-5.4
OBN				pmax	pmax			
	comp=Z,13nm,0.7s							
OBN				MLR	MLR			
	comp=Z,180nm,22.0s							
OBN	Obninsk	65.20	325	*e*P		P	18 56 59.4	+1.1
TPNV	Topopah Spring	65.23	62	P		P	18 56 59.4	+0.3
	baz=311,SNR=9.8							
TPNV	Topopah Spring	65.23	62	*e*P		P	18 56 59.7	+0.6
TPNV				pmax	pmax			
	comp=Z,33nm,1.5s							
TPNV	Topopah Spring	65.23	62	*e*P		P	18 56 59.5	+0.4
	comp=Z,33nm,1.5s							
LRMC	Laurel Mtn Rad	65.30	64	P		P	18 56 59.2	-0.3
	baz=311							
BW06	Boulder Array	65.33	53	P		P	18 56 59.9	+0.1
	baz=311,SNR=29							
BW06	Boulder Array	65.33	53	*e*P		P	18 56 59.8	+0.1
	comp=Z,15nm,0.9s							
PD31	Pinedale Array	65.33	53	*e*P		P	18 56 59.9	+0.2
PDAR	Pinedale Array	65.33	53	P		P	18 57 00.1	+0.3
	comp=Z,8.1nm,0.6s,baz=279,slow=1.6,SNR=90							
PDAR				LR	LR		19 21 00.0	
	comp=Z,42nm,21.9s,baz=328,slow=32							
TCUT	Toone Canyon	65.38	56	*e*P		P	18 57 01.1	+1.0
	comp=Z,76nm,1.8s							
GSI	Gunungsitoli	65.48	244	*e*P		P	18 57 01.6	+0.9
	comp=Z,11nm,0.6s							
SFJD	Kangerlussuaq	65.49	10	LR		LR	19 26 40.5	
	comp=Z,176nm,20.1s,baz=347,slow=37							
EDW2	Edwards Air Fo	65.50	65	P		P	18 57 01.1	+0.4
	baz=311,SNR=8.1							
PSUT	Pine Spring	65.64	59	*e*P		P	18 57 01.9	+0.1
	comp=Z,7.4nm,1.2s							
JLU	Jordanelle	65.69	56	*e*P		P	18 57 02.4	+0.3
	comp=Z,13nm,1.2s							
D25A	Fairfield	65.70	47	P		P	18 57 02.0	+0.2
	baz=313							
NLU	North Lily Min	65.75	57	*e*P		P	18 57 02.8	+0.4
	comp=Z,11nm,1.0s							
C26A	Wahner Farm, P	65.85	45	P		P	18 57 03.1	+0.4
	baz=313							
VRH	Novokhopyorsk	65.85	320	*e*P		P	18 57 03.1	+0.6
VRH				pmax	pmax			
	comp=Z,20nm,0.6s							
GSC	Goldstone, Bar	65.96	64	P		P	18 57 03.9	+0.2
	baz=311							
GSC	Goldstone, Bar	65.96	64	*e*P		P	18 57 04.2	+0.5
GSC				pmax	pmax			
	comp=Z,6.0nm,0.9s							
GSC	Goldstone, Bar	65.96	64	*e*P		P	18 57 04.2	+0.5
	comp=Z,5.5nm,0.9s							
MPU	Maple Canyon	65.97	57	*e*P		P	18 57 04.6	+0.8
	comp=Z,10.0nm,0.8s							
LPSR	Galich'ya Gora	66.06	322	*e*P		P	18 57 04.3	+0.4
LPSR				pmax	pmax			
	comp=Z,10.0nm,0.7s							
E25A	Miller Ranch,	66.10	47	P		P	18 57 04.7	+0.4
	baz=313							
VSU	Vasula	66.18	332⇓	*e*P		P	18 57 03.9	-0.6
VSU				pmax	pmax			
	comp=Z,139nm,2.5s							
SHPR	Sheep Range	66.18	62	*e*P		P	18 57 06.5	+1.3
	comp=Z,22nm,1.5s							
D26A	Manning	66.22	46	P		P	18 57 05.1	0.0
	baz=313							
B28A	Dugan Ranch, T	66.26	44	P		P	18 57 05.7	+0.4
	baz=314							
GEYT	Alibeck	66.26	301	P		P	18 57 06.1	+0.6
	comp=Z,4.0nm,0.7s,baz=38,slow=1.6,SNR=10							
GEYT				LR	LR		19 28 15.4	
	comp=Z,242nm,19.2s,baz=90,slow=38							
LEM	Lembang	66.29	230	LR		LR	19 27 25.0	
	comp=Z,45nm,18.1s,baz=340,slow=37							
SCI2	San Clemente I	66.39	67	P		P	18 57 06.9	+0.6
	baz=311							
TUQ	Turquoise Moun	66.42	63	P		P	18 57 07.1	+0.4
	baz=311,SNR=9.3							
HYB	Hyderabad	66.45	271	*i* P		P	18 57 08.0	+1.0
F25A	Bowman	66.46	48	P		P	18 57 06.6	-0.1
	baz=313							
A29A	Manning Farm,	66.47	43	P		P	18 57 06.7	+0.1
	baz=315							
CTA	Charters Tower	66.50	186	P		P	18 57 06.7	-0.3
	comp=Z,8.2nm,1.0s,baz=1.4,slow=11,SNR=4.5							
HEC	Hector,Ludlow	66.56	64	P		P	18 57 07.8	+0.3
	baz=311,SNR=9.2							
MURC	Murrieta	66.83	65	P		P	18 57 09.5	+0.2
	baz=312							
P17A	Butcher Ranch,	66.84	57	*e*P		P	18 57 09.8	+0.4
	comp=Z,27nm,1.3s							
F26A	Lodgepole	66.92	47	P		P	18 57 09.7	+0.1
	baz=314							
MTPU	Mount Pierson	66.95	59	*e*P		P	18 57 11.0	+0.7
	comp=Z,7.4nm,1.0s							
VSR	Storozhevoye	66.96	321	*e*P		P	18 57 09.8	+0.1
VSR				pmax	pmax			
	comp=Z,20nm,0.8s							
G25A	Newell	66.99	48	P		P	18 57 10.3	+0.3
	baz=314							
LCMT	Little Creek M	67.01	60	*e*P		P	18 57 11.1	+0.7
	comp=Z,10nm,0.9s							
GMRC	Granite Mounta	67.01	63	P		P	18 57 10.6	+0.2
	baz=312,SNR=5.6							
P18A	Preston Nutter	67.03	56	*e*P		P	18 57 11.5	+0.8
	comp=Z,9.5nm,1.0s							
ULM	Lac du Bonnet	67.07	40	P		P	18 57 09.9	-0.5
	comp=Z,6.9nm,0.5s,baz=310,slow=6.2,SNR=6.7							
ULM	Lac du Bonnet	67.07	40	*e*P		P	18 57 10.3	-0.1
ULM				pmax	pmax			
	comp=Z,8.0nm,0.6s							
ULM	Lac du Bonnet	67.07	40	*e*P		P	18 57 09.7	-0.7
	comp=Z,8.0nm,0.6s							
ULM	Lac du Bonnet	67.07	40	*e*P		P	18 57 09.7	-0.7
E27A	Carson	67.07	46	P		P	18 57 10.3	-0.2
	baz=314							
K22A	Casper	67.08	52	P		P	18 57 10.8	-0.1
	baz=313							
K22A	Casper	67.08	52	*e*P		P	18 57 10.7	-0.1
	comp=Z,13nm,0.6s							
LDFC	Landfair	67.15	63	*e*P		P	18 57 11.2	-0.1
	comp=Z,32nm,1.1s							
SRU	San Rafael Swe	67.21	57	*e*P		P	18 57 12.4	+0.7
SRU				pmax	pmax			
	comp=Z,18nm,0.8s							
SRU	San Rafael Swe	67.21	57	*e*P		P	18 57 11.9	+0.1
	comp=Z,18nm,0.8s							
B30A	Myrvik Farm, E	67.22	43	P		P	18 57 11.3	-0.1
	baz=315,SNR=7.8							
KNB	Kanab	67.25	60	*e*P		P	18 57 13.2	+1.2
KNB				pmax	pmax			
	comp=Z,17nm,1.1s							
KNB	Kanab	67.25	60	*e*P		P	18 57 12.9	+0.8
	comp=Z,17nm,1.1s							
H25A	Fruitdale	67.28	49	P		P	18 57 12.0	0.0
	baz=314							
TPFO	Pinon Flats	67.29	65	P		P	18 57 12.6	+0.4
	baz=312							
BELC	Belle Mtn. Jos	67.32	64	P		P	18 57 12.7	+0.3
	baz=312							
G26A	Maurine	67.34	48	P		P	18 57 12.4	+0.1
	baz=314							
RSSD	Black Hills	67.40	49	P		P	18 57 12.6	-0.3
	baz=314							
RSSD	Black Hills	67.40	49	*e*P		P	18 57 13.1	+0.2
RSSD				pmax	pmax			
	comp=Z,21nm,0.6s							
RSSD	Black Hills	67.40	49	*e*P		P	18 57 12.7	-0.2
	comp=Z,21nm,0.6s							
E28A	Huff	67.40	46	P		P	18 57 12.8	+0.2
	baz=314							
G27A	Dupree	67.62	47	P		P	18 57 13.5	-0.5
	baz=314,SNR=9.7							
I25A	Rochford	67.63	49	P		P	18 57 14.2	-0.1
	baz=314							
H26A	Fairpoint	67.72	48	P		P	18 57 14.6	-0.1
	baz=314							
IRM	Iron Mountain	67.74	64	P		P	18 57 15.3	+0.3
	baz=312,SNR=8.5							
A32A	Rocking H Ranc	67.74	42	P		P	18 57 14.7	0.0
	baz=316							
O20A	White River Ci	67.83	55	P		P	18 57 15.6	0.0
	baz=313							
O20A	White River Ci	67.83	55	*e*P		P	18 57 15.8	+0.1
	comp=Z,8.9nm,0.7s							
BC3	Big Chuckawall	67.89	64	P		P	18 57 16.2	+0.2
	baz=312							
W13A	Hualapai Mount	67.89	62	*e*P		P	18 57 16.6	+0.5
	comp=Z,8.2nm,1.3s							
U15A	North Rim	67.96	60	*e*P		P	18 57 17.5	+0.8
	comp=Z,20nm,1.3s							
H27A	Howes	68.06	48	P		P	18 57 16.9	0.0
	baz=314							
NC303	NORSAR Array S	68.09	341	*e*P		P	18 57 16.3	-0.3
WRAB	Tennant Creek	68.09	198⇓	*e*P		P	18 57 17.1	0.0
B32A	Ashes, Strandq	68.10	42	P		P	18 57 16.8	-0.1
	baz=316							
WB2	Warramunga Arr	68.10	198	*e*P		P	18 57 16.8	-0.4
	comp=Z,18nm,0.8s							
WR1	Warramunga Arr	68.10	198	*e*P		P	18 57 15.9	-1.2
WRA	Warramunga Arr	68.10	198	P		P	18 57 15.9	-1.3
	comp=Z,4.3nm,0.8s,baz=18,slow=6.8,SNR=22							
WRA				pP		pP	18 57 33.6	+0.1
	comp=Z,16nm,0.8s,baz=12,slow=6.6,SNR=29							
NC405	NORSAR Array S	68.11	341	*e*P		P	18 57 16.4	-0.3
IKP	In-Ko-Pah, Jac	68.14	65	P		P	18 57 17.9	+0.3
	baz=312							
NC204	NORSAR Array S	68.18	341	*e*P		P	18 57 17.6	+0.3
A33A	Warroad	68.23	41	P		P	18 57 17.5	-0.3
	baz=317							
AFI	Afiamalu	68.25	142	LR		LR	19 23 02.8	
	comp=Z,134nm,20.6s,baz=314,slow=32							
NB201	NORSAR Array S	68.26	341	*e*P		P	18 57 17.4	-0.3
PDMCI	Parker Dam,Lak	68.26	63	P		P	18 57 18.4	+0.2
	baz=312,SNR=5.5							
NB2	NORSAR Subarra	68.28	341	P		P	18 57 17.4	-0.5
	comp=Z,6.7nm,0.6s,baz=28,slow=6.5							
NB2	NORSAR Subarra	68.28	341	P		P	18 57 17.3	-0.6
NB2				pmax	pmax			
	comp=Z,6.0nm,0.6s							
NB200	NORSAR Array S	68.28	341	*e*P		P	18 57 17.6	-0.3
NOA	NORSAR Array B	68.28	341	P		P	18 57 17.6	-0.3
	comp=Z,6.7nm,0.5s,baz=28,slow=6.6,SNR=41							
NOA				LR	LR		19 31 28.2	
	comp=Z,108nm,18.4s,baz=20,slow=40							
E30A	Jud	68.33	45	P		P	18 57 18.2	-0.2
	baz=316							
NBO02	NORSAR Array S	68.36	341	*e*P		P	18 57 18.0	-0.3
Y12C	Blythe	68.40	63	P		P	18 57 19.5	+0.5
	baz=312							
Y12C	Blythe	68.40	63	*e*P		P	18 57 19.5	+0.5
	comp=Z,11nm,1.0s							
PV09	Paradox Valley	68.43	57	*e*P		P	18 57 19.5	0.0
J26A	Sides Ranch, S	68.46	49	P		P	18 57 19.3	-0.1
	baz=314							
NAO01	NORSAR Array S	68.53	341	*e*P		P	18 57 19.0	-0.4
PV10	Paradox Valley	68.56	57	*e*P		P	18 57 20.4	0.0
PHWY	Pilot Hill	68.58	52	*e*P		P	18 57 20.1	-0.3
	comp=Z,5.9nm,1.0s							
N23A	Red Feather La	68.59	53	P		P	18 57 21.0	+0.5
	baz=314							
N23A	Red Feather La	68.59	53	*e*P		P	18 57 20.9	+0.5
	comp=Z,47nm,1.5s							
B33A	Robert and Kas	68.63	42	P		P	18 57 19.7	-0.5
	baz=317							
FITZ	Fitzroy Crossi	68.67	207	*e*P		P	18 57 21.3	+0.7
	comp=Z,30nm,0.8s							
GLA	Glamis	68.68	64	P		P	18 57 21.1	+0.2
	baz=312							
PV05	Paradox Valley	68.73	57	*e*P		P	18 57 21.4	+0.1
E31A	Nome	68.78	44	P		P	18 57 20.8	-0.5
	baz=316							
D32A	Dogwood Acres,	68.78	43	P		P	18 57 20.7	-0.5
	baz=316							
B34A	Aery, Baudette	68.90	41	P		P	18 57 21.4	-0.5
	baz=317							
C33A	Trail	68.91	42	P		P	18 57 21.6	-0.4
	baz=317							
I28A	Midland	68.97	48	P		P	18 57 22.5	+0.1
	baz=315							
BORG	Borgarnes	68.98	357	LR		LR	19 30 05.0	
	comp=Z,47nm,18.3s,baz=224,slow=38							
NACGM	Naroch	69.00	330	*e*		P	18 57 16.0	-6.4
PV01	Paradox Valley	69.00	57	*e*P		P	18 57 23.2	+0.2
H29A	Onida	69.01	47	P		P	18 57 22.4	-0.3
	baz=315							
F31A	Hecla	69.11	45	P		P	18 57 23.2	-0.1
	baz=316							
WUAZ	Wupatki	69.13	60	P		P	18 57 24.4	+0.7
	baz=313							
WUAZ	Wupatki	69.13	60	*e*P		P	18 57 24.3	+0.6
	comp=Z,14nm,1.3s							
G30A	Faulkton	69.19	46	P		P	18 57 23.6	-0.2
	baz=316							
SMCO	Snowmass	69.19	55	*e*P		P	18 57 24.5	+0.1
	comp=Z,12nm,0.8s							
Y14A	Wickenburg	69.21	62	*e*P		P	18 57 24.4	+0.3
	comp=Z,87nm,1.5s							
B35A	Bob, Littlefor	69.41	41	P		P	18 57 24.5	-0.5
	baz=318							
ISCO	Idaho Springs	69.53	54	P		P	18 57 26.4	+0.1
	baz=314,SNR=19							
ISCO	Idaho Springs	69.53	54	*e*P		P	18 57 27.2	+0.9
ISCO				pmax	pmax			
	comp=Z,12nm,0.8s							
ISCO	Idaho Springs	69.53	54	*e*P		P	18 57 27.0	+0.7
	comp=Z,12nm,0.8s							
GOF	Gofitskoye	69.61	314⇑	*e*P		P	18 57 27.9	+1.6
GOF				pmax	pmax			
	comp=Z,43nm,0.8s							
MVCO	Mesa Verde	69.67	57	P		P	18 57 27.6	+0.4
	baz=314,SNR=7.2							
MVCO	Mesa Verde	69.67	57	*e*P		P	18 57 27.5	+0.4
	comp=Z,12nm,0.9s							
D34A	Park Rapids	69.67	42	P		P	18 57 26.1	-0.6
	baz=317							
E33A	Westby DABS, E	69.72	43	P		P	18 57 26.9	-0.1
	baz=317							
SUSD	Miller	69.77	46	P		P	18 57 27.0	-0.4
	baz=316							
C35A	Jirik Farms, M	69.78	41	P		P	18 57 27.0	-0.4
	baz=318							
X16A	Lo Mia Camp, P	69.83	61	*e*P		P	18 57 28.8	+0.7
	comp=Z,9.2nm,1.0s							
I30A	Oacoma	69.92	47	P		P	18 57 28.1	-0.2
	baz=316							
F33A	5 Mile Ranch,	70.07	44	P		P	18 57 28.8	-0.3
	baz=317,SNR=6.1							
D35A	Remer	70.20	42	P		P	18 57 29.6	-0.4
	baz=318							
C36A	Pine Crest Far	70.25	41	P		P	18 57 29.9	-0.4
	baz=318							
S22A	4UR Ranch, Cre	70.26	56	P		P	18 57 31.5	+0.7
	baz=314							
S22A	4UR Ranch, Cre	70.26	56	*e*P		P	18 57 31.4	+0.5
	comp=Z,11nm,0.9s							
J30A	Dallas	70.31	47	P		P	18 57 30.9	+0.2
	baz=316							
NCK	Nalchik	70.45	313⇑	*e*P		P	18 57 31.8	+0.2
NCK				pmax	pmax			
	comp=Z,19nm,0.9s							
G33A	Ortonville	70.47	44	P		P	18 57 31.5	-0.1
	baz=317							
D36A	Goodland	70.54	41	P		P	18 57 31.5	-0.5
	baz=318							
C37A	Embarrass	70.57	40	P		P	18 57 31.7	-0.5
	baz=319							
KVAR	Kislovodsk Arr	70.58	314	P		P	18 57 33.2	+0.8
	comp=Z,11nm,0.7s,baz=14,slow=2.7,SNR=17							
KVAR				LR	LR		19 35 10.2	
	comp=Z,152nm,18.1s,baz=22,slow=42							
KIV	Kislovodsk	70.58	314⇓	*e*P		P	18 57 34.1	+1.7
KIV				*e*			18 57 52.8	
KIV				*e*			19 00 10.7	
KIV				*e*S	S		19 06 34.0	-7.3
KIV				pmax	pmax			
	comp=Z,17nm,0.8s							
KIV	Kislovodsk	70.58	314	*e*P		P	18 57 32.5	+0.1
	comp=Z,17nm,0.8s							
KIV	Kislovodsk	70.58	314	*e*P		P	18 57 32.5	+0.1
KBZ	Khabaz	70.64	314	P		P	18 57 32.9	+0.3
	comp=Z,19nm,0.9s,baz=91,slow=1.6,SNR=35							
KBZ				LR	LR		19 33 21.3	
	comp=Z,146nm,19.4s,baz=45,slow=40							
OGNE	Ogallala	70.68	51	P		P	18 57 33.1	+0.1
	baz=315,SNR=15							
OGNE	Ogallala	70.68	51	*e*P		P	18 57 33.3	+0.2
	comp=Z,48nm,0.6s							
H33A	Prehn Over Nor	70.69	45	P		P	18 57 32.4	-0.6
	baz=317,SNR=5.6							
K30A	Basset	70.71	48	P		P	18 57 33.4	+0.2
	baz=316							
EYMN	Ely	70.71	40	P		P	18 57 32.0	-1.1
	baz=319,SNR=10							
EYMN	Ely	70.71	40	*e*P		P	18 57 32.0	-1.1
	comp=Z,19nm,1.1s							
F35A	Swanville	70.87	43	P		P	18 57 33.7	-0.3
	baz=318							
D37A	Cotton	70.89	41	P		P	18 57 33.6	-0.5
	baz=319							
C38A	Sawbill Land.	70.98	40	P		P	18 57 33.9	-0.8
	baz=319,SNR=9.2							
E36A	McGregor	70.99	42	P		P	18 57 34.8	0.0
	baz=318							
SDCO	Great Sand Dun	71.02	55	P		P	18 57 35.8	+0.3
	baz=315,SNR=12							
SDCO	Great Sand Dun	71.02	55	*e*P		P	18 57 35.5	0.0
	comp=Z,34nm,1.9s							
NEY	Neytrino	71.07	313⇓	*e*P		P	18 57 37.1	+1.6
NEY				pmax	pmax			
	comp=Z,2.0nm,0.8s							
J32A	Parkston	71.10	46	P		P	18 57 35.2	-0.3
	baz=317							
I33A	Coleman	71.13	45	P		P	18 57 35.5	-0.2
	baz=317							
H34A	Spellman Lake,	71.17	44	P		P	18 57 36.0	+0.1
	baz=318							
K31A	O'Neill	71.19	48	P		P	18 57 36.1	+0.1
	baz=317							
F36A	Milaca	71.36	42	P		P	18 57 36.1	-0.8
	baz=318,SNR=8.4							
C39A	Grand Marais	71.41	39	P		P	18 57 36.5	-0.8
	baz=320							
AKASG	Malin Array Be	71.45	326	P		P	18 57 36.3	-1.1
	comp=Z,5.8nm,0.4s,baz=34,slow=6.4,SNR=33							
AKASG				LR	LR		19 31 18.1	
	comp=Z,210nm,19.9s,baz=30,slow=38							
AKASG	Malin Array Be	71.45	326	*i* P		P	18 57 36.7	-0.7
AKASG				pmax	pmax			
	comp=Z,6.0nm,0.4s							
AKBB	Malin Array Si	71.45	326	*e*P		P	18 57 36.9	-0.5
AKBB				pmax	pmax			
	comp=Z,18nm,0.9s							
AKBB	Malin Array Si	71.45	326	*e*P		P	18 57 36.6	-0.8
	comp=Z,18nm,0.8s							
ECSD	EROS Data Cent	71.45	46	P		P	18 57 37.3	-0.3
	baz=317,SNR=22							
ECSD	EROS Data Cent	71.45	46	*e*P		P	18 57 37.0	-0.6
	comp=Z,24nm,1.0s							
KIEV	Kiev	71.46	326⇓	*i* P		P	18 57 36.7	-0.8
KIEV				pmax	pmax			
	comp=Z,16nm,0.8s							
KIEV	Kiev	71.46	326	*e*P		P	18 57 36.5	-1.0
	comp=Z,20nm,1.0s							
L31A	Butterfield Fa	71.47	48	P		P	18 57 37.9	+0.1
	baz=317							
AK11	Malin Array Si	71.49	326	*e*P		P	18 57 36.7	-0.9
H35A	Sunnyside Ranc	71.61	44	P		P	18 57 38.4	-0.1
	baz=318,SNR=9.2							
TUC	Tucson	71.67	62	P		P	18 57 40.0	+0.8
	baz=314							
TUC	Tucson	71.67	62	*e*P		P	18 57 40.2	+1.0
TUC				pmax	pmax			
	comp=Z,11nm,1.2s							
TUC	Tucson	71.67	62	*e*P		P	18 57 39.5	+0.2
	comp=Z,11nm,1.2s							
G36A	St. Michael	71.72	43	P		P	18 57 39.1	-0.1
	baz=318							
AS01	Alice Springs	71.79	198	*e*P		P	18 57 40.3	+0.6
AS31	Alice Springs	71.80	198	*e*P		P	18 57 40.4	+0.6
ASAR	Alice Springs	71.80	198	P		P	18 57 40.5	+0.7
	comp=Z,3.5nm,0.6s,baz=13,slow=5.6,SNR=58							
ASAR				pP		pP	18 57 57.0	+0.6
	comp=Z,10nm,0.8s,baz=12,slow=5.0,SNR=20							
AKH	Akhalkalaki	72.02	312⇑	*i* P		P	18 57 43.3	+2.1
L32A	Elgin	72.02	48	P		P	18 57 40.8	-0.3
	baz=317							
T25A	Trinidad	72.06	55	P		P	18 57 41.8	+0.1
	baz=315							
T25A	Trinidad	72.06	55	*e*P		P	18 57 41.7	+0.1
	comp=Z,10nm,0.8s							
K33A	Hardington	72.08	47	P		P	18 57 41.3	-0.2
	baz=317							
J34A	George	72.10	45	P		P	18 57 40.9	-0.7
	baz=318							
H36A	Jessenland, He	72.13	43	P		P	18 57 41.8	+0.2
	baz=319							
I35A	Creekview Farm	72.16	45	P		P	18 57 41.5	-0.3
	baz=318							
GNI	Garni	72.27	310	P		P	18 57 43.1	+0.3
	comp=Z,8.9nm,0.8s,baz=127,slow=15,SNR=2.7							
GNI				LR	LR		19 33 15.9	
	comp=Z,244nm,18.7s,baz=54,slow=39							
GNI	Garni	72.27	310⇑	*e*P		P	18 57 44.9	+2.1
GNI				pmax	pmax			
	comp=Z,23nm,0.8s							
BGNE	Belgrade	72.38	48	P		P	18 57 43.2	0.0
	baz=317							
J35A	Milford	72.41	45	P		P	18 57 42.9	-0.4
	baz=318							
ANMO	Albuquerque	72.43	58	P		P	18 57 43.9	0.0
	baz=315							
ANMO	Albuquerque	72.43	58⇑	*i* P		P	18 57 44.3	+0.4
ANMO				pmax	pmax			
	comp=Z,18nm,2.5s							
ANMO	Albuquerque	72.43	58	*e*P		P	18 57 44.5	+0.6
	comp=Z,6.9nm,0.9s							
K34A	Le Mars	72.48	46	P		P	18 57 43.5	-0.3
	baz=318							
ANN	Anapa	72.49	317	*e*P		P	18 57 41.0	-2.8
ANN				*e**PP		pP	18 57 58.2	-2.1
ANN				*e*			19 00 22.8	
ANN				*e*PPP	PPP		19 02 09.2	
ANN				*e*S	S		19 06 59.7	-3.4
ANN				*e*SS	SS		19 11 35.8	-5.9
ANN				pmax	pmax			
	comp=Z,11nm,0.6s							
I36A	Fitzsimmons Fa	72.50	44	P		P	18 57 43.8	-0.1
	baz=319							
BSD	Bornholm Skovb	72.56	336⇓	*i* P		P	18 57 43.6	-0.4
	comp=Z,7.9nm,0.6s							
BSD	Bornholm Skovb	72.56	336⇓	*i* P		P	18 57

baz=317
MBWA Marble Bar 73.51 212 eP P 18 57 43.5 -6.4
comp=Z,20nm,0.9s
M35A Neola 73.58 47 P P 18 57 50.1 -0.3
baz=318
L36A Harm Buss Farm 73.62 46 P P 18 57 50.0 -0.5
baz=319
K37A Belmond 73.62 45 P P 18 57 50.0 -0.5
baz=319
N34A Lincoln 73.64 48 P P 18 57 49.9 -0.7
baz=318
O33A Hebron 73.65 49 P P 18 57 49.9 -0.9
baz=318
SCHQ Schefferville 73.75 22 P P 18 57 50.9 -0.2
comp=Z,8.5nm,0.9s,baz=349,slow=6.4,SNR=6.7
SCHQ LR LR 19 35 31.9
comp=Z,86nm,18.1s,baz=338,slow=40
SCHQ Schefferville 73.75 22 eP P 18 57 50.7 -0.4
comp=Z,40nm,1.8s
J38A Wedel Dairy, R 73.76 43 P P 18 57 50.4 -0.9
baz=320
SORM Soroca 73.84 325⇑ iP P 18 57 51.6 -0.1
Q32A Meitler Ranch, 73.93 50 P P 18 57 51.4 -1.1
baz=317
O34A Beatrice 74.03 48 P P 18 57 52.0 -1.0
baz=318
M36A Felix, Anita 74.04 46 P P 18 57 52.7 -0.3
baz=319
L37A Phoenix Point, 74.05 45 P P 18 57 52.8 -0.3
baz=319
N35A Tabor 74.06 47 P P 18 57 53.1 0.0
baz=318
K38A Parkersburg 74.13 44 P P 18 57 52.8 -0.7
baz=320
R32A Long Quarter, 74.27 51 P P 18 57 54.1 -0.3
baz=318
Q33A Connelly Farm, 74.31 50 P P 18 57 53.9 -0.7
baz=318
L38A Oak Wood Farm, 74.42 45 P P 18 57 54.9 -0.3
baz=320,SNR=6.3
P34A Walnut Farm, R 74.43 49 P P 18 57 54.5 -0.8
baz=318
M37A Trindle Farm, 74.44 46 P P 18 57 55.1 -0.3
baz=319
SCIA State Center 74.48 45 eP P 18 57 55.2 -0.3
comp=Z,53nm,0.6s
S32A Newby Ranch, P 74.68 51 P P 18 57 56.1 -0.7
baz=318
R33A Olander Ranch, 74.74 50 P P 18 57 56.2 -0.9
baz=318
KWP Kalwaria Pacla 74.75 329 eP P 18 57 57.7 +0.7
KWP Kalwaria Pacla 74.75 329⇑ iP P 18 57 57.5 +0.5
KWP Kalwaria Pacla 74.75 329 eP P 18 57 57.7 +0.7
Q34A Chapman 74.83 49 P P 18 57 56.8 -0.8
baz=318
N37A Lee Faris, Mou 74.86 46 P P 18 57 57.7 0.0
baz=319
M38A Pleasantville 74.86 45 P P 18 57 57.5 -0.3
baz=320
P35A Duane Minner, 74.86 48 P P 18 57 56.9 -0.8
baz=318
KSU1 Kansas State U 74.87 49 P P 18 57 56.9 -0.9
baz=318
KSU1 Kansas State U 74.87 49 eP P 18 57 56.8 -1.1
comp=Z,16nm,0.6s
O36A Bolckow 74.95 47 P P 18 57 57.7 -0.6
baz=319
P36A Good Intent, A 75.21 48 P P 18 57 58.8 -1.0
baz=319
AMTX Amarillo 75.22 55 P P 18 58 00.4 +0.3
baz=317
AMTX Amarillo 75.22 55 eP P 18 58 00.2 +0.2
comp=Z,27nm,0.8s
S33A Kaszmaul Farm, 75.26 51 P P 18 57 59.6 -0.5
baz=318
MSTX Muleshoe 75.26 56 P P 18 58 00.1 -0.1
baz=317
MSTX Muleshoe 75.26 56 eP P 18 58 00.2 -0.1
comp=Z,32nm,1.3s
OJC Ojcow 75.27 331 eP P 18 57 60.0 0.0
OJC Ojcow 75.27 331 eP P 18 58 00.0 0.0
OJC pmax pmax
comp=Z,6.0nm,0.6s
OJC Ojcow 75.27 331 eP P 18 57 59.8 -0.1
comp=Z,5.7nm,0.6s
OJC Ojcow 75.27 331 eP P 18 57 59.8 -0.1
N38A Joes South For 75.31 46 P P 18 58 00.2 -0.1
baz=320
O37A Wolven Farm, M 75.33 47 P P 18 57 59.9 -0.6
baz=319
Q35A Mercer Eighty, 75.35 49 P P 18 57 59.6 -1.1
baz=319
MNTX Cornudas Mount 75.36 59 P P 18 58 01.3 +0.4
baz=316,SNR=9.3
MNTX Cornudas Mount 75.36 59 eP P 18 58 01.0 +0.2
comp=Z,9.3nm,1.1s
STHS Stebnicka Huta 75.45 329 eP P 18 58 02.2 +1.2
STHS Stebnicka Huta 75.45 329 e P 18 58 02.2 +1.2
BUR08 Bucovina Ar. S 75.47 326 eP P 18 58 01.4 +0.1
BURAR Bucovina Array 75.49 326⇑ iP P 18 58 01.7 +0.3
BURAR Bucovina Array 75.49 326 P P 18 58 01.6 +0.2
KOLS Kolonicke sedl 75.49 329 eP P 18 58 01.4 +0.1
KOLS pmax pmax
comp=Z,9.0nm,1.1s
KOLS Kolonicke sedl 75.49 329 eP P 18 58 01.4 +0.1
T33A Patterson Ranc 75.50 51 P P 18 58 01.0 -0.5
baz=319
Q36A Arnold C. Orve 75.57 48 P P 18 58 00.8 -1.1
baz=319
U32A Winter Ranch, 75.61 52 P P 18 58 01.9 -0.3
baz=318
R35A Emporia Munici 75.67 49 P P 18 58 01.6 -0.8
baz=319
P37A Lathrop 75.67 47 P P 18 58 01.7 -0.7
baz=319
O38A Galt 75.70 46 P P 18 58 02.0 -0.6
baz=320
UZH Uzhgorod 75.74 328 eP P 18 58 04.6 +2.0
UZH i 18 58 11.4
UZH Uzhgorod 75.74 328 eP P 18 58 04.6 +2.0
CRVS Cervenica-Dubn 75.81 329 eP P 18 58 03.2 +0.1
CRVS Cervenica-Dubn 75.81 329 eP P 18 58 03.2 +0.1
CRVS e 18 58 07.4
TESR Tescani 75.83 325⇓ iP P 18 58 03.5 +0.3
KSP Ksiaz 75.88 333 eP P 18 58 03.7 +0.3
KSP Ksiaz 75.88 333 eP P 18 58 03.7 +0.3
WSAR Wadi Sarin 75.95 289 P P 18 58 04.6 +0.3
comp=Z,2.8nm,0.5s,baz=95,slow=14,SNR=3.3
TLCR 76.02 323⇑ iP P 18 58 05.3 +1.0
R36A Gordon, Harris 76.03 49 P P 18 58 03.7 -0.8
baz=319
P38A Dawn 76.05 47 P P 18 58 04.0 -0.6
baz=320
U33A Lingo Farm, Me 76.06 52 P P 18 58 04.4 -0.3
baz=318
O39A Kirksville 76.06 46 P P 18 58 04.0 -0.6
baz=320
S35A Otter Creek Ra 76.08 50 P P 18 58 04.6 -0.2
baz=319
T34A McClaskey Farm 76.11 51 P P 18 58 04.4 -0.6
baz=318
OKC Ostrava-Krasne 76.15 331 eP P 18 58 05.9 +0.9
OKC Ostrava-Krasne 76.15 331 eP P 18 58 05.9 +0.9
Q37A Longview Farm, 76.15 48 P P 18 58 04.5 -0.7
baz=319
UPC Upice 76.26 333 eP P 18 58 06.2 +0.6
UPC Upice 76.26 333 eP P 18 58 06.2 +0.6
ODBI Odobesti 76.28 324⇑ iP P 18 58 07.3 +1.5
LANS Liptovska Anna 76.30 330 eP P 18 58 06.7 +0.8
LANS Liptovska Anna 76.30 330 eP P 18 58 06.7 +0.8
LANS e 19 38 03.9
DPC Dobruska-Polom 76.30 333 eP P 18 58 06.6 +0.7
DPC ex x 18 58 12.4
DPC Dobruska-Polom 76.30 333 eP P 18 58 06.6 +0.7
DPC e 18 58 12.4
CFR Carcaliu 76.31 323⇓ iP P 18 58 06.3 +0.4
UOSS Minazif 76.32 292 eP P 18 58 06.4 0.0
comp=Z,2.9nm,1.2s
VRI Vrincioaia 76.33 324⇑ iP P 18 58 06.9 +0.8
VRI Vrincioaia 76.33 324 P P 18 58 06.9 +0.8
U34A Anderson Ranch 76.36 51 P P 18 58 06.1 -0.4
baz=318
U34A Anderson Ranch 76.36 51 eP P 18 58 06.1 -0.4
comp=Z,43nm,1.2s
PLOR Plostina 76.37 324⇑ iP P 18 58 08.2 +1.8
PLOR Plostina 76.37 324 P P 18 58 08.1 +1.7

R37A Teagarden Farm 76.39 48 P P 18 58 05.6 -0.9
baz=319
KRLC Kraliky 76.39 332 eP P 18 58 06.7 +0.3
KRLC Kraliky 76.39 332 eP P 18 58 06.7 +0.3
MORC Moravsky Berou 76.40 332⇑ iP P 18 58 06.5 0.0
MORC Moravsky Berou 76.40 332 eP P 18 58 07.0 +0.5
MORC pmax pmax
comp=Z,25nm,0.8s
MORC Moravsky Berou 76.40 332 eP P 18 58 06.8 +0.3
comp=Z,25nm,0.8s
W32A Sentinel 76.40 53 P P 18 58 07.0 +0.3
baz=318
S36A Lake Cedric, C 76.43 49 P P 18 58 06.4 -0.4
baz=319
CLL Collm 76.46 335 i P P 18 58 05.7 -0.9
comp=Z,11nm,0.8s
CLL e 18 58 22.0
CLL LmH 19 31 00.0
comp=N,100nm,18.5s
CLL LmH 19 31 00.0
comp=E,100nm,19.5s
CLL LmV 19 34 00.0
comp=Z,100nm,20.1s
CLL Collm 76.46 335 eP P 18 58 05.8 -0.9
CLL pmax pmax
comp=Z,17nm,1.0s
CLL Collm 76.46 335 eP P 18 58 05.5 -1.2
comp=Z,17nm,1.0s
CLL Collm 76.46 335 eP P 18 58 05.5 -1.2
O40A La Belle 76.50 45 P P 18 58 06.5 -0.6
baz=320
KECS Kecovo 76.51 329 eP P 18 58 07.2 +0.2
KECS pmax pmax
comp=Z,3.0nm,0.6s
KECS Kecovo 76.51 329 eP P 18 58 07.2 +0.2
Q38A Cooks Store, C 76.51 47 P P 18 58 06.5 -0.7
baz=320
P39B Salisbury 76.55 46 P P 18 58 07.2 -0.2
baz=320
T35A Sooner Cattle 76.55 50 P P 18 58 07.2 -0.3
baz=319
BRG Berggiesshubel 76.57 334 eP P 18 58 07.2 -0.1
comp=Z,8.4nm,1.1s
BRG Berggiesshubel 76.57 334 eP P 18 58 07.2 -0.1
BRG pmax pmax
comp=Z,8.0nm,1.1s
PVCC Panska Ves 76.69 334 eP P 18 58 08.4 +0.4
PVCC Panska Ves 76.69 334 eP P 18 58 08.4 +0.4
TIRR Tirgusor 76.78 322⇑ iP P 18 58 11.0 +2.4
T36A Boggs Farm, Ca 76.78 50 P P 18 58 08.6 -0.1
baz=319
S37A Fort Scott 76.80 49 P P 18 58 08.2 -0.7
baz=319,SNR=12
W33A Caddo, Fort Co 76.81 53 P P 18 58 09.3 +0.3
baz=318
V34A Guthrie 76.82 52 P P 18 58 08.9 -0.1
baz=318,SNR=5.1
V34A Guthrie 76.82 52 eP P 18 58 08.8 -0.2
comp=Z,25nm,0.9s
U35A Pawnee 76.84 51 P P 18 58 08.9 -0.3
baz=319
P40A Paris 76.86 46 P P 18 58 08.9 -0.2
baz=320
X32A Elmer 76.90 54 P P 18 58 09.3 -0.2
baz=318
WMOK Wichita Mounta 76.94 53 P P 18 58 09.7 -0.1
baz=318,SNR=12
WMOK Wichita Mounta 76.94 53 eP P 18 58 09.8 0.0
WMOK pmax pmax
comp=Z,9.0nm,0.8s
WMOK Wichita Mounta 76.94 53 eP P 18 58 09.8 0.0
comp=Z,8.9nm,0.8s
MLR Muntele Rosu 76.95 324⇓ iP P 18 58 11.0 +1.3
MLR Muntele Rosu 76.95 324 eP P 18 58 10.6 +0.9
MLR pmax pmax
comp=Z,11nm,0.6s
MLR Muntele Rosu 76.95 324 eP P 18 58 10.2 +0.4
comp=Z,11nm,0.6s
R38A Fenwick Farm, 76.95 48 P P 18 58 08.4 -1.3
baz=320,SNR=9.7
VYHS Vyhne 77.07 330 eP P 18 58 10.7 +0.5
VYHS pmax pmax
comp=Z,5.0nm,1.3s
VYHS Vyhne 77.07 330 eP P 18 58 10.7 +0.5
VYHS e 19 38 07.8
VRAC Vranov 77.12 332 LR LR 19 37 35.9
comp=Z,304nm,19.0s,baz=26,slow=40
VRAC Vranov 77.12 332⇑ iP P 18 58 11.5 +1.0
DRGR 77.13 327⇑ iP P 18 58 10.8 +0.2
W34A Bridge Creek, 77.13 52 P P 18 58 10.7 -0.1
baz=318
GOPC GO Pecny, Ondr 77.16 333 eP P 18 58 11.6 +0.9
GOPC GO Pecny, Ondr 77.16 333 eP P 18 58 11.6 +0.9
PRU Pruhonice 77.17 334 eP P 18 58 11.2 +0.5
PRU ex x 18 58 16.2
PRU AMS AMS 19 35 50.0
comp=Z,300nm,18.4s
PRU Pruhonice 77.17 334 eP P 18 58 11.2 +0.5
PRU e 18 58 16.2
PRU MLR MLR
comp=Z,300nm,18.4s
PRU Pruhonice 77.17 334 eP P 18 58 11.2 +0.5
PSZ Piszkesteto 77.20 329 eP P 18 58 11.5 +0.5
PSZ pmax pmax
comp=Z,7.0nm,0.8s
PSZ Piszkesteto 77.20 329 eP P 18 58 10.9 -0.1
comp=Z,6.9nm,0.8s
T37A Cheneyville 18 77.24 49 P P 18 58 10.4 -0.9
baz=319,SNR=25
V35A Meyer Ranch, C 77.24 51 P P 18 58 11.0 -0.4
baz=319
X33A Lawton 77.25 53 P P 18 58 11.3 -0.1
baz=318
Q40A Laux Farm, Aux 77.26 46 P P 18 58 11.0 -0.5
baz=320
R39A Chumby, Stover 77.30 47 P P 18 58 10.8 -0.8
baz=320
MSAB Monastry St. A 77.32 323⇓ iP P 18 58 13.7 +2.1
VOIR 77.35 325⇑ iP P 18 58 13.1 +1.2
U36A Oologah 77.36 50 P P 18 58 11.5 -0.5
baz=319
S38A Stockton 77.38 48 P P 18 58 11.3 -0.8
baz=320
HDIL Hopedale 77.40 43 P P 18 58 11.8 -0.4
baz=322
SFNV Sufian 77.48 310 eP P 18 58 15.2 +2.5
X34A Smith Ranch, M 77.57 53 P P 18 58 13.8 +0.5
baz=318
Y33A Hilltop Ranch, 77.57 54 P P 18 58 13.2 -0.1
baz=318
ARR Arges 77.58 325⇑ iP P 18 58 15.0 +1.8
NKC Novy Kostel 77.58 335 eP P 18 58 13.4 +0.4
NKC Novy Kostel 77.58 335 eP P 18 58 13.4 +0.4
T38A Diamond 77.63 49 P P 18 58 13.2 -0.3
baz=320
S39A Bolivar 77.63 48 P P 18 58 12.2 -1.3
baz=320,SNR=12
MZRK Al-Mazaregh 77.64 309 eP P 18 58 15.1 +1.5
U37A Salina 77.68 50 P P 18 58 13.5 -0.3
baz=320
W35A Tecumseh 77.68 52 P P 18 58 13.7 -0.1
baz=319
TUL1 Leonard 77.69 50 P P 18 58 13.9 0.0
baz=319
TUL1 Leonard 77.69 50 eP P 18 58 13.4 -0.5
comp=Z,76nm,1.8s
R40A Maddies Statio 77.70 47 P P 18 58 13.3 -0.6
baz=320
V36A Jenks 77.70 51 P P 18 58 14.0 0.0
baz=319
BUD Budapest 77.88 330 P P 18 58 17.1 +2.4
SIRR Siria 77.96 327⇑ iP P 18 58 15.9 +0.7
ABTX Abilene, Hawle 78.03 55 P P 18 58 16.3 -0.4
baz=318
Z33A Whitaker Ranch 78.03 54 P P 18 58 15.4 -0.4
baz=318
U38A Gravette 78.03 49 P P 18 58 14.9 -0.9
baz=320,SNR=5.6
W36A Wetumka 78.04 51 P P 18 58 15.6 -0.2
baz=319
V37A Hulbert 78.06 50 P P 18 58 15.5 -0.4
baz=320
Q42A Golden Eagle 78.09 45 P P 18 58 16.0 0.0
baz=321
LTX Lajitas 78.09 60 eP P 18 58 16.8 +0.5
LTX Lajitas 78.09 60 eP P 18 58 16.8 +0.5

TX31 Lajitas Ar. Si 78.09 60 eP P 18 58 16.4 +0.1
TXAR Lajitas Array 78.09 60 P P 18 58 16.8 +0.4
comp=Z,9.9nm,0.6s,baz=300,slow=4.4,SNR=85
T39A Clever 78.11 48 P P 18 58 15.6 -0.6
baz=320
S40A Lebanon 78.12 47 P P 18 58 15.5 -0.7
baz=320
BR101 Keskin Array S 78.19 316 eP P 18 58 17.4 +0.6
BR131 Keskin Array S 78.19 316 eP P 18 58 16.9 +0.1
BRTR Keskin Array B 78.19 316 P P 18 58 17.4 +0.6
comp=Z,6.1nm,0.8s,baz=81,slow=4.1,SNR=24
BRTR LR LR 19 38 49.3
comp=Z,84nm,18.0s,baz=39,slow=40
BRTR Keskin Array B 78.19 316 i P P 18 58 17.7 +0.9
BRTR pmax pmax
comp=Z,6.0nm,0.8s
KHC Kasperske Hory 78.22 334 eP P 18 58 17.0 +0.3
KHC ex x 18 58 20.9
KHC esP sP 18 58 40.0 0.0
KHC Kasperske Hory 78.22 334 eP P 18 58 17.0 +0.3
KHC pmax pmax
comp=Z,5.0nm,0.9s
KHC Kasperske Hory 78.22 334 eP P 18 58 17.0 +0.3
comp=Z,5.4nm,0.9s
KHC Kasperske Hory 78.22 334 eP P 18 58 17.0 +0.3
HHAR Hobbs 78.39 49 eP P 18 58 16.6 -1.2
comp=Z,11nm,0.8s
X36A Centrahoma 78.40 52 P P 18 58 17.5 -0.3
baz=319
GEC2 GERESS Array S 78.44 334 eP P 18 58 18.2 +0.3
GEC2 pmax pmax
comp=Z,8.0nm,1.0s
GEC2 GERESS Array S 78.44 334 eP P 18 58 17.8 -0.1
comp=Z,8.0nm,1.1s
GERES GERESS Array B 78.44 334 P P 18 58 17.6 -0.3
comp=Z,2.7nm,0.6s,baz=36,slow=5.4,SNR=22
GERES LR LR 19 37 26.0
comp=Z,226nm,18.2s,baz=30,slow=39
GEA0 GERESS Array S 78.44 334 eP P 18 58 17.7 -0.3
133A Hamilton Ranch 78.45 55 P P 18 58 17.9 -0.3
baz=318
V38A Canehill 78.46 50 P P 18 58 17.9 -0.3
baz=320
W37B Quinton 78.47 51 P P 18 58 17.9 -0.2
baz=320
ANTO Ankara 78.48 317 eP P 18 58 19.7 +1.4
ANTO pmax pmax
comp=Z,12nm,0.7s
ANTO Ankara 78.48 317 eP P 18 58 19.0 +0.7
comp=Z,12nm,0.7s
KSRV Kasrt alli 78.48 310 eP P 18 58 19.6 +1.4
BR231 Keskin MP Arra 78.51 317 eP P 18 58 18.0 -0.5
BZS Buzias 78.53 327⇑ iP P 18 58 19.4 +1.1
SOP Sopron 78.54 331 P P 18 58 20.0 +1.6
U39A Green Forest 78.55 49 P P 18 58 18.1 -0.6
baz=320
CONA Conrad Observa 78.56 332 i P P 18 58 19.5 +0.9
comp=Z,17nm,1.1s,SNR=13
SFIN Lafayette 78.57 42 P P 18 58 18.1 -0.5
baz=323
SFIN Lafayette 78.57 42 eP P 18 58 17.9 -0.7
comp=Z,13nm,0.5s
CWF Charnwood Fore 78.59 344 eP P 18 58 18.9 +0.4
comp=Z,14nm,0.7s
HPIG 78.61 63 eP P 18 58 19.5 +0.2
comp=Z,11nm,1.0s
STKA Stephens Creek 78.61 189 P P 18 58 19.1 +0.3
comp=Z,0.8nm,0.4s,baz=357,slow=5.4,SNR=4.8
STKA pP pP 18 58 36.7 +1.3
comp=Z,1.9nm,0.6s,baz=360,slow=4.4,SNR=3.1
Z35A Perchaven, San 78.84 53 P P 18 58 19.8 -0.4
baz=319
V39A Pettigrew 78.88 49 P P 18 58 19.9 -0.6
baz=320
U40A Yellville 78.89 48 P P 18 58 20.1 -0.4
baz=320
233A Rising Star 78.90 55 P P 18 58 20.7 +0.1
baz=318
Y36A Durant 78.94 52 P P 18 58 20.6 -0.2
baz=319
134A White-Moore Ra 78.94 54 P P 18 58 21.1 +0.2
baz=319
MEM Membach 78.98 339 P P 18 58 21.5 +0.8
comp=Z,16nm,1.1s
W38A Poteau 79.00 50 P P 18 58 21.1 0.0
baz=320
MOA Molln 79.14 333 i P P 18 58 22.2 +0.5
comp=Z,6.8nm,0.8s,SNR=6.1
X38A Whitesboro 79.14 51 P P 18 58 21.7 -0.2
baz=320
LMQ La Malbaie 79.18 28 eP P 18 58 21.1 -0.8
comp=Z,9.3nm,0.6s
MDVR Moldovita 79.20 327⇑ iP P 18 58 22.2 +0.1
ARSA Arzberg 79.26 332 i P P 18 58 23.0 +0.6
comp=Z,5.5nm,0.7s
W39A Magazine 79.30 50 P P 18 58 22.5 -0.2
baz=320
135A Vickery Place, 79.33 54 P P 18 58 22.5 -0.4
baz=319
BCLA Clavier 79.33 339 P P 18 58 22.0 -0.7
V40A Witts Springs 79.33 49 P P 18 58 22.6 -0.3
baz=321
Z36A Blue Ridge 79.33 53 P P 18 58 22.8 -0.2
baz=319
234A Clairette 79.34 55 P P 18 58 23.0 0.0
baz=319
SNF Seneffe 79.50 340 P P 18 58 24.4 +0.9
JCT Junction City 79.52 57 P P 18 58 24.1 0.0
baz=318,SNR=5.2
JCT Junction City 79.52 57 eP P 18 58 24.5 +0.4
JCT pmax pmax
comp=Z,54nm,1.5s
JCT Junction City 79.52 57 eP P 18 58 24.5 +0.4
comp=Z,54nm,1.5s
X39A Fountain Ranch 79.65 50 P P 18 58 24.7 0.0
baz=320
W40A Ferguson Farm, 79.67 49 P P 18 58 24.5 -0.2
baz=321
WHTX Lake Whitney, 79.73 54 P P 18 58 25.1 0.0
baz=319
GIVF Givet 79.74 339 eP P 18 58 24.4 -0.5
GIVF pmax pmax
comp=Z,14nm,1.0s
334A Lometa 79.78 55 P P 18 58 25.4 0.0
baz=319
PBMO Poplar Bluff 79.80 46 eP P 18 58 24.9 -0.5
comp=Z,17nm,0.7s
DOU Dourbes 79.81 340 P P 18 58 25.7 +0.5
WLF Walferdange 79.82 338 P P 18 58 25.1 -0.1
Z37A Pogue Cattle C 79.83 52 P P 18 58 25.5 -0.2
baz=320
136A Ennis 79.88 53 P P 18 58 25.9 0.0
baz=319
MIAR Mount Ida 79.90 50 P P 18 58 25.7 -0.4
baz=320,SNR=11
MIAR Mount Ida 79.90 50 eP P 18 58 26.0 0.0
MIAR pmax pmax
comp=Z,16nm,1.0s
MIAR Mount Ida 79.90 50 eP P 18 58 25.7 -0.4
comp=Z,16nm,0.9s
SOKA Soboth 79.93 332 i P P 18 58 26.4 +0.4
comp=Z,24nm,1.1s,SNR=24
BAIF Baives 79.93 340 eP P 18 58 25.6 -0.3
BAIF pmax pmax
comp=Z,13nm,1.1s
PERS Pernice 79.94 332 i P P 18 58 26.5 +0.4
X201 Greenbrier Sit 79.97 49 eP P 18 58 25.3 -1.0
comp=Z,69nm,2.0s
X301 Greenbrier Sit 79.99 49 eP P 18 58 24.6 -1.8
comp=Z,8.7nm,0.6s
WHAR Wooly Hollow 80.01 49 eP P 18 58 25.5 -1.0
comp=Z,16nm,0.8s
LANF Langenberg 80.02 337 eP P 18 58 27.0 +0.6
Y39A Lockesburg 80.09 51 P P 18 58 27.0 -0.1
baz=320
RAR Rarotonga 80.10 135 LR LR 19 25 41.0
comp=Z,141nm,20.9s,baz=300,slow=29
WRDH Warideh 80.10 312 eP P 18 58 29.7 +2.5
KBA Koelnbreinsper 80.11 333 i P P 18 58 28.0 +0.8
comp=Z,56nm,1.1s,SNR=30
KBA Koelnbreinsper 80.11 333 P P 18 58 28.3 +1.1
W41B Gary Mavity, V 80.12 49 P P 18 58 27.4 +0.2
baz=321
OBKA Obir 80.23 332 i P P 18 58 27.8 0.0
comp=Z,5.0nm,0.7s
533A Kerrville 80.27 56 P P 18 58 28.0 -0.1
baz=319

ERPA	Erie	80.28	37	eP	P	18 58 27.7	-0.2
	comp=Z,36nm,0.6s						
X40A	Basin Creek Fa	80.34	49	P	P	18 58 28.1	-0.2
	baz=321						
WATA	Walderalm	80.43	334	i P	P	18 58 29.3	+0.5
	comp=Z,15nm,0.6s,SNR=13						
BFO	Black Forest	80.47	337	i P	P	18 58 29.6	+0.7
BFO	Black Forest	80.47	337	eP	P	18 58 28.4	-0.5
	comp=Z,21nm,1.1s						
WTTA	Wattenberg	80.48	334	i P	P	18 58 29.9	+0.8
	comp=Z,15nm,0.7s,SNR=11						
336A	Riesel	80.53	54	P	P	18 58 29.7	+0.2
	baz=319						
138A	Matatall Enter	80.53	52	P	P	18 58 29.6	+0.2
	baz=320						
RETA	Reutte	80.54	335	i P	P	18 58 29.9	+0.6
	comp=Z,18nm,1.1s,SNR=12						
ACSO	Alum Creek Sta	80.55	40	eP	P	18 58 28.8	-0.6
	comp=Z,40nm,0.7s						
435B	Jarrell	80.56	55	P	P	18 58 29.8	+0.1
	baz=319						
MOTA	Moosalm	80.56	334	i P	P	18 58 29.9	+0.4
	comp=Z,16nm,0.7s,SNR=21						
Z39A	Irene McRaven,	80.58	51	P	P	18 58 30.1	+0.4
	baz=320						
ALLY	Alegheny Colle	80.60	37	eP	P	18 58 29.3	-0.4
	comp=Z,27nm,0.7s						
534A	Blanco	80.62	56	P	P	18 58 29.9	-0.1
	baz=319						
633A	Saathoff Ranch	80.64	57	P	P	18 58 30.3	+0.2
	baz=319						
WCI	Wyandotte Cave	80.66	43	eP	P	18 58 30.3	+0.2
WCI				pmax	pmax		
	comp=Z,34nm,1.2s						
WCI	Wyandotte Cave	80.66	43	eP	P	18 58 29.6	-0.5
	comp=Z,34nm,1.2s						
ABTA	Abfaltersbach	80.67	333	i P	P	18 58 30.7	+0.6
	comp=Z,8.7nm,1.0s,SNR=7.8						
VISS	Visnje	80.76	331	i P	P	18 58 30.2	-0.3
HAWK	Haweek	80.87	311	eP	P	18 58 33.2	+1.8
BOJS	Bojanci	80.89	331	i P	P	18 58 31.1	0.0
ECH	Echery	80.89	337	eP	P	18 58 31.5	+0.4
M54A	Oil Creek Stat	80.92	37	P	P	18 58 31.1	-0.3
	baz=327						
Y41A	Eaglette Beard	80.92	50	P	P	18 58 31.7	+0.1
	baz=321						
JAVS	Javornik	80.94	332	i P	P	18 58 31.1	-0.4
FETA	Feichten	80.97	335	i P	P	18 58 32.3	+0.6
	comp=Z,17nm,1.2s,SNR=6.5						
DAVA	Damuels	80.98	335	i P	P	18 58 32.2	+0.4
	comp=Z,16nm,1.1s,SNR=6.3						
Z40A	Long Farm, Mag	80.99	51	P	P	18 58 32.0	+0.2
	baz=321						
436A	Wall Ranch, Ga	81.02	55	P	P	18 58 31.9	-0.1
	baz=319						
TRI	Trieste	81.20	332	eP	P	18 58 32.4	-0.3
TRI				pmax	pmax		
	comp=Z,30nm,1.3s						
TRI	Trieste	81.20	332	eP	P	18 58 31.6	-1.1
	comp=Z,30nm,1.3s						
MOF	Molkenrain	81.23	337	eP	P	18 58 33.5	+0.5
N54A	Moraine State	81.24	37	P	P	18 58 32.9	-0.1
	baz=327						
TAOE	Nuku Hiva Isla	81.36	113	eLR	LR	19 23 57.5	
	comp=Z,346nm,29.0s						
140A	Cam and Jess,	81.37	51	P	P	18 58 34.6	+0.7
	baz=321						
536A	Bastrop	81.39	55	P	P	18 58 34.3	+0.3
	baz=319						
338A	Crockett	81.40	53	P	P	18 58 34.4	+0.3
	baz=320						
FUORN	Ofenpass-Fuorn	81.47	335	eP	P	18 58 35.4	+0.8
	comp=Z,19nm,0.9s						
635A	Leesville	81.50	56	P	P	18 58 35.5	+0.8
	baz=319						
WVT	Waverly	81.60	45	eP	P	18 58 35.1	+0.1
WVT				pmax	pmax		
	comp=Z,10.0nm,0.8s						
WVT	Waverly	81.60	45	eP	P	18 58 34.7	-0.4
	comp=Z,10nm,0.8s						
ZALF	Zalf	81.62	310	eP	P	18 58 30.8	-4.5
SKO	Skopje	81.68	325	i P	P	18 58 36.1	+0.7
LOMF	Lomont	81.77	337	eP	P	18 58 36.5	+0.6
VAY	Valandovo	81.78	324	i P	P	18 58 36.4	+0.5
KNT	Kendrikon	81.78	324	P	P	18 58 36.1	+0.1
KNT	Kendrikon	81.78	324	P	P	18 58 36.1	+0.1
KNT	Kendrikon	81.78	324	P	P	18 58 36.1	+0.1
TUE	Stuetta	81.87	335	eP	P	18 58 37.1	+0.5
	comp=Z,17nm,0.8s						
LIA	Limnos Island	81.89	322	P	P	18 58 36.7	+0.2
LIA	Limnos Island	81.89	322	P	P	18 58 36.7	+0.2
933A	Laredo	81.96	58	P	P	18 58 38.4	+1.3
	baz=319						
834A	Tilden	82.00	57	P	P	18 58 38.5	+1.2
	baz=319						
OXF	Oxford	82.09	47	eP	P	18 58 37.0	-0.6
OXF				pmax	pmax		
	comp=Z,56nm,1.2s						
OXF	Oxford	82.09	47	eP	P	18 58 37.0	-0.6
	comp=Z,56nm,1.2s						
SALA	Sala	82.10	310	eP	P	18 58 32.8	-5.2
PDG	Podgorica	82.13	327⇑	iP	P	18 58 37.3	-0.4
736A	Circle Diamond	82.23	56	P	P	18 58 39.7	+1.2
	baz=320						
PLAL	Pickwick Lake	82.39	46	eP	P	18 58 38.2	-1.0
	comp=Z,11nm,0.6s						
LMN	Caledonia Moun	82.40	25	eP	P	18 58 38.9	-0.2
	comp=Z,11nm,0.6s						
O56A	Blue Knob Stat	82.41	37	P	P	18 58 39.1	-0.2
	baz=328						
ASF	Jabal al Asfar	82.43	309	P	P	18 58 40.5	+0.9
	comp=Z,3.3nm,0.6s,baz=56,slow=1.2,SNR=6.1						
PPT2	Papeete2	82.47	125	eLR	LR	19 24 32.8	
	comp=Z,375nm,24.0s						
PAIG	Paliouri	82.50	323	P	P	18 58 39.3	-0.4
PAIG	Paliouri	82.50	323	eP	P	18 58 39.3	-0.4
PAIG	Paliouri	82.50	323	eP	P	18 58 39.3	-0.4
Y45A	Yeager Farm, C	82.53	48	P	P	18 58 39.9	0.0
	baz=322						
SENIN	Lac Senin/Sane	82.55	336	eP	P	18 58 40.6	+0.5
	comp=Z,17nm,1.4s						
MMAI	Mount Meron Ar	82.57	311	P	P	18 58 41.2	+0.9
	comp=Z,5.4nm,0.4s,baz=50,slow=6.7,SNR=27						
MMAI				LR	LR	19 40 59.9	
	comp=Z,154nm,18.2s,baz=30,slow=40						
CABF	La Chapelle	82.65	337	eP	P	18 58 40.4	-0.1
CABF				pmax	pmax		
	comp=Z,17nm,1.3s						
OHR	Ohrid	82.67	325	i P	P	18 58 40.5	-0.2
FNA	Florina	82.72	325	eP	P	18 58 40.8	-0.1
034A	Hebbronville	82.72	58	P	P	18 58 41.8	+0.7
	baz=319						
737A	Port Lavaca	82.74	56	P	P	18 58 40.9	-0.2
	baz=320						
Y46A	Houston	82.86	47	P	P	18 58 41.7	0.0
	baz=323						
N59A	State Game Lan	82.99	35	P	P	18 58 41.8	-0.5
	baz=329						
342A	Flagon Creek P	83.02	51	P	P	18 58 43.7	+1.2
	baz=321						
NEST	Nestorio	83.16	325	P	P	18 58 43.3	0.0
XOR	Xorichti	83.17	323	P	P	18 58 42.4	-0.9
XOR	Xorichti	83.17	323	P	P	18 58 42.4	-0.9
AVF	Avril sur Loir	83.19	339	eP	P	18 58 43.2	+0.1
AVF				pmax	pmax		
	comp=Z,13nm,0.7s						
SWET	Sewanee	83.25	45	eP	P	18 58 43.0	-0.7
	comp=Z,6.3nm,0.6s						
PENT	Pentalofos	83.31	325	P	P	18 58 43.9	-0.2
Y47A	UCPARC, Winfie	83.36	47	P	P	18 58 44.0	-0.3
	baz=323						
LUPA	Lehigh Univers	83.42	35	eP	P	18 58 43.3	-1.2
	comp=Z,67nm,1.9s						
LPL	La Plagne	83.48	336	eP	P	18 58 45.4	+0.4
LPL				pmax	pmax		
	comp=Z,10.0nm,0.6s						
LPG	La Plagne	83.50	336	eP	P	18 58 45.6	+0.5
LPG				pmax	pmax		
	comp=Z,21nm,0.8s						
CPCT	Cooper Cave	83.74	43	eP	P	18 58 45.5	-0.7
	comp=Z,5.8nm,0.7s						
146A	Union	83.75	48	P	P	18 58 46.8	+0.5
	baz=323						
245A	Little AP, Sta	83.79	49	P	P	18 58 46.9	+0.4
	baz=322						
AGG	Agios Georgios	83.82	323	eP	P	18 58 45.8	-0.8
AGG				pmax	pmax		
	comp=Z,29nm,1.0s						
AGG	Agios Georgios	83.82	323	eP	P	18 58 45.5	-1.1
	comp=Z,29nm,1.0s						
PLDF	La Plantade	83.89	339	eP	P	18 58 48.2	+1.4
TKL	Tuckaleechee C	83.92	43	eP	P	18 58 46.9	-0.2
TKL				pmax	pmax		
	comp=Z,9.0nm,0.7s						
TKL	Tuckaleechee C	83.92	43	eP	P	18 58 46.6	-0.5
	comp=Z,8.9nm,0.6s						
Z48A	Northport	83.92	47	P	P	18 58 46.7	-0.4
	baz=323						
AGO	Saint Agoulin	83.93	339	eP	P	18 58 49.3	+2.3
BLA	Blacksburg	84.17	40	eP	P	18 58 48.2	-0.2
BLA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
BLA	Blacksburg	84.17	40	eP	P	18 58 48.2	-0.2
	comp=Z,9.7nm,0.8s						
PYM	Petit Puy Mans	84.24	339	eP	P	18 58 49.8	+1.1
DSF	Desfina	84.26	323	P	P	18 58 47.3	-1.5
DSF	Desfina	84.26	323	eP	P	18 58 47.3	-1.5
ORIF	Oris-en-Rattie	84.27	337	eP	P	18 58 49.3	+0.5
ORIF				pmax	pmax		
	comp=Z,14nm,0.6s						
SSB	Saint Sauveur	84.29	338	eP	P	18 58 49.1	+0.2
SSB				pmax	pmax		
	comp=Z,13nm,0.9s						
SSB	Saint Sauveur	84.29	338	eP	P	18 58 48.9	0.0
	comp=Z,13nm,0.9s						
AQU	L'Aquila	84.30	331	eP	P	18 58 50.3	+1.3
AQU				pmax	pmax		
	comp=Z,29nm,1.1s						
AQU	L'Aquila	84.30	331	eP	P	18 58 50.3	+1.3
	comp=Z,29nm,1.1s						
ANX	Ano Chora	84.36	323	P	P	18 58 48.5	-0.9
LRAL	Lakeview Retre	84.48	47	eP	P	18 58 48.8	-1.2
	comp=Z,5.1nm,0.8s						
MATE	Matera	84.63	328⇑	iP	P	18 58 50.5	-0.1
LAKA	Lakka	84.63	323	P	P	18 58 50.2	-0.5
VIVF	Saint-Julien-I	84.65	338	eP	P	18 58 51.2	+0.5
VIVF				pmax	pmax		
	comp=Z,12nm,1.0s						
LBL	Lubilhac	84.67	339	eP	P	18 58 53.0	+2.2
DID	Didima	84.72	322	P	P	18 58 49.1	-2.1
DID	Didima	84.72	322	eP	P	18 58 49.1	-2.1
KLV	Kalavryta, Ach	84.72	323	P	P	18 58 50.2	-1.0
DRO	Drossia	84.99	323	P	P	18 58 51.8	-0.7
347A	Saraland	84.99	49	P	P	18 58 53.0	+0.4
	baz=323						
CAF	Calviac	85.25	339	eP	P	18 58 53.7	0.0
CAF				pmax	pmax		
	comp=Z,8.0nm,0.6s						
EIL	Elat	85.43	309	LR	LR	19 43 19.6	
	comp=Z,69nm,18.1s,baz=52,slow=40						
KMSC	Kings Mountain	85.48	41	P	P	18 58 54.7	-0.3
	baz=326						
KMSC	Kings Mountain	85.48	41	eP	P	18 58 54.3	-0.7
	comp=Z,9.1nm,0.6s						
VLI	Veliai	85.51	321	P	P	18 58 51.9	-3.2
CUC	Castrocucco	85.53	328	eP	P	18 58 53.8	-1.4
	comp=Z,6.2nm,1.1s						
LAST	Lasithi	85.69	319⇑	iP	P	18 58 56.5	+0.4
LAST	Lasithi	85.69	319	P	P	18 58 55.9	-0.2
LAST	Lasithi	85.69	319	eP	P	18 58 55.4	-0.7
	comp=Z,82nm,0.8s						
448A	Bay Minette	85.72	48	P	P	18 58 56.8	+0.6
	baz=323						
IDI	Anoyia	85.85	319	P	P	18 58 55.7	-1.2
	comp=Z,12nm,0.6s,baz=27,slow=12,SNR=19						
IDI	Anoyia	85.85	319⇑	iP	P	18 58 56.9	0.0
IDI	Anoyia	85.85	319	eP	P	18 58 54.2	-2.7
	comp=Z,69nm,1.5s						
PYL	PYLOS	85.87	322	P	P	18 58 55.5	-1.4
TIP	Timpagrande	85.89	327⇑	iP	P	18 58 57.3	+0.3
TIP	Timpagrande	85.89	327	eP	P	18 58 56.0	-1.0
	comp=Z,19nm,1.1s						
GOGA	Godfrey	85.91	44	eP	P	18 58 57.1	0.0
GOGA				pmax	pmax		
	comp=Z,6.0nm,0.6s						
GOGA	Godfrey	85.91	44	eP	P	18 58 56.5	-0.5
	comp=Z,5.8nm,0.6s						
SIVA	Sivas	86.11	319⇑	iP	P	18 58 59.1	+1.0
TBI	Tubuai	87.17	129	eLR	LR	19 26 15.8	
	comp=Z,253nm,33.8s						
TBI	Tubuai	87.17	129	eT	T	20 35 05.8	
	comp=Z,28nm,0.2s						
TIGA	Tifton	87.46	45	P	P	18 59 05.3	+0.6
	baz=325						
VAE	Valguarnera	88.26	328	LR	LR	19 46 01.5	
	comp=Z,77nm,19.4s,baz=3.5,slow=40						
ES19	SONSECA Array	91.58	342	eP	P	18 59 23.1	-0.8
KEST	Kesra	91.62	331	P	P	18 59 25.9	+1.7
	comp=Z,6.2nm,0.8s,baz=85,slow=1.9,SNR=6.8						
KEST				LR	LR	19 46 28.7	
	comp=Z,53nm,18.1s,baz=258,slow=39						
KEST	Kesra	91.62	331	eP	P	18 59 26.6	+2.3
	comp=Z,19nm,1.4s						
ESDC	Sonseca Array	91.62	342	P	P	18 59 22.2	-1.9
	comp=Z,0.5nm,0.5s,baz=17,slow=3.3,SNR=5.5						
RKT	Rikitea	95.35	118	eLR	LR	19 30 09.8	
	comp=Z,281nm,33.8s						
TOA1	Torodi Ar. Sit	115.02	328	ePKiKP	PKiKP	19 04 57.2	-1.0
TOA1				ePP	PP	19 05 56.3	-0.8
TORD	Torodi Ar. Bea	115.02	328	PKP	PKPdf	19 04 57.2	-1.0
	comp=Z,0.7nm,0.5s,baz=49,slow=1.8,SNR=6.7						
TORD				PP	PP	19 05 56.3	-0.8
	comp=Z,0.6nm,0.6s,baz=6.3,slow=7.1,SNR=3.6						
DBIC	Dimbokro	123.30	333	PKP	PKPdf	19 05 13.4	-0.8
	comp=Z,4.7nm,0.7s,baz=1.3,slow=1.8,SNR=9.5						
VNDA	Vanda	123.89	178	PKP	PKPdf	19 05 12.9	-0.4
	comp=Z,1.9nm,0.7s,baz=339,slow=5.1,SNR=8.4						
MAW	Mawson	131.71	211	ePKIKP	PKPdf	19 05 32.2	+3.8
MAW	Mawson	131.71	211	ePKPdf	PKPdf	19 05 32.2	+3.8
SAML	Samuel	131.86	50	ePKPdf	PKPdf	19 05 29.8	-0.7
LPAZ	La Paz	134.94	62	PKP	PKPdf	19 05 37.8	+0.9
	comp=Z,1.0nm,0.8s,baz=346,slow=4.8,SNR=3.7						
BOSA	Boshof	135.28	274	PKP	PKPdf	19 05 37.4	+0.8
	comp=Z,1.1nm,0.6s,baz=106,slow=1.6,SNR=4.5						
QSPA	South Pole Qui	136.24	180	ePKPpre	PKPpre	19 05 30.1	
QSPA				ePKPdf	PKPdf	19 05 37.9	+0.8
SYO	Syowa Base	140.41	211⇓	ePP	PP	19 08 45.0	+0.5
PLCA	Paso Flores	148.73	95	PKP	PKPdf	19 06 00.2	+0.2
	comp=Z,14nm,0.6s,baz=299,slow=2.6,SNR=11						
PLCA				PKPbc	PKPbc	19 06 04.1	+0.2
	comp=Z,14nm,0.6s,baz=295,slow=3.7,SNR=68						
PLCA	Paso Flores	148.73	95	PKIKP	PKPdf	19 06 00.2	+0.2
PLCA						19 06 04.1	
PLCA				pmax	pmax		
	comp=Z,14nm,0.6s						
PLCA				pmax	pmax		
	comp=Z,14nm,0.6s						
PLCA	Paso Flores	148.73	95	ePKPbc	PKPbc	19 06 04.3	+0.4
CPUP	Villa Florida	149.06	60	PKPbc	PKPbc	19 06 05.0	0.0
	comp=Z,8.2nm,0.7s,baz=327,slow=3.1,SNR=18						
CPUP	Villa Florida	149.06	60	PKP2	PKPbc	19 06 05.0	0.0
CPUP				pmax	pmax		
	comp=Z,8.0nm,0.7s						
CPUP	Villa Florida	149.06	60	ePKPbc	PKPbc	19 06 04.7	-0.3
NVL	N'lazarevskaya	149.18	204	ePKP2	PKPbc	19 06 04.2	+0.3
NVL				pmax	pmax		
	comp=Z,1.0nm,1.0s						
CHRN	Cochrane	149.61	108	ePKPbc	PKPbc	19 06 06.3	+0.6
SNAA	Sanae	152.16	197	PKP	PKPbc	19 06 10.7	-0.3
SNAA	Sanae	152.16	197	ePKIKP	PKPbc	19 06 10.6	-0.5
SNAA	Sanae	152.16	197	ePKPbc	PKPbc	19 06 10.8	-0.3
VNA2	Neumayer--Watz	153.62	195	PKP	PKPbc	19 06 14.1	-0.1
	baz=44,slow=0.8						
VNA3	Neumayer Olymp	153.73	193	PKP	PKPbc	19 06 14.1	-0.4
VNA1	Neumayer--Stat	154.01	195	PKP	PKPbc	19 06 15.2	+0.1

*IDC **20** 18:52:01.8±0.9, 29°.85N×69°.73E, h0km, mb3.8/7, mb1 3.9/8, mb1mx3.5/58, mbtmp3.8/8, ML3.1/1, Error ellipse: s-maj=26.3km s-min=21.5km az=19.0*

ISC 20 18:52:03.4±0.8, 29°.7N±0°.1×69°.88E±0°.05, h12km, n14, σ2°94/19, mb3.8/7, Pakistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KHET	Khetri	5.44	106	eP	Pb	18 53 36.5	-1.9
KHET				eS	Sg	18 54 58.3	+0.2
KHET				IAML		18 55 10.8	
	comp=E,23nm,1.0s						
KHET				IAML		18 55 12.8	
	comp=N,26nm,0.7s						
KUDL	Kundal	5.99	103	eP	Pg	18 53 59.1	+0.9
KUDL				eS	Sg	18 55 20.5	+4.7
KUDL				IAML		18 55 29.8	
	comp=N,16nm,1.1s						
KUDL				IAML		18 55 31.0	
	comp=E,14nm,1.2s						
SMLA	Simla	6.46	75	eP	Pn	18 53 39.8	+1.5
SMLA				eS	Sn	18 54 51.5	-0.4
SMLA				IAML		18 55 39.0	
	comp=N,39nm,0.5s						
SMLA				IAML		18 55 40.2	
	comp=E,40nm,1.1s						
SONA	Sohna	6.47	101	eS	Sg	18 55 30.6	-0.6
SONA				IAML		18 55 46.6	
	comp=N,25nm,0.5s						
SONA				IAML		18 55 46.7	
	comp=E,16nm,0.3s						
NDI	New Delhi	6.49	97	ex	Sn	18 54 46.0	-6.8
NDI				eS	Sg	18 55 26.0	-5.8
JOSI	Joshimath	8.43	82	eP	Pn	18 54 09.3	+3.7
JOSI				ex	Sn	18 55 40.3	-0.4
WSAR	Wadi Sarin	11.95	240	Pn	Pn	18 54 52.2	-1.4
	comp=E,0.1nm,0.3s,baz=104,slow=9.5,SNR=2.3						
WSAR				Sn	Sn	18 56 55.3	-12
	comp=E,0.1nm,0.3s,baz=180,slow=19,SNR=2.4						
AKTO	Aktyubinsk	22.57	340	P	P	18 57 01.9	-1.6
	comp=E,2.8nm,0.5s,baz=114,slow=3.1,SNR=2.6						
ZALV	Zalesovo Beam	26.56	20	P	P	18 57 40.1	-1.0
	comp=E,0.6nm,0.3s,baz=219,slow=9.8,SNR=4.0						
CMAR	Chiang Mai Arr	28.71	106	P	P	18 58 03.0	+2.3
	comp=E,0.8nm,0.8s,baz=290,slow=11,SNR=4.2						
KSRS	Korea Array	48.33	65	P	P	19 00 44.9	+0.1
	comp=E,0.5nm,0.6s,baz=266,slow=8.8,SNR=3.3						
TORD	Torodi Ar. Bea	64.76	271	P	P	19 02 41.8	-0.4
	comp=E,0.4nm,0.4s,baz=60,slow=6.2,SNR=7.4						
WRA	Warramunga Arr	79.29	120	P	P	19 04 10.4	+1.2
	comp=E,0.6nm,0.6s,baz=321,slow=5.1,SNR=7.9						
ASAR	Alice Springs	81.21	123	P	P	19 04 20.9	+1.4
	comp=E,0.7nm,0.5s,baz=305,slow=5.8,SNR=20						

*NEIC **20** 19:02:34.9, 55°.35N×134°.71W, h20km, ML2.7(OTT), After OTT.*

PGC 20 19:02:34.9±0.1, 55°.35N×134°.71W, h20km, ML2.7/5, 192km Sse of Sitka, Ak Southeastern Alaska, Southeastern Alaska

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRAG	Craig	0.91	82	ePg	Pb	19 02 51.6	-0.3
CRAG				eSg	Sn	19 03 05.2	+0.2
WRAK	Wrangell Islan	1.71	50	ePn	Pn	19 03 03.1	-0.3
WRAK				eSn	Sb	19 03 26.0	-0.4
VIB	Van Inlet	2.46	148	Pn	Pn	19 03 13.5	-0.4
VIB				Sn	Sn	19 03 42.7	-0.6
VIB				Sg	Sb	19 03 51.9	+3.6
VIB	Van Inlet	2.46	148	Pn	Pn	19 03 13.5	-0.4
VIB				Sn	Sn	19 03 42.7	-0.6
VIB				Sg	Sb	19 03 51.9	+3.6
DIB	Dawson Inlet,	2.52	148	Pn	Pn	19 03 14.3	-0.3
DIB				Sn	Sn	19 03 44.2	-0.5
DIB				Sg	Sb	19 03 52.8	+2.8
DIB	Dawson Inlet,	2.52	148	Pn	Pn	19 03 14.3	-0.3
DIB				Sn	Sn	19 03 44.2	-0.5
DIB				Sg	Sb	19 03 52.8	+2.8
MOBC	Moresby Island	2.73	143	Pn	Pn	19 03 17.1	-0.5
MOBC				Sn	Sn	19 03 51.4	+1.3
MOBC				Sg	Sb	19 04 00.4	+4.2
MOBC	Moresby Island	2.73	143	Pn	Pn	19 03 17.1	-0.5
MOBC				Sn	Sn	19 03 51.4	+1.3
MOBC				Sg	Sb	19 04 00.4	+4.2
BNB	Barry Inlet	3.29	147	Pn	Pn	19 03 25.2	0.0
BNB				Sg	Sb	19 04 16.4	+4.4
BNB	Barry Inlet	3.29	147	Pn	Pn	19 03 25.2	0.0
BNB				Sg	Sb	19 04 16.4	+4.4
DLBC	Dease Lake	4.02	38	Sg	Sb	19 04 39.7	+6.7

*IDC **20** 19:07:48.5±2.0, 33°.30S×179°.19W, h0km, mb3.6/2, mb1 3.8/3, mb1mx3.6/36, mbtmp3.6/3, ML3.4/1, Error ellipse: s-maj=44.1km s-min=35.7km az=95.0*
*ISCJB **20** 19:07:52.8±2.3, 33°.40S±0°.09×179°.2W±0°.4, h48km, mb3.5/2, Error ellipse: s-maj=45.1km s-min=12.4km az=6.8*

ISC 20 19:07:55.0±1.8, 33°.3S±0°.1×179°.3W±0°.3, h48km, n11, σ0°74/14, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MXZ	Matakaoa Point	4.66	205	PN	Pn	19 09 02.3	-0.5
WMGZ	Waiomatatini S	4.86	202	PN	Pn	19 09 05.7	+0.2
HAZ	Te Kaha	5.03	208	PN	Pn	19 09 08.1	+0.3
PUZ	Puketiti	5.14	203	PN	Pn	19 09 08.4	-1.0
PUZ				SN	Sn	19 10 07.9	+0.4
MWZ	Matawai	5.63	207	PN	Pn	19 09 15.6	-0.5
URZ	Urewera	5.73	210	Pn	Pn	19 09 16.2	-1.3
	1.0nm,0.3s,baz=273,slow=4.6,SNR=17						
URZ				Sn	Sn	19 10 22.7	+0.8
	2.1nm,0.3s,baz=176,slow=14,SNR=6.3						
URZ	Urewera	5.73	210	PN	Pn	19 09 16.2	-1.3
URZ				SN	Sn	19 10 22.1	+0.2
ASAR	Alice Springs	41.99	271	P	P	19 15 42.0	+0.4
	0.5nm,0.5s,baz=108,slow=7.5,SNR=17						
WRA	Warramunga Arr	43.24	276	P	P	19 15 51.9	0.0
	0.4nm,0.3s,baz=117,slow=7.7,SNR=11						
FINES	FINESS Array B	147.49	338	PKPbc	PKPbc	19 27 33.0	+0.1
	2.2nm,1.0s,baz=40,slow=2.4,SNR=3.8						
TORD	Torodi Ar. Bea	159.88	183	PKPab	PKPab	19 28 28.7	+0.2
	0.2nm,0.4s,baz=165,slow=6.0,SNR=2.9						

IDC 20 19:14:10.6±757.0, 46°.11N×62°.93E, h0km, Error ellipse: s-maj=282.9km s-min=112.3km az=150.0, Western Kazakhstan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I31KZ	AKTYUBINSK INF	5.40	325	i		19 48 50.0	
	baz=140,slow=328,SNR=26						
I46RU	ZALESOVO INFRA	16.06	53	i		20 55 30.0	
	baz=249,slow=316,SNR=1.6						
I43RU	DUBNA INFRASONI	9.11	313	i		21 13 30.0	
	baz=114,slow=325,SNR=1.5						

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baz=80,slow=17,SNR=2.8
SGSI Sangihe 11.19 356 P **Pn 19 21 59.0 -2.3**
2μm,0.9s,24μm
JAGI Jajag, Banyuwa 12.02 265 P **Pn 19 22 10.4 -1.0**
36nm,1.3s
GMJI Gumukmas 12.71 266 P **Pn 19 22 18.8 -0.9**
35nm,2.1s
WRA Warramunga Arr 14.60 148 P **P 19 22 41.2 -0.1**
5.8nm,0.3s,baz=327,slow=12,SNR=167
WRA S **S 19 25 19.3 -2.1**
0.3nm,0.3s,baz=326,slow=21,SNR=9.5
GENI Genyem 14.71 71 P **Pn 19 22 43.8 +0.1**
53nm,0.5s
JAY Jayapura 15.24 72 P **Pn 19 22 51.0 +1.0**
0.2nm,0.3s,baz=261,slow=21,SNR=8.0
JAY Jayapura 15.24 72 P **P 19 22 47.6 -0.8**
19nm,0.8s
ASAR Alice Springs 17.63 156 P **P 19 23 15.4 +1.2**
14nm,0.3s,baz=334,slow=11,SNR=909
ASAR S **S 19 26 24.4 +2.7**
0.3nm,0.3s,baz=319,slow=18,SNR=11
CTA Charters Tower 23.04 125 P **P 19 24 09.2 +1.1**
7.9nm,0.6s,baz=302,slow=12,SNR=14
STKA Stephens Creek 28.11 151 P **P 19 24 54.3 +0.9**
4.4nm,0.4s,baz=333,slow=7.9,SNR=29
CMAR Chiang Mai Arr 37.33 314 P P 19 26 18.8 +5.7
0.3nm,0.4s,baz=147,slow=6.8,SNR=4.8
MKAR Makanchi Array 66.70 329 P **P 19 29 49.0 +1.2**
0.4nm,0.6s,baz=121,slow=8.1,SNR=4.9
ZALV Zalesovo Beam 70.48 335 P **P 19 30 12.5 +1.7**
0.5nm,0.4s,baz=141,slow=7.3,SNR=3.0
KURBB Kurchatov Arra 71.08 330 P **P 19 30 16.7 +2.3**
0.1nm,0.4s
VNDA Vanda 72.38 172 P **P 19 30 21.8 +0.1**
0.7nm,0.4s,baz=316,slow=5.8,SNR=6.5
NRIK Noril'sk 81.22 347 P P 19 31 16.5 +5.7
4.5nm,0.6s,baz=123,slow=8.0,SNR=4.0
CPUP Villa Florida 146.14 174 PKPbc **PKPbc 19 38 34.7 +0.3**
2.3nm,0.8s,baz=236,slow=2.6,SNR=4.0

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*ISCJB **20** 19:20:33.7±0.5,33°.52S±0°.04×72°.20W±0°.04,h10km, mb4.5/6,Error ellipse: s-maj=5.9km s-min=4.7km az=139.9*
*IDC **20** 19:20:33.8±1.5,33°.58S×71°.92W,h0km,mb3.8/2, mb1 3.9/4,mb1mx3.6/31,mbtmp3.8/4,ML3.7/2,MS3.4/3, Ms1 3.3/3,ms1mx3.0/34,Error ellipse: s-maj=73.3km s-min=22.6km az=95.0*
*NEIC **20** 19:20:35.3±3.4,33°.43S×72°.09W,h12km±19km,mb4.8/6, Error ellipse: s-maj=27.7km s-min=8.5km az=85.0*
*GUC **20** 19:20:37.3±0.7,33°.58S×71°.93W,h20km±15km,ML3.8*
ISC 20 19:20:33.8±1.7,33°.49S±0°.04×72°.09W±0°.06,h6km±10km, n51,σ1°.69/56,mbΔ.5/6,6D,Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
CHPI	**Pichilemu**	**0.90**	**175**	*eP*			**Pn**	**19 20 52.9**	**-0.1**
CHPI				*eS*			**Sb**	**19 21 04.5**	**+0.5**
ROC1	**El Roble**	**1.04**	**61**	*eP*			**Pn**	**19 20 56.2**	**+1.0**
ROC1				*eS*			**Sn**	**19 21 11.0**	**+0.8**
ROC1	**El Roble**	**1.04**	**61**	*eP*	g		**Pn**	**19 20 55.4**	**+0.3**
ROC1				*eS*	n		**Sb**	**19 21 07.3**	**-1.0**
ROCH	**El Roble**	**1.04**	**61**	*eP*			**Pn**	**19 20 55.5**	**+0.2**
ROCH				*eS*			**Sn**	**19 21 09.4**	**-0.9**
ROCH				IAML				19 21 11.3	
comp=N,4μm,0.3s									
RCDM	**Rinconada Maip**	**1.08**	**90**	⇓*iP*			**Pn**	**19 20 55.2**	**-0.2**
RCDM				*i* S			**Sb**	**19 21 08.9**	**-0.3**
ANTU	**Antumapu**	**1.22**	**94**	⇓*iP*			**Pg**	**19 20 58.0**	**+0.8**
ANTU				*eS*			**Sg**	**19 21 13.4**	**+0.3**
ANTU				IAML				19 21 14.8	
comp=E,6μm,0.4s									
PEL	**Peldehue**	**1.23**	**74**	⇓*iP*			**Pg**	**19 20 58.5**	**+1.1**
PEL				*i* S			**Sn**	**19 21 14.3**	**-0.3**
PEL				IAML				19 21 18.9	
comp=N,5μm,0.5s									
CLCH	**Cerro Calan**	**1.31**	**86**	⇓*iP*			**Pg**	**19 20 59.6**	**+0.8**
CLCH				*i* S			**Sg**	**19 21 16.3**	**+0.5**
CLCH				IAML				19 21 18.6	
comp=E,5μm,0.8s									
AUSP	**Uspallata**	**2.61**	**62**	*eP*			**Pb**	**19 21 21.4**	**+0.3**
AUSP				*eS*			**Sg**	**19 21 56.8**	**-0.8**
RTLS	**Leoncito**	**2.90**	**55**	*eP*			**Pb**	**19 21 25.3**	**-0.9**
RTLS				*eS*			**Sg**	**19 22 04.8**	**-2.2**
RTCV	**Cerro Valdivia**	**3.41**	**63**	*eP*			**Pb**	**19 21 31.6**	**-3.0**
RTCV				*eS*			**Sg**	**19 22 21.7**	**-1.6**
RTLL	**Cerro Villicun**	**3.74**	**56**	*eP*			**Pb**	**19 21 37.2**	**-3.1**
RTLL				*eS*			**Sb**	**19 22 28.0**	**+2.0**
AMOG	**MOGNA**	**3.97**	**51**	*eP*			**Pn**	**19 21 38.0**	**+2.7**
AMOG				*eS*			**Sb**	**19 22 35.8**	**+3.2**
ACAN	**Cantantal**	**4.30**	**75**	*eP*			**Pn**	**19 21 43.0**	**+3.1**
ACAN				*eS*			**Sb**	**19 22 39.5**	**-2.6**
CANA	**Caviahue**	**4.47**	**169**	*eP*			Pb	19 21 47.9	-4.8
CANA				⇓*eS*			**Sg**	**19 22 58.1**	**+0.8**
LCO	**Las Campanas**	**4.62**	**15**	*ePn*			**Pn**	**19 21 45.2**	**+0.7**
LCO				*eSn*			**Sn**	**19 22 37.3**	**-1.3**
AGUA	**GUANDACOL**	**5.04**	**39**	*eP*			**Pn**	**19 21 53.5**	**+3.5**
AGUA				*eS*			**Sb**	**19 23 05.2**	**+1.8**
VCA	**Vinchina**	**5.79**	**36**	*eS*			**Sb**	**19 23 23.7**	**-1.4**
VCA				IAML				19 23 31.6	
comp=Z,101nm,0.5s									
TCA	**Tanti**	**6.70**	**73**	IAML				19 24 11.6	
comp=Z,41nm,0.5s									
PLCA	**Paso Flores**	**7.33**	**171**	Pn			**Pn**	**19 22 22.2**	**+0.7**
comp=Z,0.3nm,0.3s,baz=354,slow=10,SNR=9.1									
PLCA				Lg			Lg	19 24 20.9	
comp=Z,0.1nm,0.3s,baz=288,slow=19,SNR=2.3									
PLCA				LR			LR	19 25 23.8	
comp=Z,164nm,19.7s,baz=336,slow=40									
PLCA	**Paso Flores**	**7.33**	**171**	*ePn*			**Pn**	**19 22 22.8**	**+1.3**
PLCA				*eSg*			Sg	19 24 20.9	-8.3
CYA	**Choya**	**7.38**	**49**	IAML				19 23 58.9	
comp=Z,18nm,0.6s									
TRQA	**Tornquist**	**9.39**	**122**	*ePn*			**Pn**	**19 22 50.8**	**+1.0**
LVC	**Limon Verde**	**11.20**	**15**	LR			LR	19 27 51.6	
comp=Z,593nm,21.2s,baz=206,slow=39									
LVC	**Limon Verde**	**11.20**	**15**	*ePn*			**Pn**	**19 23 12.2**	**-2.6**
PB11	**IPOC Station P**	**13.85**	**10**	*ePn*			**Pn**	**19 23 51.7**	**+0.8**
CPUP	**Villa Florida**	**14.65**	**65**	LR			LR	19 30 21.3	
comp=Z,86nm,21.7s,baz=228,slow=40									
LPAZ	**La Paz**	**17.50**	**13**	P			**P**	**19 24 40.6**	**+0.3**
comp=Z,0.1nm,0.3s,baz=184,slow=9.4,SNR=6.3									
LPAZ	**La Paz**	**17.50**	**13**	*ePn*			**Pn**	**19 24 36.3**	**-2.8**
SIV	**San Ignacio**	**20.07**	**32**	P			Pn	19 25 08.0	-1.7
comp=Z,2.3nm,0.6s,baz=233,slow=5.4,SNR=4.9									
EFI	**East Falkland**	**20.84**	**155**	*eP*			Pn	19 25 18.1	-0.4
comp=Z,168nm,1.4s									
PTGA	**Pitinga**	**34.52**	**22**	*eP*			**P**	**19 27 22.1**	**-0.9**
comp=Z,3.2nm,0.8s									
RUSC	**La Rusia**	**39.18**	**358**	*eP*			**P**	**19 28 04.6**	**+1.4**
SNAA	**Sanae**	**52.07**	**158**	*eP*			**P**	**19 29 43.4**	**-0.7**
comp=Z,6.0nm,1.2s									
SDDR	**Presa de Saban**	**52.18**	**1**	*eP*			**P**	**19 29 48.2**	**+2.8**
comp=Z,22nm,1.5s									
QSPA	**South Pole Qui**	**56.74**	**180**	*eP*			**P**	**19 30 18.5**	**+0.2**
SYO	**Syowa Base**	**66.36**	**159**	⇓*ePcP*			**PcP**	**19 31 47.8**	**-4.9**
WVT	**Waverly**	**70.81**	**347**	*eP*			**P**	**19 31 51.2**	**+0.2**
comp=Z,5.8nm,0.9s									
TORD	**Torodi Ar. Bea**	**84.08**	**70**	P			**P**	**19 33 06.3**	**+0.4**
comp=Z,0.9nm,0.7s,baz=275,slow=4.9,SNR=5.4									
TOA1	**Torodi Ar. Sit**	**84.08**	**70**	*eP*			**P**	**19 33 06.3**	**+0.4**
comp=Z,22nm,2.0s									
WRA	**Warramunga Arr**	**121.18**	**209**	PKP			**PKPdf**	**19 39 28.3**	**0.0**
comp=Z,0.9nm,1.2s,baz=176,slow=1.3,SNR=3.9									
H11S2	**WAKE ISLAND Hyl**	**25.73**	**270**	T			T	21 58 29.6	
baz=118,slow=75,SNR=19									
H11S1	**WAKE ISLAND Hyl**	**25.74**	**270**	T			T	21 58 30.3	
baz=118,slow=75,SNR=12									
H11S3	**WAKE ISLAND Hyl**	**25.75**	**270**	T			T	21 58 30.9	
baz=118,slow=75,SNR=11									
H11N3	**WAKE ISLAND Hyl**	**26.13**	**271**	T			T	21 58 48.1	
baz=151,slow=74,SNR=4.9									
H11N2	**WAKE ISLAND Hyl**	**26.15**	**271**	T			T	21 58 58.8	
baz=123,slow=74,SNR=8.3									
BVAR	**Borovoye Array**	**146.94**	**42**	PKPbc			**PKPab**	**19 40 18.0**	**-0.2**
comp=Z,0.9nm,0.5s,baz=306,slow=3.5,SNR=8.4									
KURBB	**Kurchatov Arra**	**152.53**	**43**	PKPbc			**PKPbc**	**19 40 31.4**	**+0.8**
comp=Z,0.8nm,0.7s,baz=304,slow=2.9,SNR=8.0									
KURK	**Kurchatov**	**152.54**	**42**	PKPbc			**PKPbc**	**19 40 31.4**	**+0.8**
ZALV	**Zalesovo Beam**	**153.82**	**32**	PKPbc			**PKPbc**	**19 40 34.0**	**+0.6**
comp=Z,1.4nm,0.6s,baz=298,slow=3.5,SNR=6.7									
MKAR	**Makanchi Array**	**156.46**	**48**	PKPab			**PKPab**	**19 40 58.3**	**+0.3**
comp=Z,0.5nm,0.6s,baz=293,slow=4.3,SNR=6.0									

IDC 20 19:21:13.8±912.0,50°.94N×85°.70E,h0km,Error ellipse: s-maj=355.2km s-min=73.0km az=169.0,Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**3.06**	**350**	*i*				19 41 30.0	
baz=169,slow=316,SNR=14									
I31KZ	**AKTYUBINSK INF**	**17.51**	**279**	*i*				21 08 30.0	
baz=77,slow=322,SNR=0.8									

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*IDC **20** 19:22:12.7±1.2,25°.43N×143°.41E,h0km,mb3.9/10, mb1 4.0/10,mb1mx3.7/52,mbtmp3.9/10,MS3.6/2, Ms1 3.6/2,ms1mx2.7/69,Error ellipse: s-maj=43.0km s-min=24.9km az=76.0*
*ISCJB **20** 19:22:15.7±0.7,25°.36N±0°.09×143°.2E±0°.2,h33km, mb4.2/13,MS4.6/1,Error ellipse: s-maj=32.7km s-min=7.2km az=159.9*
*NEIC **20** 19:22:17.8±0.9,25°.40N×143°.31E,h35km,mb4.3/1,Error ellipse: s-maj=42.3km s-min=12.7km az=76.0*
ISC 20 19:22:17.8±0.9,25°.4N±0°.1×143°.2E±0°.3,h35km,n19, σ1°.55/20,mb4.1/13,Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JCJ	**Chichijima**	**1.93**	**331**	Pn			**Pn**	**19 22 47.0**	**-1.1**
43nm,0.3s,baz=290,slow=24,SNR=110									
JCJ				LR			LR	19 22 54.1	
comp=Z,33nm,19.7s,baz=213,slow=21									
JCJ				Sn			**Sn**	**19 23 11.1**	**-0.1**
CBIJ	**Chichi jima**	**1.93**	**331**	Pn			**Pn**	**19 22 47.0**	**-1.1**
CBIJ				Sn			**Sn**	**19 23 11.1**	**-0.1**
GUMO	**Guam**	**11.85**	**172**	Pn			**Pn**	**19 25 02.6**	**-1.8**
185nm,1.3s									
JNU	**Nakatsue**	**13.24**	**308**	LR			LR	19 29 51.7	
comp=Z,31nm,21.4s,baz=124,slow=34									
USRK	**Ussuriysk Ar.**	**20.86**	**337**	P			**P**	**19 26 53.9**	**-2.8**
0.6nm,0.6s,baz=147,slow=43,SNR=3.2									
KLR	**Kul'dur**	**25.42**	**342**	P			**P**	**19 27 42.0**	**-0.1**
1.3nm,0.7s,baz=144,slow=12,SNR=6.7									
WRAB	**Tennant Creek**	**45.88**	**192**	*eP*			**P**	**19 30 38.3**	**+1.3**
3.0nm,0.8s									
WRA	**Warramunga Arr**	**45.90**	**192**	P			**P**	**19 30 37.1**	**0.0**
1.0nm,0.6s,baz=8.1,slow=8.6,SNR=5.8									
ZALV	**Zalesovo Beam**	**51.38**	**320**	P			**P**	**19 31 18.4**	**-0.5**
0.3nm,0.4s,baz=110,slow=13,SNR=2.7									
MKAR	**Makanchi Array**	**52.28**	**311**	P			**P**	**19 31 27.1**	**+1.3**
0.2nm,0.5s,baz=91,slow=8.6,SNR=2.9									
KURK	**Kurchatov**	**54.84**	**315**	P			**P**	**19 31 42.9**	**-1.6**
KURBB	**Kurchatov Arra**	**54.90**	**315**	P			**P**	**19 31 42.9**	**-2.0**
1.5nm,0.7s,baz=92,slow=7.9,SNR=7.0									
BVAR	**Borovoye Array**	**59.92**	**318**	P			**P**	**19 32 21.6**	**+1.3**
1.8nm,0.6s,baz=90,slow=7.4,SNR=7.1									
ARU	**Arti**	**66.33**	**323**	P			**P**	**19 33 03.9**	**+1.1**
0.9nm,0.4s,baz=127,slow=4.4,SNR=4.3									
AKTO	**Aktyubinsk**	**67.90**	**317**	P			**P**	**19 33 14.5**	**+1.7**
0.6nm,0.5s,baz=89,slow=19,SNR=4.0									
YKA	**Yellowknife Ar**	**73.18**	**28**	P			**P**	**19 33 45.6**	**+0.9**
1μm,0.8s,baz=294,slow=5.4,SNR=5.3									
KBZ	**Khabaz**	**79.85**	**314**	P			**P**	**19 34 25.6**	**+2.7**
1.8nm,0.8s,baz=55,slow=5.6,SNR=5.5									
HFS	**Hagfors**	**85.34**	**337**	P			**P**	**19 34 49.9**	**-1.2**
1.9nm,0.8s,baz=191,slow=1.5,SNR=3.4									
HFS				LR			LR	20 15 02.3	
comp=Z,251nm,18.5s,baz=304,slow=37									
NOA	**NORSAR Array B**	**85.52**	**339**	P			**P**	**19 34 50.9**	**-1.2**
0.4nm,0.6s,baz=47,slow=4.5,SNR=2.6									

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*CSEM **20** 19:22:35.2,38°.63N×29°.27W,h10km,ML1.8*
PDA 20 19:22:35.2±1.0,38°.63N×29°.27W,h10km±6km,MD3.5, ML1.8,Error ellipse: s-maj=12.6km s-min=8.0km az=2.0, Azores Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
PCED	**Cedros**	**0.45**	**89**	*eP*			Pg	19 22 42.6	-1.4
PCED				*eS*			Sg	19 22 48.3	-1.6
PCED	**Cedros**	**0.45**	**89**	*eP*			Pg	19 22 42.6	-1.4
PCED				*eS*			Sg	19 22 48.3	-1.6
PCED				A			A	19 22 49.6	
40nm,0.2s									
CALA	**Caldeira**	**0.45**	**95**	*eS*			Sg	19 22 49.2	-0.8
CALA	**Caldeira**	**0.45**	**95**	*eS*			Sg	19 22 49.2	-0.8
PCAN	**Candelaria**	**0.64**	**104**	*eP*			Pg	19 22 45.4	-2.2
PCAN				*eS*			Sg	19 22 53.5	-2.4
PCAN	**Candelaria**	**0.64**	**104**	*eP*			Pg	19 22 45.4	-2.2
PCAN				*eS*			Sg	19 22 53.5	-2.4
PCAN				A			A	19 22 56.0	
36nm,0.1s									
PPNO	**Prainha do Nor**	**0.81**	**101**	*eP*			Pg	19 22 48.1	-2.6
PPNO				*eS*			Sg	19 22 57.6	-3.7
PPNO	**Prainha do Nor**	**0.81**	**101**	*eP*			Pg	19 22 48.1	-2.6
PPNO				*eS*			Sg	19 22 57.6	-3.7
PPNO				A			A	19 23 00.0	
24nm,0.2s									
ROSA	**Rosais**	**0.81**	**83**	*eP*			Pg	19 22 48.3	-2.6
ROSA				*eS*			Sg	19 22 57.7	-3.8
ROSA	**Rosais**	**0.81**	**83**	*eP*			Pg	19 22 48.3	-2.6
ROSA				*eS*			Sg	19 22 57.7	-3.8
ROSA				A			A	19 22 58.3	
36nm,0.1s									
PMAN	**Manadas**	**0.93**	**89**	*eS*			Sg	19 23 00.1	-5.0
PMAN	**Manadas**	**0.93**	**89**	*eS*			Sg	19 23 00.1	-5.0
PMAN				A			A	19 23 01.1	
9.3nm,0.1s									

NNC 20 19:27:34.6±3.7,37°.87N×72°.15E,h0km,mbΔ.1,mpv3.7, 5C-4D,Error ellipse: s-maj=32.6km s-min=12.6km az=154.0,Tajikistan

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**2.77**	**291**	⇑Pn			Pn	19 28 20.2	-0.2
15nm,0.3s									
DZET				⇓Sn			Sn	19 28 55.9	+1.3
99nm,0.5s									
MNAS	**Manas**	**4.62**	**3**	⇓Pn			Pn	19 28 46.3	+0.4
8.8nm,0.5s									
MNAS				⇑Sn			Sn	19 29 42.4	+2.1
13nm,0.6s									
AAK	**Ala-Archa**	**5.09**	**20**	⇓Pn			Pn	19 28 52.3	+0.1
8.9nm,0.7s									
AAK				⇑Sn			Sn	19 29 54.0	+2.2
5.1nm,0.8s									
KK31	**Karatay Array**	**5.38**	**347**	⇑Pn			Pn	19 28 55.6	-0.5
1.6nm,0.4s,baz=157,slow=10,SNR=40									
KK31				⇑Sn			Sn	19 29 57.7	-1.0
5.7nm,0.5s,baz=139,slow=27,SNR=5.4									
TKM2	**Tokmak 2**	**5.69**	**26**	⇓Pn			Pn	19 28 59.8	-0.8
5.8nm,0.7s									

NNC 20 19:31:16.6±1.6,38°.81N×70°.38E,h0km,mbΔ.5,mpv3.2, 6C-7D,Error ellipse: s-maj=20.3km s-min=3.7km az=156.0,Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**1.22**	**270**	⇓P			Pg	19 31 39.0	-0.9
22nm,0.3s									
DZET				⇑S			Sb	19 31 56.7	-0.1
60nm,0.4s									
MNAS	**Manas**	**4.01**	**23**	⇓Pn			Pn	19 32 19.1	-0.3
1.3nm,0.5s									
MNAS				⇓Sn			Sn	19 33 08.7	+1.5
11nm,0.5s									
KK31	**Karatay Array**	**4.29**	**1**	Pn			Pn	19 32 23.4	+0.3
0.5nm,0.3s,baz=177,slow=11,SNR=14									
KK31				⇑Pg			Pb	19 32 32.8	-0.1
0.5nm,0.2s,baz=188,slow=17,SNR=7.0									
KK31				⇓Lg			Lg	19 33 29.2	
16nm,0.8s,baz=183,slow=29,SNR=7.6									
AAK	**Ala-Archa**	**4.93**	**38**	⇓Pn			Pn	19 32 32.7	+0.6
2.7nm,0.3s									
AAK				⇑Sn			Sn	19 33 32.4	+2.4
11nm,1.2s									
TKM2	**Tokmak 2**	**5.70**	**42**	⇓Pn			Pn	19 32 43.6	+0.9
7.0nm,0.6s									
TKM2				⇑Sn			Sn	19 33 50.2	+1.3
3.4nm,0.7s									
AB31	**Akbulak array**	**12.85**	**328**	⇑Pn			Pn	19 34 17.2	-3.1
0.6nm,0.5s									
AB31				⇓Sn			Sn	19 36 37.9	-6.1
1.0nm,0.6s									
AKTO	**Aktyubinsk**	**14.55**	**327**	⇑Sn			Sn	19 37 22.2	-3.5
1.0nm,0.7s									

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*CSEM **20** 19:34:50.6,39°.08N×29°.11E,h6km,MDΔ.3*
ISK 20 19:34:50.6,39°.08N×29°.11E,h6km,MDΔ.3,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
TVSB	**Tavsanli**	**0.46**	**37**	*ePG*			Pg	19 34 59.9	+0.4
TVSB	**Tavsanli**	**0.46**	**37**	*ePg*			Pg	19 34 59.9	+0.4
KULA	**Kula-Manisa**	**0.66**	**212**	*ePG*			Pg	19 35 03.7	+0.3
KULA				*eSG*			Sb	19 35 13.1	-1.0
KULA	**Kula-Manisa**	**0.66**	**212**	*ePg*			Pg	19 35 03.7	+0.3
KULA				*eSg*			Sb	19 35 13.1	-1.0
KHL	**Karahalli**	**0.82**	**157**	*ePG*			Pb	19 35 07.0	-0.4
KHL	**Karahalli**	**0.82**	**157**	*ePg*			Pb	19 35 07.0	-0.3
ORLT	**Orhaneli**	**0.98**	**350**	*ePG*			Pg	19 35 09.3	-0.1
ORLT	**Orhaneli**	**0.98**	**350**	*ePg*			Pg	19 35 09.3	-0.1
AKS	**Akhisar**	**1.03**	**259**	*ePG*			Pb	19 35 10.9	+0.1
AKS	**Akhisar**	**1.03**	**259**	*ePg*			Pb	19 35 10.9	+0.1
BALB	**Balikesir**	**1.10**	**301**	*ePN*			Pn	19 35 12.8	+0.2
BALB				*eSN*			Sb	19 35 27.3	+0.6
BALB	**Balikesir**	**1.10**	**301**	*ePn*			Pn	19 35 12.8	+0.2
BALB				*eSn*			Sb	19 35 27.3	+0.6
CAVI	**Cavuskoy**	**1.26**	**27**	*ePN*			Pn	19 35 14.9	+0.2
CAVI	**Cavuskoy**	**1.26**	**27**	*ePn*			Pn	19 35 14.9	+0.1
IZI	**Iznik**	**1.29**	**13**	*ePN*			Pg	19 35 16.0	+0.7
IZI	**Iznik**	**1.29**	**13**	*ePn*			Pg	19 35 16.0	+0.7
MDNY	**Mudanya-Bursa**	**1.30**	**352**	*ePN*			Pg	19 35 15.7	+0.2
MDNY	**Mudanya-Bursa**	**1.30**	**352**	*ePn*			Pg	19 35 15.7	+0.2
KCTX	**Karacabey (Bur**	**1.32**	**334**	*ePN*			Pg	19 35 16.4	+0.5
KCTX	**Karacabey (Bur**	**1.32**	**334**	*ePn*			Pg	19 35 16.4	+0.5
ADVT	**Abdulvahap**	**1.44**	**20**	*ePN*			Pn	19 35 17.3	+0.1
ADVT	**Abdulvahap**	**1.44**	**20**	*ePn*			Pn	19 35 17.3	+0.1
GONE	**Gonen-Balikesi**	**1.46**	**312**	*ePN*			Pn	19 35 17.9	+0.3
GONE	**Gonen-Balikesi**	**1.46**	**312**	*ePn*			Pb	19 35 17.9	-0.3
ARMT	**Armutlu**	**1.50**	**353**	*ePN*			Pn	19 35 18.4	+0.4
ARMT	**Armutlu**	**1.50**	**353**	*ePn*			Pn	19 35 18.4	+0.4
EDC	**Edincik**	**1.59**	**323**	*ePN*			Pn	19 35 19.7	+0.4
EDC	**Edincik**	**1.59**	**323**	*ePn*			Pn	19 35 19.7	+0.4
GULT	**Gulveren**	**1.73**	**38**	*ePN*			Pn	19 35 21.5	+0.1
GULT	**Gulveren**	**1.73**	**38**	*ePn*			Pn	19 35 21.5	+0.1
HRT	**Hereke**	**1.79**	**14**	*ePN*			Pb	19 35 23.4	-0.5
HRT	**Hereke**	**1.79**	**14**	*ePn*			Pb	19 35 23.4	-0.5
SVRH	**Sivrihisar-ESK**	**1.91**	**78**	*ePN*			Pb	19 35 25.2	-0.7
SVRH	**Sivrihisar-ESK**	**1.91**	**78**	*ePn*			Pb	19 35 25.2	-0.7
KRBG	**Karabiga-Canak**	**1.92**	**314**	*ePN*			Pn	19 35 24.8	+1.1
KRBG	**Karabiga-Canak**	**1.92**	**314**	*ePn*			Pn	19 35 24.8	+1.1
MRMT	**Marmara Adasi**	**1.92**	**323**	*ePN*			Pn	19 35 24.0	+0.1
MRMT	**Marmara Adasi**	**1.92**	**323**	*ePn*			Pn	19 35 24.0	+0.2
SILT	**Sile**	**2.11**	**11**	*ePN*			Pn	19 35 27.8	+1.3
SILT	**Sile**	**2.11**	**11**	*ePn*			Pn	19 35 27.8	+1.3
MDUB	**Mudurnu**	**2.13**	**49**	*ePN*			Pb	19 35 27.8	+1.0
MDUB	**Mudurnu**	**2.13**	**49**	*ePn*			Pb	19 35 27.8	+1.0
RKY	**Sarkoy-Tekirda**	**2.19**	**318**	*ePN*			Pn	19 35 28.6	+1.0
RKY	**Sarkoy-Tekirda**	**2.19**	**318**	*ePn*			Pn	19 35 28.6	+1.0
CTKS	**Kestanelik-??a**	**2.20**	**348**	*ePN*			Pn	19 35 29.0	+1.3
CTKS	**Kestanelik-??a**	**2.20**	**348**	*ePn*			Pn	19 35 29.0	+1.3
LPK	**Lapseki**	**2.22**	**306**	*ePN*			Pn	19 35 29.4	+1.4
LPK	**Lapseki**	**2.22**	**306**	*ePn*			Pn	19 35 29.4	+1.4
GELI	**Tayfur-Gelibol**	**2.42**	**304**	*ePN*			Pn	19 35 32.4	+1.7
GELI	**Tayfur-Gelibol**	**2.42**	**304**	*ePn*			Pn	19 35 32.4	+1.7

IDC 20 19:35:13.8±2.3,16°.88S×175°.48W,h0km,mbΔ.6/3, mb1 3.9/3,mb1mx3.5/34,mbtmp3.6/3,Error ellipse: s-maj=190.8km s-min=30.3km az=157.0,Tonga Islands

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

OJC	**Ojcow**	**2.75 119**	*e*Pg	**Pg**	**19 38 04.4**	**+0.6**
OJC			*e*Sg	**Sg**	**19 38 39.6**	**+0.2**
OJC	**Ojcow**	**2.75 119**	*e*Pg	**Pg**	**19 38 04.4**	**+0.6**
OJC			*e*Sg	**Sg**	**19 38 39.6**	**+0.2**
KHC	**Kasperske Hory**	**2.95 214**	*e*PN	**Pn**	**19 37 59.5**	**+0.1**
KHC			*e*PG	**Pb**	**19 38 05.3**	**+0.6**
KHC			*e*SN	**Sn**	**19 38 33.5**	**-2.0**
KHC			*e*SG	**Sb**	**19 38 43.2**	**+1.9**
	comp=Z,7.5nm,0.4s					
KHC	**Kasperske Hory**	**2.95 214**	Pn	**Pn**	**19 37 59.5**	**+0.1**
SMOL	**Smolenice**	**3.23 164**	*e*Sg	**Sg**	**19 38 56.5**	**+1.7**
SMOL	**Smolenice**	**3.23 164**	*e*SG	**Sg**	**19 38 56.5**	**+1.7**
LANS	**Liptovska Anna**	**3.29 137**	*e*Pg	**Pg**	**19 38 13.6**	**-0.7**
LANS			*e*Sg	**Sg**	**19 38 57.2**	**+0.3**
LANS	**Liptovska Anna**	**3.29 137**	*e*PG	**Pg**	**19 38 13.6**	**-0.7**
LANS			*e*SG	**Sg**	**19 38 57.2**	**+0.3**
BSD	**Bornholm Skovb**	**3.57 349**	*i* P	**Pn**	**19 38 08.3**	**+0.5**
BSD			*i* S	**Sn**	**19 38 49.5**	**-1.2**
BSD	**Bornholm Skovb**	**3.57 349**	*i* P	**Pn**	**19 38 08.3**	**+0.5**
BSD			*i* S	**Sn**	**19 38 49.5**	**-1.2**
VYHS	**Vyhne**	**3.60 149**	*e*Pg	**Pg**	**19 38 21.4**	**+1.2**
VYHS	**Vyhne**	**3.60 149**	*e*PG	**Pg**	**19 38 21.4**	**+1.2**
CONA	**Conrad Observa**	**3.69 182**	Pn	**Pn**	**19 38 10.3**	**+0.7**
	comp=Z,1.1nm,0.3s					
CONA			Sg	**Sg**	**19 39 08.3**	**-1.5**
	comp=Z,9.2nm,0.4s					
MOA	**Molln**	**3.94 198**	Pn	**Pn**	**19 38 13.5**	**+0.5**
	comp=Z,1.8nm,0.2s					
MOA			Sg	**Sg**	**19 39 16.3**	**-1.6**
	comp=Z,5.8nm,0.5s					
STHS	**Stebnicka Huta**	**3.97 122**	*e*Pg	**Pg**	**19 38 27.6**	**+0.3**
STHS			*e*Sg	**Sg**	**19 39 18.5**	**-0.3**
STHS	**Stebnicka Huta**	**3.97 122**	*e*PG	**Pg**	**19 38 27.6**	**+0.3**
STHS			*e*SG	**Sg**	**19 39 18.5**	**-0.3**
STHS			*e*LG	Lg	19 39 30.4	
ARSA	**Arzberg**	**4.38 185**	Pn	**Pn**	**19 38 20.5**	**+1.5**
	comp=Z,0.8nm,0.2s					
ARSA			Sg	**Sg**	**19 39 30.6**	**-1.3**
	comp=Z,9.4nm,0.6s					
CRVS	**Cervenica-Dubn**	**4.40 126**	*e*Pg	**Pg**	**19 38 34.9**	**-0.6**
CRVS	**Cervenica-Dubn**	**4.40 126**	*e*PG	**Pg**	**19 38 34.9**	**-0.6**
KBA	**Koelnbreinsper**	**4.87 202**	Pn	**Pn**	**19 38 26.7**	**+0.8**
	comp=Z,0.7nm,0.2s					
KBA			Sg	**Sg**	**19 39 48.5**	**+0.8**
	comp=Z,7.1nm,0.6s					

SJA 20 19:42:18.3±1.0,30°.16S×67°.76W,h10km±5km,ML3.3,
MW3.5,4D,San Juan Province

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time h m s	Res ISC
AGUA	**GUANDACOL**	**0.92**	**316**	*e*P		Pg	19 42 36.2	+0.1
AMOG	**MOGNA**	**1.00**	**219**	*e*P		Pb	19 42 37.8	0.0
AMOG				*e*S		Sb	19 42 51.5	+0.4
RTLL	**Cerro Villicun**	**1.32**	**208**	*e*P		Pb	19 42 43.4	+0.2
RTLL				*e*S		Sn	19 43 00.4	-0.1
VCA	**Vinchina**	**1.47**	**345**	*e*P		Pn	19 42 45.1	+0.1
VCA				*e*S		Sg	19 43 07.1	+1.4
VCA				IAML			19 43 08.6	
	comp=Z,696nm,0.2s							
SJA	**San Juan**	**1.53**	**207**	*e*P		Pg	19 42 47.4	-0.2
SJA				⇓*e*S		Sg	19 43 07.4	-0.1
RTCV	**Cerro Valdivia**	**1.82**	**201**	*e*P		Pb	19 42 52.3	+0.4
RTCV				⇓*e*S		Sg	19 43 16.5	-0.5
RTLS	**Leoncito**	**2.10**	**219**	*e*P		Pb	19 42 56.6	-0.1
RTLS				*e*S		Sb	19 43 23.4	+0.4
ACAN	**Cantantal**	**2.17**	**167**	*e*P		Pb	19 42 58.1	+0.5
CYA	**Choya**	**2.42**	**45**	*e*P		Pb	19 43 00.1	-1.8
CYA				IAML			19 43 36.8	
	comp=Z,74nm,0.1s							
AUSP	**Uspallata**	**2.49**	**214**	*e*P		Pb	19 43 03.1	-0.2
ROC1	**El Roble**	**3.95**	**224**	⇓*e*P		Pb	19 43 29.9	+1.7
ROC1				⇓*e*S		Sb	19 44 18.1	+2.0
FSA	**Cafayete**	**4.33**	**22**	*e*P		Pn	19 43 27.4	+3.1
FSA				IAML			19 44 36.0	
	comp=Z,18nm,0.5s							

ISCJB ***20*** *19:43:13.9±0.8,7°.19S±0°.02×146°.91E±0°.02,h0km±4km, mb6.1/329,MS5.5/490,Error ellipse: s-maj=2.9km s-min=2.6km az=44.4*

IDC ***20*** *19:43:15.6±0.2,7°.16S×146°.85E,h0km,mb5.8/41, mb1 5.8/44,mb1mx5.8/45,mbtmp5.8/44,ML4.6/4,MS5.3/33, Ms1 5.3/33,ms1mx5.3/39,Error ellipse: s-maj=9.8km s-min=6.7km az=85.0*

NEIC ***20*** *19:43:15.0±0.0,7°.21S×146°.89E,h15km,Moment Tensor Solution. s14 Moment tensor: Scale 10^{17}Nm; M_{rr}=2.10; $M_{\theta\theta}$=0.40; $M_{\phi\phi}$=1.70; $M_{r\theta}$=1.10; $M_{\theta\phi}$=3.20; $M_{\phi r}$=1.30; Best double couple: M_0=4.00000×10^{17} NP1:ϕ_s=356.00000°, δ=63.00000°,λ=-36.00000°. NP2:ϕ_s=104.00000°,δ=58.00000°, λ=-148.00000°. Principal axes: T 4.3000, Plg3.0000°, Azm51.0000°; N -0.4000, Plg46.0000°, Azm145.0000°; P -3.9000, Plg43.0000°, Azm318.0000°;*

BJI ***20*** *19:43:15.7,7°.15S×147°.00E,h10km,mb5.8/82,mB6.2/67, Ms5.5/94,Ms7 5.4/88*

GCMT ***20*** *19:43:16.2±0.1,7°.38S×147°.05E,h12km,MW5.7/130, Moment Tensor Solution. s120,c194; s130,c374; Duration: 1ꝑ8 Moment tensor: Scale 10^{17}Nm; M_{rr}=1.97±.04; $M_{\theta\theta}$0.71±.04; $M_{\phi\phi}$1.26±.04; $M_{r\theta}$-1.27±.09; $M_{\theta\phi}$-3.88±.03; $M_{\phi r}$-1.91±.10; Best double couple: M_0=4.82500×10^{17} NP1:ϕ_s=355.00000°,δ=67.00000°, λ=-33.00000°. NP2:ϕ_s=99.00000°,δ=60.00000°, λ=-153.00000°. Principal axes: T 4.9210, Plg5.0000°, Azm48.0000°; N -0.1900, Plg50.0000°, Azm144.0000°; P -4.7280, Plg39.0000°, Azm314.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*

NEIC ***20*** *19:43:16.2±0.1,7°.19S×146°.91E,h7km,mb6.2/206,ME5.7, MS5.5/299,MW5.7,MW5.7 Error ellipse: s-maj=3.3km s-min=3.0km az=92.0,Moment Tensor Solution. s33 Moment tensor: Scale 10^{17}Nm; M_{rr}=3.15; $M_{\theta\theta}$1.71; $M_{\phi\phi}$1.43; $M_{r\theta}$1.24; $M_{\theta\phi}$-2.63; $M_{\phi r}$-0.81; Best double couple: M_0=4.10000×10^{17} NP1:ϕ_s=308.00000°,δ=56.00000°, λ=-97.00000°. NP2:ϕ_s=141.00000°,δ=35.00000°, λ=-79.00000°. Principal axes: T 4.4900, Plg11.0000°, Azm43.0000°; N -1.0400, Plg6.0000°, Azm312.0000°; P -3.4500, Plg78.0000°, Azm193.0000°; Broadband fault plane solution: P waves. NP1:ϕ_s=270.00000°,δ=20.00000°, λ=-90.00000°. NP2:ϕ_s=90.00000°,δ=70.00000°,λ=-90.00000°. Principal axes: T Plg25.0000°, Azm180.0000°; N Plg0.0000°, Azm0.0000°; P Plg65.0000°, Azm360.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from BB mechanism.*

NEIC Felt at Kainantu, Port Moresby and Wau.

MOS ***20*** *19:43:18.7±0.9,7°.22S×146°.88E,h33km,mb6.2/90, MS5.5/98 Error ellipse: s-maj=6.8km s-min=4.6km az=101.5*

DJA ***20*** *19:43:21.0±0.9,7°S±2°×14°7E±°,h36km±7km,M6.0/93, mb5.8/93,mB6.3/85,MLv6.2/4,Mw(mB)6.0/85,Mwp5.9/4*

ISC 20 19:43:17.4±0.4,7°.20S±0°.02×146°.94E±0°.03,h14km±2km,
h14km:pP-P,n1651,σ1ꝑ71/1747,mb6.1/345,MS5.5/493,
41C-59D,Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time h m s	Res ISC
PMG	**Port Moresby**	**2.20**	**174**	Pn		**Pn**	**19 43 53.5**	**-0.1**
	2μm,0.3s,baz=358,slow=6.5,SNR=2011							
PMG				Sn		**Sb**	**19 44 22.8**	**-1.4**
	3μm,0.3s,baz=129,slow=20,SNR=6.8							
PMG				LR		LR	19 45 04.2	
	comp=Z,210μm,19.1s,baz=355,slow=48							
MANU	**Manus Island**	**5.14**	**5**	*e*Pn		**Pn**	**19 44 37.1**	**+3.1**
RABL	**Rabaul**	**5.99**	**60**	*e*Pn		**Pn**	**19 44 44.8**	**-1.0**
MMPI	**Merauke**	**6.62**	**259**	P		**Pn**	**19 44 56.6**	**+2.3**
	1μm,0.8s,48μm54nm							
COEN	**Coen**	**7.67**	**209**	P		**Pn**	**19 45 08.2**	**-0.6**
	baz=7.7,SNR=270							
COEN	**Coen**	**7.67**	**209**	*e*Pn		**Pn**	**19 45 08.1**	**-0.7**
JAY	**Jayapura**	**7.76**	**307**	Pn		**Pn**	**19 45 12.9**	**+2.8**
	1.0nm,0.3s,baz=101,slow=21,SNR=38							
JAY				LR		LR	19 48 52.3	
	comp=Z,2μm,18.1s,baz=12,slow=44							
JAY	**Jayapura**	**7.76**	**307**	P		**Pn**	**19 45 12.1**	**+2.0**
	457nm,1.3s,7μm2.2nm							
GENI	**Genyem**	**8.15**	**304**	P		**Pn**	**19 45 19.3**	**+3.9**
	1μm,1.1s,27μm50μm							
MTSU	**Mount Surprise**	**11.16**	**193**	P		**Pn**	**19 45 56.6**	**-0.2**
	baz=11,SNR=95							
CTA	**Charters Tower**	**12.83**	**183**	Pn		**Pn**	**19 46 20.9**	**+1.4**
	19nm,0.3s,baz=4.8,slow=14,SNR=242							
CTA				Sn		**Sn**	**19 48 44.3**	**+2.1**
	3.0nm,0.3s,baz=68,slow=12,SNR=2.9							
CTA				LR		LR	19 51 08.3	
	comp=Z,25μm,20.7s,baz=5.0,slow=37							
CTAO	**Charters Tower**	**12.83**	**183**	*e*P		**Pn**	**19 46 20.2**	**+0.7**
CTAO	**Charters Tower**	**12.83**	**183**	*e*Pn		**Pn**	**19 46 20.2**	**+0.7**
HNR	**Honiara**	**13.06**	**101**	Pn		**Pn**	**19 46 23.2**	**+0.6**
	2.3nm,0.3s,baz=224,slow=13,SNR=8.9							
HNR				LR		LR	19 50 52.7	
	comp=Z,7μm,19.8s,baz=269,slow=35							
HNR	**Honiara**	**13.06**	**101**	*e*P		**Pn**	**19 46 23.0**	**+0.4**
HNR	**Honiara**	**13.06**	**101**	*e*Pn		**Pn**	**19 46 22.1**	**-0.5**
QIS	**Mount Isa**	**15.06**	**207**	P		**Pn**	**19 46 49.4**	**-0.6**
	baz=15,SNR=82							
FAKI	**Fak Fak**	**15.24**	**285**	P		**Pn**	**19 46 53.8**	**+1.4**
	573nm,0.9s,8μm							
FAKI	**Fak Fak**	**15.24**	**285**	*e*Pn		**Pn**	**19 46 53.4**	**+1.1**
	434nm,0.9s							
KDU	**Kakadu**	**15.26**	**248**	P		**Pn**	**19 46 52.5**	**-0.1**
	baz=15,SNR=22							
SAUI	**Saumlaki**	**15.53**	**266**	P		**P**	**19 47 01.1**	**+0.7**
	4μm,1.2s,47μm							
SAUI	**Saumlaki**	**15.53**	**266**	*e*Pn		**Pn**	**19 46 57.6**	**+1.5**
	5μm,1.2s							
MTN	**Manton Dam**	**16.54**	**249**	P		**Pn**	**19 47 10.1**	**+1.0**
	baz=17,SNR=32							
MTN	**Manton Dam**	**16.54**	**249**	*e*Pn		**Pn**	**19 47 07.7**	**-1.5**
	1μm,1.6s							
SWI	**Sorong**	**16.86**	**291**	P		**P**	**19 47 14.2**	**-1.0**
	1μm,1.2s,12μm							
SWI	**Sorong**	**16.86**	**291**	P		**P**	**19 47 14.6**	**-0.6**
SWI				pmax		pmax		
	comp=Z,1μm,1.2s							
BNDI	**Bandanaira**	**17.16**	**278**	P		**P**	**19 47 19.2**	**+0.7**
	comp=Z,3μm,2.5s,comp=Z,46μm							
WRAB	**Tennant Creek**	**17.59**	**223**	*c i*P		**Pn**	**19 47 21.4**	**-0.9**
WRAB				pmax		pmax		
	comp=Z,4μm,1.7s							
WRAB	**Tennant Creek**	**17.59**	**223**	*e*Pn		**Pn**	**19 47 21.6**	**-0.7**
	comp=Z,2μm,1.6s							
WB2	**Warramunga Arr**	**17.60**	**223**	*e*Pn		**Pn**	**19 47 22.0**	**-0.4**
	comp=Z,2μm,1.6s							
WR1	**Warramunga Arr**	**17.60**	**223**	*e*Pn		**P**	**19 47 23.2**	**-0.3**
	comp=Z,2μm,1.6s							
WR1				*e*Sn		**Sn**	**19 50 34.1**	**-4.4**
WRA	**Warramunga Arr**	**17.61**	**223**	P		**P**	**19 47 23.2**	**-0.3**
	comp=Z,2.4nm,0.3s,baz=49,slow=10,SNR=102							
WRA				Sn		**Sn**	**19 50 34.1**	**-4.4**
	comp=Z,2.5nm,0.3s,baz=41,slow=23,SNR=5.0							
WRA				LR		LR	19 54 25.9	
	comp=Z,13μm,18.2s,baz=50,slow=38							
WRA	**Warramunga Arr**	**17.61**	**223**	*i* P		**Pn**	**19 47 19.3**	**-3.2**
WRA				pmax		pmax		
	comp=Z,169nm,1.1s							
PATS	**Pohnpei**	**17.97**	**39**	P		**Pn**	**19 47 26.3**	**-0.8**
	baz=18,SNR=16							
PATS	**Pohnpei**	**17.97**	**39**	*e*Pn		**Pn**	**19 47 26.5**	**-0.5**
	comp=Z,1μm,1.3s							
EIDS	**Eidsvold**	**18.50**	**168**	P		**P**	**19 47 33.4**	**+0.2**
	baz=18,SNR=33							
EIDS	**Eidsvold**	**18.50**	**168**	*e*P		**P**	**19 47 33.4**	**+0.2**
	comp=Z,2μm,1.9s							
PALU	**Palau**	**19.06**	**319**	P		**Pn**	**19 47 40.9**	**+0.6**
	baz=19,SNR=18							
RMQ	**Roma**	**19.26**	**175**	P		**Pn**	**19 47 43.5**	**+0.9**
	baz=19,SNR=50							
AS01	**Alice Springs**	**20.58**	**216**	*e*P		**P**	**19 47 56.1**	**-0.1**
AS31	**Alice Springs**	**20.61**	**216**	*e*P		**P**	**19 47 56.4**	**0.0**
	comp=Z,283nm,0.8s							
AS31				*e*S		**S**	**19 51 41.0**	**-5.6**
AS31				LR		LR		
	comp=Z,300nm,20.0s							
ASAR	**Alice Springs**	**20.61**	**216**	P		**P**	**19 47 56.6**	**+0.2**
	comp=Z,88nm,0.5s,baz=40,slow=11,SNR=159							
ASAR				S		Sn	19 51 51.9	+0.7
	comp=Z,86nm,1.2s,baz=35,slow=21,SNR=5.1							
ASAR				LR		LR	19 55 44.3	
	comp=Z,13μm,18.7s,baz=46,slow=36							
ASAR				ScP		**ScP**	**19 55 47.2**	**+3.7**
	comp=Z,26nm,1.1s,baz=62,slow=3.4,SNR=6.2							
GUMO	**Guam**	**20.76**	**354**	P		**P**	**19 47 58.7**	**+0.7**
	comp=Z,499nm,0.9s,baz=153,slow=6.2,SNR=23							
GUMO				S		Sn	19 51 53.5	-1.1
	comp=Z,31nm,0.6s,baz=235,slow=23,SNR=3.7							
GUMO				LR		LR	19 55 57.6	
	comp=Z,12μm,18.2s,baz=176,slow=37							
GUMO	**Guam**	**20.76**	**354**	*e*P		**P**	**19 47 58.3**	**+0.3**
	comp=Z,2μm,1.2s							
GUMO	**Guam**	**20.76**	**354**	*e*P		Sn	19 51 53.3	-1.3
	comp=Z,1μm,1.9s							
SANI	**Sanana**	**21.50**	**283**	P		**P**	**19 48 09.3**	**+3.3**
	comp=Z,702nm,1.5s,comp=Z,10μm							
SOEI	**Soe**	**22.57**	**262**	P		**P**	**19 48 21.1**	**+3.4**
	comp=Z,709nm,1.2s,comp=Z,18μm							
SOEI	**Soe**	**22.57**	**262**	*e*P		**P**	**19 48 20.2**	**+2.5**
	comp=Z,2μm,1.3s							
SOEI				LR		LR		
	comp=Z,10μm,19.0s							
FITZ	**Fitzroy Crossi**	**23.41**	**240**	P		**P**	**19 48 25.3**	**-0.9**
	comp=Z,193nm,1.1s,baz=62,slow=9.4,SNR=53							
FITZ				S		**S**	**19 52 36.6**	**-2.5**
	comp=Z,54nm,1.0s,baz=72,slow=9.4,SNR=4.5							
FITZ				Lg		Lg	19 55 40.3	
	comp=Z,51nm,1.0s,baz=317,slow=22,SNR=3.5							
FITZ				LR		LR	19 58 53.6	
	comp=Z,15μm,19.1s,baz=56,slow=40							
FITZ	**Fitzroy Crossi**	**23.41**	**240**	P		**P**	**19 48 25.7**	**-0.5**
	baz=24,SNR=139							
FITZ	**Fitzroy Crossi**	**23.41**	**240**	*e*P		**P**	**19 48 24.8**	**-1.4**
	comp=Z,272nm,0.9s							
FITZ				*e*S		**S**	**19 52 36.9**	**-2.3**
ARMA	**Armidale**	**23.51**	**170**	P		**P**	**19 48 27.1**	**-0.1**
	baz=24,SNR=35							
ARMA	**Armidale**	**23.51**	**170**	*e*P		**P**	**19 48 26.3**	**-1.0**
	comp=Z,2μm,1.7s							
ARMA				LR		LR		
	comp=Z,13μm,20.0s							
DZM	**Mont Dzumac**	**23.92**	**130**	*e*P		**P**	**19 48 29.8**	**-1.5**
	comp=Z,571nm,1.4s							
DZM				*e*LR		LR	19 54 28.9	
	comp=Z,10μm,29.4s							
DZM	**Mont Dzumac**	**23.92**	**130**	*e*P		**P**	**19 48 29.5**	**-1.8**
	comp=Z,538nm,1.5s							
DZM				LR		LR		
	comp=Z,13μm,18.0s							
SGSI	**Sangihe**	**23.95**	**296**	P		**P**	**19 48 32.8**	**+1.3**
	comp=Z,1μm,1.2s,comp=Z,14μm							
CMSA	**Cobar Meteorol**	**24.24**	**183**	P		**P**	**19 48 34.2**	**+0.2**
	baz=24,SNR=168							
KDI	**Kendari**	**24.42**	**276**	P		**P**	**19 48 37.7**	**+1.9**
	comp=Z,118nm,1.6s,comp=Z,3μm							
MMRI	**Maumere**	**24.51**	**265**	P		**P**	**19 48 35.1**	**-1.6**
	comp=Z,568nm,1.3s,comp=Z,8μm							
MMRI	**Maumere**	**24.51**	**265**	*e*P		**P**	**19 48 36.3**	**-0.4**
	comp=Z,816nm,1.2s							
LUWI	**Luwuk**	**24.86**	**283**	P		**P**	**19 48 40.4**	**+0.6**
	comp=Z,816nm,1.5s,comp=Z,11μm							
LUWI	**Luwuk**	**24.86**	**283**	*e*P		**P**	**19 48 39.7**	**-0.1**
	comp=Z,982nm,1.1s							
MATI	**Mati**	**24.96**	**304**	*e*P		**P**	**19 48 40.6**	**-0.1**
STKA	**Stephens Creek**	**25.05**	**191**	P		**P**	**19 48 41.5**	**+0.1**
	comp=Z,178nm,1.1s,baz=352,slow=9.5,SNR=45							
STKA				S		**S**	**19 53 07.8**	**+2.4**
	comp=Z,18nm,0.8s,baz=3.3,slow=9.6,SNR=2.8							
STKA				LR		LR	19 59 26.0	
	comp=Z,25μm,18.4s,baz=9.2,slow=39							
STKA	**Stephens Creek**	**25.05**	**191**	P		**P**	**19 48 40.8**	**-0.6**
	baz=25,SNR=149							
STKA	**Stephens Creek**	**25.05**	**191**	*e*P		**P**	**19 48 40.7**	**-0.6**
STKA				S		**S**	**19 53 07.8**	**+2.4**
STKA				pmax		pmax		
	comp=Z,255nm,1.8s							
STKA	**Stephens Creek**	**25.05**	**191**	*e*P		**P**	**19 48 40.7**	**-0.6**
	comp=Z,255nm,1.8s							
STKA				S		**S**	**19 53 07.8**	**+2.4**
WRKA	**Warakurna**	**25.15**	**223**	P		**P**	**19 48 41.2**	**-1.1**
	baz=25,SNR=168							
BIPH	**Bislig**	**25.59**	**306**	⇑*e*P		**P**	**19 48 50.0**	**+3.6**
DAV	**Davao City (W)**	**25.59**	**303**	P		**P**	**19 48 46.6**	**+0.2**
	comp=Z,230nm,0.4s,baz=171,slow=0.8,SNR=8.9							
DAV				S		**S**	**19 53 23.7**	**+9.5**
	comp=Z,142nm,0.4s,baz=31,slow=13,SNR=2.5							
DAV	**Davao City (W)**	**25.59**	**303**	⇓*e*P		**P**	**19 48 43.6**	**-2.9**
DAV	**Davao City (W)**	**25.59**	**303**	P		**P**	**19 48 45.8**	**-0.6**
DAV	**Davao City (W)**	**25.59**	**303**	*e*P		**P**	**19 48 46.8**	**+0.3**
	comp=Z,747nm,1.1s							
DAV				*e*S		**S**	**19 53 23.8**	**+9.5**
DAV				LR		LR		
	comp=Z,4μm,22.0s							
GSPH	**General Santos**	**25.61**	**300**	*e*P		**P**	**19 48 46.0**	**-0.7**
KWAJ	**Kwajalein Atol**	**26.02**	**53**	PFAKE			19 49 00.0	+10
KWAJ				LR		LR		
	comp=Z,4μm,18.0s							
MRSI	**Marisa**	**26.08**	**286**	P		**P**	**19 48 52.1**	**+1.2**
	comp=Z,152nm,1.3s,comp=Z,3μm							
BASI	**Baing, Sumba**	**26.23**	**262**	P		**P**	**19 48 56.2**	**+4.0**
	comp=Z,844nm,0.9s,comp=Z,12μm							
BSSI	**Bau Bau, Buton**	**26.29**	**271**	P		**P**	**19 48 54.2**	**+1.4**
	comp=Z,349nm,1.4s,comp=Z,5μm							
BUKP	**Musuan**	**26.46**	**304**	*e*P		**P**	**19 48 55.2**	**+0.8**
WSI	**Waingapu**	**26.47**	**263**	P		**P**	**19 48 57.5**	**+3.1**
	comp=Z,2μm,0.9s,comp=Z,21μm							
LHI	**Lord Howe Isla**	**26.71**	**156**	*e*P		**P**	**19 48 58.7**	**+2.3**
	comp=Z,350nm,1.3s							
LHI				LR		LR		
	comp=Z,8μm,20.0s							
CTBH	**Cotabato--PC H**	**26.79**	**302**	⇓*e*P		**P**	**19 48 57.9**	**+0.6**
YNG	**Young**	**27.00**	**177**	P		**P**	**19 49 00.0**	**+1.0**
	baz=27,SNR=160							
CGP	**Cagayan de Oro**	**27.09**	**305**	⇓*e*P		**P**	**19 49 01.6**	**+1.6**
KAPI	**Kappang**	**27.12**	**273**	P		**P**	**19 49 01.6**	**+1.3**
	comp=Z,52nm,0.9s,baz=121,slow=5.0,SNR=16							
KAPI				S		S	19 53 49.6	+11
	comp=Z,6.2nm,0.6s,baz=66,slow=12,SNR=1.6							
KAPI	**Kappang**	**27.12**	**273**	*e*P		**P**	**19 49 02.0**	**+1.7**
	comp=Z,364nm,1.4s							
KAPI				S		S	19 53 49.6	+11
HTT	**Hallett**	**27.14**	**195**	P		**P**	**19 49 00.8**	**+0.5**
	baz=27,SNR=33							
SPSI	**Sidrap Palu**	**27.23**	**275**	P		**P**	**19 49 03.3**	**+2.0**
	comp=Z,119nm,1.6s,comp=Z,2μm							
TARA	**Tarawa**	**27.28**	**73**	*e*P		**P**	**19 49 00.2**	**-1.6**
	comp=Z,220nm,1.0s							
TTSI	**Tana Toraja**	**27.32**	**277**	P		**P**	**19 49 08.7**	**+6.6**
	comp=Z,114nm,1.2s,comp=Z,3μm							
BBOO	**Buckleboo**	**27.42**	**200**	P		**P**	**19 49 02.1**	**-0.7**
	baz=28,SNR=66							
BBOO	**Buckleboo**	**27.42**	**200**	*e*P		**P**	**19 49 01.9**	**-0.8**
	comp=Z,426nm,0.9s							
BBOO				LR		LR		
	comp=Z,18μm,19.0s							
PCI	**Palu**	**27.74**	**282**	P		**P**	**19 49 06.1**	**+0.2**
	comp=Z,339nm,1.1s,comp=Z,6μm							
PAGZ	**Pagadian**	**27.85**	**302**	*e*P		**P**	**19 49 07.7**	**+0.9**
CAN	**Canberra**	**28.05**	**176**	*e*P		**P**	**19 49 08.4**	**0.0**
CAN				pmax		pmax		
	comp=Z,1μm,1.9s							
CAN				MLR		MLR		
	comp=Z,9μm,18.0s							
CAN	**Canberra**	**28.05**	**176**	*e*P		**P**	**19 49 08.4**	**0.0**
	comp=Z,1μm,1.9s							
CAN				LR		LR		
	comp=Z,9μm,18.0s							
CNB	**Canberra Magne**	**28.07**	**176**	P		**P**	**19 49 09.2**	**+0.6**
	baz=28,SNR=63							
DCPH	**Dipolog City**	**28.26**	**303**	*e*P		P	19 49 18.9	+8.4
PLP	**Palo**	**28.47**	**310**	⇓*e*P		**P**	**19 49 11.3**	**-1.0**
IPIL	**Ipil**	**28.50**	**301**	*e*P		**P**	**19 49 13.1**	**+0.5**
OCLP	**Ormoc**	**28.68**	**309**	*e*P		**P**	**19 49 15.2**	**+1.0**
LLP	**Lapu-Lapu**	**28.75**	**307**	*e*P		**P**	**19 49 14.8**	**0.0**
SNPH	**Sibulan**	**28.78**	**304**	⇑*e*P		**P**	**19 49 14.7**	**-0.4**
PLAI	**Plampang**	**28.92**	**265**	P		**P**	**19 49 18.8**	**+2.4**
	comp=Z,150nm,0.8s,comp=Z,3μm							
MBWA	**Marble Bar**	**29.74**	**239**	P		**P**	**19 49 25.7**	**+2.2**
	SNR=6.1							
MBWA	**Marble Bar**	**29.74**	**239**	P		**P**	**19 49 25.7**	**+2.2**
	SNR=6.1							
MBWA	**Marble Bar**	**29.74**	**239**	*e*P		**P**	**19 49 26.3**	**+2.7**
	comp=Z,353nm,1.8s							
MBWA				LR		LR		
	comp=Z,11μm,20.0s							
MILA	**Mila**	**29.79**	**176**	P		**P**	**19 49 24.8**	**+0.9**
	baz=30,SNR=20							
ARPS	**Mount Arapiles**	**29.80**	**188**	P		**P**	**19 49 24.5**	**+0.6**
	baz=30,SNR=65							
TWSI	**Taliwang, Sumb**	**29.81**	**265**	P		P	19 49 35.0	+11
GUIM	**Jordan**	**30.02**	**306**	*e*P		P	19 49 31.8	+5.6
TOO	**Toolangi**	**30.26**	**182**	P		**P**	**19 49 29.0**	**+1.0**
	baz=30,SNR=6.2							
RCP	**

comp=Z,2μm,21.0s
STKI Sintang 36.10 280 P P 19 50 21.3 +2.0
comp=Z,56nm,1.9s,comp=Z,4μm
UGM Wanagama 36.10 266 PFAKE 19 50 30.0 +11
UGM LR LR
comp=Z,2μm,20.0s
KLBR Kellerberrin 36.48 224 P P 19 50 21.3 -1.0
baz=37,SNR=15
BLDU Ballidu 36.67 227 P P 19 50 24.5 +0.6
baz=37,SNR=4.7
OUZ Omahuta 37.10 142 *e*P **P 19 50 28.1 +0.6**
OUZ LR LR
comp=Z,7μm,22.0s
KSM Kuching 37.55 282 ⇓P **P 19 50 32.4 +0.7**
KSM Kuching 37.55 282 *e*P **P 19 50 30.7 -1.0**
comp=Z,322nm,1.9s
KSM LR LR
comp=Z,2μm,20.0s
NWAO Narrogin (SRO) 37.61 223 P P 19 50 31.9 +0.1
comp=Z,26nm,0.9s,baz=265,slow=5.9,SNR=8.2
NWAO LR LR 20 07 21.1
comp=Z,8μm,20.6s,baz=284,slow=38
NWAO Narrogin (SRO) 37.61 223 P P 19 50 32.6 +0.7
baz=38,SNR=6.0
NWAO Narrogin (SRO) 37.61 223 P P 19 50 32.0 +0.1
NWAO pmax pmax
comp=Z,21nm,0.8s
NWAO MLR MLR
comp=Z,8μm,20.6s
NWAO Narrogin (SRO) 37.61 223 *e*P **P 19 50 32.3 +0.4**
comp=Z,297nm,1.7s
JOW Kunigami 38.37 333 *e*P **P 19 50 38.3 +0.1**
comp=Z,1μm,1.9s
JOW LR LR
comp=Z,6μm,20.0s
JCJI Jatiwangi 38.40 269 P P 19 50 45.4 +6.7
comp=Z,262nm,0.5s
CISI Cisompet, Garu 38.80 267 P P 19 50 40.9 -1.3
comp=Z,227nm,1.3s,comp=Z,4μm
CISI Cisompet, Garu 38.80 267 *e*P **P 19 50 39.9 -2.3**
comp=Z,386nm,1.1s
CISI LR LR
comp=Z,2μm,18.0s
LEM Lembang 39.02 268 LR LR 20 12 38.9
comp=Z,2μm,18.1s,baz=104,slow=45
LEM Lembang 39.02 268 P **P 19 50 48.8 +4.6**
comp=Z,1μm,1.0s,comp=Z,15μm
TWG Pinlang 39.13 320 *e*P **P 19 50 43.9 -0.9**
comp=Z,225nm,0.7s
TWG LR LR
comp=Z,17μm,20.0s
YULB Yu-li 39.41 321 *e*P **P 19 50 47.3 +0.3**
comp=Z,123nm,1.1s
YULB LR LR
comp=Z,4μm,20.0s
CNJI Cibinong 39.49 267 P P 19 50 46.4 -1.5
comp=Z,361nm,1.1s,comp=Z,5μm
RAO Raoul Island 39.68 128 LR LR 20 06 02.8
comp=Z,3μm,18.6s,baz=324,slow=34
TPUB Ta-pu 39.76 320 *e*P **P 19 50 49.6 -0.4**
comp=Z,319nm,0.8s
TPUB LR LR
comp=Z,4μm,22.0s
NACB Ninganchiao 39.80 322 *e*P **P 19 50 50.4 0.0**
comp=Z,774nm,1.5s
CBJI Citeko 39.81 269 P P 19 50 55.0 +4.4
comp=Z,388nm,1.3s,comp=Z,8μm
SSLB Suanglung 39.91 321 *e*P **P 19 50 51.0 -0.3**
comp=Z,110nm,0.8s
SSLB LR LR
comp=Z,5μm,21.0s
SKJI Sukabumi 40.07 268 P P 19 50 54.6 +1.9
comp=Z,234nm,1.6s,comp=Z,4μm
HIZ Hauiti 40.09 145 *e*P **P 19 50 55.5 +2.9**
comp=Z,174nm,0.9s
HIZ LR LR
comp=Z,7μm,20.0s
YHNB Yeheng 40.30 323 *e*P **P 19 50 54.5 -0.1**
comp=Z,561nm,1.3s
YHNB LR LR
comp=Z,6μm,22.0s
TATO Taipei 40.47 323 P P 19 50 56.4 +0.6
SNR=22
TATO P **P 19 50 56.4 +0.6**
SNR=22
TATO Taipei 40.47 323 P P 19 50 56.4 +0.6
SNR=22
TATO Taipei 40.47 323 *e*P **P 19 50 56.0 +0.1**
comp=Z,386nm,0.9s
TATO LR LR
comp=Z,6μm,20.0s
QRZ Quartz Range 40.52 150 P* **P 19 50 58.4 +2.3**
JHJ2 Mitsune 40.66 351 *e*P **P 19 50 55.9 -1.4**
comp=Z,910nm,1.2s
JHJ2 LR LR
comp=Z,5μm,19.0s
DSZ Denniston Nort 40.86 151 P* **P 19 51 00.8 +1.9**
CGJI Cibinong 40.95 268 P P 19 50 57.9 -2.1
comp=Z,158nm,1.7s,comp=Z,2μm
OTVZ Oturere 40.99 145 *e*P* **P 19 51 02.4 +2.2**
AFI Afiamalu 41.08 103 P P 19 51 02.2 +1.0
comp=Z,123nm,1.0s,baz=273,slow=11,SNR=8.8
AFI LR LR 20 05 51.8
comp=Z,5μm,20.8s,baz=272,slow=33
AFI Afiamalu 41.08 103 *e*P **P 19 51 02.2 +1.0**
AFI pmax pmax
comp=Z,131nm,1.0s
AFI Afiamalu 41.08 103 *e*P **P 19 51 02.2 +1.0**
comp=Z,131nm,1.0s
URZ Urewera 41.23 143 P P 19 51 04.1 +2.1
comp=Z,24nm,0.7s,baz=263,slow=2.6,SNR=17
URZ PcS **ScP 19 56 49.2 -1.4**
comp=Z,12nm,0.9s,baz=103,slow=14,SNR=4.1
URZ Urewera 41.23 143 *e*P **P 19 51 03.0 +1.0**
comp=Z,93nm,1.1s
URZ *e*ScP **ScP 19 56 49.2 -1.4**
URZ LR LR
comp=Z,7μm,22.0s
URZ Urewera 41.23 143 P* **P 19 51 02.2 +0.2**
FOZ Fox Glacier 41.38 155 *e*P **P 19 51 05.7 +2.6**
comp=Z,59nm,0.9s
FOZ LR LR
comp=Z,7μm,20.0s
JCZ Jackson Bay 41.40 156 P* **P 19 51 04.8 +1.4**
KNTN Kanton 41.40 86 *e*P **P 19 51 04.3 +0.6**
comp=Z,221nm,1.0s
KNTN LR LR
comp=Z,4μm,20.0s
THZ Tophouse 41.41 150 *e*P **P 19 51 04.0 +0.5**
comp=Z,539nm,1.8s
THZ LR LR
comp=Z,6μm,20.0s
THZ Tophouse 41.41 150 P* **P 19 51 04.7 +1.2**
INZ Inchbonnie 41.45 153 P* **P 19 51 04.6 +0.8**
BKZ Black Stump Fm 41.47 145 *e*P **P 19 51 05.4 +1.4**
comp=Z,89nm,0.8s
BKZ *e*ScP **ScP 19 56 48.6 -3.0**
BKZ LR LR
comp=Z,6μm,22.0s
BKZ Black Stump Fm 41.47 145 P* **P 19 51 04.6 +0.6**
MXZ Matakaoa Point 41.51 141 *e*P **P 19 51 06.2 +1.9**
comp=Z,374nm,1.7s
MXZ LR LR
comp=Z,6μm,19.0s
MWZ Matawai 41.53 143 P* **P 19 51 05.2 +0.8**
TUWZ Tuamarina 41.68 149 P* **P 19 51 05.4 -0.2**
KRHZ Kereru 41.72 145 P* **P 19 51 06.5 +0.4**
TSZ Takapari Road 41.78 146 P* **P 19 51 06.9 +0.4**
PUZ Puketiti 41.80 142 P* **P 19 51 08.1 +1.4**
LTZ Lake Taylor 41.88 152 *e*P **P 19 51 07.0 -0.4**
comp=Z,216nm,1.3s
LTZ LR LR
comp=Z,10μm,20.0s
LTZ Lake Taylor 41.88 152 P* **P 19 51 08.7 +1.4**
DCZ Deep Cove 41.95 159 *e*P **P 19 51 06.9 -0.9**
comp=Z,361nm,1.7s
DCZ LR LR
comp=Z,6μm,22.0s
SNZO South Karori 41.98 148 *e*P **P 19 51 08.3 +0.2**
comp=Z,430nm,1.3s
SNZO LR LR
comp=Z,7μm,19.0s
MRZ Mangatainoka R 41.99 147 P* **P 19 51 08.5 +0.3**
CAW Cannon Point 42.03 148 P* **P 19 51 08.9 +0.4**
DVHZ Dannevirke 42.06 146 P* **P 19 51 10.1 +1.3**
RPZ Rata Peaks 42.06 154 P **P 19 51 09.4 +0.7**
comp=Z,76nm,0.9s,baz=313,slow=3.8,SNR=45
RPZ Rata Peaks 42.06 154 *e*P **P 19 51 09.4 +0.7**
comp=Z,77nm,0.6s
RPZ LR LR
comp=Z,10μm,18.0s
RPZ Rata Peaks 42.06 154 P* **P 19 51 09.0 +0.3**
WKZ Wanaka 42.12 156 *e*P **P 19 51 07.7 -1.5**
comp=Z,178nm,1.3s
HOWZ Holdsworth Sta 42.12 147 P* **P 19 51 08.5 -0.8**
OXZ Oxford 42.20 153 *e*P **P 19 51 09.8 0.0**
comp=Z,35nm,0.7s
OXZ LR LR
comp=Z,7μm,20.0s
OXZ Oxford 42.20 153 P* **P 19 51 09.6 -0.3**
KASI Kota Agung 42.21 270 P **P 19 51 15.1 +4.7**
comp=Z,81nm,1.2s,comp=Z,1μm
KHZ Kahutara 42.21 150 *e*P **P 19 51 07.0 -3.0**
comp=Z,285nm,1.5s
KHZ LR LR
comp=Z,9μm,20.0s
KHZ Kahutara 42.21 150 P* **P 19 51 11.2 +1.3**
MLZ Mavora Lakes 42.22 158 *e*P **P 19 51 07.9 -2.2**
comp=Z,379nm,1.5s
LBZ Lake Benmore 42.23 155 *e*P **P 19 51 09.7 -0.4**
comp=Z,664nm,1.9s
LBZ Lake Benmore 42.23 155 P* **P 19 51 10.3 +0.2**
QZH Quanzhou 42.23 320 ⇓*i*P **P 19 51 05.8 -4.5**
QZH S **S 19 57 25.0 -5.4**
QZH pmax pmax
comp=Z,340nm,0.8s
QZH pmax pmax
comp=Z,6μm,4.4s
QZH LR LR
comp=N,2μm,12.7s
QZH LR LR
comp=E,6μm,22.6s
QZH LR LR
comp=Z,5μm,22.3s
PXZ Pawanui 42.26 145 P* **P 19 51 11.0 +0.6**
MTW Mount Morrison 42.30 148 P* **P 19 51 09.8 -0.9**
BFZ Birch Farm 42.36 146 *e*P **P 19 51 11.2 -0.1**
comp=Z,429nm,1.0s
BFZ LR LR
comp=Z,10μm,18.0s
BFZ Birch Farm 42.36 146 P* **P 19 51 10.9 -0.3**
CRLZ Canterbury Las 42.66 152 *e*P **P 19 51 15.4 +1.9**
comp=Z,640nm,2.0s
LWLI Liwa 42.69 270 P **P 19 51 17.5 +3.1**
comp=Z,145nm,0.9s,comp=Z,10μm
MQZ McQueen's Vall 42.77 152 *e*P **P 19 51 16.4 +1.9**
comp=Z,301nm,1.5s
MQZ LR LR
comp=Z,6μm,19.0s
MQZ McQueen's Vall 42.77 152 P* **P 19 51 13.8 -0.7**
JNU Nakatsue 42.91 340 PcS PcS 19 56 56.8 -2.1
comp=Z,11nm,1.0s,baz=143,slow=6.6,SNR=2.7
JNU S **S 19 57 36.9 -3.5**
comp=Z,3.4nm,0.8s,baz=35,slow=23,SNR=1.8
JNU LR LR 20 08 32.7
comp=Z,4μm,19.2s,baz=146,slow=35
JNU Nakatsue 42.91 340 *e*P **P 19 51 15.4 -0.3**
comp=Z,1μm,1.3s
JNU PcS **PcS 19 56 56.8 -2.1**
JNU S **S 19 57 36.9 -3.5**
ODZ Otahua Downs 42.95 155 *e*P **P 19 51 17.2 +1.3**
comp=Z,316nm,2.0s
TPRI Tanjung Pinang 43.08 279 P **P 19 51 18.0 +0.6**
comp=Z,114nm,1.1s,comp=Z,2μm
INU Inuyama 43.34 348 *e*P **P 19 51 18.9 -0.3**
comp=Z,445nm,1.2s
INU LR LR
comp=Z,3μm,21.0s
MYKOM Kota Tinggi 43.92 280 ⇑P **P 19 51 24.9 +0.7**
MYKOM Kota Tinggi 43.92 280 *e*P **P 19 51 24.2 0.0**
comp=Z,55nm,0.9s
MYKOM *e*ScP **ScP 19 57 03.2 +1.3**
MYKOM LR LR
comp=Z,2μm,20.0s
MJAR Matsushiro Arr 44.28 350 P **P 19 51 25.8 -0.9**
comp=Z,126nm,0.9s,baz=178,slow=8.4,SNR=141
MJAR PcP **PcP 19 53 11.6 +0.5**
comp=Z,55nm,1.0s,baz=176,slow=3.6,SNR=6.2
MJAR LR LR 20 08 25.6
comp=Z,3μm,20.4s,baz=160,slow=34
MAJO Matsushiro 44.28 350 *d i*P **P 19 51 25.5 -1.2**
MAJO pmax pmax
comp=Z,2μm,1.4s
MAJO MLR MLR
comp=Z,15μm,16.0s
MAJO Matsushiro 44.28 350 *e*P **P 19 51 26.0 -0.7**
comp=Z,1μm,1.6s
MAJO LR LR
comp=Z,3μm,21.0s
MJB9 Matsu-Tunnel 44.28 350 *e*P **P 19 51 26.0 -0.7**
comp=Z,329nm,1.6s
MJB9 LR LR
comp=Z,800nm,21.0s
KGM Kluang 44.48 280 ⇓P **P 19 51 30.0 +1.3**
GZH Guangzhou 44.56 313 P **P 19 51 32.5 +3.3**
GZH PcP **PcP 19 53 12.0 -0.3**
GZH S **S 19 58 10.8 +6.1**
GZH LR LR
comp=Z,3μm,20.6s
GZH LR LR
comp=Z,3μm,20.6s
QIZ Qiongzhong 44.90 306 P **P 19 51 33.5 +1.5**
QIZ S **S 19 58 10.3 +0.5**
QIZ pmax pmax
comp=Z,160nm,1.0s
QIZ LR LR
comp=Z,990nm,17.7s
QIZ LR LR
comp=Z,230nm,19.6s
QIZ Qiongzhong 44.90 306 *e*P **P 19 51 33.4 +1.5**
comp=Z,455nm,1.0s
QIZ LR LR
comp=Z,3μm,21.0s
SSE Sheshan 45.36 328 P **P 19 51 35.4 0.0**
SSE sP **pP 19 51 40.5 +0.6**
SSE PP **PP 19 53 19.3 -2.5**
SSE PcS **PcS 19 57 11.9 +3.1**
SSE S **S 19 58 14.3 -1.8**
SSE SS **ScS 20 01 34.5 +2.4**
SSE pmax pmax
comp=Z,83nm,1.4s
SSE pmax pmax
comp=Z,1μm,6.1s
SSE LR LR
comp=Z,3μm,21.3s
SSE LR LR
comp=Z,1μm,21.6s
SSE LR LR
comp=Z,4μm,19.2s
KTGM Kuala Trenggan 45.45 285 ⇓P **P 19 51 37.8 +1.3**
BKNI Bangkinang 46.39 277 P **P 19 51 43.5 -0.4**
comp=Z,114nm,1.1s,comp=Z,2μm
BKNI Bangkinang 46.39 277 *e*P **P 19 51 43.0 -0.9**
comp=Z,554nm,1.7s
UBPT Khong Chiam 46.77 299 P **P 19 51 47.8 +1.0**
comp=Z,147nm,2.0s,comp=Z,3μm
PPI Padang Panjang 46.89 276 P **P 19 51 46.2 -1.6**
comp=Z,93nm,1.2s,comp=Z,1μm
TJN Taejon 47.08 338 *d i*P **P 19 51 48.1 -0.8**
NJ2 Nanjing 47.35 327 *e*P **P 19 51 52.0 +1.0**
NJ2 pP **pP 19 51 55.8 +0.3**
NJ2 PcP **PcP 19 53 23.1 +1.3**
NJ2 S **S 19 58 50.3 +5.8**
NJ2 pmax pmax
comp=Z,100nm,1.2s
NJ2 pmax pmax
comp=Z,2μm,5.0s
NJ2 LR LR
comp=Z,4μm,20.6s
NJ2 LR LR
comp=Z,2μm,21.4s
NJ2 LR LR
comp=Z,3μm,21.7s
KULM Kulim 47.83 284 *e*P **P 19 51 54.6 -0.5**
comp=Z,149nm,1.2s
KULM LR LR
comp=Z,2μm,21.0s
KSRS Korea Array 47.85 340 P **P 19 51 54.4 -0.4**
comp=Z,107nm,0.8s,baz=158,slow=8.8,SNR=310
KSRS PcP **PcP 19 53 21.9 -1.6**
comp=Z,3.6nm,0.9s,baz=32,slow=24,SNR=2.8
KSRS ScP **ScP 19 57 23.1 +5.4**
comp=Z,4.8nm,1.1s,baz=206,slow=1.9,SNR=4.1
KSRS S **S 19 58 55.0 +3.6**
comp=Z,0.6nm,0.5s,baz=142,slow=41,SNR=3.8
KSRS ScS **ScS 20 01 46.3 -1.8**
comp=Z,0.6nm,0.7s,baz=234,slow=21,SNR=3.7
KSRS LR LR 20 09 39.4
comp=Z,5μm,21.4s,baz=145,slow=33
KS15 Wonju Array Si 47.85 339 *e*P **P 19 51 55.0 +0.2**
KS15 *e*ScP **ScP 19 57 23.1 +5.4**
KS15 *e*S **S 19 58 55.0 +3.5**
KSAR Wonju Array Be 47.85 339 P **P 19 51 54.4 -0.5**
KSAR 19 53 21.9
KSAR S **S 19 58 55.0 +3.5**
KSAR 20 01 46.3
KSAR Wonju Array Be 47.85 339 P **P 19 51 54.4 -0.5**
KSAR PcP **PcP 19 53 21.9 -1.6**
KSAR ScP **ScP 19 57 23.1 +5.4**
KSAR S **S 19 58 55.0 +3.5**
KSAR ScS **ScS 20 01 46.3 -1.8**
KS01 Wonju Array Si 47.88 340 *e*P **P 19 51 54.8 -0.3**
KS01 *e*PcP **PcP 19 53 23.8 +0.2**
KS01 *e*ScP **ScP 19 57 17.4 -0.3**
MNSI Mandailing Nat 47.91 278 P **P 19 51 55.0 -0.8**
comp=Z,47nm,1.1s,comp=Z,985nm
MCQ Macquarie Isla 48.15 171 *e*P **P 19 51 58.0 +1.1**
MCQ Macquarie Isla 48.15 171 *e*P **P 19 51 58.0 +1.1**
comp=Z,1μm,1.8s
PANO Nakornpanom 48.33 300 P **P 19 52 00.0 +1.1**
comp=Z,213nm,1.4s
INCN Inchon 48.33 338 P **P 19 51 58.8 +0.2**
SNR=24
INCN P **P 19 51 58.8 +0.2**
SNR=24
INCN Inchon 48.33 338 P **P 19 51 58.8 +0.2**
SNR=24
INCN Inchon 48.33 338 *e*P **P 19 51 58.5 -0.1**
comp=Z,399nm,1.2s
INCN LR LR
comp=Z,4μm,21.0s
SKLT Songkhla 48.36 286 P **P 19 51 59.6 +0.4**
comp=Z,100nm,1.3s
CHBT CHBT 48.56 294 P **P 19 52 01.4 +0.7**
comp=Z,316nm,2.0s,comp=Z,4μm
SKNT Sakolnakorn 48.80 300 P **P 19 52 03.3 +0.8**
comp=Z,312nm,0.9s,comp=Z,5μm
WHN Wuhan 48.83 322 ⇓*i*P **P 19 52 04.0 +1.5**
WHN S **S 19 59 08.8 +3.2**
WHN pmax pmax
comp=Z,180nm,1.0s
WHN LR LR
comp=Z,3μm,14.0s
WHN LR LR
comp=Z,1μm,12.0s
WHN LR LR
comp=Z,6μm,17.5s
PSI Prapat 48.94 280 *e*P **P 19 52 02.5 -1.4**
PSI pmax pmax
comp=Z,78nm,1.1s
PSI MLR MLR
comp=Z,3μm,22.0s
PSI Prapat 48.94 280 *e*P **P 19 52 02.5 -1.4**
comp=Z,78nm,1.1s
PSI LR LR
comp=Z,3μm,22.0s
ERM Erimo 49.10 356 *e*P **P 19 52 05.0 +0.7**
ERM pmax pmax
comp=Z,120nm,1.0s
ERM MLR MLR
comp=Z,4μm,21.0s
ERM Erimo 49.10 356 *e*P **P 19 52 05.0 +0.7**
comp=Z,120nm,1.0s
ERM LR LR
comp=Z,4μm,21.0s
JOHN Johnston Islan 49.18 61 *e*P **P 19 52 06.8 +1.4**
comp=Z,487nm,1.0s
JOHN LR LR
comp=Z,6μm,22.0s
MIDW Midway 49.26 43 *e*P **P 19 52 05.4 -0.4**
comp=Z,79nm,1.0s
MIDW LR LR
comp=Z,3μm,20.0s
SRAK Srakaew 49.29 295 P **P 19 52 03.2 -3.1**
TRTT Trang 49.43 287 P **P 19 52 07.7 +0.3**
comp=Z,71nm,1.2s,comp=Z,1μm
TSI Tuntungan 49.44 281 P **P 19 52 06.7 -0.8**
comp=Z,150nm,1.1s,comp=Z,2μm
KHON Khomkaen 49.53 299 P **P 19 52 09.6 +1.5**
comp=Z,42nm,1.0s,comp=Z,482nm
COCO West Island 49.59 260 *e*P **P 19 52 05.9 -2.7**
COCO pmax pmax
comp=Z,208nm,1.2s
COCO MLR MLR
comp=Z,2μm,18.0s
COCO West Island 49.59 260 *e*P **P 19 52 05.9 -2.7**
comp=Z,208nm,1.2s
COCO LR LR
comp=Z,2μm,18.0s
GSI Gunungsitoli 49.97 278 P **P 19 52 10.2 -1.4**
comp=Z,78nm,1.5s
GSI Gunungsitoli 49.97 278 *e*P **P 19 52 09.8 -1.8**
comp=Z,77nm,1.0s
NONG Nongkai 49.99 301 P **P 19 52 12.2 +0.6**
comp=Z,292nm,0.8s,comp=Z,3μm
KCSI Kotacane, Aceh 50.22 281 P **P 19 52 11.6 -1.9**
comp=Z,107nm,0.8s,comp=Z,5μm
SURT Suratani 50.60 288 P **P 19 52 16.5 +0.2**
comp=Z,38nm,1.2s,comp=Z,586nm
PKDT Phuket 50.73 286 P **P 19 52 17.3 0.0**
comp=Z,154nm,1.5s,comp=Z,2μm
YUK Yuzh-Kuril'sk 51.00 359 *d i*P **P 19 52 19.3 +0.5**
YUK *i* 19 53 31.9
YUK *i* 19 54 18.7
YUK *i* S **S 19 59 37.8 +2.3**
YUK *i* 20 02 08.2
YUK *i* SS **SS 20 03 07.9 -2.9**
YUK pmax pmax
comp=Z,3μm,6.0s
YUK pmax pmax
comp=Z,844nm,1.5s
YUK pmax pmax
comp=E,547nm,1.4s
YUK pmax pmax
comp=N,381nm,1.2s
PHET Kaeng Krachan 51.08 293 P **P 19 52 21.2 +1.3**
comp=N,31nm,0.8s,comp=N,309nm
ASAJ Asahikawa 51.23 356 *e*P **P 19 52 20.8 +0.3**
comp=N,392nm,1.3s
PBKT Sadao Pong 51.24 298 P **P 19 52 22.3 +1.2**
comp=N,271nm,0.9s,comp=N,2μm
LOEI Loei 51.37 299 P **P 19 52 20.5 -1.6**
comp=N,230nm,0.9s
LHMI Lhok Sumawe 51.40 283 *e*P **P 19 52 22.5 +0.2**
comp=N,237nm,1.0s
GYA Guiyang 51.44 312 ⇑*i*P **P 19 52 25.3 +2.7**
GYA PP **PP 19 54 23.8 +3.9**
GYA ScP **ScP 19 57 35.6 +2.2**
GYA S **S 19 59 45.0 +2.7**
GYA SS **SS 20 03 19.3 +0.7**
GYA pmax pmax
comp=N,60nm,1.0s
GYA pmax pmax
comp=N,2μm,8.3s
GYA LR LR
comp=N,5μm,20.6s
GYA LR LR
comp=N,2μm,21.0s
GYA LR LR
comp=N,3μm,21.0s
TIA Tai'an 51.47 329 ⇓P **P 19 52 21.9 -0.6**
TIA S **S 19 59 37.9 -4.3**
TIA pmax pmax
comp=N,100nm,1.0s
TIA pmax pmax
comp=N,2μm,4.9s
TIA LR LR
comp=N,3μm,19.1s
TIA LR LR
comp=N,3μm,18.0s
TIA LR LR
comp=N,4μm,18.1s
DL2 Dalian 51.54 335 ⇓*i*P **P 19 52 22.3 -0.6**
DL2 PcP **PcP 19 53 36.8 -0.1**
DL2 PP **PP 19 54 22.5 +2.0**
DL2 PcS **PcS 19 57 34.1 -0.6**
DL2 S **S 19 59 45.9 +2.8**
DL2 ScS **ScS 20 02 10.3 -2.8**
DL2 pmax pmax

	comp=N,130nm,1.4s					
DL2				pmax	pmax	
	comp=N,1μm,5.1s					
DL2				LR	LR	
	comp=N,4μm,17.2s					
DL2				LR	LR	
	comp=N,2μm,18.0s					
DL2				LR	LR	
	comp=N,6μm,18.6s					
MLSI	**Meulaboh, Aceh**	**51.71**	**281**	P	**P**	**19 52 23.5 -1.2**
	comp=N,352nm,1.2s,comp=N,3μm					
ENH	**Enshi**	**51.76**	**318**	*e*P	**P**	**19 52 24.9 +0.1**
	comp=N,410nm,1.1s					
ENH				LR	LR	
	comp=Z,4μm,20.0s					
VLA	**Vladivostok**	**51.92**	**346**	⇑*i*P	**P**	**19 52 26.5 +0.8**
VLA				pmax	pmax	
	comp=Z,525nm,2.6s					
SRDT	**SRDT**	**52.05**	**294**	P	**P**	**19 52 28.5 +1.4**
	comp=Z,389nm,1.6s,comp=Z,6μm					
UTTA	**Uttaradit**	**52.08**	**299**	P	**P**	**19 52 28.7 +1.3**
	comp=Z,102nm,0.9s,comp=Z,696nm					
KUR	**Kuril'sk**	**52.20**	**1***d*	*i*P	**P**	**19 52 29.0 +1.3**
KUR				*e*S	**S**	**19 59 53.6 +1.7**
KUR				*e*SSS	SSS	20 05 12.7
KUR				pmax	pmax	
	comp=Z,2μm,4.3s					
KUR				pmax	pmax	
	comp=Z,869nm,1.5s					
KUR				MLR	MLR	
	comp=N,1μm,19.0s					
KUR				MLR	MLR	
	comp=Z,1μm,19.0s					
NANT	**Nan**	**52.40**	**300**	P	**P**	**19 52 30.9 +1.2**
	comp=Z,199nm,0.9s,comp=Z,1μm					
SUKH	**Sukhothai**	**52.78**	**298**	P	**P**	**19 52 34.1 +1.6**
	comp=Z,60nm,1.0s,comp=Z,446nm					
USRK	**Ussuriysk Ar.**	**52.92**	**347**	P	**P**	**19 52 33.2 +0.2**
	comp=Z,80nm,0.8s,baz=170,slow=8.0,SNR=104					
USRK				PcP	**PcP**	**19 53 43.0 +1.0**
	comp=Z,30nm,0.9s,baz=132,slow=5.8,SNR=2.9					
USRK				S	**S**	**20 00 00.5 -1.3**
	comp=Z,2.0nm,0.7s,baz=147,slow=41,SNR=3.0					
USRK				ScS	**ScS**	**20 02 19.9 -2.6**
	comp=Z,1.5nm,0.6s,baz=149,slow=42,SNR=2.9					
USRK				LR	LR	20 13 36.8
	comp=Z,2μm,18.6s,baz=150,slow=34					
USRK				PKPPKP	**P'P'df**	**20 22 55.9 -1.2**
	comp=Z,1.7nm,0.6s,baz=247,slow=3.3,SNR=4.5					
LAMP	**Lampang**	**53.20**	**299**	P	**P**	**19 52 37.4 +1.7**
	comp=Z,142nm,1.0s,comp=Z,996nm					
RAR	**Rarotonga**	**53.25**	**111**	P	**P**	**19 52 37.0 +1.0**
	comp=Z,7.5nm,0.4s,baz=11,slow=14,SNR=3.4					
RAR	**Rarotonga**	**53.25**	**111**	*e*P	**P**	**19 52 36.2 +0.2**
RAR				pmax	pmax	
	comp=Z,237nm,1.9s					
RAR	**Rarotonga**	**53.25**	**111**	*e*P	**P**	**19 52 36.2 +0.2**
	comp=Z,237nm,1.9s					
SNY	**Shenyang**	**53.27**	**338**	⇓P	**P**	**19 52 35.6 -0.1**
SNY				pmax	pmax	
	comp=Z,85nm,1.0s					
SNY				pmax	pmax	
	comp=Z,3μm,3.6s					
SNY				LR	LR	
	comp=Z,3μm,18.2s					
SNY				LR	LR	
	comp=Z,3μm,20.4s					
SNY				LR	LR	
	comp=Z,6μm,21.4s					
CRAI	**Chiangrai**	**53.29**	**302**	P	**P**	**19 52 37.6 +1.3**
	comp=Z,2μm,1.0s,comp=Z,47μm					
KMI	**Kunming**	**53.69**	**308**	P	**P**	**19 52 41.9 +2.5**
KMI				PP	**PP**	**19 54 39.6 -0.8**
KMI				PcS	**PcS**	**19 57 45.1 0.0**
KMI				S	**S**	**20 00 15.6 +2.2**
KMI				ScS	**ScS**	**20 02 28.3 -0.9**
KMI				pmax	pmax	
	comp=Z,330nm,1.5s					
KMI				pmax	pmax	
	comp=Z,3μm,3.1s					
KMI				LR	LR	
	comp=Z,1μm,17.7s					
KMI				LR	LR	
	comp=Z,940nm,18.6s					
KMI				LR	LR	
	comp=Z,2μm,25.4s					
CM01	**Chiang Mai Arr**	**53.74**	**299**	*e*P	**P**	**19 52 41.2 +1.5**
CM31	**Chiang Mai Arr**	**53.77**	**299**	*e*P	**P**	**19 52 41.4 +1.5**
CMAR	**Chiang Mai Arr**	**53.77**	**299**	P	**P**	**19 52 40.9 +1.0**
	comp=Z,264nm,0.9s,baz=124,slow=5.8,SNR=447					
CMAR				S	**S**	**20 00 16.3 +2.0**
	comp=Z,0.4nm,0.8s,baz=108,slow=30,SNR=2.5					
CMAR				ScS	**ScS**	**20 02 32.1 +2.5**
	comp=Z,0.5nm,0.9s,baz=225,slow=30,SNR=2.4					
CMAR				LR	LR	20 14 50.0
	comp=Z,964nm,21.9s,baz=112,slow=35					
CMAR				PKPPKP	**P'P'df**	**20 23 01.2 +1.5**
	comp=Z,1.9nm,1.0s,baz=296,slow=4.6,SNR=4.3					
CMAR				PKP2bc		20 23 16.4
	comp=Z,3.0nm,1.1s,baz=307,slow=3.8,SNR=4.1					
MDJ	**Mudanjiang**	**53.90**	**345**	P	**P**	**19 52 40.4 +0.1**
MDJ				pP	pP	19 52 42.8 -2.0
MDJ				PP	**PP**	**19 54 41.3 -0.4**
MDJ				ScP	**ScP**	**19 57 43.1 -0.4**
MDJ				PcS	**PcS**	**19 57 44.8 0.0**
MDJ				S	**S**	**20 00 19.6 +4.5**
MDJ				ScS	**ScS**	**20 02 27.8 -1.6**
MDJ				pmax	pmax	
	comp=Z,180nm,1.6s					
MDJ				pmax	pmax	
	comp=Z,1μm,5.5s					
MDJ				LR	LR	
	comp=Z,2μm,23.1s					
MDJ				LR	LR	
	comp=Z,870nm,23.1s					
MDJ				LR	LR	
	comp=Z,3μm,23.1s					
MDJ	**Mudanjiang**	**53.90**	**345**	*e*P	**P**	**19 52 40.2 0.0**
	comp=Z,404nm,1.4s					
MDJ				LR	LR	
	comp=Z,1μm,20.0s					
CHTO	**Chiang Mai**	**53.91**	**299**	P	**P**	**19 52 42.0 +1.1**
	comp=Z,1μm,1.0s,comp=Z,14μm					
CHTO	**Chiang Mai**	**53.91**	**299**	*e*P	**P**	**19 52 41.7 +0.8**
CHTO				pmax	pmax	
	comp=Z,250nm,1.0s					
CHTO	**Chiang Mai**	**53.91**	**299**	P	**P**	**19 52 42.0 +1.1**
	SNR=136					
CHTO				P	**P**	**19 52 42.0 +1.1**
	SNR=136					
CHTO	**Chiang Mai**	**53.91**	**299**	P	**P**	**19 52 42.0 +1.1**
	SNR=136					
CHTO	**Chiang Mai**	**53.91**	**299**	*e*P	**P**	**19 52 42.2 +1.2**
	comp=Z,254nm,0.9s					
YSS	**Yuzh-Sakhalins**	**54.04**	**356***d*	*i*P	**P**	**19 52 41.6 +0.3**
YSS				*e*S	**S**	**20 00 09.3 -7.7**
YSS				*e*SS	**SS**	**20 03 59.0 +0.2**
YSS				*e*SSS	SSS	20 05 52.0
YSS				pmax	pmax	
	comp=Z,130nm,1.1s					
YSS				pmax	pmax	
	comp=Z,3μm,3.7s					
YSS				MLR	MLR	
	comp=N,2μm,18.0s					
YSS				MLR	MLR	
	comp=E,800nm,18.0s					
YSS				MLR	MLR	
	comp=Z,2μm,18.0s					
CN2	**Changchun**	**54.37**	**341**	⇓P	**P**	**19 52 41.4 -2.3**
CN2				PcP	**PcP**	**19 53 51.3 +3.8**
CN2				*e*S	**S**	**20 00 20.4 -1.1**
CN2				pmax	pmax	
	comp=Z,20nm,0.9s					
CN2				pmax	pmax	
	comp=Z,2μm,5.0s					
CN2				LR	LR	
	comp=Z,3μm,16.0s					
CN2				LR	LR	
	comp=Z,1μm,16.0s					
CN2				LR	LR	
	comp=Z,3μm,18.0s					
XAN	**Xi'an**	**54.57**	**321**	P	**P**	**19 52 45.8 +0.3**
XAN				PP	**PP**	**19 54 47.8 -0.2**
XAN				S	**S**	**20 00 17.4 -7.3**
XAN				ScS	**ScS**	**20 02 33.3 -1.5**
XAN				pmax	pmax	
	comp=Z,380nm,1.0s					
XAN				pmax	pmax	
	comp=Z,2μm,6.1s					
XAN				LR	LR	
	comp=Z,920nm,18.7s					
XAN				LR	LR	
	comp=Z,2μm,17.7s					
XAN				LR	LR	
	comp=Z,2μm,18.2s					
BJT	**Baijiatuau**	**54.91**	**331**	*e*P	**P**	**19 52 47.3 -0.4**
BJT				pmax	pmax	
	comp=Z,618nm,1.5s					
BJT				MLR	MLR	
	comp=Z,5μm,22.0s					
BJT	**Baijiatuau**	**54.91**	**331**	*e*P	**P**	**19 52 47.3 -0.4**
	comp=Z,618nm,1.5s					
BJT				LR	LR	
	comp=Z,5μm,22.0s					
BJI	**Beijing**	**54.92**	**331**	P	**P**	**19 52 47.4 -0.4**
BJI				S	**S**	**20 00 24.1 -4.9**
BJI				SS	**SS**	**20 04 12.5 -0.4**
BJI				pmax	pmax	
	comp=Z,98nm,1.6s					
BJI				pmax	pmax	
	comp=Z,3μm,5.9s					
BJI				LR	LR	
	comp=Z,3μm,20.6s					
BJI				LR	LR	
	comp=Z,3μm,22.2s					
BJI				LR	LR	
	comp=Z,4μm,22.6s					
TIY	**Taiyuan**	**55.07**	**327**	*e*P	**P**	**19 52 49.1 0.0**
TIY				S	**S**	**20 00 32.4 +1.1**
TIY				pmax	pmax	
	comp=Z,2μm,5.0s					
TIY				LR	LR	
	comp=Z,2μm,16.6s					
TIY				LR	LR	
	comp=Z,3μm,25.6s					
TIY				LR	LR	
	comp=Z,3μm,26.0s					
CD2	**Chengdu**	**56.07**	**315**	P	**P**	**19 52 57.8 +1.4**
CD2				PcP	**PcP**	**19 53 55.4 +0.9**
CD2				PP	**PP**	**19 55 02.9 +1.4**
CD2				S	**S**	**20 00 48.9 +4.0**
CD2				pmax	pmax	
	comp=Z,650nm,0.9s					
CD2				pmax	pmax	
	comp=Z,3μm,6.4s					
CD2				LR	LR	
	comp=Z,2μm,19.2s					
CD2				LR	LR	
	comp=Z,2μm,16.7s					
XMAS	**Kiritimati**	**56.24**	**83**	*e*P	**P**	**19 52 59.3 +1.5**
	comp=Z,306nm,1.1s					
HABR	**Khabarovsk**	**56.41**	**351***d*	*i*P	**P**	**19 52 56.4 -2.0**
HABR				*e*		19 53 53.4
HABR				*e*		19 55 02.1
HABR				*e*S	**S**	**20 00 48.8 +0.1**
HABR				*e**SS	**sS**	**20 00 53.5 -2.7**
HABR				*e*		20 02 45.5
HABR				*e*SS	**SS**	**20 04 36.5 +0.4**
HABR				pmax	pmax	
	comp=Z,827nm,1.9s					
HABR				pmax	pmax	
	comp=E,61nm,2.5s					
HABR				pmax	pmax	
	comp=N,258nm,2.5s					
HABR				pmax	pmax	
	comp=Z,710nm,2.5s					
HABR				MLR	MLR	
	comp=Z,1μm,17.0s					
KLR	**Kul'dur**	**57.75**	**348**	PKPPKP	**P'P'df**	**20 22 54.7 +4.7**
	comp=Z,0.5nm,0.5s,baz=51,slow=6.6,SNR=4.5					
KLR				PKP2bc		20 23 06.1
	comp=Z,1.9nm,1.0s,baz=25,slow=2.3,SNR=4.5					
HHC	**Hu-ho-hao-te**	**57.82**	**329**	*e*P	**P**	**19 53 08.8 +0.1**
HHC				S	**S**	**20 01 00.4 -7.4**
HHC				pmax	pmax	
	comp=Z,96nm,1.1s					
HHC				pmax	pmax	
	comp=Z,2μm,6.5s					
HHC				LR	LR	
	comp=Z,2μm,16.7s					
HHC				LR	LR	
	comp=Z,2μm,16.2s					
HHC				LR	LR	
	comp=Z,3μm,16.8s					
TYV	**Tymovskoe**	**57.95**	**357**	*e*P	**P**	**19 53 09.2 0.0**
TYV				*e*S	**S**	**20 01 08.0 -0.8**
TYV				pmax	pmax	
	comp=Z,920nm,1.6s					
TYV				pmax	pmax	
	comp=E,2μm,4.0s					
TYV				smax	smax	
	comp=E,2μm,13.0s					
SKR	**Severo-Kuril's**	**58.19**	**7**	*e*P	P	19 53 03.0 -7.9
SKR				*e*		19 53 18.0
SKR				*e*S	**S**	**20 01 08.0 -4.0**
SKR				pmax	pmax	
	comp=E,2μm,4.0s					
SKR				pmax	pmax	
	comp=Z,2μm,4.0s					
SKR				pmax	pmax	
	comp=N,960nm,1.5s					
SKR				pmax	pmax	
	comp=Z,960nm,1.5s					
BTO	**Baotou**	**58.45**	**328**	*e*P	**P**	**19 53 13.6 +0.5**
LZH	**Lanzhou**	**59.08**	**320**	*e*P	**P**	**19 53 19.3 +1.7**
LZH				pP	pP	19 53 22.8 +0.6
LZH				sP	sP	19 53 24.3 +0.4
LZH				PP	**PP**	**19 55 34.3 +5.9**
LZH				*e*S	**S**	**20 01 23.4 -1.1**
LZH				SS	**SS**	**20 05 16.8 -2.2**
LZH				pmax	pmax	
	comp=Z,490nm,1.1s					
LZH				pmax	pmax	
	comp=Z,2μm,4.4s					
LZH				LR	LR	
	comp=Z,7μm,16.7s					
LZH				LR	LR	
	comp=Z,6μm,17.6s					
LZH				LR	LR	
	comp=Z,7μm,18.7s					
KEKH	**Kekaha**	**59.77**	**60**	*e*P	**P**	**19 53 22.9 +0.5**
	comp=Z,194nm,1.0s					
NKL	**Nikolayevsk**	**60.35**	**356**	*i*P	**P**	**19 53 26.5 +0.7**
NKL				*e*		19 54 15.0
NKL				*e*		20 01 39.0
NKL				pmax	pmax	
	comp=N,800nm,1.5s					
NKL				pmax	pmax	
	comp=E,69nm,1.5s					
NKL				pmax	pmax	
	comp=Z,1μm,1.5s					
NKL				pmax	pmax	
	comp=N,2μm,4.0s					
NKL				pmax	pmax	
	comp=Z,3μm,4.0s					
NKL				MLR	MLR	
	comp=N,200nm,15.0s					
NKL				MLR	MLR	
	comp=Z,500nm,15.0s					
PEA0	**Petropavlovsk-**	**60.77**	**7**	*e*P	**P**	**19 53 28.8 +0.1**
PEA0				*e*PcP	**PcP**	**19 54 16.4 +3.9**
PEA0B	**Petropavlovsk-**	**60.77**	**7**	*e*P	**P**	**19 53 28.7 0.0**
	comp=Z,616nm,1.4s					
PEA0B				LR	LR	
	comp=Z,4μm,21.0s					
PETK	**Petropavlovsk-**	**60.77**	**7**	P	**P**	**19 53 29.7 +1.1**
	comp=Z,81nm,1.0s,baz=151,slow=3.4,SNR=49					
PETK				PcP	**PcP**	**19 54 12.9 +0.4**
	comp=Z,48nm,1.0s,baz=131,slow=5.9,SNR=2.3					
PETK				S	**S**	**20 01 49.3 +4.0**
	comp=Z,1.6nm,0.8s,baz=70,slow=22,SNR=2.8					
PETK				LR	LR	20 15 56.6
	comp=Z,4μm,21.7s,baz=191,slow=32					
PEA1	**Petropavlovsk-**	**60.77**	**7**	*e*P	**P**	**19 53 29.7 +1.0**
PEA1				*e*PcP	**PcP**	**19 54 12.9 +0.4**
PEA1				*e*S	**S**	**20 01 49.3 +3.9**
PET	**Petropavlovsk**	**60.81**	**8***d*	*i*P	**P**	**19 53 29.5 +0.6**
PET				*e*		19 54 13.0
PET				*e*S	**S**	**20 01 44.5 -1.3**
PET				pmax	pmax	
	comp=Z,83nm,1.4s					
PET				pmax	pmax	
	comp=Z,2μm,5.8s					
PET				pmax	pmax	
	comp=Z,500nm,12.6s					
PET	**Petropavlovsk**	**60.81**	**8**	*e*P	**P**	**19 53 28.5 -0.4**
	comp=Z,156nm,1.3s					
PET				*e*PcP	**PcP**	**19 54 16.0 +3.4**
PET				LR	LR	
	comp=Z,2μm,21.0s					
HON	**Honolulu**	**61.00**	**61**	*e*P	**P**	**19 53 31.6 +0.8**
HON	**Honolulu**	**61.00**	**61**	*e*P	**P**	**19 53 31.6 +0.8**
KIP	**Kipapa**	**61.02**	**61**⇓	*e*P	**P**	**19 53 31.3 +0.3**
KIP	**Kipapa**	**61.02**	**61**	*e*P	**P**	**19 53 31.9 +0.9**
	comp=Z,489nm,1.2s					
HIA	**Hailar**	**61.05**	**340**	*e*P	**P**	**19 53 30.4 -0.3**
HIA				pmax	pmax	
	comp=Z,895nm,1.5s					
HIA				MLR	MLR	
	comp=Z,3μm,18.0s					
HIA	**Hailar**	**61.05**	**340**	*e*P	**P**	**19 53 30.4 -0.3**
	comp=Z,895nm,1.5s					
HIA				LR	LR	
	comp=Z,3μm,18.0s					
OPA	**Opana**	**61.12**	**61**	*e*P	**P**	**19 53 32.9 +1.2**
OPA				pmax	pmax	
	comp=Z,636nm,1.2s					
OPA	**Opana**	**61.12**	**61**	*e*P	**P**	**19 53 32.9 +1.2**
	comp=Z,636nm,1.2s					
KKH	**Kailua Kona**	**62.15**	**63**	*e*P	**P**	**19 53 39.9 +1.3**
KKH	**Kailua Kona**	**62.15**	**63**	*e*P	**P**	**19 53 39.9 +1.3**
HLK	**Haleakala**	**62.32**	**62**	*e*P	**P**	**19 53 41.0 +0.8**
	comp=Z,856nm,1.6s					
HLK				LR	LR	
	comp=Z,8μm,21.0s					
MLOA	**Mauna Loa Obse**	**62.51**	**64**	*e*P	**P**	**19 53 42.4 +0.9**
HPAH	**Hawaii Prepara**	**62.56**	**63**	*e*P	**P**	**19 53 42.5 +1.0**
	comp=Z,133nm,0.8s					
HPAH				LR	LR	
	comp=Z,5μm,20.0s					
PAE	**Paea**	**62.61**	**106**	*e*P	**P**	**19 53 42.5 +0.7**
	comp=Z,12nm,1.1s					
PPT	**Papeete**	**62.62**	**106**	P	**P**	**19 53 43.6 +1.8**
	comp=Z,17nm,0.6s,baz=268,slow=6.2,SNR=2.4					
PPT				LR	LR	20 16 12.0
	comp=Z,2μm,21.6s,baz=268,slow=32					
PPT2	**Papeete2**	**62.62**	**106**	*e*P	**P**	**19 53 42.9 +1.0**
	comp=Z,62nm,1.2s					
PPT2				*e*S	**S**	**20 02 10.3 +0.2**
	comp=Z,2μm,24.2s					
PPT2				*e*LQ	LQ	20 09 45.9
	comp=Z,6μm,32.8s					
PPT2				*e*LR	LR	20 12 25.1
	comp=Z,3μm,22.5s					
POHA	**Pohakuloa**	**62.62**	**63**	*e*P	**P**	**19 53 43.3 +1.2**
	comp=Z,221nm,1.0s					
SHL	**Shillong**	**62.62**	**304**	*e*P	**P**	**19 53 43.5 +1.5**
SHL				*e*x	x	20 02 15.0
TIAR	**Tiarei**	**62.83**	**106**	*e*P	**P**	**19 53 44.1 +0.8**
	comp=Z,21nm,1.1s					
TVO	**Taravao**	**62.93**	**106**	*e*P	**P**	**19 53 44.7 +0.7**
	comp=Z,19nm,1.1s					
TBI	**Tubuai**	**62.96**	**112**	*e*P	**P**	**19 53 44.5 +0.5**
	comp=Z,130nm,1.0s					
TBI				*e*S	**S**	**20 02 13.3 -0.8**
	comp=Z,1μm,24.8s					
TBI				*e*LQ	LQ	20 09 56.2
	comp=Z,5μm,34.0s					
TBI				*e*LR	LR	20 12 39.1
	comp=Z,3μm,33.2s					
GTA	**Gaotai**	**63.62**	**321**	⇓P	**P**	**19 53 49.5 +1.2**
GTA				pP	sP	19 53 53.8 -0.8
GTA				sP	pP	19 53 56.5 +3.6
GTA				PcP	**PcP**	**19 54 26.3 +1.7**
GTA				PP	**PP**	**19 56 11.9 +3.5**
GTA				ScP		19 58 22.8
GTA				PcS		19 58 27.4
GTA				S	**S**	**20 02 27.4 +5.3**
GTA				sS	sS	20 02 35.3 +5.6
GTA				ScS	**SKSac**	**20 03 41.4 -0.3**
GTA				pmax	pmax	
	comp=Z,200nm,1.7s					
GTA				pmax	pmax	
	comp=Z,3μm,6.4s					
GTA				LR	LR	
	comp=Z,800nm,18.1s					
GTA				LR	LR	
	comp=Z,920nm,20.0s					
GTA				LR	LR	
	comp=Z,1μm,21.4s					
SMY	**Shemya**	**64.02**	**18**	*e*P	**P**	**19 53 50.9 +0.5**
SMY				*e*		19 54 21.5
SMY				pmax	pmax	
	comp=Z,426nm,1.3s					
SMY				MLR	MLR	
	comp=Z,2μm,21.0s					
SMY	**Shemya**	**64.02**	**18**	*e*P	**P**	**19 53 50.9 +0.5**
	comp=Z,426nm,1.3s					
SMY				*e*PcP	**PcP**	**19 54 21.5 -4.2**
SMY				LR	LR	
	comp=Z,2μm,21.0s					
CASY	**Casey**	**64.09**	**195**	*e*P	**P**	**19 53 50.1 -0.6**
	comp=Z,134nm,0.9s					
CASY				LR	LR	
	comp=Z,6μm,18.0s					
VAH	**Vaihoa**	**64.48**	**103**	*e*P	**P**	**19 53 54.9 +0.7**
	comp=Z,66nm,1.2s					
LSA	**Lhasa**	**64.92**	**307**	*e*P	**P**	**19 53 58.7 +1.3**
LSA				pmax	pmax	
	comp=Z,295nm,0.9s					
LSA				MLR	MLR	
	comp=Z,1μm,22.0s					
LSA	**Lhasa**	**64.92**	**307**	*e*P	**P**	**19 53 58.7 +1.3**
	comp=Z,294nm,0.9s					
LSA				LR	LR	
	comp=Z,1μm,22.0s					
ULN	**Ulaanbaatar**	**65.13**	**332***d*	*i*P	**P**	**19 53 58.6 +0.6**
ULN				pmax	pmax	
	comp=Z,279nm,1.7s					
ULN	**Ulaanbaatar**	**65.13**	**332**	P	**P**	**19 53 58.8 +0.8**
	SNR=114					
ULN				P	**P**	**19 53 58.8 +0.8**
	SNR=114					
ULN	**Ulaanbaatar**	**65.13**	**332**	P	**P**	**19 53 58.8 +0.8**
	SNR=114					
ULN	**Ulaanbaatar**	**65.13**	**332**	*e*P	**P**	**19 53 58.5 +0.5**
	comp=Z,269nm,1.4s					
ULN				LR	LR	
	comp=Z,3μm,19.0s					
SONA0	**Songino Array**	**65.42**	**331**	*e*P	**P**	**19 54 00.4 +0.5**
	comp=Z,207nm,1.4s					
SONA0				*e*PP	**PP**	**19 56 22.0 -2.0**
SONA0				*e*S	**S**	**20 02 50.3 +6.3**
SONM	**Songino Array**	**65.42**	**331**	P	**P**	**19 54 00.4 +0.5**
	comp=Z,50nm,1.0s,baz=146,slow=8.0,SNR=128					
SONM				PP	**PP**	**19 56 22.0 -2.0**
	comp=Z,14nm,1.2s,baz=340,slow=1.7,SNR=4.0					
SONM				S	**S**	**20 02 50.3 +6.3**
	comp=Z,0.6nm,0.9s,baz=72,slow=30,SNR=2.0					
SONM				LR	LR	20 21 21.1
	comp=Z,3μm,21.5s,baz=134,slow=35					
SONA1	**Songino Array**	**65.42**	**331**	*e*P	**P**	**19 54 00.1 +0.2**
CIT	**Chita**	**65.54**	**338**	*e*P	**P**	**19 54 01.3 +0.9**
CIT				*e*		19 54 14.6
CIT				*e*		19 54 30.6
CIT				*e*		20 02 45.7
CIT				pmax	pmax	
	comp=Z,930nm,1.8s					
BWNR	**Bhubaneshwar**	**66.01**	**296**	*e*P	**P**	**19 54 04.4 +0.4**
BWNR				IAmb	IAmb	19 54 10.1
	comp=Z,1μm,1.7s					
CLNS	**Chul'man**	**66.33**	**347**	*e*P	**P**	**19 54 06.0 +0.6**
CLNS				pmax	pmax	
	comp=Z,66nm,1.3s					
CLNS				pmax	pmax	
	comp=N,113nm,0.8s					
CLNS				pmax	pmax	
	comp=E,51nm,0.9s					
MA2	**Magadan**	**66.63**	**2**	P	**P**	**19 54 07.7 +0.5**
	comp=E,135nm,0.9s,baz=183,slow=6.5,SNR=42					
MA2				S	**S**	**20 02 58.6 +0.7**
	comp=E,2.1nm,0.4s,baz=232,slow=18,SNR=2.3					
BOK	**Bokaro**	**67.05**	**299**	*e*P	**P**	**19 54 13.1 +2.4**
BOK				IAmb	IAmb	19 54 13.6
	comp=Z,165nm,0.4s					
CHLP	**Challavanipeta**	**67.06**	**293**	*e*P	**P**	**19 54 11.1 +0.4**
CHLP				IAmb	IAmb	19 54 16.2
	comp=Z,294nm,1.2s					
CHLP				*e*S	**S**	**20 03 03.9 -0.7**

CHLP IVMs_BB IVMs_BB 20 25 34.6
comp=Z,350nm,3.5s
VIS Vishakhapatnam 67.50 292 *e*P **P 19 54 14.2 +0.6**
PALK Pallekele 67.61 281 LR LR 20 25 37.6
comp=Z,870nm,22.0s,baz=117,slow=38
PALK Pallekele 67.61 281 *i* P **P 19 54 14.3 -0.1**
SNR=9.8
PALK Pallekele 67.61 281 *e*P **P 19 54 14.9 +0.5**
PALK pmax pmax
comp=Z,94nm,1.3s
PALK Pallekele 67.61 281 *e*P **P 19 54 14.9 +0.5**
comp=Z,94nm,1.3s
GUN Gumba 68.48 304 *e*P **P 19 54 20.6 +0.6**
comp=Z,2μm,1.0s
ZAK Zakamensk 68.66 332 *e*P **P 19 54 20.2 -0.2**
ZAK pmax pmax
comp=Z,17nm,1.4s
PKIN Phulchoki 68.76 303 *e*P **P 19 54 21.9 +0.2**
comp=Z,659nm,1.2s
KKN Kakani 68.93 303 *e*P **P 19 54 23.0 +0.3**
comp=Z,1μm,1.0s
PVM Polavaram 68.95 292 *e*P **P 19 54 22.2 -0.4**
PVM IAmb IAmb 19 54 27.3
comp=Z,135nm,1.2s
PVM *e*S **S 20 03 26.7 -0.5**
PVM IVMs_BB IVMs_BB 20 22 40.6
comp=Z,720nm,3.9s
DMN Daman 69.01 303 *e*P **P 19 54 23.8 +0.6**
MDRS Chennai 69.24 287 *e*P **P 19 54 25.9 +1.4**
TLY Talaya 69.38 333 P **P 19 54 25.0 +0.2**
comp=Z,20nm,0.8s,baz=164,slow=4.3,SNR=12
TLY S **S 20 03 37.2 +6.0**
comp=Z,2.2nm,0.5s,baz=118,slow=22,SNR=2.4
TLY LR LR 20 23 22.9
comp=Z,3μm,21.8s,baz=124,slow=35
TLY Talaya 69.38 333 *d i*P **P 19 54 24.9 +0.2**
TLY *e* 19 56 57.2
TLY *e*S **S 20 03 31.4 +0.1**
TLY *e* 20 04 22.7
TLY pmax pmax
comp=Z,183nm,1.6s
TLY MLR MLR
comp=Z,2μm,18.0s
IRK Irkutsk 69.49 334 *e*P **P 19 54 25.1 -0.3**
IRK pmax pmax
comp=Z,265nm,1.7s
GKN Gorkha 69.54 303 *e*P **P 19 54 26.7 +0.3**
comp=Z,1μm,1.1s
MIR Mirnyy 69.64 200 *e*P **P 19 54 26.0 0.0**
MIR pmax pmax
comp=Z,40nm,1.5s
SKHT Srikalahasti 69.90 287 *e*P **P 19 54 28.2 -0.3**
SKHT IAmb IAmb 19 54 30.0
comp=Z,171nm,1.6s
SKHT *e*S **S 20 03 38.0 -0.6**
SKHT IVMs_BB IVMs_BB 20 22 37.1
comp=Z,534nm,4.4s
SEY Seymchan 70.05 3 P **P 19 54 29.1 +0.5**
comp=Z,111nm,1.0s,baz=176,slow=4.4,SNR=168
SEY S **S 20 03 40.0 +1.4**
BOD Bodaibo 70.09 342 *e*P **P 19 54 27.9 -1.0**
BOD pmax pmax
comp=Z,275nm,1.4s
ADKI Addanki 70.14 290 *e*P **P 19 54 30.0 0.0**
ADKI IAmb IAmb 19 54 36.2
comp=Z,125nm,0.9s
ADKI *e*S **S 20 03 41.0 -0.3**
ADKI IVMs_BB IVMs_BB 20 27 09.0
comp=Z,535nm,26.6s
YAK Yakutsk 70.31 351 P **P 19 54 30.7 +0.6**
comp=Z,10nm,0.7s,baz=349,slow=22,SNR=44
YAK S **S 20 03 43.2 +1.5**
comp=Z,1.7nm,0.4s,baz=66,slow=23,SNR=4.7
YAK PKP2bc 20 22 26.4
comp=Z,1.3nm,0.5s,baz=236,slow=3.8,SNR=4.6
YAK LR LR 20 24 09.6
comp=Z,2μm,21.5s,baz=150,slow=35
YAK Yakutsk 70.31 351 *i* P **P 19 54 30.2 +0.1**
YAK *e**PP **sP 19 54 39.5 +3.0**
YAK *e* 19 54 49.9
YAK *e*S **S 20 03 41.4 -0.3**
YAK *e**SS sS 20 03 59.9 +11
YAK *e* 20 04 28.2
YAK *e*SSS SSS 20 11 22.0
YAK pmax pmax
comp=N,278nm,1.3s
YAK pmax pmax
comp=E,97nm,1.6s
YAK smax smax
comp=E,432nm,2.4s
YAK smax smax
comp=N,200nm,2.7s
YAK Yakutsk 70.31 351 *e*P **P 19 54 30.5 +0.4**
comp=N,633nm,1.2s
YAK S **S 20 03 43.2 +1.5**
YAK ⇑*e* 20 22 26.4
KOLN Koldanda 70.32 303 *e*P **P 19 54 31.5 +0.2**
comp=N,850nm,0.9s
MOY Mondy 70.59 332 *e*P **P 19 54 33.0 +0.7**
MOY pmax pmax
comp=Z,372nm,2.5s
NIKH Nikolski High 70.67 27 *e*P **P 19 54 32.6 +0.1**
comp=Z,174nm,1.2s
NIKH LR LR
comp=Z,3μm,21.0s
VNDA Vanda 70.72 177 P **P 19 54 32.5 -0.1**
comp=Z,54nm,0.8s,baz=334,slow=6.5,SNR=45
VNDA S **S 20 03 50.8 +4.6**
comp=Z,1.6nm,0.8s,baz=316,slow=6.6,SNR=4.6
VNDA LR LR 20 23 28.9
comp=Z,5μm,18.1s,baz=350,slow=34
VNDA Vanda 70.72 177 *e*P **P 19 54 32.2 -0.4**
VNDA *e*S **S 20 03 50.8 +4.6**
VNDA pmax pmax
comp=Z,139nm,1.2s
VNDA Vanda 70.72 177 *e*P **P 19 54 32.1 -0.4**
comp=Z,139nm,1.2s
VNDA *e*S **S 20 03 50.8 +4.6**
NJS Nagarjunasagar 70.92 290 *e*P **P 19 54 34.3 -0.6**
NJS IAmb IAmb 19 54 36.8
comp=Z,163nm,1.3s
NJS *e*S **S 20 03 49.7 -0.9**
NJS IVMs_BB IVMs_BB 20 26 43.9
comp=Z,341nm,3.8s
PYUN Piuthan 70.94 303 *e*P **P 19 54 35.0 0.0**
comp=Z,2μm,0.9s
RCLA Racherla 71.00 289 *e*P **P 19 54 35.7 +0.4**
RCLA IAmb IAmb 19 54 44.0
comp=Z,75nm,1.2s
RCLA *e*S **S 20 03 50.5 -1.0**
RCLA IVMs_BB IVMs_BB 20 28 14.7
comp=Z,431nm,3.8s
SRLM Srisailam 71.20 290 *e*P **P 19 54 35.5 -1.1**
SRLM IAmb IAmb 19 54 42.7
comp=Z,156nm,0.9s
SRLM *e*S **S 20 03 52.4 -1.4**
SRLM IVMs_BB IVMs_BB 20 22 34.4
comp=Z,449nm,4.2s
SBA Scott Base 71.37 176 *e*P **P 19 54 38.9 +2.4**
SBA pmax pmax
comp=Z,809nm,2.0s
SBA MLR MLR
comp=Z,4μm,20.0s
SBA Scott Base 71.37 176 *e*P **P 19 54 38.9 +2.4**
comp=Z,809nm,2.0s
SBA LR LR
comp=Z,4μm,20.0s
TRD Trivandrum 71.48 281 *e*P **P 19 54 39.7 +1.4**
RPR Rampur 71.50 293 *e*P **P 19 54 38.1 -0.2**
RPR IAmb IAmb 19 54 42.7
comp=Z,238nm,1.1s
RPR *e*S **S 20 03 56.0 -1.2**
RPR IVMs_BB IVMs_BB 20 28 49.6
comp=Z,457nm,24.6s
HYB Hyderabad 71.83 291 *i* P **P 19 54 38.0 -2.4**
HYB *e*S **S 20 04 00.0 -1.1**
HYB Hyderabad 71.83 291 *e*P **P 19 54 40.5 +0.1**
HYB IAmb IAmb 19 54 41.3
comp=Z,75nm,0.6s
HYBB Hyderabad (bro 71.83 291 *e*P **P 19 54 39.9 -0.5**
HYBB IAmb IAmb 19 54 44.3
comp=Z,222nm,1.3s
HYBB *e*S **S 20 03 59.4 -1.7**
HYBB IVMs_BB IVMs_BB 20 26 37.6
comp=Z,442nm,3.6s
TAOE Nuku Hiva Isla 72.11 97 *e*P **P 19 54 41.8 -0.4**
comp=Z,283nm,1.4s
TAOE Nuku Hiva Isla 72.11 97 *e*LR LR 20 16 47.9
comp=Z,2μm,22.9s
UNV Unalaska Valle 72.30 27 PFAKE 19 54 50.0 +7.6
UNV LR LR
comp=Z,3μm,21.0s
NGP Nagpur 72.31 295 *e*P **P 19 54 43.6 +0.5**
NGP IAmb IAmb 19 54 44.9
comp=Z,457nm,1.8s
SRSP Sriramsagar 72.39 292 *e*P **P 19 54 42.6 -1.0**
SRSP IAmb IAmb 19 54 47.7
comp=Z,255nm,1.1s
SRSP *e*S **S 20 04 06.0 -1.4**
SRSP IVMs_BB IVMs_BB 20 26 49.4
comp=Z,292nm,10.6s
AKUT Akutan 72.82 27 PFAKE 19 55 00.0 +15
AKUT LR LR
comp=Z,2μm,20.0s
WMQ Urumqi 73.66 320⇑ *i* P **P 19 54 52.8 +2.0**
WMQ S **S 20 04 21.9 +0.8**
WMQ ScS **SKKSac 20 04 58.5 +1.0**
WMQ pmax pmax
comp=Z,260nm,1.2s
WMQ pmax pmax
comp=Z,1μm,3.6s
WMQ LR LR
comp=Z,510nm,20.4s
WMQ LR LR
comp=Z,430nm,14.6s
WMQ LR LR
comp=Z,230nm,23.8s
H08S3 Diego Garcia H 73.74 264 P **P 19 54 51.1 -0.4**
DGAR Diego Garcia 73.79 264 PFAKE 19 55 00.0 +7.9
DGAR LR LR
comp=Z,2μm,19.0s
KLRI Killari 73.79 291 *e*P **P 19 54 51.4 -0.6**
KLRI IAmb IAmb 19 54 55.9
comp=Z,239nm,1.2s
KLRI *e*S **SKiKP 20 04 21.3 -0.3**
KLRI IVMs_BB IVMs_BB 20 27 24.4
comp=Z,521nm,3.4s
BHPL Bhopal 74.31 296 *e*P **P 19 54 55.6 +0.6**
BHPL IAmb IAmb 19 54 57.9
comp=Z,706nm,1.9s
JOSI Joshimath 74.56 304 *e*P **P 19 54 57.6 +1.1**
JOSI IAmb IAmb 19 55 02.5
comp=Z,9μm,1.2s
DDI Dehra Dun 75.73 304 *e*P **P 19 55 04.4 +1.3**
DDI IAmb IAmb 19 55 05.0
comp=Z,258nm,0.6s
GOA Goa 75.83 288 *e*P **P 19 55 05.4 +1.6**
SONA Sohna 75.95 301 *e*P **P 19 55 04.6 +0.3**
NDI New Delhi 75.96 302 IAmb IAmb 19 53 24.2
NDI *e*P P 19 54 57.5 -6.8
comp=Z,28nm,0.8s
NDI *e*S **S 20 04 41.0 -6.2**
BHGR Bahadurgarh 76.19 302 *e*P **P 19 55 06.0 +0.4**
BHGR IAmb IAmb 19 55 09.7
comp=Z,672nm,0.9s
RKT Rikitea 76.28 112 *e*P **P 19 55 06.2 -0.1**
comp=Z,92nm,1.2s
RKT *e*S **S 20 04 48.7 -2.2**
comp=Z,758nm,25.8s
RKT Rikitea 76.28 112 *e*LQ LQ 20 15 35.5
comp=Z,3μm,36.0s
RKT *e*LR LR 20 18 40.3
comp=Z,2μm,36.0s
BILL Bilibino 76.30 7 *d i*P **P 19 55 05.5 +0.1**
BILL *e* 19 55 20.1
BILL *e* 19 58 02.1
BILL *i* S **S 20 04 51.4 +2.0**
BILL pmax pmax
comp=Z,208nm,1.0s
BILL Bilibino 76.30 7 *e*P **P 19 55 05.8 +0.4**
comp=Z,254nm,1.2s
BILL LR LR
comp=Z,1μm,20.0s
KUDL Kundal 76.42 301 *e*P **P 19 55 06.7 -0.2**
KUDL IAmb IAmb 19 55 07.9
comp=Z,223nm,1.0s
POO Poona 76.44 291⇑ *i*P **P 19 55 07.0 -0.3**
comp=Z,45nm,1.0s
KKR Kurukshetra 76.65 303 *e*P **P 19 55 09.5 +1.2**
KKR IAmb IAmb 19 55 14.0
comp=Z,504nm,0.9s
SMLA Simla 76.70 304 *e*P **P 19 55 09.2 +0.8**
SMLA IAmb IAmb 19 55 10.3
comp=Z,181nm,0.8s
RTK Rohtak 76.73 302 *e*P **P 19 55 09.4 +0.7**
RTK IAmb IAmb 19 55 13.1
comp=Z,394nm,0.7s
KHET Khetri 76.99 301 *e*P **P 19 55 10.3 +0.1**
KHET IAmb IAmb 19 55 14.9
comp=Z,410nm,0.8s
KRAR Krasnoyarsk 77.06 332⇓ *e*P **P 19 55 09.7 -0.2**
KRAR pmax pmax
comp=Z,93nm,1.9s
GAMB Gambell 77.33 18 *e*P **P 19 55 12.4 +1.1**
comp=Z,435nm,1.9s
GAMB LR LR
comp=Z,3μm,21.0s
ZSN Zaisan 77.35 322 *i* P **P 19 55 09.7 -2.1**
comp=Z,1μm,1.2s
ZSN *e*S **S 20 04 58.1 -3.6**
ZSN LRM MLR 20 32 15.6
comp=Z,455nm,15.6s
CHGN Chignik 77.49 28 *e*P **P 19 55 11.7 -0.6**
DHRM DHARAMSHALA 77.73 305 *e*P **P 19 55 14.7 +0.1**
DHRM IAmb IAmb 19 55 20.3
comp=Z,4μm,2.5s
THN Thein Dam 78.25 305 *e*P **P 19 55 14.6 -2.5**
MK01 Makanchi Array 78.37 321 *e*P **P 19 55 18.5 +1.0**
MK31 Makanchi Array 78.38 321 *e*P **P 19 55 18.3 +0.7**
MK31 Makanchi Array 78.38 321 *e*P **P 19 55 18.3 +0.7**
MK32 Makanchi Array 78.38 321 *e*P **P 19 55 17.7 +0.1**
MK32 *e*S **S 20 05 14.9 +2.0**
MK32 *e*PKKPbc **PKKPbc 20 14 18.6 +1.5**
MKAR Makanchi Array 78.38 321 P **P 19 55 17.7 +0.1**
comp=Z,236nm,0.9s,baz=104,slow=4.3,SNR=781
MKAR S **S 20 05 14.9 +2.0**
comp=Z,1.5nm,1.1s,baz=106,slow=8.9,SNR=3.1
MKAR PKKPbc **PKKPbc 20 14 18.6 +1.5**
comp=Z,1.7nm,0.9s,baz=278,slow=3.6,SNR=8.9
MKAR Makanchi Array 78.38 321 *e*P **P 19 55 18.6 +1.0**
MKAR S **S 20 05 14.9 +2.0**
MKAR PKKPbc **PKKPbc 20 14 18.6 +1.5**
SHLS Shalkode 78.57 317 *i* P **P 19 55 17.7 -1.3**
comp=Z,4μm,1.2s
SHLS *e*S **S 20 05 12.5 -3.0**
MAKZ Makanchi 78.58 321 *e*P **P 19 55 19.4 +0.7**
MAKZ pmax pmax
comp=Z,739nm,1.1s
MAKZ MLR MLR
comp=Z,1μm,19.0s
MAKZ Makanchi 78.58 321 *e*P **P 19 55 19.4 +0.7**
comp=Z,739nm,1.1s
MAKZ LR LR
comp=Z,1μm,19.0s
PDGK Podgornoye 78.91 317 *i* P **P 19 55 20.2 -0.3**
PDGK pmax pmax
comp=Z,470nm,0.9s
KPKS Kokpek 79.50 317 *i* P **P 19 55 21.9 -2.0**
comp=Z,7μm,1.3s
KPKS *e*S **S 20 05 21.4 -3.8**
SATY Saty 79.55 316 *i* P **P 19 55 23.1 -1.1**
comp=Z,5μm,1.4s
SATY *e*S **S 20 05 23.0 -2.8**
ZHN Zhinishke 79.57 316 *i* P **P 19 55 23.1 -1.2**
comp=Z,2μm,1.6s
ZHN *e*S **S 20 05 23.7 -2.3**
TIXI Tiksi 79.59 354 P **P 19 55 22.7 -1.0**
comp=Z,79nm,1.0s,baz=143,slow=6.0,SNR=109
TIXI S **S 20 05 23.8 -1.0**
comp=Z,0.5nm,0.3s,baz=101,slow=23,SNR=4.1
TIXI Tiksi 79.59 354 *d i*P **P 19 55 22.2 -1.4**
TIXI pmax pmax
comp=Z,108nm,1.0s
TIXI MLR MLR
comp=Z,775nm,17.0s
TIXI Tiksi 79.59 354 *e*P **P 19 55 22.9 -0.7**
comp=Z,258nm,1.4s
TIXI LR LR
comp=Z,901nm,20.0s
TNA Tin City 79.75 17 *e*P **P 19 55 25.3 +0.7**
comp=Z,96nm,1.2s
TNA LR LR
comp=Z,2μm,22.0s
ZAA0 Zalesovo Array 79.99 328 *e*P **P 19 55 25.0 -1.2**
ZALV Zalesovo Beam 79.99 328 P **P 19 55 25.6 -0.6**
comp=Z,104nm,0.9s,baz=110,slow=5.0,SNR=138
ZALV PKKPbc **PKKPbc 20 14 14.5 +0.6**
comp=Z,3.1nm,0.9s,baz=293,slow=3.8,SNR=7.2
ZALV PKPPKP **P'P'df 20 22 14.9 +1.1**
comp=Z,0.7nm,0.7s,baz=298,slow=3.2,SNR=3.6
ZALV LR LR 20 30 12.0
comp=Z,3μm,20.3s,baz=84,slow=35
ZAA1 Zalesovo Array 79.99 328 *e*P **P 19 55 25.6 -0.6**
ZAA1 *e*PKKPbc **PKKPbc 20 14 14.5 +0.6**
ZAA1 *e*P'P'df **P'P'df 20 22 14.9 +1.1**
KSH Kashi 80.13 312 P **P 19 55 29.5 +2.0**
KSH *e*PP **PP 19 58 33.4 +3.5**
KSH S **S 20 05 34.5 +2.4**
KSH SS **SS 20 10 48.4 +5.5**
KSH pmax pmax
comp=Z,360nm,1.1s
KSH LR LR
comp=Z,580nm,16.0s
KSH LR LR
comp=Z,820nm,16.0s
KSH LR LR
comp=Z,2μm,19.1s
OHAK Old Harbor 80.37 28 *e*P **P 19 55 28.6 +0.5**
comp=Z,416nm,1.8s
OHAK LR LR
comp=Z,2μm,22.0s
MDOK Medeo 80.52 316 *i* P **P 19 55 29.4 -0.1**
comp=Z,3μm,1.2s
MDOK *i* PP **PP 19 58 32.6 -0.5**
MDOK *i* PPP PPP 20 00 19.8
MDOK *e*S **S 20 05 34.9 -1.1**
MDOK LR LR 20 32 15.8
comp=Z,355nm,19.4s
AAA Alma-Ata 80.63 316 *e*P **P 19 55 31.6 +1.7**
AAA *e*S **S 20 05 39.6 +2.6**
AAA pmax pmax
comp=Z,4μm,1.8s
AAA smax smax
comp=E,2μm,10.6s
AAA MLR MLR
comp=Z,1μm,18.0s
AAA Alma-Ata 80.63 316 *i* P **P 19 55 29.5 -0.5**
comp=Z,3μm,1.4s
AAA *e*S **S 20 05 35.5 -1.5**
AAA LRM MLR 20 33 13.1
comp=Z,377nm,20.4s
JASL Jaisalmer 80.93 299 *e*P **P 19 55 31.7 -0.2**
JASL IAmb IAmb 19 55 37.5
comp=Z,337nm,0.9s
KDAK Kodiak Island 80.98 28 *e*P **P 19 55 32.1 +0.7**
KDAK pmax pmax
comp=Z,261nm,1.4s
KDAK MLR MLR
comp=Z,3μm,22.0s
KDAK Kodiak Island 80.98 28 *e*P **P 19 55 32.1 +0.7**
comp=Z,261nm,1.4s
KDAK LR LR
comp=Z,3μm,22.0s
SEM Semipalatinsk 81.05 323 *i* P **P 19 55 30.4 -1.5**
comp=Z,1μm,1.5s
SEM *e*S **S 20 05 38.0 -3.0**
SEM LRM MLR 20 33 59.3
comp=Z,543nm,19.6s
MAW Mawson 81.12 203 P **P 19 55 31.0 -1.0**
comp=Z,23nm,0.7s,baz=84,slow=4.7,SNR=13
MAW LR LR 20 31 01.9
comp=Z,2μm,18.4s,baz=81,slow=35
MAW Mawson 81.12 203 P **P 19 55 31.7 -0.4**
baz=81,SNR=30
MAW Mawson 81.12 203 *e*P **P 19 55 31.5 -0.5**
comp=Z,17nm,1.0s
NVS Novosibirsk 81.22 328 *i* P **P 19 55 32.8 +0.1**
NVS *e*S **S 20 05 41.9 -0.6**
NVS pmax pmax
comp=N,101nm,1.5s
NVS pmax pmax
comp=E,201nm,1.5s
NVS pmax pmax
comp=Z,374nm,1.5s
NVS smax smax
comp=N,40nm,1.8s
NVS smax smax
comp=E,87nm,2.1s
KUU Kurty 81.25 316 *i* P **P 19 55 32.6 -0.6**
comp=E,8μm,1.1s
KUU *e*S **S 20 05 41.9 -1.4**
BHJ Bhuj 81.26 295 *e*P **P 19 55 35.1 +1.5**
SVW2 Sparrevohn 81.35 24 *e*P **P 19 55 34.6 +1.3**
comp=E,110nm,1.3s
SVW2 LR LR
comp=Z,2μm,18.0s
TKM2 Tokmak 2 81.45 315 *i* P **P 19 55 34.4 -0.2**
TKM2 pmax pmax
comp=Z,451nm,1.2s
TKM2 Tokmak 2 81.45 315 *e*P **P 19 55 35.0 +0.5**
comp=Z,1μm,1.8s
TKM2 LR LR
comp=Z,1μm,19.0s
BMNS Besmoynak 81.46 315 *i* P **P 19 55 33.1 -1.4**
comp=Z,6μm,1.2s
FRU Bishkek 82.11 315⇓ *i*P **P 19 55 38.0 +0.2**
FRU *e* 19 58 50.0
FRU *e*S **S 20 05 53.0 +0.6**
FRU pmax pmax
comp=Z,1μm,2.0s
FRU smax smax
comp=E,250nm,2.4s
KURK Kurchatov 82.13 323 P **P 19 55 38.2 +0.5**
KURK S **S 20 05 50.3 -1.8**
KURK pmax pmax
comp=Z,91nm,0.9s
KURK Kurchatov 82.13 323 *e*P **P 19 55 38.4 +0.7**
comp=Z,541nm,1.2s
KURK *e*S **S 20 05 50.3 -1.8**
KURK *e*PKKPbc **PKKPbc 20 14 10.2 +1.5**
KURK LR LR
comp=Z,2μm,20.0s
AAK Ala-Archa 82.14 315 *i* P **P 19 55 39.4 +1.2**
AAK pmax pmax
comp=Z,456nm,1.3s
AAK Ala-Archa 82.14 315 *e*P **P 19 55 39.3 +1.2**
comp=Z,1μm,1.7s
KURBB Kurchatov Arra 82.15 323 P **P 19 55 38.1 +0.4**
comp=Z,91nm,0.9s,baz=113,slow=4.0,SNR=324
KURBB S **S 20 05 50.3 -2.0**
comp=Z,0.4nm,0.2s,baz=46,slow=12,SNR=3.4
KURBB PKKPbc **PKKPbc 20 14 10.2 +1.5**
comp=Z,1.7nm,0.7s,baz=295,slow=3.0,SNR=9.1
TT01 Tatalina 82.16 23 *e*P **P 19 55 37.8 +0.3**
TTA Tatalina 82.17 23 *e*P **P 19 55 38.1 +0.4**
TTA pmax pmax
comp=Z,230nm,1.6s
TTA MLR MLR
comp=Z,1μm,21.0s
TTA Tatalina 82.17 23 *e*P **P 19 55 38.0 +0.4**
comp=Z,230nm,1.6s
TTA LR LR
comp=Z,1μm,21.0s
RSO Redoubt South 82.22 26 *e*P **P 19 55 37.6 -0.6**
HOM Homer 82.31 27 *e*P **P 19 55 38.5 +0.1**
comp=Z,472nm,1.0s
HOM LR LR
comp=Z,2μm,21.0s
EKS2 Erkin-Say 82.65 315 *e*P **P 19 55 41.9 +1.1**
EKS2 pmax pmax
comp=Z,2μm,2.0s
EKS2 MLR MLR
comp=Z,1μm,21.0s
EKS2 Erkin-Say 82.65 315 *e*P **P 19 55 41.9 +1.1**
comp=Z,2μm,2.0s
EKS2 LR LR
comp=Z,1μm,21.0s
BRLK Bradley Lake 82.70 27 *e*P **P 19 55 40.2 -0.3**
comp=Z,121nm,1.1s
BRLK LR LR
comp=Z,2μm,21.0s
QSPA South Pole Qui 82.78 180 *e*P **P 19 55 40.0 -1.0**
QSPA LR LR
comp=Z,5μm,19.0s
SPU Mount Spurr 82.87 25 *e*P **P 19 55 40.3 -1.0**
SEW Seward 83.50 27 *e*P **P 19 55 44.5 0.0**
comp=Z,265nm,1.2s
SEW LR LR

comp=Z,3µm,22.0s
MNAS Manas 83.51 314 *i* P **P 19 55 46.1 +0.9**
MNAS pmax pmax
comp=Z,703nm,1.2s
PPLA Purkeypile 83.65 24 *e*P **P 19 55 45.0 -0.4**
comp=Z,544nm,1.7s
PPLA LR LR
comp=Z,2µm,20.0s
RC01 Rabbit Creek A 83.82 26 *e*P **P 19 55 45.8 -0.4**
comp=Z,376nm,1.3s
RC01 LR LR
comp=Z,2µm,22.0s
CAST Castle Rocks 83.95 23 *e*P **P 19 55 46.3 -0.5**
comp=Z,239nm,1.4s
CAST LR LR
comp=Z,1µm,20.0s
KBL Kabul 84.18 306 *e*P **P 19 55 48.5 -0.4**
KBL pmax pmax
comp=Z,283nm,1.4s
KBL MLR MLR
comp=Z,500nm,22.0s
KBL Kabul 84.18 306 *e*P **P 19 55 48.5 -0.4**
comp=Z,283nm,1.4s
KBL LR LR
comp=Z,500nm,22.0s
PMR Palmer 84.31 26 *e*P **P 19 55 48.4 -0.2**
PMR pmax pmax
comp=Z,302nm,1.4s
PMR MLR MLR
comp=Z,2µm,22.0s
PMR Palmer 84.31 26 *e*P **P 19 55 48.4 -0.2**
comp=Z,302nm,1.4s
PMR LR LR
comp=Z,2µm,22.0s
KTH Kantishna Hill 84.47 23 *e*P **P 19 55 48.8 -0.7**
comp=Z,223nm,1.3s
KTH LR LR
comp=Z,2µm,20.0s
TRF Thorofare Moun 84.68 24 *e*P **P 19 55 50.1 -0.6**
comp=Z,148nm,1.4s
TRF LR LR
comp=Z,2µm,20.0s
BPAW Bear Paw Mtn. 84.71 23 PFAKE 19 56 00.0 +9.3
BPAW LR LR
comp=Z,2µm,22.0s
SML Sawmill 84.74 26 *e*P **P 19 55 50.9 -0.1**
SML pmax pmax
comp=Z,390nm,1.2s
SML MLR MLR
comp=Z,1µm,22.0s
SML Sawmill 84.74 26 *e*P **P 19 55 50.9 -0.1**
comp=Z,390nm,1.2s
SML LR LR
comp=Z,1µm,22.0s
SCM Sheep Creek Mo 85.19 26 *e*P **P 19 55 53.2 0.0**
SCM pmax pmax
comp=Z,410nm,1.3s
SCM MLR MLR
comp=Z,2µm,20.0s
SCM Sheep Creek Mo 85.19 26 *e*P **P 19 55 53.2 0.0**
comp=Z,410nm,1.3s
SCM LR LR
comp=Z,2µm,20.0s
IUG Iuzhnay 85.19 313 *i* P **P 19 55 53.1 -0.6**
comp=Z,3µm,1.5s
IUG *e*S **S 20 06 14.6 -9.0**
OTUK Ortayu 85.21 320 *i* P **P 19 55 54.1 +0.5**
OTUK pmax pmax
comp=Z,1µm,1.2s
RND Reindeer 85.23 24 *e*P **P 19 55 52.2 -1.2**
RND pmax pmax
comp=Z,205nm,1.0s
RND MLR MLR
comp=Z,3µm,20.0s
RND Reindeer 85.23 24 *e*P **P 19 55 52.2 -1.2**
comp=Z,204nm,1.0s
RND LR LR
comp=Z,3µm,20.0s
MLY Manley 85.24 22 *e*P **P 19 55 52.5 -0.9**
comp=Z,293nm,1.3s
MLY LR LR
comp=Z,1µm,20.0s
DZET Dzherino 85.30 310 *i* P **P 19 55 54.4 +0.1**
DZET pmax pmax
comp=Z,386nm,1.1s
BWN Browne 85.33 23 PFAKE 19 56 10.0 +16
BWN LR LR
comp=Z,1µm,20.0s
MCK McKinley 85.34 24 *e*P **P 19 55 53.1 -0.8**
MCK pmax pmax
comp=Z,434nm,1.2s
MCK MLR MLR
comp=Z,2µm,21.0s
MCK McKinley 85.34 24 *e*P **P 19 55 53.1 -0.8**
comp=Z,434nm,1.2s
MCK LR LR
comp=Z,2µm,21.0s
EYAK Cordova Ski Ar 85.36 27 *e*P **P 19 55 54.5 +0.5**
comp=Z,398nm,1.7s
EYAK LR LR
comp=Z,3µm,20.0s
BRZS Berezniki 85.49 321 *i* P **P 19 55 53.2 -1.7**
comp=Z,621nm,1.4s
BRZS *e*S S 20 06 14.9 -11
DIV Divide 85.58 27 *e*P **P 19 55 55.6 +0.4**
comp=Z,434nm,1.4s
BRLS Borolday 85.59 314 *i* P **P 19 55 56.1 +0.5**
comp=Z,258nm,1.5s
BRLS *e*S S 20 06 18.0 -9.4
KLU Klutina 85.66 26 *e*P **P 19 55 56.2 +0.7**
comp=Z,405nm,1.3s
KLU LR LR
comp=Z,2µm,22.0s
WRH Wood River Hil 86.00 23 *e*P **P 19 55 56.5 -0.6**
comp=Z,428nm,1.4s
WRH LR LR
comp=Z,1µm,22.0s
BMRM Bremner River 86.04 27 *e*P **P 19 55 57.6 +0.1**
comp=Z,447nm,1.2s
BMRM *e*PP **PP 19 59 15.2 -2.5**
BMRM LR LR
comp=Z,2µm,20.0s
CCB Clear Creek Bu 86.19 23 *e*P **P 19 55 56.9 -1.1**
comp=Z,637nm,1.6s
COLA College 86.27 23 *e*P **P 19 55 57.5 -0.9**
COLA pmax pmax
comp=Z,439nm,1.4s
COLA College 86.27 23 *e*P **P 19 55 57.5 -0.9**
comp=Z,439nm,1.4s
NRIK Noril'sk 86.39 342 P **P 19 55 58.6 -0.3**
comp=Z,160nm,1.1s,baz=119,slow=5.1,SNR=93
NRIK S **S 20 06 28.4 -5.6**
comp=Z,2.8nm,0.5s,baz=198,slow=18,SNR=6.0
NRIK LR LR 20 35 19.0
comp=Z,2µm,19.2s,baz=125,slow=36
HDA Harding Lake 86.42 23 *e*P **P 19 55 58.4 -0.8**
comp=Z,503nm,1.9s
HDA LR LR
comp=Z,2µm,20.0s
PAX Paxson 86.44 25 PFAKE 19 56 10.0 +11
PAX LR LR
comp=Z,1µm,19.0s
COLD Coldfoot 86.47 20 *e*P **P 19 55 59.6 +0.2**
comp=Z,189nm,1.2s
COLD LR LR
comp=Z,2µm,21.0s
CRQM Cirque 86.63 28 *e*P **P 19 56 01.6 +1.1**
MRIV Mauritius Mete 87.02 250 *e*P **P 19 56 03.1 -0.1**
BALM Baldy 87.09 27 *e*P **P 19 56 03.4 +0.7**
BALM pmax pmax
comp=Z,308nm,1.2s
BALM MLR MLR
comp=Z,2µm,21.0s
BALM Baldy 87.09 27 *e*P **P 19 56 03.4 +0.7**
comp=Z,308nm,1.2s
BALM LR LR
comp=Z,2µm,21.0s
MENT Mentasta 87.17 25 *e*P **P 19 56 03.1 +0.2**
comp=Z,148nm,1.2s
MENT LR LR
comp=Z,3µm,22.0s
VOSK Vostochnaya 87.28 324 PFAKE 19 56 10.0 +6.4
VOSK LR LR
comp=Z,1µm,20.0s
DOT Dot Lake 87.29 25 *e*P **P 19 56 03.7 +0.3**
comp=Z,1µm,1.4s
BVAR Borovoye Array 87.70 324 P **P 19 56 05.7 +0.1**
comp=Z,144nm,0.9s,baz=107,slow=5.1,SNR=431
BVAR S **SKSac 20 06 30.4 -2.9**
comp=Z,1.3nm,0.8s,baz=139,slow=7.9,SNR=5.0
BVAR ScS **ScS 20 06 55.5 +1.5**
comp=Z,3.6nm,1.1s,baz=122,slow=7.7,SNR=4.3
BVAR PKKPbc **PKKPbc 20 13 54.5 -1.2**
comp=Z,0.6nm,0.6s,baz=316,slow=4.1,SNR=4.1
BVAR PKPPKP **P'P'df 20 22 04.1 +4.0**
comp=Z,1.4nm,1.0s,baz=296,slow=4.8,SNR=5.4
CHKZ Chkalovo 87.74 325 *i* P **P 19 56 04.1 -1.7**
CHKZ pmax pmax
comp=Z,319nm,1.4s
BRVK Borovoye 87.77 324 *d i* P **P 19 56 05.2 -0.8**
BRVK pmax pmax
comp=Z,229nm,1.0s
BRVK Borovoye 87.77 324 *e*P **P 19 56 05.6 -0.4**
comp=Z,237nm,1.1s
BRVK LR LR
comp=Z,1µm,19.0s
FYU Fort Yukon 87.96 22 *e*P **P 19 56 07.1 +0.5**
comp=Z,843nm,1.5s
FYU LR LR
comp=Z,2µm,21.0s
ZRNK Zerenda 88.49 324 *e*P **P 19 56 08.3 -1.1**
ZRNK pmax pmax
comp=Z,180nm,1.1s
ZRNK MLR MLR
comp=Z,1µm,20.0s
ZRNK Zerenda 88.49 324 *e*P **P 19 56 08.3 -1.1**
comp=Z,180nm,1.1s
ZRNK LR LR
comp=Z,1µm,20.0s
RER Riviere de l'E 88.55 249 *e*P **P 19 56 10.5 0.0**
comp=Z,118nm,0.9s
EGAK Eagle 88.88 24 *e*P **P 19 56 11.0 +0.1**
comp=Z,590nm,1.6s
EGAK LR LR
comp=Z,2µm,20.0s
DAWY Dawson 89.38 25 *e*P **P 19 56 14.4 +1.0**
comp=Z,420nm,1.4s
DAWY LR LR
comp=Z,3µm,22.0s
SYO Syowa Base 89.45 200 || *e*P **P 19 56 11.6 -2.0**
SYO Syowa Base 89.45 200 || *i* PcP **PcP 19 56 15.2 +0.2**
SKAG Skagway 89.96 30 *e*P **P 19 56 17.5 +1.4**
comp=Z,445nm,1.5s
H02N1 VAN INLET T-PH 90.07 36 P **P 19 56 17.6 +0.6**
H02S1 DAWSON INLET T 90.10 36 P **P 19 56 17.5 +0.6**
SNR=8.1
CRAG Craig 90.21 34 *e*P **P 19 56 18.6 +1.3**
comp=Z,310nm,1.8s
CRAG LR LR
comp=Z,2µm,22.0s
WRAK Wrangell Islan 90.83 33 *e*P **P 19 56 21.3 +1.1**
comp=Z,169nm,1.2s
WRAK LR LR
comp=Z,2µm,20.0s
WSAR Wadi Sarin 91.26 293 P **P 19 56 23.1 0.0**
comp=Z,62nm,0.9s,baz=126,slow=2.4,SNR=15
WSAR S **SKSac 20 06 52.2 -3.3**
comp=Z,5.1nm,1.1s,baz=42,slow=1.7,SNR=1.8
SMDO Samad 91.77 293 P **P 19 56 25.5 0.0**
SNR=6.8
SMDO Samad 91.77 293 P **P 19 56 25.5 0.0**
SNR=6.8
DLBC Dease Lake 92.44 32 P **P 19 56 29.3 +1.5**
comp=Z,26nm,0.9s,baz=265,slow=4.3,SNR=36
DLBC S **SKSac 20 07 05.1 +4.3**
comp=Z,0.5nm,0.4s,baz=25,slow=21,SNR=2.0
DLBC ScS **S 20 07 31.1 0.0**
comp=Z,0.6nm,0.4s,baz=116,slow=25,SNR=2.1
DLBC Dease Lake 92.44 32 *e*P **P 19 56 28.9 +1.1**
comp=Z,114nm,1.3s
DLBC S **SKSac 20 07 05.1 +4.3**
DLBC ScS **S 20 07 31.1 0.0**
DLBC LR LR
comp=Z,2µm,20.0s
BBB Bella Bella 92.54 38 P **P 19 56 29.8 +1.6**
comp=Z,80nm,1.0s,baz=255,slow=5.3,SNR=21
BBB ScS **S 20 07 37.0 +5.0**
comp=Z,7.9nm,1.0s,baz=271,slow=4.5,SNR=4.3
INK Inuvik 92.78 21 P **P 19 56 29.1 +0.1**
comp=Z,72nm,1.1s,baz=256,slow=7.2,SNR=54
INK PP **PP 20 00 11.2 0.0**
comp=Z,8.2nm,1.1s,baz=254,slow=6.1,SNR=4.6
INK S **SKSac 20 07 02.1 0.0**
comp=Z,1.8nm,1.0s,baz=96,slow=27,SNR=4.8
INK PKKPbc **PKKPbc 20 13 42.6 -0.6**
comp=Z,0.6nm,0.5s,baz=37,slow=4.3,SNR=4.2
INK LR LR 20 33 03.7
comp=Z,1µm,22.0s,baz=231,slow=32
INK Inuvik 92.78 21 *e*P **P 19 56 28.5 -0.5**
INK 20 00 11.2
INK S **SKSac 20 07 02.1 0.0**
INK 20 13 42.7
INK pmax pmax
comp=Z,150nm,1.3s
INK Inuvik 92.78 21 *e*P **P 19 56 28.5 -0.5**
comp=Z,150nm,1.3s
INK PP **PP 20 00 11.2 0.0**
INK S **SKSac 20 07 02.1 0.0**
INK PKKPbc **PKKPbc 20 13 42.6 -0.6**
ABKAR Akbulak array 93.44 319 *e*P **P 19 56 31.6 -0.9**
GEYT Alibeck 93.45 308 P **P 19 56 32.8 -0.1**
comp=Z,71nm,0.9s,baz=129,slow=2.1,SNR=89
GEYT PP **PP 20 00 19.4 +2.1**
comp=Z,25nm,1.2s,baz=55,slow=7.8,SNR=6.0
GEYT S **SKSac 20 07 06.2 -1.0**
comp=Z,1.1nm,0.5s,baz=128,slow=51,SNR=2.3
GEYT ScS **S 20 07 38.8 -2.1**
comp=Z,0.8nm,0.5s,baz=300,slow=34,SNR=2.8
GEYT LR LR 20 40 44.9
comp=Z,639nm,21.8s,baz=65,slow=37
UOSS Minazif 93.66 295 *e*P **P 19 56 33.1 -1.0**
comp=Z,2.2nm,1.0s
BANOM Banah 93.68 296 P **P 19 56 34.3 +0.1**
HATD Hatta, Dubai 93.71 294 *i* P **P 19 56 33.5 -0.9**
SNR=9.0
ASHO Ashiyiah 93.76 294 P **P 19 56 33.9 -0.8**
JCC Jacoby Creek, 93.92 50 *e*P **P 19 56 36.4 +1.5**
comp=Z,225nm,1.4s
JCC LR LR
comp=Z,2µm,20.0s
SVE Sverdlovsk 93.95 327 *c i* P **P 19 56 33.7 -1.0**
SVE *e*S **SKSac 20 07 05.9 -3.1**
SVE pmax pmax
comp=Z,249nm,1.5s
SVE pmax pmax
comp=Z,148nm,5.8s
SVE MLR MLR
comp=Z,1µm,18.0s
KMRM Mail Ridge 94.10 50 *e*P **P 19 56 36.9 +1.1**
comp=Z,226nm,1.5s
KMRM LR LR
comp=Z,2µm,20.0s
KHMM Horse Mountain 94.15 49 *e*P **P 19 56 37.7 +1.5**
comp=Z,228nm,1.3s
KHMM LR LR
comp=Z,2µm,22.0s
NAZ Nazwa, Dubai 94.15 295 P **P 19 56 35.7 -0.7**
FAQ Al Faqa, Dubai 94.19 294 *i* P **P 19 56 35.4 -1.2**
SNR=7.7
L02D Cave Junction, 94.37 48 P **P 19 56 37.8 +0.8**
baz=264,SNR=13
HOPS Hopland Field 94.46 51 *e*P **P 19 56 38.5 +1.0**
comp=Z,217nm,1.5s
HOPS LR LR
comp=Z,2µm,18.0s
KTRM Thompson Ridge 94.52 48 *e*P **P 19 56 39.4 +1.5**
MCCM Marconi Confer 94.53 52 PFAKE 19 56 50.0 +12
MCCM LR LR
comp=Z,2µm,20.0s
NLWA Neilton Lookou 94.69 43 *e*P **P 19 56 39.3 +0.9**
comp=Z,106nm,1.4s
NLWA LR LR
comp=Z,2µm,21.0s
I03D Drain, OR 94.71 47 P **P 19 56 39.2 +0.7**
baz=265,SNR=9.3
F03A Seaside 94.77 44 *e*P **P 19 56 39.2 +0.5**
comp=Z,114nm,1.3s
F03A LR LR
comp=Z,2µm,19.0s
AKTO Aktyubinsk 94.81 320 P **P 19 56 38.0 -0.8**
comp=Z,84nm,1.2s,baz=84,slow=5.5,SNR=79
AKTO S **SKSac 20 07 14.8 +0.9**
comp=Z,0.9nm,0.8s,baz=235,slow=22,SNR=8.9
AKTO ScS **S 20 07 47.0 -5.2**
comp=Z,1.1nm,0.9s,baz=310,slow=21,SNR=2.0
E03A Lebam 94.82 44 *e*P **P 19 56 39.8 +0.9**
comp=Z,124nm,1.3s
E03A LR LR
comp=Z,2µm,21.0s
COR Corvallis 94.82 46 *e*P **P 19 56 40.8 +1.9**
COR pmax pmax
comp=Z,148nm,1.5s
COR MLR MLR
comp=Z,3µm,21.0s
COR Corvallis 94.82 46 *e*P **P 19 56 40.8 +1.9**
comp=Z,148nm,1.5s
COR LR LR
comp=Z,3µm,21.0s
M02C Callahan 94.86 49 P **P 19 56 40.3 +1.0**
baz=265,SNR=53
HSO Harness Mounta 94.88 47 *e*P **P 19 56 38.7 -0.7**
HSO Harness Mounta 94.88 47 *e*P **P 19 56 38.7 -0.7**
HUMO Hull Mountain 94.89 48 *e*P **P 19 56 39.9 +0.5**
comp=Z,121nm,1.3s
HUMO LR LR
comp=Z,2µm,21.0s
G03D McMinnville, O 94.91 45 P **P 19 56 40.1 +0.8**
baz=265
N02D Trinity Center 94.93 49 P **P 19 56 40.9 +1.3**
baz=265,SNR=33
YBH Yreka Blue Hor 95.00 49 P **P 19 56 40.8 +0.9**
comp=Z,65nm,1.1s,baz=185,slow=1.6,SNR=52
YBH PP **PP 20 00 34.4 +5.0**
comp=Z,5.4nm,1.0s,baz=239,slow=9.6,SNR=2.9
YBH LR LR 20 31 17.5
comp=Z,3µm,21.8s,baz=325,slow=30
YBH Yreka Blue Hor 95.00 49 *e*P **P 19 56 40.1 +0.1**
YBH *e* 20 00 34.3
YBH pmax pmax
comp=Z,150nm,1.4s
YBH Yreka Blue Hor 95.00 49 *e*P **P 19 56 40.1 +0.1**
comp=Z,150nm,1.4s
YBH *e*PP **PP 20 00 34.3 +5.0**
WDC Whiskeytown Da 95.02 50 *e*P **P 19 56 40.9 +0.9**
WDC pmax pmax
comp=Z,175nm,1.4s
WDC MLR MLR
comp=Z,2µm,22.0s
WDC Whiskeytown Da 95.02 50 *e*P **P 19 56 40.9 +0.9**
comp=Z,175nm,1.4s
WDC LR LR
comp=Z,2µm,22.0s
ARU Arti 95.05 326 P **P 19 56 38.3 -1.4**
comp=Z,52nm,0.8s,baz=103,slow=3.1,SNR=95
ARU PP **PP 20 00 27.2 -1.9**
comp=Z,8.0nm,0.9s,baz=111,slow=23,SNR=2.6
ARU S **SKSac 20 07 12.0 -2.9**
comp=Z,0.5nm,0.3s,baz=78,slow=22,SNR=4.0
ARU ScS **S 20 07 48.7 -5.2**
comp=Z,0.5nm,0.3s,baz=258,slow=15,SNR=1.6
ARU Arti 95.05 326 *e*P **P 19 56 38.2 -1.5**
ARU 20 00 27.6
ARU S **SKSac 20 07 13.7 -1.2**
ARU SP **SP 20 09 07.5 -2.6**
ARU SS **SS 20 14 19.8 +0.3**
ARU MLR MLR
comp=Z,2µm,21.0s
ARU Arti 95.05 326 *e*P **P 19 56 38.3 -1.4**
comp=Z,173nm,1.1s
ARU PP **PP 20 00 27.2 -1.9**
ARU S **SKSac 20 07 12.0 -2.9**
ARU ScS **S 20 07 48.7 -5.2**
ARU LR LR
comp=Z,2µm,21.0s
PGC Sidney 95.09 42 *e*P **P 19 56 40.7 +0.7**
comp=Z,117nm,1.3s
PGC LR LR
comp=Z,2µm,22.0s
F04D Rainier, OR 95.16 44 P **P 19 56 41.1 +0.6**
baz=265
I04A Tendick Farm, 95.39 47 P **P 19 56 42.0 +0.3**
baz=265,SNR=24
GNW Green Mountain 95.41 43 *e*P **P 19 56 42.3 +0.7**
SAO San Andreas Ge 95.54 54 *e*P **P 19 56 42.2 -0.3**
SAO pmax pmax
comp=Z,35nm,0.8s
SAO MLR MLR
comp=Z,2µm,19.0s
SAO San Andreas Ge 95.54 54 *e*P **P 19 56 42.2 -0.3**
comp=Z,35nm,0.8s
SAO LR LR
comp=Z,2µm,19.0s
F04A Amboy 95.56 45 *e*P **P 19 56 42.7 +0.4**
comp=Z,93nm,1.4s
F04A LR LR
comp=Z,1µm,18.0s
A04D Lummi Island 95.58 42 P **P 19 56 43.3 +1.0**
baz=266
H04A Detroit Lake 95.62 46 *e*P **P 19 56 42.6 -0.1**
comp=Z,99nm,1.4s
H04A LR LR
comp=Z,2µm,22.0s
M04C Macdoel 95.65 49 P **P 19 56 43.7 +0.7**
baz=265,SNR=36
ORV Oroville 95.73 51 *e*P **P 19 56 43.6 +0.3**
ORV pmax pmax
comp=Z,95nm,1.3s
ORV MLR MLR
comp=Z,1µm,19.0s
ORV Oroville 95.73 51 *e*P **P 19 56 43.6 +0.3**
comp=Z,95nm,1.3s
ORV LR LR
comp=Z,1µm,19.0s
K04D Chiloquin, OR 95.78 48 P **P 19 56 44.2 +0.7**
baz=266,SNR=8.5
D05A Enumclaw 95.95 43 *e*P **P 19 56 45.2 +1.1**
comp=Z,213nm,1.4s
D05A LR LR
comp=Z,1µm,20.0s
B05A Bryant 95.95 42 P **P 19 56 44.5 +0.4**
baz=266
LON Longmire 96.04 44 *e*P **P 19 56 44.9 +0.3**
LON pmax pmax
comp=Z,53nm,1.6s
LON MLR MLR
comp=Z,700nm,19.0s
LON Longmire 96.04 44 *e*P **P 19 56 44.9 +0.3**
comp=Z,53nm,1.6s
LON LR LR
comp=Z,700nm,19.0s
AFDM Forest Hills D 96.09 52 *e*P **P 19 56 45.1 +0.1**
comp=Z,107nm,1.0s
AFDM LR LR
comp=Z,1µm,19.0s
I05D Terrebonne, OR 96.20 46 P **P 19 56 45.6 +0.2**
baz=266
J05D Fort Rock, OR 96.21 47 P **P 19 56 46.3 +0.8**
baz=266,SNR=47
SOKR Solikamsk 96.23 329 *c i* P **P 19 56 42.4 -2.6**
SOKR S **SKSac 20 07 20.0 -1.0**
SOKR pmax pmax
comp=Z,71nm,1.1s
SOKR MLR MLR
comp=Z,2µm,22.0s
G05D Wamic, OR 96.28 45 P **P 19 56 46.0 +0.4**
baz=266
B06A Marblemount 96.38 42 *e*P **P 19 56 46.0 +0.1**
comp=Z,77nm,1.2s
B06A LR LR
comp=Z,1µm,19.0s
K05A Summer Lake 96.42 48 *e*P **P 19 56 47.4 +0.8**
comp=Z,178nm,1.4s
K05A LR LR
comp=Z,2µm,22.0s
CMB Columbia Colle 96.48 53 *e*P **P 19 56 46.9 +0.1**
CMB MLR MLR
comp=Z,2µm,19.0s
CMB Columbia Colle 96.48 53 *e*P **P 19 56 46.9 +0.1**
comp=Z,196nm,0.3s
CMB LR LR
comp=Z,2µm,19.0s
CROR Criterion Ridg 96.50 46 P **P 19 56 46.9 +0.2**
SMMC Simmler 96.60 55 P **P 19 56 48.5 +1.1**
baz=266
NVL N'lazarevskaya 96.63 194 *e*P **P 19 56 47.1 +0.4**
NVL *e* 20 00 42.3
NVL *e*S **SKSac 20 07 23.4 +0.5**
NVL *e*SP **SP 20 09 30.8 +4.2**
NVL MLR MLR
comp=Z,7µm,23.0s
PKM Mcpherson Peak 96.72 56 P **P 19 56 49.1 +1.0**

baz=266
C06D Leavenworth 96.74 43 P P 19 56 48.2 +0.6
baz=267
G06A Carlson Farm, 96.76 45 eP P 19 56 48.2 +0.3
comp=Z,76nm,1.6s
G06A LR LR
comp=Z,2μm,18.0s
SBC Santa Barbara 96.77 56 P P 19 56 49.0 +0.9
baz=266
MOD Modoc Plateau 96.80 49 eP P 19 56 48.6 +0.3
comp=Z,126nm,1.5s
MOD LR LR
comp=Z,2μm,20.0s
SCZ2 Santa Cruz Isl 96.81 57 P P 19 56 49.5 +1.2
baz=266
SNCC San Nicolas Is 96.84 57 P P 19 56 49.6 +1.1
baz=266
SNCC San Nicolas Is 96.84 57 PFAKE 19 57 00.0 +12
SNCC LR LR
comp=Z,3μm,21.0s
TBM Table Mountain 96.90 43 eP P 19 56 49.3 +0.8
WAKR Walker 97.26 52 eP P 19 56 50.4 -0.1
RCTC Rector, Farmer 97.28 54 P Pdif 19 56 50.8 +0.3
baz=266
BLG Laguna Peak, P 97.28 57 P Pdif 19 56 50.5 0.0
baz=266
PAHR Pah Rah Range 97.37 51 eP P 19 56 50.9 0.0
comp=Z,62nm,0.5s
PAHR LR LR
comp=Z,1μm,19.0s
E07A Sunnyside 97.38 44 eP Pdif 19 56 51.5 +0.8
comp=Z,101nm,1.3s
E07A LR LR
comp=Z,1μm,20.0s
VES Vestal, Richgr 97.38 55 P Pdif 19 56 51.1 +0.2
baz=266
ARVC Arvin 97.54 56 P Pdif 19 56 52.2 +0.5
baz=266
HAWA Hanford 97.59 44 eP Pdif 19 56 52.2 +0.6
comp=Z,108nm,1.4s
HAWA LR LR
comp=Z,1μm,19.0s
OSI Osito Audit: C 97.60 56 P Pdif 19 56 52.9 +0.9
baz=266
OSI Osito Audit: C 97.60 56 PFAKE 19 57 00.0 +8.0
OSI LR LR
comp=Z,2μm,19.0s
SCI2 San Clemente I 97.64 58 P Pdif 19 56 53.4 +1.2
baz=266
CIS Catalina Islan 97.78 57 P Pdif 19 56 53.7 +1.0
baz=266
B08A Colville Reser 97.80 42 eP P 19 56 52.1 -0.3
comp=Z,91nm,1.3s
B08A LR LR
comp=Z,1μm,20.0s
ISA Isabella, Lake 97.86 55 P Pdif 19 56 53.9 +0.7
baz=267
ISA Isabella, Lake 97.86 55 eP Pdif 19 56 53.8 +0.6
ISA MLR MLR
comp=Z,1μm,18.0s
ISA Isabella, Lake 97.86 55 eP Pdif 19 56 53.8 +0.7
comp=Z,268nm,0.6s
ISA LR LR
comp=Z,1μm,18.0s
DECC Green Verdugo 97.90 56 P Pdif 19 56 53.9 +0.6
baz=267
FMP Fort Macarthur 97.90 57 P Pdif 19 56 53.8 +0.5
baz=267
G08A Pilot Rock 97.95 45 eP Pdif 19 56 53.6 +0.2
comp=Z,71nm,1.4s
G08A LR LR
comp=Z,2μm,21.0s
PASC Pasadena Art C 98.02 57 eP Pdif 19 56 54.2 +0.4
comp=Z,69nm,1.3s
PASC LR LR
comp=Z,1μm,20.0s
D08A Wollman Farm, 98.04 44 eP Pdif 19 56 54.0 +0.4
comp=Z,91nm,1.4s
D08A LR LR
comp=Z,1μm,19.0s
WVOR Wild Horse Val 98.07 48 eP Pdif 19 56 54.6 +0.6
WVOR pmax pmax
comp=Z,69nm,1.4s
WVOR MLR MLR
comp=Z,3μm,22.0s
WVOR Wild Horse Val 98.07 48 eP Pdif 19 56 54.6 +0.7
comp=Z,69nm,1.4s
WVOR LR LR
comp=Z,3μm,22.0s
MWC Mount Wilson 98.13 56 eP Pdif 19 56 54.9 +0.4
MWC pmax pmax
comp=Z,86nm,1.2s
MWC Mount Wilson 98.13 56 eP Pdif 19 56 54.9 +0.3
comp=Z,86nm,1.2s
TIN Tinemaha, Big 98.13 54 P Pdif 19 56 55.1 +0.7
baz=267
NV01 Mina Array Sit 98.14 52 eP Pdif 19 56 54.7 +0.2
NVAR Mina Array Bea 98.14 52 P Pdif 19 56 55.0 +0.5
comp=Z,11nm,0.8s,baz=257,slow=3.9,SNR=34
NVAR LR LR 20 39 05.3
comp=Z,1μm,18.1s,baz=272,slow=34
EDW2 Edwards Air Fo 98.21 56 P Pdif 19 56 55.9 +1.2
baz=267,SNR=12
NV11 Mina Array Sit 98.26 52 eP Pdif 19 56 55.4 +0.4
comp=Z,230nm,0.6s
NV11 LR LR
comp=Z,2μm,18.0s
BFSC Mount Baldy Ra 98.46 56 Pdiff Pdif 19 56 56.2 +0.3
baz=267
C09A Chrisman Ranch 98.50 43 eP P 19 56 55.5 0.0
comp=Z,60nm,1.1s
C09A LR LR
comp=Z,2μm,20.0s
LRMC Laurel Mtn Rad 98.50 55 Pdiff Pdif 19 56 56.8 +0.7
baz=267
E09A Wood Farm, Sta 98.55 44 PFAKE 19 57 10.0 +14
E09A LR LR
comp=Z,1μm,20.0s
DAC Darwin (Calif) 98.61 54 eP P 19 56 56.6 0.0
DAC pmax pmax
comp=Z,25nm,0.6s
DAC MLR MLR
comp=Z,2μm,21.0s
DAC Darwin (Calif) 98.61 54 eP P 19 56 56.6 0.0
comp=Z,25nm,0.6s
DAC LR LR
comp=Z,2μm,21.0s
MPMC Manual Prospec 98.68 55 Pdiff Pdif 19 56 57.7 +0.8
baz=267
SNAA Sanae 98.81 189 P Pdif 19 56 59.0 +2.3
SNAA Sanae 98.81 189 eP P 19 56 55.9 -0.7
SNAA *e* 20 00 58.3
SNAA pmax pmax
comp=Z,35nm,1.3s
SNAA MLR MLR
comp=Z,8μm,18.0s
SNAA Sanae 98.81 189 eP P 19 56 55.9 -0.7
comp=Z,35nm,1.3s
SNAA *e*PP **PP 20 00 58.3 +0.9**
SNAA LR LR
comp=Z,8μm,18.0s
MURC Murrieta 98.81 57 Pdiff Pdif 19 56 57.7 +0.3
baz=267
GRAC Grapevine Rang 98.82 54 Pdiff Pdif 19 56 58.1 +0.7
baz=268
109C Camp Elliot, M 98.85 58 Pdiff Pdif 19 56 58.1 +0.6
baz=267
RRX Edison Barstow 99.03 56 Pdiff **Pdif 19 56 59.2 +0.9**
baz=268
BMN Battle Mountai 99.06 50 eP Pdif 19 56 58.7 +0.2
BMN pmax pmax
comp=Z,49nm,0.3s
BMN MLR MLR
comp=Z,1μm,20.0s
BMN Battle Mountai 99.06 50 eP Pdif 19 56 58.7 +0.2
comp=Z,49nm,0.3s
BMN LR LR
comp=Z,1μm,20.0s
BBRC Big Bear Solar 99.07 57 Pdiff **Pdif 19 56 59.1 +0.3**
baz=267
BMO Blue Mountains 99.11 46 eP Pdif 19 56 58.1 -0.4
BMO pmax pmax
comp=Z,62nm,1.3s
BMO MLR MLR
comp=Z,2μm,22.0s
BMO Blue Mountains 99.11 46 eP Pdif 19 56 58.1 -0.4
comp=Z,62nm,1.3s
BMO LR LR
comp=Z,2μm,22.0s
F10A Beach Ranch, E 99.18 45 eP Pdif 19 56 58.4 -0.4
comp=Z,60nm,1.1s
F10A LR LR
comp=Z,1μm,19.0s
BAR Barrett 99.20 58 eP Pdif 19 57 00.5 +1.3
comp=Z,23nm,1.4s
BAR LR LR
comp=Z,2μm,22.0s
FURC Furnace Creek, 99.20 54 Pdiff **Pdif 19 56 59.3 +0.4**
baz=268
GSC Goldstone, Bar 99.21 55 Pdiff **Pdif 19 56 59.8 +0.6**
baz=268
GSC Goldstone, Bar 99.21 55 eP Pdif 19 56 59.8 +0.6
GSC pmax pmax
comp=Z,18nm,0.8s
GSC MLR MLR
comp=Z,2μm,19.0s
GSC Goldstone, Bar 99.21 55 eP Pdif 19 56 59.8 +0.6
comp=Z,18nm,0.8s
GSC LR LR
comp=Z,2μm,19.0s
NEW Newport 99.28 42 P **Pdif 19 56 59.5 +0.3**
comp=Z,40nm,1.0s,baz=257,slow=3.4,SNR=43
NEW Newport 99.28 42 Pdiff **Pdif 19 56 59.9 +0.8**
baz=270
NEW Newport 99.28 42 eP Pdif 19 56 59.4 +0.3
NEW pmax pmax
comp=Z,78nm,1.1s
NEW MLR MLR
comp=Z,2μm,20.0s
NEW Newport 99.28 42 eP Pdif 19 56 59.4 +0.3
comp=Z,78nm,1.1s
NEW LR LR
comp=Z,2μm,20.0s
MONP2 Monument Peak 99.42 58 Pdiff **Pdif 19 57 01.0 +0.7**
baz=268
PFO Pinyon Flats O 99.42 57 P **Pdif 19 57 01.1 +0.9**
comp=Z,14nm,0.9s,baz=286,slow=3.9,SNR=14
PFO Pinyon Flats O 99.42 57 eP Pdif 19 57 00.7 +0.5
PFO pmax pmax
comp=Z,21nm,1.1s
PFO MLR MLR
comp=Z,2μm,18.0s
PFO Pinyon Flats O 99.42 57 eP Pdif 19 57 00.7 +0.5
comp=Z,21nm,1.1s
PFO LR LR
comp=Z,2μm,18.0s
TPFO Pinon Flats 99.43 57 Pdiff **Pdif 19 57 01.0 +0.8**
baz=268
HEC Hector,Ludlow 99.58 56 Pdiff **Pdif 19 57 01.6 +0.8**
baz=268
SHOC Shoshone, Teco 99.66 55 Pdiff **Pdif 19 57 02.0 +0.9**
baz=268
IKP In-Ko-Pah, Jac 99.68 58 Pdiff **Pdif 19 57 02.6 +1.3**
baz=268
TPNV Topopah Spring 99.72 54 Pdiff **Pdif 19 57 02.1 +0.6**
baz=268
TPNV Topopah Spring 99.72 54 eP Pdif 19 57 02.4 +0.9
TPNV pmax pmax
comp=Z,76nm,0.5s
TPNV MLR MLR
comp=Z,1μm,19.0s
TPNV Topopah Spring 99.72 54 ePdif Pdif 19 57 02.4 +0.9
comp=Z,76nm,0.5s
TPNV LR LR
comp=Z,1μm,19.0s
BELC Belle Mtn. Jos 99.82 57 Pdiff **Pdif 19 57 02.7 +0.7**
baz=268
TUQ Turquoise Moun 99.93 55 Pdiff **Pdif 19 57 03.3 +0.8**
baz=268
SWSC Sam W. Stewart 99.95 58 Pdiff **Pdif 19 57 03.2 +0.8**
baz=268
GMRC Granite Mounta 100.13 56 Pdiff **Pdif 19 57 04.1 +0.8**
baz=268
MFID Camas Ranch 100.15 47 ePdif Pdif 19 57 03.5 +0.3
MFID LR LR
comp=Z,2μm,18.0s
VNA2 Neumayer--Watz 100.16 188 P **Pdif 19 57 04.4 +1.8**
baz=134,slow=3.2
VNA2 Neumayer--Watz 100.16 188 P **PP 20 01 09.1 +1.5**
baz=146,slow=6.0
VNA3 Neumayer Olymp 100.18 187 P **Pdif 19 57 04.7 +2.1**
VNA3 Neumayer Olymp 100.18 187 P **PP 20 01 04.9 -2.8**
YKW3 Yellowknife Ar 100.24 28 ePdif Pdif 19 57 02.4 -0.6
YKA Yellowknife Ar 100.25 28 P **Pdif 19 57 02.9 -0.1**
comp=Z,20nm,0.9s,baz=274,slow=4.7,SNR=125
YKA PP **PP 20 01 09.8 +0.9**
comp=Z,4.5nm,1.0s,baz=271,slow=6.6,SNR=6.5
YKA PKiKP **PKiKP 20 01 32.1 +1.9**
comp=Z,1.5nm,0.8s,baz=290,slow=1.6,SNR=5.9
YKA PKKPbc **PKKPbc 20 13 22.3 -0.3**
comp=Z,0.8nm,0.5s,baz=213,slow=28,SNR=6.0
YKB5 Yellowknife Ar 100.25 28 ePdif Pdif 19 57 02.1 -0.9
BC3 Big Chuckawall 100.26 57 Pdiff **Pdif 19 57 04.5 +0.6**
baz=268
R11A Troy Canyon, C 100.28 52 Pdiff **Pdif 19 57 04.7 +0.7**
baz=269
R11A Troy Canyon, C 100.28 52 ePdif Pdif 19 57 04.2 +0.3
R11A LR LR
comp=Z,2μm,18.0s
IRM Iron Mountain 100.53 57 Pdiff **Pdif 19 57 06.3 +1.3**
baz=268
VNA1 Neumayer--Stat 100.54 188 P **Pdif 19 57 06.7 +2.5**
VNA1 Neumayer--Stat 100.54 188 P **PP 20 01 11.1 +0.8**
ELK Elko 100.57 50 eP Pdif 19 57 06.0 +0.7
ELK MLR MLR
comp=Z,1μm,20.0s
ELK Elko 100.57 50 ePdif Pdif 19 57 06.0 +0.7
ELK LR LR
comp=Z,1μm,20.0s
SHPR Sheep Range 100.58 54 ePdif Pdif 19 57 06.7 +1.3
SHPR LR LR
comp=Z,2μm,18.0s
LDFC Landfair 100.59 56 PFAKE 19 57 20.0 +15
LDFC LR LR
comp=Z,2μm,20.0s
GLA Glamis 100.77 58 Pdiff **Pdif 19 57 07.2 +1.1**
baz=268
GLA Glamis 100.77 58 PFAKE 19 57 20.0 +14
GLA LR LR
comp=Z,2μm,21.0s
Y12C Blythe 101.04 57 Pdiff **Pdif 19 57 08.8 +1.6**
baz=269
Y12C Blythe 101.04 57 ePdif Pdif 19 57 07.7 +0.4
Y12C LR LR
comp=Z,2μm,21.0s
HLID Hailey 101.18 47 Pdiff **Pdif 19 57 08.4 +0.5**
baz=271
HLID Hailey 101.18 47 ePdif Pdif 19 57 08.3 +0.4
HLID LR LR
comp=Z,2μm,19.0s
PDMCI Parker Dam,Lak 101.37 57 Pdiff **Pdif 19 57 09.9 +1.2**
baz=269
MSO Missoula 101.45 44 Pdiff **Pdif 19 57 09.3 +0.5**
baz=272
MSO Missoula 101.45 44 ePdif Pdif 19 57 08.7 -0.2
MSO LR LR
comp=Z,1μm,19.0s
W13A Hualapai Mount 101.59 56 ePdif Pdif 19 57 11.3 +1.3
W13A LR LR
comp=Z,1μm,19.0s
PSUT Pine Spring 101.64 52 ePdif Pdif 19 57 10.7 +0.6
PSUT LR LR
comp=Z,2μm,18.0s
113A Mohawk Valley, 101.66 58 ePdif Pdif 19 57 11.4 +1.5
113A LR LR
comp=Z,2μm,21.0s
CHMT Chamberlain Mo 101.92 44 ePdif Pdif 19 57 11.1 -0.1
CCUT Cedar City 102.03 53 PFAKE 19 57 20.0 +8.2
CCUT LR LR
comp=Z,2μm,18.0s
LCMT Little Creek M 102.12 54 ePdif Pdif 19 57 13.5 +1.3
LCMT LR LR
comp=Z,1μm,18.0s
BGU Big Grassy Mou 102.25 50 PFAKE 19 57 20.0 +7.3
BGU LR LR
comp=Z,1μm,19.0s
MCMT McKenzie Canyo 102.28 46 ePdif Pdif 19 57 13.6 +0.8
Y14A Wickenburg 102.31 57 ePdif Pdif 19 57 13.8 +0.8
Y14A LR LR
comp=Z,6μm,18.0s
HVU Hansel Valley 102.42 49 eP Pdif 19 57 13.8 +0.4
HVU MLR MLR
comp=Z,2μm,21.0s
HVU Hansel Valley 102.42 49 ePdif Pdif 19 57 13.8 +0.4
HVU LR LR
comp=Z,2μm,21.0s
DUG Dugway, Tooele 102.43 51 Pdiff **Pdif 19 57 13.9 +0.5**
baz=271
DUG Dugway, Tooele 102.43 51 eP Pdif 19 57 14.2 +0.8
DUG MLR MLR
comp=Z,1μm,19.0s
DUG Dugway, Tooele 102.43 51 ePdif Pdif 19 57 14.2 +0.8
DUG LR LR
comp=Z,1μm,19.0s
DLMT Dillon 102.43 45 PFAKE 19 57 20.0 +6.6
DLMT LR LR
comp=Z,2μm,22.0s
214A Organ Pipe Nat 102.45 59 Pdiff **Pdif 19 57 14.4 +0.8**
baz=269
KNB Kanab 102.46 54 eP Pdif 19 57 14.5 +0.8
KNB MLR MLR
comp=Z,1μm,18.0s
KNB Kanab 102.46 54 ePdif Pdif 19 57 14.5 +0.8
KNB LR LR
comp=Z,1μm,18.0s
SRIG Santa Rosalia 102.86 64 PFAKE 19 57 30.0 +15
SRIG LR LR
comp=Z,3μm,22.0s
PKCU Pink Cliffs 102.86 53 ePdif Pdif 19 57 16.7 +1.0
U15A North Rim 102.89 54 ePdif Pdif 19 57 16.9 +1.2
U15A LR LR
comp=Z,1μm,18.0s
MTPU Mount Pierson 102.95 53 ePdif Pdif 19 57 17.5 +1.4
MTPU LR LR
comp=Z,2μm,18.0s
NLU North Lily Min 103.00 51 ePdif Pdif 19 57 16.1 0.0
NLU LR LR
comp=Z,1μm,19.0s
BOZ Bozeman (W) 103.10 45 Pdiff **Pdif 19 57 17.0 +0.7**
baz=273
BOZ Bozeman (W) 103.10 45 PFAKE 19 57 30.0 +14
BOZ LR LR
comp=Z,2μm,20.0s
QLMT Earthquake Lak 103.28 46 ePdif Pdif 19 57 17.4 +0.2
HWUT Hardware Ranch 103.33 49 ePdif Pdif 19 57 17.6 +0.1
HWUT LR LR
comp=Z,1μm,19.0s
MPU Maple Canyon 103.34 51 PFAKE 19 57 30.0 +12
MPU LR LR
comp=Z,1μm,18.0s
JLU Jordanelle 103.46 50 PFAKE 19 57 30.0 +12
JLU LR LR
comp=Z,1μm,18.0s
TCUT Toone Canyon 103.47 50 PFAKE 19 57 30.0 +12
TCUT LR LR
comp=Z,2μm,19.0s
X16A Lo Mia Camp, P 103.60 56 PFAKE 19 57 30.0 +11
X16A LR LR
comp=Z,1μm,19.0s
YMR Madison River 103.62 46 PFAKE 19 57 30.0 +11
YMR LR LR
comp=Z,2μm,19.0s
AHID Auburn Hatcher 103.63 48 PFAKE 19 57 30.0 +11
AHID LR LR
comp=Z,3μm,22.0s
FXWY Fox Creek 103.64 47 PFAKE 19 57 30.0 +11
FXWY LR LR
comp=Z,1μm,18.0s
WUAZ Wupatki 103.65 55 Pdiff **Pdif 19 57 20.3 +1.3**
baz=271
WUAZ Wupatki 103.65 55 ePdif Pdif 19 57 20.3 +1.3
WUAZ LR LR
comp=Z,1μm,19.0s
IMW Indian Meadow 103.69 47 PFAKE 19 57 30.0 +11
IMW LR LR
comp=Z,2μm,19.0s
TMUT Trail Mountain 103.69 51 PFAKE 19 57 30.0 +11
TMUT LR LR
comp=Z,1μm,18.0s
TPAW Teton Pass 103.70 47 PFAKE 19 57 30.0 +11
TPAW LR LR
comp=Z,2μm,22.0s
YFT Old Faithful 103.73 46 PFAKE 19 57 30.0 +11
YFT LR LR
comp=Z,3μm,19.0s
REDW Red Top Meadow 103.78 47 ePdif Pdif 19 57 20.0 +0.5
REDW LR LR
comp=Z,1μm,19.0s
MOOW Moose Ponds 103.83 47 ePdif Pdif 19 57 20.2 +0.5
MOOW LR LR
comp=Z,2μm,18.0s
SNOW Snow King Moun 103.84 47 PFAKE 19 57 30.0 +10
SNOW LR LR
comp=Z,1μm,20.0s
FLWY Flagg Ranch 103.85 46 ePdif Pdif 19 57 20.7 +0.9
FLWY LR LR
comp=Z,2μm,20.0s
TBLG Delisi 103.86 311 P **Pdif 19 57 18.8 -0.8**
TBLG Delisi 103.86 311 P **Pdif 19 57 18.8 -0.8**
DAMY Dhamar 103.88 283 PFAKE 19 57 30.0 +9.4
DAMY LR LR
comp=Z,700nm,19.0s
H17A Grant Village 103.92 46 Pdiff **Pdif 19 57 21.3 +1.1**
baz=274
H17A Grant Village 103.92 46 PFAKE 19 57 30.0 +10
H17A LR LR
comp=Z,3μm,19.0s
GNI Garni 103.93 309 Pdiff **Pdif 19 57 20.6 +0.5**
comp=Z,3.8nm,0.5s,baz=176,slow=7.9,SNR=7.2
GNI PKiKP **PP 20 01 36.5 -1.0**
comp=Z,4.3nm,0.4s,baz=199,slow=5.1,SNR=4.5
GNI Garni 103.93 309 ePdif Pdif 19 57 19.4 -0.7
GNI *e*PP **PP 20 01 36.5 -1.0**
LOHW Long Hollow 103.94 47 PFAKE 19 57 30.0 +10
LOHW LR LR
comp=Z,1μm,18.0s
GUDG Gudauri 104.02 312 P **Pdif 19 57 20.6 0.0**
HSIG 104.03 62 ePdif Pdif 19 57 19.4 -1.2
HSIG LR LR
comp=Z,2μm,21.0s
LKWY Lake 104.03 46 PFAKE 19 57 30.0 +9.4
LKWY LR LR
comp=Z,2μm,22.0s
P17A Butcher Ranch, 104.04 51 PFAKE 19 57 30.0 +9.3
P17A LR LR
comp=Z,900nm,18.0s
RES Resolute Bay 104.15 14 PFAKE 19 57 30.0 +10
RES LR LR
comp=Z,1μm,22.0s
TUC Tucson 104.17 59 eP Pdif 19 57 22.9 +1.6
TUC MLR MLR
comp=Z,2μm,22.0s
TUC Tucson 104.17 59 ePdif Pdif 19 57 22.9 +1.6
TUC LR LR
comp=Z,2μm,22.0s
EGMT Eagleton 104.21 42 Pdiff **Pdif 19 57 21.9 +0.8**
baz=275
EGMT Eagleton 104.21 42 ePdif Pdif 19 57 21.3 +0.2
EGMT LR LR
comp=Z,1μm,20.0s
SRU San Rafael Swe 104.23 52 PFAKE 19 57 30.0 +8.5
SRU LR LR
comp=Z,1μm,18.0s
P18A Preston Nutter 104.42 51 PFAKE 19 57 30.0 +7.5
P18A LR LR
comp=Z,1μm,20.0s
GCMT Greycliff 104.46 45 ePdif Pdif 19 57 24.3 +1.9
NCK Nalchik 104.60 313 i P **Pdif 19 57 22.4 -0.5**
TMCR Tamitsa 104.64 335 *i* P **Pdif 19 57 22.0 -0.5**
TMCR pmax pmax
comp=Z,150nm,1.5s
KLMR Klimovskoe 104.72 331 eP Pdif 19 57 19.6 -3.3
KLMR pmax pmax
comp=Z,186nm,1.5s
BW06 Boulder Array 104.76 48 Pdiff **Pdif 19 57 23.9 0.0**
baz=274
BW06 Boulder Array 104.76 48 PFAKE 19 57 40.0 +16
BW06 LR LR
comp=Z,3μm,22.0s
PD31 Pinedale Array 104.76 48 ePdif Pdif 19 57 24.0 +0.1
PD31 *e*PP PKiKP 20 01 29.6 -10
PDAR Pinedale Array 104.76 48 Pdiff **Pdif 19 57 24.0 +0.1**
comp=Z,11nm,1.0s,baz=252,slow=2.8,SNR=30
PDAR PP PKiKP 20 01 29.6 -10
comp=Z,1.2nm,0.9s,baz=254,slow=5.5,SNR=4.1
ONI Oni 104.77 312 P **Pdif 19 57 24.2 +0.4**
ONI Oni 104.77 312 P **Pdif 19 57 24.1 +0.4**
SPITS Spitsbergen Ar 104.77 351 Pdiff **Pdif 19 57 26.0 +3.2**
comp=Z,20nm,1.0s,baz=147,slow=12,SNR=8.2
RLMT Red Lodge 104.80 45 Pdiff **Pdif 19 57 25.2 +1.2**

baz=275
RLMT Red Lodge 104.80 45 PFAKE 19 57 30.0 +6.0
RLMT LR LR
comp=Z,1μm,20.0s
AKH Akhalkalaki 104.81 311⇑ *i*P **PKiKP 20 01 37.9 -1.5**
AKH Akhalkalaki 104.81 311 P **Pdif 19 57 24.5 +0.4**
AKH Akhalkalaki 104.81 311 P **Pdif 19 57 24.4 +0.4**
X18A Snowflake 104.83 56 *e*Pdif **Pdif 19 57 24.6 +0.3**
X18A *e*PP **PP 20 01 43.5 -0.9**
X18A LR LR
comp=Z,1μm,20.0s
GOF Gofitskoye 104.88 315⇑ *e*P **Pdif 19 57 23.1 -0.9**
LVZ Lovozero 104.93 339 *e*P **Pdif 19 57 25.8 +2.0**
LVZ MLR MLR
comp=Z,2μm,21.0s
LVZ Lovozero 104.93 339 *e*Pdif **Pdif 19 57 25.8 +2.0**
LVZ LR LR
comp=Z,2μm,21.0s
KBS Kingsbay 104.94 352 PFAKE 19 57 30.0 +6.4
KBS LR LR
comp=Z,900nm,20.0s
W18A Petrified Fore 104.99 56 Pdiff **Pdif 19 57 26.3 +1.3**
baz=272
W18A Petrified Fore 104.99 56 PFAKE 20 01 50.0
W18A LR LR
comp=Z,1μm,18.0s
KBZ Khabaz 105.09 313 Pdiff **Pdif 19 57 24.9 -0.1**
comp=Z,2.4nm,0.9s,baz=43,slow=4.0,SNR=9.5
KBZ PKiKP **PKiKP 20 01 40.8 +1.2**
comp=Z,4.5nm,0.9s,baz=64,slow=16,SNR=1.9
VRH Novokhopyorsk 105.11 321 *e*P **Pdif 19 57 22.3 -2.6**
VRH *e* 20 01 42.1
VRH pmax pmax
comp=Z,40nm,1.6s
VRH MLR MLR
comp=Z,1μm,25.0s
KVAR Kislovodsk Arr 105.22 313 Pdiff **Pdif 19 57 25.4 -0.4**
comp=Z,3.0nm,0.7s,baz=200,slow=7.2,SNR=4.0
KVAR PP **PP 20 01 43.7 -3.2**
comp=Z,10nm,0.9s,baz=73,slow=18,SNR=6.0
KIV Kislovodsk 105.22 313⇓ *i*P **Pdif 19 57 24.5 -1.2**
KIV *e* 20 01 44.5
KIV *i* 20 09 05.3
KIV *i*SS SS 20 16 33.9 -8.4
KIV pmax pmax
comp=Z,33nm,2.3s
KIV Kislovodsk 105.22 313 *e*Pdif **Pdif 19 57 24.3 -1.4**
KIV *e*PP **PKiKP 20 01 41.2 +1.2**
KIV LR LR
comp=Z,1μm,20.0s
NEY Neytrino 105.25 313⇓ *i*P **Pdif 19 57 27.5 +1.5**
319A Douglas 105.46 60 *e*Pdif **Pdif 19 57 28.1 +1.0**
319A *e*PP **PP 20 01 45.4 -3.7**
319A LR LR
comp=Z,2μm,22.0s
APA Apatity 105.49 339⇓ *i*P **Pdif 19 57 25.5 -0.7**
APA *e* 20 08 03.0
APA pmax pmax
comp=Z,140nm,1.4s
APA MLR MLR
comp=Z,2μm,21.0s
CHVG Ch'k'valeri 105.76 312⇓ *i*P **PP 20 01 52.6 +1.8**
CHVG Ch'k'valeri 105.76 312 P **Pdif 19 57 27.8 -0.2**
MVCO Mesa Verde 105.91 53 Pdiff **Pdif 19 57 29.6 +0.5**
baz=273
MVCO Mesa Verde 105.91 53 *e*Pdif **Pdif 19 57 26.5 -2.6**
MVCO LR LR
comp=Z,900nm,20.0s
O20A White River Ci 105.93 50 Pdiff **Pdif 19 57 29.0 -0.1**
baz=274
O20A White River Ci 105.93 50 *e*Pdif **Pdif 19 57 30.2 +1.1**
O20A LR LR
comp=Z,1μm,19.0s
LPSR Galich'ya Gora 106.61 323 *e*P **Pdif 19 57 29.4 -2.1**
LPSR pmax pmax
comp=Z,20nm,1.4s
LPSR MLR MLR
comp=Z,520nm,17.0s
VSR Storozhevoye 106.70 321 *e*P **Pdif 19 57 30.1 -1.8**
VSR pmax pmax
comp=Z,50nm,1.3s
VSR MLR MLR
comp=Z,1μm,25.0s
121A Cookes Peak, D 106.70 58 Pdiff **Pdif 19 57 32.1 -0.6**
baz=272
LAO LASA Array 106.75 43 Pdiff **Pdif 19 57 33.1 +0.7**
baz=277
LAO LASA Array 106.75 43 PFAKE 20 01 50.0
LAO LR LR
comp=Z,2μm,19.0s
MOS Moscow 106.76 326 *i*P **PKiKP 20 01 41.4 -0.9**
MOS pmax pmax
comp=Z,83nm,1.6s
KEV Kevo 106.80 342 *e*P **Pdif 19 57 30.8 -1.2**
KEV MLR MLR
comp=Z,2μm,19.0s
KEV Kevo 106.80 342 *e*Pdif **Pdif 19 57 30.8 -1.2**
KEV LR LR
comp=Z,2μm,19.0s
SMCO Snowmass 106.98 51 *e*Pdif **Pdif 19 57 35.0 +0.9**
SMCO LR LR
comp=Z,1μm,21.0s
K22A Casper 107.00 48 Pdiff **Pdif 19 57 33.7 0.0**
baz=276
K22A Casper 107.00 48 *e*Pdif **Pdif 19 57 33.9 +0.1**
K22A LR LR
comp=Z,2μm,21.0s
S22A 4UR Ranch, Cre 107.20 53 Pdiff **Pdif 19 57 35.5 +0.6**
baz=274
S22A 4UR Ranch, Cre 107.20 53 *e*Pdif **Pdif 19 57 36.4 +1.5**
S22A *e*PP **PP 20 02 00.6 -1.4**
S22A LR LR
comp=Z,1μm,18.0s
Y22D IRIS PASSCAL I 107.36 57 PFAKE 20 02 00.0
Y22D LR LR
comp=Z,1μm,18.0s
ARA0 ARCESS Array S 107.37 342 *e*Pdif **Pdif 19 57 33.9 -0.7**
ARA0 *e*PKiKP **PKiKP 20 01 42.9 -0.2**
ARA0 *e*PKKPbc **PKKPbc 20 13 01.6 +0.1**
ARCES ARCESS Array B 107.37 342 Pdiff **Pdif 19 57 33.9 -0.7**
comp=Z,52nm,1.0s,baz=72,slow=5.2,SNR=34
ARCES PKiKP **PKiKP 20 01 42.9 -0.2**
comp=Z,4.3nm,0.8s,baz=100,slow=2.1,SNR=19
ARCES PKKPbc **PKKPbc 20 13 01.6 +0.1**
comp=Z,0.8nm,0.5s,baz=260,slow=2.1,SNR=6.7
ARCES ARCESS Array B 107.37 342 *i*P **PKiKP 20 01 42.9 -0.2**
ARE0 ARCESS Array S 107.37 342 PFAKE 20 01 50.0
ARE0 LR LR
comp=Z,2μm,19.0s
SOC Sochi 107.40 313 *i*P **PKiKP 20 01 44.5 +0.6**
SOC *e*SSS SSS 20 21 08.1
SOC pmax pmax
comp=Z,8.0nm,0.6s
OBN Obninsk 107.48 326 Pdiff **Pdif 19 57 34.7 -0.6**
comp=Z,8.7nm,0.6s,baz=342,slow=2.9,SNR=8.4
OBN PKiKP **PKiKP 20 01 42.3 -1.3**
comp=Z,3.7nm,0.4s,baz=214,slow=17,SNR=3.2
OBN Obninsk 107.48 326*d* *i*P **Pdif 19 57 33.2 -2.1**
OBN *e* 20 02 05.8
OBN Obninsk 107.48 326 *e*Pdif **Pdif 19 57 34.2 -1.1**
OBN PKiKP **PKiKP 20 01 42.3 -1.3**
OBN LR LR
comp=Z,2μm,18.0s
BNM Barren Site 107.60 57 *e*Pdif **Pdif 19 57 39.8 +3.1**
BNM *e*PP **PP 20 02 03.5 -1.4**
N23A Red Feather La 107.61 49 Pdiff **Pdif 19 57 37.2 +0.6**
baz=276
N23A Red Feather La 107.61 49 *e*Pdif **Pdif 19 57 37.3 +0.6**
N23A LR LR
comp=Z,1μm,19.0s
ANMO Albuquerque 107.69 56 Pdiff **Pdif 19 57 38.6 +1.5**
comp=Z,1.2nm,0.7s,baz=269,slow=2.7,SNR=4.1
ANMO Albuquerque 107.69 56 *e*Pdif **Pdif 19 57 37.9 +0.8**
ANMO LR LR
comp=Z,800nm,20.0s
DGMT Dagmar 107.84 41 Pdiff **Pdif 19 57 37.5 +0.3**
baz=280
DGMT Dagmar 107.84 41 PFAKE 20 02 00.0
DGMT LR LR
comp=Z,1μm,20.0s
PHWY Pilot Hill 107.93 49 *e*Pdif **Pdif 19 57 38.6 +0.5**
PHWY LR LR
comp=Z,1μm,20.0s
FFC Flin Flon 107.96 35 *e*P **Pdif 19 57 36.8 -0.7**
FFC MLR MLR
comp=Z,2μm,20.0s
FFC Flin Flon 107.96 35 *e*Pdif **Pdif 19 57 36.8 -0.7**
FFC LR LR
comp=Z,2μm,20.0s
ISCO Idaho Springs 107.97 51 Pdiff **Pdif 19 57 39.1 +0.8**
baz=276
ISCO Idaho Springs 107.97 51 *e*P **Pdif 19 57 38.3 0.0**
ISCO MLR MLR
comp=Z,1μm,18.0s
ISCO Idaho Springs 107.97 51 *e*Pdif **Pdif 19 57 38.3 0.0**
ISCO LR LR
comp=Z,1μm,18.0s
SDCO Great Sand Dun 108.25 53 *e*Pdif **Pdif 19 57 39.4 -0.2**
SDCO LR LR
comp=Z,2μm,19.0s
Q24A Divide 108.41 51 Pdiff **Pdif 19 57 40.8 +0.5**
baz=276
Q24A Divide 108.41 51 PFAKE 20 02 00.0
Q24A LR LR
comp=Z,1μm,20.0s
B25A Knox Farm, Ray 108.56 42 Pdiff **Pdif 19 57 40.7 +0.3**
baz=280
C25A Freed Ranch, W 108.59 42 Pdiff **Pdif 19 57 41.4 +0.9**
baz=280
RSSD Black Hills 108.62 46 Pdiff **Pdif 19 57 41.1 +0.1**
baz=278
RSSD Black Hills 108.62 46 *e*P **Pdif 19 57 41.1 +0.1**
RSSD MLR MLR
comp=Z,2μm,21.0s
RSSD Black Hills 108.62 46 *e*Pdif **Pdif 19 57 41.1 +0.1**
RSSD LR LR
comp=Z,2μm,21.0s
D25A Fairfield 108.64 43 Pdiff **Pdif 19 57 41.8 +0.9**
baz=280
E25A Miller Ranch, 108.70 43 Pdiff **Pdif 19 57 41.6 +0.5**
baz=280
HPIG 108.72 64 PFAKE 20 02 00.0
HPIG LR LR
comp=Z,2μm,22.0s
F25A Bowman 108.75 44 Pdiff **Pdif 19 57 42.2 +0.9**
baz=279
MNTX Cornudas Mount 108.78 59 Pdiff **Pdif 19 57 42.5 +0.8**
baz=273
MNTX Cornudas Mount 108.78 59 *e*Pdif **Pdif 19 57 43.5 +1.7**
MNTX LR LR
comp=Z,1μm,19.0s
I25A Rochford 108.85 46 Pdiff **Pdif 19 57 41.9 -0.1**
baz=278
H25A Fruitdale 108.86 45 Pdiff **Pdif 19 57 42.2 +0.3**
baz=279
ANN Anapa 108.87 315 *i*P **PKiKP 20 01 44.1 -2.4**
ANN pmax pmax
comp=Z,11nm,1.0s
G25A Newell 108.90 45 Pdiff **Pdif 19 57 42.2 +0.2**
baz=279
FURI Furi 109.05 277 PFAKE 20 02 00.0
FURI LR LR
comp=Z,900nm,20.0s
B26A Jensen Ranch, 109.14 41 Pdiff **Pdif 19 57 43.7 +0.7**
baz=281
T25A Trinidad 109.17 53 *e*Pdif **Pdif 19 57 41.4 -2.2**
T25A LR LR
comp=Z,800nm,19.0s
A26A Wade Farm, Ken 109.17 41 Pdiff **Pdif 19 57 43.2 +0.2**
baz=281
D26A Manning 109.26 43 Pdiff **Pdif 19 57 43.3 -0.3**
baz=280
F26A Lodgepole 109.31 44 Pdiff **Pdif 19 57 43.9 +0.1**
baz=280
E26A Carlson Angus 109.34 43 Pdiff **Pdif 19 57 44.5 +0.6**
baz=280
KMBO Kilima Mbogo 109.38 266 PFAKE 20 02 00.0
KMBO LR LR
comp=Z,700nm,20.0s
J26A Sides Ranch, S 109.43 47 Pdiff **Pdif 19 57 45.2 +0.8**
baz=279
H26A Fairpoint 109.44 45 Pdiff **Pdif 19 57 45.0 +0.6**
baz=279
G26A Maurine 109.45 45 Pdiff **Pdif 19 57 45.1 +0.7**
baz=280
B27A Peters Farms, 109.78 41 Pdiff **Pdif 19 57 46.5 +0.7**
baz=282
D27A Center 109.86 42 Pdiff **Pdif 19 57 47.5 +1.3**
baz=281
G27A Dupree 109.90 44 Pdiff **Pdif 19 57 47.2 +0.8**
baz=280
H27A Howes 109.93 45 Pdiff **Pdif 19 57 47.1 +0.6**
baz=280
E27A Carson 109.96 43 Pdiff **Pdif 19 57 47.8 +1.2**
baz=281
A28A Rude Farm, Bot 110.31 40 Pdiff **Pdif 19 57 48.5 +0.3**
baz=283
B28A Dugan Ranch, T 110.35 41 Pdiff **Pdif 19 57 48.8 +0.5**
baz=282
KSCO Kaye Shedlock' 110.36 51 PFAKE 20 02 00.0
KSCO LR LR
comp=Z,2μm,19.0s
LTX Lajitas 110.39 61 *e*PKIKP **PKiKP 20 01 52.0 +2.0**
LTX *e* 20 02 23.4
LTX *e* 20 13 03.0
LTX Lajitas 110.39 61 *e*PKiKP **PKiKP 20 01 52.0 +2.0**
LTX *e*PP **PP 20 02 23.4 -1.7**
LTX *e*PKKPab **PKKPab 20 13 03.0 +2.1**
TXAR Lajitas Array 110.39 61 PKiKP **PKiKP 20 01 52.0 +2.0**
comp=Z,3.4nm,1.1s,baz=228,slow=1.5,SNR=8.6
TXAR PP **PP 20 02 23.4 -1.7**
comp=Z,6.1nm,1.1s,baz=269,slow=5.0,SNR=8.3
TXAR PKKP **PKKPab 20 13 03.0 +2.1**
comp=Z,2.9nm,1.0s,baz=124,slow=6.7,SNR=8.0
D28A Regan 110.48 42 Pdiff **Pdif 19 57 49.2 +0.2**
baz=282
E28A Huff 110.52 43 Pdiff **Pdif 19 57 49.6 +0.5**
baz=282
OGNE Ogallala 110.54 49 Pdiff **Pdif 19 57 49.9 +0.5**
baz=278
OGNE Ogallala 110.54 49 PFAKE 20 02 00.0
OGNE LR LR
comp=Z,2μm,20.0s
I28A Midland 110.68 46 Pdiff **Pdif 19 57 50.5 +0.6**
baz=280
FIA1 FINESS Array S 110.72 334 *e*Pdif **Pdif 19 57 46.7 -2.9**
FIA0 FINESS Array S 110.72 334 *e*P **Pdif 19 57 48.7 -0.9**
FIA0 FINESS Array S 110.72 334 *i*P **PKiKP 20 01 49.2 -0.3**
FIA0 FINESS Array S 110.72 334 *e*Pdif **Pdif 19 57 48.7 -0.9**
FIA0 *e*PKiKP **PKiKP 20 01 49.2 -0.3**
FINES FINESS Array B 110.72 334 Pdiff **Pdif 19 57 48.7 -0.9**
comp=Z,4.2nm,0.7s,baz=82,slow=4.2,SNR=15
FINES PKiKP **PKiKP 20 01 49.2 -0.3**
comp=Z,5.2nm,0.8s,baz=100,slow=5.1,SNR=14
ASF Jabal al Asfar 110.76 302 PKiKP **PKiKP 20 01 47.7 -3.0**
comp=Z,1.0nm,0.4s,baz=354,slow=1.5,SNR=3.5
ASF PP **PP 20 02 22.9 -4.9**
comp=Z,8.3nm,1.1s,baz=161,slow=2.3,SNR=6.7
MSTX Muleshoe 110.80 56 PFAKE 20 02 00.0
MSTX LR LR
comp=Z,2μm,22.0s
FCC Fort Churchill 110.90 29 *e*P **Pdif 19 57 49.8 -0.6**
FCC MLR MLR
comp=Z,1μm,21.0s
FCC Fort Churchill 110.90 29 *e*Pdif **Pdif 19 57 49.8 -0.6**
FCC LR LR
comp=Z,1μm,21.0s
MDND Maddock 110.98 41 PFAKE 20 02 00.0
MDND LR LR
comp=Z,1μm,20.0s
SIM Simferopol' 111.16 315 *i*PKIKP PKiKP 20 01 40.4 -11
SIM 20 02 27.3
SIM PS **PS 20 11 57.1 -4.7**
SIM pmax pmax
comp=Z,190nm,8.5s
F29A Eureka 111.26 44 Pdiff **Pdif 19 57 52.4 -0.1**
baz=282
AMTX Amarillo 111.61 55 Pdiff **Pdif 19 57 55.1 +0.7**
baz=276
AMTX Amarillo 111.61 55 PFAKE 20 02 00.0
AMTX LR LR
comp=Z,1μm,20.0s
VSU Vasula 111.61 331⇓ *i*P **Pdif 19 57 56.9 +3.3**
ZAIG Zacatecas 111.62 68 PFAKE 20 02 00.0
ZAIG LR LR
comp=Z,2μm,21.0s
D30A Buchanan 111.70 42 Pdiff **Pdif 19 57 54.6 +0.2**
baz=283
MMAI Mount Meron Ar 111.94 303 Pdiff **Pdif 19 58 01.9 +6.1**
comp=Z,0.3nm,0.3s,baz=209,slow=12,SNR=4.2
MMAI PP **PP 20 02 41.1 +5.0**
comp=Z,9.4nm,1.1s,baz=52,slow=10.0,SNR=3.9
J30A Dallas 112.00 46 Pdiff **Pdif 19 57 56.0 +0.2**
baz=281
K30A Basset 112.04 47 Pdiff **Pdif 19 57 56.6 +0.6**
baz=281
BR101 Keskin Array S 112.46 310 *e*Pdif **Pdif 19 57 57.5 -0.6**
BR101 *e*PKiKP **PKiKP 20 01 52.1 -1.6**
BR101 *e*PP **PP 20 02 42.1 +2.4**
BR101 *e*PKKPbc **PKKPbc 20 12 44.0 -0.3**
BRTR Keskin Array B 112.46 310 Pdiff **Pdif 19 57 57.5 -0.6**
comp=Z,2.4nm,0.8s,baz=117,slow=5.1,SNR=11
BRTR PKiKP **PKiKP 20 01 52.1 -1.6**
comp=Z,4.2nm,1.1s,baz=103,slow=5.5,SNR=6.1
BRTR PP **PP 20 02 42.1 +2.4**
comp=Z,7.3nm,1.0s,baz=116,slow=8.6,SNR=5.9
BRTR PKKPbc **PKKPbc 20 12 44.0 -0.3**
comp=Z,1.2nm,1.0s,baz=222,slow=1.7,SNR=4.5
MICGM Minsk 112.47 327 *e*P **Pdif 19 57 56.0 -1.6**
MICGM *e* 19 58 01.0
MICGM *e*PKP **PKiKP 20 01 50.0 -3.1**
MICGM *e*PP PP 20 02 30.0 -9.0
MICGM *e*SKS **SKSac 20 08 36.0 +0.2**
MICGM *e*SKKS **SKKSac 20 09 40.0 -1.2**
MICGM *e*SKKKS 20 10 14.0
MICGM *e*PS **PS 20 12 08.0 -5.4**
MICGM *e*LR LR 20 47 20.0
MICGM LRM MLR 20 53 54.0
comp=Z,3.2nm,18.0s
MNK Minsk 112.47 327 *e*P **Pdif 19 57 56.0 -1.6**
MNK *e* 20 01 50.0
MNK *e* 20 08 36.0
MNK *e*PS **PS 20 12 08.0 -5.4**
CBKS Cedar Bluff 112.62 51 PFAKE 20 02 10.0
CBKS LR LR
comp=Z,2μm,22.0s
ULM Lac du Bonnet 112.73 38 *e*PKIKP **PKiKP 20 01 56.8 +3.1**
ULM pmax pmax
comp=Z,3.0nm,0.5s
ULM Lac du Bonnet 112.73 38 PFAKE 20 02 10.0
ULM LR LR
comp=Z,2μm,21.0s
NACGM Naroch 112.93 327 *e* **PKiKP 20 01 53.0 -0.9**
NACGM *e*LR LR 20 47 12.0
AKASG Malin Array Be 112.93 322 Pdiff **Pdif 19 58 01.4 +1.8**
comp=Z,0.7nm,0.5s,baz=56,slow=5.2,SNR=10
AKASG PKiKP **PKiKP 20 01 54.7 +0.6**
comp=Z,1.3nm,0.5s,baz=68,slow=1.9,SNR=4.6
AKASG PP **PP 20 02 42.1 -0.3**
comp=Z,14nm,0.9s,baz=61,slow=6.7,SNR=11
AKASG PKKPbc **PKKPbc 20 12 42.4 -0.5**
comp=Z,0.3nm,0.4s,baz=266,slow=3.7,SNR=5.2
AKBB Malin Array Si 112.93 322 *e*P **Pdif 19 58 01.1 +1.4**
AKBB *e* 20 02 41.6
AKBB MLR MLR
comp=Z,1μm,22.0s
AKBB Malin Array Si 112.93 322 *e*Pdif **Pdif 19 58 01.1 +1.4**
AKBB *e*PP **PP 20 02 41.6 -0.8**
AKBB LR LR
comp=Z,1μm,22.0s
KIEV Kiev 112.94 322⇑ *i*P **Pdif 19 57 58.8 -0.9**
KIEV Kiev 112.94 322 PFAKE 20 02 10.0
KIEV LR LR
comp=Z,1μm,22.0s
AK11 Malin Array Si 112.97 322 *e*Pdif **Pdif 19 57 58.9 -0.9**
AK11 *e*PKiKP **PKiKP 20 01 52.9 -1.2**
AK11 *e*PP **PP 20 02 42.0 -0.7**
ANTO Ankara 113.07 310 *e*PP PP 20 02 42.8 -1.2
ANTO LR LR
comp=Z,500nm,21.0s
H32A Carlson Farm, 113.20 45 PKiKP **PKiKP 20 01 54.8 0.0**
baz=283
BGNE Belgrade 113.35 48 PKiKP **PKiKP 20 01 54.9 -0.4**
baz=282
BGNE Belgrade 113.35 48 PFAKE 20 02 10.0
BGNE LR LR
comp=Z,2μm,21.0s
CSS Mathiatis 113.42 305 PFAKE 20 02 10.0
CSS LR LR
comp=Z,200nm,22.0s
O32A Brockman Farm, 113.48 49 PKiKP **PKiKP 20 01 55.0 -0.5**
baz=281
BOSA Boshof 113.51 235 Pdiff **Pdif 19 58 07.3 +4.3**
comp=Z,1.4nm,0.6s,baz=17,slow=7.4,SNR=5.9
BOSA PKiKP **PKiKP 20 01 57.2 +1.1**
comp=Z,3.2nm,0.9s,baz=73,slow=4.0,SNR=4.9
BOSA PKKPab **PKKPab 20 12 49.9 +1.8**
comp=Z,7.4nm,0.9s,baz=300,slow=4.1,SNR=9.1
ABTX Abilene, Hawle 113.55 58 PFAKE 20 02 10.0
ABTX LR LR
comp=Z,1μm,19.0s
JCT Junction City 113.64 60 *e*PKiKP **PKiKP 20 01 54.3 -1.9**
JCT MLR MLR
comp=Z,3μm,21.0s
JCT Junction City 113.64 60 *e*PKiKP **PKiKP 20 01 54.3 -1.9**
JCT *e*PKKPab **PKKPab 20 12 48.7 +2.3**
JCT LR LR
comp=Z,3μm,21.0s
ECSD EROS Data Cent 113.96 45 PKiKP **PKiKP 20 01 56.0 -0.3**
baz=284
ECSD EROS Data Cent 113.96 45 *e*Pdif **Pdif 19 58 03.8 -0.6**
ECSD LR LR
comp=Z,1μm,19.0s
WMOK Wichita Mounta 113.99 55 PFAKE 20 02 10.0
WMOK LR LR
comp=Z,1μm,21.0s
B34A Aery, Baudette 114.02 40 PKiKP PKPdf 20 01 56.1 -0.1
baz=287
O33A Hebron 114.03 49 PKiKP PKPdf 20 01 56.4 -0.1
baz=281
D34A Park Rapids 114.06 41 PKiKP **PKiKP 20 01 57.0 +0.6**
baz=286
P33A Williams Farm, 114.07 50 PKiKP **PKiKP 20 01 57.1 +0.5**
baz=281
133A Hamilton Ranch 114.16 58 PKiKP **PKiKP 20 01 57.6 +0.5**
baz=277
W33A Caddo, Fort Co 114.19 55 PKiKP **PKiKP 20 01 57.4 +0.4**
baz=278
833A Chaparral WMA, 114.19 62 PKiKP PKPdf 20 01 56.9 -0.3
baz=275
433A Art 114.22 60 PKiKP PKPdf 20 01 56.7 -0.5
baz=276
SORM Soroca 114.24 320⇑ *i*P PKPdf 20 01 55.3 -1.3
SORM Soroca 114.24 320⇑PKIKP PKPdf 20 01 55.3 -1.3
X33A Lawton 114.25 55 PKiKP PKPdf 20 01 57.0 -0.1
baz=278
333A Richland Sprin 114.25 59 PKiKP PKPdf 20 01 57.3 0.0
baz=276
KIS Kishinev 114.26 319 *e*PKP PKPdf 20 01 53.0 -3.7
KIS Kishinev 114.26 319 *i*PPS PPS 20 13 18.0
KIS LRM MLR 20 53 13.0
comp=Z,800nm,20.0s
KIS Kishinev 114.26 319 *e*PKIKP PKPdf 20 01 53.0 -3.7
KIS *e* 20 03 00.0
KIS *i*PS **PS 20 12 20.0 -10**
KIS MLR MLR
comp=N,800nm,20.0s
KIS MLR MLR
comp=Z,2μm,20.0s
KIS MLR MLR
comp=E,300nm,19.0s
KIS MLR MLR
comp=Z,900nm,22.0s
J34A George 114.53 46 PKiKP **PKiKP 20 01 57.5 +0.1**
baz=284
SUMG Summit 114.60 2 *i*P PKPdf 20 01 56.4 -0.8
comp=Z,17nm,1.1s
SUMG Summit 114.60 2 *e*PKIKP PKPdf 20 01 56.4 -0.8
SUMG Summit 114.60 2 *e*PKiKP **PKiKP 20 01 56.4 -0.8**
B35A Bob, Littlefor 114.64 40 PKiKP PKPdf 20 01 57.7 +0.2
baz=288
C35A Jirik Farms, M 114.68 41 PKiKP PKPdf 20 01 57.6 +0.1
baz=287
O34A Beatrice 114.68 49 PKiKP PKPdf 20 01 57.3 -0.5
baz=282
N34A Lincoln 114.69 48 PKiKP PKPdf 20 01 57.4 -0.4
baz=282
P34A Walnut Farm, R 114.71 50 PKiKP **PKiKP 20 01 58.0 +0.1**
baz=282
U34A Anderson Ranch 114.73 53 PKiKP PKPdf 20 01 57.9 -0.1
baz=280
U34A Anderson Ranch 114.73 53 PFAKE 20 02 10.0 +12
U34A LR LR
comp=Z,1μm,19.0s
E35A Pequot Lakes 114.73 42 PKiKP PKPdf 20 01 58.1 +0.4
baz=287
W34A Bridge Creek, 114.73 55 PKiKP PKPdf 20 01 57.8 -0.3

baz=279
W34A Bridge Creek, 114.73 55 PFAKE 20 02 10.0 +12
W34A LR LR
comp=Z,1μm,19.0s
X34A Smith Ranch, M 114.78 55 PKiKP PKPdf 20 01 57.5 -0.7
baz=279
D35A Remer 114.81 41 PKiKP **PKiKP 20 01 57.4 -0.4**
baz=287
F35A Swanville 114.82 43 PKiKP **PKiKP 20 01 57.7 -0.2**
baz=286
S34A Willow Spring 114.84 52 PKiKP PKPdf 20 01 58.1 -0.1
baz=281
V34A Guthrie 114.84 54 PKiKP PKPdf 20 01 58.0 -0.2
baz=279
V34A Guthrie 114.84 54 PFAKE 20 02 10.0 +12
V34A LR LR
comp=Z,1μm,18.0s
UNM Universidad Na 114.85 72 PFAKE 20 02 10.0 +11
UNM LR LR
comp=Z,1μm,18.0s
334A Lometa 114.89 59 PKiKP PKPdf 20 01 58.5 0.0
baz=277
234A Clairette 114.89 58 PKiKP **PKiKP 20 01 58.5 0.0**
baz=277
Z34A Collier Ranch, 114.89 57 PKiKP **PKiKP 20 01 58.6 +0.2**
baz=278
T34A McClaskey Farm 114.91 53 PKiKP **PKiKP 20 01 58.1 -0.2**
baz=280
434A Burnet 114.92 59 PKiKP PKPdf 20 01 58.3 -0.3
baz=277
H35A Sunnyside Ranc 114.96 44 PKiKP PKPdf 20 01 58.4 +0.2
baz=285
KSU1 Kansas State U 114.97 50 PFAKE 20 02 10.0 +12
KSU1 LR LR
comp=Z,2μm,19.0s
L35A Bielow Farm, R 115.10 47 PKiKP **PKiKP 20 01 58.2 -0.3**
baz=284
ISP Isparta 115.19 308 PFAKE 20 02 10.0 +11
ISP LR LR
comp=Z,800nm,22.0s
SUW Suwalki 115.21 327 *e*Pdiff **Pdif 19 58 09.7 -0.1**
SUW *e*PKPdf **PKPdf 20 01 57.4 -0.9**
SUW Suwalki 115.21 327 *e*PKIKP **PKPdf 20 01 57.4 -0.9**
TIRR Tirgusor 115.23 316 *e*PP PP 20 03 01.5 +2.6
TIRR LR LR
comp=Z,1μm,20.0s
O35A Humboldt 115.25 49 PKiKP **PKPdf 20 01 59.6 +0.7**
baz=283
P35A Duane Minner, 115.33 50 PKiKP **PKPdf 20 01 59.2 +0.1**
baz=282
LSZ Lusaka 115.34 249 *e*PKIKP **PKPdf 20 01 54.8 -5.1**
LSZ MLR MLR
comp=Z,1μm,18.0s
LSZ Lusaka 115.34 249 *e*PKPdf **PKPdf 20 01 54.8 -5.1**
LSZ LR LR
comp=Z,1μm,18.0s
D36A Goodland 115.36 41 PKiKP **PKPdf 20 01 59.8 +0.9**
baz=288
U35A Pawnee 115.38 53 PKiKP **PKPdf 20 01 59.5 +0.3**
baz=280
SUR Sutherland 115.38 229 PKKPab PKKPab 20 12 40.6 +0.7
comp=Z,0.3nm,0.8s,baz=7.8,slow=9.7,SNR=3.8
SUR Sutherland 115.38 229 PKKPab PKKPab 20 12 40.6 +0.7
SUR LR LR
comp=Z,2μm,20.0s
C36A Pine Crest Far 115.39 40 PKiKP **PKPdf 20 01 59.6 +0.7**
baz=288
V35A Meyer Ranch, C 115.40 54 PKiKP **PKPdf 20 01 59.4 +0.1**
baz=280
Z35A Perchaven, San 115.45 57 PKiKP **PKPdf 20 01 59.2 -0.3**
baz=278
Q35A Mercer Eighty, 115.45 50 PKiKP **PKiKP 20 01 59.1 -0.2**
baz=282
035A Encino 115.46 64 PKiKP **PKiKP 20 01 59.9 +0.3**
baz=275
T35A Sooner Cattle 115.46 53 PKiKP **PKPdf 20 01 59.5 +0.1**
baz=281
WHTX Lake Whitney, 115.46 58 PKiKP **PKiKP 20 01 59.8 +0.3**
baz=278
WHTX Lake Whitney, 115.46 58 PFAKE 20 02 10.0 +10
WHTX LR LR
comp=Z,1μm,19.0s
S35A Otter Creek Ra 115.47 52 PKiKP **PKiKP 20 01 59.3 -0.1**
baz=281
W35A Tecumseh 115.47 55 PKiKP **PKPdf 20 01 59.6 +0.1**
baz=280
HARR Harsova 115.50 316 ⇑*i*P **PKPdf 20 01 59.2 0.0**
HARR Harsova 115.50 316 ⇑PKIKP **PKPdf 20 01 59.2 0.0**
E36A McGregor 115.50 42 PKiKP **PKPdf 20 01 59.3 +0.2**
baz=288
435B Jarrell 115.51 59 PKiKP **PKiKP 20 01 59.8 +0.1**
baz=277
F36A Milaca 115.52 42 PKiKP **PKPdf 20 01 59.4 +0.1**
baz=287
G36A St. Michael 115.55 43 PKiKP **PKPdf 20 01 59.4 +0.1**
baz=286
PSN Preselentsi 115.60 315 P **PP 20 03 00.2 -1.4**
H36A Jessenland, He 115.61 44 PKiKP **PKPdf 20 01 59.7 +0.2**
baz=286
J36A Seneca 1, Swea 115.66 45 PKiKP **PKiKP 20 01 59.5 -0.1**
baz=285
I36A Fitzsimmons Fa 115.70 44 PKiKP **PKPdf 20 01 59.7 +0.1**
baz=286
L36A Harm Buss Farm 115.74 47 PKiKP **PKiKP 20 01 59.3 -0.5**
baz=284
K36A Gilmore City 115.76 46 PKiKP **PKPdf 20 02 00.1 +0.3**
baz=285
TESR Tescani 115.83 319 ⇑*i*P **PKPdf 20 02 01.0 +1.2**
N36A Muff Farm, Cla 115.83 48 PKiKP **PKiKP 20 01 59.6 -0.4**
baz=284
D37A Cotton 115.85 41 PKiKP **PKPdf 20 01 59.9 0.0**
baz=288
Q36A Arnold C. Orve 115.87 50 PKiKP **PKPdf 20 01 59.7 -0.4**
baz=282
T36A Boggs Farm, Ca 115.93 52 PKiKP **PKPdf 20 01 59.8 -0.5**
baz=281
VRI Vrincioaia 115.97 318 ⇓*i*P **PKPdf 20 01 58.6 -1.5**
VRI Vrincioaia 115.97 318 ⇓PKIKP **PKPdf 20 01 58.6 -1.5**
X36A Centrahoma 115.99 55 PKiKP **PKPdf 20 02 00.4 0.0**
baz=280
W36A Wetumka 116.00 54 PKiKP **PKiKP 20 02 00.6 +0.1**
baz=280
S36A Lake Cedric, C 116.02 52 PKiKP **PKPdf 20 02 00.4 -0.1**
baz=282
536A Bastrop 116.04 60 PKiKP **PKPdf 20 02 00.6 -0.1**
baz=277
936A North Padre Is 116.11 63 PKiKP **PKiKP 20 02 01.0 +0.1**
baz=276
V36A Jenks 116.11 54 PKiKP **PKiKP 20 02 00.9 +0.2**
baz=280
I37A Lemond, Waseca 116.13 44 PKiKP **PKPdf 20 02 00.3 -0.2**
baz=286
Y36A Durant 116.16 56 PKiKP **PKPdf 20 02 00.8 0.0**
baz=279
U36A Oologah 116.17 53 PKiKP **PKiKP 20 02 00.9 +0.1**
baz=281
EYMN Ely 116.19 40 PKiKP **PKiKP 20 02 00.5 0.0**
baz=290
EYMN Ely 116.19 40 *e*PKPdf **PKPdf 20 02 00.3 -0.1**
EYMN *e*PP **PP 20 03 01.6 -4.0**
EYMN LR LR
comp=Z,2μm,22.0s
SPMN Marine on St. 116.19 43 PFAKE 20 02 10.0 +9.5
SPMN LR LR
comp=Z,2μm,20.0s
TUL1 Leonard 116.21 54 PKiKP **PKPdf 20 02 00.7 -0.1**
baz=281
TUL1 Leonard 116.21 54 PFAKE 20 02 10.0 +9.1
TUL1 LR LR
comp=Z,1μm,19.0s
J37A Redenius Farm, 116.22 45 PKiKP **PKPdf 20 02 00.5 -0.2**
baz=286
236A Katherine and 116.24 58 PKiKP **PKPdf 20 02 00.7 -0.3**
baz=278
K37A Belmond 116.30 46 PKiKP **PKPdf 20 02 00.6 -0.2**
baz=286
M37A Trindle Farm, 116.35 47 PKiKP **PKPdf 20 02 00.9 -0.1**
baz=284
N37A Lee Faris, Mou 116.40 48 PKiKP **PKPdf 20 02 00.6 -0.5**
baz=284
BURAR Bucovina Array 116.40 320 ⇓*i*P **PKPdf 20 02 02.5 +1.5**
BURAR Bucovina Array 116.40 320 ⇓PKIKP **PKPdf 20 02 02.5 +1.5**
BUR08 Bucovina Ar. S 116.41 320 *e*PKPdf **PKPdf 20 02 01.7 +0.7**
C38A Sawbill Land. 116.41 40 PKiKP **PKiKP 20 02 01.1 +0.1**
baz=290
R37A Teagarden Farm 116.49 51 PKiKP **PKPdf 20 02 00.9 -0.4**
baz=282

P37A Lathrop 116.57 49 PKiKP **PKPdf 20 02 01.3 -0.2**
baz=283
O37A Wolven Farm, M 116.59 49 PKiKP **PKPdf 20 02 01.3 -0.1**
baz=284
S37A Fort Scott 116.61 51 PKiKP **PKPdf 20 02 01.4 -0.2**
baz=282
MLR Muntele Rosu 116.61 318 PKP **PKPdf 20 02 00.7 -0.8**
comp=Z,4.1nm,1.2s,baz=56,slow=5.4,SNR=5.6
MLR PKKPbc **PKKPab 20 12 32.5 -0.6**
comp=Z,0.4nm,0.6s,baz=210,slow=3.8,SNR=6.2
MLR Muntele Rosu 116.61 318 ⇑*i*P **PKPdf 20 02 00.4 -1.1**
MLR Muntele Rosu 116.61 318 *e*PKPdf **PKPdf 20 01 59.7 -1.8**
MLR PKKPbc **PKKPab 20 12 32.5 -0.6**
MLR LR LR
comp=Z,1μm,21.0s
HFS Hagfors 116.62 336 PKP **PKPdf 20 01 60.0 -0.9**
comp=Z,2.7nm,0.7s,baz=106,slow=3.2,SNR=15
HFS PP **PP 20 03 06.1 -1.9**
comp=Z,4.1nm,0.9s,baz=92,slow=7.4,SNR=3.0
HFS PKKPbc **PKKPbc 20 12 28.0 -2.4**
comp=Z,2.5nm,0.9s,baz=265,slow=8.3,SNR=3.3
W37B Quinton 116.64 54 PKiKP **PKPdf 20 02 01.6 -0.2**
baz=280
U37A Salina 116.66 53 PKiKP **PKPdf 20 02 01.5 -0.2**
baz=281
T37A Cheneyville 18 116.67 52 PKiKP **PKiKP 20 02 01.7 0.0**
baz=282
537A Green Hill Far 116.68 60 PKiKP **PKPdf 20 02 01.4 -0.5**
baz=277
Y37A Hugo 116.69 56 PKiKP **PKPdf 20 02 01.7 -0.2**
baz=280
V37A Hulbert 116.74 53 PKiKP **PKiKP 20 02 02.2 +0.4**
baz=281
X37A Clayton 116.79 55 PKiKP **PKiKP 20 02 02.1 +0.1**
baz=280
Z37A Pogue Cattle C 116.82 56 PKiKP **PKiKP 20 02 02.2 +0.1**
baz=279
DOPR Dopca 116.83 318 ⇑*i*P **PKPdf 20 02 01.8 0.0**
SCIA State Center 116.83 47 PFAKE 20 02 10.0 +8.1
SCIA LR LR
comp=Z,900nm,19.0s
NC303 NORSAR Array S 116.86 338 *e*PKPdf **PKPdf 20 01 59.8 -1.6**
I38A Scanlan Farm, 116.86 44 PKiKP **PKiKP 20 02 01.9 +0.1**
baz=287
ILULI Ilulissat 116.94 7 *i* P **PKPdf 20 02 00.2 -1.0**
comp=Z,23nm,1.1s
ILULI Ilulissat 116.94 7 *e*PKIKP **PKPdf 20 02 00.2 -1.0**
ILULI pmax pmax
comp=Z,23nm,1.1s
M38A Pleasantville 116.97 47 PKiKP **PKPdf 20 02 01.8 -0.4**
baz=285
NB2 NORSAR Subarra 117.04 338 PKPdf **PKPdf 20 02 00.4 -1.3**
comp=Z,4.7nm,1.1s,baz=44,slow=1.9
NB2 NORSAR Subarra 117.04 338 PKPdf **PKPdf 20 02 00.4 -1.3**
baz=44,slow=1.9
NB200 NORSAR Array S 117.04 338 *e*PKPdf **PKPdf 20 02 01.1 -0.7**
NB200 *e*PP **PP 20 03 10.3 -0.6**
NB200 *e*PKKPbc **PKKPab 20 12 31.3 +0.5**
NOA NORSAR Array B 117.04 338 PKP **PKPdf 20 02 01.1 -0.7**
comp=Z,2.3nm,0.8s,baz=88,slow=2.0,SNR=10.0
NOA PP **PP 20 03 10.3 -0.6**
comp=Z,6.6nm,1.0s,baz=46,slow=6.6,SNR=3.8
NOA PKKPbc **PKKPab 20 12 31.3 +0.5**
comp=Z,2.6nm,0.9s,baz=231,slow=4.5,SNR=3.5
NC204 NORSAR Array S 117.06 338 *e*PKPdf **PKPdf 20 02 00.5 -1.3**
C39A Grand Marais 117.10 39 PKiKP **PKPdf 20 02 02.1 -0.1**
baz=291
O38A Galt 117.10 49 PKiKP **PKPdf 20 02 02.4 0.0**
baz=284
NC602 NORSAR Array S 117.10 337 *e*P **PKPdf 20 02 01.1 -0.7**
N38A Joes South For 117.11 48 PKiKP **PKiKP 20 02 03.0 +0.6**
baz=285
NBO02 NORSAR Array S 117.17 338 *e*PKPdf **PKPdf 20 02 01.3 -0.7**
P38A Dawn 117.18 49 PKiKP **PKiKP 20 02 02.7 +0.1**
baz=284
T38A Diamond 117.18 52 PKiKP **PKPdf 20 02 02.6 -0.1**
baz=282
X38A Whitesboro 117.21 55 PKiKP **PKPdf 20 02 02.2 -0.7**
baz=281
R38A Fenwick Farm, 117.23 51 PKiKP **PKPdf 20 02 02.3 -0.5**
baz=283
U38A Gravette 117.23 53 PKiKP **PKPdf 20 02 02.5 -0.3**
baz=282
VOIR 117.23 318 ⇓*i*P **PKPdf 20 02 03.5 +0.9**
VOIR 117.23 318 ⇓PKIKP **PKPdf 20 02 03.5 +0.9**
KWP Kalwaria Pacla 117.23 323 ⇓*i*P **PKPdf 20 01 58.7 -3.7**
KWP Kalwaria Pacla 117.23 323 ⇓PKIKP **PKPdf 20 01 58.7 -3.7**
Q38A Cooks Store, C 117.27 50 PKiKP **PKiKP 20 02 03.1 +0.3**
baz=284
SZH Strazhica 117.29 315 P PP 20 02 59.6 -14
V38A Canehill 117.33 53 PKiKP **PKPdf 20 02 02.9 -0.2**
baz=282
S38A Stockton 117.35 51 PKiKP **PKPdf 20 02 02.4 -0.6**
baz=283
W38A Poteau 117.39 54 PKiKP **PKiKP 20 02 03.6 +0.5**
baz=281
BMR Baia Mare 117.47 321 ⇑*i*P **PKPdf 20 02 02.8 -0.1**
BMR Baia Mare 117.47 321 ⇑PKIKP **PKPdf 20 02 02.8 -0.1**
HUMR Humele 117.56 317 ⇑*i*P **PKPdf 20 02 02.3 -0.9**
HHAR Hobbs 117.61 53 *e*PKPdf **PKPdf 20 02 01.4 -2.1**
HHAR LR LR
comp=Z,2μm,19.0s
N39A Derby Farms, D 117.62 47 PKiKP **PKPdf 20 02 03.3 -0.1**
baz=285
Q39A Willow Grove F 117.73 50 PKiKP **PKPdf 20 02 03.3 -0.4**
baz=284
O39A Kirksville 117.75 48 PKiKP **PKPdf 20 02 03.7 0.0**
baz=285
KOLS Kolonicke sedl 117.76 322 *e*PKIKP **PKPdf 20 02 04.0 +0.5**
KOLS *e* 20 03 20.7
KOLS Kolonicke sedl 117.76 322 *e* **PKPdf 20 02 04.0 +0.5**
KOLS Kolonicke sedl 117.76 322 *e*PKP **PKPdf 20 02 07.5 +4.0**
KOLS *e*PP **PP 20 03 20.7 +4.2**
S39A Bolivar 117.79 51 PKiKP **PKPdf 20 02 03.5 -0.4**
baz=283
P39B Salisbury 117.79 49 PKiKP **PKPdf 20 02 03.5 -0.3**
baz=284
X39A Fountain Ranch 117.82 55 PKiKP **PKPdf 20 02 03.8 -0.2**
baz=281
NATX Nacogdoches 117.85 58 PFAKE 20 02 20.0 +16
NATX LR LR
comp=Z,2μm,22.0s
R39A Chumby, Stover 117.86 50 PKiKP **PKPdf 20 02 03.5 -0.5**
baz=284
UZH Uzhgorod 117.87 322 *e*P **Pdif 19 58 24.0 +2.3**
T39A Clever 117.89 52 PKiKP **PKPdf 20 02 03.8 -0.3**
baz=283
V39A Pettigrew 117.94 53 PKiKP **PKPdf 20 02 03.9 -0.4**
baz=282
U39A Green Forest 117.95 53 PKiKP **PKPdf 20 02 03.8 -0.4**
baz=282
W39A Magazine 117.96 54 PKiKP **PKPdf 20 02 03.9 -0.3**
baz=282
539A Cross D Ranch, 118.05 60 PKiKP **PKPdf 20 02 03.6 -0.9**
baz=278
LOT Lotru 118.08 318 ⇑*i*P **PKPdf 20 02 03.6 -0.7**
STHS Stebnicka Huta 118.19 323 *e*PKIKP **PKPdf 20 02 04.5 +0.2**
STHS Stebnicka Huta 118.19 323 *e* **PKPdf 20 02 04.5 +0.2**
MIAR Mount Ida 118.25 55 PKiKP **PKPdf 20 02 04.3 -0.6**
baz=281
MIAR Mount Ida 118.25 55 *e*PKIKP **PKPdf 20 02 04.4 -0.4**
MIAR MLR MLR
comp=Z,2μm,20.0s
MIAR Mount Ida 118.25 55 *e*PKPdf **PKPdf 20 02 04.4 -0.4**
MIAR LR LR
comp=Z,2μm,20.0s
CRVS Cervenica-Dubn 118.27 322 *e*P **Pdif 19 58 24.5 +1.0**
CRVS Cervenica-Dubn 118.27 322 *e*PKP **PKPdf 20 02 08.6 +4.2**
CRVS Cervenica-Dubn 118.27 322 *e*PDIFF **Pdif 19 58 24.5 +1.0**
O40A La Belle 118.28 48 PKiKP **PKPdf 20 02 04.3 -0.4**
baz=286
DRGR 118.29 320 ⇑*i*P **PKPdf 20 02 04.3 -0.3**
DRGR 118.29 320 ⇑PKIKP **PKPdf 20 02 04.3 -0.3**
COWI Conover 118.34 41 *e*PKPdf **PKPdf 20 02 03.5 -1.1**
COWI LR LR
comp=Z,2μm,21.0s
Q40A Laux Farm, Aux 118.43 49 PKiKP **PKPdf 20 02 04.7 -0.3**
baz=285
S40A Lebanon 118.44 51 PKiKP **PKPdf 20 02 04.6 -0.5**
baz=284
U40A Yellville 118.45 53 PKiKP **PKPdf 20 02 05.0 -0.2**
baz=283
R40A Maddies Statio 118.46 50 PKiKP **PKPdf 20 02 04.6 -0.5**
baz=284
W40A Ferguson Farm, 118.53 54 PKiKP **PKPdf 20 02 05.2 -0.2**
baz=282

KONO Kongsberg 118.54 337 *e*P **PKPdf 20 02 04.1 -0.5**
KONO Kongsberg 118.54 337 PFAKE 20 02 20.0 +15
KONO LR LR
comp=Z,2μm,20.0s
V40A Witts Springs 118.60 53 PKiKP **PKPdf 20 02 05.2 -0.3**
baz=282
440A Kirbyville 118.61 59 PKiKP **PKiKP 20 02 05.9 +0.3**
baz=279
JFWS Jewell Farm 118.65 45 *e*PKIKP **PKPdf 20 02 04.9 -0.4**
JFWS MLR MLR
comp=Z,1μm,21.0s
JFWS Jewell Farm 118.65 45 *e*PKPdf **PKPdf 20 02 04.9 -0.4**
JFWS LR LR
comp=Z,1μm,21.0s
HOPE Hope Point 118.68 178 PFAKE 20 02 20.0 +15
HOPE LR LR
comp=Z,9μm,19.0s
OJC Ojcow 118.70 324 *e*Pdiff **Pdif 19 58 25.5 +0.1**
OJC *e*PKPdf **PKiKP 20 02 08.4 +3.1**
OJC Ojcow 118.70 324 *e*PKIKP **PKPdf 20 02 04.4 -0.8**
OJC Ojcow 118.70 324 *e*PKPdf **PKPdf 20 02 04.4 -0.8**
OJC *e*PP PP 20 03 10.7 -12
PGB Panagyurishte 118.74 315 P **PP 20 03 18.7 -4.9**
NIE Niedzica 118.75 323 *e*Pdiff **Pdif 19 58 27.2 +1.5**
NIE *e*PKPdf **PKPdf 20 02 06.1 +0.7**
NIE Niedzica 118.75 323 *e*PKIKP **PKPdf 20 02 06.1 +0.7**
MPEP Malo Peshtene 118.78 316 P **PP 20 03 16.2 -7.6**
WLAR White Oak Lake 118.80 56 PFAKE 20 02 20.0 +14
WLAR LR LR
comp=Z,1μm,19.0s
BSD Bornholm Skovb 118.92 331 *i* P **PKPdf 20 02 04.3 -1.1**
comp=Z,14nm,0.9s
BSD Bornholm Skovb 118.92 331 *e*PKIKP **PKPdf 20 02 04.3 -1.1**
BSD pmax pmax
comp=Z,14nm,0.9s
KECS Kecovo 119.03 322 *e*PKIKP **PKPdf 20 02 06.5 +0.6**
KECS Kecovo 119.03 322 *e* **PKPdf 20 02 06.5 +0.6**
KECS Kecovo 119.03 322 *e*PKP **PKPdf 20 02 09.4 +3.5**
X301 Greenbrier Sit 119.06 54 *e*PKPdf **PKPdf 20 02 07.0 +0.7**
X301 *e*PP PP 20 03 15.7 -10
X301 LR LR
comp=Z,800nm,20.0s
X201 Greenbrier Sit 119.07 54 PFAKE 20 02 20.0 +14
X201 LR LR
comp=Z,1μm,22.0s
SFJD Kangerlussuaq 119.10 8 PKP **PKPdf 20 02 04.7 -0.8**
comp=Z,16nm,0.8s,baz=358,slow=3.3,SNR=8.2
SFJD Kangerlussuaq 119.10 8 *i* P **PKPdf 20 02 03.9 -1.5**
comp=Z,19nm,0.9s
SFJD Kangerlussuaq 119.10 8 *e*PKIKP **PKPdf 20 02 03.9 -1.5**
SFJD pmax pmax
comp=Z,19nm,0.9s
SFJD Kangerlussuaq 119.10 8 *e*PKPdf **PKPdf 20 02 04.1 -1.3**
SFJD *e*PKPdf **PKPdf 20 02 04.7 -0.8**
SFJD LR LR
comp=Z,800nm,18.0s
Z41A Richland Creek 119.13 56 PKiKP **PKiKP 20 02 06.7 +0.1**
baz=281
WHAR Wooly Hollow 119.13 54 *e*PKPdf **PKPdf 20 02 05.1 -1.4**
WHAR LR LR
comp=Z,800nm,20.0s
SIRR Siria 119.16 320 ⇑*i*P **PKPdf 20 02 05.7 -0.5**
W41B Gary Mavity, V 119.19 54 PKiKP **PKiKP 20 02 07.3 +0.6**
baz=283
UALR University of 119.20 54 *e*PKPdf **PKPdf 20 02 05.0 -1.6**
UALR LR LR
comp=Z,1μm,20.0s
CCM Cathedral Cave 119.30 50 PFAKE 20 02 20.0 +13
CCM LR LR
comp=Z,2μm,19.0s
MMB Musomiste 119.34 314 P PP 20 03 17.0 -11
LANS Liptovska Anna 119.36 323 *e*PKIKP **PKPdf 20 02 07.1 +0.5**
LANS Liptovska Anna 119.36 323 *e*PKP **PKPdf 20 02 11.1 +4.5**
LANS Liptovska Anna 119.36 323 *e* **PKPdf 20 02 07.1 +0.5**
BZS Buzias 119.43 319 ⇑*i*P **PKPdf 20 02 06.5 -0.2**
BZS Buzias 119.43 319 ⇑PKIKP **PKPdf 20 02 06.5 -0.2**
SANT Santorini 119.46 308 *e*PP PP 20 03 20.9 -7.9
SANT LR LR
comp=Z,300nm,22.0s
ODD1 Odda 119.49 338 *e*P **PKPdf 20 02 06.8 +0.3**
PSZ Piszkesteto 119.62 322 ⇓*i*P **PKPdf 20 02 06.7 -0.4**
PSZ Piszkesteto 119.62 322 ⇓*e*PKPdf **PKPdf 20 02 06.8 -0.4**
PSZ Piszkesteto 119.62 322 *e*PKIKP **PKPdf 20 02 05.5 -1.7**
PSZ MLR MLR
comp=Z,1μm,18.0s
PSZ Piszkesteto 119.62 322 *e*PKPdf **PKPdf 20 02 05.5 -1.7**
PSZ LR LR
comp=Z,1μm,18.0s
MDVR Moldovita 119.67 318 ⇑*i*P **PKPdf 20 02 06.6 -0.7**
KKB Krupnik 119.72 314 P **PP 20 03 25.6 -4.7**
LAST Lasithi 119.72 306 PFAKE 20 02 20.0 +12
LAST LR LR
comp=Z,600nm,22.0s
OKC Ostrava-Krasne 119.83 324 *e*PKPdf **PKPdf 20 02 06.7 -0.7**
OKC *e*pPKP **pPKPdf 20 02 10.9 -1.4**
OKC AMS AMS 21 00 00.0
comp=Z,1μm,18.7s
OKC Ostrava-Krasne 119.83 324 *e*PKIKP **PKPdf 20 02 06.7 -0.7**
OKC MLR MLR
comp=Z,1μm,18.7s
CCAR Cane Creek 119.84 55 PFAKE 20 02 20.0 +12
CCAR LR LR
comp=Z,1μm,19.0s
Y42A Garnett, Star 119.85 55 PKiKP **PKiKP 20 02 08.4 +0.5**
baz=282
HOMB Homborsund 119.87 336 *e*P **PKPdf 20 02 07.1 -0.1**
BLS5 Blasjo 119.89 338 *e*P **PKPdf 20 02 08.4 +1.2**
SLM Saint Louis 119.91 49 PFAKE 20 02 20.0 +12
SLM LR LR
comp=Z,2μm,21.0s
RGN Rugen 120.00 331 PFAKE 20 02 20.0 +12
RGN LR LR
comp=Z,2μm,20.0s
VYHS Vyhne 120.02 323 *e*P **Pdif 19 58 35.6 +4.3**
VYHS *e* 20 02 07.3
VYHS *e* 20 03 38.8
VYHS Vyhne 120.02 323 *e*PKP **PKPdf 20 02 10.8 +3.0**
VYHS *e*PP **PP 20 03 38.8 +6.8**
VYHS Vyhne 120.02 323 *e*PDIFF **Pdif 19 58 35.6 +4.3**
VYHS *e* 20 02 07.3
HDIL Hopedale 120.05 47 PKiKP **PKPdf 20 02 07.9 -0.2**
baz=288
HDIL Hopedale 120.05 47 PFAKE 20 02 20.0 +12
HDIL LR LR
comp=Z,1μm,22.0s
IDI Anoyia 120.16 307 PKP **PKPdf 20 02 09.4 +0.8**
comp=Z,16nm,1.0s,baz=148,slow=14,SNR=6.0
IDI Anoyia 120.16 307 ⇓*i*P **PKPdf 20 02 08.8 +0.2**
IDI Anoyia 120.16 307 *e*PKPdf **PKPdf 20 02 08.8 +0.2**
IDI LR LR
comp=Z,300nm,21.0s
MORC Moravsky Berou 120.20 325 ⇑*i*P **PKPdf 20 02 08.1 -0.1**
MORC Moravsky Berou 120.20 325 *e*PKIKP **PKPdf 20 02 08.0 -0.1**
MORC MLR MLR
comp=Z,5μm,19.0s
MORC Moravsky Berou 120.20 325 *e*PKPdf **PKPdf 20 02 08.0 -0.1**
MORC *e*PP **PP 20 03 26.6 -6.7**
MORC LR LR
comp=Z,5μm,19.0s
SIVA Sivas 120.28 306 ⇓*i*P **PKPdf 20 02 08.6 -0.1**
SNART Snartemo 120.34 337 *e*P **PKPdf 20 02 08.0 -0.1**
KSP Ksiaz 120.40 326 *e*Pdiff **Pdif 19 58 37.8 +4.8**
KSP *e*PKPdf **PKPdf 20 02 07.4 -1.1**
KSP *e*PP **PP 20 03 31.5 -3.1**
KSP Ksiaz 120.40 326 *e*PKIKP **PKPdf 20 02 07.4 -1.1**
KSP *e* 20 03 31.5
KRLC Kraliky 120.50 325 *e*PKPdf **PKPdf 20 02 08.3 -0.4**
KRLC *e*pPKP **pPKPdf 20 02 12.2 -1.4**
KRLC Kraliky 120.50 325 *e*PKIKP **PKPdf 20 02 08.3 -0.4**
DPC Dobruska-Polom 120.63 326 *e*PDIFF **Pdif 19 58 35.5 +1.5**
DPC *e*pP 19 58 38.7
DPC *e*PKPdf **PKPdf 20 02 08.7 -0.3**
DPC *e*pPKP **pPKPdf 20 02 12.6 -1.3**
DPC *e*PP PP 20 03 28.0 -8.1
DPC AMS AMS 20 56 00.0
comp=Z,2μm,20.0s
DPC Dobruska-Polom 120.63 326 *e*P **Pdif 19 58 35.5 +1.5**
DPC *e* 20 02 08.7
DPC MLR MLR
comp=Z,2μm,20.0s
UPC Upice 120.72 326 *e*PKPdf **PKPdf 20 02 08.7 -0.4**
UPC *e*pPKP **pPKPdf 20 02 12.9 -1.1**
UPC *ex* x 20 03 24.9

UPC AMS AMS 20 56 20.0
comp=Z,2µm,19.6s
UPC Upice 120.72 326 *e*PKIKP **PKPdf 20 02 08.7 -0.4**
UPC MLR MLR
comp=Z,2µm,19.6s
CSKK Cs^‡kako 120.86 322 *e*PKPdf **PKPdf 20 02 09.1 -0.3**
PVMO Portageville 120.91 52 PFAKE 20 02 20.0 +10
PVMO LR LR
comp=Z,2µm,20.0s
SIUC Southern Illin 120.93 50 PFAKE 20 02 20.0 +10
SIUC LR LR
comp=Z,2µm,18.0s
VRAC Vranov 120.97 324 PKP **PKPdf 20 02 09.1 -0.5**
comp=Z,8.9nm,1.0s,baz=69,slow=2.3,SNR=6.6
VRAC PKKPbc **PKKPab 20 12 13.9 +0.1**
comp=Z,1.5nm,0.3s,baz=289,slow=8.6,SNR=3.2
VRAC Vranov 120.97 324 ‖ *i*P **PKPdf 20 02 09.6 0.0**
MET Memphis--Engin 121.05 53 PFAKE 20 02 20.0 +10
MET LR LR
comp=Z,1µm,20.0s
Z44A Pea Ridge, Bel 121.07 55 PKiKP **PKPdf 20 02 10.1 -0.1**
baz=283
544A White Castle 121.09 59 PKiKP **PKiKP 20 02 10.6 +0.1**
baz=280
244A Avery, Jackson 121.12 57 PKiKP **PKiKP 20 02 10.7 +0.2**
baz=282
AGG Agios Georgios 121.14 311 *e*PKIKP **PKPdf 20 02 09.0 -1.3**
AGG MLR MLR
comp=Z,1µm,21.0s
AGG Agios Georgios 121.14 311 *e*PKPdf **PKPdf 20 02 09.0 -1.3**
AGG LR LR
comp=Z,1µm,21.0s
PLCA Paso Flores 121.15 147 PKP **PKPdf 20 02 10.7 +0.3**
comp=Z,15nm,1.0s,baz=242,slow=3.6,SNR=17
PLCA PP **PP 20 03 38.8 -0.8**
comp=Z,1.8nm,0.8s,baz=267,slow=4.0,SNR=1.7
PLCA PKKPbc **PKKPbc 20 12 12.3 -1.3**
comp=Z,10nm,1.1s,baz=110,slow=5.2,SNR=8.8
PLCA Paso Flores 121.15 147 *e*PKIKP **PKPdf 20 02 09.6 -0.8**
PLCA *e* 20 03 38.8
PLCA Paso Flores 121.15 147 *e*PKPdf **PKPdf 20 02 09.6 -0.8**
PLCA *e*PP **PP 20 03 38.8 -0.8**
PLCA PKKPbc **PKKPbc 20 12 12.3 -1.3**
344A Westbrook Farm 121.20 58 PKiKP **PKiKP 20 02 11.2 +0.5**
baz=281
VBMS Vicksburg 121.23 57 PFAKE 20 02 20.0 +9.4
VBMS LR LR
comp=Z,900nm,19.0s
HALT Halls 121.32 52 PFAKE 20 02 20.0 +9.3
HALT LR LR
comp=Z,1084µm,19.0s
OLIL Olney 121.48 49 *e*PKPdf **PKPdf 20 02 09.8 -1.1**
OLIL LR LR
comp=Z,2µm,22.0s
PVCC Panska Ves 121.51 326 *e*PKPdf **PKPdf 20 02 10.6 0.0**
PVCC AMS AMS 20 56 30.0
comp=Z,2µm,19.9s
PVCC Panska Ves 121.51 326 *e*PKIKP **PKPdf 20 02 10.6 0.0**
PVCC MLR MLR
comp=Z,2µm,19.9s
TREC Trest 121.61 325 *e*PKPdf **PKPdf 20 02 10.6 -0.3**
TREC AMS AMS 20 56 50.0
comp=Z,2µm,19.2s
TREC Trest 121.61 325 *e*PKIKP **PKPdf 20 02 10.6 -0.3**
TREC MLR MLR
comp=Z,2µm,19.2s
145A Houston Renfro 121.63 56 PKiKP **PKiKP 20 02 11.6 +0.1**
baz=283
Z45A Winona 121.66 55 PKiKP **PKiKP 20 02 11.6 +0.1**
baz=283
Y45A Yeager Farm, C 121.66 55 PKiKP **PKPdf 20 02 11.3 -0.1**
baz=284
BRG Berggiesshubel 121.67 327 *e*PDIF **Pdif 19 58 42.5 +4.0**
comp=Z,4.8nm,1.0s
BRG Berggiesshubel 121.67 327 *e*PKP **PKPdf 20 02 10.9 0.0**
comp=Z,23nm,1.0s
BRG *i* 20 02 14.2
comp=Z,48nm,1.2s
BRG PP **PP 20 03 44.0 +0.9**
BRG SKKS 20 10 44.0
BRG SP **SP 20 13 34.0 -0.1**
BRG SS SS 20 20 35.0 +16
comp=N,1µm,18.6s
comp=E,629nm,19.9s
comp=Z,2µm,22.8s
BRG Berggiesshubel 121.67 327 *e*PKIKP **PKPdf 20 02 10.9 0.0**
BRG 20 03 44.0
BRG SP SP 20 13 34.0 -0.1
BRG SS SS 20 20 35.0 +16
BRG pmax pmax
comp=Z,48nm,1.2s
BRG MLR MLR
comp=N,1µm,18.6s
BRG MLR MLR
comp=E,629nm,19.9s
BRG MLR MLR
comp=Z,2µm,22.8s
SFIN Lafayette 121.70 47 PKiKP **PKiKP 20 02 11.5 +0.1**
baz=289
SFIN Lafayette 121.70 47 *e*PKPdf **PKPdf 20 02 11.4 +0.2**
SFIN *e*PP **PP 20 03 39.5 -4.3**
SFIN LR LR
comp=Z,1µm,20.0s
GOPC GO Pecny, Ondr 121.70 326 *e*PKPdf **PKPdf 20 02 10.9 -0.1**
GOPC AMS AMS 20 57 20.0
comp=Z,2µm,17.9s
GOPC GO Pecny, Ondr 121.70 326 *e*PKIKP **PKPdf 20 02 10.9 -0.1**
GOPC MLR MLR
comp=Z,2µm,17.9s
PRU Pruhonice 121.80 326 *e*PDIFF **Pdif 19 58 38.6 -0.6**
PRU *e*pP 19 58 44.0
PRU *e*PKPdf **PKPdf 20 02 10.9 -0.3**
PRU *e*pPKP **pPKPdf 20 02 14.4 -1.7**
PRU *e*PP **PP 20 03 47.1 +3.0**
PRU AMS AMS 20 57 30.0
comp=Z,2µm,20.3s
PRU Pruhonice 121.80 326 *e*P **Pdif 19 58 38.6 -0.6**
PRU *e* 20 02 10.9
PRU *e* 20 03 47.1
PRU MLR MLR
comp=Z,2µm,20.3s
CLL Collm 121.94 328 *e*Pdif **Pdif 19 58 40.0 +0.2**
comp=Z,19nm,1.8s
CLL *i* PKiKP **PKPdf 20 02 10.8 -0.6**
comp=Z,24nm,0.9s
CLL *e* 20 02 15.0
comp=Z,32nm,1.0s
CLL *e*PP **PP 20 03 44.0 -0.9**
CLL *e* 20 04 04.0
CLL *e* 20 04 23.0
CLL *e*SKKSac SKKSac 20 10 43.0 -1.3
CLL *e*PKKPbc **PKKPab 20 12 10.0 +0.6**
CLL *e*PS **PS 20 13 35.0 -4.3**
CLL *e*PPS PPS 20 15 12.0
CLL *e*SKKP 20 16 04.0
CLL *e* 20 18 48.0
CLL *e*SS SS 20 20 42.0 +20
CLL *e* 20 26 06.0
CLL *e*SSSS 20 28 36.0
CLL Collm 121.94 328 *e*PKIKP **PKPdf 20 02 10.0 -1.4**
CLL MLR MLR
comp=Z,1µm,20.0s
CLL Collm 121.94 328 *e*PKPdf **PKPdf 20 02 10.0 -1.4**
CLL LR LR
comp=Z,1µm,20.0s
LRW Lerwick 121.97 342 *e*P **PKPdf 20 02 10.7 -0.5**
USIN University of 122.04 49 PFAKE 20 02 20.0 +8.0
USIN LR LR
comp=Z,2µm,20.0s
CONA Conrad Observa 122.05 323 *i* PKiKP **PKPdf 20 02 11.7 -0.1**
comp=Z,31nm,1.4s,SNR=12
TIR Tirane 122.16 315 PFAKE 20 02 20.0 +7.9
TIR LR LR
comp=Z,1µm,20.0s
PDG Podgorica 122.19 316 ⇑ *i*P **PKPdf 20 02 11.8 -0.3**
Z46A Louisville 122.31 55 PKiKP **PKPdf 20 02 12.6 0.0**
baz=284
146A Union 122.34 56 PKiKP **PKiKP 20 02 13.1 +0.1**
baz=283
WVT Waverly 122.44 52 *e*PKIKP **PKPdf 20 02 09.9 -2.9**
WVT MLR MLR
comp=Z,2µm,22.0s
WVT Waverly 122.44 52 *e*PKPdf **PKPdf 20 02 09.9 -2.9**
WVT LR LR
comp=Z,2µm,22.0s

446A Poplarville 122.48 58 PKiKP **PKiKP 20 02 13.2 0.0**
baz=282
BLO Bloomington 122.51 48 PFAKE 20 02 20.0 +7.1
BLO LR LR
comp=Z,2µm,19.0s
PLAL Pickwick Lake 122.56 53 PFAKE 20 02 20.0 +6.9
PLAL LR LR
comp=Z,1µm,20.0s
ARSA Arzberg 122.57 323 *i* PKPdf **PKPdf 20 02 12.1 -0.7**
comp=Z,11nm,1.1s
BLY Banja Luka 122.65 319 ⇑ *i*P **PKPdf 20 02 12.1 -0.9**
KHC Kasperske Hory 122.78 325 *e*PDIFF **Pdif 19 58 44.7 +1.1**
KHC *e*pP 19 58 47.9
KHC *e*PKPdf **PKPdf 20 02 12.5 -0.7**
KHC *e*pPKP **pPKPdf 20 02 16.4 -1.6**
KHC *e*PP **PP 20 03 53.0 +2.2**
KHC *e*PKKP **PKKPab 20 12 00.0 -6.0**
KHC *e*SP SP 20 13 37.4 -6.7
KHC *ex* x 20 16 02.0
KHC AMS AMS 20 57 00.0
comp=Z,2µm,19.8s
KHC Kasperske Hory 122.78 325 *e*PKIKP **PKPdf 20 02 12.4 -0.7**
KHC MLR MLR
comp=Z,800nm,20.0s
KHC Kasperske Hory 122.78 325 *e*PKPdf **PKPdf 20 02 12.4 -0.7**
KHC LR LR
comp=Z,800nm,20.0s
NKC Novy Kostel 122.82 327 *e*PKPdf **PKPdf 20 02 13.1 -0.1**
NKC *e*PP **PP 20 03 56.3 +5.3**
NKC AMS AMS 20 59 30.0
comp=Z,2µm,17.0s
NKC Novy Kostel 122.82 327 *e*PKIKP **PKPdf 20 02 13.1 -0.1**
NKC *e* 20 03 56.3
NKC MLR MLR
comp=Z,2µm,17.0s
GEC2 GERESS Array S 122.86 325 *e*PKIKP **PKPdf 20 02 12.5 -0.9**
GEC2 *e* 20 03 49.3
GEC2 MLR MLR
comp=Z,2µm,20.0s
GEC2 GERESS Array S 122.86 325 *e*PKPdf **PKPdf 20 02 12.5 -0.9**
GEC2 *e*PP **PP 20 03 49.2 -2.1**
GEC2 LR LR
comp=Z,2µm,20.0s
GERES GERESS Array B 122.86 325 PKP **PKPdf 20 02 13.0 -0.4**
comp=Z,7.5nm,0.8s,baz=76,slow=1.3,SNR=56
GERES PP **PP 20 03 50.7 -0.6**
comp=Z,3.0nm,0.9s,baz=60,slow=5.3,SNR=4.3
GERES PKKPbc **PKKPab 20 12 06.2 +0.5**
comp=Z,1.0nm,0.6s,baz=205,slow=2.8,SNR=8.6
GEA0 GERESS Array S 122.86 325 *e*PKPdf **PKPdf 20 02 12.6 -0.8**
GEA0 *e*PP **PP 20 03 50.5 -0.9**
WCI Wyandotte Cave 122.98 49 *e*PKIKP **PKPdf 20 02 13.8 -0.1**
WCI MLR MLR
comp=Z,2µm,21.0s
WCI Wyandotte Cave 122.98 49 *e*PKPdf **PKPdf 20 02 13.8 -0.1**
WCI LR LR
comp=Z,2µm,21.0s
Z47A Carrollton 123.02 55 PKiKP **PKPdf 20 02 14.0 0.0**
baz=284
MOA Molln 123.03 324 *i* PKPdf **PKPdf 20 02 12.5 -1.1**
comp=Z,11nm,1.1s
MOX Moxa 123.04 328 PKIKP **PKPdf 20 02 13.4 -0.2**
447A Lucedale 123.08 58 PKiKP **PKPdf 20 02 14.2 0.0**
baz=282
SOKA Soboth 123.14 322 *i* PKPdf **PKPdf 20 02 13.1 -0.9**
comp=Z,34nm,1.1s,SNR=24
WET Wettzell 123.17 326 PKIKP **PKPdf 20 02 13.7 -0.2**
Z48A Worthport 123.39 55 PKiKP **PKPdf 20 02 14.7 0.0**
baz=285
AAM Ann Arbor 123.42 43 PFAKE 20 02 30.0 +15
AAM LR LR
comp=Z,2µm,22.0s
OBKA Obir 123.51 322 *i* PKPdf **PKPdf 20 02 13.8 -0.9**
comp=Z,21nm,1.4s,SNR=8.9
248A Dixon Mills 123.55 56 PKiKP **PKiKP 20 02 15.4 +0.1**
baz=284
348A Jackson 123.58 57 PKiKP **PKiKP 20 02 15.5 +0.2**
baz=283
TSUM Tsumeb 123.64 241 PKKPbc PKKPbc 20 12 04.4 +0.9
comp=Z,3.6nm,0.9s,baz=314,slow=2.5,SNR=6.4
TSUM Tsumeb 123.64 241 *e*PKPdf **PKPdf 20 02 14.2 -1.6**
TSUM *e*PKKPbc **PKKPab 20 12 04.4 +0.6**
TSUM LR LR
comp=Z,2µm,18.0s
LRAL Lakeview Retre 123.93 55 *e*PKPdf **PKPdf 20 02 14.5 -1.3**
LRAL *e*PP PP 20 03 51.3 -8.0
LRAL LR LR
comp=Z,1µm,19.0s
KBA Koelnbreinsper 123.95 323 *i* PKPdf **PKPdf 20 02 14.0 -1.6**
comp=Z,34nm,1.2s,SNR=15
KBA Koelnbreinsper 123.95 323 PKIKP **PKPdf 20 02 14.6 -1.0**
SWET Sewanee 124.18 52 PFAKE 20 02 30.0 +14
SWET LR LR
comp=Z,400nm,21.0s
TRI Trieste 124.37 322 *e*PKIKP **PKPdf 20 02 14.1 -2.1**
TRI MLR MLR
comp=Z,1µm,19.0s
TRI Trieste 124.37 322 *e*PKPdf **PKPdf 20 02 14.1 -2.1**
TRI *e*PP **PP 20 03 56.0 -5.6**
TRI LR LR
comp=Z,1µm,19.0s
ABTA Abfaltersbach 124.61 323 *i* PKPdf **PKPdf 20 02 15.4 -1.4**
comp=Z,31nm,1.0s,SNR=22
MATE Matera 124.64 315 ⇑ *i*P **PKPdf 20 02 16.5 -0.4**
WTSB Winterswijk 124.69 331 *e*PKPdf **PKPdf 20 02 16.8 +0.2**
comp=Z,16nm,0.6s
ACSO Alum Creek Sta 124.69 45 *e*PKPdf **PKPdf 20 02 16.1 -1.0**
ACSO LR LR
comp=Z,1µm,21.0s
WATA Walderalm 124.86 324 *i* PKiKP **PKPdf 20 02 16.6 -0.7**
comp=Z,53nm,1.1s,SNR=15
WTTA Wattenberg 124.86 324 *i* PKiKP **PKPdf 20 02 16.7 -0.7**
comp=Z,75nm,1.5s,SNR=20
TEIG Tepich 125.05 70 PKP **PKPdf 20 02 19.4 +1.2**
comp=Z,14nm,1.0s,baz=104,slow=22,SNR=4.9
TEIG Tepich 125.05 70 *e*PKPdf **PKPdf 20 02 18.2 0.0**
TEIG LR LR
comp=Z,900nm,20.0s
MOTA Moosalm 125.12 325 *i* PKPdf **PKPdf 20 02 16.9 -1.0**
comp=Z,27nm,0.8s,SNR=34
TIP Timpagrande 125.17 313 *e*PKPdf **PKPdf 20 02 16.9 -1.2**
TIP *e*PP **PP 20 04 00.0 -7.3**
TIP LR LR
comp=Z,1µm,22.0s
CPCT Cooper Cave 125.21 51 *e*PKPdf **PKPdf 20 02 16.1 -2.1**
CPCT LR LR
comp=Z,800nm,20.0s
RETA Reutte 125.24 325 *i* PKPdf **PKPdf 20 02 17.2 -0.8**
comp=Z,28nm,1.2s,SNR=13
SADO Sadowa 125.28 39 PKP **PKPdf 20 02 18.5 +0.5**
comp=Z,13nm,0.9s,baz=285,slow=3.5,SNR=9.6
SADO Sadowa 125.28 39 *e*PKPdf **PKPdf 20 02 17.2 -0.8**
SADO LR LR
comp=Z,2µm,20.0s
SCHQ Schefferville 125.36 23 PKP **PKPdf 20 02 19.2 +1.4**
comp=Z,11nm,1.0s,baz=201,slow=1.5,SNR=5.6
SCHQ Schefferville 125.36 23 *e*PKPdf **PKPdf 20 02 17.5 -0.3**
SCHQ LR LR
comp=Z,2µm,21.0s
NRS Narsarsuaq 125.37 7 *i* P **PKPdf 20 02 16.8 -0.8**
comp=Z,69nm,1.1s
NRS Narsarsuaq 125.37 7 *e*PKIKP **PKPdf 20 02 16.8 -0.8**
NRS pmax pmax
comp=Z,69nm,1.1s
STU Stuttgart 125.40 327 *e*PKIKP **PKPdf 20 02 17.6 -0.5**
STU MLR MLR
comp=Z,1µm,20.0s
STU Stuttgart 125.40 327 *e*PKPdf **PKPdf 20 02 17.6 -0.5**
STU LR LR
comp=Z,1µm,20.0s
FETA Feichten 125.51 324 *i* PKiKP **PKPdf 20 02 18.1 -0.5**
comp=Z,31nm,1.0s,SNR=17
CUC Castrocucco 125.53 315 PFAKE 20 02 30.0 +11
CUC LR LR
comp=Z,500nm,21.0s
TKL Tuckaleechee C 125.72 51 PKP **PKPdf 20 02 19.0 -0.2**
comp=Z,24nm,1.0s,baz=11,slow=3.5,SNR=11
TKL Tuckaleechee C 125.72 51 *e*PKIKP **PKPdf 20 02 17.6 -1.6**
TKL MLR MLR
comp=Z,2µm,20.0s
TKL Tuckaleechee C 125.72 51 *e*PKPdf **PKPdf 20 02 17.6 -1.6**
TKL LR LR
comp=Z,2µm,20.0s
DAVA Damuels 125.86 325 *i* PKPdf **PKPdf 20 02 18.5 -0.7**
comp=Z,44nm,0.9s,SNR=18

HGN Heimansgroeve 125.87 330 *e*PKPdf **PKPdf 20 02 19.0 0.0**
comp=Z,26nm,1.0s
MEM Membach 125.93 330 PKP **PKPdf 20 02 18.5 -0.6**
ERPA Erie 125.97 42 PFAKE 20 02 30.0 +11
ERPA LR LR
comp=Z,1µm,18.0s
FUORN Ofenpass-Fuorn 126.00 324 *e*PKPdf **PKPdf 20 02 19.1 -0.6**
FUORN LR LR
comp=Z,3µm,20.0s
LANF Langenberg 126.02 328 PKP **PKPdf 20 02 19.5 +0.2**
ALLY Alegheny Colle 126.07 43 PFAKE 20 02 30.0 +10
ALLY LR LR
comp=Z,1µm,20.0s
BFO Black Forest 126.12 327 *e*PKIKP **PKPdf 20 02 18.3 -1.3**
BFO Black Forest 126.12 327 *e*PKPdf **PKPdf 20 02 18.3 -1.3**
BFO *e*PP PP 20 04 03.3 -10
DAVOX Davos/Dischmat 126.13 325 PKP **PKPdf 20 02 19.7 -0.1**
comp=Z,19nm,0.9s,baz=143,slow=0.7,SNR=20
CEL Celeste 126.14 313 PFAKE 20 02 30.0 +10
CEL LR LR
comp=Z,700nm,19.0s
ROC1 El Roble 126.17 140 *e*PKPdf **PKPdf 20 02 19.9 -0.5**
AQU L'Aquila 126.17 318 *e*PKIKP **PKPdf 20 02 18.8 -1.1**
AQU MLR MLR
comp=Z,1µm,20.0s
AQU L'Aquila 126.17 318 *e*PKPdf **PKPdf 20 02 18.8 -1.1**
AQU LR LR
comp=Z,1µm,20.0s
TGUH Tegucigalpa,Un 126.38 78 *e*PKPdf **PKPdf 20 02 17.1 -3.8**
TGUH LR LR
comp=Z,1µm,19.0s
BCLA Clavier 126.40 330 PKP **PKPdf 20 02 19.5 -0.4**
BCLA APKP **pPKPdf 20 02 23.3 -1.6**
ESK Eskdalemuir 126.45 339 *i* PKIKP **PKPdf 20 02 20.3 +0.4**
M54A Oil Creek Stat 126.45 43 PKiKP **PKPdf 20 02 20.4 0.0**
baz=296
WLF Walferdange 126.46 329 PKP **PKPdf 20 02 21.2 +1.1**
WLF APKP **pPKPdf 20 02 24.3 -0.7**
WLF Walferdange 126.46 329 *e*PKIKP **PKPdf 20 02 20.1 0.0**
WLF MLR MLR
comp=Z,3µm,21.0s
WLF Walferdange 126.46 329 *e*PKPdf **PKPdf 20 02 20.1 0.0**
WLF LR LR
comp=Z,3µm,21.0s
N54A Moraine State 126.47 43 PKiKP **PKPdf 20 02 20.6 +0.2**
baz=296
TUE Stuetta 126.61 325 *e*PKPdf **PKPdf 20 02 20.1 -0.7**
TUE LR LR
comp=Z,2µm,19.0s
CDF Champ du Feu 126.64 327 *e*PKIKP **PKPdf 20 02 19.3 -1.3**
CDF pmax pmax
comp=Z,29nm,1.2s
GOGA Godfrey 126.67 53 *e*PKIKP **PKPdf 20 02 20.6 -0.4**
GOGA MLR MLR
comp=Z,2µm,21.0s
GOGA Godfrey 126.67 53 *e*PKPdf **PKPdf 20 02 20.6 -0.4**
GOGA LR LR
comp=Z,2µm,21.0s
ECH Echery 126.82 327 PKP **PKPdf 20 02 20.4 -0.5**
SNF Seneffe 126.83 331 PKP **PKPdf 20 02 21.5 +0.7**
SNF APKP **pPKPdf 20 02 24.4 -1.3**
DOU Dourbes 126.95 331 PKP **PKPdf 20 02 21.3 +0.2**
DOU APKP **pPKPdf 20 02 24.9 -1.1**
MOF Molkenrain 127.05 327 PKP **PKPdf 20 02 21.1 -0.3**
MCWV Mont Chateau 127.13 45 PFAKE 20 02 30.0 +8.3
MCWV LR LR
comp=Z,800nm,22.0s
TIGA Tifton 127.14 56 PKiKP **PKPdf 20 02 21.9 0.0**
baz=286
TIGA Tifton 127.14 56 PFAKE 20 02 30.0 +8.0
TIGA LR LR
comp=Z,1µm,18.0s
BAIF Baives 127.17 331 *e*PKIKP **PKPdf 20 02 20.9 -0.5**
BAIF pmax pmax
comp=Z,51nm,1.4s
HINF Hinteralfeld 127.22 327 *e*PKIKP **PKPdf 20 02 19.6 -2.1**
HINF pmax pmax
comp=Z,55nm,1.1s
VLC Villacollemand 127.22 322 PFAKE 20 02 30.0 +8.2
VLC LR LR
comp=Z,600nm,19.0s
LOMF Lomont 127.52 327 PKP **PKPdf 20 02 22.1 -0.2**
TRQA Tornquist 127.53 151 *e*PKPdf **PKPdf 20 02 22.1 -0.5**
TRQA LR LR
comp=Z,2µm,19.0s
BLA Blacksburg 127.70 48 *e*PKIKP **PKPdf 20 02 21.8 -1.1**
BLA MLR MLR
comp=Z,1µm,20.0s
BLA Blacksburg 127.70 48 *e*PKPdf **PKPdf 20 02 21.8 -1.1**
BLA LR LR
comp=Z,1µm,20.0s
CWF Charnwood Fore 127.72 336 *e*PKPdf **PKPdf 20 02 21.9 -0.5**
O56A Blue Knob Stat 127.75 44 PKiKP **PKPdf 20 02 23.1 +0.2**
baz=297
KMSC Kings Mountain 127.77 51 PKiKP **PKPdf 20 02 23.2 +0.1**
baz=291
KMSC Kings Mountain 127.77 51 *e*PKPdf **PKPdf 20 02 22.6 -0.5**
KMSC LR LR
comp=Z,2µm,19.0s
SENIN Lac Senin/Sane 127.84 325 *e*PKPdf **PKPdf 20 02 22.1 -1.0**
RTLS Leoncito 128.03 140 ‖ *e*P **PKPdf 20 02 24.7 +0.6**
SSPA Standing Stone 128.04 43 *e*PKPdf **PKPdf 20 02 19.8 -3.6**
SSPA LR LR
comp=Z,1µm,20.0s
WDD Wied Dalam 128.04 310 PFAKE 20 02 40.0 +16
WDD LR LR
comp=Z,400nm,21.0s
JSC Jenkinsville 128.13 52 *e*PKIKP **PKPdf 20 02 22.9 -0.9**
JSC MLR MLR
comp=Z,2µm,21.0s
JSC Jenkinsville 128.13 52 *e*PKPdf **PKPdf 20 02 22.9 -0.9**
JSC LR LR
comp=Z,2µm,21.0s
LONY Lake Ozonia 128.14 37 *e*PKPdf **PKPdf 20 02 23.0 -0.6**
LONY LR LR
comp=Z,2µm,19.0s
CLTB Caltabellotta 128.35 313 *e*PKPdf **PKPdf 20 02 22.1 -2.1**
CLTB LR LR
comp=Z,700nm,20.0s
CABF La Chapelle 128.37 326 *e*PKIKP **PKPdf 20 02 23.5 -0.5**
CABF pmax pmax
comp=Z,86nm,1.2s
BINY Binghamton 128.55 40 *e*PKPdf **PKPdf 20 02 22.1 -2.3**
BINY LR LR
comp=Z,2µm,20.0s
FRNY Flat Rock 128.61 36 *e*PKPdf **PKPdf 20 02 23.5 -0.9**
FRNY LR LR
comp=Z,2µm,22.0s
LPG La Plagne 128.65 325 *e*PKIKP **PKPdf 20 02 24.2 -0.6**
LPG pmax pmax
comp=Z,23nm,1.0s
LPL La Plagne 128.65 325 *e*PKIKP **PKPdf 20 02 24.1 -0.6**
LPL pmax pmax
comp=Z,22nm,1.0s
NCB Newcomb 128.72 38 *e*PKPdf **PKPdf 20 02 23.9 -0.8**
LMQ La Malbaie 128.79 32 *e*PKPdf **PKPdf 20 02 23.6 -1.1**
LMQ LR LR
comp=Z,2µm,20.0s
LCO Las Campanas 128.91 137 *e*PKPdf **PKPdf 20 02 23.0 -2.8**
BNI Bardonecchia 128.95 324 PFAKE 20 02 40.0 +15
BNI LR LR
comp=Z,2µm,20.0s
KSPA Keystone Colle 129.01 41 PFAKE 20 02 40.0 +15
KSPA LR LR
comp=Z,2µm,19.0s
ACAN Cantantal 129.02 142 *e*P **PKPdf 20 02 23.1 -2.5**
AMOG MOGNA 129.12 140 ‖ *e*P **PKPdf 20 02 26.2 +0.3**
LUCF Luceram 129.22 323 PKP **PKPdf 20 02 24.3 -1.4**
REVF Revere 129.29 323 PKP **PKPdf 20 02 26.5 +0.7**
MVIF Mont Vial 129.33 323 PKP **PKPdf 20 02 25.8 -0.2**
JSRW J. Sargeant Re 129.35 46 *e*PKPdf **PKPdf 20 02 25.6 -0.3**
NHSC New Hope 129.37 53 PFAKE 20 02 40.0 +14
NHSC LR LR
comp=Z,2µm,21.0s
ACCN Adirondack Com 129.37 38 *e*PKPdf **PKPdf 20 02 25.1 -0.8**
ACCN *e*PP **PP 20 04 31.5 -3.1**
MVL Millersville 129.38 43 *e*PKPdf **PKPdf 20 02 25.9 -0.1**
MVL LR LR
comp=Z,1µm,21.0s
HDC Heredia 129.48 83 PFAKE 20 02 40.0 +13
HDC LR LR
comp=Z,1µm,19.0s
ORIF Oris-en-Rattie 129.49 325 *e*PKIKP **PKPdf 20 02 26.0 -0.2**
ORIF pmax pmax

comp=Z,27nm,1.2s
CBN Corbin Frederi 129.49 45 PFAKE 20 02 40.0 +14
CBN LR LR
comp=Z,2μm,21.0s
CALN Calern 129.57 323 PKP **PKPdf 20 02 26.5 +0.1**
SUCO SUCO 129.61 145 *e*P **PKPdf 20 02 26.7 -0.1**
SUCO IAML 20 02 32.2
comp=Z,31nm,0.1s
AVF Avril sur Loir 129.73 328 *e*PKIKP **PKPdf 20 02 25.6 -0.8**
AVF pmax pmax
comp=Z,27nm,1.3s
TRY Troy 129.73 39 *e*PKPdf **PKPdf 20 02 26.0 -0.6**
TRY *e*PP **PP 20 04 34.0 -3.0**
TRY *e*SKPdf SKPbc 20 05 48.4 -0.1
TRY LR LR
comp=Z,3μm,20.0s
LUPA Lehigh Univers 129.75 42 PFAKE 20 02 40.0 +13
LUPA LR LR
comp=Z,2μm,19.0s
MRA San Martin 129.80 144 *e*P **PKPdf 20 02 27.1 -0.1**
MRA IAML 20 02 32.1
comp=Z,12nm,0.9s
DWPF Disney Wildern 129.83 59 PFAKE 20 02 40.0 +13
DWPF LR LR
comp=Z,700nm,20.0s
LBNH Lisbon 129.93 36 *e*PKIKP **PKPdf 20 02 27.6 +0.7**
LBNH MLR MLR
comp=Z,2μm,22.0s
LBNH Lisbon 129.93 36 *e*PKPdf **PKPdf 20 02 27.6 +0.7**
LBNH LR LR
comp=Z,2μm,22.0s
ODNJ Ogdensburg 130.00 41 *e*PKPdf **PKPdf 20 02 25.6 -1.6**
ODNJ *e*PP **PP 20 04 35.4 -3.5**
ODNJ *e*SKPdf SKPab 20 05 48.4 -0.8
ODNJ LR LR
comp=Z,1μm,22.0s
PSUB Penn St. - Bra 130.02 43 *e*PKPdf **PKPdf 20 02 24.4 -2.8**
PSUB *e*SKPdf **SKPab 20 05 48.9 -0.4**
PSUB LR LR
comp=Z,2μm,20.0s
HNH Hanover 130.03 37 PFAKE 20 02 40.0 +13
HNH LR LR
comp=Z,2μm,20.0s
SSB Saint Sauveur 130.03 326 *e*PKIKP **PKPdf 20 02 26.3 -0.8**
SSB Saint Sauveur 130.03 326 *e*PKPdf **PKPdf 20 02 26.3 -0.8**
SSB *e*SKPdf **SKPbc 20 05 49.7 +0.1**
AGUA GUANDACOL 130.08 139 *e*P **PKPdf 20 02 23.3 -4.6**
AGUA GUANDACOL 130.08 139 *e*P **SKPbc 20 05 51.8 +1.4**
PLDF La Plantade 130.11 327 PKP PKPdf 20 02 27.5 +0.2
VSL Villasalto 130.20 317 *e*PKPdf **PKPdf 20 02 25.5 -2.1**
VSL LR LR
comp=Z,700nm,19.0s
VIVF Saint-Julien-l 130.22 325 *e*PKIKP **PKPdf 20 02 26.8 -0.7**
VIVF pmax pmax
comp=Z,44nm,1.4s
BRNJ Basking Ridge 130.23 41 PFAKE 20 02 40.0 +12
BRNJ LR LR
comp=Z,1μm,19.0s
FLN La Foliniere 130.29 332 *e*PKIKP **PKPdf 20 02 26.9 -0.5**
FLN pmax pmax
comp=Z,44nm,1.2s
AGO Saint Agoulin 130.32 327 PKP PKPdf 20 02 27.9 +0.3
CNNC Cliffs of the 130.35 49 PFAKE 20 02 40.0 +12
CNNC LR LR
comp=Z,1μm,22.0s
PAL Palisades 130.50 41 *e*PKIKP **PKPdf 20 02 26.5 -1.6**
PAL MLR MLR
comp=Z,2μm,20.0s
PAL Palisades 130.50 41 *e*PKPdf **PKPdf 20 02 26.5 -1.6**
PAL *e*SKPbc **SKPab 20 05 50.9 -0.4**
PAL LR LR
comp=Z,2μm,20.0s
FFD Franklin Falls 130.54 37 PFAKE 20 02 40.0 +12
FFD LR LR
comp=Z,3μm,19.0s
PYM Petit Puy Mans 130.58 327 PKP PKPdf 20 02 28.6 +0.4
LBL Lubilhac 130.78 326 PKP PKPdf 20 02 29.4 +0.8
QUA2 Belchertown 130.79 38 PFAKE 20 02 40.0 +11
QUA2 LR LR
comp=Z,2μm,19.0s
PKME Peaks-Kenny Pk 130.79 33 *e*PKPdf **PKPdf 20 02 28.8 +0.3**
PKME *e*SKPbc **SKPbc 20 05 51.3 -1.0**
PKME LR LR
comp=Z,1μm,22.0s
YLE Yale 130.95 40 PFAKE 20 02 40.0 +11
YLE LR LR
comp=Z,3μm,21.0s
WVL Waterville 131.03 34 PFAKE 20 02 40.0 +11
WVL LR LR
comp=Z,3μm,20.0s
HRV Adam Dziewonsk 131.15 38 *e*PKIKP **PKPdf 20 02 29.8 +0.5**
HRV MLR MLR
comp=Z,1μm,20.0s
HRV Adam Dziewonsk 131.15 38 *e*PKPdf **PKPdf 20 02 29.8 +0.5**
HRV *e*SKPbc **SKPbc 20 05 52.5 -1.2**
HRV LR LR
comp=Z,1μm,20.0s
TCA Tanti 131.24 143 *e*P PKPdf 20 02 21.7 -8.2
TCA IAML 20 02 35.5
comp=Z,4.2nm,0.6s
TCA Tanti 131.24 143 *e*P **SKPbc 20 05 54.9 +0.4**
WES Weston 131.36 38 PFAKE 20 02 40.0 +10
WES LR LR
comp=Z,2μm,20.0s
BRYW Bryant College 131.50 38 *e*SKPbc **SKPbc 20 05 53.9 -1.1**
BRYW LR LR
comp=Z,3μm,19.0s
KEST Kesra 131.95 312 PKP PKPdf 20 02 31.4 +0.3
comp=Z,8.2nm,0.9s,baz=292,slow=1.2,SNR=7.9
KEST PP **PP 20 04 54.7 +2.8**
comp=Z,34nm,1.1s,baz=48,slow=1.8,SNR=6.6
KEST Kesra 131.95 312 *e*PKPdf **PKPdf 20 02 30.7 -0.4**
KEST *e*PP **PP 20 04 47.2 -4.6**
KEST PP PP 20 04 54.7 +2.8
KEST LR LR
comp=Z,700nm,20.0s
QUIF Quistinic 132.13 333 *e*PKIKP **PKPdf 20 02 30.5 -0.4**
QUIF pmax pmax
comp=Z,16nm,1.0s
EMMW East Machias 132.15 33 PFAKE 20 02 40.0 +8.9
EMMW LR LR
comp=Z,45μm,20.0s
NNA Nana 132.47 113 PKP PKPdf 20 02 33.2 +0.6
comp=Z,18nm,0.9s,baz=207,slow=5.5,SNR=4.9
NNA SKP 20 06 06.6
comp=Z,2.4nm,0.3s,baz=201,slow=8.0,SNR=3.6
NNA Nana 132.47 113 *e*PKIKP **PKPdf 20 02 29.9 -2.7**
NNA Nana 132.47 113 *e*PKPdf **PKPdf 20 02 29.9 -2.7**
NNA *e*PKPdf **PKPdf 20 02 33.2 +0.6**
NNA *e*SKPdf **SKPdf 20 06 06.6 -1.1**
CYA Choya 132.53 140 *e*P **SKPbc 20 05 59.6 +0.5**
ATAH Atahualpa 132.59 107 PKP PKPdf 20 02 35.4 +2.0
comp=Z,20nm,1.0s,baz=228,slow=3.4,SNR=9.9
ATAH SKP 20 06 08.2
comp=Z,3.5nm,0.5s,baz=234,slow=8.4,SNR=5.2
LRDF Laroque-de-Fa 132.61 324 PKP PKPdf 20 02 31.9 -0.1
LMN Caledonia Moun 132.75 30 *e*PKPdf **PKPdf 20 02 30.6 -1.6**
LMN *e*SKPbc **SKPbc 20 05 59.4 +0.1**
LMN LR LR
comp=Z,2μm,22.0s
ABSA Djebel Ababsia 133.06 314 P PKPdf 20 02 34.2 +1.0
VALF Valcebollere 133.25 324 PKP PKPdf 20 02 34.5 +1.0
DRLN Deer Lake 133.30 22 PFAKE 20 02 40.0 +6.9
DRLN LR LR
comp=Z,2μm,20.0s
CKFL Kef-Lekhel 133.53 315 P PKPdf 20 02 28.9 -5.2
BCIP Isla Barro Col 133.68 84 PFAKE 20 02 50.0 +15
BCIP LR LR
comp=Z,700nm,20.0s
EPF Esparros 133.79 326 *e*PKIKP **PKPdf 20 02 34.3 0.0**
EPF pmax pmax
comp=Z,10.0nm,1.0s
AHML Horco Molle 133.96 138 *e*P **SKPbc 20 06 05.6 +1.6**
FSA Cafayete 133.97 137‖ *e*P **SKPbc 20 06 05.9 +1.6**
DFRA Djebel Bou Aff 134.06 315 P PKPdf 20 02 33.8 -1.3
LVC Límon Verde 134.07 131 PKhKP PKPpre 20 02 21.8
LVC comp=Z,9.8nm,0.7s,baz=163,slow=3.7,SNR=3.1
PKP **PKiKP 20 02 36.9 -0.3**
LVC comp=Z,25nm,0.9s,baz=148,slow=2.0,SNR=7.7
PP **PP 20 05 04.7 -1.1**
LVC comp=Z,7.7nm,0.7s,baz=202,slow=7.6,SNR=4.5
SKPbc **SKPab 20 06 07.7 +0.1**
LVC comp=Z,22nm,0.9s,baz=185,slow=5.8,SNR=5.6
LVC Limon Verde 134.07 131 *e*PKPpre PKPpre 20 02 21.8
LVC *e*PKPdf **PKPdf 20 02 32.9 -2.9**
LVC *e*PKPdf **PiKiP 20 02 36.9 -0.3**
LVC *e*PP **PP 20 05 02.0 -3.8**
LVC *e*PP PP 20 05 04.7 -1.1
LVC *e*SKPbc **SKPab 20 06 07.5 -0.1**
LVC *e*SKPbc **SKPab 20 06 07.7 +0.1**
OTAV Otavalo 134.21 97 *e*PKPdf **PKPdf 20 02 36.6 +0.1**
OTAV *e*SKPbc **SKPab 20 06 07.7 -1.0**
OTAV Otavalo 134.21 97 *e*P PKPpre 20 02 29.5
LARF Larrau 134.52 327 PKP PKPdf 20 02 36.5 +0.8
PB01 IPOC Station P 134.53 129 *e*PKPdf **PKPdf 20 02 36.8 +0.4**
PB01 *e*SKPbc **SKPbc 20 06 06.9 +0.8**
GRGC Isla de Gorgon 134.89 93 *e*P **PKPdf 20 02 35.8 -1.3**
PB11 IPOC Station P 135.10 127 *e*PKPpre PKPpre 20 02 28.2
MTDJ Mount Denham 135.37 71 PFAKE 20 02 50.0 +12
MTDJ LR LR
comp=Z,500nm,20.0s
CAPC Capurgana 136.12 85 *e*P **PKPdf 20 02 37.4 -2.0**
HJA Humahuaca 136.25 135‖ *e*P **SKPbc 20 06 14.7 +2.9**
ASTB Santa Barbara 136.44 136 *e*P **SKPbc 20 06 14.2 +2.1**
ALOL LOMAS DE OLMED 136.85 137 *e*P **SKPbc 20 06 15.5 +2.3**
GTBY Guantanamo Bay 137.34 68 PFAKE 20 02 50.0 +8.5
GTBY LR LR
comp=Z,700nm,21.0s
MOTC Monteria, Cord 137.79 85 *e*P **PKPdf 20 02 43.7 +1.2**
HELC Santa Helena 137.82 89 *e*PKPpre PKPpre 20 02 31.3
HELC *e*PKPdf **PKPdf 20 02 41.3 -1.8**
HELC Santa Helena 137.82 89 *e*P **PKPdf 20 02 43.7 +0.7**
GUYC Guyana, Colomb 137.88 90 *e*P **PKPdf 20 02 44.9 +1.6**
LPAZ La Paz 138.17 124 PKhKP PKPpre 20 02 38.0
comp=Z,3.6nm,0.8s,baz=139,slow=0.8,SNR=9.9
LPAZ PKP **PKPdf 20 02 44.5 +0.6**
comp=Z,41nm,1.1s,baz=104,slow=2.4,SNR=22
LPAZ SKP 20 06 20.2
comp=Z,38nm,1.2s,baz=146,slow=6.5,SNR=9.8
LPAZ La Paz 138.17 124 *e*PKPpre PKPpre 20 02 35.3
LPAZ *e*PKPdf **PKPdf 20 02 43.7 -0.3**
LPAZ *e*SKPbc **SKPbc 20 06 19.5 +1.5**
PRAC Prado 138.23 92 *e*PKPpre PKPpre 20 02 32.6
PRAC *e*PKPdf **PKPdf 20 02 41.7 -1.7**
SJCC San Jacinto, C 138.28 83 *e*P **PKPdf 20 02 43.3 -0.1**
ES19 SONSECA Array 138.39 326 *e*PKPpre PKPpre 20 02 31.6
ES19 *e*PKPdf **PKPdf 20 02 44.0 +1.0**
ES19 *e*PP PP 20 05 19.0 -13
NORC Norcasia 138.43 90 *e*P PKPpre 20 02 31.1
ESDC Sonseca Array 138.45 326 PKhKP PKPpre 20 02 32.7
comp=Z,2.0nm,0.8s,baz=31,slow=2.7,SNR=7.8
ESDC PKP **PKiKP 20 02 44.4 -0.8**
comp=Z,2.0nm,0.8s,baz=22,slow=3.1,SNR=9.4
ESDC PP **PP 20 05 34.2 +1.9**
comp=Z,2.5nm,0.8s,baz=55,slow=7.4,SNR=5.8
ESLA Sonseca Array 138.45 326 PFAKE 20 02 50.0 +6.9
ESLA LR LR
comp=Z,1μm,19.0s
PAB San Pablo 138.75 326 *e*PKIKP **PKPdf 20 02 43.1 -0.6**
PAB MLR MLR
comp=Z,1μm,21.0s
PAB San Pablo 138.75 326 *e*PKPdf **PKPdf 20 02 43.1 -0.6**
PAB LR LR
comp=Z,1μm,21.0s
ROSC El Rosal 138.91 91 PKP **PKPdf 20 02 49.4 +4.3**
comp=Z,24nm,0.9s,baz=172,slow=3.9,SNR=9.9
ROSC El Rosal 138.91 91 *e*PKPdf **PKPdf 20 02 45.7 +0.6**
MVO Moncorvo 139.01 330 *e*PKPdf **PKPdf 20 02 43.9 -0.2**
MVO Moncorvo 139.01 330 *e*PP PP 20 05 38.2 +2.5
CPUP Villa Florida 139.18 146 *e*P PKPpre 20 02 36.0
CPUP Villa Florida 139.18 146 PKhKP PKPpre 20 02 34.6
comp=Z,2.8nm,0.8s,baz=220,slow=2.6,SNR=6.5
CPUP PKP **PKiKP 20 02 47.5 +0.5**
comp=Z,24nm,1.0s,baz=300,slow=0.9,SNR=5.2
CPUP SKPbc **SKiKP 20 06 21.5 -1.5**
comp=Z,17nm,1.1s,baz=211,slow=3.8,SNR=7.0
CPUP Villa Florida 139.18 146 *e*PKHKP PKPpre 20 02 36.2
CPUP *e* 20 02 46.2
CPUP Villa Florida 139.18 146 *e*PKPpre PKPpre 20 02 36.2
CPUP *e*PKPdf **PKiKP 20 02 46.2 -0.8**
CPUP *e*SKPbc **SKPbc 20 06 21.0 +1.3**
POLO Lamas de Olo 139.23 331 *e*PKPdf **PKPdf 20 02 44.6 +0.1**
POLO Lamas de Olo 139.23 331 *e*PP PP 20 05 39.8 +2.8
TAM Tamanrasset 139.80 297 *e*PKIKP **PKPdf 20 02 41.0 -5.2**
TAM MLR MLR
comp=Z,700nm,19.0s
TAM Tamanrasset 139.80 297 *e*PKPpre PKPpre 20 02 41.0
TAM *e*PP PP 20 05 31.8 -10
TAM LR LR
comp=Z,700nm,19.0s
MTE Manteigas 139.84 329 *e*PP PP 20 05 42.2 +1.4
MTE Manteigas 139.84 329 *e*PKPpre PKPpre 20 02 41.1
MTE LR LR
comp=Z,2μm,20.0s
BARC Barichara 140.17 88 *e*P PKPpre 20 02 39.0
PAPH Port-au-Prince 140.22 70 PFAKE 20 03 00.0 +13
PAPH LR LR
comp=Z,700nm,20.0s
PCBR Castelo Branco 140.22 329 *e*PKPdf **PKPdf 20 02 42.9 -3.3**
PCBR Castelo Branco 140.22 329 *e*PP PP 20 05 48.6 +5.5
RUSC La Rusia 140.22 89 *e*PKPpre PKPpre 20 02 37.4
RUSC LR LR
comp=Z,300nm,20.0s
RUSC La Rusia 140.22 89 *e*P PKPpre 20 02 37.4
PMRV Marv??o 140.48 328 *e*PKPdf PKPpre 20 02 42.1
PMRV Marv??o 140.48 328 *e*PP PP 20 05 47.5 +2.8
PCAS Caamalo, Conde 140.58 330 *e*PKPdf **PKPdf 20 02 49.2 +2.3**
PCAS Casmilo, Conde 140.58 330 *e*PP PP 20 05 47.6 +2.3
GRMC Gramalote, San 140.59 87 *e*P PKPpre 20 02 39.4
GRTK Grand Turk 140.60 65 PFAKE 20 03 00.0 +13
GRTK LR LR
comp=Z,900nm,20.0s
CBRI Barrientos, No 140.60 87 *e*P PKPpre 20 02 40.2
PAMC Pamplona, Colo 140.69 87 *e*P PKPpre 20 02 39.8
PESTR Estremoz 141.00 328 *e*PP PP 20 05 51.0 +3.1
SDDR Presa de Saban 141.06 69 PFAKE 20 03 00.0 +12
SDDR LR LR
comp=Z,700nm,20.0s
PMTG Montargil 141.18 329 *e*PKPdf PKPpre 20 02 41.5
PMTG Montargil 141.18 329 *e*PP PP 20 05 51.0 +2.0
PBAR Barrancos 141.21 327 *e*PKPdf **PKPdf 20 02 47.5 -0.6**
PBAR Barrancos 141.21 327 *e*PP PP 20 05 51.8 +2.6
BBSR BB Station 141.37 45 PFAKE 20 03 00.0 +12
BBSR LR LR
comp=Z,1μm,20.0s
EVO Evora 141.47 328 *e*PKPdf PKPpre 20 02 42.9
EVO Evora 141.47 328 *e*PP PP 20 05 53.8 +3.1
PBEJ Beja 141.76 327 *e*PKPdf PKPpre 20 02 44.3
PBEJ Beja 141.76 327 *e*PP PP 20 05 50.6 -2.0
PNCL Nicolau / Gran 142.05 328 *e*PKPdf **PKPdf 20 02 48.0 -1.6**
PNCL Nicolau / Gran 142.05 328 *e*PP PP 20 05 57.2 +2.9
MESJ Messejana 142.09 327 *e*PKPdf PKPpre 20 02 44.1
MESJ Messejana 142.09 327 *e*PP PP 20 05 58.5 +4.0
PVAQ Vaqueiros 142.13 326 *e*PKPdf **PKPdf 20 02 48.7 -1.0**
PVAQ Vaqueiros 142.13 326 *e*PP PP 20 05 57.8 +3.0
PCVE Castro Verde 142.14 327 *e*PKPdf PKPpre 20 02 45.6
PCVE Castro Verde 142.14 327 *e*PP PP 20 05 57.9 +3.0
PBDV Barranco-do-Ve 142.37 326 *e*PKPdf PKPpre 20 02 42.9
PBDV Barranco-do-Ve 142.37 326 *e*PP PP 20 06 01.8 +5.5
PTEO Sao Teotonio 142.57 327 *e*PKPdf **PKPdf 20 02 47.5 -3.0**
PTEO Sao Teotonio 142.57 327 *e*PP PP 20 06 05.5 +8.0
MORF Marmelete 142.71 327 *e*PKPdf PKPpre 20 02 44.8
MORF Marmelete 142.71 327 *e*PP PP 20 06 00.5 +2.1
SDV Santo Domingo 142.76 85 PFAKE 20 03 00.0 +8.2
SDV LR LR
comp=Z,600nm,19.0s
PFVI Vila Bisbo 142.94 327 *e*PKPdf **PKPdf 20 02 51.8 +0.6**
PFVI Vila Bisbo 142.94 327 *e*PP PP 20 06 04.2 +4.5
PFVI Vila Bisbo 142.94 327 *e*PKPpre PKPpre 20 02 43.8
PFVI LR LR
comp=Z,1μm,20.0s
SIV San Ignacio 143.94 130 PKhKP PKPpre 20 02 50.9
comp=Z,9.8nm,0.6s,baz=258,slow=3.9,SNR=17
RTC Rabat Centre 144.00 321 PFAKE 20 03 00.0 +6.9
RTC LR LR
comp=Z,3μm,19.0s
SHEL Horse Pasture 144.49 229 *e*PKIKP **PKPab 20 02 52.6 -0.2**
SHEL Horse Pasture 144.49 229 *e*PKPdf **PKPab 20 02 52.6 -0.2**
AGP Aguadilla 145.02 68 *e*PKPbc **PKPbc 20 02 53.3 -1.3**
MPR Mayaguez 145.06 68 PFAKE 20 03 10.0 +15
MPR LR LR
comp=Z,700nm,22.0s
TOA0 Torodi Ar. Sit 145.31 283 *e*PKPbc **PKPbc 20 02 54.5 -1.1**
TORD Torodi Ar. Bea 145.31 283 PKPbc **PKPbc 20 02 55.0 -0.6**
comp=Z,226nm,0.9s,baz=80,slow=2.3,SNR=564
TORD PP **PP 20 06 17.0 +1.5**
comp=Z,12nm,1.2s,baz=68,slow=4.0,SNR=2.7
TORD SKP 20 06 27.6
comp=Z,9.4nm,0.8s,baz=60,slow=4.8,SNR=4.3
TOA1 Torodi Ar. Sit 145.32 283 *e*PKPbc **PKPbc 20 02 55.0 -0.7**
TOA1 *e*PP **PP 20 06 17.1 +1.5**
TOA1 *e*SKPdf **SKPdf 20 06 27.6 -2.4**
SAML Samuel 145.96 118 PFAKE 20 03 10.0 +12
SAML LR LR
comp=Z,300nm,20.0s
SJG San Juan 146.00 68 *e*PKP2 **PKPdf 20 02 56.4 -0.6**
SJG MLR MLR
comp=Z,900nm,21.0s
SJG San Juan 146.00 68 *e*PKPdf **PKPdf 20 02 56.4 -0.6**
SJG LR LR
comp=Z,900nm,21.0s
SJG San Juan 146.00 68 *e*P **PKPdf 20 02 56.3 -0.6**
CBYP Canovanas 146.23 68 *e*PKPdf **PKPdf 20 02 56.8 -0.7**
CBYP LR LR
comp=Z,900nm,19.0s
HUMP Col San Antoni 146.27 68 *e*PKPdf **PKPdf 20 02 56.9 -0.6**
HUMP LR LR
comp=Z,800nm,20.0s
SPB Sao Paulo 146.33 156 *e*PKPdf **PKPdf 20 02 57.4 -0.1**
SPB LR LR
comp=Z,800nm,19.0s
MTP Monte Pirata 146.56 68 *e*PKPdf **PKPdf 20 02 58.7 +0.7**
MTP LR LR
comp=Z,800nm,20.0s
STVI Saint Thomas 147.04 67 *e*PKPdf **PKPdf 20 02 59.7 +1.0**
CDVI St. Croix 147.37 68 *e*PKPdf **PKPdf 20 03 00.2 +1.0**
ABVI Anegada Island 147.50 66 PFAKE 20 03 10.0 +5.9
ABVI LR LR
comp=Z,800nm,21.0s
H07S1 FLORES T-PHASE 147.92 357 PKPbc **PKPab 20 03 05.0 -0.1**
SNR=27
H07S1 FLORES T-PHASE 147.92 357 *e*PKP **PKPab 20 03 06.1 +1.0**
PGRA Graciosa 147.98 353 *e*PKP **PKPab 20 03 04.1 -1.3**
ROSA Rosais 148.32 353 *e*PKP **PKPab 20 03 06.0 -0.7**
ROSA Rosais 148.32 353 *e*PKPdf **PKPdf 20 03 01.5 +1.1**
ROSA *e*PKPbc **PKPab 20 03 06.4 -0.3**
PMAN Manadas 148.39 353 *e*P **PKPbc 20 03 04.8 +0.9**
PCED Cedros 148.47 353 *e*P **PKPbc 20 03 04.6 +0.5**
PPNO Prainha do Nor 148.57 353 *e*P **PKPab 20 03 07.7 -0.1**
PCAN Candelaria 148.60 353 *e*PKP **PKPbc 20 03 05.2 +0.7**
BART Pico Bartolome 148.73 348 *e*PKP **PKPbc 20 03 05.6 +0.7**
PSET Sete Cidades 148.80 349 *e*PKP **PKPbc 20 03 06.1 +1.1**
SABA Saba 148.80 68 PFAKE 20 03 10.0 +0.6
SABA LR LR
comp=Z,600nm,18.0s
CMLA Cha da Macela 148.82 348 *i* PKP2 **PKPab 20 03 10.0 +1.2**
CMLA Cha da Macela 148.82 348 *e*PKP **PKPbc 20 03 06.4 +1.4**
SMRT St. Maarten 148.84 67 *ep*PKPdf **PKPbc 20 03 04.6 -1.1**
SMRT LR LR
comp=Z,500nm,21.0s
SEUS St. Eustatius 149.08 68 PFAKE 20 03 10.0 -0.4
SEUS LR LR
comp=Z,800nm,20.0s
PSMN Pico do Norte, 149.45 347 *e*PKP **PKPbc 20 03 06.3 -0.4**
PSMA Santa Maria 149.47 347 *e*PKP **PKPbc 20 03 07.0 +0.3**
ANWB Willy Bob 150.12 67 *e*PKPbc **PKPbc 20 03 07.9 -0.9**
ANWB LR LR
comp=Z,800nm,20.0s
GDHS Morne Mazeau, 150.52 70 *e*PKPbc **PKPbc 20 03 09.7 -0.2**
LZG Guadaloupe-1 150.54 70 *e*P **PKPbc 20 03 10.4 +0.6**
PMOZ Porto Moniz, M 150.55 332 *e*PKPbc **PKPbc 20 03 09.9 +0.3**
ECG Echelle 150.68 70 *e*P **PKPbc 20 03 09.0 -1.4**
SEG Port Louis 150.73 69 *e*P **PKPbc 20 03 12.8 +2.6**
H05N1 Guadeloupe/Mar 151.16 69 PKPbc **PKPbc 20 03 13.2 +1.9**
SNR=8.3
FDF Fort de France 151.45 72 *e*PKPbc **PKPbc 20 03 12.6 +0.5**
FDF LR LR
comp=Z,600nm,21.0s
ZAM Aeronautique 151.59 73 *e*P **PKPdf 20 03 09.1 +3.0**
SVB Belmont 151.62 75 *e*PKPbc **PKPbc 20 03 11.8 -0.7**
H05S1 Guadeloupe/Mar 151.81 73 PKPbc **PKPbc 20 03 13.4 +0.6**
KIC Kosan Boka 151.87 270 *e*PKIKP **PKPbc 20 03 13.4 +0.3**
comp=Z,541nm,1.2s
DBIC Dimbokro 152.00 271 PKP **PKPdf 20 03 05.6 -1.2**
comp=Z,5.6nm,0.9s,baz=178,slow=20,SNR=3.4
DBIC PKPbc **PKiKP 20 03 13.6 -0.1**
comp=Z,52nm,0.8s,baz=82,slow=2.8,SNR=33
DBIC Dimbokro 152.00 271 *e*PKPdf **PKPdf 20 03 06.3 -0.5**
DBIC *e*PKPbc **PKiKP 20 03 13.7 0.0**
PTGA Pitinga 152.02 105 PKP **PKPdf 20 03 07.1 +0.2**
comp=Z,24nm,1.0s,baz=248,slow=1.5,SNR=15
PTGA PKPbc **PKiKP 20 03 15.0 +1.2**
comp=Z,53nm,0.8s,baz=266,slow=2.7,SNR=18
PTGA Pitinga 152.02 105 *e*PKPdf **PKPdf 20 03 06.8 -0.1**
PTGA *e*PKPbc **PKiKP 20 03 15.0 +1.2**
PTGA LR LR
comp=Z,900nm,21.0s
LIC Lamto 152.15 270 *e*PKIKP **PKPbc 20 03 14.0 +0.3**
comp=Z,619nm,1.8s
TIC Toumodi 152.16 271 *e*PKIKP **PKPbc 20 03 14.0 +0.2**
H10S2 ASCENSION HYDR 155.62 229 PKPab **PKPab 20 03 33.9 -3.7**
H10N1 ASCENSION HYDR 156.20 231 PKPab **PKPab 20 03 34.6 -5.4**
BBTS Babate 162.17 296 PKPab **PKPab 20 04 07.7 +1.4**
RCBR Riachuelo 166.75 168 PKPab **PKPab 20 04 28.2 +1.9**
comp=Z,19nm,1.1s,baz=163,slow=6.3,SNR=2.9

IDC ***20*** *19:47:13.4±0.7,7°.05S×147°.09E,h0km,mb4.8/16, mb1 4.9/19,mb1mx4.7/46,mbtmp4.8/19,ML4.7/2,Error ellipse: s-maj=28.7km s-min=12.7km az=91.0*
ISCJB ***20*** *19:47:16.0±0.2,7°.10S±0°.03×147°.03E±0°.05,h33km, mb5.1/64,Error ellipse: s-maj=6.7km s-min=3.9km az=166.5*
NEIC ***20*** *19:47:15.9±2.7,7°.09S×147°.04E,h18km±17km,mb5.3/58, Error ellipse: s-maj=6.6km s-min=4.4km az=72.0*
MOS ***20*** *19:47:15.7±0.8,7°.15S×147°.06E,h33km,mb5.4/10,Error ellipse: s-maj=17.4km s-min=8.2km az=94.7*

ISC 20 19:47:18.0±0.3,7°.15S±0°.04×147°.04E±0°.07,h33km,n128, σ1§30/132,mb5.2/64,1C,Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.24**	**177**	Pn		**Pn**	**Pn**	**19 47 51.7**	**-1.0**
	427nm,0.3s,baz=265,slow=11,SNR=8.4								
PMG				Sn			**Sb**	**19 48 22.8**	**-2.4**
	314nm,0.3s,baz=280,slow=17,SNR=5.5								
PMG	**Port Moresby**	**2.24**	**177**	*e*P			**Pn**	**19 47 51.2**	**-1.6**
PMG				*e*				19 48 17.9	
PMG	**Port Moresby**	**2.24**	**177**	*e*Pn			**Pn**	**19 47 51.2**	**-1.6**
PMG				*e*Sn			**Sn**	**19 48 17.9**	**-1.5**
MANU	**Manus Island**	**5.09**	**4**	*e*Pn			**Pn**	**19 48 33.3**	**+1.3**
RABL	**Rabaul**	**5.88**	**60**	*e*Pn			**Pn**	**19 48 42.0**	**-0.9**
CTA	**Charters Tower**	**12.88**	**183**	Pn			**Pn**	**19 50 17.9**	**-0.9**
	2.8nm,0.3s,baz=0.5,slow=12,SNR=4.6								
CTA	**Charters Tower**	**12.88**	**183**	P			**Pn**	**19 50 18.0**	**-0.9**
CTA				pmax		pmax			
	comp=Z,3.0nm,0.3s								
FAKI	**Fak Fak**	**15.32**	**285**	*e*Pn			**Pn**	**19 50 51.8**	**-0.2**
	comp=Z,155nm,1.2s								
SAUI	**Saumlaki**	**15.63**	**266**	*e*Pn			**Pn**	**19 50 56.9**	**+0.9**
	comp=Z,1μm,1.2s								
WR1	**Warramunga Arr**	**17.71**	**223**	*e*Pn			**Pn**	**19 51 21.5**	**-0.6**
	comp=Z,140nm,0.9s								
WR1				*e*Sn			Sn	19 54 25.9	-13
WRA	**Warramunga Arr**	**17.71**	**223**	P			**Pn**	**19 51 21.5**	**-0.6**
	comp=Z,2.6nm,0.3s,baz=49,slow=12,SNR=4.9								
PATS	**Pohnpei**	**17.88**	**39**	*e*Pn			**Pn**	**19 51 22.6**	**-1.7**
	comp=Z,450nm,1.6s								
EIDS	**Eidsvold**	**18.52**	**168**	*e*P			**Pn**	**19 51 35.4**	**+3.3**
	comp=Z,132nm,1.5s								
AS01	**Alice Springs**	**20.68**	**216**	*e*P			**P**	**19 51 54.2**	**-1.1**
ASAR	**Alice Springs**	**20.71**	**216**	P			**P**	**19 51 55.8**	**+0.1**
	comp=Z,30nm,0.8s,baz=52,slow=9.2,SNR=7.0								
GUMO	**Guam**	**20.72**	**354**	P			**P**	**19 51 55.8**	**0.0**
	comp=Z,25nm,0.5s,baz=22,slow=20,SNR=3.8								
FITZ	**Fitzroy Crossi**	**23.52**	**240**	P			**P**	**19 52 27.5**	**+2.2**
	comp=Z,22nm,0.8s,baz=74,slow=8.9,SNR=2.4								
FITZ	**Fitzroy Crossi**	**23.52**	**240**	*e*P			**P**	**19 52 28.1**	**+2.7**
	comp=Z,168nm,1.2s								
ARMA	**Armidale**	**23.54**	**170**	*e*P			**P**	**19 52 28.7**	**+3.2**
	comp=Z,156nm,1.8s								
MMRI	**Maumere**	**24.61**	**265**	*e*P			**P**	**19 52 38.3**	**+2.8**
	comp=Z,367nm,1.5s								
STKA	**Stephens Creek**	**25.12**	**191**	P			**P**	**19 52 42.6**	**+2.7**
	comp=Z,10nm,0.6s,baz=350,slow=5.7,SNR=4.7								
BBOO	**Buckleboo**	**27.49**	**200**	*e*P			**P**	**19 53 01.2**	**-0.2**
	comp=Z,174nm,1.5s								
CAN	**Canberra**	**28.09**	**177**	*e*P			**P**	**19 53 06.0**	**-0.7**
CAN				pmax		pmax			

comp=Z,213nm,1.8s
CAN Canberra 28.09 177 *eP* **P 19 53 06.0 -0.7**
comp=Z,212nm,1.8s
H11S3 WAKE ISLAND Hy 32.02 37 T T 20 25 53.7
baz=206,slow=73,SNR=23
H11S2 WAKE ISLAND Hy 32.02 37 T T 20 25 52.6
baz=206,slow=73,SNR=18
H11S1 WAKE ISLAND Hy 32.04 37 T T 20 25 52.8
baz=206,slow=73,SNR=12
JAGI Jajag, Banyuwa 32.61 265 *eP* **P 19 53 46.2 -0.7**
comp=Z,117nm,1.6s
KKM Kota Kinabalu 33.44 292 *eP* **P 19 53 51.8 -2.5**
comp=Z,30nm,1.2s
CBIJ Chichi jima 34.37 352 *eP* **P 19 53 59.9 -2.1**
comp=Z,140nm,1.3s
TAU Tasmania Unive 35.61 180 *eP* **P 19 54 13.4 +0.8**
TAU pmax pmax
comp=Z,65nm,1.4s
TAU Tasmania Unive 35.61 180 *eP* **P 19 54 13.4 +0.8**
comp=Z,64nm,1.4s
OUZ Omahuta 37.08 143 *eP* **P 19 54 25.7 +0.5**
comp=Z,75nm,1.9s
JOW Kunigami 38.37 332 *eP* **P 19 54 35.8 -0.4**
comp=Z,56nm,1.3s
CISI Cisompet, Garu 38.90 267 *eP* **P 19 54 40.3 -0.6**
comp=Z,88nm,1.2s
TWG Pinlang 39.16 320 *eP* **P 19 54 41.0 -1.9**
comp=Z,93nm,1.2s
YULB Yu-li 39.43 321 *eP* **P 19 54 43.8 -1.4**
comp=Z,9.9nm,0.7s
TPUB Ta-pu 39.79 320 *eP* **P 19 54 46.3 -1.8**
comp=Z,44nm,1.0s
NACB Ninganchiao 39.83 322 *eP* **P 19 54 48.7 +0.2**
comp=Z,24nm,0.8s
SSLB Suanglung 39.94 321 *eP* **P 19 54 49.0 -0.4**
comp=Z,19nm,1.0s
YHNB Yeheng 40.33 322 *eP* **P 19 54 52.4 -0.2**
comp=Z,29nm,0.9s
TATO Taipei 40.49 323 *eP* **P 19 54 52.6 -1.3**
comp=Z,60nm,0.8s
JHJ2 Mitsune 40.63 351 *eP* **P 19 54 53.3 -1.6**
comp=Z,894nm,2.0s
XMIS Christmas Isla 41.02 262 *eP* **P 19 54 58.5 0.0**
comp=Z,86nm,1.1s
URZ Urewera 41.20 143 *eP* **P 19 55 00.8 +1.2**
comp=Z,11nm,0.8s
FOZ Fox Glacier 41.38 155 *eP* **P 19 55 02.1 +1.1**
comp=Z,75nm,1.6s
THZ Tophouse 41.40 150 *eP* **P 19 55 04.0 +2.7**
comp=Z,32nm,1.1s
BKZ Black Stump Fm 41.45 145 *eP* **P 19 55 00.8 -0.9**
comp=Z,25nm,1.2s
LTZ Lake Taylor 41.87 152 *eP* **P 19 55 06.4 +1.2**
comp=Z,44nm,1.4s
SNZO South Karori 41.97 148 *eP* **P 19 55 06.5 +0.6**
comp=Z,63nm,1.1s
RPZ Rata Peaks 42.06 154 *eP* **P 19 55 08.3 +1.7**
comp=Z,42nm,1.3s
WKZ Wanaka 42.12 157 *eP* **P 19 55 08.3 +1.2**
comp=Z,153nm,1.8s
OXZ Oxford 42.19 153 *eP* **P 19 55 08.2 +0.5**
comp=Z,74nm,1.7s
KHZ Kahutara 42.20 151 *eP* **P 19 55 07.1 -0.6**
comp=Z,127nm,1.7s
MLZ Mavora Lakes 42.23 158 *eP* **P 19 55 07.3 -0.7**
comp=Z,116nm,1.8s
LBZ Lake Benmore 42.23 155 *eP* **P 19 55 06.7 -1.3**
comp=Z,41nm,1.3s
BFZ Birch Farm 42.35 147 *eP* **P 19 55 07.8 -1.2**
comp=Z,121nm,1.7s
MQZ McQueen's Vall 42.77 153 *eP* **P 19 55 13.4 +1.1**
comp=Z,107nm,1.5s
JNU Nakatsue 42.90 340 *eP* **P 19 55 12.4 -1.2**
ODZ Otahua Downs 42.95 155 *eP* **P 19 55 13.1 -0.7**
comp=Z,64nm,1.7s
MJAR Matsushiro Arr 44.25 350 P **P 19 55 23.4 -1.0**
comp=Z,2.3nm,0.6s,baz=174,slow=7.7,SNR=7.1
MAJO Matsushiro 44.25 350 *eP* **P 19 55 22.4 -2.0**
MAJO pmax pmax
comp=Z,19nm,0.8s
MAJO Matsushiro 44.25 350 *eP* **P 19 55 22.4 -2.0**
comp=Z,18nm,0.8s
MJB9 Matsu-Tunnel 44.25 350 *eP* **P 19 55 22.6 -1.8**
comp=Z,4.8nm,0.8s
QIZ Qiongzhong 44.96 306 *eP* **P 19 55 30.2 -0.1**
comp=Z,24nm,0.9s
KSRS Korea Array 47.84 339 P **P 19 55 52.1 -0.5**
comp=Z,25nm,0.9s,baz=158,slow=9.0,SNR=12
KS15 Wonju Array Si 47.84 339 *eP* **P 19 55 52.0 -0.6**
KSAR Wonju Array Be 47.84 339 P **P 19 55 52.1 -0.5**
KSAR Wonju Array Be 47.84 339 P **P 19 55 52.1 -0.5**
KULM Kulim 47.92 284 *eP* **P 19 55 52.4 -1.2**
comp=Z,69nm,1.8s
ERM Erimo 49.06 356 *eP* **P 19 56 02.3 +0.4**
ERM pmax pmax
comp=Z,73nm,1.5s
ERM Erimo 49.06 356 *eP* **P 19 56 02.3 +0.4**
comp=Z,73nm,1.5s
GSI Gunungsitoli 50.06 278 *eP* **P 19 56 08.9 -1.2**
comp=Z,48nm,1.2s
ASAJ Asahikawa 51.19 356 *eP* **P 19 56 17.9 -0.1**
comp=Z,35nm,1.4s
ENH Enshi 51.79 318 *eP* **P 19 56 22.6 -0.2**
comp=Z,146nm,2.0s
USRK Ussuriysk Ar. 52.90 346 P **P 19 56 30.6 -0.1**
comp=Z,10nm,0.7s,baz=161,slow=8.7,SNR=8.2
CM01 Chiang Mai Arr 53.81 299 *eP* **P 19 56 38.5 +0.5**
CM31 Chiang Mai Arr 53.84 299 *eP* **P 19 56 38.5 +0.4**
CMAR Chiang Mai Arr 53.84 299 P **P 19 56 39.1 +0.9**
comp=Z,20nm,0.9s,baz=120,slow=5.7,SNR=15
CHTO Chiang Mai 53.98 299 *eP* **P 19 56 39.3 +0.1**
CHTO pmax pmax
comp=Z,16nm,0.8s
CHTO Chiang Mai 53.98 299 *eP* **P 19 56 39.3 +0.1**
comp=Z,16nm,0.8s
PEA0 Petropavlovsk- 60.71 7 *eP* **P 19 57 26.4 +0.4**
PETK Petropavlovsk- 60.71 7 P **P 19 57 27.0 +0.9**
comp=Z,3.1nm,0.7s,baz=163,slow=6.2,SNR=4.4
PETK PKiKP **PKiKP 20 04 26.4 -0.5**
comp=Z,9.6nm,1.1s,baz=104,slow=6.3,SNR=4.0
PETK Petropavlovsk- 60.71 7 P **P 19 57 27.0 +0.9**
PEA1 Petropavlovsk- 60.72 7 *eP* **P 19 57 27.0 +0.9**
PEA1 *e*PKiKP **PKiKP 20 04 26.4 -0.5**
HON Honolulu 60.89 61 *eP* **P 19 57 28.5 +0.6**
HON Honolulu 60.89 61 *eP* **P 19 57 28.5 +0.6**
HIA Hailar 61.05 340 *eP* **P 19 57 27.1 -1.4**
HIA pmax pmax
comp=Z,32nm,1.0s
HIA Hailar 61.05 340 *eP* **P 19 57 27.1 -1.4**
comp=Z,32nm,1.0s
CASY Casey 64.16 196 *eP* **P 19 57 50.0 +1.1**
comp=Z,53nm,1.6s
LSA Lhasa 64.97 307 *eP* **P 19 57 56.4 +0.9**
LSA pmax pmax
comp=Z,21nm,0.6s
LSA Lhasa 64.97 307 *eP* **P 19 57 56.4 +0.9**
comp=Z,21nm,0.6s
ULN Ulaanbaatar 65.14 332 *eP* **P 19 57 55.9 +0.1**
ULN pmax pmax
comp=Z,35nm,1.6s
ULN Ulaanbaatar 65.14 332 *eP* **P 19 57 55.9 +0.1**
comp=Z,35nm,1.6s
SONA0 Songino Array 65.43 331 *eP* **P 19 57 57.7 0.0**
comp=Z,32nm,1.6s
SONA0 *e*PcP **PcP 19 58 30.2 +0.7**
SONM Songino Array 65.43 331 P **P 19 57 57.7 0.0**
comp=Z,4.4nm,0.9s,baz=138,slow=4.0,SNR=4.8
SONM PcP **PcP 19 58 30.2 +0.7**
comp=Z,4.8nm,0.9s,baz=144,slow=4.2,SNR=4.4
SONA1 Songino Array 65.43 331 *eP* **P 19 57 56.6 -1.1**
YAK Yakutsk 70.28 351 *eP* **P 19 58 26.4 -1.3**
YAK pmax pmax
comp=Z,29nm,1.1s
YAK Yakutsk 70.28 351 *eP* **P 19 58 26.4 -1.3**
comp=Z,29nm,1.1s
VNDA Vanda 70.77 177 P **P 19 58 32.4 +1.8**
comp=Z,5.7nm,0.7s,baz=317,slow=5.1,SNR=3.8
VNDA Vanda 70.77 177 *eP* **P 19 58 31.6 +1.1**
VNDA Vanda 70.77 177 *eP* **P 19 58 31.6 +1.1**
comp=Z,39nm,0.3s
MK32 Makanchi Array 78.41 321 *eP* **P 19 59 15.9 +0.4**
MKAR Makanchi Array 78.41 321 P **P 19 59 15.9 +0.4**
comp=Z,13nm,0.6s,baz=103,slow=7.5,SNR=30
TIXI Tiksi 79.56 354 P **P 19 59 20.6 -0.5**
comp=Z,2.7nm,0.5s,baz=139,slow=6.9,SNR=6.0
ZALV Zalesovo Beam 80.01 328 P **P 19 59 22.8 -1.1**
comp=Z,5.8nm,0.6s,baz=116,slow=5.7,SNR=6.2
ZAA1 Zalesovo Array 80.01 328 *eP* **P 19 59 22.8 -1.2**
KURK Kurchatov 82.16 323 *eP* **P 19 59 35.4 0.0**
KURK Kurchatov 82.16 323 *eP* **P 19 59 35.4 0.0**
KURK *e*PKiKP **PKiKP 20 04 57.4 -0.1**
KURBB Kurchatov Arra 82.17 323 P **P 19 59 35.4 -0.1**
comp=Z,3.6nm,0.6s,baz=104,slow=6.6,SNR=6.9
KURBB PKiKP **PKiKP 20 04 57.4 -0.2**
comp=Z,0.8nm,0.7s,baz=118,slow=4.1,SNR=5.3
BVAR Borovoye Array 87.72 324 P **P 20 00 02.8 -0.6**
comp=Z,10nm,0.7s,baz=117,slow=6.5,SNR=14
SYO Syowa Base 89.53 200 *eP* **P 20 00 13.4 +1.8**
SNAA Sanae 98.87 189 P Pdif 20 00 59.0 +4.4
KVAR Kislovodsk Arr 105.26 314 PKiKP **PKiKP 20 05 36.1 -1.5**
comp=Z,2.1nm,0.4s,baz=198,slow=6.5,SNR=3.0
NB200 NORSAR Array S 117.03 338 *e*PKPdf **PKPdf 20 06 00.1 +0.8**
NOA NORSAR Array B 117.03 338 PKP **PKPdf 20 06 00.1 +0.8**
comp=Z,0.8nm,0.7s,baz=44,slow=12,SNR=2.9
PRA Prague 121.84 326 *eP* **Pdif 20 02 32.6 -4.4**
PRA Prague 121.84 326 *e*PKPpre PKPpre 20 02 32.6
GERES GERESS Array B 122.88 325 PKP **PKPdf 20 06 13.2 +2.2**
comp=Z,1.6nm,0.6s,baz=77,slow=2.0,SNR=4.4
DAVOX Davos/Dischmat 126.15 325 PKP **PKPdf 20 06 19.7 +2.2**
comp=Z,4.0nm,0.8s,baz=310,slow=6.0,SNR=3.7
TORD Torodi Ar. Bea 145.40 283 PKPbc **PKPbc 20 06 52.8 -0.8**
comp=Z,27nm,0.9s,baz=75,slow=3.9,SNR=22
TOA1 Torodi Ar. Sit 145.40 283 *e*PKPbc **PKPbc 20 06 52.8 -0.8**
SJG San Juan 145.89 68 PKPbc **PKPbc 20 06 54.7 -0.3**
comp=Z,23nm,0.8s,baz=318,slow=14,SNR=4.9
HUMP Col San Antoni 146.16 68 *e*PKPdf **PKPdf 20 06 54.4 -0.4**
PTGA Pitinga 151.94 105 PKPbc **PKPbc 20 07 10.5 -0.3**
comp=Z,8.0nm,0.6s,baz=179,slow=2.7,SNR=5.3
DBIC Dimbokro 152.10 271 PKPbc **PKPbc 20 07 13.8 +2.7**
comp=Z,12nm,0.8s,baz=81,slow=2.4,SNR=7.5
DBIC Dimbokro 152.10 271 *e*PKIKP **PKPdf 20 07 04.2 -0.3**
DBIC 20 07 13.8
DBIC Dimbokro 152.10 271 *e*PKPdf **PKPdf 20 07 04.2 -0.3**
DBIC PKPbc **PKPbc 20 07 13.8 +2.7**

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*IDC **20** 19:52:29.2±1.4, 7.˚13S×147.˚15E, h0km, mb4.1/10, mb1 4.3/12, mb1mx4.0/45, mbtmp4.1/12, ML3.6/2, Error ellipse: s-maj=54.8km s-min=15.9km az=90.0*
*NEIC **20** 19:52:30.9±0.5, 7.˚15S×147.˚05E, h10km, mb4.8/9, Error ellipse: s-maj=16.9km s-min=7.2km az=99.0*
*ISCJB **20** 19:52:32.5±0.5, 7.˚15S±0.˚04×147.˚0E±0.˚1, h33km, mb4.3/14, Error ellipse: s-maj=14.7km s-min=5.8km az=2.1*
ISC 20 19:52:34.2±0.6, 7.˚19S±0.˚05×147.˚0E±0.˚1, h33km, n35, σ1°10/34, mb4.3/14, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.21**	**175**	Pn		**Pn**	**Pn**	**19 53 07.7**	**-0.9**
	214nm,0.3s,baz=20,slow=5.0,SNR=29								
PMG				Sn			**Sn**	**19 53 37.0**	**+2.2**
	81nm,0.3s,baz=42,slow=21,SNR=5.8								
PMG	**Port Moresby**	**2.21**	**175**	*e*Pn			**Pn**	**19 53 07.0**	**-1.6**
PMG				*e*Sn			**Sn**	**19 53 34.0**	**-0.7**
MANU	**Manus Island**	**5.13**	**4**	*e*Pn			**Pn**	**19 53 48.2**	**-0.7**
COEN	**Coen**	**7.69**	**209**	*e*Pn			**Pn**	**19 54 23.1**	**-0.8**
COEN				*e*Sn			Sn	19 55 37.5	-12
WR1	**Warramunga Arr**	**17.62**	**223**	*e*Pn			**Pn**	**19 56 37.0**	**-0.5**
	189nm,1.4s								
WRA	**Warramunga Arr**	**17.63**	**223**	P			**Pn**	**19 56 37.0**	**-0.5**
	0.8nm,0.3s,baz=48,slow=12,SNR=3.7								
EIDS	**Eidsvold**	**18.50**	**168**	*e*P			**P**	**19 56 47.9**	**+0.2**
	120nm,1.8s								
AS01	**Alice Springs**	**20.60**	**216**	*e*P			Pn	19 57 13.2	0.0
AS31	**Alice Springs**	**20.63**	**216**	*e*P			Pn	19 57 14.3	+0.8
	44nm,1.6s								
ASAR	**Alice Springs**	**20.63**	**216**	P			Pn	19 57 13.3	-0.2
	13nm,0.6s,baz=37,slow=11,SNR=9.3								
STKA	**Stephens Creek**	**25.07**	**191**	P			**P**	**19 57 56.7**	**+1.0**
	5.0nm,0.8s,baz=61,slow=19,SNR=3.1								
STKA	**Stephens Creek**	**25.07**	**191**	*e*P			**P**	**19 57 54.6**	**-1.1**
	18nm,1.5s								
KWAJ	**Kwajalein Atol**	**26.00**	**53**	*e*P			**P**	**19 58 03.8**	**-0.6**
	119nm,0.9s								
MJAR	**Matsushiro Arr**	**44.27**	**350**	P			**P**	**20 00 40.0**	**-0.9**
	1.5nm,0.8s,baz=182,slow=7.9,SNR=3.3								
MAJO	**Matsushiro**	**44.27**	**350**	*e*P			**P**	**20 00 40.1**	**-0.8**
	32nm,1.7s								
MJB9	**Matsu-Tunnel**	**44.28**	**350**	*e*P			**P**	**20 00 40.0**	**-0.9**
	8.1nm,1.7s								
KSRS	**Korea Array**	**47.85**	**339**	P			**P**	**20 01 08.5**	**-0.4**
	1.0nm,0.8s,baz=158,slow=8.5,SNR=5.0								
KSAR	**Wonju Array Be**	**47.85**	**339**	P			**P**	**20 01 08.5**	**-0.5**
KULM	**Kulim**	**47.85**	**284**	*e*P			**P**	**20 01 08.1**	**-1.3**
	8.8nm,1.2s								
USRK	**Ussuriysk Ar.**	**52.92**	**347**	P			**P**	**20 01 46.6**	**-0.6**
	1.2nm,0.6s,baz=166,slow=5.2,SNR=4.2								
CM01	**Chiang Mai Arr**	**53.76**	**299**	*e*P			**P**	**20 01 54.2**	**+0.4**
CMAR	**Chiang Mai Arr**	**53.79**	**299**	P			**P**	**20 01 54.5**	**+0.5**
	2.8nm,0.9s,baz=120,slow=5.8,SNR=6.9								
SONA0	**Songino Array**	**65.43**	**331**	*e*P			**P**	**20 03 13.6**	**-0.4**
	18nm,1.8s								
SONM	**Songino Array**	**65.43**	**331**	P			**P**	**20 03 13.6**	**-0.4**
	1.1nm,1.0s,baz=116,slow=6.8,SNR=3.7								
MK32	**Makanchi Array**	**78.39**	**321**	*e*P			**P**	**20 04 34.1**	**+2.5**
MKAR	**Makanchi Array**	**78.39**	**321**	P			**P**	**20 04 34.1**	**+2.5**
	1.2nm,0.6s,baz=103,slow=7.4,SNR=6.0								
ZALV	**Zalesovo Beam**	**80.00**	**328**	P			**P**	**20 04 40.1**	**-0.1**
	0.7nm,0.4s,baz=111,slow=5.4,SNR=3.6								
ZAA1	**Zalesovo Array**	**80.00**	**328**	*e*P			**P**	**20 04 40.1**	**-0.1**
QSPA	**South Pole Qui**	**82.78**	**180**	*e*P			**P**	**20 04 56.1**	**+1.1**
BVAR	**Borovoye Array**	**87.71**	**324**	P			**P**	**20 05 21.0**	**+1.4**
	1.3nm,0.7s,baz=134,slow=6.4,SNR=4.2								
ABKAR	**Akbulak array**	**93.45**	**319**	*e*P			**P**	**20 05 47.8**	**+1.3**
GERES	**GERESS Array B**	**122.86**	**325**	PKP		**PKPdf**		**20 11 28.1**	**+0.9**
	0.3nm,0.6s,baz=29,slow=2.2,SNR=2.6								
TORD	**Torodi Ar. Bea**	**145.34**	**283**	PKPbc		**PKPbc**		**20 12 08.9**	**-0.7**
	3.2nm,0.6s,baz=81,slow=4.3,SNR=48								
TOA1	**Torodi Ar. Sit**	**145.34**	**283**	*e*PKPbc		**PKPbc**		**20 12 08.9**	**-0.7**
DBIC	**Dimbokro**	**152.03**	**271**	PKPbc		**PKPbc**		**20 12 26.9**	**-0.4**
	1.2nm,0.3s,baz=82,slow=4.2,SNR=4.6								

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*ISCJB **20** 20:00:02.1±0.4, 3.˚04S±0.˚04×139.˚69E±0.˚07, h46km, mb4.3/18, Error ellipse: s-maj=9.8km s-min=6.1km az=171.4*
*IDC **20** 20:00:07.7±1.9, 3.˚08S×139.˚63E, h80km±23km, mb3.8/10, mb1 3.9/12, mb1mx3.7/44, mbtmp4.2/12, Error ellipse: s-maj=32.9km s-min=13.1km az=100.0*
*NEIC **20** 20:00:07.3±0.9, 3.˚13S×139.˚72E, h82km±9km, mb4.6/15, Error ellipse: s-maj=11.3km s-min=7.3km az=92.0*
ISC 20 20:00:04.7±0.6, 3.˚11S±0.˚07×139.˚57E±0.˚07, h46km, n41, σ1°53/42, mb4.2/18, Irian Jaya

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
JAY	**Jayapura**	**1.28**	**62**	P			Pn	20 00 29.0	+2.8
	31nm,0.3s,baz=261,slow=23,SNR=1010								
JAY				S			**Sn**	**20 00 45.6**	**+3.4**
	31nm,0.3s,baz=267,slow=24,SNR=15								
FAKI	**Fak Fak**	**7.31**	**271**	*e*Pn			Pn	20 01 55.1	+6.1
FAKI				*e*Sn			**Sn**	**20 03 14.4**	**+3.6**
COEN	**Coen**	**11.35**	**162**	*e*Pn			**Pn**	**20 02 43.4**	**-1.0**
MTN	**Manton Dam**	**12.77**	**220**	*e*Pn			**Pn**	**20 03 05.0**	**+1.2**
MTN				*e*Sn			**Sn**	**20 05 20.2**	**-4.4**
SOEI	**Soe**	**16.57**	**246**	*e*Pn			**P**	**20 03 57.5**	**+1.5**
	85nm,1.5s								
WRAB	**Tennant Creek**	**17.48**	**197**	*e*P			**Pn**	**20 04 05.6**	**+0.3**
	14nm,0.8s								
WB2	**Warramunga Arr**	**17.49**	**197**	*e*P			**Pn**	**20 04 05.1**	**-0.3**
	19nm,0.9s								
WR1	**Warramunga Arr**	**17.49**	**197**	*e*P			**Pn**	**20 04 04.8**	**-0.5**
	17nm,0.8s								
WRA	**Warramunga Arr**	**17.49**	**197**	P			**Pn**	**20 04 04.8**	**-0.6**
	1.3nm,0.3s,baz=22,slow=10,SNR=46								
CTA	**Charters Tower**	**18.09**	**159**	P			**Pn**	**20 04 13.6**	**+0.8**
	0.6nm,0.3s,baz=288,slow=22,SNR=20								
FITZ	**Fitzroy Crossi**	**20.21**	**222**	P			**P**	**20 04 37.1**	**+1.3**
	4.3nm,0.5s,baz=35,slow=11,SNR=20								
FITZ	**Fitzroy Crossi**	**20.21**	**222**	*e*P			**P**	**20 04 37.1**	**+1.3**
	20nm,0.4s								
AS01	**Alice Springs**	**21.14**	**194**	*e*P			**P**	**20 04 46.8**	**+0.8**
AS31	**Alice Springs**	**21.16**	**195**	*e*P			**P**	**20 04 47.6**	**+1.5**
	2.5nm,0.6s								
ASAR	**Alice Springs**	**21.16**	**195**	P			**P**	**20 04 47.1**	**+1.0**
	5.6nm,0.7s,baz=27,slow=10,SNR=49								
EIDS	**Eidsvold**	**24.75**	**154**	*e*P			**P**	**20 05 23.1**	**+1.0**
	52nm,1.5s								
JAGI	**Jajag, Banyuwa**	**25.83**	**257**	*e*P			**P**	**20 05 34.9**	**+2.9**
	151nm,1.8s								
STKA	**Stephens Creek**	**28.68**	**176**	P			**P**	**20 05 58.0**	**+0.7**
	3.2nm,0.9s,baz=12,slow=6.2,SNR=5.1								
STKA	**Stephens Creek**	**28.68**	**176**	*e*P			**P**	**20 05 58.2**	**+0.9**
	12nm,1.9s								
BBOO	**Buckleboo**	**29.73**	**186**	*e*P			**P**	**20 06 05.5**	**-1.2**
	59nm,1.6s								
CBIJ	**Chichi jima**	**30.14**	**5**	*e*P			**P**	**20 06 08.7**	**-1.6**
	95nm,1.0s								
PSI	**Prapat**	**41.05**	**278**	*e*P			**P**	**20 07 44.3**	**+0.1**
	5.5nm,0.6s								
KSAR	**Wonju Array Be**	**41.78**	**346**	P			**P**	**20 07 50.3**	**+0.6**
KSRS	**Korea Array**	**41.78**	**346**	P			**P**	**20 07 50.3**	**+0.6**
	0.5nm,0.6s,baz=170,slow=9.1,SNR=3.6								
GSI	**Gunungsitoli**	**42.21**	**275**	*e*P			**P**	**20 07 53.3**	**-0.3**
	10nm,0.6s								
CMAR	**Chiang Mai Arr**	**45.38**	**300**	P			**P**	**20 08 18.3**	**-0.7**
	0.9nm,0.7s,baz=121,slow=7.1,SNR=6.5								
MK01	**Makanchi Array**	**70.61**	**322**	*e*P			**P**	**20 11 14.6**	**-0.8**
MK31	**Makanchi Array**	**70.63**	**322**	*e*P			**P**	**20 11 15.1**	**-0.4**
MK32	**Makanchi Array**	**70.63**	**322**	*e*P			**P**	**20 11 15.0**	**-0.5**
MKAR	**Makanchi Array**	**70.63**	**322**	P			**P**	**20 11 15.0**	**-0.5**
	1.2nm,0.4s,baz=96,slow=8.7,SNR=29								
MKAR	**Makanchi Array**	**70.63**	**322**	*e*P			**P**	**20 11 14.8**	**-0.7**
MAKZ	**Makanchi**	**70.83**	**322**	*e*P			**P**	**20 11 16.0**	**-0.7**
	3.2nm,0.6s								
ZAA0	**Zalesovo Array**	**72.71**	**330**	*e*P			**P**	**20 11 26.0**	**-1.8**
ZALV	**Zalesovo Beam**	**72.71**	**330**	P			**P**	**20 11 26.3**	**-1.5**
	0.7nm,0.4s,baz=112,slow=5.2,SNR=3.2								
ZAA1	**Zalesovo Array**	**72.72**	**330**	*e*P			**P**	**20 11 26.3**	**-1.5**
TKM2	**Tokmak 2**	**73.42**	**316**	*e*P			**P**	**20 11 31.7**	**-0.9**
	2.9nm,1.0s								
KURK	**Kurchatov**	**74.54**	**325**	*e*P			**P**	**20 11 37.8**	**-0.7**
KURBB	**Kurchatov Arra**	**74.55**	**325**	P			**P**	**20 11 37.8**	**-0.8**
	2.7nm,0.2s,baz=105,slow=4.7,SNR=3.6								
TIXI	**Tiksi**	**74.95**	**357**	P			**P**	**20 11 38.7**	**-1.8**
	0.4nm,0.3s,baz=113,slow=2.3,SNR=5.0								
BVAR	**Borovoye Array**	**80.13**	**325**	P			**P**	**20 12 09.1**	**-0.8**
	1.4nm,0.4s,baz=119,slow=8.2,SNR=16								
DBIC	**Dimbokro**	**144.39**	**277**	PKP		**PKPab**		**20 19 34.0**	**-1.2**
	1.9nm,0.9s,baz=65,slow=7.7,SNR=5.4								

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*ISCJB **20** 20:03:25.0±0.3, 23.˚58S±0.˚03×119.˚49E±0.˚04, h10km, mb4.5/27, MS4.7/1, Error ellipse: s-maj=5.5km s-min=4.4km az=24.9*
*IDC **20** 20:03:26.1±0.8, 23.˚44S×119.˚30E, h0km, mb4.1/10, mb1 4.3/12, mb1mx4.0/41, mbtmp4.2/12, ML4.6/4, Error ellipse: s-maj=17.8km s-min=16.4km az=30.0*
*NEIC **20** 20:03:29.0, 23.˚46S×119.˚33E, h9km, mb4.7/17, ML4.7(AUST), After AUST.*
NEIC Felt [II] at Port Hedland and Roebourne. Also felt at Karratha.
*AUST **20** 20:03:29.8±0.3, 23.˚46S×119.˚33E, h9km, Error ellipse: s-maj=0.1km s-min=0.1km az=295.0*
ISC 20 20:03:26.7±0.4, 23.˚57S±0.˚04×119.˚50E±0.˚05, h10km, n83, σ2°66/92, mb4.5/27, Western Australia

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
GIRL	**Giralia**	**4.94**	**280**	P			**Pn**	**20 04 39.5**	**-1.4**
	baz=4.8								
GIRL	**Giralia**	**4.94**	**280**	P			**Pn**	**20 04 40.9**	**-0.1**
MORW	**Morawa**	**6.30**	**209**	P			**Pn**	**20 04 59.2**	**-0.4**
	baz=6.3								
MORW	**Morawa**	**6.30**	**209**	P			**Pn**	**20 05 01.9**	**+2.2**
MORW				S			**Sn**	**20 06 10.0**	**-1.8**
BLDU	**Ballidu**	**7.45**	**199**	P			**Pn**	**20 05 16.4**	**+1.0**
	baz=7.5								
BLDU	**Ballidu**	**7.45**	**199**	P			**Pn**	**20 05 17.9**	**+2.4**
FITZ	**Fitzroy Crossi**	**7.90**	**48**	Pn			**Pn**	**20 05 22.0**	**+0.3**
	5.5nm,0.3s,baz=240,slow=9.2,SNR=66								
FITZ				Sn			**Sn**	**20 06 46.7**	**-4.5**
	27nm,0.3s,baz=329,slow=22,SNR=15								
FITZ				Lg			Lg	20 07 36.2	
	25nm,0.3s,baz=305,slow=21,SNR=5.4								
FITZ	**Fitzroy Crossi**	**7.90**	**48**	P			**Pn**	**20 05 21.7**	**0.0**
	baz=8.0								
FITZ	**Fitzroy Crossi**	**7.90**	**48**	*e*Pn			**Pn**	**20 05 22.6**	**+0.9**
FITZ				*e*Sn			Sn	20 06 42.5	-8.8
FITZ				*e*Lg			Lg	20 07 36.1	
KMBL	**Kambalda**	**8.05**	**165**	P			**Pn**	**20 05 26.1**	**+2.4**
	baz=8.2								
KMBL	**Kambalda**	**8.05**	**165**	P			**Pn**	**20 05 25.9**	**+2.2**
KLBR	**Kellerberrin**	**8.14**	**191**	P			**Pn**	**20 05 26.8**	**+1.8**
	baz=8.3								
KLBR	**Kellerberrin**	**8.14**	**191**	P			**Pn**	**20 05 27.9**	**+2.9**
KLBR				S			**Sn**	**20 06 53.0**	**-4.1**
WRKA	**Warakurna**	**8.15**	**102**	P			**Pn**	**20 05 28.7**	**+3.5**
	baz=8.3								
MUN	**Mundaring**	**8.87**	**198**	P			**Pn**	**20 05 35.8**	**+0.8**
	baz=9.0								
NWAO	**Narrogin (SRO)**	**9.54**	**192**	Pn			**Pn**	**20 05 44.6**	**+0.5**
	51nm,0.3s,baz=245,slow=12,SNR=225								
NWAO				Sn			**Sn**	**20 07 27.0**	**-4.4**
	66nm,0.3s,baz=137,slow=6.9,SNR=9.8								
NWAO				Lg			Lg	20 08 22.1	
	39nm,0.3s,baz=340,slow=19,SNR=5.4								
NWAO	**Narrogin (SRO)**	**9.54**	**192**	P			**Pn**	**20 05 44.6**	**+0.5**
	baz=9.6								
NWAO	**Narrogin (SRO)**	**9.54**	**192**	*e*Pn			**Pn**	**20 05 44.5**	**+0.4**
NWAO				*e*Sn			**Sn**	**20 07 26.3**	**-5.1**
NWAO				Lg			Lg	20 08 22.1	
RKGY	**Rocky Gully**	**11.22**	**191**	P			**Pn**	**20 06 08.0**	**+0.8**
	baz=11								
RKGY	**Rocky Gully**	**11.22**	**191**	P			**Pn**	**20 06 09.0**	**+1.8**
KNRA	**Kununurra**	**11.73**	**50**	P			**Pn**	**20 06 14.1**	**-0.1**
	baz=12								
H01W3	**Cape Leeuwin H**	**12.21**	**201**	Pn

STKA	Stephens Creek	21.21	118	eP	P		20 08 16.5	+3.9
	2.8nm,0.6s							
STKA				eS	S		20 12 02.4	-6.0
FAKI	Fak Fak	23.95	33	eP	P		20 08 41.4	+0.2
	31nm,1.1s							
COCO	West Island	24.32	294	eP	P		20 08 43.3	-1.4
	287nm,1.5s							
COEN	Coen	24.33	71	eP	P		20 08 47.7	+2.8
	22nm,0.8s							
CTA	Charters Tower	25.06	87	P	P		20 08 54.5	+3.1
	20nm,0.9s,baz=261,slow=12,SNR=16							
CTAO	Charters Tower	25.06	87	eP	P		20 08 55.1	+3.7
	21nm,0.8s							
SWI	Sorong	25.29	28	P	P		20 08 57.2	+3.8
KSM	Kuching	26.45	339	eP	P		20 08 58.8	-5.2
	8.2nm,0.9s							
SBUM	Sibu	26.82	344	eP	P		20 09 03.8	-3.5
	6.8nm,1.1s							
CAN	Canberra	28.12	121	eP	P		20 09 21.8	+2.8
	10nm,1.2s							
CMAR	Chiang Mai Arr	46.34	333	P	P		20 11 53.0	-0.1
	0.5nm,0.6s,baz=160,slow=6.6,SNR=4.4							
KMI	Kunming	51.06	340	P	P		20 12 32.3	+2.7
KMI				pmax	pmax			
	comp=Z,16nm,0.5s							
ENH	Enshi	54.39	349	eP	P		20 12 53.1	-0.8
	comp=Z,4.7nm,0.5s							
NJ2	Nanjing	55.31	359	eP	P		20 13 01.6	+1.1
NJ2				pmax	pmax			
	comp=Z,15nm,0.5s							
CD2	Chengdu	56.23	344	P	P		20 13 07.6	+0.4
CD2				pmax	pmax			
	comp=Z,10.0nm,0.6s							
VNDA	Vanda	57.62	170	P	P		20 13 19.6	+3.1
	comp=Z,1.6nm,1.0s,baz=9.4,slow=7.3,SNR=3.9							
LSA	Lhasa	59.56	331	eP	P		20 13 31.4	+0.2
	comp=Z,3.3nm,0.6s							
LZH	Lanzhou	61.15	346	eP	P		20 13 44.6	+3.1
LZH				pP	sP		20 13 48.1	+2.2
LZH				sP	pP		20 13 50.3	+5.6
LZH				pmax	pmax			
	comp=Z,9.0nm,1.0s							
KSAR	Wonju Array Be	61.19	8	P	P		20 13 42.5	+0.9
KSRS	Korea Array	61.21	8	P	P		20 13 42.5	+0.8
	comp=Z,1.2nm,0.6s,baz=185,slow=8.3,SNR=8.8							
KS01	Wonju Array Si	61.23	8	eP	P		20 13 41.1	-0.7
MJAR	Matsushiro Arr	62.34	17	P	P		20 13 50.3	+0.9
	comp=Z,0.6nm,0.6s,baz=172,slow=11,SNR=2.9							
HHC	Hu-ho-hao-te	64.51	353	eP	P		20 14 06.0	+2.3
HHC				pmax	pmax			
	comp=Z,23nm,1.1s							
HHC				pmax	pmax			
	comp=Z,140nm,6.5s							
GTA	Gaotai	65.30	343	eP	P		20 14 11.8	+2.9
GTA				pP	sP		20 14 15.6	+2.2
GTA				sP	pP		20 14 18.4	+6.2
GTA				pmax	pmax			
	comp=Z,4.0nm,1.1s							
QSPA	South Pole Qui	66.51	180	eP	P		20 14 19.7	+3.2
CN2	Changchun	67.26	5	eP	P		20 14 25.5	+4.3
SONA0	Songino Array	72.04	351	eP	P		20 14 51.7	+0.8
	comp=Z,1.8nm,0.7s							
SONM	Songino Array	72.04	351	P	P		20 14 51.7	+0.8
	comp=Z,1.8nm,0.7s,baz=159,slow=5.4,SNR=10							
SONA1	Songino Array	72.05	351	eP	P		20 14 51.1	+0.2
WMQ	Urumqi	73.14	337	eP	P		20 14 58.4	+1.0
WMQ				S	S		20 24 19.0	-6.1
WMQ	Urumqi	73.14	337	SS	SS		20 29 07.5	+0.5
WMQ				pmax	pmax			
	comp=Z,3.0nm,0.6s							
WMQ				pmax	pmax			
	comp=Z,130nm,6.4s							
WMQ				LR	LR			
	comp=N,270nm,16.2s							
WMQ				LR	LR			
	comp=E,210nm,17.8s							
WMQ				LR	LR			
	comp=Z,160nm,26.0s							
KBL	Kabul	75.06	319	eP	P		20 15 07.9	-1.1
	comp=Z,16nm,1.8s							
MK32	Makanchi Array	77.69	335	eP	P		20 15 23.4	-0.1
MKAR	Makanchi Array	77.69	335	P	P		20 15 23.4	-0.1
	comp=Z,1.1nm,0.8s,baz=140,slow=7.8,SNR=7.7							
KURBB	Kurchatov Arra	82.25	335	P	P		20 15 47.3	-0.7
	comp=Z,1.1nm,0.7s,baz=144,slow=4.4,SNR=12							
KURK	Kurchatov	82.29	335	eP	P		20 15 47.3	-0.9
PEA1	Petropavlovsk-	83.25	22	eP	P		20 15 56.6	+3.5
BVAR	Borovoye Array	87.37	333	P	P		20 16 13.3	-0.4
	comp=Z,0.4nm,0.4s,baz=168,slow=7.4,SNR=4.4							
TORD	Torodi Ar. Bea	120.45	272	PKP	PKPdf		20 22 19.0	-0.3
	comp=Z,0.2nm,0.6s,baz=86,slow=2.8,SNR=3.4							
TOA1	Torodi Ar. Sit	120.46	272	ePKPdf	PKPdf		20 22 19.0	-0.3

*IDC **20** 20:11:28.6±1.0, 6°.03S×77°.03W, h0km, mb3.5/3, mb1 3.9/5, mb1mx3.7/28, mbtmp3.7/5, ML3.7/2, Error ellipse: s-maj=30.3km s-min=23.7km az=97.0*
*ISCJB **20** 20:11:32.2±0.9, 6°.14S±0°.10×77°.11W±0°.09, h41km, mb3.5/3, Error ellipse: s-maj=15.4km s-min=11.0km az=139.2*
ISC 20 20:11:34.1±0.9, 6°.2S±0°.1×77°.2W±0°.1, h41km, n8, σ0§94/9, mb3.4/3, Northern Peru

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ATAH	Atahualpa	1.54	231	Pn	Pn	20 11 59.0	-0.4
	95nm,0.3s,baz=23,slow=8.9,SNR=298						
ATAH				LR	LR	20 12 16.5	
	comp=Z,59nm,20.8s,baz=18,slow=28						
ATAH				Sn	Sn	20 12 18.2	-0.3
	70nm,0.3s,baz=66,slow=20,SNR=6.8						
NNA	Nana	5.79	177	Pn	Pn	20 12 58.0	+0.4
	3.9nm,0.3s,baz=13,slow=13,SNR=6.6						
LPAZ	La Paz	13.41	139	Pn	Pn	20 14 42.2	-0.3
	0.1nm,0.3s,baz=335,slow=7.1,SNR=2.9						
PDAR	Pinedale Array	56.90	332	P	P	20 21 15.9	+0.6
	0.2nm,0.6s,baz=124,slow=11,SNR=2.9						
YKA	Yellowknife Ar	74.21	343	P	P	20 23 06.0	-0.4
	0.3nm,0.7s,baz=138,slow=5.2,SNR=3.3						
TORD	Torodi Ar. Bea	80.64	76	P	P	20 23 42.2	-1.1
	0.5nm,0.4s,baz=288,slow=6.5,SNR=8.8						
WRA	Warramunga Arr	139.57	229	PKP	PKPdf	20 31 00.0	+1.7
	0.2nm,0.4s,baz=132,slow=1.4,SNR=4.6						
FITZ	Fitzroy Crossi	147.00	223	PKPbc	PKPab	20 31 15.3	+0.5
	0.5nm,0.5s,baz=129,slow=19,SNR=2.7						

*ISK **20** 20:13:10.6, 39°.10N×28°.98E, h5km, ML3.3*
*DDA **20** 20:13:11.0, 39°.11N×29°.01E, h5km, Ml3.5*
*CSEM **20** 20:13:11.7±0.1, 39°.08N×29°.00E, h2km, ML3.5, Error ellipse: s-maj=3.4km s-min=3.0km az=73.0*
ISC 20 20:13:11.7±1.0, 39°.12N±0°.02×28°.99E±0°.02, h7km±9km, n140, σ1§21/163, 14C-5D, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.22	250	P	Pg	20 13 16.2	0.0
DEMI				S	Sg	20 13 19.5	+0.2
DEMI	Demirci	0.22	250	iP	Pg	20 13 16.2	0.0
DEMI				iS	Sg	20 13 19.5	+0.2
GDZ	Gediz	0.39	94	P	Pg	20 13 18.7	-0.6
GDZ				S	Sg	20 13 24.2	-0.2
GDZ	Gediz	0.39	94	iP	Pg	20 13 18.7	-0.6
GDZ				iS	Sg	20 13 24.2	-0.2
TVSB	Tavsanli	0.49	48	ePG	Pg	20 13 21.8	+0.5
TVSB	Tavsanli	0.49	48	ePg	Pg	20 13 21.8	+0.5
DURS	Dursunbey	0.62	321	P	Pg	20 13 23.3	-0.5
DURS	Dursunbey	0.62	321	iP	Pg	20 13 23.3	-0.5
DURS				iS	Sn	20 13 35.9	-1.5
KULA	Kula-Manisa	0.66	203	ePG	Pg	20 13 23.8	-0.5
KULA	Kula-Manisa	0.66	203	ePg	Pg	20 13 23.8	-0.5
MANT	Manisa	0.71	208	P	Pg	20 13 24.9	-0.5
MANT				S	Sg	20 13 34.0	-0.7
MANT	Manisa	0.71	208	iP	Pg	20 13 24.9	-0.5
MANT				iS	Sg	20 13 34.0	-0.7
KHAL	Karahalli	0.85	152	P	Pg	20 13 27.4	-0.6
KHAL				S	Sg	20 13 38.9	-0.1
KHAL	Karahalli	0.85	152	iP	Pg	20 13 27.4	-0.6
KHAL				iS	Sg	20 13 38.9	-0.1
KHL	Karahalli	0.90	152	ePG	Pg	20 13 28.8	-0.2
KHL	Karahalli	0.90	152	ePg	Pg	20 13 28.8	-0.2
ORLT	Orhaneli	0.93	356	ePG	Pg	20 13 29.8	+0.2
ORLT				eSG	Sn	20 13 44.2	-0.6
ORLT	Orhaneli	0.93	356	ePg	Pg	20 13 29.8	+0.2
ORLT				eSg	Sn	20 13 44.3	-0.6
AKHS	Akhisar	0.94	256	P	Pg	20 13 29.6	-0.3
AKHS				S	Sb	20 13 43.0	-0.2
AKHS	Akhisar	0.94	256	iP	Pg	20 13 29.6	-0.3
AKHS				iS	Sb	20 13 43.0	-0.2
AKS	Akhisar	0.95	256	ePG	Pg	20 13 29.2	-0.7
AKS	Akhisar	0.95	256	ePg	Pg	20 13 29.2	-0.7
BALB	Balikesir	1.00	302	ePG	Pb	20 13 31.4	0.0
BALB				eSG	Sn	20 13 46.2	-0.4
BALB	Balikesir	1.00	302	ePg	Pb	20 13 31.4	0.0
BALB				eSg	Sn	20 13 46.3	-0.4
IGD	Bursa	1.16	8	iP	Pg	20 13 32.0	-1.9
BALY	Balya	1.23	301	P	Pg	20 13 34.8	-0.5
BALY				S	Sn	20 13 53.3	+1.0
BALY	Balya	1.23	301	iP	Pg	20 13 34.8	-0.5
BALY				iS	Sn	20 13 53.3	+1.0
KCTX	Karacabey (Bur	1.24	337	ePN	Pg	20 13 35.8	+0.2
KCTX	Karacabey (Bur	1.24	337	ePn	Pg	20 13 35.8	+0.2
MDNY	Mudanya-Bursa	1.25	356	ePN	Pg	20 13 36.6	+0.9
MDNY	Mudanya-Bursa	1.25	356	ePn	Pg	20 13 36.6	+0.9
CAVI	Cavuskoy	1.27	31	ePN	Pb	20 13 35.9	-0.1
CAVI	Cavuskoy	1.27	31	ePn	Pb	20 13 35.9	-0.1
IZI	Iznik	1.27	17	ePN	Pn	20 13 35.9	-0.2
IZI	Iznik	1.27	17	ePn	Pn	20 13 35.9	-0.2
GEMT	Gemlik	1.32	7	ePN	Pg	20 13 37.8	+0.7
GEMT	Gemlik	1.32	7	ePn	Pg	20 13 37.8	+0.7
DENT	Denizli	1.36	178	ePN	Pb	20 13 37.5	-0.1
DENT	Denizli	1.36	178	ePn	Pb	20 13 37.5	-0.1
GONE	Gonen-Balikesi	1.37	313	ePN	Pb	20 13 37.7	+0.1
GONE	Gonen-Balikesi	1.37	313	ePn	Pb	20 13 37.7	+0.1
DNZL	Cakiroluk	1.43	178	P	Pn	20 13 37.4	-0.9
DNZL	Cakiroluk	1.43	178	iP	Pn	20 13 37.4	-0.9
ADVT	Abdulvahap	1.43	24	ePN	Pg	20 13 39.1	-0.1
ADVT	Abdulvahap	1.43	24	ePn	Pg	20 13 39.1	-0.1
ARMT	Armutlu	1.45	356	ePN	Pg	20 13 39.4	-0.1
ARMT	Armutlu	1.45	356	ePn	Pg	20 13 39.4	-0.1
AYDB	Zeytinkoy-Aydi	1.45	217	ePN	Pb	20 13 38.8	-0.4
AYDB	Zeytinkoy-Aydi	1.45	217	ePn	Pb	20 13 38.8	-0.4
ESKT	Eskisehir	1.50	74	iP	Pn	20 13 38.5	-0.7
SEYT	Eskypehyr	1.50	74	P	Pn	20 13 38.5	-0.7
EDC	Edincik	1.50	325	ePN	Pb	20 13 39.6	-0.3
EDC	Edincik	1.50	325	ePn	Pb	20 13 39.6	-0.3
GPA	Golpazari	1.55	41	ePN	Pb	20 13 40.4	-0.4
GPA	Golpazari	1.55	41	ePn	Pb	20 13 40.4	-0.4
BOLV	Bolvadin	1.58	104	P	Pn	20 13 40.2	-0.2
BOLV	Bolvadin	1.58	104	iP	Pn	20 13 40.2	-0.2
KNL	Bal¯kesir	1.61	316	iP	Pn	20 13 41.0	+0.3
DKL	Dikili	1.62	269	ePN	Pb	20 13 41.8	-0.2
DKL	Dikili	1.62	269	ePn	Pb	20 13 41.8	-0.2
AYDN	Tasoluk	1.70	211	P	Pn	20 13 40.9	-0.9
AYDN	Tasoluk	1.70	211	iP	Pn	20 13 40.9	-0.9
BUY	Buyukada	1.73	3	P	Pn	20 13 41.4	-0.9
BUY	Buyukada	1.73	3	iP	Pn	20 13 41.4	-0.9
GULT	Gulveren	1.76	41	ePN	Pb	20 13 43.9	-0.6
GULT	Gulveren	1.76	41	ePn	Pb	20 13 43.9	-0.6
ISP	Isparta	1.77	137	ePN	Pn	20 13 43.5	+0.6
ISP	Isparta	1.77	137	⇑iP	Pn	20 13 42.2	-0.7
ISP				S	Sg	20 14 10.8	+2.2
ISP	Isparta	1.77	137	⇑iP	Pn	20 13 42.2	-0.7
ISP	Isparta	1.77	137	ePn	Pn	20 13 43.5	+0.6
ISP				S	Sg	20 14 10.8	+2.2
HRT	Hereke	1.78	17	ePN	Pb	20 13 44.4	-0.3
HRT	Hereke	1.78	17	ePn	Pb	20 13 44.4	-0.3
AYVA	Ayvalik	1.79	277	iP	Pg	20 13 46.8	+0.7
BAGO	Egridir - ISPA	1.81	128	iP	Pb	20 13 44.3	-0.9
BAGO				iS	Sg	20 14 13.1	+3.3
KRBG	Karabiga-Canak	1.82	315	ePN	Pb	20 13 44.4	-1.0
KRBG	Karabiga-Canak	1.82	315	ePn	Pb	20 13 44.4	-1.0
MRMT	Marmara Adasi	1.83	325	ePN	Pb	20 13 44.6	-0.9
MRMT	Marmara Adasi	1.83	325	ePn	Pb	20 13 44.7	-0.9
SPNC	Sapanca-Adapaz	1.87	33	ePN	Pb	20 13 45.8	-0.4
SPNC	Sapanca-Adapaz	1.87	33	ePn	Pb	20 13 45.8	-0.4
GOLH	Golhisar	1.93	166	P	Pn	20 13 44.9	-0.2
GOLH	Golhisar	1.93	166	iP	Pn	20 13 44.9	-0.2
GOLH				iS	Sg	20 14 22.1	+8.2
ISK	Istanbul-Kandi	1.94	2	ePN	Pn	20 13 46.2	+1.0
ISK	Istanbul-Kandi	1.94	2	ePn	Pn	20 13 46.2	+1.0
DGB	¯zmir	1.96	238	iP	Pg	20 13 49.4	0.0
SVRH	Sivrihisar-ESK	2.00	80	ePN	Pb	20 13 47.3	-1.1
SVRH	Sivrihisar-ESK	2.00	80	ePn	Pb	20 13 47.3	-1.1
URLA	Izmir	2.02	249	iP	Pg	20 13 51.0	+0.6
BGKT	Bogazkoy	2.07	356	ePN	Pb	20 13 48.4	-1.2
BGKT	Bogazkoy	2.07	356	ePn	Pb	20 13 48.4	-1.2
AUMIH	MIHALICIK	2.07	68	P	Pb	20 13 49.9	+0.1
AUMIH	MIHALICIK	2.07	68	iP	Pb	20 13 49.9	+0.1
SILT	Sile	2.09	14	ePN	Pb	20 13 48.9	-1.1
SILT	Sile	2.09	14	ePn	Pb	20 13 48.9	-1.1
RKY	Sarkoy-Tekirda	2.10	319	ePN	Pb	20 13 49.1	-0.9
RKY	Sarkoy-Tekirda	2.10	319	ePn	Pb	20 13 49.2	-0.9
SART	Tekirdag	2.10	319	P	Pb	20 13 50.9	+0.8
SART	Tekirdag	2.10	319	iP	Pb	20 13 50.9	+0.8
SART				iS	Sg	20 14 18.2	-0.8
BTAS	Taskesti	2.12	46	iP	Pg	20 13 52.5	+0.1
KLYT	Kilyos	2.13	1	ePN	Pn	20 13 48.6	+0.9
KLYT	Kilyos	2.13	1	ePn	Pn	20 13 48.6	+0.9
ZEY	¯zmir	2.13	246	iP	Pn	20 13 45.1	-2.7
ZEY				iS	Sg	20 14 22.8	+2.5
CTKS	Kestanelik-??a	2.15	350	ePN	Pn	20 13 49.1	+1.2
CTKS	Kestanelik-??a	2.15	350	ePn	Pn	20 13 49.2	+1.2
MDUB	Mudurnu	2.17	51	ePN	Pb	20 13 50.2	-1.3
MDUB	Mudurnu	2.17	51	ePn	Pb	20 13 50.2	-1.3
TKR	Tekirdag	2.17	330	ePN	Pn	20 13 49.7	+1.3
TKR	Tekirdag	2.17	330	ePn	Pn	20 13 49.7	+1.3
KAND	Kocaeli-Kandir	2.18	25	P	Pn	20 13 47.8	-0.6
KAND	Kocaeli-Kandir	2.18	25	iP	Pn	20 13 47.8	-0.6
SAHE	Sakarya_HENDEK	2.25	39	P	Pn	20 13 48.7	-0.7
SAHE	Sakarya_HENDEK	2.25	39	iP	Pn	20 13 48.7	-0.7
SAHE				iS	Sg	20 14 24.5	+0.5
KIZT	Kizilcal	2.27	95	ePN	Pn	20 13 50.5	+0.7
KIZT	Kizilcal	2.27	95	ePn	Pn	20 13 50.5	+0.7
KORT	Korkueli	2.37	153	P	Pn	20 13 51.6	+0.4
KORT	Korkueli	2.37	153	iP	Pn	20 13 51.6	+0.4
CTYL	Yalikoy Yolu	2.41	347	ePN	Pb	20 13 53.6	-1.9
CTYL	Yalikoy Yolu	2.41	347	ePn	Pb	20 13 53.6	-1.9
KESN	Edirne-Kesan	2.46	315	iP	Pg	20 13 57.9	-1.0
KESN				iS	Sg	20 14 29.8	-1.0
KDHN	Kadinhani	2.52	103	P	Pb	20 13 55.9	-1.4
KDHN	Kadinhani	2.52	103	iP	Pb	20 13 55.9	-1.4
BCAM	Yenicaga	2.91	53	P	Pn	20 13 57.8	-0.8
BCAM	Yenicaga	2.91	53	iP	Pn	20 13 57.8	-0.8
MANR	Mangalia	4.70	356	⇓iP	Pb	20 14 35.3	+0.8
MSAB	Monastry St. A	5.04	350	⇑iP	Pn	20 14 26.5	-1.3
MSAB	Monastry St. A	5.04	350	⇑iP	Pn	20 14 26.5	-1.3
TIRR	Tirgusor	5.35	356	⇑iP	Pn	20 14 31.3	-0.7
TIRR	Tirgusor	5.35	356	⇑iP	Pn	20 14 31.3	-0.7
MLR	Muntele Rosu	6.75	341	⇓iP	Pn	20 14 52.7	+1.3
MLR	Muntele Rosu	6.75	341	⇓iP	Pn	20 14 52.7	+1.3
PLOR	Plostina	6.95	346	⇑iP	Pn	20 14 57.0	+3.0
PLOR	Plostina	6.95	346	⇑iP	Pn	20 14 57.0	+3.0
VRI	Vrincioaia	6.95	347	⇑iP	Pn	20 14 56.2	+2.3
VRI	Vrincioaia	6.95	347	⇑iP	Pn	20 14 56.2	+2.3
ARR	Arges	7.03	334	⇑iP	Pn	20 14 48.1	-7.0
DOPR	Dopca	7.34	340	⇑iP	Pn	20 14 54.5	-4.9
TESR	Tescani	7.58	348	⇑iP	Pn	20 15 04.6	+1.9
TESR	Tescani	7.58	348	⇑iP	Pn	20 15 04.6	+1.9
MDVR	Moldovita	7.83	319	⇓iP	Pn	20 15 08.3	+2.2
MDVR	Moldovita	7.83	319	⇓iP	Pn	20 15 08.3	+2.2

*IDC **20** 20:13:35.3±0.5, 0°.47N×98°.51E, h0km, mb4.3/21, mb1 4.4/22, mb1mx4.2/52, mbtmp4.3/22, ML4.7/1, Error ellipse: s-maj=20.3km s-min=11.5km az=62.0*
*ISCJB **20** 20:13:41.7±0.7, 0°.42N±0°.04×98°.47E±0°.05, h61km±5km, mb4.5/43, Error ellipse: s-maj=8.5km s-min=5.2km az=145.4*
*NEIC **20** 20:13:42.0±0.8, 0°.37N×98°.51E, h52km±7km, mb4.5/19, Error ellipse: s-maj=8.8km s-min=5.5km az=59.0*
*DJA **20** 20:13:43.2±0.8, 1°.N±5°×9°.8E±°, h29km±9km, M4.7/12, mb4.7/5, MLv4.7/12*
*KLM **20** 20:13:44.5, 0°.60N×98°.34E, h65km, mb4.5, ML4.2, MS6.0*
ISC 20 20:13:41.6±1.1, 0°.40N±0°.05×98°.45E±0°.05, h44km±10km, n139, σ1§48/140, mb4.5/44, 8C-11D, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MNSI	Mandailing Nat	1.20	71	P	Pn	20 14 03.1	+1.2
GSI	Gunungsitoli	1.25	316	P	Pn	20 14 04.1	+1.4
GSI	Gunungsitoli	1.25	316	ePn	Pn	20 14 04.0	+1.4
PPI	Padang Panjang	2.13	114	P	Pn	20 14 17.8	+3.1
PSI	Prapat	2.43	11	ePn	Pn	20 14 18.6	-0.4
BKNI	Bangkinang	2.59	92	P	Pn	20 14 22.2	+1.1
BKNI	Bangkinang	2.59	92	ePn	Pn	20 14 22.2	+1.1
TSI	Tuntungan	3.08	2	P	Pn	20 14 28.5	+0.7
FRIM	Kepong	4.25	48	⇑P	Pn	20 14 45.4	+1.6
MLSI	Meulaboh, Aceh	4.35	332	P	Pn	20 14 45.8	+0.6
LHMI	Lhok Sumawe	5.03	343	P	Pn	20 14 49.7	-4.8
LHMI	Lhok Sumawe	5.03	343	ePn	Pn	20 14 55.1	+0.7
KGM	Kluang	5.13	72	⇓P	Pn	20 14 57.2	+1.3
KULM	Kulim	5.33	24	⇓P	Pn	20 15 00.1	+1.3
KULM	Kulim	5.33	24	ePn	Pn	20 15 00.0	+1.3
MYKOM	Kota Tinggi	5.58	76	⇓P	Pn	20 15 03.6	+1.5
MYKOM	Kota Tinggi	5.58	76	ePn	Pn	20 15 03.0	+1.0
TPRI	Tanjung Pinang	6.10	85	P	Pn	20 15 10.3	+1.0
	39nm,0.6s,0.3nm						
KTGM	Kuala Trenggan	6.77	44	⇑P	Pn	20 15 20.4	+1.9
SKLT	Songkhla	7.07	18	P	Pn	20 15 24.4	+1.9
	58nm,0.8s,0.2nm						
PKDT	Phuket	7.44	359	P	Pn	20 15 30.1	+2.4
	38nm,0.6s,0.1nm						
TRTT	Trang	7.49	10	P	Pn	20 15 29.8	+1.4
	42nm,0.7s,0.2nm						
KASI	Kota Agung	8.43	134	P	Pn	20 15 44.3	+3.0
SURT	Suratani	8.51	2	P	Pn	20 15 44.4	+2.1
	7.3nm,1.0s,0.0nm						
CISI	Cisompet, Garu	12.24	130	ePn	Pn	20 16 29.8	-3.6
COCO	West Island	12.61	187	ePn	Pn	20 16 37.4	-1.0
SBUM	Sibu	13.92	81	⇓P	P	20 17 00.9	-2.6
SBUM	Sibu	13.92	81	ePn	Pn	20 16 59.6	+3.3
SRAK	Srakaew	13.99	15	P	P	20 17 04.6	+0.4
UGM	Wanagama	14.60	125	ePn	Pn	20 17 02.3	-3.2
BTM	Bintulu	14.89	79	⇓P	P	20 17 15.9	+1.6
PBKT	Sadao Pong	16.26	9	P	P	20 17 29.8	+0.3
	17nm,0.9s						
UBPT	Khong Chiam	16.33	25	P	P	20 17 29.5	-0.8
	13nm,1.4s						
KHON	Khomkaen	16.42	15	P	Pn	20 17 29.3	+0.3
	9.8nm,0.8s						
SUKH	Sukhothai	17.02	4	P	P	20 17 42.1	+4.3
	3.0nm,0.9s,41nm						
SKNT	Sakolnakorn	17.35	18	P	Pn	20 17 41.1	+0.4
	11nm,1.0s						
UTTA	Uttaradit	17.36	7	P	P	20 17 42.2	+0.5
	2.6nm,0.6s,36nm						
PANO	Nakornpanom	17.72	20	P	Pn	20 17 44.2	-1.0
	75nm,1.1s						
CM01	Chiang Mai Arr	17.92	2	ePn	Pn	20 17 47.3	-0.3
CM31	Chiang Mai Arr	17.95	2	ePn	Pn	20 17 46.8	-1.3
CMAR	Chiang Mai Arr	17.95	2	P	Pn	20 17 47.5	-0.6
	0.9nm,0.3s,baz=191,slow=11,SNR=22						
JAGI	Jajag, Banyuwa	17.96	120	ePn	P	20 17 46.6	-1.8
	61nm,1.3s						
NONG	Nongkai	18.15	14	P	Pn	20 17 51.2	+0.7
	61nm,1.3s,6μm						
CHTO	Chiang Mai	18.31	2	P	Pn	20 17 55.1	+2.7
	39nm,0.7s						
CHTO	Chiang Mai	18.31	2	eP	P	20 17 52.0	-0.1
	2.7nm,0.6s						
KKM	Kota Kinabalu	18.60	72	⇓P	Pn	20 17 57.2	+1.1
KKM	Kota Kinabalu	18.60	72	eP	P	20 17 54.0	-1.5
	18nm,0.8s						
SDKM	Sandakan	19.43	74	⇓P	Pn	20 18 06.2	+0.2
CRAI	Chiangrai	19.80	5	P	P	20 18 09.0	+0.6
	175nm,0.7s,87μm						
MYLDM	Lahad Datu	20.58	76	eP	Pn	20 18 18.9	-0.6
	12nm,0.8s						
KMI	Kunming	24.93	9	P	P	20 18 59.6	-1.4
KMI				pmax	pmax		
	comp=Z,16nm,0.5s						
H08S2	Diego Garcia H	27.08	252	T	T	20 46 56.3	
	baz=73,slow=75,SNR=717						
H08S3	Diego Garcia H	27.09	252	T	T	20 46 44.5	
	baz=73,slow=75,SNR=188						
H08S1	Diego Carcia H	27.10	252	T	T	20 46 45.5	
	baz=

MAKZ Makanchi 48.42 345 *e*P **P 20 22 19.6 +0.2**
comp=Z,6.9nm,1.2s
MAKZ *e*PcP **PcP 20 23 44.5 -0.8**
CN2 Changchun 49.47 26 *e*P **P 20 22 30.0 +2.5**
TLY Talaya 51.28 4 *e*P **P 20 22 36.9 -4.2**
TLY Talaya 51.28 4 PKP2bc **P 20 22 36.9 -4.2**
comp=Z,3.4nm,0.7s,baz=232,slow=4.0,SNR=5.5
STKA Stephens Creek 51.90 132 P **P 20 22 45.9 -0.2**
comp=Z,1.9nm,0.5s,baz=313,slow=6.7,SNR=15
STKA PcP **PcP 20 23 58.6 +0.2**
comp=Z,1.2nm,0.5s,baz=317,slow=3.0,SNR=2.2
STKA Stephens Creek 51.90 132 *e*P **P 20 22 45.7 -0.3**
comp=Z,8.5nm,1.8s
STKA *e*PcP **PcP 20 23 58.6 +0.2**
GEYT Alibeck 52.62 320 P **P 20 22 51.4 0.0**
comp=Z,1.0nm,0.5s,baz=90,slow=19,SNR=2.8
ZAA0 Zalesovo Array 54.55 350 *e*P **P 20 23 04.9 -0.2**
ZALV Zalesovo Beam 54.55 350 P **P 20 23 04.8 -0.3**
comp=Z,4.8nm,0.4s,baz=169,slow=6.7,SNR=13
ZAA1 Zalesovo Array 54.55 350 *e*P **P 20 23 04.8 -0.3**
KLR Kul'dur 56.42 26 P **P 20 23 18.2 -0.5**
comp=Z,3.3nm,0.7s,baz=235,slow=8.8,SNR=9.5
BVAR Borovoye Array 57.41 340 P **P 20 23 24.8 -0.9**
comp=Z,1.6nm,0.5s,baz=144,slow=9.4,SNR=16
ZRNK Zerenda 57.83 339 *e*P **P 20 23 27.8 -0.8**
comp=Z,5.5nm,0.9s
ABKAR Akbulak array 58.80 332 *e*P **P 20 23 34.5 -0.9**
KMBO Kilima Mbogo 61.21 269 *e*P **P 20 23 54.7 +1.8**
comp=Z,4.1nm,1.0s
KBZ Khabaz 65.49 319 P **P 20 24 20.4 +0.1**
comp=Z,2.0nm,0.7s,baz=107,slow=6.7,SNR=5.3
EIL Elat 66.93 302 P **P 20 24 30.7 +0.8**
comp=Z,4.0nm,0.8s,baz=358,slow=6.2,SNR=5.0
BR101 Keskin Array S 70.57 312 *e*P **P 20 24 51.3 -1.3**
BR131 Keskin Array S 70.57 312 *e*P **P 20 24 51.3 -1.3**
BRTR Keskin Array B 70.57 312 P **P 20 24 51.3 -1.3**
comp=Z,1.8nm,0.7s,baz=134,slow=6.9,SNR=14
BR231 Keskin MP Arra 71.24 312 *e*P **P 20 24 52.6 -4.0**
MAW Mawson 72.22 194 P **P 20 25 03.9 +2.2**
comp=Z,2.9nm,0.7s,baz=340,slow=4.5,SNR=6.9
MAW Mawson 72.22 194 *e*P **P 20 25 03.7 +2.0**
comp=Z,3.7nm,1.4s
TIXI Tiksi 73.76 10 *e*P **P 20 25 11.2 +0.4**
comp=Z,3.9nm,0.6s
BOSA Boshof 75.46 240 P **P 20 25 22.1 +0.3**
comp=Z,2.2nm,0.8s,baz=94,slow=5.9,SNR=4.3
TIRR Tirgusor 75.56 316 ⇑*i*P P 20 25 12.9 -8.8
SORM Soroca 76.51 320 ⇑*i*P **P 20 25 26.6 -0.5**
AKASG Malin Array Be 76.65 322 P **P 20 25 26.6 -1.2**
comp=Z,0.7nm,0.4s,baz=89,slow=4.6,SNR=6.3
VRI Vrincioaia 77.05 317 ⇓*i*P **P 20 25 30.6 +0.4**
PLOR Plostina 77.10 317 ⇑*i*P **P 20 25 31.7 +1.2**
TESR Tescani 77.25 318 ⇑*i*P **P 20 25 31.3 0.0**
MLR Muntele Rosu 77.50 317 ⇑*i*P **P 20 25 33.0 0.0**
MLR Muntele Rosu 77.50 317 *e*P **P 20 25 32.9 0.0**
comp=Z,6.3nm,0.9s
RPZ Rata Peaks 77.76 135 P **P 20 25 34.7 +0.5**
comp=Z,12nm,0.5s,baz=286,slow=4.9,SNR=12
VOIR 78.11 316 ⇑*i*P **P 20 25 35.8 -0.4**
ARR Arges 78.38 316 ⇓*i*P P 20 25 31.0 -6.7
BUR08 Bucovina Ar. S 78.46 319 *e*P **P 20 25 38.1 -0.1**
SYO Syowa Base 79.64 198 ⇓*e*P **P 20 25 44.6 +0.6**
SYO Syowa Base 79.64 198 ⇓*e*X **PcP 20 25 49.0 -2.7**
KOLS Kolonicke sedl 80.63 320 *e*P **P 20 25 50.5 +0.7**
FIA0 FINESS Array S 81.28 332 *e*P **P 20 25 52.5 -0.5**
FINES FINESS Array B 81.28 332 P **P 20 25 52.5 -0.5**
comp=Z,2.9nm,0.5s,baz=105,slow=5.5,SNR=32
KECS Kecovo 81.72 319 *e*P **P 20 25 55.7 +0.1**
ARA0 ARCESS Array S 83.70 340 *e*P **P 20 26 05.8 +0.3**
ARCES ARCESS Array B 83.70 340 P **P 20 26 05.8 +0.3**
comp=Z,2.0nm,0.9s,baz=101,slow=5.1,SNR=5.9
GEA0 GERESS Array S 86.23 319 *e*P **P 20 26 18.3 -0.4**
GERES GERESS Array B 86.23 319 P **P 20 26 18.7 0.0**
comp=Z,0.7nm,0.6s,baz=81,slow=4.2,SNR=8.2
QSPA South Pole Qui 90.35 180 *e*P **P 20 26 39.5 +1.6**
PDAR Pinedale Array 130.20 27 PKP **PKPdf 20 32 47.2 -0.4**
comp=Z,0.3nm,0.5s,baz=204,slow=3.3,SNR=3.3
LTX Lajitas 143.66 34 *e*PKPdf PKPbc 20 33 10.1 0.0
TXAR Lajitas Array 143.66 34 PKP PKPbc 20 33 10.1 0.0
comp=Z,0.3nm,0.4s,baz=336,slow=0.5,SNR=6.9
CPUP Villa Florida 145.23 220 PKPbc **PKPdf 20 33 15.6 +0.3**
comp=Z,4.8nm,0.6s,baz=122,slow=2.2,SNR=14
CPUP Villa Florida 145.23 220 *e*PKPbc **PKPdf 20 33 15.5 +0.2**
LPAZ La Paz 159.40 219 PKPab **PKPab 20 34 16.1 +1.4**
comp=Z,0.8nm,0.9s,baz=123,slow=6.6,SNR=3.8

*IDC **20** 20:20:48.5±1.1, 35°.74N×140°.94E, h0km, mb3.6/5, mb1 3.6/8, mb1mx3.4/55, mbtmp3.6/8, ML3.6/3, MS3.3/1, Ms1 3.3/1, ms1mx2.9/45, Error ellipse: s-maj=28.9km s-min=17.0km az=71.0*
*ISCJB **20** 20:20:50.6±0.9, 35°.84N±0°.05×141°.00E±0°.08, h30km±4km, mb3.5/5, Error ellipse: s-maj=11.7km s-min=7.0km az=159.2*
*JMA **20** 20:20:51.7±0.1, 35°.82N×140°.91E, h29km±1km, M3.5*
JMA Felt II J1.
ISC 20 20:20:52.2±1.0, 35°.83N±0°.04×140°.90E±0°.07, h25km±6km, n21, σ0°92/20, mb3.5/5, 3C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.13**	**194**	⇑P	**Pb**	**20 20 56.9**	**-0.2**
CHOJ				S	**Sb**	**20 21 00.7**	**+0.4**
JYT	**Yasato**	**0.69**	**305**	⇓P	**Pb**	**20 21 04.9**	**-0.7**
JYT				*e*S	**Sb**	**20 21 14.4**	**-0.4**
JCN	**Nagara**	**0.70**	**234**	⇑P	**Pn**	**20 21 06.2**	**-0.3**
JHO	**Hitachi**	**0.82**	**341**	P	**Pb**	**20 21 06.9**	**-0.9**
BSO4	**Boso 4**	**0.96**	**209**	⇑P	**Pb**	**20 21 10.1**	**+0.1**
MJAR	**Matsushiro Arr**	**2.29**	**289**	Pn	**Pn**	**20 21 27.4**	**-1.0**
	6.3nm,0.3s,baz=167,slow=1.2,SNR=77						
MJAR				Sn	**Sn**	**20 21 56.3**	**+0.5**
	5.0nm,0.3s,baz=129,slow=14,SNR=7.7						
MAT	**Matsushiro**	**2.29**	**289**	P	**Pn**	**20 21 28.6**	**+0.2**
MAT				S	**Sn**	**20 21 56.8**	**+1.0**
JHJ	**Hachijo jima 2**	**2.86**	**199**	Pn	**Pn**	**20 21 35.8**	**-0.4**
	18nm,0.3s,baz=272,slow=12,SNR=12						
JHJ				Sn	**Sn**	**20 22 09.0**	**-0.8**
	16nm,0.3s,baz=221,slow=21,SNR=6.6						
JHJ				LR	LR	20 22 12.2	
	comp=Z,491nm,18.9s,baz=304,slow=30						
ASAJ	**Asahikawa**	**8.38**	**8**	Pn	**Pn**	**20 22 52.1**	**+0.2**
	1.3nm,0.3s,baz=208,slow=13,SNR=14						
H11N2	**WAKE ISLAND Hy**	**27.92**	**118**	T	T	20 55 41.0	
	baz=311,slow=75,SNR=53						
H11N1	**WAKE ISLAND Hy**	**27.93**	**118**	T	T	20 55 41.8	
	baz=311,slow=75,SNR=72						
H11N3	**WAKE ISLAND Hy**	**27.94**	**118**	T	T	20 55 42.5	
	baz=311,slow=75,SNR=69						
SONM	**Songino Array**	**28.13**	**306**	P	**P**	**20 26 43.4**	**+1.1**
	0.7nm,0.7s,baz=103,slow=5.3,SNR=2.9						
H11S1	**WAKE ISLAND Hy**	**28.58**	**120**	T	T	20 56 33.2	
	baz=312,slow=75,SNR=37						
H11S3	**WAKE ISLAND Hy**	**28.58**	**120**	T	T	20 56 34.2	
	baz=312,slow=75,SNR=39						
H11S2	**WAKE ISLAND Hy**	**28.60**	**120**	T	T	20 56 32.7	
	baz=312,slow=75,SNR=34						
ZALV	**Zalesovo Beam**	**42.43**	**313**	P	**P**	**20 28 46.5**	**+1.9**
	0.6nm,0.6s,baz=115,slow=9.7,SNR=2.9						
MKAR	**Makanchi Array**	**44.41**	**303**	P	**P**	**20 29 00.6**	**-0.2**
	0.8nm,0.8s,baz=85,slow=9.8,SNR=6.7						
WRA	**Warramunga Arr**	**55.82**	**187**	P	**P**	**20 30 25.5**	**-1.9**
	0.3nm,0.4s,baz=3.9,slow=7.3,SNR=6.1						
ASAR	**Alice Springs**	**59.55**	**187**	P	**P**	**20 30 53.8**	**+0.2**
	0.3nm,0.8s,baz=16,slow=14,SNR=3.5						
LPAZ	**La Paz**	**147.65**	**61**	PKPbc	**PKPbc**	**20 40 35.3**	**-0.5**
	0.5nm,0.5s,baz=267,slow=4.3,SNR=2.0						

*IDC **20** 20:22:28.6±1.1, 36°.90N×140°.54E, h0km, mb3.6/5, mb1 3.7/7, mb1mx3.5/52, mbtmp3.6/7, ML3.4/2, Error ellipse: s-maj=20.9km s-min=14.9km az=157.0*
*ISCJB **20** 20:22:29.7±0.7, 36°.90N±0°.03×140°.60E±0°.05, h15km±5km, mb3.5/5, Error ellipse: s-maj=7.3km s-min=5.2km az=22.3*
*JMA **20** 20:22:30.0, 36°.89N×140°.54E, h7km±1km, M3.5*
JMA Felt II J1.
ISC 20 20:22:29.6±1.2, 36°.92N±0°.04×140°.48E±0°.04, h4km±9km, n22, σ0°72/23, mb3.7/5, 5C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.31**	**55**	⇑P	**Pg**	**20 22 35.8**	**+0.1**
ONAJ				*e*S	**Sg**	**20 22 40.0**	**+0.2**
JHO	**Hitachi**	**0.32**	**167**	⇑P	**Pg**	**20 22 35.4**	**-0.4**
JSB	**Shiboa**	**0.45**	**276**	⇑P	**Pb**	**20 22 40.4**	**+0.2**
JSB				*e*S	**Sb**	**20 22 47.7**	**+0.4**
JFK	**Kawauchi**	**0.54**	**35**	⇑P	**Pg**	**20 22 40.2**	**+0.1**
JFK				*e*S	**Sg**	**20 22 46.7**	**-0.5**
JFT	**Otama**	**0.61**	**349**	P	**Pb**	**20 22 42.5**	**-0.3**
JFT				*e*S	**Sb**	**20 22 51.4**	**-0.4**
JFY	**Yanaizu**	**0.79**	**308**	P	**Pb**	**20 22 46.4**	**+0.2**
JFY				S	**Sb**	**20 22 57.1**	**+0.2**
JAG	**Ashikaga**	**0.96**	**239**	⇑P	**Pg**	**20 22 48.1**	**0.0**
MJAR	**Matsushiro Arr**	**1.86**	**259**	Pg	**Pn**	**20 23 03.2**	**+0.8**
	28nm,0.3s,baz=83,slow=16,SNR=24						
MJAR				Lg	Lg	20 23 28.6	
	34nm,0.3s,baz=84,slow=28,SNR=18						
MAT	**Matsushiro**	**1.86**	**259**	P	**Pn**	**20 23 03.1**	**+0.7**
MAT				S	**Sg**	**20 23 29.1**	**-0.5**
JHJ	**Hachijo jima 2**	**3.84**	**189**	Pn	**Pn**	**20 23 30.2**	**+0.8**
	5.5nm,0.3s,baz=306,slow=23,SNR=2.4						
JHJ				Sn	**Sn**	**20 24 16.2**	**+1.2**
	8.9nm,0.3s,baz=256,slow=22,SNR=3.1						
ASAJ	**Asahikawa**	**7.37**	**12**	Pn	**Pn**	**20 24 19.0**	**+1.1**
	0.6nm,0.3s,baz=29,slow=34,SNR=3.2						
SONM	**Songino Array**	**27.23**	**304**	P	**P**	**20 28 13.9**	**-0.8**
	0.5nm,0.7s,baz=101,slow=7.5,SNR=3.1						
H11N2	**WAKE ISLAND Hy**	**28.74**	**119**	T	T	20 58 14.0	
	baz=312,slow=75,SNR=41						
H11N1	**WAKE ISLAND Hy**	**28.75**	**119**	T	T	20 58 14.6	
	baz=312,slow=75,SNR=58						
H11N3	**WAKE ISLAND Hy**	**28.76**	**119**	T	T	20 58 15.3	
	baz=312,slow=75,SNR=42						
H11S1	**WAKE ISLAND Hy**	**29.43**	**121**	T	T	20 59 06.6	
	baz=314,slow=76,SNR=156						
H11S3	**WAKE ISLAND Hy**	**29.43**	**121**	T	T	20 59 04.7	
	baz=314,slow=76,SNR=98						
H11S2	**WAKE ISLAND Hy**	**29.45**	**121**	T	T	20 59 05.2	
	baz=314,slow=76,SNR=112						
MKAR	**Makanchi Array**	**43.55**	**302**	P	**P**	**20 30 35.0**	**+0.6**
	0.2nm,0.5s,baz=80,slow=10,SNR=2.7						
WRA	**Warramunga Arr**	**56.85**	**187**	P	**P**	**20 32 13.8**	**-1.6**
	0.4nm,0.4s,baz=3.8,slow=7.4,SNR=5.2						
FINES	**FINESS Array B**	**68.56**	**332**	P	**P**	**20 33 32.4**	**-0.8**
	1.2nm,0.9s,baz=52,slow=11,SNR=2.9						
TXAR	**Lajitas Array**	**90.78**	**52**	P	**P**	**20 35 34.5**	**+0.1**
	0.2nm,0.5s,baz=306,slow=2.1,SNR=2.8						

*IDC **20** 20:22:51.6±2.4, 7°.24S×147°.11E, h0km, mb3.4/3, mb1 3.6/5, mb1mx3.4/42, mbtmp3.4/5, ML2.5/2, Error ellipse: s-maj=70.2km s-min=21.7km az=84.0*
ISC 20 20:22:56.7±1.8, 7°.4S±0°.1×147°.0E±0°.3, h33km, n6, σ1°19/7, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.04**	**177**	Pn	**Pn**	**20 23 29.9**	**+1.0**
	16nm,0.3s,baz=347,slow=7.7,SNR=14						
PMG				Sn	**Sb**	**20 23 57.6**	**-0.6**
	9.4nm,0.3s,baz=20,slow=20,SNR=4.1						
WRA	**Warramunga Arr**	**17.56**	**223**	P	**Pn**	**20 26 58.5**	**-0.6**
	0.1nm,0.3s,baz=48,slow=11,SNR=3.6						
ASAR	**Alice Springs**	**20.55**	**216**	P	**P**	**20 27 32.6**	**-0.1**
	1.0nm,0.7s,baz=31,slow=13,SNR=11						
CMAR	**Chiang Mai Arr**	**53.93**	**299**	P	**P**	**20 32 19.0**	**+1.4**
	0.3nm,0.6s,baz=123,slow=6.6,SNR=3.5						
MKAR	**Makanchi Array**	**78.56**	**321**	P	**P**	**20 34 54.0**	**-1.0**
	0.3nm,0.7s,baz=104,slow=5.4,SNR=3.5						
TORD	**Torodi Ar. Bea**	**145.44**	**282**	PKPbc	**PKPdf**	**20 42 31.6**	**-0.9**
	0.5nm,0.5s,baz=81,slow=4.7,SNR=6.4						

*IDC **20** 20:23:29.7±1.4, 7°.10S×147°.09E, h0km, mb3.7/8, mb1 3.9/11, mb1mx3.8/43, mbtmp3.8/11, ML3.8/2, Error ellipse: s-maj=44.9km s-min=16.0km az=85.0*
*NEIC **20** 20:23:30.7±0.5, 7°.18S×147°.13E, h10km, mb4.1/10, Error ellipse: s-maj=12.5km s-min=8.4km az=90.0*
*ISCJB **20** 20:23:32.3±0.6, 7°.18S±0°.05×147°.07E±0°.09, h33km, mb4.3/13, Error ellipse: s-maj=12.6km s-min=7.3km az=175.5*
ISC 20 20:23:34.3±0.7, 7°.22S±0°.06×147°.0E±0°.1, h33km, n31, σ1°59/33, mb4.0/13, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.18**	**176**	Pn	**Pn**	**20 24 07.8**	**-0.5**
	72nm,0.3s,baz=134,slow=6.8,SNR=8.8						
PMG				Sn	**Sb**	**20 24 40.0**	**+0.3**
	130nm,0.3s,baz=18,slow=22,SNR=9.9						
PMG	**Port Moresby**	**2.18**	**176**	*e*Pn	**Pn**	**20 24 07.0**	**-1.3**
PMG				*e*Sn	**Sn**	**20 24 36.0**	**+1.8**
COEN	**Coen**	**7.68**	**209**	*e*Pn	**Pn**	**20 25 23.2**	**-0.8**
COEN				*e*Sn	**Sn**	**20 26 45.3**	**-4.6**
CTA	**Charters Tower**	**12.81**	**183**	Pn	**Pn**	**20 26 35.9**	**+1.6**
	0.3nm,0.3s,baz=358,slow=12,SNR=5.9						
WRAB	**Tennant Creek**	**17.62**	**223**	*e*Pn	**P**	**20 27 38.0**	**-0.2**
	15nm,1.4s						
WB2	**Warramunga Arr**	**17.62**	**223**	*e*Pn	**Pn**	**20 27 37.2**	**-0.3**
	20nm,1.5s						
WR1	**Warramunga Arr**	**17.63**	**223**	*e*Pn	**Pn**	**20 27 37.5**	**-0.1**
	9.2nm,1.1s						
WRA	**Warramunga Arr**	**17.63**	**223**	P	**Pn**	**20 27 37.5**	**-0.1**
	0.3nm,0.3s,baz=52,slow=12,SNR=7.1						
EIDS	**Eidsvold**	**18.46**	**168**	*e*P	**P**	**20 27 45.0**	**-2.4**
	24nm,1.3s						
AS01	**Alice Springs**	**20.60**	**216**	*e*P	**P**	**20 28 11.5**	**+0.6**
AS31	**Alice Springs**	**20.63**	**216**	*e*P	Pn	20 28 13.5	-0.1
	3.2nm,1.2s						
ASAR	**Alice Springs**	**20.63**	**216**	P	**P**	**20 28 11.7**	**+0.5**
	1.9nm,0.7s,baz=32,slow=12,SNR=7.5						
FITZ	**Fitzroy Crossi**	**23.45**	**241**	P	**P**	**20 28 42.9**	**+1.8**
	1.7nm,0.9s,baz=62,slow=7.3,SNR=2.9						
FITZ	**Fitzroy Crossi**	**23.45**	**241**	*e*P	**P**	**20 28 42.8**	**+1.8**
	18nm,1.6s						
ARMA	**Armidale**	**23.48**	**170**	*e*P	**P**	**20 28 40.5**	**-0.9**
	42nm,1.8s						
LUWI	**Luwuk**	**24.93**	**283**	*e*P	**P**	**20 28 54.8**	**0.0**
	72nm,0.8s						
STKA	**Stephens Creek**	**25.05**	**191**	P	**P**	**20 28 58.6**	**+2.9**
	1.0nm,0.6s,baz=0.3,slow=8.1,SNR=3.0						
STKA	**Stephens Creek**	**25.05**	**191**	*e*P	**P**	**20 28 58.3**	**+2.7**
	4.2nm,1.6s						
LHI	**Lord Howe Isla**	**26.67**	**157**	*e*P	**P**	**20 29 11.0**	**+0.6**
	168nm,1.4s						
FUNA	**Funafuti**	**31.91**	**95**	*e*P	**P**	**20 29 55.2**	**-1.9**
	123nm,0.9s						
KSRS	**Korea Array**	**47.89**	**339**	P	**P**	**20 32 08.2**	**-1.2**
	1.5nm,0.8s,baz=155,slow=8.7,SNR=6.6						
KSAR	**Wonju Array Be**	**47.89**	**339**	P	**P**	**20 32 08.2**	**-1.2**
KULM	**Kulim**	**47.90**	**284**	*e*P	**P**	**20 32 08.9**	**-1.0**
	7.1nm,1.2s						
CMAR	**Chiang Mai Arr**	**53.83**	**299**	P	**P**	**20 32 55.1**	**+0.6**
	0.5nm,0.7s,baz=125,slow=6.2,SNR=4.9						
SONA0	**Songino Array**	**65.47**	**331**	*e*P	**P**	**20 34 15.9**	**+1.7**
	3.2nm,1.4s						
SONM	**Songino Array**	**65.47**	**331**	P	**P**	**20 34 16.0**	**+1.7**
	0.2nm,0.4s,baz=177,slow=30,SNR=4.3						
VNDA	**Vanda**	**70.70**	**177**	P	**P**	**20 34 47.4**	**+0.8**
	1.2nm,0.8s,baz=314,slow=6.0,SNR=4.0						
MK32	**Makanchi Array**	**78.44**	**321**	*e*P	**P**	**20 35 31.9**	**-0.1**
MKAR	**Makanchi Array**	**78.44**	**321**	P	**P**	**20 35 31.9**	**-0.1**
	0.6nm,0.6s,baz=107,slow=6.1,SNR=7.6						
TOA0	**Torodi Ar. Sit**	**145.38**	**283**	*e*PKPbc	**PKPbc**	**20 43 08.8**	**-1.0**
TORD	**Torodi Ar. Bea**	**145.38**	**283**	PKPbc	**PKPbc**	**20 43 09.2**	**-0.6**
	1.6nm,0.6s,baz=76,slow=4.3,SNR=13						

IDC 20 20:25:42.4±6.7, 19°.98S×167°.59E, h0km, mb3.9/5, mb1 4.1/5, mb1mx3.7/40, mbtmp3.9/5, Error ellipse: s-maj=146.6km s-min=56.7km az=116.0, Vanuatu Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**26.14**	**238**	P	P	20 31 18.5	+0.1
	1.6nm,0.7s,baz=80,slow=12,SNR=6.3						
WRA	**Warramunga Arr**	**31.23**	**264**	P	P	20 32 03.6	-0.3
	0.4nm,0.5s,baz=93,slow=8.2,SNR=8.7						
ASAR	**Alice Springs**	**31.44**	**257**	P	P	20 32 05.8	0.0
	2.1nm,0.8s,baz=86,slow=8.8,SNR=17						
FITZ	**Fitzroy Crossi**	**39.63**	**265**	P	P	20 33 16.0	-0.2
	4.9nm,1.1s,baz=116,slow=3.6,SNR=3.7						
CMAR	**Chiang Mai Arr**	**77.40**	**295**	P	P	20 37 40.0	+0.2
	0.6nm,0.5s,baz=145,slow=3.3,SNR=3.3						

*ISCJB **20** 20:46:29.9±0.7, 32°.26N±0°.07×104°.84E±0°.08, h15km, mb3.7/9, Error ellipse: s-maj=10.7km s-min=9.4km az=30.1*
*IDC **20** 20:46:29.8±0.9, 31°.86N×104°.09E, h0km, mb3.7/8, mb1 3.8/10, mb1mx3.5/47, mbtmp3.6/10, ML3.2/2, Error ellipse: s-maj=59.4km s-min=16.6km az=62.0*
*BJI **20** 20:46:33.3, 32°.36N×104°.83E, h15km, ML3.4/12*
ISC 20 20:46:32.2±1.0, 32°.29N±0°.09×104°.77E±0°.06, h15km, n14, σ1°35/18, mb3.8/9, Sichuan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LZH	**Lanzhou**	**3.86**	**349**	*e*Pn	**Pn**	**20 47 31.5**	**+0.3**
LZH				Pg	**Pb**	**20 47 37.5**	**-2.6**
LZH				Sn	**Sn**	**20 48 16.3**	**-0.1**
LZH				smax	smax		
	comp=N,150nm,0.6s						
LZH				smax	smax		
	comp=E,230nm,0.8s						
XAN	**Xi'an**	**3.89**	**62**	Pn	**Pn**	**20 47 30.6**	**-0.9**
XAN				Pg	**Pb**	**20 47 40.4**	**-0.2**
XAN				Sn	**Sn**	**20 48 15.3**	**-1.7**
XAN				Sg	**Sb**	**20 48 28.5**	**+0.9**
XAN				smax	smax		
	comp=N,170nm,0.6s						
XAN				smax	smax		
	comp=E,130nm,0.7s						
GTA	**Gaotai**	**8.16**	**332**	*e*P	**Pb**	**20 48 52.5**	**-0.8**
GTA				pP	pP	20 48 56.8	
GTA				sP	sP	20 48 59.3	
GTA				pmax	pmax		
	comp=Z,3.0nm,0.8s						
CMAR	**Chiang Mai Arr**	**14.74**	**202**	Pn	Pn	20 49 52.1	-8.2
	comp=Z,0.1nm,0.3s,baz=42,slow=6.4,SNR=2.5						
SONM	**Songino Array**	**15.57**	**4**	Pn	**P**	**20 50 19.0**	**+3.5**
	comp=Z,0.1nm,0.3s,baz=200,slow=7.9,SNR=6.6						
ZALV	**Zalesovo Beam**	**25.92**	**333**	P	**P**	**20 52 04.4**	**+0.9**
	comp=Z,0.3nm,0.3s,baz=125,slow=12,SNR=3.0						
KURBB	**Kurchatov Arra**	**26.65**	**321**	P	**P**	**20 52 10.6**	**+0.3**
	comp=Z,0.2nm,0.3s,baz=136,slow=8.5,SNR=5.7						
BVAR	**Borovoye Array**	**32.23**	**320**	P	**P**	**20 52 58.9**	**-0.8**
	comp=Z,0.5nm,0.4s,baz=243,slow=44,SNR=2.6						
ARCES	**ARCESS Array B**	**56.41**	**335**	P	**P**	**20 56 12.8**	**+0.2**
	comp=Z,2.0nm,0.9s,baz=82,slow=6.5,SNR=2.9						
FINES	**FINESS Array B**	**56.90**	**326**	P	**P**	**20 56 16.7**	**+0.5**
	comp=Z,0.7nm,0.8s,baz=111,slow=7.7,SNR=4.2						
WRA	**Warramunga Arr**	**59.15**	**147**	P	**P**	**20 56 31.9**	**-0.6**
	comp=Z,1.0nm,0.7s,baz=340,slow=7.4,SNR=9.4						
ASAR	**Alice Springs**	**62.22**	**150**	P	**P**	**20 56 53.0**	**-0.3**
	comp=Z,0.7nm,0.8s,baz=331,slow=6.5,SNR=8.0						
HFS	**Hagfors**	**63.11**	**326**	P	**P**	**20 56 59.3**	**+0.5**
	comp=Z,1.5nm,0.8s,baz=79,slow=7.7,SNR=4.6						
YKA	**Yellowknife Ar**	**80.39**	**17**	P	**P**	**20 58 42.2**	**-0.5**
	comp=Z,0.5nm,0.7s,baz=332,slow=4.7,SNR=6.2						

*ISK **20** 20:56:43.9, 39°.11N×29°.02E, h4km, ML3.3*
*DDA **20** 20:56:43.8, 39°.13N×29°.05E, h8km, Ml3.5*
*CSEM **20** 20:56:44.3±0.1, 39°.10N×29°.03E, h2km, ML3.5, Error ellipse: s-maj=1.8km s-min=1.6km az=77.0*
ISC 20 20:56:44.5±1.1, 39°.11N±0°.02×29°.04E±0°.02, h4km±11km, n126, σ0°61/138, 6C-3D, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**256**	P	**Pg**	**20 56 49.5**	**0.0**
DEMI				S	**Sg**	**20 56 53.4**	**+0.5**
DEMI	**Demirci**	**0.26**	**256**	*i* P	**Pg**	**20 56 49.5**	**0.0**
DEMI				*i* S	**Sg**	**20 56 53.4**	**+0.5**
GDZ	**Gediz**	**0.34**	**93**	P	**Pg**	**20 56 50.9**	**-0.3**
GDZ				S	**Sg**	**20 56 55.8**	**0.0**
GDZ	**Gediz**	**0.34**	**93**	*i* P	**Pg**	**20 56 50.9**	**-0.3**
GDZ				*i* S	**Sg**	**20 56 55.9**	**0.0**
TVSB	**Tavsanli**	**0.48**	**44**	*e*PG	**Pg**	**20 56 53.2**	**-0.5**
TVSB	**Tavsanli**	**0.48**	**44**	*e*Pg	**Pg**	**20 56 53.2**	**-0.5**
KULA	**Kula-Manisa**	**0.66**	**207**	*e*PG	**Pg**	**20 56 56.8**	**-0.4**
KULA	**Kula-Manisa**	**0.66**	**207**	*e*Pg	**Pg**	**20 56 56.8**	**-0.4**
DURS	**Dursunbey**	**0.66**	**319**	P	**Pg**	**20 56 56.9**	**-0.3**
DURS	**Dursunbey**	**0.66**	**319**	*i* P	**Pg**	**20 56 56.9**	**-0.3**
KHAL	**Karahalli**	**0.81**	**154**	P	**Pg**	**20 57 00.0**	**-0.1**
KHAL	**Karahalli**	**0.81**	**154**	*i* P	**Pg**	**20 57 00.0**	**-0.1**
KHL	**Karahalli**	**0.87**	**154**	*e*PG	**Pg**	**20 57 01.5**	**+0.3**
KHL	**Karahalli**	**0.87**	**154**	*e*Pg	**Pg**	**20 57 01.5**	**+0.3**
ORLT	**Orhaneli**	**0.95**	**353**	*e*PG	**Pg**	**20 57 02.2**	**-0.5**
ORLT				*e*SG	**Sg**	**20 57 15.4**	**+0.5**
ORLT	**Orhaneli**	**0.95**	**353**	*e*Pg	**Pg**	**20 57 02.2**	**-0.5**
ORLT				*e*Sg	**Sg**	**20 57 15.4**	**+0.5**
AKHS	**Akhisar**	**0.98**	**257**	P	**Pg**	**20 57 03.0**	**-0.3**
AKHS				S	**

AUMIH	MIHALICIK	2.04	67	*i* P	Pb	20 57 22.2	0.0
BGKT	Bogazkoy	2.08	354	*e*PN	Pn	20 57 20.4	+0.2
BGKT	Bogazkoy	2.08	354	*e*Pn	Pn	20 57 20.4	+0.2
SILT	Sile	2.10	13	*e*PN	Pn	20 57 21.1	+0.7
SILT	Sile	2.10	13	*e*Pn	Pn	20 57 21.1	+0.7
BTAS	Taskesti	2.10	45	P	Pn	20 57 21.7	+1.1
BTAS	Taskesti	2.10	45	*i* P	Pn	20 57 21.7	+1.1
RKY	Sarkoy-Tekirda	2.13	318	*e*PN	Pn	20 57 21.1	+0.1
RKY	Sarkoy-Tekirda	2.13	318	*e*Pn	Pn	20 57 21.1	+0.1
KLYT	Kilyos	2.15	0	*e*PN	Pn	20 57 21.5	+0.4
KLYT	Kilyos	2.15	0	*e*Pn	Pn	20 57 21.5	+0.4
MDUB	Mudurnu	2.15	50	*e*PN	Pn	20 57 21.8	+0.5
MDUB	Mudurnu	2.15	50	*e*Pn	Pn	20 57 21.8	+0.5
CTKS	Kestanelik-??a	2.17	349	*e*PN	Pn	20 57 20.8	-0.5
CTKS	Kestanelik-??a	2.17	349	*e*Pn	Pn	20 57 20.8	-0.5
KAND	Kocaeli-Kandir	2.17	24	P	Pn	20 57 22.2	+0.7
KAND	Kocaeli-Kandir	2.17	24	*i* P	Pn	20 57 22.2	+0.7
TKR	Tekirdag	2.21	329	*e*PN	Pn	20 57 22.3	+0.4
TKR	Tekirdag	2.21	329	*e*Pn	Pn	20 57 22.3	+0.4
KIZT	Kizilcal	2.23	95	*e*PN	Pn	20 57 23.0	+0.7
KIZT	Kizilcal	2.23	95	*e*Pn	Pn	20 57 23.0	+0.7
SAHE	Sakarya_HENDEK	2.23	38	P	Pn	20 57 23.5	+1.2
SAHE	Sakarya_HENDEK	2.23	38	*i* P	Pn	20 57 23.5	+1.2
KORT	Korkueli	2.34	153	P	Pn	20 57 24.3	+0.4
KORT	Korkueli	2.34	153	*i* P	Pn	20 57 24.3	+0.4
BDRM	Kayabasi	2.39	212	P	Pn	20 57 25.0	+0.5
BDRM	Kayabasi	2.39	212	*i* P	Pn	20 57 25.0	+0.5
CTYL	Yalikoy Yolu	2.44	347	*e*PN	Pn	20 57 25.1	+0.1
CTYL	Yalikoy Yolu	2.44	347	*e*Pn	Pn	20 57 25.2	+0.1
KDHN	Kadinhani	2.47	103	P	Pn	20 57 25.8	+0.1
KDHN	Kadinhani	2.47	103	*i* P	Pn	20 57 25.8	+0.1
KESN	Edirne-Kesan	2.50	314	P	Pn	20 57 25.9	-0.4
KESN	Edirne-Kesan	2.50	314	*i* P	Pn	20 57 25.9	-0.4
TIRR	Tirgusor	5.37	355	⇓*i* P	Pn	20 58 04.8	-0.6
TIRR	Tirgusor	5.37	355	⇓*i* P	Pn	20 58 04.8	-0.6
SULR		5.94	340	⇓*i* P	Pn	20 58 17.2	+4.0
MLR	Muntele Rosu	6.78	341	⇑*i* P	Pn	20 58 26.3	+1.4
MLR	Muntele Rosu	6.78	341	⇑*i* P	Pn	20 58 26.3	+1.4
VRI	Vrincioaia	6.97	347	⇑*i* P	Pn	20 58 26.9	-0.5
VRI	Vrincioaia	6.97	347	⇑*i* P	Pn	20 58 26.9	-0.5
DOPR	Dopca	7.37	340	⇑*i* P	Pn	20 58 32.9	+0.1
DOPR	Dopca	7.37	340	⇑*i* P	Pn	20 58 32.9	+0.1

*JMA **20** 21:18:12.2±0.1,24°.79N×125°.41E,h47km±1km,M3.7*
JMA Felt I J1.
*IDC **20** 21:18:28.1±6.3,25°.71N×125°.22E,h144km±60km, mb3.5/11,mb1 3.6/12,mb1mx3.4/43,mbtmp3.9/12,MS3.6/1, Ms1 3.6/1,ms1mx2.7/52,Error ellipse: s-maj=33.6km s-min=14.4km az=65.0*

ISC 20 21:18:12.0±1.2,24°.8N±0°.1×125°.47E±0°.07,h43km±7km, n35,σ0°91/43,mb3.9/12,Southwestern Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JMJ	**Miyako jima 2**	**0.17**	**293**	P	**Pn**	**21 18 19.6**	**+0.2**
JMJ				S	**Sn**	**21 18 25.1**	**+0.5**
JIKM	**Ikemajima**	**0.27**	**312**	P	**Pn**	**21 18 20.1**	**-0.1**
JIKM				S	**Sn**	**21 18 26.0**	**+0.1**
JIRB	**Irabujima**	**0.28**	**287**	P	**Pn**	**21 18 20.1**	**-0.2**
JIRB				S	**Sn**	**21 18 25.6**	**-0.5**
JTJ	**Tarama**	**0.70**	**262**	P	**Pn**	**21 18 25.6**	**+0.1**
JTJ				S	**Sn**	**21 18 34.8**	**-0.5**
JISG	**Ishigakijimahi**	**1.06**	**262**	P	**Pn**	**21 18 30.0**	**-0.4**
JISG				S	**Sn**	**21 18 43.8**	**-0.3**
JIJ	**Ishigaki jima**	**1.27**	**253**	P	**Pn**	**21 18 33.3**	**+0.1**
JIJ				S	**Sn**	**21 18 48.7**	**-0.3**
JKRS	**Kuro-shima**	**1.42**	**249**	P	**Pn**	**21 18 35.9**	**+0.6**
IRIF	**Iriomote-Funau**	**1.64**	**256**	P	**Pn**	**21 18 38.3**	**+0.1**
IRIF				*e*S	**Sn**	**21 18 58.8**	**+0.7**
HATJ	**Hateruma jima**	**1.66**	**246**	P	**Pn**	**21 18 40.6**	**+2.0**
HATJ				S	**Sn**	**21 19 00.5**	**+1.7**
JKE	**Kume jima 2**	**1.97**	**37**	P	**Pn**	**21 18 43.4**	**+0.5**
JKE				S	**Sn**	**21 19 07.5**	**+1.1**
YOJ	**Yonaguni jima**	**2.25**	**263**	P	**Pn**	**21 18 46.6**	**-0.2**
YOJ				*e*S	**Sn**	**21 19 12.6**	**-0.7**
JYNG	**Yonagunijimaku**	**2.31**	**263**	P	**Pn**	**21 18 47.4**	**-0.2**
JYNG				S	**Sn**	**21 19 13.5**	**-1.3**
JAGN	**Aguni-jima**	**2.44**	**41**	P	**Pn**	**21 18 49.7**	**+0.5**
JNTH	**Nagotoyohara**	**2.90**	**52**	P	**Pn**	**21 18 56.5**	**+0.8**
JIH	**Iheya**	**3.20**	**44**	P	**Pn**	**21 19 00.2**	**+0.4**
JOW	**Kunigami**	**3.27**	**50**	P	**Pn**	**21 19 01.6**	**+0.8**
JOKE	**Okinoerabujima**	**3.82**	**46**	P	**Pn**	**21 19 07.8**	**-0.4**
JTK	**Tokunoshima**	**4.35**	**45**	P	**Pn**	**21 19 14.9**	**-0.7**
JAMN	**Amaminishikomi**	**4.81**	**43**	P	**Pn**	**21 19 22.2**	**+0.3**
JAM	**Amami Oshima**	**5.20**	**45**	P	**Pn**	**21 19 26.3**	**-0.9**
JMZ	**Minamidaito 2**	**5.32**	**77**	P	**Pn**	**21 19 26.4**	**-2.4**
JMZ				S	Sn	21 20 23.2	-5.6
MJAR	**Matsushiro Arr**	**16.06**	**40**	P	**P**	**21 21 59.1**	**+1.6**
	0.3nm,0.3s,baz=229,slow=12,SNR=4.0						
MKAR	**Makanchi Array**	**40.71**	**314**	P	**P**	**21 25 47.5**	**-0.9**
	0.6nm,0.4s,baz=102,slow=9.9,SNR=12						
ZALV	**Zalesovo Beam**	**41.97**	**325**	P	**P**	**21 25 56.7**	**-1.9**
	0.9nm,0.4s,baz=111,slow=9.1,SNR=5.6						
KURBB	**Kurchatov Arra**	**44.25**	**318**	P	**P**	**21 26 16.1**	**-0.9**
	0.2nm,0.5s,baz=108,slow=9.7,SNR=6.0						
WRA	**Warramunga Arr**	**45.25**	**168**	P	P	21 26 38.5	+13
	4.5nm,1.0s,baz=350,slow=8.5,SNR=14						
ASAR	**Alice Springs**	**48.81**	**170**	P	P	21 27 06.7	+14
	1.3nm,0.9s,baz=357,slow=14,SNR=8.3						
GEYT	**Alibeck**	**57.88**	**300**	P	**P**	**21 28 00.5**	**+0.8**
	1.6nm,0.7s,baz=135,slow=0.6,SNR=3.8						
NWAO	**Narrogin (SRO)**	**57.89**	**188**	LR	LR	21 52 03.9	
	comp=Z,55nm,21.2s,baz=91,slow=34						
KBZ	**Khabaz**	**68.16**	**309**	P	**P**	**21 29 08.4**	**+0.7**
	1.8nm,0.8s,baz=95,slow=2.5,SNR=4.3						
FINES	**FINESS Array B**	**72.92**	**330**	P	**P**	**21 29 36.2**	**-0.2**
	1.3nm,0.6s,baz=47,slow=5.2,SNR=10						
BRTR	**Keskin Array B**	**75.96**	**307**	P	**P**	**21 29 54.9**	**+0.2**
	1.5nm,0.8s,baz=104,slow=7.0,SNR=9.7						
NOA	**NORSAR Array B**	**79.52**	**333**	P	**P**	**21 30 12.7**	**-1.3**
	0.3nm,0.5s,baz=34,slow=4.3,SNR=2.4						
YKA	**Yellowknife Ar**	**80.91**	**24**	P	**P**	**21 30 21.9**	**+0.6**
	0.2nm,0.6s,baz=302,slow=5.8,SNR=3.7						
GERES	**GERESS Array B**	**84.85**	**322**	P	**P**	**21 30 42.2**	**0.0**
	0.2nm,0.5s,baz=151,slow=3.0,SNR=3.8						

*IDC **20** 21:23:29.9±20.0,3°.70N×82°.90W,h170km±217km,mb3.3/5, mb1 3.6/5,mb1mx3.4/26,mbtmp3.7/5,MS4.2/1,Ms1 4.2/1, ms1mx3.2/34,Error ellipse: s-maj=90.2km s-min=16.9km az=47.0*

ISC 20 21:23:15.1±1.1,3°.7N±0°.2×83°.1W±0°.1,h24km,n12, σ1°40/10,mb3.7/7,Off coast of central America

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GRGC	**Isla de Gorgon**	**4.98**	**98**	*e*P	**Pb**	**21 24 43.7**	**+2.0**
OTAV	**Otavalo**	**5.78**	**126**	*e*P	Pn	21 24 46.5	+6.6
GUYC	**Guyana, Colomb**	**7.84**	**79**	*e*P	**Pb**	**21 25 30.9**	**+0.2**
HELC	**Santa Helena**	**7.95**	**72**	*e*P	**Pb**	**21 25 32.5**	**0.0**
LPAZ	**La Paz**	**24.77**	**144**	P	**P**	**21 28 35.7**	**-0.3**
	1.3nm,0.7s,baz=339,slow=11,SNR=5.1						
SIV	**San Ignacio**	**29.29**	**132**	LR	LR	21 41 40.5	
	comp=Z,473nm,20.4s,baz=12,slow=37						
TXAR	**Lajitas Array**	**32.10**	**325**	P	**P**	**21 29 43.1**	**+2.3**
	0.4nm,0.8s,baz=148,slow=14,SNR=2.6						
BDFB	**Brasilia**	**39.69**	**120**	P	**P**	**21 30 44.4**	**-1.6**
	3μm,0.3s,SNR=1.8						
PDAR	**Pinedale Array**	**45.47**	**333**	P	**P**	**21 31 33.1**	**+0.3**
	1.0nm,0.9s,baz=128,slow=9.7,SNR=8.0						
NVAR	**Mina Array Bea**	**47.15**	**322**	P	**P**	**21 31 45.4**	**-0.6**
	0.5nm,0.5s,baz=132,slow=7.7,SNR=5.0						
ULM	**Lac du Bonnet**	**47.63**	**349**	P	**P**	**21 31 48.3**	**-0.9**
	2.3nm,0.4s,baz=103,slow=2.5,SNR=3.3						
YKA	**Yellowknife Ar**	**63.14**	**344**	P	**P**	**21 33 40.1**	**-0.6**
	0.1nm,0.4s,baz=135,slow=7.0,SNR=4.5						

IDC 20 21:29:27.2±47.0,14°.10S×175°.95E,h0km,mb3.9/3, mb1 4.1/3,mb1mx3.6/39,mbtmp3.9/3,Error ellipse: s-maj=839.0km s-min=145.6km az=71.0,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**36.03**	**235**	P	P	21 36 31.5	+1.0
	12nm,1.4s,baz=73,slow=12,SNR=2.9						
WRA	**Warramunga Arr**	**40.13**	**256**	P	P	21 37 06.3	+1.1
	0.3nm,0.5s,baz=89,slow=8.4,SNR=7.4						
ASAR	**Alice Springs**	**40.78**	**250**	P	P	21 37 08.8	-1.8
	0.8nm,0.5s,baz=85,slow=8.9,SNR=16						

IDC 20 21:33:55.7±7.2,17°.00N×147°.18E,h0km,mb3.4/5, mb1 3.5/5,mb1mx3.2/54,mbtmp3.4/5,Error ellipse: s-maj=278.5km s-min=23.4km az=82.0,Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**38.82**	**199**	P	P	21 41 22.4	-0.1
	0.9nm,1.0s,baz=22,slow=8.5,SNR=5.0						
ASAR	**Alice Springs**	**42.45**	**198**	P	P	21 41 52.4	-0.2
	0.2nm,0.8s,baz=12,slow=10,SNR=3.1						
MKAR	**Makanchi Array**	**60.65**	**314**	P	P	21 44 08.3	-0.3
	0.1nm,0.5s,baz=94,slow=7.7,SNR=2.5						
KURBB	**Kurchatov Arra**	**63.52**	**318**	P	P	21 44 27.9	+0.2
	0.6nm,0.6s,baz=95,slow=7.0,SNR=10						
BVAR	**Borovoye Array**	**68.67**	**321**	P	P	21 45 01.0	+0.1
	0.4nm,0.6s,baz=92,slow=6.1,SNR=4.0						

WEL 20 21:39:54.5±0.3,41°.32S×172°.57E,h198km±2km,ML3.7/9, 15C-3D,Error ellipse: s-maj=1.9km s-min=1.7km az=90.0,South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
QRZ	**Quartz Range**	**0.50**	**357**	⇑PN	Pn	21 40 21.1	-0.2
THZ	**Tophouse**	**0.51**	**150**	PN	Pn	21 40 21.6	+0.2
NNZ	**Nelson**	**0.62**	**81**	⇑PN	Pn	21 40 21.6	-0.2
NNZ				SN	Sn	21 40 42.5	-0.4
DSZ	**Denniston Nort**	**0.71**	**233**	⇑PN	Pn	21 40 22.0	-0.3
DSZ				SN	Sn	21 40 42.2	-1.8
TUWZ	**Tuamarina**	**1.04**	**96**	⇑PN	Pn	21 40 24.4	+0.1
TUWZ				SN	Sn	21 40 46.4	-1.0
TUWZ				AML	AML	21 40 47.1	
DUWZ	**D'Urville Isla**	**1.15**	**64**	⇑PN	Pn	21 40 24.9	-0.3
TCW	**Tory Channel**	**1.29**	**86**	PN	Pn	21 40 26.2	0.0
TCW				AML	AML	21 40 50.7	
TCW				AML	AML	21 40 51.3	
KHZ	**Kahutara**	**1.31**	**147**	⇑PN	Pn	21 40 26.5	+0.2
KHZ				SN	Sn	21 40 50.3	-0.9
LTZ	**Lake Taylor**	**1.48**	**189**	PN	Pn	21 40 27.8	+0.1
INZ	**Inchbonnie**	**1.63**	**210**	PN	Pn	21 40 28.7	-0.4
WEL	**Wellington**	**1.66**	**89**	⇑PN	Pn	21 40 29.1	-0.3
BHW	**Baring Head**	**1.74**	**94**	⇑PN	Pn	21 40 29.8	-0.3
BHW				AML	AML	21 40 58.1	
BHW				AML	AML	21 40 58.4	
KIW	**Kapiti Island**	**1.83**	**76**	PN	Pn	21 40 30.7	-0.4
KIW				SN	Sn	21 40 57.9	-1.7
KIW				AML	AML	21 40 59.4	
CAW	**Cannon Point**	**1.90**	**84**	PN	Pn	21 40 31.4	-0.4
CAW				AML	AML	21 41 00.4	
CAW				AML	AML	21 41 03.2	
MSWZ	**Moikau Station**	**2.02**	**94**	PN	Pn	21 40 32.7	-0.3
OGWZ	**Otaki Gorge**	**2.03**	**76**	PN	Pn	21 40 32.8	-0.3
PLWZ	**Palliser**	**2.04**	**98**	⇑PN	Pn	21 40 32.9	-0.3
OXZ	**Oxford**	**2.04**	**191**	PN	Pn	21 40 32.7	-0.5
PAWZ	**Paruwai Farm**	**2.15**	**93**	⇑PN	Pn	21 40 34.0	-0.4
PAWZ				AML	AML	21 41 05.6	
WVZ	**Waitaha Valley**	**2.22**	**217**	⇓PN	Pn	21 40 34.2	-0.8
MTW	**Mount Morrison**	**2.22**	**87**	⇑PN	Pn	21 40 34.7	-0.4
MTW				AML	AML	21 41 06.4	
MTW				AML	AML	21 41 06.5	
HOWZ	**Holdsworth Sta**	**2.27**	**80**	⇑PN	Pn	21 40 35.2	-0.5
KHEZ	**Kahui Hut**	**2.31**	**29**	PN	Pn	21 40 35.1	-1.1
TRWZ	**Traveller**	**2.35**	**93**	⇓PN	Pn	21 40 36.5	0.0
TRWZ				AML	AML	21 41 10.4	
TRWZ				AML	AML	21 41 10.4	
OHWZ	**Ohakea**	**2.37**	**63**	PN	Pn	21 40 36.5	-0.2
MRZ	**Mangatainoka R**	**2.37**	**75**	⇑PN	Pn	21 40 36.0	-0.8
MQZ	**McQueen's Vall**	**2.38**	**178**	PN	Pn	21 40 36.0	-0.9
WAZ	**Wanganui**	**2.42**	**50**	PN	Pn	21 40 37.0	-0.3
TMWZ	**Te Maipa**	**2.52**	**86**	PN	Pn	21 40 38.2	-0.2
TIWZ	**Tintock**	**2.57**	**79**	⇑PN	Pn	21 40 38.5	-0.5
TIWZ				AML	AML	21 41 14.0	
TIWZ				AML	AML	21 41 14.5	
RPZ	**Rata Peaks**	**2.64**	**205**	PN	Pn	21 40 39.2	-0.6
PRWZ	**Pori Road**	**2.69**	**75**	PN	Pn	21 40 40.0	-0.4
VRZ	**Vera Road**	**2.76**	**38**	PN	Pn	21 40 39.3	-1.9
BFZ	**Birch Farm**	**2.86**	**78**	PN	Pn	21 40 41.8	-0.5
TSZ	**Takapari Road**	**2.87**	**65**	PN	Pn	21 40 41.5	-1.1
DVHZ	**Dannevirke**	**2.92**	**71**	PN	Pn	21 40 42.0	-1.0
PKVZ	**Pokaka**	**2.94**	**47**	PN	Pn	21 40 41.9	-1.4
MTVZ	**Mangateitei**	**2.94**	**50**	PN	Pn	21 40 42.1	-1.3
FOZ	**Fox Glacier**	**3.00**	**222**	⇓PN	Pn	21 40 42.4	-1.6
WNVZ	**Wahianoa**	**3.06**	**50**	PN	Pn	21 40 43.2	-1.6
PNHZ	**Pukenui**	**3.10**	**64**	PN	Pn	21 40 44.1	-1.2
TUVZ	**Tukino**	**3.13**	**50**	PN	Pn	21 40 44.9	-0.8
BHHZ	**Black Hill Sta**	**3.24**	**57**	PN	Pn	21 40 45.3	-1.6
PXZ	**Pawanui**	**3.51**	**70**	PN	Pn	21 40 49.4	-0.7
LBZ	**Lake Benmore**	**3.53**	**209**	PN	Pn	21 40 49.0	-1.3
KAHZ	**Kahuranaki**	**3.62**	**66**	PN	Pn	21 40 50.7	-0.8
BKZ	**Black Stump Fm**	**3.70**	**56**	PN	Pn	21 40 50.2	-2.3
ODZ	**Otahua Downs**	**3.98**	**200**	PN	Pn	21 40 54.9	-0.9
RTZ	**Ruatahuna**	**4.34**	**53**	PN	Pn	21 40 57.7	-2.8
WKZ	**Wanaka**	**4.36**	**215**	PN	Pn	21 40 58.4	-2.2
TUZ	**Tuapeka**	**5.10**	**204**	⇑PN	Pn	21 41 08.4	-1.5

*IDC **20** 21:42:20.2±1.1,0°.65N×100°.17E,h0km,mb3.7/8, mb1 3.8/8,mb1mx3.5/51,mbtmp3.7/8,Error ellipse: s-maj=60.8km s-min=18.8km az=53.0*
*DJA **20** 21:42:21.8±0.3,0°.N±3°×10°0E±°,h10km,M4.3/8,mB5.2/1, mb4.2/1,MLv4.4/8,Mw(mB)4.6/1*
*ISCJB **20** 21:42:22.6±0.4,0°.35N±0°.05×99°.88E±0°.06,h33km, mb3.7/8,Error ellipse: s-maj=10.0km s-min=4.3km az=139.2*

ISC 20 21:42:24.5±0.7,0°.36N±0°.06×99°.85E±0°.07,h35km,n27, σ1°69/27,mb3.8/8,Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MNSI	**Mandailing Nat**	**0.51**	**328**	P	**Pn**	**21 42 31.3**	**-4.0**
MNSI				S	**Sn**	**21 42 38.6**	**-4.2**
PPI	**Padang Panjang**	**0.98**	**146**	P	**Pn**	**21 42 39.0**	**-2.7**
PPI				S	**Sn**	**21 42 51.9**	**-2.5**
BKNI	**Bangkinang**	**1.19**	**92**	P	**Pn**	**21 42 42.6**	**-2.0**
BKNI				S	**Sn**	**21 42 58.2**	**-1.3**
GSI	**Gunungsitoli**	**2.46**	**292**	P	**Pn**	**21 43 03.6**	**+1.5**
PPSI	**Pulau Pagai**	**3.11**	**177**	P	**Pn**	**21 43 11.1**	**+0.1**
TSI	**Tuntungan**	**3.37**	**338**	P	**Pn**	**21 43 15.6**	**+0.9**
KCSI	**Kotacane, Aceh**	**3.77**	**326**	P	**Pn**	**21 43 20.9**	**+0.8**
TPRI	**Tanjung Pinang**	**4.71**	**83**	P	**Pn**	**21 43 33.5**	**+0.5**
MLSI	**Meulaboh, Aceh**	**5.19**	**318**	P	**Pn**	**21 43 40.8**	**+1.1**
LHMI	**Lhok Sumawe**	**5.64**	**329**	P	**Pn**	**21 43 46.6**	**+0.8**
LWLI	**Liwa**	**6.80**	**142**	P	**Pn**	**21 44 02.4**	**+0.5**
KASI	**Kota Agung**	**7.46**	**142**	P	**Pn**	**21 44 11.7**	**+0.8**
CGJI	**Cibinong**	**9.05**	**140**	P	**Pn**	**21 44 32.5**	**-0.3**
SKJI	**Sukabumi**	**9.91**	**138**	P	**Pn**	**21 44 44.9**	**+0.3**
CMAR	**Chiang Mai Arr**	**18.00**	**357**	Pn	**P**	**21 46 33.5**	**+1.2**
	0.1nm,0.3s,baz=225,slow=30,SNR=4.4						
H08S2	**Diego Garcia H**	**28.42**	**253**	T	T	22 16 17.2	
	baz=76,slow=75,SNR=16						
H08S3	**Diego Garcia H**	**28.42**	**253**	T	T	22 16 20.7	
	baz=76,slow=75,SNR=16						
H08S1	**Diego Carcia H**	**28.44**	**253**	T	T	22 16 22.6	
	baz=76,slow=75,SNR=9.3						
WRA	**Warramunga Arr**	**39.35**	**123**	P	**P**	**21 49 50.9**	**+0.1**
	0.5nm,0.7s,baz=303,slow=9.1,SNR=3.8						
ASAR	**Alice Springs**	**40.78**	**128**	P	**P**	**21 50 03.0**	**+0.2**
	0.3nm,0.8s,baz=301,slow=8.1,SNR=2.7						
MKAR	**Makanchi Array**	**48.73**	**344**	P	**P**	**21 51 05.3**	**-0.3**
	0.5nm,0.5s,baz=151,slow=7.6,SNR=6.8						
KURBB	**Kurchatov Arra**	**53.26**	**343**	P	**P**	**21 51 39.4**	**-0.1**
	0.5nm,0.6s,baz=161,slow=7.4,SNR=5.0						
ZALV	**Zalesovo Beam**	**54.84**	**349**	P	**P**	**21 51 50.7**	**-0.3**
	1.4nm,0.5s,baz=173,slow=4.9,SNR=7.9						
BVAR	**Borovoye Array**	**57.93**	**339**	P	**P**	**21 52 12.3**	**-0.9**
	0.6nm,0.5s,baz=135,slow=8.2,SNR=6.2						
BRTR	**Keskin Array B**	**71.64**	**312**	P	**P**	**21 53 45.4**	**+2.5**
	0.2nm,0.6s,baz=54,slow=2.5,SNR=2.5						
ARCES	**ARCESS Array B**	**84.22**	**340**	P	**P**	**21 54 51.6**	**-0.4**
	2.5nm,0.9s,baz=93,slow=6.1,SNR=4.6						
CPUP	**Villa Florida**	**146.09**	**219**	PKPbc	**PKPab**	**22 02 02.7**	**+0.5**
	1.7nm,0.8s,baz=37,slow=6.2,SNR=3.5						

JMA 20 21:44:33.7±0.1,36°.22N×140°.98E,h44km±1km,M3.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.51**	**320**	P	Pn	21 44 44.6	-0.2
JHO				S	Sn	21 44 52.1	-0.5
CHOJ	**Chosi**	**0.53**	**191**	P	Pn	21 44 44.7	-0.2
CHOJ				S	Sn	21 44 52.2	-0.7
ONAJ	**Iwakimizuishiy**	**0.89**	**351**	P	Pn	21 44 49.5	-0.4
ONAJ				S	Sn	21 45 00.7	-1.0
MAT	**Matsushiro**	**2.26**	**279**	P	Pn	21 45 10.2	+1.6
MAT				S	Sn	21 45 38.2	+2.9

MEX 20 21:54:27.1±0.6,19°.29N×96°.11W,h16km±24km,MD3.9, Veracruz

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LVIG	**Laguna Verde**	**0.52**	**326**	*e*P	Pg	21 54 35.6	-2.0
LVIG				*e*S	Sg	21 54 42.6	-2.0
TPIG	**Tehuac#an**	**1.47**	**234**	*e*P	Pn	21 54 49.7	-3.4
TPIG				*e*S	Sn	21 55 06.8	-5.4
VHO	**Vista Hermosa**	**2.28**	**195**	*e*P	Pn	21 55 01.7	-2.7
VHO				*e*S	Sn	21 55 26.8	-5.4
OXBJ	**Oaxaca**	**2.29**	**195**	*i* P	Pn	21 55 01.8	-2.5
OXBJ				*i* S	Sn	21 55 27.0	-5.3
PPM	**Popocatepetl**	**2.39**	**265**	*e*P	Pn	21 55 02.6	-3.5
PPM				*i* S	Sn	21 55 31.7	-3.7
YAIG	**Yautepec**	**2.83**	**262**	*e*P	Pn	21 55 08.9	-2.9
YAIG				*i* S	Sn	21 55 42.1	-3.7
TLIG	**Tlapa**	**2.90**	**234**	*i* P	Pn	21 55 09.7	-3.0
DEIG	**Demacu**	**2.94**	**291**	*i* P	Pn	21 55 10.3	-3.1
DEIG				*e*S	Sn	21 55 44.6	-3.8
PLIG	**Platanillo**	**3.34**	**255**	*e*P	Pn	21 55 16.6	-2.1
PLIG				*i* S	Sn	21 55 53.9	-4.3
PNIG	**Pinotepa**	**3.46**	**214**	*e*P	Pn	21 55 15.8	-4.6
PNIG				*i* S	Sn	21 55 57.3	-3.9
HUIG	**Huatulco**	**3.50**	**180**	*e*P	Pn	21 55 19.9	-1.0
HUIG				*e*S	Sn	21 55 57.8	-4.2

JMA 20 21:55:24.1±0.4,37°.36N×144°.37E,h48km,M3.6,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.63**	**295**	P	Pn	21 56 05.6	+1.6
JIO				*e*S	Sn	21 56 36.3	+1.7
OFUJ	**Ofunato**	**2.73**	**310**	P	Pn	21 56 06.8	+1.3
OFUJ				*e*S	Sn	21 56 38.1	+0.8
JFK	**Kawauchi**	**2.79**	**271**	P	Pn	21 56 07.7	+1.5
JMK	**Ichinoseki**	**2.95**	**304**	P	Pn	21 56 09.9	+1.5
JMK				*e*S	Sn	21 56 44.9	+2.4
JOM	**Ohasama**	**3.21**	**312**	P	Pn	21 56 13.9	+1.9
JOM				*e*S	Sn	21 56 50.3	+1.3
JFT	**Otama**	**3.21**	**274**	P	Pn	21 56 14.6	+2.5
JFT				*e*S	Sn	21 56 51.9	+2.8
BSO1	**Boso 1**	**3.85**	**227**	P	Pn	21 56 20.0	-0.4
BSO1				*e*S	Sn	21 57 05.6	+1.5
JRY	**Ryogami san**	**4.59**	**255**	P	Pn	21 56 32.0	+1.0
JRY				*e*S	Sn	21 57 22.5	-0.7
JOD2	**Odawara 2**	**4.75**	**245**	*e*S	Sn	21 57 25.2	-1.8
MAT	**Matsushiro**	**5.00**	**262**	P	Pn	21 56 39.4	+2.8
MAT				*e*S	Sn	21 57 29.8	-3.4

*ISCJB **20** 21:57:02.6±0.7,21°.12S±0°.03×68°.47W±0°.10,h113km±7km, mb4.3/5,Error ellipse: s-maj=15.1km s-min=5.1km az=178.3*
*IDC **20** 21:57:03.4

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**20.95**	**340**	P	**P**	**22 03 23.7**	**+0.4**
	1.6nm,0.7s,baz=169,slow=11,SNR=4.0						
WRA	**Warramunga Arr**	**38.79**	**199**	P	**P**	**22 06 04.7**	**0.0**
	0.7nm,0.7s,baz=27,slow=9.1,SNR=11						
ASAR	**Alice Springs**	**42.43**	**198**	P	**P**	**22 06 34.6**	**0.0**
	0.3nm,0.8s,baz=24,slow=9.2,SNR=3.8						
SONM	**Songino Array**	**45.23**	**322**	P	**P**	**22 06 57.7**	**+0.6**
	0.4nm,0.5s,baz=146,slow=8.8,SNR=2.9						
ZALV	**Zalesovo Beam**	**60.11**	**323**	P	**P**	**22 08 45.0**	**-1.6**
	0.6nm,0.4s,baz=90,slow=6.1,SNR=2.9						
MKAR	**Makanchi Array**	**60.53**	**314**	P	**P**	**22 08 49.9**	**+0.1**
	0.3nm,0.5s,baz=90,slow=9.3,SNR=6.2						
KURBB	**Kurchatov Arra**	**63.40**	**318**	P	**P**	**22 09 08.3**	**-0.7**
	1.3nm,0.6s,baz=97,slow=7.2,SNR=15						
ARCES	**ARCESS Array B**	**84.46**	**342**	P	**P**	**22 11 11.8**	**+0.1**
	1.8nm,0.8s,baz=36,slow=9.0,SNR=4.0						
FINES	**FINESS Array B**	**88.92**	**336**	P	**P**	**22 11 33.5**	**0.0**
	0.9nm,0.8s,baz=104,slow=4.4,SNR=2.8						
LPAZ	**La Paz**	**146.33**	**94**	PKPbc	**PKPdf**	**22 18 20.6**	**+0.2**
	0.6nm,0.6s,baz=284,slow=6.4,SNR=4.0						

*ISK **20** 22:01:07.0, 39°.17N×29°.08E, h5km, ML3.1*
*DDA **20** 22:01:07.7, 39°.18N×29°.11E, h6km, Ml3.5*
*CSEM **20** 22:01:08.2±0.1, 39°.18N×29°.10E, h2km, ML3.5, Error ellipse: s-maj=2.5km s-min=2.3km az=107.0*
ISC 20 22:01:08.3±1.1, 39°.18N±0°.02×29°.12E±0°.01, h2km±9km, n129, σ0.870/167, 9C-2D, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.30**	**107**	P	**Pg**	**22 01 13.7**	**-0.3**
GDZ				S	**Sg**	**22 01 17.7**	**-0.2**
GDZ	**Gediz**	**0.30**	**107**	*i* P	**Pg**	**22 01 13.7**	**-0.3**
GDZ				*i* S	**Sg**	**22 01 17.7**	**-0.2**
DEMI	**Demirci**	**0.34**	**247**	P	**Pg**	**22 01 14.9**	**+0.1**
DEMI				S	**Sg**	**22 01 19.4**	**+0.2**
DEMI	**Demirci**	**0.34**	**247**	*i* P	**Pg**	**22 01 14.9**	**+0.1**
DEMI				*i* S	**Sg**	**22 01 19.4**	**+0.2**
TVSB	**Tavsanli**	**0.38**	**44**	*e*PG	**Pg**	**22 01 15.8**	**+0.1**
TVSB	**Tavsanli**	**0.38**	**44**	*e*Pg	**Pg**	**22 01 15.8**	**+0.1**
DURS	**Dursunbey**	**0.65**	**311**	P	**Pg**	**22 01 20.8**	**0.0**
DURS				S	**Sg**	**22 01 30.0**	**+0.7**
DURS	**Dursunbey**	**0.65**	**311**	*i* P	**Pg**	**22 01 20.8**	**0.0**
DURS				*i* S	**Sg**	**22 01 29.9**	**+0.7**
KULA	**Kula-Manisa**	**0.75**	**208**	*e*PG	**Pg**	**22 01 22.1**	**-0.6**
KULA	**Kula-Manisa**	**0.75**	**208**	*e*Pg	**Pg**	**22 01 22.1**	**-0.6**
MANT	**Manisa**	**0.81**	**213**	P	**Pg**	**22 01 23.0**	**-0.8**
MANT				S	**Sg**	**22 01 33.5**	**-0.9**
MANT	**Manisa**	**0.81**	**213**	*i* P	**Pg**	**22 01 23.0**	**-0.8**
MANT				*i* S	**Sg**	**22 01 33.5**	**-0.9**
KHAL	**Karahalli**	**0.86**	**160**	P	**Pg**	**22 01 24.0**	**-0.7**
KHAL				S	**Sg**	**22 01 35.3**	**-0.5**
KHAL	**Karahalli**	**0.86**	**160**	*i* P	**Pg**	**22 01 24.0**	**-0.7**
KHAL				*i* S	**Sg**	**22 01 35.4**	**-0.5**
ORLT	**Orhaneli**	**0.89**	**349**	*e*PG	**Pg**	**22 01 25.3**	**+0.1**
ORLT	**Orhaneli**	**0.89**	**349**	*e*Pg	**Pg**	**22 01 25.3**	**+0.1**
KHL	**Karahalli**	**0.91**	**159**	*e*PG	**Pg**	**22 01 26.0**	**+0.3**
KHL	**Karahalli**	**0.91**	**159**	*e*Pg	**Pg**	**22 01 26.0**	**+0.3**
AKHS	**Akhisar**	**1.06**	**254**	P	**Pg**	**22 01 28.7**	**+0.2**
AKHS				S	**Sg**	**22 01 42.8**	**+0.6**
AKHS	**Akhisar**	**1.06**	**254**	*i* P	**Pg**	**22 01 28.7**	**+0.2**
AKHS				*i* S	**Sg**	**22 01 42.8**	**+0.6**
AKS	**Akhisar**	**1.06**	**254**	*e*PG	**Pg**	**22 01 27.9**	**-0.6**
AKS	**Akhisar**	**1.06**	**254**	*e*Pg	**Pg**	**22 01 27.9**	**-0.6**
BALB	**Balikesir**	**1.06**	**296**	*e*PG	**Pg**	**22 01 28.4**	**-0.2**
BALB				*e*SG	**Sb**	**22 01 43.4**	**-0.3**
BALB	**Balikesir**	**1.06**	**296**	*e*Pg	**Pg**	**22 01 28.4**	**-0.2**
BALB				*e*Sg	**Sb**	**22 01 43.4**	**-0.3**
IGD	**Bursa**	**1.09**	**3**	*i* P	**Pg**	**22 01 27.6**	**-1.5**
IGD				*i* S	**Sb**	**22 01 44.4**	**0.0**
CAVI	**Cavuskoy**	**1.17**	**28**	*e*PN	**Pg**	**22 01 30.8**	**+0.1**
CAVI				*e*SN	**Sn**	**22 01 48.7**	**+0.6**
CAVI	**Cavuskoy**	**1.17**	**28**	*e*Pn	**Pg**	**22 01 30.8**	**+0.1**
CAVI				*e*Sn	**Sn**	**22 01 48.7**	**+0.6**
IZI	**Iznik**	**1.19**	**13**	*e*PN	**Pg**	**22 01 30.7**	**-0.4**
IZI	**Iznik**	**1.19**	**13**	*e*Pn	**Pg**	**22 01 30.7**	**-0.4**
MDNY	**Mudanya-Bursa**	**1.20**	**352**	*e*PN	**Pg**	**22 01 31.3**	**0.0**
MDNY	**Mudanya-Bursa**	**1.20**	**352**	*e*Pn	**Pg**	**22 01 31.3**	**0.0**
KCTX	**Karacabey (Bur**	**1.23**	**332**	*e*PN	**Pg**	**22 01 31.8**	**-0.1**
KCTX	**Karacabey (Bur**	**1.23**	**332**	*e*Pn	**Pg**	**22 01 31.8**	**-0.1**
BORA	**Eskisehir**	**1.25**	**55**	P	**Pg**	**22 01 31.4**	**-0.8**
BORA				S	**Sg**	**22 01 48.3**	**-0.1**
BORA	**Eskisehir**	**1.25**	**55**	*i* P	**Pg**	**22 01 31.4**	**-0.8**
BORA				*i* S	**Sg**	**22 01 48.3**	**-0.1**
GEMT	**Gemlik**	**1.26**	**3**	*e*PN	**Pg**	**22 01 32.1**	**-0.3**
GEMT	**Gemlik**	**1.26**	**3**	*e*Pn	**Pg**	**22 01 32.1**	**-0.3**
BALY	**Balya**	**1.29**	**296**	P	**Pg**	**22 01 33.0**	**+0.1**
BALY				S	**Sb**	**22 01 50.4**	**+0.2**
BALY	**Balya**	**1.29**	**296**	*i* P	**Pg**	**22 01 33.0**	**+0.1**
BALY				*i* S	**Sb**	**22 01 50.4**	**+0.2**
ADVT	**Abdulvahap**	**1.34**	**21**	*e*PN	**Pb**	**22 01 34.5**	**+0.4**
ADVT	**Abdulvahap**	**1.34**	**21**	*e*Pn	**Pb**	**22 01 34.5**	**+0.4**
ESKT	**Eskisehir**	**1.39**	**75**	*i* P	**Pn**	**22 01 34.3**	**-0.4**
ESKT				*i* S	**Sn**	**22 01 54.1**	**+0.4**
SEYT	**Eskypehyr**	**1.39**	**75**	P	**Pn**	**22 01 34.3**	**-0.4**
SEYT				S	**Sn**	**22 01 54.1**	**+0.4**
ARMT	**Armutlu**	**1.40**	**352**	*e*PN	**Pn**	**22 01 34.7**	**-0.1**
ARMT	**Armutlu**	**1.40**	**352**	*e*Pn	**Pn**	**22 01 34.7**	**-0.1**
GONE	**Gonen-Balikesi**	**1.41**	**309**	*e*PN	**Pn**	**22 01 34.4**	**-0.4**
GONE	**Gonen-Balikesi**	**1.41**	**309**	*e*Pn	**Pn**	**22 01 34.4**	**-0.4**
DENT	**Denizli**	**1.42**	**183**	*e*PN	**Pn**	**22 01 35.0**	**-0.1**
DENT	**Denizli**	**1.42**	**183**	*e*Pn	**Pn**	**22 01 35.0**	**-0.1**
GPA	**Golpazari**	**1.44**	**39**	*e*PN	**Pg**	**22 01 36.5**	**+0.6**
GPA	**Golpazari**	**1.44**	**39**	*e*Pn	**Pg**	**22 01 36.5**	**+0.6**
DNZL	**Cakiroluk**	**1.49**	**182**	P	**Pn**	**22 01 36.2**	**+0.1**
DNZL				S	**Sn**	**22 01 57.6**	**+1.4**
DNZL	**Cakiroluk**	**1.49**	**182**	*i* P	**Pn**	**22 01 36.2**	**+0.1**
DNZL				*i* S	**Sn**	**22 01 57.6**	**+1.4**
BOLV	**Bolvadin**	**1.50**	**107**	P	**Pg**	**22 01 37.1**	**0.0**
BOLV				S	**Sg**	**22 01 57.5**	**+1.0**
BOLV	**Bolvadin**	**1.50**	**107**	*i* P	**Pg**	**22 01 37.1**	**0.0**
BOLV				*i* S	**Sg**	**22 01 57.5**	**+1.0**
EDC	**Edincik**	**1.52**	**321**	*e*PN	**Pn**	**22 01 36.1**	**-0.3**
EDC	**Edincik**	**1.52**	**321**	*e*Pn	**Pn**	**22 01 36.1**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**1.56**	**218**	*e*PN	**Pn**	**22 01 36.6**	**-0.5**
AYDB	**Zeytinkoy-Aydi**	**1.56**	**218**	*e*Pn	**Pn**	**22 01 36.6**	**-0.5**
KNL	**Bal¯-kesir**	**1.64**	**312**	*i* P	**Pn**	**22 01 36.4**	**-1.7**
KNL				*i* S	**Sb**	**22 02 00.1**	**-0.3**
GULT	**Gulveren**	**1.65**	**40**	*e*PN	**Pb**	**22 01 39.0**	**-0.5**
GULT	**Gulveren**	**1.65**	**40**	*e*Pn	**Pb**	**22 01 39.0**	**-0.5**
BUY	**Buyukada**	**1.67**	**0**	P	**Pn**	**22 01 37.3**	**-1.2**
BUY				S	**Sn**	**22 01 58.9**	**-1.6**
BUY	**Buyukada**	**1.67**	**0**	*i* P	**Pn**	**22 01 37.3**	**-1.2**
BUY				*i* S	**Sn**	**22 01 58.9**	**-1.6**
HRT	**Hereke**	**1.70**	**14**	*e*PN	**Pn**	**22 01 39.0**	**+0.1**
HRT	**Hereke**	**1.70**	**14**	*e*Pn	**Pn**	**22 01 39.0**	**+0.1**
DKL	**Dikili**	**1.72**	**267**	*e*PN	**Pn**	**22 01 39.0**	**-0.2**
DKL	**Dikili**	**1.72**	**267**	*e*Pn	**Pn**	**22 01 39.0**	**-0.2**
ISP	**Isparta**	**1.75**	**140**	*e*PN	**Pn**	**22 01 39.5**	**0.0**
ISP	**Isparta**	**1.75**	**140**	*e*Pn	**Pn**	**22 01 39.6**	**0.0**
SPNC	**Sapanca-Adapaz**	**1.76**	**31**	*e*PN	**Pn**	**22 01 40.0**	**+0.2**
SPNC	**Sapanca-Adapaz**	**1.76**	**31**	*e*Pn	**Pn**	**22 01 40.0**	**+0.2**
BAGO	**Egridir - ISPA**	**1.77**	**132**	*i* P	**Pb**	**22 01 41.5**	**+0.1**
BAGO				*i* S	**Sg**	**22 02 05.1**	**+0.1**
AYDN	**Tasoluk**	**1.80**	**213**	P	**Pb**	**22 01 42.0**	**+0.1**
AYDN				S	**Sg**	**22 02 05.8**	**-0.2**
AYDN	**Tasoluk**	**1.80**	**213**	*i* P	**Pb**	**22 01 42.0**	**+0.1**
AYDN				*i* S	**Sg**	**22 02 05.8**	**-0.2**
MRMT	**Marmara Adasi**	**1.84**	**321**	*e*PN	**Pn**	**22 01 41.3**	**+0.4**
MRMT	**Marmara Adasi**	**1.84**	**321**	*e*Pn	**Pn**	**22 01 41.3**	**+0.4**
KRBG	**Karabiga-Canak**	**1.85**	**312**	*e*PN	**Pn**	**22 01 40.8**	**-0.2**
KRBG	**Karabiga-Canak**	**1.85**	**312**	*e*Pn	**Pn**	**22 01 40.8**	**-0.2**
ISK	**Istanbul-Kandi**	**1.89**	**359**	*e*PN	**Pn**	**22 01 41.6**	**+0.1**
ISK	**Istanbul-Kandi**	**1.89**	**359**	*e*Pn	**Pn**	**22 01 41.6**	**+0.1**
SVRH	**Sivrihisar-ESK**	**1.89**	**81**	*e*PN	**Pn**	**22 01 41.9**	**+0.3**
SVRH	**Sivrihisar-ESK**	**1.89**	**81**	*e*Pn	**Pn**	**22 01 41.9**	**+0.3**
AYVA	**Ayvalik**	**1.89**	**275**	*i* P	**Pg**	**22 01 45.1**	**+0.7**
AYVA				*i* S	**Sg**	**22 02 10.3**	**+1.3**
AUMIH	**MIHALICIK**	**1.96**	**69**	P	**Pb**	**22 01 44.8**	**+0.1**
AUMIH	**MIHALICIK**	**1.96**	**69**	*i* P	**Pb**	**22 01 44.9**	**+0.1**
AUMIH				*i* S	**Sg**	**22 02 12.5**	**+1.3**
GOLH	**Golhisar**	**1.97**	**170**	P	**Pn**	**22 01 41.8**	**-0.9**
GOLH	**Golhisar**	**1.97**	**170**	*i* P	**Pn**	**22 01 41.9**	**-0.9**
BTAS	**Taskesti**	**2.01**	**46**	P	**Pb**	**22 01 45.7**	**+0.2**
BTAS	**Taskesti**	**2.01**	**46**	*i* P	**Pb**	**22 01 45.7**	**+0.2**
SILT	**Sile**	**2.02**	**11**	*e*PN	**Pn**	**22 01 43.4**	**+0.2**
SILT	**Sile**	**2.02**	**11**	*e*Pn	**Pn**	**22 01 43.4**	**+0.2**
BGKT	**Bogazkoy**	**2.02**	**353**	*e*PN	**Pn**	**22 01 43.2**	**-0.1**
BGKT	**Bogazkoy**	**2.02**	**353**	*e*Pn	**Pn**	**22 01 43.2**	**-0.1**
MDUB	**Mudurnu**	**2.06**	**50**	*e*PN	**Pn**	**22 01 44.5**	**+0.6**
MDUB	**Mudurnu**	**2.06**	**50**	*e*Pn	**Pn**	**22 01 44.5**	**+0.6**
KLYT	**Kilyos**	**2.08**	**358**	*e*PN	**Pn**	**22 01 44.5**	**+0.5**
KLYT	**Kilyos**	**2.08**	**358**	*e*Pn	**Pn**	**22 01 44.5**	**+0.5**
DGB	**¯zmir**	**2.08**	**238**	*i* P	**Pg**	**22 01 47.5**	**-0.6**
KAND	**Kocaeli-Kandir**	**2.08**	**23**	P	**Pn**	**22 01 43.3**	**-0.9**
KAND	**Kocaeli-Kandir**	**2.08**	**23**	*i* P	**Pn**	**22 01 43.3**	**-0.9**
KAND				*i* S	**Sg**	**22 02 15.0**	**-0.3**
CTKS	**Kestanelik-??a**	**2.11**	**347**	*e*PN	**Pn**	**22 01 44.8**	**+0.3**
CTKS	**Kestanelik-??a**	**2.11**	**347**	*e*Pn	**Pn**	**22 01 44.8**	**+0.3**
RKY	**Sarkoy-Tekirda**	**2.12**	**316**	*e*PN	**Pn**	**22 01 44.5**	**-0.2**
RKY	**Sarkoy-Tekirda**	**2.12**	**316**	*e*Pn	**Pn**	**22 01 44.5**	**-0.2**
SART	**Tekirdag**	**2.12**	**316**	P	**Pn**	**22 01 43.5**	**-1.2**
SART	**Tekirdag**	**2.12**	**316**	*i* P	**Pn**	**22 01 43.5**	**-1.2**
URLA	**Izmir**	**2.13**	**248**	*i* P	**Pg**	**22 01 49.3**	**+0.1**
SAHE	**Sakarya_HENDEK**	**2.14**	**38**	P	**Pn**	**22 01 43.9**	**-1.1**
SAHE				S	**Sb**	**22 02 14.6**	**-0.1**
SAHE	**Sakarya_HENDEK**	**2.14**	**38**	*i* P	**Pn**	**22 01 43.9**	**-1.1**
SAHE				*i* S	**Sb**	**22 02 14.6**	**-0.1**
KIZT	**Kizilcal**	**2.17**	**97**	*e*PN	**Pn**	**22 01 46.1**	**+0.6**
KIZT	**Kizilcal**	**2.17**	**97**	*e*Pn	**Pn**	**22 01 46.1**	**+0.6**
TKR	**Tekirdag**	**2.18**	**327**	*e*PN	**Pn**	**22 01 45.5**	**+0.1**
TKR	**Tekirdag**	**2.18**	**327**	*e*Pn	**Pn**	**22 01 45.6**	**+0.1**
ZEY	**¯zmir**	**2.25**	**246**	*i* P	**Pg**	**22 01 53.4**	**+2.0**
CTYL	**Yalikoy Yolu**	**2.38**	**345**	*e*PN	**Pn**	**22 01 49.0**	**+0.7**
CTYL	**Yalikoy Yolu**	**2.38**	**345**	*e*Pn	**Pn**	**22 01 49.0**	**+0.7**
BOZC	**Bozcaada**	**2.46**	**287**	*i* P	**Pn**	**22 01 49.8**	**+0.5**
MSAB	**Monastry St. A**	**5.00**	**349**	⇑*i*P	**Pn**	**22 02 24.0**	**-0.3**
MSAB	**Monastry St. A**	**5.00**	**349**	⇑*i*P	**Pn**	**22 02 24.0**	**-0.3**
TIRR	**Tirgusor**	**5.30**	**355**	⇑*i*P	**Pn**	**22 02 27.9**	**-0.5**
TIRR	**Tirgusor**	**5.30**	**355**	⇑*i*P	**Pn**	**22 02 27.9**	**-0.5**
CFR	**Carcaliu**	**6.04**	**353**	⇑*i*P	**Pn**	**22 02 37.5**	**-1.0**
CFR	**Carcaliu**	**6.04**	**353**	⇑*i*P	**Pn**	**22 02 37.5**	**-1.0**
MLR	**Muntele Rosu**	**6.73**	**341**	⇑*i*P	**Pn**	**22 02 43.7**	**-4.5**
VRI	**Vrincioaia**	**6.91**	**346**	⇑*i*P	**Pn**	**22 02 51.2**	**+0.7**
VRI	**Vrincioaia**	**6.91**	**346**	⇑*i*P	**Pn**	**22 02 51.2**	**+0.7**
VOIR		**6.94**	**336**	⇓*i*P	**Pn**	**22 02 51.0**	**0.0**
VOIR		**6.94**	**336**	⇓*i*P	**Pn**	**22 02 51.0**	**0.0**

*NIED **20** 22:10:00, 36°.10N×142°.00E, h11km, Mw4.5 Best double couple: M0=6.98000×10^15 NP1:φ=227.00000°, δ=19.00000°, λ=129.00000°. NP2:φ=6.00000°, δ=76.00000°, λ=78.00000°.*
*IDC **20** 22:10:50.4±0.5, 36°.02N×141°.87E, h0km, mb4.2/30, mb1 4.3/37, mb1mx4.3/56, mbtmp4.3/37, ML3.9/5, MS3.9/20, Ms1 3.9/20, ms1mx3.7/53, Error ellipse: s-maj=13.7km s-min=10.7km az=97.0*
*JMA **20** 22:10:52.3±0.3, 36°.08N×141°.97E, h42km, M4.5*
*ISCJB **20** 22:10:52.7±0.8, 35°.97N±0°.02×141°.85E±0°.03, h28km±5km, mb4.7/130, MS4.1/30, Error ellipse: s-maj=3.9km s-min=3.4km az=166.7*
*MOS **20** 22:10:53.5±0.9, 36°.04N×141°.83E, h33km, mb4.9/49, Error ellipse: s-maj=7.9km s-min=5.2km az=119.2*
*NEIC **20** 22:10:54.0±1.2, 35°.97N×141°.81E, h23km±9km, mb4.8/65, Error ellipse: s-maj=4.1km s-min=3.1km az=130.0*
ISC 20 22:10:53.7±0.8, 36°.00N±0°.03×141°.87E±0°.03, h24km±5km, n282, σ1.959/321, mb4.7/130, MS4.1/30, 5C-13D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.87**	**251**	P	**Pb**	**22 11 09.8**	**-0.4**
CHOJ				*e*S	**Sn**	**22 11 23.6**	**+1.1**
JHO	**Hitachi**	**1.22**	**301**	P	**Pn**	**22 11 13.5**	**-1.8**
BSO1	**Boso 1**	**1.53**	**209**	P	**Pn**	**22 11 19.7**	**+0.7**
BSO1				S	**Sb**	**22 11 41.2**	**+1.5**
JFK	**Kawauchi**	**1.59**	**330**	P	**Pn**	**22 11 18.6**	**-1.8**
BSO3	**Boso 3**	**1.63**	**223**	S	**Sb**	**22 11 44.0**	**+1.0**
JFT	**Otama**	**1.96**	**321**	P	**Pn**	**22 11 24.9**	**-0.6**
JAG	**Ashikaga**	**2.00**	**283**	P	**Pn**	**22 11 25.3**	**-0.8**
JMM	**Marumori**	**2.06**	**335**	P	**Pn**	**22 11 25.0**	**-1.8**
JFY	**Yanaizu**	**2.24**	**310**	P	**Pn**	**22 11 28.8**	**-0.6**
JFY				S	**Sb**	**22 11 58.4**	**-2.4**
JKT	**Katashina**	**2.25**	**291**	P	**Pn**	**22 11 29.4**	**-0.2**
JKT				*e*S	**Sn**	**22 11 58.0**	**+1.3**
JOD2	**Odawara 2**	**2.38**	**253**	P	**Pn**	**22 11 31.7**	**+0.3**
JRY	**Ryogami san**	**2.41**	**271**	P	**Pn**	**22 11 31.0**	**-0.7**
JRY				*e*S	**Sn**	**22 12 01.5**	**+1.0**
JNS	**Sasagawa**	**2.74**	**312**	P	**Pn**	**22 11 36.6**	**+0.4**
JYN	**Shimob**	**2.75**	**261**	P	**Pn**	**22 11 36.9**	**+0.4**
MJAR	**Matsushiro Arr**	**3.01**	**282**	Pn	**Pn**	**22 11 39.9**	**-0.1**
	38nm,0.3s,baz=106,slow=7.6,SNR=596						
MJAR				Sn	**Sn**	**22 12 16.9**	**+1.6**
	19nm,0.3s,baz=81,slow=15,SNR=7.4						
MJAR				LR	LR	22 12 55.6	
	comp=Z,1μm,19.5s,baz=105,slow=42						
MAJO	**Matsushiro**	**3.01**	**282**	*e*P	**Pn**	**22 11 40.6**	**+0.6**
MAJO	**Matsushiro**	**3.01**	**282**	*e*Pn	**Pn**	**22 11 40.6**	**+0.6**
MAT	**Matsushiro**	**3.01**	**282**	P	**Pn**	**22 11 40.1**	**+0.1**
MAT				*e*S	**Sn**	**22 12 18.4**	**+3.0**
MJB9	**Matsu-Tunnel**	**3.02**	**282**	*e*Pn	**Pn**	**22 11 40.6**	**+0.6**
JHJ2	**Mitsune**	**3.34**	**211**	*e*Pn	**Pn**	**22 11 43.9**	**-0.6**
JHJ	**Hachijo jima 2**	**3.35**	**212**	Pn	**Pn**	**22 11 44.5**	**-0.1**
	118nm,0.3s,baz=329,slow=17,SNR=42						
JHJ				Sn	**Sn**	**22 12 22.9**	**-0.8**
	174nm,0.3s,baz=77,slow=22,SNR=14						
JHJ				LR	LR	22 13 00.7	
	comp=Z,422nm,18.7s,baz=317,slow=39						
INU	**Inuyama**	**4.00**	**262**	*e*Pn	**Pn**	**22 11 54.1**	**+0.5**
ERM	**Erimo**	**6.09**	**9**	⇓*e*P	**Pn**	**22 12 20.9**	**-1.4**
ERM	**Erimo**	**6.09**	**9**	*e*Pn	**Pn**	**22 12 20.8**	**-1.5**
ERM				*e*Sn	**Sn**	**22 13 28.8**	**-2.4**
ASAJ	**Asahikawa**	**8.13**	**4**	Pn	**Pn**	**22 12 48.2**	**-2.0**
	2.5nm,0.3s,baz=212,slow=3.2,SNR=9.8						
ASAJ				Sn	**Sn**	**22 14 17.6**	**-3.8**
	1.3nm,0.3s,baz=41,slow=28,SNR=4.0						
ASAJ	**Asahikawa**	**8.13**	**4**	*e*Pn	**Pn**	**22 12 48.5**	**-1.7**
ASAJ				Sn	**Sn**	**22 14 17.6**	**-3.8**
CBIJ	**Chichi jima**	**8.88**	**178**	*e*Pn	**Pn**	**22 13 01.0**	**+0.4**
CBIJ				*e*Sn	**Sn**	**22 14 35.4**	**-4.4**
JCJ	**Chichijima**	**8.88**	**178**	Pn	**Pn**	**22 12 58.6**	**-2.0**
	12nm,0.3s,baz=54,slow=20,SNR=17						
JCJ				Sn	**Sn**	**22 14 31.9**	**-8.0**
	21nm,0.3s,baz=290,slow=22,SNR=3.8						
JNU	**Nakatsue**	**9.51**	**256**	Pn	**Pn**	**22 13 10.6**	**+1.4**
	0.5nm,0.3s,baz=64,slow=8.4,SNR=11						
JNU				LR	LR	22 17 34.0	
	comp=Z,840nm,18.2s,baz=77,slow=42						
JNU	**Nakatsue**	**9.51**	**256**	*e*Pn	**Pn**	**22 13 09.4**	**+0.1**
VLA	**Vladivostok**	**10.48**	**316**	⇓*e*P	**Pn**	**22 13 23.5**	**+1.0**
YSS	**Yuzh-Sakhalins**	**10.97**	**3**	*e*P	**Pn**	**22 13 27.3**	**-1.8**
YSS				pmax	pmax		
	comp=Z,20nm,0.4s						
YSS				MLR	MLR		
	comp=Z,500nm,16.0s						
USRK	**Ussuriysk Ar.**	**11.15**	**320**	Pn	**Pn**	**22 13 32.0**	**+0.5**
	comp=Z,0.3nm,0.3s,baz=135,slow=12,SNR=11						
USRK				LR	LR	22 17 37.9	
	comp=Z,646nm,18.3s,baz=106,slow=37						
KSRS	**Korea Array**	**11.29**	**282**	Pn	**Pn**	**22 13 35.9**	**+2.4**
	comp=Z,0.4nm,0.3s,baz=97,slow=13,SNR=31						
KSRS				LR	LR	22 17 59.9	
	comp=Z,485nm,18.7s,baz=56,slow=38						
KS01	**Wonju Array Si**	**11.31**	**282**	*e*Pn	**Pn**	**22 13 34.8**	**+0.9**
KS15	**Wonju Array Si**	**11.32**	**281**	*e*Pn	**Pn**	**22 13 35.3**	**+1.3**
KSAR	**Wonju Array Be**	**11.32**	**281**	P	**Pn**	**22 13 35.9**	**+1.9**
KSAR	**Wonju Array Be**	**11.32**	**281**	Pn	**Pn**	**22 13 35.9**	**+1.9**
TJN	**Taejon**	**11.73**	**276**	⇓*e*P	**Pn**	**22 13 42.4**	**+2.8**
INCN	**Inchon**	**12.32**	**281**	*e*Pn	**Pn**	**22 13 48.2**	**+0.6**
MDJ	**Mudanjiang**	**12.71**	**316**	P	**Pn**	**22 13 57.1**	**+4.1**
MDJ				S	**Sn**	**22 16 16.3**	**+2.5**
MDJ				PcP	**PcP**	**22 19 30.3**	**+1.3**
MDJ				ScP	**ScP**	**22 23 00.8**	**+0.2**
MDJ				PcS	**PcS**	**22 23 04.9**	**+1.7**
MDJ	**Mudanjiang**	**12.71**	**316**	ScS	ScS	22 26 33.8	-2.9
MDJ				pmax	pmax		
	comp=Z,10.0nm,0.8s						
MDJ				pmax	pmax		
	comp=Z,72nm,8.4s						
MDJ				LR	LR		
	comp=N,470nm,12.5s						
MDJ				LR	LR		
	comp=E,140nm,13.8s						
MDJ				LR	LR		
	comp=Z,710nm,15.8s						
CN2	**Changchun**	**14.81**	**307**	*e*P	**Pn**	**22 14 22.6**	**+1.1**
CN2				*e*pP	P	22 14 30.5	+3.3
CN2				*e*S	**Sn**	**22 17 05.9**	**+1.1**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.6s						
CN2				pmax	pmax		
	comp=Z,70nm,4.0s						
CN2				LR	LR		
	comp=N,700nm,13.0s						
CN2				LR	LR		
	comp=E,600nm,13.0s						
CN2				LR	LR		
	comp=Z,700nm,15.0s						
TYV	**Tymovskoe**	**14.87**	**2**	*e*P	**Pn**	**22 14 22.0**	**-0.4**
TYV				pmax	pmax		
	comp=Z,11nm,0.8s						
KLR	**Kul'dur**	**15.16**	**334**	Pn	**Pn**	**22 14 25.7**	**-0.5**
	comp=Z,0.2nm,0.3s,baz=149,slow=14,SNR=4.4						
KLR				LR	LR	22 20 08.4	
	comp=Z,220nm,19.1s,baz=346,slow=37						
DL2	**Dalian**	**16.34**	**286**	P	**Pn**	**22 14 41.4**	**-0.1**
DL2				*e*S	**Sn**	**22 17 39.8**	**-2.2**
DL2				pmax	pmax		
	comp=Z,30nm,0.8s						
DL2				pmax	pmax		
	comp=Z,140nm,8.9s						
DL2				LR	LR		
	comp=N,200nm,10.8s						
DL2				LR	LR		
	comp=E,890nm,14.6s						
DL2				LR	LR		
	comp=Z,1μm,14.7s						
NJ2	**Nanjing**	**19.47**	**265**	*e*P	**Pn**	**22 15 22.4**	**+2.3**
NJ2				S	**S**	**22 18 51.5**	**-6.0**
NJ2				pmax	pmax		
	comp=Z,11nm,0.7s						
NJ2				LR	LR		
	comp=N,770nm,18.4s						
NJ2				LR	LR		
	comp=E,420nm,16.8s						
NJ2				LR	LR		
	comp=Z,360nm,21.1s						
TIA	**Tai'an**	**19.99**	**278**	⇓P	**P**	**22 15 22.3**	**-2.2**
TIA				pmax	pmax		
	comp=Z,10.0nm,0.8s						

comp=Z,9.3nm,0.9s
BOD Bodaibo 28.60 328 *e*P **P 22 16 46.5 -1.4**
BOD pmax pmax
comp=Z,13nm,1.0s
SONA1 Songino Array 28.68 305 *e*P **P 22 16 48.3 -0.6**
SONM Songino Array 28.68 305 P **P 22 16 48.6 -0.2**
comp=Z,12nm,0.8s,baz=103,slow=7.8,SNR=51
SONM LR LR 22 28 54.7
comp=Z,295nm,18.2s,baz=34,slow=38
LZH Lanzhou 30.62 282 *e*P **P 22 17 06.4 +0.2**
LZH pP sP 22 17 15.4 -0.8
LZH sP pP 22 17 19.9 +6.6
LZH PP **PnPn 22 18 05.0 -0.8**
LZH *e*S **S 22 22 00.1 -7.1**
LZH sS sS 22 22 12.8 -6.1
LZH SS **SnSn 22 23 42.5 -2.5**
LZH pmax pmax
comp=Z,35nm,1.4s
LZH pmax pmax
comp=Z,74nm,4.0s
LZH LR LR
comp=N,1μm,15.0s
LZH LR LR
comp=E,2μm,16.6s
LZH LR LR
comp=Z,2μm,19.2s
ZAK Zakamensk 31.21 310 *e*P **P 22 17 10.3 -0.9**
ZAK pmax pmax
comp=Z,10.0nm,1.4s
TLY Talaya 31.29 312 P **P 22 17 12.5 +0.6**
comp=Z,10.0nm,0.8s,baz=108,slow=6.3,SNR=8.0
TLY Talaya 31.29 312 *i* P **P 22 17 11.9 +0.1**
TLY pmax pmax
comp=Z,18nm,0.9s
TLY Talaya 31.29 312 *e*P **P 22 17 12.4 +0.6**
comp=Z,15nm,0.9s
GYA Guiyang 31.43 262 P **P 22 17 14.8 +1.4**
GYA pP sP 22 17 25.6 +2.2
GYA PP **PnPn 22 18 19.0 +2.6**
GYA PcP **PcP 22 20 07.8 +1.3**
GYA S **S 22 22 18.3 -1.7**
GYA sS sS 22 22 37.4 +5.8
GYA SS **SnSn 22 24 06.5 +1.7**
GYA Guiyang 31.43 262 ScS ScS 22 27 42.1 -3.9
GYA pmax pmax
comp=Z,20nm,0.8s
GYA pmax pmax
comp=Z,120nm,5.2s
GYA LR LR
comp=N,520nm,17.8s
GYA LR LR
comp=E,460nm,18.2s
GYA LR LR
comp=Z,480nm,18.4s
CD2 Chengdu 32.06 272 P **P 22 17 17.4 -1.4**
CD2 pP sP 22 17 28.3 -0.5
CD2 PP **PP 22 18 30.1 -1.3**
CD2 PcP **PcP 22 20 06.4 -1.7**
CD2 S **S 22 22 27.1 -2.5**
CD2 sS sS 22 22 45.8 +4.5
CD2 SS **SS 22 24 45.9 -1.5**
CD2 pmax pmax
comp=Z,20nm,0.7s
CD2 pmax pmax
comp=Z,100nm,5.9s
CD2 LR LR
comp=N,410nm,13.2s
CD2 LR LR
comp=Z,440nm,14.4s
QIZ Qiongzhong 32.86 248 P **P 22 17 25.1 -0.7**
QIZ S **S 22 22 42.0 -0.1**
QIZ LR LR
comp=N,96nm,18.5s
QIZ LR LR
comp=E,79nm,14.8s
GTA Gaotai 33.23 289 ⇑P **P 22 17 29.0 -0.1**
GTA pP sP 22 17 39.8 +0.7
GTA sP pP 22 17 44.0 +7.8
GTA PcP **PcP 22 20 13.0 +1.7**
GTA S **S 22 22 45.8 -2.1**
GTA sS sS 22 23 02.3 +2.7
GTA SS **SnSn 22 24 48.4 0.0**
GTA pmax pmax
comp=Z,22nm,1.1s
GTA pmax pmax
comp=Z,75nm,5.2s
GTA LR LR
comp=N,270nm,14.7s
GTA LR LR
comp=E,330nm,16.2s
GTA LR LR
comp=Z,260nm,18.5s
BILL Bilibino 34.92 16⇓*e*P **P 22 17 43.4 +0.2**
BILL *e* 22 18 59.1
BILL pmax pmax
comp=Z,4.0nm,1.3s
BILL MLR MLR
comp=Z,133nm,16.0s
BILL Bilibino 34.92 16 *e*P **P 22 17 44.2 +1.0**
comp=Z,3.8nm,0.9s
MIDW Midway 35.19 91 *e*P **P 22 17 45.3 -0.7**
comp=Z,58nm,1.0s
KMI Kunming 35.19 263 P **P 22 17 47.9 +1.6**
KMI pmax pmax
comp=Z,7.0nm,0.8s
KMI pmax pmax
comp=Z,84nm,4.5s
KMI LR LR
comp=N,190nm,12.2s
KMI LR LR
comp=E,150nm,11.0s
KMI LR LR
comp=Z,210nm,14.8s
TIXI Tiksi 36.36 353 P **P 22 17 55.3 -0.2**
comp=Z,0.6nm,0.4s,baz=124,slow=7.0,SNR=5.0
TIXI Tiksi 36.36 353⇓*i*P **P 22 17 55.3 -0.2**
TIXI pmax pmax
comp=Z,4.0nm,2.5s
TIXI Tiksi 36.36 353 *e*P **P 22 17 55.4 -0.2**
comp=Z,3.2nm,0.7s
MYLDM Lahad Datu 37.45 221 *e*P **P 22 18 03.9 -1.5**
comp=Z,11nm,1.0s
UBPT Khong Chiam 38.45 247 P **P 22 18 14.3 +0.5**
comp=Z,11nm,0.8s
NONG Nongkai 38.54 253 P **P 22 18 15.3 +0.7**
comp=Z,16nm,0.8s,comp=Z,3μm
CRAI Chiangrai 39.51 258 P **P 22 18 23.4 +0.6**
comp=Z,513nm,1.4s
LOEI Loei 40.32 254 P **P 22 18 26.7 -2.8**
comp=Z,133nm,1.2s,comp=Z,8μm
UTTA Uttaradit 40.74 255 P **P 22 18 33.6 +0.7**
comp=Z,2.7nm,0.8s
PBKT Sadao Pong 41.09 253 P **P 22 18 36.1 +0.3**
comp=Z,10nm,1.2s,comp=Z,924nm
CHTO Chiang Mai 41.41 257 P **P 22 18 39.5 +1.0**
comp=Z,30nm,1.6s
CHTO Chiang Mai 41.41 257 *e*P **P 22 18 38.5 +0.1**
CHTO pmax pmax
comp=Z,32nm,1.9s
CHTO Chiang Mai 41.41 257 *e*P **P 22 18 38.5 +0.1**
comp=Z,32nm,1.9s
CMAR Chiang Mai Arr 41.61 257 P **P 22 18 40.3 +0.2**
comp=Z,2.1nm,0.8s,baz=45,slow=6.4,SNR=10
CMAR LR LR 22 37 32.3
comp=Z,114nm,18.7s,baz=65,slow=38
SUKH Sukhothai 41.61 255 P **P 22 18 41.2 +1.1**
comp=Z,3.7nm,0.9s
CM01 Chiang Mai Arr 41.61 257 *e*P **P 22 18 40.0 -0.1**
WMQ Urumqi 41.65 298 P **P 22 18 41.3 +1.1**
WMQ pP sP 22 18 49.3 -1.0
WMQ sP pP 22 18 51.9 +4.5
WMQ S **S 22 24 52.5 -2.8**
WMQ sS sS 22 25 11.0 +3.8
WMQ pmax pmax
comp=Z,14nm,1.0s
WMQ pmax pmax
comp=Z,41nm,4.6s
WMQ LR LR
comp=N,80nm,19.6s
WMQ LR LR
comp=E,55nm,18.2s
WMQ LR LR
comp=Z,42nm,26.6s
LSA Lhasa 42.68 277 *e*P **P 22 18 49.8 +0.5**
LSA pmax pmax
comp=Z,7.0nm,0.8s
LSA Lhasa 42.68 277 *e*P **P 22 18 49.8 +0.5**
comp=Z,7.0nm,0.8s
ZAA0 Zalesovo Array 42.89 313 *e*P **P 22 18 50.2 +0.1**
ZALV Zalesovo Beam 42.89 313 P **P 22 18 50.1 0.0**
comp=Z,4.6nm,0.5s,baz=93,slow=6.8,SNR=31
ZALV PcP **PcP 22 20 40.5 -0.1**
comp=Z,2.6nm,0.8s,baz=85,slow=3.1,SNR=3.0
ZALV LR LR 22 37 35.5
comp=Z,202nm,18.0s,baz=70,slow=37
ZALV Zalesovo Beam 42.89 313 *i* P **P 22 18 50.0 -0.1**
ZALV pmax pmax
comp=Z,5.0nm,0.5s
SBUM Sibu 43.20 226 *e*P **P 22 18 53.2 +0.2**
comp=Z,5.8nm,1.1s
NVS Novosibirsk 43.83 314 *e*P **P 22 18 57.2 -0.4**
NVS pmax pmax
comp=N,3.0nm,1.0s
NVS pmax pmax
comp=E,9.0nm,1.0s
NVS pmax pmax
comp=Z,12nm,1.0s
PHET Kaeng Krachan 44.34 250 P **P 22 19 03.8 +1.6**
comp=Z,5.3nm,0.8s
NRIK Noril'sk 44.36 336 P **P 22 19 01.7 0.0**
comp=Z,2.1nm,0.4s,baz=109,slow=6.7,SNR=5.0
NRIK LR LR 22 38 15.0
comp=Z,147nm,18.3s,baz=60,slow=37
CHGN Chignik 44.46 43 *e*P **P 22 19 03.0 +0.4**
SAUI Saumlaki 44.86 195 *e*P **P 22 19 05.8 -0.5**
comp=Z,472nm,0.9s
TARA Tarawa 44.90 133 *e*P **P 22 19 06.4 -0.3**
comp=Z,331nm,1.6s
MK01 Makanchi Array 44.98 303 *e*P **P 22 19 06.9 -0.2**
MK31 Makanchi Array 44.99 303 *e*P **P 22 19 07.5 +0.4**
MK31 Makanchi Array 44.99 303 *e*P **P 22 19 07.5 +0.4**
MKAR Makanchi Array 44.99 303 P **P 22 19 07.0 -0.1**
comp=Z,9.0nm,0.8s,baz=88,slow=8.9,SNR=45
MKAR PcP **PcP 22 20 48.3 +0.3**
comp=Z,1.2nm,0.8s,baz=114,slow=1.5,SNR=2.3
MKAR LR LR 22 38 43.0
comp=Z,178nm,18.6s,baz=52,slow=37
MKAR Makanchi Array 44.99 303 *e*P **P 22 19 07.5 +0.3**
MKAR PcP **PcP 22 20 48.3 +0.3**
KSM Kuching 45.12 228 *e*P **P 22 19 08.0 -0.4**
comp=Z,39nm,1.7s
MAKZ Makanchi 45.20 303 *e*P **P 22 19 08.6 -0.2**
MAKZ pmax pmax
comp=Z,12nm,0.9s
MAKZ Makanchi 45.20 303 *e*P **P 22 19 08.6 -0.2**
comp=Z,12nm,0.9s
PMG Port Moresby 45.43 173 *e*P **P 22 19 10.9 +0.1**
PMG pmax pmax
comp=Z,32nm,1.0s
PMG Port Moresby 45.43 173 *e*P **P 22 19 10.9 +0.1**
comp=Z,32nm,1.0s
KAPI Kappang 45.77 212 P **P 22 19 14.1 +0.6**
comp=Z,9.9nm,0.8s,baz=44,slow=7.4,SNR=5.6
KAPI Kappang 45.77 212 *e*P **P 22 19 13.6 +0.2**
comp=Z,56nm,1.5s
SVW2 Sparrevohn 46.13 37 *e*P **P 22 19 16.5 +0.6**
comp=Z,8.5nm,1.0s
KURK Kurchatov 46.87 309 *e*P **P 22 19 21.5 -0.3**
KURK pmax pmax
comp=Z,18nm,1.0s
KURK Kurchatov 46.87 309 *e*P **P 22 19 21.5 -0.3**
comp=Z,18nm,1.0s
KURBB Kurchatov Arra 46.94 309 P **P 22 19 21.9 -0.4**
comp=Z,6.5nm,0.6s,baz=84,slow=7.8,SNR=85
JOHN Johnston Islan 47.05 101 *e*P **P 22 19 24.5 +0.8**
comp=Z,204nm,1.0s
SURT Suratani 47.49 246 P P 22 19 35.4 +8.3
comp=Z,5.6nm,1.0s
PDGK Podgornoye 47.60 299 *i* P **P 22 19 26.3 -1.3**
PDGK pmax pmax
comp=Z,15nm,0.6s
GUN Gumba 47.64 277 *e*P **P 22 19 28.6 +0.1**
comp=Z,20nm,0.6s
HOM Homer 48.06 39 *e*P **P 22 19 32.8 +1.9**
comp=Z,246nm,1.2s
MMRI Maumere 48.09 207 *e*P **P 22 19 31.8 +0.1**
comp=Z,56nm,1.2s
PKIN Phulchoki 48.16 277 *e*P **P 22 19 32.2 -0.3**
comp=Z,9.2nm,0.6s
KKN Kakani 48.17 277 *e*P **P 22 19 32.7 +0.2**
comp=Z,26nm,0.9s
BPAW Bear Paw Mtn. 48.39 33 *e*P **P 22 19 35.5 +2.0**
comp=Z,24nm,1.9s
KTH Kantishna Hill 48.40 34 *e*P **P 22 19 34.8 +1.1**
SOEI Soe 48.44 203 *e*P **P 22 19 34.8 +0.4**
comp=Z,44nm,0.9s
MLY Manley 48.53 32 *e*P **P 22 19 36.7 +2.1**
comp=Z,5.2nm,0.8s
GKN Gorkha 48.60 278 *e*P **P 22 19 35.8 +0.1**
comp=Z,20nm,0.6s
TRF Thorofare Moun 48.69 34 *e*P **P 22 19 37.0 +1.0**
comp=Z,10.0nm,1.0s
COLD Coldfoot 48.88 29 *e*P **P 22 19 38.5 +1.3**
comp=Z,10nm,1.6s
MYKOM Kota Tinggi 48.95 235 *e*P **P 22 19 37.2 -1.1**
comp=Z,15nm,1.1s
PMR Palmer 49.24 36 *e*P **P 22 19 41.0 +1.0**
PMR pmax pmax
comp=Z,20nm,1.4s
PMR Palmer 49.24 36 *e*P **P 22 19 41.0 +1.0**
comp=Z,20nm,1.4s
MCK McKinley 49.29 33 *e*P **P 22 19 41.8 +1.4**
MCK pmax pmax
comp=Z,32nm,1.8s
MCK McKinley 49.29 33 *e*P **P 22 19 41.8 +1.4**
comp=Z,32nm,1.8s
RND Reindeer 49.33 34 *e*P **P 22 19 42.3 +1.5**
RND pmax pmax
comp=Z,9.0nm,1.1s
RND Reindeer 49.33 34 *e*P **P 22 19 42.3 +1.5**
comp=Z,9.2nm,1.1s
KOLN Koldanda 49.53 278 *e*P **P 22 19 43.0 +0.1**
comp=Z,15nm,0.8s
MTN Manton Dam 49.62 194 *e*P **P 22 19 43.5 +0.2**
comp=Z,24nm,1.0s
COEN Coen 49.70 178 *e*P **P 22 19 44.4 +0.5**
comp=Z,19nm,0.5s
COLA College 49.76 32 *e*P **P 22 19 41.1 -2.8**
COLA pmax pmax
comp=Z,3.0nm,0.4s
COLA College 49.76 32 *e*P **P 22 19 41.1 -2.8**
comp=Z,3.3nm,0.4s
PYUN Piuthan 49.88 278 *e*P **P 22 19 45.7 +0.1**
comp=Z,70nm,1.0s
TKM2 Tokmak 2 50.45 299 *i* P **P 22 19 49.2 -0.6**
TKM2 pmax pmax
comp=Z,13nm,1.3s
TKM2 Tokmak 2 50.45 299 *e*P **P 22 19 50.7 +0.9**
comp=Z,26nm,1.5s
KLU Klutina 50.78 36 *e*P **P 22 19 52.9 +1.1**
comp=Z,11nm,1.2s
FYU Fort Yukon 50.83 30 *e*P **P 22 19 53.2 +1.3**
comp=Z,20nm,1.5s
PAX Paxson 50.88 34 *e*P **P 22 19 53.1 +0.5**
PAX pmax pmax
comp=Z,12nm,0.8s
PAX Paxson 50.88 34 *e*P **P 22 19 53.1 +0.5**
comp=Z,12nm,0.8s
DIV Divide 50.88 37 *e*P **P 22 19 54.0 +1.5**
comp=Z,16nm,1.2s
FRU Bishkek 51.17 299 *e*P **P 22 19 54.0 -1.0**
FRU *e* 22 20 07.0
FRU pmax pmax
comp=Z,30nm,2.0s
KSH Kashi 51.17 295 P **P 22 19 59.1 +4.0**
KSH *e*pP sP 22 20 10.0 +4.7
KSH *e*PcP **PcP 22 21 14.1 +3.7**
KSH S **S 22 27 15.0 +2.9**
KSH ScS **ScS 22 29 44.5 +0.1**
KSH pmax pmax
comp=Z,97nm,4.4s
KSH LR LR
comp=N,160nm,10.2s
KSH LR LR
comp=E,120nm,10.4s
KSH LR LR
comp=Z,310nm,16.2s
CHKZ Chkalovo 51.29 314 *i* P **P 22 19 53.1 -2.5**
CHKZ pmax pmax
comp=Z,9.0nm,0.9s
AAK Ala-Archa 51.31 299 *e*P **P 22 19 56.8 +0.6**
AAK pmax pmax
comp=Z,10.0nm,1.4s
AAK Ala-Archa 51.31 299 *e*P **P 22 19 56.8 +0.6**
comp=Z,10.0nm,1.4s
OTUK Ortayu 51.34 307 *i* P **P 22 19 55.2 -0.9**
OTUK pmax pmax
comp=Z,11nm,0.8s
BMRM Bremner River 51.47 37 *e*P **P 22 19 57.8 +0.9**
comp=Z,25nm,1.3s
DOT Dot Lake 51.47 33 *e*P **P 22 19 58.6 +1.8**
comp=Z,46nm,1.8s
PSI Prapat 51.59 240 *e*P **P 22 19 58.3 -0.2**
PSI pmax pmax
comp=Z,8.0nm,0.8s
PSI Prapat 51.59 240 *e*P **P 22 19 58.3 -0.2**
comp=Z,8.4nm,0.8s
BRVK Borovoye 51.60 313 *c i*P **P 22 19 57.6 -0.4**
BRVK pmax pmax
comp=Z,6.0nm,0.7s
BRVK Borovoye 51.60 313 *e*P **P 22 19 58.2 +0.2**
comp=Z,7.3nm,0.9s
EKS2 Erkin-Say 51.81 299 *e*P **P 22 20 00.4 +0.5**
EKS2 pmax pmax
comp=Z,3.0nm,0.8s
EKS2 Erkin-Say 51.81 299 *e*P **P 22 20 00.4 +0.5**
comp=Z,3.4nm,0.8s
ZRNK Zerenda 52.38 313 *i* P **P 22 20 02.3 -1.5**
ZRNK pmax pmax
comp=Z,9.0nm,0.9s
ZRNK Zerenda 52.38 313 *e*P **P 22 20 03.3 -0.5**
comp=Z,11nm,1.0s
EGAK Eagle 52.62 32 *e*P **P 22 20 06.6 +1.2**
comp=Z,7.7nm,1.3s
MNAS Manas 52.76 300 *i* P **P 22 20 06.5 -0.5**
MNAS pmax pmax
comp=Z,9.0nm,0.8s
DAWY Dawson 53.47 32 *e*P **P 22 20 13.2 +1.5**
comp=Z,15nm,1.7s
GSI Gunungsitoli 53.59 240 *e*P **P 22 20 13.3 +0.1**
comp=Z,38nm,0.8s
OPA Opana 53.79 88 *e*P **P 22 20 14.8 +0.2**
OPA Opana 53.79 88 *e*P **P 22 20 14.8 +0.2**
comp=Z,400nm,1.9s
CISI Cisompet, Garu 53.87 223 *e*P **P 22 20 14.7 -0.5**
comp=Z,80nm,1.4s
KKAR Karatay Array 53.97 301 *e*P **P 22 20 16.0 +0.3**
KKAR Karatay Array 53.97 301 *e*P **P 22 20 16.0 +0.3**
HON Honolulu 53.98 88 *e*P **P 22 20 16.0 +0.1**
HON Honolulu 53.98 88 *e*P **P 22 20 16.0 +0.1**
comp=Z,176nm,1.0s
YKU2 Yakutat 54.12 38 *e*P **P 22 20 16.8 +0.4**
comp=Z,734nm,0.9s
INK Inuvik 55.14 27 P **P 22 20 24.6 +0.9**
comp=Z,2.7nm,0.8s,baz=45,slow=6.0,SNR=5.2
INK Inuvik 55.14 27 *e*P **P 22 20 25.2 +1.5**
INK pmax pmax
comp=Z,5.0nm,0.8s
INK Inuvik 55.14 27 *e*P **P 22 20 25.2 +1.5**
comp=Z,5.2nm,0.8s
HLK Haleakala 55.68 88 *e*P **P 22 20 28.4 -0.2**
comp=Z,326nm,1.6s
FITZ Fitzroy Crossi 55.96 199 P **P 22 20 30.7 +0.6**
comp=Z,2.5nm,0.7s,baz=20,slow=7.9,SNR=6.9
FITZ Fitzroy Crossi 55.96 199 *e*P **P 22 20 30.1 0.0**
comp=Z,19nm,1.4s
WRAB Tennant Creek 56.08 189⇓*e*P **P 22 20 30.7 -0.3**
WRAB pmax pmax
comp=Z,29nm,1.1s
WRAB Tennant Creek 56.08 189 *e*P **P 22 20 31.4 +0.4**
comp=Z,35nm,1.6s
WB2 Warramunga Arr 56.09 189 *e*P **P 22 20 31.2 +0.1**
comp=Z,13nm,1.0s
WRA Warramunga Arr 56.09 189 P **P 22 20 31.0 0.0**
comp=Z,4.3nm,0.8s,baz=8.0,slow=7.2,SNR=35
SVE Sverdlovsk 56.17 319⇑*i*P **P 22 20 31.8 +0.5**
SVE pmax pmax
comp=Z,13nm,0.9s
SVE MLR MLR
comp=Z,347nm,16.0s
ARU Arti 57.38 319 *c i*P **P 22 20 39.5 -0.4**
ARU 22 21 28.4
ARU S **S 22 28 36.1 +1.1**
ARU SS **SS 22 32 18.2 -5.9**
ARU pmax pmax
comp=Z,24nm,1.7s
ARU Arti 57.38 319 *e*P **P 22 20 39.8 -0.1**
comp=Z,12nm,0.9s
KBL Kabul 58.14 292 *e*P **P 22 20 45.6 -0.2**
KBL pmax pmax
comp=Z,7.0nm,1.1s
KBL Kabul 58.14 292 *e*P **P 22 20 45.6 -0.2**
comp=Z,6.5nm,1.1s
ABKAR Akbulak array 58.89 311 *e*P **P 22 20 49.8 -0.8**
AS01 Alice Springs 59.81 188 *e*P **P 22 20 57.3 +0.2**
ASAR Alice Springs 59.81 188 P **P 22 20 57.3 +0.1**
comp=Z,1.4nm,0.7s,baz=2.0,slow=6.7,SNR=18
TMCR Tamitsa 63.83 332 *e*P P 22 21 34.9 +11
TMCR pmax pmax
comp=Z,15nm,0.9s
YKA Yellowknife Ar 64.52 30 P **P 22 21 29.1 +0.9**
comp=Z,0.8nm,0.7s,baz=301,slow=6.5,SNR=8.8
YKB5 Yellowknife Ar 64.52 30 *e*P **P 22 21 28.6 +0.4**
GEYT Alibeck 64.66 300 P **P 22 21 29.9 +0.1**
comp=Z,1.4nm,0.5s,baz=24,slow=4.0,SNR=4.9
GEYT LR LR 22 52 45.5
comp=Z,114nm,18.1s,baz=125,slow=39
KLMR Klimovskoe 64.83 328 *e*P **P 22 21 27.6 -2.7**
KLMR *e* 22 22 01.5
KLMR pmax pmax
comp=Z,7.0nm,0.9s
ARCES ARCESS Array B 65.10 340 P **P 22 21 32.0 +0.1**
comp=Z,1.6nm,0.7s,baz=56,slow=7.5,SNR=5.8
ARCES LR LR 22 56 16.9
comp=Z,78nm,19.1s,baz=37,slow=42
STKA Stephens Creek 67.52 180 P **P 22 21 48.3 +0.5**
comp=Z,1.6nm,1.0s,baz=33,slow=6.3,SNR=2.9
VRH Novokhopyorsk 68.60 318 *e*P **P 22 21 53.3 -1.2**
VRH pmax pmax
comp=Z,7.0nm,0.6s
OBN Obninsk 69.15 324⇓*e*P **P 22 21 57.0 -0.8**
OBN *e* 22 22 20.0
OBN *e* 22 24 28.9
OBN pmax pmax
comp=Z,13nm,0.9s
OBN MLR MLR
comp=Z,118nm,15.0s
LPSR Galich'ya Gora 69.33 321 *e*P **P 22 21 58.5 -0.6**
LPSR pmax pmax
comp=Z,10.0nm,0.7s
FINES FINESS Array B 69.90 333 P **P 22 22 02.2 -0.2**
comp=Z,4.7nm,0.8s,baz=49,slow=5.8,SNR=14
FINES LR LR 22 55 40.8
comp=Z,127nm,18.0s,baz=7.0,slow=38
VSR Storozhevoye 69.96 319 *e*P **P 22 22 02.2 -0.7**
VSR pmax pmax
comp=Z,10.0nm,0.8s
VSU Vasula 71.53 330 *c e*P **P 22 22 13.4 +1.0**
VSU pmax pmax
comp=Z,61nm,2.5s
KBZ Khabaz 71.86 311 P **P 22 22 15.3 +0.7**
comp=Z,2.2nm,0.7s,baz=31,slow=5.6,SNR=5.3
KIV Kislovodsk 71.87 311 *d e*P **P 22 22 15.0 +0.2**
KIV *e* 22 22 31.9
KIV *e* 22 24 50.3
KIV *e*S **S 22 31 38.6 +4.4**
KIV *e*SS **SS 22 36 13.9 +4.0**
KIV pmax pmax
comp=Z,12nm,1.2s
KIV MLR MLR
comp=Z,90nm,15.0s
KIV Kislovodsk 71.87 311 *e*P **P 22 22 16.3 +1.5**
comp=Z,9.5nm,0.8s
UOSS Minazif 72.48 288 *e*P **P 22 22 18.8 +0.1**
comp=Z,0.5nm,0.9s
SWMT Swartz Lake 72.78 43 *e*P **P 22 22 22.0 +1.8**
FFC Flin Flon 74.38 33 *e*P **P 22 22 32.3 +3.0**
FFC pmax pmax
comp=Z,9.0nm,1.1s
FFC Flin Flon 74.38 33 *e*P **P 22 22 32.3 +3.0**
comp=Z,9.0nm,1.1s
LRM Limekiln Ridge 74.63 44 *e*P **P 22 22 33.2 +1.9**
BOZ Bozeman (W) 75.20 44 *e*P **P 22 22 35.8 +1.3**
BOZ pmax pmax
comp=Z,6.0nm,1.0s
BOZ Bozeman (W) 75.20 44 *e*P **P 22 22 35.8 +1.3**
comp=Z,5.8nm,1.0s
NB2 NORSAR Subarra 75.28 338 P **P 22 22 34.1 -0.5**
comp=Z,1.8nm,0.7s,baz=39,slow=5.9

NB2 NORSAR Subarra 75.28 338 P P 22 22 34.0 -0.5
NB2 pmax pmax
comp=Z,2.0nm,0.7s
NOA NORSAR Array B 75.28 338 P P 22 22 34.4 -0.1
comp=Z,2.7nm,0.8s,baz=40,slow=5.7,SNR=9.9
NOA LR LR 22 59 07.7
comp=Z,84nm,19.2s,baz=40,slow=38
NV01 Mina Array Sit 75.31 53 *eP* **P 22 22 36.8 +1.4**
NVAR Mina Array Bea 75.31 53 *iP* **P 22 22 36.5 +1.2**
comp=Z,0.5nm,0.7s,baz=297,slow=4.5,SNR=3.9
AKASG Malin Array Be 75.34 323 P **P 22 22 34.5 -0.5**
comp=Z,2.3nm,0.6s,baz=46,slow=6.1,SNR=13
AKASG LR LR 22 58 39.6
comp=Z,161nm,18.9s,baz=75,slow=38
KIEV Kiev 75.36 323 ⇓*iP* **P 22 22 34.7 -0.3**
KIEV pmax pmax
comp=Z,7.0nm,0.9s
KIEV Kiev 75.36 323 *eP* **P 22 22 34.0 -1.0**
comp=Z,5.0nm,0.8s
GCMT Greycliff 76.21 43 *eP* **P 22 22 37.3 -3.0**
H17A Grant Village 76.55 45 *eP* **P 22 22 44.9 +2.6**
comp=Z,9.1nm,1.0s
IMW Indian Meadow 76.64 45 *eP* **P 22 22 44.3 +1.4**
comp=Z,8.4nm,1.2s
BW06 Boulder Array 78.13 46 *eP* **P 22 22 55.5 +4.4**
PDAR Pinedale Array 78.13 46 P **P 22 22 51.8 +0.6**
comp=Z,0.3nm,0.6s,baz=86,slow=2.1,SNR=3.1
BUR08 Bucovina Ar. S 79.34 322 *eP* **P 22 22 58.2 +0.6**
SRU San Rafael Swe 79.81 49 *eP* **P 22 23 02.1 +1.7**
SRU pmax pmax
comp=Z,5.0nm,1.0s
SRU San Rafael Swe 79.81 49 *eP* **P 22 23 02.1 +1.7**
comp=Z,5.3nm,1.0s
BRTR Keskin Array B 79.82 312 P **P 22 23 00.7 +0.3**
comp=Z,2.2nm,0.9s,baz=102,slow=4.3,SNR=12
BR231 Keskin MP Arra 80.26 312 *eP* **P 22 23 01.4 -1.3**
DPC Dobruska-Polom 81.53 328 *eP* **P 22 23 10.1 +0.9**
DPC *ex* x 22 23 23.4
DPC Dobruska-Polom 81.53 328 *eP* **P 22 23 10.1 +0.9**
DPC *e* 22 23 23.4
PV01 Paradox Valley 81.62 49 *eP* **P 22 23 11.3 +1.1**
comp=Z,140nm,0.8s
VYHS Vyhne 81.79 326 *eP* **P 22 23 11.0 +0.4**
VYHS Vyhne 81.79 326 *eP* **P 22 23 11.0 +0.4**
CLL Collm 82.18 330 ⇓*iP* **P 22 23 11.8 -0.7**
comp=Z,5.0nm,1.0s
CLL *e* 22 23 22.0
CLL *e* 22 23 31.0
CLL LmH 23 00 00.0
comp=N,100nm,18.5s
CLL LmH 23 00 00.0
comp=E,200nm,19.4s
CLL Collm 82.18 330 ⇓*iP* **P 22 23 11.8 -0.7**
CLL *e* 22 23 22.0
CLL pmax pmax
comp=Z,5.0nm,1.0s
PRU Pruhonice 82.56 329 *eP* **P 22 23 14.9 +0.3**
PRU Pruhonice 82.56 329 *eP* **P 22 23 14.9 +0.3**
KHC Kasperske Hory 83.62 329 *eP* **P 22 23 19.8 -0.3**
KHC Kasperske Hory 83.62 329 *eP* **P 22 23 19.8 -0.3**
KHC pmax pmax
comp=Z,1.0nm,1.0s
KHC Kasperske Hory 83.62 329 *eP* **P 22 23 19.8 -0.3**
comp=Z,0.8nm,1.0s
GERES GERESS Array B 83.79 329 P **P 22 23 21.0 -0.1**
comp=Z,0.9nm,0.8s,baz=35,slow=4.9,SNR=8.5
GERES LR LR 23 05 01.5
comp=Z,94nm,18.6s,baz=360,slow=39
GERES GERESS Array B 83.79 329 P **P 22 23 21.0 -0.1**
GEA0 GERESS Array S 83.79 328 *eP* **P 22 23 20.6 -0.4**
PPT Papeete 83.84 117 LR LR 22 50 36.4
comp=Z,54nm,22.0s,baz=349,slow=28
ANMO Albuquerque 84.97 50 P **P 22 23 27.3 -0.1**
comp=Z,1.0nm,0.8s,baz=142,slow=4.4,SNR=3.3
SCHQ Schefferville 86.23 16 LR LR 23 05 13.8
comp=Z,78nm,19.0s,baz=309,slow=38
BFO Black Forest 86.39 331 *iP* **P 22 23 34.7 +0.7**
TX31 Lajitas Ar. Si 90.46 53 *eP* **P 22 23 55.5 +1.7**
TXAR Lajitas Array 90.46 53 P **P 22 23 54.9 +1.0**
comp=Z,0.6nm,0.8s,baz=302,slow=7.2,SNR=3.6
BLO Bloomington 92.89 36 *eP* **P 22 24 04.1 -0.7**
BLO Bloomington 92.89 36 *eP* **P 22 24 04.1 -0.7**
ESDC Sonseca Array 98.38 334 LR LR 23 13 44.5
comp=Z,59nm,19.9s,baz=10,slow=38
LPAZ La Paz 146.88 62 PKPbc **PKPbc 22 30 35.8 +0.5**
comp=Z,1.9nm,0.5s,baz=330,slow=2.7,SNR=13

IDC ***20*** *22:15:56.3±1.6, 3°.07S×145°.31E, h0km, mb3.9/4, mb1 4.0/5, mb1mx3.6/39, mbtmp3.9/5, ML2.0/2, Error ellipse: s-maj=41.3km s-min=22.7km az=73.0*
ISCJB ***20*** *22:15:59.1±0.7, 3°.14S±0°.08×145°.36E±0°.08, h33km, mb4.1/9, Error ellipse: s-maj=12.1km s-min=10.4km az=42.0*
NEIC ***20*** *22:16:01.6±1.2, 3°.14S×145°.23E, h35km±12km, mb4.2/6, Error ellipse: s-maj=16.1km s-min=9.5km az=79.0*
ISC 20 22:16:01.1±0.8, 3°.10S±0°.09×145°.4E±0°.1, h35km, n13, σ0s92/14, mb4.1/9, Near north coast of New Guinea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAY	**Jayapura**	**4.69**	**277**	Pn	**Pn**	**22 17 08.1**	**-1.4**
	0.1nm,0.3s,baz=85,slow=22,SNR=4.6						
JAY				Sn	**Sn**	**22 18 04.3**	**+1.5**
	0.1nm,0.3s,baz=260,slow=24,SNR=2.4						
PMG	**Port Moresby**	**6.51**	**164**	Pn	**Pn**	**22 17 33.6**	**-0.8**
	1.3nm,0.3s,baz=167,slow=19,SNR=3.2						
PMG	**Port Moresby**	**6.51**	**164**	*e*Pn	**Pn**	**22 17 34.5**	**+0.1**
GUMO	**Guam**	**16.59**	**358**	*e*Pn	**P**	**22 19 52.9**	**-0.4**
	10nm,0.6s						
ASAR	**Alice Springs**	**23.26**	**207**	P	**P**	**22 21 04.9**	**-0.7**
	3.4nm,0.6s,baz=17,slow=12,SNR=33						
STKA	**Stephens Creek**	**28.84**	**187**	P	**P**	**22 21 57.6**	**+1.4**
	2.9nm,0.7s,baz=351,slow=7.3,SNR=4.3						
KSM	**Kuching**	**35.34**	**277**	*e*P	**P**	**22 22 53.0**	**-0.5**
	1.5nm,0.3s						
ULN	**Ulaanbaatar**	**60.80**	**331**	*e*P	**P**	**22 26 10.6**	**+0.7**
	0.8nm,0.6s						
TLY	**Talaya**	**65.04**	**333**	*e*P	**P**	**22 26 38.0**	**+0.2**
	1.6nm,0.7s						
YAK	**Yakutsk**	**66.06**	**352**	*e*P	**P**	**22 26 43.4**	**-0.7**
	9.6nm,0.6s						
BILL	**Bilibino**	**72.48**	**8**	*e*P	**P**	**22 27 24.2**	**+0.4**
	0.7nm,0.3s						
MKAR	**Makanchi Array**	**74.24**	**320**	P	**P**	**22 27 34.8**	**+0.2**
	0.2nm,0.5s,baz=99,slow=8.9,SNR=3.5						
BVAR	**Borovoye Array**	**83.48**	**324**	P	**P**	**22 28 25.6**	**+0.4**
	0.2nm,0.4s,baz=90,slow=8.6,SNR=3.0						

CSEM ***20*** *22:25:39.4, 38°.38N×15°.52E, h134km, ML1.8/6*
ROM 20 22:25:39.4±0.4, 38°.38N×15°.52E, h134km±5km, Ml1.8/6, Error ellipse: s-maj=8.9km s-min=5.0km az=128.0, Sicily

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSCL	**Scilla**	**0.26**	**125**	Pg	Pn	22 25 57.7	-0.3
MSCL				Sg	Sn	22 26 12.1	0.0
MSCL	**Scilla**	**0.26**	**125**	Pg	Pn	22 25 57.7	-0.3
MSCL				Sg	Sn	22 26 12.1	0.0
CEL	**Celeste**	**0.32**	**113**	Pg	Pn	22 25 58.2	0.0
CEL				Sg	Sn	22 26 11.5	-0.8
	22nm,0.8s						
CEL	**Celeste**	**0.32**	**113**	Pg	Pn	22 25 58.2	0.0
CEL				Sg	Sn	22 26 11.5	-0.8
	22nm,0.8s						
MCSR	**Castroreale**	**0.38**	**214**	Pg	Pn	22 25 58.6	+0.1
MCSR				Sg	Sn	22 26 13.6	+0.7
MCSR	**Castroreale**	**0.38**	**214**	Pg	Pn	22 25 58.6	+0.1
MCSR				Sg	Sn	22 26 13.6	+0.7
SOI	**Samo**	**0.52**	**126**	Pg	Pn	22 25 59.3	+0.2
SOI				Sg	Sn	22 26 13.8	-0.1
	9.0nm,0.7s						
SOI	**Samo**	**0.52**	**126**	Pg	Pn	22 25 59.3	+0.2
SOI				Sg	Sn	22 26 13.8	-0.1
	9.0nm,0.7s						
MPAZ	**Palizzi**	**0.57**	**138**	Pg	Pn	22 25 59.6	+0.2
MPAZ				Sg	Sn	22 26 14.2	-0.4
	17nm,0.3s						
MPAZ	**Palizzi**	**0.57**	**138**	Pg	Pn	22 25 59.6	+0.2
MPAZ				Sg	Sn	22 26 14.2	-0.4
	17nm,0.3s						
PLAC	**Placanica**	**0.72**	**84**	Pg	Pn	22 26 01.0	+0.6
PLAC				Sg	Sn	22 26 16.2	-0.1
	18nm,0.6s						
PLAC	**Placanica**	**0.72**	**84**	Pg	Pn	22 26 01.0	+0.6
PLAC				Sg	Sn	22 26 16.2	-0.1
	18nm,0.6s						
CAR1	**CAROLEI**	**1.02**	**32**	Pg	Pn	22 26 03.0	+0.1
CAR1				Sg	Sn	22 26 19.9	-1.0
	15nm,0.6s						
CAR1	**CAROLEI**	**1.02**	**32**	Pg	Pn	22 26 03.0	+0.1
CAR1				Sg	Sn	22 26 19.9	-1.0
	15nm,0.6s						
SERS	**Sersale**	**1.12**	**54**	Pg	Pn	22 26 04.8	+0.9
SERS				Sg	Sn	22 26 23.0	+0.4
	3.0nm,0.3s						
SERS	**Sersale**	**1.12**	**54**	Pg	Pn	22 26 04.8	+0.9
SERS				Sg	Sn	22 26 23.0	+0.4
	3.0nm,0.3s						

ISCJB ***20*** *22:27:34.4±2.3, 37°.45N±0°.04×141°.96E±0°.09, h11km±18km, mb3.1/2, Error ellipse: s-maj=11.5km s-min=7.2km az=8.4*
JMA ***20*** *22:27:36.0±0.1, 37°.47N×141°.89E, h23km±2km, M2.9*
IDC ***20*** *22:27:37.0±2.4, 37°.10N×141°.94E, h0km, mb3.2/2, mb1 3.3/3, mb1mx3.1/47, mbtmp3.0/3, ML2.4/1, Error ellipse: s-maj=50.3km s-min=32.8km az=45.0*
ISC 20 22:27:34.9±2.3, 37°.47N±0°.05×141°.88E±0°.09, h10km±12km, n16, σ1s20/17, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.81**	**263**	P	**Pb**	**22 27 51.2**	**+0.2**
JFK				S	**Sg**	**22 28 02.1**	**+1.1**
ONAJ	**Iwakimizuishiy**	**0.94**	**247**	P	**Pn**	**22 27 53.5**	**-0.7**
ONAJ				*e*S	**Sg**	**22 28 05.3**	**+0.1**
JMM	**Marumori**	**0.95**	**295**	P	**Pb**	**22 27 53.5**	**+0.1**
JMM				*e*S	**Sg**	**22 28 06.1**	**+0.5**
JIO	**Ouri**	**1.07**	**337**	P	**Pn**	**22 27 55.3**	**-0.6**
JIO				S	**Sg**	**22 28 08.6**	**-0.8**
JFT	**Otama**	**1.23**	**273**	P	**Pg**	**22 27 58.5**	**0.0**
JFT				S	**Sn**	**22 28 15.1**	**+0.3**
JOU	**Okura**	**1.31**	**313**	P	**Pg**	**22 27 59.8**	**-0.3**
JOU				S	**Sb**	**22 28 17.0**	**+0.4**
JHO	**Hitachi**	**1.36**	**231**	P	**Pb**	**22 27 59.6**	**-0.7**
JHO				S	**Sn**	**22 28 16.2**	**-1.7**
MJAR	**Matsushiro Arr**	**3.08**	**254**	Pn	**Pn**	**22 28 25.6**	**+2.0**
	0.5nm,0.3s,baz=82,slow=15,SNR=4.3						
MJAR				Sn	**Sb**	**22 29 04.9**	**-2.6**
	0.7nm,0.3s,baz=65,slow=22,SNR=3.7						
H11N2	**WAKE ISLAND Hy 28.05**	**122**		T	T	23 02 48.5	
	baz=315,slow=75,SNR=19						
H11N1	**WAKE ISLAND Hy 28.06**	**122**		T	T	23 02 51.6	
	baz=315,slow=75,SNR=15						
H11N3	**WAKE ISLAND Hy 28.07**	**122**		T	T	23 02 50.4	
	baz=315,slow=75,SNR=16						
H11S1	**WAKE ISLAND Hy 28.79**	**124**		T	T	23 03 43.0	
	baz=316,slow=76,SNR=21						
H11S3	**WAKE ISLAND Hy 28.79**	**124**		T	T	23 03 46.2	
	baz=316,slow=76,SNR=22						
H11S2	**WAKE ISLAND Hy 28.80**	**124**		T	T	23 03 45.7	
	baz=316,slow=76,SNR=23						
MKAR	**Makanchi Array**	**44.21**	**302**	P	P	22 35 49.4	+5.4
	0.1nm,0.6s,baz=79,slow=12,SNR=2.3						
WRA	**Warramunga Arr**	**57.54**	**188**	P	**P**	**22 37 25.9**	**+1.3**
	0.4nm,0.8s,baz=6.8,slow=7.1,SNR=3.4						

JMA ***20*** *22:32:16.3±0.2, 24°.30N×121°.58E, h60km±2km*
ISCJB ***20*** *22:32:17.9±0.4, 24°.37N±0°.02×121°.70E±0°.03, h52km±4km, Error ellipse: s-maj=4.8km s-min=2.9km az=31.6*
TAP ***20*** *22:32:18.1, 24°.36N×121°.67E, h48km, ML3.0, C*
ISC 20 22:32:18.5±1.3, 24°.36N±0°.03×121°.69E±0°.03, h48km±7km, n39, σ0s84/75, 3D, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ENA	**Nanau**	**0.08**	**37**	*i*P	**Pn**	**22 32 26.0**	**0.0**
	baz=50						
ENA				S	**Sn**	**22 32 32.0**	**+0.7**
	baz=50						
TWC	**Suao**	**0.29**	**31**	⇓*iP*	**Pn**	**22 32 27.4**	**+0.1**
	baz=35						
TWC				*i*S	**Sn**	**22 32 35.0**	**+1.5**
	baz=35						
TWD	**Chiawan**	**0.29**	**197**	*i*P	**Pn**	**22 32 26.5**	**-0.8**
	baz=191						
TWD				*i*S	**Sn**	**22 32 33.4**	**-0.2**
	baz=191						
NNS	**Nan Shan**	**0.30**	**285**	P	**Pn**	**22 32 27.3**	**-0.3**
	baz=286						
NNS				S	**Sn**	**22 32 34.4**	**+0.4**
	baz=286						
ENTT	**Nioudou**	**0.30**	**338**	⇓*iP*	**Pn**	**22 32 27.4**	**-0.1**
	baz=342						
TWE	**Neicheng**	**0.36**	**357**	⇓*iP*	**Pn**	**22 32 28.0**	**0.0**
	baz=2.0						
TWE				S	**Sn**	**22 32 35.4**	**+0.6**
	baz=2.0						
NSK	**Sanguang**	**0.43**	**316**	P	**Pn**	**22 32 28.2**	**-0.6**
	baz=318						
NSK				S	**Sn**	**22 32 35.5**	**-0.8**
	baz=318						
WHF	**Hehuan Shan**	**0.44**	**241**	P	**Pn**	**22 32 29.0**	**-0.4**
	baz=238						
WHF				S	**Sn**	**22 32 36.9**	**-0.1**
	baz=238						
TWT	**Tachien**	**0.48**	**257**	*e*P	**Pn**	**22 32 29.9**	**+0.4**
	baz=256						
TWT				S	**Sn**	**22 32 37.5**	**+0.1**
	baz=256						
ESL	**Shilin**	**0.59**	**203**	*e*P	**Pn**	**22 32 29.2**	**-1.6**
	baz=200						
ESL				*e*S	**Sn**	**22 32 39.5**	**0.0**
	baz=200						
TWA	**Mucha**	**0.62**	**351**	*e*P	**Pn**	**22 32 29.1**	**-2.1**
	baz=353						
TWA				*e*S	**Sn**	**22 32 40.2**	**-0.1**
	baz=353						
NSTT	**Nanjuang**	**0.68**	**293**	*e*P	**Pn**	**22 32 31.6**	**-0.3**
	baz=293						
NSTT				*e*S	**Sn**	**22 32 41.1**	**-0.5**
	baz=293						
TWB1	**Santiao Chiao**	**0.70**	**23**	*e*P	**Pn**	**22 32 33.0**	**+0.8**
	baz=25						
TWB1				*e*S	**Sn**	**22 32 42.8**	**+0.8**
	baz=25						
NWF	**Wu-fen Shan**	**0.71**	**7**	*e*P	**Pn**	**22 32 31.9**	**-0.5**
	baz=8.0						
NWF				S	**Sn**	**22 32 42.0**	**-0.4**
	baz=8.0						
NCU	**National Centr**	**0.76**	**323**	*e*S	**Sn**	**22 32 42.4**	**-1.0**
	baz=324						
TWS1	**Kuangyinshan**	**0.78**	**342**	*e*P	**Pn**	**22 32 32.4**	**-0.8**
	baz=343						
TWS1				*e*S	**Sn**	**22 32 43.0**	**-0.7**
	baz=343						
TWQ1	**Liyutan**	**0.83**	**269**	*e*P	**Pn**	**22 32 32.8**	**-1.1**
	baz=268						
TWQ1				*e*S	**Sn**	**22 32 44.5**	**-0.7**
	baz=268						
SMLT	**Sun Moon Lake**	**0.86**	**237**	*e*P	**Pn**	**22 32 34.5**	**+0.1**
	baz=235						
SMLT				S	**Sn**	**22 32 46.5**	**+0.5**
	baz=235						
TYC	**Yuchr**	**0.89**	**239**	P	**Pn**	**22 32 34.6**	**0.0**
	baz=237						
TYC				S	**Sn**	**22 32 46.6**	**+0.3**
	baz=237						
TWY	**Chenhua**	**0.91**	**355**	*e*P	**Pn**	**22 32 35.0**	**0.0**
	baz=356						
TWY				*e*S	**Sn**	**22 32 47.3**	**+0.3**
	baz=356						
EHY	**Hungye**	**0.92**	**201**	*e*P	**Pn**	**22 32 33.8**	**-1.2**
	baz=199						
EHY				*e*S	**Sn**	**22 32 46.4**	**-0.7**
	baz=199						
TCU	**Taichung**	**0.95**	**257**	*e*P	**Pn**	**22 32 35.3**	**-0.1**
	baz=256						
TCU				*e*S	**Sn**	**22 32 48.9**	**+1.0**
	baz=256						
WNT	**Mingjian**	**1.04**	**242**	*e*P	**Pn**	**22 32 37.8**	**+1.1**
	baz=241						
WNT				*e*S	**Sn**	**22 32 51.8**	**+1.8**
	baz=241						
TWF1	**Yuli**	**1.07**	**200**	*e*P	**Pn**	**22 32 36.4**	**-0.7**
	baz=198						
TWF1				*e*S	**Sn**	**22 32 50.5**	**-0.2**
	baz=198						
YUS	**Yu-Shan**	**1.10**	**218**	*e*P	**Pn**	**22 32 37.7**	**-0.2**
	baz=216						
YUS				*e*S	**Sn**	**22 32 53.3**	**+1.1**
	baz=216						
JYNG	**Yonagunijimaku**	**1.15**	**85**	P	**Pn**	**22 32 38.1**	**-0.1**
JYNG				*e*S	**Sn**	**22 32 53.6**	**+0.8**
ALS	**Alishan**	**1.17**	**224**	P	**Pn**	**22 32 39.0**	**+0.2**
	baz=222						
ALS				S	**Sn**	**22 32 55.2**	**+1.5**
	baz=222						
CHN5	**Tsauling**	**1.20**	**231**	*e*P	**Pn**	**22 32 38.7**	**-0.2**
	baz=229						
CHN5				S	**Sn**	**22 32 54.1**	**0.0**
	baz=229						
WGK	**Gukeng**	**1.23**	**237**	*e*P	**Pn**	**22 32 40.0**	**+0.7**
	baz=236						
WGK				*e*S	**Sn**	**22 32 56.3**	**+1.6**
	baz=236						
CHKT	**Chengkung**	**1.29**	**193**	*e*P	**Pn**	**22 32 38.6**	**-1.5**
	baz=192						
CHKT				*e*S	**Sn**	**22 32 55.2**	**-1.0**
	baz=192						
ELDTW	**Lidau**	**1.32**	**208**	*e*P	**Pn**	**22 32 39.6**	**-1.0**
	baz=206						
ELDTW				*e*S	**Sn**	**22 32 57.0**	**-0.1**
	baz=206						
CHN4	**Tsaushan**	**1.42**	**225**	*e*P	**Pn**	**22 32 42.0**	**+0.1**
	baz=224						
CHN4				S	**Sn**	**22 33 00.8**	**+1.4**
	baz=224						
CHY	**Chiayi**	**1.44**	**234**	*e*P	**Pn**	**22 32 42.1**	**0.0**
	baz=232						
CHY				*e*S	**Sn**	**22 32 58.9**	**-1.0**
	baz=232						
STYT	**Tauyuan**	**1.47**	**216**	*e*P	**Pn**	**22 32 42.7**	**+0.1**
	baz=214						
STYT				*e*S	**Sn**	**22 33 01.7**	**+1.0**
	baz=214						
WTP	**Ta-pu**	**1.48**	**222**	*e*P	**Pn**	**22 32 42.8**	**0.0**
	baz=220						
WTP				*e*S	**Sn**	**22 33 02.9**	**+1.9**
	baz=220						
TWK	**Hsinying**	**1.55**	**225**	*e*P	**Pn**	**22 32 43.8**	**+0.1**
	baz=224						
TWK				*e*S	**Sn**	**22 33 03.8**	**+1.2**
	baz=224						
CHN1	**Nanshi**	**1.58**	**222**	*e*P	**Pn**	**22 32 44.9**	**+0.8**
	baz=221						
CHN1				*e*S	**Sn**	**22 33 04.0**	**+0.7**
	baz=221						
TWG	**Pinlang**	**1.64**	**200**	*e*P	**Pn**	**22 32 44.5**	**-0.3**
	baz=199						
TWG				*e*S	**Sn**	**22 33 03.9**	**-0.8**
	baz=199						
IRIF	**Iriomote-Funau**	**1.86**	**90**	*e*S	**Sn**	**22 33 10.5**	**+0.2**

ATH ***20*** *22:34:40.9, 40°.90N×26°.06E, h22km, ML3.2/9, Error ellipse: s-maj=1.8km s-min=0.9km az=52.0*
ISCJB ***20*** *22:34:41.5±0.4, 40°.90N±0°.02×25°.96E±0°.02, h4km±3km, Error ellipse: s-maj=2.7km s-min=2.1km az=12.1*
CSEM ***20*** *22:34:42.4±0.1, 40°.86N×25°.97E, h5km, ML3.2, Error ellipse: s-maj=2.4km s-min=1.9km az=5.0*
THE ***20*** *22:34:42.2, 40°.93N×26°.00E, h1km±1km, ML3.4/9, Error ellipse: s-maj=2.0km s-min=0.8km az=72.0*
ISK ***20*** *22:34:42.2, 40°.88N×26°.01E, h6km, ML3.5*
DDA ***20*** *22:34:43.1, 40°.85N×26°.08E, h22km, Ml3.5*
ISC 20 22:34:42.4±0.8, 40°.89N±0°.02×26°.00E±0°.01, h9km±4km, n215, σ0s94/275, 17C-15D, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ALN	**Alexandroupoli**	**0.03**	**79**	PG	**Pg**	**22 34 44.0**	**0.0**
ALN	**Alexandroupoli**	**0.03**	**79**	P	**Pg**	**22 34 44.1**	**0.0**
ALN				S	**Sg**	**22 34 44.8**	**-0.5**
ALN	**Alexandroupoli**	**0.03**	**79**	*i*Pg	**Pg**	**22 34 44.0**	**0.0**
ALN	**Alexandroupoli**	**0.03**	**79**	P	**Pg**	**22 34 43.5**	**-0.6**
ENEZ	**Enez**	**0.19**	**143**	*e*PG	**Pg**	**22 34 47.0**	**+0.6**
ENEZ	**Enez**	**0.19**	**143**	P	**Pg**	**22 34 47.0**	**+0.6**
ENEZ				S	**Sg**	**22 34 50.1**	**+1.1**
ENEZ	**Enez**	**0.19**	**143**	P	**Pg**	**22 34 47.0**	**+0.6**
ENEZ				S	**Sg**	**22 34 50.1**	**+1.1**
ERIK	**Erikli-Kesan**	**0.45**	**119**	*e*PG	**Pg**	**22 34 51.2**	**+0.1**
ERIK				*e*SG	**Sg**	**22 34 57.3**	**+0.3**
ERIK	**Erikli-Kesan**	**0.45**	**119**	*e*Pg	**Pg**	**22 34 51.2**	**+0.1**
ERIK				*e*Sg	**Sg**	**22 34 57.3**	**+0.3**
KESN	**Edirne-Kesan**	**0.52**	**97**	P	**Pg**	**22 34 52.7**	**+0.2**
KESN				S	**Sg**	**22 34 59.3**	**-0.1**
KESN	**Edirne-Kesan**	**0.52**	**97**	*i*P	**Pg**	**22 34 52.6**	**+0.2**
KESN				*i*S	**Sg**	**22 34 59.3**	**-0.1**
SMTH	**Samothraki Isl**	**0.55**	**221**	P	**Pg**	**22 34 53.3**	**+0.2**
SMTH				S	**Sb**	**22 35 02.1**	**-0.1**
SMTH	**Samothraki Isl**	**0.55**	**221**	P	**Pg**	**22 34 53.3**	**+0.2**
SMTH				S	**Sg**	**22 35 00.4**	**+0.1**
SMTH	**Samothraki Isl**	**0.55**	**221**	P	**Pg**	**22 34 53.8**	**+0.7**
SMTH				S	**Sg**	**22 35 00.4**	**+0.1**
SMTH				AML	AML	22 35 08.7	
	comp=E,1892μm,0.4s						
SMTH				AML	AML	22 35 08.8	
	comp=N,2130μm,0.2s						
GELI	**Tayfur-Gelibol**	**0.61**	**144**	*e*PG	**Pg**	**22 34 54.5**	**+0.3**
GELI	**Tayfur-Gelibol**	**0.61**	**144**	*e*Pg	**Pg**	**22 34 54.5**	**+0.3**
LPK	**Lapseki**	**0.78**	**132**	*e*PG	**Pg**	**22 34 57.5**	**+0.2**
LPK				*e*SG	**Sb**	**22 35 08.5**	**-0.2**
LPK	**Lapseki**	**0.78**	**132**	*e*Pg	**Pg**	**22 34 57.5**	**+0.2**
LPK				*e*Sg	**Sb**	**22 35 08.5**	**-0.2**
RKY	**Sarkoy-Tekirda**	**0.92**	**102**	*e*PG	**Pg**	**22 35 00.1**	**+0.1**
RKY	**Sarkoy-Tekirda**	**0.92**	**102**	*e*Pg	**Pg**	**22 35 00.1**	**+0.1**
SART	**Tekirdag**	**0.92**	**102**	P	**Pg**	**22 35 00.3**	**+0.3**
SART				S	**Sg**	**22 35 12.2**	**+0.2**
SART	**Tekirdag**	**0.92**	**102**	*i*P	**Pg**	**22 35 00.3**	**+0.3**
SART				*i*S	**Sg**	**22 35 12.2**	**+0.2**
BOZC	**Bozcaada**	**1.05**	**178**	*i*P	**Pg**	**22 35 02.6**	**+0.1**
BOZC				*i*S	**Sg**	**22 35 16.2**	**+0.1**
EZN	**Ezine**	**1.09**	**167**	*e*PN	**Pg**	**22 35 02.7**	**-0.6**
EZN	**Ezine**	**1.09**	**167**	P	**Pg**	**22 35 03.0**	**-0.3**
EZN				S	**Sn**	**22 35 19.0**	**-0.1**
EZN	**Ezine**	**1.09**	**167**	*e*Pn	**Pg**	**22 35 02.7**	**-0.6**
EZN	**Ezine**	**1.09**	**167**	P	**Pg**	**22 35 03.0**	**-0.3**
EZN				S	**Sn**	**22 35 19.0**	**-0.1**
KRBG	**Karabiga-Canak**	**1.10**	**116**	*e*PN	**Pg**	**22 35 03.7**	**+0.1**
KRBG	**Karabiga-Canak**	**1.10**	**116**	*e*Pn	**Pg**	**22 35 03.7**	**+0.1**
EDRB	**Edirne**	**1.11**	**30**	*e*PN	**Pg**	**22 35 03.7**	**+0.1**
EDRB	**Edirne**	**1.11**	**30**	P	**Pg**	**22 35 03.1**	**-0.5**
EDRB				S	**Sg**	**22 35 17.7**	**-0.3**
EDRB	**Edirne**	**1.11**	**30**	P	**Pg**	**22 35 03.1**	**-0.5**
EDRB	**Edirne**	**1.11**	**30**	*e*Pn	**Pg**	**22 35 03.7**	**+0.1**
EDRB				S	**Sg**	**22 35 17.7**	**-0.3**
KAVA	**Kavala**	**1.13**	**276**	P	**Pg**	**22 35 03.9**	**-0.2**
KAVA				S	**Sg**	**22 35 19.2**	**+0.4**
KAVA	**Kavala**	**1.13**	**276**	P	**Pg**	**22 35 04.2**	**+0.1**
KAVA				S	**Sg**	**22 35 19.2**	**+0.4**
KAVA	**Kavala**	**1.13**	**276**	P	**Pg**	**22 35 04.2**	**+0.1**
TKR	**Tekirdag**	**1.17**	**85**	*e*PN	**Pb**	**22 35 05.0**	**+0.3**

comp=E,3230μm,0.5s
PRK Paraskevi 1.66 173 P **Pn 22 35 11.9 +0.3**
PRK S **Sg 22 35 35.3 -0.3**
PRK Paraskevi 1.66 173 P **Pn 22 35 11.9 +0.3**
PRK S **Sb 22 35 33.9 -0.1**
PRK Paraskevi 1.66 173 P **Pn 22 35 10.8 -0.8**
PRK S **Sb 22 35 33.9 -0.1**
PRK AML AML 22 35 36.2
comp=E,3328μm,0.6s
PRK AML AML 22 35 36.5
comp=N,2948μm,0.5s
AYVA Ayvalik 1.67 161 P **Pb 22 35 12.8 -0.4**
AYVA S **Sg 22 35 35.8 -0.1**
AYVA Ayvalik 1.67 161 *i* P **Pb 22 35 12.8 -0.4**
AYVA *i* S **Sg 22 35 35.8 -0.1**
NVR Nevrokopi 1.68 287 P **Pn 22 35 12.5 +0.5**
NVR S **Sn 22 35 33.6 -0.1**
NVR Nevrokopi 1.68 287 P **Pn 22 35 12.5 +0.5**
NVR S **Sn 22 35 33.6 -0.1**
SIGR SIGRI 1.68 184 *e*PN **Pn 22 35 12.7 +0.8**
SIGR SIGRI 1.68 184 P **Pn 22 35 12.0 0.0**
SIGR SIGRI 1.68 184 P **Pn 22 35 12.7 +0.8**
SIGR S **Sn 22 35 32.8 -0.8**
SIGR SIGRI 1.68 184 P **Pn 22 35 12.7 +0.8**
SIGR S **Sn 22 35 32.8 -0.8**
SIGR AML AML 22 35 36.7
comp=E,1443μm,1.0s
SIGR AML AML 22 35 40.2
comp=N,1954μm,0.4s
BALY Balya 1.69 132 P **Pb 22 35 13.5 -0.1**
BALY S **Sb 22 35 34.9 -0.1**
BALY Balya 1.69 132 *i* P **Pb 22 35 13.5 -0.1**
BALY *i* S **Sb 22 35 34.9 -0.1**
SLVT Silivri 1.70 78 P **Pn 22 35 12.0 -0.3**
SLVT S **Sn 22 35 31.8 -2.4**
CTYL Yalikoy Yolu 1.82 71 *e*PN **Pb 22 35 15.5 -0.4**
CTYL Yalikoy Yolu 1.82 71 *e*Pn **Pb 22 35 15.5 -0.4**
SRS Serrai 1.84 278 P **Pn 22 35 14.2 +0.1**
SRS S **Sb 22 35 39.6 +0.3**
SRS Serrai 1.84 278 P **Pn 22 35 14.5 +0.4**
SRS S **Sn 22 35 37.8 +0.3**
SRS Serrai 1.84 278 P **Pn 22 35 14.5 +0.4**
SRS S **Sn 22 35 37.8 +0.3**
SRS AML AML 22 35 45.3
comp=E,1120μm,0.4s
SRS AML AML 22 35 48.1
comp=N,825μm,0.4s
KCTX Karacabey (Bur 1.90 108 *e*PN **Pn 22 35 15.5 +0.5**
KCTX Karacabey (Bur 1.90 108 *e*Pn **Pn 22 35 15.5 +0.5**
BALB Balikesir 1.90 130 *e*PN **Pn 22 35 15.8 +0.8**
BALB Balikesir 1.90 130 *e*Pn **Pn 22 35 15.8 +0.8**
CTKS Kestanelik-??a 1.93 79 *e*PN **Pn 22 35 16.3 +1.0**
CTKS Kestanelik-??a 1.93 79 *e*Pn **Pn 22 35 16.3 +1.0**
DKL Dikili 1.94 159 *e*PN **Pn 22 35 16.3 +0.7**
DKL Dikili 1.94 159 *e*Pn **Pn 22 35 16.3 +0.7**
SOH Sokhos 2.01 269 P **Pn 22 35 16.5 0.0**
SOH Sokhos 2.01 269 P **Pn 22 35 16.7 +0.1**
SOH S **Sn 22 35 42.8 +1.0**
SOH Sokhos 2.01 269 P **Pn 22 35 16.7 +0.1**
SOH S **Sn 22 35 42.8 +1.0**
SOH AML AML 22 35 49.8
comp=N,818μm,0.4s
SOH AML AML 22 35 51.3
comp=E,736μm,0.7s
PLG Polygyros 2.01 256 P **Pn 22 35 16.2 -0.4**
PLG Polygyros 2.01 256 P **Pn 22 35 16.2 -0.4**
PLG S **Sn 22 35 42.6 +0.7**
PLG Polygyros 2.01 256 P **Pn 22 35 16.2 -0.4**
PLG S **Sn 22 35 42.6 +0.7**
PLG AML AML 22 35 51.5
comp=E,389μm,0.3s
PLG AML AML 22 35 53.8
comp=N,440μm,0.5s
PAIG Paliouri 2.02 242 P **Pn 22 35 15.8 -0.8**
PAIG S **Sb 22 35 44.3 -0.1**
PAIG Paliouri 2.02 242 P **Pn 22 35 15.8 -0.8**
PAIG S **Sn 22 35 41.5 -0.4**
PAIG Paliouri 2.02 242 P **Pn 22 35 15.2 -1.4**
PAIG S **Sn 22 35 41.5 -0.4**
PAIG AML AML 22 35 52.9
comp=E,450μm,0.5s
PAIG AML AML 22 35 53.6
comp=N,680μm,0.4s
BGKT Bogazkoy 2.12 81 *e*PN **Pn 22 35 19.0 +1.1**
BGKT Bogazkoy 2.12 81 *e*Pn **Pn 22 35 19.0 +1.1**
ARMT Armutlu 2.20 98 *e*PN **Pn 22 35 20.6 +1.5**
ARMT Armutlu 2.20 98 *e*Pn **Pn 22 35 20.6 +1.5**
HORT Hortiatis 2.22 263 *e*PN **Pn 22 35 20.4 +0.9**
HORT Hortiatis 2.22 263 P **Pn 22 35 19.3 -0.2**
HORT S **Sn 22 35 48.8 +1.6**
HORT Hortiatis 2.22 263 P **Pn 22 35 19.3 -0.2**
HORT S **Sn 22 35 48.8 +1.6**
HORT Hortiatis 2.22 263 P **Pn 22 35 19.3 -0.2**
HORT S **Sn 22 35 49.0 +1.8**
HORT AML AML 22 35 55.4
comp=E,456μm,0.5s
HORT AML AML 22 36 01.0
comp=N,386μm,0.7s
MDNY Mudanya-Bursa 2.25 102 *e*PN **Pn 22 35 20.6 +0.8**
MDNY Mudanya-Bursa 2.25 102 *e*Pn **Pn 22 35 20.6 +0.8**
THE Thessaloniki 2.32 265 P **Pn 22 35 22.0 +1.2**
THE Thessaloniki 2.32 265 P **Pn 22 35 22.0 +1.2**
ISK Istanbul-Kandi 2.32 85 *e*PN **Pn 22 35 21.7 +0.9**
ISK Istanbul-Kandi 2.32 85 P **Pn 22 35 19.7 -1.1**
ISK Istanbul-Kandi 2.32 85 P **Pn 22 35 19.7 -1.1**
ISK Istanbul-Kandi 2.32 85 *e*Pn **Pn 22 35 21.7 +0.9**
KLYT Kilyos 2.33 80 *e*PN **Pn 22 35 22.2 +1.4**
KLYT Kilyos 2.33 80 *e*Pn **Pn 22 35 22.2 +1.4**
KNT Kendrikon 2.36 278 *e*PN **Pn 22 35 22.6 +1.2**
KNT Kendrikon 2.36 278 P **Pn 22 35 22.4 +1.0**
KNT Kendrikon 2.36 278 P **Pn 22 35 22.4 +1.0**
BUY Buyukada 2.36 90 P **Pn 22 35 21.8 +0.5**
BUY S **Sb 22 35 53.4 -1.0**
BUY Buyukada 2.36 90 *i* P **Pn 22 35 21.8 +0.5**
BUY *i* S **Sb 22 35 53.4 -1.0**
AOS Alonnisos 2.37 224 *e*PN **Pn 22 35 22.3 +0.9**
AOS Alonnisos 2.37 224 P **Pn 22 35 19.5 -1.9**
AOS Alonnisos 2.37 224 *e*Pn **Pn 22 35 22.3 +0.9**
AOS Alonnisos 2.37 224 P **Pn 22 35 19.5 -1.9**
AKS Akhisar 2.44 145 *e*PN **Pn 22 35 23.8 +1.3**
AKS Akhisar 2.44 145 *e*Pn **Pn 22 35 23.8 +1.3**
AKHS Akhisar 2.45 145 P **Pn 22 35 23.4 +0.9**
AKHS Akhisar 2.45 145 *i* P **Pn 22 35 23.4 +0.9**
AKHS *i* S **Sg 22 35 60.0 -1.0**
CHOS Chios island 2.50 179 *e*PN **Pn 22 35 24.8 +1.5**
CHOS Chios island 2.50 179 P **Pn 22 35 23.5 +0.2**
CHOS Chios island 2.50 179 *e*Pn **Pn 22 35 24.8 +1.5**
CHOS Chios island 2.50 179 P **Pn 22 35 23.5 +0.2**
URLA Izmir 2.57 170 P **Pn 22 35 25.1 +0.9**
URLA Izmir 2.57 170 *i* P **Pn 22 35 25.1 +0.9**
URLA *i* S **Sg 22 36 04.6 -0.3**
VAY Valandovo 2.63 281 *e*Pn **Pn 22 35 26.6 +1.5**
VAY *i* Sg **Sg 22 36 06.8 -0.1**
VAY Valandovo 2.63 281 *e*Pn **Pn 22 35 26.5 +1.5**
VAY *i* Sg **Sg 22 36 06.7 -0.1**
XOR Xorichti 2.64 236 P **Pn 22 35 22.8 -2.4**
NEO Neokhori 2.65 234 P **Pn 22 35 22.9 -2.4**
ZEY ˜zmir 2.68 172 *i* P **Pn 22 35 25.9 +0.3**
ZEY *i* S **Sg 22 36 10.4 +2.1**
IZI Iznik 2.70 101 *e*PN **Pn 22 35 27.6 +1.5**
IZI Iznik 2.70 101 *e*Pn **Pn 22 35 27.6 +1.5**
GRG Griva 2.73 273 P **Pn 22 35 26.1 -0.3**
GRG Griva 2.73 273 P **Pn 22 35 26.1 -0.3**
LIT Litokhoron 2.79 255 P **Pn 22 35 25.8 -1.5**
LIT Litokhoron 2.79 255 P **Pn 22 35 25.8 -1.5**
ZIMR 2.81 351 ⇑*i* P **Pn 22 35 28.2 +0.8**
DGB ˜zmir 2.92 166 *i* P **Pn 22 35 29.5 +0.6**
DGB *i* S **Sg 22 36 16.1 +0.1**
KAND Kocaeli-Kandir 3.18 85 P **Pn 22 35 33.3 +0.8**
KAND Kocaeli-Kandir 3.18 85 *i* P **Pn 22 35 33.3 +0.8**
KAND *i* S **Sg 22 36 22.4 -2.1**
LKR Lokris 3.22 227 P **Pn 22 35 32.5 -0.6**
LKR Lokris 3.22 227 P **Pn 22 35 32.5 -0.6**
SMG Samos 3.24 168 P **Pn 22 35 33.8 +0.3**
SMG Samos 3.24 168 P **Pn 22 35 33.8 +0.3**
KZN Kozani 3.27 261 P **Pn 22 35 32.6 -1.3**
PTL Penteli 3.29 211 P **Pn 22 35 32.4 -1.7**
PTL Penteli 3.29 211 P **Pn 22 35 32.4 -1.7**
THL Klokotos Trika 3.33 248 P **Pn 22 35 33.7 -0.9**
AGG Agios Georgios 3.38 238 P **Pn 22 35 33.9 -1.5**
AGG Agios Georgios 3.38 238 P **Pn 22 35 33.9 -1.5**
MSAB Monastry St. A 3.47 22 ⇓*i* P **Pn 22 35 38.0 +1.4**
MSAB Monastry St. A 3.47 22 ⇓*i* P **Pn 22 35 38.0 +1.4**
VLY Voula,Athens 3.48 210 P **Pn 22 35 35.3 -1.5**
VLY Voula,Athens 3.48 210 P **Pn 22 35 35.3 -1.5**
FNA Florina 3.51 270 P **Pn 22 35 38.6 +1.4**
FNA Florina 3.51 270 P **Pn 22 35 38.6 +1.4**
DSF Desfina 3.65 228 P **Pn 22 35 37.7 -1.4**
DSF Desfina 3.65 228 P **Pn 22 35 37.7 -1.4**
BARS Barje 3.67 303 *e*Pn **Pn 22 35 40.7 +1.4**
LTK Loutraki 3.70 220 P **Pn 22 35 38.2 -1.6**
LTK Loutraki 3.70 220 P **Pn 22 35 38.2 -1.6**
HUMR Humele 3.71 349 ⇓*i* P **Pg 22 35 52.1 -1.4**
PENT Pentalofos 3.77 261 P **Pn 22 35 41.0 +0.2**
PENT Pentalofos 3.77 261 P **Pn 22 35 41.0 +0.2**
SULR 3.79 3 ⇑*i* P **Pg 22 35 53.5 -1.5**
NEST Nestorio 3.80 264 P **Pn 22 35 42.0 +0.8**
NEST Nestorio 3.80 264 P **Pn 22 35 42.0 +0.8**
APE Apeiranthos 3.83 186 P **Pn 22 35 41.4 -0.2**
APE Apeiranthos 3.83 186 P **Pn 22 35 41.4 -0.2**
TIRR Tirgusor 3.98 26 ⇑*i* P **Pn 22 35 44.3 +0.7**
TIRR Tirgusor 3.98 26 ⇑*i* P **Pn 22 35 44.3 +0.7**
PVO Paravola 4.13 238 P **Pn 22 35 45.4 -0.3**
PVO Paravola 4.13 238 P **Pn 22 35 45.4 -0.3**
DSL Palaion Diasel 4.16 247 P **Pn 22 35 47.4 +1.4**
DSL Palaion Diasel 4.16 247 P **Pn 22 35 47.4 +1.4**
BOLS Boljevac 4.20 316 *e*Pn **Pn 22 35 46.1 -0.5**
PDO Prodromos 4.36 240 P **Pn 22 35 48.4 -0.4**
PDO Prodromos 4.36 240 P **Pn 22 35 48.4 -0.4**
IGT Igoumenitsa 4.55 254 P **Pn 22 35 51.4 0.0**
IGT Igoumenitsa 4.55 254 P **Pn 22 35 51.4 0.0**
CFR Çarcaliu 4.56 19 ⇑*i* P Pb 22 35 58.4 -4.2
ARR Arges 4.58 348 ⇑*i* P **Pn 22 35 52.9 +0.9**
ARR Arges 4.58 348 ⇑*i* P **Pn 22 35 52.9 +0.9**
SGD Sagiada 4.59 256 P **Pn 22 35 52.4 +0.4**
SGD Sagiada 4.59 256 P **Pn 22 35 52.4 +0.4**
MLR Muntele Rosu 4.60 360 ⇓*i* P **Pn 22 35 54.7 +2.5**
MLR Muntele Rosu 4.60 360 ⇓*i* P **Pn 22 35 54.7 +2.5**
LKD2 Lefkada island 4.62 245 P **Pn 22 35 52.3 -0.1**
LKD2 Lefkada island 4.62 245 P **Pn 22 35 52.3 -0.1**
KUBS Kucevo 4.75 319 *e*Pn **Pn 22 35 53.4 -0.8**
LOT Lotru 4.84 341 ⇑*i* P **Pn 22 35 56.2 +0.7**
LOT Lotru 4.84 341 ⇑*i* P **Pn 22 35 56.2 +0.7**
GRUS Gruza 4.93 309 *e*Pn **Pn 22 35 57.1 +0.5**
PLOR Plostina 4.98 5 ⇓*i* P **Pn 22 36 00.2 +2.8**
PLOR Plostina 4.98 5 ⇓*i* P **Pn 22 36 00.2 +2.8**
VRI Vrincioaia 5.00 6 ⇑*i* P **Pn 22 36 00.3 +2.7**
VRI Vrincioaia 5.00 6 ⇑*i* P **Pn 22 36 00.3 +2.7**
MDVR Moldovita 5.01 322 ⇓*i* P **Pn 22 35 58.3 +0.6**
MDVR Moldovita 5.01 322 ⇓*i* P **Pn 22 35 58.3 +0.6**
GZR Gura Zlata 5.08 333 ⇓*i* P **Pn 22 35 59.5 +0.7**
GZR Gura Zlata 5.08 333 ⇓*i* P **Pn 22 35 59.5 +0.7**
DOPR Dopca 5.09 355 ⇑*i* P **Pn 22 36 00.4 +1.5**
DOPR Dopca 5.09 355 ⇑*i* P **Pn 22 36 00.4 +1.5**
IVAS Ivanjica 5.10 304 *e*Pn **Pn 22 35 59.6 +0.5**
BZS Buzias 5.71 327 ⇓*i* P **Pn 22 36 07.8 +0.5**
BZS Buzias 5.71 327 ⇓*i* P **Pn 22 36 07.8 +0.5**
SIRR Siria 6.23 331 ⇑*i* P **Pn 22 36 14.0 -0.5**
SIRR Siria 6.23 331 ⇑*i* P **Pn 22 36 14.0 -0.5**
DRGR 6.36 339 ⇑*i* P **Pn 22 36 16.9 +0.6**
DRGR 6.36 339 ⇑*i* P **Pn 22 36 16.9 +0.6**
BURAR Bucovina Array 6.75 355 ⇓*i* P **Pn 22 36 23.1 +1.4**
BURAR Bucovina Array 6.75 355 ⇓*i* P **Pn 22 36 23.1 +1.4**

IDC 20 22:42:18.3±1.6, 1°13S×128°09E, h0km, mb3.7/2, mb1 3.8/4, mb1mx3.5/28, mbtmp3.6/4, ML3.6/2, Error ellipse: s-maj=112.5km s-min=23.7km az=76.0, Halmahera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**17.04**	**188**	P	P	22 46 19.4	-0.7
	0.1nm,0.3s,baz=16,slow=12,SNR=3.3						
WRA	**Warramunga Arr**	**19.67**	**162**	P	P	22 46 48.5	-0.7
	0.2nm,0.3s,baz=340,slow=12,SNR=15						
ASAR	**Alice Springs**	**23.10**	**166**	P	P	22 47 26.2	+0.2
	1.8nm,0.7s,baz=347,slow=11,SNR=20						
SONM	**Songino Array**	**52.31**	**342**	P	P	22 51 31.8	-0.1
	0.3nm,0.4s,baz=138,slow=6.6,SNR=3.1						

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*ISCJB **20** 22:53:56.7±0.4, 39°.14N±0°.03×29°.10E±0°.03, h5km±6km, Error ellipse: s-maj=4.9km s-min=3.9km az=142.2*
*ISK **20** 22:53:56.1, 39°.13N×29°.10E, h5km, MD2.9*
*CSEM **20** 22:53:57.0±0.1, 39°.13N×29°.10E, h8km, ML3.1, Error ellipse: s-maj=2.7km s-min=2.1km az=101.0*
*DDA **20** 22:53:57.2, 39°.12N×29°.08E, h7km, Ml3.1*
ISC 20 22:53:56.5±0.9, 39°.14N±0°.02×29°.13E±0°.03, h15km±10km, n49, σ0°42/64, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.28**	**100**	P	**Pb**	**22 54 03.6**	**+0.4**
GDZ				S	**Sb**	**22 54 08.4**	**+0.6**
GDZ	**Gediz**	**0.28**	**100**	*i* P	**Pb**	**22 54 03.6**	**+0.4**
GDZ				*i* S	**Sb**	**22 54 08.4**	**+0.6**
DEMI	**Demirci**	**0.34**	**254**	P	**Pg**	**22 54 03.7**	**+0.2**
DEMI				S	**Sg**	**22 54 08.0**	**-0.2**
DEMI	**Demirci**	**0.34**	**254**	*i* P	**Pg**	**22 54 03.7**	**+0.2**
DEMI				*i* S	**Sg**	**22 54 08.0**	**-0.2**
TVSB	**Tavsanli**	**0.40**	**39**	*e*PG	**Pg**	**22 54 04.8**	**+0.1**
TVSB				*e*SG	**Sb**	**22 54 11.0**	**-0.4**
TVSB	**Tavsanli**	**0.40**	**39**	*e*Pg	**Pg**	**22 54 04.8**	**+0.1**
TVSB				*e*Sg	**Sb**	**22 54 11.0**	**-0.4**
DURS	**Dursunbey**	**0.69**	**312**	P	**Pb**	**22 54 10.7**	**+0.5**
DURS	**Dursunbey**	**0.69**	**312**	*i* P	**Pb**	**22 54 10.7**	**+0.5**
KULA	**Kula-Manisa**	**0.72**	**211**	*e*PG	**Pg**	**22 54 10.0**	**-0.6**
KULA				*e*SG	**Sg**	**22 54 19.9**	**-0.2**
KULA	**Kula-Manisa**	**0.72**	**211**	*e*Pg	**Pg**	**22 54 10.0**	**-0.6**
KULA				*e*Sg	**Sg**	**22 54 19.9**	**-0.2**
MANT	**Manisa**	**0.79**	**215**	P	**Pb**	**22 54 12.0**	**0.0**
MANT				S	**Sg**	**22 54 22.0**	**-0.2**
MANT	**Manisa**	**0.79**	**215**	*i* P	**Pb**	**22 54 12.0**	**0.0**
MANT				*i* S	**Sg**	**22 54 22.0**	**-0.2**
KHAL	**Karahalli**	**0.82**	**160**	P	**Pn**	**22 54 13.3**	**-0.3**
KHAL				S	**Sb**	**22 54 24.2**	**+0.9**
KHAL	**Karahalli**	**0.82**	**160**	*i* P	**Pn**	**22 54 13.3**	**-0.3**
KHAL				*i* S	**Sb**	**22 54 24.2**	**+0.9**
KHL	**Karahalli**	**0.87**	**159**	*e*PG	**Pb**	**22 54 13.4**	**+0.1**
KHL	**Karahalli**	**0.87**	**159**	*e*Pg	**Pb**	**22 54 13.4**	**+0.1**
ORLT	**Orhaneli**	**0.92**	**349**	*e*PG	**Pg**	**22 54 14.5**	**+0.1**
ORLT	**Orhaneli**	**0.92**	**349**	*e*Pg	**Pg**	**22 54 14.5**	**+0.1**
BALB	**Balikesir**	**1.09**	**298**	*e*PG	**Pb**	**22 54 16.9**	**-0.1**
BALB	**Balikesir**	**1.09**	**298**	*e*Pg	**Pb**	**22 54 16.9**	**-0.1**
IGD	**Bursa**	**1.13**	**3**	*i* P	**Pb**	**22 54 17.7**	**+0.1**
IGD				*i* S	**Sb**	**22 54 31.9**	**-0.2**
CAVI	**Cavuskoy**	**1.20**	**27**	*e*PN	**Pg**	**22 54 19.6**	**0.0**
CAVI	**Cavuskoy**	**1.20**	**27**	*e*Pn	**Pg**	**22 54 19.6**	**0.0**
IZI	**Iznik**	**1.23**	**12**	*e*PN	**Pg**	**22 54 20.3**	**+0.2**
IZI	**Iznik**	**1.23**	**12**	*e*Pn	**Pg**	**22 54 20.3**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.24**	**351**	*e*PN	**Pg**	**22 54 20.6**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.24**	**351**	*e*Pn	**Pg**	**22 54 20.6**	**+0.2**
KCTX	**Karacabey (Bur**	**1.27**	**332**	*e*PN	**Pg**	**22 54 20.9**	**-0.1**
KCTX	**Karacabey (Bur**	**1.27**	**332**	*e*Pn	**Pg**	**22 54 20.9**	**-0.1**
BALY	**Balya**	**1.32**	**298**	P	**Pg**	**22 54 22.0**	**+0.2**
BALY				S	**Sg**	**22 54 39.8**	**+0.8**
BALY	**Balya**	**1.32**	**298**	*i* P	**Pg**	**22 54 22.0**	**+0.2**
BALY				*i* S	**Sg**	**22 54 39.8**	**+0.8**
ADVT	**Abdulvahap**	**1.38**	**20**	*e*PN	**Pg**	**22 54 23.2**	**+0.3**
ADVT	**Abdulvahap**	**1.38**	**20**	*e*Pn	**Pg**	**22 54 23.3**	**+0.3**
GONE	**Gonen-Balikesi**	**1.44**	**310**	*e*PN	**Pb**	**22 54 23.0**	**0.0**
GONE	**Gonen-Balikesi**	**1.44**	**310**	*e*Pn	**Pb**	**22 54 23.0**	**0.0**
ARMT	**Armutlu**	**1.44**	**352**	*e*PN	**Pg**	**22 54 24.0**	**-0.2**
ARMT	**Armutlu**	**1.44**	**352**	*e*Pn	**Pg**	**22 54 24.0**	**-0.2**
EDC	**Edincik**	**1.55**	**321**	*e*PN	**Pb**	**22 54 25.4**	**+0.5**
EDC	**Edincik**	**1.55**	**321**	*e*Pn	**Pb**	**22 54 25.4**	**+0.5**
GULT	**Gulveren**	**1.68**	**39**	*e*PN	**Pb**	**22 54 27.5**	**+0.4**
GULT	**Gulveren**	**1.68**	**39**	*e*Pn	**Pb**	**22 54 27.5**	**+0.4**
HRT	**Hereke**	**1.73**	**14**	*e*PN	**Pb**	**22 54 27.7**	**-0.3**
HRT	**Hereke**	**1.73**	**14**	*e*Pn	**Pb**	**22 54 27.7**	**-0.3**
ISK	**Istanbul-Kandi**	**1.93**	**358**	*e*PN	**Pb**	**22 54 30.6**	**-0.6**
ISK	**Istanbul-Kandi**	**1.93**	**358**	*e*Pn	**Pb**	**22 54 30.7**	**-0.6**
SILT	**Sile**	**2.05**	**11**	*e*PN	**Pb**	**22 54 32.4**	**-1.0**
SILT	**Sile**	**2.05**	**11**	*e*Pn	**Pb**	**22 54 32.4**	**-1.0**
MDUB	**Mudurnu**	**2.08**	**49**	*e*PN	**Pb**	**22 54 33.5**	**-0.4**
MDUB	**Mudurnu**	**2.08**	**49**	*e*Pn	**Pb**	**22 54 33.5**	**-0.4**

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*ISCJB **20** 22:55:57.0±0.6, 25°.4S±0°.1×175°.3W±0°.1, h23km, mb4.1/9, Error ellipse: s-maj=20.4km s-min=13.5km az=136.5*
*IDC **20** 22:55:56.2±1.9, 25°.11S×175°.47W, h0km, mb4.1/7, mb1 4.3/8, mb1mx4.0/36, mbtmp4.2/8, ML3.7/1, Error ellipse: s-maj=75.6km s-min=29.7km az=164.0*
*NEIC **20** 22:56:00.4±0.7, 25°.51S×175°.25W, h35km, mb4.5/2, Error ellipse: s-maj=25.4km s-min=15.5km az=140.0*
ISC 20 22:55:58.7±0.7, 25°.4S±0°.1×175°.3W±0°.1, h23km, n16, σ1°08/14, mb4.2/9, 2D, South of Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**4.46**	**211**	*e*Pn	**Pn**	**22 57 04.6**	**-0.3**
RAR	**Rarotonga**	**14.87**	**77**	Pn	**Pn**	**22 59 26.7**	**-0.8**
	2.9nm,0.3s,baz=236,slow=6.4,SNR=4.0						
RAR	**Rarotonga**	**14.87**	**77**	*e*Pn	**Pn**	**22 59 27.1**	**-0.4**
ASAR	**Alice Springs**	**46.01**	**261**	P	**P**	**23 04 19.8**	**-0.9**
	0.6nm,0.6s,baz=96,slow=8.7,SNR=4.1						
MIDW	**Midway**	**53.38**	**358**	*e*P	**P**	**23 05 16.7**	**+0.3**
	4.0nm,0.4s						
CASY	**Casey**	**60.63**	**207**	*e*P	P	23 06 03.0	-4.4
	1.0nm,0.5s						
PETK	**Petropavlovsk-**	**81.67**	**344**	P	**P**	**23 08 13.7**	**-1.1**
	0.9nm,0.4s,baz=17,slow=22,SNR=5.9						
KSRS	**Korea Array**	**82.21**	**318**	P	**P**	**23 08 17.6**	**-0.4**
	1.6nm,1.1s,baz=134,slow=5.9,SNR=4.6						
KSAR	**Wonju Array Be**	**82.22**	**318**	P	**P**	**23 08 17.6**	**-0.5**
SYO	**Syowa Base**	**82.46**	**192**‖	*e*P	**P**	**23 08 19.4**	**+0.5**
SYO	**Syowa Base**	**82.46**	**192**‖	*e*PcP	P	23 08 22.0	+3.1
NVAR	**Mina Array Bea**	**82.97**	**42**	P	**P**	**23 08 24.4**	**+2.2**
	1.2nm,0.9s,baz=222,slow=9.3,SNR=4.7						
USRK	**Ussuriysk Ar.**	**84.42**	**325**	P	**P**	**23 08 28.2**	**-1.0**
	4.2nm,0.9s,baz=88,slow=5.3,SNR=7.1						
PDAR	**Pinedale Array**	**90.88**	**42**	P	**P**	**23 09 00.2**	**-0.5**
	0.2nm,0.6s,baz=251,slow=11,SNR=2.0						
CMAR	**Chiang Mai Arr**	**94.07**	**288**	P	**P**	**23 09 17.1**	**+1.5**
	0.9nm,0.4s,baz=139,slow=3.7,SNR=8.5						
BRTR	**Keskin Array B**	**151.91**	**308**	PKPbc	**PKPbc**	**23 15 53.0**	**+0.9**
	0.1nm,0.5s,baz=296,slow=27,SNR=3.1						

IDC 20 22:56:47.4±2.3, 25°.34S×175°.58W, h0km, mb4.2/5, mb1 4.5/6, mb1mx4.0/34, mbtmp4.3/6, ML3.7/1, MS3.6/2, Ms1 3.6/2, ms1mx3.0/28, Error ellipse: s-maj=110.0km s-min=28.0km az=161.0, South of Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAR	**Rarotonga**	**15.09**	**77**	Pn	Pn	23 00 20.0	-1.9
	3.0nm,0.3s,baz=246,slow=10.0,SNR=2.1						
RPZ	**Rata Peaks**	**21.33**	**207**	LR	LR	23 10 11.5	
	comp=Z,224nm,18.1s,baz=10.0,slow=38						
ASAR	**Alice Springs**	**45.78**	**261**	P	P	23 05 11.7	+0.6
	0.9nm,0.7s,baz=99,slow=7.9,SNR=4.1						
ASAR				LR	LR	23 22 07.5	
	comp=Z,53nm,20.9s,baz=70,slow=33						
WRA	**Warramunga Arr**	**46.33**	**266**	P	P	23 05 13.8	-1.7
	1.5nm,0.5s,baz=103,slow=8.7,SNR=2.2						
NVAR	**Mina Array Bea**	**83.06**	**42**	P	P	23 09 15.4	+0.3
	1.2nm,1.0s,baz=224,slow=5.9,SNR=3.2						
USRK	**Ussuriysk Ar.**	**84.20**	**325**	P	P	23 09 20.0	-0.5
	2.9nm,0.8s,baz=147,slow=3.4,SNR=5.3						
CMAR	**Chiang Mai Arr**	**93.80**	**288**	P	P	23 10 08.6	+1.6
	0.8nm,0.3s,baz=137,slow=3.3,SNR=6.8						

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*CSEM **20** 22:56:51.1, 40°.87N×26°.09E, h5km, MD2.5*
ISK 20 22:56:51.1, 40°.87N×26°.09E, h5km, MD2.5, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ALN	**Alexandroupoli**	**0.04**	**311**	*e*PG	Pg	22 56 52.6	+0.2
ALN	**Alexandroupoli**	**0.04**	**311**	*e*Pg	Pg	22 56 52.6	+0.3
ENEZ	**Enez**	**0.14**	**160**	*e*PG	Pg	22 56 54.6	+0.6
ENEZ	**Enez**	**0.14**	**160**	*e*Pg	Pg	22 56 54.6	+0.7
ERIK	**Erikli-Kesan**	**0.38**	**121**	*e*PG	Pg	22 56 58.8	+0.5
ERIK	**Erikli-Kesan**	**0.38**	**121**	*e*Pg	Pg	22 56 58.8	+0.4
GELI	**Tayfur-Gelibol**	**0.55**	**148**	*e*PG	Pg	22 57 02.0	+0.3
GELI				*e*SG	Sb	22 57 10.3	-1.2
GELI	**Tayfur-Gelibol**	**0.55**	**148**	*e*Pg	Pg	22 57 02.0	+0.3
GELI				*e*Sg	Sb	22 57 10.3	-1.2
LPK	**Lapseki**	**0.71**	**134**	*e*PG	Pb	22 57 05.5	-0.4
LPK	**Lapseki**	**0.71**	**134**	*e*Pg	Pb	22 57 05.5	-0.5
RKY	**Sarkoy-Tekirda**	**0.84**	**102**	*e*PG	Pb	22 57 07.9	-0.4
RKY	**Sarkoy-Tekirda**	**0.84**	**102**	*e*Pg	Pb	22 57 07.9	-0.4
KRBG	**Karabiga-Canak**	**1.03**	**117**	*e*PG	Pn	22 57 11.9	-0.4
KRBG	**Karabiga-Canak**	**1.03**	**117**	*e*Pg	Pn	22 57 11.9	-0.3
EZN	**Ezine**	**1.06**	**170**	*e*PG	Pb	22 57 12.2	+0.3
EZN	**Ezine**	**1.06**	**170**	*e*Pg	Pn	22 57 12.2	-0.3
EDRB	**Edirne**	**1.09**	**27**	*e*PN	Pb	22 57 12.4	-0.1
EDRB	**Edirne**	**1.09**	**27**	*e*Pn	Pb	22 57 12.4	-0.1
EDC	**Edincik**	**1.45**	**111**	*e*PN	Pb	22 57 18.5	0.0
EDC	**Edincik**	**1.45**	**111**	*e*Pn	Pb	22 57 18.5	0.0

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*IDC **20** 22:58:29.6±1.1, 6°.71S×130°.05E, h0km, mb4.0/3, mb1 4.2/6, mb1mx3.8/39, mbtmp4.1/6, ML4.3/3, Error ellipse: s-maj=55.9km s-min=21.3km az=81.0*
ISC 20 22:58:42.8±1.2, 7°.4S±0°.1×130°.1E±0°.3, h146km, n6, σ1°35/6, mb3.7/3, Tanimbar Islands region

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

IZI	**Iznik**	**1.29**	**15**	*e*PN	**Pn**	**23 05 15.1**	**-0.5**
IZI	**Iznik**	**1.29**	**15**	*e*Pn	**Pn**	**23 05 15.1**	**-0.5**
BORA	**Eskisehir**	**1.35**	**54**	P	**Pn**	**23 05 17.0**	**+0.6**
BORA				S	**Sg**	**23 05 35.3**	**+0.4**
BORA	**Eskisehir**	**1.35**	**54**	*i* P	**Pn**	**23 05 17.1**	**+0.6**
BORA				*i* S	**Sg**	**23 05 35.3**	**+0.4**
ARMT	**Armutlu**	**1.47**	**355**	*e*PN	**Pn**	**23 05 18.5**	**+0.4**
ARMT	**Armutlu**	**1.47**	**355**	*e*Pn	**Pn**	**23 05 18.5**	**+0.4**

*IDC **20** 23:08:16.5±8.5, 33°.62S×179°.61W, h126km±82km, mb3.2/2, mb1 3.5/3, mb1mx3.3/33, mbtmp3.7/3, Error ellipse: s-maj=77.8km s-min=51.6km az=174.0*

ISC 20 23:08:16.8±2.2, 33°.4S±0°.1×179°.6E±0°.3, h150km, n31, σ2°.03/37, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MXZ	**Matakaoa Point**	**4.29**	**193**	PN	**Pn**	**23 09 20.2**	**-0.6**
WMGZ	**Waiomatatini S**	**4.52**	**192**	PN	**Pn**	**23 09 23.6**	**-0.2**
HAZ	**Te Kaha**	**4.59**	**198**	PN	**Pn**	**23 09 25.9**	**+1.1**
HAZ				SN	**Sn**	**23 10 23.6**	**+5.8**
PUZ	**Puketiti**	**4.79**	**192**	PN	**Pn**	**23 09 26.6**	**-0.9**
PUZ				SN	**Sn**	**23 10 23.8**	**+1.2**
TWGZ	**Tauwhareparae**	**4.95**	**195**	PN	**Pn**	**23 09 29.5**	**0.0**
CNGZ	**Carnagh Statio**	**5.20**	**192**	PN	**Pn**	**23 09 32.5**	**-0.4**
MWZ	**Matawai**	**5.20**	**198**	PN	**Pn**	**23 09 32.8**	**-0.1**
MWZ				SN	**Sn**	**23 10 35.0**	**+2.6**
TKGZ	**Te Karaka**	**5.23**	**195**	PN	**Pn**	**23 09 32.4**	**-0.8**
URZ	**Urewera**	**5.25**	**202**	P	**Pn**	**23 09 34.1**	**+0.6**
	2.3nm,0.3s,baz=35,slow=18,SNR=45						
URZ				S	**Sn**	**23 10 34.9**	**+1.4**
	4.5nm,0.3s,baz=71,slow=21,SNR=14						
URZ	**Urewera**	**5.25**	**202**	PN	**Pn**	**23 09 34.1**	**+0.6**
RIGZ	**Rimuhau**	**5.50**	**195**	PN	**Pn**	**23 09 35.5**	**-1.4**
MUGZ	**Murupara**	**5.56**	**203**	PN	**Pn**	**23 09 38.3**	**+0.7**
RTZ	**Ruatahuna**	**5.62**	**201**	PN	**Pn**	**23 09 38.5**	**0.0**
SNGZ	**Shannon Statio**	**5.67**	**198**	PN	**Pn**	**23 09 38.9**	**-0.2**
SNGZ				SN	**Sn**	**23 10 45.8**	**+2.3**
RAHZ	**Arahi**	**5.87**	**199**	PN	**Pn**	**23 09 41.4**	**-0.3**
RAHZ				SN	**Sn**	**23 10 51.4**	**+3.3**
MHGZ	**Mahia Peninsul**	**5.91**	**193**	PN	**Pn**	**23 09 40.6**	**-1.6**
NMHZ	**Naumai**	**6.12**	**201**	PN	**Pn**	**23 09 44.9**	**-0.2**
KWHZ	**Kawekа Forest**	**6.53**	**202**	PN	**Pn**	**23 09 49.9**	**-0.8**
BHHZ	**Black Hill Sta**	**6.71**	**204**	PN	**Pn**	**23 09 52.5**	**-0.4**
KAHZ	**Kahuranaki**	**6.75**	**198**	PN	**Pn**	**23 09 51.8**	**-1.7**
PXZ	**Pawanui**	**6.97**	**197**	PN	**Pn**	**23 09 53.3**	**-3.2**
PXZ				SN	**Sn**	**23 11 11.8**	**-2.8**
BFZ	**Birch Farm**	**7.75**	**199**	PN	**Pn**	**23 10 03.7**	**-3.0**
MRZ	**Mangatainoka R**	**7.92**	**203**	PN	**Pn**	**23 10 06.1**	**-3.1**
TIWZ	**Tintock**	**7.94**	**201**	PN	**Pn**	**23 10 07.7**	**-1.7**
OGWZ	**Otaki Gorge**	**8.20**	**204**	PN	**Pn**	**23 10 10.8**	**-2.0**
TMWZ	**Te Maipa**	**8.24**	**200**	PN	**Pn**	**23 10 10.8**	**-2.6**
TMWZ				SN	**Sn**	**23 11 42.2**	**-2.9**
KIW	**Kapiti Island**	**8.33**	**205**	PN	**Pn**	**23 10 12.1**	**-2.5**
THZ	**Tophouse**	**9.88**	**210**	SN	**Sn**	**23 12 23.2**	**-1.4**
ASAR	**Alice Springs**	**40.99**	**271**	P	P	23 15 53.1	+7.9
	0.4nm,0.4s,baz=111,slow=7.9,SNR=5.8						
WRA	**Warramunga Arr**	**42.26**	**277**	P	P	23 16 03.0	+7.5
	0.5nm,0.4s,baz=118,slow=7.8,SNR=16						
FINES	**FINESS Array B**	**147.15**	**337**	PKPbc	**PKPab**	**23 27 44.6**	**+1.1**
	0.6nm,0.8s,baz=30,slow=8.7,SNR=3.0						

*ISCJB **20** 23:18:55.3±0.5, 6°.80N±0°.03×73°.05W±0°.04, h159km±4km, mb3.3/2, Error ellipse: s-maj=7.5km s-min=3.8km az=40.3*
*IDC **20** 23:18:56.6±0.8, 6°.77N×72°.98W, h165km±12km, mb3.1/2, mb1 3.5/4, mb1mx3.1/28, mbtmp3.7/4, Error ellipse: s-maj=41.2km s-min=7.7km az=132.0*
*FUNV **20** 23:18:57.4, 6°.98N×73°.07W, h172km, MW3.5*
*RSNC **20** 23:18:57.7±0.6, 6°.77N×73°.12W, h146km±3km, ML3.5*

ISC 20 23:18:55.6±0.9, 6°.81N±0°.04×73°.03W±0°.04, h160km±5km, n30, σ1°.58/52, 1C-1D, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BTLC	**Betulia, Santa**	**0.26**	**295**	*i* P	**Pn**	**23 19 17.5**	**0.0**
BTLC				*e*S	**Sn**	**23 19 33.1**	**-1.2**
BARC	**Barichara**	**0.26**	**216**	*i* P	**Pn**	**23 19 17.3**	**-0.3**
BARC				*e*S	**Sn**	**23 19 31.9**	**-2.5**
BARC				*i*		23 19 33.4	
	comp=Z,1μm,0.3s						
GIRC	**Giron, Santand**	**0.32**	**329**	*e*P	**Pn**	**23 19 17.3**	**-0.3**
GIRC				*e*S	**Sn**	**23 19 32.3**	**-2.2**
PAMC	**Pamplona, Colo**	**0.62**	**32**	*i* P	**Pn**	**23 19 20.1**	**+0.8**
PAMC				*e*S	**Sn**	**23 19 37.2**	**-0.4**
BRRC	**Barranca, Sant**	**0.74**	**294**	⇑*i* P	**Pn**	**23 19 19.1**	**-0.4**
BRRC				*i*		23 19 19.4	
	comp=Z,2μm,0.2s						
BRRC				*e*S	**Sn**	**23 19 36.2**	**-1.5**
RUSC	**La Rusia**	**0.91**	**183**	⇓*i* P	**Pn**	**23 19 21.2**	**0.0**
RUSC				*e*S	**Sn**	**23 19 39.8**	**-1.1**
RUSC				*i*		23 19 41.2	
	comp=Z,322nm,0.3s						
CBRI	**Barrientos, No**	**0.93**	**14**	*e*P	**Pn**	**23 19 21.9**	**+0.8**
CBRI				*e*S	**Sn**	**23 19 40.6**	**0.0**
CBRI				*i*		23 19 47.0	
	comp=Z,174nm,0.3s						
GRMC	**Gramalote, San**	**0.93**	**14**	*i* P	**Pn**	**23 19 23.1**	**+2.1**
GRMC				*e*S	**Sn**	**23 19 43.2**	**+2.6**
GRMC				*i*		23 19 44.2	
	comp=Z,238nm,0.4s						
GUEC	**Guerrero, Nort**	**1.02**	**6**	*e*P	**Pn**	**23 19 22.3**	**+0.4**
CAPV	**Capacho**	**1.27**	**34**	*e*P	**Pn**	**23 19 25.1**	**+1.2**
CAPV				*e*S	**Sn**	**23 19 45.3**	**-0.5**
OCAC	**Ocana**	**1.45**	**349**	*e*P	**Pn**	**23 19 26.1**	**+0.4**
OCAC				*e*S	**Sn**	**23 19 48.6**	**-0.2**
OCAC				*i*		23 19 56.0	
	comp=Z,365nm,0.2s						
NORC	**Norcasia**	**2.21**	**236**	*e*P	**Pn**	**23 19 33.1**	**-0.7**
NORC				*e*S	**Sn**	**23 20 00.9**	**-2.4**
ROSC	**El Rosal**	**2.34**	**213**	P	**Pn**	**23 19 37.5**	**+1.8**
	comp=Z,18nm,0.3s,baz=60,slow=16,SNR=46						
ROSC				S	**Sn**	**23 20 08.4**	**+1.7**
	comp=Z,85nm,0.3s,baz=333,slow=23,SNR=22						
HELC	**Santa Helena**	**2.56**	**256**	*e*P	**Pn**	**23 19 38.6**	**+0.3**
HELC				*e*S	**Sn**	**23 20 09.6**	**-1.7**
HELC				*i*		23 20 15.8	
	comp=Z,200nm,0.4s						
SOCV	**Socops**	**2.61**	**56**	*e*P	**Pn**	**23 19 39.6**	**+1.0**
SOCV				*e*S	**Sn**	**23 20 10.6**	**-1.2**
VIGV	**El Vigia**	**2.61**	**39**	*e*P	**Pn**	**23 19 39.1**	**+0.5**
VIGV				*e*S	**Sn**	**23 20 09.5**	**-2.4**
VILC	**Villavicencio,**	**2.76**	**194**	*e*P	**Pn**	**23 19 40.7**	**+0.2**
VILC				*e*S	**Sn**	**23 20 15.0**	**-0.4**
VILC				*i*		23 20 24.0	
	comp=Z,111nm,0.4s						
GUYC	**Guyana, Colomb**	**2.83**	**236**	*e*P	**Pn**	**23 19 42.0**	**+0.2**
GUYC				*i*		23 20 25.0	
	comp=Z,204nm,0.6s						
SDV	**Santo Domingo**	**3.15**	**49**	P	**Pn**	**23 19 47.4**	**+2.0**
	comp=Z,14nm,0.3s,baz=236,slow=11,SNR=3.0						
SDV				S	**Sn**	**23 20 25.2**	**+1.2**
	comp=Z,23nm,0.3s,baz=240,slow=20,SNR=13						
DBBC	**Dabeiba**	**3.17**	**274**	*e*P	**Pn**	**23 19 45.2**	**-0.4**
TOLC	**Tolima**	**3.17**	**226**	*e*P	**Pn**	**23 19 46.2**	**+0.3**
ELOV	**Elorza**	**3.52**	**87**	*e*P	**Pn**	**23 19 51.0**	**+1.0**
ELOV				*e*S	**Sn**	**23 20 31.5**	**-0.8**
PRAC	**Prado**	**3.59**	**211**	*e*P	**Pn**	**23 19 51.3**	**+0.4**
PRAC				*e*S	**Sn**	**23 20 32.5**	**-1.4**
SJAC	**San Juan de Ar**	**3.63**	**195**	*e*P	**Pn**	**23 19 51.5**	**0.0**
SJAC				*e*S	**Sn**	**23 20 33.3**	**-1.7**
VIRV	**Villa del Rosa**	**3.72**	**9**	*e*P	**Pn**	**23 19 51.5**	**-1.1**
VIRV				*e*S	Sn	23 20 31.0	-6.0
CURV	**Curarigua**	**4.40**	**43**	*e*P	**Pn**	**23 20 01.5**	**+0.1**
CURV				*e*S	**Sn**	**23 20 47.8**	**-5.0**
BAUV	**El Baul**	**5.38**	**66**	*e*P	**Pn**	**23 20 13.4**	**-0.7**
BAUV				*e*S	**Sn**	**23 21 10.8**	**-4.9**
TXAR	**Lajitas Array**	**36.54**	**312**	P	**P**	**23 25 47.2**	**+1.1**
	comp=Z,0.2nm,0.4s,baz=126,slow=9.1,SNR=2.8						
YKA	**Yellowknife Ar**	**63.31**	**340**	P	**P**	**23 29 07.8**	**+0.7**
	comp=Z,0.5nm,0.6s,baz=134,slow=6.7,SNR=16						
WRA	**Warramunga Arr**	**150.41**	**241**	PKPbc	**PKPbc**	**23 38 29.2**	**+0.1**
	comp=Z,0.2nm,0.4s,baz=106,slow=2.7,SNR=9.0						

*CSEM **20** 23:19:25.2±0.4, 67°.80N×20°.31E, h2km, ML1.3, Error ellipse: s-maj=8.4km s-min=7.6km az=35.0, Mining explosion.*
*UPP **20** 23:19:26.0, 67°.85N×20°.20E, h0km, ML1.3, Mining explosion.*

HEL 20 23:19:26.5±0.1, 67°.85N×20°.21E, h0km, ML1.7, ML1.3(UPP), Explosion, Sweden

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUA	**Kurravaara**	**0.11**	**26**	*i* P	**Pg**	23 19 28.5	-0.2
KUA				*i* S	Sg	23 19 30.1	+0.1
KUA	**Kurravaara**	**0.11**	**26**	P	**Pg**	23 19 31.1	+2.5
KUA				S	Sg	23 19 32.8	+2.7
KUA	**Kurravaara**	**0.11**	**26**	P	**Pg**	23 19 28.5	-0.1
KUA				S	Sg	23 19 30.1	0.0
NIKU	**Nikkaluokta**	**0.45**	**272**	*i* P	**Pg**	23 19 34.5	-0.5
NIKU	**Nikkaluokta**	**0.45**	**272**	P	**Pb**	23 19 37.2	0.0
NIKU	**Nikkaluokta**	**0.45**	**272**	P	**Pg**	23 19 34.5	-0.5
LANU	**Lannavaara**	**0.70**	**73**	*e*P	**Pg**	23 19 39.1	-0.8
LANU	**Lannavaara**	**0.70**	**73**	P	**Pb**	23 19 42.6	+1.0
LANU	**Lannavaara**	**0.70**	**73**	Pg	**Pg**	23 19 39.1	-0.8
MASU	**Masugnsbyn**	**0.79**	**119**	*i* P	**Pg**	23 19 41.0	-0.7
MASU	**Masugnsbyn**	**0.79**	**119**	P	**Pg**	23 19 41.0	-0.6
SALU	**Saltoluokta**	**0.81**	**235**	*i* P	**Pg**	23 19 41.0	-0.9
SALU	**Saltoluokta**	**0.81**	**235**	P	**Pb**	23 19 43.7	+0.3
SALU	**Saltoluokta**	**0.81**	**235**	P	**Pg**	23 19 41.0	-0.9
KIF	**Kilpisjarvi**	**1.18**	**10**	*e*P	**Pg**	23 19 48.2	-0.9
	baz=194						
KIF				*e*SB	Sg	23 20 04.3	+0.1
KIF	**Kilpisjarvi**	**1.18**	**10**	Pg	**Pg**	23 19 48.1	-0.9
KIF				Sb	Sg	23 20 04.3	0.0
HEF	**Hetta**	**1.41**	**65**	*e*PG	Pn	23 19 51.9	-1.5
	baz=243						
HEF				MSG		23 20 09.1	
	comp=Z,5.5nm,0.2s						
HEF	**Hetta**	**1.41**	**65**	Pg	Pn	23 19 51.9	-1.5
ERTU	**Ertsjaerv**	**1.52**	**148**	*e*P	Pn	23 19 53.9	-0.9
ERTU	**Ertsjaerv**	**1.52**	**148**	P	Pn	23 19 53.9	-0.9
HARU	**Harads**	**1.72**	**170**	*e*P	Pn	23 19 57.2	-0.5
HARU	**Harads**	**1.72**	**170**	P	Pn	23 19 57.2	-0.5
TOF	**Tornio**	**2.41**	**136**	*e*PB	Pn	23 20 07.9	+0.9
TOF				*e*SG	Sb	23 20 40.3	-0.5
TOF	**Tornio**	**2.41**	**136**	Pg	Pn	23 20 07.9	+0.9
TOF				Sg	Sb	23 20 40.3	-0.5
ARE0	**ARCESS Array S**	**2.57**	**46**	*e*P	Pn	23 20 09.7	+0.4
	baz=229						
ARE0				*e*SB	Sb	23 20 44.4	-1.1
ARE0	**ARCESS Array S**	**2.57**	**46**	Sg	Sb	23 20 44.4	-1.1
RNF	**Rovaniemi**	**2.58**	**116**	*e*PB	Pn	23 20 10.7	+1.2
RNF				*e*SG	Sb	23 20 45.3	-0.5
RNF	**Rovaniemi**	**2.58**	**116**	Pb	Pn	23 20 10.7	+1.2
RNF				Sg	Sb	23 20 45.3	-0.5
KEV	**Kevo**	**3.12**	**49**	*e*PB	Pb	23 20 20.2	-2.6
	baz=233						
KEV				*e*S	Sn	23 20 55.6	+0.8
KEV				MSG		23 20 58.3	
	comp=Z,2.6nm,0.2s						
BURU	**Burvik**	**3.32**	**171**	*e*PB	Pb	23 20 23.3	-2.8
	baz=353						
MSF	**Maaselka**	**3.99**	**115**	*e*PB	Pn	23 20 32.9	+4.1
	baz=304						
UMAU	**Umeaa**	**3.99**	**177**	*e*PB	Pb	23 20 33.3	-4.3
UMAU	**Umeaa**	**3.99**	**177**	Pb	Pn	23 20 33.2	+4.4
KU6	**Riekki**	**4.23**	**111**	*e*SG	Sg	23 21 38.9	-3.3
KU6	**Riekki**	**4.23**	**111**	Sg	Sg	23 21 38.8	-3.3

*ISCJB **20** 23:19:27.8±0.5, 39°.08N±0°.03×29°.05E±0°.03, h2km±6km, Error ellipse: s-maj=4.2km s-min=3.9km az=0.8*
*DDA **20** 23:19:27.7, 39°.09N×29°.07E, h7km, Ml2.8*
*ISK **20** 23:19:27.6, 39°.07N×29°.06E, h6km, MD2.8*
*CSEM **20** 23:19:28.3±0.1, 39°.08N×29°.06E, h5km, ML2.8, Error ellipse: s-maj=2.0km s-min=2.0km az=58.0*

ISC 20 23:19:28.2±1.1, 39°.09N±0°.02×29°.06E±0°.02, h2km±11km, n51, σ0°.42/67, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.33**	**89**	P	**Pg**	**23 19 34.5**	**-0.1**
GDZ				S	**Sg**	**23 19 39.2**	**+0.3**
GDZ	**Gediz**	**0.33**	**89**	*i* P	**Pg**	**23 19 34.5**	**-0.1**
GDZ				*i* S	**Sg**	**23 19 39.2**	**+0.3**
TVSB	**Tavsanli**	**0.48**	**41**	*e*PG	**Pg**	**23 19 36.9**	**-0.6**
TVSB	**Tavsanli**	**0.48**	**41**	*e*Pg	**Pg**	**23 19 36.9**	**-0.6**
KULA	**Kula-Manisa**	**0.65**	**209**	*e*PG	**Pg**	**23 19 40.4**	**-0.3**
KULA				*e*SG	**Sg**	**23 19 48.7**	**-0.4**
KULA	**Kula-Manisa**	**0.65**	**209**	*e*Pg	**Pg**	**23 19 40.4**	**-0.3**
KULA				*e*Sg	**Sg**	**23 19 48.7**	**-0.4**
DURS	**Dursunbey**	**0.69**	**319**	P	**Pg**	**23 19 41.7**	**+0.3**
DURS				S	**Sg**	**23 19 51.3**	**+1.0**
DURS	**Dursunbey**	**0.69**	**319**	*i* P	**Pg**	**23 19 41.7**	**+0.3**
DURS				*i* S	**Sg**	**23 19 51.3**	**+1.0**
MANT	**Manisa**	**0.71**	**214**	S	**Sg**	**23 19 51.0**	**-0.1**
MANT	**Manisa**	**0.71**	**214**	*i* S	**Sg**	**23 19 51.0**	**-0.1**
MANT				*i* P	**Sn**	**23 19 57.1**	**+0.1**
KHAL	**Karahalli**	**0.79**	**154**	P	**Pb**	**23 19 44.5**	**-0.2**
KHAL				S	**Sg**	**23 19 54.3**	**+0.7**
KHAL	**Karahalli**	**0.79**	**154**	*i* P	**Pb**	**23 19 44.5**	**-0.2**
KHAL				*i* S	**Sg**	**23 19 54.3**	**+0.7**
KHL	**Karahalli**	**0.84**	**154**	*e*PG	**Pg**	**23 19 44.5**	**+0.1**
KHL	**Karahalli**	**0.84**	**154**	*e*Pg	**Pg**	**23 19 44.5**	**+0.1**
ORLT	**Orhaneli**	**0.97**	**353**	*e*PG	**Pg**	**23 19 47.2**	**+0.4**
ORLT	**Orhaneli**	**0.97**	**353**	*e*Pg	**Pg**	**23 19 47.2**	**+0.4**
AKHS	**Akhisar**	**0.99**	**258**	P	**Pg**	**23 19 47.2**	**0.0**
AKHS				S	**Sg**	**23 20 00.3**	**+0.3**
AKHS	**Akhisar**	**0.99**	**258**	*i* P	**Pg**	**23 19 47.2**	**0.0**
AKHS				*i* S	**Sg**	**23 20 00.3**	**+0.3**
AKS	**Akhisar**	**0.99**	**258**	*e*PG	**Pg**	**23 19 47.3**	**+0.1**
AKS	**Akhisar**	**0.99**	**258**	*e*Pg	**Pg**	**23 19 47.3**	**+0.1**
BALB	**Balikesir**	**1.07**	**302**	*e*PG	**Pg**	**23 19 48.4**	**-0.3**
BALB				*e*SG	**Sb**	**23 20 04.2**	**+0.4**
BALB	**Balikesir**	**1.07**	**302**	*e*Pg	**Pg**	**23 19 48.4**	**-0.3**
BALB				*e*Sg	**Sb**	**23 20 04.2**	**+0.4**
IGD	**Bursa**	**1.18**	**5**	*i* P	**Pg**	**23 19 49.9**	**-1.1**
IGD				*i* S	**Sg**	**23 20 05.8**	**-0.5**
CAVI	**Cavuskoy**	**1.27**	**28**	*e*PN	**Pg**	**23 19 52.4**	**-0.2**
CAVI	**Cavuskoy**	**1.27**	**28**	*e*Pn	**Pg**	**23 19 52.4**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.29**	**354**	*e*PN	**Pg**	**23 19 53.0**	**0.0**
MDNY	**Mudanya-Bursa**	**1.29**	**354**	*e*Pn	**Pg**	**23 19 53.0**	**0.0**
IZI	**Iznik**	**1.29**	**14**	*e*PN	**Pb**	**23 19 53.2**	**-0.1**
IZI	**Iznik**	**1.29**	**14**	*e*Pn	**Pb**	**23 19 53.2**	**-0.1**
BALY	**Balya**	**1.29**	**301**	P	**Pg**	**23 19 52.5**	**-0.5**
BALY				S	**Sb**	**23 20 10.3**	**0.0**
BALY	**Balya**	**1.29**	**301**	*i* P	**Pg**	**23 19 52.5**	**-0.5**
BALY				*i* S	**Sb**	**23 20 10.3**	**0.0**
KCTX	**Karacabey (Bur**	**1.30**	**336**	*e*PN	**Pn**	**23 19 53.5**	**+0.1**
KCTX	**Karacabey (Bur**	**1.30**	**336**	*e*Pn	**Pn**	**23 19 53.5**	**+0.1**
GONE	**Gonen-Balikesi**	**1.43**	**313**	*e*PN	**Pn**	**23 19 54.5**	**-0.6**
GONE	**Gonen-Balikesi**	**1.43**	**313**	*e*Pn	**Pn**	**23 19 54.5**	**-0.6**
ADVT	**Abdulvahap**	**1.45**	**21**	*e*PN	**Pn**	**23 19 54.8**	**-0.6**
ADVT	**Abdulvahap**	**1.45**	**21**	*e*Pn	**Pn**	**23 19 54.8**	**-0.6**
ARMT	**Armutlu**	**1.49**	**354**	*e*PN	**Pn**	**23 19 55.6**	**-0.3**
ARMT	**Armutlu**	**1.49**	**354**	*e*Pn	**Pn**	**23 19 55.7**	**-0.3**
EDC	**Edincik**	**1.56**	**324**	*e*PN	**Pn**	**23 19 56.7**	**-0.3**
EDC	**Edincik**	**1.56**	**324**	*e*Pn	**Pn**	**23 19 56.7**	**-0.3**
GULT	**Gulveren**	**1.75**	**39**	*e*PN	**Pn**	**23 19 59.1**	**-0.6**
GULT	**Gulveren**	**1.75**	**39**	*e*Pn	**Pn**	**23 19 59.1**	**-0.6**
HRT	**Hereke**	**1.80**	**15**	*e*PN	**Pn**	**23 20 00.5**	**+0.2**
HRT	**Hereke**	**1.80**	**15**	*e*Pn	**Pn**	**23 20 00.5**	**+0.2**
SVRH	**Sivrihisar-ESK**	**1.95**	**79**	*e*PN	**Pn**	**23 20 02.9**	**+0.5**
SVRH	**Sivrihisar-ESK**	**1.95**	**79**	*e*Pn	**Pn**	**23 20 02.9**	**+0.5**
ISK	**Istanbul-Kandi**	**1.98**	**0**	*e*PN	**Pn**	**23 20 03.0**	**+0.3**
ISK	**Istanbul-Kandi**	**1.98**	**0**	*e*Pn	**Pn**	**23 20 03.0**	**+0.3**
MDUB	**Mudurnu**	**2.15**	**49**	*e*PN	**Pn**	**23 20 05.3**	**+0.1**
MDUB	**Mudurnu**	**2.15**	**49**	*e*Pn	**Pn**	**23 20 05.3**	**+0.1**

*ISCJB **20** 23:20:17.3±0.3, 0°.35N±0°.04×98°.38E±0°.03, h43km, mb4.4/53, MS3.3/5, Error ellipse: s-maj=6.0km s-min=4.0km az=41.5*
*IDC **20** 23:20:19.6±0.8, 0°.50N×98°.57E, h44km±6km, mb3.9/26, mb1 4.0/29, mb1mx3.9/45, mbtmp4.1/29, ML4.0/3, MS3.3/5, Ms1 3.3/5, ms1mx2.8/46, Error ellipse: s-maj=15.2km s-min=10.2km az=64.0*
*DJA **20** 23:20:20.1±0.8, 0°.N±3°.×9°.8E±°, h29km±9km, M4.5/16, mb4.6/7, mB4.8/6, MLv4.7/16, Mw(mB)4.1/6*
*NEIC **20** 23:20:20.4±0.6, 0°.38N×98°.47E, h55km±5km, mb4.6/22, Error ellipse: s-maj=6.9km s-min=4.0km az=46.0*
*KLM **20** 23:20:21.1, 0°.22N×98°.48E, h48km, mb4.5, MS6.0*

ISC 20 23:20:19.5±0.4, 0°.42N±0°.05×98°.39E±0°.05, h43km, n109, σ1°.31/112, mb4.3/53, MS3.3/5, 2C, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GSI	**Gunungsitoli**	**1.20**	**317**	P	**Pn**	**23 20 41.4**	**+1.6**
GSI	**Gunungsitoli**	**1.20**	**317**	*e*Pn	**Pn**	**23 20 41.4**	**+1.6**
MNSI	**Mandailing Nat**	**1.25**	**73**	P	**Pn**	**23 20 40.8**	**+0.4**
MNSI				S	**Sn**	**23 20 56.2**	**+0.1**
PPI	**Padang Panjang**	**2.19**	**113**	P	**Pn**	**23 20 55.2**	**+1.8**
PPI				S	**Sn**	**23 21 21.2**	**+1.9**
PSI	**Prapat**	**2.43**	**13**	*e*Pn	**Pn**	**23 20 56.5**	**-0.2**
BKNI	**Bangkinang**	**2.65**	**92**	P	**Pn**	**23 21 00.3**	**+0.6**
BKNI	**Bangkinang**	**2.65**	**92**	*e*Pn	**Pn**	**23 21 00.5**	**+0.7**
TSI	**Tuntungan**	**3.07**	**3**	P	Pn	23 21 13.7	+8.3
KCSI	**Kotacane, Aceh**	**3.14**	**349**	P	**Pn**	**23 21 07.2**	**+0.7**
PPSI	**Pulau Pagai**	**3.55**	**153**	P	**Pn**	**23 21 12.0**	**-0.1**
MLSI	**Meulaboh, Aceh**	**4.31**	**333**	P	**Pn**	**23 21 23.1**	**+0.6**
LHMI	**Lhok Sumawe**	**4.99**	**343**	P	**Pn**	**23 21 33.1**	**+1.2**
LHMI	**Lhok Sumawe**	**4.99**	**343**	*e*Pn	**Pn**	**23 21 33.1**	**+1.2**
KULM	**Kulim**	**5.34**	**25**	*e*Pn	**Pn**	**23 21 38.2**	**+1.6**
MYKOM	**Kota Tinggi**	**5.63**	**76**	⇑P	**Pn**	**23 21 41.7**	**+1.1**
MYKOM	**Kota Tinggi**	**5.63**	**76**	*e*Pn	**Pn**	**23 21 40.0**	**-0.6**
TPRI	**Tanjung Pinang**	**6.16**	**85**	P	**Pn**	**23 21 48.6**	**+0.7**
	53nm,0.5s,32μm2.6nm						
KTGM	**Kuala Trenggan**	**6.80**	**44**	⇑P	**Pn**	**23 21 59.7**	**+3.0**
LWLI	**Liwa**	**7.83**	**134**	P	**Pn**	**23 22 13.0**	**+2.1**
KASI	**Kota Agung**	**8.49**	**134**	P	**Pn**	**23 22 20.8**	**+0.9**
LEM	**Lembang**	**11.69**	**128**	P	**Pn**	**23 23 03.6**	**-0.3**
	0.5nm,0.3s,baz=311,slow=19,SNR=3.0						
KSM	**Kuching**	**11.96**	**85**	*e*Pn	**Pn**	**23 23 07.6**	**+0.1**
CISI	**Cisompet, Garu**	**12.29**	**130**	*e*Pn	**Pn**	**23 23 11.6**	**-0.5**
SBUM	**Sibu**	**13.97**	**82**	*e*Pn	**Pn**	**23 23 34.5**	**-0.5**
MTKI	**Muara Teweh, K**	**16.56**	**95**	P	**P**	**23 24 15.9**	**+5.1**
CM01	**Chiang Mai Arr**	**17.90**	**2**	*e*P	**Pn**	**23 24 23.8**	**-1.6**
CMAR	**Chiang Mai Arr**	**17.93**	**2**	P	**P**	**23 24 26.5**	**+0.5**
	0.4nm,0.3s,baz=185,slow=12,SNR=6.3						
CMAR				LR	LR	23 31 26.0	
	comp=Z,78nm,18.9s,baz=170,slow=37						
KKM	**Kota Kinabalu**	**18.65**	**72**	*e*P	**Pn**	**23 24 34.3**	**-0.3**
	20nm,0.8s						
PALK	**Pallekele**	**18.91**	**292**	P	**Pn**	**23 24 39.9**	**+2.2**
	0.4nm,0.3s,baz=116,slow=8.6,SNR=3.9						
PALK				S	Sn	23 27 56.8	-12
	0.6nm,0.3s,baz=290,slow=0.8,SNR=5.0						
MYLDM	**Lahad Datu**	**20.63**	**76**	*e*P	**P**	**23 24 55.6**	**+0.1**
	15nm,0.6s						
KAPI	**Kappang**	**22.01**	**104**	P	**P**	**23 25 10.0**	**-0.3**
	2.9nm,0.3s,baz=256,slow=19,SNR=2.2						
KAPI	**Kappang**	**22.01**	**104**	*e*P	**P**	**23 25 10.1**	**-0.2**
	14nm,0.7s						
KMI	**Kunming**	**24.92**	**9**	P	**P**	**23 25 41.4**	**+2.5**
KMI				pmax	pmax		
	comp=Z,12nm,0.5s	

KURBB	Kurchatov Arra	52.79	344	P	P	23 29 30.6	+0.3
	comp=Z,0.8nm,0.7s,baz=166,slow=7.1,SNR=9.8						
KURBB				pP	pP	23 29 42.2	-0.3
	comp=Z,7.2nm,0.9s,baz=164,slow=6.7,SNR=25						
USRK	Ussuriysk Ar.	52.84	30	P	P	23 29 29.6	-1.1
	comp=Z,1.1nm,0.5s,baz=235,slow=6.7,SNR=4.0						
KURK	Kurchatov	52.85	344	*e*P	P	23 29 31.2	+0.4
	comp=Z,11nm,0.9s						
KURK				pP	pP	23 29 42.2	-0.7
ZAA0	Zalesovo Array	54.52	350	*e*P	P	23 29 42.8	-0.1
ZALV	Zalesovo Beam	54.52	350	P	P	23 29 42.6	-0.2
	comp=Z,1.9nm,0.5s,baz=175,slow=7.4,SNR=7.5						
ZALV				pP	pP	23 29 54.6	-0.5
	comp=Z,13nm,0.5s,baz=169,slow=6.3,SNR=19						
DAMY	Dhamar	55.18	287	*e*P	P	23 29 47.6	-1.2
	comp=Z,9.7nm,1.2s						
KLR	Kul'dur	56.43	26	P	P	23 29 56.0	-0.6
	comp=Z,1.8nm,0.7s,baz=230,slow=8.0,SNR=8.2						
BRVK	Borovoye	57.44	340	*e*P	P	23 30 04.2	+0.4
	comp=Z,6.8nm,0.6s						
ZRNK	Zerenda	57.79	339	*e*P	P	23 30 07.2	+0.9
	comp=Z,5.5nm,0.8s						
ABKAR	Abkulak array	58.76	332	*e*P	P	23 30 13.0	-0.1
ARU	Arti	64.36	337	LR	LR	00 01 38.0	
	comp=Z,27nm,18.6s,baz=75,slow=38						
KBZ	Khabaz	65.44	319	P	P	23 30 58.1	+0.1
	comp=Z,1.5nm,0.6s,baz=131,slow=6.9,SNR=4.5						
MMAI	Mount Meron Ar	67.32	306	LR	LR	00 02 59.9	
	comp=Z,17nm,19.2s,baz=95,slow=38						
NRIK	Noril'sk	69.18	356	P	P	23 31 19.5	-1.7
	comp=Z,0.4nm,0.3s,baz=159,slow=6.9,SNR=1.9						
BR131	Keskin Array S	70.51	312	*e*P	P	23 31 29.7	-0.5
BRTR	Keskin Array B	70.51	312	P	P	23 31 29.7	-0.5
	comp=Z,1.0nm,0.7s,baz=131,slow=7.5,SNR=9.9						
BRTR				LR	LR	00 05 07.7	
	comp=Z,10nm,18.9s,baz=103,slow=38						
BR231	Keskin MP Arra	71.18	312	*e*P	P	23 31 30.2	-4.0
PETK	Petropavlovsk-	71.73	33	P	P	23 31 36.0	-1.1
	comp=Z,2.6nm,0.9s,baz=256,slow=3.7,SNR=2.7						
MAW	Mawson	72.23	194	P	P	23 31 41.0	+1.3
	comp=Z,2.9nm,0.8s,baz=22,slow=7.0,SNR=4.9						
TIXI	Tiksi	73.75	10	P	P	23 31 48.2	-0.5
	comp=Z,0.5nm,0.3s,baz=233,slow=3.2,SNR=4.3						
TIXI	Tiksi	73.75	10	*e*P	P	23 31 48.3	-0.3
TIXI				*e*		23 32 00.2	
SEY	Seymchan	74.02	23	P	P	23 31 49.6	-0.8
	comp=Z,1.2nm,0.5s,baz=226,slow=19,SNR=4.3						
BOSA	Boshof	75.42	240	P	P	23 32 00.5	+1.0
	comp=Z,2.5nm,0.9s,baz=96,slow=10,SNR=3.4						
AKASG	Malin Array Be	76.60	322	P	P	23 32 04.5	-1.0
	comp=Z,0.2nm,0.3s,baz=88,slow=4.8,SNR=3.6						
BUR08	Bucovina Ar. S	78.41	319	*e*P	P	23 32 16.0	+0.2
FINES	FINESS Array B	81.24	332	P	P	23 32 30.2	-0.5
	comp=Z,1.7nm,0.5s,baz=104,slow=5.5,SNR=20						
ARCES	ARCESS Array B	83.67	340	P	P	23 32 44.2	+0.9
	comp=Z,1.1nm,0.7s,baz=97,slow=7.4,SNR=4.4						
VNDA	Vanda	84.83	169	P	P	23 32 49.9	+0.9
	comp=Z,0.9nm,0.6s,baz=316,slow=5.4,SNR=4.1						
GERES	GERESS Array B	86.18	319	P	P	23 32 56.6	+0.1
	comp=Z,0.2nm,0.4s,baz=46,slow=5.8,SNR=4.0						
PDAR	Pinedale Array	130.21	27	PKP	PKPdf	23 39 25.5	-0.2
	comp=Z,0.2nm,0.6s,baz=270,slow=1.8,SNR=3.1						
TXAR	Lajitas Array	143.68	34	PKP	PKPbc	23 39 47.8	-0.4
	comp=Z,0.3nm,0.5s,baz=180,slow=1.9,SNR=6.7						
CPUP	Villa Florida	145.21	220	PKPbc	PKPdf	23 39 53.6	+0.4
	comp=Z,3.5nm,0.6s,baz=118,slow=2.6,SNR=16						
LPAZ	La Paz	159.38	219	PKP	PKPdf	23 40 15.5	+0.4
	comp=Z,0.4nm,0.6s,baz=98,slow=7.1,SNR=3.6						
LPAZ				PKPab	PKPab	23 40 54.5	+1.9
	comp=Z,0.6nm,0.7s,baz=183,slow=6.5,SNR=2.5						

IDC 20 23:23:40.8±2.4,0°.36N×98°.65E,h0km,mb3.4/4,mb1 3.6/4, mb1mx3.3/48,mbtmp3.4/4,MS3.1/1,Ms1 3.1/1, ms1mx2.5/28,Error ellipse: s-maj=110.4km s-min=23.1km az=61.0,Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08S2	Diego Garcia H	27.26	253	T	T	23 57 03.5	
	baz=75						
H08S3	Diego Garcia H	27.27	253	T	T	23 57 04.0	
	baz=75						
H08S1	Diego Carcia H	27.28	253	T	T	23 56 58.1	
	baz=75						
WRA	Warramunga Arr	40.36	122	P	P	23 31 20.2	-0.5
	0.2nm,0.5s,baz=306,slow=9.1,SNR=2.9						
WRA				PcP	PcP	23 33 23.8	-0.4
	0.3nm,0.5s,baz=310,slow=2.4,SNR=5.9						
ASAR	Alice Springs	41.73	127	P	P	23 31 31.9	-0.1
	0.3nm,0.5s,baz=302,slow=6.6,SNR=3.7						
ASAR				PcP	PcP	23 33 28.8	+0.1
	0.2nm,0.5s,baz=298,slow=2.2,SNR=3.4						
SONM	Songino Array	47.77	7	P	P	23 32 20.9	+1.0
	0.2nm,0.3s,baz=184,slow=6.3,SNR=2.5						
MKAR	Makanchi Array	48.42	345	P	P	23 32 23.6	-1.2
	0.4nm,0.5s,baz=148,slow=8.6,SNR=5.5						
JCJ	Chichijima	49.53	54	LR	LR	23 50 48.7	
	comp=Z,24nm,21.6s,baz=50,slow=33						

*ISK **20** 23:24:25.9,39°.10N×29°.00E,h2km,MD2.9*
*DDA **20** 23:24:26.6,39°.10N×28°.97E,h7km,Ml3.1*
*CSEM **20** 23:24:26.7±0.1,39°.10N×29°.00E,h2km,ML3.1,Error ellipse: s-maj=2.6km s-min=2.1km az=111.0*
ISC 20 23:24:27.0±1.1,39°.10N±0°.02×28°.99E±0°.03,h5km±12km, n59,σ0°.41/72,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.22	255	P	Pg	23 24 31.3	0.0
DEMI				S	Sg	23 24 34.5	+0.4
DEMI	Demirci	0.22	255	*i* P	Pg	23 24 31.3	0.0
DEMI				*i* S	Sg	23 24 34.5	+0.4
GDZ	Gediz	0.39	91	*i* P	Pn	23 24 45.6	+6.2
TVSB	Tavsanli	0.51	46	*e*PG	Pg	23 24 36.6	-0.2
TVSB	Tavsanli	0.51	46	*e*Pg	Pg	23 24 36.6	-0.2
KULA	Kula-Manisa	0.64	204	*e*PG	Pg	23 24 38.9	-0.3
KULA	Kula-Manisa	0.64	204	*e*Pg	Pg	23 24 38.9	-0.3
DURS	Dursunbey	0.64	322	P	Pg	23 24 38.8	-0.5
DURS				S	Sg	23 24 48.2	+0.6
DURS	Dursunbey	0.64	322	*i* P	Pg	23 24 38.8	-0.5
DURS				*i* S	Sg	23 24 48.2	+0.6
MANT	Manisa	0.69	209	P	Pg	23 24 39.7	-0.6
MANT				S	Sg	23 24 48.8	-0.5
MANT	Manisa	0.69	209	*i* P	Pg	23 24 39.7	-0.6
MANT				*i* S	Sg	23 24 48.8	-0.5
KHAL	Karahalli	0.83	151	P	Pg	23 24 42.8	-0.1
KHAL	Karahalli	0.83	151	*i* P	Pg	23 24 42.8	-0.1
KHL	Karahalli	0.88	151	*e*PG	Pg	23 24 43.5	-0.4
KHL	Karahalli	0.88	151	*e*Pg	Pg	23 24 43.5	-0.4
AKHS	Akhisar	0.94	257	P	Pg	23 24 44.7	-0.3
AKHS				S	Sg	23 24 57.7	+0.5
AKHS	Akhisar	0.94	257	*i* P	Pg	23 24 44.7	-0.3
AKHS				*i* S	Sg	23 24 57.7	+0.5
AKS	Akhisar	0.94	257	*e*PG	Pg	23 24 45.1	+0.1
AKS	Akhisar	0.94	257	*e*Pg	Pg	23 24 45.1	+0.1
ORLT	Orhaneli	0.95	356	*e*PG	Pg	23 24 44.8	-0.4
ORLT				*e*SG	Sb	23 24 58.7	-0.1
ORLT	Orhaneli	0.95	356	*e*Pg	Pg	23 24 44.8	-0.4
ORLT				*e*Sg	Sb	23 24 58.7	-0.1
BALB	Balikesir	1.01	303	*e*PG	Pg	23 24 46.3	-0.1
BALB				*e*SG	Sb	23 25 01.1	+0.5
BALB	Balikesir	1.01	303	*e*Pg	Pg	23 24 46.3	-0.1
BALB				*e*Sg	Sb	23 25 01.1	+0.5
BALY	Balya	1.24	302	P	Pg	23 24 49.9	-0.8
BALY				S	Sb	23 25 07.1	0.0
BALY	Balya	1.24	302	*i* P	Pg	23 24 49.9	-0.8
BALY				*i* S	Sb	23 25 07.1	0.0
KCTX	Karacabey (Bur	1.26	338	*e*PN	Pg	23 24 50.9	-0.3
KCTX	Karacabey (Bur	1.26	338	*e*Pn	Pg	23 24 50.9	-0.3
MDNY	Mudanya-Bursa	1.27	357	*e*PN	Pg	23 24 50.7	-0.7
MDNY	Mudanya-Bursa	1.27	357	*e*Pn	Pg	23 24 50.7	-0.7
CAVI	Cavuskoy	1.28	31	*e*PN	Pb	23 24 51.7	0.0
CAVI	Cavuskoy	1.28	31	*e*Pn	Pb	23 24 51.7	0.0
IZI	Iznik	1.29	17	*e*PN	Pg	23 24 51.2	-0.6
IZI	Iznik	1.29	17	*e*Pn	Pg	23 24 51.2	-0.6
GEMT	Gemlik	1.34	7	*e*PN	Pn	23 24 52.4	0.0
GEMT	Gemlik	1.34	7	*e*Pn	Pn	23 24 52.4	0.0
GONE	Gonen-Balikesi	1.38	314	*e*PN	Pb	23 24 53.2	-0.1
GONE	Gonen-Balikesi	1.38	314	*e*Pn	Pb	23 24 53.2	-0.1
ADVT	Abdulvahap	1.45	23	*e*PN	Pn	23 24 53.7	-0.2
ADVT	Abdulvahap	1.45	23	*e*Pn	Pn	23 24 53.7	-0.2
ARMT	Armutlu	1.47	356	*e*PN	Pn	23 24 53.9	-0.2
ARMT	Armutlu	1.47	356	*e*Pn	Pn	23 24 53.9	-0.2
EDC	Edincik	1.52	326	*e*PN	Pb	23 24 55.3	-0.3
EDC	Edincik	1.52	326	*e*Pn	Pb	23 24 55.3	-0.3
AYDN	Tasoluk	1.68	212	P	Pg	23 24 58.9	-0.3
AYDN	Tasoluk	1.68	212	*i* P	Pg	23 24 58.9	-0.3
GULT	Gulveren	1.78	41	*e*PN	Pn	23 24 58.5	0.0
GULT	Gulveren	1.78	41	*e*Pn	Pn	23 24 58.5	0.0
HRT	Hereke	1.80	17	*e*PN	Pn	23 24 59.0	+0.3
HRT	Hereke	1.80	17	*e*Pn	Pn	23 24 59.0	+0.3
DGB	˜zmir	1.95	238	*i* P	Pn	23 25 00.3	-0.4
ISK	Istanbul-Kandi	1.96	2	*e*PN	Pn	23 25 01.4	+0.5
ISK	Istanbul-Kandi	1.96	2	*e*Pn	Pn	23 25 01.4	+0.5
SVRH	Sivrihisar-ESK	2.00	79	*e*PN	Pn	23 25 02.2	+0.7
SVRH	Sivrihisar-ESK	2.00	79	*e*Pn	Pn	23 25 02.2	+0.7
SILT	Sile	2.11	14	*e*PN	Pn	23 25 03.3	+0.3
SILT	Sile	2.11	14	*e*Pn	Pn	23 25 03.3	+0.3
ZEY	˜zmir	2.12	247	*i* P	Sg	23 25 35.8	+0.6
MDUB	Mudurnu	2.19	51	*e*PN	Pn	23 25 04.5	+0.4
MDUB	Mudurnu	2.19	51	*e*Pn	Pn	23 25 04.5	+0.4

*ISK **20** 23:28:18.8,39°.07N×29°.11E,h11km,MD2.7*
*ISCJB **20** 23:28:19.5±0.5,39°.10N±0°.04×29°.04E±0°.04,h9km,Error ellipse: s-maj=6.1km s-min=3.9km az=146.3*
*CSEM **20** 23:28:19.5±0.1,39°.10N×29°.05E,h8km,MD2.7,Error ellipse: s-maj=2.9km s-min=2.2km az=137.0*
*DDA **20** 23:28:19.5,39°.11N×29°.03E,h7km,Ml2.3*
ISC 20 23:28:19.2±0.9,39°.09N±0°.03×29°.07E±0°.03,h9km,n26, σ0°.38/34,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.28	260	P	Pg	23 28 25.0	+0.1
DEMI				S	Sg	23 28 28.6	0.0
DEMI	Demirci	0.28	260	*i* P	Pg	23 28 24.9	+0.1
DEMI				*i* S	Sg	23 28 28.6	0.0
GDZ	Gediz	0.32	90	P	Pb	23 28 26.8	-0.4
GDZ				S	Sb	23 28 31.7	-0.8
GDZ	Gediz	0.32	90	*i* P	Pb	23 28 26.8	-0.4
GDZ				*i* S	Sb	23 28 31.7	-0.8
TVSB	Tavsanli	0.47	40	*e*PG	Pg	23 28 28.9	+0.5
TVSB				*e*SG	Sg	23 28 35.0	+0.4
TVSB	Tavsanli	0.47	40	*e*Pg	Pg	23 28 28.9	+0.5
TVSB				*e*Sg	Sg	23 28 35.0	+0.4
KULA	Kula-Manisa	0.66	209	*e*PG	Pg	23 28 32.1	+0.2
KULA				*e*SG	Sg	23 28 41.4	+0.8
KULA	Kula-Manisa	0.66	209	*e*Pg	Pg	23 28 32.1	+0.2
KULA				*e*Sg	Sg	23 28 41.4	+0.8
DURS	Dursunbey	0.69	318	P	Pg	23 28 32.5	0.0
DURS	Dursunbey	0.69	318	*i* P	Pg	23 28 32.5	0.0
BALB	Balikesir	1.07	301	*e*PN	Pn	23 28 40.5	+0.2
BALB	Balikesir	1.07	301	*e*Pn	Pn	23 28 40.6	+0.2
CAVI	Cavuskoy	1.26	28	*e*PN	Pn	23 28 43.0	0.0
CAVI	Cavuskoy	1.26	28	*e*Pn	Pn	23 28 43.0	0.0
IZI	Iznik	1.28	14	*e*PN	Pn	23 28 43.2	-0.2
IZI	Iznik	1.28	14	*e*Pn	Pn	23 28 43.2	-0.2
MDNY	Mudanya-Bursa	1.28	354	*e*PN	Pn	23 28 43.2	-0.1
MDNY	Mudanya-Bursa	1.28	354	*e*Pn	Pn	23 28 43.2	-0.1
KCTX	Karacabey (Bur	1.30	335	*e*PN	Pb	23 28 43.8	0.0
KCTX	Karacabey (Bur	1.30	335	*e*Pn	Pb	23 28 43.8	0.0
ADVT	Abdulvahap	1.44	21	*e*PN	Pn	23 28 45.6	+0.2
ADVT	Abdulvahap	1.44	21	*e*Pn	Pn	23 28 45.6	+0.2
ARMT	Armutlu	1.48	354	*e*PN	Pn	23 28 46.4	+0.4
ARMT	Armutlu	1.48	354	*e*Pn	Pn	23 28 46.4	+0.4
EDC	Edincik	1.56	324	*e*PN	Pb	23 28 48.0	-0.3
EDC	Edincik	1.56	324	*e*Pn	Pb	23 28 48.0	-0.3

*ISCJB **20** 23:36:21.5±0.4,38°.44N±0°.01×23°.90E±0°.02,h8km±3km, Error ellipse: s-maj=3.1km s-min=2.3km az=174.6*
*ATH **20** 23:36:21.4,38°.44N×23°.88E,h24km,ML3.1/15,Error ellipse: s-maj=0.9km s-min=0.5km az=248.0*
*CSEM **20** 23:36:21.8±0.1,38°.44N×23°.88E,h5km,ML3.2,Error ellipse: s-maj=2.0km s-min=1.6km az=86.0*
*THE **20** 23:36:22.1,38°.43N×23°.87E,h3km,ML3.2/17,Error ellipse: s-maj=1.0km s-min=0.4km az=256.0*
*ISK **20** 23:36:22.5,38°.54N×23°.66E,h5km,ML3.1*
ISC 20 23:36:22.1±1.0,38°.44N±0°.01×23°.84E±0°.02,h7km±9km, n215,σ0°.95/278,Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PTL	Penteli	0.39	177	P	Pg	23 36 29.8	+0.1
PTL	Penteli	0.39	177	P	Pg	23 36 29.8	+0.1
PTL				S	Sg	23 36 34.0	-0.9
PTL	Penteli	0.39	177	P	Pg	23 36 29.8	+0.1
PTL				S	Sg	23 36 34.0	-0.9
PTL				AML	AML	23 36 36.6	
	comp=N,3813μm,0.3s						
PTL				AML	AML	23 36 40.0	
	comp=E,4497μm,0.4s						
ATH	Athens Observa	0.48	192	P	Pg	23 36 31.3	-0.1
ATH				S	Sg	23 36 38.0	+0.4
ATH	Athens Observa	0.48	192	P	Pg	23 36 31.4	0.0
ATH				S	Sg	23 36 38.0	+0.4
VLY	Voula,Athens	0.59	184	P	Pg	23 36 33.3	-0.2
VLY				S	Sg	23 36 41.8	+0.7
VLY	Voula,Athens	0.59	184	P	Pg	23 36 33.3	-0.2
VLY				S	Sg	23 36 41.8	+0.7
VLY	Voula,Athens	0.59	184	P	Pg	23 36 33.5	+0.1
VLY				S	Sg	23 36 40.8	-0.4
VLY				AML	AML	23 36 42.9	
	comp=E,7090μm,0.3s						
VLY				AML	AML	23 36 45.0	
	comp=N,7587μm,0.3s						
SMIA	Simia	0.66	312	P	Pg	23 36 35.0	+0.1
SMIA				S	Sb	23 36 45.5	+0.1
SMIA	Simia	0.66	312	P	Pg	23 36 35.0	+0.1
SMIA				S	Sb	23 36 45.5	+0.1
LKR	Lokris	0.69	288	P	Pg	23 36 35.0	-0.5
LKR				S	Sg	23 36 45.9	+1.4
LKR	Lokris	0.69	288	P	Pg	23 36 35.0	-0.5
LKR				S	Sg	23 36 45.9	+1.4
LKR	Lokris	0.69	288	P	Pg	23 36 34.7	-0.8
LKR				S	Sb	23 36 46.4	+0.1
LKR				AML	AML	23 36 48.9	
	comp=E,4083μm,0.3s						
LKR				AML	AML	23 36 49.0	
	comp=N,3200μm,0.3s						
AOS	Alonnisos	0.73	2	*e*PG	Pg	23 36 35.8	-0.4
AOS	Alonnisos	0.73	2	P	Pg	23 36 36.1	-0.1
AOS				S	Sb	23 36 47.4	0.0
AOS	Alonnisos	0.73	2	*e*Pg	Pg	23 36 35.8	-0.4
AOS	Alonnisos	0.73	2	P	Pg	23 36 36.1	-0.1
AOS				S	Sb	23 36 47.4	0.0
AOS	Alonnisos	0.73	2	P	Pg	23 36 36.3	+0.1
AOS				S	Sb	23 36 47.4	0.0
AOS				AML	AML	23 36 49.3	
	comp=E,6523μm,0.6s						
AOS				AML	AML	23 36 49.5	
	comp=N,8078μm,0.4s						
LTK	Loutraki	0.80	239	P	Pg	23 36 37.0	-0.6
LTK	Loutraki	0.80	239	P	Pg	23 36 37.0	-0.6
LTK				S	Sb	23 36 49.7	+0.2
LTK	Loutraki	0.80	239	P	Pg	23 36 36.9	-0.6
LTK				S	Sb	23 36 49.7	+0.2
LTK				AML	AML	23 36 51.6	
	comp=E,5583μm,0.5s						
LTK				AML	AML	23 36 55.2	
	comp=N,4488μm,0.5s						
NEO	Neokhori	0.99	331	P	Pg	23 36 41.0	-0.2
NEO	Neokhori	0.99	331	P	Pg	23 36 41.0	-0.2
NEO				S	Sg	23 36 54.8	+0.7
NEO	Neokhori	0.99	331	P	Pg	23 36 41.6	+0.4
NEO				S	Sg	23 36 54.8	+0.7
NEO				AML	AML	23 36 57.2	
	comp=E,5045μm,0.4s						
NEO				AML	AML	23 36 58.5	
	comp=N,7642μm,0.4s						
DSF	Desfina	1.03	269	P	Pg	23 36 40.8	-1.1
DSF				S	Sg	23 36 56.6	+1.3
DSF	Desfina	1.03	269	P	Pg	23 36 40.8	-1.1
DSF				S	Sg	23 36 56.6	+1.3
DSF	Desfina	1.03	269	P	Pg	23 36 39.8	-2.1
DSF				S	Sg	23 36 56.3	+0.9
DSF				AML	AML	23 36 57.9	
	comp=E,2984μm,0.5s						
DSF				AML	AML	23 36 58.1	
	comp=N,3341μm,0.5s						
DID	Didima	1.05	207	P	Pg	23 36 41.7	-0.5
DID				S	Sb	23 36 56.8	+0.3
DID	Didima	1.05	207	P	Pg	23 36 42.2	0.0
DID				S	Sb	23 36 56.8	+0.3
DID	Didima	1.05	207	P	Pg	23 36 42.2	0.0
DID				S	Sb	23 36 57.2	+0.8
DID				AML	AML	23 36 59.6	
	comp=E,2449μm,0.4s						
DID				AML	AML	23 37 00.1	
	comp=N,2312μm,0.3s						
XOR	Xorichti	1.05	332	P	Pg	23 36 42.0	-0.4
XOR				S	Sb	23 36 57.6	+0.9
XOR	Xorichti	1.05	332	P	Pg	23 36 42.0	-0.4
XOR				S	Sg	23 36 56.6	+0.5
XOR	Xorichti	1.05	332	P	Pg	23 36 42.4	0.0
XOR				S	Sg	23 36 56.6	+0.5
XOR				AML	AML	23 37 00.7	
	comp=N,2089μm,0.9s						
XOR				AML	AML	23 37 01.1	
	comp=E,1021μm,0.5s						
KRND	KRANIDI	1.19	208	P	Pg	23 36 44.0	-0.9
KRND				S	Sb	23 37 01.6	+1.1
KRND	KRANIDI	1.19	208	P	Pg	23 36 44.0	-0.9
KRND				S	Sg	23 37 00.7	+0.4
KRND	KRANIDI	1.19	208	P	Pg	23 36 43.9	-0.9
KRND				S	Sg	23 37 00.7	+0.4
KRND				AML	AML	23 37 03.4	
	comp=E,1690μm,0.4s						
KRND				AML	AML	23 37 06.9	
	comp=N,1065μm,0.4s						
FYTO	Fytoko, Volos	1.20	324	P	Pg	23 36 44.6	-0.5
FYTO				S	Sn	23 37 02.4	+0.7
FYTO	Fytoko, Volos	1.20	324	P	Pg	23 36 44.6	-0.5
FYTO				S	Sn	23 37 02.4	+0.7
AGG	Agios Georgios	1.32	297	*e*PN	Pn	23 36 45.5	-1.4
AGG	Agios Georgios	1.32	297	P	Pn	23 36 46.6	-0.4
AGG				S	Sn	23 37 06.3	+1.5
AGG	Agios Georgios	1.32	297	*e*Pn	Pn	23 36 45.5	-1.4
AGG	Agios Georgios	1.32	297	P	Pn	23 36 46.6	-0.4
AGG				S	Sg	23 37 04.1	-0.4
AGG	Agios Georgios	1.32	297	P	Pn	23 36 46.4	-0.6
AGG				S	Sg	23 37 04.1	-0.4
AGG				AML	AML	23 37 10.2	
	comp=N,1561μm,0.6s						
AGG				AML	AML	23 37 11.1	
	comp=E,1551μm,0.7s						
KLV	Kalavryta, Ach	1.39	254	P	Pn	23 36 47.3	-0.7
KLV				S	Sb	23 37 06.6	+0.2
KLV	Kalavryta, Ach	1.39	254	P	Pn	23 36 47.3	-0.7
KLV				S	Sb	23 37 06.6	+0.2
KLV	Kalavryta, Ach	1.39	254	P	Pn	23 36 46.6	-1.3
SERG	Sergoula	1.40	269	P	Pn	23 36 47.5	-0.6
LAKA	Lakka	1.48	263	P	Pn	23 36 49.0	-0.2
LAKA	Lakka	1.48	263	P	Pn	23 36 49.0	-0.2
PAIG	Paliouri	1.49	355	P	Pn	23 36 48.5	-0.8
PAIG	Paliouri	1.49	355	P	Pn	23 36 48.5	-0.8
PAIG	Paliouri	1.49	355	P	Pn	23 36 47.7	-1.6
ANX	Ano Chora	1.51	276	P	Pn	23 36 50.2	+0.5
ANX	Ano Chora	1.51	276	P	Pn	23 36 50.2	+0.5
EFP	Efpalio	1.52	270	P	Pn	23 36 50.1	+0.4
EFP				S	Sb	23 37 11.3	+1.2
EFP	Efpalio	1.52	270	P	Pn	23 36 50.1	+0.4
EFP				S	Sb	23 37 11.3	+1.2
VLX	Vlachokerasia	1.57	228	P	Pn	23 36 50.5	0.0
VLX	Vlachokerasia	1.57	228	P	Pn	23 36 51.1	+0.5
VLX	Vlachokerasia	1.57	228	P	Pn	23 36 51.1	+0.5
UPR	University Cam	1.62	265	P	Pn	23 36 51.3	+0.2
UPR	University Cam	1.62	265	P	Pn	23 36 51.3	+0.2
EVR	Evrytania	1.66	287	P	Pn	23 36 52.0	+0.3
EVR	Evrytania	1.66	287	P	Pn	23 36 52.0	+0.3
EVR	Evrytania	1.66	287	P	Pn	23 36 52.8	+1.1
CHOS	Chios island	1.74	91	*e*PN	Pg	23 36 56.2	+0.7
CHOS				*e*SN	Sg	23 37 22.3	+4.2
CHOS	Chios island	1.74	91	P	Pn	23 36 52.4	-0.4
CHOS	Chios island	1.74	91	P	Pn	23 36 52.4	-0.4
CHOS	Chios island	1.74	91	P	Pn	23 36 52.8	-0.1
DRO	Drossia	1.75	254	P	Pn	23 36 53.0	+0.1
DRO	Drossia	1.75	254	P	Pn	23 36 53.7	+0.8
DRO	Drossia	1.75	254	P	Pn	23 36 53.7	+0.8
SIGR	SIGRI	1.75	63	*e*PN	Pg	23 36 55.9	+0.1
SIGR				*e*SN	Sg	23 37 21.5	+3.0
SIGR	SIGRI	1.75	63	P	Pn	23 36 52.4	-0.5
SIGR	SIGRI	1.75	63	P	Pn	23 36 52.1	-0.8
SIGR	SIGRI	1.75	63	*e*Pn	Pg	23 36 55.9	+0.1
SIGR	SIGRI	1.75	63	P	Pn	23 36 52.1	-0.8
LIA	Limnos Island	1.79	35	P	Pn	23 36 52.6	-0.8
LIA				S	Sn	23 37 16.5	+0.1
LI

comp=N,286μm,0.4s
HORT AML AML 23 37 27.8
comp=E,387μm,0.7s
DSL Palaion Diasel 2.25 289 P **Pn** **23 37 00.8 +1.0**
DSL S **Sn** **23 37 29.8 +1.9**
DSL Palaion Diasel 2.25 289 P **Pn** **23 37 00.8 +1.0**
DSL S **Sn** **23 37 29.8 +1.9**
DSL Palaion Diasel 2.25 289 P **Pn** **23 37 01.0 +1.1**
KYTH Kithira 2.26 196 P **Pn** **23 36 59.5 -0.4**
KYTH Kithira 2.26 196 P **Pn** **23 36 59.5 -0.4**
KYTH Kithira 2.26 196 P **Pn** **23 36 59.3 -0.7**
PYL PYLOS 2.27 228 P **Pn** **23 37 00.4 +0.4**
PYL PYLOS 2.27 228 P **Pn** **23 37 00.4 +0.4**
THE Thessaloniki 2.29 343 P **Pn** **23 36 59.6 -0.7**
THE Thessaloniki 2.29 343 P **Pn** **23 36 59.6 -0.7**
CMBO Columbo, Santo 2.33 147 P **Pn** **23 37 01.2 +0.4**
CMBO Columbo, Santo 2.33 147 P **Pn** **23 37 01.2 +0.4**
THR5 Thira Island, 2.35 149 *e*PN **Pg** **23 37 06.2 -0.9**
EZN Ezine 2.38 54 *e*PN **Pb** **23 37 05.5 +0.3**
EZN Ezine 2.38 54 *e*Pn **Pb** **23 37 05.5 +0.3**
SOH Sokhos 2.41 351 P **Pn** **23 37 01.9 -0.1**
SOH Sokhos 2.41 351 P **Pn** **23 37 01.8 -0.2**
SOH Sokhos 2.41 351 P **Pn** **23 37 01.8 -0.2**
KFL Anninata 2.42 263 P **Pn** **23 37 02.6 +0.5**
KFL Anninata 2.42 263 P **Pn** **23 37 02.6 +0.5**
KPRO Kipourio 2.45 309 P **Pn** **23 37 02.4 -0.2**
KPRO Kipourio 2.45 309 P **Pn** **23 37 02.9 +0.4**
KPRO Kipourio 2.45 309 P **Pn** **23 37 02.9 +0.4**
KZN Kozani 2.46 320 P **Pn** **23 37 04.4 +0.7**
SMG Samos 2.48 106 P **Pn** **23 37 03.2 +0.3**
SMG Samos 2.48 106 P **Pn** **23 37 03.2 +0.3**
DKL Dikili 2.48 74 *e*PN **Pb** **23 37 07.4 +0.4**
LKD2 Lefkada island 2.52 279 P **Pn** **23 37 04.6 +1.1**
LKD2 Lefkada island 2.52 279 P **Pn** **23 37 04.6 +1.1**
ZKS Zakynthos 2.52 254 P **Pn** **23 37 03.6 +0.1**
ZKS Zakynthos 2.52 254 P **Pn** **23 37 03.6 +0.1**
VLS Valsamata 2.57 265 P **Pn** **23 37 04.6 +0.4**
ANKY Antikythira Is 2.60 190 P **Pn** **23 37 04.2 -0.4**
ANKY Antikythira Is 2.60 190 P **Pn** **23 37 04.2 -0.4**
ANKY Antikythira Is 2.60 190 P **Pn** **23 37 03.6 -1.0**
KAVA Kavala 2.61 11 P **Pn** **23 37 03.5 -1.2**
KAVA Kavala 2.61 11 P **Pn** **23 37 03.5 -1.2**
JAN Janina 2.63 298 P **Pn** **23 37 06.5 +1.5**
SRS Serrai 2.68 356 P **Pn** **23 37 05.2 -0.5**
SRS Serrai 2.68 356 P **Pn** **23 37 05.2 -0.5**
SRS Serrai 2.68 356 P **Pn** **23 37 05.2 -0.5**
PENT Pentalofos 2.73 311 P **Pn** **23 37 07.6 +1.1**
PENT Pentalofos 2.73 311 P **Pn** **23 37 07.6 +1.1**
GRG Griva 2.75 337 *e*PN **Pn** **23 37 06.6 0.0**
GRG Griva 2.75 337 P **Pn** **23 37 06.9 +0.3**
GRG Griva 2.75 337 *e*Pn **Pn** **23 37 06.6 0.0**
GRG Griva 2.75 337 P **Pn** **23 37 06.9 +0.3**
GRG Griva 2.75 337 P **Pn** **23 37 07.1 +0.4**
KNT Kendrikon 2.81 345 *e*PN **Pn** **23 37 08.7 +1.2**
KNT Kendrikon 2.81 345 P **Pn** **23 37 07.9 +0.4**
KNT Kendrikon 2.81 345 P **Pn** **23 37 07.9 +0.4**
KNT Kendrikon 2.81 345 *e*Pn **Pn** **23 37 08.7 +1.2**
KNT Kendrikon 2.81 345 P **Pn** **23 37 08.1 +0.6**
GELI Tayfur-Gelibol 2.83 45 *e*PN **Pb** **23 37 11.1 -1.8**
GELI Tayfur-Gelibol 2.83 45 *e*Pn **Pb** **23 37 11.1 -1.8**
ENEZ Enez 2.91 37 *e*PN **Pb** **23 37 11.6 -2.7**
ENEZ Enez 2.91 37 *e*Pn **Pb** **23 37 11.6 -2.7**
NVR Nevrokopi 2.91 0 P **Pn** **23 37 08.1 -0.7**
NEST Nestorio 2.93 313 P **Pn** **23 37 10.2 +1.1**
NEST Nestorio 2.93 313 P **Pn** **23 37 10.2 +1.1**
IGT Igoumenitsa 2.94 293 P **Pn** **23 37 10.1 +0.8**
IGT Igoumenitsa 2.94 293 P **Pn** **23 37 10.1 +0.8**
LPK Lapseki 2.97 49 *e*PN **Pb** **23 37 13.7 -1.7**
LPK Lapseki 2.97 49 *e*Pn **Pb** **23 37 13.7 -1.7**
IMMV Iera Moni Meta 2.98 178 P **Pn** **23 37 09.5 -0.3**
IMMV Iera Moni Meta 2.98 178 P **Pn** **23 37 09.5 -0.3**
FNA Florina 3.02 322 *e*PN **Pn** **23 37 11.1 +0.7**
FNA Florina 3.02 322 P **Pn** **23 37 10.8 +0.5**
FNA Florina 3.02 322 P **Pn** **23 37 10.8 +0.5**
FNA Florina 3.02 322 *e*Pn **Pn** **23 37 11.1 +0.7**
FNA Florina 3.02 322 P **Pn** **23 37 10.9 +0.5**
ERIK Erikli-Kesan 3.04 42 *e*PN **Pb** **23 37 14.2 -2.2**
ERIK Erikli-Kesan 3.04 42 *e*Pn **Pb** **23 37 14.3 -2.2**
VAM Vamos 3.04 174 P **Pn** **23 37 11.7 +1.1**
SGD Sagiada 3.04 294 P **Pn** **23 37 10.8 +0.2**
SGD Sagiada 3.04 294 P **Pn** **23 37 10.8 +0.2**
IDI Anoyia 3.26 165 P **Pn** **23 37 12.1 -1.6**
KRBG Karabiga-Canak 3.31 53 *e*PN **Pb** **23 37 18.8 -2.4**
KEK Kerkira 3.39 293 P **Pn** **23 37 16.4 +0.9**
SIVA Sivas 3.50 167 P **Pn** **23 37 17.0 0.0**
SIVA Sivas 3.50 167 P **Pn** **23 37 17.1 0.0**
LAST Lasithi 3.53 158 P **Pn** **23 37 16.6 -0.8**
GVD Gavdhos 3.60 177 P **Pn** **23 37 18.2 -0.1**
GVD Gavdhos 3.60 177 P **Pn** **23 37 18.2 -0.1**
KARP Karpathos 3.92 136 P **Pn** **23 37 24.0 +1.2**
KARP Karpathos 3.92 136 P **Pn** **23 37 24.0 +1.2**
EDRB Edirne 4.07 32 *e*PN **Pn** **23 37 28.5 +3.8**
EDRB Edirne 4.07 32 *e*Pn **Pn** **23 37 28.5 +3.8**
TIP Timpagrande 5.58 280 P **Pn** **23 37 45.5 -0.1**
TIP Timpagrande 5.58 280 P **Pn** **23 37 45.5 -0.1**
NOCI Noci 5.73 296 P **Pn** **23 37 47.2 -0.4**
NOCI Noci 5.73 296 P **Pn** **23 37 47.2 -0.4**
CUC Castrocucco 6.42 286 P **Pn** **23 37 59.0 +1.9**
CUC Castrocucco 6.42 286 P **Pn** **23 37 59.0 +1.9**

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*ISCJB **20** 23:37:30.3±0.5, 39°.10N±0°.03×29°.02E±0°.03, h1km±6km,*
Error ellipse: s-maj=5.1km s-min=3.7km az=6.9
*DDA **20** 23:37:30.2, 39°.09N×29°.05E, h5km, Ml3.2*
*CSEM **20** 23:37:30.5±0.1, 39°.09N×29°.03E, h5km, ML3.2, Error*
ellipse: s-maj=2.1km s-min=1.8km az=140.0
*ISK **20** 23:37:30.4, 39°.10N×29°.00E, h9km, MD2.9*
ISC 20 23:37:30.7±1.0, 39°.09N±0°.02×29°.03E±0°.02, h8km±9km,
n59, σ0°43/76, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**258**	P	**Pg**	**23 37 35.7**	**+0.1**
DEMI				S	**Sg**	**23 37 39.5**	**+0.5**
DEMI	**Demirci**	**0.25**	**258**	*i* P	**Pg**	**23 37 35.7**	**+0.1**
DEMI				*i* S	**Sg**	**23 37 39.5**	**+0.5**
GDZ	**Gediz**	**0.35**	**91**	P	**Pg**	**23 37 37.0**	**-0.6**
GDZ				S	**Sg**	**23 37 42.0**	**-0.3**
GDZ	**Gediz**	**0.35**	**91**	*i* P	**Pg**	**23 37 37.0**	**-0.6**
GDZ				*i* S	**Sg**	**23 37 42.0**	**-0.3**
TVSB	**Tavsanli**	**0.49**	**43**	*e*PG	**Pg**	**23 37 40.6**	**+0.4**
TVSB	**Tavsanli**	**0.49**	**43**	*e*Pg	**Pg**	**23 37 40.6**	**+0.4**
KULA	**Kula-Manisa**	**0.65**	**207**	*e*PG	**Pg**	**23 37 43.1**	**0.0**
KULA	**Kula-Manisa**	**0.65**	**207**	*e*Pg	**Pg**	**23 37 43.1**	**0.0**
DURS	**Dursunbey**	**0.67**	**320**	P	**Pg**	**23 37 43.7**	**+0.2**
DURS	**Dursunbey**	**0.67**	**320**	*i* P	**Pg**	**23 37 43.7**	**+0.2**
MANT	**Manisa**	**0.70**	**212**	P	**Pg**	**23 37 44.0**	**-0.3**
MANT				S	**Sg**	**23 37 53.5**	**0.0**
MANT	**Manisa**	**0.70**	**212**	*i* P	**Pg**	**23 37 44.0**	**-0.3**
MANT				*i* S	**Sg**	**23 37 53.5**	**0.0**
KHAL	**Karahalli**	**0.81**	**153**	P	**Pg**	**23 37 46.3**	**+0.1**
KHAL				S	**Sg**	**23 37 56.9**	**+0.2**
KHAL	**Karahalli**	**0.81**	**153**	*i* P	**Pg**	**23 37 46.3**	**+0.1**
KHAL				*i* S	**Sg**	**23 37 56.9**	**+0.2**
KHL	**Karahalli**	**0.86**	**153**	*e*PG	**Pb**	**23 37 47.6**	**-0.4**
KHL	**Karahalli**	**0.86**	**153**	*e*Pg	**Pb**	**23 37 47.6**	**-0.4**
ORLT	**Orhaneli**	**0.96**	**354**	*e*PG	**Pg**	**23 37 49.1**	**0.0**
ORLT	**Orhaneli**	**0.96**	**354**	*e*Pg	**Pg**	**23 37 49.1**	**0.0**
AKHS	**Akhisar**	**0.97**	**258**	P	**Pg**	**23 37 49.0**	**-0.3**
AKHS				S	**Sb**	**23 38 03.0**	**+0.2**
AKHS	**Akhisar**	**0.97**	**258**	*i* P	**Pg**	**23 37 49.0**	**-0.3**
AKHS				*i* S	**Sb**	**23 38 03.0**	**+0.2**
AKS	**Akhisar**	**0.97**	**258**	*e*PG	**Pb**	**23 37 49.4**	**-0.4**
AKS	**Akhisar**	**0.97**	**258**	*e*Pg	**Pb**	**23 37 49.4**	**-0.4**
BALB	**Balikesir**	**1.04**	**302**	*e*PG	**Pg**	**23 37 50.2**	**-0.5**
BALB				*e*SG	**Sb**	**23 38 05.0**	**+0.1**
BALB	**Balikesir**	**1.04**	**302**	*e*Pg	**Pg**	**23 37 50.2**	**-0.5**
BALB				*e*Sg	**Sb**	**23 38 05.0**	**+0.1**
IGD	**Bursa**	**1.18**	**6**	*i* S	**Sg**	**23 38 08.2**	**-0.4**
CAVI	**Cavuskoy**	**1.27**	**29**	*e*PN	**Pg**	**23 37 54.7**	**-0.4**
CAVI	**Cavuskoy**	**1.27**	**29**	*e*Pn	**Pg**	**23 37 54.7**	**-0.4**
MDNY	**Mudanya-Bursa**	**1.28**	**355**	*e*PN	**Pg**	**23 37 55.0**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.28**	**355**	*e*Pn	**Pg**	**23 37 55.0**	**-0.2**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*PN	**Pn**	**23 37 54.4**	**-0.5**
KCTX				*e*SN	**Sn**	**23 38 12.5**	**+0.2**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*Pn	**Pn**	**23 37 54.4**	**-0.5**
KCTX				*e*Sn	**Sn**	**23 38 12.5**	**+0.2**
IZI	**Iznik**	**1.29**	**15**	*e*PN	**Pn**	**23 37 55.0**	**-0.2**
IZI	**Iznik**	**1.29**	**15**	*e*Pn	**Pn**	**23 37 55.0**	**-0.2**
BORA	**Eskisehir**	**1.35**	**54**	P	**Pn**	**23 37 54.9**	**-1.1**
BORA				S	**Sb**	**23 38 13.5**	**-0.4**
BORA	**Eskisehir**	**1.35**	**54**	*i* P	**Pn**	**23 37 54.9**	**-1.1**
BORA				*i* S	**Sb**	**23 38 13.5**	**-0.4**
GONE	**Gonen-Balikesi**	**1.41**	**313**	*e*PN	**Pn**	**23 37 56.7**	**0.0**
GONE	**Gonen-Balikesi**	**1.41**	**313**	*e*Pn	**Pn**	**23 37 56.7**	**0.0**
ADVT	**Abdulvahap**	**1.45**	**22**	*e*PN	**Pb**	**23 37 57.7**	**-0.2**
ADVT	**Abdulvahap**	**1.45**	**22**	*e*Pn	**Pb**	**23 37 57.7**	**-0.2**
ARMT	**Armutlu**	**1.48**	**355**	*e*PN	**Pn**	**23 37 57.9**	**+0.2**
ARMT	**Armutlu**	**1.48**	**355**	*e*Pn	**Pn**	**23 37 57.9**	**+0.2**
EDC	**Edincik**	**1.54**	**325**	*e*PN	**Pn**	**23 37 58.4**	**-0.1**
EDC	**Edincik**	**1.54**	**325**	*e*Pn	**Pn**	**23 37 58.4**	**-0.1**
GULT	**Gulveren**	**1.76**	**40**	*e*PN	**Pn**	**23 38 02.4**	**+0.8**
GULT	**Gulveren**	**1.76**	**40**	*e*Pn	**Pn**	**23 38 02.4**	**+0.8**
HRT	**Hereke**	**1.79**	**16**	*e*PN	**Pn**	**23 38 02.1**	**0.0**
HRT	**Hereke**	**1.79**	**16**	*e*Pn	**Pn**	**23 38 02.1**	**0.0**
SVRH	**Sivrihisar-ESK**	**1.97**	**79**	*e*PN	**Pn**	**23 38 05.5**	**+1.0**
SVRH	**Sivrihisar-ESK**	**1.97**	**79**	*e*Pn	**Pn**	**23 38 05.5**	**+1.0**
ISK	**Istanbul-Kandi**	**1.97**	**1**	*e*PN	**Pn**	**23 38 04.5**	**+0.1**
ISK	**Istanbul-Kandi**	**1.97**	**1**	*e*Pn	**Pn**	**23 38 04.5**	**+0.1**
AUMIH	**MIHALICIK**	**2.05**	**67**	*i* P	**Pb**	**23 38 08.7**	**+0.4**
AUMIH				*i* S	**Sg**	**23 38 36.6**	**0.0**
SILT	**Sile**	**2.11**	**13**	*e*PN	**Pn**	**23 38 06.8**	**+0.5**
SILT	**Sile**	**2.11**	**13**	*e*Pn	**Pn**	**23 38 06.8**	**+0.5**
BTAS	**Taskesti**	**2.12**	**45**	*i* P	**Pb**	**23 38 09.9**	**+0.5**
MDUB	**Mudurnu**	**2.17**	**50**	*e*PN	**Pn**	**23 38 07.9**	**+0.7**
MDUB	**Mudurnu**	**2.17**	**50**	*e*Pn	**Pn**	**23 38 07.9**	**+0.7**
KAND	**Kocaeli-Kandir**	**2.19**	**24**	*i* P	**Pb**	**23 38 10.3**	**-0.2**
SAHE	**Sakarya_HENDEK**	**2.25**	**38**	*i* P	**Pb**	**23 38 11.8**	**+0.3**

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*ISK **20** 23:40:17.4, 39°.08N×29°.12E, h9km, MD2.7*
*ISCJB **20** 23:40:18.0±0.5, 39°.09N±0°.04×29°.09E±0°.04, h9km±5km,*
Error ellipse: s-maj=6.6km s-min=4.4km az=143.4
*DDA **20** 23:40:18.2, 39°.12N×29°.09E, h7km, Ml2.3*
*CSEM **20** 23:40:18.1±0.1, 39°.09N×29°.10E, h8km, ML2.3, Error*
ellipse: s-maj=2.1km s-min=1.6km az=117.0
ISC 20 23:40:18.4±0.9, 39°.09N±0°.03×29°.10E±0°.02, h14km±8km,
n36, σ0°43/46, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.30**	**262**	P	**Pg**	**23 40 24.5**	**-0.1**
DEMI				S	**Sg**	**23 40 28.8**	**0.0**
DEMI	**Demirci**	**0.30**	**262**	*i* P	**Pg**	**23 40 24.6**	**-0.1**
DEMI				*i* S	**Sg**	**23 40 28.8**	**0.0**
GDZ	**Gediz**	**0.30**	**90**	P	**Pg**	**23 40 24.7**	**+0.1**
GDZ				S	**Sg**	**23 40 29.2**	**+0.3**
GDZ	**Gediz**	**0.30**	**90**	*i* P	**Pg**	**23 40 24.7**	**+0.1**
GDZ				*i* S	**Sg**	**23 40 29.2**	**+0.3**
TVSB	**Tavsanli**	**0.46**	**38**	*e*PG	**Pg**	**23 40 26.6**	**-0.9**
TVSB	**Tavsanli**	**0.46**	**38**	*e*Pg	**Pg**	**23 40 26.6**	**-0.9**
KULA	**Kula-Manisa**	**0.67**	**211**	*e*PG	**Pg**	**23 40 31.2**	**-0.2**
KULA				*e*SG	**Sg**	**23 40 40.2**	**0.0**
KULA	**Kula-Manisa**	**0.67**	**211**	*e*Pg	**Pg**	**23 40 31.2**	**-0.2**
KULA				*e*Sg	**Sg**	**23 40 40.2**	**0.0**
DURS	**Dursunbey**	**0.70**	**317**	P	**Pg**	**23 40 31.6**	**-0.5**
DURS	**Dursunbey**	**0.70**	**317**	*i* P	**Pg**	**23 40 31.6**	**-0.5**
MANT	**Manisa**	**0.73**	**215**	P	**Pb**	**23 40 32.9**	**-0.1**
MANT				S	**Sg**	**23 40 42.1**	**-0.1**
MANT	**Manisa**	**0.73**	**215**	*i* P	**Pb**	**23 40 32.9**	**-0.1**
MANT				*i* S	**Sg**	**23 40 42.1**	**-0.1**
KHL	**Karahalli**	**0.83**	**156**	*e*PG	**Pg**	**23 40 33.6**	**-0.9**
KHL	**Karahalli**	**0.83**	**156**	*e*Pg	**Pg**	**23 40 33.6**	**-0.9**
ORLT	**Orhaneli**	**0.97**	**351**	*e*PG	**Pg**	**23 40 36.7**	**-0.4**
ORLT	**Orhaneli**	**0.97**	**351**	*e*Pg	**Pg**	**23 40 36.7**	**-0.4**
BALB	**Balikesir**	**1.09**	**301**	*e*PN	**Pn**	**23 40 39.5**	**+0.2**
BALB				*e*SN	**Sn**	**23 40 54.4**	**+0.2**
BALB	**Balikesir**	**1.09**	**301**	*e*Pn	**Pn**	**23 40 39.5**	**+0.2**
BALB				*e*Sn	**Sn**	**23 40 54.4**	**+0.2**
CAVI	**Cavuskoy**	**1.25**	**27**	*e*PN	**Pn**	**23 40 41.5**	**-0.1**
CAVI	**Cavuskoy**	**1.25**	**27**	*e*Pn	**Pn**	**23 40 41.5**	**-0.1**
IZI	**Iznik**	**1.28**	**13**	*e*PN	**Pn**	**23 40 42.3**	**+0.3**
IZI	**Iznik**	**1.28**	**13**	*e*Pn	**Pn**	**23 40 42.3**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.29**	**353**	*e*PN	**Pg**	**23 40 42.7**	**-0.5**
MDNY	**Mudanya-Bursa**	**1.29**	**353**	*e*Pn	**Pg**	**23 40 42.7**	**-0.5**
KCTX	**Karacabey (Bur**	**1.31**	**334**	*e*PN	**Pn**	**23 40 42.4**	**+0.1**
KCTX	**Karacabey (Bur**	**1.31**	**334**	*e*Pn	**Pn**	**23 40 42.4**	**+0.1**
BORA	**Eskisehir**	**1.31**	**53**	P	**Pb**	**23 40 43.0**	**+0.1**
BORA	**Eskisehir**	**1.31**	**53**	*i* P	**Pb**	**23 40 43.0**	**+0.1**
GONE	**Gonen-Balikesi**	**1.45**	**312**	*e*PN	**Pn**	**23 40 44.9**	**+0.7**
GONE	**Gonen-Balikesi**	**1.45**	**312**	*e*Pn	**Pn**	**23 40 44.9**	**+0.7**
ARMT	**Armutlu**	**1.49**	**353**	*e*PN	**Pn**	**23 40 45.1**	**+0.3**
ARMT	**Armutlu**	**1.49**	**353**	*e*Pn	**Pn**	**23 40 45.1**	**+0.3**
EDC	**Edincik**	**1.58**	**323**	*e*PN	**Pn**	**23 40 46.2**	**+0.3**
EDC	**Edincik**	**1.58**	**323**	*e*Pn	**Pn**	**23 40 46.2**	**+0.3**
GULT	**Gulveren**	**1.73**	**39**	*e*PN	**Pn**	**23 40 48.9**	**+0.7**
GULT	**Gulveren**	**1.73**	**39**	*e*Pn	**Pn**	**23 40 48.9**	**+0.7**

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*NIED **20** 23:43:00, 38°.20N×142°.20E, h5km, Mw4.2 Best double*
couple: M0=2.30000×10^15 NP1:φ=348.00000°, δ=36.00000°,
λ=-98.00000°. NP2:φ=177.00000°, δ=55.00000°,
λ=-84.00000°.
*ISCJB **20** 23:43:14.7±1.2, 38°.16N±0°.03×142°.20E±0°.04, h5km±7km,*
mb4.2/35, MS3.3/7, Error ellipse: s-maj=5.7km
s-min=4.3km az=25.5
*JMA **20** 23:43:16.3±0.1, 38°.17N×142°.14E, h14km±1km, M4.5*
JMA Felt I J1.
*NEIC **20** 23:43:20.7±0.7, 38°.10N×142°.08E, h35km±6km, mb4.5/7,*
Error ellipse: s-maj=8.8km s-min=6.4km az=118.0
NEIC Recorded [1 JMA] in Iwate and Miyagi.
*IDC **20** 23:43:20.7±3.5, 38°.13N×141°.98E, h33km±26km, mb4.0/28,*
mb1 4.1/34, mb1mx4.0/58, mbtmp4.1/34, ML3.6/5, MS3.3/12,
Ms1 3.3/12, ms1mx3.0/44, Error ellipse: s-maj=15.2km
s-min=13.4km az=105.0
ISC 20 23:43:16.5±1.6, 38°.13N±0°.03×142°.09E±0°.05, h7km±9km,
n69, σ1°18/76, mb4.2/35, MS3.2/7, Near east coast of
eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.67**	**299**	P	**Pg**	**23 43 29.4**	**+0.1**
JIO				S	**Sg**	**23 43 38.1**	**+0.1**
OFUJ	**Ofunato**	**1.00**	**341**	P	**Pg**	**23 43 34.4**	**-1.4**
OFUJ				S	**Sg**	**23 43 48.1**	**-0.7**
JMM	**Marumori**	**1.06**	**256**	P	**Pg**	**23 43 36.7**	**-0.1**
JMM				S	**Sn**	**23 43 52.1**	**-0.6**
JMK	**Ichinoseki**	**1.07**	**321**	P	**Pg**	**23 43 36.2**	**-0.8**
JMK				S	**Sg**	**23 43 50.5**	**-0.3**
JOU	**Okura**	**1.15**	**282**	P	**Pg**	**23 43 38.3**	**-0.2**
JOU				S	**Sn**	**23 43 54.8**	**-0.2**
JFK	**Kawauchi**	**1.23**	**232**	P	**Pg**	**23 43 38.9**	**-1.1**
JFK				S	**Sb**	**23 43 56.1**	**0.0**
JOM	**Ohasama**	**1.48**	**335**	P	**Pn**	**23 43 42.2**	**-1.4**
JOM				S	**Sn**	**23 44 00.6**	**-2.6**
JFT	**Otama**	**1.52**	**247**	P	**Pn**	**23 43 44.2**	**+0.1**
JFT				S	**Sg**	**23 44 06.8**	**+1.6**
JYK	**Kaneyama**	**1.57**	**301**	P	**Pn**	**23 43 44.4**	**-0.4**
JYK				S	**Sb**	**23 44 05.5**	**-0.4**
MJAR	**Matsushiro Arr**	**3.48**	**244**	Pn	**Pn**	**23 44 12.3**	**+1.3**
3.5nm,0.3s,baz=80,slow=15,SNR=18							
MJAR				LR	LR	23 45 51.2	
comp=Z,724nm,18.9s,baz=65,slow=44							
MAJO	**Matsushiro**	**3.48**	**244**	*e*Pn	**Pn**	**23 44 13.9**	**+2.8**
MAT	**Matsushiro**	**3.48**	**244**	P	**Pn**	**23 44 13.9**	**+2.9**
MAT				*e*S	**Sb**	**23 44 57.5**	**-3.3**
ERM	**Erimo**	**3.97**	**12**	*e*Pn	**Pn**	**23 44 19.3**	**+1.6**
ERM				*e*Sn	**Sn**	**23 45 05.4**	**+0.9**
JHJ	**Hachijo jima 2**	**5.34**	**201**	Pn	**Pn**	**23 44 36.6**	**0.0**
11nm,0.3s,baz=62,slow=15,SNR=4.4							
JHJ				Sn	**Sn**	**23 45 35.6**	**-2.8**
baz=107,slow=19,SNR=2.8							
JHJ				LR	LR	23 46 59.7	
comp=Z,223nm,20.2s,baz=86,slow=41							
ASAJ	**Asahikawa**	**5.99**	**4**	Pn	**Pn**	**23 44 46.2**	**+0.6**
2.5nm,0.3s,baz=231,slow=7.2,SNR=5.5							
ASAJ				Sn	**Sn**	**23 45 53.5**	**-0.9**
1.2nm,0.3s,baz=197,slow=17,SNR=2.2							
USRK	**Ussuriysk Ar.**	**9.73**	**312**	Pn	**Pn**	**23 45 37.4**	**+0.5**
0.3nm,0.3s,baz=114,slow=13,SNR=7.8							
USRK				LR	LR	23 49 04.2	
comp=Z,146nm,20.7s,baz=124,slow=36							
JNU	**Nakatsue**	**10.40**	**245**	Pn	**Pn**	**23 45 49.3**	**+3.2**
0.1nm,0.3s,baz=56,slow=7.3,SNR=2.8							
JNU				LR	LR	23 50 12.9	
comp=Z,376nm,18.1s,baz=120,slow=40							
CBIJ	**Chichi jima**	**11.00**	**180**	Pn	**Pn**	**23 45 52.4**	**-1.9**
JCJ	**Chichijima**	**11.00**	**180**	Pn	**Pn**	**23 45 52.4**	**-1.9**
2.4nm,0.3s,baz=270,slow=20,SNR=3.4							
KSRS	**Korea Array**	**11.23**	**271**	Pn	**Pn**	**23 45 57.9**	**+0.5**
0.1nm,0.3s,baz=82,slow=14,SNR=3.1							
KSRS				LR	LR	23 50 00.9	
comp=Z,232nm,18.8s,baz=84,slow=36							
KSAR	**Wonju Array Be**	**11.27**	**271**	Pn	**Pn**	**23 45 57.9**	**0.0**
KLR	**Kul'dur**	**13.37**	**329**	Pn	**Pn**	**23 46 28.6**	**+2.0**
0.1nm,0.3s,baz=162,slow=20,SNR=2.4							
PETK	**Petropavlovsk-**	**18.47**	**31**	LR	LR	23 54 22.7	
comp=Z,45nm,20.3s,baz=220,slow=36							
MA2	**Magadan**	**22.17**	**12**	P	**P**	**23 48 14.5**	**+1.6**
8.7nm,0.6s,baz=189,slow=10,SNR=5.3							
MA2				LR	LR	23 57 49.7	
comp=Z,35nm,19.9s,baz=160,slow=39							
YAK	**Yakutsk**	**25.13**	**346**	LR	LR	00 00 49.5	
comp=Z,43nm,18.8s,baz=248,slow=42							
YAK	**Yakutsk**	**25.13**	**346**	*e*P	**P**	**23 48 42.3**	**+0.5**
14nm,0.6s							
SEY	**Seymchan**	**25.61**	**11**	P	**P**	**23 48 47.4**	**+1.2**
6.6nm,0.8s,baz=196,slow=6.5,SNR=20							
SEY				LR	LR	23 59 57.9	
comp=Z,3μm,20.2s,baz=174,slow=39							
SONM	**Songino Array**	**27.64**	**302**	P	**P**	**23 49 05.4**	**+0.6**
0.5nm,0.5s,baz=90,slow=10,SNR=3.7							
SONM				LR	LR	00 00 37.9	
comp=Z,72nm,18.1s,baz=93,slow=38							
H11N2	**WAKE ISLAND Hy**	**28.27**	**123**	T	T	00 18 46.3	
baz=316,slow=75,SNR=113							
H11N1	**WAKE ISLAND Hy**	**28.28**	**123**	T	T	00 18 48.3	
baz=316,slow=75,SNR=41							
H11N3	**WAKE ISLAND Hy**	**28.29**	**123**	T	T	00 18 48.0	
baz=316,slow=75,SNR=42							
H11S1	**WAKE ISLAND Hy**	**29.03**	**125**	T	T	00 19 43.6	
baz=318,slow=76,SNR=24							
H11S3	**WAKE ISLAND Hy**	**29.03**	**126**	T	T	00 19 43.4	
baz=318,slow=76,SNR=28							
H11S2	**WAKE ISLAND Hy**	**29.05**	**125**	T	T	00 19 44.5	
baz=318,slow=76,SNR=137							
ZALV	**Zalesovo Beam**	**41.58**	**311**	P	**P**	**23 51 04.5**	**-0.3**
1.8nm,0.6s,baz=88,slow=7.8,SNR=9.3							
ZALV				PcP	**PcP**	**23 53 01.5**	**-0.3**
0.7nm,0.4s,baz=95,slow=3.5,SNR=3.5							
ZALV				LR	LR	00 08 45.5	
comp=Z,30nm,19.2s,baz=70,slow=37							
CMAR	**Chiang Mai Arr**	**42.30**	**255**	LR	LR	00 09 58.5	
comp=Z,18nm,20.2s,baz=5,0,slow=38							
NRIK	**Noril'sk**	**42.50**	**335**	P	**P**	**23 51 11.1**	**-0.9**
1.2nm,0.6s,baz=123,slow=5.6,SNR=4.3							
MKAR	**Makanchi Array**	**44.00**	**301**	P	**P**	**23 51 24.1**	**-0.4**
1.8nm,0.8s,baz=85,slow=10,SNR=17							
MKAR				LR	LR	00 08 43.1	
comp=Z,34nm,18.8s,baz=60,slow=35							
KURK	**Kurchatov**	**45.69**	**307**	*e*P	**P**	**23 51 37.3**	**-0.6**
26nm,0.8s							
ILAR	**Eielson Array**	**48.28**	**33**	P	**P**	**23 51 58.0**	**+0.1**
2.5nm,0.9s,baz=261,slow=6.7,SNR=15							
BVAR	**Borovoye Array**	**50.24**	**312**	P	**P**	**23 52 12.2**	**-0.9**
0.6nm,0.5s,baz=71,slow=8.5,SNR=6.8							
BVAR				PcP	**PcP**	**23 53 32.2**	**+0.2**
1.3nm,0.5s,baz=97,slow=3.7,SNR=5.5							
EKS2	**Erkin-Say**	**50.94**	**298**	*e*P	**P**	**23

KAVA				S	Sn	23 47 49.9	-0.4
KAVA	**Kavala**	**1.11 277**		P	Pb	23 47 34.2	-0.1
LIA	**Limnos Island**	**1.14 212**		P	Pb	23 47 34.1	-0.6
LIA				S	Sn	23 47 50.7	-0.1
EDRB	**Edirne**	**1.14**	**30**	*e*PG	Pb	23 47 34.6	-0.1
EDRB	**Edirne**	**1.14**	**30**	*e*Pg	Pb	23 47 34.6	-0.1
TKR	**Tekirdag**	**1.19**	**83**	*e*PN	Pb	23 47 35.3	-0.3
TKR	**Tekirdag**	**1.19**	**83**	*e*Pn	Pb	23 47 35.3	-0.3
MRMT	**Marmara Adasi**	**1.26 101**		*e*PN	Pn	23 47 36.6	-0.2
MRMT	**Marmara Adasi**	**1.26 101**		*e*Pn	Pn	23 47 36.6	-0.2
EDC	**Edincik**	**1.53 109**		*e*PN	Pb	23 47 41.4	+0.1
EDC	**Edincik**	**1.53 109**		*e*Pn	Pb	23 47 41.4	+0.1
GONE	**Gonen-Balikesi**	**1.54 121**		*e*PN	Pb	23 47 41.6	+0.1
GONE	**Gonen-Balikesi**	**1.54 121**		*e*Pn	Pb	23 47 41.6	+0.1
OUR	**Ouranopolis**	**1.61 251**		P	Pb	23 47 42.5	-0.1
OUR	**Ouranopolis**	**1.61 251**		P	Pb	23 47 42.5	-0.1
PRK	**Paraskevi**	**1.63 172**		P	Pn	23 47 41.7	-0.1
PRK				S	Sg	23 48 04.7	-0.4
PRK	**Paraskevi**	**1.63 172**		P	Pn	23 47 41.7	-0.1
PRK				S	Sg	23 48 04.7	-0.4
PRK				AML	AML	23 48 06.6	
	comp=E,69μm,0.7s						
PRK				AML	AML	23 48 07.6	
	comp=N,71μm,0.8s						
SIGR	**SIGRI**	**1.65 183**		P	Pn	23 47 41.7	-0.4
SIGR				S	Sg	23 48 06.0	+0.2
SIGR	**SIGRI**	**1.65 183**		P	Pn	23 47 41.7	-0.4
SIGR				S	Sg	23 48 06.0	+0.2
SIGR				AML	AML	23 48 07.0	
	comp=E,39μm,0.7s						
SIGR				AML	AML	23 48 09.7	
	comp=N,41μm,0.4s						
NVR	**Nevrokopi**	**1.67 288**		P	Pn	23 47 42.7	+0.3
NVR				S	Sg	23 48 06.8	+0.5
SRS	**Serrai**	**1.82 279**		P	Pn	23 47 44.0	-0.4
SRS				S	Sg	23 48 10.7	-0.5
SRS	**Serrai**	**1.82 279**		P	Pn	23 47 44.0	-0.4
SRS				S	Sg	23 48 10.7	-0.5
SRS				AML	AML	23 48 13.8	
	comp=E,23μm,0.5s						
SRS				AML	AML	23 48 17.9	
	comp=N,18μm,0.5s						
CTKS	**Kestanelik-??a**	**1.95**	**78**	*e*PN	Pn	23 47 46.4	+0.2
CTKS	**Kestanelik-??a**	**1.95**	**78**	*e*Pn	Pn	23 47 46.4	+0.2
PAIG	**Paliouri**	**1.99 243**		P	Pb	23 47 48.9	-0.2
PAIG	**Paliouri**	**1.99 243**		P	Pb	23 47 48.9	-0.2
PLG	**Polygyros**	**1.99 257**		P	Pn	23 47 47.0	+0.3
PLG	**Polygyros**	**1.99 257**		P	Pn	23 47 47.0	+0.3
SOH	**Sokhos**	**1.99 270**		P	Pn	23 47 47.2	+0.5
SOH	**Sokhos**	**1.99 270**		P	Pn	23 47 47.2	+0.5
KNT	**Kendrikon**	**2.35 278**		P	Pn	23 47 52.8	+1.1
KNT	**Kendrikon**	**2.35 278**		P	Pn	23 47 52.8	+1.1

*ISCJB **20** 23:47:31.2±0.9, 51°.55N±0°.04×16°.01E±0°.04, h0km, Error ellipse: s-maj=6.4km s-min=3.1km az=19.9*
*CSEM **20** 23:47:32.5±0.6, 51°.57N×16°.00E, h2km, ML2.8/6, Error ellipse: s-maj=8.7km s-min=4.4km az=22.0*

ISC 20 23:47:33.5±1.3,**51°.53N**±0°.06×**15°.96E**±0°.03,**h0**km,**n30**, σ0s**83**/50,**Poland**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.72 163**		*e*Pg	**Pg**	**23 47 47.4**	**+0.2**
KSP				*e*Sg	**Sg**	23 47 57.6	+1.1
KSP	**Ksiaz**	**0.72 163**		*e*Pg	**Pg**	**23 47 47.4**	**+0.2**
KSP				*e*Sg	**Sg**	23 47 57.6	+1.1
UPC	**Upice**	**1.02 178**		*e*SG	**Sb**	**23 48 07.6**	**-0.5**
	comp=Z,15nm,0.2s						
UPC	**Upice**	**1.02 178**		Sg	**Sb**	**23 48 07.6**	**-0.5**
	15nm,0.2s						
DPC	**Dobruska-Polom**	**1.20 169**		*e*PG	**Pg**	**23 47 56.1**	**-0.4**
DPC				*e*SG	**Sg**	23 48 12.2	+0.1
DPC	**Dobruska-Polom**	**1.20 169**		Pg	**Pg**	23 47 56.1	-0.4
DPC				Sg	**Sg**	23 48 12.2	+0.1
PVCC	**Panska Ves**	**1.33 222**		*e*PG	**Pn**	23 47 59.2	-0.1
PVCC				*e*SG	**Sn**	23 48 18.1	+0.4
	comp=Z,28nm,0.2s						
PVCC	**Panska Ves**	**1.33 222**		Pg	**Pn**	23 47 59.2	-0.1
PVCC				Sg	**Sn**	23 48 18.1	+0.4
	28nm,0.2s						
BRG	**Berggiesshubel**	**1.43 243**		PG	**Pb**	**23 48 00.9**	**0.0**
BRG				SG	**Sn**	**23 48 20.4**	**+0.3**
	13nm,0.4s						
KRLC	**Kraliky**	**1.55 160**		*e*PG	**Pn**	23 48 02.3	0.0
KRLC				*e*SG	**Sn**	23 48 22.3	-0.8
KRLC	**Kraliky**	**1.55 160**		Pg	**Pn**	23 48 02.3	0.0
KRLC				Sg	**Sn**	23 48 22.3	-0.8
GOPC	**GO Pecny, Ondr**	**1.78 205**		*e*PN	**Pn**	23 48 05.9	+0.4
GOPC				*e*PG	**Pg**	23 48 07.6	0.0
GOPC				*e*SG	**Sg**	23 48 31.2	+0.6
	comp=Z,4.6nm,0.4s						
GOPC	**GO Pecny, Ondr**	**1.78 205**		Pn	**Pn**	23 48 05.9	+0.4
PRU	**Pruhonice**	**1.79 211**		*e*PN	**Pn**	23 48 04.7	-0.9
PRU				*e*PG	**Pb**	23 48 06.8	-0.3
PRU				*e*SG	**Sg**	23 48 31.2	+0.4
	comp=Z,6.0nm,0.3s						
PRU	**Pruhonice**	**1.79 211**		Pn	**Pn**	23 48 04.7	-0.9
CLL	**Collm**	**1.86 264**		*e*Pn	**Pn**	23 48 05.0	-1.6
CLL				*e*Pg	**Pb**	23 48 08.0	-0.4
CLL				*i*		23 48 12.0	
CLL				*e*Sg	**Sg**	23 48 34.0	+0.7
	comp=Z,5.0nm,0.5s						
OKC	**Ostrava-Krasne**	**2.19 140**		*e*SG	**Sg**	23 48 43.2	-0.7
OKC	**Ostrava-Krasne**	**2.19 140**		Sg	**Sg**	23 48 43.2	-0.7
NKC	**Novy Kostel**	**2.57 241**		*e*PN	**Pn**	23 48 16.2	-0.2
NKC				*e*PG	**Pg**	23 48 22.9	+0.1
NKC				*e*SG	**Sg**	23 48 58.2	+2.1
	comp=Z,6.1nm,0.4s						
NKC	**Novy Kostel**	**2.57 241**		Pn	**Pn**	23 48 16.2	-0.2
KHC	**Kasperske Hory**	**2.84 213**		*e*PN	**Pn**	23 48 19.7	-0.5
KHC				*e*PG	**Pb**	23 48 26.0	+0.9
KHC				*e*SN	**Sn**	23 48 55.0	-0.1
KHC				*e*SG	**Sg**	23 49 04.7	-0.1
	comp=Z,1.7nm,0.3s						
KHC	**Kasperske Hory**	**2.84 213**		Pn	**Pn**	23 48 19.7	-0.5
LANS	**Liptovska Anna**	**3.28 135**		*e*Sg	**Sg**	23 49 18.2	-0.5
LANS	**Liptovska Anna**	**3.28 135**		*e*SG	**Sg**	23 49 18.2	-0.5
LANS	**Liptovska Anna**	**3.28 135**		*e*SG	**Sg**	23 49 18.5	-0.2
VYHS	**Vyhne**	**3.56 147**		*e*Sg	**Sg**	23 49 28.7	+0.9
VYHS	**Vyhne**	**3.56 147**		*e*SG	**Sg**	23 49 28.7	+0.9
STHS	**Stebnicka Huta**	**3.98 120**		*e*Sg	**Sg**	23 49 43.5	+2.1
STHS	**Stebnicka Huta**	**3.98 120**		*e*SG	**Sg**	23 49 43.5	+2.1
STHS	**Stebnicka Huta**	**3.98 120**		*e*SG	**Sg**	23 49 43.6	+2.1

IDC 20 23:51:48.2±11.0,**36°.26N**×**141°.57E**,**h0**km,**mb3.4**/2, **mb1 3.3**/3,**mb1mx3.1**/49,**mbtmp3.3**/3,**ML2.8**/1,**Error ellipse: s-maj=209.4km s-min=81.6km az=149.0**,**Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**2.73 277**		Pn	Pn	23 52 33.1	-0.3
	1.7nm,0.3s,baz=97,slow=9.2,SNR=9.7						
MAT	**Matsushiro**	**2.73 277**		P	Pn	23 52 34.0	+0.6
SONM	**Songino Array**	**28.33 305**		P	P	23 57 43.3	-0.5
	0.5nm,0.8s,baz=99,slow=9.3,SNR=2.9						
MKAR	**Makanchi Array**	**44.64 303**		P	P	00 00 02.9	+0.4
	0.4nm,0.8s,baz=95,slow=9.2,SNR=3.5						

JMA 20 23:52:07.5±0.2,**35°.89N**×**140°.85E**,**h32**km±2km,**M1.8**, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.19 178**		P	Pb	23 52 13.5	-0.3
CHOJ				*e*S	Sb	23 52 17.8	-0.3
JYT	**Yasato**	**0.63 303**		P	Pb	23 52 19.8	-0.3
JYT				S	Sb	23 52 28.3	-0.4
JHO	**Hitachi**	**0.75 343**		P	Pn	23 52 21.7	-0.2

*ISCJB **20** 23:54:59.7±0.9, 7°.2S±0°.2×129°.7E±0°.5, h139km, mb3.8/6, Error ellipse: s-maj=71.0km s-min=9.1km az=159.6*
*IDC **20** 23:55:01.6±3.2, 7°.21S×129°.56E, h138km±28km, mb3.6/6, mb1 3.7/8, mb1mx3.5/25, mbtmp4.0/8, Error ellipse: s-maj=83.1km s-min=17.5km az=64.0*

ISC 20 23:55:01.2±1.1,**7°.2S**±0°.3×**129°.7E**±0°.6,**h139**km,**n8**, σ1s**15**/9,**mb3.8**/6,**Banda Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**13.46 161**		P	**Pn**	**23 58 05.5**	**-1.3**
	0.9nm,0.3s,baz=337,slow=13,SNR=68						
WRA				S	Sn	00 00 26.8	-8.9
	1.8nm,0.3s,baz=334,slow=22,SNR=11						
ASAR	**Alice Springs**	**16.89 167**		P	**Pn**	**23 58 51.2**	**+1.8**
	0.7nm,0.3s,baz=345,slow=9.3,SNR=22						
ASAR				S	Sn	00 01 50.5	-7.4
	0.5nm,0.3s,baz=347,slow=28,SNR=6.3						
ASAR				ScP	**ScP**	**00 06 49.9**	**-0.6**
	0.1nm,0.3s,baz=356,slow=2.1,SNR=6.1						
STKA	**Stephens Creek**	**26.96 157**		P	**P**	**00 00 30.6**	**+0.7**
	0.9nm,0.3s,baz=332,slow=11,SNR=3.9						
CMAR	**Chiang Mai Arr**	**39.63 310**		P	**P**	**00 02 18.8**	**-0.8**
	0.7nm,0.5s,baz=128,slow=8.2,SNR=3.2						
SONM	**Songino Array**	**58.52 342**		P	**P**	**00 04 43.6**	**+0.5**
	0.4nm,0.5s,baz=155,slow=6.1,SNR=3.5						
MKAR	**Makanchi Array**	**68.22 327**		P	**P**	**00 05 47.4**	**+0.6**
	2.9nm,0.4s,baz=114,slow=8.6,SNR=74						
ZALV	**Zalesovo Beam**	**71.61 334**		P	**P**	**00 06 06.6**	**-0.7**
	1.0nm,0.6s,baz=148,slow=7.3,SNR=4.9						
AKTO	**Aktyubinsk**	**84.04 322**		P	**P**	**00 07 16.6**	**+0.4**
	0.4nm,0.4s,baz=45,slow=4.3,SNR=2.6						

*ISK **20** 23:55:42.4, 39°.09N×28°.98E, h5km, MD2.8*
*CSEM **20** 23:55:42.8±0.1, 39°.10N×29°.00E, h2km, ML2.9, Error ellipse: s-maj=1.8km s-min=1.4km az=137.0*
*DDA **20** 23:55:42.5, 39°.11N×29°.02E, h7km, Ml2.9*

ISC 20 23:55:42.4±0.9,**39°.10N**±0°.02×**29°.00E**±0°.02,**h16**km±7km, **n50**, σ0s**42**/63,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.23 256**		P	**Pg**	**23 55 47.8**	**+0.2**
DEMI				S	**Sg**	23 55 51.3	+0.1
DEMI	**Demirci**	**0.23 256**		*i* P	**Pg**	23 55 47.8	+0.2
DEMI				*i* S	**Sg**	23 55 51.3	+0.1
GDZ	**Gediz**	**0.37 92**		P	**Pg**	23 55 49.9	-0.2
GDZ				S	**Sg**	23 55 55.1	-0.3
GDZ	**Gediz**	**0.37 92**		*i* P	**Pg**	23 55 49.9	-0.2
GDZ				*i* S	**Sg**	23 55 55.1	-0.3
TVSB	**Tavsanli**	**0.50 46**		*e*PG	**Pg**	23 55 52.6	+0.2
TVSB	**Tavsanli**	**0.50 46**		*e*Pg	**Pg**	23 55 52.6	+0.2
KULA	**Kula-Manisa**	**0.64 205**		*e*PG	**Pb**	23 55 55.3	0.0
KULA				*e*SG	**Sg**	23 56 03.7	+0.1
KULA	**Kula-Manisa**	**0.64 205**		*e*Pg	**Pb**	23 55 55.3	0.0
KULA				*e*Sg	**Sg**	23 56 03.7	+0.1
MANT	**Manisa**	**0.70 210**		P	**Pb**	23 55 56.5	+0.1
MANT	**Manisa**	**0.70 210**		*i* P	**Pb**	23 55 56.5	+0.1
KHL	**Karahalli**	**0.88 152**		*e*PG	**Pg**	23 55 59.8	+0.3
KHL	**Karahalli**	**0.88 152**		*e*Pg	**Pg**	23 55 59.8	+0.3
ORLT	**Orhaneli**	**0.95 355**		*e*PG	**Pn**	23 56 01.1	-0.1
ORLT	**Orhaneli**	**0.95 355**		*e*Pg	**Pn**	23 56 01.1	-0.1
AKS	**Akhisar**	**0.95 257**		*e*PG	**Pb**	23 56 00.6	0.0
AKS				*e*SG	**Sn**	23 56 14.0	-0.5
AKS	**Akhisar**	**0.95 257**		*e*Pg	**Pb**	23 56 00.6	0.0
AKS				*e*Sg	**Sn**	23 56 14.0	-0.5
BALB	**Balikesir**	**1.02 302**		*e*PG	**Pg**	23 56 02.4	+0.2
BALB				*e*SG	**Sn**	23 56 16.5	+0.3
BALB	**Balikesir**	**1.02 302**		*e*Pg	**Pg**	23 56 02.4	+0.2
BALB				*e*Sg	**Sn**	23 56 16.5	+0.3
IGD	**Bursa**	**1.17 8**		*i* P	**Pn**	23 56 03.6	-0.6
IGD				*i* S	**Sg**	23 56 20.9	+0.5
KCTX	**Karacabey (Bur**	**1.27 337**		*e*PN	**Pg**	23 56 07.6	+0.8
KCTX	**Karacabey (Bur**	**1.27 337**		*e*Pn	**Pg**	23 56 07.6	+0.8
MDNY	**Mudanya-Bursa**	**1.27 356**		*e*PN	**Pg**	23 56 07.2	+0.3
MDNY	**Mudanya-Bursa**	**1.27 356**		*e*Pn	**Pg**	23 56 07.2	+0.3
CAVI	**Cavuskoy**	**1.28 30**		*e*PN	**Pg**	23 56 07.6	+0.5
CAVI	**Cavuskoy**	**1.28 30**		*e*Pn	**Pg**	23 56 07.6	+0.5
IZI	**Iznik**	**1.29 16**		*e*PN	**Pg**	23 56 07.7	+0.4
IZI	**Iznik**	**1.29 16**		*e*Pn	**Pg**	23 56 07.7	+0.4
BORA	**Eskisehir**	**1.37 55**		P	**Pb**	23 56 07.8	+0.1
BORA				S	**Sg**	23 56 26.8	+0.2
BORA	**Eskisehir**	**1.37 55**		*i* P	**Pb**	23 56 07.8	+0.1
BORA				*i* S	**Sg**	23 56 26.8	+0.2
GONE	**Gonen-Balikesi**	**1.39 313**		*e*PN	**Pg**	23 56 08.8	-0.4
GONE	**Gonen-Balikesi**	**1.39 313**		*e*Pn	**Pg**	23 56 08.8	-0.4
ADVT	**Abdulvahap**	**1.45 23**		*e*PN	**Pg**	23 56 10.1	-0.2
ADVT	**Abdulvahap**	**1.45 23**		*e*Pn	**Pg**	23 56 10.1	-0.2
ARMT	**Armutlu**	**1.47 356**		*e*PN	**Pg**	23 56 10.4	-0.3
ARMT	**Armutlu**	**1.47 356**		*e*Pn	**Pg**	23 56 10.4	-0.3
ESKT	**Eskisehir**	**1.49 73**		*i* P	**Pg**	23 56 12.3	+1.2
SEYT	**Eskypehyr**	**1.49 73**		P	**Pg**	23 56 12.4	+1.2
EDC	**Edincik**	**1.52 325**		*e*PN	**Pb**	23 56 10.9	+0.6
EDC	**Edincik**	**1.52 325**		*e*Pn	**Pb**	23 56 10.9	+0.6
GULT	**Gulveren**	**1.77 41**		*e*PN	**Pb**	23 56 14.6	0.0
GULT	**Gulveren**	**1.77 41**		*e*Pn	**Pb**	23 56 14.6	0.0
HRT	**Hereke**	**1.79 16**		*e*PN	**Pb**	23 56 15.1	+0.2
HRT	**Hereke**	**1.79 16**		*e*Pn	**Pb**	23 56 15.1	+0.2
ISK	**Istanbul-Kandi**	**1.96 1**		*e*PN	**Pb**	23 56 17.2	-0.5
ISK	**Istanbul-Kandi**	**1.96 1**		*e*Pn	**Pb**	23 56 17.3	-0.5
SVRH	**Sivrihisar-ESK**	**1.99 79**		*e*PN	**Pb**	23 56 18.1	-0.2
SVRH	**Sivrihisar-ESK**	**1.99 79**		*e*Pn	**Pb**	23 56 18.1	-0.2
SILT	**Sile**	**2.11 13**		*e*PN	**Pb**	23 56 19.6	-0.7
SILT	**Sile**	**2.11 13**		*e*Pn	**Pb**	23 56 19.6	-0.7
KAND	**Kocaeli-Kandir**	**2.19 24**		*i* P	**Pg**	23 56 23.8	-0.7

*ISCJB **20** 23:59:42.7±0.4, 39°.07N±0°.03×29°.02E±0°.04, h9km, Error ellipse: s-maj=4.5km s-min=4.0km az=165.2*
*ISK **20** 23:59:42.2, 39°.08N×29°.02E, h6km, MD2.7*
*CSEM **20** 23:59:42.8±0.1, 39°.08N×29°.02E, h6km±1km, ML2.5, Error ellipse: s-maj=2.4km s-min=2.2km az=31.0*
*DDA **20** 23:59:42.6, 39°.09N×29°.03E, h7km, Ml2.5*

ISC 20 23:59:42.9±0.8,**39°.08N**±0°.03×**29°.03E**±0°.02,**h9**km,**n37**, σ0s**29**/44,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24 262**		P	**Pg**	**23 59 48.0**	**+0.1**
DEMI				S	**Sg**	23 59 51.9	+0.6
DEMI	**Demirci**	**0.24 262**		*i* P	**Pg**	23 59 48.0	+0.1
DEMI				*i* S	**Sg**	23 59 51.9	+0.6
GDZ	**Gediz**	**0.35 88**		P	**Pg**	23 59 50.1	+0.1
GDZ				S	**Sg**	23 59 54.8	+0.1
GDZ	**Gediz**	**0.35 88**		*i* P	**Pg**	23 59 50.1	+0.1
GDZ				*i* S	**Sg**	23 59 54.9	+0.1
TVSB	**Tavsanli**	**0.50 42**		*e*PG	**Pg**	23 59 52.4	-0.3
TVSB	**Tavsanli**	**0.50 42**		*e*Pg	**Pg**	23 59 52.4	-0.3
KULA	**Kula-Manisa**	**0.63 207**		*e*PG	**Pg**	23 59 55.0	-0.2
KULA				*e*SG	**Sg**	00 00 03.1	-0.3
KULA	**Kula-Manisa**	**0.63 207**		*e*Sg	**Sg**	00 00 03.1	-0.3
KULA	**Kula-Manisa**	**0.63 207**		*e*Pg	**Pg**	23 59 55.0	-0.2
DURS	**Dursunbey**	**0.68 321**		P	**Pg**	23 59 55.7	-0.3
DURS	**Dursunbey**	**0.68 321**		*i* P	**Pg**	23 59 55.7	-0.3
MANT	**Manisa**	**0.69 212**		P	**Pg**	23 59 56.4	+0.1
MANT	**Manisa**	**0.69 212**		*i* P	**Pg**	23 59 56.4	+0.1
KHAL	**Karahalli**	**0.79 153**		P	**Pb**	23 59 59.0	0.0
KHAL	**Karahalli**	**0.79 153**		*i* P	**Pb**	23 59 59.0	0.0
KHL	**Karahalli**	**0.85 153**		*e*PG	**Pg**	23 59 58.9	-0.3
KHL	**Karahalli**	**0.85 153**		*e*Pg	**Pg**	23 59 58.9	-0.3
BALB	**Balikesir**	**1.05 303**		*e*PG	**Pg**	00 00 02.6	-0.5
BALB				*e*SG	**Sb**	00 00 17.5	+0.3
BALB	**Balikesir**	**1.05 303**		*e*Pg	**Pg**	00 00 02.6	-0.5
BALB				*e*Sg	**Sb**	00 00 17.5	+0.3
CAVI	**Cavuskoy**	**1.29 29**		*e*PN	**Pn**	00 00 07.1	0.0
CAVI	**Cavuskoy**	**1.29 29**		*e*Pn	**Pn**	00 00 07.1	0.0
KCTX	**Karacabey (Bur**	**1.29 337**		*e*PN	**Pg**	00 00 08.0	+0.2
KCTX	**Karacabey (Bur**	**1.29 337**		*e*Pn	**Pg**	00 00 08.0	+0.2
MDNY	**Mudanya-Bursa**	**1.29 355**		*e*PN	**Pb**	00 00 07.4	-0.1
MDNY	**Mudanya-Bursa**	**1.29 355**		*e*Pn	**Pb**	00 00 07.4	-0.1
IZI	**Iznik**	**1.30 15**		*e*PN	**Pn**	00 00 07.4	0.0
IZI	**Iznik**	**1.30 15**		*e*Pn	**Pn**	00 00 07.4	0.0
GONE	**Gonen-Balikesi**	**1.42 313**		*e*PN	**Pn**	00 00 08.4	-0.5
GONE	**Gonen-Balikesi**	**1.42 313**		*e*Pn	**Pn**	00 00 08.4	-0.5
ADVT	**Abdulvahap**	**1.46 22**		*e*PN	**Pn**	00 00 09.8	+0.3
ADVT	**Abdulvahap**	**1.46 22**		*e*Pn	**Pn**	00 00 09.8	+0.3
ARMT	**Armutlu**	**1.49 355**		*e*PN	**Pb**	00 00 10.6	-0.3
ARMT	**Armutlu**	**1.49 355**		*e*Pn	**Pb**	00 00 10.6	-0.3
EDC	**Edincik**	**1.55 325**		*e*PN	**Pn**	00 00 10.8	0.0
EDC	**Edincik**	**1.55 325**		*e*Pn	**Pn**	00 00 10.8	0.0
GULT	**Gulveren**	**1.77 40**		*e*PN	**Pn**	00 00 14.0	+0.1
GULT	**Gulveren**	**1.77 40**		*e*Pn	**Pn**	00 00 14.0	+0.1

*ISK **21** 00:06:14.8, 39°.15N×29°.06E, h5km, MD2.7*
*ISCJB **21** 00:06:15.1±0.5, 39°.15N±0°.04×29°.03E±0°.04, h5km±6km, Error ellipse: s-maj=6.4km s-min=4.4km az=148.6*
*CSEM **21** 00:06:15.2±0.1, 39°.15N×29°.05E, h5km, ML2.2, Error ellipse: s-maj=2.1km s-min=1.7km az=113.0*
*DDA **21** 00:06:15.2, 39°.12N×29°.03E, h7km, Ml2.2*

ISC 21 00:06:15.6±1.1,**39°.15N**±0°.03×**29°.04E**±0°.02,**h5**km±13km, **n36**, σ0s**40**/46,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28 247**		P	**Pg**	**00 06 21.0**	**0.0**
DEMI				S	**Sg**	00 06 24.6	-0.1
DEMI	**Demirci**	**0.28 247**		*i* P	**Pg**	**00 06 21.0**	**0.0**
DEMI				*i* S	**Sg**	00 06 24.6	-0.1
GDZ	**Gediz**	**0.35 100**		P	**Pg**	00 06 22.6	+0.2
GDZ				S	**Sg**	00 06 27.5	+0.5
GDZ	**Gediz**	**0.35 100**		*i* P	**Pg**	00 06 22.6	+0.2
GDZ				*i* S	**Sg**	00 06 27.5	+0.5
TVSB	**Tavsanli**	**0.44 48**		*e*PG	**Pg**	00 06 23.7	-0.5
TVSB				*e*SG	**Sg**	00 06 30.3	+0.4
TVSB	**Tavsanli**	**0.44 48**		*e*Pg	**Pg**	00 06 23.7	-0.5
TVSB				*e*Sg	**Sg**	00 06 30.3	+0.4
DURS	**Dursunbey**	**0.63 316**		P	**Pg**	00 06 27.5	-0.2
DURS	**Dursunbey**	**0.63 316**		*i* P	**Pg**	00 06 27.5	-0.2
KULA	**Kula-Manisa**	**0.70 205**		*e*PG	**Pg**	00 06 29.0	-0.1
KULA	**Kula-Manisa**	**0.70 205**		*e*Pg	**Pg**	00 06 29.0	-0.1
MANT	**Manisa**	**0.76 210**		P	**Pg**	00 06 29.9	-0.3
MANT				S	**Sg**	00 06 39.5	-0.6
MANT	**Manisa**	**0.76 210**		*i* P	**Pg**	00 06 29.9	-0.3
MANT				*i* S	**Sg**	00 06 39.5	-0.6
KHAL	**Karahalli**	**0.86 156**		P	**Pg**	00 06 31.7	-0.4
KHAL	**Karahalli**	**0.86 156**		*i* P	**Pg**	00 06 31.7	-0.4
ORLT	**Orhaneli**	**0.90 353**		*e*PG	**Pg**	00 06 32.4	-0.5
ORLT	**Orhaneli**	**0.90 353**		*e*Pg	**Pg**	00 06 32.4	-0.5
BALB	**Balikesir**	**1.02 299**		*e*PG	**Pg**	00 06 35.1	-0.1
BALB	**Balikesir**	**1.02 299**		*e*Pg	**Pg**	00 06 35.1	-0.1
CAVI	**Cavuskoy**	**1.22 30**		*e*PN	**Pg**	00 06 38.3	-0.7
CAVI				*e*SN	**Sb**	00 06 55.7	+0.5
CAVI	**Cavuskoy**	**1.22 30**		*e*Pn	**Pg**	00 06 38.3	-0.7
CAVI				*e*Sn	**Sb**	00 06 55.7	+0.5
MDNY	**Mudanya-Bursa**	**1.22 354**		*e*PN	**Pg**	00 06 38.8	-0.2
MDNY	**Mudanya-Bursa**	**1.22 354**		*e*Pn	**Pg**	00 06 38.8	-0.2
IZI	**Iznik**	**1.23 16**		*e*PN	**Pg**	00 06 38.8	-0.4
IZI	**Iznik**	**1.23 16**		*e*Pn	**Pg**	00 06 38.8	-0.4
KCTX	**Karacabey (Bur**	**1.23 335**		*e*PN	**Pg**	00 06 39.3	+0.1
KCTX	**Karacabey (Bur**	**1.23 335**		*e*Pn	**Pg**	00 06 39.3	+0.1
GONE	**Gonen-Balikesi**	**1.38 311**		*e*PN	**Pn**	00 06 41.9	+0.5
GONE	**Gonen-Balikesi**	**1.38 311**		*e*Pn	**Pn**	00 06 41.9	+0.5
ADVT	**Abdulvahap**	**1.39 23**		*e*PN	**Pg**	00 06 41.4	-0.8
ADVT	**Abdulvahap**	**1.39 23**		*e*Pn	**Pg**	00 06 41.4	-0.8
ARMT	**Armutlu**	**1.42 354**		*e*PN	**Pn**	00 06 42.0	-0.1
ARMT	**Armutlu**	**1.42 354**		*e*Pn	**Pn**	00 06 42.0	-0.1
EDC	**Edincik**	**1.50 323**		*e*PN	**Pn**	00 06 43.2	0.

SPNC	Sapanca-Adapaz	1.83	30	ePn	Pn	00 10 24.4	+0.4
MRMT	Marmara Adasi	1.89	323	ePN	Pn	00 10 24.6	-0.3
MRMT	Marmara Adasi	1.89	323	ePn	Pn	00 10 24.6	-0.3
KRBG	Karabiga-Canak	1.89	313	ePN	Pn	00 10 24.7	-0.1
KRBG	Karabiga-Canak	1.89	313	ePn	Pn	00 10 24.7	-0.1
SVRH	Sivrihisar-ESK	1.91	79	ePN	Pn	00 10 26.1	+0.9
SVRH	Sivrihisar-ESK	1.91	79	ePn	Pn	00 10 26.1	+0.9
ISK	Istanbul-Kandi	1.96	359	ePN	Pn	00 10 26.1	+0.4
ISK	Istanbul-Kandi	1.96	359	P	Pn	00 10 24.9	-0.8
ISK				S	Sn	00 10 51.4	+1.0
ISK	Istanbul-Kandi	1.96	359	P	Pn	00 10 24.9	-0.8
ISK	Istanbul-Kandi	1.96	359	ePn	Pn	00 10 26.1	+0.4
ISK				S	Sn	00 10 51.4	+1.0
AUMIH	MIHALICIK	1.99	67	iP	Pg	00 10 29.7	-0.7
BCK	Bucak	2.02	144	ePN	Pn	00 10 28.2	+1.6
BCK	Bucak	2.02	144	ePn	Pn	00 10 28.2	+1.6
GCAM	G?zelcaml?	2.03	227	iP	Pg	00 10 32.8	+1.7
DGB	¨zmir	2.03	239	iP	Pg	00 10 30.2	-1.0
BTAS	Taskesti	2.07	44	P	Pn	00 10 27.5	+0.2
BTAS	Taskesti	2.07	44	iP	Pn	00 10 27.5	+0.2
YER	Yerkesik	2.07	198	P	Pn	00 10 26.8	-0.6
YER				S	Sn	00 10 52.9	-0.5
YER	Yerkesik	2.07	198	P	Pn	00 10 26.8	-0.6
YER				S	Sn	00 10 52.9	-0.5
SILT	Sile	2.08	11	ePN	Pn	00 10 27.6	+0.1
SILT	Sile	2.08	11	ePn	Pn	00 10 27.6	+0.1
BGKT	Bogazkoy	2.09	353	ePN	Pn	00 10 26.9	-0.6
BGKT	Bogazkoy	2.09	353	ePn	Pn	00 10 26.9	-0.6
MDUB	Mudurnu	2.11	49	ePN	Pn	00 10 28.9	+0.9
MDUB	Mudurnu	2.11	49	ePn	Pn	00 10 28.9	+0.9
KLYT	Kilyos	2.14	359	ePN	Pn	00 10 28.0	-0.3
KLYT	Kilyos	2.14	359	ePn	Pn	00 10 28.0	-0.3
KAND	Kocaeli-Kandir	2.15	23	P	Pn	00 10 28.3	-0.1
KAND	Kocaeli-Kandir	2.15	23	iP	Pn	00 10 28.3	-0.1
RKY	Sarkoy-Tekirda	2.16	317	ePN	Pn	00 10 29.1	+0.5
RKY	Sarkoy-Tekirda	2.16	317	ePn	Pn	00 10 29.1	+0.5
SART	Tekirdag	2.16	318	P	Pb	00 10 30.1	-1.6
SART	Tekirdag	2.16	318	iP	Pb	00 10 30.1	-1.6
CTKS	Kestanelik-??a	2.17	348	ePN	Pn	00 10 28.4	-0.2
CTKS	Kestanelik-??a	2.17	348	ePn	Pn	00 10 28.5	-0.2
KIZT	Kizilcal	2.18	95	ePN	Pn	00 10 29.3	+0.4
KIZT	Kizilcal	2.18	95	ePn	Pn	00 10 29.3	+0.4
SAHE	Sakarya_HENDEK	2.20	37	P	Pn	00 10 29.1	0.0
SAHE	Sakarya_HENDEK	2.20	37	iP	Pn	00 10 29.1	0.0
PRK	Paraskevi	2.20	274	P	Pn	00 10 29.2	+0.1
PRK				S	Sn	00 10 57.4	+0.9
PRK	Paraskevi	2.20	274	P	Pn	00 10 29.2	+0.1
PRK				S	Sn	00 10 57.4	+0.9
CTYL	Yalikoy Yolu	2.44	346	ePN	Pn	00 10 32.7	+0.3
CTYL	Yalikoy Yolu	2.44	346	ePn	Pn	00 10 32.7	+0.3
FETY	Fethiye	2.47	180	P	Pn	00 10 33.0	+0.2
FETY				S	Sn	00 11 02.6	-0.5
FETY	Fethiye	2.47	180	P	Pn	00 10 33.0	+0.2
FETY				S	Sn	00 11 02.6	-0.5
CHOS	Chios island	2.49	254	P	Pn	00 10 32.8	-0.3
CHOS				S	Sn	00 11 03.6	-0.1
CHOS	Chios island	2.49	254	P	Pn	00 10 32.8	-0.3
CHOS				S	Sn	00 11 03.6	-0.1
SIGR	SIGRI	2.52	273	P	Pn	00 10 33.3	-0.2
SIGR				S	Sn	00 11 04.7	+0.2
SIGR	SIGRI	2.52	273	P	Pn	00 10 33.3	-0.2
SIGR				S	Sn	00 11 04.7	+0.2
ENEZ	Enez	2.79	307	P	Pn	00 10 36.9	-0.3
ENEZ				S	Sn	00 11 11.6	+0.6
ENEZ	Enez	2.79	307	P	Pn	00 10 36.9	-0.3
ENEZ				S	Sn	00 11 11.6	+0.6
BCAM	Yenicaga	2.85	52	iP	Pb	00 10 41.8	-1.6
ALN	Alexandroupoli	2.95	308	P	Pn	00 10 39.3	-0.1
ALN				S	Sn	00 11 15.4	+0.5
ALN	Alexandroupoli	2.95	308	P	Pn	00 10 39.3	-0.1
ALN				S	Sn	00 11 15.4	+0.5
KSL	Kastellorizon	2.98	172	P	Pn	00 10 39.1	-0.6
KSL				S	Sn	00 11 14.7	-0.9
SMTH	Samothraki Isl	3.07	297	P	Pn	00 10 41.4	+0.4
SMTH				S	Sn	00 11 18.0	+0.1
SMTH	Samothraki Isl	3.07	297	P	Pn	00 10 41.4	+0.4
SMTH				S	Sn	00 11 18.0	+0.1
BBAL	Bala	3.15	81	iP	Pb	00 10 46.6	-1.9
EDRB	Edirne	3.27	327	P	Pn	00 10 44.1	+0.3
EDRB				S	Sn	00 11 23.4	+0.5
EDRB	Edirne	3.27	327	P	Pn	00 10 44.1	+0.3
EDRB				S	Sn	00 11 23.4	+0.5
MSAB	Monastry St. A	5.07	350	⇑iP	Pn	00 11 08.6	+0.1
MSAB	Monastry St. A	5.07	350	⇑iP	Pn	00 11 08.6	+0.1
TIRR	Tirgusor	5.37	355	⇓iP	Pn	00 11 12.8	+0.2
TIRR	Tirgusor	5.37	355	⇓iP	Pn	00 11 12.8	+0.2
TLCR		6.08	358	⇓iP	Pn	00 11 23.2	+0.9
TLCR		6.08	358	⇓iP	Pn	00 11 23.2	+0.9
CFR	Carcaliu	6.11	354	⇑iP	Pn	00 11 22.5	-0.2
CFR	Carcaliu	6.11	354	⇑iP	Pn	00 11 22.5	-0.2
HUMR	Humele	6.23	332	⇑iP	Pn	00 11 28.1	+3.7
GIUM	Giurgiulesti	6.41	354	⇑iP	Pn	00 11 27.8	+1.0
GIUM	Giurgiulesti	6.41	354	⇑iP	Pn	00 11 27.8	+1.0
MLR	Muntele Rosu	6.79	341	⇓iP	Pn	00 11 33.8	+1.5
MLR	Muntele Rosu	6.79	341	⇓iP	Pn	00 11 33.8	+1.5
VRI	Vrincioaia	6.98	346	⇓iP	Pn	00 11 35.6	+0.9
VRI	Vrincioaia	6.98	346	⇓iP	Pn	00 11 35.6	+0.9
VOIR		7.00	336	⇓iP	Pn	00 11 35.7	+0.6
VOIR		7.00	336	⇓iP	Pn	00 11 35.7	+0.6
DOPR	Dopca	7.38	339	⇑iP	Pn	00 11 41.0	+0.7
DOPR	Dopca	7.38	339	⇑iP	Pn	00 11 41.0	+0.7
MILM	Milestii Mici	7.81	359	⇑iP	Pn	00 11 45.1	-1.0
MILM	Milestii Mici	7.81	359	⇑iP	Pn	00 11 45.1	-1.0
BURAR	Bucovina Array	8.96	343	⇓iP	Pn	00 12 03.6	+1.6
BURAR	Bucovina Array	8.96	343	⇓iP	Pn	00 12 03.6	+1.6

ISCJB ***21*** *00:11:35.6±0.7, 36°.51N±0°.03×9°.66W±0°.04, h10km, Error ellipse: s-maj=5.4km s-min=3.3km az=136.3*
CNRM ***21*** *00:11:36.3, 36°.20N×9°.87W, h30km, MD3.4*
IGIL ***21*** *00:11:36.7, 36°.28N×9°.95W, h28km, ML2.8*
MDD ***21*** *00:11:36.6±1.1, 36°.46N×10°.00W, h20km±25km, mbLg3.1/35, Error ellipse: s-maj=27.4km s-min=5.8km az=51.0, PRXIMO*
INMG ***21*** *00:11:37.1±0.9, 36°.29N×9°.96W, h31km±15km, MD2.7, ML3.0, Error ellipse: s-maj=3.5km s-min=1.9km az=83.0*
CSEM ***21*** *00:11:38.1±0.2, 36°.49N×9°.79W, h30km, ML3.1, Error ellipse: s-maj=4.5km s-min=3.3km az=50.0*

ISC 21 00:11:34.9±1.1, 36°.47N±0°.04×9°.85W±0°.05, h10km, n155, σ2°.24/296, 8C-4D, West of Gibraltar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PFVI	Vila Bisbo	1.05	51	⇑eP	Pg	00 11 56.9	+1.7
PFVI				eS	Sb	00 12 11.2	+2.1
PFVI				A	A	00 12 12.7	
	119nm,0.2s						
PFVI	Vila Bisbo	1.05	51	⇑P	Pg	00 11 56.9	+1.7
	45nm,0.1s,SNR=18						
PFVI				S	Sn	00 12 11.5	+1.0
	171nm,0.1s,SNR=19						
PFVI	Vila Bisbo	1.05	51	P	Pg	00 11 56.9	+1.7
	45nm,0.1s,SNR=18						
PFVI				S	Sn	00 12 11.5	+1.0
	171nm,0.1s,SNR=19						
MORF	Marmelete	1.27	49	eP	Pn	00 12 00.0	+1.2
MORF				eS	Sb	00 12 16.8	+1.4
MORF				AML	AML	00 12 17.0	
	comp=N,149nm,0.2s						
MORF	Marmelete	1.27	49	⇑eP	Pn	00 12 00.0	+1.2
MORF				eS	Sb	00 12 16.8	+1.4
MORF				A	A	00 12 18.3	
	comp=N,151nm,0.2s						
MORF	Marmelete	1.27	49	P	Pn	00 12 00.0	+1.2
MORF				S	Sb	00 12 16.8	+1.4
	comp=N,149nm,0.2s						
MORF	Marmelete	1.27	49	P	Pn	00 12 00.0	+1.2
MORF				eS	Sb	00 12 16.8	+1.4
	comp=N,151nm,0.2s						
PTEO	Sao Teotonio	1.40	40	eP	Pn	00 12 01.8	+1.3
PTEO				eS	Sb	00 12 20.2	+1.2
PTEO				A	A	00 12 22.1	
	comp=N,71nm,0.4s						
PTEO	Sao Teotonio	1.40	40	P	Pn	00 12 01.8	+1.3
PTEO				S	Sb	00 12 20.2	+1.2
	comp=N,35nm,0.4s						
PTEO	Sao Teotonio	1.40	40	P	Pn	00 12 01.8	+1.3
PTEO				eS	Sb	00 12 20.2	+1.2
	comp=N,71nm,0.4s						
PBDV	Barranco-do-Ve	1.72	63	⇑eP	Pn	00 12 06.0	+1.0
PBDV				eS	Sn	00 12 26.9	-0.1
PBDV				A	A	00 12 27.7	
	comp=N,34nm,0.1s						
PBDV	Barranco-do-Ve	1.72	63	P	Pn	00 12 06.0	+1.0
PBDV				S	Sn	00 12 26.9	-0.1
	comp=N,34nm,0.1s						
PBDV	Barranco-do-Ve	1.72	63	P	Pn	00 12 06.0	+1.0
PBDV				eS	Sn	00 12 26.9	-0.1
	comp=N,34nm,0.1s						
PCVE	Castro Verde	1.85	51	⇓eP	Pn	00 12 08.3	+1.5
PCVE				eS	Sn	00 12 31.0	+0.7
PCVE				A	A	00 12 34.0	
	comp=N,31nm,0.1s						
PCVE	Castro Verde	1.85	51	P	Pn	00 12 08.3	+1.5
PCVE				S	Sn	00 12 31.0	+0.7
	comp=N,31nm,0.1s						
PCVE	Castro Verde	1.85	51	P	Pn	00 12 08.3	+1.5
PCVE				S	Sn	00 12 31.0	+0.7
	comp=N,31nm,0.1s						
MESJ	Messejana	1.89	43	eP	Pn	00 12 08.5	+1.3
MESJ				eS	Sn	00 12 31.5	+0.4
MESJ				AML	AML	00 12 33.0	
	comp=N,48nm,0.1s						
MESJ	Messejana	1.89	43	eP	Pn	00 12 08.5	+1.3
MESJ				eS	Sn	00 12 31.8	+0.8
MESJ				A	A	00 12 34.5	
	comp=N,48nm,0.3s						
MESJ	Messejana	1.89	43	P	Pn	00 12 08.5	+1.3
MESJ				S	Sn	00 12 31.8	+0.8
	comp=N,48nm,0.3s						
MESJ	Messejana	1.89	43	P	Pn	00 12 08.5	+1.3
MESJ				S	Sn	00 12 31.8	+0.8
	comp=N,48nm,0.3s						
PVAQ	Vaqueiros	1.94	61	⇑eP	Pn	00 12 09.1	+1.1
PVAQ				eS	Sn	00 12 32.3	-0.2
PVAQ				A	A	00 12 33.9	
	comp=N,76nm,0.1s						
PVAQ	Vaqueiros	1.94	61	P	Pn	00 12 09.1	+1.1
PVAQ				S	Sn	00 12 32.3	-0.2
	comp=N,76nm,0.1s						
PVAQ	Vaqueiros	1.94	61	P	Pn	00 12 09.1	+1.1
PVAQ				S	Sn	00 12 32.3	-0.2
	comp=N,76nm,0.1s						
PNCL	Nicolau / Gran	1.94	32	eP	Pn	00 12 09.2	+1.2
PNCL				eS	Sn	00 12 33.5	+1.0
PNCL				A	A	00 12 36.2	
	comp=N,64nm,0.1s						
PNCL	Nicolau / Gran	1.94	32	eP	Pn	00 12 09.2	+1.2
EGRO	El Granado	2.17	60	⇑P	Pn	00 12 12.0	+0.9
	comp=N,4.3nm,0.1s,SNR=18						
EGRO				S	Sn	00 12 38.1	0.0
	comp=N,37nm,0.1s,SNR=8.3						
EGRO	El Granado	2.17	60	P	Pn	00 12 12.0	+0.9
	comp=N,4.3nm,0.1s,SNR=18						
EGRO				S	Sn	00 12 38.1	0.0
	comp=N,37nm,0.1s,SNR=8.3						
PBEJ	Beja	2.21	45	⇑eP	Pn	00 12 12.7	+0.9
PBEJ				eS	Sn	00 12 39.7	+0.5
PBEJ	Beja	2.21	45	P	Pn	00 12 12.7	+0.9
PBEJ				S	Sn	00 12 39.7	+0.5
PBEJ	Beja	2.21	45	P	Pn	00 12 12.7	+0.9
PBEJ				S	Sn	00 12 39.7	+0.5
LIS	Lisbon	2.31	14	eS	Sn	00 12 42.5	+1.1
LIS	Lisbon	2.31	14	S	Sn	00 12 42.5	+1.1
LIS	Lisbon	2.31	14	eS	Sn	00 12 42.5	+1.1
PMST	Lisbon--Monsan	2.32	13	eP	Pn	00 12 14.2	+1.0
PMST				eS	Sn	00 12 42.1	+0.3
PMST	Lisbon--Monsan	2.32	13	eP	Pn	00 12 14.2	+1.0
PMST				eS	Sn	00 12 42.1	+0.3
PMAFR	Mafra	2.52	10	eP	Pn	00 12 16.6	+0.7
PMAFR				eS	Sn	00 12 47.1	+0.4
PMAFR				A	A	00 12 50.2	
	comp=N,112nm,0.2s						
PMAFR	Mafra	2.52	10	P	Pn	00 12 16.6	+0.7
	comp=N,5.6nm,0.1s,SNR=18						
PMAFR				S	Sn	00 12 46.3	-0.4
	comp=N,140nm,0.2s						
PMAFR	Mafra	2.52	10	P	Pn	00 12 16.6	+0.7
	comp=N,5.6nm,0.1s,SNR=18						
PMAFR				eS	Sn	00 12 47.1	+0.4
	comp=N,112nm,0.2s						
EVO	Evora	2.52	35	eP	Pn	00 12 17.0	+1.0
EVO				eS	Sn	00 12 46.9	+0.2
EVO				A	A	00 12 48.9	
	comp=N,114nm,0.1s						
EVO	Evora	2.52	35	P	Pn	00 12 17.0	+1.0
EVO				S	Sn	00 12 46.9	+0.2
	comp=N,114nm,0.1s						
EVO	Evora	2.52	35	P	Pn	00 12 17.0	+1.0
EVO				eS	Sn	00 12 46.9	+0.2
	comp=N,114nm,0.1s						
PBAR	Barrancos	2.81	52	eP	Pn	00 12 20.8	+0.9
PBAR				eS	Sn	00 12 53.6	-0.3
PBAR				A	A	00 12 55.6	
	comp=N,42nm,0.4s						
PBAR	Barrancos	2.81	52	P	Pn	00 12 20.8	+0.9
PBAR				S	Sn	00 12 53.6	-0.3
	comp=N,42nm,0.4s						
PBAR	Barrancos	2.81	52	P	Pn	00 12 20.8	+0.9
PBAR				eS	Sn	00 12 53.6	-0.3
	comp=N,42nm,0.4s						
EMIN	Mina Concepcio	2.85	62	⇓P	Pn	00 12 21.0	+0.5
	comp=N,0.8nm,0.1s,SNR=18						
EMIN				S	Sn	00 12 53.9	-0.9
	comp=N,12nm,0.3s,SNR=12						
EMIN	Mina Concepcio	2.85	62	P	Pn	00 12 21.0	+0.5
	comp=N,0.8nm,0.1s,SNR=18						
EMIN				S	Sn	00 12 53.9	-0.9
	comp=N,12nm,0.3s,SNR=12						
ALMR	Almeirim	2.86	20	eP	Pn	00 12 21.9	+1.3
ALMR				eS	Sn	00 12 55.0	-0.1
ALMR				AML	AML	00 12 56.2	
	comp=N,26nm,0.1s						
ALMR	Almeirim	2.86	20	eP	Pn	00 12 21.9	+1.3
ALMR				eS	Sn	00 12 55.0	-0.1
ALMR	Almeirim	2.86	20	P	Pn	00 12 21.9	+1.3
ALMR				S	Sn	00 12 55.0	-0.1
ALMR	Almeirim	2.86	20	P	Pn	00 12 21.9	+1.3
ALMR				S	Sn	00 12 55.0	-0.1
PMTG	Montargil	2.89	26	eP	Pn	00 12 22.3	+1.2
PMTG				eS	Sn	00 12 55.6	-0.3
PMTG				A	A	00 12 57.6	
	comp=N,67nm,0.1s						
PMTG	Montargil	2.89	26	eP	Pn	00 12 22.3	+1.2
PMTG				eS	Sn	00 12 55.6	-0.3
	comp=N,67nm,0.1s						
PESTR	Estremoz	2.99	36	eP	Pn	00 12 23.1	+0.7
PESTR				eS	Sn	00 12 58.2	-0.1
PESTR				A	A	00 13 01.1	
	comp=N,18nm,0.4s						
PESTR	Estremoz	2.99	36	eP	Pn	00 12 23.1	+0.7
PESTR				eS	Sn	00 12 58.2	-0.1
	comp=N,18nm,0.4s						
EBAD	Badajoz	3.20	44	P	Pn	00 12 25.9	+0.6
	comp=N,5.6nm,0.1s,SNR=68						
EBAD				S	Sn	00 13 02.1	-1.5
	comp=N,24nm,0.1s,SNR=13						
EBAD	Badajoz	3.20	44	P	Pn	00 12 25.9	+0.6
	comp=N,5.6nm,0.1s,SNR=68						
EBAD				S	Sn	00 13 02.1	-1.5
	comp=N,24nm,0.1s,SNR=13						
ESPR	Espera	3.23	82	P	Pn	00 12 25.7	-0.1
	comp=N,12nm,0.2s,SNR=44						
ESPR				S	Sn	00 13 02.5	-1.8
	comp=N,72nm,0.3s,SNR=6.0						
ESPR	Espera	3.23	82	P	Pn	00 12 25.7	-0.1
	comp=N,12nm,0.2s,SNR=44						
ESPR				S	Sn	00 13 02.5	-1.8
	comp=N,72nm,0.3s,SNR=6.0						
PTOM	Tomar	3.34	19	eP	Pn	00 12 28.2	+1.0
PTOM				eS	Sn	00 13 06.4	-0.5
PTOM				A	A	00 13 09.6	
	comp=N,43nm,0.2s						
PTOM	Tomar	3.34	19	P	Pn	00 12 28.2	+1.0
PTOM				S	Sn	00 13 06.4	-0.5
	comp=N,22nm,0.2s						
PTOM	Tomar	3.34	19	P	Pn	00 12 28.2	+1.0
PTOM				eS	Sn	00 13 06.4	-0.5
	comp=N,43nm,0.2s						
EJIF	Jimena Fronter	3.53	89	P	Pn	00 12 30.6	+0.8
	comp=N,1.0nm,0.2s,SNR=7.9						
EJIF				S	Sn	00 13 05.6	-6.0
	comp=N,2.0nm,0.2s,SNR=7.9						
EJIF	Jimena Fronter	3.53	89	P	Pn	00 12 30.6	+0.8
	comp=N,1.0nm,0.2s,SNR=7.9						
EJIF				S	Sn	00 13 05.6	-6.0
	comp=N,2.0nm,0.2s,SNR=7.9						
PMRV	Marv??o	3.53	33	eP	Pn	00 12 30.9	+1.0
PMRV				eS	Sn	00 13 10.7	-1.0
PMRV				A	A	00 13 13.4	
	comp=N,41nm,0.6s						
PMRV	Marv??o	3.53	33	P	Pn	00 12 30.9	+1.0
PMRV				S	Sn	00 13 10.7	-1.0
	comp=N,41nm,0.6s						
PMRV	Marv??o	3.53	33	P	Pn	00 12 30.9	+1.0
PMRV				eS	Sn	00 13 10.7	-1.0
	comp=N,41nm,0.6s						
ECEU	Ceuta	3.66	98	P	Pn	00 12 32.5	+0.8
	comp=N,2.2nm,0.1s,SNR=7.9						
ECEU				S	Sn	00 13 14.3	-0.6
	comp=N,34nm,1.0s,SNR=7.9						
ECEU	Ceuta	3.66	98	P	Pn	00 12 32.5	+0.8
	comp=N,2.2nm,0.1s,SNR=7.9						
ECEU				S	Sn	00 13 14.3	-0.6
	comp=N,34nm,1.0s,SNR=7.9						
PCAS	Casmilo, Conde	3.73	16	eP	Pn	00 12 33.7	+1.1
PCAS				eS	Sn	00 13 15.8	-0.7
PCAS				A	A	00 13 19.9	
	comp=N,13nm,0.3s						
PCAS	Casmilo, Conde	3.73	16	eP	Pn	00 12 33.7	+1.1
PCAS				eS	Sn	00 13 15.8	-0.7
	comp=N,13nm,0.3s						
PCBR	Castelo Branco	3.85	28	eP	Pn	00 12 35.0	+0.8
PCBR				eS	Sn	00 13 18.6	-0.8
PCBR				A	A	00 13 22.7	
	comp=N,16nm,0.5s						
PCBR	Castelo Branco	3.85	28	P	Pn	00 12 35.0	+0.8
PCBR				S	Sn	00 13 18.6	-0.8
	comp=N,8.2nm,0.5s						
PCBR	Castelo Branco	3.85	28	P	Pn	00 12 35.0	+0.8
PCBR				eS	Sn	00 13 18.6	-0.8
	comp=N,16nm,0.5s						
ECAB	El Cabril	3.88	64	⇓P	Pn	00 12 35.1	+0.5
	comp=N,5.1nm,0.3s,SNR=18						
ECAB				S	Sn	00 13 18.0	-2.3
	comp=N,20nm,0.4s,SNR=7.0						
ECAB	El Cabril	3.88	64	P	Pn	00 12 35.1	+0.5
	comp=N,5.1nm,0.3s,SNR=18						
ECAB				S	Sn	00 13 18.0	-2.3
	comp=N,20nm,0.4s,SNR=7.0						
EMIJ	Mijas	4.09	87	P	Pn	00 12 37.4	-0.2
	comp=N,3.0nm,0.3s,SNR=5.1						
EMIJ				S	Sn	00 13 23.3	-2.2
	comp=N,4.4nm,0.3s,SNR=6.1						
EMIJ	Mijas	4.09	87	P	Pn	00 12 37.4	-0.2
	comp=N,3.0nm,0.3s,SNR=5.1						
EMIJ				S	Sn	00 13 23.3	-2.2
	comp=N,4.4nm,0.3s,SNR=6.1						
MTE	Manteigas	4.32	24	eP	Pn	00 12 41.6	+0.9
MTE				eS	Sn	00 13 29.5	-1.6
MTE				A	A	00 13 32.7	
	comp=N,20nm,0.2s						
MTE	Manteigas	4.32	24	P	Pn	00 12 41.6	+0.9
MTE				S	Sn	00 13 29.5	-1.6
	comp=N,10nm,0.2s						
MTE	Manteigas	4.32	24	P	Pn	00 12 41.6	+0.9
MTE				eS	Sn	00 13 29.5	-1.6
	comp=N,20nm,0.2s						
EADA	Adamuz	4.53	67	⇓P	Pn	00 12 44.0	+0.4
	comp=N,6.2nm,0.3s,SNR=18						
EADA				S	Sn	00 13 34.3	-2.1
	comp=N,5.6nm,0.1s,SNR=6.5						
EADA	Adamuz	4.53	67	P	Pn	00 12 44.0	+0.4
	comp=N,6.2nm,0.3s,SNR=18						
EADA				S	Sn	00 13 34.3	-2.1
	comp=N,5.6nm,0.1s,SNR=6.5						
EGOR	Sierra Gorda,	4.65	80	P	Pn	00 12 46.5	+1.1
	comp=N,0.2nm,0.1s,SNR=7.9						
EGOR				S	Sn	00 13 38.2	-1.3
	comp=N,4.7nm,0.3s,SNR=7.9						
EGOR	Sierra Gorda,	4.65	80	P	Pn	00 12 46.5	+1.1
	comp=N,0.2nm,0.1s,SNR=7.9						
EGOR				S	Sn	00 13 38.2	-1.3
	comp=N,4.7nm,0.3s,SNR=7.9						
EPLA	Plasencia	4.65	38	P	Pn	00 12 46.1	+0.8
	comp=N,0.9nm,0.3s,SNR=15						
EPLA				S	Sn	00 13 37.8	-1.6
	comp=N,30nm,0.1s						
EPLA	Plasencia	4.65	38	P	Pn	00 12 46.1	+0.8
	comp=N,0.9nm,0.3s,SNR=15						
EPLA				S	Sn	00 13 37.8	-1.6
	comp=N,30nm,0.1s						
PTO	Porto	4.76	11	eP	Pn	00 12 47.3	+0.6
PTO				eS	Sn	00 13 40.7	-1.2
PTO	Porto	4.76	11	P	Pn	00 12 47.3	+0.6
PTO				S	Sn	00 13 40.7	-1.2
PTO	Porto	4.76	11	P	Pn	00 12 47.3	+0.6
PTO				S	Sn	00 13 40.7	-1.2
SELV	Sierra Elvira	4.97	79	P	Pn	00 12 50.8	+1.1
	comp=N,1.1nm,0.2s,SNR=7.9						
SELV				S	Sn	00 13 45.1	-2.0
	comp=N,2.4nm,0.4s,SNR=7.9						
SELV	Sierra Elvira	4.97	79	P	Pn	00 12 50.8	+1.1
	comp=N,1.1nm,0.2s,SNR=7.9						
SELV				S	Sn	00 13 45.1	-2.0
	comp=N,2.4nm,0.4s,SNR=7.9						
KIB	El Ksiba	5.00	140	iP	Pn	00 12 46.0	-4.1
ECOG	Cogollos-Vega	5.10	79	P	Pn	00 12 52.3	+0.8
	comp=N,1.7nm,0.3s,SNR=7.9						
ECOG				S	Sn	00 13 48.6	-1.9
	comp=N,2.4nm,0.2s,SNR=7.9						
ECOG	Cogollos

PGAV eS Sn 00 14 00.3 -3.0
PGAV A A 00 14 05.9
comp=N,7.8nm,0.5s
PGAV Gavieira, Arco 5.62 12 eP Pn 00 12 59.1 +0.5
PGAV eS Sn 00 14 00.3 -3.0
comp=N,7.8nm,0.5s
ESDC Sonseca Array 5.64 54 P Pn 00 12 58.9 0.0
comp=N,1.4nm,0.2s,baz=236,slow=14,SNR=89
ESDC S Sn 00 14 00.5 -3.1
comp=N,2.6nm,0.3s,baz=241,slow=24,SNR=47
ESDC Sonseca Array 5.64 54 P Pn 00 12 58.9 0.0
comp=N,1.4nm,0.2s,SNR=89
ESDC S Sn 00 14 00.5 -3.1
comp=N,2.6nm,0.3s,SNR=47
PBRG Braganca 5.84 23 eP Pn 00 13 01.6 -0.1
PBRG eS Sn 00 14 05.9 -2.9
PBRG A A 00 14 08.8
comp=N,9.2nm,0.2s
PBRG Braganca 5.84 23 P Pn 00 13 01.6 -0.1
PBRG S Sn 00 14 05.9 -2.9
comp=N,4.6nm,0.2s
PBRG Braganca 5.84 23 P Pn 00 13 01.6 -0.1
PBRG eS Sn 00 14 05.9 -2.9
comp=N,9.2nm,0.2s
EHUE Huescar 5.95 75 S Sn 00 14 08.9 -2.5
comp=N,19nm,1.4s,SNR=7.9
EHUE Huescar 5.95 75 S Sn 00 14 08.9 -2.5
comp=N,19nm,1.4s,SNR=7.9
ECAL Calabor 5.97 23 P Pn 00 13 03.8 +0.4
comp=N,0.2nm,0.2s,SNR=11
ECAL S Sn 00 14 07.1 -4.8
comp=N,25nm,0.5s,SNR=6.9
ECAL Calabor 5.97 23 P Pn 00 13 03.8 +0.4
comp=N,0.2nm,0.2s,SNR=11
ECAL S Sn 00 14 07.1 -4.8
comp=N,25nm,0.5s,SNR=6.9
SESP Santiago Espad 6.05 72 P Pn 00 13 04.9 +0.3
comp=N,3.3nm,0.4s,SNR=7.9
SESP S Sn 00 14 10.5 -3.5
comp=N,5.1nm,0.2s,SNR=7.9
SESP Santiago Espad 6.05 72 P Pn 00 13 04.9 +0.3
comp=N,3.3nm,0.4s,SNR=7.9
SESP S Sn 00 14 10.5 -3.5
comp=N,5.1nm,0.2s,SNR=7.9
GUD Guadarrama 6.10 45 P Pn 00 13 06.0 +0.8
comp=N,1.2nm,0.3s,SNR=14
GUD S Sn 00 14 12.2 -3.0
comp=N,3.4nm,0.3s,SNR=10
GUD Guadarrama 6.10 45 P Pn 00 13 06.1 +0.8
comp=N,1.2nm,0.3s,SNR=14
GUD S Sn 00 14 12.2 -3.0
comp=N,3.4nm,0.3s,SNR=10
ENIJ Nijar 6.16 83 P Pn 00 13 07.1 +1.1
comp=N,0.1nm,0.4s,SNR=7.9
ENIJ S Sn 00 14 14.0 -2.5
comp=N,1.2nm,0.3s,SNR=7.9
ENIJ Nijar 6.16 83 P Pn 00 13 07.1 +1.1
comp=N,0.1nm,0.4s,SNR=7.9
ENIJ S Sn 00 14 14.0 -2.5
comp=N,1.2nm,0.3s,SNR=7.9
EVIA Vianos 6.22 67 P Pn 00 13 06.7 -0.3
comp=N,0.7nm,0.2s,SNR=7.9
EVIA S Sn 00 14 14.5 -3.7
comp=N,69nm,1.5s,SNR=7.9
EVIA Vianos 6.22 67 P Pn 00 13 06.7 -0.3
comp=N,0.7nm,0.2s,SNR=7.9
EVIA S Sn 00 14 14.5 -3.7
comp=N,69nm,1.5s,SNR=7.9
EAGO Agolada(Pontev 6.46 12 P Pn 00 13 10.2 0.0
comp=N,4.1nm,0.4s,SNR=7.9
EAGO S Sn 00 14 18.8 -5.2
comp=N,6.7nm,0.4s,SNR=7.9
EAGO Agolada(Pontev 6.46 12 P Pn 00 13 10.2 0.0
comp=N,4.1nm,0.4s,SNR=7.9
EAGO S Sn 00 14 18.8 -5.2
comp=N,6.7nm,0.4s,SNR=7.9
EMAZ Mazaricos 6.50 6 P Pn 00 13 10.1 -0.6
comp=N,5.7nm,0.3s,SNR=7.9
EMAZ S Sn 00 14 18.8 -6.1
comp=N,9.0nm,0.3s,SNR=7.9
EMAZ Mazaricos 6.50 6 P Pn 00 13 10.1 -0.6
comp=N,5.7nm,0.3s,SNR=7.9
EMAZ S Sn 00 14 18.8 -6.1
comp=N,9.0nm,0.3s,SNR=7.9
ETOB Tobarra 6.94 69 P Pn 00 13 16.4 -0.4
comp=N,1.8nm,0.3s,SNR=17
ETOB S Sn 00 14 32.0 -3.8
comp=N,1.8nm,0.3s,SNR=4.6
ETOB Tobarra 6.94 69 P Pn 00 13 16.4 -0.4
comp=N,1.8nm,0.3s,SNR=17
ETOB S Sn 00 14 32.0 -3.8
comp=N,1.8nm,0.3s,SNR=4.6
EMUR La Murta 7.01 76 P Pn 00 13 18.3 +0.6
comp=N,1.0nm,0.6s,SNR=7.9
EMUR S Sn 00 14 34.5 -2.9
comp=N,5.5nm,0.8s,SNR=7.9
EMUR La Murta 7.01 76 P Pn 00 13 18.3 +0.6
comp=N,1.0nm,0.6s,SNR=7.9
EMUR S Sn 00 14 34.5 -2.9
comp=N,5.5nm,0.8s,SNR=7.9
EPON Pontenova 7.15 16 P Pn 00 13 19.6 0.0
comp=N,2.1nm,0.3s,SNR=7.6
EPON S Sn 00 14 36.6 -4.3
comp=N,19nm,0.9s,SNR=7.9
EPON Pontenova 7.15 16 P Pn 00 13 19.6 0.0
comp=N,2.1nm,0.3s,SNR=7.6
EPON S Sn 00 14 36.6 -4.3
comp=N,19nm,0.9s,SNR=7.9
EARI Arriondas 7.69 26 P Pn 00 13 27.9 +0.8
comp=N,0.4nm,0.4s,SNR=6.1
EARI S Sn 00 14 47.5 -6.8
comp=N,0.5nm,0.2s,SNR=7.9
EARI Arriondas 7.69 26 P Pn 00 13 27.9 +0.8
comp=N,0.4nm,0.4s,SNR=6.1
EARI S Sn 00 14 47.5 -6.8
comp=N,0.5nm,0.2s,SNR=7.9
AFON Font Roja 7.71 71 P Pn 00 13 27.9 +0.5
comp=N,0.3nm,0.3s,SNR=7.9
AFON S Sn 00 14 49.8 -5.0
comp=N,2.8nm,0.4s,SNR=7.9
AFON Font Roja 7.71 71 P Pn 00 13 27.9 +0.5
comp=N,0.3nm,0.3s,SNR=7.9
AFON S Sn 00 14 49.8 -5.0
comp=N,2.8nm,0.4s,SNR=7.9
EMOS Mosqueruela 8.32 59 P Pn 00 13 37.0 +1.2
comp=N,0.5nm,0.3s,SNR=7.9
EMOS S Sn 00 15 04.2 -5.7
comp=N,2.4nm,0.4s,SNR=7.9
EMOS Mosqueruela 8.32 59 P Pn 00 13 37.0 +1.2
comp=N,0.5nm,0.3s,SNR=7.9
EMOS S Sn 00 15 04.2 -5.7
comp=N,2.4nm,0.4s,SNR=7.9
ELAN Lanestosa 8.36 34 P Pn 00 13 36.9 +0.8
comp=N,0.1nm,0.1s,SNR=4.0
ELAN S Sn 00 15 03.7 -6.9
comp=N,0.9nm,0.4s,SNR=7.9
ELAN Lanestosa 8.36 34 P Pn 00 13 36.9 +0.8
comp=N,0.1nm,0.1s,SNR=4.0
ELAN S Sn 00 15 03.7 -6.9
comp=N,0.9nm,0.4s,SNR=7.9
CFUE Fuerteventura 8.53 205 P Pn 00 13 39.0 +0.4
comp=N,1.2nm,2.1s,SNR=7.9
CFUE S Sn 00 14 58.7 -16
comp=N,7.5nm,0.7s,SNR=7.9
CFUE Fuerteventura 8.53 205 P Pn 00 13 39.0 +0.4
comp=N,1.2nm,2.1s,SNR=7.9
CFUE S Sn 00 14 58.7 -16
comp=N,7.5nm,0.7s,SNR=7.9
IELO Elcoad 9.19 44 P Pn 00 13 48.1 +0.5
comp=N,0.5nm,0.3s,SNR=7.9
IELO S Sn 00 15 24.9 -6.2
comp=N,1.8nm,0.4s,SNR=7.9
IELO Elcoad 9.19 44 P Pn 00 13 48.1 +0.5
comp=N,0.5nm,0.3s,SNR=7.9
IELO S Sn 00 15 24.9 -6.2
comp=N,1.8nm,0.4s,SNR=7.9
EALK Alkurruntz 9.30 41 P Pn 00 13 49.6 +0.5
comp=N,0.1nm,0.5s,SNR=4.0
EALK S Sn 00 15 27.2 -6.6
comp=N,3.1nm,0.4s,SNR=7.9
EALK Alkurruntz 9.30 41 P Pn 00 13 49.6 +0.5
comp=N,0.1nm,0.5s,SNR=4.0
EALK S Sn 00 15 27.2 -6.6
comp=N,3.1nm,0.4s,SNR=7.9
ATE Arette 9.65 44 P Pn 00 13 54.9 +1.0
comp=N,0.4nm,1.1s,SNR=7.9
ATE S Sn 00 15 35.5 -6.8
comp=N,1.3nm,0.3s,SNR=7.9
ATE Arette 9.65 44 P Pn 00 13 54.9 +1.0
comp=N,0.4nm,1.1s,SNR=7.9
ATE S Sn 00 15 35.5 -6.8
comp=N,1.3nm,0.3s,SNR=7.9

*ISCJB **21** 00:14:09.8±0.6, 39°.09N±0°.04×29°.05E±0°.06, h9km, Error ellipse: s-maj=7.2km s-min=4.6km az=30.5*
*DDA **21** 00:14:09.6, 39°.10N×29°.13E, h7km, Ml3.0*
*CSEM **21** 00:14:09.8±0.1, 39°.08N×29°.08E, h8km, MD2.7, Error ellipse: s-maj=3.5km s-min=2.0km az=126.0*
*ISK **21** 00:14:09.3, 39°.09N×29°.06E, h7km, MD2.7*
ISC 21 00:14:09.6±1.0, 39°.08N±0°.03×29°.09E±0°.04, h9km, n31, σ0s36/35, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.30**	**263**	P	**Pg**	**00 14 15.7**	**+0.2**
DEMI	**Demirci**	**0.30**	**263**	*i* P	**Pg**	**00 14 15.7**	**+0.2**
TVSB	**Tavsanli**	**0.47**	**38**	*e*PG	**Pg**	**00 14 18.9**	**+0.2**
TVSB	**Tavsanli**	**0.47**	**38**	*e*Pg	**Pg**	**00 14 18.9**	**+0.2**
KULA	**Kula-Manisa**	**0.66**	**211**	*e*PG	**Pg**	**00 14 22.4**	**+0.1**
KULA				*e*SG	**Sg**	**00 14 31.6**	**+0.7**
KULA	**Kula-Manisa**	**0.66**	**211**	*e*Pg	**Pg**	**00 14 22.4**	**+0.1**
KULA				*e*Sg	**Sg**	**00 14 31.6**	**+0.7**
DURS	**Dursunbey**	**0.71**	**318**	P	**Pb**	**00 14 24.2**	**0.0**
DURS	**Dursunbey**	**0.71**	**318**	*i* P	**Pb**	**00 14 24.2**	**0.0**
MANT	**Manisa**	**0.72**	**216**	P	**Pb**	**00 14 24.0**	**-0.5**
MANT	**Manisa**	**0.72**	**216**	*i* P	**Pb**	**00 14 24.1**	**-0.5**
AKS	**Akhisar**	**1.02**	**259**	*e*PG	**Pg**	**00 14 29.0**	**-0.2**
AKS	**Akhisar**	**1.02**	**259**	*e*Pg	**Pg**	**00 14 29.0**	**-0.2**
BALB	**Balikesir**	**1.09**	**301**	*e*PG	**Pg**	**00 14 30.4**	**-0.3**
BALB				*e*SG	**Sb**	**00 14 45.0**	**-0.1**
BALB	**Balikesir**	**1.09**	**301**	*e*Pg	**Pg**	**00 14 30.4**	**-0.3**
BALB				*e*Sg	**Sb**	**00 14 45.0**	**-0.1**
IGD	**Bursa**	**1.19**	**4**	*i* P	**Pb**	**00 14 31.4**	**-0.9**
CAVI	**Cavuskoy**	**1.26**	**27**	*e*PN	**Pg**	**00 14 33.8**	**0.0**
CAVI	**Cavuskoy**	**1.26**	**27**	*e*Pn	**Pg**	**00 14 33.8**	**0.0**
IZI	**Iznik**	**1.29**	**13**	*e*PN	**Pb**	**00 14 34.1**	**0.0**
IZI	**Iznik**	**1.29**	**13**	*e*Pn	**Pb**	**00 14 34.1**	**0.0**
MDNY	**Mudanya-Bursa**	**1.30**	**353**	*e*PN	**Pb**	**00 14 34.3**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.30**	**353**	*e*Pn	**Pb**	**00 14 34.3**	**+0.1**
KCTX	**Karacabey (Bur**	**1.31**	**335**	*e*PN	**Pb**	**00 14 34.3**	**-0.2**
KCTX	**Karacabey (Bur**	**1.31**	**335**	*e*Pn	**Pb**	**00 14 34.3**	**-0.2**
ADVT	**Abdulvahap**	**1.44**	**20**	*e*PN	**Pb**	**00 14 36.9**	**+0.3**
ADVT	**Abdulvahap**	**1.44**	**20**	*e*Pn	**Pb**	**00 14 36.9**	**+0.3**
GONE	**Gonen-Balikesi**	**1.46**	**312**	*e*PN	**Pb**	**00 14 36.5**	**-0.4**
GONE	**Gonen-Balikesi**	**1.46**	**312**	*e*Pn	**Pb**	**00 14 36.5**	**-0.4**
ARMT	**Armutlu**	**1.50**	**353**	*e*PN	**Pn**	**00 14 36.7**	**0.0**
ARMT	**Armutlu**	**1.50**	**353**	*e*Pn	**Pn**	**00 14 36.7**	**0.0**
GULT	**Gulveren**	**1.74**	**39**	*e*PN	**Pb**	**00 14 41.0**	**-0.8**
GULT	**Gulveren**	**1.74**	**39**	*e*Pn	**Pb**	**00 14 41.0**	**-0.8**

*MOS **21** 00:16:24.0±1.0, 56°.08S×26°.93W, h41km, mb5.8/54, MS5.5/17, Error ellipse: s-maj=18.8km s-min=9.7km az=95.1*
*BJI **21** 00:16:24.6, 56°.10S×27°.10W, h47km, mB5.6/50, Ms5.7/58, Ms7 5.5/57*
*ISCJB **21** 00:16:24.4±0.2, 56°.06S±0°.03×27°.27W±0°.06, h50km, mb5.7/90, MS5.5/185, Error ellipse: s-maj=5.6km s-min=3.8km az=142.0*
*GCMT **21** 00:16:25.6±0.1, 56°.04S×26°.92W, h46km, MW5.9/137, Moment Tensor Solution. s120,c254; s137,c401; Duration: 2s1 Moment tensor: Scale 10^18^Nm; M_{rr}0.22±.01; $M_{\theta\theta}$0.50±.01; $M_{\phi\phi}$-0.71±.01; $M_{r\theta}$-0.33±.01; $M_{\theta\phi}$-0.43±.01; $M_{r\phi}$0.11±.01; Best double couple: $M_0$0.84600×10^18^ NP1:ϕ_s337.00000°, δ70.00000°, λ22.00000°. NP2:ϕ_s239.00000°, δ70.00000°, λ158.00000°. Principal axes: T 0.8330, Plg30.0000°, Azm198.0000°; N 0.0250, Plg60.0000°, Azm18.0000°; P -0.8590, Plg0.0000°, Azm108.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*
*NEIC **21** 00:16:25.6±1.0, 56°.07S×27°.11W, h48km±8km, mb5.7/74, MS5.5/132, MW5.9, MW5.9 Error ellipse: s-maj=5.3km s-min=4.0km az=55.0, Moment Tensor Solution. s20 Moment tensor: Scale 10^17^Nm; M_{rr}4.80; $M_{\theta\theta}$2.24; $M_{\phi\phi}$-7.05; $M_{r\theta}$-3.15; $M_{\theta\phi}$-3.08; $M_{r\phi}$1.76; Best double couple: $M_0$7.80000×10^17^ NP1:ϕ_s345.00000°, δ60.00000°, λ44.00000°. NP2:ϕ_s229.00000°, δ53.00000°, λ141.00000°. Principal axes: T 7.6300, Plg52.0000°, Azm200.0000°; N 0.4000, Plg38.0000°, Azm13.0000°; P -8.0300, Plg4.0000°, Azm106.0000°;*
*NEIC **21** 00:16:26.0±0.0, 56°.07S×27°.11W, h48km, Moment Tensor Solution. s17 Moment tensor: Scale 10^17^Nm; M_{rr}2.45; $M_{\theta\theta}$4.38; $M_{\phi\phi}$-6.83; $M_{r\theta}$-2.40; $M_{\theta\phi}$-3.94; $M_{r\phi}$0.14; Best double couple: $M_0$7.60000×10^17^ NP1:ϕ_s239.00000°, δ73.00000°, λ157.00000°. NP2:ϕ_s336.00000°, δ68.00000°, λ18.00000°. Principal axes: T 6.8600, Plg27.0000°, Azm196.0000°; N 1.2400, Plg61.0000°, Azm24.0000°; P -8.1100, Plg3.0000°, Azm288.0000°;*
*IDC **21** 00:16:27.3±1.5, 56°.08S×27°.18W, h64km±12km, mb5.2/19, mb1 5.2/20, mb1mx5.2/24, mbtmp5.5/20, MS5.4/18, Ms1 5.4/18, ms1mx5.2/23 Error ellipse: s-maj=12.1km s-min=10.4km az=21.0*
ISC 21 00:16:27.1±0.5, 56°.15S±0°.05×27°.18W±0°.04, h64km±3km, h63km:pP-P, n829, σ1s53/826, mb5.7/95, 17C-17D, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HOPE	**Hope Point**	**5.65**	**286**	*e*Pn	**Pn**	**00 17 47.4**	**-0.9**
HOPE				*e*Sn	**Sn**	**00 18 48.4**	**-3.4**
VNA1	**Neumayer--Stat**	**16.70**	**158**	P	**P**	**00 20 20.5**	**+2.7**
VNA3	**Neumayer Olymp**	**16.89**	**160**	P	**P**	**00 20 20.3**	**+0.2**
VNA2	**Neumayer--Watz**	**17.09**	**158**	P	**Pn**	**00 20 21.5**	**+0.1**
	baz=321,slow=13						
EFI	**East Falkland**	**18.64**	**271**	‖*e*P	**Pn**	**00 20 40.7**	**+0.4**
EFI				pmax	pmax		
	comp=Z,247nm,1.1s						
EFI	**East Falkland**	**18.64**	**271**	*e*P	**P**	**00 20 39.6**	**+0.3**
	comp=Z,194nm,0.9s						
SNAA	**Sanae**	**18.65**	**156**	P	**Pn**	**00 20 40.2**	**-0.1**
SNAA	**Sanae**	**18.65**	**156**	*e*P	**P**	**00 20 39.8**	**+0.4**
SNAA				pmax	pmax		
	comp=Z,230nm,0.8s						
SNAA	**Sanae**	**18.65**	**156**	*e*P	**P**	**00 20 39.8**	**+0.4**
	comp=Z,226nm,0.8s						
SNAA				*e*Sn	**Sn**	**00 24 08.3**	**+0.4**
PMSA	**Palmer Station**	**19.84**	**229**	P	**Pn**	**00 20 53.8**	**-0.5**
	comp=Z,4.2nm,0.3s,baz=67,slow=11,SNR=12						
PMSA				PcP	**PcP**	**00 25 07.9**	**+0.9**
	comp=Z,0.8nm,0.3s,baz=45,slow=5.7,SNR=3.7						
PMSA				LR	LR	00 27 36.3	
	comp=Z,7μm,18.2s,baz=85,slow=34						
PMSA				ScP	**ScP**	**00 28 36.9**	**-0.3**
	comp=Z,2.0nm,0.3s,baz=115,slow=3.2,SNR=5.4						
PMSA	**Palmer Station**	**19.84**	**229**	*e*P	**P**	**00 20 53.2**	**+1.0**
	comp=Z,741nm,0.8s						
PMSA				PcP	**PcP**	**00 25 07.9**	**+0.9**
PMSA				ScP	**ScP**	**00 28 36.9**	**-0.3**
NVL	**N'lazarevskaya**	**22.18**	**146**	‖*i* P	**P**	**00 21 18.8**	**+1.5**
NVL				*e*		00 21 41.1	
NVL				*i* S	**S**	**00 25 20.6**	**+3.3**
USHA	**Ushuaia**	**23.16**	**256**	P	**P**	**00 21 27.8**	**0.0**
	comp=Z,278nm,0.9s,baz=76,slow=12,SNR=19						
USHA				PcP	**PcP**	**00 25 14.3**	**+0.6**
	comp=Z,97nm,0.9s,baz=88,slow=5.7,SNR=4.6						
USHA				LR	LR	00 28 49.6	
	comp=Z,37μm,18.7s,baz=85,slow=32						
CHRN	**Cochrane**	**29.03**	**268**	*e*P	**P**	**00 22 21.6**	**+0.8**
	comp=Z,28nm,0.8s						
TRQA	**Tornquist**	**29.37**	**293**	*e*P	**P**	**00 22 23.2**	**-0.7**
	comp=Z,68nm,0.9s						
TRQA				*e*ScP	**ScP**	**00 29 04.4**	**+0.1**
LPA	**La Plata**	**29.84**	**302**	*de*P	**P**	**00 22 31.0**	**+3.0**
LPA				sP	**pP**	**00 22 46.0**	**+2.4**
LPA				pPP		00 23 34.0	
LPA				S	**S**	**00 27 22.0**	**+1.8**
LPA				sS	**sS**	**00 27 44.0**	**-2.8**
LPA				SS	**SS**	**00 29 32.0**	**+2.9**
SYO	**Syowa Base**	**31.50**	**141**	‖*e*P	**P**	**00 22 41.0**	**-1.3**
SYO	**Syowa Base**	**31.50**	**141**	‖*i*pP	pP	00 22 52.2	-5.7
PLCA	**Paso Flores**	**32.02**	**280**	P	**P**	**00 22 46.1**	**-1.2**
	comp=Z,9.0nm,0.6s,baz=168,slow=8.3,SNR=21						
PLCA				PcP	**PcP**	**00 25 35.7**	**+0.2**
	comp=Z,16nm,0.8s,baz=126,slow=1.7,SNR=5.0						
PLCA				ScP	**ScP**	**00 29 11.2**	**-1.9**
	comp=Z,8.3nm,0.7s,baz=138,slow=5.0,SNR=9.8						
PLCA				LR	LR	00 35 19.9	
	comp=Z,4μm,20.4s,baz=156,slow=35						
PLCA	**Paso Flores**	**32.02**	**280**	*e*P	**P**	**00 22 46.3**	**-1.0**
PLCA				pmax	pmax		
	comp=Z,33nm,1.1s						
PLCA	**Paso Flores**	**32.02**	**280**	*e*P	**P**	**00 22 46.3**	**-1.0**
	comp=Z,33nm,1.1s						
PLCA				PcP	**PcP**	**00 25 35.7**	**+0.2**
PLCA				*e*ScP	**ScP**	**00 29 11.7**	**-1.5**
QSPA	**South Pole Qui**	**34.10**	**180**	*e*P	**P**	**00 23 06.6**	**+1.3**
	comp=Z,86nm,0.7s						
QSPA				*e*PcP	**PcP**	**00 25 41.8**	**+0.8**
QSPA				LR	LR		
	comp=Z,9μm,20.0s						
SUCO	**SUCO**	**34.51**	**295**	*i* P	**P**	**00 23 08.8**	**-0.3**
SUCO				IAmb	IAmb	00 23 22.8	
	comp=Z,99nm,0.8s						
SPB	**Sao Paulo**	**35.76**	**327**	*e*P	**P**	**00 23 19.3**	**-0.4**
	comp=Z,114nm,1.3s						
SPB				LR	LR		
	comp=Z,5μm,20.0s						
TCA	**Tanti**	**35.98**	**298**	*i* P	**P**	**00 23 20.9**	**-0.8**
	baz=159,slow=7.9						
TCA				IAmb	IAmb	00 23 33.5	
	comp=Z,134nm,1.2s						
ACAN	**Cantantal**	**36.53**	**294**	*e*P	**P**	**00 23 24.4**	**-2.0**
CPUP	**Villa Florida**	**36.88**	**311**	P	**P**	**00 23 28.7**	**-0.5**
	comp=Z,98nm,0.9s,baz=151,slow=7.8,SNR=152						
CPUP				PcP	**PcP**	**00 25 49.9**	**+0.3**
	comp=Z,23nm,0.7s,baz=58,slow=1.1,SNR=7.1						
CPUP				ScP	**ScP**	**00 29 28.5**	**-2.0**
	comp=Z,23nm,1.1s,baz=102,slow=2.0,SNR=7.6						
CPUP				LR	LR	00 37 09.7	
	comp=Z,5μm,21.4s,baz=158,slow=34						
CPUP	**Villa Florida**	**36.88**	**311**	*e*P	**P**	**00 23 28.4**	**-0.8**
CPUP				PcP	**PcP**	**00 25 49.9**	**+0.3**
CPUP				*e*ScP	**ScP**	**00 29 29.6**	**-0.9**
AUSP	**Uspallata**	**37.71**	**291**	*e*P	**P**	**00 23 35.6**	**-1.0**
ROC1	**El Roble**	**37.98**	**289**	*e*P	**P**	**00 23 38.9**	**+0.1**
	comp=Z,107nm,0.7s						
ROC1				*e*S	**S**	**00 29 29.5**	**+3.3**
RTLS	**Leoncito**	**38.00**	**292**	*e*P	**P**	**00 23 38.2**	**-0.8**
AMOG	**MOGNA**	**38.27**	**294**	*e*P	**P**	**00 23 40.6**	**-0.4**
CYA	**Choya**	**38.95**	**299**	*i* P	**P**	**00 23 44.7**	**-2.0**
CYA				IAmb	IAmb	00 23 46.2	
	comp=Z,90nm,0.9s						
AGUA	**GUANDACOL**	**39.44**	**295**	*e*P	**P**	**00 23 50.9**	**+0.1**
VCA	**Vinchina**	**39.90**	**296**	*e*P	**P**	**00 23 55.0**	**+0.2**
VCA				IAmb	IAmb	00 24 40.7	
	comp=Z,181nm,1.0s						
MAW	**Mawson**	**40.06**	**143**	P	**P**	**00 23 56.4**	**+0.9**
	comp=Z,75nm,0.7s,baz=235,slow=8.3,SNR=89						
MAW				ScP	**ScP**	**00 29 42.8**	**+0.8**
	comp=Z,9.5nm,0.7s,baz=170,slow=4.0,SNR=6.5						
MAW				LR	LR	00 38 09.0	
	comp=Z,6μm,21.9s,baz=256,slow=32						
AHML	**Horco Molle**	**40.11**	**301**	*e*P	**P**	**00 23 54.5**	**-1.9**
AHML				IAmb	IAmb	00 24 11.4	
	comp=N,34nm,0.7s						
SUR	**Sutherland**	**40.66**	**75**	P	**P**	**00 24 01.7**	**+0.6**
	comp=N,5.3nm,0.9s,baz=207,slow=8.9,SNR=48						
SUR	**Sutherland**	**40.66**	**75**	*e*P	**P**	**00 24 01.0**	**-0.1**
	comp=N,103nm,1.0s						
SUR				LR	LR		
	comp=Z,12μm,22.0s						
LCO	**Las Campanas**	**40.95**	**293**	*e*P	**P**	**00 24 03.0**	**-0.6**
	comp=Z,74nm,0.9s						
LCO				LR	LR		
	comp=Z,4μm,22.0s						
FSA	**Cafayete**	**40.98**	**301**	*i* P	**P**	**00 24 02.0**	**-1.8**
FSA				IAmb	IAmb	00 25 50.8	
	comp=Z,100nm,1.5s						
SLA	**San Lorenzo**	**41.93**	**302**	*e*P	**P**	**00 24 10.4**	**-1.1**
SLA				IAmb	IAmb	00 24 32.7	
	comp=Z,74nm,1.0s						
ALOL	**LOMAS DE OLMED**	**42.00**	**305**	*i* P	**P**	**00 24 12.3**	**+0.3**
ASTB	**Santa Barbara**	**42.10**	**304**	*i* P	**P**	**00 24 13.2**	**+0.3**
AZAP	**Zapla**	**42.15**	**303**	*e*P	**P**	**00 24 12.6**	**-0.8**
AZAP				IAmb	IAmb	00 24 28.8	
	comp=Z,249nm,0.9s						
HJA	**Humahuaca**	**43.18**	**304**	*i* P	**P**	**00 24 21.4**	**-0.5**
HJA				IAmb	IAmb	00 24 43.3	
	comp=Z,52nm,0.9s						
SHEL	**Horse Pasture**	**43.32**	**31**	*e*P	**P**	**00 24 22.0**	**-0.7**
SHEL				pmax	pmax		
	comp=Z,150nm,1.0s						
SHEL	**Horse Pasture**	**43.32**	**31**	*e*P	**P**	**00 24 22.0**	**-0.7**
	comp=Z,151nm,0.9s						
SHEL				LR	LR		
	comp=Z,2μm,19.0s						
BDFB	**Brasilia**	**43.45**	**330**	LR	LR	00 40 14.6	
	comp=Z,22μm,20.0s,baz=102,slow=33						
YJA	**Yavi**	**44.12**	**304**	IAmb	IAmb	00 25 07.5	
	comp=Z,44nm,1.0s						
LVC	**Limon Verde**	**45.36**	**300**	*i* P	**P**	**00 24 39.8**	**+0.5**
LVC	**Limon Verde**	**45.36**	**300**	*e*P	**P**	**00 24 38.9**	**-0.4**
	comp=Z,144nm,0.8s						
LVC				*e*ScP	**ScP**	**00 30 03.8**	**-0.7**
LVC				LR	LR		
	comp=Z,4μm,21.0s						
PB10	**IPOC Station P**	**45.40**	**298**	*e*P	**P**	**00 24 39.1**	**-0.1**
SBA	**Scott Base**	**45.98**	**184**	*e*P	**P**	**00 24 44.3**	**+1.2**
SBA				pmax	pmax		
	comp=Z,210nm,1.1s						
SBA	**Scott Base**	**45.98**	**184**	*e*P	**P**	**00 24 44.3**	**+1.2**
	comp=Z,212nm,1.1s						
BOSA	**Boshof**	**45.99**	**76**	P	**P**	**00 24 43.2**	**-0.6**
	comp=Z,48nm,0.9s,baz=212,slow=6.8,SNR=39						
BOSA				LR	LR	00 40 21.7	
	comp=Z,10μm,20.6s,baz=220,slow=31						
BOSA	**Boshof**	**45.99**	**76**	*e*P	**P**	**00 24 43.4**	**-0.5**
BOSA				pmax	pmax		
	comp=Z,79nm,1.1s						
BOSA	**Boshof**	**45.99**	**76**	*e*P	**P**	**00 24 43.4**	**-0.6**
	comp=Z,79nm,1.1s						
PB04	**IPOC Station P**	**46.19**	**299**	*e*P	**P**	**00 24 44.2**	**-1.5**
	comp=Z,158nm,0.9s						
VNDA	**Vanda**	**46.47**	**183**	P	**P**	**00 24 48.6**	**+1.7**
	comp=Z,190nm,0.8s,baz=186,slow=6.6,SNR=232						
VNDA				ScP	**ScP**	**00 30 09.3**	**+1.4**
	comp=Z,7.8nm,0.8s,baz=219,slow=4.6,SNR=4.3						
VNDA				LR	LR	00 45 13.4	
	comp=Z,2μm,19.1s,baz=168,slow=37						
VNDA	**Vanda**	**46.47**	**183**	*e*P	**P**	**00 24 47.8**	**+0.8**
	comp=Z,188nm,0.8s						
VNDA				ScP	**ScP**	**00 30 09.3**	**+1.4**
PB01	**IPOC Station P**	**46.97**	**301**	*e*P	**P**	**00 24 51.9**	**+0.3**
	comp=Z,258nm,0.9s						
SIV	**San Ignacio**	**47.65**	**313**	P	**P**	**00 24 56.5**	**-0.3**
	comp=Z,27nm,0.8s,baz=166,slow=8.4,SNR=46						
SIV				ScP	**ScP**	**00 30 12.9**	**-0.8**
	comp=Z,9.6nm,0.9s,baz=182,slow=6.0,SNR=8.9						
H10S2	**ASCENSION HYDR**	**48.10**	**17**	T	T	01 17 14.1	
	baz=190,slow=75,SNR=254						
H10S3	**ASCENSION HYDR**	**48.10**	**17**	T	T	01 17 12.0	
	baz=190,slow=75,SNR=351						
H10S1	**ASCENSION HYDR**	**48.12**	**17**	T	T	01 17 14.4	
	baz=190,slow=75,SNR=305						
PB11	**IPOC Station P**	**48.14**	**301**	*e*P	**P**

comp=Z,5.9nm,0.7s,baz=143,slow=5.0,SNR=5.5
LPAZ LR LR 00 47 30.4
comp=Z,1μm,20.1s,baz=150,slow=37
LPAZ La Paz 50.44 305 *e*P **P 00 25 19.1 +0.3**
comp=Z,97nm,0.8s
LPAZ ScP **ScP 00 30 25.8 -0.6**
RCBR Riachuelo 50.66 349 P **P 00 25 19.5 -0.4**
comp=Z,7.4nm,0.6s,baz=158,slow=10,SNR=4.8
RCBR Riachuelo 50.66 349 *e*P **P 00 25 20.1 +0.2**
comp=Z,41nm,1.0s
RCBR LR LR
comp=Z,3μm,19.0s
CASY Casey 53.81 160 *e*P **P 00 25 43.7 +1.1**
comp=Z,102nm,0.9s
CASY *e*ScP **ScP 00 30 42.6 +3.1**
CASY LR LR
comp=Z,2μm,22.0s
MATP Matopo 54.31 73 P **P 00 25 45.7 -1.2**
comp=Z,64nm,0.9s,baz=212,slow=7.3,SNR=69
PAF Port-aux-Franc 54.55 127 PFAKE 00 26 00.0 +12
PAF LR LR
comp=Z,5μm,21.0s
SAML Samuel 54.88 315 *e*P **P 00 25 50.4 -0.5**
comp=Z,88nm,0.9s
SAML LR LR
comp=Z,5μm,22.0s
NNA Nana 58.30 299 *i* P **P 00 26 15.9 +0.6**
NNA Nana 58.30 299 *e*P **P 00 26 15.5 +0.2**
comp=Z,221nm,0.9s
NNA LR LR
comp=Z,968nm,22.0s
LSZ Lusaka 58.41 69 *e*P **P 00 26 15.9 -0.2**
LSZ pmax pmax
comp=Z,96nm,1.2s
LSZ Lusaka 58.41 69 *e*P **P 00 26 15.9 -0.2**
comp=Z,96nm,1.2s
LSZ LR LR
comp=Z,4μm,21.0s
KMZ Kasempa 58.73 65 *i* P **P 00 26 15.8 -2.6**
KMZ *i* P **P 00 26 16.4 -1.9**
KMZ *i* P **P 00 26 16.6 -1.8**
KMZ *i* 00 26 20.9
baz=215,slow=8.6
KMZ *i* 00 26 31.9
KMZ *i* 00 26 34.7
PTGA Pitinga 61.26 322 *e*P **P 00 26 34.5 -0.9**
comp=Z,26nm,0.6s
PTGA LR LR
comp=Z,40μm,21.0s
RPN Rapa Nui 63.64 260 PFAKE 00 27 00.0 +8.7
RPN LR LR
comp=Z,1μm,20.0s
LIC Lamto 64.79 24 *e*P **P 00 26 57.2 -1.6**
comp=Z,628nm,1.9s
KIC Kosan Boka 64.99 25 *e*P **P 00 27 00.1 0.0**
comp=Z,105nm,0.9s
TIC Toumodi 65.20 24 *e*P **P 00 27 01.4 -0.1**
DBIC Dimbokro 65.26 25 P **P 00 27 01.1 -0.7**
comp=Z,32nm,0.6s,baz=165,slow=8.2,SNR=84
DBIC LR LR 00 48 23.6
comp=Z,6μm,22.0s,baz=168,slow=29
DBIC Dimbokro 65.26 25 *e*P **P 00 27 01.7 -0.2**
DBIC pmax pmax
comp=Z,38nm,0.7s
DBIC Dimbokro 65.26 25 *e*P **P 00 27 01.6 -0.2**
comp=Z,38nm,0.7s
RER Riviere de l'E 68.79 97 *e*P **P 00 27 25.6 +1.1**
comp=Z,163nm,0.8s
RER LR LR
comp=Z,5μm,19.0s
FLOC Florencia 69.63 307 *e*P **P 00 27 28.3 -1.3**
OTAV Otavalo 69.72 304 *e*P **P 00 27 30.8 +0.1**
comp=Z,58nm,0.9s
OTAV LR LR
comp=Z,2μm,22.0s
OTAV Otavalo 69.72 304 *e*P **P 00 27 32.3 +1.6**
SJAC San Juan de Ar 70.39 309 *e*P **P 00 27 32.8 -1.5**
MRIV Mauritius Mete 70.46 97 *e*P **P 00 27 35.9 +1.2**
PRAC Prado 71.19 309 *e*P **P 00 27 38.5 -0.6**
ROSC El Rosal 71.95 310 P **P 00 27 43.9 -0.2**
comp=Z,37nm,0.9s,baz=191,slow=6.1,SNR=14
ROSC LR LR 01 00 50.8
comp=Z,1μm,20.9s,baz=184,slow=37
ROSC El Rosal 71.95 310 *e*P **P 00 27 44.8 +0.7**
comp=Z,25nm,0.7s
ROSC El Rosal 71.95 310 *e*P **P 00 27 44.1 +0.1**
GRGC Isla de Gorgon 72.02 305 *e*P **P 00 27 44.1 +0.1**
RUSC La Rusia 72.37 311 *e*P **P 00 27 45.8 -0.8**
MALC Bahia Malaga 72.54 307 *e*P **P 00 27 47.5 +0.4**
GUYC Guyana, Colomb 72.76 309 *e*P **P 00 27 48.1 -0.9**
NORC Norcasia 72.84 310 *e*P **P 00 27 46.4 -2.5**
PCRV Puerto La Cruz 73.03 321 LR LR 00 59 34.0
comp=Z,2μm,21.1s,slow=36
BARC Barichara 73.04 312 *e*P **P 00 27 47.5 -2.8**
PAMC Pamplona, Colo 73.52 312 *e*P **P 00 27 52.1 -1.4**
HELC Santa Helena 73.68 309 *e*P **P 00 27 50.4 -3.9**
GRGR Grenville 73.86 325 PFAKE 00 28 10.0 +15
GRGR LR LR
comp=Z,2μm,21.0s
CBRI Barrientos, No 73.90 313 *e*P **P 00 27 53.8 -1.6**
GRMC Gramalote, San 73.90 313 *e*P **P 00 27 54.3 -1.0**
SDV Santo Domingo 74.08 315 LR LR 00 59 32.4
comp=Z,5μm,21.9s,baz=154,slow=35
SDV Santo Domingo 74.08 315 *e*P **P 00 27 57.1 +0.7**
comp=Z,101nm,0.8s
BBGH Gun Hill 74.15 327 PFAKE 00 28 10.0 +14
BBGH LR LR
comp=Z,5μm,20.0s
OCAC Ocana 74.59 312 *e*P **P 00 27 56.6 -2.7**
DBBC Dabeiba 74.72 309 *e*P **P 00 27 59.3 -0.7**
KMBO Kilima Mbogo 75.07 69 *e*P **P 00 28 06.0 +3.7**
KMBO pmax pmax
comp=Z,49nm,1.5s
KMBO Kilima Mbogo 75.07 69 *e*P **P 00 28 06.0 +3.7**
comp=Z,49nm,1.5s
KMBO LR LR
comp=Z,3μm,21.0s
ZAM Aeronautique 75.95 326 *e*P **P 00 28 02.5 -4.4**
MOTC Monteria, Cord 76.06 310 *e*P **P 00 28 07.3 -0.2**
FDF Fort de France 76.14 326 PFAKE 00 28 20.0 +12
FDF LR LR
comp=Z,1μm,22.0s
SJCC San Jacinto, C 76.86 311 *e*P **P 00 28 12.4 +0.3**
TUZ Tuapeka 77.28 192 PN **P 00 28 14.4 +0.3**
GDHS Morne Mazeau, 77.78 326 *e*P **P 00 28 18.4 +1.2**
comp=Z,308nm,0.8s
SEG Port Louis 77.82 326 *e*P P 00 28 05.3 -12
MLZ Mavora Lakes 78.03 191 *e*P **P 00 28 19.7 +1.3**
comp=Z,344nm,1.8s
MLZ Mavora Lakes 78.03 191 PN **P 00 28 18.6 +0.3**
DCZ Deep Cove 78.03 190 *e*P **P 00 28 19.3 +1.0**
comp=Z,59nm,0.8s
ODZ Otahua Downs 78.06 193 *e*P **P 00 28 19.7 +1.2**
comp=Z,31nm,0.8s
BCIP Isla Barro Col 78.23 307 *e*P **P 00 28 20.5 +0.8**
comp=Z,36nm,0.9s
BCIP LR LR
comp=Z,1μm,22.0s
BCIP Isla Barro Col 78.23 307 *e*P **P 00 28 19.1 -0.6**
WKZ Wanaka 78.47 192 *e*P **P 00 28 22.4 +1.6**
comp=Z,99nm,0.9s
LBZ Lake Benmore 78.77 193 *e*P **P 00 28 23.4 +1.1**
comp=Z,304nm,1.9s
ANWB Willy Bob 79.10 327 PFAKE 00 28 40.0 +16
ANWB LR LR
comp=Z,2μm,21.0s
MQZ McQueen's Vall 79.11 195 *e*P **P 00 28 24.7 +0.5**
comp=Z,62nm,0.8s
JCZ Jackson Bay 79.24 192 PN **P 00 28 26.2 +1.2**
CRLZ Canterbury Las 79.24 195 *e*P **P 00 28 26.8 +1.9**
comp=Z,77nm,1.0s
RPZ Rata Peaks 79.32 193 P **P 00 28 25.5 +0.1**
comp=Z,62nm,0.8s,baz=204,slow=2.3,SNR=29
RPZ Rata Peaks 79.32 193 *e*P **P 00 28 26.1 +0.7**
comp=Z,88nm,0.9s
OXZ Oxford 79.57 194 *e*P **P 00 28 27.8 +1.0**
comp=Z,271nm,1.9s
FOZ Fox Glacier 79.65 192 *e*P **P 00 28 28.1 +0.9**
comp=Z,67nm,0.9s
SMRT St. Maarten 79.86 325 *e*P **P 00 28 30.3 +1.8**
comp=Z,91nm,0.8s
LTZ Lake Taylor 80.07 194 *e*P **P 00 28 30.2 +0.6**
comp=Z,118nm,0.9s
LTZ Lake Taylor 80.07 194 PN **P 00 28 29.6 +0.1**
INZ Inchbonnie 80.24 194 PN **P 00 28 29.8 -0.6**
KHZ Kahutara 80.25 195 *e*P **P 00 28 31.4 +1.0**
comp=Z,38nm,0.8s
RKT Rikitea 80.43 243 *e*P **P 00 28 33.0 +1.3**
comp=Z,104nm,1.1s
RKT Rikitea 80.43 243 *e*S **S 00 38 36.8 +4.0**
comp=Z,1μm,33.2s
RKT Rikitea 80.43 243 *e*LQ LQ 00 50 01.1
comp=Z,2μm,35.2s
RKT *e*LR LR 00 53 47.5
comp=Z,4μm,27.5s,baz=151
RKT Rikitea 80.43 243 *e*T T 01 57 13.8
comp=Z,6.7nm,0.2s
STVI Saint Thomas 80.75 324 *e*P **P 00 28 32.7 -0.5**
comp=Z,64nm,0.9s
PLWZ Palliser 80.81 197 PN **P 00 28 34.1 +0.6**
TRWZ Traveller 80.90 197 PN **P 00 28 35.0 +1.0**
MSWZ Moikau Station 80.96 197 PN **P 00 28 34.8 +0.6**
PAWZ Paruwai Farm 80.96 197 PN **P 00 28 34.4 +0.1**
CBYP Canovanas 80.98 323 *e*P **P 00 28 34.7 +0.1**
comp=Z,61nm,1.0s
THZ Tophouse 80.98 195 *e*P **P 00 28 35.1 +0.6**
comp=Z,157nm,0.7s
THZ Tophouse 80.98 195 PN **P 00 28 34.3 -0.1**
SNZO South Karori 81.15 197 *e*P **P 00 28 35.9 +0.6**
comp=Z,114nm,0.8s
TMWZ Te Maipa 81.15 197 PN **P 00 28 35.7 +0.3**
MTW Mount Morrison 81.17 197 PN **P 00 28 35.9 +0.5**
TAU Tasmania Unive 81.20 176 *e*P **P 00 28 35.7 +0.2**
TAU pmax pmax
comp=Z,330nm,0.9s
TAU Tasmania Unive 81.20 176 *e*P **P 00 28 35.7 +0.2**
comp=Z,328nm,0.9s
TAU LR LR
comp=Z,2μm,20.0s
CAW Cannon Point 81.29 197 PN **P 00 28 36.2 +0.2**
TCW Tory Channel 81.31 196 PN **P 00 28 36.1 0.0**
HOWZ Holdsworth Sta 81.42 197 PN **P 00 28 36.7 -0.1**
TIWZ Tintock 81.47 198 PN **P 00 28 37.2 +0.2**
BFZ Birch Farm 81.51 198 *e*P **P 00 28 37.6 +0.4**
comp=Z,99nm,0.8s
BFZ Birch Farm 81.51 198 PN **P 00 28 37.3 +0.2**
KIW Kapiti Island 81.55 197 PN **P 00 28 38.1 +0.6**
OGWZ Otaki Gorge 81.55 197 PN **P 00 28 37.5 0.0**
MRZ Mangatainoka R 81.64 197 PN **P 00 28 37.9 0.0**
DUWZ D'Urville Isla 81.77 196 PN **P 00 28 38.4 -0.2**
BANI BANI 82.67 319 *e*P **P 00 28 44.2 +0.7**
BKZ Black Stump Fm 82.94 198 *e*P **P 00 28 45.2 +0.4**
comp=Z,296nm,2.0s
SNGZ Shannon Statio 83.16 199 PN **P 00 28 46.7 +0.8**
TAM Tamanrasset 83.38 30 *e*P **P 00 28 48.1 +1.0**
TAM pmax pmax
comp=Z,42nm,1.2s
TAM Tamanrasset 83.38 30 *e*P **P 00 28 48.1 +1.0**
comp=Z,42nm,1.2s
TAM LR LR
comp=Z,1μm,19.0s
SDDR Presa de Saban 83.56 318 *e*P **P 00 28 48.2 +0.2**
comp=Z,28nm,0.8s
URZ Urewera 83.71 199 P **P 00 28 47.7 -0.9**
comp=Z,30nm,0.8s,baz=195,slow=1.8,SNR=21
URZ Urewera 83.71 199 *e*P **P 00 28 49.0 +0.3**
comp=Z,328nm,1.9s
HIZ Hauiti 83.85 197 *e*P **P 00 28 50.0 +0.6**
comp=Z,732nm,1.9s
MTDJ Mount Denham 85.31 313 PFAKE 00 29 10.0 +13
MTDJ LR LR
comp=Z,3μm,21.0s
GRTK Grand Turk 85.81 320 PFAKE 00 29 10.0 +11
GRTK LR LR
comp=Z,1μm,21.0s
GTBY Guantanamo Bay 85.87 316 PFAKE 00 29 10.0 +10
GTBY LR LR
comp=Z,3μm,22.0s
TGUH Tegucigalpa,Un 85.94 303 *e*P **P 00 29 00.7 +0.7**
comp=Z,42nm,0.8s
NWAO Narrogin (SRO) 86.24 151 P **P 00 29 01.0 -0.5**
comp=Z,17nm,0.7s,baz=58,slow=5.3,SNR=7.9
NWAO Narrogin (SRO) 86.24 151 P **P 00 29 01.0 -0.5**
NWAO pmax pmax
comp=Z,17nm,0.7s
NWAO Narrogin (SRO) 86.24 151 P **P 00 29 01.0 -0.5**
NWAO LR LR
comp=Z,2μm,22.0s
OUZ Omahuta 87.28 197 *e*P **P 00 29 06.4 0.0**
comp=Z,106nm,1.2s
CAN Canberra 88.83 177 *e*P **P 00 29 14.4 +0.5**
CAN pmax pmax
comp=Z,72nm,0.9s
CAN Canberra 88.83 177 *e*P **P 00 29 14.3 +0.5**
comp=Z,72nm,0.9s
CAN LR LR
comp=Z,2μm,19.0s
FUL Funchal 88.88 9 *e*T T 02 07 07.8
PMAR Madeira 88.96 9 *e*T T 02 07 09.7
PMOZ Porto Moniz, M 89.03 8 *e*LR LR 00 56 37.9
comp=Z,1μm,22.0s
PMOZ Porto Moniz, M 89.03 8 *e*T T 02 07 17.3
DGAR Diego Garcia 89.24 102 PFAKE 00 29 30.0 +14
DGAR LR LR
comp=Z,2μm,19.0s
H08N3 Diego Garcia H 89.32 100 T T 02 08 51.2
baz=216,slow=75,SNR=20
H08N1 Diego Garcia H 89.33 100 T T 02 08 46.9
baz=216,slow=75,SNR=16
H08N2 Diego Garcia H 89.34 100 T T 02 08 52.4
baz=216,slow=75,SNR=20
CCIG Comitan 90.20 300 *e*P **P 00 29 20.9 +0.4**
comp=Z,28nm,0.9s
BBOO Buckleboo 90.24 166 *e*P **P 00 29 21.1 +0.6**
comp=Z,50nm,0.9s
MEH Mehetia 91.19 235 *e*P **P 00 29 25.9 +0.8**
comp=Z,15nm,0.9s
RAO Raoul Island 91.36 205 PFAKE 00 29 40.0 +14
RAO LR LR
comp=Z,2μm,20.0s
RTC Rabat Centre 91.44 17 PFAKE 00 29 40.0 +14
RTC LR LR
comp=Z,21μm,22.0s
TEIG Tepich 91.77 305 *e*P **P 00 29 28.0 +0.5**
comp=Z,48nm,0.6s
STKA Stephens Creek 91.80 170 P **P 00 29 28.8 +1.1**
comp=Z,22nm,0.7s,baz=156,slow=5.0,SNR=33
STKA PP **PP 00 33 05.8 -0.5**
comp=Z,14nm,0.8s,baz=175,slow=7.1,SNR=7.1
STKA LR LR 01 09 29.7
comp=Z,3μm,19.4s,baz=183,slow=35
STKA Stephens Creek 91.80 170 *e*P **P 00 29 28.0 +0.3**
comp=Z,7.4nm,0.9s
STKA *e*PP **PP 00 33 07.0 +0.7**
TVO Taravao 91.81 234 *e*P **P 00 29 28.8 +0.8**
comp=Z,36nm,1.0s
TIAR Tiarei 92.04 234 *e*P **P 00 29 29.8 +0.7**
comp=Z,14nm,1.1s
DAMY Dhamar 92.06 67 *e*P **P 00 29 33.4 +4.1**
comp=Z,18nm,0.9s
PPT2 Papeete2 92.12 234 *e*S **S 00 40 28.4 +1.7**
comp=Z,1μm,32.0s
PPT2 Papeete2 92.12 234 *e*LR LR 00 59 11.0
comp=Z,5μm,28.0s,baz=159
PPT Papeete 92.14 234 LR LR 01 01 37.0
comp=Z,935nm,21.3s,baz=149,slow=29
PSMA Santa Maria 92.80 2 *e*P sP 00 29 54.3 -2.4
comp=Z,58nm,1.2s
PSMN Pico do Norte, 92.81 2 *e*P pP 00 29 43.9 -6.0
comp=Z,81nm,1.3s
CMLA Cha da Macela 93.56 1 *e*P pP 00 29 52.2 -1.1
CMLA Cha da Macela 93.56 1 PFAKE 00 29 50.0 +15
CMLA LR LR
comp=Z,1μm,22.0s
BART Pico Bartolome 93.58 2 *e*P sP 00 30 07.1 +6.7
comp=Z,116nm,1.2s
PSET Sete Cidades 93.62 1 *e*P pP 00 29 51.2 -2.4
comp=Z,123nm,1.9s
ARMA Armidale 93.77 179 *e*P **P 00 29 38.0 +1.1**
comp=Z,21nm,0.8s
BBSR BB Station 93.79 329 PFAKE 00 29 50.0 +14
BBSR LR LR
comp=Z,2μm,22.0s
PFVI Vila Bisbo 94.23 15 *e*LR LR 00 59 59.8
comp=Z,1μm,22.0s
MORF Marmelete 94.42 15 *e*P **P 00 29 39.5 +0.1**
MORF AMS AMS 01 05 38.2
comp=Z,1μm,24.2s
MORF Marmelete 94.42 15 *e*P **P 00 29 42.5 +3.1**
MORF Marmelete 94.42 15 *e*LR LR 01 00 24.2
comp=Z,2μm,22.0s
MORF Marmelete 94.42 15 *e*P **P 00 29 39.4 +0.1**
PCED Cedros 94.42 359 *e*P **P 00 29 37.7 -1.6**
comp=Z,56nm,1.1s
PBDV Barranco-do-Ve 94.47 15 *e*P **P 00 29 42.0 +2.5**
PBDV *e*sP **pP 00 29 57.3 -0.2**
PBDV Barranco-do-Ve 94.47 15 *e*LR LR 01 00 32.3
comp=Z,1μm,22.0s
TLIG Tlapa 94.48 295 *e*P **P 00 29 41.4 +1.2**
comp=Z,39nm,1.0s
ROSA Rosais 94.51 359 *e*P pP 00 29 55.3 -2.3
comp=Z,65nm,1.7s
ROSA Rosais 94.51 359 *e*P **P 00 29 42.8 +3.1**
comp=Z,38nm,1.0s
PVAQ Vaqueiros 94.66 15 *e*P **P 00 29 43.9 +3.5**
PVAQ Vaqueiros 94.66 15 *e*LR LR 01 00 25.4
comp=Z,2μm,22.0s
PCVE Castro Verde 94.83 15 *e*P **P 00 29 43.5 +2.3**
PCVE *e*sP **pP 00 29 58.8 -0.3**
PCVE Castro Verde 94.83 15 *e*LR LR 01 00 34.6
comp=Z,1μm,24.0s
MESJ Messejana 95.01 15 *e*P **P 00 29 42.3 +0.3**
MESJ AMS AMS 01 07 33.5
comp=Z,1μm,22.9s
MESJ Messejana 95.01 15 *e*P **P 00 29 44.3 +2.3**
MESJ *e*sP **pP 00 29 59.7 -0.2**
MESJ Messejana 95.01 15 *e*P **P 00 29 42.3 +0.3**
TAOE Nuku Hiva Isla 95.11 246 *e*SP SP 00 42 13.4 +3.6
comp=Z,453nm,27.1s
TAOE Nuku Hiva Isla 95.11 246 *e*LR LR 01 00 32.4
comp=Z,3μm,26.1s,baz=169
PNCL Nicolau / Gran 95.23 15 *e*P **P 00 29 45.2 +2.2**
PNCL Nicolau / Gran 95.23 15 *e*LR LR 01 00 20.7
comp=Z,1μm,22.0s
PBEJ Beja 95.25 15 *e*P **P 00 29 45.3 +2.2**
comp=Z,31nm,1.4s
PBAR Barrancos 95.51 16 *e*P **P 00 29 47.0 +2.7**
comp=Z,69nm,1.6s
PBAR *e*sP **pP 00 30 02.2 0.0**
EVO Evora 95.72 15 *e*P **P 00 29 47.9 +2.7**
PMAFR Mafra 95.96 14 *e*LR LR 01 00 20.7
comp=Z,2μm,22.0s
PESTR Estremoz 96.11 15 *e*P **P 00 29 50.8 +3.8**
PESTR Estremoz 96.11 15 *e*LR LR 01 00 53.2
comp=Z,2μm,24.0s
PMTG Montargil 96.22 15 *e*P **P 00 29 49.6 +2.2**
PMTG *e*sP **pP 00 30 05.5 +0.1**
PMTG Montargil 96.22 15 *e*LR LR 01 00 46.2
comp=Z,2μm,24.0s
KEST Kesra 96.66 29 LR LR 01 08 32.5
comp=Z,2μm,20.8s,baz=163,slow=32
PMRV Marv??o 96.69 15 *e*P **P 00 29 51.8 +2.2**
PMRV *e*sP **pP 00 30 07.5 -0.1**
PMRV Marv??o 96.69 15 *e*LR LR 01 01 21.1
comp=Z,2μm,22.0s
PCAS Casmilo, Conde 97.14 14 *e*LR LR 01 00 46.2
comp=Z,2μm,20.0s
PAB San Pablo 97.29 18 *e*P Pdif 00 29 53.7 +1.2
PAB pmax pmax
comp=Z,7.0nm,1.3s
PAB MLR MLR
comp=Z,2μm,22.0s
PAB San Pablo 97.29 18 *e*P Pdif 00 29 53.7 +1.2
comp=Z,7.4nm,1.3s
PAB LR LR
comp=Z,2μm,22.0s
ESDC Sonseca Array 97.48 18 P Pdif 00 29 54.0 +0.7
comp=Z,2.1nm,0.8s,baz=187,slow=4.4,SNR=17
ESDC PKKP **PKKPdf 00 46 31.6 -0.7**
comp=Z,1.0nm,0.7s,baz=19,slow=3.3,SNR=6.3
ESDC LR LR 01 09 30.6
comp=Z,2μm,20.4s,baz=155,slow=33
ES19 SONSECA Array 97.51 18 *e*P Pdif 00 29 55.3 +1.8
COCO West Island 97.60 125 PFAKE 00 30 10.0 +16
COCO LR LR
comp=Z,2μm,20.0s
MTE Manteigas 97.62 15 *e*LR LR 01 01 28.0
comp=Z,2μm,22.0s
MTE Manteigas 97.62 15 PFAKE 00 30 10.0 +16
MTE LR LR
comp=Z,1μm,20.0s
MBWA Marble Bar 98.06 149 PFAKE 00 30 10.0 +14
MBWA LR LR
comp=Z,2μm,21.0s
WDD Wied Dalam 98.29 33 PFAKE 00 30 10.0 +13
WDD LR LR
comp=Z,2μm,20.0s
MVO Moncorvo 98.44 15 *e*LR LR 01 01 48.9
comp=Z,1μm,24.0s
POLO Lamas de Olo 98.54 15 *e*LR LR 01 01 51.2
comp=Z,779nm,20.0s
ASAR Alice Springs 98.89 162 P **P 00 29 59.5 -0.7**
comp=Z,19nm,0.8s,baz=187,slow=3.9,SNR=48
ASAR PP **PP 00 34 00.2 -1.2**
comp=Z,9.7nm,0.8s,baz=189,slow=6.1,SNR=10
ASAR PKKP **PKKPdf 00 46 25.9 -0.3**
comp=Z,0.9nm,0.6s,baz=12,slow=2.5,SNR=7.1
ASAR LR LR 01 13 36.8
comp=Z,1μm,19.2s,baz=190,slow=35
AS31 Alice Springs 98.89 162 *e*P Pdif 00 30 00.4 +0.1
comp=Z,6.8nm,0.8s
AS31 *e*PP **PP 00 33 59.4 -2.1**
AS01 Alice Springs 98.90 163 *e*P **P 00 29 59.0 -1.2**
AS01 *e*PP **PP 00 33 58.9 -2.6**
PGAV Gavieira, Arco 99.05 14 *e*LR LR 01 01 38.0
comp=Z,2μm,22.0s
PBRG Braganca 99.11 15 *e*LR LR 01 02 14.4
comp=Z,2μm,20.0s
CLTB Caltabellotta 99.48 31 PFAKE 00 30 10.0 +7.7
CLTB LR LR
comp=Z,581nm,20.0s
NHSC New Hope 99.67 317 PFAKE 00 30 10.0 +6.9
NHSC LR LR
comp=Z,1μm,21.0s
VSL Villasalto 100.21 28 PFAKE 00 30 20.0 +15
VSL LR LR
comp=Z,2μm,20.0s
BRAL Brewton 100.72 311 PFAKE 00 30 20.0 +12
BRAL LR LR
comp=Z,2μm,21.0s
CEL Celeste 100.91 33 PFAKE 00 30 20.0 +11
CEL LR LR
comp=Z,1μm,19.0s
GOGA Godfrey 101.21 315 PFAKE 00 30 20.0 +10
GOGA LR LR
comp=Z,2μm,21.0s
DZM Mont Dzumac 101.23 193 *e*LR LR 01 03 12.2
comp=Z,4μm,22.9s
TIP Timpagrande 102.02 33 *e*Pdif **Pdif 00 30 13.4 -0.1**
TIP LR LR
comp=Z,1μm,20.0s
SANT Santorini 102.43 41 PFAKE 00 30 30.0 +15
SANT LR LR
comp=Z,1μm,19.0s
CUC Castrocucco 102.48 32 PFAKE 00 30 30.0 +14
CUC LR LR
comp=Z,527nm,21.0s
WRA Warramunga Arr 102.61 162 P **Pdif 00 30 16.7 0.0**
comp=Z,7.9nm,0.7s,baz=195,slow=3.9,SNR=30
WRA PP **PP 00 34 27.4 -2.1**
comp=Z,7.8nm,0.8s,baz=190,slow=6.0,SNR=7.2
WRA PKKPbc **PKKPbc 00 46 15.3 +1.7**
comp=Z,1.1nm,0.4s,baz=358,slow=2.9,SNR=32
WB2 Warramunga Arr 102.61 162 *e*Pdif **Pdif 00 30 17.2 +0.5**
WB2 *e*PP **PP 00 34 27.0 -2.5**
WRAB Tennant Creek 102.62 162 *e*P **Pdif 00 30 16.5 -0.3**
WRAB pmax pmax
comp=Z,84nm,2.1s
WRAB Tennant Creek 102.62 162 *e*Pdif **Pdif 00 30 17.3 +0.5**
WRAB *e*PP **PP 00 34 27.1 -2.5**
WRAB LR LR
comp=Z,2μm,21.0s
CBN Corbin Frederi 103.19 322 PFAKE 00 30 30.0 +11
CBN LR LR
comp=Z,959nm,22.0s
MSVF Nonsavu 103.39 205 PFAKE 00 30 30.0 +10
MSVF LR LR
comp=Z,3μm,19.0s
BLA Blacksburg 103.40 319 PFAKE 00 30 30.0 +10
BLA LR LR
comp=Z,784nm,20.0s
CPCT Cooper Cave 103.42 315 *e*PP PP 00 34 34.5 -2.2
CTAO Charters Tower 103.86 174 PFAKE 00 30 30.0 +7.7
CTAO LR LR
comp=Z,6μm,21.0s
AQU L'Aquila 103.96 30 PFAKE 00 30 30.0 +7.9
AQU LR LR
comp=Z,2μm,20.0s

AFI	**Afiamalu**	**104.18**	**215**	PFAKE		00 30 40.0	+16
AFI				LR	LR		
comp=Z,2μm,19.0s							
CSS	**Mathiatis**	**104.27**	**48**	PFAKE		00 30 40.0	+16
CSS				LR	LR		
comp=Z,344nm,20.0s							
SSB	**Saint Sauveur**	**104.53**	**23**	PFAKE		00 30 40.0	+16
SSB				LR	LR		
comp=Z,3μm,22.0s							
NATX	**Nacogdoches**	**104.57**	**306**	PFAKE		00 30 40.0	+15
NATX				LR	LR		
comp=Z,676nm,21.0s							
BNI	**Bardonecchia**	**104.79**	**24**	PFAKE		00 30 40.0	+14
BNI				LR	LR		
comp=Z,3μm,22.0s							
VLC	**Villacollemand**	**104.84**	**27**	PFAKE		00 30 40.0	+14
VLC				LR	LR		
comp=Z,1μm,22.0s							
TIR	**Tirane**	**104.97**	**35**	PFAKE		00 30 40.0	+13
TIR				LR	LR		
comp=Z,1μm,20.0s							
WVT	**Waverly**	**105.34**	**313**	*e*PP	PP	00 34 47.0	-3.9
ISP	**Isparta**	**105.63**	**44**	PFAKE		00 34 50.0	
ISP				LR	LR		
comp=Z,1μm,21.0s							
JCT	**Junction City**	**105.90**	**301**	PFAKE		00 35 00.0	
JCT				LR	LR		
comp=Z,573nm,22.0s							
MIAR	**Mount Ida**	**106.43**	**308**	PFAKE		00 35 00.0	
MIAR				LR	LR		
comp=Z,914nm,21.0s							
WCI	**Wyandotte Cave**	**106.53**	**315**	*e*PP	PP	00 34 58.2	-1.5
TUE	**Stuetta**	**106.75**	**25**	PFAKE		00 35 00.0	
TUE				LR	LR		
comp=Z,2μm,20.0s							
TXAR	**Lajitas Array**	**106.84**	**297**	Pdiff	**Pdif**	**00 30 35.6**	**+0.4**
comp=Z,0.8nm,0.9s,baz=134,slow=7.2,SNR=6.2							
TXAR				PKiKP	**PKiKP**	**00 34 45.5**	**+0.5**
comp=Z,1.6nm,0.8s,baz=164,slow=4.5,SNR=8.7							
TXAR				PKKPbc	**PKKPbc**	**00 46 02.2**	**+0.8**
comp=Z,1.3nm,1.0s,baz=302,slow=2.4,SNR=5.2							
TX31	**Lajitas Ar. Si**	**106.84**	**297**	*e*Pdif	**Pdif**	**00 30 36.0**	**+0.7**
TX31				*e*PKiKP	**PKiKP**	**00 34 45.0**	**0.0**
PKME	**Peaks-Kenny Pk**	**107.08**	**330**	PFAKE		00 35 00.0	
PKME				LR	LR		
comp=Z,1μm,20.0s							
LONY	**Lake Ozonia**	**108.04**	**326**	PFAKE		00 35 00.0	
LONY				LR	LR		
comp=Z,1μm,20.0s							
BFO	**Black Forest**	**108.26**	**24**	PFAKE		00 35 00.0	
BFO				LR	LR		
comp=Z,3μm,21.0s							
ANTO	**Ankara**	**108.28**	**45**	PFAKE		00 35 00.0	
ANTO				LR	LR		
comp=Z,9.0nm,21.0s							
BRTR	**Keskin Array B**	**108.49**	**45**	Pdiff	**Pdif**	**00 30 45.0**	**+2.6**
comp=Z,0.3nm,0.7s,baz=204,slow=8.0,SNR=2.3							
BRTR				PKiKP	**PKiKP**	**00 34 48.7**	**+1.0**
comp=Z,0.8nm,0.9s,baz=195,slow=1.2,SNR=4.9							
BRTR				PKKPbc	**PKKPbc**	**00 45 57.0**	**+0.3**
comp=Z,1.1nm,0.8s,baz=72,slow=2.6,SNR=5.7							
SFIN	**Lafayette**	**108.70**	**316**	*e*PP	PP	00 35 13.1	-2.5
WLF	**Walferdange**	**109.04**	**22**	PFAKE		00 35 00.0	
WLF				LR	LR		
comp=Z,1μm,19.0s							
AAM	**Ann Arbor**	**109.06**	**319**	PFAKE		00 35 00.0	
AAM				LR	LR		
comp=Z,779nm,20.0s							
HDIL	**Hopedale**	**109.72**	**314**	PFAKE		00 35 00.0	
HDIL				LR	LR		
comp=Z,1μm,21.0s							
GERES	**GERESS Array B**	**110.04**	**27**	PKiKP	**PKiKP**	**00 34 50.1**	**-0.2**
comp=Z,1.1nm,0.8s,baz=178,slow=3.9,SNR=6.1							
GERES				PKKPbc	**PKKPbc**	**00 45 52.8**	**+0.8**
comp=Z,0.8nm,0.8s,baz=20,slow=4.4,SNR=6.1							
KHC	**Kasperske Hory**	**110.28**	**27**	*e*PKP	**PKiKP**	**00 34 52.0**	**+1.4**
KHC				*e*PP	**PP**	**00 35 31.5**	**+4.6**
KHC				*e*PS	**PS**	**00 45 05.7**	**+10**
KHC				*e*PKKP	**PKKPbc**	**00 45 52.9**	**+1.8**
KHC				*ex*	x	00 46 02.1	
KHC				AMS	AMS	01 14 30.0	
comp=Z,3μm,21.9s							
KHC	**Kasperske Hory**	**110.28**	**27**	*e*PKiKP	**PKiKP**	**00 34 52.0**	**+1.4**
KHC				*e*		00 35 31.5	
KHC				*e*		00 45 52.9	
KHC				*e*		00 46 02.1	
KHC				MLR	MLR		
comp=Z,3μm,21.9s							
PSZ	**Piszkesteto**	**110.91**	**32**	PFAKE		00 35 00.0	
PSZ				LR	LR		
comp=Z,1μm,21.0s							
TREC	**Trest**	**110.92**	**28**	*e*PS	PS	00 45 09.2	+7.1
TREC				AMS	AMS	01 15 30.0	
comp=Z,2μm,20.9s							
NKC	**Novy Kostel**	**111.01**	**26**	*ex*	x	00 45 16.7	
NKC				AMS	AMS	01 15 40.0	
comp=Z,2μm,21.4s							
GOPC	**GO Pecny, Ondr**	**111.31**	**28**	AMS	AMS	01 14 40.0	
comp=Z,2μm,22.9s							
PRU	**Pruhonice**	**111.31**	**27**	*e*PKP	**PKiKP**	**00 34 55.0**	**+2.5**
PRU				*e*SP	SP	00 44 54.1	-3.9
PRU				AMS	AMS	01 15 20.0	
comp=Z,3μm,21.5s							
PRU	**Pruhonice**	**111.31**	**27**	*e*PKiKP	**PKiKP**	**00 34 55.0**	**+2.5**
PRU				*e*SP	SP	00 44 54.1	-3.9
PRU				MLR	MLR		
comp=Z,3μm,21.5s							
121A	**Cookes Peak, D**	**111.49**	**296**	*e*PKP	**PKiKP**	**00 34 54.6**	**+1.0**
KSU1	**Kansas State U**	**111.57**	**308**	PFAKE		00 35 10.0	
KSU1				LR	LR		
comp=Z,2μm,20.0s							
PVCC	**Panska Ves**	**111.81**	**27**	*e*PKP	**PKiKP**	**00 34 53.7**	**+0.3**
PVCC				*e*PKKP	**PKKPbc**	**00 45 47.5**	**+1.5**
PVCC				AMS	AMS	01 15 50.0	
comp=Z,2μm,21.1s							
PVCC	**Panska Ves**	**111.81**	**27**	*e*PKiKP	**PKiKP**	**00 34 53.7**	**+0.3**
PVCC				MLR	MLR		
comp=Z,2μm,21.1s							
FUNA	**Funafuti**	**111.95**	**208**	PFAKE		00 35 10.0	
FUNA				LR	LR		
comp=Z,16μm,19.0s							
BRG	**Berggiesshubel**	**111.97**	**27**	*e*P	**PKKPbc**	**00 45 46.7**	**+1.2**
comp=Z,4.2nm,0.9s							
KRLC	**Kraliky**	**111.98**	**29**	*e*PKKP	**PKKPbc**	**00 45 47.6**	**+2.1**
JFWS	**Jewell Farm**	**112.09**	**315**	PFAKE		00 35 10.0	
JFWS				LR	LR		
comp=Z,1μm,21.0s							
DPC	**Dobruska-Polom**	**112.11**	**28**	*e*PKP	**PKiKP**	**00 34 54.4**	**+0.3**
DPC				*e*PS	**PS**	**00 45 22.2**	**+9.2**
DPC				*e*PKKP	**PKKPbc**	**00 45 46.9**	**+1.8**
DPC				*ex*	x	00 45 54.2	
DPC				AMS	AMS	01 22 00.0	
comp=Z,1μm,17.8s							
DPC	**Dobruska-Polom**	**112.11**	**28**	*e*PKiKP	**PKiKP**	**00 34 54.4**	**+0.3**
DPC				MLR	MLR		
comp=Z,1μm,17.8s							
CLL	**Collm**	**112.14**	**26**	*e*PKiKP	**PKiKP**	**00 34 54.0**	**0.0**
CLL				*e*PP	**PP**	**00 35 42.0**	**+1.8**
CLL				*e*PPP	PPP	00 37 54.0	
CLL				*e*SKSac	**SKSac**	**00 41 38.0**	**+7.8**
CLL				*e*PS	**PS**	**00 45 13.0**	**-0.1**
CLL				*i* PKKPbc	**PKKPbc**	**00 45 46.1**	**+1.2**
comp=Z,5.0nm,0.9s							
CLL				*e*SS	**SS**	**00 51 21.0**	**+7.3**
CLL				*e*SSS	SSS	00 55 42.0	
CLL				LV		01 17 00.0	
comp=Z,1μm,21.9s							
CLL	**Collm**	**112.14**	**26**	*e*PKiKP	**PKiKP**	**00 34 54.0**	**0.0**
CLL				*e*		00 41 38.0	
CLL				pmax	pmax		
comp=Z,5.0nm,0.9s							
OKC	**Ostrava-Krasne**	**112.14**	**30**	*e*PS	PS	00 45 22.9	+10
OKC				AMS	AMS	01 17 10.0	
comp=Z,2μm,23.3s							
UPC	**Upice**	**112.17**	**28**	*e*PS	PS	00 45 19.5	+6.0
UPC				AMS	AMS	01 16 00.0	
comp=Z,2μm,22.0s							
UZH	**Uzhgorod**	**112.27**	**33**	*e*PKiKP	PKiKP	00 35 04.8	+10
UZH				*e*		00 35 16.0	
ANMO	**Albuquerque**	**112.77**	**299**	PKiKP	**PKiKP**	**00 34 55.3**	**-0.7**
comp=Z,1.3nm,0.7s,baz=231,slow=5.8,SNR=4.0							
ANMO	**Albuquerque**	**112.77**	**299**	⇑ *i* PKiKP	**PKiKP**	**00 34 56.9**	**+0.9**
ANMO	**Albuquerque**	**112.77**	**299**	PKiKP	**PKiKP**	**00 34 55.3**	**-0.7**
ANMO				LR	LR		
comp=Z,636nm,20.0s							
ESK	**Eskdalemuir**	**112.82**	**15**	PFAKE		00 35 10.0	
ESK				LR	LR		
comp=Z,2μm,20.0s							
TUC	**Tucson**	**112.83**	**294**	P	**PKiKP**	**00 34 56.6**	**+0.5**
baz=143							
TUC	**Tucson**	**112.83**	**294**	*e*PKiKP	**PKiKP**	**00 34 57.1**	**+1.0**
TUC	**Tucson**	**112.83**	**294**	*e*PKiKP	**PKiKP**	**00 34 57.1**	**+1.0**
KIS	**Kishinev**	**112.96**	**38**	*e*PP	PP	00 35 50.0	+3.9
KIS				*e*SKP		00 38 20.0	
KIS				*e*SKKS		00 42 06.0	
M35A	**Neola**	**113.12**	**311**	P	**PKiKP**	**00 34 57.2**	**+1.0**
baz=146							
SIM	**Simferopol'**	**113.12**	**43**	*i* PKIKP	**PKiKP**	**00 34 57.9**	**+1.8**
SIM				*e*		00 41 30.0	
SIM				*e*PS	**PS**	**00 45 24.0**	**+1.7**
SIM				*e*SS	SS	00 51 42.0	+15
SIM				pmax	pmax		
comp=Z,100nm,8.1s							
SIM				MLR	MLR		
comp=Z,600nm,22.0s							
KAPI	**Kappang**	**113.28**	**144**	PFAKE		00 35 10.0	
KAPI				LR	LR		
comp=Z,615nm,22.0s							
GNI	**Garni**	**113.53**	**53**	⇑ *i* PKiKP	**PKiKP**	**00 34 58.6**	**+1.3**
GNI	**Garni**	**113.53**	**53**	PFAKE		00 35 10.0	
GNI				LR	LR		
comp=Z,1μm,20.0s							
T25A	**Trinidad**	**113.54**	**302**	P	**PKiKP**	**00 34 58.1**	**+0.6**
baz=144							
T25A	**Trinidad**	**113.54**	**302**	*e*PKiKP	**PKiKP**	**00 34 57.7**	**+0.3**
L35A	**Bielow Farm, R**	**113.59**	**311**	P	**PKiKP**	**00 34 58.0**	**+0.9**
baz=145							
214A	**Organ Pipe Nat**	**113.60**	**292**	P	**PKiKP**	**00 34 58.2**	**+0.7**
baz=142							
SOC	**Sochi**	**114.19**	**47**	*i* PKIKP	PKPdf	00 34 59.9	+1.7
SOC				*e*		00 36 02.8	
SOC				*e*PPP	PPP	00 38 22.8	
SOC				*e*PS	**PS**	**00 45 32.0**	**-0.1**
SOC				*e*SS	SS	00 51 45.4	+4.3
SOC				MLR	MLR		
comp=Z,772nm,18.0s							
COWI	**Conover**	**114.34**	**318**	*e*PKP	PKPdf	00 34 58.3	-0.1
COWI				LR	LR		
comp=Z,1μm,22.0s							
HNR	**Honiara**	**114.39**	**188**	PFAKE		00 35 10.0	+10
HNR				LR	LR		
comp=Z,2μm,22.0s							
PMG	**Port Moresby**	**114.51**	**174**	PFAKE		00 35 10.0	+10
PMG				LR	LR		
comp=Z,2μm,19.0s							
SDCO	**Great Sand Dun**	**114.55**	**301**	P	PKPdf	00 34 59.8	+0.4
baz=143							
SDCO	**Great Sand Dun**	**114.55**	**301**	*e*PKiKP	**PKiKP**	**00 35 00.2**	**+0.7**
SDCO				LR	LR		
comp=Z,599nm,21.0s							
KULM	**Kulim**	**114.69**	**120**	PFAKE		00 35 10.0	+10
KULM				LR	LR		
comp=Z,2μm,21.0s							
NEY	**Neytrino**	**115.17**	**49**	⇑ *i* PKIKP	**PKPdf**	**00 35 01.4**	**+1.1**
J33A	**Davis**	**115.18**	**311**	P	**PKPdf**	**00 35 00.0**	**-0.1**
baz=144							
S22A	**4UR Ranch, Cre**	**115.18**	**300**	P	**PKPdf**	**00 35 01.2**	**+0.5**
baz=143							
SCHQ	**Schefferville**	**115.26**	**336**	PKP	**PKPdf**	**00 34 59.6**	**-0.3**
comp=Z,3.0nm,0.7s,baz=276,slow=0.9,SNR=6.5							
Q24A	**Divide**	**115.35**	**302**	P	**PKPdf**	**00 35 01.2**	**+0.2**
baz=143							
ECSD	**EROS Data Cent**	**115.37**	**311**	P	**PKPdf**	**00 35 00.4**	**-0.1**
baz=145							
ECSD	**EROS Data Cent**	**115.37**	**311**	*e*PKPdf	**PKPdf**	**00 35 00.1**	**-0.4**
ECSD				LR	LR		
comp=Z,3μm,22.0s							
H35A	**Sunnyside Ranc**	**115.42**	**313**	P	**PKPdf**	**00 35 00.4**	**-0.1**
baz=145							
OGNE	**Ogallala**	**115.49**	**306**	P	**PKPdf**	**00 35 01.6**	**+0.7**
baz=143							
OGNE	**Ogallala**	**115.49**	**306**	PFAKE		00 35 10.0	+9.1
OGNE				LR	LR		
comp=Z,924nm,21.0s							
GLA	**Glamis**	**115.50**	**292**	P	**PKPdf**	**00 35 02.0**	**+0.8**
baz=142							
GLA	**Glamis**	**115.50**	**292**	*e*PKIKP	**PKPdf**	**00 35 02.2**	**+1.1**
GLA	**Glamis**	**115.50**	**292**	*e*PKPdf	**PKPdf**	**00 35 02.2**	**+1.1**
MVCO	**Mesa Verde**	**115.57**	**299**	P	**PKPdf**	**00 35 02.0**	**+0.6**
baz=142							
MVCO	**Mesa Verde**	**115.57**	**299**	*e*PKPdf	**PKPdf**	**00 35 02.2**	**+0.8**
MVCO				LR	LR		
comp=Z,1μm,19.0s							
KBZ	**Khabaz**	**115.64**	**49**	PKP	**PKPdf**	**00 35 00.7**	**-0.2**
comp=Z,3.5nm,0.8s,baz=204,slow=12,SNR=9.0							
WUAZ	**Wupatki**	**115.67**	**296**	P	**PKPdf**	**00 35 02.1**	**+0.6**
baz=142							
WUAZ	**Wupatki**	**115.67**	**296**	*e*PKPdf	**PKPdf**	**00 35 02.6**	**+1.1**
KSM	**Kuching**	**115.69**	**131**	PFAKE		00 35 10.0	+7.9
KSM				LR	LR		
comp=Z,701nm,21.0s							
I33A	**Coleman**	**115.70**	**311**	P	**PKPdf**	**00 35 02.0**	**+0.9**
baz=144							
KIV	**Kislovodsk**	**115.73**	**49**	*i* PKIKP	**PKPdf**	**00 35 00.9**	**-0.4**
KIV				pmax	pmax		
comp=Z,9.0nm,1.2s							
KIV	**Kislovodsk**	**115.73**	**49**	*e*PKPdf	**PKPdf**	**00 35 01.4**	**+0.2**
KIV				LR	LR		
comp=Z,904nm,19.0s							
NCK	**Nalchik**	**115.75**	**50**	⇑ *i* PKIKP	**PKPdf**	**00 35 00.1**	**-1.1**
H34A	**Spellman Lake,**	**115.78**	**312**	P	**PKPdf**	**00 35 02.1**	**+0.9**
baz=145							
K30A	**Basset**	**115.80**	**309**	P	**PKPdf**	**00 35 02.2**	**+0.8**
baz=144							
F36A	**Milaca**	**115.85**	**315**	P	**PKPdf**	**00 35 01.0**	**-0.3**
baz=145							
IKP	**In-Ko-Pah, Jac**	**115.86**	**290**	P	**PKPdf**	**00 35 02.4**	**+0.5**
baz=142							
Y12C	**Blythe**	**115.89**	**292**	P	**PKPdf**	**00 35 02.5**	**+0.7**
baz=142							
Y12C	**Blythe**	**115.89**	**292**	*e*PKPdf	**PKPdf**	**00 35 02.7**	**+0.9**
SWSC	**Sam W. Stewart**	**115.93**	**291**	P	**PKPdf**	**00 35 02.5**	**+0.6**
baz=142							
BSD	**Bornholm Skovb**	**116.09**	**25**	*i* P	**PKPdf**	**00 35 01.0**	**-0.4**
BSD				*i*		00 36 15.8	
comp=Z,1μm,18.0s							
BSD	**Bornholm Skovb**	**116.09**	**25**	*i* PKIKP	**PKPdf**	**00 35 01.0**	**-0.4**
BSD				*i*		00 36 15.8	
BSD				MLR	MLR		
comp=Z,1μm,18.0s							
PDMCI	**Parker Dam,Lak**	**116.13**	**293**	P	**PKPdf**	**00 35 02.9**	**+0.7**
baz=142							
H33A	**Prehn Over Nor**	**116.19**	**312**	P	**PKPdf**	**00 35 02.3**	**+0.3**
baz=144							
MONP2	**Monument Peak**	**116.21**	**290**	P	**PKPdf**	**00 35 02.8**	**+0.1**
baz=141							
ISCO	**Idaho Springs**	**116.23**	**303**	P	**PKPdf**	**00 35 03.1**	**+0.4**
baz=142							
ISCO	**Idaho Springs**	**116.23**	**303**	*e*PKIKP	**PKPdf**	**00 35 03.4**	**+0.7**
ISCO	**Idaho Springs**	**116.23**	**303**	*e*PKPdf	**PKPdf**	**00 35 03.4**	**+0.7**
ISCO				LR	LR		
comp=Z,1μm,21.0s							
J30A	**Dallas**	**116.27**	**309**	P	**PKPdf**	**00 35 02.3**	**+0.1**
baz=144							
KIEV	**Kiev**	**116.27**	**36**	‖ *i* PKIKP	**PKPdf**	**00 35 00.2**	**-1.7**
KIEV	**Kiev**	**116.27**	**36**	PFAKE		00 35 10.0	+8.1
KIEV				LR	LR		
comp=Z,923nm,22.0s							
E36A	**McGregor**	**116.28**	**315**	P	**PKPdf**	**00 35 01.7**	**-0.4**
baz=145							
AKASG	**Malin Array Be**	**116.28**	**36**	PKP	**PKPdf**	**00 35 01.4**	**-0.6**
comp=Z,2.1nm,0.5s,baz=242,slow=1.7,SNR=9.2							
BC3	**Big Chuckawall**	**116.30**	**292**	P	**PKPdf**	**00 35 03.8**	**+1.0**
baz=141							
PV01	**Paradox Valley**	**116.33**	**300**	*e*PKPdf	**PKPdf**	**00 35 03.3**	**+0.5**
D37A	**Cotton**	**116.48**	**316**	P	**PKPdf**	**00 35 02.8**	**+0.3**
baz=145							
G33A	**Ortonville**	**116.48**	**312**	P	**PKPdf**	**00 35 02.9**	**+0.3**
baz=144							
IRM	**Iron Mountain**	**116.53**	**292**	P	**PKPdf**	**00 35 04.3**	**+1.2**
baz=141							
PV05	**Paradox Valley**	**116.55**	**299**	*e*PKPdf	**PKPdf**	**00 35 03.9**	**+0.7**
I30A	**Oacoma**	**116.71**	**310**	P	**PKPdf**	**00 35 03.9**	**+0.9**
baz=143							
PV10	**Paradox Valley**	**116.75**	**299**	*e*PKPdf	**PKPdf**	**00 35 04.2**	**+0.6**
EYMN	**Ely**	**116.77**	**317**	P	**PKPdf**	**00 35 02.7**	**-0.4**
baz=146							
EYMN	**Ely**	**116.77**	**317**	PFAKE		00 35 20.0	+17
EYMN				LR	LR		
comp=Z,1μm,22.0s							
D36A	**Goodland**	**116.78**	**316**	P	**PKPdf**	**00 35 02.7**	**-0.4**
baz=145							
TPFO	**Pinon Flats**	**116.78**	**291**	P	**PKPdf**	**00 35 04.3**	**+0.6**
baz=141							
PFO	**Pinyon Flats O**	**116.79**	**291**	PKP	**PKPdf**	**00 35 03.7**	**0.0**
comp=Z,4.9nm,0.8s,baz=109,slow=2.1,SNR=4.8							
PFO	**Pinyon Flats O**	**116.79**	**291**	P	**PKPdf**	**00 35 04.2**	**+0.5**
baz=141							
PFO	**Pinyon Flats O**	**116.79**	**291**	*e*PKIKP	**PKPdf**	**00 35 04.8**	**+1.1**
PFO	**Pinyon Flats O**	**116.79**	**291**	*e*PKPdf	**PKPdf**	**00 35 04.8**	**+1.1**
PFO				LR	LR		
comp=Z,700nm,19.0s							
BELC	**Belle Mtn. Jos**	**116.85**	**291**	P	**PKPdf**	**00 35 04.2**	**+0.4**
baz=141							
E34A	**Wadena**	**117.04**	**314**	P	**PKPdf**	**00 35 04.5**	**+0.9**
baz=144							
MURC	**Murrieta**	**117.17**	**290**	P	**PKPdf**	**00 35 04.8**	**+0.5**
baz=141							
N23A	**Red Feather La**	**117.25**	**303**	P	**PKPdf**	**00 35 05.0**	**+0.4**
baz=142							
GMRC	**Granite Mounta**	**117.29**	**292**	P	**PKPdf**	**00 35 05.7**	**+1.1**
baz=141							
C35A	**Jirik Farms, M**	**117.53**	**316**	P	**PKPdf**	**00 35 03.7**	**-0.8**
baz=144							
BBRC	**Big Bear Solar**	**117.54**	**291**	P	**PKPdf**	**00 35 05.8**	**+0.5**
baz=141							
G30A	**Faulkton**	**117.56**	**311**	P	**PKPdf**	**00 35 04.8**	**+0.2**
baz=143							
KNB	**Kanab**	**117.57**	**296**	*e*PKIKP	**PKPdf**	**00 35 06.0**	**+0.9**
KNB	**Kanab**	**117.57**	**296**	*e*PKPdf	**PKPdf**	**00 35 06.0**	**+0.9**
O20A	**White River Ci**	**117.74**	**301**	P	**PKPdf**	**00 35 05.8**	**+0.4**
baz=141							
O20A	**White River Ci**	**117.74**	**301**	*e*PKPdf	**PKPdf**	**00 35 06.0**	**+0.5**
LCMT	**Little Creek M**	**117.78**	**296**	*e*PKPdf	**PKPdf**	**00 35 06.5**	**+1.0**
TUQ	**Turquoise Moun**	**117.93**	**292**	P	**PKPdf**	**00 35 07.2**	**+1.3**
baz=141							
B35A	**Bob, Littlefor**	**117.97**	**316**	P	**PKPdf**	**00 35 04.6**	**-0.7**
baz=144							
MTPU	**Mount Pierson**	**118.04**	**297**	*e*PKPdf	**PKPdf**	**00 35 07.3**	**+1.0**
SRU	**San Rafael Swe**	**118.05**	**299**	*e*PKIKP	**PKPdf**	**00 35 06.4**	**+0.4**
SRU	**San Rafael Swe**	**118.05**	**299**	*e*PKPdf	**PKPdf**	**00 35 06.4**	**+0.4**
GEYT	**Alibeck**	**118.10**	**63**	PKP	**PKPdf**	**00 35 05.6**	**-0.4**
comp=Z,3.6nm,1.0s,baz=259,slow=6.9,SNR=6.9							
GSC	**Goldstone, Bar**	**118.28**	**292**	P	**PKPdf**	**00 35 07.7**	**+1.2**
baz=141							
GSC	**Goldstone, Bar**	**118.28**	**292**	*e*PKIKP	**PKPdf**	**00 35 07.5**	**+1.0**
GSC	**Goldstone, Bar**	**118.28**	**292**	*e*PKPdf	**PKPdf**	**00 35 07.5**	**+1.0**
C33A	**Trail**	**118.29**	**314**	P	**PKPdf**	**00 35 06.2**	**+0.3**
baz=144							
P18A	**Preston Nutter**	**118.31**	**299**	*e*PKPdf	**PKPdf**	**00 35 07.2**	**+0.5**
SHPR	**Sheep Range**	**118.36**	**294**	*e*PKPdf	**PKPdf**	**00 35 07.9**	**+1.2**
B34A	**Aery, Baudette**	**118.43**	**316**	P	**PKPdf**	**00 35 05.7**	**-0.5**
baz=144							
SHOC	**Shoshone, Teco**	**118.47**	**293**	P	**PKPdf**	**00 35 08.0**	**+1.2**
baz=140							
D31A	**Mcclaflin, Tow**	**118.51**	**313**	P	**PKPdf**	**00 35 06.7**	**+0.3**
baz=143							
TMUT	**Trail Mountain**	**118.53**	**299**	*e*PKPdf	**PKPdf**	**00 35 08.1**	**+1.0**
BLG	**Laguna Peak, P**	**118.55**	**289**	P	**PKPdf**	**00 35 07.4**	**+0.5**
baz=140							
EDW2	**Edwards Air Fo**	**118.58**	**291**	P	**PKPdf**	**00 35 08.3**	**+1.3**
baz=140							
I25A	**Rochford**	**118.69**	**307**	P	**PKPdf**	**00 35 07.3**	**+0.3**
baz=142							
H26A	**Fairpoint**	**118.73**	**308**	P	**PKPdf**	**00 35 07.1**	**+0.1**
baz=142							
OSI	**Osito Audit: C**	**118.75**	**290**	P	**PKPdf**	**00 35 08.5**	**+1.1**
baz=140							
FAKI	**Fak Fak**	**118.77**	**156**	*e*PKPdf	**PKPdf**	**00 35 08.7**	**+0.6**
LRMC	**Laurel Mtn Rad**	**118.87**	**291**	P	**PKPdf**	**00 35 08.7**	**+1.0**
baz=140							
K22A	**Casper**	**118.89**	**304**	P	**PKPdf**	**00 35 07.5**	**0.0**
baz=141							
K22A	**Casper**	**118.89**	**304**	*e*PKPdf	**PKPdf**	**00 35 07.4**	**-0.1**
RSSD	**Black Hills**	**118.90**	**307**	P	**PKPdf**	**00 35 07.4**	**-0.1**
baz=142							
RSSD	**Black Hills**	**118.90**	**307**	*e*PKIKP	**PKPdf**	**00 35 06.7**	**-0.8**
RSSD	**Black Hills**	**118.90**	**307**	*e*PKPdf	**PKPdf**	**00 35 06.7**	**-0.8**
G27A	**Dupree**	**118.96**	**309**	P	**PKPdf**	**00 35 07.3**	**-0.1**
baz=142							
A33A	**Warroad**	**119.08**	**316**	P	**PKPdf**	**00 35 07.2**	**-0.3**
baz=144							
H25A	**Fruitdale**	**119.10**	**307**	P	**PKPdf**	**00 35 08.3**	**+0.6**
baz=142							
KONO	**Kongsberg**	**119.10**	**20**	PFAKE		00 35 20.0	+13
KONO				LR	LR		
comp=Z,1μm,20.0s							
C31A	**Landman Farms,**	**119.11**	**313**	P	**PKPdf**	**00 35 07.1**	**-0.4**
baz=143							
NACGM	**Naroch**	**119.11**	**32**	*e*	**PKPdf**	**00 35 04.0**	**-3.2**
NACGM				*e*LQ	LQ	01 13 14.0	
NACGM				*e*LR	LR	01 21 54.0	
G26A	**Maurine**	**119.19**	**309**	P	**PKPdf**	**00 35 08.2**	**+0.4**
baz=142							
FURC	**Furnace Creek,**	**119.21**	**293**	P	**PKPdf**	**00 35 09.4**	**+1.3**
baz=140							
MPMC	**Manual Prospec**	**119.22**	**292**	P	**PKPdf**	**00 35 09.5**	**+1.1**
baz=140							
PSUT	**Pine Spring**	**119.26**	**296**	*e*PKPdf	**PKPdf**	**00 35 09.2**	**+0.8**
TPNV	**Topopah Spring**	**119.26**	**293**	P	**PKPdf**	**00 35 09.0**	**+0.6**

E25A	Miller Ranch,	120.48	309	P	PKPdf	00 35 10.6	+0.3
	baz=141						
BGU	Big Grassy Mou	120.67	299	ePKPdf	PKPdf	00 35 11.8	+0.9
SPUT	South Promonto	120.68	299	ePKPdf	PKPdf	00 35 11.6	+0.6
NB2	NORSAR Subarra	120.70	21	PKPdf	PKPdf	00 35 09.5	-0.7
	comp=Z,7.4nm,0.8s,baz=202,slow=1.9						
NB2	NORSAR Subarra	120.70	21	PKPdf	PKPdf	00 35 09.5	-0.7
	baz=202,slow=1.9						
NOA	NORSAR Array B	120.70	21	PKP	PKPdf	00 35 09.9	-0.3
	comp=Z,5.9nm,0.8s,baz=200,slow=1.9,SNR=14						
NOA				PKKPbc	PKKPbc	00 45 15.0	+0.1
	comp=Z,3.8nm,0.7s,baz=24,slow=3.3,SNR=11						
D25A	Fairfield	120.95	309	P	PKPdf	00 35 12.3	+1.2
	baz=141						
AHID	Auburn Hatcher	121.14	301	ePKPdf	PKPdf	00 35 12.6	+0.8
AHID				LR	LR		
	comp=Z,946nm,19.0s						
VRH	Novokhopyorsk	121.17	43	ePKIKP	PKPdf	00 35 10.7	-0.6
VRH				pmax	pmax		
	comp=Z,20nm,1.0s						
HVU	Hansel Valley	121.20	299	ePKIKP	PKPdf	00 35 12.4	+0.4
HVU	Hansel Valley	121.20	299	ePKPdf	PKPdf	00 35 12.4	+0.4
LPSR	Galich'ya Gora	121.24	41	ePKIKP	PKPdf	00 35 11.3	-0.1
LPSR				pmax	pmax		
	comp=Z,10.0nm,1.3s						
C25A	Freed Ranch, W	121.35	310	P	PKPdf	00 35 12.9	+1.0
	baz=140						
NVAR	Mina Array Bea	121.44	293	PKP	PKPdf	00 35 13.2	+0.5
	comp=Z,8.1nm,0.8s,baz=158,slow=2.9,SNR=41						
NVAR				SKP	SKPdf	00 38 43.5	+1.4
	comp=Z,1.3nm,0.6s,baz=176,slow=3.3,SNR=4.2						
NVAR				PKKPab	PKKPab	00 45 13.2	+0.8
	comp=Z,2.6nm,0.9s,baz=292,slow=3.6,SNR=8.8						
REDW	Red Top Meadow	121.47	302	ePKPdf	PKPdf	00 35 12.8	+0.3
SNOW	Snow King Moun	121.50	302	ePKPdf	PKPdf	00 35 13.6	+0.9
LOHW	Long Hollow	121.54	302	ePKPdf	PKPdf	00 35 13.0	+0.3
TPAW	Teton Pass	121.61	302	ePKPdf	PKPdf	00 35 13.9	+1.1
ELK	Elko	121.63	297	ePKIKP	PKPdf	00 35 14.1	+1.2
ELK	Elko	121.63	297	ePKPdf	PKPdf	00 35 14.1	+1.2
MOOW	Moose Ponds	121.71	302	ePKPdf	PKPdf	00 35 12.8	-0.1
FXWY	Fox Creek	121.76	302	ePKPdf	PKPdf	00 35 13.3	+0.2
SAO	San Andreas Ge	121.83	290	ePKIKP	PKPdf	00 35 14.9	+1.8
SAO	San Andreas Ge	121.83	290	ePKPdf	PKPdf	00 35 14.9	+1.8
LAO	LASA Array	121.86	307	P	PKPdf	00 35 13.6	+0.6
	baz=140						
LAO	LASA Array	121.86	307	PFAKE		00 35 20.0	+7.1
LAO				LR	LR		
	comp=Z,2μm,22.0s						
IMW	Indian Meadow	121.92	302	ePKPdf	PKPdf	00 35 13.4	0.0
FLWY	Flagg Ranch	121.94	302	ePKPdf	PKPdf	00 35 13.9	+0.5
FLWY				ePKPdf	PKiKP	00 35 14.2	+0.6
RLMT	Red Lodge	122.06	304	PFAKE		00 35 30.0	+16
RLMT				LR	LR		
	comp=Z,2μm,20.0s						
WAKR	Walker	122.08	292	ePKPdf	PKPdf	00 35 15.4	+1.6
H17A	Grant Village	122.12	303	ePKPdf	PKPdf	00 35 15.8	+2.0
VSU	Vasula	122.13	30[illegible]	ePKIKP	PKPdf	00 35 12.8	-0.1
LKWY	Lake	122.17	303	ePKIKP	PKPdf	00 35 15.8	+1.9
LKWY	Lake	122.17	303	ePKPdf	PKPdf	00 35 15.8	+1.9
LKWY				LR	LR		
	comp=Z,2μm,20.0s						
CMB	Columbia Colle	122.22	291	ePKIKP	PKPdf	00 35 15.1	+1.2
CMB	Columbia Colle	122.22	291	ePKPdf	PKPdf	00 35 15.1	+1.2
KKM	Kota Kinabalu	122.24	135	PFAKE		00 35 30.0	+15
KKM				LR	LR		
	comp=Z,256nm,22.0s						
YFT	Old Faithful	122.28	303	ePKPdf	PKPdf	00 35 16.4	+2.4
DGMT	Dagmar	122.34	310	PFAKE		00 35 30.0	+16
DGMT				LR	LR		
	comp=Z,2μm,22.0s						
BMN	Battle Mountai	122.39	295	ePKIKP	PKPdf	00 35 15.5	+1.2
BMN	Battle Mountai	122.39	295	ePKPdf	PKPdf	00 35 15.5	+1.2
OBN	Obninsk	122.42	38	↓iPKIKP	PKPdf	00 35 12.8	-0.8
OBN				i		00 42 12.0	
OBN				pmax	pmax		
	comp=Z,16nm,1.0s						
OBN				MLR	MLR		
	comp=Z,692nm,19.0s						
OBN	Obninsk	122.42	38	ePKPdf	PKPdf	00 35 13.8	+0.2
OBN				LR	LR		
	comp=Z,745nm,19.0s						
GCMT	Greycliff	122.75	304	ePKPdf	PKPdf	00 35 15.8	+1.0
QLMT	Earthquake Lak	122.85	303	ePKPdf	PKPdf	00 35 16.8	+1.7
PAHR	Pah Rah Range	122.95	293	ePKPdf	PKPdf	00 35 17.1	+1.7
AFDM	Forest Hills D	123.21	292	ePKPdf	PKPdf	00 35 17.0	+1.3
MOS	Moscow	123.28	38	iPKIKP	PKPdf	00 35 13.7	-1.5
MOS				e		00 36 59.3	
MOS				pmax	pmax		
	comp=Z,33nm,0.9s						
HLID	Hailey	123.33	300	P	PKPdf	00 35 17.1	+1.0
	baz=138						
HLID	Hailey	123.33	300	ePKPdf	PKPdf	00 35 17.0	+1.0
HLID				LR	LR		
	comp=Z,763nm,22.0s						
MCMT	McKenzie Canyo	123.52	302	ePKPdf	PKPdf	00 35 17.4	+0.9
BOZ	Bozeman (W)	123.55	303	P	PKPdf	00 35 17.1	+0.8
	baz=138						
BOZ	Bozeman (W)	123.55	303	ePKIKP	PKPdf	00 35 16.9	+0.6
BOZ	Bozeman (W)	123.55	303	ePKPdf	PKPdf	00 35 16.9	+0.6
BOZ				LR	LR		
	comp=Z,1μm,20.0s						
MFID	Camas Ranch	123.91	299	ePKPdf	PKPdf	00 35 17.8	+0.8
ORV	Oroville	123.94	292	ePKIKP	PKPdf	00 35 18.7	+1.6
ORV	Oroville	123.94	292	ePKPdf	PKPdf	00 35 18.7	+1.6
PYUN	Piuthan	123.97	89	eP	PKPdf	00 35 17.3	-0.5
	comp=Z,104nm,1.0s						
KOLN	Koldanda	124.06	90	eP	PKPdf	00 35 17.4	-0.6
	comp=Z,55nm,0.9s						
LRM	Limekiln Ridge	124.07	303	ePKPdf	PKPdf	00 35 18.4	+0.9
SFJD	Kangerlussuaq	124.08	349	PKP	PKPdf	00 35 15.7	-0.6
	comp=Z,19nm,0.8s,baz=45,slow=1.4,SNR=10						
SFJD	Kangerlussuaq	124.08	349	iP	PKPdf	00 35 15.8	-0.6
	comp=Z,18nm,0.9s						
SFJD	Kangerlussuaq	124.08	349	ePKIKP	PKPdf	00 35 16.9	+0.5
SFJD	Kangerlussuaq	124.08	349	ePKPdf	PKPdf	00 35 16.9	+0.5
DZET	Dzherino	124.27	70	PKIKP	PKPdf	00 35 17.4	-0.5
DZET				pmax	pmax		
	comp=Z,34nm,1.2s						
HRY	Holter Researc	124.44	304	ePKPdf	PKPdf	00 35 19.0	+1.1
EGMT	Eagleton	124.45	306	P	PKPdf	00 35 18.7	+0.8
	baz=138						
EGMT	Eagleton	124.45	306	ePKPdf	PKPdf	00 35 18.4	+0.5
EGMT				LR	LR		
	comp=Z,2μm,21.0s						
FINES	FINESS Array B	124.47	28	PKP	PKPdf	00 35 16.8	-0.5
	comp=Z,20nm,0.5s,baz=166,slow=2.2,SNR=76						
FINES				PKKPbc	PKKPbc	00 44 59.0	-1.2
	comp=Z,1.6nm,0.7s,baz=29,slow=4.4,SNR=5.9						
WVOR	Wild Horse Val	124.59	296	ePKIKP	PKPdf	00 35 19.6	+1.2
WVOR	Wild Horse Val	124.59	296	ePKPdf	PKPdf	00 35 19.6	+1.2
O03D	Paynes Creek	124.64	292	P	PKPdf	00 35 19.1	+0.6
	baz=137						
DMN	Daman	124.78	91	eP	PKPdf	00 35 19.0	-0.4
	comp=Z,97nm,1.2s						
GKN	Gorkha	124.82	91	eP	PKPdf	00 35 18.7	-0.7
	comp=Z,116nm,1.2s						
PKIN	Phulchoki	124.92	92	eP	PKPdf	00 35 18.9	-0.8
	comp=Z,20nm,0.8s						
KKN	Kakani	125.02	91	eP	PKPdf	00 35 19.3	-0.5
	comp=Z,32nm,0.9s						
CMAR	Chiang Mai Arr	125.03	111	PKP	PKPdf	00 35 19.8	-0.1
	comp=Z,18nm,0.9s,baz=233,slow=3.6,SNR=55						
MOD	Modoc Plateau	125.04	294	ePKPdf	PKPdf	00 35 20.7	+1.3
WDC	Whiskeytown Da	125.23	292	ePKIKP	PKPdf	00 35 20.5	+1.0
WDC	Whiskeytown Da	125.23	292	ePKPdf	PKPdf	00 35 20.5	+1.0
CHMT	Chamberlain Mo	125.25	303	ePKPdf	PKPdf	00 35 19.4	-0.2
CHTO	Chiang Mai	125.32	110	ePKIKP	PKPdf	00 35 20.4	+0.1
CHTO	Chiang Mai	125.32	110	ePKPdf	PKPdf	00 35 20.4	+0.1
CHTO				LR	LR		
	comp=Z,964nm,22.0s						
GUN	Gumba	125.44	92	eP	PKPdf	00 35 20.4	-0.4
	comp=Z,133nm,1.3s						
MSO	Missoula	125.51	303	P	PKPdf	00 35 20.8	+0.8
	baz=137						
MSO	Missoula	125.51	303	ePKPdf	PKPdf	00 35 20.3	+0.3
KMRM	Mail Ridge	125.58	291	ePKPdf	PKPdf	00 35 23.0	+2.7
N02D	Trinity Center	125.60	292	P	PKPdf	00 35 21.9	+1.6
	baz=137,SNR=14						
BMO	Blue Mountains	125.69	299	ePKIKP	PKPdf	00 35 21.4	+1.0
BMO	Blue Mountains	125.69	299	ePKPdf	PKPdf	00 35 21.4	+1.0
BMO				LR	LR		
	comp=Z,2μm,22.0s						
M04C	Macdoel	125.74	293	P	PKPdf	00 35 21.9	+1.3
	baz=137						
K05A	Summer Lake	125.94	295	ePKPdf	PKPdf	00 35 22.1	+1.0
M02C	Callahan	125.98	292	P	PKPdf	00 35 22.2	+1.2
	baz=136,SNR=20						
SWMT	Swartz Lake	126.03	303	ePKPdf	PKPdf	00 35 21.0	0.0
KHMM	Horse Mountain	126.06	291	ePKPdf	PKPdf	00 35 23.4	+2.1
FFC	Flin Flon	126.16	316	ePKIKP	PKPdf	00 35 20.8	0.0
FFC	Flin Flon	126.16	316	ePKPdf	PKPdf	00 35 20.8	0.0
FFC				LR	LR		
	comp=Z,1μm,20.0s						
YBH	Yreka Blue Hor	126.16	293	PKP	PKPdf	00 35 21.7	+0.3
	comp=Z,10nm,0.8s,baz=72,slow=3.9,SNR=16						
YBH	Yreka Blue Hor	126.16	293	ePKIKP	PKPdf	00 35 21.9	+0.5
YBH	Yreka Blue Hor	126.16	293	ePKPdf	PKPdf	00 35 21.9	+0.5
ILULI	Ilulissat	126.27	350	iP	PKPdf	00 35 20.2	-0.4
	comp=Z,28nm,0.8s						
ILULI	Ilulissat	126.27	350	iPKIKP	PKPdf	00 35 20.2	-0.4
ILULI				pmax	pmax		
	comp=Z,28nm,0.8s						
YBMT	Yellow Bay	126.29	303	ePKPdf	PKPdf	00 35 21.6	+0.1
K04D	Chiloquin, OR	126.31	294	P	PKPdf	00 35 22.4	+0.7
	baz=136						
JTMT	Jette	126.33	303	ePKPdf	PKPdf	00 35 21.6	0.0
FCC	Fort Churchill	126.37	323	ePKIKP	PKPdf	00 35 20.3	-0.7
FCC	Fort Churchill	126.37	323	ePKPdf	PKPdf	00 35 20.3	-0.7
SCO	Scoresbysund	126.39	2	iP	PKPdf	00 35 21.9	+1.1
	comp=Z,40nm,1.3s						
SCO	Scoresbysund	126.39	2	iPKIKP	PKPdf	00 35 21.9	+1.1
SCO				pmax	pmax		
	comp=Z,40nm,1.3s						
F10A	Beach Ranch, E	126.46	300	ePKPdf	PKPdf	00 35 21.8	-0.1
J05D	Fort Rock, OR	126.52	295	P	PKPdf	00 35 23.3	+1.2
	baz=136						
DAV	Davao City (W)	126.52	146	PFAKE		00 35 30.0	+7.2
DAV				LR	LR		
	comp=Z,583nm,22.0s						
BLMT	Blacktail Moun	126.56	303	ePKPdf	PKPdf	00 35 22.2	+0.1
BSMT	Bassoo Peak	126.64	303	ePKPdf	PKPdf	00 35 22.0	-0.2
G08A	Pilot Rock	126.82	298	ePKPdf	PKPdf	00 35 22.2	-0.4
HUMO	Hull Mountain	126.91	293	ePKPdf	PKPdf	00 35 23.5	+0.8
L02D	Cave Junction,	126.92	292	P	PKPdf	00 35 23.8	+1.1
	baz=136,SNR=9.0						
SHL	Shillong	126.96	99	eP	PKPdf	00 35 20.0	-3.5
I05D	Terrebonne, OR	127.33	296	P	PKPdf	00 35 25.0	+1.5
	baz=135						
AKTO	Aktyubinsk	127.39	53	PKP	PKPdf	00 35 23.7	+0.4
	comp=Z,27nm,1.1s,baz=206,slow=2.5,SNR=49						
AB31	Akbulak array	127.43	55	iPKIKP	PKPdf	00 35 22.7	-0.7
AB31				pmax	pmax		
	comp=Z,56nm,1.4s						
ABKAR	Akbulak array	127.43	55	ePKPdf	PKPdf	00 35 23.9	+0.5
I04A	Tendick Farm,	127.48	295	P	PKPdf	00 35 24.6	+0.8
	baz=135						
VTHM	Trough	127.54	297	P	PKPdf	00 35 24.9	+1.0
G06A	Carlson Farm,	127.61	297	ePKPdf	PKPdf	00 35 25.0	+1.0
HAWA	Hanford	127.89	299	ePKPdf	PKPdf	00 35 25.5	+1.1
HAWA				LR	LR		
	comp=Z,993nm,21.0s						
I03D	Drain, OR	127.89	294	P	PKPdf	00 35 24.8	+0.4
	baz=135						
KLMR	Klimovskoe	127.91	35	ePKIKP	PKPdf	00 35 21.1	-2.8
KLMR				e		00 37 24.1	
KLMR				pmax	pmax		
	comp=Z,61nm,1.3s						
H04A	Detroit Lake	128.00	296	ePKPdf	PKPdf	00 35 25.6	+0.8
NEW	Newport	128.04	302	PKP	PKPdf	00 35 23.0	-1.7
	comp=Z,6.7nm,1.0s,baz=151,slow=2.3,SNR=8.0						
NEW	Newport	128.04	302	P	PKPdf	00 35 24.8	+0.1
	baz=135						
NEW	Newport	128.04	302	ePKIKP	PKPdf	00 35 24.8	+0.1
NEW	Newport	128.04	302	ePKPdf	PKPdf	00 35 24.8	+0.1
NEW				LR	LR		
	comp=Z,2μm,20.0s						
D08A	Wollman Farm,	128.06	300	ePKPdf	PKPdf	00 35 25.6	+0.9
RNO	Roman Nose	128.24	294	P	PKPdf	00 35 26.2	+0.9
KK31	Karatay Array	128.25	68	iPKIKP	PKPdf	00 35 24.5	-0.7
KK31				pmax	pmax		
	comp=Z,44nm,1.2s						
KKAR	Karatay Array	128.25	68	ePKIKP	PKPdf	00 35 24.9	-0.3
KKAR	Karatay Array	128.25	68	ePKPdf	PKPdf	00 35 24.9	-0.3
COR	Corvallis	128.50	295	ePKIKP	PKPdf	00 35 27.0	+1.4
COR	Corvallis	128.50	295	ePKPdf	PKPdf	00 35 27.0	+1.4
KSH	Kashi	128.59	75	PKP	PKPdf	00 35 25.8	-0.3
KSH				PKS	PKSdf	00 39 01.0	-1.7
KSH				SKS	SKSdf	00 42 26.9	-5.0
KSH				AMB	AMB		
	comp=Z,300nm,7.2s						
KSH				LR	LR		
	comp=Z,150nm,8.3s						
KSH				LR	LR		
	comp=Z,650nm,19.1s						
KSH				LR	LR		
	comp=Z,860nm,28.2s						
SUMG	Summit	128.68	356	iP	PKPdf	00 35 26.2	+0.6
	comp=Z,27nm,0.9s						
SUMG	Summit	128.68	356	ePKIKP	PKPdf	00 35 26.3	+0.6
SUMG	Summit	128.68	356	ePKPdf	PKPdf	00 35 26.3	+0.6
EBG	Ellensburg	128.76	299	P	PKPdf	00 35 27.1	+1.0
MNAS	Manas	128.86	69	PKIKP	PKPdf	00 35 25.6	-1.0
MNAS				pmax	pmax		
	comp=Z,37nm,1.1s						
G03D	McMinnville, O	128.91	295	P	PKPdf	00 35 27.9	+1.5
	baz=134						
TBM	Table Mountain	128.95	299	P	PKPdf	00 35 27.8	+1.2
F04A	Amboy	128.99	297	ePKPdf	PKPdf	00 35 27.6	+1.1
B08A	Colville Reser	129.16	301	ePKPdf	PKPdf	00 35 27.1	+0.2
LON	Longmire	129.26	298	ePKIKP	PKPdf	00 35 27.4	+0.3
LON	Longmire	129.26	298	ePKPdf	PKPdf	00 35 27.4	+0.3
F04D	Rainier, OR	129.39	296	P	PKPdf	00 35 28.6	+1.4
	baz=134						
F03A	Seaside	129.56	296	ePKPdf	PKPdf	00 35 29.4	+1.8
EKS2	Erkin-Say	129.65	70	ePKIKP	PKPdf	00 35 28.5	+0.4
EKS2	Erkin-Say	129.65	70	ePKPdf	PKPdf	00 35 28.5	+0.4
EKS2				LR	LR		
	comp=Z,1μm,22.0s						
D05A	Enumclaw	129.65	298	ePKPdf	PKPdf	00 35 29.2	+1.5
LSA	Lhasa	129.76	95	PKP	PKPdf	00 35 29.5	+0.4
LSA	Lhasa	129.76	95	ePKIKP	PKPdf	00 35 30.2	+1.1
LSA				MLR	MLR		
	comp=Z,1μm,20.0s						
LSA	Lhasa	129.76	95	ePKPdf	PKPdf	00 35 30.2	+1.1
LSA				LR	LR		
	comp=Z,1μm,20.0s						
TMCR	Tamitsa	129.96	31	ePKIKP	PKPdf	00 35 26.1	-1.6
TMCR				pmax	pmax		
	comp=Z,114nm,1.4s						
E03A	Lebam	129.99	296	ePKPdf	PKPdf	00 35 29.9	+1.6
AAK	Ala-Archa	130.01	71	PKIKP	PKPdf	00 35 28.1	-0.7
AAK				pmax	pmax		
	comp=Z,55nm,1.3s						
FRU	Bishkek	130.21	71	↓iPKIKP	PKPdf	00 35 28.0	-1.0
FRU				pmax	pmax		
	comp=Z,180nm,2.1s						
B06A	Marblemount	130.31	300	ePKPdf	PKPdf	00 35 29.8	+0.9
B05A	Bryant	130.44	299	P	PKPdf	00 35 30.3	+1.1
	baz=133						
NLWA	Neilton Lookou	130.72	297	ePKPdf	PKPdf	00 35 31.6	+1.8
NLWA				LR	LR		
	comp=Z,1μm,21.0s						
TKM2	Tokmak 2	130.79	71	ePKIKP	PKPdf	00 35 30.4	+0.1
TKM2				MLR	MLR		
	comp=Z,1μm,22.0s						
TKM2	Tokmak 2	130.79	71	ePKPdf	PKPdf	00 35 30.4	+0.1
TKM2				LR	LR		
	comp=Z,1μm,22.0s						
QIZ	Qiongzhong	130.99	121	PKP	PKPdf	00 35 30.5	-0.7
QIZ				PP	PP	00 37 48.8	+0.5
QIZ				SS	SS	00 55 17.6	+3.6
QIZ				LR	LR		
	comp=Z,750nm,22.1s						
QIZ				LR	LR		
	comp=Z,670nm,23.4s						
QIZ				LR	LR		
	comp=Z,1μm,21.4s						
QIZ	Qiongzhong	130.99	121	PFAKE		00 35 40.0	+8.8
QIZ				LR	LR		
	comp=Z,1μm,21.0s						
ARCES	ARCESS Array B	131.04	22	PKhKP	PKPpre	00 35 17.7	
	comp=Z,1.4nm,0.7s,baz=202,slow=3.5,SNR=7.7						
ARCES				PKP	PKPdf	00 35 29.2	-0.4
	comp=Z,14nm,0.7s,baz=214,slow=1.7,SNR=30						
ARCES				PP	PP	00 37 46.0	-2.5
	comp=Z,7.0nm,0.7s,baz=212,slow=3.2,SNR=5.4						
A04D	Lummi Island	131.05	299	P	PKPdf	00 35 30.5	+0.3
	baz=132						
APA	Apatity	131.29	26	↓iPKIKP	PKPdf	00 35 29.0	-1.2
JOHN	Johnston Islan	131.43	231	PFAKE		00 35 40.0	+8.0
JOHN				LR	LR		
	comp=Z,133nm,21.0s						
KEV	Kevo	131.53	22	PFAKE		00 35 40.0	+9.4
KEV				LR	LR		
	comp=Z,1μm,22.0s						
ARU	Arti	131.76	48	PKP	PKPdf	00 35 31.1	-0.3
	comp=Z,9.6nm,0.7s,baz=242,slow=1.8,SNR=39						
ARU	Arti	131.76	48	iPKIKP	PKPdf	00 35 31.4	0.0
ARU				MLR	MLR		
	comp=Z,2μm,23.0s						
ARU	Arti	131.76	48	ePKPdf	PKPdf	00 35 31.5	+0.1
ARU				LR	LR		
	comp=Z,983nm,19.0s						
LVZ	Lovozero	131.85	27	dePKIKP	PKPdf	00 35 33.2	+1.9
LVZ	Lovozero	131.85	27	ePKPdf	PKPdf	00 35 32.1	+0.8
LVZ				LR	LR		
	comp=Z,1μm,21.0s						
KMI	Kunming	132.49	109	PKP	PKPdf	00 35 33.9	-0.2
KMI				PP	PP	00 37 56.4	-2.0
KMI				PKS	PKSdf	00 39 14.3	+3.4
KMI	Kunming	132.49	109	SS	SS	00 55 31.3	-1.7
KMI				AMB	AMB		
	comp=Z,200nm,6.4s						
KMI				LR	LR		
	comp=N,720nm,22.2s						
KMI				LR	LR		
	comp=E,490nm,22.2s						
KMI				LR	LR		
	comp=Z,1μm,21.5s						
OTUK	Ortayu	132.71	64	PKIKP	PKPdf	00 35 33.0	-0.5
OTUK				pmax	pmax		
	comp=Z,36nm,1.1s						
DAG	Danmarks Havn	132.77	3	iP	PKPdf	00 35 32.2	-0.6
	comp=Z,24nm,1.0s						
DAG	Danmarks Havn	132.77	3	iPKIKP	PKPdf	00 35 32.2	-0.6
DAG				pmax	pmax		
	comp=Z,24nm,1.0s						
SVE	Sverdlovsk	132.89	49	iPKIKP	PKPdf	00 35 34.2	+0.7
SVE				e		00 37 58.9	
SVE				e		00 55 41.6	
SVE				pmax	pmax		
	comp=Z,93nm,1.6s						
SVE				MLR	MLR		
	comp=Z,2μm,25.0s						
SVE				MLR	MLR		
	comp=E,1μm,24.0s						
SOKR	Solikamsk	133.13	44	iPKIKP	PKPdf	00 35 32.4	-1.4
SOKR				pmax	pmax		
	comp=Z,20nm,0.9s						
PDGK	Podgornoye	133.14	73	PKIKP	PKPdf	00 35 33.1	-1.3
PDGK				pmax	pmax		
	comp=Z,45nm,1.0s						
ZRNK	Zerenda	134.13	57	ePKIKP	PKPdf	00 35 35.6	-0.4
ZRNK	Zerenda	134.13	57	ePKPdf	PKPdf	00 35 35.6	-0.4
BRVK	Borovoye	134.80	58c	iPKIKP	PKPdf	00 35 36.9	-0.3
BRVK	Borovoye	134.80	58	ePKPdf	PKPdf	00 35 37.8	+0.6
BRVK				eSKPbc	SKPbc	00 39 02.3	+0.7
BRVK				LR	LR		
	comp=Z,1μm,20.0s						
BVA0	Borovoye Array	134.83	58	iPKIKP	PKPdf	00 35 36.7	-0.6
BVA0				pmax	pmax		
	comp=Z,45nm,1.4s						
BVAR	Borovoye Array	134.83	58	PKhKP	PKPpre	00 35 26.7	
	comp=Z,1.1nm,0.8s,baz=222,slow=2.0,SNR=9.0						
BVAR				PKP	PKPdf	00 35 36.9	-0.5
	comp=Z,32nm,1.0s,baz=225,slow=3.4,SNR=8.3						
BVAR				SKPbc	SKPbc	00 39 02.8	+1.1
	comp=Z,3.4nm,0.6s,baz=244,slow=1.8,SNR=4.5						
BVAR				SKKPbc	SKKPbc	00 48 05.0	-3.5
	comp=Z,3.0nm,0.9s,baz=64,slow=1.4,SNR=4.6						
CHKZ	Chkalovo	135.34	57	PKIKP	PKPdf	00 35 36.9	-1.3
CHKZ				pmax	pmax		
	comp=Z,43nm,1.4s						
GYA	Guiyang	135.62	112	Pdif	Pdif	00 32 42.8	-0.6
GYA				PKP	PKiKP	00 35 41.3	-0.1
GYA				PP	PP	00 38 22.0	+3.8
GYA				PKS	PKSdf	00 39 15.8	-0.5
GYA				SKKS		00 45 06.3	
GYA				SS	SS	00 56 10.3	-0.2
GYA				AMB	AMB		
	comp=Z,260nm,9.9s						
GYA				LR	LR		
	comp=Z,420nm,24.2s						
GYA				LR	LR		
	comp=Z,300nm,25.5s						
GYA				LR	LR		
	comp=Z,640nm,23.6s						
YKA	Yellowknife Ar	136.25	318	PKhKP	PKPpre	00 35 24.9	
	comp=Z,1.0nm,0.6s,baz=117,slow=4.2,SNR=13						
YKA				PKP	PKPdf	00 35 39.7	+0.1
	comp=Z,19nm,0.5s,baz=127,slow=2.3,SNR=65						
YKA				PP	PP	00 38 18.6	-3.1
	comp=Z,4.5nm,0.9s,baz=120,slow=6.8,SNR=6.7						
YKA				SKPbc	SKPbc	00 39 03.8	-2.0
	comp=Z,9.2nm,0.8s,baz=123,slow=2.3,SNR=9.1						
YKA				PKKP	PKKPdf	00 45 17.7	-0.8
	comp=Z,0.9nm,0.9s,baz=323,slow=2.0,SNR=5.8						
YKA				SKKPbc	SKKPbc	00 48 05.0	+1.2

comp=Z,280nm,23.2s
WMQ LR LR
comp=Z,480nm,26.4s
RES Resolute Bay 137.95 338 PKP **PKPdf 00 35 41.3 -1.2**
comp=Z,14nm,0.9s,baz=160,slow=2.2,SNR=5.2
QZH Quanzhou 140.14 127 PKP **PKPdf 00 35 42.0 -6.0**
QZH LR LR
comp=Z,1μm,18.2s
QZH LR LR
comp=Z,2μm,21.3s
QZH LR LR
comp=Z,2μm,19.7s
DLBC Dease Lake 140.38 306 PKhKP PKPpre 00 35 41.9
comp=Z,15nm,1.0s,baz=191,slow=1.9,SNR=10.0
DLBC SKPbc **SKPbc 00 39 17.1 -0.7**
comp=Z,16nm,0.9s,baz=148,slow=4.2,SNR=8.9
YHNB Yeheng 141.11 131 PFAKE 00 36 00.0 +10
YHNB LR LR
comp=Z,505nm,21.0s
LZH Lanzhou 141.59 100 *e*PKP **PKPdf 00 35 43.6 -6.9**
LZH pPKP PKiKP 00 35 59.8 +6.5
LZH sPKP 00 36 06.3
LZH PP **PP 00 38 52.5 -2.7**
LZH PKS **PKSdf 00 39 19.1 -7.4**
LZH SKS **SKSdf 00 42 46.0 -8.8**
LZH SKKS **SKKSac 00 45 34.0 -8.2**
GTA Gaotai 141.71 93 ⇓PKP **PKPdf 00 35 45.9 -4.7**
GTA PP **PP 00 38 53.8 -2.2**
GTA SKS **SKSdf 00 42 50.8 -3.9**
GTA SKKS **SKKSac 00 45 39.0 -3.7**
GTA SS **SS 00 57 20.4 -2.2**
GTA AMB AMB
comp=Z,110nm,7.1s
GTA LR LR
comp=Z,570nm,20.0s
GTA LR LR
comp=Z,790nm,19.0s
GTA LR LR
comp=Z,740nm,20.9s
NVS Novosibirsk 142.09 62 *e*PKIKP PKPpre 00 35 47.0
NVS *e* 00 38 59.2
NVS pmax pmax
comp=N,10.0nm,1.3s
NVS pmax pmax
comp=E,17nm,1.3s
NVS pmax pmax
comp=Z,59nm,1.3s
ZALV Zalesovo Beam 142.41 64 PKhKP PKPpre 00 35 45.1
comp=Z,3.8nm,0.5s,baz=248,slow=4.1,SNR=19
ZALV PKP **PKPdf 00 35 50.7 -0.5**
comp=Z,7.9nm,0.5s,baz=245,slow=4.4,SNR=16
XAN Xi'an 142.81 108 PKP **PKPdf 00 35 47.9 -4.7**
XAN AMB AMB
comp=Z,130nm,9.5s
XAN LR LR
comp=Z,550nm,22.2s
XAN LR LR
comp=Z,290nm,23.7s
XAN LR LR
comp=Z,760nm,23.7s
WHN Wuhan 142.85 117 PKP **PKPdf 00 35 48.9 -3.8**
WHN PP **PP 00 39 02.3 -0.1**
WHN LR LR
comp=Z,800nm,17.9s
WHN LR LR
comp=Z,1μm,18.0s
WHN LR LR
comp=Z,2μm,18.0s
MIDW Midway 144.91 230 *e*PKPbc **PKPdf 00 35 56.2 -0.2**
JOW Kunigami 145.78 139 *e*PKPbc **PKPab 00 35 59.1 +0.1**
INK Inuvik 145.88 320 PKPbc **PKPbc 00 35 57.6 +0.1**
comp=Z,145nm,0.8s,baz=103,slow=2.2,SNR=154
INK SKPbc **SKPbc 00 39 30.0 -0.7**
comp=Z,30nm,0.9s,baz=45,slow=2.1,SNR=4.3
NJ2 Nanjing 146.28 121 *e*PKPbc **PKPbc 00 35 59.9 0.0**
NJ2 PP **PP 00 39 21.6 -1.3**
NJ2 AMB AMB
comp=Z,350nm,9.8s
NJ2 LR LR
comp=Z,860nm,23.9s
NJ2 LR LR
comp=Z,1μm,22.8s
NJ2 LR LR
comp=Z,810nm,20.6s
SSE Sheshan 146.58 125 PKPbc **PKPbc 00 36 00.8 +0.1**
SSE sPKP 00 36 16.4
SSE PP **PP 00 39 27.3 +2.7**
SSE SS SS 00 58 20.0 +2.5
SSE AMB AMB
comp=Z,130nm,5.2s
SSE LR LR
comp=Z,870nm,21.6s
SSE LR LR
comp=Z,490nm,21.6s
SSE LR LR
comp=Z,1μm,22.4s
TIY Taiyuan 147.44 107 PKPbc **PKPdf 00 36 01.4 +0.9**
TIY SKKS 00 46 15.9
TIY AMB AMB
comp=Z,280nm,11.6s
TIY LR LR
comp=Z,610nm,14.5s
TIY LR LR
comp=Z,690nm,20.3s
TIY LR LR
comp=Z,850nm,18.9s
KRAR Krasnoyarsk 147.47 65 ⇓*i*PKIKP **PKPdf 00 36 00.5 +0.7**
EGAK Eagle 147.81 313 *e*PKPbc **PKPbc 00 36 03.2 +0.1**
EGAK LR LR
comp=Z,1μm,20.0s
BMRM Bremner River 148.12 305 *e*PKPdf **PKPdf 00 36 00.1 -0.8**
BMRM *e*PKPbc **PKiKP 00 36 05.3 -0.5**
BTO Baotou 148.20 101 *e*PKPbc **PKPbc 00 36 05.0 -0.1**
DOT Dot Lake 148.71 310 *e*PKPdf **PKPdf 00 36 00.7 -1.0**
DOT *e*PKPbc **PKiKP 00 36 06.6 -0.3**
DIV Divide 148.72 305 *e*PKPbc **PKPbc 00 36 06.3 +0.6**
TIA Tai'an 148.76 115 PKPbc **PKPdf 00 36 00.4 -2.2**
TIA sPKP 00 36 26.8
TIA AMB AMB
comp=Z,330nm,8.0s
TIA LR LR
comp=Z,490nm,18.0s
TIA LR LR
comp=Z,610nm,10.0s
TIA LR LR
comp=Z,720nm,22.0s
NRIK Noril'sk 149.09 39 PKPbc **PKPbc 00 36 04.9 -1.4**
comp=Z,41nm,0.9s,baz=8.3,slow=0.3,SNR=31
PAX Paxson 149.14 308 *e*PKP2 **PKPbc 00 36 06.9 +0.2**
PAX Paxson 149.14 308 *e*PKPbc **PKPbc 00 36 06.9 +0.2**
HHC Hu-ho-hao-te 149.22 102 ⇑PKPbc **PKPbc 00 36 07.8 +0.1**
HHC sPKP 00 36 22.1
HHC AMB AMB
comp=Z,220nm,8.0s
HHC LR LR
comp=Z,740nm,21.1s
HHC LR LR
comp=Z,590nm,21.1s
HHC LR LR
comp=Z,640nm,21.4s
MOY Mondy 149.75 76 *e*PKIKP **PKPdf 00 36 02.4 -1.4**
MOY pmax pmax
comp=Z,229nm,2.3s
CBIJ Chichi jima 149.97 161 *e*PKPbc **PKPbc 00 36 08.8 -0.9**
SML Sawmill 150.09 305 *e*PKIKP **PKPdf 00 36 02.0 -1.9**
SML *e* 00 36 10.0
SML Sawmill 150.09 305 *e*PKPdf **PKPdf 00 36 02.0 -1.9**
SML *e*PKPbc **PKiKP 00 36 10.0 +0.1**
SEW Seward 150.11 302 *e*PKPbc **PKPbc 00 36 09.7 +0.7**
ILAR Eielson Array 150.19 312 PKPbc **PKPbc 00 36 09.1 0.0**
comp=Z,139nm,0.8s,baz=130,slow=1.3,SNR=222
ZAK Zakamensk 150.36 80 *e*PKIKP **PKPdf 00 36 04.1 -0.7**
ZAK pmax pmax
comp=Z,93nm,1.4s
PMR Palmer 150.40 305 *e*PKIKP **PKPdf 00 36 02.3 -2.0**
PMR *e* 00 36 10.7
PMR Palmer 150.40 305 *e*PKPdf **PKPdf 00 36 02.3 -2.0**
PMR *e*PKPbc **PKiKP 00 36 10.7 +0.3**
RC01 Rabbit Creek A 150.54 304 *e*PKPdf **PKPdf 00 36 03.4 -1.2**
RC01 *e*PKPbc **PKiKP 00 36 10.9 +0.1**
COLA College 150.61 312 *c i*PKIKP **PKPbc 00 36 09.5 -0.6**
COLA College 150.61 312 *e*PKPbc **PKPbc 00 36 10.3 +0.3**
COLA LR LR
comp=Z,940nm,21.0s
SONM Songino Array 150.73 87 PKP **PKPdf 00 36 05.1 -0.4**
comp=Z,5.9nm,1.0s,baz=205,slow=2.7,SNR=35
SONM PKPbc **PKPbc 00 36 11.4 +0.3**
comp=Z,82nm,0.9s,baz=222,slow=2.5,SNR=116
MCK McKinley 150.84 309 *e*PKIKP **PKPdf 00 36 02.8 -2.2**
MCK *e* 00 36 11.9
MCK McKinley 150.84 309 *e*PKPdf **PKPdf 00 36 02.8 -2.2**
MCK *e*PKPbc **PKiKP 00 36 11.9 +0.6**
KDAK Kodiak Island 150.87 296 *i* PKIKP **PKPbc 00 36 11.2 +0.3**
KDAK Kodiak Island 150.87 296 *e*PKPbc **PKPbc 00 36 11.7 +0.8**
KDAK LR LR
comp=Z,2μm,21.0s
OHAK Old Harbor 151.02 295 *e*PKPbc **PKPbc 00 36 12.1 +0.8**
ULN Ulaanbaatar 151.11 87 *c i*PKIKP **PKPdf 00 36 05.0 -1.1**
ULN Ulaanbaatar 151.11 87 *e*PKPdf **PKPdf 00 36 06.4 +0.3**
ULN *e*PKPbc **PKiKP 00 36 12.6 0.0**
BJT Baijiatuau 151.12 108 *e*PKIKP **PKPdf 00 36 06.7 +0.5**
BJT MLR MLR
comp=Z,945nm,19.0s
BJT Baijiatuau 151.12 108 *e*PKPdf **PKPdf 00 36 06.7 +0.5**
BJT *e*PKPbc **PKiKP 00 36 12.8 +0.2**
BJT LR LR
comp=Z,945nm,19.0s
BJI Beijing 151.14 108 PKPbc **PKPdf 00 36 06.1 -0.1**
BJI PP **PP 00 39 49.6 -1.6**
BJI SS SS 00 59 10.8 +1.9
BJI AMB AMB
comp=Z,330nm,5.1s
BJI LR LR
comp=Z,210nm,23.9s
BJI LR LR
comp=Z,590nm,22.4s
BJI LR LR
comp=Z,680nm,26.5s
TLY Talaya 151.20 78 PKP **PKPdf 00 36 06.0 0.0**
comp=Z,4.3nm,0.6s,baz=196,slow=4.0,SNR=4.2
TLY PKPbc **PKiKP 00 36 12.8 +0.4**
comp=Z,28nm,0.8s,baz=215,slow=3.9,SNR=21
TLY Talaya 151.20 78 *i* PKIKP **PKPdf 00 36 06.1 +0.1**
TLY *e* 00 36 13.3
TLY *e* 00 36 23.2
TLY pmax pmax
comp=Z,80nm,1.0s
TLY Talaya 151.20 78 *e*PKPdf **PKPdf 00 36 06.5 +0.5**
TLY *e*PKPbc **PKiKP 00 36 12.9 +0.4**
TLY LR LR
comp=Z,989nm,20.0s
TRF Thorofare Moun 151.37 308 *e*PKPdf **PKPdf 00 36 03.5 -2.5**
TRF *e*PKPbc **PKiKP 00 36 12.7 +0.1**
KTH Kantishna Hill 151.67 308 *e*PKPbc **PKPbc 00 36 13.1 +0.3**
BPAW Bear Paw Mtn. 151.80 309 *e*PKPdf **PKPdf 00 36 03.7 -2.8**
BPAW *e*PKPbc **PKiKP 00 36 13.4 +0.1**
IRK Irkutsk 151.81 77 *e*PKIKP **PKPdf 00 36 05.9 -0.9**
IRK *e* 00 36 23.2
IRK pmax pmax
comp=Z,152nm,2.0s
COLD Coldfoot 151.90 316 *e*PKPdf **PKPdf 00 36 04.7 -1.8**
COLD *e*PKPbc **PKiKP 00 36 14.3 +0.9**
PPLA Purkeypile 152.10 307 *e*PKPdf **PKPdf 00 36 06.1 -1.0**
PPLA *e*PKPbc **PKiKP 00 36 14.7 +0.5**
JNU Nakatsue 152.41 137 PKP **PKPdf 00 36 08.1 -0.3**
comp=Z,2.3nm,0.8s,baz=271,slow=1.1,SNR=3.7
JNU PKPbc **PKPbc 00 36 14.8 -0.5**
comp=Z,40nm,0.8s,baz=75,slow=0.4,SNR=17
JNU Nakatsue 152.41 137 *e*PKPdf **PKPdf 00 36 09.3 +0.9**
JNU *e*PKPbc **PKiKP 00 36 15.7 +0.1**
DL2 Dalian 153.11 117 PKPbc **PKPdf 00 36 06.0 -3.2**
DL2 PKPab **PKPab 00 36 28.3 -0.1**
DL2 PP **PP 00 40 00.8 -1.6**
DL2 SS SS 00 59 27.1 -3.3
DL2 AMB AMB
comp=Z,220nm,5.6s
DL2 LR LR
comp=Z,630nm,19.8s
DL2 LR LR
comp=Z,750nm,24.7s
CHGN Chignik 153.34 291 *e*PKPbc **PKPbc 00 36 16.9 +0.4**
TJN Taejon 153.79 128 ⇑*i*PKIKP **PKPdf 00 36 08.9 -1.3**
SDPT Sand Point 154.09 288 *e*PKPbc **PKPbc 00 36 18.1 0.0**
KSAR Wonju Array Be 154.90 128 PKIKP **PKPdf 00 36 11.3 -0.5**
KSAR 00 36 35.5
KSAR Wonju Array Be 154.90 128 PKP **PKPdf 00 36 11.2 -0.5**
KSAR PKPab **PKPab 00 36 35.5 -0.6**
KSRS Korea Array 154.93 128 PKP **PKPdf 00 36 11.2 -0.5**
comp=Z,2.9nm,0.8s,baz=202,slow=1.8,SNR=17
KSRS PKPab **PKPab 00 36 35.5 -0.7**
comp=Z,15nm,0.9s,baz=221,slow=3.1,SNR=17
SNY Shenyang 156.29 115 ⇑PKP **PKPdf 00 36 12.0 -1.4**
SNY PP **PP 00 40 17.8 -2.4**
SNY SS SS 01 00 09.1 +4.2
SNY AMB AMB
comp=Z,200nm,9.4s
SNY LR LR
comp=Z,870nm,23.7s
SNY LR LR
comp=Z,430nm,24.1s
SNY LR LR
comp=Z,1μm,24.0s
MJAR Matsushiro Arr 158.03 147 PKP **PKPdf 00 36 15.8 -0.1**
comp=Z,1.4nm,0.4s,baz=156,slow=1.8,SNR=12
MJAR PKPab **PKPab 00 36 49.9 +0.3**
comp=Z,10nm,0.8s,baz=198,slow=5.0,SNR=11
MJAR PP **PP 00 40 28.3 -1.1**
comp=Z,0.8nm,0.3s,baz=208,slow=4.3,SNR=4.1
MAJO Matsushiro 158.03 147 *c i*PKIKP **PKPdf 00 36 15.0 -0.9**
MAJO Matsushiro 158.03 147 PFAKE 00 36 30.0 +14
MAJO LR LR
comp=Z,610nm,22.0s
MAT Matsushiro 158.03 147 PKP **PKPdf 00 36 14.8 -1.1**
CN2 Changchun 158.66 114 *e*PKP **PKPdf 00 36 13.3 -3.1**
CN2 *e*PP **PP 00 40 34.5 +1.2**
CN2 SS SS 01 00 26.6 -3.7
CN2 LR LR
comp=Z,700nm,23.0s
CN2 LR LR
comp=Z,600nm,23.0s
CN2 LR LR
comp=Z,700nm,22.0s
HIA Hailar 158.97 95 PFAKE 00 36 30.0 +13
HIA LR LR
comp=Z,1μm,22.0s
BOD Bodaibo 158.98 69 ⇑*i*PKIKP **PKPdf 00 36 14.1 -2.2**
BOD *e* 00 36 52.9
BOD pmax pmax
comp=Z,13nm,1.4s
VLA Vladivostok 161.29 125 ⇓*e*PKIKP **PKPdf 00 36 19.1 -0.2**
MDJ Mudanjiang 161.33 118 PKP **PKPdf 00 36 17.8 -1.5**
MDJ AMB AMB
comp=Z,140nm,8.2s
MDJ LR LR
comp=Z,430nm,30.3s
MDJ LR LR
comp=Z,570nm,23.6s
MDJ LR LR
comp=Z,630nm,26.1s
MDJ Mudanjiang 161.33 118 *e*PKPdf **PKPdf 00 36 19.6 +0.3**
MDJ LR LR
comp=Z,809nm,21.0s
TIXI Tiksi 161.46 24 PKP **PKPdf 00 36 16.1 -2.5**
comp=Z,0.7nm,0.3s,baz=143,slow=1.4,SNR=9.6
TIXI PKPab **PKPab 00 37 04.7 +1.1**
comp=Z,14nm,0.8s,baz=331,slow=3.7,SNR=18
TIXI Tiksi 161.46 24 *c i*PKIKP PKPpre 00 36 13.5
TIXI Tiksi 161.46 24 *e*PKPdf **PKPdf 00 36 18.3 -0.3**
TIXI PKPab **PKPab 00 37 04.7 +1.1**
USRK Ussuriysk Ar. 162.17 123 PKP **PKPdf 00 36 19.2 -1.0**
comp=Z,4.3nm,1.0s,baz=230,slow=1.5,SNR=8.3
USRK PKPab **PKPab 00 37 07.3 -0.2**
comp=Z,18nm,1.0s,baz=240,slow=3.8,SNR=20
ERM Erimo 164.52 152 ⇓*e*PKIKP **PKPdf 00 36 24.4 +1.9**
ERM Erimo 164.52 152 PFAKE 00 36 30.0 +7.5
ERM LR LR
comp=Z,850nm,21.0s
KLR Kul'dur 165.50 110 PKP **PKPdf 00 36 22.5 -0.6**
comp=Z,6.4nm,1.0s,baz=299,slow=4.8,SNR=15
KLR PKPab **PKPab 00 37 21.4 -0.6**
comp=Z,29nm,1.3s,baz=255,slow=4.8,SNR=11
ASAJ Asahikawa 166.30 147 PKP **PKPdf 00 36 24.6 +0.6**
comp=Z,6.9nm,0.8s,baz=83,slow=5.5,SNR=4.5
BILL Bilibino 166.56 338 ⇑*i*PKIKP PKPpre 00 36 19.1
BILL *i* 00 41 22.3
BILL pmax pmax
comp=Z,7.0nm,1.0s
BILL Bilibino 166.56 338 *e*PKPdf PKPpre 00 36 18.8
BILL LR LR
comp=Z,1μm,22.0s
HABR Khabarovsk 166.72 118 *de*PKIKP **PKPdf 00 36 24.5 +0.4**
HABR *e* 00 36 35.3
HABR *e* 00 37 27.7
HABR 00 41 16.0
HABR *e* 00 43 25.9
HABR *e*SS SS 01 01 56.1 +2.5
HABR *e*SSS SSS 01 08 29.5
HABR pmax pmax
comp=Z,52nm,1.6s
HABR pmax pmax
comp=N,6.0nm,0.8s
HABR pmax pmax
comp=E,8.0nm,0.8s
YAK Yakutsk 166.78 54 *e*PKIKP PKPpre 00 36 17.3
YAK pmax pmax
comp=Z,19nm,1.4s
YAK pmax pmax
comp=E,4.0nm,1.2s
YAK pmax pmax
comp=Z,117nm,2.5s
YAK pmax pmax
comp=N,78nm,6.6s
YAK pmax pmax
comp=E,41nm,2.3s
YSS Yuzh-Sakhalins 168.87 142 *j e*PKIKP **PKPdf 00 36 25.3 -0.3**
YSS *e* 00 36 37.0
YSS *e* 00 37 37.0
YSS pmax pmax
comp=Z,30nm,1.0s
TYV Tymovskoe 171.96 127 *e*PKIKP **PKPdf 00 36 27.5 +0.3**
TYV pmax pmax
comp=Z,22nm,1.0s
NKL Nikolayevsk 172.34 108 *e*PKIKP PKPpre 00 36 20.0
NKL pmax pmax
comp=Z,500nm,6.0s
SEY Seymchan 173.19 2 PKP **PKPdf 00 36 24.2 -3.1**
comp=Z,7.2nm,0.9s,baz=178,slow=1.6,SNR=11
SEY Seymchan 173.19 2 ⇓*e*PKIKP **PKPdf 00 36 23.8 -3.5**
PET Petropavlovsk 175.38 230 *i* PKIKP **PKPdf 00 36 25.4 -2.9**
PET *e* 00 36 40.0
PET *e* 00 38 03.7
PET *e*PPP PPP 00 46 19.0
PET *e*SSS SSS 01 10 29.2
PET pmax pmax
comp=Z,400nm,7.5s
PET pmax pmax
comp=Z,24nm,1.3s
PET pmax pmax
comp=Z,300nm,14.8s
PET Petropavlovsk 175.38 230 *e*PKPdf **PKPdf 00 36 27.5 -0.9**
PET *ep*PKPdf **pPKPdf 00 36 45.7 -1.4**
PET LR LR
comp=Z,985nm,22.0s
PETK Petropavlovsk- 175.84 225 PKP **PKPdf 00 36 27.1 -1.4**
comp=Z,11nm,0.9s,baz=65,slow=3.0,SNR=12
PETK PKPab **PKPab 00 38 07.7 0.0**
comp=Z,23nm,0.9s,baz=108,slow=8.1,SNR=10.0
MA2 Magadan 176.40 17 PKP **PKPdf 00 36 26.6 -1.8**
comp=Z,2.5nm,0.4s,baz=299,slow=19,SNR=2.9
MA2 Magadan 176.40 17 PKP **PKPdf 00 36 26.6 -1.8**
MA2 LR LR
comp=Z,2μm,22.0s

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*ISK **21** 00:16:27.8, 39.°00N×29.°29E, h8km, MD2.5*
*ISCJB **21** 00:16:29.7±0.5, 39.°09N±0.°04×29.°05E±0.°04, h9km, Error ellipse: s-maj=6.0km s-min=3.9km az=141.8*
*DDA **21** 00:16:29.3, 39.°13N×29.°02E, h7km, Ml2.3*
*CSEM **21** 00:16:29.6±0.2, 39.°11N×29.°05E, h2km, ML2.3, Error ellipse: s-maj=5.8km s-min=4.0km az=120.0*
ISC 21 00:16:29.7±0.9, 39.°11N±0.°03×29.°05E±0.°03, h9km, n24, σ0°59/32, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**256**	P	**Pg**	**00 16 35.0**	**-0.1**
DEMI				S	**Sg**	**00 16 38.3**	**-0.3**
DEMI	**Demirci**	**0.27**	**256**	*i* P	**Pg**	**00 16 35.0**	**-0.1**
DEMI				*i* S	**Sg**	**00 16 38.3**	**-0.3**
GDZ	**Gediz**	**0.34**	**93**	P	**Pg**	**00 16 36.8**	**+0.4**
GDZ				S	**Sg**	**00 16 41.7**	**+0.8**
GDZ	**Gediz**	**0.34**	**93**	*i* P	**Pg**	**00 16 36.8**	**+0.4**
GDZ				*i* S	**Sg**	**00 16 41.7**	**+0.8**
TVSB	**Tavsanli**	**0.47**	**43**	*e*PG	**Pg**	**00 16 37.3**	**-1.5**
TVSB				*e*SG	**Sg**	**00 16 44.6**	**-0.4**
TVSB	**Tavsanli**	**0.47**	**43**	*e*Pg	**Pg**	**00 16 37.3**	**-1.5**
TVSB				*e*Sg	**Sg**	**00 16 44.7**	**-0.4**
KULA	**Kula-Manisa**	**0.66**	**207**	*e*PG	**Pg**	**00 16 41.8**	**-0.7**
KULA				*e*SG	**Sg**	**00 16 51.3**	**+0.1**
KULA	**Kula-Manisa**	**0.66**	**207**	*e*Pg	**Pg**	**00 16 41.8**	**-0.7**
KULA				*e*Sg	**Sg**	**00 16 51.3**	**+0.1**
MANT	**Manisa**	**0.72**	**212**	P	**Pg**	**00 16 43.6**	**-0.1**
MANT	**Manisa**	**0.72**	**212**	*i* P	**Pg**	**00 16 43.6**	**-0.1**
KHAL	**Karahalli**	**0.81**	**155**	P	**Pb**	**00 16 46.1**	**+0.1**
KHAL	**Karahalli**	**0.81**	**155**	*i* P	**Pb**	**00 16 46.1**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.27**	**354**	*e*PN	**Pg**	**00 16 54.3**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.27**	**354**	*e*Pn	**Pg**	**00 16 54.3**	**+0.3**
IZI	**Iznik**	**1.27**	**15**	*e*PN	**Pn**	**00 16 53.5**	**-0.2**
IZI	**Iznik**	**1.27**	**15**	*e*Pn	**Pn**	**00 16 53.5**	**-0.2**
KCTX	**Karacabey (Bur**	**1.27**	**335**	*e*PN	**Pg**	**00 16 55.1**	**+0.9**
KCTX	**Karacabey (Bur**	**1.27**	**335**	*e*Pn	**Pg**	**00 16 55.1**	**+0.9**
BORA	**Eskisehir**	**1.33**	**54**	P	**Pn**	**00 16 54.8**	**+0.2**
BORA	**Eskisehir**	**1.33**	**54**	*i* P	**Pn**	**00 16 54.8**	**+0.2**
ARMT	**Armutlu**	**1.46**	**354**	*e*PN	**Pb**	**00 16 57.2**	**+0.1**
ARMT	**Armutlu**	**1.46**	**354**	*e*Pn	**Pb**	**00 16 57.2**	**+0.1**
EDC	**Edincik**	**1.54**	**324**	*e*PN	**Pg**	**00 16 59.0**	**-0.1**
EDC	**Edincik**	**1.54**	**324**	*e*Pn	**Pg**	**00 16 59.1**	**-0.1**

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*ISCJB **21** 00:19:08.7±0.5, 39.°09N±0.°03×29.°06E±0.°04, h3km±8km, Error ellipse: s-maj=6.2km s-min=4.3km az=144.8*
*DDA **21** 00:19:08.6, 39.°09N×29.°06E, h7km, Ml2.2*
*CSEM **21** 00:19:08.9±0.1, 39.°10N×29.°06E, h5km, ML2.2, Error ellipse: s-maj=2.5km s-min=1.9km az=112.0*
*ISK **21** 00:19:08.0, 39.°05N×29.°15E, h6km, MD2.5*
ISC 21 00:19:09.0±0.9, 39.°09N±0.°03×29.°07E±0.°03, h11km±10km, n30, σ0°42/41, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**260**	P	**Pg**	**00 19 14.6**	**-0.1**
DEMI				S	**Sg**	**00 19 18.7**	**+0.2**
DEMI	**Demirci**	**0.28**	**260**	*i* P	**Pg**	**00 19 14.6**	**-0.1**
DEMI				*i* S	**Sg**	**00 19 18.7**	**+0.2**
GDZ	**Gediz**	**0.32**	**90**	P	**Pg**	**00 19 15.6**	**+0.1**
GDZ				S	**Sg**	**00 19 20.2**	**+0.4**
GDZ	**Gediz**	**0.32**	**90**	*i* P	**Pg**	**00 19 15.6**	**+0.1**
GDZ				*i* S	**Sg**	**00 19 20.2**	**+0.4**
TVSB	**Tavsanli**	**0.47**	**40**	*e*PG	**Pg**	**00 19 17.9**	**-0.4**
TVSB				*e*SG	**Sg**	**00 19 24.0**	**-0.5**
TVSB	**Tavsanli**	**0.47**	**40**	*e*Pg	**Pg**	**00 19 17.9**	**-0.4**
TVSB				*e*Sg	**Sg**	**00 19 24.0**	**-0.5**
KULA	**Kula-Manisa**	**0.66**	**209**	*e*PG	**Pg**	**00 19 21.3**	**-0.4**
KULA				*e*SG	**Sg**	**00 19 30.2**	**-0.1**
KULA	**Kula-Manisa**	**0.66**	**209**	*e*Pg	**Pg**	**00 19 21.3**	**-0.4**
DURS	**Dursunbey**	**0.69**	**318**	P	**Pg**	**00 19 21.4**	**-0.9**
DURS	**Dursunbey**	**0.69**	**318**	*i* P	**Pg**	**00 19 21.4**	**-0.9**
MANT	**Manisa**	**0.72**	**214**	P	**Pg**	**00 19 23.0**	**+0.1**
MANT				S	**Sg**	**00 19 32.3**	**0.0**
MANT	**Manisa**	**0.72**	**214**	*i* P	**Pg**	**00 19 23.0**	**+0.1**
MANT				*i* S	**Sg**	**00 19 32.3**	**0.0**
KHAL	**Karahalli**	**0.79**	**155**	P	**Pb**	**00 19 24.8**	**-0.1**
KHAL				S	**Sb**	**00 19 35.1**	**-0.5**
KHAL	**Karahalli**	**0.79**	**155**	*i* P	**Pb**	**00 19 24.8**	**-0.1**
KHAL				*i* S	**Sb**	**00 19 35.1**	**-0.5**
BALB	**Balikesir**	**1.07**	**301**	*e*PN	**Pn**	**00 19 30.5**	**+0.5**
BALB	**Balikesir**	**1.07**	**301**	*e*Pn	**Pn**	**00 19 30.5**	**+0.5**
CAVI	**Cavuskoy**	**1.26**	**28**	*e*PN	**Pn**	**00 19 32.9**	**+0.3**
CAVI	**Cavuskoy**	**1.26**	**28**	*e*Pn	**Pn**	**00 19 32.9**	**+0.3**
IZI	**Iznik**	**1.28**	**14**	*e*PN	**Pn**	**00 19 33.2**	**+0.2**
IZI	**Iznik**	**1.28**	**14**	*e*Pn	**Pn**	**00 19 33.2**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.28**	**354**	*e*PN	**Pg**	**00 19 34.0**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.28**	**354**	*e*Pn	**Pg**	**00 19 34.0**	**+0.3**
KCTX	**Karacabey (Bur**	**1.30**	**335**	*e*PN	**Pg**	**00 19 34.2**	**+0.3**
KCTX	**Karacabey (Bur**	**1.30**	**335**	*e*Pn	**Pg**	**00 19 34.2**	**+0.3**
ADVT	**Abdulvahap**	**1.44**	**21**	*e*PN	**Pn**	**00 19 35.3**	**+0.3**
ADVT	**Abdulvahap**	**1.44**	**21**	*e*Pn	**Pn**	**00 19 35.3**	**+0.3**
ARMT	**Armutlu**	**1.48**	**354**	*e*PN	**Pn**	**00 19 36.4**	**+0.7**
ARMT	**Armutlu**	**1.48**	**354**	*e*Pn	**Pn**	**00 19 36.4**	**+0.7**
GULT	**Gulveren**	**1.74**	**39**	*e*PN	**Pn**	**00 19 39.6**	**+0.3**
GULT	**Gulveren**	**1.74**	**39**	*e*Pn	**Pn**	**00 19 39.6**	**+0.3**

*ISK **21** 00:20:55.6, 39°.01N×29°.16E, h7km, MD2.8*
*DDA **21** 00:20:56.0, 39°.11N×29°.06E, h7km, Md2.7*
*ISCJB **21** 00:20:56.2±0.5, 39°.06N±0°.03×29°.06E±0°.04, h3km±7km,*
Error ellipse: s-maj=5.7km s-min=4.8km az=166.6
*CSEM **21** 00:20:56.4±0.1, 39°.05N×29°.09E, h5km, MD2.7, Error*
ellipse: s-maj=3.2km s-min=2.6km az=114.0
ISC 21 00:20:55.9±1.2, 39°.05N±0°.02×29°.13E±0°.02, h2km±11km, n50, σ0s46/61, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.28**	**83**	P	**Pb**	**00 21 03.2**	**-0.5**
GDZ				S	**Sb**	**00 21 08.1**	**-0.8**
GDZ	**Gediz**	**0.28**	**83**	*i* P	**Pb**	**00 21 03.2**	**-0.5**
GDZ				*i* S	**Sb**	**00 21 08.1**	**-0.8**
DEMI	**Demirci**	**0.32**	**268**	P	**Pg**	**00 21 01.5**	**-0.6**
DEMI	**Demirci**	**0.32**	**268**	*i* P	**Pg**	**00 21 01.6**	**-0.6**
TVSB	**Tavsanli**	**0.47**	**33**	*e*PG	**Pg**	**00 21 05.7**	**+0.7**
TVSB	**Tavsanli**	**0.47**	**33**	*e*Pg	**Pg**	**00 21 05.7**	**+0.7**
KULA	**Kula-Manisa**	**0.65**	**214**	*e*PG	**Pg**	**00 21 08.8**	**+0.4**
KULA				*e*SG	**Sg**	**00 21 17.3**	**+0.4**
KULA	**Kula-Manisa**	**0.65**	**214**	*e*Pg	**Pg**	**00 21 08.8**	**+0.4**
KULA				*e*Sg	**Sg**	**00 21 17.3**	**+0.4**
MANT	**Manisa**	**0.72**	**219**	P	**Pg**	**00 21 10.2**	**+0.5**
MANT	**Manisa**	**0.72**	**219**	*i* P	**Pg**	**00 21 10.2**	**+0.5**
KHAL	**Karahalli**	**0.74**	**157**	P	**Pb**	**00 21 11.8**	**+0.2**
KHAL				S	**Sb**	**00 21 22.1**	**-0.1**
KHAL	**Karahalli**	**0.74**	**157**	*i* P	**Pb**	**00 21 11.8**	**+0.2**
KHAL				*i* S	**Sb**	**00 21 22.1**	**-0.1**
DURS	**Dursunbey**	**0.75**	**317**	P	**Pg**	**00 21 10.2**	**-0.1**
DURS	**Dursunbey**	**0.75**	**317**	*i* P	**Pg**	**00 21 10.2**	**-0.1**
KHL	**Karahalli**	**0.79**	**157**	*e*PG	**Pg**	**00 21 10.2**	**-0.9**
KHL	**Karahalli**	**0.79**	**157**	*e*Pg	**Pg**	**00 21 10.2**	**-0.9**
ORLT	**Orhaneli**	**1.01**	**350**	*e*PG	**Pb**	**00 21 16.3**	**+0.1**
ORLT	**Orhaneli**	**1.01**	**350**	*e*Pg	**Pb**	**00 21 16.3**	**+0.1**
AKS	**Akhisar**	**1.04**	**261**	*e*PG	**Pg**	**00 21 15.8**	**-0.1**
AKS	**Akhisar**	**1.04**	**261**	*e*Pg	**Pg**	**00 21 15.8**	**-0.1**
BALB	**Balikesir**	**1.13**	**302**	*e*PN	**Pb**	**00 21 18.2**	**-0.1**
BALB	**Balikesir**	**1.13**	**302**	*e*Pn	**Pb**	**00 21 18.2**	**-0.1**
IGD	**Bursa**	**1.21**	**3**	*i* P	**Pg**	**00 21 17.6**	**-1.5**
IGD				*i* S	**Sg**	**00 21 34.4**	**-0.5**
CAVI	**Cavuskoy**	**1.27**	**25**	*e*PN	**Pb**	**00 21 20.8**	**+0.1**
CAVI				*e*SN	**Sn**	**00 21 38.7**	**+0.2**
CAVI	**Cavuskoy**	**1.27**	**25**	*e*Pn	**Pb**	**00 21 20.8**	**+0.1**
CAVI				*e*Sn	**Sn**	**00 21 38.7**	**+0.2**
IZI	**Iznik**	**1.31**	**12**	*e*PN	**Pn**	**00 21 21.6**	**+0.2**
IZI	**Iznik**	**1.31**	**12**	*e*Pn	**Pn**	**00 21 21.6**	**+0.2**
BORA	**Eskisehir**	**1.31**	**51**	P	**Pg**	**00 21 21.2**	**0.0**
BORA				S	**Sn**	**00 21 39.7**	**0.0**
BORA	**Eskisehir**	**1.31**	**51**	*i* P	**Pg**	**00 21 21.2**	**0.0**
BORA				*i* S	**Sn**	**00 21 39.7**	**0.0**
MDNY	**Mudanya-Bursa**	**1.33**	**352**	*e*PN	**Pb**	**00 21 21.8**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.33**	**352**	*e*Pn	**Pb**	**00 21 21.8**	**+0.2**
KCTX	**Karacabey (Bur**	**1.35**	**334**	*e*PN	**Pb**	**00 21 22.4**	**+0.4**
KCTX	**Karacabey (Bur**	**1.35**	**334**	*e*Pn	**Pb**	**00 21 22.4**	**+0.4**
ESKT	**Eskisehir**	**1.41**	**70**	*i* P	**Pb**	**00 21 23.2**	**+0.1**
SEYT	**Eskypehyr**	**1.41**	**70**	P	**Pb**	**00 21 23.2**	**+0.1**
ADVT	**Abdulvahap**	**1.46**	**19**	*e*PN	**Pn**	**00 21 23.1**	**-0.2**
ADVT	**Abdulvahap**	**1.46**	**19**	*e*Pn	**Pn**	**00 21 23.1**	**-0.2**
GONE	**Gonen-Balikesi**	**1.49**	**312**	*e*PN	**Pb**	**00 21 24.3**	**-0.1**
GONE	**Gonen-Balikesi**	**1.49**	**312**	*e*Pn	**Pb**	**00 21 24.3**	**-0.1**
ARMT	**Armutlu**	**1.52**	**352**	*e*PN	**Pn**	**00 21 24.7**	**+0.4**
ARMT	**Armutlu**	**1.52**	**352**	*e*Pn	**Pn**	**00 21 24.7**	**+0.4**
EDC	**Edincik**	**1.62**	**323**	*e*PN	**Pn**	**00 21 25.5**	**-0.1**
EDC	**Edincik**	**1.62**	**323**	*e*Pn	**Pn**	**00 21 25.5**	**-0.1**
GULT	**Gulveren**	**1.74**	**37**	*e*PN	**Pn**	**00 21 27.6**	**+0.3**
GULT	**Gulveren**	**1.74**	**37**	*e*Pn	**Pn**	**00 21 27.6**	**+0.3**
AUMIH	**MIHALJICIK**	**1.99**	**65**	*i* P	**Pg**	**00 21 35.1**	**+0.9**
ISK	**Istanbul-Kandi**	**2.01**	**358**	*e*PN	**Pn**	**00 21 31.6**	**+0.7**
ISK	**Istanbul-Kandi**	**2.01**	**358**	*e*Pn	**Pn**	**00 21 31.6**	**+0.7**
MDUB	**Mudurnu**	**2.13**	**48**	*e*PN	**Pn**	**00 21 32.9**	**+0.2**
MDUB	**Mudurnu**	**2.13**	**48**	*e*Pn	**Pn**	**00 21 32.9**	**+0.2**

*IDC **21** 00:24:12.6±0.8, 55°.86S×26°.65W, h0km, mb4.5/4,*
mb1 4.7/4, mb1mx4.0/25, mbtmp4.5/4, Error ellipse:
s-maj=44.9km s-min=24.0km az=63.0
*ISCJB **21** 00:24:16.1±0.7, 55°.9S±0°.1×26°.7W±0°.2, h35km, mb4.3/8,*
Error ellipse: s-maj=20.6km s-min=14.2km az=149.3
*NEIC **21** 00:24:18.4±3.0, 55°.92S×26°.81W, h40km±26km, mb4.1/4,*
Error ellipse: s-maj=14.3km s-min=10.6km az=51.0
ISC 21 00:24:17.9±0.6, 55°.9S±0°.1×26°.8W±0°.2, h35km, n19, σ0s61/19, mb4.3/8, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SNAA	**Sanae**	**18.79**	**156**	*e*P	**P**	**00 28 34.0**	**+0.1**
	2um,0.8s						
CPUP	**Villa Florida**	**36.88**	**311**	P	**P**	**00 31 23.0**	**+0.1**
	2.2nm,0.6s,baz=141,slow=6.5,SNR=3.5						
LVC	**Limon Verde**	**45.42**	**300**	*e*P	**P**	**00 32 33.6**	**0.0**
	3.4nm,0.6s						
SBA	**Scott Base**	**46.24**	**184**	*e*P	**P**	**00 32 38.1**	**-0.8**
	1.1nm,0.5s						
VNDA	**Vanda**	**46.73**	**183**	P	**P**	**00 32 42.6**	**-0.2**
	6.4nm,0.6s,baz=195,slow=6.2,SNR=11						
TSUM	**Tsumeb**	**49.42**	**60**	*e*P	**P**	**00 33 04.0**	**-0.4**
	0.8nm,0.7s						
LPAZ	**La Paz**	**50.47**	**305**	P	**P**	**00 33 13.2**	**+0.2**
	2.0nm,0.4s,baz=137,slow=3.7,SNR=14						
LSZ	**Lusaka**	**58.12**	**69**	*e*P	**P**	**00 34 08.4**	**+0.4**
	1.6nm,0.9s						
RPZ	**Rata Peaks**	**79.61**	**193**	P	**P**	**00 36 21.9**	**+0.8**
	4.3nm,0.7s,baz=225,slow=2.9,SNR=3.9						
TXAR	**Lajitas Array**	**106.92**	**297**	PKiKP	**PKiKP**	**00 42 39.0**	**-0.5**
	0.4nm,0.8s,baz=148,slow=5.3,SNR=3.2						
FINES	**FINESS Array B**	**124.15**	**28**	PKP	**PKPdf**	**00 43 10.8**	**-0.4**
	2.1nm,1.0s,baz=233,slow=1.9,SNR=6.0						
ARCES	**ARCESS Array B**	**130.73**	**22**	PKP	**PKPdf**	**00 43 22.5**	**-1.0**
	1.5nm,0.8s,baz=252,slow=2.4,SNR=4.8						
BVAR	**Borovoye Array**	**134.52**	**57**	PKP	**PKPdf**	**00 43 32.7**	**+1.5**
	0.3nm,0.5s,baz=230,slow=3.6,SNR=2.7						
YKA	**Yellowknife Ar**	**136.21**	**318**	PKP	**PKPdf**	**00 43 33.4**	**-0.5**
	0.4nm,0.5s,baz=132,slow=2.1,SNR=7.3						
INK	**Inuvik**	**145.83**	**321**	PKPbc	**PKPdf**	**00 43 50.9**	**-0.2**
	2.9nm,0.6s,baz=143,slow=3.8,SNR=10						
ILAR	**Eielson Array**	**150.18**	**312**	PKPbc	**PKPbc**	**00 44 03.6**	**+0.1**
	3.1nm,0.7s,baz=122,slow=2.0,SNR=14						
SONM	**Songino Array**	**150.50**	**86**	PKPbc	**PKPbc**	**00 44 04.9**	**-0.1**
	1.0nm,0.4s,baz=211,slow=3.4,SNR=9.4						
MCK	**McKinley**	**150.85**	**309**	*e*PKPbc	**PKPbc**	**00 44 05.4**	**+0.3**
BPAW	**Bear Paw Mtn.**	**151.81**	**310**	*e*PKPbc	**PKPbc**	**00 44 07.0**	**-0.4**

*ISK **21** 00:26:06.0, 39°.12N×29°.14E, h2km, MD2.5*
*ISCJB **21** 00:26:07.1±0.6, 39°.11N±0°.05×29°.10E±0°.05, h6km±7km,*
Error ellipse: s-maj=9.2km s-min=4.7km az=144.4
*DDA **21** 00:26:07.3, 39°.07N×29°.10E, h7km, Ml2.0*
*CSEM **21** 00:26:07.2±0.2, 39°.10N×29°.10E, h8km, ML2.0, Error*
ellipse: s-maj=4.9km s-min=3.5km az=128.0
ISC 21 00:26:06.7±1.1, 39°.07N±0°.04×29°.14E±0°.03, h12km±11km, n18, σ0s27/27, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.26**	**87**	P	**Pb**	**00 26 13.6**	**+0.1**
GDZ				S	**Sb**	**00 26 18.1**	**0.0**
GDZ	**Gediz**	**0.26**	**87**	*i* P	**Pb**	**00 26 13.6**	**+0.1**
GDZ				*i* S	**Sb**	**00 26 18.1**	**0.0**
DEMI	**Demirci**	**0.33**	**265**	P	**Pg**	**00 26 13.7**	**+0.2**
DEMI				S	**Sg**	**00 26 17.9**	**-0.1**
DEMI	**Demirci**	**0.33**	**265**	*i* P	**Pg**	**00 26 13.7**	**+0.2**
DEMI				*i* S	**Sg**	**00 26 17.9**	**-0.1**
TVSB	**Tavsanli**	**0.45**	**33**	*e*PG	**Pg**	**00 26 15.2**	**-0.4**
TVSB				*e*SG	**Sg**	**00 26 21.2**	**-0.4**
KULA	**Kula-Manisa**	**0.67**	**214**	*e*PG	**Pb**	**00 26 20.5**	**0.0**
MANT	**Manisa**	**0.74**	**218**	P	**Pb**	**00 26 21.6**	**-0.1**
MANT				S	**Sb**	**00 26 31.5**	**-0.4**
MANT	**Manisa**	**0.74**	**218**	*i* P	**Pb**	**00 26 21.6**	**-0.1**
MANT				*i* S	**Sb**	**00 26 31.5**	**-0.4**
BALB	**Balikesir**	**1.13**	**300**	*e*PN	**Pb**	**00 26 28.0**	**-0.2**
BALB	**Balikesir**	**1.13**	**300**	*e*Pn	**Pb**	**00 26 28.0**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.31**	**351**	*e*PN	**Pb**	**00 26 31.2**	**-0.1**
MDNY				*e*SN	**Sg**	**00 26 49.5**	**+0.6**
MDNY	**Mudanya-Bursa**	**1.31**	**351**	*e*Pn	**Pb**	**00 26 31.2**	**-0.1**
MDNY				*e*Sn	**Sg**	**00 26 49.5**	**+0.6**
KCTX	**Karacabey (Bur**	**1.34**	**333**	*e*PN	**Pn**	**00 26 31.4**	**+0.2**
KCTX	**Karacabey (Bur**	**1.34**	**333**	*e*Pn	**Pn**	**00 26 31.4**	**+0.2**
ARMT	**Armutlu**	**1.51**	**352**	*e*PN	**Pb**	**00 26 34.4**	**-0.2**
ARMT	**Armutlu**	**1.51**	**352**	*e*Pn	**Pb**	**00 26 34.4**	**-0.2**
EDC	**Edincik**	**1.61**	**323**	*e*PN	**Pb**	**00 26 36.3**	**-0.1**
EDC	**Edincik**	**1.61**	**323**	*e*Pn	**Pb**	**00 26 36.3**	**-0.1**

*ISCJB **21** 00:31:58.5±0.4, 39°.11N±0°.03×29°.01E±0°.04, h9km, Error*
ellipse: s-maj=4.6km s-min=3.5km az=142.3
*DDA **21** 00:31:58.7, 39°.14N×28°.99E, h7km, Ml2.6*
*CSEM **21** 00:31:58.7±0.1, 39°.11N×29°.02E, h8km, ML2.6, Error*
ellipse: s-maj=2.1km s-min=1.9km az=114.0
*ISK **21** 00:31:58.1, 39°.11N×29°.05E, h9km, MD2.7*
ISC 21 00:31:58.7±0.9, 39°.12N±0°.02×29°.01E±0°.02, h9km, n44, σ0s26/52, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**252**	P	**Pg**	**00 32 03.8**	**+0.2**
DEMI				S	**Sg**	**00 32 07.2**	**+0.2**
DEMI	**Demirci**	**0.24**	**252**	*i* P	**Pg**	**00 32 03.8**	**+0.2**
DEMI				*i* S	**Sg**	**00 32 07.2**	**+0.2**
GDZ	**Gediz**	**0.36**	**94**	P	**Pg**	**00 32 06.3**	**+0.3**
GDZ				S	**Sg**	**00 32 11.5**	**+0.7**
GDZ	**Gediz**	**0.36**	**94**	*i* P	**Pg**	**00 32 06.3**	**+0.3**
GDZ				*i* S	**Sg**	**00 32 11.5**	**+0.7**
TVSB	**Tavsanli**	**0.48**	**46**	*e*PG	**Pg**	**00 32 07.9**	**-0.2**
TVSB				*e*SG	**Sg**	**00 32 14.1**	**-0.4**
TVSB	**Tavsanli**	**0.48**	**46**	*e*Pg	**Pg**	**00 32 07.9**	**-0.2**
TVSB				*e*Sg	**Sg**	**00 32 14.1**	**-0.4**
DURS	**Dursunbey**	**0.64**	**319**	P	**Pg**	**00 32 10.7**	**-0.4**
DURS	**Dursunbey**	**0.64**	**319**	*i* P	**Pg**	**00 32 10.7**	**-0.4**
KULA	**Kula-Manisa**	**0.66**	**205**	*e*PG	**Pg**	**00 32 11.5**	**0.0**
KULA				*e*SG	**Sg**	**00 32 20.3**	**+0.1**
KULA	**Kula-Manisa**	**0.66**	**205**	*e*Pg	**Pg**	**00 32 11.5**	**0.0**
KULA				*e*Sg	**Sg**	**00 32 20.3**	**+0.1**
MANT	**Manisa**	**0.72**	**210**	P	**Pg**	**00 32 12.5**	**-0.1**
MANT	**Manisa**	**0.72**	**210**	*i* P	**Pg**	**00 32 12.5**	**-0.1**
KHAL	**Karahalli**	**0.83**	**153**	P	**Pb**	**00 32 15.4**	**-0.1**
KHAL	**Karahalli**	**0.83**	**153**	*i* P	**Pb**	**00 32 15.4**	**-0.1**
KHL	**Karahalli**	**0.89**	**153**	*e*PG	**Pg**	**00 32 15.2**	**-0.6**
KHL	**Karahalli**	**0.89**	**153**	*e*Pg	**Pg**	**00 32 15.2**	**-0.6**
ORLT	**Orhaneli**	**0.93**	**354**	*e*PG	**Pg**	**00 32 16.8**	**+0.1**
ORLT	**Orhaneli**	**0.93**	**354**	*e*Pg	**Pg**	**00 32 16.8**	**+0.1**
AKS	**Akhisar**	**0.96**	**256**	*e*PG	**Pb**	**00 32 17.6**	**0.0**
AKS	**Akhisar**	**0.96**	**256**	*e*Pg	**Pb**	**00 32 17.6**	**0.0**
BALB	**Balikesir**	**1.02**	**301**	*e*PG	**Pb**	**00 32 18.7**	**+0.1**
BALB	**Balikesir**	**1.02**	**301**	*e*Pg	**Pb**	**00 32 18.7**	**+0.1**
KCTX	**Karacabey (Bur**	**1.25**	**336**	*e*PN	**Pb**	**00 32 22.7**	**+0.1**
KCTX	**Karacabey (Bur**	**1.25**	**336**	*e*Pn	**Pb**	**00 32 22.7**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.25**	**355**	*e*PN	**Pn**	**00 32 22.4**	**0.0**
MDNY	**Mudanya-Bursa**	**1.25**	**355**	*e*Pn	**Pn**	**00 32 22.4**	**0.0**
CAVI	**Cavuskoy**	**1.26**	**30**	*e*PN	**Pb**	**00 32 22.7**	**0.0**
CAVI	**Cavuskoy**	**1.26**	**30**	*e*Pn	**Pb**	**00 32 22.7**	**0.0**
IZI	**Iznik**	**1.27**	**16**	*e*PN	**Pn**	**00 32 22.4**	**-0.3**
IZI	**Iznik**	**1.27**	**16**	*e*Pn	**Pn**	**00 32 22.4**	**-0.3**
BORA	**Eskisehir**	**1.35**	**55**	P	**Pg**	**00 32 24.5**	**-0.1**
BORA	**Eskisehir**	**1.35**	**55**	*i* P	**Pg**	**00 32 24.5**	**-0.1**
GONE	**Gonen-Balikesi**	**1.38**	**313**	*e*PN	**Pb**	**00 32 24.8**	**+0.1**
GONE	**Gonen-Balikesi**	**1.38**	**313**	*e*Pn	**Pb**	**00 32 24.8**	**+0.1**
ADVT	**Abdulvahap**	**1.43**	**23**	*e*PN	**Pn**	**00 32 24.8**	**0.0**
ADVT	**Abdulvahap**	**1.43**	**23**	*e*Pn	**Pn**	**00 32 24.8**	**0.0**
ARMT	**Armutlu**	**1.45**	**355**	*e*PN	**Pn**	**00 32 25.3**	**+0.1**
ARMT	**Armutlu**	**1.45**	**355**	*e*Pn	**Pn**	**00 32 25.3**	**+0.1**
EDC	**Edincik**	**1.51**	**325**	*e*PN	**Pb**	**00 32 27.0**	**0.0**
EDC	**Edincik**	**1.51**	**325**	*e*Pn	**Pb**	**00 32 27.0**	**0.0**
GULT	**Gulveren**	**1.75**	**41**	*e*PN	**Pn**	**00 32 29.3**	**0.0**
GULT	**Gulveren**	**1.75**	**41**	*e*Pn	**Pn**	**00 32 29.3**	**0.0**
SVRH	**Sivrihisar-ESK**	**1.98**	**80**	*e*PN	**Pn**	**00 32 32.4**	**-0.1**
SVRH	**Sivrihisar-ESK**	**1.98**	**80**	*e*Pn	**Pn**	**00 32 32.4**	**-0.1**

*ISK **21** 00:33:12.3, 39°.07N×29°.10E, h8km, MD2.7*
*ISCJB **21** 00:33:13.0±0.5, 39°.12N±0°.04×29°.01E±0°.04, h5km±9km,*
Error ellipse: s-maj=8.3km s-min=4.1km az=150.0
*DDA **21** 00:33:13.1, 39°.12N×29°.00E, h7km, Ml2.6*
*CSEM **21** 00:33:13.2±0.1, 39°.13N×29°.01E, h5km, ML2.6, Error*
ellipse: s-maj=3.7km s-min=2.6km az=127.0
ISC 21 00:33:12.9±1.0, 39°.10N±0°.03×29°.05E±0°.03, h9km±11km, n36, σ0s28/46, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**258**	P	**Pg**	**00 33 18.1**	**-0.2**
DEMI				S	**Sg**	**00 33 21.6**	**-0.3**
DEMI	**Demirci**	**0.27**	**258**	*i* P	**Pg**	**00 33 18.1**	**-0.2**
DEMI				*i* S	**Sg**	**00 33 21.6**	**-0.3**
GDZ	**Gediz**	**0.34**	**91**	P	**Pb**	**00 33 20.9**	**-0.3**
GDZ				S	**Sb**	**00 33 26.4**	**-0.3**
GDZ	**Gediz**	**0.34**	**91**	*i* P	**Pb**	**00 33 20.9**	**-0.3**
GDZ				*i* S	**Sb**	**00 33 26.4**	**-0.3**
TVSB	**Tavsanli**	**0.47**	**42**	*e*PG	**Pg**	**00 33 22.1**	**0.0**
TVSB				*e*SG	**Sg**	**00 33 28.8**	**+0.3**
TVSB	**Tavsanli**	**0.47**	**42**	*e*Pg	**Pg**	**00 33 22.2**	**0.0**
TVSB				*e*Sg	**Sg**	**00 33 28.8**	**+0.3**
KULA	**Kula-Manisa**	**0.66**	**208**	*e*PG	**Pg**	**00 33 25.6**	**0.0**
KULA				*e*SG	**Sg**	**00 33 34.6**	**+0.4**
KULA	**Kula-Manisa**	**0.66**	**208**	*e*Pg	**Pg**	**00 33 25.6**	**0.0**
KULA				*e*Sg	**Sg**	**00 33 34.6**	**+0.4**
MANT	**Manisa**	**0.72**	**213**	P	**Pg**	**00 33 27.2**	**+0.4**
MANT				S	**Sg**	**00 33 36.7**	**+0.5**
MANT	**Manisa**	**0.72**	**213**	*i* P	**Pg**	**00 33 27.2**	**+0.4**
MANT				*i* S	**Sg**	**00 33 36.6**	**+0.5**
KHAL	**Karahalli**	**0.80**	**154**	P	**Pn**	**00 33 30.5**	**0.0**
KHAL	**Karahalli**	**0.80**	**154**	*i* P	**Pn**	**00 33 30.5**	**0.0**
AKS	**Akhisar**	**0.99**	**258**	*e*PG	**Pg**	**00 33 31.8**	**-0.1**
AKS	**Akhisar**	**0.99**	**258**	*e*Pg	**Pg**	**00 33 31.8**	**-0.1**
BALB	**Balikesir**	**1.06**	**301**	*e*PN	**Pn**	**00 33 34.0**	**+0.1**
BALB	**Balikesir**	**1.06**	**301**	*e*Pn	**Pn**	**00 33 34.0**	**+0.1**
CAVI	**Cavuskoy**	**1.26**	**29**	*e*PN	**Pn**	**00 33 36.5**	**-0.3**
CAVI	**Cavuskoy**	**1.26**	**29**	*e*Pn	**Pn**	**00 33 36.5**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.28**	**354**	*e*PN	**Pn**	**00 33 36.7**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.28**	**354**	*e*Pn	**Pn**	**00 33 36.7**	**-0.3**
IZI	**Iznik**	**1.28**	**15**	*e*PN	**Pb**	**00 33 37.2**	**-0.1**
IZI	**Iznik**	**1.28**	**15**	*e*Pn	**Pb**	**00 33 37.2**	**-0.1**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*PN	**Pg**	**00 33 38.0**	**+0.5**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*Pn	**Pg**	**00 33 38.1**	**+0.5**
BORA	**Eskisehir**	**1.34**	**54**	P	**Pg**	**00 33 38.9**	**+0.3**
BORA	**Eskisehir**	**1.34**	**54**	*i* P	**Pg**	**00 33 38.9**	**+0.3**
GONE	**Gonen-Balikesi**	**1.42**	**312**	*e*PN	**Pb**	**00 33 39.6**	**+0.1**
GONE	**Gonen-Balikesi**	**1.42**	**312**	*e*Pn	**Pb**	**00 33 39.7**	**+0.1**
ADVT	**Abdulvahap**	**1.44**	**21**	*e*PN	**Pb**	**00 33 39.6**	**-0.2**
ADVT	**Abdulvahap**	**1.44**	**21**	*e*Pn	**Pb**	**00 33 39.6**	**-0.2**
ARMT	**Armutlu**	**1.47**	**354**	*e*PN	**Pb**	**00 33 40.2**	**-0.3**
ARMT	**Armutlu**	**1.47**	**354**	*e*Pn	**Pb**	**00 33 40.2**	**-0.3**
EDC	**Edincik**	**1.55**	**324**	*e*PN	**Pb**	**00 33 41.8**	**0.0**
EDC	**Edincik**	**1.55**	**324**	*e*Pn	**Pb**	**00 33 41.8**	**0.0**
GULT	**Gulveren**	**1.75**	**40**	*e*PN	**Pn**	**00 33 43.6**	**+0.1**
GULT	**Gulveren**	**1.75**	**40**	*e*Pn	**Pn**	**00 33 43.6**	**+0.1**

JMA 21 00:34:40.9±0.1, 38°.75N×142°.27E, h39km±2km, M3.6,
Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.57**	**305**	P	Pn	00 34 52.8	+0.1
OFUJ				S	Sn	00 35 01.1	+0.2
JIO	**Ouri**	**0.78**	**248**	P	Pn	00 34 55.3	-0.1
JIO				S	Sn	00 35 05.2	-0.7
JMK	**Ichinoseki**	**0.84**	**284**	P	Pn	00 34 56.5	+0.2
JMK				S	Sn	00 35 07.5	0.0
JOM	**Ohasama**	**1.05**	**314**	P	Pn	00 34 59.5	+0.4
JOM				S	Sn	00 35 12.8	+0.3
JTH	**Tanohata**	**1.23**	**345**	P	Pn	00 35 01.8	+0.2
JTH				*e*S	Sn	00 35 18.0	+1.1
JOU	**Okura**	**1.32**	**254**	P	Pn	00 35 03.0	+0.2
JOU				S	Sn	00 35 19.5	+0.4

*MOS **21** 00:41:35.9±1.0, 56°.04S×27°.30W, h45km, mb5.2/7, Error*
ellipse: s-maj=23.4km s-min=13.3km az=101.0
*ISCJB **21** 00:41:36.4±0.3, 55°.97S±0°.05×27°.22W±0°.09, h50km,*
mb5.0/38, MS4.8/5, Error ellipse: s-maj=8.9km
s-min=5.6km az=137.8
*NEIC **21** 00:41:37.3±1.6, 55°.99S×27°.16W, h41km±13km, mb5.1/27,*
Error ellipse: s-maj=9.6km s-min=6.7km az=225.0
*BJI **21** 00:41:37.1, 56°.00S×27°.20W, h35km, mB5.3/8, Ms5.5/8,*
Ms7 5.3/8
*IDC **21** 00:41:40.1±1.4, 56°.01S×27°.21W, h71km±11km, mb4.4/15,*
mb1 4.5/16, mb1mx4.4/25, mbtmp4.7/16, MS4.2/2,
Ms1 4.1/2, ms1mx3.4/25, Error ellipse: s-maj=17.5km
s-min=11.7km az=39.0
ISC 21 00:41:38.3±0.3, 56°.00S±0°.07×27°.27W±0°.07, h50km, n120, σ1s61/134, mb5.1/37, MS5.0/5, 1C-2D, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HOPE	**Hope Point**	**5.56**	**284**	*e*Pn	**Pn**	**00 42 58.5**	**+0.2**
VNA1	**Neumayer--Stat**	**16.86**	**158**	P	**Pn**	**00 45 30.9**	**+0.6**
VNA3	**Neumayer Olymp**	**17.05**	**161**	P	**Pn**	**00 45 32.5**	**-0.3**
VNA2	**Neumayer--Watz**	**17.25**	**158**	P	**Pn**	**00 45 35.5**	**+0.3**
	baz=317,slow=13						
EFI	**East Falkland**	**18.59**	**271**	*e*P	**P**	**00 45 51.3**	**+0.3**
EFI				pmax	pmax		
	comp=Z,312nm,1.8s						
EFI	**East Falkland**	**18.59**	**271**	*e*P	**P**	**00 45 51.3**	**+0.3**
	comp=Z,312nm,1.8s						
SNAA	**Sanae**	**18.80**	**156**	P	**P**	**00 45 51.9**	**-1.3**
SNAA	**Sanae**	**18.80**	**156**	*e*P	**P**	**00 45 52.5**	**-0.8**
SNAA				pmax	pmax		
	comp=Z,31nm,0.7s						
SNAA	**Sanae**	**18.80**	**156**	*e*P	**P**	**00 45 52.5**	**-0.8**
	comp=Z,31nm,0.7s						
SNAA				*e*ScP	**ScP**	**00 53 47.7**	**-1.6**
PMSA	**Palmer Station**	**19.90**	**229**	P	**P**	**00 46 07.0**	**+1.9**
	comp=Z,4.3nm,0.3s,baz=74,slow=7.7,SNR=16						
PMSA	**Palmer Station**	**19.90**	**229**	*e*P	**P**	**00 46 05.9**	**+0.8**
	comp=Z,87nm,1.3s						
NVL	**N'Iazarevskaya**	**22.33**	**147**	*e*P	**P**	**00 46 33.4**	**+2.2**
CHRN	**Cochrane**	**28.99**	**268**	*e*P	**P**	**00 47 35.0**	**+2.2**
	comp=Z,229nm,1.7s						
TRQA	**Tornquist**	**29.26**	**293**	*e*P	**P**	**00 47 35.4**	**0.0**
	comp=Z,50nm,1.7s						
SYO	**Syowa Base**	**31.65**	**141**	*e*P	**P**	**00 47 53.6**	**-2.5**
SYO	**Syowa Base**	**31.65**	**141**	*e*pP	**P**	00 48 03.6	+7.5
PLCA	**Paso Flores**	**31.95**	**280**	P	**P**	**00 47 57.6**	**-1.5**
	comp=Z,2.0nm,0.7s,baz=160,slow=14,SNR=3.8						
PLCA				ScP	**ScP**	**00 54 22.6**	**-4.5**
	comp=Z,2.7nm,0.9s,baz=38,slow=6.3,SNR=3.6						
QSPA	**South Pole Qui**	**34.25**	**180**	*e*P	**P**	**00 48 18.7**	**-0.3**
	comp=Z,76nm,0.5s						
SPB	**

ROSC	El Rosal	71.82	310	P	P	00 52 56.7 +0.7
	comp=Z,2.9nm,0.4s,baz=192,slow=19,SNR=3.4					
PCRV	Puerto La Cruz	72.88	321	P	P	00 53 01.4 -0.5
	comp=Z,6.9nm,0.6s,baz=133,slow=3.9,SNR=5.1					
SDV	Santo Domingo	73.94	315	P	P	00 53 07.3 -1.0
	comp=Z,11nm,0.6s,baz=285,slow=4.8,SNR=3.2					
RPZ	Rata Peaks	79.45	193	*e*P	P	00 53 40.0 +1.0
	comp=Z,16nm,0.7s					
THZ	Tophouse	81.11	195	*e*P	P	00 53 49.6 +1.7
	comp=Z,29nm,0.6s					
STKA	Stephens Creek	91.95	171	P	P	00 54 39.6 -1.6
	comp=Z,3.4nm,0.6s,baz=126,slow=4.1,SNR=9.3					
ASAR	Alice Springs	99.05	163	P	Pdif	00 55 12.6 -1.2
	comp=Z,2.4nm,0.6s,baz=184,slow=4.0,SNR=35					
ASAR				PP	PP	00 59 11.7 -3.6
	comp=Z,0.9nm,0.6s,baz=193,slow=6.5,SNR=6.6					
AS01	Alice Springs	99.06	163	*e*P	Pdif	00 55 13.2 -0.5
WRA	Warramunga Arr	102.77	162	P	Pdif	00 55 29.1 -1.2
	comp=Z,0.8nm,0.6s,baz=195,slow=4.3,SNR=8.8					
TXAR	Lajitas Array	106.73	298	PKiKP	PKiKP	00 59 58.2 +0.6
	comp=Z,0.4nm,0.8s,baz=131,slow=3.8,SNR=4.4					
PDAR	Pinedale Array	120.28	302	PKP	PKPdf	01 00 21.7 -1.4
	comp=Z,0.4nm,0.4s,baz=145,slow=3.3,SNR=5.3					
NOA	NORSAR Array B	120.58	21	PKP	PKPdf	01 00 21.8 -1.1
	comp=Z,1.0nm,0.7s,baz=206,slow=1.9,SNR=3.7					
NVAR	Mina Array Bea	121.34	293	PKP	PKPdf	01 00 24.7 -0.6
	comp=Z,0.6nm,0.6s,baz=150,slow=2.6,SNR=3.8					
FINES	FINESS Array B	124.36	28	PKP	PKPdf	01 00 28.2 -1.8
	comp=Z,2.8nm,0.5s,baz=152,slow=1.7,SNR=23					
CMAR	Chiang Mai Arr	125.12	111	PKP	PKPdf	01 00 33.0 +0.2
	comp=Z,1.3nm,0.8s,baz=238,slow=3.7,SNR=4.4					
ABKAR	Akbulak array	127.38	55	*e*PKPdf	PKPdf	01 00 37.6 +1.4
KSH	Kashi	128.60	74	*e*PKP	PKPdf	01 00 42.9 +3.9
KSH				*es*PKP		01 00 57.8
KSH				PKS	PKSdf	01 04 18.0 +2.4
KSH				SKS	SKSdf	01 07 50.1 +3.9
KSH				AMB	AMB	
	comp=Z,47nm,5.5s					
KSH				LR	LR	
	comp=Z,110nm,7.5s					
KSH				LR	LR	
	comp=Z,110nm,9.5s					
KSH				LR	LR	
	comp=Z,220nm,12.6s					
ARCES	ARCESS Array B	130.92	22	PKP	PKPdf	01 00 40.6 -1.7
	comp=Z,1.6nm,0.6s,baz=174,slow=1.6,SNR=14					
GYA	Guiyang	135.73	112	Pdif	Pdif	00 57 56.3 -0.3
GYA				PP	PP	01 03 35.6 +4.1
GYA				AMB	AMB	
	comp=Z,120nm,7.8s					
YKA	Yellowknife Ar	136.10	318	PKhKP	PKPpre	01 00 41.5
	comp=Z,0.2nm,0.7s,baz=120,slow=3.3,SNR=5.9					
YKA				PKP	PKPdf	01 00 51.8 -0.4
	comp=Z,2.4nm,0.6s,baz=131,slow=2.1,SNR=12					
YKA				SKPbc	SKPbc	01 04 15.2 -4.4
	comp=Z,1.4nm,0.7s,baz=130,slow=3.4,SNR=10					
MKAR	Makanchi Array	136.91	71	PKhKP	PKPpre	01 00 46.4
	comp=Z,0.2nm,0.6s,baz=198,slow=2.3,SNR=2.9					
MKAR				PKP	PKPdf	01 00 53.7 -0.6
	comp=Z,0.4nm,0.5s,baz=219,slow=1.6,SNR=4.2					
MKAR				SKPbc	SKPbc	01 04 18.4 -4.3
	comp=Z,0.7nm,0.8s,baz=184,slow=1.9,SNR=4.7					
CD2	Chengdu	137.72	105	PKP	PKPdf	01 00 56.3 -0.1
CD2				PP	PP	01 03 44.0 +0.1
CD2				SKS	SKSdf	01 08 03.5 +0.8
CD2				SKKS	SKKSac	01 10 33.8 +0.2
CD2				SS	SS	01 21 51.8 +2.5
CD2				AMB	AMB	
	comp=Z,190nm,10.2s					
CD2				LR	LR	
	comp=Z,390nm,16.8s					
CD2				LR	LR	
	comp=Z,430nm,21.6s					
WMQ	Urumqi	137.94	78	*e*PKP	PKPdf	01 00 58.0 +1.6
ZALV	Zalesovo Beam	142.39	64	PKhKP	PKPpre	01 00 59.0
	comp=Z,1.2nm,0.4s,baz=240,slow=4.3,SNR=6.3					
ZALV	Zalesovo Beam	142.39	64	PKIKP	PKPpre	01 00 59.0
XAN	Xi'an	142.90	108	PKP	PKPdf	01 00 55.9 -10
XAN				pPKP	PKiKP	01 01 09.5 +0.7
XAN				PP	PP	01 04 27.8 +12
XAN				AMB	AMB	
	comp=Z,93nm,4.9s					
INK	Inuvik	145.74	321	PKPbc	PKPdf	01 01 09.3 -0.1
	comp=Z,14nm,0.6s,baz=66,slow=3.3,SNR=27					
INK				SKPbc	SKPbc	01 04 42.0 -2.6
	comp=Z,3.4nm,0.8s,baz=82,slow=4.1,SNR=5.1					
DAWY	Dawson	146.73	312	*e*PKPdf	PKPdf	01 01 12.5 +1.2
EGAK	Eagle	147.67	313	*e*PKPdf	PKPdf	01 01 14.9 +2.2
EGAK				*e*PKPbc	PKPbc	01 01 17.4 +1.7
BMRM	Bremner River	148.00	305	*e*PKPdf	PKPdf	01 01 16.1 +2.6
DOT	Dot Lake	148.58	310	*e*PKPdf	PKPdf	01 01 17.2 +2.8
DIV	Divide	148.59	305	*e*PKPdf	PKPdf	01 01 17.1 +2.6
NRIK	Noril'sk	149.00	39	PKPbc	PKPbc	01 01 19.0 0.0
	comp=Z,1.7nm,0.4s,baz=220,slow=2.4,SNR=3.5					
HHC	Hu-ho-hao-te	149.30	102	*e*PKPbc	PKPdf	01 01 18.1 +1.8
SML	Sawmill	149.97	306	*e*PKP2	PKPbc	01 01 21.3 -0.3
SML	Sawmill	149.97	306	*e*PKPbc	PKPbc	01 01 21.3 -0.3
ILAR	Eielson Array	150.05	312	PKP	PKPdf	01 01 13.8 -2.8
	comp=Z,0.7nm,0.7s,baz=287,slow=1.0,SNR=9.0					
ILAR				PKPbc	PKPbc	01 01 20.6 -1.0
	comp=Z,9.5nm,0.6s,baz=122,slow=1.3,SNR=58					
ZAK	Zakamensk	150.38	80	*e*PKIKP	PKPdf	01 01 21.4 +3.7
ZAK				pmax	pmax	
	comp=Z,4.0nm,1.4s					
RC01	Rabbit Creek A	150.41	304	*e*PKPbc	PKPbc	01 01 23.6 +0.9
COLA	College	150.47	312	*e*PKIKP	PKPbc	01 01 22.7 +0.1
COLA	College	150.47	312	*e*PKPbc	PKPbc	01 01 22.7 +0.1
MCK	McKinley	150.71	309	*e*PKIKP	PKPbc	01 01 23.3 0.0
MCK	McKinley	150.71	309	*e*PKPbc	PKPbc	01 01 23.3 0.0
SONM	Songino Array	150.77	86	PKPbc	PKPdf	01 01 22.3 +3.9
	comp=Z,3.6nm,0.6s,baz=221,slow=3.1,SNR=16					
BJI	Beijing	151.23	108	PKPbc	PKPdf	01 01 18.8 -0.4
BJI				PP	PP	01 05 04.9 +0.4
BJI				LR	LR	
	comp=Z,620nm,21.7s					
BJI				LR	LR	
	comp=Z,570nm,21.7s					
BJI				LR	LR	
	comp=Z,680nm,24.6s					
TRF	Thorofare Moun	151.24	308	*e*PKPdf	PKPdf	01 01 21.0 +2.3
TRF				*e*PKPbc	PKPbc	01 01 25.3 +0.6
KTH	Kantishna Hill	151.54	309	*e*PKPbc	PKPbc	01 01 25.7 +0.4
COLD	Coldfoot	151.76	316	*e*PKPbc	PKPbc	01 01 26.6 +1.0
PPLA	Purkeypile	151.97	307	*e*PKPdf	PKPdf	01 01 21.9 +2.1
PPLA				*e*PKPbc	PKPbc	01 01 27.4 +1.0
MDJ	Mudanjiang	161.44	118	PKP	PKPdf	01 01 31.4 -1.0
YSS	Yuzh-Sakhalins	169.02	141	||*i*PKIKP	PKPdf	01 01 43.0 +4.4
YSS				pmax	pmax	
	comp=Z,20nm,1.4s					

*CSEM **21** 00:43:11.5, 39.°10N×29.°06E, h7km, ML2.7*

DDA 21 00:43:11.5, 39.°10N×29.°06E, h7km, Ml2.7, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.27	258	P	Pg	00 43 17.4	+0.5
DEMI				S	Sg	00 43 21.2	+0.6
DEMI	Demirci	0.27	258	*i* P	Pg	00 43 17.4	+0.5
DEMI				*i* S	Sg	00 43 21.2	+0.6
GDZ	Gediz	0.33	92	P	Pg	00 43 18.5	+0.6
GDZ				S	Sg	00 43 23.2	+0.9
GDZ	Gediz	0.33	92	*i* P	Pg	00 43 18.5	+0.6
GDZ				*i* S	Sg	00 43 23.2	+0.9
DURS	Dursunbey	0.68	318	P	Pg	00 43 25.0	+0.5
DURS	Dursunbey	0.68	318	*i* P	Pg	00 43 24.9	+0.5
MANT	Manisa	0.72	213	P	Pg	00 43 25.9	+0.5
MANT	Manisa	0.72	213	*i* P	Pg	00 43 25.9	+0.4
KHAL	Karahalli	0.80	155	P	Pb	00 43 28.2	+0.4
KHAL	Karahalli	0.80	155	*i* P	Pb	00 43 28.2	+0.4
BORA	Eskisehir	1.33	54	P	Pn	00 43 36.2	-0.3
BORA	Eskisehir	1.33	54	*i* P	Pn	00 43 36.2	-0.3

*ISCJB **21** 00:50:52.5±0.5, 39.°10N±0.°03×29.°02E±0.°03, h2km±7km, Error ellipse: s-maj=5.7km s-min=4.5km az=179.4*
*DDA **21** 00:50:52.7, 39.°10N×29.°00E, h7km, Ml2.8*
*CSEM **21** 00:50:52.7±0.1, 39.°10N×29.°03E, h2km, ML2.8, Error ellipse: s-maj=1.8km s-min=1.5km az=109.0*
*ISK **21** 00:50:52.2, 39.°08N×29.°03E, h6km, MD2.8*

ISC 21 00:50:52.8±1.0, 39.°10N±0.°02×29.°03E±0.°02, h5km±12km, n49, σ0.49/43/59, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.26	256	P	Pg	00 50 57.6	-0.2
DEMI				S	Sg	00 51 01.1	-0.1
DEMI	Demirci	0.26	256	*i* P	Pg	00 50 57.6	-0.2
DEMI				*i* S	Sg	00 51 01.1	-0.1
GDZ	Gediz	0.35	92	P	Pg	00 50 59.9	+0.2
GDZ				S	Sg	00 51 05.1	+0.8
GDZ	Gediz	0.35	92	*i* P	Pg	00 50 59.9	+0.2
GDZ				*i* S	Sg	00 51 05.1	+0.8
TVSB	Tavsanli	0.48	44	*e*PG	Pg	00 51 01.6	-0.5
TVSB	Tavsanli	0.48	44	*e*Pg	Pg	00 51 01.6	-0.5
KULA	Kula-Manisa	0.66	206	*e*PG	Pg	00 51 05.4	0.0
KULA				*e*SG	Sg	00 51 13.8	-0.2
KULA	Kula-Manisa	0.66	206	*e*Pg	Pg	00 51 05.4	0.0
KULA				*e*Sg	Sg	00 51 13.8	-0.2
DURS	Dursunbey	0.66	319	P	Pg	00 51 05.4	-0.1
DURS	Dursunbey	0.66	319	*i* P	Pg	00 51 05.4	-0.1
MANT	Manisa	0.72	211	P	Pg	00 51 06.5	-0.1
MANT				S	Sg	00 51 16.1	+0.2
MANT	Manisa	0.72	211	*i* P	Pg	00 51 06.5	-0.1
MANT				*i* S	Sg	00 51 16.1	+0.2
KHAL	Karahalli	0.82	154	P	Pb	00 51 09.3	-0.3
KHAL	Karahalli	0.82	154	*i* P	Pb	00 51 09.3	-0.3
KHL	Karahalli	0.87	154	*e*PG	Pg	00 51 08.9	-0.6
KHL	Karahalli	0.87	154	*e*Pg	Pg	00 51 08.9	-0.6
AKS	Akhisar	0.98	257	*e*PG	Pg	00 51 11.6	0.0
AKS	Akhisar	0.98	257	*e*Pg	Pg	00 51 11.6	0.0
BALB	Balikesir	1.04	301	*e*PG	Pg	00 51 12.9	+0.1
BALB				*e*SG	Sb	00 51 27.4	+0.1
BALB	Balikesir	1.04	301	*e*Pg	Pg	00 51 12.9	+0.1
BALB				*e*Sg	Sb	00 51 27.4	+0.1
IGD	Bursa	1.17	6	*i* P	Pg	00 51 13.0	-2.2
CAVI	Cavuskoy	1.26	29	*e*PN	Pn	00 51 17.2	+0.1
CAVI	Cavuskoy	1.26	29	*e*Pn	Pn	00 51 17.3	+0.1
MDNY	Mudanya-Bursa	1.27	355	*e*PN	Pg	00 51 17.2	0.0
MDNY	Mudanya-Bursa	1.27	355	*e*Pn	Pg	00 51 17.2	0.0
KCTX	Karacabey (Bur	1.27	336	*e*PN	Pg	00 51 17.2	0.0
KCTX	Karacabey (Bur	1.27	336	*e*Pn	Pg	00 51 17.2	0.0
IZI	Iznik	1.28	15	*e*PN	Pn	00 51 17.6	+0.3
IZI	Iznik	1.28	15	*e*Pn	Pn	00 51 17.7	+0.3
GEMT	Gemlik	1.33	5	*e*PN	Pn	00 51 18.1	0.0
GEMT	Gemlik	1.33	5	*e*Pn	Pn	00 51 18.1	0.0
GONE	Gonen-Balikesi	1.40	313	*e*PN	Pn	00 51 19.1	+0.1
GONE	Gonen-Balikesi	1.40	313	*e*Pn	Pn	00 51 19.1	+0.1
ADVT	Abdulvahap	1.43	22	*e*PN	Pb	00 51 19.9	-0.1
ADVT	Abdulvahap	1.43	22	*e*Pn	Pb	00 51 19.9	-0.1
ARMT	Armutlu	1.47	355	*e*PN	Pb	00 51 20.4	-0.2
ARMT	Armutlu	1.47	355	*e*Pn	Pb	00 51 20.4	-0.2
EDC	Edincik	1.53	324	*e*PN	Pn	00 51 21.2	+0.4
EDC	Edincik	1.53	324	*e*Pn	Pn	00 51 21.3	+0.4
GULT	Gulveren	1.75	40	*e*PN	Pn	00 51 24.4	+0.5
GULT	Gulveren	1.75	40	*e*Pn	Pn	00 51 24.4	+0.5
HRT	Hereke	1.78	16	*e*PN	Pn	00 51 24.4	+0.1
HRT	Hereke	1.78	16	*e*Pn	Pn	00 51 24.4	+0.1
ISK	Istanbul-Kandi	1.96	1	*e*PN	Pn	00 51 27.1	+0.4
ISK	Istanbul-Kandi	1.96	1	*e*Pn	Pn	00 51 27.1	+0.4
SVRH	Sivrihisar-ESK	1.96	79	*e*PN	Pn	00 51 26.8	0.0
SVRH	Sivrihisar-ESK	1.96	79	*e*Pn	Pn	00 51 26.8	0.0
SILT	Sile	2.10	13	*e*PN	Pn	00 51 29.2	+0.6
SILT	Sile	2.10	13	*e*Pn	Pn	00 51 29.2	+0.6

*ISK **21** 00:52:58.8, 39.°04N×29.°12E, h8km, MD2.8*
*ISCJB **21** 00:52:59.3±0.5, 39.°05N±0.°05×29.°09E±0.°04, h5km±8km, Error ellipse: s-maj=8.8km s-min=4.5km az=154.4*
*DDA **21** 00:52:59.2, 39.°08N×29.°07E, h7km, Ml2.3*
*CSEM **21** 00:52:59.3±0.1, 39.°06N×29.°10E, h5km, ML2.3, Error ellipse: s-maj=2.9km s-min=2.1km az=120.0*

ISC 21 00:52:58.9±1.0, 39.°05N±0.°03×29.°11E±0.°03, h11km±9km, n32, σ0.49/42, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	Gediz	0.29	82	P	Pg	00 53 05.8	+0.9
GDZ				S	Sb	00 53 10.4	-0.8
GDZ	Gediz	0.29	82	*i* P	Pg	00 53 05.8	+0.9
GDZ				*i* S	Sb	00 53 10.3	-0.8
DEMI	Demirci	0.31	269	P	Pg	00 53 05.2	0.0
DEMI				S	Sg	00 53 09.1	-0.2
DEMI	Demirci	0.31	269	*i* P	Pg	00 53 05.2	0.0
DEMI				*i* S	Sg	00 53 09.1	-0.2
TVSB	Tavsanli	0.48	34	*e*PG	Pg	00 53 08.3	-0.1
TVSB	Tavsanli	0.48	34	*e*Pg	Pg	00 53 08.3	-0.1
KULA	Kula-Manisa	0.64	214	*e*PG	Pb	00 53 12.1	-0.1
KULA				*e*SG	Sb	00 53 20.5	-0.6
KULA	Kula-Manisa	0.64	214	*e*Pg	Pb	00 53 12.1	-0.1
KULA				*e*Sg	Sb	00 53 20.5	-0.6
MANT	Manisa	0.70	218	P	Pb	00 53 13.3	-0.1
MANT				S	Sb	00 53 22.6	-0.5
MANT	Manisa	0.70	218	*i* P	Pb	00 53 13.3	-0.1
MANT				*i* S	Sb	00 53 22.6	-0.5
KHAL	Karahalli	0.74	156	P	Pg	00 53 13.1	-0.1
KHAL	Karahalli	0.74	156	*i* P	Pg	00 53 13.1	-0.1
BALB	Balikesir	1.12	302	*e*PN	Pn	00 53 20.8	+0.2
BALB				*e*SN	Sn	00 53 37.3	+1.2
BALB	Balikesir	1.12	302	*e*Pn	Pn	00 53 20.8	+0.2
BALB				*e*Sn	Sn	00 53 37.3	+1.2
CAVI	Cavuskoy	1.28	26	*e*PN	Pg	00 53 24.2	+0.6
CAVI	Cavuskoy	1.28	26	*e*Pn	Pg	00 53 24.2	+0.6
IZI	Iznik	1.32	12	*e*PN	Pg	00 53 24.2	0.0
IZI	Iznik	1.32	12	*e*Pn	Pg	00 53 24.2	0.0
MDNY	Mudanya-Bursa	1.33	352	*e*PN	Pb	00 53 24.0	0.0
MDNY	Mudanya-Bursa	1.33	352	*e*Pn	Pb	00 53 24.0	0.0
KCTX	Karacabey (Bur	1.35	335	*e*PN	Pg	00 53 24.8	-0.1
KCTX	Karacabey (Bur	1.35	335	*e*Pn	Pg	00 53 24.8	-0.1
ADVT	Abdulvahap	1.47	19	*e*PN	Pg	00 53 26.9	-0.2
ADVT	Abdulvahap	1.47	19	*e*Pn	Pg	00 53 26.9	-0.2
GONE	Gonen-Balikesi	1.49	313	*e*PN	Pb	00 53 26.6	0.0
GONE	Gonen-Balikesi	1.49	313	*e*Pn	Pb	00 53 26.6	0.0
ARMT	Armutlu	1.53	353	*e*PN	Pb	00 53 27.1	-0.2
ARMT	Armutlu	1.53	353	*e*Pn	Pb	00 53 27.1	-0.2
EDC	Edincik	1.62	324	*e*PN	Pb	00 53 28.5	-0.3
EDC	Edincik	1.62	324	*e*Pn	Pb	00 53 28.5	-0.3
GULT	Gulveren	1.76	38	*e*PN	Pb	00 53 30.6	-0.6
GULT	Gulveren	1.76	38	*e*Pn	Pb	00 53 30.6	-0.6

*NIED **21** 00:56:00, 39.°20N×142.°40E, h35km, Mw3.9 Best double couple: M0 8.91000×10^14 NP1:φ0=292.00000°, δ29.00000°, λ-145.00000°. NP2:φ0=171.00000°, δ74.00000°, λ-65.00000°.*
*JMA **21** 00:56:22.4±0.1, 39.°20N×142.°39E, h30km±1km, M3.9*
*NEIC **21** 00:56:24.0±1.4, 38.°99N×142.°75E, h51km±15km, mb4.1/2, Error ellipse: s-maj=22.4km s-min=10.6km az=123.0*
*IDC **21** 00:56:25.0±3.4, 39.°02N×142.°57E, h53km±32km, mb3.3/4, mb1 3.6/8, mb1mx3.3/61, mbtmp3.6/8, ML3.2/4, MS4.1/1, Ms1 4.1/1, ms1mx2.9/25, Error ellipse: s-maj=37.0km s-min=19.8km az=114.0*

ISC 21 00:56:20.5±1.8, 39.°09N±0.°04×142.°36E±0.°06, h14km±10km, n34, σ1.22/31, mb3.9/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.54	270	P	Pn	00 56 33.7	-0.1
OFUJ				*e*S	Sb	00 56 41.5	+2.2
MIYJ	Miyakonagasawa	0.64	320	P	Pb	00 56 33.7	+0.1
MIYJ				S	Sg	00 56 41.5	-0.1
JMK	Ichinoseki	0.90	262	P	Pn	00 56 39.6	+0.9
JMK				S	Sn	00 56 52.7	+1.3
JOM	Ohasama	0.91	295	P	Pn	00 56 38.9	-0.1
JOM				S	Sg	00 56 50.8	+0.7
JIO	Ouri	1.01	232	*e*S	Sn	00 56 54.7	+0.5
JKZ	Kuzumaki	1.20	319	P	Pn	00 56 42.6	-0.3
JKZ				S	Sb	00 56 57.1	-1.4
JRG	Rokugo	1.37	284	P	Pg	00 56 46.7	-0.2
JRG				*e*S	Sn	00 57 04.6	+1.3
JANG	Nango	1.44	334	P	Pn	00 56 45.2	-1.0
JANG				*e*S	Sn	00 57 02.3	-2.7
JOU	Okura	1.51	242	*e*S	Sg	00 57 09.2	+0.2
JYK	Kaneyama	1.56	264	P	Pg	00 56 49.9	-0.7
JYK				*e*S	Sb	00 57 10.3	+1.4
JMM	Marumori	1.73	226	S	Sb	00 57 14.0	+0.4
JYS	Shiratake	1.99	245	*e*S	Sb	00 57 21.9	+0.7
ERM	Erimo	2.99	12	*e*Pn	Pn	00 57 09.6	+2.1
ERM				*e*Sn	Sn	00 57 44.8	+1.7
MAJO	Matsushiro	4.15	234	*e*Pn	Pn	00 57 27.9	+4.4
MAT	Matsushiro	4.15	234	P	Pb	00 57 28.5	-4.9
MAT				S	Sb	00 58 21.5	-1.9
MJAR	Matsushiro Arr	4.15	234	P	Pn	00 57 27.6	+4.0
	4.1nm,0.3s,baz=43,slow=17,SNR=36					
ASAJ	Asahikawa	5.03	2	P	Pn	00 57 37.4	+1.8
	1.5nm,0.3s,baz=186,slow=17,SNR=6.3					
ASAJ				S	Sn	00 58 33.6	+0.2
	1.1nm,0.3s,baz=194,slow=19,SNR=3.1					
JHJ	Hachijo jima 2	6.31	200	S	Sn	00 59 04.3	-0.7
	3.7nm,0.3s,baz=256,slow=23,SNR=2.9					
USRK	Ussurlysk Ar.	9.29	307	P	Pn	00 58 38.3	+4.3
	0.3nm,0.3s,baz=119,slow=12,SNR=3.9					
KSRS	Korea Array	11.46	266	P	Pn	00 59 09.8	+6.1
	0.1nm,0.3s,baz=80,slow=14,SNR=5.2					
KSAR	Wonju Array Be	11.50	266	P	Pn	00 59 09.8	+5.6
H11N2	WAKE ISLAND Hy	28.64	125	T	T	01 32 44.0	
	baz=318,slow=75,SNR=58						
H11N1	WAKE ISLAND Hy	28.65	125	T	T	01 32 39.1	
	baz=318,slow=75,SNR=84						
H11N3	WAKE ISLAND Hy	28.66	125	T	T	01 32 53.4	
	baz=318,slow=75,SNR=95						
H11S1	WAKE ISLAND Hy	29.43	127	T	T	01 33 36.2	
	baz=318,slow=74,SNR=5.1						
H11S3	WAKE ISLAND Hy	29.43	127	T	T	01 33 45.2	
	baz=318,slow=74,SNR=14						
H11S2	WAKE ISLAND Hy	29.44	127	T	T	01 33 40.6	
	baz=318						
MKAR	Makanchi Array	43.69	300	P	P	01 04 25.7	+0.8
	1.1nm,0.8s,baz=90,slow=6.2,SNR=6.4						
ILAR	Eielson Array	47.37	33	P	P	01 04 53.7	0.0
	0.5nm,0.7s,baz=282,slow=5.3,SNR=5.3						
BVAR	Borovoye Array	49.76	311	LR	LR	01 27 04.3	
	comp=Z,221nm,21.0s,baz=230,slow=37						
ABKAR	Akbulak array	57.20	309	*e*P	P	01 06 06.8	-0.2
	1.3nm,0.6s						
WRA	Warramunga Arr	59.20	189	P	P	01 06 19.9	-1.2
	0.5nm,0.4s,baz=6.9,slow=7.0,SNR=15						
YKA	Yellowknife Ar	61.67	31	P	P	01 06 36.9	-0.7
	0.1nm,0.5s,baz=318,slow=4.1,SNR=3.5						
XMAS	Kiritimati	65.87	108	*e*P	P	01 07 00.4	-5.6
	0.8nm,0.6s						

*ISCJB **21** 01:03:03.5±1.6, 30.°50S±0.°08×179.°6W±0.°3, h321km, mb2.6/1, Error ellipse: s-maj=38.9km s-min=10.5km az=4.3*
*IDC **21** 01:03:04.9±8.1, 30.°81S×179.°21W, h355km±82km, mb2.6/1, mb1 3.1/2, mb1mx2.7/26, mbtmp3.7/2, Error ellipse: s-maj=85.5km s-min=47.2km az=13.0*

ISC 21 01:03:02.7±1.8, 30.°5S±0.°1×179.°5W±0.°3, h321km, n15, σ1.73/22, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MXZ	Matakaoa Point	7.23	194	PN	Pn	01 04 49.7	+2.6
MXZ				SN	S	01 06 12.0	+0.3
WMGZ	Waiomatatini S	7.46	193	PN	Pn	01 04 53.9	+4.1
WMGZ				SN	S	01 06 16.2	-0.6
HAZ	Te Kaha	7.53	196	PN	Pn	01 04 53.7	+3.0
HAZ				SN	S	01 06 19.2	+0.8
PUZ	Puketiti	7.73	193	SN	S	01 06 21.0	-1.9
URZ	Urewera	8.18	199	P	Pn	01 04 59.2	+0.7
	1.7nm,0.3s,baz=277,slow=5.6,SNR=17						
URZ				S	S	01 06 33.3	+0.5
	1.9nm,0.3s,baz=238,slow=23,SNR=13						
RIGZ	Rimuhau	8.45	195	PN	P	01 05 05.3	-0.5
KWHZ	Kaweka Forest	9.46	199	PN	Pn	01 05 15.3	+1.2
KWHZ				SN	S	01 07 02.0	+0.5
BHHZ	Black Hill Sta	9.63	201	PN	Pn	01 05 16.8	+0.6
BHHZ				SN	S	01 07 03.2	-2.0
WNVZ	Wahianoa	9.63	203	PN	P	01 05 18.5	-0.9
KAHZ	Kahuranaki	9.69	197	PN	P	01 05 18.4	-1.5
PXZ	Pawanui	9.91	196	PN	Pn	01 05 19.5	0.0
PXZ				SN	S	01 07 09.5	-2.0
MRZ	Mangatainoka R	10.85	200	PN	Pn	01 05 31.1	+0.2
WRA	Warramunga Arr	42.79	273	P	P	01 10 31.2	+1.4
	0.5nm,1.0s,baz=110,slow=8.1,SNR=9.0						
FINES	FINESS Array B	144.81	339	PKPbc	PKPdf	01 21 59.5	-1.3
	0.9nm,0.6s,baz=44,slow=3.1,SNR=8.4						
BRTR	Keskin Array B	151.50	298	PKPbc	PKPbc	01 22 17.7	-1.4
	0.2nm,0.5s,baz=83,slow=4.9,SNR=2.9						

*ISCJB **21** 01:03

*ISCJB **21** 01:09:21.7±0.5, 33°.47N±0°.03×119°.13W±0°.03, h27km±4km, Error ellipse: s-maj=5.2km s-min=4.0km az=30.9*
*NEIC **21** 01:09:22.1, 33°.50N×119°.12W, h15km, ML3.7(PAS), After PAS.*
NEIC Felt [II] at Los Angeles. Also felt at Bell, Burbank, El Segundo, North Hollywood, Oxnard, Redondo Beach, Santa Monica, Simi Valley and Westminster.

ISC 21 01:09:21.5±1.0, 33°.52N±0°.03×119°.10W±0°.03, h16km±8km, n61, σ1°.55/78, Southern California

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SNCC	**San Nicolas Is**	**0.45**	**233**	P	**Pg**	**01 09 30.6**	**+0.1**
	baz=53,SNR=66						
SNCC				S	**Sb**	**01 09 37.4**	**-0.1**
	baz=53						
SNCC	**San Nicolas Is**	**0.45**	**233**	*e*Pg	**Pg**	**01 09 30.7**	**+0.1**
CIS	**Catalina Islan**	**0.58**	**102**	P	**Pg**	**01 09 32.8**	**-0.3**
	baz=280,SNR=108						
CIS				S	**Sg**	**01 09 41.2**	**+0.4**
	baz=280						
BLG	**Laguna Peak, P**	**0.58**	**3**	P	**Pg**	**01 09 33.1**	**-0.1**
	baz=184,SNR=54						
SCZ2	**Santa Cruz Isl**	**0.65**	**317**	P	**Pg**	**01 09 33.6**	**-0.7**
	baz=139,SNR=61						
FMP	**Fort Macarthur**	**0.70**	**74**	P	**Pg**	**01 09 35.1**	**-0.1**
	baz=253,SNR=37						
FMP				S	**Sb**	**01 09 46.1**	**+1.4**
	baz=253						
SCI2	**San Clemente I**	**0.71**	**139**	P	**Pg**	**01 09 35.1**	**-0.4**
	baz=318,SNR=60						
DECC	**Green Verdugo**	**0.97**	**41**	P	**Pb**	**01 09 40.2**	**+0.2**
	baz=221,SNR=42						
DECC				S	**Sg**	**01 09 54.2**	**+1.2**
	baz=221						
PASC	**Pasadena Art C**	**1.00**	**49**	*e*Pg	**Pb**	**01 09 40.5**	**0.0**
PASC				*e*Sg	**Sb**	**01 09 53.6**	**+0.3**
SBC	**Santa Barbara**	**1.05**	**331**	P	**Pb**	**01 09 41.3**	**-0.1**
	baz=152						
SBC				S	**Sb**	**01 09 55.9**	**+1.0**
	baz=152						
MWC	**Mount Wilson**	**1.11**	**51**	*e*Pn	**Pb**	**01 09 42.5**	**-0.1**
OSI	**Osito Audit: C**	**1.13**	**16**	P	**Pn**	**01 09 42.9**	**+0.1**
	baz=196,SNR=33						
OSI				S	**Sb**	**01 09 58.3**	**+1.0**
	baz=196						
OSI	**Osito Audit: C**	**1.13**	**16**	*e*Pn	**Pn**	**01 09 42.9**	**+0.1**
BFSC	**Mount Baldy Ra**	**1.40**	**59**	P	**Pn**	**01 09 46.1**	**-0.4**
	baz=239,SNR=109						
PKM	**Mcpherson Peak**	**1.49**	**337**	P	**Pn**	**01 09 47.6**	**-0.1**
	baz=157,SNR=58						
MARC	**Maricopa**	**1.49**	**352**	*e*Pn	**Pb**	**01 09 49.2**	**+0.4**
MURC	**Murrieta**	**1.59**	**87**	P	**Pn**	**01 09 48.4**	**-0.6**
	baz=267,SNR=93						
ARVC	**Arvin**	**1.62**	**8**	P	**Pn**	**01 09 50.0**	**+0.6**
	baz=188,SNR=68						
ARVC				S	**Sn**	**01 10 10.8**	**+0.9**
	baz=188						
EDW2	**Edwards Air Fo**	**1.64**	**34**	P	**Pn**	**01 09 50.4**	**+0.7**
	baz=214,SNR=86						
EDW2				S	**Sn**	**01 10 12.0**	**+1.5**
	baz=214						
109C	**Camp Elliot, M**	**1.79**	**110**	P	**Pn**	**01 09 50.8**	**-1.0**
	baz=290,SNR=6.2						
BBRC	**Big Bear Solar**	**1.96**	**67**	Sb	**Sb**	**01 10 23.2**	**+2.0**
	baz=248						
ISA	**Isabella, Lake**	**2.20**	**13**	Pb	**Pb**	**01 10 01.5**	**+0.5**
	baz=194,SNR=24						
ISA	**Isabella, Lake**	**2.20**	**13**	*e*Pn	**Pn**	**01 09 58.9**	**+1.5**
BAR	**Barrett**	**2.20**	**112**	*e*Pn	**Pn**	**01 09 56.7**	**-0.8**
RRX	**Edison Barstow**	**2.20**	**52**	Pb	**Pb**	**01 10 02.4**	**+1.4**
	baz=233,SNR=8.5						
PFO	**Pinyon Flats O**	**2.21**	**87**	P	**Pn**	**01 09 57.8**	**+0.3**
	baz=268						
PFO	**Pinyon Flats O**	**2.21**	**87**	*e*Pn	**Pn**	**01 09 57.9**	**+0.3**
PFO				*e*Sn	**Sn**	**01 10 24.6**	**0.0**
TPFO	**Pinon Flats**	**2.21**	**87**	P	**Pn**	**01 09 57.9**	**+0.2**
	baz=268,SNR=21						
TPFO				S	**Sn**	**01 10 26.0**	**+1.3**
	baz=268						
VES	**Vestal, Richgr**	**2.31**	**0**	P	**Pn**	**01 09 59.6**	**+0.6**
	baz=181,SNR=24						
VES				S	**Sn**	**01 10 28.4**	**+1.4**
	baz=181						
MONP2	**Monument Peak**	**2.33**	**105**	P	**Pn**	**01 09 59.3**	**-0.1**
	baz=286						
WSHM	**Spangler Hills**	**2.46**	**32**	*e*Pn	**Pn**	**01 10 02.1**	**+1.0**
GSC	**Goldstone, Bar**	**2.60**	**46**	P	**Pn**	**01 10 04.2**	**+1.2**
	baz=227,SNR=25						
GSC	**Goldstone, Bar**	**2.60**	**46**	*e*Pn	**Pn**	**01 10 03.8**	**+0.9**
BELC	**Belle Mtn. Jos**	**2.63**	**79**	P	**Pn**	**01 10 04.2**	**+0.8**
	baz=260,SNR=15						
HEC	**Hector,Ludlow**	**2.64**	**60**	P	**Pn**	**01 10 04.1**	**+0.6**
	baz=241,SNR=13						
IKP	**In-Ko-Pah, Jac**	**2.66**	**108**	P	**Pn**	**01 10 04.3**	**+0.5**
	baz=290,SNR=18						
MPMC	**Manual Prospec**	**2.85**	**27**	P	**Pn**	**01 10 07.6**	**+1.0**
	baz=208,SNR=41						
DAC	**Darwin (Calif)**	**3.01**	**24**	*e*Pn	**Pn**	**01 10 09.7**	**+0.9**
DAC				*e*Pg	**Pb**	**01 10 18.0**	**+3.1**
DAC				*e*Sn	**Sn**	**01 10 43.0**	**-1.6**
DAC				*e*Sg	**Sg**	**01 10 56.9**	**-1.5**
GMRC	**Granite Mounta**	**3.12**	**65**	P	**Pn**	**01 10 10.5**	**+0.4**
	baz=247,SNR=13						
TUQ	**Turquoise Moun**	**3.24**	**53**	P	**Pn**	**01 10 12.9**	**+1.0**
	baz=235,SNR=9.1						
SHOC	**Shoshone, Teco**	**3.32**	**44**	Pb	**Pb**	**01 10 21.2**	**+1.1**
	baz=225,SNR=19						
IRM	**Iron Mountain**	**3.35**	**78**	P	**Pn**	**01 10 13.8**	**+0.5**
	baz=260,SNR=8.0						
GLA	**Glamis**	**3.61**	**96**	*e*Pn	**Pb**	**01 10 21.9**	**-3.1**
LDFC	**Landfair**	**3.65**	**64**	*e*Pg	**Pb**	**01 10 29.3**	**+3.6**
Y12C	**Blythe**	**3.82**	**85**	*e*Pg	**Pb**	**01 10 30.6**	**+2.0**
TPNV	**Topopah Spring**	**4.14**	**33**	*e*Pn	**Pn**	**01 10 26.2**	**+2.0**
SHPR	**Sheep Range**	**4.39**	**46**	*e*Pn	**Pn**	**01 10 30.5**	**+2.8**
W13A	**Hualapai Mount**	**4.59**	**69**	*e*Pn	**Pn**	**01 10 31.0**	**+0.5**
CMB	**Columbia Colle**	**4.62**	**347**	*e*Pn	**Pn**	**01 10 31.3**	**+0.6**
CMB				*e*Sn	**Sn**	**01 11 24.3**	**+0.2**
NV11	**Mina Array Sit**	**4.96**	**9**	*e*Pg	**Pg**	**01 10 54.0**	**-2.6**
NV11				*e*Lg	Lg	01 12 03.9	
WAKR	**Walker**	**4.98**	**357**	*e*Pn	**Pn**	**01 10 40.0**	**+4.2**
Y14A	**Wickenburg**	**5.09**	**84**	*e*Pn	**Pn**	**01 10 38.1**	**+0.9**
Y14A				*e*Pg	**Pb**	**01 10 52.9**	**+2.6**
R11A	**Troy Canyon, C**	**5.60**	**30**	*e*Pn	**Pn**	**01 10 45.0**	**+0.7**
R11A				*e*Pg	**Pg**	**01 11 05.2**	**-3.5**
R11A				*e*Sg	**Sg**	**01 12 17.1**	**-4.1**
LCMT	**Little Creek M**	**5.92**	**52**	*e*Pn	**Pn**	**01 10 51.2**	**+2.5**
KNB	**Kanab**	**6.21**	**54**	*e*Pn	**Pn**	**01 10 55.2**	**+2.6**
X16A	**Lo Mia Camp, P**	**6.42**	**80**	*e*Pn	**Pn**	**01 10 57.0**	**+1.4**
MTPU	**Mount Pierson**	**7.20**	**49**	*e*Pn	Pn	01 11 12.4	+5.9
MSU	**Marysvale**	**7.50**	**46**	*e*Pn	Pn	01 11 19.7	+9.3
GMU	**Granite Mounta**	**9.16**	**38**	*e*Pn	**Pn**	**01 11 32.8**	**-0.3**
PHWY	**Pilot Hill**	**13.32**	**50**	*e*Pn	**Pn**	**01 12 26.6**	**-3.6**
KSCO	**Kaye Shedlock'**	**14.37**	**63**	*e*Pn	**P**	**01 12 50.5**	**-0.9**

*DDA **21** 01:11:15.7, 39°.11N×29°.08E, h7km, Ml2.7*
*ISCJB **21** 01:11:16.1±0.5, 39°.11N±0°.04×29°.07E±0°.04, h3km±7km, Error ellipse: s-maj=6.5km s-min=4.6km az=4.8*
*ISK **21** 01:11:16.4, 39°.14N×29°.07E, h5km, MD2.9*
*CSEM **21** 01:11:16.3±0.1, 39°.12N×29°.08E, h2km, ML2.7, Error ellipse: s-maj=3.1km s-min=2.7km az=125.0*

ISC 21 01:11:15.9±1.1, 39°.12N±0°.02×29°.06E±0°.02, h6km±10km, n45, σ0°.47/55, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**254**	P	**Pg**	**01 11 20.8**	**-0.6**
DEMI	**Demirci**	**0.28**	**254**	*i* P	**Pg**	**01 11 20.8**	**-0.6**
GDZ	**Gediz**	**0.33**	**95**	P	**Pg**	**01 11 22.6**	**+0.3**
GDZ				S	**Sg**	**01 11 26.8**	**+0.2**
GDZ	**Gediz**	**0.33**	**95**	*i* P	**Pg**	**01 11 22.6**	**+0.3**
GDZ				*i* S	**Sg**	**01 11 26.8**	**+0.2**
TVSB	**Tavsanli**	**0.45**	**43**	*e*PG	**Pg**	**01 11 24.8**	**+0.2**
TVSB	**Tavsanli**	**0.45**	**43**	*e*Pg	**Pg**	**01 11 24.8**	**+0.2**
DURS	**Dursunbey**	**0.66**	**317**	P	**Pb**	**01 11 29.5**	**-0.4**
DURS	**Dursunbey**	**0.66**	**317**	*i* P	**Pb**	**01 11 29.6**	**-0.4**
KULA	**Kula-Manisa**	**0.68**	**208**	*e*PG	**Pb**	**01 11 30.1**	**0.0**
KULA	**Kula-Manisa**	**0.68**	**208**	*e*Pg	**Pb**	**01 11 30.1**	**0.0**
MANT	**Manisa**	**0.74**	**212**	P	**Pg**	**01 11 30.5**	**+0.4**
MANT				S	**Sg**	**01 11 39.9**	**+0.1**
MANT	**Manisa**	**0.74**	**212**	*i* P	**Pg**	**01 11 30.5**	**+0.4**
MANT				*i* S	**Sg**	**01 11 39.9**	**+0.1**
KHAL	**Karahalli**	**0.82**	**156**	P	**Pg**	**01 11 32.2**	**+0.6**
KHAL	**Karahalli**	**0.82**	**156**	*i* P	**Pg**	**01 11 32.2**	**+0.6**
KHL	**Karahalli**	**0.87**	**156**	*e*PG	**Pn**	**01 11 34.4**	**-0.3**
KHL	**Karahalli**	**0.87**	**156**	*e*Pg	**Pn**	**01 11 34.4**	**-0.3**
AKS	**Akhisar**	**1.00**	**257**	*e*PG	**Pb**	**01 11 35.7**	**+0.1**
AKS	**Akhisar**	**1.00**	**257**	*e*Pg	**Pb**	**01 11 35.7**	**+0.1**
BALB	**Balikesir**	**1.05**	**300**	*e*PG	**Pn**	**01 11 37.6**	**+0.5**
BALB				*e*SG	**Sn**	**01 11 52.1**	**0.0**
BALB	**Balikesir**	**1.05**	**300**	*e*Pg	**Pn**	**01 11 37.6**	**+0.5**
BALB				*e*Sg	**Sn**	**01 11 52.1**	**0.0**
IGD	**Bursa**	**1.15**	**5**	*i* P	**Pb**	**01 11 37.4**	**-0.7**
CAVI	**Cavuskoy**	**1.24**	**29**	*e*PN	**Pg**	**01 11 40.1**	**+0.5**
CAVI				*e*SN	**Sn**	**01 11 56.8**	**+0.1**
CAVI	**Cavuskoy**	**1.24**	**29**	*e*Pn	**Pg**	**01 11 40.1**	**+0.5**
CAVI				*e*Sn	**Sn**	**01 11 56.8**	**+0.1**
IZI	**Iznik**	**1.26**	**14**	*e*PN	**Pg**	**01 11 40.3**	**+0.4**
IZI	**Iznik**	**1.26**	**14**	*e*Pn	**Pg**	**01 11 40.3**	**+0.4**
MDNY	**Mudanya-Bursa**	**1.26**	**354**	*e*PN	**Pg**	**01 11 40.6**	**+0.7**
MDNY	**Mudanya-Bursa**	**1.26**	**354**	*e*Pn	**Pg**	**01 11 40.6**	**+0.7**
KCTX	**Karacabey (Bur**	**1.27**	**335**	*e*PN	**Pg**	**01 11 41.0**	**+0.8**
KCTX	**Karacabey (Bur**	**1.27**	**335**	*e*Pn	**Pg**	**01 11 41.0**	**+0.8**
BORA	**Eskisehir**	**1.32**	**54**	P	**Pn**	**01 11 40.8**	**0.0**
BORA				S	**Sn**	**01 11 58.2**	**-0.5**
BORA	**Eskisehir**	**1.32**	**54**	*i* P	**Pn**	**01 11 40.8**	**0.0**
BORA				*i* S	**Sn**	**01 11 58.2**	**-0.5**
ADVT	**Abdulvahap**	**1.41**	**21**	*e*PN	**Pg**	**01 11 43.4**	**+0.5**
ADVT	**Abdulvahap**	**1.41**	**21**	*e*Pn	**Pg**	**01 11 43.4**	**+0.5**
GONE	**Gonen-Balikesi**	**1.41**	**311**	*e*PN	**Pg**	**01 11 43.1**	**+0.2**
GONE	**Gonen-Balikesi**	**1.41**	**311**	*e*Pn	**Pg**	**01 11 43.1**	**+0.2**
ARMT	**Armutlu**	**1.45**	**354**	*e*PN	**Pb**	**01 11 43.4**	**+0.1**
ARMT	**Armutlu**	**1.45**	**354**	*e*Pn	**Pb**	**01 11 43.4**	**+0.1**
EDC	**Edincik**	**1.54**	**323**	*e*PN	**Pg**	**01 11 45.2**	**-0.1**
EDC	**Edincik**	**1.54**	**323**	*e*Pn	**Pg**	**01 11 45.2**	**-0.1**
GULT	**Gulveren**	**1.72**	**40**	*e*PN	**Pb**	**01 11 47.9**	**0.0**
GULT	**Gulveren**	**1.72**	**40**	*e*Pn	**Pb**	**01 11 47.9**	**0.0**
SVRH	**Sivrihisar-ESK**	**1.94**	**79**	*e*PN	**Pb**	**01 11 50.8**	**-0.8**
SVRH	**Sivrihisar-ESK**	**1.94**	**79**	*e*Pn	**Pb**	**01 11 50.8**	**-0.8**
ISK	**Istanbul-Kandi**	**1.94**	**360**	*e*PN	**Pb**	**01 11 50.5**	**-1.2**
ISK	**Istanbul-Kandi**	**1.94**	**360**	*e*Pn	**Pb**	**01 11 50.5**	**-1.2**

IDC 21 01:14:46.9±1.4, 18°.14S×66°.29E, h0km, mb3.7/7, mb1 3.9/8, mb1mx3.6/38, mbtmp3.7/8, ML3.8/1, MS4.2/3, Ms1 4.2/3, ms1mx3.6/33, Error ellipse: s-maj=45.8km s-min=26.4km az=29.0, Mauritius-Reunion region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08S1	**Diego Garcia H**	**12.05**	**31**	T	T	01 29 30.6	
	baz=212,slow=75,SNR=508						
H08S2	**Diego Garcia H**	**12.06**	**31**	T	T	01 29 31.9	
	baz=212,slow=75,SNR=239						
H08S3	**Diego Garcia H**	**12.07**	**31**	T	T	01 29 40.2	
	baz=212,slow=75,SNR=417						
H08N3	**Diego Garcia H**	**12.59**	**22**	T	T	01 30 09.4	
	baz=203,slow=76,SNR=540						
H08N1	**Diego Garcia H**	**12.60**	**22**	T	T	01 30 10.3	
	baz=203,slow=76,SNR=270						
H08N2	**Diego Garcia H**	**12.61**	**22**	T	T	01 30 11.4	
	baz=203,slow=76,SNR=528						
OPO	**Ambohidratompo**	**18.14**	**266**	P	Pn	01 19 00.0	-0.6
	0.3nm,0.3s,baz=85,slow=11,SNR=3.6						
OPO				S	Sn	01 22 07.2	-17
	0.3nm,0.3s,baz=3.6,slow=16,SNR=3.8						
OPO				LR	LR	01 23 48.3	
	comp=Z,575nm,21.6s,baz=86,slow=30						
H01W3	**Cape Leeuwin H**	**45.50**	**121**	T	T	02 12 27.6	
	baz=278,slow=75,SNR=48						
H01W2	**Cape Leeuwin H**	**45.50**	**121**	T	T	02 12 26.8	
	baz=278,slow=75,SNR=44						
H01W1	**Cape Leeuwin H**	**45.52**	**121**	T	T	02 12 28.1	
	baz=278,slow=75,SNR=44						
CMAR	**Chiang Mai Air**	**48.51**	**43**	P	P	01 23 31.0	-0.9
	0.9nm,0.3s,baz=226,slow=7.5,SNR=2.7						
ASAR	**Alice Springs**	**62.89**	**108**	P	P	01 25 15.5	+0.1
	0.3nm,0.5s,baz=271,slow=5.9,SNR=4.9						
ASAR				LR	LR	01 49 16.2	
	comp=Z,281nm,19.5s,baz=299,slow=33						
WRA	**Warramunga Arr**	**63.94**	**104**	P	P	01 25 22.4	+0.1
	0.7nm,1.0s,baz=237,slow=7.0,SNR=3.4						
BRTR	**Keskin Array B**	**65.14**	**333**	P	P	01 25 30.7	+0.8
	0.2nm,0.7s,baz=122,slow=5.4,SNR=2.5						
BVAR	**Borovoye Array**	**70.96**	**3**	P	P	01 26 05.2	-0.7
	0.3nm,0.5s,baz=182,slow=7.5,SNR=2.9						
ZALV	**Zalesovo Beam**	**73.54**	**11**	P	P	01 26 22.6	+1.2
	0.9nm,0.8s,baz=212,slow=5.1,SNR=2.6						
DBIC	**Dimbokro**	**74.37**	**283**	LR	LR	01 58 06.8	
	comp=Z,121nm,18.2s,baz=44,slow=35						
AKASG	**Malin Array Be**	**75.90**	**337**	P	P	01 26 34.6	-0.5
	0.2nm,0.3s,baz=142,slow=5.3,SNR=3.2						

*ISCJB **21** 01:15:16.5±0.5, 39°.09N±0°.03×29°.03E±0°.04, h3km±8km, Error ellipse: s-maj=5.9km s-min=4.6km az=175.0*
*ISK **21** 01:15:16.2, 39°.07N×29°.03E, h6km, MD2.8*
*CSEM **21** 01:15:16.8±0.1, 39°.08N×29°.03E, h5km, ML2.8, Error ellipse: s-maj=1.7km s-min=1.5km az=105.0*
*DDA **21** 01:15:16.6, 39°.11N×29°.04E, h7km, Ml2.8*

ISC 21 01:15:17.0±1.0, 39°.08N±0°.03×29°.04E±0°.02, h7km±11km, n40, σ0°.28/50, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**261**	P	**Pg**	**01 15 22.0**	**0.0**
DEMI				S	**Sg**	**01 15 25.6**	**+0.2**
DEMI	**Demirci**	**0.25**	**261**	*i* P	**Pg**	**01 15 22.0**	**0.0**
DEMI				*i* S	**Sg**	**01 15 25.6**	**+0.2**
GDZ	**Gediz**	**0.34**	**89**	P	**Pg**	**01 15 23.8**	**0.0**
GDZ				S	**Sg**	**01 15 28.6**	**+0.2**
GDZ	**Gediz**	**0.34**	**89**	*i* P	**Pg**	**01 15 23.8**	**0.0**
GDZ				*i* S	**Sg**	**01 15 28.6**	**+0.2**
TVSB	**Tavsanli**	**0.49**	**42**	*e*PG	**Pg**	**01 15 26.1**	**-0.5**
TVSB	**Tavsanli**	**0.49**	**42**	*e*Pg	**Pg**	**01 15 26.1**	**-0.5**
KULA	**Kula-Manisa**	**0.64**	**208**	*e*PG	**Pg**	**01 15 28.8**	**-0.5**
KULA				*e*SG	**Sg**	**01 15 37.8**	**+0.2**
KULA	**Kula-Manisa**	**0.64**	**208**	*e*Pg	**Pg**	**01 15 28.8**	**-0.5**
KULA				*e*Sg	**Sg**	**01 15 37.8**	**+0.2**
DURS	**Dursunbey**	**0.68**	**320**	P	**Pg**	**01 15 29.4**	**-0.7**
DURS	**Dursunbey**	**0.68**	**320**	*i* P	**Pg**	**01 15 29.4**	**-0.7**
MANT	**Manisa**	**0.70**	**213**	P	**Pg**	**01 15 30.5**	**0.0**
MANT				S	**Sg**	**01 15 39.8**	**+0.2**
MANT	**Manisa**	**0.70**	**213**	*i* P	**Pg**	**01 15 30.5**	**0.0**
MANT				*i* S	**Sg**	**01 15 39.8**	**+0.2**
KHAL	**Karahalli**	**0.79**	**153**	P	**Pb**	**01 15 33.0**	**-0.2**
KHAL	**Karahalli**	**0.79**	**153**	*i* P	**Pb**	**01 15 33.0**	**-0.2**
KHL	**Karahalli**	**0.85**	**153**	*e*PG	**Pg**	**01 15 32.8**	**-0.5**
KHL	**Karahalli**	**0.85**	**153**	*e*Pg	**Pg**	**01 15 32.8**	**-0.5**
AKS	**Akhisar**	**0.97**	**258**	*e*PG	**Pg**	**01 15 35.4**	**-0.3**
AKS	**Akhisar**	**0.97**	**258**	*e*Pg	**Pg**	**01 15 35.4**	**-0.3**
BALB	**Balikesir**	**1.06**	**302**	*e*PG	**Pg**	**01 15 37.0**	**-0.3**
BALB				*e*SG	**Sb**	**01 15 51.8**	**+0.2**
BALB	**Balikesir**	**1.06**	**302**	*e*Pg	**Pg**	**01 15 37.0**	**-0.3**
BALB				*e*Sg	**Sb**	**01 15 51.8**	**+0.2**
CAVI	**Cavuskoy**	**1.28**	**29**	*e*PN	**Pg**	**01 15 41.5**	**-0.1**
CAVI	**Cavuskoy**	**1.28**	**29**	*e*Pn	**Pg**	**01 15 41.5**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.29**	**355**	*e*PN	**Pn**	**01 15 41.2**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.29**	**355**	*e*Pn	**Pn**	**01 15 41.2**	**-0.2**
KCTX	**Karacabey (Bur**	**1.29**	**336**	*e*PN	**Pn**	**01 15 41.5**	**0.0**
KCTX	**Karacabey (Bur**	**1.29**	**336**	*e*Pn	**Pn**	**01 15 41.5**	**0.0**
IZI	**Iznik**	**1.30**	**15**	*e*PN	**Pg**	**01 15 41.9**	**0.0**
IZI	**Iznik**	**1.30**	**15**	*e*Pn	**Pg**	**01 15 41.9**	**0.0**
GONE	**Gonen-Balikesi**	**1.42**	**313**	*e*PN	**Pn**	**01 15 43.3**	**+0.1**
GONE	**Gonen-Balikesi**	**1.42**	**313**	*e*Pn	**Pn**	**01 15 43.3**	**+0.1**
ADVT	**Abdulvahap**	**1.46**	**22**	*e*PN	**Pn**	**01 15 43.7**	**+0.1**
ADVT	**Abdulvahap**	**1.46**	**22**	*e*Pn	**Pn**	**01 15 43.7**	**+0.1**
ARMT	**Armutlu**	**1.49**	**355**	*e*PN	**Pn**	**01 15 44.3**	**+0.1**
ARMT	**Armutlu**	**1.49**	**355**	*e*Pn	**Pn**	**01 15 44.3**	**+0.1**
EDC	**Edincik**	**1.56**	**325**	*e*PN	**Pn**	**01 15 45.2**	**+0.2**
EDC	**Edincik**	**1.56**	**325**	*e*Pn	**Pn**	**01 15 45.2**	**+0.2**
GULT	**Gulveren**	**1.77**	**40**	*e*PN	**Pn**	**01 15 48.1**	**+0.1**
GULT	**Gulveren**	**1.77**	**40**	*e*Pn	**Pn**	**01 15 48.1**	**+0.1**
ISK	**Istanbul-Kandi**	**1.98**	**0**	*e*PN	**Pn**	**01 15 51.3**	**+0.4**
ISK	**Istanbul-Kandi**	**1.98**	**0**	*e*Pn	**Pn**	**01 15 51.3**	**+0.4**

*ISK **21** 01:24:58.9, 39°.12N×29°.12E, h8km, MD2.6*
*ISCJB **21** 01:24:59.5±0.5, 39°.12N±0°.03×29°.10E±0°.04, h9km±5km, Error ellipse: s-maj=5.8km s-min=4.1km az=41.8*
*DDA **21** 01:24:59.5, 39°.13N×29°.11E, h7km, Ml2.2*
*CSEM **21** 01:24:59.5±0.1, 39°.13N×29°.09E, h8km, ML2.2, Error ellipse: s-maj=1.7km s-min=1.2km az=117.0*

ISC 21 01:24:59.7±0.9, 39°.13N±0°.03×29°.10E±0°.02, h12km±10km, n30, σ0°.26/42, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.30**	**98**	P	**Pg**	**01 25 05.9**	**0.0**
GDZ				S	**Sg**	**01 25 09.9**	**-0.1**
GDZ	**Gediz**	**0.30**	**98**	*i* P	**Pg**	**01 25 05.9**	**0.0**
GDZ				*i* S	**Sg**	**01 25 09.9**	**-0.1**
DEMI	**Demirci**	**0.31**	**254**	P	**Pg**	**01 25 06.2**	**+0.1**
DEMI				S	**Sg**	**01 25 10.7**	**+0.4**
DEMI	**Demirci**	**0.31**	**254**	*i* P	**Pg**	**01 25 06.2**	**+0.1**
DEMI				*i* S	**Sg**	**01 25 10.7**	**+0.4**
TVSB	**Tavsanli**	**0.42**	**41**	*e*PG	**Pg**	**01 25 08.3**	**+0.1**
TVSB				*e*SG	**Sg**	**01 25 13.3**	**-0.6**
TVSB	**Tavsanli**	**0.42**	**41**	*e*Pg	**Pg**	**01 25 08.3**	**+0.1**
TVSB				*e*Sg	**Sg**	**01 25 13.3**	**-0.6**
DURS	**Dursunbey**	**0.68**	**314**	P	**Pg**	**01 25 12.5**	**-0.4**
DURS	**Dursunbey**	**0.68**	**314**	*i* P	**Pg**	**01 25 12.5**	**-0.4**
KULA	**Kula-Manisa**	**0.70**	**209**	*e*PG	**Pg**	**01 25 13.3**	**-0.1**
KULA				*e*SG	**Sg**	**01 25 22.5**	**-0.1**
KULA	**Kula-Manisa**	**0.70**	**209**	*e*Pg	**Pg**	**01 25 13.3**	**-0.1**
KULA				*e*Sg	**Sg**	**01 25 22.5**	**-0.1**
MANT	**Manisa**	**0.77**	**214**	P	**Pg**	**01 25 14.3**	**-0.3**
MANT				S	**Sg**	**01 25 24.2**	**-0.4**
MANT	**Manisa**	**0.77**	**214**	*i* P	**Pg**	**01 25 14.3**	**-0.3**
MANT				*i* S	**Sg**	**01 25 24.2**	**-0.4**
KHAL	**Karahalli**	**0.82**	**158**	P	**Pg**	**01 25 15.5**	**0.0**
KHAL				S	**Sg**	**01 25 26.0**	**-0.2**
KHAL	**Karahalli**	**0.82**	**158**	*i* P	**Pg**	**01 25 15.5**	**0.0**
KHAL				*i* S	**Sg**	**01 25 26.0**	**-0.2**
BALB	**Balikesir**	**1.08**	**299**	*e*PN	**Pb**	**01 25 20.2**	**-0.1**
BALB	**Balikesir**	**1.08**	**299**	*e*Pn	**Pb**	**01 25 20.2**	**-0.1**
CAVI	**Cavuskoy**	**1.22**	**28**	*e*PN	**Pn**	**01 25 22.8**	**+0.1**
CAVI	**Cavuskoy**	**1.22**	**28**	*e*Pn	**Pn**	**01 25 22.8**	**+0.1**
IZI	**Iznik**	**1.24**	**13**	*e*PN	**Pg**	**01 25 23.6**	**0.0**
IZI	**Iznik**	**1.24**	**13**	*e*Pn	**Pg**	**01 25 23.6**	**0.0**
MDNY	**Mudanya-Bursa**	**1.25**	**352**	*e*PN	**Pb**	**01 25 23.4**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.25**	**352**	*e*Pn	**Pb**	**01 25 23.4**	**+0.1**
KCTX	**Karacabey (Bur**	**1.27**	**333**	*e*PN	**Pb**	**01 25 23.8**	**+0.1**
KCTX	**Karacabey (Bur**	**1.27**	**333**	*e*Pn	**Pb**	**01 25 23.8**	**+0.1**
BORA	**Eskisehir**	**1.29**	**54**	P	**Pb**	**01 25 24.1**	**+0.1**
BORA	**Eskisehir**	**1.29**	**54**	*i* P	**Pb**	**01 25 24.1**	**+0.1**
ARMT	**Armutlu**	**1.45**	**353**	*e*PN	**Pn**	**01 25 26.3**	**+0.5**
ARMT	**Armutlu**	**1.45**	**353**	*e*Pn	**Pn**	**01 25 26.3**	**+0.5**
GULT	**Gulveren**	**1.70**	**39**	*e*PN	**Pn**	**01 25 29.4**	**0.0**
GULT	**Gulveren**	**1.70**	**39**	*e*Pn	**Pn**	**01 25 29.4**	**0.0**

*ISCJB **21** 01:27:49.9±0.6, 39°.10N±0°.05×29°.07E±0°.05, h2km±10km, Error ellipse: s

KCTX	Karacabey (Bur	1.25	336	*e*Pn		Pg	01 32 39.9	-0.2
IZI	Iznik	1.26	16	*e*PN		Pb	01 32 40.4	+0.1
IZI	Iznik	1.26	16	*e*Pn		Pb	01 32 40.4	+0.1
BORA	Eskisehir	1.34	55	P		Pn	01 32 41.0	-0.5
BORA	Eskisehir	1.34	55	*i* P		Pn	01 32 41.0	-0.5
DENT	Denizli	1.37	180	*e*PN		Pn	01 32 41.8	+0.1
DENT	Denizli	1.37	180	*e*Pn		Pn	01 32 41.8	+0.1
GONE	Gonen-Balikesi	1.39	312	*e*PN		Pn	01 32 42.1	+0.1
GONE	Gonen-Balikesi	1.39	312	*e*Pn		Pn	01 32 42.1	+0.1
ADVT	Abdulvahap	1.42	23	*e*PN		Pb	01 32 43.1	+0.1
ADVT	Abdulvahap	1.42	23	*e*Pn		Pb	01 32 43.1	+0.1
ARMT	Armutlu	1.45	355	*e*PN		Pn	01 32 43.1	+0.3
ARMT	Armutlu	1.45	355	*e*Pn		Pn	01 32 43.1	+0.3
EDC	Edincik	1.52	324	*e*PN		Pn	01 32 44.0	+0.2
EDC	Edincik	1.52	324	*e*Pn		Pn	01 32 44.0	+0.2
GULT	Gulveren	1.74	41	*e*PN		Pn	01 32 47.3	+0.4
GULT	Gulveren	1.74	41	*e*Pn		Pn	01 32 47.3	+0.4
HRT	Hereke	1.77	16	*e*PN		Pn	01 32 47.6	+0.3
HRT	Hereke	1.77	16	*e*Pn		Pn	01 32 47.6	+0.3
ISK	Istanbul-Kandi	1.94	1	*e*PN		Pn	01 32 50.5	+0.9
ISK	Istanbul-Kandi	1.94	1	*e*Pn		Pn	01 32 50.5	+0.9
SVRH	Sivrihisar-ESK	1.97	80	*e*PN		Pn	01 32 50.5	+0.4
SVRH	Sivrihisar-ESK	1.97	80	*e*Pn		Pn	01 32 50.5	+0.4
SILT	Sile	2.08	13	*e*PN		Pn	01 32 52.0	+0.5
SILT	Sile	2.08	13	*e*Pn		Pn	01 32 52.1	+0.5

*ISCJB **21** 01:34:27.9±0.4, 3°.63S±0°.04×80°.48W±0°.06, h33km, mb4.0/24, MS3.5/4, Error ellipse: s-maj=9.0km s-min=4.7km az=159.8*
*NEIC **21** 01:34:31.6±2.0, 3°.63S×80°.32W, h49km±21km, mb4.3/13, MD4.2(IGQ), Error ellipse: s-maj=28.4km s-min=10.5km az=70.0*
NEIC Felt at Tumbes and Zorritos, Peru.
*IDC **21** 01:34:32.9±2.1, 3°.63S×80°.42W, h73km±20km, mb3.6/15, mb1 3.9/19, mb1mx3.8/32, mbtmp4.1/19, MS3.6/7, Ms1 3.6/7, ms1mx3.4/32, Error ellipse: s-maj=20.4km s-min=12.2km az=73.0*
ISC 21 01:34:29.7±0.6, **3°.52S**±0°.05×**80°.42W**±0°.10, **h35**km, **n49**, σ1§**90**/50, **mb4.0**/24, **MS3.5**/4, **Peru-Ecuador border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ATAH	**Atahualpa**	**4.12**	**151**	P	**Pn**	**01 35 32.9**	**+2.3**
	37nm,0.3s,baz=342,slow=8.0,SNR=180						
ATAH				S	**Sn**	**01 36 19.3**	**+1.5**
	61nm,0.3s,baz=323,slow=12,SNR=6.1						
OTAV	**Otavalo**	**4.21**	**28**	*e*Pn	**Pn**	**01 35 34.6**	**+2.6**
OTAV	**Otavalo**	**4.21**	**28**	*e*P	**Pn**	**01 35 34.5**	**+2.6**
OTAV				*e*S	**Sn**	**01 36 15.2**	**-5.0**
CRUC	**La Cruz**	**6.12**	**35**	*e*P	**Pn**	**01 35 59.8**	**+1.7**
FLOC	**Florencia**	**6.95**	**43**	*e*P	**Pn**	**01 36 11.6**	**+2.4**
MALC	**Bahia Malaga**	**8.09**	**22**	*e*P	Pn	01 36 32.5	+7.8
NNA	**Nana**	**9.13**	**157**	P	**Pn**	**01 36 39.7**	**+0.6**
	6.0nm,0.3s,baz=304,slow=11,SNR=10						
NNA				S	**Sn**	**01 38 21.0**	**+0.2**
	24nm,0.3s,baz=199,slow=15,SNR=5.9						
NNA				LR	LR	01 40 49.8	
	comp=Z,196nm,20.8s,baz=16,slow=42						
NNA	**Nana**	**9.13**	**157**	*e*Pn	**Pn**	**01 36 39.0**	**-0.1**
NNA				*e*Sn	**Sn**	**01 38 22.6**	**+1.8**
PAYG	**Puerto Ayora**	**10.26**	**286**	*e*Pn	Pn	01 37 04.0	+9.5
ROSC	**El Rosal**	**10.30**	**36**	P	**Pn**	**01 36 59.6**	**+4.2**
	0.9nm,0.3s,baz=120,slow=20,SNR=2.0						
ROSC				LR	LR	01 41 57.7	
	comp=Z,289nm,19.9s,baz=246,slow=43						
ROSC	**El Rosal**	**10.30**	**36**	*e*Pn	Pn	01 37 04.1	+8.7
RUSC	**La Rusia**	**11.87**	**38**	*e*P	**Pn**	**01 37 20.0**	**+3.0**
SDV	**Santo Domingo**	**15.71**	**38**	P	**Pn**	**01 38 11.8**	**+3.0**
	3.4nm,0.3s,baz=218,slow=8.1,SNR=3.5						
MGAN	**Managua**	**16.60**	**340**	*e*Pn	P	01 38 29.6	+7.5
	0.2nm,0.6s						
LPAZ	**La Paz**	**17.52**	**137**	P	**Pn**	**01 38 31.8**	**-0.2**
	0.5nm,0.3s,baz=333,slow=12,SNR=22						
LPAZ				LR	LR	01 47 06.2	
	comp=Z,235nm,18.2s,baz=350,slow=43						
LPAZ	**La Paz**	**17.52**	**137**	*e*Pn	**Pn**	**01 38 31.8**	**-0.2**
	11nm,0.9s						
SAML	**Samuel**	**17.96**	**108**	*e*Pn	**Pn**	**01 38 36.3**	**-0.5**
	31nm,1.0s						
PTGA	**Pitinga**	**20.62**	**83**	P	**P**	**01 39 06.6**	**+0.3**
	15nm,0.8s,baz=265,slow=15,SNR=14						
PTGA				LR	LR	01 48 01.9	
	comp=Z,195nm,19.0s,baz=264,slow=39						
PCRV	**Puerto La Cruz**	**20.79**	**49**	P	**P**	**01 39 10.2**	**+2.1**
	18nm,1.1s,baz=28,slow=10,SNR=2.4						
PCRV				LR	LR	01 48 49.9	
	comp=Z,292nm,21.3s,baz=206,slow=41						
SIV	**San Ignacio**	**22.71**	**124**	P	**P**	**01 39 29.1**	**+0.4**
	6.1nm,0.8s,baz=305,slow=7.5,SNR=12						
SIV				LR	LR	01 49 08.3	
	comp=Z,193nm,18.2s,baz=188,slow=39						
SJG	**San Juan**	**25.68**	**33**	P	**P**	**01 39 57.0**	**+0.4**
	9.0nm,0.7s,baz=218,slow=9.9,SNR=2.1						
SJG				LR	LR	01 51 39.3	
	comp=Z,104nm,19.6s,baz=182,slow=40						
CPUP	**Villa Florida**	**31.69**	**138**	P	**P**	**01 40 49.0**	**-1.2**
	1.2nm,0.7s,baz=320,slow=5.7,SNR=4.1						
PLCA	**Paso Flores**	**38.10**	**168**	P	**P**	**01 41 43.5**	**-1.9**
	1.5nm,0.9s,baz=352,slow=14,SNR=2.9						
TXAR	**Lajitas Array**	**39.55**	**327**	P	**P**	**01 41 56.9**	**-0.7**
	0.4nm,0.9s,baz=147,slow=12,SNR=3.6						
TXAR				PcP	**PcP**	**01 44 03.6**	**-1.1**
	0.3nm,0.7s,baz=148,slow=5.3,SNR=3.4						
WMOK	**Wichita Mounta**	**41.79**	**337**	*e*P	**P**	**01 42 16.9**	**+1.0**
	1.5nm,0.6s						
MSTX	**Muleshoe**	**42.84**	**332**	*e*P	**P**	**01 42 26.0**	**+1.4**
	8.7nm,1.1s						
ANMO	**Albuquerque**	**45.41**	**330**	*e*P	**P**	**01 42 46.6**	**+1.2**
	4.4nm,0.9s						
CBKS	**Cedar Bluff**	**45.74**	**339**	*e*P	**P**	**01 42 48.1**	**+0.4**
	6.4nm,0.6s						
SDCO	**Great Sand Dun**	**47.20**	**333**	*e*P	**P**	**01 43 00.8**	**+1.3**
	1.3nm,0.8s						
BW06	**Boulder Array**	**53.07**	**333**	*e*P	**P**	**01 43 43.1**	**-0.8**
	3.1nm,0.9s						
PDAR	**Pinedale Array**	**53.07**	**333**	P	**P**	**01 43 44.1**	**+0.2**
	1.2nm,1.1s,baz=147,slow=7.2,SNR=3.2						
HWUT	**Hardware Ranch**	**53.11**	**331**	*e*P	**P**	**01 43 45.1**	**+1.0**
	6.6nm,0.8s						
MOOW	**Moose Ponds**	**54.38**	**333**	*e*P	**P**	**01 43 56.3**	**+2.9**
	1.1nm,0.9s						
NVAR	**Mina Array Bea**	**54.48**	**324**	P	**P**	**01 43 54.8**	**+0.5**
	0.2nm,0.4s,baz=125,slow=9.3,SNR=2.3						
ULM	**Lac du Bonnet**	**55.19**	**348**	P	**P**	**01 43 57.8**	**-1.0**
	2.2nm,0.6s,baz=148,slow=9.6,SNR=3.3						
HLID	**Hailey**	**55.96**	**331**	*e*P	**P**	**01 44 07.0**	**+2.3**
	2.3nm,0.9s						
BOZ	**Bozeman (W)**	**56.26**	**334**	*e*P	**P**	**01 44 09.9**	**+3.1**
	3.1nm,0.9s						
MFID	**Camas Ranch**	**56.56**	**330**	*e*P	**P**	**01 44 12.6**	**+3.6**
WVOR	**Wild Horse Val**	**57.34**	**327**	*e*P	**P**	**01 44 16.0**	**+1.5**
	4.9nm,1.1s						
YKA	**Yellowknife Ar**	**70.77**	**344**	P	**P**	**01 45 41.1**	**-1.0**
	0.2nm,0.7s,baz=136,slow=5.6,SNR=4.8						
DBIC	**Dimbokro**	**76.10**	**82**	P	**P**	**01 46 13.7**	**-0.9**
	2.0nm,0.7s,baz=256,slow=2.8,SNR=5.1						
EGAK	**Eagle**	**81.14**	**338**	*e*P	**P**	**01 46 43.0**	**+1.8**
ESDC	**Sonseca Array**	**81.85**	**49**	P	**P**	**01 46 45.3**	**-0.4**
	0.6nm,0.8s,baz=272,slow=4.6,SNR=3.5						
SNAA	**Sanae**	**82.78**	**162**	*e*P	**P**	**01 46 48.8**	**-1.1**
TORD	**Torodi Ar. Bea**	**83.13**	**76**	P	**P**	**01 46 51.4**	**-1.4**
	0.7nm,0.9s,baz=275,slow=5.7,SNR=8.4						
GERES	**GERESS Array B**	**95.34**	**41**	P	**P**	**01 47 48.1**	**-2.4**
	0.2nm,0.5s,baz=285,slow=11,SNR=1.9						
ASAR	**Alice Springs**	**137.01**	**229**	PKP	**PKPdf**	**01 53 49.6**	**-0.3**
	0.6nm,0.8s,baz=129,slow=2.6,SNR=3.6						
WRA	**Warramunga Arr**	**138.66**	**234**	PKP	**PKPdf**	**01 53 51.4**	**-1.6**
	1.0nm,1.1s,baz=115,slow=2.2,SNR=3.1						
CD2	**Chengdu**	**152.47**	**352**	PKPbc	**PKPbc**	**01 54 23.8**	**+0.8**

*ISK **21** 01:35:30.5, 39°.08N×29°.09E, h14km, MD2.9*
*ISCJB **21** 01:35:31.2±0.5, 39°.10N±0°.03×29°.06E±0°.03, h9km±4km, Error ellipse: s-maj=4.8km s-min=3.6km az=143.7*
*DDA **21** 01:35:31.4, 39°.10N×29°.07E, h7km, Ml3.0*
*CSEM **21** 01:35:31.4±0.1, 39°.11N×29°.06E, h10km, ML3.0, Error ellipse: s-maj=3.2km s-min=2.6km az=144.0*
ISC 21 01:35:31.4±0.9, **39°.10N**±0°.02×**29°.07E**±0°.02, **h12**km±8km, **n51**, σ0§**46**/67, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**259**	P	**Pg**	**01 35 37.3**	**0.0**
DEMI				S	**Sg**	**01 35 41.2**	**+0.1**
DEMI	**Demirci**	**0.28**	**259**	*i* P	**Pg**	**01 35 37.3**	**0.0**
DEMI				*i* S	**Sg**	**01 35 41.2**	**+0.1**
GDZ	**Gediz**	**0.32**	**91**	P	**Pg**	**01 35 38.1**	**+0.2**
GDZ				S	**Sg**	**01 35 42.8**	**+0.5**
GDZ	**Gediz**	**0.32**	**91**	*i* P	**Pg**	**01 35 38.1**	**+0.2**
GDZ				*i* S	**Sg**	**01 35 42.8**	**+0.5**
TVSB	**Tavsanli**	**0.46**	**41**	*e*PG	**Pg**	**01 35 40.4**	**-0.2**
TVSB				*e*SG	**Sg**	**01 35 46.6**	**-0.2**
TVSB	**Tavsanli**	**0.46**	**41**	*e*Pg	**Pg**	**01 35 40.4**	**-0.2**
TVSB				*e*Sg	**Sg**	**01 35 46.6**	**-0.2**
KULA	**Kula-Manisa**	**0.67**	**209**	*e*PG	**Pg**	**01 35 44.4**	**+0.1**
KULA				*e*SG	**Sg**	**01 35 52.7**	**-0.4**
KULA	**Kula-Manisa**	**0.67**	**209**	*e*Pg	**Pg**	**01 35 44.4**	**+0.1**
KULA				*e*Sg	**Sg**	**01 35 52.7**	**-0.4**
DURS	**Dursunbey**	**0.68**	**318**	P	**Pg**	**01 35 44.8**	**0.0**
DURS				S	**Sb**	**01 35 55.7**	**+0.8**
DURS	**Dursunbey**	**0.68**	**318**	*i* P	**Pg**	**01 35 44.8**	**0.0**
DURS				*i* S	**Sb**	**01 35 55.7**	**+0.8**
DURS				*i* S	**Sn**	**01 35 58.8**	**+1.0**
MANT	**Manisa**	**0.73**	**214**	P	**Pg**	**01 35 45.5**	**-0.1**
MANT				S	**Sg**	**01 35 54.9**	**-0.2**
MANT	**Manisa**	**0.73**	**214**	*i* P	**Pg**	**01 35 45.5**	**-0.1**
MANT				*i* S	**Sg**	**01 35 54.9**	**-0.2**
KHAL	**Karahalli**	**0.80**	**156**	P	**Pb**	**01 35 47.3**	**0.0**
KHAL	**Karahalli**	**0.80**	**156**	*i* P	**Pb**	**01 35 47.4**	**0.0**
KHL	**Karahalli**	**0.85**	**155**	*e*PG	**Pg**	**01 35 47.4**	**-0.5**
AKHS	**Akhisar**	**1.00**	**258**	P	**Pb**	**01 35 51.0**	**+0.2**
AKHS	**Akhisar**	**1.00**	**258**	*i* P	**Pb**	**01 35 51.0**	**+0.2**
AKS	**Akhisar**	**1.00**	**258**	*e*PG	**Pg**	**01 35 50.4**	**-0.4**
BALB	**Balikesir**	**1.07**	**301**	*e*PN	**Pn**	**01 35 52.5**	**+0.2**
BALB	**Balikesir**	**1.07**	**301**	*e*Pn	**Pn**	**01 35 52.5**	**+0.2**
IGD	**Bursa**	**1.17**	**5**	*i* P	**Pb**	**01 35 52.2**	**-1.5**
IGD				*i* S	**Sb**	**01 36 08.2**	**-0.5**
CAVI	**Cavuskoy**	**1.25**	**28**	*e*PN	**Pn**	**01 35 54.8**	**-0.1**
CAVI	**Cavuskoy**	**1.25**	**28**	*e*Pn	**Pn**	**01 35 54.8**	**-0.1**
IZI	**Iznik**	**1.28**	**14**	*e*PN	**Pn**	**01 35 55.0**	**-0.2**
IZI	**Iznik**	**1.28**	**14**	*e*Pn	**Pn**	**01 35 55.0**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.28**	**354**	*e*PN	**Pn**	**01 35 54.2**	**-0.9**
KCTX	**Karacabey (Bur**	**1.29**	**335**	*e*PN	**Pn**	**01 35 54.8**	**-0.6**
KCTX	**Karacabey (Bur**	**1.29**	**335**	*e*Pn	**Pn**	**01 35 54.8**	**-0.6**
BALY	**Balya**	**1.29**	**300**	P	**Pg**	**01 35 56.2**	**-0.2**
BALY	**Balya**	**1.29**	**300**	*i* P	**Pg**	**01 35 56.2**	**-0.2**
BORA	**Eskisehir**	**1.32**	**53**	P	**Pn**	**01 35 56.2**	**+0.3**
BORA				S	**Sg**	**01 36 15.0**	**+0.9**
BORA	**Eskisehir**	**1.32**	**53**	*i* P	**Pn**	**01 35 56.2**	**+0.3**
BORA				*i* S	**Sg**	**01 36 15.0**	**+0.9**
ADVT	**Abdulvahap**	**1.43**	**21**	*e*PN	**Pn**	**01 35 56.6**	**-0.6**
ADVT	**Abdulvahap**	**1.43**	**21**	*e*Pn	**Pn**	**01 35 56.6**	**-0.7**
GONE	**Gonen-Balikesi**	**1.43**	**312**	*e*PN	**Pn**	**01 35 56.9**	**-0.4**
GONE	**Gonen-Balikesi**	**1.43**	**312**	*e*Pn	**Pn**	**01 35 56.9**	**-0.4**
ESKT	**Eskisehir**	**1.44**	**72**	*i* P	**Pb**	**01 35 58.5**	**+0.1**
SEYT	**Eskypehyr**	**1.44**	**72**	P	**Pb**	**01 35 58.5**	**+0.1**
ARMT	**Armutlu**	**1.48**	**354**	*e*PN	**Pn**	**01 35 58.2**	**+0.3**
ARMT	**Armutlu**	**1.48**	**354**	*e*Pn	**Pn**	**01 35 58.2**	**+0.3**
BOLV	**Bolvadin**	**1.51**	**104**	P	**Pg**	**01 36 00.3**	**-0.2**
BOLV	**Bolvadin**	**1.51**	**104**	*i* P	**Pg**	**01 36 00.3**	**-0.2**
EDC	**Edincik**	**1.56**	**324**	*e*PN	**Pn**	**01 35 58.7**	**-0.3**
EDC	**Edincik**	**1.56**	**324**	*e*Pn	**Pn**	**01 35 58.7**	**-0.3**
GULT	**Gulveren**	**1.74**	**39**	*e*PN	**Pn**	**01 36 01.1**	**-0.5**
GULT	**Gulveren**	**1.74**	**39**	*e*Pn	**Pn**	**01 36 01.1**	**-0.5**
SVRH	**Sivrihisar-ESK**	**1.94**	**79**	*e*PN	**Pn**	**01 36 03.5**	**-0.8**
SVRH	**Sivrihisar-ESK**	**1.94**	**79**	*e*Pn	**Pn**	**01 36 03.5**	**-0.8**
ISK	**Istanbul-Kandi**	**1.97**	**360**	*e*PN	**Pn**	**01 36 04.3**	**-0.3**
ISK	**Istanbul-Kandi**	**1.97**	**360**	*e*Pn	**Pn**	**01 36 04.3**	**-0.3**
SILT	**Sile**	**2.10**	**12**	*e*PN	**Pn**	**01 36 06.1**	**-0.4**

*CSEM **21** 01:35:44.1, 40°.72N×29°.23E, h6km, MD2.0*
ISK 21 01:35:44.1, 40°.72N×29°.23E, h6km, MD2.0, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ARMT	**Armutlu**	**0.32**	**242**	*e*PG	Pg	01 35 50.6	+0.3
ARMT	**Armutlu**	**0.32**	**242**	*e*Pg	Pg	01 35 50.6	+0.3
HRT	**Hereke**	**0.35**	**72**	*e*PG	Pg	01 35 51.7	+0.8
HRT				*e*SG	Sg	01 35 56.5	+1.0
HRT	**Hereke**	**0.35**	**72**	*e*Pg	Pg	01 35 51.7	+0.8
HRT				*e*Sg	Sg	01 35 56.5	+1.0
ISK	**Istanbul-Kandi**	**0.37**	**340**	*e*PG	Pg	01 35 52.1	+0.8
ISK				*e*SG	Sg	01 35 57.4	+1.0
ISK	**Istanbul-Kandi**	**0.37**	**340**	*e*Pg	Pg	01 35 52.2	+0.8
ISK				*e*Sg	Sg	01 35 57.4	+1.1
BGKT	**Bogazkoy**	**0.58**	**323**	*e*PG	Pb	01 35 56.0	-0.6
BGKT	**Bogazkoy**	**0.58**	**323**	*e*Pg	Pb	01 35 56.1	-0.6
CTKS	**Kestanelik-??a**	**0.76**	**314**	*e*PG	Pb	01 35 59.2	-0.5
CTKS	**Kestanelik-??a**	**0.76**	**314**	*e*Pg	Pb	01 35 59.2	-0.5

*IDC **21** 01:36:41.1±0.8, 37°.52N×144°.64E, h0km, mb3.7/9, mb1 3.9/13, mb1mx3.7/43, mbtmp3.7/13, ML3.9/3, Error ellipse: s-maj=22.7km s-min=16.8km az=121.0*
*NEIC **21** 01:36:41.9±4.6, 37°.65N×144°.60E, h3km±28km, mb4.2/6, Error ellipse: s-maj=13.9km s-min=7.5km az=122.0*
*ISCJB **21** 01:36:44.5±0.5, 37°.67N±0°.04×144°.47E±0°.04, h33km, mb3.9/15, Error ellipse: s-maj=6.0km s-min=4.4km az=174.8*
*JMA **21** 01:36:46.2±0.3, 37°.69N×144°.37E, h51km, M4.2*
ISC 21 01:36:46.5±0.7, **37°.74N**±0°.05×**144°.52E**±0°.07, **h35**km, **n48**, σ1§**96**/53, **mb4.0**/15, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.60**	**287**	P	**Pn**	**01 37 25.7**	**-0.4**
JIO				S	**Sn**	**01 37 55.4**	**-1.0**
OFUJ	**Ofunato**	**2.61**	**302**	P	**Pn**	**01 37 26.1**	**-0.1**
OFUJ				S	**Sn**	**01 37 56.4**	**-0.2**
JMK	**Ichinoseki**	**2.86**	**296**	P	**Pn**	**01 37 30.0**	**+0.3**
JMK				S	**Sn**	**01 38 02.2**	**-0.7**
JFK	**Kawauchi**	**2.92**	**264**	P	**Pn**	**01 37 29.7**	**-0.8**
JFK				S	**Sn**	**01 38 01.6**	**-2.8**
JOM	**Ohasama**	**3.06**	**305**	P	**Pn**	**01 37 32.9**	**+0.5**
JOM				*e*S	**Sn**	**01 38 07.2**	**-0.7**
JFT	**Otama**	**3.33**	**267**	P	**Pn**	**01 37 36.4**	**+0.3**
JFT				S	**Sn**	**01 38 13.2**	**-1.2**
JYK	**Kaneyama**	**3.48**	**291**	P	**Pn**	**01 37 38.6**	**+0.5**
JYK				*e*S	**Sn**	**01 38 17.8**	**-0.2**
JANG	**Nango**	**3.52**	**319**	P	**Pn**	**01 37 38.7**	**0.0**
JANG				*e*S	**Sn**	**01 38 17.2**	**-1.9**
ERM	**Erimo**	**4.40**	**347**	*e*Pn	**Pn**	**01 37 50.7**	**0.0**
ERM				*e*Sn	**Sn**	**01 38 35.0**	**-5.7**
JRY	**Ryogami san**	**4.82**	**251**	P	**Pn**	**01 37 55.1**	**-1.5**
JRY				*e*S	**Sn**	**01 38 46.3**	**-4.9**
JKB	**Kayabe**	**4.94**	**328**	P	**Pn**	**01 37 59.1**	**+0.9**
JKB				*e*S	**Sn**	**01 38 51.5**	**-2.5**
JCH	**Churui**	**4.95**	**350**	P	**Pn**	**01 37 58.0**	**-0.3**
JCH				*e*S	**Sn**	**01 38 49.1**	**-5.2**
JOD2	**Odawara 2**	**5.02**	**242**	*e*S	**Sn**	**01 38 50.6**	**-5.6**
MJAR	**Matsushiro Arr**	**5.18**	**259**	Pn	**Pn**	**01 38 01.4**	**-0.2**
	2.0nm,0.3s,baz=93,slow=15,SNR=10						
MJAR				Sn	**Sn**	**01 38 59.6**	**-0.5**
	1.4nm,0.3s,baz=108,slow=21,SNR=6.0						
MAJO	**Matsushiro**	**5.18**	**259**	*e*Pn	**Pn**	**01 38 00.8**	**-0.7**
	11nm,0.5s						
MAT	**Matsushiro**	**5.18**	**259**	P	**Pn**	**01 38 02.4**	**+0.8**
MAT				S	**Sn**	**01 38 59.3**	**-0.8**
NEM2	**Nemuro 2**	**5.70**	**9**	S	Sn	01 39 06.2	-6.5
JOSM	**Okushiri--Mats**	**5.82**	**320**	P	**Pn**	**01 38 11.1**	**+0.8**
JOSM				*e*S	**Sn**	**01 39 13.3**	**-2.4**
JHJ2	**Mitsune**	**6.00**	**221**	P	**Pn**	**01 38 10.6**	**-2.2**
JHJ2				*e*S	Sn	01 39 09.6	-11
JHJ	**Hachijo jima 2**	**6.01**	**221**	Pn	Pn	01 38 08.5	-4.5
	7.7nm,0.3s,baz=46,slow=20,SNR=8.3						
JHJ				Sn	Sn	01 39 11.2	-9.4
	45nm,0.3s,baz=217,slow=19,SNR=7.0						
JTKR	**Abashiri--Toko**	**6.24**	**356**	S	**Sn**	**01 39 22.5**	**-3.7**
ASAJ	**Asahikawa**	**6.54**	**348**	Pn	**Pn**	**01 38 20.2**	**+0.1**
	3.1nm,0.3s,baz=214,slow=12,SNR=7.5						
ASAJ				Sn	**Sn**	**01 39 30.8**	**-2.6**
	2.4nm,0.3s,baz=75,slow=27,SNR=4.7						
CBIJ	**Chichi jima**	**10.79**	**191**	Pn	Pn	01 39 10.8	-7.8
CBIJ				Sn	Sn	01 41 01.7	-16
JCJ	**Chichijima**	**10.79**	**191**	Pn	Pn	01 39 10.8	-7.8
	2.4nm,0.3s,baz=356,slow=21,SNR=7.5						
JCJ				Sn	Sn	01 41 01.7	-16
	5.2nm,0.3s,baz=300,slow=22,SNR=6.6						
USRK	**Ussuriysk Ar.**	**11.46**	**308**	Pn	**Pn**	**01 39 29.4**	**+1.8**
	0.2nm,0.3s,baz=101,slow=15,SNR=3.6						
H11N2	**WAKE ISLAND Hy**	**26.48**	**126**	T	T	02 09 18.7	
	baz=317,slow=75,SNR=25						
H11N1	**WAKE ISLAND Hy**	**26.48**	**126**	T	T	02 09 22.1	
	baz=317,slow=75,SNR=11						
H11N3	**WAKE ISLAND Hy**	**26.49**	**126**	T	T	02 09 26.5	
	baz=317,slow=75,SNR=17						
H11S1	**WAKE ISLAND Hy**	**27.26**	**129**	T	T	02 10 14.1	
	baz=50,slow=75,SNR=23						
H11S3	**WAKE ISLAND Hy**	**27.26**	**129**	T	T	02 10 11.4	
	baz=50,slow=75,SNR=15						
H11S2	**WAKE ISLAND Hy**	**27.28**	**129**	T	T	02 10 11.5	
	baz=50,slow=75,SNR=17						
LZH	**Lanzhou**	**32.39**	**280**	*e*PKP		01 53 14.1	
LZH				pPKP	PKiKP	01 53 25.3	-2.1
LZH				sPKP		01 53 29.0	
LZH				LR	LR		
	comp=N,130nm,18.0s						
LZH				LR	LR		
	comp=E,130nm,18.1s						
LZH				LR	LR		
	comp=Z,170nm,20.0s						
BILL	**Bilibino**	**32.68**	**15**	*e*P	**P**	**01 43 15.0**	**0.0**
	comp=Z,1.3nm,0.4s						
ZALV	**Zalesovo Beam**	**43.28**	**312**	P	**P**	**01 44 45.4**	**+0.9**
	comp=Z,0.2nm,0.3s,baz=102,slow=7.8,SNR=2.3						
MKAR	**Makanchi Array**	**45.84**	**302**	P	**P**	**01 45 06.8**	**+1.7**
	comp=Z,0.5nm,0.9s,baz=101,slow=7.8,SNR=2.8						
ILAR	**Eielson Array**	**47.57**	**33**	P	**P**	**01 45 18.9**	**+0.6**
	comp=Z,1.5nm,0.8s,baz=265,slow=6.7,SNR=16						
DOT	**Dot Lake**	**48.84**	**34**	*e*P	**P**	**01 45 28.6**	**+0.4**
	comp=Z,3.2nm,0.8s						
TKM2	**Tokmak 2**	**51.47**	**299**	*e*P	**P**	**01 45 49.2**	**+0.6**
	comp=Z,2.2nm,0.9s						
BRVK	**Borovoye**	**51.98**	**312**	*e*P	**P**	**01 45 52.2**	**+0.2**
	comp=Z,1.3nm,0.7s						
INK	**Inuvik**	**52.63**	**28**	P	**P**	**01 45 57.7**	**+1.2**
	comp=Z,1.5nm,0.7s,baz=302,slow=5.9,SNR=5.1						
WRAB	**Tennant Creek**	**58.16**	**191**	*e*P	**P**	**01 46 37.9**	**+1.1**
	comp=Z,2.5nm,0.6s						
WRA	**Warramunga Arr**	**58.17**	**191**	P	**P**	**01 46 34.6**	**-2.3**
	comp=Z,2.3nm,0.7s,baz=9.3,slow=6.9,SNR=12						
ABKAR	**Akbulak array**	**59.37**	**311**	*e*P	**P**	**01 46 45.7**	**+0.7**
ASAR	**Alice Springs**	**61.89**	**191**	P	**P**	**01 47 01.8**	**-0.7**
	comp=Z,0.6nm,0.5s,baz=9.5,slow=8.6,SNR=5.4						
YKA	**Yellowknife Ar**	**61.94**	**31**	P	**P**	**01 47 03.0**	**+0.7**
	comp=Z,0.2nm,0.6s,baz=288,slow=6.4,SNR=3.2						
PDAR	**Pinedale Array**	**75.39**	**47**	P	**P**	**01 48 27.6**	**+0.7**
	comp=Z,0.4nm,0.6s,baz=273,slow=2.8,SNR=4.3						
ISCO	**Idaho Springs**	**79.57**	**47**	*e*P	**P**	**01 48 50.4**	**+0.1**
	comp=Z,0.5nm,0.4s						
TXAR	**Lajitas Array**	**87.72**	**54**	P	**P**	**01 49 32.3**	**+0.

BALB				eSG	Sb	01 44 58.6	+0.2
BALB	**Balikesir**	**1.00**	**301**	ePg	Pg	01 44 44.1	-0.4
BALB				eSg	Sb	01 44 58.6	+0.2
IGD	**Bursa**	**1.14**	**8**	i P	Pg	01 44 45.8	-1.4
BALY	**Balya**	**1.23**	**300**	P	Pn	01 44 49.0	+0.1
BALY	**Balya**	**1.23**	**300**	i P	Pn	01 44 49.0	+0.1
KCTX	**Karacabey (Bur**	**1.24**	**337**	ePN	Pg	01 44 48.6	-0.4
KCTX	**Karacabey (Bur**	**1.24**	**337**	ePn	Pg	01 44 48.6	-0.4
MDNY	**Mudanya-Bursa**	**1.24**	**356**	ePN	Pg	01 44 48.6	-0.5
MDNY	**Mudanya-Bursa**	**1.24**	**356**	ePn	Pg	01 44 48.6	-0.5
CAVI	**Cavuskoy**	**1.25**	**31**	ePN	Pb	01 44 49.2	-0.1
CAVI	**Cavuskoy**	**1.25**	**31**	ePn	Pb	01 44 49.2	-0.1
IZI	**Iznik**	**1.26**	**17**	ePN	Pg	01 44 49.1	-0.3
IZI	**Iznik**	**1.26**	**17**	ePn	Pg	01 44 49.1	-0.3
ADVT	**Abdulvahap**	**1.42**	**23**	ePN	Pn	01 44 51.6	+0.1
ADVT	**Abdulvahap**	**1.42**	**23**	ePn	Pn	01 44 51.6	+0.1
ARMT	**Armutlu**	**1.44**	**356**	ePN	Pn	01 44 51.8	0.0
ARMT	**Armutlu**	**1.44**	**356**	ePn	Pn	01 44 51.8	0.0
EDC	**Edincik**	**1.50**	**325**	ePN	Pn	01 44 52.4	-0.2
EDC	**Edincik**	**1.50**	**325**	ePn	Pn	01 44 52.4	-0.2
GULT	**Gulveren**	**1.75**	**41**	ePN	Pn	01 44 56.6	+0.5
GULT	**Gulveren**	**1.75**	**41**	ePn	Pn	01 44 56.6	+0.5
SPNC	**Sapanca-Adapaz**	**1.85**	**33**	ePN	Pn	01 44 57.9	+0.5
SPNC	**Sapanca-Adapaz**	**1.85**	**33**	ePn	Pn	01 44 57.9	+0.5
ISK	**Istanbul-Kandi**	**1.93**	**1**	ePN	Pn	01 44 59.3	+0.7
ISK	**Istanbul-Kandi**	**1.93**	**1**	ePn	Pn	01 44 59.3	+0.7
SVRH	**Sivrihisar-ESK**	**1.98**	**80**	ePN	Pn	01 44 59.5	+0.1
SVRH	**Sivrihisar-ESK**	**1.98**	**80**	ePn	Pn	01 44 59.5	+0.1

IDC 21 01:45:36.9±4.6, 4°28S×149°20E, h0km, mb3.5/4, mb1 3.7/4, mb1mx3.4/23, mbtmp3.5/4, Error ellipse: s-maj=130.9km s-min=28.9km az=104.0, Bismarck Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**21.26**	**222**	P	P	01 50 24.0	-1.0
	0.5nm,0.3s,baz=48,slow=12,SNR=17						
ASAR	**Alice Springs**	**24.28**	**216**	P	P	01 50 57.0	+0.9
	0.3nm,0.4s,baz=52,slow=8.3,SNR=5.4						
FITZ	**Fitzroy Crossi**	**26.83**	**237**	P	P	01 51 19.4	+0.1
	0.8nm,0.3s,baz=72,slow=11,SNR=4.9						
SONM	**Songino Array**	**64.01**	**329**	P	P	01 56 12.3	-0.2
	0.5nm,0.6s,baz=142,slow=5.1,SNR=2.3						

*ISCJB **21** 01:48:28.6±0.5, 39°.09N±0°.03×29°.03E±0°.04, h7km±6km, Error ellipse: s-maj=5.0km s-min=4.6km az=24.9*
*DDA **21** 01:48:28.6, 39°.09N×29°.03E, h7km, Ml2.6*
*CSEM **21** 01:48:28.8±0.1, 39°.10N×29°.03E, h8km, ML2.6, Error ellipse: s-maj=1.6km s-min=1.3km az=91.0*
*ISK **21** 01:48:28.3, 39°.10N×29°.04E, h9km, MD2.7*
ISC 21 01:48:28.7±1.0, 39°.11N±0°.02×29°.03E±0°.02, h11km±9km, n34, σ0s14/45, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**254**	P	Pg	01 48 34.0	+0.1
DEMI				S	Sg	01 48 37.5	0.0
DEMI	**Demirci**	**0.25**	**254**	i P	Pg	01 48 34.0	+0.1
DEMI				i S	Sg	01 48 37.5	0.0
GDZ	**Gediz**	**0.35**	**94**	P	Pg	01 48 35.7	-0.1
GDZ				S	Sg	01 48 40.6	+0.1
GDZ	**Gediz**	**0.35**	**94**	i P	Pg	01 48 35.7	-0.1
GDZ				i S	Sg	01 48 40.6	+0.1
TVSB	**Tavsanli**	**0.48**	**45**	ePG	Pg	01 48 38.1	+0.1
TVSB	**Tavsanli**	**0.48**	**45**	ePg	Pg	01 48 38.1	+0.1
DURS	**Dursunbey**	**0.65**	**319**	P	Pb	01 48 42.1	0.0
DURS				S	Sb	01 48 50.9	-0.3
DURS	**Dursunbey**	**0.65**	**319**	i P	Pb	01 48 42.1	0.0
DURS				i S	Sb	01 48 50.9	-0.3
KULA	**Kula-Manisa**	**0.66**	**206**	ePG	Pg	01 48 41.6	+0.1
KULA				eSG	Sg	01 48 50.3	+0.1
KULA	**Kula-Manisa**	**0.66**	**206**	ePg	Pg	01 48 41.6	+0.1
KULA				eSg	Sg	01 48 50.3	+0.1
MANT	**Manisa**	**0.72**	**211**	P	Pg	01 48 42.5	-0.2
MANT				S	Sg	01 48 52.0	-0.1
MANT	**Manisa**	**0.72**	**211**	i P	Pg	01 48 42.5	-0.2
MANT				i S	Sg	01 48 52.0	-0.1
KHAL	**Karahalli**	**0.82**	**154**	P	Pb	01 48 45.0	0.0
KHAL	**Karahalli**	**0.82**	**154**	i P	Pb	01 48 45.0	0.0
KHL	**Karahalli**	**0.88**	**154**	ePG	Pg	01 48 45.6	0.0
KHL	**Karahalli**	**0.88**	**154**	ePg	Pg	01 48 45.6	0.0
AKS	**Akhisar**	**0.98**	**257**	ePG	Pb	01 48 47.7	+0.1
AKS	**Akhisar**	**0.98**	**257**	ePg	Pb	01 48 47.7	+0.1
BALB	**Balikesir**	**1.03**	**301**	ePG	Pb	01 48 48.5	-0.1
BALB				eSG	Sn	01 49 04.0	+0.5
BALB	**Balikesir**	**1.03**	**301**	ePg	Pb	01 48 48.5	-0.1
CAVI	**Cavuskoy**	**1.26**	**30**	ePN	Pg	01 48 52.9	+0.1
CAVI	**Cavuskoy**	**1.26**	**30**	ePn	Pg	01 48 52.9	+0.1
MDNY	**Mudanya-Bursa**	**1.26**	**355**	ePN	Pg	01 48 52.9	0.0
MDNY	**Mudanya-Bursa**	**1.26**	**355**	ePn	Pg	01 48 52.9	0.0
KCTX	**Karacabey (Bur**	**1.26**	**336**	ePN	Pg	01 48 52.8	-0.1
KCTX	**Karacabey (Bur**	**1.26**	**336**	ePn	Pg	01 48 52.8	-0.1
IZI	**Iznik**	**1.27**	**16**	ePN	Pg	01 48 52.9	-0.2
IZI	**Iznik**	**1.27**	**16**	ePn	Pg	01 48 52.9	-0.2
GONE	**Gonen-Balikesi**	**1.40**	**312**	ePN	Pb	01 48 54.8	+0.1
GONE	**Gonen-Balikesi**	**1.40**	**312**	ePn	Pb	01 48 54.8	+0.1
ARMT	**Armutlu**	**1.46**	**355**	ePN	Pb	01 48 55.8	0.0
ARMT	**Armutlu**	**1.46**	**355**	ePn	Pb	01 48 55.8	0.0
EDC	**Edincik**	**1.52**	**324**	ePN	Pb	01 48 56.8	-0.2
EDC	**Edincik**	**1.52**	**324**	ePn	Pb	01 48 56.8	-0.2

*ISK **21** 01:51:27.8, 39°.12N×29°.05E, h7km, MD2.7*
*ISCJB **21** 01:51:28.1±0.5, 39°.11N±0°.03×29°.04E±0°.03, h5km±7km, Error ellipse: s-maj=5.9km s-min=4.3km az=162.1*
*CSEM **21** 01:51:28.3±0.1, 39°.10N×29°.04E, h8km, ML2.6, Error ellipse: s-maj=1.8km s-min=1.6km az=116.0*
*DDA **21** 01:51:28.2, 39°.08N×29°.04E, h7km, Ml2.6*
ISC 21 01:51:28.4±1.0, 39°.11N±0°.03×29°.04E±0°.02, h8km±11km, n34, σ0s20/44, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**256**	P	Pg	01 51 33.7	0.0
DEMI				S	Sg	01 51 37.2	0.0
DEMI	**Demirci**	**0.26**	**256**	i P	Pg	01 51 33.6	0.0
DEMI				i S	Sg	01 51 37.2	0.0
GDZ	**Gediz**	**0.34**	**93**	P	Pg	01 51 35.4	+0.2
GDZ				S	Sg	01 51 40.2	+0.4
GDZ	**Gediz**	**0.34**	**93**	i P	Pg	01 51 35.4	+0.2
GDZ				i S	Sg	01 51 40.2	+0.4
TVSB	**Tavsanli**	**0.47**	**43**	ePG	Pg	01 51 37.5	-0.2
TVSB				eSG	Sg	01 51 43.5	-0.4
TVSB	**Tavsanli**	**0.47**	**43**	ePg	Pg	01 51 37.5	-0.2
TVSB				eSg	Sg	01 51 43.5	-0.4
KULA	**Kula-Manisa**	**0.66**	**207**	ePG	Pg	01 51 41.2	0.0
KULA	**Kula-Manisa**	**0.66**	**207**	ePg	Pg	01 51 41.2	0.0
MANT	**Manisa**	**0.72**	**212**	P	Pg	01 51 42.2	-0.2
MANT				S	Sg	01 51 51.8	0.0
MANT	**Manisa**	**0.72**	**212**	i P	Pg	01 51 42.2	-0.2
MANT				i S	Sg	01 51 51.8	0.0
KHAL	**Karahalli**	**0.81**	**154**	P	Pb	01 51 44.8	-0.1
KHAL	**Karahalli**	**0.81**	**154**	i P	Pb	01 51 44.8	-0.1
KHL	**Karahalli**	**0.87**	**154**	ePG	Pg	01 51 44.9	-0.2
KHL	**Karahalli**	**0.87**	**154**	ePg	Pg	01 51 44.9	-0.2
AKS	**Akhisar**	**0.98**	**257**	ePG	Pg	01 51 47.3	0.0
AKS	**Akhisar**	**0.98**	**257**	ePg	Pg	01 51 47.3	0.0
BALB	**Balikesir**	**1.05**	**301**	ePG	Pg	01 51 48.6	+0.1
BALB				eSG	Sb	01 52 03.0	+0.4
BALB	**Balikesir**	**1.05**	**301**	ePg	Pg	01 51 48.6	+0.1
BALB				eSg	Sb	01 52 03.0	+0.4
CAVI	**Cavuskoy**	**1.26**	**29**	ePN	Pn	01 51 52.1	-0.2
CAVI	**Cavuskoy**	**1.26**	**29**	ePn	Pn	01 51 52.1	-0.2
MDNY	**Mudanya-Bursa**	**1.27**	**355**	ePN	Pg	01 51 52.8	+0.1
MDNY	**Mudanya-Bursa**	**1.27**	**355**	ePn	Pg	01 51 52.8	+0.1
IZI	**Iznik**	**1.27**	**15**	ePN	Pn	01 51 52.3	-0.3
IZI	**Iznik**	**1.27**	**15**	ePn	Pn	01 51 52.3	-0.3
KCTX	**Karacabey (Bur**	**1.27**	**336**	ePN	Pb	01 51 52.6	0.0
KCTX	**Karacabey (Bur**	**1.27**	**336**	ePn	Pb	01 51 52.6	0.0
GONE	**Gonen-Balikesi**	**1.41**	**312**	ePN	Pb	01 51 54.7	-0.2
GONE	**Gonen-Balikesi**	**1.41**	**312**	ePn	Pb	01 51 54.7	-0.2
ARMT	**Armutlu**	**1.46**	**355**	ePN	Pn	01 51 55.2	+0.1
ARMT	**Armutlu**	**1.46**	**355**	ePn	Pn	01 51 55.2	+0.1
EDC	**Edincik**	**1.54**	**324**	ePN	Pn	01 51 56.0	-0.1
EDC	**Edincik**	**1.54**	**324**	ePn	Pn	01 51 56.0	-0.1
GULT	**Gulveren**	**1.74**	**40**	ePN	Pn	01 51 59.2	+0.2
GULT	**Gulveren**	**1.74**	**40**	ePn	Pn	01 51 59.2	+0.2

*DDA **21** 02:12:13.9, 39°.13N×29°.01E, h7km, Ml2.9*
*ISCJB **21** 02:12:14.2±0.5, 39°.12N±0°.03×29°.01E±0°.03, h4km±7km, Error ellipse: s-maj=5.6km s-min=4.2km az=11.4*
*ISK **21** 02:12:14.0, 39°.10N×29°.01E, h8km, ML2.9*
*CSEM **21** 02:12:14.4±0.1, 39°.12N×29°.01E, h5km, ML2.9, Error ellipse: s-maj=2.4km s-min=2.2km az=121.0*
ISC 21 02:12:14.1±0.9, 39°.12N±0°.02×29°.01E±0°.02, h13km±7km, n53, σ0s43/63, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**251**	P	Pg	02 12 19.3	0.0
DEMI				S	Sg	02 12 22.9	+0.1
DEMI	**Demirci**	**0.24**	**251**	i P	Pg	02 12 19.3	0.0
DEMI				i S	Sg	02 12 22.9	+0.1
GDZ	**Gediz**	**0.37**	**95**	P	Pg	02 12 21.7	+0.1
GDZ				S	Sg	02 12 26.9	+0.3
GDZ	**Gediz**	**0.37**	**95**	i P	Pg	02 12 21.7	+0.1
GDZ				i S	Sg	02 12 26.9	+0.3
TVSB	**Tavsanli**	**0.48**	**47**	ePG	Pg	02 12 23.4	-0.2
TVSB	**Tavsanli**	**0.48**	**47**	ePg	Pg	02 12 23.4	-0.2
DURS	**Dursunbey**	**0.63**	**319**	P	Pg	02 12 26.3	-0.1
DURS	**Dursunbey**	**0.63**	**319**	i P	Pg	02 12 26.3	-0.1
KULA	**Kula-Manisa**	**0.67**	**204**	ePG	Pg	02 12 26.9	-0.2
KULA				eSG	Sg	02 12 35.9	+0.1
KULA	**Kula-Manisa**	**0.67**	**204**	ePg	Pg	02 12 26.9	-0.2
KULA				eSg	Sg	02 12 35.9	+0.1
MANT	**Manisa**	**0.72**	**209**	P	Pg	02 12 28.2	+0.1
MANT	**Manisa**	**0.72**	**209**	i P	Pg	02 12 28.2	+0.1
KHAL	**Karahalli**	**0.84**	**153**	P	Pb	02 12 30.8	+0.2
KHAL				S	Sb	02 12 42.2	+0.3
KHAL	**Karahalli**	**0.84**	**153**	i P	Pb	02 12 30.8	+0.2
KHAL				i S	Sb	02 12 42.2	+0.3
KHL	**Karahalli**	**0.89**	**153**	ePG	Pn	02 12 31.9	-0.6
KHL	**Karahalli**	**0.89**	**153**	ePg	Pn	02 12 31.9	-0.6
AKHS	**Akhisar**	**0.96**	**256**	P	Pn	02 12 33.0	-0.3
AKHS	**Akhisar**	**0.96**	**256**	i P	Pn	02 12 33.0	-0.3
AKS	**Akhisar**	**0.96**	**256**	ePG	Pn	02 12 33.2	-0.1
AKS	**Akhisar**	**0.96**	**256**	ePg	Pn	02 12 33.2	-0.1
BALB	**Balikesir**	**1.02**	**301**	ePG	Pn	02 12 34.6	+0.5
BALB				eSG	Sn	02 12 48.7	+0.5
BALB	**Balikesir**	**1.02**	**301**	ePg	Pn	02 12 34.6	+0.5
BALB				eSg	Sn	02 12 48.7	+0.5
IGD	**Bursa**	**1.15**	**7**	i P	Pn	02 12 34.9	-1.0
KCTX	**Karacabey (Bur**	**1.25**	**336**	ePN	Pg	02 12 37.9	-0.2
KCTX	**Karacabey (Bur**	**1.25**	**336**	ePn	Pg	02 12 37.9	-0.2
MDNY	**Mudanya-Bursa**	**1.25**	**356**	ePN	Pg	02 12 38.2	+0.1
MDNY	**Mudanya-Bursa**	**1.25**	**356**	ePn	Pg	02 12 38.2	+0.1
CAVI	**Cavuskoy**	**1.26**	**31**	ePN	Pg	02 12 39.0	+0.7
CAVI	**Cavuskoy**	**1.26**	**31**	ePn	Pg	02 12 39.0	+0.7
IZI	**Iznik**	**1.27**	**16**	ePN	Pg	02 12 39.1	+0.7
IZI	**Iznik**	**1.27**	**16**	ePn	Pg	02 12 39.1	+0.7
BORA	**Eskisehir**	**1.35**	**55**	P	Pb	02 12 39.3	0.0
BORA	**Eskisehir**	**1.35**	**55**	i P	Pb	02 12 39.3	0.0
GONE	**Gonen-Balikesi**	**1.38**	**313**	ePN	Pg	02 12 40.4	-0.1
GONE	**Gonen-Balikesi**	**1.38**	**313**	ePn	Pg	02 12 40.4	-0.1
ADVT	**Abdulvahap**	**1.43**	**23**	ePN	Pb	02 12 40.9	+0.4
ADVT	**Abdulvahap**	**1.43**	**23**	ePn	Pb	02 12 40.9	+0.4
ARMT	**Armutlu**	**1.45**	**356**	ePN	Pb	02 12 40.4	-0.5
ARMT	**Armutlu**	**1.45**	**356**	ePn	Pb	02 12 40.4	-0.5
EDC	**Edincik**	**1.51**	**325**	ePN	Pg	02 12 42.6	-0.4
EDC	**Edincik**	**1.51**	**325**	ePn	Pg	02 12 42.7	-0.4
GPA	**Golpazari**	**1.54**	**40**	ePN	Pb	02 12 42.4	-0.1
GPA	**Golpazari**	**1.54**	**40**	ePn	Pb	02 12 42.4	-0.1
GULT	**Gulveren**	**1.75**	**41**	ePN	Pb	02 12 45.7	-0.4
GULT	**Gulveren**	**1.75**	**41**	ePn	Pb	02 12 45.7	-0.4
HRT	**Hereke**	**1.77**	**16**	ePN	Pb	02 12 46.2	-0.2
HRT	**Hereke**	**1.77**	**16**	ePn	Pb	02 12 46.3	-0.2
ISK	**Istanbul-Kandi**	**1.94**	**1**	ePN	Pb	02 12 49.2	-0.1
ISK	**Istanbul-Kandi**	**1.94**	**1**	ePn	Pb	02 12 49.2	-0.1
SVRH	**Sivrihisar-ESK**	**1.98**	**80**	ePN	Pb	02 12 48.9	-1.1
SVRH	**Sivrihisar-ESK**	**1.98**	**80**	ePn	Pb	02 12 48.9	-1.1
SILT	**Sile**	**2.09**	**13**	ePN	Pb	02 12 51.0	-0.8
SILT	**Sile**	**2.09**	**13**	ePn	Pb	02 12 51.0	-0.8

NEIC 21 02:17:40.4, 20°.12N×157°.77W, h16km, ML3.5(HVO), 21C-7D, After HVO., Hawaiian Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HON	**Honolulu**	**1.22**	**350**	ePn	Pn	02 17 58.6	-4.2
HON				eSn	Sb	02 18 11.1	-7.6
KIP	**Kipapa**	**1.32**	**350**	ePn	Pn	02 18 00.1	-4.1
KIP				eSn	Sn	02 18 14.2	-7.3
HLK	**Haleakala**	**1.56**	**66**	⇓eP	Pn	02 18 03.5	-4.3
HLK				eS	Sn	02 18 21.5	-6.5
OPA	**Opana**	**1.58**	**352**	⇑eP	Pn	02 18 03.6	-4.2
OPA				eS	Sn	02 18 20.6	-7.3
CPH	**Captain Cook**	**1.85**	**109**	⇑eP	Pn	02 18 07.8	-3.9
HUH	**Hualalai**	**1.87**	**103**	⇑eP	Pn	02 18 07.7	-4.4
KOH	**Kohala**	**1.87**	**89**	⇓eP	Pn	02 18 07.6	-4.4
HPAH	**Hawaii Prepara**	**1.95**	**92**	ePn	Pn	02 18 08.0	-5.0
HPAH				eSn	Sn	02 18 28.9	-8.3
KUH	**Kaapuna**	**1.98**	**115**	⇑eP	Pn	02 18 09.8	-3.6
KIH	**Kanekii**	**1.98**	**107**	⇑eP	Pn	02 18 09.6	-4.0
WKH	**Waikii**	**2.00**	**97**	⇑eP	Pn	02 18 09.6	-4.2
DAH	**Dandelion**	**2.12**	**111**	⇑eP	Pn	02 18 11.4	-4.2
POHA	**Pohakuloa**	**2.14**	**99**	ePn	Pn	02 18 10.5	-5.2
POHA				eSn	Sn	02 18 34.2	-7.9
MWH	**Moku'aweowe**	**2.14**	**107**	⇑eP	Pn	02 18 11.4	-4.7
SWH	**Southwest Rift**	**2.15**	**108**	⇓eP	Pn	02 18 11.3	-4.8
MLOA	**Mauna Loa Obse**	**2.15**	**105**	ePn	Pn	02 18 10.8	-5.2
MLOA				eSn	Sn	02 18 33.7	-8.9
WIH	**Wilkes Camp**	**2.16**	**107**	eP	Pn	02 18 11.9	-4.3
HPU	**Hale Pohaku**	**2.20**	**98**	eP	Pn	02 18 11.9	-4.9
TRH	**Trail**	**2.21**	**108**	⇑eP	Pn	02 18 12.3	-4.5
HMH	**Humu'ula Sheep**	**2.21**	**103**	⇑eP	Pn	02 18 12.4	-4.4
PLL	**Puu Ulaula**	**2.25**	**105**	⇑eP	Pn	02 18 13.0	-4.4
KKU	**Keanakolu**	**2.29**	**95**	⇑eP	Pn	02 18 13.2	-4.7
AIN	**Ainahou**	**2.30**	**108**	⇑eP	Pn	02 18 13.6	-4.4
WOH	**Wood Valley**	**2.31**	**112**	⇑eP	Pn	02 18 13.5	-4.4
MLH	**Mauna Loa**	**2.33**	**105**	⇓eP	Pn	02 18 13.8	-4.6
DES	**Desert**	**2.38**	**109**	⇑eP	Pn	02 18 14.5	-4.4
PPL	**Puu Pili**	**2.38**	**113**	⇑eP	Pn	02 18 14.5	-4.3
CPK	**Cone Peak**	**2.41**	**107**	⇓eP	Pn	02 18 14.9	-4.5
UWE	**Uwekahuna**	**2.44**	**106**	ePn	Pn	02 18 15.8	-3.9
UWE				eSn	Sn	02 18 42.0	-7.3
HLP	**Hilina Pali**	**2.46**	**109**	⇑eP	Pn	02 18 15.9	-4.1
KNH	**Kipuka Nene**	**2.46**	**108**	⇑eP	Pn	02 18 17.4	-2.7
AHA	**Ahua**	**2.48**	**107**	⇑eP	Pn	02 18 15.6	-4.7
PWH	**Poliokeawe Pal**	**2.54**	**109**	eP	Pn	02 18 17.1	-4.0
KEKH	**Kekaha**	**2.59**	**316**	⇑eP	Pn	02 18 17.3	-4.5
KEKH				eS	Sn	02 18 44.2	-8.8
STCH	**Steam Cracks**	**2.60**	**106**	⇑eP	Pn	02 18 17.1	-4.8
NGH	**National Guard**	**2.61**	**99**	⇓eP	Pn	02 18 17.7	-4.3
KAE	**Kaena**	**2.62**	**108**	eP	Pn	02 18 17.9	-4.3
HUL	**Heiheiahulu**	**2.72**	**104**	⇓eP	Pn	02 18 18.8	-4.7

*ISK **21** 02:21:11.6, 39°.08N×29°.06E, h5km, ML3.2*
*ISCJB **21** 02:21:13.0±0.3, 39°.07N±0°.02×29°.05E±0°.03, h9km, Error ellipse: s-maj=3.7km s-min=3.1km az=138.9*
*CSEM **21** 02:21:12.8±0.1, 39°.07N×29°.06E, h2km, ML3.2, Error ellipse: s-maj=2.3km s-min=2.0km az=113.0*
*DDA **21** 02:21:12.4, 39°.10N×29°.04E, h7km, Ml3.2*
ISC 21 02:21:13.2±0.8, 39°.09N±0°.02×29°.05E±0°.02, h9km, n94, σ0s79/100, 5C-2D, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**261**	P	Pg	02 21 18.1	-0.4
DEMI				S	Sg	02 21 21.8	-0.3
DEMI	**Demirci**	**0.26**	**261**	i P	Pg	02 21 18.1	-0.4
DEMI				i S	Sg	02 21 21.8	-0.3
GDZ	**Gediz**	**0.34**	**89**	P	Pg	02 21 19.3	-0.6
GDZ	**Gediz**	**0.34**	**89**	i P	Pg	02 21 19.3	-0.6
TVSB	**Tavsanli**	**0.48**	**41**	ePG	Pg	02 21 21.6	-1.0
TVSB	**Tavsanli**	**0.48**	**41**	ePg	Pg	02 21 21.6	-1.0
KULA	**Kula-Manisa**	**0.65**	**208**	ePG	Pg	02 21 25.3	-0.4
KULA	**Kula-Manisa**	**0.65**	**208**	ePg	Pg	02 21 25.3	-0.4
DURS	**Dursunbey**	**0.68**	**319**	P	Pg	02 21 25.3	-1.0
DURS	**Dursunbey**	**0.68**	**319**	i P	Pg	02 21 25.3	-1.0
MANT	**Manisa**	**0.71**	**213**	P	Pg	02 21 26.3	-0.5
MANT				S	Sg	02 21 36.1	0.0
MANT	**Manisa**	**0.71**	**213**	i P	Pg	02 21 26.3	-0.5
MANT				i S	Sg	02 21 36.1	0.0
KHAL	**Karahalli**	**0.79**	**154**	P	Pg	02 21 28.2	-0.3
KHAL	**Karahalli**	**0.79**	**154**	i P	Pg	02 21 28.2	-0.3
KHL	**Karahalli**	**0.85**	**154**	ePG	Pg	02 21 28.7	-0.8
KHL	**Karahalli**	**0.85**	**154**	ePg	Pg	02 21 28.7	-0.8
ORLT	**Orhaneli**	**0.97**	**353**	ePG	Pg	02 21 31.7	-0.1
ORLT	**Orhaneli**	**0.97**	**353**	ePg	Pg	02 21 31.7	-0.1
AKHS	**Akhisar**	**0.98**	**258**	P	Pg	02 21 31.9	-0.2
AKHS	**Akhisar**	**0.98**	**258**	i P	Pg	02 21 31.9	-0.2
AKS	**Akhisar**	**0.99**	**258**	ePG	Pg	02 21 31.7	-0.4
AKS				eSG	Sb	02 21 46.2	+0.7
AKS	**Akhisar**	**0.99**	**258**	ePg	Pg	02 21 31.7	-0.4
AKS				eSg	Sb	02 21 46.2	+0.7
BALB	**Balikesir**	**1.06**	**302**	ePG	Pg	02 21 33.3	-0.3
BALB				eSG	Sn	02 21 49.5	+0.4
BALB	**Balikesir**	**1.06**	**302**	ePg	Pg	02 21 33.3	-0.3
BALB				eSg	Sn	02 21 49.5	+0.4
IGD	**Bursa**	**1.18**	**6**	i P	Pb	02 21 33.3	-2.5
CAVI	**Cavuskoy**	**1.27**	**29**	ePN	Pn	02 21 36.9	-0.3
CAVI	**Cavuskoy**	**1.27**	**29**	ePn	Pn	02 21 36.9	-0.3
BALY	**Balya**	**1.29**	**301**	P	Pn	02 21 36.7	-0.7
BALY	**Balya**	**1.29**	**301**	i P	Pn	02 21 36.7	-0.7
MDNY	**Mudanya-Bursa**	**1.29**	**354**	ePN	Pg	02 21 37.9	0.0
MDNY	**Mudanya-Bursa**	**1.29**	**354**	ePn	Pg	02 21 37.9	0.0
IZI	**Iznik**	**1.29**	**15**	ePN	Pn	02 21 37.2	-0.3
IZI	**Iznik**	**1.29**	**15**	ePn	Pn	02 21 37.2	-0.3
KCTX	**Karacabey (Bur**	**1.29**	**336**	ePN	Pn	02 21 36.8	-0.7
KCTX	**Karacabey (Bur**	**1.29**	**336**	ePn	Pn	02 21 36.8	-0.7
DENT	**Denizli**	**1.33**	**181**	ePN	Pg	02 21 38.5	-0.2
DENT	**Denizli**	**1.33**	**181**	ePn	Pg	02 21 38.5	-0.2
GEMT	**Gemlik**	**1.35**	**5**	ePN	Pg	02 21 39.0	-0.1
GEMT	**Gemlik**	**1.35**	**5**	ePn	Pg	02 21 39.1	-0.1
GONE	**Gonen-Balikesi**	**1.43**	**313**	ePN	Pn	02 21 39.6	+0.4
GONE	**Gonen-Balikesi**	**1.43**	**313**	ePn	Pn	02 21 39.6	+0.4
ADVT	**Abdulvahap**	**1.45**	**21**	ePN	Pb	02 21 40.1	-0.2
ADVT	**Abdulvahap**	**1.45**	**21**	ePn	Pb	02 21 40.1	-0.2
AYDB	**Zeytinkoy-Aydi**	**1.46**	**219**	ePN	Pn	02 21 39.8	+0.1
AYDB	**Zeytinkoy-Aydi**	**1.46**	**219**	ePn	Pn	02 21 39.8	+0.1
ARMT	**Armutlu**	**1.49**	**354**	ePN	Pb	02 21 40.8	-0.2
ARMT	**Armutlu**	**1.49**	**354**	ePn	Pb	02 21 40.8	-0.2
GPA	**Golpazari**	**1.55**	**39**	ePN	Pb	02 21 42.2	+0.2
GPA	**Golpazari**	**1.55**	**39**	ePn	Pb	02 21 42.2	+0.2
EDC	**Edincik**	**1.56**	**324**	ePN	Pn	02 21 41.4	+0.4
EDC	**Edincik**	**1.56**	**324**	ePn	Pn	02 21 41.4	+0.4
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Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GSI	**Gunungsitoli**	**1.08**	**120**	*e*P	**Pb**	**02 25 28.2**	**+0.7**
GSI				S	**Sb**	**02 25 42.6**	**+1.3**
GSI	**Gunungsitoli**	**1.08**	**120**	*e*Pn	**Pb**	**02 25 27.8**	**+0.3**
GSI				*e*Sn	**Sn**	**02 25 40.7**	**-0.1**
KCSI	**Kotacane, Aceh**	**2.01**	**34**	P	**Pn**	**02 25 39.2**	**-0.4**
KCSI				S	**Sn**	**02 26 04.9**	**+1.1**
MLSI	**Meulaboh, Aceh**	**2.42**	**354**	P	**Pn**	**02 25 46.6**	**+1.5**
MNSI	**Mandailing Nat**	**3.12**	**110**	P	**Pn**	**02 25 56.2**	**+1.4**
MNSI				S	**Sn**	**02 26 28.5**	**-2.7**
LHMI	**Lhok Sumawe**	**3.37**	**5**	S	**Sn**	**02 26 37.5**	**+0.1**
KULM	**Kulim**	**5.27**	**49**	*e*Pn	**Pn**	**02 26 23.4**	**-0.9**
CMAR	**Chiang Mai Arr**	**16.66**	**8**	Pn	**Pn**	**02 28 59.5**	**+0.4**
	0.4nm,0.3s,baz=202,slow=12,SNR=6.5						
H08S2	**Diego Garcia H**	**25.86**	**248**	T	T	02 57 24.3	
	baz=69,slow=76,SNR=166						
H08S3	**Diego Garcia H**	**25.87**	**248**	T	T	02 57 25.5	
	baz=69,slow=76,SNR=175						
H08S1	**Diego Carcia H**	**25.88**	**248**	T	T	02 57 29.6	
	baz=69,slow=76,SNR=150						
H01W3	**Cape Leeuwin H**	**40.05**	**157**	T	T	03 15 19.2	
	baz=333,slow=76,SNR=5.2						
H01W2	**Cape Leeuwin H**	**40.07**	**157**	T	T	03 15 32.6	
	baz=333,slow=76,SNR=7.1						
H01W1	**Cape Leeuwin H**	**40.07**	**157**	T	T	03 15 30.3	
	baz=333,slow=76,SNR=4.9						
WRA	**Warramunga Arr**	**42.85**	**122**	P	**P**	**02 33 03.3**	**-0.2**
	0.6nm,0.6s,baz=302,slow=9.0,SNR=8.0						
WRAB	**Tennant Creek**	**42.86**	**122**	*e*P	**P**	**02 33 04.5**	**+0.9**
	2.6nm,0.9s						
ASAR	**Alice Springs**	**44.23**	**127**	P	**P**	**02 33 15.1**	**+0.5**
	0.2nm,0.5s,baz=294,slow=9.8,SNR=3.8						
KSAR	**Wonju Array Be**	**45.61**	**35**	P	**P**	**02 33 25.5**	**+0.1**
KSRS	**Korea Array**	**45.64**	**35**	P	**P**	**02 33 25.5**	**-0.1**
	0.5nm,0.4s,baz=208,slow=6.1,SNR=2.9						
MKAR	**Makanchi Array**	**46.48**	**346**	P	**P**	**02 33 32.3**	**+0.2**
	0.9nm,0.6s,baz=163,slow=7.0,SNR=9.8						
ZALV	**Zalesovo Beam**	**52.84**	**351**	P	**P**	**02 34 20.2**	**-0.1**
	0.8nm,0.4s,baz=186,slow=5.8,SNR=5.4						
BVAR	**Borovoye Array**	**55.46**	**341**	P	**P**	**02 34 39.0**	**-0.5**
	0.3nm,0.4s,baz=148,slow=8.5,SNR=2.5						
BRVK	**Borovoye**	**55.52**	**341**	*e*P	**P**	**02 34 39.9**	**-0.1**
	1.9nm,0.7s						
FINES	**FINESS Array B**	**79.17**	**333**	P	**P**	**02 37 09.4**	**-0.1**
	1.2nm,0.9s,baz=126,slow=7.2,SNR=3.1						
PSZ	**Piszkesteto**	**79.75**	**318**	*e*P	**P**	**02 37 11.4**	**-1.6**
	2.2nm,0.7s						
ARCES	**ARCESS Array B**	**81.74**	**340**	P	**P**	**02 37 23.2**	**0.0**
	1.0nm,0.9s,baz=96,slow=7.4,SNR=3.6						
TXAR	**Lajitas Array**	**143.41**	**31**	PKP	**PKPdf**	**02 44 39.2**	**-1.0**
	0.1nm,0.4s,baz=316,slow=2.5,SNR=3.1						

ISK ***21*** *02:29:22.9, 39°.12N×29°.04E, h10km, MD2.6*
ISCJB ***21*** *02:29:23.2±0.5, 39°.10N±0°.03×29°.02E±0°.03, h9km±5km, Error ellipse: s-maj=5.4km s-min=4.3km az=156.1*
CSEM ***21*** *02:29:23.4±0.1, 39°.11N×29°.02E, h10km, ML2.8, Error ellipse: s-maj=2.0km s-min=1.8km az=110.0*
DDA ***21*** *02:29:23.3, 39°.09N×29°.01E, h7km, Ml2.8*
ISC 21 02:29:23.4±0.9, 39°.12N±0°.03×29°.01E±0°.02, h11km±8km, n38, σ0s24/48, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**253**	P	**Pg**	**02 29 28.5**	**+0.1**
DEMI				S	**Sg**	**02 29 31.8**	**-0.1**
DEMI	**Demirci**	**0.24**	**253**	*i* P	**Pg**	**02 29 28.6**	**+0.1**
DEMI				*i* S	**Sg**	**02 29 31.8**	**-0.1**
GDZ	**Gediz**	**0.37**	**94**	P	**Pg**	**02 29 31.0**	**+0.2**
GDZ				S	**Sg**	**02 29 35.9**	**+0.2**
GDZ	**Gediz**	**0.37**	**94**	*i* P	**Pg**	**02 29 31.0**	**+0.2**
GDZ				*i* S	**Sg**	**02 29 35.9**	**+0.2**
TVSB	**Tavsanli**	**0.48**	**46**	*e*PG	**Pg**	**02 29 32.6**	**-0.3**
TVSB				*e*SG	**Sg**	**02 29 39.5**	**+0.2**
TVSB	**Tavsanli**	**0.48**	**46**	*e*Pg	**Pg**	**02 29 32.6**	**-0.3**
TVSB				*e*Sg	**Sg**	**02 29 39.5**	**+0.2**
DURS	**Dursunbey**	**0.64**	**320**	P	**Pg**	**02 29 35.9**	**0.0**
DURS	**Dursunbey**	**0.64**	**320**	*i* P	**Pg**	**02 29 35.9**	**0.0**
KULA	**Kula-Manisa**	**0.66**	**205**	*e*PG	**Pg**	**02 29 36.3**	**+0.1**
KULA	**Kula-Manisa**	**0.66**	**205**	*e*Pg	**Pg**	**02 29 36.3**	**+0.1**
MANT	**Manisa**	**0.72**	**210**	P	**Pg**	**02 29 37.4**	**0.0**
MANT				S	**Sg**	**02 29 46.2**	**-0.6**
MANT	**Manisa**	**0.72**	**210**	*i* P	**Pg**	**02 29 37.4**	**0.0**
MANT				*i* S	**Sg**	**02 29 46.2**	**-0.6**
KHAL	**Karahalli**	**0.83**	**153**	P	**Pb**	**02 29 39.8**	**-0.2**
KHAL	**Karahalli**	**0.83**	**153**	*i* P	**Pb**	**02 29 39.8**	**-0.2**
KHL	**Karahalli**	**0.89**	**153**	*e*PG	**Pg**	**02 29 40.3**	**-0.2**
KHL	**Karahalli**	**0.89**	**153**	*e*Pg	**Pg**	**02 29 40.3**	**-0.2**
AKS	**Akhisar**	**0.96**	**256**	*e*PG	**Pb**	**02 29 42.3**	**+0.2**
AKS	**Akhisar**	**0.96**	**256**	*e*Pg	**Pb**	**02 29 42.3**	**+0.2**
BALB	**Balikesir**	**1.02**	**301**	*e*PG	**Pb**	**02 29 43.3**	**+0.2**
BALB				*e*SG	**Sn**	**02 29 58.2**	**+0.2**
BALB	**Balikesir**	**1.02**	**301**	*e*Pg	**Pb**	**02 29 43.3**	**+0.2**
BALB				*e*Sg	**Sn**	**02 29 58.2**	**+0.2**
KCTX	**Karacabey (Bur**	**1.26**	**336**	*e*PN	**Pn**	**02 29 47.0**	**0.0**
KCTX	**Karacabey (Bur**	**1.26**	**336**	*e*Pn	**Pn**	**02 29 47.0**	**0.0**
MDNY	**Mudanya-Bursa**	**1.26**	**356**	*e*PN	**Pn**	**02 29 47.0**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.26**	**356**	*e*Pn	**Pn**	**02 29 47.0**	**+0.1**
CAVI	**Cavuskoy**	**1.26**	**30**	*e*PN	**Pn**	**02 29 47.0**	**0.0**
CAVI	**Cavuskoy**	**1.26**	**30**	*e*Pn	**Pn**	**02 29 47.0**	**0.0**
IZI	**Iznik**	**1.27**	**16**	*e*PN	**Pn**	**02 29 47.0**	**-0.2**
IZI	**Iznik**	**1.27**	**16**	*e*Pn	**Pn**	**02 29 47.0**	**-0.2**
GONE	**Gonen-Balikesi**	**1.38**	**313**	*e*PN	**Pb**	**02 29 49.1**	**-0.2**
GONE	**Gonen-Balikesi**	**1.38**	**313**	*e*Pn	**Pb**	**02 29 49.1**	**-0.2**
ADVT	**Abdulvahap**	**1.43**	**23**	*e*PN	**Pb**	**02 29 49.6**	**+0.2**
ADVT	**Abdulvahap**	**1.43**	**23**	*e*Pn	**Pn**	**02 29 49.6**	**+0.2**
ARMT	**Armutlu**	**1.45**	**355**	*e*PN	**Pb**	**02 29 50.1**	**-0.4**
ARMT	**Armutlu**	**1.45**	**355**	*e*Pn	**Pb**	**02 29 50.1**	**-0.4**
EDC	**Edincik**	**1.52**	**325**	*e*PN	**Pb**	**02 29 51.4**	**-0.2**
EDC	**Edincik**	**1.52**	**325**	*e*Pn	**Pb**	**02 29 51.4**	**-0.2**
GULT	**Gulveren**	**1.75**	**41**	*e*PN	**Pn**	**02 29 54.3**	**+0.5**
GULT	**Gulveren**	**1.75**	**41**	*e*Pn	**Pn**	**02 29 54.3**	**+0.5**

ISK ***21*** *02:42:15.9, 39°.11N×29°.08E, h5km, MD2.8*
DDA ***21*** *02:42:16.5, 39°.12N×29°.11E, h7km, Ml3.0*
CSEM ***21*** *02:42:16.5±0.1, 39°.12N×29°.09E, h5km, ML3.0, Error ellipse: s-maj=1.8km s-min=1.5km az=115.0*
ISC 21 02:42:16.2±0.9, 39°.11N±0°.02×29°.11E±0°.02, h17km±8km, n51, σ0s37/65, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.29**	**95**	P	**Pb**	**02 42 22.9**	**-0.1**
GDZ				S	**Sg**	**02 42 27.1**	**+0.1**
GDZ	**Gediz**	**0.29**	**95**	*i* P	**Pb**	**02 42 22.9**	**-0.1**
GDZ				*i* S	**Sg**	**02 42 27.1**	**+0.1**
DEMI	**Demirci**	**0.31**	**257**	P	**Pg**	**02 42 23.0**	**0.0**
DEMI				S	**Sg**	**02 42 27.5**	**-0.1**
DEMI	**Demirci**	**0.31**	**257**	*i* P	**Pg**	**02 42 23.0**	**0.0**
DEMI				*i* S	**Sg**	**02 42 27.5**	**-0.1**
TVSB	**Tavsanli**	**0.43**	**39**	*e*PG	**Pg**	**02 42 25.0**	**-0.1**
TVSB	**Tavsanli**	**0.43**	**39**	*e*Pg	**Pg**	**02 42 25.0**	**-0.1**
DURS	**Dursunbey**	**0.69**	**315**	P	**Pg**	**02 42 29.8**	**-0.1**
DURS	**Dursunbey**	**0.69**	**315**	*i* P	**Pg**	**02 42 29.8**	**-0.1**
KULA	**Kula-Manisa**	**0.69**	**211**	*e*PG	**Pg**	**02 42 29.6**	**-0.3**
KULA				*e*SG	**Sb**	**02 42 39.4**	**+0.2**
KULA	**Kula-Manisa**	**0.69**	**211**	*e*Pg	**Pg**	**02 42 29.6**	**-0.3**
KULA				*e*Sg	**Sb**	**02 42 39.4**	**+0.2**
MANT	**Manisa**	**0.76**	**215**	P	**Pb**	**02 42 31.2**	**+0.2**
MANT				S	**Sb**	**02 42 41.1**	**0.0**
MANT	**Manisa**	**0.76**	**215**	*i* P	**Pb**	**02 42 31.2**	**+0.2**
MANT				*i* S	**Sb**	**02 42 41.1**	**0.0**
KHAL	**Karahalli**	**0.80**	**158**	P	**Pn**	**02 42 32.5**	**-0.3**
KHAL				S	**Sg**	**02 42 43.1**	**+0.6**
KHAL	**Karahalli**	**0.80**	**158**	*i* P	**Pn**	**02 42 32.5**	**-0.3**
KHAL				*i* S	**Sg**	**02 42 43.1**	**+0.6**
KHL	**Karahalli**	**0.85**	**158**	*e*PG	**Pg**	**02 42 32.8**	**-0.1**
KHL	**Karahalli**	**0.85**	**158**	*e*Pg	**Pg**	**02 42 32.8**	**-0.1**
ORLT	**Orhaneli**	**0.95**	**350**	*e*PG	**Pb**	**02 42 34.4**	**+0.2**
ORLT	**Orhaneli**	**0.95**	**350**	*e*Pg	**Pb**	**02 42 34.4**	**+0.2**
AKS	**Akhisar**	**1.04**	**257**	*e*PG	**Pn**	**02 42 36.0**	**0.0**
AKS	**Akhisar**	**1.04**	**257**	*e*Pg	**Pn**	**02 42 36.0**	**0.0**
BALB	**Balikesir**	**1.09**	**299**	*e*PG	**Pb**	**02 42 36.5**	**-0.1**
BALB				*e*SG	**Sg**	**02 42 51.9**	**+0.3**
BALB	**Balikesir**	**1.09**	**299**	*e*Pg	**Pb**	**02 42 36.5**	**-0.1**
BALB				*e*Sg	**Sg**	**02 42 51.9**	**+0.3**
IGD	**Bursa**	**1.15**	**4**	*i* P	**Pn**	**02 42 37.0**	**-0.5**
CAVI	**Cavuskoy**	**1.23**	**27**	*e*PN	**Pg**	**02 42 40.4**	**+0.5**
CAVI	**Cavuskoy**	**1.23**	**27**	*e*Pn	**Pg**	**02 42 40.4**	**+0.5**
IZI	**Iznik**	**1.25**	**13**	*e*PN	**Pb**	**02 42 39.9**	**+0.4**
IZI	**Iznik**	**1.25**	**13**	*e*Pn	**Pb**	**02 42 39.9**	**+0.4**
MDNY	**Mudanya-Bursa**	**1.27**	**352**	*e*PN	**Pg**	**02 42 40.7**	**0.0**
MDNY	**Mudanya-Bursa**	**1.27**	**352**	*e*Pn	**Pg**	**02 42 40.7**	**0.0**
KCTX	**Karacabey (Bur**	**1.29**	**333**	*e*PN	**Pg**	**02 42 41.0**	**-0.2**
KCTX	**Karacabey (Bur**	**1.29**	**333**	*e*Pn	**Pg**	**02 42 41.0**	**-0.2**
BORA	**Eskisehir**	**1.29**	**53**	P	**Pg**	**02 42 41.0**	**-0.2**
BORA				S	**Sg**	**02 42 58.6**	**+0.5**
BORA	**Eskisehir**	**1.29**	**53**	*i* P	**Pg**	**02 42 41.0**	**-0.2**
BORA				*i* S	**Sg**	**02 42 58.6**	**+0.5**
BALY	**Balya**	**1.31**	**299**	P	**Pg**	**02 42 41.6**	**0.0**
BALY	**Balya**	**1.31**	**299**	*i* P	**Pg**	**02 42 41.6**	**0.0**
ADVT	**Abdulvahap**	**1.41**	**20**	*e*PN	**Pg**	**02 42 43.3**	**0.0**
ADVT	**Abdulvahap**	**1.41**	**20**	*e*Pn	**Pg**	**02 42 43.3**	**0.0**
GONE	**Gonen-Balikesi**	**1.44**	**311**	*e*PN	**Pg**	**02 42 43.5**	**-0.5**
GONE	**Gonen-Balikesi**	**1.44**	**311**	*e*Pn	**Pg**	**02 42 43.5**	**-0.5**
ARMT	**Armutlu**	**1.46**	**353**	*e*PN	**Pb**	**02 42 43.3**	**+0.3**
ARMT	**Armutlu**	**1.46**	**353**	*e*Pn	**Pb**	**02 42 43.3**	**+0.3**
EDC	**Edincik**	**1.56**	**322**	*e*PN	**Pb**	**02 42 44.9**	**+0.2**
EDC	**Edincik**	**1.56**	**322**	*e*Pn	**Pb**	**02 42 44.9**	**+0.2**
GULT	**Gulveren**	**1.71**	**39**	*e*PN	**Pb**	**02 42 47.7**	**+0.6**
GULT	**Gulveren**	**1.71**	**39**	*e*Pn	**Pb**	**02 42 47.7**	**+0.6**
HRT	**Hereke**	**1.76**	**14**	*e*PN	**Pb**	**02 42 47.6**	**-0.5**
HRT	**Hereke**	**1.76**	**14**	*e*Pn	**Pb**	**02 42 47.6**	**-0.5**
SVRH	**Sivrihisar-ESK**	**1.90**	**79**	*e*PN	**Pb**	**02 42 50.2**	**-0.3**
SVRH	**Sivrihisar-ESK**	**1.90**	**79**	*e*Pn	**Pb**	**02 42 50.2**	**-0.3**
SILT	**Sile**	**2.08**	**11**	*e*PN	**Pb**	**02 42 52.3**	**-1.1**
SILT	**Sile**	**2.08**	**11**	*e*Pn	**Pb**	**02 42 52.3**	**-1.1**

ISCJB ***21*** *02:42:40.6±0.9, 76°.94N±0°.03×19°.1E±0°.2, h2km±10km, Error ellipse: s-maj=9.7km s-min=4.4km az=155.2*
CSEM ***21*** *02:42:42.1±0.2, 76°.96N×19°.07E, h12km, ML3.2, Error ellipse: s-maj=5.4km s-min=2.8km az=56.0*
NAO ***21*** *02:42:43.3±1.1, 76°.95N×19°.04E, h16km±10km, ML3.2*
BER ***21*** *02:42:45.6±3.4, 76°.97N×19°.05E, h15km±19km, MD2.4, ML2.7, ML3.2(NAO)*
ISC 21 02:42:42.3±2.4, 77°.00N±0°.05×19°.35E±0°.09, h2km±20km, n24, σ1s54/37, Svalbard region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HSP	**Hornsund**	**0.86**	**273**	Pg	**Pg**	**02 42 58.9**	**+0.2**
HSP				Lg	Lg	02 43 09.3	
HSPB	**Hornsund (broa**	**0.86**	**272**	*e*P	**Pg**	**02 42 58.7**	**-0.1**
HSPB				*e*Sg	**Sg**	**02 43 09.3**	**-0.7**
HSPB				IAML		02 43 12.5	
	comp=Z,214nm,0.2s						
HSPB	**Hornsund (broa**	**0.86**	**272**	*e*P	**Pg**	**02 42 58.7**	**-0.1**
	SNR=93						
HSPB				*e*Sg	**Sg**	**02 43 09.2**	**-0.7**
SPA0	**Spitsbergen Ar**	**1.35**	**333**	Pn	**Pn**	**02 43 07.3**	**-0.7**
	baz=148,slow=18						
SPA0				Pg	**Pb**	**02 43 08.3**	**+0.1**
	baz=152,slow=18						
SPA0				Lg	Lg	02 43 25.9	
	baz=148,slow=37						
SPA0	**Spitsbergen Ar**	**1.35**	**333**	*e*P	**Pn**	**02 43 07.4**	**-0.7**
SPA0				*e*Pg	**Pb**	**02 43 08.6**	**+0.4**
SPA0				*e*Sg	**Sn**	**02 43 25.9**	**-0.7**
SPA0	**Spitsbergen Ar**	**1.35**	**333**	Pn	**Pn**	**02 43 07.3**	**-0.7**
	baz=148,slow=16,SNR=999						
HOPEN	**Hopen**	**1.39**	**108**	Pn	**Pn**	**02 43 09.4**	**+0.8**
HOPEN				Sn	**Sn**	**02 43 27.4**	**-0.2**
HOPEN				Lg	Lg	02 43 30.0	
HOPEN	**Hopen**	**1.39**	**108**	*e*P	**Pn**	**02 43 09.3**	**+0.6**
HOPEN				*e*S	**Sn**	**02 43 27.8**	**+0.1**
HOPEN				IAML		02 43 33.6	
	comp=Z,364nm,0.4s						
HOPEN	**Hopen**	**1.39**	**108**	*e*P	**Pn**	**02 43 09.3**	**+0.6**
	SNR=55						
HOPEN				Sn	**Sn**	**02 43 27.4**	**-0.2**
HOPEN				Lg	Lg	02 43 30.0	
KBS	**Kingsbay**	**2.48**	**325**	Pn	**Pn**	**02 43 22.4**	**-1.2**
KBS				Pg	**Pb**	**02 43 28.6**	**+1.1**
KBS				Lg	Lg	02 44 00.9	
KBS	**Kingsbay**	**2.48**	**325**	*e*P	**Pn**	**02 43 22.2**	**-1.4**
KBS				*e*Pg	**Pb**	**02 43 28.4**	**+0.9**
KBS				*e*Sg	**Sb**	**02 44 01.6**	**+3.2**
KBS				IAML		02 44 06.3	
	comp=Z,228nm,0.5s						
KBS	**Kingsbay**	**2.48**	**325**	Pn	**Pn**	**02 43 22.4**	**-1.2**
KBS	**Kingsbay**	**2.48**	**325**	Pg	**Pb**	**02 43 28.6**	**+1.1**
KBS				Lg	Lg	02 44 00.9	
KBS				*e*Sg	**Sb**	**02 44 01.6**	**+3.2**
	SNR=91						
BJO	**Bjornoya**	**2.51**	**181**	*e*Pg	**Pb**	**02 43 29.3**	**+1.4**
BJO				*e*Sg	**Sb**	**02 44 01.5**	**+2.4**
BJO				IAML		02 44 05.0	
	comp=Z,52nm,0.3s						
BJO	**Bjornoya**	**2.51**	**181**	*e*Pg	**Pb**	**02 43 29.3**	**+1.4**
	SNR=91						
BJO				Lg	Lg	02 44 01.3	
BJO1	**Bjornoya**	**2.51**	**182**	Pg	**Pb**	**02 43 29.2**	**+1.2**
BJO1				Lg	Lg	02 44 01.3	
HAMF	**Hammerfest**	**6.50**	**167**	*e*P	**Pn**	**02 44 17.0**	**-1.8**
HAMF				*e*S	Sn	02 45 24.3	-9.1
HAMF				IAML		02 45 34.1	
	comp=Z,6.4nm,0.3s						
HAMF	**Hammerfest**	**6.50**	**167**	*e*P	**Pn**	**02 44 17.0**	**-1.8**
	SNR=51						
ARA0	**ARCESS Array S**	**7.70**	**164**	Pn	**Pn**	**02 44 33.8**	**-1.5**
	baz=353,slow=14						
ARA0				Sn	Sn	02 45 53.8	-9.2
	baz=360,slow=22						
ARA0	**ARCESS Array S**	**7.70**	**164**	P	**Pn**	**02 44 33.8**	**-1.5**
	baz=353,slow=14						
ARA0				S	Sn	02 45 53.8	-9.2
	baz=360,slow=22						
ARA0	**ARCESS Array S**	**7.70**	**164**	P	**Pn**	**02 44 33.8**	**-1.5**
	baz=353,slow=12,SNR=51						
APA0	**Apatity Array**	**10.26**	**150**	Pn	**Pn**	**02 45 07.6**	**-2.7**
	baz=350,slow=14						
APA0	**Apatity Array**	**10.26**	**150**	P	**Pn**	**02 45 07.6**	**-2.7**
	baz=350,slow=14						
APA0	**Apatity Array**	**10.26**	**150**	P	**Pn**	**02 45 07.6**	**-2.7**
	baz=350,slow=14,SNR=51						

IDC ***21*** *02:43:14.6±0.9, 4°.73N×82°.64W, h0km, mb3.9/14, mb1 4.2/16, mb1mx4.1/34, mbtmp4.0/16, ML3.3/2, MS3.6/12, Ms1 3.6/12, ms1mx3.4/33, Error ellipse: s-maj=30.7km s-min=14.9km az=49.0*
ISCJB ***21*** *02:43:18.7±0.3, 4°.79N±0°.04×82°.52W±0°.03, h33km, mb4.4/96, MS3.8/9, Error ellipse: s-maj=5.3km s-min=3.3km az=24.1*
UPA ***21*** *02:43:18.4, 5°.17N×82°.78W, h0km, MW4.4*
NEIC ***21*** *02:43:20.4±0.8, 4°.71N×82°.53W, h36km±7km, mb4.5/89, Error ellipse: s-maj=6.1km s-min=3.9km az=216.0*
ISC 21 02:43:20.2±0.6, 4°.74N±0°.06×82°.56W±0°.07, h35km, n167, σ1s33/157, mb4.4/96, MS3.7/9, 1D, South of Panama

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AZU	**Azuero**	**3.79**	**37**	*e*P	**Pn**	**02 44 13.8**	**-2.4**
AZU				*e*S	**Sn**	**02 44 57.6**	**-2.0**
BRU2	**Volcan**	**4.03**	**358**	*i* P	**Pn**	**02 44 15.9**	**-3.7**
BRU2				*e*S	**Sn**	**02 45 00.2**	**-5.5**
BRU	**Baru**	**4.04**	**0**	*e*P	**Pn**	**02 44 17.2**	**-2.8**
GRGC	**Isla de Gorgon**	**4.71**	**111**	*e*P	**Pn**	**02 44 26.1**	**-2.7**
BCIP	**Isla Barro Col**	**5.16**	**31**	*i*P	**Pn**	**02 44 34.5**	**-0.6**
BCIP	**Isla Barro Col**	**5.16**	**31**	*e*Pn	**Pn**	**02 44 34.2**	**-0.8**
BCIP				*e*Sn	**Sn**	**02 45 32.8**	**-0.6**
BCIP	**Isla Barro Col**	**5.16**	**31**	*e*P	**Pn**	**02 44 33.9**	**-1.1**
MALC	**Bahia Malaga**	**5.26**	**98**	*e*P	**Pn**	**02 44 36.2**	**-0.2**
HDC	**Heredia**	**5.45**	**344**	*e*S	**Sn**	**02 45 38.5**	**-2.3**
HDC	**Heredia**	**5.45**	**344**	*e*Pn	**Pn**	**02 44 34.6**	**-4.5**
OTAV	**Otavalo**	**6.07**	**137**	*e*Pn	**Pn**	**02 44 46.4**	**-1.5**
POPC	**Popayan, Colom**	**6.27**	**110**	*e*P	**Pn**	**02 44 49.6**	**-0.8**
CRUC	**La Cruz**	**6.43**	**119**	*e*P	**Pn**	**02 44 51.9**	**-0.8**
CAPC	**Capurgana**	**6.46**	**53**	*e*P	**Pn**	**02 44 54.3**	**+1.4**
GUYC	**Guyana, Colomb**	**7.16**	**86**	*e*P	**Pn**	**02 45 04.7**	**+1.8**
TOLC	**Tolima**	**7.22**	**91**	*e*P	**Pn**	**02 45 03.7**	**+0.2**
NORC	**Norcasia**	**7.71**	**84**	*e*P	**Pn**	**02 45 11.7**	**+1.7**
MOTC	**Monteria, Cord**	**7.94**	**59**	*e*P	**Pn**	**02 45 16.0**	**+2.8**
ROSC	**El Rosal**	**8.21**	**89**	Pn	**Pn**	**02 45 21.2**	**+3.9**
	1.9nm,0.3s,baz=288,slow=20,SNR=5.6						
ROSC				Sn	Sn	02 46 58.5	+9.4
	0.7nm,0.3s,baz=180,slow=20,SNR=3.7						
ROSC				LR	LR	02 48 23.0	
	comp=Z,137nm,19.3s,baz=344,slow=37						
ROSC	**El Rosal**	**8.21**	**89**	*e*Pn	**Pn**	**02 45 18.0**	**+0.7**
ROSC				Sn	Sn	02 46 58.5	+9.4
MGAN	**Managua**	**8.21**	**334**	*e*Pn	**Pn**	**02 45 16.9**	**0.0**
SJCC	**San Jacinto, C**	**8.94**	**55**	*e*P	**Pn**	**02 45 28.7**	**+1.8**
RUSC	**La Rusia**	**9.51**	**83**	*e*P	**Pn**	**02 45 36.7**	**+1.5**
LCY	**Lacayo**	**10.32**	**327**	*e*P	**Pn**	**02 45 45.0**	**-0.9**
TGUH	**Tegucigalpa,Un**	**10.36**	**334**	*e*Pn	**Pn**	**02 45 48.0**	**+1.6**
PACA	**Pacayal**	**10.37**	**327**	*e*P	**Pn**	**02 45 46.4**	**-0.2**
LFRS	**El Faro**	**10.91**	**324**	*e*P	**Pn**	**02 45 54.2**	**+0.1**
LBRS	**Las Brisas**	**10.99**	**325**	*e*P	**Pn**	**02 45 55.9**	**+0.8**
LFU	**La Fuente**	**11.04**	**325**	*e*P	**Pn**	**02 45 56.6**	**+0.8**
COLS	**Colinas**	**11.08**	**324**	*e*P	**Pn**	**02 45 57.9**	**+1.5**
BOQS	**Boqueron**	**11.13**	**324**	*e*P	**Pn**	**02 45 57.7**	**+0.6**
SBLS	**San Blas**	**11.41**	**323**	*e*P	**Pn**	**02 46 02.4**	**+1.4**
SNJE	**San Jose**	**11.43**	**323**	*e*P	**Pn**	**02 46 02.8**	**+1.6**
MONT	**Ecomontaæa**	**11.44**	**323**	*e*P	**Pn**	**02 46 02.9**	**+1.5**
RTR	**El Retiro**	**11.47**	**323**	*e*P	**Pn**	**02 46 03.4**	**+1.7**
RBDL	**Robledal**	**11.66**	**323**	*e*P	**Pn**	**02 46 05.3**	**+0.9**
CUS1	**Cusmapa**	**11.67**	**322**	*e*P	**Pn**	**02 46 05.7**	**+1.4**
ATAH	**Atahualpa**	**12.51**	**161**	LR	LR	02 50 35.4	
	comp=Z,703nm,20.9s,baz=339,slow=35						
CCIG	**Comitan**	**14.83**	**321**	*e*Pn	**Pn**	**02 46 48.7**	**+1.0**
TEIG	**Tepich**	**16.37**	**341**	Pn	**Pn**	**02 47 04.3**	**-3.1**
	0.0nm,0.3s,baz=194,slow=19,SNR=2.0						
TEIG				LR	LR	02 52 48.1	
	comp=Z,158nm,19.5s,baz=295,slow=35						
GTBY	**Guantanamo Bay**	**16.75**	**25**	*e*Pn	**P**	**02 47 13.0**	**-1.2**
	30nm,1.2s						
PAPH	**Port-au-Prince**	**16.98**	**35**	*e*Pn	**P**	**02 47 16.4**	**-0.3**
	89nm,0.9s						
NNA	**Nana**	**17.56**	**161**	LR	LR	02 53 11.5	
	comp=Z,59nm,19.0s,baz=318,slow=34						
SDDR	**Presa de Saban**	**17.93**	**37**	*e*Pn	**P**	**02 47 28.1**	**+0.8**
BANI	**BANI**	**18.07**	**40**	*e*Pn	**P**	**02 47 29.4**	**+0.6**
SDD	**Santo Domingo**	**18.40**	**41**	*e*P	**P**	**02 47 29.9**	**-2.5**
	78nm,0.9s						
PCRV	**Puerto La Cruz**	**18.57**	**72**	P	**P**	**02 47 33.3**	**-1.1**
	0.3nm,0.3s,baz=289,slow=6.2,SNR=3.3						
TLIG	**Tlapa**	**20.20**	**310**	*e*P	Pn	02 47 52.9	-1.4
AGP	**Aguadilla**	**20.29**	**47**	*e*Pn	Pn	02 47 54.8	-0.5
	263nm,1.3s						
CELP	**Cerrillos**	**20.49**	**48**	*e*P	Pn	02 47 56.0	-1.7
SJG	**San Juan**	**20.84**	**49**	P	Pn	02 48 00.1	-1.5
	19nm,0.7s,baz=248,slow=8.3,SNR=6.1						
SJG	**San Juan**	**

10nm,1.1s
214A Organ Pipe Nat 39.19 317 *e*P **P 02 50 45.4 +0.3**
18nm,0.9s
CPUP Villa Florida 39.39 143 P **P 02 50 46.5 -0.2**
1.1nm,0.8s,baz=330,slow=8.6,SNR=3.0
CPUP LR LR 03 08 14.6
comp=Z,103nm,19.1s,baz=336,slow=38
S22A 4UR Ranch, Cre 39.62 329 *e*P **P 02 50 51.0 +2.0**
7.8nm,1.4s
X16A Lo Mia Camp, P 39.86 321 *e*P **P 02 50 51.9 +1.1**
5.2nm,0.8s
MVCO Mesa Verde 40.10 327 *e*P **P 02 50 54.0 +1.2**
35nm,1.8s
Y14A Wickenburg 40.54 320 *e*P **P 02 50 57.2 +0.9**
11nm,0.8s
WUAZ Wupatki 40.55 323 *e*P **P 02 50 58.0 +1.5**
12nm,0.9s
ISCO Idaho Springs 40.64 332 *e*P **P 02 50 57.8 +0.4**
2.8nm,0.8s
ECSD EROS Data Cent 40.77 344 *e*P **P 02 50 57.0 -1.0**
4.3nm,1.3s
SMCO Snowmass 40.80 331 *e*P **P 02 50 59.7 +1.0**
5.0nm,0.8s
N23A Red Feather La 41.67 333 *e*P **P 02 51 06.8 +1.0**
4.7nm,1.0s
W13A Hualapai Mount 41.84 320 *e*P **P 02 51 08.6 +1.4**
5.0nm,1.0s
O20A White River Ci 42.16 330 *e*P **P 02 51 12.1 +2.5**
3.8nm,0.8s
KNB Kanab 42.42 323 *e*P **P 02 51 13.4 +1.6**
7.0nm,1.0s
SRU San Rafael Swe 42.57 327 *e*P **P 02 51 14.0 +0.9**
6.9nm,0.9s
LCMT Little Creek M 42.67 323 *e*P **P 02 51 15.8 +1.9**
6.3nm,1.5s
MTPU Mount Pierson 42.74 325 *e*P **P 02 51 15.7 +1.1**
10nm,1.9s
P18A Preston Nutter 42.80 328 *e*P **P 02 51 17.3 +2.2**
2.6nm,1.0s
P17A Butcher Ranch, 42.95 328 *e*P **P 02 51 17.0 +0.9**
4.4nm,0.8s
K22A Casper 43.34 334 *e*P **P 02 51 19.4 +0.2**
SHPR Sheep Range 43.52 321 *e*P **P 02 51 21.9 +1.2**
6.1nm,1.0s
RSSD Black Hills 43.54 337 *e*P **P 02 51 21.9 +1.1**
7.7nm,1.3s
PSUT Pine Spring 44.04 324 *e*P **P 02 51 26.2 +1.2**
3.4nm,0.9s
TPNV Topopah Spring 44.48 321 *e*P **P 02 51 29.8 +1.4**
4.6nm,1.3s
PDAR Pinedale Array 44.81 332 P **P 02 51 30.2 -0.8**
1.0nm,0.8s,baz=120,slow=8.8,SNR=9.4
PDAR LR LR 03 11 16.8
comp=Z,53nm,20.5s,baz=159,slow=38
BW06 Boulder Array 44.81 332 *e*P **P 02 51 30.5 -0.5**
HWUT Hardware Ranch 44.93 329 *e*P **P 02 51 32.3 +0.3**
5.0nm,0.8s
R11A Troy Canyon, C 44.95 323 *e*P **P 02 51 33.2 +1.1**
3.9nm,0.9s
BGU Big Grassy Mou 45.22 327 *e*P **P 02 51 34.9 +0.7**
4.9nm,1.0s
MOOW Moose Ponds 46.12 332 *e*P **P 02 51 41.6 +0.2**
2.2nm,1.0s
ELK Elko 46.31 325 *e*P **P 02 51 43.8 +0.8**
2.6nm,0.7s
NV11 Mina Array Sit 46.59 321 *e*P **P 02 51 46.1 +1.0**
6.0nm,1.0s
NV01 Mina Array Sit 46.68 321 *e*P **P 02 51 46.4 +0.6**
NVAR Mina Array Bea 46.68 321 P **P 02 51 46.2 +0.4**
4.9nm,0.8s,baz=137,slow=7.9,SNR=36
NVAR LR LR 03 11 37.0
comp=Z,88nm,18.7s,baz=106,slow=37
BMN Battle Mountai 47.25 324 *e*P **P 02 51 51.0 +0.7**
9.1nm,1.0s
BOZ Bozeman (W) 47.97 333 *e*P **P 02 51 56.0 +0.3**
4.9nm,1.3s
WVOR Wild Horse Val 49.35 325 *e*P **P 02 52 06.5 +0.2**
10nm,1.0s
YBH Yreka Blue Hor 51.35 322 P **P 02 52 19.8 -1.7**
2.2nm,0.9s,baz=99,slow=6.5,SNR=4.5
SCHQ Schefferville 51.54 12 P **P 02 52 21.8 -0.7**
4.3nm,1.0s,baz=180,slow=9.1,SNR=4.0
YKA Yellowknife Ar 62.30 344 P **P 02 53 38.0 -0.6**
0.7nm,0.8s,baz=138,slow=6.9,SNR=15
YKA Yellowknife Ar 62.30 344 P **P 02 53 38.0 -0.6**
INK Inuvik 71.97 342 P **P 02 54 38.6 -1.2**
2.2nm,0.9s,baz=180,slow=2.2,SNR=3.3
ILAR Eielson Array 74.98 336 P **P 02 54 57.8 +0.2**
0.5nm,0.8s,baz=116,slow=3.1,SNR=4.9
ESDC Sonseca Array 78.22 51 P **P 02 55 17.4 +0.8**
0.6nm,0.8s,baz=270,slow=5.9,SNR=4.2
TORD Torodi Ar. Bea 83.36 77 P **P 02 55 46.0 +1.5**
0.3nm,0.7s,baz=287,slow=5.3,SNR=4.3
NOA NORSAR Array B 87.72 29 LR LR 03 31 16.1
comp=Z,14nm,21.2s,baz=280,slow=33
GERES GERESS Array B 90.59 41 LR LR 03 33 44.0
comp=Z,28nm,18.2s,baz=306,slow=33
FINES FINESS Array B 94.65 27 LR LR 03 41 04.8
comp=Z,22nm,18.0s,baz=333,slow=37
H11N3 WAKE ISLAND Hy 107.56 292 T T 04 57 44.5
baz=78,slow=75,SNR=20
H11N2 WAKE ISLAND Hy 107.57 292 T T 04 57 47.6
baz=78,slow=75,SNR=17
H11N1 WAKE ISLAND Hy 107.58 292 T T 04 57 45.2
baz=78,slow=75,SNR=23
LZH Lanzhou 138.95 352 *e*PKP **PKPdf 03 02 44.5 +0.7**
LZH pPKP PKiKP 03 02 47.6 +1.6
LZH sPKP 03 02 49.1
LZH LR LR
comp=N,130nm,18.0s
LZH LR LR
comp=E,130nm,17.8s
LZH LR LR
comp=Z,150nm,20.0s
WRA Warramunga Arr 141.04 244 PKP **PKPdf 03 02 47.7 -0.1**
comp=Z,0.7nm,1.1s,baz=109,slow=2.8,SNR=3.0
CD2 Chengdu 144.04 351 PKPbc **PKPdf 03 02 51.9 -1.0**

*NIED **21** 02:45:00, 36°.10N×141°.80E, h11km, Mw3.8 Best double couple: M0=5.28000×10^14 NP1:φs=154.00000°, δ41.00000°, λ-156.00000°. NP2:φs=46.00000°, δ75.00000°, λ-51.00000°.*
*IDC **21** 02:45:17.5±0.8, 35°.98N×141°.86E, h0km, mb3.6/9, mb1 3.7/14, mb1mx3.6/48, mbtmp3.6/14, ML3.4/3, MS3.4/2, Ms1 3.4/2, ms1mx2.6/53, Error ellipse: s-maj=19.8km s-min=16.6km az=108.0*
*ISCJB **21** 02:45:18.5±1.5, 36°.04N±0°.04×141°.99E±0°.07, h23km±11km, mb3.6/9, MS4.0/1, Error ellipse: s-maj=10.2km s-min=6.5km az=0.5*
*JMA **21** 02:45:20.8±0.2, 36°.06N×141°.81E, h55km, M3.5*
ISC 21 02:45:19.4±3.7, 36°.05N±0°.05×141°.93E±0°.08, h14km±24km, n30, σ1s20/29, mb3.8/9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.94**	**249**	P	**Pb**	**02 45 36.7**	**-0.7**
CHOJ				S	**Sb**	**02 45 49.3**	**-0.4**
JHO	**Hitachi**	**1.23**	**297**	P	**Pn**	**02 45 40.9**	**-1.3**
JFK	**Kawauchi**	**1.57**	**327**	P	**Pn**	**02 45 45.8**	**-1.0**
JFK				*e*S	**Sn**	**02 46 05.5**	**-1.4**
BSO1	**Boso 1**	**1.59**	**210**	P	**Pn**	**02 45 47.1**	**+0.4**
BSO1				S	**Sb**	**02 46 09.3**	**+1.2**
JFT	**Otama**	**1.95**	**319**	P	**Pn**	**02 45 52.1**	**+0.1**
JFT				*e*S	**Sn**	**02 46 16.8**	**+0.5**
JMM	**Marumori**	**2.03**	**334**	P	**Pn**	**02 45 53.1**	**-0.1**
JAG	**Ashikaga**	**2.04**	**281**	P	**Pn**	**02 45 52.3**	**-1.0**
MJAR	**Matsushiro Arr**	**3.05**	**280**	Pn	**Pn**	**02 46 07.5**	**+0.3**
9.1nm,0.3s,baz=102,slow=8.1,SNR=69							
MAT	**Matsushiro**	**3.05**	**280**	P	**Pn**	**02 46 08.0**	**+0.8**
MAT				S	**Sn**	**02 46 44.4**	**+0.9**
JHJ	**Hachijo jima 2**	**3.42**	**212**	Pn	**Pn**	**02 46 11.8**	**-0.4**
9.1nm,0.3s,baz=107,slow=20,SNR=6.2							
JHJ				Sn	**Sn**	**02 46 50.9**	**-1.7**
36nm,0.3s,baz=270,slow=23,SNR=4.4							
ASAJ	**Asahikawa**	**8.07**	**3**	**Pn**	**Pn**	**02 47 16.4**	**+0.2**
0.5nm,0.3s,baz=204,slow=18,SNR=4.7							
ASAJ				Sn	**Sn**	**02 48 43.7**	**-3.5**
0.5nm,0.3s,baz=328,slow=32,SNR=5.8							
JNU	**Nakatsue**	**9.57**	**255**	LR	LR	02 51 25.9	
comp=Z,55nm,20.1s,baz=296,slow=39							
USRK	**Ussuriysk Ar.**	**11.14**	**320**	Pn	**Pn**	**02 47 58.1**	**-0.1**
0.1nm,0.3s,baz=128,slow=13,SNR=2.9							
KSRS	**Korea Array**	**11.33**	**281**	Pn	**Pn**	**02 48 02.2**	**+1.4**
baz=94,slow=13,SNR=3.6							
H11N2	**WAKE ISLAND Hy**	**27.29**	**120**	T	T	03 19 43.0	
baz=312							
H11N1	**WAKE ISLAND Hy**	**27.30**	**120**	T	T	03 19 38.8	
baz=312,slow=74							
H11N3	**WAKE ISLAND Hy**	**27.31**	**120**	T	T	03 19 41.4	
baz=312,slow=74							
H11S1	**WAKE ISLAND Hy**	**27.98**	**122**	T	T	03 20 20.7	
baz=314,slow=76,SNR=35							
H11S3	**WAKE ISLAND Hy**	**27.98**	**122**	T	T	03 20 20.5	
baz=314,slow=76,SNR=34							
H11S2	**WAKE ISLAND Hy**	**28.00**	**122**	T	T	03 20 22.8	
baz=314,slow=76,SNR=24							
SONM	**Songino Array**	**28.69**	**305**	P	**P**	**02 51 15.7**	**-0.3**
2.2nm,0.8s,baz=102,slow=9.1,SNR=6.1							
ZALV	**Zalesovo Beam**	**42.89**	**313**	P	**P**	**02 53 16.2**	**-1.0**
1.3nm,0.7s,baz=110,slow=8.3,SNR=5.1							
MKAR	**Makanchi Array**	**45.00**	**303**	P	**P**	**02 53 34.6**	**+0.4**
1.4nm,0.6s,baz=85,slow=10,SNR=14							
ILAR	**Eielson Array**	**50.10**	**32**	P	**P**	**02 54 14.7**	**+1.0**
0.4nm,0.8s,baz=275,slow=6.7,SNR=3.1							
WRA	**Warramunga Arr**	**56.15**	**189**	P	**P**	**02 54 57.7**	**-0.9**
0.2nm,0.4s,baz=7.4,slow=7.2,SNR=4.8							
ASAR	**Alice Springs**	**59.87**	**189**	P	**P**	**02 55 24.1**	**-0.6**
0.8nm,1.0s,baz=17,slow=13,SNR=3.2							
YKA	**Yellowknife Ar**	**64.45**	**30**	P	**P**	**02 55 55.5**	**+0.6**
0.1nm,0.6s,baz=298,slow=5.6,SNR=2.9							
FINES	**FINESS Array B**	**69.88**	**333**	P	**P**	**02 56 29.3**	**-0.1**
1.5nm,0.8s,baz=19,slow=13,SNR=5.2							
NVAR	**Mina Array Bea**	**75.24**	**53**	P	**P**	**02 57 04.3**	**+2.2**
0.1nm,0.4s,baz=281,slow=5.4,SNR=2.4							
URZ	**Urewera**	**80.78**	**153**	LR	LR	03 28 06.7	
comp=Z,71nm,19.3s,baz=30,slow=32							

*NIED **21** 02:46:00, 38°.30N×141°.80E, h5km, Mw4.0 Best double couple: M0=1.30000×10^15 NP1:φs=187.00000°, δ7.00000°, λ120.00000°. NP2:φs=337.00000°, δ84.00000°, λ86.00000°.*
JMA 21 02:46:31.8±0.1, 38°.25N×141°.85E, h47km±1km, M3.7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.44**	**298**	P	Pn	02 46 42.2	0.0
JIO				S	Sn	02 46 49.3	-0.3
OFUJ	**Ofunato**	**0.84**	**350**	P	Pn	02 46 47.1	-0.2
OFUJ				S	Sn	02 46 57.7	-0.9
JMK	**Ichinoseki**	**0.86**	**325**	P	Pn	02 46 47.7	+0.2
JMK				S	Sn	02 46 58.8	-0.2
JMM	**Marumori**	**0.92**	**246**	P	Pn	02 46 48.0	-0.3
JMM				*e*S	Sn	02 46 59.5	-0.9
JOU	**Okura**	**0.94**	**277**	P	Pn	02 46 48.9	+0.2
JOU				*e*S	Sn	02 47 01.7	+0.7
JFK	**Kawauchi**	**1.17**	**222**	P	Pn	02 46 51.4	-0.4
JFK				S	Sn	02 47 05.6	-1.1
JOM	**Ohasama**	**1.30**	**341**	P	Pn	02 46 53.8	+0.3
JOM				*e*S	Sn	02 47 09.7	0.0
JYK	**Kaneyama**	**1.34**	**300**	P	Pn	02 46 54.8	+0.6
JFT	**Otama**	**1.40**	**239**	P	Pn	02 46 55.5	+0.6
JFT				*e*S	Sn	02 47 12.7	+0.4

*ISCJB **21** 02:58:45.4±0.8, 37°.01N±0°.03×21°.17E±0°.03, h3km±4km, mb3.6/3, MS3.1/2, Error ellipse: s-maj=5.8km s-min=3.1km az=42.7*
*ATH **21** 02:58:46.0, 37°.05N×21°.23E, h18km±1km, ML3.2/5, Error ellipse: s-maj=2.5km s-min=0.9km az=42.0*
*CSEM **21** 02:58:46.2±0.3, 37°.04N×21°.20E, h2km, ML3.2, Error ellipse: s-maj=6.9km s-min=3.4km az=43.0*
*THE **21** 02:58:47.0, 37°.09N×21°.24E, h0km±1km, ML3.2/15, Error ellipse: s-maj=1.2km s-min=0.4km az=228.0*
*IDC **21** 02:58:52.0±8.7, 37°.10N×21°.35E, h74km±107km, mb3.5/3, mb1 3.5/4, mb1mx3.1/49, mbtmp3.6/4, ML2.2/1, MS3.1/2, Ms1 3.1/2, ms1mx2.4/42, Error ellipse: s-maj=69.0km s-min=26.5km az=111.0*
ISC 21 02:58:45.9±1.2, 37°.04N±0°.03×21°.21E±0°.03, h11km±8km, n96, σ1s03/139, mb3.9/3, Southern Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PYL	**PYLOS**	**0.45**	**109**	P	**Pb**	**02 58 55.1**	**-0.7**
PYL				S	**Sb**	**02 59 02.4**	**-0.2**
PYL	**PYLOS**	**0.45**	**109**	P	**Pb**	**02 58 55.3**	**-0.6**
PYL				S	**Sb**	**02 59 02.0**	**-0.6**
PYL	**PYLOS**	**0.45**	**109**	P	**Pb**	**02 58 55.3**	**-0.6**
PYL				S	**Sb**	**02 59 02.0**	**-0.6**
PYL				AML	AML	02 59 02.6	
comp=N,3370μm,0.4s							
PYL				AML	AML	02 59 05.1	
comp=E,3417μm,0.3s							
ITM	**Ithomi**	**0.59**	**76**	P	**Pg**	**02 58 57.0**	**-0.3**
ITM				S	**Sb**	**02 59 05.8**	**-0.8**
ITM	**Ithomi**	**0.59**	**76**	P	**Pg**	**02 58 57.0**	**-0.3**
ITM				S	**Sb**	**02 59 06.2**	**-0.3**
ITM	**Ithomi**	**0.59**	**76**	P	**Pg**	**02 58 56.3**	**-1.0**
ITM				S	**Sb**	**02 59 06.2**	**-0.3**
ITM				AML	AML	02 59 06.9	
comp=N,3092μm,0.3s							
ITM				AML	AML	02 59 11.2	
comp=E,2273μm,0.6s							
AMT	**Artemida-Makis**	**0.63**	**39**	P	**Pb**	**02 58 58.4**	**-0.5**
AMT				S	**Sg**	**02 59 06.9**	**+0.5**
AMT	**Artemida-Makis**	**0.63**	**39**	P	**Pb**	**02 58 58.6**	**-0.3**
AMT				S	**Sg**	**02 59 06.9**	**+0.5**
AMT	**Artemida-Makis**	**0.63**	**39**	P	**Pb**	**02 58 58.6**	**-0.3**
AMT				S	**Sb**	**02 59 07.5**	**-0.3**
AMT				AML	AML	02 59 11.7	
comp=N,8339μm,0.4s							
AMT				AML	AML	02 59 12.3	
comp=E,9463μm,0.4s							
ZKS	**Zakynthos**	**0.73**	**333**	P	**Pb**	**02 59 00.9**	**+0.2**
ZKS				S	**Sb**	**02 59 11.0**	**+0.2**
ZKS	**Zakynthos**	**0.73**	**333**	P	**Pb**	**02 59 00.9**	**+0.2**
ZKS				S	**Sb**	**02 59 11.0**	**+0.2**
ZKS	**Zakynthos**	**0.73**	**333**	P	**Pb**	**02 59 01.2**	**+0.5**
ZKS				S	**Sb**	**02 59 11.3**	**+0.5**
ZKS				AML	AML	02 59 20.6	
comp=E,6009μm,0.5s							
ZKS				AML	AML	02 59 22.2	
comp=N,8608μm,0.5s							
VTN	**Vitineika**	**0.87**	**359**	P	**Pn**	**02 59 04.0**	**-0.1**
VTN	**Vitineika**	**0.87**	**359**	P	**Pn**	**02 59 04.0**	**-0.1**
VLX	**Vlachokerasia**	**0.99**	**70**	P	**Pg**	**02 59 04.5**	**-0.4**
VLX				S	**Sb**	**02 59 18.4**	**+0.2**
VLX	**Vlachokerasia**	**0.99**	**70**	P	**Pg**	**02 59 04.5**	**-0.4**
VLX				S	**Sb**	**02 59 18.4**	**+0.2**
VLX	**Vlachokerasia**	**0.99**	**70**	P	**Pg**	**02 59 04.5**	**-0.4**
DRO	**Drossia**	**0.99**	**24**	P	**Pg**	**02 59 04.6**	**-0.4**
DRO				S	**Sb**	**02 59 18.7**	**+0.5**
DRO	**Drossia**	**0.99**	**24**	P	**Pg**	**02 59 04.6**	**-0.4**
DRO				S	**Sb**	**02 59 18.7**	**+0.5**
DRO	**Drossia**	**0.99**	**24**	P	**Pg**	**02 59 04.4**	**-0.5**
DRO				S	**Sn**	**02 59 23.6**	**+3.8**
DRO				AML	AML	02 59 26.0	
comp=N,5382μm,0.4s							
DRO				AML	AML	02 59 29.7	
comp=E,5282μm,0.4s							
RLS	**Riolos of Patr**	**1.03**	**11**	P	**Pg**	**02 59 05.5**	**-0.3**
RLS				S	**Sb**	**02 59 19.4**	**+0.1**
RLS	**Riolos of Patr**	**1.03**	**11**	P	**Pg**	**02 59 05.5**	**-0.3**
RLS				S	**Sb**	**02 59 19.4**	**+0.1**
KFL	**Anninata**	**1.12**	**343**	P	**Pg**	**02 59 06.8**	**-0.5**
KFL				S	**Sn**	**02 59 23.3**	**+0.5**
KFL	**Anninata**	**1.12**	**343**	P	**Pg**	**02 59 06.8**	**-0.5**
KFL				S	**Sn**	**02 59 23.3**	**+0.5**
KFL	**Anninata**	**1.12**	**343**	P	**Pg**	**02 59 06.5**	**-0.8**
AXS	**Araxos**	**1.16**	**6**	P	**Pg**	**02 59 07.7**	**-0.4**
AXS	**Araxos**	**1.16**	**6**	P	**Pg**	**02 59 07.7**	**-0.4**
AXS	**Araxos**	**1.16**	**6**	P	**Pg**	**02 59 07.4**	**-0.8**
VLS	**Valsamata**	**1.23**	**337**	P	**Pn**	**02 59 08.9**	**-0.2**
VLS				S	**Sn**	**02 59 27.7**	**+1.9**
VLS	**Valsamata**	**1.23**	**337**	P	**Pn**	**02 59 08.9**	**-0.2**
VLS				S	**Sn**	**02 59 27.2**	**+1.4**
KLV	**Kalavryta, Ach**	**1.25**	**37**	P	**Pn**	**02 59 09.0**	**-0.3**
KLV				S	**Sn**	**02 59 27.1**	**+1.0**
KLV	**Kalavryta, Ach**	**1.25**	**37**	P	**Pn**	**02 59 09.0**	**-0.3**
KLV				S	**Sn**	**02 59 27.1**	**+1.0**
KLV	**Kalavryta, Ach**	**1.25**	**37**	P	**Pn**	**02 59 07.5**	**-1.8**
UPR	**University Cam**	**1.32**	**20**	P	**Pg**	**02 59 12.6**	**+1.4**
UPR	**University Cam**	**1.32**	**20**	P	**Pg**	**02 59 12.6**	**+1.4**
LAKA	**Lakka**	**1.34**	**27**	P	**Pn**	**02 59 10.6**	**0.0**
LAKA				S	**Sg**	**02 59 30.2**	**+1.1**
LAKA	**Lakka**	**1.34**	**27**	P	**Pn**	**02 59 10.6**	**0.0**
LAKA				S	**Sg**	**02 59 30.2**	**+1.1**
VLI	**Veliai**	**1.42**	**103**	P	**Pg**	**02 59 12.8**	**-0.4**
VLI				S	**Sg**	**02 59 33.8**	**+2.2**
VLI	**Veliai**	**1.42**	**103**	P	**Pg**	**02 59 12.8**	**-0.4**
VLI				S	**Sg**	**02 59 33.8**	**+2.2**
VLI	**Veliai**	**1.42**	**103**	P	**Pb**	**02 59 11.9**	**-0.5**
SERG	**Sergoula**	**1.52**	**26**	P	**Pb**	**02 59 14.3**	**+0.1**
SERG	**Sergoula**	**1.52**	**26**	P	**Pb**	**02 59 14.3**	**+0.1**
PDO	**Prodromos**	**1.55**	**359**	P	**Pb**	**02 59 14.5**	**-0.1**
PDO				S	**Sg**	**02 59 36.3**	**+0.5**
PDO	**Prodromos**	**1.55**	**359**	P	**Pb**	**02 59 14.5**	**-0.1**
PDO				S	**Sg**	**02 59 36.3**	**+0.5**
PDO	**Prodromos**	**1.55**	**359**	P	**Pb**	**02 59 14.2**	**-0.4**
KRND	**KRANIDI**	**1.58**	**77**	P	**Pb**	**02 59 15.3**	**+0.1**
KRND				S	**Sg**	**02 59 37.1**	**+0.2**
KRND	**KRANIDI**	**1.58**	**77**	P	**Pb**	**02 59 15.4**	**+0.2**
KRND				S	**Sg**	**02 59 37.1**	**+0.2**
KRND	**KRANIDI**	**1.58**	**77**	P	**Pb**	**02 59 15.4**	**+0.2**
KYTH	**Kithira**	**1.65**	**117**	P	**Pg**	**02 59 17.6**	**0.0**
KYTH				S	**Sg**	**02 59 39.8**	**+0.7**
KYTH	**Kithira**	**1.65**	**117**	P	**Pg**	**02 59 17.6**	**0.0**
KYTH				S	**Sg**	**02 59 39.8**	**+0.7**
KYTH	**Kithira**	**1.65**	**117**	P	**Pg**	**02 59 18.1**	**+0.5**
DID	**Didima**	**1.68**	**73**	P	**Pb**	**02 59 16.5**	**-0.3**
DID				S	**Sg**	**02 59 39.4**	**-0.6**
DID	**Didima**	**1.68**	**73**	P	**Pb**	**02 59 16.7**	**-0.1**
DID				S	**Sg**	**02 59 39.4**	**-0.6**
DID	**Didima**	**1.68**	**73**	P	**Pb**	**02 59 16.7**	**-0.1**
LTK	**Loutraki**	**1.71**	**54**	P	**Pb**	**02 59 17.4**	**+0.1**
LTK	**Loutraki**	**1.71**	**54**	P	**Pb**	**02 59 17.4**	**+0.1**
DSF	**Desfina**	**1.72**	**37**	P	**Pb**	**02 59 17.3**	**-0.2**
DSF				S	**Sb**	**02 59 39.8**	**+0.7**
DSF	**Desfina**	**1.72**	**37**	P	**Pb**	**02 59 17.3**	**-0.2**
DSF				S	**Sb**	**02 59 39.8**	**+0.7**
DSF	**Desfina**	**1.72**	**37**	P	**Pb**	**02 59 17.4**	**-0.2**
LKD2	**Lefkada island**	**1.80**	**346**	P	**Pb**	**02 59 18.0**	**-0.8**
LKD2				S	**Sb**	**02 59 41.7**	**+0.3**
LKD2	**Lefkada island**	**1.80**	**346**	P	**Pb**	**02 59 18.0**	**-0.8**
LKD2				S	**Sb**	**02 59 41.7**	**+0.3**
LKD2	**Lefkada island**	**1.80**	**346**	P	**Pb**	**02 59 17.9**	**-0.8**
EVR	**Evrytania**	**1.93**	**14**	P	**Pg**	**02 59 22.2**	**-0.7**
EVR	**Evrytania**	**1.93**	**14**	P	**Pg**	**02 59 22.2**	**-0.7**
ANKY	**Antikythira Is**	**2.05**	**124**	P	**Pb**	**02 59 22.6**	**-0.6**
ANKY	**Antikythira Is**	**2.05**	**124**	P	**Pb**	**02 59 22.6**	**-0.6**
DSL	**Palaion Diasel**	**2.09**	**358**	P	**Pb**	**02 59 22.6**	**-1.2**
DSL	**Palaion Diasel**	**2.09**	**358**	P	**Pb**	**02 59 22.6**	**-1.2**
DSL	**Palaion Diasel**	**2.09**	**358**	P	**Pb**	**02 59 24.4**	**+0.6**
LKR	**Lokris**	**2.14**	**41**	P	**Pb**	**02 59 23.6**	**-1.0**
LKR	**Lokris**	**2.14**	**41**	P	**Pb**	**02 59 23.6**	**-1.0**
AGG	**Agios Georgios**	**2.16**	**24**	P	**Pg**	**02 59 26.2**	**-1.1**
VLY	**Voula,Athens**	**2.21**	**68**	P	**Pn**	**02 59 21.3**	**-1.1**
PTL	**Penteli**	**2.34**	**64**	P	**Pn**	**02 59 23.9**	**-0.3**
PTL	**Penteli**	**2.34**	**64**	P	**Pn**	**02 59 23.9**	**-0.3**
IGT	**Igoumenitsa**	**2.58**	**345**	P	**Pn**	**02 59 28.9**	**+1.3**
IGT				S	**Sn**	**03 00 01.6**	**+2.7**
IGT	**Igoumenitsa**	**2.58**	**345**	P	**Pn**	**02 59 28.5**	**+0.9**
IGT				S	**Sn**	**03 00 01.6**	**+2.7**
IGT	**Igoumenitsa**	**2.58**	**345**	P	**Pn**	**02 59 28.5**	**+0.9**
THL	**Klokotos Trika**	**2.59**	**14**	P	**Pb**	**02 59 30.7**	**-1.7**
SGD	**Sagiada**	**2.68**	**344**	P	**Pn**	**02 59 30.2**	**+1.3**
SGD	**Sagiada**	**2.68**	**344**	P	**Pn**	**02 59 30.2**	**+1.3**
NEO	**Neokhori**	**2.76**	**34**	P	**Pn**	**02 59 31.9**	**+1.8**
NEO	**Neokhori**	**2.76**	**34**	P	**Pn**	**02 59 31.9**	**+1.8**
KEK	**Kerkira**	**2.89**	**338**	P	**Pn**	**02 59 31.8**	**0.0**
PENT	**Pentalofos**	**3.15**	**359**	P	**Pb**	**02 59 39.8**	**-2.1**
IDI	**Anoyia**	**3.45**	**119**	P	**Pn**	**02 59 42.5**	**+2.9**
comp=E,0.2nm,0.3s,baz=29,slow=10,SNR=5.8							
IDI				S	**Sn**	**03 00 22.3**	**+1.6**
comp=E,3.4nm,0.3s,baz=263,slow=17,SNR=8.9							
APE	**Apeiranthos**	**3.46**	**88**	P	**Pn**	**02 59 38.9**	**-0.8**
APE	**Apeiranthos**	**3.46**	**88**	P	**Pn**	**02 59 38.9**	**-0.8**
PAIG	**Paliouri**	**3.47**	**33**	P	**Pn**	**02 59 40.1**	**+0.3**
PAIG	**Paliouri**	**3.47**	**33**	P	**Pn**	**02 59 40.1**	**+0.3**
NVLJ	**Novalja**	**8.91**	**329**	*e*Pn	**Pn**	**03 00 55.9**	**+1.4**
NVLJ				Sn	**Sn**	**03 02 30.4**	**-4.5**
FINES	**FINESS Array B**	**24.61**	**6**	P	**P**	**03 04 04.3**	**-1.6**
comp=E,3.3nm,1.1s,baz=167,slow=11,SNR=6.1							
TORD	**Torodi Ar. Bea**	**29.52**	**221**	P	**P**	**03 04 50.5**	**+0.1**
comp=E,0.4nm,0.9s,baz=32,slow=8.8,SNR=3.5							
ARCES	**ARCESS Array B**	**32.63**	**3**	P	**P**	**03 05 16.0**	**-1.3**
comp=E,1.7nm,0.9s,baz=186,slow=11,SNR=5.6							
SFJD	**Kangerlussuaq**	**49.49**	**331**	LR	LR	03 30 12.3	
comp=E,38nm,19.8s,baz=256,slow=38							
SUR	**Sutherland**	**69.07**	**180**	LR	LR	03 40 49.3	
comp=E,6.0nm,20.2s,baz=250,slow=36							

*ISCJB **21** 03:02:51.2±0.9, 23°.23S±0°.07×68°.7W±0°.1, h105km±9km, mb3.9/3, Error ellipse: s-maj=19.2km s-min=8.3km az=29.8*
*IDC **21** 03:02:51.1±2.3, 23°.28S×68°.61W, h93km±12km, mb3.6/3, mb1 3.7/5, mb1mx3.4/31, mbtmp4.0/5, Error ellipse: s-maj=43.1km s-min=36.9km az=23.0*
*GUC **21** 03:02:52.1±0.6, 23°.23S×68°.75W, h97km±9km, ML4.0*
ISC 21 03:02:51.9±1.2, 23°.24S±0°.08×68°.7W±0°.1, h98km±10km, n12, σ0s64/18, mb3.5/3, Northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LVC	**Limon Verde**	**0.66**	**340**	P	**Pn**	**03 03 09.3**	**+0.1**
3μm,0.3s,baz=175,slow=8.5,SNR=1282							
LVC				S	**Sn**	**03 03 22.3**	**+0.2**
10μm,0.3s,baz=294,slow=20,SNR=82							
PB06	**IPOC Station P**	**0.99**	**302**	*i* P	**Pn**	**03 03 12.3**	**+0.1**
PB06				*i* S	**Sn**	**03 03 27.3**	**-0.2**
PB06				IAML		03 03 28.1	
comp=N,3μm,0.1s							
PB09	**IPOC Station P**	**1.53**	**339**	*i* P	**Pn**	**03 03 19.3**	**+0.7**
PB09				*i* S	**Sn**	**03 03 39.1**	**+0.4**
PB09				IAML		03 03 47

JOM	Ohasama	1.70	324	P		Pn	03 09 16.3 +0.4
JOM				eS		Sn	03 09 37.6 +0.2
JFT	Otama	1.86	253	P		Pb	03 09 20.0 -0.4
JYK	Kaneyama	1.92	296	P		Pb	03 09 20.4 -1.0
JRG	Rokugo	2.00	311	P		Pb	03 09 21.6 -1.1
JKZ	Kuzumaki	2.12	333	P		Pn	03 09 22.6 +0.9
JANG	Nango	2.42	340	P		Pn	03 09 26.4 +0.7
MJAR	Matsushiro Arr	3.81	247	P		Pb	03 09 49.5 -4.1
	0.8nm,0.3s,baz=54,slow=9.7,SNR=9.1						
MAT	Matsushiro	3.81	247	S		Pn	03 09 47.3 +2.4
JHJ	Hachijo jima 2	5.46	205	P		Pn	03 10 09.8 +2.3
	10nm,0.3s,baz=12,slow=9.3,SNR=3.8						
JHJ				S		Sn	03 11 07.2 -2.9
	10.0nm,0.3s,baz=263,slow=17,SNR=3.1						
USRK	Ussuriysk Ar.	10.04	311	P		Pn	03 11 16.9 +6.5
	0.2nm,0.3s,baz=135,slow=14,SNR=3.1						
KLR	Kul'dur	13.60	328	LR		LR	03 17 31.2
	comp=Z,40nm,18.2s,baz=18,slow=38						
ZALV	Zalesovo Beam	41.89	312	P		P	03 16 36.9 +0.7
	0.9nm,0.4s,baz=89,slow=7.3,SNR=4.4						
MKAR	Makanchi Array	44.34	301	P		P	03 16 56.7 +0.5
	0.7nm,0.7s,baz=78,slow=11,SNR=7.3						
KURBB	Kurchatov Arra	46.08	307	P		P	03 17 10.8 +0.9
	2.5nm,0.6s,baz=81,slow=7.9,SNR=16						
ILAR	Eielson Array	48.11	33	P		P	03 17 33.9 +8.4
	0.2nm,0.7s,baz=292,slow=4.8,SNR=2.8						
BVAR	Borovoye Array	50.55	312	P		P	03 17 45.0 +0.6
	0.3nm,0.3s,baz=67,slow=8.0,SNR=2.6						
WRA	Warramunga Arr	58.24	189	P		P	03 18 40.4 -0.1
	0.7nm,0.9s,baz=7.1,slow=7.2,SNR=5.8						
WRA				LR		LR	03 43 12.7
	comp=Z,77nm,19.1s,baz=250,slow=36						
AKTO	Aktyubinsk	58.65	312	LR		LR	03 43 48.5
	comp=Z,29nm,21.9s,baz=319,slow=36						
YKA	Yellowknife Ar	62.43	31	LR		LR	03 50 23.5
	comp=Z,5.7nm,18.3s,baz=0.0,slow=39						
FINES	FINESS Array B	68.31	332	P		P	03 19 47.4 +0.6
	1.9nm,0.9s,baz=12,slow=7.3,SNR=3.5						
LPAZ	La Paz	145.36	60	PKPbc		PKPbc	03 28 25.1 0.0
	0.6nm,0.3s,baz=242,slow=2.8,SNR=14						

*DDA **21** 03:13:16.9,39°.13N×28°.99E, h7km, Md3.0*
*ISCJB **21** 03:13:17.4±0.8,39°.13N±0°.06×29°.00E±0°.04, h4km±8km, Error ellipse: s-maj=9.4km s-min=5.4km az=3.3*
*ISK **21** 03:13:17.3,39°.14N×29°.02E, h6km, MD2.5*
*CSEM **21** 03:13:17.7±0.1,39°.12N×29°.02E, h8km, MD2.5, Error ellipse: s-maj=3.2km s-min=2.5km az=172.0*
ISC 21 03:13:17.7±1.1,39°.13N±0°.04×29°.01E±0°.05, h13km±12km, n19, σ0°21/28, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	Gediz	0.37	96	P	Pg	03 13 25.1	-0.1
GDZ				S	Sg	03 13 30.1	-0.1
GDZ	Gediz	0.37	96	*i P*	Pg	03 13 25.1	-0.1
GDZ				*i S*	Sg	03 13 30.1	-0.1
TVSB	Tavsanli	0.47	47	*e*PG	Pg	03 13 26.8	-0.3
TVSB				*e*SG	Sg	03 13 33.6	+0.1
TVSB	Tavsanli	0.47	47	*e*Pg	Pg	03 13 26.8	-0.3
TVSB				*e*Sg	Sg	03 13 33.6	+0.1
KULA	Kula-Manisa	0.67	204	*e*PG	Pg	03 13 30.8	0.0
KULA	Kula-Manisa	0.67	204	*e*Pg	Pg	03 13 30.8	0.0
BALB	Balikesir	1.01	301	*e*PG	Pb	03 13 37.2	0.0
BALB				*e*SG	Sn	03 13 51.5	-0.3
BALB	Balikesir	1.01	301	*e*Pg	Pb	03 13 37.2	0.0
BALB				*e*Sg	Sn	03 13 51.5	-0.3
IGD	Bursa	1.14	7	*i P*	Pg	03 13 40.2	+0.4
IGD				*i S*	Sb	03 13 54.1	-0.1
KCTX	Karacabey (Bur	1.24	336	*e*PN	Pb	03 13 41.2	+0.1
KCTX	Karacabey (Bur	1.24	336	*e*Pn	Pb	03 13 41.2	+0.1
MDNY	Mudanya-Bursa	1.24	356	*e*PN	Pg	03 13 41.5	-0.2
MDNY	Mudanya-Bursa	1.24	356	*e*Pn	Pg	03 13 41.5	-0.2
CAVI	Cavuskoy	1.25	31	*e*PN	Pg	03 13 41.7	-0.1
CAVI	Cavuskoy	1.25	31	*e*Pn	Pg	03 13 41.7	-0.1
BORA	Eskisehir	1.35	56	P	Pn	03 13 42.5	+0.1
BORA				S	Sg	03 14 01.4	+0.3
BORA	Eskisehir	1.35	56	*i P*	Pn	03 13 42.5	+0.1
BORA				*i S*	Sg	03 14 01.4	+0.3
ARMT	Armutlu	1.44	355	*e*PN	Pb	03 13 44.6	+0.2
ARMT	Armutlu	1.44	355	*e*Pn	Pb	03 13 44.7	+0.2

*IDC **21** 03:13:56.3±0.8, 16°.26S×173°.39W, h0km, mb4.0/10, mb1 4.3/11, mb1mx4.1/30, mbtmp4.0/11, ML4.1/1, MS3.7/11, Ms1 3.7/11, ms1mx3.5/28, Error ellipse: s-maj=40.4km s-min=16.4km az=137.0*
*NEIC **21** 03:14:01.4±0.7, 16°.20S×173°.37W, h35km, mb4.6/4, Error ellipse: s-maj=34.2km s-min=11.8km az=139.0*
*ISCJB **21** 03:14:03.4±0.7, 16°.3S±0°.2×173°.5W±0°.2, h66km, mb4.0/13, Error ellipse: s-maj=29.1km s-min=12.0km az=140.2*
ISC 21 03:14:04.5±0.8, 16°.4S±0°.2×173°.4W±0°.2, h66km, n42, σ2°47/26, mb4.1/13, 1D, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	Afiamalu	2.92	33	Pn	Pn	03 14 41.1	-7.6
	28nm,0.3s,baz=351,slow=3.8,SNR=13						
AFI				Sn	Sn	03 15 08.0	-15
	60nm,0.3s,baz=36,slow=22,SNR=9.0						
AFI				LR	LR	03 15 50.7	
	comp=Z,276nm,20.5s,baz=174,slow=41						
AFI	Afiamalu	2.92	33	*e*Pn	Pn	03 14 39.4	-9.3
AFI				Sn	Sn	03 15 08.0	-15
DZM	Mont Dzumac	19.84	250	*e*P	Pn	03 18 30.8	-1.4
	18nm,0.8s						
PPT	Papeete	22.83	96	LR	LR	03 25 17.2	
	comp=Z,137nm,21.1s,baz=306,slow=30						
PPT2	Papeete2	22.83	96	eLR	LR	03 24 21.8	
	441nm,24.8s						
URZ	Urewera	23.33	199	P	P	03 19 07.0	+0.1
	2.0nm,0.3s,baz=287,slow=3.8,SNR=7.4						
TBI	Tubuai	23.55	111	eLR	LR	03 24 38.7	
	647nm,26.8s						
HNR	Honiara	26.85	282	LR	LR	03 28 49.8	
	comp=Z,734nm,20.2s,baz=134,slow=33						
TAOE	Nuku Hiva Isla	33.27	81	eLR	LR	03 29 09.3	
	256nm,25.9s						
RKT	Rikitea	36.71	107	eLR	LR	03 30 40.4	
	390nm,27.0s						
H11S2	WAKE ISLAND Hy	39.80	330	T	T	04 03 42.3	
	baz=149,slow=76,SNR=8.6						
H11S3	WAKE ISLAND Hy	39.81	330	T	T	04 03 17.4	
	baz=149,slow=76,SNR=12						
H11S1	WAKE ISLAND Hy	39.82	330	T	T	04 03 41.6	
	baz=149,slow=76,SNR=8.9						
H11N3	WAKE ISLAND Hy	40.76	331	T	T	04 04 27.3	
	baz=150,slow=76,SNR=9.1						
H11N1	WAKE ISLAND Hy	40.76	331	T	T	04 04 24.5	
	baz=150,slow=76,SNR=12						
H11N2	WAKE ISLAND Hy	40.78	331	T	T	04 04 27.2	
	baz=150,slow=76,SNR=9.8						
STKA	Stephens Creek	43.54	241	P	P	03 22 03.5	+1.6
	2.5nm,0.7s,baz=44,slow=8.7,SNR=2.9						
STKA				LR	LR	03 37 05.5	
	comp=Z,50nm,20.6s,baz=32,slow=32						
WRAB	Tennant Creek	49.60	258	*e*P	P	03 22 49.4	-0.2
	1.7nm,0.3s						
WRA	Warramunga Arr	49.61	258	P	P	03 22 48.8	-0.8
	0.9nm,0.4s,baz=95,slow=6.5,SNR=33						
ASAR	Alice Springs	49.80	253	P	P	03 22 51.2	+0.2
	3.4nm,0.4s,baz=89,slow=7.9,SNR=47						
ASAR				LR	LR	03 42 55.9	
	comp=Z,89nm,19.4s,baz=90,slow=35						
SOEI	Soe	60.87	268	*e*P	P	03 24 11.2	+0.3
	18nm,0.8s						
PETK	Petropavlovsk-	73.56	342	P	P	03 25 29.5	-0.7
	1.2nm,0.3s,baz=138,slow=8.8,SNR=3.8						
NVAR	Mina Array Bea	75.07	42	P	P	03 25 39.6	0.0
	1.9nm,0.8s,baz=226,slow=9.8,SNR=13						
USRK	Ussuriysk Ar.	78.16	323	LR	LR	03 54 10.9	
	comp=Z,75nm,21.7s,baz=126,slow=31						
TXAR	Lajitas Array	81.17	56	P	P	03 26 13.1	-0.3
	0.4nm,0.8s,baz=218,slow=7.9,SNR=4.5						
PDAR	Pinedale Array	83.00	42	P	P	03 26 23.2	+0.3
	1.3nm,0.7s,baz=216,slow=3.6,SNR=16						
COLA	College	83.33	11	*e*P	P	03 26 23.8	+0.1
	4.2nm,0.8s						
ILAR	Eielson Array	83.41	11	P	P	03 26 24.8	+0.6
	0.5nm,0.5s,baz=224,slow=5.8,SNR=15						
ILAR				LR	LR	03 56 24.8	
	comp=Z,36nm,20.5s,baz=182,slow=31						
MAW	Mawson	86.86	199	LR	LR	04 02 15.6	
	comp=Z,54nm,21.6s,baz=62,slow=33						

PLCA	Paso Flores	88.86	132	LR		LR	03 57 39.6
	comp=Z,83nm,20.5s,baz=296,slow=30						
INK	Inuvik	89.22	14	LR		LR	04 02 06.7
	comp=Z,32nm,19.3s,baz=248,slow=32						
YKA	Yellowknife Ar	91.00	23	P		P	03 27 01.5 +0.5
	0.1nm,0.6s,baz=234,slow=4.6,SNR=2.9						
SYO	Syowa Base	91.64	191	⇓*e*pP		pP	03 27 13.8 -8.6
CMAR	Chiang Mai Arr	92.91	288	LR		LR	04 04 03.5
	comp=Z,30nm,21.7s,baz=94,slow=32						
ARCES	ARCESS Array B	125.58	352	PKP		PKPdf	03 32 58.5 +0.9
	1.2nm,0.8s,baz=22,slow=1.3,SNR=5.7						
FINES	FINESS Array B	132.90	347	PKP		PKPdf	03 33 12.9 +1.2
	0.8nm,0.8s,baz=327,slow=6.8,SNR=2.9						
DPC	Dobruska-Polom	145.22	349	*e*PKP		PKPdf	03 33 36.4 +1.8
DPC				*ep*PKP		pPKPdf	03 33 46.1 -7.6
PRU	Pruhonice	145.87	351	*e*PKP		PKPab	03 33 38.4 +1.6
PRU				*ep*PKP		pPKPdf	03 33 50.7 -4.1
GOPC	GO Pecny, Ondr	145.90	351	*e*PKP		PKPab	03 33 39.4 +2.4
GOPC				*ep*PKP		pPKPdf	03 33 51.1 -3.8
KHC	Kasperske Hory	146.85	352	*e*PKP		PKPab	03 33 41.3 +0.6
KHC				*ep*PKP		pPKPdf	03 33 51.2 -5.3
BRTR	Keskin Array B	146.91	320	PKPbc		PKPab	03 33 42.6 +1.2
	1.1nm,0.5s,baz=192,slow=1.7,SNR=11						
GERES	GERESS Array B	147.11	351	PKPbc		PKPab	03 33 41.7 -0.1
	0.6nm,0.6s,baz=30,slow=3.7,SNR=6.7						

*ISK **21** 03:15:11.6,39°.03N×29°.27E, h5km, MD2.7*
*ISCJB **21** 03:15:13.2±0.5,39°.11N±0°.03×29°.13E±0°.05, h9km, Error ellipse: s-maj=5.6km s-min=4.2km az=22.9*
*DDA **21** 03:15:13.4,39°.12N×29°.04E, h7km, Md2.8*
*CSEM **21** 03:15:13.0±0.3,39°.11N×29°.14E, h5km, MD2.7, Error ellipse: s-maj=7.3km s-min=5.9km az=119.0*
ISC 21 03:15:12.9±0.8,39°.09N±0°.03×29°.16E±0°.03, h9km, n27, σ0°82/35, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TVSB	Tavsanli	0.43	33	*e*PG	Pg	03 15 20.3	-1.0
TVSB				*e*SG	Sg	03 15 27.4	+0.5
TVSB	Tavsanli	0.43	33	*e*Pg	Pg	03 15 20.3	-1.0
TVSB				*e*Sg	Sg	03 15 27.4	+0.5
KULA	Kula-Manisa	0.70	214	*e*PG	Pg	03 15 25.3	-1.0
KULA				*e*SG	Sg	03 15 35.8	+0.4
KULA	Kula-Manisa	0.70	214	*e*Pg	Pg	03 15 25.3	-1.0
KULA				*e*Sg	Sg	03 15 35.8	+0.4
KHAL	Karahalli	0.76	160	P	Pn	03 15 29.8	-0.1
KHAL				S	Sb	03 15 40.2	+1.2
KHAL	Karahalli	0.76	160	*i P*	Pn	03 15 29.8	-0.1
KHAL				*i S*	Sb	03 15 40.1	+1.2
AKS	Akhisar	1.07	259	*e*PN	Pb	03 15 33.9	+0.3
AKS	Akhisar	1.07	259	*e*Pn	Pb	03 15 33.9	+0.3
BALB	Balikesir	1.14	299	*e*PN	Pn	03 15 36.1	+1.1
BALB	Balikesir	1.14	299	*e*Pn	Pn	03 15 36.1	+1.1
IGD	Bursa	1.17	1	*i P*	Pb	03 15 34.0	-1.3
CAVI	Cavuskoy	1.23	25	*e*PN	Pb	03 15 36.0	-0.3
CAVI	Cavuskoy	1.23	25	*e*Pn	Pb	03 15 36.0	-0.3
BORA	Eskisehir	1.27	51	P	Pg	03 15 38.3	+1.0
BORA	Eskisehir	1.27	51	*i P*	Pg	03 15 38.3	+1.0
MDNY	Mudanya-Bursa	1.29	351	*e*PN	Pg	03 15 38.1	+0.4
MDNY	Mudanya-Bursa	1.29	351	*e*Pn	Pg	03 15 38.1	+0.4
KCTX	Karacabey (Bur	1.33	332	*e*PN	Pg	03 15 38.7	+0.3
KCTX	Karacabey (Bur	1.33	332	*e*Pn	Pg	03 15 38.7	+0.3
BALY	Balya	1.36	299	P	Pb	03 15 38.4	-0.1
BALY				S	Sb	03 15 54.4	-1.6
BALY	Balya	1.36	299	*i P*	Pb	03 15 38.4	-0.1
BALY				*i S*	Sb	03 15 54.4	-1.6
ARMT	Armutlu	1.49	351	*e*PN	Pb	03 15 40.6	-0.2
ARMT	Armutlu	1.49	351	*e*Pn	Pb	03 15 40.6	-0.2
GULT	Gulveren	1.70	37	*e*PN	Pn	03 15 43.0	+0.2
GULT	Gulveren	1.70	37	*e*Pn	Pn	03 15 43.0	+0.2
SVRH	Sivrihisar-ESK	1.87	78	*e*PN	Pn	03 15 44.3	-0.8
SVRH	Sivrihisar-ESK	1.87	78	*e*Pn	Pn	03 15 44.3	-0.8

*ISCJB **21** 03:17:15.5±0.6,39°.13N±0°.03×29°.09E±0°.05, h4km±8km, Error ellipse: s-maj=6.8km s-min=4.6km az=40.2*
*DDA **21** 03:17:15.5,39°.13N×29°.09E, h7km, Md2.7*
*CSEM **21** 03:17:15.9±0.1,39°.12N×29°.12E, h8km, MD2.7, Error ellipse: s-maj=2.6km s-min=1.9km az=104.0*
*ISK **21** 03:17:15.2,39°.11N×29°.15E, h8km, MD2.6*
ISC 21 03:17:15.3±1.1,39°.12N±0°.02×29°.12E±0°.03, h5km±11km, n35, σ0°50/46, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	Gediz	0.28	96	P	Pb	03 17 22.3	-0.6
GDZ	Gediz	0.28	96	*i P*	Pb	03 17 22.3	-0.6
TVSB	Tavsanli	0.42	38	*e*PG	Pb	03 17 24.6	-0.8
TVSB				*e*SG	Sg	03 17 29.6	+0.5
TVSB	Tavsanli	0.42	38	*e*Pg	Pb	03 17 24.6	-0.8
TVSB				*e*Sg	Sg	03 17 29.6	+0.5
DURS	Dursunbey	0.70	314	P	Pg	03 17 29.2	+0.5
DURS	Dursunbey	0.70	314	*i P*	Pg	03 17 29.2	+0.5
KULA	Kula-Manisa	0.70	211	*e*PG	Pb	03 17 29.8	-0.3
KULA				*e*SG	Sb	03 17 39.0	-1.1
KULA	Kula-Manisa	0.70	211	*e*Pg	Pb	03 17 29.8	-0.3
KULA				*e*Sg	Sb	03 17 39.0	-1.1
MANT	Manisa	0.77	215	P	Pb	03 17 30.7	-0.5
MANT				S	Sg	03 17 40.1	+0.1
MANT	Manisa	0.77	215	*i P*	Pb	03 17 30.7	-0.5
MANT				*i S*	Sg	03 17 40.1	+0.1
KHAL	Karahalli	0.80	159	P	Pb	03 17 32.0	+0.3
KHAL				S	Sb	03 17 42.7	-0.2
KHAL	Karahalli	0.80	159	*i P*	Pb	03 17 32.0	+0.3
KHAL				*i S*	Sb	03 17 42.7	-0.2
KHL	Karahalli	0.85	158	*e*PG	Pg	03 17 31.7	0.0
KHL	Karahalli	0.85	158	*e*Pg	Pg	03 17 31.7	0.0
BALB	Balikesir	1.09	299	*e*PN	Pn	03 17 37.3	0.0
BALB	Balikesir	1.09	299	*e*Pn	Pn	03 17 37.3	0.0
IGD	Bursa	1.15	3	*i P*	Pg	03 17 36.2	-1.1
IGD				*i S*	Sg	03 17 51.3	-0.9
CAVI	Cavuskoy	1.22	27	*e*PN	Pb	03 17 38.7	-0.2
CAVI	Cavuskoy	1.22	27	*e*Pn	Pb	03 17 38.7	-0.2
MDNY	Mudanya-Bursa	1.26	352	*e*PN	Pg	03 17 40.0	+0.4
MDNY	Mudanya-Bursa	1.26	352	*e*Pn	Pg	03 17 40.0	+0.4
BORA	Eskisehir	1.28	53	P	Pb	03 17 40.0	0.0
BORA				S	Sn	03 17 58.3	+0.8
BORA	Eskisehir	1.28	53	*i P*	Pb	03 17 40.0	0.0
BORA				*i S*	Sn	03 17 58.3	+0.8
KCTX	Karacabey (Bur	1.29	333	*e*PN	Pg	03 17 40.3	+0.2
KCTX	Karacabey (Bur	1.29	333	*e*Pn	Pg	03 17 40.3	+0.2
BALY	Balya	1.32	299	P	Pg	03 17 41.0	+0.4
BALY	Balya	1.32	299	*i P*	Pg	03 17 41.0	+0.4
ADVT	Abdulvahap	1.40	20	*e*PN	Pb	03 17 41.6	-0.3
ADVT	Abdulvahap	1.40	20	*e*Pn	Pb	03 17 41.6	-0.3
ARMT	Armutlu	1.46	352	*e*PN	Pb	03 17 42.9	-0.1
ARMT	Armutlu	1.46	352	*e*Pn	Pb	03 17 42.9	-0.1
EDC	Edincik	1.56	322	*e*PN	Pb	03 17 44.5	-0.2
EDC	Edincik	1.56	322	*e*Pn	Pb	03 17 44.5	-0.2
GULT	Gulveren	1.70	39	*e*PN	Pn	03 17 45.9	+0.2
GULT	Gulveren	1.70	39	*e*Pn	Pn	03 17 45.9	+0.2

*ISK **21** 03:19:31.8,39°.10N×29°.10E, h2km, MD2.7*
*ISCJB **21** 03:19:32.7±0.5,39°.12N±0°.03×29°.08E±0°.03, h1km±7km, Error ellipse: s-maj=5.7km s-min=3.9km az=172.8*
*DDA **21** 03:19:32.7,39°.13N×29°.09E, h15km, Md2.8*
*CSEM **21** 03:19:33.0±0.1,39°.12N×29°.07E, h2km, MD2.8, Error ellipse: s-maj=3.4km s-min=3.1km az=115.0*
ISC 21 03:19:33.4±0.9,39°.11N±0°.02×29°.09E±0°.02, h11km±8km, n55, σ0°64/70, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.30	256	P	Pg	03 19 39.5	+0.1
DEMI				S	Sg	03 19 43.8	+0.3
DEMI	Demirci	0.30	256	*i P*	Pg	03 19 39.6	+0.1
DEMI				*i S*	Sg	03 19 43.8	+0.3
DEMI	Demirci	0.30	256	*i P*	Pg	03 19 39.5	+0.1
DEMI				*i S*	Sg	03 19 43.8	+0.3
GDZ	Gediz	0.30	95	P	Pg	03 19 39.3	-0.3
GDZ				S	Sg	03 19 43.7	0.0
GDZ	Gediz	0.30	95	*i P*	Pg	03 19 39.3	-0.3
GDZ				*i S*	Sg	03 19 43.7	0.0
TVSB	Tavsanli	0.44	40	*e*PG	Pg	03 19 41.1	-1.0
TVSB	Tavsanli	0.44	40	*e*Pg	Pg	03 19 41.1	-1.0
DURS	Dursunbey	0.68	316	P	Pg	03 19 46.3	-0.3
DURS	Dursunbey	0.68	316	*i P*	Pg	03 19 46.3	-0.3
KULA	Kula-Manisa	0.69	209	*e*PG	Pg	03 19 46.0	-0.7
KULA				*e*SG	Sg	03 19 55.8	+0.1
KULA	Kula-Manisa	0.69	209	*e*Pg	Pg	03 19 46.0	-0.7
KULA				*e*Sg	Sg	03 19 55.8	+0.1
MANT	Manisa	0.75	214	P	Pg	03 19 47.3	-0.6
MANT	Manisa	0.75	214	*i P*	Pg	03 19 47.3	-0.6
KHAL	Karahalli	0.81	157	P	Pb	03 19 48.9	-0.6
KHAL				S	Sg	03 19 59.3	-0.2
KHAL	Karahalli	0.81	157	*i P*	Pb	03 19 48.9	-0.6
KHAL				*i S*	Sg	03 19 59.3	-0.2
KHL	Karahalli	0.86	157	*e*PG	Pg	03 19 49.2	-0.7
KHL	Karahalli	0.86	157	*e*Pg	Pg	03 19 49.2	-0.7
ORLT	Orhaneli	0.94	351	*e*PG	Pg	03 19 51.3	-0.2
ORLT	Orhaneli	0.94	351	*e*Pg	Pg	03 19 51.3	-0.2
AKS	Akhisar	1.02	257	*e*PG	Pg	03 19 51.8	-1.2
AKS	Akhisar	1.02	257	*e*Pg	Pg	03 19 51.8	-1.2
BALB	Balikesir	1.08	300	*e*PN	Pb	03 19 53.7	-0.3
BALB				*e*SN	Sn	03 20 09.6	+0.2
BALB	Balikesir	1.08	300	*e*Pn	Pb	03 19 53.7	-0.3
BALB				*e*Sn	Sn	03 20 09.6	+0.2
IGD	Bursa	1.15	4	*i P*	Pg	03 19 53.8	-1.7
IGD				*i S*	Sg	03 20 10.1	-0.4
CAVI	Cavuskoy	1.23	28	*e*PN	Pg	03 19 56.4	-0.7
CAVI	Cavuskoy	1.23	28	*e*Pn	Pg	03 19 56.4	-0.7
MDNY	Mudanya-Bursa	1.26	353	*e*PN	Pb	03 19 57.3	+0.1
MDNY	Mudanya-Bursa	1.26	353	*e*Pn	Pb	03 19 57.3	+0.1
KCTX	Karacabey (Bur	1.28	334	*e*PN	Pb	03 19 57.5	-0.1
KCTX	Karacabey (Bur	1.28	334	*e*Pn	Pb	03 19 57.5	-0.1
BALY	Balya	1.30	299	P	Pg	03 19 57.2	-1.1
BALY	Balya	1.30	299	*i P*	Pg	03 19 57.2	-1.1
BORA	Eskisehir	1.30	54	P	Pg	03 19 57.7	-0.7
BORA				S	Sb	03 20 15.1	+0.4
BORA	Eskisehir	1.30	54	*i P*	Pg	03 19 57.7	-0.7
BORA				*i S*	Sb	03 20 15.1	+0.4
ADVT	Abdulvahap	1.41	21	*e*PN	Pb	03 19 59.8	+0.1
ADVT	Abdulvahap	1.41	21	*e*Pn	Pb	03 19 59.8	+0.1
GONE	Gonen-Balikesi	1.43	311	*e*PN	Pn	03 19 59.9	+0.6
GONE	Gonen-Balikesi	1.43	311	*e*Pn	Pn	03 19 59.9	+0.6
ARMT	Armutlu	1.46	353	*e*PN	Pg	03 20 00.7	-0.7
ARMT	Armutlu	1.46	353	*e*Pn	Pg	03 20 00.7	-0.7
EDC	Edincik	1.55	323	*e*PN	Pn	03 20 01.4	+0.4
EDC	Edincik	1.55	323	*e*Pn	Pn	03 20 01.4	+0.4
KNL	Bal¨–kesir	1.67	314	*i P*	Pn	03 20 02.9	+0.3
KNL				*i S*	Sb	03 20 25.7	+0.5
GULT	Gulveren	1.71	39	*e*PN	Pn	03 20 03.8	+0.5
GULT	Gulveren	1.71	39	*e*Pn	Pn	03 20 03.8	+0.5
ISK	Istanbul-Kandi	1.95	359	*e*PN	Pn	03 20 07.2	+0.8
ISK	Istanbul-Kandi	1.95	359	*e*Pn	Pn	03 20 07.2	+0.8
AUMIH	MIHALICIK	2.00	67	P	Pb	03 20 10.0	+0.2
AUMIH	MIHALICIK	2.00	67	*i P*	Pb	03 20 10.0	+0.2
MDUB	Mudurnu	2.11	49	*e*PN	Pn	03 20 09.9	+1.1
MDUB	Mudurnu	2.11	49	*e*Pn	Pn	03 20 09.9	+1.1
KAND	Kocaeli-Kandir	2.15	23	*i P*	Pg	03 20 13.3	-1.3
SART	Tekirdag	2.15	318	P	Pb	03 20 11.7	-0.7
SART	Tekirdag	2.15	318	*i P*	Pb	03 20 11.7	-0.7
SAHE	Sakarya_HENDEK	2.20	37	*i P*	Pg	03 20 14.6	-1.0

*IDC **21** 03:38:34.9±5.1, 36°.12N×70°.81E, h112km±35km, mb3.2/6, mb1 3.3/11, mb1mx3.1/67, mbtmp3.7/11, MS4.2/1, Ms1 4.2/1, ms1mx2.4/45, Error ellipse: s-maj=49.0km s-min=19.9km az=153.0*
*NNC **21** 03:38:43.5±3.1, 36°.84N×70°.57E, h168km±34km, mb3.1, mpv4.0, Error ellipse: s-maj=31.8km s-min=18.9km az=146.0*
ISC 21 03:38:42.1±0.8, 36°.56N±0°.07×71°.19E±0°.09, h188km, n26, σ2°06/28, mb3.3/6, 4C-6D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	Dzherino	2.93	321	⇓P	Pn	03 39 24.7	-5.7
	15nm,0.4s						
DZET				⇑S	Sn	03 39 56.5	-12
	184nm,0.5s						
THN	Thein Dam	5.56	136	*e*P	Pn	03 40 01.0	-2.4

KULA	Kula-Manisa	0.66 207	P		Pg	03 39 00.8	-0.4
KULA			S		Sb	03 39 11.7	-0.4
KULA	Kula-Manisa	0.66 207	P		Pg	03 39 00.8	-0.4
KULA			*e*Sg		Sg	03 39 10.4	+0.7
KULA			S		Sb	03 39 11.7	-0.4
DURS	Dursunbey	0.66 319	P		Pg	03 39 00.6	-0.6
DURS			S		Sg	03 39 09.3	-0.5
DURS	Dursunbey	0.66 319	*i* P		Pg	03 39 00.6	-0.6
DURS			*i* S		Sg	03 39 09.3	-0.5
MANT	Manisa	0.72 211	P		Pg	03 39 02.0	-0.3
MANT			S		Sg	03 39 11.8	+0.2
MANT	Manisa	0.72 211	*i* P		Pg	03 39 02.0	-0.3
MANT			*i* S		Sg	03 39 11.8	+0.2
KHAL	Karahalli	0.82 154	P		Pg	03 39 04.4	+0.2
KHAL	Karahalli	0.82 154	*i* P		Pg	03 39 04.4	+0.2
KHAL			*i* S		Sn	03 39 20.1	+0.7
KHL	Karahalli	0.87 154	*e*PG		Pb	03 39 05.9	-0.3
KHL	Karahalli	0.87 154	*e*Pg		Pb	03 39 05.9	-0.3
ORLT	Orhaneli	0.95 354	*e*PG		Pg	03 39 07.1	+0.4
ORLT	Orhaneli	0.95 354	*e*Pg		Pg	03 39 07.1	+0.4
AKHS	Akhisar	0.98 257	P		Pg	03 39 07.1	-0.2
AKHS			S		Sg	03 39 20.4	+0.4
AKHS	Akhisar	0.98 257	*i* P		Pg	03 39 07.1	-0.2
AKHS			*i* S		Sg	03 39 20.4	+0.4
AKS	Akhisar	0.98 257	*e*PG		Pg	03 39 07.3	0.0
AKS	Akhisar	0.98 257	*e*Pg		Pg	03 39 07.3	0.0
BALB	Balikesir	1.04 301	*e*PG		Pb	03 39 09.0	-0.1
BALB			*e*SG		Sb	03 39 23.3	+0.1
BALB	Balikesir	1.04 301	*e*Pg		Pb	03 39 09.0	-0.1
BALB			*e*Sg		Sb	03 39 23.3	+0.1
IGD	Bursa	1.17 6	*i* P		Pg	03 39 09.4	-1.4
IGD			*i* S		Sg	03 39 26.3	+0.3
CAVI	Cavuskoy	1.26 29	*e*PN		Pn	03 39 13.3	+0.4
CAVI	Cavuskoy	1.26 29	*e*Pn		Pn	03 39 13.3	+0.4
BALY	Balya	1.27 301	P		Pg	03 39 12.2	-0.6
BALY			S		Sg	03 39 27.8	-1.5
BALY	Balya	1.27 301	*i* P		Pg	03 39 12.2	-0.6
BALY			*i* S		Sg	03 39 27.8	-1.5
MDNY	Mudanya-Bursa	1.27 355	*e*PN		Pg	03 39 12.8	0.0
MDNY	Mudanya-Bursa	1.27 355	*e*Pn		Pg	03 39 12.8	0.0
KCTX	Karacabey (Bur	1.27 336	*e*PN		Pg	03 39 12.8	-0.1
KCTX	Karacabey (Bur	1.27 336	*e*Pn		Pg	03 39 12.8	-0.1
IZI	Iznik	1.28 15	*e*PN		Pg	03 39 12.9	-0.1
IZI	Iznik	1.28 15	*e*Pn		Pg	03 39 12.9	-0.1
GEMT	Gemlik	1.33 5	*e*PN		Pg	03 39 14.2	+0.1
GEMT	Gemlik	1.33 5	*e*Pn		Pg	03 39 14.2	+0.1
BORA	Eskisehir	1.34 54	P		Pn	03 39 13.7	-0.4
BORA			S		Sn	03 39 32.6	+0.1
BORA	Eskisehir	1.34 54	*i* P		Pn	03 39 13.7	-0.4
BORA			*i* S		Sn	03 39 32.6	+0.1
DENT	Denizli	1.35 180	*e*PN		Pn	03 39 13.4	-0.7
DENT	Denizli	1.35 180	*e*Pn		Pn	03 39 13.5	-0.7
GONE	Gonen-Balikesi	1.40 312	*e*PN		Pb	03 39 15.2	-0.1
GONE	Gonen-Balikesi	1.40 312	*e*Pn		Pb	03 39 15.2	-0.1
DNZL	Cakiroluk	1.41 180	P		Pn	03 39 14.1	-1.1
DNZL	Cakiroluk	1.41 180	*i* P		Pn	03 39 14.1	-1.1
DNZL			*i* S		Sn	03 39 37.0	+2.7
ADVT	Abdulvahap	1.43 22	*e*PN		Pb	03 39 15.7	-0.1
ADVT	Abdulvahap	1.43 22	*e*Pn		Pb	03 39 15.7	-0.1
AYDB	Zeytinkoy-Aydi	1.46 218	*e*PN		Pn	03 39 15.5	-0.3
AYDB	Zeytinkoy-Aydi	1.46 218	*e*Pn		Pn	03 39 15.5	-0.3
ARMT	Armutlu	1.47 355	*e*PN		Pn	03 39 15.2	-0.5
ARMT	Armutlu	1.47 355	*e*Pn		Pn	03 39 15.2	-0.5
EDC	Edincik	1.54 324	*e*PN		Pb	03 39 16.8	+0.1
EDC	Edincik	1.54 324	*e*Pn		Pn	03 39 16.8	+0.1
GPA	Golpazari	1.54 39	*e*PN		Pb	03 39 17.3	-0.3
GPA	Golpazari	1.54 39	*e*Pn		Pb	03 39 17.3	-0.3
BOLV	Bolvadin	1.54 104	P		Pn	03 39 17.3	-0.4
BOLV	Bolvadin	1.54 104	*i* P		Pn	03 39 17.3	-0.4
KNL	Bal¨kesir	1.65 315	*i* P		Pn	03 39 18.3	+0.1
KNL			*i* S		Sb	03 39 41.0	+0.4
DKL	Dikili	1.66 270	*e*PN		Pn	03 39 18.3	-0.1
DKL	Dikili	1.66 270	*e*Pn		Pn	03 39 18.3	-0.1
AYDN	Tasoluk	1.70 213	P		Pn	03 39 18.4	-0.7
AYDN	Tasoluk	1.70 213	*i* P		Pn	03 39 18.4	-0.7
AYDN			*i* S		Sg	03 39 44.0	+0.8
ISP	Isparta	1.73 137	*e*PN		Pn	03 39 19.2	-0.3
ISP	Isparta	1.73 137	P		Pn	03 39 17.4	-2.1
ISP			S		Sn	03 39 40.5	-1.6
ISP	Isparta	1.73 137	P		Pn	03 39 17.4	-2.1
ISP	Isparta	1.73 137	*e*Pn		Pn	03 39 19.2	-0.3
ISP			S		Sn	03 39 40.5	-1.6
BUY	Buyukada	1.75 2	P		Pn	03 39 18.8	-0.8
BUY			S		Sn	03 39 42.7	+0.4
BUY	Buyukada	1.75 2	*i* P		Pn	03 39 18.8	-0.8
BUY			*i* S		Sn	03 39 42.6	+0.4
GULT	Gulveren	1.75 40	*e*PN		Pb	03 39 20.6	-0.7
GULT	Gulveren	1.75 40	*e*Pn		Pb	03 39 20.6	-0.7
HRT	Hereke	1.78 16	*e*PN		Pn	03 39 20.6	+0.4
HRT	Hereke	1.78 16	*e*Pn		Pn	03 39 20.6	+0.4
AYVA	Ayvalik	1.83 277	P		Pb	03 39 22.7	+0.1
AYVA	Ayvalik	1.83 277	*i* P		Pb	03 39 22.7	+0.1
AYVA			*i* S		Sg	03 39 47.4	0.0
KRBG	Karabiga-Canak	1.86 314	*e*PN		Pn	03 39 21.1	0.0
KRBG	Karabiga-Canak	1.86 314	*e*Pn		Pn	03 39 21.1	0.0
SPNC	Sapanca-Adapaz	1.86 31	*e*PN		Pn	03 39 21.8	+0.7
SPNC	Sapanca-Adapaz	1.86 31	*e*Pn		Pn	03 39 21.8	+0.7
MRMT	Marmara Adasi	1.86 324	*e*PN		Pn	03 39 21.3	+0.1
MRMT	Marmara Adasi	1.86 324	*e*Pn		Pn	03 39 21.3	+0.1
GOLH	Golhisar	1.91 167	P		Pn	03 39 21.7	-0.2
GOLH	Golhisar	1.91 167	*i* P		Pn	03 39 21.7	-0.2
ISK	Istanbul-Kandi	1.96 1	*e*PN		Pn	03 39 23.1	+0.6
ISK	Istanbul-Kandi	1.96 1	P		Pn	03 39 21.5	-1.0
ISK			S		Sb	03 39 48.7	-0.8
ISK	Istanbul-Kandi	1.96 1	P		Pn	03 39 21.5	-1.0
ISK	Istanbul-Kandi	1.96 1	*e*Pn		Pn	03 39 23.1	+0.6
ISK			S		Sb	03 39 48.7	-0.8
SVRH	Sivrihisar-ESK	1.96 79	*e*PN		Pn	03 39 22.9	+0.2
SVRH	Sivrihisar-ESK	1.96 79	*e*Pn		Pn	03 39 22.9	+0.2
DGB	˜zmir	1.99 239	*i* P		Pb	03 39 25.4	+0.2
DGB			*i* S		Sg	03 39 52.3	0.0
GCAM	G?zelcaml?	1.99 226	P		Pb	03 39 25.0	-0.3
GCAM	G?zelcaml?	1.99 226	*i* P		Pb	03 39 25.0	-0.3
AUMIH	MIHALICIK	2.04 67	*i* P		Pg	03 39 27.3	-0.4
URLA	Izmir	2.05 249	*i* P		Pg	03 39 28.7	+0.9
URLA			*i* S		Sg	03 39 56.5	+2.2
YER	Yerkesik	2.05 197	P		Pn	03 39 23.0	-0.9
YER	Yerkesik	2.05 197	P		Pn	03 39 23.0	-0.9
BGKT	Bogazkoy	2.08 355	*e*PN		Pn	03 39 24.9	+0.7
BGKT	Bogazkoy	2.08 355	*e*Pn		Pn	03 39 24.9	+0.7
SILT	Sile	2.10 13	*e*PN		Pn	03 39 25.1	+0.7
SILT	Sile	2.10 13	*e*Pn		Pn	03 39 25.1	+0.7
BTAS	Taskesti	2.10 45	P		Pn	03 39 24.2	-0.4
BTAS	Taskesti	2.10 45	*i* P		Pn	03 39 24.2	-0.4
RKY	Sarkoy-Tekirda	2.13 318	*e*PN		Pn	03 39 25.6	+0.7
RKY	Sarkoy-Tekirda	2.13 318	*e*Pn		Pn	03 39 25.7	+0.7
SART	Tekirdag	2.13 319	*i* P		Pb	03 39 28.4	+0.6
SART			*i* S		Sg	03 39 56.5	-0.5
KLYT	Kilyos	2.15 0	*e*PN		Pn	03 39 26.1	+1.0
KLYT	Kilyos	2.15 0	*e*Pn		Pn	03 39 26.1	+1.0
PRK	Paraskevi	2.15 275	P		Pn	03 39 25.3	+0.1
PRK			S		Sn	03 39 53.3	+1.0
PRK	Paraskevi	2.15 275	P		Pn	03 39 25.3	+0.1
PRK			S		Sn	03 39 53.3	+1.0
MDUB	Mudurnu	2.15 50	*e*PN		Pn	03 39 26.2	+0.9
MDUB	Mudurnu	2.15 50	*e*Pn		Pn	03 39 26.2	+0.9
ZEY	˜zmir	2.16 247	*i* P		Pg	03 39 29.2	-0.7
ZEY			*i* S		Sg	03 39 59.3	+1.3
CTKS	Kestanelik-??a	2.17 349	*e*PN		Pn	03 39 26.1	+0.7
CTKS	Kestanelik-??a	2.17 349	*e*Pn		Pn	03 39 26.1	+0.7
KAND	Kocaeli-Kandir	2.18 24	*i* P		Pg	03 39 30.2	0.0
KAND			*i* S		Sg	03 39 58.2	-0.3
TKR	Tekirdag	2.21 329	*e*PN		Pn	03 39 25.9	0.0
TKR	Tekirdag	2.21 329	*e*Pn		Pn	03 39 25.9	0.0
SMG	Samos	2.22 232	P		Pn	03 39 25.9	-0.2
SMG			S		Sn	03 39 54.3	+0.3
SMG	Samos	2.22 232	P		Pn	03 39 25.9	-0.2
SMG			S		Sn	03 39 54.3	+0.3
KIZT	Kizilcal	2.23 95	*e*PN		Pn	03 39 26.7	+0.4
KIZT	Kizilcal	2.23 95	*e*Pn		Pn	03 39 26.7	+0.4
SAHE	Sakarya_HENDEK	2.24 38	P		Pn	03 39 25.9	-0.5
SAHE	Sakarya_HENDEK	2.24 38	*i* P		Pn	03 39 25.9	-0.5
CRLT	Corlu	2.25 334	*e*PN		Pn	03 39 27.2	+0.6
CRLT	Corlu	2.25 334	*e*Pn		Pn	03 39 27.2	+0.6
BDRM	Kayabasi	2.39 212	P		Pn	03 39 27.6	-0.9
BDRM	Kayabasi	2.39 212	*i* P		Pn	03 39 27.6	-0.9
CTYL	Yalikoy Yolu	2.44 347	*e*PN		Pn	03 39 30.0	+0.9
CTYL	Yalikoy Yolu	2.44 347	*e*Pn		Pn	03 39 30.0	+0.9
CHOS	Chios island	2.44 254	P		Pn	03 39 28.4	-0.8
CHOS			S		Sn	03 40 00.7	+1.2
CHOS	Chios island	2.44 254	P		Pn	03 39 28.4	-0.8
CHOS			S		Sn	03 40 00.7	+1.2
FETY	Fethiye	2.46 179	P		Pn	03 39 29.1	-0.4
FETY	Fethiye	2.46 179	P		Pn	03 39 29.1	-0.4
SIGR	SIGRI	2.47 273	P		Pn	03 39 29.8	+0.2
SIGR			S		Sn	03 40 01.5	+1.3
SIGR	SIGRI	2.47 273	P		Pn	03 39 29.8	+0.2
SIGR			S		Sn	03 40 01.5	+1.3
KESN	Edirne-Kesan	2.50 314	*i* P		Pg	03 39 36.0	-0.4
KESN			*i* S		Sg	03 40 07.3	-1.5
ALN	Alexandroupoli	2.91 309	P		Pn	03 39 35.2	-0.4
ALN			S		Sn	03 40 11.3	+0.3
ALN	Alexandroupoli	2.91 309	P		Pn	03 39 35.2	-0.4
ALN			S		Sn	03 40 11.3	+0.3
KSL	Kastellorizon	2.98 171	P		Pn	03 39 36.7	+0.1
SMTH	Samothraki Isl	3.02 298	P		Pn	03 39 36.9	-0.3
SMTH			S		Sn	03 40 15.2	+1.3
SMTH	Samothraki Isl	3.02 298	P		Pn	03 39 36.9	-0.3
SMTH			S		Sn	03 40 15.2	+1.3
EDRB	Edirne	3.25 328	P		Pn	03 39 39.3	-1.0
EDRB			S		Sn	03 40 19.9	+0.5
EDRB	Edirne	3.25 328	P		Pn	03 39 39.3	-1.0
EDRB			S		Sn	03 40 19.9	+0.5

*ISCJB **21** 03:39:41.8±0.5, 39.°11N±0.°03×29.°02E±0.°03, h8km±5km, Error ellipse: s-maj=5.2km s-min=4.2km az=143.7*
*ISK **21** 03:39:41.4, 39.°08N×29.°01E, h14km, MD2.7*
*CSEM **21** 03:39:42.0±0.1, 39.°11N×29.°03E, h10km, ML3.0, Error ellipse: s-maj=3.4km s-min=2.7km az=111.0*
*DDA **21** 03:39:42.4, 39.°08N×29.°01E, h7km, Ml3.0*
ISC 21 03:39:41.6±0.9, 39.°09N±0.°02×29.°04E±0.°03, h12km±8km, n38, σ0.°33/50, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.26	259	P	Pg	03 39 47.3	+0.2
DEMI				S	Sg	03 39 50.1	-0.6
DEMI	Demirci	0.26	259	*i* P	Pg	03 39 47.3	+0.2
DEMI				*i* S	Sg	03 39 50.1	-0.6
GDZ	Gediz	0.34	90	P	Pb	03 39 49.7	0.0
GDZ				S	Sb	03 39 54.9	-0.3
GDZ	Gediz	0.34	90	*i* P	Pb	03 39 49.7	0.0
GDZ				*i* S	Sb	03 39 54.9	-0.3
TVSB	Tavsanli	0.48	42	*e*PG	Pg	03 39 51.8	+0.6
TVSB	Tavsanli	0.48	42	*e*Pg	Pg	03 39 51.8	+0.6
KULA	Kula-Manisa	0.65	207	*e*PG	Pg	03 39 54.3	0.0
KULA				*e*SG	Sg	03 40 03.1	+0.3
KULA	Kula-Manisa	0.65	207	*e*Pg	Pg	03 39 54.3	0.0
KULA				*e*Sg	Sg	03 40 03.1	+0.3
MANT	Manisa	0.71	212	P	Pb	03 39 56.1	+0.1
MANT				S	Sg	03 40 04.5	-0.3
MANT	Manisa	0.71	212	*i* P	Pb	03 39 56.1	+0.1
MANT				*i* S	Sg	03 40 04.5	-0.3
KHAL	Karahalli	0.80	154	P	Pn	03 39 59.0	+0.2
KHAL	Karahalli	0.80	154	*i* P	Pn	03 39 59.0	+0.2
KHL	Karahalli	0.85	154	*e*PG	Pb	03 39 58.6	+0.2
KHL	Karahalli	0.85	154	*e*Pg	Pb	03 39 58.6	+0.2
ORLT	Orhaneli	0.96	353	*e*PG	Pb	03 40 00.2	0.0
ORLT	Orhaneli	0.96	353	*e*Pg	Pb	03 40 00.2	0.0
AKHS	Akhisar	0.98	258	P	Pn	03 40 01.8	+0.6
AKHS				S	Sn	03 40 14.6	-0.4
AKHS	Akhisar	0.98	258	*i* P	Pn	03 40 01.8	+0.6
AKHS				*i* S	Sn	03 40 14.6	-0.4
BALB	Balikesir	1.05	302	*e*PG	Pg	03 40 02.3	+0.4
BALB				*e*SG	Sn	03 40 16.5	-0.3
BALB	Balikesir	1.05	302	*e*Pg	Pg	03 40 02.3	+0.4
BALB				*e*Sg	Sn	03 40 16.5	-0.3
CAVI	Cavuskoy	1.27	29	*e*PN	Pg	03 40 06.3	+0.2
CAVI	Cavuskoy	1.27	29	*e*Pn	Pg	03 40 06.3	+0.2
MDNY	Mudanya-Bursa	1.28	355	*e*PN	Pb	03 40 05.8	+0.1
MDNY	Mudanya-Bursa	1.28	355	*e*Pn	Pb	03 40 05.8	+0.1
KCTX	Karacabey (Bur	1.29	336	*e*PN	Pn	03 40 05.3	-0.1
KCTX	Karacabey (Bur	1.29	336	*e*Pn	Pn	03 40 05.3	-0.1
IZI	Iznik	1.29	15	*e*PN	Pb	03 40 06.1	+0.2
IZI	Iznik	1.29	15	*e*Pn	Pb	03 40 06.1	+0.2
GEMT	Gemlik	1.35	5	*e*PN	Pn	03 40 06.1	-0.2
GEMT	Gemlik	1.35	5	*e*Pn	Pn	03 40 06.1	-0.2
ADVT	Abdulvahap	1.44	22	*e*PN	Pn	03 40 07.9	+0.4
ADVT	Abdulvahap	1.44	22	*e*Pn	Pn	03 40 07.9	+0.4
ARMT	Armutlu	1.48	355	*e*PN	Pn	03 40 07.9	-0.2
ARMT	Armutlu	1.48	355	*e*Pn	Pn	03 40 07.9	-0.2
GPA	Golpazari	1.55	39	*e*PN	Pn	03 40 08.7	-0.3
GPA	Golpazari	1.55	39	*e*Pn	Pn	03 40 08.7	-0.3
EDC	Edincik	1.55	324	*e*PN	Pn	03 40 09.5	+0.5
EDC	Edincik	1.55	324	*e*Pn	Pn	03 40 09.5	+0.5

*NIED **21** 03:40:00, 37.°10N×141.°20E, h47km, Mw4.1 Best double couple: M0=1.82000×10^15 NP1:φ=232.00000°, δ=16.00000°, λ=107.00000°. NP2:φ=34.00000°, δ=75.00000°, λ=85.00000°.*
*ISCJB **21** 03:40:43.8±0.6, 37.°06N±0.°03×141.°30E±0.°07, h51km±4km, mb4.0/28, MS2.9/1, Error ellipse: s-maj=9.2km s-min=5.2km az=5.1*
*NEIC **21** 03:40:45.0±0.6, 37.°12N×141.°22E, h41km±5km, mb4.2/5, Error ellipse: s-maj=7.4km s-min=5.5km az=112.0*
NEIC Recorded [3 JMA] in Fukushima.
*JMA **21** 03:40:45.7±0.1, 37.°09N×141.°16E, h51km±1km, M4.0*
JMA Felt III J1.
*IDC **21** 03:40:47.0±2.2, 37.°13N×141.°08E, h56km±19km, mb3.7/23, mb1 3.8/26, mb1mx3.7/60, mbtmp4.0/26, ML3.8/3, MS3.0/1, Ms1 3.0/1, ms1mx2.4/45, Error ellipse: s-maj=17.3km s-min=14.4km az=100.0*
ISC 21 03:40:45.0±1.0, 37.°08N±0.°04×141.°26E±0.°07, h43km±8km, n60, σ0.°79/59, mb4.0/28, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.37	274	P	Pn	03 40 54.7	+0.4
ONAJ				S	Sn	03 41 01.0	+0.2
JFK	Kawauchi	0.42	314	P	Pn	03 40 55.2	+0.3
JFK				S	Sn	03 41 01.8	-0.1
JHO	Hitachi	0.72	230	P	Pn	03 40 58.7	-0.1
JHO				S	Sn	03 41 07.8	-1.0
JFT	Otama	0.85	301	P	Pn	03 41 01.3	+0.7
JFT				S	Sn	03 41 12.3	+0.3
JMM	Marumori	0.87	335	P	Pn	03 41 00.9	+0.1
JMM				S	Sn	03 41 12.2	-0.1
JFY	Yanaizu	1.28	285	P	Pn	03 41 06.5	0.0
JFY				*e*S	Sn	03 41 21.6	-0.8
JOU	Okura	1.37	340	P	Pn	03 41 08.2	+0.5
JOU				S	Sn	03 41 25.0	+0.4
MJAR	Matsushiro Arr	2.50	259	P	Pn	03 41 24.0	+0.7
	5.4nm,0.3s,baz=101,slow=32,SNR=35						
MAJO	Matsushiro	2.50	259	*e*Pn	Pn	03 41 24.1	+0.8
MAT	Matsushiro	2.50	259	P	Pn	03 41 24.3	+1.0
MAT				S	Sn	03 41 55.6	+3.0
JHJ	Hachijo jima 2	4.13	197	P	Pn	03 41 46.6	+1.1
	24nm,0.3s,baz=327,slow=22,SNR=8.7						
JHJ				S	Sn	03 42 32.2	-0.4
	34nm,0.3s,baz=294,slow=21,SNR=8.0						
JHJ2	Mitsune	4.13	197	*e*Pn	Pn	03 41 45.5	0.0
ERM	Erimo	5.14	16	*e*Pn	Pn	03 41 57.5	-1.9
ASAJ	Asahikawa	7.10	8	P	Pn	03 42 27.1	+0.7
	2.4nm,0.3s,baz=242,slow=7.3,SNR=18						
ASAJ	Asahikawa	7.10	8	*e*Pn	Pn	03 42 26.1	-0.2
	7.5nm,0.9s						
JNU	Nakatsue	9.37	248	*e*Pn	Pn	03 42 56.5	-1.0
CBIJ	Chichi jima	9.98	175	*e*Pn	Pn	03 43 06.2	+0.3
USRK	Ussuriysk Ar.	10.00	318	P	Pn	03 43 10.9	+4.8
	0.3nm,0.3s,baz=132,slow=12,SNR=18						
KSRS	Korea Array	10.63	276	P	Pn	03 43 19.8	+5.0
	0.2nm,0.3s,baz=91,slow=13,SNR=16						
KSAR	Wonju Array Be	10.66	276	P	Pn	03 43 19.8	+4.6
MA2	Magadan	23.34	12	LR	LR	03 54 20.0	
	comp=Z,41nm,21.8s,baz=155,slow=35						
SEY	Seymchan	26.77	11	P		03 46 21.4	+0.9
	1.4nm,0.5s,baz=174,slow=9.9,SNR=7.3						
ULN	Ulaanbaatar	27.22	304	*e*P	P	03 46 24.7	-0.2
	2.3nm,0.6s						
SONM	Songino Array	27.66	304	P	P	03 46 27.9	-0.9
	1.6nm,0.6s,baz=91,slow=9.1,SNR=5.6						
H11N2	WAKE ISLAND Hy 28.28	121		T	T	04 16 49.2	
	baz=314,slow=75,SNR=97						
H11N1	WAKE ISLAND Hy 28.29	121		T	T	04 16 49.8	
	baz=314,slow=75,SNR=133						
H11N3	WAKE ISLAND Hy 28.30	121		T	T	04 16 50.6	
	baz=314,slow=75,SNR=86						
H11S1	WAKE ISLAND Hy 28.99	123		T	T	04 17 33.1	
	baz=315,slow=76,SNR=83						
H11S3	WAKE ISLAND Hy 28.99	123		T	T	04 17 27.2	
	baz=315,slow=76,SNR=78						
H11S2	WAKE ISLAND Hy 29.01	123		T	T	04 17 33.6	
	baz=315,slow=76,SNR=47						
CMAR	Chiang Mai Arr	41.38	255	P	P	03 48 26.9	-0.3
	0.5nm,0.4s,baz=276,slow=34,SNR=2.7						
ZALV	Zalesovo Beam	41.79	312	P	P	03 48 29.8	-0.3
	4.3nm,0.6s,baz=89,slow=6.9,SNR=16						
MKAR	Makanchi Array	43.99	302	P	P	03 48 47.9	-0.1
	1.7nm,0.7s,baz=87,slow=9.7,SNR=15						
KURK	Kurchatov	45.80	308	P	P	03 49 02.5	+0.2
KURBB	Kurchatov Arra	45.87	308	P	P	03 49 02.5	-0.4
	2.4nm,0.5s,baz=85,slow=8.2,SNR=24						
TKM2	Tokmak 2	49.50	298	*e*P	P	03 49 31.9	+0.5
	1.9nm,0.7s						
ILAR	Eielson Array	49.52	32	P	P	03 49 32.3	+1.3
	0.9nm,0.7s,baz=269,slow=6.1,SNR=10						
BVAR	Borovoye Array	50.45	312	P	P	03 49 37.8	-0.4
	1.1nm,0.5s,baz=71,slow=11,SNR=7.5						
BRVK	Borovoye	50.50	312	*e*P	P	03 49 38.2	-0.4
	2.5nm,0.8s						
ARU	Arti	56.24	318	P	P	03 50 19.8	-0.9
	3.4nm,0.4s,baz=54,slow=1.6,SNR=9.2						
ARU	Arti	56.24	318	*e*P	P	03 50 20.4	-0.2
	6.3nm,0.8s						
WRA	Warramunga Arr	57.09	188	P	P	03 50 27.9	+0.9
	0.4nm,0.6s,baz=3.9,slow=7.3,SNR=5.0						
ABKAR	Akbulak array	57.81	310	*e*P	P	03 50 31.3	-0.6
	2.3nm,0.5s						
AKTO	Aktyubinsk	58.55	312	P	P	03 50 35.8	-1.2
	1.7nm,0.7s,baz=77,slow=13,SNR=5.8						
ASAR	Alice Springs	60.81	188	P	P	03 50 53.5	+0.6
	0.3nm,0.8s,baz=9.2,slow=7.5,SNR=2.5						
GEYT	Alibeck	63.70	299	P	P	03 51 11.8	-0.4
	1.3nm,0.4s,baz=28,slow=6.7,SNR=3.5						
YKA	Yellowknife Ar	63.83	30	P	P	03 51 13.5	+0.9
	0.3nm,0.7s,baz=304,slow=6.7,SNR=6.3						
ARCES	ARCESS Array B	63.91	339	P	P	03 51 12.4	-0.6
	1.3nm,0.8s,baz=51,slow=7.9,SNR=7.1						
FINES	FINESS Array B	68.72	332	P	P	03 51 43.0	-0.8
	1.8nm,0.7s,baz=104,slow=6.3,SNR=6.9						
KBZ	Khabaz	70.78	311	P	P	03 51 57.1	+0.3
	2.0nm,0.8s,baz=84,slow=5.0,SNR=4.5						
FFC	Flin Flon	73.74	33	*e*P	P	03 52 14.5	+0.2
	1.7nm,0.8s						
NB2	NORSAR Subarra	74.10	337	P	P	03 52 16.2	-0.2
	comp=Z,2.0nm,0.9s,baz=40,slow=6.2						
NOA	NORSAR Array B	74.10	337	P	P	03 52 15.7	-0.7
	comp=Z,1.1nm,0.7s,baz=43,slow=5.5,SNR=4.9						
AKASG	Malin Array Be	74.18	322	P	P	03 52 16.4	-0.6
	comp=Z,0.5nm,0.3s,baz=47,slow=4.9,SNR=4.7						
BRTR	Keskin Array B	78.73	311	P	P	03 52 42.5	-0.6
	comp=Z,0.8nm,0.9s,baz=129,slow=4.9,SNR=4.9						
MMAI	Mount Meron Ar	81.84	305	P	P	03 53 00.6	+0.7
	comp=Z,1.5nm,0.7s,baz=56,slow=11,SNR=2.7						
GERES	GERESS Array B	82.61	328	P	P	03 53 03.4	-0.2
	comp=Z,0.3nm,0.4s,baz=32,slow=8.1,SNR=3.7						
TXAR	Lajitas Array	90.19	52	P	P	03 53 41.9	+0.7
	comp=Z,0.2nm,0.6s,baz=299,slow=2.6,SNR=3.9						
TORD	Torodi Ar. Bea	117.21

BSO1			S	Sb	03 47 13.9	+2.2
JCN	**Nagara**	**0.99 263**	P	Pn	03 46 59.4	-1.0
BSO4	**Boso 4**	**1.03 238**	P	Pn	03 47 00.0	-0.9
BSO3	**Boso 3**	**1.04 225**	⇓P	Pn	03 47 00.5	-0.4
BSO3			X		03 47 13.4	
JYT	**Yasato**	**1.19 305**	P	Pn	03 47 01.8	-1.4
JYT			S	Sn	03 47 14.4	-4.2
JIM2	**Oshima 3**	**1.81 243**	P	Pn	03 47 11.0	-0.8
JHJ2	**Mitsune**	**2.76 209**	*e*Pn	Pb	03 47 28.8	-2.0
JHJ	**Hachijo jima 2**	**2.77 209**	Pn	Pn	03 47 25.2	+0.3
	9.0nm,0.3s,baz=61,slow=19,SNR=3.5					
JHJ			Sn	Sn	03 47 57.1	-0.4
	63nm,0.3s,baz=38,slow=23,SNR=9.6					
MJAR	**Matsushiro Arr**	**2.77 292**	Pn	Pn	03 47 25.0	0.0
	9.9nm,0.3s,baz=96,slow=8.2,SNR=68					
MAJO	**Matsushiro**	**2.77 292**	*e*Pn	Pn	03 47 24.8	-0.2
MAT	**Matsushiro**	**2.77 292**	P	Pn	03 47 25.3	+0.3
MAT			*e*S	Sn	03 48 00.5	+2.8
ERM	**Erimo**	**6.60 11**	*e*Pn	Pn	03 48 19.2	+1.6
CBIJ	**Chichi jima**	**8.45 175**	*e*Pn	Pn	03 48 44.1	+1.0
CBIJ			Sn	Sn	03 50 12.8	-4.8
JCJ	**Chichijima**	**8.45 175**	Pn	Pn	03 48 43.1	+0.1
	6.1nm,0.3s,baz=266,slow=21,SNR=4.7					
JCJ			Sn	Sn	03 50 12.8	-4.8
	3.1nm,0.3s,baz=270,slow=20,SNR=3.0					
ASAJ	**Asahikawa**	**8.61 6**	Pn	Pn	03 48 45.5	+0.4
	0.6nm,0.3s,baz=174,slow=9.2,SNR=4.9					
ASAJ			Sn	Sn	03 50 20.4	-1.0
	0.2nm,0.3s,baz=336,slow=20,SNR=2.1					
JNU	**Nakatsue**	**9.03 257**	LR	LR	03 52 34.7	
	comp=Z,250nm,20.2s,baz=121,slow=39					
JNU	**Nakatsue**	**9.03 257**	*e*Pn	Pn	03 48 52.2	+1.2
KSRS	**Korea Array**	**11.01 284**	Pn	Pn	03 49 20.4	+2.3
	0.2nm,0.3s,baz=236,slow=40,SNR=3.9					
KSAR	**Wonju Array Be**	**11.04 284**	Pn	Pn	03 49 20.4	+1.9
KLR	**Kul'dur**	**15.40 336**	LR	LR	03 56 03.5	
	comp=Z,92nm,20.1s,baz=100,slow=37					
H11N2	**WAKE ISLAND Hy 27.43 118**		T	T	04 21 34.7	
	baz=310,slow=75,SNR=21					
H11N1	**WAKE ISLAND Hy 27.43 118**		T	T	04 21 31.5	
	baz=310,slow=75,SNR=24					
H11N3	**WAKE ISLAND Hy 27.44 118**		T	T	04 21 39.6	
	baz=310,slow=75,SNR=25					
H11S1	**WAKE ISLAND Hy 28.09 121**		T	T	04 22 22.2	
	baz=312,slow=75,SNR=50					
H11S3	**WAKE ISLAND Hy 28.09 121**		T	T	04 22 18.6	
	baz=312,slow=75,SNR=52					
H11S2	**WAKE ISLAND Hy 28.10 121**		T	T	04 22 21.5	
	baz=312,slow=75,SNR=56					
SONM	**Songino Array**	**28.63 306**	P	P	03 52 36.4	-0.3
	0.8nm,0.7s,baz=259,slow=15,SNR=3.7					
ZALV	**Zalesovo Beam**	**42.92 314**	P	P	03 54 37.7	-0.9
	1.3nm,0.5s,baz=87,slow=6.2,SNR=6.2					
MKAR	**Makanchi Array**	**44.91 300**	P	P	03 54 54.1	-0.7
	0.6nm,0.4s,baz=86,slow=10,SNR=8.5					
MKAR			LR	LR	04 13 32.4	
	comp=Z,56nm,21.1s,baz=66,slow=36					
MCK	**McKinley**	**49.88 33**	*e*P	P	03 55 32.2	-0.9
TKM2	**Tokmak 2**	**50.34 299**	*e*P	P	03 55 36.9	-0.3
	1.6nm,0.5s					
EKS2	**Erkin-Say**	**51.70 300**	*e*P	P	03 55 48.0	+0.7
	0.9nm,0.7s					
WRA	**Warramunga Arr**	**55.59 188**	P	P	03 56 16.7	+0.9
	0.6nm,0.5s,baz=5.0,slow=8.0,SNR=12					
ARU	**Arti**	**57.47 319**	P	P	03 56 28.9	+0.1
	1.4nm,0.4s,baz=25,slow=3.5,SNR=3.6					
ARU	**Arti**	**57.47 319**	*e*P	P	03 56 29.2	+0.4
	2.1nm,0.6s					
ABKAR	**Akbulak array**	**58.89 311**	*e*P	P	03 56 38.8	-0.1
ASAR	**Alice Springs**	**59.32 188**	P	P	03 56 43.6	+1.6
	0.2nm,0.5s,baz=18,slow=12,SNR=3.5					
RES	**Resolute Bay**	**64.04 14**	*e*P	P	03 57 12.8	-0.4
	6.6nm,0.8s					
YKA	**Yellowknife Ar**	**65.10 30**	P	P	03 57 20.5	+0.2
	0.1nm,0.6s,baz=307,slow=7.2,SNR=3.3					
FINES	**FINESS Array B**	**70.12 332**	P	P	03 57 52.2	+0.2
	1.1nm,0.7s,baz=35,slow=7.0,SNR=7.0					
KBZ	**Khabaz**	**71.86 311**	P	P	03 58 04.0	+1.1
	2.0nm,0.9s,baz=117,slow=6.2,SNR=4.0					
HFS	**Hagfors**	**75.44 336**	P	P	03 58 25.6	+2.0
	0.9nm,0.7s,baz=104,slow=6.1,SNR=3.5					
NOA	**NORSAR Array B**	**75.55 337**	P	P	03 58 24.8	+0.5
	1.2nm,0.8s,baz=41,slow=5.7,SNR=3.3					
BRTR	**Keskin Array B**	**79.83 312**	P	P	03 58 49.8	+1.1
	0.8nm,0.9s,baz=344,slow=4.0,SNR=5.0					
BRTR			LR	LR	04 36 35.4	
	comp=Z,18nm,18.7s,baz=86,slow=38					

*ISCJB **21** 03:48:00.6±0.3,51°.47N±0°.02×16°.22E±0°.02,h0km, mb3.2/1,Error ellipse: s-maj=2.4km s-min=2.0km az=29.9*
*CSEM **21** 03:48:02.6±0.1,51°.46N×16°.18E,h2km,ML3.5/8,Error ellipse: s-maj=2.7km s-min=2.4km az=43.0*
*IDC **21** 03:48:03.5±0.6,51°.48N×16°.06E,h0km,mb3.1/1, mb1 3.3/9,mb1mx3.1/48,mbtmp3.1/9,ML2.8/8,Error ellipse: s-maj=12.3km s-min=6.1km az=104.0*
*WAR **21** 03:48:03.9,51°.44N×16°.19E,h1km,Mw3.0*
*PRU **21** 03:48:04.4,51°.41N×16°.11E,h0km*
*BGR **21** 03:48:04.3±0.6,51°.41N×16°.20E,h1km,ML3.2/9,Error ellipse: s-maj=6.7km s-min=5.6km az=103.0*
*VIE **21** 03:48:05.6±0.9,51°.26N×16°.35E,h0km,mb2.4/4,ML3.0/4, Error ellipse: s-maj=10.8km s-min=6.5km az=95.0, Suspected Mining induced.*
*UPP **21** 03:48:06.6±3.3,51°.68N×15°.66E,h0km,ML2.0,Suspected explosion*

ISC 21 03:48:01.8±0.6,**51°.47N**±0°.02×**16°.18E**±0°.02,**h0**km,**n91**, σ**1°75**/152,**1D, Poland**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.63**	**173**	*i* Pg	**Pb**	**03 48 15.1**	**-0.6**
KSP				*e*Sg	**Sg**	**03 48 23.3**	**+1.3**
KSP				*e*		03 48 26.6	
KSP	**Ksiaz**	**0.63**	**173**	⇓*i*Pg	**Pb**	**03 48 15.1**	**-0.6**
KSP				*e*Sg	**Sg**	**03 48 23.3**	**+1.3**
UPC	**Upice**	**0.97**	**186**	*e*PG	**Pb**	**03 48 21.3**	**-0.1**
UPC				*e*SG	**Sg**	**03 48 33.8**	**+1.0**
UPC	**Upice**	**0.97**	**186**	Pg	**Pb**	**03 48 21.3**	**-0.1**
UPC				Sg	**Sg**	**03 48 33.8**	**+1.0**
DPC	**Dobruska-Polom**	**1.12**	**175**	*e*PG	**Pg**	**03 48 23.9**	**+0.6**
DPC				*e*SG	**Sg**	**03 48 38.7**	**+0.9**
	comp=Z,73nm,0.9s						
DPC	**Dobruska-Polom**	**1.12**	**175**	Pg	**Pg**	**03 48 23.9**	**+0.6**
DPC				Sg	**Sg**	**03 48 38.7**	**+0.9**
	73nm,0.9s						
PVCC	**Panska Ves**	**1.39**	**228**	*e*PG	**Pb**	**03 48 29.3**	**+0.8**
PVCC				*e*SG	**Sn**	**03 48 48.4**	**+1.1**
	comp=Z,195nm,0.5s						
PVCC	**Panska Ves**	**1.39**	**228**	Pg	**Pb**	**03 48 29.3**	**+0.8**
PVCC				Sg	**Sn**	**03 48 48.4**	**+1.1**
	195nm,0.5s						
KRLC	**Kraliky**	**1.45**	**164**	*e*PG	**Pn**	**03 48 29.6**	**+0.4**
KRLC				*e*SG	**Sg**	**03 48 48.3**	**+0.1**
KRLC	**Kraliky**	**1.45**	**164**	Pg	**Pn**	**03 48 29.6**	**+0.4**
KRLC				Sg	**Sg**	**03 48 48.3**	**+0.1**
BRG	**Berggiesshubel**	**1.53**	**248**	PN	**Pn**	**03 48 30.8**	**+0.5**
BRG				PG	**Pg**	**03 48 32.6**	**+1.5**
BRG				SG	**Sn**	**03 48 52.6**	**+1.7**
	75nm,0.5s						
GOPC	**GO Pecny, Ondr**	**1.79**	**210**	*e*PN	**Pb**	**03 48 35.2**	**-0.2**
GOPC				*e*PG	**Pg**	**03 48 36.3**	**+0.2**
GOPC				*e*SG	**Sg**	**03 48 59.6**	**+0.4**
	comp=Z,68nm,0.8s						
GOPC	**GO Pecny, Ondr**	**1.79**	**210**	Pn	**Pb**	**03 48 35.2**	**-0.2**
RUE	**Ruedersdorf**	**1.79**	**305**	Pn	**Pn**	**03 48 34.6**	**+0.6**
	SNR=1.6						
RUE				Sg	**Sg**	**03 49 02.4**	**+3.0**
	SNR=4.5						
RUE	**Ruedersdorf**	**1.79**	**305**	*e*Pn	**Pn**	**03 48 34.6**	**+0.6**
	SNR=1.6						
RUE				*e*Sg	**Sg**	**03 49 02.4**	**+3.0**
	SNR=4.5						
PRU	**Pruhonice**	**1.81**	**216**	*e*PN	**Pn**	**03 48 34.4**	**+0.2**
PRU				*e*PG	**Pg**	**03 48 36.5**	**+0.1**
PRU				*e*SG	**Sg**	**03 49 00.1**	**+0.2**
	comp=Z,91nm,0.7s						
PRU	**Pruhonice**	**1.81**	**216**	Pn	**Pn**	**03 48 34.4**	**+0.2**
FBE	**Freiberg**	**1.86**	**254**	Pg	**Pg**	**03 48 38.6**	**+1.2**
	SNR=4.8						
FBE				Sg	**Sg**	**03 49 02.9**	**+1.4**
	SNR=5.7						
FBE	**Freiberg**	**1.86**	**254**	*e*Pg	**Pg**	**03 48 38.6**	**+1.2**
	SNR=4.8						
FBE				*e*Sg	**Sg**	**03 49 02.9**	**+1.4**
	SNR=5.7						
CLL	**Collm**	**2.00**	**267**	*e*Pn	**Pn**	**03 48 37.0**	**+0.3**
CLL				*e*Pg	**Pg**	**03 48 41.0**	**+1.0**
CLL				*i* Sg	**Sg**	**03 49 07.9**	**+2.1**
	comp=Z,38nm,0.9s						
CLL	**Collm**	**2.00**	**267**	Pn	**Pn**	**03 48 37.3**	**+0.6**
	SNR=2.6						
CLL	**Collm**	**2.00**	**267**	*e*Pn	**Pn**	**03 48 37.3**	**+0.6**
	SNR=2.6						
OKC	**Ostrava-Krasne**	**2.06**	**142**	*e*PG	**Pg**	**03 48 41.0**	**-0.2**
OKC				*e*SG	**Sb**	**03 49 06.7**	**+0.6**
	comp=Z,59nm,0.8s						
OKC	**Ostrava-Krasne**	**2.06**	**142**	Pg	**Pg**	**03 48 41.0**	**-0.2**
OKC				Sg	**Sb**	**03 49 06.7**	**+0.6**
	comp=Z,59nm,0.8s						
VRAC	**Vranov**	**2.18**	**173**	Pn	**Pn**	**03 48 40.4**	**+1.1**
	comp=Z,2.6nm,0.3s,baz=344,slow=16,SNR=10						
VRAC				Lg	Lg	03 49 11.2	
	comp=Z,4.6nm,0.3s,baz=257,slow=19,SNR=10						
TREC	**Trest**	**2.22**	**192**	*e*PN	**Pn**	**03 48 41.4**	**+1.5**
TREC				*e*PG	**Pg**	**03 48 44.2**	**-0.1**
TREC	**Trest**	**2.22**	**192**	Pn	**Pn**	**03 48 41.4**	**+1.5**
OJC	**Ojcow**	**2.61**	**117**	*e*Pn	**Pn**	**03 48 44.5**	**-0.7**
OJC				*e*Pg	**Pg**	**03 48 52.5**	**+0.7**
OJC				*e*Sg	**Sg**	**03 49 27.6**	**+1.9**
OJC	**Ojcow**	**2.61**	**117**	*e*Pn	**Pn**	**03 48 44.5**	**-0.7**
OJC	**Ojcow**	**2.61**	**117**	*e*Pn	**Pn**	**03 48 44.5**	**-0.7**
OJC				*e*Pg	**Pg**	**03 48 52.5**	**+0.7**
OJC				*e*Sg	**Sg**	**03 49 27.6**	**+1.9**
WERD	**Werda**	**2.65**	**249**	Pn	**Pn**	**03 48 46.9**	**+1.1**
	SNR=2.9						
WERD	**Werda**	**2.65**	**249**	*e*Pn	**Pn**	**03 48 46.9**	**+1.1**
	SNR=2.9						
NKC	**Novy Kostel**	**2.67**	**244**	*e*PN	**Pn**	**03 48 47.2**	**+1.2**
NKC				*e*PG	**Pg**	**03 48 53.1**	**+0.2**
NKC				*e*SG	**Sg**	**03 49 28.0**	**+0.6**
	comp=Z,49nm,0.5s						
NKC	**Novy Kostel**	**2.67**	**244**	Pn	**Pn**	**03 48 47.2**	**+1.2**
WERN	**Wernitzgruen**	**2.68**	**245**	Pn	**Pn**	**03 48 48.1**	**+1.9**
	SNR=5.0						
WERN				Sg	**Sg**	**03 49 29.5**	**+1.6**
	SNR=5.1						
WERN	**Wernitzgruen**	**2.68**	**245**	*e*Pn	**Pn**	**03 48 48.1**	**+1.9**
	SNR=5.0						
WERN				*e*Sg	**Sg**	**03 49 29.5**	**+1.6**
	SNR=5.1						
NEUB	**Neuenburg**	**2.77**	**266**	Sg	**Sg**	**03 49 33.5**	**+2.7**
	SNR=5.1						
NEUB	**Neuenburg**	**2.77**	**266**	*e*Sg	**Sg**	**03 49 33.5**	**+2.7**
	SNR=5.1						
KHC	**Kasperske Hory**	**2.87**	**216**	*e*PN	**Pn**	**03 48 49.7**	**+0.9**
KHC				*e*PG	**Pg**	**03 48 56.1**	**-0.7**
KHC				*e*SN	**Sn**	**03 49 23.0**	**-1.1**
KHC				*e*SG	**Sg**	**03 49 32.5**	**-1.5**
	comp=Z,25nm,0.7s						
KHC	**Kasperske Hory**	**2.87**	**216**	Pn	**Pn**	**03 48 49.7**	**+0.9**
MANZ	**Manzenberg**	**2.98**	**242**	Pn	**Pn**	**03 48 51.7**	**+1.4**
	SNR=3.6						
MANZ				Sg	**Sg**	**03 49 38.4**	**+0.9**
	SNR=3.3						
MANZ	**Manzenberg**	**2.98**	**242**	*e*Pn	**Pn**	**03 48 51.7**	**+1.4**
	SNR=3.6						
MANZ				*e*Sg	**Sg**	**03 49 38.4**	**+0.9**
	SNR=3.3						
MOX	**Moxa**	**2.99**	**256**	Pn	**Pn**	**03 48 51.7**	**+1.2**
	SNR=2.6						
MOX	**Moxa**	**2.99**	**256**	*e*Pn	**Pn**	**03 48 51.7**	**+1.2**
	SNR=2.6						
MOX				*e*Sg	**Sg**	**03 49 39.9**	**+2.0**
	SNR=3.7						
SMOL	**Smolenice**	**3.07**	**164**	*e*Pg	**Pg**	**03 49 01.9**	**+1.4**
SMOL				*e*Sg	**Sg**	**03 49 40.5**	**+0.3**
SMOL	**Smolenice**	**3.07**	**164**	*e*PG	**Pg**	**03 49 01.9**	**+1.4**
SMOL				*e*SG	**Sg**	**03 49 40.5**	**+0.3**
GEC2	**GERESS Array S**	**3.07**	**212**	Pn	**Pn**	**03 48 53.4**	**+1.8**
	SNR=2.7						
GEC2				Sg	**Sg**	**03 49 38.9**	**-1.5**
	SNR=3.7						
GEC2	**GERESS Array S**	**3.07**	**212**	*e*Pn	**Pn**	**03 48 53.4**	**+1.8**
	SNR=2.7						
GEC2				*e*Sg	**Sg**	**03 49 38.9**	**-1.5**
	SNR=3.7						
GERES	**GERESS Array B**	**3.07**	**212**	Pn	**Pn**	**03 48 53.4**	**+1.8**
	comp=Z,0.4nm,0.3s,baz=32,slow=13,SNR=13						
GERES				Pg	**Pb**	**03 48 59.2**	**+1.9**
	comp=Z,3.4nm,0.3s,baz=31,slow=16,SNR=49						
GERES				Lg	Lg	03 49 39.2	
	comp=Z,4.0nm,0.3s,baz=29,slow=28,SNR=12						
LANS	**Liptovska Anna**	**3.14**	**136**	*e*Pg	**Pg**	**03 49 02.7**	**+0.9**
LANS				*e*Sg	**Sg**	**03 49 43.4**	**+0.9**
LANS	**Liptovska Anna**	**3.14**	**136**	*e*PG	**Pg**	**03 49 02.7**	**+0.9**
LANS				*e*SG	**Sg**	**03 49 43.4**	**+0.9**
WET	**Wettzell**	**3.15**	**224**	Pn	**Pn**	**03 48 53.9**	**+1.3**
	SNR=5.9						
WET				Sg	**Sg**	**03 49 41.9**	**-0.8**
	SNR=2.5						
WET	**Wettzell**	**3.15**	**224**	*e*Pn	**Pn**	**03 48 53.9**	**+1.3**
	SNR=5.9						
WET				*e*Sg	**Sg**	**03 49 41.9**	**-0.8**
	SNR=2.5						
VYHS	**Vyhne**	**3.44**	**149**	*e*Pg	**Pg**	**03 49 08.7**	**+1.1**
VYHS	**Vyhne**	**3.44**	**149**	*e*	**Pn**	**03 48 57.4**	**+0.8**
VYHS	**Vyhne**	**3.44**	**149**	*e*PG	**Pg**	**03 49 08.6**	**+1.0**
VYHS				*e*SG	**Sg**	**03 49 52.5**	**+0.4**
VYHS				*e*LG	Lg	03 50 06.6	
CONA	**Conrad Observa**	**3.55**	**183**	Pn	**Pn**	**03 48 59.5**	**+1.3**
	comp=Z,2.0nm,0.4s						
CONA				Sg	**Sg**	**03 49 55.0**	**-0.8**
	comp=Z,9.6nm,0.3s						
GRA1	**Grafenberg Arr**	**3.62**	**243**	Pn	**Pn**	**03 49 00.7**	**+1.6**
	SNR=2.5						
GRF	**Grafenberg Arr**	**3.62**	**243**	*e*Pn	**Pn**	**03 49 00.7**	**+1.6**
	SNR=2.5						
BSD	**Bornholm Skovb**	**3.73**	**349**	*i* P	**Pn**	**03 49 00.7**	**+0.2**
BSD				*i* S	**Sn**	**03 49 43.5**	**-1.6**
MOA	**Molln**	**3.83**	**200**	Pn	**Pn**	**03 49 03.5**	**+1.5**
	comp=Z,1.5nm,0.2s						
MOA				Sg	**Sg**	**03 50 05.5**	**+0.8**
	comp=Z,25nm,0.6s						
STHS	**Stebnicka Huta**	**3.83**	**120**	*e*Pg	**Pg**	**03 49 17.0**	**+1.8**
STHS				*e*Sg	**Sg**	**03 50 08.5**	**+3.6**
STHS	**Stebnicka Huta**	**3.83**	**120**	*e*	**Pn**	**03 49 04.4**	**+2.4**
STHS	**Stebnicka Huta**	**3.83**	**120**	*e*PG	**Pg**	**03 49 17.0**	**+1.8**
STHS				*e*SG	**Sg**	**03 50 08.5**	**+3.6**
STHS				*e*LG	Lg	03 50 22.1	
KECS	**Kecovo**	**4.08**	**135**	*e*Pg	**Pg**	**03 49 22.0**	**+2.0**
KECS				*e*Sg	**Sg**	**03 50 16.3**	**+3.5**
KECS	**Kecovo**	**4.08**	**135**	*e*PG	**Pg**	**03 49 21.9**	**+2.0**
KECS				*e*SG	**Sg**	**03 50 16.3**	**+3.5**
KECS				*e*LG	Lg	03 50 23.7	
CRVS	**Cervenica-Dubn**	**4.26**	**125**	*e*Pg	**Pg**	**03 49 23.6**	**+0.3**
CRVS	**Cervenica-Dubn**	**4.26**	**125**	*e*PG	**Pg**	**03 49 23.6**	**+0.3**
CRVS				*e*SG	**Sg**	**03 50 26.5**	**+8.0**
BLEU	**Blekinge**	**4.85**	**358**	P	**Pn**	**03 49 16.3**	**+0.4**
BJUU	**Bjuv**	**4.98**	**339**	P	**Pn**	**03 49 17.2**	**-0.5**
BJUU				S	**Sn**	**03 50 11.7**	**-4.2**
BJUU	**Bjuv**	**4.98**	**339**	P	**Pn**	**03 49 17.2**	**-0.5**
BJUU				S	**Sn**	**03 50 11.7**	**-4.2**
DEL	**Delary**	**5.19**	**346**	P	**Pn**	**03 49 20.7**	**+0.1**
DEL	**Delary**	**5.19**	**346**	P	**Pn**	**03 49 20.7**	**+0.1**
VXJU	**Vaexsjoe**	**5.51**	**353**	P	**Pn**	**03 49 25.5**	**+0.5**
OSKU	**Oskarshamn**	**5.74**	**360**	P	**Pn**	**03 49 28.6**	**+0.5**
OSKU	**Oskarshamn**	**5.74**	**360**	P	**Pn**	**03 49 28.6**	**+0.5**
BYXU	**Byxelkrok**	**5.85**	**4**	P	**Pn**	**03 49 30.6**	**+0.9**
BYXU	**Byxelkrok**	**5.85**	**4**	P	**Pn**	**03 49 30.6**	**+0.9**
GNOU	**Gnosjoe**	**6.00**	**347**	P	**Pn**	**03 49 32.2**	**+0.5**
GNOU	**Gnosjoe**	**6.00**	**347**	P	**Pn**	**03 49 32.2**	**+0.5**
EKSU	**Eksjoe**	**6.14**	**356**	P	**Pn**	**03 49 34.2**	**+0.6**
EKSU	**Eksjoe**	**6.14**	**356**	P	**Pn**	**03 49 34.2**	**+0.6**
DAVOX	**Davos/Dischmat**	**6.25**	**224**	Pn	**Pn**	**03 49 36.4**	**+1.0**
	comp=Z,0.1nm,0.3s,baz=45,slow=14,SNR=2.2						
DAVOX				Lg	Lg	03 51 20.0	
	comp=Z,0.2nm,0.3s,baz=182,slow=14,SNR=3.4						
VIKU	**Vikbolandet**	**7.05**	**2**	P	**Pn**	**03 49 47.4**	**+1.2**
VIKU	**Vikbolandet**	**7.05**	**2**	P	**Pn**	**03 49 47.4**	**+1.2**
AKASG	**Malin Array Be**	**8.25**	**90**	Pn	**Pn**	**03 50 02.6**	**-0.1**
	comp=Z,0.7nm,0.3s,baz=282,slow=12,SNR=3.2						
AKASG				Lg	Lg	03 52 29.0	
	comp=Z,1.2nm,0.3s,baz=274,slow=26,SNR=3.3						
HFS	**Hagfors**	**8.80**	**352**	Pn	**Pn**	**03 50 09.1**	**-0.9**
	comp=Z,0.1nm,0.3s,baz=172,slow=15,SNR=5.5						
HFS				Sn	**Sn**	**03 51 45.7**	**-4.1**
	comp=Z,0.2nm,0.3s,baz=173,slow=26,SNR=4.8						
NOA	**NORSAR Array B**	**9.98**	**346**	Pn	**Pn**	**03 50 24.3**	**-2.0**
	comp=Z,0.1nm,0.3s,baz=165,slow=12,SNR=2.6						
FINES	**FINESS Array B**	**11.38**	**25**	Pn	**Pn**	**03 50 41.9**	**-3.5**
	comp=Z,0.1nm,0.3s,baz=210,slow=11,SNR=6.2						
FINES				Sn	**Sn**	**03 52 45.0**	**-8.1**
	comp=Z,0.2nm,0.3s,baz=206,slow=18,SNR=5.9						
ARCES	**ARCESS Array B**	**18.66**	**10**	Pn	**P**	**03 52 17.6**	**-3.2**
	comp=Z,0.1nm,0.3s,baz=191,slow=12,SNR=6.3						
YKA	**Yellowknife Ar**	**59.91**	**336**	P	**P**	**03 58 10.8**	**+1.8**
	comp=Z,0.2nm,0.7s,baz=32,slow=5.9,SNR=3.6						

*ISCJB **21** 03:53:12.9±0.6,39°.08N±0°.04×29°.11E±0°.04,h1km±7km, Error ellipse: s-maj=6.4km s-min=4.7km az=148.5*
*DDA **21** 03:53:12.8,39°.08N×29°.12E,h7km,Md2.9*
*ISK **21** 03:53:12.9,39°.05N×29°.12E,h8km,MD2.7*
*CSEM **21** 03:53:13.3±0.1,39°.07N×29°.12E,h5km,MD2.9,Error ellipse: s-maj=2.6km s-min=1.9km az=120.0*

ISC 21 03:53:12.3±1.2,**39°.02N**±0°.03×**29°.16E**±0°.03,**h8**km±10km, **n46**, σ**0°38**/57,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.35**	**274**	P	**Pg**	**03 53 19.5**	**+0.3**
DEMI				S	**Sg**	**03 53 23.6**	**-0.2**
DEMI	**Demirci**	**0.35**	**274**	*i* P	**Pg**	**03 53 19.5**	**+0.3**
DEMI				*i* S	**Sg**	**03 53 23.6**	**-0.2**
TVSB	**Tavsanli**	**0.49**	**28**	*e*PG	**Pg**	**03 53 21.8**	**0.0**
TVSB	**Tavsanli**	**0.49**	**28**	*e*Pg	**Pg**	**03 53 21.8**	**0.0**
KULA	**Kula-Manisa**	**0.64**	**218**	*e*PG	**Pb**	**03 53 25.3**	**-0.5**
KULA				*e*SG	**Sb**	**03 53 34.9**	**0.0**
KULA	**Kula-Manisa**	**0.64**	**218**	*e*Pg	**Pb**	**03 53 25.3**	**-0.5**
KULA				*e*Sg	**Sb**	**03 53 34.9**	**0.0**
KHAL	**Karahalli**	**0.70**	**158**	P	**Pn**	**03 53 28.4**	**-0.2**
KHAL	**Karahalli**	**0.70**	**158**	*i* P	**Pn**	**03 53 28.4**	**-0.2**
MANT	**Manisa**	**0.71**	**222**	P	**Pb**	**03 53 27.1**	**+0.1**
MANT				S	**Sb**	**03 53 36.6**	**-0.4**
MANT	**Manisa**	**0.71**	**222**	*i* P	**Pb**	**03 53 27.1**	**+0.1**
MANT				*i* S	**Sb**	**03 53 36.6**	**-0.4**
KHL	**Karahalli**	**0.75**	**158**	*e*PG	**Pn**	**03 53 29.3**	**0.0**
KHL	**Karahalli**	**0.75**	**158**	*e*Pg	**Pn**	**03 53 29.3**	**0.0**
DURS	**Dursunbey**	**0.79**	**318**	P	**Pg**	**03 53 27.5**	**0.0**
DURS	**Dursunbey**	**0.79**	**318**	*i* P	**Pg**	**03 53 27.5**	**0.0**
ORLT	**Orhaneli**	**1.05**	**349**	*e*PG	**Pb**	**03 53 32.8**	**+0.1**
ORLT	**Orhaneli**	**1.05**	**349**	*e*Pg	**Pb**	**03 53 32.8**	**+0.1**
AKHS	**Akhisar**	**1.06**	**263**	P	**Pn**	**03 53 33.7**	**+0.2**
AKHS	**Akhisar**	**1.06**	**263**	*i* P	**Pn**	**03 53 33.7**	**+0.2**
AKS	**Akhisar**	**1.06**	**263**	*e*PG	**Pn**	**03 53 33.6**	**+0.1**
AKS	**Akhisar**	**1.06**	**263**	*e*Pg	**Pn**	**03 53 33.6**	**+0.1**
BALB	**Balikesir**	**1.17**	**302**	*e*PN	**Pb**	**03 53 34.9**	**+0.1**
BALB				*e*SN	**Sn**	**03 53 51.2**	**+0.1**
BALB	**Balikesir**	**1.17**	**302**	*e*Pn	**Pb**	**03 53 34.9**	**+0.1**
BALB				*e*Sn	**Sn**	**03 53 51.2**	**+0.1**
IGD	**Bursa**	**1.24**	**1**	*i* P	**Pn**	**03 53 34.0**	**-2.0**
IGD				*i* S	**Sb**	**03 53 51.6**	**-0.6**
CAVI	**Cavuskoy**	**1.29**	**24**	*e*PN	**Pg**	**03 53 37.6**	**+0.5**
CAVI	**Cavuskoy**	**1.29**	**24**	*e*Pn	**Pg**	**03 53 37.6**	**+0.5**
BORA	**Eskisehir**	**1.32**	**49**	P	**Pg**	**03 53 37.7**	**+0.1**
BORA				S	**Sn**	**03 53 55.3**	**+0.4**
BORA	**Eskisehir**	**1.32**	**49**	*i* P	**Pg**	**03 53 37.7**	**+0.1**
BORA				*i* S	**Sn**	**03 53 55.3**	**+0.4**
IZI	**Iznik**	**1.34**	**10**	*e*PN	**Pb**	**03 53 37.8**	**+0.1**
IZI	**Iznik**	**1.34**	**10**	*e*Pn	**Pb**	**03 53 37.8**	**+0.1**
MDNY	**Mudanya-Bursa**

DENT	Denizli	1.49	177	*e*Pn	Pn	04 03 09.6	-0.5
KNL	Bal¨–kesir	1.50	314	*i* P	Pn	04 03 08.6	-1.6
KNL				*i* S	Sg	04 03 30.9	-0.2
ESKT	Eskisehir	1.50	79	*i* P	Pg	04 03 11.4	-0.3
ESKT				*i* S	Sn	04 03 30.2	0.0
SEYT	Eskypehyr	1.50	79	P	Pg	04 03 11.4	-0.3
SEYT				S	Sn	04 03 30.2	0.0
AYDB	Zeytinkoy-Aydi	1.54	213	*e*PN	Pn	04 03 11.2	+0.4
AYDB	Zeytinkoy-Aydi	1.54	213	*e*Pn	Pn	04 03 11.2	+0.4
DNZL	Cakiroluk	1.56	177	P	Pb	04 03 12.1	0.0
DNZL	Cakiroluk	1.56	177	*i* P	Pb	04 03 12.1	0.0
DNZL				*i* S	Sg	04 03 35.3	+2.4
DKL	Dikili	1.59	264	*e*PN	Pn	04 03 11.2	-0.3
DKL	Dikili	1.59	264	*e*Pn	Pn	04 03 11.2	-0.3
BUY	Buyukada	1.61	5	P	Pg	04 03 13.4	-0.4
BUY				S	Sn	04 03 31.8	-0.9
BUY	Buyukada	1.61	5	*i* P	Pg	04 03 13.3	-0.4
BUY				*i* S	Sn	04 03 31.8	-0.9
BOLV	Bolvadin	1.65	108	P	Pn	04 03 11.8	-0.6
BOLV	Bolvadin	1.65	108	*i* P	Pn	04 03 11.8	-0.6
BOLV				*i* S	Sg	04 03 37.2	+1.3
HRT	Hereke	1.67	19	*e*PN	Pn	04 03 12.9	+0.3
HRT	Hereke	1.67	19	*e*Pn	Pn	04 03 12.9	+0.3
GULT	Gulveren	1.69	45	*e*PN	Pn	04 03 13.5	+0.6
GULT	Gulveren	1.69	45	*e*Pn	Pn	04 03 13.5	+0.6
MRMT	Marmara Adasi	1.71	323	*e*PN	Pn	04 03 13.3	+0.2
MRMT	Marmara Adasi	1.71	323	*e*Pn	Pn	04 03 13.3	+0.2
AYVA	Ayvalik	1.75	273	P	Pg	04 03 16.2	-0.2
AYVA				S	Sg	04 03 39.1	-0.1
AYVA	Ayvalik	1.75	273	*i* P	Pg	04 03 16.2	-0.2
AYVA				*i* S	Sg	04 03 39.1	-0.1
SPNC	Sapanca-Adapaz	1.78	36	*e*PN	Pn	04 03 14.3	+0.3
SPNC	Sapanca-Adapaz	1.78	36	*e*Pn	Pn	04 03 14.3	+0.3
AYDN	Tasoluk	1.79	208	P	Pb	04 03 15.9	-0.1
AYDN	Tasoluk	1.79	208	*i* P	Pb	04 03 15.9	-0.1
ISK	Istanbul-Kandi	1.82	3	*e*PN	Pn	04 03 14.9	+0.3
ISK	Istanbul-Kandi	1.82	3	*e*Pn	Pn	04 03 14.9	+0.3
BGKT	Bogazkoy	1.94	356	*e*PN	Pn	04 03 16.5	+0.3
BGKT	Bogazkoy	1.94	356	*e*Pn	Pn	04 03 16.5	+0.3
RKY	Sarkoy-Tekirda	1.98	317	*e*PN	Pn	04 03 16.5	-0.4
RKY	Sarkoy-Tekirda	1.98	317	*e*Pn	Pn	04 03 16.5	-0.4
SART	Tekirdag	1.98	317	*i* P	Pb	04 03 19.9	+0.6
SART				*i* S	Sg	04 03 46.3	-0.2
SILT	Sile	1.98	15	*e*PN	Pn	04 03 17.5	+0.7
SILT	Sile	1.98	15	*e*Pn	Pn	04 03 17.5	+0.7
DGB	¨zmir	2.01	234	*i* P	Pb	04 03 20.0	+0.4
DGB				*i* S	Sb	04 03 45.9	+1.1
KLYT	Kilyos	2.01	2	*e*PN	Pn	04 03 17.5	+0.3
KLYT	Kilyos	2.01	2	*e*Pn	Pn	04 03 17.5	+0.3
SVRH	Sivrihisar-ESK	2.01	83	*e*PN	Pn	04 03 17.2	0.0
SVRH	Sivrihisar-ESK	2.01	83	*e*Pn	Pn	04 03 17.2	0.0
CTKS	Kestanelik-??a	2.02	351	*e*PN	Pn	04 03 17.8	+0.5
CTKS	Kestanelik-??a	2.02	351	*e*Pn	Pn	04 03 17.8	+0.5
URLA	Izmir	2.04	245	*i* P	Pg	04 03 21.5	-0.5
URLA				*i* S	Sg	04 03 49.3	+1.0
GCAM	G?zelcaml?	2.04	222	P	Pb	04 03 20.2	-0.1
GCAM	G?zelcaml?	2.04	222	*i* P	Pb	04 03 20.2	-0.1
AUMIH	MIHALICIK	2.06	72	*i* P	Pb	04 03 21.3	+0.7
AUMIH				*i* S	Sg	04 03 49.7	+0.6
KAND	Kocaeli-Kandir	2.08	27	P	Pn	04 03 17.7	-0.5
KAND	Kocaeli-Kandir	2.08	27	*i* P	Pn	04 03 17.7	-0.5
KAND				*i* S	Sb	04 03 47.6	+0.7
MDUB	Mudurnu	2.12	54	*e*PN	Pn	04 03 19.4	+0.5
MDUB	Mudurnu	2.12	54	*e*Pn	Pn	04 03 19.4	+0.5
ZEY	¨zmir	2.16	243	*i* P	Pg	04 03 23.4	-0.9
ZEY				*i* S	Sg	04 03 52.9	+0.7
SAHE	Sakarya_HENDEK	2.17	42	P	Pn	04 03 19.5	0.0
SAHE				S	Sn	04 03 46.8	0.0
SAHE	Sakarya_HENDEK	2.17	42	*i* P	Pn	04 03 19.5	0.0
SAHE				*i* S	Sn	04 03 46.7	0.0
CTYL	Yalikoy Yolu	2.28	348	*e*PN	Pn	04 03 21.8	+0.8
CTYL	Yalikoy Yolu	2.28	348	*e*Pn	Pn	04 03 21.8	+0.8
KIZT	Kizilcal	2.31	98	*e*PN	Pn	04 03 21.8	+0.3
KIZT	Kizilcal	2.31	98	*e*Pn	Pn	04 03 21.8	+0.3

ISCJB ***21*** *04:14:05.5±0.5,39.°12N±0.°03×29.°00E±0.°04,h4km±7km, Error ellipse: s-maj=5.7km s-min=4.1km az=143.0*
DDA ***21*** *04:14:05.7,39.°10N×29.°02E,h7km,Ml2.5*
ISK ***21*** *04:14:05.2,39.°12N×29.°02E,h9km,ML2.4*
CSEM ***21*** *04:14:05.8±0.1,39.°12N×29.°00E,h8km,ML2.5,Error ellipse: s-maj=2.1km s-min=1.7km az=117.0*

ISC 21 04:14:05.6±0.9,39.°12N±0.°02×28.°99E±0.°02,h11km±9km, n39,σ0°22/49,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.23**	**251**	P	**Pg**	**04 14 10.4**	**0.0**
DEMI				S	**Sg**	04 14 13.8	0.0
DEMI	**Demirci**	**0.23**	**251**	*i* P	**Pg**	**04 14 10.4**	**0.0**
DEMI				*i* S	**Sg**	04 14 13.8	0.0
GDZ	**Gediz**	**0.38**	**94**	P	**Pg**	04 14 13.5	+0.3
GDZ				S	**Sg**	04 14 18.2	-0.1
GDZ	**Gediz**	**0.38**	**94**	*i* P	**Pg**	04 14 13.5	+0.3
GDZ				*i* S	**Sg**	04 14 18.2	-0.1
GDZ	**Gediz**	**0.38**	**94**	*i* P	**Pg**	04 14 13.5	+0.3
TVSB	**Tavsanli**	**0.49**	**47**	*e*PG	**Pg**	04 14 15.0	-0.3
TVSB				*e*SG	**Sg**	04 14 21.7	-0.1
TVSB	**Tavsanli**	**0.49**	**47**	*e*Pg	**Pg**	04 14 15.0	-0.3
TVSB				*e*Sg	**Sg**	04 14 21.7	-0.1
DURS	**Dursunbey**	**0.63**	**320**	P	**Pg**	04 14 18.2	+0.3
DURS	**Dursunbey**	**0.63**	**320**	*i* P	**Pg**	04 14 18.2	+0.3
DURS	**Dursunbey**	**0.63**	**320**	*i* P	**Pg**	04 14 17.9	0.0
KULA	**Kula-Manisa**	**0.66**	**204**	*e*PG	**Pg**	04 14 18.4	+0.1
KULA				*e*SG	**Sb**	04 14 27.8	-0.4
KULA	**Kula-Manisa**	**0.66**	**204**	*e*Pg	**Pg**	04 14 18.4	+0.1
KULA				*e*Sg	**Sb**	04 14 27.8	-0.4
MANT	**Manisa**	**0.71**	**209**	P	**Pb**	04 14 19.9	-0.3
MANT				S	**Sg**	04 14 28.6	-0.2
MANT	**Manisa**	**0.71**	**209**	*i* P	**Pb**	04 14 19.9	-0.3
MANT				*i* S	**Sg**	04 14 28.6	-0.2
KHAL	**Karahalli**	**0.84**	**152**	P	**Pb**	04 14 22.5	+0.2
KHAL	**Karahalli**	**0.84**	**152**	*i* P	**Pb**	04 14 22.8	+0.6
KHAL	**Karahalli**	**0.84**	**152**	*i* P	**Pb**	04 14 22.5	+0.2
KHL	**Karahalli**	**0.89**	**152**	*e*PG	**Pb**	04 14 23.3	+0.2
KHL	**Karahalli**	**0.89**	**152**	*e*Pg	**Pb**	04 14 23.3	+0.2
ORLT	**Orhaneli**	**0.93**	**355**	*e*PG	**Pb**	04 14 23.8	0.0
ORLT	**Orhaneli**	**0.93**	**355**	*e*Pg	**Pb**	04 14 23.8	0.0
AKS	**Akhisar**	**0.95**	**256**	*e*PG	**Pb**	04 14 24.3	+0.2
AKS	**Akhisar**	**0.95**	**256**	*e*Pg	**Pb**	04 14 24.3	+0.2
BALB	**Balikesir**	**1.01**	**302**	*e*PG	**Pn**	04 14 25.6	0.0
BALB	**Balikesir**	**1.01**	**302**	*e*Pg	**Pn**	04 14 25.7	0.0
BALY	**Balya**	**1.23**	**301**	P	**Pg**	04 14 29.7	+0.4
BALY	**Balya**	**1.23**	**301**	*i* P	**Pg**	04 14 29.7	+0.4
MDNY	**Mudanya-Bursa**	**1.25**	**356**	*e*PN	**Pg**	04 14 29.8	+0.1
MDNY	**Mudanya-Bursa**	**1.25**	**356**	*e*Pn	**Pg**	04 14 29.8	+0.1
CAVI	**Cavuskoy**	**1.27**	**31**	*e*PN	**Pb**	04 14 29.6	+0.1
CAVI	**Cavuskoy**	**1.27**	**31**	*e*Pn	**Pb**	04 14 29.6	+0.1
IZI	**Iznik**	**1.27**	**17**	*e*PN	**Pb**	04 14 29.6	0.0
IZI	**Iznik**	**1.27**	**17**	*e*Pn	**Pb**	04 14 29.6	0.0
BORA	**Eskisehir**	**1.36**	**56**	P	**Pg**	04 14 31.9	+0.1
BORA	**Eskisehir**	**1.36**	**56**	*i* P	**Pg**	04 14 31.9	+0.1
ARMT	**Armutlu**	**1.45**	**356**	*e*PN	**Pb**	04 14 32.6	0.0
ARMT	**Armutlu**	**1.45**	**356**	*e*Pn	**Pb**	04 14 32.6	0.0
GULT	**Gulveren**	**1.76**	**41**	*e*PN	**Pn**	04 14 36.2	+0.1
GULT	**Gulveren**	**1.76**	**41**	*e*Pn	**Pn**	04 14 36.2	+0.1

SKHL ***21*** *04:20:47.3±0.3,44.°28N×148.°53E,h40km±5km,mb4.2/3*
JMA ***21*** *04:20:48.6±0.6,44.°23N×148.°04E,h113km,M3.0*

ISC 21 04:20:43.9±3.5,44.°1N±0.°1×148.°6E±0.°2,h47km,n14, σ2°82/20,1C,Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUR	**Kuril'sk**	**1.27**	**335**	*e*P	**Pn**	**04 21 05.0**	**-0.3**
KUR				AMB	AMB	04 21 05.6	
	70nm,0.3s						
KUR				*e*S	**Sn**	**04 21 18.4**	**-2.8**
KUR				A	A	04 21 21.4	
	170nm,0.3s						
KUR				A	A	04 21 21.4	
	140nm,0.3s						
SHO	**Shikotan**	**1.32**	**261**	*e*P	**Pn**	**04 21 09.0**	**+3.1**
SHO				AMB	AMB	04 21 09.8	
	80nm,0.2s						
SHO				*e*S	**Sn**	**04 21 25.0**	**+2.7**
SHO				A	A	04 21 26.5	
	310nm,0.3s						
SHO				A	A	04 21 26.5	
	320nm,0.3s						
YUK	**Yuzh-Kuril'sk**	**2.00**	**270**	⇑*i*P	**Pn**	**04 21 16.7**	**+1.5**
YUK				AMB	AMB	04 21 17.0	
	20nm,0.2s						
YUK				AMB	AMB	04 21 17.0	
	40nm,0.2s						
YUK				*e*S	**Sn**	**04 21 38.9**	**-0.1**
YUK				A	A	04 21 40.2	
	160nm,0.2s						
YUK				A	A	04 21 40.2	
	250nm,0.2s						
NEM2	**Nemuro 2**	**2.21**	**252**	P	**Pn**	**04 21 20.5**	**+2.4**
NEM2				*e*S	**Sn**	**04 21 45.0**	**+0.7**
JNK	**Nakash**	**2.88**	**261**	P	**Pn**	**04 21 28.5**	**+1.3**
JAK	**Akkeshi**	**3.06**	**251**	P	**Pn**	**04 21 31.5**	**+1.7**
JTKR	**Abashiri--Toko**	**3.41**	**270**	P	**Pn**	**04 21 34.4**	**-0.1**
JAR	**Ashorobuto**	**3.61**	**259**	P	**Pn**	**04 21 38.8**	**+1.4**
JAR				*e*S	**Sn**	**04 22 18.3**	**-0.4**
JCH	**Churui**	**4.12**	**251**	P	**Pn**	**04 21 45.4**	**+1.2**
JCH				*e*S	**Sn**	**04 22 28.4**	**-2.7**
JNBK	**Urakawa-nobuka**	**4.66**	**249**	P	**Pn**	**04 21 52.3**	**+0.6**
YSS	**Yuzh-Sakhalins**	**5.03**	**307**	*e*P	**Pn**	**04 21 59.1**	**+2.3**
JKB	**Kayabe**	**5.99**	**251**	*e*S	**Sn**	**04 23 11.6**	**-5.6**
JOT	**Ohata**	**6.20**	**247**	*e*S	**Sn**	**04 23 15.9**	**-6.5**
TYV	**Tymovskoe**	**7.90**	**331**	*e*P	**Pn**	**04 22 38.6**	**+2.6**

IDC 21 04:25:23.6±2.0,3.°35S×67.°62E,h0km,mb3.8/6,mb1 3.9/6, mb1mx3.5/60,mbtmp3.8/6,MS3.5/12,Ms1 3.5/12, ms1mx3.2/44,Error ellipse: s-maj=57.4km s-min=27.4km az=65.0,Carlsberg Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08N2	**Diego Garcia H**	**4.49**	**131**	T	T	04 31 11.4	
	baz=314,slow=75,SNR=344						
H08N3	**Diego Garcia H**	**4.49**	**132**	T	T	04 31 12.9	
	baz=314,slow=75,SNR=313						
H08N1	**Diego Carcia H**	**4.51**	**131**	T	T	04 31 12.0	
	baz=314,slow=75,SNR=365						
PALK	**Pallekele**	**16.79**	**51**	LR	LR	04 34 06.1	
	comp=Z,298nm,20.5s,baz=296,slow=31						
OPO	**Ambohidratompo**	**25.07**	**231**	LR	LR	04 38 46.7	
	comp=Z,248nm,20.1s,baz=1.0,slow=32						
WSAR	**Wadi Sarin**	**27.84**	**342**	LR	LR	04 40 02.6	
	comp=Z,77nm,20.8s,baz=168,slow=32						
CMAR	**Chiang Mai Arr**	**37.70**	**54**	P	P	04 32 39.4	-1.7
	1.3nm,0.3s,baz=243,slow=10.0,SNR=4.5						
CMAR				LR	LR	04 45 45.4	
	comp=Z,54nm,21.8s,baz=218,slow=32						
GEYT	**Alibeck**	**42.00**	**349**	LR	LR	04 49 28.1	
	comp=Z,75nm,21.5s,baz=55,slow=34						
BOSA	**Boshof**	**47.45**	**234**	LR	LR	04 51 15.8	
	comp=Z,53nm,21.1s,baz=26,slow=33						
MKAR	**Makanchi Array**	**51.58**	**13**	P	P	04 34 30.1	-1.5
	0.1nm,0.3s,baz=192,slow=5.0,SNR=2.3						
MKAR				LR	LR	04 55 00.2	
	comp=Z,17nm,19.3s,baz=168,slow=34						
BRTR	**Keskin Array B**	**53.02**	**327**	LR	LR	04 55 51.9	
	comp=Z,18nm,19.7s,baz=224,slow=34						
KURBB	**Kurchatov Arra**	**54.57**	**9**	P	P	04 34 54.9	+1.4
	0.4nm,0.4s,baz=205,slow=8.2,SNR=5.0						
ZALV	**Zalesovo Beam**	**58.87**	**12**	LR	LR	04 59 24.7	
	comp=Z,36nm,20.8s,baz=96,slow=35						
SONM	**Songino Array**	**61.21**	**29**	P	P	04 35 41.9	+1.4
	0.7nm,0.5s,baz=213,slow=6.7,SNR=3.7						
SONM				LR	LR	05 01 46.3	
	comp=Z,126nm,18.6s,baz=78,slow=36						
ASAR	**Alice Springs**	**66.97**	**114**	P	P	04 36 17.8	-0.9
	0.4nm,1.0s,baz=268,slow=6.5,SNR=3.1						
WRA	**Warramunga Arr**	**66.99**	**110**	P	P	04 36 20.4	+1.5
	1.2nm,0.9s,baz=291,slow=5.3,SNR=3.5						
ARCES	**ARCES Array B**	**78.10**	**346**	LR	LR	05 12 13.7	
	comp=Z,24nm,20.8s,baz=79,slow=36						
SPITS	**Spitsbergen Ar**	**85.86**	**351**	LR	LR	05 20 27.5	
	comp=Z,25nm,18.6s,baz=155,slow=38						
TXAR	**Lajitas Array**	**152.86**	**343**	PKPbc	PKPbc	04 45 22.4	-1.2
	0.2nm,0.8s,baz=357,slow=5.4,SNR=2.9						

IDC ***21*** *04:35:30.2±0.6,10.°07S×161.°02E,h0km,mb4.2/19, mb1 4.4/20,mb1mx4.4/32,mbtmp4.2/20,ML4.5/1,MS3.7/17, Ms1 3.7/17,ms1mx3.5/33,Error ellipse: s-maj=15.1km s-min=14.6km az=89.0*
NEIC ***21*** *04:35:36.9±1.2,10.°02S×160.°94E,h41km±11km,mb4.8/23, Error ellipse: s-maj=8.4km s-min=7.7km az=95.0*
ISCJB ***21*** *04:35:38.2±0.3,10.°09S±0.°05×160.°87E±0.°06,h67km, mb4.4/45,Error ellipse: s-maj=8.1km s-min=6.9km az=34.1*

ISC 21 04:35:40.1±0.5,10.°08S±0.°07×160.°78E±0.°07,h67km,n74, σ1°91/67,mb4.6/44,Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	**Honiara**	**1.04**	**308**	Pn	**Pn**	**04 35 55.3**	**-3.7**
	1μm,0.3s,baz=153,slow=4.6,SNR=66						
HNR				Sn	**Sn**	**04 36 11.8**	**-1.3**
	2μm,0.3s,baz=12,slow=20,SNR=29						
HNR	**Honiara**	**1.04**	**308**	*e*P	Pn	04 35 54.0	-5.0
HNR	**Honiara**	**1.04**	**308**	*e*Pn	**Pn**	**04 35 55.2**	**-3.7**
HNR				*e*Sn	**Sn**	**04 36 07.3**	**-5.7**
DZM	**Mont Dzumac**	**13.11**	**156**	*e*LR	LR	04 41 43.9	
	437nm,25.2s						
DZM	**Mont Dzumac**	**13.11**	**156**	*e*Pn	**Pn**	**04 38 41.4**	**-2.1**
PMG	**Port Moresby**	**13.44**	**272**	LR	LR	04 43 42.3	
	comp=Z,789nm,19.7s,baz=82,slow=36						
CTA	**Charters Tower**	**17.18**	**233**	P	**Pn**	**04 39 35.8**	**-0.1**
	1.1nm,0.3s,baz=61,slow=12,SNR=19						
CTA				LR	LR	04 45 48.1	
	comp=Z,391nm,20.7s,baz=67,slow=36						
CTAO	**Charters Tower**	**17.18**	**233**	*e*Pn	**Pn**	**04 39 35.8**	**-0.1**
	37nm,0.8s						
COEN	**Coen**	**17.64**	**256**	*e*Pn	**P**	**04 39 42.1**	**+0.4**
	36nm,1.0s						
EIDS	**Eidsvold**	**17.78**	**210**	*e*Pn	**P**	**04 39 43.8**	**+0.8**
	20nm,0.7s						
JAY	**Jayapura**	**21.31**	**289**	P	**P**	**04 40 24.2**	**+2.6**
	1.1nm,0.7s,baz=258,slow=24,SNR=3.6						
WRAB	**Tennant Creek**	**27.31**	**246**	*e*P	**P**	**04 41 20.6**	**+1.9**
	45nm,1.5s						
WB2	**Warramunga Arr**	**27.31**	**246**	*e*P	**P**	**04 41 20.8**	**+2.1**
	40nm,1.4s						
WRA	**Warramunga Arr**	**27.32**	**246**	P	**P**	**04 41 17.9**	**-0.9**
	2.6nm,0.6s,baz=75,slow=9.4,SNR=16						
WRA				LR	LR	04 52 38.6	
	comp=Z,134nm,18.4s,baz=70,slow=37						
CAN	**Canberra**	**27.33**	**201**	*e*P	**P**	**04 41 21.1**	**+2.4**
	17nm,1.1s						
RAO	**Raoul Island**	**27.59**	**137**	P	**P**	**04 41 18.4**	**-2.7**
	240nm,0.5s,baz=288,slow=19,SNR=2.2						
STKA	**Stephens Creek**	**28.04**	**216**	P	**P**	**04 41 25.3**	**+0.2**
	1.6nm,0.6s,baz=41,slow=14,SNR=2.1						
GUMO	**Guam**	**28.32**	**326**	LR	LR	04 52 01.5	
	comp=Z,184nm,21.3s,baz=142,slow=35						
ASAR	**Alice Springs**	**28.98**	**239**	P	**P**	**04 41 35.2**	**+1.5**
	1.8nm,0.7s,baz=64,slow=11,SNR=8.1						
ASAR				LR	LR	04 53 05.0	
	comp=Z,432nm,18.6s,baz=74,slow=36						
FITZ	**Fitzroy Crossi**	**34.95**	**253**	P	**P**	**04 42 25.0**	**-1.0**
	3.9nm,0.7s,baz=55,slow=9.6,SNR=7.6						
FITZ	**Fitzroy Crossi**	**34.95**	**253**	*e*P	**P**	**04 42 25.2**	**-0.8**
	66nm,2.0s						
DAV	**Davao City (W)**	**38.98**	**295**	LR	LR	04 59 32.0	
	comp=Z,38nm,18.9s,baz=2.0,slow=37						
KAPI	**Kappang**	**40.96**	**274**	P	**P**	**04 43 16.0**	**-0.7**
	8.6nm,0.8s,baz=69,slow=17,SNR=2.6						
KAPI	**Kappang**	**40.96**	**274**	*e*P	**P**	**04 43 16.4**	**-0.2**
	24nm,1.1s						
JCJ	**Chichijima**	**41.12**	**334**	LR	LR	04 58 48.4	
	comp=Z,85nm,21.0s,baz=74,slow=34						
KKM	**Kota Kinabalu**	**47.19**	**288**	*e*P	**P**	**04 44 06.2**	**-0.4**
	7.4nm,0.8s						
PPT	**Papeete**	**48.66**	**105**	LR	LR	04 59 59.2	
	comp=Z,116nm,21.4s,baz=335,slow=30						
PPT2	**Papeete2**	**48.66**	**105**	*e*S	**S**	**04 51 20.8**	**+5.0**
	77nm,23.8s						
PPT2				*e*LR	LR	04 58 03.9	
	215nm,23.0s						
MJAR	**Matsushiro Arr**	**51.00**	**337**	P	**P**	**04 44 33.9**	**-1.4**
	1.0nm,0.6s,baz=169,slow=8.2,SNR=2.5						
JNU	**Nakatsue**	**51.55**	**328**	LR	LR	05 03 51.0	
	comp=Z,34nm,21.7s,baz=125,slow=33						
KSRS	**Korea Array**	**56.42**	**329**	P	**P**	**04 45 15.2**	**+0.3**
	0.5nm,0.3s,baz=145,slow=7.6,SNR=3.2						
KSAR	**Wonju Array Be**	**56.43**	**329**	P	**P**	**04 45 15.2**	**+0.2**
KS01	**Wonju Array Si**	**56.46**	**329**	*e*P	**P**	**04 45 15.1**	**0.0**
KS01				*e*pP	pP	04 45 20.8	-12
TAOE	**Nuku Hiva Isla**	**58.21**	**94**	*e*LR	LR	05 02 12.2	
	153nm,28.1s						
USRK	**Ussuriysk Ar.**	**60.00**	**336**	P	**P**	**04 45 39.7**	**0.0**
	1.4nm,0.7s,baz=183,slow=13,SNR=4.2						
USRK				LR	LR	05 09 06.4	
	comp=Z,45nm,21.8s,baz=172,slow=34						
CN2	**Changchun**	**62.50**	**332**	*e*P	P	04 46 02.3	+5.7
CN2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
RKT	**Rikitea**	**62.50**	**111**	*e*LR	LR	05 04 32.6	
	comp=Z,226nm,29.0s						
PETK	**Petropavlovsk-**	**62.99**	**358**	P	**P**	**04 45 58.6**	**-1.0**
	comp=Z,0.8nm,0.4s,baz=181,slow=9.5,SNR=3.4						
PETK				LR	LR	05 11 06.5	
	comp=Z,25nm,20.0s,baz=159,slow=34						
GYA	**Guiyang**	**63.87**	**306**	*e*P	**P**	**04 46 08.3**	**+2.1**
GYA				pP	pP	04 46 21.4	-2.6
GYA				PP	**PP**	**04 48 32.0**	**+4.5**
GYA				ScP		04 50 40.6	
GYA				S	S	04 54 58.8	+22
GYA				sS	sS	04 55 00.9	-6.2
GYA				pmax	pmax		
	comp=Z,10.0nm,1.0s						
GYA				pmax	pmax		
	comp=Z,90nm,5.7s						
CMAR	**Chiang Mai Arr**	**67.27**	**295**	P	**P**	**04 46 29.0**	**+0.9**
	comp=Z,1.2nm,0.4s,baz=128,slow=5.8,SNR=3.4						
CMAR				LR	LR	05 17 18.5	
	comp=Z,20nm,18.9s,baz=152,slow=37						
VNDA	**Vanda**	**67.43**	**180**	P	**P**	**04 46 26.8**	**-1.3**
	comp=Z,1.0nm,0.8s,baz=0.1,slow=5.6,SNR=6.5						
HHC	**Hu-ho-hao-te**	**67.99**	**322**	*e*P	**P**	**04 46 34.8**	**+2.4**
HHC				S	**S**	**04 55 32.3**	**+5.7**
HHC				pmax	pmax		
	comp=Z,24nm,1.1s						
HHC				pmax	pmax		
	comp=Z,130nm,7.0s						
HHC				LR	LR		
	comp=N,130nm,16.7s						
HHC				LR	LR		
	comp=E,220nm,17.4s						
HHC				LR	LR		
	comp=Z,160nm,16.7s						
CD2	**Chengdu**	**68.17**	**309**	P	**P**	**04 46 34.3**	**+0.7**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.6s						
LZH	**Lanzhou**	**70.53**	**314**	*e*P	**P**	**04 46 49.4**	**+1.1**
LZH				pP	pP	04 46 50.8	-15
LZH				sP	PcP	04 47 06.0	-3.2
LZH				*e*PP	**PP**	**04 49 28.0**	**+2.6**
LZH				pmax	pmax		
	comp=Z,18nm,1.4s						
LZH				pmax	pmax		
	comp=Z,76nm,7.9s						
LZH				LR	LR		
	comp=N,350nm,16.2s						
LZH				LR	LR		
	comp=E,370nm,16.1s						
LZH				LR	LR		
	comp=Z,420nm,18.5s						
ULN	**Ulaanbaatar**	**74.71**	**326**	*e*P	**P**	**04 47 12.2**	**-0.6**
	comp=Z,8.1nm,1.0s						
GTA	**Gaotai**	**74.91**	**315**	*e*P	P	04 47 21.8	+7.7
GTA				pP	pP	04 47 35.3	+3.0
GTA				sP	sP	04 47 40.3	+0.6
GTA				pmax	pmax		
	comp=Z,6.0nm,1.4s						
SONM	**Songino Array**	**75.05**	**325**	P	**P**	**04 47 15.5**	**+0.7**
	comp=Z,2.2nm,0.7s,baz=140,slow=5.8,SNR=9.3						
SONM				LR	LR	05 21 32.9	
	comp=Z,35nm,18.1s,baz=5.0,slow=37						
SONA1	**Songino Array**	**75.06**	**325**	*e*P	**P**	**04 47 15.9**	**+1.2**
BILL	**Bilibino**	**78.02**	**2**	*e*P	**P**	**04 47 30.3**	**-0.6**
	comp=Z,14nm,1.2s						
SVW2	**Sparrevohn**	**78.80**	**20**	*e*P	**P**	**04 47 32.9**	**-2.5**
SVW2				*e*pP	**PcP**	**04 47 44.7**	**+0.8**
QSPA	**South Pole Qui**	**79.92**	**180**	*e*P	**P**	**04 47 40.9**	**-0.7**
	comp=Z,26nm,1.0s						
CAST	**Castle Rocks**	**81.60**

ORLT	Orhaneli	0.94	355	ePG		Pg	04 43 19.1	-0.3
ORLT	Orhaneli	0.94	355	ePg		Pg	04 43 19.1	-0.3
AKHS	Akhisar	0.96	257	P		Pb	04 43 19.9	-0.3
AKHS				S		Sb	04 43 33.0	-0.1
AKHS	Akhisar	0.96	257	*i* P		Pb	04 43 19.9	-0.3
AKHS				*i* S		Sb	04 43 33.0	-0.1
AKS	Akhisar	0.96	257	ePG		Pb	04 43 20.0	-0.2
AKS	Akhisar	0.96	257	ePg		Pb	04 43 20.0	-0.2
BALB	Balikesir	1.03	302	ePG		Pg	04 43 20.9	-0.1
BALB				eSG		Sb	04 43 35.5	+0.4
BALB	Balikesir	1.03	302	ePg		Pg	04 43 20.9	-0.1
BALB				eSg		Sb	04 43 35.5	+0.4
IGD	Bursa	1.17	7	*i* P		Pg	04 43 22.2	-1.5
IGD				*i* S		Sb	04 43 38.9	-0.2
BALY	Balya	1.25	301	P		Pn	04 43 25.0	-0.2
BALY				S		Sn	04 43 42.3	-0.1
BALY	Balya	1.25	301	*i* P		Pn	04 43 24.9	-0.2
BALY				*i* S		Sn	04 43 42.3	-0.1
KCTX	Karacabey (Bur	1.27	337	ePN		Pn	04 43 25.1	-0.3
KCTX	Karacabey (Bur	1.27	337	ePn		Pn	04 43 25.1	-0.3
MDNY	Mudanya-Bursa	1.27	356	ePN		Pb	04 43 25.3	-0.1
MDNY	Mudanya-Bursa	1.27	356	ePn		Pb	04 43 25.3	-0.1
CAVI	Cavuskoy	1.27	30	ePN		Pn	04 43 25.1	-0.3
CAVI	Cavuskoy	1.27	30	ePn		Pn	04 43 25.1	-0.3
IZI	Iznik	1.28	16	ePN		Pg	04 43 25.7	-0.1
IZI	Iznik	1.28	16	ePn		Pg	04 43 25.7	-0.1
GEMT	Gemlik	1.34	6	ePN		Pn	04 43 26.1	-0.2
GEMT	Gemlik	1.34	6	ePn		Pn	04 43 26.1	-0.2
DENT	Denizli	1.35	179	ePN		Pn	04 43 25.7	-0.8
DENT	Denizli	1.35	179	ePn		Pn	04 43 25.7	-0.8
BORA	Eskisehir	1.36	55	P		Pn	04 43 26.5	-0.2
BORA				S		Sn	04 43 45.1	+0.1
BORA	Eskisehir	1.36	55	*i* P		Pn	04 43 26.5	-0.2
BORA				*i* S		Sn	04 43 45.1	+0.1
DNZL	Cakiroluk	1.41	179	P		Pn	04 43 27.2	-0.3
DNZL	Cakiroluk	1.41	179	*i* P		Pn	04 43 27.2	-0.3
DNZL				*i* S		Sg	04 43 49.5	+2.8
ADVT	Abdulvahap	1.44	23	ePN		Pn	04 43 27.4	-0.3
ADVT	Abdulvahap	1.44	23	ePn		Pn	04 43 27.4	-0.3
AYDB	Zeytinkoy-Aydi	1.45	218	ePN		Pn	04 43 27.7	-0.3
AYDB	Zeytinkoy-Aydi	1.45	218	ePn		Pn	04 43 27.7	-0.3
ARMT	Armutlu	1.46	355	ePN		Pn	04 43 28.1	0.0
ARMT	Armutlu	1.46	355	ePn		Pn	04 43 28.1	0.0
ESKT	Eskisehir	1.48	73	*i* P		Pb	04 43 29.0	-0.2
ESKT				*i* S		Sg	04 43 48.9	-0.1
SEYT	Eskypehyr	1.48	73	P		Pb	04 43 29.0	-0.2
SEYT				S		Sg	04 43 48.9	-0.1
EDC	Edincik	1.52	325	ePN		Pn	04 43 28.4	-0.4
EDC	Edincik	1.52	325	ePn		Pn	04 43 28.5	-0.4
GPA	Golpazari	1.55	40	ePN		Pn	04 43 29.3	0.0
GPA	Golpazari	1.55	40	ePn		Pn	04 43 29.3	0.0
BOLV	Bolvadin	1.56	104	P		Pb	04 43 30.0	-0.5
BOLV				S		Sg	04 43 52.3	+0.9
BOLV	Bolvadin	1.56	104	*i* P		Pb	04 43 30.0	-0.5
BOLV				*i* S		Sg	04 43 52.3	+0.9
KNL	Bal¨–kesir	1.64	316	*i* P		Pb	04 43 31.1	-0.6
KNL				*i* S		Sg	04 43 53.6	-0.2
AYDN	Tasoluk	1.69	212	P		Pn	04 43 30.9	-0.4
AYDN				S		Sg	04 43 55.5	-0.2
AYDN	Tasoluk	1.69	212	*i* P		Pn	04 43 30.9	-0.4
AYDN				*i* S		Sg	04 43 55.5	-0.2
ISP	Isparta	1.74	137	ePN		Pn	04 43 31.5	-0.5
ISP	Isparta	1.74	137	ePn		Pn	04 43 31.5	-0.5
BUY	Buyukada	1.75	3	P		Pb	04 43 33.4	-0.2
BUY	Buyukada	1.75	3	*i* P		Pb	04 43 33.4	-0.2
BUY				*i* S		Sg	04 43 57.6	+0.1
GULT	Gulveren	1.76	41	ePN		Pn	04 43 32.0	-0.2
GULT	Gulveren	1.76	41	ePn		Pn	04 43 32.0	-0.2
HRT	Hereke	1.79	16	ePN		Pn	04 43 32.5	-0.1
HRT	Hereke	1.79	16	ePn		Pn	04 43 32.5	-0.1
AYVA	Ayvalik	1.82	277	*i* P		Pg	04 43 36.1	+0.1
AYVA				*i* S		Sg	04 44 01.0	+1.3
KRBG	Karabiga-Canak	1.85	315	ePN		Pn	04 43 33.5	+0.2
KRBG	Karabiga-Canak	1.85	315	ePn		Pn	04 43 33.5	+0.2
MRMT	Marmara Adasi	1.85	324	ePN		Pn	04 43 33.7	+0.2
MRMT	Marmara Adasi	1.85	324	ePn		Pn	04 43 33.7	+0.2
SPNC	Sapanca-Adapaz	1.87	32	ePN		Pn	04 43 33.3	-0.3
SPNC	Sapanca-Adapaz	1.87	32	ePn		Pn	04 43 33.3	-0.3
GOLH	Golhisar	1.91	167	P		Pn	04 43 34.7	+0.4
GOLH	Golhisar	1.91	167	*i* P		Pn	04 43 34.7	+0.4
ISK	Istanbul-Kandi	1.96	1	ePN		Pn	04 43 35.1	+0.2
ISK	Istanbul-Kandi	1.96	1	ePn		Pn	04 43 35.1	+0.2
DGB	¨zmir	1.97	238	*i* P		Pg	04 43 38.2	-0.8
DGB				*i* S		Sg	04 44 04.0	-0.6
SVRH	Sivrihisar-ESK	1.98	79	ePN		Pn	04 43 35.2	0.0
SVRH	Sivrihisar-ESK	1.98	79	ePn		Pn	04 43 35.2	0.0
URLA	Izmir	2.03	249	*i* P		Pg	04 43 40.9	+0.7
URLA				*i* S		Sg	04 44 06.3	-0.3
AUMIH	MIHALICIK	2.06	67	*i* P		Pg	04 43 40.1	-0.5
AUMIH				*i* S		Sg	04 44 08.9	+1.6
BGKT	Bogazkoy	2.08	355	ePN		Pn	04 43 36.3	-0.3
BGKT	Bogazkoy	2.08	355	ePn		Pn	04 43 36.3	-0.3
SILT	Sile	2.10	13	ePN		Pn	04 43 36.8	0.0
SILT	Sile	2.10	13	ePn		Pn	04 43 36.8	0.0
BTAS	Taskesti	2.12	46	P		Pn	04 43 36.7	-0.4
BTAS	Taskesti	2.12	46	*i* P		Pn	04 43 36.7	-0.4
BTAS				*i* S		Sg	04 44 10.3	+1.0
RKY	Sarkoy-Tekirda	2.12	319	ePN		Pn	04 43 37.5	+0.4
RKY	Sarkoy-Tekirda	2.12	319	ePn		Pn	04 43 37.5	+0.4
KLYT	Kilyos	2.15	1	ePN		Pn	04 43 37.7	+0.3
KLYT	Kilyos	2.15	1	ePn		Pn	04 43 37.7	+0.3
ZEY	¨zmir	2.15	247	*i* P		Pg	04 43 43.3	+0.9
ZEY				*i* S		Sg	04 44 11.6	+1.4
CTKS	Kestanelik-??a	2.17	350	ePN		Pn	04 43 37.7	0.0
CTKS	Kestanelik-??a	2.17	350	ePn		Pn	04 43 37.7	0.0
MDUB	Mudurnu	2.17	50	ePN		Pn	04 43 37.7	-0.1
MDUB	Mudurnu	2.17	50	ePn		Pn	04 43 37.7	-0.1
KAND	Kocaeli-Kandir	2.18	24	P		Pn	04 43 37.7	-0.2
KAND	Kocaeli-Kandir	2.18	24	*i* P		Pn	04 43 37.7	-0.2
KIZT	Kizilcal	2.25	95	ePN		Pn	04 43 39.0	+0.1
KIZT	Kizilcal	2.25	95	ePn		Pn	04 43 39.0	+0.1
SAHE	Sakarya_HENDEK	2.25	38	P		Pn	04 43 38.8	0.0
SAHE	Sakarya_HENDEK	2.25	38	*i* P		Pn	04 43 38.8	0.0
SAHE				*i* S		Sg	04 44 15.2	+1.8
KORT	Korkueli	2.35	153	*i* P		Pn	04 43 35.0	-5.4
CTYL	Yalikoy Yolu	2.43	347	ePN		Pn	04 43 41.8	+0.4
CTYL	Yalikoy Yolu	2.43	347	ePn		Pn	04 43 41.8	+0.4
AKAS	Kas	2.91	171	P		Pn	04 43 49.5	+1.5
AKAS	Kas	2.91	171	*i* P		Pn	04 43 49.5	+1.5

*ISK **21** 04:48:49.9, 39°.09N×28°.99E, h10km, ML2.4*
*ISCJB **21** 04:48:50.5±0.6, 39°.12N±0°.03×28°.97E±0°.05, h6km±6km, Error ellipse: s-maj=6.5km s-min=4.5km az=176.2*
*CSEM **21** 04:48:50.9±0.1, 39°.11N×28°.98E, h12km, MD2.5, Error ellipse: s-maj=2.8km s-min=2.0km az=90.0*
*DDA **21** 04:48:52.9, 39°.04N×28°.98E, h7km, Md2.5*
ISC 21 04:48:50.8±1.1, 39°.10N±0°.03×28°.97E±0°.03, h11km±11km, n26, σ0§29/36, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	Gediz	0.40	91	P	Pg	04 48 59.0	+0.2
GDZ				S	Sg	04 49 04.2	+0.1
GDZ	Gediz	0.40	91	*i* P	Pg	04 48 59.0	+0.2
GDZ				*i* S	Sg	04 49 04.2	+0.1
TVSB	Tavsanli	0.52	47	ePG	Pg	04 49 00.8	-0.2
TVSB	Tavsanli	0.52	47	ePg	Pg	04 49 00.8	-0.2
MANT	Manisa	0.68	208	P	Pb	04 49 05.3	+0.4
MANT				S	Sb	04 49 14.6	+0.2
MANT	Manisa	0.68	208	*i* P	Pb	04 49 05.3	+0.4
MANT				*i* S	Sb	04 49 14.6	+0.2
KHAL	Karahalli	0.83	150	P	Pn	04 49 08.0	-0.5
KHAL				S	Sb	04 49 19.0	+0.5
KHAL	Karahalli	0.83	150	*i* P	Pn	04 49 08.0	-0.5
KHAL				*i* S	Sb	04 49 19.0	+0.5
KHL	Karahalli	0.89	150	ePG	Pg	04 49 07.5	-0.4
KHL				eSG	Sg	04 49 19.2	-0.2
KHL	Karahalli	0.89	150	ePg	Pg	04 49 07.5	-0.4
KHL				eSg	Sg	04 49 19.2	-0.2
AKS	Akhisar	0.93	257	ePG	Pg	04 49 08.6	-0.1
AKS	Akhisar	0.93	257	ePg	Pg	04 49 08.6	-0.1
ORLT	Orhaneli	0.95	357	ePG	Pg	04 49 09.1	-0.1
ORLT				eSG	Sb	04 49 21.7	-0.2
ORLT	Orhaneli	0.95	357	ePg	Pg	04 49 09.1	-0.1
ORLT				eSg	Sb	04 49 21.7	-0.2
KCTX	Karacabey (Bur	1.26	338	ePN	Pn	04 49 14.2	-0.1
KCTX	Karacabey (Bur	1.26	338	ePn	Pn	04 49 14.2	-0.1
CAVI	Cavuskoy	1.29	31	ePN	Pn	04 49 14.7	-0.1
CAVI	Cavuskoy	1.29	31	ePn	Pn	04 49 14.7	-0.1
IZI	Iznik	1.30	17	ePN	Pn	04 49 14.7	-0.3
IZI	Iznik	1.30	17	ePn	Pn	04 49 14.7	-0.3
ADVT	Abdulvahap	1.46	24	ePN	Pn	04 49 16.9	-0.2
ADVT	Abdulvahap	1.46	24	ePn	Pn	04 49 16.9	-0.2
ARMT	Armutlu	1.47	357	ePN	Pn	04 49 17.0	-0.2
ARMT	Armutlu	1.47	357	ePn	Pn	04 49 17.0	-0.2
GULT	Gulveren	1.79	41	ePN	Pn	04 49 21.5	-0.2
GULT	Gulveren	1.79	41	ePn	Pn	04 49 21.5	-0.2

IDC 21 04:51:16.1±7.3, 20°.43S×176°.56W, h300km±72km, mb3.4/3, mb1 3.6/3, mb1mx3.0/31, mbtmp4.1/3, Error ellipse: s-maj=73.8km s-min=51.9km az=13.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	Raoul Island	8.87	188	P	Pn	04 53 20.3	0.0
	222nm,0.3s,baz=37,slow=20,SNR=9.8						
JAY	Jayapura	45.30	287	P	P	04 59 05.5	+0.4
	1.2nm,0.5s,baz=90,slow=20,SNR=6.2						
ASAR	Alice Springs	45.85	256	P	P	04 59 09.5	+0.2
	2.7nm,0.8s,baz=90,slow=8.4,SNR=17						
WRA	Warramunga Arr	45.95	262	P	P	04 59 09.3	-0.7
	1.0nm,0.3s,baz=97,slow=7.5,SNR=37						
AKASG	Malin Array Be	143.59	332	PKP	PKPdf	05 10 14.4	-0.7
	0.7nm,0.4s,baz=48,slow=4.4,SNR=4.7						

IDC 21 04:55:23.6±1.2, 25°.43N×141°.58E, h0km, mb3.5/5, mb1 3.6/5, mb1mx3.4/40, mbtmp3.5/5, MS3.7/1, Ms1 3.7/1, ms1mx2.6/31, Error ellipse: s-maj=50.3km s-min=18.0km az=96.0, Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCJ	Chichijima	1.75	18	Pn	Pn	04 55 55.0	-0.3
	18nm,0.3s,baz=8.4,slow=23,SNR=14						
JCJ				Sn	Sb	04 56 19.1	-0.2
	baz=270,slow=20						
KLR	Kul'dur	24.97	345	P	P	05 00 49.3	+0.5
	0.9nm,0.5s,baz=144,slow=6.6,SNR=5.4						
WRA	Warramunga Arr	45.64	190	P	P	05 03 45.1	-1.0
	0.3nm,0.6s,baz=9.6,slow=8.6,SNR=4.5						
ASAR	Alice Springs	49.36	189	P	P	05 04 15.6	+0.6
	0.2nm,0.7s,baz=17,slow=13,SNR=4.3						
MKAR	Makanchi Array	51.13	311	P	P	05 04 27.9	-0.4
	0.1nm,0.3s,baz=78,slow=9.4,SNR=2.5						
NRIK	Noril'sk	54.00	339	LR	LR	05 30 05.5	
	comp=Z,74nm,20.4s,baz=92,slow=38						
FINES	FINESS Array B	79.20	334	P	P	05 07 30.4	+0.2
	0.6nm,0.5s,baz=64,slow=4.4,SNR=8.0						

*ISCJB **21** 05:06:25.4±1.6, 20°.5S±0°.4×168°.2E±0°.3, h32km, mb4.0/7, MS3.1/3, Error ellipse: s-maj=69.5km s-min=20.0km az=150.9*
*IDC **21** 05:06:26.9±1.5, 20°.62S×168°.34E, h37km±6km, mb3.8/7, mb1 4.1/7, mb1mx3.8/31, mbtmp4.0/7, MS3.3/3, Ms1 3.3/3, ms1mx2.9/21, Error ellipse: s-maj=80.5km s-min=17.5km az=156.0*
ISC 21 05:06:26.8±1.5, 20°.5S±0°.5×168°.3E±0°.3, h32km, n11, σ1§30/14, mb4.0/7, MS3.3/3, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	Port Moresby	23.17	295	LR	LR	05 18 02.4	
	comp=Z,38nm,20.1s,baz=294,slow=30						
STKA	Stephens Creek	26.44	239	P	P	05 12 01.1	+0.2
	2.5nm,0.8s,baz=56,slow=10.0,SNR=3.0						
STKA				LR	LR	05 21 48.0	
	comp=Z,80nm,19.0s,baz=29,slow=35						
WRA	Warramunga Arr	31.84	265	P	P	05 12 48.2	-0.8
	0.3nm,0.5s,baz=89,slow=8.5,SNR=9.6						
WRA				pP	pP	05 12 58.1	-0.2
	0.4nm,0.4s,baz=92,slow=8.5,SNR=3.7						
ASAR	Alice Springs	31.98	258	P	P	05 12 50.0	-0.2
	2.0nm,0.7s,baz=87,slow=8.9,SNR=36						
ASAR				pP	pP	05 13 00.8	+1.2
	3.8nm,0.7s,baz=85,slow=9.0,SNR=12						
ASAR				LR	LR	05 25 29.9	
	comp=Z,64nm,18.2s,baz=71,slow=36						
FITZ	Fitzroy Crossi	40.25	266	P	P	05 14 00.8	-0.2
	2.3nm,0.9s,baz=141,slow=6.5,SNR=4.2						
FITZ				pP	pP	05 14 11.5	+1.1
	1.9nm,0.7s,baz=150,slow=9.7,SNR=2.9						
CMAR	Chiang Mai Arr	78.21	295	P	P	05 18 23.5	-0.2
	1.2nm,0.3s,baz=136,slow=4.5,SNR=6.9						
NVAR	Mina Array Bea	90.28	49	P	P	05 19 24.1	-0.8
	1.1nm,0.7s,baz=229,slow=8.2,SNR=8.9						
NVAR				pP	pP	05 19 36.5	+1.5
	1.2nm,0.7s,baz=230,slow=7.9,SNR=8.5						
ILAR	Eielson Array	91.67	18	P	P	05 19 31.7	+1.3
	0.4nm,0.6s,baz=235,slow=6.4,SNR=4.5						
YKA	Yellowknife Ar	102.17	28	P	Pdif	05 20 16.9	-1.0
	0.1nm,0.6s,baz=257,slow=4.8,SNR=3.8						
YKA				pP		05 20 29.0	
	0.1nm,0.5s,baz=254,slow=4.9,SNR=3.0						
ARCES	ARCESS Array B	126.03	345	PKP	PKPdf	05 25 22.0	-3.0
	2.7nm,0.9s,baz=29,slow=2.8,SNR=6.0						
GERES	GERESS Array B	145.14	330	PKPbc	PKPdf	05 26 01.6	+0.6
	0.2nm,0.5s,baz=33,slow=3.2,SNR=5.4						

*DDA **21** 05:09:03.5, 39°.12N×29°.00E, h7km, Ml3.0*
*ISK **21** 05:09:03.9, 39°.08N×28°.93E, h7km, MD2.8*
*ISCJB **21** 05:09:04.3±0.4, 39°.08N±0°.03×28°.96E±0°.04, h9km, Error ellipse: s-maj=4.3km s-min=3.7km az=24.7*
*CSEM **21** 05:09:04.2±0.1, 39°.10N×28°.97E, h2km, ML3.0, Error ellipse: s-maj=2.9km s-min=2.4km az=90.0*
ISC 21 05:09:03.8±0.9, 39°.09N±0°.02×29°.00E±0°.02, h9km, n59, σ0§50/65, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.23	257	P	Pg	05 09 08.6	+0.1
DEMI				S	Sg	05 09 11.8	+0.2
DEMI	Demirci	0.23	257	*i* P	Pg	05 09 08.6	+0.1
DEMI				*i* S	Sg	05 09 11.8	+0.2
GDZ	Gediz	0.37	91	P	Pg	05 09 11.0	-0.2
GDZ	Gediz	0.37	91	*i* P	Pg	05 09 11.0	-0.2
TVSB	Tavsanli	0.50	45	ePG	Pb	05 09 15.1	+0.2
TVSB	Tavsanli	0.50	45	ePg	Pb	05 09 15.1	+0.2
KULA	Kula-Manisa	0.64	205	ePG	Pg	05 09 16.4	+0.3
KULA				eSG	Sg	05 09 24.0	-0.4
KULA	Kula-Manisa	0.64	205	ePg	Pg	05 09 16.4	+0.3
KULA				eSg	Sg	05 09 24.0	-0.4
DURS	Dursunbey	0.65	321	P	Pg	05 09 15.7	-0.7
DURS	Dursunbey	0.65	321	*i* P	Pg	05 09 15.7	-0.7
KHAL	Karahalli	0.82	152	P	Pg	05 09 19.8	+0.3
KHAL	Karahalli	0.82	152	*i* P	Pg	05 09 19.8	+0.3
KHL	Karahalli	0.87	152	ePG	Pb	05 09 21.2	+0.1
KHL	Karahalli	0.87	152	ePg	Pb	05 09 21.2	+0.1
AKHS	Akhisar	0.95	257	P	Pb	05 09 22.5	+0.1
AKHS	Akhisar	0.95	257	*i* P	Pb	05 09 22.5	+0.1
ORLT	Orhaneli	0.95	355	ePG	Pg	05 09 22.4	+0.3
ORLT	Orhaneli	0.95	355	ePg	Pg	05 09 22.5	+0.3
BALB	Balikesir	1.03	302	ePG	Pg	05 09 23.5	0.0
BALB				eSG	Sb	05 09 37.2	-0.1
BALB	Balikesir	1.03	302	ePg	Pg	05 09 23.5	0.0
BALB				eSg	Sb	05 09 37.2	-0.1
IGD	Bursa	1.18	7	*i* P	Pb	05 09 24.2	-2.1
BALY	Balya	1.25	302	P	Pg	05 09 28.1	+0.3
BALY	Balya	1.25	302	*i* P	Pg	05 09 28.1	+0.3
KCTX	Karacabey (Bur	1.27	337	ePN	Pn	05 09 28.0	+0.2
KCTX	Karacabey (Bur	1.27	337	ePn	Pn	05 09 28.0	+0.2
MDNY	Mudanya-Bursa	1.28	356	ePN	Pb	05 09 28.8	+0.5
MDNY	Mudanya-Bursa	1.28	356	ePn	Pg	05 09 28.8	+0.5
CAVI	Cavuskoy	1.28	30	ePN	Pg	05 09 29.1	+0.7
CAVI	Cavuskoy	1.28	30	ePn	Pg	05 09 29.1	+0.7
IZI	Iznik	1.29	16	ePN	Pg	05 09 28.9	+0.3
IZI	Iznik	1.29	16	ePn	Pg	05 09 28.9	+0.3
GEMT	Gemlik	1.35	6	ePN	Pg	05 09 30.4	+0.7
GEMT	Gemlik	1.35	6	ePn	Pg	05 09 30.4	+0.7
GONE	Gonen-Balikesi	1.39	314	ePN	Pb	05 09 29.9	-0.1
GONE	Gonen-Balikesi	1.39	314	ePn	Pb	05 09 29.9	-0.1
DNZL	Cakiroluk	1.40	179	P	Pg	05 09 30.5	-0.2
DNZL	Cakiroluk	1.40	179	*i* P	Pg	05 09 30.5	-0.2
ADVT	Abdulvahap	1.45	23	ePN	Pg	05 09 32.0	+0.3
ADVT	Abdulvahap	1.45	23	ePn	Pg	05 09 32.0	+0.3
ARMT	Armutlu	1.47	356	ePN	Pb	05 09 31.6	+0.2
ARMT	Armutlu	1.47	356	ePn	Pb	05 09 31.6	+0.2
EDC	Edincik	1.53	325	ePN	Pn	05 09 31.7	+0.4
EDC	Edincik	1.53	325	ePn	Pn	05 09 31.7	+0.4
KNL	Bal¨–kesir	1.64	316	*i* P	Pb	05 09 33.0	+0.2
AYDN	Tasoluk	1.68	212	P	Pg	05 09 35.7	-0.3
AYDN	Tasoluk	1.68	212	*i* P	Pg	05 09 35.6	-0.3
GULT	Gulveren	1.77	41	ePN	Pb	05 09 36.7	+0.2
GULT	Gulveren	1.77	41	ePn	Pb	05 09 36.7	+0.2
HRT	Hereke	1.80	16	ePN	Pb	05 09 36.7	-0.2
HRT	Hereke	1.80	16	ePn	Pb	05 09 36.7	-0.2
SPNC	Sapanca-Adapaz	1.88	32	ePN	Pb	05 09 37.8	-0.5
SPNC	Sapanca-Adapaz	1.88	32	ePn	Pb	05 09 37.8	-0.5
DGB	¨zmir	1.96	239	*i* P	Pg	05 09 41.9	+0.6
ISK	Istanbul-Kandi	1.97	1	ePN	Pb	05 09 39.1	-0.7
ISK	Istanbul-Kandi	1.97	1	ePn	Pb	05 09 39.1	-0.7
SVRH	Sivrihisar-ESK	1.99	79	ePN	Pb	05 09 39.6	-0.6
SVRH	Sivrihisar-ESK	1.99	79	ePn	Pb	05 09 39.6	-0.6
SILT	Sile	2.12	13	ePN	Pb	05 09 41.2	-1.1
SILT	Sile	2.12	13	ePn	Pb	05 09 41.2	-1.1

*ISCJB **21** 05:20:16.8±0.4, 39°.06N±0°.03×29°.07E±0°.04, h9km, Error ellipse: s-maj=5.2km s-min=4.4km az=28.2*
*CSEM **21** 05:20:16.8±0.2, 39°.08N×29°.08E, h5km, ML2.7, Error ellipse: s-maj=3.7km s-min=3.6km az=102.0*
*DDA **21** 05:20:16.8, 39°.10N×29°.08E, h7km, Ml2.7*
*ISK **21** 05:20:16.1, 39°.06N×29°.09E, h5km, MD2.7*
ISC 21 05:20:16.5±0.9, 39°.08N±0°.02×29°.10E±0°.03, h9km, n43, σ0§41/47, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	Gediz	0.30	87	P	Pb	05 20 23.8	-0.3
GDZ	Gediz	0.30	87	*i* P	Pb	05 20 23.8	-0.3
DEMI	Demirci	0.30	264	P	Pg	05 20 22.4	-0.2
DEMI	Demirci	0.30	264	*i* P	Pg	05 20 22.4	-0.2
TVSB	Tavsanli	0.47	37	ePG	Pg	05 20 26.1	+0.4
TVSB	Tavsanli	0.47	37	ePg	Pg	05 20 26.1	+0.4
KULA	Kula-Manisa	0.66	212	ePG	Pg	05 20 29.5	+0.3
KULA				eSG	Sg	05 20 38.0	+0.2
KULA	Kula-Manisa	0.66	212	ePg	Pg	05 20 29.5	+0.3
KULA				eSg	Sg	05 20 38.1	+0.2
DURS	Dursunbey	0.71	317	P	Pg	05 20 30.8	+0.4
DURS	Dursunbey	0.71	317	*i* P	Pg	05 20 30.8	+0.4
KHAL	Karahalli	0.77	156	P	Pb	05 20 32.9	+0.8
KHAL	Karahalli	0.77	156	*i* P	Pb	05 20 32.9	+0.8
KHL	Karahalli	0.82	156	ePG	Pg	05 20 32.4	0.0
KHL	Karahalli	0.82	156	ePg	Pg	05 20 32.4	0.0
ORLT	Orhaneli	0.98	351	ePG	Pg	05 20 35.4	0.0
ORLT	Orhaneli	0.98	351	ePg	Pg	05 20 35.4	0.0
AKS	Akhisar	1.02	259	ePG	Pg	05 20 35.9	-0.3
AKS	Akhisar	1.02	259	ePg	Pg	05 20 35.9	-0.3
BALB	Balikesir	1.10	301	ePN	Pg	05 20 37.4	-0.3
BALB				eSN	Sn	05 20 53.7	+0.2
BALB	Balikesir	1.10	301	ePn	Pg	05 20 37.4	-0.3
BALB				eSn	Sn	05 20 53.7	+0.2
IGD	Bursa	1.19	4	*i* P	Pb	05 20 38.7	-0.6
CAVI	Cavuskoy	1.26	27	ePN	Pg	05 20 41.2	+0.4
CAVI	Cavuskoy	1.26	27	ePn	Pg	05 20 41.2	+0.4
IZI	Iznik	1.29	13	ePN	Pb	05 20 41.5	+0.4
IZI	Iznik	1.29	13	ePn	Pb	05 20 41.5	+0.4
MDNY	Mudanya-Bursa	1.30	353	ePN	Pg	05 20 42.0	+0.5
MDNY	Mudanya-Bursa	1.30	353	ePn	Pg	05 20 42.0	+0.5
BORA	Eskisehir	1.32	52	P	Pb	05 20 42.0	+0.5
BORA	Eskisehir	1.32	52	*i*

MAJO	**Matsushiro**	**4.17**	**234**	*c i*P		**Pn**	**05 36 28.3 +0.8**
MAJO	**Matsushiro**	**4.17**	**234**	*e*Pn		**Pn**	**05 36 29.6 +2.1**
MAT	**Matsushiro**	**4.17**	**234**	P		**Pn**	**05 36 29.1 +1.6**
MAT				S		**Sn**	**05 37 19.3 +4.2**
MJAR	**Matsushiro Arr**	**4.17**	**234**	P		**Pn**	**05 36 28.7 +1.2**
	6.1nm,0.3s,baz=39,slow=11,SNR=89						
MJB9	**Matsu-Tunnel**	**4.17**	**234**	*e*Pn		**Pn**	**05 36 29.7 +2.1**
ASAJ	**Asahikawa**	**5.05**	**2**	P		**Pn**	**05 36 40.7 +1.1**
	3.7nm,0.3s,baz=226,slow=5.9,SNR=10.0						
ASAJ				S		**Sn**	**05 37 37.9 +1.1**
	2.9nm,0.3s,baz=257,slow=31,SNR=4.9						
YUK	**Yuzh-Kuril'sk**	**5.60**	**26**	P		**Pn**	**05 36 47.4 +0.3**
YUK				*i* S		**Sn**	**05 37 45.6 -4.7**
YUK				pmax	pmax		
	comp=Z,136nm,0.4s						
YUK				pmax	pmax		
	comp=N,47nm,0.2s						
YUK				pmax	pmax		
	comp=E,70nm,0.2s						
YUK				MLR	MLR		
	comp=Z,582nm,14.0s						
YUK				MLR	MLR		
	comp=N,969nm,12.0s						
INU	**Inuyama**	**5.68**	**231**	*e*Pn		**Pn**	**05 36 49.9 +1.7**
JHJ	**Hachijo jima 2**	**6.30**	**201**	P		**Pn**	**05 36 56.2 -0.5**
	comp=N,16nm,0.3s,baz=253,slow=19,SNR=3.2						
JHJ				S		**Sn**	**05 38 04.5 -3.0**
	comp=N,17nm,0.3s,baz=127,slow=20,SNR=4.6						
KUR	**Kuril'sk**	**7.38**	**32**	P		Pn	05 37 04.4 -7.1
KUR				S		**Sn**	**05 38 28.6 -5.4**
YSS	**Yuzh-Sakhalins**	**7.89**	**2**	*e*P		**Pn**	**05 37 18.4 -0.2**
YSS				*e*S		**Sn**	**05 38 44.8 -1.9**
YSS				pmax	pmax		
	comp=Z,20nm,1.1s						
YSS				MLR	MLR		
	comp=Z,300nm,15.0s						
VLA	**Vladivostok**	**8.92**	**300⇑**	*e*P		**Pn**	**05 37 34.6 +1.9**
VLA				pmax	pmax		
	comp=Z,44nm,0.9s						
USRK	**Ussuriysk Ar.**	**9.34**	**307**	P		**Pn**	**05 37 40.6 +2.2**
	comp=Z,0.7nm,0.3s,baz=118,slow=13,SNR=16						
USRK				LR	LR		05 41 08.6
	comp=Z,489nm,18.4s,baz=118,slow=37						
JNU	**Nakatsue**	**11.05**	**241**	P		**Pn**	**05 38 04.3 +2.4**
	comp=Z,0.6nm,0.3s,baz=39,slow=8.0,SNR=3.7						
JNU				LR	LR		05 42 38.3
	comp=Z,452nm,20.2s,baz=126,slow=39						
JNU	**Nakatsue**	**11.05**	**241**	*e*Pn		**Pn**	**05 38 03.2 +1.3**
MDJ	**Mudanjiang**	**11.05**	**304**	P		**Pn**	**05 38 01.9 0.0**
MDJ				S		**Sn**	**05 40 03.8 -0.4**
MDJ				ScP		**ScP**	**05 47 28.9 +0.9**
MDJ				PcS		**PcS**	**05 47 33.0 +1.3**
MDJ				pmax	pmax		
	comp=Z,6.0nm,0.5s						
MDJ				pmax	pmax		
	comp=Z,31nm,4.7s						
MDJ				LR	LR		
	comp=N,210nm,17.6s						
MDJ				LR	LR		
	comp=E,270nm,18.2s						
MDJ				LR	LR		
	comp=Z,400nm,15.7s						
MDJ	**Mudanjiang**	**11.05**	**304**	*e*Pn		**Pn**	**05 38 05.4 +3.5**
KSRS	**Korea Array**	**11.51**	**267**	P		**Pn**	**05 38 12.6 +4.5**
	comp=Z,0.2nm,0.3s,baz=78,slow=14,SNR=13						
KS01	**Wonju Array Si**	**11.52**	**267**	*e*Pn		**Pn**	**05 38 10.2 +1.9**
KS15	**Wonju Array Si**	**11.54**	**266**	*e*Pn		**Pn**	**05 38 11.0 +2.4**
KSAR	**Wonju Array Be**	**11.54**	**266**	P		**Pn**	**05 38 12.6 +4.0**
KSAR	**Wonju Array Be**	**11.54**	**266**	P		**Pn**	**05 38 12.6 +4.0**
KLR	**Kul'dur**	**12.71**	**327**	P		**Pn**	**05 38 27.9 +3.4**
	comp=Z,0.1nm,0.3s,baz=138,slow=13,SNR=3.1						
KLR				LR	LR		05 43 18.7
	comp=Z,253nm,18.8s,baz=142,slow=37						
DL2	**Dalian**	**16.16**	**276**	P		**P**	**05 39 14.1 +0.4**
DL2				*e*S		**S**	**05 42 15.5 -5.8**
DL2				pmax	pmax		
	comp=Z,22nm,1.2s						
DL2				pmax	pmax		
	comp=Z,80nm,3.7s						
DL2				LR	LR		
	comp=N,220nm,17.5s						
DL2				LR	LR		
	comp=E,230nm,15.3s						
DL2				LR	LR		
	comp=Z,290nm,17.3s						
PETK	**Petropavlovsk-**	**17.55**	**32**	LR		LR	05 47 05.8
	comp=Z,145nm,18.8s,baz=195,slow=40						
BJI	**Beijing**	**20.24**	**281**	P		**P**	**05 39 58.6 +0.2**
BJI				S		**S**	**05 43 42.8 -0.8**
BJI				pmax	pmax		
	comp=Z,6.0nm,0.6s						
BJI				LR	LR		
	comp=N,110nm,14.3s						
BJI				LR	LR		
	comp=E,220nm,15.2s						
BJI				LR	LR		
	comp=Z,120nm,16.7s						
MA2	**Magadan**	**21.21**	**12**	P		**P**	**05 40 08.7 -0.1**
	comp=Z,13nm,0.7s,baz=225,slow=7.3,SNR=9.0						
HHC	**Hu-ho-hao-te**	**23.66**	**284**	*e*P		**P**	**05 40 36.1 +1.4**
HHC				sP		sP	05 40 48.8 +0.7
HHC				PP		**PnPn**	**05 41 04.0 +1.6**
HHC				S		**S**	**05 44 43.1 -4.1**
HHC				pmax	pmax		
	comp=Z,29nm,0.9s						
HHC				pmax	pmax		
	comp=Z,220nm,4.1s						
HHC				LR	LR		
	comp=N,880nm,12.8s						
HHC				LR	LR		
	comp=E,710nm,12.2s						
HHC				LR	LR		
	comp=Z,870nm,11.7s						
YAK	**Yakutsk**	**24.29**	**345**	LR		LR	05 52 16.4
	comp=Z,86nm,18.7s,baz=118,slow=42						
YAK	**Yakutsk**	**24.29**	**345**	*e*P		**P**	**05 40 42.4 +2.3**
YAK				*e**PP		**sP**	**05 40 56.2 +2.4**
YAK				*e*			05 41 14.9
YAK				*e*			05 44 20.5
YAK				*e*S		**S**	**05 44 57.4 +0.8**
YAK				*e*SS		**SnSn**	**05 45 45.4 +4.6**
YAK				*e*			05 51 42.2
YAK				pmax	pmax		
	comp=Z,10.0nm,0.9s						
YAK				pmax	pmax		
	comp=Z,97nm,4.3s						
YAK				pmax	pmax		
	comp=N,31nm,3.8s						
YAK				pmax	pmax		
	comp=E,56nm,3.8s						
YAK				smax	smax		
	comp=N,54nm,1.6s						
YAK				smax	smax		
	comp=E,63nm,2.0s						
SEY	**Seymchan**	**24.65**	**11**	P		**P**	**05 40 43.9 +0.5**
	comp=E,8.5nm,0.7s,baz=196,slow=7.8,SNR=26						
SEY	**Seymchan**	**24.65**	**11⇓**	*e*P		**P**	**05 40 43.4 -0.1**
GUMO	**Guam**	**25.46**	**174**	LR		LR	05 50 25.5
	comp=E,41nm,19.8s,baz=118,slow=35						
BOD	**Bodaibo**	**26.28**	**325**	*e*P		**P**	**05 40 56.1 -2.2**
BOD				pmax	pmax		
	comp=Z,3.0nm,1.0s						
ULN	**Ulaanbaatar**	**26.93**	**301⇑**	*e*P		**P**	**05 41 04.3 -0.2**
ULN				pmax	pmax		
	comp=Z,3.0nm,1.2s						
XAN	**Xi'an**	**27.27**	**270**	P		**P**	**05 41 07.1 -0.4**
XAN				pP		pP	05 41 16.8 -0.3
XAN				S		**S**	**05 45 39.8 -4.9**
XAN				pmax	pmax		
	comp=Z,4.0nm,0.8s						
XAN				LR	LR		
	comp=N,140nm,15.4s						
XAN				LR	LR		
	comp=E,130nm,16.4s						
XAN				LR	LR		
	comp=Z,120nm,11.3s						
SONA1	**Songino Array**	**27.37**	**301**	*e*P		**P**	**05 41 08.3 -0.1**
SONM	**Songino Array**	**27.37**	**300**	P		**P**	**05 41 08.4 0.0**
	comp=Z,1.0nm,0.4s,baz=99,slow=9.7,SNR=4.6						
ENH	**Enshi**	**28.34**	**262**	*e*P		**P**	**05 41 15.8 -1.3**
	comp=Z,28nm,1.4s						
H11N2	**WAKE ISLAND Hy**	**28.59**	**125**	T		T	06 11 41.7
	baz=318,slow=76,SNR=632						
H11N1	**WAKE ISLAND Hy**	**28.60**	**125**	T		T	06 11 51.4
	baz=318,slow=76,SNR=508						
H11N3	**WAKE ISLAND Hy**	**28.61**	**125**	T		T	06 11 47.6
	baz=318,slow=76,SNR=463						
H11S1	**WAKE ISLAND Hy**	**29.38**	**127**	T		T	06 12 48.8
	baz=319,slow=76,SNR=43						
H11S3	**WAKE ISLAND Hy**	**29.38**	**127**	T		T	06 12 49.4
	baz=319,slow=76,SNR=57						
H11S2	**WAKE ISLAND Hy**	**29.39**	**127**	T		T	06 12 43.4
	baz=319,slow=76,SNR=75						
TLY	**Talaya**	**29.65**	**308**	*e*P		**P**	**05 41 28.0 -0.5**
TLY				pmax	pmax		
	comp=Z,3.0nm,0.6s						
TLY				MLR	MLR		
	comp=Z,160nm,15.0s						
TLY	**Talaya**	**29.65**	**308**	*e*P		**P**	**05 41 27.8 -0.7**
	comp=Z,4.2nm,0.9s						
ZAK	**Zakamensk**	**29.69**	**305**	*e*P		**P**	**05 41 26.4 -2.5**
ZAK				pmax	pmax		
	comp=Z,4.0nm,1.0s						
LZH	**Lanzhou**	**30.56**	**277**	*e*P		**P**	**05 41 37.5 +0.6**
LZH				pP		pP	05 41 48.0 +1.5
LZH				sP		sP	05 41 52.1 +1.6
LZH				*e*PP		**PnPn**	**05 42 37.3 +0.8**
LZH				pmax	pmax		
	comp=Z,21nm,1.1s						
LZH				pmax	pmax		
	comp=Z,63nm,5.2s						
LZH				LR	LR		
	comp=N,360nm,12.9s						
LZH				LR	LR		
	comp=E,380nm,13.1s						
LZH				LR	LR		
	comp=Z,430nm,16.3s						
BILL	**Bilibino**	**31.86**	**17**	*i* P		**P**	**05 41 46.9 -0.9**
BILL				*i*			05 41 54.9
BILL				*i*			05 44 33.8
BILL				pmax	pmax		
	comp=Z,5.0nm,1.1s						
BILL				MLR	MLR		
	comp=Z,63nm,16.0s						
BILL	**Bilibino**	**31.86**	**17**	*e*P		**P**	**05 41 47.3 -0.5**
	comp=Z,11nm,1.4s						
CD2	**Chengdu**	**32.50**	**268**	P		**P**	**05 41 52.0 -1.9**
CD2				pmax	pmax		
	comp=Z,11nm,0.7s						
GTA	**Gaotai**	**32.77**	**284**	⇑P		**P**	**05 41 56.3 +0.1**
GTA				pP		pP	05 42 05.8 -0.1
GTA				sP		sP	05 42 09.9 0.0
GTA				S		**S**	**05 47 09.4 -1.6**
GTA				sS		sS	05 47 25.8 -1.1
GTA				SS		**SnSn**	**05 49 09.4 +1.2**
GTA				pmax	pmax		
	comp=Z,5.0nm,1.1s						
GTA				pmax	pmax		
	comp=Z,31nm,3.8s						
GTA				LR	LR		
	comp=N,160nm,18.3s						
GTA				LR	LR		
	comp=E,240nm,18.3s						
GTA				LR	LR		
	comp=Z,260nm,20.4s						
TIXI	**Tiksi**	**33.38**	**352**	*e*P		**P**	**05 42 01.5 +0.5**
TIXI				pmax	pmax		
	comp=Z,1.0nm,1.0s						
QIZ	**Qiongzhong**	**34.50**	**244**	P		**P**	**05 42 12.3 +1.0**
QIZ				S		**S**	**05 47 38.9 +1.1**
QIZ				LR	LR		
	comp=E,150nm,17.4s						
QIZ				LR	LR		
	comp=Z,210nm,14.3s						
KMI	**Kunming**	**36.08**	**259**	P		**P**	**05 42 25.3 +0.2**
KMI				pmax	pmax		
	comp=Z,28nm,0.6s						
KMI				pmax	pmax		
	comp=Z,100nm,4.2s						
WMQ	**Urumqi**	**40.66**	**295**	P		**P**	**05 43 03.4 +0.1**
WMQ				pP		pP	05 43 11.0 -2.1
WMQ				sP		sP	05 43 18.0 +0.9
WMQ				PP		**PnPn**	**05 44 43.3 +2.0**
WMQ				S		**S**	**05 49 11.1 +0.1**
WMQ	**Urumqi**	**40.66**	**295**	ScS		ScS	05 53 11.4 +5.4
WMQ				pmax	pmax		
	comp=Z,14nm,0.8s						
WMQ				pmax	pmax		
	comp=Z,67nm,4.4s						
WMQ				LR	LR		
	comp=N,16nm,19.6s						
WMQ				LR	LR		
	comp=E,34nm,29.4s						
WMQ				LR	LR		
	comp=Z,22nm,25.4s						
ZAA0	**Zalesovo Array**	**41.16**	**311**	*e*P		**P**	**05 43 06.7 -0.5**
ZALV	**Zalesovo Beam**	**41.16**	**311**	P		**P**	**05 43 07.2 0.0**
	comp=Z,1.9nm,0.5s,baz=87,slow=11,SNR=5.7						
ZALV	**Zalesovo Beam**	**41.16**	**311**	*i* P		P	05 43 12.3 +5.2
ZALV				pmax	pmax		
	comp=Z,3.0nm,0.5s						
CHTO	**Chiang Mai**	**42.57**	**254**	*e*P		**P**	**05 43 18.4 -0.7**
CHTO				pmax	pmax		
	comp=Z,4.0nm,0.6s						
CHTO	**Chiang Mai**	**42.57**	**254**	*e*P		**P**	**05 43 18.4 -0.7**
	comp=Z,3.6nm,0.6s						
CMAR	**Chiang Mai Arr**	**42.79**	**254**	P		**P**	**05 43 21.1 +0.3**
	comp=Z,2.1nm,0.3s,baz=45,slow=6.4,SNR=7.2						
TT01	**Tatalina**	**43.31**	**36**	*e*P		**P**	**05 43 26.1 +1.5**
MK01	**Makanchi Array**	**43.74**	**300**	*e*P		**P**	**05 43 27.8 -0.4**
MK31	**Makanchi Array**	**43.74**	**300**	*e*P		**P**	**05 43 28.2 0.0**
MK31	**Makanchi Array**	**43.74**	**300**	*e*P		**P**	**05 43 28.2 0.0**
MKAR	**Makanchi Array**	**43.74**	**300**	P		**P**	**05 43 28.1 -0.1**
	comp=Z,4.9nm,0.7s,baz=84,slow=9.6,SNR=41						
MKAR	**Makanchi Array**	**43.74**	**300**	*e*P		**P**	**05 43 28.2 0.0**
MKAR	**Makanchi Array**	**43.74**	**300**	*e*P		**P**	**05 43 28.2 0.0**
MAKZ	**Makanchi**	**43.95**	**301**	*e*P		**P**	**05 43 29.9 0.0**
MAKZ				pmax	pmax		
	comp=Z,7.0nm,0.9s						
MAKZ	**Makanchi**	**43.95**	**301**	*e*P		**P**	**05 43 29.9 0.0**
	comp=Z,6.7nm,0.9s						
CAST	**Castle Rocks**	**45.11**	**35**	*e*P		**P**	**05 43 40.0 +1.0**
	comp=Z,7.1nm,1.2s						
KURK	**Kurchatov**	**45.33**	**307**	*e*P		**P**	**05 43 39.8 -1.0**
KURK				pmax	pmax		
	comp=Z,10.0nm,0.7s						
KURK	**Kurchatov**	**45.33**	**307**	*e*P		**P**	**05 43 39.8 -1.0**
	comp=Z,10.0nm,0.7s						
KURBB	**Kurchatov Arra**	**45.40**	**307**	P		**P**	**05 43 40.8 -0.6**
	comp=Z,8.4nm,0.7s,baz=82,slow=8.2,SNR=50						
KTH	**Kantishna Hill**	**45.63**	**35**	*e*P		**P**	**05 43 44.3 +1.2**
	comp=Z,24nm,1.4s						
MLY	**Manley**	**45.72**	**33**	*e*P		**P**	**05 43 45.1 +1.3**
	comp=Z,6.6nm,1.0s						
BWN	**Browne**	**46.27**	**34**	*e*P		**P**	**05 43 50.0 +1.9**
	comp=Z,36nm,1.1s						
MCK	**McKinley**	**46.52**	**35**	*e*P		**P**	**05 43 51.0 +0.9**
MCK				pmax	pmax		
	comp=Z,30nm,1.8s						
MCK	**McKinley**	**46.52**	**35**	*e*P		**P**	**05 43 51.0 +0.9**
	comp=Z,30nm,1.8s						
PMR	**Palmer**	**46.54**	**38**	*e*P		**P**	**05 43 50.2 +0.1**
PMR				pmax	pmax		
	comp=Z,7.0nm,0.7s						
PMR	**Palmer**	**46.54**	**38**	*e*P		**P**	**05 43 50.2 +0.1**
	comp=Z,6.9nm,0.7s						
PDGK	**Podgornoye**	**46.55**	**296**	P		**P**	**05 43 49.3 -1.2**
PDGK				pmax	pmax		
	comp=Z,3.0nm,0.6s						
RND	**Reindeer**	**46.57**	**35**	*e*P		**P**	**05 43 50.6 +0.1**
RND				pmax	pmax		
	comp=Z,16nm,1.2s						
RND	**Reindeer**	**46.57**	**35**	*e*P		**P**	**05 43 50.6 +0.1**
	comp=Z,16nm,1.2s						
SML	**Sawmill**	**46.90**	**37**	*e*P		**P**	**05 43 48.6 -4.5**
SML				pmax	pmax		
	comp=Z,63nm,1.6s						
SML	**Sawmill**	**46.90**	**37**	*e*P		**P**	**05 43 48.6 -4.5**
	comp=Z,63nm,1.6s						
COLA	**College**	**46.95**	**33**	*e*P		**P**	**05 43 51.6 -1.8**
COLA				pmax	pmax		
	comp=Z,34nm,0.3s						
COLA	**College**	**46.95**	**33**	*e*P		**P**	**05 43 51.6 -1.8**
	comp=Z,34nm,0.3s						
HDA	**Harding Lake**	**47.36**	**34**	*e*P		**P**	**05 43 57.1 +0.5**
	comp=Z,28nm,1.6s						
ILAR	**Eielson Array**	**47.37**	**33**	P		**P**	**05 43 56.7 +0.1**
	comp=Z,4.5nm,1.0s,baz=265,slow=5.7,SNR=28						
ILAR	**Eielson Array**	**47.37**	**33**	P		**P**	**05 43 56.7 +0.1**
ILAR				pmax	pmax		
	comp=Z,4.0nm,1.0s						
ILB	**Eielson Array**	**47.37**	**33**	*e*P		**P**	**05 43 56.8 +0.1**
IL1	**Eielson Array**	**47.37**	**33**	*e*P		**P**	**05 43 56.2 -0.4**
DIV	**Divide**	**48.19**	**38**	*e*P		**P**	**05 44 04.1 +1.0**
	comp=Z,27nm,1.3s						
DOT	**Dot Lake**	**48.69**	**35**	*e*P		**P**	**05 44 06.6 -0.3**
	comp=Z,18nm,1.3s						
BMRM	**Bremner River**	**48.78**	**38**	*e*P		**P**	**05 44 07.5 -0.2**
	comp=Z,12nm,1.1s						
MENT	**Mentasta**	**48.93**	**36**	*e*P		**P**	**05 44 10.0 +1.3**
	comp=Z,12nm,1.4s						
TKM2	**Tokmak 2**	**49.38**	**297**	*e*P		**P**	**05 44 13.1 +0.3**
TKM2				pmax	pmax		
	comp=Z,7.0nm,0.8s						
TKM2	**Tokmak 2**	**49.38**	**297**	*e*P		**P**	**05 44 13.1 +0.3**
	comp=Z,7.4nm,0.8s						
BVA0	**Borovoye Array**	**49.81**	**311**	*i* P		**P**	**05 44 15.0 -0.6**
BVA0				pmax	pmax		
	comp=Z,2.0nm,0.8s						
BVAR	**Borovoye Array**	**49.81**	**311**	P		**P**	**05 44 15.3 -0.3**
	comp=Z,1.4nm,0.4s,baz=81,slow=9.3,SNR=9.3						
BVAR	**Borovoye Array**	**49.81**	**311**	P		**P**	**05 44 15.3 -0.3**
BVAR				pmax	pmax		
	comp=Z,2.0nm,0.4s						
BRVK	**Borovoye**	**49.87**	**311**	*e*P		**P**	**05 44 16.1 +0.1**
BRVK				pmax	pmax		
	comp=Z,4.0nm,0.7s						
BRVK	**Borovoye**	**49.87**	**311**	*e*P		**P**	**05 44 16.1 +0.1**
	comp=Z,3.5nm,0.7s						
OTUK	**Ortayu**	**49.90**	**305**	P		**P**	**05 44 14.6 -1.8**
OTUK				pmax	pmax		
	comp=Z,2.0nm,0.7s						
AAK	**Ala-Archa**	**50.24**	**297**	*e*P		**P**	**05 44 19.7 +0.4**
AAK				pmax	pmax		
	comp=Z,3.0nm,0.6s						
AAK	**Ala-Archa**	**50.24**	**297**	*e*P		**P**	**05 44 19.6 +0.4**
	comp=Z,3.2nm,0.6s						
ZRNK	**Zerenda**	**50.64**	**311**	*e*P		**P**	**05 44 21.5 -0.4**
ZRNK				pmax	pmax		
	comp=Z,3.0nm,0.9s						
ZRNK	**Zerenda**	**50.64**	**311**	*e*P		**P**	**05 44 21.5 -0.4**
	comp=Z,3.4nm,0.9s						
EKS2	**Erkin-Say**	**50.73**	**297**	*e*P		**P**	**05 44 22.8 -0.1**
EKS2				pmax	pmax		
	comp=Z,3.0nm,0.8s						
EKS2	**Erkin-Say**	**50.73**	**297**	*e*P		**P**	**05 44 22.8 -0.1**
	comp=Z,3.0nm,0.8s						
MNAS	**Manas**	**51.67**	**298**	P		**P**	**05 44 30.0 +0.1**
MNAS				pmax	pmax		
	comp=Z,8.0nm,0.9s						
INK	**Inuvik**	**52.23**	**28**	P		**P**	**05 44 34.1 +0.7**
	comp=Z,1.8nm,0.6s,baz=296,slow=7.9,SNR=9.7						
INK	**Inuvik**	**52.23**	**28**	*e*P		**P**	**05 44 33.9 +0.4**
	comp=Z,7.4nm,1.3s						
KK31	**Karatay Array**	**52.81**	**299**	*i* P		**P**	**05 44 37.7 -0.5**
KK31				pmax	pmax		
	comp=Z,2.0nm,0.8s						
KKAR	**Karatay Array**	**52.81**	**299**	*e*P		**P**	**05 44 38.0 -0.2**
KKAR	**Karatay Array**	**52.81**	**299**	*e*P		**P**	**05 44 38.0 -0.2**
ARU	**Arti**	**55.38**	**318**	*d i*P		**P**	**05 44 57.2 +0.5**
ARU							05 46 59.1
ARU				S		**S**	**05 52 42.9 +4.3**
ARU				SS		**SS**	**05 56 22.7 -0.1**
ARU				pmax	pmax		
	comp=Z,5.0nm,1.0s						
ARU	**Arti**	**55.38**	**318**	*e*P		**P**	**05 44 56.6 -0.1**
	comp=Z,7.0nm,1.2s						
AB31	**Akbulak array**	**57.25**	**309**	*e*P		**P**	**05 45 09.0 -1.2**
AB31				pmax	pmax		
	comp=Z,2.0nm,0.7s						
ABKAR	**Akbulak array**	**57.25**	**309**	*e*P		**P**	**05 45 09.8 -0.4**
WB2	**Warramunga Arr**	**59.18**	**189**	*e*P		**P**	**05 45 22.7 -1.1**
	comp=Z,21nm,1.5s						
WRA	**Warramunga Arr**	**59.18**	**189**	P		**P**	**05 45 22.6 -1.2**
	comp=Z,3.6nm,0.7s,baz=6.5,slow=7.0,SNR=40						
YKW3	**Yellowknife Ar**	**61.63**	**31**	*e*P		**P**	**05 45 40.2 +0.1**
	comp=Z,4.8nm,1.2s						
YKA	**Yellowknife Ar**	**61.66**	**31**	P		**P**	**05 45 40.3 -0.1**
	comp=Z,2.6nm,1.1s,baz=295,slow=6.8,SNR=17						
YKB5	**Yellowknife Ar**	**61.66**	**31**	*e*P		**P**	**05 45 39.9 -0.5**
AS01	**Alice Springs**	**62.90**	**189**	*e*P		**P**	**05 45 48.4 -0.6**
ASAR	**Alice Springs**	**62.90**	**189**	P		**P**	**05 45 48.5 -0.6**
	comp=Z,1.4nm,0.7s,baz=10,slow=6.2,SNR=15						
OBN	**Obninsk**	**66.95**	**323**	*e*P		**P**	**05 46 14.4 -0.7**
OBN				pmax	pmax		
	comp=Z,3.0nm,1.0s						
FIA1	**FINESS Array S**	**67.39**	**332**	*e*P		**P**	**05 46 17.3 -0.5**
FINES	**FINESS Array B**	**67.39**	**332**	P		**P**	**05 46 16.7 -1.1**
	comp=Z,2.1nm,0.8s,baz=35,slow=7.0,SNR=7.7						
FINES	**FINESS Array B**	**67.39**	**332**	*i* P		**P**	**05 46 20.0 +2.2**
FINES				pmax	pmax		
	comp=Z,2.0nm,1.0s						
K05A	**Summer Lake**	**69.06**	**52**	*e*P		**P**	**05 46 30.4 +1.5**
	comp=Z,8.3nm,1.0s						
MOD	**Modoc Plateau**	**69.89**	**52**	*e*P		**P**	**05 46 35.9 +2.0**
	comp=Z,6.6nm,0.4s						
KIV	**Kislovodsk**	**70.18**	**311**	*e*P		**P**	**05 46 37.2 +1.6**
KIV				*i*			05 46 44.0
KIV				*i*			05 46 52.4
KIV				*i*			05 49 12.7
KIV				pmax	pmax		
	comp=Z,9.0nm,1.0s						
KIV				MLR	MLR		
	comp=Z,49nm,17.0s						
KBZ	**Khabaz**	**70.18**	**311**	P		**P**	**05 46 36.0 +0.6**
	comp=Z,0.9nm,0.5s,baz=6.8,slow=4.3,SNR=3.6						
KBZ				LR	LR		06 18 55.1
	comp=Z,38nm,18.2s,baz=24,slow=37						
SWMT	**Swartz Lake**	**70.28**	**44**	*e*P		**P**	**05 46 36.8 +0.6**
FFC	**Flin Flon**	**71.58**	**33**	*e*P		**P**	**05 46 43.9 +0.1**
FFC				pmax	pmax		
	comp=Z,8.0nm,1.0s						
FFC	**Flin Flon**	**71.58**	**33**	*e*P		**P**	**05 46 43.9 +0.1**
	comp=Z,8.0nm,1.0s						
FCC	**Fort Churchill**	**71.84**	**27**	*e*P		**P**	**05 46 44.8 -0.4**
FCC				pmax	pmax		
	comp=Z,8.0nm,0.9s						
FCC	**Fort Churchill**	**71.84**	**27**	*e*P		**P**	**05 46 44.8 -0.4**
	comp=Z,7.8nm,0.9s						
LRM	**Limekiln Ridge**	**72.16**	**45**	*e*P		**P**	**05 46 48.2 +0.5**
EGMT	**Eagleton**	**72.24**	**42**	*e*P		**P**	**05 46 48.2 +0.3**
	comp=Z,7.6nm,1.2s						
DLMT	**Dillon**	**72.36**	**46**	*e*P		**P**	**05 46 49.2 +0.4**
	comp=Z,8.1nm,0.9s						
NC405	**NORSAR Array S**	**72.42**	**337**	*e*P		**P**	**05 46 48.4 -0.3**
NOA	**NORSAR Array B**	**72.62**	**337**	P		**P**	**05 46 49.2 -0.7**
	comp=Z,1.3nm,0.8s,baz=41,slow=5.9,SNR=3.5						
BOZ	**Bozeman (W)**	**72.72**	**45**	*e*P		**P**	**05 46 51.6 +0.7**
BOZ				pmax	pmax		
	comp=Z,2.0nm,0.8s						
BOZ	**Bozeman (W)**	**72.72**	**45**	*e*P		**P**	**05 46 51.6 +0.7**
	comp=Z,2.3nm,0.8s						
NV01	**Mina Array Sit**	**73.15**	**54**	*e*P		**P**	**05 46 54.0 +0.2**
NVAR	**Mina Array Bea**	**73.15**	**54**

PD31	**Pinedale Array**	**75.69**	**46**	*e*P		**P**	**05 47 08.6**	**+0.1**
PDAR	**Pinedale Array**	**75.69**	**46**	P		**P**	**05 47 08.2**	**-0.3**
	comp=Z,0.7nm,0.7s,baz=256,slow=2.4,SNR=8.7							
SHPR	**Sheep Range**	**76.31**	**54**	*e*P		**P**	**05 47 13.0**	**+1.0**
	comp=Z,9.4nm,1.9s							
P17A	**Butcher Ranch,**	**77.13**	**49**	*e*P		**P**	**05 47 17.5**	**+0.9**
	comp=Z,9.3nm,1.2s							
MTPU	**Mount Pierson**	**77.18**	**51**	*e*P		**P**	**05 47 18.4**	**+1.3**
	comp=Z,10nm,1.5s							
LCMT	**Little Creek M**	**77.19**	**53**	*e*P		**P**	**05 47 18.1**	**+1.2**
	comp=Z,5.6nm,1.2s							
BUR08	**Bucovina Ar. S**	**77.20**	**322**	*e*P		**P**	**05 47 17.3**	**+0.6**
SRU	**San Rafael Swe**	**77.49**	**50**	*e*P		**P**	**05 47 19.2**	**+0.5**
SRU				pmax	pmax			
	comp=Z,4.0nm,0.9s							
SRU	**San Rafael Swe**	**77.49**	**50**	*e*P		**P**	**05 47 19.2**	**+0.5**
	comp=Z,4.2nm,0.9s							
KECS	**Kecovo**	**78.78**	**325**	*e*P		P	05 47 33.4	+8.1
KECS	**Kecovo**	**78.78**	**325**	*e*		P	05 47 33.4	+8.1
PV10	**Paradox Valley**	**78.85**	**49**	*e*P		**P**	**05 47 27.2**	**+1.0**
PV05	**Paradox Valley**	**79.01**	**50**	*e*P		**P**	**05 47 27.5**	**+0.3**
PV01	**Paradox Valley**	**79.29**	**49**	*e*P		**P**	**05 47 28.7**	**0.0**
Y14A	**Wickenburg**	**79.29**	**55**	*e*P		**P**	**05 47 28.8**	**+0.3**
	comp=Z,18nm,1.4s							
DGAR	**Diego Garcia**	**79.39**	**251**	*e*P		**P**	**05 47 29.0**	**-0.1**
DGAR				pmax	pmax			
	comp=Z,349nm,1.3s							
DGAR	**Diego Garcia**	**79.39**	**251**	*e*P		**P**	**05 47 29.0**	**-0.1**
	comp=Z,349nm,1.3s							
113A	**Mohawk Valley,**	**79.55**	**56**	*e*P		**P**	**05 47 30.2**	**+0.3**
	comp=Z,3.2nm,1.1s							
BRG	**Berggiesshubel**	**79.71**	**330**	*e*P		**P**	**05 47 30.5**	**+0.1**
	comp=Z,1.6nm,0.6s							
BRG	**Berggiesshubel**	**79.71**	**330**	*e*P		**P**	**05 47 30.5**	**+0.1**
BRG				pmax	pmax			
	comp=Z,2.0nm,0.6s							
CLL	**Collm**	**79.73**	**330⇑**	*i*P		**P**	**05 47 30.2**	**-0.3**
	comp=Z,3.0nm,0.8s							
CLL				*i*			05 47 39.4	
CLL				*e*			05 47 43.0	
CLL	**Collm**	**79.73**	**330⇑**	*i*P		**P**	**05 47 30.2**	**-0.3**
CLL				*i*			05 47 39.4	
CLL				pmax	pmax			
	comp=Z,3.0nm,0.8s							
CLL	**Collm**	**79.73**	**330**	*e*P		**P**	**05 47 30.1**	**-0.3**
	comp=Z,16nm,1.8s							
S22A	**4UR Ranch, Cre**	**80.57**	**49**	*e*P		**P**	**05 47 36.6**	**+0.9**
	comp=Z,3.3nm,1.2s							
KHC	**Kasperske Hory**	**81.22**	**329**	*e*P		**P**	**05 47 38.5**	**-0.1**
KHC	**Kasperske Hory**	**81.22**	**329**	*e*P		**P**	**05 47 38.5**	**-0.1**
GERES	**GERESS Array B**	**81.40**	**329**	P		**P**	**05 47 39.2**	**-0.4**
	comp=Z,0.2nm,0.3s,baz=8.9,slow=7.0,SNR=3.5							
ECSD	**EROS Data Cent**	**81.84**	**39**	*e*P		**P**	**05 47 41.6**	**-0.3**
	comp=Z,3.9nm,1.1s							
ANMO	**Albuquerque**	**82.69**	**51**	*e*P		**P**	**05 47 48.0**	**+1.3**
ANMO				pmax	pmax			
	comp=Z,4.0nm,1.3s							
ANMO	**Albuquerque**	**82.69**	**51**	*e*P		**P**	**05 47 48.0**	**+1.3**
	comp=Z,3.8nm,1.3s							
FUORN	**Ofenpass-Fuorn**	**84.57**	**329**	*e*P		**P**	**05 47 56.5**	**+0.2**
	comp=Z,5.5nm,1.0s							
TX31	**Lajitas Ar. Si**	**88.27**	**53**	*e*P		**P**	**05 48 14.4**	**-0.1**
TXAR	**Lajitas Array**	**88.27**	**53**	P		**P**	**05 48 14.4**	**-0.1**
	comp=Z,0.8nm,0.9s,baz=284,slow=2.7,SNR=5.0							
CCM	**Cathedral Cave**	**88.80**	**39**	*e*P		**P**	**05 48 16.5**	**-0.2**
CCM				pmax	pmax			
	comp=Z,7.0nm,1.1s							
CCM	**Cathedral Cave**	**88.80**	**39**	*e*P		**P**	**05 48 16.5**	**-0.2**
	comp=Z,6.6nm,1.1s							
SNAA	**Sanae**	**142.91**	**197**	P		PKPpre	05 54 48.7	
VNA2	**Neumayer--Watz**	**144.48**	**197**	P		**PKPab**	**05 54 56.0**	**-0.2**
	baz=105,slow=1.6							
VNA3	**Neumayer Olymp**	**144.72**	**195**	P		**PKPab**	**05 54 56.4**	**-0.8**
LPAZ	**La Paz**	**144.97**	**58**	PKPbc		PKPbc	05 55 00.4	0.0
	comp=Z,0.6nm,0.6s,baz=8.0,slow=7.8,SNR=3.8							
LPAZ	**La Paz**	**144.97**	**58**	*e*PKIKP		**PKPdf**	**05 55 00.8**	**-0.3**
LPAZ	**La Paz**	**144.97**	**58**	*e*PKPbc		**PKPdf**	**05 55 00.8**	**-0.3**

*ISK **21** 05:49:13.5, 39°.11N×29°.16E, h5km, ML2.3*
*ISCJB **21** 05:49:14.1±0.5, 39°.13N±0°.03×29°.11E±0°.04, h5km±8km, Error ellipse: s-maj=6.2km s-min=4.4km az=32.5*
*CSEM **21** 05:49:14.3±0.1, 39°.12N×29°.13E, h8km, MD2.5, Error ellipse: s-maj=3.1km s-min=2.2km az=101.0*
*DDA **21** 05:49:14.4, 39°.11N×29°.11E, h7km, Md2.5*
ISC 21 05:49:14.3±0.9, 39°.12N±0°.03×29°.11E±0°.03, h14km±9km, n28, σ0°37/38, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.29**	**96**	P	**Pg**	**05 49 20.6**	**+0.2**
GDZ				S	**Sg**	**05 49 24.7**	**+0.1**
GDZ	**Gediz**	**0.29**	**96**	*i* P	**Pg**	**05 49 20.6**	**+0.2**
GDZ				*i* S	**Sg**	**05 49 24.7**	**+0.1**
DEMI	**Demirci**	**0.32**	**256**	P	**Pg**	**05 49 21.2**	**+0.3**
DEMI	**Demirci**	**0.32**	**256**	*i* P	**Pg**	**05 49 21.2**	**+0.3**
TVSB	**Tavsanli**	**0.43**	**39**	*e*PG	**Pg**	**05 49 22.4**	**-0.4**
TVSB				*e*SG	**Sg**	**05 49 27.9**	**-0.8**
TVSB	**Tavsanli**	**0.43**	**39**	*e*Pg	**Pg**	**05 49 22.5**	**-0.4**
TVSB				*e*Sg	**Sg**	**05 49 27.9**	**-0.8**
DURS	**Dursunbey**	**0.69**	**314**	P	**Pg**	**05 49 27.7**	**-0.1**
DURS	**Dursunbey**	**0.69**	**314**	*i* P	**Pg**	**05 49 27.7**	**-0.1**
KULA	**Kula-Manisa**	**0.70**	**210**	*e*PG	**Pg**	**05 49 27.5**	**-0.5**
KULA				*e*SG	**Sb**	**05 49 37.5**	**-0.5**
KULA	**Kula-Manisa**	**0.70**	**210**	*e*Pg	**Pg**	**05 49 27.5**	**-0.5**
KULA				*e*Sg	**Sb**	**05 49 37.5**	**-0.5**
MANT	**Manisa**	**0.76**	**215**	P	**Pg**	**05 49 29.0**	**-0.2**
MANT				S	**Sb**	**05 49 39.8**	**-0.1**
MANT	**Manisa**	**0.76**	**215**	*i* P	**Pg**	**05 49 29.1**	**-0.2**
MANT				*i* S	**Sb**	**05 49 39.8**	**-0.1**
KHAL	**Karahalli**	**0.81**	**158**	P	**Pb**	**05 49 30.4**	**+0.2**
KHAL				S	**Sb**	**05 49 41.3**	**+0.3**
KHAL	**Karahalli**	**0.81**	**158**	*i* P	**Pb**	**05 49 30.4**	**+0.2**
KHAL				*i* S	**Sb**	**05 49 41.3**	**+0.3**
KHL	**Karahalli**	**0.86**	**158**	*e*PG	**Pg**	**05 49 30.4**	**-0.6**
KHL	**Karahalli**	**0.86**	**158**	*e*Pg	**Pg**	**05 49 30.4**	**-0.6**
ORLT	**Orhaneli**	**0.94**	**350**	*e*PG	**Pb**	**05 49 32.7**	**+0.2**
ORLT	**Orhaneli**	**0.94**	**350**	*e*Pg	**Pb**	**05 49 32.7**	**+0.2**
CAVI	**Cavuskoy**	**1.22**	**27**	*e*PN	**Pn**	**05 49 37.3**	**+0.3**
CAVI	**Cavuskoy**	**1.22**	**27**	*e*Pn	**Pn**	**05 49 37.3**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.26**	**352**	*e*PN	**Pb**	**05 49 38.1**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.26**	**352**	*e*Pn	**Pb**	**05 49 38.1**	**+0.2**
GONE	**Gonen-Balikesi**	**1.44**	**310**	*e*PN	**Pg**	**05 49 41.9**	**-0.2**
GONE	**Gonen-Balikesi**	**1.44**	**310**	*e*Pn	**Pg**	**05 49 41.9**	**-0.2**
ARMT	**Armutlu**	**1.46**	**352**	*e*PN	**Pb**	**05 49 41.2**	**0.0**
ARMT	**Armutlu**	**1.46**	**352**	*e*Pn	**Pb**	**05 49 41.3**	**0.0**
GULT	**Gulveren**	**1.70**	**39**	*e*PN	**Pn**	**05 49 44.2**	**+0.5**
GULT	**Gulveren**	**1.70**	**39**	*e*Pn	**Pn**	**05 49 44.2**	**+0.5**

*ISCJB **21** 06:05:46.8±0.6, 39°.11N±0°.03×29°.06E±0°.04, h5km±7km, Error ellipse: s-maj=5.6km s-min=4.8km az=33.4*
*ISK **21** 06:05:46.3, 39°.11N×29°.08E, h8km, ML2.3*
*DDA **21** 06:05:46.7, 39°.10N×29°.09E, h7km, Md2.6*
*CSEM **21** 06:05:47.2±0.1, 39°.12N×29°.07E, h10km, MD2.6, Error ellipse: s-maj=4.1km s-min=2.9km az=99.0*
ISC 21 06:05:47.0±1.0, 39°.12N±0°.03×29°.07E±0°.03, h8km±9km, n35, σ0°30/49, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.32**	**96**	P	**Pg**	**06 05 53.6**	**+0.1**
GDZ				S	**Sg**	**06 05 58.0**	**+0.2**
GDZ	**Gediz**	**0.32**	**96**	*i* P	**Pg**	**06 05 53.6**	**+0.1**
GDZ				*i* S	**Sg**	**06 05 58.0**	**+0.2**
TVSB	**Tavsanli**	**0.45**	**43**	*e*PG	**Pg**	**06 05 55.8**	**0.0**
TVSB				*e*SG	**Sg**	**06 06 01.6**	**-0.1**
TVSB	**Tavsanli**	**0.45**	**43**	*e*Pg	**Pg**	**06 05 55.8**	**0.0**
TVSB				*e*Sg	**Sg**	**06 06 01.6**	**-0.1**
DURS	**Dursunbey**	**0.67**	**316**	P	**Pb**	**06 06 01.3**	**+0.4**
DURS	**Dursunbey**	**0.67**	**316**	*i* P	**Pb**	**06 06 01.3**	**+0.4**
DURS				*i* S	**Sn**	**06 06 13.8**	**+0.3**
KULA	**Kula-Manisa**	**0.68**	**208**	*e*PG	**Pg**	**06 06 00.2**	**0.0**
KULA				*e*SG	**Sg**	**06 06 09.4**	**+0.2**
KULA	**Kula-Manisa**	**0.68**	**208**	*e*Pg	**Pg**	**06 06 00.2**	**0.0**
KULA				*e*Sg	**Sg**	**06 06 09.4**	**+0.2**
MANT	**Manisa**	**0.74**	**212**	P	**Pg**	**06 06 01.2**	**-0.2**
MANT	**Manisa**	**0.74**	**212**	*i* P	**Pg**	**06 06 01.2**	**-0.2**
KHAL	**Karahalli**	**0.82**	**156**	P	**Pn**	**06 06 04.7**	**-0.2**
KHAL				S	**Sg**	**06 06 13.0**	**-0.5**
KHAL	**Karahalli**	**0.82**	**156**	*i* P	**Pn**	**06 06 04.7**	**-0.2**
KHAL				*i* S	**Sg**	**06 06 13.0**	**-0.5**
KHL	**Karahalli**	**0.87**	**156**	*e*PG	**Pg**	**06 06 03.9**	**+0.1**
KHL	**Karahalli**	**0.87**	**156**	*e*Pg	**Pg**	**06 06 03.9**	**+0.1**
ORLT	**Orhaneli**	**0.93**	**352**	*e*PG	**Pb**	**06 06 05.5**	**0.0**
ORLT	**Orhaneli**	**0.93**	**352**	*e*Pg	**Pb**	**06 06 05.5**	**0.0**
IGD	**Bursa**	**1.15**	**5**	*i* P	**Pb**	**06 06 08.4**	**-0.7**
IGD				*i* S	**Sn**	**06 06 24.7**	**-0.5**
CAVI	**Cavuskoy**	**1.23**	**29**	*e*PN	**Pn**	**06 06 10.2**	**-0.4**
CAVI	**Cavuskoy**	**1.23**	**29**	*e*Pn	**Pn**	**06 06 10.2**	**-0.4**
IZI	**Iznik**	**1.25**	**14**	*e*PN	**Pb**	**06 06 11.0**	**0.0**
IZI	**Iznik**	**1.25**	**14**	*e*Pn	**Pb**	**06 06 11.0**	**0.0**
MDNY	**Mudanya-Bursa**	**1.25**	**354**	*e*PN	**Pn**	**06 06 10.6**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.25**	**354**	*e*Pn	**Pn**	**06 06 10.6**	**-0.2**
KCTX	**Karacabey (Bur**	**1.27**	**335**	*e*PN	**Pn**	**06 06 10.8**	**-0.2**
KCTX	**Karacabey (Bur**	**1.27**	**335**	*e*Pn	**Pn**	**06 06 10.8**	**-0.2**
BORA	**Eskisehir**	**1.31**	**54**	P	**Pb**	**06 06 12.1**	**+0.2**
BORA				S	**Sn**	**06 06 30.0**	**+0.5**
BORA	**Eskisehir**	**1.31**	**54**	*i* P	**Pb**	**06 06 12.1**	**+0.2**
BORA				*i* S	**Sn**	**06 06 30.0**	**+0.5**
ADVT	**Abdulvahap**	**1.41**	**21**	*e*PN	**Pb**	**06 06 13.6**	**+0.1**
ADVT	**Abdulvahap**	**1.41**	**21**	*e*Pn	**Pb**	**06 06 13.6**	**+0.1**
ESKT	**Eskisehir**	**1.44**	**73**	*i* P	**Pb**	**06 06 14.2**	**+0.1**
ESKT				*i* S	**Sb**	**06 06 32.8**	**+0.2**
SEYT	**Eskypehyr**	**1.44**	**73**	P	**Pb**	**06 06 14.2**	**+0.1**
SEYT				S	**Sb**	**06 06 32.8**	**+0.2**
ARMT	**Armutlu**	**1.45**	**354**	*e*PN	**Pn**	**06 06 13.6**	**+0.1**
ARMT	**Armutlu**	**1.45**	**354**	*e*Pn	**Pn**	**06 06 13.6**	**+0.1**
GULT	**Gulveren**	**1.72**	**40**	*e*PN	**Pn**	**06 06 16.7**	**-0.6**
GULT	**Gulveren**	**1.72**	**40**	*e*Pn	**Pn**	**06 06 16.7**	**-0.6**

*SOME **21** 06:11:15.1, 42°.07N×77°.50E, h0km*
KRNET 21 06:11:15.3±0.1, 42°.06N×77°.47E, h18km, mb1.4, 16C, Lake Issyk-Kul region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KDJ	**Kajisay**	**0.23**	**289⇑**	*i*P	Pb	06 11 21.3	+0.5
	baz=271						
KDJ			⇑	*i*S	Sg	06 11 26.5	+1.9
	baz=271						
ANVS	**Anan'yevo**	**0.74**	**12⇑**	*e*P	Pb	06 11 24.4	-5.4
	baz=351						
ANVS			⇑	*e*S	Sb	06 11 33.9	-5.8
	baz=351						
PRZ	**Przheval'sk**	**0.81**	**58⇑**	*i*P	Pb	06 11 22.3	-8.8
	baz=52						
PRZ			⇑	*i*S	Sb	06 11 29.4	-12
	baz=52						
ULHL	**Ulahol**	**0.93**	**282⇑**	*i*P	Pn	06 11 33.7	0.0
	baz=281						
ULHL			⇑	*i*S	Sn	06 11 46.9	+0.2
	baz=281						
TNSS	**Tian-Shan**	**1.06**	**339**	*e*P	Pb	06 11 35.4	+0.1
	3.2nm,0.1s						
TNSS				*e*S	Sn	06 11 50.3	+0.1
	2.0nm,0.3s						
MDOK	**Medeo**	**1.15**	**345**	*e*P	Pg	06 11 37.7	+0.1
	2.9nm,0.1s						
MDOK				*e*S	Sg	06 11 54.0	+1.3
	4.5nm,0.6s						
BOOM	**Boomskoye usch**	**1.21**	**291⇑**	*e*P	Pn	06 11 37.2	-0.4
	baz=285						
BOOM			⇑	*i*S	Sg	06 11 55.5	+0.8
	baz=285						
SATY	**Saty**	**1.22**	**34**	*e*P	Pn	06 11 37.4	-0.2
	3.2nm,0.3s						
SATY				*e*S	Sb	06 11 53.3	-0.1
	17nm,0.1s						
NRN	**Naryn**	**1.26**	**241⇑**	*e*P	Pg	06 11 39.7	-0.1
	baz=243						
NRN			⇑	*i*S	Sg	06 11 59.7	+3.4
	baz=243						
KST	**Kastek**	**1.48**	**312**	*e*P	Pb	06 11 43.2	+0.7
	0.9nm,0.3s						
KST				*e*S	Sg	06 12 03.2	-0.1
	2.0nm,0.3s						
UZB	**Uzynbulak**	**1.58**	**46**	*e*P	Pb	06 11 44.6	+0.4
	0.3nm,0.1s						
UZB				*e*S	Sg	06 12 05.8	-0.7
	4.7nm,0.2s						
TKM2	**Tokmak 2**	**1.63**	**303⇑**	*i*P	Pb	06 11 45.5	+0.5
	baz=303						
TKM2			⇑	*i*S	Sg	06 12 08.3	+0.3
	baz=303						
KZA	**Kyzart**	**1.65**	**271⇑**	*i*P	Pb	06 11 46.3	+0.8
	baz=271						
KZA			⇑	*i*S	Sg	06 12 08.6	-0.1
	baz=271						
KPKS	**Kokpek**	**1.67**	**32**	*e*P	Pb	06 11 46.4	+0.8
	3.3nm,0.2s						
KPKS				*e*S	Sg	06 12 09.2	-0.1
	13nm,0.3s						
CHKK	**Chushkaly**	**1.84**	**349**	*e*P	Pb	06 11 49.3	+0.7
	1.7nm,0.4s						
CHKK				*e*S	Sg	06 12 13.9	-0.9
	7.6nm,0.3s						

MEX 21 06:17:30.9±0.7, 14°.23N×92°.31W, h94km±13km, MD3.7, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THIG		**0.67**	**4**	*e*P	Pn	06 17 45.4	-2.1
THIG				*i* S	Sn	06 17 58.6	-1.2
PCIG		**1.71**	**329**	*e*P	Pn	06 17 57.7	-1.7
PCIG				*i* S	Sn	06 18 20.3	-0.8
CCIG	**Comitan**	**2.04**	**5**	*e*P	Pn	06 18 02.9	-1.1
CCIG				*e*S	Sn	06 18 27.6	-1.6

IDC 21 06:19:31.5±3.3, 4°.77N×93°.61E, h0km, mb3.5/2, mb1 3.7/3, mb1mx3.4/41, mbtmp3.5/3, ML3.7/1, Error ellipse: s-maj=112.2km s-min=32.4km az=61.0, Off west coast of northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**14.57**	**21**	Pn	Pn	06 22 59.5	+0.4
	0.1nm,0.3s,baz=216,slow=12,SNR=4.8						
MKAR	**Makanchi Array**	**42.99**	**349**	P	P	06 27 32.4	-0.2
	0.4nm,0.4s,baz=182,slow=8.7,SNR=5.3						
WRA	**Warramunga Arr**	**46.97**	**123**	P	P	06 28 04.5	-0.2
	0.4nm,0.8s,baz=303,slow=8.9,SNR=6.4						

IDC 21 06:27:13.4±11.0, 7°.84S×126°.45E, h120km±128km, mb3.0/1, mb1 3.3/4, mb1mx3.1/31, mbtmp3.6/4, ML3.4/3, Error ellipse: s-maj=92.2km s-min=55.4km az=40.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**10.23**	**184**	P	Pn	06 29 38.2	+1.2
	0.2nm,0.3s,baz=12,slow=11,SNR=8.2						
FITZ				S	Sn	06 31 28.0	-1.9
	0.3nm,0.3s,baz=126,slow=19,SNR=4.3						
WRA	**Warramunga Arr**	**14.25**	**148**	P	Pn	06 30 28.3	-1.6
	0.2nm,0.3s,baz=328,slow=12,SNR=9.6						
WRA				S	Sn	06 32 54.3	-13
	0.2nm,0.3s,baz=323,slow=25,SNR=6.5						
ASAR	**Alice Springs**	**17.28**	**156**	P	Pn	06 31 08.7	+1.2
	0.5nm,0.3s,baz=337,slow=12,SNR=44						
MKAR	**Makanchi Array**	**67.06**	**329**	P	P	06 37 53.7	-0.1
	0.1nm,0.4s,baz=134,slow=4.2,SNR=1.9						

*ISCJB **21** 06:31:50.2±0.2, 25°.76S±0°.03×179°.47E±0°.05, h503km, mb4.4/69, Error ellipse: s-maj=6.2km s-min=3.1km az=15.4*
*IDC **21** 06:31:50.9±1.4, 25°.66S×179°.46E, h504km±14km, mb3.6/17, mb1 3.9/19, mb1mx3.8/34, mbtmp4.5/19, Error ellipse: s-maj=13.5km s-min=11.9km az=8.0*
*NEIC **21** 06:31:52.2±0.6, 25°.81S×179°.50E, h521km±7km, mb4.7/65, Error ellipse: s-maj=7.4km s-min=5.6km az=124.0*
ISC 21 06:31:50.5±0.4, 25°.80S±0°.05×179°.57E±0°.07, h503km, n169, σ1°52/181, mb4.5/69, 1C-1D, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**4.10**	**148**	P	P	06 33 14.8	+5.0
	141nm,0.3s,baz=66,slow=11,SNR=14						
RAO				S	**S**	**06 34 10.4**	**-4.2**
	199nm,0.3s,baz=31,slow=22,SNR=11						
RAO	**Raoul Island**	**4.10**	**148**	*e*P	P	06 33 14.6	+4.7
RAO				*e*S	**S**	**06 34 19.7**	**+5.1**
MSVF	**Nonsavu**	**8.15**	**350**	*e*P	**P**	**06 33 49.5**	**+0.7**
OUZ	**Omahuta**	**10.70**	**207**	*e*P	P	06 34 20.1	+4.9
KUZ	**Kuaotunu**	**11.39**	**196**	PN	**P**	**06 34 26.3**	**+3.9**
MXZ	**Matakaoa Point**	**11.77**	**185**	*e*P	**P**	**06 34 28.0**	**+1.5**
MXZ	**Matakaoa Point**	**11.77**	**185**	PN	**P**	**06 34 30.3**	**+3.8**
HAZ	**Te Kaha**	**12.01**	**187**	PN	**P**	**06 34 29.6**	**+0.6**
HAZ				SN	**S**	**06 36 37.4**	**-2.2**
WMGZ	**Waiomatatini S**	**12.02**	**184**	SN	**S**	**06 36 39.9**	**0.0**
PUZ	**Puketiti**	**12.28**	**185**	PN	**P**	**06 34 34.0**	**+2.1**
PUZ				SN	**S**	**06 36 42.3**	**-2.6**
DZM	**Mont Dzumac**	**12.56**	**284**	*e*P	**P**	**06 34 36.5**	**+1.3**
URZ	**Urewera**	**12.59**	**189**	P	**P**	**06 34 35.0**	**-0.2**
	7.9nm,0.3s,baz=13,slow=1.1,SNR=41						
URZ				S	**S**	**06 36 49.0**	**-1.9**
	0.8nm,0.3s,baz=60,slow=20,SNR=6.2						
URZ	**Urewera**	**12.59**	**189**	*e*P	**P**	**06 34 35.1**	**0.0**
URZ				*e*S	**S**	**06 36 52.7**	**+1.8**
URZ	**Urewera**	**12.59**	**189**	PN	**P**	**06 34 34.7**	**-0.5**
MWZ	**Matawai**	**12.61**	**187**	PN	**P**	**06 34 35.8**	**+0.3**
RIGZ	**Rimuhau**	**12.96**	**186**	PN	**P**	**06 34 39.9**	**+0.8**
SNGZ	**Shannon Statio**	**13.08**	**188**	PN	**P**	**06 34 41.2**	**+0.8**
MRHZ	**Matea Rd**	**13.26**	**191**	PN	**P**	**06 34 42.1**	**-0.2**
HIZ	**Hauiti**	**13.28**	**196**	*e*P	**P**	**06 34 45.3**	**+2.8**
NMHZ	**Naumai**	**13.46**	**189**	PN	**P**	**06 34 44.6**	**+0.1**
BKZ	**Black Stump Fm**	**13.57**	**190**	*e*P	**P**	**06 34 44.8**	**-0.8**
BKZ				*e*S	**S**	**06 37 07.8**	**-2.1**
BHHZ	**Black Hill Sta**	**13.96**	**191**	PN	**P**	**06 34 48.0**	**-1.7**
TSZ	**Takapari Road**	**14.53**	**191**	PN	**P**	**06 34 54.8**	**-0.8**
BFZ	**Birch Farm**	**15.10**	**190**	*e*P	**P**	**06 35 00.4**	**-1.1**
	24nm,0.9s						
BFZ				*e*S	**S**	**06 37 35.4**	**-3.6**
TCW	**Tory Channel**	**15.98**	**195**	PN	**P**	**06 35 09.9**	**-0.8**
SNZO	**South Karori**	**15.98**	**193**	*e*P	**P**	**06 35 11.5**	**+0.8**
	59nm,0.5s						
SNZO				*e*S	**S**	**06 37 55.0**	**-0.7**
QRZ	**Quartz Range**	**16.09**	**200**	PN	**P**	**06 35 12.9**	**+1.1**
NNZ	**Nelson**	**16.21**	**197**	PN	**P**	**06 35 13.0**	**-0.1**
TUWZ	**Tuamarina**	**16.27**	**195**	PN	**P**	**06 35 12.9**	**-0.8**
THZ	**Tophouse**	**16.84**	**197**	*e*P	**P**	**06 35 19.6**	**-0.2**
	46nm,0.4s						
THZ				*e*S	**S**	**06 38 10.7**	**-0.5**
THZ	**Tophouse**	**16.84**	**197**	PN	**P**	**06 35 19.3**	**-0.4**
DSZ	**Denniston Nort**	**17.15**	**200**	PN	**P**	**06 35 23.1**	**+0.4**
KHZ	**Kahutara**	**17.30**	**195**	*e*P	**P**	**06 35 24.4**	**+0.3**
	35nm,0.4s						
KHZ				*e*S	**S**	**06 38 17.4**	**-1.2**
KHZ	**Kahutara**	**17.30**	**195**	PN	**P**	**06 35 23.6**	**-0.4**
LTZ	**Lake Taylor**	**17.96**	**198**	*e*P	**P**	**06 35 30.0**	**-0.3**
	26nm,0.5s						
LTZ				*e*S	**S**	**06 38 29.1**	**-0.5**
LTZ	**Lake Taylor**	**17.96**	**198**	PN	**P**	**06 35 29.0**	**-1.3**
INZ	**Inchbonnie**	**18.15**	**200**	PN	**P**	**06 35 32.2**	**+0.3**
OXZ	**Oxford**	**18.53**	**198**	*e*P	**P**	**06 35 35.2**	**-0.3**
	27nm,0.7s						
OXZ				*e*S	**S**	**06 38 35.8**	**-2.9**
OXZ	**Oxford**	**18.53**	**198**	PN	**P**	**06 35 34.8**	**-0.6**
CRLZ	**Canterbury Las**	**18.61**	**196**	*e*P	**P**	**06 35 36.6**	**+0.5**
	67nm,1.4s						
MQZ	**McQueen's Vall**	**18.73**	**196**	*e*P	**P**	**06 35 37.1**	**-0.1**
	58nm,1.5s						
MQZ	**McQueen's Vall**	**18.73**	**196**	PN	**P**	**06 35 37.4**	**+0.2**
LHI	**Lord Howe Isla**	**18.86**	**248**	*e*P	**P**	**06 35 41.2**	**+2.6**
	478nm,1.4s						
RPZ	**Rata Peaks**	**19.17**	**199**	P	**P**	**06 35 41.0**	**-0.3**
	3.9nm,0.3s,baz=328,slow=0.7,SNR=25						
RPZ	**Rata Peaks**	**19.17**	**199**	*e*P	**P**	**06 35 41.8**	**+0.6**
	52nm,1.5s						
FOZ	**Fox Glacier**	**19.39**	**202**	*e*P	**P**	**06 35 43.4**	**+0.2**
	70nm,1.6s						
FOZ	**Fox Glacier**	**19.39**	**202**	PN	**P**	**06 35 42.9**	**-0.4**
LBZ	**Lake Benmore**	**20.04**	**200**	*e*P	**P**	**06 35 48.2**	**-1.0**
	30nm,1.5s						
JCZ	**Jackson Bay**	**20.22**	**203**	PN	**P**	**06 35 51.2**	**+0.2**
ODZ	**Otahua Downs**	**20.50**	**198**	*e*P	**P**	**06 35

WAKR	**Walker**	**85.73**	**43**	*eP*	**P**	**06 43 36.8**	**+0.6**
NV01	**Mina Array Sit**	**86.39**	**44**	*eP*	**P**	**06 43 39.2**	**-0.1**
NVAR	**Mina Array Bea**	**86.39**	**44**	P	**P**	**06 43 39.5**	**+0.2**
	comp=Z,1.9nm,0.7s,baz=222,slow=8.6,SNR=20						
NV11	**Mina Array Sit**	**86.48**	**44**	*eP*	**P**	**06 43 40.0**	**+0.3**
	comp=Z,8.7nm,1.6s						
PAHR	**Pah Rah Range**	**86.49**	**43**	*eP*	**P**	**06 43 40.0**	**+0.2**
	comp=Z,18nm,1.9s						
TPNV	**Topopah Spring**	**86.83**	**46**	*eP*	**P**	**06 43 41.9**	**+0.5**
	comp=Z,3.3nm,0.7s						
PLCA	**Paso Flores**	**87.22**	**134**	P	**P**	**06 43 45.1**	**+1.8**
	comp=Z,3.3nm,0.9s,baz=283,slow=5.3,SNR=6.9						
PLCA	**Paso Flores**	**87.22**	**134**	*eP*	**P**	**06 43 44.1**	**+0.8**
	comp=Z,37nm,1.8s						
SHPR	**Sheep Range**	**87.28**	**47**	*eP*	**P**	**06 43 44.6**	**+1.0**
	comp=Z,17nm,2.0s						
MOD	**Modoc Plateau**	**87.30**	**40**	*eP*	**P**	**06 43 44.2**	**+0.7**
	comp=Z,17nm,1.6s						
GYA	**Guiyang**	**87.38**	**301**	P	**P**	**06 43 45.3**	**+1.1**
GYA				pP	pP	06 45 41.8	+6.2
GYA				sP	sP	06 46 33.0	+6.2
GYA				PP	**PP**	**06 47 21.3**	**+3.2**
GYA				SKS	**SKSac**	**06 53 20.5**	**-3.4**
GYA				S	**S**	**06 53 41.6**	**-1.0**
GYA	**Guiyang**	**87.38**	**301**	sS	sS	06 57 06.4	+5.3
GYA				pmax	pmax		
	comp=Z,120nm,0.8s						
K05A	**Summer Lake**	**87.47**	**39**	*eP*	**P**	**06 43 45.5**	**+1.1**
	comp=Z,5.9nm,0.7s						
TUC	**Tucson**	**87.98**	**53**	*eP*	**P**	**06 43 48.6**	**+1.7**
	comp=Z,24nm,1.8s						
H04A	**Detroit Lake**	**87.99**	**37**	*eP*	**P**	**06 43 47.0**	**+0.4**
	comp=Z,21nm,1.6s						
319A	**Douglas**	**88.58**	**54**	*eP*	**P**	**06 43 51.6**	**+1.9**
	comp=Z,28nm,1.6s						
WVOR	**Wild Horse Val**	**88.60**	**41**	*eP*	**P**	**06 43 50.1**	**+0.5**
	comp=Z,9.5nm,1.4s						
X16A	**Lo Mia Camp, P**	**88.65**	**51**	*eP*	**P**	**06 43 51.4**	**+1.3**
	comp=Z,16nm,1.8s						
LCMT	**Little Creek M**	**88.84**	**48**	*eP*	**P**	**06 43 51.4**	**+0.6**
	comp=Z,3.3nm,1.1s						
KNB	**Kanab**	**89.12**	**48**	*eP*	**P**	**06 43 53.0**	**+0.8**
	comp=Z,21nm,1.8s						
PSUT	**Pine Spring**	**89.29**	**46**	*eP*	**P**	**06 43 53.4**	**+0.4**
	comp=Z,3.0nm,1.3s						
LON	**Longmire**	**89.52**	**36**	*eP*	**P**	**06 43 53.6**	**0.0**
	comp=Z,10nm,1.8s						
SPU	**Mount Spurr**	**89.68**	**13**	*eP*	**P**	**06 43 54.0**	**0.0**
CM01	**Chiang Mai Arr**	**89.79**	**290**	*eP*	**P**	**06 43 55.6**	**+0.1**
KMI	**Kunming**	**89.80**	**298**	P	**P**	**06 43 56.9**	**+1.2**
KMI				pmax	pmax		
	comp=Z,20nm,0.5s						
KMI				pmax	pmax		
	comp=Z,67nm,6.3s						
CMAR	**Chiang Mai Arr**	**89.82**	**291**	P	**P**	**06 43 56.3**	**+0.7**
	comp=Z,0.3nm,0.3s,baz=94,slow=2.6,SNR=5.6						
MTPU	**Mount Pierson**	**90.11**	**47**	*eP*	**P**	**06 43 58.2**	**+1.2**
	comp=Z,3.7nm,0.7s						
TT01	**Tatalina**	**90.52**	**11**	*eP*	**P**	**06 43 57.1**	**-0.7**
DUG	**Dugway, Tooele**	**90.88**	**45**	*eP*	**P**	**06 44 00.7**	**+0.5**
	comp=Z,8.8nm,1.7s						
TMUT	**Trail Mountain**	**91.43**	**47**	*eP*	**P**	**06 44 04.2**	**+1.2**
	comp=Z,6.3nm,0.6s						
MNTX	**Cornudas Mount**	**91.61**	**55**	*eP*	**P**	**06 44 04.1**	**+0.5**
	comp=Z,8.9nm,1.8s						
CAST	**Castle Rocks**	**91.70**	**12**	*eP*	**P**	**06 44 01.7**	**-1.6**
	comp=Z,8.9nm,1.5s						
TX31	**Lajitas Ar. Si**	**91.77**	**58**	*eP*	**P**	**06 44 05.4**	**+0.9**
TXAR	**Lajitas Array**	**91.77**	**58**	P	**P**	**06 44 05.2**	**+0.8**
	comp=Z,0.8nm,0.6s,baz=214,slow=5.7,SNR=12						
HVU	**Hansel Valley**	**91.78**	**44**	*eP*	**P**	**06 44 04.9**	**+0.5**
	comp=Z,21nm,2.0s						
SRU	**San Rafael Swe**	**91.78**	**47**	*eP*	**P**	**06 44 04.9**	**+0.5**
	comp=Z,2.9nm,0.8s						
CD2	**Chengdu**	**91.80**	**304**	P	**P**	**06 44 04.3**	**-0.2**
CD2				pmax	pmax		
	comp=Z,2.0nm,0.5s						
JLU	**Jordanelle**	**91.98**	**45**	*eP*	**P**	**06 44 05.7**	**+0.3**
	comp=Z,16nm,1.9s						
RND	**Reindeer**	**92.35**	**14**	*eP*	**P**	**06 44 05.2**	**-1.1**
	comp=Z,26nm,2.0s						
PV09	**Paradox Valley**	**92.38**	**48**	*eP*	**P**	**06 44 07.9**	**+0.5**
HWUT	**Hardware Ranch**	**92.44**	**44**	*eP*	**P**	**06 44 07.6**	**+0.2**
	comp=Z,7.5nm,1.8s						
WRH	**Wood River Hil**	**93.45**	**13**	*eP*	**P**	**06 44 09.7**	**-1.5**
	comp=Z,13nm,1.6s						
S22A	**4UR Ranch, Cre**	**93.56**	**50**	*eP*	**P**	**06 44 13.3**	**+0.5**
	comp=Z,8.6nm,2.0s						
HDA	**Harding Lake**	**93.64**	**14**	*eP*	**P**	**06 44 10.9**	**-1.2**
	comp=Z,11nm,0.9s						
IL1	**Eielson Array**	**93.97**	**14**	*eP*	**P**	**06 44 11.9**	**-1.7**
ILAR	**Eielson Array**	**93.97**	**14**	P	**P**	**06 44 11.7**	**-1.9**
	comp=Z,0.4nm,0.6s,baz=221,slow=5.4,SNR=8.1						
SMCO	**Snowmass**	**94.18**	**48**	*eP*	**P**	**06 44 15.6**	**-0.2**
	comp=Z,4.4nm,1.0s						
LZH	**Lanzhou**	**94.23**	**308**	*eP*	**P**	**06 44 16.5**	**+0.8**
LZH				pP	pP	06 46 13.8	+5.7
LZH				sP	sP	06 47 05.6	+6.7
LZH				PP	**PP**	**06 48 15.5**	**+4.1**
LZH				pmax	pmax		
	comp=Z,23nm,1.5s						
LZH				pmax	pmax		
	comp=Z,95nm,9.2s						
PDAR	**Pinedale Array**	**94.32**	**44**	P	**P**	**06 44 15.2**	**-0.9**
	comp=Z,0.2nm,0.5s,baz=200,slow=5.4,SNR=4.0						
YKA	**Yellowknife Ar**	**102.24**	**26**	PKiKP	**PKiKP**	**06 49 07.7**	**-1.6**
	comp=Z,0.1nm,0.5s,baz=230,slow=1.7,SNR=4.8						
MKAR	**Makanchi Array**	**113.14**	**312**	PKKPbc	PKKPbc	07 00 17.9	-0.5
	comp=Z,0.2nm,0.4s,baz=262,slow=4.2,SNR=4.9						
KSH	**Kashi**	**115.99**	**303**	*e*PKP	**PKPdf**	**06 49 35.8**	**-0.4**
KSH				*e*PP	PP	06 50 58.8	+8.8
KSH				*es*PKP		06 52 34.6	
KSH				PKS	**PKSdf**	**06 53 10.9**	**-2.0**
KSH				SKS	**SKSdf**	**06 55 56.4**	**-4.0**
KSH				AMB	AMB		
	comp=Z,86nm,4.8s						
KURBB	**Kurchatov Arra**	**116.34**	**316**	PKP	**PKPdf**	**06 49 34.8**	**-1.5**
	comp=Z,0.2nm,0.4s,baz=115,slow=2.0,SNR=2.9						
SUR	**Sutherland**	**118.70**	**200**	*e*PKPdf	**PKPdf**	**06 49 41.3**	**-0.5**
BVAR	**Borovoye Array**	**121.59**	**318**	PKP	**PKPdf**	**06 49 44.5**	**-1.8**
	comp=Z,0.9nm,0.5s,baz=108,slow=1.9,SNR=5.0						
PKME	**Peaks-Kenny Pk**	**122.42**	**51**	*e*PKPdf	**PKPdf**	**06 49 46.9**	**-1.2**
LMN	**Caledonia Moun**	**125.60**	**51**	*e*PKPdf	**PKPdf**	**06 49 52.7**	**-1.5**
ARCES	**ARCESS Array B**	**133.66**	**348**	PKP	**PKPdf**	**06 50 07.5**	**-1.3**
	comp=Z,1.4nm,0.7s,baz=73,slow=3.2,SNR=6.7						
ARCES				SKPbc	**SKPbc**	**06 52 48.4**	**-1.9**
	comp=Z,1.6nm,0.5s,baz=35,slow=3.8,SNR=24						
FINES	**FINESS Array B**	**140.11**	**340**	PKhKP	PKPpre	06 50 12.0	
	comp=Z,1.5nm,1.0s,baz=46,slow=4.0,SNR=6.5						
FINES				PKP	**PKPdf**	**06 50 21.6**	**+0.8**
	comp=Z,0.4nm,0.3s,baz=43,slow=1.7,SNR=6.6						
FINES				SKP		06 53 07.7	
	comp=Z,1.1nm,0.5s,baz=48,slow=3.3,SNR=10.0						
NC303	**NORSAR Array S**	**143.69**	**350**	*e*PKPbc	PKPab	06 50 24.7	-1.3
NC204	**NORSAR Array S**	**143.73**	**351**	*e*PKPbc	PKPab	06 50 25.2	-1.1
NC405	**NORSAR Array S**	**143.74**	**350**	*e*PKPbc	PKPab	06 50 24.8	-1.4
NB201	**NORSAR Array S**	**143.87**	**350**	*e*PKPbc	PKPbc	06 50 25.2	-1.5
NB2	**NORSAR Subarra**	**143.89**	**350**	PKP	PKPbc	06 50 24.9	-1.9
	comp=Z,2.8nm,0.5s,baz=18,slow=3.2						
NOA	**NORSAR Array B**	**143.89**	**350**	PKP	PKPbc	06 50 24.9	-1.8
	comp=Z,1.5nm,0.6s,baz=25,slow=4.5,SNR=18						
NBO00	**NORSAR Array S**	**143.96**	**351**	*e*PKPbc	PKPbc	06 50 25.7	-1.2
NAO01	**NORSAR Array S**	**144.12**	**351**	*e*PKPbc	PKPbc	06 50 26.4	-1.0
NC602	**NORSAR Array S**	**144.13**	**350**	*e*PKPbc	PKPbc	06 50 25.9	-1.6
KONO	**Kongsberg**	**145.46**	**351**	*e*PKPdf	**PKPdf**	**06 50 30.3**	**0.0**
BRTR	**Keskin Array B**	**148.37**	**305**	PKPbc	**PKPbc**	**06 50 41.9**	**+1.6**
	comp=Z,0.9nm,0.5s,baz=112,slow=3.5,SNR=6.7						
BR231	**Keskin MP Arra**	**148.97**	**305**	*e*PKPbc	**PKPab**	**06 50 45.7**	**-2.1**
ESK	**Eskdalemuir**	**150.44**	**3**	*e*PKPbc	**PKPbc**	**06 50 43.7**	**-0.8**
OJC	**Ojcow**	**151.06**	**333**	*e*PKPbc	**PKPbc**	**06 50 46.1**	**0.0**
CLL	**Collm**	**152.54**	**342**	*e*PKPbc	**PKPbc**	**06 50 46.0**	**-3.3**
CLL				*e*PKPab	**PKPab**	**06 51 01.0**	**-1.2**
CLL				*ep*PKPbc	**pPKPbc**	**06 52 55.0**	**+7.0**
BRG	**Berggiesshubel**	**152.65**	**340**	*e*PKP	**PKPbc**	**06 50 48.7**	**-0.9**
	comp=Z,2.3nm,0.6s						
TOA0	**Torodi Ar. Sit**	**167.25**	**189**	*e*PKPab	**PKPab**	**06 52 07.3**	**+0.2**
TORD	**Torodi Ar. Bea**	**167.25**	**189**	PKPab	**PKPab**	**06 52 07.2**	**+0.1**
	comp=Z,1.4nm,0.8s,baz=190,slow=3.1,SNR=7.8						

*ISK **21** 06:38:54.3,39.°12N×29.°04E,h9km,ML2.2*
*ISCJB **21** 06:38:55.0±0.5,39.°13N±0.°03×29.°03E±0.°04,h11km±5km, Error ellipse: s-maj=6.9km s-min=4.2km az=41.7*
*CSEM **21** 06:38:55.1±0.1,39.°12N×29.°03E,h12km,MD2.5, Error ellipse: s-maj=3.3km s-min=1.9km az=120.0*

*DDA **21** 06:38:56.0,39.°05N×29.°06E,h7km,Md2.5*
ISC 21 06:38:55.2±0.9,39.°13N±0.°03×29.°03E±0.°03,h11km±9km, n22,σ0s64/33,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**249**	P	**Pb**	**06 39 01.5**	**-0.4**
DEMI				S	**Sg**	**06 39 04.9**	**+0.8**
DEMI	**Demirci**	**0.26**	**249**	*i* P	**Pb**	**06 39 01.5**	**-0.4**
DEMI				*i* S	**Sg**	**06 39 05.0**	**+0.8**
GDZ	**Gediz**	**0.36**	**97**	P	**Pg**	**06 39 02.2**	**-0.2**
GDZ				S	**Sg**	**06 39 07.6**	**+0.4**
GDZ	**Gediz**	**0.36**	**97**	*i* P	**Pg**	**06 39 02.2**	**-0.2**
GDZ				*i* S	**Sg**	**06 39 07.6**	**+0.4**
TVSB	**Tavsanli**	**0.46**	**47**	*e*PG	**Pg**	**06 39 04.6**	**+0.3**
TVSB				*e*SG	**Sg**	**06 39 10.5**	**0.0**
TVSB	**Tavsanli**	**0.46**	**47**	*e*Pg	**Pg**	**06 39 04.6**	**+0.3**
TVSB				*e*Sg	**Sg**	**06 39 10.5**	**0.0**
DURS	**Dursunbey**	**0.63**	**318**	*i* P	Pn	06 39 14.8	+4.6
DURS				*i* S	**Sn**	**06 39 21.4**	**+1.1**
KULA	**Kula-Manisa**	**0.68**	**205**	*e*PG	**Pg**	**06 39 08.1**	**-0.3**
KULA				*e*SG	**Sg**	**06 39 16.9**	**-0.5**
KULA	**Kula-Manisa**	**0.68**	**205**	*e*Pg	**Pg**	**06 39 08.1**	**-0.3**
KULA				*e*Sg	**Sg**	**06 39 16.9**	**-0.5**
MANT	**Manisa**	**0.74**	**210**	P	**Pb**	**06 39 09.6**	**-0.6**
MANT				S	**Sg**	**06 39 18.7**	**-0.6**
MANT	**Manisa**	**0.74**	**210**	*i* P	**Pb**	**06 39 09.6**	**-0.6**
MANT				*i* S	**Sg**	**06 39 18.7**	**-0.6**
KHAL	**Karahalli**	**0.84**	**154**	*i* P	**Pn**	**06 39 14.9**	**+1.8**
KHAL				*i* S	**Sg**	**06 39 22.3**	**-0.2**
ORLT	**Orhaneli**	**0.92**	**354**	*e*PG	**Pb**	**06 39 12.9**	**-0.2**
ORLT	**Orhaneli**	**0.92**	**354**	*e*Pg	**Pb**	**06 39 12.9**	**-0.2**
CAVI	**Cavuskoy**	**1.24**	**30**	*e*PN	**Pb**	**06 39 18.3**	**-0.3**
CAVI	**Cavuskoy**	**1.24**	**30**	*e*Pn	**Pb**	**06 39 18.3**	**-0.3**
IZI	**Iznik**	**1.25**	**16**	*e*PN	**Pn**	**06 39 18.1**	**-0.5**
IZI	**Iznik**	**1.25**	**16**	*e*Pn	**Pn**	**06 39 18.1**	**-0.5**
ARMT	**Armutlu**	**1.44**	**355**	*e*PN	**Pb**	**06 39 21.4**	**-0.6**
ARMT	**Armutlu**	**1.44**	**355**	*e*Pn	**Pb**	**06 39 21.4**	**-0.6**
GULT	**Gulveren**	**1.73**	**41**	*e*PN	**Pb**	**06 39 26.0**	**-1.0**
GULT	**Gulveren**	**1.73**	**41**	*e*Pn	**Pb**	**06 39 26.0**	**-1.0**

*ISK **21** 06:40:33.7,39.°12N×29.°12E,h10km,ML2.3*
*ISCJB **21** 06:40:34.1±0.5,39.°12N±0.°03×29.°10E±0.°04,h10km±4km, Error ellipse: s-maj=5.0km s-min=4.2km az=16.6*
*CSEM **21** 06:40:34.1±0.1,39.°12N×29.°10E,h10km,MD2.6, Error ellipse: s-maj=1.5km s-min=1.1km az=97.0*
*DDA **21** 06:40:34.1,39.°12N×29.°09E,h7km,Md2.6*
ISC 21 06:40:34.4±0.9,39.°12N±0.°02×29.°10E±0.°02,h13km±8km, n31,σ0s29/46,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.30**	**95**	P	**Pg**	**06 40 40.6**	**0.0**
GDZ				S	**Sg**	**06 40 45.2**	**+0.4**
GDZ	**Gediz**	**0.30**	**95**	*i* P	**Pg**	**06 40 40.6**	**0.0**
GDZ				*i* S	**Sg**	**06 40 45.2**	**+0.4**
DEMI	**Demirci**	**0.31**	**256**	P	**Pg**	**06 40 40.8**	**0.0**
DEMI				S	**Sg**	**06 40 45.1**	**+0.1**
DEMI	**Demirci**	**0.31**	**256**	*i* P	**Pg**	**06 40 40.8**	**0.0**
DEMI				*i* S	**Sg**	**06 40 45.1**	**+0.1**
TVSB	**Tavsanli**	**0.43**	**40**	*e*PG	**Pg**	**06 40 42.9**	**-0.1**
TVSB				*e*SG	**Sg**	**06 40 48.7**	**-0.2**
TVSB	**Tavsanli**	**0.43**	**40**	*e*Pg	**Pg**	**06 40 42.9**	**-0.1**
TVSB				*e*Sg	**Sg**	**06 40 48.7**	**-0.2**
DURS	**Dursunbey**	**0.69**	**315**	P	**Pg**	**06 40 47.6**	**-0.1**
DURS	**Dursunbey**	**0.69**	**315**	*i* P	**Pg**	**06 40 47.6**	**-0.1**
DURS				*i* S	**Sn**	**06 41 00.8**	**+0.3**
KULA	**Kula-Manisa**	**0.69**	**210**	*e*PG	**Pg**	**06 40 47.9**	**0.0**
KULA	**Kula-Manisa**	**0.69**	**210**	*e*Pg	**Pg**	**06 40 47.9**	**0.0**
MANT	**Manisa**	**0.76**	**214**	P	**Pg**	**06 40 48.7**	**-0.4**
MANT				S	**Sg**	**06 40 59.2**	**+0.1**
MANT	**Manisa**	**0.76**	**214**	*i* P	**Pg**	**06 40 48.7**	**-0.4**
MANT				*i* S	**Sg**	**06 40 59.2**	**+0.1**
KHAL	**Karahalli**	**0.81**	**158**	P	**Pb**	**06 40 50.2**	**-0.1**
KHAL				S	**Sg**	**06 41 00.6**	**0.0**
KHAL	**Karahalli**	**0.81**	**158**	*i* P	**Pb**	**06 40 50.2**	**-0.1**
KHAL				*i* S	**Sg**	**06 41 00.7**	**0.0**
KHL	**Karahalli**	**0.86**	**157**	*e*PG	**Pg**	**06 40 50.4**	**-0.6**
KHL	**Karahalli**	**0.86**	**157**	*e*Pg	**Pg**	**06 40 50.4**	**-0.6**
ORLT	**Orhaneli**	**0.94**	**350**	*e*PG	**Pg**	**06 40 52.3**	**-0.3**
ORLT				*e*SG	**Sb**	**06 41 05.4**	**+0.3**
ORLT	**Orhaneli**	**0.94**	**350**	*e*Pg	**Pg**	**06 40 52.3**	**-0.3**
ORLT				*e*Sg	**Sb**	**06 41 05.4**	**+0.3**
BALB	**Balikesir**	**1.08**	**299**	*e*PN	**Pn**	**06 40 55.2**	**-0.1**
BALB				*e*SN	**Sn**	**06 41 10.5**	**+0.4**
BALB	**Balikesir**	**1.08**	**299**	*e*Pn	**Pn**	**06 40 55.2**	**-0.1**
BALB				*e*Sn	**Sn**	**06 41 10.5**	**+0.4**
IGD	**Bursa**	**1.15**	**4**	*i* P	**Pb**	**06 40 55.5**	**-0.6**
CAVI	**Cavuskoy**	**1.23**	**28**	*e*PN	**Pn**	**06 40 57.3**	**0.0**
CAVI	**Cavuskoy**	**1.23**	**28**	*e*Pn	**Pn**	**06 40 57.3**	**0.0**
IZI	**Iznik**	**1.25**	**13**	*e*PN	**Pn**	**06 40 57.5**	**-0.2**
IZI	**Iznik**	**1.25**	**13**	*e*Pn	**Pn**	**06 40 57.5**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.26**	**352**	*e*PN	**Pn**	**06 40 57.6**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.26**	**352**	*e*Pn	**Pn**	**06 40 57.6**	**-0.1**
ARMT	**Armutlu**	**1.46**	**353**	*e*PN	**Pn**	**06 41 00.6**	**+0.1**
ARMT	**Armutlu**	**1.46**	**353**	*e*Pn	**Pn**	**06 41 00.6**	**+0.1**
GULT	**Gulveren**	**1.71**	**39**	*e*PN	**Pn**	**06 41 04.4**	**+0.5**
GULT	**Gulveren**	**1.71**	**39**	*e*Pn	**Pn**	**06 41 04.4**	**+0.5**

JMA 21 06:46:52.3±0.2,38.°97N×142.°45E,h28km±2km,M3.7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.62**	**280**	P	Pb	06 47 04.5	-0.1
OFUJ				S	Sb	06 47 12.8	-0.2
MIYJ	**Miyakonagasawa**	**0.78**	**321**	P	Pb	06 47 06.6	-0.7
MIYJ				S	Sb	06 47 16.4	-1.1
JMK	**Ichinoseki**	**0.96**	**269**	P	Pn	06 47 09.9	0.0
JMK				S	Sn	06 47 22.3	-0.3
JIO	**Ouri**	**1.00**	**239**	P	Pn	06 47 09.8	-0.7
JIO				S	Sn	06 47 22.3	-1.4
JOM	**Ohasama**	**1.03**	**300**	P	Pb	06 47 11.2	-0.3
JOM				S	Sb	06 47 24.6	-0.1
JTH	**Tanohata**	**1.07**	**335**	P	Pn	06 47 11.5	+0.1
JTH				*e*S	Sb	06 47 25.7	-0.1
JRG	**Rokugo**	**1.47**	**287**	P	Pb	06 47 18.7	-0.3
JRG				S	Sb	06 47 37.4	0.0
JOU	**Okura**	**1.52**	**247**	P	Pn	06 47 18.1	+0.4
JOU				*e*S	Sb	06 47 37.7	-1.1
MAT	**Matsushiro**	**4.14**	**236**	P	Pn	06 47 57.1	+3.4
MAT				S	Sn	06 48 47.3	+6.0

DJA 21 06:52:57.8±0.4,8.°S±3.°×10.°7E±.°,h10km,M3.9/13, MLv3.9/13,Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CISI	**Cisompet, Garu**	**0.85**	**39**	P	Pg	06 53 13.4	-0.9
CISI				S	Sg	06 53 23.4	-2.0
CNJI	**Cibinong**	**0.92**	**351**	P	Pg	06 53 14.3	-1.2
CNJI				S	Sb	06 53 28.7	+0.7
CMJI	**Cimerak**	**1.25**	**70**	P	Pn	06 53 19.4	-1.9
CMJI				S	Sn	06 53 38.6	+0.5
SKJI	**Sukabumi**	**1.40**	**330**	P	Pn	06 53 22.8	-0.6
SKJI				S	Sn	06 53 41.4	-0.5
LEM	**Lembang**	**1.43**	**14**	P	Pg	06 53 27.7	+2.5
CGJI	**Cibinong**	**2.23**	**315**	P	Pn	06 53 33.3	-1.6
CGJI				S	Sn	06 53 58.2	-4.4
UGM	**Wanagama**	**3.24**	**85**	P	Pn	06 53 48.1	-0.6
SMRI	**Semarang**	**3.35**	**70**	P	Pn	06 53 50.6	+0.3
PCJI	**Pacitan**	**3.87**	**90**	P	Pn	06 53 57.2	-0.2
PWJI	**Pagerwojo**	**4.49**	**88**	P	Pn	06 54 06.4	+0.4

*IDC **21** 06:55:35.6±4.3,21.°44N×122.°51E,h0km,mb3.5/3, mb1 3.8/4,mb1mx3.4/46,mbtmp3.6/4,ML3.4/1,MS3.1/3, Ms1 3.1/3,ms1mx2.6/29, Error ellipse: s-maj=105.5km s-min=51.8km az=2.0*
*ISCJB **21** 06:55:50.5±0.8,23.°71N±0.°02×122.°57E±0.°02,h9km±5km, mb3.3/3,MS3.0/3, Error ellipse: s-maj=3.5km s-min=2.5km az=147.3*
*JMA **21** 06:55:51.5±0.2,23.°77N×122.°49E,h23km,M3.4*
*TAP **21** 06:55:52.1,23.°79N×122.°56E,h25km±1km,ML3.8,D*
ISC 21 06:55:49.1±1.1,23.°68N±0.°02×122.°55E±0.°02,h6km±8km, n70,σ0s66/110,mb3.5/3,MS2.9/3,4C-9D,Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JYNG	**Yonagunijimaku**	**0.85**	**25**	P	**Pb**	**06 56 06.6**	**+0.3**
JYNG				S	**Sg**	**06 56 16.1**	**-0.4**
YOJ	**Yonaguni jima**	**0.89**	**28**	P	**Pb**	**06 56 06.9**	**0.0**
YOJ				S	**Sg**	**06 56 17.4**	**-0.3**
TEGC	**Jichi Village**	**0.93**	**272**	*e*S	**Sn**	**06 56 22.0**	**-0.3**
	baz=263						
TWD	**Chiawan**	**0.96**	**295**	⇓P	**Pb**	**06 56 08.4**	**+0.2**
	baz=273						
TWD				*e*S	**Sg**	**06 56 20.2**	**+0.2**
	baz=273						
ESL	**Shilin**	**1.03**	**278**	P	**Pb**	**06 56 09.6**	**+0.1**
	baz=269						
ESL				*e*S	**Sb**	**06 56 23.5**	**+0.3**
	baz=269						
ENA	**Nanau**	**1.05**	**315**	P	**Pn**	**06 56 10.4**	**0.0**
	baz=310						
TWC	**Suao**	**1.13**	**326**	P	**Pg**	**06 56 10.9**	**+0.2**
	baz=319						
TWC				*e*S	**Sb**	**06 56 26.1**	**+0.1**
	baz=319						
EHY	**Hungye**	**1.14**	**262**	⇓P	**Pn**	**06 56 12.1**	**+0.4**
	baz=254						
EHY				S	**Sb**	**06 56 26.9**	**+0.6**
	baz=254						
TWF1	**Yuli**	**1.19**	**254**	P	**Pn**	**06 56 13.1**	**+0.6**
	baz=247						
TWF1				*e*S	**Sb**	**06 56 28.5**	**+0.5**
	baz=247						
HATJ	**Hateruma jima**	**1.21**	**72**	P	**Pn**	**06 56 13.7**	**+1.1**
HATJ				*e*S	**Sb**	**06 56 29.1**	**+0.7**
CHKT	**Chengkung**	**1.23**	**242**	⇑P	**Pn**	**06 56 13.3**	**+0.4**
	baz=236						
CHKT				*e*S	**Sg**	**06 56 28.4**	**-0.3**
	baz=236						
IRIF	**Iriomote-Funau**	**1.26**	**59**	P	**Pn**	**06 56 14.8**	**+1.5**
WHF	**Hehuan Shan**	**1.26**	**292**	P	**Pg**	**06 56 13.3**	**-0.1**
	baz=271						
WHF				*e*S	**Sb**	**06 56 30.4**	**+0.1**
	baz=271						
WDT	**Danda**	**1.30**	**274**	⇓P	**Pb**	**06 56 14.3**	**+0.1**
	baz=265						
WDT				*e*S	**Sg**	**06 56 30.2**	**-0.8**
	baz=265						
ENTT	**Nioudou**	**1.31**	**317**	P	**Pn**	**06 56 14.4**	**+0.3**
	baz=296						
ENTT				*e*S	**Sn**	**06 56 32.8**	**+0.8**
	baz=296						
TWE	**Neicheng**	**1.31**	**322**	⇑P	**Pb**	**06 56 14.6**	**+0.4**
	baz=316						
TWE				*e*S	**Sg**	**06 56 30.9**	**-0.5**
	baz=316						
NNS	**Nan Shan**	**1.31**	**305**	P	**Pg**	**06 56 14.2**	**-0.2**
	baz=287						
NNS				*e*S	**Sg**	**06 56 30.9**	**-0.5**
	baz=287						
TWT	**Tachien**	**1.38**	**295**	P	**Pg**	**06 56 15.6**	**0.0**
	baz=276						
TWT				*e*S	**Sg**	**06 56 33.2**	**-0.3**
	baz=276						
TWB1	**Santiao Chiao**	**1.42**	**339**	*e*P	**Pn**	**06 56 15.2**	**-0.3**
	baz=352						
TWB1				*e*S	**Sg**	**06 56 34.1**	**-0.7**
	baz=352						
JKRS	**Kuro-shima**	**1.45**	**67**	P	**Pg**	**06 56 17.4**	**+0.5**
NSK	**Sanguang**	**1.47**	**313**	P	**Pn**	**06 56 16.6**	**+0.3**
	baz=305						
NSK				*e*S	**Sn**	**06 56 36.7**	**+0.8**
	baz=305						
YUS	**Yu-Shan**	**1.48**	**263**	⇓P	**Pb**	**06 56 17.9**	**+0.6**
	baz=255						
YUS				*e*S	**Sg**	**06 56 36.0**	**-0.7**
	baz=255						

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHY	Chiayi	1.96	265	eS	Sg	06 56 51.0	-1.0
	baz=257						
PCYT	Pengchaiyu	1.99	347	P	Pn	06 56 23.7	+0.3
	baz=344						
SSD	Sandimen	1.99	243	eP	Pb	06 56 26.1	+0.3
	baz=232						
EAST	Anshuo	2.03	231	eP	Pb	06 56 25.7	-0.7
	baz=238						
TWM1	Shoushan	2.13	247	eP	Pg	06 56 30.2	+0.2
	baz=243						
TWM1				eS	Sg	06 56 57.0	-0.7
	baz=243						
WSF	Szhu	2.13	269	eS	Sb	06 56 54.5	-0.4
	baz=261						
CHN8	Yiju	2.17	262	eS	Sb	06 56 55.8	-0.2
	baz=253						
JTJ	Tarama	2.19	64	P	Pn	06 56 27.7	+1.6
SCZT	Fangliau	2.20	234	eP	Pb	06 56 29.4	+0.1
	baz=232						
TSEB	Hengchuen, Pin	2.33	221	eP	Pg	06 56 33.7	-0.1
	baz=228						
TSEB				eS	Sb	06 57 00.3	-0.4
	baz=228						
WDGT	Dungji	2.69	262	eP	Pn	06 56 35.0	+2.1
	baz=253						
WDGT				eS	Sn	06 57 06.6	+0.8
	baz=253						
PNG	Penghu	2.75	268	⇑P	Pn	06 56 35.6	+1.9
	baz=249						
PNG				S	Sn	06 57 07.7	+0.4
	baz=249						
KNM	Kinmen	3.83	282	P	Pn	06 56 51.4	+2.7
	baz=269						
KNM				S	Sn	06 57 35.1	+1.0
	baz=269						
KSRS	Korea Array	14.48	17	Pn	P	06 59 31.0	+9.4
	0.1nm,0.3s,baz=200,slow=11,SNR=5.8						
KLR	Kul'dur	26.51	14	LR	LR	07 12 18.7	
	comp=Z,25nm,19.2s,baz=286,slow=35						
TLY	Talaya	31.51	337	LR	LR	07 15 36.6	
	comp=Z,29nm,21.1s,baz=76,slow=36						
MKAR	Makanchi Array	39.57	316	P	P	07 03 21.4	+0.2
	0.5nm,0.4s,baz=96,slow=12,SNR=4.9						
ZALV	Zalesovo Beam	41.35	327	LR	LR	07 22 25.9	
	comp=Z,33nm,18.3s,baz=62,slow=37						
ILAR	Eielson Array	69.09	27	P	P	07 06 54.5	-1.2
	0.1nm,0.5s,baz=280,slow=6.0,SNR=4.0						
YKA	Yellowknife Ar	82.95	23	P	P	07 08 13.8	-1.0
	0.2nm,0.5s,baz=306,slow=5.2,SNR=10						

JMA 21 07:05:38.2, 37°.01N×140°.51E, h6km±1km, M2.9, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.25	68	P	Pg	07 05 43.4	+0.3
ONAJ				S	Sg	07 05 47.0	+0.6
JHO	Hitachi	0.40	173	P	Pg	07 05 45.9	-0.1
JHO				eS	Sg	07 05 51.4	+0.2
JFK	Kawauchi	0.46	39	P	Pg	07 05 47.1	0.0
JFK				S	Sg	07 05 53.4	+0.3
JFT	Otama	0.53	345	S	Sg	07 05 56.0	+0.8
JMM	Marumori	0.88	15	P	Pg	07 05 54.4	-0.8
JMM				S	Sg	07 06 06.1	-0.6
MAT	Matsushiro	1.91	257	P	Pb	07 06 12.5	-0.9
MAT				S	Sb	07 06 37.3	-0.2

MAN 21 07:07:43, 5°.85N×125°.83E, h158km, mb5.8, ML4.8, MS5.3, Mindanao

IDC 21 07:16:02.3±1.2, 55°.98S×26°.59W, h0km, mb4.0/3, mb1 4.1/3, mb1mx3.8/24, mbtmp4.0/3, MS2.8/1, Ms1 2.8/1, ms1mx2.5/19, Error ellipse: s-maj=46.8km s-min=31.4km az=92.0, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CPUP	Villa Florida	37.02	310	LR	LR	07 37 53.4	
	comp=Z,14nm,19.6s,baz=156,slow=35						
VNDA	Vanda	46.66	183	P	P	07 24 31.3	-0.4
	1.0nm,0.6s,baz=176,slow=6.5,SNR=7.3						
LPAZ	La Paz	50.61	305	P	P	07 25 02.1	-1.5
	0.9nm,0.8s,baz=144,slow=6.0,SNR=4.4						
TORD	Torodi Ar. Bea	72.83	29	P	P	07 27 32.4	-0.2
	1.4nm,0.5s,baz=199,slow=6.7,SNR=20						
ILAR	Eielson Array	150.32	312	PKPab	PKPab	07 36 01.8	+1.5
	1.5nm,0.8s,baz=115,slow=1.3,SNR=12						

*ISK **21** 07:16:53.2, 39°.13N×29°.00E, h7km, ML2.0*
*ISCJB **21** 07:16:54.0±0.5, 39°.12N±0°.03×29°.04E±0°.04, h8km±6km, Error ellipse: s-maj=5.7km s-min=4.5km az=43.9*
*CSEM **21** 07:16:54.2±0.1, 39°.11N×29°.04E, h10km, ML2.6, Error ellipse: s-maj=3.1km s-min=2.5km az=101.0*
*DDA **21** 07:16:54.3, 39°.08N×29°.05E, h7km, Ml2.6*
ISC 21 07:16:53.9±0.9, 39°.09N±0°.03×29°.05E±0°.03, h16km±7km, n25, σ0s40/35, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.26	260	P	Pg	07 16 59.8	+0.1
DEMI				S	Sg	07 17 03.1	-0.5
DEMI	Demirci	0.26	260	i P	Pg	07 16 59.8	+0.1
DEMI				i S	Sg	07 17 03.1	-0.5
GDZ	Gediz	0.34	90	P	Pg	07 17 01.0	0.0
GDZ				S	Sg	07 17 06.1	+0.2
GDZ	Gediz	0.34	90	i P	Pg	07 17 01.0	0.0
GDZ				i S	Sg	07 17 06.1	+0.2
TVSB	Tavsanli	0.48	42	ePG	Pg	07 17 03.7	+0.1
TVSB				eSG	Sg	07 17 09.6	-0.6
TVSB	Tavsanli	0.48	42	ePg	Pg	07 17 03.7	+0.1
TVSB				eSg	Sg	07 17 09.6	-0.6
KULA	Kula-Manisa	0.65	208	ePG	Pb	07 17 06.8	0.0
KULA				eSG	Sb	07 17 15.7	+0.1
KULA	Kula-Manisa	0.65	208	ePg	Pb	07 17 06.8	0.0
KULA				eSg	Sb	07 17 15.7	+0.1
DURS	Dursunbey	0.68	319	P	Pb	07 17 07.8	+0.4
DURS	Dursunbey	0.68	319	i P	Pb	07 17 07.8	+0.4
MANT	Manisa	0.71	213	P	Pb	07 17 08.3	+0.3
MANT	Manisa	0.71	213	i P	Pb	07 17 08.3	+0.3
KHAL	Karahalli	0.80	154	P	Pn	07 17 10.8	+0.2
KHAL				S	Sn	07 17 21.5	-0.7
KHAL	Karahalli	0.80	154	i P	Pn	07 17 10.8	+0.2
KHAL				i S	Sn	07 17 21.4	-0.7
KHL	Karahalli	0.85	154	ePG	Pn	07 17 11.5	+0.3
KHL	Karahalli	0.85	154	ePg	Pn	07 17 11.5	+0.3
IGD	Bursa	1.18	6	i P	Pn	07 17 14.7	-1.1
CAVI	Cavuskoy	1.27	29	ePN	Pn	07 17 17.5	+0.5
CAVI	Cavuskoy	1.27	29	ePn	Pn	07 17 17.5	+0.5
BALY	Balya	1.28	301	P	Pg	07 17 18.8	+0.2
BALY	Balya	1.28	301	i P	Pg	07 17 18.8	+0.2
IZI	Iznik	1.29	15	ePN	Pb	07 17 18.1	+0.2
IZI	Iznik	1.29	15	ePn	Pb	07 17 18.1	+0.2
ARMT	Armutlu	1.48	355	ePN	Pn	07 17 20.2	+0.3
ARMT	Armutlu	1.48	355	ePn	Pn	07 17 20.2	+0.3

IDC 21 07:26:49.1±2.2, 21°.62N×143°.09E, h298km±21km, mb2.9/4, mb1 3.1/5, mb1mx2.8/47, mbtmp3.7/5, Error ellipse: s-maj=40.4km s-min=18.0km az=91.0, Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCJ	Chichijima	5.51	352	P	Pn	07 28 13.3	+0.8
	4.8nm,0.3s,baz=123,slow=22,SNR=11						
JCJ				S	S	07 29 19.2	-0.4
	baz=270,slow=20						
WRA	Warramunga Arr	42.19	192	P	P	07 34 13.2	-0.2
	0.6nm,0.9s,baz=15,slow=9.4,SNR=15						
MKAR	Makanchi Array	54.68	313	P	P	07 35 48.2	+0.3
	0.3nm,0.7s,baz=95,slow=8.0,SNR=2.3						
YKA	Yellowknife Ar	76.56	28	P	P	07 38 06.9	+0.3
	0.2nm,0.5s,baz=293,slow=5.8,SNR=6.9						
FINES	FINESS Array B	83.21	334	P	P	07 38 40.8	-1.3
	0.8nm,0.6s,baz=56,slow=4.8,SNR=4.5						

*ISCJB **21** 07:38:08.4±0.6, 6°.81N±0°.04×73°.06W±0°.05, h162km±5km, Error ellipse: s-maj=9.8km s-min=4.3km az=41.6*

*RSNC **21** 07:38:11.3±0.7, 6°.79N×73°.14W, h146km±4km, ML2.9*
*FUNV **21** 07:38:11.3, 6°.96N×73°.01W, h175km, MW2.9*
ISC 21 07:38:07.7±1.4, 6°.83N±0°.05×73°.07W±0°.05, h169km±8km, n25, σ1s49/39, 1D, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BTLC	Betulia, Santa	0.22	294	eP	Pn	07 38 31.1	+0.5
BARC	Barichara	0.26	206	i P	Pn	07 38 30.9	+0.1
BARC				eS	Sn	07 38 46.2	-2.2
BARC				i		07 38 47.6	
	comp=Z,220nm,0.2s						
GIRC	Giron, Santand	0.28	333	eP	Pn	07 38 31.0	+0.3
PAMC	Pamplona, Colo	0.62	36	eS	Sn	07 38 50.8	-0.6
BRRC	Barranca, Sant	0.70	293	⇓i P	Pn	07 38 32.8	+0.5
BRRC				eS	Sn	07 38 49.5	-1.6
BRRC				i		07 38 51.9	
	comp=Z,164nm,0.1s						
GRMC	Gramalote, San	0.92	16	i P	Pn	07 38 36.7	+2.8
GRMC				eS	Sn	07 38 56.2	+2.0
GRMC				i		07 38 59.5	
	comp=Z,78nm,0.4s						
CBRI	Barrientos, No	0.92	17	eP	Pn	07 38 35.4	+1.4
RUSC	La Rusia	0.93	181	eP	Pn	07 38 34.9	+0.4
RUSC				i		07 38 35.7	
	comp=Z,54nm,0.2s						
RUSC				eS	Sn	07 38 53.3	-1.7
CAPV	Capacho	1.27	36	eP	Pn	07 38 38.7	+1.8
CAPV				eS	Sn	07 38 59.5	+0.1
OCAC	Ocana	1.42	350	eP	Pn	07 38 39.3	+1.1
OCAC				eS	Sn	07 39 01.3	-0.5
OCAC				i		07 39 04.9	
	comp=Z,74nm,0.2s						
NORC	Norcasia	2.19	235	eP	Pn	07 38 47.0	+0.7
NORC				eS	Sn	07 39 14.6	-1.5
ROSC	El Rosal	2.34	212	eP	Pn	07 38 50.6	+2.2
ROSC				i		07 39 24.9	
	comp=Z,96nm,0.6s						
HELC	Santa Helena	2.53	256	eP	Pn	07 38 51.4	+0.9
HELC				eS	Sn	07 39 22.7	-0.9
HELC				i		07 39 30.0	
	comp=Z,48nm,0.5s						
VIGV	El Vigia	2.61	40	eP	Pn	07 38 53.4	+2.2
VIGV				eS	Sn	07 39 23.1	-1.9
SOCV	Socops	2.62	56	eP	Pn	07 38 53.1	+1.8
SOCV				eS	Sn	07 39 23.6	-1.6
VILC	Villavicencio,	2.77	193	eP	Pn	07 38 54.5	+1.2
VILC				eS	Sn	07 39 28.3	-0.4
VILC				i		07 39 33.9	
	comp=Z,32nm,0.9s						
GUYC	Guyana, Colomb	2.81	235	eP	Pn	07 38 55.3	+1.3
GUYC				eS	Sn	07 39 29.0	-0.9
GUYC				i		07 39 38.7	
	comp=Z,85nm,0.4s						
DBBC	Dabeiba	3.12	274	eP	Pn	07 38 58.8	+1.2
TOLC	Tolima	3.16	225	eP	Pn	07 38 59.2	+0.9
PRAC	Prado	3.59	210	eP	Pn	07 39 04.2	+0.9
PRAC				eS	Sn	07 39 46.0	-0.6
VIRV	Villa del Rosa	3.71	10	eP	Pn	07 39 05.7	+0.9
VIRV				eS	Sn	07 39 45.5	-3.8
SANV	Sanarito	4.39	53	eP	Pn	07 39 14.2	+0.5
CURV	Curarigua	4.41	44	eP	Pn	07 39 14.4	+0.5
BAUV	El Baul	5.40	67	eP	Pn	07 39 26.8	0.0
MAPV	Macapo	5.45	57	eP	Pn	07 39 28.1	+0.7

IDC 21 07:38:30.6±9.7, 20°.42S×177°.71W, h545km±109km, mb3.4/5, mb1 3.6/5, mb1mx3.1/26, mbtmp4.3/5, Error ellipse: s-maj=108.7km s-min=47.0km az=167.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	Charters Tower	33.77	264	P	P	07 44 27.6	0.0
	8.3nm,0.8s,baz=103,slow=10,SNR=5.2						
STKA	Stephens Creek	38.07	244	P	P	07 45 03.1	+0.1
	1.0nm,0.5s,baz=87,slow=13,SNR=6.0						
ASAR	Alice Springs	44.80	257	P	P	07 45 56.4	0.0
	9.2nm,0.5s,baz=96,slow=7.6,SNR=124						
WRA	Warramunga Arr	44.88	262	P	P	07 45 56.4	-0.7
	5.3nm,0.6s,baz=98,slow=8.0,SNR=98						
TXAR	Lajitas Array	86.78	57	P	P	07 50 17.6	0.0
	0.1nm,0.3s,baz=218,slow=8.7,SNR=3.6						
AKASG	Malin Array Be	143.07	331	PKP	PKPab	07 56 59.9	-0.2
	0.7nm,0.4s,baz=45,slow=4.2,SNR=5.8						
BRTR	Keskin Array B	146.98	313	PKPbc	PKPbc	07 57 12.8	+0.2
	0.5nm,0.5s,baz=101,slow=1.5,SNR=3.4						

*ISCJB **21** 07:42:43.7±0.4, 58°.21N±0°.04×151°.42W±0°.05, h24km, mb3.2/2, Error ellipse: s-maj=5.6km s-min=2.9km az=154.9*
*NEIC **21** 07:42:46.3, 58°.18N×151°.52W, h44km, ML3.3(AEIC), After AEIC.*
*IDC **21** 07:42:48.0±1.8, 58°.15N×150°.63W, h0km, mb3.3/2, mb1 3.6/4, mb1mx3.4/42, mbtmp3.3/4, ML3.2/2, MS2.7/1, Ms1 2.9/1, ms1mx2.3/15, Error ellipse: s-maj=31.4km s-min=21.5km az=85.0*
ISC 21 07:42:45.3±0.9, 58°.22N±0°.05×151°.50W±0°.04, h24km, n67, σ0s90/72, Kodiak Island region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KDAK	Kodiak Island	0.73	233	P	Pb	07 42 59.2	0.0
KDAK				S	Sb	07 43 08.8	0.0
FOPK	Fourpeaked Vol	1.17	298	P	Pn	07 43 05.3	-0.8
FOSS	Fourpeaked Sta	1.29	298	P	Pn	07 43 07.1	-0.7
CDD	Cape Douglas	1.33	303	P	Pn	07 43 07.9	-0.4
OHAK	Old Harbor	1.39	224	P	Pn	07 43 07.9	-1.2
OHAK				S	Sn	07 43 24.0	-2.6
HOM	Homer	1.44	357	P	Pn	07 43 10.5	+0.6
HOM				S	Sb	07 43 29.5	+0.2
AUSE	Augustine SEas	1.49	319	P	Pn	07 43 10.8	+0.2
BRLK	Bradley Lake	1.58	11	P	Pn	07 43 11.8	0.0
KAWH	Katmai	1.75	277	P	Pn	07 43 13.8	-0.3
KABR	Katmai Barrier	1.84	269	P	Pn	07 43 14.8	-0.7
KAKN	Katmai Knife C	1.88	274	P	Pn	07 43 15.3	-0.7
KAKN				S	Sn	07 43 39.4	+0.3
KAHC	Katmai Hardscr	1.89	285	P	Pn	07 43 15.8	-0.4
KABU	Katmai Buttres	2.00	273	P	Pn	07 43 17.5	-0.1
KVTA	Katmai Vly 10	2.01	276	P	Pn	07 43 17.1	-0.6
SEW	Seward	2.16	28	P	Pn	07 43 19.4	-0.3
KELA	Mount Kelaz	2.25	277	P	Pn	07 43 20.2	-0.8
RDWB	Redoubt West	2.37	344	P	Pn	07 43 22.6	-0.3
SLKM	Skilak Lake	2.38	15	P	Pn	07 43 22.9	0.0
NCT	North Crescent	2.46	343	P	Pn	07 43 24.0	+0.1
RDJH	Redoubt Jeurge	2.47	345	P	Pn	07 43 24.1	0.0
RC01	Rabbit Creek A	3.01	17	P	Pn	07 43 31.6	+0.1
CKL	Chakachamna La	3.01	352	P	Pn	07 43 32.0	+0.4
SPWE	Spurr West	3.11	351	P	Pn	07 43 33.3	+0.4
STLK	Strandline Lak	3.29	357	P	Pn	07 43 35.7	+0.3
SVW2	Sparrevohn	3.55	326	P	Pn	07 43 38.5	-0.3
PMR	Palmer	3.58	18	ePn	Pn	07 43 39.0	-0.3
EYAK	Cordova Ski Ar	3.75	49	P	Pn	07 43 41.3	-0.3
VLZ	Valdez	3.92	40	P	Pn	07 43 44.3	+0.4
SML	Sawmill	3.93	23	P	Pn	07 43 44.4	+0.2
DIV	Divide	4.12	42	ePn	Pn	07 43 46.9	+0.2
DIV				eSn	Sn	07 44 32.0	-2.1
RAGM	Ragged Mountai	4.12	55	P	Pn	07 43 46.8	+0.1
SCM	Sheep Creek Mo	4.18	28	P	Pn	07 43 48.1	+0.5
KLU	Klutina	4.32	38	P	Pn	07 43 49.7	+0.2
NICHA	Nichawak Mount	4.37	59	P	Pn	07 43 49.3	-0.7
BMRM	Bremner River	4.46	49	P	Pn	07 43 51.6	+0.2
BERG	Berg Lake	4.55	58	P	Pn	07 43 52.3	-0.3
PPLA	Purkeypile	4.70	356	ePn	Pn	07 43 55.7	+0.9
KHIT	Khitrov Hills	4.78	59	P	Pn	07 43 55.2	-0.5
KULT	Kultieth River	4.95	62	P	Pn	07 43 57.9	-0.2
VRDI	Verde Repeater	5.07	50	P	Pn	07 43 59.7	-0.1
TGL	Tana Glacier	5.10	56	P	Pn	07 44 00.5	+0.3
BARK	Barkley Ridge	5.11	61	P	Pn	07 44 00.6	+0.2
TT01	Tatalina	5.20	337	P	Pn	07 44 00.8	-0.7
ISLE	Juniper Island	5.25	59	P	Pn	07 44 02.1	-0.2
TRF	Thorofare Moun	5.28	6	ePn	Pn	07 44 03.1	+0.4
	18nm,0.4s						
MESA	MESA	5.29	64	P	Pn	07 44 02.5	-0.4
BAGL	Bagley Icefiel	5.33	61	P	Pn	07 44 03.1	-0.1
MCARA	McCarthy VSAT	5.33	50	P	Pn	07 44 03.2	0.0
KTH	Kantishna Hill	5.36	3	P	Pn	07 44 03.9	+0.2
RND	Reindeer	5.36	13	P	Pn	07 44 03.9	+0.2
KIAG	Kiagna River	5.38	56	P	Pn	07 44 03.8	-0.3
PTPK	Patty Peak	5.46	53	P	Pn	07 44 05.0	-0.2
PAX	Paxson	5.61	29	ePn	Pn	07 44 08.0	+0.8
	11nm,0.6s						
BPAW	Bear Paw Mtn.	5.90	2	P	Pn	07 44 10.5	-0.7
WRH	Wood River Hil	6.48	13	P	Pn	07 44 18.9	-0.1
DOT	Dot Lake	6.54	31	ePn	Pn	07 44 21.1	+1.2
	21nm,0.7s						
BCA3	Beaver Creek A	6.81	40	P	Pn	07 44 23.3	-0.3
COLA	College	6.90	13	ePn	Pn	07 44 24.4	-0.3
	20nm,0.8s						
ILAR	Eielson Array	6.93	17	Pn	Pn	07 44 25.9	+0.6
	0.4nm,0.3s,baz=202,slow=14,SNR=14						
ILAR				Sn	Sn	07 45 38.8	-4.4
	0.3nm,0.3s,baz=212,slow=22,SNR=2.7						
ILAR				LR	LR	07 47 17.8	
	comp=Z,64nm,18.9s,baz=233,slow=39						
ILB	Eielson Array	6.93	17	P	Pn	07 44 24.3	-0.9
IM3	Indian Mountai	7.86	353	P	Pn	07 44 36.9	-1.1
EGAK	Eagle	8.22	33	ePn	Pn	07 44 44.7	+1.8
	3.5nm,0.7s						
SKAG	Skagway	8.48	75	ePn	Pn	07 44 48.0	+1.5
	12nm,0.8s						
COLD	Coldfoot	9.06	3	ePn	Pn	07 44 54.1	-0.3
	6.8nm,0.7s						
YKA	Yellowknife Ar	18.56	61	P	Pn	07 47 01.4	+1.1
	0.1nm,0.3s,baz=271,slow=11,SNR=12						
PDAR	Pinedale Array	30.24	102	P	P	07 48 56.0	+1.8
	0.2nm,0.7s,baz=300,slow=7.2,SNR=3.2						
MKAR	Makanchi Array	66.31	323	P	P	07 53 39.8	+8.4
	0.2nm,0.5s,baz=45,slow=4.5,SNR=3.1						

*IDC **21** 07:50:12.8±1.4, 1°.57N×124°.04E, h0km, mb3.7/3, mb1 4.0/5, mb1mx3.7/35, mbtmp3.9/5, ML4.1/2, MS3.0/1, Ms1 3.0/1, ms1mx2.3/31, Error ellipse: s-maj=57.9km s-min=22.4km az=68.0*
*DJA **21** 07:50:21.1±2.5, 1°.N±22°×12°.3E±°, h10km, M4.5/5, mB5.1/1, mb4.7/3, MLv4.3/5, Mw(mB)4.4/1*
ISC 21 07:50:18.2±1.4, 1°.5N±0°.1×124°.0E±0°.2, h35km, n11, σ1s12/10, mb3.7/3, Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KMSI	Cibinong	0.93	179	P	Pn	07 50 33.8	-1.0
MRSI	Marisa	2.27	243	P	Pn	07 50 48.4	-4.9
MRSI				S	Sn	07 51 11.4	-8.7
LUWI	Luwuk	2.81	205	P	Pn	07 51 00.1	-0.5
KDI	Kendari	5.60	194	P	Pn	07 51 41.6	+2.5
	56nm,1.0s,0.2nm						
TTSI	Tana Toraja	6.14	222	P	Pn	07 51 46.7	+0.2
	157nm,0.7s,1μm0.5nm						
KAPI	Kappang	7.73	213	Pn	Pn	07 52 07.9	-0.5
	5.5nm,0.3s,baz=39,slow=7.1,SNR=5.9						
KAPI				LR	LR	07 55 35.5	
	comp=Z,99nm,19.0s,baz=90,slow=41						
FITZ	Fitzroy Crossi	19.56	175	P	P	07 54 42.7	-0.5
	0.3nm,0.3s,baz=17,slow=11,SNR=7.9						
WRA	Warramunga Arr	23.62	155	P	P	07 55 26.4	0.0
	3.8nm,0.6s,baz=335,slow=10.0,SNR=49						
ASAR	Alice Springs	26.83	159	P	P	07 55 55.6	+0.1
	0.5nm,0.6s,baz=331,slow=7.1,SNR=11						
MKAR	Makanchi Array	57.86	327	P	P	08 00 06.9	+0.4
	0.4nm,0.6s,baz=121,slow=8.2,SNR=5.4						
TORD	Torodi Ar. Bea	120.94	286	PKP	PKPdf	08 09 07.5	-0.5
	0.5nm,0.9s,baz=91,slow=0.8,SNR=3.0						

NNC 21 07:59:05.1±17.0, 36°.58N×71°.94E, h0km, mb3.6, mpv3.3, 2C-1D, Error ellipse: s-maj=141.2km s-min=74.2km az=165.0, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	Dzherino	3.33	313	⇑Pn	Pn	07 59 56.9	-1.6
	4.2nm,0.3s						
DZET				Sn	Sn	08 00 39.5	+0.7
	61nm,0.5s						
MNAS	Manas	5.92	4	Pn	Pn	08 00 36.1	+2.0
	1.1nm,0.3s						
MNAS				Sn	Sn	08 01 45.7	+2.9
	5.4nm,0.6s						
AAK	Ala-Archa	6.36	17	⇓Pn	Pn	08 00 42.6	+2.4
	1.3nm,0.7s						
AAK				⇑Sn	Sn	08 01 57.0	+3.3
	3.2nm,0.5s						
KK31	Karatay Array	6.61	351	Pn	Pn	08 00 43.5	0.0
	0.6nm,0.3s,baz=153,slow=12,SNR=5.6						
KK31				Sn	Sn	08 01 57.3	-2.3
	1.9nm,0.3s,baz=142,slow=19,SNR=8.3						

*ISCJB **21** 08:03:44.3±0.5, 39°.08N±0°.03×29°.04E±0°.03, h3km±10km, Error ellipse: s-maj=4.7km s-min=4.3km az=38.2*
*CSEM **21** 08:03:44.6±0.1, 39°.07N×29°.05E, h5km, MD2.5, Error ellipse: s-maj=3.0km s-min=2.3km az=89.0*
*ISK **21** 08:03:44.1, 39°.09N×29°.06E, h6km, ML2.3*
*DDA **21** 08:03:44.6, 39°.04N×29°.05E, h7km, Md2.5*
ISC 21 08:03:44.0±0.9, 39°.05N±0°.02×29°.08E±0°.03, h13km±9km, n26, σ0s38/40, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.28	270	P	Pg	08 03 50.0	+0.1
DEMI				S	Sg	08 03 53.8	-0.1
DEMI	Demirci	0.28	270	i P	Pg	08 03 50.0	+0.1
DEMI				i S	Sg	08 03 53.8	-0.1
GDZ	Gediz	0.32	82	P	Pb	08 03 51.9	+0.3
GDZ				S	Sb	08 03 56.5	-0.1
GDZ	Gediz	0.32	82	i P	Pb	08 03 51.9	+0.3
GDZ				i S	Sb	08 03 56.5	-0.1
TVSB	Tavsanli	0.50	36	ePG	Pg	08 03 53.8	-0.1
TVSB				eSG	Sg	08 04 00.4	-0.2
TVSB	Tavsanli	0.50	36	ePg	Pg	08 03 53.8	-0.1
TVSB				eSg	Sg	08 04 00.4	-0.2
KULA	Kula-Manisa	0.62	212	ePG	Pb	08 03 57.3	+0.5
KULA				eSG	Sb	08 04 05.8	+0.4
KULA	Kula-Manisa	0.62	212	ePg	Pb	08 03 57.3	+0.5
KULA				eSg	Sb	08 04 05.8	+0.4
MANT	Manisa	0.69	217	P	Pb	08 03 57.8	-0.1
MANT				S	Sg	08 04 06.2	-0.3
MANT	Manisa	0.69	217	i P	Pb	08 03 57.8	-0.1
MANT				i S	Sg	08 04 06.2	-0.3
DURS	Dursunbey	0.73	320	P	Pb	08 03 58.9	+0.3
DURS				S	Sg	08 04 06.9	-0.8
DURS	Dursunbey	0.73	320	i P	Pb	08 03 58.9	+0.3
DURS				i S	Sg	08 04 07.0	-0.8
KHAL	Karahalli	0.75

GDZ	**Gediz**	**0.34**	**88**	P	**Pg**	**08 04 52.9**	**+0.3**
GDZ				S	**Sg**	**08 04 57.6**	**+0.4**
GDZ	**Gediz**	**0.34**	**88**	*i* P	**Pg**	**08 04 52.9**	**+0.3**
GDZ				*i* S	**Sg**	**08 04 57.6**	**+0.4**
TVSB	**Tavsanli**	**0.49**	**41**	*e*PG	**Pg**	**08 04 55.4**	**0.0**
TVSB				*e*SG	**Sg**	**08 05 01.8**	**-0.2**
TVSB	**Tavsanli**	**0.49**	**41**	*e*Pg	**Pg**	**08 04 55.4**	**0.0**
TVSB				*e*Sg	**Sg**	**08 05 01.8**	**-0.2**
KULA	**Kula-Manisa**	**0.64**	**208**	*e*PG	**Pg**	**08 04 58.4**	**+0.3**
KULA	**Kula-Manisa**	**0.64**	**208**	*e*Pg	**Pg**	**08 04 58.4**	**+0.3**
MANT	**Manisa**	**0.70**	**213**	P	**Pg**	**08 04 59.1**	**-0.2**
MANT				S	**Sg**	**08 05 08.2**	**-0.2**
MANT	**Manisa**	**0.70**	**213**	*i* P	**Pg**	**08 04 59.1**	**-0.2**
MANT				*i* S	**Sg**	**08 05 08.2**	**-0.2**
KHAL	**Karahalli**	**0.79**	**153**	P	**Pb**	**08 05 01.7**	**0.0**
KHAL				S	**Sb**	**08 05 12.0**	**-0.5**
KHAL	**Karahalli**	**0.79**	**153**	*i* P	**Pb**	**08 05 01.7**	**0.0**
KHAL				*i* S	**Sb**	**08 05 12.0**	**-0.5**
ORLT	**Orhaneli**	**0.97**	**354**	*e*PG	**Pg**	**08 05 03.8**	**-0.7**
ORLT				*e*SG	**Sb**	**08 05 18.2**	**+0.5**
ORLT	**Orhaneli**	**0.97**	**354**	*e*Pg	**Pg**	**08 05 03.8**	**-0.7**
ORLT				*e*Sg	**Sb**	**08 05 18.3**	**+0.5**
BALB	**Balikesir**	**1.06**	**302**	*e*PN	**Pn**	**08 05 06.7**	**0.0**
BALB				*e*SN	**Sn**	**08 05 22.0**	**+0.4**
BALB	**Balikesir**	**1.06**	**302**	*e*Pn	**Pn**	**08 05 06.7**	**0.0**
BALB				*e*Sn	**Sn**	**08 05 22.0**	**+0.4**
CAVI	**Cavuskoy**	**1.28**	**29**	*e*PN	**Pn**	**08 05 09.6**	**-0.2**
CAVI	**Cavuskoy**	**1.28**	**29**	*e*Pn	**Pn**	**08 05 09.6**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.29**	**355**	*e*PN	**Pb**	**08 05 10.2**	**0.0**
MDNY	**Mudanya-Bursa**	**1.29**	**355**	*e*Pn	**Pb**	**08 05 10.2**	**0.0**
KCTX	**Karacabey (Bur**	**1.30**	**336**	*e*PN	**Pb**	**08 05 10.4**	**+0.1**
KCTX	**Karacabey (Bur**	**1.30**	**336**	*e*Pn	**Pb**	**08 05 10.4**	**+0.1**
IZI	**Iznik**	**1.30**	**15**	*e*PN	**Pn**	**08 05 10.0**	**-0.1**
IZI	**Iznik**	**1.30**	**15**	*e*Pn	**Pn**	**08 05 10.0**	**-0.1**
ADVT	**Abdulvahap**	**1.46**	**22**	*e*PN	**Pb**	**08 05 12.8**	**-0.2**
ADVT	**Abdulvahap**	**1.46**	**22**	*e*Pn	**Pb**	**08 05 12.8**	**-0.2**
ARMT	**Armutlu**	**1.49**	**355**	*e*PN	**Pn**	**08 05 13.0**	**+0.3**
ARMT	**Armutlu**	**1.49**	**355**	*e*Pn	**Pn**	**08 05 13.0**	**+0.3**
GULT	**Gulveren**	**1.77**	**40**	*e*PN	**Pn**	**08 05 16.2**	**-0.4**
GULT	**Gulveren**	**1.77**	**40**	*e*Pn	**Pn**	**08 05 16.2**	**-0.4**

*ISK **21** 08:06:06.4, 39°.11N×29°.10E, h10km, ML2.4*
*ISCJB **21** 08:06:07.0±0.5, 39°.11N±0°.03×29°.09E±0°.04, h10km±5km, Error ellipse: s-maj=5.7km s-min=4.0km az=34.9*
*CSEM **21** 08:06:07.1±0.1, 39°.12N×29°.09E, h10km, MD2.6, Error ellipse: s-maj=2.0km s-min=1.3km az=105.0*
*DDA **21** 08:06:07.5, 39°.07N×29°.10E, h7km, Md2.6*
ISC 21 08:06:06.8±0.9, 39°.12N±0°.02×29°.10E±0°.02, h17km±9km, n32, σ0°.22/44, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.30**	**96**	P	**Pb**	**08 06 13.9**	**+0.1**
GDZ				S	**Sg**	**08 06 18.1**	**+0.3**
GDZ	**Gediz**	**0.30**	**96**	*i* P	**Pb**	**08 06 13.8**	**+0.1**
GDZ				*i* S	**Sg**	**08 06 18.1**	**+0.3**
DEMI	**Demirci**	**0.31**	**256**	P	**Pb**	**08 06 13.8**	**-0.1**
DEMI				S	**Sg**	**08 06 17.8**	**-0.2**
DEMI	**Demirci**	**0.31**	**256**	*i* P	**Pb**	**08 06 13.8**	**-0.1**
DEMI				*i* S	**Sg**	**08 06 17.8**	**-0.2**
TVSB	**Tavsanli**	**0.43**	**40**	*e*PG	**Pb**	**08 06 15.9**	**-0.1**
TVSB				*e*SG	**Sg**	**08 06 21.7**	**+0.1**
TVSB	**Tavsanli**	**0.43**	**40**	*e*Pg	**Pb**	**08 06 15.9**	**-0.1**
TVSB				*e*Sg	**Sg**	**08 06 21.7**	**+0.1**
KULA	**Kula-Manisa**	**0.70**	**210**	*e*PG	**Pg**	**08 06 20.3**	**-0.2**
KULA				*e*SG	**Sg**	**08 06 29.5**	**-0.2**
KULA	**Kula-Manisa**	**0.70**	**210**	*e*Pg	**Pg**	**08 06 20.3**	**-0.2**
KULA				*e*Sg	**Sg**	**08 06 29.5**	**-0.2**
MANT	**Manisa**	**0.76**	**214**	P	**Pb**	**08 06 22.0**	**+0.4**
MANT				S	**Sg**	**08 06 31.5**	**-0.2**
MANT	**Manisa**	**0.76**	**214**	*i* P	**Pb**	**08 06 22.1**	**+0.4**
MANT				*i* S	**Sg**	**08 06 31.5**	**-0.2**
KHAL	**Karahalli**	**0.81**	**158**	P	**Pn**	**08 06 23.4**	**-0.1**
KHAL				S	**Sg**	**08 06 33.3**	**0.0**
KHAL	**Karahalli**	**0.81**	**158**	*i* P	**Pn**	**08 06 23.4**	**-0.1**
KHAL				*i* S	**Sg**	**08 06 33.3**	**0.0**
KHL	**Karahalli**	**0.86**	**157**	*e*PG	**Pg**	**08 06 23.5**	**-0.1**
KHL	**Karahalli**	**0.86**	**157**	*e*Pg	**Pg**	**08 06 23.5**	**-0.1**
ORLT	**Orhaneli**	**0.94**	**350**	*e*PG	**Pn**	**08 06 25.5**	**+0.3**
ORLT	**Orhaneli**	**0.94**	**350**	*e*Pg	**Pn**	**08 06 25.5**	**+0.3**
BALB	**Balikesir**	**1.08**	**299**	*e*PN	**Pg**	**08 06 28.0**	**+0.3**
BALB	**Balikesir**	**1.08**	**299**	*e*Pn	**Pg**	**08 06 28.0**	**+0.3**
CAVI	**Cavuskoy**	**1.22**	**28**	*e*PN	**Pg**	**08 06 30.1**	**-0.3**
CAVI	**Cavuskoy**	**1.22**	**28**	*e*Pn	**Pg**	**08 06 30.1**	**-0.3**
IZI	**Iznik**	**1.25**	**13**	*e*PN	**Pg**	**08 06 31.0**	**+0.1**
IZI	**Iznik**	**1.25**	**13**	*e*Pn	**Pg**	**08 06 31.0**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.26**	**352**	*e*PN	**Pg**	**08 06 30.8**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.26**	**352**	*e*Pn	**Pg**	**08 06 30.8**	**-0.2**
KCTX	**Karacabey (Bur**	**1.28**	**334**	*e*PN	**Pg**	**08 06 31.2**	**-0.3**
KCTX	**Karacabey (Bur**	**1.28**	**334**	*e*Pn	**Pg**	**08 06 31.2**	**-0.3**
ADVT	**Abdulvahap**	**1.40**	**20**	*e*PN	**Pb**	**08 06 32.2**	**-0.2**
ADVT	**Abdulvahap**	**1.40**	**20**	*e*Pn	**Pb**	**08 06 32.2**	**-0.2**
ARMT	**Armutlu**	**1.46**	**353**	*e*PN	**Pb**	**08 06 33.5**	**+0.1**
ARMT	**Armutlu**	**1.46**	**353**	*e*Pn	**Pb**	**08 06 33.5**	**+0.1**
GULT	**Gulveren**	**1.70**	**39**	*e*PN	**Pb**	**08 06 37.5**	**-0.1**
GULT	**Gulveren**	**1.70**	**39**	*e*Pn	**Pb**	**08 06 37.6**	**-0.1**

*ISCJB **21** 08:21:38.6±0.4, 5°.95S±0°.03×130°.27E±0°.06, h146km, mb4.1/5, Error ellipse: s-maj=8.0km s-min=4.5km az=10.8*
*IDC **21** 08:21:38.9±1.9, 5°.81S×130°.08E, h155km±22km, mb3.9/6, mb1 4.1/10, mb1mx3.7/31, mbtmp4.5/10, Error ellipse: s-maj=29.5km s-min=11.0km az=78.0*
*DJA **21** 08:21:41.1±0.2, 6°S±2°×13°0E±°, h176km±5km, M5.0/10, mB5.4/7, mb4.7/10, MLv5.4/8, Mw(mB)4.9/7*
ISC 21 08:21:38.4±0.7, 5°.90S±0°.05×130°.16E±0°.09, h146km, n21, σ1°.67/21, mb4.1/6, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BNDI	**Bandanaira**	**1.39**	**349**	P	Pn	08 22 12.9	+6.4
BNDI				S	Sn	08 22 39.9	+12
SAUI	**Saumlaki**	**2.36**	**151**	P	**Pn**	**08 22 16.4**	**-1.3**
SAUI				S	**Sn**	**08 22 51.1**	**+3.2**
FAKI	**Fak Fak**	**3.62**	**35**	P	Pn	08 22 37.0	+3.4
FAKI				S	**Sn**	**08 23 16.4**	**0.0**
SIJI	**Sorong**	**5.11**	**13**	P	**Pn**	**08 22 55.0**	**+1.6**
	13nm,0.3s,baz=269,slow=24,SNR=7.3						
SIJI				S	**Sn**	**08 23 50.1**	**-1.7**
	12nm,0.3s,baz=270,slow=24,SNR=20						
SWI	**Sorong**	**5.12**	**12**	P	**Pn**	**08 22 55.4**	**+2.0**
	192nm,0.4s,14μm3.6nm						
SWI				S	**Sn**	**08 23 51.6**	**-0.2**
	192nm,0.4s,14μm3.6nm						
SANI	**Sanana**	**5.65**	**312**	P	Pn	08 23 05.0	+4.6
	190nm,0.8s,3μm0.8nm						
LBMI	**Labuha**	**5.86**	**333**	P	Pn	08 23 06.5	+3.3
	574nm,0.9s,7μm2.6nm						
RKPI	**Ransiki, Papua**	**5.92**	**43**	P	Pn	08 23 07.7	+3.6
	254nm,0.7s,16μm5.5nm						
RKPI				S	**Sn**	**08 24 11.6**	**+0.6**
	254nm,0.7s,16μm5.5nm						
SOEI	**Soe**	**6.98**	**236**	P	Pn	08 23 22.2	+3.8
	40nm,0.9s,2μm0.9nm						
PLAI	**Plampang**	**12.62**	**256**	P	**Pn**	**08 24 35.3**	**+2.3**
	38nm,0.9s						
FITZ	**Fitzroy Crossi**	**12.91**	**200**	P	**Pn**	**08 24 36.7**	**+0.1**
	3.7nm,0.3s,baz=29,slow=11,SNR=41						
FITZ				S	Sn	08 26 53.0	-6.4
	4.4nm,0.3s,baz=97,slow=22,SNR=8.7						
TWSI	**Taliwang, Sumb**	**13.47**	**257**	P	**Pn**	**08 24 44.8**	**+1.0**
	21nm,1.5s,877nm						
WRA	**Warramunga Arr**	**14.54**	**164**	P	**Pn**	**08 24 57.1**	**-0.3**
	2.5nm,0.3s,baz=348,slow=13,SNR=107						
WRA				S	Sn	08 27 33.0	-5.8
	3.5nm,0.3s,baz=331,slow=21,SNR=8.4						
ASAR	**Alice Springs**	**18.03**	**169**	P	**Pn**	**08 25 40.4**	**+0.5**
	6.1nm,0.3s,baz=346,slow=9.6,SNR=361						
ASAR				S	**S**	**08 28 54.9**	**-2.9**
	1.1nm,0.3s,baz=350,slow=19,SNR=15						
CTA	**Charters Tower**	**21.06**	**134**	P	**P**	**08 26 13.1**	**+2.0**
	5.4nm,0.9s,baz=348,slow=14,SNR=3.9						
STKA	**Stephens Creek**	**27.98**	**159**	P	**P**	**08 27 15.9**	**+0.4**
	1.7nm,0.5s,baz=328,slow=9.7,SNR=11						
NWAO	**Narrogin (SRO)**	**29.47**	**202**	P	**P**	**08 27 28.3**	**-0.3**
	9.6nm,1.0s,baz=108,slow=20,SNR=2.5						
CMAR	**Chiang Mai Arr**	**39.16**	**309**	P	**P**	**08 28 51.4**	**-0.9**
	1.3nm,0.3s,baz=144,slow=7.2,SNR=7.9						
MKAR	**Makanchi Array**	**67.39**	**326**	P	**P**	**08 32 17.1**	**-0.9**
	2.1nm,0.5s,baz=123,slow=8.3,SNR=24						
ZALV	**Zalesovo Beam**	**70.67**	**334**	P	**P**	**08 32 36.4**	**-1.7**
	0.8nm,0.4s,baz=187,slow=3.2,SNR=4.3						
TORD	**Torodi Ar. Bea**	**128.74**	**282**	PKP	**PKPdf**	**08 40 27.4**	**-2.1**
	0.2nm,0.6s,baz=39,slow=1.6,SNR=2.6						

*IDC **21** 08:26:43.5±1.6, 37°.86N×142°.74E, h0km, mb3.3/2, mb1 3.5/3, mb1mx3.2/33, mbtmp3.1/3, ML2.8/1, Error ellipse: s-maj=61.6km s-min=31.4km az=126.0*
*ISCJB **21** 08:26:48.7±1.5, 37°.72N±0°.06×142°.1E±0°.1, h24km, mb3.4/2, Error ellipse: s-maj=13.0km s-min=8.4km az=175.5*
*JMA **21** 08:26:49.4±0.2, 37°.72N×142°.09E, h25km±5km, M3.1*
ISC 21 08:26:49.2±1.8, 37°.69N±0°.06×142°.0E±0°.1, h24km, n10, σ1°.19/12, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.93**	**325**	P	**Pb**	**08 27 06.7**	**0.0**
JIO				S	**Sb**	**08 27 18.1**	**-0.6**
JFK	**Kawauchi**	**0.98**	**251**	P	**Pb**	**08 27 08.1**	**+0.6**
JMM	**Marumori**	**1.00**	**280**	P	**Pb**	**08 27 08.3**	**+0.4**
JMM				S	**Sb**	**08 27 20.1**	**-0.5**
ONAJ	**Iwakimizuishiy**	**1.15**	**239**	P	**Pn**	**08 27 10.3**	**+0.4**
ONAJ				*e*S	**Sb**	**08 27 26.1**	**+1.2**
JOU	**Okura**	**1.27**	**302**	P	**Pb**	**08 27 12.7**	**+0.1**
JFT	**Otama**	**1.36**	**263**	P	**Pb**	**08 27 14.6**	**+0.6**
JHO	**Hitachi**	**1.59**	**228**	P	**Pn**	**08 27 16.6**	**+0.7**
MJAR	**Matsushiro Arr**	**3.27**	**251**	Pn	**Pb**	**08 27 43.5**	**-3.1**
	0.8nm,0.3s,baz=80,slow=16,SNR=7.4						
WRA	**Warramunga Arr**	**57.78**	**189**	P	**P**	**08 36 38.4**	**-0.1**
	0.4nm,0.6s,baz=6.4,slow=7.4,SNR=5.2						
YKA	**Yellowknife Ar**	**62.99**	**30**	P	P	08 37 08.7	-4.9
	0.1nm,0.6s,baz=291,slow=5.6,SNR=3.8						

*BJI **21** 08:33:19.0, 65°.40N×166°.90W, h10km, mb4.9/55, mB5.0/39, Ms4.9/44, Ms7 4.7/41*
*GCMT **21** 08:33:21.7±0.2, 65°.44N×166°.90W, h12km, MW5.0/98, Moment Tensor Solution. s46,c56; s98,c138; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-3.27±.07; $M_{\theta\theta}$2.95±.08; $M_{\phi\phi}$0.31±.06; $M_{r\theta}$-0.32±.26; $M_{\theta\phi}$-1.49±.06; $M_{r\phi}$1.02±.22; Best double couple: $M_0$3.61800×10^{16} NP1:ϕ_S128.00000°, δ52.00000°, λ-72.00000°. NP2: ϕ_S280.00000°, δ41.00000°, λ-111.00000°. Principal axes: T 3.6960, Plg6.0000°, Azm205.0000°; N -0.1600, Plg14.0000°, Azm297.0000°; P -3.5410, Plg75.0000°, Azm93.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*IDC **21** 08:33:21.2±0.5, 65°.51N×166°.70W, h0km, mb4.7/32, mb1 4.9/35, mb1mx4.8/48, mbtmp4.7/35, ML4.1/3, MS3.9/29, Ms1 3.9/29, ms1mx3.8/44 Error ellipse: s-maj=14.8km s-min=9.3km az=2.0*
*ISCJB **21** 08:33:21.2±0.1, 65°.55N±0°.02×166°.60W±0°.03, h11km, mb5.0/312, MS4.2/45, Error ellipse: s-maj=3.7km s-min=1.6km az=20.7*
*MOS **21** 08:33:21.8±1.0, 65°.50N×166°.71W, h16km, mb5.3/106, MS4.2/10, Error ellipse: s-maj=8.9km s-min=4.4km az=100.8*
*NEIC **21** 08:33:21.7, 65°.36N×166°.83W, h19km, mb5.0/215, MW4.8, ML5.2(AEIC), Moment Tensor Solution. s72 Moment tensor: Scale 10^{16}Nm; M_{rr}-1.89; $M_{\theta\theta}$1.60; $M_{\phi\phi}$0.30; $M_{r\theta}$-0.65; $M_{\theta\phi}$-0.54; $M_{r\phi}$0.78; Best double couple: $M_0$2.10000×10^{16} NP1:ϕ_S123.00000°, δ59.00000°, λ-77.00000°. NP2:ϕ_S279.00000°, δ33.00000°, λ-111.00000°. Principal axes: T 1.9900, Plg13.0000°, Azm203.0000°; N 0.2100, Plg11.0000°, Azm296.0000°; P -2.2000, Plg73.0000°, Azm65.0000°; After AEIC.*
NEIC Felt [II] at Nome. Also felt at Wales.
ISC 21 08:33:23.1±0.6, 65°.48N±0°.05×166°.86W±0°.03, h15km±3km, h14km:pP-P, n1008, σ1°.26/1046, mb5.0/320, MS4.1/47, 27C-14D, Northern Alaska

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TNA	**Tin City**	**0.45**	**281**	P	**Pg**	**08 33 31.1**	**-1.0**
TNA				S	**Sb**	**08 33 39.1**	**-0.2**
GAMB	**Gambell**	**2.70**	**233**	P	**Pn**	**08 34 03.3**	**-2.5**
GAMB				S	**Sn**	**08 34 35.1**	**-3.0**
TTA	**Tatalina**	**5.38**	**113**	*e*P	**Pn**	**08 34 41.4**	**-1.4**
TTA	**Tatalina**	**5.38**	**113**	P	**Pn**	**08 34 41.4**	**-1.4**
TTA				S	**Sn**	**08 35 42.5**	**-2.0**
TT01	**Tatalina**	**5.39**	**114**	P	**Pn**	**08 34 41.4**	**-1.5**
IM3	**Indian Mountai**	**5.43**	**79**	P	**Pn**	**08 34 41.9**	**-1.5**
CAST	**Castle Rocks**	**6.71**	**101**	P	**Pn**	**08 34 59.0**	**-2.1**
SVW2	**Sparrevohn**	**6.71**	**126**	P	**Pn**	**08 34 59.5**	**-1.5**
SVW2				S	**Sn**	**08 36 13.4**	**-3.8**
MLY	**Manley**	**6.78**	**86**	P	**Pn**	**08 34 59.8**	**-2.2**
PPLA	**Purkeypile**	**6.91**	**105**	P	**Pn**	**08 35 02.0**	**-1.8**
PPLA				S	**Sn**	**08 36 19.1**	**-3.0**
BPAW	**Bear Paw Mtn.**	**6.92**	**94**	P	**Pn**	**08 35 01.5**	**-2.3**
COLD	**Coldfoot**	**6.92**	**68**	P	**Pn**	**08 35 02.5**	**-1.3**
KTH	**Kantishna Hill**	**7.14**	**98**	P	**Pn**	**08 35 04.8**	**-2.1**
TRF	**Thorofare Moun**	**7.44**	**98**	P	**Pn**	**08 35 09.4**	**-1.7**
BWN	**Browne**	**7.53**	**92**	*e*Pn	**Pn**	**08 35 10.8**	**-1.4**
MCK	**McKinley**	**7.89**	**95**	*e*P	**Pn**	**08 35 15.3**	**-1.9**
MCK	**McKinley**	**7.89**	**95**	P	**Pn**	**08 35 15.5**	**-1.7**
SPU	**Mount Spurr**	**7.92**	**116**	*e*Pn	**Pn**	**08 35 16.3**	**-1.3**
COLA	**College**	**8.02**	**86**	*e*P	**Pn**	**08 35 17.2**	**-1.6**
COLA	**College**	**8.02**	**86**	P	**Pn**	**08 35 17.4**	**-1.4**
WRH	**Wood River Hil**	**8.02**	**89**	P	**Pn**	**08 35 16.5**	**-2.4**
RND	**Reindeer**	**8.05**	**97**	*e*P	**Pn**	**08 35 17.8**	**-1.6**
RND	**Reindeer**	**8.05**	**97**	P	**Pn**	**08 35 17.9**	**-1.6**
CCB	**Clear Creek Bu**	**8.09**	**87**	*e*Pn	**Pn**	**08 35 18.3**	**-1.6**
RDWB	**Redoubt West**	**8.10**	**122**	P	**Pn**	**08 35 17.9**	**-2.3**
RSO	**Redoubt South**	**8.15**	**122**	*e*Pn	**Pn**	**08 35 19.8**	**-1.1**
IL1	**Eielson Array**	**8.44**	**86**	*e*Pn	**Pn**	**08 35 21.9**	**-2.8**
ILAR	**Eielson Array**	**8.44**	**86**	Pn	**Pn**	**08 35 21.5**	**-3.2**
	1.3nm,0.3s,baz=279,slow=13,SNR=104						
ILAR				Sn	**Sn**	**08 36 54.0**	**-5.6**
	5.1nm,0.3s,baz=51,slow=22,SNR=5.9						
ILAR				Lg	Lg	08 37 44.8	
	2.0nm,0.3s,baz=285,slow=29,SNR=3.4						
ILB	**Eielson Array**	**8.44**	**86**	P	**Pn**	**08 35 22.5**	**-2.2**
HDA	**Harding Lake**	**8.51**	**88**	*e*Pn	**Pn**	**08 35 24.5**	**-1.1**
PMR	**Palmer**	**8.81**	**108**	*e*P	**Pn**	**08 35 29.3**	**-0.4**
PMR	**Palmer**	**8.81**	**108**	P	**Pn**	**08 35 27.9**	**-1.8**
FYU	**Fort Yukon**	**8.86**	**73**	*e*Pn	**Pn**	**08 35 30.2**	**-0.2**
RC01	**Rabbit Creek A**	**8.86**	**112**	*e*Pn	**Pn**	**08 35 29.8**	**-0.7**
KVTA	**Katmai Vly 10**	**8.95**	**137**	P	**Pn**	**08 35 29.6**	**-2.1**
SML	**Sawmill**	**9.01**	**106**	*e*P	**Pn**	**08 35 32.0**	**-0.5**
SML	**Sawmill**	**9.01**	**106**	P	**Pn**	**08 35 31.5**	**-1.0**
BM3	**Burnt Mountain**	**9.10**	**68**	P	**Pn**	**08 35 32.6**	**-1.1**
BRLK	**Bradley Lake**	**9.30**	**121**	P	**Pn**	**08 35 34.7**	**-1.8**
SCM	**Sheep Creek Mo**	**9.40**	**104**	*e*P	**Pn**	**08 35 37.6**	**-0.3**
SCM	**Sheep Creek Mo**	**9.40**	**104**	P	**Pn**	**08 35 36.8**	**-1.1**
SEW	**Seward**	**9.60**	**116**	P	**Pn**	**08 35 39.4**	**-1.2**
PAX	**Paxson**	**9.63**	**95**	*e*P	**Pn**	**08 35 41.4**	**+0.3**
PAX	**Paxson**	**9.63**	**95**	P	**Pn**	**08 35 40.0**	**-1.1**
DOT	**Dot Lake**	**9.96**	**90**	P	**Pn**	**08 35 43.5**	**-2.0**
CHGN	**Chignik**	**10.07**	**152**	*e*Pn	**Pn**	**08 35 49.8**	**+2.8**
KLU	**Klutina**	**10.15**	**103**	*e*Pn	**Pn**	**08 35 47.6**	**-0.6**
KDAK	**Kodiak Island**	**10.25**	**132**	*e*P	**Pn**	**08 35 52.0**	**+2.5**
KDAK	**Kodiak Island**	**10.25**	**132**	*e*Pn	**Pn**	**08 35 52.0**	**+2.5**
MENT	**Mentasta**	**10.37**	**94**	*e*Pn	**Pn**	**08 35 51.2**	**+0.1**
DIV	**Divide**	**10.41**	**105**	*e*Pn	**Pn**	**08 35 51.0**	**-0.7**
OHAK	**Old Harbor**	**10.51**	**136**	*e*Pn	**Pn**	**08 35 53.5**	**+0.5**
EYAK	**Cordova Ski Ar**	**10.76**	**107**	*e*Pn	**Pn**	**08 35 55.5**	**-0.9**
EGAK	**Eagle**	**10.82**	**82**	*e*Pn	**Pn**	**08 35 56.1**	**-1.1**
BILL	**Bilibino**	**10.88**	**296**	*i* P	**Pn**	**08 35 56.8**	**-1.2**
BILL				pmax	pmax		
	comp=Z,5.0nm,1.1s						
BILL				MLR	MLR		
	comp=Z,1μm,14.0s						
BILL	**Bilibino**	**10.88**	**296**	*e*Pn	**Pn**	**08 35 57.6**	**-0.4**
BMRM	**Bremner River**	**10.97**	**104**	*e*Pn	**Pn**	**08 35 59.6**	**+0.2**
AKUT	**Akutan**	**11.39**	**177**	*e*Pn	**Pn**	**08 36 04.7**	**-0.4**
UNV	**Unalaska Valle**	**11.67**	**179**	*e*Pn	**Pn**	**08 36 10.3**	**+1.4**
DAWY	**Dawson**	**11.76**	**84**	*e*Pn	**Pn**	**08 36 09.4**	**-0.8**
INK	**Inuvik**	**13.29**	**63**	Pn	**Pn**	**08 36 30.1**	**-0.7**
	comp=Z,0.9nm,0.3s,baz=288,slow=13,SNR=23						
INK				LR	LR	08 41 49.5	
	comp=Z,1μm,19.4s,baz=262,slow=38						
INK	**Inuvik**	**13.29**	**63**	*e*P	**Pn**	**08 36 30.3**	**-0.5**
INK	**Inuvik**	**13.29**	**63**	*e*Pn	**Pn**	**08 36 30.3**	**-0.5**
SKAG	**Skagway**	**15.64**	**98**	*e*Pn	**Pn**	**08 37 00.7**	**-1.9**
	comp=Z,77nm,1.0s						
SEY	**Seymchan**	**17.69**	**281**	P	**P**	**08 37 30.4**	**+0.9**
	comp=Z,0.5nm,0.3s,baz=80,slow=8.8,SNR=20						
SEY				Lg	Lg	08 42 45.1	
	comp=Z,0.1nm,0.3s,baz=53,slow=21,SNR=8.6						
SEY	**Seymchan**	**17.69**	**281**	*e*P	**P**	**08 37 30.2**	**+0.8**
DLBC	**Dease Lake**	**18.45**	**95**	P	**Pn**	**08 37 38.0**	**0.0**
	comp=Z,0.2nm,0.3s,baz=297,slow=13,SNR=23						
DLBC	**Dease Lake**	**18.45**	**95**	*e*P	**Pn**	**08 37 38.4**	**+0.3**
	comp=Z,55nm,1.2s						
WRAK	**Wrangell Islan**	**18.80**	**102**	*e*P	**P**	**08 37 41.0**	**-0.7**
	comp=Z,36nm,1.0s						
CRAG	**Craig**	**19.15**	**105**	*e*P	**Pn**	**08 37 46.9**	**+0.5**
	comp=Z,108nm,1.4s						
MA2	**Magadan**	**20.09**	**273**	P	Pn	08 37 57.3	-0.3
	comp=Z,22nm,0.9s,baz=49,slow=11,SNR=9.3						
PET	**Petropavlovsk**	**21.25**	**251**	*e*P	**P**	**08 38 08.7**	**+0.4**
PET				*e*S	**S**	**08 41 57.4**	**-6.3**
PET				pmax	pmax		
	comp=Z,200nm,13.3s						
PET				pmax	pmax		
	comp=Z,300nm,11.0s						
PET				pmax	pmax		
	comp=Z,43nm,1.1s						
PET				MLR	MLR		
	comp=Z,500nm,13.0s						
PET				MLR	MLR		
	comp=Z,600nm,11.0s						
PET	**Petropavlovsk**	**21.25**	**251**	*e*P	**P**	**08 38 13.1**	**+4.8**
	comp=Z,37nm,1.0s						
PEA0	**Petropavlovsk-**	**21.56**	**252**	*e*P	**P**	**08 38 14.2**	**+2.5**
PEA0B	**Petropavlovsk-**	**21.56**	**252**	*e*P	**P**	**08 38 16.7**	**+5.0**
	comp=Z,56nm,1.2s						
PETK	**Petropavlovsk-**	**21.56**	**252**	P	**P**	**08 38 12.8**	**+1.2**
	comp=Z,8.6nm,1.0s,baz=46,slow=19,SNR=6.9						
PETK				LR	LR	08 47 40.5	
	comp=Z,323nm,18.4s,baz=33,slow=40						
YKW3	**Yellowknife Ar**	**22.52**	**73**	*e*P	**P**	**08 38 21.8**	**-0.1**
	comp=Z,89nm,1.2s						
YKA	**Yellowknife Ar**	**22.56**	**73**	P	**P**	**08 38 21.9**	**-0.3**
	comp=Z,16nm,0.9s,baz=298,slow=8.9,SNR=91						
YKA				PcP	**PcP**	**08 42 14.5**	**-0.4**
	comp=Z,3.3nm,1.0s,baz=293,slow=2.2,SNR=6.7						
YKB5	**Yellowknife Ar**	**22.56**	**73**	*e*P	**P**	**08 38 20.7**	**-1.6**
TIXI	**Tiksi**	**23.17**	**314**	P	**P**	**08 38 29.0**	**+0.5**
	comp=Z,12nm,0.9s,baz=74,slow=7.6,SNR=23						
TIXI	**Tiksi**	**23.17**	**314**	*de*P	**P**	**08 38 29.0**	**+0.5**
TIXI				pmax	pmax		
	comp=Z,27nm,1.2s						
TIXI				MLR	MLR		
	comp=Z,187nm,13.0s						
TIXI	**Tiksi**	**23.17**	**314**	*e*P	**P**	**08 38 29.1**	**+0.5**
	comp=Z,21nm,0.9s						
RES	**Resolute Bay**	**24.44**	**38**	P	**P**	**08 38 37.9**	**-2.8**
	comp=Z,10.0nm,0.9s,baz=290,slow=7.5,SNR=9.4						
**RES

baz=327,SNR=17
L02D Cave Junction, 33.52 113 P **P 08 40 02.4 +0.7**
baz=329
MSO Missoula 33.54 98 P **P 08 40 02.1 +0.1**
baz=323,SNR=17
MSO Missoula 33.54 98 *e*P **P 08 40 02.0 0.0**
comp=Z,22nm,1.1s
CHMT Chamberlain Mo 33.76 97 *e*P **P 08 40 04.1 +0.1**
BMO Blue Mountains 33.76 103 *e*P **P 08 40 04.8 +0.8**
comp=Z,35nm,1.6s
K04D Chiloquin, OR 33.84 110 P **P 08 40 05.6 +0.9**
baz=328
K05A Summer Lake 34.09 109 *e*P **P 08 40 08.6 +1.6**
comp=Z,50nm,1.3s
HOG Hogback Mounta 34.19 110 P **P 08 40 09.1 +1.3**
YBH Yreka Blue Hor 34.23 112 *e*P **P 08 40 09.6 +1.6**
YBH pmax pmax
comp=Z,27nm,1.2s
YBH Yreka Blue Hor 34.23 112 *e*P **P 08 40 09.6 +1.6**
comp=Z,27nm,1.2s
EGMT Eagleton 34.34 92 P **P 08 40 08.7 -0.2**
baz=322,SNR=18
EGMT Eagleton 34.34 92 *e*P **P 08 40 08.6 -0.2**
comp=Z,38nm,1.2s
HABR Khabarovsk 34.40 269 *e*P **P 08 40 08.9 -0.4**
HABR *e**PP **pP 08 40 11.9 -1.8**
HABR *e*S **S 08 45 38.2 +1.9**
HABR *e**SS **sS 08 45 43.3 -0.4**
HABR *e*SS **SnSn 08 47 50.3 +4.1**
HABR *e* 08 50 32.2
HABR pmax pmax
comp=E,41nm,2.0s
HABR pmax pmax
comp=Z,21nm,2.0s
HABR pmax pmax
comp=N,30nm,2.0s
HABR MLR MLR
comp=Z,287nm,18.0s
M02C Callahan 34.47 113 P **P 08 40 11.0 +1.0**
baz=329,SNR=11
LHEM Herd Peak 34.51 112 P **P 08 40 11.9 +1.3**
M04C Macdoel 34.52 111 P **P 08 40 11.5 +0.9**
baz=328,SNR=7.9
KHMM Horse Mountain 34.57 114 *e*P **P 08 40 13.4 +2.3**
comp=Z,28nm,1.1s
ASAJ Asahikawa 34.77 257 LR LR 08 56 32.7
comp=Z,284nm,18.2s,baz=16,slow=40
N02D Trinity Center 34.88 113 P **P 08 40 14.9 +1.2**
baz=329,SNR=13
LRM Limekiln Ridge 34.97 97 *e*P **P 08 40 15.1 +0.5**
MOD Modoc Plateau 35.02 109 *e*P **P 08 40 16.0 +1.1**
comp=Z,37nm,1.5s
KLR Kul'dur 35.19 273 P **P 08 40 16.1 0.0**
comp=Z,11nm,0.9s,baz=38,slow=9.5,SNR=15
WVOR Wild Horse Val 35.24 107 *e*P **P 08 40 17.4 +0.7**
WVOR pmax pmax
comp=Z,35nm,1.5s
DLMT Dillon 35.28 98 *e*P **P 08 40 18.0 +0.9**
comp=Z,24nm,1.3s
WDC Whiskeytown Da 35.28 113 *e*P **P 08 40 18.2 +1.2**
WDC pmax pmax
comp=Z,33nm,1.4s
WDC Whiskeytown Da 35.28 113 *e*P **P 08 40 18.2 +1.2**
comp=Z,33nm,1.4s
BOZ Bozeman (W) 35.45 97 P **P 08 40 19.3 +0.7**
baz=324,SNR=35
BOZ Bozeman (W) 35.45 97 *e*P **P 08 40 19.3 +0.7**
BOZ pmax pmax
comp=Z,35nm,1.2s
BOZ Bozeman (W) 35.45 97 *e*P **P 08 40 19.3 +0.7**
comp=Z,35nm,1.2s
MFID Camas Ranch 35.55 103 *e*P **P 08 40 19.9 +0.5**
comp=Z,23nm,1.2s
MCMT McKenzie Canyo 35.61 99 *e*P **P 08 40 20.4 +0.4**
KBS Kingsbay 35.81 0 *e*P **P 08 40 22.3 +1.1**
KBS pmax pmax
comp=Z,62nm,1.2s
KBS Kingsbay 35.81 0 *e*P **P 08 40 22.3 +1.1**
comp=Z,62nm,1.3s
O03D Paynes Creek 35.81 112 P **P 08 40 22.0 +0.3**
baz=330,SNR=15
NRIK Noril'sk 35.93 324 P **P 08 40 23.4 +1.2**
comp=Z,33nm,0.9s,baz=49,slow=7.1,SNR=21
NRIK LR LR 08 57 59.8
comp=Z,360nm,18.7s,baz=56,slow=41
BOD Bodaibo 35.93 296 ⇑ *i*P **P 08 40 21.9 -0.4**
BOD pmax pmax
comp=Z,54nm,1.1s
HLID Hailey 36.00 101 P **P 08 40 23.9 +0.5**
baz=326,SNR=18
HLID Hailey 36.00 101 *e*P **P 08 40 24.2 +0.8**
comp=Z,24nm,1.3s
GCMT Greycliff 36.15 95 *e*P **P 08 40 25.7 +1.2**
GCMT *e*S **S 08 46 09.1 +5.5**
QLMT Earthquake Lak 36.19 97 *e*P **P 08 40 26.2 +1.2**
DGMT Dagmar 36.31 87 P **P 08 40 25.5 -0.3**
baz=321
YMR Madison River 36.52 97 *e*P **P 08 40 29.0 +1.2**
comp=Z,52nm,1.4s
DAG Danmarks Havn 36.62 12 *i*P **P 08 40 28.4 +0.4**
comp=Z,4.3nm,0.9s
DAG Danmarks Havn 36.62 12 *e*P **P 08 40 28.4 +0.4**
DAG pmax pmax
comp=Z,4.0nm,0.9s
YFT Old Faithful 36.75 97 *e*P **P 08 40 32.2 +2.4**
comp=Z,27nm,1.5s
LKWY Lake 36.84 96 *e*P **P 08 40 32.9 +2.3**
LKWY pmax pmax
comp=Z,33nm,1.6s
LKWY Lake 36.84 96 *e*P **P 08 40 32.9 +2.3**
comp=Z,33nm,1.6s
RLMT Red Lodge 36.85 95 P **P 08 40 28.6 -2.1**
baz=324,SNR=6.2
RLMT Red Lodge 36.85 95 *e*P **P 08 40 31.8 +1.1**
comp=Z,33nm,1.3s
LAO LASA Array 36.87 90 P **P 08 40 30.3 -0.3**
baz=323,SNR=10
LAO LASA Array 36.87 90 *e*P **P 08 40 30.3 -0.3**
comp=Z,30nm,1.0s
A26A Wade Farm, Ken 36.87 84 P **P 08 40 30.8 +0.2**
baz=321
H17A Grant Village 36.90 97 P **P 08 40 32.9 +1.7**
baz=325
H17A Grant Village 36.90 97 *e*P **P 08 40 31.0 -0.1**
comp=Z,32nm,1.5s
FLWY Flagg Ranch 37.11 97 *e*P **P 08 40 34.2 +1.4**
comp=Z,34nm,1.3s
IMW Indian Meadow 37.16 98 *e*P **P 08 40 34.5 +1.2**
comp=Z,22nm,1.1s
PAHR Pah Rah Range 37.26 110 *e*P **P 08 40 34.8 +0.7**
comp=Z,24nm,1.2s
AFDM Forest Hills D 37.30 113 *e*P **P 08 40 34.4 +0.2**
comp=Z,20nm,1.4s
MOOW Moose Ponds 37.36 98 *e*P **P 08 40 35.8 +0.8**
comp=Z,13nm,1.5s
TPAW Teton Pass 37.49 98 *e*P **P 08 40 37.6 +1.5**
comp=Z,37nm,1.4s
BMN Battle Mountai 37.50 107 *e*P **P 08 40 37.1 +1.0**
BMN pmax pmax
comp=Z,17nm,1.2s
BMN Battle Mountai 37.50 107 *e*P **P 08 40 37.1 +1.0**
comp=Z,17nm,1.2s
LOHW Long Hollow 37.53 98 *e*P **P 08 40 37.3 +0.9**
comp=Z,23nm,1.3s
A28A Rude Farm, Bot 37.60 83 P **P 08 40 35.7 -1.0**
baz=321
REDW Red Top Meadow 37.63 98 *e*P **P 08 40 38.2 +0.9**
comp=Z,56nm,1.5s
D25A Fairfield 37.71 87 P **P 08 40 38.3 +0.6**
baz=322
SUMG Summit 37.96 23 *i*P **P 08 40 41.3 +1.3**
comp=Z,17nm,0.9s
SUMG Summit 37.96 23 *e*P **P 08 40 40.9 +1.0**
SUMG pmax pmax
comp=Z,58nm,1.4s
SUMG Summit 37.96 23 *e*P **P 08 40 40.9 +1.0**
comp=Z,58nm,1.4s
A29A Manning Farm, 38.02 82 P **P 08 40 40.5 +0.3**
baz=321,SNR=11
AHID Auburn Hatcher 38.02 99 *e*P **P 08 40 41.3 +0.7**
comp=Z,24nm,1.1s
ELK Elko 38.03 105 *e*P **P 08 40 41.8 +1.2**
ELK pmax pmax
comp=Z,18nm,1.1s
ELK Elko 38.03 105 *e*P **P 08 40 41.8 +1.2**
comp=Z,18nm,1.1s
HVU Hansel Valley 38.16 101 *e*P **P 08 40 42.8 +1.1**
HVU pmax pmax
comp=Z,31nm,1.2s
HVU Hansel Valley 38.16 101 *e*P **P 08 40 42.8 +1.1**
comp=Z,31nm,1.3s
D26A Manning 38.17 87 P **P 08 40 41.9 +0.3**
baz=322,SNR=9.0
E25A Miller Ranch, 38.19 88 P **P 08 40 42.4 +0.6**
baz=323
WAKR Walker 38.28 111 *e*P **P 08 40 43.4 +0.6**
CMB Columbia Colle 38.32 113 *e*P **P 08 40 43.4 +0.5**
CMB pmax pmax
comp=Z,8.0nm,1.0s
CMB Columbia Colle 38.32 113 *e*P **P 08 40 43.4 +0.5**
comp=Z,7.5nm,1.0s
B29A Wagenman Farm, 38.32 83 P **P 08 40 42.8 0.0**
baz=321
ULM Lac du Bonnet 38.37 78 P **P 08 40 41.6 -1.5**
comp=Z,15nm,1.0s,baz=317,slow=8.7,SNR=14
ULM LR LR 08 57 34.3
comp=Z,468nm,21.7s,baz=333,slow=38
ULM Lac du Bonnet 38.37 78 *e*P **P 08 40 42.8 -0.3**
ULM pmax pmax
comp=Z,30nm,1.1s
ULM Lac du Bonnet 38.37 78 *e*P **P 08 40 42.8 -0.3**
comp=Z,30nm,1.1s
A30A Hoffart Farm, 38.39 81 P **P 08 40 43.7 +0.3**
baz=321
C28A Hausauer Farms 38.48 84 P **P 08 40 45.3 +1.1**
baz=322
E26A Carlson Angus 38.61 87 P **P 08 40 45.6 +0.3**
baz=323
F25A Bowman 38.63 89 P **P 08 40 46.0 +0.5**
baz=323
BW06 Boulder Array 38.66 97 P **P 08 40 46.2 +0.3**
baz=326,SNR=26
BW06 Boulder Array 38.66 97 *e*P **P 08 40 46.1 +0.1**
comp=Z,33nm,1.4s
PD31 Pinedale Array 38.66 97 *e*P **P 08 40 46.2 +0.2**
PDAR Pinedale Array 38.66 97 P **P 08 40 46.0 0.0**
comp=Z,8.2nm,1.0s,baz=309,slow=4.7,SNR=54
PDAR PcP **PcP 08 42 57.1 -0.6**
comp=Z,1.3nm,0.7s,baz=309,slow=0.6,SNR=3.9
SPUT South Promonto 38.69 101 *e*P **P 08 40 47.1 +1.0**
comp=Z,37nm,1.2s
MDND Maddock 38.71 83 P **P 08 40 45.8 -0.3**
baz=322
MDND Maddock 38.71 83 *e*P **P 08 40 47.3 +1.3**
comp=Z,37nm,1.3s
B30A Myrvik Farm, E 38.76 82 P **P 08 40 46.6 +0.1**
baz=322
BGU Big Grassy Mou 38.77 102 *e*P **P 08 40 47.6 +0.8**
comp=Z,14nm,1.5s
NV01 Mina Array Sit 38.79 110 *e*P **P 08 40 47.6 +0.6**
NVAR Mina Array Bea 38.79 110 P **P 08 40 47.6 +0.6**
comp=Z,15nm,0.9s,baz=306,slow=7.6,SNR=93
NVAR LR LR 08 57 09.3
comp=Z,186nm,18.4s,baz=342,slow=37
HWUT Hardware Ranch 38.80 100 *e*P **P 08 40 47.8 +0.7**
comp=Z,11nm,1.1s
NV11 Mina Array Sit 38.84 110 *e*P **P 08 40 48.0 +0.6**
comp=Z,44nm,1.2s
E27A Carson 39.02 86 P **P 08 40 48.9 +0.2**
baz=323,SNR=5.2
F26A Lodgepole 39.02 88 P **P 08 40 49.3 +0.6**
baz=323
B31A Greenbush Farm 39.06 81 P **P 08 40 49.2 +0.2**
baz=322
USRK Ussuriysk Ar. 39.09 268 P **P 08 40 49.5 +0.3**
comp=Z,3.2nm,0.8s,baz=75,slow=7.8,SNR=5.4
USRK PcP **PcP 08 42 59.0 +0.3**
comp=Z,4.0nm,0.9s,baz=345,slow=3.0,SNR=5.4
USRK LR LR 09 00 09.5
comp=Z,175nm,18.3s,baz=27,slow=41
A32A Rocking H Ranc 39.15 80 P **P 08 40 49.9 +0.2**
baz=321,SNR=6.9
G25A Newell 39.24 89 P **P 08 40 50.9 +0.4**
baz=324
TCUT Toone Canyon 39.27 101 *e*P **P 08 40 52.1 +1.0**
comp=Z,76nm,1.2s
MLAC Mammoth, Mammo 39.27 111 P **P 08 40 52.4 +1.3**
baz=331,SNR=8.4
DUG Dugway, Tooele 39.47 103 P **P 08 40 53.2 +0.5**
baz=328,SNR=24
DUG Dugway, Tooele 39.47 103 *e*P **P 08 40 52.8 +0.1**
DUG pmax pmax
comp=Z,30nm,1.2s
DUG Dugway, Tooele 39.47 103 *e*P **P 08 40 52.8 +0.1**
comp=Z,30nm,1.3s
G26A Maurine 39.50 88 P **P 08 40 52.6 -0.1**
baz=324,SNR=14
C31A Landman Farms, 39.52 82 P **P 08 40 53.0 +0.1**
baz=322,SNR=6.9
B32A Ashes, Strandq 39.54 80 P **P 08 40 52.8 -0.2**
baz=322,SNR=5.9
A33A Warroad 39.59 79 P **P 08 40 52.8 -0.6**
baz=322,SNR=6.1
H25A Fruitdale 39.62 90 P **P 08 40 53.6 -0.2**
baz=324,SNR=6.0
D30A Buchanan 39.64 83 P **P 08 40 53.3 -0.6**
baz=322
E29A Napoleon 39.70 85 P **P 08 40 54.1 -0.3**
baz=323
G27A Dupree 39.71 88 P **P 08 40 54.5 0.0**
baz=324,SNR=14
MDJ Mudanjiang 39.75 270 P **P 08 40 51.8 -2.9**
MDJ pP pP 08 40 54.9 -4.4
MDJ S **S 08 46 52.8 -5.0**
MDJ pmax pmax
comp=Z,3.0nm,0.4s
MDJ pmax pmax
comp=Z,27nm,4.1s
MDJ LR LR
comp=Z,660nm,12.6s
MDJ LR LR
comp=Z,240nm,16.0s
MDJ LR LR
comp=Z,620nm,11.4s
RSSD Black Hills 39.85 91 P **P 08 40 55.8 -0.1**
baz=324
RSSD Black Hills 39.85 91 *e*P **P 08 40 55.8 -0.1**
RSSD pmax pmax
comp=Z,23nm,1.3s
RSSD Black Hills 39.85 91 *e*P **P 08 40 55.8 -0.1**
comp=Z,23nm,1.4s
R11A Troy Canyon, C 39.93 107 P **P 08 40 56.7 +0.1**
baz=329,SNR=25
R11A Troy Canyon, C 39.93 107 *e*P **P 08 40 56.6 +0.1**
comp=Z,22nm,1.3s
H26A Fairpoint 39.97 89 P **P 08 40 56.9 +0.2**
baz=324,SNR=9.2
NLU North Lily Min 39.98 102 *e*P **P 08 40 57.6 +0.7**
comp=Z,30nm,1.1s
TIN Tinemaha, Big 40.01 111 P **P 08 40 58.7 +1.5**
baz=331
K22A Casper 40.02 94 P **P 08 40 56.9 -0.3**
baz=326
K22A Casper 40.02 94 *e*P **P 08 40 57.2 0.0**
comp=Z,68nm,1.9s
B33A Robert and Kas 40.03 80 P **P 08 40 56.8 -0.2**
baz=322
I25A Rochford 40.06 91 P **P 08 40 57.2 -0.4**
baz=325
D31A Mcclaflin, Tow 40.12 83 P **P 08 40 57.8 0.0**
baz=323
F29A Eureka 40.22 86 P **P 08 40 58.9 +0.2**
baz=323
B34A Aery, Baudette 40.24 79 P **P 08 40 58.5 -0.3**
baz=322,SNR=8.1
H27A Howes 40.25 89 P **P 08 40 59.0 +0.1**
baz=324,SNR=6.9
SFJD Kangerlussuaq 40.26 33 *i*P **P 08 40 59.3 +0.6**
comp=Z,23nm,1.1s
SFJD Kangerlussuaq 40.26 33 *i*P **P 08 40 59.3 +0.6**
SFJD pmax pmax
comp=Z,23nm,1.1s
SFJD Kangerlussuaq 40.26 33 *e*P **P 08 40 59.6 +0.9**
comp=Z,29nm,1.0s
RCTC Rector, Farmer 40.27 113 P **P 08 40 59.6 +0.4**
baz=332,SNR=19
C33A Trail 40.36 80 P **P 08 40 59.5 -0.2**
baz=322
GRAC Grapevine Rang 40.40 110 P **P 08 41 01.7 +1.4**
baz=331,SNR=9.2
PSUT Pine Spring 40.47 105 *e*P **P 08 41 01.6 +0.5**
comp=Z,46nm,1.2s
CWC Cottonwood Cre 40.60 111 P **P 08 41 03.1 +1.0**
baz=331
G29A Hoven 40.69 86 P **P 08 41 02.9 +0.3**
baz=324
B35A Bob, Littlefor 40.72 78 P **P 08 41 02.5 -0.3**
baz=322,SNR=7.2
VES Vestal, Richgr 40.74 113 P **P 08 41 03.1 +0.1**
baz=332,SNR=8.9
F31A Hecla 40.85 84 P **P 08 41 03.5 -0.3**
baz=324
SMMC Simmler 40.86 114 P **P 08 41 05.1 +1.0**
baz=332,SNR=5.5
TPNV Topopah Spring 40.88 109 P **P 08 41 04.8 +0.4**
baz=330,SNR=24
TPNV Topopah Spring 40.88 109 *e*P **P 08 41 04.6 +0.2**
TPNV pmax pmax
comp=Z,22nm,1.1s
TPNV Topopah Spring 40.88 109 *e*P **P 08 41 04.5 +0.2**
comp=Z,22nm,1.1s
TMUT Trail Mountain 40.89 102 *e*P **P 08 41 04.9 +0.3**
comp=Z,10nm,1.1s
J26A Sides Ranch, S 40.91 91 P **P 08 41 04.6 +0.1**
baz=325,SNR=14
P17A Butcher Ranch, 40.93 101 *e*P **P 08 41 05.5 +0.7**
comp=Z,19nm,1.2s
DAC Darwin (Calif) 40.94 111 *e*P **P 08 41 05.4 +0.5**
DAC pmax pmax
comp=Z,20nm,1.0s
DAC Darwin (Calif) 40.94 111 *e*P **P 08 41 05.4 +0.5**
comp=Z,20nm,1.0s
FURC Furnace Creek, 41.06 110 P **P 08 41 06.3 +0.7**
baz=331,SNR=9.2
G30A Faulkton 41.07 86 P **P 08 41 05.8 +0.1**
baz=324
ISA Isabella, Lake 41.13 112 P **P 08 41 06.5 +0.1**
baz=332
C35A Jirik Farms, M 41.14 79 P **P 08 41 05.7 -0.5**
baz=323,SNR=7.4
I28A Midland 41.14 88 P **P 08 41 05.4 -0.9**
baz=325
MPMC Manual Prospec 41.17 111 P **P 08 41 07.4 +0.5**
baz=331,SNR=19
PKM Mcpherson Peak 41.30 114 P **P 08 41 08.6 +0.7**
baz=332,SNR=6.5
SRU San Rafael Swe 41.33 101 *e*P **P 08 41 08.6 +0.5**
SRU pmax pmax
comp=Z,44nm,1.1s
SRU San Rafael Swe 41.33 101 *e*P **P 08 41 08.6 +0.5**
comp=Z,44nm,1.1s
O20A White River Ci 41.40 98 P **P 08 41 08.7 0.0**
baz=327,SNR=5.7
O20A White River Ci 41.40 98 *e*P **P 08 41 08.8 +0.1**
comp=Z,13nm,1.2s
ARVC Arvin 41.47 113 P **P 08 41 08.8 -0.2**
baz=332
I29A Vivian Onida 41.49 88 P **P 08 41 08.7 -0.5**
baz=325
C36A Pine Crest Far 41.56 78 P **P 08 41 09.4 -0.3**
baz=323
MTPU Mount Pierson 41.56 104 *e*P **P 08 41 11.2 +1.0**
comp=Z,32nm,1.2s
LRMC Laurel Mtn Rad 41.60 112 P **P 08 41 10.6 +0.3**
baz=332,SNR=19
D35A Remer 41.60 79 P **P 08 41 10.0 0.0**
baz=323,SNR=6.7
F33A 5 Mile Ranch, 41.68 82 P **P 08 41 10.6 -0.1**
baz=324
SHPR Sheep Range 41.70 108 *e*P **P 08 41 11.3 +0.2**
comp=Z,22nm,1.2s
N23A Red Feather La 41.72 95 P **P 08 41 11.5 +0.1**
baz=327,SNR=9.0
N23A Red Feather La 41.72 95 *e*P **P 08 41 11.5 +0.1**
comp=Z,24nm,1.4s
SHOC Shoshone, Teco 41.78 110 P **P 08 41 12.5 +0.8**
baz=331,SNR=7.6
C37A Embarrass 41.85 77 P **P 08 41 11.0 -1.0**
baz=323,SNR=5.9
E35A Pequot Lakes 41.88 80 P **P 08 41 12.1 -0.2**
baz=323,SNR=8.7
D36A Goodland 41.89 79 P **P 08 41 11.9 -0.5**
baz=323,SNR=7.2
I30A Oacoma 41.94 87 P **P 08 41 12.6 -0.3**
baz=325
EYMN Ely 41.96 77 P **P 08 41 12.8 -0.2**
baz=323,SNR=7.7
EYMN Ely 41.96 77 *e*P **P 08 41 13.1 +0.1**
comp=Z,36nm,1.1s
OSI Osito Audit: C 41.96 113 P **P 08 41 13.9 +0.8**
baz=332
EDW2 Edwards Air Fo 42.01 112 P **P 08 41 13.3 -0.2**
baz=332
LCMT Little Creek M 42.02 106 *e*P **P 08 41 14.2 +0.5**
comp=Z,30nm,1.0s
GSC Goldstone, Bar 42.10 111 P **P 08 41 13.9 -0.4**
baz=331,SNR=22
GSC Goldstone, Bar 42.10 111 *e*P **P 08 41 14.6 +0.3**
GSC pmax pmax
comp=Z,44nm,1.1s
GSC Goldstone, Bar 42.10 111 *e*P **P 08 41 14.6 +0.3**
comp=Z,44nm,1.1s
CN2 Changchun 42.14 273 *e*P **P 08 41 14.1 -0.3**
CN2 *e*S **S 08 47 28.6 -4.8**
CN2 pmax pmax
comp=Z,10.0nm,0.9s
CN2 pmax pmax
comp=Z,200nm,3.0s
CN2 LR LR
comp=Z,300nm,10.0s
CN2 LR LR
comp=Z,300nm,10.0s
CN2 LR LR
comp=Z,400nm,10.0s
KNB Kanab 42.19 105 *e*P **P 08 41 15.8 +0.7**
KNB pmax pmax
comp=Z,35nm,1.1s
KNB Kanab 42.19 105 *e*P **P 08 41 15.8 +0.7**
comp=Z,35nm,1.1s
D37A Cotton 42.21 78 P **P 08 41 13.5 -1.5**
baz=323,SNR=9.1
C38A Sawbill Land. 42.23 77 P **P 08 41 14.1 -1.1**
baz=323
BLG Laguna Peak, P 42.28 114 P **P 08 41 14.6 -1.1**
baz=333
H32A Carlson Farm, 42.29 85 P **P 08 41 15.6 0.0**
baz=324
TUQ Turquoise Moun 42.33 110 P **P 08 41 16.8 +0.6**
baz=331,SNR=7.3
F35A Swanville 42.37 81 P **P 08 41 16.4 +0.1**
baz=324,SNR=7.2
E36A McGregor 42.38 79 P **P 08 41 16.6 +0.1**
baz=324,SNR=14
J30A Dallas 42.39 87 P **P 08 41 15.7 -0.9**
baz=325
RRX Edison Barstow 42.40 111 P **P 08 41 17.5 +0.8**
baz=332
PV09 Paradox Valley 42.42 100 *e*P **P 08 41 17.4 +0.3**
DECC Green Verdugo 42.43 113 P **P 08 41 17.4 +0.5**
baz=332
H33A Prehn Over Nor 42.43 84 P **P 08 41 16.8 0.0**
baz=324
PASC Pasadena Art C 42.56 113 *e*P **P 08 41 18.3 +0.4**
comp=Z,48nm,1.3s
MWC Mount Wilson 42.56 113 *e*P **P 08 41 18.8 +0.6**
MWC pmax pmax
comp=Z,57nm,1.2s
MWC Mount Wilson 42.56 113 *e*P **P 08 41 18.8 +0.6**
comp=Z,57nm,1.2s
PV10 Paradox Valley 42.56 100 *e*P **P 08 41 19.1 +0.8**
PV04 Paradox Valley 42.60 100 *e*P **P 08 41 18.6 +0.1**
C39A Grand Marais 42.62 76 P **P 08 41 18.0 -0.2**
baz=323
HEC Hector,Ludlow 42.70 111 P **P 08 41 19.4 +0.2**
baz=332
BFSC Mount Baldy Ra 42.70 112 P **P 08 41 19.6 +0.4**
baz=332,SNR=14
SMCO Snowmass 42.73 98 *e*P **P 08 41 19.8 0.0**
comp=Z,8.0nm,1.3s
ISCO Idaho Springs 42.77 96 P **P 08 41 20.1 +0.1**
baz=327,SNR=14
ISCO Idaho Springs 42.77 96 *e*P **P 08 41 20.6 +0.6**
ISCO pmax pmax
comp=Z,10.0nm,1.0s
PV05 Paradox Valley 42.79 101 *e*P **P 08 41 20.0 -0.1**
F36A Milaca 42.80 80 P **P 08 41 19.3 -0.5**
baz=324,SNR=9.1
H34A Spellman Lake, 42.84 83 P **P 08 41 20.2 0.0**
baz=324
K30A Basset 42.88 88 P **P 08 41 20.4 -0.1**
baz=326
U15A North Rim 42.91 105 *e*P **P 08 41 21.4 +0.3**
comp=Z,22nm,1.0s

I33A **Coleman** 42.92 84 P P 08 41 20.1 -0.8
baz=325
G35A **Watkins** 42.93 81 P P 08 41 20.7 -0.1
baz=324
LDFC **Landfair** 42.96 109 eP P 08 41 21.9 +0.6
comp=Z,53nm,1.2s
MJB9 **Matsu-Tunnel** 42.96 255 eP P 08 41 22.2 +1.0
comp=Z,7.6nm,0.9s
MAJO **Matsushiro** 42.96 255c iP P 08 41 23.6 +2.4
MAJO pmax pmax
comp=Z,57nm,0.8s
MAJO **Matsushiro** 42.96 255 eP P 08 41 21.9 +0.7
comp=Z,30nm,0.9s
MJAR **Matsushiro Arr** 42.96 255 P P 08 41 21.8 +0.6
comp=Z,12nm,0.8s,baz=15,slow=6.9,SNR=14
PV01 **Paradox Valley** 42.96 100 eP P 08 41 21.4 -0.1
BBRC **Big Bear Solar** 42.97 112 P P 08 41 22.1 +0.6
baz=332
GMRC **Granite Mounta** 43.00 110 P P 08 41 22.1 +0.4
baz=332,SNR=16
J32A **Parkston** 43.04 86 P P 08 41 21.1 -0.7
baz=325
H35A **Sunnyside Ranc** 43.21 82 P P 08 41 23.3 +0.2
baz=324,SNR=8.1
G36A **St. Michael** 43.22 81 P P 08 41 22.8 -0.4
baz=324
ECSD **EROS Data Cent** 43.26 85 P P 08 41 22.4 -1.1
baz=325,SNR=7.3
ECSD **EROS Data Cent** 43.26 85 eP P 08 41 23.1 -0.4
comp=Z,18nm,1.5s
OGNE **Ogallala** 43.30 92 P P 08 41 22.7 -1.3
baz=326
W13A **Hualapai Mount** 43.43 108 eP P 08 41 26.0 +0.7
comp=Z,25nm,1.5s
MURC **Murrieta** 43.45 112 P P 08 41 24.5 -0.7
baz=332
J33A **Davis** 43.45 85 P P 08 41 25.1 0.0
baz=325
SCI2 **San Clemente I** 43.48 114 P P 08 41 25.4 +0.1
baz=333
BELC **Belle Mtn. Jos** 43.56 111 P P 08 41 26.3 +0.1
baz=332,SNR=7.1
K32A **Verdigre** 43.58 87 P P 08 41 24.9 -1.2
baz=326
L31A **Butterfield Fa** 43.61 88 P P 08 41 26.2 -0.3
baz=326
SPMN **Marine on St.** 43.62 80 P P 08 41 26.3 -0.1
baz=324,SNR=8.0
SPMN **Marine on St.** 43.62 80 eP P 08 41 26.2 -0.1
comp=Z,26nm,1.1s
Q24A **Divide** 43.67 96 P P 08 41 26.9 -0.4
baz=328
Q24A **Divide** 43.67 96 eP P 08 41 27.4 +0.2
comp=Z,17nm,1.5s
H36A **Jessenland, He** 43.68 82 P P 08 41 27.3 +0.3
baz=325,SNR=6.5
PFO **Pinyon Flats O** 43.72 112 eP P 08 41 27.5 0.0
PFO pmax pmax
comp=Z,27nm,1.3s
PFO **Pinyon Flats O** 43.72 112 eP P 08 41 27.5 0.0
comp=Z,26nm,1.4s
TPFO **Pinon Flats** 43.73 112 P P 08 41 27.5 -0.1
baz=332,SNR=6.4
IRM **Iron Mountain** 43.75 110 P P 08 41 28.2 +0.5
baz=332,SNR=18
MVCO **Mesa Verde** 43.78 101 P P 08 41 28.0 -0.1
baz=329,SNR=6.3
MVCO **Mesa Verde** 43.78 101 eP P 08 41 28.0 -0.1
comp=Z,7.0nm,0.9s
IRK **Irkutsk** 43.80 297 eP P 08 41 27.8 0.0
IRK pmax pmax
comp=Z,63nm,1.4s
J34A **George** 43.90 84 P P 08 41 28.4 -0.3
baz=325
S22A **4UR Ranch, Cre** 44.01 99 P P 08 41 30.5 +0.6
baz=329,SNR=31
S22A **4UR Ranch, Cre** 44.01 99 eP P 08 41 30.6 +0.6
comp=Z,35nm,1.3s
PDMCI **Parker Dam,Lak** 44.02 109 P P 08 41 30.0 +0.3
baz=331,SNR=6.8
K33A **Hardington** 44.02 86 P P 08 41 30.0 +0.3
baz=326
WUAZ **Wupatki** 44.07 105 P P 08 41 30.7 +0.4
baz=330,SNR=34
WUAZ **Wupatki** 44.07 105 eP P 08 41 30.8 +0.5
comp=Z,55nm,1.1s
BC3 **Big Chuckawall** 44.07 110 P P 08 41 30.3 0.0
baz=332
H37A **Dierke Farm, C** 44.09 81 P P 08 41 30.5 +0.3
baz=325
I36A **Fitzsimmons Fa** 44.10 82 P P 08 41 30.4 +0.1
baz=325
109C **Camp Elliot, M** 44.11 113 P P 08 41 30.3 -0.2
baz=333
M31A **Lambtecht Ranc** 44.25 89 P P 08 41 30.8 -0.8
baz=326
K34A **Le Mars** 44.33 85 P P 08 41 31.9 -0.3
baz=326,SNR=5.6
Y12C **Blythe** 44.35 109 P P 08 41 32.8 +0.4
baz=332,SNR=9.3
Y12C **Blythe** 44.35 109 eP P 08 41 33.2 +0.7
comp=Z,35nm,1.0s
I37A **Lemond, Waseca** 44.36 82 P P 08 41 32.5 +0.2
baz=325,SNR=6.8
MONP2 **Monument Peak** 44.37 112 P P 08 41 33.3 +0.5
baz=333,SNR=12
COWI **Conover** 44.40 76 eP P 08 41 32.2 -0.6
comp=Z,39nm,1.3s
BAR **Barrett** 44.46 112 eP P 08 41 33.8 +0.4
comp=Z,19nm,1.0s
TLY **Talaya** 44.49 297 P P 08 41 36.4 +3.1
comp=Z,1.4nm,0.3s,baz=14,slow=5.5,SNR=3.8
TLY LR LR 09 01 41.8
comp=Z,313nm,18.3s,baz=28,slow=38
TLY **Talaya** 44.49 297 eP P 08 41 36.6 +3.3
TLY pmax pmax
comp=Z,16nm,1.3s
TLY MLR MLR
comp=Z,319nm,13.0s
J36A **Seneca 1, Swea** 44.53 83 P P 08 41 33.8 0.0
baz=325,SNR=7.1
SDCO **Great Sand Dun** 44.56 97 P P 08 41 34.4 0.0
baz=328,SNR=14
SWSC **Sam W. Stewart** 44.56 111 P P 08 41 34.4 +0.3
baz=332,SNR=5.3
K35A **Storm Lake** 44.66 84 P P 08 41 35.1 +0.2
baz=326
KSCO **Kaye Shedlock'** 44.68 94 P P 08 41 35.5 +0.3
baz=328,SNR=8.9
KSCO **Kaye Shedlock'** 44.68 94 eP P 08 41 35.7 +0.6
comp=Z,34nm,1.1s
KEV **Kevo** 44.70 353 eP P 08 41 35.4 +0.7
KEV pmax pmax
comp=Z,38nm,1.0s
KEV **Kevo** 44.70 353 eP P 08 41 35.4 +0.7
comp=Z,38nm,1.0s
IKP **In-Ko-Pah, Jac** 44.71 112 P P 08 41 35.7 +0.3
baz=333,SNR=6.3
KRAR **Krasnoyarsk** 44.76 308 eP P 08 41 36.4 +1.1
KRAR pmax pmax
comp=Z,37nm,0.9s
I38A **Scanlan Farm,** 44.78 81 P P 08 41 35.5 -0.2
baz=325,SNR=6.9
Y14A **Wickenburg** 44.79 108 eP P 08 41 36.5 +0.5
comp=Z,98nm,1.1s
L34A **Svendsen Farm,** 44.81 86 P P 08 41 35.1 -1.0
baz=326
GLA **Glamis** 44.85 110 P P 08 41 37.1 +0.6
baz=332,SNR=6.7
GLA **Glamis** 44.85 110 eP P 08 41 37.0 +0.6
GLA pmax pmax
comp=Z,46nm,1.2s
GLA **Glamis** 44.85 110 eP P 08 41 37.0 +0.6
comp=Z,46nm,1.2s
J37A **Redenius Farm,** 44.87 82 P P 08 41 36.5 0.0
baz=325
ARA0 **ARCESS Array S** 44.98 354 eP P 08 41 37.6 +0.5
ARCES **ARCESS Array B** 44.98 354 P P 08 41 37.5 +0.4
comp=Z,16nm,1.1s,baz=30,slow=8.4,SNR=12
ARCES PcP PcP 08 43 17.8 0.0
comp=Z,6.0nm,0.8s,baz=15,slow=5.0,SNR=8.9
ARCES LR LR 08 58 05.9
comp=Z,110nm,21.0s,baz=352,slow=33
ARE0 **ARCESS Array S** 44.98 354 eP P 08 41 37.7 +0.6
comp=Z,50nm,1.3s
X16A **Lo Mia Camp, P** 45.00 106 eP P 08 41 38.5 +0.7
comp=Z,20nm,0.9s
L35A **Bielow Farm, R** 45.04 85 P P 08 41 36.8 -1.0
baz=326
K36A **Gilmore City** 45.06 84 P P 08 41 37.7 -0.3
baz=326,SNR=8.1
W18A **Petrified Fore** 45.08 104 eP P 08 41 38.7 +0.3
comp=Z,17nm,1.0s
O31A **Woolen Ranch,** 45.09 90 P P 08 41 37.9 -0.4
baz=327,SNR=6.3
K37A **Belmond** 45.29 83 P P 08 41 39.5 -0.2
baz=326,SNR=7.4
J38A **Wedel Dairy, R** 45.31 81 P P 08 41 39.9 -0.1
baz=326,SNR=6.0
MOY **Mondy** 45.47 299 eP P 08 41 43.2 +1.9
X18A **Snowflake** 45.50 104 eP P 08 41 42.0 +0.3
comp=Z,39nm,1.0s
113A **Mohawk Valley,** 45.52 109 eP P 08 41 41.8 +0.1
comp=Z,20nm,1.0s
T25A **Trinidad** 45.53 97 P P 08 41 41.2 -0.8
baz=329
T25A **Trinidad** 45.53 97 eP P 08 41 41.9 -0.1
comp=Z,27nm,1.8s
SCHQ **Schefferville** 45.64 53 P P 08 41 42.2 -0.3
comp=Z,13nm,1.0s,baz=332,slow=8.1,SNR=9.2
SCHQ LR LR 09 03 00.1
comp=Z,294nm,19.4s,baz=286,slow=39
SCHQ **Schefferville** 45.64 53 eP P 08 41 42.2 -0.3
comp=Z,27nm,1.1s
ZAK **Zakamensk** 45.67 297 eP P 08 41 43.3 +0.4
ZAK pmax pmax
comp=Z,8.0nm,1.4s
ZAK pmax pmax
comp=Z,6.0nm,1.4s
N34A **Lincoln** 45.70 87 P P 08 41 42.4 -0.7
baz=327
K38A **Parkersburg** 45.74 82 P P 08 41 43.5 +0.1
baz=326,SNR=11
L37A **Phoenix Point,** 45.77 83 P P 08 41 43.2 -0.4
baz=326,SNR=9.4
P32A **Huiting Farm,** 45.84 90 P P 08 41 43.3 -0.9
baz=327
O33A **Hebron** 45.89 88 P P 08 41 43.5 -1.0
baz=327
M36A **Felix, Anita** 45.89 85 P P 08 41 43.6 -1.0
baz=326
LVZ **Lovozero** 46.04 349ceP P 08 41 46.0 +0.6
LVZ pmax pmax
comp=Z,66nm,1.0s
LVZ **Lovozero** 46.04 349 eP P 08 41 46.1 +0.7
comp=Z,58nm,1.0s
N35A **Tabor** 46.04 86 P P 08 41 45.5 -0.3
baz=327
CBKS **Cedar Bluff** 46.05 91 P P 08 41 45.2 -0.7
baz=328
CBKS **Cedar Bluff** 46.05 91 eP P 08 41 45.8 -0.1
CBKS pmax pmax
comp=Z,31nm,1.3s
CBKS **Cedar Bluff** 46.05 91 eP P 08 41 45.8 -0.1
comp=Z,31nm,1.4s
L38A **Oak Wood Farm,** 46.09 83 P P 08 41 45.6 -0.4
baz=326,SNR=11
O34A **Beatrice** 46.17 87 P P 08 41 46.0 -0.7
baz=327,SNR=6.3
SCIA **State Center** 46.17 83 eP P 08 41 46.9 +0.1
comp=Z,43nm,1.0s
M37A **Trindle Farm,** 46.25 84 P P 08 41 47.2 -0.1
baz=326,SNR=11
ULN **Ulaanbaatar** 46.29 292deP P 08 41 48.8 +1.0
ULN pmax pmax
comp=Z,24nm,1.2s
ULN **Ulaanbaatar** 46.29 292 eP P 08 41 49.0 +1.2
comp=Z,17nm,1.0s
N36A **Muff Farm, Cla** 46.36 85 P P 08 41 47.9 -0.4
baz=327
P33A **Williams Farm,** 46.38 89 P P 08 41 48.0 -0.4
baz=327
Q32A **Meitler Ranch,** 46.39 90 P P 08 41 48.5 0.0
baz=328
KS01 **Wonju Array Si** 46.40 266 eP P 08 41 48.8 +0.2
KSRS **Korea Array** 46.41 266 P P 08 41 49.6 +1.0
comp=Z,10nm,0.9s,baz=25,slow=8.0,SNR=22
KSRS PcP PcP 08 43 25.4 +2.2
comp=Z,2.2nm,0.9s,baz=30,slow=3.5,SNR=4.3
KSRS LR LR 09 02 00.8
comp=Z,136nm,18.5s,baz=50,slow=37
KS15 **Wonju Array Si** 46.44 266 eP P 08 41 51.0 +2.1
KSAR **Wonju Array Be** 46.44 266 P P 08 41 49.6 +0.7
KSAR 08 43 25.4
KSAR **Wonju Array Be** 46.44 266 P P 08 41 49.6 +0.7
KSAR PcP PcP 08 43 25.4 +2.1
APA **Apatity** 46.46 349 eP P 08 41 50.0 +1.3
APA pmax pmax
comp=Z,36nm,1.2s
APA MLR MLR
comp=Z,400nm,18.0s
SONA1 **Songino Array** 46.56 292 eP P 08 41 51.4 +1.5
JFWS **Jewell Farm** 46.56 80 eP P 08 41 49.1 -0.7
JFWS pmax pmax
comp=Z,14nm,1.0s
JFWS **Jewell Farm** 46.56 80 eP P 08 41 49.1 -0.7
comp=Z,14nm,1.0s
ANMO **Albuquerque** 46.56 100 P P 08 41 50.2 +0.1
baz=330
ANMO **Albuquerque** 46.56 100deP P 08 41 50.3 +0.1
ANMO pmax pmax
comp=Z,15nm,1.2s
ANMO **Albuquerque** 46.56 100 eP P 08 41 50.2 +0.1
comp=Z,14nm,1.1s
SONM **Songino Array** 46.57 292 P P 08 41 51.6 +1.6
comp=Z,16nm,0.8s,baz=39,slow=7.6,SNR=22
SONM LR LR 09 02 43.1
comp=Z,484nm,18.5s,baz=43,slow=38
M38A **Pleasantville** 46.59 83 P P 08 41 49.7 -0.4
baz=326,SNR=5.6
214A **Organ Pipe Nat** 46.61 109 P P 08 41 50.5 +0.1
baz=332,SNR=22
214A **Organ Pipe Nat** 46.61 109 eP P 08 41 50.5 +0.1
comp=Z,118nm,1.0s
P34A **Walnut Farm, R** 46.65 88 P P 08 41 49.6 -0.9
baz=327,SNR=6.1
Q33A **Connelly Farm,** 46.69 89 P P 08 41 50.0 -0.9
baz=328,SNR=7.6
N37A **Lee Faris, Mou** 46.72 85 P P 08 41 50.6 -0.5
baz=327
LAZ **Ladron** 46.76 101 eP P 08 41 52.0 +0.4
R32A **Long Quarter,** 46.81 91 P P 08 41 51.0 -0.9
baz=328,SNR=10
P35A **Duane Minner,** 47.00 87 P P 08 41 53.0 -0.3
baz=327,SNR=13
LPM **Los Pinos Moun** 47.04 101 eP P 08 41 54.5 +0.6
N38A **Joes South For** 47.10 84 P P 08 41 53.2 -0.8
baz=327,SNR=7.0
TUC **Tucson** 47.10 106 P P 08 41 54.7 +0.4
baz=332
TUC **Tucson** 47.10 106 eP P 08 41 54.7 +0.4
TUC pmax pmax
comp=Z,16nm,1.1s
KSU1 **Kansas State U** 47.11 88 P P 08 41 53.4 -0.9
baz=328,SNR=8.7
KSU1 **Kansas State U** 47.11 88 eP P 08 41 53.3 -0.9
comp=Z,40nm,0.9s
Q34A **Chapman** 47.12 89 P P 08 41 53.6 -0.7
baz=328
BNM **Barren Site** 47.18 101 eP P 08 41 55.4 +0.3
R33A **Olander Ranch,** 47.21 90 P P 08 41 54.1 -0.9
baz=328
O37A **Wolven Farm, M** 47.24 85 P P 08 41 54.8 -0.3
baz=327,SNR=7.7
P36A **Good Intent, A** 47.26 87 P P 08 41 54.5 -0.8
baz=327
S32A **Newby Ranch, P** 47.33 91 P P 08 41 55.2 -0.7
baz=328
N39A **Derby Farms, D** 47.33 83 P P 08 41 55.1 -0.7
baz=327,SNR=9.4
R34A **Isabella, Hill** 47.52 89 P P 08 41 56.4 -1.0
baz=328
Q35A **Mercer Eighty,** 47.55 88 P P 08 41 56.9 -0.7
baz=328,SNR=8.5
O38A **Galt** 47.56 85 P P 08 41 56.9 -0.7
baz=327,SNR=6.8
TJN **Taejon** 47.56 266ceP P 08 42 00.3 +2.6
P37A **Lathrop** 47.64 86 P P 08 41 57.5 -0.8
baz=327,SNR=7.9
Q36A **Arnold C. Orve** 47.71 87 P P 08 41 57.9 -0.9
baz=328
T32A **Huddler Ranch,** 47.77 92 P P 08 41 58.7 -0.7
baz=328
S33A **Kaszmaul Farm,** 47.81 91 P P 08 41 58.7 -0.9
baz=328
O39A **Kirksville** 47.83 84 P P 08 41 59.0 -0.7
baz=327,SNR=10
R35A **Emporia Munici** 47.94 88 P P 08 41 59.5 -1.1
baz=328
P38A **Dawn** 47.95 85 P P 08 41 60.0 -0.7
baz=327,SNR=7.3
S34A **Willow Spring** 48.09 90 P P 08 42 01.3 -0.4
baz=328
121A **Cookes Peak, D** 48.12 103 P P 08 42 02.2 0.0
baz=331,SNR=11
121A **Cookes Peak, D** 48.12 103 eP P 08 42 02.9 +0.7
comp=Z,16nm,1.1s
T33A **Patterson Ranc** 48.14 91 P P 08 42 01.8 -0.4
baz=328
Q37A **Longview Farm,** 48.20 86 P P 08 42 01.9 -0.7
baz=328
O40A **La Belle** 48.22 83 P P 08 42 01.8 -1.0
baz=327,SNR=20
R36A **Gordon, Harris** 48.23 88 P P 08 42 02.0 -0.9
baz=328,SNR=8.1
P39B **Salisbury** 48.39 84 P P 08 42 03.2 -0.8
baz=328,SNR=12
U32A **Winter Ranch,** 48.42 92 P P 08 42 03.7 -0.7
baz=329
S35A **Otter Creek Ra** 48.43 89 P P 08 42 03.6 -0.8
baz=328,SNR=9.8
Q38A **Cooks Store, C** 48.48 86 P P 08 42 03.8 -0.9
baz=328,SNR=5.5
R37A **Teagarden Farm** 48.52 87 P P 08 42 04.5 -0.6
baz=328
319A **Douglas** 48.53 106 eP P 08 42 05.8 +0.4
comp=Z,23nm,1.0s
AMTX **Amarillo** 48.59 96 P P 08 42 05.3 -0.5
baz=330
AMTX **Amarillo** 48.59 96 eP P 08 42 05.5 -0.3
comp=Z,16nm,1.0s
T34A **McCaskey Farm** 48.63 90 P P 08 42 05.1 -0.9
baz=328
P40A **Paris** 48.65 84 P P 08 42 05.3 -0.8
baz=328,SNR=31
Q39A **Willow Grove F** 48.67 85 P P 08 42 05.5 -0.7
baz=328,SNR=7.2
S36A **Lake Cedric, C** 48.70 88 P P 08 42 05.2 -1.3
baz=328
U33A **Lingo Farm, Me** 48.75 91 P P 08 42 05.7 -1.2
baz=329
NVS **Novosibirsk** 48.77 314 eP P 08 42 06.6 -0.2
NVS pmax pmax
comp=N,8.0nm,1.3s
NVS pmax pmax
comp=E,13nm,1.3s
NVS pmax pmax
comp=Z,23nm,1.3s
JNU **Nakatsue** 48.91 260 P P 08 42 10.7 +2.5
comp=Z,13nm,0.9s,baz=30,slow=9.5,SNR=6.5
HDIL **Hopedale** 48.92 81 P P 08 42 07.0 -1.2
baz=327,SNR=7.0
HDIL **Hopedale** 48.92 81 eP P 08 42 07.2 -1.0
comp=Z,44nm,1.1s
MSTX **Muleshoe** 48.93 97 P P 08 42 08.0 -0.4
baz=330
MSTX **Muleshoe** 48.93 97 eP P 08 42 08.3 -0.1
comp=Z,24nm,1.0s
V32A **Arapaho** 48.97 93 P P 08 42 08.1 -0.5
baz=329
U34A **Anderson Ranch** 48.99 91 P P 08 42 07.6 -1.1
baz=329
U34A **Anderson Ranch** 48.99 91 eP P 08 42 08.0 -0.7
comp=Z,24nm,1.1s
S37A **Fort Scott** 48.99 88 P P 08 42 07.2 -1.5
baz=328,SNR=7.7
T35A **Sooner Cattle** 49.01 90 P P 08 42 08.0 -0.9
baz=329,SNR=8.5
R38A **Fenwick Farm,** 49.01 86 P P 08 42 07.3 -1.6
baz=328,SNR=10
ZAA0 **Zalesovo Array** 49.05 312 eP P 08 42 08.4 -0.5
ZALV **Zalesovo Beam** 49.05 312 P P 08 42 09.3 +0.4
comp=Z,19nm,0.8s,baz=33,slow=6.7,SNR=33
ZALV LR LR 09 04 06.2
comp=Z,103nm,20.0s,baz=67,slow=38
Q40A **Laux Farm, Aux** 49.09 84 P P 08 42 08.5 -1.0
baz=328,SNR=14
BJI **Beijing** 49.11 278 P P 08 42 10.1 +0.5
BJI S S 08 49 12.5 -1.3
BJI pmax pmax
comp=Z,21nm,0.8s
BJI pmax pmax
comp=Z,110nm,3.0s
BJI LR LR
comp=Z,470nm,11.9s
BJI LR LR
comp=Z,340nm,17.3s
BJI LR LR
comp=Z,140nm,17.7s
BJT **Baijiatuau** 49.13 278 eP P 08 42 09.5 -0.3
BJT pmax pmax
comp=Z,13nm,0.6s
BJT **Baijiatuau** 49.13 278 eP P 08 42 09.5 -0.3
comp=Z,12nm,0.6s
T36A **Boggs Farm, Ca** 49.15 89 P P 08 42 08.7 -1.1
baz=328,SNR=21
V33A **Lossen Ranch,** 49.20 92 P P 08 42 09.1 -1.2
baz=329
R39A **Chumby, Stover** 49.27 86 P P 08 42 09.6 -1.2
baz=328,SNR=22
U35A **Pawnee** 49.38 90 P P 08 42 10.5 -1.2
baz=329,SNR=7.2
TMCR **Tamitsa** 49.38 346 eP P 08 42 11.4 +0.1
TMCR pmax pmax
comp=Z,49nm,1.4s
W32A **Sentinel** 49.40 93 P P 08 42 10.9 -0.9
baz=329,SNR=6.7
S38A **Stockton** 49.48 87 P P 08 42 10.7 -1.8
baz=328,SNR=20
SADO **Sadowa** 49.48 69 eP P 08 42 11.1 -1.3
comp=Z,21nm,1.4s
T37A **Cheneyville 18** 49.49 88 P P 08 42 10.9 -1.7
baz=328,SNR=11
V34A **Guthrie** 49.51 91 P P 08 42 11.7 -1.0
baz=329,SNR=5.9
V34A **Guthrie** 49.51 91 eP P 08 42 11.8 -0.9
comp=Z,28nm,1.3s
R40A **Maddies Statio** 49.60 85 P P 08 42 12.3 -1.1
baz=328,SNR=17
S39A **Bolivar** 49.68 86 P P 08 42 12.2 -1.8
baz=328,SNR=14
W33A **Caddo, Fort Co** 49.70 93 P P 08 42 13.3 -0.9
baz=329
JCJ **Chichijima** 49.75 245 LR LR 09 01 20.6
comp=Z,25nm,21.9s,baz=2.5,slow=34
AAM **Ann Arbor** 49.76 75 eP P 08 42 14.8 +0.3
AAM pmax pmax
comp=Z,51nm,1.1s
AAM **Ann Arbor** 49.76 75 eP P 08 42 14.8 +0.3
comp=Z,52nm,1.1s
U36A **Oologah** 49.78 89 P P 08 42 13.8 -0.9
baz=329,SNR=6.7
Q42A **Golden Eagle** 49.80 83 P P 08 42 14.0 -0.8
baz=328
MNTX **Cornudas Mount** 49.83 101 P P 08 42 15.0 -0.2
baz=331,SNR=37
MNTX **Cornudas Mount** 49.83 101 eP P 08 42 15.3 +0.1
comp=Z,29nm,1.1s
T38A **Diamond** 49.83 88 P P 08 42 13.5 -1.6
baz=329,SNR=7.9
V35A **Meyer Ranch, C** 49.85 91 P P 08 42 13.7 -1.6
baz=329
W34A **Bridge Creek,** 49.92 92 P P 08 42 15.1 -0.7
baz=329,SNR=5.6
W34A **Bridge Creek,** 49.92 92 eP P 08 42 15.3 -0.6
comp=Z,27nm,1.0s
WMOK **Wichita Mounta** 49.92 93 P P 08 42 15.3 -0.5
baz=330,SNR=26
WMOK **Wichita Mounta** 49.92 93 eP P 08 42 14.8 -1.1
WMOK pmax pmax
comp=Z,19nm,1.1s
WMOK **Wichita Mounta** 49.92 93 eP P 08 42 14.8 -1.1
comp=Z,19nm,1.1s
HSIG 49.95 109 eP P 08 42 16.2 +0.1
comp=Z,19nm,0.9s
SFIN **Lafayette** 49.98 79 P P 08 42 15.7 -0.5
baz=328
U37A **Salina** 50.02 89 P P 08 42 15.3 -1.3
baz=329,SNR=19
S40A **Lebanon** 50.10 86 P P 08 42 15.7 -1.5
baz=328,SNR=25
TUL1 **Leonard** 50.16 90 P P 08 42 16.4 -1.3
baz=329,SNR=11

TUL1	Leonard	50.16	90	eP	P	08 42 16.8	-0.9
	comp=Z,32nm,1.0s						
V36A	Jenks	50.21	90	P	P	08 42 16.5	-1.4
	baz=329,SNR=8.5						
X33A	Lawton	50.21	93	P	P	08 42 17.3	-0.7
	baz=330,SNR=12						
T39A	Clever	50.22	87	P	P	08 42 16.3	-1.8
	baz=329,SNR=14						
CCM	Cathedral Cave	50.23	84	eP	P	08 42 16.7	-1.4
CCM				pmax	pmax		
	comp=Z,32nm,1.3s						
CCM	Cathedral Cave	50.23	84	eP	P	08 42 16.7	-1.4
	comp=Z,32nm,1.3s						
U38A	Gravette	50.30	88	P	P	08 42 17.0	-1.7
	baz=329,SNR=17						
HHC	Hu-ho-hao-te	50.32	283	eP	P	08 42 17.6	-1.3
HHC				sP	sP	08 42 25.8	+0.5
HHC				PP	PP	08 44 15.6	+1.5
HHC				S	S	08 49 29.3	-1.7
HHC				sS	sS	08 49 37.5	-1.1
HHC				ScS	ScS	08 52 05.8	-3.4
HHC				pmax	pmax		
	comp=Z,21nm,1.0s						
HHC				pmax	pmax		
	comp=Z,140nm,5.4s						
HHC				LR	LR		
	comp=Z,790nm,15.4s						
HHC				LR	LR		
	comp=Z,550nm,16.2s						
HHC				LR	LR		
	comp=Z,820nm,15.9s						
W35A	Tecumseh	50.36	91	P	P	08 42 17.6	-1.5
	baz=329						
X34A	Smith Ranch, M	50.44	92	P	P	08 42 18.6	-1.2
	baz=330						
V37A	Hulbert	50.46	89	P	P	08 42 18.4	-1.5
	baz=329,SNR=7.7						
T40A	Mansfield	50.47	86	P	P	08 42 18.5	-1.5
	baz=329,SNR=32						
HHAR	Hobbs	50.62	88	eP	P	08 42 19.4	-1.7
	comp=Z,13nm,0.9s						
W36A	Wetumka	50.64	91	P	P	08 42 20.4	-0.8
	baz=329,SNR=8.9						
U39A	Green Forest	50.73	87	P	P	08 42 20.1	-1.8
	baz=329,SNR=15						
V38A	Canehill	50.78	88	P	P	08 42 20.6	-1.7
	baz=329,SNR=19						
T41A	Mountain View	50.88	85	P	P	08 42 21.5	-1.6
	baz=329,SNR=16						
OLIL	Olney	50.96	81	eP	P	08 42 22.9	-0.7
	comp=Z,45nm,1.1s						
SRIG	Santa Rosalia	50.96	111	eP	P	08 42 23.8	+0.1
	comp=Z,30nm,1.0s						
X35A	Drake	50.97	92	P	P	08 42 22.5	-1.2
	baz=330						
W37B	Quinton	50.98	90	P	P	08 42 22.8	-1.0
	baz=329,SNR=9.9						
U40A	Yellville	51.01	87	P	P	08 42 22.5	-1.6
	baz=329,SNR=9.5						
Y34A	Reagan Ranch,	51.02	93	P	P	08 42 23.3	-0.8
	baz=330						
SOKR	Solikamsk	51.04	333	eP	P	08 42 22.2	-1.7
SOKR				pmax	pmax		
	comp=Z,16nm,0.7s						
SOKR				MLR	MLR		
	comp=Z,291nm,24.0s						
X36A	Centrahoma	51.08	91	P	P	08 42 24.0	-0.5
	baz=330,SNR=11						
V39A	Pettigrew	51.12	88	P	P	08 42 23.4	-1.6
	baz=329,SNR=20						
Z33A	Whitaker Ranch	51.18	94	P	P	08 42 24.3	-1.1
	baz=330,SNR=7.9						
SIUC	Southern Illin	51.36	83	eP	P	08 42 26.0	-0.7
	comp=Z,48nm,1.2s						
S44A	Carbondale	51.36	83	P	P	08 42 25.5	-1.1
	baz=328						
Y35A	Marietta	51.37	92	P	P	08 42 25.8	-0.9
	baz=330,SNR=5.6						
LONY	Lake Ozonia	51.37	66	eP	P	08 42 25.2	-1.5
	comp=Z,28nm,1.1s						
ERPA	Erie	51.38	72	eP	P	08 42 26.2	-0.5
	comp=Z,42nm,1.0s						
ABTX	Abilene, Hawle	51.39	95	P	P	08 42 25.8	-1.2
	baz=330,SNR=5.0						
ABTX	Abilene, Hawle	51.39	95	eP	P	08 42 26.2	-0.8
	comp=Z,30nm,1.4s						
W38A	Poteau	51.42	89	P	P	08 42 26.1	-1.0
	baz=329,SNR=6.3						
Z34A	Collier Ranch,	51.46	93	P	P	08 42 26.6	-0.9
	baz=330,SNR=5.9						
X37A	Clayton	51.47	90	P	P	08 42 26.2	-1.3
	baz=330,SNR=6.1						
V40A	Witts Springs	51.49	87	P	P	08 42 26.1	-1.6
	baz=329,SNR=18						
FRNY	Flat Rock	51.56	65	eP	P	08 42 26.8	-1.3
	comp=Z,25nm,1.1s						
W39A	Magazine	51.61	88	P	P	08 42 27.2	-1.3
	baz=329,SNR=13						
X38A	Whitesboro	51.63	90	P	P	08 42 27.6	-1.1
	baz=330,SNR=10.0						
PBMO	Poplar Bluff	51.66	84	eP	P	08 42 27.5	-1.3
	comp=Z,28nm,0.8s						
S45A	Carrier Mills	51.66	82	P	P	08 42 27.7	-1.1
	baz=329						
Y36A	Durant	51.69	91	P	P	08 42 28.4	-0.7
	baz=330,SNR=5.8						
133A	Hamilton Ranch	51.71	95	P	P	08 42 28.4	-1.0
	baz=330,SNR=9.1						
ALLY	Alegheny Colle	51.71	72	eP	P	08 42 28.5	-0.8
	comp=Z,77nm,1.0s						
Z35A	Perchaven, San	51.77	93	P	P	08 42 28.7	-1.1
	baz=330						
USIN	University of	51.79	81	eP	P	08 42 28.9	-0.9
	comp=Z,48nm,1.0s						
V41A	Mountainview	51.79	86	P	P	08 42 28.3	-1.6
	baz=329						
Y37A	Hugo	51.90	91	P	P	08 42 29.8	-0.9
	baz=330,SNR=7.0						
W40A	Ferguson Farm,	51.92	88	P	P	08 42 29.6	-1.2
	baz=329,SNR=11						
M54A	Oil Creek Stat	52.02	72	P	P	08 42 30.3	-1.3
	baz=328,SNR=17						
X39A	Fountain Ranch	52.07	89	P	P	08 42 30.9	-1.0
	baz=330,SNR=13						
134A	White-Moore Ra	52.09	94	P	P	08 42 31.1	-1.1
	baz=330						
V42A	Cord	52.09	86	P	P	08 42 30.3	-1.8
	baz=329						
X201	Greenbrier Sit	52.12	87	eP	P	08 42 31.1	-1.3
	comp=Z,35nm,1.6s						
WCI	Wyandotte Cave	52.13	80	eP	P	08 42 31.0	-1.4
WCI				pmax	pmax		
	comp=Z,23nm,1.0s						
WCI	Wyandotte Cave	52.13	80	eP	P	08 42 31.0	-1.4
	comp=Z,23nm,0.9s						
X301	Greenbrier Sit	52.16	87	eP	P	08 42 31.1	-1.4
	comp=Z,16nm,1.2s						
WHAR	Wooly Hollow	52.16	87	eP	P	08 42 31.2	-1.4
	comp=Z,34nm,1.6s						
Z36A	Blue Ridge	52.17	92	P	P	08 42 31.5	-1.2
	baz=330,SNR=8.4						
233A	Rising Star	52.23	95	P	P	08 42 32.3	-0.9
	baz=331,SNR=10						
MIAR	Mount Ida	52.26	89	P	P	08 42 32.4	-1.0
	baz=330,SNR=15						
MIAR	Mount Ida	52.26	89	eP	P	08 42 32.6	-0.8
MIAR				pmax	pmax		
	comp=Z,29nm,1.1s						
W41A	Tony Mavity, V	52.27	87	P	P	08 42 31.8	-1.7
	baz=329,SNR=11						
W41B	Gary Mavity, V	52.27	87	P	P	08 42 32.0	-1.5
	baz=329,SNR=11						
Y38A	Idabel	52.31	90	P	P	08 42 33.0	-0.8
	baz=330						
N54A	Moraine State	52.36	73	P	P	08 42 33.1	-1.0
	baz=328,SNR=10						
KLMR	Klimovskoe	52.46	344	eP	P	08 42 32.4	-2.1
KLMR				e		08 43 42.2	
KLMR				pmax	pmax		
	comp=Z,75nm,1.3s						
234A	Clairette	52.56	94	P	P	08 42 34.8	-0.9
	baz=331						
Y39A	Lockesburg	52.57	89	P	P	08 42 34.7	-1.0
	baz=330						
UALR	University of	52.58	87	eP	P	08 42 34.9	-0.9
	comp=Z,21nm,1.0s						
TXAR	Lajitas Array	52.61	101	P	P	08 42 35.9	-0.2
	comp=Z,6.2nm,0.8s,baz=316,slow=5.4,SNR=54						
TXAR				LR	LR	09 07 18.9	
	comp=Z,282nm,18.8s,baz=0.0,slow=39						
X40A	Basin Creek Fa	52.62	88	P	P	08 42 35.1	-1.0
	baz=330,SNR=9.3						
LBNH	Lisbon	52.70	64	eP	P	08 42 36.3	-0.3
LBNH				pmax	pmax		
	comp=Z,43nm,1.0s						
LBNH	Lisbon	52.70	64	eP	P	08 42 36.2	-0.3
	comp=Z,43nm,1.0s						
X41A	Kaden, Bauxite	52.75	88	P	P	08 42 36.0	-1.0
	baz=330						
ACCN	Adirondack Com	52.77	66	eP	P	08 42 36.2	-0.8
	comp=Z,24nm,1.3s						
333A	Richland Sprin	52.80	96	P	P	08 42 36.6	-0.9
	baz=331						
PKME	Peaks-Kenny Pk	52.80	62	eP	P	08 42 37.3	0.0
	comp=Z,41nm,1.0s						
SVE	Sverdlovsk	52.84	329	⇓eP	P	08 42 38.4	+1.0
SVE				pmax	pmax		
	comp=Z,34nm,1.3s						
Y40A	Okolona	52.84	89	P	P	08 42 36.5	-1.2
	baz=330						
WHTX	Lake Whitney,	52.85	94	P	P	08 42 36.6	-1.1
	baz=331						
WHTX	Lake Whitney,	52.85	94	eP	P	08 42 36.6	-1.1
	comp=Z,7.1nm,0.9s						
BINY	Binghamton	52.88	69	eP	P	08 42 36.9	-1.0
	comp=Z,23nm,1.0s						
HNH	Hanover	53.02	65	eP	P	08 42 39.1	+0.2
	comp=Z,35nm,1.3s						
FIA1	FINESS Array S	53.02	352	eP	P	08 42 38.9	+0.2
FINES	FINESS Array B	53.02	352	P	P	08 42 39.0	+0.3
	comp=Z,24nm,1.0s,baz=21,slow=7.3,SNR=26						
FINES				LR	LR	09 06 54.2	
	comp=Z,91nm,18.1s,baz=5.0,slow=38						
334A	Lometa	53.10	95	P	P	08 42 38.7	-1.0
	baz=331,SNR=13						
V45A	Humboldt	53.16	84	P	P	08 42 39.0	-1.0
	baz=329						
JCT	Junction City	53.19	97	P	P	08 42 39.7	-0.7
	baz=331,SNR=35						
JCT	Junction City	53.19	97	eP	P	08 42 39.8	-0.6
JCT				pmax	pmax		
	comp=Z,74nm,1.2s						
JCT	Junction City	53.19	97	eP	P	08 42 39.8	-0.6
	comp=Z,74nm,1.2s						
WLAR	White Oak Lake	53.19	89	eP	P	08 42 40.7	+0.4
	comp=Z,45nm,0.9s						
236A	Katherine and	53.23	93	P	P	08 42 40.7	+0.1
	baz=331						
Y41A	Eaglette Beard	53.24	88	P	P	08 42 40.2	-0.4
	baz=330,SNR=12						
433A	Art	53.25	96	P	P	08 42 39.8	-1.0
	baz=331,SNR=11						
138A	Matatall Enter	53.26	91	P	P	08 42 40.2	-0.6
	baz=330						
WVT	Waverly	53.29	82	eP	P	08 42 40.1	-0.9
WVT				pmax	pmax		
	comp=Z,31nm,1.1s						
WVT	Waverly	53.29	82	eP	P	08 42 40.1	-0.9
	comp=Z,31nm,1.1s						
CHKZ	Chkalovo	53.35	321	P	P	08 42 40.3	-0.9
CHKZ				pmax	pmax		
	comp=Z,23nm,1.0s						
X43A	Marvell	53.41	86	P	P	08 42 40.7	-1.2
	baz=330						
Z40A	Long Farm, Mag	53.45	89	P	P	08 42 41.5	-0.7
	baz=330						
FFD	Franklin Falls	53.46	64	eP	P	08 42 42.4	+0.3
	comp=Z,51nm,1.2s						
SSPA	Standing Stone	53.47	71	eP	P	08 42 40.9	-1.4
	comp=Z,22nm,1.0s						
335A	Moody	53.48	94	P	P	08 42 41.5	-1.0
	baz=331						
O56A	Blue Knob Stat	53.52	72	P	P	08 42 41.2	-1.4
	baz=329,SNR=15						
139A	Bunkhouse Ranc	53.53	90	P	P	08 42 42.5	-0.3
	baz=330						
434A	Burnet	53.54	95	P	P	08 42 41.8	-1.1
	baz=331,SNR=7.2						
NC204	NORSAR Array S	53.54	1	eP	P	08 42 43.6	+1.0
CCAR	Cane Creek	53.55	87	eP	P	08 42 43.0	+0.1
	comp=Z,62nm,1.2s						
Y42A	Garnett, Star	53.62	87	P	P	08 42 43.0	-0.4
	baz=330						
336A	Riesel	53.63	94	P	P	08 42 42.6	-1.0
	baz=331,SNR=8.0						
ARU	Arti	53.64	331	*d iP*	P	08 42 43.4	+0.1
ARU						08 43 48.7	
ARU				S	S	08 50 18.2	+2.3
ARU				SS	SS	08 53 50.4	-5.1
ARU				pmax	pmax		
	comp=Z,51nm,1.7s						
ARU	Arti	53.64	331	eP	P	08 42 43.4	+0.1
	comp=Z,27nm,1.0s						
Z41A	Richland Creek	53.69	89	P	P	08 42 42.5	-1.5
	baz=330						
NC405	NORSAR Array S	53.71	1	eP	P	08 42 44.5	+0.7
X44A	Crenshaw	53.73	86	P	P	08 42 43.0	-1.2
	baz=330						
KURK	Kurchatov	53.75	314	eP	P	08 42 44.4	+0.2
KURK				pmax	pmax		
	comp=Z,36nm,0.9s						
KURK	Kurchatov	53.75	314	eP	P	08 42 44.4	+0.2
	comp=Z,36nm,0.9s						
NB201	NORSAR Array S	53.77	1	eP	P	08 42 44.9	+0.6
NB2	NORSAR Subarra	53.78	1	P	P	08 42 44.1	-0.2
	comp=Z,14nm,1.2s,baz=358,slow=7.4						
NOA	NORSAR Array B	53.78	1	P	P	08 42 44.5	+0.2
	comp=Z,5.3nm,0.9s,baz=356,slow=7.2,SNR=9.6						
NOA				LR	LR	09 06 50.8	
	comp=Z,44nm,18.1s,baz=345,slow=37						
238A	Jacksonville	53.81	92	P	P	08 42 44.2	-0.7
	baz=331						
435B	Jarrell	53.85	95	P	P	08 42 44.5	-0.7
	baz=331						
533A	Kerrville	53.87	96	P	P	08 42 44.6	-0.7
	baz=331						
140A	Cam and Jess,	53.91	90	P	P	08 42 44.5	-1.0
	baz=330						
Y43A	Makayla and Ka	53.91	87	P	P	08 42 44.8	-0.7
	baz=330						
LMN	Caledonia Moun	53.91	58	eP	P	08 42 45.1	-0.3
	comp=Z,21nm,1.1s						
HPIG		53.91	105	eP	P	08 42 45.3	-0.6
	comp=Z,13nm,0.9s						
BRVK	Borovoye	54.00	321	eP	P	08 42 46.1	+0.1
BRVK				pmax	pmax		
	comp=Z,34nm,0.9s						
BRVK	Borovoye	54.00	321	eP	P	08 42 46.0	+0.1
	comp=Z,34nm,0.9s						
BVA0	Borovoye Array	54.00	321	*i* P	P	08 42 45.0	-1.0
BVA0				pmax	pmax		
	comp=Z,32nm,1.2s						
OXF	Oxford	54.02	85	eP	P	08 42 46.0	-0.4
OXF				pmax	pmax		
	comp=Z,120nm,1.0s						
OXF	Oxford	54.02	85	eP	P	08 42 46.0	-0.4
	comp=Z,123nm,1.0s						
Z42A	Norrel Spur, H	54.04	88	P	P	08 42 46.4	0.0
	baz=330						
N59A	State Game Lan	54.06	69	P	P	08 42 45.5	-1.2
	baz=329,SNR=9.2						
239A	Gary	54.07	91	P	P	08 42 46.4	-0.3
	baz=331						
337A	Centerville	54.09	93	P	P	08 42 45.5	-1.4
	baz=331						
X45A	UM Field Stati	54.11	85	P	P	08 42 46.6	-0.4
	baz=330						
534A	Blanco	54.14	96	P	P	08 42 46.2	-1.1
	baz=331						
Y44A	Strider, Charl	54.17	86	P	P	08 42 47.2	-0.2
	baz=330,SNR=6.3						
436A	Wall Ranch, Ga	54.19	94	P	P	08 42 45.9	-1.7
	baz=331						
141A	Papa Simpson,	54.22	89	P	P	08 42 45.9	-1.9
	baz=330						
NATX	Nacogdoches	54.22	91	P	P	08 42 47.8	0.0
	baz=331						
338A	Crockett	54.30	92	P	P	08 42 47.8	-0.6
	baz=331						
HRV	Adam Dziewonsk	54.32	65	eP	P	08 42 48.1	-0.3
HRV				pmax	pmax		
	comp=Z,63nm,1.8s						
HRV	Adam Dziewonsk	54.32	65	eP	P	08 42 48.1	-0.3
	comp=Z,63nm,1.8s						
633A	Saathoff Ranch	54.35	97	P	P	08 42 48.0	-0.8
	baz=332						
240A	Hunter Patters	54.35	90	P	P	08 42 48.0	-0.8
	baz=330						
ODNJ	Ogdensburg	54.37	68	eP	P	08 42 47.4	-1.5
	comp=Z,22nm,1.2s						
ZRNK	Zerenda	54.42	322	eP	P	08 42 49.3	+0.2
ZRNK				pmax	pmax		
	comp=Z,27nm,1.0s						
ZRNK	Zerenda	54.42	322	eP	P	08 42 49.3	+0.2
	comp=Z,27nm,1.0s						
LUPA	Lehigh Univers	54.49	69	eP	P	08 42 48.6	-1.1
	comp=Z,36nm,1.0s						
WES	Weston	54.51	65	eP	P	08 42 49.1	-0.7
WES				pmax	pmax		
	comp=Z,46nm,1.0s						
WES	Weston	54.51	65	eP	P	08 42 49.1	-0.7
	comp=Z,46nm,1.0s						
535A	Dale	54.51	95	P	P	08 42 49.2	-0.8
	baz=331						
Y45A	Yeager Farm, C	54.53	85	P	P	08 42 49.7	-0.3
	baz=330,SNR=6.8						
BCX	Boston College	54.61	65	eP	P	08 42 50.4	-0.2
	comp=Z,46nm,1.0s						
MVL	Millersville	54.62	70	eP	P	08 42 50.1	-0.6
	comp=Z,32nm,1.4s						
PAL	Palisades	54.71	68	eP	P	08 42 50.0	-1.2
PAL				pmax	pmax		
	comp=Z,22nm,1.0s						
PAL	Palisades	54.71	68	eP	P	08 42 50.0	-1.2
	comp=Z,22nm,1.0s						
143A	Socs Landing,	54.76	88	P	P	08 42 51.7	-0.1
	baz=330						
Y46A	Houston	54.80	85	P	P	08 42 51.3	-0.7
	baz=330,SNR=19						
BRYW	Bryant College	54.83	65	eP	P	08 42 50.9	-1.3
	comp=Z,32nm,1.0s						
SWET	Sewanee	54.86	81	eP	P	08 42 51.1	-1.4
	comp=Z,6.7nm,1.1s						
CPNY	Central Park	54.87	68	eP	P	08 42 51.3	-1.1
	comp=Z,23nm,0.9s						
Z45A	Winona	54.89	86	P	P	08 42 52.5	-0.2
	baz=330,SNR=5.9						
SDMD	Soldier's Deli	54.93	71	eP	P	08 42 51.9	-1.0
	comp=Z,19nm,1.2s						
733A	Divot King Ran	54.95	97	P	P	08 42 52.7	-0.4
	baz=332,SNR=6.2						
242A	Grayson	55.00	89	P	P	08 42 52.8	-0.7
	baz=330						
832A	Faith Ranch, C	55.05	98	P	P	08 42 53.5	-0.4
	baz=332,SNR=13						
734A	La Parita Cree	55.14	97	P	P	08 42 54.4	-0.1
	baz=332,SNR=6.6						
Y47A	UCPARC, Winfie	55.20	84	P	P	08 42 54.2	-0.7
	baz=330,SNR=12						
636A	Smothers Creek	55.21	95	P	P	08 42 54.6	-0.4
	baz=332						
341A	Kurthwood	55.21	90	P	P	08 42 54.4	-0.6
	baz=331						
CPCT	Cooper Cave	55.24	80	eP	P	08 42 53.3	-1.9
	comp=Z,13nm,1.2s						
Z46A	Louisville	55.36	85	P	P	08 42 55.4	-0.7
	baz=330						
TKL	Tuckaleechee C	55.37	79	eP	P	08 42 55.3	-0.8
TKL				pmax	pmax		
	comp=Z,30nm,1.1s						
TKL	Tuckaleechee C	55.37	79	eP	P	08 42 55.3	-0.8
	comp=Z,30nm,1.1s						
440A	Kirbyville	55.39	91	P	P	08 42 55.8	-0.5
	baz=331						
BLA	Blacksburg	55.39	75	eP	P	08 42 55.7	-0.7
BLA				pmax	pmax		
	comp=Z,31nm,1.0s						
BLA	Blacksburg	55.39	75	eP	P	08 42 55.7	-0.7
	comp=Z,31nm,1.0s						
145A	Houston Renfro	55.46	86	P	P	08 42 55.7	-1.1
	baz=330						
244A	Avery, Jackson	55.63	88	P	P	08 42 57.2	-0.9
	baz=331,SNR=7.9						
Z47A	Carrollton	55.72	84	P	P	08 42 57.6	-1.0
	baz=330,SNR=11						
CBN	Corbin Frederi	55.76	72	eP	P	08 42 58.0	-0.9
	comp=Z,53nm,1.1s						
Z48A	Northport	55.78	84	P	P	08 42 57.8	-1.2
	baz=330						
834A	Tilden	55.78	97	P	P	08 42 59.3	+0.1
	baz=332						
146A	Union	55.79	86	P	P	08 42 59.0	-0.2
	baz=330						
933A	Laredo	55.93	98	P	P	08 43 00.3	+0.1
	baz=332						
835A	Beeville	55.93	96	P	P	08 43 00.3	+0.1
	baz=332						
VSU	Vasula	55.95	351	*c eP*	P	08 43 00.9	+0.9
VSU				pmax	pmax		
	comp=Z,190nm,1.7s						
245A	Little AP, Sta	55.97	87	P	P	08 42 59.8	-0.6
	baz=331						
MK31	Makanchi Array	56.07	309	eP	P	08 43 01.0	0.0
MK31	Makanchi Array	56.07	309	eP	P	08 43 01.0	0.0
MKAR	Makanchi Array	56.07	309	P	P	08 43 00.8	-0.2
	comp=Z,5.8nm,0.7s,baz=47,slow=7.4,SNR=49						
MKAR				LR	LR	09 10 41.6	
	comp=Z,114nm,19.0s,baz=16,slow=40						
MKAR	Makanchi Array	56.07	309	eP	P	08 43 01.0	0.0
MKAR	Makanchi Array	56.07	309	eP	P	08 43 01.0	0.0
MK01	Makanchi Array	56.09	309	eP	P	08 43 00.9	-0.3
147A	Livingston	56.09	85	P	P	08 43 00.5	-0.8
	baz=330						
344A	Westbrook Farm	56.12	88	P	P	08 43 00.8	-0.8
	baz=331						
MAKZ	Makanchi	56.16	310	eP	P	08 43 02.0	+0.3
MAKZ				pmax	pmax		
	comp=Z,12nm,0.9s						
MAKZ	Makanchi	56.16	310	eP	P	08 43 02.0	+0.3
	comp=Z,12nm,0.9s						
GTA	Gaotai	56.23	292	⇓P	P	08 43 03.3	+0.9
GTA				pP	sP	08 43 09.3	+0.5
GTA				sP	pP	08 43 12.1	+5.0
GTA				S	S	08 50 54.5	+3.1
GTA				sS	sS	08 51 05.0	+6.0
GTA				pmax	pmax		
	comp=Z,12nm,1.3s						
GTA				pmax	pmax		
	comp=Z,110nm,4.5s						
GTA				LR	LR		
	comp=Z,370nm,15.7s						
GTA				LR	LR		
	comp=Z,390nm,17.1s						
GTA				LR	LR		
	comp=Z,430nm,16.2s						
934A	Benavides	56.25	97	P	P	08 43 01.0	-1.5
	baz=332						
LRAL	Lakeview Retre	56.30	84	eP	P	08 43 01.5	-1.3
	comp=Z,15nm,1.2s						
345A	Thompson Farm,	56.54	87	P	P	08 43 04.3	-0.2
	baz=331						
034A	Hebbronville	56.66	98	P	P	08 43 04.9	-0.5
	baz=332						
346A	Big Creek Wild	56.71	87	P	P	08 43 05.4	-0.4
	baz=331						
KMSC	Kings Mountain	56.81	78	P	P	08 43 05.9	-0.6
	baz=330,SNR=10						
248A	Dixon Mills	56.81	85	P	P	08 43 05.8	-0.7
	baz=331						
WMQ	Urumqi	56.87	304	P	P	08 43 08.4	+1.6
WMQ				pP	pP	08 43 10.9	-0.6
WMQ				sP	sP	08 43 16.0	+2.7
WMQ				pmax	pmax		
	comp=Z,9.0nm,0.8s						
WMQ				pmax	pmax		
	comp=Z,84nm,8.6s						
WMQ				LR	LR		
	comp=Z,120nm,10.4s						
WMQ				LR	LR		
	comp=Z,100nm,18.8s						
445A	Amite	56.92	88	P	P	08 43 07.7	+0.5
	baz=331						
347A	Saraland	57.08	86	P	P	08 43 08.3	-0.1
	baz=331,SNR=6.8						
XAN	Xi'an	57.23	281	P	P	08 43 09.0	-0.5
XAN				pP	sP	08 43 17.9	+2.0
XAN				pmax	pmax		
	comp=Z,8.0nm,1.3s						
446A	Poplarville	57.27	87	P	P	08 43 10.1	+0.4
	baz=331						
348A	Jackson	57.34	85	P	P	08 43 09.9	-0.3
	baz=331						

LZH	**Lanzhou**	**57.52 286**	*e*P	**P**	**08 43 11.0 -0.6**
LZH			pP	pP	08 43 14.3 -2.0
LZH			sP	sP	08 43 15.8 -2.3
LZH			PP	**PP**	**08 45 19.0 +0.1**
LZH			*e*S	**S**	**08 51 05.3 -3.2**
LZH			*e*SS	**SS**	**08 54 55.0 -2.7**
LZH			pmax	pmax	
	comp=Z,32nm,1.3s				
LZH			pmax	pmax	
	comp=Z,120nm,4.9s				
LZH			LR	LR	
	comp=Z,490nm,14.0s				
LZH			LR	LR	
	comp=Z,450nm,15.1s				
LZH			LR	LR	
	comp=Z,550nm,18.5s				
JSC	**Jenkinsville**	**57.59 78**	*e*P	**P**	**08 43 11.4 -0.5**
JSC			pmax	pmax	
	comp=Z,35nm,1.2s				
JSC	**Jenkinsville**	**57.59 78**	*e*P	**P**	**08 43 11.4 -0.5**
	comp=Z,35nm,1.2s				
MOS	**Moscow**	**57.68 344**	*e*P	P	08 43 07.0 -5.3
MOS			pmax	pmax	
	comp=Z,67nm,1.3s				
OTUK	**Ortayu**	**57.79 317**	P	**P**	**08 43 12.4 -0.8**
OTUK			pmax	pmax	
	comp=Z,45nm,1.4s				
BRAL	**Brewton**	**57.91 85**	*e*P	**P**	**08 43 13.8 -0.4**
OBN	**Obninsk**	**58.41 344**	*i* P	**P**	**08 43 17.6 +0.2**
OBN			*i*		08 44 07.5
OBN			*i* S	**S**	**08 51 14.1 -5.2**
OBN			pmax	pmax	
	comp=Z,20nm,1.0s				
ZAIG	**Zacatecas**	**58.88 104**	*e*P	**P**	**08 43 21.5 0.0**
	comp=Z,6.6nm,0.9s				
ESK	**Eskdalemuir**	**58.89 11**	*i* P	**P**	**08 43 23.2 +2.5**
NHSC	**New Hope**	**59.05 78**	*e*P	**P**	**08 43 22.1 -0.1**
	comp=Z,107nm,1.4s				
TIGA	**Tifton**	**59.10 82**	P	**P**	**08 43 21.1 -1.4**
	baz=331				
AKTO	**Aktyubinsk**	**59.37 328**	P	**P**	**08 43 23.7 -0.5**
AKTO			pmax	pmax	
	comp=Z,41nm,0.9s				
AB31	**Akbulak array**	**60.05 327**	*i* P	**P**	**08 43 29.0 +0.2**
AB31			pmax	pmax	
	comp=Z,31nm,0.8s				
ABKAR	**Akbulak array**	**60.05 327**	*e*P	**P**	**08 43 28.9 +0.1**
PDGK	**Podgornoye**	**60.06 310**	P	**P**	**08 43 29.7 +0.8**
PDGK			pmax	pmax	
	comp=Z,29nm,0.9s				
SUW	**Suwalki**	**60.59 353**	*e*P	**P**	**08 43 32.9 +0.5**
SUW	**Suwalki**	**60.59 353**	*e*P	**P**	**08 43 32.9 +0.5**
LPSR	**Galich'ya Gora**	**60.60 342**	*e*P	**P**	**08 43 32.1 -0.4**
LPSR			pmax	pmax	
	comp=Z,10.0nm,1.1s				
VRH	**Novokhopyorsk**	**61.59 340**	*e*P	**P**	**08 43 37.9 -1.3**
VRH			pmax	pmax	
	comp=Z,9.0nm,0.6s				
TKM2	**Tokmak 2**	**61.65 312**	*e*P	**P**	**08 43 41.3 +1.2**
TKM2			pmax	pmax	
	comp=Z,30nm,1.0s				
TKM2	**Tokmak 2**	**61.65 312**	*e*P	**P**	**08 43 41.3 +1.2**
	comp=Z,30nm,1.0s				
VSR	**Storozhevoye**	**61.93 342**	*e*P	**P**	**08 43 40.8 -0.7**
VSR			pmax	pmax	
	comp=Z,10.0nm,1.0s				
CD2	**Chengdu**	**62.07 283**	P	**P**	**08 43 39.1 -3.8**
CD2			sP	pP	08 43 47.8 +0.2
CD2			PcP	**PcP**	**08 44 19.6 -3.5**
CD2			S	**S**	**08 52 02.8 -4.2**
CD2			sS	sS	08 52 13.3 -1.4
CD2			SS	**SS**	**08 56 06.3 -2.8**
CD2			pmax	pmax	
	comp=Z,20nm,0.5s				
CD2			pmax	pmax	
	comp=Z,100nm,5.4s				
CD2			LR	LR	
	comp=Z,470nm,13.2s				
CD2			LR	LR	
	comp=Z,660nm,13.2s				
AAK	**Ala-Archa**	**62.25 313**	*e*P	**P**	**08 43 45.4 +1.3**
AAK			pmax	pmax	
	comp=Z,29nm,1.0s				
AAK	**Ala-Archa**	**62.25 313**	*e*P	**P**	**08 43 45.4 +1.3**
	comp=Z,29nm,1.0s				
EKS2	**Erkin-Say**	**62.45 314**	*e*P	**P**	**08 43 46.8 +1.5**
EKS2			pmax	pmax	
	comp=Z,28nm,1.0s				
MNAS	**Manas**	**62.99 314**	P	**P**	**08 43 48.5 -0.5**
MNAS			pmax	pmax	
	comp=Z,53nm,1.0s				
KKAR	**Karatay Array**	**63.01 316**	*e*P	**P**	**08 43 49.8 +0.9**
KKAR	**Karatay Array**	**63.01 316**	*e*P	**P**	**08 43 49.8 +0.9**
AKASG	**Malin Array Be**	**63.49 349**	P	**P**	**08 43 51.8 -0.2**
	comp=Z,11nm,0.8s,baz=10,slow=6.6,SNR=30				
AKASG			LR	LR	09 13 37.5
	comp=Z,100nm,18.1s,baz=10.0,slow=38				
AKBB	**Malin Array Si**	**63.49 349**	*e*P	**P**	**08 43 52.2 +0.2**
AKBB			pmax	pmax	
	comp=Z,22nm,1.0s				
AKBB	**Malin Array Si**	**63.49 349**	*e*P	**P**	**08 43 52.2 +0.2**
	comp=Z,22nm,1.0s				
KIEV	**Kiev**	**63.50 349**	*e*P	**P**	**08 43 51.8 -0.2**
KIEV			pmax	pmax	
	comp=Z,23nm,1.0s				
KIEV	**Kiev**	**63.50 349**	*e*P	**P**	**08 43 51.8 -0.2**
	comp=Z,23nm,1.0s				
AK11	**Malin Array Si**	**63.52 349**	*e*P	**P**	**08 43 52.1 0.0**
CLL	**Collm**	**63.55 0**	*i* P	**P**	**08 43 52.2 -0.1**
	comp=Z,18nm,1.4s				
CLL			*i*		08 43 55.1
	comp=Z,25nm,1.4s				
CLL			*e*PP	**PP**	**08 46 11.0 -0.4**
CLL			*e*(S)	**S**	**08 52 30.0 +5.1**
CLL			*e*SS	SS	08 56 48.0 +17
CLL			*e*PKPPKP	**dP'P'df**	**09 12 52.0 -2.8**
CLL	**Collm**	**63.55 0**	*i* P	**P**	**08 43 52.2 -0.1**
CLL			*i*		08 43 55.1
CLL			pmax	pmax	
	comp=Z,18nm,1.4s				
CLL	**Collm**	**63.55 0**	*e*P	**P**	**08 43 52.6 +0.3**
	comp=Z,15nm,1.1s				
BRG	**Berggiesshubel**	**63.98 359**	*e*P	**P**	**08 43 55.7 +0.5**
	comp=Z,16nm,1.3s				
BRG	**Berggiesshubel**	**63.98 359**	*e*P	**P**	**08 43 55.7 +0.5**
BRG			pmax	pmax	
	comp=Z,16nm,1.3s				
KSP	**Ksiaz**	**63.99 358**	*e*P	**P**	**08 43 56.1 +0.8**
KSP	**Ksiaz**	**63.99 358**	*e*P	**P**	**08 43 56.1 +0.8**
MEM	**Membach**	**64.12 5**	P	**P**	**08 43 57.0 +0.9**
	comp=Z,16nm,1.3s				
SNF	**Seneffe**	**64.15 6**	P	**P**	**08 43 56.9 +0.6**
BCLA	**Clavier**	**64.28 6**	P	**P**	**08 43 57.8 +0.6**
	comp=Z,15nm,2.1s				
PVCC	**Panska Ves**	**64.32 359**	*e*pP	pP	08 44 00.9 -1.3
PVCC	**Panska Ves**	**64.32 359**	*e*P	pP	08 44 00.9 -1.3
UPC	**Upice**	**64.33 358**	*e*P	**P**	**08 43 58.4 +0.9**
UPC	**Upice**	**64.33 358**	*e*P	**P**	**08 43 58.4 +0.9**
OJC	**Ojcow**	**64.52 355**	*e*P	**P**	**08 43 60.0 +1.2**
OJC	**Ojcow**	**64.52 355**	*e*P	**P**	**08 43 59.6 +0.8**
OJC			pmax	pmax	
	comp=Z,27nm,1.2s				
OJC	**Ojcow**	**64.52 355**	*e*P	**P**	**08 43 59.6 +0.8**
	comp=Z,27nm,1.2s				
DOU	**Dourbes**	**64.57 6**	P	**P**	**08 43 59.9 +0.8**
NKC	**Novy Kostel**	**64.62 0**	*e*P	**P**	**08 44 00.4 +0.9**
NKC			*e*pP	**pP**	**08 44 03.2 -1.0**
NKC	**Novy Kostel**	**64.62 0**	*e*P	**P**	**08 44 00.4 +0.9**
NKC			*e**PP	**pP**	**08 44 03.2 -1.0**
KSH	**Kashi**	**64.63 310**	P	**P**	**08 44 04.3 +4.5**
KSH			*e*pP	sP	08 44 10.4 +4.1
KSH			*e*PcP	**PcP**	**08 44 36.1 +2.5**
KSH			*e*PP	PP	08 46 30.8 +9.4
KSH			PcS		08 48 38.4
KSH			S	**S**	**08 52 45.9 +7.0**
KSH			ScS	**ScS**	**08 53 55.3 +1.8**
KSH			pmax	pmax	
	comp=Z,28nm,1.0s				
KSH			LR	LR	
	comp=Z,520nm,9.9s				
KSH			LR	LR	
	comp=Z,370nm,11.2s				
KSH			LR	LR	
	comp=Z,450nm,13.5s				
LVV	**L'vov**	**64.73 352**	*e*P	**P**	**08 44 00.8 +0.7**
KRLC	**Kraliky**	**64.75 357**	*e*P	**P**	**08 44 01.0 +0.7**
KRLC	**Kraliky**	**64.75 357**	*e*P	**P**	**08 44 01.0 +0.7**
GYA	**Guiyang**	**64.81 279**	P	**P**	**08 43 58.9 -2.2**
GYA			PP	**PP**	**08 46 24.0 +0.7**
GYA			ScP		08 48 32.8
GYA			S	**S**	**08 52 37.4 -3.9**
GYA			SKS	**SKSac**	**08 53 49.3 -5.8**
GYA			SS	**SS**	**08 56 49.0 -3.0**
GYA			pmax	pmax	
	comp=Z,20nm,1.0s				
GYA			pmax	pmax	
	comp=Z,120nm,5.6s				
GYA			LR	LR	
	comp=Z,560nm,22.2s				
GYA			LR	LR	
	comp=Z,500nm,21.5s				
GYA			LR	LR	
	comp=Z,510nm,22.6s				
PRU	**Pruhonice**	**64.86 359**	*e*P	**P**	**08 44 02.0 +1.0**
PRU			*e*pP	**pP**	**08 44 04.7 -1.0**
PRU	**Pruhonice**	**64.86 359**	*e*P	**P**	**08 44 02.0 +1.0**
PRU			*e**PP	**pP**	**08 44 04.7 -1.0**
GOPC	**GO Pecny, Ondr**	**64.94 359**	*e*P	**P**	**08 44 02.3 +0.8**
GOPC	**GO Pecny, Ondr**	**64.94 359**	*e*P	**P**	**08 44 02.3 +0.8**
OKC	**Ostrava-Krasne**	**64.96 356**	*e*P	**P**	**08 44 02.6 +1.0**
OKC	**Ostrava-Krasne**	**64.96 356**	*e*P	**P**	**08 44 02.6 +1.0**
KWP	**Kalwaria Pacla**	**64.99 353**	*e*P	**P**	**08 44 03.2 +1.4**
KWP	**Kalwaria Pacla**	**64.99 353** ⇑	*i*P	**P**	**08 44 03.1 +1.3**
KWP	**Kalwaria Pacla**	**64.99 353** ⇑	P	**P**	**08 44 03.1 +1.3**
MORC	**Moravsky Berou**	**65.03 357** ⇓	*i*P	**P**	**08 44 03.1 +0.9**
MORC	**Moravsky Berou**	**65.03 357** ⇓	P	**P**	**08 44 03.1 +0.9**
MORC	**Moravsky Berou**	**65.03 357**	*e*P	**P**	**08 44 02.9 +0.7**
	comp=Z,74nm,1.4s				
TLIG	**Tlapa**	**65.18 102**	*e*P	**P**	**08 44 03.9 +0.4**
	comp=Z,32nm,1.3s				
STHS	**Stebnicka Huta**	**65.27 354**	*e*P	**P**	**08 44 05.4 +1.7**
STHS			pmax	pmax	
	comp=Z,7.0nm,0.9s				
STHS	**Stebnicka Huta**	**65.27 354**	*e*P	**P**	**08 44 05.4 +1.7**
NIE	**Niedzica**	**65.31 355**	*e*P	**P**	**08 44 05.2 +1.3**
NIE	**Niedzica**	**65.31 355**	*e*P	**P**	**08 44 05.2 +1.3**
VRAC	**Vranov**	**65.52 358** ⇑	*i*P	**P**	**08 44 06.3 +1.0**
VRAC	**Vranov**	**65.52 358** ⇑	P	**P**	**08 44 06.3 +1.0**
LANS	**Liptovska Anna**	**65.60 355**	*e*P	**P**	**08 44 07.5 +1.6**
LANS	**Liptovska Anna**	**65.60 355**	*e*P	**P**	**08 44 07.5 +1.6**
LANS			*e*		08 44 24.5
KOLS	**Kolonicke sedl**	**65.71 353**	*e*P	**P**	**08 44 07.6 +1.1**
KOLS			pmax	pmax	
	comp=Z,14nm,1.1s				
KOLS	**Kolonicke sedl**	**65.71 353**	*e*P	**P**	**08 44 07.6 +1.1**
KHC	**Kasperske Hory**	**65.73 360**	*e*P	**P**	**08 44 07.7 +1.0**
KHC			*e*pP	**pP**	**08 44 10.3 -1.1**
KHC	**Kasperske Hory**	**65.73 360**	*e*P	**P**	**08 44 07.7 +1.0**
KHC			*e**PP	**pP**	**08 44 10.3 -1.1**
KHC	**Kasperske Hory**	**65.73 360**	*e*P	**P**	**08 44 07.5 +0.8**
	comp=Z,7.7nm,1.2s				
CRVS	**Cervenica-Dubn**	**65.78 354**	*e*P	**P**	**08 44 08.1 +1.2**
CRVS	**Cervenica-Dubn**	**65.78 354**	*e*P	**P**	**08 44 08.1 +1.2**
UZH	**Uzhgorod**	**66.01 353**	*e*P	**P**	**08 44 04.0 -4.4**
UZH			*e*		08 44 06.8
UZH			*e*		08 44 13.8
UZH			*e*S	**S**	**08 52 46.4 -8.8**
GEC2	**GERESS Array S**	**66.01 360**	*e*P	**P**	**08 44 09.7 +1.1**
GEC2			pmax	pmax	
	comp=Z,17nm,1.1s				
GEC2	**GERESS Array S**	**66.01 360**	*e*P	**P**	**08 44 09.7 +1.1**
	comp=Z,17nm,1.1s				
GERES	**GERESS Array B**	**66.01 360**	P	**P**	**08 44 09.3 +0.7**
	comp=Z,6.8nm,0.9s,baz=9.5,slow=4.1,SNR=26				
GERES			LR	LR	09 12 16.1
	comp=Z,43nm,21.6s,baz=9.5,slow=35				
GEA0	**GERESS Array S**	**66.02 360**	*e*P	**P**	**08 44 09.2 +0.6**
SORM	**Soroca**	**66.11 349** ⇑	*i*P	**P**	**08 44 09.0 -0.1**
SORM	**Soroca**	**66.11 349** ⇑	P	**P**	**08 44 09.0 -0.1**
KECS	**Kecovo**	**66.23 355**	*e*P	**P**	**08 44 11.2 +1.3**
KECS			pmax	pmax	
	comp=Z,8.0nm,1.2s				
KECS	**Kecovo**	**66.23 355**	*e*P	**P**	**08 44 11.2 +1.3**
VYHS	**Vyhne**	**66.28 356**	*e*P	**P**	**08 44 11.0 +0.8**
VYHS			pmax	pmax	
	comp=Z,11nm,1.2s				
VYHS	**Vyhne**	**66.28 356**	*e*P	**P**	**08 44 11.0 +0.8**
VYHS			*e*		08 44 26.3
BFO	**Black Forest**	**66.47 4**	*e*P	**P**	**08 44 12.1 +0.7**
BFO			pmax	pmax	
	comp=Z,10.0nm,1.2s				
BFO	**Black Forest**	**66.47 4**	*e*P	**P**	**08 44 12.1 +0.7**
	comp=Z,10nm,1.2s				
PSZ	**Piszkesteto**	**66.82 355** ⇓	*i*P	**P**	**08 44 15.0 +1.2**
PSZ	**Piszkesteto**	**66.82 355**	*e*P	**P**	**08 44 14.9 +1.2**
PSZ			pmax	pmax	
	comp=Z,26nm,1.3s				
PSZ	**Piszkesteto**	**66.82 355**	*e*P	**P**	**08 44 14.9 +1.2**
	comp=Z,26nm,1.3s				
BUR08	**Bucovina Ar. S**	**66.83 351**	*e*P	**P**	**08 44 14.5 +0.7**
BURAR	**Bucovina Array**	**66.86 351** ⇑	*i*P	**P**	**08 44 14.6 +0.6**
BURAR	**Bucovina Array**	**66.86 351** ⇑	P	**P**	**08 44 14.6 +0.6**
CONA	**Conrad Observa**	**66.91 358**	*i* pP	**P**	**08 44 15.2 +0.9**
	comp=Z,23nm,1.5s,SNR=11				
MOA	**Molln**	**67.01 359**	*i* pP	**P**	**08 44 15.4 +0.5**
	comp=Z,16nm,1.5s,SNR=7.8				
RETA	**Reutte**	**67.36 2**	*i* pP	**P**	**08 44 17.9 +0.8**
	comp=Z,11nm,1.2s				
GOF	**Gofitskoye**	**67.38 337** ⇑	*e*P	**P**	**08 44 18.3 +1.1**
GOF			pmax	pmax	
	comp=Z,111nm,1.1s				
MOTA	**Moosalm**	**67.50 2**	*i* pP	**P**	**08 44 18.5 +0.3**
	comp=Z,11nm,1.1s				
WATA	**Walderalm**	**67.52 1**	*i* pP	**P**	**08 44 18.8 +0.6**
	comp=Z,11nm,1.1s				
WTTA	**Wattenberg**	**67.59 1**	*i* pP	**P**	**08 44 19.4 +0.7**
	comp=Z,28nm,1.6s				
KMI	**Kunming**	**67.60 281**	P	**P**	**08 44 17.8 -1.4**
KMI			pmax	pmax	
	comp=Z,15nm,1.0s				
KMI			pmax	pmax	
	comp=Z,97nm,3.6s				
KMI			LR	LR	
	comp=Z,180nm,13.9s				
KMI			LR	LR	
	comp=Z,310nm,15.7s				
KMI			LR	LR	
	comp=Z,160nm,15.7s				
KBA	**Koelnbreinsper**	**67.78 360**	*i* pP	**P**	**08 44 21.1 +1.2**
	comp=Z,16nm,1.0s,SNR=10				
DRGR		**67.82 353** ⇑	*i*P	**P**	**08 44 20.2 +0.1**
DRGR		**67.82 353** ⇑	P	**P**	**08 44 20.2 +0.1**
FETA	**Feichten**	**67.82 2**	*e*pP	**P**	**08 44 21.3 +1.0**
	comp=Z,25nm,1.0s,SNR=18				
LSA	**Lhasa**	**68.13 293**	P	**P**	**08 44 23.9 +1.1**
LSA			pmax	pmax	
	comp=Z,7.0nm,0.7s				
PERS	**Pernice**	**68.21 359**	*i* P	**P**	**08 44 23.1 +0.5**
FUORN	**Ofenpass-Fuorn**	**68.22 2**	*e*P	**P**	**08 44 23.9 +1.0**
	comp=Z,18nm,1.1s				
OBKA	**Obir**	**68.35 359**	*i* pP	**P**	**08 44 24.2 +0.8**
	comp=Z,38nm,0.9s,SNR=17				
TUE	**Stuetta**	**68.35 3**	*e*P	**P**	**08 44 24.5 +0.9**
	comp=Z,7.2nm,0.9s				
SIRR	**Siria**	**68.40 354** ⇑	*i*P	**P**	**08 44 23.8 +0.2**
ANN	**Anapa**	**68.45 342**	*e*P	P	08 44 17.5 -6.4
ANN			pmax	pmax	
	comp=Z,34nm,1.3s				
DOPR	**Dopca**	**68.49 351** ⇑	*i*P	**P**	**08 44 25.3 +1.1**
KIV	**Kislovodsk**	**68.51 337**	*d i*P	**P**	**08 44 24.9 +0.4**
KIV			*i*		08 44 47.9
KIV			*i*		08 46 55.7
KIV			*i* SS	SS	08 57 48.7 +0.3
KIV			pmax	pmax	
	comp=Z,38nm,1.0s				
KIV			MLR	MLR	
	comp=Z,77nm,19.0s				
KIV	**Kislovodsk**	**68.51 337**	*e*P	**P**	**08 44 25.4 +0.9**
	comp=Z,28nm,0.8s				
CADS	**Cadrg**	**68.63 360**	*i* P	**P**	**08 44 24.9 -0.2**
KBZ	**Khabaz**	**68.70 337**	P	**P**	**08 44 26.2 +0.7**
	comp=Z,11nm,0.8s,baz=343,slow=4.0,SNR=19				
KBZ			LR	LR	09 16 52.0
	comp=Z,95nm,21.8s,baz=10.0,slow=38				
NCK	**Nalchik**	**68.81 337**	*e*P	**P**	**08 44 26.4 +0.1**
NCK			pmax	pmax	
	comp=Z,25nm,0.9s				
CFR	**Carcaliu**	**69.07 349** ⇑	*i*P	**P**	**08 44 28.3 +0.5**
CFR	**Carcaliu**	**69.07 349** ⇑	P	**P**	**08 44 28.3 +0.5**
ARR	**Arges**	**69.13 351** ⇓	*i*P	**P**	**08 44 29.7 +1.4**
NEY	**Neytrino**	**69.19 337**	*e*P	**P**	**08 44 30.0 +1.2**
NEY			pmax	pmax	
	comp=Z,2.0nm,1.0s				
GZR	**Gura Zlata**	**69.21 353** ⇑	*i*P	**P**	**08 44 29.4 +0.6**
GZR	**Gura Zlata**	**69.21 353** ⇑	P	**P**	**08 44 29.4 +0.6**
BOJS	**Bojanci**	**69.34 358**	*i* P	**P**	**08 44 29.6 +0.1**
SSB	**Saint Sauveur**	**69.38 6**	*e*P	**P**	**08 44 30.4 +0.6**
SSB			pmax	pmax	
	comp=Z,13nm,1.0s				
SSB	**Saint Sauveur**	**69.38 6**	*e*P	**P**	**08 44 30.4 +0.6**
	comp=Z,13nm,1.0s				
ZEI	**Tsey**	**69.45 336**	*e*P	**P**	**08 44 28.9 -1.6**
ZEI			pmax	pmax	
	comp=Z,83nm,1.7s				
TIRR	**Tirgusor**	**69.76 348** ⇑	*i*P	**P**	**08 44 32.6 +0.5**
TIRR	**Tirgusor**	**69.76 348** ⇑	P	**P**	**08 44 32.6 +0.5**
TIRR	**Tirgusor**	**69.76 348**	*e*P	**P**	**08 44 32.4 +0.3**
	comp=Z,12nm,1.0s				
MDVR	**Moldovita**	**69.88 354** ⇑	*i*P	**P**	**08 44 33.2 +0.3**
QIZ	**Qiongzhong**	**70.09 272**	P	**P**	**08 44 32.3 -2.1**
QIZ			S	**S**	**08 53 49.8 +5.1**
QIZ			LR	LR	
	comp=Z,210nm,14.3s				
QIZ			LR	LR	
	comp=Z,220nm,13.0s				
GEYT	**Alibeck**	**71.17 324**	P	**P**	**08 44 41.4 +0.6**
	comp=Z,20nm,0.9s,baz=318,slow=4.2,SNR=14				
GEYT			LR	LR	09 22 40.0
	comp=Z,66nm,21.1s,baz=10.0,slow=42				
KBL	**Kabul**	**71.35 314**	*e*P	**P**	**08 44 42.0 -0.2**
KBL			pmax	pmax	
	comp=Z,17nm,0.9s				
KBL	**Kabul**	**71.35 314**	*e*P	**P**	**08 44 42.0 -0.2**
	comp=Z,17nm,0.9s				
GNI	**Garni**	**71.87 335**	*d i*P	**P**	**08 44 46.3 +1.1**
GNI			pmax	pmax	
	comp=Z,82nm,1.5s				
GNI	**Garni**	**71.87 335**	*e*P	**P**	**08 44 46.4 +1.1**
	comp=Z,56nm,1.8s				
PDG	**Podgorica**	**72.32 355** ⇓	*i*P	**P**	**08 44 47.4 -0.2**
MVO	**Moncorvo**	**72.54 16**	*e*P	**P**	**08 44 47.7 -1.4**
CRAI	**Chiangrai**	**72.94 281**	P	**P**	**08 44 51.9 +0.3**
	comp=Z,117nm,1.3s,comp=Z,5μm				
MTE	**Manteigas**	**73.23 16**	*e*P	**P**	**08 44 53.9 +0.7**
	comp=Z,27nm,1.0s				
PCAS	**Casmilo, Conde**	**73.46 17**	*e*P	**P**	**08 44 55.2 +0.7**
	comp=Z,37nm,1.3s				
PCBR	**Castelo Branco**	**73.79 16**	*e*P	**P**	**08 44 56.3 -0.1**
	comp=Z,17nm,1.3s				
ANTO	**Ankara**	**73.88 344**	*e*P	**P**	**08 44 58.6 +1.6**
ANTO			pmax	pmax	
	comp=Z,19nm,1.0s				
ANTO	**Ankara**	**73.88 344**	*e*P	**P**	**08 44 58.6 +1.6**
	comp=Z,19nm,0.9s				
BR231	**Keskin MP Arra**	**73.91 344**	*e*P	**P**	**08 44 58.2 +1.0**
BR131	**Keskin Array S**	**73.92 344**	*e*P	**P**	**08 44 57.9 +0.6**
BRTR	**Keskin Array B**	**73.92 344**	P	**P**	**08 44 57.8 +0.4**
	comp=Z,5.0nm,0.8s,baz=25,slow=4.1,SNR=19				
BRTR			LR	LR	09 22 35.4
	comp=Z,34nm,19.4s,baz=9.5,slow=40				
NDI	**New Delhi**	**74.12 305**	*e*P	P	08 44 52.5 -6.0
ES19	**SONSECA Array**	**74.32 14**	*e*P	**P**	**08 44 59.9 +0.3**
ESDC	**Sonseca Array**	**74.34 14**	P	**P**	**08 44 59.9 +0.3**
	comp=Z,7.6nm,0.8s,baz=354,slow=5.8,SNR=33				
ESDC			LR	LR	09 16 58.0
	comp=Z,55nm,21.0s,baz=295,slow=35				
ESLA	**Sonseca Array**	**74.34 14**	*e*P	**P**	**08 45 00.3 +0.7**
SKNT	**Sakolnakorn**	**74.36 276**	P	**P**	**08 45 00.1 +0.1**
	comp=Z,50nm,1.1s				
PAB	**San Pablo**	**74.43 14**	*e*P	**P**	**08 45 00.9 +0.7**
PAB			pmax	pmax	
	comp=Z,16nm,1.2s				
PAB	**San Pablo**	**74.43 14**	*e*P	**P**	**08 45 00.9 +0.7**
	comp=Z,16nm,1.3s				
LAMP	**Lampang**	**74.77 281**	P	**P**	**08 45 02.8 +0.4**
	comp=Z,34nm,0.9s,comp=Z,259nm				
CHTO	**Chiang Mai**	**74.79 282**	P	**P**	**08 45 02.3 -0.2**
	comp=Z,136nm,1.0s,comp=Z,1μm				
CHTO	**Chiang Mai**	**74.79 282**	*e*P	**P**	**08 45 02.4 -0.1**
CHTO			pmax	pmax	
	comp=Z,30nm,1.0s				
CHTO	**Chiang Mai**	**74.79 282**	*e*P	**P**	**08 45 02.4 -0.1**
	comp=Z,30nm,1.0s				
CUC	**Castrocucco**	**74.84 358**	*e*P	**P**	**08 45 02.0 -0.6**
	comp=Z,6.5nm,1.2s				
EVO	**Evora**	**75.02 17**	*e*P	**P**	**08 45 02.5 -1.0**
	comp=Z,21nm,1.5s				
UTTA	**Uttaradit**	**75.09 280**	P	**P**	**08 45 04.4 +0.2**
	comp=Z,13nm,0.8s,comp=Z,96nm				
CM31	**Chiang Mai Arr**	**75.11 282**	*e*P	**P**	**08 45 05.1 +0.7**
CMAR	**Chiang Mai Arr**	**75.11 282**	P	**P**	**08 45 05.0 +0.7**
	comp=Z,43nm,0.8s,baz=8.3,slow=6.7,SNR=92				
CMAR			LR	LR	09 19 25.0
	comp=Z,48nm,21.7s,baz=40,slow=37				
CM01	**Chiang Mai Arr**	**75.14 282**	*e*P	**P**	**08 45 04.4 -0.1**
PNCL	**Nicolau / Gran**	**75.37 18**	*e*P	**P**	**08 45 05.7 +0.1**
KHON	**Khomkaen**	**75.42 277**	P	**P**	**08 45 08.9 +2.8**
	comp=Z,24nm,0.9s,comp=Z,1μm				
PBAR	**Barrancos**	**75.49 16**	*e*P	**P**	**08 45 06.6 +0.4**
	comp=Z,42nm,1.6s				
TIP	**Timpagrande**	**75.64 357**	*e*P	**P**	**08 45 06.9 -0.3**
	comp=Z,24nm,1.8s				
SUKH	**Sukhothai**	**75.70 281**	P	**P**	**08 45 08.5 +0.8**
	comp=Z,10nm,0.9s,comp=Z,81nm				
PBKT	**Sadao Pong**	**75.97 279**	P	**P**	**08 45 09.8 +0.6**
	comp=Z,17nm,1.5s,comp=Z,1μm				
PVAQ	**Vaqueiros**	**76.17 17**	*e*P	**P**	**08 45 09.0 -1.1**
SRDT	**SRDT**	**78.73 280**	P	**P**	**08 45 27.4 +2.7**
	comp=Z,90nm,1.1s				
KEST	**Kesra**	**79.08 3**	P	**P**	**08 45 26.2 -0.3**
	comp=Z,3.4nm,0.4s,baz=108,slow=3.2,SNR=3.8				
KKM	**Kota Kinabalu**	**79.11 261**	*e*P	**P**	**08 45 27.4 +0.4**
LAST	**Lasithi**	**79.23 350**	*e*P	**P**	**08 45 26.3 -1.1**
AFI	**Afiamalu**	**79.24 185**	LR	LR	09 12 28.2
	comp=Z,95nm,21.3s,baz=20,slow=30				
PATY	**Pattaya**	**79.29 277**	P	**P**	**08 45 31.2 +3.4**
	comp=Z,10nm,0.8s,comp=Z,3μm				
SURT	**Suratani**	**83.72 278**	P	**P**	**08 45 52.0 +0.7**
	comp=Z,11nm,1.7s				
PPT	**Papeete**	**83.83 163**	LR	LR	09 18 01.2
	comp=Z,60nm,21.8s,baz=324,slow=32				
PPT2	**Papeete2**	**83.85 163**	*e*LR	LR	09 12 07.4
	comp=Z,235nm,30.2s				
UOSS	**Minazif**	**84.01 321**	*e*P	**P**	**08 45 52.0 -0.7**
TRTT	**Trang**	**84.36 276**	P	**P**	**08 45 56.7 +2.2**
	comp=Z,29nm,1.0s				
KSM	**Kuching**	**85.69 264**	*e*

Vito. Felt in Chiriqui, Panama.
*ISCJB **21** 08:37:08.1±0.7, 8.78N±0.06×82.98W±0.04, h26km±5km, mb4.2/8, MS3.7/3, Error ellipse: s-maj=11.2km s-min=3.6km az=29.7*
ISC 21 08:37:08.1±1.3, 8.81N±0.08×82.99W±0.04, h13km±8km, n52, σ1.60/66, mb4.2/8, MS3.4/3, 4C-4D, Panama-Costa Rica border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BRU2	Volcan	0.30	93	⇓iP	Pg	08 37 14.2	-0.2
BRU2				eS	Sg	08 37 19.1	+0.4
BRU2				eS	Sb	08 37 20.1	-0.2
TBS2		0.33	93	eP	Pb	08 37 15.4	-0.5
TBS2				eP	Pb	08 37 15.5	-0.5
TBS2				eS	Sb	08 37 21.9	+0.6
TBS2				eS	Sb	08 37 21.9	+0.6
BRU	Baru	0.43	90	⇑iP	Pg	08 37 16.6	-0.2
BRU				eP	Pb	08 37 16.7	-1.1
LCR2	La Lucha 2	1.36	313	⇓iP	Pn	08 37 31.0	-1.9
LCR2				eS	Sb	08 37 50.7	-0.2
HDC	Heredia	1.62	317	⇓eP	Pn	08 37 35.3	-1.1
HDC				eP	Pb	08 37 35.5	-2.4
HDC				eS	Sn	08 37 57.9	+0.6
HDC				eS	Sb	08 37 58.0	-0.3
ARE1	Arenal 1	2.36	314	⇓iP	Pn	08 37 46.5	-0.1
ARE1				eS	Sn	08 38 15.7	+0.2
PNME	Penonome	2.66	97	eP	Pn	08 37 51.3	+0.8
PNME				⇑eP	Pb	08 37 51.4	-4.1
PNME				eS	Sn	08 38 25.4	+2.8
PNME				eS	Sb	08 38 26.1	-1.9
A494	Palo Verde	2.78	304	⇑eP	Pn	08 37 51.7	-0.6
CUI	Cuipilapa	2.82	311	⇑iP	Pn	08 37 52.8	-0.1
COLC	Colonia	2.85	310	eP	Pn	08 37 53.6	+0.3
AZU	Azuero	2.88	110	eP	Pn	08 37 52.6	-0.9
AZU				eP	Pb	08 37 52.8	-6.4
AZU				eS	Sn	08 38 26.2	-1.8
AZU				eS	Sb	08 38 28.5	-5.8
MESS	Mesas	2.90	312	eP	Pn	08 37 53.9	0.0
GUAB	Guayabo de Bag	2.90	311	eP	Pn	08 37 54.7	+0.8
GPS2	Hotel Rinc‡n	3.02	310	eP	Pn	08 37 55.8	+0.1
BUEV	Buena Vista	3.09	310	eP	Pn	08 37 56.8	+0.1
ZANG	Zanguenga, Cho	3.09	87	eP	Pn	08 37 56.3	-0.3
GB1A	Borinquen Arri	3.10	310	eP	Pn	08 37 57.1	+0.3
BCIP	Isla Barro Col	3.14	83	eP	Pn	08 37 56.3	-0.9
BCIP				eP	Pb	08 37 56.5	-7.2
BCIP				eS	Sn	08 38 33.2	-1.3
BCIP				eS	Sb	08 38 43.1	+1.2
BCIP	Isla Barro Col	3.14	83	ePn	Pn	08 37 56.7	-0.5
BCIP				eSn	Sb	08 38 41.3	-0.6
UPD2	Meteti	4.93	93	eP	Pn	08 38 20.2	-1.6
UPD2				eS	Sn	08 39 16.4	-2.4
CAPC	Capurgana	5.58	91	eP	Pn	08 38 31.2	+0.4
SOLC	Bahia Solano	6.10	114	eP	Pn	08 38 34.9	-3.1
LCY	Lacayo	6.93	312	eP	Pn	08 38 51.9	+2.3
PACA	Pacayal	6.99	312	i P	Pn	08 38 51.8	+1.6
PACA				eP	Pn	08 38 51.8	+1.6
MOTC	Monteria, Cord	7.24	90	eP	Pn	08 38 56.8	+3.1
SJCC	San Jacinto, C	7.79	81	eP	Pn	08 39 01.1	-0.1
HELC	Santa Helena	7.84	109	eP	Pn	08 39 03.3	+1.1
GUYC	Guyana, Colomb	8.35	115	eP	Pn	08 39 11.5	+2.3
NORC	Norcasia	8.68	111	eP	Pn	08 39 14.3	+0.9
POPC	Popayan, Colom	8.85	134	eP	Pn	08 39 15.5	-0.4
BRRC	Barranca, Sant	9.35	100	eP	Pn	08 39 27.5	+4.9
ROSC	El Rosal	9.47	114	Pn	Pn	08 39 31.6	+7.0
	0.6nm,0.3s,baz=360,slow=7.4,SNR=9.7						
ROSC				LR	LR	08 42 48.2	
	comp=Z,147nm,20.7s,baz=314,slow=35						
OTAV	Otavalo	9.64	152	ePn	Pn	08 39 26.9	-0.1
	15nm,1.3s						
CBRI	Barrientos, No	10.15	95	eP	Pn	08 39 37.5	+3.8
RUSC	La Rusia	10.25	106	eP	Pn	08 39 36.4	+1.1
VILC	Villavicencio,	10.35	116	eP	Pn	08 39 37.2	+0.8
MTDJ	Mount Denham	10.76	29	ePn	Pn	08 39 42.1	+0.1
	43nm,0.6s						
URIC	Uribia, Colomb	11.20	74	eP	Pn	08 39 45.1	-2.8
GTBY	Guantanamo Bay	13.43	34	ePn	Pn	08 40 17.9	-0.5
SDDR	Presa de Saban	15.20	47	eP	Pn	08 40 44.2	+1.5
	16nm,0.6s						
BBGH	Gun Hill	23.40	77	eP	P	08 42 20.4	+3.5
	2μm,1.9s						
LRAL	Lakeview Retre	24.39	352	eP	P	08 42 26.6	+0.5
	17nm,1.5s						
GOGA	Godfrey	24.49	359	eP	P	08 42 26.0	-1.0
	3.2nm,0.6s						
SAML	Samuel	26.47	131	P	P	08 42 46.4	+1.3
	13nm,1.2s						
LPAZ	La Paz	28.95	149	LR	LR	08 54 59.5	
	comp=Z,91nm,20.8s,baz=324,slow=37						
CPUP	Villa Florida	42.91	145	LR	LR	09 03 44.3	
	comp=Z,23nm,19.2s,baz=269,slow=37						
PLCA	Paso Flores	50.61	168	P	P	08 46 08.1	+1.3
	2.3nm,0.8s,baz=326,slow=5.4,SNR=4.0						
YKA	Yellowknife Ar	58.30	343	P	P	08 47 00.7	-1.6
	0.4nm,0.6s,baz=136,slow=7.2,SNR=8.5						
ILAR	Eielson Array	71.10	336	P	P	08 48 25.0	-0.9
	0.6nm,0.8s,baz=122,slow=4.8,SNR=4.6						
ESDC	Sonseca Array	76.00	51	P	P	08 48 56.2	+0.9
	0.6nm,0.7s,baz=283,slow=6.3,SNR=2.6						
RAR	Rarotonga	81.01	247	LR	LR	09 18 17.4	
	comp=Z,274nm,20.9s,baz=286,slow=31						
ASAR	Alice Springs	141.76	243	PKP	PKPdf	08 56 37.0	-3.3
	0.2nm,0.7s,baz=121,slow=3.5,SNR=4.2						

*IDC **21** 08:39:38.4±1.4, 38.81N×143.05E, h0km, mb3.5/2, mb1 3.7/4, mb1mx3.4/41, mbtmp3.4/4, ML3.1/2, Error ellipse: s-maj=56.2km s-min=24.8km az=113.0*
*JMA **21** 08:39:42.0±0.1, 39.11N×142.40E, h35km±1km, M3.6*
ISC 21 08:39:39.4±2.3, 39.09N±0.04×142.5E±0.1, h11km±13km, n25, σ0.97/24, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.65	269	P	Pb	08 39 53.6	+1.0
OFUJ				S	Sg	08 40 01.4	+1.0
MIYJ	Miyakonagasawa	0.71	313	P	Pb	08 39 54.4	+0.6
MIYJ				S	Sg	08 40 03.0	+0.4
JMK	Ichinoseki	1.01	262	P	Pg	08 39 59.0	+0.3
JMK				S	Sg	08 40 11.2	-0.7
JOM	Ohasama	1.01	292	P	Pg	08 39 59.1	+0.3
JOM				S	Sg	08 40 11.6	-0.4
JIO	Ouri	1.10	235	P	Pg	08 40 00.0	-0.6
JIO				S	Sg	08 40 13.0	-1.9
JKZ	Kuzumaki	1.27	315	P	Pn	08 40 03.3	+0.2
JKZ				S	Sg	08 40 18.7	-1.6
JRG	Rokugo	1.48	282	P	Pn	08 40 06.7	+0.8
JANG	Nango	1.49	330	P	Pb	08 40 06.4	-0.6
JANG				S	Sn	08 40 24.2	-1.2
JOU	Okura	1.61	244	P	Pn	08 40 08.3	+0.6
JYK	Kaneyama	1.68	265	P	Pn	08 40 08.8	+0.2
JMM	Marumori	1.81	228	P	Pn	08 40 10.6	+0.1
JMM				eS	Sn	08 40 32.4	-1.1
JYS	Shiratake	2.10	246	P	Pn	08 40 15.3	+0.9
JFK	Kawauchi	2.15	217	P	Pn	08 40 16.2	+1.1
JFT	Otama	2.32	228	P	Pn	08 40 18.6	+1.2
MAT	Matsushiro	4.25	234	P	Pn	08 40 47.4	+3.4
MAT				S	Sn	08 41 19.6	-14
MJAR	Matsushiro Arr	4.25	234	Pn	Pn	08 40 47.7	+3.7
	0.7nm,0.3s,baz=39,slow=11,SNR=9.8						
ASAJ	Asahikawa	5.02	1	Pn	Pn	08 40 58.4	+3.9
	0.7nm,0.3s,baz=216,slow=9.0,SNR=6.0						
H11N2	WAKE ISLAND Hy 28.55	126		T	T	09 16 01.5	
	baz=318,slow=75,SNR=42						
H11N1	WAKE ISLAND Hy 28.56	126		T	T	09 16 02.3	
	baz=318,slow=75,SNR=36						
H11N3	WAKE ISLAND Hy 28.57	126		T	T	09 16 03.0	
	baz=318,slow=75,SNR=31						
H11S1	WAKE ISLAND Hy 29.34	127		T	T	09 16 59.8	
	baz=319,slow=76,SNR=12						
H11S3	WAKE ISLAND Hy 29.35	127		T	T	09 16 57.7	
	baz=319,slow=76,SNR=13						
H11S2	WAKE ISLAND Hy 29.36	127		T	T	09 17 05.7	
	baz=319,slow=76,SNR=8.9						
ILAR	Eielson Array	47.30	33	P	P	08 48 13.5	+1.0
	0.3nm,0.5s,baz=280,slow=5.7,SNR=4.6						
WRA	Warramunga Arr	59.22	189	P	P	08 49 39.8	-0.8
	0.4nm,0.4s,baz=6.6,slow=7.0,SNR=13						

BUC 21 08:43:25.9±1.0, 45.66N×26.33E, h5km±10km, MD1.8/2, 4C-6D, Error ellipse: s-maj=4.1km s-min=0.9km az=328.0, Romania

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLOR	Plostina	0.29	49	⇑iP	Pg	08 43 32.3	+0.7
PLOR	Plostina	0.29	49	S	Sb	08 43 37.4	-1.5
PLOR	Plostina	0.29	49	⇑iP	Pg	08 43 32.3	+0.7
PLOR				i S	Sb	08 43 37.4	-1.5
MLR	Muntele Rosu	0.32	238	⇓iP	Pg	08 43 32.8	+0.6
MLR	Muntele Rosu	0.32	238	S	Sb	08 43 38.1	-1.6
MLR	Muntele Rosu	0.32	238	⇓iP	Pg	08 43 32.8	+0.6
MLR				i S	Sb	08 43 38.1	-1.6
VRI	Vrincioaia	0.34	53	⇑iP	Pg	08 43 33.2	+0.6
VRI	Vrincioaia	0.34	53	S	Sg	08 43 38.7	+1.6
VRI	Vrincioaia	0.34	53	⇑iP	Pg	08 43 33.2	+0.6
VRI				i S	Sg	08 43 38.7	+1.6
ISR	Istrita	0.56	165	⇓iP	Pb	08 43 38.0	-0.2
ISR	Istrita	0.56	165	⇓iP	Pb	08 43 38.0	-0.2
ISR				i S	Sb	08 43 46.2	-0.3
VOIR		0.93	257	⇓iP	Pb	08 43 45.1	+0.6
VOIR		0.93	257	⇓iP	Pb	08 43 45.1	+0.6

*IDC **21** 08:44:40.8±1.2, 8.04S×114.06E, h0km, mb4.0/7, mb1 4.1/8, mb1mx3.8/45, mbtmp4.0/8, ML3.5/1, MS2.9/2, Ms1 2.9/2, ms1mx2.5/33, Error ellipse: s-maj=77.5km s-min=16.7km az=52.0*
*ISCJB **21** 08:44:42.2±0.9, 8.22S±0.09×113.9E±0.1, h16km, mb4.0/7, Error ellipse: s-maj=15.3km s-min=11.3km az=151.5*
*DJA **21** 08:44:45.6±0.5, 8.5S±.5×11.4E±.4, h10km±7km, M4.1/6, MLv4.1/6*
ISC 21 08:44:43.6±0.7, 8.20S±0.06×114.11E±0.07, h16km, n16, σ2.32/15, mb4.2/7, Bali region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAGI	Jajag, Banyuwa	0.28	172	P	Pb	08 44 52.0	+1.8
ABJI	Asem Bagus	0.42	17	P	Pb	08 44 53.8	+1.2
GMJI	Gumukmas	0.67	263	P	Pb	08 44 57.9	+1.1
SRBI	Singaraja	1.09	84	P	Pn	08 45 05.7	+1.5
PLAI	Plampang	3.68	100	P	Pn	08 45 42.5	+2.7
KAPI	Kappang	6.43	61	LR	LR	08 49 07.7	
	comp=Z,82nm,21.4s,baz=261,slow=42						
LEM	Lembang	6.58	281	LR	LR	08 49 16.6	
	comp=Z,131nm,20.4s,baz=128,slow=42						
FITZ	Fitzroy Crossi	14.92	132	Pn	Pn	08 48 13.3	-0.7
	0.1nm,0.3s,baz=321,slow=12,SNR=3.9						
FITZ				Sn	Sn	08 50 53.1	-6.0
	0.1nm,0.3s,baz=0.0,slow=20,SNR=2.9						
WRA	Warramunga Arr	22.80	123	P	P	08 49 46.1	+0.3
	4.4nm,0.6s,baz=294,slow=12,SNR=44						
ASAR	Alice Springs	24.42	131	P	P	08 50 02.7	+1.0
	6.3nm,0.8s,baz=306,slow=9.3,SNR=67						
STKA	Stephens Creek	34.76	136	P	P	08 51 34.6	+1.3
	3.6nm,0.7s,baz=311,slow=11,SNR=8.3						
SONM	Songino Array	56.20	354	P	P	08 54 23.3	+0.4
	1.9nm,0.8s,baz=176,slow=6.6,SNR=5.8						
MKAR	Makanchi Array	61.64	336	P	P	08 54 58.6	-2.0
	0.3nm,0.6s,baz=155,slow=8.2,SNR=3.3						
ZALV	Zalesovo Beam	66.67	342	P	P	08 55 31.0	-2.4
	0.5nm,0.3s,baz=98,slow=3.1,SNR=3.1						
BRTR	Keskin Array B	87.93	310	P	P	08 57 32.6	-0.5
	0.4nm,0.5s,baz=119,slow=12,SNR=3.1						
CPUP	Villa Florida	144.69	193	PKP	PKPdf	09 04 20.8	+0.4
	2.4nm,1.0s,baz=144,slow=6.0,SNR=4.4						

*NIED **21** 08:51:00.36.00N×140.40E, h56km, Mw4.2 Best double couple: M0:2.41000×10^15 NP1:φs=207.00000°, δ29.00000°, λ112.00000°. NP2:φs=3.00000°, δ63.00000°, λ78.00000°.*
*ISCJB **21** 08:51:44.4±0.3, 35.89N±0.03×140.43E±0.04, h50km, mb4.4/59, MS4.1/8, Error ellipse: s-maj=5.3km s-min=4.6km az=25.1*
*MOS **21** 08:51:46.3±1.2, 36.02N×140.46E, h66km, mb4.7/33, Error ellipse: s-maj=10.9km s-min=6.7km az=121.8*
*NEIC **21** 08:51:47.8±0.6, 35.92N×140.37E, h63km±5km, mb4.8/23, Error ellipse: s-maj=6.6km s-min=5.2km az=108.0*
NEIC Felt at Narita. Recorded [2 JMA] in Ibaraki.
*JMA **21** 08:51:47.5±0.1, 36.01N×140.39E, h55km±1km, M3.6 Broadband fault plane solution: P waves. NP1: φs=34.00000°, δ74.00000°, λ103.00000°. NP2: φs=175.00000°, δ20.00000°, λ52.00000°. Principal axes: T Plg59.0000°, Azm322.0000°; N Plg12.0000°, Azm211.0000°; P Plg28.0000°, Azm114.0000°;*
JMA Felt II J1.
*IDC **21** 08:51:48.7±1.4, 35.92N×140.33E, h71km±13km, mb3.9/23, mb1 4.1/26, mb1mx3.9/53, mbtmp4.2/26, MS3.3/2, Ms1 3.3/2, ms1mx2.7/36 Error ellipse: s-maj=15.7km s-min=8.7km az=82.0*
ISC 21 08:51:46.0±0.4, 35.94N±0.04×140.43E±0.04, h50km, n155, σ2.45/173, mb4.5/59, MS4.3/8, 11C-10D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JYT	Yasato	0.34	326	⇓P	Pn	08 51 57.0	+1.5
JAG	Ashikaga	0.93	302	⇓P	Pn	08 52 04.0	+1.3
MJAR	Matsushiro Arr	1.90	289	P	Pn	08 52 18.3	+2.4
	214nm,0.3s,baz=89,slow=9.2,SNR=2217						
MJAR				LR	LR	08 53 10.8	
	comp=Z,431nm,20.4s,baz=100,slow=46						
MAJO	Matsushiro	1.90	289	iP	Pn	08 52 18.1	+2.2
MAJO	Matsushiro	1.90	289	ePn	Pn	08 52 18.5	+2.6
MAT	Matsushiro	1.90	289	P	Pn	08 52 17.4	+1.5
MAT				S	Sn	08 52 43.2	+4.5
MJB9	Matsu-Tunnel	1.90	289	ePn	Pn	08 52 18.6	+2.6
INU	Inuyama	2.84	259	ePn	Pn	08 52 31.8	+2.9
INU				eSn	Sn	08 53 10.3	+8.4
JHJ	Hachijo jima 2	2.87	191	P	Pn	08 52 31.6	+2.4
	78nm,0.3s,baz=325,slow=19,SNR=32						
JHJ				S	Sn	08 53 04.4	+1.9
	145nm,0.3s,baz=64,slow=22,SNR=11						
JHJ2	Mitsune	2.87	190	ePn	Pn	08 52 31.5	+2.3
JHJ2				eSn	Sn	08 53 07.0	+4.5
ERM	Erimo	6.42	18	eP	Pn	08 53 18.2	+0.3
ERM				e		08 54 31.5	
ERM	Erimo	6.42	18	ePn	Pn	08 53 18.2	+0.3
ERM				eSn	Sn	08 54 31.5	+1.6
ASAJ	Asahikawa	8.33	11	P	Pn	08 53 43.2	-0.8
	1.8nm,0.3s,baz=204,slow=14,SNR=12						
ASAJ				S	Sn	08 55 14.0	-2.7
	0.6nm,0.3s,baz=12,slow=19,SNR=2.7						
ASAJ	Asahikawa	8.33	11	ePn	Pn	08 53 43.8	-0.3
ASAJ				S	Sn	08 55 14.0	-2.7
JNU	Nakatsue	8.37	253	P	Pn	08 53 47.9	+3.2
	1.0nm,0.3s,baz=38,slow=4.5,SNR=9.9						
JNU				LR	LR	08 57 20.8	
	comp=Z,156nm,21.1s,baz=108,slow=40						
JNU	Nakatsue	8.37	253	ePn	Pn	08 53 48.7	+4.0
CBIJ	Chichi jima	8.94	170	ePn	Pn	08 53 51.3	-1.3
CBIJ				S	Sn	08 55 24.9	-7.1
JCJ	Chichijima	8.94	170	P	Pn	08 53 50.8	-1.7
	baz=288,slow=12						
JCJ				S	Sn	08 55 24.9	-7.1
	6.9nm,0.3s,baz=288,slow=19,SNR=5.4						
VLA	Vladivostok	9.74	320	⇑eP	Pn	08 54 12.6	+9.2
VLA				pmax	pmax		
	comp=Z,27nm,0.6s						
KSRS	Korea Array	10.16	282	P	Pn	08 54 14.3	+5.2
	comp=Z,0.5nm,0.3s,baz=98,slow=13,SNR=15						
KS01	Wonju Array Si	10.18	282	ePn	Pn	08 54 10.0	+0.6
KSAR	Wonju Array Be	10.19	282	P	Pn	08 54 14.3	+4.8
KSAR	Wonju Array Be	10.19	282	P	Pn	08 54 14.3	+4.8
USRK	Ussuriysk Ar.	10.48	324	P	Pn	08 54 17.1	+3.7
	comp=Z,0.6nm,0.3s,baz=137,slow=13,SNR=9.0						
YSS	Yuzh-Sakhalins	11.14	8	eP	Pn	08 54 34.9	+12
MDJ	Mudanjiang	11.97	320	P	Pn	08 54 41.6	+7.7
MDJ				S	Sn	08 56 57.8	+12
MDJ				pmax	pmax		
	comp=Z,14nm,1.1s						
MDJ				pmax	pmax		
	comp=Z,12nm,2.9s						
MDJ				LR	LR		
	comp=N,660nm,12.8s						
MDJ				LR	LR		
	comp=E,240nm,16.7s						
MDJ				LR	LR		
	comp=Z,620nm,11.8s						
KLR	Kut'dur	14.72	337	P	Pn	08 55 08.3	-2.8
	comp=Z,0.3nm,0.3s,baz=124,slow=18,SNR=2.6						
TYV	Tymovskoe	15.00	5	eP	P	08 55 19.8	+0.6
TYV				pmax	pmax		
	comp=Z,22nm,1.0s						
DL2	Dalian	15.23	287	⇓P	Pn	08 55 12.6	-5.1
DL2				eS	Sn	08 57 54.3	-11
DL2				pmax	pmax		
	comp=Z,52nm,1.2s						
DL2				LR	LR		
	comp=N,450nm,17.5s						
DL2				LR	LR		
	comp=E,490nm,16.3s						
DL2				LR	LR		
	comp=Z,630nm,13.9s						
YOJ	Yonaguni jima	18.88	237	eP	P	08 56 00.5	-1.7
YOJ				pmax	pmax		
	comp=Z,112nm,1.4s						
YOJ	Yonaguni jima	18.88	237	eP	P	08 56 00.5	-1.7
	comp=Z,112nm,1.4s						
BJI	Beijing	19.53	289	P	P	08 56 09.3	+0.1
BJI				S	S	08 59 43.4	-3.7
BJI				sS	sS	09 00 08.4	+2.8
BJI				pmax	pmax		
	comp=Z,16nm,0.7s						
BJI				pmax	pmax		
	comp=Z,88nm,3.9s						
BJI				LR	LR		
	comp=N,470nm,12.6s						
BJI				LR	LR		
	comp=E,340nm,17.8s						
BJI				LR	LR		
	comp=Z,140nm,16.4s						
BJT	Baijiatuau	19.54	289	eP	P	08 56 06.2	-3.1
BJT				pmax	pmax		
	comp=Z,13nm,0.5s						
BJT	Baijiatuau	19.54	289	eP	P	08 56 06.2	-3.1
	comp=Z,12nm,0.5s						
YHNB	Yeheng	19.89	241	eP	P	08 56 13.1	-0.2
	comp=Z,17nm,1.3s						
SSLB	Suanglung	20.74	240	eP	P	08 56 22.3	-0.2
	comp=Z,6.2nm,0.8s						
YULB	Yu-li	20.76	238	eP	P	08 56 21.6	-1.1
	comp=Z,6.5nm,0.9s						
WHN	Wuhan	22.44	264	⇑P	P	08 56 41.0	+0.4
HHC	Hu-ho-hao-te	23.10	291	eP	P	08 56 47.9	+0.4
HHC				PP	PnPn	08 57 26.6	+12
HHC				S	S	09 00 47.9	-7.1
HHC				pmax	pmax		
	comp=Z,34nm,0.9s						
HHC				pmax	pmax		
	comp=Z,120nm,4.8s						
HHC				LR	LR		
	comp=N,780nm,13.1s						
HHC				LR	LR		
	comp=E,650nm,12.1s						
HHC				LR	LR		
	comp=Z,820nm,12.4s						
MA2	Magadan	24.59	13	P	P	08 57 02.0	+1.0
	comp=Z,4.3nm,0.5s,baz=184,slow=5.5,SNR=4.1						
XAN	Xi'an	25.83	275	P	P	08 57 11.8	-0.9
XAN				pP	pP	08 57 23.1	-2.4
XAN				S	S	09 01 52.0	+13
XAN				pmax	pmax		
	comp=Z,6.0nm,0.6s						
XAN				LR	LR		
	comp=N,640nm,12.3s						
XAN				LR	LR		
	comp=E,250nm,10.3s						
XAN				LR	LR		
	comp=Z,620nm,12.3s						
ENH	Enshi	26.46	267	eP	P	08 57 17.6	-0.9
	comp=Z,19nm,0.6s						
ULN	Ulaanbaatar	27.34	306	ceP	P	08 57 25.4	-0.9
ULN				pmax	pmax		
	comp=Z,1.0nm,0.6s						
SONA1	Songino Array	27.76	306	eP	P	08 57 30.9	+0.9
SONM	Songino Array	27.76	306	P	P	08 57 29.8	-0.2
	comp=Z,2.4nm,0.5s,baz=100,slow=8.3,SNR=11						
SEY	Seymchan	28.02	12	P	P	08 57 32.0	+0.1
	comp=Z,0.5nm,0.4s,baz=53,slow=20,SNR=2.1						
BOD	Bodaibo	28.05	330	eP	P	08 57 31.3	-1.0
BOD				pmax	pmax		
	comp=Z,9.0nm,0.9s						
LZH	Lanzhou	29.49	281	eP	P	08 57 47.0	+1.5
LZH				pP	pP	08 58 03.3	+4.9
LZH				sP	sP	08 58 11.5	+7.1
LZH				PP	PP	08 58 44.1	-8.5
LZH				eSS	PcP	09 01 12.3	+22
LZH				eS	S	09 02 33.0	-3.6
LZH				sS	sS	09 03 02.1	+3.7
LZH				pmax	pmax		
	comp=Z,29nm,1.2s						
LZH				pmax	pmax		
	comp=Z,110nm,4.8s						
LZH				LR	LR		
	comp=N,500nm,12.0s						
LZH				LR	LR		
	comp=E,450nm,13.2s						
LZH				LR	LR		
	comp=Z,740nm,15.0s						
GYA	Guiyang	30.27	261	P	P	08 57 43.0	-9.4
GYA				pP	sP	08 58 10.3	-1.0
GYA				sP	pP	08 58 18.4	+13
GYA				PP	PnPn	08 58 54.0	+2.2
GYA				PcP	PcP	09 00 53.4	+1.3
GYA				S	S	09 02 45.6	-3.3
GYA				sS	sS	09 03 15.3	+4.6
GYA				SS	SnSn	09 04 27.0	+0.4
GYA	Guiyang	30.27	261	ScS	ScS	09 08 22.6	-3.7
GYA				pmax	pmax		
	comp=Z,10.0nm,0.9s						
GYA				pmax	pmax		
	comp=Z,110nm,5.1s						
GYA				LR	LR		
	comp=N,560nm,17.8s						
GYA				LR	LR		
	comp=E,500nm,18.0s						
GYA				LR	LR		
	comp=Z,510nm,18.2s						
CD2	Chengdu	30.90	271	P	P	08 57 56.3	-1.6
CD2				pmax	pmax		
	comp=Z,10.0nm,0.6s						
KMI	Kunming	34.02	262	P	P	08 58 27.1	+1.6
KMI				pP	sP	08 58 43.8	-0.6
KMI				sP	pP	08 58 50.9	+12
KMI				PP	PP	08 59 43.6	+0.5
KMI				pmax	pmax		
	comp=Z,10.0nm,0.8s						
KMI				pmax	pmax		
	comp=Z,99nm,6.9s						
KMI				LR	LR		
	comp=N,180nm,7.8s						
KMI				LR	LR		
	comp=E,380nm,12.2s						
KMI				LR	LR		
	comp=Z,160nm,10.7s						
BILL	Bilibino	35.30	16	i P	P	08 58 42.9	+7.2
BILL				pmax	pmax		
	comp=Z,1.0nm,0.9s						
TIXI	Tiksi	36.28	354	P	P	08 58 43.0	-1.1
	comp=Z,0.8nm,0.4s,baz=199,slow=4.1,SNR=3.8						
TIXI	Tiksi	36.28	354	eP	P	08 58 47.6	+3.5
TIXI				pmax	pmax		
	comp=Z,1.0nm,0.8s						
FAKI	Fak F

MKAR	**Makanchi Array**	**44.04 303**	*ce*P	**P**		**08 59 48.7**	**0.0**
MKAR			pmax	pmax			
comp=Z,2.0nm,0.5s							
MKAR	**Makanchi Array**	**44.04 303**	*e*P	**P**		**08 59 49.2**	**+0.5**
MKAR			PcP	**PcP**		**09 01 33.9**	**+0.5**
KURK	**Kurchatov**	**45.99 309**	*e*P	**P**		**09 00 04.2**	**+0.1**
KURK			pmax	pmax			
comp=Z,13nm,0.8s							
KURK	**Kurchatov**	**45.99 309**	*e*P	**P**		**09 00 04.2**	**+0.1**
comp=Z,13nm,0.8s							
PDGK	**Podgornoye**	**46.60 299**	P	**P**		**09 00 09.0**	**+0.1**
PDGK			pmax	pmax			
comp=Z,8.0nm,0.6s							
MLY	**Manley**	**49.19 32**	*e*P	**P**		**09 00 31.2**	**+2.4**
comp=Z,10nm,1.8s							
TKM2	**Tokmak 2**	**49.46 299**	*e*P	**P**		**09 00 32.6**	**+1.2**
TKM2			pmax	pmax			
comp=Z,7.0nm,0.6s							
TKM2	**Tokmak 2**	**49.46 299**	*e*P	**P**		**09 00 32.6**	**+1.2**
comp=Z,7.1nm,0.6s							
KSH	**Kashi**	**50.13 295**	*e*P	P		09 00 42.3	+5.9
KSH			*e*pP	sP		09 00 57.9	+2.1
KSH			*e*sP	pP		09 01 05.1	+15
KSH			*e*ScP	**ScP**		**09 05 48.8**	**+1.9**
KSH			S	**S**		**09 07 49.9**	**+5.3**
KSH			ScS	**ScS**		**09 10 24.3**	**+0.9**
KSH			pmax	pmax			
comp=Z,70nm,4.6s							
KSH			LR	LR			
comp=N,200nm,10.2s							
KSH			LR	LR			
comp=E,190nm,11.7s							
KSH			LR	LR			
comp=Z,180nm,9.1s							
AAK	**Ala-Archa**	**50.32 299**	*e*P	**P**		**09 00 37.4**	**-0.4**
AAK	**Ala-Archa**	**50.32 299**	*e*P	**P**		**09 00 37.4**	**-0.4**
WRH	**Wood River Hil**	**50.33 32**	*e*P	**P**		**09 00 39.2**	**+1.9**
comp=Z,13nm,1.7s							
SML	**Sawmill**	**50.34 36**	*e*P	**P**		**09 00 40.2**	**+2.7**
SML			pmax	pmax			
comp=Z,20nm,1.4s							
SML	**Sawmill**	**50.34 36**	*e*P	**P**		**09 00 40.2**	**+2.7**
comp=Z,20nm,1.4s							
OTUK	**Ortayu**	**50.43 306**	P	**P**		**09 00 38.1**	**-0.3**
OTUK			pmax	pmax			
comp=Z,5.0nm,0.8s							
CHKZ	**Chkalovo**	**50.49 314**	P	**P**		**09 00 37.8**	**-0.9**
CHKZ			pmax	pmax			
comp=Z,3.0nm,0.6s							
BVA0	**Borovoye Array**	**50.73 313**	P	**P**		**09 00 44.8**	**+4.3**
BVA0			pmax	pmax			
comp=Z,4.0nm,1.1s							
BRVK	**Borovoye**	**50.78 313**	*e*P	**P**		**09 00 41.2**	**+0.2**
BRVK			pmax	pmax			
comp=Z,2.0nm,0.9s							
IL1	**Eielson Array**	**50.84 32**	*e*P	**P**		**09 00 41.8**	**+0.6**
ILAR	**Eielson Array**	**50.84 32**	P	**P**		**09 00 42.5**	**+1.3**
comp=Z,2.3nm,0.7s,baz=270,slow=6.4,SNR=23							
ILB	**Eielson Array**	**50.84 32**	*e*P	**P**		**09 00 42.5**	**+1.3**
ZRNK	**Zerenda**	**51.56 313**	*e*P	**P**		**09 00 47.1**	**+0.3**
ZRNK			pmax	pmax			
comp=Z,4.0nm,0.6s							
ZRNK	**Zerenda**	**51.56 313**	*e*P	**P**		**09 00 47.1**	**+0.3**
comp=Z,3.9nm,0.6s							
EYAK	**Cordova Ski Ar**	**51.70 37**	*e*P	**P**		**09 00 49.5**	**+1.8**
comp=Z,55nm,1.7s							
DOT	**Dot Lake**	**52.15 33**	*e*P	**P**		**09 00 52.4**	**+1.4**
comp=Z,32nm,1.8s							
BMRM	**Bremner River**	**52.21 37**	*e*P	**P**		**09 00 53.4**	**+1.9**
comp=Z,13nm,1.3s							
KKAR	**Karatay Array**	**52.99 301**	*e*P	**P**		**09 00 58.5**	**+0.9**
KKAR	**Karatay Array**	**52.99 301**	*e*P	**P**		**09 00 58.5**	**+0.9**
FITZ	**Fitzroy Crossi**	**55.54 197**	P	**P**		**09 01 17.0**	**+0.8**
comp=Z,2.5nm,0.6s,baz=25,slow=6.2,SNR=11							
FITZ	**Fitzroy Crossi**	**55.54 197**	*e*P	**P**		**09 01 17.1**	**+0.9**
comp=Z,23nm,1.8s							
DZET	**Dzherino**	**55.61 296**	P	**P**		**09 01 16.4**	**-0.4**
DZET			pmax	pmax			
comp=Z,6.0nm,0.5s							
INK	**Inuvik**	**55.72 27**	P	**P**		**09 01 18.4**	**+1.5**
comp=Z,1.9nm,0.6s,baz=298,slow=7.8,SNR=10							
INK	**Inuvik**	**55.72 27**	*e*P	**P**		**09 01 18.4**	**+1.5**
comp=Z,2.5nm,0.7s							
WRAB	**Tennant Creek**	**55.87 187**	*e*P	**P**		**09 01 18.4**	**-0.1**
WRAB			pmax	pmax			
comp=Z,54nm,2.0s							
WRAB	**Tennant Creek**	**55.87 187**	*e*P	**P**		**09 01 18.4**	**-0.1**
comp=Z,54nm,2.0s							
WB2	**Warramunga Arr**	**55.88 187**	*e*P	**P**		**09 01 18.8**	**+0.2**
comp=Z,40nm,1.8s							
WRA	**Warramunga Arr**	**55.88 187**	P	**P**		**09 01 18.7**	**+0.1**
comp=Z,3.0nm,0.5s,baz=1.6,slow=7.6,SNR=88							
ARU	**Arti**	**56.66 319**	*c i*P	**P**		**09 01 23.7**	**-0.1**
ARU			S	**S**		**09 09 20.8**	**+8.6**
ARU			SS	**SS**		**09 12 58.1**	**-1.8**
ARU			pmax	pmax			
comp=Z,10.0nm,0.7s							
ARU	**Arti**	**56.66 319**	*e*P	**P**		**09 01 24.0**	**+0.2**
comp=Z,12nm,0.5s							
AB31	**Akbulak array**	**58.04 310**	*i*P	**P**		**09 01 33.1**	**-0.6**
AB31			pmax	pmax			
comp=Z,2.0nm,0.4s							
ABKAR	**Akbulak array**	**58.04 310**	*e*P	**P**		**09 01 33.8**	**+0.1**
AKTO	**Aktyubinsk**	**58.82 312**	LR	LR		09 27 25.3	
comp=Z,38nm,19.4s,baz=351,slow=36							
AKTO	**Aktyubinsk**	**58.82 312**	P	**P**		**09 01 35.6**	**-3.5**
AKTO			pmax	pmax			
comp=Z,4.0nm,0.8s							
AS01	**Alice Springs**	**59.60 187**	*e*P	**P**		**09 01 45.7**	**+1.0**
AS31	**Alice Springs**	**59.60 187**	*e*P	**P**		**09 01 45.1**	**+0.3**
comp=Z,1.9nm,1.1s							
ASAR	**Alice Springs**	**59.60 187**	P	**P**		**09 01 44.9**	**+0.1**
comp=Z,1.2nm,0.6s,baz=18,slow=11,SNR=23							
KLMR	**Klimovskoe**	**64.26 328**	*e*P	**P**		**09 02 14.3**	**-1.2**
KLMR			pmax	pmax			
comp=Z,8.0nm,1.0s							
ARCES	**ARCESS Array B**	**64.74 339**	P	**P**		**09 02 18.9**	**+0.3**
comp=Z,2.9nm,0.8s,baz=56,slow=8.9,SNR=9.0							
YKA	**Yellowknife Ar**	**65.15 30**	P	**P**		**09 02 21.8**	**+0.5**
comp=Z,0.4nm,0.8s,baz=302,slow=6.4,SNR=6.4							
STKA	**Stephens Creek**	**67.47 179**	P	**P**		**09 02 36.9**	**+0.4**
comp=Z,2.3nm,0.8s,baz=338,slow=16,SNR=2.6							
OBN	**Obninsk**	**68.50 323**	*i*P	**P**		**09 02 42.1**	**-0.6**
OBN			pmax	pmax			
comp=Z,3.0nm,0.8s							
FIA1	**FINESS Array S**	**69.41 332**	*e*P	**P**		**09 02 48.1**	**-0.2**
FINES	**FINESS Array B**	**69.41 332**	P	**P**		**09 02 47.7**	**-0.6**
comp=Z,4.2nm,0.8s,baz=35,slow=7.0,SNR=11							
FINES	**FINESS Array B**	**69.41 332**	*e*P	**P**		**09 02 47.9**	**-0.4**
KBZ	**Khabaz**	**71.01 311**	P	**P**		**09 02 59.2**	**+0.8**
comp=Z,4.3nm,0.8s,baz=78,slow=4.3,SNR=11							
KIV	**Kislovodsk**	**71.02 311**	*i*P	**P**		**09 02 57.3**	**-1.3**
KIV			*i*			09 03 18.0	
KIV			pmax	pmax			
comp=Z,7.0nm,0.9s							
NC405	**NORSAR Array S**	**74.67 337**	*e*P	**P**		**09 03 20.2**	**+0.4**
AKASG	**Malin Array Be**	**74.67 322**	P	**P**		**09 03 19.7**	**-0.3**
comp=Z,3.9nm,0.6s,baz=47,slow=6.1,SNR=18							
KIEV	**Kiev**	**74.69 322**	*e*P	**P**		**09 03 19.5**	**-0.6**
KIEV			pmax	pmax			
comp=Z,6.0nm,0.7s							
KIEV	**Kiev**	**74.69 322**	*e*P	**P**		**09 03 19.5**	**-0.6**
comp=Z,6.3nm,0.7s							
NC204	**NORSAR Array S**	**74.85 337**	*e*P	**P**		**09 03 21.9**	**+1.0**
NB2	**NORSAR Subarra**	**74.88 337**	P	**P**		**09 03 21.1**	**0.0**
comp=Z,1.6nm,0.7s,baz=41,slow=5.9							
NOA	**NORSAR Array B**	**74.88 337**	P	**P**		**09 03 21.2**	**+0.1**
comp=Z,2.7nm,0.8s,baz=43,slow=5.5,SNR=8.6							
NBO02	**NORSAR Array S**	**74.99 337**	*e*P	**P**		**09 03 21.8**	**+0.1**
NVAR	**Mina Array Bea**	**76.28 52**	P	**P**		**09 03 31.4**	**+1.6**
comp=Z,0.6nm,0.7s,baz=286,slow=5.6,SNR=5.8							
BUR08	**Bucovina Ar. S**	**78.66 321**	*e*P	**P**		**09 03 43.4**	**+0.6**
TESR	**Tescani**	**78.66 320**	⇓*i*P	**P**		**09 03 42.9**	**+0.3**
BURAR	**Bucovina Array**	**78.67 321**	⇑*i*P	**P**		**09 03 43.2**	**+0.4**
BURAR	**Bucovina Array**	**78.67 321**	⇑P	**P**		**09 03 43.2**	**+0.4**
BRTR	**Keskin Array B**	**78.98 311**	P	**P**		**09 03 44.5**	**-0.1**
comp=Z,1.3nm,0.6s,baz=126,slow=4.4,SNR=7.9							
BRTR	**Keskin Array B**	**78.98 311**	*ce*P	**P**		**09 03 44.9**	**+0.2**
BRTR			pmax	pmax			
comp=Z,1.0nm,0.6s							
PDAR	**Pinedale Array**	**79.00 45**	P	**P**		**09 03 45.9**	**+1.0**
comp=Z,0.4nm,0.7s,baz=299,slow=3.7,SNR=6.3							
VRI	**Vrincioaia**	**79.04 319**	⇑*i*P	**P**		**09 03 45.9**	**+1.2**
VRI	**Vrincioaia**	**79.04 319**	⇑P	**P**		**09 03 45.9**	**+1.2**
BR231	**Keskin MP Arra**	**79.43 312**	*e*P	**P**		**09 03 45.4**	**-1.7**
ARR	**Arges**	**80.47 320**	⇓*i*P	**P**		**09 03 54.2**	**+1.6**
DRGR		**80.49 322**	⇓*i*P	**P**		**09 03 52.7**	**+0.1**
DRGR		**80.49 322**	⇓P	**P**		**09 03 52.7**	**+0.1**
CLL	**Collm**	**81.64 330**	*e*P	P		09 03 53.0	-5.6
CLL			*i*			09 03 58.2	
comp=Z,4.0nm,1.0s							
CLL			*i*			09 04 00.9	
CLL	**Collm**	**81.64 330**	*e*P	P		09 03 53.0	-5.6
MDVR	**Moldovita**	**82.38 321**	⇓*i*P	**P**		**09 04 02.1**	**-0.6**
GERES	**GERESS Array B**	**83.22 328**	P	**P**		**09 04 06.2**	**-0.8**
comp=Z,0.3nm,0.4s,baz=49,slow=6.1,SNR=3.8							
PDG	**Podgorica**	**85.31 321**	⇓*i*P	**P**		**09 04 17.9**	**+0.4**
BFO	**Black Forest**	**85.86 330**	*ce*P	**P**		**09 04 20.8**	**+0.6**
TX31	**Lajitas Ar. Si**	**91.41 52**	*e*P	**P**		**09 04 48.5**	**+1.4**
TXAR	**Lajitas Array**	**91.42 52**	P	**P**		**09 04 48.4**	**+1.4**
comp=Z,0.6nm,0.7s,baz=319,slow=3.4,SNR=8.0							
QSPA	**South Pole Qui**	**125.69 180**	*e*PKPdf	**PKPdf**		**09 10 41.7**	**+0.7**
LPAZ	**La Paz**	**147.93 60**	PKPbc	**PKPbc**		**09 11 25.8**	**-1.1**
comp=Z,0.9nm,0.7s,baz=220,slow=6.5,SNR=5.7							
LPAZ	**La Paz**	**147.93 60**	*e*PKP2	**PKPab**		**09 11 28.6**	**-0.9**
LPAZ	**La Paz**	**147.93 60**	*e*PKPbc	**PKPab**		**09 11 28.6**	**-0.9**
PB10	**IPOC Station P**	**150.51 74**	*e*PKPbc	**PKPbc**		**09 11 31.0**	**-1.4**
LVC	**Limon Verde**	**151.29 70**	*e*PKPbc	**PKPbc**		**09 11 36.4**	**+1.6**

*ISK **21** 08:55:11.6, 37°.28N×28°.22E, h7km, ML2.3*
*ISCJB **21** 08:55:12.5±0.5, 37°.25N±0°.03×28°.20E±0°.03, h0km, Error ellipse: s-maj=4.5km s-min=3.2km az=27.5*
*DDA **21** 08:55:12.5, 37°.25N×28°.21E, h7km, Md2.7, Suspected Mining explosion.*
*CSEM **21** 08:55:12.5±0.2, 37°.26N×28°.22E, h1km, ML2.3, Error ellipse: s-maj=3.9km s-min=2.9km az=25.0, Suspected Mining explosion.*

ISC 21 08:55:11.9±0.8, 37°.28N±0°.03×28°.13E±0°.03, h0km, n25, σ1§06/40, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.19**	**139**	PG	**Pg**	**08 55 15.0**	**-0.5**
YER				*e*SG	**Sg**	**08 55 18.4**	**+0.5**
YER	**Yerkesik**	**0.19**	**139**	*i* Pg	**Pg**	**08 55 15.0**	**-0.5**
YER				*e*Sg	**Sg**	**08 55 18.4**	**+0.5**
AYDN	**Tasoluk**	**0.43**	**333**	P	**Pb**	**08 55 22.2**	**-0.3**
AYDN				S	**Sb**	**08 55 29.7**	**+0.1**
AYDN	**Tasoluk**	**0.43**	**333**	*i* P	**Pb**	**08 55 22.2**	**-0.3**
AYDN				*i* S	**Sb**	**08 55 29.7**	**+0.1**
TURN	**Turunc**	**0.55**	**137**	*i* P	**Pg**	**08 55 21.3**	**-1.2**
TURN				*i* S	**Sg**	**08 55 29.7**	**0.0**
BDRM	**Kayabasi**	**0.59**	**249**	P	**Pb**	**08 55 25.0**	**-0.1**
BDRM				S	**Sb**	**08 55 34.3**	**+0.4**
BDRM	**Kayabasi**	**0.59**	**249**	*i* P	**Pb**	**08 55 25.0**	**-0.1**
BDRM				*i* S	**Sb**	**08 55 34.3**	**+0.4**
DALY	**Dalyan (Mu¨la**	**0.62**	**137**	*e*PG	**Pg**	**08 55 23.3**	**-0.5**
DALY				*e*SG	**Sg**	**08 55 31.5**	**-0.4**
DALY	**Dalyan (Mu¨la**	**0.62**	**137**	*e*Pg	**Pg**	**08 55 23.3**	**-0.5**
DALY				*e*Sg	**Sg**	**08 55 31.5**	**-0.4**
BODT	**Bodrum**	**0.69**	**252**	*e*PG	**Pb**	**08 55 26.2**	**-0.6**
BODT				*e*SG	**Sb**	**08 55 37.8**	**+0.9**
BODT	**Bodrum**	**0.69**	**252**	*e*Pg	**Pb**	**08 55 26.2**	**-0.6**
BODT				*e*Sg	**Sb**	**08 55 37.8**	**+0.9**
AYDB	**Zeytinkoy-Aydi**	**0.69**	**344**	*e*PG	**Pb**	**08 55 26.8**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**0.69**	**344**	*e*Pg	**Pb**	**08 55 26.8**	**-0.2**
DNZL	**Cakiroluk**	**0.84**	**60**	P	**Pg**	**08 55 27.9**	**-0.1**
DNZL				S	**Sb**	**08 55 41.5**	**+0.1**
DNZL	**Cakiroluk**	**0.84**	**60**	*i* P	**Pg**	**08 55 27.9**	**-0.1**
DNZL				*i* S	**Sb**	**08 55 41.5**	**+0.1**
FETY	**Fethiye**	**1.00**	**130**	*e*PG	**Pg**	**08 55 30.2**	**-0.7**
FETY	**Fethiye**	**1.00**	**130**	*e*Pg	**Pg**	**08 55 30.3**	**-0.7**
NIS1	**Nisyros Isl.**	**1.02**	**229**	*e*PG	**Pn**	**08 55 32.9**	**-0.6**
NIS1	**Nisyros Isl.**	**1.02**	**229**	*e*Pg	**Pn**	**08 55 32.9**	**-0.6**
GOLH	**Golhisar**	**1.14**	**92**	P	**Pg**	**08 55 33.4**	**-0.4**
GOLH	**Golhisar**	**1.14**	**92**	*i* P	**Pg**	**08 55 33.4**	**-0.4**
GOLH				*i* S	**Sn**	**08 55 53.2**	**+1.5**
ELL	**Elmali**	**1.52**	**110**	*e*PN	**Pn**	**08 55 38.7**	**-1.7**
ELL	**Elmali**	**1.52**	**110**	*e*Pn	**Pn**	**08 55 38.7**	**-1.7**
AKAS	**Kas**	**1.58**	**131**	P	**Pn**	**08 55 41.1**	**-0.2**
AKAS	**Kas**	**1.58**	**131**	*i* P	**Pn**	**08 55 41.1**	**-0.2**
AKAS				*i* S	**Sg**	**08 56 07.6**	**+5.0**

*DJA **21** 09:00:33.0±0.5, 8°.S±5°.×11°.4E±°, h10km±6km, M3.2/7, MLv3.2/7*
*IDC **21** 09:00:33.7±7.3, 9°.30S×113°.83E, h0km, mb3.4/3, mb1 3.6/3, mb1mx3.3/39, mbtmp3.5/3, Error ellipse: s-maj=134.7km s-min=105.0km az=19.0*

ISC 21 09:00:28.8±3.5, 8°.2S±0°.1×113°.8E±0°.3, h16km, n7, σ0§69/6, mb3.4/3, Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GMJI	**Gumukmas**	**0.33**	**249**	P	Pn	09 00 45.1	+6.2
JAGI	**Jajag, Banyuwa**	**0.51**	**128**	P	**Pg**	**09 00 39.3**	**+0.4**
ABJI	**Asem Bagus**	**0.60**	**53**	P	**Pb**	**09 00 41.4**	**+0.5**
SRBI	**Singaraja**	**1.45**	**87**	P	**Pn**	**09 00 53.4**	**-0.9**
WRA	**Warramunga Arr**	**23.12**	**123**	P	**P**	**09 05 34.4**	**-0.1**
0.3nm,0.5s,baz=295,slow=12,SNR=7.7							
ASAR	**Alice Springs**	**24.71**	**131**	P	**P**	**09 05 49.9**	**+0.3**
0.3nm,0.3s,baz=304,slow=9.3,SNR=9.7							
STKA	**Stephens Creek**	**35.03**	**136**	P	**P**	**09 07 20.9**	**-0.1**
0.5nm,0.4s,baz=304,slow=7.3,SNR=2.9							

IDC 21 09:00:33.9±55.0, 16°.86S×178°.76W, h0km, mb3.9/3, mb1 4.1/3, mb1mx3.5/37, mbtmp3.9/3, Error ellipse: s-maj=1015.0km s-min=147.1km az=78.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**38.86**	**240**	P	P	09 08 01.8	+0.8
0.4nm,0.3s,baz=89,slow=12,SNR=3.2							
WRA	**Warramunga Arr**	**44.51**	**259**	P	P	09 08 46.9	-0.7
0.3nm,0.3s,baz=96,slow=7.8,SNR=17							
ASAR	**Alice Springs**	**44.77**	**253**	P	P	09 08 49.2	-0.4
1.8nm,0.3s,baz=89,slow=7.4,SNR=64							

*IDC **21** 09:15:36.9±1.1, 2°.24S×120°.77E, h0km, mb3.7/5, mb1 3.9/6, mb1mx3.6/33, mbtmp3.8/6, ML3.8/1, MS2.9/4, Ms1 3.0/4, ms1mx2.6/36, Error ellipse: s-maj=40.6km s-min=17.8km az=71.0*
*DJA **21** 09:15:39.3±0.4, 2°.S±4°.×12°.1E±°, h10km, M4.2/8, MLv4.2/8*
*ISCJB **21** 09:15:40.4±0.5, 2°.27S±0°.04×120°.70E±0°.06, h35km, mb3.7/5, MS3.1/3, Error ellipse: s-maj=9.1km s-min=4.8km az=33.2*

ISC 21 09:15:41.8±0.8, 2°.29S±0°.05×120°.70E±0°.06, h35km, n14, σ1§06/16, mb3.7/5, MS3.2/3, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TTSI	**Tana Toraja**	**1.15**	**230**	P	**Pn**	**09 15 59.2**	**-2.3**
TTSI				S	**Sn**	**09 16 15.4**	**-0.6**
PCI	**Palu**	**1.63**	**328**	P	**Pn**	**09 16 08.4**	**+0.4**
SPSI	**Sidrap Palu**	**1.90**	**209**	P	**Pn**	**09 16 11.4**	**-0.4**
LUWI	**Luwuk**	**2.42**	**59**	P	**Pn**	**09 16 18.2**	**-0.7**
LUWI				S	**Sn**	**09 16 47.3**	**+0.1**
KDI	**Kendari**	**2.53**	**131**	P	**Pn**	**09 16 20.0**	**-0.4**
KAPI	**Kappang**	**2.86**	**199**	Pn	**Pn**	**09 16 24.9**	**-0.1**
12nm,0.3s,baz=18,slow=8.7,SNR=35							
KAPI				Sn	**Sn**	**09 17 00.4**	**+2.1**
22nm,0.3s,baz=197,slow=22,SNR=9.7							
KAPI				LR	LR	09 17 08.7	
comp=Z,57nm,19.1s,baz=17,slow=31							
MRSI	**Marisa**	**3.02**	**24**	P	**Pn**	**09 16 26.6**	**-0.6**
MRSI				S	**Sn**	**09 17 01.5**	**-0.6**
WRA	**Warramunga Arr**	**22.03**	**144**	P	**P**	**09 20 33.1**	**-0.4**
2.0nm,0.8s,baz=322,slow=11,SNR=15							
ASAR	**Alice Springs**	**24.80**	**150**	P	**P**	**09 21 01.2**	**+0.5**
1.0nm,0.8s,baz=323,slow=9.0,SNR=7.2							
CMAR	**Chiang Mai Arr**	**29.73**	**315**	P	**P**	**09 21 46.5**	**+1.4**
1.1nm,0.7s,baz=138,slow=6.7,SNR=4.6							
CMAR				LR	LR	09 34 48.9	
comp=Z,26nm,20.7s,baz=120,slow=39							
SONM	**Songino Array**	**51.47**	**348**	P	**P**	**09 24 43.8**	**0.0**
1.2nm,0.6s,baz=159,slow=9.6,SNR=3.1							
MKAR	**Makanchi Array**	**59.40**	**330**	P	**P**	**09 25 40.1**	**-0.7**
0.3nm,0.5s,baz=135,slow=8.0,SNR=5.0							
YAK	**Yakutsk**	**64.52**	**5**	LR	LR	09 55 57.9	
comp=Z,22nm,19.6s,baz=98,slow=38							
MAW	**Mawson**	**76.08**	**200**	LR	LR	10 01 06.5	
comp=Z,10.0nm,18.4s,baz=60,slow=36							

*NIED **21** 09:19:00, 39°.10N×142°.40E, h41km, Mw3.5 Best double couple: M0:2.36000×10^14 NP1:φ0=209.00000°, δ42.00000°, λ-48.00000°. NP2:φ0=339.00000°, δ60.00000°, λ-121.00000°.*

JMA 21 09:19:05.5±0.1, 39°.12N×142°.41E, h33km±2km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.58**	**266**	P	Pb	09 19 17.1	-0.2
OFUJ				S	Sb	09 19 25.1	-0.3
MIYJ	**Miyakonagasawa**	**0.65**	**315**	P	Pn	09 19 17.8	-0.5
MIYJ				S	Sb	09 19 26.3	-1.0
JOM	**Ohasama**	**0.94**	**292**	P	Pn	09 19 22.6	+0.3
JOM				S	Sb	09 19 35.2	-0.2
JMK	**Ichinoseki**	**0.94**	**260**	P	Pn	09 19 22.6	+0.2
JIO	**Ouri**	**1.06**	**232**	P	Pn	09 19 23.7	-0.4
JIO				S	Sn	09 19 36.5	-1.2
JKZ	**Kuzumaki**	**1.20**	**316**	P	Pb	09 19 27.0	-0.8
JKZ				S	Sn	09 19 41.8	+0.6
JRG	**Rokugo**	**1.41**	**282**	P	Pn	09 19 29.9	+1.1
JANG	**Nango**	**1.43**	**331**	P	Pn	09 19 30.0	+0.9
JANG				S	Sn	09 19 48.0	+1.2
JOU	**Okura**	**1.56**	**242**	P	Pb	09 19 32.4	-1.4
JOU				S	Sn	09 19 51.5	+1.5
JMM	**Marumori**	**1.78**	**226**	P	Pn	09 19 34.6	+0.6

*ISN **21** 09:35:40.7±2.3, 39°.22N×42°.35E, h36km±999km, ML3.4*
*DDA **21** 09:35:47.4, 39°.09N×42°.38E, h3km, Ml3.4*
*ISCJB **21** 09:35:47.9±0.7, 39°.11N±0°.03×42°.33E±0°.03, h3km±6km, Error ellipse: s-maj=5.6km s-min=4.0km az=18.7*
*ISK **21** 09:35:47.9, 39°.09N×42°.31E, h9km, MD3.5*
*CSEM **21** 09:35:47.9±0.2, 39°.11N×42°.34E, h2km, ML3.4, Error ellipse: s-maj=6.9km s-min=5.0km az=13.0*
*NSSP **21** 09:35:50.1, 39°.10N×42°.28E, h5km, Ms3.5*

ISC 21 09:35:48.3±1.2, 39°.09N±0°.02×42°.34E±0°.02, h7km±11km, n59, σ1§07/68, 1C-2D, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EKAR	**Karacoban**	**0.27**	**308**	P	**Pg**	**09 35 54.1**	**+0.4**
EKAR	**Karacoban**	**0.27**	**308**	*i* P	**Pg**	**09 35 54.1**	**+0.4**
TUTA	**Tutak**	**0.48**	**50**	P	**Pg**	**09 35 56.7**	**-1.0**
TUTA	**Tutak**	**0.48**	**50**	*i* P	**Pg**	**09 35 56.7**	**-1.0**
EATA	**Eleskirt**	**0.78**	**9**	P	**Pg**	**09 36 02.5**	**-0.9**
EATA	**Eleskirt**	**0.78**	**9**	*i* P	**Pg**	**09 36 02.5**	**-0.9**
BNGL	**BINGOL**	**0.94**	**262**	*i* P	**Pg**	**09 36 05.4**	**-0.8**
VANB	**Van**	**0.96**	**121**	*e*PG	**Pb**	**09 36 07.2**	**-0.1**
VANB				*e*SG	**Sb**	**09 36 21.2**	**+1.0**
VANB	**Van**	**0.96**	**121**	*e*Pg	**Pb**	**09 36 07.2**	**-0.1**
VANB				*e*Sg	**Sb**	**09 36 21.2**	**+1.0**
GEVA	**Gevas**	**0.96**	**144**	*i* P	**Pg**	**09 36 04.4**	**-2.3**
VMUR	**Van-Muradiye**	**0.97**	**95**	P	**Pg**	**09 36 05.2**	**-1.6**
VMUR	**Van-Muradiye**	**0.97**	**95**	*i* P	**Pg**	**09 36 05.2**	**-1.6**
TVAN	**Van**	**1.00**	**123**	P	**Pg**	**09 36 06.3**	**-1.3**
TVAN	**Van**	**1.00**	**123**	*i* P	**Pg**	**09 36 06.3**	**-1.3**
HOMI	**Horasan**	**1.01**	**341**	*i* P	**Pg**	**09 36 07.2**	**-0.5**
ERZM	**Erzurum**	**1.11**	**318**	P	**Pg**	**09 36 09.6**	**0.0**
ERZM	**Erzurum**	**1.11**	**318**	*i* P	**Pg**	**09 36 09.6**	**0.0**
EZM	**Erzurum**	**1.11**	**318**	*e*PN	**Pg**	**09 36 09.0**	**-0.6**
EZM				*e*SN	**Sb**	**09 36 24.9**	**0.0**
DYDN	**Diyadin**	**1.14**	**66**	P	**Pg**	**09 36 09.0**	**-1.2**
DYDN	**Diyadin**	**1.14**	**66**	*i* P	**Pg**	**09 36 09.0**	**-1.2**
ECAT	**Cat-ERZURUM**	**1.18**	**297**	P	**Pg**	**09 36 10.0**	**-0.9**
ECAT	**Cat-ERZURUM**	**1.18**	**297**	*i* P	**Pg**	**09 36 10.0**	**-0.9**
CLDR	**Caldiran**	**1.23**	**87**	*e*PN	**Pg**	**09 36 11.7**	**-0.2**
CLDR				*e*SN	**Sn**	**09 36 29.4**	**+0.2**
CLDR	**Caldiran**	**1.23**	**87**	*e*Pn	**Pg**	**09 36 11.7**	**-0.2**
CLDR				*e*Sn	**Sn**	**09 36 29.4**	**+0.2**
BNGB	**Bing¨¶l**	**1.29**	**266**	*e*PN	**Pn**	**09 36 11.7**	**-1.2**
BNGB				*e*SN

MNBS	**Baschi**	**1.47 342**	*e*P	**Pn**	**09 40 30.2**	**-1.7**
	14nm,0.3s					
MNBS			*e*S	**Sn**	**09 40 48.3**	**-3.4**
	157nm,0.3s					
KDJ	**Kajisay**	**1.48 249**	⇑*i*P	**Pg**	**09 40 32.8**	**-0.1**
	baz=247					
KDJ			⇑*i*S	**Sg**	**09 40 53.0**	**+0.9**
	baz=247					
KOTS	**Kotyrbulak**	**1.52 292**	*e*P	**Pg**	**09 40 33.5**	**-0.1**
KOTS			*e*S	**Sg**	**09 40 53.7**	**+0.4**
MDOK	**Medeo**	**1.54 289**	*e*P	**Pg**	**09 40 33.7**	**-0.3**
	6.6nm,0.2s					
MDOK			*e*S	**Sg**	**09 40 53.9**	**0.0**
	62nm,0.6s					
TNSS	**Tian-Shan**	**1.58 284**	*e*P	**Pg**	**09 40 34.5**	**-0.3**
	14nm,0.2s					
TNSS			*e*S	**Sg**	**09 40 55.6**	**+0.2**
	62nm,0.3s					
DJR	**Jarkent**	**1.74 18**	*e*P	**Pb**	**09 40 36.1**	**-0.9**
	76nm,0.2s					
DJR			*e*S	**Sn**	**09 40 58.2**	**0.0**
	103nm,0.3s					
ARXS	**Arharly**	**1.77 330**	*e*P	**Pb**	**09 40 37.2**	**-0.3**
	22nm,0.3s					
ARXS			*e*S	**Sb**	**09 41 00.4**	**+0.3**
	99nm,0.5s					
IZV	**Izvestkoviy**	**1.82 282**	*e*P	**Pb**	**09 40 38.6**	**+0.1**
	35nm,0.2s					
IZV			*e*S	**Sg**	**09 41 02.9**	**-0.1**
	182nm,0.5s					
CHKK	**Chushkaly**	**1.91 309**	*e*P	**Pb**	**09 40 39.9**	**+0.1**
	10nm,0.2s					
CHKK			*e*S	**Sb**	**09 41 04.7**	**+0.8**
	128nm,0.4s					
MTBS	**Maitube**	**1.97 284**	*e*P	**Pg**	**09 40 43.2**	**+0.9**
	21nm,0.4s					
MTBS			*e*S	**Sg**	**09 41 10.4**	**+2.6**
	93nm,0.4s					
ULHL	**Ulahol**	**2.12 259**	⇑*i*P	**Pb**	**09 40 43.2**	**-0.3**
	baz=257					
ULHL			⇑*i*S	**Sg**	**09 41 12.0**	**-0.4**
	baz=257					
KST	**Kastek**	**2.29 280**	*e*P	**Pb**	**09 40 46.5**	**0.0**
	8.9nm,0.3s					
KST			*e*S	**Sg**	**09 41 16.5**	**-1.6**
	57nm,0.5s					
BOOM	**Boomskoye usch**	**2.30 266**	⇓*e*P	**Pb**	**09 40 45.4**	**-1.2**
	baz=265					
BOOM			⇓*e*S	**Sb**	**09 41 15.2**	**-0.2**
	baz=265					
KUU	**Kurty**	**2.31 302**	*e*P	**Pb**	**09 40 45.6**	**-1.2**
	12nm,0.3s					
KUU			*e*S	**Sb**	**09 41 14.4**	**-1.4**
	66nm,0.4s					
TDK	**Taldyqorghan**	**2.37 349**	*e*P	**Pb**	**09 40 47.1**	**-0.7**
	91nm,0.9s					
TDK			*e*S	**Sb**	**09 41 17.1**	**-0.2**
	76nm,0.2s					
DGS	**Degeres**	**2.46 284**	*e*P	**Pb**	**09 40 49.5**	**+0.1**
	25nm,0.3s					
DGS			*e*S	**Sb**	**09 41 21.2**	**+1.1**
	102nm,0.6s					
TKM2	**Tokmak 2**	**2.55 277**	⇑*i*P	**Pb**	**09 40 50.3**	**-0.5**
	baz=275					
TKM2			⇑*i*S	**Sb**	**09 41 23.7**	**+1.1**
	baz=275					
TKM2	**Tokmak 2**	**2.55 277**	⇓Pg	**Pb**	**09 40 50.5**	**-0.3**
	10nm,0.5s					
TKM2			⇑Lg	Lg	09 41 25.8	
	29nm,0.4s					
NRN	**Naryn**	**2.58 242**	⇓*e*P	**Pb**	**09 40 49.9**	**-1.6**
	baz=241					
NRN			⇓*e*S	**Sb**	**09 41 22.6**	**-1.2**
	baz=241					
KAPS	**Kapalarasan**	**2.61 5**	*e*P	**Pb**	**09 40 51.2**	**-0.7**
	57nm,0.4s					
KAPS			*e*S	**Sb**	**09 41 24.1**	**-0.2**
	50nm,0.5s					
KZA	**Kyzart**	**2.87 259**	⇓*i*P	**Pb**	**09 40 55.0**	**-1.5**
	baz=258					
KZA			⇓*i*S	**Sb**	**09 41 33.8**	**+1.6**
	baz=258					
AAK	**Ala-Archa**	**3.35 271**	⇑*i*P	**Pb**	**09 41 02.9**	**-1.6**
	baz=270					
AAK			⇑*i*S	**Sb**	**09 41 48.6**	**+2.8**
	baz=270					
AAK	**Ala-Archa**	**3.35 271**	⇑Pg	**Pb**	**09 41 03.0**	**-1.6**
	1.5nm,0.3s					
AAK			⇓Lg	Lg	09 41 48.6	
	12nm,0.6s					
MAKZ	**Makanchi**	**4.63 26**	⇑Pn	**Pn**	**09 41 17.6**	**+2.4**
	0.8nm,0.3s					
MAKZ			⇓Lg	Lg	09 42 27.5	
	1.5nm,0.7s					
MK31	**Makanchi Array**	**4.72 28**	⇑Pn	**Pn**	**09 41 18.5**	**+2.1**
	0.2nm,0.3s,baz=102,slow=15,SNR=26					
MK31			⇓Sn	**Sn**	**09 42 13.5**	**+1.9**
	0.7nm,0.4s,baz=210,slow=25,SNR=4.4					
MK31			⇓Lg	Lg	09 42 29.5	
	1.2nm,0.6s,baz=209,slow=29,SNR=4.7					
KK31	**Karatay Array**	**6.28 277**	⇓Pg	Pb	09 41 58.3	+4.0
	0.6nm,0.5s,baz=88,slow=16,SNR=5.9					
KK31			⇓Lg	Lg	09 43 20.9	
	0.9nm,0.4s,baz=91,slow=29,SNR=7.6					

NIED ***21*** *09:43:00,37°.60N×141°.70E,h14km,Mw3.7 Best double couple: M0:3.41000×10^14 NP1:φs172.00000°,δ44.00000°, λ159.00000°. NP2:φs277.00000°,δ76.00000°,λ48.00000°.*
IDC ***21*** *09:43:49.2±1.0,37°.45N×142°.13E,h0km,mb3.6/5, mb1 3.8/9,mb1mx3.6/50,mbtmp3.8/9,ML3.9/4,MS2.9/1, Ms1 2.9/1,ms1mx2.2/39,Error ellipse: s-maj=30.3km s-min=18.2km az=94.0*
JMA ***21*** *09:43:51.6±0.1,37°.58N×141°.70E,h23km±3km,M4.0*
JMA Felt I J1.
ISC 21 09:43:48.5±1.9,37°.51N±0°.05×141°.78E±0°.07,h8km±12km, n17,σ2°32/23,mb3.7/5,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.73**	**259**	P	**Pn**	**09 44 04.9**	**-0.2**
JFK				S	**Sg**	**09 44 13.7**	**+1.6**
JMM	**Marumori**	**0.86**	**295**	P	**Pn**	**09 44 06.2**	**-0.6**
JMM				S	**Sg**	**09 44 16.2**	**+0.1**
ONAJ	**Iwakimizuishiy**	**0.88**	**243**	P	**Pn**	**09 44 07.2**	**0.0**
JIO	**Ouri**	**1.00**	**340**	P	**Pn**	**09 44 08.3**	**-0.5**
JIO				S	**Sg**	**09 44 19.3**	**-1.4**
JFT	**Otama**	**1.14**	**271**	P	**Pg**	**09 44 11.6**	**+1.1**
JFT				S	**Sb**	**09 44 25.3**	**-0.2**
JOU	**Okura**	**1.23**	**314**	P	**Pg**	**09 44 12.3**	**+0.3**
JOU				S	**Sb**	**09 44 27.1**	**-0.8**
MJAR	**Matsushiro Arr**	**3.01**	**252**	Pn	**Pb**	**09 44 39.4**	**-3.0**
	13nm,0.3s,baz=79,slow=16,SNR=108						
MJAR				Sn	**Sb**	**09 45 17.8**	**-1.6**
	10nm,0.3s,baz=74,slow=33,SNR=6.7						
MAT	**Matsushiro**	**3.02**	**252**	P	**Pb**	**09 44 39.5**	**-2.9**
MAT				S	**Sn**	**09 45 15.8**	**+3.0**
JHJ	**Hachijo jima 2**	**4.67**	**201**	Pn	**Pn**	**09 45 02.0**	**+2.7**
	24nm,0.3s,baz=324,slow=22,SNR=12						
JHJ				Sn	**Sn**	**09 45 52.1**	**-1.6**
	12nm,0.3s,baz=72,slow=20,SNR=2.1						
ASAJ	**Asahikawa**	**6.63**	**5**	Pn	**Pn**	**09 45 26.6**	**+0.5**
	1.2nm,0.3s,baz=212,slow=13,SNR=11						
JCJ	**Chichijima**	**10.39**	**178**	Pn	**Pn**	**09 46 19.5**	**+1.7**
	3.2nm,0.3s,baz=287,slow=22,SNR=6.1						
JCJ				Sn	**Sn**	**09 48 07.6**	**-6.8**
	1.5nm,0.3s,baz=288,slow=20,SNR=3.3						
PETK	**Petropavlovsk-**	**19.13**	**30**	LR	LR	09 56 16.4	
	comp=Z,32nm,19.4s,baz=114,slow=39						
MKAR	**Makanchi Array**	**44.11**	**302**	P	P	09 52 01.9	+4.8
	1.2nm,1.0s,baz=73,slow=10,SNR=4.4						
KURBB	**Kurchatov Arra**	**45.94**	**308**	P	P	09 52 16.2	+4.7
	0.7nm,0.4s,baz=75,slow=8.7,SNR=4.4						
WRA	**Warramunga Arr**	**57.57**	**188**	P	**P**	**09 53 40.0**	**+1.3**
	0.4nm,0.5s,baz=6.0,slow=7.1,SNR=13						
ASAR	**Alice Springs**	**61.30**	**188**	P	**P**	**09 54 06.3**	**+1.9**
	0.6nm,0.8s,baz=16,slow=12,SNR=4.9						
YKA	**Yellowknife Ar**	**63.25**	**30**	P	**P**	**09 54 18.4**	**+1.4**
	0.2nm,0.8s,baz=308,slow=7.0,SNR=3.2						

IDC ***21*** *09:53:48.5±0.4,7°.24S×147°.03E,h0km,mb5.0/29, mb1 5.0/31,mb1mx5.0/38,mbtmp5.0/31,ML4.1/2,MS4.0/14, Ms1 4.0/14,ms1mx3.7/33,Error ellipse: s-maj=17.0km s-min=9.7km az=84.0*
MOS ***21*** *09:53:52.2±1.0,7°.22S×146°.95E,h33km,mb5.3/35,Error ellipse: s-maj=9.7km s-min=5.8km az=100.6*
ISCJB ***21*** *09:53:52.3±0.7,7°.27S±0°.02×146°.94E±0°.03,h33km±6km, mb5.1/122,MS4.1/23,Error ellipse: s-maj=5.1km s-min=3.8km az=165.1*
BJI ***21*** *09:53:54.5,6°.77S×147°.18E,h42km,mb5.1/62,mB5.0/39, Ms4.6/36,Ms7 4.2/25*
GCMT ***21*** *09:53:55.8±0.3,7°.30S×147°.16E,h27km±1km,MW5.0/70, Moment Tensor Solution. s40,c46; s70,c98; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr~3.04±.20; Mθθ1.91±.12; Mφφ1.13±.13; Mrθ1.49±.19; Mφφ-1.62±.07; Mφr~2.63±.26; Best double couple: M0=4.34000×10^16 NP1:φs323.00000°,δ67.00000°,λ-78.00000°. NP2: φs114.00000°,δ25.00000°,λ-117.00000°. Principal axes: T 4.2980, Plg22.0000°, Azm44.0000°; N 0.0850, Plg11.0000°, Azm139.0000°; P -4.3830, Plg65.0000°, Azm254.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
NEIC ***21*** *09:53:55.9±0.5,7°.29S×146°.95E,h54km±5km,mb5.1/50 Error ellipse: s-maj=4.7km s-min=3.3km az=79.0*
NEIC Felt at Wau.
DJA ***21*** *09:53:55.6±1.3,7°.5S±3°×14°.7E±°,h39km±10km,M5.1/35, mb5.1/35,mB5.4/7,MLv5.3/1,Mw(mB)4.9/7,Mwp7.4/1*
ISC 21 09:53:55.1±0.5,7°.32S±0°.03×147°.01E±0.05,h48km±3km, h48km:pP-P,n318,σ1°35/350,mb5.2/121,MS4.1/26,9C-7D, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.08**	**176**	Pn	**Pn**	**09 54 27.7**	**+0.1**
	858nm,0.3s,baz=27,slow=5.3,SNR=374						
PMG				Sn	**Sn**	**09 54 56.7**	**+4.3**
	404nm,0.3s,baz=95,slow=10,SNR=8.5						
PMG	**Port Moresby**	**2.08**	**176**	*de*P	**Pn**	**09 54 27.6**	**0.0**
PMG	**Port Moresby**	**2.08**	**176**	*e*Pn	**Pn**	**09 54 27.9**	**+0.3**
PMG				*e*Sn	**Sn**	**09 54 50.1**	**-2.2**
PMG				Sn	Sn	09 54 56.7	+4.3
MANU	**Manus Island**	**5.25**	**4**	*e*Pn	**Pn**	**09 55 11.6**	**+0.5**
RABL	**Rabaul**	**6.00**	**59**	*e*Pn	**Pn**	**09 55 18.8**	**-2.6**
COEN	**Coen**	**7.60**	**209**	P	**Pn**	**09 55 42.2**	**-1.1**
	baz=7.7,SNR=56						
COEN	**Coen**	**7.60**	**209**	*e*Pn	**Pn**	**09 55 44.0**	**+0.7**
COEN				*e*Sn	**Sn**	**09 57 08.0**	**-0.1**
JAY	**Jayapura**	**7.88**	**307**	Pn	**Pn**	**09 55 48.5**	**+1.2**
	0.1nm,0.3s,baz=90,slow=20,SNR=3.8						
GENI	**Genyem**	**8.27**	**304**	P	**Pn**	**09 55 54.5**	**+1.9**
	138nm,1.1s,4μm						
MTSU	**Mount Surprise**	**11.07**	**193**	P	**Pn**	**09 56 30.7**	**-0.2**
	baz=11,SNR=34						
CTA	**Charters Tower**	**12.72**	**183**	Pn	**Pn**	**09 56 54.8**	**+1.4**
	3.5nm,0.3s,baz=357,slow=14,SNR=28						
CTA	**Charters Tower**	**12.72**	**183**	P	**Pn**	**09 56 54.8**	**+1.4**
	baz=13						
CTAO	**Charters Tower**	**12.72**	**183**	*e*P	**Pn**	**09 56 54.6**	**+1.2**
CTAO	**Charters Tower**	**12.72**	**183**	*e*Pn	**Pn**	**09 56 54.6**	**+1.2**
HNR	**Honiara**	**12.98**	**100**	Pn	**Pn**	**09 56 59.7**	**+2.7**
	8.6nm,0.3s,baz=206,slow=4.9,SNR=3.4						
HNR				LR	LR	10 00 56.2	
	comp=Z,311nm,21.8s,baz=268,slow=33						
QIS	**Mount Isa**	**14.99**	**208**	P	**Pn**	**09 57 23.7**	**-0.3**
	baz=15,SNR=25						
KDU	**Kakadu**	**15.27**	**248**	P	**Pn**	**09 57 26.9**	**-0.7**
	baz=15,SNR=28						
MTN	**Manton Dam**	**16.56**	**249**	P	**Pn**	**09 57 44.3**	**+0.1**
	baz=17,SNR=8.3						
MTN	**Manton Dam**	**16.56**	**249**	*e*Pn	**Pn**	**09 57 44.4**	**+0.2**
	84nm,1.1s						
SWI	**Sorong**	**16.96**	**292**	P	**P**	**09 57 52.0**	**+1.5**
WB8	**Warramunga Arr**	**17.44**	**223**	P	**Pn**	**09 57 55.0**	**-0.2**
	baz=18						
WRAB	**Tennant Creek**	**17.55**	**223**	*c i*P	**Pn**	**09 57 56.4**	**-0.1**
WRAB				pmax	pmax		
	comp=Z,526nm,1.2s						
WRAB	**Tennant Creek**	**17.55**	**223**	*e*Pn	**Pn**	**09 57 56.4**	**-0.1**
	comp=Z,252nm,1.3s						
WB2	**Warramunga Arr**	**17.55**	**223**	*e*Pn	**Pn**	**09 57 56.5**	**0.0**
	comp=Z,228nm,1.2s						
WRA	**Warramunga Arr**	**17.56**	**223**	P	**Pn**	**09 57 55.7**	**-0.9**
	comp=Z,2.3nm,0.3s,baz=51,slow=12,SNR=117						
WRA				S	**Sn**	**10 01 05.7**	**-5.8**
	comp=Z,0.7nm,0.3s,baz=46,slow=22,SNR=4.8						
WRA				LR	LR	10 05 32.4	
	comp=Z,1μm,18.1s,baz=50,slow=40						
EIDS	**Eidsvold**	**18.37**	**168**	P	**Pn**	**09 58 08.1**	**+1.7**
	baz=19,SNR=5.0						
EIDS	**Eidsvold**	**18.37**	**168**	*e*P	**P**	**09 58 05.9**	**0.0**
	comp=Z,26nm,0.9s						
RMQ	**Roma**	**19.14**	**175**	P	**Pn**	**09 58 17.1**	**+1.4**
	baz=19,SNR=16						
KNRA	**Kununurra**	**19.70**	**243**	P	**P**	**09 58 20.0**	**-0.6**
	baz=20						
AS01	**Alice Springs**	**20.52**	**216**	*e*P	**P**	**09 58 30.0**	**+0.4**
LBMI	**Labuha**	**20.55**	**288**	P	Pn	09 58 35.7	+3.2
AS31	**Alice Springs**	**20.55**	**216**	*e*P	**P**	**09 58 29.9**	**+0.1**
	comp=Z,51nm,1.0s						
ASAR	**Alice Springs**	**20.55**	**216**	P	**P**	**09 58 30.1**	**+0.1**
	comp=Z,105nm,0.9s,baz=55,slow=9.8,SNR=218						
ASAR				S	**S**	**10 02 15.3**	**-2.0**
	comp=Z,9.5nm,1.0s,baz=42,slow=22,SNR=4.7						
ASAR				LR	LR	10 07 14.6	
	comp=Z,1μm,18.3s,baz=48,slow=39						
GUMO	**Guam**	**20.88**	**354**	P	**P**	**09 58 32.3**	**-1.1**
	comp=Z,45nm,0.6s,baz=168,slow=12,SNR=8.4						
GUMO				LR	LR	10 06 08.0	
	comp=Z,152nm,19.7s,baz=184,slow=36						
SOEI	**Soe**	**22.61**	**262**	P	P	09 59 01.1	+8.9
SOEI	**Soe**	**22.61**	**262**	*e*P	**P**	**09 58 52.7**	**+0.5**
	comp=Z,183nm,1.0s						
ARMA	**Armidale**	**23.39**	**170**	*e*P	**P**	**09 59 00.0**	**+0.2**
	comp=Z,95nm,1.4s						
FITZ	**Fitzroy Crossi**	**23.41**	**241**	P	**P**	**09 58 58.1**	**-1.9**
	comp=Z,18nm,1.0s,baz=75,slow=6.9,SNR=18						
FITZ				LR	LR	10 09 52.9	
	comp=Z,654nm,18.6s,baz=66,slow=41						
FITZ	**Fitzroy Crossi**	**23.41**	**241**	P	**P**	**09 58 58.6**	**-1.5**
	baz=24,SNR=14						
FITZ	**Fitzroy Crossi**	**23.41**	**241**	*e*P	**P**	**09 58 58.5**	**-1.5**
	comp=Z,49nm,1.0s						
DZM	**Mont Dzumac**	**23.80**	**130**	*e*P	**P**	**09 59 02.5**	**-1.3**
	comp=Z,99nm,1.3s						
DZM				*e*LR	LR	10 05 07.9	
	comp=Z,361nm,25.4s						
CMSA	**Cobar Meteorol**	**24.13**	**183**	P	**P**	**09 59 07.5**	**+0.9**
	baz=24,SNR=26						
STKA	**Stephens Creek**	**24.95**	**191**	P	**P**	**09 59 14.2**	**+0.2**
	comp=Z,18nm,0.7s,baz=350,slow=8.7,SNR=25						
STKA				LR	LR	10 09 47.2	
	comp=Z,844nm,18.6s,baz=9.7,slow=38						
STKA	**Stephens Creek**	**24.95**	**191**	P	**P**	**09 59 14.2**	**+0.2**
	baz=25,SNR=14						
STKA	**Stephens Creek**	**24.95**	**191**	*e*P	**P**	**09 59 14.3**	**+0.2**
STKA				pmax	pmax		
	comp=Z,6.0nm,0.9s						
STKA	**Stephens Creek**	**24.95**	**191**	*e*P	**P**	**09 59 14.3**	**+0.2**
	comp=Z,5.7nm,0.9s						
WRKA	**Warakurna**	**25.11**	**223**	P	**P**	**09 59 14.8**	**-0.8**
	baz=25,SNR=39						
DAV	**Davao City (W)**	**25.71**	**303**	LR	LR	10 08 28.8	
	comp=Z,111nm,21.7s,baz=199,slow=34						
MGCD	**Mangrove Creek**	**26.05**	**172**	P	**P**	**09 59 26.4**	**+2.4**
	baz=26,SNR=5.6						
MRSI	**Marisa**	**26.17**	**286**	P	P	09 59 37.1	+12
BUKP	**Musuan**	**26.58**	**304**	*e*P	**P**	**09 59 28.2**	**-0.9**
YNG	**Young**	**26.88**	**177**	P	**P**	**09 59 32.4**	**+0.8**
	baz=27,SNR=53						
CTBH	**Cotabato--PC H**	**26.90**	**302**	⇑*i*P	**P**	**09 59 31.6**	**-0.3**
HTT	**Hallett**	**27.04**	**195**	P	**P**	**09 59 33.8**	**+0.8**
	baz=27,SNR=14						
KAPI	**Kappang**	**27.19**	**273**	P	**P**	**09 59 36.3**	**+1.8**
	comp=Z,5.8nm,0.5s,baz=113,slow=8.9,SNR=5.1						
KAPI				LR	LR	10 12 55.6	
	comp=Z,169nm,19.8s,baz=96,slow=42						
KAPI	**Kappang**	**27.19**	**273**	*e*P	**P**	**09 59 34.5**	**0.0**
BBOO	**Buckleboo**	**27.33**	**200**	P	**P**	**09 59 35.5**	**0.0**
	baz=28,SNR=23						
BBOO	**Buckleboo**	**27.33**	**200**	*e*P	**P**	**09 59 35.7**	**+0.1**
	comp=Z,65nm,0.8s						
CAN	**Canberra**	**27.93**	**177**	*e*P	**P**	**09 59 41.7**	**+0.7**
CAN				pmax	pmax		
	comp=Z,17nm,0.9s						
CAN	**Canberra**	**27.93**	**177**	*e*P	**P**	**09 59 41.7**	**+0.7**
	comp=Z,17nm,0.9s						
CNB	**Canberra Magne**	**27.95**	**176**	P	**P**	**09 59 42.1**	**+1.0**
	baz=28,SNR=9.6						
PLAI	**Plampang**	**28.97**	**265**	P	**P**	**09 59 51.6**	**+1.1**
ARPS	**Mount Arapiles**	**29.69**	**188**	P	**P**	**09 59 57.5**	**+1.0**
	baz=30,SNR=10						
MYLDM	**Lahad Datu**	**31.04**	**293**	*e*P	**P**	**10 00 07.3**	**-1.4**
	comp=Z,34nm,1.1s						
KMBL	**Kambalda**	**33.51**	**221**	P	**P**	**10 00 30.6**	**+0.4**
	baz=34,SNR=6.0						
CBIJ	**Chichi jima**	**34.53**	**352**	P	**P**	**10 00 36.9**	**-2.1**
JCJ	**Chichijima**	**34.53**	**352**	P	**P**	**10 00 36.9**	**-2.1**
	comp=Z,63nm,0.7s,baz=299,slow=20,SNR=6.7						
JCJ				LR	LR	10 12 24.3	
	comp=Z,121nm,20.9s,baz=163,slow=32						
MOO	**Moorlands**	**34.98**	**180**	P	**P**	**10 00 44.3**	**+1.5**
	baz=35,SNR=4.2						
YULB	**Yu-li**	**39.53**	**321**	*e*P	**P**	**10 01 21.6**	**-0.1**
	comp=Z,21nm,1.4s						
CBJI	**Citeko**	**39.87**	**269**	P	**P**	**10 01 26.4**	**+1.8**
TPUB	**Ta-pu**	**39.89**	**320**	*e*P	**P**	**10 01 23.9**	**-0.7**
	comp=Z,38nm,1.1s						
NACB	**Ninganchiao**	**39.93**	**322**	*e*P	**P**	**10 01 25.1**	**+0.3**
	comp=Z,33nm,1.0s						
YHNB	**Yeheng**	**40.43**	**323**	*e*P	**P**	**10 01 28.9**	**-0.3**
	comp=Z,52nm,1.1s						
TATO	**Taipei**	**40.59**	**323**	*e*P	**P**	**10 01 29.9**	**-0.5**
	comp=Z,48nm,0.8s						
AFI	**Afiamalu**	**40.99**	**103**	P	**P**	**10 01 33.1**	**-0.9**
	comp=Z,33nm,1.0s,baz=270,slow=22,SNR=4.1						
DUWZ	**D'Urville Isla**	**41.08**	**148**	PN	**P**	**10 01 35.3**	**+1.1**
URZ	**Urewera**	**41.10**	**143**	P	**P**	**10 01 35.0**	**+0.7**
	comp=Z,3.9nm,0.4s,baz=270,slow=4.4,SNR=10						
URZ				PcP	**PcP**	**10 03 31.4**	**-1.9**
	comp=Z,4.9nm,0.7s,baz=45,slow=5.7,SNR=3.5						
URZ	**Urewera**	**41.10**	**143**	*e*P	**P**	**10 01 35.2**	**+0.8**
	comp=Z,16nm,1.2s						
URZ				PcP	**PcP**	**10 03 31.4**	**-1.9**
JCZ	**Jackson Bay**	**41.27**	**156**	PN	**P**	**10 01 37.5**	**+1.7**
BHHZ	**Black Hill Sta**	**41.31**	**145**	PN	**P**	**10 01 37.7**	**+1.5**
BKZ	**Black Stump Fm**	**41.34**	**145**	*e*P	**P**	**10 01 37.1**	**+0.7**
	comp=Z,11nm,0.6s						
KWHZ	**Kaweka Forest**	**41.47**	**145**	PN	**P**	**10 01 39.3**	**+1.8**
KRHZ	**Kereru**	**41.59**	**145**	PN	**P**	**10 01 39.6**	**+1.2**
KIW	**Kapiti Island**	**41.64**	**148**	PN	**P**	**10 01 41.1**	**+2.3**
TSZ	**Takapari Road**	**41.65**	**146**	PN	**P**	**10 01 40.1**	**+1.3**
PNHZ	**Pukenui**	**41.68**	**146**	PN	**P**	**10 01 40.5**	**+1.3**
LTZ	**Lake Taylor**	**41.75**	**152**	*e*P	**P**	**10 01 40.4**	**+0.7**
	comp=Z,64nm,1.5s						
MRZ	**Mangatainoka R**	**41.85**	**147**	PN	**P**	**10 01 41.0**	**+0.4**
CAW	**Cannon Point**	**41.90**	**148**	PN	**P**	**10 01 43.4**	**+2.5**
RPZ	**Rata Peaks**	**41.93**	**154**	P	**P**	**10 01 41.7**	**+0.6**
	comp=Z,17nm,0.6s,baz=313,slow=3.4,SNR=16						
RPZ	**Rata Peaks**	**41.93**	**154**	*e*P	**P**	**10 01 42.4**	**+1.3**
	comp=Z,17nm,0.6s						
KHZ	**Kahutara**	**42.08**	**150**	*e*P	**P**	**10 01 42.3**	**0.0**
	comp=Z,71nm,1.6s						
MLZ	**Mavora Lakes**	**42.09**	**158**	*e*P	**P**	**10 01 43.6**	**+1.2**
	comp=Z,79nm,1.4s						
LBZ	**Lake Benmore**	**42.10**	**155**	*e*P	**P**	**10 01 42.9**	**+0.4**
	comp=Z,57nm,1.6s						
ANWZ	**Angora Road**	**42.21**	**146**	PN	**P**	**10 01 44.4**	**+0.9**
BFZ	**Birch Farm**	**42.23**	**146**	*e*P	**P**	**10 01 43.9**	**+0.3**
	comp=Z,31nm,0.6s						
BFZ	**Birch Farm**	**42.23**	**146**	PN	**P**	**10 01 44.6**	**+0.9**
JNU	**Nakatsue**	**43.04**	**340**	P	**P**	**10 01 49.2**	**-1.1**
	comp=Z,39nm,0.9s,baz=126,slow=3.9,SNR=17						
JNU	**Nakatsue**	**43.04**	**340**	*e*P	**P**	**10 01 49.8**	**-0.5**
	comp=Z,53nm,1.0s						
INU	**Inuyama**	**43.47**	**348**	*e*P	**P**	**10 01 52.3**	**-1.3**
	comp=Z,23nm,1.0s						
MYKOM	**Kota Tinggi**	**44.00**	**280**	*e*P	**P**	**10 01 57.9**	**-0.4**
	comp=Z,14nm,1.0s						
MJAR	**Matsushiro Arr**	**44.40**	**350**	P	**P**	**10 01 59.5**	**-1.7**
	comp=Z,18nm,0.9s,baz=178,slow=8.9,SNR=50						
MJAR				PcP	**PcP**	**10 03 42.9**	**-1.4**
	comp=Z,4.2nm,1.0s,baz=181,slow=3.5,SNR=4.0						
MAJO	**Matsushiro**	**44.40**	**350**	*c i*P	**P**	**10 01 59.5**	**-1.6**
MAJO				pmax	pmax		
	comp=Z,52nm,0.7s						
MAJO	**Matsushiro**	**44.40**	**350**	*e*P	**P**	**10 01 59.8**	**-1.3**
	comp=Z,34nm,0.8s						
MAT	**Matsushiro**	**44.40**	**350**	P	**P**	**10 01 59.6**	**-1.5**
MAT				S	**S**	**10 08 29.6**	**-2.9**
MJB9	**Matsu-Tunnel**	**44.41**	**350**	*e*P	**P**	**10 01 59.6**	**-1.6**
	comp=Z,8.8nm,0.9s						
QIZ	**Qiongzhong**	**45.02**	**306**	P	**P**	**10 02 06.9**	**+0.5**
QIZ				PP	**PP**	**10 03 49.8**	**-2.6**
QIZ				S	**S**	**10 08 43.5**	**+1.5**
QIZ				sS	**sS**	**10 09 01.6**	**-2.2**
QIZ				pmax	pmax		
	comp=Z,45nm,0.9s						
QIZ				LR	LR		
	comp=Z,110nm,20.1s						
QIZ	**Qiongzhong**	**45.02**	**306**	*e*P	**P**	**10 02 06.8**	**+0.4**
	comp=Z,29nm,0.8s						
PPI	**Padang Panjang**	**46.97**	**276**	P	P	10 02 28.9	+7.1
	comp=Z,17nm,1.1s						
TJN	**Ta

comp=Z,72nm,6.1s
CMAR Chiang Mai Arr 53.88 299 P **P** **10 03 14.9 +1.0**
comp=Z,26nm,0.9s,baz=124,slow=5.8,SNR=45
CMAR Chiang Mai Arr 53.88 299 P **P** **10 03 15.0 +1.0**
CHTO Chiang Mai 54.02 299 P **P** **10 03 16.1 +1.1**
comp=Z,117nm,1.0s,comp=Z,1µm
CHTO Chiang Mai 54.02 299 *e*P **P** **10 03 15.8 +0.7**
CHTO Chiang Mai 54.02 299 *e*P **P** **10 03 15.8 +0.7**
MDJ Mudanjiang 54.03 345 P **P** **10 03 13.3 -1.2**
MDJ pP pP 10 03 24.9 -3.0
MDJ sP sP 10 03 29.5 -4.0
MDJ ScP **ScP** **10 08 13.1 -0.3**
MDJ S **S** **10 10 45.8 -1.3**
MDJ sS sS 10 11 00.1 -9.4
MDJ ScS **ScS** **10 12 59.3 -0.4**
MDJ pmax pmax
comp=Z,22nm,0.9s
MDJ pmax pmax
comp=Z,41nm,4.3s
MDJ LR LR
comp=Z,140nm,20.4s
MDJ LR LR
comp=Z,88nm,20.1s
MDJ LR LR
comp=Z,180nm,22.1s
YSS Yuzh-Sakhalins 54.16 356 *e*P **P** **10 03 18.9 +3.5**
CN2 Changchun 54.50 341 *e*P **P** **10 03 17.0 -1.0**
CN2 *e*S **S** **10 10 53.4 -0.1**
CN2 pmax pmax
comp=Z,10.0nm,0.8s
CN2 pmax pmax
comp=Z,200nm,3.0s
CN2 LR LR
comp=Z,200nm,20.0s
CN2 LR LR
comp=Z,200nm,20.0s
CN2 LR LR
comp=Z,200nm,21.0s
XAN Xi'an 54.70 321 P **P** **10 03 19.1 -0.6**
XAN pP pP 10 03 28.0 -5.1
XAN S **S** **10 10 57.5 +0.8**
XAN pmax pmax
comp=Z,26nm,1.0s
XAN pmax pmax
comp=Z,55nm,5.8s
XAN LR LR
comp=Z,88nm,20.5s
XAN LR LR
comp=Z,110nm,13.3s
BJI Beijing 55.05 331 P **P** **10 03 21.6 -0.4**
BJI pP **pP** **10 03 35.3 -0.1**
BJI S **S** **10 11 03.4 +2.4**
BJI sS **sS** **10 11 21.1 -2.4**
BJI pmax pmax
comp=Z,10.0nm,1.0s
BJI pmax pmax
comp=Z,95nm,4.5s
BJI LR LR
comp=Z,110nm,14.6s
BJI LR LR
comp=Z,110nm,18.9s
CD2 Chengdu 56.20 315 P **P** **10 03 30.1 -0.4**
CD2 sP sP 10 03 47.5 -2.0
CD2 PP **PP** **10 05 35.8 -0.5**
CD2 S **S** **10 11 17.8 +1.0**
CD2 sS sS 10 11 38.6 -0.7
CD2 pmax pmax
comp=Z,70nm,0.6s
CD2 pmax pmax
comp=Z,110nm,7.8s
CD2 LR LR
comp=Z,90nm,4.9s
CD2 LR LR
comp=Z,150nm,16.8s
HABR Khabarovsk 56.54 350 *c*eP **P** **10 03 30.6 -1.9**
HABR *e**PP **pP** **10 03 46.5 +0.5**
HABR *e*S **S** **10 11 18.3 -2.3**
HABR *e**SS **sS** **10 11 46.0 +2.9**
HABR *e* 10 13 14.4
HABR *e*SS **SS** **10 15 08.0 -0.8**
HABR pmax pmax
comp=Z,21nm,1.4s
HABR pmax pmax
comp=E,13nm,1.3s
HABR pmax pmax
comp=N,14nm,1.4s
HABR MLR MLR
comp=Z,57nm,18.0s
KLR Kul'dur 57.87 348 P **P** **10 03 41.8 -0.2**
comp=Z,3.8nm,0.7s,baz=150,slow=6.5,SNR=12
HHC Hu-ho-hao-te 57.95 329 *e*P **P** **10 03 45.4 +2.6**
HHC sP sP 10 04 03.3 +1.4
HHC S **S** **10 11 44.4 +4.7**
HHC pmax pmax
comp=Z,20nm,1.2s
HHC pmax pmax
comp=Z,210nm,6.7s
HHC LR LR
comp=Z,550nm,16.4s
HHC LR LR
comp=Z,510nm,16.7s
HHC LR LR
comp=Z,500nm,16.7s
TYV Tymovskoe 58.06 357 *e*P **P** **10 03 43.0 -0.2**
TYV pmax pmax
comp=Z,22nm,1.0s
LZH Lanzhou 59.21 320 *e*P **P** **10 03 53.0 +1.2**
LZH pP pP 10 04 04.3 -1.0
LZH sP sP 10 04 09.5 -1.3
LZH PP **PP** **10 06 06.1 +3.0**
LZH *e*S **S** **10 11 56.3 -0.1**
LZH *e*SS **SS** **10 15 52.1 +0.4**
LZH pmax pmax
comp=Z,48nm,1.4s
LZH pmax pmax
comp=Z,140nm,6.0s
LZH LR LR
comp=Z,150nm,13.1s
LZH LR LR
comp=Z,220nm,15.2s
LZH LR LR
comp=Z,430nm,19.6s
PETK Petropavlovsk- 60.88 7 P **P** **10 04 03.1 +0.5**
comp=Z,3.2nm,0.6s,baz=159,slow=5.3,SNR=9.5
PETK LR LR 10 25 55.3
comp=Z,82nm,21.7s,baz=206,slow=32
KIP Kipapa 61.02 61‖*e*P **P** **10 04 04.6 +0.4**
KIP pmax pmax
comp=Z,637nm,1.7s
HIA Hailar 61.18 340 *e*P **P** **10 04 04.8 -0.1**
HIA pmax pmax
comp=Z,9.0nm,0.4s
HIA Hailar 61.18 340 *e*P **P** **10 04 04.8 -0.1**
comp=Z,9.1nm,0.4s
PPT Papeete 62.52 106 LR LR 10 30 17.5
comp=Z,68nm,18.0s,baz=155,slow=35
PPT2 Papeete2 62.52 106 *e*LR LR 10 23 01.6
comp=Z,171nm,24.5s
SHL Shillong 62.74 304 *e*P **P** **10 04 17.0 +1.1**
TBI Tubuai 62.86 112 *e*LR LR 10 23 10.9
comp=Z,153nm,23.8s
GTA Gaotai 63.75 321 *e*P **P** **10 04 23.8 +1.5**
GTA pP pP 10 04 31.5 -4.5
GTA sP sP 10 04 34.8 -6.7
GTA S **S** **10 12 54.1 +0.3**
GTA sS sS 10 13 07.9 -8.8
GTA pmax pmax
comp=Z,7.0nm,1.2s
GTA pmax pmax
comp=Z,110nm,5.5s
GTA LR LR
comp=Z,110nm,21.4s
GTA LR LR
comp=Z,170nm,20.0s
CASY Casey 64.00 196 *e*P **P** **10 04 23.6 +0.3**
LSA Lhasa 65.03 307 P **P** **10 04 32.4 +1.1**
LSA pmax pmax
comp=Z,33nm,0.9s
LSA Lhasa 65.03 307 *e*P **P** **10 04 32.7 +1.4**
LSA pmax pmax
comp=Z,39nm,0.8s
LSA Lhasa 65.03 307 *e*P **P** **10 04 32.7 +1.4**
comp=Z,39nm,0.8s
ULN Ulaanbaatar 65.26 332 *e*P **P** **10 04 31.8 -0.2**
ULN Ulaanbaatar 65.26 332 *e*P **P** **10 04 31.8 -0.2**

SONM Songino Array 65.55 331 P **P** **10 04 34.0 +0.1**
comp=Z,5.3nm,0.9s,baz=149,slow=7.9,SNR=11
CLNS Chul'man 66.46 347 *e*P **P** **10 04 39.3 -0.1**
CLNS pmax pmax
comp=Z,25nm,0.8s
CLNS pmax pmax
comp=N,13nm,0.9s
CLNS pmax pmax
comp=E,8.0nm,1.1s
MA2 Magadan 66.74 2 P **P** **10 04 41.1 0.0**
comp=E,16nm,0.8s,baz=181,slow=9.4,SNR=7.1
GUN Gumba 68.59 304 *e*P **P** **10 04 54.6 +0.7**
comp=E,177nm,1.0s
ZAK Zakamensk 68.79 332 *e*P **P** **10 04 54.2 -0.1**
ZAK pmax pmax
comp=Z,10.0nm,1.1s
KKN Kakani 69.05 303 *e*P **P** **10 04 57.1 +0.6**
comp=Z,99nm,0.9s
DMN Daman 69.13 303 *e*P **P** **10 04 57.8 +0.7**
comp=Z,187nm,1.0s
TLY Talaya 69.51 333 P **P** **10 04 58.9 +0.2**
comp=Z,4.7nm,0.8s,baz=263,slow=7.1,SNR=4.0
TLY Talaya 69.51 333 *e*P **P** **10 05 00.1 +1.4**
TLY *e*S **S** **10 14 04.8 +2.0**
TLY pmax pmax
comp=Z,9.0nm,0.9s
TLY MLR MLR
comp=Z,55nm,18.0s
GKN Gorkha 69.65 303 *e*P **P** **10 05 00.6 +0.4**
comp=Z,144nm,0.9s
SEY Seymchan 70.17 3 P **P** **10 05 03.1 +0.7**
comp=Z,16nm,1.0s,baz=175,slow=6.5,SNR=31
SEY Seymchan 70.17 3 *e*P **P** **10 05 03.3 +0.9**
BOD Bodaibo 70.22 342‖*i*P **P** **10 05 02.1 -0.8**
BOD pmax pmax
comp=Z,17nm,1.0s
KOLN Koldanda 70.44 303 *e*P **P** **10 05 05.5 +0.4**
comp=Z,92nm,0.8s
YAK Yakutsk 70.44 351 *e*P **P** **10 05 03.7 -0.3**
YAK pmax pmax
comp=Z,21nm,1.0s
YAK pmax pmax
comp=N,12nm,1.1s
YAK Yakutsk 70.44 351 *e*P **P** **10 05 03.9 -0.1**
comp=N,17nm,0.6s
VNDA Vanda 70.61 177 P **P** **10 05 05.5 +0.5**
comp=N,11nm,0.9s,baz=325,slow=6.6,SNR=22
VNDA LR LR 10 34 04.9
comp=N,159nm,18.8s,baz=348,slow=34
MOY Mondy 70.73 332 *e*P **P** **10 05 06.7 +0.5**
MOY pmax pmax
comp=Z,13nm,1.6s
PYUN Piuthan 71.05 303 *e*P **P** **10 05 09.1 +0.2**
comp=Z,204nm,0.9s
WMQ Urumqi 73.79 320 P **P** **10 05 26.0 +1.4**
WMQ pP pP 10 05 34.6 -4.0
WMQ sP sP 10 05 45.3 +1.3
WMQ S **S** **10 14 58.8 +6.3**
WMQ sS sS 10 15 13.8 -2.0
WMQ pmax pmax
comp=Z,14nm,1.0s
WMQ pmax pmax
comp=Z,83nm,5.2s
WMQ LR LR
comp=Z,28nm,34.2s
WMQ LR LR
comp=Z,45nm,39.8s
BILL Bilibino 76.41 7 *c i*P **P** **10 05 39.6 +0.5**
BILL *i* 10 05 49.1
BILL *i* 10 08 34.9
BILL pmax pmax
comp=Z,22nm,1.0s
BILL Bilibino 76.41 7 *e*P **P** **10 05 39.8 +0.6**
comp=Z,26nm,1.1s
THN Thein Dam 78.37 305 *e*P **P** **10 05 48.0 -2.8**
MKAR Makanchi Array 78.51 321 P **P** **10 05 52.0 +0.7**
comp=Z,30nm,0.8s,baz=110,slow=6.0,SNR=191
MKAR PKKPbc **PKKPbc** **10 24 48.0 -1.8**
comp=Z,0.8nm,0.9s,baz=306,slow=4.1,SNR=4.0
PDGK Podgornoye 79.03 317 P **P** **10 05 54.2 0.0**
PDGK pmax pmax
comp=Z,37nm,0.8s
TIXI Tiksi 79.71 354 *de*P **P** **10 05 56.5 -0.9**
TIXI pmax pmax
comp=Z,12nm,1.2s
TIXI Tiksi 79.71 354 *e*P **P** **10 05 56.4 -0.9**
comp=Z,4.7nm,0.6s
ZALV Zalesovo Beam 80.12 328 P **P** **10 05 59.1 -0.8**
comp=Z,8.4nm,0.6s,baz=109,slow=4.7,SNR=26
KSH Kashi 80.26 312 P **P** **10 06 03.3 +2.1**
KSH *e*pP pP 10 06 16.1 +0.9
KSH *e*PP **PP** **10 09 08.6 +4.2**
KSH S **S** **10 16 04.1 +0.9**
KSH SKS **SKSac** **10 16 12.3 -2.9**
KSH sS sS 10 16 26.4 -0.4
KSH pmax pmax
comp=Z,18nm,0.8s
KSH pmax pmax
comp=Z,130nm,5.2s
KSH LR LR
comp=Z,660nm,16.6s
KSH LR LR
comp=Z,840nm,19.0s
MAW Mawson 81.04 203 P **P** **10 06 04.8 +0.1**
comp=Z,5.0nm,0.8s,baz=87,slow=6.8,SNR=9.7
MAW LR LR 10 41 15.1
comp=Z,95nm,18.7s,baz=65,slow=35
MAW Mawson 81.04 203 P **P** **10 06 05.1 +0.5**
baz=81,SNR=4.7
NVS Novosibirsk 81.35 328 *e*P **P** **10 06 03.7 -2.8**
NVS pmax pmax
comp=Z,20nm,1.5s
NVS pmax pmax
comp=N,8.0nm,1.6s
NVS pmax pmax
comp=E,7.0nm,1.3s
TKM2 Tokmak 2 81.58 315 P **P** **10 06 08.3 0.0**
TKM2 pmax pmax
comp=Z,18nm,0.9s
FRU Bishkek 82.24 315 *e*P **P** **10 06 12.5 +1.0**
FRU pmax pmax
comp=E,47µm,2.1s
KURK Kurchatov 82.26 323 *e*P **P** **10 06 11.5 +0.1**
KURK pmax pmax
comp=Z,32nm,0.8s
KURK Kurchatov 82.26 323 *e*P **P** **10 06 11.5 +0.1**
comp=Z,32nm,0.8s
QSPA South Pole Qui 82.66 180 *e*P **P** **10 06 13.3 -0.1**
comp=Z,163nm,0.9s
EKS2 Erkin-Say 82.78 315 *e*P **P** **10 06 15.7 +1.2**
EKS2 pmax pmax
comp=Z,32nm,0.9s
EKS2 Erkin-Say 82.78 315 *e*P **P** **10 06 15.7 +1.2**
comp=Z,32nm,0.9s
MNAS Manas 83.63 314 P **P** **10 06 19.9 +1.0**
MNAS pmax pmax
comp=Z,40nm,1.1s
PPLA Purkeypile 83.73 24 *e*P **P** **10 06 18.7 -0.2**
comp=Z,81nm,1.8s
RC01 Rabbit Creek A 83.90 26 *e*P **P** **10 06 19.7 +0.1**
comp=Z,28nm,1.0s
PMR Palmer 84.39 26 *e*P **P** **10 06 22.0 0.0**
PMR pmax pmax
comp=Z,7.0nm,0.8s
PMR Palmer 84.39 26 *e*P **P** **10 06 22.0 0.0**
comp=Z,6.7nm,0.8s
KTH Kantishna Hill 84.56 23 *e*P **P** **10 06 22.1 -0.8**
comp=Z,27nm,1.2s
TRF Thorofare Moun 84.76 24 *e*P **P** **10 06 23.3 -0.8**
comp=Z,5.3nm,0.7s
BPAW Bear Paw Mtn. 84.79 23 *e*P **P** **10 06 23.8 -0.3**
comp=Z,5.1nm,1.6s
SML Sawmill 84.82 26 *e*P **P** **10 06 24.8 +0.5**
SML pmax pmax
comp=Z,11nm,1.2s
SML Sawmill 84.82 26 *e*P **P** **10 06 24.8 +0.5**
comp=Z,11nm,1.2s
KKAR Karatay Array 85.21 314 *e*P **P** **10 06 26.9 +0.2**
KKAR pmax pmax
comp=Z,10.0nm,0.8s
KKAR Karatay Array 85.21 314 *e*P **P** **10 06 26.9 +0.2**
comp=Z,10nm,0.8s
OTUK Ortayu 85.34 320 P **P** **10 06 27.8 +0.6**
OTUK pmax pmax
comp=Z,66nm,0.9s
MCK McKinley 85.42 24 *e*P **P** **10 06 26.9 -0.4**

MCK pmax pmax
comp=Z,31nm,1.0s
MCK McKinley 85.42 24 *e*P **P** **10 06 26.9 -0.4**
comp=Z,31nm,1.0s
DIV Divide 85.66 27 *e*P **P** **10 06 29.2 +0.7**
comp=Z,20nm,1.1s
BMRM Bremner River 86.12 27 *e*P **P** **10 06 31.4 +0.6**
comp=Z,30nm,1.1s
COLA College 86.35 23 *d i*P **P** **10 06 31.1 -0.7**
COLA pmax pmax
comp=Z,17nm,0.8s
COLA College 86.35 23 *e*P **P** **10 06 31.1 -0.7**
comp=Z,12nm,1.0s
PAX Paxson 86.52 25 *e*P **P** **10 06 32.9 +0.1**
PAX pmax pmax
comp=Z,35nm,1.6s
PAX Paxson 86.52 25 *e*P **P** **10 06 32.9 +0.1**
comp=Z,35nm,1.6s
NRIK Noril'sk 86.52 342 P **P** **10 06 32.0 -0.5**
comp=Z,14nm,0.8s,baz=119,slow=4.3,SNR=20
COLD Coldfoot 86.56 20 *e*P **P** **10 06 33.8 +1.0**
comp=Z,5.2nm,0.9s
ILAR Eielson Array 86.68 23 P **P** **10 06 31.9 -1.5**
comp=Z,10.0nm,0.7s,baz=254,slow=4.9,SNR=92
DOT Dot Lake 87.37 25 *e*P **P** **10 06 37.0 +0.2**
comp=Z,97nm,1.4s
BVA0 Borovoye Array 87.83 324 *i*P **P** **10 06 38.4 -0.8**
BVA0 pmax pmax
comp=Z,16nm,0.9s
BRVK Borovoye 87.90 324 *de*P **P** **10 06 38.9 -0.7**
BRVK pmax pmax
comp=Z,21nm,1.2s
BRVK Borovoye 87.90 324 *e*P **P** **10 06 39.0 -0.5**
comp=Z,14nm,0.9s
ZRNK Zerenda 88.62 324 P **P** **10 06 41.5 -1.5**
ZRNK pmax pmax
comp=Z,7.0nm,0.8s
EGAK Eagle 88.96 24 *e*P **P** **10 06 44.9 +0.6**
comp=Z,46nm,1.6s
SYO Syowa Base 89.37 200‖*e*X **P** **10 06 44.6 -1.6**
DAWY Dawson 89.46 25 *e*P **P** **10 06 47.6 +0.9**
comp=Z,47nm,1.4s
SKAG Skagway 90.03 30 *e*P **P** **10 06 51.0 +1.5**
comp=Z,56nm,1.7s
GEYT Alibeck 93.57 308 P **P** **10 07 05.6 -0.8**
comp=Z,6.8nm,0.8s,baz=180,slow=2.4,SNR=7.3
AB31 Akbulak array 93.57 319 *i*P **P** **10 07 04.7 -1.4**
AB31 pmax pmax
comp=Z,11nm,0.8s
ABKAR Akbulak array 93.57 319 *e*P **P** **10 07 05.0 -1.1**
comp=Z,11nm,0.8s
L02D Cave Junction, 94.40 48 P **P** **10 07 11.8 +1.7**
baz=264
M02C Callahan 94.89 49 P **P** **10 07 13.9 +1.5**
baz=265
HUMO Hull Mountain 94.92 48 *e*P **P** **10 07 14.2 +1.8**
comp=Z,132nm,1.7s
N02D Trinity Center 94.96 49 P **P** **10 07 14.9 +2.1**
baz=265
YBH Yreka Blue Hor 95.03 49 *e*P **P** **10 07 14.8 +1.8**
YBH pmax pmax
comp=Z,18nm,1.4s
YBH Yreka Blue Hor 95.03 49 *e*P **P** **10 07 14.8 +1.8**
comp=Z,18nm,1.4s
ARU Arti 95.18 326 P **P** **10 07 11.5 -1.8**
ARU 10 11 02.9
ARU S **SKSac** **10 17 41.9 -3.1**
ARU Arti 95.18 326 *e*P **P** **10 07 11.7 -1.6**
comp=Z,9.1nm,0.8s
O03D Paynes Creek 95.58 50 P **P** **10 07 17.0 +1.3**
baz=265
M04C Macdoel 95.68 49 P **P** **10 07 17.4 +1.3**
baz=265
I05D Terrebonne, OR 96.24 46 P **P** **10 07 20.0 +1.5**
baz=266
J05D Fort Rock, OR 96.24 47 P **P** **10 07 19.3 +0.7**
baz=266
SOKR Solikamsk 96.36 329 *e*P **P** **10 07 18.8 +0.3**
SOKR pmax pmax
comp=Z,12nm,0.6s
NVAR Mina Array Bea 98.17 52 P Pdif 10 07 29.3 +1.7
comp=Z,1.6nm,0.8s,baz=251,slow=7.5,SNR=11
NVAR LR LR 10 47 31.4
comp=Z,44nm,18.6s,baz=275,slow=33
MPMC Manual Prospec 98.70 55 P Pdif 10 07 31.2 +1.2
baz=267
SNAA Sanae 98.70 189 *c i*P **P** **10 07 28.3 -0.8**
MONP2 Monument Peak 99.43 58 P **Pdif** **10 07 34.1 +0.7**
baz=267
TPNV Topopah Spring 99.73 54 P **Pdif** **10 07 35.5 +0.9**
baz=268
R11A Troy Canyon, C 100.30 52 P **Pdif** **10 07 38.0 +0.9**
baz=269
YKA Yellowknife Ar 100.33 28 P **Pdif** **10 07 37.1 +0.8**
comp=Z,1.9nm,0.9s,baz=276,slow=4.5,SNR=26
YKA PKiKP **PKiKP** **10 12 03.0 -0.1**
comp=Z,0.2nm,0.7s,baz=269,slow=1.5,SNR=5.0
YKA PKKPbc **PKKPbc** **10 23 51.6 -3.7**
comp=Z,0.4nm,0.8s,baz=88,slow=2.9,SNR=6.4
BOZ Bozeman (W) 103.14 45 P **Pdif** **10 07 50.2 +0.7**
baz=273
ZEI Tsey 104.55 312 *e*P **Pdif** **10 07 53.5 -2.3**
ZEI pmax pmax
comp=Z,4.0nm,0.5s
BW06 Boulder Array 104.79 48 P **Pdif** **10 07 57.6 +0.6**
baz=274
PDAR Pinedale Array 104.79 48 Pdiff **Pdif** **10 07 57.5 +0.6**
comp=Z,0.8nm,0.6s,baz=196,slow=1.6,SNR=9.5
KLMR Klimovskoe 104.85 331 *e*P **Pdif** **10 07 54.3 -2.1**
KLMR pmax pmax
comp=Z,9.0nm,1.2s
ARCES ARCESS Array B 107.50 342 Pdiff **Pdif** **10 08 07.8 -0.3**
comp=Z,3.0nm,1.0s,baz=51,slow=7.1,SNR=4.1
ARCES PKiKP **PKiKP** **10 12 15.8 -0.3**
comp=Z,2.8nm,0.9s,baz=66,slow=3.3,SNR=5.5
TXAR Lajitas Array 110.39 62 PKiKP **PKiKP** **10 12 23.5 +0.6**
comp=Z,0.6nm,0.9s,baz=212,slow=3.2,SNR=4.7
TXAR PP **PP** **10 12 57.3 -1.2**
comp=Z,1.3nm,1.1s,baz=270,slow=6.9,SNR=7.0
TXAR PKKPab **PKKPab** **10 23 32.8 -1.0**
comp=Z,0.4nm,0.8s,baz=123,slow=4.6,SNR=4.8
FINES FINESS Array B 110.85 334 PKiKP **PKiKP** **10 12 22.0 -0.6**
comp=Z,1.4nm,0.7s,baz=108,slow=2.2,SNR=3.7
AKASG Malin Array Be 113.06 322 PP PP 10 13 12.6 -4.0
comp=Z,0.3nm,0.3s,baz=60,slow=6.5,SNR=3.3
ECSD EROS Data Cent 114.00 45 P **PKiKP** **10 12 28.2 -1.0**
baz=284
ECSD EROS Data Cent 114.00 45 *e*PKPdf **PKiKP** **10 12 28.4 -0.7**
O33A Hebron 114.06 49 P PKPdf 10 12 29.1 -0.3
baz=281
F36A Milaca 115.56 42 P **PKPdf** **10 12 31.1 -1.0**
baz=287
P38A Dawn 117.21 49 P **PKPdf** **10 12 33.8 -1.6**
baz=284
X38A Whitesboro 117.23 55 P **PKPdf** **10 12 36.2 +0.6**
baz=280
Q39A Willow Grove F 117.76 50 P **PKPdf** **10 12 36.2 -0.3**
baz=284
S39A Bolivar 117.81 51 P **PKPdf** **10 12 36.4 -0.3**
baz=283
X39A Fountain Ranch 117.84 55 P **PKPdf** **10 12 36.8 0.0**
baz=281
R39A Chumby, Stover 117.89 50 P **PKPdf** **10 12 36.4 -0.4**
baz=284
T39A Clever 117.92 52 P **PKPdf** **10 12 36.3 -0.6**
baz=283
W39A Magazine 117.97 54 P **PKPdf** **10 12 37.0 -0.1**
baz=282
P40A Paris 118.34 49 P **PKPdf** **10 12 37.5 -0.1**
baz=285
Q40A Laux Farm, Aux 118.46 49 P **PKPdf** **10 12 37.7 -0.2**
baz=285
U40A Yellville 118.47 53 P **PKPdf** **10 12 36.7 -1.4**
baz=283
T40A Mansfield 118.56 52 P **PKPdf** **10 12 37.1 -1.1**
baz=283
V40A Witts Springs 118.62 53 P **PKPdf** **10 12 38.0 -0.3**
baz=282
V42A Cord 119.75 53 P **PKPdf** **10 12 40.1 -0.3**
baz=283
PLCA Paso Flores 121.02 147 PKP **PKPdf** **10 12 43.6 +0.7**
comp=Z,3.0nm,0.9s,baz=244,slow=1.7,SNR=6.0
BRG Berggiesshubel 121.80 327 *e*P **PKPdf** **10 12 44.1 +0.1**
comp=Z,3.2nm,0.8s
BRG Berggiesshubel 121.80 327 *e*PKIKP **PKPdf** **10 12 44.1 +0.1**
BRG pmax pmax
comp=Z,3.0nm,0.8s

CLL	**Collm**	**122.08**	**328**	*i* PKiKP	**PKPdf**	**10 12 44.3**	**-0.1**
	comp=Z,4.0nm,0.8s						
CLL				*i*		10 12 47.4	
CLL				*e*		10 13 02.0	
CLL	**Collm**	**122.08**	**328**	*i* PKIKP	**PKPdf**	**10 12 44.3**	**-0.1**
CLL				pmax	pmax		
	comp=Z,4.0nm,0.8s						
KHC	**Kasperske Hory**	**122.91**	**325**	*e*PKPdf	**PKPdf**	**10 12 45.5**	**-0.7**
KHC	**Kasperske Hory**	**122.91**	**325**	*e*PKIKP	**PKPdf**	**10 12 45.5**	**-0.7**
KHC	**Kasperske Hory**	**122.91**	**325**	*e*PKPdf	**PKPdf**	**10 12 45.6**	**-0.5**
GERES	**GERESS Array B**	**122.98**	**325**	PKP	**PKPdf**	**10 12 46.2**	**-0.2**
	comp=Z,2.0nm,0.7s,baz=48,slow=2.0,SNR=14						
GERES				PKKPab	**PKKPab**	**10 22 37.5**	**-0.6**
	comp=Z,0.4nm,0.6s,baz=253,slow=4.1,SNR=4.1						
WCI	**Wyandotte Cave**	**123.02**	**49**	*e*PKIKP	**PKPdf**	**10 12 46.0**	**-0.7**
WCI	**Wyandotte Cave**	**123.02**	**49**	*e*PKPdf	**PKPdf**	**10 12 46.0**	**-0.7**
SSPA	**Standing Stone**	**128.09**	**43**	*e*PKPdf	**PKPdf**	**10 12 56.6**	**+0.3**
CRUC	**La Cruz**	**135.83**	**95**	*e*P	**PKPdf**	**10 13 14.0**	**+1.8**
DBBC	**Dabeiba**	**137.13**	**88**	*e*P	**PKPdf**	**10 13 16.2**	**+2.0**
MOTC	**Monteria, Cord**	**137.74**	**85**	*e*P	PKPpre	10 13 09.4	
GUYC	**Guyana, Colomb**	**137.82**	**90**	*e*P	**PKPdf**	**10 13 14.0**	**-2.0**
LPAZ	**La Paz**	**138.06**	**124**	PKP	**PKPdf**	**10 13 17.1**	**+0.6**
	comp=Z,3.6nm,0.9s,baz=180,slow=4.8,SNR=7.6						
SJCC	**San Jacinto, C**	**138.23**	**83**	*e*P	**PKPdf**	**10 13 17.4**	**+1.2**
SJAC	**San Juan de Ar**	**139.03**	**93**	*e*P	PKPpre	10 13 12.8	
CPUP	**Villa Florida**	**139.05**	**146**	PKhKP	PKPpre	10 13 10.8	
	comp=Z,1.3nm,0.9s,baz=265,slow=13,SNR=3.2						
CPUP				PKP	**PKiKP**	**10 13 19.8**	**+0.3**
	comp=Z,5.3nm,1.0s,baz=244,slow=1.8,SNR=7.9						
OCAC	**Ocana**	**140.05**	**86**	*e*P	**PKPdf**	**10 13 17.9**	**-1.7**
BARC	**Barichara**	**140.11**	**88**	*e*P	**PKPdf**	**10 13 19.6**	**-0.2**
RUSC	**La Rusia**	**140.16**	**90**	*e*P	PKPpre	10 13 11.7	
GRMC	**Gramalote, San**	**140.54**	**87**	*e*P	PKPpre	10 13 12.8	
CBRI	**Barrientos, No**	**140.55**	**87**	*e*P	PKPpre	10 13 12.8	
URIC	**Uribia, Colomb**	**141.32**	**80**	*e*P	PKPpre	10 13 13.4	
TORD	**Torodi Ar. Bea**	**145.40**	**282**	PKPbc	**PKPab**	**10 13 29.2**	**+0.1**
	comp=Z,61nm,0.8s,baz=82,slow=3.9,SNR=342						
SJG	**San Juan**	**145.99**	**68**	*e*PKP2	**PKPbc**	**10 13 30.4**	**-0.2**
SJG	**San Juan**	**145.99**	**68**	*e*PKPbc	**PKPbc**	**10 13 30.4**	**-0.2**
SJG	**San Juan**	**145.99**	**68**	*e*P	**PKPdf**	**10 13 27.5**	**-2.2**
ZAM	**Aeronautique**	**151.57**	**73**	*e*P	**PKPbc**	**10 13 45.7**	**+0.6**
KIC	**Kosan Boka**	**151.93**	**270**	*e*PKIKP	**PKPbc**	**10 13 46.5**	**+0.5**
	comp=Z,114nm,1.5s						
DBIC	**Dimbokro**	**152.06**	**270**	PKPbc	**PKPbc**	**10 13 46.9**	**+0.6**
	comp=Z,9.7nm,0.5s,baz=70,slow=2.9,SNR=20						
LIC	**Lamto**	**152.21**	**269**	*e*PKIKP	**PKPbc**	**10 13 47.0**	**+0.4**
	comp=Z,57nm,1.3s						
TIC	**Toumodi**	**152.23**	**270**	*e*PKIKP	**PKPbc**	**10 13 47.0**	**+0.3**

ISCJB ***21*** *10:04:26.3±0.5, 39°.11N±0°.03×29°.00E±0°.04, h4km±6km, Error ellipse: s-maj=5.7km s-min=3.7km az=139.5*
DDA ***21*** *10:04:26.2, 39°.14N×29°.00E, h7km, Md2.8*
CSEM ***21*** *10:04:26.5±0.1, 39°.12N×29°.00E, h5km, MD2.8, Error ellipse: s-maj=2.5km s-min=2.0km az=114.0*
ISK ***21*** *10:04:26.2, 39°.11N×29°.01E, h8km, ML2.6*
ISC 21 10:04:26.3±0.9, 39°.11N±0°.02×28°.99E±0°.02, h14km±7km, n41, σ0°.25/54, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.22**	**252**	P	**Pg**	**10 04 31.3**	**+0.1**
DEMI				S	**Sg**	**10 04 34.5**	**-0.1**
DEMI	**Demirci**	**0.22**	**252**	*i* P	**Pg**	**10 04 31.3**	**+0.1**
DEMI				*i* S	**Sg**	**10 04 34.5**	**-0.1**
GDZ	**Gediz**	**0.38**	**94**	P	**Pg**	**10 04 33.8**	**-0.3**
GDZ				S	**Sg**	**10 04 39.5**	**+0.2**
GDZ	**Gediz**	**0.38**	**94**	*i* P	**Pg**	**10 04 33.8**	**-0.3**
GDZ				*i* S	**Sg**	**10 04 39.5**	**+0.2**
TVSB	**Tavsanli**	**0.50**	**47**	*e*PG	**Pg**	**10 04 36.2**	**0.0**
TVSB				*e*SG	**Sg**	**10 04 43.2**	**+0.5**
TVSB	**Tavsanli**	**0.50**	**47**	*e*Pg	**Pg**	**10 04 36.2**	**0.0**
TVSB				*e*Sg	**Sg**	**10 04 43.3**	**+0.5**
DURS	**Dursunbey**	**0.63**	**321**	P	**Pg**	**10 04 38.7**	**+0.1**
DURS	**Dursunbey**	**0.63**	**321**	*i* P	**Pg**	**10 04 38.7**	**+0.1**
KULA	**Kula-Manisa**	**0.65**	**203**	*e*PG	**Pb**	**10 04 39.6**	**+0.1**
KULA				*e*SG	**Sb**	**10 04 48.6**	**+0.2**
KULA	**Kula-Manisa**	**0.65**	**203**	*e*Pg	**Pb**	**10 04 39.6**	**+0.1**
KULA				*e*Sg	**Sb**	**10 04 48.7**	**+0.2**
MANT	**Manisa**	**0.71**	**209**	P	**Pb**	**10 04 40.4**	**-0.1**
MANT				S	**Sg**	**10 04 49.2**	**-0.2**
MANT	**Manisa**	**0.71**	**209**	*i* P	**Pb**	**10 04 40.4**	**-0.1**
MANT				*i* S	**Sg**	**10 04 49.2**	**-0.2**
KHAL	**Karahalli**	**0.84**	**152**	P	**Pb**	**10 04 42.8**	**0.0**
KHAL	**Karahalli**	**0.84**	**152**	*i* P	**Pb**	**10 04 42.8**	**0.0**
KHL	**Karahalli**	**0.89**	**152**	*e*PG	**Pg**	**10 04 43.4**	**-0.2**
KHL	**Karahalli**	**0.89**	**152**	*e*Pg	**Pg**	**10 04 43.4**	**-0.2**
ORLT	**Orhaneli**	**0.93**	**356**	*e*PG	**Pn**	**10 04 45.0**	**-0.1**
ORLT	**Orhaneli**	**0.93**	**356**	*e*Pg	**Pn**	**10 04 45.0**	**-0.1**
AKHS	**Akhisar**	**0.94**	**256**	P	**Pn**	**10 04 45.4**	**+0.2**
AKHS				S	**Sn**	**10 04 58.4**	**-0.1**
AKHS	**Akhisar**	**0.94**	**256**	*i* P	**Pn**	**10 04 45.4**	**+0.2**
AKHS				*i* S	**Sn**	**10 04 58.4**	**-0.1**
BALB	**Balikesir**	**1.01**	**302**	*e*PG	**Pn**	**10 04 46.2**	**+0.2**
BALB	**Balikesir**	**1.01**	**302**	*e*Pg	**Pn**	**10 04 46.2**	**+0.2**
IGD	**Bursa**	**1.16**	**8**	*i* P	**Pn**	**10 04 47.4**	**-0.7**
IGD				*i* S	**Sn**	**10 05 04.5**	**+0.7**
BALY	**Balya**	**1.23**	**301**	P	**Pn**	**10 04 49.1**	**-0.1**
BALY	**Balya**	**1.23**	**301**	*i* P	**Pn**	**10 04 49.1**	**-0.1**
KCTX	**Karacabey (Bur**	**1.25**	**337**	*e*PN	**Pg**	**10 04 50.0**	**-0.3**
KCTX	**Karacabey (Bur**	**1.25**	**337**	*e*Pn	**Pg**	**10 04 50.0**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.26**	**356**	*e*PN	**Pg**	**10 04 50.2**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.26**	**356**	*e*Pn	**Pg**	**10 04 50.2**	**-0.3**
CAVI	**Cavuskoy**	**1.27**	**31**	*e*PN	**Pg**	**10 04 50.8**	**0.0**
CAVI	**Cavuskoy**	**1.27**	**31**	*e*Pn	**Pg**	**10 04 50.8**	**0.0**
IZI	**Iznik**	**1.28**	**17**	*e*PN	**Pg**	**10 04 51.1**	**+0.2**
IZI	**Iznik**	**1.28**	**17**	*e*Pn	**Pg**	**10 04 51.1**	**+0.2**
GEMT	**Gemlik**	**1.33**	**7**	*e*PN	**Pg**	**10 04 51.9**	**0.0**
GEMT	**Gemlik**	**1.33**	**7**	*e*Pn	**Pg**	**10 04 51.9**	**0.0**
ADVT	**Abdulvahap**	**1.44**	**23**	*e*PN	**Pb**	**10 04 52.6**	**-0.2**
ADVT	**Abdulvahap**	**1.44**	**23**	*e*Pn	**Pb**	**10 04 52.7**	**-0.2**
ARMT	**Armutlu**	**1.45**	**356**	*e*PN	**Pg**	**10 04 53.8**	**-0.4**
ARMT	**Armutlu**	**1.45**	**356**	*e*Pn	**Pg**	**10 04 53.8**	**-0.4**
GULT	**Gulveren**	**1.77**	**41**	*e*PN	**Pb**	**10 04 58.3**	**-0.2**
GULT	**Gulveren**	**1.77**	**41**	*e*Pn	**Pb**	**10 04 58.3**	**-0.2**

SKO 21 10:22:52.1, 40°.73N×21°.28E, h19km, M1.2, ML1.8, Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BIA	**Bitola**	**0.29**	**7**	*i* Pg	Pb	10 22 59.8	+1.1
BIA				*i* Sg	Sb	10 23 03.9	+0.7
OHR	**Ohrid**	**0.53**	**316**	*i* Pg	Pb	10 23 02.5	-0.3
OHR				*i* Sg	Sb	10 23 10.9	+0.9
OHR				*e*Lg	Lg	10 23 11.1	
	comp=E,56nm,0.3s						
OHR				*e*Lg	Lg	10 23 11.1	
	comp=N,43nm,0.4s						
VAY	**Valandovo**	**1.14**	**58**	*e*Pg	Pg	10 23 13.8	-0.5
VAY				*e*Sg	Sg	10 23 28.8	-0.4
VAY				*e*Lg	Lg	10 23 30.5	
	comp=N,6.2nm,0.5s						
VAY				*e*Lg	Lg	10 23 31.3	
	comp=E,3.8nm,0.4s						

NIED ***21*** *10:24:00, 37°.20N×141°.50E, h32km, Mw4.3 Best double couple: M0 3.44000×10^15 NP1:φs 346.00000°, δ22.00000°, λ94.00000°. NP2:φs 162.00000°, δ68.00000°, λ88.00000°.*
MOS ***21*** *10:24:41.5±1.0, 37°.24N×141°.44E, h27km, mb4.6/56, Error ellipse: s-maj=8.3km s-min=5.3km az=93.3*
ISCJB ***21*** *10:24:42.8±0.2, 37°.23N±0°.03×141°.53E±0°.02, h32km, mb4.5/125, MS3.6/7, Error ellipse: s-maj=4.2km s-min=2.5km az=158.1*
JMA ***21*** *10:24:44.2±0.1, 37°.19N×141°.47E, h48km±2km, M4.4*
JMA Felt III J1.
NEIC ***21*** *10:24:44.6±0.2, 37°.20N×141°.44E, h35km, mb4.6/69, Error ellipse: s-maj=5.0km s-min=3.3km az=143.0*
NEIC Recorded [3 JMA] in Fukushima.
IDC ***21*** *10:24:45.8±1.6, 37°.22N×141°.47E, h46km±14km, mb4.1/24, mb1 4.2/31, mb1mx4.1/50, mbtmp4.3/31, ML3.7/7, MS3.4/10, Ms1 3.5/10, ms1mx3.2/44, Error ellipse: s-maj=14.6km s-min=9.4km az=106.0*
ISC 21 10:24:42.8±0.7, 37°.20N±0°.04×141°.59E±0°.04, h26km±4km, n239, σ1°.45/252, mb4.5/125, MS3.5/9, 5C-4D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.59**	**287**	P	**Pb**	**10 24 55.3**	**+0.6**
JFK				S	**Sb**	**10 25 03.0**	**+0.3**
ONAJ	**Iwakimizuishiy**	**0.64**	**262**	P	**Pb**	**10 24 55.9**	**+0.5**
ONAJ				S	**Sb**	**10 25 03.9**	**-0.1**
JMM	**Marumori**	**0.92**	**317**	P	**Pb**	**10 25 00.0**	**-0.1**
JMM				S	**Sb**	**10 25 11.3**	**-0.6**
JHO	**Hitachi**	**1.00**	**235**	P	**Pb**	**10 25 00.4**	**-1.1**
JFT	**Otama**	**1.05**	**288**	P	**Pn**	**10 25 02.2**	**+0.4**
JFT				S	**Sb**	**10 25 15.1**	**-0.5**
JIO	**Ouri**	**1.27**	**352**	P	**Pb**	**10 25 05.6**	**-0.4**
JOU	**Okura**	**1.38**	**328**	P	**Pb**	**10 25 07.4**	**-0.5**
JFY	**Yanaizu**	**1.52**	**279**	P	**Pn**	**10 25 08.6**	**+0.3**
MJAR	**Matsushiro Arr**	**2.79**	**257**	P	**Pn**	**10 25 26.7**	**+1.0**
	21nm,0.3s,baz=79,slow=15,SNR=124						
MJAR				S	**Sn**	**10 26 01.8**	**+3.3**
	29nm,0.3s,baz=282,slow=36,SNR=8.6						
MJAR				LR	LR	10 26 51.5	
	comp=Z,1μm,19.5s,baz=80,slow=47						
MAJO	**Matsushiro**	**2.79**	**257**	*d i* P	**Pn**	**10 25 27.1**	**+1.4**
MAJO	**Matsushiro**	**2.79**	**257**	*e*Pn	**Pn**	**10 25 26.9**	**+1.2**
MAJO				*e*Sn	**Sn**	**10 25 59.5**	**+1.0**
MAT	**Matsushiro**	**2.79**	**257**	P	**Pn**	**10 25 27.0**	**+1.2**
MAT				S	**Sn**	**10 26 01.1**	**+2.5**
MJB9	**Matsu-Tunnel**	**2.79**	**258**	*e*Pn	**Pn**	**10 25 27.3**	**+1.5**
MJB9				*e*Sn	**Sn**	**10 25 59.9**	**+1.3**
INU	**Inuyama**	**4.13**	**245**	*e*Pn	**Pn**	**10 25 46.2**	**+2.1**
INU				*e*Sn	**Sn**	**10 26 32.2**	**+0.6**
JHJ2	**Mitsune**	**4.33**	**200**	*e*Pn	**Pn**	**10 25 48.9**	**+2.0**
JHJ	**Hachijo jima 2**	**4.33**	**200**	P	**Pn**	**10 25 47.7**	**+0.8**
	53nm,0.3s,baz=110,slow=23,SNR=61						
JHJ				S	**Sn**	**10 26 34.2**	**-2.3**
	296nm,0.3s,baz=220,slow=20,SNR=12						
JHJ				LR	LR	10 27 41.9	
	comp=Z,506nm,21.9s,baz=98,slow=41						
ERM	**Erimo**	**4.96**	**14**	*ce*P	**Pn**	**10 25 58.5**	**+2.9**
ERM				pmax	pmax		
	comp=Z,17nm,0.6s						
ERM	**Erimo**	**4.96**	**14**	*e*Pn	**Pn**	**10 25 57.3**	**+1.7**
ERM				*e*Sn	**Sn**	**10 26 55.5**	**+3.4**
ASAJ	**Asahikawa**	**6.96**	**6**	P	**Pn**	**10 26 23.1**	**+0.1**
	comp=Z,5.0nm,0.3s,baz=227,slow=8.0,SNR=39						
ASAJ				S	**Sn**	**10 27 41.8**	**+0.6**
	comp=Z,3.2nm,0.3s,baz=261,slow=19,SNR=3.2						
ASAJ	**Asahikawa**	**6.96**	**6**	*e*Pn	**Pn**	**10 26 23.4**	**+0.4**
ASAJ				S	**Sn**	**10 27 41.8**	**+0.6**
YUK	**Yuzh-Kuril'sk**	**7.56**	**24**	*e*P	**Pn**	**10 26 32.8**	**+1.5**
YUK				*i* S	**Sn**	**10 27 52.6**	**-3.5**
YUK				pmax	pmax		
	comp=E,46nm,0.3s						
YUK				pmax	pmax		
	comp=Z,135nm,0.3s						
YUK				pmax	pmax		
	comp=N,28nm,0.1s						
SHO	**Shikotan**	**7.77**	**29**	*e*P	**Pn**	**10 26 33.9**	**-0.2**
SHO				*i* S	**Sn**	**10 27 55.2**	**-5.9**
SHO				pmax	pmax		
	comp=Z,79nm,1.0s						
SHO				pmax	pmax		
	comp=N,20nm,0.6s						
SHO				pmax	pmax		
	comp=E,56nm,1.0s						
KUR	**Kuril'sk**	**9.31**	**29**	*i* P	Pn	10 27 00.7	+5.4
KUR				*i* S	**Sn**	**10 28 38.3**	**-0.8**
KUR				pmax	pmax		
	comp=Z,31nm,0.5s						
KUR				pmax	pmax		
	comp=E,13nm,0.2s						
KUR				pmax	pmax		
	comp=N,13nm,0.5s						
VLA	**Vladivostok**	**9.49**	**312**	*i* P	**Pn**	**10 27 01.5**	**+3.8**
VLA				*e*S	**Sn**	**10 28 49.8**	**+6.3**
VLA				pmax	pmax		
	comp=Z,39nm,0.6s						
JNU	**Nakatsue**	**9.66**	**248**	P	**Pn**	**10 27 03.1**	**+2.9**
	comp=Z,0.3nm,0.3s,baz=75,slow=8.3,SNR=6.8						
JNU				LR	LR	10 31 02.9	
	comp=Z,317nm,21.4s,baz=124,slow=39						
JNU	**Nakatsue**	**9.66**	**248**	*e*Pn	**Pn**	**10 26 59.9**	**-0.3**
YSS	**Yuzh-Sakhalins**	**9.79**	**5**	*e*P	**Pn**	**10 27 03.2**	**+1.4**
YSS				pmax	pmax		
	comp=Z,30nm,1.2s						
YSS				MLR	MLR		
	comp=Z,300nm,10.0s						
CBIJ	**Chichi jima**	**10.09**	**177**	P	**Pn**	**10 27 04.3**	**-1.6**
CBIJ				S	Sn	10 28 47.2	-11
JCJ	**Chichijima**	**10.09**	**177**	P	**Pn**	**10 27 04.3**	**-1.6**
	comp=Z,6.7nm,0.3s,baz=98,slow=8.7,SNR=22						
JCJ				S	Sn	10 28 47.2	-11
	comp=Z,5.2nm,0.3s,baz=287,slow=20,SNR=5.1						
USRK	**Ussuriysk Ar.**	**10.10**	**317**	P	**Pn**	**10 27 08.0**	**+2.0**
	comp=Z,0.7nm,0.3s,baz=128,slow=14,SNR=21						
USRK				LR	LR	10 30 50.8	
	comp=Z,173nm,18.6s,baz=131,slow=36						
TJN	**Taejon**	**11.44**	**270**	*ce*P	**Pn**	**10 27 20.6**	**-3.8**
TYV	**Tymovskoe**	**13.68**	**3**	*e*P	**Pn**	**10 27 54.5**	**-0.5**
TYV				pmax	pmax		
	comp=Z,31nm,0.8s						
KLR	**Kul'dur**	**13.99**	**332**	P	**Pn**	**10 28 00.6**	**+1.5**
	comp=Z,0.2nm,0.3s,baz=161,slow=11,SNR=4.3						
DL2	**Dalian**	**15.82**	**282**	P	**P**	**10 28 29.5**	**+2.3**
DL2				S	**S**	**10 31 28.4**	**-3.7**
DL2				pmax	pmax		
	comp=Z,47nm,0.9s						
DL2				LR	LR		
	comp=N,260nm,19.4s						
DL2				LR	LR		
	comp=Z,230nm,21.6s						
PETK	**Petropavlovsk-**	**19.48**	**30**	P	**Pn**	**10 29 09.4**	**+0.5**
	comp=Z,0.3nm,0.3s,baz=210,slow=5.7,SNR=6.2						
PETK				LR	LR	10 36 56.2	
	comp=Z,86nm,19.9s,baz=211,slow=37						
TIA	**Tai'an**	**19.63**	**275**	⇑P	**Pn**	**10 29 11.9**	**+1.1**
TIA				pmax	pmax		
	comp=Z,20nm,1.2s						
BJI	**Beijing**	**20.04**	**286**	P	**P**	**10 29 13.9**	**+0.2**
BJI				S	**S**	**10 32 55.1**	**-2.5**
BJI				pmax	pmax		
	comp=Z,8.0nm,1.0s						
BJI				pmax	pmax		
	comp=Z,54nm,4.1s						
BJI				LR	LR		
	comp=N,89nm,15.1s						
BJI				LR	LR		
	comp=E,110nm,13.9s						
BJI				LR	LR		
	comp=Z,81nm,30.3s						
MA2	**Magadan**	**23.16**	**12**	P	**P**	**10 29 47.9**	**+0.9**
	comp=Z,15nm,0.8s,baz=216,slow=9.1,SNR=9.4						
HHC	**Hu-ho-hao-te**	**23.55**	**288**	*e*P	**P**	**10 29 50.4**	**-0.8**
GUMO	**Guam**	**23.69**	**172**	LR	LR	10 44 09.3	
	comp=Z,20nm,18.1s,baz=14,slow=49						
YAK	**Yakutsk**	**25.94**	**347**	*e*P	**P**	**10 30 11.8**	**-0.9**
YAK				*e**PP	**sP**	**10 30 22.0**	**-1.6**
YAK				*e*		10 30 50.1	
YAK				*e*		10 33 41.1	
YAK				*e*S	**S**	**10 34 38.2**	**-2.9**
YAK				*e*		10 41 03.5	
YAK				pmax	pmax		
	comp=Z,12nm,0.9s						
YAK				pmax	pmax		
	comp=N,6.0nm,1.1s						
YAK				pmax	pmax		
	comp=Z,55nm,2.3s						
YAK				pmax	pmax		
	comp=N,38nm,2.8s						
YAK				pmax	pmax		
	comp=E,19nm,2.6s						
YAK				smax	smax		
	comp=N,32nm,2.4s						
YAK				smax	smax		
	comp=E,17nm,2.0s						
YAK	**Yakutsk**	**25.94**	**347**	*e*P	**P**	**10 30 11.6**	**-1.0**
	comp=E,15nm,0.5s						
SEY	**Seymchan**	**26.60**	**11**	P	**P**	**10 30 20.1**	**+1.5**
	comp=E,3.9nm,0.6s,baz=191,slow=7.2,SNR=16						
SEY	**Seymchan**	**26.60**	**11**	*ce*P	**P**	**10 30 20.8**	**+2.1**
XAN	**Xi'an**	**26.67**	**273**	P	**P**	**10 30 21.4**	**+1.8**
XAN				pP	sP	10 30 29.6	-1.0
XAN				pmax	pmax		
	comp=Z,11nm,0.6s						
ULN	**Ulaanbaatar**	**27.38**	**304**	*e*P	**P**	**10 30 27.8**	**+1.8**
ULN				pmax	pmax		
	comp=Z,5.0nm,1.4s						
BOD	**Bodaibo**	**27.47**	**328**	*e*P	**P**	**10 30 24.9**	**-1.6**
BOD				pmax	pmax		
	comp=Z,4.0nm,0.8s						
ENH	**Enshi**	**27.48**	**265**	*e*P	**P**	**10 30 26.4**	**-0.6**
	comp=Z,8.2nm,0.6s						
SONA1	**Songino Array**	**27.81**	**304**	*e*P	**P**	**10 30 28.8**	**-1.0**
SONM	**Songino Array**	**27.81**	**304**	P	**P**	**10 30 30.4**	**+0.5**
	comp=Z,4.2nm,0.7s,baz=94,slow=8.1,SNR=9.3						
H11N2	**WAKE ISLAND Hy**	**28.11**	**121**	T	T	10 59 59.7	
	baz=314,slow=75,SNR=403						
H11N1	**WAKE ISLAND Hy**	**28.12**	**121**	T	T	11 00 00.9	
	baz=314,slow=75,SNR=608						
H11N3	**WAKE ISLAND Hy**	**28.13**	**121**	T	T	11 00 05.0	
	baz=314,slow=75,SNR=103						
H11S1	**WAKE ISLAND Hy**	**28.83**	**123**	T	T	11 01 22.2	
	baz=316,slow=76,SNR=410						
H11S3	**WAKE ISLAND Hy**	**28.83**	**123**	T	T	11 00 57.2	
	baz=316,slow=76,SNR=403						
H11S2	**WAKE ISLAND Hy**	**28.85**	**123**	T	T	11 00 56.3	
	baz=316,slow=76,SNR=281						
LZH	**Lanzhou**	**30.18**	**279**	*e*P	**P**	**10 30 50.3**	**-0.7**
LZH				pP	sP	10 31 00.8	-1.2
LZH				sP	pP	10 31 05.0	+6.2
LZH				*e*PP	**PnPn**	**10 31 48.5**	**-0.3**
LZH				pmax	pmax		
	comp=Z,20nm,1.0s						
LZH				pmax	pmax		
	comp=Z,67nm,5.4s						
LZH				LR	LR		
	comp=N,330nm,13.1s						
LZH				LR	LR		
	comp=E,340nm,13.4s						
LZH				LR	LR		
	comp=Z,400nm,16.0s						
ZAK	**Zakamensk**	**30.28**	**308**	*e*P	**P**	**10 30 50.8**	**-0.9**
ZAK				pmax	pmax		
	comp=Z,1.0nm,1.0s						
ZAK				pmax	pmax		
	comp=Z,2.0nm,1.0s						
GYA	**Guiyang**	**31.39**	**260**	*e*P	**P**	**10 31 02.6**	**+0.9**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
CD2	**Chengdu**	**31.81**	**270**	P	**P**	**10 31 03.3**	**-2.0**
CD2				pmax	pmax		
	comp=Z,2.0nm,0.6s						
GTA	**Gaotai**	**32.65**	**287**	*e*P	**P**	**10 31 13.5**	**+0.8**
GTA				pP	pP	10 31 18.6	-1.9
GTA				sP	sP	10 31 22.0	-1.7
GTA				pmax	pmax		
	comp=Z,6.0nm,0.7s						
BILL	**Bilibino**	**33.83**	**16**	*i* P	**P**	**10 31 19.5**	**-3.0**
BILL				*i*		10 34 01.5	
BILL				pmax	pmax		
	comp=Z,5.0nm,1.0s						
TIXI	**Tiksi**	**35.15**	**353**	LR	LR	10 46 33.7	
	comp=Z,70nm,21.1s,baz=176,slow=37						
TIXI	**Tiksi**	**35.15**	**353**	*e*P	**P**	**10 31 33.7**	**-0.1**
TIXI				pmax	pmax		
	comp=Z,2.0nm,1.0s						
KRAR	**Krasnoyarsk**	**37.44**	**316**	*e*P	**P**	**10 31 53.1**	**-0.5**
KRAR				pmax	pmax		
	comp=Z,5.0nm,0.6s						
SIJI	**Sorong**	**39.06**	**197**	P	**P**	**10 32 09.7**	**+2.0**
	comp=Z,46nm,0.3s,baz=357,slow=11,SNR=2.2						
WMQ	**Urumqi**	**40.89**	**297**	P	**P**	**10 32 24.6**	**+1.9**
WMQ				pmax	pmax		
	comp=Z,7.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,44nm,5.2s						
WMQ				LR	LR		
	comp=N,76nm,18.2s						
WMQ				LR	LR		
	comp=E,65nm,31.8s						
WMQ				LR	LR		
	comp=Z,32nm,35.8s						
CMAR	**Chiang Mai Arr**	**41.67**	**255**	P	**P**	**10 32 30.1**	**+0.8**
	comp=Z,0.5nm,0.3s,baz=43,slow=5.2,SNR=4.3						
CMAR				LR	LR	10 51 30.9	
	comp=Z,65nm,18.5s,baz=60,slow=39						
ZAA0	**Zalesovo Array**	**41.91**	**312**	*e*P	**P**	**10 32 30.5**	**-0.3**
ZALV	**Zalesovo Beam**	**41.91**	**312**	P	**P**	**10 32 30.9**	**+0.1**
	comp=Z,4.7nm,0.6s,baz=97,slow=7.6,SNR=14						
ZALV	**Zalesovo Beam**	**41.91**	**312**	*i* P	**P**	**10 32 31.2**	**+0.4**
ZALV				pmax	pmax		
	comp=Z,5.0nm,0.6s						
MK01	**Makanchi Array**	**44.15**	**302**	*e*P	**P**	**10 32 48.7**	**-0.4**
MK31	**Makanchi Array**	**44.15**	**302**	P	**P**	**10 32 48.4**	**-0.7**
MK31				pmax	pmax		
	comp=Z,3.0nm,0.6s						
MK31	**Makanchi Array**	**44.15**	**302**	*e*P	**P**	**10 32 48.4**	**-0.7**
MKAR	**Makanchi Array**	**44.15**	**302**	P	**P**	**10 32 48.8**	**-0.3**
	comp=Z,4.2nm,0.6s,baz=87,slow=10,SNR=42						
MKAR	**Makanchi Array**	**44.15**	**302**	*e*P	**P**	**10 32 48.5**	**-0.6**
MAKZ	**Makanchi**	**44.36**	**302**	*e*P	**P**	**10 32 49.9**	**-0.9**
MAKZ				pmax	pmax		
	comp=Z,4.0nm,0.7s						
MAKZ	**Mak

comp=Z,3.0nm,0.7s
OTUK Ortayu 50.44 306 P P 10 33 37.0 -1.1
OTUK pmax pmax
comp=Z,5.0nm,0.7s
BVA0 Borovoye Array 50.57 312 *i* P **P 10 33 38.0 -0.9**
BVA0 pmax pmax
comp=Z,2.0nm,0.6s
DOT Dot Lake 50.59 34 *eP* **P 10 33 39.8 +0.8**
comp=Z,12nm,0.7s
BRVK Borovoye 50.62 312 *eP* **P 10 33 38.5 -0.8**
BRVK pmax pmax
comp=Z,3.0nm,0.8s
BMRM Bremner River 50.65 37 *eP* **P 10 33 40.6 +1.1**
comp=Z,13nm,0.9s
MENT Mentasta 50.82 35 *eP* **P 10 33 42.5 +1.8**
comp=Z,12nm,1.3s
ZRNK Zerenda 51.40 312 *eP* **P 10 33 44.4 -0.8**
ZRNK pmax pmax
comp=Z,4.0nm,0.8s
ZRNK Zerenda 51.40 312 *eP* **P 10 33 44.4 -0.8**
comp=Z,4.2nm,0.8s
EGAK Eagle 51.73 32 *eP* **P 10 33 48.2 +0.8**
comp=Z,4.6nm,0.6s
MNAS Manas 51.98 299 P **P 10 33 49.4 -0.4**
MNAS pmax pmax
comp=Z,3.0nm,0.7s
DAWY Dawson 52.59 33 *eP* **P 10 33 55.6 +1.7**
comp=Z,2.3nm,0.6s
KK31 Karatay Array 53.16 300 *i* P **P 10 33 57.3 -1.1**
KK31 pmax pmax
comp=Z,1.0nm,0.6s
KKAR Karatay Array 53.16 300 *eP* **P 10 33 57.6 -0.8**
KKAR Karatay Array 53.16 300 *eP* **P 10 33 57.6 -0.8**
INK Inuvik 54.18 27 *eP* **P 10 34 06.1 +0.7**
INK pmax pmax
comp=Z,8.0nm,1.0s
INK Inuvik 54.18 27 *eP* **P 10 34 06.1 +0.7**
comp=Z,7.6nm,1.0s
SKAG Skagway 55.48 38 *eP* **P 10 34 16.6 +1.6**
comp=Z,26nm,1.9s
DZET Dzherino 55.90 296 P **P 10 34 17.8 -0.7**
DZET pmax pmax
comp=Z,10.0nm,0.6s
ARU Arti 56.33 319 *d i* P **P 10 34 19.9 -1.2**
ARU S **S 10 42 08.9 -0.7**
ARU SS **SS 10 45 53.8 -2.2**
ARU pmax pmax
comp=Z,5.0nm,0.8s
FITZ Fitzroy Crossi 57.02 198 P **P 10 34 26.5 +0.1**
comp=Z,1.9nm,0.6s,baz=22,slow=6.8,SNR=6.6
WRA Warramunga Arr 57.24 188 P **P 10 34 27.4 -0.5**
comp=Z,3.0nm,0.7s,baz=5.8,slow=7.4,SNR=35
WRA PcP **PcP 10 35 22.5 +0.4**
comp=Z,2.8nm,0.7s,baz=2.2,slow=4.7,SNR=8.0
AB31 Akbulak array 57.94 310 *i* P **P 10 34 31.7 -0.9**
AB31 pmax pmax
comp=Z,2.0nm,0.6s
ABKAR Akbulak array 57.94 310 *eP* **P 10 34 32.0 -0.6**
DLBC Dease Lake 58.41 38 *eP* **P 10 34 38.5 +2.6**
comp=Z,6.9nm,1.0s
AKTO Aktyubinsk 58.67 312 P **P 10 34 36.8 -0.9**
AKTO pmax pmax
comp=Z,3.0nm,1.0s
AS01 Alice Springs 60.96 188 *eP* **P 10 34 53.2 -0.4**
ASAR Alice Springs 60.97 188 P **P 10 34 53.2 -0.5**
comp=Z,1.8nm,0.8s,baz=10,slow=5.4,SNR=12
YKW3 Yellowknife Ar 63.56 30 *eP* **P 10 35 10.7 0.0**
comp=Z,3.3nm,0.9s
YKA Yellowknife Ar 63.60 30 P **P 10 35 11.4 +0.5**
comp=Z,2.3nm,0.7s,baz=302,slow=6.8,SNR=39
YKB5 Yellowknife Ar 63.60 30 *eP* **P 10 35 10.9 0.0**
GEYT Alibeck 63.88 299 P **P 10 35 13.1 -0.2**
comp=Z,1.9nm,0.4s,baz=35,slow=5.3,SNR=3.6
ARCES ARCESS Array B 63.89 339 P **P 10 35 13.3 +0.5**
comp=Z,2.9nm,1.0s,baz=46,slow=10,SNR=6.1
COCO West Island 64.65 230 *eP* **P 10 35 15.5 -2.9**
COCO pmax pmax
comp=Z,149nm,0.6s
COCO West Island 64.65 230 *eP* **P 10 35 15.5 -2.9**
comp=Z,149nm,0.6s
OBN Obninsk 68.05 323 *i* P **P 10 35 40.8 +1.2**
OBN pmax pmax
comp=Z,5.0nm,0.7s
STKA Stephens Creek 68.72 180 P **P 10 35 44.8 +0.8**
comp=Z,4.7nm,0.8s,baz=335,slow=11,SNR=5.2
FINES FINESS Array B 68.73 332 P **P 10 35 43.8 0.0**
comp=Z,1.5nm,0.6s,baz=38,slow=7.2,SNR=5.9
H04A Detroit Lake 68.89 49 *eP* **P 10 35 46.5 +1.2**
comp=Z,5.1nm,0.8s
K05A Summer Lake 70.73 51 *eP* **P 10 35 58.6 +1.8**
comp=Z,8.8nm,0.9s
KBZ Khabaz 70.90 311 P **P 10 35 57.3 -0.2**
comp=Z,3.1nm,0.9s,baz=10.0,slow=2.7,SNR=6.5
KIV Kislovodsk 70.91 311 *eP* **P 10 35 56.8 -0.9**
KIV *i* 10 36 17.3
KIV pmax pmax
comp=Z,5.0nm,1.0s
KIV MLR MLR
comp=Z,31nm,15.0s
FFC Flin Flon 73.49 33 *eP* **P 10 36 13.4 +0.6**
FFC pmax pmax
comp=Z,7.0nm,0.8s
FFC Flin Flon 73.49 33 *eP* **P 10 36 13.4 +0.6**
comp=Z,7.2nm,0.8s
FCC Fort Churchill 73.79 27 *eP* **P 10 36 14.6 +0.1**
FCC pmax pmax
comp=Z,7.0nm,0.9s
FCC Fort Churchill 73.79 27 *eP* **P 10 36 14.6 +0.1**
comp=Z,7.2nm,0.9s
LRM Limekiln Ridge 73.93 44 *eP* **P 10 36 17.5 +1.6**
EGMT Eagleton 74.06 41 *eP* **P 10 36 17.1 +0.7**
comp=Z,4.5nm,0.8s
NB2 NORSAR Subarra 74.09 337 P **P 10 36 15.7 -0.6**
comp=Z,6.4nm,1.2s,baz=40,slow=6.2
NOA NORSAR Array B 74.09 337 P **P 10 36 16.0 -0.2**
comp=Z,2.5nm,0.9s,baz=39,slow=5.9,SNR=3.9
NOA NORSAR Array B 74.09 337 P **P 10 36 16.0 -0.2**
NOA pmax pmax
comp=Z,2.0nm,0.8s
DLMT Dillon 74.13 45 *eP* **P 10 36 18.2 +1.3**
comp=Z,6.1nm,0.7s
ASAG Malin Array Be 74.25 322 P **P 10 36 16.5 -0.8**
comp=Z,1.4nm,0.4s,baz=46,slow=6.2,SNR=12
KIEV Kiev 74.27 322 *eP* **P 10 36 15.6 -1.8**
KIEV pmax pmax
comp=Z,3.0nm,0.9s
BOZ Bozeman (W) 74.50 44 *eP* **P 10 36 20.5 +1.4**
BOZ pmax pmax
comp=Z,5.0nm,0.8s
BOZ Bozeman (W) 74.50 44 *eP* **P 10 36 20.5 +1.4**
comp=Z,4.7nm,0.8s
NV01 Mina Array Sit 74.78 53 *eP* **P 10 36 22.4 +1.5**
NVAR Mina Array Bea 74.78 53 P **P 10 36 22.8 +1.8**
comp=Z,3.0nm,0.8s,baz=289,slow=6.5,SNR=9.3
YMR Madison River 75.47 45 *eP* **P 10 36 24.1 -0.7**
comp=Z,28nm,1.9s
H17A Grant Village 75.86 45 *eP* **P 10 36 29.8 +2.7**
comp=Z,6.2nm,0.8s
IMW Indian Meadow 75.96 45 *eP* **P 10 36 29.8 +2.1**
comp=Z,4.4nm,0.7s
RLMT Red Lodge 76.13 44 *eP* **P 10 36 29.5 +1.0**
comp=Z,7.4nm,1.2s
MOOW Moose Ponds 76.16 45 *eP* **P 10 36 29.9 +1.1**
comp=Z,1.9nm,0.9s
TPNV Topopah Spring 76.97 53 *eP* **P 10 36 34.0 +0.6**
TPNV pmax pmax
comp=Z,4.0nm,1.0s
TPNV Topopah Spring 76.97 53 *eP* **P 10 36 34.0 +0.6**
comp=Z,4.3nm,1.0s
HWUT Hardware Ranch 77.02 47 *eP* **P 10 36 34.9 +1.3**
comp=Z,5.2nm,1.2s
DUG Dugway, Tooele 77.14 49 *eP* **P 10 36 35.5 +1.2**
DUG pmax pmax
comp=Z,3.0nm,0.8s
DUG Dugway, Tooele 77.14 49 *eP* **P 10 36 35.5 +1.2**
comp=Z,3.4nm,0.8s
TCUT Toone Canyon 77.41 48 *eP* **P 10 36 36.9 +1.0**
comp=Z,4.6nm,0.7s
BW06 Boulder Array 77.45 46 *eP* **P 10 36 36.7 +0.7**
PD31 Pinedale Array 77.45 46 *eP* **P 10 36 36.6 +0.6**
PDAR Pinedale Array 77.45 46 P **P 10 36 36.8 +0.7**
comp=Z,1.6nm,0.6s,baz=265,slow=2.3,SNR=25
PSUT Pine Spring 77.52 51 *eP* **P 10 36 37.8 +1.3**
comp=Z,1.9nm,0.9s
NLU North Lily Min 77.74 49 *eP* **P 10 36 39.0 +1.3**
comp=Z,2.1nm,0.9s
SHPR Sheep Range 77.93 53 *eP* **P 10 36 40.1 +1.3**
comp=Z,3.2nm,1.0s
BUR08 Bucovina Ar. S 78.26 322 *eP* **P 10 36 39.9 -0.4**
KOLS Kolonicke sedl 78.77 324 *eP* **P 10 36 41.0 -2.0**
KOLS Kolonicke sedl 78.77 324 *eP* **P 10 36 41.0 -2.0**
LCMT Little Creek M 78.84 52 *eP* **P 10 36 45.7 +2.0**
comp=Z,3.1nm,1.0s
P17A Butcher Ranch, 78.84 49 *eP* **P 10 36 45.1 +1.3**
comp=Z,3.7nm,0.7s
BRTR Keskin Array B 78.85 312 P **P 10 36 43.6 -0.2**
comp=Z,0.4nm,0.5s,baz=28,slow=7.0,SNR=3.5
MTPU Mount Pierson 78.86 51 *eP* **P 10 36 46.2 +2.0**
comp=Z,2.6nm,0.8s
SRU San Rafael Swe 79.20 49 *eP* **P 10 36 46.8 +1.0**
SRU pmax pmax
comp=Z,4.0nm,0.7s
SRU San Rafael Swe 79.20 49 *eP* **P 10 36 46.8 +1.0**
comp=Z,4.4nm,0.7s
RSSD Black Hills 79.61 42 *eP* **P 10 36 48.5 +0.5**
RSSD pmax pmax
comp=Z,4.0nm,1.0s
RSSD Black Hills 79.61 42 *eP* **P 10 36 48.5 +0.5**
comp=Z,4.1nm,1.0s
PV09 Paradox Valley 80.43 49 *eP* **P 10 36 54.2 +1.7**
PV10 Paradox Valley 80.56 49 *eP* **P 10 36 55.2 +2.0**
VYHS Vyhne 80.67 325 *eP* **P 10 36 53.4 +0.1**
VYHS *e* 10 37 06.7
VYHS Vyhne 80.67 325 *eP* **P 10 36 53.4 +0.1**
VYHS *e* 10 37 06.7
PV05 Paradox Valley 80.72 49 *eP* **P 10 36 56.0 +1.9**
N23A Red Feather La 80.72 45 *eP* **P 10 36 55.8 +1.8**
comp=Z,3.4nm,0.8s
WUAZ Wupatki 80.95 52 *eP* **P 10 36 56.4 +1.2**
comp=Z,2.8nm,0.8s
BRG Berggiesshubel 80.98 329 *eP* **P 10 36 53.7 -1.2**
comp=Z,2.5nm,0.9s
BRG Berggiesshubel 80.98 329 *eP* **P 10 36 53.7 -1.2**
BRG pmax pmax
comp=Z,3.0nm,0.9s
PV01 Paradox Valley 81.00 49 *eP* **P 10 36 56.8 +1.2**
comp=Z,176nm,0.8s
CLL Collm 81.02 330 *i* P **P 10 36 54.6 -0.5**
comp=Z,5.0nm,1.0s
CLL Collm 81.02 330 *i* P **P 10 36 54.6 -0.5**
CLL pmax pmax
comp=Z,5.0nm,1.0s
X16A Lo Mia Camp, P 81.60 53 *eP* **P 10 37 00.7 +2.0**
comp=Z,2.2nm,0.8s
ISCO Idaho Springs 81.64 46 *eP* **P 10 36 59.9 +0.9**
ISCO pmax pmax
comp=Z,2.0nm,0.8s
ISCO Idaho Springs 81.64 46 *eP* **P 10 36 59.9 +0.9**
comp=Z,1.8nm,0.8s
MVCO Mesa Verde 81.64 49 *eP* **P 10 36 59.6 +0.6**
comp=Z,3.1nm,0.8s
URZ Urewera 81.93 152 *eP* **P 10 37 02.7 +2.9**
comp=Z,35nm,0.5s
S22A 4UR Ranch, Cre 82.29 48 *eP* **P 10 37 03.6 +1.2**
comp=Z,2.7nm,0.8s
KHC Kasperske Hory 82.48 329 *eP* **P 10 37 03.0 +0.1**
KHC *ep*P **sP 10 37 15.0 +0.6**
KHC Kasperske Hory 82.48 329 *eP* **P 10 37 03.0 +0.1**
KHC 10 37 15.0 *e*
KHC Kasperske Hory 82.48 329 *eP* **P 10 37 02.8 -0.1**
comp=Z,1.0nm,0.8s
GERES GERESS Array B 82.65 328 P **P 10 37 03.6 -0.3**
comp=Z,0.7nm,0.5s,baz=28,slow=6.0,SNR=8.4
GEA0 GERESS Array S 82.65 328 *eP* **P 10 37 03.3 -0.6**
SDCO Great Sand Dun 83.08 47 *eP* **P 10 37 07.4 +0.9**
comp=Z,3.3nm,1.0s
ECSD EROS Data Cent 83.70 38 *eP* **P 10 37 09.3 +0.1**
comp=Z,3.5nm,0.9s
T25A Trinidad 84.13 47 *eP* **P 10 37 13.1 +1.3**
comp=Z,6.0nm,0.8s
ANMO Albuquerque 84.38 50 *eP* **P 10 37 14.0 +0.9**
ANMO pmax pmax
comp=Z,2.0nm,0.8s
ANMO Albuquerque 84.38 50 *eP* **P 10 37 13.6 +0.5**
comp=Z,2.7nm,1.0s
PPT Papeete 84.58 117 LR LR 11 09 35.2
comp=Z,58nm,21.9s,baz=98,slow=32
319A Douglas 84.95 54 *eP* **P 10 37 17.4 +1.4**
comp=Z,4.4nm,0.9s
SCHQ Schefferville 85.14 16 P **P 10 37 16.8 +0.4**
comp=Z,3.0nm,0.7s,baz=35,slow=16,SNR=3.7
BFO Black Forest 85.23 331 *i* P **P 10 37 17.5 +0.6**
KSU1 Kansas State U 87.09 41 *eP* **P 10 37 25.8 -0.5**
comp=Z,6.0nm,0.6s
V34A Guthrie 88.98 44 *eP* **P 10 37 35.8 +0.4**
comp=Z,6.6nm,0.8s
TX31 Lajitas Ar. Si 89.91 52 *eP* **P 10 37 40.4 +0.5**
TXAR Lajitas Array 89.91 52 P **P 10 37 40.9 +0.9**
comp=Z,1.7nm,0.8s,baz=302,slow=3.1,SNR=21
MIAR Mount Ida 92.10 43 *eP* **P 10 37 50.9 +1.0**
MIAR pmax pmax
comp=Z,4.0nm,0.8s
MIAR Mount Ida 92.10 43 *eP* **P 10 37 50.9 +1.0**
comp=Z,4.3nm,0.8s
TORD Torodi Ar. Bea 117.31 315 PKP **PKPdf 10 43 25.2 -1.2**
comp=Z,0.2nm,0.5s,baz=51,slow=0.7,SNR=3.0
QSPA South Pole Qui 126.94 180 *eP*KPdf **PKPdf 10 43 43.1 -0.2**
VNA2 Neumayer--Watz 142.51 196 PKP PKPpre 10 44 08.2
baz=95,slow=1.9
VNA3 Neumayer Olymp 142.76 195 PKP PKPpre 10 44 09.2
LPAZ La Paz 146.49 60 PKPbc **PKPbc 10 44 22.9 0.0**
comp=Z,3.3nm,0.5s,baz=18,slow=2.6,SNR=20
LVC Limon Verde 149.99 70 PKPbc **PKPbc 10 44 32.6 +1.0**
comp=Z,20nm,0.7s,baz=276,slow=20,SNR=7.4

*ISCJB **21** 10:27:47.1±0.6,6°.84N±0°.04×73°.08W±0°.05,h156km±5km, Error ellipse: s-maj=9.1km s-min=4.3km az=40.2*
*FUNV **21** 10:27:47.4,6°.76N×73°.08W,h168km,MW3.2*
*RSNC **21** 10:27:49.9±1.2,6°.79N×73°.14W,h141km±6km,ML2.8*
ISC 21 10:27:46.8±1.4,**6°.82N**±0°.04×**73°.06W**±0°.05,**h161**km±8km,
n24,σ1**°32**/40,**1C-1D**,**Northern Colombia**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BTLC	**Betulia, Santa**	**0.23**	**295**	*eP*	**Pn**	**10 28 09.0**	**+0.3**
BARC	**Barichara**	**0.26**	**207**	*i* P	**Pn**	**10 28 08.8**	**0.0**
BARC				*eS*	**Sn**	**10 28 23.4**	**-2.2**
BARC				*i*		10 28 24.5	
comp=Z,218nm,0.2s							
GIRC	**Giron, Santand**	**0.29**	**333**	*i* P	**Pn**	**10 28 08.9**	**+0.2**
GIRC				*eS*	**Sn**	**10 28 24.1**	**-1.5**
PAMC	**Pamplona, Colo**	**0.63**	**35**	*i* P	**Pn**	**10 28 11.9**	**+1.3**
PAMC				*eS*	**Sn**	**10 28 28.5**	**-0.3**
BRRC	**Barranca, Sant**	**0.70**	**294**	*i* P	**Pn**	**10 28 10.8**	**+0.3**
BRRC				*i*		10 28 11.1	
comp=Z,200nm,0.1s							
BRRC				*eS*	**Sn**	**10 28 27.7**	**-0.9**
RUSC	**La Rusia**	**0.92**	**181**	*eP*	**Pn**	**10 28 13.1**	**+0.5**
RUSC				*eS*	**Sn**	**10 28 30.8**	**-1.5**
RUSC				*i*		10 28 32.8	
comp=Z,49nm,0.4s							
GRMC	**Gramalote, San**	**0.93**	**16**	*i* P	**Pn**	**10 28 14.9**	**+2.7**
GRMC				*eS*	**Sn**	**10 28 34.1**	**+2.3**
GRMC				*i*		10 28 35.4	
comp=Z,144nm,0.4s							
CBRI	**Barrientos, No**	**0.93**	**17**	*i* P	**Pn**	**10 28 13.6**	**+1.3**
CBRI				*eS*	**Sn**	**10 28 31.8**	**0.0**
CAPV	**Capacho**	**1.27**	**36**	*eP*	**Pn**	**10 28 16.6**	**+1.4**
CAPV				*eS*	**Sn**	**10 28 37.6**	**+0.5**
OCAC	**Ocana**	**1.43**	**350**	*eP*	**Pn**	**10 28 17.6**	**+0.9**
OCAC				*eS*	**Sn**	**10 28 39.0**	**-0.7**
OCAC				*i*		10 28 42.7	
comp=Z,110nm,0.4s							
NORC	**Norcasia**	**2.19**	**235**	*eP*	**Pn**	**10 28 25.3**	**+0.5**
NORC				*eS*	**Sn**	**10 28 52.3**	**-1.9**
ROSC	**El Rosal**	**2.33**	**212**	*eP*	**Pn**	**10 28 28.1**	**+1.3**
ROSC				*eS*	**Sn**	**10 28 57.4**	**-0.4**
HELC	**Santa Helena**	**2.53**	**256**	*eP*	**Pn**	**10 28 30.9**	**+1.7**
HELC				*eS*	**Sn**	**10 28 59.6**	**-2.2**
HELC				*i*		10 29 07.9	
comp=Z,25nm,0.3s							
VIGV	**El Vigia**	**2.62**	**40**	*eP*	**Pn**	**10 28 30.6**	**+0.7**
VIGV				*eS*	**Sn**	**10 29 02.5**	**-0.8**
SOCV	**Socops**	**2.63**	**56**	*eP*	**Pn**	**10 28 30.1**	**+0.1**
SOCV				*eS*	**Sn**	**10 29 02.5**	**-1.0**
DBBC	**Dabeiba**	**3.13**	**274**	*eP*	**Pn**	**10 28 37.0**	**+0.7**
TOLC	**Tolima**	**3.16**	**225**	*eP*	**Pn**	**10 28 39.7**	**+2.8**
SDV	**Santo Domingo**	**3.16**	**49**	*eP*	**Pn**	**10 28 38.6**	**+1.8**
ELOV	**Elorza**	**3.56**	**87**	*eP*	**Pn**	**10 28 42.1**	**+0.4**
PRAC	**Prado**	**3.58**	**211**	*eP*	**Pn**	**10 28 43.4**	**+1.4**
PRAC				*eS*	**Sn**	**10 29 24.6**	**-0.4**
SJCC	**San Jacinto, C**	**3.70**	**326**	*eP*	**Pn**	**10 28 43.7**	**+0.1**
VIRV	**Villa del Rosa**	**3.71**	**10**	*eP*	**Pn**	**10 28 43.5**	**-0.1**
VIRV				*eS*	**Sn**	**10 29 26.4**	**-1.6**
CURV	**Curarigua**	**4.41**	**44**	*eP*	**Pn**	**10 28 53.0**	**+0.2**
BAUV	**El Baul**	**5.40**	**67**	*eP*	**Pn**	**10 29 05.0**	**-0.7**

*IDC **21** 10:32:12.7±6.7,17°.51S×178°.87W,h634km±85km,mb3.2/9, mb1 3.4/9,mb1mx3.0/43,mbtmp4.2/9,Error ellipse: s-maj=77.2km s-min=27.9km az=151.0*
ISC 21 10:32:04.9±1.4,**17°.5S**±0°.5×**178°.7W**±0°.3,**h539**km,**n9**,
σ1**°01**/10,**mb3.6/9**,**Fiji Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**33.29**	**260**	P	**P**	**10 37 59.3**	**+1.1**
2.3nm,0.5s,baz=86,slow=13,SNR=5.6							
STKA	**Stephens Creek**	**38.63**	**241**	P	**P**	**10 38 42.3**	**0.0**
2.9nm,0.7s,baz=89,slow=12,SNR=5.6							
WRA	**Warramunga Arr**	**44.48**	**259**	P	**P**	**10 39 28.6**	**-0.1**
2.3nm,0.5s,baz=96,slow=7.2,SNR=55							
ASAR	**Alice Springs**	**44.68**	**254**	P	**P**	**10 39 30.1**	**-0.2**
14nm,0.7s,baz=88,slow=8.5,SNR=192							
ASAR				PcP	**PcP**	**10 40 59.1**	**-2.0**
0.5nm,0.6s,baz=102,slow=3.7,SNR=4.4							
FITZ	**Fitzroy Crossi**	**52.87**	**260**	P	**P**	**10 40 31.0**	**+0.1**
3.4nm,1.0s,baz=113,slow=5.9,SNR=5.6							
NVAR	**Mina Array Bea**	**79.28**	**44**	P	**P**	**10 43 15.8**	**+0.9**
0.3nm,0.6s,baz=232,slow=7.3,SNR=5.6							
ILAR	**Eielson Array**	**85.52**	**13**	P	**P**	**10 43 44.7**	**-0.8**
0.3nm,0.4s,baz=221,slow=4.9,SNR=6.1							
TXAR	**Lajitas Array**	**85.96**	**58**	P	**P**	**10 43 49.1**	**+0.5**
0.9nm,0.7s,baz=215,slow=5.8,SNR=14							
PDAR	**Pinedale Array**	**87.20**	**44**	P	**P**	**10 43 54.2**	**-0.1**
0.5nm,0.6s,baz=234,slow=3.7,SNR=6.9							

*ISK **21** 10:35:57.6,39°.10N×29°.20E,h8km,ML2.5*
*DDA **21** 10:35:57.9,39°.15N×29°.13E,h7km,Ml2.8*
*CSEM **21** 10:35:58.0±0.1,39°.13N×29°.15E,h5km,ML2.8,Error ellipse: s-maj=3.5km s-min=2.8km az=88.0*
ISC 21 10:35:58.3±1.0,**39°.13N**±0°.02×**29°.14E**±0°.02,**h5**km±10km,
n40,σ0**°57**/52,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.27**	**98**	P	**Pg**	**10 36 03.4**	**-0.1**
GDZ				S	**Sg**	**10 36 08.1**	**+1.0**
GDZ	**Gediz**	**0.27**	**98**	*i* P	**Pg**	**10 36 03.4**	**-0.1**
GDZ				*i* S	**Sg**	**10 36 08.1**	**+1.0**
DEMI	**Demirci**	**0.34**	**256**	P	**Pg**	**10 36 04.8**	**0.0**
DEMI				S	**Sg**	**10 36 09.5**	**+0.1**
DEMI	**Demirci**	**0.34**	**256**	*i* P	**Pg**	**10 36 04.8**	**0.0**
DEMI				*i* S	**Sg**	**10 36 09.5**	**+0.1**
TVSB	**Tavsanli**	**0.41**	**38**	*e*PG	**Pg**	**10 36 06.0**	**-0.2**
TVSB	**Tavsanli**	**0.41**	**38**	*e*Pg	**Pg**	**10 36 06.0**	**-0.2**
DURS	**Dursunbey**	**0.70**	**313**	P	**Pg**	**10 36 11.4**	**-0.3**
DURS	**Dursunbey**	**0.70**	**313**	*i* P	**Pg**	**10 36 11.4**	**-0.3**
MANT	**Manisa**	**0.78**	**216**	P	**Pg**	**10 36 12.6**	**-0.7**
MANT	**Manisa**	**0.78**	**216**	*i* P	**Pg**	**10 36 12.6**	**-0.7**
KHAL	**Karahalli**	**0.81**	**160**	P	**Pg**	**10 36 13.7**	**0.0**
KHAL				S	**Sg**	**10 36 24.0**	**-0.2**
KHAL	**Karahalli**	**0.81**	**160**	*i* P	**Pg**	**10 36 13.7**	**0.0**
KHAL				*i* S	**Sg**	**10 36 24.0**	**-0.2**
KHL	**Karahalli**	**0.86**	**159**	*e*PG	**Pg**	**10 36 13.9**	**-0.8**
KHL				*e*SG	**Sg**	**10 36 25.2**	**-0.7**
KHL	**Karahalli**	**0.86**	**159**	*e*Pg	**Pg**	**10 36 13.9**	**-0.8**
KHL				*e*Sg	**Sg**	**10 36 25.2**	**-0.7**
ORLT	**Orhaneli**	**0.94**	**349**	*e*PG	**Pg**	**10 36 16.5**	**+0.3**
ORLT	**Orhaneli**	**0.94**	**349**	*e*Pg	**Pg**	**10 36 16.5**	**+0.3**
AKHS	**Akhisar**	**1.06**	**257**	P	**Pb**	**10 36 19.4**	**+0.3**
AKHS	**Akhisar**	**1.06**	**257**	*i* P	**Pb**	**10 36 19.4**	**+0.3**
BALB	**Balikesir**	**1.10**	**298**	*e*PN	**Pn**	**10 36 20.7**	**+0.4**
BALB				*e*SN	**Sn**	**10 36 36.5**	**+0.6**
BALB	**Balikesir**	**1.10**	**298**	*e*Pn	**Pn**	**10 36 20.7**	**+0.4**
BALB				*e*Sn	**Sn**	**10 36 36.5**	**+0.6**
IGD	**Bursa**	**1.14**	**2**	*i* P	**Pg**	**10 36 18.5**	**-1.5**
IGD				*i* S	**Sb**	**10 36 35.1**	**-0.3**
CAVI	**Cavuskoy**	**1.20**	**27**	*e*PN	**Pg**	**10 36 21.2**	**-0.1**
CAVI	**Cavuskoy**	**1.20**	**27**	*e*Pn	**Pg**	**10 36 21.2**	**-0.1**
IZI	**Iznik**	**1.23**	**12**	*e*PN	**Pg**	**10 36 21.8**	**-0.1**
IZI	**Iznik**	**1.23**	**12**	*e*Pn	**Pg**	**10 36 21.8**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.25**	**351**	*e*PN	**Pg**	**10 36 21.8**	**-0.5**
MDNY	**Mudanya-Bursa**	**1.25**	**351**	*e*Pn	**Pg**	**10 36 21.8**	**-0.5**
BALY	**Balya**	**1.33**	**298**	P	**Pn**	**10 36 21.9**	**-1.6**
BALY	**Balya**	**1.33**	**298**	*i* P	**Pn**	**10 36 21.9**	**-1.6**
ADVT	**Abdulvahap**	**1.38**	**19**	*e*PN	**Pb**	**10 36 24.4**	**-0.2**
ADVT	**Abdulvahap**	**1.38**	**19**	*e*Pn	**Pb**	**10 36 24.4**	**-0.2**
DNZL	**Cakiroluk**	**1.44**	**183**	P	**Pg**	**10 36 26.3**	**+0.4**
DNZL	**Cakiroluk**	**1.44**	**183**	*i* P	**Pg**	**10 36 26.3**	**+0.4**
ARMT	**Armutlu**	**1.45**	**352**	*e*PN	**Pn**	**10 36 25.1**	**-0.1**
ARMT	**Armutlu**	**1.45**	**352**	*e*Pn	**Pn**	**10 36 25.1**	**-0.1**
GULT	**Gulveren**	**1.68**	**39**	*e*PN	**Pn**	**10 36 28.0**	**-0.4**
GULT	**Gulveren**	**1.68**	**39**	*e*Pn	**Pn**	**10 36 28.0**	**-0.4**
AYDN	**Tasoluk**	**1.77**	**214**	P	**Pn**	**10 36 29.6**	**0.0**
AYDN	**Tasoluk**	**1.77**	**214**	*i* P	**Pn**	**10 36 29.6**	**0.0**
SART	**Tekirdag**	**2.17**	**317**	*i* P	**Pb**	**10 36 38.2**	**+0.2**
SART				*i* S	**Sb**	**10 37 05.9**	**+0.7**

*IDC **21** 10:36:29.3±3.1,35°.89S×179°.22E,h0km,mb4.1/3, mb1 4.2/4,mb1mx3.8/35,mbtmp4.0/4,ML3.7/1,Error ellipse: s-maj=64.3km s-min=33.5km az=112.0*
ISC 21 10:36:20.0±1.8,**36°.5S**±0°.1×**179°.1W**±0°.1,**h10**km,**n38**,
σ1**°08**/42,**mb4.2/3**,**East of North Island**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MXZ	**Matakaoa Point**	**2.33**	**241**	*eP*	**Pn**	**10 36 58.9**	**+0.4**
77nm,0.4s							
MXZ	**Matakaoa Point**	**2.33**	**241**	PN	**Pn**	**10 36 58.6**	**+0.2**
MXZ				SN	**Sn**	**10 37 25.9**	**-1.3**
WMGZ	**Waiomatatini S**	**2.39**	**235**	PN	**Pn**	**10 37 00.6**	**+1.3**
WMGZ				SN	**Sn**	**10 37 29.8**	**+1.2**
PUZ	**Puketiti**	**2.64**	**232**	PN	**Pn**	**10 37 03.6**	**+0.9**
PUZ				SN	**Sn**	**10 37 34.8**	**+0.1**
HAZ	**Te Kaha**	**2.79**	**241**	PN	**Pn**	**10 37 05.6**	**+0.8**
HAZ				SN	**Sn**	**10 37 40.2**	**+1.7**
TWGZ	**Tauwhareparae**	**2.88**	**233**	PN	**Pn**	**10 37 07.3**	**+1.3**
CNGZ	**Carnagh Statio**	**2.93**	**226**	PN	**Pn**	**10 37 08.4**	**+1.7**
TKGZ	**Te Karaka**	**3.12**	**230**	PN	**Pn**	**10 37 10.5**	**+1.2**
MWZ	**Matawai**	**3.26**	**234**	PN	**Pn**	**10 37 11.7**	**+0.5**
RIGZ	**Rimuhau**	**3.34**	**227**	PN	**Pn**	**10 37 13.1**	**+0.7**
PRGZ	**Paritu Road**	**3.42**	**223**	PN	**Pn**	**10 37 14.2**	**+0.8**
RAGZ	**Rawiri**	**3.42**	**233**	PN	**Pn**	**10 37 13.8**	**+0.3**
URZ	**Urewera**	**3.50**	**238**	Pn	**Pn**	**10 37 15.3**	**+0.8**
10nm,0.3s,baz=264,slow=3.5,SNR=103							
URZ				Sn	**Sn**	**10 37 54.7**	**-1.2**
9.5nm,0.3s,baz=163,slow=20,SNR=8.5							
URZ	**Urewera**	**3.50**	**238**	PN	**Pn**	**10 37 14.8**	**+0.4**
MHGZ	**Mahia Peninsul**	**3.57**	**220**	PN	**Pn**	**10 37 16.4**	**+0.9**
KNZ	**Kokohu**	**3.60**	**224**	PN	**Pn**	**10 37 16.5**	**+0.6**
SNGZ	**Shannon Statio**	**3.64**	**229**	PN	**Pn**	**10 37 17.4**	**+1.0**
EDRZ	**Edgecumbe**	**3.69**	**242**	PN	**Pn**	**10 37 17.6**	**+0.5**
RTZ	**Ruatahuna**	**3.77**	**234**	PN	**Pn**	**10 37 19.3**	**+1.0**
RAHZ	**Arah

*CSEM **21** 10:36:58.8±0.1,39°.11N×29°.04E,h2km,MD2.6,Error ellipse: s-maj=2.6km s-min=1.9km az=109.0*
*ISK **21** 10:36:58.2,39°.08N×29°.08E,h5km,ML2.6*
*DDA **21** 10:36:58.4,39°.12N×29°.03E,h7km,Md2.6*
ISC 21 10:36:58.7±0.9,39°.11N±0°.02×29°.05E±0°.02,h11km±9km, n36,σ0=52/54,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DEMI	**Demirci**	**0.27**	**256**	P	**Pg**	**10 37 04.2**	**+0.1**
DEMI				S	**Sg**	**10 37 07.8**	**0.0**
DEMI	**Demirci**	**0.27**	**256**	*i* P	**Pg**	**10 37 04.2**	**+0.1**
DEMI				*i* S	**Sg**	**10 37 07.8**	**0.0**
GDZ	**Gediz**	**0.34**	**93**	P	**Pg**	**10 37 05.5**	**0.0**
GDZ				S	**Sg**	**10 37 10.3**	**+0.2**
GDZ	**Gediz**	**0.34**	**93**	*i* P	**Pg**	**10 37 05.5**	**0.0**
GDZ				*i* S	**Sg**	**10 37 10.3**	**+0.2**
TVSB	**Tavsanli**	**0.47**	**43**	*e*PG	**Pg**	**10 37 08.2**	**+0.3**
TVSB				*e*SG	**Sg**	**10 37 14.3**	**+0.1**
TVSB	**Tavsanli**	**0.47**	**43**	*e*Pg	**Pg**	**10 37 08.2**	**+0.3**
TVSB				*e*Sg	**Sg**	**10 37 14.3**	**+0.1**
DURS	**Dursunbey**	**0.66**	**318**	P	**Pb**	**10 37 12.0**	**-0.4**
DURS				S	**Sb**	**10 37 20.6**	**-1.0**
DURS	**Dursunbey**	**0.66**	**318**	*i* P	**Pb**	**10 37 12.0**	**-0.4**
DURS				*i* S	**Sb**	**10 37 20.6**	**-1.0**
KULA	**Kula-Manisa**	**0.66**	**207**	*e*PG	**Pg**	**10 37 11.4**	**-0.2**
KULA				*e*SG	**Sg**	**10 37 20.4**	**+0.1**
KULA	**Kula-Manisa**	**0.66**	**207**	*e*Pg	**Pg**	**10 37 11.4**	**-0.2**
KULA				*e*Sg	**Sg**	**10 37 20.4**	**+0.1**
MANT	**Manisa**	**0.72**	**212**	P	**Pg**	**10 37 12.6**	**-0.1**
MANT				S	**Sg**	**10 37 21.6**	**-0.6**
MANT	**Manisa**	**0.72**	**212**	*i* P	**Pg**	**10 37 12.6**	**-0.1**
MANT				*i* S	**Sg**	**10 37 21.6**	**-0.6**
KHAL	**Karahalli**	**0.81**	**155**	P	**Pg**	**10 37 14.6**	**+0.2**
KHAL				S	**Sg**	**10 37 24.5**	**-0.6**
KHAL	**Karahalli**	**0.81**	**155**	*i* P	**Pg**	**10 37 14.6**	**+0.2**
KHAL				*i* S	**Sg**	**10 37 24.4**	**-0.6**
ORLT	**Orhaneli**	**0.94**	**353**	*e*PG	**Pb**	**10 37 17.4**	**+0.2**
ORLT	**Orhaneli**	**0.94**	**353**	*e*Pg	**Pb**	**10 37 17.4**	**+0.2**
AKHS	**Akhisar**	**0.99**	**257**	P	**Pb**	**10 37 17.8**	**0.0**
AKHS				S	**Sb**	**10 37 31.2**	**+0.4**
AKHS	**Akhisar**	**0.99**	**257**	*i* P	**Pb**	**10 37 17.8**	**0.0**
AKHS				*i* S	**Sb**	**10 37 31.2**	**+0.4**
BALB	**Balikesir**	**1.05**	**301**	*e*PN	**Pn**	**10 37 19.4**	**+0.1**
BALB	**Balikesir**	**1.05**	**301**	*e*Pn	**Pn**	**10 37 19.4**	**+0.1**
CAVI	**Cavuskoy**	**1.25**	**29**	*e*PN	**Pg**	**10 37 23.2**	**+0.4**
CAVI	**Cavuskoy**	**1.25**	**29**	*e*Pn	**Pg**	**10 37 23.2**	**+0.4**
MDNY	**Mudanya-Bursa**	**1.27**	**354**	*e*PN	**Pg**	**10 37 22.8**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.27**	**354**	*e*Pn	**Pg**	**10 37 22.8**	**-0.2**
IZI	**Iznik**	**1.27**	**15**	*e*PN	**Pg**	**10 37 23.6**	**+0.5**
IZI	**Iznik**	**1.27**	**15**	*e*Pn	**Pg**	**10 37 23.6**	**+0.5**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*PN	**Pg**	**10 37 24.4**	**+1.2**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*Pn	**Pg**	**10 37 24.4**	**+1.2**
DNZL	**Cakiroluk**	**1.42**	**180**	P	**Pg**	**10 37 26.1**	**+0.2**
DNZL				S	**Sg**	**10 37 45.7**	**+1.4**
DNZL	**Cakiroluk**	**1.42**	**180**	*i* P	**Pg**	**10 37 26.1**	**+0.2**
DNZL				*i* S	**Sg**	**10 37 45.7**	**+1.4**
ADVT	**Abdulvahap**	**1.43**	**22**	*e*PN	**Pg**	**10 37 25.7**	**-0.4**
ADVT	**Abdulvahap**	**1.43**	**22**	*e*Pn	**Pg**	**10 37 25.7**	**-0.4**
ARMT	**Armutlu**	**1.46**	**354**	*e*PN	**Pg**	**10 37 26.5**	**-0.3**
ARMT	**Armutlu**	**1.46**	**354**	*e*Pn	**Pg**	**10 37 26.5**	**-0.3**
GULT	**Gulveren**	**1.74**	**40**	*e*PN	**Pb**	**10 37 30.4**	**-0.3**
GULT	**Gulveren**	**1.74**	**40**	*e*Pn	**Pb**	**10 37 30.4**	**-0.3**

*NIED **21** 10:42:00,38°.70N×142°.20E,h41km,Mw4.4 Best double couple: M=3.80000×10^15 NP1:φ=199.00000°,δ=18.00000°, λ=74.00000°. NP2:φ=36.00000°,δ=73.00000°,λ=95.00000°.*
*ISCJB **21** 10:42:26.6±0.5,38°.71N±0°.03×142°.27E±0°.04,h40km±3km, mb4.5/79,MS3.6/24,Error ellipse: s-maj=6.3km s-min=3.8km az=32.5*
*JMA **21** 10:42:28.0±0.1,38°.70N×142°.21E,h40km±2km,M4.4*
JMA Felt II J1.
*MOS **21** 10:42:28.3±0.8,38°.90N×142°.06E,h43km,mb4.7/49,Error ellipse: s-maj=7.5km s-min=5.0km az=109.5*
*NEIC **21** 10:42:28.2±0.2,38°.78N×142°.21E,h35km,mb4.6/29,Error ellipse: s-maj=6.3km s-min=4.0km az=130.0*
NEIC Recorded [2 JMA] in Iwate and Miyagi.
*IDC **21** 10:42:29.4±1.5,38°.70N×142°.16E,h48km±13km,mb4.1/26, mb1 4.3/33,mb1mx4.2/51,mbtmp4.4/33,ML3.9/7,MS3.5/26, Ms1 3.5/26,ms1mx3.4/54,Error ellipse: s-maj=14.1km s-min=10.2km az=115.0*
ISC 21 10:42:26.8±0.7,38°.67N±0°.04×142°.34E±0°.04,h32km±4km, n241,σ1=53/257,mb4.5/79,MS3.6/26,28C-13D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**0.67**	**308**	P	**Pb**	**10 42 39.7**	**-0.3**
OFUJ				S	**Sb**	**10 42 47.9**	**-1.2**
JIO	**Ouri**	**0.81**	**255**	P	**Pn**	**10 42 41.5**	**-0.4**
JIO				S	**Sn**	**10 42 50.4**	**-2.4**
JMK	**Ichinoseki**	**0.92**	**288**	P	**Pn**	**10 42 43.2**	**-0.3**
JMK				S	**Sn**	**10 42 54.0**	**-1.6**
JOM	**Ohasama**	**1.14**	**315**	P	**Pn**	**10 42 46.8**	**+0.2**
JOU	**Okura**	**1.35**	**257**	P	**Pn**	**10 42 49.5**	**+0.1**
JOU				S	**Sn**	**10 43 05.5**	**-0.8**
JMM	**Marumori**	**1.46**	**237**	P	**Pn**	**10 42 50.8**	**-0.1**
JRG	**Rokugo**	**1.52**	**299**	P	**Pn**	**10 42 51.8**	**+0.1**
JYK	**Kaneyama**	**1.57**	**280**	P	**Pn**	**10 42 52.5**	**+0.1**
ERM	**Erimo**	**3.40**	**10**	*ce*P	**Pn**	**10 43 18.5**	**+1.0**
ERM				pmax	pmax		
	comp=Z,77nm,1.0s						
ERM	**Erimo**	**3.40**	**10**	*e*Pn	**Pn**	**10 43 18.5**	**+1.0**
ERM				*e*Sn	**Sn**	**10 43 56.2**	**-0.5**
MJAR	**Matsushiro Arr**	**3.91**	**238**	P	**Pn**	**10 43 26.9**	**+2.3**
	comp=Z,27nm,0.3s,baz=38,slow=12,SNR=137						
MJAR				LR	LR	10 45 15.1	
	comp=Z,430nm,18.4s,baz=40,slow=44						
MAJO	**Matsushiro**	**3.91**	**238**	*c i* P	**Pn**	**10 43 26.9**	**+2.3**
MAJO	**Matsushiro**	**3.91**	**238**	*e*Pn	**Pn**	**10 43 26.8**	**+2.1**
MAT	**Matsushiro**	**3.91**	**238**	P	**Pn**	**10 43 26.9**	**+2.3**
MAT				S	**Sn**	**10 44 11.6**	**+2.2**
MJB9	**Matsu-Tunnel**	**3.91**	**238**	*e*Pn	**Pn**	**10 43 27.1**	**+2.5**
INU	**Inuyama**	**5.40**	**234**	*e*Pn	**Pn**	**10 43 48.5**	**+3.4**
ASAJ	**Asahikawa**	**5.44**	**2**	P	**Pn**	**10 43 46.9**	**+1.2**
	comp=Z,4.3nm,0.3s,baz=212,slow=10,SNR=40						
ASAJ				S	**Sn**	**10 44 47.9**	**+0.7**
	comp=Z,6.9nm,0.3s,baz=11,slow=22,SNR=4.0						
ASAJ	**Asahikawa**	**5.44**	**2**	*e*Pn	**Pn**	**10 43 44.1**	**-1.5**
ASAJ				S	**Sn**	**10 44 47.9**	**+0.7**
JHJ2	**Mitsune**	**5.91**	**201**	*e*Pn	**Pn**	**10 43 53.8**	**+1.6**
JHJ2				*e*Sn	**Sn**	**10 44 58.6**	**-0.2**
JHJ	**Hachijo jima 2**	**5.92**	**201**	P	**Pn**	**10 43 52.1**	**-0.1**
	comp=Z,28nm,0.3s,baz=319,slow=5.6,SNR=18						
JHJ				S	**Sn**	**10 44 56.0**	**-2.9**
	comp=Z,36nm,0.3s,baz=53,slow=20,SNR=3.8						
YUK	**Yuzh-Kuril'sk**	**5.98**	**25**	*e*P	**Pn**	**10 43 54.0**	**+1.0**
YUK				*e*S	**Sn**	**10 44 57.9**	**-2.3**
YUK				pmax	pmax		
	comp=Z,145nm,0.5s						
YUK				pmax	pmax		
	comp=E,55nm,0.6s						
YUK				pmax	pmax		
	comp=N,118nm,0.5s						
KUR	**Kuril'sk**	**7.74**	**30**	*e*P	**Pn**	**10 44 17.9**	**+0.7**
KUR				*e*S	**Sn**	**10 45 40.0**	**-3.6**
KUR				pmax	pmax		
	comp=N,15nm,0.7s						
KUR				pmax	pmax		
	comp=Z,23nm,0.7s						
KUR				smax	smax		
	comp=N,81nm,0.6s						
KUR				smax	smax		
	comp=E,39nm,0.6s						
YSS	**Yuzh-Sakhalins**	**8.28**	**2⇑**	*e*P	**Pn**	**10 44 26.3**	**+1.7**
YSS				pmax	pmax		
	comp=Z,30nm,0.7s						
VLA	**Vladivostok**	**9.08**	**303⇑**	*e*P	**Pn**	**10 44 36.1**	**+0.6**
VLA				pmax	pmax		
	comp=Z,23nm,0.9s						
USRK	**Ussuriysk Ar.**	**9.53**	**309**	P	**Pn**	**10 44 43.4**	**+1.6**
	comp=Z,3.1nm,0.3s,baz=119,slow=14,SNR=70						
USRK				LR	LR	10 48 11.2	
	comp=Z,291nm,18.4s,baz=98,slow=36						
JNU	**Nakatsue**	**10.82**	**243**	P	**Pn**	**10 45 01.7**	**+2.3**
	comp=Z,0.6nm,0.3s,baz=34,slow=4.8,SNR=9.8						
JNU				LR	LR	10 49 26.6	
	comp=Z,240nm,20.9s,baz=326,slow=39						
JNU	**Nakatsue**	**10.82**	**243**	*e*Pn	**Pn**	**10 45 01.0**	**+1.6**
HABR	**Khabarovsk**	**11.13**	**334**	*e*P	**Pn**	**10 44 59.4**	**-4.1**
HABR				*e*S	**Sn**	**10 46 59.3**	**-7.4**
HABR				pmax	pmax		
	comp=Z,21nm,2.0s						
HABR				pmax	pmax		
	comp=N,7.0nm,1.0s						
HABR				pmax	pmax		
	comp=E,53nm,2.0s						
HABR				MLR	MLR		
	comp=Z,148nm,14.0s						
MDJ	**Mudanjiang**	**11.23**	**306**	*e*Pn	Pn	10 45 10.8	+5.7
	comp=Z,18nm,0.8s						
KSRS	**Korea Array**	**11.43**	**268**	P	**Pn**	**10 45 09.9**	**+2.2**
	comp=Z,0.8nm,0.3s,baz=81,slow=14,SNR=42						
KSRS				LR	LR	10 49 08.0	
	comp=Z,192nm,20.3s,baz=72,slow=35						
KSRS	**Korea Array**	**11.43**	**268**	P	**Pn**	**10 45 10.0**	**+2.2**
KSRS				pmax	pmax		
	comp=Z,1.0nm,0.3s						
KSRS				MLR	MLR		
	comp=Z,193nm,20.3s						
KSAR	**Wonju Array Be**	**11.47**	**268**	P	**Pn**	**10 45 10.0**	**+1.7**
KSAR	**Wonju Array Be**	**11.47**	**268**	P	**Pn**	**10 45 09.9**	**+1.7**
CBIJ	**Chichi jima**	**11.54**	**181**	P	**Pn**	**10 45 08.1**	**-1.3**
CBIJ				S	**Sn**	**10 47 10.0**	**-7.2**
JCJ	**Chichijima**	**11.54**	**181**	P	**Pn**	**10 45 08.1**	**-1.3**
	comp=Z,4.0nm,0.3s,baz=101,slow=23,SNR=7.9						
JCJ				S	**Sn**	**10 47 10.0**	**-7.2**
	comp=Z,4.4nm,0.3s,baz=284,slow=19,SNR=3.3						
JCJ				LR	LR	10 51 52.4	
	comp=Z,17nm,20.2s,baz=34,slow=49						
TJN	**Taejon**	**12.11**	**264**	*e*P	**Pn**	**10 45 17.2**	**+0.1**
TYV	**Tymovskoe**	**12.19**	**1**	*e*P	**Pn**	**10 45 18.5**	**+0.4**
TYV				pmax	pmax		
	comp=Z,18nm,1.0s						
KLR	**Kul'dur**	**13.01**	**328**	P	**Pn**	**10 45 29.5**	**+0.2**
	comp=Z,0.2nm,0.3s,baz=134,slow=13,SNR=10						
KLR				LR	LR	10 50 24.6	
	comp=Z,270nm,19.7s,baz=138,slow=37						
DL2	**Dalian**	**16.16**	**277**	P	**P**	**10 46 13.3**	**-1.0**
DL2				*e*S	**Sn**	**10 49 12.8**	**+3.3**
DL2				pmax	pmax		
	comp=Z,38nm,1.0s						
DL2				pmax	pmax		
	comp=Z,120nm,5.4s						
DL2				LR	LR		
	comp=E,260nm,17.5s						
DL2				LR	LR		
	comp=Z,290nm,18.4s						
PETK	**Petropavlovsk-**	**17.91**	**31**	LR	LR	10 53 30.2	
	comp=Z,54nm,18.0s,baz=210,slow=37						
BJI	**Beijing**	**20.26**	**282**	P	**P**	**10 46 58.8**	**-0.6**
BJI				S	**S**	**10 50 43.5**	**-1.4**
BJI				pmax	pmax		
	comp=Z,11nm,0.7s						
BJI				pmax	pmax		
	comp=Z,71nm,3.9s						
BJI				LR	LR		
	comp=N,56nm,11.1s						
BJI				LR	LR		
	comp=E,150nm,12.7s						
BJI				LR	LR		
	comp=Z,98nm,17.2s						
BJT	**Baijiatuau**	**20.27**	**282**	*e*P	**P**	**10 46 58.8**	**-0.7**
BJT				pmax	pmax		
	comp=Z,10.0nm,0.6s						
BJT	**Baijiatuau**	**20.27**	**282**	*e*P	**P**	**10 46 58.8**	**-0.7**
	comp=Z,9.6nm,0.6s						
MA2	**Magadan**	**21.60**	**12**	P	**P**	**10 47 14.1**	**+0.4**
	comp=Z,11nm,0.9s,baz=234,slow=9.7,SNR=4.8						
MA2				LR	LR	10 55 18.2	
	comp=Z,53nm,18.9s,baz=215,slow=36						
MA2	**Magadan**	**21.60**	**12**	*e*P	**P**	**10 47 14.3**	**+0.6**
MA2				pmax	pmax		
	comp=Z,48nm,0.9s						
MA2	**Magadan**	**21.60**	**12**	*e*P	**P**	**10 47 14.3**	**+0.6**
	comp=Z,48nm,0.9s						
YHNB	**Yeheng**	**22.58**	**238**	*e*P	**P**	**10 47 22.1**	**-2.5**
	comp=Z,8.7nm,0.7s						
HHC	**Hu-ho-hao-te**	**23.70**	**285**	*e*P	**P**	**10 47 35.8**	**0.0**
TWG	**Pinlang**	**24.07**	**235**	*e*P	**P**	**10 47 39.2**	**0.0**
	comp=Z,60nm,0.5s						
YAK	**Yakutsk**	**24.65**	**346**	P	**P**	**10 47 44.0**	**-0.1**
	comp=Z,2.1nm,0.3s,baz=169,slow=16,SNR=3.9						
YAK				LR	LR	10 57 13.2	
	comp=Z,32nm,21.4s,baz=228,slow=36						
YAK	**Yakutsk**	**24.65**	**346**	*e*P	**P**	**10 47 43.5**	**-0.7**
YAK				*e**PP	**pP**	**10 47 54.6**	**+1.1**
YAK				*e*		10 48 17.0	
YAK				*e*S	**S**	**10 51 59.9**	**-3.4**
YAK				*e**SS	**sS**	**10 52 18.8**	**+0.3**
YAK				*e*SS	**SnSn**	**10 52 50.6**	**+0.2**
YAK				*e*		10 58 41.0	
YAK				pmax	pmax		
	comp=Z,12nm,0.8s						
YAK				pmax	pmax		
	comp=N,10.0nm,1.2s						
YAK				pmax	pmax		
	comp=Z,113nm,5.4s						
YAK				pmax	pmax		
	comp=E,40nm,3.9s						
YAK				pmax	pmax		
	comp=N,44nm,3.6s						
YAK				smax	smax		
	comp=N,48nm,2.6s						
YAK				smax	smax		
	comp=E,27nm,2.3s						
SEY	**Seymchan**	**25.05**	**11**	P	**P**	**10 47 50.0**	**+2.2**
	comp=E,13nm,0.9s,baz=195,slow=5.9,SNR=36						
GUMO	**Guam**	**25.08**	**174**	LR	LR	10 57 15.2	
	comp=E,41nm,21.6s,baz=18,slow=35						
BOD	**Bodaibo**	**26.57**	**325**	*e*P	**P**	**10 48 00.4**	**-1.2**
BOD				pmax	pmax		
	comp=Z,5.0nm,0.9s						
ULN	**Ulaanbaatar**	**27.09**	**301**	*e*P	**P**	**10 48 05.8**	**-0.8**
ULN				pmax	pmax		
	comp=Z,5.0nm,1.2s						
XAN	**Xi'an**	**27.22**	**271**	P	**P**	**10 48 07.8**	**0.0**
XAN				pP	pP	10 48 16.8	-0.2
XAN				pmax	pmax		
	comp=Z,7.0nm,0.7s						
SONA1	**Songino Array**	**27.52**	**301**	*e*P	**P**	**10 48 10.3**	**-0.2**
SONM	**Songino Array**	**27.52**	**301**	P	**P**	**10 48 10.6**	**+0.1**
	comp=Z,1.9nm,0.4s,baz=95,slow=8.8,SNR=7.1						
SONM				LR	LR	10 59 21.3	
	comp=Z,101nm,20.5s,baz=82,slow=37						
ENH	**Enshi**	**28.24**	**263**	*e*P	**P**	**10 48 16.1**	**-0.8**
	comp=Z,30nm,0.7s						
H11N2	**WAKE ISLAND Hy**	**28.41**	**125**	T	T	11 18 48.9	
	baz=317,slow=75,SNR=2363						
H11N1	**WAKE ISLAND Hy**	**28.42**	**125**	T	T	11 18 42.4	
	baz=317,slow=75,SNR=2527						
H11N3	**WAKE ISLAND Hy**	**28.43**	**125**	T	T	11 18 41.2	
	baz=317,slow=75,SNR=2214						
H11S1	**WAKE ISLAND Hy**	**29.19**	**127**	T	T	11 19 44.9	
	baz=319,slow=76,SNR=220						
H11S3	**WAKE ISLAND Hy**	**29.19**	**127**	T	T	11 19 34.5	
	baz=319,slow=76,SNR=265						
H11S2	**WAKE ISLAND Hy**	**29.20**	**127**	T	T	11 19 39.1	
	baz=319,slow=76,SNR=189						
ZAK	**Zakamensk**	**29.87**	**306**	*e*P	**P**	**10 48 30.2**	**-1.1**
ZAK				pmax	pmax		
	comp=Z,7.0nm,1.0s						
LZH	**Lanzhou**	**30.55**	**277**	*e*P	**P**	**10 48 36.0**	**-1.5**
LZH				pP	pP	10 48 48.5	+1.6
LZH				sP	sP	10 48 51.6	+0.8
LZH				*e*PP	**PnPn**	**10 49 36.3**	**-0.8**
LZH				pmax	pmax		
	comp=Z,22nm,1.1s						
LZH				pmax	pmax		
	comp=Z,64nm,6.0s						
LZH				LR	LR		
	comp=N,320nm,13.3s						
LZH				LR	LR		
	comp=E,340nm,13.5s						
LZH				LR	LR		
	comp=Z,390nm,16.7s						
GYA	**Guiyang**	**32.24**	**259**	*e*P	**P**	**10 48 52.6**	**+0.1**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
BILL	**Bilibino**	**32.25**	**17**	*d i*P	**P**	**10 48 53.0**	**+1.1**
BILL				*e*		10 49 04.3	
BILL				pmax	pmax		
	comp=Z,4.0nm,0.8s						
BILL	**Bilibino**	**32.25**	**17**	*e*P	**P**	**10 48 52.5**	**+0.6**
	comp=Z,4.0nm,0.9s						
CD2	**Chengdu**	**32.43**	**268**	P	**P**	**10 48 52.4**	**-1.6**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
GTA	**Gaotai**	**32.82**	**285**	*e*P	**P**	**10 48 57.8**	**+0.4**
GTA				pP	pP	10 49 06.8	+0.1
GTA				sP	sP	10 49 10.8	+0.2
GTA				S	**S**	**10 54 11.8**	**-0.8**
GTA				sS	sS	10 54 26.8	-1.2
GTA				SS	**SnSn**	**10 56 12.3**	**+2.2**
GTA				pmax	pmax		
	comp=Z,7.0nm,1.0s						
GTA				pmax	pmax		
	comp=Z,43nm,5.0s						
GTA				LR	LR		
	comp=N,160nm,17.3s						
GTA				LR	LR		
	comp=E,150nm,16.6s						
GTA				LR	LR		
	comp=Z,190nm,18.5s						
TIXI	**Tiksi**	**33.76**	**352**	P	**P**	**10 49 04.2**	**-0.8**
	comp=Z,1.3nm,0.4s,baz=144,slow=6.1,SNR=6.5						
TIXI	**Tiksi**	**33.76**	**352**	*e*P	**P**	**10 49 04.9**	**-0.1**
TIXI				pmax	pmax		
	comp=Z,3.0nm,0.8s						
TIXI	**Tiksi**	**33.76**	**352**	*e*P	**P**	**10 49 04.3**	**-0.8**
	comp=Z,2.3nm,0.7s						
QIZ	**Qiongzhong**	**34.28**	**244**	P	**P**	**10 49 10.9**	**+0.7**
QIZ				S	**S**	**10 54 36.8**	**+1.5**
QIZ				LR	LR		
	comp=Z,74nm,12.5s						
KRAR	**Krasnoyarsk**	**36.81**	**315**	*e*P	**P**	**10 49 32.3**	**+0.8**
KRAR				pmax	pmax		
	comp=Z,20nm,1.1s						
WMQ	**Urumqi**	**40.78**	**295**	P	**P**	**10 50 06.0**	**+1.0**
WMQ				pP	pP	10 50 13.4	-1.1
WMQ				sP	sP	10 50 19.0	+0.6
WMQ				S	**S**	**10 56 08.1**	**-5.5**
WMQ				pmax	pmax		
	comp=Z,11nm,0.8s						
WMQ				pmax	pmax		
	comp=Z,53nm,4.8s						
WMQ				LR	LR		
	comp=N,70nm,8.4s						
WMQ				LR	LR		
	comp=E,43nm,37.2s						
WMQ				LR	LR		
	comp=Z,22nm,31.8s						
ZAA0	**Zalesovo Array**	**41.38**	**311**	*e*P	**P**	**10 50 09.1**	**-0.6**
ZALV	**Zalesovo Beam**	**41.38**	**311**	P	**P**	**10 50 09.5**	**-0.1**
	comp=Z,7.4nm,0.5s,baz=87,slow=7.7,SNR=34						
ZALV				PcP	**PcP**	**10 52 06.3**	**-1.0**
	comp=Z,1.1nm,0.3s,baz=77,slow=4.1,SNR=3.7						
NRIK	**Noril'sk**	**42.10**	**334**	LR	LR	11 08 39.1	
	comp=Z,118nm,19.3s,baz=113,slow=37						
NVS	**Novosibirsk**	**42.26**	**312**	*e*P	**P**	**10 50 15.5**	**-1.3**
NVS				pmax	pmax		
	comp=Z,6.0nm,1.0s						
NVS				pmax	pmax		
	comp=E,4.0nm,0.8s						
CHTO	**Chiang Mai**	**42.42**	**255**	*e*P	**P**	**10 50 18.4**	**-0.2**
CHTO				pmax	pmax		
	comp=Z,6.0nm,0.9s						
CHTO	**Chiang Mai**	**42.42**	**255**	*e*P	**P**	**10 50 18.4**	**-0.2**
	comp=Z,5.5nm,0.9s						
CMAR	**Chiang Mai Arr**	**42.63**	**254**	P	**P**	**10 50 20.5**	**+0.2**
	comp=Z,1.1nm,0.5s,baz=49,slow=8.3,SNR=4.3						
CMAR				LR	LR	11 08 02.9	
	comp=Z,14nm,20.5s,baz=40,slow=36						
MK01	**Makanchi Array**	**43.89**	**301**	*e*P	**P**	**10 50 29.8**	**-0.4**
MK31	**Makanchi Array**	**43.89**	**301**	*e*P	**P**	**10 50 30.1**	**-0.1**
MK31	**Makanchi Array**	**43.89**	**301**	*e*P	**P**	**10 50 30.1**	**-0.1**
MKAR	**Makanchi Array**	**43.89**	**301**	P	**P**	**10 50 29.9**	**-0.3**
	comp=Z,6.5nm,0.7s,baz=85,slow=9.6,SNR=46						
MKAR				PcP	**PcP**	**10 52 15.6**	**-0.4**
	comp=Z,0.9nm,0.8s,baz=60,slow=3.5,SNR=2.1						
MKAR				LR	LR	11 08 01.7	
	comp=Z,28nm,20.8s,baz=74,slow=35						
MAKZ	**Makanchi**	**44.10**	**301**	*e*P	**P**	**10 50 31.3**	**-0.6**
MAKZ				pmax	pmax		
	comp=Z,9.0nm,1.1s						
MAKZ	**Makanchi**	**44.10**	**301**	*e*P	**P**	**10 50 31.3**	**-0.6**
	comp=Z,9.3nm,1.1s						
KURK	**Kurchatov**	**45.52**	**307**	P	**P**	**10 50 43.3**	**+0.2**
KURK						10 52 21.4	
KURK				pmax	pmax		
	comp=Z,33nm,0.8s						
KURK				pmax	pmax		
	comp=Z,2.0nm,0.7s						
KURK	**Kurchatov**	**45.52**	**307**	*e*P	**P**	**10 50 42.6**	**-0.4**
	comp=Z,30nm,0.8s						
KURK				PcP	**PcP**	**10 52 21.4**	**0.0**
KURBB	**Kurchatov Arra**	**45.59**	**307**	P	**P**	**10 50 43.2**	**-0.4**
	comp=Z,27nm,0.7s,baz=82,slow=8.3,SNR=117						
KURBB				PcP	**PcP**	**10 52 21.4**	**-0.2**
	comp=Z,1.7nm,0.7s,baz=87,slow=3.7,SNR=4.4						
PDGK	**Podgornoye**	**46.68**	**297**	P	**P**	**10 50 52.0**	**-0.3**
PDGK				pmax	pmax		
	comp=Z,7.0nm,0.8s						
KSM	**Kuching**	**47.21**	**226**	*e*P	**P**	**10 50 58.0**	**+1.3**
	comp=Z,6.3nm,0.8s						
ILAR	**Eielson Array**	**47.72**	**33**	P	**P**	**10 51 01.6**	**+1.5**
	comp=Z,1.9nm,0.7s,baz=269,slow=6.6,SNR=26						
ILB	**Eielson Array**	**47.72**	**33**	*e*P	**P**	**10 51 01.2**	**+1.0**
GUN	**Gumba**	**47.74**	**275**	*e*P	**P**	**10 51 01.0**	**-0.2**
	comp=Z,33nm,0.7s						
KKN	**Kakani**	**48.27**	**275**	*e*P	**P**	**10 51 05.0**	**-0.1**
	comp=Z,16nm,0.5s						
GKN	**Gorkha**	**48.66**	**275**	*e*P	**P**	**10 51 07.9**	**-0.2**
	comp=Z,7.9nm,0.3s						
TKM2	**Tokmak 2**	**49.51**	**297**	*e*P	**P**	**10 51 14.8**	**+0.3**
TKM2				pmax	pmax		
	comp=Z,7.0nm,0.8s						
TKM2	**Tokmak 2**	**49.51**	**297**	*e*P	**P**	**10 51 14.8**	**+0.3**
	comp=Z,7.2nm,0.8s						

comp=Z,1.0nm,0.4s
INK Inuvik 52.60 28 *e*P **P 10 51 38.6 +1.6**
comp=Z,0.6nm,0.4s
KK31 Karatay Array 52.95 299 *i* P **P 10 51 39.6 -0.4**
KK31 pmax pmax
comp=Z,3.0nm,0.6s
KKAR Karatay Array 52.95 299 *e*P **P 10 51 39.3 -0.7**
KKAR Karatay Array 52.95 299 *e*P **P 10 51 39.3 -0.7**
SVE Sverdlovsk 54.42 318⇑*i*P **P 10 51 51.1 +0.6**
SVE pmax pmax
comp=Z,15nm,0.9s
ARU Arti 55.63 318*c i*P **P 10 51 58.9 -0.4**
ARU 10 52 56.7
ARU 10 54 00.1
ARU S **S 10 59 42.9 +0.1**
ARU SS **SS 11 03 24.3 -3.3**
ARU pmax pmax
comp=Z,8.0nm,0.7s
ARU Arti 55.63 318 *e*P **P 10 51 58.7 -0.5**
comp=Z,12nm,1.0s
AB31 Akbulak array 57.46 310 *i* P **P 10 52 11.5 -0.9**
AB31 pmax pmax
comp=Z,7.0nm,0.6s
ABKAR Akbulak array 57.46 310 *e*P **P 10 52 11.8 -0.5**
AKTO Aktyubinsk 58.14 311 LR LR 11 18 27.6
comp=Z,46nm,19.4s,baz=63,slow=37
WRAB Tennant Creek 58.77 189 *e*P **P 10 52 21.6 -0.2**
WRAB pmax pmax
comp=Z,1.0nm,0.4s
WRAB Tennant Creek 58.77 189 *e*P **P 10 52 21.6 -0.2**
comp=Z,0.8nm,0.4s
WRA Warramunga Arr 58.78 189 P **P 10 52 21.6 -0.2**
comp=Z,2.1nm,0.7s,baz=5.8,slow=6.7,SNR=29
YKA Yellowknife Ar 62.03 31 P **P 10 52 44.3 +0.8**
comp=Z,0.6nm,0.7s,baz=302,slow=6.3,SNR=11
AS01 Alice Springs 62.50 189 *e*P **P 10 52 47.8 +0.6**
ASAR Alice Springs 62.51 189 P **P 10 52 47.6 +0.4**
comp=Z,1.0nm,0.7s,baz=13,slow=5.5,SNR=15
ASAR LR LR 11 18 22.6
comp=Z,31nm,21.4s,baz=66,slow=34
ARCES ARCESS Array B 62.73 339 P **P 10 52 48.1 -0.1**
comp=Z,2.6nm,0.7s,baz=46,slow=7.8,SNR=12
ARCES LR LR 11 22 55.1
comp=Z,28nm,18.6s,baz=94,slow=39
KLMR Klimovskoe 62.77 328 *e*P **P 10 52 45.7 -2.9**
KLMR *e**PP **pP 10 52 56.8 -1.7**
KLMR pmax pmax
comp=Z,3.0nm,0.8s
GEYT Alibeck 63.69 299 P **P 10 52 54.9 -0.3**
comp=Z,5.6nm,0.8s,baz=56,slow=5.6,SNR=7.2
OBN Obninsk 67.23 323 LR LR 11 26 03.6
comp=Z,38nm,19.8s,baz=82,slow=39
OBN Obninsk 67.23 323 *i* P **P 10 53 16.3 -1.3**
OBN pmax pmax
comp=Z,7.0nm,0.7s
FIA1 FINESS Array S 67.71 332 *e*P **P 10 53 20.3 -0.2**
comp=Z,43nm,1.6s
FINES FINESS Array B 67.71 332 P **P 10 53 20.4 -0.1**
comp=Z,7.0nm,0.7s,baz=54,slow=9.7,SNR=26
FINES LR LR 11 24 09.9
comp=Z,90nm,18.4s,baz=49,slow=37
SUMG Summit 69.05 0 *e*P **P 10 53 29.3 0.0**
SUMG pmax pmax
comp=Z,6.0nm,0.8s
SUMG Summit 69.05 0 *e*P **P 10 53 29.3 0.0**
comp=Z,6.0nm,0.8s
NCK Nalchik 70.11 310 *e*P **P 10 53 35.5 -0.4**
NCK pmax pmax
comp=Z,28nm,0.5s
ZEI Tsey 70.33 309 *e*P **P 10 53 35.6 -1.9**
ZEI pmax pmax
comp=Z,9.0nm,0.4s
KIV Kislovodsk 70.39 311 *i* P **P 10 53 37.7 0.0**
KIV pmax pmax
comp=Z,17nm,1.0s
KIV Kislovodsk 70.39 311 *e*P **P 10 53 38.3 +0.6**
comp=Z,16nm,0.7s
KBZ Khabaz 70.40 311 P **P 10 53 38.1 +0.6**
comp=Z,7.6nm,0.8s,baz=68,slow=3.2,SNR=17
NEY Neytrino 70.78 310 *e*P **P 10 53 41.1 +1.0**
NEY pmax pmax
comp=Z,1.0nm,0.8s
GNI Garni 71.32 307 LR LR 11 28 03.7
comp=Z,39nm,18.9s,baz=65,slow=38
HFS Hagfors 72.90 336 LR LR 11 28 56.7
comp=Z,60nm,18.1s,baz=54,slow=38
NB2 NORSAR Subarra 72.96 337 P **P 10 53 52.3 -0.4**
comp=Z,2.9nm,0.7s,baz=38,slow=6.2
NOA NORSAR Array B 72.96 337 P **P 10 53 53.0 +0.3**
comp=Z,3.6nm,0.8s,baz=39,slow=6.0,SNR=9.2
NOA LR LR 11 28 31.1
comp=Z,40nm,21.6s,baz=55,slow=38
NOA NORSAR Array B 72.96 337 P **P 10 53 53.0 +0.3**
NOA pmax pmax
comp=Z,2.0nm,0.6s
NOA MLR MLR
comp=Z,40nm,21.6s
BOZ Bozeman (W) 73.03 45 *e*P **P 10 53 55.0 +1.4**
BOZ pmax pmax
comp=Z,1.0nm,0.8s
BOZ Bozeman (W) 73.03 45 *e*P **P 10 53 55.0 +1.4**
comp=Z,1.4nm,0.8s
NV01 Mina Array Sit 73.43 54 *e*P **P 10 53 58.8 +2.7**
NVAR Mina Array Bea 73.43 54 P **P 10 53 58.5 +2.4**
comp=Z,0.9nm,0.8s,baz=298,slow=6.6,SNR=7.3
AKASG Malin Array Be 73.45 322 P **P 10 53 55.3 -0.4**
comp=Z,4.6nm,0.5s,baz=46,slow=6.0,SNR=28
AKASG LR LR 11 28 56.6
comp=Z,32nm,20.8s,baz=20,slow=38
KIEV Kiev 73.46 322⇓*i*P **P 10 53 54.6 -1.2**
KIEV pmax pmax
comp=Z,7.0nm,0.9s
KIEV Kiev 73.46 322 *e*P **P 10 53 54.8 -1.0**
comp=Z,7.2nm,0.7s
AK11 Malin Array Si 73.49 322 *e*P **P 10 53 55.4 -0.6**
SORM Soroca 75.59 321⇑*i*P **P 10 54 07.3 -0.9**
SORM Soroca 75.59 321⇑P **P 10 54 07.3 -0.9**
BW06 Boulder Array 76.00 46 *e*P **P 10 54 12.2 +1.2**
PD31 Pinedale Array 76.00 46 *e*P **P 10 54 11.9 +0.9**
PDAR Pinedale Array 76.00 46 P **P 10 54 12.4 +1.5**
comp=Z,1.1nm,0.7s,baz=251,slow=2.3,SNR=14
KWP Kalwaria Pacla 77.23 325⇓*i*P **P 10 54 18.1 +0.6**
KWP Kalwaria Pacla 77.23 325⇓P **P 10 54 18.1 +0.6**
MTPU Mount Pierson 77.47 51 *e*P **P 10 54 22.1 +2.6**
comp=Z,4.1nm,1.2s
BUR08 Bucovina Ar. S 77.47 322 *e*P **P 10 54 18.7 -0.3**
BURAR Bucovina Array 77.48 322⇑*i*P **P 10 54 19.3 +0.2**
BURAR Bucovina Array 77.48 322⇑P **P 10 54 19.3 +0.2**
SRU San Rafael Swe 77.79 50 *e*P **P 10 54 22.7 +1.7**
SRU pmax pmax
comp=Z,3.0nm,0.7s
SRU San Rafael Swe 77.79 50 *e*P **P 10 54 22.7 +1.7**
comp=Z,3.3nm,0.7s
ODBI Odobesti 77.86 320⇓*i*P **P 10 54 23.1 +2.0**
VRI Vrincioaia 77.95 320⇑*i*P **P 10 54 23.2 +1.6**
VRI Vrincioaia 77.95 320⇑P **P 10 54 23.2 +1.6**
PLOR Plostina 78.00 320⇓*i*P **P 10 54 22.6 +0.7**
PLOR Plostina 78.00 320⇓P **P 10 54 22.6 +0.7**
STHS Stebnicka Huta 78.04 325 *e*P **P 10 54 23.5 +1.4**
STHS pmax pmax
comp=Z,4.0nm,0.6s
STHS Stebnicka Huta 78.04 325 *e*P **P 10 54 23.5 +1.4**
OJC Ojcow 78.09 326 *e*P **P 10 54 21.1 -1.2**
OJC pmax pmax
comp=Z,12nm,1.1s
OJC Ojcow 78.09 326 *e*P **P 10 54 21.1 -1.2**
comp=Z,12nm,1.1s
BR131 Keskin Array S 78.31 312 *e*P **P 10 54 23.3 -0.6**
BRTR Keskin Array B 78.31 312 P **P 10 54 23.9 0.0**
comp=Z,1.6nm,0.4s,baz=113,slow=3.4,SNR=18
DOPR Dopca 78.55 321⇓*i*P **P 10 54 26.1 +1.1**
ISR Istrita 78.56 319⇓*i*P **P 10 54 26.4 +1.3**
ISR Istrita 78.56 319⇓P **P 10 54 26.4 +1.3**
MLR Muntele Rosu 78.61 320⇓*i*P **P 10 54 26.9 +1.5**
MLR Muntele Rosu 78.61 320⇓P **P 10 54 26.9 +1.5**
SULR 79.02 319⇑*i*P P 10 54 36.1 +8.6
VOIR 79.09 320⇑*i*P **P 10 54 29.0 +1.0**
VOIR 79.09 320⇑P **P 10 54 29.0 +1.0**
DRGR 79.27 323⇑*i*P **P 10 54 29.2 +0.3**
DRGR 79.27 323⇑P **P 10 54 29.2 +0.3**
ARR Arges 79.35 321⇑*i*P **P 10 54 31.1 +1.7**
MORC Moravsky Berou 79.39 327⇑*i*P **P 10 54 30.1 +0.6**
MORC Moravsky Berou 79.39 327⇑P **P 10 54 30.1 +0.6**
MORC Moravsky Berou 79.39 327 *e*P **P 10 54 30.0 +0.6**
comp=Z,24nm,1.0s
KRLC Kraliky 79.48 328 *e*P **P 10 54 30.5 +0.5**
KRLC Kraliky 79.48 328 *e*P **P 10 54 30.5 +0.5**
VYHS Vyhne 79.79 326 *e*P **P 10 54 32.0 +0.3**
VYHS pmax pmax
comp=Z,3.0nm,1.5s
VYHS Vyhne 79.79 326 *e*P **P 10 54 32.0 +0.3**
BRG Berggiesshubel 80.02 330 *e*P **P 10 54 33.0 +0.2**
comp=Z,6.0nm,1.1s
BRG Berggiesshubel 80.02 330 *e*P **P 10 54 33.0 +0.2**
BRG pmax pmax
comp=Z,6.0nm,1.1s
PVCC Panska Ves 80.04 329 *e*P **P 10 54 33.8 +0.9**
PVCC Panska Ves 80.04 329 *e*P **P 10 54 33.8 +0.9**
CLL Collm 80.04 330⇑*i*P **P 10 54 32.6 -0.3**
comp=Z,8.0nm,0.8s
CLL *i* 10 54 48.5
CLL Collm 80.04 330⇑*i*P **P 10 54 32.6 -0.3**
CLL *i* 10 54 48.5
CLL pmax pmax
comp=Z,8.0nm,0.8s
CLL Collm 80.04 330 *e*P **P 10 54 32.8 -0.1**
VRAC Vranov 80.14 327 LR LR 11 32 20.6
comp=Z,57nm,18.1s,baz=2.5,slow=37
VRAC Vranov 80.14 327⇑*i*P **P 10 54 33.4 -0.2**
VRAC Vranov 80.14 327⇑P **P 10 54 33.4 -0.2**
GZR Gura Zlata 80.25 322⇑*i*P **P 10 54 34.3 +0.1**
GZR Gura Zlata 80.25 322⇑P **P 10 54 34.3 +0.1**
PRU Pruhonice 80.47 329 *e*P **P 10 54 36.1 +0.8**
PRU Pruhonice 80.47 329 *e*P **P 10 54 36.1 +0.8**
MDVR Moldovita 81.21 322⇑*i*P **P 10 54 38.8 -0.6**
KHC Kasperske Hory 81.53 329 *e*P **P 10 54 41.3 +0.3**
KHC Kasperske Hory 81.53 329 *e*P **P 10 54 41.3 +0.3**
KHC Kasperske Hory 81.53 329 *e*P **P 10 54 41.1 +0.1**
comp=Z,2.2nm,0.8s
GERES GERESS Array B 81.70 329 P **P 10 54 42.0 0.0**
comp=Z,1.9nm,0.7s,baz=32,slow=5.3,SNR=15
GERES LR LR 11 33 36.2
comp=Z,71nm,18.9s,baz=18,slow=38
GEA0 GERESS Array S 81.71 329 *e*P **P 10 54 41.7 -0.3**
ECSD EROS Data Cent 82.18 39 *e*P **P 10 54 45.5 +1.0**
comp=Z,2.0nm,0.8s
PDG Podgorica 84.15 321⇓*i*P **P 10 54 54.7 +0.1**
BFO Black Forest 84.23 331 *i* P **P 10 54 56.3 +1.3**
PPT Papeete 84.72 117 LR LR 11 27 48.8
comp=Z,73nm,21.4s,baz=116,slow=32
FUORN Ofenpass-Fuorn 84.88 329 *e*P **P 10 54 58.9 +0.3**
TUE Stuetta 85.36 330 *e*P **P 10 55 00.7 -0.3**
LAST Lasithi 86.16 313⇑*i*P **P 10 55 05.3 +0.3**
SENIN Lac Senin/Sane 86.25 331 *e*P **P 10 55 05.7 +0.3**
TX31 Lajitas Ar. Si 88.54 53 *e*P **P 10 55 17.7 +1.1**
TXAR Lajitas Array 88.55 53 P **P 10 55 18.3 +1.7**
comp=Z,0.7nm,0.7s,baz=292,slow=3.2,SNR=12
ESDC Sonseca Array 96.14 334 LR LR 11 44 08.9
comp=Z,27nm,18.2s,baz=285,slow=38
NNA Nana 136.23 63 *i* PKIKP **PKPdf 11 01 47.6 +2.1**
SNAA Sanae 142.53 197 PKP PKPdf 11 02 04.3 +9.0
VNA2 Neumayer--Watz 144.09 196 PKP PKPdf 11 02 09.7 +12
baz=132,slow=1.5
VNA3 Neumayer Olymp 144.34 195 PKP PKPdf 11 02 10.4 +12
LPAZ La Paz 145.22 59 PKPbc **PKPdf 11 02 02.8 +0.5**
comp=Z,0.9nm,0.7s,baz=291,slow=1.4,SNR=5.0

CSEM ***21*** *10:51:27.8,39°.08N×29°.00E,h7km,MD2.1*
DDA 21 10:51:27.8,39°.08N×29°.00E,h7km,Md2.1,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.22**	**262**	P	Pg	10 51 32.7	+0.5
DEMI				S	Sg	10 51 36.1	+0.8
DEMI	**Demirci**	**0.22**	**262**	*i* P	Pg	10 51 32.7	+0.4
DEMI				*i* S	Sg	10 51 36.1	+0.8
GDZ	**Gediz**	**0.38**	**88**	P	Pg	10 51 34.3	-0.8
GDZ	**Gediz**	**0.38**	**88**	*i* P	Pg	10 51 34.3	-0.8
DURS	**Dursunbey**	**0.66**	**322**	P	Pg	10 51 40.7	+0.1
DURS	**Dursunbey**	**0.66**	**322**	*i* P	Pg	10 51 40.7	+0.2
MANT	**Manisa**	**0.68**	**211**	P	Pg	10 51 41.1	+0.3
MANT	**Manisa**	**0.68**	**211**	*i* P	Pg	10 51 41.1	+0.2
KHAL	**Karahalli**	**0.80**	**151**	P	Pg	10 51 43.2	0.0
KHAL	**Karahalli**	**0.80**	**151**	*i* P	Pg	10 51 43.2	0.0

IDC 21 11:12:46.8±37.0,29°.08N×139°.73E,h473km±194km, mb3.1/3,mb1 3.1/4,mb1mx2.5/58,mbtmp3.7/4,Error ellipse: s-maj=538.4km s-min=57.3km az=0.0, Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**7.55**	**351**	P	P	11 14 37.6	-0.1
	0.3nm,0.3s,baz=168,slow=11,SNR=7.0						
ARCES	**ARCESS Array B**	**70.96**	**340**	P	P	11 23 15.7	+0.6
	1.9nm,0.8s,baz=67,slow=9.1,SNR=4.5						
YKA	**Yellowknife Ar**	**71.43**	**28**	P	P	11 23 17.9	-0.1
	0.2nm,0.6s,baz=300,slow=6.1,SNR=4.8						
FINES	**FINESS Array B**	**75.21**	**333**	P	P	11 23 39.4	-0.3
	0.7nm,0.3s,baz=76,slow=5.9,SNR=10.0						

IDC 21 11:16:23.0±547.0,51°.09N×114°.22E,h0km,Error ellipse: s-maj=203.6km s-min=121.0km az=61.0,East of Lake Baykal

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I34MN	**SONGINO INFRAS**	**6.06**	**240**	*i*		11 57 30.0	
	baz=55,slow=320,SNR=0.5						
I45RU	**USSURIYSK INFR**	**13.80**	**113**	*i*		12 43 30.0	
	baz=306,slow=320,SNR=1.0						
I46RU	**ZALESOVO INFRA**	**18.06**	**291**	*i*		13 00 20.0	
	baz=88,slow=322,SNR=1.0						

DDA ***21*** *11:16:46.9,39°.11N×29°.12E,h19km,Ml3.1*
ISK ***21*** *11:16:46.9,39°.13N×29°.08E,h4km,ML3.5*
ISCJB ***21*** *11:16:47.7±0.5,39°.12N±0°.02×29°.04E±0°.03,h12km±4km, Error ellipse: s-maj=3.6km s-min=3.0km az=176.2*
CSEM ***21*** *11:16:48.0±0.1,39°.10N×29°.05E,h10km,ML3.1,Error ellipse: s-maj=2.9km s-min=2.3km az=80.0*
THE ***21*** *11:16:51.3,39°.00N×28°.80E,h16km±1km,ML3.2/4,Error ellipse: s-maj=1.9km s-min=0.7km az=181.0*
ISC 21 11:16:47.4±1.0,39°.11N±0°.02×29°.09E±0°.02,h15km±8km, n148,σ1$22/167,15C-2D,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.30**	**257**	*i* P	Pg	11 16 45.9	-7.7
DEMI				*i* S	Sg	11 16 57.9	0.0
DURS	**Dursunbey**	**0.68**	**316**	P	Pg	11 17 00.1	-0.7
DURS	**Dursunbey**	**0.68**	**316**	*i* P	Pg	11 17 00.1	-0.7
KULA	**Kula-Manisa**	**0.68**	**209**	*e*PG	Pg	11 17 00.6	-0.1
KULA	**Kula-Manisa**	**0.68**	**209**	P	Pg	11 17 00.6	-0.1
KULA				S	Sg	11 17 09.2	-0.6
KULA	**Kula-Manisa**	**0.68**	**209**	P	Pg	11 17 00.6	-0.1
KULA				S	Sg	11 17 09.2	-0.6
MANT	**Manisa**	**0.74**	**214**	P	Pg	11 17 02.0	+0.1
MANT	**Manisa**	**0.74**	**214**	*i* P	Pg	11 17 02.0	+0.1
KHAL	**Karahalli**	**0.81**	**157**	P	Pg	11 17 03.2	+0.1
KHAL	**Karahalli**	**0.81**	**157**	*i* P	Pg	11 17 03.2	+0.1
KHL	**Karahalli**	**0.86**	**156**	*e*PG	Pb	11 17 04.5	+0.4
KHL	**Karahalli**	**0.86**	**156**	*e*Pg	Pb	11 17 04.5	+0.4
ORLT	**Orhaneli**	**0.94**	**351**	*e*PG	Pg	11 17 05.1	-0.6
ORLT	**Orhaneli**	**0.94**	**351**	*e*Pg	Pg	11 17 05.1	-0.6
AKHS	**Akhisar**	**1.02**	**257**	S	Sb	11 17 20.0	0.0
AKHS	**Akhisar**	**1.02**	**257**	*i* P	Pn	11 17 14.1	+6.9
AKHS				*i* S	Sb	11 17 19.9	0.0
AKS	**Akhisar**	**1.02**	**257**	*e*PG	Pg	11 17 07.1	0.0
AKS				*e*SG	Sn	11 17 21.2	-0.1
AKS	**Akhisar**	**1.02**	**257**	*e*Pg	Pg	11 17 07.1	0.0
AKS				*e*Sg	Sn	11 17 21.2	-0.1
BALB	**Balikesir**	**1.07**	**300**	*e*PG	Pn	11 17 08.3	+0.3
BALB				*e*SG	Sn	11 17 22.8	+0.2
BALB	**Balikesir**	**1.07**	**300**	*e*Pg	Pn	11 17 08.3	+0.3
BALB				*e*Sg	Sn	11 17 22.8	+0.2
IGD	**Bursa**	**1.16**	**4**	*i* P	Pb	11 17 04.5	-4.6
CAVI	**Cavuskoy**	**1.24**	**28**	*e*PN	Pb	11 17 10.8	+0.3
CAVI				*e*SN	Sg	11 17 28.2	+0.8
CAVI	**Cavuskoy**	**1.24**	**28**	*e*Pn	Pb	11 17 10.8	+0.3
CAVI				*e*Sn	Sg	11 17 28.2	+0.8
IZI	**Iznik**	**1.26**	**14**	*e*PN	Pn	11 17 10.8	+0.2
IZI	**Iznik**	**1.26**	**14**	*e*Pn	Pn	11 17 10.8	+0.2
MDNY	**Mudanya-Bursa**	**1.27**	**353**	*e*PN	Pb	11 17 11.2	+0.2
MDNY	**Mudanya-Bursa**	**1.27**	**353**	*e*Pn	Pb	11 17 11.2	+0.2
KCTX	**Karacabey (Bur**	**1.28**	**334**	*e*PN	Pb	11 17 11.4	+0.1
KCTX	**Karacabey (Bur**	**1.28**	**334**	*e*Pn	Pb	11 17 11.4	+0.1
BALY	**Balya**	**1.30**	**299**	P	Pg	11 17 12.4	0.0
BALY	**Balya**	**1.30**	**299**	*i* P	Pg	11 17 12.4	0.0
BORA	**Eskisehir**	**1.31**	**54**	*i* P	Pn	11 17 09.7	-1.6
GEMT	**Gemlik**	**1.32**	**3**	*e*PN	Pn	11 17 12.0	+0.6
GEMT	**Gemlik**	**1.32**	**3**	*e*Pn	Pn	11 17 12.0	+0.6
DENT	**Denizli**	**1.35**	**182**	*e*PN	Pg	11 17 13.4	-0.1
DENT	**Denizli**	**1.35**	**182**	*e*Pn	Pg	11 17 13.4	-0.1
ADVT	**Abdulvahap**	**1.41**	**21**	*e*PN	Pb	11 17 13.9	+0.4
ADVT	**Abdulvahap**	**1.41**	**21**	*e*Pn	Pb	11 17 13.9	+0.4
DNZL	**Cakiroluk**	**1.42**	**181**	P	Pn	11 17 13.6	+0.7
DNZL	**Cakiroluk**	**1.42**	**181**	*i* P	Pn	11 17 13.6	+0.7
ESKT	**Eskisehir**	**1.43**	**73**	*i* P	Pn	11 17 13.6	+0.6
SEYT	**Eskypehyr**	**1.43**	**73**	P	Pn	11 17 13.6	+0.6
ARMT	**Armutlu**	**1.46**	**353**	*e*PN	Pn	11 17 13.9	+0.5
ARMT	**Armutlu**	**1.46**	**353**	*e*Pn	Pn	11 17 13.9	+0.5
AYDB	**Zeytinkoy-Aydi**	**1.49**	**219**	*e*PN	Pb	11 17 15.7	+0.7
AYDB	**Zeytinkoy-Aydi**	**1.49**	**219**	*e*Pn	Pb	11 17 15.7	+0.7
BOLV	**Bolvadin**	**1.51**	**104**	P	Pn	11 17 14.9	+0.8
BOLV	**Bolvadin**	**1.51**	**104**	*i* P	Pn	11 17 14.9	+0.8
GPA	**Golpazari**	**1.51**	**38**	*e*PN	Pb	11 17 14.9	-0.3
GPA	**Golpazari**	**1.51**	**38**	*e*Pn	Pb	11 17 14.9	-0.3
EDC	**Edincik**	**1.55**	**323**	*e*PN	Pb	11 17 15.5	-0.4
EDC	**Edincik**	**1.55**	**323**	*e*Pn	Pb	11 17 15.5	-0.4
KNL	**Bal¨–kesir**	**1.67**	**314**	*i* P	Pb	11 17 17.7	-0.2
ISP	**Isparta**	**1.71**	**138**	*e*PN	Pb	11 17 19.0	+0.4
ISP	**Isparta**	**1.71**	**138**	P	Pb	11 17 19.6	+1.0
ISP				S	Sg	11 17 41.9	-0.6
ISP	**Isparta**	**1.71**	**138**	*e*Pn	Pb	11 17 19.0	+0.4
ISP	**Isparta**	**1.71**	**138**	P	Pb	11 17 19.6	+1.0
ISP				S	Sg	11 17 41.9	-0.6
GULT	**Gulveren**	**1.72**	**39**	*e*PN	Pn	11 17 17.9	+1.0
GULT	**Gulveren**	**1.72**	**39**	*e*Pn	Pn	11 17 17.9	+1.0
AYDN	**Tasoluk**	**1.73**	**214**	P	Pn	11 17 17.6	+0.5
AYDN	**Tasoluk**	**1.73**	**214**	*i* P	Pn	11 17 17.6	+0.5
BUY	**Buyukada**	**1.74**	**1**	*i* P	Pn	11 17 14.9	-2.2
BAGO	**Egridir - ISPA**	**1.74**	**129**	*i* P	Pn	11 17 14.9	-2.4
HRT	**Hereke**	**1.77**	**14**	*e*PN	Pn	11 17 18.7	+1.2
HRT	**Hereke**	**1.77**	**14**	*e*Pn	Pn	11 17 18.7	+1.2
SPNC	**Sapanca-Adapaz**	**1.83**	**30**	*e*PN	Pb	11 17 19.9	-0.8
SPNC	**Sapanca-Adapaz**	**1.83**	**30**	*e*Pn	Pb	11 17 19.9	-0.8
AYVA	**Ayvalik**	**1.87**	**277**	P	Pn	11 17 20.1	+1.2
AYVA	**Ayvalik**	**1.87**	**277**	*i* P	Pn	11 17 20.1	+1.2
KRBG	**Karabiga-Canak**	**1.88**	**313**	*e*PN	Pb	11 17 20.7	-0.8
KRBG	**Karabiga-Canak**	**1.88**	**313**	*e*Pn	Pb	11 17 20.7	-0.8
GOLH	**Golhisar**	**1.91**	**169**	P	Pn	11 17 20.1	+0.5
GOLH	**Golhisar**	**1.91**	**169**	*i* P	Pn	11 17 20.1	+0.5
SVRH	**Sivrihisar-ESK**	**1.92**	**79**	*e*PN	Pb	11 17 21.9	-0.3
SVRH	**Sivrihisar-ESK**	**1.92**	**79**	*e*Pn	Pb	11 17 21.9	-0.3
ISK	**Istanbul-Kandi**	**1.95**	**359**	*e*PN	Pb	11 17 21.9	-0.8
ISK	**Istanbul-Kandi**	**1.95**	**359**	P	Pg	11 17 25.1	+0.2
ISK				S	Sg	11 17 50.0	-0.2
ISK	**Istanbul-Kandi**	**1.95**	**359**	*e*PN	Pb	11 17 21.9	-0.8
ISK	**Istanbul-Kandi**	**1.95**	**359**	P	Pg	11 17 25.1	+0.2
ISK				S	Sg	11 17 50.0	-0.2
GLHS	**Glhisar (BURDU**	**1.98**	**170**	*e*PN	Pn	11 17 22.1	+1.6
GLHS	**Glhisar (BURDU**	**1.98**	**170**	*e*Pn	Pn	11 17 22.1	+1.6
AUMIH	**MIHALICIK**	**2.00**	**67**	P	Pb	11 17 22.6	-1.0
AUMIH	**MIHALICIK**	**2.00**	**67**	*i* P	Pb	11 17 22.6	-1.0
DGB	**¨zmir**	**2.02**	**239**	*i* P	Pg	11 17 25.8	-0.4
YER	**Yerkesik**	**2.07**	**198**	*e*PN	Pn	11 17 23.5	+1.8
YER	**Yerkesik**	**2.07**	**198**	P	Pn	11 17 22.1	+0.3
YER				S	Sn	11 17 46.2	-1.2
YER	**Yerkesik**	**2.07**	**198**	P	Pn	11 17 22.1	+0.3
YER	**Yerkesik**	**2.07**	**198**	*e*Pn	Pn	11 17 23.5	+1.8
YER				S	Sn	11 17 46.2	-1.2
SILT	**Sile**	**2.08**	**12**	*e*PN	Pb	11 17 23.7	-1.2
SILT	**Sile**	**2.08**	**12**	*e*Pn	Pb	11 17 23.7	-1.2
URLA	**Izmir**	**2.09**	**250**	*i* P	Pg	11 17 28.7	+1.3
KLYT	**Kilyos**	**2.14**	**359**	*e*PN	Pn	11 17 23.9	+1.3
KLYT	**Kilyos**	**2.14**	**359**	*e*Pn	Pn	11 17 23.9	+1.3
SART	**Tekirdag**	**2.15**	**318**	*i* P	Pg	11 17 27.8	-0.9
RKY	**Sarkoy-Tekirda**	**2.15**	**318**	*e*PN	Pn	11 17 24.3	+1.4
RKY	**Sarkoy-Tekirda**	**2.15**	**318**	*e*Pn	Pn	11 17 24.3	+1.4
KAND	**Kocaeli-Kandir**	**2.15**	**23**	P	Pb	11 17 25.2	-0.9
KAND	**Kocaeli-Kandir**	**2.15**	**23**	*i* P	Pb	11 17 25.2	-0.9
CTKS	**Kestanelik-??a**	**2.17**	**348**	*e*PN	Pn	11 17 24.5	+1.5
CTKS	**Kestanelik-??a**	**2.17**	**348**	*e*Pn	Pn	11 17 24.5	+1.5
KIZT	**Kizilcal**	**2.19**	**95**	*e*PN	Pn	11 17 25.1	+1.7
KIZT	**Kizilcal**	**2.19**	**95**	*e*Pn	Pn	11 17 25.1	+1.7
LPK	**Lapseki**	**2.19**	**306**	*e*PN	Pn	11 17 24.9	+1.6
LPK	**Lapseki**	**2.19**	**306**	*e*Pn	Pn	11 17 24.9	+1.6
ZEY	**¨zmir**	**2.20**	**248**	*i* P	Pg	11 17 31.4	+1.8
SAHE	**Sakarya_HENDEK**	**2.21**	**37**	P	Pb	11 17 26.5	-0.5
SAHE	**Sakarya_HENDEK**	**2.21**	**37**	*i* P	Pb	11 17 26.5	-0.5
SUTC	**Sutluce-Ispart**	**2.22**	**137**	*e*PN	Pn	11 17 25.8	+1.9
SUTC	**Sutluce-Ispart**	**2.22**	**137**	*e*Pn	Pn	11 17 25.8	+1.9
EZN	**Ezine**	**2.25**	**289**	*e*PN	Pn	11 17 25.8	+1.6
EZN	**Ezine**	**2.25**	**289**	*e*Pn	Pn	11 17 25.8	+1.6
KORT	**Korkueli**	**2.33**	**154**	P	Pn	11 17 25.2	-0.2
KORT	**Korkueli**	**2.33**	**154**	*i* P	Pn	11 17 25.2	-0.2
GELI	**Tayfur-Gelibol**	**2.39**	**303**	*e*PN	Pn	11 17 28.3	+2.3
GELI	**Tayfur-Gelibol**	**2.39**	**303**	*e*Pn	Pn	11 17 28.3	+2.3
CTYL	**Yalikoy Yolu**	**2.44**	**346**	*e*PN	Pn	11 17 28.5	+1.8
CTYL	**Yalikoy Yolu**	**2.44**	**346**	*e*Pn	Pn	11 17 28.5	+1.8
BOZC	**Bozcaada**	**2.46**	**288**	*i* P	Pn	11 17 22.6	-4.3
FETY	**Fethiye**	**2.47**	**180**	P	Pn	11 17 28.3	+1.1
FETY	**Fethiye**	**2.47**	**180**	P	Pn	11 17 28.3	+1.1
CHOS	**Chios island**	**2.48**	**254**	P	Pn	11 17 26.1	-1.2
CHOS				S	Sn	11 17 54.1	-3.3
CHOS	**Chios island**	**2.48**	**254**	P	Pn	11 17 26.1	-1.2
SIGR	**SIGRI**	**2.51**	**273**	P	Pn	11 17 26.9	-0.8
SIGR				S	Sn	11 17 55.6	-2.5
SIGR	**SIGRI**	**2.51**	**273**	P	Pn	11 17 26.9	-

couple: M₀6.35000×10¹⁴ NP1:φ₀42.00000°, δ21.00000°, λ-80.00000°. NP2:φ₀212.00000°, δ69.00000°, λ-94.00000°.
*IDC **21** 11:32:07.1±0.8, 37.°82N×144.°64E, h0km, mb3.6/10, mb1 3.8/13, mb1mx3.7/53, mbtmp3.7/13, ML3.6/3, MS2.6/3, Ms1 2.6/3, ms1mx2.2/52, Error ellipse: s-maj=22.0km s-min=16.8km az=124.0*
*ISCJB **21** 11:32:10.9±0.6, 38.°03N±0.°05×144.°47E±0.°05, h33km, mb3.6/10, Error ellipse: s-maj=6.5km s-min=5.6km az=165.6*
*JMA **21** 11:32:11.8±0.1, 38.°14N×144.°35E, h19km, M4.0*
ISC 21 11:32:12.5±0.8, 38.°05N±0.°05×144.°49E±0.°08, h35km, n29, σ2°27/38, mb3.6/10, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	2.44	296	P	Pn	11 32 50.0	+0.2
OFUJ				S	Sn	11 33 17.9	-0.5
JIO	Ouri	2.50	280	P	Pn	11 32 50.8	+0.1
JIO				S	Sn	11 33 19.6	-0.4
JOM	Ohasama	2.87	301	P	Pn	11 32 56.6	+0.8
JOM				eS	Sn	11 33 29.0	-0.2
JANG	Nango	3.27	316	eS	Sn	11 33 38.4	-0.6
JFT	Otama	3.33	262	P	Pn	11 33 03.3	+1.1
JFT				S	Sn	11 33 40.8	+0.3
JYK	Kaneyama	3.35	286	P	Pn	11 33 03.6	+1.2
JOT	Ohata	4.25	322	S	Sn	11 34 03.4	+0.2
BSO1	Boso 1	4.42	221	eS	Sn	11 34 05.0	-1.5
JCH	Churui	4.64	350	P	Pn	11 33 18.8	-1.3
JCH				eS	Sn	11 34 10.2	-2.4
JKB	Kayabe	4.66	326	P	Pn	11 33 21.6	+1.2
JKB				eS	Sn	11 34 10.7	-2.5
JRY	Ryogami san	4.91	247	P	Pn	11 33 23.2	-0.7
JRY				S	Sn	11 34 16.5	-3.0
JOD2	Odawara 2	5.16	239	S	Sn	11 34 22.5	-3.0
MJAR	Matsushiro Arr	5.23	255	Pn	Pn	11 33 29.3	+1.0
	1.5nm,0.3s,baz=50,slow=29,SNR=11						
MJAR				Sn	Sn	11 34 28.8	+1.5
	0.8nm,0.3s,baz=76,slow=38,SNR=3.1						
MJAR				LR	LR	11 35 36.4	
	comp=Z,36nm,22.0s,baz=80,slow=40						
NEM2	Nemuro 2	5.39	10	P	Pn	11 33 26.8	-3.6
NEM2				S	Sn	11 34 24.5	-6.7
JOSM	Okushiri--Mats	5.57	318	P	Pn	11 33 33.6	+0.8
ASAJ	Asahikawa	6.22	347	Pn	Pn	11 33 42.1	+0.3
	1.4nm,0.3s,baz=208,slow=9.2,SNR=11						
ASAJ				Sn	Sn	11 34 49.8	-2.0
	0.8nm,0.3s,baz=24,slow=18,SNR=4.3						
JHJ	Hachijo jima 2	6.24	219	Pn	Pn	11 33 38.5	-3.5
	3.1nm,0.3s,baz=336,slow=20,SNR=3.6						
JHJ				Sn	Sn	11 34 45.6	-6.6
	11nm,0.3s,baz=95,slow=22,SNR=5.6						
KSRS	Korea Array	13.13	272	LR	LR	11 39 30.2	
	comp=Z,29nm,21.1s,baz=100,slow=33						
KLR	Kul'dur	14.46	325	LR	LR	11 40 40.2	
	comp=Z,34nm,19.6s,baz=139,slow=35						
SEY	Seymchan	25.37	8	P	P	11 37 38.0	+1.9
	1.2nm,0.6s,baz=163,slow=8.8,SNR=6.4						
MKAR	Makanchi Array	45.66	302	P	P	11 40 31.6	+1.9
	0.7nm,0.8s,baz=92,slow=7.3,SNR=3.9						
KURBB	Kurchatov Arra	47.31	308	P	P	11 40 44.0	+1.6
	1.6nm,0.4s,baz=81,slow=8.0,SNR=10						
BVAR	Borovoye Array	51.70	312	P	P	11 41 16.6	+0.7
	0.7nm,0.5s,baz=57,slow=10,SNR=4.0						
WRA	Warramunga Arr	58.47	191	P	P	11 42 03.8	-1.3
	0.7nm,0.6s,baz=11,slow=6.9,SNR=7.0						
YKA	Yellowknife Ar	61.69	31	P	P	11 42 27.0	+0.3
	0.1nm,0.7s,baz=300,slow=6.2,SNR=3.7						
ASAR	Alice Springs	62.19	191	P	P	11 42 28.3	-2.2
	0.4nm,0.8s,baz=11,slow=12,SNR=4.4						
NVAR	Mina Array Bea	72.41	55	P	P	11 43 36.6	+1.2
	0.3nm,0.6s,baz=270,slow=7.0,SNR=3.6						
PDAR	Pinedale Array	75.20	47	P	P	11 43 52.0	+0.3
	0.3nm,0.5s,baz=299,slow=4.2,SNR=4.7						
TXAR	Lajitas Array	87.55	54	P	P	11 44 58.0	+0.8
	0.1nm,0.5s,baz=284,slow=3.6,SNR=2.4						

*CSEM **21** 11:37:27.6, 35.°38N×26.°26E, h44km, ML1.7/3*
ATH 21 11:37:27.6, 35.°38N×26.°26E, h44km±1km, ML1.7/2, Error ellipse: s-maj=5.9km s-min=1.4km az=172.0, Crete

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZKR	Zakros	0.27	188	P	Pn	11 37 37.3	+1.4
ZKR				S	Sn	11 37 41.8	+0.1
ZKR	Zakros	0.27	188	P	Pn	11 37 37.3	+1.4
ZKR				S	Sn	11 37 41.8	+0.1
ZKR				AML	AML	11 37 43.0	
	comp=N,290μm,0.4s						
ZKR				AML	AML	11 37 45.4	
	comp=E,147μm,0.3s						
NPS	Neapolis	0.55	258	P	Pn	11 37 40.1	+1.0
NPS				S	Sn	11 37 48.0	+0.7
NPS	Neapolis	0.55	258	P	Pn	11 37 40.1	+1.0
NPS				S	Sn	11 37 48.0	+0.6
NPS				AML	AML	11 37 49.5	
	comp=E,270μm,0.2s						
NPS				AML	AML	11 37 50.3	
	comp=N,227μm,0.3s						
LAST	Lasithi	0.68	252	P	Pn	11 37 42.5	+1.6
LAST				S	Sn	11 37 51.9	+1.4
LAST	Lasithi	0.68	252	P	Pn	11 37 42.5	+1.6
KARP	Karpathos	0.75	77	P	Pn	11 37 43.5	+1.7
KARP				S	Sn	11 37 52.9	+0.7
KARP	Karpathos	0.75	77	P	Pn	11 37 43.5	+1.7
KARP				S	Sn	11 37 52.9	+0.7
IDI	Anoyia	1.13	266	P	Pn	11 37 47.3	+0.3
IDI	Anoyia	1.13	266	P	Pn	11 37 47.3	+0.3

*ISK **21** 11:38:20.9, 39.°12N×29.°08E, h10km, ML2.8*
*DDA **21** 11:38:21.1, 39.°11N×29.°09E, h8km, Md3.4*
*CSEM **21** 11:38:21.3±0.1, 39.°13N×29.°10E, h5km, MD3.4, Error ellipse: s-maj=2.0km s-min=1.6km az=137.0*
ISC 21 11:38:21.5±0.9, 39.°13N±0.°02×29.°09E±0.°02, h11km±8km, n60, σ0°52/88, 4C, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.30	254	P	Pg	11 38 27.7	+0.1
DEMI				S	Sg	11 38 32.0	+0.2
DEMI	Demirci	0.30	254	⇑iP	Pg	11 38 27.7	+0.1
DEMI				iS	Sg	11 38 32.0	+0.2
GDZ	Gediz	0.31	97	P	Pg	11 38 27.8	+0.1
GDZ				S	Sg	11 38 32.1	+0.2
GDZ	Gediz	0.31	97	⇑iP	Pg	11 38 27.8	+0.1
GDZ				iS	Sg	11 38 32.1	+0.2
TVSB	Tavsanli	0.43	42	ePG	Pg	11 38 30.1	+0.1
TVSB				eSG	Sg	11 38 35.9	+0.2
TVSB	Tavsanli	0.43	42	ePg	Pg	11 38 30.1	+0.1
TVSB				eSg	Sg	11 38 35.9	+0.2
DURS	Dursunbey	0.67	315	P	Pg	11 38 34.6	+0.1
DURS				S	Sb	11 38 44.1	-0.6
DURS	Dursunbey	0.67	315	iP	Pg	11 38 34.6	+0.1
DURS				iS	Sb	11 38 44.1	-0.6
KULA	Kula-Manisa	0.70	209	ePG	Pg	11 38 34.6	-0.4
KULA	Kula-Manisa	0.70	209	ePg	Pg	11 38 34.6	-0.4
MANT	Manisa	0.76	213	P	Pg	11 38 35.8	-0.4
MANT				S	Sg	11 38 45.2	-1.0
MANT	Manisa	0.76	213	⇑iP	Pg	11 38 35.8	-0.4
MANT				iS	Sg	11 38 45.1	-1.0
KHAL	Karahalli	0.82	157	P	Pb	11 38 37.1	-0.7
KHAL				S	Sg	11 38 47.4	-0.6
KHAL	Karahalli	0.82	157	⇑iP	Pb	11 38 37.1	-0.7
KHAL				iS	Sg	11 38 47.4	-0.6
KHL	Karahalli	0.87	157	ePG	Pb	11 38 38.1	-0.5
ORLT	Orhaneli	0.93	351	ePG	Pg	11 38 39.3	0.0
ORLT	Orhaneli	0.93	351	ePg	Pg	11 38 39.3	0.0
AKHS	Akhisar	1.03	256	P	Pb	11 38 41.1	-0.2
AKHS				S	Sb	11 38 54.9	+0.2
AKHS	Akhisar	1.03	256	iP	Pb	11 38 41.1	-0.2
AKHS				iS	Sb	11 38 54.9	+0.2
AKS	Akhisar	1.03	256	ePG	Pb	11 38 40.9	-0.4
AKS	Akhisar	1.03	256	ePg	Pb	11 38 40.9	-0.4
BALB	Balikesir	1.07	299	ePG	Pb	11 38 42.1	+0.1
BALB				eSG	Sn	11 38 57.0	-0.3
BALB	Balikesir	1.07	299	ePg	Pb	11 38 42.1	+0.1
BALB				eSg	Sn	11 38 57.0	-0.3
IGD	Bursa	1.14	4	iP	Pg	11 38 42.4	-0.9
IGD				iS	Sg	11 38 57.7	-0.4
CAVI	Cavuskoy	1.22	28	ePN	Pb	11 38 44.4	-0.2
CAVI	Cavuskoy	1.22	28	ePn	Pb	11 38 44.0	-0.2
IZI	Iznik	1.24	14	ePN	Pg	11 38 45.3	0.0
IZI	Iznik	1.24	14	ePn	Pg	11 38 45.3	0.0
MDNY	Mudanya-Bursa	1.25	353	ePN	Pn	11 38 44.9	0.0
MDNY	Mudanya-Bursa	1.25	353	ePn	Pn	11 38 44.9	0.0
KCTX	Karacabey (Bur	1.27	334	ePN	Pn	11 38 45.1	-0.1
KCTX	Karacabey (Bur	1.27	334	ePn	Pn	11 38 45.1	-0.1
BALY	Balya	1.29	299	P	Pg	11 38 46.2	-0.1
BALY				S	Sn	11 39 03.2	+0.3
BALY	Balya	1.29	299	iP	Pg	11 38 46.1	-0.1
BALY				iS	Sn	11 39 03.2	+0.3
BORA	Eskisehir	1.29	54	P	Pg	11 38 45.9	-0.4
BORA				S	Sn	11 39 03.5	+0.6
BORA	Eskisehir	1.29	54	iP	Pg	11 38 45.9	-0.4
BORA				iS	Sn	11 39 03.5	+0.6
GEMT	Gemlik	1.31	3	ePN	Pb	11 38 46.0	0.0
GEMT	Gemlik	1.31	3	ePn	Pb	11 38 46.0	0.0
ADVT	Abdulvahap	1.40	21	ePN	Pn	11 38 47.2	+0.3
ADVT	Abdulvahap	1.40	21	ePn	Pn	11 38 47.2	+0.3
ESKT	Eskisehir	1.42	73	iP	Pb	11 38 47.7	-0.3
ESKT				iS	Sg	11 39 07.6	+0.4
SEYT	Eskypehyr	1.42	73	P	Pb	11 38 47.7	-0.3
SEYT				S	Sg	11 39 07.6	+0.5
DNZL	Cakiroluk	1.44	181	P	Pg	11 38 49.1	0.0
DNZL	Cakiroluk	1.44	181	iP	Pg	11 38 49.1	0.0
DNZL				iS	Sg	11 39 10.1	+2.3
ARMT	Armutlu	1.45	353	ePN	Pn	11 38 48.0	+0.4
ARMT	Armutlu	1.45	353	ePn	Pn	11 38 48.0	+0.4
GPA	Golpazari	1.49	39	ePN	Pb	11 38 48.8	-0.4
GPA	Golpazari	1.49	39	ePn	Pb	11 38 48.8	-0.4
EDC	Edincik	1.54	322	ePN	Pn	11 38 49.1	+0.2
EDC	Edincik	1.54	322	ePn	Pn	11 38 49.1	+0.2
GULT	Gulveren	1.70	40	ePN	Pn	11 38 51.3	+0.1
GULT	Gulveren	1.70	40	ePn	Pn	11 38 51.3	+0.1
BUY	Buyukada	1.72	1	P	Pg	11 38 54.2	-0.3
BUY				S	Sb	11 39 14.9	+0.2
BUY	Buyukada	1.72	1	iP	Pg	11 38 54.2	-0.3
BUY				iS	Sb	11 39 14.9	+0.2
AYDN	Tasoluk	1.75	213	P	Pb	11 38 53.4	-0.2
AYDN	Tasoluk	1.75	213	iP	Pb	11 38 53.4	-0.2
AYDN				iS	Sg	11 39 19.0	+1.3
HRT	Hereke	1.75	15	ePN	Pn	11 38 52.5	+0.7
HRT	Hereke	1.75	15	ePn	Pn	11 38 52.5	+0.7
SAHE	Sakarya_HENDEK	2.19	38	P	Pn	11 38 58.4	+0.6
SAHE	Sakarya_HENDEK	2.19	38	iP	Pn	11 38 58.4	+0.6
SAHE				iS	Sg	11 39 30.1	-1.8

*IDC **21** 11:45:08.0±0.9, 35.°73N×143.°11E, h0km, mb3.5/6, mb1 3.7/9, mb1mx3.5/36, mbtmp3.5/9, ML3.4/3, MS2.2/2, Ms1 2.2/2, ms1mx2.0/41, Error ellipse: s-maj=28.5km s-min=20.2km az=110.0*
*ISCJB **21** 11:45:10.9±0.7, 35.°86N±0.°06×143.°03E±0.°06, h33km, mb3.5/6, Error ellipse: s-maj=9.2km s-min=6.9km az=28.4*
*JMA **21** 11:45:12.4±0.3, 35.°89N×142.°85E, h87km, M3.2*
ISC 21 11:45:12.6±0.9, 35.°84N±0.°06×143.°05E±0.°08, h35km, n17, σ2°27/22, mb3.5/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	1.78	266	P	Pn	11 45 40.1	-0.8
CHOJ				eS	Sn	11 46 01.5	-0.8
JHO	Hitachi	2.15	292	P	Pn	11 45 44.8	-1.1
ONAJ	Iwakimizuishiy	2.21	306	S	Sn	11 46 10.2	-2.7
JMM	Marumori	2.71	319	P	Pn	11 45 52.4	-1.3
JMM				eS	Sn	11 46 22.9	-2.3
JFT	Otama	2.75	308	P	Pn	11 45 54.3	+0.1
JFT				S	Sn	11 46 25.7	-0.5
JAG	Ashikaga	2.96	282	P	Pn	11 45 56.4	-0.8
JHJ	Hachijo jima 2	3.82	226	Pn	Pn	11 46 07.3	-1.6
	2.6nm,0.3s,baz=270,slow=20,SNR=4.9						
JHJ				Sn	Sn	11 46 47.4	-5.3
	19nm,0.3s,baz=236,slow=23,SNR=7.3						
MJAR	Matsushiro Arr	3.97	282	Pn	Pn	11 46 11.2	+0.1
	1.3nm,0.3s,baz=94,slow=6.4,SNR=13						
MJAR				LR	LR	11 47 21.2	
	comp=Z,19nm,19.0s,baz=150,slow=33						
MAT	Matsushiro	3.98	282	P	Pn	11 46 12.5	+1.4
MAT				S	Sn	11 46 57.9	+1.4
ASAJ	Asahikawa	8.28	358	Pn	Pn	11 47 08.7	-1.4
	1.0nm,0.3s,baz=229,slow=6.2,SNR=7.9						
ASAJ				Sn	Sn	11 48 36.6	-5.7
	0.3nm,0.3s,baz=347,slow=18,SNR=2.0						
KSRS	Korea Array	12.26	282	LR	LR	11 52 10.5	
	comp=Z,20nm,21.1s,baz=50,slow=34						
ZALV	Zalesovo Beam	43.69	313	P	P	11 53 15.5	+1.6
	0.8nm,0.4s,baz=101,slow=7.5,SNR=2.8						
WRA	Warramunga Arr	56.09	190	P	P	11 54 48.2	-0.1
	0.6nm,0.8s,baz=9.5,slow=7.4,SNR=5.2						
ASAR	Alice Springs	59.81	190	P	P	11 55 13.9	-0.5
	0.2nm,0.8s,baz=2.5,slow=5.7,SNR=3.8						
YKA	Yellowknife Ar	64.18	30	P	P	11 55 45.2	+1.9
	0.3nm,0.9s,baz=300,slow=6.7,SNR=3.7						
PDAR	Pinedale Array	77.56	46	P	P	11 57 05.2	0.0
	0.2nm,0.3s,baz=144,slow=1.3,SNR=3.7						
TXAR	Lajitas Array	89.79	53	P	P	11 58 10.0	+2.1
	0.1nm,0.6s,baz=327,slow=4.8,SNR=2.6						

*ISK **21** 11:54:12.8, 39.°20N×28.°94E, h6km, MD2.6*
*ISCJB **21** 11:54:13.5±0.5, 39.°12N±0.°04×29.°08E±0.°05, h19km±9km, Error ellipse: s-maj=7.2km s-min=5.9km az=166.2*
*DDA **21** 11:54:13.5, 39.°09N×29.°11E, h7km, Md2.5*
*CSEM **21** 11:54:13.2±0.3, 39.°11N×29.°07E, h15km, MD2.5, Error ellipse: s-maj=7.1km s-min=5.9km az=93.0*
ISC 21 11:54:12.4±1.2, 39.°14N±0.°03×29.°05E±0.°04, h8km±13km, n24, σ0°51/35, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.28	250	P	Pb	11 54 19.8	0.0
DEMI				S	Sb	11 54 24.5	-0.2
DEMI	Demirci	0.28	250	iP	Pb	11 54 19.8	0.0
DEMI				iS	Sb	11 54 24.4	-0.2
GDZ	Gediz	0.34	99	P	Pg	11 54 19.2	+0.1
GDZ				S	Sg	11 54 23.7	+0.1
GDZ	Gediz	0.34	99	iP	Pg	11 54 19.2	+0.1
GDZ				iS	Sg	11 54 23.7	+0.1
TVSB	Tavsanli	0.44	46	ePG	Pb	11 54 22.5	0.0
TVSB				eSG	Sb	11 54 29.5	+0.2
TVSB	Tavsanli	0.44	46	ePg	Pb	11 54 22.5	0.0
TVSB				eSg	Sb	11 54 29.5	+0.2
DURS	Dursunbey	0.64	316	P	Pn	11 54 27.5	-0.4
DURS	Dursunbey	0.64	316	iP	Pn	11 54 27.5	-0.4
DURS				iS	Sn	11 54 39.8	+1.5
KULA	Kula-Manisa	0.70	206	ePG	Pb	11 54 27.1	+0.2
KULA	Kula-Manisa	0.70	206	ePg	Pb	11 54 27.1	+0.2
KHAL	Karahalli	0.84	156	P	Pb	11 54 29.3	-0.1
KHAL				S	Sg	11 54 39.6	0.0
KHAL	Karahalli	0.84	156	iP	Pb	11 54 29.3	-0.1
KHAL				iS	Sg	11 54 39.6	0.0
CAVI	Cavuskoy	1.22	30	ePN	Pg	11 54 36.7	+0.8
CAVI	Cavuskoy	1.22	30	ePn	Pg	11 54 36.7	+0.8
MDNY	Mudanya-Bursa	1.23	354	ePN	Pn	11 54 35.6	-0.3
MDNY	Mudanya-Bursa	1.23	354	ePn	Pn	11 54 35.6	-0.3
IZI	Iznik	1.24	15	ePN	Pg	11 54 36.5	+0.3
IZI	Iznik	1.24	15	ePn	Pg	11 54 36.5	+0.3
KCTX	Karacabey (Bur	1.25	335	ePN	Pn	11 54 35.1	-1.1
KCTX				eSN	Sb	11 54 51.7	-0.7
KCTX	Karacabey (Bur	1.25	335	ePn	Pn	11 54 35.1	-1.1
KCTX				eSn	Sb	11 54 51.7	-0.7
ARMT	Armutlu	1.43	354	ePN	Pb	11 54 39.3	0.0
ARMT	Armutlu	1.43	354	ePn	Pb	11 54 39.3	0.0
GULT	Gulveren	1.71	41	ePN	Pg	11 54 44.8	-0.4
GULT	Gulveren	1.71	41	ePn	Pg	11 54 44.8	-0.4

*NIED **21** 12:04:00, 38.°20N×141.°60E, h50km, Mw3.5 Best double couple: M₀1.78000×10¹⁴ NP1:φ₀6.00000°, δ23.00000°, λ65.00000°. NP2:φ₀213.00000°, δ70.00000°, λ100.00000°.*
*ISCJB **21** 12:04:50.4±0.7, 38.°22N±0.°03×141.°77E±0.°08, h68km±6km, mb3.5/4, Error ellipse: s-maj=11.1km s-min=5.6km az=8.3*
*IDC **21** 12:04:50.0±1.7, 38.°22N×141.°90E, h47km±16km, mb3.3/4, mb1 3.6/9, mb1mx3.3/68, mbtmp3.7/9, ML3.0/5, Error ellipse: s-maj=32.2km s-min=11.3km az=93.0*
*JMA **21** 12:04:52.6, 38.°24N×141.°62E, h62km±1km, M3.6*
JMA Felt I J1.
ISC 21 12:04:51.2±1.1, 38.°22N±0.°04×141.°78E±0.°08, h54km±10km, n27, σ1°43/35, mb3.7/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.41	304	P	Pn	12 05 03.0	+1.3
JIO				S	Sn	12 05 10.4	+1.2
JMK	Ichinoseki	0.85	329	P	Pn	12 05 08.0	+1.0
JMK				S	Sn	12 05 19.1	+0.5
JMM	Marumori	0.86	246	P	Pn	12 05 07.4	+0.3
JMM				S	Sn	12 05 18.3	-0.5
JOU	Okura	0.89	280	P	Pn	12 05 07.8	+0.2
JOU				S	Sn	12 05 19.1	-0.5
JFK	Kawauchi	1.12	220	P	Pn	12 05 11.6	+1.0
JFK				S	Sn	12 05 25.3	+0.3
JOM	Ohasama	1.30	343	P	Pn	12 05 14.3	+1.2
JOM				S	Sn	12 05 30.3	+0.8
JYK	Kaneyama	1.31	302	P	Pn	12 05 13.5	+0.3
JYK				S	Sn	12 05 29.3	-0.3
JFT	Otama	1.34	239	P	Pn	12 05 14.5	+0.9
JFT				S	Sn	12 05 30.8	+0.4
JYS	Shirataka	1.35	270	P	Pn	12 05 14.0	+0.3
JYS				S	Sn	12 05 30.3	-0.3
JRG	Rokugo	1.47	323	P	Pn	12 05 16.4	+1.0
JRG				S	Sn	12 05 34.9	+1.3
JYA	Atsumi	1.66	283	P	Pn	12 05 18.1	+0.1
JYA				S	Sn	12 05 37.9	-0.3
MJAR	Matsushiro Arr	3.30	241	P	Pn	12 05 41.9	+1.5
	1.8nm,0.3s,baz=34,slow=14,SNR=28						
MAT	Matsushiro	3.30	241	P	Pn	12 05 42.4	+2.0
MAT				S	Sn	12 06 24.3	+5.8
JHJ	Hachijo jima 2	5.35	198	P	Pn	12 06 08.9	+0.5
	7.0nm,0.3s,baz=142,slow=22,SNR=9.9						
JHJ				S	Sn	12 07 06.5	-2.2
	6.2nm,0.3s,baz=94,slow=23,SNR=6.3						
ASAJ	Asahikawa	5.92	6	P	Pn	12 06 14.7	-1.5
	0.2nm,0.3s,baz=304,slow=13,SNR=2.4						
ASAJ				S	Sn	12 07 21.4	-1.3
	0.3nm,0.3s,baz=93,slow=31,SNR=2.5						
USRK	Ussuriysk Ar.	9.49	312	P	Pn	12 07 05.6	+0.5
	0.2nm,0.3s,baz=125,slow=14,SNR=3.0						
JCJ	Chichijima	11.10	178	P	Pn	12 07 26.6	-0.6
	0.8nm,0.3s,baz=334,slow=22,SNR=1.7						
H11N2	WAKE ISLAND Hy 28.53	123		T	T	12 41 00.4	
	baz=316,slow=75,SNR=56						
H11N1	WAKE ISLAND Hy 28.54	123		T	T	12 41 01.1	
	baz=316,slow=75,SNR=12						
H11N3	WAKE ISLAND Hy 28.55	123		T	T	12 41 01.8	
	baz=316,slow=75,SNR=45						
H11S1	WAKE ISLAND Hy 29.28	125		T	T	12 41 58.0	
	baz=318,slow=76,SNR=48						
H11S3	WAKE ISLAND Hy 29.29	125		T	T	12 41 57.2	
	baz=318,slow=76,SNR=86						
H11S2	WAKE ISLAND Hy 29.30	125		T	T	12 41 58.4	
	baz=318,slow=76,SNR=58						
MKAR	Makanchi Array	43.74	301	P	P	12 12 50.3	-0.8
	0.2nm,0.6s,baz=65,slow=7.2,SNR=2.3						
KURBB	Kurchatov Arra	45.51	307	P	P	12 13 05.2	+0.1
	0.5nm,0.4s,baz=84,slow=8.2,SNR=3.0						
WRA	Warramunga Arr	58.28	188	P	P	12 14 39.7	-0.6
	0.6nm,0.6s,baz=5.4,slow=7.3,SNR=13						
ASAR	Alice Springs	62.01	188	P	P	12 15 06.2	+0.3
	0.4nm,0.7s,baz=21,slow=5.6,SNR=6.2						

DDA 21 12:15:59.7, 39.°07N×29.°03E, h7km, Md2.3, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.24	264	iP	Pg	12 16 05.2	+0.6
DEMI				iS	Sg	12 16 08.7	+0.8
GDZ	Gediz	0.35	87	iP	Pg	12 16 06.6	-0.1
GDZ				iS	Sg	12 16 12.4	+1.1
MANT	Manisa	0.69	213	iP	Pb	12 16 13.9	-0.3
MANT				iS	Sb	12 16 23.0	-0.9

*CSEM **21** 12:16:27.8, 39.°07N×29.°07E, h7km, MD2.3*
DDA 21 12:16:27.8, 39.°07N×29.°07E, h7km, Md2.3, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.28	264	P	Pg	12 16 33.4	0.0
DEMI				S	Sg	12 16 37.7	+0.6
DEMI	Demirci	0.28	264	iP	Pg	12 16 33.4	+0.1
DEMI				iS	Sg	12 16 37.7	+0.6
GDZ	Gediz	0.32	87	P	Pg	12 16 34.0	-0.1
GDZ				S	Sg	12 16 39.4	+1.1
GDZ	Gediz	0.32	87	iP	Pg	12 16 34.0	-0.1
GDZ				iS	Sg	12 16 39.4	+1.0
DURS	Dursunbey	0.70	319	P	Pn	12 16 44.0	-0.3
DURS				S	Sb	12 16 52.2	-0.3
DURS	Dursunbey	0.70	319	iP	Pn	12 16 44.0	-0.3
DURS				iS	Sb	12 16 52.2	-0.2
MANT	Manisa	0.71	215	P	Pg	12 16 41.9	+0.5
MANT				S	Sg	12 16 51.5	+0.9
MANT	Manisa	0.71	215	iP	Pg	12 16 41.9	+0.4
MANT				iS	Sg	12 16 51.5	+0.9

*IDC **21** 12:28:17.6±0.6, 18.°77N×120.°05E, h0km, mb4.2/16, mb1 4.3/18, mb1mx4.1/41, mbtmp4.2/18, ML3.6/2, MS3.1/8, Ms1 3.1/8, ms1mx2.8/49, Error ellipse: s-maj=20.0km s-min=13.8km az=71.0*
*MAN **21** 12:28:22.1, 18.°59N×119.°96E, h9km, mb5.1, ML4.0, MS3.9*
*NEIC **21** 12:28:22.6±0.4, 18.°85N×120.°10E, h35km, mb4.4/5, Error ellipse: s

WRA	**Warramunga Arr**	41.03 159	P	P	12 36 01.3	-1.6
	7.5nm,0.8s,baz=341,slow=8.9,SNR=40					
MKAR	**Makanchi Array**	41.59 321	P	P	12 36 08.2	+0.9
	3.2nm,0.8s,baz=113,slow=9.3,SNR=20					
MKAR			PcP	PcP	12 38 04.0	-0.5
	0.3nm,0.5s,baz=131,slow=4.2,SNR=3.6					
YAK	**Yakutsk**	43.65 7	LR	LR	12 55 22.8	
	comp=Z,26nm,18.7s,baz=162,slow=37					
ZALV	**Zalesovo Beam**	44.24 331	P	P	12 36 28.7	+0.1
	1.2nm,0.6s,baz=116,slow=9.8,SNR=4.9					
ZALV			LR	LR	12 55 19.9	
	comp=Z,32nm,19.6s,baz=68,slow=37					
ASAR	**Alice Springs**	44.38 162	P	P	12 36 29.0	-1.1
	6.5nm,0.5s,baz=338,slow=6.8,SNR=197					
PETK	**Petropavlovsk-**	44.90 31	P	P	12 36 35.4	+1.5
	1.1nm,0.6s,baz=213,slow=6.9,SNR=3.3					
KURK	**Kurchatov**	45.61 324	P	P	12 36 40.2	+0.6
KURBB	**Kurchatov Arra**	45.62 324	P	P	12 36 40.2	+0.5
	3.1nm,0.6s,baz=123,slow=7.9,SNR=27					
MA2	**Magadan**	46.30 21	LR	LR	12 59 39.6	
	comp=Z,22nm,18.5s,baz=169,slow=41					
TIXI	**Tiksi**	53.05 3	*e*P	P	12 37 35.7	-0.4
	2.4nm,0.9s					
NRIK	**Noril'sk**	54.27 346	P	P	12 37 45.9	+0.7
	6.4nm,0.9s,baz=145,slow=9.2,SNR=4.3					
STKA	**Stephens Creek**	54.52 157	P	P	12 37 47.8	+0.4
	7.2nm,0.8s,baz=337,slow=7.4,SNR=12					
ABKAR	**Akbulak array**	56.49 317	*e*P	P	12 38 01.7	+0.2
	3.0nm,0.8s					
GEYT	**Alibeck**	56.69 303	P	P	12 38 04.3	+1.2
	6.6nm,0.9s,baz=132,slow=4.2,SNR=8.2					
ARU	**Arti**	58.77 325	*e*P	P	12 38 17.2	-0.2
	14nm,1.1s					
KBZ	**Khabaz**	68.03 310	P	P	12 39 18.9	0.0
	1.4nm,0.7s,baz=112,slow=5.4,SNR=2.8					
ILAR	**Eielson Array**	74.42 26	P	P	12 39 58.0	+0.7
	0.5nm,0.9s,baz=289,slow=5.9,SNR=5.4					
FINES	**FINESS Array B**	75.50 330	P	P	12 40 03.5	0.0
	2.3nm,0.8s,baz=58,slow=7.2,SNR=4.9					
RAR	**Rarotonga**	88.00 113	LR	LR	13 18 52.3	
	comp=Z,168nm,18.2s,baz=276,slow=34					
YKA	**Yellowknife Ar**	88.27 22	P	P	12 41 10.9	+0.2
	1.1nm,0.7s,baz=312,slow=4.5,SNR=25					
NVAR	**Mina Array Bea**	101.04 43	P	Pdif	12 42 09.1	-0.8
	0.2nm,0.6s,baz=298,slow=2.5,SNR=2.9					

*ISCJB **21** 12:28:46.0±0.5,32°.77N±0°.04×105°.59E±0°.05,h11km, mb3.5/8,Error ellipse: s-maj=7.0km s-min=4.9km az=39.9*
*BJI **21** 12:28:50.2,32°.75N×105°.43E,h22km,mb3.9/1,ML3.6/17, Ms3.2/4,Ms7 3.2/2*
*IDC **21** 12:28:53.4±6.2,32°.66N×105°.42E,h44km±63km,mb3.3/8, mb1 3.5/9,mb1mx3.3/44,mbtmp3.6/9,ML4.2/1,Error ellipse: s-maj=33.8km s-min=17.9km az=59.0*

ISC 21 12:28:48.8±0.6,32°.73N±0°.04×105°.47E±0°.04,h11km,n15, σ2§59/26,mb3.7/8,Sichuan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CD2	**Chengdu**	2.33	219	Pn	Pn	12 29 26.8	-0.3
CD2				Pg	Pb	12 29 30.8	0.0
CD2				Sn	Sb	12 29 58.9	-0.7
CD2				Sg	Sg	12 30 03.5	-0.1
CD2				smax	smax		
	comp=N,1μm,0.8s						
CD2				smax	smax		
	comp=E,670nm,0.6s						
XAN	**Xi'an**	3.17	65	Pn	Pn	12 29 39.0	+0.3
XAN				Pg	Pb	12 29 45.6	+0.4
XAN				Sn	Sn	12 30 09.4	-7.1
XAN				Sg	Sb	12 30 27.3	+3.5
XAN				smax	smax		
	comp=N,230nm,0.5s						
XAN				smax	smax		
	comp=E,210nm,0.7s						
LZH	**Lanzhou**	3.61	339	Pn	Pn	12 29 47.3	+2.5
LZH				Pg	Pb	12 29 55.1	+2.4
LZH				Sg	Sb	12 30 35.3	-1.3
LZH				smax	smax		
	comp=N,160nm,1.1s						
LZH				smax	smax		
	comp=E,180nm,1.0s						
LZH				LR	LR		
	comp=N,240nm,4.2s						
LZH				LR	LR		
	comp=E,270nm,4.0s						
LZH				LR	LR		
	comp=Z,290nm,5.4s						
GYA	**Guiyang**	6.33	170	Pn	Pn	12 30 23.1	+0.8
GYA				Pg	Pg	12 30 46.6	-3.5
GYA				Sn	Sn	12 31 35.8	+1.1
GYA				Sg	Sb	12 32 02.3	+7.3
GYA				smax	smax		
	comp=N,30nm,0.8s						
GYA				smax	smax		
	comp=E,40nm,0.8s						
GTA	**Gaotai**	8.09	327	*e*P	Pn	12 30 46.8	+0.5
GTA				pP	pP	12 30 50.4	
GTA				pmax	pmax		
	comp=Z,5.0nm,0.9s						
CMAR	**Chiang Mai Arr**	15.38	204	P	Pn	12 32 25.7	-0.1
	0.3nm,0.3s,baz=4.1,slow=14,SNR=3.3						
WMQ	**Urumqi**	17.78	314	*e*P	Pn	12 32 53.6	-2.7
MKAR	**Makanchi Array**	22.58	315	P	P	12 33 50.2	+1.0
	0.5nm,0.5s,baz=113,slow=12,SNR=7.7						
KLR	**Kul'dur**	25.61	42	P	P	12 34 19.1	+1.1
	1.0nm,0.6s,baz=263,slow=12,SNR=5.1						
KURBB	**Kurchatov Arra**	26.69	320	P	P	12 34 28.6	+0.8
	0.4nm,0.8s,baz=139,slow=8.5,SNR=5.2						
FINES	**FINESS Array B**	56.88	326	P	P	12 38 33.6	+0.3
	0.8nm,0.5s,baz=95,slow=7.5,SNR=11						
AKASG	**Malin Array Be**	57.13	313	P	P	12 38 35.1	-0.2
	0.3nm,0.3s,baz=68,slow=7.6,SNR=2.6						
WRA	**Warramunga Arr**	59.20	148	P	P	12 38 49.8	-0.3
	0.5nm,0.6s,baz=343,slow=7.4,SNR=5.4						
ASAR	**Alice Springs**	62.30	150	P	P	12 39 11.2	0.0
	0.4nm,0.5s,baz=332,slow=6.6,SNR=4.2						
YKA	**Yellowknife Ar**	79.80	18	P	P	12 40 56.6	-0.1
	0.3nm,0.9s,baz=328,slow=5.2,SNR=4.0						

*ISCJB **21** 12:40:05.5±0.7,41°.25N±0°.03×25°.52E±0°.04,h6km±6km, Error ellipse: s-maj=5.3km s-min=4.5km az=13.2*
*ATH **21** 12:40:06.0,41°.19N×25°.53E,h29km±1km,ML1.9/3,Error ellipse: s-maj=3.0km s-min=1.2km az=30.0*
*CSEM **21** 12:40:06.2±0.2,41°.23N×25°.53E,h15km,ML1.9,Error ellipse: s-maj=3.8km s-min=2.6km az=10.0*
*THE **21** 12:40:06.5,41°.23N×25°.54E,h16km±1km,ML2.0/6,Error ellipse: s-maj=1.2km s-min=0.4km az=129.0*
*SOF **21** 12:40:10.9,41°.67N×25°.34E,h2km,MD2.6*

ISC 21 12:40:05.1±1.2,41°.27N±0°.04×25°.55E±0°.02,h10km±10km, n29,σ0§58/46,Greece-Bulgaria border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KDZ	**Kurdzhali**	0.40	346	P	Pg	12 40 11.7	-1.2
ALN	**Alexandroupoli**	0.53	134	P	Pb	12 40 16.4	0.0
ALN				S	Sb	12 40 23.7	-0.4
ALN	**Alexandroupoli**	0.53	134	P	Pb	12 40 16.4	0.0
ALN				S	Sb	12 40 23.7	-0.4
ALN	**Alexandroupoli**	0.53	134	P	Pb	12 40 16.4	0.0
ALN				S	Sg	12 40 22.8	+0.6
ALN				AML	AML	12 40 24.3	
	comp=E,186μm,0.2s						
ALN				AML	AML	12 40 24.7	
	comp=N,172μm,0.2s						
ENEZ	**Enez**	0.70	139	P	Pb	12 40 19.4	0.0
ENEZ				S	Sb	12 40 29.5	+0.4
ENEZ	**Enez**	0.70	139	P	Pb	12 40 19.4	0.0
ENEZ				S	Sb	12 40 29.5	+0.4
RZN	**Rozhen**	0.75	304	P	Pg	12 40 19.8	+0.2
SMTH	**Samothraki Isl**	0.79	181	P	Pb	12 40 21.0	+0.1
SMTH				S	Sb	12 40 32.1	+0.3
SMTH	**Samothraki Isl**	0.79	181	P	Pb	12 40 21.0	+0.1
SMTH				S	Sb	12 40 31.4	-0.4
SMTH	**Samothraki Isl**	0.79	181	P	Pb	12 40 21.1	+0.1
SMTH				S	Sb	12 40 31.4	-0.4
SMTH				AML	AML	12 40 34.8	
	comp=E,258μm,0.2s						
SMTH				AML	AML	12 40 35.9	
	comp=N,188μm,0.1s						
KAVA	**Kavala**	0.82	251	P	Pb	12 40 21.5	0.0
KAVA				S	Sb	12 40 33.4	+0.8
KAVA	**Kavala**	0.82	251	P	Pb	12 40 21.5	0.0
KAVA				S	Sb	12 40 32.3	-0.3
KAVA	**Kavala**	0.82	251	P	Pb	12 40 21.4	-0.1
EDRB	**Edirne**	1.07	57	P	Pn	12 40 26.5	+0.3
EDRB				S	Sn	12 40 41.5	+0.4
EDRB	**Edirne**	1.07	57	P	Pn	12 40 26.5	+0.3
EDRB				S	Sn	12 40 41.5	+0.4
NVR	**Nevrokopi**	1.27	274	P	Pb	12 40 29.1	0.0
NVR				S	Sn	12 40 45.9	-0.2
NVR	**Nevrokopi**	1.27	274	P	Pb	12 40 29.1	0.0
NVR				S	Sn	12 40 45.9	-0.2
LIA	**Limnos Island**	1.39	192	P	Pn	12 40 30.1	-0.5
LIA				S	Sb	12 40 48.0	-1.0
LIA	**Limnos Island**	1.39	192	P	Pn	12 40 30.3	-0.2
LIA				S	Sb	12 40 47.8	-1.2
MMB	**Musomiste**	1.40	284	P	Pg	12 40 34.1	+2.1
SRS	**Serrai**	1.48	265	P	Pg	12 40 33.3	-0.2
SRS	**Serrai**	1.48	265	P	Pg	12 40 33.3	-0.2
OUR	**Ouranopolis**	1.51	232	P	Pn	12 40 32.1	-0.1
OUR				S	Sn	12 40 51.6	-0.2
OUR	**Ouranopolis**	1.51	232	P	Pn	12 40 32.0	-0.1
OUR	**Ouranopolis**	1.51	232	P	Pn	12 40 32.0	-0.1
OUR				AML	AML	12 40 56.0	
	comp=N,191μm,0.5s						
OUR				AML	AML	12 40 56.2	
	comp=E,149μm,0.4s						
KKB	**Krupnik**	1.94	289	P	Pg	12 40 43.5	+1.2
PAIG	**Paliouri**	1.95	227	P	Pn	12 40 37.7	-0.5
PAIG	**Paliouri**	1.95	227	P	Pn	12 40 37.6	-0.5
MPEP	**Malo Peshtene**	2.48	328	P	Pg	12 40 51.7	-0.9

*NIED **21** 12:45:00,37°.90N×144°.50E,h5km,Mw3.6 Best double couple: Mo3.16000×10^14 NP1:φ=350.00000°,δ=24.00000°, λ=105.00000°. NP2:φ=187.00000°,δ=67.00000°, λ=83.00000°.*
*IDC **21** 12:45:33.2±1.0,37°.77N×144°.83E,h0km,mb3.5/4, mb1 3.8/8,mb1mx3.5/48,mbtmp3.7/8,ML3.7/3,MS2.3/1, Ms1 2.3/1,ms1mx2.0/43,Error ellipse: s-maj=31.8km s-min=20.3km az=112.0*
*ISCJB **21** 12:45:36.0±0.7,37°.88N±0°.04×144°.64E±0°.06,h33km, mb3.5/4,Error ellipse: s-maj=7.0km s-min=5.7km az=136.8*
*JMA **21** 12:45:37.8±0.2,37°.93N×144°.52E,h36km,M4.1*

ISC 21 12:45:38.3±1.1,37°.87N±0°.06×144°.59E±0°.09,h35km,n27, σ1§88/31,mb3.5/4,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	2.59	299	P	Pn	12 46 17.8	+0.2
JIO	**Ouri**	2.62	284	P	Pn	12 46 18.2	+0.2
JIO				S	Sn	12 46 47.9	-0.7
JMK	**Ichinoseki**	2.86	293	P	Pn	12 46 21.9	+0.6
JOM	**Ohasama**	3.04	303	P	Pn	12 46 24.4	+0.6
JOM				S	Sn	12 46 59.2	+0.3
JFT	**Otama**	3.39	265	P	Pn	12 46 29.9	+1.2
JFT				S	Sn	12 47 07.9	+0.3
JANG	**Nango**	3.46	317	P	Pn	12 46 29.8	+0.2
JYK	**Kaneyama**	3.48	289	P	Pn	12 46 30.9	+1.0
JYK				S	Sn	12 47 10.9	+1.0
JCH	**Churui**	4.83	349	P	Pn	12 46 47.4	-1.0
JCH				S	Sn	12 47 39.9	-3.2
JRY	**Ryogami san**	4.91	250	P	Pn	12 46 49.5	-0.1
JRY				S	Sn	12 47 43.1	-2.2
MJAR	**Matsushiro Arr**	5.26	257	Pn	Pn	12 46 56.1	+1.7
	4.0nm,0.3s,baz=68,slow=11,SNR=49						
MJAR				Sn	Sn	12 47 55.7	+1.9
	1.7nm,0.3s,baz=52,slow=26,SNR=5.5						
MJAR				LR	LR	12 49 30.6	
	comp=Z,31nm,18.7s,baz=85,slow=44						
MAT	**Matsushiro**	5.26	257	P	Pn	12 46 56.2	+1.8
MAT				S	Sn	12 47 54.2	+0.4
JTKR	**Abashiri--Toko**	6.12	355	P	Pn	12 47 05.0	-1.1
JTKR				*e*S	Sn	12 48 09.8	-5.0
JHJ2	**Mitsune**	6.14	221	P	Pn	12 47 07.9	+1.5
JHJ	**Hachijo jima 2**	6.15	221	Pn	Pn	12 47 04.5	-2.0
	7.7nm,0.3s,baz=92,slow=23,SNR=12						
JHJ				Sn	Sn	12 48 10.4	-5.2
	20nm,0.3s,baz=249,slow=24,SNR=8.6						
ASAJ	**Asahikawa**	6.42	347	Pn	Pn	12 47 10.0	-0.3
	1.2nm,0.3s,baz=191,slow=9.0,SNR=16						
ASAJ				Sn	Sn	12 48 23.1	+0.9
	0.6nm,0.3s,baz=339,slow=30,SNR=4.8						
JCJ	**Chichijima**	10.93	191	Pn	Pn	12 48 07.0	-5.2
	1.4nm,0.3s,baz=207,slow=23,SNR=3.5						
JCJ				Sn	Sn	12 50 02.6	-11
USRK	**Ussuriysk Ar.**	11.42	308	Pn	Pn	12 48 21.3	+2.5
	0.3nm,0.3s,baz=113,slow=15,SNR=3.1						
H11N2	**WAKE ISLAND Hy**	26.51	127	T	T	13 19 01.7	
	baz=306,slow=75						
H11N1	**WAKE ISLAND Hy**	26.52	127	T	T	13 19 05.3	
	baz=306						
H11N3	**WAKE ISLAND Hy**	26.53	127	T	T	13 18 47.8	
	baz=306,slow=75						
H11S1	**WAKE ISLAND Hy**	27.30	129	T	T	13 19 52.6	
	baz=320						
H11S3	**WAKE ISLAND Hy**	27.30	129	T	T	13 19 53.2	
	baz=320						
H11S2	**WAKE ISLAND Hy**	27.32	129	T	T	13 19 57.5	
	baz=320						
WRA	**Warramunga Arr**	58.30	191	P	P	12 55 29.4	-0.2
	0.5nm,0.5s,baz=10,slow=7.2,SNR=8.9						
YKA	**Yellowknife Ar**	61.80	31	P	P	12 55 52.7	-0.4
	0.2nm,0.8s,baz=300,slow=6.3,SNR=4.5						
ASAR	**Alice Springs**	62.03	191	P	P	12 55 54.9	-0.1
	0.4nm,0.9s,baz=6.6,slow=6.7,SNR=3.8						
PDAR	**Pinedale Array**	75.27	47	P	P	12 57 18.8	+1.0
	0.3nm,0.5s,baz=347,slow=4.6,SNR=4.4						

*ECX **21** 12:50:19.5±0.6,31°.26N×115°.67W,h5km,MD2.5,ML2.7*
*MEX **21** 12:50:20.2±0.4,31°.01N×115°.73W,h15km,MD3.5*

ISC 21 12:50:17.8±1.0,31°.28N±0°.06×115°.66W±0°.05, h16km±12km,n12,σ0§34/17,3D,Baja California

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SPIG	**San Pedro Mart**	0.29	144	*e*P	Pb	12 50 24.9	+0.1
SPIG				*e*S	Sg	12 50 28.7	+0.1
SPIG	**San Pedro Mart**	0.29	144	*e*P	Pb	12 50 24.9	+0.1
SPX	**San Pedro Mart**	0.29	144	*i* P	Pb	12 50 24.9	+0.2
SPX				*i* S	Sg	12 50 28.8	+0.2
SPX				AML	AML	12 50 29.2	
	comp=N,938nm,0.1s						
ECBX	**El Chinero**	0.56	70	*e*P	Pb	12 50 29.3	+0.2
ECBX				AML	AML	12 50 37.2	
	comp=E,334nm,0.2s						
ECBX				⇓*e*		12 50 37.2	
ECBX				AML	AML	12 50 39.2	
	comp=N,627nm,0.3s						
ECBX				*e*		12 50 39.2	
ZAX	**El Zacaton**	0.57	294	*e*P	Pb	12 50 29.5	+0.1
ZAX				AML	AML	12 50 39.9	
	comp=E,330nm,0.5s						
ZAX				⇓*e*		12 50 39.9	
ECNX	**Esteban Cantu**	0.88	295	*e*P	Pn	12 50 35.4	-0.1
ECNX				*e*S	Sg	12 50 47.2	+0.6
PBX	**Punta Banda**	1.02	297	*e*P	Pb	12 50 37.2	+0.2
CBX	**Cerro Bola**	1.34	321	*e*P	Pg	12 50 43.2	-0.3
CBX				*e*S	Sg	12 51 01.6	+0.6
CBX	**Cerro Bola**	1.34	321	*e*P	Pg	12 50 43.3	-0.3
CBX				⇓*e*		12 51 03.5	
CBX				AML	AML	12 51 03.5	
	comp=N,112nm,0.4s						
RMX	**La Rumorosa**	1.36	345	*e*P	Pg	12 50 43.9	-0.2
TJIG	**Tijuana**	1.44	323	*e*P	Pg	12 50 45.0	-0.4
TJIG				*e*S	Sg	12 51 03.8	-0.4
SDRC	**San Diego Road**	1.81	323	*e*P	Pb	12 50 50.7	+0.2

*CSEM **21** 12:53:24.7±0.2,41°.20N×25°.54E,h15km,ML2.0,Error ellipse: s-maj=6.7km s-min=2.7km az=14.0*

ATH 21 12:53:24.3,41°.19N×25°.53E,h30km±1km,ML2.0/4,Error ellipse: s-maj=3.4km s-min=1.1km az=31.0, Greece-Bulgaria border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ALN	**Alexandroupoli**	0.49	127	P	Pb	12 53 34.8	+0.2
ALN				S	Sb	12 53 41.2	-0.4
ALN	**Alexandroupoli**	0.49	127	P	Pb	12 53 34.8	+0.2
ALN				S	Sb	12 53 41.2	-0.4
ALN				AML	AML	12 53 44.5	
	comp=N,176μm,0.3s						
ALN				AML	AML	12 53 46.0	
	comp=E,159μm,0.3s						
SMTH	**Samothraki Isl**	0.72	180	P	Pn	12 53 39.7	+1.3
SMTH	**Samothraki Isl**	0.72	180	P	Pn	12 53 39.7	+1.2
SMTH				AML	AML	12 53 53.3	
	comp=E,212μm,0.2s						
SMTH				AML	AML	12 53 54.4	
	comp=N,156μm,0.2s						
KAVA	**Kavala**	0.79	256	P	Pb	12 53 39.8	+0.2
KAVA				S	Sn	12 53 51.1	+0.9
KAVA	**Kavala**	0.79	256	P	Pb	12 53 39.9	+0.2
KESN	**Edirne-Kesan**	0.94	112	P	Pb	12 53 42.9	+0.5
KESN				S	Sb	12 53 55.1	+0.4
KESN	**Edirne-Kesan**	0.94	112	*i* P	Pb	12 53 42.9	+0.6
KESN				*i* S	Sb	12 53 55.1	+0.4
NVR	**Nevrokopi**	1.27	278	P	Pb	12 53 48.2	+0.6
NVR				S	Sb	12 54 04.4	+0.8
LIA	**Limnos Island**	1.32	192	P	Pb	12 53 48.5	0.0
LIA				S	Sb	12 54 05.5	+0.5
BOZC	**Bozcaada**	1.41	163	*i* P	Pb	12 53 51.7	+1.8
BOZC				*i* S	Sb	12 54 08.4	+0.9
OUR	**Ouranopolis**	1.46	234	P	Pb	12 53 50.6	-0.2
OUR				S	Sb	12 54 10.2	+1.3
OUR	**Ouranopolis**	1.46	234	P	Pb	12 53 50.6	-0.2
OUR				S	Sb	12 54 10.2	+1.3
OUR				AML	AML	12 54 14.4	
	comp=N,267μm,0.5s						
OUR				AML	AML	12 54 14.7	
	comp=E,175μm,0.4s						
SRS	**Serrai**	1.47	268	P	Pb	12 53 51.4	+0.4
SRS				S	Sb	12 54 10.6	+1.4
SRS	**Serrai**	1.47	268	P	Pb	12 53 51.4	+0.4
SRS				S	Sb	12 54 10.6	+1.3
SRS				AML	AML	12 54 16.4	
	comp=E,91μm,0.2s						
SRS				AML	AML	12 54 17.5	
	comp=N,102μm,0.3s						
PAIG	**Paliouri**	1.89	229	P	Pn	12 53 55.9	+1.3
PAIG	**Paliouri**	1.89	229	P	Pn	12 53 55.9	+1.3

*DDA **21** 12:54:14.4,40°.99N×25°.92E,h9km,Md2.7*
*ISCJB **21** 12:54:26.6±1.7,41°.21N±0°.08×25°.54E±0°.05,h7km±9km, Error ellipse: s-maj=12.8km s-min=6.5km az=6.4*
*CSEM **21** 12:54:26.4±0.5,41°.24N×25°.55E,h10km,ML1.7,Error ellipse: s-maj=12.1km s-min=4.7km az=7.0*
*ATH **21** 12:54:26.3,41°.21N×25°.54E,h18km±3km,ML1.7/2,Error ellipse: s-maj=4.2km s-min=1.6km az=183.0*

ISC 21 12:54:25.6±1.7,41°.25N±0°.08×25°.55E±0°.04,h11km±11km, n12,σ0§40/20,Greece-Bulgaria border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ALN	**Alexandroupoli**	0.52	133	P	Pb	12 54 36.5	-0.2
ALN				S	Sg	12 54 42.8	+0.3
ALN	**Alexandroupoli**	0.52	133	P	Pb	12 54 36.5	-0.2
ALN				S	Sg	12 54 42.8	+0.3
ALN				AML	AML	12 54 46.1	
	comp=E,130μm,0.4s						
ALN				AML	AML	12 54 46.2	
	comp=N,109μm,0.2s						
SMTH	**Samothraki Isl**	0.78	181	P	Pb	12 54 41.1	-0.1
SMTH				S	Sb	12 54 52.1	+0.4
SMTH	**Samothraki Isl**	0.78	181	P	Pb	12 54 41.1	-0.1
SMTH				S	Sb	12 54 52.1	+0.4
SMTH				AML	AML	12 54 55.0	
	comp=E,164μm,0.2s						
SMTH				AML	AML	12 54 56.1	
	comp=N,121μm,0.1s						
KAVA	**Kavala**	0.82	252	P	Pb	12 54 41.8	0.0
KAVA				S	Sb	12 54 53.5	+0.6
KAVA	**Kavala**	0.82	252	P	Pb	12 54 41.9	0.0
KESN	**Edirne-Kesan**	0.96	116	P	Pn	12 54 45.0	-0.3
KESN				S	Sb	12 54 58.0	+0.8
KESN	**Edirne-Kesan**	0.96	116	*i* P	Pn	12 54 45.0	-0.3
KESN				*i* S	Sb	12 54 58.0	+0.8
LIA	**Limnos Island**	1.38	192	P	Pn	12 54 50.6	-0.1
BOZC	**Bozcaada**	1.46	164	*i* P	Pg	12 54 53.4	-0.2
BOZC				*i* S	Sn	12 55 10.6	-0.3
OUR	**Ouranopolis**	1.50	233	P	Pg	12 54 54.2	-0.2
OUR	**Ouranopolis**	1.50	233	P	Pg	12 54 54.2	-0.2

*IDC **21** 12:57:17.8±0.5,25°.43N×142°.60E,h0km,mb4.1/27, mb1 4.3/30,mb1mx4.2/47,mbtmp4.1/30,ML3.6/3,Error ellipse: s-maj=17.0km s-min=11.9km az=81.0*
*ISCJB **21** 12:57:21.8±0.4,25°.43N±0°.05×142°.50E±0°.10,h38km, mb4.2/34,Error ellipse: s-maj=12.9km s-min=7.5km az=166.9*
*NEIC **21** 12:57:23.1±1.2,25°.44N×142°.55E,h35km±10km,mb4.7/8, Error ellipse: s-maj=10.6km s-min=7.9km az=85.0*

ISC 21 12:57:23.3±0.5,25°.39N±0°.07×142°.5E±0°.1,h38km,n52, σ1§14/51,mb4.2/34,Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	1.73	350	Pn	Pn	12 57 50.1	-0.6
CBIJ				Sn	Sn	12 58 15.1	+3.5
JCJ	**Chichijima**	1.73	350	Pn	Pn	12 57 50.1	-0.6
JCJ				Sn	Sn	12 58 15.1	+3.5
	147nm,0.3s,baz=7.5,slow=14,SNR=6.5						
JHJ	**Hachijo jima 2**	8.06	343	Pn	Pn	12 59 16.9	-0.9
	2.1nm,0.3s,baz=96,slow=22,SNR=4.2						
JHJ				Sn	Sn	13 00 45.4	-2.3
	5.9nm,0.3s,baz=265,slow=19,SNR=3.2						
MJAR	**Matsushiro Arr**	11.71	343	Pn	Pn	13 00 06.4	-1.4
	0.6nm,0.3s,baz=152,slow=8.5,SNR=11						
MAJO	**Matsushiro**	11.71	343	*e*Pn	Pn	13 00 07.7	-0.1
KSRS	**Korea Array**	17.29	318	Pn	P	13 01 23.1	+0.4
	0.2nm,0.3s,baz=6.3,slow=35,SNR=6.5						
KSAR	**Wonju Array Be**	17.30	317	Pn	P	13 01 23.1	+0.2
USRK	**Ussuriysk Ar.**	20.63	338	P	P	13 01 59.6	+0.3
	5.6nm,0.8s,baz=128,slow=10,SNR=8.5						
H11N1	**WAKE ISLAND Hy**	23.19	99	T	T	13 25 52.6	
	baz=290,slow=75,SNR=8.1						
H11N2	**WAKE ISLAND Hy**	23.19	99	T	T	13 25 54.1	
	baz=290,slow=75,SNR=8.7						
H11N3	**WAKE ISLAND Hy**	23.21	99	T	T	13 25 59.9	
	baz=290,slow=75,SNR=13						
H11S3	**WAKE ISLAND Hy**	23.43	102	T	T	13 26 10.2	
	baz=292,slow=75,SNR=4.4						
H11S1	**WAKE ISLAND Hy**	23.43	102	T	T	13 26 10.7	
	baz=292,slow=75,SNR=6.7						
H11S2	**WAKE ISLAND Hy**	23.44	102

1.7nm,0.8s,baz=350,slow=4.4,SNR=2.8
ARU Arti 65.95 323 *e*P **P 13 08 05.5 +0.1**
8.5nm,0.9s
ABKAR **Akbulak array 66.50 315** *e*P **P 13 08 09.1 0.0**
5.5nm,0.8s
GEYT Alibeck 70.68 303 P **P 13 08 36.6 +1.2**
0.8nm,0.3s,baz=79,slow=7.5,SNR=4.0
YKA Yellowknife Ar 73.50 28 P **P 13 08 50.4 -1.3**
0.6nm,0.6s,baz=296,slow=5.9,SNR=9.4
ARCES **ARCESS Array B 75.24 341** P **P 13 09 02.0 +0.3**
1.8nm,0.7s,baz=64,slow=8.5,SNR=6.3
YBH Yreka Blue Hor 76.91 50 P **P 13 09 13.3 +1.4**
0.9nm,0.5s,baz=120,slow=2.9,SNR=3.3
KBZ Khabaz 79.39 313 P **P 13 09 26.8 +1.4**
2.0nm,0.8s,baz=39,slow=1.2,SNR=5.4
FINES FINESS Array B 79.60 334 P **P 13 09 26.2 0.0**
4.5nm,0.5s,baz=72,slow=4.9,SNR=37
NVAR Mina Array Bea 81.34 52 P **P 13 09 36.6 +0.3**
2.1nm,1.0s,baz=289,slow=5.9,SNR=8.2
FFC Flin Flon 83.03 32 *e*P **P 13 09 43.6 -1.0**
1.5nm,0.7s
AKASG **Malin Array Be 84.17 324** P **P 13 09 50.3 -0.2**
1.1nm,0.5s,baz=46,slow=5.8,SNR=8.4
KIEV Kiev 84.18 324 *e*P **P 13 09 50.1 -0.4**
3.8nm,0.8s
PFO Pinyon Flats O 84.80 55 P **P 13 09 53.8 -0.4**
1.3nm,0.6s,baz=343,slow=4.5,SNR=2.6
PDAR Pinedale Array 85.21 45 P **P 13 09 57.0 +0.8**
0.3nm,0.5s,baz=294,slow=4.7,SNR=4.2
NB2 NORSAR Subarra 85.30 338 P **P 13 09 55.2 -0.8**
comp=Z,1.2nm,0.6s,baz=45,slow=4.8
NOA NORSAR Array B 85.30 338 P **P 13 09 55.8 -0.2**
comp=Z,1.5nm,0.6s,baz=56,slow=6.1,SNR=6.5
BRTR Keskin Array B 87.38 313 P **P 13 10 07.2 +0.4**
comp=Z,0.9nm,0.7s,baz=81,slow=2.5,SNR=6.0
TXAR Lajitas Array 96.38 53 P **P 13 10 50.4 +1.7**
comp=Z,0.6nm,0.9s,baz=279,slow=2.4,SNR=4.1
TORD Torodi Ar. Bea 125.92 311 PKP **PKPdf 13 16 22.7 +0.7**
comp=Z,0.5nm,0.7s,baz=335,slow=0.7,SNR=3.7
PLCA Paso Flores 148.56 127 PKPbc **PKPbc 13 17 06.5 +0.2**
comp=Z,3.2nm,0.6s,baz=262,slow=4.3,SNR=10
LPAZ La Paz 150.02 78 PKPbc **PKPbc 13 17 11.4 +0.2**
comp=Z,2.9nm,0.9s,baz=270,slow=3.7,SNR=7.8

IDC ***21*** *13:07:59.0±0.4, 17°.11N×121°.74E, h0km, mb4.9/27, mb1 5.0/27, mb1mx4.9/38, mbtmp5.0/27, ML4.4/1, MS4.5/22, Ms1 4.5/22, ms1mx4.4/39, Error ellipse: s-maj=16.1km s-min=11.1km az=64.0*
MAN ***21*** *13:08:01, 17°.19N×121°.89E, h13km, mb5.9, ML5.0, MS5.5*
MAN INTENSITY V - ILAGAN ISABELA; INTENSITY IV - TUGUEGARAO CITY; PENABLANCA CAGAYAN; QUIRINO AND TUMAUINI ISABELA; INTENSITY II - BAGUIO CITY; TABUK KALINGA.
ISCJB ***21*** *13:08:02.6±0.4, 17°.25N±0°.01×121°.88E±0°.02, h31km±3km, mb5.1/196, MS4.6/53, Error ellipse: s-maj=3.2km s-min=2.1km az=177.3*
MOS ***21*** *13:08:02.5±1.1, 17°.17N×121°.78E, h33km, mb5.4/78, MS4.6/16, Error ellipse: s-maj=7.5km s-min=4.1km az=112.1*
NEIC ***21*** *13:08:04.5±0.6, 17°.19N×121°.72E, h35km±5km, mb5.3/109, Error ellipse: s-maj=4.9km s-min=3.7km az=93.0*
NEIC Felt [V PIVS] at Ilagan; [IV PIVS] at Baler, Penablanca, Quirino, Tuguegarao City and Tumauini; [II PIVS] at Baguio and Tabuk. Also felt at Angadanan, Bayombong, Cabarroguis, Gamu, Luna, San Mateo and Santiago.
BJI ***21*** *13:08:04.6, 17°.24N×121°.86E, h46km, mb4.9/80, mB5.1/61, Ms5.0/92, Ms7 4.7/85*
GCMT ***21*** *13:08:04.5±0.1, 17°.31N×121°.91E, h13km, MW5.2/113, Moment Tensor Solution. s61,c89; s113,c200; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}1.24±.13; $M_{\theta\theta}$-6.04±.12; $M_{\phi\phi}$4.81±.12; $M_{r\theta}$1.13±.25; $M_{\theta\phi}$2.79±.09; $M_{\phi r}$1.72±.30; Best double couple: $M_0$6.51000×10^{16} NP1:ϕ_S61.00000°, δ79.00000°, λ19.00000°. NP2: ϕ_S327.00000°, δ71.00000°, λ168.00000°. Principal axes: T 6.2420, Plg21.0000°, Azm285.0000°; N 0.5460, Plg68.0000°, Azm90.0000°; P -6.7780, Plg5.0000°, Azm193.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
KLM ***21*** *13:08:07.6, 17°.23N×122°.13E, h94km, mb5.2, MS5.8*
BKK ***21*** *13:08:09.3±5.9, 17°N±15°×12°2E±4°0, h90km±30km, mB5.1/20, mb4.7/24, Mw(mB)4.4/20*
ISC 21 13:08:04.8±0.4, 17°.25N±0°.02×121°.91E±0°.03, h34km±1km, h34km:pP-P, n649, σ1§87/702, mb5.2/208, MS4.7/56, 68C-32D, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CAUP	**Cauayan**	**0.32**	**195**	*e*P	**Pb**	**13 08 09.4**	**-3.4**
CAUP				*e*S	**Sn**	**13 08 17.0**	**-0.7**
CVP	**Callao Caves**	**0.46**	**350**	⇓*i*P	**Pb**	**13 08 11.7**	**-3.1**
CVP				*i* S	**Sb**	**13 08 18.8**	**-2.9**
APYP	**Conner**	**0.88**	**314**	*e*P	**Pn**	**13 08 18.6**	**-2.1**
APYP				*e*S	**Sn**	**13 08 32.5**	**+0.2**
ABRA	**Dolores**	**1.21**	**289**	*e*P	**Pn**	**13 08 22.9**	**-2.4**
ABRA				*e*S	**Sn**	**13 08 39.7**	**-0.8**
BALP	**Baler**	**1.53**	**192**	*e*P	**Pn**	**13 08 26.7**	**-3.1**
BCPH	**Baguio City Da**	**1.54**	**236**	⇑*i*P	**Pb**	**13 08 32.4**	**-0.4**
BCPH				*i* S	**Sb**	**13 08 50.9**	**-1.1**
PIP	**Pasuquin**	**1.63**	**311**	⇑*i*P	**Pn**	**13 08 31.2**	**+0.2**
PIP				*e*S	**Sb**	**13 08 54.2**	**-0.3**
BOLP	**Bolinao**	**2.10**	**246**	*e*P	**Pn**	**13 08 37.4**	**-0.1**
BOLP				*e*S	**Sb**	**13 09 06.4**	**-1.4**
SCZP	**Santa Cruz**	**2.41**	**233**	*e*P	**Pn**	**13 08 42.2**	**+0.4**
POLP	**Polillo Island**	**2.51**	**179**	*e*P	**Pn**	**13 08 42.2**	**-1.0**
POLP				*e*S	**Sn**	**13 09 12.1**	**-0.4**
LQP	**Lukban**	**3.14**	**187**	⇓*e*P	**Pn**	**13 08 51.4**	**-0.6**
TGY	**Tagaytay City**	**3.27**	**197**	⇑*e*P	**Pn**	**13 08 54.9**	**+1.2**
GQP	**Guinayangan**	**3.37**	**171**	⇑*e*P	**Pn**	**13 08 54.7**	**-0.3**
GQP				*e*S	**Sn**	**13 09 34.5**	**+0.7**
BOAC	**Boac**	**3.77**	**181**	*e*P	**Pn**	**13 08 60.0**	**-0.6**
BOAC				*e*S	**Sn**	**13 09 44.4**	**+0.7**
PGP	**Puerto Galera**	**3.84**	**194**	⇑*e*P	**Pn**	**13 09 00.6**	**-0.9**
LUBP	**Lubang**	**3.84**	**205**	*e*P	**Pn**	**13 09 01.6**	**0.0**
AUQP	**San Andres**	**3.97**	**169**	*e*P	**Pn**	**13 09 03.5**	**+0.2**
PVCP	**Virac**	**4.23**	**149**	*e*P	**Pn**	**13 09 06.5**	**-0.4**
SJMP	**San Jose**	**4.82**	**189**	*e*P	**Pn**	**13 09 15.6**	**+0.6**
SJMP				*e*S	**Sn**	**13 10 11.2**	**+1.5**
OTRP	**Odiongan**	**4.86**	**179**	*e*P	**Pn**	**13 09 15.6**	**+0.1**
BUSP	**Coron**	**5.47**	**198**	*e*P	**Pn**	**13 09 23.0**	**-1.0**
TWG	**Pinlang**	**5.60**	**352**	*e*Pn	**Pn**	**13 09 24.6**	**-1.1**
TWG				*e*Sn	**Sn**	**13 10 30.2**	**+1.3**
RCP	**Roxas**	**5.71**	**172**	⇑*e*P	**Pn**	**13 09 26.9**	**-0.4**
TPUB	**Ta-pu**	**6.14**	**349**	*e*Pn	**Pn**	**13 09 32.5**	**-0.6**
TPUB				*e*Sn	**Sn**	**13 10 43.8**	**+1.6**
YULB	**Yu-li**	**6.14**	**355**	*e*Pn	**Pn**	**13 09 33.0**	**-0.1**
YULB				*e*Sn	**Sn**	**13 10 43.4**	**+1.2**
JAP	**San Jose, Anti**	**6.46**	**180**	⇓*e*P	**Pn**	**13 09 41.5**	**+3.9**
ENPP	**El Nido**	**6.47**	**202**	*e*P	**Pn**	**13 09 37.2**	**-0.5**
SSLB	**Suanglung**	**6.56**	**352**	*e*Pn	**Pn**	**13 09 37.5**	**-1.5**
SSLB				*e*Sn	**Sn**	**13 10 54.3**	**+1.6**
GUIM	**Jordan**	**6.62**	**174**	*e*P	**Pn**	**13 09 40.4**	**+0.7**
OCLP	**Ormoc**	**6.70**	**157**	*e*P	**Pn**	**13 09 41.4**	**+0.6**
PLP	**Palo**	**6.74**	**153**	⇓*e*P	**Pn**	**13 09 40.3**	**-1.1**
PLP				*e*S	**Sn**	**13 10 53.5**	**-3.6**
NACB	**Ninganchiao**	**6.89**	**358**	*e*Pn	**Pn**	**13 09 43.4**	**-0.1**
NACB				*e*Sn	**Sn**	**13 10 59.5**	**-1.3**
YOJ	**Yonaguni jima**	**7.25**	**8**	*e*P	**Pn**	**13 09 47.8**	**-0.5**
YOJ				*e*		13 11 10.0	
YOJ	**Yonaguni jima**	**7.25**	**8**	*e*Pn	**Pn**	**13 09 47.8**	**-0.5**
YOJ				*e*Sn	**Sn**	**13 11 10.0**	**+0.5**
YHNB	**Yeheng**	**7.40**	**356**	*e*Pn	**Pn**	**13 09 51.9**	**+1.4**
YHNB				*e*Sn	**Sn**	**13 11 15.4**	**+2.1**
TATO	**Taipei**	**7.70**	**357**	*e*Pn	**Pn**	**13 09 54.8**	**+0.3**
TATO				*e*Sn	**Sn**	**13 11 23.4**	**+2.9**
SNPH	**Sibulan**	**7.97**	**170**	⇑*i*P	**Pn**	**13 09 59.3**	**+1.0**
QZH	**Quanzhou**	**8.26**	**339**	Pn	**Pn**	**13 09 58.0**	**-4.1**
QZH				Sn	**Sn**	**13 11 25.8**	**-8.5**
QZH	comp=N,180nm,0.9s			smax	smax		
QZH	comp=E,220nm,0.7s			smax	smax		
QZH	comp=N,7μm,20.3s			LR	LR		
QZH	comp=E,6μm,15.8s			LR	LR		
QZH	comp=Z,5μm,14.3s			LR	LR		
HKC	**Hong Kong Obse**	**8.85**	**306**	P	**Pn**	**13 10 15.0**	**+4.8**
MCO	**Taipa Grande**	**9.24**	**303**	P	**Pn**	**13 10 13.0**	**-2.6**
GZH	**Guangzhou**	**9.92**	**307**	P	**Pn**	**13 10 25.6**	**+0.7**
GZH				S	**Sn**	**13 12 17.1**	**+2.0**
GZH				smax	smax		
GZH	comp=Z,600nm,1.0s			smax	smax		
CTBH	**Cotabato--PC H**	**10.23**	**167**	⇓*i*P	**Pn**	**13 10 29.8**	**+0.5**
DAV	**Davao City (W)**	**10.73**	**160**	Pn	**Pn**	**13 10 38.8**	**+2.6**
DAV	comp=Z,36nm,0.3s,baz=232,slow=22,SNR=2.0			LR	LR	13 15 27.7	
JOW	**Kunigami**	**11.21**	**31**	*e*Pn	**Pn**	**13 10 40.9**	**-1.8**
JOW				*e*Sn	**Sn**	**13 12 47.7**	**+0.8**
KDM	**Kudat**	**11.40**	**206**	⇑P	Pn	13 10 51.3	+5.9
QIZ	**Qiongzhong**	**11.61**	**281**	P	**Pn**	**13 10 47.0**	**-1.1**
QIZ				S	**Sn**	**13 12 57.8**	**+1.2**
QIZ	comp=Z,11nm,0.6s			pmax	pmax		
QIZ	comp=Z,220nm,9.2s			pmax	pmax		
QIZ	comp=Z,3μm,19.7s			LR	LR		
QIZ	comp=Z,4μm,20.6s			LR	LR		
QIZ	**Qiongzhong**	**11.61**	**281**	*e*Pn	**Pn**	**13 10 46.2**	**-1.9**
KKM	**Kota Kinabalu**	**12.45**	**207**	*e*Pn	**Pn**	**13 10 59.7**	**-0.1**
MYLDM	**Lahad Datu**	**12.45**	**196**	⇑P	Pn	13 11 05.1	+5.4
TSM	**Tawau**	**13.47**	**198**	⇓P	**Pn**	**13 11 16.9**	**+3.3**
SSE	**Sheshan**	**13.80**	**357**	P	**Pn**	**13 11 19.5**	**+1.5**
SSE				S	**Sn**	**13 13 50.4**	**+0.3**
SSE	comp=Z,20nm,0.8s			pmax	pmax		
SSE	comp=Z,210nm,9.0s			pmax	pmax		
SSE	comp=Z,360nm,17.2s			LR	LR		
SSE	comp=Z,2μm,17.2s			LR	LR		
SSE	comp=Z,1μm,17.8s			LR	LR		
WHN	**Wuhan**	**14.92**	**334**	P	**Pn**	**13 11 35.3**	**+2.1**
WHN				sP	P	13 11 46.8	+8.3
WHN				S	**Sn**	**13 14 24.8**	**+7.4**
WHN				LR	LR		
WHN	comp=Z,6μm,14.3s			LR	LR		
WHN	comp=Z,3μm,13.2s			LR	LR		
WHN	comp=Z,6μm,16.6s			LR	LR		
NJ2	**Nanjing**	**14.99**	**350**	*e*P	**P**	**13 11 39.4**	**+0.1**
NJ2				S	**Sn**	**13 14 20.3**	**+1.1**
NJ2	comp=Z,26nm,0.5s			pmax	pmax		
NJ2	comp=Z,2μm,14.1s			LR	LR		
NJ2	comp=Z,2μm,11.9s			LR	LR		
NJ2	comp=Z,2μm,11.4s			LR	LR		
UBPT	**Khong Chiam**	**15.90**	**265**	P	**Pn**	**13 11 47.6**	**+1.4**
BTM	**Bintulu**	**16.43**	**213**	⇓P	**Pn**	**13 11 52.3**	**-0.7**
PANO	**Nakornpanom**	**16.53**	**272**	P	**P**	**13 11 55.9**	**-0.5**
MRSI	**Marisa**	**16.67**	**180**	P	**P**	**13 12 02.0**	**+4.0**
	comp=Z,95nm,1.0s,comp=Z,2μm						
GYA	**Guiyang**	**16.84**	**306**	⇑*i*P	**Pn**	**13 11 58.8**	**+0.6**
GYA				pP	pP	13 12 06.9	-2.0
GYA				PP	**sP**	**13 12 13.0**	**-0.2**
GYA				S	**Sn**	**13 15 02.8**	**-1.6**
GYA				sS	S	13 15 16.0	+1.8
GYA				SS	**SnSn**	**13 15 23.4**	**+5.5**
GYA				PcP	**PcP**	**13 16 46.3**	**+1.4**
GYA	comp=Z,30nm,1.0s			pmax	pmax		
GYA	comp=Z,520nm,10.3s			pmax	pmax		
GYA	comp=Z,2μm,18.6s			LR	LR		
GYA	comp=Z,3μm,22.9s			LR	LR		
GYA	comp=Z,3μm,23.7s			LR	LR		
SKNT	**Sakolnakorn**	**17.14**	**272**	P	**P**	**13 12 03.8**	**+0.6**
ENH	**Enshi**	**17.22**	**321**	*e*Pn	**Pn**	**13 12 02.7**	**-0.1**
SBUM	**Sibu**	**17.52**	**214**	⇓P	**Pn**	**13 12 06.2**	**-0.3**
SBUM	**Sibu**	**17.52**	**214**	*e*Pn	**Pn**	**13 12 06.1**	**-0.4**
JNU	**Nakatsue**	**17.75**	**25**	P	**P**	**13 12 10.7**	**+0.8**
JNU	**Nakatsue**	**17.75**	**25**	*e*Pn	**P**	**13 12 10.1**	**+0.2**
NONG	**Nongkai**	**17.90**	**275**	P	**P**	**13 12 13.2**	**+1.6**
PCI	**Palu**	**18.16**	**187**	P	**P**	**13 12 21.3**	**+6.9**
LUWI	**Luwuk**	**18.20**	**177**	P	**P**	**13 12 19.7**	**+4.8**
LUWI	**Luwuk**	**18.20**	**177**	*e*P	**Pn**	**13 12 12.7**	**-2.1**
KHON	**Khomkaen**	**18.30**	**270**	P	**Pn**	**13 12 17.1**	**+1.0**
BKB	**Balikpapan**	**19.05**	**196**	P	**Pn**	**13 12 27.0**	**+1.9**
CHAI	**Chaiyaphum**	**19.14**	**269**	P	**Pn**	**13 12 26.0**	**-0.3**
MTKI	**Muara Teweh, K**	**19.35**	**202**	P	**Pn**	**13 12 32.5**	**+3.6**
TIA	**Tai'an**	**19.36**	**348**	⇑P	**Pn**	**13 12 28.4**	**-0.4**
TIA				S	**Sn**	**13 16 06.6**	**+1.7**
TIA	comp=Z,70nm,1.0s			pmax	pmax		
TIA	comp=Z,770nm,7.0s			pmax	pmax		
TIA	comp=Z,1μm,19.0s			LR	LR		
TIA	comp=Z,2μm,23.0s			LR	LR		
TIA	comp=Z,1μm,25.0s			LR	LR		
KSM	**Kuching**	**19.39**	**217**	*e*P	**P**	**13 12 27.1**	**-0.8**
SRAK	**Srakaew**	**19.40**	**263**	P	**P**	**13 12 28.3**	**+0.2**
CHBT	**CHBT**	**19.43**	**259**	P	**Pn**	**13 12 29.3**	**-0.4**
KMI	**Kunming**	**19.50**	**297**	P	**Pn**	**13 12 32.0**	**+1.2**
KMI				pP	sP	13 12 42.4	-0.3
KMI				sP	pP	13 12 48.8	+10
KMI				PP	**PnPn**	**13 12 51.9**	**+7.4**
KMI				S	**S**	**13 16 03.8**	**-4.3**
KMI	comp=Z,38nm,0.9s			pmax	pmax		
KMI	comp=Z,1μm,10.9s			pmax	pmax		
KMI	comp=Z,4μm,15.4s			LR	LR		
KMI	comp=Z,3μm,16.3s			LR	LR		
KMI	comp=Z,4μm,19.2s			LR	LR		
SANI	**Sanana**	**19.59**	**168**	P	**Pn**	**13 12 31.2**	**-0.5**
	comp=Z,111nm,1.0s,comp=Z,1μm						
TJN	**Taejon**	**19.66**	**13**	*c*eP	**Pn**	**13 12 31.6**	**-0.7**
LOEI	**Loei**	**19.70**	**274**	P	**Pn**	**13 12 32.6**	**-0.5**
	comp=Z,75nm,1.3s,comp=Z,1μm						
STKI	**Sintang**	**19.93**	**212**	P	**P**	**13 12 34.5**	**+0.6**
	comp=Z,101nm,1.3s,comp=Z,14μm						
SWI	**Sorong**	**20.22**	**152**	P	Pn	13 12 39.5	+0.4
	comp=Z,78nm,1.3s,comp=Z,1μm						
SIJI	**Sorong**	**20.23**	**152**	P	**P**	**13 12 36.7**	**-0.5**
	comp=Z,61nm,0.3s,baz=360,slow=22,SNR=2.5						
TTSI	**Tana Toraja**	**20.27**	**186**	P	Pn	13 12 41.0	+1.3
	comp=Z,149nm,1.1s,comp=Z,2μm						
UTTA	**Uttaradit**	**20.37**	**275**	P	**P**	**13 12 39.6**	**+0.9**
	comp=Z,23nm,1.2s,comp=Z,213nm						
XAN	**Xi'an**	**20.38**	**328**	P	Pn	13 12 39.8	-1.1
XAN				pP	pP	13 12 48.1	+0.5
XAN				S	**S**	**13 16 26.8**	**+1.6**
XAN	comp=Z,96nm,1.3s			pmax	pmax		
XAN	comp=Z,530nm,4.8s			pmax	pmax		
XAN	comp=Z,2μm,15.4s			LR	LR		
XAN	comp=Z,2μm,13.3s			LR	LR		
XAN	comp=Z,2μm,15.4s			LR	LR		
INCN	**Inchon**	**20.58**	**11**	*e*P	**P**	**13 12 39.6**	**-1.2**
	comp=Z,125nm,0.9s						
CRAI	**Chiangrai**	**20.61**	**282**	P	Pn	13 12 43.0	-0.6
	comp=Z,576nm,1.3s,comp=Z,8μm						
KS15	**Wonju Array Si**	**20.79**	**14**	*e*P	Pn	13 12 44.4	-1.3
KSAR	**Wonju Array Be**	**20.79**	**14**	P	**P**	**13 12 44.0**	**+0.9**
KSAR	**Wonju Array Be**	**20.79**	**14**	P	**P**	**13 12 44.0**	**+0.9**
KSRS	**Korea Array**	**20.81**	**14**	P	**P**	**13 12 44.0**	**+0.7**
	comp=Z,150nm,0.8s,baz=197,slow=11,SNR=542						
KSRS				LR	LR	13 22 03.4	
	comp=Z,1μm,18.6s,baz=206,slow=40						
KS01	**Wonju Array Si**	**20.83**	**13**	*e*P	**P**	**13 12 43.7**	**+0.3**
KDI	**Kendari**	**21.08**	**178**	P	**P**	**13 12 50.4**	**+4.0**
	comp=Z,86nm,1.6s,comp=Z,1μm						
CBIJ	**Chichi jima**	**21.15**	**59**	P	**P**	**13 12 48.8**	**+1.7**
JCJ	**Chichijima**	**21.15**	**59**	P	**P**	**13 12 48.8**	**+1.7**
	comp=Z,47nm,0.8s,baz=105,slow=22,SNR=4.7						
SPSI	**Sidrap Palu**	**21.18**	**186**	P	**P**	**13 12 47.1**	**-0.3**
	comp=Z,99nm,1.1s,comp=Z,1μm						
LAMP	**Lampang**	**21.24**	**277**	P	**P**	**13 12 48.3**	**+0.3**
	comp=Z,16nm,0.9s						
CD2	**Chengdu**	**21.39**	**313**	P	**P**	**13 12 51.0**	**+1.3**
CD2				pP	sP	13 13 02.8	-0.2
CD2				sP	pP	13 13 08.5	+10
CD2				PP	**PnPn**	**13 13 16.4**	**+6.1**
CD2				S	**S**	**13 16 46.8**	**+1.4**
CD2				sS	sS	13 16 58.5	-1.3
CD2				SS	**SnSn**	**13 17 16.0**	**+6.6**
CD2	comp=Z,180nm,1.2s			pmax	pmax		
CD2	comp=Z,850nm,10.3s			pmax	pmax		
CD2	comp=Z,6μm,20.4s			LR	LR		
CD2	comp=Z,3μm,16.8s			LR	LR		
DL2	**Dalian**	**21.58**	**359**	⇓P	**P**	**13 12 52.3**	**+0.8**
DL2				pmax	pmax		
	comp=Z,97nm,0.9s						
DL2	comp=Z,390nm,7.5s			pmax	pmax		
DL2	comp=Z,3μm,17.3s			LR	LR		
DL2	comp=Z,980nm,15.7s			LR	LR		
KTGM	**Kuala Trenggan**	**21.86**	**239**	⇓P	**P**	**13 12 55.3**	**+0.5**
CM01	**Chiang Mai Arr**	**21.88**	**277**	*e*P	**P**	**13 12 54.5**	**-0.4**
CHTO	**Chiang Mai**	**21.89**	**278**	P	**P**	**13 12 55.3**	**+0.2**
	comp=Z,330nm,1.5s,comp=Z,5μm						
CHTO	**Chiang Mai**	**21.89**	**278**	*e*P	**P**	**13 12 53.9**	**-1.2**
CHTO				pmax	pmax		
	comp=Z,114nm,1.3s						
CHTO	**Chiang Mai**	**21.89**	**278**	*e*P	**P**	**13 12 53.9**	**-1.2**
	comp=Z,114nm,1.3s						
CM31	**Chiang Mai Arr**	**21.89**	**277**	*e*P	**P**	**13 12 56.2**	**+1.1**
CMAR	**Chiang Mai Arr**	**21.89**	**277**	P	**P**	**13 12 55.7**	**+0.6**
	comp=Z,42nm,1.0s,baz=78,slow=8.0,SNR=126						
CMAR				PcP	**PcP**	**13 16 54.1**	**+0.3**
	comp=Z,1.9nm,0.7s,baz=106,slow=0.9,SNR=7.0						
CMAR				LR	LR	13 21 44.7	
	comp=Z,1μm,20.3s,baz=94,slow=38						
PHET	**Kaeng Krachan**	**21.93**	**262**	P	**P**	**13 12 56.2**	**+0.7**
	comp=Z,30nm,1.0s,comp=Z,220nm						
TIY	**Taiyuan**	**22.02**	**340**	*e*P	**P**	**13 12 57.5**	**+1.1**
TIY				SS	SS	13 17 34.6	
TIY	comp=Z,630nm,5.5s			pmax	pmax		
TIY	comp=Z,2μm,12.8s			LR	LR		
TIY	comp=Z,2μm,18.0s			LR	LR		
UMPA	**Umpang Tak**	**22.10**	**271**	P	**P**	**13 12 58.7**	**+1.4**
	comp=Z,35nm,1.2s,comp=Z,904nm						
SRDT	**SRDT**	**22.11**	**266**	P	**P**	**13 12 57.5**	**+0.1**
	comp=Z,308nm,1.3s,comp=Z,8μm						
KAPI	**Kappang**	**22.23**	**186**	P	**P**	**13 12 58.3**	**-0.3**
	comp=Z,57nm,0.9s,baz=359,slow=4.1,SNR=8.7						
KAPI	**Kappang**	**22.23**	**186**	*e*P	**P**	**13 12 55.0**	**-3.6**
	comp=Z,119nm,1.1s						
GUMO	**Guam**	**22.43**	**96**	P	**P**	**13 13 02.2**	**+1.3**
	comp=Z,12nm,0.4s,baz=216,slow=22,SNR=1.8						
GUMO				LR	LR	13 19 59.7	
	comp=Z,1μm,21.1s,baz=294,slow=32						
FAKI	**Fak Fak**	**22.49**	**152**	P	**P**	**13 13 04.1**	**+2.6**
	comp=Z,131nm,1.7s,comp=Z,2μm						
FAKI	**Fak Fak**	**22.49**	**152**	*e*P	**P**	**13 13 02.2**	**+0.7**
	comp=Z,77nm,0.8s						
INU	**Inuyama**	**22.50**	**34**	*e*P	**P**	**13 13 03.0**	**+1.6**
	comp=Z,100nm,1.3s						
KHLT	**Khaolaem Dam**	**22.54**	**267**	P	**P**	**13 13 02.3**	**+0.2**
	comp=Z,32nm,1.2s,comp=Z,474nm						
SKLT	**Songkhla**	**23.07**	**247**	P	**P**	**13 13 05.8**	**-1.7**
BJT	**Baijiatuau**	**23.23**	**349**	*e*P	**P**	**13 13 07.3**	**-1.6**
BJT				pmax	pmax		
	comp=Z,99nm,1.0s						
BJT	**Baijiatuau**	**23.23**	**349**	*e*P	**P**	**13 13 07.3**	**-1.6**
	comp=Z,99nm,1.0s						
BJI	**Beijing**	**23.25**	**349**	P	**P**	**13 13 08.9**	**-0.2**
BJI				sP	**sP**	**13 13 26.6**	**+4.0**
BJI				S	**S**	**13 17 20.1**	**+1.2**
BJI	comp=Z,83nm,1.0s			pmax	pmax		
BJI	comp=Z,580nm,6.4s			pmax	pmax		
BJI	comp=Z,620nm,23.2s			LR	LR		
BJI	comp=Z,2μm,20.2s			LR	LR		
BJI	comp=Z,1μm,31.1s			LR	LR		
BSSI	**Bau Bau, Buton**	**23.29**	**184**	P	**P**	**13 13 12.8**	**+3.1**
	comp=Z,106nm,1.5s,comp=Z,2μm						
MYKOM	**Kota Tinggi**	**23.48**	**231**	⇓P	**P**	**13 13 11.5**	**-0.1**
MYKOM	**Kota Tinggi**	**23.48**	**231**	*e*P	**P**	**13 13 08.9**	**-2.7**
	comp=Z,44nm,1.1s						
TRTT	**Trang**	**23.59**	**249**	P	**P**	**13 13 11.5**	**-1.2**
	comp=Z,58nm,1.3s,comp=Z,913nm						
KGM	**Kluang**	**23.73**	**232**	⇓P	**P**	**13 13 12.8**	**-1.2**
KRAB	**Krabi**	**23.88**	**251**	P	**P**	**13 13 15.0**	**-0.4**
	comp=Z,102nm,1.1s						
SURT	**Suratani**	**23.95**	**253**	P	**P**	**13 13 15.4**	**-0.7**
	comp=Z,18nm,1.5s,comp=Z,373nm						
KULM	**Kulim**	**23.96**	**243**	⇑P	**P**	**13 13 15.5**	**-0.7**
KULM	**Kulim**	**23.96**	**243**	*e*P	**P**	**13 13 12.6**	**-3.6**
	comp=Z,98nm,1.5s						
MAJO	**Matsushiro**	**24.03**	**34**	*e*P	**P**	**13 13 17.2**	**+0.5**
MAT	**Matsushiro**	**24.03**	**34**	P	**P**	**13 13 17.6**	**+0.9**
MAT				S	**S**	**13 17 22.6**	**-9.1**
MJAR	**Matsushiro Arr**	**24.03**	**34**	P	**P**	**13 13 17.6**	**+0.9**
	comp=Z,2.5nm,0.8s,baz=214,slow=7.6,SNR=7.2						
IPM	**Ipoh**	**24.08**	**241**	⇓P	**P**	**13 13 15.7**	**-1.6**
IPM	**Ipoh**	**24.08**	**241**	*e*P	**P**	**13 13 13.5**	**-3.8**
	comp=Z,43nm,1.0s						
FRIM	**Kepong**	**24.29**	**237**	⇓P	**P**	**13 13 18.6**	**-0.7**
LZH	**Lanzhou**	**24.67**	**323**	⇑P	**P**	**13 13 24.0**	**+1.3**
LZH				pP	sP	13 13 35.3	-1.3
LZH				sP	pP	13 13 41.1	+8.6
LZH				PP	**PnPn**	**13 14 01.5**	**+6.3**
LZH				*e*S	**S**	**13 17 39.0**	**-3.3**
LZH				sS	sS	13 17 57.0	-1.3
LZH				SS	**SnSn**	**13 18 38.0**	**+8.1**
LZH	comp=Z,140nm,1.3s			pmax	pmax		
LZH	comp=Z,750nm,5.6s			pmax	pmax		
LZH	comp=Z,2μm,10.8s		

HHC pmax pmax
comp=Z,320nm,4.2s
HHC LR LR
comp=Z,2μm,11.5s
HHC LR LR
comp=Z,1μm,12.5s
HHC LR LR
comp=Z,2μm,12.5s
BTO Baotou 25.44 339 *e*P **P 13 13 30.5 +0.9**
PLAI Plampang 26.23 189 P **P 13 13 40.4 +3.6**
comp=Z,196nm,1.6s,comp=Z,2μm
TWSI Taliwang, Sumb 26.30 191 P **P 13 13 43.0 +5.6**
NGJI Ngawi 26.55 204 P P 13 13 48.5 +8.8
CN2 Changchun 26.64 6 *e*P **P 13 13 40.6 +0.4**
CN2 pmax pmax
comp=Z,10.0nm,1.1s
CN2 pmax pmax
comp=Z,200nm,6.0s
CN2 LR LR
comp=Z,800nm,15.0s
CN2 LR LR
comp=Z,700nm,15.0s
CN2 LR LR
comp=Z,800nm,13.0s
PSI Prapat 26.75 240 *e*P **P 13 13 38.2 -3.5**
PSI pmax pmax
comp=Z,53nm,1.3s
PSI Prapat 26.75 240 *e*P **P 13 13 38.2 -3.5**
comp=Z,53nm,1.3s
SOEI Soe 26.93 175 P P 13 13 51.9 +8.6
SOEI Soe 26.93 175 P **P 13 13 42.3 -1.0**
comp=Z,184nm,1.2s
VLA Vladivostok 27.15 16 *e*P **P 13 13 45.4 +0.6**
VLA pmax pmax
comp=Z,15nm,0.8s
MNSI Mandailing Nat 27.39 236 P **P 13 13 50.7 +3.4**
comp=Z,35nm,1.0s
PPI Padang Panjang 27.54 232 P **P 13 13 50.7 +2.0**
comp=Z,26nm,1.6s,comp=Z,574nm
MDJ Mudanjiang 28.04 12 P **P 13 13 53.4 +0.6**
MDJ pP pP 13 14 04.4 +1.8
MDJ sP sP 13 14 09.3 +2.6
MDJ S **S 13 18 35.8 +0.7**
MDJ sS sS 13 18 55.0 +3.8
MDJ pmax pmax
comp=Z,26nm,1.6s
MDJ LR LR
comp=Z,480nm,24.7s
MDJ LR LR
comp=Z,1μm,22.5s
MDJ LR LR
comp=Z,940nm,21.6s
MDJ Mudanjiang 28.04 12 *e*P **P 13 13 50.4 -2.4**
comp=Z,37nm,1.0s
USRK Ussuriysk Ar. 28.18 15 P **P 13 13 54.9 +0.8**
comp=Z,13nm,0.8s,baz=205,slow=8.0,SNR=18
USRK LR LR 13 26 34.7
comp=Z,710nm,18.1s,baz=197,slow=39
SHL Shillong 29.10 292 *e*P **P 13 14 02.0 -0.7**
GTA Gaotai 29.27 323 ⇑P **P 13 14 04.5 +0.5**
GTA PcP **PcP 13 17 11.8 +1.4**
GTA S **S 13 18 54.8 -0.1**
GTA SS **SnSn 13 20 23.5 +1.4**
GTA pmax pmax
comp=Z,10.0nm,1.2s
GTA pmax pmax
comp=Z,100nm,6.2s
GTA LR LR
comp=Z,990nm,17.1s
GTA LR LR
comp=Z,1μm,15.2s
GTA LR LR
comp=Z,1μm,16.2s
ERM Erimo 30.66 32 *e*P **P 13 14 18.1 +2.1**
LSA Lhasa 30.71 299 P **P 13 14 17.9 +0.7**
LSA pmax pmax
comp=Z,24nm,0.9s
LSA Lhasa 30.71 299 *e*P **P 13 14 15.9 -1.4**
LSA pmax pmax
comp=Z,15nm,0.6s
LSA Lhasa 30.71 299 *e*P **P 13 14 15.8 -1.4**
comp=Z,15nm,0.6s
MTN Manton Dam 31.26 162 *e*P **P 13 14 19.9 -1.7**
comp=Z,42nm,1.4s
ASAJ Asahikawa 31.97 29 P **P 13 14 28.6 +1.1**
comp=Z,3.8nm,0.5s,baz=154,slow=4.0,SNR=7.2
ULN Ulaanbaatar 32.88 341 *ce*P **P 13 14 36.5 +0.8**
ULN pmax pmax
comp=Z,146nm,1.2s
ULN Ulaanbaatar 32.88 341 *e*P **P 13 14 35.9 +0.2**
comp=Z,117nm,1.1s
HABR Khabarovsk 32.94 16 *ce*P **P 13 14 34.4 -1.6**
HABR *e**SP **sP 13 14 48.2 -1.7**
HABR *e* 13 15 44.4
HABR *e* 13 17 17.5
HABR *e*S **S 13 19 51.5 -0.2**
HABR *e**SS **sS 13 20 07.7 -0.2**
HABR *e*SS **SnSn 13 21 52.8 +2.0**
HABR *e* 13 24 59.4
HABR pmax pmax
comp=Z,14nm,1.6s
HABR pmax pmax
comp=N,4.0nm,0.8s
HABR pmax pmax
comp=E,16nm,0.8s
HABR MLR MLR
comp=Z,660nm,18.0s
SONM Songino Array 33.05 341 P **P 13 14 38.0 +0.8**
comp=Z,69nm,1.1s,baz=162,slow=8.9,SNR=142
SONM PcP **PcP 13 17 20.9 +0.6**
comp=Z,4.7nm,1.0s,baz=147,slow=2.9,SNR=3.5
SONM LR LR 13 29 04.7
comp=Z,993nm,18.3s,baz=154,slow=38
SONA1 Songino Array 33.06 341 *e*P **P 13 14 37.0 -0.2**
YSS Yuzh-Sakhalins 34.26 26⇓ *e*P **P 13 14 48.2 +0.7**
YSS *e* 13 14 53.3
YSS *e**SP **sP 13 15 06.0 +4.5**
YSS *e*S **S 13 20 11.9 -0.4**
YSS pmax pmax
comp=Z,20nm,1.1s
YSS MLR MLR
comp=Z,500nm,17.0s
YSS MLR MLR
comp=N,400nm,14.0s
GUN Gumba 34.80 294 *e*P **P 13 14 52.5 -0.4**
comp=N,143nm,0.8s
PKIN Phulchoki 35.17 294 *e*P **P 13 14 54.8 -1.2**
comp=N,26nm,0.6s
KKN Kakani 35.30 294 *e*P **P 13 14 56.3 -0.8**
comp=N,77nm,0.9s
FITZ Fitzroy Crossi 35.32 174 *e*P **P 13 14 54.4 -2.5**
DMN Daman 35.43 293 *e*P **P 13 14 57.4 -0.8**
comp=N,122nm,1.1s
GKN Gorkha 35.90 294 *e*P **P 13 15 01.0 -1.1**
comp=N,144nm,1.0s
ZAK Zakamensk 36.28 340 *e*P **P 13 15 04.9 -0.1**
ZAK pmax pmax
comp=Z,41nm,1.3s
KOLN Koldanda 36.77 293 *e*P **P 13 15 08.7 -0.9**
comp=Z,64nm,0.8s
TLY Talaya 37.29 341 *c i*P **P 13 15 14.2 +0.7**
TLY *e*PPP PPP 13 17 01.3
TLY *e*S **S 13 20 57.8 -0.8**
TLY pmax pmax
comp=Z,80nm,1.3s
TLY MLR MLR
comp=Z,809nm,19.0s
TLY Talaya 37.29 341 *e*P **P 13 15 12.7 -0.8**
comp=Z,102nm,1.3s
PYUN Piuthan 37.35 294 *e*P **P 13 15 13.9 -0.7**
comp=Z,162nm,1.1s
TYV Tymovskoe 37.41 22 *e*P **P 13 15 15.8 +1.3**
TYV pmax pmax
comp=Z,22nm,1.0s
IRK Irkutsk 37.59 342 *e*P **P 13 15 16.5 +0.5**
IRK *e*S **S 13 21 06.7 +3.5**
IRK pmax pmax
comp=Z,163nm,1.6s
MOY Mondy 38.14 339 *e*P **P 13 15 21.6 +0.8**
MOY pmax pmax
comp=Z,116nm,1.6s
MBWA Marble Bar 38.23 183 P **P 13 15 20.1 -1.6**
comp=Z,184nm,1.4s
WRAB Tennant Creek 38.92 161 *e*P **P 13 15 25.5 -2.0**
WRAB pmax pmax
comp=Z,95nm,1.3s
WRAB Tennant Creek 38.92 161 *e*P **P 13 15 25.5 -2.0**
comp=Z,94nm,1.3s
WRA Warramunga Arr 38.92 161 P **P 13 15 25.1 -2.5**
comp=Z,30nm,1.0s,baz=341,slow=9.2,SNR=38
WMQ Urumqi 39.16 320 P **P 13 15 29.3 -0.1**
WMQ pP pP 13 15 38.3 -1.1
WMQ sP sP 13 15 45.6 +2.1
WMQ S **S 13 21 22.8 -4.5**
WMQ sS sS 13 21 45.8 +2.1
WMQ SS **SS 13 24 13.0 -7.8**
WMQ ScS **ScS 13 25 28.4 -7.7**
WMQ pmax pmax
comp=Z,9.0nm,0.6s
WMQ pmax pmax
comp=Z,62nm,4.0s
WMQ LR LR
comp=Z,620nm,27.0s
WMQ LR LR
comp=Z,390nm,18.4s
WMQ LR LR
comp=Z,470nm,23.2s
CLNS Chul'man 39.58 3 *e*P **P 13 15 31.8 -0.9**
CLNS pmax pmax
comp=Z,21nm,0.9s
CLNS pmax pmax
comp=N,15nm,0.9s
CLNS pmax pmax
comp=E,11nm,1.1s
CLNS MLR MLR
comp=Z,532nm,15.0s
CLNS MLR MLR
comp=N,516nm,16.0s
CLNS MLR MLR
comp=E,226nm,12.0s
BOD Bodaibo 40.93 354⇓ *i*P **P 13 15 43.6 -0.2**
BOD pmax pmax
comp=Z,39nm,1.3s
HYB Hyderabad 41.32 277 *i*P **P 13 15 45.0 -2.6**
AS31 Alice Springs 42.32 164 *e*P **P 13 15 53.9 -1.7**
comp=Z,5.5nm,1.0s
ASAR Alice Springs 42.32 164 P **P 13 15 53.4 -2.3**
comp=Z,8.3nm,0.9s,baz=342,slow=7.2,SNR=52
AS01 Alice Springs 42.33 163 *e*P **P 13 15 53.6 -2.1**
H11S3 WAKE ISLAND Hy 42.56 81 T T 14 01 09.8
baz=276,slow=75,SNR=2691
H11S1 WAKE ISLAND Hy 42.57 81 T T 14 01 09.9
baz=276,slow=75,SNR=1134
H11S2 WAKE ISLAND Hy 42.57 81 T T 14 01 11.1
baz=276,slow=75,SNR=959
H11N1 WAKE ISLAND Hy 42.64 79 T T 14 00 58.8
baz=274,slow=74,SNR=531
H11N2 WAKE ISLAND Hy 42.65 79 T T 14 01 13.1
baz=274,slow=74,SNR=601
H11N3 WAKE ISLAND Hy 42.66 79 T T 14 01 18.6
baz=274,slow=74,SNR=527
MK01 Makanchi Array 43.94 321 *e*P **P 13 16 07.9 -0.6**
MK31 Makanchi Array 43.95 321 *i*P **P 13 16 08.2 -0.4**
MK31 pmax pmax
comp=Z,31nm,0.9s
MK31 Makanchi Array 43.95 321 *e*P **P 13 16 08.9 +0.3**
MKAR Makanchi Array 43.95 321 P **P 13 16 08.8 +0.2**
comp=Z,7.0nm,0.7s,baz=113,slow=9.3,SNR=68
MKAR PcP **PcP 13 17 54.5 +0.4**
comp=Z,14nm,0.7s,baz=133,slow=3.9,SNR=4.0
MKAR LR LR 13 35 08.3
comp=Z,456nm,19.8s,baz=147,slow=37
MAKZ Makanchi 44.15 321 P **P 13 16 09.3 -0.9**
MAKZ pmax pmax
comp=Z,43nm,1.3s
MAKZ Makanchi 44.15 321 *e*P **P 13 16 10.5 +0.3**
comp=Z,24nm,0.9s
PDGK Podgornoye 44.25 315 P **P 13 16 10.6 -0.4**
PDGK pmax pmax
comp=Z,29nm,0.9s
KRAR Krasnoyarsk 44.51 337 *e*P **P 13 16 13.8 +0.9**
KRAR pmax pmax
comp=Z,25nm,1.3s
YAK Yakutsk 45.07 5 *c i*P **P 13 16 16.5 -0.7**
YAK *e**PP **pP 13 16 28.8 +1.6**
YAK *e* 13 18 02.2
YAK *e*PPP PPP 13 18 41.8
YAK *e*S **S 13 22 50.7 -3.0**
YAK *e* 13 26 07.3
YAK *e*SSS SSS 13 27 06.8
YAK pmax pmax
comp=Z,27nm,0.9s
YAK pmax pmax
comp=N,15nm,1.3s
YAK pmax pmax
comp=Z,123nm,4.1s
YAK pmax pmax
comp=N,25nm,2.1s
YAK pmax pmax
comp=E,18nm,2.6s
YAK smax smax
comp=N,29nm,2.2s
YAK smax smax
comp=E,10.0nm,1.5s
YAK Yakutsk 45.07 5 *e*P **P 13 16 15.5 -1.6**
comp=E,27nm,0.7s
PEA0 Petropavlovsk- 45.38 30 *e*P **P 13 16 18.9 -0.9**
PEA0B Petropavlovsk- 45.38 30 *e*P **P 13 16 18.6 -1.2**
comp=E,33nm,1.0s
PETK Petropavlovsk- 45.38 30 P **P 13 16 20.2 +0.4**
comp=E,15nm,0.8s,baz=190,slow=4.2,SNR=17
PETK LR LR 13 36 19.2
comp=E,211nm,21.4s,baz=221,slow=37
KSH Kashi 45.50 309 P **P 13 16 23.5 +2.3**
KSH *e*pP sP 13 16 35.8 +0.5
KSH *e*sP pP 13 16 41.6 +10
KSH *e*PcP **PcP 13 18 02.0 +2.3**
KSH *e*PP **PP 13 18 11.1 +3.1**
KSH S **S 13 23 01.8 +0.8**
KSH ScS **ScS 13 26 14.3 -1.1**
KSH pmax pmax
comp=E,84nm,3.8s
KSH LR LR
comp=E,650nm,11.4s
KSH LR LR
comp=E,630nm,12.2s
KSH LR LR
comp=E,1μm,16.6s
PET Petropavlovsk 45.78 30 *e*P **P 13 16 23.2 +0.2**
PET *e**PP **sP 13 16 35.9 -1.2**
PET *e*S **S 13 23 00.4 -3.8**
PET *e*SS **ScS 13 26 15.3 -0.9**
PET 13 27 31.7
PET pmax pmax
comp=Z,100nm,10.7s
PET pmax pmax
comp=Z,38nm,0.9s
PET MLR MLR
comp=Z,400nm,20.0s
PET Petropavlovsk 45.78 30 *e*P **P 13 16 22.7 -0.3**
comp=Z,32nm,0.9s
ZAA0 Zalesovo Array 46.50 331 *e*P **P 13 16 27.9 -0.7**
ZALV Zalesovo Beam 46.50 331 P **P 13 16 28.2 -0.5**
comp=Z,11nm,0.6s,baz=117,slow=6.5,SNR=24
ZALV PcP **PcP 13 18 01.9 -0.8**
comp=Z,4.4nm,0.7s,baz=120,slow=4.5,SNR=3.7
TKM2 Tokmak 2 46.78 313 *e*P **P 13 16 27.6 -3.7**
TKM2 pmax pmax
comp=Z,19nm,1.4s
TKM2 Tokmak 2 46.78 313 *e*P **P 13 16 27.6 -3.7**
comp=Z,19nm,1.4s
MA2 Magadan 47.19 20⇑ *e*P **P 13 16 33.6 -0.3**
FRU Bishkek 47.43 313 *e*P **P 13 16 36.0 -0.2**
FRU *e* 13 18 10.0
FRU pmax pmax
comp=Z,30nm,2.1s
FRU MLR MLR
comp=E,2μm,20.5s
AAK Ala-Archa 47.46 312 LR LR 13 37 01.8
comp=E,2μm,21.8s,baz=83,slow=37
AAK Ala-Archa 47.46 312 *e*P **P 13 16 37.4 +0.8**
AAK pmax pmax
comp=Z,7.0nm,0.8s
AAK Ala-Archa 47.46 312 *e*P **P 13 16 37.4 +0.8**
comp=Z,7.1nm,0.8s
NVS Novosibirsk 47.78 331 *e*P **P 13 16 38.4 -0.2**
NVS *e* 13 18 04.4
NVS *e* 13 18 33.4
NVS pmax pmax
comp=Z,58nm,1.5s
NVS pmax pmax
comp=N,35nm,1.6s
NVS pmax pmax
comp=E,43nm,1.5s
KURK Kurchatov 47.95 324 *e*P **P 13 16 38.8 -1.2**
KURK pmax pmax
comp=Z,71nm,1.0s
KURK Kurchatov 47.95 324 *e*P **P 13 16 38.8 -1.2**
comp=Z,71nm,1.0s
EKS2 Erkin-Say 47.97 312 P **P 13 16 38.0 -2.5**
EKS2 pmax pmax
comp=Z,10.0nm,0.9s
EKS2 Erkin-Say 47.97 312 P **P 13 16 38.0 -2.5**
comp=Z,9.6nm,0.9s
MNAS Manas 48.83 312 P **P 13 16 47.0 -0.1**
MNAS pmax pmax
comp=Z,17nm,1.5s
KBL Kabul 50.02 301 *e*P **P 13 16 56.1 -0.3**
KBL pmax pmax
comp=Z,35nm,1.1s
KBL Kabul 50.02 301 *e*P **P 13 16 56.1 -0.3**
comp=Z,35nm,1.1s
SEY Seymchan 50.30 18⇑ *e*P **P 13 16 58.9 +1.2**
KK31 Karatay Array 50.41 312 P **P 13 16 57.9 -1.1**
KK31 pmax pmax
comp=Z,9.0nm,0.9s
KKAR Karatay Array 50.41 312 *e*P **P 13 16 56.6 -2.3**
KKAR Karatay Array 50.41 312 *e*P **P 13 16 56.6 -2.3**
OTUK Ortayu 50.69 319 P **P 13 17 00.7 -0.4**
OTUK pmax pmax
comp=Z,1.0nm,0.4s
DZET Dzherino 50.77 306 P **P 13 17 00.0 -1.9**
DZET pmax pmax
comp=Z,44nm,1.5s
EIDS Eidsvold 51.01 145 *e*P **P 13 17 02.3 -1.3**
comp=Z,75nm,1.7s
BBOO Buckleboo 51.59 165 *e*P **P 13 17 07.3 -0.5**
comp=Z,69nm,1.1s
STKA Stephens Creek 52.37 159 P **P 13 17 12.0 -1.6**
comp=Z,44nm,0.7s,baz=334,slow=7.0,SNR=25
STKA Stephens Creek 52.37 159 *e*P **P 13 17 12.1 -1.6**
STKA pmax pmax
comp=Z,12nm,0.8s
STKA Stephens Creek 52.37 159 *e*P **P 13 17 12.1 -1.6**
comp=Z,12nm,0.8s
BVA0 Borovoye Array 53.55 324 P **P 13 17 22.0 -0.2**
BVA0 pmax pmax
comp=Z,12nm,1.1s
BRVK Borovoye 53.63 324 *e*P **P 13 17 21.7 -1.0**
BRVK pmax pmax
comp=Z,26nm,0.9s
BRVK Borovoye 53.63 324 *e*P **P 13 17 21.7 -1.0**
comp=Z,26nm,0.9s
ZRNK Zerenda 54.31 324 P **P 13 17 26.6 -1.1**
ZRNK pmax pmax
comp=Z,17nm,0.8s
ZRNK Zerenda 54.31 324 *e*P **P 13 17 27.7 0.0**
comp=Z,26nm,0.8s
TIXI Tiksi 54.55 3 *ce*P **P 13 17 28.2 -0.9**
TIXI pmax pmax
comp=Z,46nm,0.8s
ARMA Armidale 55.36 149 *e*P **P 13 17 36.6 +0.9**
comp=Z,82nm,1.7s
NRIK Noril'sk 56.25 346 P **P 13 17 41.6 +0.1**
comp=Z,80nm,1.0s,baz=128,slow=7.2,SNR=77
NRIK LR LR 13 44 26.7
comp=Z,865nm,18.3s,baz=150,slow=39
BILL Bilibino 57.99 18 *c i*P **P 13 17 54.0 +0.2**
BILL *i* 13 18 05.6
BILL *i* 13 18 50.3
BILL *i* 13 20 02.9
BILL pmax pmax
comp=Z,39nm,0.9s
BILL MLR MLR
comp=Z,398nm,21.0s
BILL Bilibino 57.99 18 *e*P **P 13 17 53.4 -0.4**
comp=Z,47nm,0.9s
CAN Canberra 58.26 154 *e*P **P 13 17 57.4 +1.3**
CAN pmax pmax
comp=Z,58nm,1.4s
CAN Canberra 58.26 154 *e*P **P 13 17 57.4 +1.3**
comp=Z,58nm,1.4s
DZM Mont Dzumac 58.55 130 *e*LR LR 13 35 13.2
comp=Z,612nm,23.6s
ABKAR Akbulak array 58.87 318 *e*P **P 13 17 59.8 -0.5**
GEYT Alibeck 59.06 304 P **P 13 18 01.9 +0.1**
comp=Z,12nm,0.8s,baz=126,slow=4.0,SNR=22
GEYT LR LR 13 46 00.3
comp=Z,2μm,21.5s,baz=75,slow=39
SVE Sverdlovsk 60.09 326⇑ *e*P **P 13 18 08.6 +0.2**
SVE pmax pmax
comp=Z,55nm,1.3s
AKTO Aktyubinsk 60.30 319 LR LR 13 46 39.3
comp=Z,523nm,18.4s,baz=102,slow=38
ARU Arti 61.10 325 *c i*P **P 13 18 14.7 -0.7**
ARU 13 18 54.2
ARU 13 20 29.0
ARU S **S 13 26 33.9 +1.8**
ARU SS **SS 13 30 33.5 +1.5**
ARU pmax pmax
comp=Z,25nm,1.7s
ARU MLR MLR
comp=Z,501nm,22.0s
ARU Arti 61.10 325 *e*P **P 13 18 14.7 -0.7**
comp=Z,27nm,0.7s
SOKR Solikamsk 62.72 329 *e*P **P 13 18 24.8 -1.4**
SOKR pmax pmax
comp=Z,16nm,0.9s
SOKR MLR MLR
comp=Z,664nm,18.0s
TNA Tin City 66.24 25 *e*P **P 13 18 50.7 +1.6**
comp=Z,16nm,1.1s
DGRG David-gareji 68.80 308 P **P 13 19 04.2 -1.6**
GUDG Gudauri 69.38 309 P **P 13 19 10.7 +1.1**
GNI Garni 69.39 307 *ce*P **P 13 19 10.2 +0.5**
GNI pmax pmax
comp=Z,102nm,1.5s
GNI Garni 69.39 307 *e*P **P 13 19 10.8 +1.1**
comp=Z,40nm,1.3s
ZEI Tsey 69.78 310 *e*P **P 13 19 09.4 -2.6**
ZEI pmax pmax
comp=Z,120nm,1.3s
NCK Nalchik 69.94 311 *e*P **P 13 19 13.2 +0.4**
NCK pmax pmax
comp=Z,6.0nm,0.8s
ONI Oni 70.12 310 P **P 13 19 14.3 +0.3**
GOF Gofitskoye 70.20 312⇑ *e*P **P 13 19 13.3 -1.0**
GOF pmax pmax
comp=Z,12nm,0.9s
KBZ Khabaz 70.42 311 P **P 13 19 15.8 +0.2**
comp=Z,6.3nm,1.0s,baz=75,slow=4.0,SNR=17
KBZ LR LR 13 52 16.0
comp=Z,661nm,21.5s,baz=78,slow=38
KVAR Kislovodsk Arr 70.55 311 P **P 13 19 16.2 -0.4**
comp=Z,4.5nm,0.4s,baz=101,slow=9.7,SNR=3.2
KIV Kislovodsk 70.55 311 *c i*P **P 13 19 16.6 0.0**
KIV *i* 13 19 41.0
KIV pmax pmax
comp=Z,15nm,0.9s
KIV MLR MLR
comp=Z,464nm,18.0s
KIV Kislovodsk 70.55 311 *e*P **P 13 19 16.9 +0.2**
comp=Z,47nm,1.1s
NEY Neytrino 70.60 310 *e*P **P 13 19 16.5 -0.5**
NEY pmax pmax
comp=Z,1.0nm,0.8s
VRH Novokhopyorsk 70.64 319 *e*P **P 13 19 16.7 -0.1**
VRH pmax pmax
comp=Z,20nm,1.0s
TT01 Tatalina 71.19 29 *e*P **P 13 19 21.0 +1.0**
TTA Tatalina 71.20 29 *e*P **P 13 19 21.3 +1.2**
TTA pmax pmax
comp=Z,26nm,0.9s
TTA Tatalina 71.20 29 *e*P **P 13 19 21.3 +1.2**
comp=Z,26nm,0.9s
KLMR Klimovskoe 71.40 329 *e*P **P 13 19 18.8 -2.5**
KLMR *e* 13 19 38.2
KLMR *e* 13 21 58.2
KLMR pmax pmax
comp=Z,63nm,1.3s
SVW2 Sparrevohn 71.45 31 *e*P **P 13 19 23.1 +1.5**
comp=Z,19nm,1.1s
TMCR Tamitsa 71.96 333 *e*P **P 13 19 24.1 -0.5**
TMCR pmax pmax
comp=Z,31nm,1.0s
VSR Storozhevoye 72.24 319 *e*P **P 13 19 24.7 -1.8**
VSR pmax pmax
comp=Z,20nm,1.3s

LPSR	**Galich'ya Gora**	**72.25**	**321**	*e*P	**P**	**13 19 24.6**	**-2.0**
LPSR				pmax	pmax		
	comp=Z,20nm,0.6s						
AFI	**Afiamalu**	**72.40**	**111**	LR	LR	13 46 39.5	
	comp=Z,138nm,18.6s,baz=270,slow=32						
MOS	**Moscow**	**72.73**	**324**	*e*P	**P**	**13 19 27.8**	**-1.5**
MOS				*e*		13 19 34.6	
MOS				*e*		13 22 06.2	
MOS				pmax	pmax		
	comp=Z,42nm,1.1s						
PPLA	**Purkeypile**	**72.95**	**29**	*e*P	**P**	**13 19 32.1**	**+1.3**
	comp=Z,22nm,0.9s						
CAST	**Castle Rocks**	**72.95**	**28**	*e*P	**P**	**13 19 31.7**	**+1.1**
	comp=Z,79nm,0.9s						
LVZ	**Lovozero**	**73.13**	**337**	*ce*P	**P**	**13 19 30.7**	**-0.9**
LVZ				pmax	pmax		
	comp=Z,11nm,1.1s						
SPU	**Mount Spurr**	**73.15**	**30**	*e*P	**P**	**13 19 32.4**	**+0.6**
KDAK	**Kodiak Island**	**73.20**	**34**	*ce*P	**P**	**13 19 32.5**	**+0.4**
BPAW	**Bear Paw Mtn.**	**73.38**	**27**	*e*P	**P**	**13 19 34.2**	**+1.0**
	comp=Z,70nm,1.0s						
OBN	**Obninsk**	**73.39**	**323**	P	**P**	**13 19 33.4**	**+0.1**
	comp=Z,15nm,0.3s						
OBN	**Obninsk**	**73.39**	**323**	*i* P	**P**	**13 19 31.3**	**-1.9**
OBN				*i*		13 19 48.8	
OBN				*i* S	**S**	**13 28 58.4**	**-1.5**
OBN				pmax	pmax		
	comp=Z,13nm,1.1s						
OBN				MLR	MLR		
	comp=Z,423nm,17.0s						
MLY	**Manley**	**73.41**	**26**	*e*P	**P**	**13 19 34.3**	**+1.0**
	comp=Z,52nm,0.9s						
COLD	**Coldfoot**	**73.43**	**24**	*e*P	**P**	**13 19 34.7**	**+1.4**
	comp=Z,32nm,0.9s						
KTH	**Kantishna Hill**	**73.46**	**28**	*e*P	**P**	**13 19 34.6**	**+0.9**
	comp=Z,20nm,0.8s						
APA	**Apatity**	**73.64**	**336**	⇓*i*P	**P**	**13 19 35.0**	**+0.5**
APA				pmax	pmax		
	comp=Z,18nm,1.2s						
TRF	**Thorofare Moun**	**73.75**	**28**	*e*P	**P**	**13 19 36.0**	**+0.5**
	comp=Z,125nm,2.0s						
BRLK	**Bradley Lake**	**73.87**	**32**	*e*P	**P**	**13 19 37.6**	**+1.5**
	comp=Z,181nm,2.0s						
BWN	**Browne**	**74.04**	**27**	*e*P	**P**	**13 19 38.6**	**+1.7**
	comp=Z,55nm,0.9s						
ANN	**Anapa**	**74.19**	**313**	*e*P	**P**	**13 19 38.6**	**+0.5**
ANN				*e*		13 19 55.1	
ANN				*e*S	**S**	**13 29 12.1**	**+2.8**
ANN				pmax	pmax		
	comp=Z,87nm,1.4s						
ANN				MLR	MLR		
	comp=E,519nm,20.0s						
ANN				MLR	MLR		
	comp=N,357nm,20.0s						
ANN				MLR	MLR		
	comp=Z,335nm,20.0s						
RC01	**Rabbit Creek A**	**74.28**	**30**	*e*P	**P**	**13 19 38.4**	**0.0**
	comp=Z,74nm,2.0s						
MCK	**McKinley**	**74.32**	**28**	*e*P	**P**	**13 19 39.3**	**+0.7**
MCK				pmax	pmax		
	comp=Z,76nm,1.0s						
MCK	**McKinley**	**74.32**	**28**	*e*P	**P**	**13 19 39.3**	**+0.7**
	comp=Z,76nm,1.0s						
RND	**Reindeer**	**74.40**	**28**	*e*P	**P**	**13 19 39.1**	**-0.1**
RND				pmax	pmax		
	comp=Z,63nm,0.9s						
RND	**Reindeer**	**74.40**	**28**	*e*P	**P**	**13 19 39.1**	**-0.1**
	comp=Z,63nm,0.9s						
PMR	**Palmer**	**74.51**	**30**	*e*P	**P**	**13 19 39.5**	**-0.2**
PMR				pmax	pmax		
	comp=Z,32nm,0.9s						
PMR	**Palmer**	**74.51**	**30**	*e*P	**P**	**13 19 39.5**	**-0.2**
	comp=Z,32nm,0.9s						
WRH	**Wood River Hil**	**74.60**	**27**	*e*P	**P**	**13 19 40.7**	**+0.6**
	comp=Z,23nm,1.0s						
COLA	**College**	**74.64**	**26**	*c i*P	**P**	**13 19 40.5**	**+0.1**
COLA				pmax	pmax		
	comp=Z,29nm,1.0s						
COLA	**College**	**74.64**	**26**	*e*P	**P**	**13 19 40.7**	**+0.3**
	comp=Z,25nm,0.9s						
SML	**Sawmill**	**74.85**	**29**	*e*P	**P**	**13 19 42.2**	**+0.4**
SML				pmax	pmax		
	comp=Z,46nm,1.0s						
SML	**Sawmill**	**74.85**	**29**	*e*P	**P**	**13 19 42.2**	**+0.4**
	comp=Z,46nm,1.0s						
IL1	**Eielson Array**	**75.07**	**26**	*e*P	**P**	**13 19 41.9**	**-1.0**
ILAR	**Eielson Array**	**75.07**	**26**	P	**P**	**13 19 42.0**	**-0.9**
	comp=Z,4.4nm,0.7s,baz=246,slow=2.9,SNR=41						
ILB	**Eielson Array**	**75.07**	**26**	*e*P	**P**	**13 19 42.4**	**-0.5**
SCM	**Sheep Creek Mo**	**75.32**	**29**	*e*P	**P**	**13 19 45.5**	**+1.0**
SCM				pmax	pmax		
	comp=Z,74nm,0.9s						
SCM	**Sheep Creek Mo**	**75.32**	**29**	*e*P	**P**	**13 19 45.5**	**+1.0**
	comp=Z,74nm,0.9s						
FYU	**Fort Yukon**	**75.46**	**24**	*e*P	**P**	**13 19 46.6**	**+1.5**
	comp=Z,44nm,1.0s						
RPZ	**Rata Peaks**	**75.51**	**145**	P	**P**	**13 19 46.3**	**+0.7**
	comp=Z,12nm,1.1s,baz=49,slow=9.1,SNR=3.8						
URZ	**Urewera**	**75.67**	**138**	P	**P**	**13 19 49.2**	**+2.5**
	comp=Z,4.8nm,0.8s,baz=318,slow=5.8,SNR=3.2						
BKZ	**Black Stump Fm**	**75.81**	**139**	*e*P	**P**	**13 19 50.7**	**+3.1**
	comp=Z,105nm,2.0s						
PAX	**Paxson**	**75.98**	**28**	*e*P	**P**	**13 19 49.0**	**+0.7**
PAX				pmax	pmax		
	comp=Z,28nm,1.0s						
PAX	**Paxson**	**75.98**	**28**	*e*P	**P**	**13 19 49.0**	**+0.7**
	comp=Z,28nm,1.0s						
KLU	**Klutina**	**76.04**	**30**	*e*P	**P**	**13 19 49.4**	**+0.7**
	comp=Z,22nm,1.0s						
DIV	**Divide**	**76.18**	**30**	*e*P	**P**	**13 19 50.5**	**+1.0**
	comp=Z,39nm,0.9s						
ARA0	**ARCESS Array S**	**76.21**	**339**	*e*P	**P**	**13 19 49.3**	**0.0**
ARCES	**ARCESS Array B**	**76.21**	**339**	P	**P**	**13 19 48.9**	**-0.4**
	comp=Z,7.8nm,0.8s,baz=60,slow=7.2,SNR=13						
ARCES				LR	LR	13 57 11.1	
	comp=Z,359nm,18.7s,baz=80,slow=39						
ARCES	**ARCESS Array B**	**76.21**	**339**	*e*P	**P**	**13 19 47.0**	**-2.3**
EYAK	**Cordova Ski Ar**	**76.30**	**31**	*e*P	**P**	**13 19 50.7**	**+0.8**
	comp=Z,48nm,1.5s						
DOT	**Dot Lake**	**76.48**	**27**	*e*P	**P**	**13 19 51.2**	**+0.1**
	comp=Z,70nm,0.9s						
SIM	**Simferopol'**	**76.49**	**313**	*e*P	**P**	**13 19 48.7**	**-2.7**
SIM				*e*S	**S**	**13 29 40.0**	**+5.1**
SIM				pmax	pmax		
	comp=Z,34nm,1.1s						
SIM				MLR	MLR		
	comp=Z,300nm,20.0s						
MENT	**Mentasta**	**76.78**	**28**	*e*P	**P**	**13 19 53.4**	**+0.7**
	comp=Z,14nm,0.6s						
RAGM	**Ragged Mountai**	**76.85**	**31**	*e*P	**P**	**13 19 52.9**	**-0.3**
	comp=Z,19nm,0.8s						
EGAK	**Eagle**	**77.47**	**26**	*e*P	**P**	**13 19 57.0**	**+0.5**
	comp=Z,30nm,0.8s						
FIA1	**FINESS Array S**	**77.77**	**331**	*e*P	**P**	**13 19 57.5**	**-0.7**
FINES	**FINESS Array B**	**77.77**	**331**	P	**P**	**13 19 57.4**	**-0.8**
	comp=Z,12nm,0.9s,baz=64,slow=13,SNR=31						
FINES				LR	LR	13 58 17.4	
	comp=Z,486nm,19.2s,baz=80,slow=39						
BR131	**Keskin Array S**	**77.88**	**308**	*e*P	**P**	**13 19 58.7**	**-0.9**
BRTR	**Keskin Array B**	**77.88**	**308**	P	**P**	**13 19 58.5**	**-1.0**
	comp=Z,3.6nm,0.9s,baz=106,slow=2.7,SNR=9.6						
BRTR				LR	LR	13 58 25.1	
	comp=Z,154nm,21.1s,baz=74,slow=39						
VSU	**Vasula**	**78.14**	**328**	*ce*P	**P**	**13 19 59.8**	**-0.6**
VSU				pmax	pmax		
	comp=Z,93nm,1.4s						
DAWY	**Dawson**	**78.40**	**26**	*e*P	**P**	**13 20 02.6**	**+0.8**
	comp=Z,42nm,0.9s						
MICGM	**Minsk**	**78.45**	**324**	*e*	**P**	**13 20 01.0**	**-1.1**
MNK	**Minsk**	**78.45**	**324**	*e*P	**P**	**13 20 01.0**	**-1.1**
BR231	**Keskin MP Arra**	**78.51**	**308**	*e*P	**P**	**13 19 58.9**	**-4.1**
AKASG	**Malin Array Be**	**78.52**	**320**	P	**P**	**13 20 01.0**	**-1.6**
	comp=Z,6.5nm,0.8s,baz=63,slow=5.8,SNR=17						
AKASG				LR	LR	13 55 09.3	
	comp=Z,195nm,18.7s,baz=80,slow=36						
KIEV	**Kiev**	**78.53**	**320**	*d i*P	**P**	**13 20 01.6**	**-1.1**
KIEV				pmax	pmax		
	comp=Z,9.0nm,1.0s						
KIEV	**Kiev**	**78.53**	**320**	*e*P	**P**	**13 20 01.1**	**-1.6**
	comp=Z,16nm,1.1s						
AK11	**Malin Array Si**	**78.56**	**320**	*e*P	**P**	**13 20 01.9**	**-0.9**
NACGM	**Naroch**	**78.97**	**324**	*e*	**P**	**13 20 04.0**	**-1.0**
NACGM				*e*LQ	LQ	13 49 50.0	
CSS	**Mathiatis**	**79.19**	**303**	*e*P	**P**	**13 20 05.8**	**-0.9**
	comp=Z,15nm,0.9s						
INK	**Inuvik**	**79.38**	**21**	*e*P	**P**	**13 20 07.7**	**+0.7**
INK				pmax	pmax		
	comp=Z,40nm,0.9s						
INK	**Inuvik**	**79.38**	**21**	*e*P	**P**	**13 20 07.7**	**+0.7**
	comp=Z,40nm,0.9s						
SORM	**Soroca**	**79.68**	**317**	⇑*i*P	**P**	**13 20 10.0**	**+1.0**
TLCR		**80.10**	**314**	⇑*i*P	**P**	**13 20 13.2**	**+1.9**
TIRR	**Tirgusor**	**80.56**	**314**	⇓*i*P	**P**	**13 20 14.9**	**+1.1**
TIRR	**Tirgusor**	**80.56**	**314**	*e*P	**P**	**13 20 13.0**	**-0.8**
TIRR				pmax	pmax		
	comp=Z,25nm,1.2s						
TIRR	**Tirgusor**	**80.56**	**314**	*e*P	**P**	**13 20 13.0**	**-0.8**
	comp=Z,25nm,1.2s						
CFR	**Carcaliu**	**80.57**	**314**	⇑*i*P	**P**	**13 20 14.9**	**+1.1**
HARR	**Harsova**	**80.83**	**314**	⇑*i*P	**P**	**13 20 16.1**	**+0.8**
MSAB	**Monastry St. A**	**81.06**	**313**	⇓*i*P	**P**	**13 20 17.6**	**+1.1**
ODBI	**Odobesti**	**81.15**	**315**	⇑*i*P	**P**	**13 20 18.6**	**+1.6**
TESR	**Tescani**	**81.22**	**316**	⇓*i*P	**P**	**13 20 18.5**	**+1.2**
SUW	**Suwalki**	**81.24**	**324**	*e*P	**P**	**13 20 16.9**	**-0.4**
SUW	**Suwalki**	**81.24**	**324**	*e*P	**P**	**13 20 16.9**	**-0.4**
PRAR	**RASCA**	**81.27**	**317**	⇑*i*P	**P**	**13 20 21.7**	**+4.1**
GRER		**81.31**	**315**	⇑*i*P	P	13 20 22.6	+4.8
VRI	**Vrincioaia**	**81.34**	**315**	⇑*i*P	**P**	**13 20 19.1**	**+1.1**
PLOR	**Plostina**	**81.40**	**315**	⇑*i*P	**P**	**13 20 19.2**	**+0.8**
SKAG	**Skagway**	**81.63**	**30**	*e*P	**P**	**13 20 21.1**	**+1.9**
	comp=Z,36nm,1.1s						
BUR08	**Bucovina Ar. S**	**81.86**	**317**	*e*P	**P**	**13 20 20.9**	**+0.1**
LVV	**L'vov**	**81.97**	**320**	*e*P	**P**	**13 20 21.0**	**-0.2**
LVV				MLR	MLR		
	comp=N,200nm,21.0s						
LVV				MLR	MLR		
	comp=E,220nm,21.0s						
LVV				MLR	MLR		
	comp=Z,350nm,21.0s						
MLR	**Muntele Rosu**	**81.97**	**315**	⇓*i*P	**P**	**13 20 21.6**	**+0.1**
MLR	**Muntele Rosu**	**81.97**	**315**	*e*P	**P**	**13 20 21.6**	**+0.1**
MLR				pmax	pmax		
	comp=Z,18nm,0.8s						
MLR	**Muntele Rosu**	**81.97**	**315**	*e*P	**P**	**13 20 21.6**	**+0.1**
	comp=Z,18nm,0.8s						
DOPR	**Dopca**	**82.21**	**316**	⇑*i*P	**P**	**13 20 22.8**	**+0.2**
VOIR		**82.59**	**315**	⇑*i*P	**P**	**13 20 24.1**	**-0.6**
SZH	**Strazhica**	**82.61**	**313**	*i* P	**P**	**13 20 24.3**	**-0.4**
KWP	**Kalwaria Pacla**	**82.84**	**320**	*e*P	**P**	**13 20 25.6**	**-0.2**
KWP	**Kalwaria Pacla**	**82.84**	**320**	⇓*i*P	**P**	**13 20 26.0**	**+0.2**
KWP	**Kalwaria Pacla**	**82.84**	**320**	*e*P	**P**	**13 20 25.6**	**-0.2**
ARR	**Arges**	**82.89**	**315**	⇓*i*P	**P**	**13 20 26.3**	**+0.1**
CJR	**Cluj-Napoca**	**83.17**	**317**	⇓*i*P	**P**	**13 20 27.2**	**-0.5**
ALN	**Alexandroupoli**	**83.21**	**311**	P	**P**	**13 20 26.1**	**-1.8**
ALN	**Alexandroupoli**	**83.21**	**311**	P	**P**	**13 20 26.1**	**-1.8**
ALN	**Alexandroupoli**	**83.21**	**311**	P	**P**	**13 20 26.1**	**-1.8**
DAG	**Danmarks Havn**	**83.29**	**352**	⇑*i*P	**P**	**13 20 26.7**	**-0.9**
	comp=Z,38nm,1.1s						
DAG	**Danmarks Havn**	**83.29**	**352**	⇑*i*P	**P**	**13 20 26.7**	**-0.9**
DAG				pmax	pmax		
	comp=Z,48nm,1.1s						
BEL	**Belsk**	**83.29**	**322**	*e*P	**P**	**13 20 28.0**	**-0.1**
BEL	**Belsk**	**83.29**	**322**	*e*P	**P**	**13 20 28.0**	**-0.1**
KOLS	**Kolonicke sedl**	**83.33**	**319**	*e*P	P	13 20 36.0	+7.6
KOLS	**Kolonicke sedl**	**83.33**	**319**	*e*	P	13 20 36.0	+7.6
UZH	**Uzhgorod**	**83.42**	**319**	*c i*P	**P**	**13 20 28.8**	**0.0**
UZH				*e*		13 20 36.8	
UZH				*e*PP	**pP**	**13 20 41.0**	**+1.5**
UZH				*e*		13 23 37.2	
UZH				*e*S	**S**	**13 30 43.0**	**-4.7**
UZH				*e*		13 31 35.6	
UZH				*e*SSS	SSS	13 39 36.2	
KDZ	**Kurdzhali**	**83.44**	**311**	*i* P	**P**	**13 20 28.6**	**-0.5**
PRK	**Paraskevi**	**83.52**	**309**	P	**P**	**13 20 28.1**	**-1.4**
PRK	**Paraskevi**	**83.52**	**309**	P	**P**	**13 20 28.1**	**-1.4**
PRK	**Paraskevi**	**83.52**	**309**	P	**P**	**13 20 28.1**	**-1.4**
SMG	**Samos**	**83.54**	**307**	P	**P**	**13 20 28.4**	**-1.3**
SMG	**Samos**	**83.54**	**307**	P	**P**	**13 20 28.4**	**-1.3**
DRGR		**83.73**	**317**	⇓*i*P	**P**	**13 20 30.7**	**+0.2**
SIGR	**SIGRI**	**83.84**	**309**	P	**P**	**13 20 29.6**	**-1.5**
SIGR	**SIGRI**	**83.84**	**309**	P	**P**	**13 20 29.6**	**-1.5**
CRVS	**Cervenica-Dubn**	**83.85**	**319**	*e*P	**P**	**13 20 31.1**	**+0.1**
CRVS	**Cervenica-Dubn**	**83.85**	**319**	*e*P	**P**	**13 20 31.1**	**+0.1**
DEV	**Deva**	**83.89**	**316**	⇑*i*P	**P**	**13 20 31.6**	**+0.3**
KARP	**Karpathos**	**83.91**	**305**	*e*P	**P**	**13 20 30.7**	**-0.9**
	comp=Z,31nm,0.9s						
RZN	**Rozhen**	**83.93**	**312**	*i* P	**P**	**13 20 31.1**	**-0.7**
PGB	**Panagyurishte**	**84.06**	**313**	*i* P	**P**	**13 20 32.1**	**-0.2**
MPEP	**Malo Peshtene**	**84.11**	**313**	*i* P	**P**	**13 20 32.2**	**-0.3**
GZR	**Gura Zlata**	**84.13**	**316**	⇑*i*P	**P**	**13 20 33.0**	**+0.4**
WRAK	**Wrangell Islan**	**84.21**	**33**	*e*P	**P**	**13 20 34.1**	**+1.5**
	comp=Z,18nm,1.1s						
KAVA	**Kavala**	**84.29**	**311**	P	**P**	**13 20 32.3**	**-1.1**
KAVA	**Kavala**	**84.29**	**311**	P	**P**	**13 20 32.3**	**-1.1**
NIE	**Niedzica**	**84.40**	**320**	*e*P	**P**	**13 20 34.1**	**+0.3**
NIE	**Niedzica**	**84.40**	**320**	*e*P	**P**	**13 20 34.1**	**+0.3**
NC405	**NORSAR Array S**	**84.41**	**333**	*e*P	**P**	**13 20 33.1**	**-0.5**
OJC	**Ojcow**	**84.43**	**321**	*e*P	**P**	**13 20 34.1**	**+0.1**
OJC	**Ojcow**	**84.43**	**321**	*e*P	**P**	**13 20 33.7**	**-0.2**
OJC				pmax	pmax		
	comp=Z,21nm,0.8s						
OJC	**Ojcow**	**84.43**	**321**	*e*P	**P**	**13 20 33.7**	**-0.2**
	comp=Z,21nm,0.8s						
NC303	**NORSAR Array S**	**84.51**	**333**	*e*P	**P**	**13 20 34.1**	**0.0**
DLBC	**Dease Lake**	**84.56**	**30**	*e*P	**P**	**13 20 36.5**	**+2.0**
	comp=Z,38nm,1.3s						
SIRR	**Siria**	**84.59**	**317**	⇓*i*P	**P**	**13 20 35.4**	**+0.6**
KECS	**Kecovo**	**84.60**	**319**	*e*P	**P**	**13 20 35.7**	**+0.9**
KECS				*e*		13 20 42.0	
KECS				pmax	pmax		
	comp=Z,11nm,0.9s						
KECS	**Kecovo**	**84.60**	**319**	*e*P	**P**	**13 20 35.7**	**+0.9**
KECS				*e*		13 20 42.0	
NB201	**NORSAR Array S**	**84.62**	**333**	*e*P	**P**	**13 20 34.1**	**-0.6**
NC602	**NORSAR Array S**	**84.65**	**332**	*e*P	**P**	**13 20 33.9**	**-0.9**
NVR	**Nevrokopi**	**84.65**	**312**	P	**P**	**13 20 33.4**	**-1.9**
NVR	**Nevrokopi**	**84.65**	**312**	P	**P**	**13 20 33.4**	**-1.9**
NB2	**NORSAR Subarra**	**84.66**	**333**	P	**P**	**13 20 33.8**	**-1.1**
	comp=Z,5.4nm,0.7s,baz=64,slow=5.3						
NOA	**NORSAR Array B**	**84.66**	**333**	P	**P**	**13 20 33.5**	**-1.4**
	comp=Z,9.6nm,0.9s,baz=64,slow=5.1,SNR=15						
NOA				PKKPbc	**PKKPbc**	**13 38 44.4**	**-2.0**
	comp=Z,1.2nm,0.8s,baz=89,slow=3.8,SNR=3.3						
NOA				LR	LR	14 02 13.0	
	comp=Z,373nm,18.3s,baz=100,slow=38						
MMB	**Musomiste**	**84.67**	**312**	*i* P	**P**	**13 20 34.3**	**-1.1**
NC204	**NORSAR Array S**	**84.75**	**333**	*e*P	**P**	**13 20 34.8**	**-0.6**
NBO02	**NORSAR Array S**	**84.81**	**333**	*e*P	**P**	**13 20 35.2**	**-0.4**
BZS	**Buzias**	**84.83**	**316**	⇓*i*P	**P**	**13 20 36.2**	**+0.2**
OUR	**Ouranopolis**	**84.88**	**311**	P	**P**	**13 20 34.8**	**-1.6**
OUR	**Ouranopolis**	**84.88**	**311**	P	**P**	**13 20 34.8**	**-1.6**
OUR	**Ouranopolis**	**84.88**	**311**	P	**P**	**13 20 34.8**	**-1.6**
NAO01	**NORSAR Array S**	**84.89**	**333**	*e*P	**P**	**13 20 35.7**	**-0.3**
SANT	**Santorini**	**84.99**	**306**	⇓*i*P	**P**	**13 20 41.1**	**+4.0**
SANT	**Santorini**	**84.99**	**306**	*e*P	**P**	**13 20 35.1**	**-2.0**
	comp=Z,167nm,1.0s						
LANS	**Liptovska Anna**	**85.00**	**320**	*e*P	**P**	**13 20 38.6**	**+1.7**
LANS				*e*		13 20 44.0	
LANS	**Liptovska Anna**	**85.00**	**320**	*e*P	**P**	**13 20 38.6**	**+1.7**
LANS				*e*		13 20 44.0	
KKB	**Krupnik**	**85.04**	**312**	*i* P	**P**	**13 20 36.2**	**-1.0**
MDVR	**Moldovita**	**85.04**	**315**	⇑*i*P	**P**	**13 20 36.9**	**-0.3**
PSZ	**Piszkesteto**	**85.16**	**319**	⇑*i*P	**P**	**13 20 37.8**	**0.0**
PSZ	**Piszkesteto**	**85.16**	**319**	*e*P	**P**	**13 20 38.0**	**+0.2**
PSZ				pmax	pmax		
	comp=Z,26nm,1.1s						
PSZ	**Piszkesteto**	**85.16**	**319**	*e*P	**P**	**13 20 38.0**	**+0.2**
	comp=Z,26nm,1.1s						
PAIG	**Paliouri**	**85.22**	**310**	P	**P**	**13 20 36.4**	**-1.7**
PAIG	**Paliouri**	**85.22**	**310**	P	**P**	**13 20 36.4**	**-1.7**
PAIG	**Paliouri**	**85.22**	**310**	P	**P**	**13 20 36.4**	**-1.7**
AOS	**Alonnisos**	**85.31**	**309**	P	**P**	**13 20 36.7**	**-1.9**
AOS	**Alonnisos**	**85.31**	**309**	P	**P**	**13 20 36.7**	**-1.9**
LAST	**Lasithi**	**85.34**	**305**	⇑*i*P	**P**	**13 20 38.0**	**-0.9**
LAST	**Lasithi**	**85.34**	**305**	P	**P**	**13 20 38.2**	**-0.7**
LAST	**Lasithi**	**85.34**	**305**	*e*P	**P**	**13 20 38.3**	**-0.7**
	comp=Z,54nm,0.9s						
RES	**Resolute Bay**	**85.36**	**9**	*e*P	**P**	**13 20 38.8**	**+0.7**
RES				pmax	pmax		
	comp=Z,34nm,0.9s						
RES	**Resolute Bay**	**85.36**	**9**	*e*P	**P**	**13 20 38.8**	**+0.7**
	comp=Z,34nm,0.9s						
BSD	**Bornholm Skovb**	**85.37**	**327**	⇑*i*P	**P**	**13 20 37.5**	**-1.0**
	comp=Z,29nm,1.2s						
BSD	**Bornholm Skovb**	**85.37**	**327**	⇑*i*P	**P**	**13 20 37.5**	**-1.0**
BSD				pmax	pmax		
	comp=Z,29nm,1.2s						
KNT	**Kendrikon**	**85.40**	**312**	P	**P**	**13 20 38.6**	**-0.4**
KNT	**Kendrikon**	**85.40**	**312**	P	**P**	**13 20 38.6**	**-0.4**
KNT	**Kendrikon**	**85.40**	**312**	P	**P**	**13 20 38.6**	**-0.4**
OKC	**Ostrava-Krasne**	**85.56**	**321**	⇑*e*P	**P**	**13 20 39.2**	**-0.4**
OKC				*e*PCP	**PcP**	**13 20 44.2**	**+1.7**
OKC	**Ostrava-Krasne**	**85.56**	**321**	*e*P	**P**	**13 20 39.2**	**-0.4**
OKC				*e*		13 20 44.2	
VAY	**Valandovo**	**85.58**	**312**	*i* P	**P**	**13 20 38.6**	**-1.3**
VYHS	**Vyhne**	**85.62**	**319**	*e*P	**P**	**13 20 40.0**	**0.0**
VYHS				pmax	pmax		
	comp=Z,32nm,1.8s						
VYHS	**Vyhne**	**85.62**	**319**	*e*P	**P**	**13 20 40.0**	**0.0**
IDI	**Anoyia**	**85.76**	**305**	⇓*i*P	**P**	**13 20 39.7**	**-1.3**
IDI	**Anoyia**	**85.76**	**305**	P	**P**	**13 20 45.6**	**+4.6**
IDI	**Anoyia**	**85.76**	**305**	*e*P	**P**	**13 20 39.0**	**-2.0**
	comp=Z,26nm,1.1s						
XOR	**Xorichti**	**85.76**	**310**	P	P	13 20 36.0	-4.9
XOR	**Xorichti**	**85.76**	**310**	P	P	13 20 36.0	-4.9
VLY	**Voula,Athens**	**85.79**	**308**	P	**P**	**13 20 38.4**	**-2.6**
VLY	**Voula,Athens**	**85.79**	**308**	P	**P**	**13 20 38.4**	**-2.6**
SIVA	**Sivas**	**85.90**	**305**	⇑*i*P	**P**	**13 20 41.4**	**-0.2**
MORC	**Moravsky Berou**	**85.94**	**321**	⇑*i*P	**P**	**13 20 41.8**	**+0.2**
MORC	**Moravsky Berou**	**85.94**	**321**	*e*P	**P**	**13 20 41.8**	**+0.2**
MORC				pmax	pmax		
	comp=Z,60nm,1.2s						
MORC	**Moravsky Berou**	**85.94**	**321**	*e*P	**P**	**13 20 41.8**	**+0.2**
	comp=Z,60nm,1.2s						
LIT	**Litokhoron**	**86.03**	**311**	P	**P**	**13 20 40.0**	**-2.2**
LIT	**Litokhoron**	**86.03**	**311**	P	**P**	**13 20 40.0**	**-2.2**
LIT	**Litokhoron**	**86.03**	**311**	P	**P**	**13 20 40.0**	**-2.2**
SKO	**Skopje**	**86.16**	**313**	*i* P	**P**	**13 20 42.5**	**-0.3**
KSP	**Ksiaz**	**86.28**	**322**	*e*P	**P**	**13 20 43.4**	**+0.2**
KSP	**Ksiaz**	**86.28**	**322**	*e*P	**P**	**13 20 43.4**	**+0.2**
KRLC	**Kraliky**	**86.29**	**321**	⇑*e*P	**P**	**13 20 43.4**	**+0.1**
KRLC	**Kraliky**	**86.29**	**321**	*e*P	**P**	**13 20 43.4**	**+0.1**
DID	**Didima**	**86.32**	**308**	P	**P**	**13 20 40.2**	**-3.5**
DID	**Didima**	**86.32**	**308**	P	**P**	**13 20 40.2**	**-3.5**
IMMV	**Iera Moni Meta**	**86.41**	**306**	P	**P**	**13 20 43.0**	**-1.1**
DIVS	**Divibare**	**86.43**	**315**	P	**P**	**13 20 42.8**	**-1.4**
DPC	**Dobruska-Polom**	**86.45**	**322**	*e*P	**P**	**13 20 44.1**	**0.0**
DPC				*ex*	x	13 20 49.9	
DPC				AMS	AMS	14 00 20.0	
	comp=Z,500nm,21.9s						
DPC	**Dobruska-Polom**	**86.45**	**322**	*e*P	**P**	**13 20 44.1**	**0.0**
DPC				*e*		13 20 49.9	
DPC				MLR	MLR		
	comp=Z,500nm,21.9s						
AGG	**Agios Georgios**	**86.50**	**310**	P	**P**	**13 20 41.8**	**-2.8**
AGG	**Agios Georgios**	**86.50**	**310**	*e*P	**P**	**13 20 42.2**	**-2.3**
AGG				pmax	pmax		
	comp=Z,49nm,1.0s						
AGG	**Agios Georgios**	**86.50**	**310**	*e*P	**P**	**13 20 42.2**	**-2.3**
	comp=Z,48nm,1.0s						
BIA	**Bitola**	**86.57**	**312**	*i* P	**P**	**13 20 43.7**	**-1.2**
UPC	**Upice**	**86.58**	**322**	⇑AMS	AMS	14 00 20.0	
	comp=Z,500nm,22.5s						
FNA	**Florina**	**86.61**	**312**	P	**P**	**13 20 43.0**	**-2.1**
FNA	**Florina**	**86.61**	**312**	P	**P**	**13 20 43.0**	**-2.1**
FNA	**Florina**	**86.61**	**312**	P	**P**	**13 20 43.0**	**-2.1**
VRAC	**Vranov**	**86.69**	**321**	⇓*i*P	**P**	**13 20 46.0**	**+0.8**
VLI	**Veliai**	**86.81**	**307**	P	**P**	**13 20 42.7**	**-3.3**
VLI	**Veliai**	**86.81**	**307**	P	**P**	**13 20 42.7**	**-3.3**

GERES LR LR 14 03 31.4
comp=Z,291nm,19.2s,baz=68,slow=38
GEA0 GERESS Array S 88.62 321 *eP* **P 13 20 53.9 -0.7**
MOA Molln 88.69 320 *i* PcP **P 13 20 54.7 -0.2**
comp=Z,23nm,1.0s,SNR=8.9
SOKA Soboth 88.70 319 *i* PcP **P 13 20 54.3 -0.7**
comp=Z,12nm,1.5s,SNR=10.0
YKW3 Yellowknife Ar 89.02 23 *eP* **P 13 20 56.6 +0.6**
comp=Z,26nm,1.1s
BOJS Bojanci 89.03 318 *i P* **P 13 20 56.2 -0.3**
YKA Yellowknife Ar 89.07 23 P **P 13 20 56.7 +0.5**
comp=Z,10.0nm,0.9s,baz=307,slow=4.5,SNR=91
YKB5 Yellowknife Ar 89.07 23 *eP* **P 13 20 56.3 0.0**
OBKA Obir 89.07 319 *i* PcP **P 13 20 56.3 -0.4**
comp=Z,9.0nm,0.8s
LJU Ljubljana 89.27 318 *eP* **P 13 20 57.2 -0.4**
SUMG Summit 89.43 354 *i P* **P 13 20 58.4 +0.1**
comp=Z,18nm,0.9s
SUMG Summit 89.43 354 *i P* **P 13 20 58.4 +0.1**
SUMG pmax pmax
comp=Z,18nm,0.9s
SUMG Summit 89.43 354 *eP* **P 13 20 58.8 +0.5**
comp=Z,20nm,1.0s
KBA Koelnbreinsper 89.58 320 *i* PcP **P 13 20 58.5 -0.8**
comp=Z,12nm,1.4s
MYKA Terra Mystica 89.59 319 *i* PcP **P 13 20 58.1 -1.0**
comp=Z,5.4nm,1.3s
ABTA Abfaltersbach 90.24 320 *eP* **P 13 21 00.6 -1.6**
comp=Z,16nm,1.3s,SNR=11
TIP Timpagrande 90.50 311 ⇑*iP* **P 13 21 03.1 -0.4**
TIP Timpagrande 90.50 311 P **P 13 21 02.5 -1.0**
TIP Timpagrande 90.50 311 *eP* **P 13 21 03.0 -0.6**
comp=Z,22nm,1.0s
WTTA Wattenberg 90.55 320 *i* PcP **P 13 21 03.0 -0.8**
comp=Z,12nm,1.0s
WATA Walderalm 90.56 320 *i* PcP **P 13 21 02.4 -1.4**
comp=Z,12nm,1.2s
MOTA Moosalm 90.84 321 *i* PcP **P 13 21 03.9 -1.2**
comp=Z,17nm,1.3s,SNR=8.7
CUC Castrocucco 90.85 312 *eP* **P 13 21 03.1 -2.0**
comp=Z,15nm,1.2s
RETA Reutte 90.98 321 *i* PcP **P 13 21 04.8 -0.8**
comp=Z,5.6nm,1.2s
FETA Feichten 91.22 320 *i* PcP **P 13 21 06.3 -0.6**
comp=Z,21nm,1.3s,SNR=9.9
CEL Celeste 91.48 311 *eP* **P 13 21 08.1 0.0**
comp=Z,69nm,1.0s
AQU L'Aquila 91.55 315 *eP* **P 13 21 08.4 +0.1**
AQU pmax pmax
comp=Z,29nm,1.1s
AQU L'Aquila 91.55 315 *eP* **P 13 21 08.4 +0.1**
comp=Z,29nm,1.1s
DAVA Damuels 91.61 321 *e*PcP **P 13 21 08.1 -0.6**
comp=Z,14nm,1.2s
FUORN Ofenpass-Fuorn 91.68 320 *eP* **P 13 21 09.3 +0.2**
comp=Z,38nm,1.3s
BFO Black Forest 92.04 322 *ceP* **P 13 21 10.6 +0.1**
BFO Black Forest 92.04 322 *eP* **P 13 21 10.5 +0.1**
comp=Z,29nm,1.7s
TUE Stuetta 92.31 320 *eP* **P 13 21 11.7 -0.3**
comp=Z,40nm,1.5s
PGC Sidney 92.50 37 *eP* **P 13 21 10.0 -2.5**
comp=Z,38nm,1.4s
B05A Bryant 93.47 37 P **P 13 21 17.9 +0.9**
baz=301
SENIN Lac Senin/Sane 93.61 321 *eP* **P 13 21 17.7 -0.3**
comp=Z,12nm,1.0s
B06A Marblemount 93.69 37 *eP* **P 13 21 19.3 +1.3**
comp=Z,21nm,1.1s
PPT Papeete 93.72 107 LR LR 13 57 05.6
comp=Z,149nm,20.7s,baz=314,slow=31
PPT2 Papeete2 93.72 107 *e*LR LR 13 51 31.0
comp=Z,512nm,26.0s
LON Longmire 94.41 38 *eP* **P 13 21 22.9 +1.4**
LON pmax pmax
comp=Z,5.0nm,1.2s
LON Longmire 94.41 38 *eP* **P 13 21 22.9 +1.4**
comp=Z,5.1nm,1.2s
MAW Mawson 94.81 199 LR LR 14 00 20.0
comp=Z,81nm,21.3s,baz=62,slow=33
B08A Colville Reser 94.99 36 *eP* **P 13 21 25.7 +1.6**
comp=Z,12nm,1.1s
TBI Tubuai 95.46 113 *e*LR LR 13 52 19.0
comp=Z,386nm,34.5s
I04A Tendick Farm, 95.55 41 P **P 13 21 27.2 +0.5**
baz=300
J05D Fort Rock, OR 96.54 41 P **P 13 21 32.6 +1.2**
baz=301
M04C Macdoel 96.92 43 P **P 13 21 33.9 +0.8**
baz=300
K05A Summer Lake 97.04 41 *eP* Pdif 13 21 35.0 +1.1
comp=Z,13nm,1.1s
BSMT Bassoo Peak 97.79 35 *eP* Pdif 13 21 38.4 +1.3
TAOE Nuku Hiva Isla 100.11 96 *e*LR LR 13 54 26.8
comp=Z,477nm,30.1s
NVAR Mina Array Bea 100.98 44 P **Pdif 13 21 52.0 +0.6**
comp=Z,1.6nm,1.0s,baz=278,slow=4.7,SNR=9.3
NVAR PKiKP **PKiKP 13 26 18.9 +2.2**
comp=Z,0.6nm,0.8s,baz=276,slow=2.8,SNR=3.7
MPMC Manual Prospec 102.80 46 P **Pdif 13 22 00.5 +1.0**
baz=303
TPNV Topopah Spring 103.15 44 P **Pdif 13 22 01.9 +0.8**
baz=304
RKT Rikitea 108.35 109 *e*LR LR 13 58 17.1
comp=Z,218nm,28.2s
TORD Torodi Ar. Bea 113.69 293 PKiKP **PKiKP 13 26 39.0 -1.7**
comp=Z,1.1nm,1.0s,baz=48,slow=2.1,SNR=3.1
TORD PKKPbc **PKKPbc 13 37 24.2 +0.9**
comp=Z,0.8nm,1.0s,baz=259,slow=2.1,SNR=3.8
TORD PKKPab **PKKPab 13 37 29.4 -2.1**
comp=Z,0.5nm,0.7s,baz=257,slow=4.0,SNR=3.9
S39A Bolivar 116.09 31 P **PKPdf 13 26 44.4 -0.3**
baz=322
TXAR Lajitas Array 116.13 44 PKP **PKPdf 13 26 44.8 -0.4**
comp=Z,1.5nm,0.8s,baz=207,slow=1.1,SNR=6.7
T41A Mountain View 117.36 30 P **PKPdf 13 26 46.4 -0.8**
baz=324
U40A Yellville 117.37 31 P **PKPdf 13 26 46.5 -0.8**
baz=322
X38A Whitesboro 117.67 34 P **PKPdf 13 26 48.5 +0.6**
baz=320
V40A Witts Springs 117.82 32 P **PKPdf 13 26 47.9 -0.3**
baz=322
X39A Fountain Ranch 118.17 33 P **PKPdf 13 26 48.7 -0.1**
baz=321
S45A Carrier Mills 118.29 27 P **PKPdf 13 26 46.6 -2.4**
baz=327
VNA2 Neumayer--Watz 118.51 197 P **PKPdf 13 26 51.7 +3.4**
baz=51,slow=0.9
VNA3 Neumayer Olymp 118.95 196 P **PKPdf 13 26 51.9 +2.8**
BCIP Isla Barro Col 146.07 41 *eP* **PKPdf 13 27 36.9 -4.5**
CAPC Capurgana 148.00 38 *eP* **PKPdf 13 27 45.4 +0.8**
URIC Uribia, Colomb 148.12 26 *eP* **PKPbc 13 27 48.2 +0.2**
SJCC San Jacinto, C 148.18 33 *eP* **PKPbc 13 27 47.6 -0.6**
MOTC Monteria, Cord 148.84 35 *eP* **PKPdf 13 27 44.8 -1.2**
SOLC Bahia Solano 149.86 41 *eP* **PKPbc 13 27 51.6 -0.8**
DBBC Dabeiba 149.97 38 *eP* **PKPdf 13 27 49.3 +1.4**
OCAC Ocana 150.54 32 *eP* **PKPbc 13 27 56.7 +2.4**
SDV Santo Domingo 151.22 26 *e*PKPbc **PKPbc 13 27 57.2 +1.3**
SDV Santo Domingo 151.22 26 *eP* **PKPbc 13 27 55.0 -0.9**
GRMC Gramalote, San 151.24 32 *eP* **PKPbc 13 27 56.7 +0.8**
CBRI Barrientos, No 151.25 32 *eP* **PKPbc 13 27 57.8 +1.9**
BRRC Barranca, Sant 151.29 34 *eP* **PKPbc 13 27 58.9 +3.1**
PAMC Pamplona, Colo 151.62 32 *eP* **PKPbc 13 27 55.0 -2.2**
GRGC Isla de Gorgon 151.76 46 *eP* **PKPbc 13 27 55.0 -1.9**
GUYC Guyana, Colomb 151.88 39 *eP* PKPpre 13 27 42.0
NORC Norcasia 151.92 38 *eP* **PKPbc 13 27 55.5 -1.8**
BARC Barichara 152.01 33 *eP* **PKPbc 13 27 57.8 0.0**
TOLC Tolima 152.43 40 *eP* **PKPbc 13 28 01.8 +2.9**
RUSC La Rusia 152.65 34 *eP* **PKPbc 13 27 58.9 -0.6**
ROSC El Rosal 152.82 38 PKPbc **PKPbc 13 28 01.1 +1.3**
comp=Z,7.2nm,0.5s,baz=101,slow=4.3,SNR=8.9
POPC Popayan, Colom 153.11 45 *eP* **PKPdf 13 27 55.0 +2.1**
OTAV Otavalo 153.47 51 *eP* **PKPdf 13 27 52.7 -0.9**
CRUC La Cruz 153.63 47 *eP* **PKPdf 13 27 52.7 -1.1**
VILC Villavicencio, 153.77 37 *eP* **PKPbc 13 28 01.8 +0.2**
PLCA Paso Flores 154.24 158 PKPbc **PKPbc 13 28 01.9 +0.3**
comp=Z,10nm,1.1s,baz=350,slow=9.9,SNR=2.5
PLCA Paso Flores 154.24 158 PKIKP **PKPbc 13 28 02.0 +0.3**
SJAC San Juan de Ar 154.29 39 *eP* **PKPbc 13 28 00.1 -2.6**
PTGA Pitinga 163.48 7 *e*PKPab **PKPab 13 28 56.0 0.0**
LPAZ La Paz 170.34 86 PKP **PKPdf 13 28 10.8 0.0**
comp=Z,8.7nm,1.0s,baz=271,slow=1.3,SNR=7.9
LPAZ La Paz 170.34 86 *e*PKIKP **PKPdf 13 28 11.1 +0.3**
LPAZ La Paz 170.34 86 *e*PKPdf **PKPdf 13 28 11.1 +0.3**

*CSEM **21** 13:08:31.7±0.1, 44°.64N×22°.29E, h2km, ML2.2, Error ellipse: s-maj=3.2km s-min=2.1km az=131.0*
*BEO **21** 13:08:31.8±0.4, 44°.64N×22°.35E, h4km±4km, M2.2/1*
*BUC **21** 13:08:32.7±0.8, 44°.75N×22°.35E, h4km±6km, MD2.7/2, Error ellipse: s-maj=8.1km s-min=4.4km az=6.0*
ISC 21 13:08:31.1±1.1, 44°.62N±0°.02×22°.34E±0°.02, h1km±10km, n65, σ0°.50/106, 15C-21D, Romania

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RMGR	**Halanga-Turnu**	**0.25**	**81**	⇓*iP*	**Pb**	**13 08 37.8**	**-0.6**
RMGR	**Halanga-Turnu**	**0.25**	**81**	⇓*iP*	**Pb**	**13 08 37.8**	**-0.6**
RMGR				*i* S	**Sb**	**13 08 42.2**	**-1.1**
RMGR	**Halanga-Turnu**	**0.25**	**81**	⇓*iP*	**Pb**	**13 08 37.8**	**-0.6**
RMGR				S	**Sb**	**13 08 42.2**	**-1.1**
MDVR	**Moldovita**	**0.48**	**290**	⇓*iP*	**Pb**	**13 08 42.1**	**-0.2**
MDVR	**Moldovita**	**0.48**	**290**	⇓*iP*	**Pb**	**13 08 42.1**	**-0.2**
MDVR				*i* S	**Sb**	**13 08 49.1**	**-0.7**
MDVR	**Moldovita**	**0.48**	**290**	⇓*iP*	**Pb**	**13 08 42.1**	**-0.2**
MDVR				S	**Sb**	**13 08 49.1**	**-0.7**
KUBS	**Kucevo**	**0.52**	**247**	*eP*g	**Pg**	**13 08 41.8**	**+0.8**
KUBS	**Kucevo**	**0.52**	**247**	*eP*g	**Pg**	**13 08 41.8**	**+0.8**
SRE	**Strehaia**	**0.62**	**86**	⇓*iP*	**Pb**	**13 08 44.6**	**0.0**
SRE	**Strehaia**	**0.62**	**86**	⇓*iP*	**Pb**	**13 08 44.6**	**0.0**
SRE				*i* S	**Sb**	**13 08 53.9**	**+0.1**
SRE	**Strehaia**	**0.62**	**86**	⇓*iP*	**Pb**	**13 08 44.6**	**0.0**
SRE				S	**Sb**	**13 08 53.9**	**+0.1**
GZR	**Gura Zlata**	**0.83**	**22**	⇑*iP*	**Pg**	**13 08 47.0**	**0.0**
GZR	**Gura Zlata**	**0.83**	**22**	⇑*iP*	**Pg**	**13 08 47.0**	**0.0**
GZR				*i* S	**Sg**	**13 08 57.8**	**0.0**
GZR	**Gura Zlata**	**0.83**	**22**	⇑*iP*	**Pg**	**13 08 47.0**	**0.0**
GZR				S	**Sg**	**13 08 57.8**	**0.0**
BOLS	**Boljevac**	**0.84**	**200**	*eP*g	**Sg**	**13 08 46.2**	**-1.0**
BOLS				*eS*g	**Sg**	**13 08 57.9**	**-0.1**
BOLS	**Boljevac**	**0.84**	**200**	*eP*g	**Pg**	**13 08 46.2**	**-1.0**
BOLS				*eS*g	**Sg**	**13 08 57.9**	**-0.1**
SVIS	**Svilajnac**	**0.88**	**247**	*eP*g	**Pg**	**13 08 47.8**	**-0.2**
SVIS				*eS*g	**Sg**	**13 08 59.8**	**+0.4**
BOVS	**Bovan**	**1.09**	**205**	*eP*g	**Pb**	**13 08 52.3**	**-0.3**
BOVS				*eS*g	**Sb**	**13 09 06.7**	**-0.6**
BOVS	**Bovan**	**1.09**	**205**	*eP*g	**Pb**	**13 08 52.3**	**-0.3**
BOVS				*eS*g	**Sb**	**13 09 06.7**	**-0.6**
BZS	**Buzias**	**1.12**	**333**	⇑*iP*	**Pg**	**13 08 52.7**	**+0.2**
BZS	**Buzias**	**1.12**	**333**	⇑*iP*	**Pg**	**13 08 52.7**	**+0.2**
BZS				*i* S	**Sg**	**13 09 07.3**	**+0.2**
BZS	**Buzias**	**1.12**	**333**	*eP*g	**Pg**	**13 08 52.7**	**+0.2**
BZS				*eS*g	**Sg**	**13 09 06.9**	**-0.1**
BZS	**Buzias**	**1.12**	**333**	⇑*iP*	**Pg**	**13 08 52.7**	**+0.2**
BZS				*eS*g	**Sg**	**13 09 06.9**	**-0.1**
BZS				S	**Sg**	**13 09 07.3**	**+0.2**
LOT	**Lotru**	**1.31**	**50**	⇓*iP*	**Pb**	**13 08 56.4**	**-0.1**
LOT	**Lotru**	**1.31**	**50**	⇓*iP*	**Pb**	**13 08 56.4**	**-0.1**
LOT				*i* S	**Sb**	**13 09 14.3**	**+0.5**
LOT	**Lotru**	**1.31**	**50**	⇓*iP*	**Pb**	**13 08 56.4**	**-0.1**
LOT				S	**Sb**	**13 09 14.3**	**+0.5**
DEV	**Deva**	**1.32**	**17**	⇑*iP*	**Pb**	**13 08 56.6**	**-0.1**
DEV	**Deva**	**1.32**	**17**	⇑*iP*	**Pb**	**13 08 56.6**	**-0.1**
DEV				*i* S	**Sg**	**13 09 13.0**	**-0.6**
DEV	**Deva**	**1.32**	**17**	⇑*iP*	**Pb**	**13 08 56.6**	**-0.1**
DEV				S	**Sg**	**13 09 13.0**	**-0.6**
ZAPS	**Zavoj**	**1.36**	**171**	*eP*g	**Pb**	**13 08 57.9**	**+0.5**
ZAPS				*eS*g	**Sn**	**13 09 15.8**	**-0.1**
GRUS	**Gruza**	**1.38**	**238**	*eP*g	**Pb**	**13 08 57.6**	**0.0**
GRUS				*eS*g	**Sn**	**13 09 16.9**	**+0.6**
GRUS	**Gruza**	**1.38**	**238**	*eP*g	**Pb**	**13 08 57.6**	**0.0**
GRUS				*eS*g	**Sn**	**13 09 16.9**	**+0.6**
TRUS	**Trudelj**	**1.44**	**255**	*eP*g	**Pn**	**13 08 58.3**	**0.0**
TRUS				*eS*g	**Sg**	**13 09 17.1**	**-0.3**
TRUS	**Trudelj**	**1.44**	**255**	*eP*g	**Pn**	**13 08 58.3**	**0.0**
TRUS				*eS*g	**Sg**	**13 09 17.1**	**-0.3**
SELS	**Selova**	**1.66**	**213**	*eP*g	**Pg**	**13 09 02.8**	**0.0**
SELS				*eS*g	**Sg**	**13 09 24.8**	**+0.5**
SIRR	**Siria**	**1.71**	**344**	⇓*iP*	**Pb**	**13 09 02.9**	**-0.5**
SIRR	**Siria**	**1.71**	**344**	⇓*iP*	**Pb**	**13 09 02.9**	**-0.5**
SIRR				*i* S	**Sn**	**13 09 25.3**	**+0.7**
SIRR	**Siria**	**1.71**	**344**	⇓*iP*	**Pb**	**13 09 02.9**	**-0.5**
SIRR				S	**Sn**	**13 09 25.3**	**+0.7**
DIVS	**Divibare**	**1.77**	**254**	*eP*g	**Pg**	**13 09 05.1**	**+0.2**
DIVS	**Divibare**	**1.77**	**254**	*eP*g	**Pg**	**13 09 05.1**	**+0.2**
ARR	**Arges**	**1.79**	**65**	⇓*iP*	**Pb**	**13 09 04.7**	**0.0**
ARR	**Arges**	**1.79**	**65**	⇓*iP*	**Pb**	**13 09 04.7**	**0.0**
ARR				*i* S	**Sb**	**13 09 28.0**	**+0.4**
ARR	**Arges**	**1.79**	**65**	⇓*iP*	**Pb**	**13 09 04.7**	**0.0**
ARR				S	**Sb**	**13 09 28.0**	**+0.4**
BARS	**Barje**	**1.84**	**192**	*eP*n	**Pb**	**13 09 05.4**	**-0.2**
BARS				*eS*g	**Sg**	**13 09 29.9**	**-0.4**
BARS	**Barje**	**1.84**	**192**	*eP*n	**Pb**	**13 09 05.4**	**-0.2**
BARS				*eS*g	**Sg**	**13 09 29.9**	**-0.4**
HUMR	**Humele**	**1.89**	**92**	S	**Sg**	**13 09 32.3**	**+0.6**
HUMR	**Humele**	**1.89**	**92**	*i* S	**Sg**	**13 09 32.3**	**+0.6**
HUMR	**Humele**	**1.89**	**92**	S	**Sg**	**13 09 32.3**	**+0.6**
IVAS	**Ivanjica**	**1.89**	**237**	*eP*n	**Pn**	**13 09 04.7**	**+0.2**
IVAS				*eS*g	**Sg**	**13 09 32.0**	**+0.2**
IVAS	**Ivanjica**	**1.89**	**237**	*eP*n	**Pn**	**13 09 04.7**	**+0.2**
IVAS				*eS*g	**Sg**	**13 09 32.0**	**+0.2**
TEKS	**Tekeris**	**2.01**	**269**	*eP*n	**Pn**	**13 09 06.2**	**+0.1**
TEKS	**Tekeris**	**2.01**	**269**	*eP*n	**Pn**	**13 09 06.2**	**+0.1**
VOIR		**2.09**	**66**	⇓*iP*	**Pb**	**13 09 09.0**	**-0.7**
VOIR		**2.09**	**66**	⇓*iP*	**Pb**	**13 09 09.0**	**-0.7**
VOIR				*i* S	**Sb**	**13 09 36.2**	**0.0**
VOIR		**2.09**	**66**	⇓*iP*	**Pb**	**13 09 09.0**	**-0.7**
VOIR				S	**Sb**	**13 09 36.2**	**0.0**
DRGR		**2.19**	**7**	⇑*iP*	**Pn**	**13 09 08.1**	**-0.5**
DRGR		**2.19**	**7**	⇑*iP*	**Pn**	**13 09 08.1**	**-0.5**
DRGR				*i* S	**Sn**	**13 09 35.3**	**-1.0**
DRGR		**2.19**	**7**	*eP*n	**Pn**	**13 09 07.8**	**-0.8**
DRGR				*eS*g	**Sb**	**13 09 39.4**	**+0.4**
DRGR		**2.19**	**7**	*eP*n	**Pn**	**13 09 07.8**	**-0.8**
DRGR		**2.19**	**7**	⇑*iP*	**Pn**	**13 09 08.1**	**-0.5**
DRGR				S	**Sn**	**13 09 35.3**	**-1.0**
DRGR				*eS*g	**Sb**	**13 09 39.4**	**+0.4**
BBLS	**Lazići**	**2.24**	**251**	*eP*n	**Pn**	**13 09 09.9**	**+0.6**
BBLS	**Lazići**	**2.24**	**251**	*eP*n	**Pn**	**13 09 09.9**	**+0.6**
DOPR	**Dopca**	**2.54**	**57**	⇑*iP*	**Pn**	**13 09 14.5**	**+1.1**
DOPR	**Dopca**	**2.54**	**57**	⇑*iP*	**Pn**	**13 09 14.5**	**+1.1**
DOPR	**Dopca**	**2.54**	**57**	⇑*iP*	**Pn**	**13 09 14.5**	**+1.1**

IDC 21 13:13:53.1±4.4, 12°.41N×145°.35E, h0km, mb3.8/5, mb1 3.9/5, mb1mx3.6/45, mbtmp3.8/5, Error ellipse: s-maj=180.4km s-min=29.9km az=85.0, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**33.92**	**199**	P	P	13 20 38.1	-0.1
	0.8nm,0.9s,baz=32,slow=8.9,SNR=2.5						
MKAR	**Makanchi Array**	**62.66**	**316**	P	P	13 24 20.5	+0.8
	0.2nm,0.2s,baz=92,slow=8.9,SNR=2.9						
KURBB	**Kurchatov Arra**	**65.82**	**320**	P	P	13 24 39.2	-1.0
	0.4nm,0.7s,baz=99,slow=6.8,SNR=6.3						
BVAR	**Borovoye Array**	**71.14**	**322**	P	P	13 25 13.2	-0.3
	0.8nm,0.5s,baz=90,slow=6.8,SNR=4.5						
FINES	**FINESS Array B**	**92.42**	**335**	P	P	13 27 06.3	+0.7
	0.6nm,0.7s,baz=62,slow=4.5,SNR=4.3						

IDC 21 13:23:14.1±4.4, 18°.64N×146°.32E, h90km±40km, mb3.5/10, mb1 3.6/11, mb1mx3.4/58, mbtmp3.8/11, MS3.7/2, Ms1 3.7/2, ms1mx3.2/30, Error ellipse: s-maj=44.2km s-min=18.7km az=79.0, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**5.21**	**196**	P	Pn	13 24 29.3	-0.3
	14nm,0.3s,baz=145,slow=7.2,SNR=17						
GUMO				S	Sn	13 25 34.8	+6.4
	3.4nm,0.3s,baz=146,slow=23,SNR=1.9						
JCJ	**Chichijima**	**9.24**	**336**	P	Pn	13 25 20.3	-4.2
	1.2nm,0.3s,baz=266,slow=16,SNR=2.7						
H11S3	**WAKE ISLAND Hy**	**19.31**	**87**	T	T	13 46 12.9	
	baz=274,slow=74,SNR=16						
H11S1	**WAKE ISLAND Hy**	**19.32**	**87**	T	T	13 46 12.3	
	baz=274,slow=74,SNR=12						
H11S2	**WAKE ISLAND Hy**	**19.33**	**87**	T	T	13 46 14.0	
	baz=274,slow=74,SNR=8.3						
KSRS	**Korea Array**	**24.72**	**323**	P	P	13 28 27.1	+0.2
	1.4nm,0.7s,baz=144,slow=9.1,SNR=8.2						
KSRS				LR	LR	13 36 28.6	
	comp=Z,108nm,19.8s,baz=195,slow=32						
WRA	**Warramunga Arr**	**40.10**	**198**	P	P	13 30 41.0	-0.1
	0.2nm,0.4s,baz=31,slow=8.9,SNR=5.4						
SONM	**Songino Array**	**43.56**	**321**	P	P	13 31 09.3	+0.2
	0.9nm,0.6s,baz=134,slow=11,SNR=3.7						
ASAR	**Alice Springs**	**43.76**	**197**	P	P	13 31 10.9	0.0
	0.3nm,0.6s,baz=14,slow=6.1,SNR=4.6						
ZALV	**Zalesovo Beam**	**58.42**	**322**	P	P	13 32 59.8	-0.4
	0.9nm,0.5s,baz=121,slow=7.4,SNR=4.0						
MKAR	**Makanchi Array**	**58.93**	**314**	P	P	13 33 04.5	+0.5
	0.4nm,0.5s,baz=96,slow=8.7,SNR=6.2						
KURBB	**Kurchatov Arra**	**61.76**	**318**	P	P	13 33 23.1	0.0
	1.5nm,0.6s,baz=97,slow=6.6,SNR=16						
BVAR	**Borovoye Array**	**66.90**	**320**	P	P	13 33 56.7	+0.1
	1.0nm,0.5s,baz=87,slow=7.7,SNR=6.7						
BBB	**Bella Bella**	**72.82**	**40**	LR	LR	13 58 26.7	
	comp=Z,83nm,21.6s,baz=277,slow=29						
YKA	**Yellowknife Ar**	**77.77**	**28**	P	P	13 35 01.6	+0.5
	0.4nm,0.7s,baz=284,slow=5.6,SNR=5.7						
FINES	**FINESS Array B**	**87.19**	**335**	P	P	13 35 48.8	-1.2
	0.8nm,0.5s,baz=46,slow=8.2,SNR=12						

IDC 21 13:35:10.7±2.0, 20°.20S×177°.93W, h497km±26km, mb3.0/4, mb1 3.3/6, mb1mx3.0/23, mbtmp3.9/6, Error ellipse: s-maj=36.1km s-min=15.3km az=146.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**8.58**	**44**	P	P	13 37 14.7	+1.5
	1.1nm,0.3s,baz=216,slow=6.9,SNR=2.9						
AFI				S	S	13 38 51.7	-2.1
	2.1nm,0.3s,baz=28,slow=21,SNR=3.2						
URZ	**Urewera**	**18.51**	**192**	P	P	13 38 55.0	-0.7
	0.6nm,0.3s,baz=11,slow=16,SNR=5.7						
ASAR	**Alice Springs**	**44.65**	**256**	P	P	13 42 38.8	+0.1
	1.5nm,0.5s,baz=98,slow=7.6,SNR=17						
WRA	**Warramunga Arr**	**44.71**	**262**	P	P	13 42 39.1	-0.1
	1.1nm,0.4s,baz=96,slow=7.6,SNR=44						
TXAR	**Lajitas Array**	**86.84**	**57**	P	P	13 47 03.4	+1.0
	0.3nm,0.8s,baz=224,slow=3.8,SNR=3.1						
PDAR	**Pinedale Array**	**88.70**	**43**	P	P	13 47 10.5	-0.5
	0.2nm,0.5s,baz=232,slow=4.4,SNR=2.4						
BRTR	**Keskin Array B**	**146.68**	**313**	PKPbc	PKPdf	13 53 55.4	+1.3
	0.3nm,0.5s,baz=34,slow=3.8,SNR=2.1						

MAN 21 13:39:42, 17°.19N×122°.02E, h31km, mb4.0, ML2.7, MS2.4, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CAUP	**Cauayan**	**0.31**	**217**	*eP*	Pn	13 39 51.7	+1.3
CAUP				*eS*	Sn	13 39 59.3	+3.4
CVP	**Callao Caves**	**0.54**	**340**	*eP*	Pn	13 39 53.9	+0.3
APYP	**Conner**	**0.99**	**312**	*eP*	Pb	13 40 01.2	+0.6
APYP				*eS*	Sb	13 40 13.2	-0.3

MEX 21 13:43:32.1±0.7, 15°.40N×94°.56W, h16km±8km, MD3.9, Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		**1.33**	**77**	*eP*	Pn	13 43 52.6	-3.4
PCIG				*eS*	Sn	13 44 08.3	-5.0
HUIG	**Huatulco**	**1.54**	**284**	*eP*	Pn	13 43 55.8	-3.1
HUIG				*eS*	Sn	13 44 13.1	-5.5
CCIG	**Comitan**	**2.49**	**69**	*eP*	Pn	13 44 09.4	-2.7
CCIG				*eS*	Sn	13 44 38.0	-4.3

MAN 21 13:46:13, 17°.17N×121°.79E, h28km, mb3.9, ML2.7, MS2.3, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CAUP	**Cauayan**	**0.23**	**173**	*eP*	Pn	13 46 21.6	+1.1
CAUP				*eS*	Sb	13 46 30.0	+6.5
CVP	**Callao Caves**	**0.53**	**3**	*eP*	Pn	13 46 24.8	0.0
CVP				*eS*	Sb	13 46 31.3	0.0
APYP	**Conner**	**0.87**	**323**	*eP*	Pb	13 46 30.9	+1.4
APYP				*eS*	Sn	13 46 42.2	+1.1
BALP	**Baler**	**1.44**	**188**	*eP*	Pb	13 46 38.6	-0.5
BALP				*eS*	Sb	13 46 56.1	-0.9

*CSEM **21** 13:48:45.8±0.1, 33°.75N×35°.79E, h10km, ML2.8, Error ellipse: s-maj=4.3km s-min=2.8km az=98.0*
*ISCJB **21** 13:48:46.1±0.5, 33°.75N±0°.02×35°.83E±0°.05, h10km±6km, Error ellipse: s-maj=6.7km s-min=4.0km az=168.2*
*GRAL **21** 13:48:46.5±0.3, 33°.75N×35°.84E, h9km±5km, MD2.8*
*NSSC **21** 13:48:46.5±1.2, 33°.74N×35°.85E, h15km±5km, ML1.9*
ISC 21 13:48:45.9±0.9, 33°.76N±0°.02×35°.85E±0°.05, h13km±9km, n24, σ0°.37/46, Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BHL	**Bhannes**	**0.22**	**313**	*eP*	**Pg**	**13 48 50.6**	**0.0**
BHL				*eS*	**Sg**	**13 48 53.7**	**-0.2**
BHL	**Bhannes**	**0.22**	**313**	*eP*	**Pg**	**13 48 50.6**	**0.0**
BHL				*eS*	**Sg**	**13 48 53.7**	**-0.2**
DQRL	**Deir Qamar**	**0.23**	**257**	*eP*	**Pg**	**13 48 50.9**	**0.0**
DQRL				*eS*	**Sg**	**13 48 54.1**	**-0.3**
DQRL	**Deir Qamar**	**0.23**	**257**	*eP*	**Pg**	**13 48 50.9**	**0.0**
DQRL				*eS*	**Sg**	**13 48 54.1**	**-0.3**
RCY	**Rachaya**	**0.26**	**182**	*eP*	**Pg**	**13 48 51.3**	**-0.1**
RCY				*eS*	**Sg**	**13 48 55.0**	**-0.1**
RCY	**Rachaya**	**0.26**	**182**	*eP*	**Pg**	**13 48 51.3**	**-0.1**
RCY				*eS*	**Sg**	**13 48 55.0**	**-0.1**
BRBR	**Barbar**	**0.36**	**166**	*eP*	**Pg**	**13

BIDA				AML	AML	13 49 31.9	
	comp=E,160nm,0.4s						
BIDA				AML	AML	13 49 32.6	
	comp=N,95nm,0.4s						
BIDA	**Albida**	**1.31**	**17**	*e*P	**Pg**	**13 49 11.1**	**-0.1**
BIDA				*e*S	**Sn**	**13 49 27.3**	**-0.2**
BIDA				AML	AML	13 49 31.9	
	comp=E,160nm,0.4s						
BIDA				AML	AML	13 49 32.6	
	comp=N,95nm,0.4s						
BIDA	**Albida**	**1.31**	**17**	*e*P	**Pg**	**13 49 11.1**	**-0.1**
BIDA				*e*S	**Sn**	**13 49 27.3**	**-0.2**
	comp=N,95nm,0.4s						
ZALF	**Zalf**	**1.50**	**123**	*e*P	**Pb**	**13 49 13.5**	**-0.1**
ZALF				*e*S	**Sb**	**13 49 32.9**	**+0.3**
ZALF				AML	AML	13 49 35.7	
	comp=E,22nm,0.4s						
ZALF				AML	AML	13 49 39.6	
	comp=N,11nm,0.7s						
ZALF	**Zalf**	**1.50**	**123**	*e*P	**Pb**	**13 49 14.1**	**+0.5**
ZALF				*e*S	**Sn**	**13 49 31.4**	**-0.6**
ZALF				AML	AML	13 49 35.7	
	comp=E,22nm,0.4s						
ZALF				AML	AML	13 49 39.7	
	comp=N,11nm,0.7s						
ZALF	**Zalf**	**1.50**	**123**	*e*P	**Pb**	**13 49 14.1**	**+0.5**
ZALF				*e*S	**Sn**	**13 49 31.4**	**-0.6**
	comp=N,11nm,0.7s						

MAN 21 13:53:08.17⁗17N×121°90E, h24km, mb4.8, ML3.7, MS3.7, 1C, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CAUP	**Cauayan**	**0.24**	**199**	*e*P	Pn	13 53 16.6	+0.5
CAUP				*e*S	Sb	13 53 22.1	+3.9
CVP	**Callao Caves**	**0.54**	**352**	*e*P	Pn	13 53 27.0	+6.9
APYP	**Conner**	**0.93**	**318**	*e*P	Pn	13 53 25.8	+0.2
APYP				*e*S	Sn	13 53 39.4	+1.1
SGCP	**Mt. Cagua**	**1.07**	**7**	*e*P	Pn	13 53 27.7	+0.1
ABRA	**Dolores**	**1.23**	**293**	*e*P	Pn	13 53 29.7	-0.1
ABRA				*e*S	Sb	13 53 47.3	+1.2
BALP	**Baler**	**1.46**	**192**	*e*P	Pb	13 53 34.0	-0.5
BALP				*e*S	Sb	13 53 52.2	-0.4
BCPH	**Baguio City Da**	**1.49**	**238**	⇑*i*P	Pb	13 53 38.3	+3.2
BCPH				*i* S	Sb	13 53 57.0	+3.3

NIED ***21*** *13:56:00, 34°80N×142°80E, h8km, Mw3.9 Best double couple: M₀6.97000×10¹⁴ NP1:φs355.00000°, δ27.00000°, λ-125.00000°. NP2:φs213.00000°, δ68.00000°, λ-74.00000°.*
IDC ***21*** *13:56:14.2±0.6, 34°69N×142°83E, h0km, mb3.9/14, mb1 4.1/19, mb1mx3.9/47, mbtmp3.9/19, ML3.3/4, MS3.0/4, Ms1 3.0/4, ms1mx2.6/56, Error ellipse: s-maj=17.4km s-min=15.0km az=126.0*
ISCJB ***21*** *13:56:15.2±1.5, 34°88N±0°04×142°75E±0°04, h17km±11km, mb3.9/17, MS3.4/1, Error ellipse: s-maj=7.3km s-min=5.8km az=6.5*
JMA ***21*** *13:56:16.0±0.4, 34°82N×142°80E, h37km, M3.9*
NEIC ***21*** *13:56:19.0±0.5, 34°61N×142°67E, h35km, mb4.3/3, Error ellipse: s-maj=11.4km s-min=10.4km az=225.0*

ISC 21 13:56:14.4±4.5, 34°84N±0°05×142°80E±0°06, h3km±28km, n53, σ2⁹11/61, mb3.9/17, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**1.51**	**264**	P	**Pn**	**13 56 41.3**	**-0.5**
BSO1				*e*S	**Sn**	**13 56 59.2**	**-2.5**
CHOJ	**Chosi**	**1.81**	**299**	P	**Pn**	**13 56 46.3**	**-0.1**
CHOJ				*e*S	**Sn**	**13 57 08.4**	**-1.4**
BSO3	**Boso 3**	**1.88**	**270**	P	**Pn**	**13 56 47.4**	**+0.2**
BSO3				S	**Sn**	**13 57 10.8**	**-0.5**
BSO4	**Boso 4**	**2.03**	**275**	P	**Pn**	**13 56 50.1**	**+0.8**
BSO4				*e*S	**Sn**	**13 57 14.4**	**-0.7**
JCN	**Nagara**	**2.21**	**286**	P	**Pn**	**13 56 52.6**	**+0.7**
JCN				*e*S	**Sn**	**13 57 17.3**	**-2.3**
JHJ2	**Mitsune**	**3.02**	**236**	P	**Pn**	**13 57 02.1**	**-0.9**
JHJ	**Hachijo jima 2**	**3.04**	**236**	Pn	**Pn**	**13 57 02.2**	**-1.0**
	47nm,0.3s,baz=68,slow=19,SNR=38						
JHJ				Sn	**Sn**	**13 57 34.6**	**-5.5**
	50nm,0.3s,baz=240,slow=23,SNR=14						
JOD2	**Odawara 2**	**3.07**	**279**	P	**Pn**	**13 57 02.9**	**-0.9**
JOD2				S	**Sn**	**13 57 38.1**	**-3.0**
JAG	**Ashikaga**	**3.15**	**301**	P	**Pn**	**13 57 04.6**	**-0.3**
JAG				S	**Sn**	**13 57 40.9**	**-2.1**
JFT	**Otama**	**3.34**	**324**	P	**Pn**	**13 57 07.0**	**-0.4**
JFT				S	**Sn**	**13 57 44.4**	**-3.2**
JRY	**Ryogami san**	**3.39**	**291**	P	**Pn**	**13 57 08.8**	**+0.6**
JYN	**Shimob**	**3.55**	**282**	P	**Pn**	**13 57 09.9**	**-0.5**
JNS	**Sasagawa**	**4.09**	**318**	P	**Pn**	**13 57 17.8**	**0.0**
MJAR	**Matsushiro Arr**	**4.11**	**296**	Pn	**Pn**	**13 57 17.5**	**-0.5**
	7.1nm,0.3s,baz=298,slow=27,SNR=67						
MJAR				Sn	**Sn**	**13 58 04.9**	**-1.7**
	2.9nm,0.3s,baz=117,slow=10,SNR=4.4						
MJAR				LR	LR	13 59 34.9	
	comp=Z,115nm,19.0s,baz=105,slow=48						
MAJO	**Matsushiro**	**4.11**	**296**	*e*Pn	**Pn**	**13 57 18.3**	**+0.3**
MAT	**Matsushiro**	**4.11**	**296**	P	**Pn**	**13 57 18.1**	**+0.1**
MAT				S	**Sn**	**13 58 03.1**	**-3.5**
MAT	**Matsushiro**	**4.11**	**296**	P	**Pn**	**13 57 18.6**	**+0.6**
JMK	**Ichinoseki**	**4.30**	**343**	P	**Pn**	**13 57 19.1**	**-1.5**
JMK				S	**Sn**	**13 58 06.6**	**-4.6**
JYK	**Kaneyama**	**4.52**	**335**	P	**Pn**	**13 57 22.6**	**-1.1**
JYK				S	**Sn**	**13 58 14.0**	**-2.7**
JOM	**Ohasama**	**4.78**	**346**	P	**Pn**	**13 57 25.7**	**-1.6**
JOM				S	**Sn**	**13 58 18.5**	**-4.7**
JSD	**Sado**	**4.86**	**312**	P	**Pn**	**13 57 28.0**	**-0.3**
CBIJ	**Chichi jima**	**7.74**	**184**	Pn	**Pn**	**13 58 04.2**	**-3.7**
CBIJ				Sn	Sn	13 59 27.6	-8.4
JCJ	**Chichijima**	**7.74**	**184**	Pn	**Pn**	**13 58 04.2**	**-3.7**
	10nm,0.3s,baz=290,slow=23,SNR=31						
JCJ				Sn	Sn	13 59 27.6	-8.4
	7.1nm,0.3s,baz=280,slow=23,SNR=4.6						
ASAJ	**Asahikawa**	**9.27**	**359**	Pn	**Pn**	**13 58 27.0**	**-1.9**
	4.2nm,0.3s,baz=220,slow=7.0,SNR=47						
ASAJ				Sn	**Sn**	**14 00 08.3**	**-5.3**
	1.0nm,0.3s,baz=144,slow=32,SNR=4.0						
KSRS	**Korea Array**	**12.31**	**287**	Pn	**Pn**	**13 59 13.2**	**+2.7**
	0.1nm,0.3s,baz=101,slow=14,SNR=6.8						
KSRS				LR	LR	14 03 46.4	
	comp=Z,82nm,21.1s,baz=126,slow=36						
KSAR	**Wonju Array Be**	**12.34**	**286**	Pn	**Pn**	**13 59 13.2**	**+2.3**
USRK	**Ussuriysk Ar.**	**12.52**	**322**	Pn	**Pn**	**13 59 14.8**	**+1.4**
	0.2nm,0.3s,baz=123,slow=15,SNR=3.7						
USRK				LR	LR	14 02 50.4	
	comp=Z,63nm,20.7s,baz=281,slow=31						
TPUB	**Ta-pu**	**22.48**	**245**	*e*P	**P**	**14 01 11.4**	**-3.5**
H11N2	**WAKE ISLAND Hy**	**26.08**	**119**	T	T	14 28 58.8	
	baz=311,slow=75,SNR=9.8						
H11N1	**WAKE ISLAND Hy**	**26.09**	**119**	T	T	14 29 05.2	
	baz=311,slow=75,SNR=0.5						
H11N3	**WAKE ISLAND Hy**	**26.10**	**119**	T	T	14 29 10.3	
	baz=311,slow=75,SNR=12						
H11S1	**WAKE ISLAND Hy**	**26.74**	**121**	T	T	14 29 49.0	
	baz=312,slow=75,SNR=13						
H11S3	**WAKE ISLAND Hy**	**26.74**	**121**	T	T	14 29 49.0	
	baz=312,slow=75,SNR=13						
H11S2	**WAKE ISLAND Hy**	**26.76**	**121**	T	T	14 29 53.3	
	baz=312,slow=75,SNR=12						
SONM	**Songino Array**	**29.97**	**307**	P	**P**	**14 02 25.8**	**+1.8**
	1.0nm,0.7s,baz=116,slow=10,SNR=4.0						
CMAR	**Chiang Mai Arr**	**42.10**	**259**	P	**P**	**14 04 08.4**	**+0.5**
	0.3nm,0.4s,baz=56,slow=8.8,SNR=3.0						
ZALV	**Zalesovo Beam**	**44.23**	**314**	P	**P**	**14 04 25.1**	**+0.4**
	1.0nm,0.5s,baz=94,slow=4.8,SNR=3.8						
MKAR	**Makanchi Array**	**46.26**	**304**	P	**P**	**14 04 41.6**	**+0.7**
	1.2nm,0.7s,baz=87,slow=8.9,SNR=9.2						
KURK	**Kurchatov**	**48.19**	**310**	*e*P	**P**	**14 04 55.8**	**0.0**
	9.2nm,0.8s						
ILAR	**Eielson Array**	**50.76**	**31**	P	**P**	**14 05 16.1**	**+0.8**
	0.6nm,0.7s,baz=259,slow=6.2,SNR=6.4						
TKM2	**Tokmak 2**	**51.69**	**300**	*e*P	**P**	**14 05 22.3**	**-0.6**
	2.0nm,0.6s						
WRAB	**Tennant Creek**	**55.06**	**190**	*e*P	**P**	**14 05 45.5**	**-1.9**
	1.0nm,0.6s						
WRA	**Warramunga Arr**	**55.07**	**190**	P	**P**	**14 05 46.7**	**-0.9**
	5.5nm,0.8s,baz=7.7,slow=7.4,SNR=33						
INK	**Inuvik**	**55.84**	**27**	P	**P**	**14 05 53.6**	**+1.1**
	1.5nm,0.6s,baz=288,slow=7.2,SNR=5.3						
ASAR	**Alice Springs**	**58.79**	**190**	P	**P**	**14 06 13.7**	**-0.3**
	2.0nm,0.7s,baz=1.0,slow=5.5,SNR=21						
YKA	**Yellowknife Ar**	**65.14**	**30**	P	**P**	**14 06 56.3**	**+0.1**
	0.5nm,0.8s,baz=298,slow=6.4,SNR=5.3						
WSAR	**Wadi Sarin**	**72.54**	**286**	LR	LR	14 42 44.5	
	comp=Z,19nm,19.4s,slow=38						
NVAR	**Mina Array Bea**	**75.40**	**53**	P	**P**	**14 08 00.8**	**+1.0**
	1.7nm,0.7s,baz=294,slow=6.7,SNR=16						
NOA	**NORSAR Array B**	**76.64**	**338**	P	**P**	**14 08 08.5**	**+2.3**
	0.8nm,0.8s,baz=63,slow=7.0,SNR=2.8						
AKASG	**Malin Array Be**	**76.72**	**323**	P	**P**	**14 08 07.6**	**+0.8**
	0.2nm,0.3s,baz=50,slow=7.1,SNR=4.0						
PDAR	**Pinedale Array**	**78.40**	**46**	P	**P**	**14 08 17.3**	**+0.7**
	0.3nm,0.5s,baz=272,slow=4.3,SNR=4.7						
TXAR	**Lajitas Array**	**90.55**	**53**	P	**P**	**14 09 19.9**	**+1.7**
	0.4nm,0.8s,baz=267,slow=2.5,SNR=3.6						
LPAZ	**La Paz**	**146.73**	**64**	PKPbc	**PKPdf**	**14 15 58.6**	**+1.3**
	0.7nm,0.5s,baz=303,slow=1.0,SNR=3.5						

ISCJB ***21*** *13:57:08.4±0.2, 59°76N±0°02×152°60W±0°04, h95km±3km, mb4.1/13, Error ellipse: s-maj=4.3km s-min=2.7km az=43.8*
NEIC ***21*** *13:57:10.5, 59°75N×152°68W, h82km, MG3.9(AEIC), After AEIC.*
NEIC Felt at Anchor Point, Homer and Soldotna.
IDC ***21*** *13:57:11.6±3.7, 60°01N×152°76W, h92km±34km, mb3.6/9, mb1 3.9/14, mb1mx3.6/45, mbtmp4.1/14, Error ellipse: s-maj=28.3km s-min=12.7km az=34.0*

ISC 21 13:57:09.8±0.7, 59°78N±0°04×152°66W±0°04, h83km±6km, n121, σ0⁶77/129, mb4.2/13, Southern Alaska

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HOM	**Homer**	**0.53**	**102**	P	**Pn**	**13 57 24.4**	**+0.4**
HOM				S	**Sn**	**13 57 36.0**	**+1.4**
AUE	**Augustine Isla**	**0.55**	**221**	P	**Pn**	**13 57 24.1**	**-0.1**
AUL	**Augustine Lava**	**0.56**	**225**	P	**Pn**	**13 57 24.3**	**-0.1**
AUL				S	**Sn**	**13 57 35.5**	**+0.4**
AUSE	**Augustine SEas**	**0.58**	**221**	P	**Pn**	**13 57 24.3**	**-0.2**
AUI	**Augustine Isla**	**0.59**	**222**	P	**Pn**	**13 57 24.4**	**-0.2**
RDWB	**Redoubt West**	**0.72**	**353**	P	**Pn**	**13 57 25.9**	**-0.2**
RDWB				S	**Sn**	**13 57 38.5**	**+0.3**
NCT	**North Crescent**	**0.80**	**350**	P	**Pn**	**13 57 26.9**	**0.0**
RDJH	**Redoubt Jeurge**	**0.82**	**355**	P	**Pn**	**13 57 27.2**	**+0.1**
RDJH				S	**Sn**	**13 57 41.4**	**+1.4**
BRLK	**Bradley Lake**	**0.90**	**90**	P	**Pn**	**13 57 27.7**	**-0.1**
CDD	**Cape Douglas**	**0.99**	**211**	P	**Pn**	**13 57 28.3**	**-0.6**
FOPK	**Fourpeaked Vol**	**1.10**	**203**	P	**Pn**	**13 57 29.6**	**-0.7**
FOSS	**Fourpeaked Sta**	**1.11**	**209**	P	**Pn**	**13 57 30.0**	**-0.4**
SLKM	**Skilak Lake**	**1.42**	**58**	P	**Pn**	**13 57 34.6**	**+0.4**
CKL	**Chakachamna La**	**1.43**	**6**	P	**Pn**	**13 57 34.8**	**+0.3**
SPCR	**Spurr Chakacha**	**1.45**	**9**	P	**Pn**	**13 57 34.9**	**+0.3**
SPCR				S	**Sn**	**13 57 54.1**	**+0.8**
SPWE	**Spurr West**	**1.50**	**2**	P	**Pn**	**13 57 35.8**	**+0.5**
SPCG	**Spurr Capps Gl**	**1.55**	**11**	P	**Pn**	**13 57 35.5**	**-0.5**
SPCG				S	**Sn**	**13 57 55.9**	**+0.1**
SEW	**Seward**	**1.65**	**77**	*e*Pn	**Pn**	**13 57 36.5**	**-0.6**
KAHC	**Katmai Hardscr**	**1.65**	**228**	P	**Pn**	**13 57 36.9**	**-0.4**
KARR	**Katmai Rainbow**	**1.66**	**220**	P	**Pn**	**13 57 37.3**	**0.0**
STLK	**Strandline Lak**	**1.78**	**13**	P	**Pn**	**13 57 39.3**	**+0.4**
KAWH	**Katmai**	**1.78**	**219**	P	**Pn**	**13 57 38.6**	**-0.3**
FIB	**Fire Island**	**1.86**	**49**	P	**Pn**	**13 57 41.5**	**+1.6**
KAKN	**Katmai Knife C**	**1.94**	**221**	P	**Pn**	**13 57 40.7**	**-0.2**
KAKN				S	**Sn**	**13 58 04.3**	**-0.4**
KVTA	**Katmai Vly 10**	**1.95**	**225**	P	**Pn**	**13 57 41.0**	**-0.2**
RC01	**Rabbit Creek A**	**1.96**	**46**	*e*Pn	**Pn**	**13 57 41.4**	**+0.2**
SVW2	**Sparrevohn**	**1.96**	**314**	P	**Pn**	**13 57 40.8**	**-0.5**
KBM	**Katmai Bkd Mtn**	**2.00**	**222**	P	**Pn**	**13 57 41.9**	**+0.1**
KDAK	**Kodiak Island**	**2.00**	**179**	*e*Pn	**Pn**	**13 57 40.8**	**-0.9**
KABU	**Katmai Buttres**	**2.03**	**223**	P	**Pn**	**13 57 42.4**	**+0.2**
KABU				S	**Sn**	**13 58 06.7**	**-0.2**
KABR	**Katmai Barrier**	**2.04**	**217**	P	**Pn**	**13 57 42.2**	**-0.1**
KELA	**Mount Kelaz**	**2.08**	**231**	P	**Pn**	**13 57 42.6**	**-0.2**
PTE	**Portage**	**2.11**	**57**	P	**Pn**	**13 57 43.4**	**+0.2**
PMR	**Palmer**	**2.52**	**42**	*e*Pn	**Pn**	**13 57 48.0**	**-0.6**
OHAK	**Old Harbor**	**2.58**	**188**	*e*Pn	**Pn**	**13 57 48.1**	**-1.4**
CUT	**Chulitna**	**2.88**	**23**	P	**Pn**	**13 57 54.0**	**+0.6**
SML	**Sawmill**	**2.94**	**44**	*e*Pn	**Pn**	**13 57 53.8**	**-0.6**
PPLA	**Purkeypile**	**3.14**	**4**	*e*Pn	**Pn**	**13 57 57.7**	**+0.6**
MID	**Middleton Isla**	**3.23**	**93**	P	**Pn**	**13 57 57.9**	**-0.3**
SCM	**Sheep Creek Mo**	**3.33**	**49**	P	**Pn**	**13 57 59.1**	**-0.5**
VLZ	**Valdez**	**3.42**	**64**	P	**Pn**	**13 58 00.0**	**-0.7**
HUR	**Hurricane**	**3.53**	**23**	P	**Pn**	**13 58 03.0**	**+0.7**
TT01	**Tatalina**	**3.53**	**334**	P	**Pn**	**13 58 02.3**	**0.0**
EYAK	**Cordova Ski Ar**	**3.54**	**74**	P	**Pn**	**13 58 01.1**	**-1.3**
TTA	**Tatalina**	**3.55**	**334**	P	**Pn**	**13 58 02.6**	**-0.1**
CAST	**Castle Rocks**	**3.67**	**4**	P	**Pn**	**13 58 04.6**	**+0.4**
DIV	**Divide**	**3.67**	**65**	*e*Pn	**Pn**	**13 58 03.6**	**-0.6**
KLU	**Klutina**	**3.74**	**60**	P	**Pn**	**13 58 04.5**	**-0.7**
TRF	**Thorofare Moun**	**3.86**	**16**	*e*Pn	**Pn**	**13 58 06.7**	**-0.1**
KTH	**Kantishna Hill**	**3.88**	**12**	*e*Pn	**Pn**	**13 58 07.3**	**+0.3**
ANNE	**Aniakchak Nort**	**4.04**	**227**	P	**Pn**	**13 58 09.1**	**-0.2**
RAGM	**Ragged Mountai**	**4.05**	**78**	P	**Pn**	**13 58 09.4**	**+0.1**
ANNW	**Aniakchak Nort**	**4.06**	**228**	P	**Pn**	**13 58 09.6**	**+0.1**
RND	**Reindeer**	**4.07**	**25**	P	**Pn**	**13 58 10.0**	**+0.4**
PS12	**TAPS Pump St12**	**4.08**	**62**	P	**Pn**	**13 58 09.6**	**-0.1**
ANPK	**Aniakchak Peak**	**4.12**	**227**	P	**Pn**	**13 58 10.4**	**+0.1**
CHUM	**Lake Minchumin**	**4.12**	**2**	P	**Pn**	**13 58 10.9**	**+0.6**
BMRM	**Bremner River**	**4.17**	**70**	*e*Pn	**Pn**	**13 58 08.1**	**-3.0**
ANPB	**Aniakchak Plen**	**4.21**	**227**	P	**Pn**	**13 58 11.9**	**+0.3**
MCK	**McKinley**	**4.35**	**22**	*e*Pn	**Pn**	**13 58 13.8**	**+0.4**
NICHA	**Nichawak Mount**	**4.39**	**80**	P	**Pn**	**13 58 13.9**	**0.0**
BPAW	**Bear Paw Mtn.**	**4.41**	**10**	*e*Pn	**Pn**	**13 58 13.6**	**-0.7**
SUCK	**Suckling Hills**	**4.48**	**82**	P	**Pn**	**13 58 14.7**	**-0.4**
BERG	**Berg Lake**	**4.53**	**78**	P	**Pn**	**13 58 16.0**	**+0.2**
CHGN	**Chignik**	**4.63**	**224**	P	**Pn**	**13 58 16.6**	**-0.7**
BWN	**Browne**	**4.66**	**17**	P	**Pn**	**13 58 18.7**	**+1.1**
GRIN	**Grindle Hills**	**4.71**	**80**	P	**Pn**	**13 58 18.6**	**+0.3**
PAX	**Paxson**	**4.71**	**44**	*e*Pn	**Pn**	**13 58 18.3**	**-0.1**
KHIT	**Khitrov Hills**	**4.76**	**78**	P	**Pn**	**13 58 18.6**	**-0.4**
VRDI	**Verde Repeater**	**4.78**	**68**	P	**Pn**	**13 58 18.5**	**-0.9**
PS10	**TAPS Pump St10**	**4.92**	**39**	P	**Pn**	**13 58 21.6**	**+0.4**
TGL	**Tana Glacier**	**4.99**	**74**	P	**Pn**	**13 58 22.3**	**+0.1**
KULT	**Kultieth River**	**5.01**	**80**	P	**Pn**	**13 58 22.4**	**0.0**
MCARA	**McCarthy VSAT**	**5.02**	**74**	P	**Pn**	**13 58 22.1**	**-0.4**
BARK	**Barkley Ridge**	**5.13**	**79**	P	**Pn**	**13 58 23.5**	**-0.6**
WRH	**Wood River Hil**	**5.18**	**22**	P	**Pn**	**13 58 24.3**	**-0.3**
ISLE	**Juniper Island**	**5.22**	**76**	P	**Pn**	**13 58 23.9**	**-1.5**
PTPK	**Patty Peak**	**5.24**	**70**	P	**Pn**	**13 58 25.5**	**-0.2**
KIAG	**Kiagna River**	**5.24**	**73**	P	**Pn**	**13 58 25.9**	**+0.2**
BAGL	**Bagley Icefiel**	**5.33**	**78**	P	**Pn**	**13 58 26.8**	**+0.1**
MLY	**Manley**	**5.35**	**9**	P	**Pn**	**13 58 27.1**	**+0.1**
HDA	**Harding Lake**	**5.37**	**28**	P	**Pn**	**13 58 27.5**	**+0.3**
CCB	**Clear Creek Bu**	**5.39**	**23**	P	**Pn**	**13 58 27.5**	**0.0**
MESA	**MESA**	**5.39**	**81**	P	**Pn**	**13 58 28.0**	**+0.2**
PS08	**TAPS Pump Stn8**	**5.51**	**27**	P	**Pn**	**13 58 29.1**	**0.0**
COLA	**College**	**5.58**	**22**	*e*Pn	**Pn**	**13 58 29.3**	**-0.9**
	64nm,0.6s						
BARN	**Barnard Glacie**	**5.60**	**72**	P	**Pn**	**13 58 30.8**	**+0.2**
DOT	**Dot Lake**	**5.64**	**43**	*e*Pn	**Pn**	**13 58 30.4**	**-0.5**
	101nm,0.6s						
ILAR	**Eielson Array**	**5.69**	**26**	P	**Pn**	**13 58 31.1**	**-0.6**
	7.2nm,0.3s,baz=208,slow=14,SNR=388						
ILAR				S	**Sn**	**13 59 33.7**	**-1.7**
	11nm,0.3s,baz=213,slow=24,SNR=9.4						
ILB	**Eielson Array**	**5.69**	**26**	P	**Pn**	**13 58 31.0**	**-0.6**
CTGM	**Chitina Glacie**	**5.75**	**73**	P	**Pn**	**13 58 32.5**	**0.0**
BCA3	**Beaver Creek A**	**6.17**	**53**	P	**Pn**	**13 58 37.8**	**-0.5**
PS06	**TAPS Pump Stn6**	**6.25**	**11**	P	**Pn**	**13 58 39.5**	**+0.3**
IM3	**Indian Mountai**	**6.25**	**356**	P	**Pn**	**13 58 39.1**	**-0.1**
PS05	**TAPS Pump Stn5**	**7.12**	**6**	P	**Pn**	**13 58 51.5**	**+0.4**
EGAK	**Eagle**	**7.34**	**42**	*e*Pn	**Pn**	**13 58 53.2**	**-0.9**
	24nm,0.5s						
COLD	**Coldfoot**	**7.56**	**7**	*e*Pn	**Pn**	**13 58 57.3**	**+0.2**
	26nm,0.7s						
DAWY	**Dawson**	**7.59**	**50**	*e*Pn	**Pn**	**13 58 56.7**	**-0.8**
	11nm,0.7s						
PLBC	**Pleasant Camp**	**8.27**	**85**	P	**Pn**	**13 59 06.4**	**-0.4**
BM3	**Burnt Mountain**	**8.46**	**22**	P	**Pn**	**13 59 08.6**	**-0.8**
SKAG	**Skagway**	**8.79**	**85**	*e*Pn	**Pn**	**13 59 13.2**	**-0.6**
	49nm,0.4s						
WHY	**Whitehorse**	**8.89**	**77**	P	**Pn**	**13 59 14.6**	**-0.8**
DLBC	**Dease Lake**	**11.70**	**87**	P	**Pn**	**13 59 55.0**	**+1.5**
	5.8nm,0.3s,baz=266,slow=9.1,SNR=60						
DLBC				S	**Sn**	**14 02 01.0**	**-1.0**
	1.4nm,0.3s,baz=122,slow=21,SNR=7.7						
INK	**Inuvik**	**11.92**	**36**	P	**Pn**	**13 59 56.8**	**+0.5**
	0.4nm,0.3s,baz=256,slow=18,SNR=12						
INK				S	**Sn**	**14 02 03.6**	**-3.4**
	0.1nm,0.3s,baz=254,slow=32,SNR=2.2						
BBB	**Bella Bella**	**15.62**	**108**	P	**P**	**14 00 47.7**	**+0.4**
	0.3nm,0.3s,baz=323,slow=11,SNR=6.0						
YKA	**Yellowknife Ar**	**18.39**	**65**	P	**Pn**	**14 01 18.2**	**-0.5**
	1.1nm,0.3s,baz=277,slow=10.0,SNR=185						
NVAR	**Mina Array Bea**	**30.46**	**119**	P	P	14 03 17.7	+3.0
	0.6nm,0.3s,baz=299,slow=9.0,SNR=10						
PDAR	**Pinedale Array**	**31.17**	**104**	P	**P**	**14 03 23.4**	**+2.5**
	0.1nm,0.3s,baz=345,slow=6.7,SNR=2.3						
KLR	**Kul'dur**	**42.78**	**291**	P	**P**	**14 04 57.6**	**-1.1**
	1.6nm,0.5s,baz=45,slow=7.7,SNR=7.8						
TXAR	**Lajitas Array**	**44.74**	**111**	P	**P**	**14 05 16.5**	**+1.7**
	0.1nm,0.5s,baz=309,slow=11,SNR=2.9						
TLY	**Talaya**	**53.10**	**311**	P	**P**	**14 06 19.0**	**+0.7**
	4.0nm,0.6s,baz=73,slow=12,SNR=3.3						
KSRS	**Korea Array**	**53.40**	**283**	P	**P**	**14 06 20.5**	**0.0**
	2.1nm,0.5s,baz=40,slow=6.9,SNR=16						
KSAR	**Wonju Array Be**	**53.42**	**283**	P	**P**	**14 06 20.5**	**-0.3**
SONM	**Songino Array**	**55.06**	**306**	P	**P**	**14 06 33.1**	**+0.4**
	1.8nm,0.7s,baz=36,slow=8.6,SNR=7.8						
ZALV	**Zalesovo Beam**	**57.66**	**324**	P	**P**	**14 06 50.1**	**-0.7**
	3.8nm,0.7s,baz=26,slow=7.3,SNR=11						
HHC	**Hu-ho-hao-te**	**58.44**	**298**	*e*P	P	14 07 00.5	+3.8
HHC				pmax	pmax		
	comp=Z,22nm,1.2s						
HHC				pmax	pmax		
	comp=Z,100nm,6.9s						
GTA	**Gaotai**	**64.70**	**305**	*e*P	**P**	**14 07 38.8**	**0.0**
GTA				pP	pP	14 07 42.3	-18
GTA				sP	sP	14 07 44.8	-24
GTA				pmax	pmax		
	comp=Z,5.0nm,1.0s						
MKAR	**Makanchi Array**	**64.72**	**322**	P	**P**	**14 07 37.6**	**-1.0**
	comp=Z,0.8nm,0.6s,baz=36,slow=6.0,SNR=6.3						
WMQ	**Urumqi**	**65.54**	**316**	*e*P	P	14 07 48.3	+4.2
WMQ				pmax	pmax		
	comp=Z,5.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,32nm,5.2s						
CD2	**Chengdu**	**70.20**	**297**	P	**P**	**14 08 14.3**	**+0.8**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
BOSA	**Boshof**	**148.81**	**4**	PKPbc	**PKPbc**	**14 16 46.0**	**-1.3**
	comp=Z,0.6nm,0.4s,baz=295,slow=2.6,SNR=4.2						

WEL 21 13:59:07.4±0.2, 37°66S×177°36E, h115km±1km, ML3.5/4, 6C-16D, Error ellipse: s-maj=1.6km s-min=1.1km az=0.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HAZ	**Te Kaha**	**0.35**	**107**	⇑PN	Pn	13 59 23.6	-0.4
HAZ				SN	Sn	13 59 35.8	-0.7
URZ	**Urewera**	**0.63**	**198**	⇓PN	Pn	13 59 25.6	-0.2
URZ				SN	Sn	13 59 39.6	0.0
URZ				AML	AML	13 59 40.4	
MARZ	**Manawahe**	**0.63**	**239**	⇓PN	Pn	13 59 26.0	+0.2
**OPRZ

mb3.7/8, Error ellipse: s-maj=8.9km s-min=5.8km az=167.7
MAN 21 14:13:01, 13°.37N×120°.66E, h52km, mb4.6, ML3.5, MS3.4
IDC 21 14:13:01.7±0.8, 13°.61N×121°.16E, h89km±5km, mb3.5/8, mb1 3.6/8, mb1mx3.3/48, mbtmp3.8/8, Error ellipse: s-maj=35.8km s-min=15.3km az=63.0
ISC 21 14:13:01.5±0.8, 13°.43N±0°.04×120°.69E±0°.05, h79km±6km, n20, σ1§36/28, mb3.7/8, 4C, Mindoro

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PGP	**Puerto Galera**	**0.26**	**73**	⇑*e*P	**Pn**	**14 13 13.2**	**-0.3**
PGP				*i* S	**Sn**	**14 13 21.8**	**-0.6**
LUBP	**Lubang**	**0.53**	**305**	*e*P	**Pn**	**14 13 15.8**	**+0.3**
LUBP				*e*S	**Sn**	**14 13 25.5**	**-0.3**
TGY	**Tagaytay City**	**0.71**	**19**	P	**Pn**	**14 13 17.8**	**+0.5**
532nm,0.3s,baz=171,slow=5.7,SNR=27							
TGY				S	**Sn**	**14 13 29.7**	**+0.7**
2μm,0.3s,baz=114,slow=20,SNR=66							
TGY	**Tagaytay City**	**0.71**	**19**	⇑*i*P	**Pn**	**14 13 17.8**	**+0.5**
TGY				*i* S	**Sn**	**14 13 30.1**	**+1.0**
LQP	**Lukban**	**1.07**	**50**	⇑*e*P	**Pn**	**14 13 21.8**	**+0.3**
BOAC	**Boac**	**1.12**	**88**	*e*P	**Pn**	**14 13 22.2**	**+0.3**
OTRP	**Odiongan**	**1.67**	**129**	*e*P	**Pn**	**14 13 30.1**	**+1.0**
OTRP				*e*S	**Sn**	**14 13 50.2**	**+0.3**
AUQP	**San Andres**	**1.93**	**93**	*e*P	**Pn**	**14 13 34.3**	**+1.9**
SCZP	**Santa Cruz**	**2.46**	**342**	*e*P	**Pn**	**14 13 39.4**	**-0.1**
SCZP				*e*S	**Sn**	**14 14 11.3**	**+2.7**
ENPP	**El Nido**	**2.53**	**209**	*e*P	**Pn**	**14 13 41.4**	**+0.9**
ENPP				*e*S	**Sn**	**14 14 09.4**	**-1.0**
CUYO	**Cuyo Island**	**2.58**	**173**	*e*P	**Pn**	**14 13 41.6**	**+0.5**
CUYO				*e*S	**Sn**	**14 14 11.8**	**+0.3**
JAP	**San Jose, Anti**	**2.93**	**155**	⇑*e*P	**Pn**	**14 13 47.8**	**+1.9**
CMAR	**Chiang Mai Arr**	**21.50**	**286**	P	**P**	**14 17 47.2**	**+3.2**
1.2nm,0.7s,baz=94,slow=7.7,SNR=10							
WRA	**Warramunga Arr**	**35.77**	**158**	P	**P**	**14 19 52.2**	**-1.0**
0.2nm,0.4s,baz=333,slow=10,SNR=11							
SONM	**Songino Array**	**36.32**	**344**	P	**P**	**14 19 56.4**	**-1.3**
0.7nm,0.5s,baz=161,slow=9.1,SNR=3.5							
ASAR	**Alice Springs**	**39.06**	**161**	P	**P**	**14 20 20.5**	**-0.4**
0.3nm,0.4s,baz=335,slow=6.8,SNR=8.2							
MKAR	**Makanchi Array**	**46.25**	**324**	P	**P**	**14 21 19.4**	**+0.5**
0.9nm,0.5s,baz=123,slow=8.8,SNR=6.8							
ZALV	**Zalesovo Beam**	**49.30**	**333**	P	**P**	**14 21 41.7**	**-0.6**
1.8nm,0.4s,baz=122,slow=6.6,SNR=9.4							
GEYT	**Alibeck**	**60.29**	**306**	P	**P**	**14 23 03.3**	**+1.2**
2.5nm,0.7s,baz=105,slow=5.2,SNR=4.4							
ILAR	**Eielson Array**	**79.00**	**26**	P	**P**	**14 24 53.5**	**-3.0**
0.4nm,0.7s,baz=280,slow=5.4,SNR=4.0							

NIED 21 14:16:00, 38°.20N×142°.00E, h44km, Mw3.6 Best double couple: M0=2.49000×10^14 NP1:φ1=54.00000°, δ1=47.00000°, λ1=127.00000°. NP2:φ2=186.00000°, δ2=55.00000°, λ2=57.00000°.
IDC 21 14:16:11.3±1.1, 38°.15N×142°.28E, h0km, mb3.5/5, mb1 3.7/9, mb1mx3.5/49, mbtmp3.6/9, ML2.9/4, Error ellipse: s-maj=29.3km s-min=19.9km az=84.0
ISCJB 21 14:16:16.4±0.9, 38°.23N±0°.04×142°.05E±0°.09, h50km±9km, mb3.4/5, Error ellipse: s-maj=12.8km s-min=5.5km az=18.8
JMA 21 14:16:18.2±0.1, 38°.28N×141°.92E, h52km±1km, M4.0
JMA Felt I J1.
ISC 21 14:16:17.2±1.3, 38°.24N±0°.05×142°.0E±0°.1, h38km±2km, n27, σ1§13/33, mb3.4/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.58**	**292**	P	**Pn**	**14 16 29.4**	**+0.3**
JIO				S	**Sn**	**14 16 37.2**	**-0.2**
OFUJ	**Ofunato**	**0.89**	**341**	P	**Pn**	**14 16 33.7**	**+0.5**
OFUJ				S	**Sn**	**14 16 44.6**	**-0.3**
JMK	**Ichinoseki**	**0.96**	**319**	P	**Pn**	**14 16 34.5**	**+0.4**
JMK				S	**Sn**	**14 16 46.1**	**-0.4**
JMM	**Marumori**	**1.05**	**250**	P	**Pn**	**14 16 35.4**	**+0.1**
JMM				S	**Sn**	**14 16 47.9**	**-0.8**
JOU	**Okura**	**1.08**	**277**	P	**Pn**	**14 16 36.2**	**+0.3**
JOU				S	**Sn**	**14 16 49.4**	**-0.3**
JFK	**Kawauchi**	**1.26**	**227**	P	**Pn**	**14 16 38.9**	**+0.6**
JFK				S	**Sn**	**14 16 53.9**	**-0.2**
JOM	**Ohasama**	**1.36**	**335**	P	**Pn**	**14 16 40.3**	**+0.6**
JOM				S	**Sn**	**14 16 56.9**	**+0.4**
JYK	**Kaneyama**	**1.48**	**298**	P	**Pn**	**14 16 41.5**	**+0.2**
JYK				*e*S	**Sn**	**14 16 58.6**	**-0.8**
JFT	**Otama**	**1.52**	**242**	P	**Pn**	**14 16 42.8**	**+0.9**
JFT				S	**Sn**	**14 17 00.7**	**+0.3**
JYS	**Shiratake**	**1.55**	**270**	P	**Pn**	**14 16 42.7**	**+0.4**
JRG	**Rokugo**	**1.59**	**317**	P	**Pn**	**14 16 43.3**	**+0.5**
MJAR	**Matsushiro Arr**	**3.48**	**242**	Pn	**Pn**	**14 17 08.8**	**-0.1**
0.4nm,0.3s,baz=108,slow=12,SNR=4.1							
MAT	**Matsushiro**	**3.48**	**242**	P	**Pn**	**14 17 11.1**	**+2.2**
MAT				*e*S	**Sn**	**14 17 51.2**	**+2.3**
JHJ	**Hachijo jima 2**	**5.42**	**200**	Pn	**Pn**	**14 17 34.8**	**-0.7**
2.5nm,0.3s,baz=336,slow=9.1,SNR=9.8							
JHJ				Sn	**Sn**	**14 18 33.7**	**-2.9**
13nm,0.3s,baz=324,slow=23,SNR=11							
ASAJ	**Asahikawa**	**5.89**	**4**	Pn	**Pn**	**14 17 42.1**	**+0.2**
0.6nm,0.3s,baz=186,slow=14,SNR=11							
ASAJ				Sn	**Sn**	**14 18 45.6**	**-2.5**
0.3nm,0.3s,baz=210,slow=20,SNR=2.6							
USRK	**Ussuriysk Ar.**	**9.63**	**311**	Pn	**Pn**	**14 18 34.2**	**+1.1**
0.4nm,0.3s,baz=122,slow=14,SNR=4.9							
SONM	**Songino Array**	**27.55**	**302**	P	**P**	**14 22 02.4**	**+2.0**
0.2nm,0.3s,baz=79,slow=7.5,SNR=2.5							
H11N2	**WAKE ISLAND Hy**	**28.37**	**124**	T	T	14 52 25.4	
baz=316,slow=75,SNR=134							
H11N1	**WAKE ISLAND Hy**	**28.38**	**124**	T	T	14 52 26.8	
baz=316,slow=75,SNR=100							
H11N3	**WAKE ISLAND Hy**	**28.39**	**124**	T	T	14 52 26.6	
baz=316,slow=75,SNR=100							
H11S1	**WAKE ISLAND Hy**	**29.13**	**126**	T	T	14 53 23.5	
baz=318,slow=76,SNR=93							
H11S3	**WAKE ISLAND Hy**	**29.13**	**126**	T	T	14 53 23.7	
baz=318,slow=76,SNR=89							
H11S2	**WAKE ISLAND Hy**	**29.14**	**126**	T	T	14 53 24.8	
baz=318,slow=76,SNR=99							
MKAR	**Makanchi Array**	**43.91**	**301**	P	**P**	**14 24 19.9**	**-0.2**
0.2nm,0.4s,baz=82,slow=9.4,SNR=4.9							
WRA	**Warramunga Arr**	**58.32**	**189**	P	**P**	**14 26 07.6**	**-0.8**
0.7nm,0.6s,baz=6.7,slow=7.0,SNR=8.7							
ASAR	**Alice Springs**	**62.05**	**188**	P	**P**	**14 26 32.8**	**-1.0**
0.3nm,0.9s,baz=1.4,slow=6.2,SNR=6.1							
PDAR	**Pinedale Array**	**76.48**	**46**	P	**P**	**14 28 02.9**	**-0.4**
0.2nm,0.5s,baz=171,slow=0.8,SNR=4.2							

SOME 21 14:17:51.0, 44°.72N×82°.18E, h20km
NNC 21 14:17:51.2±1.4, 44°.66N×82°.05E, h0km, mb3.2, mpv2.8, Error ellipse: s-maj=21.1km s-min=4.1km az=116.0
ISCJB 21 14:17:52.1±1.4, 44°.64N±0°.07×82°.4E±0°.1, h10km, Error ellipse: s-maj=16.8km s-min=4.9km az=30.4
ISC 21 14:17:51.0±1.6, 44°.70N±0°.06×82°.20E±0°.09, h10km, n12, σ1§36/23, 4C-2D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DJR	**Jarkent**	**1.76**	**259**	*e*P	**Pb**	**14 18 22.8**	**-0.6**
19nm,0.2s							
DJR				*e*S	**Sb**	**14 18 45.4**	**-0.3**
12nm,0.3s							
MK31	**Makanchi Array**	**2.09**	**2**	⇑Pn	**Pb**	**14 18 28.6**	**-0.5**
4.7nm,0.3s,baz=187,slow=12,SNR=84							
MK31				⇓Sn	**Sg**	**14 18 56.6**	**-1.6**
3.5nm,0.3s,baz=185,slow=26,SNR=13							
KAPS	**Kapalarasan**	**2.10**	**287**	*e*P	**Pb**	**14 18 27.9**	**-1.2**
2.9nm,0.3s							
KAPS				*e*S	**Sb**	**14 18 54.2**	**-1.1**
6.6nm,0.4s							
MAKZ	**Makanchi**	**2.11**	**356**	⇑Pn	**Pb**	**14 18 28.4**	**-1.0**
3.6nm,0.5s							
MAKZ				⇑Sn	**Sb**	**14 18 56.7**	**+1.0**
9.7nm,0.6s							
SHLS	**Shalkode**	**2.28**	**228**	*e*P	**Pb**	**14 18 31.7**	**-0.6**
10nm,0.2s							
SHLS				*e*S	**Sb**	**14 19 00.7**	**+0.1**
30nm,0.3s							
PDGK	**Podgornoye**	**2.39**	**236**	⇑Pg	**Pb**	**14 18 32.2**	**-1.9**
0.9nm,0.3s							
PDGK				⇓Lg	Lg	14 19 05.1	
8.2nm,0.6s							
UZB	**Uzynbulak**	**2.77**	**237**	*e*P	**Pn**	**14 18 37.9**	**+2.2**
2.5nm,0.2s							
UZB				*e*S	**Sb**	**14 19 11.7**	**-3.1**
4.5nm,0.3s							
MNBS	**Baschi**	**2.79**	**258**	*e*P	**Pb**	**14 18 39.9**	**-1.2**
1.0nm,0.2s							
MNBS				*e*S	**Sb**	**14 19 14.9**	**-0.4**
24nm,0.4s							
KPKS	**Kokpek**	**2.82**	**245**	*e*P	**Pb**	**14 18 40.4**	**-1.1**
16nm,0.2s							
KPKS				*e*S	**Sb**	**14 19 16.2**	**+0.2**
25nm,0.3s							
ARXS	**Arharly**	**3.17**	**263**	*e*P	**Pb**	**14 18 47.1**	**-0.3**
1.9nm,0.2s							
ARXS				*e*S	**Sb**	**14 19 27.6**	**+1.5**
11nm,0.5s							
SATY	**Saty**	**3.19**	**240**	*e*P	**Pb**	**14 18 46.9**	**-1.1**
3.1nm,0.1s							
SATY				*e*S	**Sb**	**14 19 27.6**	**+0.6**
15nm,0.2s							
CHKK	**Chushkaly**	**3.82**	**259**	*e*P	**Pb**	**14 18 58.5**	**0.0**
3.1nm,0.2s							
CHKK				*e*S	**Sb**	**14 19 46.8**	**+1.9**
7.3nm,0.2s							

JMA 21 14:21:48.2±0.1, 38°.35N×144°.43E, h36km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.28**	**290**	P	Pn	14 22 24.9	+1.6
JIO	**Ouri**	**2.42**	**273**	P	Pn	14 22 26.7	+1.5
JIO				S	Sn	14 22 55.3	+1.7
JTH	**Tanohata**	**2.55**	**309**	P	Pn	14 22 28.5	+1.5
JTH				S	Sn	14 22 58.5	+1.8
JMK	**Ichinoseki**	**2.58**	**284**	P	Pn	14 22 29.3	+1.9
JMK				S	Sn	14 22 59.9	+2.3
JOM	**Ohasama**	**2.69**	**296**	P	Pn	14 22 30.9	+2.0
JOM				*e*S	Sn	14 23 03.0	+2.7
JMM	**Marumori**	**2.91**	**262**	*e*S	Sn	14 23 07.3	+1.7
JOU	**Okura**	**2.96**	**271**	P	Pn	14 22 34.4	+1.8
JOU				S	Sn	14 23 09.5	+2.6
JANG	**Nango**	**3.03**	**313**	P	Pn	14 22 34.9	+1.3
JANG				*e*S	Sn	14 23 10.7	+2.1
JRG	**Rokugo**	**3.14**	**291**	P	Pn	14 22 37.7	+2.6
JRG				S	Sn	14 23 13.9	+2.5
JYK	**Kaneyama**	**3.24**	**281**	P	Pn	14 22 39.0	+2.6
JYK				*e*S	Sn	14 23 16.1	+2.4
JFT	**Otama**	**3.34**	**257**	*e*S	Sn	14 23 18.1	+1.8

SOME 21 14:23:30.8, 40°.92N×71°.08E, h30km
KRNET 21 14:23:33.6±0.1, 41°.30N×71°.13E, h21km, mb2.4
NNC 21 14:23:34.1±5.4, 41°.18N×70°.90E, h0km, mb3.0, mpv2.7, Error ellipse: s-maj=41.8km s-min=20.0km az=22.0
ISCJB 21 14:23:36.5±1.2, 41°.17N±0°.06×71°.10E±0°.07, h19km±16km, Error ellipse: s-maj=11.5km s-min=5.5km az=41.0
ISC 21 14:23:34.1±1.3, 41°.26N±0°.04×71°.17E±0°.03, h5km±13km, n15, σ1§48/30, 18C-8D, Kyrgyzstan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IUG	**Iuzhnay**	**1.23**	**316**	*e*P	**Pg**	**14 23 57.7**	**+0.1**
29nm,0.2s							
IUG				*e*S	**Sn**	**14 24 17.1**	**+1.9**
27nm,0.2s							
BTK	**Batken**	**1.23**	**193**	⇑*e*P	**Pg**	**14 23 58.0**	**+0.3**
baz=191							
BTK				⇑*i*S	**Sn**	**14 24 15.6**	**+0.4**
baz=191							
ARSB	**Arslanbob**	**1.37**	**87**	⇓*e*P	**Pg**	**14 24 00.0**	**-0.4**
baz=88							
ARSB				⇓*i*S	**Sg**	**14 24 19.6**	**+1.5**
baz=88							
OHH	**Osh**	**1.43**	**120**	⇑*i*P	**Pg**	**14 24 01.6**	**0.0**
baz=121							
OHH				⇑*i*S	**Sg**	**14 24 22.1**	**+2.0**
baz=121							
TOKL	**Toktogul**	**1.45**	**62**	⇑*i*P	**Pb**	**14 24 01.5**	**-0.1**
baz=63							
TOKL				⇑*i*S	**Sg**	**14 24 21.9**	**+1.3**
baz=63							
MNAS	**Manas**	**1.58**	**39**	⇓*i*P	**Pb**	**14 24 03.5**	**-0.5**
baz=40							
MNAS				⇓*i*S	**Sg**	**14 24 24.9**	**0.0**
baz=40							
MNAS	**Manas**	**1.58**	**39**	⇓Pn	**Pb**	**14 24 03.5**	**-0.5**
1.5nm,0.4s							
MNAS				⇓Sn	**Sg**	**14 24 29.7**	**+4.8**
3.1nm,0.5s							
BRLS	**Borolday**	**1.88**	**325**	⇑*i*P	**Pb**	**14 24 07.7**	**-1.4**
11nm,0.3s							
BRLS				⇑*i*S	**Sg**	**14 24 34.0**	**-0.6**
14nm,0.4s							
KK31	**Karatay Array**	**1.90**	**345**	⇑Pn	**Pb**	**14 24 08.5**	**-0.8**
3.9nm,0.4s,baz=170,slow=17,SNR=34							
KK31				⇑Sn	**Sg**	**14 24 35.3**	**+0.1**
8.7nm,0.5s,baz=164,slow=31,SNR=15							
AML	**Almayashu**	**2.08**	**65**	⇑*i*P	**Pb**	**14 24 11.8**	**-0.9**
baz=66							
AML				⇑*i*S	**Sg**	**14 24 41.0**	**0.0**
baz=66							
MRKS	**Merke**	**2.13**	**45**	*e*P	**Pb**	**14 24 13.3**	**-0.1**
4.5nm,0.3s							
MRKS				*e*S	**Sg**	**14 24 43.6**	**+1.0**
7.4nm,0.3s							
ARLS	**Aral**	**2.44**	**75**	⇑*i*P	**Pb**	**14 24 17.2**	**-1.5**
baz=76							
ARLS				⇑*i*S	**Sb**	**14 24 48.8**	**-0.4**
baz=76							
UCH	**Uchtor**	**2.68**	**68**	⇑*i*P	**Pb**	**14 24 20.5**	**-2.4**
baz=69							
UCH				⇑*i*S	**Sg**	**14 24 58.2**	**-2.2**
baz=69							
AAK	**Ala-Archa**	**2.83**	**60**	⇓Pn	**Pb**	**14 24 24.1**	**-1.2**
1.7nm,0.4s							
AAK				⇓Sn	**Sg**	**14 25 03.9**	**-1.3**
1.3nm,0.6s							
TKM2	**Tokmak 2**	**3.69**	**62**	⇑Pn	**Pb**	**14 24 39.4**	**-0.6**
0.5nm,0.4s							
TKM2				⇑Sn	**Sb**	**14 25 25.0**	**-0.1**
1.0nm,0.6s							

KLM 21 14:23:51.4, 7°.25S×127°.76E, h24km, mb4.9, MS5.5
ISCJB 21 14:23:52.7±0.2, 7°.32S±0°.03×127°.31E±0°.03, h35km, mb4.7/74, MS3.7/13, Error ellipse: s-maj=4.3km s-min=3.6km az=156.5
MOS 21 14:23:52.5±0.8, 7°.38S×127°.09E, h33km, mb5.2/26, Error ellipse: s-maj=14.6km s-min=6.8km az=114.8
IDC 21 14:23:54.8±4.2, 7°.39S×127°.14E, h33km±32km, mb4.3/24, mb1 4.4/28, mb1mx4.3/42, mbtmp4.5/28, ML4.3/3, MS3.5/10, Ms1 3.5/10, ms1mx3.2/34, Error ellipse: s-maj=18.0km s-min=10.6km az=69.0
NEIC 21 14:23:54.1±0.3, 7°.35S×127°.33E, h35km, mb4.9/24, Error ellipse: s-maj=9.2km s-min=5.5km az=60.0
DJA 21 14:23:54.1±1.4, 7°.S±3°×12°.7E±°, h32km±16km, M4.7/26, mb4.9/26, mB5.1/12, MLv4.9/12, Mw(mB)4.5/12
ISC 21 14:23:54.1±0.3, 7°.39S±0°.04×127°.31E±0°.05, h35km, n194, σ2§16/217, mb4.8/74, MS3.6/13, 14C-4D, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SOEI	**Soe**	**3.82**	**232**	P	**Pn**	**14 24 54.4**	**+3.8**
SOEI	**Soe**	**3.82**	**232**	*e*Pn	**Pn**	**14 24 53.6**	**+3.0**
SOEI				*e*Sn	**Sn**	**14 25 34.2**	**-0.1**
BNDI	**Bandanaira**	**3.84**	**42**	P	**Pn**	**14 24 46.9**	**-4.0**
MSAI	**Masohi**	**4.33**	**22**	P	**Pn**	**14 24 54.5**	**-3.0**
MMRI	**Maumere**	**5.17**	**256**	P	**Pn**	**14 25 10.7**	**+1.6**
576nm,0.7s,5μm1.7nm							
MMRI	**Maumere**	**5.17**	**256**	*e*Pn	**Pn**	**14 25 10.0**	**+0.9**
MMRI				*e*Sn	**Sn**	**14 26 04.4**	**-3.1**
SANI	**Sanana**	**5.46**	**346**	P	**Pn**	**14 25 11.5**	**-1.6**
174nm,0.7s,2μm0.7nm							
KDI	**Kendari**	**5.78**	**306**	P	**Pn**	**14 25 16.0**	**-1.4**
159nm,0.6s,1μm0.5nm							
MTN	**Manton Dam**	**6.60**	**146**	*e*Pn	**Pn**	**14 25 31.9**	**+3.1**
FAKI	**Fak Fak**	**6.63**	**48**	P	**Pn**	**14 25 27.4**	**-1.8**
68nm,0.8s,0.3nm							
FAKI	**Fak Fak**	**6.63**	**48**	*e*Pn	**Pn**	**14 25 26.7**	**-2.5**
FAKI				*e*Sn	**Sn**	**14 26 42.2**	**-1.4**
LBMI	**Labuha**	**6.71**	**2**	P	**Pn**	**14 25 30.9**	**+0.7**
177nm,0.9s,2μm0.5nm							
BSSI	**Bau Bau, Buton**	**6.88**	**280**	P	**Pn**	**14 25 32.2**	**-0.4**
74nm,0.7s,919nm0.3nm							
BASI	**Baing, Sumba**	**7.22**	**247**	P	**Pn**	**14 25 38.3**	**+1.1**
WSI	**Waingapu**	**7.29**	**251**	P	**Pn**	**14 25 40.9**	**+2.7**
SWI	**Sorong**	**7.59**	**31**	P	**Pn**	**14 25 40.8**	**-1.5**
218nm,0.7s,2μm0.7nm							
LUWI	**Luwuk**	**7.76**	**324**	P	**Pn**	**14 25 42.4**	**-2.2**
KAPI	**Kappang**	**7.87**	**287**	Pn	**Pn**	**14 25 45.5**	**-0.7**
4.9nm,0.3s,baz=132,slow=7.3,SNR=7.3							
KAPI				Sn	**Sn**	**14 27 12.0**	**-2.1**
6.0nm,0.3s,baz=179,slow=16,SNR=3.8							
KAPI				LR	LR	14 28 37.1	
comp=Z,369nm,19.5s,baz=118,slow=37							
KAPI	**Kappang**	**7.87**	**287**	Pn	**Pn**	**14 25 45.5**	**-0.7**
KAPI				*e*Sn	**Sn**	**14 27 10.9**	**-3.2**
KAPI				Sn	Sn	14 27 12.0	-2.1
SPSI	**Sidrap Palu**	**8.23**	**294**	P	**Pn**	**14 25 51.4**	**+0.2**
40nm,0.8s,603nm							
KNRA	**Kununurra**	**8.36**	**170**	P	**Pn**	**14 25 54.2**	**+1.3**
baz=8.5							
TTSI	**Tana Toraja**	**8.61**	**300**	P	**Pn**	**14 25 57.3**	**+0.9**
38nm,0.7s							
RKPI	**Ransiki, Papua**	**9.00**	**50**	P	**Pn**	**14 25 57.7**	**-4.0**
MRSI	**Marisa**	**9.47**	**325**	P	**Pn**	**14 26 10.4**	**+2.3**
PLAI	**Plampang**	**9.54**	**261**	P	**Pn**	**14 26 11.4**	**+2.3**
73nm,0.8s							
PCI	**Palu**	**9.84**	**311**	P	**Pn**	**14 26 13.7**	**+0.4**
52nm,0.7s,534nm							
TWSI	**Taliwang, Sumb**	**10.41**	**262**	P	**Pn**	**14 26 22.4**	**+1.4**
23nm,0.8s							
FITZ	**Fitzroy Crossi**	**10.77**	**189**	Pn	**Pn**	**14 26 25.5**	**-0.5**
1.7nm,0.3s,baz=1.8,slow=9.5,SNR=82							
FITZ				Sn	**Sn**	**14 28 20.9**	**-4.5**
9.0nm,0.3s,baz=82,slow=14,SNR=9.6							
FITZ				LR	LR	14 30 58.5	
comp=Z,421nm,20.3s,baz=356,slow=39							
FITZ	**Fitzroy Crossi**	**10.77**	**189**	*e*Pn	**Pn**	**14 26 25.2**	**-0.8**
FITZ				Sn	**Sn**	**14 28 20.9**	**-4.5**
FITZ				*e*Sn	Sn	14 28 21.3	-4.1
WRAB	**Tennant Creek**	**14.22**	**152**	*c*eP	**Pn**	**14 27 13.4**	**+0.2**
WRAB				pmax	pmax		
comp=Z,102nm,1.7s							
WRAB	**Tennant Creek**	**14.22**	**152**	*e*Pn	**Pn**	**14 27 11.5**	**-1.7**
WRAB				*e*Sn	**Sn**	**14 29 46.2**	**-3.5**
WRA	**Warramunga Arr**	**14.22**	**152**	Pn	**Pn**	**14 27 11.2**	**-2.1**
comp=Z,1.5nm,0.3s,baz=324,slow=13,SNR=28							
WRA				Sn	**Sn**	**14 29 42.8**	**-7.1**
comp=Z,2.5nm,0.3s,baz=332,slow=22,SNR=10.0							
WB2	**Warramunga Arr**	**14.23**	**152**	*e*Pn	**Pn**	**14 27 12.0**	**-1.3**
MYLDM	**Lahad Datu**	**15.27**	**325**	⇓P	**P**	**14 27 29.5**	**-2.2**
PWJI	**Pagerwojo**	**15.38**	**267**	P	**Pn**	**14 27 30.7**	**+2.1**
comp=Z,40nm,2.3s							
MBWA	**Marble Bar**	**15.53**	**207**	*e*Pn	**Pn**	**14 27 30.1**	**-0.4**
comp=Z,58nm,0.6s							
COEN	**Coen**	**16.90**	**114**	P	**Pn**	**14 27 47.2**	**-1.0**
baz=17,SNR=15							
COEN	**Coen**	**16.90**	**114**	*e*Pn	**Pn**	**14 27 46.7**	**-1.5**
comp=Z,183nm,1.9s							
AS31	**Alice Springs**	**17.38**	**159**	*e*Pn	**Pn**	**14 27 53.6**	**-0.5**
comp=Z,14nm,0.9s							
ASAR	**Alice Springs**	**17.38**	**159**	P	**Pn**	**14 27 54.8**	**+0.7**
comp=Z,1.1nm,0.3s,baz=331,slow=10.0,SNR=37							
ASAR				S	**Sn**	**14 30 59.4**	**-7.3**
comp=Z,0.9nm,0.3s,baz=331,slow=23,SNR=5.1							
ASAR				LR	LR	14 35 04.8	
comp=Z,159nm,19.1s,baz=336,slow=38							
AS01	**Alice Springs**	**17.40**	**159**	*e*Pn	**P**	**14 27 55.8**	**+0.5**
BTM	**Bintulu**	**17.66**	**306**	⇑P	**P**	**14 28 02.2**	**+3.9**
SBUM	**Sibu**	**17.95**	**302**	⇓P	**P**	**14 28 04.2**	**+2.8**
SBUM	**Sibu**	**17.95**	**302**	*e*Pn	**P**	**14 28 02.5**	**+1.1**
comp=Z,69nm,0.8s							
KSM	**Kuching**	**19.11**	**297**	⇑P	**Pn**	**14 28 16.5**	**+1.3**
KSM	**Kuching**	**19.11**	**297**	*e*P	**P**	**14 28 13.3**	**-0.9**
comp=Z,36nm,0.9s							
LEM	**Lembang**	**19.54**	**270**	P	**Pn**	**14 28 23.0**	**+2.4**
comp=Z,16nm,0.3s,baz=30,slow=12,SNR=4.4							
LEM	**Lembang**	**19.54**	**270**	P	**Pn**	**14 28 23.0**	**+2.4**
PMG	**Port Moresby**	**19.74**	**97**	P	**Pn**	**14 28 24.0**	**+1.2**
comp=Z,0.7nm,0.3s,baz=284,slow=12,SNR=4.7							
CGJI	**Cibinong**	**21.46**	**271**	P	**P**	**14 28 37.3**	**-2.5**
comp=Z,41nm,0.9s,comp=Z,854nm							
CTA	**Charters Tower**	**22.29**	**126**	P	**P**	**14 28 50.2**	**+1.7**
comp=Z,5.1nm,0.7s,baz=192,slow=12,SNR=3.3							
MYKOM	**Kota Tinggi**	**25.11**	**290**	⇑P	**P**	**14 29 18.1**	**+2.1**
MYKOM	**Kota Tinggi**	**25.11**	**290**	*e*P	**P**	**14 29 17.4**	**+1.4**
comp=Z,21nm,0.8s							
BLDU	**Ballidu**	**25.15**	**202**	P	**P**	**14 29 19.3**	**+3.1**
baz=25,SNR=9.8							
KGM	**Kluang**	**25.69**	**290**	⇑P	**P**	**14 29 22.9**	**+1.7**
BBOO	**Buckleboo**	**26.57**	**163**	*e*P	**P**	**14 29 31.4**	**+2.4**
comp=Z,44nm,0.8s							
NWAO	**Narrogin (SRO)**	**27.08**	**199**	P	**P**	**14 29 33.9**	**+0.3**
comp=Z,18nm,0.8s,baz=272,slow=7.1,SNR=7.5							
KTGM	**Kuala Trenggan**	**27.23**	**297**	⇓P	**P**	**14 29 36.0**	**

comp=Z,143nm,0.8s
CHTO Chiang Mai 38.21 313 *e*P **P 14 31 08.8 -2.1**
CHTO pmax pmax
comp=Z,21nm,0.7s
CHTO Chiang Mai 38.21 313 *e*P **P 14 31 08.8 -2.1**
comp=Z,21nm,0.7s
WHN Wuhan 39.71 342 ⇑P **P 14 31 24.8 +1.6**
KMI Kunming 40.20 324 P **P 14 31 30.3 +2.6**
KMI pmax pmax
comp=Z,16nm,0.9s
KMI pmax pmax
comp=Z,100nm,5.7s
KMI LR LR
comp=N,46nm,4.8s
KMI LR LR
comp=E,45nm,4.3s
KMI LR LR
comp=Z,50nm,5.2s
TJN Taejon 43.53 0⇑*e*P **P 14 31 55.2 +0.7**
CD2 Chengdu 44.26 331 P **P 14 32 00.6 +0.1**
CD2 pmax pmax
comp=Z,10.0nm,1.2s
KSAR Wonju Array Be 44.60 1 P **P 14 32 04.1 +1.1**
KSAR 14 33 45.9
KSAR Wonju Array Be 44.60 1 P **P 14 32 04.1 +1.1**
KSAR PcP **PcP 14 33 45.9 +0.3**
KSRS Korea Array 44.61 1 P **P 14 32 04.1 +1.0**
comp=Z,1.7nm,0.6s,baz=180,slow=9.8,SNR=13
KSRS PcP **PcP 14 33 45.8 +0.3**
comp=Z,1.3nm,0.7s,baz=188,slow=3.0,SNR=5.7
XAN Xi'an 44.73 338 P **P 14 32 07.4 +3.2**
XAN pP pP 14 32 15.4 +0.8
XAN pmax pmax
comp=Z,5.0nm,0.8s
MJAR Matsushiro Arr 44.88 12 P **P 14 32 06.6 +1.3**
comp=Z,1.5nm,0.7s,baz=186,slow=9.6,SNR=6.5
BJI Beijing 48.30 349 P **P 14 32 31.4 -0.6**
BJI S **S 14 39 25.5 -4.0**
BJI pmax pmax
comp=Z,10.0nm,0.8s
BJI LR LR
comp=Z,39nm,34.0s
LZH Lanzhou 48.54 335 *e*P **P 14 32 33.5 -0.7**
LZH pP pP 14 32 40.6 -4.0
LZH sP sP 14 32 43.8 -5.0
LZH *e*PP **PP 14 34 26.5 -0.8**
LZH pmax pmax
comp=Z,20nm,1.2s
LZH pmax pmax
comp=Z,95nm,6.5s
LZH LR LR
comp=N,390nm,14.5s
LZH LR LR
comp=E,410nm,13.8s
LZH LR LR
comp=Z,500nm,17.3s
HHC Hu-ho-hao-te 50.14 344 *e*P **P 14 32 49.3 +3.1**
HHC S **S 14 40 01.0 +5.4**
HHC ScS **ScS 14 42 37.8 +2.8**
HHC pmax pmax
comp=Z,22nm,1.0s
HHC pmax pmax
comp=Z,210nm,6.3s
HHC LR LR
comp=N,590nm,15.9s
HHC LR LR
comp=E,600nm,15.9s
HHC LR LR
comp=Z,660nm,15.9s
USRK Ussuriysk Ar. 51.52 4 P **P 14 32 57.9 +1.5**
comp=Z,2.0nm,0.6s,baz=183,slow=6.6,SNR=5.0
MDJ Mudanjiang 51.80 2 P **P 14 32 59.8 +1.3**
MDJ pmax pmax
comp=Z,5.0nm,0.9s
MDJ pmax pmax
comp=Z,20nm,3.9s
GTA Gaotai 53.07 333 ⇑P **P 14 33 08.3 +0.1**
GTA pP pP 14 33 15.6 -3.1
GTA sP sP 14 33 18.8 -4.1
GTA S **S 14 40 38.0 +1.9**
GTA sS sS 14 40 50.4 -3.1
GTA Gaotai 53.07 333 SS **SKiKP 14 44 18.8 -5.5**
GTA pmax pmax
comp=Z,7.0nm,1.3s
GTA pmax pmax
comp=Z,49nm,6.2s
GTA LR LR
comp=N,88nm,17.8s
GTA LR LR
comp=E,76nm,16.2s
GTA LR LR
comp=Z,64nm,15.7s
GUN Gumba 53.23 313 *e*P **P 14 33 09.6 -0.2**
comp=Z,32nm,0.7s
KKN Kakani 53.59 313 *e*P **P 14 33 11.8 -0.6**
DMN Daman 53.62 312 *e*P **P 14 33 12.0 -0.6**
GKN Gorkha 54.18 312 *e*P **P 14 33 16.0 -0.6**
comp=Z,13nm,0.3s
KOLN Koldanda 54.82 311 *e*P **P 14 33 20.9 -0.4**
comp=Z,38nm,0.7s
PYUN Piuthan 55.45 311 *e*P **P 14 33 25.7 -0.2**
comp=Z,62nm,0.9s
YSS Yuzh-Sakhalins 55.82 13⇑*e*P **P 14 33 30.6 +2.8**
YSS pmax pmax
comp=Z,200nm,3.4s
KLR Kul'dur 56.51 3 LR LR 15 01 07.7
comp=Z,22nm,18.1s,baz=130,slow=40
KLR Kul'dur 56.51 3 *e*P **P 14 33 33.8 +1.0**
ULN Ulaanbaatar 57.85 344 *ce*P **P 14 33 42.7 +0.2**
ULN pmax pmax
comp=Z,6.0nm,1.0s
ULN Ulaanbaatar 57.85 344 P **P 14 33 38.8 -3.7**
comp=Z,7.2nm,1.2s
SONM Songino Array 58.01 344 P **P 14 33 43.9 +0.4**
comp=Z,2.0nm,0.7s,baz=161,slow=11,SNR=9.0
SONM LR LR 15 00 25.6
comp=Z,28nm,19.4s,baz=97,slow=38
SONA1 Songino Array 58.02 344 *e*P **P 14 33 43.7 +0.1**
WMQ Urumqi 62.29 329 P **P 14 34 14.8 +1.9**
WMQ pmax pmax
comp=Z,3.0nm,1.0s
WMQ pmax pmax
comp=Z,2.0nm,6.8s
WMQ LR LR
comp=Z,10.0nm,35.0s
PETK Petropavlovsk- 65.55 20 P **P 14 34 35.4 +1.3**
comp=Z,4.1nm,0.8s,baz=192,slow=5.9,SNR=6.3
PETK LR LR 15 05 27.8
comp=Z,16nm,19.4s,baz=176,slow=38
BOD Bodaibo 65.88 352 *e*P **P 14 34 35.7 -0.4**
BOD pmax pmax
comp=Z,4.0nm,1.4s
KSH Kashi 66.52 319 *e*P **P 14 34 40.8 0.0**
KSH *ep*P pP 14 34 48.5 -3.1
KSH *es*P sP 14 34 52.1 -3.5
KSH *e*PcP **PcP 14 35 10.8 +0.7**
KSH S **S 14 43 26.1 -3.3**
KSH pmax pmax
comp=Z,98nm,4.4s
KSH LR LR
comp=N,310nm,14.3s
KSH LR LR
comp=E,200nm,13.0s
MK01 Makanchi Array 67.09 328 *e*P **P 14 34 44.2 +0.1**
MK31 Makanchi Array 67.11 328 *e*P **P 14 34 44.5 +0.3**
MK31 Makanchi Array 67.11 328 *e*P **P 14 34 44.5 +0.3**
MKAR Makanchi Array 67.11 328 P **P 14 34 44.5 +0.3**
comp=E,13nm,0.7s,baz=125,slow=7.9,SNR=97
MKAR Makanchi Array 67.11 328 *e*P **P 14 34 44.4 +0.1**
MAKZ Makanchi 67.29 328 *e*P **P 14 34 45.4 0.0**
MAKZ pmax pmax
comp=Z,12nm,1.1s
MAKZ Makanchi 67.29 328 *e*P **P 14 34 45.4 0.0**
comp=Z,12nm,1.1s
TKM2 Tokmak 2 68.61 322 P **P 14 34 53.4 -0.6**
TKM2 pmax pmax
comp=Z,4.0nm,0.8s
TKM2 Tokmak 2 68.61 322 *e*P **P 14 34 49.8 -4.1**
comp=Z,3.9nm,0.8s
KBL Kabul 68.99 311 *e*P **P 14 34 56.1 -0.4**
KBL pmax pmax
comp=Z,11nm,0.6s
KBL Kabul 68.99 311 *e*P **P 14 34 56.1 -0.4**
comp=Z,11nm,0.6s
AAK Ala-Archa 69.13 321 P **P 14 34 58.1 +0.9**
comp=Z,4.2nm,0.6s,baz=139,slow=7.0,SNR=10
AAK Ala-Archa 69.13 321 *e*P **P 14 34 57.1 -0.1**
AAK pmax pmax
comp=Z,1.0nm,0.6s
AAK Ala-Archa 69.13 321 *e*P **P 14 34 57.1 -0.1**
comp=Z,0.8nm,0.6s
YAK Yakutsk 69.23 1 *e*P **P 14 34 57.7 +0.6**
YAK pmax pmax
comp=Z,11nm,1.3s
YAK pmax pmax
comp=N,5.0nm,1.1s
EKS2 Erkin-Say 69.60 321 P **P 14 34 55.3 -4.7**
EKS2 pmax pmax
comp=Z,6.0nm,1.1s
EKS2 Erkin-Say 69.60 321 P **P 14 34 55.3 -4.7**
comp=Z,5.8nm,1.1s
ZAA0 Zalesovo Array 70.77 335 *e*P **P 14 35 06.4 -0.4**
ZALV Zalesovo Beam 70.77 335 P **P 14 35 06.3 -0.5**
comp=Z,3.6nm,0.5s,baz=124,slow=4.1,SNR=21
DZET Dzherino 71.01 315 P **P 14 35 08.4 -0.3**
DZET pmax pmax
comp=Z,8.0nm,0.7s
KURBB **Kurchatov Arra 71.47 330** P **P 14 35 11.2 +0.2**
comp=Z,8.6nm,0.7s,baz=133,slow=5.2,SNR=57
KURK Kurchatov 71.48 330 P **P 14 35 10.7 -0.4**
KURK pmax pmax
comp=Z,38nm,1.0s
KURK Kurchatov 71.48 330 *e*P **P 14 35 10.2 -0.9**
comp=Z,18nm,0.9s
NVS Novosibirsk 72.06 335 *e*P **P 14 35 14.5 0.0**
NVS pmax pmax
comp=Z,7.0nm,1.0s
NVS pmax pmax
comp=N,3.0nm,0.9s
VNDA Vanda 72.40 173 P **P 14 35 17.4 +1.1**
comp=N,1.0nm,0.7s,baz=320,slow=7.9,SNR=9.7
VNDA LR LR 15 05 18.9
comp=N,115nm,21.1s,baz=322,slow=34
SEY Seymchan 72.70 12 *ce*P **P 14 35 19.7 +1.5**
OTUK Ortayu 73.41 325 P **P 14 35 22.5 -0.2**
OTUK pmax pmax
comp=Z,5.0nm,0.8s
MAW Mawson 73.62 201 P **P 14 35 24.5 +0.9**
comp=Z,1.0nm,0.4s,baz=75,slow=4.3,SNR=8.9
MAW LR LR 15 03 40.7
comp=Z,46nm,21.7s,baz=58,slow=32
WSAR Wadi Sarin 73.64 297 P **P 14 35 23.9 -0.8**
comp=Z,3.9nm,0.9s,baz=188,slow=9.2,SNR=2.4
BVA0 Borovoye Array 76.98 329 P **P 14 35 42.8 -0.4**
BVA0 pmax pmax
comp=Z,24nm,1.3s
BVAR Borovoye Array 76.98 329 P **P 14 35 43.5 +0.3**
comp=Z,11nm,1.0s,baz=132,slow=6.2,SNR=39
BRVK Borovoye 77.06 329 P **P 14 35 43.5 -0.1**
BRVK pmax pmax
comp=Z,41nm,1.2s
BRVK Borovoye 77.06 329 *e*P **P 14 35 39.7 -3.9**
comp=Z,18nm,1.0s
CHKZ Chkalovo 77.21 329 P **P 14 35 43.8 -0.6**
CHKZ pmax pmax
comp=Z,22nm,1.2s
ZRNK Zerenda 77.66 328 *e*P **P 14 35 47.3 +0.3**
ZRNK pmax pmax
comp=Z,25nm,0.9s
ZRNK Zerenda 77.66 328 *e*P **P 14 35 47.3 +0.3**
comp=Z,25nm,0.9s
GEYT Alibeck 78.44 311 P **P 14 35 52.7 +1.0**
comp=Z,7.1nm,0.7s,baz=149,slow=6.3,SNR=13
TIXI Tiksi 78.88 1 *e*P **P 14 35 53.2 -0.1**
TIXI pmax pmax
comp=Z,14nm,1.0s
TIXI Tiksi 78.88 1 *e*P **P 14 35 52.4 -0.9**
comp=Z,13nm,1.0s
BILL Bilibino 80.11 14 *i*P **P 14 35 57.0 -3.1**
BILL *i* 14 36 12.0
BILL *i* 14 39 00.1
BILL pmax pmax
comp=Z,2.0nm,1.1s
ABKAR **Akbulak array 81.16 322** *e*P **P 14 36 05.0 -1.1**
NRIK Noril'sk 81.30 347 P **P 14 36 06.9 +0.4**
comp=Z,7.7nm,0.9s,baz=137,slow=4.6,SNR=17
QSPA South Pole Qui 82.59 180 *e*P **P 14 36 15.6 +2.0**
AKTO Aktyubinsk 82.75 323 P **P 14 36 14.9 +0.4**
comp=Z,5.6nm,0.7s,baz=107,slow=6.3,SNR=19
SVE Sverdlovsk 83.73 329‖*e*P **P 14 36 20.0 +0.6**
SVE pmax pmax
comp=Z,30nm,1.5s
ARU Arti 84.63 329 P **P 14 36 24.3 +0.3**
comp=Z,4.7nm,0.7s,baz=107,slow=4.7,SNR=13
ARU Arti 84.63 329 *c i*P **P 14 36 23.9 -0.1**
ARU 14 39 34.2
ARU S **S 14 46 42.4 -6.2**
ARU SS **SS 14 52 15.7 -4.9**
ARU pmax pmax
comp=Z,28nm,1.7s
ARU Arti 84.63 329 P **P 14 36 22.7 -1.3**
comp=Z,34nm,1.5s
SOKR Solikamsk 86.66 331 *e*P **P 14 36 31.3 -2.6**
SOKR pmax pmax
comp=Z,36nm,1.5s
ZEI Tsey 90.15 313 *e*P **P 14 36 50.0 -1.2**
ZEI pmax pmax
comp=Z,12nm,1.0s
ILAR Eielson Array 94.84 25 P **P 14 37 12.6 +0.5**
comp=Z,0.2nm,0.5s,baz=224,slow=3.8,SNR=3.0
KLMR Klimovskoe 95.31 331 *e*P **P 14 37 11.7 -2.6**
KLMR *e**PP **sP 14 37 28.2 -1.3**
KLMR pmax pmax
comp=Z,4.0nm,0.9s
OBN Obninsk 96.42 325 *i*P **P 14 37 18.4 -1.1**
OBN pmax pmax
comp=Z,5.0nm,0.8s
BOSA Boshof 96.96 240 P **P 14 37 22.9 +0.2**
comp=Z,0.9nm,0.6s,baz=108,slow=5.4,SNR=3.9
BOSA Boshof 96.96 240 P **P 14 37 23.0 +0.2**
BRTR Keskin Array B 97.48 309 P **P 14 37 23.8 -1.1**
comp=Z,0.6nm,0.6s,baz=118,slow=3.9,SNR=4.3
YKA Yellowknife Ar 109.27 26 PKKPbc PKKPbc 14 53 26.7 -2.1
comp=Z,0.5nm,0.9s,baz=111,slow=3.1,SNR=6.9
TORD Torodi Ar. Bea 126.26 281 PKP **PKPdf 14 42 53.3 -0.8**
comp=Z,0.7nm,0.7s,baz=3.1,slow=2.2,SNR=5.9
PLCA Paso Flores 129.37 162 PKP **PKPdf 14 43 00.5 +1.0**
comp=Z,1.2nm,0.7s,baz=140,slow=1.7,SNR=4.0
CPUP Villa Florida 146.18 173 PKPbc **PKPab 14 43 32.5 +0.3**
comp=Z,15nm,0.8s,baz=180,slow=1.8,SNR=30
CPUP Villa Florida 146.18 173 *e*PKP2 **PKPbc 14 43 31.9 +0.4**
CPUP Villa Florida 146.18 173 *e*PKPdf **PKPbc 14 43 31.9 +0.4**
LVC Limon Verde 146.22 152 *e*PKPdf **PKPdf 14 43 28.7 -2.5**
PB11 IPOC Station P 148.27 149 *e*PKPbc **PKPbc 14 43 38.8 +1.1**
LPAZ La Paz 151.95 147 PKPbc **PKPbc 14 43 48.3 +0.9**
comp=Z,4.7nm,0.5s,baz=59,slow=1.0,SNR=26
LPAZ La Paz 151.95 147 *e*PKIKP **PKPdf 14 43 42.2 +1.3**
LPAZ 14 43 48.3
LPAZ La Paz 151.95 147 *e*PKPdf **PKPdf 14 43 42.2 +1.3**
LPAZ PKPbc **PKPbc 14 43 48.3 +0.9**

*ISK **21** 14:25:05.9, 39.°12N×29.°13E, h6km, ML2.6*
*ISCJB **21** 14:25:06.8±0.5, 39.°13N±0.°03×29.°12E±0.°04, h9km±5km, Error ellipse: s-maj=5.4km s-min=4.9km az=154.3*
*CSEM **21** 14:25:06.9±0.1, 39.°12N×29.°13E, h10km, MD2.4, Error ellipse: s-maj=2.6km s-min=2.0km az=72.0*
*DDA **21** 14:25:06.9, 39.°11N×29.°11E, h7km, Md2.4*
ISC 21 14:25:06.3±1.1, 39.°10N±0.°03×29.°10E±0.°03, h11km±10km, n32, σ0°35/43, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.30**	**92**	P	**Pb**	**14 25 13.2**	**-0.5**
GDZ				S	**Sg**	**14 25 17.1**	**+0.7**
GDZ	**Gediz**	**0.30**	**92**	*i* P	**Pb**	**14 25 13.2**	**-0.5**
GDZ				*i* S	**Sg**	**14 25 17.1**	**+0.7**
DEMI	**Demirci**	**0.30**	**259**	P	**Pb**	**14 25 13.9**	**+0.1**
DEMI				S	**Sb**	**14 25 18.3**	**-0.6**
DEMI	**Demirci**	**0.30**	**259**	*i* P	**Pb**	**14 25 13.9**	**+0.1**
DEMI				*i* S	**Sb**	**14 25 18.3**	**-0.6**
TVSB	**Tavsanli**	**0.45**	**39**	*e*PG	**Pg**	**14 25 15.1**	**-0.1**
TVSB				*e*SG	**Sg**	**14 25 20.8**	**-0.3**
TVSB	**Tavsanli**	**0.45**	**39**	*e*Pg	**Pg**	**14 25 15.1**	**-0.1**
TVSB				*e*Sg	**Sg**	**14 25 20.8**	**-0.3**
DURS	**Dursunbey**	**0.70**	**316**	P	**Pb**	**14 25 20.5**	**-0.1**
DURS	**Dursunbey**	**0.70**	**316**	*i* P	**Pb**	**14 25 20.4**	**-0.1**
DURS				*i* S	**Sn**	**14 25 33.7**	**+0.6**
KHAL	**Karahalli**	**0.79**	**157**	P	**Pn**	**14 25 23.1**	**-0.4**
KHAL				S	**Sb**	**14 25 33.5**	**+0.6**
KHAL	**Karahalli**	**0.79**	**157**	*i* P	**Pn**	**14 25 23.1**	**-0.4**
KHAL				*i* S	**Sb**	**14 25 33.5**	**+0.6**
KHL	**Karahalli**	**0.84**	**157**	*e*PG	**Pg**	**14 25 22.5**	**-0.1**
KHL	**Karahalli**	**0.84**	**157**	*e*Pg	**Pg**	**14 25 22.5**	**-0.1**
ORLT	**Orhaneli**	**0.96**	**351**	*e*PG	**Pg**	**14 25 24.6**	**-0.2**
ORLT				*e*SG	**Sb**	**14 25 37.8**	**+0.1**
ORLT	**Orhaneli**	**0.96**	**351**	*e*Pg	**Pg**	**14 25 24.6**	**-0.2**
ORLT				*e*Sg	**Sb**	**14 25 37.8**	**+0.1**
CAVI	**Cavuskoy**	**1.24**	**27**	*e*PN	**Pn**	**14 25 29.6**	**-0.1**
CAVI	**Cavuskoy**	**1.24**	**27**	*e*Pn	**Pn**	**14 25 29.6**	**-0.1**
IZI	**Iznik**	**1.27**	**13**	*e*PN	**Pb**	**14 25 30.2**	**-0.1**
IZI	**Iznik**	**1.27**	**13**	*e*Pn	**Pb**	**14 25 30.2**	**-0.1**
KCTX	**Karacabey (Bur**	**1.30**	**334**	*e*PN	**Pg**	**14 25 31.1**	**-0.1**
KCTX	**Karacabey (Bur**	**1.30**	**334**	*e*Pn	**Pg**	**14 25 31.1**	**-0.1**
GEMT	**Gemlik**	**1.33**	**3**	*e*PN	**Pb**	**14 25 31.4**	**0.0**
GEMT	**Gemlik**	**1.33**	**3**	*e*Pn	**Pb**	**14 25 31.4**	**0.0**
ADVT	**Abdulvahap**	**1.42**	**20**	*e*PN	**Pb**	**14 25 32.5**	**-0.3**
ADVT	**Abdulvahap**	**1.42**	**20**	*e*Pn	**Pb**	**14 25 32.5**	**-0.3**
GONE	**Gonen-Balikesi**	**1.44**	**311**	*e*PN	**Pb**	**14 25 33.3**	**+0.1**
GONE	**Gonen-Balikesi**	**1.44**	**311**	*e*Pn	**Pb**	**14 25 33.3**	**+0.1**
ARMT	**Armutlu**	**1.48**	**353**	*e*PN	**Pb**	**14 25 33.6**	**-0.2**
ARMT	**Armutlu**	**1.48**	**353**	*e*Pn	**Pb**	**14 25 33.6**	**-0.2**
EDC	**Edincik**	**1.57**	**323**	*e*PN	**Pb**	**14 25 35.0**	**-0.4**
EDC	**Edincik**	**1.57**	**323**	*e*Pn	**Pb**	**14 25 35.0**	**-0.4**
GULT	**Gulveren**	**1.72**	**39**	*e*PN	**Pn**	**14 25 36.7**	**+0.4**
GULT	**Gulveren**	**1.72**	**39**	*e*Pn	**Pn**	**14 25 36.7**	**+0.4**

MAN 21 14:30:08, 17.°99N×121.°46E, h20km, mb4.0, ML2.8, MS2.5, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
APYP	**Conner**	**0.24**	**239**	*e*P	Pb	14 30 15.1	+1.3
APYP				*e*S	Sb	14 30 19.2	+1.6
SGCP	**Mt. Cagua**	**0.61**	**65**	*e*P	Pb	14 30 20.7	+0.6
SGCP				*e*S	Sn	14 30 32.9	+2.1
ABRA	**Dolores**	**0.79**	**245**	*e*P	Pn	14 30 24.1	+0.1
ABRA				*e*S	Sn	14 30 35.2	+0.1
CAUP	**Cauayan**	**1.09**	**161**	*e*P	Pb	14 30 31.1	+2.9
CAUP				*e*S	Sn	14 30 45.1	+2.3
BALP	**Baler**	**2.24**	**177**	*e*P	Pb	14 30 47.5	-0.2
BALP				*e*S	Sn	14 31 12.3	+1.4

WEL 21 14:35:30.4±0.6, 35.°72S×178.°11E, h202km±6km, ML3.4/9, Error ellipse: s-maj=11.0km s-min=9.3km az=90.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MXZ	**Matakaoa Point**	**1.85**	**175**	PN	Pn	14 36 07.2	-0.2
MXZ				SN	S	14 36 36.4	+0.4
HAZ	**Te Kaha**	**2.05**	**187**	PN	Pn	14 36 09.8	+0.3
HAZ				SN	S	14 36 40.2	+0.6
HAZ	**Te Kaha**	**2.05**	**187**	SN	Pn	14 36 09.8	+0.3
WMGZ	**Waiomatatini S**	**2.11**	**173**	PN	Pn	14 36 10.3	+0.2
PUZ	**Puketiti**	**2.35**	**177**	PN	Pn	14 36 12.9	+0.1
PUZ				SN	S	14 36 45.0	-0.4
TWGZ	**Tauwhareparae**	**2.46**	**182**	PN	Pn	14 36 14.4	+0.4
MWZ	**Matawai**	**2.65**	**190**	PN	Pn	14 36 16.7	+0.6
URZ	**Urewera**	**2.66**	**197**	PN	Pn	14 36 16.2	+0.1
TKGZ	**Te Karaka**	**2.72**	**184**	PN	Pn	14 36 16.9	+0.1
CNGZ	**Carnagh Statio**	**2.76**	**178**	PN	Pn	14 36 17.7	+0.4
RAGZ	**Rawiri**	**2.83**	**191**	PN	Pn	14 36 18.6	+0.4
RIGZ	**Rimuhau**	**2.99**	**185**	PN	Pn	14 36 19.7	-0.3
RTZ	**Ruatahuna**	**3.03**	**197**	PN	Pn	14 36 20.4	-0.1
SNGZ	**Shannon Statio**	**3.12**	**191**	PN	Pn	14 36 22.1	+0.5
KNZ	**Kokohu**	**3.31**	**186**	PN	Pn	14 36 23.3	-0.5
MHGZ	**Mahia Peninsul**	**3.43**	**183**	PN	Pn	14 36 25.0	-0.3
NMHZ	**Naumai**	**3.53**	**197**	PN	Pn	14 36 27.1	+0.6
ARHZ	**Aropaoanui**	**3.65**	**194**	PN	Pn	14 36 27.7	-0.2
BKZ	**Black Stump Fm**	**3.67**	**200**	PN	Pn	14 36 28.3	+0.1
KWHZ	**Kaweka Forest**	**3.93**	**199**	PN	Pn	14 36 31.3	-0.1
BHHZ	**Black Hill Sta**	**4.10**	**203**	PN	Pn	14 36 32.8	-0.7
KRHZ	**Kereru**	**4.15**	**199**	PN	Pn	14 36 33.3	-0.8
KAHZ	**Kahuranaki**	**4.18**	**193**	PN	Pn	14 36 33.9	-0.7
PXZ	**Pawanui**	**4.42**	**193**	PN	Pn	14 36 35.9	-1.5
TSZ	**Takapari Road**	**4.65**	**201**	PN	Pn	14 36 39.1	-1.3
PRHZ	**Porangahau**	**4.69**	**194**	PN	Pn	14 36 39.4	-1.4
BFZ	**Birch Farm**	**5.17**	**196**	PN	Pn	14 36 45.1	-1.8
MRZ	**Mangatainoka R**	**5.32**	**201**	PN	Pn	14 36 46.7	-2.1
TIWZ	**Tintock**	**5.34**	**198**	PN	Pn	14 36 47.2	-1.9
OGWZ	**Otaki Gorge**	**5.59**	**204**	PN	Pn	14 36 50.3	-2.0
CAW	**Cannon Point**	**5.89**	**203**	PN	Pn	14 36 53.3	-2.8

IDC 21 14:37:15.6±2.0, 6.°81S×129.°34E, h0km, mb3.5/1, mb1 4.0/4, mb1mx3.5/48, mbtmp3.8/4, ML4.0/3, Error ellipse: s-maj=78.1km s-min=27.8km az=76.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**11.79**	**197**	Pn	Pn	14 40 05.9	+0.8
	0.5nm,0.3s,baz=22,slow=13,SNR=19						
FITZ				Sn	Sn	14 42 02.5	-15
	1.1nm,0.3s,baz=227,slow=21,SNR=8.7						
WRA	**Warramunga Arr**	**13.93**	**160**	Pn	Pn	14 40 35.8	+1.3
	1.1nm,0.3s,baz=338,slow=14,SNR=22						
WRA				Sn	Sn	14 42 55.1	-15
	1.3nm,0.3s,baz=329,slow=22,SNR=7.6						
ASAR	**Alice Springs**	**17.33**	**166**	Pn	Pn	14 41 17.1	-2.0
	0.4nm,0.3s,baz=342,slow=9.7,SNR=40						
ASAR				Sn	Sn	14 44 13.8	-19
	0.2nm,0.3s,baz=340,slow=25,SNR=5.6						
MKAR	**Makanchi Array**	**67.71**	**327**	P	P	14 48 14.9	0.0
	0.3nm,0.5s,baz=115,slow=7.2,SNR=3.7						

*IDC **21** 14:38:54.8±0.9, 34.°50N×142.°84E, h0km, mb3.8/6, mb1 4.0/8, mb1mx3.6/63, mbtmp3.9/8, ML4.0/2, MS2.4/1, Ms1 2.4/1, ms1mx2.0/53, Error ellipse: s-maj=27.3km s-min=21.8km az=106.0*
*ISCJB **21** 14:38:55.5±0.8, 34.°89N±0.°05×142.°79E±0.°06, h33km, mb3.8/6, Error ellipse: s-maj=6.8km s-min=6.6km az=165.6*
*JMA **21** 14:38:55.5±0.4, 34.°81N×142.°79E, h50km, M3.6*
ISC 21 14:38:57.8±0.9, 34.°81N±0.°06×142.°77E±0.°07, h35km, n33, σ19°80/36, mb3.8/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**1.49**	**264**	P	**Pn**	**14 39 20.5**	**-1.0**
BSO1				S	**Sn**	**14 39 38.3**	**-1.1**
CHOJ	**Chosi**	**1.80**	**300**	P	**Pn**	**14 39 25.5**	**-0.9**
BSO3	**Boso 3**	**1.86**	**270**	P	**Pn**	**14 39 26.6**	**-0.3**
BSO3				S	**Sn**	**14 39 49.2**	**+0.1**
BSO4	**Boso 4**	**2.01**	**276**	P	**Pn**	**14 39 28.7**	**-0.4**
BSO4				*e*S	**Sn**	**14 39 52.5**	**-0.5**
KTR	**Katsuura**	**2.04**	**280**	P	**Pn**	**14 39 27.1**	**-2.6**
KTR				*e*S	**Sn**	**14 39 52.7**	**-1.3**
JHJ	**Hachijo jima 2**	**3.00**	**237**	Pn	**Pn**	**14 39 41.5**	**-1.4**
	24nm,0.3s,baz=146,slow=23,SNR=31						
JHJ				Sn	**Sn**	**14 40 13.9**	**-3.7**
	44nm,0.3s,baz=217,slow=22,SNR=15						
JOD2	**Odawara 2**	**3.06**	**280**	P	**Pn**	**14 39 42.0**	**-1.6**
JOD2				S	**Sn**	**14 40 17.1**	**-1.9**
JAG	**Ashikaga**	**3.15**	**302**	P	**Pn**	**14 39 44.0**	**-0.9**
JAG				*e*S	**Sn**	**14 40 21.2**	**0.0**
JFT	**Otama**	**3.34**	**325**	P	**Pn**	**14 39 46.5**	**-1.1**
JFT				S	**Sn**	**14 40 23.7**	**-2.4**
JRY	**Ryogami san**	**3.38**	**292**	P	**Pn**	**14 39 47.9**	**-0.2**
JRY				*e*S	**Sn**	**14 40 26.1**	**-1.0**
JYN	**Shimob**	**3.53**	**282**	P	**Pn**	**14 39 49.0**	**-1.2**
JYN				*e*S	**Sn**	**14 40 32.0**	**+1.2**
MJAR	**Matsushiro Arr**	**4.10**	**296**	**Pn**	**Pn**	**14 39 57.5**	**-0.5**
	3.1nm,0.3s,baz=111,slow=8.6,SNR=50						
MAT	**Matsushiro**	**4.10**	**296**	P	**Pn**	**14 39 57.2**	**-0.8**
MAT				S	**Sn**	**14 40 42.7**	**-2.0**
MAT	**Matsushiro**	**4.10**	**296**	P	**Pn**	**14 39 56.1**	**-1.9**
TK02	**Tokai 2**	**4.24**	**260**	S	**Sn**	**14 40 48.9**	**+1.2**
JYK	**Kaneyama**	**4.53**	**335**	P	**Pn**	**14 40 02.6**	**-1.3**
JYK				S	**Sn**	**14 40 53.2**	**-2.2**
JSD	**Sado**	**4.86**	**313**	P	**Pn**	**14 40 07.5**	**-0.9**
JCJ	**Chichijima**	**7.71**	**184**	Pn	**Pn**	**14 40 43.4**	**-4.2**
	5.7nm,0.3s,baz=287,slow=24,SNR=20						
ASAJ	**Asahikawa**	**9.30**	**359**	Pn	**Pn**	**14 41 06.1**	**-3.1**
	1.7nm,0.3s,baz=211,slow=8.6,SNR=21						
KSRS	**Korea Array**	**12.29**	**287**	LR	LR	14 45 39.9	
	comp=Z,17nm,21.2s,baz=178,slow=32						
H11N2	**WAKE ISLAND Hy**	**26.09**	**119**	T	T	15 11 45.9	

baz=310,slow=75,SNR=12
H11N1 WAKE ISLAND Hy 26.09 119 T T 15 11 45.7
baz=310,slow=75,SNR=11
H11N3 WAKE ISLAND Hy 26.10 119 T T 15 11 49.7
baz=310,slow=75,SNR=8.5
H11S1 WAKE ISLAND Hy 26.75 121 T T 15 12 37.4
baz=312,slow=75,SNR=11
H11S3 WAKE ISLAND Hy 26.75 121 T T 15 12 35.4
baz=312,slow=75,SNR=10
H11S2 WAKE ISLAND Hy 26.76 121 T T 15 12 38.1
baz=312,slow=75,SNR=7.4
MKAR Makanchi Array 46.26 304 P P 14 47 24.2 +4.5
0.4nm,0.5s,baz=97,slow=7.8,SNR=4.7
KURBB Kurchatov Arra 48.25 310 P **P 14 47 38.3 +3.2**
0.7nm,0.3s,baz=87,slow=7.7,SNR=6.5
WRA Warramunga Arr 55.04 190 P **P 14 48 26.2 +0.2**
1.9nm,0.8s,baz=8.3,slow=7.5,SNR=8.7
ASAR Alice Springs 58.76 190 P **P 14 48 52.6 +0.3**
0.8nm,0.7s,baz=18,slow=9.3,SNR=6.1
NVAR Mina Array Bea 75.43 53 P **P 14 50 40.5 +2.0**
0.5nm,0.7s,baz=298,slow=6.4,SNR=4.3
TXAR Lajitas Array 90.59 53 P P 14 52 00.7 +3.9
0.2nm,0.7s,baz=305,slow=5.2,SNR=2.7
LPAZ La Paz 146.77 64 PKPbc **PKPab 14 58 40.1 +1.5**
0.5nm,0.7s,baz=260,slow=6.1,SNR=2.9

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*ISK **21** 14:49:51.3, 39°.14N×29°.03E, h5km, MD2.7*
*CSEM **21** 14:49:51.6±0.2, 39°.15N×28°.98E, h5km, MD2.5, Error ellipse: s-maj=4.5km s-min=3.5km az=98.0*
*DDA **21** 14:49:52.4, 39°.09N×28°.99E, h7km, Md2.5*
ISC 21 14:49:51.2±1.0, 39°.15N±0°.02×28°.98E±0°.03, h19km±2km, n28, σ0°60/40, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.23**	**242**	P	**Pg**	**14 49 57.4**	**+0.6**
DEMI				S	**Sb**	**14 50 00.2**	**+0.2**
DEMI	**Demirci**	**0.23**	**242**	*i* P	**Pg**	**14 49 57.4**	**+0.6**
DEMI				*i* S	**Sb**	**14 50 00.2**	**+0.2**
GDZ	**Gediz**	**0.40**	**99**	P	**Pg**	**14 49 59.6**	**0.0**
GDZ				S	**Sg**	**14 50 05.3**	**+0.1**
GDZ	**Gediz**	**0.40**	**99**	*i* P	**Pg**	**14 49 59.6**	**0.0**
GDZ				*i* S	**Sg**	**14 50 05.3**	**+0.1**
TVSB	**Tavsanli**	**0.48**	**51**	*e*PG	**Pb**	**14 50 01.6**	**+0.5**
TVSB				*e*SG	**Sg**	**14 50 07.1**	**-0.5**
TVSB	**Tavsanli**	**0.48**	**51**	*e*Pg	**Pb**	**14 50 01.6**	**+0.5**
TVSB				*e*Sg	**Sg**	**14 50 07.1**	**-0.5**
DURS	**Dursunbey**	**0.59**	**319**	P	**Pb**	**14 50 01.4**	**-1.6**
DURS	**Dursunbey**	**0.59**	**319**	*i* P	**Pb**	**14 50 01.4**	**-1.6**
KULA	**Kula-Manisa**	**0.68**	**201**	*e*PG	**Pn**	**14 50 05.3**	**-0.6**
KULA	**Kula-Manisa**	**0.68**	**201**	*e*Pg	**Pn**	**14 50 05.4**	**-0.6**
MANT	**Manisa**	**0.74**	**207**	P	**Pg**	**14 50 06.0**	**+0.2**
MANT				S	**Sb**	**14 50 15.3**	**-0.1**
MANT	**Manisa**	**0.74**	**207**	*i* P	**Pg**	**14 50 06.0**	**+0.2**
MANT				*i* S	**Sb**	**14 50 15.3**	**-0.1**
KHAL	**Karahalli**	**0.88**	**153**	P	**Pn**	**14 50 08.6**	**-0.1**
KHAL				S	**Sg**	**14 50 20.3**	**+0.3**
KHAL	**Karahalli**	**0.88**	**153**	*i* P	**Pn**	**14 50 08.6**	**-0.1**
KHAL				*i* S	**Sg**	**14 50 20.3**	**+0.3**
ORLT	**Orhaneli**	**0.90**	**356**	*e*PG	**Pn**	**14 50 09.1**	**+0.3**
ORLT				*e*SG	**Sn**	**14 50 21.7**	**+0.4**
ORLT	**Orhaneli**	**0.90**	**356**	*e*Pg	**Pn**	**14 50 09.1**	**+0.3**
ORLT				*e*Sg	**Sn**	**14 50 21.7**	**+0.4**
KHL	**Karahalli**	**0.93**	**153**	*e*PG	**Pb**	**14 50 08.5**	**-0.3**
KHL	**Karahalli**	**0.93**	**153**	*e*Pg	**Pb**	**14 50 08.5**	**-0.3**
AKS	**Akhisar**	**0.95**	**254**	*e*PG	**Pg**	**14 50 10.3**	**+0.7**
AKS	**Akhisar**	**0.95**	**254**	*e*Pg	**Pg**	**14 50 10.3**	**+0.7**
KCTX	**Karacabey (Bur**	**1.21**	**337**	*e*PN	**Pg**	**14 50 15.9**	**+1.3**
KCTX	**Karacabey (Bur**	**1.21**	**337**	*e*Pn	**Pg**	**14 50 15.9**	**+1.3**
CAVI	**Cavuskoy**	**1.24**	**32**	*e*PN	**Pg**	**14 50 14.9**	**-0.3**
CAVI	**Cavuskoy**	**1.24**	**32**	*e*Pn	**Pg**	**14 50 14.9**	**-0.3**
IZI	**Iznik**	**1.24**	**18**	*e*PN	**Pg**	**14 50 15.5**	**+0.2**
IZI	**Iznik**	**1.24**	**18**	*e*Pn	**Pg**	**14 50 15.5**	**+0.2**
ARMT	**Armutlu**	**1.41**	**356**	*e*PN	**Pg**	**14 50 18.8**	**+0.3**
ARMT	**Armutlu**	**1.41**	**356**	*e*Pn	**Pg**	**14 50 18.8**	**+0.3**

IDC 21 14:52:45.8±3.3, 3°.71S×151°.30E, h0km, mb3.4/3, mb1 3.7/3, mb1mx3.3/45, mbtmp3.5/3, Error ellipse: s-maj=119.5km s-min=45.3km az=121.0, New Ireland region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**23.10**	**224**	P	P	14 57 53.1	-0.4
	0.3nm,0.4s,baz=50,slow=10,SNR=9.2						
ASAR	**Alice Springs**	**26.00**	**219**	P	P	14 58 20.8	+0.2
	0.3nm,0.7s,baz=60,slow=8.2,SNR=4.2						
FITZ	**Fitzroy Crossi**	**28.91**	**238**	P	P	14 58 47.3	+0.5
	2.0nm,1.0s,baz=58,slow=9.5,SNR=3.3						
TORD	**Torodi Ar. Bea**	**148.54**	**289**	PKPbc	PKPbc	15 12 34.9	-0.9
	0.5nm,0.7s,baz=67,slow=2.5,SNR=4.3						

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*NEIC **21** 14:56:55.7±0.5, 10°.34N×125°.83E, h10km, mb4.4/7, Error ellipse: s-maj=23.8km s-min=9.1km az=86.0*
NEIC Felt [V PIVS] at Libjo; [IV PIVS] at Loreto and San Jose; [III PIVS] at Dinagat; [II PIVS] at Basilisa and Cagdianao, Dinagat Island. Also felt [II PIVS] at Anahawan and Hinundayan, Leyte. Felt [I PIVS] at Surigao, Mindanao.
*MAN **21** 14:56:59, 10°.40N×125°.56E, h33km, mb5.3, ML4.2, MS4.5*
MAN INTENSITY V - LIBJO DINAGAT ISLAND; INTENSITY IV - SAN JOSE AND LORETO DINAGAT ISLAND; INTENSITY III - MUNICIPALITY OF DINAGAT DINAGAT ISLAND; INTENSITY II - BASILISA AND CAGDIANAO DINAGAT ISLAND; INTENSITY I - SURIGAO CITY.
*IDC **21** 14:57:03.8±2.8, 10°.24N×125°.41E, h80km±27km, mb3.7/30, mb1 3.8/31, mb1mx3.7/61, mbtmp4.0/31, MS3.2/7, Ms1 3.2/7, ms1mx2.9/42, Error ellipse: s-maj=20.3km s-min=9.9km az=78.0*
ISC 21 14:56:58.3±1.3, 10°.39N±0°.03×125°.57E±0°.05, h27km±9km, n86, σ1°65/84, mb4.1/36, MS3.2/5, 7C-5D, Leyte

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLP	**Palo**	**0.97**	**323**	⇑*e*P	**Pn**	**14 57 15.3**	**-0.9**
PLP				*e*S	**Sn**	**14 57 26.7**	**-2.2**
BESP	**Borongan**	**1.21**	**354**	*e*P	**Pb**	**14 57 21.0**	**+0.5**
LLP	**Lapu-Lapu**	**1.58**	**268**	⇓*e*P	**Pb**	**14 57 25.8**	**+1.2**
LLP				*i* S	**Sb**	**14 57 46.9**	**+0.3**
TBP	**Tagbilaran**	**1.82**	**248**	⇑*e*P	**Pn**	**14 57 29.3**	**+1.4**
CGP	**Cagayan de Oro**	**2.11**	**204**	⇓*e*P	**Pn**	**14 57 31.3**	**-0.6**
CGP				*e*S	**Sn**	**14 57 58.9**	**+1.7**
BIPH	**Bislig**	**2.33**	**160**	⇓*i*P	**Pb**	**14 57 39.0**	**-0.6**
BIPH				*i* S	**Sb**	**14 58 09.3**	**+1.5**
SNPH	**Sibulan**	**2.53**	**246**	⇑*i*P	**Pn**	**14 57 38.2**	**+0.6**
SNPH				*i* S	**Sn**	**14 58 10.8**	**+3.2**
BUKP	**Musuan**	**2.55**	**191**	*e*P	**Pn**	**14 57 37.7**	**-0.2**
BUKP				*e*S	**Sb**	**14 58 13.8**	**-0.5**
DCPH	**Dipolog City**	**2.83**	**231**	⇑*e*P	**Pn**	**14 57 42.5**	**+0.8**
DCPH				*e*S	**Sn**	**14 58 14.8**	**-0.3**
GUIM	**Jordan**	**2.94**	**275**	*e*P	**Pn**	**14 57 44.5**	**+1.2**
RCP	**Roxas**	**3.01**	**293**	⇑*e*P	**Pn**	**14 57 46.8**	**+2.5**
DMPH	**Davao City--Mi**	**3.29**	**181**	⇑*e*P	**Pn**	**14 57 51.7**	**+3.6**
DAV	**Davao City (W)**	**3.30**	**180**	P	**Pn**	**14 57 51.0**	**+2.8**
	66nm,0.3s,baz=330,slow=1.8,SNR=6.6						
DAV	**Davao City (W)**	**3.30**	**180**	P	**Pn**	**14 57 48.4**	**+0.2**
PAGZ	**Pagadian**	**3.33**	**221**	*e*P	**Pn**	**14 57 51.6**	**+3.0**
KCP	**Kidapawan**	**3.39**	**188**	⇓*e*P	**Pn**	**14 57 51.1**	**+1.5**
CTBH	**Cotabato--PC H**	**3.41**	**203**	⇓*i*P	**Pn**	**14 57 50.9**	**+1.2**
PVCP	**Virac**	**3.48**	**337**	*e*P	**Pb**	**14 57 57.8**	**-1.4**
MATI	**Mati**	**3.49**	**169**	*e*P	**Pn**	**14 57 53.7**	**+2.8**
MATI				*e*S	**Sb**	**14 58 39.5**	**-1.8**
JAP	**San Jose, Anti**	**3.58**	**276**	⇑*e*P	**Pn**	**14 57 55.6**	**+3.4**
IPIL	**Ipil**	**3.93**	**229**	*e*P	**Pn**	**14 57 59.4**	**+2.4**
CUYO	**Cuyo Island**	**4.50**	**276**	*e*P	**Pn**	**14 58 06.4**	**+1.6**
BOAC	**Boac**	**4.76**	**310**	*e*P	**Pb**	**14 58 17.4**	**-3.6**
BUSP	**Coron**	**5.51**	**287**	*e*P	**Pn**	**14 58 20.0**	**+1.3**
ENPP	**El Nido**	**6.09**	**278**	*e*P	**Pn**	**14 58 28.4**	**+1.7**
BALP	**Baler**	**6.59**	**324**	*e*P	Pn	14 58 38.8	+5.3
CAUP	**Cauayan**	**7.46**	**331**	*e*P	**Pn**	**14 58 48.7**	**+3.2**
APYP	**Conner**	**8.53**	**331**	*e*P	**Pn**	**14 59 01.4**	**+1.3**
LUWI	**Luwuk**	**11.69**	**194**	P	**Pn**	**14 59 43.9**	**+0.4**
YULB	**Yu-li**	**13.56**	**343**	P	**P**	**15 00 17.2**	**-0.6**
	6.3nm,0.6s						
TPUB	**Ta-pu**	**13.68**	**340**	*e*P	**P**	**15 00 19.6**	**+0.5**
	28nm,0.7s						
SSLB	**Suanglung**	**14.03**	**342**	P	**Pn**	**15 00 16.0**	**+0.5**
	13nm,0.7s						
YHNB	**Yeheng**	**14.75**	**345**	P	**P**	**15 00 28.3**	**-2.7**
KAPI	**Kappang**	**16.36**	**201**	LR	LR	15 08 11.2
	comp=Z,64nm,18.2s,baz=31,slow=41					
GUMO	**Guam**	**19.14**	**79**	LR	LR	15 07 18.7
	comp=Z,41nm,19.8s,baz=246,slow=32					
LEM	**Lembang**	**24.74**	**227**	LR	LR	15 13 40.6
	comp=Z,76nm,19.1s,baz=123,slow=41					
ENH	**Enshi**	**24.82**	**325**	*e*P	**P**	**15 02 18.5**	**+0.1**
CMAR	**Chiang Mai Arr**	**26.98**	**290**	P	**P**	**15 02 38.0**	**-0.1**
	1.4nm,0.8s,baz=102,slow=7.3,SNR=9.7						
CMAR				LR	LR	15 14 39.4
	comp=Z,21nm,18.3s,baz=285,slow=39					
KSRS	**Korea Array**	**27.03**	**4**	P	**P**	**15 02 39.6**	**+1.4**
	2.7nm,0.8s,baz=186,slow=10,SNR=6.3						
FITZ	**Fitzroy Crossi**	**28.31**	**180**	P	**P**	**15 02 48.6**	**-1.3**
	3.4nm,0.8s,baz=18,slow=9.6,SNR=4.2						
FITZ	**Fitzroy Crossi**	**28.31**	**180**	*e*P	**P**	**15 02 48.0**	**-1.9**
MJAR	**Matsushiro Arr**	**28.44**	**22**	P	**P**	**15 02 54.1**	**+3.2**
	0.7nm,0.7s,baz=196,slow=8.5,SNR=3.6						
MJAR				LR	LR	15 14 34.2
	comp=Z,42nm,18.0s,baz=200,slow=37					
WRAB	**Tennant Creek**	**31.35**	**164**	*e*P	**P**	**15 03 14.9**	**-1.9**
	2.6nm,0.8s						
WRA	**Warramunga Arr**	**31.35**	**164**	P	**P**	**15 03 14.9**	**-1.9**
	1.4nm,0.6s,baz=345,slow=9.4,SNR=22						
USRK	**Ussuriysk Ar.**	**34.14**	**8**	P	**P**	**15 03 42.7**	**+1.7**
	1.4nm,0.8s,baz=196,slow=7.9,SNR=2.7						
ASAR	**Alice Springs**	**34.81**	**167**	P	**P**	**15 03 46.0**	**-1.0**
	1.6nm,0.4s,baz=355,slow=7.5,SNR=16						
CTA	**Charters Tower**	**36.49**	**146**	P	**P**	**15 04 00.9**	**-0.6**
	2.5nm,0.6s,baz=326,slow=11,SNR=4.3						
CTAO	**Charters Tower**	**36.49**	**146**	*e*P	**P**	**15 03 58.3**	**-3.2**
ASAJ	**Asahikawa**	**36.69**	**21**	P	**P**	**15 04 04.8**	**+1.9**
	3.0nm,0.7s,baz=149,slow=18,SNR=3.0						
LSA	**Lhasa**	**37.40**	**306**	P	P	15 04 15.9	+6.1
KLR	**Kul'dur**	**39.06**	**6**	P	**P**	**15 04 23.8**	**+0.9**
	0.4nm,0.2s,baz=180,slow=4.0,SNR=2.6						
ULN	**Ulaanbaatar**	**40.48**	**341**	*e*P	P	15 04 40.1	+5.2
SONM	**Songino Array**	**40.67**	**340**	P	**P**	**15 04 37.7**	**+1.3**
	0.3nm,0.3s,baz=165,slow=6.3,SNR=2.9						
SONM				LR	LR	15 23 47.6
	comp=Z,53nm,18.4s,baz=132,slow=39					
H11N1	**WAKE ISLAND Hy**	**40.87**	**72**	T	T	15 47 58.8
	baz=265,slow=74,SNR=65					
H11N2	**WAKE ISLAND Hy**	**40.88**	**72**	T	T	15 47 59.3
	baz=265,slow=74,SNR=57					
H11N3	**WAKE ISLAND Hy**	**40.89**	**72**	T	T	15 48 00.1
	baz=265,slow=74,SNR=51					
STKA	**Stephens Creek**	**44.74**	**161**	P	**P**	**15 05 09.0**	**-0.4**
	1.8nm,0.5s,baz=343,slow=6.8,SNR=8.2						
TLY	**Talaya**	**44.89**	**341**	P	**P**	**15 05 11.5**	**+1.0**
	1.7nm,0.6s,baz=92,slow=4.0,SNR=3.3						
PETK	**Petropavlovsk-**	**49.81**	**25**	P	**P**	**15 05 50.1**	**+1.3**
	2.8nm,0.6s,baz=250,slow=1.6,SNR=9.0						
MKAR	**Makanchi Array**	**51.52**	**323**	P	**P**	**15 06 01.9**	**+0.2**
	1.4nm,0.6s,baz=124,slow=7.9,SNR=10						
YAK	**Yakutsk**	**51.64**	**2**	P	**P**	**15 06 02.7**	**+0.5**
	0.9nm,0.4s,baz=173,slow=19,SNR=2.2						
ZALV	**Zalesovo Beam**	**54.19**	**332**	P	**P**	**15 06 21.0**	**-0.4**
	0.5nm,0.3s,baz=118,slow=8.7,SNR=3.3						
KURBB	**Kurchatov Arra**	**55.59**	**326**	P	**P**	**15 06 31.4**	**-0.1**
	0.8nm,0.3s,baz=125,slow=6.8,SNR=9.2						
SEY	**Seymchan**	**55.87**	**14**	P	**P**	**15 06 35.1**	**+1.8**
	1.1nm,0.5s,baz=82,slow=22,SNR=6.0						
KKAR	**Karatay Array**	**57.68**	**315**	P	**P**	**15 06 47.2**	**+0.6**
BVAR	**Borovoye Array**	**61.18**	**326**	P	**P**	**15 07 10.4**	**-0.2**
	0.5nm,0.8s,baz=124,slow=7.2,SNR=2.6						
TIXI	**Tiksi**	**61.24**	**1**	P	**P**	**15 07 10.7**	**+0.1**
	0.4nm,0.3s,baz=150,slow=7.4,SNR=4.2						
TIXI	**Tiksi**	**61.24**	**1**	*e*P	**P**	**15 07 12.4**	**+1.9**
	2.8nm,0.8s						
BRVK	**Borovoye**	**61.25**	**326**	*e*P	**P**	**15 07 13.1**	**+2.1**
	2.5nm,0.8s						
BILL	**Bilibino**	**63.48**	**16**	*e*P	**P**	**15 07 26.1**	**+0.5**
	3.6nm,1.0s						
NRIK	**Noril'sk**	**63.73**	**346**	P	**P**	**15 07 26.8**	**-0.5**
	0.8nm,0.5s,baz=166,slow=6.8,SNR=2.3						
ARU	**Arti**	**68.75**	**327**	P	**P**	**15 07 58.4**	**-1.3**
	1.3nm,0.4s,baz=90,slow=12,SNR=4.0						
PPLA	**Purkeypile**	**77.28**	**28**	*e*P	**P**	**15 08 51.0**	**+0.7**
BPAW	**Bear Paw Mtn.**	**77.86**	**27**	*e*P	**P**	**15 08 54.1**	**+0.8**
	0.6nm,0.6s						
COLD	**Coldfoot**	**78.25**	**23**	*e*P	**P**	**15 08 53.9**	**-1.5**
	2.9nm,0.9s						
MCK	**McKinley**	**78.76**	**27**	*e*P	**P**	**15 08 58.1**	**-0.2**
	6.1nm,0.7s						
ILAR	**Eielson Array**	**79.63**	**26**	P	**P**	**15 09 02.4**	**-0.6**
	0.8nm,0.7s,baz=238,slow=5.1,SNR=13						
ARCES	**ARCESS Array B**	**83.84**	**340**	P	**P**	**15 09 24.3**	**-0.8**
	1.5nm,0.7s,baz=84,slow=7.5,SNR=5.3						
INK	**Inuvik**	**84.43**	**22**	P	**P**	**15 09 28.3**	**+0.2**
	4.7nm,1.3s,baz=290,slow=2.8,SNR=4.0						
BRTR	**Keskin Array B**	**84.93**	**309**	P	**P**	**15 09 29.2**	**-2.2**
	0.4nm,0.6s,baz=81,slow=3.6,SNR=2.7						
FINES	**FINESS Array B**	**85.46**	**332**	P	**P**	**15 09 32.0**	**-1.4**
	1.1nm,0.5s,baz=56,slow=5.3,SNR=9.6						
VNDA	**Vanda**	**90.14**	**173**	P	**P**	**15 09 54.6**	**-0.8**
	0.6nm,0.8s,baz=357,slow=3.3,SNR=4.7						
NOA	**NORSAR Array B**	**92.35**	**334**	LR	LR	15 58 21.5
	comp=Z,14nm,18.3s,baz=245,slow=40						
YKA	**Yellowknife Ar**	**93.92**	**24**	P	**P**	**15 10 13.1**	**-0.3**
	0.2nm,0.5s,baz=302,slow=4.8,SNR=4.4						
TORD	**Torodi Ar. Bea**	**119.59**	**292**	PKP	**PKPdf**	**15 15 45.4**	**-1.3**
	0.1nm,0.3s,baz=80,slow=2.3,SNR=2.9						
PLCA	**Paso Flores**	**146.58**	**157**	PKPbc	**PKPbc**	**15 16 37.2**	**-0.6**
	2.2nm,0.6s,baz=290,slow=2.2,SNR=8.4						

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*NIED **21** 15:03:00, 36°.60N×140°.90E, h50km, Mw3.9 Best double couple: M_0=7.11000×10^14 NP1:ϕ_0=179.00000°, δ24.00000°, λ57.00000°. NP2:ϕ_0=35.00000°, δ70.00000°, λ104.00000°.*
*ISCJB **21** 15:03:08.5±0.6, 36°.51N±0°.04×141°.06E±0°.07, h49km±5km, mb3.8/20, Error ellipse: s-maj=9.2km s-min=5.3km az=20.9*
*JMA **21** 15:03:10.5±0.1, 36°.54N×140°.87E, h51km±1km, M4.1*
JMA Felt III J1.
*IDC **21** 15:03:12.1±1.6, 36°.47N×140°.90E, h66km±16km, mb3.6/20, mb1 3.7/24, mb1mx3.6/62, mbtmp3.9/24, MS2.8/3, Ms1 2.8/3, ms1mx2.5/35, Error ellipse: s-maj=13.8km s-min=9.8km az=70.0*
ISC 21 15:03:09.6±1.0, 36°.51N±0°.05×141°.04E±0°.07, h42km±9km, n42, σ1°13/43, mb3.9/20, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.40**	**285**	P	**Pn**	**15 03 19.4**	**+0.3**
JHO				S	**Sn**	**15 03 25.2**	**-0.6**
ONAJ	**Iwakimizuishiy**	**0.62**	**342**	P	**Pn**	**15 03 22.1**	**0.0**
ONAJ				S	**Sn**	**15 03 30.3**	**-0.7**
JYT	**Yasato**	**0.74**	**248**	P	**Pn**	**15 03 23.3**	**-0.4**
JYT				S	**Sn**	**15 03 32.2**	**-1.6**
JFK	**Kawauchi**	**0.86**	**351**	P	**Pn**	**15 03 25.3**	**-0.1**
JFK				S	**Sn**	**15 03 35.8**	**-1.1**
JFT	**Otama**	**1.15**	**331**	P	**Pn**	**15 03 29.7**	**+0.4**
JFT				S	**Sn**	**15 03 43.5**	**-0.4**
JAG	**Ashikaga**	**1.28**	**267**	P	**Pn**	**15 03 30.5**	**-0.6**
MJAR	**Matsushiro Arr**	**2.28**	**272**	P	**Pn**	**15 03 44.7**	**-0.2**
	42nm,0.3s,baz=76,slow=18,SNR=664						
MJAR				S	**Sn**	**15 04 11.8**	**+0.1**
	20nm,0.3s,baz=99,slow=15,SNR=8.0						
MJAR				LR	LR	15 04 43.5
	comp=Z,129nm,21.3s,baz=90,slow=43						
MAT	**Matsushiro**	**2.29**	**272**	P	**Pn**	**15 03 45.3**	**+0.4**
MAT				S	**Sn**	**15 04 12.9**	**+1.1**
JHJ	**Hachijo jima 2**	**3.54**	**197**	P	**Pn**	**15 04 04.0**	**+1.9**
	16nm,0.3s,baz=341,slow=18,SNR=21						
JHJ				S	**Sn**	**15 04 44.0**	**+1.3**
	28nm,0.3s,baz=44,slow=22,SNR=7.6						
ASAJ	**Asahikawa**	**7.69**	**8**	P	**Pn**	**15 04 58.7**	**-0.3**
	2.7nm,0.3s,baz=199,slow=15,SNR=32						
ASAJ				S	**Sn**	**15 06 23.8**	**-0.9**
	1.3nm,0.3s,baz=102,slow=20,SNR=4.0						
JCJ	**Chichijima**	**9.44**	**174**	P	**Pn**	**15 05 21.7**	**-1.3**
	baz=270,slow=19						
JCJ				S	Sn	15 06 59.9	-7.9
	baz=255,slow=20						
USRK	**Ussuriysk Ar.**	**10.32**	**321**	P	**Pn**	**15 05 36.6**	**+1.6**
	0.5nm,0.3s,baz=130,slow=11,SNR=6.3						
USRK				LR	LR	15 09 19.2
	comp=Z,73nm,22.0s,baz=85,slow=36						
KSRS	**Korea Array**	**10.54**	**279**	P	Pn	15 05 40.9	+2.9
	0.2nm,0.3s,baz=94,slow=15,SNR=4.5						
KLR	**Kul'dur**	**14.41**	**335**	LR	LR	15 11 57.7
	comp=Z,42nm,19.2s,baz=134,slow=36						
PETK	**Petropavlovsk-**	**20.29**	**30**	P	**P**	**15 07 41.8**	**+0.2**
	4.7nm,1.0s,baz=148,slow=12,SNR=3.8						
MA2	**Magadan**	**23.93**	**12**	P	**P**	**15 08 21.0**	**+1.5**
	8.6nm,0.9s,baz=208,slow=18,SNR=2.7						
SEY	**Seymchan**	**27.36**	**11**	P	**P**	**15 08 54.5**	**+4.0**
	2.6nm,0.9s,baz=196,slow=13,SNR=4.9						
SONM	**Songino Array**	**27.84**	**305**	P	**P**	**15 08 54.1**	**-1.0**
	1.3nm,0.6s,baz=97,slow=7.3,SNR=6.0						
H11N2	**WAKE ISLAND Hy**	**28.14**	**119**	T	T	15 38 32.5
	baz=313,slow=75,SNR=65						
H11N1	**WAKE ISLAND Hy**	**28.15**	**119**	T	T	15 38 32.5
	baz=313,slow=75,SNR=81						
H11N3	**WAKE ISLAND Hy**	**28.16**	**119**	T	T	15 38 32.5
	baz=313,slow=75,SNR=81						
H11S1	**WAKE ISLAND Hy**	**28.83**	**122**	T	T	15 39 21.3
	baz=314,slow=76,SNR=260						
H11S3	**WAKE ISLAND Hy**	**28.83**	**122**	T	T	15 39 21.3
	baz=314,slow=76,SNR=117						
H11S2	**WAKE ISLAND Hy**	**28.85**	**122**	T	T	15 39 21.3
	baz=314,slow=76,SNR=161						
TIXI	**Tiksi**	**35.77**	**353**	P	**P**	**15 10 03.5**	**-0.7**
	0.6nm,0.2s,baz=163,slow=5.5,SNR=2.9						
CMAR	**Chiang Mai Arr**	**41.08**	**256**	P	**P**	**15 10 48.6**	**-0.8**
	0.4nm,0.6s,baz=58,slow=8.6,SNR=2.8						
ZALV	**Zalesovo Beam**	**42.05**	**313**	P	**P**	**15 10 56.6**	**-0.3**
	3.9nm,0.7s,baz=98,slow=7.1,SNR=14						
MKAR	**Makanchi Array**	**44.15**	**303**	P	**P**	**15 11 14.1**	**0.0**
	0.8nm,0.5s,baz=83,slow=10.0,SNR=8.7						
KURBB	**Kurchatov Arra**	**46.09**	**308**	P	**P**	**15 11 28.8**	**-0.6**
	3.4nm,0.2s,baz=81,slow=8.2,SNR=5.8						
ILAR	**Eielson Array**	**50.09**	**32**	P	**P**	**15 12 01.0**	**+0.9**
	1.1nm,0.7s,baz=270,slow=6.3,SNR=12						
INK	**Inuvik**	**54.99**	**27**	P	**P**	**15 12 37.6**	**+1.5**
	0.9nm,0.5s,baz=285,slow=7.0,SNR=5.9						
WRA	**Warramunga Arr**	**56.50**	**188**	P	**P**	**15 12 47.4**	**-0.2**
	0.3nm,0.6s,baz=5.6,slow=7.4,SNR=7.8						
ASAR	**Alice Springs**	**60.23**	**188**	P	**P**	**15 13 12.1**	**-1.5**
	0.6nm,1.0s,baz=10,slow=7.7,SNR=2.8						
ARCES	**ARCESS Array B**	**64.38**	**339**	P	**P**	**15 13 40.5**	**-0.3**
	2.2nm,0.8s,baz=40,slow=8.5,SNR=3.3						
YKA	**Yellowknife Ar**	**64.41**	**30**	P	**P**	**15 13 42.3**	**+1.2**
	0.2nm,0.5s,baz=300,slow=6.4,SNR=3.8						
FINES	**FINESS Array B**	**69.14**	**332**	P	**P**	**15 14 10.5**	**-0.7**
	0.4nm,0.3s,baz=27,slow=9.0,SNR=6.2						
AKASG	**Malin Array Be**	**74.53**	**322**	P	**P**	**15 14 42.5**	**-1.2**
	0.6nm,0.3s,baz=47,slow=6.2,SNR=5.6						
NOA	**NORSAR Array B**	**74.55**	**337**	P	**P**	**15 14 42.8**	**-1.0**
	0.8nm,0.6s,baz=33,slow=2.9,SNR=3.0						
NVAR	**Mina Array Bea**	**75.54**	**53**	P	**P**	**15 14 49.3**	**-0.8**
	0.3nm,0.7s,baz=290,slow=5.4,SNR=2.9						
PDAR	**Pinedale Array**	**78.24**	**45**	P	**P**	**15 15 06.3**	**+1.0**
	0.2nm,0.7s,baz=241,slow=1.7,SNR=2.6						
GERES	**GERESS Array B**	**83.00**	**328**	P	**P**	**15 15 30.4**	**0.0**
	0.2nm,0.5s,baz=84,slow=4.0,SNR=3.4						
TORD	**Torodi Ar. Bea**	**117.49**	**314**	PKP	**PKPdf**	**15 21 51.4**	**0.0**
	0.4nm,0.9s,baz=130,slow=2.3,SNR=3.0						

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*ISK **21** 15:09:28.9, 39°.14N×29°.02E, h9km, MD2.7*
*ISCJB **21** 15:09:29.5±0.5, 39°.14N±0°.03×29°.01E±0°.04, h10km±5km, Error ellipse: s-maj=5.1km s-min=4.2km az=28.9*
*CSEM **21** 15:09:29.6±0.1, 39°.13N×29°.01E, h10km, MD2.3, Error ellipse: s-maj=2

	baz=235						
IRIF	**Iriomote-Funau**	**1.39**	**132**	P	**Pn**	**15 11 06.5**	**-0.2**
IRIF				S	**S**	**15 11 32.0**	**-0.4**
TWD	**Chiawan**	**1.50**	**218**	*e*P	**Pn**	**15 11 07.3**	**-0.2**
	baz=219						
TWD				*e*S	**S**	**15 11 34.1**	**+0.1**
	baz=219						
NSTT	**Nanjuang**	**1.58**	**247**	*e*P	**Pn**	**15 11 07.9**	**-0.5**
	baz=241						
NSTT				*e*S	**S**	**15 11 35.0**	**-0.3**
	baz=241						
HATJ	**Hateruma jima**	**1.63**	**137**	P	**Pn**	**15 11 09.3**	**+0.5**
HATJ				*e*S	**S**	**15 11 36.9**	**+0.8**
TWT	**Tachien**	**1.64**	**232**	*e*P	**Pn**	**15 11 08.5**	**-0.6**
	baz=241						
TWT				*e*S	**S**	**15 11 38.2**	**+1.6**
	baz=241						
JKRS	**Kuro-shima**	**1.64**	**128**	P	**Pn**	**15 11 09.3**	**+0.4**
JKRS				S	**S**	**15 11 36.4**	**+0.1**
WHF	**Hehuan Shan**	**1.65**	**228**	*e*P	**Pn**	**15 11 09.7**	**+0.3**
	baz=230						
WHF				*e*S	**S**	**15 11 37.2**	**0.0**
	baz=230						
JIJ	**Ishigaki jima**	**1.67**	**122**	P	**Pn**	**15 11 08.9**	**-0.2**
JIJ				S	**S**	**15 11 36.1**	**-0.6**
JISG	**Ishigakijimahi**	**1.70**	**113**	P	**Pn**	**15 11 09.4**	**0.0**
JISG				S	**S**	**15 11 36.9**	**-0.2**
ESL	**Shilin**	**1.80**	**216**	*e*P	**Pn**	**15 11 09.3**	**-1.1**
	baz=228						
ESL				*e*S	**S**	**15 11 38.2**	**-0.7**
	baz=228						
TWQ1	**Liyutan**	**1.90**	**241**	*e*P	**Pn**	**15 11 10.7**	**-0.6**
	baz=242						
TWQ1				S	**S**	**15 11 40.6**	**+0.1**
	baz=242						
JTJ	**Tarama**	**2.01**	**108**	P	**Pn**	**15 11 12.7**	**+0.3**
JTJ				S	**S**	**15 11 42.8**	**+0.3**
SMLT	**Sun Moon Lake**	**2.07**	**229**	*e*P	**Pn**	**15 11 13.1**	**-0.1**
	baz=230						
SMLT				*e*S	**S**	**15 11 45.4**	**+1.5**
	baz=230						
TYC	**Yuchr**	**2.09**	**230⇑**	*e*P	**Pn**	**15 11 13.3**	**+0.1**
	baz=231						
TYC				*e*S	**S**	**15 11 43.8**	**-0.2**
	baz=231						
TWF1	**Yuli**	**2.25**	**212**	*e*P	**Pn**	**15 11 14.2**	**-0.7**
	baz=219						
TWF1				*e*S	**S**	**15 11 46.7**	**-0.3**
	baz=219						
YUS	**Yu-Shan**	**2.32**	**221**	*e*P	**Pn**	**15 11 17.1**	**+0.8**
	baz=222						
YUS				*e*S	**S**	**15 11 49.8**	**+0.5**
	baz=222						
JIRB	**Irabujima**	**2.38**	**100**	P	**Pn**	**15 11 16.2**	**0.0**
JIRB				S	**S**	**15 11 48.5**	**-0.8**
ALS	**Alishan**	**2.40**	**223**	*e*P	**Pn**	**15 11 17.1**	**+0.3**
	baz=231						
ALS				*e*S	**S**	**15 11 51.2**	**+0.9**
	baz=231						
CHN5	**Tsauling**	**2.42**	**227**	*e*P	**Pn**	**15 11 16.8**	**0.0**
	baz=228						
CHN5				*e*S	**S**	**15 11 50.6**	**+0.3**
	baz=228						
JIKM	**Ikemajima**	**2.43**	**98**	P	**Pn**	**15 11 17.1**	**+0.3**
JIKM				S	**S**	**15 11 50.0**	**-0.3**
JMJ	**Miyako jima 2**	**2.49**	**100**	S	**S**	**15 11 51.4**	**0.0**
ELDTW	**Lidau**	**2.52**	**215**	*e*P	**Pn**	**15 11 17.9**	**-0.1**
	baz=215						
ELDTW				*e*S	**S**	**15 11 51.2**	**-1.3**
	baz=215						
CHN4	**Tsaushan**	**2.65**	**224**	*e*P	**Pn**	**15 11 19.2**	**0.0**
	baz=226						
CHN4				*e*S	**S**	**15 11 54.9**	**+0.2**
	baz=226						
CHN1	**Nanshi**	**2.81**	**223**	*e*P	**Pn**	**15 11 21.1**	**0.0**
	baz=229						
CHN1				*e*S	**S**	**15 11 57.8**	**-0.2**
	baz=229						

*ISK **21** 15:13:32.8, 39.°10N×29.°12E, h10km, ML2.6*
*ISCJB **21** 15:13:33.2±0.5, 39.°11N±0.°03×29.°07E±0.°04, h9km±5km,*
Error ellipse: s-maj=5.8km s-min=4.3km az=38.1
*CSEM **21** 15:13:33.2±0.1, 39.°13N×29.°05E, h8km, MD2.3, Error*
ellipse: s-maj=2.9km s-min=2.1km az=117.0
*DDA **21** 15:13:33.6, 39.°08N×29.°07E, h7km, Md2.3*
ISC 21 15:13:33.4±0.9,**39.°11N**±0.°03×**29.°06E**±0.°03,**h13**km±8km,
n26,σ0°**57**/38,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**256**	P	**Pg**	**15 13 39.5**	**+0.3**
DEMI				S	**Sg**	**15 13 43.4**	**+0.3**
DEMI	**Demirci**	**0.27**	**256**	*i* P	**Pg**	**15 13 39.5**	**+0.3**
DEMI				*i* S	**Sg**	**15 13 43.4**	**+0.3**
GDZ	**Gediz**	**0.33**	**93**	P	**Pg**	**15 13 40.2**	**0.0**
GDZ				S	**Sg**	**15 13 44.8**	**0.0**
GDZ	**Gediz**	**0.33**	**93**	*i* P	**Pg**	**15 13 40.2**	**0.0**
GDZ				*i* S	**Sg**	**15 13 44.8**	**0.0**
TVSB	**Tavsanli**	**0.46**	**43**	*e*PG	**Pg**	**15 13 42.2**	**-0.4**
TVSB				*e*SG	**Sg**	**15 13 48.3**	**-0.5**
TVSB	**Tavsanli**	**0.46**	**43**	*e*Pg	**Pg**	**15 13 42.2**	**-0.4**
TVSB				*e*Sg	**Sg**	**15 13 48.3**	**-0.5**
DURS	**Dursunbey**	**0.67**	**318**	P	**Pg**	**15 13 44.9**	**-1.6**
DURS	**Dursunbey**	**0.67**	**318**	*i* P	**Pg**	**15 13 44.9**	**-1.6**
KULA	**Kula-Manisa**	**0.67**	**208**	*e*PG	**Pb**	**15 13 46.6**	**-0.5**
KULA	**Kula-Manisa**	**0.67**	**208**	*e*Pg	**Pb**	**15 13 46.6**	**-0.5**
MANT	**Manisa**	**0.73**	**212**	P	**Pb**	**15 13 47.9**	**-0.3**
MANT				S	**Sg**	**15 13 57.2**	**-0.1**
MANT	**Manisa**	**0.73**	**212**	*i* P	**Pb**	**15 13 47.9**	**-0.3**
MANT				*i* S	**Sg**	**15 13 57.2**	**-0.1**
KHAL	**Karahalli**	**0.81**	**155**	P	**Pb**	**15 13 49.5**	**0.0**
KHAL				S	**Sg**	**15 13 59.5**	**-0.3**
KHAL	**Karahalli**	**0.81**	**155**	*i* P	**Pb**	**15 13 49.5**	**0.0**
KHAL				*i* S	**Sg**	**15 13 59.5**	**-0.3**
KHL	**Karahalli**	**0.86**	**155**	*e*PG	**Pg**	**15 13 49.2**	**-1.0**
CAVI	**Cavuskoy**	**1.25**	**29**	*e*PN	**Pn**	**15 13 56.6**	**-0.1**
CAVI				*e*SN	**Sn**	**15 14 14.2**	**+0.8**
CAVI	**Cavuskoy**	**1.25**	**29**	*e*Pn	**Pn**	**15 13 56.6**	**-0.1**
CAVI				*e*Sn	**Sn**	**15 14 14.2**	**+0.8**
MDNY	**Mudanya-Bursa**	**1.27**	**354**	*e*PN	**Pn**	**15 13 57.3**	**+0.4**
IZI	**Iznik**	**1.27**	**14**	*e*PN	**Pn**	**15 13 57.3**	**+0.3**
IZI	**Iznik**	**1.27**	**14**	*e*Pn	**Pn**	**15 13 57.3**	**+0.3**
KCTX	**Karacabey (Bur**	**1.27**	**335**	*e*PN	**Pb**	**15 13 57.7**	**+0.3**
KCTX	**Karacabey (Bur**	**1.27**	**335**	*e*Pn	**Pb**	**15 13 57.7**	**+0.3**
GEMT	**Gemlik**	**1.33**	**4**	*e*PN	**Pn**	**15 13 58.1**	**+0.3**
ARMT	**Armutlu**	**1.46**	**354**	*e*PN	**Pn**	**15 14 00.3**	**+0.7**
GULT	**Gulveren**	**1.73**	**40**	*e*PN	**Pn**	**15 14 03.8**	**+0.4**
GULT	**Gulveren**	**1.73**	**40**	*e*Pn	**Pn**	**15 14 03.8**	**+0.4**

*ISCJB **21** 15:18:52.4±0.8, 10.°59N±0.°05×73.°02W±0.°04, h121km±9km,*
Error ellipse: s-maj=8.9km s-min=5.8km az=160.2
*FUNV **21** 15:18:53.1, 10.°66N×73.°19W, h108km, MW2.8*
*RSNC **21** 15:18:55.5±0.4, 10.°53N×73.°05W, h23km±8km, ML2.1*
ISC 21 15:18:52.7±1.7,**10.°59N**±0.°06×**73.°05W**±0.°06,
h121km±14km,**n15**,σ0°**88**/26,**Northern Colombia**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VIRV	**Villa del Rosa**	**0.64**	**98**	*e*P	**Pn**	**15 19 11.9**	**+0.3**
VIRV				*e*S	**Sn**	**15 19 25.1**	**-0.8**
URIC	**Uribia, Colomb**	**1.51**	**43**	*e*P	**Pn**	**15 19 20.8**	**+0.5**
URIC				*e*S	**Sn**	**15 19 40.9**	**-0.4**
URIC				*i*		15 19 43.9	
	comp=Z,15nm,0.1s						
SJCC	**San Jacinto, C**	**2.21**	**252**	*e*P	**Pn**	**15 19 29.8**	**+0.9**
SJCC				*e*S	**Sn**	**15 19 56.1**	**-0.5**
SJCC				*i*		15 20 05.7	
	comp=Z,10nm,0.6s						
OCAC	**Ocana**	**2.35**	**187**	*e*P	**Pn**	**15 19 31.3**	**+0.4**
DABV	**Dabajuro**	**2.39**	**82**	*e*P	**Pn**	**15 19 32.4**	**+1.3**
DABV				*e*S	**Sn**	**15 20 01.0**	**+0.3**
VIGV	**El Vigia**	**2.41**	**136**	*e*P	**Pn**	**15 19 32.5**	**+1.1**
VIGV				*e*S	**Sn**	**15 20 01.3**	**+0.2**
GRMC	**Gramalote, San**	**2.87**	**175**	*e*P	**Pn**	**15 19 36.0**	**-1.5**
GRMC				*i*		15 20 12.4	
	comp=Z,18nm,0.2s						
CBRI	**Barrientos, No**	**2.87**	**175**	*e*P	**Pn**	**15 19 38.4**	**+0.8**
CURV	**Curarigua**	**3.09**	**100**	*e*P	**Pn**	**15 19 41.2**	**+0.9**
CURV				*e*S	**Sn**	**15 20 16.6**	**-0.4**
SOCV	**Socops**	**3.15**	**137**	*e*P	**Pn**	**15 19 42.0**	**+0.9**
SOCV				*e*S	**Sn**	**15 20 18.5**	**+0.1**
SIQV	**Siquisique**	**3.18**	**89**	*e*P	**Pn**	**15 19 41.5**	**+0.1**
SIQV				*e*S	**Sn**	**15 20 18.6**	**-0.5**
MONV	**Montecano**	**3.31**	**66**	*e*P	**Pn**	**15 19 43.6**	**+0.5**
MONV				*e*S	**Sn**	**15 20 20.8**	**-1.2**
SANV	**Sanarito**	**3.62**	**107**	*e*P	**Pn**	**15 19 48.2**	**+0.9**
SANV				*e*S	**Sn**	**15 20 29.4**	**-0.3**
BAUV	**El Baul**	**5.20**	**108**	*e*P	**Pn**	**15 20 08.8**	**+0.4**
BAUV				*e*S	**Sn**	**15 21 05.3**	**-2.0**
CUPV	**Cœpira**	**7.16**	**94**	*e*P	**Pn**	**15 20 34.6**	**-0.4**

*JMA **21** 15:27:07.4±0.1, 23.°45N×121.°41E, h0km, M2.8*
*ISCJB **21** 15:27:08.4±0.4, 23.°43N±0.°02×121.°42E±0.°02, h3km±3km,*
Error ellipse: s-maj=3.2km s-min=2.4km az=33.3
*TAP **21** 15:27:09.0, 23.°46N×121.°34E, h9km, ML3.2, B*
ISC 21 15:27:08.8±0.8,**23.°45N**±0.°02×**121.°38E**±0.°02,**h10**km±5km,
n55,σ0°**56**/91,**8C-6D**,**Taiwan**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EHY	**Hungye**	**0.08**	**320**	⇓*i* P	**Pg**	**15 27 11.1**	**0.0**
	baz=340						
EHY				S	**Sg**	**15 27 12.2**	**-0.6**
	baz=340						
TWF1	**Yuli**	**0.12**	**218**	⇓*i* P	**Pg**	**15 27 12.1**	**+0.4**
	baz=204						
TWF1				*i* S	**Sg**	**15 27 13.8**	**+0.1**
	baz=204						
CHKT	**Chengkung**	**0.35**	**182**	P	**Pb**	**15 27 18.0**	**+0.9**
	baz=181						
ESL	**Shilin**	**0.37**	**8⇑**	*i* P	**Pg**	**15 27 16.4**	**+0.3**
	baz=11						
ESL				S	**Sg**	**15 27 20.8**	**-0.3**
	baz=11						
YUS	**Yu-Shan**	**0.39**	**276**	⇑P	**Pg**	**15 27 17.1**	**+0.4**
	baz=275						
YUS				S	**Sg**	**15 27 21.8**	**-0.1**
	baz=275						
ELDTW	**Lidau**	**0.42**	**232**	⇓*i* P	**Pg**	**15 27 17.0**	**0.0**
	baz=229						
ELDTW				*e*S	**Sg**	**15 27 21.9**	**-0.7**
	baz=229						
ALS	**Alishan**	**0.53**	**277**	⇑P	**Pb**	**15 27 19.8**	**-0.6**
	baz=277						
ALS				S	**Sg**	**15 27 26.5**	**+0.3**
	baz=277						
HWA	**Hwalien**	**0.57**	**22**	*e*P	**Pb**	**15 27 20.9**	**+0.1**
	baz=12						
SMLT	**Sun Moon Lake**	**0.62**	**315**	⇑*i* P	**Pg**	**15 27 21.0**	**+0.2**
	baz=316						
SMLT				*e*S	**Sg**	**15 27 28.9**	**-0.1**
	baz=316						
STYT	**Tauyuan**	**0.64**	**244**	⇓P	**Pg**	**15 27 21.5**	**+0.3**
	baz=237						
STYT				S	**Sg**	**15 27 29.2**	**-0.3**
	baz=237						
CHN5	**Tsauling**	**0.66**	**283**	P	**Pb**	**15 27 22.4**	**-0.1**
	baz=283						
CHN5				S	**Sb**	**15 27 31.3**	**-0.4**
	baz=283						
TYC	**Yuchr**	**0.66**	**314**	⇑*i* P	**Pg**	**15 27 21.7**	**+0.1**
	baz=308						
TWD	**Chiawan**	**0.66**	**18**	*e*P	**Pg**	**15 27 21.6**	**0.0**
	baz=18						
TWG	**Pinlang**	**0.68**	**204**	*e*P	**Pb**	**15 27 22.7**	**-0.2**
	baz=213						
TWG				S	**Sg**	**15 27 31.4**	**+0.4**
	baz=213						
WHF	**Hehuan Shan**	**0.70**	**352**	⇑*i* P	**Pg**	**15 27 22.5**	**0.0**
	baz=354						
WHF				S	**Sg**	**15 27 31.9**	**+0.1**
	baz=354						
TTN	**Taitung**	**0.72**	**197**	*e*P	**Pb**	**15 27 23.4**	**-0.1**
	baz=199						
CHN4	**Tsaushan**	**0.73**	**263**	⇓*i* P	**Pb**	**15 27 24.0**	**+0.4**
	baz=255						
CHN4				S	**Sb**	**15 27 33.4**	**-0.3**
	baz=255						
WTP	**Ta-pu**	**0.73**	**254**	⇓*i* P	**Pb**	**15 27 23.8**	**+0.2**
	baz=251						
WTP				*i* S	**Sb**	**15 27 33.2**	**-0.6**
	baz=251						
WNT	**Mingjian**	**0.77**	**304**	⇑*i* P	**Pn**	**15 27 25.4**	**-0.4**
	baz=305						
WNT				S	**Sn**	**15 27 36.4**	**-1.0**
	baz=305						
WGK	**Gukeng**	**0.79**	**288**	⇑P	**Pn**	**15 27 25.6**	**-0.4**
	baz=288						
WGK				S	**Sn**	**15 27 36.9**	**-0.9**
	baz=288						
SGST	**Jiashian**	**0.81**	**244**	*e*P	**Pb**	**15 27 25.1**	**0.0**
	baz=241						
SGST				S	**Sb**	**15 27 36.7**	**+0.5**
	baz=241						
CHN1	**Nanshi**	**0.82**	**252**	P	**Pn**	**15 27 25.9**	**-0.6**
	baz=251						
CHN1				S	**Sb**	**15 27 37.0**	**+0.6**
	baz=251						
TWT	**Tachien**	**0.82**	**347**	P	**Pg**	**15 27 24.8**	**+0.1**
	baz=347						
TWT				*e*S	**Sg**	**15 27 34.9**	**-0.6**
	baz=347						
CHN2	**Minshiung**	**0.83**	**276**	*e*P	**Pn**	**15 27 26.4**	**-0.2**
	baz=292						
CHN2				S	**Sn**	**15 27 38.3**	**-0.7**
	baz=292						
TWK	**Hsinying**	**0.84**	**258**	*e*P	**Pn**	**15 27 26.3**	**-0.4**
	baz=257						
TWK				S	**Sb**	**15 27 37.6**	**+0.7**
	baz=257						
CHY	**Chiayi**	**0.88**	**274**	P	**Pn**	**15 27 27.1**	**-0.1**
	baz=289						
CHY				*i* S	**Sn**	**15 27 39.4**	**-0.7**
	baz=289						
ECL	**Taimali**	**0.93**	**205**	*e*P	**Pg**	**15 27 26.7**	**-0.1**
	baz=193						
TCU	**Taichung**	**0.95**	**318**	P	**Pn**	**15 27 28.6**	**+0.4**
	baz=319						
TCU				*e*S	**Sn**	**15 27 42.8**	**+1.0**
	baz=319						
SSD	**Sandimen**	**0.98**	**225**	*e*P	**Pg**	**15 27 26.9**	**-0.8**
	baz=216						
NNS	**Nan Shan**	**0.99**	**360**	*e*P	**Pg**	**15 27 27.8**	**-0.1**
	baz=8.0						
NNS				*e*S	**Sg**	**15 27 40.4**	**-0.4**
	baz=8.0						
CHN3	**Shinhua**	**1.00**	**249**	*e*P	**Pn**	**15 27 30.3**	**+1.4**
	baz=245						
ENA	**Nanau**	**1.03**	**19**	*e*P	**Pb**	**15 27 28.9**	**+0.1**
	baz=15						
TWQ1	**Liyutan**	**1.05**	**329**	P	**Pn**	**15 27 30.6**	**+0.9**
	baz=331						
TWQ1				*e*S	**Sn**	**15 27 45.8**	**+1.3**
	baz=331						
TWM1	**Shoushan**	**1.07**	**235**	*e*P	**Pn**	**15 27 30.4**	**+0.3**
	baz=221						
CHN8	**Yiju**	**1.08**	**265**	*e*P	**Pg**	**15 27 29.2**	**-0.3**
	baz=264						
CHN8				S	**Sn**	**15 27 45.5**	**+0.6**
	baz=264						
WSF	**Szhu**	**1.08**	**280**	*e*P	**Pn**	**15 27 30.2**	**+0.3**
	baz=278						
NSY	**Sanyi**	**1.12**	**330**	*e*P	**Pn**	**15 27 31.7**	**+1.1**
	baz=332						
NSY				*e*S	**Sn**	**15 27 47.6**	**+1.5**
	baz=332						
EAST	**Anshuo**	**1.17**	**205**	*e*P	**Pb**	**15 27 30.8**	**-0.3**
	baz=197						
ENTT	**Nioudou**	**1.20**	**8**	P	**Pg**	**15 27 31.9**	**0.0**
	baz=7.0						
ENTT				*e*S	**Sb**	**15 27 47.3**	**0.0**
	baz=7.0						
NSK	**Sanguang**	**1.22**	**359**	P	**Pg**	**15 27 32.3**	**-0.1**
	baz=360						
NSK				*e*S	**Sb**	**15 27 47.2**	**-0.8**
	baz=360						
NSTT	**Nanjuang**	**1.23**	**344**	*e*P	**Pg**	**15 27 32.3**	**-0.1**
	baz=346						
NSTT				*e*S	**Sg**	**15 27 48.2**	**-0.2**
	baz=346						
TWC	**Suao**	**1.23**	**20**	*e*P	**Pn**	**15 27 31.9**	**-0.3**
	baz=15						
SCZT	**Fangliau**	**1.28**	**213**	*e*P	**Pg**	**15 27 33.3**	**-0.1**
	baz=214						
TWE	**Neicheng**	**1.30**	**12**	*e*P	**Pg**	**15 27 33.9**	**+0.2**
	baz=9.0						
TWE				*e*S	**Sg**	**15 27 50.9**	**+0.3**
	baz=9.0						
TWS1	**Kuangyinshan**	**1.65**	**1**	*e*P	**Pb**	**15 27 39.5**	**+0.2**
	baz=12						
TWB1	**Santiao Chiao**	**1.65**	**20**	*e*P	**Pg**	**15 27 40.6**	**+0.1**
	baz=11						
NWF	**Wu-fen Shan**	**1.66**	**13**	*e*P	**Pb**	**15 27 39.9**	**+0.4**
	baz=8.0						
PNG	**Penghu**	**1.68**	**274**	*e*P	**Pn**	**15 27 37.9**	**-0.3**
	baz=274						
PNG				*e*S	**Sn**	**15 28 00.1**	**+0.3**
	baz=274						
JYNG	**Yonagunijimaku**	**1.75**	**55**	P	**Pn**	**15 27 39.2**	**0.0**
JYNG				S	**Sn**	**15 28 00.9**	**-0.7**
YOJ	**Yonaguni jima**	**1.81**	**56**	*e*P	**Pn**	**15 27 40.5**	**+0.5**
	baz=49						
HATJ	**Hateruma jima**	**2.31**	**74**	*e*S	**Sn**	**15 28 15.7**	**+0.3**
IRIF	**Iriomote-Funau**	**2.33**	**67**	P	**Pn**	**15 27 47.6**	**+0.4**
IRIF				S	**Sn**	**15 28 17.2**	**+1.3**
JKRS	**Kuro-shima**	**2.54**	**71**	P	**Pn**	**15 27 50.2**	**+0.1**
JKRS				*e*S	**Sb**	**15 28 23.8**	**-1.9**
JIJ	**Ishigaki jima**	**2.69**	**70**	P	**Pn**	**15 27 52.0**	**-0.2**
JIJ				S	**Sn**	**15 28 25.5**	**+0.6**
JISG	**Ishigakijimahi**	**2.91**	**66**	P	**Pn**	**15 27 55.0**	**-0.3**
JISG				S	**Sn**	**15 28 30.2**	**-0.2**

IDC 21 15:32:07.6±60.0,**18.°67S**×**179.°53W**,**h0**km,**mb3.7**/3,
mb1 3.9/3,**mb1mx3.5**/23,**mbtmp3.7**/3,**Error ellipse:**
s-maj=1084.0km s-min=158.1km az=80.0,**Fiji Islands**
region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**37.33**	**242**	P	P	15 39 21.1	-0.8
	6.8nm,1.1s,baz=60,slow=8.1,SNR=3.3						
WRA	**Warramunga Arr**	**43.45**	**260**	P	P	15 40 13.2	+0.4
	0.2nm,0.3s,baz=95,slow=7.5,SNR=15						
ASAR	**Alice Springs**	**43.56**	**255**	P	P	15 40 13.4	-0.3
	0.6nm,1.1s,baz=78,slow=8.7,SNR=3.9						

*ISK **21** 15:33:14.9, 39.°10N×29.°05E, h5km, MD2.8*
*ISCJB **21** 15:33:15.1±0.5, 39.°11N±0.°03×29.°01E±0.°03, h2km±6km,*
Error ellipse: s-maj=6.1km s-min=4.0km az=157.9
*CSEM **21** 15:33:15.3±0.1, 39.°11N×29.°01E, h2km, ML2.7, Error*
ellipse: s-maj=3.6km s-min=2.5km az=143.0
*DDA **21** 15:33:15.0, 39.°11N×28.°99E, h7km, Ml2.7*
ISC 21 15:33:15.5±1.0,**39.°13N**±0.°03×**28.°99E**±0.°02,**h4**km±10km,
n55,σ0°**50**/65,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.23**	**248**	P	**Pg**	**15 33 19.9**	**-0.1**
DEMI				S	**Sg**	**15 33 23.4**	**+0.3**
DEMI	**Demirci**	**0.23**	**248**	*i* P	**Pg**	**15 33 19.9**	**-0.1**
DEMI				*i* S	**Sg**	**15 33 23.4**	**+0.3**
GDZ	**Gediz**	**0.38**	**96**	P	**Pg**	**15 33 23.3**	**+0.4**
GDZ				S	**Sg**	**15 33 28.2**	**+0.2**
GDZ	**Gediz**	**0.38**	**96**	*i* P	**Pg**	**15 33 23.3**	**+0.4**
GDZ				*i* S	**Sg**	**15 33 28.2**	**+0.2**
TVSB	**Tavsanli**	**0.48**	**48**	*e*PG	**Pg**	**15 33 24.3**	**-0.5**
TVSB				*e*SG	**Sg**	**15 33 31.2**	**0.0**
TVSB	**Tavsanli**	**0.48**	**48**	*e*Pg	**Pg**	**15 33 24.3**	**-0.5**
TVSB				*e*Sg	**Sg**	**15 33 31.2**	**0.0**
DURS	**Dursunbey**	**0.62**	**320**	P	**Pg**	**15 33 26.2**	**-1.2**
DURS	**Dursunbey**	**0.62**	**320**	*i* P	**Pg**	**15 33 26.2**	**-1.2**
KULA	**Kula-Manisa**	**0.67**	**203**	*e*PG	**Pg**	**15 33 28.1**	**-0.2**
KULA	**Kula-Manisa**	**0.67**	**203**	*e*Pg	**Pg**	**15 33 28.1**	**-0.2**
MANT	**Manisa**	**0.72**	**208**	P	**Pg**	**15 33 29.1**	**-0.3**
MANT				S	**Sg**	**15 33 38.3**	**-0.5**
MANT	**Manisa**	**0.72**	**208**	*i* P	**Pg**	**15 33 29.1**	**-0.3**
MANT				*i* S	**Sg**	**15 33 38.3**	**-0.5**
KHAL	**Karahalli**	**0.85**	**153**	*i* S	**Sn**	**15 33 47.0**	**-0.2**
ORLT	**Orhaneli**	**0.92**	**355**	*e*PG	**Pb**	**15 33 33.8**	**-0.2**
ORLT	**Orhaneli**	**0.92**	**355**	*e*Pg	**Pb**	**15 33 33.8**	**-0.2**
AKHS	**Akhisar**	**0.95**	**255**	P	**Pg**	**15 33 33.6**	**-0.1**
AKHS	**Akhisar**	**0.95**	**255**	*i* P	**Pg**	**15 33 33.6**	**-0.1**
AKS	**Akhisar**	**0.95**	**255**	*e*PG	**Pb**	**15 33 34.3**	**-0.2**
AKS	**Akhisar**	**0.95**	**255**	*e*Pg	**Pb**	**15 33 34.3**	**-0.2**
BALB	**Balikesir**	**1.00**	**301**	*e*PG	**Pb**	**15 33 35.4**	**0.0**
BALB				*e*SG	**Sn**	**15 33 50.6**	**-0.2**
BALB	**Balikesir**	**1.00**	**301**	*e*Pg	**Pb**	**15 33 35.4**	**0.0**
BALB				*e*Sg	**Sn**	**15 33 50.6**	**-0.2**
IGD	**Bursa**	**1.15**	**8**	*i* P	**Pg**	**15 33 36.4**	**-1.1**
BALY	**Balya**	**1.23**	**300**	P	**Pg**	**15 33 38.8**	**-0.2**
BALY	**Balya**	**1.23**	**300**	*i* P	**Pg**	**15 33 38.8**	**-0.2**
KCTX	**Karacabey (Bur**	**1.24**	**337**	*e*PN	**Pn**	**15 33 39.5**	**-0.1**
KCTX	**Karacabey (Bur**	**1.24**	**337**	*e*Pn	**Pn**	**15 33 39.5**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.24**	**356**	*e*PN	**Pn**	**15 33 39.8**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.24**	**356**	*e*Pn	**Pn**	**15 33 39.8**	**+0.2**
CAVI	**Cavuskoy**	**1.26**	**31**	*e*PN	**Pg**	**15 33 39.2**	**-0.4**
CAVI	**Cavuskoy**	**1.26**	**31**	*e*Pn	**Pg**	**15 33 39.2**	**-0.4**
IZI	**Iznik**	**1.26**	**17**	*e*PN	**Pb**	**15 33 39.8**	**-0.1**
IZI	**Iznik**	**1.26**	**17**	*e*Pn	**Pb**	**15 33 39.8**	**-0.1**
GEMT	**Gemlik**	**1.31**	**7**	*e*PN	**Pb**	**15 33 40.8**	**+0.1**
GEMT	**Gemlik**	**1.31**	**7**	*e*Pn	**Pb**	**15 33 40.8**	**+0.1**
GONE	**Gonen-Balikesi**	**1.36**	**313**	*e*PN	**Pg**	**15 33 41.8**	**+0.2**
GONE	**Gonen-Balikesi**	**1.36**	**313**	*e*Pn	**Pg**	**15 33 41.8**	**+0.2**
ADVT	**Abdulvahap**	**1.42**	**24**	*e*PN	**Pg**	**15 33 42.6**	**-0.2**
ADVT	**Abdulvahap**	**1.42**	**24**	*e*Pn	**Pg**	**15 33 42.6**	**-0.2**
ARMT	**Armutlu**	**1.44**	**356**	*e*PN	**Pg**	**15 33 43.1**	**0.0**
ARMT	**Armutlu**	**1.44**	**356**	*e*Pn	**Pg**	**15 33 43.1**	**0.0**
EDC	**Edincik**	**1.50**	**325**	*e*PN	**Pb**	**15 33 43.9**	**+0.1**

YKA	**Yellowknife Ar**	**95.11**	**25**	P	**P**	**15 54 45.0**	**+0.1**
	0.2nm,0.7s,baz=242,slow=5.0,SNR=3.9						

*IDC **21** 15:42:52.3±0.9,55°.94S×27°.07W,h0km,mb4.1/5, mb1 4.2/5,mb1mx3.9/18,mbtmp4.1/5,MS3.2/1,Ms1 3.3/1, ms1mx2.7/16,Error ellipse: s-maj=41.0km s-min=25.0km az=74.0*
*NEIC **21** 15:42:57.4±0.5,55°.95S×27°.05W,h35km,mb4.9/1,Error ellipse: s-maj=18.3km s-min=9.7km az=53.0*
*ISCJB **21** 15:42:58.6±0.8,56°.0S±0°.1×27°.3W±0°.3,h63km,mb4.2/6, Error ellipse: s-maj=26.2km s-min=10.6km az=143.8*
ISC 21 15:42:59.9±0.8,56°.0S±0°.1×27°.2W±0°.2,h63km,n16, σ1§22/16,mb4.1/5,1C,South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HOPE	**Hope Point**	**5.61**	**284**	*e*Pn	**Pn**	**15 44 19.2**	**-1.4**
VNA3	**Neumayer Olymp**	**17.01**	**161**	P	**Pn**	**15 46 53.4**	**+0.1**
VNA2	**Neumayer–Watz**	**17.21**	**158**	P	**P**	**15 46 56.8**	**+0.4**
	baz=326,slow=11						
SNAA	**Sanae**	**18.76**	**156**	P	**P**	**15 47 13.7**	**+0.2**
SNAA	**Sanae**	**18.76**	**156**	*e*P	**P**	**15 47 13.5**	**0.0**
	292nm,0.8s						
SYO	**Syowa Base**	**31.60**	**141**	⇑*e*P	**P**	**15 49 12.8**	**-3.3**
QSPA	**South Pole Qui**	**34.22**	**180**	*e*P	**P**	**15 49 39.9**	**+0.7**
	12nm,0.7s						
CPUP	**Villa Florida**	**36.80**	**311**	P	**P**	**15 50 00.8**	**-0.7**
	0.6nm,0.5s,baz=129,slow=14,SNR=3.4						
VNDA	**Vanda**	**46.59**	**183**	P	**P**	**15 51 22.4**	**+1.6**
	2.6nm,0.6s,baz=187,slow=7.3,SNR=26						
VNDA				LR	LR	16 10 46.2	
	comp=Z,27nm,18.2s,baz=352,slow=36						
LPAZ	**La Paz**	**50.36**	**305**	P	**P**	**15 51 52.0**	**+0.8**
	1.2nm,0.7s,baz=195,slow=8.4,SNR=4.8						
TORD	**Torodi Ar. Bea**	**73.04**	**29**	P	**P**	**15 54 23.4**	**+0.5**
	1.8nm,0.7s,baz=200,slow=7.0,SNR=12						
ASAR	**Alice Springs**	**99.01**	**162**	P	**Pdif**	**15 56 33.7**	**0.0**
	0.4nm,0.8s,baz=187,slow=3.7,SNR=4.0						
WRA	**Warramunga Arr**	**102.73**	**162**	P	**Pdif**	**15 56 51.1**	**+0.8**
	0.3nm,0.8s,baz=198,slow=3.0,SNR=2.5						
YKA	**Yellowknife Ar**	**136.15**	**318**	PKP	**PKPdf**	**16 02 13.2**	**+0.8**
	0.1nm,0.4s,baz=126,slow=2.4,SNR=3.5						
INK	**Inuvik**	**145.78**	**321**	PKPbc	**PKPab**	**16 02 31.1**	**+0.4**
	1.4nm,0.6s,baz=106,slow=3.8,SNR=6.0						
ILAR	**Eielson Array**	**150.10**	**312**	PKPbc	**PKPbc**	**16 02 42.7**	**+0.8**
	0.9nm,0.8s,baz=122,slow=2.3,SNR=7.8						

*ISCJB **21** 15:45:58.4±0.6,39°.12N±0°.03×29°.02E±0°.04,h10km±5km, Error ellipse: s-maj=6.2km s-min=4.6km az=40.4*
*DDA **21** 15:45:58.5,39°.07N×29°.03E,h7km,Md2.3*
*CSEM **21** 15:45:58.3±0.1,39°.13N×29°.01E,h8km,MD2.3,Error ellipse: s-maj=2.5km s-min=1.8km az=101.0*
*ISK **21** 15:45:58.3,39°.14N×29°.06E,h11km,MD2.6*
ISC 21 15:45:58.3±0.9,39°.09N±0°.03×29°.05E±0°.03,h12km±8km, n22,σ0§24/34,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**259**	P	**Pg**	**15 46 03.8**	**+0.1**
DEMI				S	**Sg**	**15 46 07.3**	**-0.1**
DEMI	**Demirci**	**0.26**	**259**	*i* P	**Pg**	**15 46 03.8**	**+0.1**
DEMI				*i* S	**Sg**	**15 46 07.3**	**-0.1**
GDZ	**Gediz**	**0.34**	**91**	P	**Pg**	**15 46 05.6**	**+0.4**
GDZ				S	**Sb**	**15 46 11.1**	**-0.6**
GDZ	**Gediz**	**0.34**	**91**	*i* P	**Pg**	**15 46 05.6**	**+0.4**
GDZ				*i* S	**Sb**	**15 46 11.1**	**-0.6**
TVSB	**Tavsanli**	**0.48**	**42**	*e*PG	**Pg**	**15 46 07.6**	**-0.1**
TVSB				*e*SG	**Sg**	**15 46 14.0**	**-0.2**
TVSB	**Tavsanli**	**0.48**	**42**	*e*Pg	**Pg**	**15 46 07.6**	**-0.1**
TVSB				*e*Sg	**Sg**	**15 46 14.0**	**-0.2**
MANT	**Manisa**	**0.71**	**212**	P	**Pg**	**15 46 12.1**	**0.0**
MANT				S	**Sb**	**15 46 22.4**	**-0.1**
MANT	**Manisa**	**0.71**	**212**	*i* P	**Pg**	**15 46 12.2**	**0.0**
MANT				*i* S	**Sb**	**15 46 22.4**	**-0.1**
KHAL	**Karahalli**	**0.80**	**154**	P	**Pn**	**15 46 15.6**	**+0.1**
KHAL				S	**Sb**	**15 46 25.0**	**0.0**
KHAL	**Karahalli**	**0.80**	**154**	*i* P	**Pn**	**15 46 15.6**	**+0.1**
KHAL				*i* S	**Sb**	**15 46 25.0**	**0.0**
KHL	**Karahalli**	**0.85**	**154**	*e*PG	**Pn**	**15 46 15.9**	**-0.2**
KHL	**Karahalli**	**0.85**	**154**	*e*Pg	**Pn**	**15 46 15.9**	**-0.2**
CAVI	**Cavuskoy**	**1.27**	**29**	*e*PN	**Pb**	**15 46 22.1**	**+0.1**
CAVI				*e*SN	**Sn**	**15 46 39.0**	**+0.3**
CAVI	**Cavuskoy**	**1.27**	**29**	*e*Pn	**Pb**	**15 46 22.1**	**+0.1**
CAVI				*e*Sn	**Sn**	**15 46 39.0**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.28**	**354**	*e*PN	**Pn**	**15 46 22.0**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.28**	**354**	*e*Pn	**Pn**	**15 46 22.0**	**+0.1**
IZI	**Iznik**	**1.28**	**15**	*e*PN	**Pn**	**15 46 22.2**	**+0.1**
IZI	**Iznik**	**1.28**	**15**	*e*Pn	**Pn**	**15 46 22.2**	**+0.1**
KCTX	**Karacabey (Bur**	**1.29**	**336**	*e*PN	**Pn**	**15 46 22.2**	**+0.2**
KCTX	**Karacabey (Bur**	**1.29**	**336**	*e*Pn	**Pn**	**15 46 22.2**	**+0.2**
ARMT	**Armutlu**	**1.48**	**355**	*e*PN	**Pn**	**15 46 24.8**	**+0.1**
ARMT	**Armutlu**	**1.48**	**355**	*e*Pn	**Pn**	**15 46 24.8**	**+0.1**

*ISCJB **21** 15:57:55.0±0.5,39°.11N±0°.03×29°.09E±0°.04,h5km±7km, Error ellipse: s-maj=6.3km s-min=4.6km az=145.3*
*DDA **21** 15:57:54.6,39°.12N×29°.08E,h7km,Md2.5*
*CSEM **21** 15:57:55.1±0.1,39°.11N×29°.08E,h5km,MD2.5,Error ellipse: s-maj=3.9km s-min=3.0km az=103.0*
*ISK **21** 15:57:55.7,39°.16N×29°.10E,h6km,MD2.6*
ISC 21 15:57:55.0±1.0,39°.11N±0°.02×29°.08E±0°.03,h12km±12km, n25,σ0§39/35,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.29**	**257**	P	**Pg**	**15 58 00.3**	**-0.7**
DEMI				S	**Sg**	**15 58 05.9**	**+0.9**
DEMI	**Demirci**	**0.29**	**257**	*i* P	**Pg**	**15 58 00.3**	**-0.7**
DEMI				*i* S	**Sg**	**15 58 05.9**	**+0.9**
GDZ	**Gediz**	**0.32**	**94**	P	**Pg**	**15 58 01.5**	**0.0**
GDZ				S	**Sg**	**15 58 05.9**	**0.0**
GDZ	**Gediz**	**0.32**	**94**	*i* P	**Pg**	**15 58 01.5**	**0.0**
GDZ				*i* S	**Sg**	**15 58 05.9**	**0.0**
TVSB	**Tavsanli**	**0.45**	**41**	*e*PG	**Pg**	**15 58 04.1**	**+0.1**
TVSB				*e*SG	**Sg**	**15 58 09.7**	**-0.3**
DURS	**Dursunbey**	**0.68**	**317**	*i* P	Pg	15 57 58.6	-10
MANT	**Manisa**	**0.74**	**213**	P	**Pg**	**15 58 09.4**	**0.0**
MANT				S	**Sg**	**15 58 19.4**	**+0.2**
MANT	**Manisa**	**0.74**	**213**	*i* P	**Pg**	**15 58 09.4**	**0.0**
MANT				*i* S	**Sg**	**15 58 19.4**	**+0.2**
KHAL	**Karahalli**	**0.81**	**156**	P	**Pb**	**15 58 11.0**	**0.0**
KHAL				S	**Sg**	**15 58 21.4**	**+0.2**
KHAL	**Karahalli**	**0.81**	**156**	*i* P	**Pb**	**15 58 11.0**	**0.0**
KHAL				*i* S	**Sg**	**15 58 21.4**	**+0.2**
ORLT	**Orhaneli**	**0.94**	**352**	*e*PG	**Pg**	**15 58 13.4**	**+0.2**
ORLT	**Orhaneli**	**0.94**	**352**	*e*Pg	**Pg**	**15 58 13.5**	**+0.2**
IGD	**Bursa**	**1.16**	**5**	*i* P	**Pb**	**15 58 16.5**	**-0.4**
IGD				*i* S	**Sg**	**15 58 32.2**	**-0.2**
CAVI	**Cavuskoy**	**1.24**	**28**	*e*PN	**Pg**	**15 58 18.7**	**-0.2**
CAVI				*e*SN	**Sg**	**15 58 35.9**	**+0.9**
CAVI	**Cavuskoy**	**1.24**	**28**	*e*Pn	**Pg**	**15 58 18.7**	**-0.2**
IZI	**Iznik**	**1.26**	**14**	*e*PN	**Pb**	**15 58 18.7**	**-0.1**
IZI	**Iznik**	**1.26**	**14**	*e*Pn	**Pb**	**15 58 18.7**	**-0.1**
KCTX	**Karacabey (Bur**	**1.28**	**335**	*e*PN	**Pg**	**15 58 20.1**	**+0.4**
KCTX	**Karacabey (Bur**	**1.28**	**335**	*e*Pn	**Pg**	**15 58 20.1**	**+0.4**
GONE	**Gonen-Balikesi**	**1.43**	**311**	*e*PN	**Pg**	**15 58 22.2**	**-0.2**
GONE	**Gonen-Balikesi**	**1.43**	**311**	*e*Pn	**Pg**	**15 58 22.2**	**-0.2**
ARMT	**Armutlu**	**1.46**	**354**	*e*PN	**Pg**	**15 58 22.7**	**-0.4**
ARMT	**Armutlu**	**1.46**	**354**	*e*Pn	**Pg**	**15 58 22.7**	**-0.4**
GULT	**Gulveren**	**1.72**	**40**	*e*PN	**Pb**	**15 58 26.5**	**-0.1**
GULT	**Gulveren**	**1.72**	**40**	*e*Pn	**Pb**	**15 58 26.5**	**-0.1**

*IDC **21** 15:58:53.2±1.5,10°.85S×34°.07E,h0km,mb3.8/1, mb1 3.7/3,mb1mx3.3/53,mbtmp3.7/3,ML3.5/2,Error ellipse: s-maj=263.9km s-min=13.6km az=114.0*
ISC 21 15:58:54.2±1.3,10°.2S±0°.2×32°.6E±0°.5,h10km,n6,σ1§45/9, Zambia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DODT	**Dodoma, Tanzan**	**5.10**	**38**	*i* P	**Pb**	**16 00 25.7**	**+1.9**
DODT				*i* S	**Sg**	**16 01 36.5**	**-1.7**
KMBO	**Kilima Mbogo**	**10.17**	**28**	Pn	**Pn**	**16 01 21.7**	**+1.0**
	0.5nm,0.3s,baz=217,slow=20,SNR=6.3						
KMBO				Sn	**Sn**	**16 03 14.3**	**-0.8**
	0.8nm,0.3s,baz=331,slow=20,SNR=6.4						
KMBO				Lg	Lg	16 04 21.8	
	0.3nm,0.3s,baz=284,slow=19,SNR=3.0						
BLWY	**Bulawayo**	**10.57**	**201**	*i* P	Pn	16 01 31.3	+5.3
BLWY				*i* S	Sn	16 03 35.0	+10
MATP	**Matopo**	**10.87**	**201**	*i* P	**Pn**	**16 01 28.8**	**-1.4**
MATP				*i* S	**Sn**	**16 03 32.8**	**+0.9**
BOSA	**Boshof**	**19.53**	**200**	P	**Pn**	**16 03 23.6**	**+0.1**
	0.1nm,0.3s,baz=19,slow=11,SNR=3.2						
BOSA				S	**S**	**16 07 03.4**	**+0.4**
	0.1nm,0.3s,baz=90,slow=19,SNR=2.0						
BOSA				Lg	Lg	16 09 23.9	
	0.2nm,0.3s,baz=120,slow=20,SNR=2.3						
MKAR	**Makanchi Array**	**72.00**	**33**	P	**P**	**16 10 17.1**	**-1.2**
	0.7nm,0.7s,baz=241,slow=6.8,SNR=6.2						

*NEIC **21** 16:01:54.7,37°.64S×176°.01E,h274km,MG4.0(WEL), After WEL.*
WEL 21 16:01:55.1±0.4,37°.65S×175°.98E,h270km±3km,ML4.0/12, 5C-16D,Error ellipse: s-maj=4.5km s-min=4.2km az=0.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TLZ	**Tolley Road**	**0.76**	**207**	PN	Pn	16 02 32.0	+0.9
TLZ	**Tolley Road**	**0.76**	**207**	Pn	Pn	16 02 32.0	+0.9
MUGZ	**Murupara**	**1.03**	**143**	PN	Pn	16 02 32.2	-0.1
URZ	**Urewera**	**1.08**	**124**	PN	Pn	16 02 32.3	-0.2
URZ				SN	S	16 03 02.0	-0.3
URZ				AML	AML	16 03 03.5	
URZ	**Urewera**	**1.08**	**124**	Pn	Pn	16 02 32.0	-0.5
URZ				Sn	S	16 03 02.0	-0.3
URZ				*e*S	S	16 03 02.1	-0.1
MRHZ	**Matea Rd**	**1.23**	**164**	PN	Pn	16 02 33.5	0.0
RTZ	**Ruatahuna**	**1.25**	**141**	PN	Pn	16 02 33.6	0.0
RTZ				SN	S	16 03 04.1	-0.1
MWZ	**Matawai**	**1.40**	**120**	PN	Pn	16 02 34.7	+0.1
MWZ				SN	S	16 03 05.6	-0.3
MWZ				AML	AML	16 03 09.2	
MWZ	**Matawai**	**1.40**	**120**	Pn	Pn	16 02 34.7	+0.1
MWZ				Sn	S	16 03 05.6	-0.3
RAGZ	**Rawiri**	**1.41**	**127**	PN	Pn	16 02 35.1	+0.3
RAGZ	**Rawiri**	**1.41**	**127**	Pn	Pn	16 02 35.1	+0.3
HAZ	**Te Kaha**	**1.44**	**95**	PN	Pn	16 02 34.3	-0.5
HAZ				SN	S	16 03 05.3	-0.9
RAHZ	**Arahi**	**1.53**	**146**	PN	Pn	16 02 35.9	+0.4
RAHZ	**Arahi**	**1.53**	**146**	Pn	Pn	16 02 35.9	+0.4
NGZ	**Ngauruhoe**	**1.55**	**191**	PN	Pn	16 02 35.9	+0.1
NGZ	**Ngauruhoe**	**1.55**	**191**	Pn	Pn	16 02 35.9	+0.1
SNGZ	**Shannon Statio**	**1.56**	**137**	⇓PN	Pn	16 02 36.0	+0.3
SNGZ	**Shannon Statio**	**1.56**	**137**	Pn	Pn	16 02 36.0	+0.3
BKZ	**Black Stump Fm**	**1.56**	**165**	⇓PN	Pn	16 02 35.7	-0.1
BKZ				SN	S	16 03 06.3	-1.7
BKZ				AML	AML	16 03 09.8	
BKZ	**Black Stump Fm**	**1.56**	**165**	Pn	Pn	16 02 35.7	-0.1
BKZ				Sn	S	16 03 07.2	-0.8
NMHZ	**Naumai**	**1.58**	**156**	⇓PN	Pn	16 02 36.6	+0.7
NMHZ	**Naumai**	**1.58**	**156**	Pn	Pn	16 02 36.6	+0.7
TUVZ	**Tukino**	**1.63**	**189**	PN	Pn	16 02 36.3	-0.1
TUVZ	**Tukino**	**1.63**	**189**	Pn	Pn	16 02 36.3	-0.1
FWVZ	**Far West T-bar**	**1.63**	**192**	PN	Pn	16 02 36.3	-0.1
FWVZ	**Far West T-bar**	**1.63**	**192**	Pn	Pn	16 02 36.4	-0.1
TWGZ	**Tauwhareparae**	**1.67**	**109**	PN	Pn	16 02 36.9	+0.3
TKGZ	**Te Karaka**	**1.67**	**119**	⇓PN	Pn	16 02 36.7	+0.2
TKGZ	**Te Karaka**	**1.67**	**119**	Pn	Pn	16 02 36.7	+0.2
WNVZ	**Wahianoa**	**1.70**	**190**	PN	Pn	16 02 36.7	-0.2
WNVZ	**Wahianoa**	**1.70**	**190**	Pn	Pn	16 02 36.7	-0.2
PKVZ	**Pokaka**	**1.71**	**197**	PN	Pn	16 02 36.9	+0.1
PKVZ	**Pokaka**	**1.71**	**197**	Pn	Pn	16 02 36.9	+0.1
WHHZ	**Waihua**	**1.73**	**146**	PN	Pn	16 02 37.1	+0.2
VRZ	**Vera Road**	**1.75**	**213**	PN	Pn	16 02 37.7	+0.6
VRZ	**Vera Road**	**1.75**	**213**	Pn	Pn	16 02 37.7	+0.6
RIGZ	**Rimuhau**	**1.76**	**127**	⇓PN	Pn	16 02 37.4	+0.2
MOVZ	**Moawhango**	**1.76**	**186**	⇑PN	Pn	16 02 36.9	-0.4
MOVZ	**Moawhango**	**1.76**	**186**	Pn	Pn	16 02 36.9	-0.4
MTVZ	**Mangateitei**	**1.77**	**193**	PN	Pn	16 02 37.0	-0.4
MTVZ	**Mangateitei**	**1.77**	**193**	Pn	Pn	16 02 37.2	-0.2
ARHZ	**Aropaoanui**	**1.80**	**154**	PN	Pn	16 02 37.6	+0.2
ARHZ	**Aropaoanui**	**1.80**	**154**	Pn	Pn	16 02 37.6	+0.2
KWHZ	**Kaweka Forest**	**1.80**	**169**	⇓PN	Pn	16 02 37.5	0.0
BHHZ	**Black Hill Sta**	**1.83**	**178**	⇓PN	Pn	16 02 37.5	-0.3
BHHZ	**Black Hill Sta**	**1.83**	**178**	Pn	Pn	16 02 37.5	-0.3
MXZ	**Matakaoa Point**	**1.85**	**88**	PN	Pn	16 02 38.0	0.0
MXZ	**Matakaoa Point**	**1.85**	**88**	Pn	Pn	16 02 38.0	0.0
PUZ	**Puketiti**	**1.85**	**104**	PN	Pn	16 02 37.7	-0.3
PUZ				AML	AML	16 03 13.7	
PUZ	**Puketiti**	**1.85**	**104**	Pn	Pn	16 02 37.7	-0.3
MCHZ	**McNeill Hill**	**1.88**	**163**	⇓PN	Pn	16 02 38.3	+0.2
MCHZ	**McNeill Hill**	**1.88**	**163**	Pn	Pn	16 02 38.3	+0.2
KNZ	**Kokohu**	**1.91**	**136**	⇓PN	Pn	16 02 38.0	-0.3
KNZ	**Kokohu**	**1.91**	**136**	Pn	Pn	16 02 38.0	-0.3
WMGZ	**Waiomatatini S**	**1.94**	**96**	PN	Pn	16 02 38.7	+0.1
WMGZ	**Waiomatatini S**	**1.94**	**96**	Pn	Pn	16 02 38.8	+0.1
CNGZ	**Carnagh Statio**	**1.95**	**116**	PN	Pn	16 02 38.9	+0.3
CNGZ	**Carnagh Statio**	**1.95**	**116**	Pn	Pn	16 02 39.0	+0.3
PRGZ	**Paritu Road**	**1.96**	**131**	PN	Pn	16 02 38.6	-0.3
PRGZ	**Paritu Road**	**1.96**	**131**	Pn	Pn	16 02 38.6	-0.3
KRHZ	**Kereru**	**2.01**	**171**	⇓PN	Pn	16 02 38.8	-0.5
MHGZ	**Mahia Peninsul**	**2.13**	**135**	⇓PN	Pn	16 02 40.1	-0.2
MHGZ	**Mahia Peninsul**	**2.13**	**135**	Pn	Pn	16 02 40.1	-0.2
NEZ	**North Egmont**	**2.19**	**222**	PN	Pn	16 02 41.9	+1.0
NEZ	**North Egmont**	**2.19**	**222**	Pn	Pn	16 02 41.9	+1.0
WAZ	**Wanganui**	**2.24**	**200**	⇓PN	Pn	16 02 40.8	-0.4
WAZ	**Wanganui**	**2.24**	**200**	Pn	Pn	16 02 40.8	-0.4
KAHZ	**Kahuranaki**	**2.25**	**162**	⇓PN	Pn	16 02 41.0	-0.4
KAHZ	**Kahuranaki**	**2.25**	**162**	Pn	Pn	16 02 41.0	-0.4
PNHZ	**Pukenui**	**2.26**	**176**	PN	Pn	16 02 40.7	-0.9
PNHZ	**Pukenui**	**2.26**	**176**	Pn	Pn	16 02 40.7	-0.9
TSZ	**Takapari Road**	**2.40**	**180**	⇑PN	Pn	16 02 41.7	-1.1
TSZ				AML	AML	16 03 20.2	
TSZ				AML	AML	16 03 22.5	
TSZ	**Takapari Road**	**2.40**	**180**	Pn	Pn	16 02 41.7	-1.1
PXZ	**Pawanui**	**2.47**	**164**	⇓PN	Pn	16 02 42.6	-0.8
PXZ				AML	AML	16 03 23.3	
PXZ	**Pawanui**	**2.47**	**164**	Pn	Pn	16 02 42.6	-0.8
OHWZ	**Ohakea**	**2.60**	**191**	PN	Pn	16 02 44.1	-0.6
DVHZ	**Dannevirke**	**2.65**	**177**	PN	Pn	16 02 44.0	-1.1
DVHZ	**Dannevirke**	**2.65**	**177**	Pn	Pn	16 02 44.0	-1.1
PRHZ	**Porangahau**	**2.66**	**169**	PN	Pn	16 02 44.2	-1.1
PRHZ	**Porangahau**	**2.66**	**169**	Pn	Pn	16 02 44.2	-1.0
POWZ	**Post Office Ro**	**2.74**	**183**	PN	Pn	16 02 44.7	-1.4
POWZ	**Post Office Ro**	**2.74**	**183**	Pn	Pn	16 02 44.7	-1.4
ANWZ	**Angora Road**	**2.83**	**172**	PN	Pn	16 02 45.8	-1.1
PRWZ	**Pori Road**	**2.90**	**180**	PN	Pn	16 02 46.5	-1.1
PRWZ	**Pori Road**	**2.90**	**180**	Pn	Pn	16 02 46.5	-1.1
MRZ	**Mangatainoka R**	**3.02**	**186**	PN	Pn	16 02 46.9	-2.1
MRZ	**Mangatainoka R**	**3.02**	**186**	Pn	Pn	16 02 46.9	-2.1
BFZ	**Birch Farm**	**3.03**	**176**	PN	Pn	16 02 47.4	-1.6
BFZ	**Birch Farm**	**3.03**	**176**	Pn	Pn	16 02 47.4	-1.6
TIWZ	**Tintock**	**3.12**	**181**	PN	Pn	16 02 48.1	-1.9
TIWZ				AML	AML	16 03 32.6	
TIWZ				AML	AML	16 03 34.8	
TIWZ	**Tintock**	**3.12**	**181**	Pn	Pn	16 02 48.1	-1.9
OGWZ	**Otaki Gorge**	**3.22**	**191**	PN	Pn	16 02 49.0	-2.0
OGWZ	**Otaki Gorge**	**3.22**	**191**	Pn	Pn	16 02 49.0	-2.0
HOWZ	**Holdsworth Sta**	**3.26**	**186**	PN	Pn	16 02 49.2	-2.3
HOWZ	**Holdsworth Sta**	**3.26**	**186**	Pn	Pn	16 02 49.2	-2.3
KIW	**Kapiti Island**	**3.31**	**194**	PN	Pn	16 02 49.7	-2.3
KIW				AML	AML	16 03 34.0	
KIW				AML	AML	16 03 35.0	
KIW	**Kapiti Island**	**3.31**	**194**	Pn	Pn	16 02 49.7	-2.3
TMWZ	**Te Maipa**	**3.45**	**181**	PN	Pn	16 02 51.6	-2.0
TMWZ	**Te Maipa**	**3.45**	**181**	Pn	Pn	16 02 51.6	-2.0
MTW	**Mount Morrison**	**3.52**	**186**	PN	Pn	16 02 51.6	-2.7
MTW				AML	AML	16 03 39.0	
MTW				AML	AML	16 03 39.7	
MTW	**Mount Morrison**	**3.52**	**186**	Pn	Pn	16 02 51.6	-2.7
CAW	**Cannon Point**	**3.52**	**191**	PN	Pn	16 02 51.7	-2.6
CAW				AML	AML	16 03 39.1	
CAW				AML	AML	16 03 39.2	
CAW	**Cannon Point**	**3.52**	**191**	Pn	Pn	16 02 51.7	-2.6
DUWZ	**D'Urville Isla**	**3.53**	**206**	PN	Pn	16 02 51.8	-2.6
DUWZ	**D'Urville Isla**	**3.53**	**206**	Pn	Pn	16 02 51.8	-2.6
WEL	**Wellington**	**3.75**	**194**	PN	Pn	16 02 54.4	-2.4
WEL	**Wellington**	**3.75**	**194**	Pn	Pn	16 02 54.4	-2.4
TRWZ	**Traveller**	**3.75**	**183**	PN	Pn	16 02 54.5	-2.3
TRWZ	**Traveller**	**3.75**	**183**	Pn	Pn	16 02 54.5	-2.3
PAWZ	**Paruwai Farm**	**3.75**	**186**	PN	Pn	16 02 54.1	-2.8
PAWZ	**Paruwai Farm**	**3.75**	**186**	Pn	Pn	16 02 54.1	-2.8
TCW	**Tory Channel**	**3.79**	**200**	PN	Pn	16 02 54.5	-2.8
TCW				AML	AML	16 03 43.6	
TCW				AML	AML	16 03 44.4	
TCW	**Tory Channel**	**3.79**	**200**	Pn	Pn	16 02 54.5	-2.8
MSWZ	**Moikau Station**	**3.80**	**188**	Pn	Pn	16 02 54.5	-3.0
PLWZ	**Palliser**	**3.95**	**188**	PN	Pn	16 02 56.0	-3.1
PLWZ	**Palliser**	**3.95**	**188**	Pn	Pn	16 02 56.0	-3.1
TUWZ	**Tuamarina**	**4.09**	**202**	PN	Pn	16 02 57.8	-2.9
TUWZ				AML	AML	16 03 48.8	
TUWZ				AML	AML	16 03 49.2	
TUWZ	**Tuamarina**	**4.09**	**202**	Pn	Pn	16 02 57.8	-2.9
NNZ	**Nelson**	**4.09**	**209**	⇓PN	Pn	16 02 57.3	-3.4
NNZ	**Nelson**	**4.09**	**209**	Pn	Pn	16 02 57.3	-3.4
QRZ	**Quartz Range**	**4.15**	**219**	PN	Pn	16 02 57.9	-3.5
QRZ	**Quartz Range**	**4.15**	**219**	Pn	Pn	16 02 57.9	-3.5
BSWZ	**Blackbirch Sta**	**4.37**	**201**	PN	Pn	16 03 01.5	-2.5
BSWZ	**Blackbirch Sta**	**4.37**	**201**	Pn	Pn	16 03 01.5	-2.5
THZ	**Tophouse**	**4.74**	**209**	PN	Pn	16 03 04.4	-3.9
THZ	**Tophouse**	**4.74**	**209**	Pn	Pn	16 03 04.4	-3.9
KHZ	**Kahutara**	**5.11**	**201**	PN	Pn	16 03 09.1	-3.6
KHZ	**Kahutara**	**5.11**	**201**	*e*Pn	Pn	16 03 09.3	-3.4
DSZ	**Denniston Nort**	**5.20**	**217**	⇑PN	Pn	16 03 09.6	-4.3
DSZ	**Denniston Nort**	**5.20**	**217**	Pn	Pn	16 03 09.6	-4.3
INZ	**Inchbonnie**	**6.14**	**213**	⇑PN	Pn	16 03 20.4	-4.8
OXZ	**Oxford**	**6.41**	**207**	PN	Pn	16 03 23.5	-5.1
OXZ	**Oxford**	**6.41**	**207**	Pn	Pn	16 03 23.5	-5.1
CRLZ	**Canterbury Las**	**6.44**	**202**	PN	Pn	16 03 23.8	-5.1
CRLZ	**Canterbury Las**	**6.44**	**202**	Pn	Pn	16 03 23.8	-5.1
MQZ	**McQueen's Vall**	**6.55**	**202**	⇑PN	Pn	16 03 24.9	-5.4
MQZ	**McQueen's Vall**	**6.55**	**202**	Pn	Pn	16 03 24.9	-5.4
WVZ	**Waitaha Valley**	**6.73**	**215**	⇓PN	Pn	16 03 27.7	-4.8
WVZ	**Waitaha Valley**	**6.73**	**215**	Pn	Pn	16 03 27.7	-4.8
RPZ	**Rata Peaks**	**7.12**	**210**	PN	Pn	16 03 32.2	-5.1
RPZ	**Rata Peaks**	**7.12**	**210**	Pn	Pn	16 03 32.2	-5.1
FOZ	**Fox Glacier**	**7.51**	**217**	PN	Pn	16 03 36.0	-6.2
FOZ	**Fox Glacier**	**7.51**	**217**	Pn	Pn	16 03 36.0	-6.2
LBZ	**Lake Benmore**	**8.02**	**211**	PN	Pn	16 03 43.2	-5.4
LBZ	**Lake Benmore**	**8.02**	**211**	Pn	Pn	16 03 43.2	-5.4
JCZ	**Jackson Bay**	**8.41**	**218**	PN	Pn	16 03 47.0	-6.5
JCZ	**Jackson Bay**	**8.41**	**218**	Pn	Pn	16 03 47.0	-6.5
WKZ	**Wanaka**	**8.88**	**214**	Pn	Pn	16 03 52.5

TVSB	Tavsanli	0.45	39	*e*Pg		Pg	16 14 26.2	-0.3
KULA	Kula-Manisa	0.67	210	*e*PG		Pb	16 14 31.3	-0.3
KULA	Kula-Manisa	0.67	210	*e*Pg		Pb	16 14 31.3	-0.3
DURS	Dursunbey	0.69	317	P		Pg	16 14 30.8	-0.2
DURS	Dursunbey	0.69	317	*i* P		Pg	16 14 30.8	-0.2
MANT	Manisa	0.74	215	P		Pg	16 14 31.9	+0.1
MANT				S		Sg	16 14 41.0	-0.5
MANT	Manisa	0.74	215	*i* P		Pg	16 14 31.9	+0.1
MANT				*i* S		Sg	16 14 41.0	-0.5
KHAL	Karahalli	0.79	157	P		Pb	16 14 33.4	-0.2
KHAL				S		Sg	16 14 43.1	-0.1
KHAL	Karahalli	0.79	157	*i* P		Pb	16 14 33.4	-0.2
KHAL				*i* S		Sg	16 14 43.1	-0.1
KHL	Karahalli	0.85	156	*e*PG		Pb	16 14 34.5	0.0
KHL	Karahalli	0.85	156	*e*Pg		Pb	16 14 34.5	0.0
AKS	Akhisar	1.02	258	*e*PG		Pb	16 14 37.6	+0.2
AKS				*e*SG		Sn	16 14 52.1	-0.4
AKS	Akhisar	1.02	258	*e*Pg		Pb	16 14 37.6	+0.2
AKS				*e*Sg		Sn	16 14 52.2	-0.4
BALB	Balikesir	1.08	300	*e*PN		Pb	16 14 38.6	+0.1
BALB				*e*SN		Sn	16 14 54.6	+0.5
BALB	Balikesir	1.08	300	*e*Pn		Pb	16 14 38.6	+0.1
BALB				*e*Sn		Sn	16 14 54.6	+0.5
IGD	Bursa	1.17	4	*i* P		Pb	16 14 39.0	-1.0
CAVI	Cavuskoy	1.25	28	*e*PN		Pn	16 14 41.2	0.0
CAVI	Cavuskoy	1.25	28	*e*Pn		Pn	16 14 41.2	0.0
KCTX	Karacabey (Bur	1.29	334	*e*PN		Pg	16 14 42.5	+0.1
KCTX	Karacabey (Bur	1.29	334	*e*Pn		Pg	16 14 42.5	+0.1
ARMT	Armutlu	1.48	353	*e*PN		Pb	16 14 45.0	-0.1
ARMT	Armutlu	1.48	353	*e*Pn		Pb	16 14 45.1	-0.1
GULT	Gulveren	1.73	39	*e*PN		Pn	16 14 48.3	+0.4
GULT	Gulveren	1.73	39	*e*Pn		Pn	16 14 48.3	+0.4

*IDC **21** 16:27:16.8±3.8, 22°.60S×170°.38E, h0km, mb3.7/3, mb1 3.9/3, mb1mx3.6/26, mbtmp3.7/3, Error ellipse: s-maj=141.2km s-min=48.6km az=146.0*

ISC 21 16:27:15.4±2.0, 23°.1S±0°.4×171°.3E±0°.3, h35km, n7, σ0°71/7, mb3.5/3, Southeast of Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	Stephens Creek	27.71	245	P	P	16 33 01.5	+1.0
	3.6nm,1.0s,baz=90,slow=12,SNR=2.8						
ASAR	Alice Springs	34.28	261	P	P	16 33 58.1	-0.5
	0.3nm,0.5s,baz=95,slow=9.1,SNR=10						
WRA	Warramunga Arr	34.49	268	P	P	16 33 59.7	-0.6
	0.4nm,0.7s,baz=96,slow=8.5,SNR=4.5						
SNAA	Sanae	85.39	182	P	P	16 39 48.6	-0.2
VNA3	Neumayer Olymp	85.91	180	P	P	16 39 51.3	0.0
VNA2	Neumayer--Watz	86.23	180	P	P	16 39 52.6	-0.3
	baz=176,slow=4.3						
GERES	GERESS Array B	148.79	331	PKPbc	PKPab	16 47 03.4	+0.4
	0.3nm,0.6s,baz=222,slow=1.3,SNR=2.4						

*BJI **21** 16:30:28.8, 31°.30N×41°.00W, h10km, mb4.8/9, mB5.2/9, Ms4.8/5, Ms7 4.6/4*

*IDC **21** 16:30:28.9±0.4, 31°.30N×41°.10W, h0km, mb4.4/31, mb1 4.5/31, mb1mx4.4/41, mbtmp4.4/31, MS3.9/44, Ms1 3.9/44, ms1mx3.8/58, Error ellipse: s-maj=13.9km s-min=11.0km az=160.0*

*MOS **21** 16:30:29.0±1.0, 31°.30N×41°.07W, h10km, mb5.1/67, MS4.1/7, Error ellipse: s-maj=8.3km s-min=5.0km az=51.9*

*ISCJB **21** 16:30:30.3±0.2, 31°.28N±0°.06×41°.08W±0°.02, h19km, mb4.8/177, MS3.9/53, Error ellipse: s-maj=8.0km s-min=2.5km az=175.4*

*GCMT **21** 16:30:30.4±0.4, 31°.49N×40°.98W, h14km±1km, MW5.0/87, Moment Tensor Solution. s11,c12; s87,c109; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-2.79±.24; $M_{\theta\theta}$1.26±.17; $M_{\phi\phi}$1.53±.15; $M_{r\theta}$-0.66±.43; $M_{r\phi}$1.44±.09; $M_{\theta\phi}$-1.92±.38; Best double couple: $M_0$3.47000×10^{16} NP1:ϕ_s29.00000°, δ63.00000°, λ-102.00000°. NP2: ϕ_s235.00000°, δ29.00000°, λ-67.00000°. Principal axes: T 3.4180, Plg17.0000°, Azm128.0000°; N 0.1050, Plg11.0000°, Azm35.0000°; P -3.5220, Plg70.0000°, Azm274.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

*NEIC **21** 16:30:30.4±0.3, 31°.25N×41°.02W, h10km, mb5.0/113 Error ellipse: s-maj=8.5km s-min=4.0km az=178.0*

ISC 21 16:30:30.9±0.7, 31°.28N±0°.07×41°.09W±0°.06, h13km±3km, h12km:pP-P, n491, σ1§15/481, mb4.9/184, MS3.9/53, 24C-11D, Northern Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BBSR	BB Station	20.08	279	*e*P	Pn	16 35 05.0	-1.1
PMOZ	Porto Moniz, M	20.31	79	*e*S	Sn	16 39 00.7	+3.2
DRLN	Deer Lake	21.81	330	*e*P	P	16 35 20.4	-2.4
	174nm,1.4s						
LMN	Caledonia Moun	23.45	315	*e*P	P	16 35 38.8	-1.2
	74nm,1.3s						
SJG	San Juan	26.19	246	LR	LR	16 44 23.6	
	comp=Z,135nm,22.0s,baz=65,slow=32						
BBTS	Babate	27.91	121	LR	LR	16 44 50.0	
	comp=Z,751nm,20.5s,baz=274,slow=31						
ACCN	Adirondack Com	28.40	304	*e*P	P	16 36 25.8	+0.7
	69nm,1.9s						
SCHQ	Schefferville	29.82	330	P	P	16 36 37.0	-0.6
	5.1nm,0.8s,baz=117,slow=9.7,SNR=3.9						
SCHQ				LR	LR	16 47 50.3	
	comp=Z,826nm,19.3s,baz=110,slow=35						
BINY	Binghamton	29.82	301	*e*P	P	16 36 37.0	-0.8
	63nm,1.8s						
PAB	San Pablo	30.89	64	*e*P	P	16 36 46.2	-1.1
PAB				pmax	pmax		
	comp=Z,9.0nm,1.1s						
PAB	San Pablo	30.89	64	*e*P	P	16 36 46.2	-1.1
	comp=Z,8.5nm,1.1s						
SSPA	Standing Stone	31.02	298	P	P	16 36 45.2	-3.2
	comp=Z,28nm,1.5s						
ESDC	Sonseca Array	31.20	64	P	P	16 36 49.9	-0.1
	comp=Z,7.2nm,1.2s,baz=261,slow=7.9,SNR=11						
ESDC				LR	LR	16 47 34.0	
	comp=Z,85nm,18.2s,baz=245,slow=33						
ESLA	Sonseca Array	31.20	64	*e*P	P	16 36 50.8	+0.8
	comp=Z,23nm,1.6s						
ES19	SONSECA Array	31.25	64	*e*P	P	16 36 50.2	-0.3
SADO	Sadowa	32.55	305	*e*P	P	16 37 00.1	-1.7
	comp=Z,17nm,1.3s						
DYA	Yadsworthy	33.54	44	*e*P	P	16 37 10.0	-0.3
	comp=Z,166nm,1.7s						
KMSC	Kings Mountain	33.73	288	P	P	16 37 12.6	+0.4
	baz=85						
TKL	Tuckaleechee C	35.67	289	P	P	16 37 29.0	+0.1
	comp=Z,4.4nm,0.8s,baz=81,slow=7.5,SNR=3.7						
TKL	Tuckaleechee C	35.67	289	P	P	16 37 29.0	+0.1
CWF	Charnwood Fore	35.88	42	*e*P	P	16 37 29.0	-1.5
	comp=Z,32nm,1.2s						
CPCT	Cooper Cave	36.30	289	*e*P	P	16 37 33.0	-1.3
	comp=Z,9.4nm,1.3s						
PTGA	Pitinga	36.53	213	P	P	16 37 37.0	+0.6
	comp=Z,5.2nm,0.8s,baz=10,slow=10,SNR=8.8						
FRB	Frobisher Bay	36.81	340	P	P	16 37 31.2	-7.1
	comp=Z,11nm,1.2s,baz=119,slow=8.3,SNR=5.0						
LBL	Lubilhac	37.03	55⇑	*e*P	P	16 37 42.4	+1.8
PLDF	La Plantade	37.38	54⇑	*e*P	P	16 37 45.4	+1.9
SFIN	Lafayette	38.03	297	P	P	16 37 49.2	+0.2
	baz=89						
SFIN	Lafayette	38.03	297	P	P	16 37 47.6	-1.4
	comp=Z,87nm,1.9s						
WLF	Walferdange	39.61	48	*e*P	P	16 38 00.2	-1.9
WLF				pmax	pmax		
	comp=Z,22nm,1.2s						
WLF	Walferdange	39.61	48	*e*P	P	16 38 00.2	-1.9
	comp=Z,22nm,1.2s						
LOMF	Lomont	39.74	52⇑	*e*P	P	16 38 04.0	+0.7
147A	Livingston	39.79	285	P	P	16 38 04.4	+0.6
	baz=79						
S44A	Carbondale	39.86	293	P	P	16 38 04.7	+0.4
	baz=84						
MOF	Molkenrain	40.00	51⇑	*e*P	P	16 38 05.5	0.0
Y46A	Houston	40.05	287	P	P	16 38 06.7	+0.8
	baz=80						
ECH	Echery	40.06	51⇑	*e*P	P	16 38 06.1	+0.2
347A	Saraland	40.27	283	P	P	16 38 08.9	+1.1
	baz=77						
JFWS	Jewell Farm	40.37	301	*e*P	P	16 38 08.3	-0.2
JFWS				pmax	pmax		
	comp=Z,41nm,1.4s						
JFWS	Jewell Farm	40.37	301	*e*P	P	16 38 08.3	-0.2
	comp=Z,41nm,1.4s						
LANF	Langenberg	40.58	50	*e*P	P	16 38 10.5	+0.3
Q42A	Golden Eagle	40.75	295	P	P	16 38 12.4	+0.7
	baz=85						
ROSC	El Rosal	40.80	237	LR	LR	16 54 01.6	
	comp=Z,110nm,21.0s,baz=70,slow=35						
BFO	Black Forest	40.85	51	*i* P	P	16 38 12.6	+0.2
BFO	Black Forest	40.85	51	P	P	16 38 08.2	-4.2
	comp=Z,66nm,1.9s						
SUMG	Summit	41.38	1	*i* P	P	16 38 16.2	-0.7
	comp=Z,36nm,1.5s						
SUMG	Summit	41.38	1	*e*P	P	16 38 16.2	-0.7
SUMG				pmax	pmax		
	comp=Z,36nm,1.5s						
CCM	Cathedral Cave	41.39	294	*e*P	P	16 38 15.6	-1.4
CCM				pmax	pmax		
	comp=Z,20nm,1.3s						
CCM	Cathedral Cave	41.39	294	*e*P	P	16 38 15.6	-1.4
	comp=Z,20nm,1.3s						
O40A	La Belle	41.69	297	P	P	16 38 19.2	-0.2
	baz=86,SNR=6.3						
DBIC	Dimbokro	41.79	118	P	P	16 38 19.8	-0.6
	comp=Z,2.4nm,0.7s,baz=233,slow=2.0,SNR=4.3						
DBIC				LR	LR	16 53 15.3	
	comp=Z,448nm,20.4s,baz=295,slow=33						
V42A	Cord	41.80	290	P	P	16 38 21.5	+1.2
	baz=81						
DAVA	Damuels	41.80	53	*i* pP	P	16 38 21.2	+0.8
	comp=Z,9.3nm,1.0s						
P40A	Paris	41.87	296	P	P	16 38 20.7	-0.2
	baz=85,SNR=7.9						
T41A	Mountain View	41.92	292	P	P	16 38 21.5	+0.2
	baz=82						
KEST	Kesra	41.92	70	P	P	16 38 21.6	+0.2
	comp=Z,7.1nm,0.9s,baz=155,slow=8.2,SNR=4.7						
KEST				LR	LR	16 53 01.9	
	comp=Z,118nm,19.6s,baz=230,slow=32						
KEST	Kesra	41.92	70	*e*P	P	16 38 19.6	-1.9
	comp=Z,86nm,1.9s						
Q40A	Laux Farm, Aux	41.94	295	P	P	16 38 21.7	+0.2
	baz=84						
J38A	Wedel Dairy, R	42.00	302	P	P	16 38 22.5	+0.6
	baz=89						
N39A	Derby Farms, D	42.12	298	P	P	16 38 23.2	+0.3
	baz=86						
TAM	Tamanrasset	42.12	90	*e*P	P	16 38 23.8	+0.5
TAM				pmax	pmax		
	comp=Z,13nm,1.0s						
TAM	Tamanrasset	42.12	90	*e*P	P	16 38 23.8	+0.5
	comp=Z,13nm,1.0s						
R40A	Maddies Statio	42.17	294	P	P	16 38 22.9	-0.4
	baz=84						
L38A	Oak Wood Farm,	42.39	300	P	P	16 38 24.4	-0.7
	baz=87						
RETA	Reutte	42.41	52	*i* pP	P	16 38 25.8	+0.5
	comp=Z,13nm,1.5s						
V41A	Mountainview	42.41	290	P	P	16 38 25.1	-0.3
	baz=81						
P39B	Salisbury	42.42	296	P	P	16 38 24.9	-0.4
	baz=85						
T40A	Mansfield	42.50	292	P	P	16 38 25.8	-0.3
	baz=82						
E36A	McGregor	42.58	306	P	P	16 38 26.9	+0.3
	baz=92						
W41B	Gary Mavity, V	42.59	289	P	P	16 38 26.6	-0.2
	baz=80						
WHAR	Wooly Hollow	42.60	290	*e*P	P	16 38 25.3	-1.6
	comp=Z,23nm,1.2s						
M38A	Pleasantville	42.61	299	P	P	16 38 27.0	+0.2
	baz=86						
MOTA	Moosalm	42.63	52	*i* pP	P	16 38 28.8	+1.5
	comp=Z,3.3nm,0.7s						
Q39A	Willow Grove F	42.63	295	P	P	16 38 26.9	-0.2
	baz=84,SNR=7.7						
X201	Greenbrier Sit	42.66	290	*e*P	P	16 38 25.5	-1.9
	comp=Z,23nm,1.2s						
X301	Greenbrier Sit	42.70	290	*e*P	P	16 38 26.4	-1.3
	comp=Z,19nm,1.1s						
UALR	University of	42.73	289	*e*P	P	16 38 27.5	-0.5
	comp=Z,27nm,1.0s						
F36A	Milaca	42.75	305	P	P	16 38 27.7	-0.3
	baz=91						
R39A	Chumby, Stover	42.77	294	P	P	16 38 28.7	+0.5
	baz=83,SNR=8.2						
K37A	Belmond	42.87	301	P	P	16 38 29.0	+0.1
	baz=88						
U40A	Yellville	42.88	291	P	P	16 38 28.6	-0.6
	baz=81						
WATA	Walderalm	42.95	53	*i* pP	P	16 38 30.1	+0.3
	comp=Z,3.9nm,0.7s						
B35A	Bob, Littlefor	42.98	309	P	P	16 38 29.5	-0.4
	baz=94						
WTTA	Wattenberg	42.99	53	*i* pP	P	16 38 30.8	+0.6
	comp=Z,25nm,2.1s						
P38A	Dawn	43.01	296	P	P	16 38 29.5	-0.7
	baz=84						
S39A	Bolivar	43.07	293	P	P	16 38 30.2	-0.5
	baz=82						
C35A	Jirik Farms, M	43.12	308	P	P	16 38 29.3	-1.6
	baz=93						
Q38A	Cooks Store, C	43.14	295	P	P	16 38 31.4	+0.2
	baz=84						
D35A	Remer	43.14	307	P	P	16 38 30.9	-0.3
	baz=92						
X40A	Basin Creek Fa	43.19	289	P	P	16 38 30.9	-0.8
	baz=79						
T39A	Clever	43.20	292	P	P	16 38 31.9	+0.2
	baz=82,SNR=7.5						
TOA0	Torodi Ar. Sit	43.21	105	*e*P	P	16 38 31.4	-0.6
TORD	Torodi Ar. Bea	43.21	105	P	P	16 38 31.5	-0.5
	comp=Z,9.0nm,1.0s,baz=297,slow=7.2,SNR=35						
TORD				LR	LR	16 54 10.9	
	comp=Z,172nm,21.7s,baz=185,slow=33						
U39A	Green Forest	43.38	291	P	P	16 38 33.3	+0.1
	baz=81,SNR=7.0						
R38A	Fenwick Farm,	43.46	294	P	P	16 38 33.9	+0.1
	baz=83,SNR=8.1						
K36A	Gilmore City	43.47	301	P	P	16 38 34.3	+0.4
	baz=87						
F35A	Swanville	43.48	305	P	P	16 38 34.6	+0.7
	baz=90						
S38A	Stockton	43.53	293	P	P	16 38 34.5	0.0
	baz=82						
ABTA	Abfaltersbach	43.58	53	*i* pP	P	16 38 35.0	+0.2
	comp=Z,20nm,1.6s,SNR=9.1						
V39A	Pettigrew	43.60	291	P	P	16 38 34.9	-0.1
	baz=80						
H35A	Sunnyside Ranc	43.67	304	P	P	16 38 35.6	+0.2
	baz=89						
NKC	Novy Kostel	43.72	48	*e*P	P	16 38 36.0	+0.2
NKC				*ex*	x	16 38 43.2	
NKC	Novy Kostel	43.72	48	*e*P	P	16 38 36.0	+0.2
NKC				*e*		16 38 43.2	
C34A	RKJ Ranch, Bem	43.75	308	P	P	16 38 35.5	-0.5
	baz=92						
MIAR	Mount Ida	43.78	289	*e*P	P	16 38 35.1	-1.3
MIAR				pmax	pmax		
	comp=Z,82nm,1.9s						
MIAR	Mount Ida	43.78	289	*e*P	P	16 38 35.1	-1.3
	comp=Z,82nm,1.9s						
W39A	Magazine	43.82	290	P	P	16 38 37.6	+0.8
	baz=80						
T38A	Diamond	43.92	293	P	P	16 38 38.0	+0.4
	baz=81,SNR=6.3						
U38A	Gravette	44.09	292	P	P	16 38 39.1	+0.2
	baz=80,SNR=7.0						
A33A	Warroad	44.12	310	P	P	16 38 39.4	+0.4
	baz=93						
KBA	Koelnbreinsper	44.15	53	*i* pP	P	16 38 39.5	0.0
	comp=Z,15nm,1.8s,SNR=6.3						
CLL	Collm	44.16	47	*i* P	P	16 38 38.9	-0.4
	comp=Z,18nm,1.0s						
CLL				*i*		16 38 45.4	
CLL				*e*S	S	16 45 06.0	-5.9
CLL				*e*SS	ScS	16 48 42.0	+4.5
CLL				*e*SSS	SSS	16 49 18.0	
CLL	Collm	44.16	47	*i* P	P	16 38 38.9	-0.4
CLL				*i*		16 38 45.4	
CLL				pmax	pmax		
	comp=Z,18nm,1.0s						
CLL	Collm	44.16	47	*e*P	P	16 38 38.8	-0.5
	comp=Z,15nm,0.9s						
V38A	Canehill	44.21	291	P	P	16 38 40.0	+0.1
	baz=80,SNR=5.2						
X39A	Fountain Ranch	44.22	289	P	P	16 38 39.7	-0.3
	baz=79,SNR=9.6						
S37A	Fort Scott	44.24	294	P	P	16 38 39.5	-0.6
	baz=82,SNR=9.6						
AQU	L'Aquila	44.33	60	*e*P	P	16 38 39.8	-1.0
AQU				pmax	pmax		
	comp=Z,9.0nm,0.8s						
AQU	L'Aquila	44.33	60	*e*P	P	16 38 39.8	-1.0
	comp=Z,8.5nm,0.8s						
MYKA	Terra Mystica	44.35	54	*i* P	P	16 38 40.8	-0.2
	comp=Z,7.2nm,1.0s						
KHC	Kasperske Hory	44.38	50	*e*P	P	16 38 40.8	-0.3
KHC				*e*pP	sP	16 38 47.0	+0.4
KHC	Kasperske Hory	44.38	50	*e*P	P	16 38 40.8	-0.3
KHC				*e*		16 38 47.0	
KHC	Kasperske Hory	44.38	50	*e*P	P	16 38 37.7	-3.4
	comp=Z,10nm,1.4s						
T37A	Cheneyville 18	44.40	293	P	P	16 38 41.7	+0.3
	baz=81						
GEA0	GERESS Array S	44.44	50	*e*P	P	16 38 41.1	-0.6
GEC2	GERESS Array S	44.44	50	*e*P	P	16 38 41.7	0.0
GEC2				pmax	pmax		
	comp=Z,41nm,1.9s						
GEC2	GERESS Array S	44.44	50	*e*P	P	16 38 41.7	0.0
	comp=Z,41nm,1.9s						
GERES	GERESS Array B	44.44	50	P	P	16 38 41.6	0.0
	comp=Z,1.5nm,0.8s,baz=270,slow=8.0,SNR=14						
GERES				LR	LR	16 55 42.1	
	comp=Z,76nm,18.2s,baz=252,slow=34						
ULM	Lac du Bonnet	44.51	312	P	P	16 38 41.0	-1.0
	comp=Z,4.0nm,0.7s,baz=72,slow=6.9,SNR=3.9						
ULM				LR	LR	16 56 48.1	
	comp=Z,140nm,19.1s,baz=74,slow=36						
Q36A	Arnold C. Orve	44.57	295	P	P	16 38 42.7	0.0
	baz=83						
JAVS	Javornik	44.65	55	*e*P	P	16 38 43.1	-0.3
U37A	Salina	44.68	292	P	P	16 38 44.0	+0.4
	baz=80,SNR=9.0						
F33A	5 Mile Ranch,	44.68	305	P	P	16 38 43.5	0.0
	baz=89						
BRG	Berggiesshubel	44.72	48	*e*P	P	16 38 43.7	0.0
	comp=Z,10nm,1.1s						
BRG	Berggiesshubel	44.72	48	*e*P	P	16 38 43.7	0.0
BRG				pmax	pmax		
	comp=Z,10.0nm,1.1s						
X38A	Whitesboro	44.77	289	P	P	16 38 45.0	+0.7
	baz=79,SNR=6.1						
V37A	Hulbert	44.79	291	P	P	16 38 44.1	-0.4
	baz=80						
MOA	Molln	44.79	52	*i* P	P	16 38 44.0	-0.4
	comp=Z,9.5nm,1.2s						
G33A	Ortonville	44.80	304	P	P	16 38 44.7	+0.2
	baz=88						
B32A	Ashes, Strandq	44.86	309	P	P	16 38 44.6	-0.3
	baz=91						
LJU	Ljubljana	44.97	54	*i* P	P	16 38 45.7	-0.2
OBKA	Obir	44.98	54	*i* P	P	16 38 46.0	0.0
	comp=Z,17nm,0.7s,SNR=11						
ECSD	EROS Data Cent	44.99	302	P	P	16 38 46.1	0.0
	baz=87						
ECSD	EROS Data Cent	44.99	302	*e*P	P	16 38 44.6	-1.5
	comp=Z,46nm,1.8s						
PRU	Pruhonice	45.04	49	*e*P	P	16 38 47.0	+0.7
PRU				*ex*	x	16 38 53.9	
PRU				AMS	AMS	16 55 50.0	
	comp=Z,200nm,19.5s						
PRU	Pruhonice	45.04	49	*e*P	P	16 38 47.0	+0.7
PRU				*e*		16 38 53.9	
PRU				MLR	MLR		
	comp=Z,200nm,19.5s						
NB2	NORSAR Subarra	45.08	33	P	P	16 38 46.4	-0.1
	comp=Z,2.0nm,0.8s,baz=253,slow=7.9						
NOA	NORSAR Array B	45.08	33	P	P	16 38 46.2	-0.3
	comp=Z,3.2nm,0.8s,baz=254,slow=7.9,SNR=8.6						
NOA				LR	LR	16 55 34.4	
	comp=Z,49nm,18.9s,baz=255,slow=33						
PVCC	Panska Ves	45.09	48	*e*P	P	16 38 47.1	+0.4
PVCC				*e*pP	pP	16 38 50.0	-0.7
PVCC				AMS	AMS	16 55 10.0	
	comp=Z,300nm,17.1s						
PVCC	Panska Ves	45.09	48	*e*P	P	16 38 47.1	+0.4
PVCC				*e*		16 38 50.0	
PVCC				MLR	MLR		
	comp=Z,300nm,17.1s						
T36A	Boggs Farm, Ca	45.17	293	P	P	16 38 47.3	-0.2
	baz=80						
GOPC	GO Pecny, Ondr	45.20	49	*e*P	P	16 38 48.4	+0.8
GOPC				*e*pP	sP	16 38 53.6	+0.4
GOPC	GO Pecny, Ondr	45.20	49	*e*P	P	16 38 48.4	+0.8
GOPC				*e*		16 38 53.6	
X37A	Clayton	45.22	289	P	P	16 38 48.3	+0.3
	baz=78						
F32A	Veblen	45.26	305	P	P	16 38 48.6	+0.4
	baz=88						
TUL1	Leonard	45.30	291	P	P	16 38 48.7	0.0
	baz=79						
TUL1	Leonard	45.30	291	*e*P	P	16 38 48.2	-0.4
	comp=Z,25nm,0.9s						
SOKA	Soboth	45.31	54	*i* P	P	16 38 47.9	-0.8
	comp=Z,14nm,1.9s,SNR=8.6						
O34A	Beatrice	45.36	297	P	P	16 38 48.4	-0.7
	baz=83						
PERS	Pernice	45.37	54	*e*P	P	16 38 48.1	-1.0
S35A	Otter Creek Ra	45.42	294	P	P	16 38 49.2	-0.4
	baz=81						
KSU1	Kansas State U	45.44	296	P	P	16 38 49.2	-0.4
	baz=82						
V36A	Jenks	45.45	291	P	P	16 38 49.7	-0.1
	baz=79						
P34A	Walnut Farm, R	45.54	296	P	P	16 38 50.7	+0.2
	baz=82,SNR=5.2						
M33A	Taylor Creek F	45.59	299	P	P	16 38 49.9	-1.0
	baz=84						
ARSA	Arzberg	45.64	53	*i* P	P	16 38 50.5	-0.6
	comp=Z,13nm,1.1s,SNR=13						
C31A	Landman Farms,	45.65	308	P	P	16 38 50.9	-0.4
	baz=90,SNR=9.2						
VAE	Valguarnera	45.67	66	LR	LR	16 56 27.3	
	comp=Z,232nm,18.0s,baz=358,slow=34						
CONA	Conrad Observa	45.87	52	*i* P	P	16 38 52.6	-0.4
	comp=Z,5.0nm,0.9s						
UPC	Upice	46.01	48	*e*P	P	16 38 54.1	+0.1
UPC				*e*pP	sP	16 38 59.8	+0.3
UPC				AMS	AMS	16 55 30.0	
	comp=Z,300nm,17.5s						
UPC	Upice	46.01	48	*e*P	P	16 38 54.1	+0.1
UPC				*e*		16 38 59.8	
UPC				MLR	MLR		
	comp=Z,300nm,17.5s						
HFS	Hagfors	46.02	35	LR	LR	16 55 07.3	
	comp=Z,68nm,19.5s,baz=291,slow=32						
B30A	Myrvik Farm, E	46.05	309	P	P	16 38 54.4	0.0
	baz=90						
O33A	Hebron	46.05	297	P	P	16 38 55.0	+0.5
	baz=82						
KSP	Ksiaz	46.20	48	*e

DAG Danmarks Havn 46.76 7 *i* P **P 16 38 58.8 -0.7**
comp=Z,17nm,1.3s
DAG Danmarks Havn 46.76 7 *eP* **P 16 38 58.8 -0.7**
DAG pmax pmax
comp=Z,32nm,1.3s
P32A Huiting Farm, 46.89 297 P **P 16 39 00.7 -0.4**
baz=82
OTAV Otavalo 46.95 236 *eP* **P 16 39 00.8 -1.5**
comp=Z,43nm,1.8s
Q32A Meitler Ranch, 46.95 296 P **P 16 39 01.0 -0.6**
baz=81
MORC Moravsky Berou 46.98 49⇑ *iP* **P 16 39 01.9 +0.2**
MORC Moravsky Berou 46.98 49 *eP* **P 16 39 01.9 +0.2**
MORC pmax pmax
comp=Z,28nm,1.1s
MORC Moravsky Berou 46.98 49 *eP* **P 16 39 01.9 +0.2**
comp=Z,28nm,1.1s
TIP Timpagrande 47.22 64 *eP* **P 16 39 00.5 -3.3**
comp=Z,29nm,1.7s
H10S1 ASCENSION HYDR 47.34 143 T T 17 29 39.4
baz=329,slow=75,SNR=230
H10S3 ASCENSION HYDR 47.34 143 T T 17 29 38.0
baz=329,slow=75,SNR=230
H10S2 ASCENSION HYDR 47.36 143 T T 17 29 40.0
baz=329,slow=75,SNR=217
OKC Ostrava-Krasne 47.37 49 *eP* **P 16 39 04.9 +0.2**
OKC Ostrava-Krasne 47.37 49 *eP* **P 16 39 04.9 +0.2**
VYHS Vyhne 47.84 51 *eP* **P 16 39 08.2 -0.2**
VYHS pmax pmax
comp=Z,17nm,2.1s
VYHS Vyhne 47.84 51 *eP* **P 16 39 08.2 -0.2**
V32A Arapaho 47.93 292 P **P 16 39 09.7 +0.4**
baz=78
WMOK Wichita Mounta 47.94 290 P **P 16 39 09.3 0.0**
baz=77,SNR=7.3
WMOK Wichita Mounta 47.94 290 *eP* **P 16 39 06.1 -3.2**
WMOK pmax pmax
comp=Z,15nm,1.3s
WMOK Wichita Mounta 47.94 290 *eP* **P 16 39 06.1 -3.2**
comp=Z,15nm,1.3s
LANS Liptovska Anna 48.24 50 *eP* **P 16 39 11.8 +0.3**
LANS Liptovska Anna 48.24 50 *eP* **P 16 39 11.8 +0.3**
X32A Elmer 48.41 290 P **P 16 39 13.5 +0.5**
baz=77
OJC Ojcow 48.43 49 *eP* **P 16 39 13.3 +0.4**
OJC Ojcow 48.43 49 *eP* **P 16 39 13.3 +0.4**
OJC Ojcow 48.43 49 *eP* **P 16 39 13.3 +0.4**
comp=Z,11nm,1.0s
434A Burnet 48.50 285 P **P 16 39 14.0 +0.3**
baz=74
FFC Flin Flon 48.51 317 *eP* **P 16 39 13.7 +0.3**
FFC pmax pmax
comp=Z,13nm,1.0s
FFC Flin Flon 48.51 317 *eP* **P 16 39 13.7 +0.3**
comp=Z,13nm,1.0s
PSZ Piszkesteto 48.58 52 *eP* **P 16 39 11.3 -2.8**
PSZ pmax pmax
comp=Z,26nm,1.5s
PSZ Piszkesteto 48.58 52 *eP* **P 16 39 11.3 -2.8**
comp=Z,26nm,1.5s
PDG Podgorica 48.63 59⇑ *iP* **P 16 39 15.1 +0.6**
G27A Dupree 48.66 305 P **P 16 39 14.1 -0.7**
baz=85
KLNR Kaliningrad 48.74 43 *eP* **P 16 39 15.3 +0.1**
KLNR pmax pmax
comp=Z,47nm,0.9s
NIE Niedzica 48.78 50 *eP* **P 16 39 17.0 +1.4**
NIE Niedzica 48.78 50 *eP* **P 16 39 17.0 +1.4**
534A Blanco 48.89 284 P **P 16 39 16.2 -0.6**
baz=73
333A Richland Sprin 48.95 286 P **P 16 39 17.3 +0.2**
baz=74
G26A Maurine 49.13 305 P **P 16 39 17.9 -0.6**
baz=84
433A Art 49.19 285 P **P 16 39 19.2 +0.2**
baz=74,SNR=7.3
STHS Stebnicka Huta 49.39 50 *eP* **P 16 39 21.4 +1.1**
STHS pmax pmax
comp=Z,7.0nm,0.9s
STHS Stebnicka Huta 49.39 50 *eP* **P 16 39 21.4 +1.1**
CRVS Cervenica-Dubn 49.56 50 *eP* **P 16 39 22.5 +0.9**
CRVS Cervenica-Dubn 49.56 50 *eP* **P 16 39 22.5 +0.9**
SIRR Siria 49.91 54⇑ *iP* **P 16 39 24.7 +0.5**
BZS Buzias 49.94 55⇑ *iP* **P 16 39 24.4 -0.1**
KOLS Kolonicke sedl 50.10 50 *eP* **P 16 39 26.3 +0.7**
KOLS pmax pmax
comp=Z,8.0nm,1.2s
KOLS Kolonicke sedl 50.10 50 *eP* **P 16 39 26.3 +0.7**
UZH Uzhgorod 50.13 51 *eP* **P 16 39 24.0 -1.9**
UZH *i* 16 39 26.4
AMTX Amarillo 50.22 291 P **P 16 39 26.4 -0.5**
comp=Z,32nm,1.4s
KWP Kalwaria Pacla 50.33 49 *eP* **P 16 39 28.1 +0.7**
KWP Kalwaria Pacla 50.33 49 *eP* **P 16 39 28.1 +0.7**
DRGR 50.57 53⇑ *iP* **P 16 39 29.5 +0.1**
SIV San Ignacio 50.77 205 LR LR 16 58 25.7
comp=Z,97nm,21.3s,baz=14,slow=33
RES Resolute Bay 50.77 344 P **P 16 39 29.6 -0.7**
comp=Z,4.9nm,0.9s,baz=132,slow=5.3,SNR=3.0
LVV L'vov 51.18 49 *eP* **P 16 39 33.0 -0.8**
MSTX Muleshoe 51.32 290 *eP* **P 16 39 34.4 -0.9**
comp=Z,19nm,1.2s
T25A Trinidad 51.84 295 *eP* **P 16 39 40.8 +1.5**
comp=Z,12nm,1.1s
BUR08 Bucovina Ar. S 52.16 52 *eP* **P 16 39 42.0 +0.7**
BURAR Bucovina Array 52.18 52⇓ *iP* **P 16 39 42.1 +0.7**
ISCO Idaho Springs 52.18 298 *eP* **P 16 39 40.9 -0.9**
ISCO pmax pmax
comp=Z,9.0nm,1.1s
ISCO Idaho Springs 52.18 298 *eP* **P 16 39 40.9 -0.9**
comp=Z,8.9nm,1.1s
N23A Red Feather La 52.21 300 *eP* **P 16 39 42.4 +0.4**
comp=Z,46nm,1.8s
FINES FINESS Array B 52.21 34 P **P 16 39 41.3 0.0**
comp=Z,4.0nm,0.7s,baz=264,slow=3.8,SNR=11
FINES LR LR 16 58 15.3
comp=Z,59nm,18.4s,baz=293,slow=32
ATAH Atahualpa 52.26 230 LR LR 17 01 29.6
comp=Z,119nm,20.8s,baz=352,slow=36
VOIR 52.36 54⇑ *iP* **P 16 39 42.6 -0.2**
VSU Vasula 52.46 38 *cePP* **P 16 39 42.4 -0.7**
VSU pmax pmax
comp=Z,33nm,1.0s
SDCO Great Sand Dun 52.55 296 P **P 16 39 44.5 0.0**
baz=76
SDCO Great Sand Dun 52.55 296 *eP* **P 16 39 43.4 -1.2**
comp=Z,5.2nm,1.0s
PRAR RASCA 52.89 52⇑ *iP* **P 16 39 46.7 +0.1**
ARCES ARCESS Array B 52.90 24 P **P 16 39 45.9 -0.4**
comp=Z,3.7nm,0.8s,baz=260,slow=7.3,SNR=8.0
ARCES LR LR 16 58 26.4
comp=Z,41nm,21.2s,baz=260,slow=32
MLR Muntele Rosu 52.97 54 LR LR 17 01 20.0
comp=Z,18nm,18.9s,baz=268,slow=35
MLR Muntele Rosu 52.97 54⇑ *iP* **P 16 39 47.5 +0.1**
MLR Muntele Rosu 52.97 54 *eP* **P 16 39 47.5 +0.1**
MLR pmax pmax
comp=Z,43nm,1.3s
MLR Muntele Rosu 52.97 54 *eP* **P 16 39 47.5 +0.1**
comp=Z,43nm,1.3s
SPITS Spitsbergen Ar 53.09 13 LR LR 16 57 18.5
comp=Z,67nm,18.8s,baz=15,slow=30
MICGM Minsk 53.21 43 *e* **P 16 39 46.0 -2.8**
MNK Minsk 53.21 43 *eP* **P 16 39 46.0 -2.8**
TESR Tescani 53.30 53⇑ *iP* **P 16 39 49.3 -0.3**
PLOR Plostina 53.40 54⇑ *iP* **P 16 39 50.1 -0.3**
TXAR Lajitas Array 53.40 285 P **P 16 39 50.3 -0.5**
comp=Z,0.9nm,0.8s,baz=91,slow=7.5,SNR=8.0
TXAR LR LR 17 02 30.0
comp=Z,105nm,18.3s,baz=0.0,slow=36
TX31 Lajitas Ar. Si 53.41 285 *eP* **P 16 39 50.5 -0.2**
VRI Vrincioaia 53.46 54⇓ *iP* **P 16 39 50.4 -0.4**
S22A 4UR Ranch, Cre 53.57 296 P **P 16 39 52.0 -0.1**
baz=76,SNR=6.1
EGMT Eagleton 53.70 309 P **P 16 39 52.6 0.0**
baz=82,SNR=9.4
EGMT Eagleton 53.70 309 *eP* **P 16 39 52.8 +0.2**
comp=Z,28nm,1.1s
RLMT Red Lodge 53.83 305 P **P 16 39 52.9 -0.9**
baz=80
LPAZ La Paz 53.96 213 P **P 16 39 55.3 -0.1**
comp=Z,3.4nm,0.8s,baz=354,slow=6.5,SNR=15
LPAZ LR LR 17 01 34.2
comp=Z,129nm,19.8s,baz=12,slow=35
LPAZ La Paz 53.96 213 *eP* **P 16 39 55.9 +0.5**
LPAZ pmax pmax
comp=Z,34nm,1.8s
LPAZ La Paz 53.96 213 *eP* **P 16 39 55.9 +0.5**
comp=Z,34nm,1.8s
ANMO Albuquerque 54.00 293 P **P 16 39 55.5 +0.4**
baz=74
ANMO Albuquerque 54.00 293⇑ *eP* **P 16 39 55.6 +0.4**
ANMO pmax pmax
comp=Z,14nm,2.5s
ANMO Albuquerque 54.00 293 *eP* **P 16 39 55.8 +0.6**
comp=Z,25nm,1.8s
MNTX Cornudas Mount 54.07 288 P **P 16 39 56.0 +0.5**
baz=72
MNTX Cornudas Mount 54.07 288 *eP* **P 16 39 56.4 +0.9**
comp=Z,12nm,1.6s
O20A White River Ci 54.08 299 P **P 16 39 55.6 -0.1**
baz=77,SNR=7.3
O20A White River Ci 54.08 299 P **P 16 39 54.0 -1.7**
comp=Z,11nm,1.0s
SORM Soroca 54.20 51⇑ *iP* **P 16 39 54.5 -1.6**
LPM Los Pinos Moun 54.31 292 *eP* **P 16 39 57.4 -0.1**
BNM Barren Site 54.36 292 *eP* **P 16 39 59.2 +1.4**
AK11 Malin Array Si 54.37 47 *eP* **P 16 39 55.3 -2.0**
KIEV Kiev 54.39 47 *c iP* **P 16 39 54.8 -2.7**
KIEV pmax pmax
comp=Z,10.0nm,1.0s
KIEV Kiev 54.39 47 *eP* **P 16 39 55.1 -2.3**
comp=Z,12nm,0.9s
IDI Anoyia 54.39 67 LR LR 17 02 03.5
comp=Z,35nm,21.1s,baz=276,slow=35
IDI Anoyia 54.39 67 *eP* **P 16 39 57.0 -0.9**
comp=Z,23nm,1.1s
AKASG Malin Array Be 54.40 47 P **P 16 39 56.6 -0.9**
comp=Z,12nm,0.8s,baz=278,slow=6.3,SNR=49
AKASG LR LR 17 01 27.7
comp=Z,150nm,18.1s,baz=270,slow=34
BW06 Boulder Array 54.48 303 *eP* **P 16 39 57.9 -0.7**
PD31 Pinedale Array 54.48 303 *eP* **P 16 39 58.5 -0.1**
PDAR Pinedale Array 54.48 303 P **P 16 39 58.1 -0.5**
comp=Z,2.9nm,0.8s,baz=75,slow=7.8,SNR=20
PDAR LR LR 17 02 34.0
comp=Z,579nm,18.1s,baz=112,slow=35
CFR Carcaliu 54.55 54⇑ *iP* **P 16 39 57.8 -0.9**
PV01 Paradox Valley 54.81 297 *eP* **P 16 40 00.5 -0.5**
TIRR Tirgusor 54.88 55⇑ *iP* **P 16 40 00.1 -1.0**
TIRR Tirgusor 54.88 55 *eP* **P 16 40 00.2 -0.9**
TIRR pmax pmax
comp=Z,52nm,2.0s
TIRR Tirgusor 54.88 55 *eP* **P 16 40 00.2 -0.9**
comp=Z,52nm,2.0s
MVCO Mesa Verde 54.99 296 P **P 16 40 02.2 -0.2**
baz=75
LOHW Long Hollow 55.05 304 *eP* **P 16 40 02.4 -0.3**
comp=Z,22nm,1.6s
SNOW Snow King Moun 55.19 304 *eP* **P 16 40 04.7 +0.9**
comp=Z,15nm,1.0s
YKA Yellowknife Ar 55.22 327 P **P 16 40 02.9 -0.4**
comp=Z,2.3nm,0.9s,baz=87,slow=7.5,SNR=24
YKA PcP **PcP** 16 41 03.5 -0.6
comp=Z,0.7nm,0.8s,baz=88,slow=5.1,SNR=3.7
YKA LR LR 17 02 42.7
comp=Z,37nm,20.4s,baz=0.0,slow=35
YKB5 Yellowknife Ar 55.22 327 *eP* **P 16 40 02.5 -0.8**
YKW3 Yellowknife Ar 55.22 327 *eP* **P 16 40 03.2 -0.1**
comp=Z,12nm,1.3s
IMW Indian Meadow 55.23 304 *eP* **P 16 40 04.7 +0.5**
comp=Z,30nm,1.5s
REDW Red Top Meadow 55.28 304 *eP* **P 16 40 05.4 +1.0**
comp=Z,27nm,1.4s
TPAW Teton Pass 55.33 304 *eP* **P 16 40 06.0 +1.2**
comp=Z,46nm,1.8s
BOZ Bozeman (W) 55.37 307 P **P 16 40 05.2 +0.3**
baz=79
AHID Auburn Hatcher 55.59 303 *eP* **P 16 40 04.6 -2.0**
comp=Z,20nm,1.4s
APA Apatity 55.60 27 *eP* **P 16 40 06.0 0.0**
APA pmax pmax
comp=Z,13nm,0.7s
APA MLR MLR
comp=Z,500nm,21.0s
P18A Preston Nutter 55.70 299 *eP* **P 16 40 08.1 +0.5**
comp=Z,14nm,1.1s
121A Cookes Peak, D 55.76 290 *eP* **P 16 40 06.0 -1.9**
comp=Z,32nm,1.7s
SRU San Rafael Swe 56.04 299 *eP* **P 16 40 10.5 +0.6**
SRU pmax pmax
comp=Z,27nm,1.4s
SRU San Rafael Swe 56.04 299 *eP* **P 16 40 10.5 +0.6**
comp=Z,27nm,1.4s
HWUT Hardware Ranch 56.19 302 *eP* **P 16 40 12.6 +1.7**
comp=Z,15nm,1.2s
CHMT Chamberlain Mo 56.22 308 *eP* **P 16 40 12.4 +1.3**
JLU Jordanelle 56.35 301 *eP* **P 16 40 12.9 +0.8**
comp=Z,56nm,2.0s
SWMT Swartz Lake 56.60 309 *eP* **P 16 40 14.4 +0.8**
MSO Missoula 56.70 308 P **P 16 40 15.2 +0.9**
baz=78
MSO Missoula 56.70 308 *eP* **P 16 40 15.9 +1.6**
comp=Z,40nm,1.8s
NLU North Lily Min 56.98 300 *eP* **P 16 40 18.3 +1.7**
comp=Z,23nm,1.5s
BSMT Bassoo Peak 57.06 310 *eP* **P 16 40 17.6 +0.6**
DUG Dugway, Tooele 57.46 300 P **P 16 40 20.6 +0.7**
baz=75,SNR=9.6
DUG Dugway, Tooele 57.46 300 *eP* **P 16 40 21.0 +1.1**
DUG pmax pmax
comp=Z,24nm,1.4s
DUG Dugway, Tooele 57.46 300 *eP* **P 16 40 21.0 +1.1**
comp=Z,24nm,1.4s
PB11 IPOC Station P 57.68 212 *eP* **P 16 40 20.4 -1.1**
comp=Z,43nm,1.0s
WUAZ Wupatki 57.69 295 P **P 16 40 22.9 +1.3**
baz=72
WUAZ Wupatki 57.69 295 *eP* **P 16 40 23.5 +1.9**
comp=Z,18nm,1.1s
X16A Lo Mia Camp, P 58.08 293 *eP* **P 16 40 26.1 +1.7**
comp=Z,5.5nm,1.0s
U15A North Rim 58.13 296 *eP* **P 16 40 26.6 +1.8**
comp=Z,23nm,1.4s
OBN Obninsk 58.13 41 *d iP* **P 16 40 24.0 -0.1**
OBN *i* 16 41 15.7
OBN *i* SS SS 16 52 23.7 +7.8
OBN pmax pmax
comp=Z,25nm,1.1s
DWU Dry Willow Pea 58.18 298 *eP* **P 16 40 26.6 +1.5**
KNB Kanab 58.36 297 *eP* **P 16 40 27.8 +1.5**
KNB pmax pmax
comp=Z,10.0nm,1.1s
KNB Kanab 58.36 297 *eP* **P 16 40 27.8 +1.5**
comp=Z,9.8nm,1.1s
NEW Newport 58.50 310 P **P 16 40 27.2 +0.3**
baz=77
NEW Newport 58.50 310 *eP* **P 16 40 27.2 +0.3**
NEW pmax pmax
comp=Z,18nm,1.1s
NEW Newport 58.50 310 *eP* **P 16 40 27.2 +0.3**
comp=Z,18nm,1.1s
MOS Moscow 58.61 41 *eP* P 16 40 20.8 -6.7
MOS *e* 16 40 27.5
LCMT Little Creek M 58.69 297 *eP* **P 16 40 29.4 +0.9**
comp=Z,4.4nm,0.8s
PSUT Pine Spring 58.70 299 *eP* **P 16 40 30.1 +1.5**
comp=Z,16nm,1.0s
KLMR Klimovskoe 58.74 34 *eP* **P 16 40 25.4 -2.9**
KLMR *e*SP **pP** 16 40 32.4 0.0
KLMR pmax pmax
comp=Z,18nm,1.5s
MFID Camas Ranch 58.80 305 *eP* **P 16 40 30.5 +1.4**
comp=Z,21nm,1.4s
CPUP Villa Florida 59.35 197 P **P 16 40 32.4 -0.4**
comp=Z,1.3nm,0.6s,baz=24,slow=8.3,SNR=3.6
CPUP LR LR 17 03 24.0
comp=Z,48nm,21.4s,baz=15,slow=33
Y14A Wickenburg 59.46 293 *eP* **P 16 40 36.1 +2.2**
comp=Z,81nm,1.6s
W13A Hualapai Mount 59.77 295 *eP* **P 16 40 38.3 +2.2**
comp=Z,10nm,1.1s
BR131 Keskin Array S 59.82 59 *eP* **P 16 40 36.6 +0.2**
BRTR Keskin Array B 59.82 59 P **P 16 40 36.5 +0.2**
comp=Z,8.1nm,0.8s,baz=266,slow=5.1,SNR=47
BRTR LR LR 17 05 52.2
comp=Z,41nm,18.8s,baz=284,slow=36
LPSR Galich'ya Gora 60.01 44 *eP* **P 16 40 37.0 -0.1**
LPSR pmax pmax
comp=Z,30nm,0.9s
R11A Troy Canyon, C 60.05 299 P **P 16 40 37.9 -0.1**
baz=72,SNR=9.5
R11A Troy Canyon, C 60.05 299 *eP* **P 16 40 39.4 +1.4**
comp=Z,8.9nm,1.3s
SHPR Sheep Range 60.30 297 *eP* **P 16 40 41.7 +2.0**
comp=Z,5.0nm,1.0s
VSR Storozhevoye 60.48 45 *eP* **P 16 40 39.2 -1.2**
VSR pmax pmax
comp=Z,10.0nm,0.6s
TPNV Topopah Spring 60.99 298 P **P 16 40 45.5 +1.1**
baz=71,SNR=8.1
TPNV Topopah Spring 60.99 298 *eP* **P 16 40 45.9 +1.5**
TPNV pmax pmax
comp=Z,17nm,1.0s
TPNV Topopah Spring 60.99 298 *eP* **P 16 40 45.9 +1.5**
comp=Z,17nm,1.0s
ANN Anapa 61.05 53 *eP* **P 16 40 43.5 -0.9**
ANN pmax pmax
comp=Z,32nm,1.0s
WVOR Wild Horse Val 61.05 304 *eP* **P 16 40 46.0 +1.4**
WVOR pmax pmax
comp=Z,13nm,1.3s
WVOR Wild Horse Val 61.05 304 *eP* **P 16 40 46.0 +1.4**
comp=Z,13nm,1.3s
IRM Iron Mountain 61.06 294 P **P 16 40 45.4 +0.7**
baz=70
GMRC Granite Mounta 61.25 295 P **P 16 40 46.1 0.0**
baz=70
FURC Furnace Creek, 61.62 297 P **P 16 40 50.2 +1.8**
baz=70
NV11 Mina Array Sit 61.94 300 *eP* **P 16 40 50.9 +0.1**
comp=Z,4.7nm,0.9s
VRH Novokhopyorsk 62.03 45 *eP* **P 16 40 50.3 -0.6**
VRH pmax pmax
comp=Z,30nm,0.8s
NV01 Mina Array Sit 62.05 300 *eP* **P 16 40 51.3 -0.3**
NVAR Mina Array Bea 62.05 300 P **P 16 40 51.6 0.0**
comp=Z,1.5nm,0.7s,baz=59,slow=5.2,SNR=11
NVAR PcP **PcP** 16 41 33.3 +1.3
comp=Z,2.1nm,0.9s,baz=26,slow=5.0,SNR=2.0
NVAR LR LR 17 07 04.3
comp=Z,675nm,19.1s,baz=78,slow=36
INK Inuvik 62.22 335 *eP* **P 16 40 53.0 +1.1**
INK Inuvik 62.22 335 *eP* **P 16 40 53.0 +1.1**
DAC Darwin (Calif) 62.23 297 *eP* **P 16 40 54.6 +1.8**
DAC pmax pmax
comp=Z,22nm,1.2s
DAC Darwin (Calif) 62.23 297 *eP* **P 16 40 54.6 +1.8**
comp=Z,22nm,1.2s
I05D Terrebonne, OR 62.36 307 P **P 16 40 54.4 +1.0**
baz=72
MOD Modoc Plateau 62.39 304 *eP* **P 16 40 55.4 +1.6**
comp=Z,18nm,1.4s
PAHR Pah Rah Range 62.43 302 *eP* **P 16 40 54.6 +0.5**
comp=Z,16nm,1.3s
K05A Summer Lake 62.55 305 *eP* **P 16 40 56.4 +1.6**
comp=Z,60nm,1.8s
EDW2 Edwards Air Fo 63.02 296 P **P 16 40 58.9 +0.9**
baz=69
NLWA Neilton Lookou 63.11 311 *eP* **P 16 40 59.0 +0.7**
comp=Z,39nm,1.1s
DLBC Dease Lake 63.40 324 *eP* **P 16 41 01.5 +1.5**
comp=Z,14nm,1.3s
CMB Columbia Colle 63.73 300 *eP* **P 16 41 04.8 +2.2**
CMB pmax pmax
comp=Z,27nm,1.8s
CMB Columbia Colle 63.73 300 *eP* **P 16 41 04.8 +2.2**
comp=Z,27nm,1.8s
GOF Gofitskoye 64.76 51⇑ *eP* **P 16 41 09.6 +0.5**
GOF pmax pmax
comp=Z,71nm,1.7s
KIV Kislovodsk 64.89 52 P **P 16 41 10.8 +0.7**
KIV Kislovodsk 64.89 52 *d iP* **P 16 41 10.8 +0.7**
KIV *i* 16 41 16.5
KIV pmax pmax
comp=Z,35nm,1.7s
KIV MLR MLR
comp=Z,39nm,17.0s
KBZ Khabaz 65.11 53 P **P 16 41 11.2 -0.2**
comp=Z,5.9nm,0.8s,baz=297,slow=5.5,SNR=17
KBZ LR LR 17 10 11.1
comp=Z,40nm,18.1s,baz=342,slow=37
NEY Neytrino 65.16 53 *i P* **P 16 41 12.3 +0.3**
NEY pmax pmax
comp=Z,1.0nm,0.8s
NCK Nalchik 65.67 53 *eP* **P 16 41 15.1 0.0**
NCK pmax pmax
comp=Z,11nm,1.1s
DAWY Dawson 65.81 332 *eP* **P 16 41 17.2 +1.5**
comp=Z,32nm,1.5s
ONI Oni 65.89 54 P **P 16 41 15.7 -0.9**
ONI Oni 65.89 54 *eP* **P 16 41 15.7 -0.9**
ZEI Tsey 66.13 53 *eP* **P 16 41 16.0 -2.3**
ZEI pmax pmax
comp=Z,42nm,1.2s
EGAK Eagle 66.25 333 *eP* **P 16 41 19.6 +1.2**
comp=Z,17nm,1.4s
AKH Akhalkalaki 66.35 55⇓ *iP* **P 16 41 20.3 +0.6**
AKH Akhalkalaki 66.35 55 P **P 16 41 20.6 +0.9**
AKH Akhalkalaki 66.35 55 *eP* **P 16 41 20.6 +0.9**
BGD Bogdanovka 66.47 55 P **P 16 41 21.4 +0.8**
GUDG Gudauri 66.64 53 P **P 16 41 23.5 +1.9**
TBLG Delisi 67.09 54 P **P 16 41 25.2 +0.9**
TBLG Delisi 67.09 54 *eP* **P 16 41 25.2 +0.9**
SOKR Solikamsk 67.35 33 *eP* **P 16 41 23.0 -2.4**
SOKR pmax pmax
comp=Z,18nm,1.1s
GNI Garni 67.70 56 *i P* **P 16 41 29.2 +0.9**
SNR=6.9
GNI Garni 67.70 56 *deP* **P 16 41 28.9 +0.6**
GNI pmax pmax
comp=Z,172nm,1.7s
GNI Garni 67.70 56 *eP* **P 16 41 29.5 +1.2**
comp=Z,37nm,1.1s
IL1 Eielson Array 68.47 334 *eP* **P 16 41 32.7 +0.2**
ILAR Eielson Array 68.47 334 P **P 16 41 32.1 -0.4**
comp=Z,3.2nm,1.1s,baz=56,slow=4.4,SNR=23
ILAR LR LR 17 11 38.2
comp=Z,273nm,18.6s,baz=94,slow=36
ILB Eielson Array 68.47 334 *eP* **P 16 41 34.7 +2.1**
HDA Harding Lake 68.67 333 *eP* **P 16 41 35.0 +1.3**
comp=Z,31nm,1.3s
COLA College 68.79 334 *eP* **P 16 41 35.4 +1.0**
COLA pmax pmax
comp=Z,15nm,1.6s
CCB Clear Creek Bu 68.88 334 *eP* **P 16 41 35.7 +0.7**
comp=Z,30nm,1.3s
WRH Wood River Hil 69.07 334 *eP* **P 16 41 37.6 +1.4**
comp=Z,30nm,1.2s
ARU Arti 69.52 36 LR LR 17 09 18.5
comp=Z,61nm,18.7s,baz=298,slow=34
ARU Arti 69.52 36 *d iP* **P 16 41 38.9 -0.3**
ARU 16 44 09.5
ARU S **S** 16 50 48.4 +1.9
ARU SS **SS** 16 55 12.7 -0.6
ARU pmax pmax
comp=Z,23nm,1.7s
ARU Arti 69.52 36 *eP* **P 16 41 39.3 +0.1**
comp=Z,35nm,1.7s
MCK McKinley 69.76 333 *eP* **P 16 41 42.6 +2.0**
MCK pmax pmax
comp=Z,33nm,1.3s
MCK McKinley 69.76 333 *eP* **P 16 41 42.6 +2.0**
comp=Z,32nm,1.3s
RND Reindeer 69.89 333 *eP* **P 16 41 43.3 +1.9**
RND pmax pmax
comp=Z,25nm,1.4s
RND Reindeer 69.89 333 *eP* **P 16 41 43.3 +1.9**
comp=Z,25nm,1.4s
BPAW Bear Paw Mtn. 70.35 334 *eP* **P 16 41 45.9 +1.7**
comp=Z,45nm,1.8s
SVE Sverdlovsk 70.37 35⇑ *eP* **P 16 41 44.2 -0.2**
SVE pmax pmax
comp=Z,32nm,1.8s
TRF Thorofare Moun 70.42 333 *eP* **P 16 41 46.8 +2.0**
comp=Z,40nm,1.7s
KTH Kantishna Hill 70.61 333 *eP* **P 16 41 47.6 +1.8**
comp=Z,38nm,1.3s
PPLA Purkeypile 71.45 333 *eP* **P 16 41 52.1 +1.1**
comp=Z,24nm,1.2s
AKTO Aktyubinsk 71.91 42 LR LR 17 12 38.1
comp=Z,83nm,18.4s,slow=35
NRIK Noril'sk 72.95 17 P **P 16 41 59.6 -0.1**
comp=Z,4.3nm,0.7s,baz=312,slow=4.5,SNR=9.0
ABKAR Akbulak array 73.57 42 *eP* **P 16 42 04.2 +0.5**
ZRNK Zerenda 76.51 36 *eP* **P 16 42 21.2 +0.6**
ZRNK pmax pmax
comp=Z,22nm,1.7s
ZRNK Zerenda 76.51 36 *eP* **P 16 42 21.2 +0.6**

comp=Z,22nm,1.7s
PLCA Paso Flores 76.66 203 P **P 16 42 21.7 +0.2**
comp=Z,5.3nm,1.2s,baz=4.6,slow=5.1,SNR=4.5
PLCA LR LR 17 14 50.0
comp=Z,39nm,21.9s,baz=106,slow=35
BRVK Borovoye 77.08 35 *d i P* **P 16 42 23.7 -0.1**
BRVK pmax pmax
comp=Z,21nm,1.9s
BRVK Borovoye 77.08 35 *e P* **P 16 42 24.3 +0.5**
comp=Z,10nm,1.1s
TIXI Tiksi 77.11 3 LR LR 17 11 21.7
comp=Z,32nm,20.8s,baz=35,slow=32
TIXI Tiksi 77.11 3 ‖ *e P* **P 16 42 23.7 +0.1**
TIXI pmax pmax
comp=Z,19nm,2.5s
TIXI Tiksi 77.11 3 *e P* **P 16 42 23.8 +0.1**
comp=Z,12nm,1.4s
BVAR Borovoye Array 77.15 35 P **P 16 42 24.8 +0.6**
comp=Z,4.5nm,0.7s,baz=306,slow=5.1,SNR=32
BVAR LR LR 17 15 11.9
comp=Z,78nm,18.2s,baz=272,slow=35
GEYT Alibeck 78.00 53 P **P 16 42 30.0 +0.7**
comp=Z,1.7nm,0.3s,baz=285,slow=7.4,SNR=4.6
BILL Bilibino 78.89 350 *d e P* **P 16 42 33.4 -0.2**
BILL *i* 16 42 44.1
BILL *i* 16 45 29.8
BILL pmax pmax
comp=Z,10.0nm,1.2s
BILL MLR MLR
comp=Z,52nm,17.0s
BILL Bilibino 78.89 350 *e P* **P 16 42 33.5 -0.1**
comp=Z,12nm,1.2s
KMBO Kilima Mbogo 80.63 97 P **P 16 42 44.2 -0.1**
comp=Z,0.5nm,0.3s,baz=338,slow=4.8,SNR=4.0
KMBO LR LR 17 17 51.6
comp=Z,369nm,19.9s,baz=280,slow=35
KMBO Kilima Mbogo 80.63 97 *i P* **P 16 42 47.2 +2.9**
KMBO pmax pmax
comp=Z,1.0nm,0.3s
NVS Novosibirsk 81.83 29 *e P* **P 16 42 50.4 +0.8**
NVS pmax pmax
comp=N,6.0nm,1.5s
NVS pmax pmax
comp=Z,25nm,1.5s
KURK Kurchatov 82.59 34 *e P* **P 16 42 53.3 -0.4**
KURK pmax pmax
comp=Z,14nm,1.0s
KURK Kurchatov 82.59 34 *e P* **P 16 42 53.3 -0.4**
comp=Z,14nm,1.0s
BANOM Banah 82.79 64 *i P* **P 16 42 55.5 +0.2**
SNR=7.6
FAQ Al Faqa, Dubai 82.85 66 P **P 16 42 55.5 -0.1**
ZAA0 Zalesovo Array 83.11 29 *e P* **P 16 42 56.2 -0.2**
ZALV Zalesovo Beam 83.11 29 P **P 16 42 56.6 +0.3**
comp=Z,5.0nm,0.8s,baz=291,slow=7.2,SNR=23
ZALV LR LR 17 19 31.2
comp=Z,48nm,18.0s,baz=77,slow=35
UOSS Minazif 83.22 65 *e P* **P 16 42 57.7 +0.2**
comp=Z,2.2nm,0.9s
HATD Hatta, Dubai 83.23 65 *i P* **P 16 42 57.8 +0.2**
SNR=5.2
ASHO Ashiyiah 83.25 65 *i P* **P 16 42 57.7 0.0**
SNR=8.5
KRAR Krasnoyarsk 84.63 24 *e P* **P 16 43 05.2 +1.2**
KRAR pmax pmax
comp=Z,6.0nm,0.9s
EKS2 Erkin-Say 85.23 42 *e P* **P 16 43 09.0 +1.4**
EKS2 pmax pmax
comp=Z,6.0nm,0.9s
EKS2 Erkin-Say 85.23 42 *e P* **P 16 43 09.0 +1.4**
comp=Z,6.1nm,0.9s
SEY Seymchan 85.50 354 ‖ *e P* **P 16 43 07.3 -1.0**
FRU Bishkek 85.60 42 *e P* **P 16 43 10.5 +1.2**
FRU *e* 16 43 17.5
FRU pmax pmax
comp=Z,42nm,2.1s
AAK Ala-Archa 85.66 42 *e P* **P 16 43 11.1 +1.3**
AAK pmax pmax
comp=Z,7.0nm,1.0s
AAK Ala-Archa 85.66 42 *e P* **P 16 43 11.1 +1.3**
comp=Z,6.9nm,1.0s
TKM2 Tokmak 2 86.10 41 *e P* **P 16 43 12.9 +0.9**
TKM2 pmax pmax
comp=Z,8.0nm,0.9s
TKM2 Tokmak 2 86.10 41 *e P* **P 16 43 12.9 +0.9**
comp=Z,8.2nm,0.9s
YAK Yakutsk 86.72 4 LR LR 17 17 45.3
comp=Z,41nm,19.6s,baz=35,slow=33
YAK Yakutsk 86.72 4 *e P* **P 16 43 14.3 0.0**
YAK pmax pmax
comp=Z,10.0nm,1.0s
YAK pmax pmax
comp=N,6.0nm,1.5s
BOSA Boshof 86.80 126 LR LR 17 15 50.3
comp=N,106nm,21.1s,baz=326,slow=31
MAKZ Makanchi 86.87 35 *e P* **P 16 43 14.5 -1.0**
MAKZ pmax pmax
comp=Z,5.0nm,0.8s
MAKZ Makanchi 86.87 35 *e P* **P 16 43 14.5 -1.0**
comp=Z,4.9nm,0.8s
MK31 Makanchi Array 87.04 35 *e P* **P 16 43 16.3 0.0**
MK31 Makanchi Array 87.04 35 *e P* **P 16 43 16.3 0.0**
MKAR Makanchi Array 87.04 35 P **P 16 43 16.0 -0.3**
comp=Z,2.2nm,0.9s,baz=316,slow=3.3,SNR=11
MKAR LR LR 17 21 35.8
comp=Z,90nm,19.2s,baz=314,slow=35
MKAR Makanchi Array 87.04 35 *e P* **P 16 43 16.3 0.0**
MKAR Makanchi Array 87.04 35 *e P* **P 16 43 16.3 0.0**
MK01 Makanchi Array 87.06 35 *e P* **P 16 43 15.9 -0.5**
KSH Kashi 88.51 44 P **P 16 43 25.3 +1.7**
KSH *e* pP sP 16 43 29.8 +0.5
KSH *e* PP **PP 16 46 56.1 +5.1**
KSH SKS **SKSac 16 53 51.3 -1.4**
KSH S **S 16 54 08.9 -0.6**
KSH SS **SS 17 00 02.5 +3.7**
KSH pmax pmax
comp=Z,98nm,5.7s
KSH LR LR
comp=Z,240nm,14.7s
KSH LR LR
comp=Z,160nm,11.3s
BOD Bodaibo 88.81 13 *e P* P 16 43 19.3 -5.1
BOD pmax pmax
comp=Z,6.0nm,1.7s
MA2 Magadan 88.95 354 LR LR 17 21 05.2
comp=Z,41nm,19.4s,baz=46,slow=34
WMQ Urumqi 91.82 34 *e P* **P 16 43 38.4 -0.5**
WMQ LR LR
comp=Z,39nm,22.2s
WMQ LR LR
comp=Z,29nm,26.6s
WMQ LR LR
comp=Z,41nm,24.4s
ZAK Zakamensk 92.79 22 *e P* **P 16 43 42.5 -0.8**
ZAK pmax pmax
comp=Z,3.0nm,1.6s
PETK Petropavlovsk- 94.39 349 LR LR 17 25 11.7
comp=Z,58nm,20.9s,baz=58,slow=35
SONM Songino Array 96.01 21 P **P 16 43 59.3 +1.1**
comp=Z,0.2nm,0.3s,baz=320,slow=3.8,SNR=2.4
SONM LR LR 17 28 48.0
comp=Z,40nm,18.1s,baz=359,slow=36
ULN Ulaanbaatar 96.18 21 *e P* **P 16 43 59.0 +0.1**
KLR Kul'dur 99.60 5 *e P* **Pdif 16 44 15.9 +1.9**
GTA Gaotai 100.84 30 *e P* **Pdif 16 44 17.3 -2.7**
GTA pP pP 16 44 22.0 -2.3
GTA sP sP 16 44 24.3 -1.5
GTA pmax pmax
comp=Z,2.0nm,1.9s
CD2 Chengdu 109.73 32 Pdif **Pdif 16 44 56.9 -2.7**
GYA Guiyang 114.85 32 *e* Pdif **Pdif 16 45 21.8 -0.7**
GYA PKP **PKiKP 16 49 11.0 -1.1**
GYA PP **PP 16 50 11.3 +2.0**
GYA AMB AMB
comp=Z,120nm,7.8s
CMAR Chiang Mai Arr 117.41 43 PKP **PKPdf 16 49 15.2 -1.8**
comp=Z,0.9nm,0.7s,baz=298,slow=3.1,SNR=7.2
VNDA Vanda 132.52 187 PKP **PKPdf 16 49 44.5 +0.4**
comp=Z,2.0nm,0.9s,baz=286,slow=2.9,SNR=8.6
URZ Urewera 148.02 247 PKPbc **PKPbc 16 50 16.6 +0.3**
comp=Z,6.2nm,0.9s,baz=35,slow=1.3,SNR=5.2
RPZ Rata Peaks 151.82 235 PKPbc **PKPbc 16 50 24.4 -0.9**
comp=Z,4.3nm,0.6s,baz=310,slow=0.7,SNR=3.9
WRA Warramunga Arr 167.99 21 PKP **PKPdf 16 50 36.9 -0.8**
comp=Z,0.9nm,0.9s,baz=313,slow=1.2,SNR=4.1
ASAR Alice Springs 171.21 32 PKP **PKPdf 16 50 38.2 -1.4**
comp=Z,1.0nm,0.9s,baz=182,slow=0.6,SNR=8.0
ASAR PKPab **PKPab 16 51 59.1 -0.2**
comp=Z,2.1nm,0.9s,baz=333,slow=3.3,SNR=12

*ISK **21** 16:38:23.9, 39°.03N×29°.20E, h5km, MD2.6*
*CSEM **21** 16:38:24.6±0.2, 39°.06N×29°.08E, h2km, MD2.6, Error ellipse: s-maj=4.4km s-min=3.3km az=113.0*
ISC 21 16:38:24.2±1.3, 39°.03N±0°.03×29°.15E±0°.03, h2km±12km, n24, σ0s38/34, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.26**	**77**	P	**Pb**	**16 38 31.7**	**0.0**
GDZ				S	**Sb**	**16 38 35.8**	**-0.9**
GDZ	**Gediz**	**0.26**	**77**	*i P*	**Pb**	**16 38 31.7**	**0.0**
GDZ				*i S*	**Sb**	**16 38 35.8**	**-0.9**
TVSB	**Tavsanli**	**0.48**	**30**	*e* PG	**Pg**	**16 38 33.7**	**+0.3**
TVSB				*e* SG	**Sg**	**16 38 39.6**	**-0.1**
TVSB	**Tavsanli**	**0.48**	**30**	*e* Pg	**Pg**	**16 38 33.7**	**+0.3**
TVSB				*e* Sg	**Sg**	**16 38 39.6**	**-0.1**
KULA	**Kula-Manisa**	**0.64**	**217**	*e* PG	**Pg**	**16 38 36.6**	**+0.1**
KULA	**Kula-Manisa**	**0.64**	**217**	*e* Pg	**Pg**	**16 38 36.6**	**+0.1**
MANT	**Manisa**	**0.71**	**221**	P	**Pg**	**16 38 37.6**	**-0.2**
MANT				S	**Sb**	**16 38 49.5**	**-0.2**
MANT	**Manisa**	**0.71**	**221**	*i P*	**Pg**	**16 38 37.6**	**-0.2**
MANT				*i S*	**Sb**	**16 38 49.5**	**-0.2**
KHAL	**Karahalli**	**0.71**	**158**	P	**Pb**	**16 38 39.2**	**-0.1**
KHAL				S	**Sb**	**16 38 50.5**	**+0.9**
KHAL	**Karahalli**	**0.71**	**158**	*i P*	**Pb**	**16 38 39.2**	**-0.1**
KHAL				*i S*	**Sb**	**16 38 50.5**	**+0.9**
AKS	**Akhisar**	**1.05**	**262**	*e* PN	**Pn**	**16 38 45.7**	**-0.2**
AKS	**Akhisar**	**1.05**	**262**	*e* Pn	**Pn**	**16 38 45.7**	**-0.2**
BALB	**Balikesir**	**1.16**	**302**	*e* PN	**Pb**	**16 38 47.0**	**+0.1**
BALB				*e* SN	**Sn**	**16 39 03.7**	**0.0**
BALB	**Balikesir**	**1.16**	**302**	*e* Pn	**Pb**	**16 38 47.0**	**+0.1**
BALB				*e* Sn	**Sn**	**16 39 03.7**	**0.0**
IZI	**Iznik**	**1.33**	**11**	*e* PN	**Pb**	**16 38 49.9**	**0.0**
IZI	**Iznik**	**1.33**	**11**	*e* Pn	**Pb**	**16 38 49.9**	**0.0**
MDNY	**Mudanya-Bursa**	**1.35**	**351**	*e* PN	**Pg**	**16 38 50.1**	**0.0**
MDNY	**Mudanya-Bursa**	**1.35**	**351**	*e* Pn	**Pg**	**16 38 50.1**	**0.0**
KCTX	**Karacabey (Bur**	**1.38**	**334**	*e* PN	**Pg**	**16 38 50.5**	**0.0**
KCTX	**Karacabey (Bur**	**1.38**	**334**	*e* Pn	**Pg**	**16 38 50.6**	**0.0**
EDC	**Edincik**	**1.65**	**323**	*e* PN	**Pn**	**16 38 54.4**	**+0.3**
EDC	**Edincik**	**1.65**	**323**	*e* Pn	**Pn**	**16 38 54.4**	**+0.3**
GULT	**Gulveren**	**1.75**	**36**	*e* PN	**Pn**	**16 38 55.8**	**+0.2**
GULT	**Gulveren**	**1.75**	**36**	*e* Pn	**Pn**	**16 38 55.8**	**+0.2**

JMA 21 16:49:44.6±0.3, 36°.67N×142°.49E, h0km, M3.2, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**1.42**	**288**	P	Pn	16 50 11.2	-0.6
JFK	**Kawauchi**	**1.47**	**299**	P	Pn	16 50 12.3	-0.1
JHO	**Hitachi**	**1.55**	**268**	P	Pn	16 50 13.6	+0.2
JMM	**Marumori**	**1.81**	**312**	P	Pn	16 50 17.1	+0.1
JMM				*e* S	Sn	16 50 40.2	-0.4
JFT	**Otama**	**1.92**	**297**	P	Pn	16 50 19.2	+0.7
JFT				S	Sn	16 50 43.7	+0.3
JOU	**Okura**	**2.23**	**320**	P	Pb	16 50 24.4	-1.4
JFY	**Yanaizu**	**2.35**	**289**	P	Pn	16 50 25.9	+1.5
JAG	**Ashikaga**	**2.46**	**265**	P	Pn	16 50 27.0	+1.1
MAT	**Matsushiro**	**3.45**	**269**	P	Pn	16 50 41.7	+2.1
MAT				S	Sn	16 51 22.9	+1.7

*NIED **21** 16:57:00, 37°.90N×144°.50E, h5km, Mw3.8 Best double couple: M0:6.63000×10^14 NP1:φs=43.00000°, δ=23.00000°, λ=-85.00000°. NP2:φs=217.00000°, δ=67.00000°, λ=-92.00000°.*
*IDC **21** 16:57:03.5±0.8, 37°.82N×144°.52E, h0km, mb3.6/9, mb1 3.8/13, mb1mx3.6/58, mbtmp3.7/13, ML3.6/3, MS2.6/3, Ms1 2.6/3, ms1mx2.3/46, Error ellipse: s-maj=21.0km s-min=17.2km az=128.0*
*ISCJB **21** 16:57:06.3±0.6, 37°.81N±0°.06×144°.52E±0°.05, h33km, mb3.7/9, Error ellipse: s-maj=8.2km s-min=5.7km az=11.4*
*JMA **21** 16:57:07.8±0.3, 37°.87N×144°.45E, h44km, M4.0*
ISC 21 16:57:08.9±0.9, 37°.94N±0°.08×144°.55E±0°.07, h35km, n26, σ1s31/23, mb3.7/9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.57**	**282**	S	**Sn**	**16 58 16.9**	**-1.2**
JMK	**Ichinoseki**	**2.80**	**292**	*e* S	**Sn**	**16 58 24.0**	**+0.3**
JOM	**Ohasama**	**2.97**	**302**	S	**Sn**	**16 58 28.3**	**+0.3**
JFT	**Otama**	**3.37**	**264**	P	**Pn**	**16 57 59.0**	**0.0**
JFT				*e* S	**Sn**	**16 58 37.0**	**-0.7**
JANG	**Nango**	**3.38**	**317**	P	**Pn**	**16 57 59.1**	**-0.2**
JANG				*e* S	**Sn**	**16 58 39.0**	**+0.8**
JYK	**Kaneyama**	**3.43**	**288**	P	**Pn**	**16 58 00.1**	**+0.2**
JYK				*e* S	**Sn**	**16 58 40.0**	**+0.7**
MJAR	**Matsushiro Arr**	**5.25**	**256**	Pn	**Pn**	**16 58 23.3**	**-1.6**
	1.8nm,0.3s,baz=197,slow=25,SNR=33						
MJAR				Sn	**Sn**	**16 59 22.1**	**-2.0**
	1.0nm,0.3s,baz=85,slow=26,SNR=5.5						
MJAR				LR	LR	17 00 21.2	
	comp=Z,45nm,21.4s,baz=95,slow=38						
JHJ	**Hachijo jima 2**	**6.18**	**220**	Pn	Pn	16 58 34.8	-2.9
	7.7nm,0.3s,baz=345,slow=23,SNR=7.0						
JHJ				Sn	Sn	16 59 38.4	-8.9
	4.5nm,0.3s,baz=61,slow=19,SNR=2.4						
ASAJ	**Asahikawa**	**6.34**	**347**	Pn	**Pn**	**16 58 39.8**	**-0.1**
	1.2nm,0.3s,baz=196,slow=15,SNR=17						
ASAJ				Sn	**Sn**	**16 59 48.1**	**-2.9**
	0.9nm,0.3s,baz=210,slow=20,SNR=3.0						
JCJ	**Chichijima**	**11.00**	**191**	Pn	Pn	16 59 37.4	-6.4
	baz=356,slow=19						
JCJ				Sn	Sn	17 01 32.6	-13
	1.2nm,0.3s,baz=270,slow=20,SNR=3.5						
USRK	**Ussuriysk Ar.**	**11.35**	**307**	Pn	Pn	16 59 45.4	-3.1
	0.2nm,0.3s,baz=102,slow=15,SNR=2.8						
KSRS	**Korea Array**	**13.18**	**273**	Pn	**Pn**	**17 00 16.6**	**+3.1**
	0.1nm,0.3s,baz=83,slow=15,SNR=3.3						
KSRS				LR	LR	17 04 52.9	
	comp=Z,22nm,19.2s,baz=82,slow=36						
KLR	**Kul'dur**	**14.58**	**325**	LR	LR	17 06 02.7	
	comp=Z,41nm,18.3s,baz=122,slow=37						
H11N2	**WAKE ISLAND Hy**	**26.58**	**127**	T	T	17 30 25.2	
	baz=318						
H11N1	**WAKE ISLAND Hy**	**26.59**	**127**	T	T	17 30 21.3	
	baz=318						
H11N3	**WAKE ISLAND Hy**	**26.60**	**127**	T	T	17 30 21.3	
	baz=318						
ZALV	**Zalesovo Beam**	**43.16**	**312**	PcP	**PcP**	**17 06 55.7**	**+0.8**
	1.0nm,0.5s,baz=105,slow=2.6,SNR=5.1						
MKAR	**Makanchi Array**	**45.75**	**302**	P	**P**	**17 05 26.1**	**-0.6**
	0.5nm,0.8s,baz=78,slow=11,SNR=5.3						
ILAR	**Eielson Array**	**47.39**	**33**	P	**P**	**17 05 39.8**	**+0.5**
	0.4nm,0.6s,baz=258,slow=6.0,SNR=4.2						
KURBB	**Kurchatov Arra**	**47.41**	**308**	P	**P**	**17 05 41.0**	**+1.4**
	1.1nm,0.6s,baz=82,slow=7.9,SNR=14						
BVAR	**Borovoye Array**	**51.80**	**312**	P	**P**	**17 06 12.6**	**-0.5**
	0.6nm,0.7s,baz=57,slow=10,SNR=3.4						
WRA	**Warramunga Arr**	**58.37**	**191**	P	P	17 06 59.2	-1.6
	0.7nm,0.6s,baz=13,slow=7.4,SNR=12						
YKA	**Yellowknife Ar**	**61.76**	**31**	P	**P**	**17 07 23.5**	**0.0**
	0.4nm,0.8s,baz=302,slow=6.7,SNR=4.3						
ASAR	**Alice Springs**	**62.09**	**191**	P	**P**	**17 07 25.4**	**-0.8**
	0.3nm,0.8s,baz=23,slow=11,SNR=5.1						
NVAR	**Mina Array Bea**	**72.44**	**55**	P	**P**	**17 08 33.0**	**+1.0**
	0.8nm,0.8s,baz=293,slow=7.3,SNR=5.7						
PDAR	**Pinedale Array**	**75.24**	**47**	P	**P**	**17 08 49.0**	**+0.7**
	0.5nm,0.6s,baz=298,slow=3.2,SNR=5.3						

*DDA **21** 17:03:15.0, 39°.14N×28°.96E, h7km, Md2.7*
*ISK **21** 17:03:15.3, 39°.12N×28°.96E, h5km, MD2.8*
*CSEM **21** 17:03:15.7±0.1, 39°.12N×28°.96E, h2km, MD2.7, Error ellipse: s-maj=1.6km s-min=1.5km az=134.0*
ISC 21 17:03:15.3±0.9, 39°.13N±0°.02×28°.96E±0°.02, h16km±6km, n57, σ0s31/74, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.21**	**246**	P	**Pg**	**17 03 20.3**	**+0.1**
DEMI				S	**Sg**	**17 03 23.3**	**-0.2**
DEMI	**Demirci**	**0.21**	**246**	*i P*	**Pg**	**17 03 20.3**	**+0.1**
DEMI				*i S*	**Sg**	**17 03 23.3**	**-0.2**
GDZ	**Gediz**	**0.41**	**95**	P	**Pg**	**17 03 23.9**	**+0.3**
GDZ				S	**Sg**	**17 03 29.5**	**+0.3**
GDZ	**Gediz**	**0.41**	**95**	*i P*	**Pg**	**17 03 23.9**	**+0.3**
GDZ				*i S*	**Sg**	**17 03 29.5**	**+0.3**
TVSB	**Tavsanli**	**0.50**	**50**	*e* PG	**Pg**	**17 03 25.6**	**+0.2**
TVSB	**Tavsanli**	**0.50**	**50**	*e* Pg	**Pg**	**17 03 25.6**	**+0.2**
DURS	**Dursunbey**	**0.61**	**321**	P	**Pb**	**17 03 27.5**	**-0.2**
DURS	**Dursunbey**	**0.61**	**321**	*i P*	**Pb**	**17 03 27.4**	**-0.2**
KULA	**Kula-Manisa**	**0.66**	**201**	*e* PG	**Pb**	**17 03 28.5**	**0.0**
KULA	**Kula-Manisa**	**0.66**	**201**	*e* Pg	**Pb**	**17 03 28.5**	**0.0**
MANT	**Manisa**	**0.71**	**207**	P	**Pb**	**17 03 29.5**	**0.0**
MANT				S	**Sg**	**17 03 38.2**	**-0.5**
MANT	**Manisa**	**0.71**	**207**	*i P*	**Pb**	**17 03 29.5**	**0.0**
MANT				*i S*	**Sg**	**17 03 38.1**	**-0.5**
KHAL	**Karahalli**	**0.86**	**151**	P	**Pg**	**17 03 32.4**	**+0.3**
KHAL				S	**Sb**	**17 03 43.2**	**-0.2**
KHAL	**Karahalli**	**0.86**	**151**	*i P*	**Pg**	**17 03 32.4**	**+0.3**
KHAL				*i S*	**Sb**	**17 03 43.2**	**-0.2**
KHL	**Karahalli**	**0.92**	**151**	*e* PG	**Pb**	**17 03 32.9**	**0.0**
KHL				*e* SG	**Sn**	**17 03 46.6**	**0.0**
KHL	**Karahalli**	**0.92**	**151**	*e* Pg	**Pb**	**17 03 32.9**	**0.0**
KHL				*e* Sg	**Sn**	**17 03 46.6**	**0.0**
AKHS	**Akhisar**	**0.93**	**255**	P	**Pn**	**17 03 33.8**	**0.0**
AKHS				S	**Sg**	**17 03 45.7**	**+0.2**
AKHS	**Akhisar**	**0.93**	**255**	*i P*	**Pn**	**17 03 33.8**	**0.0**
AKHS				*i S*	**Sg**	**17 03 45.7**	**+0.2**
AKS	**Akhisar**	**0.93**	**255**	*e* PG	**Pg**	**17 03 33.5**	**+0.1**
AKS	**Akhisar**	**0.93**	**255**	*e* Pg	**Pg**	**17 03 33.5**	**+0.1**
BALB	**Balikesir**	**0.98**	**302**	*e* PG	**Pn**	**17 03 34.8**	**+0.3**
BALB				*e* SG	**Sn**	**17 03 48.4**	**+0.3**
BALB	**Balikesir**	**0.98**	**302**	*e* Pg	**Pn**	**17 03 34.8**	**+0.3**
BALB				*e* Sg	**Sn**	**17 03 48.4**	**+0.3**
IGD	**Bursa**	**1.15**	**9**	*i P*	**Pn**	**17 03 36.1**	**-0.7**
IGD				*i S*	**Sn**	**17 03 52.1**	**-0.1**
BALY	**Balya**	**1.21**	**301**	P	**Pg**	**17 03 38.7**	**+0.1**
BALY	**Balya**	**1.21**	**301**	*i P*	**Pg**	**17 03 38.7**	**+0.1**
KCTX	**Karacabey (Bur**	**1.23**	**338**	*e* PN	**Pg**	**17 03 39.8**	**+0.8**
KCTX	**Karacabey (Bur**	**1.23**	**338**	*e* Pn	**Pg**	**17 03 39.8**	**+0.8**
MDNY	**Mudanya-Bursa**	**1.24**	**357**	*e* PN	**Pg**	**17 03 39.2**	**0.0**
MDNY	**Mudanya-Bursa**	**1.24**	**357**	*e* Pn	**Pg**	**17 03 39.2**	**0.0**
IZI	**Iznik**	**1.27**	**18**	*e* PN	**Pg**	**17 03 40.2**	**+0.4**
IZI	**Iznik**	**1.27**	**18**	*e* Pn	**Pg**	**17 03 40.2**	**+0.4**
GEMT	**Gemlik**	**1.32**	**8**	*e* PN	**Pg**	**17 03 41.0**	**+0.4**
GEMT	**Gemlik**	**1.32**	**8**	*e* Pn	**Pg**	**17 03 41.1**	**+0.4**
GONE	**Gonen-Balikesi**	**1.35**	**313**	*e* PN	**Pg**	**17 03 41.7**	**+0.4**
GONE	**Gonen-Balikesi**	**1.35**	**313**	*e* Pn	**Pg**	**17 03 41.7**	**+0.4**
BORA	**Eskisehir**	**1.38**	**56**	P	**Pb**	**17 03 40.9**	**+0.1**
BORA				S	**Sg**	**17 04 00.2**	**+0.4**
BORA	**Eskisehir**	**1.38**	**56**	*i P*	**Pb**	**17 03 40.9**	**+0.1**
BORA				*i S*	**Sg**	**17 04 00.2**	**+0.4**
ADVT	**Abdulvahap**	**1.43**	**24**	*e* PN	**Pg**	**17 03 42.9**	**0.0**
ADVT	**Abdulvahap**	**1.43**	**24**	*e* Pn	**Pg**	**17 03 42.9**	**0.0**
ARMT	**Armutlu**	**1.44**	**357**	*e* PN	**Pg**	**17 03 43.1**	**+0.1**
ARMT	**Armutlu**	**1.44**	**357**	*e* Pn	**Pg**	**17 03 43.1**	**+0.1**
EDC	**Edincik**	**1.48**	**326**	*e* PN	**Pg**	**17 03 43.9**	**0.0**
EDC	**Edincik**	**1.48**	**326**	*e* Pn	**Pg**	**17 03 43.9**	**0.0**
GPA	**Golpazari**	**1.56**	**41**	*e* PN	**Pg**	**17 03 44.7**	**-0.6**
GPA	**Golpazari**	**1.56**	**41**	*e* Pn	**Pg**	**17 03 44.7**	**-0.6**
GULT	**Gulveren**	**1.77**	**42**	*e* PN	**Pb**	**17 03 47.5**	**+0.1**
GULT	**Gulveren**	**1.77**	**42**	*e* Pn	**Pb**	**17 03 47.6**	**+0.1**
HRT	**Hereke**	**1.78**	**18**	*e* PN	**Pb**	**17 03 47.4**	**-0.2**
HRT	**Hereke**	**1.78**	**18**	*e* Pn	**Pb**	**17 03 47.4**	**-0.2**
SPNC	**Sapanca-Adapaz**	**1.87**	**33**	*e* PN	**Pb**	**17 03 49.2**	**+0.1**
SPNC	**Sapanca-Adapaz**	**1.87**	**33**	*e* Pn	**Pb**	**17 03 49.2**	**+0.1**
ISK	**Istanbul-Kandi**	**1.94**	**2**	*e* PN	**Pb**	**17 03 50.2**	**-0.1**
ISK	**Istanbul-Kandi**	**1.94**	**2**	*e* Pn	**Pb**	**17 03 50.2**	**-0.1**
SVRH	**Sivrihisar-ESK**	**2.01**	**80**	*e* PN	**Pb**	**17 03 51.2**	**-0.4**
SVRH	**Sivrihisar-ESK**	**2.01**	**80**	*e* Pn	**Pb**	**17 03 51.2**	**-0.4**
SILT	**Sile**	**2.09**	**14**	*e* PN	**Pb**	**17 03 52.2**	**-0.6**
SILT	**Sile**	**2.09**	**14**	*e* Pn	**Pb**	**17 03 52.2**	**-0.6**

*NIED **21** 17:05:00, 38°.30N×143°.90E, h5km, Mw3.5 Best double couple: M0:2.17000×10^14 NP1:φs=19.00000°, δ=30.00000°, λ=-87.00000°. NP2:φs=196.00000°, δ=60.00000°, λ=-92.00000°.*
*IDC **21** 17:05:53.5±1.8, 38°.09N×144°.40E, h0km, mb3.4/5, mb1 3.6/8, mb1mx3.4/52, mbtmp3.5/8, ML3.5/3, MS2.4/2, Ms1 2.4/2, ms1mx2.2/33, Error ellipse: s-maj=46.7km s-min=21.1km az=75.0*
*ISCJB **21** 17:05:56.6±0.8, 38°.16N±0°.06×144°.07E±0°.07, h33km, mb3.4/5, Error ellipse: s-maj=8.8km s-min=7.0km az=135.4*
*JMA **21** 17:05:57.3±0.2, 38°.28N×143°.92E, h21km, M3.8*
ISC 21 17:05:58.2±1.3, 38°.19N±0°.06×144°.17E±0°.10, h35km, n19, σ2s32/26, mb3.4/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.15**	**295**	P	**Pn**	**17 06 30.0**	**-1.5**
JIO	**Ouri**	**2.23**	**278**	P	**Pn**	**17 06 31.3**	**-1.3**
JIO				S	**Sn**	**17 06 55.9**	**-3.1**
JMK	**Ichinoseki**	**2.44**	**289**	P	**Pn**	**17 06 34.2**	**-1.2**
JOM	**Ohasama**	**2.59**	**301**	P	**Pn**	**17 06 36.7**	**-0.8**
JOM				S	**Sn**	**17 07 05.8**	**-1.9**
JYK	**Kaneyama**	**3.08**	**285**	P	**Pn**	**17 06 43.7**	**-0.5**
JFT	**Otama**	**3.11**	**259**	P	**Pn**	**17 06 44.6**	**-0.1**
JFT				S	**Sn**	**17 07 18.7**	**-1.8**
JAG	**Ashikaga**	**4.15**	**246**	P	**Pn**	**17 06 58.8**	**-0.2**
JAG				S	**Sn**	**17 07 43.7**	**-2.6**
JCH	**Churui**	**4.47**	**352**	P	**Pn**	**17 07 01.6**	**-1.7**
JRY	**Ryogami san**	**4.73**	**244**	P	**Pn**	**17 07 06.4**	**-0.7**
MJAR	**Matsushiro Arr**	**5.02**	**253**	Pn	**Pn**	**17 07 11.4**	**+0.3**
	1.3nm,0.3s,baz=64,slow=9.6,SNR=19						
MJAR				Sn	**Sn**	**17 08 07.0**	**-0.9**
	baz=84,slow=18,SNR=2.7						
MJAR				LR	LR	17 09 12.8	
	comp=Z,30nm,19.8s,baz=95,slow=39						
MAT	**Matsushiro**	**5.02**	**253**	P	**Pn**	**17 07 12.1**	**+1.1**
MAT				S	**Sn**	**17 08 07.3**	**-0.6**
ASAJ	**Asahikawa**	**6.04**	**349**	Pn	**Pn**	**17 07 24.9**	**-0.1**
	1.0nm,0.3s,baz=184,slow=13,SNR=20						
ASAJ				Sn	**Sn**	**17 08 28.6**	**-4.3**
	0.6nm,0.3s,baz=207,slow=33,SNR=4.4						
JHJ	**Hachijo jima 2**	**6.19**	**217**	Pn	**Pn**	**17 07 25.5**	**-1.5**
	3.6nm,0.3s,baz=121,slow=21,SNR=9.0						
JHJ				Sn	**Sn**	**17 08 29.6**	**-7.0**
	12nm,0.3s,baz=69,slow=22,SNR=6.7

JFY	**Yanaizu**	**0.51**	**27**	⇑P		**Pg**	**17 17 32.2**	**-0.3**
JFY				S		**Sg**	**17 17 38.9**	**-0.3**
JAG	**Ashikaga**	**0.53**	**177**	⇓P		**Pg**	**17 17 32.5**	**-0.3**
JAG				*e*S		**Sg**	**17 17 39.4**	**-0.2**
JIZZ	**Izumozaki**	**0.81**	**316**	⇓P		**Pb**	**17 17 39.2**	**0.0**
JNS	**Sasagawa**	**0.87**	**355**	⇓P		**Pg**	**17 17 38.8**	**-0.6**
JNS				S		**Sg**	**17 17 50.7**	**0.0**
JFT	**Otama**	**0.93**	**52**	⇑P		**Pg**	**17 17 39.8**	**-0.7**
MJAR	**Matsushiro Arr**	**1.05**	**247**	Pg		**Pg**	**17 17 41.9**	**-0.9**
	69nm,0.3s,baz=72,slow=16,SNR=814							
MJAR				Lg		Lg	17 17 55.0	
	55nm,0.3s,baz=71,slow=30,SNR=18							
MAT	**Matsushiro**	**1.05**	**248**	P		**Pg**	**17 17 42.4**	**-0.5**
MAT				S		**Sg**	**17 17 56.4**	**-0.1**
JHJ	**Hachijo jima 2**	**3.83**	**175**	Pn		**Pn**	**17 18 22.6**	**+0.4**
	10nm,0.3s,baz=66,slow=7.7,SNR=7.3							
JHJ				Sn		**Sn**	**17 19 09.6**	**+1.9**
	2.2nm,0.3s,baz=40,slow=23,SNR=3.0							
JNU	**Nakatsue**	**7.97**	**244**	LR		LR	17 22 43.1	
	comp=Z,120nm,20.1s,baz=119,slow=40							
USRK	**Ussuriysk Ar.**	**9.18**	**324**	LR		LR	17 23 18.5	
	comp=Z,72nm,18.2s,baz=44,slow=38							
KSRS	**Korea Array**	**9.18**	**277**	Pn		**Pn**	**17 19 37.6**	**+1.9**
	0.2nm,0.3s,baz=88,slow=14,SNR=2.9							
KLR	**Kul'dur**	**13.48**	**338**	LR		LR	17 25 06.5	
	comp=Z,82nm,20.8s,baz=56,slow=34							
CMAR	**Chiang Mai Arr**	**39.93**	**254**	LR		LR	17 43 48.7	
	comp=Z,46nm,18.9s,baz=328,slow=40							
KURBB	**Kurchatov Arra**	**44.79**	**308**	P		**P**	**17 25 37.2**	**+0.1**
	0.2nm,0.6s,baz=82,slow=8.3,SNR=3.9							
ILAR	**Eielson Array**	**50.42**	**32**	P		**P**	**17 26 21.1**	**+0.5**
	0.3nm,0.6s,baz=278,slow=6.9,SNR=3.8							
WRA	**Warramunga Arr**	**56.79**	**186**	P		**P**	**17 27 05.6**	**-2.2**
	0.7nm,0.6s,baz=1.8,slow=7.4,SNR=9.0							
ASAR	**Alice Springs**	**60.52**	**186**	P		**P**	**17 27 31.0**	**-2.7**
	0.7nm,1.1s,baz=8.9,slow=6.6,SNR=3.1							

IDC 21 17:18:00.9±3.1,6°.27S×151°.54E,h0km,mb3.0/2, mb1 3.5/3,mb1mx3.2/34,mbtmp3.3/3,ML1.4/1,Error ellipse: s-maj=123.8km s-min=42.9km az=126.0,New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**5.34**	**234**	Pn	Pn	17 19 22.2	+0.2
	0.8nm,0.3s,baz=26,slow=12,SNR=9.6						
PMG				Sn	Sn	17 20 15.4	-8.8
	3.3nm,0.3s,baz=96,slow=13,SNR=6.4						
WRA	**Warramunga Arr**	**21.54**	**229**	P	P	17 22 51.3	-0.7
	0.4nm,0.6s,baz=56,slow=12,SNR=7.0						
ASAR	**Alice Springs**	**24.22**	**223**	P	P	17 23 20.4	+0.7
	0.5nm,1.0s,baz=53,slow=9.1,SNR=5.6						
TORD	**Torodi Ar. Bea**	**149.52**	**285**	PKPbc	PKPbc	17 37 52.8	-0.6
	0.3nm,0.4s,baz=84,slow=2.6,SNR=5.1						

*IDC **21** 17:36:59.8±1.0,36°.26N×141°.17E,h0km,mb3.8/7, mb1 3.9/11,mb1mx3.7/50,mbtmp3.8/11,ML3.5/2,MS3.2/3, Ms1 3.2/3,ms1mx2.5/61,Error ellipse: s-maj=24.6km s-min=17.0km az=70.0*

*NIED **21** 17:37:00,36°.30N×141°.00E,h29km,Mw3.8 Best double couple: M0 5.73000×1014 NP1:φs266.00000°,δ44.00000°, λ151.00000°. NP2:φs18.00000°,δ70.00000°,λ50.00000°.*

*ISCJB **21** 17:37:03.5±0.6,36°.34N±0°.03×141°.20E±0°.05,h44km±5km, mb4.3/20,MS4.1/1,Error ellipse: s-maj=6.9km s-min=4.3km az=11.0*

*NEIC **21** 17:37:05.6±0.7,36°.32N×141°.21E,h46km±6km,mb4.5/12, Error ellipse: s-maj=7.0km s-min=5.8km az=103.0*

*JMA **21** 17:37:05.1±0.1,36°.33N×141°.01E,h46km±1km,M3.7*

JMA Felt I J1.

ISC 21 17:37:03.5±1.4,36°.32N±0°.04×141°.18E±0°.06,h27km±10km, n64,σ1°.22/70,mb4.2/20,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.57**	**301**	P	**Pb**	**17 37 15.3**	**+0.3**
JHO				S	**Sb**	**17 37 22.6**	**-0.1**
CHOJ	**Chosi**	**0.67**	**203**	P	**Pn**	**17 37 17.8**	**+0.6**
JYT	**Yasato**	**0.80**	**264**	P	**Pb**	**17 37 18.2**	**-0.6**
JYT				S	**Sb**	**17 37 27.4**	**-1.8**
ONAJ	**Iwakimizuishiy**	**0.83**	**339**	P	**Pb**	**17 37 19.5**	**0.0**
ONAJ				S	**Sb**	**17 37 29.6**	**-0.8**
JFK	**Kawauchi**	**1.07**	**347**	P	**Pn**	**17 37 22.8**	**+0.1**
JFK				S	**Sn**	**17 37 35.1**	**-1.6**
JFT	**Otama**	**1.37**	**331**	P	**Pb**	**17 37 28.1**	**-0.4**
JFT				S	**Sn**	**17 37 44.1**	**0.0**
JAG	**Ashikaga**	**1.39**	**275**	P	**Pn**	**17 37 26.7**	**-0.4**
JAG				S	**Sn**	**17 37 42.3**	**-2.4**
JFY	**Yanaizu**	**1.60**	**313**	P	**Pn**	**17 37 30.6**	**+0.6**
JKT	**Katashina**	**1.61**	**287**	P	**Pn**	**17 37 30.5**	**+0.2**
JKT				S	**Sn**	**17 37 49.1**	**-1.1**
MJAR	**Matsushiro Arr**	**2.40**	**276**	Pn	**Pn**	**17 37 41.5**	**+0.5**
	6.0nm,0.3s,baz=106,slow=8.8,SNR=4.6						
MJAR				Sn	**Sn**	**17 38 12.0**	**+2.4**
	14nm,0.3s,baz=36,slow=19,SNR=7.9						
MJAR				LR	LR	17 38 43.1	
	comp=Z,124nm,18.9s,baz=100,slow=44						
MAJO	**Matsushiro**	**2.40**	**276**	*e*Pn	**Pn**	**17 37 41.7**	**+0.7**
MAT	**Matsushiro**	**2.40**	**276**	P	**Pn**	**17 37 41.5**	**+0.4**
MAT				*e*S	**Sn**	**17 38 09.1**	**-0.5**
MJB9	**Matsu-Tunnel**	**2.41**	**276**	*e*Pn	**Pn**	**17 37 41.9**	**+0.8**
JHJ2	**Mitsune**	**3.39**	**200**	*e*Pn	**Pn**	**17 37 57.7**	**+3.0**
JHJ2				*e*Sn	**Sn**	**17 38 34.1**	**+0.1**
JHJ	**Hachijo jima 2**	**3.40**	**200**	Pn	**Pn**	**17 37 57.8**	**+3.1**
	24nm,0.3s,baz=266,slow=17,SNR=15						
JHJ				Sn	**Sn**	**17 38 35.1**	**+1.1**
	54nm,0.3s,baz=64,slow=21,SNR=8.3						
INU	**Inuyama**	**3.52**	**255**	*e*Pn	**Pn**	**17 37 58.8**	**+2.5**
INU				*e*Sn	**Sn**	**17 38 33.8**	**-3.2**
ERM	**Erimo**	**5.89**	**15**	*e*Pn	**Pn**	**17 38 31.3**	**+2.4**
ERM				*e*Sn	**Sn**	**17 39 33.7**	**-1.7**
ASAJ	**Asahikawa**	**7.86**	**8**	Pn	**Pn**	**17 38 56.5**	**+0.6**
	0.9nm,0.3s,baz=203,slow=12,SNR=15						
ASAJ				Sn	**Sn**	**17 40 25.1**	**+1.2**
	0.5nm,0.3s,baz=347,slow=18,SNR=3.1						
ASAJ	**Asahikawa**	**7.86**	**8**	*e*Pn	**Pn**	**17 38 57.0**	**+1.0**
ASAJ				Sn	**Sn**	**17 40 25.1**	**+1.2**
CBIJ	**Chichi jima**	**9.24**	**174**	*e*Pn	**Pn**	**17 39 14.1**	**-0.9**
CBIJ				*e*Sn	Sn	17 40 46.8	-11
JCJ	**Chichijima**	**9.24**	**174**	Pn	**Pn**	**17 39 13.3**	**-1.6**
	4.4nm,0.3s,baz=107,slow=23,SNR=11						
JCJ				Sn	Sn	17 40 49.5	-8.4
	4.4nm,0.3s,baz=211,slow=18,SNR=4.5						
USRK	**Ussuriysk Ar.**	**10.54**	**321**	Pn	**Pn**	**17 39 34.0**	**+1.3**
	0.1nm,0.3s,baz=117,slow=12,SNR=2.4						
KSRS	**Korea Array**	**10.68**	**280**	Pn	Pn	17 39 38.3	+3.7
	0.1nm,0.3s,baz=93,slow=15,SNR=7.5						
KSRS				LR	LR	17 43 27.5	
	comp=Z,61nm,20.2s,baz=70,slow=36						
KS15	**Wonju Array Si**	**10.71**	**280**	*e*Pn	**Pn**	**17 39 37.8**	**+2.8**
KSAR	**Wonju Array Be**	**10.71**	**280**	Pn	Pn	17 39 38.3	+3.3
YAK	**Yakutsk**	**26.72**	**348**	*e*P	**P**	**17 42 40.1**	**-0.1**
	3.7nm,0.7s						
ENH	**Enshi**	**27.09**	**266**	*e*P	**P**	**17 42 43.1**	**-0.8**
	4.1nm,0.8s						
H11N2	**WAKE ISLAND Hy**	**27.96**	**119**	T	T	18 12 53.0	
	baz=313,slow=75,SNR=44						
H11N1	**WAKE ISLAND Hy**	**27.96**	**119**	T	T	18 12 47.6	
	baz=313,slow=75,SNR=53						
H11N3	**WAKE ISLAND Hy**	**27.98**	**119**	T	T	18 12 48.4	
	baz=313,slow=75,SNR=47						
SONA1	**Songino Array**	**28.03**	**305**	*e*P	**P**	**17 42 52.1**	**-0.2**
SONA0	**Songino Array**	**28.03**	**305**	*e*P	**P**	**17 42 52.2**	**-0.1**
	5.7nm,1.8s						
SONM	**Songino Array**	**28.03**	**305**	P	**P**	**17 42 52.2**	**-0.1**
	0.6nm,0.5s,baz=92,slow=10,SNR=4.6						
H11S1	**WAKE ISLAND Hy**	**28.64**	**121**	T	T	18 13 49.0	
	baz=314,slow=75,SNR=74						
H11S3	**WAKE ISLAND Hy**	**28.64**	**121**	T	T	18 13 44.1	
	baz=314,slow=75,SNR=57						
H11S2	**WAKE ISLAND Hy**	**28.66**	**121**	T	T	18 13 42.0	
	baz=314,slow=75,SNR=41						
CM31	**Chiang Mai Arr**	**41.13**	**256**	*e*P	**P**	**17 44 45.9**	**+0.5**
CMAR	**Chiang Mai Arr**	**41.13**	**256**	P	**P**	**17 44 44.9**	**-0.6**
	0.3nm,0.6s,baz=50,slow=8.4,SNR=3.6						
ZAA0	**Zalesovo Array**	**42.26**	**313**	*e*P	**P**	**17 44 54.0**	**-0.1**
ZAA1	**Zalesovo Array**	**42.26**	**313**	*e*P	**P**	**17 44 54.6**	**+0.5**
ZALV	**Zalesovo Beam**	**42.26**	**313**	P	**P**	**17 44 54.7**	**+0.5**
	1.5nm,0.5s,baz=88,slow=7.1,SNR=7.9						
SDPT	**Sand Point**	**43.44**	**45**	*e*P	**P**	**17 45 02.7**	**-1.0**
	165nm,1.4s						
MK01	**Makanchi Array**	**44.33**	**303**	*e*P	**P**	**17 45 11.9**	**+0.7**
MK31	**Makanchi Array**	**44.34**	**303**	*e*P	**P**	**17 45 11.8**	**+0.6**
MK32	**Makanchi Array**	**44.34**	**303**	*e*P	**P**	**17 45 11.6**	**+0.4**
MKAR	**Makanchi Array**	**44.34**	**303**	P	**P**	**17 45 11.5**	**+0.4**
	0.8nm,0.7s,baz=87,slow=9.1,SNR=7.6						
MKAR	**Makanchi Array**	**44.34**	**303**	*e*P	**P**	**17 45 12.2**	**+1.0**
TKM2	**Tokmak 2**	**49.80**	**299**	*e*P	**P**	**17 45 53.3**	**-0.8**
	4.7nm,1.3s						
ILAR	**Eielson Array**	**50.20**	**32**	P	**P**	**17 45 57.4**	**+0.9**
	0.3nm,0.7s,baz=263,slow=6.3,SNR=4.3						
ILB	**Eielson Array**	**50.20**	**32**	*e*P	**P**	**17 45 56.8**	**+0.3**
ZRNK	**Zerenda**	**51.75**	**313**	*e*P	**P**	**17 46 08.1**	**-0.2**
	2.0nm,0.6s						
GSI	**Gunungsitoli**	**53.27**	**239**	*e*P	**P**	**17 46 20.4**	**+0.3**
	10nm,0.5s						
KKAR	**Karatay Array**	**53.32**	**300**	*e*P	**P**	**17 46 20.6**	**+0.5**
YKU2	**Yakutat**	**54.21**	**38**	*e*P	**P**	**17 46 26.4**	**+0.1**
	662nm,1.2s						
WR1	**Warramunga Arr**	**56.33**	**188**	*e*P	**P**	**17 46 42.3**	**+0.3**
	32nm,1.8s						
WRA	**Warramunga Arr**	**56.33**	**188**	P	**P**	**17 46 42.3**	**+0.3**
	1.8nm,0.4s,baz=5.1,slow=7.4,SNR=75						
ARU	**Arti**	**56.77**	**319**	*e*P	**P**	**17 46 44.7**	**-0.1**
	2.6nm,0.6s						
ABKAR	**Akbulak array**	**58.25**	**310**	*e*P	**P**	**17 46 55.0**	**-0.3**
WRAK	**Wrangell Islan**	**58.81**	**40**	*e*P	**P**	**17 46 56.9**	**-2.2**
	29nm,1.6s						
AS01	**Alice Springs**	**60.05**	**188**	*e*P	**P**	**17 47 08.6**	**+0.6**
AS31	**Alice Springs**	**60.06**	**188**	*e*P	**P**	**17 47 07.7**	**-0.4**
	1.4nm,1.0s						
ASAR	**Alice Springs**	**60.06**	**188**	P	**P**	**17 47 08.4**	**+0.3**
	0.7nm,0.6s,baz=17,slow=7.9,SNR=22						
SUMG	**Summit**	**71.39**	**360**	*e*P	**P**	**17 48 20.5**	**-0.5**
	22nm,1.8s						
NWAO	**Narrogin (SRO)**	**72.44**	**201**	LR	LR	18 20 16.7	
	comp=Z,99nm,20.5s,baz=237,slow=36						

*MOS **21** 17:45:00.4±0.9,43°.64N×144°.69E,h145km,mb4.3/36, Error ellipse: s-maj=8.7km s-min=5.6km az=107.5*

*ISCJB **21** 17:45:00.6±0.2,43°.57N±0°.03×144°.80E±0°.03, h148km±1km,mb4.4/78,Error ellipse: s-maj=4.6km s-min=3.6km az=149.4*

*NIED **21** 17:45:00,43°.50N×144°.90E,h150km,Mw4.0 Best double couple: M0 1.22000×1015 NP1:φs356.00000°, δ23.00000°,λ-169.00000°. NP2:φs256.00000°, δ86.00000°,λ-67.00000°.*

*IDC **21** 17:45:01.4±1.1,43°.59N×144°.83E,h144km±8km,mb3.9/23, mb1 4.0/27,mb1mx3.8/63,mbtmp4.3/27,Error ellipse: s-maj=13.2km s-min=11.5km az=132.0*

*JMA **21** 17:45:01.7±0.1,43°.51N×144°.85E,h143km±1km,M4.0*

JMA Felt II J1.

*SKHL **21** 17:45:01.8±0.7,43°.56N×144°.87E,h145km±4km,mb4.6/10, msh5.8/4*

*NEIC **21** 17:45:02.1±0.3,43°.61N×144°.74E,h146km±3km,mb4.6/47, Error ellipse: s-maj=4.1km s-min=2.6km az=139.0*

ISC 21 17:45:01.4±0.5,43°.56N±0°.04×144°.78E±0°.04,h145km±4km, n253,σ1°.14/274,mb4.4/78,26C-25D,Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JNK	**Nakash**	**0.05**	**302**	⇓P	**Pn**	**17 45 21.1**	**+0.2**
JNK				*e*S	**Sn**	**17 45 35.5**	**-0.2**
JRA	**Rausu**	**0.45**	**34**	⇓P	**Pn**	**17 45 22.1**	**+0.2**
JRA				*e*S	**Sn**	**17 45 37.6**	**0.0**
JAK	**Akkeshi**	**0.57**	**186**	⇑P	**Pn**	**17 45 22.4**	**-0.1**
JAK				*e*S	**Sn**	**17 45 38.0**	**-0.6**
NEM2	**Nemuro 2**	**0.73**	**105**	⇑P	**Pn**	**17 45 22.9**	**-0.6**
NEM2				*e*S	**Sn**	**17 45 38.8**	**-1.6**
JTKR	**Abashiri--Toko**	**0.75**	**303**	⇓P	**Pn**	**17 45 24.4**	**+0.7**
JTKR				*e*S	**Sn**	**17 45 41.0**	**+0.3**
JAR	**Ashorobuto**	**0.78**	**251**	⇑P	**Pn**	**17 45 24.6**	**+0.7**
JAR				*e*S	**Sn**	**17 45 41.7**	**+0.7**
YUK	**Yuzh-Kuril'sk**	**0.92**	**59**	*d i*PN	**Pn**	**17 45 25.1**	**+0.1**
YUK				*i* S	**Sn**	**17 45 42.8**	**-0.2**
YUK				pmax	pmax		
	comp=N,143nm,0.2s						
YUK				pmax	pmax		
	comp=E,279nm,0.2s						
YUK				pmax	pmax		
	comp=Z,1μm,0.2s						
YUK				smax	smax		
	comp=E,4μm,0.6s						
YUK				smax	smax		
	comp=N,3μm,0.3s						
YUK	**Yuzh-Kuril'sk**	**0.92**	**59**	⇓*i*P	**Pn**	**17 45 25.1**	**+0.1**
YUK				AMB	AMB	17 45 25.9	
	comp=N,140nm,0.2s						
YUK				AMB	AMB	17 45 25.9	
	comp=N,280nm,0.2s						
YUK				AMB	AMB	17 45 25.9	
	comp=N,1μm,0.2s						
YUK				*i* S	**Sn**	**17 45 42.8**	**-0.2**
YUK				A	A	17 45 45.7	
	comp=N,3μm,0.3s						
YUK				A	A	17 45 45.7	
	comp=N,4μm,0.6s						
JOB	**Onbets**	**0.95**	**227**	⇑P	**Pn**	**17 45 25.8**	**+0.5**
JOB				*e*S	**Sn**	**17 45 43.7**	**+0.3**
JMP	**Maruseppu**	**1.12**	**294**	⇓P	**Pn**	**17 45 27.4**	**+0.6**
JMP				*e*S	**Sn**	**17 45 46.7**	**+0.5**
HRK	**Horoka**	**1.20**	**266**	*e*P	**Pn**	**17 45 28.6**	**+1.0**
JCH	**Churui**	**1.40**	**228**	⇑P	**Pn**	**17 45 29.6**	**+0.1**
JCH				*e*S	**Sn**	**17 45 50.0**	**-1.0**
JKK2	**Kamakawa 2**	**1.50**	**283**	⇓P	**Pn**	**17 45 31.5**	**+0.9**
JKK2				*e*S	**Sn**	**17 45 53.8**	**+0.9**
SHO	**Shikotan**	**1.52**	**78**	*c i*PN	**Pn**	**17 45 30.1**	**-0.7**
SHO				*i* S	**Sn**	**17 45 50.7**	**-2.5**
SHO				pmax	pmax		
	comp=N,50nm,0.3s						
SHO				pmax	pmax		
	comp=E,164nm,0.3s						
SHO				pmax	pmax		
	comp=Z,387nm,0.3s						
SHO				smax	smax		
	comp=N,7μm,0.4s						
SHO				smax	smax		
	comp=E,12μm,0.4s						
SHO	**Shikotan**	**1.52**	**78**	⇑*i*P	**Pn**	**17 45 30.1**	**-0.7**
SHO				AMB	AMB	17 45 30.3	
	comp=E,50nm,0.3s						
SHO				AMB	AMB	17 45 30.3	
	comp=E,160nm,0.3s						
SHO				AMB	AMB	17 45 30.3	
	comp=E,390nm,0.3s						
SHO				*i* S	**Sn**	**17 45 50.7**	**-2.5**
SHO				A	A	17 45 51.6	
	comp=E,7μm,0.4s						
SHO				A	A	17 45 51.6	
	comp=E,12μm,0.4s						
JFR	**Furan**	**1.64**	**257**	P	**Pn**	**17 45 33.0**	**+0.9**
JFR				*e*S	**Sn**	**17 45 56.3**	**+0.7**
JKA	**Kamikawa-asahi**	**1.67**	**290**	*e*P	**Pn**	**17 45 33.8**	**+1.4**
ASAJ	**Asahikawa**	**1.67**	**290**	P	**Pn**	**17 45 33.8**	**+1.3**
	comp=E,46nm,0.3s,baz=140,slow=7.2,SNR=686						
ASAJ				S	**Sn**	**17 45 56.6**	**+0.4**
	comp=E,14nm,0.3s,baz=72,slow=20,SNR=18						
ASAJ	**Asahikawa**	**1.67**	**290**	⇓P	**Pn**	**17 45 33.7**	**+1.3**
ASAJ				*e*S	**Sn**	**17 45 58.1**	**+1.9**
ASAJ	**Asahikawa**	**1.67**	**290**	*e*Pn	**Pn**	**17 45 33.6**	**+1.2**
ASAJ				*e*Sn	**Sn**	**17 45 57.0**	**+0.8**
ERM	**Erimo**	**1.95**	**218**	*d i*PN	**Pn**	**17 45 36.4**	**+0.8**
ERM	**Erimo**	**1.95**	**218**	*e*Pn	**Pn**	**17 45 36.8**	**+1.1**
ERM				*e*Sn	**Sn**	**17 45 58.0**	**-3.8**
ERM	**Erimo**	**1.95**	**218**	⇓*i*P	**Pn**	**17 45 36.4**	**+0.8**
JNBK	**Urakawa-nobuka**	**1.96**	**230**	⇑P	**Pn**	**17 45 35.5**	**-0.2**
JNBK				*e*S	**Sn**	**17 46 00.1**	**-2.0**
JSE	**Soyaes**	**2.11**	**312**	⇓P	**Pn**	**17 45 38.0**	**+0.6**
JSE				*e*S	**Sn**	**17 46 06.0**	**+0.9**
KUR	**Kuril'sk**	**2.78**	**52**	*d i*PN	**Pn**	**17 45 45.9**	**+0.3**
KUR				*e*S	**Sn**	**17 46 19.6**	**-0.2**
KUR				pmax	pmax		
	comp=Z,114nm,0.4s						
KUR				pmax	pmax		
	comp=N,38nm,0.2s						
KUR				pmax	pmax		
	comp=E,16nm,0.1s						
KUR				smax	smax		
	comp=N,197nm,0.2s						
KUR				smax	smax		
	comp=E,260nm,0.2s						
KUR	**Kuril'sk**	**2.78**	**52**	⇓*i*P	**Pn**	**17 45 45.9**	**+0.3**
KUR				AMB	AMB	17 45 47.1	
	comp=E,40nm,0.3s						
KUR				AMB	AMB	17 45 47.1	
	comp=E,20nm,0.3s						
KUR				AMB	AMB	17 45 47.1	
	comp=E,110nm,0.3s						
KUR				*e*S	**Sn**	**17 46 19.6**	**-0.2**
KUR				A	A	17 46 23.2	
	comp=E,200nm,0.2s						
KUR				A	A	17 46 23.2	
	comp=E,260nm,0.2s						
YSS	**Yuzh-Sakhalins**	**3.68**	**338**	*e*PN	**Pn**	**17 45 57.6**	**+0.3**
YSS				*e*S	**Sn**	**17 46 40.7**	**+0.1**
YSS				pmax	pmax		
	comp=Z,30nm,0.8s						
YSS				smax	smax		
	comp=N,90nm,0.9s						
YSS				smax	smax		
	comp=E,60nm,1.2s						
YSS	**Yuzh-Sakhalins**	**3.68**	**338**	*e*P	**Pn**	**17 45 57.7**	**+0.4**
YSS				AMB	AMB	17 46 01.0	
	comp=E,30nm,0.8s						
YSS				*e*S	**Sn**	**17 46 40.7**	**+0.1**
YSS				A	A	17 46 43.8	
	comp=E,100nm,1.0s						
YSS				A	A	17 46 43.8	
	comp=E,60nm,1.0s						
UGL	**Uglegorsk**	**5.83**	**342**	*e*P	**Pn**	**17 46 25.8**	**+0.2**
TEY	**Ternei**	**6.05**	**287**	*e*P	**Pn**	**17 46 30.0**	**+1.4**
TEY				AMB	AMB	17 46 30.8	
	comp=E,20nm,0.7s						
TYV	**Tymovskoe**	**7.45**	**350**	*e*P	**Pn**	**17 46 48.4**	**+1.2**
TYV				AMB	AMB	17 46 50.0	
	comp=E,10.0nm,0.6s						
HABR	**Khabarovsk**	**8.36**	**309**	*e*PN	**Pn**	**17 46 55.9**	**-3.6**
HABR				*e*S	**Sn**	**17 48 27.4**	**-4.9**
HABR				pmax	pmax		
	comp=E,3.0nm,0.8s						
HABR				pmax	pmax		
	comp=N,3.0nm,0.8s						
HABR				pmax	pmax		
	comp=Z,3.0nm,0.8s						
HABR				MLR	MLR		
	comp=Z,68nm,15.0s						
HABR	**Khabarovsk**	**8.36**	**309**	*e*P	**Pn**	**17 46 55.9**	**-3.6**
HABR				AMB	AMB	17 46 56.6	
	comp=Z,3.0nm,0.8s						
HABR				*e*S	**Sn**	**17 48 27.4**	**-4.9**
HABR				AMS	AMS	17 50 29.5	
	comp=Z,100nm,15.0s						
MJB9	**Matsu-Tunnel**	**8.63**	**218**	*e*Pn	**Pn**	**17 47 03.5**	**+0.3**
MAJO	**Matsushiro**	**8.63**	**218**	*e*PN	**Pn**	**17 47 03.0**	**-0.2**
MAJO	**Matsushiro**	**8.63**	**218**	*e*Pn	**Pn**	**17 47 03.0**	**-0.2**
MAJO	**Matsushiro**	**8.63**	**218**	*e*P	**Pn**	**17 47 03.0**	**-0.2**
MJAR	**Matsushiro Arr**	**8.63**	**218**	P	**Pn**	**17 47 03.0**	**-0.2**
	comp=Z,0.4nm,0.3s,baz=31,slow=13,SNR=8.4						
GRNR	**Gornyy**	**9.18**	**325**	*e*P	**Pn**	**17 47 10.8**	**+0.4**
GRNR				AMB	AMB	17 47 12.1	
	comp=Z,10.0nm,0.6s						
NKL	**Nikolayevsk**	**9.97**	**346**	*e*P	**Pn**	**17 47 20.4**	**-0.5**
NKL				AMB	AMB	17 47 21.0	
	comp=Z,10.0nm,0.8s						
INU	**Inuyama**	**10.15**	**219**	*e*Pn	**Pn**	**17 47 24.2**	**+0.7**
KLR	**Kul'dur**	**10.63**	**307**	P	**Pn**	**17 47 29.6**	**-0.1**
	comp=Z,0.3nm,0.3s,baz=115,slow=15,SNR=5.7						
JHJ2	**Mitsune**	**11.13**	**202**	*e*Pn	**Pn**	**17 47 38.9**	**+2.5**
EKMR	**Ekimchan**	**12.33**	**325**	*e*P	**Pn**	**17 47 51.0**	**-0.9**
EKMR				AMB	AMB	17 47 54.5	
	comp=Z,4.0nm,0.5s						
PEA0	**Petropavlovsk-**	**12.83**	**37**	*e*Pn	**Pn**	**17 47 57.8**	**-0.6**
PEA0B	**Petropavlovsk-**	**12.83**	**37**	*e*Pn	**Pn**	**17 47 58.2**	**-0.2**
PETK	**Petropavlovsk-**	**12.83**	**37**	P	**Pn**	**17 47 58.0**	**-0.4**
	comp=Z,0.2nm,0.3s,baz=216,slow=9.9,SNR=8.3						
PETK	**Petropavlovsk-**	**12.83**	**37**	PN	**Pn**	**17 47 58.0**	**-0.4**
PEA1	**Petropavlovsk-**	**12.84**	**37**	*e*Pn	**Pn**	**17 47 58.0**	**-0.5**
JNU	**Nakatsue**	**15.06**	**231**	*e*Pn	**P**	**17 48 29.4**	**+0.8**
	comp=Z,57nm,1.8s						
BMKR	**Bomnak**	**15.23**	**323**	*e*P	**Pn**	**17 48 28.0**	**-0.6**
BMKR				AMB	AMB	17 48 28.5	
	comp=Z,4.0nm,0.5s						
ZEA	**Zeya**	**15.38**	**318**	*e*P	**Pn**	**17 48 31.1**	**+0.6**
ZEA				AMB	AMB	17 48 32.8	
	comp=Z,30nm,0.7s						
KROS	**Kirovskiy**	**15.91**	**319**	*e*P	**Pn**	**17 48 37.1**	**0.0**
KROS				AMB	AMB	17 48 39.2	
	comp=Z,10.0nm,0.5s						
CBIJ	**Chichi jima**	**16.56**	**188**	*e*P	**Pn**	**17 48 46.6**	**+1.4**
	comp=Z,98nm,1.4s						
SEY	**Seymchan**	**19.91**	**10**	P	**P**	**17 49 19.6**	**-1.7**
	comp=Z,1.6nm,0.3s,baz=186,slow=8.9,SNR=31						
SEY	**Seymchan**	**19.91**	**10**	*ce*P	**P**	**17 49 18.2**	**-3.1**
YAK	**Yakutsk**	**20.53**	**340**	*e*P	**P**	**17 49 26.9**	**-1.1**
YAK				pmax	pmax		
	comp=Z,14nm,0.8s	

comp=Z,935nm,0.9s
RND Reindeer 41.90 38 *e*P P 17 52 37.5 +0.4
RND pmax pmax
comp=Z,55nm,0.9s
RND Reindeer 41.90 38 *e*P P 17 52 37.5 +0.4
comp=Z,54nm,0.9s
WRH Wood River Hil 42.16 37 *e*P P 17 52 40.2 +1.1
comp=Z,104nm,0.9s
COLA College 42.24 36 *e*P P 17 52 40.7 +1.0
COLA pmax pmax
comp=Z,6.0nm,0.7s
COLA College 42.24 36 *e*P P 17 52 40.6 +1.0
comp=Z,87nm,0.8s
COLA College 42.24 36 *e*P P 17 52 40.7 +1.0
CCB Clear Creek Bu 42.27 36 *e*P P 17 52 40.6 +0.6
comp=Z,42nm,0.5s
SML Sawmill 42.28 40 *e*P P 17 52 41.5 +1.3
SML pmax pmax
comp=Z,8.0nm,0.7s
SML Sawmill 42.28 40 *e*P P 17 52 41.5 +1.3
comp=Z,7.6nm,0.7s
IL1 Eielson Array 42.66 36 *e*P P 17 52 43.5 +0.4
ILAR Eielson Array 42.66 36 P P 17 52 43.4 +0.2
comp=Z,1.4nm,0.7s,baz=256,slow=5.8,SNR=26
ILB Eielson Array 42.66 36 *e*P P 17 52 43.5 +0.4
HDA Harding Lake 42.66 37 *e*P P 17 52 43.2 +0.1
comp=Z,82nm,0.9s
MK31 Makanchi Array 43.14 297 *e*P P 17 52 47.8 +0.5
MK31 Makanchi Array 43.14 297 *e*P P 17 52 47.8 +0.5
MK32 Makanchi Array 43.14 297 *e*P P 17 52 47.8 +0.5
MKAR Makanchi Array 43.14 297 P P 17 52 47.8 +0.5
comp=Z,4.4nm,0.5s,baz=82,slow=9.1,SNR=40
MKAR Makanchi Array 43.14 297 *e*P P 17 52 47.6 +0.3
MKAR Makanchi Array 43.14 297 *e*P P 17 52 47.6 +0.3
MKAR Makanchi Array 43.14 297 *e*P P 17 52 47.6 +0.3
MK01 Makanchi Array 43.14 297 *e*P P 17 52 47.5 +0.2
MAKZ Makanchi 43.34 297 *e*P P 17 52 49.1 +0.2
MAKZ pmax pmax
comp=Z,5.0nm,0.6s
MAKZ Makanchi 43.34 297 *e*P P 17 52 49.1 +0.2
comp=Z,5.2nm,0.6s
KLU Klutina 43.47 41 *e*P P 17 52 51.8 +2.0
comp=Z,6.3nm,0.7s
DIV Divide 43.60 41 *e*P P 17 52 51.5 +0.7
comp=Z,41nm,2.0s
DOT Dot Lake 44.01 37 *e*P P 17 52 54.0 0.0
comp=Z,58nm,0.9s
KURK Kurchatov 44.20 303 *e*P P 17 52 55.6 0.0
KURK pmax pmax
comp=Z,12nm,0.6s
KURK Kurchatov 44.20 303 *e*P P 17 52 55.6 0.0
comp=Z,12nm,0.6s
KURK Kurchatov 44.20 303 *e*P P 17 52 55.6 0.0
MENT Mentasta 44.27 38 *e*P P 17 52 56.7 +0.7
comp=Z,8.7nm,0.8s
KURBB Kurchatov Arra 44.28 303 P P 17 52 56.5 +0.2
comp=Z,9.8nm,0.5s,baz=70,slow=8.8,SNR=137
BALM Baldy 45.25 41 *e*P P 17 53 04.2 +0.3
BALM pmax pmax
comp=Z,25nm,1.9s
BALM Baldy 45.25 41 *e*P P 17 53 04.2 +0.3
comp=Z,24nm,1.9s
INK Inuvik 47.43 30 P P 17 53 20.8 +0.1
comp=Z,2.8nm,0.4s,baz=296,slow=4.9,SNR=26
INK Inuvik 47.43 30 *e*P P 17 53 20.7 +0.1
comp=Z,5.5nm,1.1s
BVA0 Borovoye Array 48.28 309 *i* P P 17 53 27.6 +0.1
BVA0 pmax pmax
comp=Z,3.0nm,0.5s
BVAR Borovoye Array 48.28 309 P P 17 53 27.8 +0.3
comp=Z,4.0nm,0.4s,baz=81,slow=9.3,SNR=56
BRVK Borovoye 48.33 309 *e*P P 17 53 28.6 +0.7
BRVK pmax pmax
comp=Z,7.0nm,1.0s
BRVK Borovoye 48.33 309 *e*P P 17 53 28.6 +0.7
comp=Z,6.0nm,1.0s
BRVK Borovoye 48.33 309⇑*e*P P 17 53 28.6 +0.7
OTUK Ortayu 48.90 302 P P 17 53 32.7 +0.4
OTUK pmax pmax
comp=Z,7.0nm,0.5s
TKM2 Tokmak 2 49.02 295 *e*P P 17 53 34.3 +0.7
TKM2 pmax pmax
comp=Z,3.0nm,0.5s
TKM2 Tokmak 2 49.02 295 *e*P P 17 53 34.3 +0.7
comp=Z,3.3nm,0.5s
ZRNK Zerenda 49.09 309 *e*P P 17 53 33.8 +0.1
ZRNK pmax pmax
comp=Z,7.0nm,0.5s
ZRNK Zerenda 49.09 309 *e*P P 17 53 33.8 +0.1
comp=Z,6.8nm,0.5s
AAK Ala-Archa 49.88 295 P P 17 53 43.8 +3.8
comp=Z,1.7nm,0.3s,baz=111,slow=8.2,SNR=3.9
AAK Ala-Archa 49.88 295 *e*P P 17 53 41.2 +1.2
comp=Z,6.1nm,1.5s
AAK Ala-Archa 49.88 295 *e*P P 17 53 41.2 +1.2
EKS2 Erkin-Say 50.34 295 *e*P P 17 53 43.8 +0.4
EKS2 pmax pmax
comp=Z,3.0nm,0.6s
EKS2 Erkin-Say 50.34 295 *e*P P 17 53 43.8 +0.4
comp=Z,3.0nm,0.6s
KK31 Karatay Array 52.27 297 *e*P P 17 53 57.6 0.0
KK31 pmax pmax
comp=Z,1.0nm,0.4s
KKAR Karatay Array 52.27 297 *e*P P 17 53 57.7 0.0
KKAR Karatay Array 52.27 297 *e*P P 17 53 57.7 0.0
ARU Arti 53.30 316 P P 17 54 04.8 -0.1
comp=Z,1.8nm,0.3s,baz=59,slow=5.4,SNR=9.4
ARU Arti 53.30 316 *e i*P P 17 54 04.6 -0.3
ARU S **S 18 01 25.8 +0.9**
ARU SS **SKiKP 18 05 00.7 -4.9**
ARU pmax pmax
comp=Z,12nm,1.2s
ARU Arti 53.30 316 *e*P P 17 54 04.4 -0.5
comp=Z,7.2nm,0.9s
ARU Arti 53.30 316⇑*i*P P 17 54 04.4 -0.5
KULM Kulim 54.37 239 *e*P P 17 54 14.4 +1.2
comp=Z,8.9nm,1.3s
RES Resolute Bay 55.64 16 P P 17 54 21.4 -0.1
comp=Z,8.0nm,0.7s,baz=335,slow=7.2,SNR=10.0
RES Resolute Bay 55.64 16 *e*P P 17 54 21.0 -0.5
comp=Z,14nm,1.1s
RES Resolute Bay 55.64 16 *e*P P 17 54 21.0 -0.5
AB31 Akbulak array 55.83 308 *i* P P 17 54 23.4 +0.1
AB31 pmax pmax
comp=Z,4.0nm,0.4s
ABKAR Akbulak array 55.83 308 *e*P P 17 54 23.4 +0.1
AKTO Aktyubinsk 56.34 310 P P 17 54 28.4 +1.5
comp=Z,2.0nm,0.4s,baz=68,slow=10,SNR=11
AKTO Aktyubinsk 56.34 310 P P 17 54 26.5 -0.4
AKTO pmax pmax
comp=Z,2.0nm,0.6s
YKA Yellowknife Ar 56.91 33 P P 17 54 30.7 0.0
comp=Z,0.7nm,0.7s,baz=306,slow=6.9,SNR=11
YKB5 Yellowknife Ar 56.91 33 *e*P P 17 54 30.4 -0.2
ARA0 ARCESS Array S 58.81 339 *e*P P 17 54 43.8 -0.2
ARCES ARCESS Array B 58.81 339 P P 17 54 43.8 -0.1
comp=Z,1.6nm,0.5s,baz=44,slow=7.5,SNR=17
DAG Danmarks Havn 59.48 356 *i* P P 17 54 47.8 -0.6
comp=Z,3.5nm,0.8s
DAG Danmarks Havn 59.48 356 *e*P P 17 54 47.8 -0.6
DAG pmax pmax
comp=Z,3.0nm,0.8s
DAG Danmarks Havn 59.48 356 *e*P P 17 54 47.8 -0.6
WRAB Tennant Creek 63.90 191 *c e*P P 17 55 20.0 +1.4
WRAB pmax pmax
comp=Z,17nm,1.1s
WRAB Tennant Creek 63.90 191 *e*P P 17 55 19.5 +0.9
comp=Z,38nm,1.8s
WB2 Warramunga Arr 63.91 191 *e*P P 17 55 19.8 +1.1
comp=Z,30nm,1.7s
WR1 Warramunga Arr 63.91 191 *e*P P 17 55 18.7 0.0
comp=Z,33nm,1.8s
WRA Warramunga Arr 63.91 191 P P 17 55 18.7 0.0
comp=Z,2.7nm,0.8s,baz=8.4,slow=6.8,SNR=22
SUMG Summit 64.14 1 *i* P P 17 55 20.5 +0.4
comp=Z,7.6nm,0.7s
SUMG Summit 64.14 1 *i* P P 17 55 20.5 +0.4
SUMG pmax pmax
comp=Z,8.0nm,0.7s
SUMG Summit 64.14 1 *e*P P 17 55 20.3 +0.2
comp=Z,8.2nm,0.7s
FIA1 FINESS Array S 64.25 332 *e*P P 17 55 19.9 -0.5
FIA0 FINESS Array S 64.25 332 *e*P P 17 55 20.1 -0.3
FIA0 FINESS Array S 64.25 332 *e*P P 17 55 20.1 -0.3
FINES FINESS Array B 64.25 332 P P 17 55 20.1 -0.3
comp=Z,8.2nm,0.5s,baz=44,slow=7.4,SNR=64
FINES FINESS Array B 64.25 332 *e*P P 17 55 18.7 -1.7
OBN Obninsk 64.44 323 *i* P P 17 55 20.9 -0.8
OBN pmax pmax
comp=Z,4.0nm,0.8s
OBN Obninsk 64.44 323 *i* P P 17 55 20.9 -0.8
AS01 Alice Springs 67.63 191 *e*P P 17 55 43.2 +0.7
AS31 Alice Springs 67.64 191 *e*P P 17 55 44.3 +1.8
comp=Z,4.9nm,1.6s
ASAR Alice Springs 67.64 191 P P 17 55 43.1 +0.6
comp=Z,0.7nm,0.6s,baz=5.4,slow=6.7,SNR=10
KIV Kislovodsk 68.59 311 *i* P P 17 55 49.9 +1.4
KIV pmax pmax
comp=Z,4.0nm,0.8s
KIV Kislovodsk 68.59 311 *e*P P 17 55 49.8 +1.3
comp=Z,7.2nm,0.7s
KIV Kislovodsk 68.59 311 *e*P P 17 55 49.8 +1.3
KBZ Khabaz 68.62 310 P P 17 55 49.2 +0.7
comp=Z,2.4nm,0.7s,baz=37,slow=7.5,SNR=7.1
NC405 NORSAR Array S 68.94 338 *e*P P 17 55 50.4 +0.1
NC303 NORSAR Array S 68.95 338 *e*P P 17 55 50.2 0.0
NC204 NORSAR Array S 69.07 338 *e*P P 17 55 51.1 0.0
NB201 NORSAR Array S 69.11 338 *e*P P 17 55 51.1 -0.2
NB2 NORSAR Subarra 69.14 338 P P 17 55 51.0 -0.5
comp=Z,1.7nm,0.5s,baz=33,slow=6.5
NB200 NORSAR Array S 69.14 338 *e*P P 17 55 51.2 -0.3
NOA NORSAR Array B 69.14 338 P P 17 55 51.2 -0.3
comp=Z,1.2nm,0.5s,baz=27,slow=5.1,SNR=21
HFS Hagfors 69.18 336 P P 17 55 51.6 -0.1
comp=Z,3.8nm,0.5s,baz=49,slow=6.6,SNR=10
NBO02 NORSAR Array S 69.23 338 *e*P P 17 55 52.0 0.0
AHID Auburn Hatcher 70.49 49 *e*P P 17 56 01.3 +1.0
comp=Z,12nm,1.9s
AKASG Malin Array Be 70.70 323 P P 17 56 00.8 -0.3
comp=Z,1.7nm,0.4s,baz=44,slow=6.7,SNR=6.6
KIEV Kiev 70.71 323 *e*P P 17 56 01.8 +0.6
KIEV pmax pmax
comp=Z,2.0nm,1.0s
TPNV Topopah Spring 71.33 57 *e*P P 17 56 06.0 +0.6
TPNV pmax pmax
comp=Z,16nm,2.0s
TPNV Topopah Spring 71.33 57 *e*P P 17 56 06.0 +0.6
comp=Z,16nm,2.0s
BW06 Boulder Array 71.34 48 *e*P P 17 56 05.5 0.0
PD31 Pinedale Array 71.34 48 *e*P P 17 56 05.1 -0.4
PDAR Pinedale Array 71.34 48 P P 17 56 05.5 +0.1
comp=Z,0.4nm,0.5s,baz=268,slow=1.5,SNR=4.6
SORM Soroca 72.95 321⇓*i*P P 17 56 14.5 -0.1
SORM Soroca 72.95 321⇓P P 17 56 14.5 -0.1
K22A Casper 73.05 47 *e*P P 17 56 16.2 +0.7
comp=Z,18nm,1.4s
BUR08 Bucovina Ar. S 74.74 322 *e*P P 17 56 25.3 +0.1
BURAR Bucovina Array 74.75 322⇑*i*P P 17 56 25.9 +0.7
BURAR Bucovina Array 74.75 322⇑P P 17 56 25.9 +0.7
GLA Glamis 74.78 59 *e*P P 17 56 25.6 0.0
GLA pmax pmax
comp=Z,5.0nm,1.0s
GLA Glamis 74.78 59 *e*P P 17 56 25.6 0.0
comp=Z,4.6nm,1.0s
TESR Tescani 74.93 321⇑*i*P P 17 56 26.7 +0.5
OJC Ojcow 75.02 327 *e*P P 17 56 27.1 +0.5
OJC pmax pmax
comp=Z,3.0nm,0.6s
OJC Ojcow 75.02 327 *e*P P 17 56 27.1 +0.5
comp=Z,3.4nm,0.6s
OJC Ojcow 75.02 327 *e*P P 17 56 27.1 +0.5
STHS Stebnicka Huta 75.06 326 *e*P P 17 56 27.7 +0.8
STHS pmax pmax
comp=Z,2.0nm,0.7s
STHS Stebnicka Huta 75.06 326 *e*P P 17 56 27.7 +0.8
CFR Carcaliu 75.23 319⇓*i*P P 17 56 28.3 +0.4
CFR Carcaliu 75.23 319⇓P P 17 56 28.3 +0.4
VRI Vrincioaia 75.38 320⇓*i*P P 17 56 33.7 +4.9
VRI Vrincioaia 75.38 320⇓P P 17 56 33.7 +4.9
PLOR Plostina 75.43 320⇑*i*P P 17 56 29.8 +0.7
PLOR Plostina 75.43 320⇑P P 17 56 29.8 +0.7
MLR Muntele Rosu 76.03 321⇑*i*P P 17 56 32.7 +0.1
MLR Muntele Rosu 76.03 321⇑P P 17 56 32.7 +0.1
ISR Istrita 76.03 320⇑*i*P P 17 56 33.8 +1.3
ISR Istrita 76.03 320⇑P P 17 56 33.8 +1.3
MSAB Monastry St. A 76.19 319⇑*i*P P 17 56 34.3 +1.0
BR101 Keskin Array S 76.41 312 *e*P P 17 56 35.0 +0.1
BRTR Keskin Array B 76.41 312 P P 17 56 35.0 +0.1
comp=Z,0.7nm,0.7s,baz=77,slow=4.2,SNR=3.7
BRTR Keskin Array B 76.41 312 *i* P P 17 56 39.9 +5.0
BRTR pmax pmax
comp=Z,1.0nm,0.7s
VOIR 76.48 321⇓*i*P P 17 56 36.4 +1.3
VOIR 76.48 321⇓P P 17 56 36.4 +1.3
DRGR 76.48 323⇓*i*P P 17 56 36.0 +0.9
DRGR 76.48 323⇓P P 17 56 36.0 +0.9
CLL Collm 76.67 331 *i* P P 17 56 35.7 -0.2
comp=Z,5.0nm,0.8s
CLL *i* 17 56 38.3
comp=Z,5.0nm,0.4s
CLL Collm 76.67 331 *i* P P 17 56 35.7 -0.2
comp=Z,5.0nm,0.8s
CLL pmax pmax
comp=Z,4.1nm,0.7s
CLL Collm 76.67 331 *e*P P 17 56 35.4 -0.5
CLL Collm 76.67 331 *e*P P 17 56 35.4 -0.5
ARR Arges 76.72 321⇑*i*P P 17 56 38.4 +2.0
VYHS Vyhne 76.77 326 *e*P P 17 56 37.2 +0.6
VYHS Vyhne 76.77 326 *e*P P 17 56 37.2 +0.6
EKA Eskdalemuir Ar 77.79 342 P P 17 56 42.0 0.0
comp=Z,1.1nm,0.4s,baz=23,slow=5.2,SNR=3.3
KHC Kasperske Hory 78.27 330 *e*P P 17 56 45.0 +0.1
KHC Kasperske Hory 78.27 330 *e*P P 17 56 45.0 +0.1
KHC Kasperske Hory 78.27 330 *e*P P 17 56 45.0 +0.1
GERES GERESS Array B 78.46 329 P P 17 56 45.3 -0.8
comp=Z,0.6nm,0.5s,baz=32,slow=7.8,SNR=7.8
PDG Podgorica 81.44 322⇓*i*P P 17 57 02.3 +0.3
LAST Lasithi 84.13 314⇓*i*P P 17 57 17.0 +0.8

*CSEM **21** 17:48:05.7±1.0,34°.78N×44°.73E,h10km,ML2.8,Error ellipse: s-maj=42.2km s-min=7.9km az=30.0*
*ISN **21** 17:48:05.1±0.3,34°.87N×44°.62E,h0km,ML2.8*
TEH 21 17:48:05.9,34°.78N×44°.65E,h18km,ML2.8,Iraq

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IDHR	**Dehrash**	**1.43**	**93**	*e*Pg	Pn	17 48 30.9	-0.2
IDHR				*e*Sg	Sb	17 48 51.1	+1.0
IDHR				*e*AMB	AMB	17 48 56.5	
comp=Z,1μm,0.2s							
IDHR	**Dehrash**	**1.43**	**93**	*e*Pg	Pn	17 48 30.9	-0.2
IDHR				*e*Sg	Sb	17 48 51.1	+1.0
IGHG	**Ghaleghazi**	**1.64**	**105**	*e*Pn	Pn	17 48 33.8	-0.3
IGHG				*e*AMB	AMB	17 49 05.2	
comp=Z,2μm,0.3s							
IGHG	**Ghaleghazi**	**1.64**	**105**	*e*Pn	Pn	17 48 33.8	-0.3
IVIS	**Veis**	**1.83**	**97**	*e*Pn	Pn	17 48 37.7	+1.2
IVIS				*e*AMB	AMB	17 49 04.4	
comp=Z,866nm,0.2s							
IVIS	**Veis**	**1.83**	**97**	*e*Pn	Pn	17 48 37.7	+1.2

IDC 21 18:00:17.9±2.6,3°.77S×99°.97E,h0km,mb3.6/7,mb1 3.8/7,mb1mx3.5/60,mbtmp3.7/7,MS2.9/1,Ms1 3.1/1,ms1mx2.4/46,Error ellipse: s-maj=104.1km s-min=26.1km az=54.0,Southwest of Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**22.11**	**357**	P	P	18 05 15.2	+0.1
0.7nm,0.8s,baz=181,slow=8.1,SNR=4.6							
CMAR				LR	LR	18 14 55.1	
comp=Z,27nm,18.6s,baz=235,slow=40							
H08S2	**Diego Garcia H**	**27.61**	**261**	T	T	18 35 35.0	
baz=83,slow=76,SNR=688							
H08S3	**Diego Garcia H**	**27.61**	**261**	T	T	18 35 35.5	
baz=83,slow=76,SNR=520							
H08S1	**Diego Carcia H**	**27.62**	**261**	T	T	18 35 36.4	
baz=83,slow=76,SNR=521							
H01W3	**Cape Leeuwin H**	**33.63**	**159**	T	T	18 42 39.3	
baz=334							
H01W2	**Cape Leeuwin H**	**33.65**	**159**	T	T	18 42 39.1	
baz=334							
H01W1	**Cape Leeuwin H**	**33.65**	**159**	T	T	18 42 35.4	
baz=334							
WRA	**Warramunga Arr**	**37.15**	**118**	P	P	18 07 30.5	-0.4
0.4nm,0.4s,baz=306,slow=8.5,SNR=4.5							
SONM	**Songino Array**	**51.70**	**6**	P	P	18 09 26.6	-0.2
1.7nm,0.7s,baz=185,slow=9.5,SNR=13							
MKAR	**Makanchi Array**	**52.72**	**345**	P	P	18 09 34.8	+0.5
1.0nm,0.7s,baz=154,slow=8.7,SNR=8.0							
KURBB	**Kurchatov Arra**	**57.23**	**344**	P	P	18 10 06.2	-0.7
0.4nm,0.7s,baz=161,slow=6.7,SNR=7.3							
ZALV	**Zalesovo Beam**	**58.89**	**350**	P	P	18 10 18.3	-0.2
1.7nm,0.8s,baz=160,slow=4.6,SNR=5.8							
BVAR	**Borovoye Array**	**61.83**	**340**	P	P	18 10 38.5	-0.1
0.3nm,0.4s,baz=116,slow=6.6,SNR=4.1							
TXAR	**Lajitas Array**	**146.10**	**39**	PKPbc	PKPbc	18 20 00.7	-0.2
1.0nm,0.7s,baz=272,slow=0.9,SNR=11							

*IDC **21** 18:02:38.7±1.2,7°.11S×147°.22E,h0km,mb3.9/8,mb1 4.1/11,mb1mx3.9/41,mbtmp4.0/11,ML3.7/2,MS3.3/8,Ms1 3.3/8,ms1mx3.0/37,Error ellipse: s-maj=39.2km s-min=16.7km az=96.0*
*ISCJB **21** 18:02:41.6±0.5,7°.21S±0°.05×147°.15E±0°.08,h33km,mb4.4/12,MS3.2/7,Error ellipse: s-maj=12.1km s-min=6.6km az=15.2*
*NEIC **21** 18:02:45.5±0.8,7°.30S×147°.15E,h55km±8km,mb4.4/10,Error ellipse: s-maj=9.4km s-min=5.9km az=115.0*
ISC 21 18:02:42.8±0.6,7°.32S±0°.06×147°.2E±0°.1,h33km,n46,σ0s86/35,mb4.2/12,MS3.2/7,1D,Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.08**	**180**	Pn	**Pb**	**18 03 18.5**	**-1.4**
53nm,0.3s,baz=3.4,slow=5.7,SNR=190							
PMG				Sn	**Sb**	**18 03 46.7**	**+1.4**
46nm,0.3s,baz=100,slow=22,SNR=7.9							
PMG				LR	LR	18 04 28.8	
comp=Z,704nm,19.0s,baz=346,slow=48							
MANU	**Manus Island**	**5.24**	**2**	*e*Pn	Pn	18 04 02.4	+3.5
COEN	**Coen**	**7.68**	**210**	*e*Pn	**Pn**	**18 04 34.0**	**+1.6**
COEN				*e*Sn	**Sn**	**18 05 56.9**	**-1.5**
CTA	**Charters Tower**	**12.73**	**184**	Pn	Pn	18 05 44.7	+3.1
0.5nm,0.3s,baz=359,slow=15,SNR=5.9							
MTN	**Manton Dam**	**16.71**	**250**	*e*Pn	**P**	**18 06 35.1**	**-1.5**
13nm,1.1s							
WRAB	**Tennant Creek**	**17.66**	**223**	*e*Pn	**P**	**18 06 46.4**	**-0.7**
54nm,2.0s							
WR1	**Warramunga Arr**	**17.67**	**223**	*e*Pn	**P**	**18 06 47.3**	**+0.1**
17nm,1.1s							
WRA	**Warramunga Arr**	**17.67**	**223**	P	**P**	**18 06 47.3**	**+0.1**
0.2nm,0.3s,baz=49,slow=11,SNR=15							
AS01	**Alice Springs**	**20.62**	**217**	*e*P	Pn	18 07 21.8	-0.2
AS31	**Alice Springs**	**20.65**	**217**	*e*P	Pn	18 07 22.0	-0.3
4.1nm,1.0s							
ASAR	**Alice Springs**	**20.65**	**217**	P	Pn	18 07 22.1	-0.2
2.5nm,0.7s,baz=33,slow=12,SNR=30							
GUMO	**Guam**	**20.89**	**354**	LR	LR	18 14 32.7	
comp=Z,33nm,18.5s,baz=174,slow=34							
GUMO	**Guam**	**20.89**	**354**	*e*P	Pn	18 07 22.7	-2.4
147nm,1.2s							
FITZ	**Fitzroy Crossi**	**23.55**	**241**	P	**P**	**18 07 52.0**	**+1.6**
1.9nm,1.0s,baz=68,slow=8.7,SNR=4.5							
FITZ				LR	LR	18 17 30.3	
comp=Z,98nm,19.7s,baz=70,slow=38							
FITZ	**Fitzroy Crossi**	**23.55**	**241**	*e*P	**P**	**18 07 51.3**	**+0.9**
12nm,1.4s							
STKA	**Stephens Creek**	**24.98**	**191**	LR	LR	18 17 48.4	
comp=Z,56nm,18.6s,baz=21,slow=36							
DAV	**Davao City (W)**	**25.84**	**303**	LR	LR	18 20 05.2	
comp=Z,32nm,18.3s,baz=244,slow=41							
TARA	**Tarawa**	**27.10**	**72**	*e*P	**P**	**18 08 23.5**	**+0.6**
122nm,1.3s							
FUNA	**Funafuti**	**31.74**	**94**	*e*P	**P**	**18 09 03.7**	**-0.4**
270nm,1.6s							
MJAR	**Matsushiro Arr**	**44.43**	**350**	LR	LR	18 28 46.8	
comp=Z,25nm,18.3s,baz=145,slow=36							
KSRS	**Korea Array**	**48.03**	**339**	P	**P**	**18 11 18.6**	**-0.3**
2.5nm,0.8s,baz=151,slow=8.2,SNR=5.1							
KSRS				LR	LR	18 29 01.8	
comp=Z,24nm,20.1s,baz=145,slow=33							
KS15	**Wonju Array Si**	**48.04**	**339**	*e*P	P	18 11 19.8	+0.9
KSAR	**Wonju Array Be**	**48.04**	**339**	P	**P**	**18 11 18.6**	**-0.3**
KS01	**Wonju Array Si**	**48.06**	**339**	*e*P	**P**	**18 11 18.0**	**-1.2**
CM01	**Chiang Mai Arr**	**53.99**	**299**	*e*P	**P**	**18 12 04.2**	**+0.1**
CM31	**Chiang Mai Arr**	**54.02**	**299**	*e*P	**P**	**18 12 05.0**	**+0.6**
CMAR	**Chiang Mai Arr**	**54.02**	**299**	P	**P**	**18 12 05.4**	**+1.1**
2.3nm,0.9s,baz=120,slow=6.0,SNR=13							
CHTO	**Chiang Mai**	**54.17**	**299**	*e*P	**P**	**18 12 05.5**	**+0.1**
6.9nm,1.4s							
LSA	**Lhasa**	**65.16**	**307**	*e*P	P	18 13 17.7	-3.8
3.0nm,0.9s							
YAK	**Yakutsk**	**70.46**	**351**	*e*P	**P**	**18 13 54.5**	**+0.9**
6.9nm,0.4s							
MK01	**Makanchi Array**	**78.60**	**321**	*e*P	**P**	**18 14 41.2**	**0.0**
MK31	**Makanchi Array**	**78.61**	**321**	*e*P	**P**	**18 14 41.2**	**-0.2**
MK32	**Makanchi Array**	**78.61**	**321**	*e*P	**P**	**18 14 41.8**	**+0.4**
MKAR	**Makanchi Array**	**78.61**	**321**	P	**P**	**18 14 41.8**	**+0.4**
0.7nm,0.4s,baz=99,slow=7.5,SNR=12							
MKAR	**Makanchi Array**	**78.61**	**321**	*e*P	**P**	**18 14 41.6**	**+0.2**
TIXI	**Tiksi**	**79.73**	**354**	LR	LR	18 51 48.7	
comp=Z,69nm,21.2s,baz=134,slow=37							
ZALV	**Zalesovo Beam**	**80.21**	**328**	P	**P**	**18 14 49.8**	**-0.1**
1.2nm,0.7s,baz=96,slow=5.8,SNR=5.2							
ZAA1	**Zalesovo Array**	**80.21**	**328**	*e*P	**P**	**18 14 49.8**	**-0.1**
KURK	**Kurchatov**	**82.36**	**323**	*e*P	**P**	**18 15 01.8**	**+0.4**
KURBB	**Kurchatov Arra**	**82.38**	**323**	P	**P**	**18 15 01.8**	**+0.3**
0.6nm,0.9s,baz=114,slow=3.3,SNR=5.4							
KKAR	**Karatay Array**	**85.32**	**314**	*e*P	**P**	**18 15 16.9**	**+0.2**
ILAR	**Eielson Array**	**86.62**	**23**	P	**P**	**18 15 22.3**	**-0.3**
0.7nm,0.8s,baz=246,slow=4.9,SNR=6.4							
ILB	**Eielson Array**	**86.62**	**23**	*e*P	**P**	**18 15 23.1**	**+0.5**
SYO	**Syowa Base**	**89.42**	**200**	⇓*e*PKiKP	**PKiKP**	**18 20 32.8**	**-0.8**
ABKAR	**Akbulak array**	**93.68**	**319**	*e*P	**P**	**18 15 54.5**	**-1.5**
TORD	**Torodi Ar. Bea**	**145.56**	**283**	PKPbc	**PKPab**	**18 22 19.9**	**+0.7**
3.6nm,0.7s,baz=82,slow=4.1,SNR=22							

*ISCJB **21** 18:04:14.7±0.7,32°.36N±0°.05×115°.27W±0°.06,h23km±6km,Error ellipse: s-maj=10.3km s-min=5.7km az=38.4*
*ECX **21** 18:04:15.8±0.6,32°.32N×115°.31W,h4km,MD2.5,ML2.7*
*MEX **21** 18:04:15.0±0.9,32°.51N×115°.07W,h21km±10km,MD3.6*
ISC 21 18:04:14.3±1.2,32°.37N±0°.05×115°.27W±0°.05,h24km±7km,n15,σ0s48/20,8C-1D,California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CPBX	**Cerro Prieto**	**0.06**	**326**	*e*P	**Pb**	**18 04 17.9**	**-0.6**
CPBX				⇓*i*P	**Pb**	**18 04 18.0**	**-0.6**
CPBX				AML	AML	18 04 20.8	
comp=N,7μm,0.3s							
CPBX				⇑*e*		18 04 20.8	
CPBX				⇑*e*		18 04 20.9	
CPBX				AML	AML	18 04 20.9	
comp=E,6μm,0.1s							
CPBX				AML	AML	18 04 21.8	
comp=E,8μm,0.3s							
CPBX				AML	AML	18 04 25.5	
comp=N,5μm,0.2s							
MBIG	**Mexicali**	**0.07**	**57**	*e*P	**Pb**	**18 04 18.7**	**+0.1**
MBIG				*e*S	**Sb**	**18 04 22.4**	**+1.0**
SGL	**Mount Signal**	**0.48**	**306**	⇑*i*P	**Pb**	**18 04 24.6**	**+0.5**
YUH	**Yuha Desert**	**0.62**	**297**	⇑*i*P	**Pb**	**18 04 26.7**	**+0.1**
YMD	**Yuma Desert**	**0.64**	**73**	⇑*i*P	**Pn**	**18 04 27.6**	**-0.3**
RMX	**La Rumorosa**	**0.72**	**289**	*e*P	**Pb**	**18 04 27.9**	**-0.5**
IKP	**In-Ko-Pah, Jac**	**0.77**	**292**	⇓*e*P	**Pn**	**18 04 29.2**	**-0.5**
ECBX	**El Chinero**	**0.91**	**168**	*e*P	**Pb**	**18 04 31.5**	**0.0**
ECBX				*i* S	**Sb**	**18 04 43.1**	**-0.1**
ECBX				AML	AML	18 04 44.1	
comp=N,540nm,0.3s							
ECBX				*e*		18 04 44.1	
ECBX				AML	AML	18 04 44.6	
comp=E,263nm,0.3s							
ECBX				⇑*e*		18 04 44.6	
CBX	**Cerro Bola**	**1.19**	**268**	*e*P	**Pb**	**18 04 36.3**	**+0.1**
CBX				*e*S	**Sb**	**18 04 52.0**	**+0.8**
CBX	**Cerro Bola**	**1.19**	**268**	*e*P	**Pb**	**18 04 36.1**	**-0.1**
TJIG	**Tijuana**	**1.19**	**273**	*e*P	**Pb**	**18 04 36.2**	**-0.1**
TJIG				*e*S	**Sb**	**18 04 51.4**	**+0.1**
ZAX	**El Zacaton**	**1.21**

IDC 21 18:06:16.5±1.4, 7°09'S×147°29'E, h0km, mb3.7/5, mb1 4.0/8, mb1mx3.7/36, mbtmp3.8/8, ML3.6/2, Error ellipse: s-maj=49.1km s-min=19.1km az=92.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.30**	**183**	P	Pn	18 06 56.5	+0.8
	37nm,0.3s,baz=354,slow=6.8,SNR=38						
PMG				Sn	Sn	18 07 25.7	+1.0
	44nm,0.3s,baz=289,slow=23,SNR=7.6						
CTA	**Charters Tower**	**12.96**	**184**	Pn	Pn	18 09 22.9	+0.9
	0.4nm,0.3s,baz=358,slow=14,SNR=4.0						
WRA	**Warramunga Arr**	**17.91**	**223**	P	Pn	18 10 26.3	-1.0
	0.1nm,0.3s,baz=48,slow=12,SNR=6.4						
ASAR	**Alice Springs**	**20.90**	**217**	P	P	18 10 59.7	-1.0
	1.6nm,0.8s,baz=40,slow=12,SNR=16						
CMAR	**Chiang Mai Arr**	**54.02**	**299**	P	P	18 15 43.7	+0.7
	0.8nm,0.7s,baz=130,slow=5.4,SNR=6.1						
MKAR	**Makanchi Array**	**78.52**	**321**	P	P	18 18 20.0	+0.2
	0.8nm,0.7s,baz=119,slow=6.2,SNR=8.2						
ZALV	**Zalesovo Beam**	**80.08**	**328**	P	P	18 18 27.4	-0.7
	0.4nm,0.3s,baz=122,slow=5.4,SNR=3.5						
ILAR	**Eielson Array**	**86.37**	**23**	P	P	18 18 60.0	-0.4
	0.2nm,0.5s,baz=249,slow=4.5,SNR=3.3						
TORD	**Torodi Ar. Bea**	**145.62**	**283**	PKPbc	PKPdf	18 25 57.7	-0.3
	1.2nm,0.7s,baz=76,slow=3.7,SNR=9.3						

*ISCJB **21** 18:07:06.9±0.9, 16°.85S±0°.06×69°.72W±0°.10, h174km±6km, mb3.7/3, Error ellipse: s-maj=17.9km s-min=5.9km az=31.3*
*SCB **21** 18:07:06.5±0.5, 16°.72S×69°.07W, h200km, Ml3.6/1, Error ellipse: s-maj=18.0km s-min=6.8km az=95.0*
*GUC **21** 18:07:08.6±0.5, 17°.14S×69°.87W, h185km±5km, ML4.0*
*IDC **21** 18:07:10.2±1.6, 16°.67S×69°.34W, h185km±10km, mb3.5/3, mb1 3.7/4, mb1mx3.3/34, mbtmp4.0/4, Error ellipse: s-maj=34.7km s-min=25.5km az=109.0*

ISC 21 18:07:08.0±1.2, 16°.81S±0°.08×69°.6W±0°.1, h172km±8km, n20, σ1°.03/23, mb3.9/3, 8C-2D, Peru-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BBOD	**La Paz, Gloria**	**1.00**	**80**	↑*i* Pn	**Pn**	**18 07 35.8**	**+0.2**
BBOD				*e*Sn	**Sn**	**18 07 57.3**	**+0.7**
	74nm,0.6s						
BBOJ	**La Paz, Jacaqu**	**1.39**	**97**	↑*i* Pn	**Pn**	**18 07 39.5**	**+0.7**
BBOJ				*e*Sn	**Sn**	**18 08 02.8**	**+0.4**
PB13	**IPOC Station P**	**1.52**	**175**	↑*i* P	**Pn**	**18 07 40.9**	**+0.7**
PB13				*i* S	**Sn**	**18 08 05.2**	**+0.2**
PB13				IAML		18 08 11.4	
	comp=E,2μm,0.5s						
LPAZ	**La Paz**	**1.53**	**70**	P	**Pn**	**18 07 40.6**	**+0.4**
	comp=E,4.9nm,0.3s,baz=236,slow=5.7,SNR=10						
LPAZ				S	**Sn**	**18 08 04.6**	**-0.4**
	comp=E,4.7nm,0.3s,baz=342,slow=20,SNR=15						
LPAZ	**La Paz**	**1.53**	**70**	⇓*i* Pn	**Pn**	**18 07 40.4**	**+0.1**
LPAZ				*e*Sn	**Sn**	**18 08 03.9**	**-1.1**
BBOE	**La Paz, Chanca**	**1.58**	**90**	↑*i* Pn	**Pn**	**18 07 41.0**	**+0.3**
BBOB	**La Paz, Bander**	**1.58**	**65**	↑*i* Pn	**Pn**	**18 07 40.6**	**-0.1**
BBOB				*e*Sn	**Sn**	**18 08 04.9**	**-0.9**
	comp=E,339nm,0.6s						
ARCH	**Arica**	**1.78**	**201**	*i* S	Sn	18 08 05.5	-3.2
PB12	**IPOC Station P**	**1.91**	**200**	↑*i* P	Pn	18 07 41.9	-1.7
PB12				*i* S	Sn	18 08 07.8	-3.5
MNMC	**Minye Minye**	**2.31**	**179**	*e*P	Pn	18 07 47.8	-0.5
MNMC				*e*S	**Sn**	**18 08 18.0**	**-1.6**
MNMC				IAML		18 08 22.9	
	comp=E,620nm,0.2s						
PB11	**IPOC Station P**	**2.93**	**180**	↑*i* P	Pn	18 07 54.9	-0.7
PB11				*i* S	Sn	18 08 29.5	-3.2
PB08	**IPOC Station P**	**3.34**	**172**	↓*i* P	**Pn**	**18 08 00.8**	**-0.1**
PB08				*e*S	**Sn**	**18 08 40.2**	**-1.9**
PB08				IAML		18 08 45.4	
	comp=N,148nm,0.2s						
PB01	**IPOC Station P**	**4.21**	**178**	↑*i* P	Pn	18 08 10.4	-1.3
PB01				*i* S	Sn	18 08 56.4	-5.1
PB01				IAML		18 09 00.3	
	comp=E,195nm,0.2s						
LVC	**Limon Verde**	**5.80**	**173**	P	**Pn**	**18 08 32.2**	**-0.6**
	comp=E,253nm,0.3s,baz=334,slow=6.4,SNR=67						
LVC				S	Sn	18 09 33.7	-5.6
	comp=E,183nm,0.3s,baz=177,slow=21,SNR=12						
MOCB	**Mochara**	**5.81**	**140**	*e*Pn	**Pn**	**18 08 33.9**	**+1.1**
SIV	**San Ignacio**	**8.25**	**86**	P	**Pn**	**18 09 04.2**	**-0.6**
	comp=E,1.3nm,0.3s,baz=274,slow=12,SNR=11						
PLCA	**Paso Flores**	**23.85**	**182**	P	**P**	**18 12 07.9**	**+2.3**
	comp=E,3.6nm,0.9s,baz=24,slow=10,SNR=6.3						
TORD	**Torodi Ar. Bea**	**76.48**	**72**	P	**P**	**18 18 38.0**	**-1.5**
	comp=E,1.4nm,0.5s,baz=266,slow=5.1,SNR=17						
YKA	**Yellowknife Ar**	**86.56**	**341**	P	**P**	**18 19 31.2**	**-0.1**
	comp=E,0.3nm,0.5s,baz=133,slow=4.8,SNR=7.5						
SONM	**Songino Array**	**148.89**	**5**	PKPbc	**PKPbc**	**18 26 36.4**	**+0.7**
	comp=E,0.7nm,0.5s,baz=337,slow=3.3,SNR=7.3						

*ISCJB **21** 18:09:05.8±0.5, 39°.15N±0°.03×28°.96E±0°.03, h9km±4km, Error ellipse: s-maj=5.2km s-min=3.7km az=157.2*
*CSEM **21** 18:09:05.9±0.1, 39°.15N×28°.96E, h10km, MD2.8, Error ellipse: s-maj=2.1km s-min=1.8km az=147.0*
*ISK **21** 18:09:05.3, 39°.16N×28°.98E, h10km, ML2.6*
*DDA **21** 18:09:05.7, 39°.16N×28°.97E, h7km, Md2.8*

ISC 21 18:09:06.1±0.9, 39°.16N±0°.03×28°.97E±0°.02, h11km±9km, n39, σ0°.36/54, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.23**	**240**	P	**Pg**	**18 09 11.0**	**+0.1**
DEMI				S	**Sg**	**18 09 14.2**	**0.0**
DEMI	**Demirci**	**0.23**	**240**	*i* P	**Pg**	**18 09 11.0**	**+0.1**
DEMI				*i* S	**Sg**	**18 09 14.2**	**0.0**
GDZ	**Gediz**	**0.41**	**100**	P	**Pg**	**18 09 14.2**	**0.0**
GDZ				S	**Sg**	**18 09 20.0**	**+0.4**
GDZ	**Gediz**	**0.41**	**100**	*i* P	**Pg**	**18 09 14.2**	**0.0**
GDZ				*i* S	**Sg**	**18 09 20.0**	**+0.4**
TVSB	**Tavsanli**	**0.48**	**52**	*e*PG	**Pg**	**18 09 15.3**	**-0.3**
TVSB				*e*SG	**Sg**	**18 09 22.2**	**+0.2**
TVSB	**Tavsanli**	**0.48**	**52**	*e*Pg	**Pg**	**18 09 15.3**	**-0.3**
TVSB				*e*Sg	**Sg**	**18 09 22.2**	**+0.2**
MANT	**Manisa**	**0.74**	**206**	P	**Pg**	**18 09 20.3**	**-0.1**
MANT				S	**Sg**	**18 09 29.5**	**-0.6**
MANT	**Manisa**	**0.74**	**206**	*i* P	**Pg**	**18 09 20.3**	**-0.1**
MANT				*i* S	**Sg**	**18 09 29.5**	**-0.6**
KHAL	**Karahalli**	**0.89**	**152**	P	**Pb**	**18 09 23.4**	**-0.1**
KHAL	**Karahalli**	**0.89**	**152**	*i* P	**Pb**	**18 09 23.4**	**-0.1**
KHL	**Karahalli**	**0.94**	**152**	*e*PG	**Pg**	**18 09 23.6**	**-0.5**
KHL	**Karahalli**	**0.94**	**152**	*e*Pg	**Pg**	**18 09 23.7**	**-0.5**
AKS	**Akhisar**	**0.94**	**253**	*e*PG	**Pg**	**18 09 24.1**	**-0.2**
AKS				*e*SG	**Sb**	**18 09 37.6**	**+0.7**
AKS	**Akhisar**	**0.94**	**253**	*e*Pg	**Pg**	**18 09 24.1**	**-0.2**
AKS				*e*Sg	**Sb**	**18 09 37.6**	**+0.7**
BALB	**Balikesir**	**0.97**	**300**	*e*PG	**Pg**	**18 09 24.4**	**-0.4**
BALB				*e*SG	**Sb**	**18 09 38.6**	**+0.9**
BALB	**Balikesir**	**0.97**	**300**	*e*Pg	**Pg**	**18 09 24.4**	**-0.4**
BALB				*e*Sg	**Sb**	**18 09 38.6**	**+0.9**
IGD	**Bursa**	**1.12**	**9**	*i* P	**Pb**	**18 09 26.5**	**-1.0**
IGD				*i* S	**Sg**	**18 09 42.4**	**+0.2**
KCTX	**Karacabey (Bur**	**1.20**	**337**	*e*PN	**Pb**	**18 09 28.8**	**-0.1**
KCTX	**Karacabey (Bur**	**1.20**	**337**	*e*Pn	**Pb**	**18 09 28.8**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.21**	**357**	*e*PN	**Pn**	**18 09 28.8**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.21**	**357**	*e*Pn	**Pn**	**18 09 28.8**	**-0.2**
IZI	**Iznik**	**1.24**	**18**	*e*PN	**Pn**	**18 09 29.1**	**-0.3**
IZI	**Iznik**	**1.24**	**18**	*e*Pn	**Pn**	**18 09 29.2**	**-0.3**
CAVI	**Cavuskoy**	**1.24**	**33**	*e*PN	**Pn**	**18 09 29.4**	**0.0**
CAVI	**Cavuskoy**	**1.24**	**33**	*e*Pn	**Pn**	**18 09 29.4**	**0.0**
GONE	**Gonen-Balikesi**	**1.33**	**312**	*e*PN	**Pb**	**18 09 30.7**	**+0.1**
GONE	**Gonen-Balikesi**	**1.33**	**312**	*e*Pn	**Pb**	**18 09 30.7**	**+0.1**
BORA	**Eskisehir**	**1.36**	**57**	P	**Pg**	**18 09 32.0**	**-0.2**
BORA				S	**Sg**	**18 09 49.9**	**+0.1**
BORA	**Eskisehir**	**1.36**	**57**	*i* P	**Pg**	**18 09 32.0**	**-0.2**
BORA				*i* S	**Sg**	**18 09 49.9**	**+0.1**
ADVT	**Abdulvahap**	**1.41**	**25**	*e*PN	**Pn**	**18 09 31.6**	**0.0**
ADVT	**Abdulvahap**	**1.41**	**25**	*e*Pn	**Pn**	**18 09 31.6**	**0.0**
ARMT	**Armutlu**	**1.41**	**357**	*e*PN	**Pn**	**18 09 31.7**	**0.0**
ARMT	**Armutlu**	**1.41**	**357**	*e*Pn	**Pn**	**18 09 31.7**	**0.0**
EDC	**Edincik**	**1.46**	**325**	*e*PN	**Pn**	**18 09 32.5**	**+0.1**
EDC	**Edincik**	**1.46**	**325**	*e*Pn	**Pn**	**18 09 32.5**	**+0.1**
GULT	**Gulveren**	**1.74**	**43**	*e*PN	**Pn**	**18 09 36.4**	**+0.1**
HRT	**Hereke**	**1.75**	**18**	*e*PN	**Pn**	**18 09 36.3**	**-0.1**
HRT	**Hereke**	**1.75**	**18**	*e*Pn	**Pn**	**18 09 36.3**	**-0.1**
SVRH	**Sivrihisar-ESK**	**2.00**	**81**	*e*PN	**Pn**	**18 09 40.1**	**+0.2**

*ISK **21** 18:15:42.9, 39°.11N×29°.06E, h5km, ML3.1*
*CSEM **21** 18:15:43.3±0.1, 39°.12N×29°.05E, h2km, MD2.8, Error ellipse: s-maj=1.8km s-min=1.5km az=106.0*
*DDA **21** 18:15:43.4, 39°.11N×29°.01E, h9km, Md2.8*

ISC 21 18:15:43.6±1.1, 39°.12N±0°.02×29°.04E±0°.02, h1km±11km, n67, σ0°.44/93, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**253**	P	**Pg**	**18 15 48.9**	**+0.2**
DEMI				S	**Sg**	**18 15 52.4**	**+0.3**
DEMI	**Demirci**	**0.27**	**253**	*i* P	**Pg**	**18 15 48.9**	**+0.2**
DEMI				*i* S	**Sg**	**18 15 52.4**	**+0.3**
GDZ	**Gediz**	**0.34**	**95**	P	**Pg**	**18 15 50.6**	**+0.4**
GDZ				S	**Sg**	**18 15 55.5**	**+0.8**
GDZ	**Gediz**	**0.34**	**95**	*i* P	**Pg**	**18 15 50.6**	**+0.4**
GDZ				*i* S	**Sg**	**18 15 55.5**	**+0.8**
TVSB	**Tavsanli**	**0.46**	**45**	*e*PG	**Pg**	**18 15 52.6**	**+0.1**
TVSB				*e*SG	**Sg**	**18 15 58.6**	**+0.1**
TVSB	**Tavsanli**	**0.46**	**45**	*e*Pg	**Pg**	**18 15 52.6**	**+0.1**
TVSB				*e*Sg	**Sg**	**18 15 58.6**	**+0.1**
DURS	**Dursunbey**	**0.65**	**318**	P	**Pg**	**18 15 56.4**	**+0.3**
DURS				S	**Sg**	**18 16 04.8**	**+0.3**
DURS	**Dursunbey**	**0.65**	**318**	*i* P	**Pg**	**18 15 56.4**	**+0.3**
DURS				*i* S	**Sg**	**18 16 04.8**	**+0.3**
MANT	**Manisa**	**0.73**	**211**	P	**Pg**	**18 15 57.4**	**-0.2**
MANT				S	**Sg**	**18 16 06.6**	**-0.6**
MANT	**Manisa**	**0.73**	**211**	*i* P	**Pg**	**18 15 57.4**	**-0.2**
MANT				*i* S	**Sg**	**18 16 06.6**	**-0.6**
KHAL	**Karahalli**	**0.83**	**155**	P	**Pg**	**18 15 59.7**	**+0.2**
KHAL				S	**Sg**	**18 16 10.3**	**+0.1**
KHAL	**Karahalli**	**0.83**	**155**	*i* P	**Pg**	**18 15 59.7**	**+0.2**
KHAL				*i* S	**Sg**	**18 16 10.3**	**+0.1**
KHL	**Karahalli**	**0.88**	**155**	*e*PG	**Pg**	**18 15 60.0**	**-0.5**
KHL				*e*SG	**Sg**	**18 16 12.2**	**+0.3**
KHL	**Karahalli**	**0.88**	**155**	*e*Pg	**Pg**	**18 16 00.0**	**-0.5**
KHL				*e*Sg	**Sg**	**18 16 12.2**	**+0.3**
ORLT	**Orhaneli**	**0.93**	**353**	*e*PG	**Pg**	**18 16 01.0**	**-0.5**
ORLT				*e*SG	**Sb**	**18 16 14.9**	**-0.5**
ORLT	**Orhaneli**	**0.93**	**353**	*e*Pg	**Pg**	**18 16 01.0**	**-0.5**
ORLT				*e*Sg	**Sb**	**18 16 14.9**	**-0.5**
AKHS	**Akhisar**	**0.99**	**256**	P	**Pg**	**18 16 02.4**	**-0.1**
AKHS				S	**Sg**	**18 16 15.3**	**0.0**
AKHS	**Akhisar**	**0.99**	**256**	*i* P	**Pg**	**18 16 02.4**	**-0.1**
AKHS				*i* S	**Sg**	**18 16 15.3**	**0.0**
AKS	**Akhisar**	**0.99**	**256**	*e*PG	**Pg**	**18 16 02.5**	**0.0**
AKS	**Akhisar**	**0.99**	**256**	*e*Pg	**Pg**	**18 16 02.5**	**0.0**
BALB	**Balikesir**	**1.04**	**300**	*e*PG	**Pg**	**18 16 03.7**	**+0.2**
BALB	**Balikesir**	**1.04**	**300**	*e*Pg	**Pg**	**18 16 03.7**	**+0.2**
CAVI	**Cavuskoy**	**1.24**	**30**	*e*PN	**Pg**	**18 16 07.1**	**-0.3**
CAVI	**Cavuskoy**	**1.24**	**30**	*e*Pn	**Pg**	**18 16 07.1**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.25**	**355**	*e*PN	**Pg**	**18 16 07.0**	**-0.6**
MDNY	**Mudanya-Bursa**	**1.25**	**355**	*e*Pn	**Pg**	**18 16 07.0**	**-0.6**
IZI	**Iznik**	**1.26**	**15**	*e*PN	**Pg**	**18 16 07.5**	**-0.2**
IZI	**Iznik**	**1.26**	**15**	*e*Pn	**Pg**	**18 16 07.6**	**-0.2**
KCTX	**Karacabey (Bur**	**1.26**	**335**	*e*PN	**Pg**	**18 16 07.7**	**0.0**
KCTX	**Karacabey (Bur**	**1.26**	**335**	*e*Pn	**Pg**	**18 16 07.7**	**0.0**
BALY	**Balya**	**1.26**	**300**	P	**Pg**	**18 16 07.5**	**-0.3**
BALY	**Balya**	**1.26**	**300**	*i* P	**Pg**	**18 16 07.5**	**-0.3**
GEMT	**Gemlik**	**1.32**	**5**	*e*PN	**Pn**	**18 16 08.6**	**-0.5**
GEMT	**Gemlik**	**1.32**	**5**	*e*Pn	**Pn**	**18 16 08.6**	**-0.5**
DENT	**Denizli**	**1.36**	**180**	*e*PN	**Pn**	**18 16 08.9**	**-0.9**
DENT	**Denizli**	**1.36**	**180**	*e*Pn	**Pn**	**18 16 08.9**	**-0.9**
ADVT	**Abdulvahap**	**1.42**	**22**	*e*PN	**Pn**	**18 16 09.8**	**-0.6**
ADVT	**Abdulvahap**	**1.42**	**22**	*e*Pn	**Pn**	**18 16 09.8**	**-0.6**
DNZL	**Cakiroluk**	**1.43**	**180**	P	**Pn**	**18 16 10.2**	**-0.6**
DNZL	**Cakiroluk**	**1.43**	**180**	*i* P	**Pn**	**18 16 10.2**	**-0.6**
DNZL				*i* S	**Sn**	**18 16 31.7**	**+1.4**
ARMT	**Armutlu**	**1.45**	**355**	*e*PN	**Pn**	**18 16 10.4**	**-0.5**
ARMT	**Armutlu**	**1.45**	**355**	*e*Pn	**Pn**	**18 16 10.4**	**-0.5**
GPA	**Golpazari**	**1.52**	**40**	*e*PN	**Pn**	**18 16 11.4**	**-0.6**
GPA	**Golpazari**	**1.52**	**40**	*e*Pn	**Pn**	**18 16 11.4**	**-0.6**
EDC	**Edincik**	**1.52**	**324**	*e*PN	**Pb**	**18 16 12.5**	**-0.1**
EDC	**Edincik**	**1.52**	**324**	*e*Pn	**Pb**	**18 16 12.5**	**-0.1**
AYDN	**Tasoluk**	**1.72**	**212**	P	**Pn**	**18 16 14.6**	**-0.1**
AYDN				S	**Sb**	**18 16 37.3**	**-0.8**
AYDN	**Tasoluk**	**1.72**	**212**	*i* P	**Pn**	**18 16 14.6**	**-0.1**
AYDN				*i* S	**Sb**	**18 16 37.3**	**-0.8**
GULT	**Gulveren**	**1.73**	**40**	*e*PN	**Pn**	**18 16 14.4**	**-0.5**
GULT	**Gulveren**	**1.73**	**40**	*e*Pn	**Pn**	**18 16 14.4**	**-0.5**
HRT	**Hereke**	**1.77**	**16**	*e*PN	**Pn**	**18 16 15.0**	**-0.3**
HRT	**Hereke**	**1.77**	**16**	*e*Pn	**Pn**	**18 16 15.0**	**-0.3**
AYVA	**Ayvalik**	**1.83**	**277**	P	**Pb**	**18 16 18.1**	**+0.2**
AYVA				S	**Sb**	**18 16 41.6**	**+0.2**
AYVA	**Ayvalik**	**1.83**	**277**	*i* P	**Pb**	**18 16 18.1**	**+0.2**
AYVA				*i* S	**Sb**	**18 16 41.6**	**+0.2**
SPNC	**Sapanca-Adapaz**	**1.84**	**32**	*e*PN	**Pn**	**18 16 16.0**	**-0.3**
SPNC	**Sapanca-Adapaz**	**1.84**	**32**	*e*Pn	**Pn**	**18 16 16.0**	**-0.3**
ISK	**Istanbul-Kandi**	**1.94**	**0**	*e*PN	**Pn**	**18 16 17.6**	**0.0**
ISK	**Istanbul-Kandi**	**1.94**	**0**	*e*Pn	**Pn**	**18 16 17.7**	**0.0**
SVRH	**Sivrihisar-ESK**	**1.95**	**80**	*e*PN	**Pn**	**18 16 17.5**	**-0.5**
SVRH	**Sivrihisar-ESK**	**1.95**	**80**	*e*Pn	**Pn**	**18 16 17.5**	**-0.5**
DGB	**˙zmir**	**2.00**	**238**	*i* P	**Pb**	**18 16 20.5**	**-0.3**
DGB				*i* S	**Sb**	**18 16 46.3**	**+0.2**
URLA	**Izmir**	**2.06**	**249**	*i* P	**Pb**	**18 16 21.7**	**0.0**
URLA				*i* S	**Sb**	**18 16 48.5**	**+0.6**
SILT	**Sile**	**2.08**	**13**	*e*PN	**Pn**	**18 16 19.8**	**+0.2**
SILT	**Sile**	**2.08**	**13**	*e*Pn	**Pn**	**18 16 19.8**	**+0.2**
MDUB	**Mudurnu**	**2.14**	**53**	*e*PN	**Pn**	**18 16 20.4**	**-0.1**
MDUB	**Mudurnu**	**2.14**	**50**	*e*Pn	**Pn**	**18 16 20.4**	**-0.1**
ZEY	**˙zmir**	**2.17**	**247**	*i* P	**Pb**	**18 16 23.9**	**+0.3**
ZEY				*i* S	**Sb**	**18 16 51.9**	**+0.9**

MAN 21 18:19:57, 17°.19N×121°.87E, h22km, mb4.5, ML3.4, MS3.3, 1C, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CAUP	**Cauayan**	**0.25**	**191**	*e*P	Pb	18 20 05.4	+2.3
CAUP				*e*S	Sb	18 20 10.5	+3.2
APYP	**Conner**	**0.90**	**318**	*e*P	Pb	18 20 14.1	+0.1
SGCP	**Mt. Cagua**	**1.06**	**9**	*e*P	Pn	18 20 16.5	-0.1
SGCP				*e*S	Sn	18 20 31.6	+0.9
ABRA	**Dolores**	**1.20**	**293**	*e*P	Pb	18 20 19.0	0.0
ABRA				*e*S	Sb	18 20 35.0	+1.0
BALP	**Baler**	**1.47**	**191**	*e*P	Pn	18 20 22.8	+0.7
BALP				*e*S	Sb	18 20 41.8	0.0
BCPH	**Baguio City Da**	**1.47**	**237**	↑*i* P	Pb	18 20 27.5	+3.7
BCPH				*i* S	Sn	18 20 34.2	-6.9

*IDC **21** 18:29:12.0±0.5, 18°.77N×67°.65W, h0km, mb4.4/21, mb1 4.6/22, mb1mx4.5/34, mbtmp4.4/22, ML4.1/1, MS3.9/36, Ms1 3.9/36, ms1mx3.8/50, Error ellipse: s-maj=14.7km s-min=11.8km az=38.0*
*NEIC **21** 18:29:14.8, 18°.98N×67°.89W, h26km, mb4.7/129, MD4.6(RSPR), After RSPR.*
NEIC Felt [II] at Higuey and Santo Domingo. Also felt at Azua and Otra Banda. Felt [IV] at Isabela and Mayaguez; [III] at Moca; [II] at Aguada, Aguadilla, Gurabo and San German, Puerto Rico. Also felt at Cabo Rojo, Caguas, Guanica, Hormigueros, Ponce, Rincon, San Juan, San Sebastian and Utuado.
*RSPR **21** 18:29:14.9, 18°.98N×67°.89W, h26km±29km, MD4.2/17*
*ISCJB **21** 18:29:15.3±0.6, 18°.95N±0°.03×67°.65W±0°.02, h27km±5km, mb4.6/152, MS3.9/37, Error ellipse: s-maj=4.6km s-min=2.1km az=26.6*

ISC 21 18:29:15.7±0.6, 18°.91N±0°.03×67°.67W±0°.03, h23km±4km, n492, σ1°.57/508, mb4.7/153, MS3.9/37, 26C-7D, Mona Passage

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IDE	**Isla Desecheo**	**0.55**	**160**	↑*i* P	**Pb**	**18 29 26.8**	**0.0**
IDE	**Isla Desecheo**	**0.55**	**160**	*e*Pg	**Pb**	**18 29 26.8**	**0.0**
AGPR	**Aguadilla, PR**	**0.69**	**129**	⇑*e*P	**Pb**	**18 29 29.2**	**+0.1**
AGPR	**Aguadilla, PR**	**0.69**	**129**	⇑*e*P	**Pb**	**18 29 29.2**	**+0.1**
AGP	**Aguadilla**	**0.71**	**135**	*e*Pg	**Pb**	**18 29 28.1**	**-1.3**
AGP				*e*Sn	**Sb**	**18 29 38.8**	**0.0**
MPR	**Mayaguez**	**0.86**	**144**	⇑*e*P	**Pb**	**18 29 31.5**	**-0.5**
MPR	**Mayaguez**	**0.86**	**144**	*e*S	**Sn**	**18 29 44.9**	**+0.6**
MPR	**Mayaguez**	**0.86**	**144**	*e*Pg	**Pb**	**18 29 31.0**	**-1.0**
LSP	**Las Mesas**	**0.92**	**142**	⇑*e*P	**Pb**	**18 29 32.1**	**-0.9**
LSP	**Las Mesas**	**0.92**	**142**	*e*Pg	**Pb**	**18 29 32.1**	**-0.9**
LRS	**Lares**	**1.00**	**128**	⇑*e*P	**Pb**	**18 29 33.1**	**-1.3**
LRS	**Lares**	**1.00**	**128**	*e*Pg	**Pb**	**18 29 31.8**	**-2.5**
AOPR	**Arecibo Observ**	**1.04**	**123**	⇑*e*P	**Pn**	**18 29 34.4**	**-0.5**
AOPR	**Arecibo Observ**	**1.04**	**123**	*e*S	**Sn**	**18 29 49.7**	**+1.0**
AOPR	**Arecibo Observ**	**1.04**	**123**	*e*Pn	**Pn**	**18 29 34.4**	**-0.5**
CRPR	**Cabo Rojo, PR**	**1.04**	**149**	⇑*e*P	**Pn**	**18 29 34.9**	**-0.1**
CRPR	**Cabo Rojo, PR**	**1.04**	**149**	*e*Pn	**Pn**	**18 29 34.9**	**-0.1**
GBPR	**Guanica, Bosqu**	**1.20**	**141**	⇑*e*P	**Pn**	**18 29 36.9**	**-0.2**
GBPR				*e*S	**Sb**	**18 29 54.0**	**+1.2**
GBPR	**Guanica, Bosqu**	**1.20**	**141**	*e*Pn	**Pn**	**18 29 36.9**	**-0.2**
CELP	**Cerrillos**	**1.33**	**128**	⇑*e*P	**Pn**	**18 29 38.1**	**-0.8**
CELP	**Cerrillos**	**1.33**	**128**	*e*Pn	**Pn**	**18 29 37.7**	**-1.2**
OBIP	**Obispado Ponce**	**1.33**	**130**	⇑*e*P	**Pn**	**18 29 39.2**	**+0.3**
OBIP	**Obispado Ponce**	**1.33**	**130**	*e*S	**Sb**	**18 29 56.7**	**+0.1**
OBIP	**Obispado Ponce**	**1.33**	**130**	*e*Sn	**Sb**	**18 29 56.7**	**+0.1**
ICMP	**Isla Caja de M**	**1.49**	**133**	⇑*e*P	**Pn**	**18 29 41.1**	**0.0**
ICMP	**Isla Caja de M**	**1.49**	**133**	*e*Pn	**Pn**	**18 29 41.1**	**0.0**
SJG	**San Juan**	**1.65**	**118**	⇑*e*P	**Pn**	**18 29 42.6**	**-0.7**
SJG				*e*S	**Sb**	**18 30 04.6**	**-1.2**
SJG	**San Juan**	**1.65**	**118**	Pn	**Pn**	**18 29 42.3**	**-1.0**
	645nm,0.3s,baz=303,slow=11,SNR=427						
SJG				Sn	**Sn**	**18 30 03.7**	**-0.1**
	930nm,0.3s,baz=270,slow=20,SNR=23						
SJG	**San Juan**	**1.65**	**118**	*e*P	**Pn**	**18 29 42.9**	**-0.4**
CBYP	**Canovanas**	**1.84**	**110**	⇑*e*P	**Pn**	**18 29 45.7**	**-0.3**
CBYP	**Canovanas**	**1.84**	**110**	*e*S	**Sb**	**18 30 10.6**	**-0.7**
CBYP	**Canovanas**	**1.84**	**110**	*e*Pn	**Pn**	**18 29 44.7**	**-1.2**
CBYP				*e*Sn	**Sb**	**18 30 10.6**	**-0.7**
HUMP	**Col San Antoni**	**1.89**	**113**	⇓*e*P	**Pn**	**18 29 45.8**	**-0.9**
HUMP	**Col San Antoni**	**1.89**	**113**	*e*S	**Sb**	**18 30 11.2**	**-1.5**
HUMP	**Col San Antoni**	**1.89**	**113**	*e*Pn	**Pn**	**18 29 45.5**	**-1.1**
HUMP				*e*Sn	**Sb**	**18 30 11.2**	**-1.5**
MTP	**Monte Pirata**	**2.17**	**112**	⇑*e*P	**Pn**	**18 29 50.6**	**+0.1**
MTP	**Monte Pirata**	**2.17**	**112**	*e*Pn	**Pn**	**18 29 49.5**	**-0.9**
SDD	**Santo Domingo**	**2.17**	**258**	*e*Pn	**Pn**	**18 29 51.9**	**+1.5**
BANI	**BANI**	**2.60**	**259**	*e*Pn	**Pn**	**18 29 59.1**	**+2.7**
STVI	**Saint Thomas**	**2.64**	**102**	⇑*e*P	**Pn**	**18 29 58.1**	**+1.2**
STVI	**Saint Thomas**	**2.64**	**102**	*e*S	**Sn**	**18 30 29.9**	**+1.7**
STVI	**Saint Thomas**	**2.64**	**102**	*e*Pn	**Pn**	**18 29 55.6**	**-1.3**
STVI				*e*Sn	**Sn**	**18 30 29.9**	**+1.7**
CDVI	**St. Croix**	**

PAL eS S 18 38 19.5 -2.7
Z48A Northport 22.88 313 P P 18 34 18.9 +1.2
baz=124
ODNJ Ogdensburg 22.89 346 eP P 18 34 18.6 +0.9
18nm,0.6s
SWET Sewanee 22.92 319 eP P 18 34 19.0 +0.8
3.8nm,0.7s
147A Livingston 23.00 311 P P 18 34 20.3 +1.2
baz=122
N59A State Game Lan 23.01 344 P P 18 34 20.1 +1.1
baz=161,SNR=5.6
Z47A Carrollton 23.14 312 P P 18 34 21.7 +1.3
baz=123
BRYW Bryant College 23.17 353 eP P 18 34 27.0 +6.3
52nm,0.8s
BRYW eS S 18 38 30.4 -0.6
O56A Blue Knob Stat 23.26 339 P P 18 34 23.0 +1.4
baz=154
246A Jackson Lee, B 23.30 308 P P 18 34 23.2 +1.1
baz=119
SSPA Standing Stone 23.36 340 eP P 18 34 22.1 -0.5
17nm,0.8s
SSPA eS S 18 38 31.4 -2.8
Y47A UCPARC, Winfie 23.38 314 P P 18 34 23.9 +1.1
baz=125
CCIG Comitan 23.46 267 eP P 18 34 24.5 +0.6
28nm,0.8s
WES Weston 23.61 353 eP P 18 34 26.9 +2.0
28nm,0.9s
WES eS S 18 38 34.9 -3.2
KSPA Keystone Colle 23.61 345 eP P 18 34 31.7 +6.7
16nm,0.8s
KSPA eS S 18 38 44.9 +6.8
QUA2 Belchertown 23.63 351 eP P 18 34 25.5 +0.3
15nm,0.6s
QUA2 eS S 18 38 35.1 -3.4
HRV Adam Dziewonsk 23.75 353 eP P 18 34 26.2 -0.1
29nm,0.8s
HRV eS S 18 38 41.1 +0.7
Y46A Houston 24.06 312 P P 18 34 30.2 +0.8
baz=123,SNR=6.0
PLAL Pickwick Lake 24.15 316 eP P 18 34 31.1 +0.9
24nm,0.8s
TRY Troy 24.29 349 eP P 18 34 33.6 +2.3
24nm,0.6s
TRY eSn S 18 39 04.0 +15
N54A Moraine State 24.38 337 P P 18 34 33.1 +0.9
baz=151
244A Avery, Jackson 24.48 307 P P 18 34 35.4 +2.2
baz=117
WVT Waverly 24.69 318 eP P 18 34 35.6 +0.5
17nm,0.6s
X45A UM Field Stati 24.73 313 P P 18 34 37.2 +1.7
baz=124
M54A Oil Creek Stat 24.74 338 P P 18 34 36.2 +0.6
baz=152,SNR=5.3
ACSO Alum Creek Sta 25.00 331 eP P 18 34 38.8 +0.9
21nm,0.9s
ALLY Alegheny Colle 25.04 338 eP P 18 34 38.9 +0.7
15nm,0.8s
WCI Wyandotte Cave 25.17 324 eP P 18 34 41.0 +1.6
27nm,0.8s
MMNY Mt. Morris Dam 25.28 342 eP P 18 34 41.7 +1.4
ERPA Erie 25.39 338 eP P 18 34 42.6 +1.2
22nm,0.8s
NCB Newcomb 25.59 349 eP P 18 34 44.4 +1.3
USIN University of 25.78 322 eP P 18 34 46.5 +1.6
39nm,0.7s
S45A Carrier Mills 26.14 320 P P 18 34 49.3 +1.1
baz=130
LONY Lake Ozonia 26.28 349 eP P 18 34 50.7 +1.3
7.4nm,0.9s
SIUC Southern Illin 26.55 319 eP P 18 34 53.4 +1.5
22nm,0.8s
S44A Carbondale 26.56 319 P P 18 34 52.7 +0.7
baz=129
V42A Cord 26.85 314 P P 18 34 55.8 +1.1
baz=123
W41B Gary Mavity, V 27.12 312 P P 18 34 57.7 +0.6
baz=121
SFIN Lafayette 27.14 326 P P 18 34 58.1 +0.9
baz=137,SNR=5.3
SFIN Lafayette 27.14 326 eP P 18 34 57.8 +0.6
11nm,0.7s
WHAR Wooly Hollow 27.21 312 eP P 18 34 59.4 +1.5
14nm,0.9s
X301 Greenbrier Sit 27.26 312 eP P 18 34 59.8 +1.5
8.7nm,0.8s
X201 Greenbrier Sit 27.26 312 eP P 18 34 59.3 +0.9
9.9nm,0.8s
V41A Mountainview 27.37 313 P P 18 35 00.4 +1.1
baz=122
SADO Sadowa 27.51 342 LR LR 18 47 07.9
comp=Z,298nm,18.1s,baz=164,slow=39
T41A Mountain View 27.78 316 P P 18 35 04.1 +1.0
baz=124,SNR=13
ATAH Atahualpa 27.95 203 LR LR 18 47 36.7
comp=Z,524nm,21.7s,baz=10,slow=40
CCM Cathedral Cave 28.03 318 eP P 18 35 05.9 +0.7
CCM ePcP PcP 18 38 20.6 +0.8
SAML Samuel 28.03 171 eP P 18 35 04.1 -1.3
15nm,0.7s
Q42A Golden Eagle 28.11 320 P P 18 35 06.9 +1.0
baz=129
U40A Yellville 28.15 313 P P 18 35 07.4 +1.1
baz=122
T40A Mansfield 28.34 315 P P 18 35 09.1 +1.0
baz=123
V39A Pettigrew 28.44 312 P P 18 35 10.1 +1.1
baz=120,SNR=10.0
S40A Lebanon 28.58 316 P P 18 35 11.1 +0.9
baz=124,SNR=7.8
U39A Green Forest 28.60 313 P P 18 35 11.0 +0.6
baz=121
X38A Whitesboro 28.75 309 P P 18 35 12.4 +0.7
baz=116
R40A Maddies Statio 28.82 317 P P 18 35 12.7 +0.5
baz=126
T39A Clever 28.86 314 P P 18 35 13.3 +0.7
baz=122
Q40A Laux Farm, Aux 29.11 319 P P 18 35 15.7 +0.9
baz=127
R39A Chumby, Stover 29.33 317 P P 18 35 17.4 +0.6
baz=124
P40A Paris 29.41 319 P P 18 35 18.2 +0.7
baz=128
T38A Diamond 29.49 313 P P 18 35 18.9 +0.6
baz=121
V37A Hulbert 29.53 311 P P 18 35 19.3 +0.7
baz=118
O40A La Belle 29.67 321 P P 18 35 20.4 +0.6
baz=129
R38A Fenwick Farm, 29.83 316 P P 18 35 21.7 +0.5
baz=123
TUL1 Leonard 30.01 310 P P 18 35 23.9 +1.1
baz=117
TUL1 Leonard 30.01 310 eP P 18 35 23.9 +1.1
17nm,1.0s
V36A Jenks 30.07 310 P P 18 35 24.6 +1.3
baz=117
Q38A Cooks Store, C 30.07 317 P P 18 35 24.2 +0.9
baz=125
S37A Fort Scott 30.23 314 P P 18 35 25.6 +0.9
baz=121
W35A Tecumseh 30.48 308 P P 18 35 27.8 +0.8
baz=115
R37A Teagarden Farm 30.51 315 P P 18 35 27.7 +0.4
baz=122
JFWS Jewell Farm 30.60 326 eP P 18 35 28.9 +0.9
28nm,0.7s
S36A Lake Cedric, C 30.73 313 P P 18 35 30.4 +1.2
baz=120,SNR=9.2
433A Art 30.75 299 P P 18 35 30.1 +0.7
baz=105,SNR=6.5
333A Richland Sprin 30.82 300 P P 18 35 30.8 +0.7
baz=106
P37A Lathrop 30.89 317 P P 18 35 31.5 +0.9
baz=124
R36A Gordon, Harris 30.97 314 P P 18 35 32.1 +0.8
baz=121
T35A Sooner Cattle 30.99 311 P P 18 35 32.5 +1.0
baz=118
S35A Otter Creek Ra 31.21 313 P P 18 35 34.2 +0.8
baz=119
JCT Junction City 31.27 298 eP P 18 35 36.0 +1.8
L38A Oak Wood Farm, 31.57 323 P P 18 35 37.4 +0.9
baz=130
O36A Bolckow 31.59 318 P P 18 35 37.7 +0.9
baz=124
Q35A Mercer Eighty, 31.61 315 P P 18 35 38.0 +1.1
baz=121
ABTX Abilene, Hawle 31.73 302 P P 18 35 38.7 +0.6
baz=108
ABTX Abilene, Hawle 31.73 302 eP P 18 35 39.4 +1.4
11nm,0.9s
WMOK Wichita Mounta 31.76 306 P P 18 35 39.3 +0.9
baz=112,SNR=9.1
WMOK Wichita Mounta 31.76 306 eP P 18 35 38.5 +0.2
K38A Parkersburg 31.79 324 P P 18 35 39.0 +0.6
baz=131
L37A Phoenix Point, 32.02 322 P P 18 35 41.1 +0.6
baz=129
R34A Isabella, Hill 32.15 313 P P 18 35 42.6 +0.8
baz=119,SNR=5.7
M36A Felix, Anita 32.24 320 P P 18 35 43.3 +0.8
baz=126
W32A Sentinel 32.26 306 P P 18 35 43.1 +0.4
baz=112
K37A Belmond 32.36 323 P P 18 35 44.2 +0.7
baz=130
COWI Conover 32.39 332 eP P 18 35 45.2 +1.5
I38A Scanlan Farm, 32.47 326 P P 18 35 45.0 +0.6
baz=133,SNR=8.1
P34A Walnut Farm, R 32.48 315 P P 18 35 44.9 +0.3
baz=121
L36A Harm Buss Farm 32.55 321 P P 18 35 46.1 +1.0
baz=127
J37A Redenius Farm, 32.66 324 P P 18 35 47.1 +1.0
baz=130
R33A Olander Ranch, 32.67 313 P P 18 35 47.1 +0.8
baz=118
M35A Neola 32.80 319 P P 18 35 48.0 +0.7
baz=125
Q33A Connelly Farm, 32.89 314 P P 18 35 49.0 +0.8
baz=119
P33A Williams Farm, 33.01 315 P P 18 35 50.0 +0.8
baz=120
Q32A Meitler Ranch, 33.38 313 P P 18 35 53.7 +1.1
baz=118
SPMN Marine on St. 33.53 327 P P 18 35 53.7 0.0
baz=134
SPMN Marine on St. 33.53 327 eP P 18 35 53.2 -0.4
6.0nm,0.6s
H36A Jessenland, He 33.69 325 P P 18 35 55.9 +0.9
baz=131
P32A Huiting Farm, 33.71 314 P P 18 35 56.0 +0.7
baz=119
O32A Brockman Farm, 33.81 316 P P 18 35 56.8 +0.6
baz=120
J34A George 34.02 322 P P 18 35 58.8 +0.9
baz=127
CBKS Cedar Bluff 34.12 312 P P 18 35 59.6 +0.6
baz=117
CBKS Cedar Bluff 34.12 312 eP P 18 36 00.3 +1.3
C39A Grand Marais 34.14 333 P P 18 36 00.1 +1.1
baz=140,SNR=5.2
L33A Hoskins 34.17 319 P P 18 36 00.2 +0.9
baz=124
H35A Sunnyside Ranc 34.26 325 P P 18 36 00.8 +0.8
baz=130
LTX Lajitas 34.33 294 eP P 18 36 02.2 +1.3
LTX ePcP PcP 18 38 38.0 +1.1
LTX eScP ScP 18 42 23.1 +2.4
TXAR Lajitas Array 34.33 294 P P 18 36 02.2 +1.3
1.8nm,0.7s,baz=115,slow=9.3,SNR=18
TXAR PcP PcP 18 38 38.0 +1.1
1.8nm,0.7s,baz=136,slow=6.0,SNR=5.7
TXAR ScP ScP 18 42 23.1 +2.4
1.4nm,0.7s,baz=123,slow=6.4,SNR=14
TXAR LR LR 18 54 33.6
comp=Z,149nm,19.6s,baz=0.0,slow=44
TX31 Lajitas Ar. Si 34.33 294 eP P 18 36 02.4 +1.5
TX31 eScP ScP 18 42 22.5 +1.8
F36A Milaca 34.33 327 P P 18 36 01.1 +0.4
baz=133
C38A Sawbill Land. 34.57 332 P P 18 36 03.3 +0.6
baz=138
MSTX Muleshoe 34.63 303 P P 18 36 03.8 +0.3
baz=107
MSTX Muleshoe 34.63 303 eP P 18 36 03.4 -0.1
12nm,0.9s
J33A Davis 34.63 321 P P 18 36 04.1 +0.8
baz=126
E36A McGregor 34.65 328 P P 18 36 04.4 +1.1
baz=134
ECSD EROS Data Cent 34.67 322 P P 18 36 04.5 +0.9
baz=127,SNR=13
ECSD EROS Data Cent 34.67 322 eP P 18 36 03.3 -0.3
7.9nm,0.8s
H34A Spellman Lake, 34.76 324 P P 18 36 05.2 +0.9
baz=129
LPAZ La Paz 34.98 181 P P 18 36 06.7 -0.5
2.6nm,0.7s,baz=3.2,slow=7.1,SNR=11
LPAZ LR LR 18 51 40.8
comp=Z,224nm,19.5s,baz=3.0,slow=39
LPAZ La Paz 34.98 181 eP P 18 36 06.2 -0.9
6.5nm,1.0s
G34A Benson 35.04 325 P P 18 36 07.6 +0.9
baz=130
D36A Goodland 35.07 329 P P 18 36 08.2 +1.3
baz=135
H33A Prehn Over Nor 35.31 323 P P 18 36 10.0 +0.9
baz=128
D35A Remer 35.44 328 P P 18 36 11.0 +0.9
baz=134
H32A Carlson Farm, 35.60 322 P P 18 36 12.4 +0.8
baz=126
F33A 5 Mile Ranch, 35.78 325 P P 18 36 13.9 +0.8
baz=129
C35A Jirik Farms, M 35.83 329 P P 18 36 14.8 +1.3
baz=135
SCHQ Schefferville 35.87 1 P P 18 36 14.8 +1.1
12nm,0.6s,baz=184,slow=8.2,SNR=8.2
SCHQ LR LR 18 49 09.0
comp=Z,226nm,21.8s,baz=158,slow=33
SCHQ Schefferville 35.87 1 eP P 18 36 13.7 0.0
12nm,0.7s
J30A Dallas 36.17 319 P P 18 36 17.1 +0.6
baz=122
B35A Bob, Littlefor 36.17 330 P P 18 36 17.2 +0.8
baz=136,SNR=6.3
MNTX Cornudas Mount 36.21 298 P P 18 36 18.5 +1.4
baz=102,SNR=9.9
MNTX Cornudas Mount 36.21 298 eP P 18 36 18.3 +1.3
7.4nm,0.9s
B34A Aery, Baudette 36.70 330 P P 18 36 21.5 +0.6
baz=134
T25A Trinidad 36.88 307 P P 18 36 24.2 +1.3
baz=110
T25A Trinidad 36.88 307 eP P 18 36 24.1 +1.3
5.5nm,0.8s
I29A Vivian Onida 37.04 320 P P 18 36 24.4 +0.5
baz=122
E31A Nome 37.09 325 P P 18 36 25.2 +0.9
baz=128
A33A Warroad 37.37 330 P P 18 36 27.2 +0.6
baz=134
B32A Ashes, Strandq 37.56 328 P P 18 36 28.7 +0.4
baz=132
I28A Midland 37.56 319 P P 18 36 28.8 +0.4
baz=121
BNM Barren Site 37.77 302 eP P 18 36 31.7 +1.2
C31A Landman Farms, 37.78 327 P P 18 36 31.0 +0.8
baz=130,SNR=6.9
ANMO Albuquerque 37.82 303 LR LR 18 54 17.6
comp=Z,112nm,20.0s,baz=122,slow=40
ANMO Albuquerque 37.82 303 P P 18 36 32.1 +1.2
baz=105
ANMO Albuquerque 37.82 303 eP P 18 36 32.3 +1.4
2.3nm,0.8s
SDCO Great Sand Dun 37.90 308 P P 18 36 32.6 +1.0
baz=109,SNR=15
SDCO Great Sand Dun 37.90 308 eP P 18 36 32.8 +1.2
8.2nm,0.8s
B31A Greenbush Farm 38.14 327 P P 18 36 33.6 +0.5
baz=130
PB11 IPOC Station P 38.48 183 eP P 18 36 34.4 -2.0
20nm,0.7s
ULM Lac du Bonnet 38.50 331 P P 18 36 36.3 +0.1
4.2nm,0.6s,baz=128,slow=9.1,SNR=4.0
ULM LR LR 18 51 20.2
comp=Z,198nm,21.9s,baz=136,slow=34
ISCO Idaho Springs 38.69 311 eP P 18 36 39.5 +1.3
7.0nm,1.2s
G27A Dupree 38.74 321 P P 18 36 39.3 +1.0
baz=122,SNR=11
S22A 4UR Ranch, Cre 38.90 307 eP P 18 36 41.2 +1.1
4.4nm,0.8s
G26A Maurine 39.10 320 P P 18 36 42.1 +0.8
baz=121,SNR=5.1
A29A Manning Farm, 39.27 327 P P 18 36 43.8 +1.1
baz=129
RSSD Black Hills 39.42 318 eP P 18 36 44.5 +0.3
2.7nm,0.9s
F26A Lodgepole 39.43 321 P P 18 36 45.4 +1.4
baz=122,SNR=5.7
319A Douglas 39.44 297 eP P 18 36 46.1 +1.7
10.0nm,0.8s
PB01 IPOC Station P 39.74 183 eP P 18 36 44.3 -2.6
21nm,0.7s
PV01 Paradox Valley 40.33 307 eP P 18 36 53.5 +1.6
PV05 Paradox Valley 40.71 307 eP P 18 36 55.8 +0.8
TUC Tucson 40.84 298 eP P 18 36 58.0 +2.0
2.5nm,0.8s
PV09 Paradox Valley 40.85 307 eP P 18 36 57.7 +1.4
LVC Limon Verde 41.28 182 eP P 18 36 58.1 -1.9
14nm,0.7s
WUAZ Wupatki 41.87 302 eP P 18 37 06.7 +2.2
5.8nm,1.0s
SRU San Rafael Swe 42.07 308 eP P 18 37 06.6 +0.4
3.7nm,0.7s
SRU ePcP PcP 18 39 01.7 +0.9
BW06 Boulder Array 42.53 313 eP P 18 37 09.9 0.0
BW06 ePcP PcP 18 39 02.3 0.0
PD31 Pinedale Array 42.53 313 eP P 18 37 10.0 +0.2
PD31 ePcP PcP 18 39 02.4 +0.1
PDAR Pinedale Array 42.53 313 P P 18 37 10.0 +0.2
0.9nm,0.9s,baz=82,slow=6.8,SNR=6.3
PDAR PcP PcP 18 39 02.4 +0.1
1.4nm,0.7s,baz=116,slow=5.0,SNR=6.3
PDAR LR LR 18 56 20.6
comp=Z,222nm,19.3s,baz=126,slow=38
TMUT Trail Mountain 42.63 308 eP P 18 37 12.2 +1.4
8.2nm,0.8s
TMUT ePcP PcP 18 39 03.4 +0.7
Y14A Wickenburg 42.92 300 eP P 18 37 14.6 +1.6
17nm,0.8s
MTPU Mount Pierson 43.05 306 eP P 18 37 16.2 +1.8
5.5nm,0.8s
MSU Marysvale 43.16 306 eP P 18 37 15.6 +0.5
RLMT Red Lodge 43.22 317 P P 18 37 16.3 +0.9
baz=114
RLMT Red Lodge 43.22 317 eP P 18 37 16.7 +1.3
47nm,1.0s
KNB Kanab 43.32 304 eP P 18 37 18.5 +2.2
3.6nm,0.9s
LOHW Long Hollow 43.54 314 eP P 18 37 18.9 +0.8
3.8nm,0.7s
HWUT Hardware Ranch 43.55 311 eP P 18 37 17.9 -0.2
REDW Red Top Meadow 43.62 314 eP P 18 37 17.9 -0.8
10nm,1.3s
MOOW Moose Ponds 43.69 314 eP P 18 37 19.8 +0.6
3.3nm,0.9s
IMW Indian Meadow 43.87 314 eP P 18 37 21.4 +0.6
2.7nm,0.6s
DUG Dugway, Tooele 44.06 309 P P 18 37 23.0 +0.8
baz=105
FCC Fort Churchill 44.21 341 eP P 18 37 23.3 +0.4
44nm,1.8s
FFC Flin Flon 44.27 332 eP P 18 37 23.7 +0.3
5.7nm,0.9s
BGU Big Grassy Mou 44.42 310 eP P 18 37 25.9 +0.9
3.5nm,0.8s
PSUT Pine Spring 44.45 306 eP P 18 37 27.4 +2.0
7.1nm,0.9s
IRM Iron Mountain 44.71 300 P P 18 37 29.2 +1.9
baz=98,SNR=8.3
EGMT Eagleton 44.73 320 eP P 18 37 28.4 +1.0
7.1nm,0.9s
FRB Frobisher Bay 44.81 359 LR LR 18 54 26.7
comp=Z,263nm,21.2s,baz=196,slow=34
BC3 Big Chuckawall 44.90 299 P P 18 37 30.7 +1.7
baz=97
BOZ Bozeman (W) 44.96 316 P P 18 37 30.7 +1.4
baz=112
BOZ Bozeman (W) 44.96 316 eP P 18 37 30.3 +1.1
4.6nm,0.9s
GMRC Granite Mounta 45.21 300 P P 18 37 33.4 +1.9
baz=98
DLMT Dillon 45.49 316 eP P 18 37 34.8 +1.3
4.1nm,0.8s
TUQ Turquoise Moun 45.52 301 P P 18 37 35.7 +1.8
baz=98
LRM Limekiln Ridge 45.56 316 eP P 18 37 35.2 +1.1
MONP2 Monument Peak 45.63 298 P P 18 37 37.1 +2.2
baz=95,SNR=6.1
R11A Troy Canyon, C 45.74 305 P P 18 37 36.5 +0.9
baz=101
R11A Troy Canyon, C 45.74 305 eP P 18 37 37.2 +1.6
4.8nm,1.2s
TPNV Topopah Spring 46.01 303 P P 18 37 40.3 +2.5
baz=100
TPNV Topopah Spring 46.01 303 eP P 18 37 39.6 +1.8
9.8nm,0.9s
CPUP Villa Florida 46.08 167 P P 18 37 35.5 -2.6
7.0nm,0.8s,baz=345,slow=7.9,SNR=19
CPUP LR LR 18 57 27.0
comp=Z,112nm,21.8s,baz=352,slow=37
CPUP Villa Florida 46.08 167 eP P 18 37 35.0 -3.1
HLID Hailey 46.15 313 P P 18 37 40.8 +2.1
baz=107
HLID Hailey 46.15 313 eP P 18 37 38.9 +0.2
6.9nm,1.4s
GSC Goldstone, Bar 46.21 301 P P 18 37 41.2 +1.9
baz=98
GSC Goldstone, Bar 46.21 301 eP P 18 37 40.9 +1.7
5.5nm,0.8s
DAC Darwin (Calif) 46.98 302 eP P 18 37 47.2 +1.8
7.7nm,0.8s
MFID Camas Ranch 47.09 312 eP P 18 37 46.7 +0.6
2.6nm,0.8s
EDW2 Edwards Air Fo 47.13 300 P P 18 37 48.3 +1.8
baz=96
YBMT Yellow Bay 47.29 318 eP P 18 37 47.9 +0.3
NV11 Mina Array Sit 47.74 305 eP P 18 37 52.4 +1.2
11nm,0.9s
NV01 Mina Array Sit 47.85 305 eP P 18 37 53.2 +1.0
NVAR Mina Array Bea 47.85 305 P P 18 37 53.8 +1.5
2.0nm,0.6s,baz=94,slow=6.3,SNR=17
NVAR LR LR 18 59 49.3
comp=Z,164nm,19.0s,baz=110,slow=38
BBTS Babate 49.01 87 LR LR 18 55 55.9
comp=Z,100nm,18.2s,baz=253,slow=33
NEW Newport 49.39 318 LR LR 19 00 08.5
comp=Z,210nm,19.3s,baz=102,slow=38
ROC1 El Roble 51.69 184 eP P 18 38 18.1 -3.2
60nm,0.7s
YKA Yellowknife Ar 54.16 335 P P 18 38 38.7 -0.2
11nm,0.6s,baz=112,slow=7.5,SNR=122
YKA LR LR 19 01 12.8
comp=Z,20nm,20.9s,baz=180,slow=35
YKB5 Yellowknife Ar 54.16 335 eP P 18 38 38.5 -0.5
YKW3 Yellowknife Ar 54.20 335 eP P 18 38 38.6 -0.7
9.6nm,0.7s
SUMG Summit 56.22 10 *i* P P 18 38 55.2 +1.1
13nm,0.8s
SUMG Summit 56.22 10 eP P 18 38 54.3 +0.2
14nm,0.9s
RES Resolute Bay 57.71 352 LR LR 19 02 13.5
comp=Z,146nm,21.9s,baz=97,slow=34
ESDC Sonseca Array 58.10 55 P P 18 39 08.7 +1.0
6.7nm,0.7s,baz=272,slow=7.1,SNR=57
ESDC LR LR 18 58 04.2
comp=Z,84nm,21.4s,baz=315,slow=30
ESLA Sonseca Array 58.10 55 eP P 18 39 08.6 +1.0
8.9nm,0.9s
ES19 SONSECA Array 58.15 55 eP P 18 39 08.5 +0.6
PLCA Paso Flores 59.39 183 P P 18 39 14.6 -1.8
4.2nm,0.8s,baz=16,slow=8.0,SNR=7.7
PLCA LR LR 19 05 48.4
comp=Z,73nm,21.9s,baz=328,slow=37
PLCA Paso Flores 59.39 183 eP P 18 39 14.8 -1.6
32nm,1.6s
DLBC Dease Lake 59.67 327 eP P 18 39 19.1 +0.9
12nm,0.8s
TIC Toumodi 62.03 92 eP P 18 39 34.5 -0.4
LIC Lamto 62.15 93 eP P 18 39 35.4 -0.3
86nm,1.5s
DBIC Dimbokro 62.18 92 P P 18 39 36.0 +0.2
9.3nm,0.8s,baz=289,slow=6.3,SNR=9.5
DBIC LR LR 19 01 43.6
comp=Z,115nm,21.9s,baz=283,slow=31
DBIC Dimbokro 62.18 92 eP P 18 39 35.0 -0.9

12nm,0.6s
KIC Kosan Boka 62.38 93 *eP* **P 18 39 37.0 -0.2**
19nm,0.5s
SKAG Skagway 62.56 328 *eP* **P 18 39 37.8 +0.1**
14nm,1.4s
DAG Danmarks Havn 62.84 11 *i P* **P 18 39 39.0 -0.3**
9.0nm,0.9s
INK Inuvik 63.70 338 *eP* **P 18 39 45.0 -0.1**
9.9nm,0.8s
DAWY Dawson 65.17 333 *eP* **P 18 39 55.5 +0.7**
5.7nm,0.7s
EGAK Eagle 66.02 333 *eP* **P 18 40 00.9 +0.6**
13nm,0.8s
SENIN Lac Senin/Sane 66.27 47 *eP* **P 18 40 03.4 +0.8**
7.6nm,1.1s
TOA1 Torodi Ar. Sit 66.56 84 *eP* **P 18 40 04.2 -0.4**
25nm,1.8s
TOA0 Torodi Ar. Sit 66.56 84 *eP* **P 18 40 03.8 -0.8**
TORD Torodi Ar. Bea 66.56 84 P **P 18 40 04.2 -0.4**
1.7nm,0.7s,baz=287,slow=6.5,SNR=13
TORD LR LR 19 05 07.0
comp=Z,134nm,21.8s,baz=290,slow=32
DOT Dot Lake 67.19 332 *eP* **P 18 40 08.3 +0.5**
44nm,1.5s
BMRM Bremner River 67.32 329 *eP* **P 18 40 09.8 +1.2**
7.9nm,0.7s
PAX Paxson 67.79 331 *eP* **P 18 40 12.3 +0.6**
4.6nm,0.8s
TAM Tamanrasset 67.88 72 *eP* **P 18 40 13.3 +0.3**
5.4nm,1.0s
KLU Klutina 67.97 330 *eP* **P 18 40 12.5 -0.3**
6.3nm,0.7s
DAVA Damuels 67.98 46 *i P* **P 18 40 14.4 +1.1**
4.5nm,0.9s
NAO01 NORSAR Array S 68.11 31 *eP* **P 18 40 13.1 -0.6**
NB2 NORSAR Subarra 68.27 31 P **P 18 40 15.8 +1.1**
comp=Z,5.2nm,0.7s,baz=272,slow=6.5
NB200 NORSAR Array S 68.27 31 *eP* **P 18 40 15.4 +0.7**
NOA NORSAR Array B 68.27 31 P **P 18 40 15.4 +0.7**
comp=Z,4.4nm,0.7s,baz=271,slow=6.4,SNR=16
FUORN Ofenpass-Fuorn 68.30 47 *eP* **P 18 40 15.9 +0.5**
comp=Z,10nm,0.8s
IL1 Eielson Array 68.47 333 *eP* **P 18 40 15.7 -0.1**
ILAR Eielson Array 68.47 333 P **P 18 40 15.9 +0.1**
comp=Z,4.8nm,0.8s,baz=109,slow=4.3,SNR=46
ILAR LR LR 19 09 57.7
comp=Z,202nm,20.8s,baz=102,slow=36
ILB Eielson Array 68.47 333 *eP* **P 18 40 15.9 +0.1**
HDA Harding Lake 68.49 333 *eP* **P 18 40 15.8 -0.1**
comp=Z,5.1nm,0.7s
RETA Reutte 68.57 46 *i P* **P 18 40 17.9 +1.1**
comp=Z,7.4nm,0.9s
FETA Feichten 68.58 46 *i P* **P 18 40 18.2 +1.2**
comp=Z,8.1nm,0.7s,SNR=5.4
SCM Sheep Creek Mo 68.64 330 *eP* **P 18 40 17.6 +0.6**
comp=Z,57nm,1.9s
MOTA Moosalm 68.81 46 *i P* **P 18 40 19.2 +0.8**
comp=Z,4.8nm,0.7s,SNR=8.1
CCB Clear Creek Bu 68.86 333 *eP* **P 18 40 18.0 -0.2**
comp=Z,3.7nm,0.7s
KEST Kesra 68.88 58 LR LR 19 05 55.3
comp=Z,78nm,21.9s,baz=294,slow=32
WRH Wood River Hil 68.99 333 *eP* **P 18 40 19.7 +0.7**
comp=Z,5.4nm,0.8s
WATA Walderalm 69.13 46 *i P* **P 18 40 20.9 +0.4**
comp=Z,1.9nm,0.6s
WTTA Wattenberg 69.18 46 *i P* **P 18 40 20.0 -0.7**
comp=Z,2.9nm,0.6s
RND Reindeer 69.33 332 *eP* **P 18 40 21.8 +0.5**
comp=Z,11nm,0.7s
MCK McKinley 69.36 332 *eP* **P 18 40 21.7 +0.3**
comp=Z,9.4nm,1.0s
BWN Browne 69.59 332 *eP* **P 18 40 22.6 -0.1**
comp=Z,14nm,0.8s
CLL Collm 69.69 41 *eP* **P 18 40 24.0 +0.4**
CLL LmV 19 03 00.0
comp=Z,200nm,20.4s
ABTA Abfaltersbach 69.83 46 *eP* **P 18 40 25.3 +0.6**
comp=Z,6.9nm,1.0s,SNR=5.7
COLD Coldfoot 69.84 336 *eP* **P 18 40 25.4 +1.1**
comp=Z,5.8nm,0.9s
TRF Thorofare Moun 69.97 332 *eP* **P 18 40 25.8 +0.5**
comp=Z,12nm,0.7s
MLY Manley 70.11 333 *eP* **P 18 40 26.1 +0.1**
comp=Z,3.2nm,0.6s
KTH Kantishna Hill 70.25 332 *eP* **P 18 40 27.4 +0.5**
comp=Z,20nm,1.0s
BPAW Bear Paw Mtn. 70.26 332 *eP* **P 18 40 26.6 -0.3**
comp=Z,10nm,0.7s
KHC Kasperske Hory 70.28 44 *eP* **P 18 40 28.2 +0.9**
KHC *epP* **sP 18 40 37.0 -0.4**
KHC Kasperske Hory 70.28 44 *eP* **P 18 40 27.9 +0.6**
comp=Z,1.8nm,1.0s
BRG Berggiesshubel 70.33 42 *eP* **P 18 40 28.5 +1.0**
comp=Z,5.2nm,1.0s
KBA Koelnbreinsper 70.36 46 *i P* **P 18 40 28.5 +0.5**
comp=Z,4.3nm,0.9s
GERES GERESS Array B 70.39 44 P **P 18 40 27.9 -0.2**
comp=Z,0.9nm,0.8s,baz=270,slow=8.0,SNR=9.5
GERES LR LR 19 04 56.3
comp=Z,99nm,21.4s,baz=311,slow=30
GEA0 GERESS Array S 70.39 44 *eP* **P 18 40 27.0 -1.1**
BSD Bornholm Skovb 70.50 37 *i P* **P 18 40 28.5 0.0**
comp=Z,7.6nm,0.9s
MYKA Terra Mystica 70.61 46 *i P* **P 18 40 30.0 +0.5**
comp=Z,3.8nm,0.8s
CADS Cadrg 70.73 47 *i P* **P 18 40 30.5 +0.4**
CAST Castle Rocks 70.78 332 *eP* **P 18 40 29.4 -0.7**
comp=Z,5.2nm,0.7s
PRU Pruhonice 70.80 43 *eP* **P 18 40 31.4 +0.9**
PRU *epP* **sP 18 40 41.3 +0.8**
MOA Molln 70.88 45 *i P* **P 18 40 31.4 +0.4**
comp=Z,2.6nm,0.8s
OBKA Obir 71.25 46 *i P* **P 18 40 34.0 +0.6**
comp=Z,4.1nm,0.8s
CEY Cerknica 71.27 47 *i P* **P 18 40 34.4 +0.9**
UPC Upice 71.68 42 *eP* **P 18 40 36.7 +1.0**
ARSA Arzberg 71.81 45 *i P* **P 18 40 37.1 +0.5**
comp=Z,4.3nm,0.9s
LEGS Legarje 71.86 47 *i P* **P 18 40 37.6 +0.6**
DPC Dobruska-Polom 71.89 42 *eP* **P 18 40 38.3 +1.2**
DPC *epP* **sP 18 40 48.1 +0.9**
DPC AMS AMS 19 04 20.0
comp=Z,200nm,19.3s
CONA Conrad Observa 71.94 45 *i pP* **P 18 40 39.9 +2.5**
comp=Z,1.8nm,0.7s
VRAC Vranov 72.22 43 LR LR 19 12 51.7
comp=Z,96nm,18.1s,baz=299,slow=36
VRAC Vranov 72.22 43 *i P* **P 18 40 39.5 +0.5**
KRLC Kraliky 72.22 42 *eP* **P 18 40 40.0 +0.9**
KRLC *esP* **sP 18 40 51.1 +2.0**
MORC Moravsky Berou 72.76 43 *i P* **P 18 40 43.6 +1.3**
MORC Moravsky Berou 72.76 43 *eP* **P 18 40 42.2 0.0**
comp=Z,19nm,0.9s
CUC Castrocucco 73.22 53 *eP* **P 18 40 43.9 -1.3**
comp=Z,3.2nm,0.8s
ARA0 ARCESS Array S 73.56 21 *eP* **P 18 40 46.9 +0.3**
ARCES ARCESS Array B 73.56 21 P **P 18 40 47.0 +0.5**
comp=Z,8.3nm,0.7s,baz=290,slow=5.0,SNR=30
VYHS Vyhne 73.81 44 *eP* **P 18 40 49.0 +0.5**
VYHS *e* 18 52 30.1
STHS Stebnicka Huta 75.19 42 *eP* **P 18 40 58.7 +2.2**
STHS *e* 18 41 05.9
PDG Podgorica 75.28 50 *i P* **P 18 40 58.3 +1.2**
FIA0 FINESS Array S 75.36 30 *eP* **P 18 40 58.1 +1.0**
FINES FINESS Array B 75.36 30 P **P 18 40 58.1 +1.0**
comp=Z,4.3nm,0.7s,baz=286,slow=3.8,SNR=14
CRVS Cervenica-Dubn 75.44 43 *eP* **P 18 40 59.9 +2.0**
CRVS *e* 18 52 40.8
KOLS Kolonicke sedl 75.95 43 *eP* **P 18 41 02.7 +1.8**
DRGR 76.72 45 *i P* **P 18 41 06.5 +1.2**
TNA Tin City 77.12 335 *eP* **P 18 41 07.4 +0.3**
comp=Z,7.6nm,0.9s
BUR08 Bucovina Ar. S 78.16 44 *eP* **P 18 41 14.4 +1.0**
BURAR Bucovina Array 78.18 44 *i P* **P 18 41 15.1 +1.6**
ARR Arges 78.37 46 *i P* **P 18 41 16.8 +2.2**
VOIR 78.63 46 *i P* **P 18 41 16.9 +0.8**
DOPR Dopca 78.72 45 *i P* P 18 41 10.4 -6.1
MLR Muntele Rosu 79.23 46 LR LR 19 15 14.3
comp=Z,24nm,19.2s,baz=314,slow=35
MLR Muntele Rosu 79.23 46 *i P* **P 18 41 21.4 +2.0**
MLR Muntele Rosu 79.23 46 *eP* **P 18 41 21.0 +1.6**
comp=Z,15nm,0.7s
VRI Vrincioaia 79.65 45 *i P* **P 18 41 23.1 +1.6**
AK11 Malin Array Si 79.82 40 *eP* **P 18 41 21.6 -0.7**
AKASG Malin Array Be 79.85 40 P **P 18 41 22.7 +0.3**
comp=Z,2.6nm,0.7s,baz=291,slow=4.2,SNR=10
AKASG LR LR 19 18 21.6
comp=Z,100nm,18.1s,baz=295,slow=37
SORM Soroca 80.06 43 *i P* **P 18 41 24.3 +0.7**
CFR Carcaliu 80.80 45 *i P* **P 18 41 27.5 -0.1**
MSAB Monastry St. A 80.91 47 *i P* **P 18 41 29.0 +0.7**
TIRR Tirgusor 81.20 46 *i P* **P 18 41 30.6 +0.8**
IDI Anoyia 81.34 56 *i P* P 18 41 42.7 +12
SIVA Sivas 81.35 56 *i P* **P 18 41 34.4 +3.6**
OBN Obninsk 82.54 34 *eP* **P 18 41 36.4 -0.3**
comp=Z,23nm,0.7s
PMSA Palmer Station 83.46 178 LR LR 19 20 01.7
comp=Z,52nm,19.6s,baz=328,slow=37
BILL Bilibino 84.90 342 *eP* **P 18 41 48.5 0.0**
comp=Z,3.7nm,0.8s
BR101 Keskin Array S 86.45 49 *eP* **P 18 41 57.1 +0.1**
BR131 Keskin Array S 86.45 49 *eP* **P 18 41 57.0 0.0**
BRTR Keskin Array B 86.45 49 P **P 18 41 57.1 +0.1**
comp=Z,1.4nm,0.8s,baz=273,slow=3.3,SNR=9.4
BRTR LR LR 19 19 33.8
comp=Z,24nm,19.5s,baz=296,slow=35
PPT Papeete 88.25 251 LR LR 19 13 20.5
comp=Z,100nm,20.8s,baz=348,slow=30
TIXI Tiksi 88.96 355 P **P 18 42 08.8 +0.6**
comp=Z,1.1nm,0.5s,baz=59,slow=5.9,SNR=6.6
TIXI LR LR 19 20 06.5
comp=Z,116nm,21.9s,baz=44,slow=34
TIXI Tiksi 88.96 355 *eP* **P 18 42 08.3 +0.1**
comp=Z,1.8nm,0.5s
NRIK Noril'sk 90.22 9 LR LR 19 21 31.9
comp=Z,132nm,21.8s,baz=303,slow=35
MMAI Mount Meron Ar 90.30 55 LR LR 19 19 43.6
comp=Z,24nm,21.7s,baz=300,slow=34
EIL Elat 91.23 58 LR LR 19 25 07.6
comp=Z,30nm,18.2s,baz=243,slow=37
TSUM Tsumeb 91.80 110 *eP* **P 18 42 23.4 +0.8**
comp=Z,4.6nm,1.0s
SEY Seymchan 92.58 343 P **P 18 42 26.5 +1.3**
comp=Z,1.7nm,0.7s,baz=87,slow=2.0,SNR=7.4
PETK Petropavlovsk- 98.28 334 LR LR 19 30 22.7
comp=Z,31nm,19.2s,baz=61,slow=37
KS01 Wonju Array Si 122.03 345 *e*PKPdf **PKPdf 18 48 07.8 -1.0**
KSRS Korea Array 122.05 345 PKP **PKPdf 18 48 08.8 -0.1**
comp=Z,1.0nm,0.7s,baz=50,slow=2.3,SNR=6.9
KSAR Wonju Array Be 122.07 345 PKP **PKPdf 18 48 08.8 -0.1**
LZH Lanzhou 124.72 8 *e*PKP **PKPdf 18 48 13.1 -1.1**
LZH pPKP pPKPdf 18 48 20.5 -1.4
LZH sPKP 18 48 22.8
LZH LR LR
comp=N,100nm,18.0s
LZH LR LR
comp=E,95nm,18.2s
LZH LR LR
comp=Z,140nm,20.1s
CD2 Chengdu 129.79 10 PKP **PKPdf 18 48 22.8 -1.1**
CM31 Chiang Mai Arr 140.61 20 *e*PKPdf **PKPdf 18 48 43.3 -1.0**
CMAR Chiang Mai Arr 140.61 20 PKP **PKPdf 18 48 44.3 0.0**
comp=Z,1.3nm,0.8s,baz=316,slow=2.8,SNR=10.0
CM01 Chiang Mai Arr 140.65 20 *e*PKPdf **PKPdf 18 48 44.0 -0.3**
STKA Stephens Creek 150.68 238 PKPbc **PKPbc 18 49 05.6 -0.9**
comp=Z,7.6nm,0.8s,baz=103,slow=3.2,SNR=7.7
STKA Stephens Creek 150.68 238 *e*PKPbc **PKPbc 18 49 05.0 -1.5**
WR1 Warramunga Arr 159.21 264 *e*PKPdf **PKPdf 18 49 12.9 -0.1**
WRA Warramunga Arr 159.21 264 PKP **PKPdf 18 49 12.9 -0.1**
comp=Z,4.1nm,0.8s,baz=80,slow=1.0,SNR=7.9
AS31 Alice Springs 159.35 253 *e*PKPab **PKPab 18 49 49.6 -1.1**
ASAR Alice Springs 159.35 253 PKP **PKPdf 18 49 12.1 -1.0**
comp=Z,1.1nm,0.8s,baz=79,slow=1.4,SNR=10
ASAR PKPab **PKPab 18 49 49.9 -0.9**
comp=Z,2.1nm,0.7s,baz=105,slow=4.2,SNR=14

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*ISK **21** 18:33:38.6, 39.°13N×29.°05E, h10km, ML2.5*
*DDA **21** 18:33:38.8, 39.°15N×29.°00E, h7km, Md2.5*
*ISCJB **21** 18:33:39.0±0.5, 39.°12N±0.°03×29.°02E±0.°03, h7km±5km, Error ellipse: s-maj=5.7km s-min=3.9km az=160.9*
*CSEM **21** 18:33:39.2±0.1, 39.°11N×29.°03E, h10km, MD2.5, Error ellipse: s-maj=2.4km s-min=1.9km az=130.0*
ISC 21 18:33:39.3±0.9, 39.°13N±0.°03×29.°02E±0.°02, h12km±8km, n37, σ0s30/50, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DEMI	**Demirci**	**0.25**	**251**	P	**Pg**	**18 33 44.7**	**+0.1**
DEMI				S	**Sg**	**18 33 48.1**	**-0.1**
DEMI	**Demirci**	**0.25**	**251**	*i P*	**Pg**	**18 33 44.7**	**+0.1**
DEMI				*i S*	**Sg**	**18 33 48.1**	**-0.1**
GDZ	**Gediz**	**0.36**	**96**	P	**Pg**	**18 33 46.7**	**+0.2**
GDZ				S	**Sg**	**18 33 51.8**	**+0.4**
GDZ	**Gediz**	**0.36**	**96**	*i P*	**Pg**	**18 33 46.7**	**+0.2**
GDZ				*i S*	**Sg**	**18 33 51.8**	**+0.4**
TVSB	**Tavsanli**	**0.47**	**46**	*e*PG	**Pg**	**18 33 48.2**	**-0.4**
TVSB				*e*SG	**Sg**	**18 33 54.6**	**-0.3**
TVSB	**Tavsanli**	**0.47**	**46**	*e*Pg	**Pg**	**18 33 48.2**	**-0.4**
TVSB				*e*Sg	**Sg**	**18 33 54.6**	**-0.3**
KULA	**Kula-Manisa**	**0.67**	**205**	*e*PG	**Pg**	**18 33 52.3**	**-0.1**
KULA	**Kula-Manisa**	**0.67**	**205**	*e*Pg	**Pg**	**18 33 52.3**	**-0.1**
MANT	**Manisa**	**0.73**	**210**	P	**Pg**	**18 33 53.2**	**-0.3**
MANT				S	**Sg**	**18 34 02.6**	**-0.5**
MANT	**Manisa**	**0.73**	**210**	*i P*	**Pg**	**18 33 53.2**	**-0.3**
MANT				*i S*	**Sg**	**18 34 02.6**	**-0.5**
KHL	**Karahalli**	**0.89**	**154**	*e*PG	**Pg**	**18 33 56.0**	**-0.5**
KHL	**Karahalli**	**0.89**	**154**	*e*Pg	**Pg**	**18 33 56.0**	**-0.5**
ORLT	**Orhaneli**	**0.93**	**354**	*e*PG	**Pg**	**18 33 56.8**	**-0.4**
ORLT	**Orhaneli**	**0.93**	**354**	*e*Pg	**Pg**	**18 33 56.8**	**-0.4**
AKHS	**Akhisar**	**0.97**	**256**	P	**Pb**	**18 33 58.5**	**+0.4**
AKHS	**Akhisar**	**0.97**	**256**	*i P*	**Pb**	**18 33 58.5**	**+0.4**
AKHS				*i S*	Sg	18 34 03.5	-7.3
BALB	**Balikesir**	**1.02**	**301**	*e*PG	**Pg**	**18 33 59.0**	**0.0**
BALB				*e*SG	**Sn**	**18 34 13.8**	**0.0**
BALB	**Balikesir**	**1.02**	**301**	*e*Pg	**Pg**	**18 33 59.0**	**0.0**
BALB				*e*Sg	**Sn**	**18 34 13.8**	**0.0**
MDNY	**Mudanya-Bursa**	**1.25**	**355**	*e*PN	**Pg**	**18 34 03.1**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.25**	**355**	*e*Pn	**Pg**	**18 34 03.1**	**-0.2**
CAVI	**Cavuskoy**	**1.25**	**30**	*e*PN	**Pn**	**18 34 02.6**	**0.0**
CAVI	**Cavuskoy**	**1.25**	**30**	*e*Pn	**Pn**	**18 34 02.6**	**0.0**
KCTX	**Karacabey (Bur**	**1.25**	**336**	*e*PN	**Pg**	**18 34 03.3**	**-0.1**
KCTX	**Karacabey (Bur**	**1.25**	**336**	*e*Pn	**Pg**	**18 34 03.3**	**-0.1**
IZI	**Iznik**	**1.26**	**16**	*e*PN	**Pn**	**18 34 02.8**	**0.0**
IZI	**Iznik**	**1.26**	**16**	*e*Pn	**Pn**	**18 34 02.8**	**0.0**
BORA	**Eskisehir**	**1.34**	**55**	P	**Pg**	**18 34 04.7**	**-0.4**
BORA				S	**Sg**	**18 34 23.0**	**+0.5**
BORA	**Eskisehir**	**1.34**	**55**	*i P*	**Pg**	**18 34 04.7**	**-0.4**
BORA				*i S*	**Sg**	**18 34 23.0**	**+0.5**
GONE	**Gonen-Balikesi**	**1.38**	**312**	*e*PN	**Pn**	**18 34 04.5**	**+0.1**
GONE	**Gonen-Balikesi**	**1.38**	**312**	*e*Pn	**Pn**	**18 34 04.5**	**+0.1**
ADVT	**Abdulvahap**	**1.42**	**23**	*e*PN	**Pn**	**18 34 05.0**	**+0.1**
ADVT	**Abdulvahap**	**1.42**	**23**	*e*Pn	**Pn**	**18 34 05.0**	**+0.1**
ARMT	**Armutlu**	**1.44**	**355**	*e*PN	**Pn**	**18 34 05.5**	**+0.2**
ARMT	**Armutlu**	**1.44**	**355**	*e*Pn	**Pn**	**18 34 05.5**	**+0.2**
EDC	**Edincik**	**1.51**	**324**	*e*PN	**Pn**	**18 34 06.4**	**+0.2**
EDC	**Edincik**	**1.51**	**324**	*e*Pn	**Pn**	**18 34 06.4**	**+0.2**
KNL	**Bal'–kesir**	**1.63**	**315**	*i P*	**Pb**	**18 34 08.7**	**-0.5**
KNL				*i S*	**Sn**	**18 34 29.0**	**+0.4**

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*ISCJB **21** 18:37:54.6±0.4, 39.°10N±0.°02×29.°12E±0.°03, h9km±5km, Error ellipse: s-maj=4.2km s-min=4.0km az=32.5*
*CSEM **21** 18:37:54.7±0.1, 39.°10N×29.°12E, h10km, MD2.6, Error ellipse: s-maj=1.9km s-min=1.6km az=97.0*
*ISK **21** 18:37:54.1, 39.°10N×29.°12E, h9km, ML2.5*
*DDA **21** 18:37:54.8, 39.°08N×29.°12E, h7km, Md2.6*
ISC 21 18:37:54.4±1.1, 39.°10N±0.°02×29.°07E±0.°04, h8km±12km, n36, σ0s38/52, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DEMI	**Demirci**	**0.28**	**258**	P	**Pb**	**18 38 01.8**	**0.0**
DEMI				S	**Sb**	**18 38 06.2**	**-0.6**
DEMI	**Demirci**	**0.28**	**258**	*i P*	**Pb**	**18 38 01.8**	**0.0**
DEMI				*i S*	**Sb**	**18 38 06.2**	**-0.6**
GDZ	**Gediz**	**0.32**	**93**	P	**Pg**	**18 38 01.0**	**+0.3**
GDZ				S	**Sg**	**18 38 05.0**	**0.0**
GDZ	**Gediz**	**0.32**	**93**	*i P*	**Pg**	**18 38 01.0**	**+0.3**
GDZ				*i S*	**Sg**	**18 38 05.0**	**0.0**
TVSB	**Tavsanli**	**0.46**	**41**	*e*PG	**Pg**	**18 38 03.3**	**-0.1**
TVSB				*e*SG	**Sg**	**18 38 09.0**	**-0.4**
TVSB	**Tavsanli**	**0.46**	**41**	*e*Pg	**Pg**	**18 38 03.3**	**-0.1**
TVSB				*e*Sg	**Sg**	**18 38 09.0**	**-0.4**
KULA	**Kula-Manisa**	**0.67**	**209**	*e*PG	**Pb**	**18 38 08.1**	**-0.3**
KULA	**Kula-Manisa**	**0.67**	**209**	*e*Pg	**Pb**	**18 38 08.1**	**-0.3**
DURS	**Dursunbey**	**0.68**	**317**	P	**Pb**	**18 38 08.7**	**+0.1**
DURS				S	**Sb**	**18 38 19.5**	**+1.4**
DURS	**Dursunbey**	**0.68**	**317**	*i P*	**Pb**	**18 38 08.7**	**+0.1**
DURS				*i S*	**Sb**	**18 38 19.5**	**+1.4**
MANT	**Manisa**	**0.73**	**213**	P	**Pb**	**18 38 09.6**	**+0.1**
MANT				S	**Sb**	**18 38 19.5**	**-0.3**
MANT	**Manisa**	**0.73**	**213**	*i P*	**Pb**	**18 38 09.6**	**+0.1**
MANT				*i S*	**Sb**	**18 38 19.4**	**-0.3**
KHAL	**Karahalli**	**0.80**	**156**	P	**Pb**	**18 38 10.6**	**-0.1**
KHAL				S	**Sg**	**18 38 20.5**	**+0.2**
KHAL	**Karahalli**	**0.80**	**156**	*i P*	**Pb**	**18 38 10.6**	**-0.1**
KHAL				*i S*	**Sg**	**18 38 20.5**	**+0.2**
KHL	**Karahalli**	**0.85**	**156**	*e*PG	**Pg**	**18 38 10.6**	**-0.3**
KHL				*e*SG	**Sg**	**18 38 22.5**	**+0.5**
KHL	**Karahalli**	**0.85**	**156**	*e*Pg	**Pg**	**18 38 10.6**	**-0.3**
KHL				*e*Sg	**Sg**	**18 38 22.5**	**+0.5**
ORLT	**Orhaneli**	**0.95**	**352**	*e*PG	**Pb**	**18 38 13.0**	**-0.2**
ORLT	**Orhaneli**	**0.95**	**352**	*e*Pg	**Pb**	**18 38 13.0**	**-0.2**
AKS	**Akhisar**	**1.01**	**258**	*e*PG	**Pb**	**18 38 14.3**	**+0.2**
AKS				*e*SG	**Sn**	**18 38 29.2**	**0.0**
AKS	**Akhisar**	**1.01**	**258**	*e*Pg	**Pb**	**18 38 14.3**	**+0.2**
AKS				*e*Sg	**Sn**	**18 38 29.2**	**0.0**
BALB	**Balikesir**	**1.07**	**300**	*e*PN	**Pn**	**18 38 15.6**	**0.0**
BALB	**Balikesir**	**1.07**	**300**	*e*Pn	**Pn**	**18 38 15.6**	**0.0**
IZI	**Iznik**	**1.27**	**14**	*e*PN	**Pn**	**18 38 18.4**	**-0.1**
IZI	**Iznik**	**1.27**	**14**	*e*Pn	**Pn**	**18 38 18.4**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.27**	**353**	*e*PN	**Pg**	**18 38 18.7**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.27**	**353**	*e*Pn	**Pg**	**18 38 18.7**	**-0.2**
KCTX	**Karacabey (Bur**	**1.28**	**335**	*e*PN	**Pg**	**18 38 19.0**	**-0.1**
KCTX	**Karacabey (Bur**	**1.28**	**335**	*e*Pn	**Pg**	**18 38 19.0**	**-0.1**
ADVT	**Abdulvahap**	**1.42**	**21**	*e*PN	**Pn**	**18 38 20.5**	**0.0**
ADVT	**Abdulvahap**	**1.42**	**21**	*e*Pn	**Pn**	**18 38 20.5**	**0.0**
ARMT	**Armutlu**	**1.47**	**354**	*e*PN	**Pb**	**18 38 21.6**	**-0.4**
ARMT	**Armutlu**	**1.47**	**354**	*e*Pn	**Pb**	**18 38 21.6**	**-0.4**
EDC	**Edincik**	**1.55**	**323**	*e*PN	**Pb**	**18 38 23.0**	**-0.4**
EDC	**Edincik**	**1.55**	**323**	*e*Pn	**Pb**	**18 38 23.0**	**-0.4**
GULT	**Gulveren**	**1.73**	**39**	*e*PN	**Pn**	**18 38 25.0**	**+0.1**
GULT	**Gulveren**	**1.73**	**39**	*e*Pn	**Pn**	**18 38 25.0**	**+0.1**

ROM 21 18:39:00.7±0.1, 41.°75N×13.°73E, h13km±1km, Md1.5/3, Ml1.0/1, Error ellipse: s-maj=2.0km s-min=0.9km az=27.0, Southern Italy

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
POFI	**Posta Fibreno**	**0.04**	**202**	Pg	Pg	18 39 03.4	+0.2
POFI				Sg	Sg	18 39 05.3	+0.3
32nm,0.2s							
VVLD	**Villa Vallelon**	**0.14**	**325**	Pg	Pg	18 39 04.7	+0.3
VVLD				Sg	Sg	18 39 07.5	+0.6
31nm,0.2s							
INTR	**Introdacqua**	**0.29**	**27**	Pg	Pg	18 39 07.0	+0.3
INTR				Sg	Sb	18 39 11.8	-0.8

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*NSSC **21** 18:41:12.6±0.9, 33.°74N×36.°06E, h0km±3km, ML1.3*
*ISCJB **21** 18:41:13.1±0.5, 33.°75N±0.°02×36.°06E±0.°04, h5km±6km, Error ellipse: s-maj=5.4km s-min=3.9km az=2.2*
*GRAL **21** 18:41:13.4±0.3, 33.°72N×36.°10E, h2km±21km, MD2.7*
*CSEM **21** 18:41:13.0±0.1, 33.°74N×36.°07E, h5km, ML1.3, Error ellipse: s-maj=3.0km s-min=2.6km az=88.0*
ISC 21 18:41:12.5±1.0, 33.°74N±0.°03×36.°06E±0.°03, h16km±9km, n19, σ0s37/36, Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
QASN	**Qassioun**	**0.28**	**139**	*e*P	**Pg**	**18 41 18.8**	**+0.2**
QASN				*e*S	**Sb**	**18 41 23.3**	**-0.3**
QASN	**Qassioun**	**0.28**	**139**	*e*P	**Pg**	**18 41 18.8**	**+0.2**
QASN				*e*S	**Sb**	**18 41 23.3**	**-0.3**
RCY	**Rachaya**	**0.31**	**217**	*e*P	**Pg**	**18 41 19.1**	**0.0**
RCY				*e*S	**Sg**	**18 41 23.2**	**-0.4**
BRBR	**Barbar**	**0.34**	**195**	*e*P	**Pg**	**18 41 19.5**	**-0.2**
BRBR				*e*S	**Sb**	**18 41 25.1**	**-0.5**
BRBR				AML	AML	18 41 28.3	
comp=E,49nm,0.2s							
BRBR				AML	AML	18 41 28.3	
comp=N,57nm,0.3s							
BRBR	**Barbar**	**0.34**	**195**	*e*P	**Pg**	**18 41 19.5**	**-0.2**
BRBR				*e*S	**Sb**	**18 41 25.1**	**-0.5**
comp=N,57nm,0.3s							
BHL	**Bhannes**	**0.37**	**296**	*e*P	**Pb**	**18 41 20.9**	**+0.2**
BHL	**Bhannes**	**0.37**	**296**	*e*P	**Pb**	**18 41 20.9**	**+0.2**
DQRL	**Deir Qamar**	**0.41**	**265**	*e*P	**Pb**	**18 41 21.4**	**+0.1**
DQRL				*e*S	**Sb**	**18 41 27.2**	**-0.1**
DQRL	**Deir Qamar**	**0.41**	**265**	*e*P	**Pb**	**18 41 21.4**	**+0.1**
DQRL				*e*S	**Sb**	**18 41 27.2**	**-0.1**
MARH	**Ras Al Marh**	**0.45**	**51**	*e*P	**Pg**	**18 41 21.1**	**-0.7**
MARH				*e*S	**Sb**	**18 41 28.7**	**-0.2**
MARH				AML	AML	18 41 31.0	
comp=N,51nm,0.3s							
MARH				AML	AML	18 41 34.3	
comp=E,26nm,0.5s							
MARH	**Ras Al Marh**	**0.45**	**51**	*e*P	**Pg**	**18 41 21.0**	**-0.7**
MARH				*e*S	**Sb**	**18 41 28.7**	**-0.2**
comp=E,26nm,0.5s							
HWQ	**Hawqa**	**0.54**	**350**	*e*P	**Pb**	**18 41 23.7**	**+0.1**
HWQ				*e*S	**Sb**	**18 41 31.4**	**+0.2**
HWQ	**Hawqa**	**0.54**	**350**	*e*P	**Pb**	**18 41 23.7**	**+0.1**
HWQ				*e*S	**Sb**	**18 41 31.4**	**+0.2**
HAWK	**Haweek**	**0.83**	**20**	*e*P	**Pg**	**18 41 29.1**	**+0.4**
HAWK				*e*S	**Sn**	**18 41 41.2**	**-0.3**
HAWK	**Haweek**	**0.83**	**20**	*e*P	**Pg**	**18 41 29.0**	**+0.4**
HAWK				*e*S	**Sn**	**18 41 41.2**	**-0.3**
SALA	**Sala**	**1.18**	**151**	*e*P	**Pg**	**18 41 35.4**	**+0.2**
SALA				*e*S	**Sg**	**18 41 51.4**	**+0.8**
SALA				AML	AML	18 41 56.4	
comp=E,1.1nm,0.3s							
SALA				AML	AML	18 41 58.1	
comp=N,9.6nm,0.4s							
SALA	**Sala**	**1.18**	**151**	*e*P	**Pg**	**18 41 35.4**	**+0.2**
SALA				*e*S	**Sg**	**18 41 51.4**	**+0.8**
comp=N,10.0nm,0.4s							
ZALF	**Zalf**	**1.35**	**127**	*e*P	**Pg**	**18 41 38.2**	**-0.2**
ZALF				*e*S	**Sg**	**18 41 56.4**	**+0.4**
ZALF	**Zalf**	**1.35**	**127**	*e*P	**Pg**	**18 41 38.2**	**-0.2**
ZALF				*e*S	**Sg**	**18 41 56.4**	**+0.4**

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*ISCJB **21** 18:42:42.6±0.5,

IGD				*i* S	Sg	18 43 20.3	-0.5
BALY	**Balya**	**1.25**	**301**	P	Pn	18 43 07.4	+0.4
BALY	**Balya**	**1.25**	**301**	*i* P	Pn	18 43 07.4	+0.4
KCTX	**Karacabey (Bur**	**1.26**	**336**	*e*PN	Pg	18 43 06.2	-1.4
MDNY	**Mudanya-Bursa**	**1.26**	**355**	*e*PN	Pg	18 43 07.0	-0.6
MDNY	**Mudanya-Bursa**	**1.26**	**355**	*e*Pn	Pg	18 43 07.0	-0.6
CAVI	**Cavuskoy**	**1.26**	**30**	*e*PN	Pg	18 43 06.8	-0.8
CAVI	**Cavuskoy**	**1.26**	**30**	*e*Pn	Pg	18 43 06.8	-0.8
IZI	**Iznik**	**1.27**	**16**	*e*PN	Pg	18 43 07.5	-0.4
IZI	**Iznik**	**1.27**	**16**	*e*Pn	Pg	18 43 07.5	-0.4
GEMT	**Gemlik**	**1.33**	**6**	*e*PN	Pn	18 43 08.2	+0.2
GEMT	**Gemlik**	**1.33**	**6**	*e*Pn	Pn	18 43 08.2	+0.2
GONE	**Gonen-Balikesi**	**1.39**	**313**	*e*PN	Pn	18 43 07.9	-0.9
ADVT	**Abdulvahap**	**1.43**	**23**	*e*PN	Pn	18 43 09.9	+0.4
ADVT	**Abdulvahap**	**1.43**	**23**	*e*Pn	Pn	18 43 09.9	+0.4
ARMT	**Armutlu**	**1.46**	**355**	*e*PN	Pn	18 43 09.9	+0.1
ARMT	**Armutlu**	**1.46**	**355**	*e*Pn	Pn	18 43 09.9	+0.1
AYDB	**Zeytinkoy-Aydi**	**1.46**	**218**	*e*PN	Pn	18 43 09.7	-0.2
AYDB	**Zeytinkoy-Aydi**	**1.46**	**218**	*e*Pn	Pn	18 43 09.7	-0.2
EDC	**Edincik**	**1.52**	**325**	*e*PN	Pn	18 43 10.8	+0.1
GPA	**Golpazari**	**1.54**	**40**	*e*PN	Pn	18 43 10.7	-0.3
GPA	**Golpazari**	**1.54**	**40**	*e*Pn	Pn	18 43 10.7	-0.3
KNL	**Bal¨–kesir**	**1.63**	**316**	*i* P	Pn	18 43 12.8	+0.6
KNL				*i* S	Sb	18 43 34.9	+0.7
ISP	**Isparta**	**1.75**	**137**	*e*PN	Pn	18 43 14.2	+0.3
ISP	**Isparta**	**1.75**	**137**	*e*Pn	Pn	18 43 14.2	+0.3
GULT	**Gulveren**	**1.75**	**41**	*e*PN	Pn	18 43 14.2	+0.3
GULT	**Gulveren**	**1.75**	**41**	*e*Pn	Pn	18 43 14.2	+0.3
HRT	**Hereke**	**1.78**	**16**	*e*PN	Pn	18 43 14.4	+0.1
HRT	**Hereke**	**1.78**	**16**	*e*Pn	Pn	18 43 14.4	+0.1
KRBG	**Karabiga-Canak**	**1.84**	**315**	*e*PN	Pn	18 43 15.8	+0.7
MRMT	**Marmara Adasi**	**1.85**	**324**	*e*PN	Pn	18 43 15.5	+0.2
SPNC	**Sapanca-Adapaz**	**1.86**	**32**	*e*PN	Pn	18 43 16.0	+0.6
SPNC	**Sapanca-Adapaz**	**1.86**	**32**	*e*Pn	Pn	18 43 16.0	+0.6
ISK	**Istanbul-Kandi**	**1.95**	**1**	*e*PN	Pn	18 43 17.0	+0.4
ISK	**Istanbul-Kandi**	**1.95**	**1**	*e*Pn	Pn	18 43 17.0	+0.4
SVRH	**Sivrihisar-ESK**	**1.97**	**79**	*e*PN	Pn	18 43 17.5	+0.5
SVRH	**Sivrihisar-ESK**	**1.97**	**79**	*e*Pn	Pn	18 43 17.5	+0.5
BGKT	**Bogazkoy**	**2.08**	**355**	*e*PN	Pn	18 43 18.7	+0.4
BGKT	**Bogazkoy**	**2.08**	**355**	*e*Pn	Pn	18 43 18.7	+0.4
SILT	**Sile**	**2.10**	**13**	*e*PN	Pn	18 43 19.4	+0.8
SILT	**Sile**	**2.10**	**13**	*e*Pn	Pn	18 43 19.4	+0.8
RKY	**Sarkoy-Tekirda**	**2.12**	**319**	*e*PN	Pn	18 43 19.2	+0.3
SART	**Tekirdag**	**2.12**	**319**	*i* P	Pb	18 43 22.2	+0.3
SART				*i* S	Sb	18 43 49.1	+0.9
KLYT	**Kilyos**	**2.14**	**1**	*e*PN	Pn	18 43 19.2	0.0
KLYT	**Kilyos**	**2.14**	**1**	*e*Pn	Pn	18 43 19.2	0.0
CTKS	**Kestanelik-??a**	**2.16**	**350**	*e*PN	Pn	18 43 19.8	+0.4
CTKS	**Kestanelik-??a**	**2.16**	**350**	*e*Pn	Pn	18 43 19.8	+0.4
MDUB	**Mudurnu**	**2.16**	**50**	*e*PN	Pn	18 43 20.4	+0.8
MDUB	**Mudurnu**	**2.16**	**50**	*e*Pn	Pn	18 43 20.4	+0.8
TKR	**Tekirdag**	**2.19**	**329**	*e*PN	Pn	18 43 20.6	+0.7
KIZT	**Kizilcal**	**2.24**	**95**	*e*PN	Pn	18 43 21.1	+0.4
KIZT	**Kizilcal**	**2.24**	**95**	*e*Pn	Pn	18 43 21.1	+0.4

*NEIC **21** 18:43:05.3, 18°.91N×67°.74W, h20km, MD3.4(RSPR), After RSPR.*
RSPR 21 18:43:05.3, 18°.91N×67°.73W, h20km±24km, MD3.4/6, 5C-4D, Mona Passage

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IDE	**Isla Desecheo**	**0.58**	**155**	*e*P	Pb	18 43 15.3	-1.5
IDE	**Isla Desecheo**	**0.58**	**155**	*e*S	Sb	18 43 23.6	-1.1
IDE	**Isla Desecheo**	**0.58**	**155**	*e*Pg	Pb	18 43 15.3	-1.5
IDE				*e*Sn	Sb	18 43 23.6	-1.1
AGPR	**Aguadilla, PR**	**0.74**	**127**	*e*P	Pb	18 43 17.4	-2.1
AGPR	**Aguadilla, PR**	**0.74**	**127**	*e*P	Pb	18 43 17.4	-2.1
AGPR				*e*S	Sb	18 43 27.2	-2.0
AGP	**Aguadilla**	**0.76**	**132**	*e*Pg	Pb	18 43 17.3	-2.5
AGP				*e*Sn	Sb	18 43 27.0	-2.6
MPR	**Mayaguez**	**0.90**	**141**	*e*Pg	Pb	18 43 20.2	-2.0
LRS	**Lares**	**1.05**	**126**	*i* P	Pb	18 43 21.9	-2.9
LRS	**Lares**	**1.05**	**126**	*e*Pg	Pb	18 43 21.9	-2.9
AOPR	**Arecibo Observ**	**1.09**	**121**	*e*P	Pn	18 43 22.6	-2.8
AOPR	**Arecibo Observ**	**1.09**	**121**	*e*Pg	Pn	18 43 22.6	-2.8
CELP	**Cerrillos**	**1.38**	**127**	*e*P	Pn	18 43 27.2	-2.2
CELP	**Cerrillos**	**1.38**	**127**	*e*Pn	Pn	18 43 27.2	-2.2
OBIP	**Obispado Ponce**	**1.38**	**129**	*e*P	Pn	18 43 27.2	-2.2
OBIP	**Obispado Ponce**	**1.38**	**129**	*e*S	Sn	18 43 43.6	-3.4
OBIP	**Obispado Ponce**	**1.38**	**129**	*e*Sn	Sn	18 43 43.6	-3.4
SJG	**San Juan**	**1.70**	**118**	*e*P	Pn	18 43 31.7	-2.1
SJG	**San Juan**	**1.70**	**118**	*e*Pn	Pn	18 43 31.5	-2.3
CBYP	**Canovanas**	**1.89**	**109**	*e*Pn	Pn	18 43 34.1	-2.5
HUMP	**Col San Antoni**	**1.94**	**113**	*e*P	Pn	18 43 34.9	-2.3
HUMP	**Col San Antoni**	**1.94**	**113**	*e*Pn	Pn	18 43 34.5	-2.7
SDD	**Santo Domingo**	**2.12**	**258**	*e*Pn	Pb	18 43 42.4	-0.6
MTP	**Monte Pirata**	**2.22**	**111**	*e*Pn	Pn	18 43 38.7	-2.4
BANI	**BANI**	**2.54**	**259**	*e*Pn	Pb	18 43 48.8	-1.6
STVI	**Saint Thomas**	**2.69**	**102**	*e*Pn	Pn	18 43 46.1	-1.4
CDVI	**St. Croix**	**3.05**	**112**	*e*Pn	Pn	18 43 50.1	-2.3
ABVI	**Anegada Island**	**3.23**	**93**	*e*Pn	Pn	18 43 53.2	-1.6
SDDR	**Presa de Saban**	**3.37**	**272**	*e*Pn	Pn	18 43 58.0	+1.2
SDDR				*e*Sg	Sb	18 44 50.6	+5.8
GRTK	**Grand Turk**	**4.11**	**310**	*e*Sn	Sn	18 44 51.0	-3.4
SEUS	**St. Eustatius**	**4.73**	**107**	*e*Pn	Pn	18 44 09.7	-5.8

*ISCJB **21** 18:44:16.6±0.5, 64°.5N±0°.1×17°.4W±0°.1, h9km, mb3.5/9, Error ellipse: s-maj=19.3km s-min=7.2km az=15.2*
*IDC **21** 18:44:16.5±0.9, 64°.40N×17°.57W, h0km, mb3.4/8, mb1 3.7/10, mb1mx3.4/63, mbtmp3.5/10, ML3.3/2, Error ellipse: s-maj=27.1km s-min=15.4km az=21.0*
ISC 21 18:44:17.6±0.7, 64°.4N±0°.2×17°.62W±0°.08, h9km, n16, σ0s74/16, mb3.5/9, Iceland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BORG	**Borgarnes**	**1.65**	**285**	Pn	Pn	18 44 46.6	0.0
	27nm,0.3s,baz=97,slow=7.4,SNR=25						
BORG				Sn	Sg	18 45 10.2	-0.3
	15nm,0.3s,baz=73,slow=23,SNR=11						
EKA	**Eskdalemuir Ar**	**11.58**	**135**	Pn	Pn	18 47 01.7	-1.1
	baz=331,slow=13,SNR=5.3						
FINES	**FINESS Array B**	**19.82**	**78**	P	P	18 48 47.5	-0.6
	0.0nm,0.3s,baz=301,slow=11,SNR=2.9						
BRG	**Berggiesshubel**	**21.33**	**114**	*e*P	P	18 49 04.1	-0.5
	7.6nm,1.5s						
PRU	**Pruhonice**	**22.27**	**115**	*e*P	P	18 49 16.1	+1.5
UPC	**Upice**	**22.45**	**112**	*e*P	P	18 49 21.3	+4.8
KHC	**Kasperske Hory**	**22.58**	**118**	*e*P	P	18 49 18.4	+0.4
DPC	**Dobruska-Polom**	**22.69**	**112**	*e*P	P	18 49 19.6	+0.4
GERES	**GERESS Array B**	**22.86**	**118**	P	P	18 49 21.9	+0.9
	0.4nm,0.7s,baz=335,slow=8.6,SNR=4.2						
ESDC	**Sonseca Array**	**25.99**	**155**	P	P	18 49 51.6	+1.1
	1.2nm,0.8s,baz=347,slow=9.1,SNR=6.1						
AKASG	**Malin Array Be**	**27.86**	**97**	P	P	18 50 07.3	+0.2
	0.2nm,0.3s,baz=319,slow=9.5,SNR=4.2						
BRTR	**Keskin Array B**	**38.45**	**105**	P	P	18 51 39.8	+0.3
	0.9nm,0.7s,baz=328,slow=6.4,SNR=6.0						
YKA	**Yellowknife Ar**	**39.39**	**313**	P	P	18 51 47.2	+0.3
	0.6nm,1.0s,baz=45,slow=8.8,SNR=3.6						
KURBB	**Kurchatov Arra**	**48.36**	**58**	P	P	18 52 58.8	-0.3
	0.7nm,0.8s,baz=320,slow=7.5,SNR=9.5						
TORD	**Torodi Ar. Bea**	**52.88**	**156**	P	P	18 53 33.3	-0.2
	0.4nm,0.6s,baz=336,slow=8.8,SNR=4.1						
MKAR	**Makanchi Array**	**52.93**	**58**	P	P	18 53 33.7	0.0
	0.5nm,0.8s,baz=347,slow=5.9,SNR=3.1						

*ISCJB **21** 18:45:37.2±0.5, 64°.4N±0°.1×17°.5W±0°.1, h9km, mb3.5/9, Error ellipse: s-maj=18.7km s-min=7.0km az=18.9*
*IDC **21** 18:45:37.4±0.9, 64°.37N×17°.69W, h0km, mb3.4/8, mb1 3.7/10, mb1mx3.4/60, mbtmp3.5/10, ML3.5/2, Error ellipse: s-maj=27.4km s-min=14.7km az=22.0*
ISC 21 18:45:38.5±0.7, 64°.4N±0°.2×17°.71W±0°.08, h9km, n16, σ0s91/17, mb3.6/9, Iceland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BORG	**Borgarnes**	**1.61**	**286**	Pn	Pn	18 46 06.6	-0.5
	48nm,0.3s,baz=95,slow=8.0,SNR=9.8						
BORG				Sn	Sg	18 46 30.7	+0.4
	21nm,0.3s,baz=47,slow=19,SNR=5.2						
EKA	**Eskdalemuir Ar**	**11.60**	**134**	Pn	Pn	18 48 23.1	-0.9
	baz=324,slow=13,SNR=6.0						
FINES	**FINESS Array B**	**19.86**	**78**	P	P	18 50 08.4	-1.0
	0.1nm,0.3s,baz=316,slow=12,SNR=2.3						
BRG	**Berggiesshubel**	**21.36**	**114**	*e*P	P	18 50 25.3	-0.5
	11nm,1.5s						
BRG	**Berggiesshubel**	**21.36**	**114**	*e*P	S	18 54 24.3	+1.6
	19nm,1.9s						
PRU	**Pruhonice**	**22.30**	**115**	*e*P	P	18 50 35.6	-0.2
UPC	**Upice**	**22.48**	**112**	*e*P	P	18 50 38.2	+0.4
KHC	**Kasperske Hory**	**22.61**	**117**	*e*P	P	18 50 39.8	+0.6
GERES	**GERESS Array B**	**22.89**	**118**	P	P	18 50 43.2	+1.0
	0.3nm,0.5s,baz=320,slow=9.0,SNR=2.5						
ESDC	**Sonseca Array**	**26.00**	**155**	P	P	18 51 11.8	+0.3
	1.5nm,0.8s,baz=345,slow=9.1,SNR=5.6						
AKASG	**Malin Array Be**	**27.89**	**97**	P	P	18 51 30.2	+1.9
	0.3nm,0.4s,baz=320,slow=9.7,SNR=5.2						
YKA	**Yellowknife Ar**	**39.37**	**313**	P	P	18 53 07.9	+0.2
	0.3nm,0.8s,baz=40,slow=8.7,SNR=4.4						
KURBB	**Kurchatov Arra**	**48.40**	**58**	P	P	18 54 19.9	-0.5
	0.7nm,0.6s,baz=324,slow=7.0,SNR=6.7						
TORD	**Torodi Ar. Bea**	**52.89**	**156**	P	P	18 54 54.1	-0.5
	0.6nm,0.7s,baz=340,slow=7.7,SNR=4.2						
MKAR	**Makanchi Array**	**52.97**	**58**	P	P	18 54 54.4	-0.5
	0.8nm,0.9s,baz=311,slow=8.8,SNR=4.0						
PDAR	**Pinedale Array**	**53.22**	**293**	P	P	18 54 57.4	+0.4
	0.2nm,0.6s,baz=42,slow=8.6,SNR=2.6						

*IASPEI **21** 18:47:02.6±0.9, 64°.41N±0°.02×17°.34W±0°.02, h8km±6km, mb3.8/11, Error ellipse: s-maj=3.7km s-min=2.0km az=135.5, GT5 selection from ISC bulletin GT5 identified by Bond¨jr and McLaughlin (2009) selection criteria Bond¨jr and McLaughlin, A new ground truth data set for seismic studies, Seism. Res. Let., 80, 465-472, 2009*
*ISCJB **21** 18:47:02.5±0.3, 64°.41N±0°.02×17°.35W±0°.04, h7km±2km, mb3.6/11, Error ellipse: s-maj=3.7km s-min=2.0km az=138.3*
*CSEM **21** 18:47:03.2, 64°.38N×17°.27W, h0km, ML2.6*
*REY **21** 18:47:03.2, 64°.38N×17°.27W, h0km*
*IDC **21** 18:47:03.7±0.8, 64°.34N×17°.49W, h0km, mb3.7/10, mb1 3.9/13, mb1mx3.6/62, mbtmp3.8/13, ML2.6/2, Error ellipse: s-maj=24.9km s-min=13.4km az=27.0*
ISC 21 18:47:02.9±0.8, 64°.40N±0°.02×17°.33W±0°.02, h3km±5km, n124, σ1s43/166, mb3.8/11, 1C, Iceland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IGRF	**Grimsfjall**	**0.03**	**80**	P	Pg	18 47 04.1	+0.2
	baz=3.4						
IGRF				S	Sg	18 47 04.9	+0.4
	baz=3.4						
IGRF	**Grimsfjall**	**0.03**	**80**	P	Pg	18 47 04.1	+0.2
IKAL	**Kalfafell**	**0.48**	**199**	P	Pg	18 47 12.1	-0.1
	baz=203						
IKAL				S	Sb	18 47 19.4	-2.1
	baz=203						
IKAL	**Kalfafell**	**0.48**	**199**	P	Pg	18 47 12.1	-0.1
IKAL				S	Sb	18 47 19.4	-2.1
ISKR	**Skrokkalda**	**0.48**	**290**	P	Pb	18 47 13.5	-0.6
	baz=291						
ISKR				S	Sb	18 47 21.6	-0.1
	baz=291						
ISKR	**Skrokkalda**	**0.48**	**290**	P	Pb	18 47 13.5	-0.6
ISKR				S	Sb	18 47 21.5	-0.1
IKRE	**Kreppuhraun**	**0.56**	**46**	P	Pb	18 47 13.9	-1.5
	baz=43						
IKRE				S	Sb	18 47 22.7	-1.1
	baz=43						
IKRE	**Kreppuhraun**	**0.56**	**46**	P	Pb	18 47 13.9	-1.5
IKRE				S	Sb	18 47 22.7	-1.1
IFAG	**Fagurholsmyri**	**0.61**	**150**	P	Pg	18 47 14.3	-0.2
	baz=151						
IFAG				S	Sg	18 47 22.9	+0.5
	baz=151						
IFAG	**Fagurholsmyri**	**0.61**	**150**	P	Pg	18 47 14.4	-0.2
IFAG				S	Sg	18 47 22.9	+0.5
IBRU	**Bruarjokull**	**0.69**	**51**	P	Pg	18 47 16.1	0.0
	baz=48						
IBRU				S	Sb	18 47 26.1	-1.3
	baz=48						
IBRU	**Bruarjokull**	**0.69**	**51**	P	Pg	18 47 16.0	0.0
IBRU				S	Sb	18 47 26.1	-1.3
IASK	**Askja**	**0.71**	**24**	P	Pg	18 47 16.4	-0.2
	baz=21						
IASK				S	Sb	18 47 26.9	-1.4
	baz=21						
IASK	**Askja**	**0.71**	**24**	P	Pg	18 47 16.4	-0.2
IASK				S	Sb	18 47 26.9	-1.4
IMKO	**Mokollar**	**0.72**	**36**	P	Pg	18 47 16.6	-0.2
	baz=33						
IMKO				S	Sb	18 47 26.9	-1.4
	baz=33						
IMKO	**Mokollar**	**0.72**	**36**	P	Pg	18 47 16.5	-0.2
IMKO				S	Sb	18 47 26.9	-1.4
IVAT	**Vatnsfell**	**0.72**	**253**	P	Pg	18 47 16.7	-0.1
	baz=256						
IVAT				S	Sb	18 47 27.3	-1.2
	baz=256						
IVAT	**Vatnsfell**	**0.72**	**253**	P	Pg	18 47 16.7	-0.1
IVAT				S	Sb	18 47 27.3	-1.2
IVSH	**V-Sauoahnukur**	**0.80**	**59**	P	Pg	18 47 17.7	-0.6
	baz=56						
IVSH				S	Sb	18 47 29.1	-1.7
	baz=56						
IVSH	**V-Sauoahnukur**	**0.80**	**59**	P	Pg	18 47 17.7	-0.6
IVSH				S	Sb	18 47 29.1	-1.7
IHVA	**Hvannstoosfjol**	**0.84**	**48**	P	Pg	18 47 18.7	-0.3
	baz=46						
IHVA				S	Sg	18 47 29.8	0.0
	baz=46						
IHVA	**Hvannstoosfjol**	**0.84**	**48**	P	Pg	18 47 18.7	-0.3
IHVA				S	Sg	18 47 29.8	0.0
ISVA	**Svartarkot**	**0.94**	**2**	P	Pg	18 47 20.2	-0.7
	baz=0.4						
ISVA				S	Sb	18 47 33.3	-1.4
	baz=0.4						
ISVA	**Svartarkot**	**0.94**	**2**	P	Pg	18 47 20.2	-0.7
ISVA				S	Sb	18 47 33.3	-1.4
IADA	**Aoalbol**	**0.98**	**50**	P	Pg	18 47 20.7	-0.9
	baz=48						
IADA				S	Sb	18 47 34.2	-1.5
	baz=48						
IADA	**Aoalbol**	**0.98**	**50**	P	Pg	18 47 20.7	-0.9
IADA				S	Sb	18 47 34.2	-1.5
ISLY	**Slysaalda**	**0.98**	**234**	P	Pg	18 47 20.8	-0.8
	baz=236						
ISLY				S	Sb	18 47 34.3	-1.4
	baz=236						
ISLY	**Slysaalda**	**0.98**	**234**	P	Pg	18 47 20.8	-0.8
ISLY				S	Sb	18 47 34.3	-1.4
IRJU	**Rjupnafell**	**0.98**	**217**	P	Pg	18 47 21.1	-0.7
	baz=220						
IRJU				S	Sb	18 47 35.0	-0.9
	baz=220						
IRJU	**Rjupnafell**	**0.98**	**217**	P	Pg	18 47 21.1	-0.7
IRJU				S	Sb	18 47 35.0	-0.9
IHVE	**Hveravellir**	**1.07**	**297**	P	Pg	18 47 22.7	-0.7
	baz=298						
IHVE	**Hveravellir**	**1.07**	**297**	P	Pg	18 47 22.7	-0.7
IHVO	**Lagu-Hvolar**	**1.11**	**218**	P	Pb	18 47 23.2	-1.4
	baz=220						
IHVO				S	Sn	18 47 38.8	-2.2
	baz=220						
IHVO	**Lagu-Hvolar**	**1.11**	**218**	P	Pb	18 47 23.2	-1.4
IHVO				S	Sn	18 47 38.8	-2.2
IGLU	**Glumsstadir**	**1.13**	**58**	P	Pb	18 47 23.0	-2.0
	baz=56						
IGLU				S	Sg	18 47 38.9	-0.2
	baz=56						
IGLU	**Glumsstadir**	**1.13**	**58**	P	Pb	18 47 23.0	-2.0
IGLU				S	Sg	18 47 38.9	-0.2
IGOD	**Go??abunga**	**1.15**	**231**	P	Pb	18 47 24.1	-1.4
	baz=232						
IGOD				S	Sg	18 47 39.3	-0.5
	baz=232						
IGOD	**Go??abunga**	**1.15**	**231**	P	Pb	18 47 24.1	-1.4
IGOD				S	Sg	18 47 39.3	-0.5
IALF	**Alftagrof**	**1.23**	**223**	P	Pn	18 47 25.2	-1.7
	baz=224						
IALF				S	Sn	18 47 42.2	-1.7
	baz=224						
IHAU	**Haukadalur**	**1.23**	**251**	P	Pn	18 47 25.2	-1.8
	baz=252						
IHAU				S	Sn	18 47 42.3	-1.8
	baz=252						
IHAU	**Haukadalur**	**1.23**	**251**	P	Pn	18 47 25.2	-1.8
IHAU				S	Sn	18 47 42.3	-1.8
ISMJ	**Smjorgil**	**1.26**	**236**	P	Pn	18 47 25.6	-1.7
	baz=237						
IGYG	**Gygjarholskot**	**1.26**	**266**	P	Pn	18 47 25.3	-2.1
	baz=267						
IGYG	**Gygjarholskot**	**1.26**	**266**	P	Pn	18 47 25.3	-2.1
IREN	**Reynihlio**	**1.26**	**8**	P	Pn	18 47 25.3	-2.1
	baz=6.8						
IREN	**Reynihlio**	**1.26**	**8**	P	Pn	18 47 25.3	-2.1
IESK	**Eystri-Skogar**	**1.28**	**228**	P	Pn	18 47 25.6	-2.1
	baz=229						
IESK				S	Sg	18 47 43.8	-0.3
	baz=229						
IESK	**Eystri-Skogar**	**1.28**	**228**	P	Pn	18 47 25.6	-2.1
IESK				S	Sg	18 47 43.8	-0.3
IASO	**Asolfsskalahei**	**1.33**	**234**	P	Pn	18 47 26.7	-1.7
	baz=235						
IASO	**Asolfsskalahei**	**1.33**	**234**	P	Pn	18 47 26.7	-1.7
IGRS	**Grimsstaoir**	**1.34**	**22**	P	Pn	18 47 26.7	-1.8
	baz=20						
IGRS	**Grimsstaoir**	**1.34**	**22**	P	Pn	18 47 26.7	-1.8
IMID	**Miomork**	**1.35**	**238**	P	Pn	18 47 27.3	-1.3
	baz=239						
IMID	**Miomork**	**1.35**	**238**	P	Pn	18 47 27.3	-1.3
ISAU	**Saurbar**	**1.41**	**254**	P	Pn	18 47 28.0	-1.4
	baz=256						
ISAU	**Saurbar**	**1.41**	**254**	P	Pn	18 47 28.0	-1.4
IGHA	**Grjothals**	**1.48**	**11**	P	Pn	18 47 28.6	-1.8
	baz=9.6						
IGHA	**Grjothals**	**1.48**	**11**	P	Pn	18 47 28.6	-1.8
IGRA	**Granastaoir**	**1.53**	**356**	P	Pn	18 47 29.5	-1.5
	baz=355						
IGRA	**Granastaoir**	**1.53**	**356**	P	Pn	18 47 29.5	-1.5
IASM	**Asmuli**	**1.55**	**250**	P	Pn	18 47 30.2	-1.1
	baz=251						
IASM	**Asmuli**	**1.55**	**250**	P	Pn	18 47 30.2	-1.1
IDIM	**Dimmadals¨js**	**1.57**	**6**	P	Pn	18 47 30.4	-1.3
	baz=5.0						
IDIM	**Dimmadals¨js**	**1.57**	**6**	P	Pn	18 47 30.4	-1.3
IHLA	**Hella**	**1.61**	**344**	P	Pn	18 47 30.7	-1.5
	baz=344						
IHLA	**Hella**	**1.61**	**344**	P	Pn	18 47 30.7	-1.5
IVES	**Vestmannaeyjar**	**1.62**	**235**	P	Pn	18 47 31.3	-1.0
	baz=236						
IVES	**Vestmannaeyjar**	**1.62**	**235**	P	Pn	18 47 31.3	-1.0
ISOL	**Solvholt**	**1.65**	**255**	P	Pn	18 47 31.3	-1.4
	baz=256						
ISOL	**Solvholt**	**1.65**	**255**	P	Pn	18 47 31.3	-1.4
IKRO	**Krokur**	**1.68**	**261**	P	Pn	18 47 31.6	-1.6
	baz=262						
IKRO	**Krokur**	**1.68**	**261**	P	Pn	18 47 31.6	-1.6
IHED	**Heoinshofoi**	**1.69**	**0**	P	Pn	18 47 32.1	-1.1
	baz=360						
IHED	**Heoinshofoi**	**1.69**	**0**	P	Pn	18 47 32.1	-1.1
IHEI	**Heioarbar**	**1.71**	**265**	P	Pn	18 47 32.4	-1.2
	baz=266						
IHEI	**Heioarbar**	**1.71**	**265**	P	Pn	18 47 32.4	-1.2
IGIL	**Gilhagi**	**1.73**	**13**	P	Pn	18 47 32.7	-1.2
	baz=12						
IGIL	**Gilhagi**	**1.73**	**13**	P	Pn	18 47 32.7	-1.2
IBRE	**Brettingsstaoi**	**1.75**	**352**	P	Pn	18 47 33.0	-1.0
	baz=352						
IBRE	**Brettingsstaoi**	**1.75**	**352**	P	Pn	18 47 33.0	-1.0
BORG	**Borgarnes**	**1.76**	**283**	Pn	Pn	18 47 33.2	-1.0
	29nm,0.3s,baz=96,slow=12,SNR=4.0						
BORG				Sn	Sb	18 47 56.6	-1.6
	13nm,0.3s,baz=58,slow=17,SNR=3.9						
IASB	**`sbjarnarst**	**1.76**	**283**	P	Pn	18 47 33.0	-1.2
	baz=284						
IASB				S	Sb	18 47 57.0	-1.2
	baz=284						
IASB	**`sbjarnarst**	**1.76**	**283**	P	Pn	18 47 33.0	-1.2
IASB				S	Sb	18 47 57.0	-1.2
IBJA	**Bjarnastaoir**	**1.80**	**257**	P	Pn	18 47 34.0	-0.8
	baz=258						
IBJA	**Bjarnastaoir**	**1.80**	**257**	P	Pn	18 47 34.0	-0.8
ISIG	**Siglufjorour**	**1.86**	**340**	P	Pn	18 47 34.2	-1.4
	baz=339						
ISIG	**Siglufjorour**	**1.86**	**340**	P	Pn	18 47 34.2	-1.4
ISAN	**Sandskeio**	**1.89**	**261**	P	Pn	18 47 34.9	-1.1
	baz=262						
ISAN	**Sandskeio**	**1.89**	**261**	P	Pn	18 47 34.8	-1.1
IKUD	**Kuludalsa**	**1.98**	**270**	P	Pn	18 47 36.4	-0.8
	baz=270						
IKUD	**Kuludalsa**	**1.98**	**270**	P	Pn	18 47 36.4	-0.8
IVOS	**V

DURS	Dursunbey	0.66 319	P		Pg	18 51 33.6	-0.6
DURS	Dursunbey	0.66 319	*i* P		Pg	18 51 33.6	-0.6
MANT	Manisa	0.72 211	P		Pg	18 51 35.2	-0.2
MANT			S		Sg	18 51 44.5	-0.2
MANT	Manisa	0.72 211	*i* P		Pg	18 51 35.2	-0.2
MANT			*i* S		Sg	18 51 44.5	-0.2
KHAL	Karahalli	0.82 154	P		Pg	18 51 37.4	+0.2
KHAL			S		Sg	18 51 48.4	+0.6
KHAL	Karahalli	0.82 154	*i* P		Pg	18 51 37.4	+0.2
KHAL			*i* S		Sg	18 51 48.4	+0.6
KHL	Karahalli	0.87 154	*e*PG		Pg	18 51 38.0	-0.2
KHL			*e*SG		Sg	18 51 49.4	-0.1
KHL	Karahalli	0.87 154	*e*Pg		Pg	18 51 38.0	-0.2
KHL			*e*Sg		Sg	18 51 49.4	-0.1
ORLT	Orhaneli	0.94 353	*e*PG		Pg	18 51 38.9	-0.8
ORLT			*e*SG		Sb	18 51 53.1	-0.1
ORLT	Orhaneli	0.94 353	*e*Pg		Pg	18 51 38.9	-0.8
ORLT			*e*Sg		Sb	18 51 53.1	-0.1
AKHS	Akhisar	0.98 257	P		Pg	18 51 40.1	-0.2
AKHS			S		Sb	18 51 53.3	-0.7
AKHS	Akhisar	0.98 257	*i* P		Pg	18 51 40.1	-0.2
AKHS			*i* S		Sb	18 51 53.3	-0.7
AKS	Akhisar	0.98 257	*e*PG		Pg	18 51 40.0	-0.3
AKS	Akhisar	0.98 257	*e*Pg		Pg	18 51 40.0	-0.3
BALB	Balikesir	1.04 301	*e*PG		Pb	18 51 41.7	-0.3
BALB	Balikesir	1.04 301	*e*Pg		Pb	18 51 41.7	-0.3
IGD	Bursa	1.16 6	*i* P		Pb	18 51 42.0	-2.1
IGD			*i* S		Sg	18 51 59.1	+0.1
CAVI	Cavuskoy	1.26 29	*e*PN		Pn	18 51 44.8	-0.9
CAVI	Cavuskoy	1.26 29	*e*Pn		Pn	18 51 44.8	-0.9
BALY	Balya	1.27 300	P		Pn	18 51 45.1	-0.7
BALY	Balya	1.27 300	*i* P		Pn	18 51 45.1	-0.7
MDNY	Mudanya-Bursa	1.27 355	*e*PN		Pn	18 51 45.2	-0.6
KCTX	Karacabey (Bur	1.27 336	*e*PN		Pn	18 51 45.4	-0.4
IZI	Iznik	1.27 15	*e*PN		Pn	18 51 45.2	-0.8
IZI	Iznik	1.27 15	*e*Pn		Pn	18 51 45.2	-0.8
GEMT	Gemlik	1.33 5	*e*PN		Pb	18 51 46.8	-0.2
DENT	Denizli	1.35 180	*e*PN		Pn	18 51 45.9	-1.0
DENT	Denizli	1.35 180	*e*Pn		Pn	18 51 45.9	-1.0
GONE	Gonen-Balikesi	1.40 312	*e*PN		Pb	18 51 47.6	-0.5
GONE	Gonen-Balikesi	1.40 312	*e*Pn		Pb	18 51 47.7	-0.5
ADVT	Abdulvahap	1.43 22	*e*PN		Pn	18 51 47.6	-0.4
ARMT	Armutlu	1.46 355	*e*PN		Pn	18 51 48.2	-0.3
ARMT	Armutlu	1.46 355	*e*Pn		Pn	18 51 48.2	-0.3
EDC	Edincik	1.53 324	*e*PN		Pb	18 51 49.6	-0.8
EDC	Edincik	1.53 324	*e*Pn		Pb	18 51 49.6	-0.8
GPA	Golpazari	1.54 39	*e*PN		Pn	18 51 49.2	-0.3
GPA	Golpazari	1.54 39	*e*Pn		Pn	18 51 49.2	-0.3
GULT	Gulveren	1.75 40	*e*PN		Pn	18 51 52.4	-0.1
HRT	Hereke	1.78 16	*e*PN		Pn	18 51 52.8	-0.1
HRT	Hereke	1.78 16	*e*Pn		Pn	18 51 52.8	-0.1
SPNC	Sapanca-Adapaz	1.86 31	*e*PN		Pn	18 51 53.8	-0.1
SPNC	Sapanca-Adapaz	1.86 31	*e*Pn		Pn	18 51 53.8	-0.1
ISK	Istanbul-Kandi	1.96 1	*e*PN		Pn	18 51 55.4	+0.2
ISK	Istanbul-Kandi	1.96 1	*e*Pn		Pn	18 51 55.4	+0.2
SVRH	Sivrihisar-ESK	1.96 79	*e*PN		Pn	18 51 54.9	-0.5
SVRH	Sivrihisar-ESK	1.96 79	*e*Pn		Pn	18 51 54.9	-0.5
SILT	Sile	2.10 13	*e*PN		Pn	18 51 57.5	+0.3
SILT	Sile	2.10 13	*e*Pn		Pn	18 51 57.5	+0.3
MDUB	Mudurnu	2.15 50	*e*PN		Pn	18 51 57.9	-0.2
MDUB	Mudurnu	2.15 50	*e*Pn		Pn	18 51 57.9	-0.2
KDZ	Kurdzhali	3.75 314	*i* P		Pg	18 52 40.7	+7.2
DIM	Dimitrovgrad	3.97 319	*i* P		Pn	18 52 25.5	+2.6
PRD	Provadia	4.27 344	*i* P		Pb	18 52 39.7	+2.7
SZH	Strazhica	4.77 332	*i* P		Pn	18 52 36.3	+2.4
TIRR	Tirgusor	5.37 355 ⇑	*i* P		Pn	18 52 42.3	+0.2
TIRR	Tirgusor	5.37 355 ⇑	*i* P		Pn	18 52 42.3	+0.2
SULR		5.94 340 ⇓	*i* P		Pb	18 52 59.9	-5.6
MLR	Muntele Rosu	6.78 341 ⇑	*i* P		Pn	18 53 06.8	+5.2
VRI	Vrincioaia	6.97 347 ⇑	*i* P		Pn	18 53 08.8	+4.7
VOIR		6.98 336 ⇑	*i* P		Pn	18 53 07.1	+2.7
DOPR	Dopca	7.37 340 ⇓	*i* P		Pn	18 53 13.7	+4.1
LOT	Lotru	7.44 330 ⇓	*i* P		Pn	18 53 18.6	+7.9
PDG	Podgorica	8.13 297 ⇓	*i* P		Pn	18 53 17.6	-2.4

*ISCJB **21** 18:53:21.5±0.5, 64°.2N±0°.1×17°.6W±0°.2, h10km, mb3.6/11, Error ellipse: s-maj=17.9km s-min=6.4km az=24.9*
*IDC **21** 18:53:21.6±0.8, 64°.20N×17°.69W, h0km, mb3.6/10, mb1 3.8/12, mb1mx3.6/71, mbtmp3.7/12, ML3.4/2, Error ellipse: s-maj=26.2km s-min=13.2km az=30.0*
ISC 21 18:53:23.0±0.7, 64°.2N±0°.1×17°.66W±0°.09, h10km, n19, σ0°69/20, mb3.7/11, Iceland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BORG	**Borgarnes**	**1.68**	**291**	Pn	**Pn**	**18 53 50.6**	**-1.7**
	21nm,0.3s,baz=80,slow=7.0,SNR=14						
BORG				Sn	**Sn**	**18 54 14.5**	**+0.6**
	13nm,0.3s,baz=75,slow=20,SNR=6.0						
EKA	**Eskdalemuir Ar**	**11.48**	**134**	Pn	**Pn**	**18 56 06.4**	**-0.3**
	baz=321,slow=13,SNR=4.4						
FINES	**FINESS Array B**	**19.87**	**78**	P	**Pn**	**18 57 55.1**	**-0.3**
	0.1nm,0.3s,baz=290,slow=9.9,SNR=3.7						
BRG	**Berggiesshubel**	**21.28**	**114**	*e*P	**P**	**18 58 08.8**	**-0.4**
	23nm,1.8s						
PRU	**Pruhonice**	**22.21**	**115**	*e*P	**P**	**18 58 19.2**	**0.0**
KHC	**Kasperske Hory**	**22.52**	**117**	*e*P	**P**	**18 58 23.2**	**+0.6**
DPC	**Dobruska-Polom**	**22.65**	**112**	*e*P	**P**	**18 58 24.1**	**+0.2**
GERES	**GERESS Array B**	**22.80**	**117**	P	**P**	**18 58 26.7**	**+1.1**
	0.7nm,0.8s,baz=325,slow=10,SNR=3.6						
VYHS	**Vyhne**	**25.12**	**111**	*e*P	**P**	**18 58 48.1**	**+0.4**
VYHS				*e*		18 58 59.8	
ESDC	**Sonseca Array**	**25.86**	**155**	P	**P**	**18 58 54.9**	**+0.4**
	1.5nm,0.9s,baz=350,slow=8.9,SNR=7.2						
KOLS	**Kolonicke sedl**	**26.20**	**107**	*e*P	**P**	**18 58 57.6**	**+0.1**
AKASG	**Malin Array Be**	**27.86**	**97**	P	**P**	**18 59 11.2**	**-1.1**
	0.5nm,0.4s,baz=317,slow=9.8,SNR=4.2						
BRTR	**Keskin Array B**	**38.43**	**104**	P	**P**	**19 00 44.5**	**-0.1**
	1.6nm,0.9s,baz=336,slow=7.3,SNR=6.6						
YKA	**Yellowknife Ar**	**39.48**	**314**	P	**P**	**19 00 53.2**	**+0.3**
	0.7nm,1.0s,baz=41,slow=8.6,SNR=6.7						
ILAR	**Eielson Array**	**46.07**	**333**	P	**P**	**19 01 47.2**	**+0.9**
	1.9nm,1.1s,baz=27,slow=6.1,SNR=10						
TORD	**Torodi Ar. Bea**	**52.74**	**156**	P	**P**	**19 02 37.9**	**+0.1**
	0.8nm,0.8s,baz=339,slow=7.5,SNR=4.8						
MKAR	**Makanchi Array**	**53.03**	**58**	P	**P**	**19 02 39.4**	**-0.3**
	1.1nm,0.9s,baz=349,slow=9.1,SNR=6.3						
PDAR	**Pinedale Array**	**53.30**	**293**	P	**P**	**19 02 42.4**	**+0.5**
	0.2nm,0.5s,baz=48,slow=8.9,SNR=4.5						
SONM	**Songino Array**	**60.04**	**40**	P	**P**	**19 03 29.6**	**0.0**
	0.1nm,0.3s,baz=320,slow=6.3,SNR=3.6						

*IDC **21** 18:58:17.2±1.4, 6°.63S×150°.73E, h0km, mb4.1/6, mb1 4.4/7, mb1mx3.8/49, mbtmp4.2/7, ML2.1/1, MS3.2/2, Ms1 3.2/2, ms1mx2.7/32, Error ellipse: s-maj=54.0km s-min=20.7km az=118.0*
*ISCJB **21** 18:58:21.6±0.6, 6°.55S±0°.07×150°.33E±0°.10, h33km, mb4.1/10, MS3.0/2, Error ellipse: s-maj=15.5km s-min=7.1km az=32.2*
*NEIC **21** 18:58:23.1±1.0, 6°.76S×150°.73E, h42km±11km, mb4.3/12, Error ellipse: s-maj=13.3km s-min=8.4km az=122.0*
ISC 21 18:58:23.0±0.8, 6°.5S±0°.1×150°.4E±0°.1, h33km, n30, σ1°09/29, mb4.1/10, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RABL	**Rabaul**	**2.91**	**37**	*e*Pn	**Pn**	**18 59 07.8**	**+0.7**
PMG	**Port Moresby**	**4.29**	**228**	Pn	**Pn**	**18 59 28.0**	**+1.9**
	6.5nm,0.3s,baz=44,slow=8.1,SNR=30						
PMG				Sn	**Sn**	**19 00 15.0**	**-0.1**
	17nm,0.3s,baz=340,slow=15,SNR=13						
PMG	**Port Moresby**	**4.29**	**228**	*e*Pn	**Pn**	**18 59 27.8**	**+1.8**
PMG				*e*Sn	**Sn**	**19 00 12.5**	**-2.6**
MANU	**Manus Island**	**5.38**	**326**	*e*Pn	Pn	18 59 48.1	+7.0
HNR	**Honiara**	**9.89**	**108**	*e*Pn	Pn	19 00 35.3	-7.6
COEN	**Coen**	**10.24**	**223**	*e*Pn	**Pn**	**19 00 48.1**	**+0.3**
EIDS	**Eidsvold**	**18.75**	**178**	*e*P	**P**	**19 02 38.9**	**-0.3**
	16nm,1.2s						
MTN	**Manton Dam**	**19.99**	**250**	*e*P	**Pn**	**19 02 54.2**	**-0.6**
	40nm,1.6s						
WRAB	**Tennant Creek**	**20.50**	**228**	*e*P	**P**	**19 02 58.2**	**-0.3**
	17nm,0.9s						
WB2	**Warramunga Arr**	**20.51**	**228**	*e*P	**P**	**19 02 57.8**	**-0.7**
	12nm,0.8s						
WR1	**Warramunga Arr**	**20.52**	**228**	*e*P	**P**	**19 02 58.6**	**0.0**
	14nm,0.9s						
WRA	**Warramunga Arr**	**20.52**	**228**	P	**P**	**19 02 58.6**	**0.0**
	14nm,0.9s,baz=52,slow=11,SNR=45						
GUMO	**Guam**	**20.72**	**345**	LR	LR	19 09 27.4	
	comp=Z,32nm,20.7s,baz=152,slow=32						
AS01	**Alice Springs**	**23.24**	**221**	*e*P	**P**	**19 03 27.1**	**-0.6**
AS31	**Alice Springs**	**23.27**	**221**	*e*P	**P**	**19 03 28.8**	**+0.8**
	3.7nm,1.3s						
ASAR	**Alice Springs**	**23.27**	**221**	P	**P**	**19 03 27.6**	**-0.3**
	4.0nm,0.8s,baz=55,slow=9.1,SNR=52						
ARMA	**Armidale**	**23.80**	**177**	*e*P	**P**	**19 03 33.6**	**+0.6**
	19nm,1.0s						
STKA	**Stephens Creek**	**26.53**	**197**	P	**P**	**19 03 56.7**	**-1.0**
	4.3nm,0.7s,baz=20,slow=12,SNR=6.5						
STKA				LR	LR	19 13 15.0	
	comp=Z,91nm,18.4s,baz=24,slow=34						
STKA	**Stephens Creek**	**26.53**	**197**	*e*P	**P**	**19 03 57.0**	**-0.8**
	5.5nm,1.5s						
FITZ	**Fitzroy Crossi**	**26.74**	**242**	P	**P**	**19 04 00.3**	**+0.5**
	2.8nm,0.6s,baz=64,slow=7.1,SNR=14						
FITZ	**Fitzroy Crossi**	**26.74**	**242**	*e*P	**P**	**19 04 01.3**	**+1.5**
	16nm,1.3s						
SBUM	**Sibu**	**39.14**	**282**	*e*P	**P**	**19 05 46.0**	**-1.9**
	4.6nm,1.3s						
SSLB	**Suanglung**	**41.64**	**317**	*e*P	**P**	**19 06 08.8**	**+0.3**
	23nm,1.8s						
SONA0	**Songino Array**	**66.54**	**329**	*e*P	**P**	**19 09 10.6**	**+0.7**
	7.1nm,1.9s						
SONM	**Songino Array**	**66.54**	**329**	P	**P**	**19 09 10.6**	**+0.7**
	1.1nm,1.0s,baz=130,slow=5.8,SNR=5.5						
SONA1	**Songino Array**	**66.54**	**329**	*e*P	**P**	**19 09 10.0**	**+0.1**
IL1	**Eielson Array**	**84.66**	**22**	*e*P	**P**	**19 10 53.4**	**+0.3**
ILAR	**Eielson Array**	**84.66**	**22**	P	**P**	**19 10 51.7**	**-1.4**
	1.3nm,0.9s,baz=256,slow=4.9,SNR=10.0						
ILB	**Eielson Array**	**84.66**	**22**	*e*P	**P**	**19 10 53.6**	**+0.5**
TORD	**Torodi Ar. Bea**	**148.49**	**284**	PKPbc	**PKPbc**	**19 18 09.3**	**+1.9**
	1.6nm,0.8s,baz=81,slow=2.8,SNR=8.2						

*IDC **21** 18:58:25.0±0.9, 64°.25N×17°.59W, h0km, mb3.4/8, mb1 3.7/9, mb1mx3.4/71, mbtmp3.5/9, ML3.6/1, Error ellipse: s-maj=37.1km s-min=13.7km az=32.0*
*ISCJB **21** 18:58:25.0±0.5, 64°.2N±0°.2×17°.6W±0°.2, h9km, mb3.4/9, Error ellipse: s-maj=25.5km s-min=6.6km az=26.3*
ISC 21 18:58:26.3±0.7, 64°.2N±0°.2×17°.7W±0°.1, h9km, n15, σ0°73/16, mb3.5/9, Iceland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BORG	**Borgarnes**	**1.68**	**290**	Pn	**Pn**	**18 58 54.9**	**-0.8**
	16nm,0.3s,baz=107,slow=7.4,SNR=11						
BORG				Sn	**Sb**	**18 59 18.6**	**+0.3**
	10.0nm,0.3s,baz=21,slow=17,SNR=6.9						
EKA	**Eskdalemuir Ar**	**11.49**	**134**	Pn	**Pn**	**19 01 10.0**	**-0.4**
	baz=326,slow=14,SNR=3.5						
BRG	**Berggiesshubel**	**21.29**	**114**	*e*P	**P**	**19 03 12.7**	**-0.1**
	16nm,1.7s						
PRU	**Pruhonice**	**22.22**	**115**	*e*P	**P**	**19 03 22.9**	**+0.1**
UPC	**Upice**	**22.41**	**112**	*e*P	**P**	**19 03 25.7**	**+0.9**
KHC	**Kasperske Hory**	**22.53**	**117**	*e*P	**P**	**19 03 27.5**	**+1.4**
DPC	**Dobruska-Polom**	**22.66**	**112**	*e*P	**P**	**19 03 27.8**	**+0.3**
GERES	**GERESS Array B**	**22.81**	**118**	P	**P**	**19 03 29.8**	**+0.7**
	0.4nm,0.7s,baz=321,slow=11,SNR=3.7						
ESDC	**Sonseca Array**	**25.88**	**155**	P	**P**	**19 03 58.6**	**+0.4**
	0.4nm,0.4s,baz=348,slow=7.8,SNR=7.6						
AKASG	**Malin Array Be**	**27.85**	**97**	P	**P**	**19 04 15.2**	**-0.6**
	0.3nm,0.3s,baz=319,slow=9.8,SNR=3.6						
BRTR	**Keskin Array B**	**38.43**	**104**	P	**P**	**19 05 46.9**	**-1.1**
	0.8nm,0.8s,baz=344,slow=9.4,SNR=5.3						
YKA	**Yellowknife Ar**	**39.47**	**314**	P	**P**	**19 05 56.7**	**+0.5**
	0.3nm,0.7s,baz=42,slow=8.4,SNR=5.0						
ILAR	**Eielson Array**	**46.05**	**333**	P	**P**	**19 06 50.2**	**+0.6**
	0.6nm,1.0s,baz=23,slow=5.3,SNR=5.2						
TORD	**Torodi Ar. Bea**	**52.77**	**156**	P	**P**	**19 07 41.8**	**+0.4**
	0.5nm,0.8s,baz=338,slow=8.1,SNR=3.3						
PDAR	**Pinedale Array**	**53.29**	**293**	P	**P**	**19 07 45.0**	**-0.3**
	0.1nm,0.3s,baz=45,slow=9.0,SNR=4.0						

*ISCJB **21** 19:04:00.0±0.6, 7°.64S±0°.08×127°.76E±0°.09, h33km, mb3.9/9, Error ellipse: s-maj=15.6km s-min=8.1km az=137.5*
*IDC **21** 19:04:12.3±4.6, 7°.78S×127°.28E, h127km±43km, mb3.6/9, mb1 3.7/10, mb1mx3.4/46, mbtmp4.0/10, Error ellipse: s-maj=43.6km s-min=14.7km az=64.0*
ISC 21 19:04:01.9±0.7, 7°.79S±0°.08×127°.8E±0°.1, h35km, n13, σ2°99/16, mb3.9/9, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAPI	**Kappang**	**8.49**	**288**	P	**Pn**	**19 06 03.5**	**+1.1**
	1.0nm,0.3s,baz=154,slow=14,SNR=6.9						
KAPI				S	**Sn**	**19 07 36.7**	**-0.3**
	0.2nm,0.3s,baz=21,slow=17,SNR=2.0						
FITZ	**Fitzroy Crossi**	**10.47**	**192**	P	**Pn**	**19 06 31.1**	**+1.5**
	0.6nm,0.3s,baz=1.2,slow=12,SNR=18						
FITZ				S	Sn	19 08 17.9	-7.8
	3.3nm,0.3s,baz=195,slow=23,SNR=10.0						
WRA	**Warramunga Arr**	**13.63**	**153**	P	**Pn**	**19 07 15.7**	**+2.8**
	1.2nm,0.3s,baz=324,slow=14,SNR=62						
WRA				S	**Sn**	**19 09 38.0**	**-5.1**
	3.2nm,0.3s,baz=334,slow=21,SNR=19						
ASAR	**Alice Springs**	**16.83**	**160**	P	**Pn**	**19 07 57.7**	**+2.8**
	1.8nm,0.3s,baz=329,slow=10.0,SNR=40						
ASAR				S	**Sn**	**19 10 55.3**	**-5.6**
	1.2nm,0.3s,baz=317,slow=18,SNR=9.6						
STKA	**Stephens Creek**	**27.18**	**154**	P	**P**	**19 09 46.2**	**+4.0**
	5.0nm,0.4s,baz=332,slow=8.9,SNR=26						
CMAR	**Chiang Mai Arr**	**38.63**	**313**	P	**P**	**19 11 20.9**	**-1.4**
	1.0nm,0.5s,baz=142,slow=6.3,SNR=8.1						
KSRS	**Korea Array**	**45.01**	**0**	P	**P**	**19 12 16.4**	**+2.4**
	0.6nm,0.6s,baz=179,slow=10.0,SNR=4.8						
SONM	**Songino Array**	**58.54**	**343**	P	**P**	**19 13 54.7**	**-0.3**
	0.5nm,0.5s,baz=169,slow=7.1,SNR=5.9						
MKAR	**Makanchi Array**	**67.73**	**328**	P	**P**	**19 14 54.2**	**-1.7**
	0.7nm,0.6s,baz=122,slow=7.4,SNR=7.6						
ZALV	**Zalesovo Beam**	**71.36**	**335**	P	**P**	**19 15 15.6**	**-2.5**
	1.3nm,0.6s,baz=117,slow=5.5,SNR=6.4						
VNDA	**Vanda**	**71.94**	**173**	P	**P**	**19 15 22.4**	**+1.2**
	0.6nm,0.6s,baz=316,slow=7.4,SNR=8.3						
BVAR	**Borovoye Array**	**77.60**	**329**	P	**P**	**19 15 52.3**	**-2.0**
	0.5nm,0.8s,baz=157,slow=4.1,SNR=4.0						
TIXI	**Tiksi**	**79.28**	**0**	P	**P**	**19 16 02.8**	**-0.4**
	0.6nm,0.4s,baz=134,slow=4.9,SNR=8.0						

*GUC **21** 19:05:39.3±0.6, 34°.11S×72°.55W, h43km±4km, ML3.7*
ISC 21 19:05:37.9±2.9, 33°.97S±0°.06×72°.5W±0°.1, h2km±19km, n10, σ0°75/15, 4C, Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHPI	**Pichilemu**	**0.56**	**139** ⇑	*i*P	**Pb**	**19 05 50.8**	**+0.3**
CHPI				*i* S	**Sb**	**19 05 59.2**	**+0.2**
ROCH	**El Roble**	**1.56**	**51**	*e*P	**Pb**	**19 06 07.0**	**-0.6**
ROCH				*e*S	**Sg**	**19 06 29.2**	**+1.1**
ROCH				IAML		19 06 39.2	
	comp=N,1μm,0.5s						
ANTU	**Antumapu**	**1.56**	**76**	*e*P	**Pb**	**19 06 07.1**	**-0.6**
ANTU				*e*S	**Sg**	**19 06 28.0**	**-0.2**
ANTU				IAML		19 06 32.5	
	comp=N,1μm,0.4s						
TALC	**Talca**	**1.58**	**155** ⇑	*i*P	**Pg**	**19 06 08.4**	**+0.2**
TALC				*i* S	**Sb**	**19 06 27.6**	**-0.7**
PEL	**Peldehue**	**1.69**	**61** ⇑	*i*P	**Pb**	**19 06 09.2**	**-0.6**
PEL				*e*S	**Sb**	**19 06 31.6**	**+0.1**
PEL				IAML		19 06 41.8	
	comp=N,1μm,0.6s						
CLCH	**Cerro Calan**	**1.69**	**71** ⇑	*i*P	**Pb**	**19 06 09.2**	**-0.7**
CLCH				*i* S	**Sg**	**19 06 32.1**	**-0.3**
CLCH				IAML		19 06 45.4	
	comp=N,986nm,1.0s						
AUSP	**Uspallata**	**3.10**	**57**	*e*P	**Pb**	**19 06 34.6**	**+0.5**
AUSP				*e*S	**Sg**	**19 07 16.7**	**-1.0**
ACAN	**Cantantal**	**4.73**	**71**	*e*P	Pb	19 06 56.1	-5.5
ACAN				*e*S	**Sb**	**19 08 00.1**	**+1.1**
MRA	**San Martin**	**5.85**	**77**	*e*P	Pn	19 07 10.2	+4.3
MRA				IAML		19 08 53.8	
	comp=Z,18nm,0.6s						
TCA	**Tanti**	**7.12**	**71**	*e*P	Pn	19 07 28.6	+5.2
TCA				IAML		19 07 30.2	
	comp=Z,12nm,0.4s						
TCA				*e*S	Sn	19 08 53.0	+8.0

*ISCJB **21** 19:05:52.8±0.3, 64°.27N±0°.07×17°.4W±0°.1, h9km, mb4.2/30, MS3.3/13, Error ellipse: s-maj=11.3km s-min=4.7km az=32.8*

*IDC **21** 19:05:52.7±0.9, 64°.24N×17°.59W, h0km, mb3.6/7, mb1 3.9/8, mb1mx3.5/71, mbtmp3.7/8, ML4.2/1, MS3.3/14, Ms1 3.3/14, ms1mx3.2/40, Error ellipse: s-maj=31.4km s-min=14.4km az=36.0*
*CSEM **21** 19:05:53.0±0.1, 64°.33N×17°.31W, h2km, mb4.4/21, Error ellipse: s-maj=10.5km s-min=4.6km az=35.0*
*NEIC **21** 19:05:54.6±0.3, 64°.30N×17°.28W, h10km, mb4.4/23, Error ellipse: s-maj=10.4km s-min=4.7km az=218.0*
ISC 21 19:05:53.8±0.5, 64°.3N±0°.1×17°.47W±0°.06, h9km, n100, σ1°42/91, mb4.3/30, MS3.4/13, Iceland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BORG	**Borgarnes**	**1.73**	**287**	Pn	**Pn**	**19 06 22.0**	**-1.9**
	18nm,0.3s,baz=102,slow=9.9,SNR=18						
BORG				Sn	**Sn**	**19 06 45.8**	**-0.3**
	17nm,0.3s,baz=122,slow=6.9,SNR=5.2						
BORG	**Borgarnes**	**1.73**	**287**	*e*Pn	**Pn**	**19 06 21.6**	**-2.3**
BORG				*e*Sn	**Sb**	**19 06 48.1**	**+0.7**
EKA	**Eskdalemuir Ar**	**11.49**	**135**	Pn	**Pn**	**19 08 37.8**	**0.0**
	baz=324,slow=13,SNR=3.4						
NC204	**NORSAR Array S**	**13.21**	**90**	*e*Pn	**Pn**	**19 08 59.2**	**-2.1**
NC204	**NORSAR Array S**	**13.21**	**90**	*e*Pn	**Pn**	**19 08 59.2**	**-2.1**
NBO00	**NORSAR Array S**	**13.32**	**91**	*e*Pn	**Pn**	**19 09 00.9**	**-1.9**
NBO00	**NORSAR Array S**	**13.32**	**91**	*e*Pn	**Pn**	**19 09 00.9**	**-1.9**
NOA	**NORSAR Array B**	**13.51**	**91**	LR	LR	19 14 30.5	
	comp=Z,89nm,18.9s,baz=300,slow=38						
SFJD	**Kangerlussuaq**	**13.84**	**296**	*e*Pn	**Pn**	**19 09 08.9**	**-0.8**
SFJD	**Kangerlussuaq**	**13.84**	**296**	*e*Pn	**Pn**	**19 09 08.9**	**-0.8**
CLL	**Collm**	**20.54**	**115**	*e*P	**P**	**19 10 31.8**	**-0.3**
	11nm,1.5s						
CLL	**Collm**	**20.54**	**115**	*e*P	**P**	**19 10 31.8**	**-0.3**
	11nm,1.5s						
STU	**Stuttgart**	**21.15**	**125**	*e*P	**P**	**19 10 39.8**	**+1.1**
	47nm,2.0s						
STU	**Stuttgart**	**21.15**	**125**	*e*P	**P**	**19 10 39.8**	**+1.1**
	47nm,2.0s						
BFO	**Black Forest**	**21.22**	**127**	*e*P	**P**	**19 10 40.7**	**+1.2**
	16nm,1.4s						
BFO	**Black Forest**	**21.22**	**127**	*e*P	**P**	**19 10 40.7**	**+1.2**
	16nm,1.4s						
BRG	**Berggiesshubel**	**21.25**	**114**	*e*P	**P**	**19 10 40.5**	**+0.7**
	19nm,1.8s						
FRB	**Frobisher Bay**	**21.90**	**292**	LR	LR	19 17 28.4	
	comp=Z,77nm,21.8s,baz=200,slow=32						
PRU	**Pruhonice**	**22.18**	**115**	*e*P	**P**	**19 10 50.1**	**+0.3**
PRU	**Pruhonice**	**22.18**	**115**	P	**P**	**19 10 50.1**	**+0.3**
GOPC	**GO Pecny, Ondr**	**22.34**	**115**	*e*P	**P**	**19 10 52.5**	**+1.0**
GOPC	**GO Pecny, Ondr**	**22.34**	**115**	P	**P**	**19 10 52.5**	**+1.0**
KHC	**Kasperske Hory**	**22.49**	**118**	*e*P	**P**	**19 10 52.5**	**-0.7**
KHC	**Kasperske Hory**	**22.49**	**118**	*e*P	**P**	**19 10 53.7**	**+0.5**
	5.5nm,1.6s						
KHC	**Kasperske Hory**	**22.49**	**118**	*e*P	**P**	**19 10 53.7**	**+0.5**
	5.5nm,1.6s						
SENIN	**Lac Senin/Sane**	**22.57**	**131**	*e*P	**P**	**19 10 53.9**	**-0.4**
	29nm,2.0s						
SENIN	**Lac Senin/Sane**	**22.57**	**131**	*e*P	**P**	**19 10 53.9**	**-0.4**
	29nm,2.0s						
DPC	**Dobruska-Polom**	**22.61**	**112**	*e*P	**P**	**19 10 54.2**	**-0.2**
DPC	**Dobruska-Polom**	**22.61**	**112**	P	**P**	**19 10 54.2**	**-0.2**
SSB	**Saint Sauveur**	**22.67**	**137**	*e*P	**P**	**19 10 56.0**	**+0.8**
	31nm,1.9s						
SSB	**Saint Sauveur**	**22.67**	**137**	*e*P	**P**	**19 10 56.0**	**+0.8**
	31nm,1.9s						
GEC2	**GERESS Array S**	**22.77**	**118**	*e*P	**P**	**19 10 55.9**	**-0.3**
	10nm,1.4s						
GEC2	**GERESS Array S**	**22.77**	**118**	*e*P	**P**	**19 10 55.9**	**-0.3**
	10nm,1.4s						
GERES	**GERESS Array B**	**22.77**	**118**	P	**P**	**19 10 56.2**	**0.0**
	0.7nm,0.9s,baz=350,slow=5.3,SNR=5.1						
GERES				LR	LR	19 19 56.8	
	comp=Z,102nm,18.8s,baz=322,slow=37						
GEA0	**GERESS Array S**	**22.77**	**118

COLA	College 15nm,0.3s	46.12 333	*e*P	P	19 14 20.7 +3.1
MLY	Manley 2.3nm,1.0s	46.53 335	*e*P	P	19 14 22.4 +1.4
MLY	Manley 2.3nm,1.0s	46.53 335	*e*P	P	19 14 22.4 +1.4
BALM	Baldy 11nm,1.5s	48.34 328	*e*P	P	19 14 37.2 +2.1
BALM	Baldy 11nm,1.5s	48.34 328	*e*P	P	19 14 37.2 +2.1
TNA	Tin City 7.3nm,1.2s	48.66 344	*e*P	P	19 14 38.2 +0.8
TNA	Tin City 7.4nm,1.2s	48.66 344	*e*P	P	19 14 38.2 +0.8
TOA1	Torodi Ar. Sit 8.1nm,1.4s	52.79 156	*e*P	P	19 15 08.7 -0.4
TOA1	Torodi Ar. Sit 8.1nm,1.4s	52.79 156	*e*P	P	19 15 08.7 -0.4
TORD	Torodi Ar. Bea 0.7nm,0.9s,baz=341,slow=9.5,SNR=4.5	52.80 156	P	P	19 15 08.7 -0.4
DBIC	Dimbokro comp=Z,43nm,18.8s,baz=340,slow=37	58.23 165	LR	LR	19 41 41.2
TXAR	Lajitas Array comp=Z,58nm,19.5s,baz=0.0,slow=36	62.36 280	LR	LR	19 42 49.8

*IDC **21** 19:06:47.9±1.1,30°.10S×177°.45W,h0km,mb4.4/6, mb1 4.5/7,mb1mx4.0/43,mbtmp4.3/7,ML3.5/1,Error ellipse: s-maj=29.0km s-min=22.5km az=127.0*
*NEIC **21** 19:06:52.0±2.9,30°.13S×177°.55W,h27km±19km,mb4.5/16, Error ellipse: s-maj=14.6km s-min=9.4km az=96.0*
*ISCJB **21** 19:06:52.2±0.6,30°.17S±0°.04×177°.7W±0°.1,h35km, mb4.5/14,Error ellipse: s-maj=15.3km s-min=4.4km az=11.6*

ISC 21 19:06:53.2±0.7,30°.06S±0°.05×177°.6W±0°.1,h35km,n63, σ1§38/62,mb4.5/14,Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	0.84	342	Pn	Pn	19 07 08.1	-0.6
	4μm,0.3s,baz=102,slow=7.8,SNR=279						
RAO				Sn	Sn	19 07 18.2	-1.5
	4μm,0.3s,baz=78,slow=20,SNR=24						
RAO	**Raoul Island**	0.84	342	*e*Pn	Pn	19 07 08.0	-0.6
RAO				*e*Sn	Sn	19 07 16.9	-2.8
RAO				*e*Sn	Sn	19 07 18.2	-1.5
MXZ	**Matakaoa Point**	8.22	203	*e*Pn	Pn	19 08 50.0	+0.1
MXZ				*e*Sn	Sn	19 10 19.7	-1.7
WMGZ	**Waiomatatini S**	8.41	202	PN	Pn	19 08 52.3	-0.3
WMGZ				SN	Sn	19 10 27.7	+1.4
HAZ	**Te Kaha**	8.58	205	PN	Pn	19 08 54.4	-0.4
HAZ				SN	Sn	19 10 33.1	+2.8
PUZ	**Puketiti**	8.69	202	PN	Pn	19 08 56.3	-0.2
PUZ				SN	Sn	19 10 31.8	-1.5
OUZ	**Omahuta**	9.02	233	*e*Pn	Pn	19 09 10.1	+9.2
MWZ	**Matawai**	9.18	205	PN	Pn	19 09 03.1	-0.1
MWZ				SN	Sn	19 10 45.7	+0.5
URZ	**Urewera**	9.27	207	Pn	Pn	19 09 03.5	-0.9
	0.5nm,0.3s,baz=265,slow=3.7,SNR=11						
URZ				Sn	Sn	19 10 47.0	-0.3
	1.6nm,0.3s,baz=226,slow=20,SNR=9.8						
URZ	**Urewera**	9.27	207	*e*Pn	Pn	19 09 02.7	-1.6
URZ				*e*Sn	Sn	19 10 47.0	-0.3
URZ	**Urewera**	9.27	207	PN	Pn	19 09 02.5	-1.8
URZ				SN	Sn	19 10 48.6	+1.2
BKZ	**Black Stump Fm**	10.30	206	*e*Pn	Pn	19 09 13.4	-5.1
BFZ	**Birch Farm**	11.72	204	*e*Pn	Pn	19 09 34.3	-3.6
THZ	**Tophouse**	13.96	211	*e*Pn	Pn	19 10 08.9	+0.3
KHZ	**Kahutara**	14.24	208	*e*Pn	Pn	19 10 11.0	-1.2
OXZ	**Oxford** 28nm,1.5s	15.61	209	*e*Pn	Pn	19 10 29.9	-0.5
MQZ	**McQueen's Vall** 103nm,2.0s	15.67	207	*e*Pn	Pn	19 10 30.1	-1.2
RPZ	**Rata Peaks** 38nm,1.5s	16.34	210	*e*Pn	Pn	19 10 40.0	+0.1
FOZ	**Fox Glacier** 48nm,1.6s	16.77	213	*e*Pn	Pn	19 10 42.3	-2.9
ODZ	**Otahua Downs** 26nm,1.3s	17.59	208	*e*Pn	Pn	19 10 54.8	-0.7
WKZ	**Wanaka** 48nm,1.3s	18.13	212	*e*Pn	Pn	19 11 00.7	-1.4
MLZ	**Mavora Lakes** 62nm,1.5s	18.95	212	*e*P	P	19 11 10.4	-0.8
WHZ	**Wether Hill Ro** 106nm,1.9s	19.43	212	*e*P	P	19 11 16.9	+0.5
ARMA	**Armidale** 24nm,1.6s	26.53	261	*e*P	P	19 12 24.3	-3.5
CTA	**Charters Tower** 6.0nm,0.6s,baz=106,slow=12,SNR=6.5	34.07	278	P	P	19 13 36.8	+2.4
STKA	**Stephens Creek** 1.7nm,0.4s,baz=101,slow=8.4,SNR=5.8	34.88	256	P	P	19 13 43.8	+2.4
STKA	**Stephens Creek** 7.0nm,1.6s	34.88	256	*e*P	P	19 13 43.0	+1.7
AS01	**Alice Springs**	43.41	266	*e*P	P	19 14 53.6	+0.8
AS31	**Alice Springs** 2.9nm,1.2s	43.45	266	*e*P	P	19 14 53.3	+0.1
ASAR	**Alice Springs** 2.0nm,0.5s,baz=105,slow=7.4,SNR=6.4	43.45	266	P	P	19 14 53.1	0.0
WB2	**Warramunga Arr** 9.2nm,0.6s	44.40	272	*e*P	P	19 15 00.9	+0.2
WRAB	**Tennant Creek** 8.1nm,0.6s	44.41	272	*e*P	P	19 15 00.9	+0.1
WR1	**Warramunga Arr** 12nm,0.5s	44.41	272	*e*P	P	19 15 00.9	+0.1
WRA	**Warramunga Arr** 8.3nm,0.6s,baz=110,slow=7.8,SNR=18	44.41	272	P	P	19 15 00.9	+0.1
MAW	**Mawson** 6.0nm,1.8s	72.74	200	*e*P	P	19 18 16.1	-1.3
SBUM	**Sibu** 2.9nm,1.0s	74.17	282	*e*P	P	19 18 25.8	-0.8
SNAA	**Sanae**	78.49	178	P	P	19 18 56.2	+5.9
VNA3	**Neumayer Olymp**	78.62	176	P	P	19 18 57.9	+6.9
VNA2	**Neumayer--Watz** baz=172,slow=3.1	79.06	177	P	P	19 19 00.7	+7.3
PETK	**Petropavlovsk-** 1.4nm,0.6s,baz=60,slow=9.0,SNR=4.7	85.56	345	P	P	19 19 29.5	+2.1
PEA1	**Petropavlovsk-**	85.57	345	*e*P	P	19 19 29.5	+2.1
NV01	**Mina Array Sit**	87.77	43	*e*P	P	19 19 40.1	+1.4
NVAR	**Mina Array Bea** 0.2nm,0.5s,baz=230,slow=7.0,SNR=4.0	87.77	43	P	P	19 19 40.2	+1.4
RLMT	**Red Lodge** 35nm,1.0s	97.21	42	*e*P	P	19 20 22.3	0.0
H10S3	**ASCENSION HYDR** baz=204,slow=75,SNR=29	137.89	154	T	T	22 01 20.4	
H10S2	**ASCENSION HYDR** baz=204,slow=75,SNR=26	137.90	154	T	T	22 01 12.0	
H10S1	**ASCENSION HYDR** baz=204,slow=75,SNR=32	137.91	154	T	T	22 01 20.8	
H10N3	**ASCENSION HYDR** baz=204,slow=75,SNR=24	138.98	154	T	T	22 02 40.8	
H10N1	**ASCENSION HYDR** baz=204,slow=75,SNR=28	138.98	154	T	T	22 02 41.0	
H10N2	**ASCENSION HYDR** baz=204,slow=75,SNR=22	138.99	154	T	T	22 02 41.8	
FIA0	**FINESS Array S**	144.93	340	*e*PKPbc	PKPab	19 26 24.8	-0.4
FINES	**FINESS Array B** 4.8nm,0.4s,baz=53,slow=3.8,SNR=67	144.93	340	PKPbc	PKPab	19 26 24.8	-0.4
NB2	**NORSAR Subarra** comp=Z,1.8nm,0.6s,baz=12,slow=2.9	148.46	352	PKP	PKPbc	19 26 35.3	-0.2
NB200	**NORSAR Array S**	148.46	352	*e*PKPbc	PKPbc	19 26 35.3	-0.2
NOA	**NORSAR Array B** comp=Z,2.1nm,0.6s,baz=14,slow=4.3,SNR=6.1	148.46	352	PKPbc	PKPbc	19 26 35.3	-0.2
HFS	**Hagfors** comp=Z,3.2nm,0.6s,baz=64,slow=3.4,SNR=11	148.97	349	PKPbc	PKPbc	19 26 36.1	-0.6
AKASG	**Malin Array Be** comp=Z,1.0nm,0.4s,baz=49,slow=3.2,SNR=7.4	151.22	323	PKPbc	PKPbc	19 26 41.2	-1.2
AKBB	**Malin Array Si**	151.22	323	*e*PKPbc	PKPbc	19 26 41.2	-1.2
AK11	**Malin Array Si**	151.27	323	*e*PKPbc	PKPbc	19 26 42.1	-0.5
MMAI	**Mount Meron Ar** comp=Z,2.1nm,0.7s,baz=243,slow=5.5,SNR=4.2	151.76	285	PKPbc	PKPbc	19 26 45.1	+0.7
BR101	**Keskin Array S**	152.72	299	*e*PKPbc	PKPbc	19 26 46.2	-0.3
BRTR	**Keskin Array B** comp=Z,0.7nm,0.8s,baz=72,slow=2.5,SNR=5.1	152.72	299	PKPbc	PKPbc	19 26 46.2	-0.3
BR231	**Keskin MP Arra**	153.35	300	*e*PKPbc	PKPbc	19 26 46.4	-1.4

MAN 21 19:14:12,6°.37N×124°.76E,h32km,mb4.5,ML3.3,MS3.2, 1D,Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GSPH	**General Santos**	0.34	146	*e*P	Pn	19 14 23.6	+2.7
CTBH	**Cotabato--PC H**	0.98	329	⇓*i*P	Pn	19 14 29.8	+0.2
CTBH				*i*S	Sn	19 14 42.3	-0.2
IPIL	**Ipil**	2.59	303	*e*P	Pn	19 14 53.0	+1.4
IPIL				*e*S	Sn	19 15 23.3	+1.3

IDC 21 19:16:58.0±276.0,64°.69N×17°.37W,h0km,Error ellipse: s-maj=152.6km s-min=142.1km az=143.0,Iceland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I18DK	**QAANAAQ INFRAS** baz=106,slow=319,SNR=4.5	20.12	330	*i*		21 22 09.2	
I26DE	**FREYUNG INFRAS** baz=326,slow=328,SNR=4.1	22.91	119	*i*		21 36 55.3	
I42PT	**GRACIOSA ISLAN** baz=16,slow=307,SNR=20	26.43	199	*i*		22 00 25.0	
I43RU	**DUBNA INFRASON** baz=310,slow=321,SNR=2.7	27.05	81	*i*		22 02 19.5	
I31KZ	**AKTYUBINSK INF** baz=321,slow=304,SNR=2.4	40.26	73	*i*		23 56 20.0	

*LDG **21** 19:17:57.5±0.2,42°.36N×13°.44E,h20km,Ml3.0/6,Error ellipse: s-maj=7.3km s-min=4.9km az=52.0*
*ISCJB **21** 19:17:58.5±0.2,42°.39N±0°.01×13°.39E±0°.02,h6km±1km, mb3.4/2,Error ellipse: s-maj=2.9km s-min=1.7km az=136.1*
*ROM **21** 19:17:58.7±0.1,42°.37N×13°.42E,h9km,Ml3.3/57,Error ellipse: s-maj=1.2km s-min=0.7km az=58.0*
*PRU **21** 19:17:58.3,42°.39N×13°.27E,h0km*
*IASPEI **21** 19:17:58.9±1.0,42°.38N±0°.02×13°.42E±0°.02,h9km±4km, Error ellipse: s-maj=2.9km s-min=2.1km az=53.5,GT5 selection from ISC bulletin GT5 identified by Bond¨jr and McLaughlin (2009) selection criteria Bond¨jr and McLaughlin, A new ground truth data set for seismic studies, Seism. Res. Let., 80, 465-472, 2009*
*IDC **21** 19:17:59.9±1.3,42°.56N×13°.19E,h0km,mb3.4/3, mb1 3.6/7,mb1mx3.3/53,mbtmp3.5/7,ML3.2/4,Error ellipse: s-maj=23.5km s-min=14.2km az=93.0*
*CSEM **21** 19:17:59.0±0.1,42°.37N×13°.37E,h2km,ML3.6/21,Error ellipse: s-maj=2.4km s-min=1.7km az=40.0*
*PDG **21** 19:17:59.0±0.2,42°.42N×13°.46E,h1km±1km,ML3.5/12, Error ellipse: s-maj=0.9km s-min=2.6km az=0.0*

ISC 21 19:18:00.0±0.8,42°.38N±0°.01×13°.41E±0°.02,h6km±4km, n258,σ1§34/333,18C-12D,Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AQU	**L'Aquila**	0.02	197	⇑*i*Pg	Pg	19 18 00.5	-0.7
AQU				Sg	Sg	19 18 01.7	-0.3
	186μm,0.3s						
AQU	**L'Aquila**	0.02	197	⇑*i*Pg	Pg	19 18 00.5	-0.7
AQU				Sg	Sg	19 18 01.7	-0.3
	186μm,0.3s						
T0104	**Madonna delle**	0.06	255	⇑*i*Pg	Pg	19 18 01.1	-0.5
T0104				Sg	Sg	19 18 02.7	+0.1
FAGN	**Fagnano**	0.17	130	Pg	Pg	19 18 02.8	-0.6
FAGN				Sg	Sg	19 18 05.8	+0.1
	34μm,0.8s						
FAGN	**Fagnano**	0.17	130	Pg	Pg	19 18 02.8	-0.6
FAGN				Sg	Sg	19 18 05.8	+0.1
	34μm,0.8s						
RM33	**Pellescritta (**	0.20	313	Pg	Pg	19 18 03.5	-0.5
RM33				Sg	Sg	19 18 07.1	+0.4
	7μm,0.3s						
RM33	**Pellescritta (**	0.20	313	Pg	Pg	19 18 03.5	-0.5
RM32	**Poggio Cancell**	0.21	336	Pg	Pg	19 18 03.7	-0.6
RM32				Sg	Sg	19 18 07.3	+0.1
	18μm,0.3s						
RM32	**Poggio Cancell**	0.21	336	Pg	Pg	19 18 03.7	-0.6
RM32				Sg	Sg	19 18 07.3	+0.1
	18μm,0.3s						
RM29	**Verrico (Monte**	0.24	320	Pg	Pg	19 18 04.3	-0.5
RM29				Sg	Sg	19 18 08.6	+0.6
	10μm,0.5s						
RM29	**Verrico (Monte**	0.24	320	Pg	Pg	19 18 04.3	-0.5
FIAM	**Fiamignano**	0.24	244	Pg	Pg	19 18 04.4	-0.4
FIAM				Sg	Sg	19 18 08.7	+0.7
	8μm,0.5s						
FIAM	**Fiamignano**	0.24	244	Pg	Pg	19 18 04.4	-0.4
FIAM				Sg	Sg	19 18 08.7	+0.7
	8μm,0.5s						
VCEL	**Villa Celiera**	0.32	86	Pg	Pg	19 18 05.4	-0.9
VCEL				Sg	Sg	19 18 11.1	+0.6
	11μm,0.4s						
VCEL	**Villa Celiera**	0.32	86	Pg	Pg	19 18 05.4	-0.9
VCEL				Sg	Sg	19 18 11.1	+0.6
	11μm,0.4s						
PTQR	**Pietraquaria**	0.35	181	Pg	Pg	19 18 06.1	-0.8
PTQR				Sg	Sg	19 18 11.7	+0.1
PTQR	**Pietraquaria**	0.35	181	Pg	Pg	19 18 06.1	-0.8
PTQR				Sg	Sg	19 18 11.7	+0.1
LNSS	**Leonessa**	0.36	310	Pg	Pg	19 18 06.3	-0.7
LNSS				Sg	Sg	19 18 11.6	-0.1
	4μm,0.4s						
LNSS	**Leonessa**	0.36	310	Pg	Pg	19 18 06.3	-0.7
LNSS				Sg	Sg	19 18 11.6	-0.1
	4μm,0.4s						
NRCA	**Norcia**	0.51	335	Pg	Pg	19 18 08.6	-1.3
NRCA				Sg	Sg	19 18 16.5	0.0
	2μm,0.2s						
NRCA	**Norcia**	0.51	335	Pg	Pg	19 18 08.6	-1.3
NRCA				Sg	Sg	19 18 16.5	0.0
	2μm,0.2s						
INTR	**Introdacqua**	0.52	135	Pg	Pg	19 18 08.8	-1.2
INTR				Sg	Sg	19 18 17.1	+0.4
	4μm,0.6s						
INTR	**Introdacqua**	0.52	135	Pg	Pg	19 18 08.8	-1.2
INTR				Sg	Sg	19 18 17.1	+0.4
	4μm,0.6s						
VVLD	**Villa Vallelon**	0.53	163	Pg	Pg	19 18 08.9	-1.3
VVLD				Sg	Sg	19 18 16.9	-0.2
	1μm,0.6s						
VVLD	**Villa Vallelon**	0.53	163	Pg	Pg	19 18 08.9	-1.3
VVLD				Sg	Sg	19 18 16.9	-0.2
	1μm,0.6s						
CERT	**Cerreto** 2μm,0.4s	0.53	217	Pg	Pg	19 18 09.2	-1.1
CERT	**Cerreto** 2μm,0.4s	0.53	217	Pg	Pg	19 18 09.2	-1.1
TRTR	**Tortoreto Alta** 6μm,0.7s	0.57	40	Pg	Pg	19 18 11.0	0.0
TRTR	**Tortoreto Alta** 6μm,0.7s	0.57	40	Pg	Pg	19 18 11.0	0.0
GUAR	**Guarcino** 1μm,0.4s	0.58	187	Pg	Pg	19 18 10.0	-1.3
GUAR	**Guarcino** 1μm,0.4s	0.58	187	Pg	Pg	19 18 10.0	-1.3
OFFI	**Offida** 10μm,0.6s	0.60	20	Pg	Pg	19 18 11.2	-0.3
OFFI	**Offida** 10μm,0.6s	0.60	20	Pg	Pg	19 18 11.2	-0.3
MTCE	**Montecelio** 1μm,0.6s	0.61	235	Pg	Pg	19 18 10.6	-1.1
MTCE	**Montecelio** 1μm,0.6s	0.61	235	Pg	Pg	19 18 10.6	-1.1
CESX	**Cesi** 862nm,0.4s	0.66	291	Pg	Pg	19 18 12.3	-0.4
CESX	**Cesi** 862nm,0.4s	0.66	291	Pg	Pg	19 18 12.3	-0.4
POFI	**Posta Fibreno** 547nm,0.6s	0.69	161	Pg	Pg	19 18 11.7	-1.7
POFI	**Posta Fibreno** 547nm,0.6s	0.69	161	Pg	Pg	19 18 11.7	-1.7
FDMO	**Fiordimonte**	0.70	340	Pg	Pg	19 18 12.0	-1.6
FDMO				Sg	Sg	19 18 23.1	+0.4
	937nm,0.2s						
FDMO	**Fiordimonte**	0.70	340	Pg	Pg	19 18 12.0	-1.6
FDMO				Sg	Sg	19 18 23.1	+0.4
	937nm,0.2s						
CAFR	**Castel Frentan** 4μm,0.4s	0.71	102	Pg	Pg	19 18 12.7	-1.0
CAFR	**Castel Frentan** 4μm,0.4s	0.71	102	Pg	Pg	19 18 12.7	-1.0
CESI	**CESI - Serrava** 501nm,0.4s	0.73	330	Pg	Pg	19 18 12.6	-1.5
CESI	**CESI - Serrava** 501nm,0.4s	0.73	330	Pg	Pg	19 18 12.6	-1.5
RMP	**Rome, Mte Porz** 1μm,0.4s	0.77	223	Pg	Pg	19 18 13.7	-1.1
RMP	**Rome, Mte Porz** 1μm,0.4s	0.77	223	Pg	Pg	19 18 13.7	-1.1
GUMA	**Gualdo di Mace** 8μm,0.4s	0.79	29	Pg	Pg	19 18 12.2	-3.0
GUMA	**Gualdo di Mace** 8μm,0.4s	0.79	29	Pg	Pg	19 18 12.2	-3.0
RDP	**Rocca di Papa** 2μm,0.5s	0.80	220	Pg	Pg	19 18 15.1	-0.4
RDP	**Rocca di Papa** 2μm,0.5s	0.80	220	Pg	Pg	19 18 15.1	-0.4
RNI2	**Rionero Sannit**	0.87	140	Pg	Pg	19 18 15.0	-1.7
RNI2	**Rionero Sannit**	0.87	140	Pg	Pg	19 18 15.0	-1.7
CERA	**Filignano** 690nm,0.5s	0.90	150	Pg	Pg	19 18 15.1	-2.2
CERA	**Filignano** 690nm,0.5s	0.90	150	Pg	Pg	19 18 15.1	-2.2
SNTG	**Esanatoglia** 451nm,0.7s	0.94	339	Pg	Pg	19 18 16.3	-1.9
SNTG	**Esanatoglia** 451nm,0.7s	0.94	339	Pg	Pg	19 18 16.3	-1.9
MIDA	**Miranda** 478nm,0.4s	0.96	139	Pg	Pg	19 18 16.3	-2.3
MIDA	**Miranda** 478nm,0.4s	0.96	139	Pg	Pg	19 18 16.3	-2.3
CING	**Cingoli** 607nm,0.4s	1.01	351	Pg	Pg	19 18 17.5	-2.0
CING	**Cingoli** 607nm,0.4s	1.01	351	Pg	Pg	19 18 17.5	-2.0
FRES	**Fresagrandinar** 581nm,0.6s	1.02	113	Pg	Pg	19 18 17.5	-2.1
FRES	**Fresagrandinar** 581nm,0.6s	1.02	113	Pg	Pg	19 18 17.5	-2.1
TRIV	**Trivento** 540nm,0.9s	1.04	125	Pg	Pg	19 18 18.3	-1.8
TRIV	**Trivento** 540nm,0.9s	1.04	125	Pg	Pg	19 18 18.3	-1.8
TOLF	**Tolfa** 315nm,0.7s	1.09	254	Pg	Pg	19 18 20.0	-1.0
TOLF	**Tolfa** 315nm,0.7s	1.09	254	Pg	Pg	19 18 20.0	-1.0
MGAB	**Montegabbione** 613nm,0.5s	1.10	300	Pg	Pg	19 18 19.7	-1.4
MGAB	**Montegabbione** 613nm,0.5s	1.10	300	Pg	Pg	19 18 19.7	-1.4
MURB	**Monte Urbino** 1μm,0.4s	1.10	324	Pg	Pg	19 18 19.6	-1.6
MURB	**Monte Urbino** 1μm,0.4s	1.10	324	Pg	Pg	19 18 19.6	-1.6
ATTE	**AVT- Monte Tez** 335nm,0.7s	1.13	317	Pg	Pg	19 18 20.8	-1.0
ATTE	**AVT- Monte Tez** 335nm,0.7s	1.13	317	Pg	Pg	19 18 20.8	-1.0
VAGA	**Valle Agricola** 348nm,0.6s	1.14	147	Pg	Pg	19 18 19.7	-2.2
VAGA	**Valle Agricola** 348nm,0.6s	1.14	147	Pg	Pg	19 18 19.7	-2.2
SSFR	**Montelago di S** 628nm,0.3s	1.16	337	Pg	Pg	19 18 20.0	-2.2
SSFR	**Montelago di S** 628nm,0.3s	1.16	337	Pg	Pg	19 18 20.0	-2.2
ARVD	**Arcevia** 364nm,0.6s	1.17	343	Pg	Pg	19 18 20.3	-2.3
ARVD	**Arcevia** 364nm,0.6s	1.17	343	Pg	Pg	19 18 20.3	-2.3
AOI	**Ancona** 685nm,0.5s	1.18	7	Pg	Pg	19 18 21.1	-1.6
AOI	**Ancona** 685nm,0.5s	1.18	7	Pg	Pg	19 18 21.1	-1.6
SACS	**San Casciano d** 628nm,1.2s	1.21	294	Pg	Pg	19 18 22.0	-1.2
BSSO	**Busso** 326nm,0.8s	1.21	133	Pg	Pg	19 18 21.0	-2.2
BSSO	**Busso** 326nm,0.8s	1.21	133	Pg	Pg	19 18 21.0	-2.2
LATE	**Laterza** 391nm,0.5s	1.21	282	Pg	Pg	19 18 22.7	-0.6
LATE	**Laterza** 391nm,0.5s	1.21	282	Pg	Pg	19 18 22.7	-0.6
ATVO	**AVT- Monte Val** 339nm,0.5s	1.25	324	Pg	Pg	19 18 21.9	-2.1
ATVO	**AVT- Monte Val** 339nm,0.5s	1.25	324	Pg	Pg	19 18 21.9	-2.1
FRON	**Frontone** 439nm,0.6s	1.25	336	Pg	Pg	19 18 21.8	-2.2
FRON	**Frontone** 439nm,0.6s	1.25	336	Pg	Pg	19 18 21.8	-2.2
ATPC	**Poggio Castell** 569nm,0.5s	1.31	328	Pg	Pn	19 18 23.2	-1.8
ATPC	**Poggio Castell** 569nm,0.5s	1.31	328	Pg	Pn	19 18 23.2	-1.8
PTRJ	**Pietraroja** 830nm,0.7s	1.31	140	Pg	Pn	19 18 23.3	-1.7
PTRJ	**Pietraroja** 830nm,0.7s	1.31	140	Pg	Pn	19 18 23.3	-1.7
CIGN	**Sant'Elia a Pi** 248nm,1.0s	1.33	122	Pg	Pn	19 18 22.6	-2.6
PIEI	**Pieia** 275nm,0.7s	1.33	331	Pg	Pn	19 18 23.0	-2.2
PIEI	**Pieia** 275nm,0.7s	1.33	331	Pg	Pn	19 18 23.0	-2.2
SACR	**S. Croce Del S** 268nm,0.8s	1.37	135	Pg	Pn	19 18 25.0	-0.9
SACR	**S. Croce Del S** 268nm,0.8s	1.37	135	Pg	Pn	19 18 25.0	-0.9
FSSB	**Fossombrone** 752nm,0.5s	1.40	341	Pg	Pn	19 18 24.5	-1.7
FSSB	**Fossombrone** 752nm,0.5s	1.40	341	Pg	Pn	19 18 24.5	-1.7
BADI	**Badiali** 719nm,0.7s	1.42	323	Pg	Pn	19 18 25.8	-0.7
BADI	**Badiali** 719nm,0.7s	1.42	323	Pg	Pn	19 18 25.8	-0.7
CAFI	**Castiglion Fio** 217nm,0.7s	1.43	312	Pg	Pn	19 18 25.9	-0.7
CAFI	**Castiglion Fio** 217nm,0.7s	1.43	312	Pg	Pn	19 18 25.9	-0.7
PARC	**Parchiule** 347nm,0.8s	1.54	326	Pg	Pn	19 18 27.6	-0.5
PARC	**Parchiule** 347nm,0.8s	1.54	326	Pg	Pn	19 18 27.6	-0.5
PESA	**Pesaro** 501nm,0.6s	1.62	345	Pg	Pb	19 18 29.5	-0.9
PESA	**Pesaro** 501nm,0.6s	1.62	345	Pg	Pb	19 18 29.5	-0.9
MAON	**Monte Argentar** 80nm,0.8s	1.69	273	Pg	Pn	19 18 29.4	-0.7
MAON	**Monte Argentar** 80nm,0.8s	1.69	273	Pg	Pn	19 18 29.4	-0.7
FROS	**Frosini** 122nm,1.0s	1.86	297	Pg	Pn	19 18 32.0	-0.5
FROS	**Frosini** 122nm,1.0s	1.86	297	Pg	Pn	19 18 32.0	-0.5
SFI	**Santa Sofia** 416nm,1.8s	1.91	324	Pg	Pn	19 18 33.1	-0.1
SFI	**Santa Sofia** 416nm,1.8s	1.91	324	Pg	Pn	19 18 33.1	-0.1
TRIF	**Trifonti** 43nm,0.7s	1.99	293	Pg	Pn	19 18 34.0	-0.3
TRIF	**Trifonti** 43nm,0.7s	1.99	293	Pg	Pn	19 18 34.0	-0.3
MS1	**Monte Sant'Ang**	2.00	109	*e*Pn	Pb	19 18 35.8	-1.1
NVLJ	**Novalja**	2.43	25	*e*Pn	Pn	19 18 39.1	-1.3
NVLJ				Sn	Sn	19 19 10.0	-0.5
NVLJ	**Novalja**	2.43	25	*e*Pn	Pn	19 18 39.0	-1.3
NVLJ				Sn	Sn	19 19 09.9	-0.5
MRVN	**Minervino Murg** 32nm,0.5s	2.46	121	Pg	Pn	19 18 40.6	-0.2
CDT	**Castel del Mon**	2.50	120	*e*Pn	Pn	19 18 41.7	+0.3
MAIM	**Mastiano**	2.63	307	P	Pn	19 18 43.3	+0.2
SARO	**Sassorosso**	2.85	310	P	Pn	19 18 45.7	-0.4
BAI	**Bari**	2.89	115	*e*Pn	Pn	19 18 42.7	-3.9
SG1	**Sgolgore (BA)**	2.89	121	*e*Pn	Pn	19 18 46.7	0.0
RIY	**Rijeka**	3.05	14	*e*Pn	Pn	19 18 48.0	-0.8
NOCI	**Noci**	3.17	119	P	Sn	19 18 29.9	+0.3
PGF	**Pioggiola**	3.27	275	*e*P	Pn	19 18 52.4	+0.4
PGF	**Pioggiola**	3.27	275	*e*P	Pn	19 18 52.4	+0.4
BOJS	**Bojanci**	3.40	22	*i* Pn	Pn	19 18 54.0	+0.3
BOJS	**Bojanci**	3.40

HCY				*e*Sn	**Sn**	**19 19 44.6**	**+1.3**
HCY	**Herceg Novi**	**3.77**	**87**	⇑*i*Pn	**Pn**	**19 18 59.4**	**+0.7**
HCY				*e*Sn	**Sn**	**19 19 44.6**	**+1.3**
BRY	**Bratogost**	**3.82**	**80**	⇓*i*Pn	**Pn**	**19 18 59.9**	**+0.3**
BRY				*e*Sn	**Sn**	**19 19 46.0**	**+1.1**
BRY	**Bratogost**	**3.82**	**80**	⇓*i*Pn	**Pn**	**19 18 59.9**	**+0.3**
BRY				*e*Sn	**Sn**	**19 19 46.0**	**+1.1**
BUM	**Brajici-Budva**	**4.07**	**89**	⇓*i*Pn	**Pn**	**19 19 03.1**	**+0.2**
BUM				*e*Sn	**Sn**	**19 19 52.3**	**+1.5**
BUM	**Brajici-Budva**	**4.07**	**89**	⇓*i*Pn	**Pn**	**19 19 03.1**	**+0.2**
BUM				*e*Sn	**Sn**	**19 19 52.3**	**+1.5**
CEME	**Cevo**	**4.08**	**86**	*e*Pn	**Pn**	**19 19 03.0**	**-0.1**
CEME				*e*Sn	**Sn**	**19 19 52.5**	**+1.3**
CEME	**Cevo**	**4.08**	**86**	*e*Pn	**Pn**	**19 19 03.0**	**-0.1**
CEME				*e*Sn	**Sn**	**19 19 52.5**	**+1.3**
NKME	**Niksic**	**4.11**	**83**	⇑*i*Pn	**Pn**	**19 19 03.6**	**+0.1**
NKME				*e*Sn	**Sn**	**19 19 53.1**	**+1.1**
NKME	**Niksic**	**4.11**	**83**	⇑*i*Pn	**Pn**	**19 19 03.6**	**+0.1**
NKME				*e*Sn	**Sn**	**19 19 53.1**	**+1.1**
UPM	**Unac-Piva**	**4.13**	**77**	⇑*i*Pn	**Pn**	**19 19 03.8**	**-0.1**
UPM				*e*Sn	**Sn**	**19 19 53.0**	**+0.4**
UPM	**Unac-Piva**	**4.13**	**77**	⇑*i*Pn	**Pn**	**19 19 03.8**	**-0.1**
UPM				*e*Sn	**Sn**	**19 19 53.0**	**+0.4**
OBKA	**Obir**	**4.21**	**11**	*i* Pn	**Pn**	**19 19 05.8**	**+0.9**
	3.0nm,0.3s						
OBKA				*e*Sn	**Sn**	**19 19 55.7**	**+1.2**
	27nm,0.8s						
OBKA				Sg	**Sg**	**19 20 15.2**	**-0.1**
	46nm,0.8s						
OBKA	**Obir**	**4.21**	**11**	Pn	**Pn**	**19 19 05.8**	**+0.9**
	3.0nm,0.3s						
OBKA				Sn	**Sn**	**19 19 55.7**	**+1.2**
	27nm,0.8s						
OBKA				Sg	**Sg**	**19 20 15.2**	**-0.1**
	46nm,0.8s						
MYKA	**Terra Mystica**	**4.26**	**2**	*e*Pn	**Pn**	**19 19 05.3**	**-0.2**
	3.6nm,0.5s						
MYKA				*e*Sn	**Sn**	**19 19 56.9**	**+1.3**
	8.8nm,0.5s						
MYKA	**Terra Mystica**	**4.26**	**2**	Pn	**Pn**	**19 19 05.3**	**-0.2**
	3.6nm,0.5s						
MYKA				Sn	**Sn**	**19 19 56.9**	**+1.3**
	8.8nm,0.5s						
DRME	**Dracevica, Mon**	**4.29**	**91**	⇓*i*Pn	**Pn**	**19 19 06.3**	**+0.4**
DRME				*e*Sn	**Sn**	**19 19 57.4**	**+1.2**
DRME	**Dracevica, Mon**	**4.29**	**91**	⇓*i*Pn	**Pn**	**19 19 06.3**	**+0.4**
DRME				*e*Sn	**Sn**	**19 19 57.4**	**+1.2**
PDG	**Podgorica**	**4.33**	**87**	⇓*i*P	**Pn**	**19 19 07.3**	**+0.9**
PDG	**Podgorica**	**4.33**	**87**	⇓*i*Pn	**Pn**	**19 19 06.6**	**+0.2**
PDG	**Podgorica**	**4.33**	**87**	⇓*i*P	**Pn**	**19 19 07.3**	**+0.9**
PDG				*e*Sn	**Sn**	**19 19 58.1**	**+0.9**
TTG	**Podgorica**	**4.33**	**87**	⇓*i*Pn	**Pn**	**19 19 06.6**	**+0.2**
TTG				*e*Sn	**Sn**	**19 19 58.1**	**+0.9**
ULC	**Ulcinj**	**4.36**	**93**	⇑*i*Pn	**Pn**	**19 19 06.8**	**0.0**
ULC				*e*Sn	**Sn**	**19 19 59.0**	**+1.1**
ULC	**Ulcinj**	**4.36**	**93**	⇑*i*Pn	**Pn**	**19 19 06.8**	**0.0**
ULC				*e*Sn	**Sn**	**19 19 59.0**	**+1.1**
HAPS	**Han Pijesak,BI**	**4.39**	**65**	*e*Pn	**Pn**	**19 19 06.2**	**-1.2**
ABTA	**Abfaltersbach**	**4.42**	**352**	*e*Pn	**Pn**	**19 19 07.5**	**-0.3**
	11nm,0.4s,SNR=15						
ABTA				*e*Sn	**Sn**	**19 19 59.8**	**+0.2**
	18nm,0.5s						
ABTA	**Abfaltersbach**	**4.42**	**352**	Pn	**Pn**	**19 19 07.5**	**-0.3**
	11nm,0.4s,SNR=15						
ABTA				Sn	**Sn**	**19 19 59.8**	**+0.2**
	18nm,0.5s						
PERS	**Pernice**	**4.43**	**15**	*i* Pn	**Pn**	**19 19 08.2**	**+0.3**
PERS	**Pernice**	**4.43**	**15**	*i* Pn	**Pn**	**19 19 08.2**	**+0.3**
SOKA	**Soboth**	**4.46**	**15**	*e*Pn	**Pn**	**19 19 09.0**	**+0.7**
	2.2nm,0.4s						
SOKA				*e*Sn	**Sn**	**19 20 00.6**	**+0.1**
	6.2nm,0.9s						
SOKA	**Soboth**	**4.46**	**15**	Pn	**Pn**	**19 19 09.0**	**+0.7**
	2.2nm,0.4s						
SOKA				Sn	**Sn**	**19 20 00.6**	**+0.1**
	6.2nm,0.9s						
PLE	**Pljevlja**	**4.50**	**76**	*e*Pn	**Pn**	**19 19 09.6**	**+0.7**
PLE				*e*Sn	**Sn**	**19 20 02.3**	**+0.7**
PLE	**Pljevlja**	**4.50**	**76**	*e*Pn	**Pn**	**19 19 09.6**	**+0.7**
PLE				*e*Sn	**Sn**	**19 20 02.3**	**+0.7**
SBF	**Sospel**	**4.62**	**291**	*e*P	**Pn**	**19 19 11.1**	**+0.6**
SBF				*e*Sn	Sn	19 19 52.2	-12
	3.1nm,0.4s						
SBF	**Sospel**	**4.62**	**291**	*e*P	**Pn**	**19 19 11.1**	**+0.6**
BBLS	**Lazići**	**4.63**	**69**	⇓*i*Pn	**Pn**	**19 19 11.4**	**+0.7**
KBA	**Koelnbreinsper**	**4.70**	**359**	*i* Pn	**Pn**	**19 19 11.3**	**-0.4**
	4.1nm,0.5s						
KBA				*i* Sn	**Sn**	**19 20 05.2**	**-1.5**
	8.5nm,0.5s						
KBA	**Koelnbreinsper**	**4.70**	**359**	Pn	**Pn**	**19 19 11.3**	**-0.4**
	4.1nm,0.5s						
KBA				Sn	**Sn**	**19 20 05.2**	**-1.5**
	8.5nm,0.5s						
BEY	**Berane**	**4.81**	**82**	*e*Pn	**Pn**	**19 19 13.8**	**+0.7**
BEY				*e*Sn	**Sn**	**19 20 09.8**	**+0.6**
IVA	**Berane**	**4.81**	**82**	*e*Pn	**Pn**	**19 19 13.8**	**+0.7**
IVA				*e*Sn	**Sn**	**19 20 09.8**	**+0.6**
PVY	**Plav**	**4.85**	**85**	⇑*i*Pn	**Pn**	**19 19 13.9**	**+0.2**
PVY				*e*Sn	**Sn**	**19 20 10.9**	**+0.7**
TIR	**Tirane**	**4.93**	**100**	P	Pb	19 19 21.2	-5.5
TEKS	**Tekeris**	**4.96**	**62**	*e*Pn	**Pn**	**19 19 14.6**	**-0.5**
FETA	**Feichten**	**5.02**	**339**	*e*Pn	**Pn**	**19 19 18.1**	**+2.0**
	9.7nm,0.9s						
FETA	**Feichten**	**5.02**	**339**	Pn	**Pn**	**19 19 18.1**	**+2.0**
	9.7nm,0.9s						
WTTA	**Wattenberg**	**5.05**	**346**	*i* Pn	**Pn**	**19 19 19.8**	**+3.3**
	5.3nm,0.7s						
WTTA				*e*Sn	**Sn**	**19 20 14.5**	**-0.7**
	14nm,1.0s						
WTTA	**Wattenberg**	**5.05**	**346**	Pn	**Pn**	**19 19 19.8**	**+3.3**
	5.3nm,0.7s						
WTTA				Sn	**Sn**	**19 20 14.5**	**-0.7**
	14nm,1.0s						
DAVOX	**Davos/Dischmat**	**5.08**	**331**	Pn	**Pn**	**19 19 18.2**	**+1.4**
	1.5nm,0.3s,baz=145,slow=15,SNR=11						
DAVOX				Sn	**Sn**	**19 20 19.2**	**+3.3**
	1.1nm,0.3s,baz=319,slow=12,SNR=4.6						
IVAS	**Ivanjica**	**5.09**	**74**	*e*Pn	**Pn**	**19 19 17.1**	**+0.1**
ARSA	**Arzberg**	**5.10**	**16**	*e*Pn	**Pn**	**19 19 16.4**	**-0.7**
	3.8nm,0.5s						
ARSA				*i* Sn	**Sn**	**19 20 13.9**	**-2.4**
	2.9nm,0.6s						
ARSA	**Arzberg**	**5.10**	**16**	Pn	**Pn**	**19 19 16.4**	**-0.7**
	3.8nm,0.5s						
ARSA				Sn	**Sn**	**19 20 13.9**	**-2.4**
	2.9nm,0.6s						
FRF	**La Foret Royal**	**5.10**	**286**	*e*P	**Pn**	**19 19 16.8**	**-0.3**
FRF				*e*Sn	Sn	19 20 04.5	-12
	1.1nm,0.3s						
FRF	**La Foret Royal**	**5.10**	**286**	*e*P	**Pn**	**19 19 16.8**	**-0.3**
DIVS	**Divibare**	**5.11**	**68**	*e*Pn	**Pn**	**19 19 15.5**	**-1.7**
LMR	**La Mourre**	**5.16**	**283**	*e*P	**Pn**	**19 19 17.5**	**-0.4**
LMR	**La Mourre**	**5.16**	**283**	*e*P	**Pn**	**19 19 17.5**	**-0.4**
MOTA	**Moosalm**	**5.23**	**343**	*i* Pn	**Pn**	**19 19 20.3**	**+1.3**
	1.4nm,0.2s						
MOTA				*e*Sn	**Sn**	**19 20 19.0**	**-0.7**
	3.5nm,0.5s						
MOTA	**Moosalm**	**5.23**	**343**	Pn	**Pn**	**19 19 20.3**	**+1.3**
	1.4nm,0.2s						
MOTA				Sn	**Sn**	**19 20 19.0**	**-0.7**
	3.5nm,0.5s						
MBDF	**Montbardon**	**5.37**	**298**	*e*Pn	Pn	19 19 13.6	-7.2
MBDF				*e*Sn	Sn	19 20 11.3	-12
	1.5nm,0.4s						
FGSL	**Fruska Gora**	**5.40**	**57**	*e*Pn	**Pn**	**19 19 23.2**	**+2.0**
TRUS	**Trudelj**	**5.43**	**68**	*e*Pn	**Pn**	**19 19 21.5**	**-0.1**
RETA	**Reutte**	**5.45**	**341**	*i* Pn	**Pn**	**19 19 22.9**	**+1.1**
	1.8nm,0.3s						
RETA				*e*Sn	**Sn**	**19 20 27.3**	**+2.4**
	5.9nm,0.5s						
RETA	**Reutte**	**5.45**	**341**	Pn	**Pn**	**19 19 22.9**	**+1.1**
	1.8nm,0.3s						
MOA	**Molln**	**5.51**	**6**	*i* Pn	**Pn**	**19 19 22.8**	**+0.1**
	3.3nm,0.4s						
MOA				*i* Sn	**Sn**	**19 20 26.4**	**+0.1**
	12nm,0.9s						
MOA	**Molln**	**5.51**	**6**	Pn	**Pn**	**19 19 22.8**	**+0.1**
	3.3nm,0.4s						
MOA				Sn	**Sn**	**19 20 26.4**	**+0.1**
	12nm,0.9s						
DAVA	**Damuels**	**5.51**	**334**	*i* Pn	**Pn**	**19 19 23.6**	**+0.7**
	5.5nm,0.4s						
DAVA				*e*Sn	**Sn**	**19 20 25.9**	**-0.8**
	13nm,0.6s						
DAVA	**Damuels**	**5.51**	**334**	Pn	**Pn**	**19 19 23.6**	**+0.7**
	5.5nm,0.4s						
DAVA				Sn	**Sn**	**19 20 25.9**	**-0.8**
	13nm,0.6s						
GRUS	**Gruza**	**5.55**	**72**	*e*Pn	**Pn**	**19 19 23.4**	**+0.1**
LPG	**La Plagne**	**5.73**	**305**	*e*P	**Pn**	**19 19 26.7**	**+0.7**
LPG	**La Plagne**	**5.73**	**305**	*e*P	**Pn**	**19 19 26.7**	**+0.7**
SELS	**Selova**	**5.73**	**79**	*e*Pn	**Pn**	**19 19 25.8**	**0.0**
LPL	**La Plagne**	**5.75**	**305**	*e*P	**Pn**	**19 19 24.1**	**-2.1**
LPL	**La Plagne**	**5.75**	**305**	*e*P	**Pn**	**19 19 24.1**	**-2.1**
CONA	**Conrad Observa**	**5.82**	**16**	*i* Pn	**Pn**	**19 19 26.2**	**-0.8**
	1.9nm,0.4s						
CONA				*e*Sn	**Sn**	**19 20 33.9**	**-0.1**
	3.2nm,0.5s						
CONA	**Conrad Observa**	**5.82**	**16**	Pn	**Pn**	**19 19 26.2**	**-0.8**
	1.9nm,0.4s						
CONA				Sn	**Sn**	**19 20 33.9**	**-0.1**
	3.2nm,0.5s						
SGD	**Sagiada**	**5.85**	**116**	P	**Pn**	**19 19 28.9**	**+1.5**
IGT	**Igoumenitsa**	**5.96**	**116**	P	**Pn**	**19 19 29.4**	**+0.5**
IGT				AML	AML	19 19 33.3	
	comp=E,25µm,0.4s						
IGT				AML	AML	19 19 37.1	
	comp=N,22µm,0.4s						
ORIF	**Oris-en-Rattie**	**6.03**	**298**	*e*P	**Pn**	**19 19 29.1**	**-0.7**
ORIF	**Oris-en-Rattie**	**6.03**	**298**	*e*P	**Pn**	**19 19 29.1**	**-0.7**
NEST	**Nestorio**	**6.07**	**106**	P	**Pn**	**19 19 31.6**	**+1.1**
NEST				AML	AML	19 19 40.8	
	comp=E,30µm,0.4s						
NEST				AML	AML	19 19 44.7	
	comp=N,31µm,0.3s						
FNA	**Florina**	**6.18**	**102**	P	**Pn**	**19 19 33.3**	**+1.3**
PENT	**Pentalofos**	**6.21**	**108**	P	**Pn**	**19 19 32.9**	**+0.4**
KPRO	**Kipourio**	**6.47**	**109**	P	**Pn**	**19 19 37.2**	**+1.3**
GERES	**GERESS Array B**	**6.47**	**2**	Pn	**Pn**	**19 19 34.3**	**-1.7**
	comp=N,0.4nm,0.3s,baz=183,slow=12,SNR=11						
GERES				Sn	**Sn**	**19 20 46.5**	**-3.7**
	comp=N,0.7nm,0.3s,baz=180,slow=23,SNR=3.5						
MDVR	**Moldovita**	**6.49**	**65**	⇑*i*P	**Pn**	**19 19 37.4**	**+1.2**
MDVR	**Moldovita**	**6.49**	**65**	⇑*i*P	**Pn**	**19 19 37.4**	**+1.2**
CABF	**La Chapelle**	**6.73**	**311**	*e*P	**Pn**	**19 19 38.2**	**-1.3**
CABF	**La Chapelle**	**6.73**	**311**	*e*P	**Pn**	**19 19 38.2**	**-1.3**
KHC	**Kasperske Hory**	**6.76**	**1**	*e*PN	**Pn**	**19 19 39.1**	**-0.7**
KHC				*ex*	x	19 20 00.0	
KHC				*e*SN	**Sn**	**19 20 53.1**	**-4.0**
KHC	**Kasperske Hory**	**6.76**	**1**	Pn	**Pn**	**19 19 39.1**	**-0.7**
KHC				Sn	**Sn**	**19 20 53.1**	**-4.0**
TREC	**Trest**	**7.07**	**11**	*e*PN	**Pn**	**19 19 43.5**	**-0.6**
TREC	**Trest**	**7.07**	**11**	Pn	**Pn**	**19 19 43.5**	**-0.6**
HINF	**Hinteralfeld**	**7.15**	**322**	*e*P	**Pn**	**19 19 43.8**	**-1.4**
HINF				*e*Sn	Sn	19 20 51.3	-15
	comp=N,6.9nm,0.5s						
HINF	**Hinteralfeld**	**7.15**	**322**	*e*P	**Pn**	**19 19 43.8**	**-1.4**
KEST	**Kesra**	**7.35**	**207**	Pn	**Pn**	**19 19 51.2**	**+3.2**
	comp=N,0.8nm,0.3s,baz=326,slow=5.6,SNR=16						
CDF	**Champ du Feu**	**7.42**	**327**	*e*P	**Pn**	**19 19 47.8**	**-1.2**
CDF				*e*Sn	Sn	19 21 00.4	-13
	comp=N,3.7nm,0.4s						
CDF	**Champ du Feu**	**7.42**	**327**	*e*P	**Pn**	**19 19 47.8**	**-1.2**
HAU	**Haudompre**	**7.52**	**321**	*e*P	**Pn**	**19 19 49.0**	**-1.3**
HAU				*e*Sn	Sn	19 21 02.1	-14
	comp=N,12nm,0.5s						
HAU	**Haudompre**	**7.52**	**321**	*e*P	**Pn**	**19 19 49.0**	**-1.3**
GOPC	**GO Pecny, Ondr**	**7.60**	**7**	*e*PN	**Pn**	**19 19 50.1**	**-1.3**
GOPC	**GO Pecny, Ondr**	**7.60**	**7**	Pn	**Pn**	**19 19 50.1**	**-1.3**
PRU	**Pruhonice**	**7.66**	**5**	*e*P	**Pg**	**19 20 23.5**	**-3.1**
KLV	**Kalavryta, Ach**	**7.96**	**120**	P	**Pn**	**19 19 56.4**	**0.0**
KRLC	**Kraliky**	**8.05**	**16**	*e*P	**Pg**	**19 20 37.9**	**+3.8**
DPC	**Dobruska-Polom**	**8.23**	**13**	*e*P	**Pb**	**19 20 26.4**	**+3.5**
UPC	**Upice**	**8.33**	**12**	*e*P	**Pb**	**19 20 25.5**	**+0.8**
BRG	**Berggiesshubel**	**8.51**	**2**	*e*P	Pn	19 20 12.5	+8.7
	comp=N,8.3nm,1.2s						
VOIR		**8.94**	**66**	⇑*i*P	**Pn**	**19 20 12.8**	**+3.0**
MLR	**Muntele Rosu**	**9.56**	**67**	Pn	**Pn**	**19 20 20.9**	**+2.5**
	comp=N,0.0nm,0.3s,baz=257,slow=9.7,SNR=6.0						
MLR	**Muntele Rosu**	**9.56**	**67**	⇑*i*P	**Pn**	**19 20 20.6**	**+2.2**
BURAR	**Bucovina Array**	**9.87**	**54**	⇓*i*P	**Pn**	**19 20 25.9**	**+3.4**
IDI	**Anoyia**	**11.40**	**125**	Pn	Pn	19 20 48.3	+4.7
	comp=N,0.3nm,0.3s,baz=299,slow=10,SNR=3.9						
FINES	**FINESS Array B**	**20.56**	**17**	P	Pn	19 22 40.0	-1.4
	comp=N,1.5nm,0.7s,baz=200,slow=12,SNR=5.7						
TORD	**Torodi Ar. Bea**	**30.84**	**203**	P	**P**	**19 24 17.9**	**+0.8**
	comp=N,0.4nm,0.7s,baz=10,slow=9.0,SNR=4.1						
MKAR	**Makanchi Array**	**47.83**	**60**	P	**P**	**19 26 38.9**	**+0.5**
	comp=N,0.2nm,0.4s,baz=273,slow=6.9,SNR=2.2						

IDC 21 19:22:48.3±3.6, 30°.31S×177°.53W, h0km, mb3.4/2, mb1 3.7/2, mb1mx3.5/24, mbtmp3.4/2, Error ellipse: s-maj=75.3km s-min=35.0km az=110.0, Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.11**	**342**	Pn	Pn	19 23 11.1	0.0
	56nm,0.3s,baz=93,slow=17,SNR=5.0						
RAO				Sn	Sg	19 23 22.1	-1.9
	380nm,0.3s,baz=99,slow=20,SNR=18						
ASAR	**Alice Springs**	**43.52**	**267**	P	P	19 30 53.3	-0.6
	0.3nm,0.7s,baz=106,slow=6.7,SNR=4.5						
WRA	**Warramunga Arr**	**44.50**	**272**	P	P	19 31 01.9	+0.1
	0.7nm,0.7s,baz=110,slow=8.0,SNR=9.2						
FINES	**FINESS Array B**	**145.20**	**340**	PKPbc	PKPbc	19 42 25.9	-0.8
	3.7nm,1.0s,baz=29,slow=3.2,SNR=5.1						

*ISCJB **21** 19:28:46.2±0.5, 53°.59S±0°.07×141°.1E±0°.2, h10km, mb4.5/16, MS3.4/5, Error ellipse: s-maj=13.8km s-min=9.4km az=177.2*

*IDC **21** 19:28:46.9±1.4, 53°.62S×141°.01E, h0km, mb4.0/4, mb1 4.2/4, mb1mx3.9/21, mbtmp4.0/4, MS3.5/5, Ms1 3.5/5, ms1mx3.2/21, Error ellipse: s-maj=147.5km s-min=22.5km az=81.0*

*NEIC **21** 19:28:48.3±0.4, 53°.60S×141°.13E, h10km, mb4.7/15, Error ellipse: s-maj=11.6km s-min=8.3km az=81.0*

ISC 21 19:28:48.3±0.7, 53°.63S±0°.10×141°.3E±0°.2, h10km, n31, σ1§44/23, mb4.7/16, MS3.4/5, 1C-1D, West of Macquarie Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MLZ	**Mavora Lakes**	**19.16**	**75**	*e*P	**P**	**19 33 08.1**	**-3.6**
	144nm,2.0s						
FOZ	**Fox Glacier**	**21.23**	**73**	*e*P	**P**	**19 33 35.1**	**+0.9**
	71nm,1.8s						
STKA	**Stephens Creek**	**21.74**	**1**	P	**P**	**19 33 41.2**	**+1.5**
	6.0nm,0.8s,baz=158,slow=9.6,SNR=7.4						
STKA				LR	LR	19 41 10.8	
	comp=Z,123nm,18.2s,baz=197,slow=34						
STKA	**Stephens Creek**	**21.74**	**1**	*e*P	**P**	**19 33 41.4**	**+1.7**
	6.5nm,1.4s						
RPZ	**Rata Peaks**	**21.83**	**75**	LR	LR	19 39 56.9	
	comp=Z,124nm,21.4s,baz=197,slow=30						
MQZ	**McQueen's Vall**	**22.76**	**77**	*e*P	**P**	**19 33 49.7**	**-0.8**
	35nm,1.4s						
VNDA	**Vanda**	**25.13**	**170**	P	**P**	**19 34 13.5**	**+0.6**
	2.6nm,1.0s,baz=327,slow=9.6,SNR=8.9						
VNDA				LR	LR	19 43 30.9	
	comp=Z,140nm,18.5s,baz=0.5,slow=35						
VNDA	**Vanda**	**25.13**	**170**	*e*P	**P**	**19 34 13.4**	**+0.6**
	13nm,1.5s						
H01W1	**Cape Leeuwin H**	**26.75**	**303**	T	T	20 02 01.9	
	baz=143,slow=76,SNR=11						
H01W2	**Cape Leeuwin H**	**26.76**	**303**	T	T	20 02 06.4	
	baz=143,slow=76,SNR=11						
H01W3	**Cape Leeuwin H**	**26.77**	**303**	T	T	20 02 03.3	
	baz=143,slow=76,SNR=11						
OUZ	**Omahuta**	**29.12**	**64**	*e*P	**P**	**19 34 50.1**	**+1.0**
	47nm,1.9s						
MXZ	**Matakaoa Point**	**30.02**	**73**	*e*P	**P**	**19 34 59.2**	**+2.1**
	41nm,1.5s						
AS01	**Alice Springs**	**30.44**	**347**	*e*P	**P**	**19 34 59.6**	**-1.3**
ASAR	**Alice Springs**	**30.44**	**346**	P	**P**	**19 35 00.1**	**-0.8**
	1.1nm,0.6s,baz=166,slow=9.9,SNR=22						
ASAR				LR	LR	19 46 14.0	
	comp=Z,57nm,18.6s,baz=134,slow=34						
AS31	**Alice Springs**	**30.44**	**346**	*e*P	**P**	**19 35 00.3**	**-0.7**
	3.7nm,1.5s						
WB2	**Warramunga Arr**	**34.05**	**348**	*e*P	**P**	**19 35 31.8**	**-0.7**
	16nm,1.3s						
WR1	**Warramunga Arr**	**34.05**	**348**	*e*P	**P**	**19 35 31.7**	**-0.9**
	19nm,1.3s						
WRA	**Warramunga Arr**	**34.05**	**348**	P	**P**	**19 35 31.7**	**-0.9**
	3.7nm,1.0s,baz=171,slow=7.6,SNR=20						
WRAB	**Tennant Creek**	**34.06**	**348**	*e*P	**P**	**19 35 31.8**	**-0.8**
	19nm,1.4s						
QSPA	**South Pole Qui**	**36.49**	**180**	*e*P	**P**	**19 35 53.9**	**+0.6**
FITZ	**Fitzroy Crossi**	**37.49**	**335**	*e*P	**P**	**19 36 01.1**	**-0.9**
	27nm,1.8s						
MAW	**Mawson**	**38.04**	**218**	LR	LR	19 50 37.9	
	comp=Z,72nm,19.2s,baz=94,slow=35						
MAW	**Mawson**	**38.04**	**218**	*e*P	**P**	**19 36 06.1**	**-0.1**
	1.0nm,0.4s						
MTN	**Manton Dam**	**41.48**	**345**	*e*P	**P**	**19 36 35.7**	**+0.3**
	15nm,1.1s						
SYO	**Syowa Base**	**45.12**	**210**	⇑*e*P	**P**	**19 37 01.6**	**-2.6**
SYO	**Syowa Base**	**45.12**	**210**	⇓*e*pP	**P**	**19 37 05.6**	**+1.4**
SNAA	**Sanae**	**52.47**	**194**	*e*P	**P**	**19 38 00.4**	**-0.3**
	18nm,1.8s						
H08S2	**Diego Garcia H**	**71.39**	**283**	T	T	20 57 38.7	
	baz=144,slow=76,SNR=3.8						
H08S1	**Diego Carcia H**	**71.40**	**283**	T	T	20 57 41.0	
	baz=144,slow=76,SNR=4.9						
H08S3	**Diego Garcia H**	**71.41**	**283**	T	T	20 57 42.5	
	baz=144,slow=76,SNR=4.5						

*NEIC **21** 19:32:37.2, 19°.15N×67°.43W, h27km, MD2.9(RSPR), After RSPR.*

RSPR 21 19:32:37.2, 19°.15N×67°.43W, h27km±21km, MD2.9/3, 1C-4D, Mona Passage

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AGPR	**Aguadilla, PR**	**0.74**	**156**	⇓*e*P	Pb	19 32 49.3	-2.3
AGPR	**Aguadilla, PR**	**0.74**	**156**	⇓*e*P	Pb	19 32 49.3	-2.3
AGPR				*e*S	Sb	19 32 58.9	-2.5
AGP	**Aguadilla**	**0.79**	**160**	*e*Pg	Pb	19 32 47.1	-5.2
AGP				*e*Sg	Sb	19 32 58.5	-4.2
MPR	**Mayaguez**	**0.97**	**164**	*e*Pg	Pn	19 32 52.4	-2.7
LRS	**Lares**	**1.02**	**147**	⇓*e*P	Pn	19 32 53.7	-2.1
LRS				*e*S	Sn	19 33 06.6	-2.6
LRS	**Lares**	**1.02**	**147**	*e*Pg	Pn	19 32 53.5	-2.3
LRS				*e*Sn	Sn	19 33 06.2	-3.1
AOPR	**Arecibo Observ**	**1.02**	**141**	⇑*e*P	Pn	19 32 53.9	-2.0
AOPR	**Arecibo Observ**	**1.02**	**141**	*e*S	Sn	19 33 06.6	-2.8
AOPR	**Arecibo Observ**	**1.02**	**141**	*e*Pg	Pn	19 32 53.9	-2.0
AOPR				*e*Sn	Sn	19 33 06.6	-2.8
CRPR	**Cabo Rojo, PR**	**1.18**	**165**	⇓*e*P	Pn	19 32 56.2	-1.8
CRPR	**Cabo Rojo, PR**	**1.18**	**165**	*e*S	Sn	19 33 10.7	-2.5
CELP	**Cerrillos**	**1.34**	**143**	*e*Pg	Pn	19 32 59.4	-0.8
SJG	**San Juan**	**1.59**	**130**	*e*Pn	Pn	19 33 03.3	-0.4
CBYP	**Canovanas**	**1.73**	**120**	*e*Pn	Pn	19 33 05.2	-0.4
HUMP	**Col San Antoni**	**1.80**	**124**	*e*Pn	Pn	19 33 06.5	0.0
MTP	**Monte Pirata**	**2.06**	**120**	*e*Pn	Pn	19 33 09.9	-0.3
SDD	**Santo Domingo**	**2.45**	**254**	*e*Pn	Pb	19 33 23.2	+2.5
SDDR	**Presa de Saban**	**3.66**	**268**	*e*Pn	Pn	19 33 35.8	+3.7

BER 21 19:46:29.9±1.2, 71°.05N×8°.09W, h10km, MD1.9, ML3.6, 1C-3D, Jan Mayen Island region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JNE	**Jan Mayen East**	**0.09**	**229**	⇓*i*P	Pg	19 46 32.3	0.0
JNW	**Jan Mayen West**	**0.11**	**260**	⇓*i*P	Pg	19 46 32.0	-0.6
JNW				IAML		19 46 37.9	
	comp=Z,14µm,0.3s						
JMIC	**Jan Mayen**	**0.15**	**246**	⇓*i*P	Pg	19 46 32.2	-1.0
JMIC				*e*S	Sg	19 46 35.8	+0.3
JMIC				IAML		19 46 37.3	
	comp=Z,10µm,0.4s						
JMI	**Jan Mayen**	**0.24**	**240**	*i* P	Pg	19 46 34.1	-0.7
JMI				*e*S	Sg	19 46 38.4	+0.3

MOZ				SG	Sg	19 56 30.6	+0.2
MOZ				AML	AML	19 56 31.1	
OXZ	**Oxford**	**0.39**	**313**	⇓P*	Pg	19 56 30.8	-0.1
LTZ	**Lake Taylor**	**0.81**	**352**	⇓P*	Pb	19 56 39.2	-0.2
LTZ				AML	AML	19 56 50.8	
LTZ				AML	AML	19 56 52.7	
RPZ	**Rata Peaks**	**1.01**	**262**	P*	Pg	19 56 42.3	-0.3
RPZ				AML	AML	19 56 57.7	
RPZ				AML	AML	19 56 57.9	
INZ	**Inchbonnie**	**1.12**	**320**	P*	Pb	19 56 43.7	-1.0
WVZ	**Waitaha Valley**	**1.34**	**292**	⇑PN	Pn	19 56 47.3	-0.6
WVZ				AML	AML	19 57 09.0	
WVZ				AML	AML	19 57 12.5	
LBZ	**Lake Benmore**	**1.81**	**243**	⇑PN	Pn	19 56 53.5	-0.8
LBZ				AML	AML	19 57 22.7	
LBZ				AML	AML	19 57 22.7	
LBZ				AML	AML	19 57 29.8	
LBZ				AML	AML	19 57 29.8	
THZ	**Tophouse**	**1.86**	**11**	PN	Pn	19 56 54.0	-1.1
THZ				AML	AML	19 57 29.1	
THZ				AML	AML	19 57 30.9	
DSZ	**Denniston Nort**	**1.90**	**346**	PN	Pn	19 56 54.9	-0.8
DSZ				AML	AML	19 57 25.5	
DSZ				AML	AML	19 57 32.2	
DSZ				AML	AML	19 57 32.2	
DSZ				AML	AML	19 57 32.7	
FOZ	**Fox Glacier**	**1.90**	**271**	PN	Pn	19 56 56.0	+0.4
FOZ				AML	AML	19 57 28.7	
FOZ				AML	AML	19 57 33.8	
ODZ	**Otahua Downs**	**1.94**	**221**	⇑PN	Pn	19 56 55.0	-1.2
ODZ				AML	AML	19 57 33.3	
ODZ				AML	AML	19 57 36.2	
BSWZ	**Blackbirch Sta**	**2.16**	**30**	PN	Pn	19 56 59.2	+0.1
NNZ	**Nelson**	**2.47**	**17**	PN	Pn	19 57 03.1	-0.4
HHSZ	**Highcliff Hill**	**2.64**	**209**	PN	Pn	19 57 03.2	-2.6
JCZ	**Jackson Bay**	**2.68**	**258**	PN	Pn	19 57 05.7	-0.8
JCZ				AML	AML	19 57 53.3	
JCZ				AML	AML	19 57 59.0	
WKZ	**Wanaka**	**2.75**	**242**	PN	Pn	19 57 06.2	-1.2
WKZ				AML	AML	19 57 56.7	
WKZ				AML	AML	19 58 02.8	
QRZ	**Quartz Range**	**2.76**	**2**	PN	Pn	19 57 07.0	-0.5
QRZ				AML	AML	19 57 18.4	
QRZ				AML	AML	19 57 55.5	
QRZ				AML	AML	19 58 01.0	
TUZ	**Tuapeka**	**3.09**	**219**	⇑PN	Pn	19 57 10.7	-1.3
TUZ				AML	AML	19 58 09.1	
TUZ				AML	AML	19 58 09.9	
CAW	**Cannon Point**	**3.16**	**39**	PN	Pn	19 57 11.9	-1.0
KIW	**Kapiti Island**	**3.29**	**35**	PN	Pn	19 57 14.9	+0.1
OGWZ	**Otaki Gorge**	**3.44**	**37**	PN	Pn	19 57 16.1	-0.7
MRZ	**Mangatainoka R**	**3.75**	**40**	PN	Pn	19 57 19.9	-1.2
SYZ	**Scrubby Hill**	**3.76**	**217**	PN	Pn	19 57 20.1	-1.0
WHZ	**Wether Hill Ro**	**3.94**	**233**	PN	Pn	19 57 21.4	-2.2
APZ	**The Paps**	**4.51**	**223**	PN	Pn	19 57 29.7	-1.8
HIZ	**Hauiti**	**5.39**	**21**	PN	Pn	19 57 43.7	+0.1

*NEIC **21** 20:01:29.0, 19°.18N×67°.50W, h8km, MD2.8(RSPR), After RSPR.*
RSPR 21 20:01:29.0, 19°.18N×67°.50W, h8km±31km, MD2.9/4, 3C-1D, Mona Passage

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AGP	**Aguadilla**	**0.84**	**156**	*e*Pg	Pg	20 01 41.7	-3.6
AGP				*e*Sg	Sg	20 01 51.2	-5.1
MPR	**Mayaguez**	**1.02**	**161**	*e*Pg	Pg	20 01 44.5	-4.2
LSP	**Las Mesas**	**1.08**	**159**	⇓*e*P	Pg	20 01 47.2	-2.5
LSP				*e*S	Sg	20 02 00.9	-2.8
LRS	**Lares**	**1.08**	**145**	*e*Pg	Pg	20 01 46.4	-3.5
LRS				*e*Sn	Sg	20 01 59.7	-4.2
AOPR	**Arecibo Observ**	**1.09**	**140**	⇑*e*P	Pg	20 01 47.1	-2.9
AOPR				*e*S	Sg	20 02 01.6	-2.6
AOPR	**Arecibo Observ**	**1.09**	**140**	*e*Pg	Pg	20 01 47.1	-2.9
CRPR	**Cabo Rojo, PR**	**1.23**	**162**	⇑*e*P	Pb	20 01 49.0	-3.4
CRPR				*e*S	Sb	20 02 05.4	-3.1
CRPR	**Cabo Rojo, PR**	**1.23**	**162**	*e*Pn	Pb	20 01 49.0	-3.4
GBPR	**Guanica, Bosqu**	**1.34**	**154**	*e*S	Sb	20 02 08.0	-3.7
CELP	**Cerrillos**	**1.41**	**142**	⇑*e*P	Pn	20 01 52.1	-2.9
CELP	**Cerrillos**	**1.41**	**142**	*e*Pn	Pn	20 01 52.0	-3.0
CELP				*e*Sn	Sb	20 02 10.0	-3.6
SJG	**San Juan**	**1.67**	**130**	*e*Pn	Pn	20 01 56.0	-2.5
CBYP	**Canovanas**	**1.80**	**120**	*e*Pn	Pn	20 01 59.2	-1.2
HUMP	**Col San Antoni**	**1.88**	**123**	*e*Pn	Pn	20 01 57.7	-3.7
MTP	**Monte Pirata**	**2.14**	**120**	*e*Pn	Pn	20 02 04.5	-0.5
SDD	**Santo Domingo**	**2.40**	**253**	*e*Pn	Pn	20 02 10.4	+1.8
STVI	**Saint Thomas**	**2.55**	**109**	*e*Pn	Pn	20 02 11.6	+0.9
SDDR	**Presa de Saban**	**3.59**	**267**	*e*Pn	Pn	20 02 28.8	+3.7
SDDR				*e*Sn	Sn	20 03 10.8	+3.1

*ISCJB **21** 20:05:46.6±0.5, 39°.12N±0°.03×29°.03E±0°.03, h4km±7km, Error ellipse: s-maj=5.8km s-min=4.5km az=5.2*
*CSEM **21** 20:05:46.7±0.1, 39°.12N×29°.05E, h5km, MD2.4, Error ellipse: s-maj=2.6km s-min=2.6km az=162.0*
*ISK **21** 20:05:46.5, 39°.11N×29°.09E, h9km, MD2.7*
*DDA **21** 20:05:46.2, 39°.12N×29°.03E, h7km, Md2.4*
ISC 21 20:05:46.8±1.0, 39°.12N±0°.03×29°.02E±0°.02, h9km±11km, n34, σ0°.24/44, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**252**	P	**Pg**	**20 05 51.8**	**-0.1**
DEMI				S	**Sg**	**20 05 55.2**	**-0.1**
DEMI	**Demirci**	**0.25**	**252**	*i* P	**Pg**	**20 05 51.9**	**-0.1**
DEMI				*i* S	**Sg**	**20 05 55.2**	**-0.1**
GDZ	**Gediz**	**0.36**	**95**	P	**Pg**	**20 05 54.0**	**+0.1**
GDZ				S	**Sg**	**20 05 59.0**	**+0.3**
GDZ	**Gediz**	**0.36**	**95**	*i* P	**Pg**	**20 05 54.0**	**+0.1**
GDZ				*i* S	**Sg**	**20 05 59.0**	**+0.3**
TVSB	**Tavsanli**	**0.47**	**46**	*e*PG	**Pg**	**20 05 55.8**	**-0.3**
TVSB				*e*SG	**Sg**	**20 06 02.2**	**-0.1**
TVSB	**Tavsanli**	**0.47**	**46**	*e*Pg	**Pg**	**20 05 55.8**	**-0.3**
TVSB				*e*Sg	**Sg**	**20 06 02.2**	**-0.1**
DURS	**Dursunbey**	**0.64**	**319**	P	**Pg**	**20 05 58.9**	**-0.3**
DURS				S	**Sg**	**20 06 07.8**	**+0.2**
DURS	**Dursunbey**	**0.64**	**319**	*i* P	**Pg**	**20 05 58.9**	**-0.3**
DURS				*i* S	**Sg**	**20 06 07.8**	**+0.2**
KULA	**Kula-Manisa**	**0.67**	**205**	*e*PG	**Pg**	**20 05 59.8**	**+0.1**
KULA	**Kula-Manisa**	**0.67**	**205**	*e*Pg	**Pg**	**20 05 59.8**	**+0.1**
KHL	**Karahalli**	**0.89**	**154**	*e*PG	**Pg**	**20 06 03.3**	**-0.6**
KHL				*e*SG	**Sg**	**20 06 16.0**	**+0.5**
KHL	**Karahalli**	**0.89**	**154**	*e*Pg	**Pg**	**20 06 03.3**	**-0.6**
KHL				*e*Sg	**Sg**	**20 06 16.0**	**+0.5**
AKS	**Akhisar**	**0.97**	**256**	*e*PG	**Pn**	**20 06 06.6**	**-0.1**
AKS	**Akhisar**	**0.97**	**256**	*e*Pg	**Pn**	**20 06 06.6**	**-0.1**
BALB	**Balikesir**	**1.02**	**301**	*e*PG	**Pn**	**20 06 07.6**	**+0.2**
BALB	**Balikesir**	**1.02**	**301**	*e*Pg	**Pn**	**20 06 07.6**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.25**	**355**	*e*PN	**Pg**	**20 06 10.8**	**0.0**
MDNY	**Mudanya-Bursa**	**1.25**	**355**	*e*Pn	**Pg**	**20 06 10.8**	**0.0**
CAVI	**Cavuskoy**	**1.25**	**30**	*e*PN	**Pn**	**20 06 10.6**	**0.0**
CAVI	**Cavuskoy**	**1.25**	**30**	*e*Pn	**Pn**	**20 06 10.6**	**0.0**
KCTX	**Karacabey (Bur**	**1.25**	**336**	*e*PN	**Pg**	**20 06 11.1**	**+0.2**
KCTX	**Karacabey (Bur**	**1.25**	**336**	*e*Pn	**Pg**	**20 06 11.1**	**+0.2**
IZI	**Iznik**	**1.26**	**16**	*e*PN	**Pn**	**20 06 10.8**	**+0.1**
IZI	**Iznik**	**1.26**	**16**	*e*Pn	**Pn**	**20 06 10.8**	**+0.1**
GONE	**Gonen-Balikesi**	**1.39**	**312**	*e*PN	**Pg**	**20 06 13.2**	**-0.2**
GONE	**Gonen-Balikesi**	**1.39**	**312**	*e*Pn	**Pg**	**20 06 13.2**	**-0.2**
ADVT	**Abdulvahap**	**1.42**	**23**	*e*PN	**Pn**	**20 06 12.9**	**+0.1**
ADVT	**Abdulvahap**	**1.42**	**23**	*e*Pn	**Pn**	**20 06 12.9**	**+0.1**
ARMT	**Armutlu**	**1.45**	**355**	*e*PN	**Pb**	**20 06 14.0**	**0.0**
ARMT	**Armutlu**	**1.45**	**355**	*e*Pn	**Pb**	**20 06 14.0**	**0.0**
EDC	**Edincik**	**1.52**	**324**	*e*PN	**Pb**	**20 06 15.0**	**-0.1**
EDC	**Edincik**	**1.52**	**324**	*e*Pn	**Pb**	**20 06 15.0**	**-0.1**
GULT	**Gulveren**	**1.74**	**41**	*e*PN	**Pn**	**20 06 17.1**	**-0.2**
GULT	**Gulveren**	**1.74**	**41**	*e*Pn	**Pn**	**20 06 17.2**	**-0.2**

*KRNET **21** 20:06:06.5±0.1, 40°.80N×73°.32E, h13km, mb3.0*
*SOME **21** 20:06:08.6, 40°.90N×73°.30E, h0km*
*NNC **21** 20:06:09.9±2.3, 40°.84N×73°.22E, h0km, mb3.6, mpv3.2, Error ellipse: s-maj=16.9km s-min=12.1km az=170.0*
ISC 21 20:06:06.1±1.6, 40°.78N±0°.06×73°.45E±0°.03, h5km±11km, n33, σ1°.29/63, 31C-9D, Kyrgyzstan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ARSB	**Arslanbob**	**0.65**	**328**	⇑*i*P	**Pg**	**20 06 18.1**	**-0.5**
	baz=334						
TOKL	**Toktogul**	**1.24**	**340**	⇑*i*P	**Pg**	**20 06 29.9**	**0.0**
	baz=344						
TOKL				⇑*i*S	**Sb**	**20 06 46.6**	**+0.2**
	baz=344						
ARLS	**Aral**	**1.27**	**31**	⇓*i*P	**Pn**	**20 06 31.6**	**+1.0**
	baz=35						
ARLS				⇓*i*S	**Sn**	**20 06 49.5**	**+1.4**
	baz=35						
AML	**Almayashu**	**1.37**	**8**	⇓*i*P	**Pb**	**20 06 32.9**	**+0.5**
	baz=11						
AML				⇓*i*S	**Sn**	**20 06 51.4**	**+0.5**
	baz=11						
ARK	**Arkit**	**1.52**	**313**	⇑*i*P	**Pn**	**20 06 33.0**	**-0.9**
	baz=315						
ARK				⇑*i*S	**Sn**	**20 06 52.7**	**-1.4**
	baz=315						
UCH	**Uchtor**	**1.66**	**29**	⇑*i*P	**Pg**	**20 06 38.6**	**+0.7**
	baz=32						
UCH				⇑*i*S	**Sg**	**20 07 03.0**	**+3.6**
	baz=32						
MNAS	**Manas**	**1.85**	**338**	⇑*i*P	**Pb**	**20 06 40.3**	**-0.2**
	baz=341						
MNAS				⇑*i*S	**Sb**	**20 07 04.0**	**0.0**
	baz=341						
MNAS	**Manas**	**1.85**	**338**	⇓P	**Pb**	**20 06 40.3**	**-0.2**
	12nm,0.5s						
MNAS				⇑S	**Sb**	**20 07 04.3**	**+0.3**
	69nm,0.4s						
KZA	**Kyzart**	**1.88**	**46**	⇑*i*P	**Pg**	**20 06 43.3**	**+1.2**
	baz=48						
KZA				⇑*i*S	**Sg**	**20 07 09.1**	**+2.6**
	baz=48						
EKS2	**Erkin-Say**	**1.90**	**7**	⇑*i*P	**Pg**	**20 06 42.6**	**+0.1**
	baz=11						
EKS2				⇑*i*S	**Sg**	**20 07 07.8**	**+0.6**
	baz=11						
AAK	**Ala-Archa**	**2.02**	**23**	⇑*i*P	**Pg**	**20 06 44.9**	**+0.2**
	baz=25						
AAK				⇑*i*S	**Sg**	**20 07 12.4**	**+1.5**
	baz=25						
AAK	**Ala-Archa**	**2.02**	**23**	⇑Pn	**Pg**	**20 06 44.9**	**+0.2**
	8.6nm,0.4s						
AAK				⇑Sn	**Sg**	**20 07 12.7**	**+1.8**
	93nm,0.8s						
NRN	**Naryn**	**2.04**	**70**	⇑*i*P	**Pb**	**20 06 44.3**	**+0.5**
	baz=72						
NRN				⇑*i*S	**Sg**	**20 07 11.5**	**-0.1**
	baz=72						
KBK	**Karagaybulak**	**2.19**	**30**	⇑*i*P	**Pg**	**20 06 48.0**	**-0.1**
	baz=33						
KBK				⇑*i*S	**Sg**	**20 07 18.3**	**+1.8**
	baz=33						
JBG	**Jabagly**	**2.28**	**43**	*e*P	Pg	20 06 56.2	+6.4
	27nm,0.4s						
JBG				*e*S	Sg	20 07 29.8	+11
	192nm,0.5s						
BOOM	**Boomskoye usch**	**2.54**	**47**	⇑*e*P	**Pb**	**20 06 51.1**	**-1.0**
	baz=48						
BOOM				⇑*e*S	**Sb**	**20 07 23.2**	**-0.5**
	baz=48						
ULHL	**Ulahol**	**2.56**	**54**	⇑*i*P	**Pb**	**20 06 52.8**	**+0.2**
	baz=56						
ULHL				⇑*i*S	**Sg**	**20 07 28.3**	**-0.1**
	baz=56						
TKM2	**Tokmak 2**	**2.68**	**36**	⇑Pn	**Pg**	**20 06 56.1**	**-1.3**
	7.9nm,0.6s						
TKM2				⇓Sn	**Sg**	**20 07 31.5**	**-0.6**
	8.6nm,0.4s						
IUG	**Iuzhnay**	**2.91**	**299**	*e*P	**Pb**	**20 06 57.9**	**-0.6**
	47nm,0.4s						
IUG				*e*S	**Sb**	**20 07 33.1**	**-1.3**
	116nm,0.5s						
KST	**Kastek**	**2.94**	**39**	*e*P	**Pg**	**20 07 02.3**	**-0.2**
	1.8nm,0.5s						
KST				*e*S	**Sg**	**20 07 40.4**	**-0.2**
	28nm,0.6s						
DGS	**Degeres**	**3.01**	**34**	*e*P	**Pg**	**20 07 03.5**	**-0.3**
	7.8nm,0.6s						
DGS				*e*S	**Sg**	**20 07 43.7**	**+0.9**
	21nm,0.5s						
KDJ	**Kajisay**	**3.12**	**63**	⇑*e*P	**Pb**	**20 06 59.3**	**-2.7**
	baz=64						
KDJ				⇑*e*S	**Sb**	**20 07 40.3**	**-0.1**
	baz=64						
KK31	**Karatay Array**	**3.19**	**318**	⇓Pn	**Pn**	**20 06 57.8**	**+0.9**
	1.5nm,0.3s,baz=133,slow=15,SNR=45						
KK31				⇑Sn	**Sb**	**20 07 40.3**	**-2.2**
	11nm,0.4s,baz=130,slow=28,SNR=10.0						
MTBS	**Maitube**	**3.24**	**42**	*e*P	**Pg**	**20 07 07.9**	**-0.2**
	6.3nm,0.3s						
MTBS				*e*S	**Sg**	**20 07 50.4**	**+0.3**
	29nm,0.5s						
TNSS	**Tian-Shan**	**3.46**	**48**	*e*P	**Pg**	**20 07 12.6**	**+0.3**
	6.9nm,0.6s						
TNSS				*e*S	**Sg**	**20 07 58.7**	**+1.6**
	18nm,0.8s						
MDOK	**Medeo**	**3.59**	**47**	*e*P	**Pg**	**20 07 15.2**	**+0.3**
	6.0nm,0.6s						
MDOK				*e*S	**Sg**	**20 08 02.6**	**+1.2**
	16nm,0.8s						
KOTS	**Kotyrbulak**	**3.67**	**47**	*e*P	**Pg**	**20 07 14.3**	**-2.2**
KOTS				*e*S	**Sg**	**20 08 01.4**	**-2.7**
KUU	**Kurty**	**3.78**	**34**	*e*P	**Pg**	**20 07 17.3**	**-1.2**
	5.5nm,0.4s						
KUU				*e*S	**Sg**	**20 08 07.0**	**-0.5**
	28nm,0.5s						
CHKK	**Chushkaly**	**4.06**	**39**	*e*P	**Pg**	**20 07 22.8**	**-1.1**
	3.5nm,0.4s						
CHKK				*e*S	**Sg**	**20 08 16.1**	**-0.5**
	15nm,0.7s						
DZET	**Dzherino**	**4.07**	**243**	⇓Pn	**Pn**	**20 07 11.9**	**+2.9**
	3.9nm,0.4s						
DZET				⇓Lg	Lg	20 08 14.6	
	24nm,0.7s						
ARXS	**Arharly**	**4.72**	**42**	*e*P	**Pg**	**20 07 34.2**	**-2.3**
	2.3nm,0.6s						
ARXS				*e*S	**Sg**	**20 08 36.0**	**-1.6**
	12nm,0.4s						
KPKS	**Kokpek**	**4.73**	**54**	*e*P	**Pg**	**20 07 35.4**	**-1.4**
	6.5nm,0.6s						
KPKS				*e*S	**Sg**	**20 08 37.4**	**-0.7**
	15nm,0.5s						
MNBS	**Baschi**	**4.93**	**46**	*e*P	**Pg**	**20 07 39.4**	**-1.2**
	0.9nm,0.7s						
MNBS				*e*S	**Sg**	**20 08 44.5**	**0.0**
	15nm,0.4s						

SJA 21 20:16:06.0±1.2, 31°.59S×69°.01W, h113km±5km, ML3.5, MW3.7, 2D, San Juan Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RTLS	**Leoncito**	**0.32**	**230**	*e*P	Pn	20 16 23.3	+0.7
SJA	**San Juan**	**0.39**	**81**	*e*P	Pn	20 16 23.3	+0.8
SJA				IAML		20 16 23.5	
	comp=Z,1μm,0.1s						
RTCV	**Cerro Valdivia**	**0.48**	**125**	*e*P	Pn	20 16 24.0	+0.9
RTCV				*e*S	Sn	20 16 36.5	+0.5
RTLL	**Cerro Villicun**	**0.52**	**61**	*e*P	Pn	20 16 23.9	+0.5
RTLL				⇓*e*S	Sn	20 16 37.6	+1.2
AUSP	**Uspallata**	**0.71**	**207**	*e*P	Pn	20 16 26.2	+1.2
AUSP				*e*S	Sn	20 16 40.5	+1.0
AMOG	**MOGNA**	**0.78**	**34**	*e*P	Pn	20 16 26.2	+0.7
AMOG				*e*S	Sn	20 16 39.3	-0.8
ACAN	**Cantantal**	**1.69**	**114**	*e*P	Pn	20 16 37.0	+1.7
ACAN				*e*S	Sn	20 16 59.2	+1.6
AGUA	**GUANDACOL**	**2.14**	**12**	*e*P	Pn	20 16 41.8	+0.7
AGUA				*e*S	Sn	20 17 09.3	+1.5
ROC1	**El Roble**	**2.19**	**230**	*e*P	Pn	20 16 43.0	+1.2
ROC1				*e*S	Sn	20 17 10.7	+1.5
MRA	**San Martin**	**2.92**	**107**	*e*P	Pn	20 16 52.4	+1.4
MRA				⇓*e*S	Sn	20 17 25.6	-0.1
MRA				IAML		20 17 26.8	
	comp=Z,205nm,0.5s						
VCA	**Vinchina**	**2.93**	**14**	*e*P	Pn	20 16 51.8	+0.5
VCA				IAML		20 17 31.4	
	comp=Z,124nm,0.2s						
TCA	**Tanti**	**3.78**	**87**	*e*P	Pn	20 17 03.5	+1.0
TCA				IAML		20 18 02.5	
	comp=Z,41nm,0.4s						

*ISCJB **21** 20:20:52.6±0.5, 39°.08N±0°.04×29°.03E±0°.04, h8km±7km, Error ellipse: s-maj=6.6km s-min=4.5km az=160.3*

*CSEM **21** 20:20:52.6±0.1, 39°.09N×29°.02E, h5km, MD2.3, Error ellipse: s-maj=2.9km s-min=2.4km az=119.0*
*ISK **21** 20:20:52.3, 39°.10N×29°.07E, h10km, MD2.7*
*DDA **21** 20:20:52.7, 39°.09N×29°.01E, h7km, Md2.3*
ISC 21 20:20:52.4±1.0, 39°.08N±0°.04×29°.06E±0°.03, h9km±10km, n26, σ0°.37/35, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**263**	P	**Pg**	**20 20 57.8**	**0.0**
DEMI				S	**Sg**	**20 21 00.9**	**-0.5**
DEMI	**Demirci**	**0.27**	**263**	*i* P	**Pg**	**20 20 57.9**	**0.0**
DEMI				*i* S	**Sg**	**20 21 00.9**	**-0.5**
GDZ	**Gediz**	**0.33**	**87**	P	**Pb**	**20 21 00.3**	**-0.3**
GDZ				S	**Sb**	**20 21 05.5**	**-0.6**
GDZ	**Gediz**	**0.33**	**87**	*i* P	**Pb**	**20 21 00.3**	**-0.3**
GDZ				*i* S	**Sb**	**20 21 05.5**	**-0.6**
TVSB	**Tavsanli**	**0.49**	**40**	*e*PG	**Pg**	**20 21 02.1**	**+0.1**
TVSB				*e*SG	**Sg**	**20 21 08.6**	**+0.2**
TVSB	**Tavsanli**	**0.49**	**40**	*e*Pg	**Pg**	**20 21 02.1**	**+0.1**
TVSB				*e*Sg	**Sg**	**20 21 08.6**	**+0.2**
KULA	**Kula-Manisa**	**0.64**	**209**	*e*PG	**Pb**	**20 21 05.8**	**0.0**
KULA	**Kula-Manisa**	**0.64**	**209**	*e*Pg	**Pb**	**20 21 05.8**	**0.0**
MANT	**Manisa**	**0.70**	**214**	P	**Pg**	**20 21 05.8**	**-0.2**
MANT				S	**Sg**	**20 21 15.8**	**+0.6**
MANT	**Manisa**	**0.70**	**214**	*i* P	**Pg**	**20 21 05.8**	**-0.2**
MANT				*i* S	**Sg**	**20 21 15.8**	**+0.6**
KHL	**Karahalli**	**0.83**	**154**	*e*PG	**Pb**	**20 21 08.9**	**-0.2**
KHL	**Karahalli**	**0.83**	**154**	*e*Pg	**Pb**	**20 21 08.9**	**-0.2**
BALB	**Balikesir**	**1.07**	**302**	*e*PG	**Pg**	**20 21 13.0**	**0.0**
BALB				*e*SG	**Sn**	**20 21 28.5**	**-0.1**
BALB	**Balikesir**	**1.07**	**302**	*e*Pg	**Pg**	**20 21 13.0**	**0.0**
MDNY	**Mudanya-Bursa**	**1.30**	**354**	*e*PN	**Pn**	**20 21 16.7**	**0.0**
MDNY	**Mudanya-Bursa**	**1.30**	**354**	*e*Pn	**Pn**	**20 21 16.7**	**0.0**
KCTX	**Karacabey (Bur**	**1.31**	**336**	*e*PN	**Pn**	**20 21 17.0**	**+0.1**
KCTX	**Karacabey (Bur**	**1.31**	**336**	*e*Pn	**Pn**	**20 21 17.0**	**+0.1**
GONE	**Gonen-Balikesi**	**1.44**	**313**	*e*PN	**Pn**	**20 21 19.1**	**+0.5**
GONE	**Gonen-Balikesi**	**1.44**	**313**	*e*Pn	**Pn**	**20 21 19.1**	**+0.5**
ARMT	**Armutlu**	**1.50**	**354**	*e*PN	**Pn**	**20 21 19.8**	**+0.3**
ARMT	**Armutlu**	**1.50**	**354**	*e*Pn	**Pn**	**20 21 19.8**	**+0.3**
EDC	**Edincik**	**1.57**	**324**	*e*PN	**Pn**	**20 21 20.9**	**+0.4**
EDC	**Edincik**	**1.57**	**324**	*e*Pn	**Pn**	**20 21 20.9**	**+0.4**
GULT	**Gulveren**	**1.76**	**39**	*e*PN	**Pn**	**20 21 23.8**	**+0.6**
GULT	**Gulveren**	**1.76**	**39**	*e*Pn	**Pn**	**20 21 23.8**	**+0.6**

*ISCJB **21** 20:23:35.8±0.5, 39°.09N±0°.03×29°.04E±0°.03, h3km±7km, Error ellipse: s-maj=5.7km s-min=3.8km az=157.9*
*DDA **21** 20:23:35.5, 39°.12N×29°.04E, h7km, Md2.8*
*ISK **21** 20:23:35.7, 39°.07N×29°.06E, h5km, ML2.9*
*CSEM **21** 20:23:36.1±0.1, 39°.10N×29°.04E, h2km, MD2.8, Error ellipse: s-maj=2.7km s-min=2.3km az=125.0*
ISC 21 20:23:36.1±1.0, 39°.11N±0°.02×29°.05E±0°.02, h4km±11km, n53, σ0°.45/68, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**256**	P	**Pg**	**20 23 41.5**	**+0.2**
DEMI				S	**Sg**	**20 23 45.2**	**+0.4**
DEMI	**Demirci**	**0.26**	**256**	*i* P	**Pg**	**20 23 41.5**	**+0.2**
DEMI				*i* S	**Sg**	**20 23 45.2**	**+0.4**
GDZ	**Gediz**	**0.34**	**93**	P	**Pg**	**20 23 42.6**	**-0.2**
GDZ				S	**Sg**	**20 23 47.4**	**+0.2**
GDZ	**Gediz**	**0.34**	**93**	*i* P	**Pg**	**20 23 42.6**	**-0.2**
GDZ				*i* S	**Sg**	**20 23 47.4**	**+0.2**
TVSB	**Tavsanli**	**0.47**	**43**	*e*PG	**Pg**	**20 23 44.9**	**-0.3**
TVSB	**Tavsanli**	**0.47**	**43**	*e*Pg	**Pg**	**20 23 44.9**	**-0.3**
DURS	**Dursunbey**	**0.66**	**318**	P	**Pg**	**20 23 48.6**	**-0.3**
DURS	**Dursunbey**	**0.66**	**318**	*i* P	**Pg**	**20 23 48.6**	**-0.3**
KULA	**Kula-Manisa**	**0.67**	**207**	*e*PG	**Pg**	**20 23 48.6**	**-0.3**
KULA				*e*SG	**Sg**	**20 23 57.1**	**-0.5**
KULA	**Kula-Manisa**	**0.67**	**207**	*e*Pg	**Pg**	**20 23 48.6**	**-0.3**
KULA				*e*Sg	**Sg**	**20 23 57.1**	**-0.5**
MANT	**Manisa**	**0.72**	**212**	P	**Pg**	**20 23 49.7**	**-0.4**
MANT				S	**Sg**	**20 23 59.0**	**-0.5**
MANT	**Manisa**	**0.72**	**212**	*i* P	**Pg**	**20 23 49.7**	**-0.4**
MANT				*i* S	**Sg**	**20 23 59.0**	**-0.5**
KHAL	**Karahalli**	**0.82**	**155**	P	**Pb**	**20 23 53.5**	**+0.6**
KHAL				S	**Sg**	**20 24 02.1**	**-0.3**
KHAL	**Karahalli**	**0.82**	**155**	*i* P	**Pb**	**20 23 53.5**	**+0.6**
KHAL				*i* S	**Sg**	**20 24 02.1**	**-0.3**
KHL	**Karahalli**	**0.87**	**154**	*e*PG	**Pg**	**20 23 52.3**	**-0.5**
KHL	**Karahalli**	**0.87**	**154**	*e*Pg	**Pg**	**20 23 52.3**	**-0.5**
AKHS	**Akhisar**	**0.99**	**257**	P	**Pg**	**20 23 55.1**	**+0.1**
AKHS				S	**Sg**	**20 24 08.0**	**+0.2**
AKHS	**Akhisar**	**0.99**

CBYP			eSn	Sn	20 25 08.3	+1.2
HUMP	**Col San Antoni**	**1.86 123**	ePn	Pn	20 24 46.4	-0.1
HUMP			eSn	Sn	20 25 09.6	+0.9
MTP	**Monte Pirata**	**2.12 119**	ePn	Pn	20 24 51.1	+0.9
STVI	**Saint Thomas**	**2.54 108**	ePn	Pn	20 24 57.6	+1.7
BANI	**BANI**	**2.81 255**	ePn	Pn	20 25 02.2	+2.5
SDDR	**Presa de Saban**	**3.59 268**	ePn	Pn	20 25 12.5	+2.1
GRTK	**Grand Turk**	**4.14 305**	ePn	Pn	20 25 19.0	+1.2

*ISCJB **21** 20:31:15.1±0.6,22°.83N±0°.02×103°.64E±0°.03,h6km±4km, mb4.1/13,MS3.0/7,Error ellipse: s-maj=4.1km s-min=3.5km az=2.5*
*IDC **21** 20:31:16.1±1.3,22°.85N×103°.67E,h0km,mb3.8/6, mb1 3.9/7,mb1mx3.5/48,mbtmp3.8/7,ML4.1/1,MS3.2/7, Ms1 3.2/7,ms1mx2.9/41,Error ellipse: s-maj=30.7km s-min=20.5km az=99.0*
*NEIC **21** 20:31:17.7±0.4,22°.82N×103°.62E,h10km,mb4.1/8,Error ellipse: s-maj=9.3km s-min=6.4km az=109.0*
NEIC Felt at Xicheng, China.
*PLV **21** 20:31:17.6±2.6,22°.82N×103°.72E,h2km±10km,ML4.2*
*BJI **21** 20:31:17.1,22°.91N×103°.64E,h7km,mb4.4/11,mB4.3/10, ML4.1/9,Ms4.0/13,Ms7 3.7/11*
ISC 21 20:31:16.3±1.1,22°.80N±0°.02×103°.61E±0°.02,h3km±8km, n62,σ1°49/87,mb4.0/13,MS3.0/7,2C,Yunnan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SPV	**Sa-pa**	**0.51**	**156**	ePg	**Pb**	**20 31 28.1**	**+0.1**
SPV				eSg	**Sb**	**20 31 36.1**	**+0.3**
SPV				AML	AML	20 31 38.5	
	comp=E,25μm,0.4s						
SPV				AML	AML	20 31 40.5	
	comp=N,12μm,0.3s						
MLVB	**It Ong**	**0.87**	**209**	ePg	Pn	20 31 43.2	+7.8
MLVB				eSg	Sn	20 32 02.2	+13
TGV	**Tuan Giao**	**1.22**	**188**	ePg	**Pn**	**20 31 41.7**	**+1.4**
TGV				eSg	**Sn**	**20 31 59.6**	**+2.3**
TGV				AML	AML	20 32 04.5	
	comp=E,1μm,0.5s						
TGV				AML	AML	20 32 04.7	
	comp=N,955nm,0.5s						
HGVB	**Ha Giang**	**1.27**	**88**	ePg	**Pg**	**20 31 41.0**	**+0.2**
HGVB				eSg	**Sg**	**20 31 56.8**	**-0.6**
HGVB				AML	AML	20 31 58.8	
	comp=N,3μm,0.4s						
HGVB				AML	AML	20 31 59.7	
	comp=E,4μm,0.4s						
VTVB	**Vinh Tuy**	**1.31**	**115**	ePg	**Pb**	**20 31 41.9**	**+0.3**
DBV	**Dienbien**	**1.51**	**201**	ePg	**Pg**	**20 31 45.9**	**+0.6**
DBV				eSg	**Sg**	**20 32 07.2**	**+2.4**
DBV				AML	AML	20 32 12.1	
	comp=E,4μm,0.4s						
DBV				AML	AML	20 32 12.8	
	comp=N,3μm,0.4s						
DHV	**Doan Hung**	**1.87**	**128**	ePn	**Pn**	**20 31 49.8**	**+0.6**
DHV				eSg	**Sg**	**20 32 16.8**	**+0.3**
DHV				AML	AML	20 32 18.6	
	comp=E,5μm,0.2s						
DHV				AML	AML	20 32 18.9	
	comp=N,3μm,0.1s						
BCVB	**Bac Can**	**2.20**	**114**	ePn	**Pn**	**20 31 53.7**	**0.0**
BCVB				eSg	**Sb**	**20 32 25.5**	**+1.1**
BCVB				AML	AML	20 32 29.0	
	comp=E,1μm,0.3s						
BCVB				AML	AML	20 32 31.2	
	comp=N,2μm,0.3s						
CBVB	**Cao Bang**	**2.39**	**93**	ePn	**Pn**	**20 31 56.3**	**-0.1**
CBVB				ePg	**Pg**	**20 32 01.8**	**-0.4**
KMI	**Kunming**	**2.44**	**341**	Pn	**Pn**	**20 31 57.9**	**+0.6**
KMI				Pg	**Pg**	**20 32 03.3**	**+0.1**
KMI				Sn	**Sn**	**20 32 27.5**	**-0.3**
KMI				Sg	**Sg**	**20 32 34.3**	**-0.6**
KMI				smax	smax		
	comp=N,840nm,0.7s						
KMI				smax	smax		
	comp=N,770nm,0.8s						
KMI	**Kunming**	**2.44**	**341**	Pn	**Pn**	**20 31 57.9**	**+0.6**
KMI				Pg	**Pg**	**20 32 03.3**	**+0.1**
KMI				Sn	**Sn**	**20 32 27.5**	**-0.3**
KMI				Sg	**Sg**	**20 32 34.3**	**-0.6**
HBVN	**Hoa-Binh**	**2.55**	**140**	ePn	**Pn**	**20 31 58.6**	**+0.1**
HBVN				eSg	**Sg**	**20 32 38.1**	**-0.1**
HBVN				AML	AML	20 32 40.8	
	comp=N,5μm,0.3s						
HBVN				AML	AML	20 32 45.0	
	comp=E,2μm,0.4s						
MTZV	**Met**	**2.82**	**116**	ePn	**Pn**	**20 32 03.0**	**+0.7**
MTZV				ePg	**Pg**	**20 32 10.7**	**+0.3**
LSVB	**Lang Son stati**	**3.06**	**107**	ePn	**Pn**	**20 32 05.8**	**+0.2**
LSVB				eSg	**Sb**	**20 32 52.0**	**+2.9**
PLV	**Phu-Lien**	**3.44**	**125**	ePn	**Pn**	**20 32 10.7**	**-0.1**
THV	**Thanh Hoa**	**3.57**	**145**	ePg	**Pg**	**20 32 24.0**	**-0.8**
THV				eSg	**Sg**	**20 33 11.0**	**0.0**
TIYB	**Tien Yen**	**3.80**	**112**	ePn	**Pn**	**20 32 16.3**	**+0.5**
TIYB				eSg	**Sg**	**20 33 16.2**	**-2.2**
CCVB	**Con Cuong**	**3.92**	**162**	ePn	**Pn**	**20 32 18.3**	**+0.9**
CCVB				ePg	**Pg**	**20 32 31.9**	**+0.4**
VIVB	**Vinh**	**4.57**	**154**	eSg	**Sg**	**20 33 44.0**	**+0.7**
GYA	**Guiyang**	**4.58**	**37⇑**	iPn	**Pn**	**20 32 24.9**	**-1.7**
GYA				Sn	**Sn**	**20 33 17.3**	**-3.1**
GYA				Sg	**Sb**	**20 33 36.4**	**+3.4**
GYA				smax	smax		
	comp=E,580nm,0.9s						
GYA				smax	smax		
	comp=E,640nm,0.7s						
GYA	**Guiyang**	**4.58**	**37⇑**	iPn	**Pn**	**20 32 24.9**	**-1.7**
GYA				Sn	**Sn**	**20 33 17.3**	**-3.1**
GYA				Sg	**Sb**	**20 33 36.4**	**+3.4**
CHTO	**Chiang Mai**	**5.90**	**229**	ePn	**Pn**	**20 32 46.6**	**+1.9**
CHTO				ePg	**Pg**	**20 33 09.4**	**-0.1**
CHTO				eSg	**Sg**	**20 34 20.6**	**-5.3**
CHTO				eLg	Lg	20 34 28.7	
CM31	**Chiang Mai Arr**	**6.15**	**226**	ePn	**Pn**	**20 32 50.1**	**+2.0**
CM31				ePg	**Pg**	**20 33 14.0**	**-0.2**
CM31				eSn	**Sn**	**20 33 59.5**	**+0.5**
CM31				eLg	Lg	20 34 30.3	
CMAR	**Chiang Mai Arr**	**6.15**	**226**	Pn	**Pn**	**20 32 50.1**	**+2.0**
	comp=E,1.1nm,0.3s,baz=34,slow=12,SNR=15						
CMAR				Sn	**Sn**	**20 33 59.5**	**+0.5**
	comp=E,0.1nm,0.3s,baz=37,slow=18,SNR=2.6						
CMAR				Lg	Lg	20 34 33.9	
	comp=E,1.1nm,0.3s,baz=51,slow=32,SNR=15						
CM01	**Chiang Mai Arr**	**6.16**	**226**	ePn	**Pn**	**20 32 50.2**	**+1.8**
CM01				ePg	**Pg**	**20 33 14.2**	**-0.2**
CM01				eLg	Lg	20 34 33.4	
QIZ	**Qiongzhong**	**6.93**	**122**	ePn	**Pn**	**20 32 58.6**	**-0.2**
QIZ				eLg	Lg	20 34 55.4	
GZH	**Guangzhou**	**8.97**	**86**	P	Pg	20 34 12.9	+4.6
GZH				S	Sg	20 36 10.3	+5.7
GZH				smax	smax		
	comp=N,280nm,0.9s						
GZH				smax	smax		
	comp=E,160nm,0.9s						
ENH	**Enshi**	**9.11**	**34**	ePn	**Pn**	**20 33 31.2**	**+2.5**
ENH				eSn	**Sn**	**20 35 10.8**	**-1.1**
ENH				eLg	Lg	20 36 09.4	
XAN	**Xi'an**	**12.13**	**21**	P	**Pn**	**20 34 11.1**	**+1.0**
XAN				LR	LR		
	comp=E,340nm,11.9s						
XAN				LR	LR		
	comp=E,520nm,11.5s						
XAN				LR	LR		
	comp=E,170nm,9.8s						
XAN	**Xi'an**	**12.13**	**21**	P	**Pn**	**20 34 11.1**	**+1.0**
LSA	**Lhasa**	**13.12**	**304**	ePn	**Pn**	**20 34 24.1**	**+0.1**
LZH	**Lanzhou**	**13.24**	**1**	eP	**Pn**	**20 34 25.3**	**-0.1**
LZH				pP	P	20 34 28.6	-6.9
LZH				sP		20 34 32.0	
LZH				ePP	**PnPn**	**20 34 36.3**	**+2.9**
LZH				pmax	pmax		
	comp=E,21nm,1.0s						
LZH				pmax	pmax		
	comp=E,65nm,4.2s						
LZH				LR	LR		
	comp=E,220nm,8.5s						
LZH				LR	LR		
	comp=E,250nm,9.2s						
LZH				LR	LR		
	comp=E,310nm,12.5s						
LZH	**Lanzhou**	**13.24**	**1**	eP	**Pn**	**20 34 25.3**	**-0.1**
IPM	**Ipoh**	**18.39**	**188**	eP	**Pn**	**20 35 29.5**	**-3.0**
	comp=E,7.2nm,1.1s						
HHC	**Hu-ho-hao-te**	**19.20**	**19**	eP	**Pn**	**20 35 45.1**	**+2.8**
PSI	**Prapat**	**20.40**	**194**	eP	**P**	**20 35 53.3**	**-1.3**
	comp=E,29nm,2.0s						
WMQ	**Urumqi**	**24.74**	**332**	eP	**P**	**20 36 36.9**	**-2.2**
WMQ				pmax	pmax		
	comp=E,12nm,0.6s						
WMQ				pmax	pmax		
	comp=E,150nm,3.6s						
SONA0	**Songino Array**	**25.07**	**4**	eP	**P**	**20 36 42.5**	**+0.4**
	comp=E,2.9nm,0.9s						
SONM	**Songino Array**	**25.07**	**4**	P	**P**	**20 36 42.5**	**+0.4**
	comp=E,1.5nm,0.7s,baz=184,slow=9.0,SNR=6.8						
SONM				LR	LR	20 47 33.2	
	comp=E,92nm,20.3s,baz=188,slow=39						
SONA1	**Songino Array**	**25.09**	**4**	eP	**P**	**20 36 42.2**	**0.0**
ULN	**Ulaanbaatar**	**25.16**	**5**	eP	**P**	**20 36 44.1**	**+1.1**
	comp=E,4.4nm,1.3s						
KS01	**Wonju Array Si**	**25.49**	**49**	eP	**P**	**20 36 47.4**	**+1.6**
KSRS	**Korea Array**	**25.50**	**50**	LR	LR	20 46 54.6	
	comp=E,38nm,18.4s,baz=186,slow=37						
JNU	**Nakatsue**	**26.12**	**61**	LR	LR	20 48 16.4	
	comp=E,26nm,18.4s,baz=118,slow=39						
PALK	**Pallekele**	**26.91**	**239**	LR	LR	20 50 25.9	
	comp=E,37nm,18.4s,baz=116,slow=43						
TLY	**Talaya**	**28.83**	**0**	LR	LR	20 49 59.7	
	comp=E,39nm,18.6s,baz=171,slow=39						
MK01	**Makanchi Array**	**29.45**	**329**	eP	**P**	**20 37 20.5**	**-0.8**
MK31	**Makanchi Array**	**29.47**	**329**	eP	**P**	**20 37 21.5**	**0.0**
MK32	**Makanchi Array**	**29.47**	**329**	eP	**P**	**20 37 22.6**	**+1.1**
MKAR	**Makanchi Array**	**29.47**	**329**	P	**P**	**20 37 22.6**	**+1.1**
	comp=E,2.5nm,1.0s,baz=139,slow=9.9,SNR=6.9						
MKAR				LR	LR	20 50 13.8	
	comp=E,37nm,19.6s,baz=186,slow=39						
KURK	**Kurchatov**	**33.99**	**331**	eP	**P**	**20 38 00.5**	**-0.6**
	comp=E,3.1nm,0.9s						
ZAA0	**Zalesovo Array**	**34.19**	**340**	eP	**P**	**20 38 02.3**	**-0.5**
ZALV	**Zalesovo Beam**	**34.19**	**340**	P	**P**	**20 38 02.7**	**-0.1**
	comp=E,1.0nm,0.7s,baz=139,slow=7.0,SNR=5.0						
ZALV				LR	LR	20 52 34.7	
	comp=E,50nm,18.2s,baz=70,slow=37						
ZAA1	**Zalesovo Array**	**34.19**	**340**	eP	**P**	**20 38 02.7**	**-0.1**
BVAR	**Borovoye Array**	**39.34**	**329**	P	**P**	**20 38 46.8**	**0.0**
	comp=E,0.8nm,0.6s,baz=123,slow=10,SNR=7.4						
BRVK	**Borovoye**	**39.41**	**329**	eP	**P**	**20 38 46.3**	**-1.0**
	comp=E,2.6nm,0.8s						
ABKAR	**Akbulak array**	**43.24**	**319**	eP	**P**	**20 39 18.9**	**+0.1**
TIXI	**Tiksi**	**50.96**	**10**	eP	**P**	**20 40 21.1**	**+2.3**
	comp=E,7.8nm,1.9s						
WR1	**Warramunga Arr**	**52.01**	**142**	eP	**P**	**20 40 27.4**	**+0.1**
	comp=E,33nm,1.8s						
WRA	**Warramunga Arr**	**52.01**	**142**	P	**P**	**20 40 27.4**	**+0.1**
	comp=E,1.2nm,0.5s,baz=331,slow=8.3,SNR=4.8						
BR231	**Keskin MP Arra**	**61.37**	**304**	eP	**P**	**20 41 32.5**	**-1.4**
AKASG	**Malin Array Be**	**62.91**	**317**	P	**P**	**20 41 42.7**	**-1.2**
	comp=E,0.5nm,0.5s,baz=76,slow=6.8,SNR=2.9						

IDC 21 20:32:12.1±5.7,5°.32S×133°.47E,h0km,mb3.5/1, mb1 3.8/3,mb1mx3.4/30,mbtmp3.6/3,ML3.6/2,Error ellipse: s-maj=330.6km s-min=33.2km az=77.0,Aru Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**14.56**	**177**	Pn	Pn	20 35 38.8	-0.8
	0.3nm,0.3s,baz=358,slow=13,SNR=16						
WRA				Sn	Sn	20 38 10.6	-11
	0.8nm,0.3s,baz=346,slow=23,SNR=12						
ASAR	**Alice Springs**	**18.24**	**179**	P	P	20 36 27.3	0.0
	0.3nm,0.3s,baz=353,slow=11,SNR=22						
ASAR				S	Sn	20 39 37.7	-14
	0.2nm,0.3s,baz=356,slow=28,SNR=4.9						
MKAR	**Makanchi Array**	**68.78**	**325**	P	P	20 43 18.2	0.0
	0.3nm,0.5s,baz=118,slow=7.9,SNR=3.2						

*NEIC **21** 20:35:25.0,18°.84N×67°.59W,h5km,MD2.6(RSPR),After RSPR.*
RSPR 21 20:35:25.5,18°.84N×67°.59W,h6km±3km,1C-2D,Mona Passage

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IDE	**Isla Desecheo**	**0.47**	**166**	eS	Sg	20 35 41.8	+1.2
AGP	**Aguadilla**	**0.61**	**135**	ePg	Pg	20 35 35.6	-1.6
AGP				eSg	Sg	20 35 44.9	-0.3
MPR	**Mayaguez**	**0.76**	**146**	ePn	Pn	20 35 42.1	-0.7
LSP	**Las Mesas**	**0.82**	**144⇓**	eP	Pg	20 35 40.6	-0.6
LSP				eS	Sg	20 35 51.7	-0.2
LSP	**Las Mesas**	**0.82**	**144**	ePg	Pg	20 35 40.6	-0.6
LRS	**Lares**	**0.90**	**128**	ePg	Pg	20 35 40.1	-2.6
LRS				eSg	Sg	20 35 53.2	-1.2
LRS				eSn	Sb	20 35 53.4	-2.4
AOPR	**Arecibo Observ**	**0.94**	**122⇓**	eP	Pg	20 35 41.2	-2.3
AOPR				eS	Sg	20 35 55.2	-0.5
AOPR	**Arecibo Observ**	**0.94**	**122**	ePg	Pg	20 35 41.2	-2.3
CELP	**Cerrillos**	**1.23**	**128**	ePn	Pg	20 35 47.8	-1.2
CELP				eSg	Sg	20 36 03.2	-1.8
SJG	**San Juan**	**1.55**	**118**	ePn	Pn	20 35 53.0	-0.7
SJG				eSn	Sn	20 36 10.0	-4.2
DR12	**Loma Pena Alta**	**1.69**	**268⇑**	eP	Pn	20 35 53.1	-2.6
DR12				eS	Sn	20 36 13.5	-4.2
DR12	**Loma Pena Alta**	**1.69**	**268**	ePn	Pn	20 35 53.1	-2.6
CBYP	**Canovanas**	**1.74**	**109**	ePn	Pn	20 35 54.8	-1.5
HUMP	**Col San Antoni**	**1.79**	**113**	ePn	Pn	20 35 56.2	-0.9
SDD	**Santo Domingo**	**2.23**	**260**	ePn	Pn	20 36 02.1	-0.9
STVI	**Saint Thomas**	**2.55**	**101**	ePn	Pn	20 36 05.6	-1.9
SDDR	**Presa de Saban**	**3.50**	**273**	ePn	Pn	20 36 19.0	-1.6

*NEIC **21** 20:40:33.5,18°.93N×67°.79W,h12km,MD2.9(RSPR), After RSPR.*
RSPR 21 20:40:33.6,18°.93N×67°.79W,h12km±10km,MD2.9/9, 13C-2D,Mona Passage

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IDE	**Isla Desecheo**	**0.61**	**151⇑**	eP	Pg	20 40 44.7	-0.9
IDE	**Isla Desecheo**	**0.61**	**151**	eS	Sg	20 40 53.0	-0.7
IDE	**Isla Desecheo**	**0.61**	**151**	ePg	Pg	20 40 44.7	-0.9
IDE				eSg	Sg	20 40 53.0	-0.7
AGPR	**Aguadilla, PR**	**0.79**	**125⇑**	eP	Pg	20 40 46.4	-2.5
AGPR	**Aguadilla, PR**	**0.79**	**125⇑**	eP	Pg	20 40 46.4	-2.5
AGPR				eS	Sg	20 40 56.6	-2.6
AGP	**Aguadilla**	**0.80**	**130**	ePg	Pg	20 40 46.4	-2.7
AGP				eSg	Sg	20 40 56.3	-3.4
MPR	**Mayaguez**	**0.94**	**139**	ePg	Pg	20 40 49.6	-2.1
LSP	**Las Mesas**	**1.00**	**138⇑**	eP	Pg	20 40 50.8	-2.2
LSP	**Las Mesas**	**1.00**	**138**	eS	Sg	20 41 03.9	-2.1
LSP	**Las Mesas**	**1.00**	**138⇑**	eP	Pg	20 40 50.8	-2.2
LSP				eS	Sg	20 41 03.9	-2.1
LSP	**Las Mesas**	**1.00**	**138**	ePg	Pg	20 40 50.8	-2.2
LSP				eSn	Sg	20 41 03.9	-2.1
LRS	**Lares**	**1.09**	**125⇑**	eP	Pb	20 40 51.4	-3.2
LRS				eS	Sb	20 41 05.1	-3.8
LRS	**Lares**	**1.09**	**125⇓**	eP	Pb	20 40 51.3	-3.3
LRS				eS	Sb	20 41 04.8	-4.1
LRS	**Lares**	**1.09**	**125**	ePg	Pb	20 40 51.3	-3.3
LRS				eSg	Sb	20 41 04.3	-4.6
CRPR	**Cabo Rojo, PR**	**1.12**	**145⇑**	eP	Pb	20 40 51.5	-3.4
CRPR	**Cabo Rojo, PR**	**1.12**	**145**	eS	Sb	20 41 06.2	-3.3
CRPR	**Cabo Rojo, PR**	**1.12**	**145**	eS	Sb	20 41 08.3	-1.2
CRPR	**Cabo Rojo, PR**	**1.12**	**145**	ePg	Pb	20 40 51.5	-3.4
AOPR	**Arecibo Observ**	**1.14**	**120⇑**	eP	Pb	20 40 52.0	-3.3
AOPR	**Arecibo Observ**	**1.14**	**120**	eS	Sb	20 41 06.3	-3.8
AOPR	**Arecibo Observ**	**1.14**	**120⇓**	eP	Pb	20 40 51.9	-3.4
AOPR				eS	Sb	20 41 06.4	-3.7
AOPR	**Arecibo Observ**	**1.14**	**120**	ePg	Pb	20 40 51.9	-3.4
AOPR				eSg	Sb	20 41 06.3	-3.8
OBIP	**Obispado Ponce**	**1.43**	**128⇑**	eP	Pn	20 40 56.6	-2.8
OBIP	**Obispado Ponce**	**1.43**	**128**	eS	Sn	20 41 14.3	-3.8
OBIP	**Obispado Ponce**	**1.43**	**128**	ePn	Pn	20 40 56.6	-2.8
OBIP				eSn	Sn	20 41 14.3	-3.8
CELP	**Cerrillos**	**1.43**	**126⇑**	eP	Pn	20 40 56.9	-2.5
CELP				eS	Sn	20 41 14.2	-4.0
CELP	**Cerrillos**	**1.43**	**126⇑**	eP	Pn	20 40 56.9	-2.5
CELP	**Cerrillos**	**1.43**	**126**	ePn	Pn	20 40 56.8	-2.6
CELP				eSn	Sn	20 41 14.0	-4.1
DR12	**Loma Pena Alta**	**1.51**	**265⇑**	eP	Pg	20 41 03.2	+0.5
SJG	**San Juan**	**1.75**	**117**	ePn	Pn	20 41 02.8	-1.1
CBYP	**Canovanas**	**1.94**	**109**	ePn	Pn	20 41 05.6	-1.0
HUMP	**Col San Antoni**	**2.00**	**113**	eS	Sn	20 41 28.6	-3.7
HUMP	**Col San Antoni**	**2.00**	**113⇑**	eP	Pn	20 41 04.7	-2.6
HUMP	**Col San Antoni**	**2.00**	**113**	ePn	Pn	20 41 05.2	-2.1
HUMP				eSn	Sn	20 41 28.6	-3.7
MTP	**Monte Pirata**	**2.28**	**111**	ePn	Pn	20 41 08.6	-2.5
BANI	**BANI**	**2.49**	**258**	ePn	Pb	20 41 17.7	-0.8
STVI	**Saint Thomas**	**2.75**	**102**	ePn	Pn	20 41 18.4	+0.8
SDDR	**Presa de Saban**	**3.31**	**272**	ePn	Pb	20 41 29.8	-2.7

*CSEM **21** 20:48:52.9,39°.07N×29°.02E,h7km,MD2.6*
DDA 21 20:48:52.9,39°.07N×29°.02E,h7km,Md2.6,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.23**	**264**	P	Pg	20 48 58.0	+0.4
DEMI	**Demirci**	**0.23**	**264**	iP	Pg	20 48 58.0	+0.5
GDZ	**Gediz**	**0.36**	**87**	P	Pg	20 49 00.3	+0.3
GDZ				S	Sg	20 49 05.4	+0.6
GDZ	**Gediz**	**0.36**	**87**	iP	Pg	20 49 00.3	+0.2
GDZ				iS	Sg	20 49 05.4	+0.5
DURS	**Dursunbey**	**0.68**	**322**	P	Pg	20 49 05.7	-0.3
DURS	**Dursunbey**	**0.68**	**322**	iP	Pg	20 49 05.7	-0.3
MANT	**Manisa**	**0.68**	**212**	P	Pg	20 49 06.5	+0.5
MANT				S	Sg	20 49 15.4	+0.6
MANT	**Manisa**	**0.68**	**212**	iP	Pg	20 49 06.5	+0.5
MANT				iS	Sg	20 49 15.4	+0.6
KHAL	**Karahalli**	**0.79**	**152**	P	Pb	20 49 08.6	-0.4
KHAL				S	Sb	20 49 19.8	-0.2
KHAL	**Karahalli**	**0.79**	**152**	iP	Pb	20 49 08.6	-0.4
KHAL				iS	Sb	20 49 19.8	-0.2

IDC 21 20:49:00.0±1.3,1°.28N×28°.89W,h0km,mb3.9/4, mb1 4.0/4,mb1mx3.6/27,mbtmp3.9/4,Error ellipse: s-maj=98.5km s-min=23.9km az=155.0,Central Mid-Atlantic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H10N3	**ASCENSION HYDR16.97**	**122**		T	T	21 09 54.1	
	baz=301,slow=74,SNR=150						
H10N2	**ASCENSION HYDR16.98**	**122**		T	T	21 09 50.5	
	baz=301,slow=74,SNR=152						
H10N1	**ASCENSION HYDR16.99**	**122**		T	T	21 09 55.7	
	baz=301,slow=74,SNR=147						
H10S3	**ASCENSION HYDR17.45**	**126**		T	T	21 10 26.4	
	baz=304,slow=74,SNR=86						
H10S1	**ASCENSION HYDR17.45**	**126**		T	T	21 10 28.1	
	baz=304,slow=74,SNR=85						
H10S2	**ASCENSION HYDR17.46**	**126**		T	T	21 10 28.1	
	baz=304,slow=74,SNR=52						
DBIC	**Dimbokro**	**24.56**	**77**	P	P	20 54 22.9	+1.0
	3.7nm,0.8s,baz=231,slow=13,SNR=6.4						
TORD	**Torodi Ar. Bea**	**32.50**	**67**	P	P	20 55 31.6	-1.3
	0.6nm,0.5s,baz=255,slow=9.7,SNR=5.7						
LPAZ	**La Paz**	**42.48**	**244**	P	P	20 56 57.9	-0.2
	2.4nm,0.7s,baz=74,slow=6.8,SNR=13						
AKASG	**Malin Array Be**	**69.34**	**35**	P	P	21 00 09.7	+0.3
	0.4nm,0.5s,baz=243,slow=7.2,SNR=4.0						

IDC 21 20:51:17.1±3.3,3°.60S×99°.66E,h0km,mb3.5/6,mb1 3.7/6, mb1mx3.5/39,mbtmp3.5/6,Error ellipse: s-maj=131.3km s-min=20.0km az=57.0,Southwest of Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**21.93**	**358**	P	P	20 56 12.5	+0.2
	1.0nm,0.8s,baz=182,slow=9.1,SNR=6.3						
WRA	**Warramunga Arr**	**37.50**	**118**	P	P	20 58 31.2	-1.8
	0.6nm,0.7s,baz=303,slow=9.3,SNR=3.5						
ASAR	**Alice Springs**	**38.61**	**124**	P	P	20 58 43.7	+1.4
	0.5nm,0.6s,baz=299,slow=8.3,SNR=10.0						
SONM	**Songino Array**	**51.56**	**6**	P	P	21 00 25.5	+0.5
	0.5nm,0.6s,baz=190,slow=9.1,SNR=5.1						
MKAR	**Makanchi Array**	**52.47**	**345**	P	P	21 00 31.6	-0.1
	0.3nm,0.7s,baz=169,slow=8.8,SNR=3.2						
ZALV	**Zalesovo Beam**	**58.67**	**350**	P	P	21 01 15.5	-0.6
	0.2nm,0.3s,baz=148,slow=8.4,SNR=3.2						
TXAR	**Lajitas Array**	**146.16**	**38**	PKPbc	PKPdf	21 10 59.6	+0.3
	0.1nm,0.5s,baz=328,slow=3.2,SNR=3.4						

*ISK **21** 20:57:59.7,39°.12N×29°.01E,h5km,ML2.9*
*CSEM **21** 20:58:00.8±0.1,39°.13N×29°.03E,h2km,MD2.8,Error ellipse: s-maj=2.7km s-min=2.3km az=135.0*
*DDA **21** 20:58:00.2,39°.11N×29°.06E,h7km,Md2.8*
ISC 21 20:58:00.4±0.9,39°.12N±0°.02×29°.05E±0°.02,h15km±7km, n53,σ0°.36/68,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**254**	P	**Pg**	**20 58 06.5**	**+0.3**
DEMI				S	**Sg**	**20 58 10.3**	**+0.2**
DEMI	**Demirci**	**0.27**	**254**	iP	**Pg**	**20 58 06.5**	**+0.3**
DEMI				iS	**Sg**	**20 58 10.3**	**+0.2**
GDZ	**Gediz**	**0.34**	**95**	P	**Pg**	**20 58 07.3**	**-0.1**
GDZ				S	**Sg**	**20 58 12.0**	**-0.1**
GDZ	**Gediz**	**0.34**	**95**	iP	**Pg**	**20 58 07.3**	**-0.1**
GDZ				iS	**Sg**	**20 58 12.0**	**-0.1**
TVSB	**Tavsanli**	**0.46**	**44**	ePG	**Pg**	**20 58 09.5**	**-0.1**
TVSB	**Tavsanli**	**0.46**	**44**	ePg	**Pg**	**20 58 09.5**	**-0.1**
DURS	**Dursunbey**	**0.66**	**317**	P	**Pb**	**20 58 13.6**	**-0.1**
DURS	**Dursunbey**	**0.66**	**317**	iP	**Pb**	**20 58 13.

WEL 21 21:13:07.8±0.1, 37°.63S×177°.03E, h5km, ML2.8/9, 2C-2D, Error ellipse: s-maj=1.4km s-min=1.4km az=0.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WIZ	White Island	0.16	50	⇓PG	Pg	21 13 11.8	+0.8
WIZ				SG	Sg	21 13 14.5	+1.4
OPRZ	Ohinepanea	0.43	240	PG	Pg	21 13 15.8	-0.4
OPRZ				SG	Sg	21 13 21.8	-0.1
MARZ	Manawahe	0.45	219	PG	Pg	21 13 16.6	0.0
EDRZ	Edgecumbe	0.53	206	PG	Pg	21 13 19.2	-0.5
HAZ	Te Kaha	0.61	102	P*	Pg	21 13 19.8	+0.3
TGRZ	Tauranga	0.62	261	P*	Pg	21 13 19.7	-0.1
TGRZ				AML	AML	21 13 30.4	
TGRZ				AML	AML	21 13 30.9	
URZ	Urewera	0.63	174	⇑P*	Pg	21 13 19.1	-0.9
URZ				S*	Sg	21 13 26.8	-1.3
URZ				AML	AML	21 13 37.2	
MYRZ	Mayor Island	0.72	299	⇓P*	Pg	21 13 22.0	+0.4
KARZ	Kaharoa	0.74	238	P*	Pg	21 13 22.0	0.0
MWZ	Matawai	0.80	151	⇑P*	Pg	21 13 22.5	-0.7
MWZ				AML	AML	21 13 33.5	
MWZ				AML	AML	21 13 35.6	
RTZ	Ruatahuna	0.98	182	P*	Pg	21 13 25.6	-1.1
MXZ	Matakaoa Point	1.01	87	P*	Pn	21 13 28.9	+0.2
PUZ	Puketiti	1.06	115	P*	Pn	21 13 29.2	-0.2
WMGZ	Waiomatatini S	1.11	100	P*	Pn	21 13 31.0	+1.0
SNGZ	Shannon Statio	1.18	168	P*	Pg	21 13 29.7	-0.7
RIGZ	Rimuhau	1.22	152	P*	Pn	21 13 31.6	+0.1
KUZ	Kuaotunu	1.37	310	PN	Pn	21 13 32.1	-1.5
MKAZ	Moumakai	1.58	289	PN	Pn	21 13 34.3	-2.2
GRZ	Great Barrier	1.87	317	PN	Pn	21 13 39.6	-0.8

*ISK **21** 21:14:35.2, 39°.15N×29°.03E, h5km, MD2.8*
*DDA **21** 21:14:35.5, 39°.13N×29°.09E, h7km, Md2.7*
*CSEM **21** 21:14:36.0±0.1, 39°.13N×29°.06E, h2km, MD2.7, Error ellipse: s-maj=2.9km s-min=2.6km az=125.0*

ISC 21 21:14:35.5±0.9, 39°.13N±0°.02×29°.08E±0°.02, h12km±8km, n56, σ0°.47/68, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.29	253	P	Pg	21 14 41.8	+0.2
DEMI				S	Sg	21 14 45.8	+0.2
DEMI	Demirci	0.29	253	*i* P	Pg	21 14 41.8	+0.2
DEMI				*i* S	Sg	21 14 45.8	+0.2
GDZ	Gediz	0.32	98	P	Pg	21 14 42.0	0.0
GDZ				S	Sg	21 14 46.4	+0.1
GDZ	Gediz	0.32	98	*i* P	Pg	21 14 42.0	0.0
GDZ				*i* S	Sg	21 14 46.4	+0.1
TVSB	Tavsanli	0.44	43	*e*PG	Pb	21 14 45.0	-0.2
TVSB	Tavsanli	0.44	43	*e*Pg	Pb	21 14 45.0	-0.2
DURS	Dursunbey	0.66	315	P	Pg	21 14 48.5	+0.2
DURS				S	Sg	21 14 55.3	-1.8
DURS	Dursunbey	0.66	315	*i* P	Pg	21 14 48.5	+0.2
DURS				*i* S	Sg	21 14 55.3	-1.8
KULA	Kula-Manisa	0.70	208	*e*PG	Pb	21 14 49.7	+0.1
KULA	Kula-Manisa	0.70	208	*e*Pg	Pb	21 14 49.7	+0.1
MANT	Manisa	0.76	213	P	Pg	21 14 50.2	0.0
MANT	Manisa	0.76	213	*i* P	Pg	21 14 50.2	0.0
KHAL	Karahalli	0.83	157	P	Pg	21 14 51.1	-0.4
KHAL	Karahalli	0.83	157	*i* P	Pg	21 14 51.1	-0.4
KHL	Karahalli	0.88	156	*e*PG	Pn	21 14 53.7	0.0
KHL	Karahalli	0.88	156	*e*Pg	Pn	21 14 53.7	0.0
ORLT	Orhaneli	0.92	351	*e*PG	Pb	21 14 53.7	+0.3
ORLT				*e*SG	Sn	21 15 07.4	-0.1
ORLT	Orhaneli	0.92	351	*e*Pg	Pb	21 14 53.7	+0.3
ORLT				*e*Sg	Sn	21 15 07.4	-0.1
AKHS	Akhisar	1.02	256	P	Pg	21 14 55.3	+0.2
AKHS	Akhisar	1.02	256	*i* P	Pg	21 14 55.3	+0.2
AKS	Akhisar	1.02	256	*e*PG	Pn	21 14 55.6	+0.1
AKS				*e*SG	Sn	21 15 09.8	+0.1
AKS	Akhisar	1.02	256	*e*Pg	Pn	21 14 55.6	+0.1
AKS				*e*Sg	Sn	21 15 09.8	+0.1
BALB	Balikesir	1.06	299	*e*PG	Pg	21 14 56.0	+0.1
BALB				*e*SG	Sn	21 15 10.9	+0.2
BALB	Balikesir	1.06	299	*e*Pg	Pg	21 14 56.0	+0.1
BALB				*e*Sg	Sn	21 15 10.9	+0.2
CAVI	Cavuskoy	1.22	29	*e*PN	Pg	21 14 59.2	+0.2
CAVI	Cavuskoy	1.22	29	*e*Pn	Pg	21 14 59.2	+0.2
IZI	Iznik	1.24	14	*e*PN	Pg	21 14 59.7	+0.3
IZI	Iznik	1.24	14	*e*Pn	Pg	21 14 59.7	+0.3
MDNY	Mudanya-Bursa	1.25	353	*e*PN	Pg	21 14 59.7	+0.3
MDNY	Mudanya-Bursa	1.25	353	*e*Pn	Pg	21 14 59.7	+0.3
KCTX	Karacabey (Bur	1.26	334	*e*PN	Pg	21 15 00.2	+0.5
KCTX	Karacabey (Bur	1.26	334	*e*Pn	Pg	21 15 00.2	+0.5
GEMT	Gemlik	1.30	4	*e*PN	Pg	21 15 00.9	+0.4
GEMT	Gemlik	1.30	4	*e*Pn	Pg	21 15 00.9	+0.4
ADVT	Abdulvahap	1.40	21	*e*PN	Pg	21 15 03.2	+0.9
ADVT	Abdulvahap	1.40	21	*e*Pn	Pg	21 15 03.2	+0.9
GONE	Gonen-Balikesi	1.41	311	*e*PN	Pb	21 15 02.2	+0.5
GONE	Gonen-Balikesi	1.41	311	*e*Pn	Pb	21 15 02.2	+0.5
ARMT	Armutlu	1.44	353	*e*PN	Pg	21 15 03.2	0.0
ARMT	Armutlu	1.44	353	*e*Pn	Pg	21 15 03.2	0.0
EDC	Edincik	1.53	323	*e*PN	Pb	21 15 04.1	+0.3
EDC	Edincik	1.53	323	*e*Pn	Pb	21 15 04.1	+0.3
GULT	Gulveren	1.71	40	*e*PN	Pb	21 15 07.6	+0.8
GULT	Gulveren	1.71	40	*e*Pn	Pb	21 15 07.6	+0.8
HRT	Hereke	1.75	15	*e*PN	Pb	21 15 07.7	+0.2
HRT	Hereke	1.75	15	*e*Pn	Pb	21 15 07.7	+0.2
SPNC	Sapanca-Adapaz	1.82	31	*e*PN	Pb	21 15 08.9	+0.2
SPNC	Sapanca-Adapaz	1.82	31	*e*Pn	Pb	21 15 08.9	+0.2
SVRH	Sivrihisar-ESK	1.92	80	*e*PN	Pb	21 15 10.9	+0.4
SVRH	Sivrihisar-ESK	1.92	80	*e*Pn	Pb	21 15 10.9	+0.4
ISK	Istanbul-Kandi	1.93	360	*e*PN	Pb	21 15 10.4	-0.2
ISK	Istanbul-Kandi	1.93	360	*e*Pn	Pb	21 15 10.4	-0.2
SILT	Sile	2.06	12	*e*PN	Pb	21 15 12.1	-0.8
SILT	Sile	2.06	12	*e*Pn	Pb	21 15 12.1	-0.8
MDUB	Mudurnu	2.11	50	*e*PN	Pb	21 15 13.6	-0.1
MDUB	Mudurnu	2.11	50	*e*Pn	Pb	21 15 13.6	-0.1

*NIED **21** 21:16:00, 37°.50N×141°.90E, h5km, Mw3.4 Best double couple: M₀1.19000×10¹⁴ NP1:φ₁223.00000°, δ22.00000°, λ-93.00000°. NP2:φ₂47.00000°, δ68.00000°, λ-89.00000°.*

JMA 21 21:16:07.0±0.2, 37°.54N×141°.95E, h24km±3km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	0.87	259	P	Pb	21 16 23.0	-0.5
JFK				S	Sb	21 16 34.5	-0.3
JMM	Marumori	0.97	290	P	Pn	21 16 24.5	-0.7
JMM				S	Sb	21 16 37.2	-0.4
ONAJ	Iwakimizuishiy	1.02	245	P	Pn	21 16 25.6	-0.2
ONAJ				S	Sb	21 16 38.8	-0.1
JIO	Ouri	1.03	333	P	Pn	21 16 25.5	-0.4
JIO				S	Sb	21 16 38.2	-1.0
JFT	Otama	1.28	270	P	Pb	21 16 30.1	-0.4
JFT				S	Sb	21 16 46.9	+0.4
JOU	Okura	1.31	309	P	Pb	21 16 30.5	-0.4
JOU				S	Sb	21 16 47.3	0.0
JHO	Hitachi	1.44	230	P	Pn	21 16 31.3	-0.3
JHO				S	Sn	21 16 49.0	-0.8
MAT	Matsushiro	3.16	253	P	Pb	21 16 59.0	-3.4
MAT				S	Sb	21 17 42.5	+2.1

*BJI **21** 21:16:58.2, 30°.21S×177°.49W, h19km, mb5.6/54, mB5.8/58, Ms5.6/68, Ms7 5.5/63*
*ISCJB **21** 21:16:58.5±0.1, 30°.92S±0°.02×178°.17W±0°.03, h17km, mb5.6/281, MS5.4/193, Error ellipse: s-maj=3.5km s-min=1.9km az=31.1*
*MOS **21** 21:17:01.6±1.1, 30°.70S×178°.15W, h33km, mb5.7/76, MS5.5/34, Error ellipse: s-maj=8.3km s-min=6.3km az=84.9*
*NEIC **21** 21:17:02.4±0.1, 30°.82S×178°.17W, h34km, mb5.5/203, ME5.8, MS5.4/132, MW5.8, MW5.9, Error ellipse: s-maj=5.5km s-min=3.5km az=129.0, Moment Tensor Solution. s37 Moment tensor: Scale 10¹⁷Nm; Mrr5.88; Mθθ-2.61; Mφφ-3.27; Mrθ-0.35; Mφθ-2.05; Mφr-0.25; Best double couple: M₀5.50000×10¹⁷ NP1:φ₁221.00000°, δ47.00000°, λ91.00000°. NP2:φ₂40.00000°, δ43.00000°, λ89.00000°. Principal axes: T 5.9000, Plg88.0000°, Azm152.0000°; N -0.8700, Plg1.0000°, Azm41.0000°; P -5.0400, Plg2.0000°, Azm310.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from CMT mechanism.*
*NEIC **21** 21:17:02.0±0.0, 30°.82S×178°.17W, h34km, Moment Tensor Solution. s24 Moment tensor: Scale 10¹⁷Nm; Mrr6.81; Mθθ1.62; Mφφ-8.43; Mrθ-1.18; Mφθ-0.91; Mφr0.07; Best double couple: M₀7.90000×10¹⁷ NP1:φ₁97.00000°, δ46.00000°, λ107.00000°. NP2:φ₂353.00000°, δ46.00000°, λ73.00000°. Principal axes: T 7.0700, Plg77.0000°, Azm184.0000°; N 1.4400, Plg12.0000°, Azm5.0000°; P -8.5100, Plg0.0000°, Azm275.0000°;*
*GCMT **21** 21:17:02.4±0.1, 30°.81S×177°.96W, h53km, MW5.8/138, Moment Tensor Solution. s138,c281; s128,c368; Duration: 2s0 Moment tensor: Scale 10¹⁷Nm; Mrr6.91±.06; Mθθ-0.37±.05; Mφφ-6.54±.05; Mrθ-0.25±.05; Mφθ-2.05±.04; Mφr0.66±.05; Best double couple: M₀7.07000×10¹⁷ NP1:φ₁13.00000°, δ47.00000°, λ85.00000°. NP2:φ₂200.00000°, δ43.00000°, λ95.00000°. Principal axes: T 6.9590, Plg86.0000°, Azm229.0000°; N 0.2230, Plg4.0000°, Azm17.0000°; P -7.1810, Plg2.0000°, Azm107.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*
*IDC **21** 21:17:03.4±1.0, 30°.58S×178°.17W, h44km±8km, mb5.1/38, mb1 5.1/39, mb1mx5.1/43, mbtmp5.3/39, ML5.3/1, MS5.3/24, Ms1 5.3/24, ms1mx5.0/45 Error ellipse: s-maj=11.2km s-min=9.3km az=5.0*

ISC 21 21:17:02.2±0.5, 30°.85S±0°.03×178°.11W±0°.03, h34km±1km, h34km:pP-P, n1209, σ2s10/1200, mb5.6/275, MS5.4/197, 59C-20D, Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	Raoul Island	1.60	6	P	Pn	21 17 26.4	-1.6
RAO	1μm,0.3s,baz=130,slow=6.5,SNR=42						
RAO	Raoul Island	1.60	6	*e*Pn	Pn	21 17 26.8	-1.2
RAO				*e*Sn	Sn	21 17 45.7	-1.8
MXZ	Matakaoa Point	7.33	203	*e*Pn	Pn	21 18 45.9	-0.8
MXZ	Matakaoa Point	7.33	203	PN	Pn	21 18 44.6	-2.0
MXZ				SN	Sn	21 20 10.2	+1.6
WMGZ	Waiomatatini S	7.53	202	PN	Pn	21 18 48.4	-1.0
HAZ	Te Kaha	7.68	205	PN	Pn	21 18 50.6	-0.9
PUZ	Puketiti	7.81	202	PN	Pn	21 18 51.3	-2.0
PUZ				SN	Sn	21 20 20.0	-0.5
KUZ	Kuaotunu	7.81	219	PN	Pn	21 18 57.3	+4.1
MYRZ	Mayor Island	7.95	215	PN	Pn	21 19 01.2	+5.9
TWGZ	Tauwhareparae	7.99	203	PN	Pn	21 18 55.1	-0.8
WCZ	Waipu Caves	8.10	229	PN	Pn	21 19 05.2	+7.9
CNGZ	Carnagh Statio	8.20	201	PN	Pn	21 18 57.2	-1.5
OUZ	Omahuta	8.22	236	PN	Pn	21 19 06.1	+7.2
TKGZ	Te Karaka	8.27	203	PN	Pn	21 18 58.1	-1.6
MWZ	Matawai	8.29	205	PN	Pn	21 18 58.3	-1.6
MARZ	Manawahe	8.32	210	PN	Pn	21 19 01.7	+1.3
MKAZ	Moumakai	8.38	220	PN	Pn	21 19 05.8	+4.7
URZ	Urewera	8.38	207	P	Pn	21 19 00.1	-1.0
URZ	10nm,0.3s,baz=276,slow=4.6,SNR=26						
URZ				S	Sn	21 20 35.4	+1.0
URZ	118nm,0.3s,baz=246,slow=20,SNR=13						
URZ				LR	LR	21 22 19.5	
URZ	comp=Z,14μm,20.0s,baz=48,slow=37						
URZ	Urewera	8.38	207	*e*Pn	Pn	21 19 00.7	-0.4
URZ	1.7nm,0.7s						
URZ				*e*Sn	Sn	21 20 34.9	+0.4
URZ	Urewera	8.38	207	PN	Pn	21 18 59.2	-1.9
EDRZ	Edgecumbe	8.40	209	*e*PN	Pn	21 19 02.7	+1.2
RAGZ	Rawiri	8.47	205	PN	Pn	21 19 01.1	-1.4
RIGZ	Rimuhau	8.54	202	PN	Pn	21 19 01.4	-2.0
TARZ	Mount Tarawera	8.60	210	PN	Pn	21 19 06.4	+2.0
AWAZ	Awhitu Peninsu	8.64	222	PN	Pn	21 19 15.0	+10
TOZ	Tahuroa Road	8.66	216	PN	Pn	21 19 09.0	+4.0
RRRZ	Republican Roa	8.69	209	PN	Pn	21 19 06.9	+1.5
MUGZ	Murupara	8.70	208	PN	Pn	21 19 04.8	-0.7
PRGZ	Paritu Road	8.70	201	PN	Pn	21 19 03.4	-2.2
PRGZ				SN	Sn	21 20 39.8	-2.7
RTZ	Ruatahuna	8.74	206	PN	Pn	21 19 03.5	-2.6
SNGZ	Shannon Statio	8.75	204	PN	Pn	21 19 04.9	-1.4
KNZ	Kokohu	8.86	202	PN	Pn	21 19 04.7	-3.0
PRRZ	Plateau Road	8.87	209	PN	Pn	21 19 09.2	+1.2
MHGZ	Mahia Peninsul	8.91	200	PN	Pn	21 19 05.8	-2.6
RAHZ	Arahi	8.96	205	PN	Pn	21 19 08.1	-1.0
WHHZ	Waihua	9.05	204	*e*PN	Pn	21 19 09.4	-1.0
MRHZ	Matea Rd	9.15	208	PN	Pn	21 19 09.8	-1.9
NMHZ	Naumai	9.23	205	PN	Pn	21 19 11.0	-1.8
ARHZ	Aropaoanui	9.30	204	PN	Pn	21 19 12.5	-1.3
BKZ	Black Stump Fm	9.40	207	*e*Pn	Pn	21 19 15.0	-0.3
BKZ	Black Stump Fm	9.40	207	PN	Pn	21 19 12.8	-2.5
KATZ	Kakaramea	9.57	210	PN	Pn	21 19 19.5	+1.9
MCHZ	McNeill Hill	9.57	205	PN	Pn	21 19 16.8	-0.7
HIZ	Hauiti	9.59	215	*e*Pn	Pn	21 19 21.1	+3.3
HIZ	Hauiti	9.59	215	PN	Pn	21 19 19.7	+2.0
CKHZ	Cape Kidnapper	9.63	203	PN	Pn	21 19 15.2	-3.1
KWHZ	Kaweka Forest	9.66	206	PN	Pn	21 19 15.5	-3.2
KRVZ	Karewarewa	9.69	210	PN	Pn	21 19 19.7	+0.4
WTVZ	West Tongariro	9.73	210	PN	Pn	21 19 20.4	+0.6
OTVZ	Oturere	9.74	210	PN	Pn	21 19 18.0	-1.9
TWVZ	Taurewa	9.76	211	PN	Pn	21 19 21.3	+1.1
NGZ	Ngauruhoe	9.78	210	PN	Pn	21 19 20.0	-0.4
KAHZ	Kahuranaki	9.82	203	PN	Pn	21 19 16.8	-4.2
BHHZ	Black Hill Sta	9.85	207	PN	Pn	21 19 19.1	-2.3
FWVZ	Far West T-bar	9.86	210	PN	Pn	21 19 21.8	+0.1
KRHZ	Kereru	9.87	206	PN	Pn	21 19 17.5	-4.1
TRVZ	Turoa	9.90	210	PN	Pn	21 19 23.5	+1.3
WNVZ	Wahianoa	9.90	210	PN	Pn	21 19 21.7	-0.5
MOVZ	Moawhango	9.91	209	PN	Pn	21 19 21.0	-1.1
PKVZ	Pokaka	9.98	211	PN	Pn	21 19 24.0	+0.8
MTVZ	Mangateitei	10.01	210	PN	Pn	21 19 22.2	-1.3
PXZ	Pawanui	10.04	203	PN	Pn	21 19 18.9	-4.9
PNHZ	Pukenui	10.17	206	PN	Pn	21 19 22.5	-3.2
WPHZ	Waipukurau	10.21	204	PN	Pn	21 19 24.8	-1.5
PRHZ	Porangahau	10.32	203	PN	Pn	21 19 23.8	-4.0
TSZ	Takapari Road	10.38	206	PN	Pn	21 19 24.7	-3.9
DVHZ	Dannevirke	10.52	205	PN	Pn	21 19 25.9	-4.5
WAZ	Wanganui	10.52	211	PN	Pn	21 19 29.6	-0.9
PKE	Pukeiti	10.55	216	PN	Pn	21 19 35.0	+4.1
POWZ	Post Office Ro	10.74	206	PN	Pn	21 19 32.4	-1.2
PRWZ	Pori Road	10.81	205	PN	Pn	21 19 30.7	-3.7
BFZ	Birch Farm	10.83	203	*e*Pn	Pn	21 19 32.2	-2.5
BFZ				*e*ScP	ScP	21 29 07.4	+3.7
BFZ	Birch Farm	10.83	203	PN	Pn	21 19 29.7	-5.0
TIWZ	Tintock	11.04	205	PN	Pn	21 19 33.2	-4.4
MRZ	Mangatainoka R	11.05	206	PN	Pn	21 19 32.4	-5.3
HOWZ	Holdsworth Sta	11.28	206	PN	Pn	21 19 35.2	-5.7
TMWZ	Te Maipa	11.33	204	PN	Pn	21 19 36.4	-5.2
OGWZ	Otaki Gorge	11.34	207	PN	Pn	21 19 36.3	-5.3
KIW	Kapiti Island	11.48	208	PN	Pn	21 19 38.4	-5.2
MTW	Mount Morrison	11.51	205	PN	Pn	21 19 38.4	-5.7
CAW	Cannon Point	11.63	206	PN	Pn	21 19 39.7	-6.0
TRWZ	Traveller	11.66	204	PN	Pn	21 19 41.0	-5.1
PAWZ	Paruwai Farm	11.73	205	PN	Pn	21 19 42.5	-4.6
MSWZ	Moikau Station	11.83	205	PN	Pn	21 19 43.2	-5.2
DUWZ	D'Urville Isla	11.85	211	PN	Pn	21 19 43.9	-4.7
SNZO	South Karori	11.94	207	*e*Pn	Pn	21 19 51.0	+1.1
PLWZ	Palliser	11.96	205	PN	Pn	21 19 44.3	-5.9
TCW	Tory Channel	12.03	209	PN	Pn	21 19 45.7	-5.4
NFK	Norfolk Island	12.24	275	P	Pn	21 19 57.2	+3.2
NFK	baz=13,SNR=19						
TUWZ	Tuamarina	12.35	209	PN	Pn	21 19 50.1	-5.5
NNZ	Nelson	12.42	211	PN	Pn	21 19 51.0	-5.4
QRZ	Quartz Range	12.52	215	PN	Pn	21 19 58.4	+0.6
BSWZ	Blackbirch Sta	12.62	209	PN	Pn	21 19 54.4	-4.7
CTZ	Chatham Island	12.92	175	PN	Pn	21 20 02.1	-1.1
THZ	Tophouse	13.07	211	*e*Pn	Pn	21 20 05.2	-0.2
THZ	Tophouse	13.07	211	PN	Pn	21 19 59.0	-6.4
KHZ	Kahutara	13.34	208	*e*Pn	Pn	21 20 08.0	-1.0
KHZ	Kahutara	13.34	208	PN	Pn	21 20 02.6	-6.5
MSVF	Nonsavu	13.52	344	*e*P	Pn	21 20 12.8	+1.2
MSVF	Nonsavu	13.52	344	*e*Pn	Pn	21 20 12.8	+1.2
LTZ	Lake Taylor	14.17	210	*e*Pn	Pn	21 20 22.2	+1.8
INZ	Inchbonnie	14.50	212	PN	Pn	21 20 19.1	-5.6
CRLZ	Canterbury Las	14.68	208	*e*Pn	Pn	21 20 27.4	+0.1
OXZ	Oxford	14.71	209	*e*Pn	Pn	21 20 25.2	-2.5
OXZ	Oxford	14.71	209	PN	Pn	21 20 23.8	-3.9
MQZ	McQueen's Vall	14.78	207	*e*Pn	Pn	21 20 25.0	-3.5
MQZ	McQueen's Vall	14.78	207	PN	Pn	21 20 20.4	-8.2
WVZ	Waitaha Valley	15.10	213	PN	Pn	21 20 28.4	-4.3
RPZ	Rata Peaks	15.45	211	P	Pn	21 20 35.8	-1.7
RPZ	4.6nm,0.3s,baz=46,slow=1.3,SNR=20						
RPZ				S	Sn	21 23 16.9	-11
RPZ	20nm,0.3s,baz=282,slow=23,SNR=12						
RPZ	Rata Peaks	15.45	211	*e*Pn	Pn	21 20 34.6	-2.9
RPZ	149nm,0.5s						
RPZ				S	Sn	21 23 16.9	-11
RPZ	Rata Peaks	15.45	211	PN	Pn	21 20 30.7	-6.8
FOZ	Fox Glacier	15.88	214	*e*Pn	Pn	21 20 42.1	-0.9
FOZ	157nm,1.2s						
FOZ	Fox Glacier	15.88	214	PN	Pn	21 20 38.9	-4.1
DZM	Mont Dzumac	16.35	299	*e*P	P	21 20 53.7	+1.9
DZM	2μm,1.6s						
DZM				*e*S	S	21 23 58.9	-2.4
DZM	18μm,25.0s						
DZM				*e*LR	LR	21 24 39.0	
DZM	73μm,25.5s						
DZM	Mont Dzumac	16.35	299	*e*Pn	Pn	21 20 50.0	+0.8
LBZ	844nm,1.4s						
LBZ	Lake Benmore	16.37	211	*e*Pn	Pn	21 20 50.0	+0.8
LBZ	111nm,1.4s						
LBZ	Lake Benmore	16.37	211	PN	Pn	21 20 46.7	-2.5
ODZ	Otahua Downs	16.70	209	*e*Pn	Pn	21 20 53.1	-0.2
ODZ	69nm,0.7s						
ODZ	Otahua Downs	16.70	209	PN	Pn	21 20 46.2	-7.1
JCZ	Jackson Bay	16.78	214	PN	Pn	21 20 50.2	-4.3
WKZ	Wanaka	17.24	212	*e*Pn	P	21 21 01.9	+0.5
WKZ	153nm,1.3s						
WKZ	Wanaka	17.24	212	PN	Pn	21 20 57.9	-2.2
EAZ	Earnscleugh	17.42	211	PN	Pn	21 21 02.3	-0.1
MSZ	Milford Sound	17.64	215	PN	Pn	21 21 04.5	-0.6
AFI	Afiamalu	17.84	20	P	Pn	21 21 05.6	-2.2
AFI	9.7nm,0.3s,baz=225,slow=8.6,SNR=7.5						
AFI				S	Sn	21 24 08.6	-17
AFI	5.3nm,0.3s,baz=65,slow=17,SNR=3.4						
AFI	Afiamalu	17.84	20	*e*P	Pn	21 21 06.1	-1.7
AFI				pmax	pmax		
AFI	comp=Z,102nm,0.6s						
AFI	Afiamalu	17.84	20	*e*Pn	Pn	21 21 06.1	-1.7
AFI	comp=Z,102nm,0.6s						
AFI				S	Sn	21 24 08.6	-17
TUZ	Tuapeka	17.85	209	PN	Pn	21 21 06.1	-1.6
MLZ	Mavora Lakes	18.06	213	*e*Pn	Pn	21 21 09.7	-0.6
MLZ	comp=Z,120nm,1.2s						
MLZ	Mavora Lakes	18.06	213	PN	Pn	21 21 09.2	-1.1
SYZ	Scrubby Hill	18.52	209	PN	Pn	21 21 16.8	+0.9
WHZ	Wether Hill Ro	18.54	212	*e*P	Pn	21 21 16.6	+0.5
WHZ	comp=Z,54nm,0.5s						
WHZ	Wether Hill Ro	18.54	212	PN	P	21 21 13.8	-1.9
DCZ	Deep Cove	18.59	214	*e*P	Pn	21 21 17.1	+0.4
DCZ	comp=Z,40nm,0.9s						
RAR	Rarotonga	19.04	64	P	Pn	21 21 24.7	+2.4
RAR	comp=Z,10.0nm,0.3s,baz=227,slow=8.5,SNR=8.1						
RAR				S	Sn	21 24 41.0	-14
RAR	comp=Z,6.2nm,0.3s,baz=134,slow=13,SNR=3.4						
RAR				LR	LR	21 28 18.6	
RAR	comp=Z,3μm,19.6s,baz=256,slow=36						
RAR	Rarotonga	19.04	64	*e*P	P	21 21 19.2	-2.2
RAR	comp=Z,163nm,0.9s						
RAR				S	Sn	21 24 41.0	-14
APZ	The Paps	19.24	210	PN	P	21 21 23.6	+0.1
LHI	Lord Howe Isla	19.54	262	P	Pn	21 21 31.6	+3.3
LHI	baz=20						
LHI	Lord Howe Isla	19.54	262	*e*P	Pn	21 21 31.2	+2.9
LHI	comp=Z,276nm,1.0s						
FUNA	Funafuti	22.35	353	*e*P	P	21 21 58.5	+1.3
FUNA	comp=Z,181nm,1.2s						
FUNA				LR	LR		
FUNA	comp=Z,12μm,19.0s						
ARMA	Armidale	26.01	263	P	P	21 22 36.2	+4.0
ARMA	baz=26,SNR=91						
ARMA	Armidale	26.01	263	*e*P	P	21 22 36.4	+4.2
ARMA	comp=Z,183nm,1.2s						
ARMA				LR	LR		
ARMA	comp=Z,13μm,21.0s						
MGCD	Mangrove Creek	26.16	257	P	P	21 22 37.2	+3.9
TBI	baz=26,SNR=117						
TBI	Tubuai	26.52	81	*e*S	S	21 27 07.4	-1.3
TBI	comp=Z,6μm,31.9s						
TBI				*e*LQ	LQ	21 27 54.0	
TBI	comp=Z,11μm,27.2s						
TBI				*e*L

TARA	**Tarawa**	**33.14 343**	*e*P	**P**	**21 23 34.7**	**-0.7**
	comp=Z,116nm,0.8s					
TARA			LR	LR		
	comp=Z,558nm,21.0s					
ARPS	**Mount Arapiles**	**33.62 249**	P	**P**	**21 23 41.0**	**+1.6**
	baz=34,SNR=59					
CTA	**Charters Tower**	**33.78 280**	P	**P**	**21 23 41.7**	**+0.7**
	comp=Z,112nm,0.5s,baz=105,slow=11,SNR=167					
CTA			S	**S**	**21 29 00.3**	**-2.4**
	comp=Z,4.4nm,0.8s,baz=101,slow=10,SNR=1.6					
CTA			LR	LR	21 35 27.9	
	comp=Z,14μm,20.5s,baz=126,slow=33					
CTAO	**Charters Tower**	**33.78 280**	*e*P	**P**	**21 23 43.0**	**+2.0**
CTAO			pmax	pmax		
	comp=Z,230nm,0.6s					
CTAO	**Charters Tower**	**33.78 280**	*e*P	**P**	**21 23 43.0**	**+2.0**
	comp=Z,227nm,0.6s					
CTAO			LR	LR		
	comp=Z,20μm,20.0s					
STKA	**Stephens Creek**	**34.29 258**	P	**P**	**21 23 47.0**	**+1.8**
	comp=Z,416nm,0.9s,baz=99,slow=10,SNR=211					
STKA			S	**S**	**21 29 10.1**	**-0.2**
	comp=Z,5.2nm,0.8s,baz=226,slow=18,SNR=3.1					
STKA			LR	LR	21 36 25.6	
	comp=Z,11μm,19.7s,baz=91,slow=34					
STKA	**Stephens Creek**	**34.29 258**	P	**P**	**21 23 47.3**	**+2.0**
	baz=35,SNR=164					
STKA	**Stephens Creek**	**34.29 258**	*e*P	**P**	**21 23 47.3**	**+2.0**
	comp=Z,117nm,1.0s					
STKA			S	**S**	**21 29 10.1**	**-0.2**
HTT	**Hallett**	**36.29 254**	P	**P**	**21 24 03.9**	**+1.4**
	baz=37,SNR=328					
MTSU	**Mount Surprise**	**36.29 282**	P	**P**	**21 24 04.5**	**+1.8**
	baz=37,SNR=177					
RABL	**Rabaul**	**38.56 307**	*e*P	**P**	**21 24 25.3**	**+3.4**
	comp=Z,106nm,0.6s					
PMG	**Port Moresby**	**38.72 296**	P	**P**	**21 24 22.6**	**-0.5**
	comp=Z,63nm,0.7s,baz=114,slow=6.7,SNR=14					
PMG			LR	LR	21 38 08.4	
	comp=Z,5μm,20.5s,baz=124,slow=33					
PMG	**Port Moresby**	**38.72 296**	*ce*P	**P**	**21 24 24.5**	**+1.4**
PMG			pmax	pmax		
	comp=Z,379nm,1.0s					
PMG	**Port Moresby**	**38.72 296**	*e*P	**P**	**21 24 24.7**	**+1.5**
	comp=Z,80nm,0.9s					
BBOO	**Buckleboo**	**38.76 255**	P	**P**	**21 24 23.8**	**+0.4**
	baz=39,SNR=86					
BBOO	**Buckleboo**	**38.76 255**	*e*P	**P**	**21 24 24.0**	**+0.6**
	comp=Z,1μm,1.6s					
RKT	**Rikitea**	**39.01 89**	*e*S	**S**	**21 30 22.8**	**+0.4**
	comp=Z,3μm,30.8s					
RKT			*e*LQ	LQ	21 33 28.4	
	comp=Z,4μm,23.5s					
RKT			*e*LR	LR	21 35 03.8	
	comp=Z,15μm,28.8s,baz=254					
RKT	**Rikitea**	**39.01 89**	*e*T	T	22 05 58.3	
	comp=Z,13nm,0.2s					
QIS	**Mount Isa**	**39.26 275**	P	**P**	**21 24 28.3**	**+0.6**
	baz=40,SNR=48					
COEN	**Coen**	**39.31 287**	P	**P**	**21 24 29.5**	**+1.4**
	baz=40,SNR=61					
COEN	**Coen**	**39.31 287**	*e*P	**P**	**21 24 29.6**	**+1.4**
	comp=Z,265nm,1.1s					
TAOE	**Nuku Hiva Isla**	**41.57 66**	*e*S	**S**	**21 31 02.7**	**+1.8**
	comp=Z,3μm,30.9s					
TAOE			*e*LQ	LQ	21 34 25.9	
	comp=Z,4μm,25.3s					
TAOE			*e*LR	LR	21 36 04.5	
	comp=Z,11μm,28.3s,baz=238					
KWAJ	**Kwajalein Atol**	**41.74 339**	*e*P	**P**	**21 24 48.2**	**+0.1**
KWAJ			pmax	pmax		
	comp=Z,180nm,1.1s					
KWAJ	**Kwajalein Atol**	**41.74 339**	*e*P	**P**	**21 24 48.2**	**+0.1**
	comp=Z,180nm,1.1s					
AS01	**Alice Springs**	**42.95 267**	*e*P	**P**	**21 24 59.3**	**+1.2**
AS31	**Alice Springs**	**42.99 267**	*e*P	**P**	**21 24 58.4**	**-0.1**
AS31			*ep*P	**P**	**21 24 59.3**	**+0.9**
ASAR	**Alice Springs**	**42.99 267**	P	**P**	**21 24 58.3**	**-0.1**
	comp=Z,177nm,0.9s,baz=104,slow=6.9,SNR=391					
ASAR			PcP	**PcP**	**21 26 49.5**	**+1.1**
	comp=Z,21nm,0.9s,baz=125,slow=4.7,SNR=5.5					
ASAR			ScP	**ScP**	**21 30 35.6**	**-1.4**
	comp=Z,22nm,0.8s,baz=116,slow=4.3,SNR=16					
ASAR			S	**S**	**21 31 14.2**	**-7.6**
	comp=Z,3.0nm,0.9s,baz=120,slow=14,SNR=2.1					
ASAR			LR	LR	21 42 38.6	
	comp=Z,10μm,18.7s,baz=126,slow=36					
ASAR	**Alice Springs**	**42.99 267**	P	**P**	**21 24 58.3**	**-0.1**
ASAR					21 26 49.5	
ASAR			S	**S**	**21 31 14.2**	**-7.6**
ASAR			pmax	pmax		
	comp=Z,142nm,0.8s					
ASAR			pmax	pmax		
	comp=Z,21nm,0.9s					
ASAR			pmax	pmax		
	comp=N,22nm,0.8s					
ASAR			smax	smax		
	comp=N,3.0nm,0.9s					
ASAR			MLR	MLR		
	comp=Z,10μm,18.7s					
MANU	**Manus Island**	**43.43 305**	*e*P	**P**	**21 25 01.3**	**-0.7**
MANU			*es*P	**P**	**21 25 02.1**	**+0.1**
WB2	**Warramunga Arr**	**44.01 273**	*e*P	**P**	**21 25 07.2**	**+0.6**
	comp=Z,525nm,1.1s					
WRAB	**Tennant Creek**	**44.02 273**	*ce*P	**P**	**21 25 06.7**	**0.0**
WRAB			pmax	pmax		
	comp=Z,989nm,1.0s					
WRAB	**Tennant Creek**	**44.02 273**	*e*P	**P**	**21 25 07.8**	**+1.1**
	comp=Z,469nm,1.1s					
WRAB			LR	LR		
	comp=Z,8μm,21.0s					
WRA	**Warramunga Arr**	**44.02 273**	P	**P**	**21 25 06.3**	**-0.4**
	comp=Z,296nm,0.6s,baz=111,slow=8.0,SNR=407					
WRA			ScP	**ScP**	**21 30 38.7**	**-2.5**
	comp=Z,7.2nm,0.6s,baz=110,slow=3.4,SNR=5.0					
WRA			S	**S**	**21 31 31.8**	**-5.1**
	comp=Z,5.3nm,0.8s,baz=110,slow=14,SNR=2.9					
WRA			PKiKP	**PKiKP**	**21 33 52.3**	**-0.9**
	comp=Z,2.4nm,0.8s,baz=97,slow=0.4,SNR=5.6					
WRA			LR	LR	21 42 59.0	
	comp=Z,7μm,18.2s,baz=110,slow=35					
WRA			P4KPbc		22 03 00.9	
	comp=Z,0.4nm,0.6s,baz=103,slow=4.4,SNR=6.9					
WRKA	**Warakurna**	**47.33 263**	P	**P**	**21 25 32.1**	**-0.8**
	baz=48,SNR=155					
SBA	**Scott Base**	**47.59 184**	*e*P	**P**	**21 25 36.4**	**+2.4**
SBA			pmax	pmax		
	comp=Z,222nm,1.3s					
SBA			MLR	MLR		
	comp=Z,2μm,22.0s					
SBA	**Scott Base**	**47.59 184**	*e*P	**P**	**21 25 36.4**	**+2.4**
	comp=Z,222nm,1.3s					
SBA			LR	LR		
	comp=Z,2μm,22.0s					
VNDA	**Vanda**	**47.64 186**	P	**P**	**21 25 37.3**	**+2.8**
	comp=Z,12nm,0.6s,baz=8.2,slow=7.2,SNR=28					
VNDA			ScP	**ScP**	**21 30 55.5**	**+0.4**
	comp=Z,2.8nm,0.5s,baz=355,slow=5.3,SNR=3.0					
VNDA			LR	LR	21 42 16.2	
	comp=Z,2μm,21.9s,baz=26,slow=32					
VNDA	**Vanda**	**47.64 186**	*e*P	**P**	**21 25 36.5**	**+2.0**
	comp=Z,122nm,1.8s					
VNDA			ScP	**ScP**	**21 30 55.5**	**+0.4**
JAY	**Jayapura**	**48.02 298**	P	**P**	**21 25 37.2**	**-1.1**
	comp=Z,4.6nm,0.8s,baz=90,slow=20,SNR=10					
JAY			LR	LR	21 45 55.3	
	comp=Z,39nm,18.3s,baz=174,slow=36					
JAY	**Jayapura**	**48.02 298**	P	**P**	**21 25 37.9**	**-0.4**
GENI	**Genyem**	**48.38 297**	P	**P**	**21 25 42.0**	**+1.0**
	comp=Z,169nm,0.9s,comp=Z,2μm					
KDU	**Kakadu**	**48.91 280**	P	**P**	**21 25 44.8**	**-0.2**
	baz=49,SNR=12					
MTN	**Manton Dam**	**49.96 279**	P	**P**	**21 25 52.9**	**-0.2**
	baz=50,SNR=22					
MTN	**Manton Dam**	**49.96 279**	*e*P	**P**	**21 25 52.5**	**-0.6**
	comp=Z,72nm,0.6s					
KMBL	**Kambalda**	**50.80 253**	P	**P**	**21 25 58.5**	**-0.9**
	baz=51,SNR=52					
FITZ	**Fitzroy Crossi**	**52.27 270**	P	**P**	**21 26 10.2**	**-0.2**
	comp=Z,68nm,0.8s,baz=160,slow=6.8,SNR=74					
FITZ			LR	LR	21 47 22.9	
	comp=Z,6μm,20.4s,baz=109,slow=35					
FITZ	**Fitzroy Crossi**	**52.27 270**	P	**P**	**21 26 10.0**	**-0.4**
	baz=53,SNR=57					
FITZ	**Fitzroy Crossi**	**52.27 270**	*e*P	**P**	**21 26 09.9**	**-0.5**
	comp=Z,60nm,0.8s					
NWAO	**Narrogin (SRO)**	**54.15 250**	P	**P**	**21 26 25.1**	**+1.0**
	comp=Z,21nm,1.0s,baz=348,slow=8.0,SNR=13					
NWAO			LR	LR	21 47 42.7	
	comp=Z,4μm,20.1s,baz=338,slow=34					
NWAO	**Narrogin (SRO)**	**54.15 250**	*e*P	**P**	**21 26 26.1**	**+1.9**
NWAO			pmax	pmax		
	comp=Z,60nm,1.2s					
NWAO	**Narrogin (SRO)**	**54.15 250**	*e*P	**P**	**21 26 26.1**	**+1.9**
	comp=Z,60nm,1.2s					
HPO	**Honuapo**	**54.18 27**	*e*P	**P**	**21 26 23.3**	**-0.9**
FAKI	**Fak Fak**	**54.41 291**	P	**P**	**21 26 29.3**	**+3.1**
	comp=Z,91nm,1.2s					
FAKI	**Fak Fak**	**54.41 291**	*e*P	**P**	**21 26 25.7**	**-0.5**
	comp=Z,56nm,0.8s					
KKH	**Kailua Kona**	**54.52 26**	*e*P	**P**	**21 26 26.1**	**-0.6**
KKH	**Kailua Kona**	**54.52 26**	*e*P	**P**	**21 26 26.1**	**-0.6**
UWE	**Uwekahuna**	**54.58 27**	*e*P	**P**	**21 26 25.1**	**-2.2**
	comp=Z,141nm,0.9s					
CASY	**Casey**	**54.70 208**	*e*P	**P**	**21 26 27.6**	**0.0**
	comp=Z,184nm,1.0s					
CASY			LR	LR		
	comp=Z,352nm,19.0s					
POHA	**Pohakuloa**	**54.79 26**	*e*P	**P**	**21 26 27.4**	**-1.6**
	comp=Z,335nm,1.5s					
POHA			LR	LR		
	comp=Z,2μm,19.0s					
HPAH	**Hawaii Prepara**	**54.98 26**	*e*P	**P**	**21 26 29.8**	**-0.4**
	comp=Z,234nm,0.8s					
MHA	**Mahukona**	**55.05 26**	*e*P	P	21 26 43.0	+12
HON	**Honolulu**	**55.35 23**	*e*P	**P**	**21 26 31.7**	**-1.0**
HON	**Honolulu**	**55.35 23**	*e*P	**P**	**21 26 31.7**	**-1.0**
KEKH	**Kekaha**	**55.42 21**	*e*P	**P**	**21 26 32.5**	**-0.7**
	comp=Z,509nm,1.7s					
KIP	**Kipapa**	**55.44 23**	*ce*P	**P**	**21 26 34.2**	**+0.9**
KIP			pmax	pmax		
	comp=Z,345nm,1.1s					
KIP	**Kipapa**	**55.44 23**	*e*P	**P**	**21 26 32.1**	**-1.2**
	comp=Z,133nm,0.9s					
HLK	**Haleakala**	**55.44 25**	*e*P	**P**	**21 26 31.9**	**-1.9**
	comp=Z,349nm,1.4s					
MBWA	**Marble Bar**	**56.09 264**	*e*P	**P**	**21 26 36.9**	**-1.3**
	comp=Z,97nm,0.6s					
MBWA			LR	LR		
	comp=Z,5μm,19.0s					
SWI	**Sorong**	**56.42 292**	P	**P**	**21 26 41.9**	**+1.3**
	comp=Z,127nm,0.8s,comp=Z,2μm					
GUMO	**Guam**	**56.73 316**	P	**P**	**21 26 41.7**	**-1.0**
	comp=Z,95nm,0.7s,baz=175,slow=6.5,SNR=4.2					
GUMO			LR	LR	21 48 51.8	
	comp=Z,2μm,19.9s,baz=120,slow=34					
GUMO	**Guam**	**56.73 316**	*e*P	**P**	**21 26 44.7**	**+2.0**
GUMO			pmax	pmax		
	comp=Z,470nm,1.5s					
GUMO	**Guam**	**56.73 316**	*e*P	**P**	**21 26 44.7**	**+2.0**
	comp=Z,471nm,1.5s					
SOEI	**Soe**	**57.33 279**	P	**P**	**21 26 51.3**	**+4.0**
	comp=Z,142nm,0.8s,comp=Z,2μm					
SOEI	**Soe**	**57.33 279**	*e*P	**P**	**21 26 48.7**	**+1.4**
	comp=Z,104nm,1.0s					
BATI	**Baumata**	**57.62 278**	LR	LR	21 51 50.5	
	comp=Z,5μm,18.7s,slow=36					
MIDW	**Midway**	**58.74 1**	*e*P	**P**	**21 26 57.9**	**+1.3**
	comp=Z,197nm,1.6s					
MIDW			LR	LR		
	comp=Z,5μm,22.0s					
QSPA	**South Pole Qui**	**59.26 180**	*e*P	**P**	**21 27 02.0**	**+2.0**
	comp=Z,1μm,0.6s					
QSPA			LR	LR		
	comp=Z,3μm,19.0s					
RPN	**Rapa Nui**	**59.41 105**	LR	LR	21 46 08.4	
	comp=Z,12μm,21.5s,baz=245,slow=29					
MMRI	**Maumere**	**59.62 278**	*e*P	**P**	**21 27 05.5**	**+2.5**
	comp=Z,117nm,1.0s					
WSI	**Waingapu**	**60.76 276**	P	**P**	**21 27 14.4**	**+3.5**
	comp=Z,360nm,0.9s					
MIR	**Mirnyy**	**61.68 207**	*i* P	**P**	**21 27 16.0**	**-0.3**
MIR			pmax	pmax		
	comp=Z,4.0nm,1.0s					
KAPI	**Kappang**	**63.60 280**	P	**P**	**21 27 29.4**	**-0.5**
	comp=Z,11nm,0.6s,baz=109,slow=10,SNR=4.0					
KAPI	**Kappang**	**63.60 280**	*e*P	**P**	**21 27 32.9**	**+3.0**
	comp=Z,18nm,0.8s					
KAPI			LR	LR		
	comp=Z,2μm,22.0s					
SPSI	**Sidrap Palu**	**64.14 281**	P	**P**	**21 27 36.2**	**+2.7**
	comp=Z,34nm,0.7s,comp=Z,578nm					
TWSI	**Taliwang, Sumb**	**64.14 275**	P	**P**	**21 27 33.1**	**-0.4**
MRSI	**Marisa**	**64.76 287**	P	**P**	**21 27 39.3**	**+1.8**
	comp=Z,64nm,0.8s,comp=Z,2μm					
DAV	**Davao City (W)**	**65.73 295**	LR	LR	21 55 43.4	
	comp=Z,767nm,20.0s,baz=126,slow=35					
DAV	**Davao City (W)**	**65.73 295**	||*e*P	**P**	**21 27 43.6**	**-0.2**
PCI	**Palu**	**65.73 284**	P	**P**	**21 27 45.8**	**+1.9**
	comp=Z,88nm,1.2s,comp=Z,1μm					
JAGI	**Jajag, Banyuwa**	**66.61 274**	P	**P**	**21 27 46.8**	**-2.7**
JAGI	**Jajag, Banyuwa**	**66.61 274**	*e*P	**P**	**21 27 50.9**	**+1.3**
	comp=Z,69nm,0.9s					
GMJI	**Gumukmas**	**67.32 274**	P	**P**	**21 27 54.7**	**+0.7**
PWJI	**Pagerwojo**	**68.85 273**	P	**P**	**21 28 04.1**	**+0.5**
CBIJ	**Chichi jima**	**68.98 322**	*e*P	**P**	**21 28 04.5**	**+0.4**
	comp=Z,128nm,1.0s					
JCJ	**Chichijima**	**68.98 322**	P	**P**	**21 28 01.9**	**-2.2**
	comp=Z,54nm,0.7s,baz=90,slow=7.1,SNR=7.2					
PCJI	**Pacitan**	**69.30 273**	P	**P**	**21 28 07.3**	**+0.9**
	comp=Z,362nm,0.6s,comp=Z,4μm					
NGJI	**Ngawi**	**69.47 274**	P	P	21 28 19.7	+12
MYLDM	**Lahad Datu**	**70.25 289**	*e*P	**P**	**21 28 15.2**	**+2.9**
	comp=Z,34nm,1.0s					
PBKI	**Pangkalan Bun**	**71.66 278**	P	**P**	**21 28 24.1**	**+3.2**
	comp=Z,317nm,1.1s,comp=Z,9μm					
MAW	**Mawson**	**71.86 201**	P	**P**	**21 28 21.7**	**+0.6**
	comp=Z,86nm,1.0s,baz=123,slow=7.2,SNR=31					
MAW			LR	LR	21 58 34.8	
	comp=Z,4μm,20.5s,baz=104,slow=35					
MAW	**Mawson**	**71.86 201**	*e*P	**P**	**21 28 22.0**	**+0.9**
MAW			pmax	pmax		
	comp=Z,28nm,1.2s					
MAW	**Mawson**	**71.86 201**	*e*P	**P**	**21 28 22.0**	**+0.9**
	comp=Z,28nm,1.2s					
PMSA	**Palmer Station**	**71.89 156**	PFAKE		21 28 30.0	+8.6
PMSA			LR	LR		
	comp=Z,1μm,20.0s					
CISI	**Cisompet, Garu**	**72.51 272**	*e*P	**P**	**21 28 24.6**	**-1.3**
	comp=Z,165nm,1.0s					
KKM	**Kota Kinabalu**	**72.61 288**	*e*P	**P**	**21 28 25.6**	**-0.9**
	comp=Z,36nm,0.7s					
KKM			LR	LR		
	comp=Z,1μm,19.0s					
LEM	**Lembang**	**73.04 272**	P	**P**	**21 28 32.1**	**+2.8**
	comp=Z,80nm,0.8s,baz=95,slow=7.1,SNR=15					
CNJI	**Cibinong**	**73.22 271**	P	**P**	**21 28 30.0**	**-0.1**
STKI	**Sintang**	**73.28 280**	P	**P**	**21 28 30.3**	**-0.2**
	comp=Z,114nm,0.9s,comp=Z,10μm					
SKJI	**Sukabumi**	**73.86 271**	P	**P**	**21 28 34.6**	**+0.7**
SBUM	**Sibu**	**73.93 283**	*e*P	**P**	**21 28 33.5**	**-0.8**
	comp=Z,38nm,0.9s					
KSM	**Kuching**	**75.02 281**	*e*P	**P**	**21 28 39.4**	**-1.3**
	comp=Z,66nm,0.8s					
KSM			LR	LR		
	comp=Z,1μm,21.0s					
JHJ	**Hachijo jima 2**	**75.05 324**	P	**P**	**21 28 38.2**	**-2.1**
	comp=Z,183nm,0.8s,baz=143,slow=9.5,SNR=5.6					
USHA	**Ushuaia**	**75.60 146**	P	**P**	**21 28 45.0**	**+1.7**
	comp=Z,125nm,0.9s,baz=261,slow=6.4,SNR=7.0					
KASI	**Kota Agung**	**76.37 272**	P	**P**	**21 28 48.0**	**-0.4**
SYO	**Syowa Base**	**76.66 193**	||*i*P	**P**	**21 28 48.0**	**-1.0**
SYO	**Syowa Base**	**76.66 193**	||*i*pP	pP	21 28 57.4	-2.4
JOW	**Kunigami**	**76.89 312**	*e*P	**P**	**21 28 51.2**	**+0.3**
	comp=Z,44nm,1.0s					
LWLI	**Liwa**	**77.00 272**	P	**P**	**21 28 52.7**	**+0.6**
	comp=Z,133nm,0.6s,comp=Z,3μm					
CHRN	**Cochrane**	**77.48 138**	*e*P	**P**	**21 28 54.1**	**0.0**
	comp=Z,25nm,0.9s					
SNAA	**Sanae**	**77.71 178**	P	**P**	**21 28 56.0**	**+0.9**
SNAA	**Sanae**	**77.71 178**	*e*P	**P**	**21 28 55.4**	**+0.3**
SNAA			pmax	pmax		
	comp=Z,290nm,1.2s					
SNAA	**Sanae**	**77.71 178**	*e*P	**P**	**21 28 55.4**	**+0.3**
	comp=Z,293nm,1.2s					
VNA3	**Neumayer Olymp**	**77.87 176**	P	**P**	**21 28 56.6**	**+0.7**
INU	**Inuyama**	**78.21 324**	*e*P	**P**	**21 28 56.6**	**-1.5**
	comp=Z,23nm,0.9s					
VNA2	**Neumayer--Watz**	**78.30 177**	P	**P**	**21 28 59.4**	**+1.2**
	baz=179,slow=4.3					
NVL	**N'lazarevskaya**	**78.42 183**	*e*P	**P**	**21 29 01.6**	**+2.7**
NVL			*e**PP	**PcP**	**21 29 08.1**	**+0.1**
NVL			*e*		21 31 56.6	
NVL			*e*S	**S**	**21 38 53.1**	**+1.2**
NVL			*e*SSS	SSS	21 47 22.2	
NVL			MLR	MLR		
	comp=Z,2μm,25.0s					
VNA1	**Neumayer--Stat**	**78.53 177**	P	**P**	**21 29 00.8**	**+1.3**
MJAR	**Matsushiro Arr**	**78.56 325**	P	**P**	**21 28 57.8**	**-2.3**
	comp=Z,9.1nm,0.8s,baz=158,slow=5.0,SNR=18					
MAJO	**Matsushiro**	**78.56 325**	*e*P	**P**	**21 29 01.7**	**+1.6**
MAJO			pmax	pmax		
	comp=Z,27nm,1.0s					
MAJO	**Matsushiro**	**78.56 325**	*e*P	**P**	**21 29 01.7**	**+1.6**
	comp=Z,27nm,1.0s					
MAJO			LR	LR		
	comp=Z,30μm,20.0s					
MAT	**Matsushiro**	**78.56 325**	P	**P**	**21 28 57.7**	**-2.3**
MAT			S	**S**	**21 38 47.6**	**-6.6**
MJB9	**Matsu-Tunnel**	**78.56 325**	*e*P	**P**	**21 29 01.7**	**+1.6**
	comp=Z,7.8nm,1.1s					
YOJ	**Yonaguni jima**	**78.76 307**	*e*P	**P**	**21 29 01.9**	**+0.5**
YOJ			pmax	pmax		
	comp=Z,87nm,0.9s					
YOJ	**Yonaguni jima**	**78.76 307**	*e*P	**P**	**21 29 01.9**	**+0.5**
	comp=Z,87nm,0.9s					
TWG	**Pinlang**	**79.04 305**	*e*P	**P**	**21 29 00.4**	**-2.6**
	comp=Z,220nm,0.7s					
YULB	**Yu-li**	**79.25 305**	*e*P	**P**	**21 29 01.0**	**-3.2**
	comp=Z,21nm,0.7s					
MASI	**Maura Aman, Be**	**79.51 273**	P	**P**	**21 29 05.2**	**-0.7**
	comp=Z,430nm,0.9s,comp=Z,8μm					
NACB	**Ninganchiao**	**79.55 306**	*e*P	**P**	**21 29 06.0**	**+0.3**
	comp=Z,67nm,1.1s					
TPRI	**Tanjung Pinang**	**79.63 277**	P	**P**	**21 29 07.4**	**+0.9**
	comp=Z,78nm,1.1s,comp=Z,6μm					
TPUB	**Ta-pu**	**79.66 305**	*e*P	**P**	**21 29 04.1**	**-2.3**
	comp=Z,83nm,0.7s					
COCO	**West Island**	**79.66 262**	PFAKE		21 29 20.0	+13
COCO			LR	LR		
	comp=Z,4μm,20.0s					
SSLB	**Suanglung**	**79.74 306**	*e*P	**P**	**21 29 04.6**	**-2.2**
	comp=Z,59nm,0.7s					
JNU	**Nakatsue**	**79.83 318**	P	**P**	**21 29 06.0**	**-1.2**
	comp=Z,32nm,1.1s,baz=121,slow=5.3,SNR=14					
JNU	**Nakatsue**	**79.83 318**	*e*P	**P**	**21 29 06.9**	**-0.2**
	comp=Z,171nm,1.8s					
YHNB	**Yeheng**	**80.02 306**	*e*P	**P**	**21 29 08.3**	**0.0**
	comp=Z,36nm,1.0s					
YHNB			LR	LR		
	comp=Z,2μm,22.0s					
TATO	**Taipei**	**80.14 307**	*e*P	**P**	**21 29 08.8**	**-0.1**
	comp=Z,52nm,0.8s					
TATO			LR	LR		
	comp=Z,1μm,20.0s					
MYKOM	**Kota Tinggi**	**80.66 278**	*e*P	**P**	**21 29 11.3**	**-0.8**
	comp=Z,59nm,1.0s					
ERM	**Erimo**	**80.81 332**	*e*P	**P**	**21 29 15.2**	**+3.1**
ERM			pmax	pmax		
	comp=Z,50nm,0.9s					
ERM	**Erimo**	**80.81 332**	*e*P	**P**	**21 29 15.2**	**+3.1**
	comp=Z,50nm,0.9s					
ERM			LR	LR		
	comp=Z,7μm,19.0s					
H06S1	**SOCORRO T**	**81.16 62**	T	T	22 59 04.9	
	SNR=5.6					
H06E1	**SOCORRO T-PHAS**	**81.22 62**	T	T	22 59 06.0	
	SNR=12					
YUK	**Yuzh-Kuril'sk**	**81.48 335**	*c i*P	**P**	**21 29 16.1**	**+0.5**
YUK			*i*		21 29 29.9	
YUK			*i* S	**S**	**21 39 28.0**	**+3.5**
YUK			pmax	pmax		
	comp=Z,286nm,1.5s					
YUK			pmax	pmax		
	comp=E,155nm,1.3s					
YUK			pmax	pmax		
	comp=N,260nm,1.2s					
PPSI	**Pulau Pagai**	**81.62 272**	P	**P**	**21 29 20.1**	**+3.0**
	comp=N,187nm,1.2s,comp=N,3μm					
KUR	**Kuril'sk**	**81.80 336**	*c i*P	**P**	**21 29 16.1**	**-1.1**
KUR			*i* S	**S**	**21 39 27.4**	**-0.4**
KUR			*e*SS	**SS**	**21 44 48.3**	**+1.2**
KUR			pmax	pmax		
	comp=Z,117nm,2.3s					
QZH	**Quanzhou**	**82.14 305**	⇑*i*P	P	21 29 14.4	-5.1
QZH			PP	**PP**	**21 32 27.0**	**-1.3**
QZH	**Quanzhou**	**82.14 305**	S	S	21 39 20.5	-12
QZH			pmax	pmax		
	comp=Z,90nm,0.8s					
QZH			pmax	pmax		
	comp=Z,1μm,4.2s					
QZH			LR	LR		
	comp=N,450nm,14.0s					
QZH			LR	LR		
	comp=E,2μm,21.0s					
QZH			LR	LR		
	comp=Z,2μm,27.6s					
PDSI	**Padang**	**82.17 274**	P	**P**	**21 29 17.5**	**-2.6**
PLCA	**Paso Flores**	**82.27 133**	*e*P	**P**	**21 29 21.5**	**+1.3**
PLCA	**Paso Flores**	**82.27 133**	P	**P**	**21 29 21.8**	**+1.5**
	comp=Z,67nm,0.9s,baz=262,slow=5.1,SNR=33					
PLCA			LR	LR	21 57 32.8	
	comp=Z,3μm,20.6s,baz=287,slow=29					
PLCA	**Paso Flores**	**82.27 133**	*e*P	**P**	**21 29 20.7**	**+0.4**
	comp=Z,128nm,1.1s					
BKNI	**Bangkinang**	**82.31 275**	*e*P	**P**	**21 29 19.2**	**-1.5**
	comp=Z,124nm,1.1s					
EFI	**East Falkland**	**82.47 147**	*e*P	**P**	**21 29 22.7**	**+1.8**
EFI			pmax	pmax		
	comp=Z,230nm,1.1s					
EFI	**East Falkland**	**82.47 147**	*e*P	**P**	**21 29 22.7**	**+1.8**
	comp=Z,226nm,1.1s					
EFI			LR	LR		
	comp=Z,2μm,22.0s					
ASAJ	**Asahikawa**	**82.79 333**	P	**P**	**21 29 21.3**	**-1.2**
	comp=Z,11nm,0.6s,baz=188,slow=5.0,SNR=15					
ASAJ	**Asahikawa**	**82.79 333**	*e*P	**P**	**21 29 25.1**	**+2.6**
	comp=Z,49nm,0.7s					
SMY	**Shemya**	**83.50 355**	*e*P	**P**	**21 29 26.7**	**+0.8**
SMY			pmax	pmax		
	comp=Z,110nm,0.8s					
SMY	**Shemya**	**83.50 355**	*e*P	**P**	**21 29 26.7**	**+0.8**
	comp=Z,109nm,0.8s					
MNSI	**Mandailing Nat**	**83.80 275**	P	**P**	**21 29 26.1**	**-2.4**
NIKH	**Nikolski High**	**83.86 6**	*e*P	**P**	**21 29 27.0**	**-0.8**
	comp=Z,174nm,0

QIZ	**Qiongzhong**	**85.10 295**	P	**P**	**21 29 35.3 +0.4**
QIZ			PP	**PP**	**21 32 53.1 +0.4**
QIZ			SKS	**S**	**21 39 56.5 -5.8**
QIZ			pmax	pmax	
	comp=Z,26nm,1.0s				
QIZ			pmax	pmax	
	comp=Z,520nm,14.7s				
QIZ			LR	LR	
	comp=Z,2μm,19.6s				
QIZ			LR	LR	
	comp=Z,3μm,22.4s				
QIZ	**Qiongzhong**	**85.10 295**	*e*P	**P**	**21 29 35.2 +0.4**
	comp=Z,14nm,0.7s				
QIZ			LR	LR	
	comp=Z,906nm,21.0s				
YSS	**Yuzh-Sakhalins**	**85.11 334**	*o e*P	**P**	**21 29 35.6 +1.4**
YSS			*e**SP	**pP**	**21 29 44.6 -0.5**
YSS			*e*		21 32 52.0
YSS			*e*S	**S**	**21 40 03.0 +1.9**
YSS			*e*SS	**SS**	**21 45 42.0 +5.9**
YSS			pmax	pmax	
	comp=Z,500nm,6.0s				
YSS			pmax	pmax	
	comp=Z,70nm,1.0s				
YSS			smax	smax	
	comp=N,1μm,19.0s				
YSS			MLR	MLR	
	comp=Z,1μm,19.0s				
KULM	**Kulim**	**85.20 279**	*e*P	**P**	**21 29 34.5 -1.0**
	comp=Z,53nm,0.9s				
KULM			LR	LR	
	comp=Z,2μm,20.0s				
PKM	**Mcpherson Peak**	**85.35 45**	P	**P**	**21 29 37.3 +1.2**
	baz=227				
INCN	**Inchon**	**85.37 319**	PFAKE		21 29 50.0 +14
INCN			LR	LR	
	comp=Z,11μm,22.0s				
PSI	**Prapat**	**85.39 276**	*e*P	**P**	**21 29 33.4 -3.3**
PSI			*e*		21 32 55.3
PSI			pmax	pmax	
	comp=Z,68nm,1.2s				
PSI	**Prapat**	**85.39 276**	*e*P	**P**	**21 29 33.4 -3.3**
	comp=Z,68nm,1.2s				
PSI			*e*PP	**PP**	**21 32 55.3 +0.2**
GSI	**Gunungsitoli**	**85.78 274**	*e*P	**P**	**21 29 38.0 -0.5**
	comp=Z,166nm,0.7s				
GSI			*e*PP	**PP**	**21 32 58.5 +0.3**
BAR	**Barrett**	**85.83 48**	*e*P	**P**	**21 29 38.0 -0.3**
	comp=Z,45nm,1.5s				
PET	**Petropavlovsk**	**85.94 346**	*c i*P	**P**	**21 29 36.4 -1.8**
PET			*e*		21 32 59.9
PET			*e*		21 39 52.6
PET			*e*S	**S**	**21 40 06.3 -2.7**
PET			*e*PS	**PnS**	**21 41 06.6 -3.5**
PET			*e*PS		21 41 27.5
PET			*e*SS	**SS**	**21 45 50.2 +2.1**
PET			pmax	pmax	
	comp=Z,700nm,16.4s				
PET			pmax	pmax	
	comp=Z,107nm,0.6s				
PET			MLR	MLR	
	comp=Z,1μm,18.0s				
PET	**Petropavlovsk**	**85.94 346**	*e*P	**P**	**21 29 38.6 +0.5**
	comp=Z,66nm,0.6s				
PET			LR	LR	
	comp=Z,3μm,21.0s				
MWC	**Mount Wilson**	**85.98 46**	*e*P	**P**	**21 29 41.3 +2.1**
MWC			pmax	pmax	
	comp=Z,38nm,1.3s				
MWC	**Mount Wilson**	**85.98 46**	*e*P	**P**	**21 29 41.3 +2.1**
	comp=Z,38nm,1.3s				
TSI	**Tuntungan**	**86.06 276**	P	**P**	**21 29 40.5 +0.7**
	comp=Z,71nm,1.2s,comp=Z,1μm				
MURC	**Murrieta**	**86.10 47**	P	**P**	**21 29 40.7 +1.1**
	baz=229				
MONP2	**Monument Peak**	**86.13 48**	P	**P**	**21 29 40.9 +0.9**
	baz=229,SNR=10				
IKP	**In-Ko-Pah, Jac**	**86.17 48**	P	**P**	**21 29 41.0 +1.0**
	baz=230				
SKLT	**Songkhla**	**86.20 281**	P	**P**	**21 29 41.5 +1.0**
	comp=Z,43nm,1.3s,comp=Z,767nm				
PEA0	**Petropavlovsk-**	**86.22 346**	*e*P	**P**	**21 29 38.6 -1.0**
PEA0B	**Petropavlovsk-**	**86.22 346**	*e*P	**P**	**21 29 39.0 -0.6**
	comp=Z,114nm,0.7s				
PETK	**Petropavlovsk-**	**86.22 346**	P	**P**	**21 29 38.3 -1.3**
	comp=Z,35nm,0.7s,baz=105,slow=6.9,SNR=25				
PETK	**Petropavlovsk-**	**86.22 346**	P	**P**	**21 29 38.3 -1.3**
PETK			pmax	pmax	
	comp=Z,36nm,0.7s				
BFSC	**Mount Baldy Ra**	**86.23 46**	P	**P**	**21 29 41.5 +1.1**
	baz=228,SNR=14				
FALS	**False Pass**	**86.29 8**	*e*P	**P**	**21 29 39.8 -0.1**
	comp=Z,147nm,1.4s				
ROC1	**El Roble**	**86.33 126**	*e*P	**P**	**21 29 42.4 +1.1**
ROC1	**El Roble**	**86.33 126**	*e*P	**P**	**21 29 42.4 +1.1**
	comp=Z,62nm,0.7s				
VES	**Vestal, Richgr**	**86.43 44**	P	**P**	**21 29 41.9 +0.9**
	baz=228				
EDW2	**Edwards Air Fo**	**86.45 46**	P	**P**	**21 29 41.9 +0.6**
	baz=228,SNR=20				
NJ2	**Nanjing**	**86.47 311**	*e*P	**P**	**21 29 43.3 +2.0**
NJ2			PP	**PP**	**21 33 01.0 -2.5**
NJ2			S	**S**	**21 40 17.3 +2.2**
NJ2			pmax	pmax	
	comp=Z,27nm,0.6s				
NJ2			pmax	pmax	
	comp=Z,460nm,6.0s				
NJ2			LR	LR	
	comp=Z,2μm,19.5s				
NJ2			LR	LR	
	comp=Z,1μm,17.4s				
NJ2			LR	LR	
	comp=Z,2μm,16.3s				
UBPT	**Khong Chiam**	**86.49 290**	P	**P**	**21 29 42.5 +0.7**
	comp=Z,47nm,1.3s,comp=Z,1μm				
SWSC	**Sam W. Stewart**	**86.56 48**	P	**P**	**21 29 42.8 +1.0**
	baz=230				
PFO	**Pinyon Flats O**	**86.58 47**	P	**P**	**21 29 42.1 +0.1**
	comp=Z,13nm,0.8s,baz=269,slow=5.3,SNR=12				
PFO	**Pinyon Flats O**	**86.58 47**	P	**P**	**21 29 43.0 +0.9**
	baz=229				
PFO	**Pinyon Flats O**	**86.58 47**	*e*P	**P**	**21 29 42.8 +0.8**
PFO			pmax	pmax	
	comp=Z,24nm,1.0s				
PFO	**Pinyon Flats O**	**86.58 47**	*e*P	**P**	**21 29 42.8 +0.8**
	comp=Z,24nm,1.0s				
PFO			LR	LR	
	comp=Z,1μm,20.0s				
ISA	**Isabella, Lake**	**86.68 45**	P	**P**	**21 29 43.5 +1.0**
	baz=228				
ISA	**Isabella, Lake**	**86.68 45**	*e*P	**P**	**21 29 43.4 +1.0**
ISA			pmax	pmax	
	comp=Z,35nm,1.0s				
ISA	**Isabella, Lake**	**86.68 45**	*e*P	**P**	**21 29 43.4 +1.0**
	comp=Z,35nm,1.0s				
VLA	**Vladivostok**	**86.72 326**	*d i*P	**P**	**21 29 44.7 +2.4**
VLA			pmax	pmax	
	comp=Z,20nm,1.0s				
KCSI	**Kotacane, Aceh**	**86.75 276**	P	**P**	**21 29 42.9 -0.3**
	comp=Z,47nm,0.8s,comp=Z,4μm				
KMRM	**Mail Ridge**	**86.84 39**	*e*P	**P**	**21 29 45.9 +2.8**
	comp=Z,43nm,1.1s				
LRMC	**Laurel Mtn Rad**	**87.04 45**	P	**P**	**21 29 45.2 +0.9**
	baz=228				
BELC	**Belle Mtn. Jos**	**87.12 47**	P	**P**	**21 29 45.6 +0.9**
	baz=230,SNR=18				
CMB	**Columbia Colle**	**87.16 42**	*e*P	**P**	**21 29 44.3 -0.4**
CMB			pmax	pmax	
	comp=Z,18nm,0.8s				
CMB	**Columbia Colle**	**87.16 42**	*e*P	**P**	**21 29 44.3 -0.4**
	comp=Z,18nm,0.8s				
SDPT	**Sand Point**	**87.17 10**	*e*P	**P**	**21 29 43.3 -0.9**
	comp=Z,152nm,0.8s				
BC3	**Big Chuckawall**	**87.24 48**	P	**P**	**21 29 46.5 +1.3**
	baz=230,SNR=14				
GLA	**Glamis**	**87.26 49**	P	**P**	**21 29 46.4 +1.1**
	baz=230				
GLA	**Glamis**	**87.26 49**	*e*P	**P**	**21 29 47.2 +1.9**
GLA			pmax	pmax	
	comp=Z,42nm,1.1s				
GLA	**Glamis**	**87.26 49**	*e*P	**P**	**21 29 47.2 +1.9**
	comp=Z,42nm,1.1s				
KHMM	**Horse Mountain**	**87.29 38**	*e*P	**P**	**21 29 49.8 +4.4**
	comp=Z,18nm,0.8s				
TRTT	**Trang**	**87.33 281**	P	**P**	**21 29 46.3 +0.3**
	comp=Z,85nm,1.1s,comp=Z,1μm				
HSIG		**87.35 54**	*e*P	**P**	**21 29 49.5 +3.8**
HSIG			*e*		21 30 03.9
CWC	**Cottonwood Cre**	**87.44 44**	P	**P**	**21 29 47.1 +0.9**
	baz=228				
HEC	**Hector,Ludlow**	**87.45 47**	P	**P**	**21 29 47.1 +1.0**
	baz=229				
AFDM	**Forest Hills D**	**87.45 41**	*e*P	**P**	**21 29 46.7 +0.6**
	comp=Z,19nm,1.1s				
GSC	**Goldstone, Bar**	**87.46 46**	P	**P**	**21 29 46.9 +0.6**
	baz=229,SNR=19				
GSC	**Goldstone, Bar**	**87.46 46**	*e*P	**P**	**21 29 46.8 +0.6**
GSC			pmax	pmax	
	comp=Z,45nm,1.1s				
GSC	**Goldstone, Bar**	**87.46 46**	*e*P	**P**	**21 29 46.8 +0.5**
	comp=Z,45nm,1.1s				
USRK	**Ussuriysk Ar.**	**87.48 327**	P	**P**	**21 29 45.2 -0.7**
	comp=Z,18nm,0.7s,baz=117,slow=3.9,SNR=16				
MPMC	**Manual Prospec**	**87.54 45**	P	**P**	**21 29 47.5 +0.8**
	baz=228,SNR=20				
ORV	**Oroville**	**87.57 40**	*e*P	**P**	**21 29 47.3 +0.7**
ORV			pmax	pmax	
	comp=Z,13nm,1.0s				
ORV	**Oroville**	**87.57 40**	*e*P	**P**	**21 29 47.3 +0.7**
	comp=Z,13nm,0.9s				
DAC	**Darwin (Calif)**	**87.62 45**	*e*P	**P**	**21 29 47.6 +0.5**
DAC			pmax	pmax	
	comp=Z,11nm,1.0s				
DAC	**Darwin (Calif)**	**87.62 45**	*e*P	**P**	**21 29 47.6 +0.5**
	comp=Z,11nm,1.0s				
CHBT	**CHBT**	**87.70 286**	P	**P**	**21 29 49.8 +2.1**
	comp=Z,70nm,1.1s,comp=Z,1μm				
WDC	**Whiskeytown Da**	**87.72 39**	*e*P	**P**	**21 29 48.3 +1.1**
WDC			pmax	pmax	
	comp=Z,16nm,0.9s				
WDC	**Whiskeytown Da**	**87.72 39**	*e*P	**P**	**21 29 48.3 +1.1**
	comp=Z,16nm,0.8s				
IRM	**Iron Mountain**	**87.76 48**	P	**P**	**21 29 48.9 +1.2**
	baz=230,SNR=48				
113A	**Mohawk Valley,**	**87.77 49**	*e*P	**P**	**21 29 48.4 +0.8**
PAYG	**Puerto Ayora**	**87.78 89**	PFAKE		21 30 00.0 +12
PAYG			LR	LR	
	comp=Z,2μm,20.0s				
GMRC	**Granite Mounta**	**87.84 47**	P	**P**	**21 29 48.9 +0.8**
	baz=230,SNR=18				
214A	**Organ Pipe Nat**	**87.89 51**	P	**P**	**21 29 49.1 +0.7**
	baz=231				
214A	**Organ Pipe Nat**	**87.89 51**	*e*P	**P**	**21 29 48.8 +0.5**
	comp=Z,53nm,0.7s				
AUSP	**Uspallata**	**87.89 127**	*e*P	**P**	**21 29 50.6 +1.7**
Y12C	**Blythe**	**87.90 48**	*e*P	**P**	**21 29 49.7 +1.4**
	comp=Z,49nm,1.3s				
Y12C			*e*		21 30 05.6
O03D	**Paynes Creek**	**87.92 40**	P	**P**	**21 29 48.8 +0.5**
	baz=226				
KRAB	**Krabi**	**87.95 281**	P	**P**	**21 29 49.9 +0.9**
	comp=Z,36nm,0.9s,comp=Z,462nm				
WAKR	**Walker**	**88.02 42**	*e*P	**P**	**21 29 49.6 +0.7**
TUQ	**Turquoise Moun**	**88.09 46**	P	**P**	**21 29 50.2 +0.9**
	baz=230				
M02C	**Callahan**	**88.12 38**	P	**P**	**21 29 50.3 +1.0**
	baz=225,SNR=9.2				
FURC	**Furnace Creek,**	**88.19 45**	P	**P**	**21 29 50.6 +1.1**
	baz=229				
PANO	**Nakornpanom**	**88.19 291**	P	**P**	**21 29 50.5 +0.5**
	comp=Z,97nm,1.7s,comp=Z,8μm				
RTLS	**Leoncito**	**88.20 126**	*e*P	**P**	**21 29 51.0 +0.7**
LHMI	**Lhok Sumawe**	**88.32 277**	P	**P**	**21 29 52.7 +1.9**
	comp=Z,108nm,1.2s,comp=Z,2μm				
LHMI	**Lhok Sumawe**	**88.32 277**	*e*P	**P**	**21 29 51.3 +0.5**
	comp=Z,100nm,1.0s				
CHGN	**Chignik**	**88.41 11**	*e*P	**P**	**21 29 50.8 +0.7**
TYV	**Tymovskoe**	**88.43 336**	*e*P	**P**	**21 29 50.5 +0.2**
TYV			pmax	pmax	
	comp=Z,84nm,0.8s				
YBH	**Yreka Blue Hor**	**88.44 38**	P	**P**	**21 29 50.8 0.0**
	comp=Z,5.7nm,0.8s,baz=125,slow=1.3,SNR=12				
YBH	**Yreka Blue Hor**	**88.44 38**	*e*P	**P**	**21 29 51.2 +0.5**
YBH			pmax	pmax	
	comp=Z,11nm,0.8s				
YBH	**Yreka Blue Hor**	**88.44 38**	*e*P	**P**	**21 29 51.2 +0.5**
	comp=Z,11nm,0.8s				
PDMCI	**Parker Dam,Lak**	**88.50 48**	P	**P**	**21 29 52.3 +1.2**
	baz=231				
PKDT	**Phuket**	**88.51 280**	P	**P**	**21 29 54.2 +2.6**
	comp=Z,30nm,1.0s,comp=Z,800nm				
WHN	**Wuhan**	**88.54 307**	⇓P	**P**	**21 29 52.6 +1.2**
WHN			SKS	**SKSac**	**21 40 13.4 -4.5**
WHN			S	**S**	**21 40 32.3 -2.8**
WHN			LR	LR	
	comp=Z,660nm,14.8s				
WHN			LR	LR	
	comp=Z,1μm,19.0s				
WHN			LR	LR	
	comp=Z,2μm,18.7s				
SRAK	**Srakaew**	**88.61 287**	P	**P**	**21 29 51.2 -0.8**
	comp=Z,104nm,1.0s,comp=Z,968nm				
SKNT	**Sakolnakorn**	**88.61 291**	P	**P**	**21 29 52.3 +0.3**
	comp=Z,76nm,0.8s				
NV01	**Mina Array Sit**	**88.63 43**	*e*P	**P**	**21 29 51.8 -0.1**
NVAR	**Mina Array Bea**	**88.63 43**	P	**P**	**21 29 51.7 -0.2**
	comp=Z,14nm,0.7s,baz=226,slow=8.0,SNR=65				
NVAR			PKKPbc	**PKKPbc**	**21 47 33.8 +0.1**
	comp=Z,1.0nm,0.6s,baz=55,slow=2.9,SNR=6.0				
NVAR			PKPPKP	**P'P'df**	**21 55 41.0 +3.0**
	comp=Z,1.1nm,0.7s,baz=59,slow=2.6,SNR=7.6				
NVAR			LR	LR	22 06 23.3
	comp=Z,976nm,18.0s,baz=232,slow=33				
SURT	**Suratani**	**88.67 281**	P	**P**	**21 29 54.3 +1.9**
	comp=Z,9.1nm,1.3s,comp=Z,233nm				
RTCV	**Cerro Valdivia**	**88.69 127**	*e*P	**P**	**21 29 54.5 +2.1**
NV11	**Mina Array Sit**	**88.72 43**	*e*P	**P**	**21 29 52.2 0.0**
	comp=Z,16nm,1.0s				
LCO	**Las Campanas**	**88.81 123**	PFAKE		21 30 10.0 +17
LCO			LR	LR	
	comp=Z,3μm,21.0s				
PAHR	**Pah Rah Range**	**88.86 41**	*e*P	**P**	**21 29 53.0 +0.1**
	comp=Z,15nm,0.7s				
TPNV	**Topopah Spring**	**88.88 45**	P	**P**	**21 29 53.7 +0.6**
	baz=229,SNR=15				
TPNV	**Topopah Spring**	**88.88 45**	*e*P	**P**	**21 29 53.6 +0.6**
TPNV			pmax	pmax	
	comp=Z,15nm,0.7s				
TPNV	**Topopah Spring**	**88.88 45**	*e*P	**P**	**21 29 53.6 +0.5**
	comp=Z,15nm,0.6s				
HUMO	**Hull Mountain**	**88.93 37**	*e*P	**P**	**21 29 55.0 +2.1**
	comp=Z,93nm,1.8s				
HUMO			*e*		21 30 10.0
M04C	**Macdoel**	**88.94 38**	P	**P**	**21 29 53.7 +0.6**
	baz=226				
MDJ	**Mudanjiang**	**88.94 326**	P	**P**	**21 29 53.0 +0.1**
MDJ			pP	PcP	21 29 56.3 +1.9
MDJ			S	**S**	**21 40 38.5 +0.2**
MDJ			SS	**SS**	**21 46 33.3 +1.0**
MDJ			pmax	pmax	
	comp=Z,10.0nm,1.6s				
MDJ			pmax	pmax	
	comp=Z,530nm,6.6s				
MDJ			LR	LR	
	comp=Z,4μm,24.3s				
MDJ			LR	LR	
	comp=Z,3μm,24.3s				
MDJ			LR	LR	
	comp=Z,5μm,23.0s				
MDJ	**Mudanjiang**	**88.94 326**	*e*P	**P**	**21 29 53.9 +1.0**
	comp=Z,57nm,1.3s				
MDJ			LR	LR	
	comp=Z,5μm,21.0s				
HOPE	**Hope Point**	**88.97 159**	*e*P	**P**	**21 29 52.0 -1.1**
	comp=Z,286nm,1.1s				
HOPE			LR	LR	
	comp=Z,1μm,19.0s				
Y14A	**Wickenburg**	**89.00 49**	*e*P	**P**	**21 29 54.4 +0.8**
PATY	**Pattaya**	**89.00 286**	P	P	21 29 59.4 +5.5
	comp=Z,16nm,0.7s,comp=Z,994nm				
RTLL	**Cerro Villicun**	**89.04 126**	*e*P	**P**	**21 29 55.4 +1.4**
W13A	**Hualapai Mount**	**89.16 48**	*e*P	**P**	**21 29 55.3 +0.8**
TRQA	**Tornquist**	**89.18 135**	*e*P	**P**	**21 29 55.7 +1.1**
	comp=Z,94nm,1.5s				
TRQA			LR	LR	
	comp=Z,1μm,21.0s				
KHON	**Khomkaen**	**89.20 289**	P	**P**	**21 29 56.4 +1.6**
	comp=Z,21nm,1.2s,comp=Z,1μm				
DL2	**Dalian**	**89.22 317**	⇑*i*P	**P**	**21 29 54.0 -0.3**
DL2			S	**S**	**21 40 44.3 +3.2**
DL2			pmax	pmax	
	comp=Z,50nm,0.9s				
DL2			pmax	pmax	
	comp=Z,470nm,6.7s				
DL2			LR	LR	
	comp=Z,710nm,23.3s				
DL2			LR	LR	
	comp=Z,1μm,23.6s				
DL2			LR	LR	
	comp=Z,2μm,25.0s				
AMOG	**MOGNA**	**89.26 126**	*e*P	**P**	**21 29 56.0 +0.9**
SHPR	**Sheep Range**	**89.26 46**	*e*P	**P**	**21 29 56.4 +1.6**
	comp=Z,26nm,1.3s				
ACAN	**Cantantal**	**89.37 128**	⇓*e*P	**P**	**21 29 56.8 +1.2**
HABR	**Khabarovsk**	**89.39 331**	*c e*P	**P**	**21 29 54.9 0.0**
HABR			*e**SP	**pP**	**21 30 04.0 -1.8**
HABR			*e*		21 33 26.2
HABR			*e*PPP	PPP	21 35 22.6
HABR			*e*S	**SKSac**	**21 40 23.5 +1.4**
HABR			*e*S	**SKKSac**	**21 40 32.5 -1.9**
HABR			*e*SS	**SS**	**21 46 41.7 +3.1**
HABR			*e*SSS	SSS	21 50 17.2
HABR			pmax	pmax	
	comp=Z,51nm,1.4s				
HABR			pmax	pmax	
	comp=N,13nm,1.4s				
HABR			pmax	pmax	
	comp=E,23nm,1.4s				
HABR			MLR	MLR	
	comp=Z,2μm,20.0s				
TUC	**Tucson**	**89.46 51**	P	**P**	**21 29 56.7 +0.9**
	baz=232				
TUC	**Tucson**	**89.46 51**	*e*P	**P**	**21 29 57.0 +1.2**
TUC			pmax	pmax	
	comp=Z,48nm,1.1s				
TUC	**Tucson**	**89.46 51**	*e*P	**P**	**21 29 57.0 +1.2**
	comp=Z,48nm,1.1s				
TUC			LR	LR	
	comp=Z,781nm,21.0s				
I03D	**Drain, OR**	**89.50 36**	P	**P**	**21 29 56.4 +0.9**
	baz=225				
CHAI	**Chaiyaphum**	**89.65 289**	P	**P**	**21 29 57.2 +0.3**
	comp=Z,24nm,0.8s,comp=Z,193nm				
MOD	**Modoc Plateau**	**89.85 39**	*e*P	**P**	**21 29 58.1 +0.6**
	comp=Z,78nm,1.9s				
NONG	**Nongkai**	**89.86 291**	P	**P**	**21 29 58.0 +0.2**
	comp=Z,92nm,0.9s,comp=Z,8μm				
HPIG		**89.90 58**	*e*P	**P**	**21 29 58.9 +0.8**
	comp=Z,48nm,1.8s				
319A	**Douglas**	**89.92 53**	*e*P	**P**	**21 29 59.4 +1.4**
PHET	**Kaeng Krachan**	**90.02 285**	P	**P**	**21 30 01.0 +2.3**
	comp=Z,14nm,1.0s,comp=Z,168nm				
I04A	**Tendick Farm,**	**90.05 37**	P	**P**	**21 29 58.6 +0.4**
	baz=225				
SNY	**Shenyang**	**90.08 321**	⇑P	**P**	**21 29 59.5 +1.2**
SNY			SKS	**SKSac**	**21 40 25.1 -1.3**
SNY			pmax	pmax	
	comp=Z,24nm,1.1s				
SNY			pmax	pmax	
	comp=Z,540nm,12.0s				
SNY			LR	LR	
	comp=Z,3μm,13.9s				
SNY			LR	LR	
	comp=Z,4μm,20.0s				
SNY			LR	LR	
	comp=Z,7μm,26.5s				
K05A	**Summer Lake**	**90.10 38**	*e*P	**P**	**21 29 59.3 +0.7**
	comp=Z,73nm,1.4s				
AGUA	**GUANDACOL**	**90.11 125**	*e*P	**P**	**21 30 01.6 +2.4**
R11A	**Troy Canyon, C**	**90.19 44**	P	**P**	**21 29 59.2 0.0**
	baz=230				
R11A	**Troy Canyon, C**	**90.19 44**	*e*P	**P**	**21 29 59.3 +0.1**
	comp=Z,6.9nm,1.2s				
TIA	**Tai'an**	**90.21 313**	*e*P	**P**	**21 29 58.3 -0.8**
TIA			pmax	pmax	
	comp=Z,60nm,1.0s				
TIA			pmax	pmax	
	comp=Z,800nm,8.0s				
TIA			LR	LR	
	comp=Z,1μm,26.0s				
TIA			LR	LR	
	comp=Z,1μm,24.0s				
TIA			LR	LR	
	comp=Z,2μm,26.0s				
TLIG	**Tlapa**	**90.23 70**	*e*P	**P**	**21 30 02.3 +2.6**
	comp=Z,47nm,1.4s				
MRA	**San Martin**	**90.28 129**	*e*P	**P**	**21 30 00.8 +0.9**
J05D	**Fort Rock, OR**	**90.31 38**	P	**P**	**21 30 00.6 +1.0**
	baz=226,SNR=8.7				
X16A	**Lo Mia Camp, P**	**90.31 49**	*e*P	**P**	**21 30 01.0 +1.1**
CN2	**Changchun**	**90.44 323**	*e*P	**P**	**21 29 58.8 -1.1**
CN2			*e*pP	PcP	21 30 03.6 +2.5
CN2			*e*S	**S**	**21 40 52.4 +0.1**
CN2			SS	**SS**	**21 46 52.3 -1.8**
CN2			pmax	pmax	
	comp=Z,10.0nm,0.8s				
CN2			pmax	pmax	
	comp=Z,200nm,4.0s				
CN2			LR	LR	
	comp=Z,700nm,25.0s				
CN2			LR	LR	
	comp=Z,900nm,25.0s				
CN2			LR	LR	
	comp=Z,1μm,26.0s				
BMN	**Battle Mountai**	**90.58 42**	*e*P	**P**	**21 30 01.1 +0.2**
BMN			pmax	pmax	
	comp=Z,29nm,1.2s				
BMN	**Battle Mountai**	**90.58 42**	*e*P	**P**	**21 30 01.1 +0.2**
	comp=Z,29nm,1.3s				
VCA	**Vinchina**	**90.75 124**	*e*P	**P**	**21 30 04.9 +2.7**
LCMT	**Little Creek M**	**90.77 46**	*e*P	**P**	**21 30 02.9 +1.0**
	comp=Z,13nm,0.8s				
PBKT	**Sadao Pong**	**90.83 289**	P	**P**	**21 30 04.0 +1.6**
	comp=Z,86nm,0.9s,comp=Z,1μm				
KDAK	**Kodiak Island**	**90.86 13**	PFAKE		21 30 10.0 +8.5
KDAK			LR	LR	
	comp=Z,1μm,20.0s				
I05D	**Terrebonne, OR**	**90.98 37**	P	**P**	**21 30 03.3 +0.7**
	baz=226,SNR=12				
WUAZ	**Wupatki**	**91.03 49**	P	**P**	**21 30 04.1 +1.0**
	baz=232				
WUAZ	**Wupatki**	**91.03 49**	*e*P	**P**	**21 30 04.3 +1.2**
	comp=Z,26nm,1.0s				
WUAZ			LR	LR	
	comp=Z,870nm,20.0s				
KNB	**Kanab**	**91.03 47**	*e*P	**P**	**21 30 04.3 +1.2**
KNB			pmax	pmax	
	comp=Z,21nm,0.8s				
KNB	**Kanab**	**91.03 47**	*e*P	**P**	**21 30 04.3 +1.2**
	comp=Z,21nm,0.8s				
LOEI	**Loei**	**91.08 290**	P	**P**	**21 30 04.1 +0.5**
	comp=Z,55nm,1.2s,comp=Z,10μm				
WVOR	**Wild Horse Val**	**91.12 40**	*e*P	**P**	**21 30 06.3 +3.0**
WVOR			pmax	pmax	
	comp=Z,25nm,1.2s				
WVOR	**Wild Horse Val**	**91.12 40**	*e*P	**P**	**21 30 06.3 +3.0**
	comp=Z,25nm,1.3s				
WVOR			LR	LR	
	comp=Z,2μm,22.0s				
SRDT	**SRDT**	**91.19 286**	P	**P**	**21 30 08.1 +4.0**
	comp=Z,101nm,1.0s,comp=Z,2μm				
PSUT	**Pine Spring**	**91.35 45**	*e*P	**P**	**21 30 05.2 +0.6**
	comp=Z,12nm,0.6s				
X18A	**Snowflake**	**91.36 50**	*e*P	**P**	**21 30 06.0 +1.3**
KLR	**Kul'dur**	**91.37 330**	P	**P**	**21 30 03.4 -0.8**
	comp=Z,14nm,0.7s,baz=84,slow=2.9,SNR=23				
KLR			PKKPbc	**PKKPbc**	**21 47 27.5 +0.5**
	comp=Z,1.1nm,0.5s,baz=342,slow=5.8,SNR=4.0				
E03A	**Lebam**	**91.42 34**	*e*P	**P**	**21 30 08.9 +4.5**
	comp=Z,54nm,0.9s				
F04A	**Amboy**	**91.55 35**	*e*P	**P**	**21 30 05.8 +0.7**
	comp=Z,34nm,0.8s				
G05D	**Wamic, OR**	**91.62 36**	P	**P**	**21 30 06.4 +1.0**
	baz=226				
121A	**Cookes Peak, D**	**91.63 53**	P	**P**	**21 30 06.4 +0.4**
	baz=234				
121A	**Cookes Peak, D**	**91.63 53**	*e*P	**P**	**21 30 06.5 +0.5**
	comp=Z,12nm,0.6s				
TCA	**Tanti**	**91.69 128**	*e*P	**P**	**21 30 06.0 -0.4**
GYA	**Guiyang**	**91.69 300**	P	**P**	**21 30 08.4 +2.0**
GYA			PP	**PP**	**21 33 50.3 +4.7**
GYA			SKS	**SKSac**	**21 40 38.6 +1.9**
GYA			S	**S**	**21 41 06.0 +1.3**
GYA			SS	**SS**	**21 47 17.8 +4.8**
GYA			pmax	pmax	
	comp=Z,50nm,1.0s				
GYA			pmax	pmax	
	comp=Z,160nm,7.2s				
GYA			LR	LR	
	comp=Z,1μm,23.6s				

GYA LR LR
comp=Z,850nm,22.9s
GYA LR LR
comp=Z,920nm,23.7s
ENH Enshi 91.78 304 *e*P **P 21 30 06.4 -0.2**
comp=Z,36nm,0.6s
ENH LR LR
comp=Z,4μm,20.0s
UTTA Uttaradit 91.78 290 P **P 21 30 10.3 +3.5**
comp=Z,3.9nm,0.8s,comp=Z,46nm
KHLT Khaolaem Dam 91.86 286 P **P 21 30 11.9 +4.7**
comp=Z,23nm,1.7s
NLWA Neilton Lookou 91.88 33 *e*P **P 21 30 09.8 +3.2**
comp=Z,39nm,1.3s
NLWA LR LR
comp=Z,2μm,21.0s
ELK Elko 91.93 43 *e*P **P 21 30 07.4 +0.1**
ELK pmax pmax
comp=Z,10.0nm,1.1s
ELK Elko 91.93 43 *e*P **P 21 30 07.3 +0.1**
comp=Z,10nm,1.1s
G06A Carlson Farm, 91.97 37 *e*P **P 21 30 07.3 +0.2**
comp=Z,30nm,0.9s
MTPU Mount Pierson 92.07 46 *e*P **P 21 30 09.7 +1.5**
comp=Z,15nm,0.8s
MSU Marysvale 92.36 46 *e*P **P 21 30 10.5 +1.2**
MSU Marysvale 92.36 46 *e*P **P 21 30 10.5 +1.2**
SUKH Sukhothai 92.40 289 P P 21 30 16.0 +6.4
comp=Z,3.2nm,0.9s
LON Longmire 92.42 35 *e*P **P 21 30 10.0 +0.8**
LON pmax pmax
comp=Z,7.0nm,0.9s
LON Longmire 92.42 35 *e*P **P 21 30 10.0 +0.8**
comp=Z,7.2nm,0.9s
CYA Choya 92.62 125 *e*P **P 21 30 11.3 +0.6**
D05A Enumclaw 92.64 35 *e*P **P 21 30 13.3 +3.2**
comp=Z,56nm,1.3s
TX31 Lajitas Ar. Si 92.71 57 *e*P **P 21 30 11.8 +0.8**
TXAR Lajitas Array 92.71 57 P **P 21 30 10.9 -0.1**
comp=Z,4.3nm,1.0s,baz=210,slow=7.6,SNR=16
TXAR PP **PP 21 33 50.3 -3.2**
comp=Z,0.8nm,1.1s,baz=215,slow=7.4,SNR=2.7
TXAR PKKPbc **PKKPbc 21 47 23.0 +0.2**
comp=Z,0.5nm,0.6s,baz=109,slow=4.9,SNR=3.6
TXAR LR LR 22 05 29.9
comp=Z,661nm,19.4s,baz=0.0,slow=31
MNTX Cornudas Mount 92.81 55 P **P 21 30 11.6 +0.3**
baz=235
MNTX Cornudas Mount 92.81 55 *e*P **P 21 30 11.5 +0.3**
comp=Z,6.9nm,0.8s
MNTX *e*PP PP 21 34 04.7 +10
G08A Pilot Rock 92.87 37 *e*P **P 21 30 13.4 +2.1**
comp=Z,17nm,0.9s
LAMP Lampang 92.94 290 P **P 21 30 16.1 +4.0**
comp=Z,7.1nm,0.8s
DUG Dugway, Tooele 93.02 44 *e*P **P 21 30 12.3 +0.1**
DUG pmax pmax
comp=Z,9.0nm,1.2s
DUG Dugway, Tooele 93.02 44 *e*P **P 21 30 12.3 +0.1**
comp=Z,8.9nm,1.3s
DUG LR LR
comp=Z,1μm,22.0s
BRLK Bradley Lake 93.04 13 *e*P **P 21 30 14.1 +2.5**
comp=Z,32nm,1.0s
LAZ Ladron 93.16 52 *e*P **P 21 30 14.0 +1.0**
BJT Baijiatuau 93.17 315 *e*P **P 21 30 13.1 +0.4**
BJT pmax pmax
comp=Z,23nm,0.9s
BJT MLR MLR
comp=Z,5μm,22.0s
BJT Baijiatuau 93.17 315 *e*P **P 21 30 13.1 +0.4**
comp=Z,23nm,0.9s
BJT LR LR
comp=Z,5μm,22.0s
BJI Beijing 93.18 316 P **P 21 30 15.0 +2.3**
BJI sP **pP 21 30 20.8 -2.8**
BJI PP **PP 21 33 54.6 -2.2**
BJI SKS **SKSac 21 40 40.4 -3.7**
BJI S **ScS 21 41 19.0 +0.2**
BJI pmax pmax
comp=Z,26nm,1.2s
BJI pmax pmax
comp=Z,480nm,17.6s
BJI LR LR
comp=Z,1μm,28.5s
BJI LR LR
comp=Z,910nm,29.2s
BJI LR LR
comp=Z,3μm,28.5s
CRAI Chiangrai 93.23 292 P **P 21 30 16.0 +2.6**
comp=Z,269nm,1.2s,comp=Z,64μm
NLU North Lily Min 93.31 45 *e*P **P 21 30 15.3 +1.6**
comp=Z,5.2nm,1.0s
HAWA Hanford 93.32 36 *e*P **P 21 30 13.3 +0.1**
comp=Z,7.8nm,0.8s
HAWA LR LR
comp=Z,1μm,22.0s
MFID Camas Ranch 93.32 40 *e*P **P 21 30 13.2 -0.2**
comp=Z,15nm,0.8s
RSO Redoubt South 93.33 12 *e*P **P 21 30 15.0 +1.8**
B05A Bryant 93.34 34 P **P 21 30 14.8 +1.6**
baz=226
BGU Big Grassy Mou 93.34 43 *e*P **P 21 30 14.4 +0.7**
comp=Z,5.5nm,0.9s
BNM Barren Site 93.36 52 *e*P **P 21 30 15.4 +1.4**
NNA Nana 93.39 106 P **P 21 30 15.3 +0.9**
comp=Z,7.1nm,0.6s,baz=250,slow=6.4,SNR=4.1
NNA Nana 93.39 106 P **P 21 30 15.3 +0.9**
NNA pmax pmax
comp=Z,5.0nm,0.4s
NNA Nana 93.39 106 P **P 21 30 15.3 +0.9**
NNA LR LR
comp=Z,1μm,22.0s
CM01 Chiang Mai Arr 93.43 289 *e*P **P 21 30 14.0 -0.4**
CM01 *e* 21 33 58.4
TMUT Trail Mountain 93.44 46 *e*P **P 21 30 15.6 +1.3**
comp=Z,17nm,0.7s
LPM Los Pinos Moun 93.45 52 *e*P **P 21 30 16.6 +2.3**
BMO Blue Mountains 93.45 38 *e*P **P 21 30 14.0 0.0**
BMO *e*SP **sP 21 30 30.2 +1.3**
BMO Blue Mountains 93.45 38 *e*P **P 21 30 14.0 0.0**
BMO *es*P **sP 21 30 30.2 +1.3**
BMO LR LR
comp=Z,1μm,21.0s
CM31 Chiang Mai Arr 93.46 289 *e*P **P 21 30 18.6 +4.0**
CMAR Chiang Mai Arr 93.46 289 P **P 21 30 14.5 0.0**
comp=Z,3.3nm,0.8s,baz=138,slow=3.9,SNR=9.2
CMAR PP **PP 21 33 57.2 -2.2**
comp=Z,4.6nm,1.1s,baz=140,slow=6.3,SNR=5.4
CMAR PKKPbc **PKKPbc 21 47 21.9 +1.6**
comp=Z,1.5nm,0.8s,baz=290,slow=4.0,SNR=5.7
CHTO Chiang Mai 93.64 290 P **P 21 30 19.2 +3.8**
comp=Z,48nm,1.1s,comp=Z,2μm
CHTO Chiang Mai 93.64 290 *e*P **P 21 30 16.8 +1.4**
CHTO pmax pmax
comp=Z,7.0nm,0.8s
CHTO MLR MLR
comp=Z,1μm,19.0s
CHTO Chiang Mai 93.64 290 *e*P **P 21 30 16.8 +1.4**
comp=Z,7.1nm,0.8s
CHTO LR LR
comp=Z,1μm,19.0s
MA2 Magadan 93.70 345 P **P 21 30 13.5 -1.1**
comp=Z,7.6nm,0.7s,baz=184,slow=10,SNR=3.3
MA2 Magadan 93.70 345 *e*P **P 21 30 13.8 -0.8**
MA2 pmax pmax
comp=Z,77nm,0.9s
MA2 MLR MLR
comp=Z,2μm,21.0s
MA2 Magadan 93.70 345 *e*P **P 21 30 13.8 -0.8**
comp=Z,77nm,0.9s
MA2 LR LR
comp=Z,2μm,21.0s
SRU San Rafael Swe 93.75 46 *e*P **P 21 30 15.6 -0.1**
SRU pmax pmax
comp=Z,13nm,1.0s
SRU San Rafael Swe 93.75 46 *e*P **P 21 30 15.6 -0.1**
comp=Z,13nm,1.0s
LVC Limon Verde 93.80 119 P **P 21 30 18.0 +1.3**
comp=Z,67nm,1.0s,baz=233,slow=4.4,SNR=12
LVC PKKPbc **PKKPbc 21 47 20.3 +0.9**
comp=Z,14nm,0.8s,baz=67,slow=3.0,SNR=3.6
LVC Limon Verde 93.80 119 *e*P **P 21 30 19.7 +3.1**
comp=Z,64nm,1.4s
LVC PKKPbc **PKKPbc 21 47 20.3 +0.9**
LVC LR LR
comp=Z,3μm,20.0s

P17A Butcher Ranch, 93.83 46 *e*P **P 21 30 18.9 +2.9**
comp=Z,7.5nm,0.7s
MVCO Mesa Verde 93.90 49 PFAKE 21 30 30.0 +14
MVCO LR LR
comp=Z,942nm,19.0s
SPUT South Promonto 93.92 43 *e*P **P 21 30 16.6 +0.2**
comp=Z,19nm,1.2s
ANMO Albuquerque 93.93 51 P **P 21 30 16.9 +0.4**
baz=235
ANMO Albuquerque 93.93 51 *ce*P **P 21 30 16.4 -0.2**
ANMO pmax pmax
comp=Z,11nm,1.1s
ANMO Albuquerque 93.93 51 *e*P **P 21 30 16.9 +0.4**
comp=Z,9.4nm,1.0s
ANMO LR LR
comp=Z,870nm,21.0s
KMI Kunming 93.94 297 P **P 21 30 18.3 +1.4**
KMI pP pP 21 30 25.1 -2.7
KMI sP sP 21 30 28.4 -3.3
KMI PP **PP 21 34 02.0 -1.4**
KMI SKS **SKSac 21 40 47.4 -2.1**
KMI S **ScS 21 41 25.8 -0.6**
KMI pmax pmax
comp=Z,15nm,0.5s
KMI pmax pmax
comp=Z,160nm,8.2s
KMI LR LR
comp=Z,310nm,21.8s
KMI LR LR
comp=Z,570nm,22.6s
KMI LR LR
comp=Z,810nm,24.1s
AHML Horco Molle 93.95 124 *e*P **P 21 30 17.5 +0.6**
HVU Hansel Valley 94.03 43 *e*P **P 21 30 17.1 +0.3**
HVU pmax pmax
comp=Z,19nm,0.8s
HVU Hansel Valley 94.03 43 *e*P **P 21 30 17.1 +0.3**
comp=Z,19nm,0.8s
D08A Wollman Farm, 94.08 36 *e*P **P 21 30 18.0 +1.3**
comp=Z,18nm,0.8s
JLU Jordanelle 94.09 44 *e*P **P 21 30 18.8 +1.5**
comp=Z,25nm,1.8s
TIY Taiyuan 94.10 312 *e*P **P 21 30 16.3 -0.8**
TIY pmax pmax
comp=Z,300nm,4.6s
TIY LR LR
comp=Z,750nm,17.6s
TIY LR LR
comp=Z,680nm,20.1s
TIY LR LR
comp=Z,2μm,25.6s
SPU Mount Spurr 94.13 12 *e*P **P 21 30 16.0 -0.6**
HLID Hailey 94.20 41 P **P 21 30 18.1 +0.5**
baz=231
HLID Hailey 94.20 41 *e*P **P 21 30 18.0 +0.4**
comp=Z,8.7nm,0.8s
HLID LR LR
comp=Z,1μm,20.0s
F10A Beach Ranch, E 94.23 38 *e*P **P 21 30 16.9 -0.6**
comp=Z,15nm,0.9s
P18A Preston Nutter 94.23 46 *e*P **P 21 30 19.3 +1.3**
comp=Z,6.7nm,0.9s
PV09 Paradox Valley 94.25 47 *e*P **P 21 30 18.8 +0.6**
PB01 IPOC Station P 94.27 117 *e*P **P 21 30 22.8 +4.3**
PB01 *e* 21 30 39.2
XAN Xi'an 94.31 307 P **P 21 30 18.0 -0.2**
XAN pP pP 21 30 24.6 -4.5
XAN PP **PP 21 34 11.5 +5.6**
XAN SKS **SKSac 21 40 46.3 -4.4**
XAN S **ScS 21 41 28.3 -0.4**
XAN SS **SS 21 47 46.6 -3.6**
XAN pmax pmax
comp=Z,9.0nm,0.7s
XAN pmax pmax
comp=Z,270nm,7.0s
XAN LR LR
comp=Z,2μm,20.5s
XAN LR LR
comp=Z,3μm,22.6s
XAN LR LR
comp=Z,4μm,25.6s
PV01 Paradox Valley 94.40 48 *e*P **P 21 30 19.0 +0.3**
GAMB Gambell 94.44 3 *e*P **P 21 30 19.0 +1.2**
comp=Z,44nm,1.3s
RC01 Rabbit Creek A 94.48 13 *e*P **P 21 30 19.5 +1.3**
comp=Z,10nm,1.1s
HWUT Hardware Ranch 94.63 44 *e*P **P 21 30 19.3 -0.4**
comp=Z,48nm,1.9s
HWUT LR LR
comp=Z,2μm,22.0s
ATAH Atahualpa 94.65 101 P **P 21 30 21.8 +1.1**
comp=Z,3.7nm,0.5s,baz=197,slow=5.7,SNR=2.5
B08A Colville Reser 94.75 35 *e*P **P 21 30 22.0 +2.2**
comp=Z,7.5nm,0.8s
EYAK Cordova Ski Ar 94.85 15 *e*P **P 21 30 19.4 -0.4**
comp=Z,12nm,0.8s
PB11 IPOC Station P 94.87 116 *e*P **P 21 30 25.8 +4.5**
comp=Z,68nm,0.7s
PMR Palmer 95.06 13 *e*P **P 21 30 25.5 +4.7**
PMR pmax pmax
comp=Z,11nm,1.0s
PMR Palmer 95.06 13 *e*P **P 21 30 25.5 +4.7**
comp=Z,11nm,1.0s
TT01 Tatalina 95.09 10 *e*P **P 21 30 22.2 +1.3**
TTA Tatalina 95.11 10 *e*P **P 21 30 22.5 +1.3**
TTA pmax pmax
comp=Z,24nm,1.5s
TTA Tatalina 95.11 10 *e*P **P 21 30 22.5 +1.3**
comp=Z,24nm,1.5s
WRAK Wrangell Islan 95.21 24 PFAKE 21 30 30.0 +8.4
WRAK LR LR
comp=Z,1μm,21.0s
S22A 4UR Ranch, Cre 95.29 49 *e*P **P 21 30 23.9 +1.0**
comp=Z,5.2nm,0.8s
DIV Divide 95.36 15 *e*P **P 21 30 26.2 +3.9**
comp=Z,9.9nm,0.9s
BMRM Bremner River 95.48 16 *e*P **P 21 30 22.8 -0.1**
comp=Z,17nm,0.9s
AHID Auburn Hatcher 95.61 43 *e*P **P 21 30 25.6 +1.5**
comp=Z,12nm,1.0s
AHID LR LR
comp=Z,2μm,22.0s
SCM Sheep Creek Mo 95.65 14 *e*P **P 21 30 23.5 -0.1**
SCM pmax pmax
comp=Z,17nm,0.7s
SCM Sheep Creek Mo 95.65 14 *e*P **P 21 30 23.5 -0.1**
comp=Z,17nm,0.7s
NEW Newport 95.79 36 PFAKE 21 30 40.0 +15
NEW LR LR
comp=Z,2μm,22.0s
MCMT McKenzie Canyo 95.87 41 *e*P **P 21 30 26.8 +1.5**
MSTX Muleshoe 95.90 54 P **P 21 30 24.9 -0.6**
baz=237
MSTX Muleshoe 95.90 54 *e*P **P 21 30 25.6 +0.1**
MSTX *e* 21 30 43.8
SMCO Snowmass 96.02 48 *e*P **P 21 30 28.8 +2.5**
comp=Z,11nm,1.2s
BALM Baldy 96.08 17 *e*P **P 21 30 25.3 -0.4**
BALM pmax pmax
comp=Z,9.0nm,0.9s
BALM Baldy 96.08 17 *e*P **P 21 30 25.3 -0.4**
comp=Z,8.8nm,0.9s
REDW Red Top Meadow 96.12 43 *e*P **P 21 30 26.6 +0.1**
comp=Z,22nm,1.4s
TPAW Teton Pass 96.14 42 *e*P **P 21 30 26.8 +0.2**
comp=Z,6.3nm,0.6s
JCT Junction City 96.14 58 PFAKE 21 30 40.0 +13
JCT LR LR
comp=Z,1μm,22.0s
SDCO Great Sand Dun 96.15 50 PFAKE 21 30 40.0 +13
SDCO LR LR
comp=Z,615nm,20.0s
CAST Castle Rocks 96.20 11 *e*P **P 21 30 24.3 -1.7**
comp=Z,13nm,0.8s
SNOW Snow King Moun 96.23 43 *e*P **P 21 30 27.6 +0.6**
comp=Z,10.0nm,0.7s
CD2 Chengdu 96.25 302 P **P 21 30 27.3 +0.2**
CD2 sP pP 21 30 36.4 -1.6
CD2 PP **PP 21 34 20.8 -0.2**
CD2 SKS **SKSac 21 41 02.5 +1.3**
CD2 S **ScS 21 41 46.3 +1.3**
CD2 sS sS 21 41 57.8 -4.8
CD2 SS **SS 21 48 20.8 +3.0**
CD2 pmax pmax
comp=Z,20nm,0.9s
CD2 pmax pmax
comp=Z,330nm,4.5s
CD2 LR LR
comp=Z,950nm,20.4s
CD2 LR LR
comp=Z,770nm,30.0s
DLMT Dillon 96.34 40 *e*P **P 21 30 29.2 +1.9**
comp=Z,6.1nm,0.8s
IMW Indian Meadow 96.39 42 *e*P **P 21 30 28.3 +0.6**
comp=Z,9.6nm,1.2s
SEY Seymchan 96.39 347 P **P 21 30 25.3 -1.5**
comp=Z,16nm,0.8s,baz=165,slow=6.1,SNR=10.0
SEY Seymchan 96.39 347 *ce*P **P 21 30 27.9 +1.1**
LOHW Long Hollow 96.41 42 *e*P **P 21 30 27.7 0.0**
comp=Z,5.4nm,0.8s
MOOW Moose Ponds 96.41 42 *e*P **P 21 30 27.6 -0.1**
comp=Z,24nm,2.0s
TNA Tin City 96.42 4 *e*P **P 21 30 26.5 -0.4**
comp=Z,19nm,0.8s
HHC Hu-ho-hao-te 96.48 314 *e*P **P 21 30 29.8 +1.8**
HHC sP sP 21 30 41.3 -1.5
HHC SKS **SKSac 21 41 03.8 +1.7**
HHC S **ScS 21 41 50.3 +3.7**
HHC sS sS 21 42 01.4 -2.9
HHC pmax pmax
comp=Z,33nm,1.3s
HHC pmax pmax
comp=Z,1μm,8.1s
HHC LR LR
comp=Z,6μm,18.5s
HHC LR LR
comp=Z,4μm,18.2s
HHC LR LR
comp=Z,5μm,18.7s
BW06 Boulder Array 96.52 44 *e*P **P 21 30 27.5 -0.8**
BW06 LR LR
comp=Z,2μm,22.0s
PD31 Pinedale Array 96.52 44 *e*P **P 21 30 28.0 -0.3**
PDAR Pinedale Array 96.52 44 P **P 21 30 27.6 -0.7**
comp=Z,1.9nm,0.8s,baz=209,slow=2.7,SNR=12
PDAR PKKPbc **PKKPbc 21 47 12.2 -1.1**
comp=Z,2.0nm,0.6s,baz=75,slow=4.2,SNR=11
PDAR LR LR 22 06 32.0
comp=Z,1μm,21.8s,baz=242,slow=31
KTH Kantishna Hill 96.53 12 *e*P **P 21 30 28.1 +0.5**
comp=Z,9.6nm,0.9s
TRF Thorofare Moun 96.55 12 *e*P **P 21 30 27.8 0.0**
comp=Z,20nm,0.9s
FLWY Flagg Ranch 96.64 42 *e*P **P 21 30 30.5 +1.7**
FLWY *e* 21 30 46.6
LRM Limekiln Ridge 96.71 40 *e*P **P 21 30 29.2 +0.1**
RND Reindeer 96.77 13 *e*P **P 21 30 28.7 0.0**
RND pmax pmax
comp=Z,19nm,0.9s
RND Reindeer 96.77 13 *e*P **P 21 30 28.7 0.0**
comp=Z,19nm,0.9s
433A Art 96.81 58 P **P 21 30 31.1 +1.5**
baz=238
H17A Grant Village 96.90 42 *e*P **P 21 30 31.8 +1.8**
comp=Z,5.3nm,1.1s
BPAW Bear Paw Mtn. 97.02 12 *e*P **P 21 30 31.1 +1.4**
comp=Z,3.7nm,0.9s
HIA Hailar 97.03 324 PFAKE 21 30 40.0 +10
HIA LR LR
comp=Z,4μm,19.0s
MCK McKinley 97.05 13 *e*P Pdif 21 30 30.4 +0.4
MCK pmax pmax
comp=Z,16nm,1.0s
MCK McKinley 97.05 13 *e*P Pdif 21 30 30.4 +0.4
comp=Z,16nm,1.0s
BOZ Bozeman (W) 97.06 40 P Pdif 21 30 31.7 +1.1
baz=233
BOZ Bozeman (W) 97.06 40 *e*P Pdif 21 30 31.4 +0.8
BOZ pmax pmax
comp=Z,6.0nm,1.0s
BOZ Bozeman (W) 97.06 40 *e*P Pdif 21 30 31.4 +0.8
comp=Z,5.8nm,0.9s
BOZ LR LR
comp=Z,1μm,22.0s
LKWY Lake 97.10 42 PFAKE 21 30 40.0 +9.0
LKWY LR LR
comp=Z,2μm,22.0s
ISCO Idaho Springs 97.24 48 PFAKE 21 30 40.0 +8.2
ISCO LR LR
comp=Z,1μm,22.0s
BWN Browne 97.36 12 *e*P Pdif 21 30 32.4 +1.1
comp=Z,16nm,0.7s
MENT Mentasta 97.42 15 *e*P **P 21 30 31.4 -0.2**
comp=Z,156nm,0.2s
DLBC Dease Lake 97.57 23 PKKPbc PKKPbc 21 47 10.4 -0.5
comp=Z,1.7nm,0.7s,baz=336,slow=1.1,SNR=3.2
WRH Wood River Hil 97.88 13 *e*P **P 21 30 33.3 -0.2**
comp=Z,9.8nm,0.9s
MLY Manley 97.92 11 *e*P **P 21 30 33.3 -0.5**
comp=Z,4.5nm,0.5s
DOT Dot Lake 97.97 15 *e*P Pdif 21 30 34.1 0.0
comp=Z,25nm,0.9s
LPAZ La Paz 98.05 114 P Pdif 21 30 37.0 +0.7
comp=Z,3.1nm,0.8s,baz=227,slow=2.2,SNR=13
LPAZ LR LR 22 06 34.2
comp=Z,773nm,21.9s,baz=215,slow=30
LPAZ La Paz 98.05 114 *e*P Pdif 21 30 37.6 +1.2
LPAZ pmax pmax
comp=Z,5.0nm,0.7s
LPAZ La Paz 98.05 114 *e*P Pdif 21 30 37.6 +1.2
comp=Z,5.3nm,0.7s
RLMT Red Lodge 98.08 42 PFAKE 21 30 50.0 +15
RLMT LR LR
comp=Z,1μm,22.0s
CCB Clear Creek Bu 98.09 13 *e*P **P 21 30 34.2 -0.3**
comp=Z,9.3nm,0.8s
K22A Casper 98.28 45 *e*P **P 21 30 36.0 -0.2**
comp=Z,7.9nm,0.9s
K22A *e*PP **PP 21 34 39.1 +2.5**
COLA College 98.29 13 *c i*P **P 21 30 34.6 -0.8**
COLA pmax pmax
comp=Z,7.0nm,0.7s
COLA College 98.29 13 *e*P Pdif 21 30 37.8 +2.4
comp=Z,18nm,0.8s
COLA LR LR
comp=Z,1μm,20.0s
IL1 Eielson Array 98.38 13 *e*P **P 21 30 34.0 -1.8**
ILAR Eielson Array 98.38 13 P **P 21 30 34.5 -1.3**
comp=Z,2.1nm,0.7s,baz=216,slow=4.9,SNR=14
ILAR PKiKP **PKiKP 21 35 06.6 -1.2**
comp=Z,0.9nm,0.7s,baz=302,slow=3.2,SNR=4.1
ILAR PKKPbc **PKKPbc 21 47 04.5 -4.2**
comp=Z,1.6nm,0.7s,baz=348,slow=3.7,SNR=5.7
ILAR LR LR 22 13 19.8
comp=Z,384nm,18.2s,baz=227,slow=34
ILAR Eielson Array 98.38 13 P **P 21 30 34.5 -1.3**
ILAR pmax pmax
comp=Z,3.0nm,0.8s
ILB Eielson Array 98.38 13 *e*P **P 21 30 34.9 -0.9**
OTAV Otavalo 98.42 95 PFAKE 21 30 50.0 +12
OTAV LR LR
comp=Z,1μm,22.0s
LZH Lanzhou 98.91 307 *e*P Pdif 21 30 40.0 +0.8
LZH pP pP 21 30 46.5 -3.6
LZH sP sP 21 30 49.3 -4.7
LZH PP **PP 21 34 44.0 +2.4**
LZH SKS **SKSac 21 41 14.5 -0.4**
LZH sS sS 21 42 17.3 -8.2
LZH SS **SS 21 48 59.5 +4.0**
LZH pmax pmax
comp=Z,35nm,1.2s
LZH pmax pmax
comp=Z,220nm,5.1s
LZH LR LR
comp=Z,690nm,16.4s
LZH LR LR
comp=Z,1μm,17.2s
LZH LR LR
comp=Z,1μm,20.0s
WMOK Wichita Mounta 99.10 55 PFAKE 21 30 50.0 +10
WMOK LR LR
comp=Z,924nm,21.0s
BILL Bilibino 99.28 354 *c i*P **Pdif 21 30 43.2 +3.5**
BILL pmax pmax
comp=Z,7.0nm,0.8s
BILL Bilibino 99.28 354 *e*P **Pdif 21 30 39.5 -0.2**
comp=Z,6.5nm,0.8s
BILL LR LR
comp=Z,2μm,22.0s
DAWY Dawson 99.39 16 *e*P **Pdif 21 30 40.4 -0.1**
comp=Z,4.2nm,0.8s
DAWY *e*PP **PP 21 34 43.8 -0.6**

EGMT Eagleton 99.51 39 PFAKE 21 30 50.0 +8.6
EGMT LR LR
comp=Z,966nm,20.0s
EGAK Eagle 99.58 15 *e*P **Pdif** **21 30 43.9 +2.7**
comp=Z,7.0nm,0.9s
EGAK LR LR
comp=Z,1μm,22.0s
CPUP Villa Florida 99.78 129 P **Pdif** **21 30 44.5 +1.3**
comp=Z,3.2nm,0.7s,baz=245,slow=7.1,SNR=7.4
CPUP PKKPbc **PKKPbc** **21 47 01.3 -1.5**
comp=Z,1.7nm,0.7s,baz=50,slow=5.2,SNR=3.4
CPUP LR LR 22 07 56.1
comp=Z,933nm,21.0s,baz=243,slow=30
CPUP Villa Florida 99.78 129 P **Pdif** **21 30 44.5 +1.3**
CPUP pmax pmax
comp=Z,2.0nm,0.7s
CPUP pmax pmax
comp=Z,2.0nm,0.7s
CPUP MLR MLR
comp=Z,933nm,21.0s
CPUP Villa Florida 99.78 129 *e*Pdif **Pdif** **21 30 46.8 +3.7**
CPUP PKKPbc **PKKPbc** **21 47 01.3 -1.5**
TEIG Tepich 99.96 72 PFAKE 21 31 00.0 +16
TEIG LR LR
comp=Z,244nm,21.0s
OGNE Ogallala 100.15 48 PFAKE 21 31 00.0 +16
OGNE LR LR
comp=Z,961nm,20.0s
CBKS Cedar Bluff 100.55 51 PFAKE 21 31 00.0 +14
CBKS LR LR
comp=Z,852nm,21.0s
NATX Nacogdoches 100.58 59 PFAKE 21 31 00.0 +14
NATX LR LR
comp=Z,1μm,21.0s
RSSD Black Hills 100.60 45 P **Pdif** **21 30 46.2 -0.4**
baz=237
RSSD Black Hills 100.60 45 *e*P **Pdif** **21 30 46.4 -0.1**
RSSD Black Hills 100.60 45 *e*Pdif **Pdif** **21 30 46.4 -0.1**
LAO LASA Array 100.72 42 PFAKE 21 31 00.0 +13
LAO LR LR
comp=Z,842nm,22.0s
I25A Rochford 100.73 45 P **Pdif** **21 30 47.7 +0.7**
baz=237
YAK Yakutsk 101.62 338 P **Pdif** **21 30 48.1 -2.1**
comp=Z,0.5nm,0.3s,baz=114,slow=10.0,SNR=1.6
YAK Yakutsk 101.62 338 *i* P **Pdif** **21 30 52.8 +2.5**
YAK pmax pmax
comp=Z,8.0nm,0.8s
BCIP Isla Barro Col 101.71 86 PFAKE 21 31 00.0 +8.1
BCIP LR LR
comp=Z,953nm,19.0s
DGAR Diego Garcia 102.62 253 PFAKE 21 31 10.0 +14
DGAR LR LR
comp=Z,2μm,20.0s
MIAR Mount Ida 102.73 57 PFAKE 21 31 10.0 +14
MIAR LR LR
comp=Z,824nm,22.0s
KSU1 Kansas State U 102.80 52 PFAKE 21 31 10.0 +14
KSU1 LR LR
comp=Z,909nm,22.0s
DGMT Dagmar 102.84 41 PFAKE 21 31 10.0 +14
DGMT LR LR
comp=Z,1μm,22.0s
ULN Ulaanbaatar 103.05 318 *e*P **Pdif** **21 31 05.4 +8.2**
ULN *e* 21 35 09.7
SONM Songino Array 103.41 318 Pdiff **Pdif** **21 30 57.7 -1.1**
comp=Z,0.8nm,0.8s,baz=140,slow=3.7,SNR=4.4
SONM PP **PP** **21 35 11.7 -3.5**
comp=Z,3.5nm,1.1s,baz=138,slow=4.6,SNR=6.5
SONA1 Songino Array 103.41 318 *e*Pdif **Pdif** **21 31 00.4 +1.6**
SONA1 *e* 21 35 05.3
INK Inuvik 104.24 16 PKiKP **PKiKP** **21 35 17.2 -1.1**
comp=Z,3.1nm,0.7s,baz=207,slow=2.9,SNR=7.2
INK PKKPbc **PKKPbc** **21 46 52.3 +0.7**
comp=Z,3.1nm,0.7s,baz=82,slow=3.7,SNR=5.7
ECSD EROS Data Cent 105.03 48 *e*PKiKP **PKiKP** **21 35 21.9 +1.4**
ECSD LR LR
comp=Z,1μm,19.0s
LSA Lhasa 105.14 296 *e*PKP **PKiKP** **21 35 23.1 +1.3**
LSA LR LR
comp=Z,2μm,20.0s
CHLP Challavanipeta 105.80 282 *e*Pdif **Pdif** **21 31 03.5 -6.4**
CHLP *e*PKiKP **PKiKP** **21 35 21.7 -1.0**
CHLP *e*PP **PP** **21 35 32.4 -0.9**
CHLP *e*SKSac **SKSac** **21 41 46.1 -1.6**
CHLP IVMsBB 22 21 13.9
comp=Z,446nm,16.2s
YKA Yellowknife Ar 105.89 26 Pdiff **Pdif** **21 31 08.1 -1.2**
comp=Z,0.2nm,0.5s,baz=242,slow=4.0,SNR=3.3
YKA PKiKP **PKiKP** **21 35 20.6 -0.9**
comp=Z,1.5nm,0.5s,baz=247,slow=1.6,SNR=16
YKA PKKPbc **PKKPbc** **21 46 43.3 -3.0**
comp=Z,2.4nm,0.6s,baz=36,slow=3.0,SNR=24
YKA SKKPbc SKKPbc 21 50 25.5 -3.8
comp=Z,0.3nm,0.6s,baz=52,slow=2.4,SNR=4.0
YKW3 Yellowknife Ar 105.92 26 *e*P **PKiKP** **21 35 20.3 -1.2**
BRAL Brewton 106.04 63 PFAKE 21 35 30.0
BRAL LR LR
comp=Z,551nm,22.0s
SCIA State Center 106.40 51 PFAKE 21 35 40.0
SCIA LR LR
comp=Z,724nm,22.0s
ZAK Zakamensk 106.45 319 *e*P **Pdif** **21 31 15.9 +3.7**
ZAK pmax pmax
comp=Z,2.0nm,1.2s
ZAK pmax pmax
comp=Z,4.0nm,1.3s
TLY Talaya 106.87 320 PKKPbc PKKPbc 21 46 42.2 -0.8
comp=Z,1.2nm,0.5s,baz=296,slow=9.4,SNR=3.1
FFC Flin Flon 107.22 36 PFAKE 21 35 40.0
FFC LR LR
comp=Z,980nm,20.0s
SKHT Srikalahasti 107.27 276 *e*Pdif **Pdif** **21 31 12.0 -4.5**
SKHT *e*PKiKP **PKiKP** **21 35 24.1 -1.3**
SKHT *e*PP **PP** **21 35 43.9 -0.2**
SKHT *e*SKSac **SKSac** **21 41 53.7 -0.7**
SKHT IVMs_BB IVMs_BB 22 16 41.7
comp=Z,708nm,10.7s
PVM Polavaram 107.27 280 *e*Pdif **Pdif** **21 31 11.0 -5.5**
PVM *e*PKiKP **PKiKP** **21 35 25.6 +0.2**
PVM *e*PP **PP** **21 35 43.8 -0.3**
PVM *e*SKSac **SKSac** **21 41 50.8 -3.5**
PVM IVMs_BB IVMs_BB 22 15 57.7
comp=Z,551nm,4.2s
MTDJ Mount Denham 107.97 79 PFAKE 21 35 40.0
MTDJ LR LR
comp=Z,2μm,22.0s
ADKI Addanki 108.03 278 *e*Pdif **Pdif** **21 31 11.7 -8.2**
ADKI *e*PKiKP **PKiKP** **21 35 25.5 -1.3**
ADKI *e*PP **PP** **21 35 48.5 -1.3**
ADKI *e*SKSac **SKSac** **21 41 57.9 +0.3**
ADKI IVMs_BB IVMs_BB 22 21 46.4
comp=Z,826nm,21.6s
SPB Sao Paulo 108.13 133 PFAKE 21 35 40.0
SPB LR LR
comp=Z,2μm,21.0s
HDIL Hopedale 108.47 53 PFAKE 21 35 40.0
HDIL LR LR
comp=Z,630nm,19.0s
GUN Gumba 108.50 292 *e*P **PKiKP** **21 35 27.6 -0.3**
TIXI Tiksi 108.67 345 PKKPbc PKKPbc 21 46 35.8 -1.9
comp=Z,0.6nm,0.3s,baz=302,slow=2.8,SNR=5.3
TIXI Tiksi 108.67 345 *e*P **Pdif** **21 31 24.7 +3.3**
TIXI Tiksi 108.67 345 *e*Pdif **Pdif** **21 31 24.6 +3.3**
TIXI *e*PKiKP **PKiKP** **21 35 24.5 -1.9**
TIXI PKKPbc **PKKPbc** **21 46 35.8 -1.9**
TIXI LR LR
comp=Z,2μm,20.0s
RCLA Racherla 108.71 277 *e*Pdif **Pdif** **21 31 21.5 -1.5**
RCLA *e*PKiKP **PKiKP** **21 35 26.9 -1.3**
RCLA *e*PP **PP** **21 35 56.6 +1.9**
RCLA *e*SKSac **SKSac** **21 41 54.5 -6.1**
RCLA IVMs_BB IVMs_BB 22 21 38.7
comp=Z,1μm,20.0s
PKIN Phulchoki 108.74 291 *e*P **PKiKP** **21 35 28.6 +0.3**
comp=Z,12nm,0.7s
JFWS Jewell Farm 108.82 51 PFAKE 21 35 40.0
JFWS LR LR
comp=Z,648nm,20.0s
NJS Nagarjunasagar 108.92 278 *e*Pdif **Pdif** **21 31 22.9 -1.0**
NJS *e*PP **PP** **21 35 55.7 -0.6**
NJS *e*SKSac **SKSac** **21 42 03.7 +2.3**
NJS IVMs_BB IVMs_BB 22 22 33.5
comp=Z,614nm,21.4s
KKN Kakani 108.93 292 *e*P **PKiKP** **21 35 27.7 -0.9**
comp=Z,20nm,0.9s
DMN Daman 108.99 291 *e*P **PKiKP** **21 35 30.3 +1.6**
comp=Z,16nm,0.6s
SRLM Srisailam 109.06 278 *e*Pdif **Pdif** **21 31 18.6 -6.0**
SRLM *e*PP **PP** **21 35 51.6 -5.7**
SRLM *e*SKSac **SKSac** **21 41 55.6 -6.5**
SRLM IVMs_BB IVMs_BB 22 21 56.0
comp=Z,862nm,19.9s
SDV Santo Domingo 109.48 91 PFAKE 21 35 40.0
SDV LR LR
comp=Z,2μm,22.0s
GKN Gorkha 109.53 291 *e*P **PKiKP** **21 35 27.7 -1.9**
comp=Z,6.3nm,0.6s
GOGA Godfrey 109.74 62 PFAKE 21 35 40.0
GOGA LR LR
comp=Z,776nm,22.0s
HYBB Hyderabad (bro 109.95 279 *e*Pdif **Pdif** **21 31 28.5 0.0**
HYBB *e*PP PP 21 35 54.1 -10
HYBB *e*SKSac **SKSac** **21 42 05.7 -0.2**
HYBB IVMs_BB IVMs_BB 22 23 20.8
comp=Z,672nm,16.8s
RPR Rampur 109.97 280 *e*Pdif **Pdif** **21 31 28.0 -0.5**
RPR *e*PKiKP **PKiKP** **21 35 30.5 0.0**
RPR *e*PP **PP** **21 35 57.2 -6.7**
RPR *e*SKSac **SKSac** **21 42 02.5 -3.3**
RPR IVMs_BB IVMs_BB 22 14 50.9
comp=Z,443nm,16.6s
EYMN Ely 110.09 46 PFAKE 21 35 40.0
EYMN LR LR
comp=Z,1μm,22.0s
KOLN Koldanda 110.27 291 *e*P **PKiKP** **21 35 29.0 -2.1**
comp=Z,9.8nm,0.7s
TKL Tuckaleechee C 110.43 60 PKiKP **PKiKP** **21 35 30.1 -0.8**
comp=Z,3.0nm,0.8s,baz=170,slow=3.9,SNR=4.1
GTBY Guantanamo Bay 110.78 79 PFAKE 21 35 40.0
GTBY LR LR
comp=Z,692nm,21.0s
SRSP Sriramsagar 110.81 280 *e*Pdif **Pdif** **21 31 28.0 -4.2**
SRSP *e*PP **PP** **21 36 09.8 -0.1**
SRSP *e*SKSac **SKSac** **21 42 01.8 -7.5**
SRSP IVMs_BB IVMs_BB 22 16 10.3
comp=Z,664nm,3.8s
COWI Conover 110.84 48 *e*PKP **PKiKP** **21 35 30.1 -1.3**
COWI LR LR
comp=Z,808nm,21.0s
PYUN Piuthan 110.89 291 *e*P **PKiKP** **21 35 27.5 -4.7**
comp=Z,65nm,1.1s
KLRI Killari 111.91 278 *e*Pdif **Pdif** **21 31 35.5 -1.7**
KLRI *e*PP **PP** **21 36 11.4 -6.4**
KLRI *e*SKSac **SKSac** **21 42 08.1 -5.7**
KLRI IVMs_BB IVMs_BB 22 23 41.5
comp=Z,1μm,21.5s
NHSC New Hope 112.14 64 PFAKE 21 35 50.0
NHSC LR LR
comp=Z,711nm,19.0s
ACSO Alum Creek Sta 112.77 56 PFAKE 21 35 50.0
ACSO LR LR
comp=Z,1μm,22.0s
AAM Ann Arbor 113.06 53 PFAKE 21 35 50.0
AAM LR LR
comp=Z,768nm,22.0s
WMQ Urumqi 113.43 308 PKP **PKiKP** **21 35 36.3 -0.1**
WMQ PP **PP** **21 36 32.0 +3.7**
WMQ PKS **PKSdf** **21 39 06.6 -6.4**
WMQ SKKS **SKKSac** **21 43 19.8 -7.3**
WMQ SS **SS** **21 52 11.3 -1.4**
WMQ AMB AMB
comp=Z,91nm,12.0s
WMQ LR LR
comp=Z,250nm,23.6s
WMQ LR LR
comp=Z,180nm,25.8s
WMQ LR LR
comp=Z,350nm,28.0s
BLA Blacksburg 113.52 60 PFAKE 21 35 50.0
BLA LR LR
comp=Z,726nm,19.0s
PTGA Pitinga 113.52 106 PFAKE 21 35 50.0
PTGA LR LR
comp=Z,37μm,20.0s
SDDR Presa de Saban 113.61 81 PFAKE 21 35 50.0
SDDR LR LR
comp=Z,749nm,20.0s
OPO Ambohidratompo 114.36 228 PKP PKPdf 21 35 39.3 +0.2
comp=Z,6.2nm,0.6s,baz=34,slow=3.6,SNR=18
SUR Sutherland 114.61 198 PKP PKPdf 21 35 39.8 +0.4
comp=Z,1.2nm,1.1s,baz=144,slow=4.3,SNR=12
SUR PKKPbc **PKKPbc** **21 46 15.5 -1.9**
comp=Z,0.4nm,0.7s,baz=328,slow=1.8,SNR=8.0
SUR Sutherland 114.61 198 *e*PKiKP PKPdf 21 35 42.3 +2.9
SUR PKKPbc **PKKPbc** **21 46 15.5 -1.9**
SUR LR LR
comp=Z,2μm,19.0s
GRTK Grand Turk 114.82 79 PFAKE 21 35 50.0 +10
GRTK LR LR
comp=Z,582nm,22.0s
CBN Corbin Frederi 116.13 60 PFAKE 21 35 50.0 +8.4
CBN LR LR
comp=Z,659nm,19.0s
BOSA Boshof 116.81 203 PKP **PKPdf** **21 35 43.9 +0.2**
comp=Z,9.0nm,0.7s,baz=173,slow=1.8,SNR=27
BOSA PKKPbc **PKKPbc** **21 46 09.3 -0.3**
comp=Z,1.2nm,0.5s,baz=326,slow=4.1,SNR=5.6
BOSA Boshof 116.81 203 *e*PKPdf **PKPdf** **21 35 45.2 +1.6**
BOSA PKKPbc **PKKPbc** **21 46 09.3 -0.3**
SADO Sadowa 116.97 52 PKP **PKPdf** **21 35 41.6 -1.4**
comp=Z,4.4nm,0.6s,baz=281,slow=3.0,SNR=7.0
SJG San Juan 117.61 85 PFAKE 21 36 00.0 +15
SJG LR LR
comp=Z,755nm,21.0s
RES Resolute Bay 117.70 17 PKKPbc PKKPbc 21 46 09.2 +2.1
comp=Z,5.9nm,0.5s,baz=70,slow=5.1,SNR=4.8
HUMP Col San Antoni 117.88 85 *e*PKPdf **PKPdf** **21 35 44.2 -1.4**
MKAR Makanchi Array 117.99 310 Pdiff **Pdif** **21 32 04.3 +0.7**
comp=Z,0.4nm,0.7s,baz=86,slow=6.7,SNR=3.9
MKAR PKP **PKPdf** **21 35 43.3 -1.7**
comp=Z,3.2nm,0.3s,baz=121,slow=1.1,SNR=74
MKAR PKKPbc **PKKPbc** **21 46 05.4 -0.1**
comp=Z,2.3nm,0.5s,baz=268,slow=3.8,SNR=31
MAKZ Makanchi 118.20 310 *e*PKIKP **PKPdf** **21 35 43.4 -2.0**
MAKZ Makanchi 118.20 310 *e*P **PKPdf** **21 35 43.4 -2.0**
ZALV Zalesovo Beam 118.30 318 PKP **PKPdf** **21 35 43.4 -1.9**
comp=Z,9.3nm,0.7s,baz=139,slow=2.2,SNR=16
GRGR Grenville 118.77 93 PFAKE 21 36 00.0 +13
GRGR LR LR
comp=Z,1μm,22.0s
NVS Novosibirsk 119.41 319 *e*PKIKP **PKPdf** **21 35 45.7 -1.7**
NVS *e* 21 42 36.2
NVS pmax pmax
comp=E,23nm,1.4s
LBTB Lobatse 120.00 205 PKP **PKPdf** **21 35 49.7 -0.1**
comp=E,10nm,0.9s,baz=175,slow=1.6,SNR=11
LBTB PKKPbc **PKKPbc** **21 45 56.4 -1.7**
comp=E,3.2nm,0.8s,baz=359,slow=4.6,SNR=2.5
LBTB Lobatse 120.00 205 *e*PKIKP **PKPdf** **21 35 50.1 +0.3**
LBTB Lobatse 120.00 205 *e*PKPdf **PKPdf** **21 35 50.1 +0.3**
LBTB PKKPbc **PKKPbc** **21 45 56.4 -1.7**
NRIK Noril'sk 120.01 336 PKP **PKPdf** **21 35 46.9 -1.3**
comp=E,5.7nm,0.4s,baz=86,slow=4.2,SNR=9.2
NRIK PKKPbc **PKKPbc** **21 46 00.8 +2.3**
comp=E,3.1nm,0.6s,baz=259,slow=0.5,SNR=5.2
LONY Lake Ozonia 120.05 53 *e*PKPdf **PKPdf** **21 35 48.3 -0.7**
LONY LR LR
comp=Z,490nm,19.0s
KSH Kashi 120.39 300 *e*PKP **PKPdf** **21 35 50.3 +0.3**
KSH *e*PP **PP** **21 37 24.3 +7.2**
KSH PKS **PKSdf** **21 39 26.4 -0.3**
KSH SKS **SKSdf** **21 42 57.3 -2.2**
KSH SKKS **SKKSac** **21 44 12.1 -1.8**
KSH SS **SS** **21 53 51.0 +7.2**
KSH AMB AMB
comp=Z,77nm,4.8s
KSH LR LR
comp=Z,610nm,15.0s
KSH LR LR
comp=Z,360nm,10.3s
KSH LR LR
comp=Z,1μm,25.5s
FDF Fort de France 120.41 90 PFAKE 21 36 00.0 +9.4
FDF LR LR
comp=Z,693nm,21.0s
FRNY Flat Rock 120.79 53 *e*PKPdf **PKPdf** **21 35 49.9 -0.5**
QUA2 Belchertown 121.02 56 *e*PKPdf **PKPdf** **21 35 50.8 -0.1**
BBGH Gun Hill 121.04 93 PFAKE 21 36 00.0 +8.2
BBGH LR LR
comp=Z,3μm,22.0s
ANWB Willy Bob 121.16 87 PFAKE 21 36 00.0 +8.1
ANWB LR LR
comp=Z,911nm,22.0s
KURK Kurchatov 121.29 314 PKIKP **PKPdf** **21 35 49.7 -1.5**
KURK pmax pmax
comp=Z,29nm,0.7s
KURK pmax pmax
comp=N,2.0nm,0.8s
KURK pmax pmax
comp=Z,2.0nm,0.7s
KURK Kurchatov 121.29 314 *e*P **PKPdf** **21 35 49.1 -2.0**
KURK SKP 21 39 23.0
KURK PKKPbc **PKKPbc** **21 45 53.5 +0.1**
KURK LR LR
comp=Z,4μm,20.0s
KURBB Kurchatov Arra 121.33 313 PKP **PKPdf** **21 35 49.7 -1.5**
comp=Z,29nm,0.7s,baz=107,slow=1.8,SNR=77
KURBB SKP 21 39 23.0
comp=Z,2.2nm,0.8s,baz=110,slow=1.9,SNR=4.5
KURBB PKKPbc **PKKPbc** **21 45 53.5 +0.3**
comp=Z,1.6nm,0.7s,baz=282,slow=4.7,SNR=11
TKM2 Tokmak 2 121.57 304 *e*PKIKP **PKPdf** **21 35 50.8 -1.5**
TKM2 MLR MLR
comp=Z,2μm,21.0s
TKM2 Tokmak 2 121.57 304 *e*PKPdf **PKPdf** **21 35 50.8 -1.5**
TKM2 LR LR
comp=Z,2μm,21.0s
FRU Bishkek 122.24 304 *e*PKIKP **PKPdf** **21 35 52.0 -1.3**
FRU *i* 21 35 57.0
FRU pmax pmax
comp=Z,28nm,1.4s
AAK Ala-Archa 122.28 304 PKP **PKPdf** **21 35 52.2 -1.4**
comp=Z,11nm,0.7s,baz=99,slow=4.0,SNR=16
AAK PKKPbc **PKKPbc** **21 45 50.3 +0.8**
comp=Z,4.8nm,0.6s,baz=232,slow=5.9,SNR=10
AAK Ala-Archa 122.28 304 PKIKP **PKPdf** **21 35 52.2 -1.4**
AAK pmax pmax
comp=Z,24nm,0.9s
AAK pmax pmax
comp=Z,5.0nm,0.6s
AAK Ala-Archa 122.28 304 *e*PKPdf **PKPdf** **21 35 52.4 -1.2**
AAK PKKPbc **PKKPbc** **21 45 50.3 +0.8**
AAK LR LR
comp=Z,3μm,20.0s
EKS2 Erkin-Say 122.80 303 *e*PKIKP **PKPdf** **21 35 53.1 -1.5**
EKS2 MLR MLR
comp=Z,3μm,22.0s
EKS2 Erkin-Say 122.80 303 *e*PKPdf **PKPdf** **21 35 53.1 -1.5**
EKS2 LR LR
comp=Z,3μm,22.0s
MATP Matopo 122.97 210 PKP **PKPdf** **21 35 55.2 -0.4**
comp=Z,36nm,0.9s,baz=171,slow=1.9,SNR=26
MATP PKKPbc **PKKPbc** **21 45 45.9 -0.9**
comp=Z,1.7nm,0.8s,baz=282,slow=6.9,SNR=3.5
PKME Peaks-Kenny Pk 123.86 54 *e*PKPdf **PKPdf** **21 35 55.9 -0.4**
PKME LR LR
comp=Z,798nm,19.0s
BBSR BB Station 124.13 70 PFAKE 21 36 10.0 +13
BBSR LR LR
comp=Z,634nm,22.0s
KBL Kabul 124.31 293 *e*PKIKP **PKPdf** **21 35 57.2 -0.6**
KBL Kabul 124.31 293 *e*PKPdf **PKPdf** **21 35 57.2 -0.6**
KKAR Karatay Array 125.24 303 *e*PKIKP **PKPdf** **21 35 57.8 -1.2**
KKAR Karatay Array 125.24 303 *e*PKPdf **PKPdf** **21 35 57.8 -1.2**
FRB Frobisher Bay 125.81 31 PKhKP PKPpre 21 35 52.2
comp=Z,16nm,0.8s,baz=336,slow=0.6,SNR=16
SCHQ Schefferville 126.63 42 PKP **PKPdf** **21 36 00.5 -0.8**
comp=Z,34nm,1.0s,baz=308,slow=2.3,SNR=12
BVAR Borovoye Array 126.66 316 PKhKP PKPpre 21 35 52.3
comp=Z,0.7nm,0.3s,baz=96,slow=2.2,SNR=5.7
BVAR PKP **PKPdf** **21 36 00.4 -1.1**
comp=Z,16nm,0.6s,baz=136,slow=2.0,SNR=55
BRVK Borovoye 126.73 316 *e*PKIKP **PKPdf** **21 36 00.2 -1.3**
ZRNK Zerenda 127.49 315 *e*PKHKP PKPpre 21 35 52.1
KULLO Kullorsuaq 127.57 17 *i* P **PKPdf** **21 36 01.0 -1.5**
KULLO Kullorsuaq 127.57 17 *i* PKIKP **PKPdf** **21 36 01.0 -1.5**
LSZ Lusaka 127.63 213 PKP **PKPdf** **21 36 05.0 +0.4**
comp=Z,25nm,0.8s,baz=169,slow=3.1,SNR=22
LSZ SKPbc SKPbc 21 39 18.2
comp=Z,6.6nm,0.7s,baz=116,slow=4.0,SNR=5.6
LSZ Lusaka 127.63 213 PKIKP **PKPdf** **21 36 05.0 +0.4**
LSZ pmax pmax
comp=Z,25nm,0.8s
LSZ pmax pmax
comp=N,7.0nm,0.7s
LSZ Lusaka 127.63 213 *e*PKPdf **PKPdf** **21 36 04.6 0.0**
LSZ LR LR
comp=Z,954nm,21.0s
TSUM Tsumeb 128.00 199 PKP **PKPdf** **21 36 05.8 +0.5**
comp=Z,7.4nm,0.5s,baz=166,slow=4.0,SNR=16
TSUM Tsumeb 128.00 199 *e*PKPdf **PKPdf** **21 36 05.0 -0.3**
TSUM LR LR
comp=Z,1μm,19.0s
RCBR Riachuelo 128.66 129 *e*P **PKPdf** **21 36 10.4 +3.9**
RCBR LR LR
comp=Z,2μm,20.0s
WSAR Wadi Sarin 129.35 276 PKP **PKPdf** **21 36 06.8 -0.6**
comp=Z,28nm,1.1s,baz=214,slow=3.7,SNR=5.0
ILULI Ilulissat 131.41 22 *i* P **PKPdf** **21 36 08.3 -1.6**
ILULI Ilulissat 131.41 22 *i* PKIKP **PKPdf** **21 36 08.3 -1.6**
KBS Kingsbay 131.63 357 *e*P **PKPdf** **21 36 10.6 +0.4**
KBS *e*PP **PP** **21 38 32.9 +2.6**
KBS Kingsbay 131.63 357 PFAKE 21 36 20.0 +10
KBS LR LR
comp=Z,897nm,22.0s
UOSS Minazif 132.03 277 *e*PKPdf **PKPdf** **21 36 11.5 -1.0**
SPA0 Spitsbergen Ar 132.14 356 *e*P **PKPdf** **21 36 10.6 -0.5**
SPITS Spitsbergen Ar 132.14 356 PKhKP PKPpre 21 36 03.3
comp=Z,4.7nm,0.7s,baz=98,slow=2.5,SNR=7.1
SPITS PKP **PKPdf** **21 36 10.7 -0.5**
comp=Z,18nm,0.7s,baz=134,slow=4.2,SNR=13
SPITS Spitsbergen Ar 132.14 356 PKIKP **PKPdf** **21 36 10.7 -0.5**
SPITS pmax pmax
comp=Z,17nm,0.7s
SVE Sverdlovsk 132.19 321 *i* PKIKP **PKPdf** **21 36 12.1 +0.3**
SVE pmax pmax
comp=Z,41nm,0.9s
SFJD Kangerlussuaq 132.44 25 PKP **PKPdf** **21 36 11.7 -0.2**
comp=Z,9.3nm,0.5s,baz=352,slow=3.1,SNR=9.7
SFJD Kangerlussuaq 132.44 25 *i* P **PKPdf** **21 36 11.6 -0.4**
comp=Z,870nm,20.0s
SFJD Kangerlussuaq 132.44 25 *e*PKIKP **PKPdf** **21 36 12.2 +0.2**
SFJD Kangerlussuaq 132.44 25 *e*PKPdf **PKPdf** **21 36 12.2 +0.2**
SFJD LR LR
comp=Z,1μm,21.0s
SHEL Horse Pasture 132.89 170 PFAKE 21 36 30.0 +16
SHEL LR LR
comp=Z,700nm,20.0s
DAG Danmarks Havn 133.00 6 *i* P **PKPdf** **21 36 10.3 -2.5**
comp=Z,860nm,22.0s
DAG Danmarks Havn 133.00 6 *i* PKIKP **PKPdf** **21 36 10.3 -2.5**
DAG MLR MLR
comp=Z,960nm,22.0s
SUMG Summit 133.16 16 *i* P **PKPdf** **21 36 15.2 +1.5**
SUMG Summit 133.16 16 *e*PKIKP **PKPdf** **21 36 14.7 +1.0**
SUMG Summit 133.16 16 *e*PKPdf **PKPdf** **21 36 14.7 +1.0**
ARU Arti 133.38 320 PKhKP PKPpre 21 36 06.6
comp=Z,4.6nm,0.7s,baz=74,slow=2.2,SNR=5.0
ARU PKP **PKPdf** **21 36 13.2 -0.8**
comp=Z,12nm,0.3s,baz=96,slow=2.2,SNR=28
ARU SKPbc **SKPbc** **21 39 37.9 -1.8**
comp=Z,11nm,0.8s,baz=148,slow=4.0,SNR=5.9
ARU Arti 133.38 320 *i* PKIKP **PKPdf** **21 36 13.6 -0.4**
ARU 21 38 38.4
GEYT Alibeck 133.66 295 PKhKP PKPpre 21 36 03.3
comp=Z,1.4nm,0.5s,baz=202,slow=1.6,SNR=4.3
GEYT PKP **PKPdf** **21 36 15.3 +0.1**
comp=Z,25nm,0.9s,baz=219,slow=3.7,SNR=19
GEYT SKPbc **SKPbc** **21 39 39.5 -1.9**
comp=Z,11nm,0.9s,baz=70,slow=4.7,SNR=7.8
SOKR Solikamsk 133.70 325 *e*PKIKP **PKPdf** **21 36 15.9 +1.4**
SOKR pmax pmax
comp=Z,111nm,1.0s
KMBO Kilima Mbogo 133.73 233 PKP **PKPdf** **21 36 17.5 +1.1**
comp=Z,4.7nm,0.7s,baz=70,slow=2.7,SNR=12
KMBO SKPbc **SKPbc** **21 39 41.3 -1.4**
comp=Z,7.2nm,0.6s,baz=72,slow=4.9,SNR=12
KMBO Kilima Mbogo 133.73 233 *c* PKIKP **PKPdf** **21 36 18.0 +1.6**
KMBO pmax pmax
comp=Z,5.0nm,0.7s
KMBO Kilima Mbogo 133.73 233 *e*PKPdf **PKPdf** **21 36 17.7 +1.3**
KMBO SKPbc **SKPbc** **21 39 41.3 -1.4**
KMBO LR LR
comp=Z,997nm,20.0s
AKTO Aktyubinsk 134.33 312 PKhKP PKPpre 21 36 01.8

comp=Z,2.0nm,0.7s,baz=26,slow=4.4,SNR=6.1
AKTO PKP **PKPdf** **21 36 16.0 0.0**
comp=Z,13nm,0.8s,baz=47,slow=3.4,SNR=7.1
AKTO SKPbc **SKPbc** **21 39 40.9 -2.2**
comp=Z,14nm,0.8s,baz=118,slow=4.8,SNR=10
AKTO Aktyubinsk 134.33 312 PKIKP **PKPdf** **21 36 16.0 0.0**
AKTO pmax pmax
comp=Z,6.0nm,0.6s
AKTO pmax pmax
comp=N,14nm,0.8s
NRS Narsarsuaq 136.80 31 *i* P **PKPdf** **21 36 17.7 -2.6**
comp=N,41nm,1.1s
NRS Narsarsuaq 136.80 31 *i* PKIKP **PKPdf** **21 36 17.7 -2.6**
NRS pmax pmax
comp=Z,41nm,1.1s
LVZ Lovozero 138.24 342 *e*PKIKP **PKPdf** **21 36 24.5 +1.7**
LVZ Lovozero 138.24 342 *e*P **PKPdf** **21 36 24.5 +1.7**
LVZ LR LR
comp=Z,1μm,20.0s
HAMF Hammerfest 138.36 349 *e* PKPpre 21 36 15.7
ASCN Ascension 138.41 155 PFAKE 21 36 40.0 +15
ASCN LR LR
comp=Z,2μm,21.0s
KEV Kevo 138.54 347 *e*PKIKP **PKPdf** **21 36 24.3 +1.1**
KEV Kevo 138.54 347 *e*PKPdf **PKPdf** **21 36 24.3 +1.1**
KEV LR LR
comp=Z,1μm,22.0s
APA Apatity 138.81 342⇓*i*PKIKP **PKPdf** **21 36 23.0 -0.8**
APA pmax pmax
comp=Z,27nm,0.6s
APA MLR MLR
comp=Z,2μm,26.0s
ARCES ARCESS Array B 139.01 348 PKhKP PKPpre 21 36 15.7
comp=Z,12nm,0.7s,baz=70,slow=2.7,SNR=28
ARCES SKPbc **SKPbc** **21 39 54.6 -1.9**
comp=Z,16nm,0.8s,baz=11,slow=2.5,SNR=9.9
ARE0 ARCESS Array S 139.01 348 *e* PKPpre 21 36 15.8
TMCR Tamitsa 139.72 336 *e*PKIKP **PKPdf** **21 36 29.3 +3.8**
TMCR pmax pmax
comp=Z,28nm,1.0s
KTK1 Kautokeino 139.87 348 *e* PKPpre 21 36 18.8
TRO Tromso 139.98 351 *e* PKPpre 21 36 20.6
KLMR Klimovskoe 141.11 332 *e*PKIKP PKPpre 21 36 24.3
KLMR pmax pmax
comp=Z,50nm,0.8s
KONS Konsvik 143.68 352 *e*P PKPbc 21 36 31.2 +1.1
STOK Stokkvaagen 143.85 352 *e*P **PKPdf** **21 36 34.3 +1.4**
TBLG Delisi 144.13 300 P PKPbc 21 36 32.2 -0.1
TBLG Delisi 144.13 300 *e*PKIKP PKPbc 21 36 32.2 -0.2
GNI Garni 144.19 297 PKP **PKPab** **21 36 32.4 0.0**
comp=Z,30nm,0.8s,baz=199,slow=3.4,SNR=13
GNI Garni 144.19 297*c i*PKIKP PKPbc 21 36 33.0 +0.2
GNI Garni 144.19 297 *e*PKPdf PKPbc 21 36 32.8 0.0
GNI LR LR
comp=Z,2μm,19.0s
GUDG Gudauri 144.27 301 P PKPbc 21 36 32.9 -0.1
VRH Novokhopyorsk 144.30 316 *e*PKIKP **PKPab** **21 36 31.8 -0.4**
VRH pmax pmax
comp=Z,20nm,0.6s
MOS Moscow 144.65 325 *e*PKIKP **PKPab** **21 36 33.2 -0.1**
MOS *e* 21 36 47.8
MOS pmax pmax
comp=Z,217nm,0.8s
MOS pmax pmax
comp=Z,200nm,0.9s
ZEI Tsey 144.66 302 *i* PKIKP **PKPdf** **21 36 38.6 +3.3**
ZEI pmax pmax
comp=Z,194nm,0.8s
NCK Nalchik 144.81 303*c i*PKIKP **PKPab** **21 36 33.4 -1.0**
GOF Gofitskoye 144.98 306⇓*i*PKIKP PKPbc 21 36 34.0 -0.9
GOF pmax pmax
comp=Z,366nm,1.5s
ONI Oni 145.01 301 P **PKPbc** **21 36 34.3 -0.9**
ONI Oni 145.01 301 *e*PKIKP **PKPbc** **21 36 34.2 -0.9**
BGD Bogdanovka 145.01 299 P **PKPbc** **21 36 34.3 -1.1**
AKH Akhalkalaki 145.08 299 P **PKPbc** **21 36 34.2 -1.4**
AKH Akhalkalaki 145.08 299 *e*PKIKP **PKPbc** **21 36 34.2 -1.4**
KBZ Khabaz 145.28 303 PKPbc **PKPbc** **21 36 34.6 -1.2**
comp=Z,32nm,0.7s,baz=163,slow=1.5,SNR=32
LPSR Galich'ya Gora 145.39 320 *e*PKP2 **PKPbc** **21 36 34.3 -1.6**
LPSR pmax pmax
comp=Z,40nm,0.6s
KVAR Kislovodsk Arr 145.40 304 PKPbc **PKPbc** **21 36 35.1 -1.4**
comp=Z,36nm,0.7s,baz=271,slow=2.9,SNR=26
KIV Kislovodsk 145.40 304*c i*PKP2 **PKPbc** **21 36 35.1 -1.3**
KIV pmax pmax
comp=Z,65nm,1.4s
KIV Kislovodsk 145.40 304 PFAKE 21 36 50.0 +13
KIV LR LR
comp=Z,990nm,20.0s
NEY Neytrino 145.47 303 *i* PKIKP **PKPdf** **21 36 36.4 -0.3**
OBN Obninsk 145.48 325 PKPbc **PKPdf** **21 36 34.6 -1.4**
comp=Z,174nm,0.6s,baz=48,slow=2.8,SNR=56
OBN Obninsk 145.48 325*c i*PKP2 **PKPdf** **21 36 34.3 -1.7**
OBN pmax pmax
comp=Z,122nm,0.9s
OBN Obninsk 145.48 325 PKPbc **PKPdf** **21 36 34.6 -1.4**
OBN LR LR
comp=Z,978nm,20.0s
FINES FINESS Array B 145.53 340 PKPbc **PKPdf** **21 36 34.3 -1.6**
comp=Z,230nm,0.8s,baz=53,slow=3.5,SNR=353
FINES SKPbc **SKPbc** **21 40 12.1 -1.0**
comp=Z,15nm,0.9s,baz=90,slow=2.8,SNR=4.6
VORR Voronezh 145.60 318 *e*PKP2 **PKPdf** **21 36 35.0 -1.4**
VORR pmax pmax
comp=Z,300nm,1.4s
NSS Namsos 145.71 352 *e*P **PKPdf** **21 36 34.8 -1.3**
VSR Storozhevoye 145.80 317 *e*PKIKP **PKPdf** **21 36 35.5 -1.2**
VSR pmax pmax
comp=Z,80nm,0.6s
CHVG Ch'k'valeri 146.00 302 P **PKPab** **21 36 38.9 +0.1**
TBLU Trondheim 147.14 353 *e*P **PKPdf** **21 36 39.2 +0.6**
KBSD Kabsdagh 147.51 291 *e*P **PKPdf** **21 36 39.2 -0.9**
KBSD Kabsdagh 147.51 291 *e*P **PKPdf** **21 36 39.2 -0.9**
SOC Sochi 147.58 304*d i*PKHKP PKPpre 21 36 38.4
SOC *i* 21 36 44.4
SOC pmax pmax
comp=Z,10.0nm,0.5s
SOC pmax pmax
comp=Z,92nm,0.9s
VSU Vasula 147.59 336*c i*PKIKP **PKPdf** **21 36 40.8 +1.3**
MOL Molde 148.06 355 *e*P **PKPbc** **21 36 44.4 +1.1**
AKN Aaknes 148.48 355 *e*P **PKPbc** **21 36 44.1 -0.4**
ANN Anapa 148.93 307 *i* PKIKP **PKPbc** **21 36 44.4 -1.7**
ANN *e* 21 36 51.1
ANN pmax pmax
comp=Z,254nm,1.0s
ANN MLR MLR
comp=N,857nm,23.0s
ANN MLR MLR
comp=Z,838nm,23.0s
ANN MLR MLR
comp=E,580nm,23.0s
FOO Floro 149.17 357 *e*P **PKPbc** **21 36 46.0 -0.2**
NB2 NORSAR Subarra149.18 351 PKP **PKPbc** **21 36 45.1 -1.3**
comp=Z,44nm,0.7s,baz=20,slow=2.7
NB2 NORSAR Subarra149.18 351 PKP **PKPbc** **21 36 45.1 -1.3**
baz=20,slow=2.7
NOA NORSAR Array B 149.18 351 PKPbc **PKPbc** **21 36 45.0 -1.4**
comp=Z,10.0nm,0.6s,baz=49,slow=1.8,SNR=64
NOA NORSAR Array B 149.18 351 PKHKP **PKPbc** **21 36 45.0 -1.3**
NOA pmax pmax
comp=Z,10.0nm,0.6s
NC602 NORSAR Array S 149.43 351 *e*P **PKPbc** **21 36 45.0 -1.9**
HYA Hoyanger 149.54 356 *e*P **PKPbc** **21 36 47.9 +0.8**
HFS Hagfors 149.66 348 PKPbc **PKPbc** **21 36 45.5 -2.0**
comp=Z,40nm,0.7s,baz=101,slow=1.5,SNR=62
SUE Sulen 149.72 357 *e*P **PKPbc** **21 36 47.0 -0.6**
IZAR Zarasai 149.75 332 *e*P **PKPbc** **21 36 46.9 -0.9**
IZAR IAmb IAmb 21 36 55.6
comp=Z,123nm,0.9s
IDID Didziasalis 149.86 331 *e*P **PKPbc** **21 36 47.0 -1.1**
IDID IAmb IAmb 21 36 54.8
comp=Z,64nm,0.8s
MICGM Minsk 149.92 329⇑*e*P **PKPbc** **21 36 46.0 -2.3**
MICGM PM 21 36 48.0
comp=Z,0.3nm,1.0s
MICGM *e*LR LR 22 37 20.0
MICGM LRM MLR 22 43 40.0
comp=Z,3.2nm,20.0s
MNK Minsk 149.92 329⇑*e*PKHKP PKPpre 21 36 46.0
MNK pmax pmax
comp=Z,270nm,1.0s
MNK MLR MLR
comp=Z,3μm,20.0s

ISAL Salakas 149.93 332 *e*P **PKPbc** **21 36 47.4 -0.9**
ISAL IAmb IAmb 21 36 55.1
comp=Z,50nm,0.7s
ROOS tl_alroos 150.06 286 *e*P **PKPdf** **21 36 43.3 -1.1**
ROOS tl_alroos 150.06 286 *e*P **PKPdf** **21 36 43.3 -1.1**
NACGM Naroch 150.12 331 *e*P **PKPdf** **21 36 46.0 +2.3**
NACGM PM 21 36 55.0
comp=Z,1.1nm,1.0s
ASF Jabal al Asfar 150.20 282 PKP **PKPdf** **21 36 44.8 +0.1**
comp=Z,1.7nm,0.7s,baz=219,slow=3.9,SNR=3.1
ASF PKPbc **PKPbc** **21 36 48.9 -1.0**
comp=Z,50nm,0.8s,baz=72,slow=1.0,SNR=34
ASK Askoy 150.28 357 *e*P **PKPbc** **21 36 49.3 +0.4**
OSL Oslo 150.31 351 *e*P **PKPbc** **21 36 50.0 +0.9**
MARH Ras Al Marh 150.72 285 *e*P **PKPbc** **21 36 51.0 -0.3**
MARH Ras Al Marh 150.72 285 *e*P **PKPbc** **21 36 51.0 -0.3**
KONO Kongsberg 150.73 352 *e*P **PKPbc** **21 36 48.7 -1.4**
KONO Kongsberg 150.73 352 *e*PKIKP **PKPdf** **21 36 45.6 +1.1**
KONO MLR MLR
comp=Z,1μm,20.0s
KONO Kongsberg 150.73 352 *e*PKPdf **PKPdf** **21 36 45.6 +1.1**
KONO *e*PKPbc **PKPbc** **21 36 49.4 -0.6**
KONO LR LR
comp=Z,1μm,20.0s
ODD1 Odda 150.76 355 *e*P **PKPbc** **21 36 48.4 -1.8**
BIDA Albida 150.89 287 *e*P **PKPdf** **21 36 47.1 +1.4**
BIDA Albida 150.89 287 *e*P **PKPdf** **21 36 47.1 +1.4**
SIM Simferopol' 151.15 308 *e*PKIKP **PKPbc** **21 36 50.3 -1.3**
SIM pmax pmax
comp=Z,160nm,0.8s
SIM MLR MLR
comp=Z,900nm,22.0s
HWQ Hawqa 151.18 286 *e*P **PKPdf** **21 36 47.7 +1.5**
BLS5 Blasjo 151.26 355 *e*P **PKPbc** **21 36 51.4 0.0**
BHL Bhannes 151.40 285 *e*P **PKPdf** **21 36 47.5 +1.0**
EIL Elat 151.48 276 PKPbc **PKPbc** **21 36 52.6 -0.2**
comp=Z,146nm,1.0s,baz=104,slow=2.3,SNR=20
KMY Karmoy 151.54 356 *e*P **PKPbc** **21 36 51.8 -0.1**
MMAI Mount Meron Ar 151.54 283 PKPbc **PKPbc** **21 36 52.8 -0.2**
comp=Z,69nm,0.6s,baz=60,slow=3.3,SNR=31
AKASG Malin Array Be 151.60 322 PKP **PKPdf** **21 36 44.8 -1.3**
comp=Z,3.6nm,0.9s,baz=49,slow=1.8,SNR=15
AKASG PKPbc **PKPbc** **21 36 51.3 -1.1**
comp=Z,79nm,0.6s,baz=48,slow=2.9,SNR=109
KIEV Kiev 151.61 322 PFAKE 21 37 00.0 -1.1
KIEV LR LR
comp=Z,2μm,19.0s
H07S1 FLORES T-PHASB 151.74 63 *e*PKPdf **PKPdf** **21 36 49.4 +2.6**
HOMB Homborsund 152.21 353 *e*P **PKPbc** **21 36 52.7 -0.8**
HOMB *e*PP **PP** **21 40 36.7 +1.6**
SNART Snartemo 152.27 354 *e*P **PKPbc** **21 36 53.9 +0.2**
BRTR Keskin Array B 152.73 298 PKP **PKPdf** **21 36 48.0 -0.3**
comp=Z,8.5nm,1.1s,baz=163,slow=1.3,SNR=10.0
BRTR PKPbc **PKPbc** **21 36 54.0 -1.5**
comp=Z,21nm,0.6s,baz=138,slow=4.1,SNR=42
PHNC Paralimni 152.77 287 P **PKPbc** **21 36 55.1 -0.5**
ANTO Ankara 153.35 298 PFAKE 21 37 00.0 +3.2
ANTO LR LR
comp=Z,11nm,20.0s
CSS Mathiatis 153.35 287 P **PKPbc** **21 36 56.1 -0.8**
CSS Mathiatis 153.35 287 PFAKE 21 37 00.0 +3.1
CSS LR LR
comp=Z,535nm,22.0s
MAMC Mammari 153.44 288 P **PKPbc** **21 36 58.4 +1.4**
SORM Soroca 153.46 318⇓*i*P **PKPbc** **21 36 56.6 0.0**
SZAC Souni 153.72 287 P **PKPbc** **21 36 58.3 +0.6**
KIS Kishinev 153.75 316 *e*PKP **PKPbc** **21 36 57.0 -0.3**
KIS Kishinev 153.75 316 *e*PsP 21 37 06.0
KIS Kishinev 153.75 316 *e*PP PP 21 40 40.0 -4.7
KIS *e*SKKS 21 47 32.0
KIS Kishinev 153.75 316⇓*i*P **PKPbc** **21 36 59.2 +1.9**
KIS Kishinev 153.75 316 *e*PKIKP **PKPbc** **21 36 57.0 -0.3**
KIS *e* 21 40 40.0
KIS *e* 21 44 20.0
MUD Monsted U'grnd 153.90 351 *i* P **PKPbc** **21 37 00.3 +3.1**
MUD Monsted U'grnd 153.90 351 *e*PKIKP **PKPbc** **21 37 00.3 +3.1**
ALFC Alefka 153.95 288 P **PKPbc** **21 36 58.0 -0.2**
PCAN Candelaria 153.96 65 *e*PKPdf **PKPdf** **21 36 54.0 +4.0**
BSD Bornholm Skovb 154.03 343 *i* P **PKPbc** **21 36 56.8 -0.8**
BSD Bornholm Skovb 154.03 343 *i* PKIKP **PKPbc** **21 36 56.8 -0.8**
COP Copenhagen 154.07 346 *i* P **PKPbc** **21 36 57.2 -0.5**
comp=Z,650nm,19.0s
COP Copenhagen 154.07 346 *e*PKIKP **PKPbc** **21 36 57.2 -0.5**
COP MLR MLR
comp=Z,660nm,19.0s
ROSA Rosais 154.12 64 *e*PKPdf **PKPbc** **21 36 54.4 -4.0**
PPCY Paphos 154.16 287 P **PKPbc** **21 36 58.0 -0.6**
AKMC Akamas 154.17 287 P **PKPbc** **21 36 58.2 -0.4**
PGRA Graciosa 154.27 63 *e*PKPdf **PKPdf** **21 36 54.5 +4.1**
LEOM Leova 154.34 315⇑*i*P **PKPbc** **21 36 56.8 -1.7**
LIC Lamto 154.66 164 *e*PKP2 **PKPdf** **21 36 52.9 +1.2**
comp=Z,59nm,0.7s
LVV L'vov 154.79 325 *e*PKIKP **PKPdf** **21 36 47.1 -3.7**
LVV *e* 21 40 45.9
LVV MLR MLR
comp=N,430nm,22.0s
LVV MLR MLR
comp=E,970nm,22.0s
LVV MLR MLR
comp=Z,1μm,22.0s
KIC Kosan Boka 154.86 164 *e*PKP2 **PKPdf** **21 36 51.7 -0.3**
comp=Z,102nm,0.8s
CFR Carcaliu 155.00 312⇑*i*P **PKPbc** **21 36 56.5 -3.5**
TIC Toumodi 155.06 164 *e*PKP2 **PKPdf** **21 36 52.6 +0.3**
PRAR RASCA 155.08 318⇑*i*P PKPab 21 37 04.0 -12
TIRR Tirgusor 155.12 311⇑*i*P **PKPdf** **21 36 54.0 +2.6**
DBIC Dimbokro 155.13 164 PKP **PKPdf** **21 36 52.4 0.0**
comp=Z,8.2nm,0.6s,baz=146,slow=2.8,SNR=23
EFOR EFORIE 155.13 310⇑*i*P **PKPdf** **21 36 56.5 +5.1**
MANR Mangalia 155.26 309⇑*i*P PKPab 21 37 05.9 -11
EKA Eskdalemuir Ar 155.26 7 PKP **PKPdf** **21 36 51.1 -0.2**
comp=Z,1.1nm,0.3s,baz=319,slow=2.8,SNR=4.2
EKA PKPab **PKPab** **21 37 13.1 -3.2**
comp=Z,4.2nm,0.6s,baz=354,slow=1.9,SNR=3.8
ESK Eskdalemuir 155.27 7 PFAKE 21 37 00.0 +8.7
ESK LR LR
comp=Z,1μm,21.0s
TESR Tescani 155.28 316⇓*i*P PKPdf 21 37 01.1 +10
ODBI Odobesti 155.41 314⇑*i*P PKPab 21 37 04.8 -13
ISP Isparta 155.42 294⇓*i*P PKPab 21 37 05.1 -13
ISP Isparta 155.42 294⇓⇓PKIKP PKPab 21 37 05.1 -13
KWP Kalwaria Pacla 155.56 326⇑*i*P PKPdf 21 37 03.9 +12
KWP Kalwaria Pacla 155.56 326⇑PKIKP PKPdf 21 37 03.9 +12
VRI Vrincioaia 155.56 315⇓*i*P PKPdf 21 37 04.2 +12
VRI Vrincioaia 155.56 315⇓PKIKP PKPdf 21 37 04.2 +12
MSAB Monastry St. A 155.66 310⇑*i*P PKPdf 21 37 00.4 +8.3
PGOR Pogoanele 155.85 313⇑*i*P PKPab 21 37 07.6 -12
ISR Istrita 156.03 313⇑*i*P PKPab 21 37 08.4 -12
ISR Istrita 156.03 313⇑PKIKP PKPab 21 37 08.4 -12
PSET Sete Cidades 156.21 66 *e*PKPdf **PKPdf** **21 36 57.6 +4.5**
MLR Muntele Rosu 156.22 315 PKP **PKPdf** **21 36 52.1 -1.0**
comp=Z,1.3nm,1.0s,baz=77,slow=2.2,SNR=3.6
MLR Muntele Rosu 156.22 315⇑*i*P **PKPdf** **21 36 56.9 +3.9**
KOLS Kolonicke sedl 156.24 325 *e*PKIKP **PKPdf** **21 36 52.9 +0.1**
KOLS *e* 21 37 07.1
KOLS Kolonicke sedl 156.24 325 *e*PKP **PKPdf** **21 36 52.9 +0.1**
KOLS *e* 21 37 07.1
ARCR ARCALIA 156.30 320⇑*i*P **PKPdf** **21 36 59.0 +6.1**
PRD Provadia 156.30 308 *i* P **PKPdf** **21 36 53.4 +0.4**
SECR 156.37 314⇑*i*P **PKPab** **21 37 21.9 +0.4**
CMLA Cha da Macela 156.38 66 *e*PKPdf **PKPdf** **21 36 59.1 +5.8**
CMLA Cha da Macela 156.38 66 PFAKE 21 37 00.0 +6.7
CMLA LR LR
comp=Z,949nm,21.0s
STHS Stebnicka Huta 156.40 327 *e*PKIKP **PKPdf** **21 36 55.6 +2.6**
STHS Stebnicka Huta 156.40 327 *e*PKP **PKPdf** **21 36 55.6 +2.6**
STHS *e* 21 37 21.6
SULR 156.41 313⇑*i*P PKPdf 21 37 01.6 +8.5
BMR Baia Mare 156.42 322⇑*i*P **PKPdf** **21 36 58.6 +5.6**
UZH Uzhgorod 156.43 325 *e*PKIKP **PKPdf** **21 36 56.3 +3.3**
UZH *e* 21 37 03.7
UZH *e* 21 37 08.5
UZH *e* 21 37 16.9
OJC Ojcow 156.46 330 *e*PKPdf **PKPdf** **21 36 53.6 +0.6**
OJC Ojcow 156.46 330 *e*PKIKP **PKPdf** **21 36 53.6 +0.6**
CRVS Cervenica-Dubn 156.65 326 *e*PKIKP **PKPdf** **21 36 54.8 +1.5**
CRVS Cervenica-Dubn 156.65 326 *e*PKP **PKPdf** **21 36 54.8 +1.5**
CRVS *e* 21 37 22.3
BART Pico Bartolome 156.65 65 *e*PKPdf **PKPdf** **21 36 58.1 +4.3**
VOIR 156.79 315⇑*i*P PKPdf 21 37 05.7 +12
VOIR 156.79 315⇑PKIKP PKPdf 21 37 05.7 +12
NIE Niedzica 156.83 328 *e*PKPdf **PKPdf** **21 36 54.0 +0.4**

NIE Niedzica 156.83 328 *e*PKIKP **PKPdf** **21 36 54.0 +0.4**
PSMN Pico do Norte, 156.84 67 *e*PKPdf **PKPdf** **21 36 58.4 +4.4**
CJR Cluj-Napoca 156.94 319⇓*i*P **PKPdf** **21 37 00.2 +6.4**
CJR Cluj-Napoca 156.94 319⇓⇓PKIKP **PKPdf** **21 37 00.2 +6.4**
ARR Arges 157.08 316⇑*i*P **PKPdf** **21 36 55.1 +1.0**
SZH Strazhica 157.25 310 *i* P **PKPdf** **21 36 56.3 +2.0**
HUMR Humele 157.29 313⇑*i*P PKPdf 21 37 03.4 +9.1
DRGR 157.38 321⇑*i*P **PKPdf** **21 36 55.1 +0.7**
LANS Liptovska Anna 157.39 329 *e*PKIKP **PKPdf** **21 36 55.8 +1.5**
LANS Liptovska Anna 157.39 329 *e*PKP **PKPdf** **21 36 55.8 +1.5**
LANS *e* 21 37 28.9
KECS Kecovo 157.41 326 *e*PKIKP **PKPdf** **21 36 54.6 +0.3**
KECS Kecovo 157.41 326 *e*PKP **PKPdf** **21 36 54.5 +0.3**
KECS *e* 21 37 25.3
OKC Ostrava-Krasne 157.43 332 *e*PKPDF **PKPdf** **21 36 54.3 0.0**
OKC *e*PKPAB **PKPab** **21 37 26.1 +0.2**
OKC AMS AMS 22 42 20.0
comp=Z,2μm,23.3s
OKC Ostrava-Krasne 157.43 332 *e*PKIKP **PKPdf** **21 36 54.3 0.0**
OKC MLR MLR
comp=Z,2μm,23.3s
LOT Lotru 157.55 317⇑*i*P **PKPab** **21 37 26.9 +0.1**
UPC Upice 157.70 336 *e*PKPDF **PKPdf** **21 36 55.2 +0.6**
UPC *e*PKPAB **PKPab** **21 37 29.4 +2.3**
UPC *ex* x 21 40 52.0
UPC *ex* x 21 54 22.6
UPC AMS AMS 22 48 00.0
comp=Z,2μm,21.5s
UPC Upice 157.70 336 *e*PKIKP **PKPdf** **21 36 55.2 +0.6**
UPC *e* 21 54 22.6
UPC MLR MLR
comp=Z,2μm,21.5s
DPC Dobruska-Polom 157.72 335 *e*PKPDF **PKPdf** **21 36 54.1 -0.6**
DPC *e*PKPAB **PKPab** **21 37 26.9 -0.3**
DPC *e*PP PP 21 40 58.1 -8.2
DPC *ex* x 21 54 25.1
DPC AMS AMS 22 47 10.0
comp=Z,2μm,22.9s
DPC Dobruska-Polom 157.72 335 *e*PKIKP **PKPdf** **21 36 54.1 -0.6**
DPC *e* 21 54 25.1
DPC MLR MLR
comp=Z,2μm,22.9s
MORC Moravsky Berou 157.72 333⇑*i*P **PKPdf** **21 36 57.0 +2.3**
KRLC Kraliky 157.78 334 *e*PKPDF **PKPdf** **21 36 55.3 +0.5**
KRLC Kraliky 157.78 334 *e*PKIKP **PKPdf** **21 36 55.3 +0.5**
DEV Deva 157.81 318⇑*i*P **PKPdf** **21 37 00.9 +6.0**
DEV Deva 157.81 318⇑PKIKP **PKPdf** **21 37 00.9 +6.0**
CLL Collm 157.96 341 *e*PKPdf **PKPdf** **21 36 55.0 +0.1**
CLL *e* 21 37 07.0
CLL *e*PKPdiff PKPab 21 37 09.0 -19
comp=Z,26nm,1.0s
CLL *e*PKPab PKPab 21 37 27.0 -1.1
CLL *i* PKPabmax 21 37 29.5
comp=Z,44nm,1.0s
CLL *i* pPKPab **pPKPab** **21 37 32.0 -7.1**
comp=Z,55nm,0.9s
CLL *e*PP **PP** **21 41 08.0 +0.6**
CLL *e*PPP PPP 21 44 45.0
CLL *e*PPPP 21 47 12.0
CLL *e*SKKSac SKKSac 21 48 01.0 +7.0
CLL *e* 21 49 50.0
CLL *e*PSKS 21 51 25.0
CLL *e* 21 53 00.0
CLL *e* 21 54 29.0
CLL *e* 21 56 19.0
CLL *e*SS SS 22 01 24.0 +21
CLL *e*SSS SSS 22 07 24.0
CLL *e*SSSS 22 11 24.0
CLL LmV 23 01 00.0
comp=Z,1μm,21.7s
CLL Collm 157.96 341 *e*PKIKP **PKPdf** **21 36 55.0 +0.1**
CLL *e* 21 37 09.0
CLL *e* 21 37 27.0
CLL pmax pmax
comp=Z,26nm,1.0s
CLL MLR MLR
comp=Z,1μm,21.7s
BRG Berggiesshubel 158.07 339 *i* PKP **PKPdf** **21 36 54.6 -0.4**
comp=Z,11nm,1.2s
BRG *i* 21 37 29.3
comp=Z,94nm,1.4s
BRG PP **PP** **21 41 09.0 +0.9**
BRG Berggiesshubel 158.07 339 *i* PKIKP **PKPdf** **21 36 54.6 -0.4**
BRG *i* 21 37 29.3
BRG 21 41 09.0
BRG pmax pmax
comp=Z,11nm,1.2s
BRG pmax pmax
comp=Z,94nm,1.4s
PSZ Piszkesteto 158.09 326 *e*PKIKP **PKPdf** **21 36 55.8 +0.5**
PSZ MLR MLR
comp=Z,1μm,19.0s
PSZ Piszkesteto 158.09 326 *e*PKPdf **PKPdf** **21 36 55.8 +0.5**
PSZ LR LR
comp=Z,1μm,19.0s
VYHS Vyhne 158.16 329 *e*PKIKP **PKPdf** **21 36 55.1 -0.2**
VYHS *e* 21 37 29.7
VYHS Vyhne 158.16 329 *e*PKP **PKPdf** **21 36 55.0 -0.2**
VYHS *e* 21 37 29.7
GZR Gura Zlata 158.16 318⇑*i*P **PKPdf** **21 36 55.8 +0.4**
PVCC Panska Ves 158.18 338 *e*PKPDF **PKPdf** **21 36 55.4 +0.2**
PVCC *e*PP **PP** **21 41 03.0 -5.7**
PVCC *ex* x 21 54 26.0
PVCC AMS AMS 22 45 00.0
comp=Z,1μm,18.9s
PVCC Panska Ves 158.18 338 *e*PKIKP **PKPdf** **21 36 55.4 +0.2**
PVCC *e* 21 54 26.0
PVCC MLR MLR
comp=Z,1μm,18.9s
SIRR Siria 158.27 321⇑*i*P **PKPdf** **21 37 00.8 +5.3**
VRAC Vranov 158.47 333 PKP **PKPdf** **21 36 55.0 -0.6**
comp=Z,3.6nm,0.6s,baz=99,slow=2.1,SNR=5.4
VRAC PKPab **PKPab** **21 37 30.3 -0.1**
comp=Z,23nm,1.0s,baz=69,slow=5.0,SNR=11
VRAC Vranov 158.47 333⇑*i*P PKPdf 21 37 12.1 +17
VRAC Vranov 158.47 333 PKIKP **PKPdf** **21 36 55.0 -0.6**
VRAC 21 37 30.3
VRAC pmax pmax
comp=Z,2.0nm,0.6s
VRAC pmax pmax
comp=Z,23nm,1.0s
WTSB Winterswijk 158.59 352 *e*PKPdf **PKPdf** **21 36 55.6 0.0**
WTSB *e*PKPab **PKPab** **21 37 31.4 +0.7**
GOPC GO Pecny, Ondr 158.63 337 *e*PKPDF **PKPdf** **21 36 55.1 -0.7**
GOPC *e*PKPAB **PKPab** **21 37 30.9 -0.2**
GOPC *e*PP **PP** **21 41 08.8 -2.4**
GOPC AMS AMS 22 44 30.0
comp=Z,2μm,25.3s
GOPC GO Pecny, Ondr 158.63 337 *e*PKIKP **PKPdf** **21 36 55.1 -0.7**
GOPC *e* 21 37 30.9
GOPC *e* 21 41 08.8
GOPC MLR MLR
comp=Z,2μm,25.3s
MPEP Malo Peshtene 158.64 312 *i* P **PKPdf** **21 37 00.9 +4.9**
PRU Pruhonice 158.65 337 *e*PKPDF **PKPdf** **21 36 56.5 +0.7**
PRU *e*PKPAB **PKPab** **21 37 32.6 +1.5**
PRU *e*PP **PP** **21 41 09.9 -1.4**
PRU *ex* x 21 54 28.9
PRU AMS AMS 22 44 00.0
comp=Z,2μm,21.3s
PRU Pruhonice 158.65 337 *e*PKIKP **PKPdf** **21 36 56.5 +0.7**
PRU *e* 21 41 09.9
PRU *e* 21 54 28.9
PRU MLR MLR
comp=Z,2μm,21.3s
BZS Buzias 158.69 319⇑*i*P **PKPdf** **21 36 56.5 +0.5**
SMOL Smolenice 158.76 331 *e*PKP2 **PKPab** **21 37 33.2 +1.5**
SMOL Smolenice 158.76 331 *e*PKP **PKPab** **21 37 33.2 +1.5**
NKC Novy Kostel 159.08 341 *e*PKPDF **PKPdf** **21 37 00.9 +4.6**
NKC Novy Kostel 159.08 341 *e*PKIKP **PKPdf** **21 37 00.9 +4.6**
MMB Musomiste 159.43 307 *i* P **PKPdf** **21 36 56.7 -0.3**
SANT Santorini 159.63 292 PFAKE 21 37 10.0 +13
SANT LR LR
comp=Z,602nm,20.0s
KHC Kasperske Hory 159.71 337 *e*PKPDF **PKPdf** **21 36 56.6 -0.5**
KHC *ex* x 21 37 02.0
KHC *e*PKPAB **PKPab** **21 37 35.5 -0.3**
KHC *e*PP **PP** **21 41 12.4 -4.7**
KHC *ex* x 21 54 37.0
KHC AMS AMS 22 45 10.0
comp=Z,2μm,24.8s
KHC Kasperske Hory 159.71 337 *e*PKIKP **PKPdf** **21 36 56.6 -0.5**

KHC				*e*			21 37 02.0
KHC				*e*			21 37 35.5
KHC				*e*			21 41 12.4
KHC				*e*			21 54 37.0
KHC				MLR	MLR		
	comp=Z,2μm,24.8s						
KHC	**Kasperske Hory**	**159.71**	**337**	*e*PKPdf	**PKPdf**	**21 36 56.3**	**-0.8**
KKB	**Krupnik**	**159.75**	**309**	*i* P	**PKPdf**	**21 36 59.9**	**+2.6**
LAST	**Lasithi**	**159.77**	**289⇑**	*i* P	**PKPdf**	**21 37 02.0**	**+4.3**
CONA	**Conrad Observa**	**159.87**	**332**	*e*PKPdf	**PKPdf**	**21 36 56.8**	**-0.6**
	comp=Z,10.0nm,1.1s						
CONA				*e*PKPab	**PKPab**	**21 37 38.7**	**+2.1**
	comp=Z,25nm,0.8s						
HGN	**Heimansgroeve**	**159.88**	**353**	*e*PKPdf	**PKPdf**	**21 36 57.2**	**+0.1**
HGN				*e*PKPab	**PKPab**	**21 37 33.8**	**-2.6**
GERES	**GERESS Array B**	**159.91**	**337**	PKP	**PKPdf**	**21 36 55.9**	**-1.5**
	comp=Z,1.0nm,0.7s,baz=48,slow=2.0,SNR=12						
GERES				PKPab	**PKPab**	**21 37 35.3**	**-1.5**
	comp=Z,4.3nm,0.7s,baz=27,slow=3.3,SNR=4.7						
MEM	**Membach**	**160.02**	**352**	PKP	**PKPdf**	**21 36 58.5**	**+1.2**
MEM				PKPab	**PKPab**	**21 37 36.4**	**-0.6**
IDI	**Anoyia**	**160.24**	**289**	PKP	**PKPdf**	**21 36 57.7**	**-0.5**
	comp=Z,16nm,0.9s,baz=204,slow=0.8,SNR=7.2						
IDI	**Anoyia**	**160.24**	**289⇑**	*i* P	**PKPdf**	**21 36 58.5**	**+0.3**
IDI	**Anoyia**	**160.24**	**289**	PKP	**PKPdf**	**21 36 57.7**	**-0.5**
IDI				*e*PKPdf	**PKPdf**	**21 36 58.6**	**+0.4**
SNF	**Seneffe**	**160.28**	**355**	PKPab	**PKPab**	**21 37 37.1**	**-1.1**
BCLA	**Clavier**	**160.28**	**354**	PKPab	**PKPab**	**21 37 36.8**	**-1.4**
ARSA	**Arzberg**	**160.55**	**331**	*i* PKPdf	**PKPdf**	**21 36 56.6**	**-1.4**
	comp=Z,2.8nm,0.9s						
ARSA				*i* PKPab	**PKPab**	**21 37 41.1**	**+1.5**
	comp=Z,22nm,1.5s						
MOA	**Molln**	**160.55**	**334**	*i* PKPdf	**PKPdf**	**21 36 57.3**	**-0.8**
	comp=Z,12nm,1.8s						
MOA				*i* PKPab	**PKPab**	**21 37 41.6**	**+2.1**
	comp=Z,27nm,1.1s						
DOU	**Dourbes**	**160.66**	**355**	PKPab	**PKPab**	**21 37 35.0**	**-4.8**
WLF	**Walferdange**	**160.93**	**352**	PKP	**PKPdf**	**21 36 59.5**	**+1.1**
WLF				PKPab	**PKPab**	**21 37 41.5**	**+0.5**
WLF	**Walferdange**	**160.93**	**352**	*e*PKIKP	**PKPdf**	**21 36 58.7**	**+0.3**
WLF				MLR	MLR		
	comp=Z,2μm,20.0s						
WLF	**Walferdange**	**160.93**	**352**	*e*PKPdf	**PKPdf**	**21 36 58.6**	**+0.3**
WLF				LR	LR		
	comp=Z,2μm,20.0s						
PERS	**Pernice**	**161.20**	**331**	*e*PKPdf	**PKPdf**	**21 36 57.9**	**-0.9**
SOKA	**Soboth**	**161.21**	**331**	*i* PKPdf	**PKPdf**	**21 36 58.1**	**-0.8**
	comp=Z,15nm,1.3s,SNR=8.2						
SOKA				*i* PKPab	**PKPab**	**21 37 43.9**	**+1.4**
	comp=Z,24nm,0.9s						
STU	**Stuttgart**	**161.26**	**345**	*e*PKIKP	**PKPdf**	**21 36 59.5**	**+0.7**
STU				*e*		21 37 42.0	
STU	**Stuttgart**	**161.26**	**345**	*e*PKPdf	**PKPdf**	**21 36 59.5**	**+0.7**
STU				*e*PKPab	**PKPab**	**21 37 42.0**	**-0.5**
LANF	**Langenberg**	**161.34**	**348**	PKP	**PKPab**	**21 37 46.7**	**+3.8**
OBKA	**Obir**	**161.54**	**331**	*i* PKPdf	**PKPdf**	**21 36 59.8**	**+0.5**
	comp=Z,5.9nm,0.9s						
OBKA				*i* PKPab	**PKPab**	**21 37 45.2**	**+1.2**
	comp=Z,11nm,0.8s						
KBA	**Koelnbreinsper**	**161.54**	**335**	*i* PKPdf	**PKPdf**	**21 36 57.8**	**-1.5**
	comp=Z,14nm,1.2s						
MYKA	**Terra Mystica**	**161.80**	**333**	*i* PKPdf	**PKPdf**	**21 36 59.7**	**+0.2**
	comp=Z,7.3nm,1.0s						
MYKA				*e*PKPab	**PKPab**	**21 37 46.1**	**+1.0**
	comp=Z,24nm,0.8s						
BFO	**Black Forest**	**161.86**	**346**	PFAKE		21 37 10.0	+11
BFO				LR	LR		
	comp=Z,1μm,21.0s						
LJU	**Ljubljana**	**161.92**	**331**	*i* PKPdf	**PKPdf**	**21 36 59.5**	**-0.1**
PDG	**Podgorica**	**161.94**	**315⇓**	*i* P	**PKPdf**	**21 36 59.6**	**0.0**
WTTA	**Wattenberg**	**161.97**	**338**	*e*PKPdf	**PKPdf**	**21 36 59.0**	**-0.8**
	comp=Z,14nm,1.1s						
WTTA				*i* PKPab	**PKPab**	**21 37 47.6**	**+1.6**
	comp=Z,14nm,0.6s						
BOJS	**Bojanci**	**162.03**	**328**	*i* PKPdf	**PKPdf**	**21 36 59.3**	**-0.3**
RETA	**Reutte**	**162.04**	**340**	*i* PKPdf	**PKPdf**	**21 37 00.1**	**+0.4**
	comp=Z,10nm,1.8s						
RETA				*e*PKPab	**PKPab**	**21 37 46.6**	**+0.5**
	comp=Z,58nm,1.1s,SNR=6.2						
MOTA	**Moosalm**	**162.06**	**339**	*e*PKPdf	**PKPdf**	**21 36 58.1**	**-1.7**
	comp=Z,17nm,1.1s						
MOTA				*e*PKPab	**PKPab**	**21 37 48.4**	**+2.1**
	comp=Z,49nm,0.8s,SNR=5.5						
ABTA	**Abfaltersbach**	**162.12**	**336**	*i* PKPdf	**PKPdf**	**21 36 59.3**	**-0.6**
	comp=Z,20nm,1.2s,SNR=12						
ABTA				*i* PKPab	**PKPab**	**21 37 47.6**	**+1.1**
	comp=Z,34nm,0.8s						
ECH	**Echery**	**162.19**	**348**	PKP	**PKPab**	**21 37 47.1**	**+0.5**
TORD	**Torodi Ar. Bea**	**162.38**	**179**	PKP	**PKPdf**	**21 37 00.1**	**-0.8**
	comp=Z,12nm,0.8s,baz=329,slow=0.2,SNR=39						
TORD				PKPab	**PKPab**	**21 37 48.6**	**+0.4**
	comp=Z,34nm,0.6s,baz=189,slow=4.4,SNR=5.1						
FETA	**Feichten**	**162.47**	**340**	*e*PKPdf	**PKPdf**	**21 36 59.9**	**-0.4**
	comp=Z,12nm,1.0s,SNR=6.7						
FETA				*e*PKPab	**PKPab**	**21 37 50.3**	**+2.3**
	comp=Z,38nm,1.0s,SNR=5.4						
DAVA	**Damuels**	**162.47**	**342**	*i* PKPdf	**PKPdf**	**21 37 00.9**	**+0.6**
DAVA				*i* PKPab	**PKPab**	**21 37 50.7**	**+2.7**
MOF	**Molkenrain**	**162.55**	**348**	PKP	**PKPab**	**21 37 51.0**	**+2.7**
DAVOX	**Davos/Dischmat**	**162.93**	**341**	PKP	**PKPdf**	**21 36 59.2**	**-1.5**
	comp=Z,5.0nm,0.8s,baz=33,slow=4.6,SNR=6.1						
DAVOX				PKPab	**PKPab**	**21 37 48.2**	**-1.9**
	comp=Z,40nm,1.0s,baz=350,slow=5.8,SNR=9.9						
DAVOX	**Davos/Dischmat**	**162.93**	**341**	PKIKP	**PKPdf**	**21 36 59.2**	**-1.5**
DAVOX						21 37 48.2	
DAVOX				pmax	pmax		
	comp=Z,4.0nm,0.8s						
DAVOX				pmax	pmax		
	comp=Z,41nm,1.0s						
LOMF	**Lomont**	**163.09**	**348**	PKP	**PKPab**	**21 37 51.4**	**+0.7**
TUE	**Stuetta**	**163.36**	**342**	PFAKE		21 37 10.0	+8.8
TUE				LR	LR		
	comp=Z,1μm,21.0s						
PMOZ	**Porto Moniz, M**	**163.66**	**78**	*e*PP	PP	21 41 35.3	-4.5
PMOZ	**Porto Moniz, M**	**163.66**	**78**	*e*LR	LR	22 38 00.3	
	comp=Z,620nm,20.0s						
MATE	**Matera**	**164.52**	**313⇑**	*i* P	**PKPdf**	**21 37 03.9**	**+1.8**
RSL	**Roselend**	**164.73**	**347**	PKP	**PKPab**	**21 38 00.3**	**+2.3**
VLC	**Villacollemand**	**165.11**	**336**	PFAKE		21 37 10.0	+7.4
VLC				LR	LR		
	comp=Z,563nm,20.0s						
TIP	**Timpagrande**	**165.27**	**308⇑**	*i* P	**PKPdf**	**21 37 02.3**	**-0.7**
TIP	**Timpagrande**	**165.27**	**308**	PFAKE		21 37 10.0	+7.0
TIP				LR	LR		
	comp=Z,1μm,20.0s						
AQU	**L'Aquila**	**165.28**	**324**	PFAKE		21 37 10.0	+7.2
AQU				LR	LR		
	comp=Z,2μm,22.0s						
SSB	**Saint Sauveur**	**165.44**	**353**	PKP	**PKPab**	**21 38 04.6**	**+3.6**
SSB	**Saint Sauveur**	**165.44**	**353**	PFAKE		21 37 10.0	+7.1
SSB				LR	LR		
	comp=Z,1μm,20.0s						
CUC	**Castrocucco**	**165.45**	**313**	PFAKE		21 37 10.0	+6.9
CUC				LR	LR		
	comp=Z,1μm,20.0s						
FRNF	**Fournols**	**165.47**	**358**	PKP	**PKPab**	**21 38 06.4**	**+5.3**
OG22	**Abries**	**165.49**	**346**	PKP	**PKPab**	**21 38 05.1**	**+3.6**
PGAV	**Gavieira, Arco**	**166.23**	**34**	*e*PKPdf	**PKPdf**	**21 37 06.9**	**+3.2**
PGAV	**Gavieira, Arco**	**166.23**	**34**	*e*PKPab	**PKPab**	**21 38 05.7**	**+1.0**
PGAV	**Gavieira, Arco**	**166.23**	**34**	*e*PP	PP	21 41 41.6	-10
PGAV	**Gavieira, Arco**	**166.23**	**34**	*e*SS	SS	22 02 38.3	+8.3
PGAV	**Gavieira, Arco**	**166.23**	**34**	*e*LR	LR	22 35 09.2	
	comp=Z,834nm,20.0s						
CEL	**Celeste**	**166.31**	**306**	PFAKE		21 37 10.0	+6.2
CEL				LR	LR		
	comp=Z,2μm,19.0s						
POLO	**Lamas de Olo**	**166.91**	**34**	*e*PKPdf	**PKPdf**	**21 37 07.5**	**+3.3**
POLO	**Lamas de Olo**	**166.91**	**34**	*e*PP	PP	21 41 53.1	-2.4
POLO	**Lamas de Olo**	**166.91**	**34**	*e*SS	SS	22 02 58.7	+22
POLO	**Lamas de Olo**	**166.91**	**34**	*e*LR	LR	22 34 58.9	
	comp=Z,460nm,20.0s						
PBRG	**Braganca**	**167.05**	**30**	*e*PKPdf	**PKPdf**	**21 36 59.5**	**-4.8**
PBRG	**Braganca**	**167.05**	**30**	*e*PKPab	**PKPab**	**21 38 07.3**	**-1.0**
PBRG	**Braganca**	**167.05**	**30**	*e*PP	PP	21 41 52.0	-4.0
PBRG	**Braganca**	**167.05**	**30**	*e*LR	LR	22 37 27.9	
	comp=Z,1μm,20.0s						
MVO	**Moncorvo**	**167.43**	**33**	*e*PKPdf	**PKPdf**	**21 37 05.3**	**+0.7**
MVO	**Moncorvo**	**167.43**	**33**	*e*PKPab	**PKPab**	**21 38 10.8**	**+0.8**
MVO	**Moncorvo**	**167.43**	**33**	*e*PP	PP	21 41 49.9	-8.2
MVO	**Moncorvo**	**167.43**	**33**	*e*LR	LR	22 35 28.7	
	comp=Z,1μm,22.0s						
PCAS	**Casmilo, Conde**	**167.51**	**40**	*e*PP	PP	21 41 47.9	-11
PCAS	**Casmilo, Conde**	**167.51**	**40**	*e*SS	SS	22 02 34.8	-8.4
PCAS	**Casmilo, Conde**	**167.51**	**40**	*e*LR	LR	22 35 30.2	
	comp=Z,1μm,20.0s						
MTE	**Manteigas**	**167.77**	**36**	*e*PKPdf	**PKPdf**	**21 37 05.8**	**+0.9**
MTE	**Manteigas**	**167.77**	**36**	*e*PP	PP	21 41 53.1	-6.8
MTE	**Manteigas**	**167.77**	**36**	*e*SS	SS	22 02 54.1	+8.4
MTE	**Manteigas**	**167.77**	**36**	*e*LR	LR	22 35 58.2	
	comp=Z,1μm,22.0s						
MTE	**Manteigas**	**167.77**	**36**	PFAKE		21 37 20.0	+15
MTE				LR	LR		
	comp=Z,1μm,21.0s						
PMAFR	**Mafra**	**167.78**	**46**	*e*PP	PP	21 41 48.9	-11
PMAFR	**Mafra**	**167.78**	**46**	*e*SS	SS	22 02 57.2	+11
PMAFR	**Mafra**	**167.78**	**46**	*e*LR	LR	22 34 54.1	
	comp=Z,1μm,20.0s						
PTOM	**Tomar**	**167.86**	**41**	*e*PKPdf	**PKPdf**	**21 37 07.3**	**+2.5**
LIS	**Lisbon**	**168.01**	**46**	*e*P	**PKPdf**	**21 37 04.5**	**-0.5**
LIS				*e*PP	**PP**	**21 42 01.2**	**-0.1**
LIS				AMS	AMS	22 47 43.3	
	comp=Z,1μm,21.9s						
LIS	**Lisbon**	**168.01**	**46**	*e*PKIKP	**PKPdf**	**21 37 04.4**	**-0.5**
LIS				*e*		21 42 01.2	
PCBR	**Castelo Branco**	**168.22**	**38**	*e*PKPdf	**PKPdf**	**21 37 05.4**	**+0.3**
WDD	**Wied Dalam**	**168.33**	**299**	PFAKE		21 37 20.0	+15
WDD				LR	LR		
	comp=Z,2μm,20.0s						
PMTG	**Montargil**	**168.34**	**43**	*e*PP	PP	21 41 57.3	-5.6
PMTG	**Montargil**	**168.34**	**43**	*e*SS	SS	22 03 05.9	+14
PMTG	**Montargil**	**168.34**	**43**	*e*LR	LR	22 35 46.3	
	comp=Z,970nm,18.0s						
CLTB	**Caltabellotta**	**168.48**	**309**	PFAKE		21 37 20.0	+15
CLTB				LR	LR		
	comp=Z,899nm,22.0s						
PMRV	**Marv??o**	**168.56**	**39**	*e*PKPdf	**PKPdf**	**21 37 05.7**	**+0.3**
PMRV	**Marv??o**	**168.56**	**39**	*e*PKPab	**PKPab**	**21 38 14.1**	**-0.9**
PMRV	**Marv??o**	**168.56**	**39**	*e*PP	PP	21 41 56.2	-7.8
PMRV	**Marv??o**	**168.56**	**39**	*e*LR	LR	22 34 43.9	
	comp=Z,1μm,20.0s						
PNCL	**Nicolau / Gran**	**168.76**	**47**	*e*PKPdf	**PKPdf**	**21 37 05.9**	**+0.4**
PNCL	**Nicolau / Gran**	**168.76**	**47**	*e*PP	PP	21 41 55.2	-10
PNCL	**Nicolau / Gran**	**168.76**	**47**	*e*SS	SS	22 02 49.7	-6.4
PNCL	**Nicolau / Gran**	**168.76**	**47**	*e*LR	LR	22 35 51.0	
	comp=Z,985nm,20.0s						
EVO	**Evora**	**168.81**	**44**	*e*PKPdf	**PKPdf**	**21 37 06.2**	**+0.7**
PESTR	**Estremoz**	**168.84**	**42**	*e*PKPdf	**PKPdf**	**21 37 08.5**	**+2.9**
PESTR	**Estremoz**	**168.84**	**42**	*e*PP	PP	21 41 54.1	-11
PESTR	**Estremoz**	**168.84**	**42**	*e*SS	SS	22 03 06.0	+9.4
PESTR	**Estremoz**	**168.84**	**42**	*e*LR	LR	22 35 23.2	
	comp=Z,1μm,22.0s						
PTEO	**Sao Teotonio**	**168.96**	**50**	*e*PKPdf	**PKPdf**	**21 37 09.4**	**+3.8**
MESJ	**Messejana**	**169.12**	**47**	*e*P	**PKPdf**	**21 37 05.3**	**-0.4**
MESJ				*e*PP	**PP**	**21 42 06.7**	**-0.3**
MESJ				AMS	AMS	22 55 25.7	
	comp=Z,1μm,20.3s						
MESJ	**Messejana**	**169.12**	**47**	*e*PKPdf	**PKPdf**	**21 37 07.1**	**+1.4**
MESJ	**Messejana**	**169.12**	**47**	*e*PKIKP	**PKPdf**	**21 37 05.3**	**-0.4**
MESJ				*e*		21 42 06.7	
PFVI	**Vila Bisbo**	**169.12**	**52**	*e*PP	PP	21 41 57.3	-10
PFVI	**Vila Bisbo**	**169.12**	**52**	*e*SS	SS	22 03 01.9	+1.9
PFVI	**Vila Bisbo**	**169.12**	**52**	*e*LR	LR	22 36 40.1	
	comp=Z,888nm,22.0s						
MORF	**Marmelete**	**169.14**	**51**	*e*P	**PKPdf**	**21 37 05.4**	**-0.5**
MORF				*e*PP	**PP**	**21 42 07.1**	**-0.3**
MORF				AMS	AMS	22 55 31.4	
	comp=Z,1μm,20.0s						
MORF	**Marmelete**	**169.14**	**51**	*e*PKPdf	**PKPdf**	**21 37 03.8**	**-2.0**
MORF	**Marmelete**	**169.14**	**51**	*e*PP	PP	21 42 02.5	-4.9
MORF	**Marmelete**	**169.14**	**51**	*e*SS	SS	22 02 59.0	-1.3
MORF	**Marmelete**	**169.14**	**51**	*e*LR	LR	22 36 19.1	
	comp=Z,1μm,20.0s						
MORF	**Marmelete**	**169.14**	**51**	*e*PKIKP	**PKPdf**	**21 37 05.3**	**-0.5**
MORF				*e*		21 42 07.0	
PBEJ	**Beja**	**169.22**	**46**	*e*PKPdf	**PKPdf**	**21 37 06.2**	**+0.4**
PBEJ	**Beja**	**169.22**	**46**	*e*PKPab	**PKPab**	**21 38 17.8**	**-0.2**
VSL	**Villasalto**	**169.42**	**327**	PFAKE		21 37 20.0	+14
VSL				LR	LR		
	comp=Z,1μm,21.0s						
PBDV	**Barranco-do-Ve**	**169.65**	**49**	*e*PKPdf	**PKPdf**	**21 37 07.1**	**+1.0**
PBDV	**Barranco-do-Ve**	**169.65**	**49**	*e*PP	PP	21 41 58.3	-12
PBDV	**Barranco-do-Ve**	**169.65**	**49**	*e*SS	SS	22 03 05.2	0.0
PBDV	**Barranco-do-Ve**	**169.65**	**49**	*e*LR	LR	22 36 33.1	
	comp=Z,1μm,20.0s						
PVAQ	**Vaqueiros**	**169.70**	**48**	*e*PP	PP	21 42 04.6	-5.4
PVAQ	**Vaqueiros**	**169.70**	**48**	*e*SS	SS	22 02 57.8	-7.7
PVAQ	**Vaqueiros**	**169.70**	**48**	*e*LR	LR	22 36 06.1	
	comp=Z,1μm,22.0s						
PAB	**San Pablo**	**169.93**	**29**	PFAKE		21 37 20.0	+14
PAB				LR	LR		
	comp=Z,1μm,20.0s						
ESDC	**Sonseca Array**	**169.98**	**27**	PKP	**PKPdf**	**21 37 05.7**	**-0.6**
	comp=Z,7.8nm,0.9s,baz=349,slow=2.1,SNR=26						
ESDC				PKPab	**PKPab**	**21 38 19.8**	**-1.4**
	comp=Z,2.2nm,0.7s,baz=326,slow=4.1,SNR=4.2						
ESDC				PP	**PP**	**21 42 09.4**	**-1.4**
	comp=Z,1.2nm,0.9s,baz=345,slow=4.9,SNR=4.0						
TAM	**Tamanrasset**	**171.35**	**203**	PFAKE		21 37 20.0	+12
TAM				LR	LR		
	comp=Z,1μm,22.0s						
RTC	**Rabat Centre**	**171.97**	**65**	PFAKE		21 37 20.0	+13
RTC				LR	LR		
	comp=Z,6μm,22.0s						
KEST	**Kesra**	**172.09**	**310**	PKP	**PKPdf**	**21 37 07.7**	**+0.2**
	comp=Z,13nm,0.9s,baz=170,slow=2.9,SNR=4.2						
KEST				PKPab	**PKPab**	**21 38 30.2**	**-0.7**
	comp=Z,16nm,1.1s,baz=192,slow=0.5,SNR=4.2						

*ISCJB **21** 21:19:39.4±0.5, 39°.07N±0°.04×29°.05E±0°.04, h11km±5km, Error ellipse: s-maj=7.8km s-min=4.4km az=145.2*
*DDA **21** 21:19:39.2, 39°.10N×29°.03E, h7km, Md2.6*
*ISK **21** 21:19:39.0, 39°.06N×29°.12E, h13km, ML2.2*
*CSEM **21** 21:19:39.4±0.1, 39°.08N×29°.06E, h8km, MD2.6, Error ellipse: s-maj=3.9km s-min=2.5km az=134.0*

ISC 21 21:19:39.0±1.0, 39°.05N±0°.03×29°.08E±0°.03, h11km±10km, n32, σ0s35/42, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**268**	P	**Pg**	**21 19 45.0**	**+0.2**
DEMI				S	**Sg**	**21 19 48.6**	**-0.1**
DEMI	**Demirci**	**0.28**	**268**	*i* P	**Pg**	**21 19 45.0**	**+0.2**
DEMI				*i* S	**Sg**	**21 19 48.6**	**-0.1**
GDZ	**Gediz**	**0.32**	**83**	P	**Pb**	**21 19 46.6**	**-0.2**
GDZ				S	**Sb**	**21 19 51.6**	**-0.4**
GDZ	**Gediz**	**0.32**	**83**	*i* P	**Pb**	**21 19 46.6**	**-0.2**
GDZ				*i* S	**Sb**	**21 19 51.6**	**-0.4**
TVSB	**Tavsanli**	**0.50**	**37**	*e*PG	**Pg**	**21 19 48.9**	**+0.1**
TVSB				*e*SG	**Sg**	**21 19 55.6**	**+0.2**
TVSB	**Tavsanli**	**0.50**	**37**	*e*Pg	**Pg**	**21 19 48.9**	**+0.1**
TVSB				*e*Sg	**Sg**	**21 19 55.6**	**+0.2**
KULA	**Kula-Manisa**	**0.63**	**211**	*e*PG	**Pb**	**21 19 51.9**	**-0.2**
KULA	**Kula-Manisa**	**0.63**	**211**	*e*Pg	**Pb**	**21 19 51.9**	**-0.2**
MANT	**Manisa**	**0.69**	**216**	P	**Pb**	**21 19 53.1**	**-0.2**
MANT				S	**Sg**	**21 20 01.6**	**0.0**
MANT	**Manisa**	**0.69**	**216**	*i* P	**Pb**	**21 19 53.1**	**-0.2**
MANT				*i* S	**Sg**	**21 20 01.6**	**0.0**
DURS	**Dursunbey**	**0.72**	**320**	P	**Pg**	**21 19 52.1**	**-0.9**
DURS	**Dursunbey**	**0.72**	**320**	*i* P	**Pg**	**21 19 52.1**	**-0.9**
AKS	**Akhisar**	**1.00**	**260**	*e*PG	**Pn**	**21 19 59.4**	**+0.3**
AKS	**Akhisar**	**1.00**	**260**	*e*Pg	**Pn**	**21 19 59.4**	**+0.3**
BALB	**Balikesir**	**1.10**	**303**	*e*PN	**Pn**	**21 20 00.9**	**+0.5**
BALB	**Balikesir**	**1.10**	**303**	*e*Pn	**Pn**	**21 20 00.9**	**+0.5**
CAVI	**Cavuskoy**	**1.29**	**27**	*e*PN	**Pb**	**21 20 03.4**	**0.0**
CAVI	**Cavuskoy**	**1.29**	**27**	*e*Pn	**Pb**	**21 20 03.4**	**0.0**
IZI	**Iznik**	**1.32**	**13**	*e*PN	**Pn**	**21 20 03.2**	**-0.3**
IZI				*e*SN	**Sb**	**21 20 21.1**	**+0.3**
IZI	**Iznik**	**1.32**	**13**	*e*Pn	**Pn**	**21 20 03.2**	**-0.3**
IZI				*e*Sn	**Sb**	**21 20 21.1**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.32**	**354**	*e*PN	**Pn**	**21 20 03.8**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.32**	**354**	*e*Pn	**Pn**	**21 20 03.8**	**+0.3**
KCTX	**Karacabey (Bur**	**1.33**	**336**	*e*PN	**Pg**	**21 20 04.5**	**-0.1**
KCTX	**Karacabey (Bur**	**1.33**	**336**	*e*Pn	**Pg**	**21 20 04.6**	**-0.1**
GONE	**Gonen-Balikesi**	**1.46**	**313**	*e*PN	**Pb**	**21 20 06.1**	**-0.2**
GONE	**Gonen-Balikesi**	**1.46**	**313**	*e*Pn	**Pb**	**21 20 06.1**	**-0.2**
ARMT	**Armutlu**	**1.52**	**354**	*e*PN	**Pb**	**21 20 07.2**	**-0.1**
ARMT	**Armutlu**	**1.52**	**354**	*e*Pn	**Pb**	**21 20 07.2**	**-0.1**
EDC	**Edincik**	**1.60**	**324**	*e*PN	**Pn**	**21 20 07.7**	**+0.5**
EDC	**Edincik**	**1.60**	**324**	*e*Pn	**Pn**	**21 20 07.7**	**+0.5**
GULT	**Gulveren**	**1.77**	**38**	*e*PN	**Pn**	**21 20 10.1**	**+0.4**
GULT	**Gulveren**	**1.77**	**38**	*e*Pn	**Pn**	**21 20 10.1**	**+0.4**

IDC 21 21:25:10.8±249.0, 63°.76N×18°.78W, h0km, Error ellipse: s-maj=148.7km s-min=132.2km az=28.0, Iceland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
II8DK	**QAANAAQ INFRAS**	**20.63**	**331**	*i*		23 30 25.0	
	baz=108,slow=314,SNR=18						
I26DE	**FREYUNG INFRAS**	**23.04**	**115**	*i*		23 47 44.5	
	baz=325,slow=328,SNR=13						

*ISCJB **21** 21:25:42.2±0.5, 39°.08N±0°.04×29°.05E±0°.03, h5km±7km, Error ellipse: s-maj=6.7km s-min=4.4km az=171.8*
*DDA **21** 21:25:42.2, 39°.09N×29°.05E, h7km, Md2.5*
*ISK **21** 21:25:42.0, 39°.11N×29°.05E, h5km, MD2.7*
*CSEM **21** 21:25:42.4±0.1, 39°.09N×29°.06E, h5km, MD2.5, Error ellipse: s-maj=2.5km s-min=2.0km az=137.0*

ISC 21 21:25:42.5±1.0, 39°.09N±0°.03×29°.05E±0°.02, h7km±11km, n34, σ0s34/44, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**261**	P	**Pg**	**21 25 47.8**	**0.0**
DEMI				S	**Sg**	**21 25 51.6**	**+0.2**
DEMI	**Demirci**	**0.27**	**261**	*i* P	**Pg**	**21 25 47.8**	**0.0**
DEMI				*i* S	**Sg**	**21 25 51.6**	**+0.2**
GDZ	**Gediz**	**0.33**	**90**	P	**Pg**	**21 25 49.2**	**0.0**
GDZ				S	**Sg**	**21 25 54.1**	**+0.5**
GDZ	**Gediz**	**0.33**	**90**	*i* P	**Pg**	**21 25 49.2**	**0.0**
GDZ				*i* S	**Sg**	**21 25 54.1**	**+0.5**
TVSB	**Tavsanli**	**0.48**	**41**	*e*PG	**Pg**	**21 25 51.6**	**-0.3**
TVSB	**Tavsanli**	**0.48**	**41**	*e*Pg	**Pg**	**21 25 51.6**	**-0.3**
KULA	**Kula-Manisa**	**0.65**	**208**	*e*PG	**Pg**	**21 25 55.0**	**0.0**
KULA	**Kula-Manisa**	**0.65**	**208**	*e*Pg	**Pg**	**21 25 55.0**	**0.0**
DURS	**Dursunbey**	**0.68**	**319**	P	**Pg**	**21 25 55.6**	**-0.1**
DURS	**Dursunbey**	**0.68**	**319**	*i* P	**Pg**	**21 25 55.6**	**-0.1**
MANT	**Manisa**	**0.71**	**213**	P	**Pg**	**21 25 55.8**	**-0.4**
MANT				S	**Sg**	**21 26 05.0**	**-0.5**
MANT	**Manisa**	**0.71**	**213**	*i* P	**Pg**	**21 25 55.9**	**-0.4**
MANT				*i* S	**Sg**	**21 26 05.0**	**-0.5**
KHL	**Karahalli**	**0.85**	**154**	*e*PG	**Pb**	**21 25 59.4**	**-0.2**
KHL	**Karahalli**	**0.85**	**154**	*e*Pg	**Pb**	**21 25 59.4**	**-0.2**
AKHS	**Akhisar**	**0.99**	**258**	P	**Pg**	**21 26 01.5**	**0.0**
AKHS	**Akhisar**	**0.99**	**258**	*i* P	**Pg**	**21 26 01.5**	**0.0**
AKS	**Akhisar**	**0.99**	**258**	*e*PG	**Pb**	**21 26 01.8**	**-0.2**
AKS				*e*SG	**Sb**	**21 26 15.8**	**+0.6**
AKS	**Akhisar**	**0.99**	**258**	*e*Pg	**Pb**	**21 26 01.8**	**-0.2**
AKS				*e*Sg	**Sb**	**21 26 15.8**	**+0.6**
BALB	**Balikesir**	**1.06**	**302**	*e*PG	**Pg**	**21 26 02.9**	**-0.1**
BALB				*e*SG	**Sb**	**21 26 17.5**	**+0.1**
BALB	**Balikesir**	**1.06**	**302**	*e*Pg	**Pg**	**21 26 02.9**	**-0.1**
BALB				*e*Sg	**Sb**	**21 26 17.5**	**+0.1**

DRN			pmax	pmax		
	comp=Z,136nm,0.5s					
DRN			smax	smax		
	comp=N,377nm,0.4s					
DRN			smax	smax		
	comp=E,283nm,0.6s					
DRN	**Derbent**	**1.11 359**	*e*Pg	**Pg**	**21 27 27.1**	**-0.3**
	comp=E,136nm,0.5s					
DRN			*e*Sg	**Sb**	**21 27 42.6**	**+0.2**
	comp=E,377nm,0.4s					
BRDA	**Brd**	**1.11 234**	⇑P	**Pb**	**21 27 27.8**	**0.0**
	SNR=18					
BRDA			⇑S	**Sn**	**21 27 45.0**	**+1.1**
BRDA	**Brd**	**1.11 234**	P	**Pb**	**21 27 27.8**	**0.0**
	SNR=18					
BRDA			S	**Sn**	**21 27 45.0**	**+1.1**
NDR	**Nardaran**	**1.28 105**	⇑S	**Sb**	**21 27 46.1**	**-1.3**
NDR	**Nardaran**	**1.28 105**	S	**Sb**	**21 27 46.1**	**-1.3**
URKR	**Urkarakh**	**1.36 337**	*i* PG	**Pn**	**21 27 31.0**	**-0.8**
URKR			*i* S	**Sb**	**21 27 49.0**	**-0.7**
URKR			pmax	pmax		
	comp=Z,163nm,0.2s					
URKR	**Urkarakh**	**1.36 337**	*i* Pg	**Pn**	**21 27 31.0**	**-0.8**
	comp=Z,163nm,0.2s					
URKR			*i* Sg	**Sb**	**21 27 49.0**	**-0.7**
ZKTA	**Zakatala**	**1.49 299**	⇑P	**Pn**	**21 27 33.0**	**-0.5**
	SNR=97					
ZKTA			⇑S	**Sg**	**21 27 55.2**	**+1.0**
KMKR	**Kumukh**	**1.54 322**	*e*PG	**Pb**	**21 27 35.0**	**-0.1**
KMKR			*e*S	**Sg**	**21 27 58.0**	**+2.5**
KMKR	**Kumukh**	**1.54 322**	*e*Pg	**Pb**	**21 27 35.0**	**-0.1**
KMKR			*e*Sg	**Sg**	**21 27 58.0**	**+2.5**
GANJ	**Ganja**	**1.57 261**	⇓Pn	**Pn**	**21 27 33.3**	**-1.3**
	SNR=90					
GANJ			⇑S	**Sn**	**21 27 54.5**	**-0.8**
GANJ	**Ganja**	**1.57 261**	Pn	**Pn**	**21 27 33.3**	**-1.3**
	SNR=90					
GANJ			S	**Sn**	**21 27 54.5**	**-0.8**
SGKR	**Sergokala**	**1.62 341**	PG	**Pg**	**21 27 37.0**	**-0.3**
SGKR			*e*S	**Sg**	**21 27 59.0**	**+0.6**
SGKR	**Sergokala**	**1.62 341**	Pg	**Pg**	**21 27 37.0**	**-0.3**
SGKR			*e*Sg	**Sg**	**21 27 59.0**	**+0.6**
GLBA	**Clilabad**	**1.68 179**	⇑Pn	**Pn**	**21 27 35.5**	**-0.5**
	SNR=8.6					
GLBA			⇓Sn	**Sg**	**21 28 00.3**	**+0.2**
GLBA	**Clilabad**	**1.68 179**	Pn	**Pn**	**21 27 35.5**	**-0.5**
	SNR=8.6					
GLBA			Sn	**Sg**	**21 28 00.3**	**+0.2**
GNBR	**Gunib**	**1.80 325**	⇑*i*PN	**Pb**	**21 27 39.2**	**-0.4**
GNBR			*i* S	**Sg**	**21 28 05.1**	**+1.0**
GNBR			pmax	pmax		
	comp=Z,231nm,0.7s					
GNBR	**Gunib**	**1.80 325**	*i* Pn	**Pb**	**21 27 39.2**	**-0.4**
	comp=Z,231nm,0.7s					
GNBR			*i* Sg	**Sg**	**21 28 05.1**	**+1.0**
ARKR	**Arakani**	**1.96 329**	*e*PN	**Pg**	**21 27 45.0**	**+1.1**
ARKR			*e*S	**Sg**	**21 28 13.0**	**+3.7**
GDB	**GEDABAY**	**1.99 265**	⇓Pn	**Pn**	**21 27 39.4**	**-1.1**
	SNR=55					
GDB			⇓Sn	**Sn**	**21 28 05.9**	**+0.2**
GDB	**GEDABAY**	**1.99 265**	Pn	**Pn**	**21 27 39.4**	**-1.1**
	SNR=55					
GDB			Sn	**Sn**	**21 28 05.9**	**+0.2**
UNCR	**Uncukul**	**2.14 327**	*e*PN	**Pb**	**21 27 46.0**	**+0.7**
UNCR			*e*S	**Sg**	**21 28 17.0**	**+2.1**
UNCR			pmax	pmax		
	comp=Z,34nm,0.3s					
UNCR	**Uncukul**	**2.14 327**	*e*Pn	**Pb**	**21 27 46.0**	**+0.7**
	comp=Z,34nm,0.3s					
UNCR			*e*Sg	**Sg**	**21 28 17.0**	**+2.1**
KRNR	**Karanay**	**2.19 331**	*e*PN	**Pn**	**21 27 39.2**	**-4.0**
KRNR	**Karanay**	**2.19 331**	*e*Pn	**Pn**	**21 27 39.2**	**-4.0**
LKRN	**Lenkeran, Azer**	**2.23 172**	⇓Pn	**Pn**	**21 27 42.9**	**-0.7**
	SNR=18					
LKRN			⇓Sn	**Sb**	**21 28 14.1**	**-0.6**
LKRN	**Lenkeran, Azer**	**2.23 172**	Pn	**Pn**	**21 27 42.9**	**-0.7**
	SNR=18					
LKRN			Sn	**Sb**	**21 28 14.1**	**-0.6**
QZX	**Qazax, Azerbai**	**2.27 274**	⇑Pn	**Pn**	**21 27 44.4**	**+0.2**
	SNR=50					
QZX			⇑Sn	**Sb**	**21 28 14.7**	**-1.0**
QZX	**Qazax, Azerbai**	**2.27 274**	Pn	**Pn**	**21 27 44.4**	**+0.2**
	SNR=50					
QZX			Sn	**Sb**	**21 28 14.7**	**-1.0**
LRK	**Lerik**	**2.28 180**	⇑Pn	**Pn**	**21 27 44.1**	**-0.3**
	SNR=9.3					
LRK			⇑Sn	**Sb**	**21 28 15.4**	**-0.8**
LRK	**Lerik**	**2.28 180**	Pn	**Pn**	**21 27 44.1**	**-0.3**
	SNR=9.3					
LRK			Sn	**Sb**	**21 28 15.4**	**-0.8**
ASTR	**Astara**	**2.38 172**	⇓Pn	**Pn**	**21 27 44.9**	**-0.8**
	SNR=21					
ASTR			⇑Sn	**Sn**	**21 28 16.0**	**+0.8**
ASTR	**Astara**	**2.38 172**	Pn	**Pn**	**21 27 44.9**	**-0.8**
	SNR=21					
ASTR			Sn	**Sn**	**21 28 16.0**	**+0.8**
DBC	**Dubki**	**2.39 332**	*e*PN	**Pg**	**21 27 54.0**	**+2.1**
DBC			*e*S	**Sg**	**21 28 27.2**	**+4.3**
TBLG	**Delisi**	**2.84 288**	P	**Pb**	**21 27 55.8**	**-1.6**
TBLG			S	**Sn**	**21 28 29.1**	**+2.4**
TBLG	**Delisi**	**2.84 288**	*e*PN	**Pb**	**21 27 55.7**	**-1.6**
TBLG			*e*S	**Sn**	**21 28 29.0**	**+2.4**
TBLG	**Delisi**	**2.84 288**	*e*Pn	**Pb**	**21 27 55.7**	**-1.6**
TBLG			*e*Sn	**Sn**	**21 28 29.0**	**+2.4**
GUDG	**Gudauri**	**3.29 299**	P	**Pb**	**21 28 03.4**	**-1.7**
GUDG			S	**Sn**	**21 28 41.1**	**+3.2**
BGD	**Bogdanovka**	**3.61 277**	P	**Pb**	**21 28 07.8**	**-2.8**
BGD			S	**Sb**	**21 28 55.3**	**+0.5**
AKH	**Akhalkalaki**	**3.71 279**	P	**Sb**	**21 28 57.4**	**0.0**
ONI	**Oni**	**4.03 296**	P	**Pn**	**21 28 09.5**	**+1.1**
ONI	**Oni**	**4.03 296**	*e*PN	**Pn**	**21 28 09.5**	**+1.1**
ONI	**Oni**	**4.03 296**	*e*Pn	**Pn**	**21 28 09.5**	**+1.1**

*DDA **21** 21:30:12.8, 39.°10N×29.°04E, h7km, Md2.9*
*CSEM **21** 21:30:13.7±0.1, 39.°08N×29.°02E, h2km, MD2.9, Error ellipse: s-maj=1.8km s-min=1.5km az=85.0*
*ISK **21** 21:30:13.0, 39.°10N×29.°02E, h2km, ML3.2*
ISC 21 21:30:13.7±1.2, 39.°10N±0.°02×29.°03E±0.°02, h0km±14km, n74, σ0.°30/85, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**257**	P	**Pg**	**21 30 18.5**	**+0.1**
DEMI				S	**Sg**	**21 30 22.3**	**+0.7**
DEMI	**Demirci**	**0.25**	**257**	*i* P	**Pg**	**21 30 18.6**	**+0.1**
DEMI				*i* S	**Sg**	**21 30 22.3**	**+0.7**
GDZ	**Gediz**	**0.35**	**91**	P	**Pg**	**21 30 20.4**	**-0.1**
GDZ				S	**Sg**	**21 30 25.1**	**0.0**
GDZ	**Gediz**	**0.35**	**91**	*i* P	**Pg**	**21 30 20.4**	**-0.1**
GDZ				*i* S	**Sg**	**21 30 25.1**	**0.0**
TVSB	**Tavsanli**	**0.49**	**44**	*e*PG	**Pg**	**21 30 23.3**	**+0.3**
TVSB	**Tavsanli**	**0.49**	**44**	*e*Pg	**Pg**	**21 30 23.3**	**+0.3**
KULA	**Kula-Manisa**	**0.65**	**206**	*e*PG	**Pg**	**21 30 26.0**	**-0.1**
KULA	**Kula-Manisa**	**0.65**	**206**	*e*Pg	**Pg**	**21 30 26.0**	**-0.1**
DURS	**Dursunbey**	**0.66**	**320**	P	**Pg**	**21 30 26.2**	**-0.2**
DURS	**Dursunbey**	**0.66**	**320**	*i* P	**Pg**	**21 30 26.2**	**-0.2**
MANT	**Manisa**	**0.71**	**211**	P	**Pg**	**21 30 26.7**	**-0.5**
MANT				S	**Sg**	**21 30 35.9**	**-0.5**
MANT	**Manisa**	**0.71**	**211**	*i* P	**Pg**	**21 30 26.7**	**-0.5**
MANT				*i* S	**Sg**	**21 30 35.9**	**-0.5**
KHAL	**Karahalli**	**0.81**	**153**	P	**Pg**	**21 30 29.0**	**-0.2**
KHAL	**Karahalli**	**0.81**	**153**	*i* P	**Pg**	**21 30 29.0**	**-0.2**
KHL	**Karahalli**	**0.86**	**153**	*e*PG	**Pg**	**21 30 30.5**	**+0.2**
KHL	**Karahalli**	**0.86**	**153**	*e*Pg	**Pg**	**21 30 30.5**	**+0.2**
ORLT	**Orhaneli**	**0.95**	**354**	*e*PG	**Pg**	**21 30 32.0**	**0.0**
ORLT				*e*SG	**Sb**	**21 30 46.0**	**-0.3**
ORLT	**Orhaneli**	**0.95**	**354**	*e*Pg	**Pg**	**21 30 32.0**	**0.0**
ORLT				*e*Sg	**Sb**	**21 30 46.0**	**-0.3**
AKHS	**Akhisar**	**0.97**	**257**	P	**Pg**	**21 30 32.2**	**0.0**
AKHS	**Akhisar**	**0.97**	**257**	*i* P	**Pg**	**21 30 32.2**	**0.0**
AKS	**Akhisar**	**0.97**	**257**	*e*PG	**Pg**	**21 30 32.5**	**+0.2**
BALB	**Balikesir**	**1.04**	**302**	*e*PG	**Pg**	**21 30 33.9**	**+0.3**
BALB				*e*SG	**Sb**	**21 30 48.7**	**0.0**
BALB	**Balikesir**	**1.04**	**302**	*e*Pg	**Pg**	**21 30 33.9**	**+0.3**
BALB				*e*Sg	**Sb**	**21 30 48.7**	**0.0**
IGD	**Bursa**	**1.17**	**7**	*i* P	**Pg**	**21 30 34.8**	**-1.4**
IGD				*i* S	**Sg**	**21 30 51.5**	**+0.1**
CAVI	**Cavuskoy**	**1.27**	**30**	*e*PN	**Pg**	**21 30 38.1**	**0.0**
CAVI	**Cavuskoy**	**1.27**	**30**	*e*Pn	**Pg**	**21 30 38.1**	**0.0**
MDNY	**Mudanya-Bursa**	**1.27**	**355**	*e*PN	**Pg**	**21 30 38.0**	**-0.1**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*PN	**Pg**	**21 30 37.8**	**-0.4**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*Pn	**Pg**	**21 30 37.8**	**-0.4**
IZI	**Iznik**	**1.28**	**15**	*e*PN	**Pb**	**21 30 38.7**	**-0.1**
IZI	**Iznik**	**1.28**	**15**	*e*Pn	**Pb**	**21 30 38.7**	**-0.1**
DENT	**Denizli**	**1.34**	**180**	*e*PN	**Pg**	**21 30 39.3**	**-0.1**
DENT	**Denizli**	**1.34**	**180**	*e*Pn	**Pg**	**21 30 39.3**	**-0.1**
GEMT	**Gemlik**	**1.34**	**5**	*e*PN	**Pg**	**21 30 39.1**	**-0.3**
GEMT	**Gemlik**	**1.34**	**5**	*e*Pn	**Pg**	**21 30 39.1**	**-0.3**
ADVT	**Abdulvahap**	**1.44**	**22**	*e*PN	**Pn**	**21 30 41.2**	**+0.2**
ADVT	**Abdulvahap**	**1.44**	**22**	*e*Pn	**Pn**	**21 30 41.2**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**1.45**	**218**	*e*PN	**Pn**	**21 30 41.4**	**+0.1**
ARMT	**Armutlu**	**1.47**	**355**	*e*PN	**Pn**	**21 30 41.6**	**+0.2**
ARMT	**Armutlu**	**1.47**	**355**	*e*Pn	**Pn**	**21 30 41.6**	**+0.2**
EDC	**Edincik**	**1.54**	**325**	*e*PN	**Pn**	**21 30 42.3**	**0.0**
EDC	**Edincik**	**1.54**	**325**	*e*Pn	**Pn**	**21 30 42.3**	**0.0**
GPA	**Golpazari**	**1.55**	**39**	*e*PN	**Pn**	**21 30 42.6**	**+0.1**
GPA	**Golpazari**	**1.55**	**39**	*e*Pn	**Pn**	**21 30 42.6**	**+0.1**
ISP	**Isparta**	**1.73**	**137**	*e*PN	**Pn**	**21 30 45.3**	**+0.2**
ISP	**Isparta**	**1.73**	**137**	*e*Pn	**Pn**	**21 30 45.3**	**+0.2**
GULT	**Gulveren**	**1.76**	**40**	*e*PN	**Pn**	**21 30 45.9**	**+0.5**
HRT	**Hereke**	**1.79**	**16**	*e*PN	**Pn**	**21 30 46.0**	**+0.1**
HRT	**Hereke**	**1.79**	**16**	*e*Pn	**Pn**	**21 30 46.0**	**+0.1**
KRBG	**Karabiga-Canak**	**1.86**	**315**	*e*PN	**Pn**	**21 30 46.6**	**-0.1**
KRBG	**Karabiga-Canak**	**1.86**	**315**	*e*Pn	**Pn**	**21 30 46.6**	**-0.1**
MRMT	**Marmara Adasi**	**1.86**	**324**	*e*PN	**Pn**	**21 30 46.8**	**0.0**
SPNC	**Sapanca-Adapaz**	**1.87**	**31**	*e*PN	**Pn**	**21 30 47.3**	**+0.4**
SPNC	**Sapanca-Adapaz**	**1.87**	**31**	*e*Pn	**Pn**	**21 30 47.3**	**+0.4**
ISK	**Istanbul-Kandi**	**1.97**	**1**	*e*PN	**Pn**	**21 30 48.4**	**+0.2**
ISK	**Istanbul-Kandi**	**1.97**	**1**	*e*Pn	**Pn**	**21 30 48.4**	**+0.2**
SVRH	**Sivrihisar-ESK**	**1.97**	**79**	*e*PN	**Pn**	**21 30 48.5**	**+0.2**
SVRH	**Sivrihisar-ESK**	**1.97**	**79**	*e*Pn	**Pn**	**21 30 48.5**	**+0.2**
BGKT	**Bogazkoy**	**2.09**	**355**	*e*PN	**Pn**	**21 30 50.0**	**+0.1**
BGKT	**Bogazkoy**	**2.09**	**355**	*e*Pn	**Pn**	**21 30 50.0**	**+0.1**
SILT	**Sile**	**2.11**	**13**	*e*PN	**Pn**	**21 30 50.2**	**+0.1**
SILT	**Sile**	**2.11**	**13**	*e*Pn	**Pn**	**21 30 50.3**	**+0.1**
RKY	**Sarkoy-Tekirda**	**2.13**	**319**	*e*PN	**Pn**	**21 30 50.2**	**-0.3**
KLYT	**Kilyos**	**2.15**	**0**	*e*PN	**Pn**	**21 30 50.8**	**+0.1**
KLYT	**Kilyos**	**2.15**	**0**	*e*Pn	**Pn**	**21 30 50.8**	**+0.1**
MDUB	**Mudurnu**	**2.16**	**50**	*e*PN	**Pn**	**21 30 51.4**	**+0.4**
CTKS	**Kestanelik-??a**	**2.17**	**350**	*e*PN	**Pn**	**21 30 51.4**	**+0.4**
CTKS	**Kestanelik-??a**	**2.17**	**350**	*e*Pn	**Pn**	**21 30 51.4**	**+0.4**
TKR	**Tekirdag**	**2.21**	**329**	*e*PN	**Pn**	**21 30 51.6**	**+0.1**
TKR	**Tekirdag**	**2.21**	**329**	*e*Pn	**Pn**	**21 30 51.6**	**+0.1**
KIZT	**Kizilcal**	**2.23**	**95**	*e*PN	**Pn**	**21 30 52.3**	**+0.3**
KIZT	**Kizilcal**	**2.23**	**95**	*e*Pn	**Pn**	**21 30 52.3**	**+0.3**
CTYL	**Yalikoy Yolu**	**2.44**	**347**	*e*PN	**Pn**	**21 30 55.0**	**+0.3**
CTYL	**Yalikoy Yolu**	**2.44**	**347**	*e*Pn	**Pn**	**21 30 55.0**	**+0.3**

*ISCJB **21** 21:30:46.3±0.8, 30.°92S±0.°08×177.°2W±0.°1, h33km, mb4.8/9, Error ellipse: s-maj=16.1km s-min=11.6km az=4.7*
*IDC **21** 21:30:47.9±2.5, 30.°75S×178.°01W, h0km, mb4.1/3, mb1 4.3/3, mb1mx3.7/52, mbtmp4.1/3, Error ellipse: s-maj=62.8km s-min=22.4km az=120.0*
*NEIC **21** 21:30:47.6±0.9, 31.°04S×177.°11W, h35km, mb4.6/6, Error ellipse: s-maj=21.2km s-min=13.5km az=135.0*
ISC 21 21:30:48.7±0.9, 30.°87S±0.°10×177.°2W±0.°1, h35km, n16, σ1.9/65/18, mb4.7/9, Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.72**	**340**	Pn	**Pn**	**21 31 17.2**	**+1.0**
	52nm,0.3s,baz=156,slow=20,SNR=2.9						
RAO				Sn	**Sn**	**21 31 35.4**	**-1.6**
	110nm,0.3s,baz=287,slow=19,SNR=5.6						
RAO	**Raoul Island**	**1.72**	**340**	*e*Pn	**Pn**	**21 31 18.2**	**+2.0**
RAO				Sn	**Sn**	**21 31 35.4**	**-1.6**
AFI	**Afiamalu**	**17.61**	**18**	*e*Pn	**Pn**	**21 34 50.6**	**-0.9**
	6.4nm,0.5s						
FUNA	**Funafuti**	**22.48**	**351**	*e*P	**P**	**21 35 46.0**	**+0.8**
HNR	**Honiara**	**30.11**	**310**	*e*P	**P**	**21 36 55.8**	**+0.7**
STKA	**Stephens Creek**	**35.02**	**257**	P	**P**	**21 37 37.4**	**-0.6**
	8.6nm,0.8s,baz=98,slow=6.6,SNR=6.5						
ASAR	**Alice Springs**	**43.74**	**267**	P	**P**	**21 38 49.8**	**-1.2**
	1.0nm,0.8s,baz=105,slow=7.6,SNR=6.3						
WRA	**Warramunga Arr**	**44.77**	**272**	P	**P**	**21 38 57.8**	**-1.5**
	1.4nm,0.6s,baz=112,slow=8.1,SNR=13						
POHA	**Pohakuloa**	**54.49**	**25**	*e*P	**P**	**21 40 12.8**	**-0.4**
	43nm,0.4s						
MAJO	**Matsushiro**	**79.01**	**325**	*e*P	**P**	**21 42 50.0**	**+1.0**
	1.6nm,0.3s						
COCO	**West Island**	**80.40**	**262**	*e*P	**P**	**21 42 56.6**	**-0.5**
	187nm,0.6s						
HWUT	**Hardware Ranch**	**94.14**	**43**	*e*P	**P**	**21 44 03.1**	**-0.7**
	0.4nm,0.3s						
PMR	**Palmer**	**94.92**	**13**	*e*P	**P**	**21 44 06.0**	**-0.6**
	2.3nm,0.7s						
SMCO	**Snowmass**	**95.48**	**47**	*e*P	**P**	**21 44 08.4**	**-1.9**
	9.9nm,1.2s						
FINES	**FINESS Array B**	**145.81**	**340**	PKPbc	**PKPab**	**21 50 25.5**	**+1.6**
	1.4nm,0.6s,baz=66,slow=3.5,SNR=9.3						
AKASG	**Malin Array Be**	**152.07**	**323**	PKPbc	**PKPbc**	**21 50 44.0**	**+4.0**
	0.4nm,0.4s,baz=51,slow=3.7,SNR=4.1						

ROM 21 21:34:19.0±0.1, 43.°46N×10.°98E, h10km, Md1.6/3, MI0.9/2, Error ellipse: s-maj=1.6km s-min=0.8km az=13.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FROS	**Frosini**	**0.28**	**153**	Pg	Pg	21 34 25.3	+0.7
FROS				Sg	Sb	21 34 30.0	-0.9
	28nm,0.4s						
SASS	**Sassa´´´´´**	**0.29**	**227**	Pg	Pg	21 34 25.6	+0.7
SASS				Sg	Sb	21 34 30.3	-1.0
	87nm,3.2s						
TRIF	**Trifonti**	**0.35**	**190**	Pg	Pb	21 34 26.7	-0.6
TRIF				Sg	Sb	21 34 32.1	-0.8

GUC 21 21:34:38.3±0.7, 35.°25S×72.°50W, h20km±4km, ML3.7, 2D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TALC	**Talca**	**0.72**	**102**	⇓*i*P	Pb	21 34 51.9	-0.3
TALC				*i* S	Sb	21 35 01.4	-0.2
CHPI	**Pichilemu**	**0.95**	**25**	*e*P	Pb	21 34 55.0	-1.0
CHPI				*e*S	Sb	21 35 07.8	-0.3
ANTU	**Antumapu**	**2.27**	**43**	*e*P	Pn	21 35 16.0	+1.2
ANTU				IAML		21 35 48.7	
	comp=E,619nm,0.4s						
CLCH	**Cerro Calan**	**2.46**	**42**	*e*P	Pn	21 35 18.1	+0.7
CLCH				*i* S	Sn	21 35 49.2	+2.4
CLCH				IAML		21 36 00.1	
	comp=E,554nm,0.3s						
PEL	**Peldehue**	**2.58**	**36**	⇓*i*P	Pn	21 35 20.5	+1.4
PEL				*e*S	Sn	21 35 52.3	+2.4
PEL				IAML		21 36 02.5	
	comp=N,307nm,0.5s						

*CSEM **21** 21:35:28.7, 38.°45N×2.°41W, h0km, ML0.8*
MDD 21 21:35:28.7±1.6, 38.°45N×2.°41W, h0km, mbLg0.8/1, Error ellipse: s-maj=22.8km s-min=4.6km az=138.0, PRXIMO SIN SOLUCIN, Spain

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SESP	**Santiago Espad**	**0.34**	**198**	Pg	Pg	21 35 34.4	-0.8
	0.6nm,0.2s,SNR=7.9						
SESP				Lg	Lg	21 35 40.4	
	2.4nm,0.2s,SNR=7.9						
SESP	**Santiago Espad**	**0.34**	**198**	Pg	Pg	21 35 34.4	-0.8
	0.6nm,0.2s,SNR=7.9						
SESP				Lg	Lg	21 35 40.4	
	2.4nm,0.2s,SNR=7.9						
ETOB	**Tobarra**	**0.71**	**73**	Pg	Pg	21 35 42.0	-0.3
	0.2nm,0.2s,SNR=7.9						
ETOB				Lg	Lg	21 35 51.0	
	0.1nm,0.1s,SNR=7.9						
ETOB	**Tobarra**	**0.71**	**73**	Pg	Pg	21 35 42.0	-0.2
	0.2nm,0.2s,SNR=7.9						
ETOB				Lg	Lg	21 35 51.0	
	0.1nm,0.1s,SNR=7.9						
EQES	**Quesada**	**0.82**	**219**	Pg	Pg	21 35 44.6	+0.2
	0.1nm,0.1s,SNR=4.0						
EQES				Lg	Lg	21 35 55.4	
	0.5nm,0.2s,SNR=7.9						
EQES	**Quesada**	**0.82**	**219**	Pg	Pg	21 35 44.7	+0.2
	0.1nm,0.1s,SNR=4.0						
EQES				Lg	Lg	21 35 55.4	
	0.5nm,0.2s,SNR=7.9						
EQUE	**Quentar**	**1.48**	**214**	Lg	Lg	21 36 14.1	
	0.5nm,0.1s,SNR=4.0						
EQUE	**Quentar**	**1.48**	**214**	Lg	Lg	21 36 14.1	
	0.5nm,0.1s,SNR=4.0						

*CSEM **21** 21:35:47.8, 38.°80N×20.°95E, h20km, ML1.4/5*
ATH 21 21:35:47.8, 38.°80N×20.°95E, h20km±4km, ML1.4/5, Error ellipse: s-maj=4.2km s-min=1.1km az=299.0, Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LKD2	**Lefkada island**	**0.23**	**268**	P	Pg	21 35 53.4	0.0
LKD2				S	Sg	21 35 58.1	+0.9
LKD2	**Lefkada island**	**0.23**	**268**	P	Pg	21 35 53.4	0.0
LKD2				S	Sg	21 35 58.1	+0.9
LKD2				AML	AML	21 36 01.0	
	comp=E,194μm,0.5s						
LKD2				AML	AML	21 36 02.6	
	comp=N,237μm,0.2s						
PDO	**Prodromos**	**0.27**	**137**	P	Pb	21 35 53.3	-0.7
PDO				S	Sg	21 35 59.1	+0.9
PDO	**Prodromos**	**0.27**	**137**	P	Pb	21 35 53.3	-0.7
PDO				S	Sg	21 35 59.1	+0.9
PDO				AML	AML	21 36 02.2	
	comp=E,356μm,0.3s						
PDO				AML	AML	21 36 04.1	
	comp=N,450μm,0.6s						
DSL	**Palaion Diasel**	**0.35**	**19**	P	Pg	21 35 54.6	-0.9
DSL				S	Sg	21 36 00.6	0.0
DSL	**Palaion Diasel**	**0.35**	**19**	P	Pg	21 35 54.6	-0.9
DSL				S	Sg	21 36 00.6	-0.1
DSL				AML	AML	21 36 03.1	
	comp=E,228μm,0.4s						
DSL				AML	AML	21 36 03.4	
	comp=N,169μm,0.4s						
PVO	**Paravola**	**0.48**	**112**	P	Pg	21 35 57.8	+0.1
PVO				S	Sb	21 36 05.1	+0.7
PVO	**Paravola**	**0.48**	**112**	P	Pg	21 35 57.8	0.0
PVO				S	Sb	21 36 05.1	+0.7
PVO				AML	AML	21 36 10.3	
	comp=N,118μm,0.5s						
PVO				AML	AML	21 36 12.7	
	comp=E,164μm,0.4s						
EVR	**Evrytania**	**0.68**	**80**	P	Pg	21 36 01.6	+0.3
EVR				S	Sb	21 36 10.2	+0.1
EVR	**Evrytania**	**0.68**	**80**	P	Pg	21 36 01.6	+0.2
EVR				S	Sb	21 36 10.2	+0.1
EVR				AML	AML	21 36 19.5	
	comp=N,33μm,0.4s						
VLS	**Valsamata**	**0.68**	**205**	P	Pb	21 36 00.7	-0.3
AXS	**Araxos**	**0.69**	**151**	P	Pg	21 36 01.8	+0.4
AXS	**Araxos**	**0.69**	**151**	P	Pg	21 36 01.8	+0.4
KFL	**Anninata**	**0.70**	**191**	P	Pg	21 36 02.0	+0.4
KFL	**Anninata**	**0.70**	**191**	P	Pg	21 36 02.0	+0.4
EFP	**Efpalio**	**0.83**	**116**	P	Pg	21 36 04.2	0.0
EFP	**Efpalio**	**0.83**	**116**	P	Pg	21 36 04.2	0.0
RLS	**Riolos of Patr**	**0.84**	**151**	P	Pg	21 36 04.1	-0.2
LAKA	**Lakka**	**0.98**	**124**	P	Pg	21 36 06.9	0.0
LAKA	**Lakka**	**0.98**	**124**	P	Pg	21 36 06.9	0.0
DRO	**Drossia**	**1.03**	**144**	P	Pb	21 36 06.5	-0.6
DRO	**Drossia**	**1.03**	**144**	P	Pb	21 36 06.5	-0.6
AGG	**Agios Georgios**	**1.10**	**78**	P	Pg	21 36 08.9	-0.3
AGG				S	Sg	21 36 24.3	+0.6
AGG	**Agios Georgios**	**1.10**	**78**	P	Pg	21 36 08.9	-0.3
AGG				S	Sg	21 36 24.3	+0.7
THL	**Klokotos Trika**	**1.13**	**47**	P	Pg	21 36 09.8	+0.1
KLV	**Kalavryta, Ach**	**1.21**	**128**	P	Pb	21 36 09.9	-0.1
KLV	**Kalavryta, Ach**	**1.21**	**128**	P	Pb	21 36 09.9	-0.1

*MOS **21** 21:37:08.9±1.0, 5.°80S×129.°40E, h243km, mb4.7/21, Error ellipse: s-maj=10.2km s-min=6.1km az=109.2*
*ISCJB **21** 21:37:09.7±0.1, 5.°82S±0.°02×129.°49E±0.°03, h250km, mb4.6/112, Error ellipse: s-maj=3.6km s-min=2.5km az=163.1*
*NEIC **21** 21:37:11.1±0.3, 5.°82S×129.°43E, h252km±3km, mb4.9/64, Error ellipse: s-maj=3.7km s-min=2.8km az=56.0*
*IDC **21** 21:37:11.7±0.9, 5.°78S×129.°51E, h255km±8km, mb4.2/38, mb1 4.2/43, mb1mx4.1/62, mbtmp4.8/43, Error ellipse: s-maj=9.1km s-min=6.1km az=75.0*
*KLM **21** 21:37:12.1, 6.°03S×129.°24E, h254km, mb5.0, MS6.0*
*DJA **21** 21:37:12.4±0.2, 6.°S±3.°×12.°9E±.°, h

JAGI	**Jajag, Banyuwa**	15.44	259	*e*P	P	21 40 33.9 -1.8
	48nm,0.8s					
MYLDM	**Lahad Datu**	15.50	315	*e*P	P	21 40 36.0 -0.5
	81nm,1.6s					
COEN	**Coen**	15.70	122	P	P	21 40 40.0 +1.4
	baz=16,SNR=661					
COEN	**Coen**	15.70	122	*e*P	P	21 40 40.1 +1.4
	34nm,1.0s					
GMJI	**Gumukmas**	16.10	260	P	P	21 40 43.2 +0.2
SDKM	**Sandakan**	16.76	313	⇓P	Pn	21 40 54.0 +1.8
QIS	**Mount Isa**	17.61	147	P	P	21 41 00.7 +1.2
	baz=18,SNR=105					
KKM	**Kota Kinabalu**	17.75	312	*e*P	P	21 41 00.8 -0.3
	31nm,1.0s					
PMG	**Port Moresby**	17.87	102	P	P	21 41 02.6 +0.3
	14nm,0.3s,baz=272,slow=4.3,SNR=23					
PMG	**Port Moresby**	17.87	102	*de*P	Pn	21 41 07.3 +2.2
PMG				pmax	pmax	
	comp=Z,559nm,0.7s					
PMG	**Port Moresby**	17.87	102	*e*P	P	21 41 02.8 +0.5
	comp=Z,179nm,0.8s					
MBWA	**Marble Bar**	17.92	211	P	P	21 41 03.6 +0.8
	SNR=14					
MBWA	**Marble Bar**	17.92	211	*e*P	P	21 41 03.0 +0.2
	comp=Z,555nm,0.4s					
AS31	**Alice Springs**	18.22	167	*e*P	P	21 41 07.2 +1.2
	comp=Z,185nm,0.8s					
ASAR	**Alice Springs**	18.22	167	P	P	21 41 07.3 +1.3
	comp=Z,79nm,0.3s,baz=349,slow=12,SNR=2947					
ASAR				S	S	21 44 18.7 -2.6
	comp=Z,16nm,0.3s,baz=347,slow=20,SNR=39					
ASAR				ScP	ScP	21 48 36.8 -1.8
	baz=356,slow=2.4,SNR=4.3					
AS01	**Alice Springs**	18.23	167	*e*P	P	21 41 05.7 -0.4
MANU	**Manus Island**	18.23	79	*e*P	P	21 41 08.2 +1.9
	comp=Z,415nm,1.9s					
MTSU	**Mount Surprise**	18.94	131	P	P	21 41 14.9 +1.1
	baz=19,SNR=139					
WRKA	**Warakurna**	19.11	183	P	P	21 41 16.6 +1.0
	baz=19,SNR=98					
SBUM	**Sibu**	19.11	295	⇑P	P	21 41 17.7 +2.0
SBUM	**Sibu**	19.11	295	*e*P	P	21 41 16.6 +0.9
	comp=Z,9.3nm,0.8s					
KSM	**Kuching**	20.49	290	*e*P	P	21 41 30.7 +0.3
	comp=Z,67nm,1.9s					
JCJI	**Jatiwangi**	21.10	267	P	P	21 41 43.2 +6.5
CTA	**Charters Tower**	21.58	133	P	P	21 41 42.5 +1.2
	comp=Z,26nm,0.4s,baz=286,slow=9.3,SNR=87					
CTAO	**Charters Tower**	21.58	133	*e*P	P	21 41 42.6 +1.3
CTAO				pmax	pmax	
	comp=Z,52nm,0.6s					
CTAO	**Charters Tower**	21.58	133	*e*P	P	21 41 42.6 +1.3
	comp=Z,52nm,0.6s					
CISI	**Cisompet, Garu**	21.59	264	P	P	21 41 41.9 +0.4
CISI	**Cisompet, Garu**	21.59	264	*e*P	P	21 41 40.4 -1.1
	comp=Z,95nm,0.6s					
LEM	**Lembang**	21.76	266	P	P	21 41 48.8 +5.7
	comp=Z,40nm,0.6s,baz=110,slow=16,SNR=9.8					
GIRL	**Giralia**	22.26	220	P	P	21 41 48.5 +1.1
	baz=22,SNR=22					
CBJI	**Citeko**	22.51	267	P	P	21 41 52.1 +2.2
RABL	**Rabaul**	22.65	87	*e*P	P	21 41 52.3 +1.2
	comp=Z,113nm,0.6s					
XMIS	**Christmas Isla**	24.03	257	*e*P	P	21 42 02.7 -1.0
	comp=Z,104nm,1.0s					
GUMO	**Guam**	24.62	38	P	P	21 42 09.4 +0.5
	comp=Z,29nm,0.3s,baz=212,slow=9.5,SNR=8.9					
GUMO	**Guam**	24.62	38	*e*P	P	21 42 07.7 -1.3
GUMO				pmax	pmax	
	comp=Z,645nm,1.9s					
GUMO	**Guam**	24.62	38	*e*P	P	21 42 07.7 -1.3
	comp=Z,645nm,1.9s					
MORW	**Morawa**	26.36	207	P	P	21 42 24.3 -0.2
	baz=26,SNR=39					
KMBL	**Kambalda**	26.37	195	P	P	21 42 24.6 +0.2
	baz=26,SNR=90					
BLDU	**Ballidu**	27.41	204	P	P	21 42 33.6 -0.1
	baz=28,SNR=14					
BBOO	**Buckleboo**	27.52	168	P	P	21 42 34.9 +0.3
	baz=28,SNR=7.1					
RMQ	**Roma**	27.55	140	P	P	21 42 36.1 +1.0
	baz=28,SNR=4.9					
KLBR	**Kellerberrin**	27.87	202	P	P	21 42 38.0 +0.2
	baz=28,SNR=107					
STKA	**Stephens Creek**	28.26	158	P	P	21 42 42.1 +0.8
	comp=Z,2.7nm,0.3s,baz=328,slow=9.7,SNR=11					
STKA	**Stephens Creek**	28.26	158	P	P	21 42 42.8 +1.4
	baz=28,SNR=7.5					
EIDS	**Eidsvold**	28.36	135	P	P	21 42 42.4 +0.1
	baz=28,SNR=3.1					
EIDS	**Eidsvold**	28.36	135	*e*P	P	21 42 41.3 -1.0
	comp=Z,34nm,1.5s					
HTT	**Hallett**	28.81	163	P	P	21 42 47.5 +1.3
	baz=29,SNR=12					
BKNI	**Bangkinang**	29.05	281	P	P	21 42 54.6 +6.1
	comp=Z,69nm,0.5s					
NWAO	**Narrogin (SRO)**	29.26	201	P	P	21 42 50.4 +0.3
	comp=Z,18nm,0.3s,baz=271,slow=8.0,SNR=62					
NWAO	**Narrogin (SRO)**	29.26	201	P	P	21 42 50.4 +0.3
	baz=29,SNR=48					
NWAO	**Narrogin (SRO)**	29.26	201	*e*P	P	21 42 49.0 -1.1
NWAO				pmax	pmax	
	comp=Z,34nm,0.6s					
NWAO	**Narrogin (SRO)**	29.26	201	*e*P	P	21 42 49.0 -1.1
	comp=Z,34nm,0.6s					
PPI	**Padang Panjang**	29.52	279	P	P	21 42 52.0 -0.7
	comp=Z,14nm,0.9s					
TWG	**Pinlang**	29.66	344	*e*P	P	21 42 53.3 -0.4
	comp=Z,39nm,0.4s					
CMSA	**Cobar Meteorol**	29.72	151	P	P	21 42 55.5 +1.3
	baz=30,SNR=32					
YULB	**Yu-li**	30.14	345	*e*P	P	21 42 57.6 -0.4
	comp=Z,15nm,1.5s					
IPM	**Ipoh**	30.22	289	⇑P	P	21 42 56.0 -2.8
TPUB	**Ta-pu**	30.24	344	*e*P	P	21 42 58.5 -0.3
	comp=Z,13nm,1.0s					
HNR	**Honiara**	30.39	99	P	P	21 43 00.3 0.0
	comp=Z,58nm,0.3s,baz=358,slow=1.7,SNR=6.8					
HNR	**Honiara**	30.39	99	*e*P	P	21 43 00.5 +0.2
HNR				pmax	pmax	
	comp=Z,103nm,0.9s					
HNR	**Honiara**	30.39	99	*e*P	P	21 43 00.5 +0.2
	comp=Z,102nm,0.9s					
SSLB	**Suanglung**	30.61	345	*e*P	P	21 43 01.6 -0.5
	comp=Z,11nm,1.0s					
YOJ	**Yonaguni jima**	30.78	348	*e*P	P	21 43 03.2 -0.3
YOJ				pmax	pmax	
	comp=Z,75nm,1.1s					
YOJ	**Yonaguni jima**	30.78	348	*e*P	P	21 43 03.2 -0.3
	comp=Z,75nm,1.1s					
NACB	**Ninganchiao**	30.82	346	*e*P	P	21 43 02.5 -1.3
	comp=Z,11nm,0.7s					
KULM	**Kulim**	30.84	290	*e*P	P	21 43 02.9 -1.4
	comp=Z,5.7nm,0.9s					
RKGY	**Rocky Gully**	30.87	200	P	P	21 43 05.7 +1.5
	baz=31,SNR=50					
YHNB	**Yeheng**	31.35	346	*e*P	P	21 43 07.3 -1.2
	comp=Z,40nm,1.7s					
PATS	**Pohnpei**	31.41	67	*e*P	P	21 43 09.7 +0.5
	comp=Z,429nm,1.9s					
TATO	**Taipei**	31.61	346	*e*P	P	21 43 10.6 -0.2
	comp=Z,169nm,1.9s					
PSI	**Prapat**	31.71	285	*e*P	P	21 43 10.0 -2.0
PSI				pmax	pmax	
	comp=Z,5.0nm,0.7s					
PSI	**Prapat**	31.71	285	*e*P	P	21 43 10.0 -2.0
	comp=Z,5.0nm,0.7s					
ARMA	**Armidale**	32.11	142	P	P	21 43 16.9 +1.7
	baz=32,SNR=24					
ARMA	**Armidale**	32.11	142	*e*P	P	21 43 15.6 +0.4
	comp=Z,69nm,1.8s					
JOW	**Kunigami**	32.51	358	*e*P	P	21 43 18.0 -0.6
	comp=Z,34nm,0.9s					
GSI	**Gunungsitoli**	32.65	282	*e*P	P	21 43 18.0 -2.0
	comp=Z,49nm,1.8s					
ARPS	**Mount Arapiles**	32.79	162	P	P	21 43 23.2 +2.3
	baz=33,SNR=14					
COCO	**West Island**	32.83	257	*e*P	P	21 43 20.2 -1.4
COCO				pmax	pmax	
	comp=Z,127nm,0.8s					
COCO	**West Island**	32.83	257	*e*P	P	21 43 20.2 -1.4
	comp=Z,127nm,0.8s					
YNG	**Young**	33.28	151	P	P	21 43 26.9 +1.7
	baz=33,SNR=9.4					
PANO	**Nakornpanom**	33.56	313	P	P	21 43 29.1 +1.3
	comp=Z,48nm,1.7s					
MGCD	**Mangrove Creek**	33.84	146	P	P	21 43 32.4 +2.3
	baz=34,SNR=4.6					
LHMI	**Lhok Sumawe**	34.30	288	*e*P	P	21 43 32.5 -1.8
	comp=Z,41nm,1.2s					
CAN	**Canberra**	34.40	151	*e*P	P	21 43 36.8 +1.9
CAN				pmax	pmax	
	comp=Z,13nm,0.7s					
CAN	**Canberra**	34.40	151	*e*P	P	21 43 36.8 +1.9
	comp=Z,13nm,0.7s					
CNB	**Canberra Magne**	34.57	151	P	P	21 43 38.7 +2.3
	baz=35,SNR=5.7					
CBIJ	**Chichi jima**	34.98	20	*e*P	P	21 43 40.2 +0.3
	comp=Z,46nm,0.9s					
JCJ	**Chichijima**	34.98	20	P	P	21 43 38.3 -1.5
	comp=Z,22nm,0.3s,baz=91,slow=14,SNR=23					
UTTA	**Uttaradit**	36.95	310	P	P	21 43 58.3 +1.6
	comp=Z,3.2nm,0.8s					
SUKH	**Sukhothai**	37.51	309	P	P	21 44 09.0 +7.7
CM01	**Chiang Mai Arr**	38.58	309	*e*P	P	21 44 10.3 +0.1
CMAR	**Chiang Mai Arr**	38.61	309	P	P	21 44 10.3 -0.2
	comp=Z,2.2nm,0.6s,baz=136,slow=7.1,SNR=16					
CMAR				PcP	PcP	21 46 17.5 0.0
	comp=Z,1.9nm,0.8s,baz=166,slow=2.9,SNR=5.6					
CMAR				ScP	ScP	21 49 41.0 -0.7
	comp=Z,6.0nm,1.2s,baz=152,slow=2.4,SNR=11					
JNU	**Nakatsue**	38.78	2	P	P	21 44 11.2 -0.5
	comp=Z,12nm,0.8s,baz=269,slow=3.8,SNR=8.5					
JNU	**Nakatsue**	38.78	2	*e*P	P	21 44 09.7 -2.1
	comp=Z,28nm,1.0s					
CHTO	**Chiang Mai**	38.82	310	P	P	21 44 13.8 +1.6
	comp=Z,36nm,0.8s					
CHTO	**Chiang Mai**	38.82	310	*e*P	P	21 44 12.4 +0.2
CHTO				pmax	pmax	
	comp=Z,5.0nm,0.7s					
CHTO	**Chiang Mai**	38.82	310	*e*P	P	21 44 12.4 +0.2
	comp=Z,4.6nm,0.7s					
WHN	**Wuhan**	38.98	339	⇓P	P	21 44 14.1 +0.7
GYA	**Guiyang**	39.00	326	*e*P	P	21 44 14.8 +1.0
GYA				pP	pP	21 45 08.3 +3.2
GYA				sP	sP	21 45 36.0 +2.4
GYA				PP	PP	21 45 52.3 +3.3
GYA				PcP	PcP	21 46 19.8 +1.1
GYA				S	S	21 49 52.4 -1.4
GYA				sS	sS	21 51 28.9 +3.6
GYA				pmax	pmax	
	comp=Z,20nm,1.0s					
NJ2	**Nanjing**	39.03	346	*e*P	P	21 44 14.6 +0.9
NJ2				pmax	pmax	
	comp=Z,15nm,0.7s					
JHJ2	**Mitsune**	39.97	14	*e*P	P	21 44 19.4 -2.1
	comp=Z,413nm,1.3s					
KMI	**Kunming**	40.31	321	P	P	21 44 25.4 +0.7
KMI				pmax	pmax	
	comp=Z,10.0nm,0.6s					
KMI				pmax	pmax	
	comp=Z,52nm,3.5s					
KMI				LR	LR	
	comp=N,320nm,31.4s					
KMI				LR	LR	
	comp=E,350nm,21.8s					
KMI				LR	LR	
	comp=Z,220nm,21.8s					
KWAJ	**Kwajalein Atol**	40.70	69	*e*P	P	21 44 27.0 -0.8
KWAJ				pmax	pmax	
	comp=Z,142nm,1.0s					
KWAJ	**Kwajalein Atol**	40.70	69	*e*P	P	21 44 27.0 -0.8
	comp=Z,142nm,1.0s					
ENH	**Enshi**	40.71	333	*e*P	P	21 44 27.6 -0.1
	comp=Z,5.5nm,0.8s					
INU	**Inuyama**	41.59	9	*e*P	P	21 44 34.6 0.0
	comp=Z,51nm,1.7s					
TJN	**Taejon**	42.05	357	*ce*P	P	21 44 39.1 +0.8
MJAR	**Matsushiro Arr**	42.95	10	P	P	21 44 44.2 -1.4
	comp=Z,9.7nm,0.8s,baz=190,slow=9.5,SNR=15					
MAJO	**Matsushiro**	42.95	10	*c i*P	P	21 44 44.7 -0.9
MAJO				pmax	pmax	
	comp=Z,126nm,1.0s					
MAJO	**Matsushiro**	42.95	10	*e*P	P	21 44 44.8 -0.8
	comp=Z,17nm,0.9s					
MAT	**Matsushiro**	42.95	10	P	P	21 44 44.2 -1.4
MJB9	**Matsu-Tunnel**	42.96	10	*e*P	P	21 44 44.6 -1.0
	comp=Z,4.4nm,0.9s					
KSAR	**Wonju Array Be**	43.09	358	P	P	21 44 46.6 -0.1
KSAR	**Wonju Array Be**	43.09	358	P	P	21 44 46.6 -0.1
KSAR				ScP	ScP	21 49 57.5 -1.4
KSRS	**Korea Array**	43.10	358	P	P	21 44 46.6 -0.1
	comp=Z,3.2nm,0.7s,baz=177,slow=11,SNR=25					
KSRS				ScP	ScP	21 49 57.5 -1.4
	comp=Z,1.2nm,0.8s,baz=173,slow=4.7,SNR=5.2					
KS01	**Wonju Array Si**	43.13	358	*e*P	P	21 44 47.1 +0.1
INCN	**Inchon**	43.19	357	*e*P	P	21 44 46.7 -0.8
	comp=Z,48nm,1.5s					
TARA	**Tarawa**	43.96	82	*e*P	P	21 44 53.0 -1.0
	comp=Z,92nm,0.9s					
CD2	**Chengdu**	44.07	328	P	P	21 44 54.5 -0.1
CD2				sP	sP	21 46 16.9 +1.6
CD2				PP	PP	21 46 43.1 +0.1
CD2				S	S	21 51 08.5 +0.6
CD2				sS	sS	21 52 43.8 +2.8
CD2				SS	SS	21 54 34.9 +2.1
CD2				pmax	pmax	
	comp=Z,20nm,0.5s					
CD2				pmax	pmax	
	comp=Z,170nm,6.9s					
XAN	**Xi'an**	44.19	335	P	P	21 44 54.8 -0.7
XAN				pmax	pmax	
	comp=Z,14nm,1.0s					
BJT	**Baijiatuau**	47.27	346	*e*P	P	21 45 18.8 -0.5
BJT				pmax	pmax	
	comp=Z,19nm,0.8s					
BJT	**Baijiatuau**	47.27	346	*e*P	P	21 45 18.8 -0.5
	comp=Z,19nm,0.8s					
BJI	**Beijing**	47.28	346	P	P	21 45 19.8 +0.3
BJI				pmax	pmax	
	comp=Z,28nm,0.9s					
BJI				pmax	pmax	
	comp=Z,82nm,4.2s					
BJI				LR	LR	
	comp=N,560nm,32.8s					
BJI				LR	LR	
	comp=E,570nm,30.0s					
BJI				LR	LR	
	comp=Z,710nm,30.6s					
LZH	**Lanzhou**	48.16	332	⇑P	P	21 45 27.1 +0.6
LZH				pP	pP	21 46 21.6 +1.7
LZH				sP	sP	21 46 50.0 +2.2
LZH				PP	PP	21 47 23.5 +2.1
LZH				pmax	pmax	
	comp=Z,27nm,1.3s					
LZH				pmax	pmax	
	comp=Z,110nm,6.2s					
HHC	**Hu-ho-hao-te**	49.30	342	*e*P	P	21 45 36.8 +1.8
HHC				pP	pP	21 46 31.3 +2.6
HHC				S	S	21 52 22.8 +1.0
HHC				ScS	ScS	21 54 58.4 -1.9
HHC				pmax	pmax	
	comp=Z,31nm,1.4s					
HHC				pmax	pmax	
	comp=Z,130nm,6.3s					
HHC				LR	LR	
	comp=N,940nm,15.1s					
HHC				LR	LR	
	comp=E,850nm,15.6s					
HHC				LR	LR	
	comp=Z,840nm,15.6s					
USRK	**Ussuriysk Ar.**	49.87	2	P	P	21 45 39.0 0.0
	comp=Z,4.6nm,0.5s,baz=188,slow=7.0,SNR=15					
MDJ	**Mudanjiang**	50.24	0	P	P	21 45 42.6 +0.8
MDJ				pP	pP	21 46 35.8 +0.1
MDJ				sP	sP	21 47 04.0 +0.5
MDJ				ScP	ScP	21 50 29.4 +0.7
MDJ				PcS	PcS	21 50 44.5 -10
MDJ				S	S	21 52 35.1 +0.7
MDJ				sS	sS	21 54 05.8 -3.8
MDJ				ScS	ScS	21 55 04.4 -1.9
MDJ	**Mudanjiang**	50.24	0	SS	SS	21 56 15.3 +3.8
MDJ				pmax	pmax	
	comp=Z,10.0nm,0.9s					
MDJ				pmax	pmax	
	comp=Z,38nm,3.9s					
PALK	**Pallekele**	50.39	284	P	P	21 45 43.2 -0.3
	comp=Z,4.5nm,0.6s,baz=123,slow=8.2,SNR=4.9					
LSA	**Lhasa**	51.02	316	*e*P	P	21 45 48.6 +0.1
LSA				pmax	pmax	
	comp=Z,8.0nm,0.8s					
LSA	**Lhasa**	51.02	316	*e*P	P	21 45 48.5 +0.1
	comp=Z,7.7nm,0.8s					
ASAJ	**Asahikawa**	51.12	12	P	P	21 45 48.6 +0.2
	comp=Z,10nm,0.3s,baz=232,slow=10,SNR=32					
LBZ	**Lake Benmore**	52.31	144	*e*P	P	21 45 58.8 +1.6
	comp=Z,96nm,1.6s					
RPZ	**Rata Peaks**	52.45	143	P	P	21 45 59.5 +1.2
	comp=Z,9.0nm,0.6s,baz=291,slow=2.5,SNR=9.3					
RPZ	**Rata Peaks**	52.45	143	*e*P	P	21 45 60.0 +1.7
	comp=Z,60nm,1.5s					
THZ	**Tophouse**	52.57	140	*e*P	P	21 46 00.7 +1.5
	comp=Z,13nm,0.5s					
GTA	**Gaotai**	52.73	331	⇓P	P	21 46 01.0 +0.5
GTA				pP	pP	21 46 44.6 -10
GTA				sP	PcP	21 47 07.9 +1.3
GTA				S	S	21 53 11.8 +3.0
GTA				sS	sS	21 54 31.8 -13
GTA				pmax	pmax	
	comp=Z,11nm,0.9s					
GTA				pmax	pmax	
	comp=Z,160nm,5.7s					
KHZ	**Kahutara**	53.31	140	*e*P	P	21 46 05.4 +0.9
BKZ	**Black Stump Fm**	53.77	135	*e*P	P	21 46 08.8 +0.8
GUN	**Gumba**	53.82	311	*e*P	P	21 46 08.6 -0.3
URZ	**Urewera**	53.82	134	P	P	21 46 08.7 +0.4
	comp=Z,19nm,0.6s,baz=210,slow=5.7,SNR=11					
URZ	**Urewera**	53.82	134	*e*P	P	21 46 09.7 +1.3
PKIN	**Phulchoki**	54.01	310	*e*P	P	21 46 10.5 +0.3
	comp=Z,5.2nm,0.4s					
KKN	**Kakani**	54.21	310	*e*P	P	21 46 11.1 -0.4
	comp=Z,21nm,0.9s					
HABR	**Khabarovsk**	54.31	5	*e*P	P	21 46 10.5 -1.1
HABR				*e**PP	pP	21 47 04.9 -1.5
HABR				*e*		21 47 11.0
HABR				*e**SP	sP	21 47 33.0 -0.9
HABR				*e*		21 48 15.0
HABR				*e*PPP	PPP	21 49 30.7
HABR				*e*S	S	21 53 28.8 -0.7
HABR				*e**SS	sS	21 55 05.3 -0.7
HABR				*e*		21 55 33.3
HABR				*e*SS	SS	21 57 16.0 +0.3
HABR				pmax	pmax	
	comp=N,6.0nm,0.7s					
HABR				pmax	pmax	
	comp=E,22nm,1.4s					
HABR				pmax	pmax	
	comp=Z,31nm,1.4s					
GKN	**Gorkha**	54.80	310	*e*P	P	21 46 15.3 -0.4
	comp=Z,10nm,0.3s					
KLR	**Kul'dur**	54.89	2	P	P	21 46 16.0 +0.3
	comp=Z,2.2nm,0.5s,baz=200,slow=6.1,SNR=14					
KLR	**Kul'dur**	54.89	2	P	P	21 46 16.0 +0.3
KOLN	**Koldanda**	55.48	309	*e*P	P	21 46 20.2 -0.4
	comp=Z,4.1nm,0.2s					
PYUN	**Piuthan**	56.11	309	*e*P	P	21 46 24.9 -0.2
	comp=Z,47nm,1.0s					
ULN	**Ulaanbaatar**	57.02	342	*de*P	P	21 46 31.5 +0.5
ULN				pmax	pmax	
	comp=Z,12nm,0.9s					
ULN	**Ulaanbaatar**	57.02	342	P	P	21 46 33.3 +2.3
	SNR=5.5					
ULN	**Ulaanbaatar**	57.02	342	*e*P	P	21 46 31.6 +0.6
SONM	**Songino Array**	57.20	342	P	P	21 46 32.7 +0.4
	comp=Z,1.3nm,0.3s,baz=164,slow=6.0,SNR=23					
SONA1	**Songino Array**	57.20	342	*e*P	P	21 46 32.2 -0.1
ZAK	**Zakamensk**	60.42	341	*e*P	P	21 46 47.2 -7.0
ZAK				pmax	pmax	
	comp=Z,4.0nm,1.2s					
TLY	**Talaya**	61.43	342	P	P	21 47 00.9 0.0
	comp=Z,1.0nm,0.3s,baz=156,slow=10.0,SNR=4.6					
WMQ	**Urumqi**	62.16	327	⇑*i*P	P	21 47 06.8 +0.8
WMQ				pP	pP	21 48 02.6 +0.3
WMQ				sP	sP	21 48 24.6 -4.9
WMQ				S	S	21 55 12.1 +0.9
WMQ	**Urumqi**	62.16	327	SS	SS	21 59 20.9 +1.7
WMQ				pmax	pmax	
	comp=Z,8.0nm,0.8s					
WMQ				pmax	pmax	
	comp=Z,200nm,10.0s					
WMQ				LR	LR	
	comp=N,200nm,29.8s					
WMQ				LR	LR	
	comp=E,220nm,26.6s					
WMQ				LR	LR	
	comp=Z,160nm,23.6s					
MOY	**Mondy**	62.27	340	*e*P	P	21 47 07.9 +1.3
PETK	**Petropavlovsk-**	63.40	19	P	P	21 47 14.2 +0.4
	comp=Z,12nm,0.8s,baz=174,slow=5.3,SNR=24					
PET	**Petropavlovsk**	63.64	19	*e*P	P	21 47 16.0 +0.6
PET				pmax	pmax	
	comp=Z,29nm,1.4s					
BOD	**Bodaibo**	64.69	351	*e*P	P	21 47 21.6 -0.5
BOD				pmax	pmax	
	comp=Z,10.0nm,1.3s					
KSH	**Kashi**	66.83	317	P	P	21 47 37.8 +1.5
KSH				*e*pP	pP	21 48 37.3 +3.8
KSH				*e*sP	sP	21 49 03.9 +3.4
KSH				*e*PP	PP	21 50 10.3 +3.1
KSH				*e*ScP		21 51 41.6
KSH				PcS		21 52 07.4
KSH				S	S	21 56 08.5 -0.1
KSH				ScS	SKSac	21 57 08.3 -0.5
KSH	**Kashi**	66.83	317	sS	sS	21 57 50.8 +1.8
KSH	**Kashi**	66.83	317	SS	SS	22 00 35.1 +3.0
KSH				pmax	pmax	
	comp=Z,84nm,4.3s					
MKAR	**Makanchi Array**	66.99	327	P	P	21 47 37.6 +0.5
	comp=Z,8.9nm,0.6s,baz=127,slow=7.8,SNR=42					
YAK	**Yakutsk**	67.68	0	P	P	21 47 40.9 -0.1
	comp=Z,4.2nm,0.3s,baz=165,slow=12,SNR=7.2					
YAK	**Yakutsk**	67.68	0	*e*P	P	21 47 41.4 +0.4
YAK				pmax	pmax	
	comp=Z,24nm,0.7s					
YAK				pmax	pmax	
	comp=N,11nm,0.9s					
YAK	**Yakutsk**	67.68	0	*e*P	P	21 47 40.7 -0.2
	comp=N,38nm,0.7s					
KRAR	**Krasnoyarsk**	68.61	339	*e*P	P	21 47 46.7 -0.2
KRAR				pmax	pmax	
	comp=Z,3.0nm,0.5s					
TKM2	**Tokmak 2**	68.78	320	*e*P	P	21 47 49.2 +0.7
TKM2				pmax	pmax	
	comp=Z,2.0nm,0.6s					
TKM2	**Tokmak 2**	68.78	320	*e*P	P	21 47 49.2 +0.7
	comp=Z,2.5nm,0.6s					
AAK	**Ala-Archa**	69.34	320	P	P	21 47 52.8 +0.9
	comp=Z,4.5nm,0.7s,baz=123,slow=4.9,SNR=7.1					
AAK	**Ala-Archa**	69.34	320	*e*P	P	21 47 51.7 -0.2
AAK				pmax	pmax	
	comp=Z,36nm,1.8s					
AAK	**Ala-Archa**	69.34	320	*e*P	P	21 47 51.7 -0.2
	comp=Z,36nm,1.8s					
EKS2	**Erkin-Say**	69.81	320	*e*P	P	21 47 55.3 +0.6
EKS2				pmax	pmax	
	comp=Z,16nm,1.3s					
EKS2	**Erkin-Say**	69.81	320	*e*P	P	21 47 55.3 +0.6
	comp=Z,16nm,1.3s					
ZALV	**Zalesovo Beam**	70.33	334	P	P	21 47 57.2 -0.2
	comp=Z,3.2nm,0.3s,baz=141,slow=4.8,SNR=21					
SEY	**Seymchan**	70.78	11	P	P	21 48 00.3 +0.4
	comp=Z,26nm,1.0s,baz=199,slow=5.1,SNR=28					
SEY	**Seymchan**	70.78	11	*ce*P	P	21 48 00.9 +1.0
KURBB	**Kurchatov Arra**	71.27	329	P	P	21 48 03.5 +0.4
	comp=Z,6.6nm,0.6s,baz=128,slow=4.9,SNR=63					
KURK	**Kurchatov**	71.28	329	*e*P	P

comp=Z,1.6nm,0.7s,baz=315,slow=5.1,SNR=9.6
WSAR Wadi Sarin 74.91 296 P **P 21 48 24.3 -0.7**
comp=Z,5.6nm,0.9s,baz=148,slow=2.5,SNR=4.3
MAW Mawson 75.83 201 P **P 21 48 29.8 +0.5**
comp=Z,4.1nm,0.6s,baz=58,slow=7.5,SNR=6.3
MAW Mawson 75.83 201 P **P 21 48 29.9 +0.6**
baz=76,SNR=7.9
BVAR Borovoye Array 76.83 328 P **P 21 48 35.2 0.0**
comp=Z,2.2nm,0.4s,baz=130,slow=6.2,SNR=17
BRVK Borovoye 76.90 328*ceP* **P 21 48 34.9 -0.7**
BRVK pmax pmax
comp=Z,8.0nm,1.0s
BRVK Borovoye 76.90 328 *eP* **P 21 48 35.0 -0.5**
comp=Z,2.9nm,0.7s
TIXI Tiksi 77.35 360 P **P 21 48 36.9 -0.7**
comp=Z,11nm,0.3s,baz=161,slow=4.4,SNR=50
TIXI Tiksi 77.35 360*c iP* **P 21 48 37.4 -0.2**
TIXI pmax pmax
comp=Z,25nm,1.6s
TIXI Tiksi 77.35 360 *eP* **P 21 48 37.0 -0.6**
comp=Z,12nm,0.5s
BILL Bilibino 78.12 13⇑*eP* **P 21 48 42.1 +0.1**
BILL pmax pmax
comp=Z,7.0nm,1.6s
GEYT Alibeck 79.08 310 P **P 21 48 48.1 +0.1**
comp=Z,2.0nm,0.7s,baz=147,slow=3.5,SNR=4.6
NRIK Noril'sk 80.33 346 P **P 21 48 54.2 +0.3**
comp=Z,2.8nm,0.4s,baz=133,slow=5.9,SNR=11
OPO Ambohidratompo 80.88 252 P **P 21 48 58.8 +0.7**
comp=Z,3.1nm,0.7s,baz=76,slow=3.6,SNR=8.7
ABKAR Akbulak array 81.30 322 *eP* **P 21 48 59.1 -0.3**
comp=Z,1.4nm,0.3s
AKTO Aktyubinsk 82.86 322 P **P 21 49 07.7 +0.2**
comp=Z,2.4nm,0.3s,baz=89,slow=4.1,SNR=18
SVE Sverdlovsk 83.53 329⇓*eP* **P 21 49 11.1 +0.3**
SVE pmax pmax
comp=Z,35nm,1.4s
TNA Tin City 84.35 22 *eP* **P 21 49 15.0 +0.3**
comp=Z,12nm,1.4s
ARU Arti 84.47 328 P **P 21 49 15.5 0.0**
comp=Z,3.3nm,0.3s,baz=101,slow=4.3,SNR=10
ARU Arti 84.47 328*c iP* **P 21 49 15.3 -0.2**
ARU S **S 21 59 13.5 -6.8**
ARU SS **SS 22 04 53.0 -4.1**
ARU pmax pmax
comp=Z,23nm,1.7s
ARU Arti 84.47 328 *eP* **P 21 49 15.1 -0.4**
comp=Z,20nm,1.3s
SYO Syowa Base 84.54 201⇓*eP* **P 21 49 14.2 -1.5**
COLD Coldfoot 91.61 23 *eP* **P 21 49 49.0 -0.2**
comp=Z,4.3nm,0.7s
ILAR Eielson Array 92.53 25 P **P 21 49 51.6 -2.0**
comp=Z,1.9nm,0.6s,baz=241,slow=5.1,SNR=14
PAX Paxson 92.91 27 *eP* **P 21 49 55.0 -0.5**
PAX pmax pmax
comp=Z,6.0nm,0.9s
PAX Paxson 92.91 27 *eP* **P 21 49 55.0 -0.5**
comp=Z,5.6nm,0.9s
DOT Dot Lake 93.62 27 *eP* **P 21 49 58.3 -0.3**
comp=Z,16nm,0.7s
KLMR Klimovskoe 95.05 331 *eP* P 21 50 01.5 -3.7
KLMR pmax pmax
comp=Z,5.0nm,1.1s
DAWY Dawson 95.71 26 *eP* **P 21 50 08.4 +0.2**
comp=Z,17nm,1.3s
OBN Obninsk 96.43 325 *eP* **P 21 50 09.8 -1.7**
OBN pmax pmax
comp=Z,6.0nm,1.6s
SNAA Sanae 96.65 194 P **P 21 50 12.5 +0.1**
comp=Z,0.7nm,0.8s,baz=190,slow=6.1,SNR=3.2
INK Inuvik 97.99 22 P **P 21 50 16.7 -1.5**
comp=Z,1.6nm,0.6s,baz=256,slow=4.8,SNR=3.5
MATP Matopo 98.20 248 P **P 21 50 20.4 -0.1**
comp=Z,0.5nm,0.3s,baz=146,slow=3.8,SNR=3.5
ARCES ARCESS Array B 100.33 340 P **Pdif 21 50 27.4 -1.3**
comp=Z,2.2nm,0.7s,baz=86,slow=5.3,SNR=12
ARCES PKiKP **PKiKP 21 54 54.2 -0.1**
comp=Z,1.4nm,0.8s,baz=92,slow=0.9,SNR=8.5
KIEV Kiev 101.01 320 *i P* **Pdif 21 50 29.8 -2.3**
FINES FINESS Array B 101.52 332 PKiKP **PKiKP 21 54 56.4 -0.2**
comp=Z,1.9nm,1.0s,baz=64,slow=3.2,SNR=3.5
FINES FINESS Array B 101.52 332 *i P* **Pdif 21 50 28.6 -5.5**
FINES pmax pmax
comp=Z,1.0nm,0.6s
YKA Yellowknife Ar 106.95 26 PKiKP **PKiKP 21 55 05.9 -0.6**
comp=Z,0.8nm,0.6s,baz=301,slow=1.5,SNR=7.9
GERES GERESS Array B 111.22 320 PKiKP **PKiKP 21 55 14.1 -1.0**
comp=Z,0.5nm,0.4s,baz=51,slow=2.2,SNR=9.4
GERES SKP 21 58 24.4
comp=Z,0.3nm,0.6s,baz=96,slow=3.0,SNR=4.0
BFO Black Forest 114.77 321 *i* PKIKP PKPdf 21 55 20.7 -1.2
PDAR Pinedale Array 116.44 45 PKP **PKPdf 21 55 24.8 -0.8**
comp=Z,0.4nm,0.4s,baz=215,slow=1.1,SNR=6.3
RSSD Black Hills 119.75 42 P **PKPdf 21 55 30.8 -1.1**
baz=293
S22A 4UR Ranch, Cre 119.94 50 P **PKPdf 21 55 31.9 -0.6**
baz=287
I25A Rochford 119.99 42 P **PKPdf 21 55 32.0 -0.3**
baz=293
A28A Rude Farm, Bot 120.01 36 P **PKPdf 21 55 31.9 -0.1**
baz=299
G27A Dupree 120.61 40 P **PKPdf 21 55 32.1 -1.1**
baz=296
H27A Howes 120.83 41 P **PKPdf 21 55 33.1 -0.5**
baz=295
ANMO Albuquerque 121.03 53 *i* PKIKP **PKPdf 21 55 34.4 -0.2**
ANMO pmax pmax
comp=Z,5.0nm,2.5s
B30A Myrvik Farm, E 121.36 35 P **PKPdf 21 55 34.2 -0.3**
baz=300
C31A Landman Farms, 122.03 36 P **PKPdf 21 55 35.4 -0.4**
baz=301
MNTX Cornudas Mount 122.75 56 P **PKPdf 21 55 38.1 +0.4**
baz=285
ECSD EROS Data Cent 124.74 39 P **PKPdf 21 55 40.9 -0.3**
baz=299
TXAR Lajitas Array 124.77 58 PKP **PKPdf 21 55 42.0 +0.3**
comp=Z,0.6nm,0.5s,baz=220,slow=4.3,SNR=17
F36A Milaca 125.51 36 P **PKPdf 21 55 42.4 -0.2**
baz=304
P34A Walnut Farm, R 126.55 44 P **PKPdf 21 55 44.9 +0.1**
baz=297
JCT Junction City 127.68 56 P **PKPdf 21 55 47.5 +0.3**
baz=288
JCT Junction City 127.68 56 *e*PKIKP **PKPdf 21 55 47.4 +0.1**
JCT Junction City 127.68 56 *e*PKPdf **PKPdf 21 55 47.4 +0.1**
TORD Torodi Ar. Bea 128.08 282 PKP **PKPdf 21 55 48.4 +0.1**
comp=Z,0.6nm,0.5s,baz=93,slow=2.3,SNR=10
TORD SKPbc SKPbc 21 58 41.5
comp=Z,2.3nm,0.7s,baz=65,slow=3.8,SNR=12
333A Richland Sprin 128.09 54 P **PKPdf 21 55 48.0 +0.1**
baz=289
433A Art 128.18 55 P **PKPdf 21 55 48.4 +0.2**
baz=288
P38A Dawn 128.76 43 P **PKPdf 21 55 49.3 +0.3**
baz=300
R38A Fenwick Farm, 129.20 44 P **PKPdf 21 55 49.4 -0.4**
baz=298
Q39A Willow Grove F 129.42 43 P **PKPdf 21 55 49.9 -0.3**
baz=300
R39A Chumby, Stover 129.74 44 P **PKPdf 21 55 51.1 +0.2**
baz=299
S39A Bolivar 129.84 45 P **PKPdf 21 55 50.5 -0.6**
baz=298
V38A Canehill 129.90 47 P **PKPdf 21 55 51.0 -0.3**
baz=296
PLCA Paso Flores 130.12 160 SKPbc **SKPbc 21 58 49.5 -1.4**
comp=Z,1.6nm,0.6s,baz=290,slow=5.2,SNR=4.6
X39A Fountain Ranch 130.70 49 P **PKPdf 21 55 53.4 +0.6**
baz=295
MIAR Mount Ida 131.08 48 P **PKPdf 21 55 54.9 +1.4**
baz=296
DBIC Dimbokro 134.62 274 PKP **PKPdf 21 56 01.2 +0.5**
comp=Z,1.4nm,0.7s,baz=344,slow=2.3,SNR=3.6
DBIC SKPbc **SKPbc 21 59 05.1 -2.0**
comp=Z,4.8nm,0.6s,baz=70,slow=3.5,SNR=13
LVC Limon Verde 146.47 148 *e*PKPab **PKPbc 21 56 25.6 +1.6**
CPUP Villa Florida 147.34 169 PKPbc **PKPdf 21 56 25.8 +2.6**
comp=Z,2.9nm,0.6s,baz=193,slow=1.8,SNR=7.4
CPUP SKPbc **SKPbc 21 59 39.2 -0.8**
comp=Z,4.0nm,0.9s,baz=199,slow=0.9,SNR=5.0
LPAZ La Paz 151.93 142 PKP **PKPdf 21 56 31.6 +0.2**
comp=Z,1.0nm,0.7s,baz=296,slow=5.7,SNR=5.1
LPAZ PKPbc **PKPbc 21 56 38.7 +0.6**
comp=Z,5.8nm,0.3s,baz=295,slow=0.7,SNR=48

*ISK **21** 21:38:51.6, 39.°06N×29.°02E, h7km, MD2.9*
*DDA **21** 21:38:52.0, 39.°08N×28.°99E, h7km, Md2.1*
*CSEM **21** 21:38:52.1±0.1, 39.°06N×29.°02E, h5km, MD2.9, Error ellipse: s-maj=3.5km s-min=2.8km az=110.0*
ISC 21 21:38:52.2±1.2,**39.09N**±0.°03×**29.04E**±0.°03,**h3**km±12km, **n46,**σ0°**53**/56,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**260**	P	**Pg**	**21 38 57.5**	**+0.3**
DEMI				S	**Sg**	**21 39 01.1**	**+0.6**
DEMI	**Demirci**	**0.25**	**260**	*i P*	**Pg**	**21 38 57.5**	**+0.3**
DEMI				*i* S	**Sg**	**21 39 01.1**	**+0.6**
TVSB	**Tavsanli**	**0.49**	**42**	*e*PG	**Pg**	**21 39 01.3**	**-0.3**
TVSB	**Tavsanli**	**0.49**	**42**	*e*Pg	**Pg**	**21 39 01.3**	**-0.3**
KULA	**Kula-Manisa**	**0.64**	**207**	*e*PG	**Pg**	**21 39 04.3**	**-0.2**
KULA	**Kula-Manisa**	**0.64**	**207**	*e*Pg	**Pg**	**21 39 04.3**	**-0.2**
DURS	**Dursunbey**	**0.68**	**320**	P	**Pg**	**21 39 04.5**	**-0.7**
DURS	**Dursunbey**	**0.68**	**320**	*i P*	**Pg**	**21 39 04.5**	**-0.7**
MANT	**Manisa**	**0.70**	**212**	P	**Pg**	**21 39 05.4**	**-0.3**
MANT				S	**Sg**	**21 39 14.8**	**0.0**
MANT	**Manisa**	**0.70**	**212**	*i P*	**Pg**	**21 39 05.4**	**-0.3**
MANT				*i* S	**Sg**	**21 39 14.8**	**0.0**
KHL	**Karahalli**	**0.85**	**153**	*e*PG	**Pg**	**21 39 07.6**	**-0.9**
KHL				*e*SG	**Sg**	**21 39 20.2**	**+0.7**
KHL	**Karahalli**	**0.85**	**153**	*e*Pg	**Pg**	**21 39 07.6**	**-0.9**
KHL				*e*Sg	**Sg**	**21 39 20.2**	**+0.7**
ORLT	**Orhaneli**	**0.97**	**354**	*e*PG	**Pb**	**21 39 11.8**	**+0.1**
ORLT	**Orhaneli**	**0.97**	**354**	*e*Pg	**Pb**	**21 39 11.8**	**+0.1**
AKS	**Akhisar**	**0.98**	**258**	*e*PG	**Pg**	**21 39 10.2**	**-0.8**
AKS	**Akhisar**	**0.98**	**258**	*e*Pg	**Pg**	**21 39 10.2**	**-0.8**
BALB	**Balikesir**	**1.05**	**302**	*e*PG	**Pg**	**21 39 12.3**	**-0.2**
BALB				*e*SG	**Sb**	**21 39 27.2**	**-0.2**
BALB	**Balikesir**	**1.05**	**302**	*e*Pg	**Pg**	**21 39 12.3**	**-0.2**
BALB				*e*Sg	**Sb**	**21 39 27.2**	**-0.2**
CAVI	**Cavuskoy**	**1.28**	**29**	*e*PN	**Pb**	**21 39 16.9**	**-0.1**
CAVI	**Cavuskoy**	**1.28**	**29**	*e*Pn	**Pb**	**21 39 16.9**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.29**	**355**	*e*PN	**Pg**	**21 39 16.2**	**-0.7**
MDNY				*e*SN	**Sn**	**21 39 35.3**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.29**	**355**	*e*Pn	**Pg**	**21 39 16.2**	**-0.7**
MDNY				*e*Sn	**Sn**	**21 39 35.3**	**+0.3**
KCTX	**Karacabey (Bur**	**1.29**	**336**	*e*PN	**Pg**	**21 39 16.5**	**-0.5**
KCTX	**Karacabey (Bur**	**1.29**	**336**	*e*Pn	**Pg**	**21 39 16.5**	**-0.5**
IZI	**Iznik**	**1.29**	**15**	*e*PN	**Pb**	**21 39 17.3**	**0.0**
IZI	**Iznik**	**1.29**	**15**	*e*Pn	**Pb**	**21 39 17.3**	**0.0**
GONE	**Gonen-Balikesi**	**1.42**	**313**	*e*PN	**Pn**	**21 39 18.6**	**-0.3**
GONE	**Gonen-Balikesi**	**1.42**	**313**	*e*Pn	**Pn**	**21 39 18.7**	**-0.3**
ADVT	**Abdulvahap**	**1.45**	**22**	*e*PN	**Pn**	**21 39 19.7**	**+0.3**
ADVT	**Abdulvahap**	**1.45**	**22**	*e*Pn	**Pn**	**21 39 19.7**	**+0.3**
ARMT	**Armutlu**	**1.48**	**355**	*e*PN	**Pn**	**21 39 18.9**	**-1.0**
ARMT	**Armutlu**	**1.48**	**355**	*e*Pn	**Pn**	**21 39 18.9**	**-1.0**
EDC	**Edincik**	**1.55**	**325**	*e*PN	**Pn**	**21 39 20.3**	**-0.5**
EDC	**Edincik**	**1.55**	**325**	*e*Pn	**Pn**	**21 39 20.3**	**-0.5**
GULT	**Gulveren**	**1.76**	**40**	*e*PN	**Pn**	**21 39 24.2**	**+0.4**
GULT	**Gulveren**	**1.76**	**40**	*e*Pn	**Pn**	**21 39 24.2**	**+0.4**
HRT	**Hereke**	**1.80**	**15**	*e*PN	**Pn**	**21 39 24.6**	**+0.3**
HRT	**Hereke**	**1.80**	**15**	*e*Pn	**Pn**	**21 39 24.6**	**+0.3**
SVRH	**Sivrihisar-ESK**	**1.96**	**79**	*e*PN	**Pn**	**21 39 26.4**	**-0.1**
SVRH	**Sivrihisar-ESK**	**1.96**	**79**	*e*Pn	**Pn**	**21 39 26.5**	**-0.1**
ISK	**Istanbul-Kandi**	**1.98**	**0**	*e*PN	**Pn**	**21 39 27.2**	**+0.6**
ISK	**Istanbul-Kandi**	**1.98**	**0**	*e*Pn	**Pn**	**21 39 27.3**	**+0.6**
SILT	**Sile**	**2.12**	**12**	*e*PN	**Pn**	**21 39 29.6**	**+1.0**
SILT	**Sile**	**2.12**	**12**	*e*Pn	**Pn**	**21 39 29.6**	**+1.0**
MDUB	**Mudurnu**	**2.16**	**50**	*e*PN	**Pn**	**21 39 29.8**	**+0.5**
MDUB	**Mudurnu**	**2.16**	**50**	*e*Pn	**Pn**	**21 39 29.8**	**+0.5**

*CSEM **21** 21:43:08.7±0.1, 39.°08N×29.°05E, h2km, ML4.0, Error ellipse: s-maj=2.1km s-min=2.0km az=73.0*
*ISK **21** 21:43:08.3, 39.°10N×29.°04E, h6km, ML3.8*
*IDC **21** 21:43:08.0±1.3, 39.°04N×29.°05E, h0km, mb3.4/2, mb1 3.4/6, mb1mx3.2/50, mbtmp3.3/6, ML3.0/4, Error ellipse: s-maj=22.6km s-min=15.7km az=166.0*
*DDA **21** 21:43:08.6, 39.°10N×29.°05E, h7km, Ml4.0*
*ISCJB **21** 21:43:08.5±0.4, 39.°09N±0.°01×29.°04E±0.°02, h5km±3km, mb3.5/2, Error ellipse: s-maj=2.5km s-min=2.2km az=2.2*
*THE **21** 21:43:09.6, 39.°05N×29.°01E, h2km±1km, ML3.4/3, Error ellipse: s-maj=1.8km s-min=0.9km az=109.0*
ISC 21 21:43:09.0±1.0,**39.10N**±0.°02×**29.04E**±0.°01,**h6**km±8km, **n178,**σ0°**81**/227,**21C-9D,Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**259**	P	**Pg**	**21 43 14.3**	**+0.3**
DEMI				S	**Sg**	**21 43 18.0**	**+0.5**
DEMI	**Demirci**	**0.26**	**259**⇑	*i P*	**Pg**	**21 43 14.3**	**+0.3**
DEMI				*i* S	**Sg**	**21 43 18.0**	**+0.5**
GDZ	**Gediz**	**0.34**	**91**	P	**Pg**	**21 43 15.4**	**-0.3**
GDZ				S	**Sg**	**21 43 20.2**	**0.0**
GDZ	**Gediz**	**0.34**	**91**⇑	*i P*	**Pg**	**21 43 15.4**	**-0.3**
GDZ				*i* S	**Sg**	**21 43 20.2**	**0.0**
TVSB	**Tavsanli**	**0.48**	**42**	*e*PG	**Pg**	**21 43 17.8**	**-0.5**
TVSB	**Tavsanli**	**0.48**	**42**	*e*Pg	**Pg**	**21 43 17.8**	**-0.5**
KULA	**Kula-Manisa**	**0.65**	**207**	*e*PG	**Pg**	**21 43 21.4**	**-0.1**
KULA	**Kula-Manisa**	**0.65**	**207**	P	**Pg**	**21 43 21.4**	**-0.1**
KULA				S	**Sg**	**21 43 29.8**	**-0.2**
KULA	**Kula-Manisa**	**0.65**	**207**	P	**Pg**	**21 43 21.4**	**-0.1**
KULA				S	**Sg**	**21 43 29.8**	**-0.2**
DURS	**Dursunbey**	**0.67**	**319**	P	**Pg**	**21 43 21.6**	**-0.3**
DURS				S	**Sb**	**21 43 32.4**	**-0.3**
DURS	**Dursunbey**	**0.67**	**319**⇑	*i P*	**Pg**	**21 43 21.6**	**-0.3**
DURS				*i* S	**Sb**	**21 43 32.4**	**-0.3**
MANT	**Manisa**	**0.71**	**212**	P	**Pg**	**21 43 22.4**	**-0.2**
MANT				S	**Sg**	**21 43 31.4**	**-0.5**
MANT	**Manisa**	**0.71**	**212**⇑	*i P*	**Pg**	**21 43 22.4**	**-0.2**
MANT				*i* S	**Sg**	**21 43 31.4**	**-0.5**
KHAL	**Karahalli**	**0.81**	**154**	P	**Pg**	**21 43 24.3**	**-0.1**
KHAL				S	**Sg**	**21 43 34.9**	**0.0**
KHAL	**Karahalli**	**0.81**	**154**⇑	*i P*	**Pg**	**21 43 24.3**	**-0.1**
KHAL				*i* S	**Sg**	**21 43 34.9**	**0.0**
KHL	**Karahalli**	**0.86**	**154**	*e*PG	**Pg**	**21 43 25.6**	**+0.2**
KHL	**Karahalli**	**0.86**	**154**	*e*Pg	**Pg**	**21 43 25.6**	**+0.2**
ORLT	**Orhaneli**	**0.96**	**353**	*e*PG	**Pg**	**21 43 26.8**	**-0.5**
ORLT	**Orhaneli**	**0.96**	**353**	*e*Pg	**Pg**	**21 43 26.8**	**-0.5**
AKHS	**Akhisar**	**0.98**	**258**	P	**Pg**	**21 43 27.6**	**-0.2**
AKHS				S	**Sg**	**21 43 40.3**	**-0.2**
AKHS	**Akhisar**	**0.98**	**258**⇑	*i P*	**Pg**	**21 43 27.6**	**-0.2**
AKHS				*i* S	**Sg**	**21 43 40.3**	**-0.2**
AKS	**Akhisar**	**0.98**	**258**	*e*PG	**Pg**	**21 43 27.9**	**+0.1**
AKS				*e*SG	**Sb**	**21 43 41.6**	**0.0**
AKS	**Akhisar**	**0.98**	**258**	*e*Pg	**Pg**	**21 43 27.9**	**+0.1**
AKS				*e*Sg	**Sb**	**21 43 41.6**	**0.0**
ULDT	**Uludag**	**1.05**	**4**	*i P*	Pn	21 43 36.5	+6.1
BALB	**Balikesir**	**1.05**	**302**	*e*PG	**Pg**	**21 43 29.0**	**-0.2**
BALB				*e*SG	**Sb**	**21 43 44.0**	**+0.4**
BALB	**Balikesir**	**1.05**	**302**	*e*Pg	**Pg**	**21 43 29.0**	**-0.2**
BALB				*e*Sg	**Sb**	**21 43 44.0**	**+0.4**
IGD	**Bursa**	**1.17**	**6**⇑	*i P*	**Pg**	**21 43 29.1**	**-2.4**
IGD				*i* S	**Sg**	**21 43 46.1**	**-0.6**
CAVI	**Cavuskoy**	**1.27**	**29**	*e*PN	**Pg**	**21 43 32.4**	**-0.9**
CAVI	**Cavuskoy**	**1.27**	**29**	*e*Pn	**Pg**	**21 43 32.4**	**-0.9**
BALY	**Balya**	**1.28**	**301**	P	**Pg**	**21 43 33.0**	**-0.5**
BALY				S	**Sb**	**21 43 50.4**	**+0.2**
BALY	**Balya**	**1.28**	**301**⇓	*i P*	**Pg**	**21 43 33.0**	**-0.5**
BALY				*i* S	**Sb**	**21 43 50.4**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.28**	**355**	*e*PN	**Pg**	**21 43 32.5**	**-1.0**
MDNY	**Mudanya-Bursa**	**1.28**	**355**	*e*Pn	**Pg**	**21 43 32.5**	**-1.0**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*PN	**Pg**	**21 43 33.1**	**-0.5**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*Pn	**Pg**	**21 43 33.1**	**-0.5**
IZI	**Iznik**	**1.28**	**15**	*e*PN	**Pg**	**21 43 33.2**	**-0.4**
IZI	**Iznik**	**1.28**	**15**	*e*Pn	**Pg**	**21 43 33.2**	**-0.4**
DENT	**Denizli**	**1.34**	**180**	*e*PN	**Pn**	**21 43 33.7**	**-0.6**
DENT	**Denizli**	**1.34**	**180**	*e*Pn	**Pn**	**21 43 33.7**	**-0.6**
GEMT	**Gemlik**	**1.34**	**5**	*e*PN	**Pn**	**21 43 34.2**	**-0.1**
GEMT	**Gemlik**	**1.34**	**5**	*e*Pn	**Pn**	**21 43 34.2**	**-0.1**
BORA	**Eskisehir**	**1.34**	**54**	P	**Pn**	**21 43 33.3**	**-1.1**
BORA				S	**Sb**	**21 43 52.6**	**+0.4**
BORA	**Eskisehir**	**1.34**	**54**	*i P*	**Pn**	**21 43 33.3**	**-1.1**
BORA				*i* S	**Sb**	**21 43 52.6**	**+0.4**
DNZL	**Cakiroluk**	**1.40**	**180**	P	**Pn**	**21 43 34.4**	**-0.9**
DNZL	**Cakiroluk**	**1.40**	**180**	*i P*	**Pn**	**21 43 34.4**	**-0.9**
DNZL				*i* S	**Sn**	**21 43 56.1**	**+2.0**
ADVT	**Abdulvahap**	**1.44**	**22**	*e*PN	**Pn**	**21 43 35.9**	**+0.3**
ADVT	**Abdulvahap**	**1.44**	**22**	*e*Pn	**Pn**	**21 43 35.9**	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**1.46**	**219**	*e*PN	**Pn**	**21 43 35.7**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**1.46**	**219**	*e*Pn	**Pn**	**21 43 35.7**	**-0.3**
ESKT	**Eskisehir**	**1.47**	**73**	*i P*	**Pn**	**21 43 35.3**	**-0.8**
ESKT				*i* S	**Sg**	**21 43 56.0**	**-0.1**
SEYT	**Eskypehyr**	**1.47**	**73**	P	**Pn**	**21 43 35.3**	**-0.8**
SEYT				S	**Sg**	**21 43 56.0**	**-0.1**
ARMT	**Armutlu**	**1.48**	**355**	*e*PN	**Pn**	**21 43 36.0**	**-0.1**
ARMT	**Armutlu**	**1.48**	**355**	*e*Pn	**Pn**	**21 43 36.0**	**-0.1**
BOLV	**Bolvadin**	**1.54**	**104**	P	**Pn**	**21 43 36.6**	**-0.4**
BOLV				S	**Sg**	**21 43 58.3**	**0.0**
BOLV	**Bolvadin**	**1.54**	**104**	*i P*	**Pn**	**21 43 36.6**	**-0.4**
BOLV				*i* S	**Sg**	**21 43 58.3**	**0.0**
GPA	**Golpazari**	**1.54**	**39**	*e*PN	**Pn**	**21 43 37.4**	**+0.3**
GPA	**Golpazari**	**1.54**	**39**	*e*Pn	**Pn**	**21 43 37.4**	**+0.3**
EDC	**Edincik**	**1.55**	**324**	*e*PN	**Pn**	**21 43 37.2**	**+0.1**
EDC	**Edincik**	**1.55**	**324**	*e*Pn	**Pn**	**21 43 37.2**	**+0.1**
KNL	**Bal¯–kesir**	**1.66**	**316**	*i P*	**Pn**	**21 43 37.8**	**-0.8**
KNL				*i* S	**Sn**	**21 44 00.5**	**+0.3**
DKL	**Dikili**	**1.66**	**270**	*e*PN	**Pn**	**21 43 38.1**	**-0.5**
DKL	**Dikili**	**1.66**	**270**	*e*Pn	**Pn**	**21 43 38.1**	**-0.5**
AYDN	**Tasoluk**	**1.70**	**213**	P	**Pn**	**21 43 38.8**	**-0.4**
AYDN	**Tasoluk**	**1.70**	**213**	*i P*	**Pn**	**21 43 38.8**	**-0.4**
AYDN				*i* S	**Sg**	**21 44 05.4**	**+1.9**
ISP	**Isparta**	**1.72**	**137**	*e*PN	**Pn**	**21 43 39.4**	**-0.2**
ISP	**Isparta**	**1.72**	**137**	P	**Pn**	**21 43 38.9**	**-0.7**
ISP				S	**Sn**	**21 44 01.7**	**-0.3**
ISP	**Isparta**	**1.72**	**137**	P	**Pn**	**21 43 38.9**	**-0.7**
ISP	**Isparta**	**1.72**	**137**	*e*Pn	**Pn**	**21 43 39.4**	**-0.2**
ISP				S	**Sn**	**21 44 01.7**	**-0.3**
GULT	**Gulveren**	**1.75**	**40**	*e*PN	**Pn**	**21 43 40.4**	**+0.4**
GULT	**Gulveren**	**1.75**	**40**	*e*Pn	**Pn**	**21 43 40.4**	**+0.4**
HRT	**Hereke**	**1.79**	**15**	*e*PN	**Pn**	**21 43 41.0**	**+0.5**
HRT	**Hereke**	**1.79**	**15**	*e*Pn	**Pn**	**21 43 41.0**	**+0.5**
AYVA	**Ayvalik**	**1.84**	**277**	P	**Pb**	**21 43 42.7**	**-0.3**
AYVA	**Ayvalik**	**1.84**	**277**	*i P*	**Pb**	**21 43 42.7**	**-0.3**
AYVA				*i* S	**Sg**	**21 44 08.0**	**0.0**
SPNC	**Sapanca-Adapaz**	**1.86**	**31**	*e*PN	**Pn**	**21 43 41.7**	**+0.3**
SPNC	**Sapanca-Adapaz**	**1.86**	**31**	*e*Pn	**Pn**	**21 43 41.7**	**+0.3**
KRBG	**Karabiga-Canak**	**1.87**	**315**	*e*PN	**Pn**	**21 43 41.4**	**-0.1**
KRBG	**Karabiga-Canak**	**1.87**	**315**	*e*Pn	**Pn**	**21 43 41.4**	**-0.1**
MRMT	**Marmara Adasi**	**1.87**	**324**	*e*PN	**Pn**	**21 43 41.9**	**+0.3**
MRMT	**Marmara Adasi**	**1.87**	**324**	*e*Pn	**Pn**	**21 43 41.9**	**+0.3**
SVRH	**Sivrihisar-ESK**	**1.96**	**79**	*e*PN	**Pn**	**21 43 43.6**	**+0.8**
SVRH	**Sivrihisar-ESK**	**1.96**	**79**	*e*Pn	**Pn**	**21 43 43.6**	**+0.8**
ISK	**Istanbul-Kandi**	**1.97**	**0**	*e*PN	**Pn**	**21 43 43.4**	**+0.5**
ISK	**Istanbul-Kandi**	**1.97**	**0**	P	**Pn**	**21 43 41.9**	**-1.0**
ISK				S	**Sb**	**21 44 09.5**	**-0.5**
ISK	**Istanbul-Kandi**	**1.97**	**0**	P	**Pn**	**21 43 41.9**	**-1.0**
ISK	**Istanbul-Kandi**	**1.97**	**0**	*e*Pn	**Pn**	**21 43 43.4**	**+0.5**
ISK				S	**Sb**	**21 44 09.5**	**-0.5**
GLHS	**Glhisar (BURDU**	**1.97**	**169**	*e*PN	**Pn**	**21 43 42.7**	**-0.3**
GLHS	**Glhisar (BURDU**	**1.97**	**169**	*e*Pn	**Pn**	**21 43 42.7**	**-0.3**
DGB	**¯zmir**	**1.99**	**239**	*i P*	**Pb**	**21 43 45.7**	**+0.2**
DGB				*i* S	**Sb**	**21 44 10.9**	**+0.4**
GCAM	**G?zelcaml?**	**1.99**	**226**	P	**Pb**	**21 43 44.7**	**-0.8**
GCAM	**G?zelcaml?**	**1.99**	**226**	*i P*	**Pb**	**21 43 44.7**	**-0.8**
GCAM				*i* S	**Sg**	**21 44 12.8**	**0.0**
BCK	**Bucak**	**2.04**	**143**	*e*PN	**Pn**	**21 43 44.0**	**+0.1**
BCK	**Bucak**	**2.04**	**143**	*e*Pn	**Pn**	**21 43 44.0**	**+0.1**
URLA	**Izmir**	**2.05**	**250**	P	**Pb**	**21 43 46.0**	**-0.6**
URLA	**Izmir**	**2.05**	**250**	*i P*	**Pb**	**21 43 46.0**	**-0.6**
URLA				*i* S	**Sg**	**21 44 16.3**	**+1.5**
BGKT	**Bogazkoy**	**2.09**	**354**	*e*PN	**Pn**	**21 43 44.9**	**+0.3**
BGKT	**Bogazkoy**	**2.09**	**354**	*e*Pn	**Pn**	**21 43 44.9**	**+0.3**
SILT	**Sile**	**2.11**	**12**	*e*PN	**Pn**	**21 43 44.9**	**+0.1**
SILT	**Sile**	**2.11**	**12**	*e*Pn	**Pn**	**21 43 44.9**	**+0.1**
RKY	**Sarkoy-Tekirda**	**2.14**	**319**	*e*PN	**Pn**	**21 43 45.9**	**+0.6**
RKY	**Sarkoy-Tekirda**	**2.14**	**319**	*e*Pn	**Pn**	**21 43 45.9**	**+0.6**
KLYT	**Kilyos**	**2.16**	**0**	*e*PN	**Pn**	**21 43 44.9**	**-0.5**
KLYT	**Kilyos**	**2.16**	**0**	*e*Pn	**Pn**	**21 43 44.9**	**-0.5**
MDUB	**Mudurnu**	**2.16**	**50**	*e*PN	**Pn**	**21 43 45.9**	**+0.3**
MDUB	**Mudurnu**	**2.16**	**50**	*e*Pn	**Pn**	**21 43 45.9**	**+0.3**
PRK	**Paraskevi**	**2.16**	**275**	P	**Pn**	**21 43 45.4**	**-0.1**
PRK				S	**Sn**	**21 44

TORD	**Torodi Ar. Bea**	**35.39**	**231**	P	**P**	**21 50 05.2**	**-0.4**
	0.4nm,0.8s,baz=40,slow=9.3,SNR=4.1						
SONM	**Songino Array**	**54.63**	**54**	P	**P**	**21 52 38.4**	**-0.1**
	0.6nm,0.9s,baz=289,slow=4.4,SNR=3.0						

IDC 21 21:50:22.9±6.5, 28°.17S×178°.43W, h0km, mb3.6/2, mb1 3.9/2, mb1mx3.5/19, mbtmp3.6/2, Error ellipse: s-maj=283.6km s-min=102.2km az=163.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**42.90**	**265**	P	P	21 58 23.0	-0.4
	0.3nm,0.8s,baz=106,slow=6.8,SNR=4.3						
WRA	**Warramunga Arr**	**43.68**	**270**	P	P	21 58 29.9	+0.1
	0.9nm,0.8s,baz=110,slow=7.9,SNR=5.4						
FINES	**FINESS Array B**	**142.93**	**341**	PKP	PKPdf	22 09 57.4	-0.4
	0.4nm,0.4s,baz=27,slow=1.6,SNR=6.7						

*CSEM **21** 21:52:28.9, 39°.12N×28°.93E, h9km, MD2.6*

ISK 21 21:52:28.9, 39°.12N×28°.93E, h9km, MD2.6, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TVSB	**Tavsanli**	**0.53**	**51**	*e*PG	Pg	21 52 39.5	+0.4
TVSB	**Tavsanli**	**0.53**	**51**	*e*Pg	Pg	21 52 39.5	+0.4
KULA	**Kula-Manisa**	**0.64**	**199**	*e*PG	Pg	21 52 41.8	+0.4
KULA				*e*SG	Sb	21 52 51.3	-0.1
KULA	**Kula-Manisa**	**0.64**	**199**	*e*Pg	Pg	21 52 41.8	+0.5
KULA				*e*Sg	Sb	21 52 51.3	-0.1
BALB	**Balikesir**	**0.97**	**303**	*e*PG	Pb	21 52 47.9	+0.1
BALB				*e*SG	Sn	21 53 01.8	-0.7
BALB	**Balikesir**	**0.97**	**303**	*e*Pg	Pb	21 52 47.9	+0.1
BALB				*e*Sg	Sn	21 53 01.8	-0.7
KCTX	**Karacabey (Bur**	**1.23**	**339**	*e*PN	Pg	21 52 52.7	+0.2
KCTX	**Karacabey (Bur**	**1.23**	**339**	*e*Pn	Pg	21 52 52.7	+0.3
MDNY	**Mudanya-Bursa**	**1.25**	**358**	*e*PN	Pg	21 52 52.9	+0.1
MDNY	**Mudanya-Bursa**	**1.25**	**358**	*e*Pn	Pg	21 52 52.9	+0.1
IZI	**Iznik**	**1.28**	**19**	*e*PN	Pg	21 52 54.3	+0.7
IZI	**Iznik**	**1.28**	**19**	*e*Pn	Pg	21 52 54.3	+0.8
ARMT	**Armutlu**	**1.44**	**358**	*e*PN	Pb	21 52 56.1	+0.2
ARMT	**Armutlu**	**1.44**	**358**	*e*Pn	Pb	21 52 56.1	+0.1

IDC 21 21:57:43.8±44.0, 16°.68S×172°.64W, h0km, mb4.5/3, mb1 4.6/3, mb1mx3.8/33, mbtmp4.5/3, Error ellipse: s-maj=857.9km s-min=177.4km az=80.0, Samoa Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**44.05**	**241**	P	P	22 05 54.0	+0.4
	2.3nm,0.5s,baz=83,slow=7.4,SNR=5.3						
WRA	**Warramunga Arr**	**50.28**	**258**	P	P	22 06 41.9	-0.5
	1.9nm,0.7s,baz=96,slow=7.0,SNR=40						
ASAR	**Alice Springs**	**50.42**	**253**	P	P	22 06 43.5	-0.1
	11nm,0.6s,baz=89,slow=8.3,SNR=154						

*NIED **21** 22:06:00, 35°.80N×140°.70E, h50km, Mw5.5 Best double couple: M0=1.91000×10^17 NP1:φs=225.00000°, δ22.00000°, λ136.00000°. NP2:φs=357.00000°, δ75.00000°, λ74.00000°.*
*BJI **21** 22:06:21.6, 35°.58N×140°.90E, h39km, mb5.7/89, mB5.4/62, Ms5.1/95, Ms7 5.1/88*
*GCMT **21** 22:06:26.4±0.2, 35°.64N×140°.79E, h49km, MW5.5/118, Moment Tensor Solution. s88,c147; s118,c237; Duration: 1s4 Moment tensor: Scale 10^17Nm; Mrr=2.10±.05; Mθθ=0.06±.03; Mφφ=-2.04±.03; Mrθ=0.15±.03; Mrφ=-0.39±.02; Mθφ=1.32±.03; Best double couple: M0=2.49100×10^17 NP1:φs=2.00000°, δ61.00000°, λ81.00000°. NP2:φs=200.00000°, δ30.00000°, λ106.00000°. Principal axes: T 2.5110, Plg72.0000°, Azm251.0000°; N -0.0420, Plg8.0000°, Azm6.0000°; P -2.4720, Plg16.0000°, Azm98.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*
*NEIC **21** 22:06:26.4±0.4, 35°.60N×140°.49E, h37km±3km, mb5.5/299, MS5.0/136, MW5.6 Error ellipse: s-maj=3.6km s-min=2.7km az=141.0*
NEIC Felt [IV] at Narita; [III] at Tokyo, Yokosuka and Zushi; [II] at Yokohama. Felt widely in southeastern Honshu. Recorded [4 JMA] in Chiba and Ibaraki.
*NEIC **21** 22:06:26.0±0.0, 35°.59N×140°.73E, h34km, Moment Tensor Solution. s24 Moment tensor: Scale 10^17Nm; Mrr=1.50; Mθθ=0.00; Mφφ=-1.40; Mrθ=-0.60; Mθφ=-0.30; Mφr=2.90; Best double couple: M0=3.00000×10^17 NP1:φs=352.00000°, δ77.00000°, λ80.00000°. NP2:φs=209.00000°, δ15.00000°, λ125.00000°. Principal axes: T 3.4000, Plg56.0000°, Azm250.0000°; N -0.1000, Plg9.0000°, Azm354.0000°; P -3.3000, Plg31.0000°, Azm89.0000°;*
*MOS **21** 22:06:27.4±0.8, 36°.01N×140°.44E, h42km, mb5.8/132, MS4.9/30 Error ellipse: s-maj=6.3km s-min=3.6km az=103.9*
*JMA **21** 22:06:27.4±0.1, 35°.73N×140°.64E, h48km±1km, M5.5 Broadband fault plane solution: P waves. NP1: φs=13.00000°, δ79.00000°, λ87.00000°. NP2:φs=210.00000°, δ11.00000°, λ106.00000°. Principal axes: T Plg56.0000°, Azm279.0000°; N Plg3.0000°, Azm14.0000°; P Plg34.0000°, Azm106.0000°;*
JMA Felt IV J1.
*IDC **21** 22:06:29.0±1.2, 35°.66N×140°.49E, h57km±10km, mb5.1/39, mb1 5.2/42, mb1mx5.2/45, mbtmp5.4/42, MS4.7/27, Ms1 4.7/27, ms1mx4.7/40 Error ellipse: s-maj=10.6km s-min=6.8km az=90.0*
*ISCJB **21** 22:06:28.1±0.2, 35°.61N±0°.02×140°.46E±0°.02, h61km±1km, mb5.6/436, Error ellipse: s-maj=2.6km s-min=2.1km az=158.2*

ISC 21 22:06:25.8±0.2, 35°.63N±0°.02×140°.71E±0°.03, h36km±1km, h36km:pP-P, n1627, σ1s71/1701, mb5.6/469, MS5.0/187, 166C-45D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.14**	**60**	P	**Pn**	**22 06 35.3**	**-0.2**
CHOJ				*e*S	**Sn**	**22 06 41.3**	**-3.2**
JCN	**Nagara**	**0.47**	**243**	⇓P	**Pn**	**22 06 39.0**	**+3.1**
BSO4	**Boso 4**	**0.71**	**205**	⇓P	**Pn**	**22 06 42.2**	**+2.9**
JYT	**Yasato**	**0.72**	**325**	⇓P	**Pn**	**22 06 40.1**	**+0.5**
JYT				*e*S	**Sn**	**22 06 49.1**	**-0.3**
TOK	**Tokyo**	**0.78**	**274**	⇓P	**Pn**	**22 06 42.6**	**+2.4**
BSO3	**Boso 3**	**0.84**	**191**	P	**Pn**	**22 06 43.8**	**+2.8**
JHO	**Hitachi**	**0.98**	**353**	⇓P	**Pn**	**22 06 43.9**	**+0.8**
BSO1	**Boso 1**	**1.00**	**167**	P	**Pn**	**22 06 45.7**	**+2.9**
JAG	**Ashikaga**	**1.29**	**308**	⇓P	**Pn**	**22 06 47.7**	**+0.4**
JOD2	**Odawara 2**	**1.37**	**255**	⇓P	**Pn**	**22 06 50.1**	**+1.6**
JIM2	**Oshima 3**	**1.39**	**229**	P	**Pn**	**22 06 49.8**	**+1.1**
AJI	**Ajiro2**	**1.45**	**247**	⇓P	**Pn**	**22 06 50.9**	**+1.5**
ONAJ	**Iwakimizuishiy**	**1.47**	**3**	⇓P	**Pn**	**22 06 50.9**	**+1.1**
JSB	**Shiboa**	**1.48**	**335**	⇓P	**Pn**	**22 06 50.8**	**+0.9**
JRY	**Ryogami san**	**1.52**	**285**	⇓P	**Pn**	**22 06 52.0**	**+1.5**
JKT	**Katashina**	**1.64**	**314**	⇓P	**Pn**	**22 06 53.1**	**+1.0**
JKT				S	**Sn**	**22 07 13.0**	**+1.0**
JFK	**Kawauchi**	**1.73**	**4**	⇓P	**Pn**	**22 06 54.6**	**+1.1**
JIZS	**Izushimoda**	**1.76**	**239**	P	**Pn**	**22 06 55.3**	**+1.6**
JIZS				S	**Sn**	**22 07 19.7**	**+4.9**
JYN	**Shimob**	**1.77**	**266**	⇓P	**Pn**	**22 06 55.7**	**+1.7**
JFT	**Otama**	**1.91**	**351**	⇓P	**Pn**	**22 06 57.4**	**+1.6**
JGK	**Kuni**	**1.92**	**300**	P	**Pn**	**22 06 57.6**	**+1.7**
JKO	**Kozu shima**	**1.94**	**222**	P	**Pn**	**22 06 57.8**	**+1.6**
JFY	**Yanaizu**	**1.95**	**336**	⇓P	**Pn**	**22 06 57.8**	**+1.4**
JNT	**Takato**	**2.10**	**277**	P	**Pn**	**22 07 01.1**	**+2.5**
JHK	**Hiroka**	**2.11**	**320**	P	**Pn**	**22 07 00.5**	**+1.9**
SHZ3	**Shizuoka 3**	**2.12**	**255**	P	**Pn**	**22 07 01.2**	**+2.4**
SHZ3				S	**Sn**	**22 07 29.4**	**+5.5**
MJAR	**Matsushiro Arr**	**2.22**	**295**	P	**Pn**	**22 07 01.7**	**+1.6**
	587nm,0.3s,baz=97,slow=9.0,SNR=2730						
MJAR				LR	LR	22 08 01.7	
	comp=Z,38μm,19.8s,baz=125,slow=46						
MAJO	**Matsushiro**	**2.22**	**295**	*d* iP	**Pn**	**22 07 01.1**	**+1.0**
MAJO	**Matsushiro**	**2.22**	**295**	*e*Pn	**Pn**	**22 07 02.5**	**+2.3**
MAT	**Matsushiro**	**2.22**	**295**	P	**Pn**	**22 07 02.3**	**+2.2**
MAT				*e*S	**Sn**	**22 07 27.0**	**+0.7**
MAT	**Matsushiro**	**2.22**	**295**	P	**Pn**	**22 07 02.4**	**+2.3**
MJB9	**Matsu-Tunnel**	**2.22**	**295**	*e*Pn	**Pn**	**22 07 02.4**	**+2.2**
JNG	**Nsakai**	**2.25**	**291**	P	**Pn**	**22 07 02.8**	**+2.2**
JSG	**Sagara**	**2.28**	**246**	P	**Pn**	**22 07 03.6**	**+2.7**
JNY	**Yasuok**	**2.34**	**264**	P	**Pn**	**22 07 04.7**	**+2.9**
JNS	**Sasagawa**	**2.45**	**333**	P	**Pn**	**22 07 05.1**	**+1.8**
JNS				S	**Sn**	**22 07 36.2**	**+4.2**
JIZZ	**Izumozaki**	**2.48**	**320**	P	**Pn**	**22 07 06.6**	**+2.9**
JYZW	**Yoshizawa**	**2.51**	**256**	P	**Pn**	**22 07 06.7**	**+2.6**
JJN	**Nakama**	**2.52**	**306**	P	**Pn**	**22 07 06.7**	**+2.4**
HMMJ	**Hamamatsu 2**	**2.56**	**253**	P	**Pn**	**22 07 07.1**	**+2.3**
JHJ2	**Mitsune**	**2.62**	**197**	S	**Sn**	**22 07 40.9**	**+4.7**
JHJ2	**Mitsune**	**2.62**	**197**	*e*Pn	**Pn**	**22 07 07.0**	**+1.4**
JHJ	**Hachijo jima 2**	**2.62**	**197**	P	**Pn**	**22 07 07.0**	**+1.4**
	1μm,0.3s,baz=54,slow=1.5,SNR=103						
JHJ				S	**Sn**	**22 07 40.0**	**+3.8**
	2μm,0.3s,baz=246,slow=20,SNR=8.1						
JHJ				LR	LR	22 08 25.8	
	comp=Z,12μm,20.8s,baz=306,slow=45						
JGF	**Kuroka**	**2.73**	**270**	P	**Pn**	**22 07 10.2**	**+3.0**
JGN	**Niukaw**	**2.82**	**283**	P	**Pn**	**22 07 11.3**	**+2.9**
JAO	**Obara**	**2.84**	**264**	P	**Pn**	**22 07 11.3**	**+2.6**
JIO	**Ouri**	**2.86**	**10**	P	**Pn**	**22 07 10.2**	**+1.3**
JTT	**Ttatey**	**2.90**	**291**	P	**Pn**	**22 07 12.9**	**+3.5**
INU	**Inuyama**	**3.02**	**266**	*e*Pn	**Pn**	**22 07 13.7**	**+2.5**
JAW	**Awa shima**	**3.05**	**338**	P	**Pn**	**22 07 13.7**	**+2.2**
JYA	**Atsumi**	**3.06**	**345**	P	**Pn**	**22 07 14.4**	**+2.8**
JAA	**Atsumi**	**3.09**	**252**	P	**Pn**	**22 07 14.1**	**+2.1**
JSD	**Sado**	**3.10**	**321**	P	**Pn**	**22 07 13.7**	**+1.5**
JSZ	**Suzu**	**3.25**	**305**	P	**Pn**	**22 07 16.3**	**+2.1**
JGM	**Miyama**	**3.25**	**272**	P	**Pn**	**22 07 16.9**	**+2.6**
JYK	**Kaneyama**	**3.29**	**355**	P	**Pn**	**22 07 17.1**	**+2.3**
JJH	**Hakui**	**3.42**	**293**	P	**Pn**	**22 07 19.6**	**+3.0**
JIE	**Ise**	**3.51**	**250**	P	**Pn**	**22 07 21.0**	**+3.2**
JKG	**Kaga**	**3.61**	**282**	P	**Pn**	**22 07 22.1**	**+2.9**
TSUJ	**Tsu 2**	**3.63**	**257**	P	**Pn**	**22 07 22.1**	**+2.6**
JRG	**Rokugo**	**3.76**	**359**	P	**Pn**	**22 07 23.6**	**+2.4**
JHG	**Hegura jima**	**3.76**	**307**	P	**Pn**	**22 07 22.9**	**+1.6**
JFM	**Mihama**	**3.85**	**270**	P	**Pn**	**22 07 25.0**	**+2.5**
JKN2	**Miekihoku**	**3.90**	**250**	P	**Pn**	**22 07 25.7**	**+2.5**
JHE	**Heguri**	**4.23**	**258**	P	**Pn**	**22 07 30.2**	**+2.5**
JKY	**Yasaka**	**4.56**	**272**	P	**Pn**	**22 07 34.6**	**+2.3**
JHS	**Saijyo**	**6.24**	**266**	P	**Pn**	**22 07 58.5**	**+3.1**
ERM	**Erimo**	**6.65**	**16**	*e*P	**Pn**	**22 08 00.2**	**-0.8**
ERM	**Erimo**	**6.65**	**16**	*e*Pn	**Pn**	**22 08 00.2**	**-0.8**
JNU	**Nakatsue**	**8.50**	**256**	P	**Pn**	**22 08 29.6**	**+3.1**
	3.7nm,0.3s,baz=65,slow=7.4,SNR=39						
JNU				LR	LR	22 12 07.2	
	comp=Z,28μm,18.7s,baz=70,slow=41						
JNU	**Nakatsue**	**8.50**	**256**	*e*Pn	**Pn**	**22 08 29.1**	**+2.7**
ASAJ	**Asahikawa**	**8.60**	**9**	P	**Pn**	**22 08 26.2**	**-1.4**
	23nm,0.3s,baz=222,slow=14,SNR=86						
ASAJ				S	**Sn**	**22 10 01.0**	**-2.3**
	13nm,0.3s,baz=139,slow=19,SNR=3.6						
CBIJ	**Chichi jima**	**8.60**	**171**	P	**Pn**	**22 08 27.9**	**+0.1**
CBIJ				S	**Sn**	**22 09 56.0**	**-7.6**
CBIJ	**Chichi jima**	**8.60**	**171**	*e*Pn	**Pn**	**22 08 27.2**	**-0.6**
CBIJ				S	**Sn**	**22 09 57.6**	**-6.0**
JCJ	**Chichijima**	**8.60**	**171**	P	**Pn**	**22 08 26.8**	**-1.0**
	287nm,0.3s,baz=3.1,slow=5.5,SNR=312						
JCJ				S	**Sn**	**22 09 57.6**	**-6.0**
	42nm,0.3s,baz=127,slow=20,SNR=4.1						
YUK	**Yuzh-Kuril'sk**	**9.28**	**24**	*e*P	**Pn**	**22 08 36.3**	**-0.6**
YUK				*i* S	**Sn**	**22 10 13.0**	**-7.0**
YUK				pmax	pmax		
	comp=Z,765nm,0.4s						
YUK				pmax	pmax		
	comp=N,505nm,0.5s						
YUK				pmax	pmax		
	comp=E,401nm,0.5s						
YUK				MLR	MLR		
	comp=Z,4μm,16.0s						
YUK				MLR	MLR		
	comp=N,4μm,14.0s						
SHO	**Shikotan**	**9.48**	**28**	⇑ *i* P	**Pn**	**22 08 37.7**	**-2.0**
SHO				pmax	pmax		
	comp=Z,446nm,0.6s						
SHO				pmax	pmax		
	comp=E,112nm,0.4s						
SHO				pmax	pmax		
	comp=N,411nm,0.6s						
VLA	**Vladivostok**	**10.12**	**320**	*e*P	**Pn**	**22 08 50.8**	**+2.3**
KSRS	**Korea Array**	**10.45**	**284**	P	Pn	22 08 57.5	+4.5
	comp=N,4.9nm,0.3s,baz=101,slow=14,SNR=410						
KSRS				S	Sn	22 10 56.7	+8.0
	baz=85,slow=21,SNR=1.8						
KSRS				LR	LR	22 12 59.6	
	comp=N,10μm,19.6s,baz=116,slow=38						
KSRS				PcP	**PcP**	**22 14 57.5**	**+0.7**
	comp=N,0.1nm,0.3s,baz=93,slow=1.0,SNR=4.7						
KSRS				ScP	**ScP**	**22 18 25.8**	**-0.6**
	comp=N,0.2nm,0.3s,baz=94,slow=1.4,SNR=5.1						
KS01	**Wonju Array Si**	**10.47**	**284**	*e*Pn	**Pn**	**22 08 56.3**	**+2.9**
TJN	**Taejon**	**10.84**	**278**	*d* iP	**Pn**	**22 09 02.1**	**+3.7**
USRK	**Ussuriysk Ar.**	**10.86**	**325**	P	**Pn**	**22 09 01.1**	**+2.5**
	comp=N,3.4nm,0.3s,baz=137,slow=12,SNR=130						
USRK				S	**Sn**	**22 11 06.0**	**+7.2**
	baz=125,slow=12,SNR=1.6						
USRK				LR	LR	22 13 01.5	
	comp=N,6μm,18.2s,baz=133,slow=37						
KUR	**Kuril'sk**	**11.03**	**27**	*e*P	**Pn**	**22 09 00.4**	**-0.5**
KUR				*i* S	Sn	22 10 55.3	-7.5
KUR				pmax	pmax		
	comp=N,93nm,0.5s						
KUR				pmax	pmax		
	comp=Z,243nm,0.5s						
KUR				pmax	pmax		
	comp=E,78nm,0.6s						
YSS	**Yuzh-Sakhalins**	**11.41**	**7**	*e*P	**Pn**	**22 09 04.3**	**-1.9**
YSS				*e*S	**Sn**	**22 11 06.7**	**-5.6**
YSS				pmax	pmax		
	comp=Z,110nm,0.7s						
YSS				MLR	MLR		
	comp=Z,2μm,17.0s						
YSS				MLR	MLR		
	comp=E,2μm,14.0s						
INCN	**Inchon**	**11.47**	**283**	Pn	Pn	22 09 11.8	+4.7
	SNR=14						
MDJ	**Mudanjiang**	**12.35**	**320**	P	**Pn**	**22 09 20.6**	**+1.5**
MDJ				S	**Sn**	**22 11 37.3**	**+1.9**
MDJ				pmax	pmax		
	comp=E,24nm,1.4s						
MDJ				pmax	pmax		
	comp=E,1μm,8.2s						
MDJ				LR	LR		
	comp=E,3μm,20.4s						
MDJ				LR	LR		
	comp=E,3μm,21.9s						
MDJ				LR	LR		
	comp=E,5μm,23.0s						
MDJ	**Mudanjiang**	**12.35**	**320**	*e*Pn	**Pn**	**22 09 18.6**	**-0.5**
	comp=E,532nm,1.4s						
UGL	**Uglegorsk**	**13.47**	**4**	P	**Pn**	**22 09 35.5**	**+1.2**
UGL				pmax	pmax		
	comp=Z,58nm,0.5s						
UGL				MLR	MLR		
	comp=Z,2μm,17.0s						
UGL				MLR	MLR		
	comp=N,2μm,19.0s						
UGL				MLR	MLR		
	comp=E,5μm,18.0s						
HABR	**Khabarovsk**	**13.49**	**344**	*e*P	**Pn**	**22 09 31.8**	**-2.8**
HABR				*e*S	**Sn**	**22 12 00.4**	**-2.8**
HABR				pmax	pmax		
	comp=E,35nm,1.4s						
HABR				pmax	pmax		
	comp=Z,49nm,1.4s						
HABR				pmax	pmax		
	comp=N,20nm,1.4s						
HABR				pmax	pmax		
	comp=Z,146nm,1.2s						
HABR				MLR	MLR		
	comp=Z,2μm,15.0s						
JOW	**Kunigami**	**13.78**	**234**	*e*Pn	**Pn**	**22 09 37.2**	**-1.5**
CN2	**Changchun**	**14.28**	**309**	*e*P	**Pn**	**22 09 46.1**	**+0.7**
CN2				*es*P	P	22 09 58.3	+6.2
CN2				*e*S	**Sn**	**22 12 29.4**	**+6.9**
CN2				pmax	pmax		
	comp=Z,30nm,1.0s						
CN2				pmax	pmax		
	comp=Z,200nm,4.0s						
CN2				LR	LR		
	comp=Z,3μm,18.0s						
CN2				LR	LR		
	comp=Z,4μm,18.0s						
CN2				LR	LR		
	comp=Z,3μm,20.0s						
SNY	**Shenyang**	**14.72**	**300**	⇑P	**Pn**	**22 09 52.4**	**+1.1**
SNY				S	S	22 12 41.1	-10
SNY				pmax	pmax		
	comp=Z,87nm,1.2s						
SNY				pmax	pmax		
	comp=Z,890nm,3.5s						
SNY				LR	LR		
	comp=Z,3μm,14.1s						
SNY				LR	LR		
	comp=Z,4μm,19.2s						
SNY				LR	LR		
	comp=Z,7μm,26.1s						
KLR	**Kul'dur**	**15.10**	**337**	P	**Pn**	**22 09 53.8**	**-2.5**
	comp=Z,1.5nm,0.3s,baz=139,slow=12,SNR=35						
KLR				S	**Sn**	**22 12 46.5**	**+4.4**
	comp=Z,0.3nm,0.3s,baz=304,slow=11,SNR=1.9						
TYV	**Tymovskoe**	**15.29**	**5**	*e*P	**Pn**	**22 09 56.2**	**-2.6**
TYV				pmax	pmax		
	comp=N,176nm,1.0s						
TYV				pmax	pmax		
	comp=Z,396nm,1.0s						
TYV				MLR	MLR		
	comp=E,4μm,16.0s						
DL2	**Dalian**	**15.54**	**288**	⇑ *i* P	**P**	**22 10 04.3**	**-1.8**
DL2				S	**Sn**	**22 12 57.9**	**+4.9**
DL2				pmax	pmax		
	comp=E,500nm,1.0s						
DL2				pmax	pmax		
	comp=E,2μm,4.8s						
DL2				LR	LR		
	comp=E,6μm,23.9s						
DL2				LR	LR		
	comp=E,9μm,23.5s						
SSE	**Sheshan**	**16.92**	**260**	P	**P**	**22 10 20.8**	**-0.6**
SSE				sP	**sP**	**22 10 33.3**	**-2.0**
SSE				S	**Sn**	**22 13 28.6**	**+1.9**
SSE				pmax	pmax		
	comp=E,100nm,1.1s						
SSE				pmax	pmax		
	comp=E,1μm,6.5s						
SSE				LR	LR		
	comp=E,1μm,14.4s						
SSE				LR	LR		
	comp=E,5μm,14.7s						
SSE				LR	LR		
	comp=E,6μm,15.5s						
NJ2	**Nanjing**	**18.50**	**265**	*e*P	**P**	**22 10 38.3**	**-0.5**
NJ2				pP	**pP**	**22 10 44.4**	**-3.8**
NJ2				PP	**sP**	**22 10 53.9**	**+1.2**
NJ2				pmax	pmax		
	comp=E,68nm,0.8s						
NJ2				pmax	pmax		
	comp=E,3μm,9.2s						
NJ2				LR	LR		
	comp=E,4μm,11.4s						
NJ2				LR	LR		
	comp=E,7μm,14.1s						
NJ2				LR	LR		
	comp=E,6μm,19.0s						
SKR	**Severo-Kuril's**	**18.72**	**32**	*e*P	P	22 10 33.1	-8.0
SKR				pmax	pmax		
	comp=N,10.0nm,1.0s						
SKR				pmax	pmax		
	comp=E,220nm,1.0s						
SKR				pmax	pmax		
	comp=Z,270nm,1.0s						
SKR				pmax	pmax		
	comp=Z,1μm,2.0s						
SKR				MLR	MLR		
	comp=N,4μm,20.0s						
SKR				MLR	MLR		
	comp=Z,4μm,20.0s						
SKR				MLR	MLR		
	comp=E,2μm,18.0s						
YOJ	**Yonaguni jima**	**18.91**	**239**	*e*P	**P**	**22 10 41.0**	**-2.4**
YOJ				pmax	pmax		
	comp=Z,250nm,0.9s						
YOJ	**Yonaguni jima**	**18.91**	**239**	*e*P	**P**	**22 10 41.0**	**-2.4**
	comp=Z,245nm,0.9s						
TIA	**Tai'an**	**19.11**	**279**	⇑P	**P**	**22 10 44.3**	**-1.2**
TIA				pmax	pmax		
	comp=Z,430nm,1.2s						
TIA				pmax	pmax		
	comp=Z,1μm,6.0s						
TIA				LR	LR		
	comp=Z,3μm,19.0s						
TIA				LR	LR		
	comp=Z,4μm,19.0s						
TIA				LR	LR		
	comp=Z,7μm,26.0s						
TATO	**Taipei**	**19.67**	**243**	P	**P**	**22 10 50.0**	**-1.7**
	SNR=8.8						
TATO	**Taipei**	**19.67**	**243**	*e*P	**P**	**22 10 51.5**	**-0.2**
	comp=Z,176nm,0.9s						
BJI	**Beijing**	**19.85**	**290**	P	**P**	**22 10 51.3**	**-2.3**
BJI				sP	**sP**	**22 11 07.3**	**-0.2**
BJI				S	**Sn**	**22 14 37.3**	**0.0**
BJI				sS	**sS**	**22 14 50.0**	**0.0**
BJI				pmax	pmax		
	comp=Z,270nm,1.1s						
BJI				LR	LR		
	comp=Z,2μm,22.2s						
BJI				LR	LR		
	comp=Z,2μm,30.1s						
BJI				LR	LR		
	comp=Z,5μm,27.0s						
BJT	**Baijiatuau**	**19.85**	**290**	*e*P	**P**	**22 10 51.6**	**-2.0**
BJT				pmax	pmax		
	comp=Z,246nm,0.8s						
BJT	**Baijiatuau**	**19.85**	**290**	*e*P	**P**	**22 10 51.6**	**-2.0**
	comp=Z,246nm,0.8s						
YHNB	**Yeheng**	**19.93**	**242**	*e*P	**P**	**22 10 53.0**	**-1.8**
	comp=Z,171nm,1.1s						
NACB	**Ninganchiao**	**20.09**	**241**	*e*P	**P**	**22 10 53.8**	**-2.5**
	comp=Z,74nm,0.8s						
HIA	**Hailar**	**20.52**	**318**	*e*P	**P**	**22 10 58.9**	**-2.0**
HIA				pmax	pmax		
	comp=Z,84nm,1.0s						
HIA				MLR	MLR		
	comp=Z,4μm,19.0s						
HIA	**Hailar**	**20.52**	**318**	*e*P	**P**	**22 10 58.9**	**-2.0**
	comp=Z,84nm,1.0s						
HIA				LR	LR		
	comp=Z,4μm,19.0s						
SSLB	**Suanglung**	**20.78**	**241**	*e*P	**P**	**22 11 01.7**	**-2.2**
	comp=Z,122nm,1.0s						
SSLB				*e*S	**S**	**22 14 55.5**	**+1.5**
SSLB				LR	LR		
	comp=Z,2μm,21.0s						
YULB	**Yu-li**	**20.79**	**239**	*e*P	**P**	**22 11 01.0**	**-3.0**
	comp=Z,68nm,0.9s						
YULB				LR	LR		
	comp=Z,2μm,20.0s						
PEA0	**Petropavlovsk-**	**21.18**	**29**	*e*P	**P**	**22 11 09.6**	**+1.6**
PEA0B	**Petropavlovsk-**	**21.18**	**29**	*e*P	**P**	**22 11 10.2**	**+2.3**
	comp=Z,163nm,1.1s						
PEA0B				LR	LR		
	comp=Z,3μm,22.0s						
PETK	**Petropavlovsk-**	**21.18**	**29**	P	**P**	**22 11 09.8**	**+1.9**
	comp=Z,55nm,0.8s,baz=212,slow=5.3,SNR=36						
PETK				S	**S**	**22 14 59.0**	**-2.4**
	comp=Z,1.3nm,0.5s,baz=190,slow=13,SNR=2.8						
PETK				LR	LR	22 19 56.0	
	comp=Z,959nm,19.

GUMO	**Guam**	**22.27 169**	P	**P**		**22 11 21.3 +1.5**
	comp=Z,195nm,0.8s,baz=326,slow=3.8,SNR=7.9					
GUMO			S	**S**		**22 15 24.0 +1.3**
	comp=Z,27nm,0.8s,baz=358,slow=18,SNR=1.6					
GUMO	**Guam**	**22.27 169**	*e*P	**P**		**22 11 17.4 -2.4**
	comp=Z,630nm,1.1s					
GUMO			S	**S**		**22 15 24.0 +1.3**
GUMO			LR	LR		
	comp=Z,2μm,19.0s					
WHN	**Wuhan**	**22.63 265**	⇑P	**P**		**22 11 21.8 -1.8**
WHN			S	**S**		**22 15 25.5 -3.6**
WHN			pmax	pmax		
	comp=Z,1μm,4.7s					
WHN			LR	LR		
	comp=Z,9μm,21.7s					
WHN			LR	LR		
	comp=Z,7μm,12.4s					
WHN			LR	LR		
	comp=Z,13μm,20.2s					
TIY	**Taiyuan**	**22.74 284**	*e*P	**P**		**22 11 22.9 -1.9**
TIY			PP	**PnPn**		**22 11 57.1 +7.8**
TIY			S	**S**		**22 15 22.1 -9.1**
TIY			SS	**SnSn**		**22 16 08.9 +6.1**
TIY			pmax	pmax		
	comp=Z,88nm,0.7s					
TIY			pmax	pmax		
	comp=Z,410nm,8.0s					
TIY			LR	LR		
	comp=Z,1μm,12.8s					
TIY			LR	LR		
	comp=Z,3μm,14.7s					
TIY			LR	LR		
	comp=Z,5μm,26.0s					
HHC	**Hu-ho-hao-te**	**23.42 292**	*e*P	**P**		**22 11 27.4 -4.3**
HHC			pP	pP		22 11 36.4 -5.1
HHC			sP	sP		22 11 41.3 -4.6
HHC			PP	**PnPn**		**22 12 06.1 +7.5**
HHC			S	**S**		**22 15 37.4 -5.1**
HHC			pmax	pmax		
	comp=Z,200nm,0.9s					
HHC			pmax	pmax		
	comp=Z,4μm,4.6s					
HHC			LR	LR		
	comp=Z,8μm,12.3s					
HHC			LR	LR		
	comp=Z,9μm,11.3s					
HHC			LR	LR		
	comp=Z,10μm,11.6s					
CLNS	**Chul'man**	**23.75 338**	*e*P	**P**		**22 11 32.0 -2.6**
CLNS			pmax	pmax		
	comp=Z,137nm,1.1s					
CLNS			pmax	pmax		
	comp=E,53nm,1.1s					
CLNS			pmax	pmax		
	comp=N,124nm,1.2s					
CLNS			MLR	MLR		
	comp=Z,2μm,19.0s					
CLNS			MLR	MLR		
	comp=E,499nm,16.0s					
CLNS			MLR	MLR		
	comp=N,968nm,15.0s					
BTO	**Baotou**	**24.58 291**	*e*P	**P**		**22 11 40.4 -2.1**
MA2	**Magadan**	**24.84 12**	P	**P**		**22 11 45.5 +1.0**
	comp=N,123nm,0.7s,baz=218,slow=10,SNR=41					
MA2			S	**S**		**22 16 04.9 +0.2**
	comp=N,4.9nm,0.7s,baz=180,slow=20,SNR=2.2					
MA2	**Magadan**	**24.84 12**	*e*P	**P**		**22 11 45.5 +1.0**
	comp=N,804nm,0.9s					
MA2			S	**S**		**22 16 04.9 +0.2**
MA2			LR	LR		
	comp=Z,2μm,21.0s					
CIT	**Chita**	**25.32 319**	*e*P	**P**		**22 11 46.9 -2.2**
CIT			*e*			22 11 56.3
CIT			*e*			22 12 02.4
CIT			*e*			22 12 24.1
CIT			pmax	pmax		
	comp=Z,153nm,1.6s					
XAN	**Xi'an**	**26.08 276**	P	**P**		**22 11 54.5 -1.6**
XAN			pP	pP		22 12 03.1 -3.2
XAN			pmax	pmax		
	comp=Z,240nm,0.9s					
XAN			pmax	pmax		
	comp=Z,400nm,6.4s					
XAN			LR	LR		
	comp=Z,2μm,20.5s					
XAN			LR	LR		
	comp=Z,3μm,22.6s					
XAN			LR	LR		
	comp=Z,4μm,25.6s					
HKC	**Hong Kong Obse**	**26.65 247**	P	**P**		**22 12 01.0 -0.2**
ENH	**Enshi**	**26.67 267**	*e*P	**P**		**22 12 00.1 -1.4**
	comp=Z,778nm,0.8s					
ENH			LR	LR		
	comp=Z,4μm,20.0s					
GZH	**Guangzhou**	**26.83 250**	P	**P**		**22 11 57.3 -5.6**
GZH			S	**S**		**22 16 31.9 -5.0**
GZH			LR	LR		
	comp=Z,6μm,15.0s					
GZH			LR	LR		
	comp=Z,6μm,15.4s					
MCO	**Taipa Grande**	**27.22 248**	P	**P**		**22 12 06.0 -0.4**
YAK	**Yakutsk**	**27.32 349**	P	**P**		**22 12 06.6 -0.3**
	comp=Z,16nm,0.7s,baz=142,slow=19,SNR=59					
YAK			S	**S**		**22 16 41.2 -2.7**
	comp=Z,1.6nm,0.4s,baz=37,slow=20,SNR=2.7					
YAK			LR	LR		22 22 19.4
	comp=Z,726nm,21.2s,baz=140,slow=35					
YAK	**Yakutsk**	**27.32 349***c i*P		**P**		**22 12 06.6 -0.3**
YAK			*e**PP	**pP**		**22 12 18.1 +1.0**
YAK			*e*			22 12 50.5
YAK			*e*PPP	PPP		22 13 00.4
YAK			*e*			22 15 25.6
YAK			*e*S	**S**		**22 16 43.4 -0.5**
YAK			*e*SS	**SnSn**		**22 17 53.4 -0.8**
YAK			*e*SSS	SSS		22 18 18.5
YAK			*e*			22 22 49.6
YAK			pmax	pmax		
	comp=Z,181nm,1.0s					
YAK			pmax	pmax		
	comp=N,110nm,1.1s					
YAK			pmax	pmax		
	comp=E,39nm,1.1s					
YAK			pmax	pmax		
	comp=Z,116nm,1.4s					
YAK			pmax	pmax		
	comp=N,100nm,1.3s					
YAK			pmax	pmax		
	comp=E,62nm,1.4s					
YAK			smax	smax		
	comp=N,93nm,1.8s					
YAK			smax	smax		
	comp=E,109nm,2.0s					
YAK	**Yakutsk**	**27.32 349**	*e*P	**P**		**22 12 06.6 -0.3**
	comp=E,328nm,0.9s					
YAK			S	**S**		**22 16 41.2 -2.7**
ULN	**Ulaanbaatar**	**27.70 307**	*e*P	**P**		**22 12 09.6 -1.1**
ULN	**Ulaanbaatar**	**27.70 307**	P	**P**		**22 12 09.9 -0.7**
	SNR=80					
ULN	**Ulaanbaatar**	**27.70 307**	*e*P	**P**		**22 12 09.6 -1.1**
ULN			*e*pP	pP		22 12 10.0 -11
ULN			LR	LR		
	comp=Z,3μm,22.0s					
TGY	**Tagaytay City**	**27.85 225**	P	**P**		**22 12 10.8 -1.3**
	comp=Z,90nm,0.4s,baz=6.2,slow=7.4,SNR=6.6					
TGY	**Tagaytay City**	**27.85 225**	P	**P**		**22 12 10.8 -1.3**
TGY			pmax	pmax		
	comp=Z,86nm,0.4s					
H11N2	**WAKE ISLAND Hy**	**27.96 118**	T	T		22 41 32.2
	baz=310,slow=75,SNR=871					
H11N1	**WAKE ISLAND Hy**	**27.97 118**	T	T		22 41 30.3
	baz=310,slow=75,SNR=122					
H11N3	**WAKE ISLAND Hy**	**27.98 118**	T	T		22 41 38.3
	baz=310,slow=75,SNR=99					
SONA1	**Songino Array**	**28.12 306**	*e*P	**P**		**22 12 12.6 -1.9**
SONA1			*e*pP	pP		22 12 13.2 -11
SONA1			*e*ScP	**ScP**		**22 19 04.2 -1.9**
SONM	**Songino Array**	**28.12 306**	P	**P**		**22 12 13.7 -0.8**
	comp=Z,84nm,1.0s,baz=104,slow=8.8,SNR=133					
SONM			PcP	**PcP**		**22 15 28.7 +0.8**
	comp=Z,8.6nm,0.9s,baz=124,slow=3.1,SNR=4.6					
SONM			ScP	**ScP**		**22 19 04.0 -2.0**
	comp=Z,6.4nm,1.2s,baz=120,slow=1.9,SNR=5.4					
SONM			LR	LR		22 23 12.3
	comp=Z,4μm,21.9s,baz=110,slow=36					
SONM	**Songino Array**	**28.12 306**	P	**P**		**22 12 13.7 -0.8**
SONM						22 15 28.7
SONM			pmax	pmax		
	comp=Z,83nm,1.0s					
SONM			pmax	pmax		
	comp=Z,9.0nm,0.9s					
SONM			pmax	pmax		
	comp=N,6.0nm,1.2s					
SONM			MLR	MLR		
	comp=Z,4μm,21.9s					
SEY	**Seymchan**	**28.27 11**	P	**P**		**22 12 16.8 +1.4**
	comp=Z,28nm,0.7s,baz=208,slow=9.8,SNR=55					
BOD	**Bodaibo**	**28.43 330**	⇓*i*P	**P**		**22 12 16.3 -0.5**
BOD			pmax	pmax		
	comp=Z,99nm,0.8s					
SMY	**Shemya**	**29.07 44**	*e*P	**P**		**22 12 19.0 -3.5**
SMY			pmax	pmax		
	comp=Z,85nm,1.0s					
LZH	**Lanzhou**	**29.77 282**	⇑P	**P**		**22 12 28.4 -0.8**
LZH			pP	pP		22 12 38.6 -0.8
LZH			sP	sP		22 12 42.5 -1.3
LZH			PP	**PnPn**		**22 13 26.0 +0.6**
LZH			PcP	**PcP**		**22 15 31.3 -1.0**
LZH			*e*S	**S**		**22 17 21.5 -1.8**
LZH			SS	**SnSn**		**22 18 57.0 +2.3**
LZH			pmax	pmax		
	comp=Z,180nm,1.1s					
LZH			pmax	pmax		
	comp=Z,650nm,4.7s					
LZH			LR	LR		
	comp=Z,2μm,13.0s					
LZH			LR	LR		
	comp=Z,4μm,13.2s					
LZH			LR	LR		
	comp=Z,5μm,17.2s					
GYA	**Guiyang**	**30.44 262**	⇑*i*P	**P**		**22 12 33.1 -2.1**
GYA			pP	sP		22 12 48.0 -1.8
GYA			PP	**PnPn**		**22 13 38.3 +3.8**
GYA			S	**S**		**22 17 34.4 +0.4**
GYA			sS	sS		22 17 52.0 +1.1
GYA			ScP	**ScP**		**22 19 14.5 +0.7**
GYA			pmax	pmax		
	comp=Z,410nm,1.1s					
GYA			pmax	pmax		
	comp=Z,310nm,6.8s					
GYA			LR	LR		
	comp=Z,2μm,20.2s					
GYA			LR	LR		
	comp=Z,2μm,19.6s					
GYA			LR	LR		
	comp=Z,2μm,21.7s					
IRK	**Irkutsk**	**30.64 314**	*e*P	**P**		**22 12 35.1 -1.4**
IRK			pmax	pmax		
	comp=Z,78nm,1.0s					
ZAK	**Zakamensk**	**30.72 310**	*e*P	**P**		**22 12 36.7 -0.6**
ZAK			*e*			22 15 34.7
ZAK			pmax	pmax		
	comp=Z,36nm,0.9s					
ZAK			pmax	pmax		
	comp=Z,15nm,1.1s					
TLY	**Talaya**	**30.84 313**	LR	LR		22 25 36.9
	comp=Z,2μm,18.0s,baz=111,slow=37					
TLY	**Talaya**	**30.84 313***c i*P		**P**		**22 12 37.7 -0.6**
TLY			pmax	pmax		
	comp=Z,34nm,0.7s					
TLY			MLR	MLR		
	comp=Z,1μm,14.0s					
TLY	**Talaya**	**30.84 313**	*e*P	**P**		**22 12 37.1 -1.2**
CD2	**Chengdu**	**31.13 272**	⇑*i*P	**P**		**22 12 39.3 -1.8**
CD2			pP	pP		22 12 49.0 -2.4
CD2			sP	sP		22 12 53.5 -2.2
CD2			S	**S**		**22 17 43.3 -1.2**
CD2			sS	sS		22 18 00.0 -1.4
CD2			pmax	pmax		
	comp=Z,300nm,0.7s					
CD2			pmax	pmax		
	comp=Z,600nm,10.4s					
CD2			LR	LR		
	comp=Z,950nm,20.4s					
CD2			LR	LR		
	comp=Z,6μm,19.2s					
CD2			LR	LR		
	comp=Z,7μm,21.6s					
DAV	**Davao City (W)**	**31.64 210**	PFAKE			22 13 00.0 +14
DAV			LR	LR		
	comp=Z,1μm,22.0s					
QIZ	**Qiongzhong**	**31.84 247**	P	**P**		**22 12 48.0 +0.5**
QIZ			PP	**PP**		**22 13 57.8 -1.9**
QIZ			S	**S**		**22 17 55.8 +0.1**
QIZ			sS	**sS**		**22 18 13.6 +0.9**
QIZ			pmax	pmax		
	comp=Z,30nm,1.1s					
QIZ			LR	LR		
	comp=Z,2μm,19.9s					
QIZ			LR	LR		
	comp=Z,3μm,22.3s					
MOY	**Mondy**	**32.43 312**	*e*P	**P**		**22 12 51.3 -1.1**
MOY			*e*			22 14 04.6
MOY			pmax	pmax		
	comp=Z,46nm,2.5s					
GTA	**Gaotai**	**32.46 289**	⇑P	**P**		**22 12 51.5 -1.3**
GTA			pP	pP		22 13 00.9 -2.2
GTA			sP	sP		22 13 04.8 -2.6
GTA			PcP	**PcP**		**22 15 40.5 +1.1**
GTA			S	**S**		**22 17 59.6 -5.6**
GTA			ScP	**ScP**		**22 19 21.1 +0.7**
GTA			PcS	**PcS**		**22 19 24.9 +0.4**
GTA			ScS	**ScS**		**22 23 17.4 -2.4**
GTA			pmax	pmax		
	comp=Z,26nm,0.9s					
GTA			pmax	pmax		
	comp=Z,670nm,5.0s					
GTA			LR	LR		
	comp=Z,1μm,20.4s					
GTA			LR	LR		
	comp=Z,2μm,21.4s					
GTA			LR	LR		
	comp=Z,2μm,23.8s					
PATS	**Pohnpei**	**32.90 146**	*e*P	**P**		**22 12 54.3 -2.4**
	comp=Z,187nm,1.4s					
KMI	**Kunming**	**34.20 263**	P	**P**		**22 13 06.8 -1.5**
KMI			pP	pP		22 13 16.5 -2.1
KMI			sP	sP		22 13 20.3 -2.6
KMI			PP	**PnPn**		**22 14 21.9 -0.9**
KMI			pmax	pmax		
	comp=Z,150nm,1.3s					
KMI			pmax	pmax		
	comp=Z,340nm,3.1s					
KMI			LR	LR		
	comp=Z,1μm,14.1s					
KMI			LR	LR		
	comp=Z,1μm,12.9s					
KMI			LR	LR		
	comp=Z,3μm,22.9s					
BILL	**Biiibino**	**35.53 16**	*e*P	**P**		**22 13 19.3 +0.4**
BILL			pmax	pmax		
	comp=Z,71nm,1.1s					
BILL	**Biiibino**	**35.53 16**	*e*P	**P**		**22 13 19.3 +0.4**
	comp=Z,71nm,1.1s					
BILL			LR	LR		
	comp=Z,2μm,22.0s					
MYLDM	**Lahad Datu**	**36.57 219**	*e*P	**P**		**22 13 28.0 -0.3**
	comp=Z,117nm,1.1s					
TIXI	**Tiksi**	**36.61 354***c e*P		**P**		**22 13 27.9 -0.2**
TIXI			pmax	pmax		
	comp=Z,72nm,1.2s					
TIXI			MLR	MLR		
	comp=Z,2μm,18.0s					
TIXI	**Tiksi**	**36.61 354**	*e*P	**P**		**22 13 27.5 -0.6**
	comp=Z,53nm,1.0s					
TIXI			LR	LR		
	comp=Z,1μm,19.0s					
PANO	**Nakornpanom**	**36.94 250**	P	**P**		**22 13 30.9 -0.6**
	comp=Z,66nm,0.7s,comp=Z,4μm					
KKM	**Kota Kinabalu**	**37.07 223**	*e*P	**P**		**22 13 31.3 -1.5**
	comp=Z,43nm,1.2s					
KKM			LR	LR		
	comp=Z,1μm,21.0s					
SWI	**Sorong**	**37.37 196**	P	**P**		**22 13 34.8 -0.3**
UBPT	**Khong Chiam**	**37.44 246**	P	**P**		**22 13 34.8 -1.0**
	comp=Z,84nm,1.0s,comp=Z,898nm					
SKNT	**Sakolnakorn**	**37.52 250**	P	**P**		**22 13 35.4 -1.1**
	comp=Z,88nm,1.2s					
NONG	**Nongkai**	**37.53 252**	P	**P**		**22 13 35.6 -0.9**
	comp=Z,209nm,1.0s,comp=Z,6μm					
JAY	**Jayapura**	**37.95 180**	P	**P**		**22 13 41.8 +1.7**
MANU	**Manus Island**	**37.99 169**	*e*P	**P**		**22 13 39.5 -1.0**
MANU			*e*pP	**pP**		**22 13 45.3 -5.5**
GENI	**Genyem**	**38.03 181**	P	**P**		**22 13 42.8 +2.1**
KRAR	**Krasnoyarsk**	**38.09 318***c i*P		**P**		**22 13 40.6 -0.3**
KRAR			pmax	pmax		
	comp=Z,182nm,1.2s					
CRAI	**Chiangrai**	**38.51 257**	P	**P**		**22 13 44.4 -0.5**
	comp=Z,891nm,0.9s					
KHON	**Khomkaen**	**38.79 250**	P	**P**		**22 13 46.9 -0.3**
	comp=Z,51nm,0.9s,comp=Z,1μm					
MRSI	**Marisa**	**39.10 211**	P	**P**		**22 13 48.8 -0.9**
NIKH	**Nikolski High**	**39.13 48**	*e*P	**P**		**22 13 47.6 -2.0**
	comp=Z,86nm,0.9s					
FAKI	**Fak Fak**	**39.16 193**	P	**P**		**22 13 49.8 -0.4**
FAKI	**Fak Fak**	**39.16 193**	*e*P	**P**		**22 13 50.0 -0.2**
	comp=Z,308nm,1.3s					
LOEI	**Loei**	**39.31 253**	P	**P**		**22 13 47.5 -4.0**
	comp=Z,255nm,0.8s,comp=Z,10μm					
CHAI	**Chaiyaphum**	**39.69 250**	P	**P**		**22 13 53.2 -1.5**
	comp=Z,53nm,1.1s,comp=Z,375nm					
UTTA	**Uttaradit**	**39.73 254**	P	**P**		**22 13 54.1 -0.9**
	comp=Z,35nm,0.8s,comp=Z,244nm					
SANI	**Sanana**	**39.94 203**	P	P		22 14 01.5 +4.8
LAMP	**Lampang**	**40.02 256**	P	**P**		**22 13 57.1 -0.4**
	comp=Z,31nm,0.8s,comp=Z,295nm					
PBKT	**Sadao Pong**	**40.08 252**	P	**P**		**22 13 56.9 -1.0**
	comp=Z,164nm,1.2s,comp=Z,1μm					
LUWI	**Luwuk**	**40.15 209**	*e*P	**P**		**22 13 54.7 -3.7**
	comp=Z,175nm,0.4s					
GAMB	**Gambell**	**40.21 31**	*e*P	**P**		**22 13 56.3 -2.1**
	comp=Z,48nm,1.4s					
CHTO	**Chiang Mai**	**40.41 257**	P	**P**		**22 13 59.8 -0.9**
	comp=Z,249nm,1.1s,comp=Z,3μm					
CHTO	**Chiang Mai**	**40.41 257**	*e*P	**P**		**22 13 59.2 -1.4**
CHTO			pmax	pmax		
	comp=Z,80nm,1.2s					
CHTO			MLR	MLR		
	comp=Z,2μm,22.0s					
CHTO	**Chiang Mai**	**40.41 257**	*e*P	**P**		**22 13 59.2 -1.4**
	comp=Z,80nm,1.2s					
CHTO			LR	LR		
	comp=Z,2μm,22.0s					
CM31	**Chiang Mai Arr**	**40.60 256**	*e*P	**P**		**22 14 01.6 -0.7**
CMAR	**Chiang Mai Arr**	**40.60 256**	P	**P**		**22 14 01.8 -0.5**
	comp=Z,27nm,0.9s,baz=46,slow=7.1,SNR=61					
CMAR			PcP	**PcP**		**22 16 05.0 +1.0**
	comp=Z,17nm,1.0s,baz=16,slow=2.4,SNR=10					
CMAR			LR	LR		22 32 30.5
	comp=Z,2μm,18.4s,baz=65,slow=39					
SUKH	**Sukhothai**	**40.60 254**	P	**P**		**22 14 01.8 -0.4**
	comp=Z,26nm,1.0s,comp=Z,198nm					
CM01	**Chiang Mai Arr**	**40.61 256**	*e*P	**P**		**22 14 00.8 -1.5**
CM01			*e*ScP	**ScP**		**22 19 53.5 +2.9**
SRAK	**Srakaew**	**40.81 248**	P	**P**		**22 13 59.7 -4.3**
	comp=Z,234nm,0.9s,comp=Z,2μm					
WMQ	**Urumqi**	**40.98 298**	⇑*i*P	**P**		**22 14 05.8 +0.6**
WMQ			pP	sP		22 14 18.0 -1.9
WMQ			sP	pP		22 14 22.8 +7.1
WMQ			PcP	**PcP**		**22 16 06.0 +1.1**
WMQ			S	**S**		**22 20 18.8 +3.9**
WMQ			pmax	pmax		
	comp=Z,140nm,1.0s					
WMQ			pmax	pmax		
	comp=Z,96nm,3.6s					
WMQ			LR	LR		
	comp=Z,660nm,13.8s					
WMQ			LR	LR		
	comp=Z,590nm,19.8s					
WMQ			LR	LR		
	comp=Z,790nm,26.0s					
PCI	**Palu**	**41.24 213**	P	**P**		**22 14 06.0 -1.5**
	comp=Z,118nm,1.1s,comp=Z,1μm					
CHBT	**CHBT**	**41.39 246**	P	**P**		**22 14 08.0 -0.7**
	comp=Z,116nm,1.1s,comp=Z,2μm					
LSA	**Lhasa**	**41.78 276**	P	**P**		**22 14 13.0 +0.6**
LSA			pmax	pmax		
	comp=Z,290nm,1.2s					
LSA	**Lhasa**	**41.78 276**	*e*P	**P**		**22 14 12.5 +0.1**
LSA			pmax	pmax		
	comp=Z,357nm,1.0s					
LSA			MLR	MLR		
	comp=Z,2μm,20.0s					
LSA	**Lhasa**	**41.78 276**	*e*P	**P**		**22 14 12.5 +0.1**
	comp=Z,357nm,1.0s					
LSA			LR	LR		
	comp=Z,2μm,20.0s					
SBUM	**Sibu**	**42.27 225**	⇓P	**P**		**22 14 14.8 -1.1**
SBUM	**Sibu**	**42.27 225**	*e*P	**P**		**22 14 14.1 -1.8**
	comp=Z,39nm,1.0s					
TNA	**Tin City**	**42.35 29**	*e*P	**P**		**22 14 16.4 +0.4**
	comp=Z,65nm,1.2s					
ZAA0	**Zalesovo Array**	**42.45 314**	*e*P	**P**		**22 14 16.7 -0.3**
ZAA0			*e*ScP	**ScP**		**22 19 59.0 +1.6**
ZALV	**Zalesovo Beam**	**42.45 314**	P	**P**		**22 14 16.9 -0.1**
	comp=Z,143nm,0.8s,baz=91,slow=6.2,SNR=398					
ZALV			PcP	**PcP**		**22 16 09.3 -0.1**
	comp=Z,11nm,0.5s,baz=104,slow=2.8,SNR=4.2					
ZALV			ScP	**ScP**		**22 19 56.5 -0.8**
	comp=Z,3.4nm,0.8s,baz=82,slow=3.2,SNR=4.5					
SRDT	**SRDT**	**42.83 251**	P	**P**		**22 14 20.4 -0.1**
	comp=Z,278nm,1.1s					
SHL	**Shillong**	**42.83 270**	*e*P	**P**		**22 14 19.6 -1.0**
SHL			*ex*	x		22 21 50.0
ZSN	**Zaisan**	**42.89 304**	*i* P	**P**		**22 14 23.0 +2.3**
	comp=Z,4μm,1.1s					
ZSN			*e*S	**S**		**22 20 43.3 +0.4**
KHLT	**Khaolaem Dam**	**42.97 252**	P	**P**		**22 14 22.0 +0.3**
	comp=Z,37nm,1.2s					
NVS	**Novosibirsk**	**43.41 315**	*e*P	**P**		**22 14 25.0 +0.3**
NVS			*e*S	**S**		**22 20 47.5 -2.7**
NVS			pmax	pmax		
	comp=Z,201nm,1.0s					
NVS			pmax	pmax		
	comp=N,27nm,0.8s					
NVS			pmax	pmax		
	comp=E,118nm,0.9s					
NVS			smax	smax		
	comp=E,34nm,1.7s					
NVS			smax	smax		
	comp=N,32nm,2.3s					
SPSI	**Sidrap Palu**	**44.01 211**	P	**P**		**22 14 29.1 -0.9**
KSM	**Kuching**	**44.18 227**	*e*P	**P**		**22 14 30.2 -1.1**
	comp=N,52nm,0.8s					
KSM			LR	LR		
	comp=Z,562nm,19.0s					
SAUI	**Saumlaki**	**44.28 193**	*e*P	**P**		**22 14 31.0 -1.1**
	comp=Z,642nm,0.8s					
NRIK	**Noril'sk**	**44.30 336**	P	**P**		**22 14 31.9 +0.1**
	comp=Z,127nm,1.0s,baz=110,slow=9.1,SNR=92					
NRIK			PcP	**PcP**		**22 16 15.8 +0.4**
	comp=Z,48nm,0.9s,baz=147,slow=3.0,SNR=4.6					
NRIK			LR	LR		22 33 53.7
	comp=Z,1μm,19.7s,baz=110,slow=37					
MK01	**Makanchi Array**	**44.39 303**	*e*P	**P**		**22 14 31.8 -1.0**
MK31	**Makanchi Array**	**44.39 303**	*e*P	**P**		**22 14 33.2 +0.4**
MK31	**Makanchi Array**	**44.39 303**	*e*P	**P**		**22 14 33.1 +0.4**
MKAR	**Makanchi Array**	**44.39 303**	P	**P**		**22 14 32.8 -0.1**
	comp=Z,110nm,0.7s,baz=89,slow=9.5,SNR=594					
MKAR			LR	LR		22 33 37.9
	comp=Z,2μm,18.3s,baz=100,slow=37					
MKAR	**Makanchi Array**	**44.39 303**	*e*P	**P**		**22 14 33.2 +0.4**
MKAR	**Makanchi Array**	**44.39 303**	*e*P	**P**		**22 14 33.1 +0.4**
MAKZ	**Makanchi**	**44.60 303**	*e*P	**P**		**22 14 34.9 +0.4**
MAKZ			pmax	pmax		
	comp=Z,149nm,0.9s					
MAKZ	**Makanchi**	**44.60 303**	*e*P	**P**		**22 14 34.9 +0.4**
	comp=Z,148nm,0.9s					
STKI	**Sintang**	**44.64 224**	P	**P**		**22 14 34.7 -0.3**
KAPI	**Kappang**	**44.97 210**	*e*P	**P**		**22 14 36.7 -0.9**
	comp=Z,88nm,0.9s					
KAPI			LR	LR		
	comp=Z,463nm,21.0s					
PMG	**Port Moresby**	**45.21 171**	*e*P	**P**		**22 14 36.9 -2.5**
PMG			pmax	pmax		
	comp=Z,44nm,0.9s					
PMG	**Port Moresby**	**45.21 171**	*e*P	**P**		**22 14 36.9 -2.5**
	comp=Z,44nm,0.8s					
PMG			LR	LR		
	comp=Z,709nm,19.0s					
SEM	**Semipalatinsk**	**45.35 309**	*i* P	**P**		**22 14 37.3 -3.0**
	comp=Z,1μm,1.1s					
SEM			*e*S	**S**		**22 21 14.0 -4.6**
SEM			LR	LR		22 33 21.7
	comp=Z,432nm,14.6s					
TARA	**Tarawa**	**45.36 131**	PFAKE			22 14 50.0 +9.2
TARA			LR	LR		
	comp=Z,119nm,22.0s					
KTGM	**Kuala Trenggan**	**45.86 238**	⇓P	**P**		**22 14 44.4 -0.4**

KURK	**Kurchatov**	**46.36**	**309**	*e*P	**P**	**22 14 48.1**	**-0.1**
KURK				pmax	pmax		
comp=Z,560nm,1.0s							
KURK	**Kurchatov**	**46.36**	**309**	*e*P	**P**	**22 14 48.1**	**-0.1**
comp=Z,564nm,1.0s							
KURK				LR	LR		
comp=Z,4μm,20.0s							
SURT	**Suratani**	**46.48**	**246**	P	**P**	**22 14 49.1**	**-0.5**
comp=Z,29nm,0.9s							
TRTT	**Trang**	**46.56**	**244**	P	**P**	**22 14 49.7**	**-0.6**
comp=Z,62nm,0.9s							
KRAB	**Krabi**	**46.67**	**244**	P	**P**	**22 14 50.5**	**-0.6**
comp=Z,131nm,0.7s							
SHLS	**Shalkode**	**46.69**	**299**	*i* P	**P**	**22 14 48.1**	**-3.2**
comp=Z,1μm,0.9s							
SHLS				*e*S	**S**	**22 21 33.4**	**-5.2**
SHLS				LR	LR	22 34 46.1	
comp=Z,256nm,15.5s							
GUN	**Gumba**	**46.74**	**277**	*e*P	**P**	**22 14 52.0**	**0.0**
comp=Z,658nm,0.8s							
TT01	**Tatalina**	**46.89**	**34**	*e*P	**P**	**22 14 50.2**	**-2.0**
TTA	**Tatalina**	**46.90**	**34**	*e*P	**P**	**22 14 50.3**	**-2.1**
TTA				pmax	pmax		
comp=Z,23nm,1.2s							
TTA	**Tatalina**	**46.90**	**34**	*e*P	**P**	**22 14 50.3**	**-2.1**
comp=Z,23nm,1.2s							
SVW2	**Sparrevohn**	**46.98**	**37**	*e*P	**P**	**22 14 52.1**	**-1.0**
SVW2				*e*pP	pP	22 14 56.1	-7.5
PKIN	**Phulchoki**	**47.26**	**276**	*e*P	**P**	**22 14 55.6**	**-0.4**
comp=Z,169nm,0.8s							
KKN	**Kakani**	**47.27**	**277**	*e*P	**P**	**22 14 55.7**	**-0.3**
comp=Z,421nm,0.8s							
UZB	**Uzynbulak**	**47.31**	**299**	*i* P	**P**	**22 14 53.6**	**-2.5**
comp=Z,1μm,0.9s							
UZB				*e*S	**S**	**22 21 42.4**	**-4.8**
UZB				LR	LR	22 35 06.1	
comp=Z,290nm,15.2s							
MMRI	**Maumere**	**47.35**	**205**	*e*P	**P**	**22 14 55.4**	**-1.0**
comp=Z,145nm,1.2s							
KPKS	**Kokpek**	**47.48**	**299**	*i* P	**P**	**22 14 55.9**	**-1.4**
comp=Z,2μm,0.9s							
KPKS				*e*S	**S**	**22 21 46.3**	**-3.2**
KPKS				LR	LR	22 34 54.9	
comp=Z,732nm,17.3s							
DMN	**Daman**	**47.49**	**277**	*e*P	**P**	**22 14 57.6**	**-0.1**
comp=Z,336nm,1.0s							
PKDT	**Phuket**	**47.52**	**245**	P	**P**	**22 14 57.3**	**-0.5**
comp=Z,104nm,1.0s							
KULM	**Kulim**	**47.62**	**240**	⇓P	**P**	**22 14 58.2**	**-0.3**
KULM	**Kulim**	**47.62**	**240**	*e*P	**P**	**22 14 57.6**	**-0.9**
comp=Z,33nm,1.0s							
KULM				LR	LR		
comp=Z,1μm,19.0s							
GKN	**Gorkha**	**47.70**	**277**	*e*P	**P**	**22 14 59.3**	**0.0**
comp=Z,514nm,0.7s							
ZHN	**Zhinishke**	**47.73**	**299**	*i* P	**P**	**22 14 57.2**	**-2.0**
comp=Z,581nm,1.2s							
ZHN				*e*S	**S**	**22 21 49.6**	**-3.5**
SOEI	**Soe**	**47.74**	**202**	P	**P**	**22 14 59.2**	**-0.3**
SOEI	**Soe**	**47.74**	**202**	*e*P	**P**	**22 14 57.9**	**-1.6**
comp=Z,446nm,0.9s							
SATY	**Saty**	**47.77**	**299**	*i* P	**P**	**22 14 57.6**	**-2.0**
comp=Z,996nm,1.3s							
SATY				*e*S	**S**	**22 21 50.3**	**-3.4**
IPM	**Ipoh**	**47.93**	**239**	*e*P	**P**	**22 14 59.3**	**-1.7**
MYKOM	**Kota Tinggi**	**47.97**	**234**	*e*P	**P**	**22 15 00.8**	**-0.4**
comp=Z,39nm,1.0s							
DGPR	**DIGLIPUR**	**48.35**	**255**	*e*P	**P**	**22 15 04.4**	**+0.3**
RSO	**Redoubt South**	**48.35**	**37**	*e*P	**P**	**22 15 06.1**	**+2.2**
HNR	**Honiara**	**48.36**	**154**	P	**P**	**22 15 07.4**	**+3.3**
comp=Z,44nm,0.6s,baz=263,slow=8.1,SNR=3.4							
BOK	**Bokaro**	**48.50**	**272**	*e*P	**P**	**22 15 05.2**	**-0.1**
KDAK	**Kodiak Island**	**48.52**	**41**	*i* P	**P**	**22 15 06.5**	**+1.6**
KDAK	**Kodiak Island**	**48.52**	**41**	*e*P	**P**	**22 15 02.2**	**-2.8**
comp=Z,139nm,1.4s							
KDAK				LR	LR		
comp=Z,2μm,21.0s							
KOLN	**Koldanda**	**48.64**	**278**	*e*P	**P**	**22 15 06.6**	**0.0**
comp=Z,220nm,0.7s							
PPLA	**Purkeypile**	**48.64**	**34**	*e*P	**P**	**22 15 03.6**	**-2.4**
PPLA				*e*pP	pP	22 15 09.1	-7.6
SPU	**Mount Spurr**	**48.69**	**36**	*e*P	**P**	**22 15 05.1**	**-1.2**
CAST	**Castle Rocks**	**48.70**	**34**	*e*P	**P**	**22 15 08.9**	**+2.6**
comp=Z,48nm,1.2s							
MDOK	**Medeo**	**48.71**	**299**	*i* P	**P**	**22 15 04.4**	**-2.4**
comp=Z,1μm,1.0s							
MDOK				*e*S	**S**	**22 22 02.9**	**-4.2**
MDOK				LR	LR	22 34 33.2	
comp=Z,793nm,19.6s							
AAA	**Alma-Ata**	**48.76**	**299**	*i* P	**P**	**22 15 08.3**	**+1.2**
AAA				*e*S	**S**	**22 22 07.1**	**-0.4**
AAA				pmax	pmax		
comp=Z,700nm,4.6s							
AAA				smax	smax		
comp=N,900nm,18.2s							
AAA				MLR	MLR		
comp=Z,2μm,17.0s							
AAA	**Alma-Ata**	**48.76**	**299**	*i* P	**P**	**22 15 06.4**	**-0.7**
comp=Z,2μm,1.1s							
AAA				*e*S	**S**	**22 22 05.5**	**-2.0**
AAA				LR	LR	22 35 25.4	
comp=Z,785nm,18.0s							
PYUN	**Piuthan**	**48.99**	**278**	*e*P	**P**	**22 15 09.6**	**+0.3**
comp=Z,2μm,1.0s							
KUU	**Kurty**	**49.04**	**300**	*i* P	**P**	**22 15 06.4**	**-2.9**
comp=Z,991nm,1.4s							
KUU				*e*S	**S**	**22 22 06.6**	**-4.8**
KUU				LR	LR	22 35 42.6	
comp=Z,353nm,14.4s							
MTN	**Manton Dam**	**49.06**	**192**	*e*P	**P**	**22 15 09.4**	**0.0**
comp=Z,414nm,1.3s							
BPAW	**Bear Paw Mtn.**	**49.21**	**33**	*e*P	**P**	**22 15 10.0**	**-0.2**
comp=Z,32nm,1.1s							
KTH	**Kantishna Hill**	**49.23**	**33**	*e*P	**P**	**22 15 11.0**	**+0.6**
comp=Z,144nm,1.5s							
BRLK	**Bradley Lake**	**49.31**	**38**	*e*P	**P**	**22 15 09.2**	**-1.8**
BRLK				*e*pP	pP	22 15 13.9	-7.8
MLY	**Manley**	**49.34**	**31**	*e*P	**P**	**22 15 12.5**	**+1.3**
comp=Z,80nm,1.2s							
COEN	**Coen**	**49.37**	**177**	*e*P	**P**	**22 15 11.3**	**-0.6**
comp=Z,78nm,0.8s							
PBA	**Port Blair**	**49.40**	**253**	*e*P	P	22 15 11.4	-0.8
TRF	**Thorofare Moun**	**49.51**	**33**	*e*P	**P**	**22 15 11.9**	**-0.8**
comp=Z,29nm,1.0s							
TWSI	**Taliwang, Sumb**	**49.53**	**212**	P	**P**	**22 15 12.2**	**-0.9**
comp=Z,88nm,1.0s							
COLD	**Coldfoot**	**49.65**	**28**	*e*P	**P**	**22 15 13.6**	**+0.1**
comp=Z,21nm,0.9s							
BMNS	**Besmoynak**	**49.71**	**299**	*i* P	**P**	**22 15 12.6**	**-1.9**
comp=Z,8μm,0.9s							
TKM2	**Tokmak 2**	**49.80**	**299**	*e*P	**P**	**22 15 16.2**	**+0.9**
TKM2				pmax	pmax		
comp=Z,660nm,1.5s							
TKM2	**Tokmak 2**	**49.80**	**299**	*e*P	**P**	**22 15 16.2**	**+0.9**
comp=Z,661nm,1.5s							
TKM2				LR	LR		
comp=Z,2μm,21.0s							
RC01	**Rabbit Creek A**	**49.82**	**37**	*e*P	**P**	**22 15 13.0**	**-1.8**
comp=Z,41nm,1.0s							
BWN	**Browne**	**49.88**	**33**	*e*P	**P**	**22 15 16.8**	**+1.5**
comp=Z,193nm,1.0s							
SEW	**Seward**	**50.01**	**38**	*e*P	**P**	**22 15 18.7**	**+2.5**
comp=Z,54nm,0.9s							
PMR	**Palmer**	**50.09**	**36**	*e*P	**P**	**22 15 17.0**	**+0.2**
PMR				pmax	pmax		
comp=Z,28nm,0.9s							
PMR	**Palmer**	**50.09**	**36**	*e*P	**P**	**22 15 17.0**	**+0.2**
comp=Z,28nm,0.9s							
MCK	**McKinley**	**50.11**	**33**	*e*P	**P**	**22 15 19.0**	**+1.9**
MCK				pmax	pmax		
comp=Z,56nm,1.0s							
MCK	**McKinley**	**50.11**	**33**	*e*P	**P**	**22 15 18.9**	**+1.9**
comp=Z,56nm,1.0s							
RND	**Reindeer**	**50.16**	**34**	*e*P	**P**	**22 15 18.7**	**+1.2**
RND				pmax	pmax		
comp=Z,98nm,1.4s							
RND	**Reindeer**	**50.16**	**34**	*e*P	**P**	**22 15 18.7**	**+1.2**
comp=Z,98nm,1.4s							
BRZS	**Berezniki**	**50.23**	**309**	*i* P	**P**	**22 15 16.6**	**-1.6**
comp=Z,280nm,1.1s							
BRZS				*e*S	**S**	**22 22 24.4**	**-3.4**
BWNR	**Bhubaneshwar**	**50.23**	**268**	*e*P	**P**	**22 15 18.8**	**+0.3**
LHMI	**Lhok Sumawe**	**50.33**	**244**	P	**P**	**22 15 21.5**	**+2.2**
LHMI	**Lhok Sumawe**	**50.33**	**244**	*e*P	**P**	**22 15 19.2**	**0.0**
comp=Z,95nm,1.0s							
MDM	**Murphy Dome**	**50.40**	**31**	*e*P	**P**	**22 15 18.5**	**-0.7**
comp=Z,42nm,1.3s							
SML	**Sawmill**	**50.46**	**36**	*e*P	**P**	**22 15 20.4**	**+0.7**
SML				pmax	pmax		
comp=Z,48nm,0.8s							
SML	**Sawmill**	**50.46**	**36**	*e*P	**P**	**22 15 20.4**	**+0.7**
comp=Z,48nm,0.8s							
KSH	**Kashi**	**50.47**	**295**	P	**P**	**22 15 24.1**	**+3.8**
KSH				*e*pP	sP	22 15 34.3	-0.8
KSH				*e*sP	pP	22 15 38.0	+7.1
KSH				*e*PP	**PP**	**22 17 20.6**	**+4.7**
KSH				PcS	**PcS**	**22 20 37.1**	**+1.7**
KSH				S	**S**	**22 22 35.1**	**+3.5**
KSH				ScS	**ScS**	**22 25 09.0**	**+0.4**
KSH				pmax	pmax		
comp=Z,50nm,0.9s							
KSH				pmax	pmax		
comp=Z,420nm,4.3s							
KSH				LR	LR		
comp=Z,2μm,21.2s							
KSH				LR	LR		
comp=Z,780nm,15.8s							
KSH				LR	LR		
comp=Z,2μm,22.9s							
WRH	**Wood River Hil**	**50.47**	**32**	*e*P	**P**	**22 15 21.2**	**+1.4**
comp=Z,49nm,0.8s							
JAGI	**Jajag, Banyuwa**	**50.51**	**215**	P	**P**	**22 15 19.6**	**-1.0**
JAGI	**Jajag, Banyuwa**	**50.51**	**215**	*e*P	**P**	**22 15 18.4**	**-2.2**
comp=Z,74nm,1.1s							
FRU	**Bishkek**	**50.52**	**299**	⇑*i* P	**P**	**22 15 20.5**	**0.0**
FRU				*i*		22 15 33.5	
FRU				*e*S	**S**	**22 22 36.0**	**+3.8**
FRU				pmax	pmax		
comp=Z,200nm,1.3s							
FRU				MLR	MLR		
comp=E,2μm,20.5s							
COLA	**College**	**50.57**	**32**	*c*eP	**P**	**22 15 21.8**	**+1.4**
COLA				pmax	pmax		
comp=Z,30nm,0.7s							
COLA	**College**	**50.57**	**32**	*e*P	**P**	**22 15 22.8**	**+2.4**
comp=Z,45nm,0.8s							
COLA				LR	LR		
comp=Z,589nm,20.0s							
CCB	**Clear Creek Bu**	**50.59**	**32**	*e*P	**P**	**22 15 22.4**	**+1.7**
comp=Z,17nm,0.8s							
PSI	**Prapat**	**50.59**	**239**	*e*P	**P**	**22 15 20.0**	**-1.4**
PSI				pmax	pmax		
comp=Z,57nm,0.9s							
PSI	**Prapat**	**50.59**	**239**	*e*P	**P**	**22 15 20.0**	**-1.4**
comp=Z,57nm,0.9s							
AAK	**Ala-Archa**	**50.66**	**299**	*e*P	**P**	**22 15 22.1**	**+0.3**
AAK				pmax	pmax		
comp=Z,88nm,1.0s							
AAK	**Ala-Archa**	**50.66**	**299**	*e*P	**P**	**22 15 22.1**	**+0.3**
comp=Z,88nm,1.0s							
AAK				LR	LR		
comp=Z,3μm,20.0s							
GMJI	**Gumukmas**	**50.67**	**216**	P	**P**	**22 15 19.7**	**-2.1**
CHKZ	**Chkalovo**	**50.86**	**314**	*i* P	**P**	**22 15 22.1**	**-0.7**
CHKZ				pmax	pmax		
comp=Z,333nm,1.2s							
BKNI	**Bangkinang**	**50.93**	**235**	P	**P**	**22 15 23.5**	**-0.2**
comp=Z,293nm,0.8s,comp=Z,3μm							
BKNI	**Bangkinang**	**50.93**	**235**	*e*P	**P**	**22 15 23.6**	**-0.2**
comp=Z,240nm,0.9s							
SCM	**Sheep Creek Mo**	**50.93**	**36**	*e*P	**P**	**22 15 23.6**	**+0.2**
SCM				pmax	pmax		
comp=Z,49nm,0.9s							
SCM	**Sheep Creek Mo**	**50.93**	**36**	*e*P	**P**	**22 15 23.6**	**+0.2**
comp=Z,49nm,0.9s							
HDA	**Harding Lake**	**50.97**	**32**	*e*P	**P**	**22 15 21.3**	**-2.2**
comp=Z,76nm,1.1s							
IL1	**Eielson Array**	**50.98**	**32**	*e*P	**P**	**22 15 23.6**	**+0.1**
ILAR	**Eielson Array**	**50.98**	**32**	P	**P**	**22 15 24.5**	**+0.9**
comp=Z,29nm,0.8s,baz=270,slow=6.2,SNR=252							
ILAR	**Eielson Array**	**50.98**	**32**	P	**P**	**22 15 24.5**	**+0.9**
ILAR				pmax	pmax		
comp=Z,30nm,0.8s							
ILB	**Eielson Array**	**50.98**	**32**	*e*P	**P**	**22 15 24.7**	**+1.1**
BRVK	**Borovoye**	**51.16**	**313**	*c i*P	**P**	**22 15 24.4**	**-0.7**
BRVK				pmax	pmax		
comp=Z,284nm,1.0s							
BRVK				pmax	pmax		
comp=Z,200nm,1.0s							
BRVK	**Borovoye**	**51.16**	**313**	*e*P	**P**	**22 15 24.7**	**-0.4**
comp=Z,151nm,0.8s							
BRVK				LR	LR		
comp=Z,1μm,20.0s							
EKS2	**Erkin-Say**	**51.17**	**299**	*e*P	**P**	**22 15 25.8**	**+0.3**
EKS2				pmax	pmax		
comp=Z,53nm,0.8s							
EKS2	**Erkin-Say**	**51.17**	**299**	*e*P	**P**	**22 15 25.8**	**+0.3**
comp=Z,53nm,0.8s							
EKS2				LR	LR		
comp=Z,3μm,22.0s							
PWJI	**Pagerwojo**	**51.26**	**218**	P	**P**	**22 15 24.6**	**-1.6**
comp=Z,348nm,0.8s,comp=Z,3μm							
CMBY	**CAMPBELL BAY**	**51.39**	**248**	*e*P	**P**	**22 15 28.3**	**+1.0**
FYU	**Fort Yukon**	**51.60**	**29**	*e*P	**P**	**22 15 31.1**	**+2.9**
comp=Z,172nm,1.3s							
KLU	**Klutina**	**51.63**	**36**	*e*P	**P**	**22 15 30.7**	**+2.1**
comp=Z,33nm,0.8s							
MID	**Middleton Isla**	**51.64**	**39**	*e*P	**P**	**22 15 26.7**	**-1.8**
MID				pmax	pmax		
comp=Z,160nm,1.1s							
MID	**Middleton Isla**	**51.64**	**39**	*e*P	**P**	**22 15 26.7**	**-1.8**
comp=Z,157nm,1.1s							
PAX	**Paxson**	**51.71**	**34**	*e*P	**P**	**22 15 28.7**	**-0.5**
PAX				pmax	pmax		
comp=Z,28nm,0.8s							
PAX	**Paxson**	**51.71**	**34**	*e*P	**P**	**22 15 28.7**	**-0.5**
comp=Z,28nm,0.8s							
DIV	**Divide**	**51.74**	**36**	*e*P	**P**	**22 15 30.1**	**+0.8**
comp=Z,55nm,0.9s							
EYAK	**Cordova Ski Ar**	**51.81**	**37**	*e*P	**P**	**22 15 28.2**	**-1.6**
comp=Z,44nm,0.8s							
UGM	**Wanagama**	**51.81**	**219**	P	**P**	**22 15 29.0**	**-1.4**
UGM	**Wanagama**	**51.81**	**219**	*e*P	**P**	**22 15 28.1**	**-2.3**
comp=Z,374nm,1.2s							
ZRNK	**Zerenda**	**51.94**	**313**	*i* P	**P**	**22 15 29.9**	**-1.0**
ZRNK				pmax	pmax		
comp=Z,294nm,0.9s							
ZRNK	**Zerenda**	**51.94**	**313**	*e*P	**P**	**22 15 31.0**	**+0.1**
comp=Z,230nm,0.8s							
DDI	**Dehra Dun**	**52.05**	**283**	*e*P	**P**	**22 15 32.9**	**+0.7**
DOT	**Dot Lake**	**52.28**	**33**	*e*P	**P**	**22 15 34.6**	**+1.2**
comp=Z,69nm,0.7s							
BMRM	**Bremner River**	**52.32**	**36**	*e*P	**P**	**22 15 36.0**	**+2.3**
comp=Z,70nm,1.0s							
RAGM	**Ragged Mountai**	**52.36**	**37**	*e*P	**P**	**22 15 36.1**	**+2.1**
RAGM				*e*pP	pP	22 15 37.6	-7.1
SMLA	**Simla**	**52.44**	**284**	*e*P	**P**	**22 15 34.9**	**0.0**
LEM	**Lembang**	**52.47**	**223**	P	P	22 15 40.2	+4.8
MENT	**Mentasta**	**52.51**	**34**	*e*P	**P**	**22 15 36.2**	**+1.1**
comp=Z,50nm,0.9s							
CHLP	**Challavanipeta**	**52.56**	**267**	*e*P	**P**	**22 15 36.3**	**+0.4**
CHLP				IAmb	IAmb	22 15 37.7	
comp=Z,264nm,1.4s							
GSI	**Gunungsitoli**	**52.60**	**239**	*e*P	**P**	**22 15 34.8**	**-1.5**
comp=Z,309nm,1.0s							
DHRM	**DHARAMSHALA**	**52.69**	**286**	*e*P	**P**	**22 15 36.5**	**-0.5**
CISI	**Cisompet, Garu**	**52.96**	**222**	*e*P	**P**	**22 15 36.2**	**-2.7**
comp=Z,52nm,0.7s							
KASI	**Kota Agung**	**53.22**	**227**	P	**P**	**22 15 38.4**	**-2.4**
KKAR	**Karatay Array**	**53.34**	**301**	*e*P	**P**	**22 15 41.7**	**+0.2**
KKAR	**Karatay Array**	**53.34**	**301**	*e*P	**P**	**22 15 41.7**	**+0.2**
CGJI	**Cibinong**	**53.39**	**225**	P	**P**	**22 15 41.0**	**-1.0**
BALM	**Baldy**	**53.40**	**36**	*e*P	**P**	**22 15 40.8**	**-1.0**
BALM				pmax	pmax		
comp=Z,34nm,1.0s							
BALM	**Baldy**	**53.40**	**36**	*e*P	**P**	**22 15 40.8**	**-1.0**
comp=Z,34nm,1.0s							
EGAK	**Eagle**	**53.43**	**31**	*e*P	**P**	**22 15 42.0**	**+0.3**
comp=Z,68nm,1.4s							
EGAK				LR	LR		
comp=Z,659nm,21.0s							
VIS	**Vishakhapatnam**	**53.56**	**266**	*e*P	**P**	**22 15 44.0**	**+0.7**
IUG	**Iuzhnay**	**53.97**	**300**	*i* P	**P**	**22 15 43.8**	**-2.4**
comp=Z,2μm,1.0s							
IUG				*e*S	**S**	**22 23 15.3**	**-4.2**
BRLS	**Borolday**	**54.02**	**301**	*i* P	**P**	**22 15 44.6**	**-1.8**
comp=Z,63nm,0.9s							
BRLS				*e*S	**S**	**22 23 16.8**	**-3.1**
DAWY	**Dawson**	**54.29**	**32**	*e*P	**P**	**22 15 49.8**	**+1.7**
comp=Z,12nm,0.8s							
OPA	**Opana**	**54.75**	**87**	*e*P	**P**	**22 15 50.3**	**-1.7**
OPA				pmax	pmax		
comp=Z,180nm,1.1s							
OPA	**Opana**	**54.75**	**87**	*e*P	**P**	**22 15 50.3**	**-1.7**
comp=Z,178nm,1.1s							
KIP	**Kipapa**	**54.87**	**87**	*e*P	**P**	**22 15 52.0**	**-0.9**
KIP				pmax	pmax		
comp=Z,440nm,2.0s							
KIP	**Kipapa**	**54.87**	**87**	*e*P	**P**	**22 15 52.0**	**-0.9**
comp=Z,438nm,2.0s							
HON	**Honolulu**	**54.93**	**88**	*e*P	**P**	**22 15 51.3**	**-2.0**
HON				pmax	pmax		
comp=Z,200nm,1.0s							
HON	**Honolulu**	**54.93**	**88**	*e*P	**P**	**22 15 51.3**	**-2.0**
comp=Z,203nm,1.0s							
PVM	**Polavaram**	**55.19**	**267**	*e*P	**P**	**22 15 55.4**	**+0.2**
PVM				IAmb	IAmb	22 15 56.1	
comp=Z,98nm,0.9s							
NGP	**Nagpur**	**55.32**	**272**	*e*P	**P**	**22 15 55.6**	**-0.5**
FITZ	**Fitzroy Crossi**	**55.32**	**198**	*e*P	**P**	**22 15 56.6**	**+0.7**
comp=Z,128nm,0.8s							
WRAB	**Tennant Creek**	**55.59**	**187**	*e*P	**P**	**22 15 58.0**	**+0.1**
WRAB				pmax	pmax		
comp=Z,140nm,0.9s							
WRAB	**Tennant Creek**	**55.59**	**187**	*e*P	**P**	**22 15 58.0**	**+0.1**
comp=Z,144nm,0.8s							
WRAB				LR	LR		
comp=Z,1μm,21.0s							
WB2	**Warramunga Arr**	**55.60**	**187**	*e*P	**P**	**22 15 58.1**	**+0.1**
comp=Z,149nm,0.8s							
WRA	**Warramunga Arr**	**55.60**	**187**	P	**P**	**22 15 58.0**	**0.0**
comp=Z,82nm,0.9s,baz=2.7,slow=7.4,SNR=196							
WRA				LR	LR	22 37 16.4	
comp=Z,422nm,21.5s,baz=10.0,slow=33							
WRA	**Warramunga Arr**	**55.60**	**187**	P	**P**	**22 15 58.0**	**0.0**
WRA				pmax	pmax		
comp=Z,82nm,0.9s							
WRA				MLR	MLR		
comp=Z,422nm,21.5s							
BHPL	**Bhopal**	**55.64**	**276**	*e*P	**P**	**22 15 57.8**	**-0.6**
BHPL				IAmb	IAmb	22 15 59.1	
comp=Z,104nm,1.4s							
CTAO	**Charters Tower**	**55.66**	**174**	*e*P	**P**	**22 16 00.2**	**+1.8**
CTAO				pmax	pmax		
comp=Z,81nm,1.6s							
CTAO	**Charters Tower**	**55.66**	**174**	*e*P	**P**	**22 16 00.2**	**+1.8**
comp=Z,81nm,1.6s							
CTAO				LR	LR		
comp=Z,982nm,21.0s							
SVE	**Sverdlovsk**	**55.83**	**319**	*d i*P	**P**	**22 15 59.8**	**+0.6**
SVE				*e*S	**S**	**22 23 41.8**	**-1.9**
SVE				pmax	pmax		
comp=Z,312nm,0.9s							
SVE				MLR	MLR		
comp=Z,1μm,17.0s							
INK	**Inuvik**	**55.89**	**27**	P	**P**	**22 16 00.9**	**+1.4**
comp=Z,26nm,0.9s,baz=299,slow=6.5,SNR=43							
INK				LR	LR	22 40 23.4	
comp=Z,571nm,21.6s,baz=270,slow=36							
INK	**Inuvik**	**55.89**	**27**	*e*P	**P**	**22 16 01.1**	**+1.6**
INK				pmax	pmax		
comp=Z,99nm,1.4s							
INK	**Inuvik**	**55.89**	**27**	*e*P	**P**	**22 16 01.1**	**+1.6**
comp=Z,99nm,1.4s							
RPR	**Rampur**	**56.26**	**270**	*e*P	**P**	**22 16 02.0**	**-0.8**
RPR				IAmb	IAmb	22 16 03.5	
comp=Z,151nm,0.7s							
SRSP	**Sriramsagar**	**57.00**	**271**	*e*P	**P**	**22 16 07.8**	**-0.3**
SRSP				IAmb	IAmb	22 16 09.1	
comp=Z,302nm,1.0s							
ARU	**Arti**	**57.04**	**319**	*c i*P	**P**	**22 16 07.9**	**+0.1**
ARU						22 17 00.7	
ARU						22 18 13.6	
ARU				S	**S**	**22 24 01.8**	**+2.0**
ARU				SS	**SS**	**22 27 51.0**	**+2.9**
ARU				pmax	pmax		
comp=Z,406nm,1.0s							
ARU				MLR	MLR		
comp=Z,2μm,18.0s							
ARU	**Arti**	**57.04**	**319**	*e*P	**P**	**22 16 08.0**	**+0.1**
comp=Z,333nm,0.9s							
ARU				LR	LR		
comp=Z,1μm,19.0s							
SOKR	**Solikamsk**	**57.09**	**323**	*c i*P	**P**	**22 16 06.6**	**-1.5**
SOKR				pmax	pmax		
comp=Z,217nm,1.1s							
SOKR				MLR	MLR		
comp=Z,2μm,20.0s							
SKAG	**Skagway**	**57.15**	**37**	*e*P	**P**	**22 16 08.6**	**0.0**
comp=Z,39nm,1.0s							
ADKI	**Addanki**	**57.27**	**266**	*e*P	**P**	**22 16 10.4**	**+0.3**
ADKI				IAmb	IAmb	22 16 11.2	
comp=Z,70nm,0.9s							
KBL	**Kabul**	**57.39**	**292**	*e*P	**P**	**22 16 10.3**	**-0.7**
KBL				pmax	pmax		
comp=Z,53nm,0.8s							
KBL	**Kabul**	**57.39**	**292**	*e*P	**P**	**22 16 10.3**	**-0.7**
comp=Z,53nm,0.8s							
NJS	**Nagarjunasagar**	**57.44**	**268**	*e*P	**P**	**22 16 11.0**	**-0.2**
NJS				IAmb	IAmb	22 16 11.8	
comp=Z,91nm,0.8s							
HYB	**Hyderabad**	**57.60**	**269**	*i* P	**P**	**22 16 11.0**	**-1.5**
HYB	**Hyderabad**	**57.60**	**269**	*e*P	**P**	**22 16 12.3**	**-0.1**
HYBB	**Hyderabad (bro**	**57.60**	**269**	*e*P	**P**	**22 16 12.1**	**-0.4**
HYBB				IAmb	IAmb	22 16 13.2	
comp=Z,191nm,0.8s							
POHA	**Pohakuloa**	**57.72**	**88**	*e*P	**P**	**22 16 11.7**	**-1.8**
comp=Z,197nm,1.3s							
SRLM	**Srisailam**	**58.02**	**267**	*e*P	**P**	**22 16 14.9**	**-0.5**
SRLM				IAmb	IAmb	22 16 16.2	
comp=Z,130nm,1.1s							
RCLA	**Racherla**	**58.31**	**267**	*e*P	**P**	**22 16 17.2**	**-0.2**
RCLA				IAmb	IAmb	22 16 18.5	
comp=Z,134nm,0.9s							
ABKAR	**Akbulak array**	**58.41**	**311**	*e*P	**P**	**22 16 17.5**	**-0.1**
MDRS	**Chennai**	**58.56**	**264**	*e*P	**P**	**22 16 20.0**	**+0.9**
MDRS				IAmb	IAmb	22 16 20.7	
comp=Z,49nm,0.8s							

KBS	**Kingsbay**	**61.94**	**350**	*e*P	**P**	**22 16 42.9**	**+1.6**
	comp=Z,123nnm,0.9s						
KBS				LR	LR		
	comp=Z,653nnm,19.0s						
DZM	**Mont Dzumac**	**62.35**	**153**	*e*LR	LR	22 35 22.6	
	comp=Z,2μm,25.9s						
DZM	**Mont Dzumac**	**62.35**	**153**	*e*P	**P**	**22 16 45.7**	**+0.9**
	comp=Z,94nm,1.3s						
GOA	**Goa**	**62.46**	**270**	*e*P	**P**	**22 16 46.0**	**+0.3**
HSPB	**Hornsund (broa**	**62.70**	**348**	*e*P	**P**	**22 16 45.9**	**-0.5**
HSPB	**Hornsund (broa**	**62.70**	**348**	*e*P	**P**	**22 16 47.6**	**+1.2**
LVZ	**Lovozero**	**63.15**	**336**	*e*P	**P**	**22 16 49.1**	**-0.5**
LVZ				pmax	pmax		
	comp=Z,150nnm,1.4s						
LVZ	**Lovozero**	**63.15**	**336**	*e*P	**P**	**22 16 49.1**	**-0.5**
	comp=Z,146nnm,1.4s						
LVZ				LR	LR		
	comp=Z,1μm,20.0s						
TMCR	**Tamitsa**	**63.70**	**332**	*e*P	**P**	**22 16 53.3**	**+0.1**
TMCR				pmax	pmax		
	comp=Z,102nnm,0.8s						
APA	**Apatity**	**63.73**	**336**⇓	*i*P	**P**	**22 16 52.0**	**-1.4**
APA				pmax	pmax		
	comp=Z,100nnm,0.8s						
APA				MLR	MLR		
	comp=Z,1μm,20.0s						
MSVF	**Nonsavu**	**63.79**	**140**	PFAKE		22 17 10.0	+16
MSVF				LR	LR		
	comp=Z,1μm,19.0s						
TRD	**Trivandrum**	**63.79**	**261**	*e*P	**P**	**22 16 54.8**	**+0.2**
GEYT	**Alibeck**	**64.02**	**299**	P	**P**	**22 16 55.9**	**0.0**
	comp=Z,65nnm,1.1s,baz=46,slow=4.2,SNR=112						
RES	**Resolute Bay**	**64.09**	**14**	*e*P	**P**	**22 16 56.6**	**+0.9**
RES				pmax	pmax		
	comp=Z,100nnm,1.2s						
RES	**Resolute Bay**	**64.09**	**14**	*e*P	**P**	**22 16 56.6**	**+0.9**
	comp=Z,101nnm,1.2s						
KEV	**Kevo**	**64.55**	**339**	*e*P	**P**	**22 16 59.1**	**+0.4**
KEV				pmax	pmax		
	comp=Z,82nnm,1.0s						
KEV	**Kevo**	**64.55**	**339**	*e*P	**P**	**22 16 59.1**	**+0.4**
	comp=Z,82nnm,0.9s						
KEV				LR	LR		
	comp=Z,1μm,22.0s						
KLMR	**Klimovskoe**	**64.64**	**328**⇑	*i*P	**P**	**22 16 59.2**	**-0.2**
KLMR				*e*		22 17 31.6	
KLMR				*e*		22 19 22.7	
KLMR				pmax	pmax		
	comp=Z,80nnm,0.8s						
HAMF	**Hammerfest**	**64.95**	**341**	*e*P	**P**	**22 17 00.9**	**-0.4**
HAMF				IAmb	IAmb	22 17 02.3	
	comp=Z,72nnm,1.0s						
ARA0	**ARCESS Array S**	**65.11**	**339**	*e*P	**P**	**22 17 02.9**	**+0.5**
ARCES	**ARCESS Array B**	**65.11**	**339**	P	**P**	**22 17 02.7**	**+0.3**
	comp=Z,58nnm,0.8s,baz=57,slow=8.8,SNR=74						
ARE0	**ARCESS Array S**	**65.11**	**339**	*e*P	**P**	**22 17 03.0**	**+0.6**
ARE0				IAmb	IAmb	22 17 03.8	
	comp=Z,83nnm,0.9s						
ARE0	**ARCESS Array S**	**65.11**	**339**	*e*P	**P**	**22 17 03.0**	**+0.6**
	comp=Z,87nnm,0.9s						
YKW3	**Yellowknife Ar**	**65.27**	**30**	*e*P	**P**	**22 17 03.6**	**+0.1**
	comp=Z,28nnm,1.2s						
YKA	**Yellowknife Ar**	**65.30**	**30**	P	**P**	**22 17 04.6**	**+0.9**
	comp=Z,12nnm,0.8s,baz=297,slow=6.5,SNR=96						
YKA				PKPPKP	**P'P'df**	**22 45 43.2**	**-7.6**
	comp=Z,1.3nnm,0.9s,baz=117,slow=2.8,SNR=8.3						
YKA				LR	LR	22 46 47.7	
	comp=Z,19nnm,21.7s,baz=0.0,slow=37						
YKB5	**Yellowknife Ar**	**65.30**	**30**	*e*P	**P**	**22 17 03.6**	**-0.1**
KTK1	**Kautokeino**	**66.07**	**340**	*e*P	**P**	**22 17 08.5**	**-0.1**
KTK1				IAmb	IAmb	22 17 09.9	
	comp=Z,104nnm,1.1s						
ARMA	**Armidale**	**66.50**	**170**	*e*P	**P**	**22 17 12.1**	**+0.3**
	comp=Z,28nnm,0.9s						
AFI	**Afiamalu**	**66.69**	**129**	PFAKE		22 17 30.0	+17
AFI				LR	LR		
	comp=Z,860nnm,20.0s						
TRO	**Tromso**	**66.85**	**341**	*e*P	**P**	**22 17 13.3**	**-0.2**
TRO				IAmb	IAmb	22 17 14.6	
	comp=Z,50nnm,0.9s						
DAG	**Danmarks Havn**	**67.12**	**355**⇑	*i*P	**P**	**22 17 15.5**	**+0.3**
	comp=Z,37nnm,0.9s						
DAG	**Danmarks Havn**	**67.12**	**355**⇑	*i*P	**P**	**22 17 15.5**	**+0.3**
DAG				pmax	pmax		
	comp=Z,31nnm,0.9s						
STKA	**Stephens Creek**	**67.16**	**179**	P	**P**	**22 17 16.4**	**+0.5**
	comp=Z,24nm,0.6s,baz=356,slow=7.7,SNR=14						
STKA				LR	LR	22 47 18.9	
	comp=Z,427nnm,20.1s,baz=359,slow=36						
STKA	**Stephens Creek**	**67.16**	**179**	*e*P	**P**	**22 17 16.8**	**+0.9**
STKA				pmax	pmax		
	comp=Z,6.0nm,0.7s						
STKA	**Stephens Creek**	**67.16**	**179**	*e*P	**P**	**22 17 16.8**	**+0.9**
	comp=Z,5.5nm,0.7s						
PGC	**Sidney**	**67.72**	**45**	*e*P	**P**	**22 17 19.8**	**+0.4**
PGC				*ep*P	**pP**	**22 17 27.6**	**-2.8**
OSR	**Olympics--Salm**	**67.97**	**47**	P	**P**	**22 17 24.2**	**+3.0**
MOS	**Moscow**	**68.03**	**324**	*e*P	**P**	**22 17 20.2**	**-1.1**
MOS				*e*		22 17 46.7	
MOS				*e*		22 19 48.6	
MOS				*i*S	**S**	**22 26 13.9**	**-4.0**
MOS				pmax	pmax		
	comp=Z,222nnm,1.3s						
MOS				pmax	pmax		
	comp=Z,400nnm,1.8s						
MOS				smax	smax		
	comp=N,800nm,3.3s						
MOS				MLR	MLR		
	comp=Z,1μm,17.0s						
NLWA	**Neilton Lookou**	**68.08**	**47**	*e*P	**P**	**22 17 23.4**	**+1.6**
	comp=Z,41nm,0.9s						
NLWA				LR	LR		
	comp=Z,941nnm,20.0s						
BBOO	**Buckleboo**	**68.23**	**184**	*e*P	**P**	**22 17 23.7**	**+1.1**
	comp=Z,164nnm,1.6s						
VRH	**Novokhopyorsk**	**68.24**	**318**	*e*P	**P**	**22 17 21.9**	**-0.7**
VRH				pmax	pmax		
	comp=Z,140nnm,0.6s						
MBW	**Mount Baker**	**68.55**	**45**	P	**P**	**22 17 26.6**	**+1.8**
E03A	**Lebam**	**68.68**	**47**	*e*P	**P**	**22 17 25.8**	**+0.4**
	comp=Z,71nm,1.2s						
B05A	**Bryant**	**68.69**	**45**	P	**P**	**22 17 27.7**	**+2.2**
	baz=300						
JCW	**Jim Creek**	**68.83**	**45**	P	**P**	**22 17 28.5**	**+2.1**
OBN	**Obninsk**	**68.88**	**323**	*ce*P	**P**	**22 17 26.4**	**-0.1**
OBN				*i*		22 17 57.9	
OBN				*i*		22 20 00.2	
OBN				*i*S	S	22 26 18.2	-10
OBN				pmax	pmax		
	comp=Z,85nnm,0.9s						
OBN				MLR	MLR		
	comp=Z,1μm,16.0s						
OBN	**Obninsk**	**68.88**	**323**	*e*P	**P**	**22 17 26.5**	**-0.1**
	comp=Z,449nnm,1.7s						
OBN				LR	LR		
	comp=Z,978nnm,20.0s						
LPSR	**Galich'ya Gora**	**69.01**	**320**	*e*P	**P**	**22 17 27.0**	**-0.4**
LPSR				pmax	pmax		
	comp=Z,150nnm,0.8s						
PUL	**Pulkovo**	**69.11**	**329**	*c i*P	**P**	**22 17 28.0**	**+0.1**
PUL				pmax	pmax		
	comp=Z,147nnm,1.0s						
D05A	**Enumclaw**	**69.30**	**46**	*e*P	**P**	**22 17 29.7**	**+0.4**
	comp=Z,44nm,1.0s						
LOF	**Lofoten**	**69.31**	**341**	*e*P	**P**	**22 17 30.5**	**+1.6**
KULLO	**Kullorsuaq**	**69.42**	**5**⇑	*i*P	**P**	**22 17 30.2**	**+0.6**
	comp=Z,117nnm,1.1s						
KULLO	**Kullorsuaq**	**69.42**	**5**⇑	*i*P	**P**	**22 17 30.2**	**+0.6**
KULLO				pmax	pmax		
	comp=Z,120nnm,1.1s						
TDL	**Tradedollar La**	**69.58**	**47**	P	**P**	**22 17 33.7**	**+2.4**
VSR	**Storozhevoye**	**69.61**	**319**	*e*P	**P**	**22 17 30.5**	**-0.7**
VSR				pmax	pmax		
	comp=Z,180nnm,0.9s						
LON	**Longmire**	**69.62**	**47**	*e*P	**P**	**22 17 31.3**	**-0.1**
LON				pmax	pmax		
	comp=Z,14nm,1.0s						
LON	**Longmire**	**69.62**	**47**	*e*P	**P**	**22 17 31.3**	**-0.1**
	comp=Z,14nm,1.0s						
F04A	**Amboy**	**69.67**	**48**	*e*P	**P**	**22 17 30.9**	**-0.8**
	comp=Z,38nnm,0.9s						
FIA1	**FINESS Array S**	**69.78**	**332**	*e*P	**P**	**22 17 32.0**	**0.0**
FINES	**FINESS Array B**	**69.79**	**332**	P	**P**	**22 17 32.1**	**0.0**
	comp=Z,59nm,0.8s,baz=42,slow=6.9,SNR=206						
FINES				PP	**PP**	**22 20 00.2**	**-5.8**
	comp=Z,18nm,1.0s,baz=46,slow=12,SNR=3.1						
COR	**Corvallis**	**69.82**	**49**	*e*P	**P**	**22 17 31.3**	**-1.2**
COR				pmax	pmax		
	comp=Z,56nm,1.0s						
COR	**Corvallis**	**69.82**	**49**	*e*P	**P**	**22 17 31.3**	**-1.2**
	comp=Z,56nm,1.0s						
GLK	**Glacier Lake**	**69.84**	**47**	P	**P**	**22 17 35.0**	**+2.2**
B08A	**Colville Reser**	**70.23**	**44**	*e*P	**P**	**22 17 36.0**	**+0.9**
	comp=Z,31nm,1.1s						
I03D	**Drain, OR**	**70.24**	**50**	P	**P**	**22 17 37.9**	**+2.8**
	baz=301,SNR=6.3						
EBG	**Ellensburg**	**70.27**	**46**	P	**P**	**22 17 37.8**	**+2.3**
SAW	**Saint Andrews**	**70.54**	**45**	P	**P**	**22 17 38.8**	**+1.8**
GOF	**Gofitskoye**	**70.60**	**312**⇑	*i*P	**P**	**22 17 37.6**	**+0.2**
GOF				pmax	pmax		
	comp=Z,243nnm,1.0s						
KONS	**Konsvik**	**70.61**	**340**	*e*P	**P**	**22 17 38.1**	**+1.2**
STOK	**Stokkvaagen**	**70.76**	**340**	*e*P	**P**	**22 17 38.0**	**+0.1**
I04A	**Tendick Farm,**	**70.77**	**50**	P	**P**	**22 17 41.0**	**+2.5**
	baz=301,SNR=9.1						
L02D	**Cave Junction,**	**70.86**	**52**	P	**P**	**22 17 41.6**	**+2.6**
	baz=301						
BIDO	**Bidbid**	**70.93**	**286**	P	**P**	**22 17 40.2**	**+0.4**
	SNR=18						
BIDO	**Bidbid**	**70.93**	**286**	P	**P**	**22 17 40.2**	**+0.4**
	SNR=18						
DGRG	**David-gareji**	**71.00**	**308**	P	**P**	**22 17 40.9**	**+0.9**
DGRG	**David-gareji**	**71.00**	**308**	*e*P	**P**	**22 17 40.8**	**+0.9**
CAN	**Canberra**	**71.01**	**173**	*e*P	**P**	**22 17 41.5**	**+1.7**
CAN				pmax	pmax		
	comp=Z,99nnm,1.4s						
CAN	**Canberra**	**71.01**	**173**	*e*P	**P**	**22 17 41.5**	**+1.7**
	comp=Z,99nnm,1.4s						
CAN				LR	LR		
	comp=Z,1μm,22.0s						
CROR	**Criterion Ridg**	**71.03**	**48**	P	**P**	**22 17 42.3**	**+2.3**
HUMO	**Hull Mountain**	**71.04**	**51**	*e*P	**P**	**22 17 42.4**	**+2.2**
HUMO				*e*PcP	**PcP**	**22 18 00.6**	**+0.3**
GUDG	**Gudauri**	**71.05**	**309**	P	**P**	**22 17 41.8**	**+1.3**
NCK	**Nalchik**	**71.07**	**310**	*c i*P	**P**	**22 17 40.1**	**-0.2**
NCK				pmax	pmax		
	comp=Z,119nnm,1.0s						
G06A	**Carlson Farm,**	**71.11**	**48**	*e*P	**P**	**22 17 41.4**	**+0.8**
	comp=Z,34nm,1.3s						
BANOM	**Banah**	**71.12**	**289**	*i*P	**P**	**22 17 41.4**	**+0.5**
	SNR=35						
BANOM	**Banah**	**71.12**	**289**	P	**P**	**22 17 41.5**	**+0.7**
	SNR=11						
BANOM	**Banah**	**71.12**	**289**	P	**P**	**22 17 41.5**	**+0.7**
	SNR=11						
C09A	**Chrisman Ranch**	**71.13**	**44**	*e*P	**P**	**22 17 42.4**	**+1.8**
	comp=Z,43nm,1.1s						
HAWA	**Hanford**	**71.15**	**46**	*e*P	**P**	**22 17 41.8**	**+1.1**
	comp=Z,24nm,1.0s						
HAWA				LR	LR		
	comp=Z,648nnm,21.0s						
D08A	**Wollman Farm,**	**71.16**	**45**	*e*P	**P**	**22 17 41.3**	**+0.6**
	comp=Z,20nm,0.8s						
SMDO	**Samad**	**71.23**	**285**	P	**P**	**22 17 41.9**	**+0.3**
	SNR=13						
SMDO	**Samad**	**71.23**	**285**	P	**P**	**22 17 41.9**	**+0.3**
	SNR=13						
ZEI	**Tsey**	**71.25**	**309**	*e*P	**P**	**22 17 40.5**	**-1.1**
ZEI				pmax	pmax		
	comp=Z,160nnm,0.8s						
TBLG	**Delisi**	**71.26**	**308**	P	**P**	**22 17 41.9**	**+0.4**
TBLG	**Delisi**	**71.26**	**308**	*e*P	**P**	**22 17 41.8**	**+0.4**
VSU	**Vasula**	**71.37**	**330**	*c i*P	**P**	**22 17 41.7**	**0.0**
VSU				pmax	pmax		
	comp=Z,373nnm,1.0s						
KBZ	**Khabaz**	**71.38**	**311**	P	**P**	**22 17 42.3**	**+0.2**
	comp=Z,128nnm,0.9s,baz=63,slow=4.8,SNR=211						
KIV	**Kislovodsk**	**71.39**	**311**	*i*P	**P**	**22 17 42.8**	**+0.5**
	SNR=42						
KIV	**Kislovodsk**	**71.39**	**311**	*c i*P	**P**	**22 17 42.7**	**+0.4**
KIV				*i*		22 18 01.8	
KIV				pmax	pmax		
	comp=Z,276nnm,1.0s						
KIV				MLR	MLR		
	comp=Z,939nnm,19.0s						
KIV	**Kislovodsk**	**71.39**	**311**	*e*P	**P**	**22 17 43.0**	**+0.6**
	comp=Z,297nnm,0.9s						
KIV				LR	LR		
	comp=Z,990nnm,20.0s						
KHMM	**Horse Mountain**	**71.44**	**53**	*e*P	**P**	**22 17 42.4**	**-0.4**
	comp=Z,98nnm,1.7s						
NEW	**Newport**	**71.53**	**44**	P	**P**	**22 17 44.3**	**+1.3**
	comp=Z,20nm,1.0s,baz=316,slow=5.2,SNR=17						
NEW	**Newport**	**71.53**	**44**	P	**P**	**22 17 44.9**	**+1.9**
	baz=303						
NEW	**Newport**	**71.53**	**44**	*e*P	**P**	**22 17 43.0**	**0.0**
	comp=Z,25nm,1.0s						
NEW				LR	LR		
	comp=Z,597nnm,20.0s						
ONI	**Oni**	**71.63**	**309**	P	**P**	**22 17 44.6**	**+0.9**
ONI	**Oni**	**71.63**	**309**	*e*P	**P**	**22 17 44.6**	**+0.9**
YBH	**Yreka Blue Hor**	**71.65**	**52**	P	**P**	**22 17 45.7**	**+1.8**
	comp=Z,15nm,0.9s,baz=320,slow=1.7,SNR=17						
YBH	**Yreka Blue Hor**	**71.65**	**52**	*e*P	**P**	**22 17 46.0**	**+2.1**
YBH				pmax	pmax		
	comp=Z,15nm,1.0s						
YBH	**Yreka Blue Hor**	**71.65**	**52**	*e*P	**P**	**22 17 46.0**	**+2.1**
	comp=Z,15nm,1.0s						
NWAO	**Narrogin (SRO)**	**71.66**	**201**	*e*P	**P**	**22 17 44.1**	**+0.4**
NWAO				pmax	pmax		
	comp=Z,310nnm,1.6s						
NWAO	**Narrogin (SRO)**	**71.66**	**201**	*e*P	**P**	**22 17 44.1**	**+0.4**
	comp=Z,311nnm,1.6s						
UOSS	**Minazif**	**71.69**	**288**	*e*P	**P**	**22 17 43.9**	**-0.4**
	comp=Z,7.2nm,1.0s						
M02C	**Callahan**	**71.74**	**52**	P	**P**	**22 17 47.4**	**+2.9**
	baz=302,SNR=9.8						
NEY	**Neytrino**	**71.74**	**310**	*ce*P	**P**	**22 17 44.8**	**+0.3**
NEY				pmax	pmax		
	comp=Z,12nm,0.9s						
J05D	**Fort Rock, OR**	**71.77**	**50**	P	**P**	**22 17 47.5**	**+2.8**
	baz=302,SNR=13						
HATD	**Hatta, Dubai**	**71.81**	**288**	*i*P	**P**	**22 17 45.4**	**+0.4**
	SNR=77						
ASHO	**Ashiyiah**	**71.94**	**288**	*i*P	**P**	**22 17 46.1**	**+0.3**
	SNR=61						
ASHO	**Ashiyiah**	**71.94**	**288**	P	**P**	**22 17 45.1**	**-0.8**
	SNR=32						
ASHO	**Ashiyiah**	**71.94**	**288**	P	**P**	**22 17 45.1**	**-0.8**
	SNR=32						
N02D	**Trinity Center**	**72.05**	**52**	P	**P**	**22 17 49.3**	**+2.9**
	baz=302,SNR=6.9						
G08A	**Pilot Rock**	**72.08**	**47**	*e*P	**P**	**22 17 46.3**	**-0.2**
	comp=Z,33nm,1.5s						
SUMG	**Summit**	**72.08**	**360**	*i*P	**P**	**22 17 47.0**	**+0.7**
SUMG	**Summit**	**72.08**	**360**	*e*P	**P**	**22 17 47.6**	**+1.3**
SUMG				pmax	pmax		
	comp=Z,88nnm,1.1s						
SUMG	**Summit**	**72.08**	**360**	*e*P	**P**	**22 17 47.6**	**+1.3**
	comp=Z,88nnm,1.1s						
GNI	**Garni**	**72.08**	**307**	*i*P	**P**	**22 17 47.6**	**+1.0**
	SNR=47						
GNI	**Garni**	**72.08**	**307**	*ce*P	**P**	**22 17 47.7**	**+1.0**
GNI				pmax	pmax		
	comp=Z,560nnm,1.3s						
GNI	**Garni**	**72.08**	**307**	P	**P**	**22 17 47.9**	**+1.2**
	SNR=58						
GNI	**Garni**	**72.08**	**307**	P	**P**	**22 17 47.9**	**+1.2**
	SNR=58						
GNI	**Garni**	**72.08**	**307**	*e*P	**P**	**22 17 47.9**	**+1.2**
	comp=Z,173nnm,1.0s						
GNI				LR	LR		
	comp=Z,2μm,19.0s						
NAZ	**Nazwa, Dubai**	**72.09**	**288**	*i*P	**P**	**22 17 46.7**	**0.0**
	SNR=11						
M04C	**Macdoel**	**72.18**	**51**	P	**P**	**22 17 49.6**	**+2.5**
	baz=302,SNR=14						
AKH	**Akhalkalaki**	**72.23**	**308**⇑	*i*P	**P**	**22 17 48.3**	**+0.8**
BGD	**Bogdanovka**	**72.24**	**308**	P	P	22 17 40.9	-6.7
FAQ	**Al Faqa, Dubai**	**72.27**	**288**	*i*P	**P**	**22 17 47.7**	**-0.1**
	SNR=26						
K05A	**Summer Lake**	**72.28**	**50**	*e*P	**P**	**22 17 49.1**	**+1.4**
	comp=Z,71nm,1.3s						
WDC	**Whiskeytown Da**	**72.37**	**53**	*e*P	**P**	**22 17 49.5**	**+1.4**
WDC				pmax	pmax		
	comp=Z,21nm,1.0s						
WDC	**Whiskeytown Da**	**72.37**	**53**	*e*P	**P**	**22 17 49.5**	**+1.4**
	comp=Z,21nm,1.0s						
NSS	**Namsos**	**72.39**	**339**	*e*P	**P**	**22 17 47.4**	**-0.3**
F10A	**Beach Ranch, E**	**72.73**	**46**	*e*P	**P**	**22 17 52.6**	**+2.3**
	comp=Z,14nm,0.8s						
O03D	**Paynes Creek**	**73.00**	**52**	P	**P**	**22 17 53.7**	**+1.7**
	baz=303						
BSMT	**Bassoo Peak**	**73.06**	**43**	P	**P**	**22 17 54.2**	**+1.8**
MOD	**Modoc Plateau**	**73.09**	**50**	*e*P	**P**	**22 17 55.0**	**+2.4**
	comp=Z,14nm,0.8s						
BLMT	**Blacktail Moun**	**73.21**	**43**	*e*P	**P**	**22 17 54.4**	**+1.2**
IZAR	**Zarasai**	**73.28**	**327**	*e*P	**P**	**22 17 53.8**	**+0.6**
IZAR				IAmb	IAmb	22 17 55.3	
	comp=Z,73nm,1.2s						
BMO	**Blue Mountains**	**73.30**	**47**	*e*P	**P**	**22 17 56.0**	**+2.3**
BMO				pmax	pmax		
	comp=Z,18nm,0.9s						
BMO	**Blue Mountains**	**73.30**	**47**	*e*P	**P**	**22 17 56.0**	**+2.3**
	comp=Z,18nm,0.9s						
BMO				LR	LR		
	comp=Z,526nnm,20.0s						
MICGM	**Minsk**	**73.33**	**326**⇓	*e*P	**P**	**22 17 53.0**	**-0.5**
MICGM				PM		22 17 54.0	
	comp=Z,0.3nm,1.0s						
MICGM				*e*LR	LR	22 53 00.0	
MNK	**Minsk**	**73.33**	**326**⇓	*e*P	**P**	**22 17 53.0**	**-0.5**
MNK				pmax	pmax		
	comp=Z,270nnm,1.0s						
IDID	**Didziasalis**	**73.34**	**327**	*e*P	**P**	**22 17 54.0**	**+0.5**
IDID				IAmb	IAmb	22 17 55.5	
	comp=Z,37nm,0.9s						
JTMT	**Jette**	**73.40**	**43**	*e*P	**P**	**22 17 56.3**	**+2.0**
SOC	**Sochi**	**73.41**	**312**	*e*P	**P**	**22 17 52.7**	**-1.5**
SOC				*e**SP	**pP**	**22 18 07.1**	**+1.8**
SOC				*e*		22 20 41.6	
SOC				*e*PPP	PPP	22 22 27.4	
SOC				*e*S	**S**	**22 27 17.6**	**-3.2**
SOC				pmax	pmax		
	comp=Z,106nnm,1.0s						
SOC				MLR	MLR		
	comp=Z,1μm,21.0s						
SCO	**Scoresbysund**	**73.44**	**354**	*i*P	**P**	**22 17 55.4**	**+1.5**
	comp=Z,48nnm,1.1s						
SCO	**Scoresbysund**	**73.44**	**354**	*i*P	**P**	**22 17 55.4**	**+1.5**
SCO				pmax	pmax		
	comp=Z,48nm,1.1s						
ISAL	**Salakas**	**73.45**	**327**	*e*P	**P**	**22 17 54.8**	**+0.6**
ISAL				IAmb	IAmb	22 17 56.3	
	comp=Z,91nm,1.1s						
YBMT	**Yellow Bay**	**73.49**	**43**	*e*P	**P**	**22 17 57.0**	**+2.2**
NACGM	**Naroch**	**73.58**	**327**	*e*	**P**	**22 17 56.0**	**+1.0**
NACGM				*e*LQ	LQ	22 33 44.0	
NACGM				*e*LR	LR	22 39 05.0	
ORV	**Oroville**	**73.59**	**53**	*e*P	**P**	**22 17 57.7**	**+2.4**
ORV				pmax	pmax		
	comp=Z,28nm,1.0s						
ORV	**Oroville**	**73.59**	**53**	*e*P	**P**	**22 17 57.7**	**+2.4**
	comp=Z,28nm,1.0s						
SWMT	**Swartz Lake**	**73.70**	**43**	*e*P	**P**	**22 17 57.7**	**+1.7**
WVOR	**Wild Horse Val**	**73.83**	**49**	*e*P	**P**	**22 17 59.3**	**+2.4**
WVOR				pmax	pmax		
	comp=Z,30nm,1.3s						
WVOR	**Wild Horse Val**	**73.83**	**49**	*e*P	**P**	**22 17 59.2**	**+2.4**
	comp=Z,30nm,1.3s						
WVOR				LR	LR		
	comp=Z,471nm,19.0s						
TBLU	**Trondheim**	**73.85**	**339**	*e*P	**P**	**22 17 55.8**	**-0.7**
ANN	**Anapa**	**74.09**	**314**	*i*P	**P**	**22 17 57.9**	**-0.2**
ANN				*e*		22 18 11.1	
ANN				*e*		22 20 45.7	
ANN				*e*S	**S**	**22 27 26.1**	**-2.3**
ANN				*e*		22 27 55.0	
ANN				pmax	pmax		
	comp=Z,227nm,1.3s						
ANN				pmax	pmax		
	comp=N,55nm,1.4s						
ANN				pmax	pmax		
	comp=E,40nm,1.4s						
ANN				MLR	MLR		
	comp=N,840nm,18.0s						
ANN				MLR	MLR		
	comp=Z,522nm,18.0s						
ANN				MLR	MLR		
	comp=E,420nm,18.0s						
MSO	**Missoula**	**74.12**	**44**	P	**P**	**22 18 00.2**	**+1.7**
	baz=305						
MSO	**Missoula**	**74.12**	**44**	*e*P	**P**	**22 17 59.9**	**+1.4**
	comp=E,23nm,1.0s						
AFDM	**Forest Hills D**	**74.26**	**53**	*e*P	**P**	**22 18 02.1**	**+2.7**
	comp=E,12nm,1.1s						
CHMT	**Chamberlain Mo**	**74.46**	**43**	*e*P	**P**	**22 18 01.6**	**+1.1**
PAHR	**Pah Rah Range**	**74.87**	**52**	*e*P	**P**	**22 18 05.3**	**+2.3**
	comp=E,25nm,0.9s						
MFID	**Camas Ranch**	**74.99**	**47**	*e*P	**P**	**22 18 06.1**	**+2.5**
	comp=E,18nm,0.9s						
NC405	**NORSAR Array S**	**75.04**	**337**	*e*P	**P**	**22 18 03.8**	**+0.4**
AKASG	**Malin Array Be**	**75.05**	**322**	P	**P**	**22 18 03.4**	**-0.3**
	comp=E,119nm,0.9s,baz=47,slow=6.2,SNR=333						
AKASG	**Malin Array Be**	**75.05**	**322**	P	**P**	**22 18 03.4**	**-0.3**
AKASG				pmax	pmax		
	comp=Z,117nm,0.8s						
NC303	**NORSAR Array S**	**75.06**	**337**	*e*P	**P**	**22 18 04.0**	**+0.5**
KIEV	**Kiev**	**75.07**	**322**	*ce*P	**P**	**22 18 03.3**	**-0.4**
KIEV				pmax	pmax		
	comp=Z,151nm,1.0s						
KIEV	**Kiev**	**75.07**	**322**	*e*P	**P**	**22 18 02.9**	**-0.8**
	comp=Z,126nm,0.9s						
KIEV				LR	LR		
	comp=Z,2μm,19.0s						
AK11	**Malin Array Si**	**75.10**	**322**	*e*P	**P**	**22 18 03.5**	**-0.3**
ILULI	**Ilulissat**	**75.10**	**4**⇑	*i*P	**P**	**22 18 04.5**	**+0.9**
	comp=Z,58nm,1.0s						
ILULI	**Ilulissat**	**75.10**	**4**⇑	*i*P	**P**	**22 18 04.5**	**+0.9**
ILULI				pmax	pmax		
	comp=Z,58nm,1.0s						
CMB	**Columbia Colle**	**75.15**	**54**	*e*P	**P**	**22 18 06.8**	**+2.3**
CMB				pmax	pmax		
	comp=Z,26nm,1.0s						
CMB	**Columbia Colle**	**75.15**	**54**	*e*P	**P**	**22 18 06.8**	**+2.3**
	comp=Z,26nm,1.0s						
MOL	**Molde**	**75.17**	**340**	*e*P	**P**	**22 18 05.0**	**+1.0**
MOL				IAmb	IAmb	22 18 05.7	
	comp=Z,70nm,1.1s	

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SUW  Suwalki          75.76 327⇑eP      P     22 18 07.2 -0.4
BMN  Battle Mountai   75.84  50 eP      P     22 18 10.9 +2.3
BMN                              pmax  pmax
     comp=Z,23nm,0.9s
BMN  Battle Mountai   75.84  50 eP      P     22 18 10.9 +2.3
     comp=Z,23nm,0.9s
MCMT McKenzie Canyo   75.91  45 eP      P     22 18 10.8 +1.8
SIM  Simferopol'      75.92 315ceP      P     22 18 08.9 +0.1
SIM                              eS      S     22 27 46.0 -2.9
SIM                              pmax  pmax
     comp=Z,120nm,0.8s
BOZ  Bozeman (W)      76.11  44 P       P     22 18 12.3 +2.2
     baz=307
BOZ  Bozeman (W)      76.11  44 eP      P     22 18 12.0 +2.0
BOZ                              pmax  pmax
     comp=Z,32nm,0.9s
BOZ  Bozeman (W)      76.11  44 eP      P     22 18 12.0 +2.0
     comp=Z,32nm,0.9s
BOZ                              LR    LR
     comp=Z,410nm,20.0s
OSL  Oslo             76.26 337 eP      P     22 18 11.2 +0.8
NV01 Mina Array Sit   76.29  53 eP      P     22 18 12.8 +1.6
NVAR Mina Array Bea   76.29  53 P       P     22 18 13.3 +2.1
     comp=Z,23nm,1.0s,baz=294,slow=6.3,SNR=66
NVAR                             LR    LR    22 47 55.4
     comp=Z,336nm,19.0s,baz=302,slow=32
NV11 Mina Array Sit   76.38  52 eP      P     22 18 13.8 +2.1
     comp=Z,37nm,1.4s
HYA  Hoyanger         76.68 339 eP      P     22 18 13.2 +0.5
HYA                              IAmb  IAmb  22 18 14.2
     comp=Z,123nm,1.1s
QLMT Earthquake Lak   76.72  44 eP      P     22 18 16.1 +2.5
KONO Kongsberg        76.84 337 eP      P     22 18 13.9 +0.2
KONO                             IAmb  IAmb  22 18 14.8
     comp=Z,66nm,1.1s
KONO Kongsberg        76.84 337 eP      P     22 18 14.3 +0.7
KONO                             pmax  pmax
     comp=Z,69nm,1.1s
KONO Kongsberg        76.84 337 eP      P     22 18 14.3 +0.7
     comp=Z,69nm,1.1s
KONO                             LR    LR
     comp=Z,1µm,20.0s
OUZ  Omahuta          76.88 153 eP      P     22 18 15.8 +1.8
OUZ                              e           22 18 25.8
ELK  Elko             76.89  49 eP      P     22 18 17.0 +2.4
ELK                              pmax  pmax
     comp=Z,15nm,0.9s
ELK  Elko             76.89  49 eP      P     22 18 17.0 +2.4
     comp=Z,15nm,0.9s
DGAR Diego Garcia     77.00 251 PFAKE         22 18 30.0 +15
DGAR                             LR    LR
     comp=Z,977nm,22.0s
YHH  Holmes Hill      77.07  44 eP      P     22 18 17.8 +2.1
YMR  Madison River    77.08  44 eP      P     22 18 18.5 +2.9
     comp=Z,25nm,0.9s
SORM Soroca           77.11 321⇑iP      P     22 18 15.2 -0.2
VES  Vestal, Richgr   77.24  55 P       P     22 18 18.2 +1.9
     baz=305
YFT  Old Faithful     77.28  44 eP      P     22 18 20.8 +4.0
     comp=Z,31nm,0.9s
SFJD Kangerlussuaq    77.33   5⇑iP      P     22 18 17.0 +0.8
SFJD Kangerlussuaq    77.33   5⇑iP      P     22 18 17.0 +0.8
SFJD Kangerlussuaq    77.33   5 eP      P     22 18 17.2 +1.0
     comp=Z,45nm,0.9s
SFJD                             LR    LR
     comp=Z,648nm,22.0s
H08N1 Diego Carcia H  77.45 253 P       P     22 18 19.1 +1.8
     baz=44,slow=3.0,SNR=3.6
H08N2 Diego Garcia H  77.45 253 P       P     22 18 19.5 +2.2
     baz=44,slow=3.0,SNR=4.6
LKWY Lake             77.46  44 eP      P     22 18 21.9 +4.1
LKWY                             pmax  pmax
     comp=Z,30nm,1.0s
LKWY Lake             77.46  44 eP      P     22 18 20.8 +3.0
     comp=Z,30nm,0.9s
LKWY                             e           22 18 30.6
LKWY                             LR    LR
     comp=Z,632nm,20.0s
H08N3 Diego Garcia H  77.47 253 P       P     22 18 19.6 +2.1
     baz=44,slow=3.0,SNR=4.2
H17A Grant Village    77.47  44 P       P     22 18 21.8 +3.9
     baz=308
H17A Grant Village    77.47  44 eP      P     22 18 21.5 +3.7
     comp=Z,61nm,0.9s
ASK  Askoy            77.52 339 eP      P     22 18 18.1 +0.7
ODD1 Odda             77.56 338 eP      P     22 18 18.7 +0.9
ODD1                             IAmb  IAmb  22 18 19.3
     comp=Z,97nm,1.1s
BER  Bergen           77.56 339 eP      P     22 18 17.7  0.0
IMW  Indian Meadow    77.56  45 eP      P     22 18 21.1 +2.6
     comp=Z,29nm,0.9s
CWC  Cottonwood Cre   77.57  54 P       P     22 18 20.4 +2.0
     baz=305
KIS  Kishinev         77.59 319⇑iP      P     22 18 18.0 -0.1
     comp=Z,200nm,1.0s
KIS  Kishinev         77.59 319 ePcP    PcP   22 18 30.0 +1.8
KIS                              eS      S     22 28 10.0 +3.1
KIS                              LRM   MLR    22 55 18.0
     comp=Z,1µm,16.0s
KIS  Kishinev         77.59 319⇓iP      P     22 18 15.4 -2.7
KIS  Kishinev         77.59 319⇑iP      P     22 18 18.0 -0.1
KIS                              e           22 18 30.0
KIS                              e           22 21 20.0
KIS                              eS      S     22 28 10.0 +3.1
KIS                              e           22 33 00.0
KIS                              pmax  pmax
     comp=Z,200nm,1.0s
KIS                              MLR   MLR
     comp=N,900nm,15.0s
KIS                              MLR   MLR
     comp=Z,2µm,15.0s
KIS                              MLR   MLR
     comp=E,1µm,16.0s
KIS                              MLR   MLR
     comp=Z,2µm,16.0s
FLWY Flagg Ranch      77.59  44 eP      P     22 18 21.8 +3.4
     comp=Z,32nm,1.0s
RLMT Red Lodge        77.75  43 P       P     22 18 21.6 +2.2
     baz=309
RLMT Red Lodge        77.75  43 PFAKE         22 18 30.0 +11
RLMT                             LR    LR
     comp=Z,419nm,19.0s
MOOW Moose Ponds      77.77  45 eP      P     22 18 21.4 +2.0
     comp=Z,42nm,1.5s
HVU  Hansel Valley    77.77  47 eP      P     22 18 22.1 +2.7
HVU                              pmax  pmax
     comp=Z,24nm,0.9s
HVU  Hansel Valley    77.77  47 eP      P     22 18 22.1 +2.7
     comp=Z,24nm,0.9s
TPAW Teton Pass       77.81  45 eP      P     22 18 22.6 +2.8
     comp=Z,20nm,0.8s
LOHW Long Hollow      77.93  45 eP      P     22 18 22.9 +2.5
     comp=Z,12nm,0.9s
SNOW Snow King Moun   77.94  45 eP      P     22 18 23.3 +2.8
     comp=Z,20nm,1.0s
REDW Red Top Meadow   77.94  45 eP      P     22 18 23.1 +2.6
     comp=Z,23nm,1.1s
DAC  Darwin (Calif)   77.98  54 eP      P     22 18 22.7 +2.0
DAC                              pmax  pmax
     comp=Z,11nm,0.9s
DAC  Darwin (Calif)   77.98  54 eP      P     22 18 22.7 +2.0
     comp=Z,11nm,0.9s
BLS5 Blasjo           78.00 338 eP      P     22 18 21.1 +0.9
BLS5                             IAmb  IAmb  22 18 21.9
     comp=Z,97nm,1.0s
R11A Troy Canyon, C   78.08  51 P       P     22 18 23.5 +2.2
     baz=306
R11A Troy Canyon, C   78.08  51 eP      P     22 18 23.3 +2.1
     comp=Z,17nm,0.9s
IAS  Iasi             78.12 320⇓iP      P     22 18 21.4 +0.3
BGU  Big Grassy Mou   78.13  48 eP      P     22 18 24.0 +2.5
     comp=Z,16nm,1.0s
AHID Auburn Hatcher   78.16  46 eP      P     22 18 24.0 +2.3
     comp=Z,15nm,0.8s
AHID                             LR    LR
     comp=Z,546nm,20.0s
LVV  L'vov            78.17 324 eP      P     22 18 20.9 -0.4
LVV                              e           22 21 16.5
LVV                              eS      S     22 28 06.1 -7.1
LVV                              MLR   MLR
     comp=N,380nm,16.0s
LVV                              MLR   MLR
     comp=E,450nm,16.0s
LVV                              MLR   MLR
     comp=Z,420nm,16.0s
MPMC Manual Prospec   78.18  54 P       P     22 18 23.7 +1.9
     baz=306
LEOM Leova            78.22 319⇑iP      P     22 18 21.8 +0.2
SPUT South Promonto   78.25  47 eP      P     22 18 24.7 +2.5
     comp=Z,16nm,1.0s
HOMB Homborsund       78.28 336 eP      P     22 18 22.1 +0.4
HOMB                             IAmb  IAmb  22 18 22.8
     comp=Z,47nm,1.0s
DGMT Dagmar           78.29  38 P       P     22 18 23.8 +1.8
     baz=311,SNR=5.3
DGMT Dagmar           78.29  38 eP      P     22 18 24.2 +2.1
     comp=Z,86nm,1.2s
DGMT                             LR    LR
     comp=Z,707nm,22.0s
BEL  Belsk            78.30 327 eP      P     22 18 22.8 +0.9
BEL  Belsk            78.30 327⇑eP      P     22 18 22.8 +0.9
FURC Furnace Creek,   78.35  53 P       P     22 18 24.9 +2.4
     baz=306
TAU  Tasmania Unive   78.40 175 PFAKE         22 18 30.0 +7.7
TAU                              LR    LR
     comp=Z,612nm,22.0s
BSD  Bornholm Skovb   78.41 332⇑iP      P     22 18 22.3 -0.1
     comp=Z,111nm,0.9s
BSD  Bornholm Skovb   78.41 332⇑iP      P     22 18 22.3 -0.1
BSD                              pmax  pmax
     comp=Z,110nm,0.9s
LAO  LASA Array       78.41  40 P       P     22 18 25.3 +2.5
     baz=310
LAO  LASA Array       78.41  40 PFAKE         22 18 40.0 +17
LAO                              LR    LR
     comp=Z,515nm,21.0s
TPNV Topopah Spring   78.47  53 P       P     22 18 25.8 +2.3
     baz=306
TPNV Topopah Spring   78.47  53 eP      P     22 18 25.7 +2.3
TPNV                             pmax  pmax
     comp=Z,28nm,1.0s
TPNV Topopah Spring   78.47  53 eP      P     22 18 25.7 +2.3
     comp=Z,28nm,1.0s
EDW2 Edwards Air Fo   78.52  55 P       P     22 18 25.9 +2.3
     baz=306,SNR=7.3
HWUT Hardware Ranch   78.60  47 eP      P     22 18 26.2 +2.2
     comp=Z,34nm,1.0s
HWUT                             LR    LR
     comp=Z,487nm,21.0s
STAV Stavanger        78.63 338 eP      P     22 18 24.3 +0.7
STAV                             IAmb  IAmb  22 18 25.0
     comp=Z,95nm,1.0s
SNART Snartemo        78.64 337 eP      P     22 18 24.2 +0.5
SNART                            IAmb  IAmb  22 18 25.1
     comp=Z,77nm,0.9s
RSUT Red Spur Mount   78.67  47 eP      P     22 18 26.9 +2.3
DUG  Dugway, Tooele   78.70  49 P       P     22 18 26.8 +2.3
     baz=307
DUG  Dugway, Tooele   78.70  49 eP      P     22 18 26.9 +2.3
DUG                              pmax  pmax
     comp=Z,21nm,0.9s
DUG  Dugway, Tooele   78.70  49 eP      P     22 18 26.9 +2.3
     comp=Z,21nm,0.8s
DUG                              LR    LR
     comp=Z,394nm,19.0s
PRAR RASCA            78.70 321⇑iP      P     22 18 24.4 +0.1
MCU  Monte Cristo P   78.72  47 eP      P     22 18 27.0 +2.1
TLCR                  78.74 318⇑iP      P     22 18 24.6 +0.1
MWC  Mount Wilson     78.86  56 eP      P     22 18 30.1 +4.5
MWC                              pmax  pmax
     comp=Z,39nm,1.4s
MWC  Mount Wilson     78.86  56 eP      P     22 18 30.1 +4.5
     comp=Z,39nm,1.4s
COP  Copenhagen       78.92 333⇑iP      P     22 18 25.7 +0.5
     comp=Z,71nm,0.9s
COP  Copenhagen       78.92 333⇑iP      P     22 18 25.7 +0.5
COP                              pmax  pmax
     comp=Z,71nm,0.9s
KWP  Kalwaria Pacla   78.93 324 eP      P     22 18 26.3 +0.8
KWP  Kalwaria Pacla   78.93 324⇑iP      P     22 18 26.5 +1.0
KWP  Kalwaria Pacla   78.93 324⇑eP      P     22 18 26.3 +0.8
B25A Knox Farm, Ray   78.94  38 P       P     22 18 27.7 +2.1
     baz=312
BORG Borgarnes        78.96 352 eP      P     22 18 28.8 +3.5
BORG                             pmax  pmax
     comp=Z,130nm,1.0s
BORG Borgarnes        78.96 352 eP      P     22 18 28.8 +3.5
     comp=Z,126nm,1.0s
TESR Tescani          79.04 320⇑iP      P     22 18 26.5 +0.3
BUR08 Bucovina Ar. S  79.04 322 eP      P     22 18 26.7 +0.4
BURAR Bucovina Array  79.05 322⇓iP      P     22 18 26.8 +0.5
BW06 Boulder Array    79.06  45 P       P     22 18 28.2 +1.6
     baz=309
BW06 Boulder Array    79.06  45 eP      P     22 18 28.1 +1.4
     comp=Z,15nm,0.8s
BW06                             LR    LR
     comp=Z,546nm,22.0s
PD31 Pinedale Array   79.06  45 eP      P     22 18 28.0 +1.4
PDAR Pinedale Array   79.06  45 P       P     22 18 27.7 +1.1
     comp=Z,10nm,0.8s,baz=272,slow=2.6,SNR=77
PDAR                             PKKPbc PKKPbc 22 37 17.3 -0.3
     comp=Z,0.6nm,0.8s,baz=132,slow=4.4,SNR=3.5
PDAR                             LR    LR    22 48 53.2
     comp=Z,281nm,21.6s,baz=320,slow=32
PSUT Pine Spring      79.06  50 eP      P     22 18 29.0 +2.3
     comp=Z,23nm,0.9s
GSC  Goldstone, Bar   79.07  54 P       P     22 18 28.0 +1.4
     baz=306
GSC  Goldstone, Bar   79.07  54 eP      P     22 18 28.7 +2.1
GSC                              pmax  pmax
     comp=Z,16nm,1.0s
GSC  Goldstone, Bar   79.07  54 eP      P     22 18 28.7 +2.1
     comp=Z,16nm,1.0s
A26A Wade Farm, Ken   79.07  37 P       P     22 18 27.3 +1.0
     baz=313
CFR  Carcaliu         79.11 318⇑iP      P     22 18 26.7 +0.2
JLU  Jordanelle       79.28  48 eP      P     22 18 30.4 +2.5
     comp=Z,16nm,1.0s
NLU  North Lily Min   79.30  48 eP      P     22 18 26.9 -1.1
     comp=Z,21nm,0.9s
DRWC Darouich         79.31 307 eP      P     22 18 29.0 +1.0
ODBI Odobesti         79.31 319⇓iP      P     22 18 29.4 +1.8
B26A Jensen Ranch,    79.33  37 P       P     22 18 29.5 +1.8
     baz=313,SNR=9.4
BR131 Keskin Array S  79.35 311 eP      P     22 18 28.4 +0.2
BRTR Keskin Array B   79.35 311 P       P     22 18 28.2  0.0
     comp=Z,48nm,0.9s,baz=99,slow=3.9,SNR=109
BRTR                             PP    PP    22 21 19.3 -8.6
     comp=Z,4.3nm,0.9s,baz=77,slow=6.5,SNR=4.4
BRTR                             PKKPbc PKKPbc 22 37 17.9 +1.2
     comp=Z,1.3nm,0.8s,baz=195,slow=2.6,SNR=7.2
A27A Ledoux Ranch,    79.42  36 P       P     22 18 29.8 +1.6
     baz=313
VRI  Vrincioaia       79.42 319⇑iP      P     22 18 29.0 +0.7
TIRR Tirgusor         79.42 318⇑iP      P     22 18 28.5 +0.2
TIRR Tirgusor         79.42 318 eP      P     22 18 28.4 +0.2
TIRR                             pmax  pmax
     comp=Z,47nm,1.1s
TIRR Tirgusor         79.42 318 eP      P     22 18 28.4 +0.2
     comp=Z,47nm,1.1s
SHPR Sheep Range      79.44  53 eP      P     22 18 31.3 +2.5
     comp=Z,25nm,1.2s
RGN  Rugen            79.44 332 eP      P     22 18 29.0 +0.8
     comp=Z,144nm,1.0s
PLOR Plostina         79.47 320⇓iP      P     22 18 29.4 +0.8
MUD  Monsted U'grnd   79.48 335 iP      P     22 18 28.6 +0.3
     comp=Z,85nm,1.1s
MUD  Monsted U'grnd   79.48 335 iP      P     22 18 28.6 +0.3
MUD                              pmax  pmax
     comp=Z,85nm,1.1s
HARR Harsova          79.54 318⇓iP      P     22 18 29.2 +0.3
EFOR EFORIE           79.55 317⇑iP      P     22 18 29.6 +0.7
TUQ  Turquoise Moun   79.57  54 P       P     22 18 31.5 +2.1
     baz=306
FLU  Fool Peak        79.59  49 eP      P     22 18 31.9 +2.3
D25A Fairfield        79.61  39 P       P     22 18 30.9 +1.6
     baz=312,SNR=11
GRER                  79.61 319⇑iP      P     22 18 31.0 +1.7
KOLS Kolonicke sedl   79.62 324 eP      P     22 18 29.7 +0.4
KOLS                             pmax  pmax
     comp=Z,44nm,1.1s
KOLS Kolonicke sedl   79.62 324 eP      P     22 18 29.7 +0.4
KOLS                             ePP   PP    22 21 21.3 -8.3
HEC  Hector,Ludlow    79.66  55 P       P     22 18 32.3 +2.4
     baz=306
LEVU Levan            79.73  49 eP      P     22 18 32.7 +2.3
STHS Stebnicka Huta   79.77 325 eP      P     22 18 31.0 +0.9
STHS                             pmax  pmax
     comp=Z,44nm,1.0s
STHS Stebnicka Huta   79.77 325 eP      P     22 18 31.0 +0.9
STHS Stebnicka Huta   79.77 325 eS      SKSac 22 28 43.2 -1.1
ANTO Ankara           79.78 312 eP      P     22 18 31.2 +0.8
ANTO                             pmax  pmax
     comp=Z,73nm,0.9s
ANTO Ankara           79.78 312 eP      P     22 18 31.2 +0.8
     comp=Z,73nm,0.8s
ANTO                             LR    LR
     comp=Z,11nm,20.0s
BR231 Keskin MP Arra  79.80 312 eP      P     22 18 29.2 -1.4
MURC Murrieta         79.81  56 P       P     22 18 32.4 +1.8
     baz=306
RAR  Rarotonga        79.81 125 LR    LR    22 47 43.3
     comp=Z,638nm,20.1s,baz=291,slow=31
UZH  Uzhgorod         79.81 324d iP     P     22 18 30.1 -0.2
UZH                              e           22 18 37.9
UZH                              e           22 18 46.9
UZH                              eS      S     22 28 27.4 -3.3
UZH                              ePS    PnS    22 29 23.8 +6.1
UZH                              MLR   MLR
     comp=N,1µm,16.0s
UZH                              MLR   MLR
     comp=E,1µm,16.0s
ARCR ARCALIA          79.84 322⇑iP      P     22 18 31.8 +1.3
BMR  Baia Mare        79.88 322⇑iP      P     22 18 31.7 +1.0
OJC  Ojcow            79.88 326 eP      P     22 18 31.3 +0.6
OJC  Ojcow            79.88 326⇑eP      P     22 18 31.3 +0.6
OJC  Ojcow            79.88 326 eP      P     22 18 30.9 +0.3
     comp=E,176nm,1.2s
PGOR Pogoanele        79.91 319⇑iP      P     22 18 31.6 +0.7
AMRR Amara            79.91 318⇑iP      P     22 18 31.3 +0.4
A28A Rude Farm, Bot   79.92  36 P       P     22 18 32.5 +1.6
     baz=314,SNR=18
MSAB Monastry St. A   79.98 318⇑iP      P     22 18 32.2 +0.9
E25A Miller Ranch,    80.00  39 P       P     22 18 33.1 +1.6
     baz=312,SNR=19
ISR  Istrita          80.01 319⇑iP      P     22 18 32.5 +1.0
CRVS Cervenica-Dubn   80.03 324 eP      P     22 18 32.1 +0.6
CRVS Cervenica-Dubn   80.03 324 eP      P     22 18 32.1 +0.6
TRPA Tarpa            80.04 323⇑epP     P     22 18 32.5 +1.0
PSN  Preselentsi      80.05 317 iP      P     22 18 32.9 +1.2
DOPR Dopca            80.06 320⇓iP      P     22 18 32.9 +1.2
MLR  Muntele Rosu     80.08 320⇑iP      P     22 18 32.4 +0.4
MLR  Muntele Rosu     80.08 320 eP      P     22 18 32.3 +0.3
MLR                              pmax  pmax
     comp=Z,68nm,1.4s
MLR  Muntele Rosu     80.08 320 eP      P     22 18 32.3 +0.3
     comp=Z,68nm,1.4s
MSU  Marysvale        80.12  50 eP      P     22 18 35.0 +2.5
MSU  Marysvale        80.12  50 eP      P     22 18 35.0 +2.5
GMRC Granite Mounta   80.13  54 P       P     22 18 34.5 +2.0
     baz=307,SNR=14
C27A Sayler Ranch,    80.14  37 P       P     22 18 34.1 +2.0
     baz=313
WRDH Warideh          80.14 307 eP      P     22 18 32.3 -0.1
WRDH                             eP      P     22 18 32.6 +0.2
B28A Dugan Ranch, T   80.19  36 P       P     22 18 33.7 +1.4
     baz=314,SNR=14
NIE  Niedzica         80.21 325 eP      P     22 18 33.3 +0.8
NIE  Niedzica         80.21 325⇑eP      P     22 18 33.3 +0.8
ARNB Al Arnab         80.21 307 eP      P     22 18 32.2 -0.6
TMUT Trail Mountain   80.23  48 eP      P     22 18 35.6 +2.4
     comp=Z,16nm,0.9s
RABH Abou Rabah       80.25 305 eP      P     22 18 33.8 +0.7
109C Camp Elliot, M   80.28  57 P       P     22 18 35.5 +2.4
     baz=306
PFO  Pinyon Flats O   80.29  56 P       P     22 18 35.0 +1.6
     comp=Z,6.6nm,0.7s,baz=313,slow=3.8,SNR=9.6
PFO  Pinyon Flats O   80.29  56 P       P     22 18 35.6 +2.2
     baz=306
PFO  Pinyon Flats O   80.29  56 eP      P     22 18 36.0 +2.6
PFO                              pmax  pmax
     comp=Z,24nm,1.0s
PFO  Pinyon Flats O   80.29  56 eP      P     22 18 36.0 +2.6
     comp=Z,24nm,1.0s
PFO                              LR    LR
     comp=Z,1µm,22.0s
TPFO Pinon Flats      80.30  56 P       P     22 18 35.2 +1.8
     baz=306,SNR=11
SECR                  80.32 319⇑iP      P     22 18 33.6 +0.5
F25A Bowman           80.35  40 P       P     22 18 34.8 +1.4
     baz=312,SNR=11
ROOS tl_alroos        80.36 305 eP      P     22 18 34.2 +0.6
LCMT Little Creek M   80.36  51 eP      P     22 18 36.4 +2.7
     comp=Z,25nm,1.1s
BELC Belle Mtn. Jos   80.37  55 P       P     22 18 35.3 +1.5
     baz=307,SNR=9.4
A29A Manning Farm,    80.40  35 P       P     22 18 34.9 +1.4
     baz=315,SNR=24
MTPU Mount Pierson    80.40  50 eP      P     22 18 37.1 +3.0
     comp=Z,18nm,0.8s
P17A Butcher Ranch,   80.41  48 eP      P     22 18 36.3 +2.4
     comp=Z,27nm,0.7s
PLAR PLOIESTI         80.42 319⇑iP      P     22 18 34.5 +0.9
SULR                  80.45 319⇓iP      P     22 18 34.8 +1.0
MDB  Medias           80.46 321⇓iP      P     22 18 34.7 +0.8
BIDA Albida           80.49 306 eP      P     22 18 31.0 -3.3
E26A Carlson Angus    80.50  39 P       P     22 18 35.5 +1.3
     baz=313
D27A Center           80.54  38 P       P     22 18 36.1 +1.7
     baz=313,SNR=13
VOIR                  80.59 320⇓iP      P     22 18 34.9 +0.2
KNB  Kanab            80.63  51 eP      P     22 18 38.0 +2.8
KNB                              pmax  pmax
     comp=Z,100nm,1.5s
KNB  Kanab            80.63  51 eP      P     22 18 38.0 +2.8
     comp=Z,100nm,1.5s
B29A Wagenman Farm,   80.66  36 P       P     22 18 36.3 +1.4
     baz=314,SNR=21
C28A Hausauer Farms   80.68  37 P       P     22 18 36.8 +1.8
     baz=314
BAR  Barrett          80.70  57 eP      P     22 18 37.3 +1.9
     comp=Z,29nm,1.0s
MTUR Matau            80.72 320⇑iP      P     22 18 35.8 +0.4
HAWK Haweek           80.73 306 eP      P     22 18 36.0 +0.3
MONP2 Monument Peak   80.74  56 P       P     22 18 37.8 +1.9
     baz=307
SRU  San Rafael Swe   80.76  48 eP      P     22 18 37.8 +1.9
SRU                              pmax  pmax
     comp=Z,35nm,0.8s
SRU  San Rafael Swe   80.76  48 eP      P     22 18 37.8 +1.9
     comp=Z,35nm,0.8s
KECS Kecovo           80.78 324 eP      P     22 18 36.4 +0.9
KECS                             pmax  pmax
     comp=Z,19nm,1.2s
KECS Kecovo           80.78 324 eP      P     22 18 36.4 +0.9
KECS                             ePP    PP    22 21 39.9 +0.7
LANS Liptovska Anna   80.79 325 eP      P     22 18 36.9 +1.3
LANS                             e           22 21 39.5
LANS Liptovska Anna   80.79 325 eP      P     22 18 36.9 +1.3
LANS                             ePP    PP    22 21 39.5 +0.2
PRD  Provadia         80.80 317 iP      P     22 18 36.8 +1.1
F26A Lodgepole        80.81  39 P       P     22 18 37.4 +1.6
     baz=313,SNR=12
A30A Hoffart Farm,    80.82  35 P       P     22 18 37.2 +1.4
     baz=315,SNR=13
IRM  Iron Mountain    80.85  55 P       P     22 18 38.4 +2.2
     baz=307,SNR=8.2
ARR  Arges            80.85 320⇑iP      P     22 18 36.8 +0.7
K22A Casper           80.85  44 P       P     22 18 37.7 +1.4
     baz=311,SNR=10
K22A Casper           80.85  44 eP      P     22 18 38.0 +1.7
     comp=Z,33nm,1.1s
MMU  Miners Mountai   80.86  49 eP      P     22 18 37.7 +1.2
G25A Newell           80.86  40 P       P     22 18 37.8 +1.6
     baz=312,SNR=5.0
DRGR                  80.87 322⇓iP      P     22 18 36.6 +0.5
URZ  Urewera          80.88 152 LR    LR    22 50 03.3
     comp=Z,488nm,21.9s,baz=335,slow=32
URZ  Urewera          80.88 152 esP   sP    22 18 50.4 -0.8
OKC  Ostrava-Krasne   80.90 326⇑iP      P     22 18 36.8 +0.7
OKC  Ostrava-Krasne   80.90 326⇑iP      P     22 18 36.8 +0.7
BC3  Big Chuckawall   80.94  55 P       P     22 18 38.9 +2.1
     baz=307,SNR=7.7
D28A Regan            80.95  37 P       P     22 18 38.4 +1.8
     baz=314,SNR=6.5
MDND Maddock          80.97  36 P       P     22 18 38.4 +1.8
     baz=314
E27A Carson           80.98  38 P       P     22 18 38.4 +1.6
     baz=313
ULM  Lac du Bonnet    80.98  33 P       P     22 18 37.3 +0.7
     comp=Z,19nm,0.8s,baz=317,slow=6.7,SNR=14
ULM                              LR    LR    22 55 40.1
     comp=Z,263nm,20.5s,baz=334,slow=36
ULM  Lac du Bonnet    80.98  33 eP      P     22 18 37.3 +0.7
ULM                              pmax  pmax
     comp=Z,32nm,1.0s
ULM  Lac du Bonnet    80.98  33 eP      P     22 18 37.2 +0.7
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comp=Z,32nm,1.0s
KSP Ksiaz 80.99 328 *e*P **P 22 18 37.4 +0.8**
KSP Ksiaz 80.99 328⇑ *e*P **P 22 18 37.4 +0.8**
IKP In-Ko-Pah, Jac 81.10 56 P **P 22 18 39.7 +2.0**
baz=307,SNR=7.1
W13A Hualapai Mount 81.11 53 *e*P **P 22 18 39.6 +1.7**
comp=Z,7.8nm,0.9s
SWSC Sam W. Stewart 81.13 56 P **P 22 18 39.6 +1.9**
baz=307,SNR=7.1
H25A Fruitdale 81.15 41 P **P 22 18 39.3 +1.6**
baz=312,SNR=12
B30A Myrvik Farm, E 81.16 35 P **P 22 18 38.8 +1.2**
baz=315,SNR=29
MORC Moravsky Berou 81.22 327⇑ *i*P **P 22 18 38.6 +0.7**
MORC Moravsky Berou 81.22 327 *e*P **P 22 18 38.4 +0.5**
MORC pmax pmax
comp=Z,280nm,1.0s
MORC Moravsky Berou 81.22 327 *e*P **P 22 18 38.4 +0.5**
comp=Z,279nm,1.1s
G26A Maurine 81.22 40 P **P 22 18 39.7 +1.7**
baz=313,SNR=27
HUMR Humele 81.23 319⇓ *i*P **P 22 18 38.1 +0.1**
LOT Lotru 81.25 321⇓ *i*P **P 22 18 38.7 +0.5**
RSSD Black Hills 81.25 41 P **P 22 18 39.6 +1.2**
baz=312
RSSD Black Hills 81.25 41 *e*P **P 22 18 39.4 +1.0**
RSSD pmax pmax
comp=Z,22nm,1.0s
RSSD Black Hills 81.25 41 *e*P **P 22 18 39.4 +1.0**
comp=Z,22nm,1.0s
U15A North Rim 81.33 51 *e*P **P 22 18 41.7 +2.7**
comp=Z,70nm,0.4s
DPC Dobruska-Polom 81.34 328⇑ *i*P **P 22 18 39.5 +1.0**
DPC *ep*P **sP 22 18 52.5 -1.3**
DPC *e*PP **PP 22 21 44.9 +1.1**
DPC Dobruska-Polom 81.34 328⇑ *i*P **P 22 18 39.5 +1.0**
DPC *e* 22 18 52.5
DPC *e* 22 21 44.9
KRLC Kraliky 81.34 327⇑ *i*P **P 22 18 39.1 +0.6**
KRLC Kraliky 81.34 327⇑ *i*P **P 22 18 39.1 +0.6**
UPC Upice 81.36 328⇑ *i*P **P 22 18 39.2 +0.6**
UPC *e*PP **PP 22 21 43.6 -0.3**
UPC Upice 81.36 328⇑ *i*P **P 22 18 39.2 +0.6**
UPC *e* 22 21 43.6
DEV Deva 81.39 321⇑ *i*P **P 22 18 39.7 +0.9**
PDMCI Parker Dam,Lak 81.42 54 P **P 22 18 41.3 +2.1**
baz=308
BKZ Black Stump Fm 81.44 153 *e*P **P 22 18 40.0 +1.1**
comp=Z,29nm,1.1s
PSZ Piszkesteto 81.46 324⇑ *i*P **P 22 18 40.1 +0.8**
PSZ Piszkesteto 81.46 324⇑ *e*P **P 22 18 40.0 +0.8**
PSZ Piszkesteto 81.46 324 *e*P **P 22 18 39.9 +0.7**
PSZ pmax pmax
comp=Z,140nm,1.2s
PSZ Piszkesteto 81.46 324 *e*P **P 22 18 39.9 +0.7**
comp=Z,141nm,1.2s
PSZ LR LR
comp=Z,1μm,19.0s
I25A Rochford 81.48 41 P **P 22 18 40.7 +1.1**
baz=312,SNR=19
O20A White River Ci 81.48 46 P **P 22 18 41.3 +1.6**
baz=310,SNR=9.9
O20A White River Ci 81.48 46 *e*P **P 22 18 41.6 +1.9**
comp=Z,24nm,0.9s
B31A Greenbush Farm 81.49 35 P **P 22 18 40.6 +1.3**
baz=316,SNR=8.8
Y12C Blythe 81.50 55 P **P 22 18 41.9 +2.3**
baz=307,SNR=6.4
Y12C Blythe 81.50 55 *e*P **P 22 18 42.0 +2.3**
comp=Z,23nm,0.9s
G27A Dupree 81.51 39 P **P 22 18 40.7 +1.1**
baz=313,SNR=15
VYHS Vyhne 81.55 325 *e*P **P 22 18 40.3 +0.7**
VYHS pmax pmax
comp=Z,41nm,1.2s
VYHS Vyhne 81.55 325 *e*P **P 22 18 40.3 +0.7**
SZH Strazhica 81.56 318 *i*P **P 22 18 40.5 +0.7**
H26A Fairpoint 81.59 40 P **P 22 18 41.2 +1.2**
baz=313,SNR=14
SALA Sala 81.60 304 *e*P **P 22 18 41.1 +0.6**
ZIMR 81.61 318⇓ *i*P **P 22 18 40.5 +0.5**
C30A Mose, Pekin 81.61 36 P **P 22 18 41.2 +1.2**
baz=315,SNR=7.1
A32A Rocking H Ranc 81.67 34 P **P 22 18 41.1 +0.9**
baz=316,SNR=13
GLA Glamis 81.72 55 P **P 22 18 43.2 +2.4**
baz=307,SNR=6.1
GLA Glamis 81.72 55 *e*P **P 22 18 43.4 +2.5**
GLA pmax pmax
comp=Z,20nm,0.9s
GLA Glamis 81.72 55 *e*P **P 22 18 43.4 +2.5**
comp=Z,20nm,0.8s
SIRR Siria 81.76 322⇑ *i*P **P 22 18 41.3 +0.5**
GZR Gura Zlata 81.80 321⇑ *i*P **P 22 18 41.4 +0.3**
D30A Buchanan 81.90 36 P **P 22 18 42.4 +0.9**
baz=315,SNR=10
C31A Landman Farms, 81.90 35 P **P 22 18 42.5 +1.0**
baz=316,SNR=11
H27A Howes 81.94 40 P **P 22 18 43.4 +1.6**
baz=313,SNR=25
PVCC Panska Ves 81.96 329⇑ *i*P **P 22 18 42.5 +0.8**
PVCC Panska Ves 81.96 329⇑ *i*P **P 22 18 42.5 +0.8**
BRG Berggiesshubel 81.96 329⇑ *i*P **P 22 18 42.0 +0.3**
comp=Z,54nm,0.9s
BRG *i* 22 18 57.2
comp=Z,49nm,1.1s
BRG *e*PP **PP 22 21 42.1 -6.7**
comp=Z,20nm,1.1s
BRG *e*PKPPKP **P'P'df 22 45 26.2 +5.0**
comp=Z,7.8nm,1.6s
BRG Berggiesshubel 81.96 329⇑ *i*P **P 22 18 42.0 +0.3**
BRG *i* 22 18 57.2
BRG pmax pmax
comp=Z,54nm,1.0s
BRG pmax pmax
comp=Z,49nm,1.1s
BRG pmax pmax
comp=Z,20nm,1.1s
BRG MLR MLR
comp=N,999nm,15.9s
BRG MLR MLR
comp=E,785nm,24.7s
BRG MLR MLR
comp=Z,1μm,23.3s
VRAC Vranov 81.98 327⇑ *i*P **P 22 18 42.5 +0.6**
PHNC Paralimni 81.99 307 P **P 22 18 42.0 -0.2**
PV09 Paradox Valley 81.99 48 *e*P **P 22 18 45.0 +2.5**
CLL Collm 82.02 330⇑ *i*P **P 22 18 42.0 0.0**
comp=Z,135nm,1.0s
CLL *i* 22 18 57.1
CLL *e* 22 21 37.0
CLL *e*PP **PP 22 21 49.0 -0.3**
CLL *e* 22 21 59.0
CLL Collm 82.02 330⇑ *i*P **P 22 18 42.0 0.0**
CLL *i* 22 18 57.1
CLL pmax pmax
comp=Z,135nm,1.0s
CLL Collm 82.02 330 *e*P **P 22 18 41.7 -0.3**
comp=Z,110nm,0.9s
CLL *e*PP PP 22 21 41.5 -7.9
B32A Ashes, Strandq 82.03 34 P **P 22 18 43.0 +0.8**
baz=316,SNR=7.3
EDRB Edirne 82.05 316 P **P 22 18 42.9 +0.5**
EDRB Edirne 82.05 316 P **P 22 18 42.9 +0.5**
SRE Strehaia 82.08 320⇓ *i*P **P 22 18 43.5 +1.0**
A33A Warroad 82.16 34 P **P 22 18 43.5 +0.7**
baz=317,SNR=13
BUD Budapest 82.18 324⇑ *e*P **P 22 18 43.6 +0.7**
SMOL Smolenice 82.18 326 *e*P **P 22 18 44.0 +1.0**
SMOL Smolenice 82.18 326 *e*P **P 22 18 44.0 +1.0**
PV04 Paradox Valley 82.20 48 *e*P **P 22 18 45.5 +2.0**
BZS Buzias 82.23 322⇑ *i*P **P 22 18 43.5 +0.3**
MVH1 Achvaich 82.24 342⇑ *e*P **P 22 18 43.5 +0.5**
E30A Jud 82.25 37 P **P 22 18 44.7 +1.3**
baz=315,SNR=10
F29A Eureka 82.27 38 P **P 22 18 44.8 +1.3**
baz=314,SNR=9.6
PV05 Paradox Valley 82.28 48 *e*P **P 22 18 46.2 +2.3**
MCD Coleburn Disti 82.31 341⇑ *e*P **P 22 18 43.7 +0.3**
J26A Sides Ranch, S 82.31 41 P **P 22 18 45.4 +1.6**
baz=313,SNR=9.5
GOPC GO Pecny, Ondr 82.33 328⇑ *i*P **P 22 18 44.4 +0.7**
GOPC GO Pecny, Ondr 82.33 328⇑ *i*P **P 22 18 44.4 +0.7**
N23A Red Feather La 82.33 45 P **P 22 18 46.3 +2.1**
baz=311,SNR=17
N23A Red Feather La 82.33 45 *e*P **P 22 18 46.4 +2.1**
comp=Z,53nm,1.0s
PRU Pruhonice 82.37 328⇑ *i*P **P 22 18 44.4 +0.5**
PRU *ex* x 22 18 59.7
PRU *ex* x 22 21 40.3
PRU Pruhonice 82.37 328⇑ *i*P **P 22 18 44.4 +0.5**
PRU *e* 22 18 59.7
Y14A Wickenburg 82.39 54 *e*P **P 22 18 46.4 +2.0**
MAMC Mammari 82.41 308 P **P 22 18 44.5 +0.1**
ISP Isparta 82.44 311⇑ *i*P **P 22 18 44.5 -0.1**
ISP Isparta 82.44 311 PFAKE 22 19 00.0 +15
ISP LR LR
comp=Z,1μm,22.0s
D31A Mcclaflin, Tow 82.44 36 P **P 22 18 45.5 +1.2**
baz=316,SNR=7.2
CSS Mathiatis 82.47 308 P **P 22 18 45.3 +0.6**
CSS Mathiatis 82.47 308 P **P 22 18 44.8 +0.1**
CSS Mathiatis 82.47 308 *e*P **P 22 18 44.8 +0.1**
comp=Z,13nm,0.8s
CSS LR LR
comp=Z,535nm,22.0s
WUAZ Wupatki 82.47 52 P **P 22 18 47.3 +2.4**
baz=309,SNR=10
WUAZ Wupatki 82.47 52 *e*P **P 22 18 47.5 +2.6**
comp=Z,35nm,1.0s
WUAZ LR LR
comp=Z,607nm,22.0s
THZ Tophouse 82.48 156 *e*P **P 22 18 45.2 +0.9**
comp=Z,38nm,1.0s
PV01 Paradox Valley 82.57 48 *e*P **P 22 18 47.4 +2.0**
113A Mohawk Valley, 82.60 55 *e*P **P 22 18 47.5 +2.1**
comp=Z,32nm,1.5s
CSKK Cs˙ˇtkako 82.63 325⇓ *e*P **P 22 18 46.1 +0.8**
F30A Leola 82.67 38 P **P 22 18 46.8 +1.2**
baz=315
G29A Hoven 82.67 38 P **P 22 18 47.0 +1.4**
baz=314
BFZ Birch Farm 82.67 154 *e*P **P 22 18 46.5 +1.1**
BFZ *ep*P **pP 22 18 54.7 -1.8**
SNZO South Karori 82.68 155 PFAKE 22 19 00.0 +15
SNZO LR LR
comp=Z,1μm,19.0s
MPEP Malo Peshtene 82.69 319 *i*P **P 22 18 46.9 +1.2**
E31A Nome 82.71 36 P **P 22 18 46.5 +0.8**
baz=316,SNR=20
D32A Dogwood Acres, 82.71 36 P **P 22 18 46.6 +0.9**
baz=316
MDVR Moldovita 82.76 321⇑ *i*P **P 22 18 46.2 +0.1**
ALFC Alefka 82.82 308 P **P 22 18 46.1 -0.5**
B34A Aery, Baudette 82.82 33 P **P 22 18 46.8 +0.5**
baz=318,SNR=9.8
C33A Trail 82.84 35 P **P 22 18 46.9 +0.5**
baz=317,SNR=9.2
I28A Midland 82.85 40 P **P 22 18 47.8 +1.2**
baz=314,SNR=18
SZAC Souni 82.89 308 P **P 22 18 47.4 +0.5**
KAC Achnashellach 82.90 342⇑ *e*P **P 22 18 47.1 +0.6**
H29A Onida 82.92 39 P **P 22 18 48.1 +1.2**
baz=314,SNR=7.5
KDZ Kurdzhali 82.92 317 *i*P **P 22 18 48.5 +1.5**
F31A Hecla 83.03 37 P **P 22 18 48.3 +0.9**
baz=316,SNR=12
NKC Novy Kostel 83.07 329⇑ *i*P **P 22 18 47.8 +0.2**
NKC Novy Kostel 83.07 329⇑ *i*P **P 22 18 47.8 +0.2**
AKMC Akamas 83.07 308 P **P 22 18 47.4 -0.5**
ALN Alexandroupoli 83.07 316 P **P 22 18 48.0 +0.3**
ALN Alexandroupoli 83.07 316 P **P 22 18 48.0 +0.3**
ALN Alexandroupoli 83.07 316 P **P 22 18 48.0 +0.3**
G30A Faulkton 83.10 38 P **P 22 18 49.0 +1.1**
baz=315,SNR=6.1
X16A Lo Mia Camp, P 83.11 52 *e*P **P 22 18 50.8 +2.4**
comp=Z,22nm,1.1s
ENEZ Enez 83.12 316 P **P 22 18 48.2 +0.3**
KPL Plockton 83.13 342⇑ *e*P **P 22 18 48.5 +0.8**
KPL AMB AMB 22 18 49.6
comp=Z,157nm,1.1s
PPCY Paphos 83.15 308 P **P 22 18 47.9 -0.3**
KSB Sheil Bridge 83.19 342 *e*P **P 22 18 48.5 +0.5**
SOP Sopron 83.19 326⇑ *e*P **P 22 18 49.2 +1.0**
MVCO Mesa Verde 83.20 49 P **P 22 18 50.6 +1.8**
baz=310,SNR=12
MVCO Mesa Verde 83.20 49 *e*P **P 22 18 51.1 +2.3**
comp=Z,51nm,1.4s
MVCO LR LR
comp=Z,440nm,22.0s
ISCO Idaho Springs 83.24 45 P **P 22 18 50.4 +1.4**
baz=312,SNR=15
ISCO Idaho Springs 83.24 45 *e*P **P 22 18 51.0 +2.0**
ISCO pmax pmax
comp=Z,59nm,1.7s
ISCO Idaho Springs 83.24 45 *e*P **P 22 18 51.0 +2.0**
comp=Z,59nm,1.8s
ISCO LR LR
comp=Z,365nm,19.0s
D33A AnnSam, Waubun 83.26 35 P **P 22 18 49.3 +0.7**
baz=317
RZN Rozhen 83.29 317 *i*P **P 22 18 50.5 +1.4**
I29A Vivian Onida 83.29 39 P **P 22 18 50.0 +1.1**
baz=314,SNR=8.0
CONA Conrad Observa 83.33 326 *i*PcP **P 22 18 50.0 +1.0**
comp=Z,85nm,1.2s,SNR=50
CONA *i*PP **PP 22 22 01.4 +1.1**
B35A Bob, Littlefor 83.33 33 P **P 22 18 49.9 +1.0**
baz=318
KHC Kasperske Hory 83.43 328⇑ *i*P **P 22 18 49.9 +0.4**
KHC *ep*P **pP 22 18 58.5 -2.2**
KHC *ex* x 22 19 05.1
KHC Kasperske Hory 83.43 328⇑ *i*P **P 22 18 49.9 +0.4**
KHC *e* 22 18 58.5
KHC *e* 22 19 05.1
KHC Kasperske Hory 83.43 328 *e*P **P 22 18 49.5 0.0**
comp=Z,31nm,1.1s
F32A Veblen 83.57 37 P **P 22 18 51.1 +0.9**
baz=316,SNR=9.3
ESY Stoneypath 83.59 340⇑ *e*P **P 22 18 50.2 +0.1**
GEC2 GERESS Array S 83.60 328 *e*P **P 22 18 50.5 +0.1**
GEC2 pmax pmax
comp=Z,52nm,1.1s
GEC2 GERESS Array S 83.60 328 *e*P **P 22 18 50.5 +0.1**
comp=Z,52nm,1.2s
GERES GERESS Array B 83.60 328 P **P 22 18 50.4 +0.1**
comp=Z,19nm,0.9s,baz=38,slow=5.0,SNR=118
GERES PKKPbc **PKKPbc 22 37 07.5 0.0**
comp=Z,0.9nm,0.8s,baz=222,slow=1.8,SNR=8.7
GEA0 GERESS Array S 83.60 328 *e*P **P 22 18 49.5 -0.9**
D34A Park Rapids 83.60 35 P **P 22 18 51.1 +0.7**
baz=318,SNR=11
OXZ Oxford 83.61 158 *e*P **P 22 18 54.3 +4.2**
OXZ *es*P **sP 22 19 12.9 +7.4**
EZN Ezine 83.63 315 P **P 22 18 50.8 +0.2**
EZN Ezine 83.63 315 P **P 22 18 50.8 +0.2**
EZN Ezine 83.63 315 P **P 22 18 50.8 +0.2**
SMTH Samothraki Isl 83.65 316 P **P 22 18 49.5 -1.2**
SMTH Samothraki Isl 83.65 316 P **P 22 18 49.5 -1.2**
E33A Westby DABS, E 83.65 36 P **P 22 18 51.5 +0.8**
baz=317,SNR=6.7
RPZ Rata Peaks 83.67 158 LR LR 22 50 45.8
comp=Z,513nm,21.9s,baz=330,slow=32
SUSD Miller 83.68 38 P **P 22 18 52.2 +1.4**
baz=315
C35A Jirik Farms, M 83.71 34 P **P 22 18 51.5 +0.6**
baz=318
214A Organ Pipe Nat 83.74 55 P **P 22 18 53.4 +2.1**
baz=308
214A Organ Pipe Nat 83.74 55 *e*P **P 22 18 53.0 +1.6**
comp=Z,100nm,1.1s
I30A Oacoma 83.82 39 P **P 22 18 53.1 +1.6**
baz=315,SNR=12
EAB Aberfoyle 83.82 341⇑ *e*P **P 22 18 51.6 +0.4**
G32A Webster 83.83 37 P **P 22 18 53.3 +1.7**
baz=316,SNR=5.3
KAVA Kavala 83.87 317 P **P 22 18 52.1 +0.3**
KAVA Kavala 83.87 317 P **P 22 18 52.1 +0.3**
S22A 4UR Ranch, Cre 83.87 47 P **P 22 18 54.5 +2.3**
baz=311,SNR=36
S22A 4UR Ranch, Cre 83.87 47 *e*P **P 22 18 54.7 +2.4**
comp=Z,37nm,1.1s
MMB Musomiste 83.90 318 *i*P **P 22 18 53.0 +1.0**
H31A Wolsey 83.90 38 P **P 22 18 52.9 +1.0**
baz=316
WTSB Winterswijk 83.91 333 *i*P **P 22 18 51.5 -0.2**
comp=Z,46nm,0.9s
ARSA Arzberg 83.98 326 *i*P **P 22 18 52.8 +0.5**
comp=Z,54nm,1.4s,SNR=32
NVR Nevrokopi 83.99 318 P **P 22 18 52.5 0.0**
NVR Nevrokopi 83.99 318 P **P 22 18 52.5 0.0**
F33A 5 Mile Ranch, 84.00 36 P **P 22 18 53.6 +1.2**
baz=317,SNR=29
X18A Snowflake 84.00 52 *e*P **P 22 18 55.3 +2.4**
LBZ Lake Benmore 84.02 159 *e*P **P 22 18 53.5 +1.3**
comp=Z,48nm,1.0s
PRK Paraskevi 84.04 315 P **P 22 18 52.8 +0.1**
PRK Paraskevi 84.04 315 P **P 22 18 52.8 +0.1**
PRK Paraskevi 84.04 315 P **P 22 18 52.8 +0.1**
KKB Krupnik 84.06 318 *i*P **P 22 18 53.5 +0.7**
Q24A Divide 84.06 46 P **P 22 18 55.2 +1.9**
baz=312,SNR=7.9
MOA Molln 84.10 327 *i*P **P 22 18 53.4 +0.5**
comp=Z,66nm,1.2s,SNR=34
MOA *i*PP **PP 22 22 06.3 -0.2**
DIVS Divibare 84.12 321 P **P 22 18 53.3 +0.1**
D35A Remer 84.13 34 P **P 22 18 53.5 +0.4**
baz=318
C36A Pine Crest Far 84.17 33 P **P 22 18 54.0 +0.7**
baz=319
PGBU Glenifferbraes 84.19 341 *e*P **P 22 18 54.0 +0.8**
J30A Dallas 84.20 40 P **P 22 18 54.8 +1.3**
baz=315
LIA Limnos Island 84.23 316 P **P 22 18 52.8 -0.8**
LIA Limnos Island 84.23 316 P **P 22 18 52.8 -0.8**
YER Yerkesik 84.24 312 P **P 22 18 54.7 +0.8**
YER Yerkesik 84.24 312 P **P 22 18 54.7 +0.8**
YER Yerkesik 84.24 312 P **P 22 18 54.7 +0.8**
ESK Eskdalemuir 84.28 340⇑ *e*P **P 22 18 54.1 +0.5**
ESK Eskdalemuir 84.28 340 *i*P **P 22 18 54.9 +1.3**
ESK Eskdalemuir 84.28 340 *e*P **P 22 18 54.5 +0.8**
comp=Z,260nm,2.0s
ESK LR LR
comp=Z,1μm,21.0s
SRS Serrai 84.29 317 P **P 22 18 53.9 -0.1**
SRS Serrai 84.29 317 P **P 22 18 53.9 -0.1**
SRS Serrai 84.29 317 P **P 22 18 53.9 -0.1**
SIGR SIGRI 84.31 315 P **P 22 18 53.9 -0.1**
SIGR SIGRI 84.31 315 P **P 22 18 53.9 -0.1**
E35A Pequot Lakes 84.36 35 P **P 22 18 54.8 +0.5**
baz=318
ECK Cauldkaine Hil 84.38 340⇑ *e*P **P 22 18 54.4 +0.3**
G33A Ortonville 84.39 37 P **P 22 18 55.6 +1.2**
baz=317,SNR=22
H32A Carlson Farm, 84.40 38 P **P 22 18 54.0 -0.5**
baz=316
D36A Goodland 84.47 34 P **P 22 18 55.2 +0.5**
baz=319
C37A Embarrass 84.49 33 P **P 22 18 55.6 +0.8**
baz=320
OGNE Ogallala 84.49 43 P **P 22 18 56.2 +1.1**
baz=314
OGNE Ogallala 84.49 43 *e*P **P 22 18 56.6 +1.5**
comp=Z,144nm,1.6s
OGNE LR LR
comp=Z,447nm,19.0s
F34A Alexandria 84.52 36 P **P 22 18 56.3 +1.2**
baz=318,SNR=6.0
PPT Papeete 84.53 116 LR LR 22 49 32.8
comp=Z,842nm,21.7s,baz=316,slow=30
PPT2 Papeete2 84.54 116 *e*LR LR 22 45 40.8
comp=Z,2μm,22.0s,baz=307
K30A Basset 84.59 40 P **P 22 18 57.1 +1.5**
baz=315,SNR=11
OUR Ouranopolis 84.61 317 P **P 22 18 55.4 -0.2**
OUR Ouranopolis 84.61 317 P **P 22 18 55.4 -0.2**
OUR Ouranopolis 84.61 317 P **P 22 18 55.4 -0.2**
H33A Prehn Over Nor 84.62 37 P **P 22 18 56.8 +1.3**
baz=317,SNR=47
EYMN Ely 84.62 32 P **P 22 18 56.4 +0.8**
baz=320
EYMN Ely 84.62 32 *e*P **P 22 18 56.5 +1.0**
comp=Z,49nm,1.2s
EYMN LR LR
comp=Z,481nm,20.0s
PERS Pernice 84.63 326 *i*P **P 22 18 55.8 +0.2**
SOH Sokhos 84.63 317 P **P 22 18 55.4 -0.3**
SOH Sokhos 84.63 317 P **P 22 18 55.4 -0.3**
SOH Sokhos 84.63 317 P **P 22 18 55.4 -0.3**
SOKA Soboth 84.63 326 *i*PcP **P 22 18 56.0 +0.3**
comp=Z,145nm,1.2s,SNR=101
KNT Kendrikon 84.64 318 P **P 22 18 55.7 -0.1**
KNT Kendrikon 84.64 318 P **P 22 18 55.7 -0.1**
KNT Kendrikon 84.64 318 P **P 22 18 55.7 -0.1**
SDCO Great Sand Dun 84.66 47 P **P 22 18 58.0 +1.8**
baz=312,SNR=29
SDCO Great Sand Dun 84.66 47 *e*P **P 22 18 58.2 +2.0**
comp=Z,42nm,1.2s
SDCO LR LR
comp=Z,367nm,20.0s
VAY Valandovo 84.71 318 P **P 22 18 56.2 +0.1**
VAY Valandovo 84.71 318 P **P 22 18 56.2 +0.1**
VAY Valandovo 84.71 318 P **P 22 18 56.2 +0.1**
I32A Karley and Nic 84.73 38 P **P 22 18 57.1 +0.9**
baz=316
CHOS Chios island 84.74 314 P **P 22 18 56.3 -0.1**
CHOS Chios island 84.74 314 P **P 22 18 56.3 -0.1**
G34A Benson 84.75 36 P **P 22 18 57.5 +1.3**
baz=317
F35A Swanville 84.80 35 P **P 22 18 57.2 +0.8**
baz=318,SNR=6.0
D37A Cotton 84.81 33 P **P 22 18 56.2 -0.3**
baz=319
TUC Tucson 84.86 54 P **P 22 18 59.4 +2.3**
baz=309
TUC Tucson 84.86 54 *e*P **P 22 18 59.0 +1.9**
TUC pmax pmax
comp=Z,22nm,1.2s
TUC Tucson 84.86 54 *e*P **P 22 18 59.0 +1.9**
comp=Z,22nm,1.2s
TUC LR LR
comp=Z,774nm,20.0s
BODT Bodrum 84.88 313 P **P 22 18 56.9 -0.1**
BODT Bodrum 84.88 313 P **P 22 18 56.9 -0.1**
PLG Polygyros 84.88 317 P **P 22 18 56.8 -0.2**
PLG Polygyros 84.88 317 P **P 22 18 56.8 -0.2**
PLG Polygyros 84.88 317 P **P 22 18 56.8 -0.2**
C38A Sawbill Land. 84.89 32 P **P 22 18 57.5 +0.6**
baz=320
GMK Mull of Kintyr 84.90 341⇑ *e*P **P 22 18 57.1 +0.4**
E36A McGregor 84.92 34 P **P 22 18 57.6 +0.5**
baz=319
HORT Hortiatis 84.92 317 P **P 22 18 56.7 -0.6**
HORT Hortiatis 84.92 317 P **P 22 18 56.7 -0.6**
ARG Arkhangelos 84.94 311 P **P 22 18 57.2 -0.1**
ARG Arkhangelos 84.94 311 P **P 22 18 57.2 -0.1**
ARG Arkhangelos 84.94 311 P **P 22 18 57.2 -0.1**
PLE Pljevlja 84.97 321⇑ *i*P **P 22 18 58.3 +0.8**
OBKA Obir 84.98 326 *i*P **P 22 18 57.3 -0.1**
comp=Z,20nm,0.8s,SNR=8.5
OBKA *e*PP **PP 22 22 09.2 -4.5**
comp=Z,13nm,1.1s
J32A Parkston 85.01 39 P **P 22 18 58.4 +0.8**
baz=316,SNR=5.4
IVA Berane 85.04 321⇑ *i*P **P 22 18 58.5 +0.7**
BLY Banja Luka 85.05 323⇑ *i*P **P 22 18 58.3 +0.6**
I33A Coleman 85.05 38 P **P 22 18 58.8 +1.0**
baz=317,SNR=6.3
GRG Griva 85.06 318 P **P 22 18 57.4 -0.5**
GRG Griva 85.06 318 P **P 22 18 57.4 -0.5**
GRG Griva 85.06 318 P **P 22 18 57.4 -0.5**
PAIG Paliouri 85.06 317 P **P 22 18 57.2 -0.6**
PAIG Paliouri 85.06 317 P **P 22 18 57.2 -0.6**
PAIG Paliouri 85.06 317 P **P 22 18 57.2 -0.6**
K31A O'Neill 85.08 40 P **P 22 18 59.3 +1.4**
baz=315
GAL1 Galloway 85.09 341⇑ *e*P **P 22 18 57.5 -0.2**
GAL1 AMB AMB 22 18 59.3
comp=Z,35nm,1.1s
KBA Koelnbreinsper 85.09 327 *i*P **P 22 18 58.0 -0.1**
comp=Z,31nm,1.0s,SNR=17
H34A Spellman Lake, 85.10 37 P **P 22 18 58.8 +0.8**
baz=317
HGN Heimansgroeve 85.20 333 *i*P **P 22 18 58.2 -0.1**
comp=Z,76nm,1.1s
PVY Plav 85.21 320⇑ *i*P **P 22 18 58.2 -0.5**
BEBN Eben Emael 85.27 333 P **P 22 18 58.7 0.0**
comp=Z,30nm,1.3s
F36A Milaca 85.29 35 P **P 22 18 59.4 +0.5**
baz=319,SNR=5.3
MEM Membach 85.30 333 P **P 22 18 58.6 -0.2**
comp=Z,48nm,1.1s
MYKA Terra Mystica 85.30 327 *i*P **P 22 18 58.6 -0.5**
comp=Z,24nm,0.6s,SNR=20
C39A Grand Marais 85.31 32 P **P 22 18 59.7 +0.7**

baz=321
UPM Unac-Piva 85.31 321⇑ *i*P P 22 18 59.0 -0.3
G35A Watkins 85.31 36 P P 22 19 00.8 +1.7
baz=318,SNR=7.2
LJU Ljubljana 85.34 326 *i* P P 22 18 58.9 -0.3
L31A Butterfield Fa 85.35 40 P P 22 19 00.6 +1.2
baz=315
ECSD EROS Data Cent 85.37 38 P P 22 19 00.5 +1.1
baz=317,SNR=46
ECSD EROS Data Cent 85.37 38 *e*P P 22 19 00.1 +0.8
comp=Z,34nm,0.9s
ECSD LR LR
comp=Z,529nm,22.0s
BOJS Bojanci 85.41 325 *i* P P 22 18 59.4 -0.1
AOS Alonnisos 85.46 316 P P 22 18 58.8 -1.1
AOS Alonnisos 85.46 316 P P 22 18 58.8 -1.1
KSCO Kaye Shedlock' 85.48 44 P P 22 19 01.7 +1.5
baz=313,SNR=10
KSCO Kaye Shedlock' 85.48 44 *e*P P 22 19 01.2 +1.1
comp=Z,124nm,1.5s
KSCO *e*pP **pP 22 19 10.8 -0.7**
J33A Davis 85.49 38 P P 22 19 01.1 +1.1
baz=317
H35A Sunnyside Ranc 85.53 36 P P 22 19 01.6 +1.4
baz=318,SNR=53
STU Stuttgart 85.54 330 *e*P P 22 19 00.4 +0.3
STU pmax pmax
comp=Z,140nm,1.0s
STU Stuttgart 85.54 330 *e*P P 22 19 00.3 +0.3
comp=Z,139nm,1.0s
NKY Niksic 85.55 321⇑ *i*P P 22 18 59.2 -1.2
LIT Litokhoron 85.60 317 P P 22 18 59.8 -0.8
LIT Litokhoron 85.60 317 P P 22 18 59.8 -0.8
LIT Litokhoron 85.60 317 P P 22 18 59.8 -0.8
G36A St. Michael 85.65 35 P P 22 19 01.6 +0.9
baz=319
JAVS Javornik 85.67 326 *i* P P 22 19 00.1 -0.8
WATA Walderalm 85.67 328 *i* P P 22 19 00.6 -0.3
comp=Z,6.0nm,0.6s,SNR=9.3
WATA *e*PP **PP 22 22 19.7 +0.3**
comp=Z,16nm,1.0s
PDG Podgorica 85.69 321⇑ *i*P P 22 19 00.9 +0.1
PDG Podgorica 85.69 321 P P 22 19 01.0 +0.1
TTG Podgorica 85.69 321⇑ *i*P P 22 19 00.4 -0.5
TTG Podgorica 85.69 321 P P 22 19 01.0 +0.1
TTG Podgorica 85.69 321 P P 22 19 01.0 +0.1
WTTA Wattenberg 85.70 328 *i* PcP P 22 19 01.2 +0.1
comp=Z,22nm,1.3s,SNR=7.5
T25A Trinidad 85.71 47 P P 22 19 03.4 +1.9
baz=312,SNR=32
T25A Trinidad 85.71 47 *e*P P 22 19 03.4 +1.9
comp=Z,56nm,0.9s
ABTA Abfaltersbach 85.71 327 *i* P P 22 19 00.2 -0.9
comp=Z,48nm,1.1s,SNR=26
BCLA Clavier 85.71 333 P P 22 19 00.6 -0.3
comp=Z,49nm,1.3s
BRY Bratogost 85.72 321⇑ *i*P P 22 19 00.3 -1.0
XOR Xorichti 85.72 316 P P 22 18 59.9 -1.3
XOR Xorichti 85.72 316 P P 22 18 59.9 -1.3
FNA Florina 85.73 318 P P 22 19 00.4 -0.9
FNA Florina 85.73 318 P P 22 19 00.4 -0.9
FNA Florina 85.73 318 P P 22 19 00.4 -0.9
NEO Neokhori 85.74 316 P P 22 19 00.0 -1.3
NEO Neokhori 85.74 316 P P 22 19 00.0 -1.3
FYTO Fytoko, Volos 85.83 317 P P 22 19 01.4 -0.3
FYTO Fytoko, Volos 85.83 317 P P 22 19 01.4 -0.3
LAZ Ladron 85.86 50 *e*P P 22 19 04.6 +2.4
MOTA Moosalm 85.86 328 *i* P P 22 19 01.5 -0.4
comp=Z,40nm,1.2s,SNR=17
UDBI Udbina 85.89 324 P P 22 19 01.7 -0.3
RETA Reutte 85.90 329 *i* PcP P 22 19 02.2 +0.2
comp=Z,79nm,1.3s,SNR=33
L32A Elgin 85.90 40 P P 22 19 03.4 +1.3
baz=316
ANMO Albuquerque 85.93 49 P P 22 19 04.3 +1.7
comp=Z,20nm,1.0s,baz=304,slow=5.4,SNR=40
ANMO Albuquerque 85.93 49 P P 22 19 04.9 +2.4
baz=311
ANMO Albuquerque 85.93 49 *e*P P 22 19 03.6 +1.1
ANMO pmax pmax
comp=Z,36nm,1.2s
ANMO Albuquerque 85.93 49 *e*P P 22 19 04.5 +2.0
comp=Z,33nm,1.1s
ANMO LR LR
comp=Z,590nm,22.0s
LANF Langenberg 85.93 331⇑ *e*P P 22 19 02.2 +0.2
APE Apeiranthos 85.93 313⇑ *i*P P 22 19 01.3 -1.0
TRI Trieste 85.94 326 *e*P P 22 19 01.1 -1.0
TRI pmax pmax
comp=Z,61nm,1.1s
TRI Trieste 85.94 326 *e*P P 22 19 01.1 -1.0
comp=Z,61nm,1.1s
BUM Brajici-Budva 85.97 321⇑ *i*P P 22 19 02.2 -0.2
KARP Karpathos 85.97 311 *e*P P 22 19 02.4 -0.1
comp=Z,34nm,0.9s
GMM Mts of Mourne 85.98 341⇑ *e*P P 22 19 02.1 0.0
CWF Charnwood Fore 85.98 338⇑ *e*P P 22 19 01.8 -0.4
CWF AMB AMB 22 19 03.0
comp=Z,70nm,0.9s
CWF Charnwood Fore 85.98 338 *e*P P 22 19 02.5 +0.3
comp=Z,100nm,1.1s
K33A Hardington 85.99 39 P P 22 19 04.0 +1.5
baz=317
SNF Seneffe 86.01 334 P P 22 19 02.3 0.0
WLF Walferdange 86.01 332 P P 22 19 03.0 +0.6
comp=Z,72nm,1.6s
WLF Walferdange 86.01 332 *e*P P 22 19 03.0 +0.6
WLF pmax pmax
comp=Z,94nm,1.2s
WLF Walferdange 86.01 332 *e*P P 22 19 03.0 +0.6
comp=Z,94nm,1.2s
WLF LR LR
comp=Z,2µm,20.0s
J34A George 86.02 38 P P 22 19 03.6 +1.0
baz=317
ULC Ulcinj 86.03 320⇑ *i*P P 22 19 02.3 -0.4
SMIA Simia 86.04 316 P P 22 19 01.7 -1.1
H36A Jessenland, He 86.06 36 P P 22 19 04.6 +1.9
baz=318,SNR=16
HCY Herceg Novi 86.07 321⇑ *i*P P 22 19 02.3 -0.5
I35A Creekview Farm 86.08 37 P P 22 19 04.2 +1.3
baz=318
SPMN Marine on St. 86.10 35 P P 22 19 03.7 +0.8
baz=319,SNR=7.4
SPMN Marine on St. 86.10 35 *e*P P 22 19 03.3 +0.3
comp=Z,31nm,1.1s
TIR Tirane 86.14 320 PFAKE 22 19 10.0 +6.8
TIR LR LR
comp=Z,2µm,20.0s
L33A Hoskins 86.17 39 P P 22 19 04.8 +1.4
baz=316
NEST Nestorio 86.17 318 P P 22 19 03.0 -0.5
LPM Los Pinos Moun 86.23 50 *e*P P 22 19 05.8 +1.8
DOU Dourbes 86.24 333 P P 22 19 03.4 -0.1
comp=Z,30nm,1.4s
BFO Black Forest 86.24 330 *i* P P 22 19 03.5 -0.2
BFO Black Forest 86.24 330 *e*P P 22 19 03.4 -0.2
comp=Z,110nm,1.0s
BFO *e*PP **PP 22 22 22.4 -1.5**
BFO LR LR
comp=Z,1µm,21.0s
BGNE Belgrade 86.26 40 P P 22 19 04.8 +0.9
baz=316
BGNE Belgrade 86.26 40 *e*P P 22 19 05.0 +1.2
comp=Z,134nm,1.1s
PENT Pentalofos 86.28 318 P P 22 19 03.7 -0.3
FETA Feichten 86.28 328 *i* PcP P 22 19 04.0 0.0
comp=Z,29nm,1.0s,SNR=18
NVLJ Novalja 86.29 324 P P 22 19 03.0 -0.8
LKR Lokris 86.32 316 P P 22 19 02.5 -1.6
LKR Lokris 86.32 316 P P 22 19 02.5 -1.6
J35A Milford 86.33 37 P P 22 19 05.1 +1.0
baz=318
BNM Barren Site 86.34 50 *e*P P 22 19 06.4 +1.8
K34A Le Mars 86.39 38 P P 22 19 05.3 +0.9
baz=317,SNR=9.5
TAOE Nuku Hiva Isla 86.39 103 *e*LR LR 22 46 20.3
comp=Z,2µm,25.0s,baz=313
FOEL Foel Wylfa 86.41 339⇑ *e*P P 22 19 04.8 +0.5
FOEL AMB AMB 22 19 06.1
comp=Z,141nm,0.9s
VLY Voula,Athens 86.42 315 P P 22 19 02.5 -2.1
VLY Voula,Athens 86.42 315 P P 22 19 02.5 -2.1
DAVA Damuels 86.43 329 *i* PcP P 22 19 04.7 0.0
comp=Z,104nm,1.3s,SNR=32

I36A Fitzsimmons Fa 86.43 36 P P 22 19 06.0 +1.4
baz=318
AGG Agios Georgios 86.44 317 P P 22 19 02.6 -2.2
AGG Agios Georgios 86.44 317 *e*P P 22 19 03.2 -1.6
AGG pmax pmax
comp=Z,130nm,1.6s
AGG Agios Georgios 86.44 317 *e*P P 22 19 03.2 -1.6
comp=Z,131nm,1.6s
319A Douglas 86.44 54 *e*P P 22 19 06.8 +1.8
comp=Z,22nm,1.1s
SANT Santorini 86.44 313 PFAKE 22 19 20.0 +15
SANT LR LR
comp=Z,602nm,20.0s
O31A Woolen Ranch, 86.52 42 P P 22 19 05.9 +0.8
baz=315
H37A Dierke Farm, C 86.53 35 P P 22 19 06.3 +1.3
baz=319,SNR=13
M33A Taylor Creek F 86.64 40 P P 22 19 06.6 +0.9
baz=316,SNR=5.3
HLM1 Long Mynd 86.65 339⇑ *e*P P 22 19 05.5 0.0
DAMY Dhamar 86.66 285 *e*P P 22 19 07.5 +1.0
comp=Z,88nm,1.2s
DAMY *e*pP **sP 22 19 21.6 -0.4**
121A Cookes Peak, D 86.67 52 P P 22 19 07.0 +0.8
baz=311
121A Cookes Peak, D 86.67 52 *e*P P 22 19 07.3 +1.1
comp=Z,19nm,1.0s
I37A Lemond, Waseca 86.73 36 P P 22 19 07.1 +1.0
baz=319
L34A Svendsen Farm, 86.77 39 P P 22 19 07.4 +1.1
baz=317,SNR=7.4
J36A Seneca 1, Swea 86.79 37 P P 22 19 07.6 +1.2
baz=318,SNR=10
FUORN Ofenpass-Fuorn 86.79 328 *e*P P 22 19 06.8 +0.2
comp=Z,93nm,1.0s
K35A Storm Lake 86.80 38 P P 22 19 07.2 +0.8
baz=318,SNR=5.3
ECH Echery 86.80 331⇑ *e*P P 22 19 06.1 -0.3
SCHQ Schefferville 86.84 16 P P 22 19 07.3 +0.9
comp=Z,32nm,0.8s,baz=340,slow=4.7,SNR=28
SCHQ LR LR 23 02 02.4
comp=Z,342nm,18.6s,baz=358,slow=38
SCHQ Schefferville 86.84 16 *e*P P 22 19 07.4 +1.0
comp=Z,45nm,0.9s
ANX Ano Chora 86.97 317 P P 22 19 05.8 -1.6
M34A Aspy Farms, Fr 87.00 39 P P 22 19 08.6 +1.1
baz=317
O32A Brockman Farm, 87.01 41 P P 22 19 08.5 +0.9
baz=316
SERG Sergoula 87.02 316 P P 22 19 05.8 -1.8
DSL Palaion Diasel 87.05 317 P P 22 19 06.8 -0.9
DSL Palaion Diasel 87.05 317 P P 22 19 06.8 -0.9
HMNX Herstmonceux 87.07 336⇑ *e*P P 22 19 08.3 +0.8
HMNX AMB AMB 22 19 09.3
comp=Z,183nm,1.2s
COWI Conover 87.07 32 *e*P P 22 19 07.9 +0.2
comp=Z,46nm,1.4s
COWI LR LR
comp=Z,622nm,20.0s
STRD Stroud 87.08 338 *e*P P 22 19 07.9 +0.3
STRD AMB AMB 22 19 08.7
comp=Z,253nm,1.0s
L35A Bielow Farm, R 87.09 38 P P 22 19 08.6 +0.7
baz=318,SNR=5.1
MOF Molkenrain 87.10 331⇑ *e*P P 22 19 07.6 -0.3
MCH1 Michaelchurch 87.14 339⇑ *e*P P 22 19 08.1 +0.2
MCH1 AMB AMB 22 19 09.2
comp=Z,96nm,0.8s
SGD Sagiada 87.18 318 P P 22 19 07.5 -0.8
LAKA Lakka 87.18 316 P P 22 19 07.0 -1.4
LAKA Lakka 87.18 316 P P 22 19 07.0 -1.4
IGT Igoumenitsa 87.18 318 P P 22 19 07.3 -1.1
IGT Igoumenitsa 87.18 318 P P 22 19 07.3 -1.1
IGT Igoumenitsa 87.18 318 P P 22 19 07.3 -1.1
J37A Redenius Farm, 87.18 36 P P 22 19 09.6 +1.3
baz=319,SNR=10
WOL Wolverton 87.19 337 *e*P P 22 19 07.7 -0.4
WOL AMB AMB 22 19 09.4
comp=Z,126nm,1.1s
SWN1 Swindon 87.20 338⇑ *e*P P 22 19 08.5 +0.4
SWN1 AMB AMB 22 19 09.9
comp=Z,260nm,1.2s
I38A Scanlan Farm, 87.22 35 P P 22 19 09.8 +1.4
baz=320
MONM Monmouth 87.22 338⇑ *e*P P 22 19 08.4 +0.2
KLV Kalavryta, Ach 87.22 316 P P 22 19 06.5 -2.1
KLV Kalavryta, Ach 87.22 316 P P 22 19 06.5 -2.1
CBKS Cedar Bluff 87.24 43 P P 22 19 09.5 +0.8
baz=315
CBKS Cedar Bluff 87.24 43 *e*P P 22 19 09.7 +1.0
CBKS pmax pmax
comp=Z,62nm,1.1s
CBKS Cedar Bluff 87.24 43 *e*P P 22 19 09.7 +1.0
comp=Z,62nm,1.1s
K36A Gilmore City 87.25 37 P P 22 19 09.6 +1.0
baz=318,SNR=11
LAST Lasithi 87.25 312⇓ *i*P P 22 19 08.7 -0.1
LAST Lasithi 87.25 312 P P 22 19 08.5 -0.3
LAST Lasithi 87.25 312 *e*P P 22 19 08.9 0.0
comp=Z,52nm,1.0s
LAST *e*PP **PP 22 22 30.5 -1.9**
P32A Huiting Farm, 87.29 42 P P 22 19 09.8 +0.9
baz=316
TUE Stuetta 87.30 329 *e*P P 22 19 08.8 -0.2
comp=Z,43nm,1.1s
TUE *e*PP **PP 22 22 37.8 +5.2**
TUE LR LR
comp=Z,1µm,21.0s
KEK Kerkira 87.34 319 P P 22 19 08.0 -1.1
KEK Kerkira 87.34 319 P P 22 19 08.0 -1.1
LPW Lampeter 87.35 339⇑ *e*P P 22 19 09.2 +0.3
LPW AMB AMB 22 19 10.3
comp=Z,104nm,1.3s
M35A Neola 87.49 39 P P 22 19 11.1 +1.3
baz=317,SNR=13
IDI Anoyia 87.52 313⇑ *i*P P 22 19 09.2 -0.9
IDI Anoyia 87.52 313 P P 22 19 08.5 -1.6
IDI Anoyia 87.52 313 *e*P P 22 19 07.5 -2.6
comp=Z,32nm,0.9s
N34A Lincoln 87.53 40 P P 22 19 10.5 +0.4
baz=317,SNR=13
LKD2 Lefkada island 87.53 317 P P 22 19 09.1 -1.0
LKD2 Lefkada island 87.53 317 P P 22 19 09.1 -1.0
DRO Drossia 87.53 316 P P 22 19 09.2 -0.9
K37A Belmond 87.55 37 P P 22 19 10.9 +0.8
baz=319,SNR=17
RLS Riolos of Patr 87.60 316 P P 22 19 09.7 -0.6
RLS Riolos of Patr 87.60 316 P P 22 19 09.7 -0.6
LOMF Lomont 87.63 331⇑ *e*P P 22 19 10.2 -0.3
VLI Veliai 87.69 315 P P 22 19 08.1 -2.7
VLI Veliai 87.69 315 P P 22 19 08.1 -2.7
J38A Wedel Dairy, R 87.69 36 P P 22 19 11.6 +0.9
baz=320
SIVA Sivas 87.75 312⇑ *i*P P 22 19 10.7 -0.4
Q32A Meitler Ranch, 87.76 42 P P 22 19 12.0 +0.8
baz=316
AMT Artemida-Makis 87.83 316 P P 22 19 10.4 -1.1
VAM Vamos 87.85 313 P P 22 19 11.1 -0.5
VAM Vamos 87.85 313 P P 22 19 11.1 -0.5
VAM Vamos 87.85 313 P P 22 19 11.1 -0.5
O34A Beatrice 87.91 40 P P 22 19 12.4 +0.6
baz=317,SNR=13
P33A Williams Farm, 87.91 41 P P 22 19 12.7 +0.8
baz=316,SNR=12
IMMV Iera Moni Meta 87.94 313 P P 22 19 11.4 -0.7
M36A Felix, Anita 87.95 38 P P 22 19 13.3 +1.3
baz=318,SNR=13
ITM Ithomi 87.95 316 P P 22 19 10.7 -1.4
ITM Ithomi 87.95 316 P P 22 19 10.7 -1.4
N35A Tabor 87.96 39 P P 22 19 13.5 +1.5
baz=318,SNR=14
L37A Phoenix Point, 87.97 37 P P 22 19 12.8 +0.7
baz=319,SNR=6.4
Q33A Connelly Farm, 88.15 42 P P 22 19 14.0 +0.9
baz=316,SNR=14
SENIN Lac Senin/Sane 88.24 330 *e*P P 22 19 13.1 -0.4
comp=Z,85nm,1.9s
O35A Humboldt 88.25 40 P P 22 19 14.1 +0.7
baz=317,SNR=5.5
PYL PYLOS 88.25 315 P P 22 19 11.7 -1.8
PYL PYLOS 88.25 315 P P 22 19 11.7 -1.8
MATE Matera 88.30 321⇑ *i*P P 22 19 13.4 -0.2
P34A Walnut Farm, R 88.30 41 P P 22 19 14.5 +0.8
baz=317,SNR=28
TBI Tubuai 88.31 120 *e*LR LR 22 47 13.7

comp=Z,2µm,26.5s,baz=310
N36A Muff Farm, Cla 88.34 39 P P 22 19 15.6 +1.7
baz=318,SNR=6.1
L38A Oak Wood Farm, 88.35 37 P P 22 19 14.8 +0.9
baz=319
M37A Trindle Farm, 88.36 38 P P 22 19 15.5 +1.6
baz=318,SNR=8.8
SCIA State Center 88.40 37 *e*P P 22 19 16.0 +1.8
comp=Z,65nm,1.0s
SCIA LR LR
comp=Z,696nm,21.0s
S32A Newby Ranch, P 88.47 43 P P 22 19 15.6 +1.0
baz=316
AQU L'Aquila 88.66 324 *e*P P 22 19 15.6 +0.2
AQU *e* 22 22 46.4
AQU pmax pmax
comp=Z,87nm,0.9s
AQU L'Aquila 88.66 324 *e*P P 22 19 15.6 +0.2
comp=Z,87nm,0.9s
AQU *e*PP **PP 22 22 46.4 +2.9**
AQU LR LR
comp=Z,2µm,22.0s
VLC Villacollemand 88.67 327 *e*P P 22 19 15.9 +0.5
comp=Z,12nm,0.8s
VLC LR LR
comp=Z,563nm,20.0s
Q34A Chapman 88.69 41 P P 22 19 16.9 +1.3
baz=317,SNR=16
KSU1 Kansas State U 88.74 41 P P 22 19 16.5 +0.7
baz=317,SNR=13
KSU1 Kansas State U 88.74 41 *e*P P 22 19 16.7 +0.9
comp=Z,56nm,0.8s
KSU1 LR LR
comp=Z,518nm,22.0s
P35A Duane Minner, 88.74 40 P P 22 19 16.5 +0.7
baz=317,SNR=8.3
MNTX Cornudas Mount 88.75 51 P P 22 19 17.5 +1.6
baz=312
MNTX Cornudas Mount 88.75 51 *e*P P 22 19 17.4 +1.4
comp=Z,6.0nm,0.9s
N37A Lee Faris, Mou 88.77 38 P P 22 19 17.0 +1.2
baz=318,SNR=8.5
M38A Pleasantville 88.78 37 P P 22 19 17.2 +1.3
baz=319,SNR=11
MSTX Muleshoe 88.84 48 P P 22 19 18.1 +1.6
baz=313
MSTX Muleshoe 88.84 48 *e*P P 22 19 18.6 +2.1
comp=Z,10nm,1.0s
O36A Bolckow 88.84 39 P P 22 19 17.3 +1.0
baz=318
T32A Huddler Ranch, 88.85 44 P P 22 19 17.9 +1.5
baz=316
AMTX Amarillo 88.86 47 *e*P P 22 19 17.7 +1.1
comp=Z,53nm,1.0s
R34A Isabella, Hill 88.97 42 P P 22 19 18.9 +2.0
baz=317
JFWS Jewell Farm 89.05 35 *e*P P 22 19 17.7 +0.5
JFWS pmax pmax
comp=Z,31nm,1.1s
JFWS Jewell Farm 89.05 35 *e*P P 22 19 17.7 +0.5
comp=Z,31nm,1.1s
JFWS LR LR
comp=Z,755nm,19.0s
S33A Kaszmaul Farm, 89.07 43 P P 22 19 18.9 +1.5
baz=316,SNR=8.3
P36A Good Intent, A 89.10 40 P P 22 19 18.5 +1.1
baz=318,SNR=6.6
Q35A Mercer Eighty, 89.22 41 P P 22 19 19.2 +1.2
baz=317,SNR=14
CUC Castrocucco 89.24 321 *e*P P 22 19 17.1 -1.0
comp=Z,24nm,1.4s
CUC *e*PP **PP 22 22 42.8 -5.3**
CUC LR LR
comp=Z,1µm,20.0s
JQE Queens East 89.28 337⇑ *e*P P 22 19 17.8 -0.3
JQE ⇑ *e*P **PcP 22 19 18.1 -1.4**
T33A Patterson Ranc 89.30 43 P P 22 19 20.2 +1.8
baz=316
JSA Saint Aubin 89.34 337⇑ *e*P P 22 19 18.4 +0.1
JSA AMB AMB 22 19 19.2
comp=Z,69nm,1.2s
TIP Timpagrande 89.35 320⇑ *i*P P 22 19 18.6 -0.1
TIP Timpagrande 89.35 320 *e*P P 22 19 18.6 -0.1
comp=Z,18nm,1.0s
TIP *e*PP **PP 22 22 52.3 +3.2**
TIP LR LR
comp=Z,1µm,20.0s
U32A Winter Ranch, 89.37 44 P P 22 19 20.7 +1.8
baz=316,SNR=7.1
S34A Willow Spring 89.48 42 P P 22 19 20.7 +1.4
baz=317,SNR=9.8
R35A Emporia Munici 89.52 41 P P 22 19 21.2 +1.8
baz=317,SNR=12
N39A Derby Farms, D 89.53 37 P P 22 19 20.5 +1.1
baz=320
P37A Lathrop 89.56 39 P P 22 19 20.4 +0.7
baz=318,SNR=5.1
V32A Arapaho 89.82 45 P P 22 19 23.3 +2.4
baz=316,SNR=9.2
U33A Lingo Farm, Me 89.84 44 P P 22 19 22.5 +1.5
baz=316,SNR=8.5
R36A Gordon, Harris 89.89 41 P P 22 19 22.6 +1.4
baz=318,SNR=8.8
S35A Otter Creek Ra 89.92 42 P P 22 19 22.8 +1.5
baz=317,SNR=13
T34A McClaskey Farm 89.93 43 P P 22 19 22.5 +1.1
baz=317,SNR=7.4
P38A Dawn 89.96 39 P P 22 19 22.7 +1.2
baz=319,SNR=9.7
PLDF La Plantade 90.03 332⇑ *e*P P 22 19 22.0 +0.2
W32A Sentinel 90.12 45 P P 22 19 24.2 +1.8
baz=315,SNR=10
AGO Saint Agoulin 90.14 332⇑ *e*P P 22 19 22.7 +0.5
U34A Anderson Ranch 90.16 43 P P 22 19 24.2 +1.8
baz=316,SNR=11
U34A Anderson Ranch 90.16 43 *e*P P 22 19 24.4 +1.9
comp=Z,69nm,1.0s
V33A Lossen Ranch, 90.18 44 P P 22 19 24.2 +1.6
baz=316
SSB Saint Sauveur 90.24 331 *e*P P 22 19 22.7 0.0
SSB pmax pmax
comp=Z,16nm,0.9s
SSB Saint Sauveur 90.24 331 *e*P P 22 19 22.7 0.0
comp=Z,16nm,0.9s
SSB LR LR
comp=Z,1µm,20.0s
R37A Teagarden Farm 90.26 40 P P 22 19 23.3 +0.4
baz=318,SNR=7.6
S36A Lake Cedric, C 90.29 41 P P 22 19 24.4 +1.3
baz=318,SNR=8.1
T35A Sooner Cattle 90.38 42 P P 22 19 24.9 +1.4
baz=317,SNR=10
Q38A Cooks Store, C 90.41 39 P P 22 19 24.4 +0.9
baz=319,SNR=8.2
O40A La Belle 90.42 38 P P 22 19 25.0 +1.5
baz=320
PYM Petit Puy Mans 90.44 332⇑ *e*P P 22 19 24.2 +0.5
P39B Salisbury 90.45 38 P P 22 19 24.9 +1.2
baz=319,SNR=6.6
CEL Celeste 90.48 320 *e*P P 22 19 23.9 -0.1
comp=Z,38nm,0.8s
CEL LR LR
comp=Z,2µm,19.0s
W33A Caddo, Fort Co 90.55 45 P P 22 19 26.7 +2.3
baz=316
X32A Elmer 90.60 46 P P 22 19 25.9 +1.4
baz=315,SNR=11
V34A Guthrie 90.60 44 P P 22 19 26.5 +1.9
baz=316,SNR=18
V34A Guthrie 90.60 44 *e*P P 22 19 26.2 +1.7
comp=Z,80nm,1.0s
T36A Boggs Farm, Ca 90.62 42 P P 22 19 25.9 +1.3
baz=317,SNR=17
U35A Pawnee 90.65 43 P P 22 19 26.5 +1.7
baz=317,SNR=15
WMOK Wichita Mounta 90.66 45 P P 22 19 26.3 +1.4
baz=316,SNR=7.1
WMOK Wichita Mounta 90.66 45 *e*P P 22 19 24.9 0.0
WMOK pmax pmax
comp=Z,43nm,1.3s
WMOK MLR MLR
comp=Z,360nm,19.0s
WMOK Wichita Mounta 90.66 45 *e*P P 22 19 24.9 0.0
comp=Z,43nm,1.3s
WMOK LR LR
comp=Z,360nm,19.0s
S37A Fort Scott 90.67 41 P P 22 19 25.6 +0.8
baz=318,SNR=25

Q39A	Willow Grove F	90.68	39	P	P	22 19 26.0	+1.2
	baz=319,SNR=17						
P40A	Paris	90.78	38	P	P	22 19 26.7	+1.4
	baz=320						
LBL	Lubilhac	90.79	331⇑	eP	P	22 19 25.9	+0.6
R38A	Fenwick Farm,	90.84	40	P	P	22 19 26.0	+0.4
	baz=319,SNR=11						
W34A	Bridge Creek,	90.89	44	P	P	22 19 27.6	+1.8
	baz=316,SNR=7.7						
W34A	Bridge Creek,	90.89	44	eP	P	22 19 27.7	+1.8
	comp=Z,68nm,1.1s						
X33A	Lawton	90.97	45	P	P	22 19 27.7	+1.5
	baz=316						
V35A	Meyer Ranch, C	91.03	43	P	P	22 19 27.8	+1.3
	baz=317						
T37A	Cheneyville 18	91.09	41	P	P	22 19 28.0	+1.2
	baz=318,SNR=11						
Q40A	Laux Farm, Aux	91.17	38	P	P	22 19 28.3	+1.1
	baz=320						
U36A	Oologah	91.19	42	P	P	22 19 28.8	+1.6
	baz=318,SNR=9.4						
R39A	Chumby, Stover	91.19	39	P	P	22 19 28.2	+0.9
	baz=319						
S38A	Stockton	91.25	40	P	P	22 19 27.9	+0.4
	baz=319,SNR=12						
Y33A	Hilltop Ranch,	91.27	46	P	P	22 19 29.1	+1.4
	baz=316,SNR=8.6						
X34A	Smith Ranch, M	91.31	45	P	P	22 19 29.8	+2.0
	baz=316,SNR=12						
HDIL	Hopedale	91.33	36	PFAKE		22 19 40.0	+12
HDIL				LR	LR		
	comp=Z,557nm,20.0s						
TX31	Lajitas Ar. Si	91.43	52	eP	P	22 19 30.2	+1.6
TXAR	Lajitas Array	91.43	52	P	P	22 19 30.2	+1.6
	comp=Z,12nm,0.9s,baz=298,slow=2.7,SNR=76						
TXAR				PKKPbc	PKKPbc	22 36 50.1	+1.9
	comp=Z,0.5nm,0.5s,baz=144,slow=6.4,SNR=12						
TXAR				LR	LR	22 55 56.4	
	comp=Z,364nm,20.3s,baz=0.0,slow=32						
W35A	Tecumseh	91.45	44	P	P	22 19 29.9	+1.4
	baz=317,SNR=12						
T38A	Diamond	91.49	41	P	P	22 19 29.8	+1.1
	baz=318,SNR=29						
TUL1	Leonard	91.51	43	P	P	22 19 30.3	+1.5
	baz=317,SNR=10						
TUL1	Leonard	91.51	43	eP	P	22 19 30.1	+1.4
	comp=Z,47nm,1.1s						
U37A	Salina	91.51	42	P	P	22 19 30.3	+1.5
	baz=318,SNR=11						
S39A	Bolivar	91.52	40	P	P	22 19 29.3	+0.5
	baz=319,SNR=19						
V36A	Jenks	91.52	43	P	P	22 19 30.4	+1.6
	baz=317,SNR=16						
R40A	Maddies Statio	91.61	39	P	P	22 19 30.2	+1.1
	baz=320						
ABTX	Abilene, Hawle	91.65	47	P	P	22 19 31.2	+1.6
	baz=315,SNR=11						
ABTX	Abilene, Hawle	91.65	47	eP	P	22 19 31.4	+1.8
	comp=Z,69nm,1.2s						
Z33A	Whitaker Ranch	91.70	46	P	P	22 19 31.1	+1.4
	baz=316,SNR=6.9						
HPIG		91.73	55	eP	P	22 19 32.4	+2.2
	comp=Z,21nm,1.2s						
Y34A	Reagan Ranch,	91.81	45	P	P	22 19 31.7	+1.5
	baz=316,SNR=7.3						
W36A	Wetumka	91.83	43	P	P	22 19 31.8	+1.5
	baz=317,SNR=14						
U38A	Gravette	91.88	41	P	P	22 19 31.6	+1.1
	baz=318,SNR=17						
V37A	Hulbert	91.89	42	P	P	22 19 31.7	+1.2
	baz=318,SNR=24						
X35A	Drake	91.94	44	P	P	22 19 32.1	+1.3
	baz=317,SNR=12						
T39A	Clever	91.99	40	P	P	22 19 31.7	+0.7
	baz=319,SNR=9.8						
Q42A	Golden Eagle	92.01	37	P	P	22 19 32.3	+1.4
	baz=321						
S40A	Lebanon	92.01	40	P	P	22 19 31.9	+0.8
	baz=320						
133A	Hamilton Ranch	92.10	47	P	P	22 19 33.3	+1.7
	baz=316,SNR=11						
Z34A	Collier Ranch,	92.14	46	P	P	22 19 33.0	+1.3
	baz=316,SNR=10.0						
X36A	Centrahoma	92.17	44	P	P	22 19 33.4	+1.6
	baz=317,SNR=37						
SADO	Sadowa	92.20	27	P	P	22 19 32.3	+0.6
	comp=Z,9.6nm,0.9s,baz=339,slow=4.9,SNR=9.4						
SADO	Sadowa	92.20	27	eP	P	22 19 32.6	+0.9
	comp=Z,23nm,1.2s						
HHAR	Hobbs	92.24	41	eP	P	22 19 33.1	+1.0
	comp=Z,21nm,1.0s						
Y35A	Marietta	92.27	45	P	P	22 19 33.7	+1.4
	baz=317						
W37B	Quinton	92.27	43	P	P	22 19 33.7	+1.4
	baz=318,SNR=9.0						
V38A	Canehill	92.30	42	P	P	22 19 33.3	+0.9
	baz=318,SNR=23						
CCM	Cathedral Cave	92.31	38	eP	P	22 19 33.0	+0.6
CCM				pmax	pmax		
	comp=Z,32nm,1.2s						
CCM	Cathedral Cave	92.31	38	eP	P	22 19 33.0	+0.6
	comp=Z,32nm,1.2s						
T40A	Mansfield	92.34	40	P	P	22 19 33.3	+0.7
	baz=320						
CLTB	Caltabellotta	92.39	321	PFAKE		22 19 40.0	+7.1
CLTB				LR	LR		
	comp=Z,899nm,22.0s						
U39A	Green Forest	92.41	41	P	P	22 19 33.7	+0.8
	baz=319						
AAM	Ann Arbor	92.47	31	PFAKE		22 19 50.0	+17
AAM				LR	LR		
	comp=Z,496nm,20.0s						
SFIN	Lafayette	92.50	35	P	P	22 19 34.2	+1.0
	baz=323						
SFIN	Lafayette	92.50	35	eP	P	22 19 34.3	+1.0
	comp=Z,31nm,1.1s						
233A	Rising Star	92.53	47	P	P	22 19 35.3	+1.8
	baz=316,SNR=17						
Z35A	Perchaven, San	92.56	45	P	P	22 19 34.6	+0.9
	baz=316,SNR=9.3						
134A	White-Moore Ra	92.62	46	P	P	22 19 35.3	+1.3
	baz=316,SNR=9.7						
Y36A	Durant	92.70	44	P	P	22 19 35.0	+0.7
	baz=317,SNR=11						
X37A	Clayton	92.71	43	P	P	22 19 35.5	+1.1
	baz=318,SNR=8.0						
V39A	Pettigrew	92.73	41	P	P	22 19 35.5	+1.0
	baz=319						
U40A	Yellville	92.77	41	P	P	22 19 35.5	+0.9
	baz=319						
VSL	Villasalto	92.80	324	eP	P	22 19 34.3	-0.3
	comp=Z,30nm,1.2s						
VSL				LR	LR		
	comp=Z,1μm,21.0s						
T41A	Mountain View	92.81	39	P	P	22 19 35.7	+0.9
	baz=320						
W38A	Poteau	92.83	42	P	P	22 19 36.1	+1.3
	baz=318,SNR=13						
X38A	Whitesboro	92.95	43	P	P	22 19 36.9	+1.4
	baz=318,SNR=23						
333A	Richland Sprin	92.97	48	P	P	22 19 37.2	+1.6
	baz=316,SNR=27						
LRDF	Laroque-de-Fa	92.98	331⇑	eP	P	22 19 36.0	+0.6
234A	Clairette	92.99	47	P	P	22 19 37.3	+1.6
	baz=316,SNR=21						
WDD	Wied Dalam	93.00	319	PFAKE		22 19 50.0	+14
WDD				LR	LR		
	comp=Z,2μm,20.0s						
135A	Vickery Place,	93.02	46	P	P	22 19 37.5	+1.7
	baz=316						
JCT	Junction City	93.06	49	P	P	22 19 37.0	+0.9
	baz=315,SNR=12						
JCT	Junction City	93.06	49	eP	P	22 19 37.2	+1.1
JCT				pmax	pmax		
	comp=Z,49nm,1.3s						
JCT	Junction City	93.06	49	eP	P	22 19 37.2	+1.1
	comp=Z,49nm,1.3s						
JCT				LR	LR		
	comp=Z,490nm,22.0s						
W39A	Magazine	93.14	42	P	P	22 19 37.3	+1.1
	baz=319						
V40A	Witts Springs	93.20	41	P	P	22 19 37.0	+0.4
	baz=319						
SJAF	Saint Jean de	93.23	330⇑	eP	P	22 19 36.3	-0.3
FILF	Fillols	93.29	330⇑	eP	P	22 19 37.1	+0.2
433A	Art	93.30	48	P	P	22 19 38.1	+0.9
	baz=315,SNR=13						
OLIL	Olney	93.33	36	eP	P	22 19 38.6	+1.5
OLIL				epP	sP	22 19 53.4	+0.8
CARF	Carcanieres	93.34	331⇑	eP	P	22 19 37.3	+0.1
WHTX	Lake Whitney,	93.40	46	P	P	22 19 39.2	+1.7
	baz=316						
WHTX	Lake Whitney,	93.40	46	eP	P	22 19 39.2	+1.7
	comp=Z,71nm,1.1s						
334A	Lometa	93.41	47	P	P	22 19 39.2	+1.6
	baz=316,SNR=12						
X39A	Fountain Ranch	93.47	43	P	P	22 19 39.4	+1.5
	baz=318,SNR=26						
W40A	Ferguson Farm,	93.53	41	P	P	22 19 38.8	+0.8
	baz=319						
Y38A	Idabel	93.55	43	P	P	22 19 38.8	+0.6
	baz=318						
V41A	Mountainview	93.57	40	P	P	22 19 38.8	+0.6
	baz=320						
Z37A	Pogue Cattle C	93.59	44	P	P	22 19 39.8	+1.4
	baz=317						
VALF	Valcebollere	93.64	331⇑	eP	P	22 19 39.0	+0.3
PBMO	Poplar Bluff	93.70	39	eP	P	22 19 39.7	+0.9
	comp=Z,24nm,1.1s						
MIAR	Mount Ida	93.73	42	P	P	22 19 40.5	+1.5
	baz=319						
MIAR	Mount Ida	93.73	42	eP	P	22 19 40.2	+1.1
MIAR				pmax	pmax		
	comp=Z,56nm,1.2s						
MIAR				MLR	MLR		
	comp=Z,536nm,20.0s						
MIAR	Mount Ida	93.73	42	eP	P	22 19 40.1	+1.1
	comp=Z,56nm,1.2s						
MIAR				LR	LR		
	comp=Z,536nm,20.0s						
434A	Burnet	93.76	48	P	P	22 19 40.3	+1.0
	baz=316,SNR=8.8						
533A	Kerrville	93.82	49	P	P	22 19 41.2	+1.6
	baz=315						
X201	Greenbrier Sit	93.83	41	eP	P	22 19 40.5	+1.0
	comp=Z,37nm,1.3s						
X301	Grenbrier Sit	93.85	41	eP	P	22 19 41.1	+1.5
	comp=Z,22nm,1.2s						
WHAR	Wooly Hollow	93.87	41	eP	P	22 19 40.3	+0.6
	comp=Z,45nm,1.2s						
Y39A	Lockesburg	93.90	43	P	P	22 19 41.0	+1.2
	baz=318						
335A	Moody	93.93	47	P	P	22 19 41.3	+1.3
	baz=316						
LONY	Lake Ozonia	93.95	24	eP	P	22 19 40.6	+0.8
	comp=Z,11nm,1.0s						
LONY				LR	LR		
	comp=Z,536nm,20.0s						
RESF	Ens	93.96	332⇑	eP	P	22 19 41.2	+1.1
W41B	Gary Mavity, V	93.98	41	P	P	22 19 39.7	-0.4
	baz=320						
VIEF	Viey	94.01	332⇑	eP	P	22 19 41.2	+0.9
ERPA	Erie	94.13	29	eP	P	22 19 41.9	+1.2
	comp=Z,50nm,1.3s						
633A	Saathoff Ranch	94.17	49	P	P	22 19 42.3	+1.1
	baz=315,SNR=13						
X40A	Basin Creek Fa	94.18	42	P	P	22 19 42.0	+0.9
	baz=319						
435B	Jarrell	94.19	47	P	P	22 19 42.2	+1.0
	baz=316						
534A	Blanco	94.19	48	P	P	22 19 42.7	+1.5
	baz=316,SNR=18						
336A	Riesel	94.20	46	P	P	22 19 42.6	+1.4
	baz=317,SNR=5.1						
MMNY	Mt. Morris Dam	94.41	27	eP	P	22 19 43.1	+1.2
ALLY	Alegheny Colle	94.46	29	eP	P	22 19 43.3	+1.1
	comp=Z,37nm,1.3s						
ACSO	Alum Creek Sta	94.46	32	eP	P	22 19 43.5	+1.2
	comp=Z,34nm,1.1s						
ACSO				LR	LR		
	comp=Z,476nm,20.0s						
FURI	Furi	94.51	284	eP	P	22 19 45.1	+1.8
	comp=Z,85nm,1.0s						
WCI	Wyandotte Cave	94.59	35	eP	P	22 19 43.8	+0.9
WCI				pmax	pmax		
	comp=Z,16nm,0.8s						
WCI	Wyandotte Cave	94.59	35	eP	P	22 19 43.8	+0.9
	comp=Z,16nm,0.8s						
M54A	Oil Creek Stat	94.77	29	P	P	22 19 44.8	+1.1
	baz=328						
833A	Chaparral WMA,	94.83	50	P	P	22 19 46.2	+2.1
	baz=315,SNR=5.5						
536A	Bastrop	95.01	47	P	P	22 19 46.4	+1.5
	baz=316						
PKME	Peaks-Kenny Pk	95.02	21	PFAKE		22 20 00.0	+15
PKME				LR	LR		
	comp=Z,708nm,20.0s						
N54A	Moraine State	95.10	30	P	P	22 19 45.9	+0.7
	baz=328						
NATX	Nacogdoches	95.19	45	PFAKE		22 20 00.0	+14
NATX				LR	LR		
	comp=Z,575nm,21.0s						
ACCN	Adirondack Com	95.35	24	eP	P	22 19 47.2	+1.0
	comp=Z,19nm,1.3s						
933A	Laredo	95.41	51	P	P	22 19 49.3	+2.5
	baz=315,SNR=12						
636A	Smothers Creek	95.44	48	P	P	22 19 49.3	+2.3
	baz=316,SNR=5.2						
834A	Tilden	95.50	50	P	P	22 19 48.9	+1.7
	baz=316						
WVT	Waverly	95.52	38	eP	P	22 19 47.9	+0.7
WVT				pmax	pmax		
	comp=Z,10.0nm,1.2s						
WVT	Waverly	95.52	38	eP	P	22 19 47.9	+0.7
	comp=Z,10nm,1.3s						
BINY	Binghamton	95.58	26	eP	P	22 19 48.5	+1.1
	comp=Z,11nm,1.0s						
Z42A	Norrel Spur, H	95.58	42	P	P	22 19 48.7	+1.2
	baz=320						
KEST	Kesra	95.78	322	P	P	22 19 48.0	-0.5
	comp=Z,12nm,1.0s,baz=63,slow=6.8,SNR=6.2						
KEST	Kesra	95.78	322	eP	P	22 19 48.9	+0.3
	comp=Z,49nm,1.4s						
637A	Eagle Lake	95.91	47	P	P	22 19 52.0	+2.9
	baz=317						
034A	Hebbronville	96.16	51	P	P	22 19 52.5	+2.2
	baz=315,SNR=7.1						
SSPA	Standing Stone	96.21	29	eP	P	22 19 51.1	+0.9
	comp=Z,22nm,1.4s						
O56A	Blue Knob Stat	96.26	29	P	P	22 19 50.6	0.0
	baz=329						
ZAIG	Zacatecas	96.60	56	eP	P	22 19 55.8	+3.1
	comp=Z,8.9nm,1.1s						
N59A	State Game Lan	96.77	27	P	P	22 19 53.3	+0.5
	baz=331						
PBRG	Braganca	97.36	336	eP	P	22 19 55.0	-0.5
	comp=Z,26nm,1.4s						
CPCT	Cooper Cave	97.67	36	eP	Pdif	22 19 57.8	+0.8
	comp=Z,8.8nm,1.3s						
CPCT				epP	sP	22 20 14.5	+2.1
TKL	Tuckaleechee C	97.86	35	P	P	22 19 58.3	+0.5
	comp=Z,7.1nm,0.8s,baz=169,slow=4.1,SNR=10						
TKL	Tuckaleechee C	97.86	35	eP	Pdif	22 19 58.8	+1.0
TKL				pmax	pmax		
	comp=Z,16nm,1.1s						
TKL	Tuckaleechee C	97.86	35	eP	Pdif	22 19 58.8	+0.9
	comp=Z,16nm,1.1s						
MVO	Moncorvo	98.03	336	eP	P	22 19 56.4	-2.2
	comp=Z,29nm,1.5s						
POLO	Lamas de Olo	98.10	337	eP	P	22 19 58.6	-0.3
	comp=Z,15nm,2.3s						
ES19	SONSECA Array	98.24	333	eP	P	22 19 59.2	-0.3
ESDC	Sonseca Array	98.29	333	P	P	22 19 59.3	-0.4
	comp=Z,3.4nm,0.8s,baz=19,slow=4.4,SNR=19						
ESDC				PP	PP	22 23 43.1	-16
	comp=Z,2.2nm,0.9s,baz=16,slow=6.7,SNR=4.1						
CBN	Corbin Frederi	98.51	29	PFAKE		22 20 10.0	+9.4
CBN				LR	LR		
	comp=Z,469nm,20.0s						
PAB	San Pablo	98.54	333	eP	Pdif	22 20 01.0	+0.1
PAB				e		22 24 01.4	
PAB	San Pablo	98.54	333	eP	Pdif	22 20 01.0	+0.1
PAB				ePP	PP	22 24 01.4	+0.8
PAB				LR	LR		
	comp=Z,1μm,20.0s						
RKT	Rikitea	98.75	112	eLR	LR	22 52 03.0	
	comp=Z,2μm,27.5s,baz=303						
MTE	Manteigas	98.89	336	PFAKE		22 20 10.0	+7.6
MTE				LR	LR		
	comp=Z,1μm,21.0s						
KMSC	Kings Mountain	99.41	34	P	Pdif	22 20 04.9	+0.2
	baz=327						
KMSC	Kings Mountain	99.41	34	eP	Pdif	22 20 05.6	+0.8
	comp=Z,7.9nm,1.0s						
PMRV	Marv??o	99.72	335	eP	Pdif	22 20 05.5	-0.5
BRAL	Brewton	99.83	40	PFAKE		22 20 20.0	+13
BRAL				LR	LR		
	comp=Z,415nm,20.0s						
GOGA	Godfrey	99.83	36	PFAKE		22 20 20.0	+13
GOGA				LR	LR		
	comp=Z,478nm,21.0s						
KMBO	Kilima Mbogo	101.59	277	P	Pdif	22 20 14.1	-1.0
	comp=Z,0.5nm,0.2s,baz=153,slow=2.3,SNR=3.2						
KMBO	Kilima Mbogo	101.59	277	P	Pdif	22 20 14.1	-1.0
KMBO				LR	LR		
	comp=Z,527nm,20.0s						
NHSC	New Hope	101.63	34	PFAKE		22 20 30.0	+15
NHSC				LR	LR		
	comp=Z,606nm,21.0s						
CASY	Casey	104.21	192	PFAKE		22 20 40.0	+15
CASY				LR	LR		
	comp=Z,45nm,20.0s						
CMLA	Cha da Macela	105.86	349	PFAKE		22 25 00.0	
CMLA				LR	LR		
	comp=Z,949nm,21.0s						
TEIG	Tepich	107.62	48	PFAKE		22 25 00.0	
TEIG				LR	LR		
	comp=Z,173nm,21.0s						
VNDA	Vanda	113.63	175	PKiKP	PKiKP	22 24 59.4	+0.3
	comp=Z,3.9nm,0.8s,baz=310,slow=3.7,SNR=16						
GTBY	Guantanamo Bay	115.15	37	PFAKE		22 25 20.0	+16
GTBY				LR	LR		
	comp=Z,367nm,22.0s						
MTDJ	Mount Denham	115.33	41	PFAKE		22 25 20.0	+16
MTDJ				LR	LR		
	comp=Z,352nm,20.0s						
GRTK	Grand Turk	115.66	33	PFAKE		22 25 20.0	+15
GRTK				LR	LR		
	comp=Z,483nm,20.0s						
LSZ	Lusaka	116.94	270	ePKIKP	PKPdf	22 25 07.9	+0.6
LSZ	Lusaka	116.94	270	ePKPdf	PKPdf	22 25 07.9	+0.6
LSZ				LR	LR		
	comp=Z,579nm,20.0s						
SDDR	Presa de Saban	117.79	35	PFAKE		22 25 20.0	+11
SDDR				LR	LR		
	comp=Z,382nm,20.0s						
TORD	Torodi Ar. Bea	117.90	314	PKP	PKPdf	22 25 08.7	-0.5
	comp=Z,6.8nm,0.9s,baz=23,slow=1.5,SNR=31						
TORD				PP	PP	22 26 08.7	-14
	comp=Z,4.7nm,0.9s,baz=28,slow=5.6,SNR=4.5						
TORD				PKKPbc	PKKPbc	22 35 29.8	+1.5
	comp=Z,0.9nm,0.9s,baz=216,slow=2.1,SNR=11						
MAW	Mawson	118.03	205	PKP	PKPdf	22 25 08.3	+0.6
	comp=Z,5.9nm,0.8s,baz=54,slow=3.7,SNR=6.6						
MAW	Mawson	118.03	205	ePKIKP	PKPdf	22 25 08.9	+1.3
MAW	Mawson	118.03	205	ePKPdf	PKPdf	22 25 08.9	+1.3
SJG	San Juan	120.79	30	PFAKE		22 25 30.0	+15
SJG				LR	LR		
	comp=Z,420nm,22.0s						
BCIP	Isla Barro Col	121.29	49	PFAKE		22 25 30.0	+14
BCIP				LR	LR		
	comp=Z,285nm,19.0s						
ANWB	Willy Bob	122.86	26	PFAKE		22 25 30.0	+11
ANWB				LR	LR		
	comp=Z,379nm,21.0s						
MOTC	Monteria, Cord	124.08	45	eP	PKPdf	22 25 18.9	-2.1
QSPA	South Pole Qui	125.38	180	ePKPdf	PKPdf	22 25 22.2	+0.2
QSPA				LR	LR		
	comp=Z,530nm,19.0s						
BOSA	Boshof	125.74	258	PKP	PKPdf	22 25 24.1	+0.2
	comp=Z,12nm,0.9s,baz=104,slow=1.9,SNR=19						
FDF	Fort de France	125.80	26	PFAKE		22 25 40.0	+16
FDF				LR	LR		
	comp=Z,458nm,22.0s						
OCAC	Ocana	125.85	43	eP	PKPdf	22 25 25.2	+0.5
BRRC	Barranca, Sant	126.56	44	eP	PKPpre	22 25 17.0	
SYO	Syowa Base	126.70	206⇑	ePKPdf	PKPdf	22 25 23.9	-0.4
SYO	Syowa Base	126.70	206⇓	epPKPdf	pPKPdf	22 25 38.0	+2.1
SDV	Santo Domingo	126.76	40	PFAKE		22 25 40.0	+14
SDV				LR	LR		
	comp=Z,365nm,22.0s						
DBIC	Dimbokro	126.90	315	PKP	PKPdf	22 25 26.3	-0.1
	comp=Z,22nm,1.0s,baz=37,slow=2.1,SNR=14						
DBIC				PP	PP	22 27 17.7	-5.7
	comp=Z,16nm,1.1s,baz=7.1,slow=8.1,SNR=4.1						
TIC	Toumodi	127.02	316	ePKIKP	PKPdf	22 25 26.3	-0.4
KIC	Kosan Boka	127.09	315	ePKIKP	PKPdf	22 25 26.5	-0.3
	comp=Z,62nm,1.1s						
GUYC	Guyana, Colomb	127.09	47	eP	PKPdf	22 25 25.8	-1.6
BARC	Barichara	127.28	44	eP	PKPpre	22 25 23.9	
LIC	Lamto	127.36	315	ePKIKP	PKPdf	22 25 26.7	-0.6
	comp=Z,88nm,1.5s						
TSUM	Tsumeb	127.61	272	ePKPdf	PKPdf	22 25 28.5	+0.8
TSUM				LR	LR		
	comp=Z,459nm,22.0s						
RUSC	La Rusia	127.90	45	eP	PKPdf	22 25 28.9	-0.1
GRGR	Grenville	128.00	28	PFAKE		22 25 40.0	+11
GRGR				LR	LR		
	comp=Z,447nm,22.0s						
ROSC	El Rosal	128.03	47	PKP	PKPdf	22 25 30.1	+1.0
	comp=Z,6.1nm,0.5s,baz=326,slow=0.9,SNR=9.8						
OTAV	Otavalo	129.00	54	ePKPdf	PKPdf	22 25 32.5	+1.5
OTAV				LR	LR		
	comp=Z,375nm,19.0s						
OTAV	Otavalo	129.00	54	eP	PKPdf	22 25 31.4	+0.4
SUR	Sutherland	130.74	256	PFAKE		22 25 50.0	+17
SUR				LR	LR		
	comp=Z,955nm,19.0s						
NVL	N'lazarevskaya	135.78	202	ePKHKP	PKPpre	22 25 32.0	
NNA	Nana	138.73	65	i PKIKP	PKPdf	22 25 45.8	-2.9
NNA	Nana	138.73	65	PFAKE		22 26 00.0	+11
NNA				LR	LR		
	comp=Z,477nm,21.0s						
SNAA	Sanae	139.25	197	PKP	PKPpre	22 25 37.4	
VNA2	Neumayer--Watz	140.82	196	PKP	PKPpre	22 25 43.9	
	baz=92,slow=2.2						
VNA3	Neumayer Olymp	141.07	195	PKP	PKPpre	22 25 45.3	
VNA1	Neumayer--Stat	141.22	196	PKP	PKPpre	22 25 46.0	
ASCN	Ascension	144.22	314	PFAKE		22 26 10.0	+12
ASCN				LR	LR		
	comp=Z,534nm,19.0s						
SHEL	Horse Pasture	144.25	295	i PKIKP	PKPdf	22 25 58.0	-0.5
SHEL	Horse Pasture	144.25	295	ePKPdf	PKPbc	22 25 57.1	+0.3
LPAZ	La Paz	147.88	61	PKPbc	PKPbc	22 26 08.9	+0.6
	comp=Z,52nm,0.9s,baz=347,slow=3.4,SNR=68						
RCBR	Riachuelo	150.17	353	ePKPbc	PKPbc	22 26 14.0	+0.4
RCBR				LR	LR		
	comp=Z,483nm,22.0s						
LVC	Limon Verde	151.18	71	ePKPdf	PKPdf	22 26 11.7	+1.5
LVC				ePKPbc	PKiKP	22 26 17.8	+1.2
LVC				LR	LR		
	comp=Z,270nm,19.0s						
LCO	Las Campanas	152.72	85	PFAKE		22 26 20.0	+0.7
LCO				LR	LR		
	comp=Z,688nm,20.0s						
PLCA	Paso Flores	154.98	111	PKP	PKPdf	22 26 15.0	+0.2
	comp=Z,5.7nm,1.1s,baz=338,slow=1.1,SNR=4.0						
PLCA				PKPbc	PKPbc	22 26 24.4	+0.8
	comp=Z,5.9nm,0.9s,baz=248,slow=2.3,SNR=8.4						
CPUP	Villa Florida	161.99	64	PKP	PKPdf	22 26 23.9	+0.4
	comp=Z,6.0nm,1.1s,baz=259,slow=1.1,SNR=6.6						
CPUP				PKPab	PKPab	22 27 10.6	+0.8
	comp=Z,4.2nm,0.9s,baz=333,slow=5.4,SNR=5.1						
SPB	Sao Paulo	166.08	33	PFAKE		22 26 40.0	+13
SPB				LR	LR		
	comp=Z,480nm,20.0s						

**JMA 21 22:12:53.7±0.1

*DDA **21** 22:14:03.4, 39.°11N×29.°04E, h7km, Md2.8*
*ISK **21** 22:14:04.4, 39.°15N×29.°00E, h8km, ML3.4*
*CSEM **21** 22:14:04.2±0.1, 39.°13N×29.°01E, h2km, MD2.8, Error ellipse: s-maj=2.7km s-min=2.1km az=84.0*

ISC 21 22:14:04.0±1.0, 39.°12N±0.°02×29.°04E±0.°02, h8km±9km, n75, σ0.°75/91, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**253**	P	**Pg**	**22 14 09.4**	**+0.2**
DEMI				S	**Sg**	**22 14 13.2**	**+0.5**
DEMI	**Demirci**	**0.26**	**253**	*i* P	**Pg**	**22 14 09.4**	**+0.2**
DEMI				*i* S	**Sg**	**22 14 13.2**	**+0.5**
GDZ	**Gediz**	**0.35**	**95**	P	**Pg**	**22 14 10.7**	**-0.2**
GDZ				S	**Sg**	**22 14 15.5**	**+0.1**
GDZ	**Gediz**	**0.35**	**95**	*i* P	**Pg**	**22 14 10.7**	**-0.2**
GDZ				*i* S	**Sg**	**22 14 15.5**	**+0.1**
TVSB	**Tavsanli**	**0.47**	**45**	*e*PG	**Pg**	**22 14 13.2**	**+0.1**
TVSB	**Tavsanli**	**0.47**	**45**	*e*Pg	**Pg**	**22 14 13.2**	**+0.1**
DURS	**Dursunbey**	**0.65**	**318**	P	**Pb**	**22 14 17.0**	**-0.7**
DURS	**Dursunbey**	**0.65**	**318**	*i* P	**Pb**	**22 14 17.0**	**-0.7**
KULA	**Kula-Manisa**	**0.67**	**206**	*e*PG	**Pb**	**22 14 17.9**	**-0.1**
MANT	**Manisa**	**0.73**	**211**	P	**Pg**	**22 14 17.4**	**-0.7**
MANT				S	**Sg**	**22 14 26.9**	**-0.7**
MANT	**Manisa**	**0.73**	**211**	*i* P	**Pg**	**22 14 17.4**	**-0.7**
MANT				*i* S	**Sg**	**22 14 26.9**	**-0.7**
KHAL	**Karahalli**	**0.83**	**154**	P	**Pg**	**22 14 20.3**	**+0.4**
KHAL				S	**Sg**	**22 14 30.4**	**-0.3**
KHAL	**Karahalli**	**0.83**	**154**	*i* P	**Pg**	**22 14 20.3**	**+0.4**
KHAL				*i* S	**Sg**	**22 14 30.4**	**-0.3**
KHL	**Karahalli**	**0.88**	**154**	*e*PG	**Pn**	**22 14 22.6**	**-0.2**
KHL	**Karahalli**	**0.88**	**154**	*e*Pg	**Pn**	**22 14 22.6**	**-0.2**
ORLT	**Orhaneli**	**0.93**	**353**	*e*PG	**Pg**	**22 14 22.0**	**+0.1**
ORLT	**Orhaneli**	**0.93**	**353**	*e*Pg	**Pg**	**22 14 22.0**	**+0.1**
AKS	**Akhisar**	**0.98**	**256**	*e*PG	**Pb**	**22 14 23.1**	**-0.2**
AKS	**Akhisar**	**0.98**	**256**	*e*Pg	**Pb**	**22 14 23.1**	**-0.2**
BALB	**Balikesir**	**1.04**	**300**	*e*PG	**Pb**	**22 14 24.1**	**-0.1**
BALB				*e*SG	**Sn**	**22 14 38.3**	**-1.2**
BALB	**Balikesir**	**1.04**	**300**	*e*Pg	**Pb**	**22 14 24.1**	**-0.1**
BALB				*e*Sg	**Sn**	**22 14 38.3**	**-1.2**
IGD	**Bursa**	**1.15**	**6**	*i* P	**Pb**	**22 14 25.1**	**-1.1**
IGD				*i* S	**Sg**	**22 14 41.4**	**+0.4**
CAVI	**Cavuskoy**	**1.25**	**30**	*e*PN	**Pg**	**22 14 28.8**	**+0.8**
CAVI	**Cavuskoy**	**1.25**	**30**	*e*Pn	**Pg**	**22 14 28.8**	**+0.8**
MDNY	**Mudanya-Bursa**	**1.25**	**355**	*e*PN	**Pg**	**22 14 27.9**	**-0.2**
MDNY				*e*SN	**Sn**	**22 14 45.8**	**+0.9**
MDNY	**Mudanya-Bursa**	**1.25**	**355**	*e*Pn	**Pg**	**22 14 27.9**	**-0.2**
MDNY				*e*Sn	**Sn**	**22 14 45.8**	**+0.9**
KCTX	**Karacabey (Bur**	**1.26**	**336**	*e*PN	**Pg**	**22 14 28.3**	**+0.1**
KCTX	**Karacabey (Bur**	**1.26**	**336**	*e*Pn	**Pg**	**22 14 28.3**	**+0.1**
IZI	**Iznik**	**1.26**	**15**	*e*PN	**Pg**	**22 14 28.4**	**+0.2**
IZI	**Iznik**	**1.26**	**15**	*e*Pn	**Pg**	**22 14 28.4**	**+0.2**
GEMT	**Gemlik**	**1.32**	**5**	*e*PN	**Pg**	**22 14 29.4**	**+0.1**
GEMT	**Gemlik**	**1.32**	**5**	*e*Pn	**Pg**	**22 14 29.4**	**+0.1**
DENT	**Denizli**	**1.36**	**180**	*e*PN	**Pg**	**22 14 30.9**	**+0.8**
DENT	**Denizli**	**1.36**	**180**	*e*Pn	**Pg**	**22 14 30.9**	**+0.8**
ADVT	**Abdulvahap**	**1.42**	**22**	*e*PN	**Pb**	**22 14 30.4**	**-0.2**
ADVT	**Abdulvahap**	**1.42**	**22**	*e*Pn	**Pb**	**22 14 30.5**	**-0.2**
DNZL	**Cakiroluk**	**1.43**	**180**	P	**Pn**	**22 14 30.1**	**-0.3**
DNZL				S	**Sg**	**22 14 52.1**	**+2.2**
DNZL	**Cakiroluk**	**1.43**	**180**	*i* P	**Pn**	**22 14 30.1**	**-0.3**
DNZL				*i* S	**Sg**	**22 14 52.1**	**+2.2**
ARMT	**Armutlu**	**1.45**	**355**	*e*PN	**Pb**	**22 14 30.9**	**-0.4**
ARMT	**Armutlu**	**1.45**	**355**	*e*Pn	**Pb**	**22 14 30.9**	**-0.4**
AYDB	**Zeytinkoy-Aydi**	**1.48**	**218**	*e*PN	**Pg**	**22 14 32.2**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**1.48**	**218**	*e*Pn	**Pg**	**22 14 32.2**	**-0.1**
EDC	**Edincik**	**1.52**	**324**	*e*PN	**Pb**	**22 14 31.8**	**-0.7**
EDC	**Edincik**	**1.52**	**324**	*e*Pn	**Pb**	**22 14 31.8**	**-0.7**
GPA	**Golpazari**	**1.53**	**40**	*e*PN	**Pg**	**22 14 33.4**	**+0.1**
GPA	**Golpazari**	**1.53**	**40**	*e*Pn	**Pg**	**22 14 33.4**	**+0.1**
KNL	**Bal¨–kesir**	**1.64**	**315**	*i* P	**Pb**	**22 14 33.9**	**-0.6**
KNL				*i* S	**Sg**	**22 14 56.0**	**-0.6**
GULT	**Gulveren**	**1.74**	**40**	*e*PN	**Pn**	**22 14 35.2**	**+0.7**
GULT	**Gulveren**	**1.74**	**40**	*e*Pn	**Pn**	**22 14 35.2**	**+0.7**
ISP	**Isparta**	**1.74**	**138**	*e*PN	**Pb**	**22 14 36.1**	**-0.2**
ISP	**Isparta**	**1.74**	**138**	*e*Pn	**Pb**	**22 14 36.1**	**-0.2**
HRT	**Hereke**	**1.77**	**16**	*e*PN	**Pb**	**22 14 35.9**	**-0.8**
HRT	**Hereke**	**1.77**	**16**	*e*Pn	**Pb**	**22 14 35.9**	**-0.8**
SPNC	**Sapanca-Adapaz**	**1.84**	**32**	*e*PN	**Pb**	**22 14 37.4**	**-0.6**
SPNC	**Sapanca-Adapaz**	**1.84**	**32**	*e*Pn	**Pb**	**22 14 37.4**	**-0.6**
MRMT	**Marmara Adasi**	**1.85**	**324**	*e*PN	**Pn**	**22 14 36.6**	**+0.5**
MRMT	**Marmara Adasi**	**1.85**	**324**	*e*Pn	**Pn**	**22 14 36.6**	**+0.5**
ISK	**Istanbul-Kandi**	**1.94**	**0**	*e*PN	**Pb**	**22 14 38.3**	**-1.4**
ISK	**Istanbul-Kandi**	**1.94**	**0**	*e*Pn	**Pb**	**22 14 38.3**	**-1.4**
SVRH	**Sivrihisar-ESK**	**1.96**	**80**	*e*PN	**Pb**	**22 14 39.3**	**-0.7**
SVRH	**Sivrihisar-ESK**	**1.96**	**80**	*e*Pn	**Pb**	**22 14 39.3**	**-0.7**
BGKT	**Bogazkoy**	**2.07**	**354**	*e*PN	**Pn**	**22 14 39.6**	**+0.5**
BGKT	**Bogazkoy**	**2.07**	**354**	*e*Pn	**Pn**	**22 14 39.6**	**+0.5**
SILT	**Sile**	**2.08**	**13**	*e*PN	**Pb**	**22 14 40.8**	**-1.2**
SILT	**Sile**	**2.08**	**13**	*e*Pn	**Pb**	**22 14 40.8**	**-1.2**
RKY	**Sarkoy-Tekirda**	**2.12**	**318**	*e*PN	**Pn**	**22 14 40.5**	**+0.7**
RKY	**Sarkoy-Tekirda**	**2.12**	**318**	*e*Pn	**Pn**	**22 14 40.5**	**+0.7**
KLYT	**Kilyos**	**2.13**	**0**	*e*PN	**Pn**	**22 14 41.1**	**+1.2**
KLYT	**Kilyos**	**2.13**	**0**	*e*Pn	**Pn**	**22 14 41.1**	**+1.2**
MDUB	**Mudurnu**	**2.14**	**50**	*e*PN	**Pb**	**22 14 41.9**	**-1.2**
MDUB	**Mudurnu**	**2.14**	**50**	*e*Pn	**Pb**	**22 14 41.9**	**-1.2**
CTKS	**Kestanelik-??a**	**2.15**	**349**	*e*PN	**Pn**	**22 14 41.1**	**+0.9**
CTKS	**Kestanelik-??a**	**2.15**	**349**	*e*Pn	**Pn**	**22 14 41.1**	**+0.9**
KIZT	**Kizilcal**	**2.23**	**95**	*e*PN	**Pb**	**22 14 43.3**	**-1.3**
KIZT	**Kizilcal**	**2.23**	**95**	*e*Pn	**Pb**	**22 14 43.3**	**-1.3**

JMA 21 22:22:28.7±0.2, 35.°73N×140.°98E, h17km±1km, M3.1, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.10**	**255**	P	Pb	22 22 32.1	-0.1
CHOJ				S	Sb	22 22 34.3	-0.3
JCN	**Nagara**	**0.71**	**244**	P	Pg	22 22 43.1	+0.5
JCN				*e*S	Sn	22 22 53.7	-0.7
JHO	**Hitachi**	**0.94**	**339**	P	Pb	22 22 45.9	-0.7
MAT	**Matsushiro**	**2.39**	**291**	P	Pn	22 23 07.2	+0.1
MAT				S	Sn	22 23 37.3	+1.4

*IDC **21** 22:26:01.4±1.6, 37.°75N×144.°55E, h0km, mb3.7/5, mb1 3.8/8, mb1mx3.5/40, mbtmp3.8/8, ML3.7/3, Error ellipse: s-maj=38.1km s-min=21.3km az=77.0*
*ISCJB **21** 22:26:05.0±0.8, 37.°85N±0.°06×144.°36E±0.°06, h33km, mb3.7/5, Error ellipse: s-maj=8.5km s-min=6.9km az=9.8*
*JMA **21** 22:26:06.3±0.2, 37.°94N×144.°16E, h21km, M3.8*

ISC 21 22:26:07.2±1.5, 37.°85N±0.°06×144.°3E±0.°1, h35km, n20, σ1.°78/30, mb3.8/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.40**	**301**	P	**Pn**	**22 26 42.9**	**-1.1**
JIO	**Ouri**	**2.40**	**285**	P	**Pn**	**22 26 44.0**	**0.0**
JIO				*e*S	**Sn**	**22 27 11.3**	**-0.9**
JMK	**Ichinoseki**	**2.66**	**295**	P	**Pn**	**22 26 47.9**	**+0.4**
JMK				*e*S	**Sn**	**22 27 18.4**	**-0.1**
JFK	**Kawauchi**	**2.76**	**261**	P	**Pn**	**22 26 49.1**	**0.0**
JMM	**Marumori**	**2.77**	**271**	P	**Pn**	**22 26 49.2**	**0.0**
JMM				S	**Sn**	**22 27 20.5**	**-0.9**
JOM	**Ohasama**	**2.85**	**305**	P	**Pn**	**22 26 50.3**	**0.0**
JOM				S	**Sn**	**22 27 23.0**	**-0.4**
JOU	**Okura**	**2.91**	**281**	*e*S	**Sn**	**22 27 25.7**	**+0.8**
JFT	**Otama**	**3.16**	**265**	*e*S	**Sn**	**22 27 31.1**	**+0.1**
JRG	**Rokugo**	**3.26**	**299**	P	**Pn**	**22 26 56.7**	**+0.9**
JRG				*e*S	**Sn**	**22 27 34.2**	**+0.9**
JYK	**Kaneyama**	**3.27**	**290**	P	**Pn**	**22 26 56.5**	**+0.5**
JYK				*e*S	**Sn**	**22 27 34.6**	**+0.9**
JANG	**Nango**	**3.32**	**320**	P	**Pn**	**22 26 57.0**	**+0.3**
MJAR	**Matsushiro Arr**	**5.04**	**257**	Pn	**Pn**	**22 27 21.1**	**+0.8**
1.3nm,0.3s,baz=85,slow=15,SNR=13							
MJAR				Sn	**Sn**	**22 28 20.2**	**+2.9**
1.3nm,0.3s,baz=10.0,slow=28,SNR=4.6							
MAT	**Matsushiro**	**5.04**	**257**	P	**Pn**	**22 27 21.8**	**+1.5**
MAT				S	**Sn**	**22 28 20.0**	**+2.7**
JHJ	**Hachijo jima 2**	**5.99**	**219**	Pn	**Pn**	**22 27 30.8**	**-2.6**
5.3nm,0.3s,baz=53,slow=20,SNR=5.6							
JHJ				Sn	**Sn**	**22 28 35.4**	**-5.3**
9.2nm,0.3s,baz=72,slow=19,SNR=4.8							
ASAJ	**Asahikawa**	**6.39**	**349**	Pn	**Pn**	**22 27 37.9**	**-0.9**
1.8nm,0.3s,baz=194,slow=12,SNR=14							
ASAJ				Sn	**Sn**	**22 28 46.0**	**-4.4**
0.3nm,0.3s,baz=323,slow=20,SNR=2.7							
ZALV	**Zalesovo Beam**	**43.07**	**312**	P	**P**	**22 34 03.7**	**+0.2**
0.3nm,0.3s,baz=98,slow=10,SNR=2.1							
MKAR	**Makanchi Array**	**45.63**	**302**	P	**P**	**22 34 25.6**	**+1.4**
0.1nm,0.3s,baz=68,slow=9.2,SNR=6.2							
KURBB	**Kurchatov Arra**	**47.31**	**308**	P	**P**	**22 34 38.2**	**+1.1**
0.7nm,0.2s,baz=81,slow=7.9,SNR=7.9							
WRA	**Warramunga Arr**	**58.25**	**191**	P	**P**	**22 35 57.0**	**-1.2**
0.4nm,0.4s,baz=8.3,slow=7.1,SNR=13							
ASAR	**Alice Springs**	**61.97**	**191**	P	**P**	**22 36 23.0**	**-0.7**
0.8nm,1.1s,baz=16,slow=7.0,SNR=3.0							

JMA 21 22:31:52.8±0.2, 35.°62N×140.°90E, h12km±2km, M2.9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.09**	**338**	P	Pg	22 31 55.5	0.0
CHOJ				S	Sg	22 31 57.8	+0.3
JCN	**Nagara**	**0.60**	**251**	P	Pb	22 32 05.2	-0.1
KTR	**Katsuura**	**0.67**	**226**	*e*S	Sg	22 32 15.1	+0.5
JYT	**Yasato**	**0.83**	**317**	*e*S	Sg	22 32 19.0	-0.9
BSO3	**Boso 3**	**0.88**	**201**	P	Pg	22 32 09.4	-0.3

*NIED **21** 22:32:00, 37.°00N×141.°00E, h41km, Mw4.0 Best double couple: $M_0$1.16000×10^15 NP1:ϕ_s345.00000°, δ51.00000°, λ5.00000°. NP2:ϕ_s252.00000°, δ86.00000°, λ141.00000°.*
*ISCJB **21** 22:32:35.1±0.6, 37.°03N±0.°03×141.°11E±0.°06, h60km±4km, mb3.9/8, MS3.9/1, Error ellipse: s-maj=8.4km s-min=4.4km az=23.6*
*JMA **21** 22:32:36.9±0.1, 37.°05N×140.°98E, h53km±1km, M3.9 Broadband fault plane solution: P waves. NP1: ϕ_s252.00000°, δ71.00000°, λ149.00000°. NP2: ϕ_s353.00000°, δ61.00000°, λ22.00000°. Principal axes: T Plg35.0000°, Azm210.0000°; N Plg54.0000°, Azm45.0000°; P Plg7.0000°, Azm305.0000°;*
JMA Felt II J1.
*NEIC **21** 22:32:37.4±1.5, 37.°04N×141.°08E, h64km±12km, mb4.1/2 Error ellipse: s-maj=19.9km s-min=12.2km az=126.0*
*IDC **21** 22:32:37.9±2.1, 37.°08N×141.°03E, h71km±17km, mb3.6/6, mb1 3.7/11, mb1mx3.4/47, mbtmp3.9/11, MS4.0/1, Ms1 4.0/1, ms1mx2.9/46, Error ellipse: s-maj=19.4km s-min=12.9km az=109.0*

ISC 21 22:32:36.0±1.1, 37.°02N±0.°05×141.°12E±0.°08, h52km±7km, n31, σ1.°08/42, mb3.9/8, 5C-2D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.27**	**288**	⇑P	**Pn**	**22 32 45.2**	**0.0**
ONAJ				S	**Sn**	**22 32 51.2**	**-0.5**
JFK	**Kawauchi**	**0.40**	**331**	⇑P	**Pn**	**22 32 46.4**	**0.0**
JFK				S	**Sn**	**22 32 53.1**	**-0.7**
JHO	**Hitachi**	**0.60**	**227**	P	**Pn**	**22 32 48.7**	**+0.1**
JHO				S	**Sn**	**22 32 56.7**	**-0.9**
JFT	**Otama**	**0.80**	**309**	⇓P	**Pn**	**22 32 51.2**	**+0.1**
JFT				S	**Sn**	**22 33 01.5**	**-0.7**
JMM	**Marumori**	**0.89**	**343**	⇑P	**Pn**	**22 32 52.3**	**0.0**
JMM				S	**Sn**	**22 33 03.5**	**-0.7**
JFY	**Yanaizu**	**1.19**	**289**	⇓P	**Pn**	**22 32 55.8**	**-0.6**
JFY				*e*S	**Sn**	**22 33 09.9**	**-1.6**
JOU	**Okura**	**1.39**	**345**	P	**Pn**	**22 32 59.4**	**+0.3**
JOU				S	**Sn**	**22 33 16.6**	**+0.2**
JIO	**Ouri**	**1.45**	**7**	⇑P	**Pn**	**22 33 00.3**	**+0.5**
JIO				S	**Sn**	**22 33 17.4**	**-0.3**
JAG	**Ashikaga**	**1.46**	**247**	⇑P	**Pn**	**22 32 59.7**	**-0.3**
JAG				S	**Sn**	**22 33 16.4**	**-1.6**
JYS	**Shirataka**	**1.46**	**326**	P	**Pn**	**22 33 00.1**	**+0.1**
JYS				S	**Sn**	**22 33 18.0**	**-0.1**
JKT	**Katashina**	**1.52**	**261**	S	**Sn**	**22 33 19.1**	**-0.4**
MJAR	**Matsushiro Arr**	**2.38**	**259**	P	**Pn**	**22 33 13.3**	**+0.7**
9.9nm,0.3s,baz=85,slow=15,SNR=23							
MJAR				S	**Sn**	**22 33 41.7**	**+1.1**
15nm,0.3s,baz=74,slow=42,SNR=14							
MAJO	**Matsushiro**	**2.38**	**259**	*e*Pn	**Pn**	**22 33 13.7**	**+1.1**
MAT	**Matsushiro**	**2.38**	**259**	P	**Pn**	**22 33 13.4**	**+0.8**
MAT				S	**Sn**	**22 33 42.3**	**+1.7**
JHJ	**Hachijo jima 2**	**4.04**	**196**	P	**Pn**	**22 33 37.9**	**+2.6**
24nm,0.3s,baz=99,slow=22,SNR=16							
JHJ				S	**Sn**	**22 34 21.9**	**+0.5**
74nm,0.3s,baz=82,slow=21,SNR=11							
ERM	**Erimo**	**5.24**	**17**	Pn	**Pn**	**22 33 53.6**	**+2.0**
ASAJ	**Asahikawa**	**7.18**	**9**	P	**Pn**	**22 34 18.9**	**+0.5**
0.9nm,0.3s,baz=208,slow=11,SNR=7.3							
ASAJ				S	**Sn**	**22 35 39.4**	**+0.9**
1.0nm,0.3s,baz=252,slow=20,SNR=3.7							
JCJ	**Chichijima**	**9.93**	**174**	S	Sn	22 36 38.9	-7.3
5.3nm,0.3s,baz=300,slow=22,SNR=6.6							
USRK	**Ussurisk Ar.**	**9.98**	**319**	P	**Pn**	**22 34 58.9**	**+2.3**
0.4nm,0.3s,baz=115,slow=13,SNR=10							
KSRS	**Korea Array**	**10.53**	**276**	P	**Pn**	**22 35 06.3**	**+2.1**
0.1nm,0.3s,baz=90,slow=14,SNR=8.0							
KSAR	**Wonju Array Be**	**10.56**	**276**	P	**Pn**	**22 35 06.3**	**+1.7**
MDJ	**Mudanjiang**	**11.56**	**315**	*e*Pn	**Pn**	**22 35 18.8**	**+0.6**
YAK	**Yakutsk**	**26.03**	**348**	LR	LR	22 48 55.6	
comp=Z,376nm,20.7s,baz=231,slow=38							
SONM	**Songino Array**	**27.60**	**304**	P	**P**	**22 38 16.9**	**-1.5**
1.8nm,1.0s,baz=101,slow=8.4,SNR=6.0							
ZALV	**Zalesovo Beam**	**41.75**	**312**	P	**P**	**22 40 19.2**	**-0.6**
2.7nm,0.8s,baz=104,slow=7.4,SNR=9.1							
MKAR	**Makanchi Array**	**43.92**	**302**	P	**P**	**22 40 36.6**	**-0.9**
1.0nm,0.7s,baz=84,slow=11,SNR=7.1							
KURK	**Kurchatov**	**45.75**	**308**	*e*P	**P**	**22 40 51.6**	**-0.4**
0.7nm,0.4s							
EKS2	**Erkin-Say**	**50.78**	**299**	*e*P	P	22 41 34.6	+3.6
1.7nm,0.6s							
WRA	**Warramunga Arr**	**57.01**	**188**	P	**P**	**22 42 16.7**	**+0.3**
1.5nm,0.6s,baz=3.9,slow=7.3,SNR=20							
ASAR	**Alice Springs**	**60.74**	**188**	P	**P**	**22 42 42.4**	**+0.2**
0.7nm,0.8s,baz=13,slow=5.7,SNR=4.7							
FINES	**FINESS Array B**	**68.72**	**332**	P	**P**	**22 43 33.3**	**-0.5**
1.3nm,1.0s,baz=52,slow=9.0,SNR=3.1							

*IDC **21** 22:39:56.9±9.8, 36.°08N×71.°13E, h84km±43km, mb3.6/3, mb1 3.5/5, mb1mx3.1/46, mbtmp3.8/5, ML3.2/2, Error ellipse: s-maj=159.0km s-min=27.5km az=166.0*
*ISCJB **21** 22:39:58.1±0.5, 36.°35N±0.°04×71.°32E±0.°07, h100km, mb3.9/2, Error ellipse: s-maj=8.6km s-min=4.4km az=150.8*
*NNC **21** 22:40:06.2±2.4, 36.°80N×70.°99E, h144km±23km, mb3.2, mpv4.0, Error ellipse: s-maj=21.0km s-min=12.6km az=157.0*

ISC 21 22:39:58.5±0.8, 36.°33N±0.°07×71.°12E±0.°06, h100km, n19, σ2.°97/28, 8C-5D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**3.07**	**324**	⇑P	**Pn**	**22 40 48.2**	**+2.9**
66nm,0.4s							
DZET				⇑S	**Sn**	**22 41 22.3**	**+1.0**
145nm,0.3s							
THN	**Thein Dam**	**5.43**	**134**	*e*P	**Pn**	**22 41 17.0**	**-0.1**
THN				*e*S	**Sn**	**22 42 16.5**	**-1.8**
MNAS	**Manas**	**6.24**	**9**	⇑P	**Pn**	**22 41 30.3**	**+2.2**
4.2nm,0.5s							
MNAS				⇓S	**Sn**	**22 42 36.1**	**-1.9**
22nm,0.6s							
KK31	**Karatay Array**	**6.78**	**356**	P	**Pn**	**22 41 37.5**	**+2.2**
2.1nm,0.3s,baz=178,slow=13,SNR=54							
KK31				⇑S	**Sn**	**22 42 49.8**	**-1.2**
9.1nm,0.5s,baz=170,slow=16,SNR=12							
AAK	**Ala-Archa**	**6.81**	**21**	⇑P	**Pn**	**22 41 39.2**	**+3.3**
10nm,0.4s							
AAK				⇓S	**Sn**	**22 42 51.9**	**-0.1**
13nm,0.5s							
TKM2	**Tokmak 2**	**7.43**	**26**	⇑P	**Pn**	**22 41 46.7**	**+2.4**
7.2nm,0.7s							
TKM2				⇓S	**Sn**	**22 43 05.3**	**-1.8**
6.3nm,0.7s							
GEYT	**Alibeck**	**10.51**	**283**	P	**Pn**	**22 42 27.3**	**+1.2**
0.5nm,0.3s,baz=104,slow=11,SNR=5.8							
GEYT				S	**Sn**	**22 44 19.1**	**-2.7**
1.0nm,0.3s,baz=90,slow=17,SNR=6.7							
PYUN	**Piuthan**	**12.96**	**126**	*e*P	**Pn**	**22 42 58.5**	**-0.6**
12nm,0.3s							
MKAR	**Makanchi Array**	**13.37**	**35**	P	**Pn**	**22 43 06.3**	**+2.2**
0.1nm,0.3s,baz=211,slow=12,SNR=3.8							
KOLN	**Koldanda**	**13.59**	**125**	*e*P	**Pn**	**22 43 06.4**	**-0.8**
4.9nm,0.4s							
GKN	**Gorkha**	**14.13**	**122**	*e*P	**Pn**	**22 43 13.2**	**-1.0**
11nm,0.4s							
KKN	**Kakani**	**14.71**	**121**	*e*P	**Pn**	**22 43 19.7**	**-2.0**
17nm,0.6s							
PKIN	**Phulchoki**	**14.92**	**122**	*e*P	**Pn**	**22 43 22.4**	**-2.1**
9.9nm,0.4s							
GUN	**Gumba**	**15.05**	**120**	*e*P	**Pn**	**22 43 24.2**	**-2.0**
11nm,0.4s							
AB31	**Akbulak array**	**15.28**	**331**	⇑P	**Pn**	**22 43 29.3**	**+0.8**
1.0nm,0.4s,baz=167,slow=11,SNR=47							
AB31				⇓S	**Sn**	**22 46 08.5**	**-8.6**
3.3nm,0.6s,baz=154,slow=23,SNR=9.5							
AKTO	**Aktyubinsk**	**16.98**	**330**	⇓P	**P**	**22 43 52.5**	**+2.6**
4.0nm,0.8s							
AKTO				⇑S	**Sn**	**22 46 50.7**	**-7.3**
3.5nm,0.8s							
ZALV	**Zalesovo Beam**	**20.03**	**24**	P	**P**	**22 44 24.1**	**+0.9**
2.2nm,0.3s,baz=206,slow=9.6,SNR=16							
FINES	**FINESS Array B**	**37.68**	**326**	P	**P**	**22 47 05.9**	**+2.2**
1.4nm,0.8s,baz=116,slow=9.4,SNR=3.5							
ARCES	**ARCESS Array B**	**41.34**	**338**	P	**P**	**22 47 36.1**	**+2.1**
2.0nm,1.0s,baz=115,slow=8.1,SNR=3.4							

*ISCJB **21** 22:43:24.9±0.7, 6.°52S±0.°07×147.°84E±0.°10, h51km, mb4.2/8, Error ellipse: s-maj=14.4km s-min=9.9km az=21.1*
*NEIC **21** 22:43:28.7±1.3, 6.°70S×147.°90E, h72km±13km, mb4.3/7, Error ellipse: s-maj=15.3km s-min=8.2km az=149.0*
*IDC **21** 22:43:29.7±7.1, 6.°67S×147.°84E, h77km±62km, mb3.8/2, mb1 3.9/4, mb1mx3.3/33, mbtmp4.0/4, ML3.9/1, Error ellipse: s-maj=75.9km s-min=51.7km az=123.0*

ISC 21 22:43:26.7±0.8, 6.°53S±0.°09×147.°8E±0.°1, h51km, n14, σ0.°86/15, mb4.4/8, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.93**	**193**	P	**Pn**	**22 44 11.0**	**+0.1**
7.7nm,0.3s,baz=5.5,slow=9.3,SNR=21							
PMG				S	**Sn**	**22 44 46.5**	**+1.6**
8.4nm,0.3s,baz=84,slow=16,SNR=4.5							
HNR	**Honiara**	**12.33**	**104**	*e*Pn	**Pn**	**22 46 20.4**	**+0.7**
WRAB	**Tennant Creek**	**18.68**	**223**	*e*P	**P**	**22 47 40.8**	**-0.1**
2.4nm,0.7s							
WRA	**Warramunga Arr**	**18.70**	**223**	P	**P**	**22 47 40.2**	**-0.9**
0.4nm,0.3s,baz=51,slow=11,SNR=11							
ASAR	**Alice Springs**	**21.67**	**217**	P	**P**	**22 48 12.6**	**-0.8**
1.4nm,0.5s,baz=53,slow=8.8,SNR=49							
FITZ	**Fitzroy Crossi**	**24.51**	**240**	P	**P**	**22 48 41.3**	**-0.2**
6.7nm,0.5s,baz=62,slow=10.0,SNR=43							
FITZ	**Fitzroy Crossi**	**24.51**	**240**	*e*P	**P**	**22 48 41.3**	**-0.2**
6.2nm,0.5s							
KSM	**Kuching**	**38.30**	**281**	*e*P	**P**	**22 50 43.6**	**+0.9**
2.7nm,0.4s							
KULM	**Kulim**	**48.55**	**283**	*e*P	**P**	**22 52 06.0**	**+0.6**
2.9nm,0.6s							
CASY	**Casey**	**64.97**	**196**	*e*P	**P**	**22 53 59.9**	**-1.0**
0.1nm,0.4s							
BILL	**Bilibino**	**75.53**	**7**	*e*P	**P**	**22 55 05.5**	**+0.1**
1.3nm,0.3s							
QSPA	**South Pole Qui**	**83.44**	**180**	*e*P	**P**	**22 55 47.2**	**-1.5**
8.6nm,1.1s							
COLA	**College**	**85.31**	**23**	*e*P	**P**	**22 55 58.1**	**+0.2**
1.1nm,0.5s							
TORD	**Torodi Ar. Bea**	**146.03**	**284**	PKPbc	**PKPbc**	**23 03 01.8**	**-0.3**
0.4n

MUGZ	Murupara	0.85 191	P*	Pg	23 03 07.5	-1.1
RAGZ	Rawiri	0.92 158	P*	Pg	23 03 08.4	-1.5
HRRZ	Handcock Road	0.93 216	P*	Pg	23 03 10.5	+0.3
TWGZ	Tauwhareparae	0.95 125	P*	Pg	23 03 09.8	-0.7
RTZ	Ruatahuna	0.97 180	P*	Pg	23 03 09.3	-1.7
TKGZ	Te Karaka	1.05 140	⇑P*	Pg	23 03 11.9	-0.5
MXZ	Matakaoa Point	1.05 86	P*	Pg	23 03 11.3	-1.1
MXZ			AML	AML	23 03 28.6	
MXZ			AML	AML	23 03 31.9	
PUZ	Puketiti	1.10 114	P*	Pg	23 03 12.9	-0.3
PUZ			AML	AML	23 03 35.8	
PUZ			AML	AML	23 03 36.4	
WMGZ	Waiomatatini S	1.15 99	P*	Pg	23 03 14.3	0.0
SNGZ	Shannon Statio	1.18 166	P*	Pg	23 03 13.6	-1.2
TOZ	Tahuroa Road	1.18 265	P*	Pg	23 03 12.9	-2.0
TOZ			AML	AML	23 03 39.3	
TOZ			AML	AML	23 03 39.9	
MRHZ	Matea Rd	1.27 200	P*	Pg	23 03 14.7	-1.9
RAHZ	Arahi	1.28 176	P*	Pg	23 03 15.5	-1.3
CNGZ	Carnagh Statio	1.28 132	P*	Pg	23 03 16.8	0.0
TLZ	Tolley Road	1.33 238	P*	Pn	23 03 17.1	-0.5
KUZ	Kuaotunu	1.35 311	PN	Pn	23 03 14.7	-3.0
KUZ			AML	AML	23 03 36.5	
KUZ			AML	AML	23 03 36.6	
KUZ			AML	AML	23 03 47.3	
KUZ			AML	AML	23 03 47.4	
WHHZ	Waihua	1.45 172	PN	Pn	23 03 19.4	+0.2
NMHZ	Naumai	1.46 185	PN	Pg	23 03 20.2	-0.1
PRGZ	Paritu Road	1.46 151	PN	Pn	23 03 18.8	-0.6
KNZ	Kokohu	1.48 159	PN	Pn	23 03 19.6	0.0
KNZ			AML	AML	23 03 49.8	
KNZ			AML	AML	23 03 59.6	
MKAZ	Moumakai	1.55 290	PN	Pn	23 03 18.2	-2.2
MKAZ			AML	AML	23 03 47.9	
MKAZ			AML	AML	23 03 48.1	
BKZ	Black Stump Fm	1.57 194	P*	Pn	23 03 21.2	+0.3
BKZ			AML	AML	23 03 56.0	
BKZ			AML	AML	23 04 03.2	
ARHZ	Aropaoanui	1.62 180	PN	Pb	23 03 22.2	-0.5
MHGZ	Mahia Peninsul	1.68 155	PN	Pn	23 03 21.5	-0.8
WIAZ	Waiheke Island	1.70 299	PN	Pn	23 03 21.5	-1.1
ETAZ	East Tamaki Re	1.78 292	PN	Pn	23 03 22.7	-0.9
MCHZ	McNeill Hill	1.82 187	PN	Pn	23 03 25.0	+0.8
KWHZ	Kaweka Forest	1.84 194	P*	Pn	23 03 23.2	-1.3
GRZ	Great Barrier	1.85 318	PN	Pn	23 03 22.4	-2.2
HIZ	Hauiti	1.89 242	PN	Pn	23 03 23.8	-1.4
HIZ			AML	AML	23 04 00.1	
HIZ			AML	AML	23 04 15.3	
AWAZ	Awhitu Peninsu	1.95 286	PN	Pg	23 03 29.2	-0.5
BHHZ	Black Hill Sta	1.98 201	P*	Pb	23 03 27.8	-1.1
KAHZ	Kahuranaki	2.15 182	PN	Pn	23 03 28.0	-0.8
PNHZ	Pukenui	2.35 195	PN	Pn	23 03 30.8	-0.8
PXZ	Pawanui	2.39 182	PN	Pn	23 03 30.6	-1.4
PXZ			AML	AML	23 04 35.4	
PXZ			AML	AML	23 04 58.0	
WCZ	Waipu Caves	2.71 308	PN	Pn	23 03 34.8	-1.7
BFZ	Birch Farm	3.09 190	PN	Pn	23 03 40.2	-1.5

JMA 21 23:02:53.4±0.2, 36°.74N×141°.90E, h46km, M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.95 293		P	Pn	23 03 10.4	-0.1
ONAJ				eS	Sn	23 03 24.5	+1.5
JFK	Kawauchi	1.03 308		P	Pn	23 03 11.6	+0.1
JHO	Hitachi	1.08 264		P	Pn	23 03 12.0	-0.1
JHO				S	Sn	23 03 26.2	+0.3
JMM	Marumori	1.43 322		P	Pn	23 03 17.6	+0.7
JMM				S	Sn	23 03 34.7	+0.2
JFT	Otama	1.47 302		P	Pn	23 03 18.9	+1.4
JFT				S	Sn	23 03 37.3	+1.7
JIO	Ouri	1.77 346		S	Sn	23 03 43.4	+0.6
JOU	Okura	1.90 329		P	Pn	23 03 25.6	+2.3
JOU				S	Sn	23 03 48.7	+2.7
JAG	Ashikaga	1.99 262		P	Pn	23 03 25.9	+1.3
JAG				S	Sn	23 03 49.0	+0.6
MAT	Matsushiro	2.98 267		P	Pn	23 03 40.4	+2.3
MAT				S	Sn	23 04 15.9	+3.3

*ISCJB **21** 23:07:34.5±0.3, 39°.10N±0°.01×29°.03E±0°.02, h5km±2km, Error ellipse: s-maj=2.5km s-min=2.2km az=5.4*
*ISK **21** 23:07:34.6, 39°.11N×29°.02E, h10km, ML3.8*
*DDA **21** 23:07:34.3, 39°.10N×29°.00E, h17km, Md3.2*
*CSEM **21** 23:07:34.9±0.1, 39°.09N×29°.04E, h5km, MD3.2, Error ellipse: s-maj=1.5km s-min=1.2km az=94.0*
*THE **21** 23:07:35.9, 39°.07N×28°.99E, h1km, ML3.4/7, Error ellipse: s-maj=1.1km s-min=0.6km az=71.0*

ISC 21 23:07:34.9±1.0, 39°.09N±0°.02×29°.03E±0°.02, h6km±8km, n150, σ0°66/210, 16C-8D, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.24 259		P	Pg	23 07 40.0	+0.3
DEMI				S	Sg	23 07 43.3	+0.3
DEMI	Demirci	0.24 259		*i* P	Pg	23 07 40.0	+0.3
DEMI				*i* S	Sg	23 07 43.3	+0.3
GDZ	Gediz	0.35 90		P	Pg	23 07 42.2	+0.4
GDZ				S	Sg	23 07 47.2	+0.7
GDZ	Gediz	0.35 90		*i* P	Pg	23 07 42.2	+0.4
GDZ				*i* S	Sg	23 07 47.2	+0.7
TVSB	Tavsanli	0.49 43		*e*PG	Pg	23 07 44.7	+0.3
TVSB				*e*SG	Sg	23 07 50.9	0.0
TVSB	Tavsanli	0.49 43		*e*Pg	Pg	23 07 44.7	+0.3
TVSB				*e*Sg	Sg	23 07 50.9	0.0
KULA	Kula-Manisa	0.64 207		*e*PG	Pg	23 07 47.3	+0.1
KULA	Kula-Manisa	0.64 207		P	Pg	23 07 47.2	0.0
KULA				S	Sb	23 07 57.0	-0.8
KULA	Kula-Manisa	0.64 207		*e*Pg	Pg	23 07 47.3	+0.1
KULA				S	Sb	23 07 57.0	-0.8
DURS	Dursunbey	0.67 320		P	Pg	23 07 47.5	-0.2
DURS				S	Sg	23 07 56.5	+0.1
DURS	Dursunbey	0.67 320		*i* P	Pg	23 07 47.5	-0.2
DURS				*i* S	Sg	23 07 56.5	+0.1
MANT	Manisa	0.70 212		P	Pg	23 07 48.1	-0.2
MANT				S	Sg	23 07 57.0	-0.5
MANT	Manisa	0.70 212		*i* P	Pg	23 07 48.1	-0.2
MANT				*i* S	Sg	23 07 57.0	-0.5
KHAL	Karahalli	0.81 153		P	Pg	23 07 50.6	+0.3
KHAL				S	Sg	23 08 00.7	-0.1
KHAL	Karahalli	0.81 153		*i* P	Pg	23 07 50.6	+0.3
KHAL				*i* S	Sg	23 08 00.7	-0.1
KHL	Karahalli	0.86 153		*e*PG	Pb	23 07 52.2	-0.1
KHL	Karahalli	0.86 153		*e*Pg	Pb	23 07 52.2	-0.1
ORLT	Orhaneli	0.96 354		*e*PG	Pg	23 07 53.2	-0.1
ORLT				*e*SG	Sb	23 08 07.1	+0.1
ORLT	Orhaneli	0.96 354		*e*Pg	Pg	23 07 53.2	-0.1
ORLT				*e*Sg	Sb	23 08 07.1	+0.1
AKHS	Akhisar	0.97 258		P	Pg	23 07 53.6	+0.2
AKHS				S	Sb	23 08 06.7	-0.4
AKHS	Akhisar	0.97 258		*i* P	Pg	23 07 53.6	+0.2
AKHS				*i* S	Sb	23 08 06.7	-0.4
AKS	Akhisar	0.97 258		*e*PG	Pb	23 07 53.9	-0.2
AKS	Akhisar	0.97 258		*e*Pg	Pb	23 07 53.9	-0.2
BALB	Balikesir	1.04 302		*e*PG	Pb	23 07 55.5	+0.1
BALB				*e*SG	Sb	23 08 09.6	+0.2
BALB	Balikesir	1.04 302		*e*Pg	Pb	23 07 55.5	+0.1
BALB				*e*Sg	Sb	23 08 09.6	+0.2
IGD	Bursa	1.18 7		*i* P	Pg	23 07 56.7	-0.8
IGD				*i* S	Sg	23 08 12.5	-0.4
KCTX	Karacabey (Bur	1.28 336		*e*PN	Pn	23 07 59.2	-0.2
KCTX	Karacabey (Bur	1.28 336		*e*Pn	Pn	23 07 59.2	-0.2
MDNY	Mudanya-Bursa	1.28 355		*e*PN	Pn	23 07 58.9	-0.5
MDNY	Mudanya-Bursa	1.28 355		*e*Pn	Pn	23 07 58.9	-0.5
IZI	Iznik	1.29 15		*e*PN	Pn	23 07 59.1	-0.5
IZI	Iznik	1.29 15		*e*Pn	Pn	23 07 59.1	-0.5
DENT	Denizli	1.33 180		*e*PN	Pb	23 08 00.2	-0.1
DENT	Denizli	1.33 180		*e*Pn	Pb	23 08 00.3	-0.1
GEMT	Gemlik	1.35 5		*e*PN	Pn	23 08 00.1	-0.2
GEMT	Gemlik	1.35 5		*e*Pn	Pn	23 08 00.1	-0.2
BORA	Eskisehir	1.36 54		P	Pn	23 08 00.2	-0.3
BORA				S	Sn	23 08 18.8	-0.1
BORA	Eskisehir	1.36 54		*i* P	Pn	23 08 00.2	-0.3
BORA				*i* S	Sn	23 08 18.8	-0.1
DNZL	Cakiroluk	1.40 179		P	Pn	23 08 00.3	-0.8
DNZL				S	Sn	23 08 20.6	+0.6
DNZL	Cakiroluk	1.40 179		*i* P	Pn	23 08 00.3	-0.8
DNZL				*i* S	Sn	23 08 20.6	+0.6
AYDB	Zeytinkoy-Aydi	1.45 218		*e*PN	Pn	23 08 01.8	0.0
AYDB	Zeytinkoy-Aydi	1.45 218		*e*Pn	Pn	23 08 01.8	0.0
ADVT	Abdulvahap	1.45 22		*e*PN	Pn	23 08 01.3	-0.4
ADVT	Abdulvahap	1.45 22		*e*Pn	Pn	23 08 01.3	-0.4
ARMT	Armutlu	1.48 355		*e*PN	Pn	23 08 01.6	-0.5
ARMT	Armutlu	1.48 355		*e*Pn	Pn	23 08 01.6	-0.5
ESKT	Eskisehir	1.48 73		*i* P	Pb	23 08 02.6	-0.3
SEYT	Eskypehyr	1.48 73		P	Pb	23 08 02.6	-0.3
EDC	Edincik	1.54 325		*e*PN	Pn	23 08 02.8	-0.2
EDC	Edincik	1.54 325		*e*Pn	Pn	23 08 02.8	-0.2
GPA	Golpazari	1.56 39		*e*PN	Pn	23 08 03.2	0.0
GPA	Golpazari	1.56 39		*e*Pn	Pn	23 08 03.2	0.0
DKL	Dikili	1.65 270		*e*PN	Pn	23 08 04.3	-0.1
DKL	Dikili	1.65 270		*e*Pn	Pn	23 08 04.3	-0.1
KNL	Bal¨–kesir	1.65 316		*i* P	Pn	23 08 03.4	-1.1
KNL				*i* S	Sn	23 08 25.6	-0.5
AYDN	Tasoluk	1.69 213		P	Pb	23 08 06.4	0.0
AYDN	Tasoluk	1.69 213		*i* P	Pb	23 08 06.4	0.0
ISP	Isparta	1.73 137		*e*PN	Pn	23 08 05.6	0.0
ISP	Isparta	1.73 137		P	Pn	23 08 05.5	-0.1
ISP				S	Sn	23 08 28.0	0.0
ISP	Isparta	1.73 137		*e*Pn	Pn	23 08 05.6	0.0
ISP				S	Sn	23 08 28.0	0.0
GULT	Gulveren	1.77 40		*e*PN	Pn	23 08 05.9	-0.2
GULT	Gulveren	1.77 40		*e*Pn	Pn	23 08 05.9	-0.2
HRT	Hereke	1.80 16		*e*PN	Pn	23 08 06.4	-0.1
HRT	Hereke	1.80 16		*e*Pn	Pn	23 08 06.4	-0.1
AYVA	Ayvalik	1.83 278		*i* P	Pg	23 08 09.6	-0.3
AYVA				*i* S	Sg	23 08 33.2	-0.4
KRBG	Karabiga-Canak	1.86 315		*e*PN	Pn	23 08 07.3	-0.1
KRBG	Karabiga-Canak	1.86 315		*e*Pn	Pn	23 08 07.3	-0.1
MRMT	Marmara Adasi	1.87 324		*e*PN	Pn	23 08 07.8	+0.3
MRMT	Marmara Adasi	1.87 324		*e*Pn	Pn	23 08 07.8	+0.3
SPNC	Sapanca-Adapaz	1.88 31		*e*PN	Pn	23 08 07.4	-0.1
SPNC	Sapanca-Adapaz	1.88 31		*e*Pn	Pn	23 08 07.4	-0.1
SVRH	Sivrihisar-ESK	1.97 79		*e*PN	Pn	23 08 09.0	0.0
SVRH	Sivrihisar-ESK	1.97 79		*e*Pn	Pn	23 08 09.0	0.0
DGB	¯zmir	1.97 239		*i* P	Pg	23 08 12.1	-0.6
DGB				*i* S	Sb	23 08 36.0	0.0
ISK	Istanbul-Kandi	1.97 1		*e*PN	Pn	23 08 08.8	-0.1
ISK	Istanbul-Kandi	1.97 1		P	Pn	23 08 08.7	-0.1
ISK				S	Sb	23 08 35.9	-0.2
ISK	Istanbul-Kandi	1.97 1		*e*Pn	Pn	23 08 08.8	-0.1
ISK				S	Sb	23 08 35.9	-0.2
YER	Yerkesik	2.04 197		P	Pn	23 08 10.3	+0.5
YER				S	Sn	23 08 36.1	+0.5
YER	Yerkesik	2.04 197		P	Pn	23 08 10.3	+0.5
YER				S	Sn	23 08 36.1	+0.5
BCK	Bucak	2.04 142		*e*PN	Pn	23 08 09.9	+0.1
BCK	Bucak	2.04 142		*e*Pn	Pn	23 08 09.9	+0.1
BGKT	Bogazkoy	2.10 355		*e*PN	Pn	23 08 10.3	-0.3
BGKT	Bogazkoy	2.10 355		*e*Pn	Pn	23 08 10.3	-0.3
SILT	Sile	2.12 13		*e*PN	Pn	23 08 10.8	0.0
SILT	Sile	2.12 13		*e*Pn	Pn	23 08 10.8	0.0
RKY	Sarkoy-Tekirda	2.14 319		*e*PN	Pn	23 08 11.2	0.0
RKY	Sarkoy-Tekirda	2.14 319		*e*Pn	Pn	23 08 11.2	0.0
PRK	Paraskevi	2.15 275		P	Pn	23 08 11.6	+0.4
PRK				S	Sn	23 08 39.3	+1.1
PRK	Paraskevi	2.15 275		P	Pn	23 08 11.6	+0.4
PRK				S	Sn	23 08 39.3	+1.1
KLYT	Kilyos	2.16 0		*e*PN	Pn	23 08 11.2	-0.2
KLYT	Kilyos	2.16 0		*e*Pn	Pn	23 08 11.2	-0.2
MDUB	Mudurnu	2.17 50		*e*PN	Pn	23 08 11.5	-0.2
MDUB	Mudurnu	2.17 50		*e*Pn	Pn	23 08 11.5	-0.2
SMG	Samos	2.20 232		P	Pn	23 08 11.9	-0.1
SMG				S	Sn	23 08 40.0	+0.4
SMG	Samos	2.20 232		P	Pn	23 08 11.9	-0.1
SMG				S	Sn	23 08 40.0	+0.4
EZN	Ezine	2.22 290		P	Pn	23 08 12.4	+0.2
EZN				S	Sn	23 08 40.6	+0.7
EZN	Ezine	2.22 290		P	Pn	23 08 12.4	+0.2
EZN				S	Sn	23 08 40.6	+0.7
TKR	Tekirdag	2.22 329		*e*PN	Pn	23 08 12.0	-0.2
TKR	Tekirdag	2.22 329		*e*Pn	Pn	23 08 12.0	-0.2
KIZT	Kizilcal	2.23 94		*e*PN	Pn	23 08 12.9	+0.3
KIZT	Kizilcal	2.23 94		*e*Pn	Pn	23 08 12.9	+0.3
CRLT	Corlu	2.27 335		*e*PN	Pn	23 08 12.7	-0.2
CRLT	Corlu	2.27 335		*e*Pn	Pn	23 08 12.7	-0.2
CHOS	Chios island	2.43 254		P	Pn	23 08 15.0	-0.2
CHOS				S	Sn	23 08 46.3	+1.1
CHOS	Chios island	2.43 254		P	Pn	23 08 15.0	-0.2
CHOS				S	Sn	23 08 46.3	+1.1
BODT	Bodrum	2.44 214		P	Pn	23 08 15.3	+0.1
BODT				S	Sn	23 08 45.4	+0.1
BODT	Bodrum	2.44 214		P	Pn	23 08 15.3	+0.1
BODT				S	Sn	23 08 45.4	+0.1
CTYL	Yalikoy Yolu	2.45 347		*e*PN	Pn	23 08 15.6	+0.2
CTYL	Yalikoy Yolu	2.45 347		*e*Pn	Pn	23 08 15.6	+0.2
FETY	Fethiye	2.45 179		P	Pn	23 08 16.5	+1.0
FETY				S	Sn	23 08 46.5	+0.8
FETY	Fethiye	2.45 179		P	Pn	23 08 16.5	+1.0
FETY				S	Sn	23 08 46.5	+0.8
SIGR	SIGRI	2.47 274		P	Pn	23 08 15.5	-0.2
SIGR				S	Sn	23 08 46.5	+0.4
SIGR	SIGRI	2.47 274		P	Pn	23 08 15.5	-0.2
SIGR				S	Sn	23 08 46.5	+0.4
ENEZ	Enez	2.75 308		P	Pn	23 08 20.1	+0.5
ENEZ				S	Sn	23 08 54.1	+0.9
ENEZ	Enez	2.75 308		P	Pn	23 08 20.1	+0.5
ENEZ				S	Sn	23 08 54.1	+0.9
ALN	Alexandroupoli	2.92 309		P	Pn	23 08 21.9	+0.1
ALN				S	Sn	23 08 58.3	+1.1
ALN	Alexandroupoli	2.92 309		P	Pn	23 08 21.9	+0.1
ALN				S	Sn	23 08 58.3	+1.1
KSL	Kastellorizon	2.97 171		P	Pn	23 08 23.9	+1.4
KSL				S	Sn	23 08 59.8	+1.4
SMTH	Samothraki Isl	3.03 298		P	Pn	23 08 23.6	+0.2
SMTH				S	Sn	23 09 01.3	+1.4
SMTH	Samothraki Isl	3.03 298		P	Pn	23 08 23.6	+0.2
SMTH				S	Sn	23 09 01.3	+1.4
LIA	Limnos Island	3.08 286		P	Pn	23 08 24.5	+0.4
LIA				S	Sn	23 09 02.5	+1.3
LIA	Limnos Island	3.08 286		P	Pn	23 08 24.5	+0.4
LIA				S	Sn	23 09 02.5	+1.3
EDRB	Edirne	3.26 328		P	Pn	23 08 26.8	+0.3
EDRB				S	Sn	23 09 06.7	+1.1
EDRB	Edirne	3.26 328		P	Pn	23 08 26.8	+0.3
EDRB				S	Sn	23 09 06.7	+1.1
APE	Apeiranthos	3.42 235	⇑	*i*P	Pb	23 08 33.2	-2.7
APE	Apeiranthos	3.42 235	⇑	*i*P	Pb	23 08 33.2	-2.7
RZN	Rozhen	4.19 310		*i* Pg	Pn	23 08 39.6	+0.1
SZH	Strazhica	4.78 332		*i* Pg	Pn	23 08 47.5	0.0
MSAB	Monastry St. A	5.08 350	⇓	*i*P	Pn	23 08 52.1	+0.6
MSAB	Monastry St. A	5.08 350	⇓	*i*P	Pn	23 08 52.1	+0.6
MSAB				S	Sn	23 09 47.9	-2.6
TIRR	Tirgusor	5.38 355	⇑	*i*P	Pn	23 08 55.8	+0.1
TIRR	Tirgusor	5.38 355	⇑	*i*P	Pn	23 08 55.8	+0.1
CFR	Carcaliu	6.12 354	⇑	*i*P	Pn	23 09 05.8	0.0
CFR	Carcaliu	6.12 354	⇑	*i*P	Pn	23 09 05.8	0.0
MLR	Muntele Rosu	6.79 341	⇑	*i*P	Pn	23 09 16.4	+1.2
MLR	Muntele Rosu	6.79 341	⇑	*i*P	Pn	23 09 16.4	+1.2
PLOR	Plostina	6.98 346	⇓	*i*P	Pn	23 09 19.4	+1.7
PLOR	Plostina	6.98 346	⇓	*i*P	Pn	23 09 19.4	+1.7
VRI	Vrincioaia	6.98 347	⇑	*i*P	Pn	23 09 17.9	+0.2
VRI	Vrincioaia	6.98 347	⇑	*i*P	Pn	23 09 17.9	+0.2
VOIR		6.99 336	⇑	*i*P	Pn	23 09 18.6	+0.7
VOIR		6.99 336	⇑	*i*P	Pn	23 09 18.6	+0.7
ARR	Arges	7.07 334	⇓	*i*P	Pn	23 09 21.5	+2.6
ARR	Arges	7.07 334	⇓	*i*P	Pn	23 09 21.5	+2.6
TESR	Tescani	7.62 348	⇑	*i*P	Pn	23 09 26.5	0.0
TESR	Tescani	7.62 348	⇑	*i*P	Pn	23 09 26.5	0.0
MDVR	Moldovita	7.88 319	⇓	*i*P	Pn	23 09 30.3	+0.3
MDVR	Moldovita	7.88 319	⇓	*i*P	Pn	23 09 30.3	+0.3
BURAR	Bucovina Array	8.96 343	⇑	*i*P	Pn	23 09 46.1	+1.2
BURAR	Bucovina Array	8.96 343	⇑	*i*P	Pn	23 09 46.1	+1.2

*JMA **21** 23:12:06.3±0.3, 37°.11N×142°.45E, h1km±3km, M4.5*
*NEIC **21** 23:12:10.1±2.2, 37°.00N×142°.43E, h14km±13km, mb4.7/8, Error ellipse: s-maj=7.2km s-min=5.2km az=127.0*
*MOS **21** 23:12:12.2±0.9, 36°.99N×142°.38E, h44km, mb4.4/30, Error ellipse: s-maj=10.4km s-min=7.2km az=125.7*
*IDC **21** 23:12:14.8±1.9, 37°.05N×142°.31E, h46km±17km, mb3.8/30, mb1 4.0/37, mb1mx3.9/65, mbtmp4.1/37, ML3.5/6, MS3.4/1, Ms1 3.4/1, ms1mx2.8/32, Error ellipse: s-maj=13.8km s-min=12.9km az=118.0*

ISC 21 23:12:08.0±1.6, 36°.99N±0°.04×142°.43E±0°.05, h3km±10km, n106, σ1°70/114, mb4.2/44, 6C-4D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	1.30 287		P	Pg	23 12 30.7	-2.2
JFK				S	Sb	23 12 49.0	-1.1
ONAJ	Iwakimizuishiy	1.31 275		P	Pg	23 12 31.1	-2.0
JHO	Hitachi	1.54 256		P	Pn	23 12 34.9	-1.4
JHO				*e*S	Sn	23 12 56.5	-0.3
JMM	Marumori	1.57 304		P	Pn	23 12 34.3	-2.4
JMM				S	Sn	23 12 55.5	-2.1
JIO	Ouri	1.70 330		P	Pn	23 12 35.9	-2.6
JIO				S	Sn	23 12 57.3	-3.4
JFT	Otama	1.75 288		P	Pn	23 12 38.1	-1.2
JOU	Okura	1.96 315		P	Pn	23 12 40.4	-1.8
JOU				S	Sn	23 13 06.2	-1.1
MJAR	Matsushiro Arr	3.42 264		P	Pn	23 13 03.2	+1.0
	30nm,0.3s,baz=90,slow=15,SNR=172						
MAJO	Matsushiro	3.42 264	*d*	*i*P	Pn	23 13 03.7	+1.5
MAJO	Matsushiro	3.42 264		*e*Pn	Pn	23 13 03.7	+1.5
MAT	Matsushiro	3.42 264		P	Pn	23 13 03.0	+0.8
MAT				S	Sb	23 13 48.3	-2.9
JHJ	Hachijo jima 2	4.43 210		P	Pn	23 13 18.7	+2.7
	112nm,0.3s,baz=65,slow=15,SNR=3.4						
JHJ				S	Sn	23 14 06.4	-1.7
	67nm,0.3s,baz=64,slow=20,SNR=3.6						
ERM	Erimo	5.05	6*d*	*i*P	Pn	23 13 23.6	-1.0
ERM	Erimo	5.05	6	*e*Pn	Pn	23 13 23.7	-0.9
ASAJ	Asahikawa	7.12	1	P	Pn	23 13 52.5	-0.5
	3.1nm,0.3s,baz=217,slow=13,SNR=12						
ASAJ				S	Sn	23 15 11.9	-2.5
	2.0nm,0.3s,baz=1.5,slow=29,SNR=3.5						
YUK	Yuzh-Kuril'sk	7.51	19	*e*P	Pn	23 13 56.2	-2.1
YUK				pmax	pmax		
	comp=E,20nm,0.2s						
YUK				pmax	pmax		
	comp=Z,79nm,0.2s						
SHO	Shikotan	7.65	25	*e*P	Pn	23 13 57.3	-3.0
SHO				pmax	pmax		
	comp=E,36nm,0.6s						
SHO				pmax	pmax		
	comp=Z,32nm,0.6s						
SHO				pmax	pmax		
	comp=N,22nm,0.5s						
KUR	Kuril'sk	9.20	25	*e*P	Pn	23 14 21.6	+0.1
KUR				*e*S	Sn	23 16 00.0	-5.5
KUR				pmax	pmax		
	comp=Z,45nm,0.5s						
KUR				pmax	pmax		
	comp=E,35nm,0.1s						
CBIJ	Chichi jima	9.87 181		P	Pn	23 14 30.1	-0.7
CBIJ				S	Sn	23 16 17.4	-4.6
JCJ	Chichijima	9.87 181		P	Pn	23 14 30.1	-0.7
	comp=E,3.7nm,0.3s,baz=1.4,slow=20,SNR=17						
JCJ				S	Sn	23 16 17.4	-4.6
	comp=E,4.7nm,0.3s,baz=285,slow=20,SNR=4.0						
VLA	Vladivostok	10.14 310	*b*	*i*P	Pn	23 14 39.7	+5.3
VLA				*e*S	Sn	23 16 34.3	+5.8
VLA				pmax	pmax		
	comp=Z,31nm,1.1s						
JNU	Nakatsue	10.22 251		P	Pn	23 14 38.2	+2.5
	comp=Z,0.8nm,0.3s,baz=74,slow=4.4,SNR=15						
JNU				LR	LR	23 18 51.7	
	comp=Z,182nm,18.3s,baz=311,slow=39						
JNU	Nakatsue	10.22 251		*e*Pn	Pn	23 14 36.4	+0.8
	comp=Z,16nm,0.9s						
USRK	Ussuriysk Ar.	10.71 315		P	Pn	23 14 45.0	+2.8
	comp=Z,0.6nm,0.3s,baz=127,slow=12,SNR=16						
KSRS	Korea Array	11.58 277		P	Pn	23 14 57.6	+3.5
	comp=Z,0.4nm,0.3s,baz=91,slow=14,SNR=26						
KSAR	Wonju Array Be	11.61 277		P	Pn	23 14 57.6	+3.0
KSAR	Wonju Array Be	11.61 277		P	Pn	23 14 57.6	+3.0
HABR	Khabarovsk	12.69 337		*e*P	Pn	23 15 08.4	-0.8
HABR				*e*S	Sn	23 17 29.1	-1.8
HABR				pmax	pmax		
	comp=Z,19nm,1.6s						
HABR				MLR	MLR		
	comp=Z,242nm,15.0s						
KLR	Kul'dur	14.49 331		P	Pn	23 15 35.1	+1.2
	comp=Z,0.1nm,0.3s,baz=139,slow=14,SNR=4.2						
PETK	Petropavlovsk-	19.33	29	P	Pn	23 16 36.3	+1.0
	comp=Z,0.1nm,0.3s,baz=168,slow=7.6,SNR=4.2						
YAK	Yakutsk

TKM2	Tokmak 2	50.37	299	*eP*	P	23 21 07.3	+0.8
	comp=Z,4.5nm,0.6s						
BVAR	Borovoye Array	51.20	312	P	P	23 21 12.2	-0.2
	comp=Z,0.6nm,0.7s,baz=64,slow=7.1,SNR=4.4						
AAK	Ala-Archa	51.23	299	P	P	23 21 12.7	-0.2
	comp=Z,1.0nm,0.4s,baz=149,slow=5.9,SNR=3.5						
AAK	Ala-Archa	51.23	299	*eP*	P	23 21 13.2	+0.3
AAK	Ala-Archa	51.23	299	*eP*	P	23 21 13.2	+0.3
BRVK	Borovoye	51.26	313	*ceP*	P	23 21 14.9	+2.1
BRVK				pmax	pmax		
	comp=Z,4.0nm,1.7s						
BRVK	Borovoye	51.26	313	*eP*	P	23 21 12.5	-0.4
	comp=Z,3.0nm,0.8s						
KKAR	Karatay Array	53.85	300	*eP*	P	23 21 32.5	+0.3
KKAR				pmax	pmax		
	comp=Z,3.0nm,0.7s						
KKAR	Karatay Array	53.85	300	*eP*	P	23 21 32.5	+0.3
	comp=Z,2.8nm,0.7s						
INK	Inuvik	54.06	27	P	P	23 21 34.1	+0.9
	comp=Z,1.2nm,0.6s,baz=280,slow=12,SNR=4.9						
GSI	Gungngsitoli	54.48	240	*eP*	P	23 21 37.6	+0.6
	comp=Z,15nm,0.8s						
SVE	Sverdlovsk	55.72	319	*eP*	P	23 21 46.5	+1.0
ARU	Arti	56.93	319	P	P	23 21 53.9	-0.3
	comp=Z,2.2nm,0.6s,baz=69,slow=5.9,SNR=7.1						
ARU	Arti	56.93	319	*d iP*	P	23 21 54.2	0.0
ARU						23 22 47.5	
ARU						23 23 57.5	
ARU				S	S	23 29 47.3	-1.3
ARU				SS	SS	23 33 32.1	-4.1
ARU				pmax	pmax		
	comp=Z,8.0nm,1.7s						
WRA	Warramunga Arr	57.13	189	P	P	23 21 56.5	+0.5
	comp=Z,2.4nm,0.5s,baz=6.7,slow=7.2,SNR=48						
AKTO	Aktyubinsk	59.31	312	P	P	23 22 10.6	-0.3
	comp=Z,1.4nm,0.7s,baz=261,slow=19,SNR=5.9						
ASAR	Alice Springs	60.86	189	P	P	23 22 22.8	+1.0
	comp=Z,1.6nm,0.6s,baz=15,slow=7.1,SNR=20						
YKA	Yellowknife Ar	63.44	30	P	P	23 22 39.1	+0.5
	comp=Z,0.7nm,0.8s,baz=294,slow=6.3,SNR=4.5						
GEYT	Alibeck	64.57	299	P	P	23 22 46.8	+0.2
	comp=Z,1.0nm,0.7s,baz=63,slow=10,SNR=3.0						
COCO	West Island	65.03	230	*ceP*	P	23 22 49.4	-0.2
OBN	Obninsk	68.62	324	*i* P	P	23 23 15.9	+3.9
OBN				pmax	pmax		
	comp=Z,4.0nm,0.9s						
FINES	FINESS Array B	69.23	333	P	P	23 23 15.9	+0.1
	comp=Z,1.8nm,0.6s,baz=40,slow=7.9,SNR=11						
FINES	FINESS Array B	69.23	333	*ceP*	P	23 23 16.3	+0.5
FINES				pmax	pmax		
	comp=Z,2.0nm,0.6s						
KVAR	Kislovodsk Arr	71.54	311	P	P	23 23 30.4	0.0
	comp=Z,2.7nm,0.7s,baz=346,slow=4.2,SNR=3.1						
KBZ	Khabaz	71.55	311	P	P	23 23 30.8	+0.5
	comp=Z,1.2nm,0.7s,baz=16,slow=6.8,SNR=3.9						
KIV	Kislovodsk	71.55	311	*i* P	P	23 23 30.2	-0.2
KIV				*i*		23 23 48.7	
KIV				pmax	pmax		
	comp=Z,3.0nm,0.8s						
KIV	Kislovodsk	71.55	311	*eP*	P	23 23 31.5	+1.1
	comp=Z,6.6nm,0.9s						
NVAR	Mina Array Bea	74.36	54	P	P	23 23 48.4	+1.0
	comp=Z,1.7nm,0.8s,baz=287,slow=6.7,SNR=11						
HFS	Hagfors	74.46	336	P	P	23 23 47.4	+0.1
	comp=Z,1.3nm,0.8s,baz=40,slow=4.7,SNR=4.8						
HFS	Hagfors	74.46	336	P	P	23 23 47.4	+0.1
HFS				pmax	pmax		
	comp=Z,2.0nm,0.8s						
NOA	NORSAR Array B	74.54	338	P	P	23 23 47.3	-0.4
	comp=Z,1.0nm,0.8s,baz=40,slow=6.2,SNR=2.6						
AKASG	Malin Array Be	74.83	323	P	P	23 23 49.2	-0.3
	comp=Z,1.9nm,0.5s,baz=45,slow=6.1,SNR=8.5						
AKASG	Malin Array Be	74.83	323	*ceP*	P	23 23 49.7	+0.2
AKASG				pmax	pmax		
	comp=Z,2.0nm,0.5s						
FRB	Frobisher Bay	76.63	14	P	P	23 23 59.7	+0.1
	comp=Z,2.0nm,0.6s,baz=324,slow=5.0,SNR=4.3						
PDAR	Pinedale Array	77.12	46	P	P	23 24 03.5	+0.4
	comp=Z,0.9nm,0.7s,baz=246,slow=1.4,SNR=6.7						
BRTR	Keskin Array B	79.49	312	P	P	23 24 16.1	0.0
	comp=Z,0.3nm,0.8s,baz=82,slow=6.1,SNR=2.7						
KHC	Kasperske Hory	83.00	329	*eP*	P	23 24 35.0	+0.5
KHC				*ep*P	PcP	23 24 41.0	+1.8
KHC	Kasperske Hory	83.00	329	*eP*	P	23 24 35.0	+0.5
GERES	GERESS Array B	83.17	329	P	P	23 24 34.9	-0.6
	comp=Z,0.2nm,0.5s,baz=31,slow=5.9,SNR=3.3						
ANMO	Albuquerque	83.99	50	P	P	23 24 41.9	+1.9
	comp=Z,1.0nm,0.8s,baz=303,slow=7.9,SNR=5.2						
ANMO	Albuquerque	83.99	50	*eP*	P	23 24 40.1	0.0
ANMO				pmax	pmax		
	comp=Z,4.0nm,1.7s						
TXAR	Lajitas Array	89.50	53	P	P	23 25 07.5	+0.6
	comp=Z,1.0nm,0.8s,baz=281,slow=3.3,SNR=11						
LPAZ	La Paz	146.01	61	PKPbc	PKPbc	23 31 50.6	+0.2
	comp=Z,2.1nm,0.7s,baz=338,slow=4.1,SNR=11						

*SOF **21** 23:16:28.6, 39.°58N×22.°97E, h15^{km}, MD2.8*
*IDC **21** 23:16:28.1±2.0, 39.°41N×22.°23E, h57^{km}±24^{km}, mb3.4/7, mb1 3.5/10, mb1mx3.2/54, mbtmp3.6/10, ML3.3/3, Error ellipse: s-maj=19.1km s-min=12.3km az=66.0*
*ISCJB **21** 23:16:30.7±0.2, 39.°42N±0.°01×22.°27E±0.°02, h114^{km}±2^{km}, mb3.7/6, Error ellipse: s-maj=3.1km s-min=2.1km az=155.8*
*ATH **21** 23:16:31.8, 39.°38N×22.°34E, h102^{km}±2^{km}, ML3.5/16, Error ellipse: s-maj=2.3km s-min=0.9km az=3.0*
*PDG **21** 23:16:31.7±0.7, 39.°40N×22.°21E, h95^{km}±2^{km}, MD4.3/1, ML4.2/11, Error ellipse: s-maj=0.7km s-min=1.2km az=0.0*
*CSEM **21** 23:16:31.4±0.1, 39.°40N×22.°28E, h112^{km}± 1^{km}, ML3.5, Error ellipse: s-maj=2.6km s-min=1.8km az=70.0*
*THE **21** 23:16:32.6, 39.°38N×22.°33E, h98^{km}± 1^{km}, ML3.6/24, Error ellipse: s-maj=1.3km s-min=0.6km az=108.0*

ISC 21 23:16:31.6±0.7, 39.°41N±0.°03×22.°29E±0.°03, h106^{km}±5^{km}, n267, σ1§40/380, mb3.7/6, 19C-24D, Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THL	Klokotos Trika	0.26	307	P	Pn	23 16 47.1	+0.4
THL				S	Sn	23 16 57.6	-0.4
THL	Klokotos Trika	0.26	307	P	Pn	23 16 47.0	+0.4
THL				S	Sn	23 16 57.6	-0.4
AGG	Agios Georgios	0.38	175	P	Pn	23 16 47.4	+0.1
AGG				S	Sn	23 16 58.1	-1.0
AGG	Agios Georgios	0.38	175	P	Pn	23 16 47.5	+0.1
AGG				S	Sn	23 16 58.1	-1.0
AGG	Agios Georgios	0.38	175	P	Pn	23 16 47.5	+0.2
AGG				S	Sn	23 16 57.5	-1.5
FYTO	Fytoko, Volos	0.51	89	P	Pn	23 16 48.2	+0.2
FYTO				S	Sn	23 16 59.4	-0.9
FYTO	Fytoko, Volos	0.51	89	P	Pn	23 16 48.2	+0.2
FYTO				S	Sn	23 16 59.4	-0.9
FYTO	Fytoko, Volos	0.51	89	P	Pn	23 16 48.5	+0.5
FYTO				S	Sn	23 16 58.5	-1.8
FYTO				AML	AML	23 16 59.9	
	comp=E,10426μm,0.2s						
FYTO				AML	AML	23 17 00.9	
	comp=N,5994μm,0.3s						
EVR	Evrytania	0.61	217	P	Pn	23 16 49.6	+0.7
EVR				S	Sn	23 17 01.9	0.0
EVR	Evrytania	0.61	217	P	Pn	23 16 49.6	+0.7
EVR				S	Sn	23 17 01.9	0.0
EVR	Evrytania	0.61	217	P	Pn	23 16 49.9	+1.0
EVR				AML	AML	23 17 03.6	
	comp=N,4288μm,0.3s						
XOR	Xorichti	0.70	93	P	Pn	23 16 50.1	+0.5
XOR				S	Sn	23 17 02.7	-0.4
XOR	Xorichti	0.70	93	P	Pn	23 16 50.1	+0.5
XOR				S	Sn	23 17 02.7	-0.4
XOR	Xorichti	0.70	93	P	Pn	23 16 50.6	+1.0
XOR				S	Sn	23 17 02.0	-1.1
XOR				AML	AML	23 17 03.1	
	comp=N,8973μm,0.4s						
XOR				AML	AML	23 17 03.5	
	comp=E,5356μm,0.4s						
LIT	Litokhoron	0.71	13	P	Pn	23 16 50.1	+0.4
LIT				S	Sn	23 17 03.4	+0.1
LIT	Litokhoron	0.71	13	P	Pn	23 16 49.8	+0.1
LIT				S	Sn	23 17 03.4	+0.1
LIT	Litokhoron	0.71	13	P	Pn	23 16 49.8	+0.1
LIT				S	Sn	23 17 01.9	-1.3
LIT				AML	AML	23 17 03.4	
	comp=E,3267μm,0.1s						
LIT				AML	AML	23 17 03.9	
	comp=N,4704μm,0.3s						
NEO	Neokhori	0.73	97	P	Pn	23 16 50.4	+0.6
NEO				S	Sn	23 17 02.7	-0.9
NEO	Neokhori	0.73	97	P	Pn	23 16 50.4	+0.6
NEO				S	Sn	23 17 02.7	-0.9
NEO	Neokhori	0.73	97	P	Pn	23 16 50.9	+1.1
NEO				S	Sn	23 17 02.7	-0.9
NEO				AML	AML	23 17 03.4	
	comp=E,9132μm,0.3s						
NEO				AML	AML	23 17 03.6	
	comp=N,25474μm,0.4s						
ANX	Ano Chora	0.86	199	P	Pn	23 16 51.6	+0.5
ANX				S	Sn	23 17 05.5	-0.3
ANX	Ano Chora	0.86	199	P	Pn	23 16 52.3	+1.2
ANX				S	Sn	23 17 05.5	-0.3
ANX	Ano Chora	0.86	199	P	Pn	23 16 52.3	+1.2
SMIA	Simia	0.89	126	P	Pn	23 16 51.6	+0.3
SMIA				S	Sn	23 17 05.0	-1.2
SMIA	Simia	0.89	126	P	Pn	23 16 51.6	+0.3
SMIA				S	Sn	23 17 05.0	-1.2
SMIA	Simia	0.89	126	P	Pn	23 16 51.2	-0.1
SMIA				S	Sn	23 17 05.0	-1.2
SMIA				AML	AML	23 17 08.7	
	comp=N,4263μm,0.6s						
SMIA				AML	AML	23 17 15.5	
	comp=E,3431μm,0.6s						
KPRO	Kipourio	0.90	308	P	Pn	23 16 52.4	+0.9
KPRO	Kipourio	0.90	308	P	Pn	23 16 52.3	+0.8
KPRO				S	Sn	23 17 06.7	+0.3
KPRO	Kipourio	0.90	308	P	Pn	23 16 52.3	+0.8
KPRO				S	Sn	23 17 06.7	+0.3
KPRO				AML	AML	23 17 08.7	
	comp=N,3910μm,0.3s						
KPRO				AML	AML	23 17 10.9	
	comp=E,5528μm,0.2s						
LKR	Lokris	0.94	143	P	Pn	23 16 52.0	+0.3
LKR				S	Sn	23 17 06.4	-0.5
LKR	Lokris	0.94	143	P	Pn	23 16 52.1	+0.3
LKR				S	Sn	23 17 06.4	-0.5
LKR	Lokris	0.94	143	P	Pn	23 16 52.1	+0.3
LKR				S	Sn	23 17 06.0	-0.9
LKR				AML	AML	23 17 06.7	
	comp=E,2514μm,0.3s						
LKR				AML	AML	23 17 08.4	
	comp=N,1575μm,0.3s						
DSL	Palaion Diasel	0.96	254	P	Pn	23 16 53.3	+1.2
DSL				S	Sn	23 17 08.4	+0.9
DSL	Palaion Diasel	0.96	254	P	Pn	23 16 53.3	+1.2
DSL				S	Sn	23 17 07.9	+0.4
DSL	Palaion Diasel	0.96	254	P	Pn	23 16 53.5	+1.4
DSL				S	Sn	23 17 07.9	+0.4
DSL				AML	AML	23 17 10.0	
	comp=E,4988μm,0.3s						
DSL				AML	AML	23 17 12.1	
	comp=N,7736μm,0.3s						
KZN	Kozani	0.98	336	P	Pn	23 16 53.6	+1.3
KZN				S	Sn	23 17 09.2	+1.2
KZN	Kozani	0.98	336	P	Pn	23 16 53.6	+1.3
KZN				S	Sn	23 17 09.2	+1.2
PVO	Paravola	0.98	217	P	Pn	23 16 53.4	+1.1
PVO				S	Sn	23 17 08.7	+0.9
PVO	Paravola	0.98	217	P	Pn	23 16 53.4	+1.1
PVO				S	Sn	23 17 08.7	+0.9
PVO	Paravola	0.98	217	P	Pn	23 16 54.0	+1.8
PVO				AML	AML	23 17 09.7	
	comp=E,2023μm,0.3s						
PVO				AML	AML	23 17 09.9	
	comp=N,1762μm,0.3s						
SERG	Sergoula	1.01	190	P	Pn	23 16 53.0	+0.5
SERG				S	Sn	23 17 08.6	+0.3
DSF	Desfina	1.01	169	P	Pn	23 16 52.5	-0.1
DSF				S	Sn	23 17 07.7	-0.7
DSF	Desfina	1.01	169	P	Pn	23 16 52.5	-0.1
DSF				S	Sn	23 17 07.7	-0.7
DSF	Desfina	1.01	169	P	Pn	23 16 52.4	-0.1
DSF				S	Sn	23 17 07.1	-1.3
DSF				AML	AML	23 17 08.1	
	comp=N,1519μm,0.1s						
DSF				AML	AML	23 17 09.5	
	comp=E,1419μm,0.2s						
EFP	Efpalio	1.02	197	P	Pn	23 16 53.6	+1.0
EFP	Efpalio	1.02	197	P	Pn	23 16 53.6	+1.0
JAN	Janina	1.14	283	P	Pn	23 16 56.0	+2.1
JAN				S	Sn	23 17 12.8	+1.9
JAN	Janina	1.14	283	P	Pn	23 16 56.0	+2.1
JAN				S	Sn	23 17 11.8	+1.0
JAN	Janina	1.14	283	S	Sn	23 17 11.8	+1.0
JAN				AML	AML	23 17 15.5	
	comp=E,4729μm,0.5s						
PDO	Prodromos	1.18	227	P	Pn	23 16 55.2	+0.8
PDO				S	Sn	23 17 12.1	+0.5
PDO	Prodromos	1.18	227	P	Pn	23 16 55.2	+0.8
PDO				S	Sn	23 17 12.1	+0.5
PDO	Prodromos	1.18	227	P	Pn	23 16 55.2	+0.8
PDO				S	Sn	23 17 11.2	-0.4
PDO				AML	AML	23 17 13.2	
	comp=E,2601μm,0.3s						
PDO				AML	AML	23 17 14.7	
	comp=N,3930μm,0.3s						
PENT	Pentalofos	1.19	312	P	Pn	23 16 55.9	+1.3
PENT	Pentalofos	1.19	312	P	Pn	23 16 55.9	+1.3
UPR	University Cam	1.19	199	P	Pn	23 16 55.2	+0.8
LAKA	Lakka	1.19	192	P	Pn	23 16 55.0	+0.5
LAKA	Lakka	1.19	192	P	Pn	23 16 54.8	+0.3
LAKA	Lakka	1.19	192	P	Pn	23 16 54.8	+0.3
PAIG	Paliouri	1.20	64	P	Pn	23 16 55.2	+0.7
PAIG				S	Sn	23 17 12.2	+0.3
PAIG	Paliouri	1.20	64	P	Pn	23 16 55.2	+0.7
PAIG				S	Sn	23 17 12.2	+0.3
PAIG	Paliouri	1.20	64	P	Pn	23 16 55.2	+0.7
PAIG				S	Sn	23 17 10.9	-1.0
PAIG				AML	AML	23 17 11.8	
	comp=E,2386μm,0.4s						
PAIG				AML	AML	23 17 12.2	
	comp=N,1432μm,0.6s						
AOS	Alonnisos	1.26	100	P	Pn	23 16 55.6	+0.4
AOS				S	Sn	23 17 12.5	-0.7
AOS	Alonnisos	1.26	100	P	Pn	23 16 55.7	+0.4
AOS	Alonnisos	1.26	100	P	Pn	23 16 55.7	+0.4
PLG	Polygyros	1.32	42	P	Pn	23 16 56.6	+0.6
PLG				S	Sn	23 17 14.6	+0.1
PLG	Polygyros	1.32	42	P	Pn	23 16 56.4	+0.4
PLG				S	Sn	23 17 14.6	+0.1
PLG	Polygyros	1.32	42	P	Pn	23 16 56.4	+0.4
PLG				AML	AML	23 17 14.2	
	comp=E,1234μm,0.3s						
PLG				AML	AML	23 17 15.0	
	comp=N,1170μm,0.3s						
THE	Thessaloniki	1.33	23	P	Pn	23 16 56.6	+0.5
THE	Thessaloniki	1.33	23	P	Pn	23 16 56.1	0.0
THE	Thessaloniki	1.33	23	P	Pn	23 16 56.1	0.0
HORT	Hortiatis	1.35	27	P	Pn	23 16 56.8	+0.4
HORT				S	Sn	23 17 15.1	-0.1
HORT	Hortiatis	1.35	27	P	Pn	23 16 56.8	+0.4
HORT				S	Sn	23 17 15.1	-0.1
HORT	Hortiatis	1.35	27	P	Pn	23 16 56.5	+0.1
KLV	Kalavryta, Ach	1.36	185	P	Pn	23 16 56.9	+0.3
KLV	Kalavryta, Ach	1.36	185	P	Pn	23 16 56.9	+0.3
KLV	Kalavryta, Ach	1.36	185	P	Pn	23 16 56.9	+0.3
NEST	Nestorio	1.39	317	P	Pn	23 16 58.4	+1.5
NEST				S	Sn	23 17 18.0	+2.0
NEST	Nestorio	1.39	317	P	Pn	23 16 58.4	+1.5
NEST				S	Sn	23 17 18.0	+2.0
NEST	Nestorio	1.39	317	P	Pn	23 16 59.1	+2.2
AXS	Araxos	1.40	211	P	Pn	23 16 57.6	+0.7
AXS				S	Sn	23 17 16.5	+0.4
AXS	Araxos	1.40	211	P	Pn	23 16 57.6	+0.7
AXS				S	Sn	23 17 16.5	+0.4
AXS	Araxos	1.40	211	P	Pn	23 16 57.6	+0.7
LKD2	Lefkada island	1.41	245	P	Pn	23 16 57.6	+0.5
LKD2				S	Sn	23 17 17.4	+1.0
LKD2	Lefkada island	1.41	245	P	Pn	23 16 57.6	+0.5
LKD2				S	Sn	23 17 17.4	+1.0
LKD2	Lefkada island	1.41	245	P	Pn	23 16 56.8	-0.2
LKD2				AML	AML	23 17 16.6	
	comp=E,3569μm,0.3s						
LKD2				AML	AML	23 17 18.2	
	comp=N,4611μm,0.2s						
LTK	Loutraki	1.48	159	P	Pn	23 16 58.0	+0.1
LTK	Loutraki	1.48	159	P	Pn	23 16 58.0	+0.1
LTK	Loutraki	1.48	159	P	Pn	23 16 57.4	-0.5
RLS	Riolos of Patr	1.49	206	P	Pn	23 16 58.9	+0.9
RLS	Riolos of Patr	1.49	206	P	Pn	23 16 58.8	+0.8
IGT	Igoumenitsa	1.52	275	P	Pn	23 16 59.2	+0.9
IGT				S	Sn	23 17 19.5	+0.8
IGT	Igoumenitsa	1.52	275	P	Pn	23 16 59.2	+0.9
IGT				S	Sn	23 17 19.5	+0.8
DRO	Drossia	1.52	197	P	Pn	23 16 59.4	+1.0
DRO	Drossia	1.52	197	P	Pn	23 16 59.4	+1.0
DRO	Drossia	1.52	197	P	Pn	23 16 59.6	+1.2
FNA	Florina	1.54	333	P	Pn	23 17 00.0	+1.3
FNA				S	Sn	23 17 21.1	+1.8
FNA	Florina	1.54	333	P	Pn	23 17 00.0	+1.3
FNA				S	Sn	23 17 21.1	+1.8
GRG	Griva	1.55	3	P	Pn	23 16 59.4	+0.6
GRG	Griva	1.55	3	P	Pn	23 16 59.0	+0.2
GRG	Griva	1.55	3	P	Pn	23 16 59.0	+0.2
SGD	Sagiada	1.60	278	P	Pn	23 17 00.5	+1.2
SGD	Sagiada	1.60	278	P	Pn	23 17 00.5	+1.2
OUR	Ouranopolis	1.60	54	P	Pn	23 17 00.1	+0.8
OUR	Ouranopolis	1.60	54	P	Pn	23 17 00.1	+0.8
OUR	Ouranopolis	1.60	54	P	Pn	23 17 00.1	+0.8
SOH	Sokhos	1.64	30	P	Pn	23 17 01.0	+1.2
SOH	Sokhos	1.64	30	P	Pn	23 17 01.0	+1.2
SOH	Sokhos	1.64	30	P	Pn	23 17 01.4	+1.6
KFL	Anninata	1.75	223	P	Pn	23 17 01.4	+0.2
KFL	Anninata	1.75	223	P	Pn	23 17 01.4	+0.2
KFL	Anninata	1.75	223	P	Pn	23 17 00.9	-0.3
BIA	Bitola	1.77	336	P	Pn	23 17 03.1	+1.6
BIA	Bitola	1.77	336	*i* Pn	Pn	23 17 03.3	+1.7
BIA				*i* Sg	Sn	23 17 26.0	+1.6
BIA	Bitola	1.77	336	P	Pn	23 17 03.1	+1.6
BIA				*i* Sg	Sn	23 17 25.9	+1.6
VLS	Valsamata	1.81	228	P	Pn	23 17 01.7	-0.2
VLS	Valsamata	1.81	228	P	Pn	23 17 01.7	-0.2
ATH	Athens Observa	1.82	142	P	Pn	23 17 02.8	+0.8
ATH	Athens Observa	1.82	142	P	Pn	23 17 02.8	+0.8
ATH				S	Sn	23 17 24.1	-1.1
KNT	Kendrikon	1.82	15	P	Pn	23 17 03.1	+1.1
KNT	Kendrikon	1.82	15	P	Pn	23 17 03.1	+1.1
PTL	Penteli	1.83	137	P	Pn	23 17 03.0	+0.8
PTL	Penteli	1.83	137	P	Pn	23 17 03.0	+0.8
PTL	Penteli	1.83	137	P	Pn	23 17 03.1	+0.8
TRIP	Tripoli	1.87	180	P	Pn	23 17 03.4	+0.6
TRIP	Tripoli	1.87	180	P	Pn	23 17 03.4	+0.6
AMT	Artemida-Makis	1.92	194	P	Pn	23 17 04.6	+1.2
AMT	Artemida-Makis	1.92	194	P	Pn	23 17 04.6	+1.2
AMT	Artemida-Makis	1.92	194	P	Pn	23 17 05.0	+1.6
VAY	Valandovo	1.93	6	P	Pn	23 17 04.5	+1.0
VAY	Valandovo	1.93	6	⇑*i* Pn	Pn	23 17 04.5	+1.0
VAY	Valandovo	1.93	6	⇑*i* Pn	Pn	23 17 04.4	+1.0
KEK	Kerkira	1.95	280	P	Pn	23 17 04.4	+0.7
KEK				S	Sn	23 17 29.2	+1.0
KEK	Kerkira	1.95	280	P	Pn	23 17 04.4	+0.7
KEK				S	Sn	23 17 29.2	+1.0
VLY	Voula,Athens	1.95	142	P	Pn	23 17 04.4	+0.7
VLY	Voula,Athens	1.95	142	P	Pn	23 17 04.6	+0.9
VLY	Voula,Athens	1.95	142	P	Pn	23 17 04.6	+0.9
SRS	Serrai	1.98	30	P	Pn	23 17 04.9	+0.8
SRS	Serrai	1.98	30	P	Pn	23 17 04.9	+0.8
VLX	Vlachokerasia	2.03	178	P	Pn	23 17 05.8	+0.9
VLX	Vlachokerasia	2.03	178	P	Pn	23 17 05.8	+0.9
DID	Didima	2.04	158	P	Pn	23 17 05.0	+0.1
DID				S	Sn	23 17 29.6	-0.7
DID	Didima	2.04	158	P	Pn	23 17 05.0	+0.1
DID				S	Sn	23 17 29.6	-0.7
DID	Didima	2.04	158	P	Pn	23 17 04.5	-0.3
OHR	Ohrid	2.05	327	*i* Pn	Pn	23 17 06.4	+1.4
OHR				*i* Sg	Sn	23 17 32.3	+1.7
OHR	Ohrid	2.05	327	*i* Pn	Pn	23 17 06.4	+1.4
OHR				*i* Sg	Sn	23 17 32.3	+1.7
ZKS	Zakynthos	2.07	215	P	Pn	23 17 05.5	+0.2
ZKS	Zakynthos	2.07	215	P	Pn	23 17 05.1	-0.2
ZKS	Zakynthos	2.07	215	P	Pn	23 17 05.0	-0.2
KRND	KRANIDI	2.13	161	P	Pn	23 17 06.3	+0.3
KRND	KRANIDI	2.13	161	P	Pn	23 17 06.3	+0.3
KRND	KRANIDI	2.13	161	P	Pn	23 17 05.9	-0.1
ITM	Ithomi	2.24	187	P	Pn	23 17 08.6	+1.1
ITM	Ithomi	2.24	187	P	Pn	23 17 08.5	+1.1
ITM	Ithomi	2.24	187	P	Pn	23 17 08.5	+1.0
NVR	Nevrokopi	2.29	31	P	Pn	23 17 08.9	+0.8
NVR	Nevrokopi	2.29	31	P	Pn	23 17 08.9	+0.8
KAVA	Kavala	2.33	46	P	Pn	23 17 09.3	+0.7
KAVA	Kavala	2.33	46	P	Pn	23 17 09.3	+0.7
MMB	Musomiste	2.44	26	*i* Pg	Pn	23 17 10.9	+0.8
KKB	Krupnik	2.53	14	*i* Pg	Pn	23 17 12.2	+0.9
PYL	PYLOS	2.54	190	P	Pn	23 17 11.4	0.0
PYL	PYLOS	2.54	190	P	Pn	23 17 11.4	0.0
SKO	Skopje	2.64	346	*i* Pn	Pn	23 17 14.2	+1.5
TIR	Tirane	2.68	317	⇑*iP*	Pn	23 17 14.7	+1.5
TIR	Tirane	2.68	317	P	Pn	23 17 14.6	+1.4
TIR				S	Sn	23 17 48.5	+3.3
VLI	Veliai	2.73	169	P	Pn	23 17 13.8	-0.1
VLI	Veliai	2.73	169	P	Pn	23 17 13.8	-0.1
VLI	Veliai	2.73	169	P	Pn	23 17 13.6	-0.3
RZN	Rozhen	2.94	38	*i* Pg	Pn	23 17 18.1	+1.3
KDZ	Kurdzhali	3.27	46	*i* Pg

UPM	Unac-Piva	4.57 327	P	Pn	23 17 39.9	+1.3
UPM			eSn	Sn	23 18 29.5	-1.2
IDI	Anoyia	4.60 152	P	Pn	23 17 37.0	-2.0
comp=N,0.5nm,0.3s,baz=339,slow=11,SNR=23						
IDI			S	Sn	23 18 28.0	-3.4
comp=N,6.9nm,0.3s,baz=143,slow=16,SNR=17						
IDI	Anoyia	4.60 152	⇑iP	Pn	23 17 38.5	-0.5
IDI	Anoyia	4.60 152	S	Sn	23 18 26.9	-4.5
IDI	Anoyia	4.60 152	⇑iP	Pn	23 17 38.5	-0.5
GRUS	Gruza	4.63 346	ePn	Pn	23 17 40.0	+0.7
SIVA	Sivas	4.82 155	⇑iP	Pn	23 17 45.0	+3.1
SIVA	Sivas	4.82 155	⇑iP	Pn	23 17 45.0	+3.1
SIVA			S	Sn	23 18 37.7	+1.1
CDT	Castel del Mon	4.90 292	iPn	Pn	23 17 42.5	-0.4
LAST	Lasithi	4.94 148	⇑iP	Pn	23 17 43.0	-0.6
LAST	Lasithi	4.94 148	⇑iP	Pn	23 17 43.0	-0.6
LAST			S	Sn	23 18 36.4	-3.3
BBLS	Lazići	4.95 335	⇓iPn	Pn	23 17 43.6	-0.1
DIVS	Divibare	4.99 341	⇓iPn	Pn	23 17 44.0	-0.3
TRUS	Trudelj	5.02 344	ePn	Pn	23 17 44.5	0.0
HAPS	Han Pijesak,BI	5.30 333	⇑iPn	Pn	23 17 47.4	-1.1
MS1	Monte Sant'Ang	5.35 297	iPn	Pn	23 17 48.0	-1.1
TEKS	Tekeris	5.54 339	ePn	Pn	23 17 51.4	-0.1
FGSL	Fruska Gora	6.03 343	⇑iPn	Pn	23 17 59.0	+0.7
DOB	Doboj	6.17 331	ePn	Pn	23 17 58.5	-1.6
VAE	Valguarnera	6.47 255	P	Pn	23 18 04.1	-0.2
comp=N,1.1nm,0.3s,baz=151,slow=4.6,SNR=13						
VAE			S	Sn	23 19 13.8	-3.0
comp=N,2.3nm,0.3s,baz=360,slow=16,SNR=3.9						
BLY	Banja Luka	6.55 326	⇓iP	Pn	23 18 04.9	-0.4
BLY	Banja Luka	6.55 326	⇓iPn	Pn	23 18 04.7	-0.6
UDBI	Udbina	7.06 319	iPn	Pn	23 18 12.1	-0.2
UDBI	Udbina	7.06 319	iPn	Pn	23 18 12.0	-0.2
AQU	L'Aquila	7.35 296	ePn	Pn	23 18 18.6	+2.4
NVLJ	Novalja	7.55 315	ePn	Pn	23 18 17.6	-1.3
NVLJ			Sn	Sn	23 19 36.6	-6.2
NVLJ	Novalja	7.55 315	ePn	Pn	23 18 17.5	-1.3
BOJS	Bojanci	8.01 322	iPn	Pn	23 18 24.1	-1.0
BOJS			iSn	Sn	23 19 48.8	-5.1
CRES	Cresnjev	8.15 324	⇓iPn	Pn	23 18 25.5	-1.6
VISS	Visnje	8.43 322	iPn	Pn	23 18 29.7	-1.0
VISS			iSn	Sn	23 19 58.8	-5.3
CEY	Cerknica	8.58 320	ePn	Pn	23 18 31.4	-1.5
LJU	Ljubljana	8.75 322	ePn	Pn	23 18 34.3	-0.8
PERS	Pernice	8.93 326	iPn	Pn	23 18 36.2	-1.4
PERS			iSn	Sn	23 20 08.4	-7.9
SOKA	Soboth	9.00 326	iPn	Pn	23 18 37.2	-1.4
comp=N,3.0nm,0.4s,SNR=10						
SOKA	Soboth	9.00 326	Pn	Pn	23 18 37.2	-1.4
comp=N,3.0nm,0.4s,SNR=10						
OBKA	Obir	9.08 324	iPn	Pn	23 18 39.1	-0.7
comp=N,2.2nm,0.2s						
OBKA	Obir	9.08 324	Pn	Pn	23 18 39.1	-0.7
comp=N,2.2nm,0.2s						
ARSA	Arzberg	9.26 330	iPn	Pn	23 18 40.6	-1.5
comp=N,1.5nm,0.3s						
ARSA			iSn	Sn	23 20 18.3	-6.0
comp=N,1.9nm,0.3s						
ARSA	Arzberg	9.26 330	Pn	Pn	23 18 40.6	-1.5
comp=N,1.5nm,0.3s						
ABTA	Abfaltersbach	10.24 319	iPn	Pn	23 18 54.1	-1.3
comp=N,2.8nm,0.2s,SNR=11						
ABTA			eSn	Sn	23 20 43.3	-5.0
comp=N,3.4nm,0.4s						
ABTA	Abfaltersbach	10.24 319	Pn	Pn	23 18 54.1	-1.3
comp=N,2.8nm,0.2s,SNR=11						
MOA	Molln	10.24 328	iPn	Pn	23 18 54.9	-0.5
comp=N,0.6nm,0.1s						
MOA			eSn	Sn	23 20 46.2	-2.0
comp=N,3.0nm,0.3s						
MOA	Molln	10.24 328	Pn	Pn	23 18 54.9	-0.5
comp=N,0.6nm,0.1s						
KEST	Kesra	10.90 254	P	Pn	23 19 05.0	+0.4
comp=N,0.3nm,0.3s,baz=101,slow=8.4,SNR=8.2						
WATA	Walderalm	11.11 319	iPn	Pn	23 19 07.2	0.0
comp=N,1.9nm,0.2s,SNR=4.2						
WATA	Walderalm	11.11 319	Pn	Pn	23 19 07.2	0.0
comp=N,1.9nm,0.2s,SNR=4.2						
GERES	GERESS Array B	11.27 330	P	Pn	23 19 06.2	-3.1
comp=N,0.1nm,0.3s,baz=156,slow=15,SNR=3.6						
GERES			S	Sn	23 21 09.1	-4.0
comp=N,0.2nm,0.3s,baz=149,slow=23,SNR=4.7						
MOTA	Moosalm	11.36 318	iPn	Pn	23 19 10.4	-0.2
comp=N,1.3nm,0.2s						
MOTA			eSn	Sn	23 21 11.3	-4.1
comp=N,4.8nm,0.7s						
MOTA	Moosalm	11.36 318	Pn	Pn	23 19 10.4	-0.2
comp=N,1.3nm,0.2s						
KHC	Kasperske Hory	11.55 330	eP	Pn	23 19 14.2	+1.2
DAVOX	Davos/Dischmat	11.68 313	P	Pn	23 19 11.4	-3.5
comp=N,0.2nm,0.3s,baz=163,slow=20,SNR=2.3						
DAVOX			S	Sn	23 21 16.6	-6.7
comp=N,0.2nm,0.3s,baz=286,slow=18,SNR=4.5						
ESDC	Sonseca Array	20.23 279	P	P	23 20 58.2	-0.1
comp=N,0.3nm,0.5s,baz=78,slow=10,SNR=4.4						
HFS	Hagfors	21.44 348	P	P	23 21 11.3	+0.4
comp=N,1.6nm,0.8s,baz=165,slow=12,SNR=6.3						
EKA	Eskdalemuir Ar	23.27 322	P	P	23 21 30.6	+1.0
comp=N,1.4nm,0.6s,baz=121,slow=9.6,SNR=5.3						
TORD	Torodi Ar. Bea	31.85 220	P	P	23 22 47.6	+1.0
comp=N,1.4nm,0.5s,baz=31,slow=9.2,SNR=32						
KURBB	Kurchatov Arra	40.39 55	P	P	23 23 59.8	+0.9
comp=N,0.2nm,0.4s,baz=288,slow=9.1,SNR=3.4						
DBIC	Dimbokro	40.73 224	P	P	23 24 03.0	+1.0
comp=N,3.2nm,0.9s,baz=18,slow=9.1,SNR=6.0						
ZALV	Zalesovo Beam	43.85 49	P	P	23 24 28.2	+1.3
comp=N,1.0nm,0.5s,baz=266,slow=7.9,SNR=5.1						

MEX 21 23:19:45.2±0.5, 14°.90N×92°.87W, h81km±5km, MD3.6, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
THIG		0.58	89	iP	Pn	23 19 58.7	-1.1
THIG				iS	Sn	23 20 08.3	-2.4
PCIG		0.87	337	eP	Pn	23 20 01.6	-1.2
PCIG				eS	Sn	23 20 14.1	-1.8
CCIG	Comitan	1.54	27	eP	Pn	23 20 09.9	-1.4
CCIG				eS	Sn	23 20 29.4	-1.7

*IDC **21** 23:22:02.9±2.4, 40°.08N×78°.08E, h0km, mb3.8/2, mb1 3.5/6, mb1mx3.2/44, mbtmp3.5/6, ML2.9/4, Error ellipse: s-maj=36.8km s-min=21.9km az=133.0*
*SOME **21** 23:22:03.1, 40°.30N×77°.92E, h10km*
*KRNET **21** 23:22:06.2±0.1, 40°.42N×77°.79E, mb3.7*
*NNC **21** 23:22:08.0±3.1, 40°.61N×77°.88E, h0km, mb3.8, mpv3.5, Error ellipse: s-maj=24.8km s-min=12.8km az=161.0*
ISC 21 23:22:03.5±0.8, 40°.26N±0°.04×77°.74E±0°.03, h10km, n54, σ1§95/90, 30C-15D, Kyrgyzstan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
NRN	Naryn	1.77	312	⇑iP	Pg	23 22 38.1	+0.6
baz=307							
NRN				⇑iS	Sg	23 23 02.0	+1.6
baz=307							
KDJ	Kajisay	1.92	347	⇓eP	Pg	23 22 39.7	-0.7
baz=345							
KDJ				⇓iS	Sg	23 23 03.8	-1.5
baz=345							
PRZ	Przheval'sk	2.28	12	⇑eP	Pb	23 22 45.2	+0.3
baz=12							
PRZ				⇑iS	Sb	23 23 13.0	-0.2
baz=12							
ULHL	Ulahol	2.29	331	⇑iP	Pg	23 22 46.5	-0.9
baz=328							
ULHL				⇑iS	Sg	23 23 16.1	-1.0
baz=328							
ANVS	Anan'yevo	2.53	359	⇑iP	Pb	23 22 49.1	0.0
baz=358							
ANVS				⇑iS	Sb	23 23 20.1	-0.2
baz=358							
BOOM	Boomskoye usch	2.61	329	⇓eP	Pb	23 22 50.8	+0.2
baz=327							
BOOM				⇓iS	Sb	23 23 22.4	-0.4
baz=327							
KZA	Kyzart	2.62	315	⇓iP	Pg	23 22 51.9	-1.8
baz=312							
KZA				⇓iS	Sg	23 23 26.1	-1.6
baz=312							
SATY	Saty	2.85	10	eP	Pb	23 22 54.8	+0.2
144nm,0.6s							
SATY				eS	Sg	23 23 32.2	-2.8
230nm,0.5s							
TNSS	Tian-Shan	2.85	348	eP	Pg	23 22 56.1	-2.0
72nm,0.5s							
TNSS				eS	Sg	23 23 34.2	-0.9
205nm,0.7s							
MDOK	Medeo	2.95	350	eP	Pb	23 22 56.7	+0.3
37nm,0.4s							
MDOK				eS	Sb	23 23 34.6	+2.1
324nm,0.5s							
ZHN	Zhinishke	2.96	10	eP	Pb	23 22 54.9	-1.6
23nm,0.2s							
ZHN				eS	Sb	23 23 32.0	-0.6
183nm,0.4s							
KOTS	Kotyrbulak	3.01	351	eP	Pb	23 22 56.4	-1.0
KOTS				eS	Sb	23 23 34.8	+0.5
KNDC	Almaty	3.02	349	⇑Pg	Pb	23 22 55.6	-1.7
KNDC				⇑Lg	Lg	23 23 36.1	
MTBS	Maitube	3.04	342	eP	Pb	23 22 58.2	+0.4
40nm,0.3s							
MTBS				eS	Sg	23 23 37.8	-3.3
188nm,0.4s							
ARLS	Aral	3.04	303	⇑eP	Pb	23 22 57.2	-0.7
baz=300							
ARLS				⇑iS	Sb	23 23 35.0	-0.1
baz=300							
UZB	Uzynbulak	3.04	18	eP	Pb	23 22 56.0	-2.0
28nm,0.9s							
UZB				eS	Sb	23 23 34.1	-1.1
66nm,0.3s							
KST	Kastek	3.09	335	eP	Pg	23 23 00.2	-2.5
17nm,0.7s							
KST				eS	Sg	23 23 41.2	-1.5
112nm,0.7s							
TKM2	Tokmak 2	3.11	330	⇑iP	Pb	23 22 58.5	-0.6
baz=327							
TKM2				⇑iS	Sb	23 23 37.9	+0.7
baz=327							
TKM2	Tokmak 2	3.11	330	⇓Pg	Pb	23 22 58.6	-0.5
22nm,0.8s							
TKM2				⇑Lg	Lg	23 23 41.2	
90nm,0.7s							
UCH	Uchtor	3.13	310	⇑iP	Pb	23 22 58.9	-0.7
baz=307							
UCH				⇑iS	Sb	23 23 39.2	+1.2
baz=307							
KBK	Karagaybulak	3.19	320	⇑iP	Pb	23 23 00.2	-0.2
baz=317							
KBK				⇑iS	Sg	23 23 41.8	-4.1
baz=317							
KURS	Kuram	3.25	6	eP	Pb	23 23 01.1	-0.2
38nm,0.7s							
KURS				eS	Sb	23 23 43.2	+2.3
65nm,0.7s							
KPKS	Kokpek	3.29	12	eP	Pb	23 23 02.1	+0.1
71nm,0.4s							
KPKS				eS	Sb	23 23 44.5	+2.4
146nm,0.5s							
SHLS	Shalkode	3.31	28	eP	Pb	23 23 01.2	-1.4
22nm,0.5s							
SHLS				eS	Sb	23 23 42.6	-0.4
170nm,0.6s							
DGS	Degeres	3.33	334	eP	Pg	23 23 04.6	-2.7
56nm,0.6s							
DGS				eS	Sg	23 23 48.6	-1.8
153nm,0.6s							
PDGK	Podgornoye	3.34	22	⇑eP	Pb	23 22 59.8	-3.0
baz=23							
PDGK				⇑eS	Sb	23 23 39.3	-4.1
baz=23							
PDGK	Podgornoye	3.34	22	⇓Pg	Pb	23 22 59.7	-3.1
15nm,0.4s							
PDGK				⇑Lg	Lg	23 23 43.5	
106nm,0.7s							
AAK	Ala-Archa	3.41	315	Pn	Pb	23 23 03.4	-0.7
5.3nm,0.3s,baz=125,slow=12,SNR=32							
AAK				Sn	Sg	23 23 50.1	-2.8
4.2nm,0.3s,baz=282,slow=16,SNR=5.4							
AAK	Ala-Archa	3.41	315	⇑Pg	Pg	23 23 07.0	-1.8
19nm,0.5s							
AAK				⇑Lg	Lg	23 23 51.2	
158nm,0.7s							
FRU1	Bishkek	3.46	319	⇓eP	Pb	23 23 02.1	-2.8
baz=316							
FRU1				⇓eS	Sb	23 23 44.8	-2.2
baz=316							
CHKK	Chushkaly	3.65	352	eP	Pb	23 23 08.5	+0.3
18nm,0.4s							
CHKK				eS	Sb	23 23 55.8	+3.2
94nm,0.5s							
ARSB	Arslanbob	3.77	288	⇑eP	Pb	23 23 08.5	-1.7
baz=286							
ARSB				⇑eS	Sb	23 23 54.3	-1.7
baz=286							
KUU	Kurty	3.78	344	eP	Pb	23 23 11.0	+0.6
38nm,0.5s							
KUU				eS	Sb	23 23 59.8	+3.5
126nm,0.7s							
MNBS	Baschi	3.85	7	eP	Pb	23 23 11.1	-0.6
6.1nm,0.6s							
MNBS				eS	Sb	23 24 00.2	+1.8
166nm,0.6s							
ARXS	Arharly	3.96	1	eP	Pb	23 23 13.5	+0.1
22nm,0.7s							
ARXS				eS	Sb	23 24 04.6	+3.2
114nm,0.5s							
MRKS	Merke	4.20	308	eP	Pg	23 23 21.6	-2.5
11nm,0.7s							
MRKS				eS	Sg	23 24 17.7	-0.8
28nm,0.6s							
DJR	Jarkent	4.35	20	eP	Pb	23 23 19.9	-0.1
13nm,0.7s							
DJR				eS	Sb	23 24 15.1	+2.5
23nm,0.5s							
MNAS	Manas	4.53	301	⇓Pn	Pb	23 23 18.9	-4.3
2.6nm,0.7s							
MNAS				⇓Pg	Pg	23 23 31.3	+1.1
21nm,1.1s							
MNAS				⇑Lg	Lg	23 24 27.4	
33nm,0.9s							
KAPS	Kapalarasan	5.17	13	eP	Pg	23 23 38.8	-3.7
11nm,0.8s							
KAPS				eS	Sg	23 24 47.3	-2.1
8.2nm,0.8s							
KK31	Karatay Array	6.11	300	⇑Pg	Pg	23 23 57.6	-3.0
1.5nm,0.6s,baz=116,slow=15,SNR=3.5							
KK31				⇓Lg	Lg	23 25 19.0	
7.4nm,0.6s,baz=117,slow=28,SNR=8.3							
MK31	Makanchi Array	7.32	25	⇑Pn	Pn	23 23 53.7	+3.2
0.3nm,0.4s							
MK31				⇓Sn	Sn	23 25 15.0	+1.3
1.9nm,0.6s							
MK31				⇓Lg	Lg	23 25 46.5	
2.4nm,0.6s							
MKAR	Makanchi Array	7.32	25	Pn	Pn	23 23 53.0	+2.4
0.2nm,0.3s,baz=205,slow=14,SNR=5.5							
MKAR				Sn	Sn	23 25 16.1	+2.4
0.2nm,0.3s,baz=209,slow=26,SNR=2.9							
MKAR				Lg	Lg	23 25 47.2	
0.2nm,0.3s,baz=199,slow=26,SNR=3.0							
KURBB	Kurchatov Arra	10.38	3	Pn	Pn	23 24 34.3	+1.9
0.0nm,0.3s,baz=191,slow=12,SNR=4.0							
KURBB				Lg	Lg	23 27 27.9	
0.1nm,0.3s,baz=191,slow=34,SNR=7.8							
KURK	Kurchatov	10.48	3	⇑Lg	Lg	23 27 29.2	
16nm,0.9s							
PYUN	Piuthan	12.88	159	eP	Pn	23 25 07.2	+0.4
9.4nm,0.4s							
KOLN	Koldanda	13.36	157	eP	Pn	23 25 13.0	-0.5
4.3nm,0.4s							
GKN	Gorkha	13.48	153	eP	Pn	23 25 15.6	+0.5
4.3nm,0.3s							
BVAR	Borovoye Array	13.72	341	Pn	P	23 25 24.7	-2.1
0.1nm,0.3s,baz=149,slow=12,SNR=2.6							
BVAR				Lg	Lg	23 29 16.4	
0.1nm,0.3s,baz=145,slow=33,SNR=6.6							
KKN	Kakani	13.91	151	eP	Pn	23 25 20.4	-0.5
4.5nm,0.4s							
GUN	Gumba	14.03	149	eP	Pn	23 25 22.4	-0.3
7.6nm,0.4s							
PKIN	Phulchoki	14.14	151	eP	Pn	23 25 23.8	-0.4
6.1nm,0.4s							
ZALV	Zalesovo Beam	14.51	17	Pn	P	23 25 31.9	-3.6
0.1nm,0.3s,baz=200,slow=9.7,SNR=2.3							
FINES	FINESS Array B	37.57	322	P	P	23 29 21.0	+3.3
1.3nm,0.8s,baz=112,slow=9.4,SNR=3.4							
TORD	Torodi Ar. Bea	71.02	271	P	P	23 33 24.6	+2.8
0.4nm,0.6s,baz=47,slow=4.7,SNR=7.0							

*ISCJB **21** 23:25:24.3±0.4, 39°.08N±0°.03×29°.04E±0°.03, h4km±5km, Error ellipse: s-maj=4.4km s-min=3.9km az=178.1*
*DDA **21** 23:25:24.0, 39°.08N×29°.02E, h8km, Md2.7*
*ISK **21** 23:25:24.0, 39°.11N×29°.06E, h3km, MD2.8*
*CSEM **21** 23:25:24.5±0.1, 39°.10N×29°.05E, h2km, MD2.7, Error ellipse: s-maj=2.1km s-min=2.0km az=134.0*
ISC 21 23:25:24.5±1.0, 39°.11N±0°.03×29°.04E±0°.02, h6km±10km, n56, σ0§52/72, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DEMI	Demirci	0.26	256	P	Pg	23 25 29.7	+0.1
DEMI				S	Sg	23 25 33.2	+0.1
DEMI	Demirci	0.26	256	iP	Pg	23 25 29.7	+0.1
DEMI				iS	Sg	23 25 33.2	+0.1
GDZ	Gediz	0.34	93	P	Pg	23 25 31.4	+0.1
GDZ				S	Sg	23 25 35.9	+0.1
GDZ	Gediz	0.34	93	iP	Pg	23 25 31.4	+0.1
GDZ				iS	Sg	23 25 35.9	+0.1
TVSB	Tavsanli	0.47	44	ePG	Pg	23 25 33.4	-0.2
TVSB	Tavsanli	0.47	44	ePg	Pg	23 25 33.4	-0.2
DURS	Dursunbey	0.66	319	P	Pg	23 25 37.5	+0.3
DURS	Dursunbey	0.66	319	iP	Pg	23 25 37.5	+0.3
MANT	Manisa	0.72	212	P	Pg	23 25 37.9	-0.5
MANT				S	Sg	23 25 47.4	-0.3
MANT	Manisa	0.72	212	iP	Pg	23 25 37.9	-0.5
MANT				iS	Sg	23 25 47.4	-0.3
KHAL	Karahalli	0.82	154	P	Pg	23 25 40.6	+0.4
KHAL				S	Sg	23 25 50.8	0.0
KHAL	Karahalli	0.82	154	iP	Pg	23 25 40.6	+0.4
KHAL				iS	Sg	23 25 50.8	0.0
KHL	Karahalli	0.87	154	ePG	Pg	23 25 41.5	+0.3
KHL	Karahalli	0.87	154	ePg	Pg	23 25 41.5	+0.3
ORLT	Orhaneli	0.94	353	ePG	Pg	23 25 42.1	-0.5
ORLT				eSG	Sn	23 25 57.2	-0.9
ORLT	Orhaneli	0.94	353	ePg	Pg	23 25 42.1	-0.5
ORLT				eSg	Sn	23 25 57.2	-0.9
AKHS	Akhisar	0.98	257	P	Pg	23 25 43.4	+0.1
AKHS				S	Sg	23 25 55.8	-0.2
AKHS	Akhisar	0.98	257	iP	Pg	23 25 43.4	+0.1
AKHS				iS	Sg	23 25 55.8	-0.2
AKS	Akhisar	0.98	257	ePG	Pg	23 25 43.6	+0.3
AKS	Akhisar	0.98	257	ePg	Pg	23 25 43.6	+0.3
BALB	Balikesir	1.04	301	ePG	Pb	23 25 45.1	+0.2
BALB				eSG	Sn	23 26 00.3	-0.1
BALB	Balikesir	1.04	301	ePg	Pb	23 25 45.1	+0.2
BALB				eSg	Sn	23 26 00.3	-0.1
MDNY	Mudanya-Bursa	1.27	355	ePN	Pg	23 25 49.0	+0.2
MDNY				eSN	Sn	23 26 06.6	+0.6
MDNY	Mudanya-Bursa	1.27	355	ePn	Pg	23 25 49.0	+0.2
MDNY				eSn	Sn	23 26 06.6	+0.6
BALY	Balya	1.27	300	P	Pn	23 25 48.0	-0.7
BALY	Balya	1.27	300	iP	Pn	23 25 48.0	-0.7
KCTX	Karacabey (Bur	1.27	336	ePN	Pg	23 25 49.3	+0.4
KCTX	Karacabey (Bur	1.27	336	ePn	Pg	23 25 49.3	+0.4
IZI	Iznik	1.27	15	ePN	Pg	23 25 49.2	+0.3
IZI	Iznik	1.27	15	ePn	Pg	23 25 49.2	+0.3
GEMT	Gemlik	1.33	5	ePN	Pg	23 25 50.1	+0.1
GEMT	Gemlik	1.33	5	ePn	Pg	23 25 50.1	+0.1
GONE	Gonen-Balikesi	1.41	312	ePN	Pg	23 25 52.0	+0.6
GONE	Gonen-Balikesi	1.41	312	ePn	Pg	23 25 52.0	+0.6
ADVT	Abdulvahap	1.43	22	ePN	Pg	23 25 51.8	-0.1
ADVT	Abdulvahap	1.43	22	ePn	Pg	23 25 51.8	-0.1
ARMT	Armutlu	1.46	355	ePN	Pb	23 25 52.1	0.0
ARMT	Armutlu	1.46	355	ePn	Pb	23 25 52.1	0.0
EDC	Edincik	1.53	324	ePN	Pb	23 25 53.5	+0.2
EDC	Edincik	1.53	324	ePn	Pb	23 25 53.5	+0.2
GPA	Golpazari	1.53	39	ePN	Pb	23 25 52.9	-0.4
GPA	Golpazari	1.53	39	ePn	Pb	23 25 52.9	-0.4
GULT	Gulveren	1.75	40	ePN	Pn	23 25 55.7	+0.3
GULT	Gulveren	1.75	40	ePn	Pn	23 25 55.7	+0.3
HRT	Hereke	1.78	16	ePN	Pb	23 25 56.6	-0.9
HRT	Hereke	1.78	16	ePn	Pb	23 25 56.6	-0.9
SPNC	Sapanca-Adapaz	1.85	31	ePN	Pn	23 25 57.5	+0.8
SPNC	Sapanca-Adapaz	1.85	31	ePn	Pn	23 25 57.5	+0.8
ISK	Istanbul-Kandi	1.96	0	ePN	Pn	23 25 59.0	+0.9
ISK	Istanbul-Kandi	1.96	0	ePn	Pn	23 25 59.0	+0.9
SVRH	Sivrihisar-ESK	1.96	79	ePN	Pn	23 25 58.7	+0.4
SVRH	Sivrihisar-ESK	1.96	79	ePn	Pn	23 25 58.7	+0.4
SILT	Sile	2.10	13	ePN	Pb	23 26 01.5	-1.4
SILT	Sile	2.10	13	ePn	Pb	23 26 01.5	-1.4
MDUB	Mudurnu	2.15	50	ePN	Pn	23 26 01.8	+0.9
MDUB	Mudurnu	2.15	50	ePn	Pn	23 26 01.8	+0.9

JMA 21 23:28:04.4±0.1, 36°.26N×141°.13E, h46km±2km, M3.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	Hitachi	0.57	308	P	Pn	23 28 16.0	-0.3
JHO				S	Sn	23 28 23.9	-1.0
CHOJ	Chosi	0.60	202	P	Pn	23 28 16.6	-0.1
CHOJ				S	Sn	23 28 24.2	-1.2
JYT	Yasato	0.76	268	P	Pn	23 28 18.9	+0.2
JYT				S	Sn	23 28 29.0	-0.1
ONAJ	Iwakimizuishiy	0.88	342	P	Pn	23 28 19.9	-0.6
ONAJ				S	Sn	23 28 30.8	-1.4
JFK	Kawauchi	1.12	350	P	Pn	23 28 23.2	-0.6
JFK				S	Sn	23 28 36.4	-1.7
JAG	Ashikaga	1.36	277	P	Pn	23 28 27.5	+0.5
JFT	Otama	1.41	333	P	Pn	23 28 28.8	+1.2
JFT				S	Sn	23 28 45.8	+0.8
MAT	Matsushiro	2.38	278	P	Pn	23 28 42.9	+2.0
MAT				S	Sn	23 29 12.0	+3.2

*NEIC **21** 23:32:39.5, 19°.14N×67°.46W, h12km, MD3.0(RSPR), After RSPR.*
RSPR 21 23:32:39.5, 19°.14N×67°.46W, h12km±3km, MD3.0/6, 8C-4D, Mona Passage

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
AGPR	Aguadilla, PR	0.74	154	⇓eP	Pg	23 32 52.2	-1.8
AGPR	Aguadilla, PR	0.74	154	⇓eP	Pg	23 32 52.2	-1.8
AGPR				eS	Sg	23 33 02.7	-1.1
LSP	Las Mesas	1.02	160	⇓eP	Pb	23 32 56.2	-3.0

TBH				*e*S	Sn	23 35 39.0	-0.2
GRW	Mount Saint Ca	1.56	24	*e*P	Pn	23 35 26.6	+1.0
BOT	Bacolet	1.63	74	*e*P	Pn	23 35 27.0	+0.7
BOT				*e*S	Sn	23 35 47.2	-0.2
GRSS	Sisters	1.71	24	*e*P	Pn	23 35 28.6	+1.3
TOSP	Speyside	1.84	72	*e*P	Pn	23 35 29.2	+0.3
TOSP				*e*S	Sn	23 35 50.9	-1.2
ORIV	Oritupano	1.97	213	*e*P	Pn	23 35 32.7	+2.0
ORIV				*e*S	Sn	23 35 56.3	+1.1
PCRV	Puerto La Cruz	2.35	257	*e*P	Pn	23 35 36.8	+1.1
SVB	Belmont	2.73	22	*e*P	Pn	23 35 42.4	+1.6
SVB				*e*S	Sn	23 36 11.5	-1.7
GURV	El Guri	3.05	195	*e*P	Pn	23 35 46.2	+1.3
GURV				*e*S	Sn	23 36 19.4	-1.3
CUPV	Cœpira	3.48	259	*e*P	Pn	23 35 52.1	+1.3
CUPV				*e*S	Sn	23 36 31.1	-0.1
LUEV	Luepa	4.93	170	*e*P	Pn	23 36 11.2	+0.7
LUEV				*e*S	Sn	23 37 02.7	-3.7
BAUV	El Baul	5.92	253	*e*P	Pn	23 36 24.1	+0.3
BAUV				*e*S	Sn	23 37 27.1	-3.2

IDC 21 23:38:11.6±445.0, 64°.18N×20°.78W, h0km, Error ellipse: s-maj=389.3km s-min=149.6km az=40.0, Iceland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I18DK	QAANAAQ INFRAS	19.84	331	*i*		01 43 10.0	
	baz=106,slow=312,SNR=2.1						
I26DE	FREYUNG INFRAS	24.02	113	*i*		02 05 00.0	
	baz=324,slow=329,SNR=3.1						
I53US	FAIRBANKS INFR	45.56	332	*i*		04 50 50.0	
	baz=30,slow=316,SNR=1.2						

*NEIC **21** 23:45:15.0±0.5, 19°.82S×68°.94W, h99km±4km, mb5.0/68, Error ellipse: s-maj=6.5km s-min=4.5km az=77.0*
NEIC Felt [IV] at Pica; [III] at Alto Hospicio, Iquique and Pisagua; [II] at Quillagua.
*BJI **21** 23:45:14.6, 19°.80S×68°.90W, h93km, mB5.1/10*
*ISCJB **21** 23:45:14.7±0.3, 19°.84S±0°.02×68°.99W±0°.04, h114km±2km, mb4.8/80, Error ellipse: s-maj=6.9km s-min=3.8km az=170.5*
*IDC **21** 23:45:16.9±0.6, 19°.78S×68°.91W, h117km±5km, mb4.1/18, mb1 4.3/22, mb1mx4.2/36, mbtmp4.5/22, MS3.6/3, Ms1 3.6/3, ms1mx3.3/21, Error ellipse: s-maj=15.7km s-min=11.6km az=71.0*
*GUC **21** 23:45:16.8±0.6, 19°.95S×69°.22W, h105km±3km, ML5.0*
*MOS **21** 23:45:17.8±1.4, 19°.73S×68°.91W, h134km, mb4.6/13, Error ellipse: s-maj=18.5km s-min=7.7km az=108.7*
*SCB **21** 23:45:17.8±1.1, 19°.61S×68°.65W, h125km, Ml4.0/1, Error ellipse: s-maj=46.4km s-min=6.8km az=69.0*

ISC 21 23:45:15.7±0.4, 19°.89S±0°.03×69°.09W±0°.06, h111km±3km, h111km:pP-P, n389, σ1°.23/406, mb4.9/81, 8C-6D, Northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB08	IPOC Station P	0.26	193	⇓*i*P	Pn	23 45 32.7	+0.7
PB08				*e*S	Sn	23 45 44.5	+0.4
PB08				IAML		23 45 47.1	
	comp=E,53μm,0.5s						
PB11	IPOC Station P	0.55	284	⇑*i*P	Pn	23 45 33.2	+0.1
PB11				*i* S	Sn	23 45 45.9	-0.3
PB11	IPOC Station P	0.55	284	*e*Pn	Pn	23 45 32.0	-1.2
MNMC	Minye Minye	0.89	328	⇓*i*P	Pn	23 45 37.0	+0.7
MNMC				*i* S	Sn	23 45 52.4	+0.7
PSGC	Pisagua	1.01	287	⇑*i*P	Pn	23 45 37.1	-0.1
PSGC				*i* S	Sn	23 45 52.5	-1.0
PB01	IPOC Station P	1.21	198	⇑*i*P	Pn	23 45 39.7	+0.4
PB01				*i* S	Sn	23 45 57.0	-0.1
PB01				IAML		23 45 58.5	
	comp=N,44μm,0.7s						
PB01	IPOC Station P	1.21	198	*e*Pn	Pn	23 45 38.1	-1.2
PB13	IPOC Station P	1.59	346	⇓*i*P	Pn	23 45 45.8	+1.4
PB13				*e*S	Sn	23 46 07.5	+1.5
PB09	IPOC Station P	1.90	184	⇑*i*P	Pn	23 45 48.5	+0.8
PB09				*i* S	Sn	23 46 12.3	+0.2
PB09				IAML		23 46 16.1	
	comp=N,21μm,0.7s						
PB04	IPOC Station P	2.62	202	*e*Pn	Pn	23 45 56.6	-0.4
LVC	Limon Verde	2.71	176	P	Pn	23 45 59.7	+1.4
	comp=N,3μm,0.3s,baz=0.7,slow=13,SNR=249						
LVC				S	Sn	23 46 32.0	+1.0
	comp=N,9μm,0.3s,baz=338,slow=12,SNR=24						
LVC	Limon Verde	2.71	176	*e*Pn	Pn	23 45 58.8	+0.5
LVC				S	Sn	23 46 32.0	+1.0
BBOJ	La Paz, Jacaqu	3.02	17	*e*Pn	Pn	23 46 05.9	+3.3
BBOE	La Paz, Chanca	3.24	19	⇑*i*Pn	Pn	23 46 07.3	+1.9
MOCB	Mochara	3.51	113	⇑*i*Pn	Pn	23 46 12.9	+4.0
LPAZ	La Paz	3.70	14	P	Pn	23 46 14.5	+2.9
	comp=N,76nm,0.3s,baz=198,slow=5.5,SNR=1389						
LPAZ				S	Sn	23 46 54.8	0.0
	comp=N,12nm,0.3s,baz=194,slow=4.2,SNR=4.2						
LPAZ				LR	LR	23 47 54.7	
	comp=N,687nm,18.7s,baz=214,slow=44						
LPAZ	La Paz	3.70	14	*e*P	Pn	23 46 14.3	+2.6
LPAZ				pmax	pmax		
	comp=Z,76nm,0.3s						
LPAZ	La Paz	3.70	14	*e*Pn	Pn	23 46 14.3	+2.6
LPAZ				*e*Sn	Sn	23 46 55.6	+0.8
BBOB	La Paz, Bander	3.84	14	⇓*i*Pn	Pn	23 46 15.8	+2.4
BBOB				*e*Sn	Sn	23 46 56.9	-1.1
	comp=Z,109nm,0.3s						
PB10	IPOC Station P	3.85	200	*e*Pn	Pn	23 46 11.9	-1.3
SIV	San Ignacio	8.56	64	P	Pn	23 47 15.1	-1.8
	comp=Z,42nm,0.3s,baz=265,slow=13,SNR=329						
SAML	Samuel	12.29	29	*e*Pn	Pn	23 48 04.7	-2.3
CPUP	Villa Florida	12.57	123	P	Pn	23 48 10.1	-0.6
	comp=Z,0.7nm,0.3s,baz=300,slow=12,SNR=16						
CPUP	Villa Florida	12.57	123	*e*P	Pn	23 48 10.3	-0.4
CPUP	Villa Florida	12.57	123	*e*Pn	Pn	23 48 10.3	-0.4
ROC1	El Roble	13.15	187	*e*Pn	Pn	23 48 17.7	-0.7
ATAH	Atahualpa	15.56	323	P	P	23 48 51.5	+0.1
	comp=Z,0.1nm,0.3s,baz=169,slow=10,SNR=2.7						
TRQA	Tornquist	19.13	163	*e*P	P	23 49 30.9	+0.8
	comp=Z,57nm,1.0s						
SPB	Sao Paulo	20.45	104	*e*P	Pn	23 49 45.0	-2.7
	comp=Z,33nm,1.2s						
PLCA	Paso Flores	20.81	183	P	P	23 49 49.3	+0.9
	comp=Z,26nm,0.9s,baz=35,slow=12,SNR=15						
PLCA				PcP	PcP	23 53 53.1	+0.3
	comp=Z,1.8nm,0.7s,baz=297,slow=2.3,SNR=3.2						
PLCA	Paso Flores	20.81	183	*e*P	P	23 49 49.4	+1.1
PLCA				pmax	pmax		
	comp=Z,26nm,0.9s						
PLCA	Paso Flores	20.81	183	*e*P	P	23 49 48.2	-0.1
	comp=Z,60nm,1.3s						
PLCA				PcP	PcP	23 53 53.1	+0.3
PTGA	Pitinga	21.03	26	P	P	23 49 48.6	-2.2
	comp=Z,17nm,0.3s,baz=215,slow=14,SNR=66						
PTGA	Pitinga	21.03	26	*e*P	P	23 49 48.5	-2.4
	comp=Z,58nm,1.1s						
OTAV	Otavalo	22.01	334	*e*P	P	23 50 02.6	+0.9
	comp=Z,19nm,1.0s						
OTAV	Otavalo	22.01	334	*e*P	P	23 50 01.8	+0.2
ROSC	El Rosal	25.11	348	*e*P	P	23 50 31.1	+0.3
	comp=Z,9.3nm,1.1s						
GUYC	Guyana, Colomb	25.71	345	*e*P	P	23 50 35.7	-0.7
RUSC	La Rusia	25.92	351	*e*P	P	23 50 37.4	-0.8
NORC	Norcasia	25.93	347	*e*P	P	23 50 36.3	-1.5
HELC	Santa Helena	26.68	346	*e*P	P	23 50 43.1	-1.9
MOTC	Monteria, Cord	29.21	347	*e*P	P	23 51 04.5	-2.6
PCRV	Puerto La Cruz	30.20	9	LR	LR	00 05 58.3	
	comp=Z,89nm,21.0s,slow=41						
SVB	Belmont	33.84	14	*e*P	P	23 51 46.9	-0.8
	comp=Z,76nm,0.3s						
RCBR	Riachuelo	35.15	71	*e*P	P	23 51 58.9	-0.2
	comp=Z,59nm,1.2s						
FDF	Fort de France	35.28	13	*e*P	P	23 51 59.9	-0.2
FDF				pmax	pmax		
	comp=Z,169nm,1.7s						
FDF	Fort de France	35.28	13	*e*P	P	23 51 59.9	-0.2
	comp=Z,169nm,1.7s						
MGAN	Managua	36.04	331	*e*P	P	23 52 05.3	-1.2
	comp=Z,0.3nm,1.1s						
GDHS	Morne Mazeau,	36.65	12	*e*P	P	23 52 12.3	+0.5
	comp=Z,50nm,0.9s						
SEUS	St. Eustatius	37.63	10	*e*P	P	23 52 20.0	0.0
	comp=Z,162nm,1.0s						
SABA	Saba	37.72	9	*e*P	P	23 52 20.8	0.0
	comp=Z,90nm,1.0s						
CELP	Cerrillos	37.81	4	*e*P	P	23 52 19.8	-1.7
SJG	San Juan	37.88	5	*e*P	P	23 52 20.1	-2.0
SJG				pmax	pmax		
	comp=Z,28nm,0.9s						
SJG	San Juan	37.88	5	*e*P	P	23 52 20.1	-2.0
	comp=Z,28nm,0.9s						
MPR	Mayaguez	37.91	3	*e*P	P	23 52 21.4	-0.9
	comp=Z,28nm,1.0s						
CBYP	Canovanas	38.06	5	*e*P	P	23 52 21.7	-2.0
	comp=Z,29nm,0.9s						
BANI	BANI	38.06	358	*e*P	P	23 52 23.7	-0.1
SDD	Santo Domingo	38.12	359	*e*P	P	23 52 23.9	-0.2
	comp=Z,158nm,1.1s						
SMRT	St. Maarten	38.16	9	*e*P	P	23 52 24.5	0.0
	comp=Z,47nm,1.0s						
TGUH	Tegucigalpa,Un	38.19	331	*e*P	P	23 52 24.4	-0.3
	comp=Z,15nm,0.8s						
STVI	Saint Thomas	38.22	6	*e*P	P	23 52 24.6	-0.3
	comp=Z,27nm,1.1s						
PAPH	Port-au-Prince	38.30	355	*e*P	P	23 52 25.2	-0.5
	comp=Z,133nm,1.2s						
ABVI	Anegada Island	38.66	7	*e*P	P	23 52 29.1	+0.4
	comp=Z,94nm,1.0s						
SDDR	Presa de Saban	38.69	357	*e*P	P	23 52 28.8	-0.1
	comp=Z,52nm,1.8s						
MTDJ	Mount Denham	38.77	347	*e*P	P	23 52 27.4	-2.3
	comp=Z,43nm,1.4s						
GRTK	Grand Turk	41.20	357	*e*P	P	23 52 49.4	-0.2
	comp=Z,114nm,1.1s						
HOPE	Hope Point	42.37	152	*e*P	P	23 52 57.4	-1.4
	comp=Z,222nm,1.2s						
CCIG	Comitan	42.49	326	*e*P	P	23 53 00.6	+0.2
	comp=Z,15nm,1.2s						
TEIG	Tepich	44.08	334	*e*P	P	23 53 12.1	-0.8
	comp=Z,27nm,1.4s						
PMSA	Palmer Station	44.98	177	*e*P	P	23 53 18.2	-1.4
	comp=Z,35nm,0.6s						
TLIG	Tlapa	47.15	320	*e*P	P	23 53 37.1	-0.1
	comp=Z,11nm,0.7s						
ZAIG	Zacatecas	53.53	321	*e*P	P	23 54 26.2	+0.7
	comp=Z,13nm,0.8s						
RGRS	Roger Stewart	53.56	348	*e*P	P	23 54 25.6	+0.5
	comp=Z,269nm,0.7s						
CSU	Charleston Sou	53.62	349	*e*P	P	23 54 25.5	-0.1
NHSC	New Hope	53.75	348	*e*P	P	23 54 26.3	-0.3
	comp=Z,48nm,1.1s						
347A	Saraland	54.31	339	P	P	23 54 31.2	+0.5
	baz=157						
933A	Laredo	55.53	327	P	P	23 54 40.3	+0.7
	baz=145						
736A	Circle Diamond	55.57	330	P	P	23 54 41.3	+1.5
	baz=148						
834A	Tilden	55.59	328	P	P	23 54 41.9	+1.9
	baz=146						
342A	Flagon Creek P	55.64	336	P	P	23 54 41.7	+1.5
	baz=153						
Z48A	Northport	55.83	341	P	P	23 54 41.5	-0.1
	baz=159						
833A	Chaparral WMA,	56.17	328	P	P	23 54 45.2	+1.1
	baz=145						
Y47A	UCPARC, Winfie	56.40	341	P	P	23 54 45.4	-0.3
	baz=159						
733A	Divot King Ran	56.45	328	P	P	23 54 46.8	+0.7
	baz=145						
Z44A	Pea Ridge, Bel	56.66	339	P	P	23 54 48.0	+0.6
	baz=156						
NATX	Nacogdoches	56.91	334	*e*P	P	23 54 49.2	0.0
	comp=Z,13nm,0.6s						
CPCT	Cooper Cave	56.95	345	*e*P	P	23 54 49.6	+0.1
CPCT				*e*pP	pP	23 55 17.9	+1.6
141A	Papa Simpson,	56.95	336	P	P	23 54 50.7	+1.1
	baz=153						
TKL	Tuckaleechee C	56.97	346	P	P	23 54 49.2	-0.5
	comp=Z,3.0nm,0.6s,baz=164,slow=9.4,SNR=7.7						
TKL	Tuckaleechee C	56.97	346	*e*P	P	23 54 49.6	-0.1
TKL				pmax	pmax		
	comp=Z,10.0nm,1.1s						
TKL	Tuckaleechee C	56.97	346	*e*P	P	23 54 49.6	-0.1
	comp=Z,10nm,1.1s						
633A	Saathoff Ranch	57.00	329	P	P	23 54 51.3	+1.3
	baz=146						
SWET	Sewanee	57.09	344	*e*P	P	23 54 50.2	-0.3
	comp=Z,6.0nm,1.4s						
238A	Jacksonville	57.31	334	P	P	23 54 53.6	+1.5
	baz=150						
OXF	Oxford	57.45	340	*e*P	P	23 54 52.5	-0.5
OXF				pmax	pmax		
	comp=Z,16nm,1.0s						
OXF	Oxford	57.45	340	*e*P	P	23 54 52.5	-0.5
	comp=Z,16nm,1.0s						
PLAL	Pickwick Lake	57.47	342	*e*P	P	23 54 52.5	-0.7
	comp=Z,6.0nm,0.8s						
335A	Moody	57.70	331	P	P	23 54 55.6	+0.8
	baz=148						
URVA	University of	57.70	352	*e*P	P	23 54 54.4	-0.3
CCAR	Cane Creek	57.71	338	*e*P	P	23 54 55.1	+0.3
	comp=Z,13nm,0.7s						
TZTN	Tazewell	57.77	346	*e*P	P	23 54 55.4	+0.1
BLA	Blacksburg	57.79	349	*e*P	P	23 54 54.6	-0.8
BLA				pmax	pmax		
	comp=Z,14nm,1.3s						
BLA	Blacksburg	57.79	349	*e*P	P	23 54 54.6	-0.8
	comp=Z,14nm,1.3s						
138A	Matatall Enter	57.87	334	P	P	23 54 57.6	+1.6
	baz=151						
WLAR	White Oak Lake	58.00	336	*e*P	P	23 54 56.1	-0.7
	comp=Z,25nm,0.9s						
137A	Heron Place, G	58.09	333	P	P	23 54 59.0	+1.4
	baz=150						
JCT	Junction City	58.14	329	*e*P	P	23 54 56.8	-1.3
JCT				pmax	pmax		
	comp=Z,5.0nm,0.8s						
JCT	Junction City	58.14	329	*e*P	P	23 54 56.8	-1.3
	comp=Z,4.7nm,0.8s						
Y40A	Okolona	58.35	336	P	P	23 55 00.1	+0.8
	baz=153						
333A	Richland Sprin	58.45	330	P	P	23 55 00.5	+0.4
	baz=147						
WVT	Waverly	58.47	342	*e*P	P	23 54 58.9	-1.2
WVT				*e**PP	pP	23 55 28.2	+1.2
WVT				pmax	pmax		
	comp=Z,10.0nm,0.8s						
WVT	Waverly	58.47	342	*e*P	P	23 54 58.9	-1.2
	comp=Z,9.8nm,0.8s						
WVT				*e*pP	pP	23 55 28.2	+1.2
HPIG		58.51	321	*e*P	P	23 54 59.8	-1.0
	comp=Z,6.9nm,1.0s						
234A	Clairette	58.63	331	P	P	23 55 01.8	+0.4
	baz=148						
UALR	University of	58.69	338	*e*P	P	23 55 01.1	-0.5
	comp=Z,21nm,1.5s						
SLBS	Sierra La Lagu	58.84	316	*e*P	P	23 55 02.2	-0.8
	comp=Z,29nm,1.4s						
MIAR	Mount Ida	58.93	336	P	P	23 55 03.6	+0.3
	baz=153,SNR=6.9						
MIAR	Mount Ida	58.93	336	*e*P	P	23 55 03.7	+0.3
MIAR				pmax	pmax		
	comp=Z,19nm,1.4s						
MIAR	Mount Ida	58.93	336	*e*P	P	23 55 03.7	+0.4
	comp=Z,19nm,1.4s						
Z36A	Blue Ridge	58.96	333	P	P	23 55 04.4	+0.8
	baz=150						
233A	Rising Star	58.99	330	P	P	23 55 04.2	+0.4
	baz=147						
GLAT	Glass	59.03	341	*e*P	P	23 55 03.9	-0.1
X39A	Fountain Ranch	59.11	336	P	P	23 55 05.4	+0.8
	baz=152,SNR=11						
X301	Greenbrier Sit	59.12	338	*e*P	P	23 55 04.8	+0.1
	comp=Z,4.7nm,0.8s						
WHAR	Wooly Hollow	59.13	338	*e*P	P	23 55 03.9	-0.8
	comp=Z,3.9nm,0.9s						
X201	Greenbrier Sit	59.16	338	*e*P	P	23 55 04.9	0.0
	comp=Z,4.9nm,0.7s						
TXAR	Lajitas Array	59.22	325	P	P	23 55 05.5	-0.1
	comp=Z,1.0nm,0.8s,baz=138,slow=9.5,SNR=8.7						
TX31	Lajitas Ar. Si	59.22	325	*e*P	P	23 55 05.4	-0.2
Y37A	Hugo	59.23	334	P	P	23 55 06.9	+1.5
	baz=151,SNR=7.7						
W40A	Ferguson Farm,	59.32	337	P	P	23 55 06.5	+0.4
	baz=154						
SDMD	Soldier's Deli	59.43	353	*e*P	P	23 55 06.9	+0.2
	comp=Z,3.3nm,0.8s						
X38A	Whitesboro	59.52	335	P	P	23 55 08.5	+1.1
	baz=152,SNR=8.4						
V41A	Mountainview	59.53	338	P	P	23 55 07.2	-0.3
	baz=155						
W39A	Magazine	59.59	337	P	P	23 55 08.7	+0.9
	baz=153,SNR=9.3						
X37A	Clayton	59.67	335	P	P	23 55 09.1	+0.7
	baz=151,SNR=6.3						
W38A	Poteau	59.76	336	P	P	23 55 09.8	+0.8
	baz=152,SNR=6.1						
Y35A	Marietta	59.76	333	P	P	23 55 09.9	+0.9
	baz=149						
ABTX	Abilene, Hawle	59.84	330	*e*P	P	23 55 09.1	-0.5
	comp=Z,8.2nm,0.9s						
PBMO	Poplar Bluff	59.86	340	*e*P	P	23 55 09.4	-0.3
	comp=Z,12nm,0.6s						
V39A	Pettigrew	60.11	337	P	P	23 55 11.6	+0.1
	baz=153,SNR=16						
Y34A	Reagan Ranch,	60.11	333	P	P	23 55 12.2	+0.7
	baz=149						
X35A	Drake	60.16	334	P	P	23 55 12.1	+0.3
	baz=149						
W37B	Quinton	60.17	335	P	P	23 55 12.7	+0.9
	baz=151						
U40A	Yellville	60.29	338	P	P	23 55 12.7	0.0
	baz=154,SNR=6.4						
V38A	Canehill	60.41	336	P	P	23 55 13.6	+0.1
	baz=152,SNR=11						
W36A	Wetumka	60.49	335	P	P	23 55 14.0	0.0
	baz=150						
U39A	Green Forest	60.53	337	P	P	23 55 14.2	-0.1
	baz=153						
Y33A	Hilltop Ranch,	60.54	332	P	P	23 55 14.9	+0.5
	baz=148						
X34A	Smith Ranch, M	60.69	333	P	P	23 55 15.8	+0.4
	baz=149						
V37A	Hulbert	60.71	336	P	P	23 55 15.6	+0.1
	baz=152,SNR=8.9						
U38A	Gravette	60.92	337	P	P	23 55 16.8	-0.1
	baz=152						
V36A	Jenks	60.94	335	P	P	23 55 17.3	+0.3
	baz=151,SNR=5.9						
TUL1	Leonard	60.99	335	P	P	23 55 18.0	+0.6
	baz=151						
U37A	Salina	61.16	336	P	P	23 55 19.0	+0.5
	baz=152						
S40A	Lebanon	61.28	339	P	P	23 55 19.2	-0.1
	baz=155,SNR=6.2						
CCM	Cathedral Cave	61.29	340	*e*P	P	23 55 19.2	-0.2
CCM				pmax	pmax		
	comp=Z,6.0nm,0.9s						
CCM	Cathedral Cave	61.29	340	*e*P	P	23 55 19.2	-0.2
	comp=Z,5.6nm,0.9s						
U36A	Oologah	61.39	336	P	P	23 55 20.5	+0.4
	baz=151						
T38A	Diamond	61.41	337	P	P	23 55 20.4	+0.2
	baz=153,SNR=13						
V34A	Guthrie	61.62	334	P	P	23 55 21.6	-0.1
	baz=149						
VNA3	Neumayer Olymp	61.65	162	P	P	23 55 22.6	+1.2
S39A	Bolivar	61.65	338	P	P	23 55 21.8	0.0
	baz=154,SNR=11						
T37A	Cheneyville 18	61.72	337	P	P	23 55 22.4	+0.2
	baz=152,SNR=25						
W32A	Sentinel	61.75	332	P	P	23 55 22.9	+0.3
	baz=148,SNR=5.8						
U35A	Pawnee	61.76	335	P	P	23 55 23.3	+0.7
	baz=150,SNR=5.8						
S38A	Stockton	61.80	338	P	P	23 55 23.1	+0.3
	baz=153						
R40A	Maddies Statio	61.83	339	P	P	23 55 23.0	0.0
	baz=155						
VNA1	Neumayer--Stat	61.85	161	P	P	23 55 24.1	+1.4
M54A	Oil Creek Stat	61.87	351	P	P	23 55 23.7	+0.5
	baz=169						
V33A	Lossen Ranch,	61.93	333	P	P	23 55 24.5	+0.7
	baz=149						
MNTX	Cornudas Mount	61.98	325	P	P	23 55 24.0	-0.3
	baz=141,SNR=6.1						
MNTX	Cornudas Mount	61.98	325	*e*P	P	23 55 24.2	0.0
	comp=Z,4.8nm,1.0s						
T36A	Boggs Farm, Ca	62.03	336	P	P	23 55 24.5	+0.2
	baz=151,SNR=5.6						
BBTS	Babate	62.05	60	LR	LR	00 20 18.3	
	comp=Z,71nm,19.7s,baz=250,slow=34						
ALLY	Alegheny Colle	62.08	351	*e*P	P	23 55 25.1	+0.5
	comp=Z,22nm,0.4s						
R39A	Chumby, Stover	62.11	339	P	P	23 55 25.0	+0.1
	baz=154						
T35A	Sooner Cattle	62.15	335	P	P	23 55 26.3	+1.1
	baz=151						
VNA2	Neumayer--Watz	62.22	161	P	P	23 55 26.1	+0.9
	baz=283,slow=6.1						
S37A	Fort Scott	62.25	337	P	P	23 55 26.2	+0.4
	baz=152,SNR=12						
SFIN	Lafayette	62.26	345	P	P	23 55 25.0	-0.8
	baz=161,SNR=7.4						
SFIN	Lafayette	62.26	345	*e*P	P	23 55 25.0	-0.8
	comp=Z,14nm,0.6s						
R38A	Fenwick Farm,	62.30	338	P	P	23 55 26.1	-0.1
	baz=153,SNR=17						
Q40A	Laux Farm, Aux	62.41	340	P	P	23 55 26.8	0.0
	baz=155						
MSTX	Muleshoe	62.44	329	P	P	23 55 27.2	-0.1
	baz=144						
MSTX	Muleshoe	62.44	329	*e*P	P	23 55 27.4	+0.1
	comp=Z,14nm,1.0s						
S36A	Lake Cedric, C	62.50	336	P	P	23 55 27.7	+0.2
	baz=152,SNR=10						
ERPA	Erie	62.51	351	*e*P	P	23 55 27.9	+0.4
	comp=Z,28nm,0.6s						
R37A	Teagarden Farm	62.74	337	P	P	23 55 29.2	+0.1
	baz=153						
S35A	Otter Creek Ra	62.74	336	P	P	23 55 29.6	+0.5
	baz=151,SNR=5.4						
Q39A	Willow Grove F	62.75	339	P	P	23 55 29.0	-0.1
	baz=154,SNR=9.2						
P40A	Paris	62.89	340	P	P	23 55 29.8	-0.2
	baz=156,SNR=6.3						
Q38A	Cooks Store, C	62.89	339	P	P	23 55 30.4	+0.3
	baz=154,SNR=13						
R36A	Gordon, Harris	62.99	337	P	P	23 55 31.1	+0.4
	baz=152						
P39B	Salisbury	63.08	340	P	P	23 55 31.1	-0.1
	baz=155,SNR=5.1						
O40A	La Belle	63.37	341	P	P	23 55 33.0	-0.2
	baz=156,SNR=6.7						
P38A	Dawn	63.46	339	P	P	23 55 33.9	+0.1
	baz=154,SNR=7.7						
Q36A	Arnold C. Orve	63.54	337	P	P	23 55 34.1	-0.2
	baz=152						
R34A	Isabella, Hill	63.64	336	P	P	23 55 35.1	0.0
	baz=150						
P37A	Lathrop	63.70	338	P	P	23 55 35.4	0.0
	baz=153,SNR=6.6						
SNAA	Sanae	63.85	161	P	P	23 55 36.9	+0.8
SNAA

TUC	Tucson	65.47 322	eP	P	23 55 47.8	+0.6
	comp=Z,3.8nm,1.0s					
M36A	Felix, Anita	65.52 339	P	P	23 55 47.5	+0.3
	baz=153					
L38A	Oak Wood Farm,	65.55 341	P	P	23 55 47.2	-0.2
	baz=155					
T25A	Trinidad	65.78 330	P	P	23 55 50.2	+1.0
	baz=143					
L36A	Harm Buss Farm	66.06 339	P	P	23 55 51.0	+0.4
	baz=154					
K37A	Belmond	66.33 340	P	P	23 55 51.8	-0.5
	baz=155					
L35A	Bielow Farm, R	66.36 339	P	P	23 55 52.7	+0.1
	baz=153					
K36A	Gilmore City	66.47 340	P	P	23 55 53.4	+0.1
	baz=154					
J38A	Wedel Dairy, R	66.47 342	P	P	23 55 53.0	-0.3
	baz=156					
X18A	Snowflake	66.62 324	eP	P	23 55 57.1	+2.4
BGNE	Belgrade	66.68 337	eP	P	23 55 55.0	+0.3
	comp=Z,40nm,0.6s					
SDCO	Great Sand Dun	66.78 329	P	P	23 55 56.8	+1.1
	baz=142					
SDCO	Great Sand Dun	66.78 329	eP	P	23 55 56.2	+0.5
	comp=Z,9.2nm,1.2s					
J37A	Redenius Farm,	66.79 341	P	P	23 55 55.1	-0.2
	baz=155					
J36A	Seneca 1, Swea	67.05 340	P	P	23 55 57.1	+0.2
	baz=154					
I38A	Scanlan Farm,	67.09 342	P	P	23 55 57.2	+0.1
	baz=156,SNR=5.1					
I37A	Lemond, Waseca	67.38 341	P	P	23 55 59.1	+0.1
	baz=155					
S22A	4UR Ranch, Cre	67.43 328	P	P	23 56 01.0	+1.2
	baz=141					
Q24A	Divide	67.59 330	P	P	23 56 02.1	+1.3
	baz=143					
Q24A	Divide	67.59 330	eP	P	23 56 02.1	+1.3
MVCO	Mesa Verde	67.86 327	P	P	23 56 03.6	+1.1
	baz=140					
MVCO	Mesa Verde	67.86 327	eP	P	23 56 02.4	0.0
	comp=Z,17nm,1.7s					
H36A	Jessenland, He	68.05 341	P	P	23 56 03.7	+0.5
	baz=155					
WUAZ	Wupatki	68.14 324	P	P	23 56 06.4	+2.2
	baz=137					
ECSD	EROS Data Cent	68.16 339	P	P	23 56 04.1	+0.2
	baz=152,SNR=5.3					
ECSD	EROS Data Cent	68.16 339	eP	P	23 56 04.1	+0.2
	comp=Z,9.3nm,1.4s					
NVL	N'lazarevskaya	68.39 159	eP	P	23 56 07.9	+2.9
H35A	Sunnyside Ranc	68.44 341	P	P	23 56 05.7	+0.1
	baz=154,SNR=5.7					
DBIC	Dimbokro	68.45 74	P	P	23 56 05.7	-0.7
	comp=Z,12nm,0.7s,baz=204,slow=6.4,SNR=13					
DBIC	Dimbokro	68.45 74	eP	P	23 56 06.5	+0.1
DBIC	Dimbokro	68.45 74	eP	P	23 56 06.5	+0.1
ISCO	Idaho Springs	68.47 330	P	P	23 56 07.4	+1.1
	baz=143					
ISCO	Idaho Springs	68.47 330	eP	P	23 56 07.0	+0.7
ISCO			pmax	pmax		
	comp=Z,5.0nm,1.0s					
ISCO	Idaho Springs	68.47 330	eP	P	23 56 07.0	+0.7
	comp=Z,4.9nm,1.0s					
PV01	Paradox Valley	68.60 327	eP	P	23 56 08.7	+1.6
SMCO	Snowmass	68.62 329	eP	P	23 56 09.0	+1.6
	comp=Z,3.4nm,0.8s					
F36A	Milaca	69.10 342	P	P	23 56 09.3	-0.3
	baz=155					
BC3	Big Chuckawall	69.20 320	P	P	23 56 12.3	+1.6
	baz=133					
IRM	Iron Mountain	69.36 320	P	P	23 56 13.4	+1.9
	baz=134,SNR=7.1					
N23A	Red Feather La	69.50 331	P	P	23 56 13.8	+1.3
	baz=143,SNR=5.3					
N23A	Red Feather La	69.50 331	eP	P	23 56 13.9	+1.4
BELC	Belle Mtn. Jos	69.77 320	P	P	23 56 16.0	+1.7
	baz=133					
PFO	Pinyon Flats O	69.78 319	eP	P	23 56 16.6	+2.2
PFO			pmax	pmax		
	comp=Z,10.0nm,1.2s					
PFO	Pinyon Flats O	69.78 319	eP	P	23 56 16.6	+2.2
	comp=Z,9.5nm,1.2s					
KNB	Kanab	70.03 324	eP	P	23 56 18.4	+2.6
KNB	Kanab	70.03 324	eP	P	23 56 18.4	+2.6
GMRC	Granite Mounta	70.10 321	P	P	23 56 17.9	+1.7
	baz=133,SNR=9.4					
LCMT	Little Creek M	70.26 324	eP	P	23 56 19.3	+2.1
G30A	Faulkton	70.26 338	P	P	23 56 18.2	+1.4
	baz=150					
QSPA	South Pole Qui	70.29 180	eP	P	23 56 18.4	+1.4
	comp=Z,100nm,1.1s					
SRU	San Rafael Swe	70.34 327	eP	P	23 56 19.1	+1.4
SRU	San Rafael Swe	70.34 327	eP	P	23 56 19.1	+1.4
MTPU	Mount Pierson	70.42 325	eP	P	23 56 20.3	+1.9
P18A	Preston Nutter	70.59 327	eP	P	23 56 21.1	+1.8
P17A	Butcher Ranch,	70.72 327	eP	P	23 56 21.6	+1.6
MSU	Marysvale	70.76 325	eP	P	23 56 22.1	+1.8
MSU	Marysvale	70.76 325	eP	P	23 56 22.1	+1.8
H27A	Howes	70.93 336	P	P	23 56 21.5	+0.6
	baz=147					
BFSC	Mount Baldy Ra	70.94 319	P	P	23 56 23.2	+1.8
	baz=132					
SHPR	Sheep Range	70.99 322	eP	P	23 56 23.9	+2.3
I25A	Rochford	71.07 334	P	P	23 56 23.5	+1.5
	baz=146,SNR=17					
GSC	Goldstone, Bar	71.14 320	eP	P	23 56 24.8	+2.3
GSC	Goldstone, Bar	71.14 320	eP	P	23 56 24.8	+2.3
K22A	Casper	71.16 332	eP	P	23 56 20.1	-2.5
RSSD	Black Hills	71.28 334	P	P	23 56 24.5	+1.1
	baz=145					
RSSD	Black Hills	71.28 334	eP	P	23 56 24.4	+1.1
RSSD	Black Hills	71.28 334	eP	P	23 56 24.4	+1.1
EDW2	Edwards Air Fo	71.58 319	P	P	23 56 26.6	+1.5
	baz=132					
G26A	Maurine	71.68 336	P	P	23 56 26.0	+0.5
	baz=147,SNR=6.8					
PSUT	Pine Spring	71.69 324	eP	P	23 56 27.8	+1.9
WMUT	West Mountain	71.73 327	eP	P	23 56 26.9	+0.8
NLU	North Lily Min	71.77 327	eP	P	23 56 28.4	+2.1
B34A	Aery, Baudette	71.80 342	P	P	23 56 25.8	-0.2
	baz=155					
JLU	Jordanelle	71.93 327	eP	P	23 56 29.1	+1.8
TPNV	Topopah Spring	71.93 322	eP	P	23 56 29.6	+2.3
TPNV	Topopah Spring	71.93 322	eP	P	23 56 29.6	+2.3
FURC	Furnace Creek,	71.96 321	P	P	23 56 29.3	+2.1
	baz=133,SNR=5.0					
MPMC	Manual Prospec	72.06 320	P	P	23 56 29.2	+1.1
	baz=132					
C31A	Landman Farms,	72.11 340	P	P	23 56 28.2	+0.2
	baz=152					
TJR	Tejon Ranch	72.14 319	eP	P	23 56 30.0	+1.6
F26A	Lodgepole	72.18 336	P	P	23 56 29.4	+1.0
	baz=147					
DAC	Darwin (Calif)	72.27 321	eP	P	23 56 31.3	+1.9
DAC	Darwin (Calif)	72.27 321	eP	P	23 56 31.3	+1.9
B32A	Ashes, Strandq	72.27 341	P	P	23 56 29.0	+0.1
	baz=153					
DUG	Dugway, Tooele	72.33 326	P	P	23 56 30.8	+1.2
	baz=137,SNR=7.4					
DUG	Dugway, Tooele	72.33 326	eP	P	23 56 31.3	+1.7
DUG	Dugway, Tooele	72.33 326	eP	P	23 56 31.2	+1.7
A33A	Warroad	72.42 342	P	P	23 56 29.5	-0.2
	baz=154					
R11A	Troy Canyon, C	72.52 323	P	P	23 56 32.8	+2.0
	baz=134,SNR=10.0					
R11A	Troy Canyon, C	72.52 323	eP	P	23 56 32.8	+2.0
BW06	Boulder Array	72.64 330	eP	P	23 56 31.7	+0.2
PDAR	Pinedale Array	72.64 330	P	P	23 56 31.9	+0.4
	comp=Z,1.3nm,0.8s,baz=126,slow=9.3,SNR=8.6					
CWC	Cottonwood Cre	72.67 320	P	P	23 56 33.5	+1.9
	baz=132					
HWUT	Hardware Ranch	72.73 328	eP	P	23 56 33.1	+1.1
MDND	Maddock	72.78 339	P	P	23 56 32.8	+0.9
	baz=150,SNR=5.2					
MDND	Maddock	72.78 339	eP	P	23 56 33.0	+1.1
VES	Vestal, Richgr	72.88 319	P	P	23 56 34.6	+1.9
	baz=131					
B30A	Myrvik Farm, E	72.88 340	P	P	23 56 33.1	+0.6
	baz=151,SNR=6.6					
SPUT	South Promonto	72.96 327	eP	P	23 56 34.6	+1.2
BGU	Big Grassy Mou	72.98 327	eP	P	23 56 34.9	+1.4
E25A	Miller Ranch,	73.00 336	P	P	23 56 34.3	+1.0
	baz=146					
B29A	Wagenman Farm,	73.23 339	P	P	23 56 35.3	+0.8
	baz=150,SNR=6.0					
B28A	Dugan Ranch, T	73.55 339	P	P	23 56 37.5	+1.1
	baz=149					
A29A	Manning Farm,	73.59 340	P	P	23 56 37.0	+0.4
	baz=150,SNR=9.0					
ULM	Lac du Bonnet	73.74 342	P	P	23 56 37.4	0.0
	comp=Z,3.6nm,0.6s,baz=154,slow=7.7,SNR=3.1					
LOHW	Long Hollow	73.78 330	eP	P	23 56 39.6	+1.5
MOOW	Moose Ponds	73.95 330	eP	P	23 56 40.1	+1.0
NVAR	Mina Array Bea	74.13 322	P	P	23 56 41.6	+1.3
	comp=Z,3.1nm,0.8s,baz=159,slow=6.2,SNR=20					
NVAR			pP	pP	23 57 10.7	+2.4
	comp=Z,1.0nm,0.7s,baz=149,slow=7.2,SNR=2.7					
IMW	Indian Meadow	74.15 330	eP	P	23 56 42.0	+1.6
FLWY	Flagg Ranch	74.18 330	eP	P	23 56 42.4	+1.9
SCHQ	Schefferville	74.44 1	P	P	23 56 41.1	-0.3
	comp=Z,1.1nm,0.4s,baz=219,slow=6.5,SNR=3.2					
HLID	Hailey	75.60 328	P	P	23 56 50.2	+1.6
	baz=136,SNR=11					
HLID	Hailey	75.60 328	eP	P	23 56 50.8	+2.2
PAHR	Pah Rah Range	75.61 322	eP	P	23 56 51.0	+2.3
MCMT	McKenzie Canyo	75.76 329	eP	P	23 56 51.6	+2.1
BOZ	Bozeman (W)	75.80 331	P	P	23 56 50.6	+0.9
	baz=139,SNR=5.4					
BOZ	Bozeman (W)	75.80 331	eP	P	23 56 50.9	+1.2
BOZ	Bozeman (W)	75.80 331	eP	P	23 56 50.9	+1.2
MFID	Camas Ranch	76.21 327	eP	P	23 56 54.0	+2.0
ORV	Oroville	76.74 321	eP	P	23 56 57.2	+2.2
ORV	Oroville	76.74 321	eP	P	23 56 57.2	+2.2
EGMT	Eagleton	76.79 333	P	P	23 56 55.9	+0.9
	baz=141,SNR=5.0					
EGMT	Eagleton	76.79 333	eP	P	23 56 56.0	+0.9
TORD	Torodi Ar. Bea	76.98 71	P	P	23 56 55.8	-1.1
	comp=Z,6.0nm,0.4s,baz=251,slow=5.1,SNR=72					
TORD			pP	pP	23 57 25.9	+0.9
	comp=Z,7.2nm,0.9s,baz=250,slow=5.4,SNR=4.3					
MSO	Missoula	77.75 330	eP	P	23 57 02.3	+1.8
SYO	Syowa Base	78.06 160‖	eP	P	23 57 01.8	0.0
VNDA	Vanda	78.40 190	P	P	23 57 05.3	+1.7
	comp=Z,2.4nm,0.8s,baz=124,slow=6.1,SNR=13					
K05A	Summer Lake	78.45 324	eP	P	23 57 07.4	+2.8
YBMT	Yellow Bay	78.54 331	eP	P	23 57 06.6	+1.7
BSMT	Bassoo Peak	78.89 331	eP	P	23 57 08.4	+1.5
FFC	Flin Flon	79.46 341	eP	P	23 57 10.2	+0.6
FFC	Flin Flon	79.46 341	eP	P	23 57 10.2	+0.6
I05D	Terrebonne, OR	79.75 325	P	P	23 57 13.3	+1.8
	baz=131					
C09A	Chrisman Ranch	80.51 329	eP	P	23 57 17.2	+1.8
B05A	Bryant	82.72 327	P	P	23 57 27.8	+0.9
	baz=131					
BOSA	Boshof	84.35 118	P	P	23 57 36.7	+0.6
	comp=Z,2.3nm,1.0s,baz=252,slow=3.2,SNR=3.2					
ESDC	Sonseca Array	84.81 45	P	P	23 57 37.6	-0.4
	comp=Z,1.3nm,0.9s,baz=258,slow=4.7,SNR=6.3					
ESDC			pP	pP	23 58 08.3	+1.7
	comp=Z,2.0nm,0.9s,baz=244,slow=5.4,SNR=3.6					
ES19	SONSECA Array	84.87 45	eP	P	23 57 38.8	+0.5
MAW	Mawson	85.91 163	P	P	23 57 44.0	+1.1
	comp=Z,3.4nm,0.7s,baz=206,slow=4.9,SNR=3.7					
MAW	Mawson	85.91 163	P	P	23 57 44.0	+1.1
YKA	Yellowknife Ar	89.62 341	P	P	23 58 00.7	+0.2
	comp=Z,11nm,0.7s,baz=134,slow=4.6,SNR=103					
YKA			pP	pP	23 58 30.3	+0.9
	comp=Z,7.2nm,0.9s,baz=134,slow=4.8,SNR=7.0					
GERES	GERESS Array B	100.13 42	P	Pdif	23 58 49.6	+0.7
	comp=Z,0.1nm,0.6s,baz=290,slow=5.8,SNR=2.4					
OBN	Obninsk	115.01 38⇑	PKIKP	PKPdf	00 03 44.6	+1.3
OBN			e		00 04 48.8	
OBN			pmax	pmax		
	comp=Z,2.0nm,1.0s					
KLMR	Klimovskoe	116.23 31	PKIKP	PKPdf	00 03 44.7	-0.8
KLMR			pmax	pmax		
	comp=Z,4.0nm,1.4s					
BILL	Bilibino	120.97 339	ePKIKP	PKPdf	00 03 54.8	+0.3
BILL			pmax	pmax		
	comp=Z,1.0nm,1.0s					
TIXI	Tiksi	127.18 353	ePKIKP	PKPdf	00 04 05.2	-1.1
TIXI			pmax	pmax		
	comp=Z,1.0nm,0.8s					
H11N3	WAKE ISLAND Hyl	27.53 280	T	T	02 24 04.2	
	baz=101,slow=74,SNR=123					
H11N2	WAKE ISLAND Hyl	27.55 280	T	T	02 24 05.6	
	baz=101,slow=74,SNR=127					
H11N1	WAKE ISLAND Hyl	27.55 280	T	T	02 24 06.5	
	baz=101,slow=74,SNR=109					
ABKAR	Akbulak array	130.08 42	ePKPdf	PKPdf	00 04 12.9	+0.4
ASAR	Alice Springs	131.25 208	PKP	PKPdf	00 04 15.4	-0.2
	comp=Z,3.0nm,0.9s,baz=127,slow=1.9,SNR=15					
WRA	Warramunga Arr	134.24 211	PKP	PKPdf	00 04 21.4	+0.1
	comp=Z,2.9nm,0.7s,baz=156,slow=1.8,SNR=30					
BVAR	Borovoye Array	134.56 33	PKP	PKPdf	00 04 20.3	-0.5
	comp=Z,0.7nm,0.7s,baz=272,slow=3.6,SNR=3.6					
ZALV	Zalesovo Beam	140.57 24	PKP	PKPdf	00 04 31.8	0.0
	comp=Z,2.6nm,0.8s,baz=272,slow=2.9,SNR=13					
ZALV			pPKP	pPKPdf	00 05 03.6	+1.6
	comp=Z,2.1nm,0.7s,baz=318,slow=1.9,SNR=3.8					
BOD	Bodaibo	142.05 357	ePKHKP	PKPpre	00 04 23.4	
BOD			pmax	pmax		
	comp=Z,2.0nm,0.8s					
KSH	Kashi	144.20 49	PKP	PKPbc	00 04 38.5	+1.1
KSH			ePKP	pPKPdf	00 05 04.5	-4.6
KSH			ePKP		00 05 15.8	
KSH			ePP	PP	00 07 55.1	+0.3
KSH			PKS	PKSdf	00 08 12.8	-1.9
KSH			SKKS		00 14 33.4	
KSH			SS	SS	00 26 26.1	-5.4
KSH			AMB	AMB		
	comp=Z,56nm,4.2s					
MKAR	Makanchi Array	144.42 34	PKP	PKPbc	00 04 37.9	+0.1
	comp=Z,1.8nm,0.8s,baz=302,slow=2.7,SNR=8.9					
KLR	Kul'dur	146.30 335	PKPbc	PKPdf	00 04 43.0	+1.0
	comp=Z,3.3nm,0.6s,baz=349,slow=2.7,SNR=15					
GUMO	Guam	146.92 264	PKPbc	PKPbc	00 04 46.3	+0.2
	comp=Z,80nm,0.9s,baz=150,slow=11,SNR=4.6					
MOY	Mondy	147.35 11	ePKP2	PKPbc	00 04 47.5	+1.1
ZAK	Zakamensk	148.98 9	ePKP2	PKPbc	00 04 51.4	+0.7
ZAK			pmax	pmax		
	comp=Z,3.0nm,1.4s					
WMQ	Urumqi	149.25 34	ePKPbc	PKPdf	00 04 46.8	-0.4
USRK	Ussuriysk Ar.	150.06 329	PKPbc	PKPbc	00 04 53.6	+0.1
	comp=Z,12nm,0.9s,baz=285,slow=0.7,SNR=16					
MJAR	Matsushiro Arr	150.92 311	PKPbc	PKPbc	00 04 56.3	+0.5
	comp=Z,5.2nm,0.8s,baz=81,slow=2.0,SNR=16					
MAT	Matsushiro	150.92 311	PKP	PKPbc	00 04 56.0	+0.2
SONM	Songino Array	151.88 6	PKP	PKPdf	00 04 52.1	+0.9
	comp=Z,1.4nm,0.8s,baz=277,slow=1.0,SNR=8.9					
SONM			PKPbc	PKPbc	00 04 58.5	+0.7
	comp=Z,5.5nm,0.8s,baz=313,slow=1.4,SNR=26					
KSRS	Korea Array	157.06 323	PKPab	PKPab	00 05 29.6	+0.2
	comp=Z,1.8nm,0.8s,baz=67,slow=3.1,SNR=5.3					
GTA	Gaotai	158.32 24	⇑PKP	PKPdf	00 05 01.4	+1.1
GTA			pPKP	pPKPdf	00 05 28.4	-2.2
GTA			sPKP		00 05 38.8	
HHC	Hu-ho-hao-te	159.10 359	ePKP	PKPdf	00 05 00.4	-0.7
LZH	Lanzhou	162.71 20	ePKP	PKPdf	00 05 01.3	-3.9
LZH			pPKP	pPKPdf	00 05 28.5	-7.0
LZH			sPKP		00 05 39.0	
LZH			LR	LR		
	comp=Z,140nm,18.0s					
LZH			LR	LR		
	comp=Z,170nm,18.2s					
LZH			LR	LR		
	comp=Z,200nm,20.0s					
CD2	Chengdu	167.27 29	PKP	PKPdf	00 05 07.8	-1.3
GYA	Guiyang	172.39 30	ePKP	PKPdf	00 05 11.0	-1.3
GYA			pPKP	pPKPdf	00 05 39.6	-3.1
GYA			PKPab	PKPab	00 06 38.3	+1.2
GYA			PKS	PKSdf	00 08 42.3	-2.5
GYA			PP	PP	00 10 30.8	+3.1
GYA			AMB	AMB		
	comp=Z,120nm,8.2s					

RSPR 21 23:46:09.3, 18°.84N×67°.81W, h21km±19km, MD2.7/5, 8C-3D, Mona Passage

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AGPR	Aguadilla, PR	0.76	119⇑	eP	Pb	23 46 21.7	-2.0
AGPR	Aguadilla, PR	0.76	119	eS	Sb	23 46 31.7	-1.9
LSP	Las Mesas	0.95	134‖	eP	Pb	23 46 25.1	-1.9
LSP	Las Mesas	0.95	134‖	eP	Pb	23 46 26.4	-0.7
LSP				eS	Sn	23 46 40.1	-0.2
CRPR	Cabo Rojo, PR	1.06	141‖	eP	Pb	23 46 29.3	+0.4
CRPR				eS	Sn	23 46 44.9	+1.9
LRS	Lares	1.06	121⇑	eP	Pn	23 46 26.2	-2.8
LRS				eS	Sb	23 46 39.7	-2.8
LRS	Lares	1.06	121‖	eP	Pn	23 46 25.9	-3.0
AOPR	Arecibo Observ	1.11	116⇑	eP	Pn	23 46 26.8	-2.8
AOPR	Arecibo Observ	1.11	116	eS	Sb	23 46 41.0	-2.9
AOPR	Arecibo Observ	1.11	116⇑	eP	Pn	23 46 26.8	-2.8
AOPR				eS	Sb	23 46 41.7	-2.2
CELP	Cerrillos	1.39	123‖	eP	Pn	23 46 31.6	-1.9
SJG	San Juan	1.73	115⇑	eP	Pn	23 46 36.0	-2.2
SJG				eS	Sn	23 46 56.1	-3.5
CBYP	Canovanas	1.93	107⇑	eP	Pn	23 46 38.6	-2.4
CBYP	Canovanas	1.93	107	eS	Sn	23 47 01.8	-2.9

*ISCJB **21** 23:52:07.8±0.8, 41°.27N±0°.03×25°.56E±0°.04, h7km±7km, Error ellipse: s-maj=5.8km s-min=4.7km az=168.1*
*CSEM **21** 23:52:08.0±0.2, 41°.29N×25°.55E, h12km, MD2.9*
*THE **21** 23:52:08.5, 41°.26N×25°.55E, h7km±1km, ML1.8/7, Error ellipse: s-maj=1.3km s-min=0.5km az=101.0*
*ATH **21** 23:52:08.1, 41°.20N×25°.54E, h30km±1km, ML1.7/4, Error ellipse: s-maj=2.8km s-min=1.1km az=32.0*
*ISK **21** 23:52:10.0, 41°.30N×25°.83E, h18km, MD2.9*
ISC 21 23:52:08.8±1.3, 41°.26N±0°.03×25°.55E±0°.02, h22km±5km, n44, σ0°.69/70, Greece-Bulgaria border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ALN	Alexandroupoli	0.52	134	ePG	Pb	23 52 19.6	+0.3
ALN	Alexandroupoli	0.52	134	P	Pb	23 52 18.6	-0.6
ALN				S	Sb	23 52 26.1	-0.2
ALN	Alexandroupoli	0.52	134	P	Pb	23 52 18.6	-0.6
ALN	Alexandroupoli	0.52	134	ePg	Pb	23 52 19.6	+0.3
ALN				S	Sb	23 52 26.1	-0.2
ALN	Alexandroupoli	0.52	134	P	Pb	23 52 18.6	-0.6
ALN				S	Sb	23 52 25.3	-1.0
ALN				AML	AML	23 52 28.4	
	comp=N,130μm,0.4s						
ALN				AML	AML	23 52 30.5	
	comp=E,169μm,0.1s						
ENEZ	Enez	0.69	139	ePG	Pb	23 52 22.3	+0.1
ENEZ				eSG	Sb	23 52 31.7	+0.4
ENEZ	Enez	0.69	139	P	Pb	23 52 22.1	-0.1
ENEZ				S	Sb	23 52 31.7	+0.4
ENEZ	Enez	0.69	139	P	Pb	23 52 22.1	-0.1
ENEZ				S	Sb	23 52 31.7	+0.4
SMTH	Samothraki Isl	0.79	181	P	Pb	23 52 23.5	-0.3
SMTH				S	Sn	23 52 35.2	-0.5
SMTH	Samothraki Isl	0.79	181	P	Pb	23 52 23.7	-0.1
SMTH				S	Sb	23 52 33.9	-0.1
SMTH	Samothraki Isl	0.79	181	P	Pb	23 52 23.7	-0.1
SMTH				S	Sb	23 52 33.9	-0.1
SMTH				AML	AML	23 52 37.1	
	comp=E,109μm,0.2s						
SMTH				AML	AML	23 52 38.2	
	comp=N,66μm,0.2s						
KAVA	Kavala	0.83	252	P	Pb	23 52 23.8	-0.6
KAVA				S	Sn	23 52 35.8	-0.9
KAVA	Kavala	0.83	252	P	Pb	23 52 23.8	-0.6
KAVA				S	Sb	23 52 34.9	-0.2
KAVA	Kavala	0.83	252	P	Pb	23 52 23.5	-0.9
ERIK	Erikli-Kesan	0.94	129	ePG	Pb	23 52 26.1	-0.1
ERIK				eSG	Sb	23 52 38.0	-0.2
ERIK	Erikli-Kesan	0.94	129	ePg	Pb	23 52 26.2	-0.1
ERIK				eSg	Sb	23 52 38.0	-0.2
EDRB	Edirne	1.07	56	ePG	Pb	23 52 27.5	-1.1
EDRB	Edirne	1.07	56	P	Pn	23 52 28.7	+0.2
EDRB				S	Sn	23 52 43.7	+1.0
EDRB	Edirne	1.07	56	ePg	Pb	23 52 27.5	-1.1
EDRB	Edirne	1.07	56	P	Pn	23 52 28.7	+0.2
EDRB				S	Sn	23 52 43.7	+1.0
GELI	Tayfur-Gelibol	1.11	141	ePG	Pb	23 52 30.4	+1.1
GELI	Tayfur-Gelibol	1.11	141	ePg	Pb	23 52 30.4	+1.1
LPK	Lapseki	1.27	134	ePN	Pn	23 52 31.5	+0.2
LPK	Lapseki	1.27	134	ePn	Pn	23 52 31.5	+0.2
NVR	Nevrokopi	1.28	275	P	Pb	23 52 32.1	0.0
NVR				S	Sb	23 52 49.9	+1.8
NVR	Nevrokopi	1.28	275	P	Pb	23 52 31.9	-0.2
NVR				S	Sb	23 52 49.9	+1.8
RKY	Sarkoy-Tekirda	1.36	114	ePN	Pn	23 52 32.2	-0.3
RKY	Sarkoy-Tekirda	1.36	114	ePn	Pn	23 52 32.2	-0.3
LIA	Limnos Island	1.39	192	P	Pn	23 52 33.1	+0.3
LIA				S	Sb	23 52 52.5	+1.2
LIA	Limnos Island	1.39	192	P	Pn	23 52 33.1	+0.3
LIA				S	Sb	23 52 52.5	+1.2
SRS	Serrai	1.49	265	P	Pb	23 52 34.9	-0.8
SRS				S	Sb	23 52 55.4	+1.3
SRS	Serrai	1.49	265	P	Pb	23 52 34.9	-0.8
SRS				S	Sb	23 52 55.4	+1.3
SRS	Serrai	1.49	265	P	Pb	23 52 35.6	-0.1
SRS				S	Sb	23 52 54.9	+0.8
SRS				AML	AML	23 52 59.8	
	comp=N,69μm,0.5s						
SRS				AML	AML	23 53 01.9	
	comp=E,53μm,0.5s						
OUR	Ouranopolis	1.51	233	P	Pn	23 52 34.5	0.0
OUR				S	Sb	23 52 54.7	0.0
OUR	Ouranopolis	1.51	233	P	Pn	23 52 34.5	0.0
OUR				S	Sb	23 52 54.7	0.0
OUR				AML	AML	23 52 58.3	
	comp=N,140μm,0.5s						
OUR				AML	AML	23 52 59.0	
	comp=E,105μm,0.3s						
TKR	Tekirdag	1.52	100	ePN	Pn	23 52 34.1	-0.6
TKR	Tekirdag	1.52	100	ePn	Pn	23 52 34.1	-0.6
EZN	Ezine	1.55	157	ePN	Pb	23 52 36.7	0.0
EZN	Ezine	1.55	157	ePn	Pb	23 52 36.7	0.0
KRBG	Karabiga-Canak	1.58	123	ePN	Pn	23 52 36.0	+0.5
KRBG	Karabiga-Canak	1.58	123	ePn	Pn	23 52 36.0	+0.5
PAIG	Paliouri	1.95	228	P	Pn	23 52 40.4	-0.2
PAIG				S	Sb	23 53 06.7	-0.7
PAIG	Paliouri	1.95	228	P	Pn	23 52 40.4	-0.2
PAIG				S	Sb	23 53 06.7	-0.7

36nm,0.6s
AFI Afiamalu 40.26 104 P P 00 09 59.9 +0.5
8.5nm,0.2s,baz=319,slow=19,SNR=5.1
MJAR Matsushiro Arr 43.76 349 P P 00 10 28.0 +0.5
4.0nm,1.1s,baz=165,slow=8.8,SNR=6.2
KSRS Korea Array 47.54 338 P P 00 10 56.6 -0.7
0.9nm,0.6s,baz=152,slow=7.9,SNR=6.5
KSRS LR LR 00 31 09.6
comp=Z,47nm,18.2s,baz=152,slow=36
KSAR Wonju Array Be 47.55 338 P P 00 10 56.6 -0.8
USRK Ussuriysk Ar. 52.47 346 P P 00 11 34.4 -0.2
2.0nm,0.8s,baz=170,slow=8.8,SNR=4.3
KLR Kul'dur 57.26 347 P P 00 12 10.3 +1.2
3.3nm,0.8s,baz=194,slow=3.3,SNR=12
PETK Petropavlovsk- 59.93 7 P P 00 12 28.7 +1.0
6.0nm,0.8s,baz=180,slow=8.3,SNR=7.1
SONM Songino Array 65.29 331 P P 00 13 04.7 +1.0
1.2nm,0.8s,baz=146,slow=11,SNR=6.7
SEY Seymchan 69.30 2 P P 00 13 28.7 +0.2
2.2nm,0.7s,baz=180,slow=20
VNDA Vanda 71.38 177 P P 00 13 41.4 +0.2
1.0nm,0.7s,baz=326,slow=6.9,SNR=7.2
MKAR Makanchi Array 78.47 320 P P 00 14 22.7 +0.1
0.6nm,0.6s,baz=100,slow=7.8,SNR=7.9
TIXI Tiksi 78.98 354 *eP* **P 00 14 24.3 -0.6**
1.7nm,0.8s
ZALV Zalesovo Beam 79.93 328 P P 00 14 30.2 -0.1
1.0nm,0.6s,baz=112,slow=4.5,SNR=4.6
ZALV LR LR 00 49 19.3
comp=Z,59nm,21.5s,baz=80,slow=35
QSPA South Pole Qui 83.49 180 *eP* **P 00 14 48.0 -1.1**
18nm,0.9s
KKAR Karatay Array 85.31 314 *eP* **P 00 14 59.1 +0.5**
0.6nm,0.5s
ILAR Eielson Array 85.54 23 P P 00 14 58.0 -1.4
2.2nm,0.8s,baz=255,slow=5.0,SNR=17
NRIK Noril'sk 86.02 342 LR LR 00 55 38.6
comp=Z,32nm,18.1s,baz=22,slow=37
BVAR Borovoye Array 87.72 324 P P 00 15 09.8 -0.4
1.3nm,0.7s,baz=107,slow=5.1,SNR=6.9
NVAR Mina Array Bea 96.90 52 LR LR 00 54 43.8
comp=Z,50nm,19.8s,baz=262,slow=32
YKA Yellowknife Ar 99.15 28 P Pdif 00 16 02.3 -0.2
0.6nm,0.9s,baz=280,slow=4.7,SNR=4.4
DPC Dobruska-Polom 120.60 326 *e*PKPdf **PKPdf 00 21 14.4 +1.2**
PVCC Panska Ves 121.47 327 *e*PKPdf **PKPdf 00 21 15.9 +1.1**
CONA Conrad Observa 122.08 324 *i*PKiKP **PKiKP 00 21 16.6 +0.3**
1.6nm,0.8s
KHC Kasperske Hory 122.76 326 *e*PKPdf **PKPdf 00 21 18.2 +0.8**
GERES GERESS Array B 122.84 326 PKP **PKPdf 00 21 18.0 +0.4**
1.3nm,0.6s,baz=58,slow=1.9,SNR=21
MOA Molln 123.04 324 *i*PKiKP **PKiKP 00 21 18.5 +0.4**
1.4nm,0.9s
WTTA Wattenberg 124.86 325 *i*PKiKP **PKPdf 00 21 21.7 0.0**
4.1nm,0.9s
MOTA Moosalm 125.12 325 *i*PKiKP **PKiKP 00 21 22.8 +0.3**
2.3nm,0.6s
FETA Feichten 125.51 325 *i*PKPdf **PKPdf 00 21 21.2 -1.6**
3.5nm,1.0s
DAVA Damuels 125.84 326 *i*PKiKP **PKiKP 00 21 24.1 +0.2**
2.8nm,0.7s
LPAZ La Paz 137.72 123 PKP **PKPdf 00 21 46.6 -0.7**
0.7nm,0.7s,baz=218,slow=19,SNR=3.1
SAML Samuel 145.38 116 *e*PKPbc **PKPab 00 22 00.5 0.0**
TORD Torodi Ar. Bea 146.14 284 PKPbc **PKPab 00 22 02.8 -0.5**
1.4nm,0.4s,baz=64,slow=3.8,SNR=16
TORD SKPbc **SKiKP 00 25 42.7 +4.7**
1.3nm,1.0s,baz=64,slow=2.6,SNR=4.5
DBIC Dimbokro 153.00 272 PKPbc **PKPbc 00 22 19.6 -0.2**
1.5nm,0.7s,baz=46,slow=3.5,SNR=3.5

CSEM ***22*** *00:03:41.5, 36.°41N×25.°42E, h2km, ML0.9/1*
THE 22 00:03:41.5, 36.°41N×25.°42E, h2km±1km**, ML0.9/1, Error ellipse: s-maj=1.0km s-min=0.4km az=50.0, Dodecanese Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THR7	**Fira-Santorini**	**0.01**	**28**	P	Pg	00 03 42.3	+0.2
THR7	**Fira-Santorini**	**0.01**	**28**	P	Pg	00 03 42.3	+0.2
THR3	**Thira Island,**	**0.02**	**258**	P	Pg	00 03 42.2	+0.1
THR3	**Thira Island,**	**0.02**	**258**	P	Pg	00 03 42.2	+0.1
THT1	**Athinios (Pele**	**0.03**	**168**	P	Pg	00 03 42.3	+0.1
THT1				S	Sg	00 03 42.9	+0.3
THT1	**Athinios (Pele**	**0.03**	**168**	P	Pg	00 03 42.3	+0.1
THR2	**Thira island,**	**0.04**	**17**	P	Pg	00 03 42.4	+0.1
THR2	**Thira island,**	**0.04**	**17**	P	Pg	00 03 42.4	+0.1
SANT	**Santorini**	**0.05**	**145**	P	Pg	00 03 42.9	+0.3
SANT				S	Sg	00 03 43.8	+0.5
SANT	**Santorini**	**0.05**	**145**	P	Pg	00 03 42.9	+0.3
SANT				S	Sg	00 03 43.8	+0.5
THR5	**Thira Island,**	**0.06**	**274**	P	Pg	00 03 42.9	+0.2
THR5	**Thira Island,**	**0.06**	**274**	P	Pg	00 03 42.9	+0.2
THR6	**Thira Island,**	**0.06**	**199**	P	Pg	00 03 43.1	+0.4
THR6	**Thira Island,**	**0.06**	**199**	P	Pg	00 03 43.1	+0.4

ISCJB ***22*** *00:04:22.2±0.4, 39.°11N±0.°03×29.°01E±0.°03, h7km±5km, Error ellipse: s-maj=4.7km s-min=3.8km az=153.8*
ISK ***22*** *00:04:22.0, 39.°12N×29.°00E, h10km, MD2.9*
CSEM ***22*** *00:04:22.4±0.1, 39.°11N×29.°02E, h10km, MD2.7, Error ellipse: s-maj=1.8km s-min=1.7km az=156.0*
DDA ***22*** *00:04:22.3, 39.°09N×29.°01E, h11km, Md2.7*
ISC 22 00:04:22.5±0.9, 39.°12N±0.°03×29.°01E±0.°02, h11km±9km**, n31,σ0°37/45, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**252**	P	Pg	00 04 27.6	+0.1
DEMI				S	Sg	00 04 30.8	0.0
DEMI	**Demirci**	**0.24**	**252**	*i* P	Pg	00 04 27.6	+0.1
DEMI				*i* S	Sg	00 04 30.8	0.0
GDZ	**Gediz**	**0.37**	**94**	P	Pg	00 04 29.6	-0.3
GDZ				S	Sg	00 04 35.0	+0.1
GDZ	**Gediz**	**0.37**	**94**	*i* P	Pg	00 04 29.6	-0.3
GDZ				*i* S	Sg	00 04 35.0	+0.1
TVSB	**Tavsanli**	**0.48**	**47**	*e*PG	Pg	00 04 32.3	+0.3
TVSB				*e*SG	Sg	00 04 39.0	+0.5
TVSB	**Tavsanli**	**0.48**	**47**	*e*Pg	Pg	00 04 32.3	+0.3
TVSB				*e*Sg	Sg	00 04 39.0	+0.5
KULA	**Kula-Manisa**	**0.66**	**204**	*e*PG	Pg	00 04 35.2	-0.1
MANT	**Manisa**	**0.72**	**209**	P	Pg	00 04 36.3	-0.1
MANT				S	Sg	00 04 45.3	-0.5
MANT	**Manisa**	**0.72**	**209**	*i* P	Pg	00 04 36.4	-0.1
MANT				*i* S	Sg	00 04 45.3	-0.5
KHAL	**Karahalli**	**0.84**	**153**	P	Pg	00 04 38.8	+0.1
KHAL				S	Sg	00 04 49.5	-0.1
KHAL	**Karahalli**	**0.84**	**153**	*i* P	Pg	00 04 38.8	+0.1
KHAL				*i* S	Sg	00 04 49.5	-0.1
KHL	**Karahalli**	**0.89**	**153**	*e*PG	Pg	00 04 39.5	-0.1
KHL	**Karahalli**	**0.89**	**153**	*e*Pg	Pg	00 04 39.6	-0.1
AKHS	**Akhisar**	**0.96**	**256**	P	Pb	00 04 41.5	+0.3
AKHS				S	Sb	00 04 53.9	0.0
AKHS	**Akhisar**	**0.96**	**256**	*i* P	Pb	00 04 41.5	+0.3
AKHS				*i* S	Sb	00 04 53.9	0.0
AKS	**Akhisar**	**0.96**	**256**	*e*PG	Pb	00 04 41.1	-0.1
AKS	**Akhisar**	**0.96**	**256**	*e*Pg	Pg	00 04 41.1	+0.1
BALB	**Balikesir**	**1.02**	**301**	*e*PG	Pg	00 04 41.9	-0.2
BALB				*e*SG	Sb	00 04 56.2	+0.6
IGD	**Bursa**	**1.16**	**7**	*i* P	Pb	00 04 43.0	-1.6
IGD				*i* S	Sb	00 04 59.6	0.0
KCTX	**Karacabey (Bur**	**1.25**	**337**	*e*PN	Pn	00 04 46.0	0.0
KCTX	**Karacabey (Bur**	**1.25**	**337**	*e*Pn	Pn	00 04 46.0	0.0
GONE	**Gonen-Balikesi**	**1.38**	**313**	*e*PN	Pn	00 04 47.9	+0.2
GONE	**Gonen-Balikesi**	**1.38**	**313**	*e*Pn	Pn	00 04 47.9	+0.2
ADVT	**Abdulvahap**	**1.43**	**23**	PN	Pb	00 04 49.0	-0.2
ARMT	**Armutlu**	**1.45**	**356**	*e*PN	Pn	00 04 48.6	-0.1
ARMT	**Armutlu**	**1.45**	**356**	*e*Pn	Pn	00 04 48.7	-0.1
GULT	**Gulveren**	**1.75**	**41**	*e*PN	Pn	00 04 53.4	+0.4
ISK	**Istanbul-Kandi**	**1.95**	**1**	*e*PN	Pn	00 04 55.6	0.0
ISK	**Istanbul-Kandi**	**1.95**	**1**	*e*Pn	Pn	00 04 55.6	0.0
SVRH	**Sivrihisar-ESK**	**1.98**	**80**	*e*PN	Pn	00 04 56.9	+0.8
MDUB	**Mudurnu**	**2.16**	**51**	*e*PN	Pn	00 04 58.9	+0.3

ISCJB ***22*** *00:05:01.8±0.5, 24.°54N×0.°03×122.°12E±0.°02, h59km±6km, Error ellipse: s-maj=5.1km s-min=2.7km az=162.7*
JMA ***22*** *00:05:01.0±0.1, 24.°47N×122.°08E, h67km±2km, M2.4*
TAP ***22*** *00:05:01.5, 24.°56N×122.°08E, h62km±1km, ML3.2, D*
ISC 22 00:05:02.3±1.3, 24.°54N±0.°04×122.°11E±0.°03, h57km±9km**, n39,σ0°63/67, 1C-6D, Taiwan region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWC	**Suao**	**0.25**	**286**	⇓*i* P	Pn	00 05 11.9	+0.2
TWC	baz=284			*i* S	Sn	00 05 19.0	+0.7
ENA	**Nanau**	**0.36**	**252**	P	Pn	00 05 12.5	-0.1
ENA	baz=246			*i* S	Sn	00 05 20.5	+0.6
TWE	**Neicheng**	**0.44**	**294**	⇓P	Pn	00 05 13.5	+0.2
TWE	baz=293			S	Sn	00 05 22.1	+0.8
TWB1	**Santiao Chiao**	**0.48**	**346**	P	Pn	00 05 13.3	-0.4
TWB1	baz=350			S	Sn	00 05 21.7	-0.3
ENTT	**Nioudou**	**0.51**	**281**	P	Pn	00 05 14.0	0.0
ENTT	baz=279			S	Sn	00 05 22.8	+0.2
NWF	**Wu-fen Shan**	**0.61**	**330**	⇓*i* P	Pn	00 05 14.9	-0.4
NWF	baz=331			*i* S	Sn	00 05 24.4	-0.4
TWA	**Mucha**	**0.65**	**312**	*e*S	Sn	00 05 25.3	-0.2
TWD	**Chiawan**	**0.66**	**226**	*i* P	Pn	00 05 15.3	-0.5
TWD	baz=222			*i* S	Sn	00 05 25.1	-0.5
NNS	**Nan Shan**	**0.68**	**262**	⇑*i* P	Pn	00 05 15.8	-0.4
NNS	baz=259			*i* S	Sn	00 05 26.0	-0.4
NSK	**Sangwang**	**0.70**	**281**	*i* P	Pn	00 05 16.1	-0.3
NSK	baz=280			*i* S	Sn	00 05 26.3	-0.4
JYNG	**Yonaguni jima**	**0.76**	**97**	P	Pn	00 05 17.0	-0.1
JYNG				S	Sn	00 05 28.4	+0.5
YOJ	**Yonaguni jima**	**0.82**	**95**	P	Pn	00 05 17.7	-0.1
YOJ				S	Sn	00 05 30.0	+0.7
TWS1	**Kuangyinshan**	**0.84**	**312**	*e*P	Pn	00 05 17.8	-0.3
TWS1	baz=312			*e*S	Sn	00 05 30.0	+0.2
TWY	**Chenhua**	**0.87**	**328**	*e*S	Sn	00 05 30.0	-0.3
WHF	**Hehuan Shan**	**0.87**	**243**	⇓P	Pn	00 05 18.2	-0.7
WHF	baz=240			S	Sn	00 05 30.3	-0.7
TWT	**Tachien**	**0.90**	**252**	P	Pn	00 05 19.1	+0.1
TWT	baz=249			*i* S	Sn	00 05 31.4	0.0
NCU	**National Centr**	**0.94**	**297**	*e*S	Sn	00 05 32.4	+0.3
ESL	**Shilin**	**0.95**	**221**	*e*S	Sn	00 05 32.3	-0.1
NSTT	**Nanjuang**	**1.02**	**275**	P	Pn	00 05 20.0	-0.4
NSTT	baz=274			S	Sn	00 05 33.8	0.0
WDT	**Danda**	**1.19**	**229**	P	Pn	00 05 22.3	-0.7
WDT	baz=227			S	Sn	00 05 37.2	-1.2
TWQ1	**Liyutan**	**1.24**	**261**	*e*S	Sn	00 05 38.8	-0.3
NSY	**Sanyi**	**1.24**	**264**	*e*S	Sn	00 05 39.5	+0.3
EHY	**Hungye**	**1.26**	**215**	*e*P	Pn	00 05 23.7	0.0
EHY	baz=213			*e*S	Sn	00 05 39.5	-0.2
SMLT	**Sun Moon Lake**	**1.29**	**240**	⇓P	Pn	00 05 24.9	+0.8
SMLT	baz=237			S	Sn	00 05 40.8	+0.4
TYC	**Yuchr**	**1.31**	**241**	⇓P	Pn	00 05 25.1	+0.8
TYC	baz=239			S	Sn	00 05 40.7	-0.1
TWF1	**Yuli**	**1.40**	**212**	*e*P	Pn	00 05 24.1	-1.4
TWF1	baz=210			*e*S	Sn	00 05 41.9	-1.1
IRIF	**Iriomote-Funau**	**1.49**	**98**	P	Pn	00 05 26.1	-0.6
IRIF				*e*S	Sn	00 05 45.2	+0.1
YUS	**Yu-Shan**	**1.49**	**226**	*e*S	Sn	00 05 45.1	-0.8
ALS	**Alishan**	**1.58**	**230**	P	Pn	00 05 29.0	+0.8
ALS	baz=228			S	Sn	00 05 46.9	-0.8
CHN5	**Tsauling**	**1.61**	**235**	*e*P	Pn	00 05 29.0	+0.5
CHN5	baz=233			*e*S	Sn	00 05 49.5	+1.2
ELDTW	**Lidau**	**1.68**	**217**	*e*S	Sn	00 05 48.6	-1.3
JKRS	**Kuro-shima**	**1.75**	**100**	P	Pn	00 05 30.4	+0.1
JKRS				S	Sn	00 05 52.2	+0.6
CHN4	**Tsaushan**	**1.83**	**230**	*e*P	Pn	00 05 32.5	+1.1
CHN4	baz=228			*e*S	Sn	00 05 54.6	+1.2
JIJ	**Ishigaki jima**	**1.86**	**95**	P	Pn	00 05 31.4	-0.3
JIJ				S	Sn	00 05 53.8	-0.3
WTP	**Ta-pu**	**1.88**	**227**	*e*S	Sn	00 05 56.5	+1.7
TWK	**Hsinying**	**1.96**	**230**	*e*S	Sn	00 05 57.6	+1.0
CHN1	**Nanshi**	**1.98**	**227**	*e*S	Sn	00 05 57.9	+0.7
JISG	**Ishigakijimahi**	**2.00**	**88**	P	Pn	00 05 33.3	-0.4
JISG				*e*S	Sn	00 05 57.6	0.0
JTJ	**Tarama**	**2.36**	**87**	P	Pn	00 05 38.8	+0.2
JTJ				*e*S	Sn	00 06 06.5	+0.1

ISCJB ***22*** *00:07:46.9±0.4, 33.°32N±0.°02×35.°41E±0.°03, h5km±4km, Error ellipse: s-maj=4.8km s-min=2.5km az=25.1*
CSEM ***22*** *00:07:47.1±0.1, 33.°32N×35.°41E, h5km, MD2.1, Error ellipse: s-maj=2.8km s-min=1.4km az=111.0*
GII ***22*** *00:07:47.0±0.0, 33.°23N×35.°44E, h1km, MD2.1/6*
NSSC ***22*** *00:07:47.7±1.1, 33.°28N×35.°43E, h11km±4km, ML2.4*
GRAL ***22*** *00:07:47.9±0.2, 33.°32N×35.°41E, h0km±3km, MD3.2*
ISC 22 00:07:46.7±0.9, 33.°32N±0.°02×35.°43E±0.°03, h15km±7km**, n52,σ0°63/86, Jordan-Syria region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSDI	**Kefar Szold**	**0.23**	**123**	Pg	Pb	00 07 52.2	-0.3
KSDI				Sg	Sb	00 07 56.0	-0.4
KSDI	**Kefar Szold**	**0.23**	**123**	Pg	Pb	00 07 52.2	-0.3
KSDI				Sg	Sb	00 07 56.0	-0.4
MMC7	**Mount Meron ar**	**0.29**	**187**	Pg	Pg	00 07 53.1	+0.1
MMC7	**Mount Meron ar**	**0.29**	**187**	Pg	Pg	00 07 53.1	+0.1
MMA0B	**Mount Meron ar**	**0.30**	**185**	Pg	Pg	00 07 52.9	-0.2
MMA0B				Sg	Sg	00 07 57.8	+0.4
MMA0B	**Mount Meron ar**	**0.30**	**185**	Pg	Pg	00 07 52.9	-0.2
MMA0B				Sg	Sg	00 07 57.8	+0.4
NAQL	**Naqoura**	**0.32**	**231**	*e*P	Pg	00 07 53.3	0.0
NAQL				*e*S	Sg	00 07 57.3	-0.5
NAQL	**Naqoura**	**0.32**	**231**	*e*P	Pg	00 07 53.3	0.0
NAQL				*e*S	Sg	00 07 57.3	-0.5
RCY	**Rachaya**	**0.38**	**62**	*e*P	Pb	00 07 55.0	-0.3
RCY				*e*S	Sg	00 08 00.3	+0.3
DQRL	**Deir Qamar**	**0.41**	**16**	*e*P	Pg	00 07 55.2	+0.2
DQRL				*e*S	Sg	00 08 00.7	+0.1
DQRL	**Deir Qamar**	**0.41**	**16**	*e*P	Pg	00 07 55.2	+0.2
DQRL				*e*S	Sg	00 08 00.7	+0.1
BRBR	**Barbar**	**0.44**	**77**	*e*P	Pb	00 07 56.4	0.0
BRBR				*e*S	Sb	00 08 03.4	+0.4
BRBR				AML	AML	00 08 04.9	
	comp=N,217nm,0.5s						
BRBR	**Barbar**	**0.44**	**77**	*e*P	Pb	00 07 56.4	0.0
BRBR				*e*S	Sb	00 08 03.3	+0.4
KSHT	**Keshet**	**0.46**	**136**	Pg	Pb	00 07 56.7	+0.1
KSHT	**Keshet**	**0.46**	**136**	Pg	Pb	00 07 56.7	+0.1
BEYL	**Beirut**	**0.56**	**5**	*e*P	Pg	00 07 57.9	+0.2
BEYL	**Beirut**	**0.56**	**5**	*e*P	Pg	00 07 57.9	+0.2
BHL	**Bhannes**	**0.61**	**17**	*e*P	Pg	00 07 59.0	+0.1
BHL				*e*S	Sg	00 08 07.3	+0.2
BHL	**Bhannes**	**0.61**	**17**	*e*P	Pg	00 07 59.0	+0.1
BHL				*e*S	Sg	00 08 07.3	+0.2
BLGI	**Bet Lehem HaGe**	**0.61**	**199**	Pg	Pb	00 07 59.1	-0.1
BLGI	**Bet Lehem HaGe**	**0.61**	**199**	Pg	Pb	00 07 59.1	-0.1
QASN	**Qassioun**	**0.74**	**73**	*e*P	Pn	00 08 02.2	-0.5
QASN				*e*S	Sn	00 08 12.9	-0.8
QASN				AML	AML	00 08 15.0	
	comp=N,432nm,0.4s						
QASN	**Qassioun**	**0.74**	**73**	*e*P	Pn	00 08 02.2	-0.5
QASN				*e*S	Sn	00 08 12.9	-0.8
TCHB	**Talchebab**	**0.79**	**145**	*e*P	Pn	00 08 02.7	-0.6
TCHB				*e*S	Sg	00 08 13.2	+0.8
TCHB				AML	AML	00 08 15.8	
	comp=E,204nm,0.4s						
TCHB	**Talchebab**	**0.79**	**145**	*e*P	Pn	00 08 02.7	-0.6
TCHB				*e*S	Sg	00 08 13.2	+0.8
OFRI	**'Ofer**	**0.79**	**209**	Pg	Pb	00 08 02.1	-0.1
OFRI				Sg	Sn	00 08 14.7	-0.2
OFRI	**'Ofer**	**0.79**	**209**	Pg	Pb	00 08 02.1	-0.1
OFRI				Sg	Sn	00 08 14.7	-0.2
MMLI	**Mount Malkishu**	**0.88**	**181**	Pg	Pg	00 08 03.7	0.0
MMLI				Sg	Sg	00 08 15.8	+0.6
MMLI	**Mount Malkishu**	**0.88**	**181**	Pg	Pg	00 08 03.7	0.0
MMLI				Sg	Sg	00 08 15.8	+0.6
HWQ	**Hawqa**	**1.05**	**24**	*e*P	Pn	00 08 06.9	-0.2
HWQ				*e*S	Sg	00 08 20.9	0.0
HWQ	**Hawqa**	**1.05**	**24**	*e*P	Pn	00 08 06.9	-0.2
HWQ				*e*S	Sg	00 08 20.9	0.0
HMDT	**Nahal Hemdat**	**1.06**	**176**	Pg	Pn	00 08 07.0	-0.1
HMDT				Sg	Sn	00 08 22.8	+1.2
HMDT	**Nahal Hemdat**	**1.06**	**176**	Pg	Pn	00 08 07.0	-0.1
HMDT				Sg	Sn	00 08 22.8	+1.2
SLTI	**Sal'it**	**1.12**	**197**	Pg	Pn	00 08 07.8	-0.1
SLTI				Sg	Sg	00 08 23.2	+0.2
SLTI	**Sal'it**	**1.12**	**197**	Pg	Pn	00 08 07.8	-0.1
SLTI				Sg	Sg	00 08 23.2	+0.2
FKH	**Fakeheh**	**1.23**	**41**	*e*P	Pg	00 08 10.2	-0.4
SALA	**Sala**	**1.25**	**119**	*e*P	Pg	00 08 10.7	-0.1
SALA				*e*S	Sb	00 08 25.8	-0.2
SALA				AML	AML	00 08 34.7	
	comp=N,53nm,0.4s						
SALA	**Sala**	**1.25**	**119**	*e*P	Pg	00 08 10.7	-0.1
SALA				*e*S	Sb	00 08 25.8	-0.2
HAWK	**Haweek**	**1.45**	**34**	*e*P	Pb	00 08 13.8	+0.3
HAWK				*e*S	Sg	00 08 33.4	-0.1
HAWK				AML	AML	00 08 36.3	
	comp=N,49nm,0.7s						
HAWK	**Haweek**	**1.45**	**34**	*e*P	Pb	00 08 13.8	+0.3
HAWK				*e*S	Sg	00 08 33.4	-0.1
DSI	**Dead Sea**	**1.74**	**181**	Pn	Pb	00 08 18.0	-0.4
DSI	**Dead Sea**	**1.74**	**181**	Pn	Pb	00 08 18.0	-0.4
AMAZ	**Amatzia**	**1.83**	**194**	Pn	Pb	00 08 19.9	0.0
AMAZ				Sn	Sg	00 08 45.6	-0.1
AMAZ	**Amatzia**	**1.83**	**194**	Pn	Pb	00 08 19.9	0.0
BIDA	**Albida**	**1.85**	**23**	*e*P	Pb	00 08 19.6	-0.7
BIDA				*e*S	Sb	00 08 44.2	+1.0
BIDA				AML	AML	00 08 51.9	
	comp=N,80nm,0.4s						
BIDA	**Albida**	**1.85**	**23**	*e*P	Pb	00 08 19.6	-0.7
BIDA				*e*S	Sb	00 08 44.2	+1.0
MZDA	**Masada**	**2.00**	**182**	Pn	Pb	00 08 21.8	-1.0
MZDA	**Masada**	**2.00**	**182**	Pn	Pb	00 08 21.8	-1.0
KZIT	**Kziot**	**2.56**	**200**	Pn	Pb	00 08 30.1	-2.2
KZIT	**Kziot**	**2.56**	**200**	Pn	Pb	00 08 30.1	-2.2
PRNI	**Paran**	**2.98**	**187**	Pn	Pn	00 08 35.3	+1.8
PRNI	**Paran**	**2.98**	**187**	Pn	Pn	00 08 35.3	+1.8

CSEM ***22*** *00:09:04.7±0.7, 32.°84N×45.°89E, h20km, ML2.5, Error ellipse: s-maj=17.5km s-min=7.8km az=10.0*
ISN ***22*** *00:09:06.3±0.3, 32.°97N×46.°19E, h0km, ML2.5*
TEH 22 00:09:07.8, 32.°99N×46.°19E, h11km**, ML2.5, Iran-Iraq border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IGHG	**Ghaleghazi**	**1.38**	**13**	*e*Pg	Pn	00 09 32.5	-0.6
IGHG				*e*AMB	AMB	00 09 34.6	
	comp=Z,731nm,0.1s						
IGHG				*e*Sg	Sb	00 09 51.2	-0.2
IGHG	**Ghaleghazi**	**1.38**	**13**	*e*Pg	Pn	00 09 32.5	-0.6
IGHG				*e*Sg	Sb	00 09 51.2	-0.2
IKFM	**Kafar-mosalman**	**1.49**	**68**	*e*Pn	Pn	00 09 34.1	-0.3
IKFM				*e*AMB	AMB	00 09 35.0	
	comp=Z,99nm,0.1s						
IKFM				*e*Sg	Sb	00 09 54.5	+0.3
IKFM	**Kafar-mosalman**	**1.49**	**68**	*e*Pn	Pn	00 09 34.1	-0.3
IKFM				*e*Sg	Sb	00 09 54.5	+0.3
IVIS	**Veis**	**1.63**	**19**	*e*Pn	Pn	00 09 37.0	+0.5
IVIS				*e*Sg	Sb	00 09 58.2	-0.4
IVIS				*e*AMB	AMB	00 09 59.3	
	comp=Z,351nm,0.2s						
IVIS	**Veis**	**1.63**	**19**	*e*Pn	Pn	00 09 37.0	+0.5
IVIS				*e*Sg	Sb	00 09 58.2	-0.4
IKMR	**Kamar-syah**	**1.91**	**73**	*e*Pn	Pn	00 09 40.3	+0.1
IKMR				*e*AMB	AMB	00 10 07.9	
	comp=Z,99nm,0.1s						
IKMR	**Kamar-syah**	**1.91**	**73**	*e*Pn	Pn	00 09 40.3	+0.1

NEIC ***22*** *00:13:19.9, 18.°88N×67.°74W, h19km, MD3.1(RSPR), After RSPR.*
RSPR 22 00:13:19.9, 18.°88N×67.°74W, h19km±14km**, MD3.1/4, 6C-3D, Mona Passage**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IDE	**Isla Desecheo**	**0.55**	**153**	*e*S	Sb	00 13 37.5	-1.0
AGPR	**Aguadilla, PR**	**0.73**	**124**	⇑*e*P	Pb	00 13 32.2	-1.8
AGPR	**Aguadilla, PR**	**0.73**	**124**	⇑*e*P	Pb	00 13 32.2	-1.8
AGPR				*e*S	Sb	00 13 41.8	-1.7
CRPR	**Cabo Rojo, PR**	**1.06**	**145**	⇑*e*P	Pb	00 13 37.2	-2.4
CRPR	**Cabo Rojo, PR**	**1.06**	**145**	⇑*e*P	Pb	00 13 37.2	-2.4
AOPR	**Arecibo Observ**	**1.08**	**119**	⇓*e*P	Pb	00 13 37.0	-3.0
AOPR	**Arecibo Observ**	**1.08**	**119**	⇓*e*P	Pb	00 13 37.2	-2.8
AOPR	**Arecibo Observ**	**1.08**	**119**	⇓*e*P	Pb	00 13 37.2	-2.8
AOPR				*e*S	Sb	00 13 50.9	-2.9
CELP	**Cerrillos**	**1.36**	**126**	⇑*e*P	Pn	00 13 41.9	-2.1
CELP				*e*S	Sn	00 13 58.2	-3.4
CELP	**Cerrillos**	**1.36**	**126**	⇑*e*P	Pn	00 13 41.9	-2.1
SJG	**San Juan**	**1.69**	**117**	*e*Pn	Pn	00 13 46.0	-2.5
SJG				*e*Sn	Sn	00 14 06.9	-2.8
SJG				*e*Sg	Sb	00 14 10.3	-1.1
SDDR	**Presa de Saban**	**3.36**	**272**	*e*Pn	Pn	00 14 12.5	+1.0

PDG ***22*** *00:14:12.9±0.3, 41.°69N×20.°90E, h2km, ML2.9/13, Error ellipse: s-maj=0.5km s-min=0.6km az=0.0*
ATH ***22*** *00:14:12.1, 41.°71N×20.°94E, h14km±1km, ML2.5/5, Error ellip

OHR			*i* Sg	Sb	00 14 33.6	-0.6
OHR			*e*Lg	Lg	00 14 33.7	
	comp=E,782nm,0.7s					
BIA	**Bitola**	**0.73 155**	P	**Pg**	**00 14 26.5**	**-0.4**
BIA			S	**Sb**	**00 14 38.4**	**-0.2**
BIA	**Bitola**	**0.73 155**	*i* Pg	**Pg**	**00 14 26.7**	**-0.2**
BIA			*i* Sg	**Sb**	**00 14 38.5**	**-0.2**
BIA	**Bitola**	**0.73 155**	*i* Pg	**Pg**	**00 14 26.7**	**-0.2**
BIA			S	**Sb**	**00 14 38.4**	**-0.2**
ZATK	**Zatriq**	**0.79 344**	P	**Pg**	**00 14 26.9**	**-1.2**
TIR	**Tirane**	**0.86 247**	*i* PG	**Pg**	**00 14 28.8**	**-0.5**
TIR			*i* SG	**Sb**	**00 14 41.6**	**-0.5**
TIR	**Tirane**	**0.86 247**	*e*Pg	**Pg**	**00 14 29.5**	**+0.2**
TIR			*e*Sg	**Sb**	**00 14 41.4**	**-0.7**
TIR	**Tirane**	**0.86 247**	P	**Pg**	**00 14 29.1**	**-0.2**
TIR	**Tirane**	**0.86 247**	*e*Pg	**Pg**	**00 14 29.5**	**+0.2**
TIR			S	**Sg**	**00 14 41.0**	**+0.6**
TIR	**Tirane**	**0.86 247**	P	**Pg**	**00 14 29.1**	**-0.2**
TIR			S	**Sg**	**00 14 41.0**	**+0.6**
TIR			AML	AML	00 14 51.5	
	comp=E,543μm,0.5s					
TIR			AML	AML	00 14 51.5	
	comp=N,382μm,0.4s					
FNA	**Florina**	**0.97 159**	P	**Pg**	**00 14 30.6**	**-0.8**
FNA			S	**Sb**	**00 14 46.4**	**+1.1**
FNA	**Florina**	**0.97 159**	P	**Pg**	**00 14 30.6**	**-0.8**
FNA			S	**Sb**	**00 14 45.0**	**-0.3**
FNA	**Florina**	**0.97 159**	P	**Pg**	**00 14 30.5**	**-0.9**
FNA			S	**Sb**	**00 14 45.0**	**-0.3**
FNA			AML	AML	00 14 50.2	
	comp=E,912μm,0.3s					
FNA			AML	AML	00 14 51.6	
	comp=N,1119μm,0.3s					
PEJK	**Peje**	**1.07 334**	P	**Pg**	**00 14 32.3**	**-1.0**
PEJK			S	**Sb**	**00 14 49.4**	**+1.1**
PVY	**Plav**	**1.15 322⇑**	*i* Pg	**Pg**	**00 14 33.5**	**-1.5**
PVY			*e*Sg	**Sn**	**00 14 52.2**	**0.0**
NEST	**Nestorio**	**1.27 175**	P	**Pg**	**00 14 36.4**	**-0.9**
NEST			S	**Sn**	**00 14 56.9**	**+1.8**
NEST	**Nestorio**	**1.27 175**	P	**Pg**	**00 14 36.4**	**-0.9**
NEST			S	**Sb**	**00 14 54.6**	**+0.4**
NEST	**Nestorio**	**1.27 175**	P	**Pg**	**00 14 36.1**	**-1.2**
NEST			S	**Sb**	**00 14 54.6**	**+0.4**
NEST			AML	AML	00 14 59.0	
	comp=E,418μm,0.6s					
NEST			AML	AML	00 15 01.6	
	comp=N,219μm,0.2s					
ULC	**Ulcinj**	**1.28 283⇑**	*i* Pg	**Pg**	**00 14 35.9**	**-1.5**
ULC			*e*Sg	**Sn**	**00 14 56.0**	**+0.8**
ULC	**Ulcinj**	**1.28 283⇑**	*i* Pg	**Pg**	**00 14 35.9**	**-1.5**
ULC	**Ulcinj**	**1.28 283**	P	**Pg**	**00 14 36.2**	**-1.2**
ULC			*e*Sg	**Sn**	**00 14 56.0**	**+0.8**
VAY	**Valandovo**	**1.30 106**	P	**Pg**	**00 14 37.2**	**-0.5**
VAY	**Valandovo**	**1.30 106**	*i* Pg	**Pg**	**00 14 37.3**	**-0.4**
VAY			*i* Sg	**Sb**	**00 14 54.5**	**-0.2**
VAY			*e*Lg	Lg	00 14 55.9	
	comp=E,76nm,0.6s					
VAY			*e*Lg	Lg	00 14 56.5	
	comp=N,65nm,0.7s					
VAY	**Valandovo**	**1.30 106**	*e*Pg	**Pg**	**00 14 37.1**	**-0.6**
VAY			*e*Sg	**Sb**	**00 14 54.7**	**-0.1**
VAY	**Valandovo**	**1.30 106**	P	**Pg**	**00 14 37.2**	**-0.5**
VAY			*e*Sg	**Sb**	**00 14 54.7**	**-0.1**
VAY			*e*Lg	Lg	00 14 55.8	
	comp=N,76nm,0.6s					
BARS	**Barje**	**1.31 30**	*e*Pg	**Pg**	**00 14 37.5**	**-0.6**
BARS			*e*Sg	**Sb**	**00 14 55.6**	**+0.3**
GRG	**Griva**	**1.34 123**	P	**Pg**	**00 14 38.0**	**-0.5**
GRG			S	**Sn**	**00 14 57.5**	**+0.9**
GRG	**Griva**	**1.34 123**	P	**Pg**	**00 14 38.0**	**-0.5**
GRG			S	**Sb**	**00 14 55.7**	**-0.3**
GRG	**Griva**	**1.34 123**	P	**Pg**	**00 14 38.0**	**-0.5**
GRG			S	**Sb**	**00 14 55.7**	**-0.3**
GRG			AML	AML	00 14 58.5	
	comp=N,440μm,0.4s					
GRG			AML	AML	00 15 01.2	
	comp=E,341μm,0.4s					
DRME	**Dracevica, Mon**	**1.38 292⇑**	*i* Pg	**Pn**	**00 14 38.4**	**-0.6**
DRME			*e*Sg	**Sn**	**00 14 59.8**	**+2.1**
DRME	**Dracevica, Mon**	**1.38 292**	*e*Pn	**Pn**	**00 14 37.4**	**-1.6**
DRME	**Dracevica, Mon**	**1.38 292⇑**	*i* Pg	**Pn**	**00 14 38.4**	**-0.6**
DRME			*e*Sg	**Sn**	**00 14 59.8**	**+2.1**
BEY	**Berane**	**1.41 328⇑**	*i* Pg	**Pn**	**00 14 39.1**	**-0.3**
BEY			*e*Sg	**Sn**	**00 15 00.4**	**+2.0**
IVA	**Berane**	**1.41 328⇑**	*i* Pg	**Pn**	**00 14 39.1**	**-0.3**
IVA			*e*Sg	**Sn**	**00 15 00.4**	**+2.0**
PDG	**Podgorica**	**1.44 302**	P	**Pn**	**00 14 39.0**	**-0.8**
PDG			S	**Sn**	**00 15 00.3**	**+1.2**
PDG	**Podgorica**	**1.44 302**	*e*Pg	**Pn**	**00 14 38.3**	**-1.5**
PDG			*e*Sg	**Sn**	**00 15 00.5**	**+1.4**
PDG	**Podgorica**	**1.44 302**	*e*Pn	**Pn**	**00 14 38.5**	**-1.3**
PDG	**Podgorica**	**1.44 302**	P	**Pn**	**00 14 39.0**	**-0.8**
PDG	**Podgorica**	**1.44 302⇓**	*i* Pg	**Pn**	**00 14 40.0**	**+0.2**
PDG			*e*Sg	**Sn**	**00 15 00.5**	**+1.4**
TTG	**Podgorica**	**1.44 302⇓**	*i* Pg	**Pn**	**00 14 40.0**	**+0.2**
TTG			*e*Sg	**Sn**	**00 15 01.8**	**+2.7**
PENT	**Pentalofos**	**1.50 173**	P	**Pn**	**00 14 40.5**	**-0.1**
PENT	**Pentalofos**	**1.50 173**	P	**Pn**	**00 14 40.6**	**-0.1**
PENT	**Pentalofos**	**1.50 173**	P	**Pn**	**00 14 40.6**	**-0.1**
KZN	**Kozani**	**1.52 155**	P	**Pb**	**00 14 41.5**	**-0.2**
KZN			S	**Sg**	**00 15 03.5**	**+1.7**
KZN	**Kozani**	**1.52 155**	P	**Pb**	**00 14 41.5**	**-0.2**
KZN			S	**Sg**	**00 15 03.5**	**+1.7**
SELS	**Selova**	**1.54 6**	*e*Pg	**Pn**	**00 14 41.0**	**-0.2**
SELS			*e*Sg	**Sg**	**00 15 03.0**	**+0.6**
KNT	**Kendrikon**	**1.58 109**	P	**Pn**	**00 14 41.3**	**-0.4**
KNT			S	**Sg**	**00 15 03.6**	**-0.1**
KNT	**Kendrikon**	**1.58 109**	P	**Pn**	**00 14 41.5**	**-0.2**
KNT			S	**Sg**	**00 15 03.6**	**-0.1**
KNT	**Kendrikon**	**1.58 109**	P	**Pn**	**00 14 41.5**	**-0.2**
KNT			S	**Sn**	**00 15 02.6**	**0.0**
KNT			AML	AML	00 15 03.6	
	comp=E,71μm,0.6s					
KNT			AML	AML	00 15 06.6	
	comp=N,106μm,0.3s					
BUM	**Brajici-Budva**	**1.63 293⇓**	*i* Pn	**Pn**	**00 14 42.8**	**+0.4**
BUM			*e*Sn	**Sg**	**00 15 07.4**	**+2.3**
BUM	**Brajici-Budva**	**1.63 293⇓**	*i* Pn	**Pn**	**00 14 42.8**	**+0.4**
BUM			*e*Sn	**Sg**	**00 15 07.4**	**+2.3**
CEME	**Cevo**	**1.72 301⇓**	*i* Pn	**Pn**	**00 14 44.4**	**+0.8**
CEME			*e*Sn	**Sg**	**00 15 09.8**	**+1.8**
CEME	**Cevo**	**1.72 301⇓**	*i* Pn	**Pn**	**00 14 44.4**	**+0.8**
CEME			*e*Sn	**Sg**	**00 15 09.8**	**+1.8**
KPRO	**Kipourio**	**1.76 169**	P	**Pn**	**00 14 45.0**	**+0.8**
KPRO	**Kipourio**	**1.76 169**	P	**Pn**	**00 14 45.0**	**+0.8**
KPRO	**Kipourio**	**1.76 169**	P	**Pb**	**00 14 45.3**	**-0.5**
NKME	**Niksic**	**1.81 307⇑**	*i* Pn	**Pb**	**00 14 46.5**	**-0.2**
NKME			*e*Sn	**Sg**	**00 15 12.4**	**+1.3**
NKME	**Niksic**	**1.81 307⇑**	*i* Pn	**Pb**	**00 14 46.5**	**-0.2**
NKME			*e*Sn	**Sg**	**00 15 12.4**	**+1.3**
NKY	**Niksic**	**1.82 309⇑**	*i* Pn	**Pn**	**00 14 46.0**	**+1.0**
NKY			*e*Sn	**Sg**	**00 15 12.3**	**+1.0**
NKY	**Niksic**	**1.82 309⇑**	*i* Pn	**Pn**	**00 14 46.0**	**+1.0**
NKY			*e*Sn	**Sg**	**00 15 12.3**	**+1.0**
HCY	**Herceg Novi**	**1.96 294⇓**	*i* Pn	**Pn**	**00 14 48.0**	**+1.2**
HCY			*e*Sn	**Sg**	**00 15 16.1**	**+0.4**
HCY	**Herceg Novi**	**1.96 294⇓**	*i* Pn	**Pn**	**00 14 48.0**	**+1.2**
HCY			*e*Sn	**Sg**	**00 15 16.1**	**+0.4**
IVAS	**Ivanjica**	**1.97 344**	*e*Pn	**Pn**	**00 14 46.7**	**-0.4**
IVAS			*e*Sg	**Sg**	**00 15 16.9**	**+0.7**
IVAS	**Ivanjica**	**1.97 344**	*e*Pn	**Pn**	**00 14 46.7**	**-0.4**
IVAS			*e*Sg	**Sg**	**00 15 16.9**	**+0.7**
HORT	**Hortiatis**	**1.98 123**	P	**Pn**	**00 14 47.2**	**0.0**
HORT	**Hortiatis**	**1.98 123**	P	**Pn**	**00 14 47.2**	**0.0**
LIT	**Litokhoron**	**1.98 142**	P	**Pn**	**00 14 48.3**	**+1.1**
LIT			S	**Sb**	**00 15 14.2**	**-0.4**
LIT	**Litokhoron**	**1.98 142**	P	**Pn**	**00 14 48.3**	**+1.1**
LIT			S	**Sb**	**00 15 14.2**	**-0.4**
PLE	**Pljevlja**	**1.99 326⇑**	*i* Pn	**Pn**	**00 14 48.4**	**+0.9**
PLE			*e*Sn	**Sb**	**00 15 16.0**	**+1.0**
PLE	**Pljevlja**	**1.99 326⇑**	*i* Pn	**Pn**	**00 14 48.4**	**+0.9**
PLE			*e*Sn	**Sb**	**00 15 16.0**	**+1.0**
SOH	**Sokhos**	**2.03 114**	P	**Pn**	**00 14 48.7**	**+0.7**
SOH			S	**Sb**	**00 15 15.4**	**-0.6**
SOH	**Sokhos**	**2.03 114**	P	**Pn**	**00 14 48.6**	**+0.7**
SOH			S	**Sb**	**00 15 15.4**	**-0.6**
SOH	**Sokhos**	**2.03 114**	P	**Pn**	**00 14 48.6**	**+0.7**
ZAPS	**Zavoj**	**2.03 38**	*e*Pg	**Pg**	**00 14 51.2**	**-0.7**
ZAPS	**Zavoj**	**2.03 38**	*e*Pg	**Pg**	**00 14 51.2**	**-0.7**
SRS	**Serrai**	**2.09 105**	P	**Pn**	**00 14 48.8**	**+0.1**
SRS	**Serrai**	**2.09 105**	P	**Pn**	**00 14 48.8**	**+0.1**
SRS	**Serrai**	**2.09 105**	P	**Pn**	**00 14 48.7**	**-0.1**
UPM	**Unac-Piva**	**2.12 316⇑**	*i* Pn	**Pn**	**00 14 50.8**	**+1.5**
UPM			*e*Sn	**Sb**	**00 15 19.5**	**+0.7**
UPM	**Unac-Piva**	**2.12 316⇑**	*i* Pn	**Pn**	**00 14 50.8**	**+1.5**
UPM	**Unac-Piva**	**2.12 316**	P	**Pb**	**00 14 52.1**	**+0.1**
UPM			*e*Sn	**Sb**	**00 15 19.5**	**+0.7**
SGD	**Sagiada**	**2.13 194**	P	**Pn**	**00 14 50.4**	**+1.1**
SGD			S	**Sb**	**00 15 19.0**	**+0.1**
SGD	**Sagiada**	**2.13 194**	P	**Pn**	**00 14 50.4**	**+1.1**
SGD			S	**Sb**	**00 15 19.0**	**+0.1**
SGD	**Sagiada**	**2.13 194**	P	**Pb**	**00 14 51.0**	**-1.0**
BRY	**Bratogost**	**2.14 305**	*e*Pn	**Pn**	**00 14 51.0**	**+1.5**
BRY			*e*Sn	**Sb**	**00 15 20.3**	**+1.1**
BRY	**Bratogost**	**2.14 305**	*e*Pn	**Pn**	**00 14 51.0**	**+1.5**
BRY			*e*Sn	**Sb**	**00 15 20.3**	**+1.1**
KEK	**Kerkira**	**2.15 204**	P	**Pn**	**00 14 49.9**	**+0.5**
KEK			S	**Sb**	**00 15 18.7**	**-0.5**
KEK	**Kerkira**	**2.15 204**	P	**Pn**	**00 14 49.9**	**+0.5**
KEK			S	**Sb**	**00 15 18.7**	**-0.5**
TREB	**Trebinje**	**2.17 299**	*e*Pn	**Pb**	**00 14 51.6**	**-1.0**
IGT	**Igoumenitsa**	**2.20 192**	P	**Pb**	**00 14 51.8**	**-1.3**
IGT			S	**Sb**	**00 15 20.1**	**-0.6**
IGT	**Igoumenitsa**	**2.20 192**	P	**Pb**	**00 14 51.8**	**-1.3**
IGT			S	**Sb**	**00 15 20.1**	**-0.6**
IGT	**Igoumenitsa**	**2.20 192**	P	**Pb**	**00 14 52.0**	**-1.1**
GRUS	**Gruza**	**2.21 356**	*e*Pn	**Pn**	**00 14 50.1**	**-0.2**
GRUS			*e*Sn	**Sn**	**00 15 18.5**	**+0.5**
GRUS	**Gruza**	**2.21 356**	*e*Pn	**Pn**	**00 14 50.1**	**-0.2**
GRUS			*e*Sn	**Sn**	**00 15 18.5**	**+0.5**
NVR	**Nevrokopi**	**2.24 98**	P	**Pn**	**00 14 51.2**	**+0.4**
NVR			S	**Sn**	**00 15 19.9**	**+1.0**
NVR	**Nevrokopi**	**2.24 98**	P	**Pn**	**00 14 50.9**	**+0.1**
NVR			S	**Sn**	**00 15 19.9**	**+1.0**
THL	**Klokotos Trika**	**2.28 158**	P	**Pn**	**00 14 51.4**	**+0.2**
THL			S	**Sb**	**00 15 22.3**	**-0.7**
THL	**Klokotos Trika**	**2.28 158**	P	**Pn**	**00 14 51.4**	**+0.2**
THL			S	**Sb**	**00 15 22.3**	**-0.7**
BBLS	**Lazići**	**2.45 333**	*e*Pn	**Pn**	**00 14 53.7**	**+0.1**
BBLS	**Lazići**	**2.45 333**	*e*Pn	**Pn**	**00 14 53.7**	**+0.1**
DIVS	**Divibare**	**2.50 345**	*e*Pn	**Pn**	**00 14 53.5**	**-1.0**
DIVS	**Divibare**	**2.50 345**	*e*Pn	**Pn**	**00 14 53.5**	**-1.0**
DSL	**Palaion Diasel**	**2.55 177**	P	**Pb**	**00 14 57.3**	**-2.0**
DSL	**Palaion Diasel**	**2.55 177**	P	**Pb**	**00 14 57.3**	**-2.0**
TRUS	**Trudelj**	**2.56 352**	*e*Pn	**Pn**	**00 14 54.8**	**-0.4**
TRUS	**Trudelj**	**2.56 352**	*e*Pn	**Pn**	**00 14 54.8**	**-0.4**
HAPS	**Han Pijesak,Bl**	**2.80 330**	*e*Pn	**Pn**	**00 14 58.8**	**+0.3**
AGG	**Agios Georgios**	**2.87 157**	P	**Pn**	**00 14 59.5**	**0.0**
AGG			S	**Sn**	**00 15 36.7**	**+2.2**
AGG	**Agios Georgios**	**2.87 157**	P	**Pn**	**00 14 59.5**	**0.0**
AGG			S	**Sn**	**00 15 36.7**	**+2.2**
AGG	**Agios Georgios**	**2.87 157**	P	**Pn**	**00 14 58.8**	**-0.7**
XOR	**Xorichti**	**2.90 142**	P	**Pn**	**00 15 00.5**	**+0.7**
XOR	**Xorichti**	**2.90 142**	P	**Pn**	**00 15 00.5**	**+0.7**
LKD2	**Lefkada island**	**2.90 184**	P	**Pn**	**00 15 00.2**	**+0.4**
LKD2	**Lefkada island**	**2.90 184**	P	**Pn**	**00 15 00.2**	**+0.4**
BLY	**Banja Luka**	**4.10 320**	*e*Pn	**Pn**	**00 15 13.6**	**-2.7**
UDBI	**Udbina**	**4.72 309**	*e*Pn	**Pn**	**00 15 26.5**	**+1.6**
UDBI			Sn	**Sn**	**00 16 17.8**	**-2.3**
UDBI	**Udbina**	**4.72 309**	*e*Pn	**Pn**	**00 15 26.4**	**+1.6**
UDBI			Sn	**Sn**	**00 16 17.8**	**-2.3**
NVLJ	**Novalja**	**5.28 305**	*e*Pn	**Pn**	**00 15 32.5**	**+0.1**
NVLJ			Sn	**Sn**	**00 16 29.3**	**-4.3**
NVLJ	**Novalja**	**5.28 305**	*e*Pn	**Pn**	**00 15 32.5**	**+0.1**
NVLJ			Sn	**Sn**	**00 16 29.3**	**-4.3**

CSEM ***22*** *00:15:27.0, 39.°10N×29.°04E, h7km, MD2.9*
ISK 22 00:15:27.0, 39.°10N×29.°04E, h7km, MD2.9, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TVSB	**Tavsanli**	**0.48**	**43**	*e*PG	Pg	00 15 36.7	+0.5
TVSB				*e*SG	Sg	00 15 43.1	+0.5
TVSB	**Tavsanli**	**0.48**	**43**	*e*Pg	Pg	00 15 36.7	+0.4
TVSB				*e*Sg	Sg	00 15 43.1	+0.6
KULA	**Kula-Manisa**	**0.66**	**207**	*e*PG	Pg	00 15 40.2	+0.6
KULA	**Kula-Manisa**	**0.66**	**207**	*e*Pg	Pg	00 15 40.2	+0.5
KHL	**Karahalli**	**0.86**	**154**	*e*PG	Pg	00 15 44.0	+0.4
KHL	**Karahalli**	**0.86**	**154**	*e*Pg	Pb	00 15 44.0	-0.4
ORLT	**Orhaneli**	**0.95**	**353**	*e*PG	Pb	00 15 45.7	-0.1
ORLT	**Orhaneli**	**0.95**	**353**	*e*Pg	Pb	00 15 45.7	-0.1
AKS	**Akhisar**	**0.98**	**257**	*e*PG	Pb	00 15 46.1	-0.2
AKS	**Akhisar**	**0.98**	**257**	*e*Pg	Pb	00 15 46.1	-0.2
BALB	**Balikesir**	**1.05**	**301**	*e*PG	Pb	00 15 47.6	+0.1
BALB				*e*SG	Sn	00 16 02.5	-0.5
BALB	**Balikesir**	**1.05**	**301**	*e*Pg	Pb	00 15 47.6	+0.1
BALB				*e*Sg	Sn	00 16 02.5	-0.5
MDNY	**Mudanya-Bursa**	**1.27**	**355**	*e*PN	Pg	00 15 51.8	+0.4
MDNY	**Mudanya-Bursa**	**1.27**	**355**	*e*Pn	Pg	00 15 51.8	+0.4
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*PN	Pg	00 15 51.6	+0.1
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*Pn	Pg	00 15 51.6	+0.1
IZI	**Iznik**	**1.28**	**15**	*e*PN	Pb	00 15 51.8	+0.2
IZI	**Iznik**	**1.28**	**15**	*e*Pn	Pg	00 15 51.8	+0.3
GONE	**Gonen-Balikesi**	**1.41**	**312**	*e*PN	Pb	00 15 53.7	0.0
GONE	**Gonen-Balikesi**	**1.41**	**312**	*e*Pn	Pb	00 15 53.7	+0.1
ADVT	**Abdulvahap**	**1.43**	**22**	*e*PN	Pb	00 15 54.2	+0.1
ADVT	**Abdulvahap**	**1.43**	**22**	*e*Pn	Pb	00 15 54.2	+0.1
ARMT	**Armutlu**	**1.47**	**355**	*e*PN	Pn	00 15 54.2	+0.3
ARMT	**Armutlu**	**1.47**	**355**	*e*Pn	Pn	00 15 54.2	+0.3
EDC	**Edincik**	**1.54**	**324**	*e*PN	Pb	00 15 55.5	-0.3
EDC	**Edincik**	**1.54**	**324**	*e*Pn	Pb	00 15 55.6	-0.2
GULT	**Gulveren**	**1.75**	**40**	*e*PN	Pb	00 15 58.8	-0.7
GULT	**Gulveren**	**1.75**	**40**	*e*Pn	Pb	00 15 58.8	-0.7
HRT	**Hereke**	**1.78**	**15**	*e*PN	Pn	00 15 59.0	+0.7
HRT	**Hereke**	**1.78**	**15**	*e*Pn	Pn	00 15 59.0	+0.7
SVRH	**Sivrihisar-ESK**	**1.96**	**79**	*e*PN	Pn	00 16 01.6	+0.9
SVRH	**Sivrihisar-ESK**	**1.96**	**79**	*e*Pn	Pn	00 16 01.6	+0.9
ISK	**Istanbul-Kandi**	**1.96**	**0**	*e*PN	Pn	00 16 01.8	+1.1
ISK	**Istanbul-Kandi**	**1.96**	**0**	*e*Pn	Pn	00 16 01.8	+1.1
SILT	**Sile**	**2.10**	**13**	*e*PN	Pn	00 16 03.7	+1.1
SILT	**Sile**	**2.10**	**13**	*e*Pn	Pn	00 16 03.7	+1.1
MDUB	**Mudurnu**	**2.15**	**50**	*e*PN	Pn	00 16 04.4	+1.0
MDUB	**Mudurnu**	**2.15**	**50**	*e*Pn	Pn	00 16 04.4	+1.0

ISCJB ***22*** *00:16:51.8±0.5, 39.°09N±0.°03×29.°06E±0.°03, h2km±6km, Error ellipse: s-maj=5.2km s-min=4.0km az=159.1*
DDA ***22*** *00:16:51.4, 39.°10N×29.°04E, h7km, Md2.9*
ISK ***22*** *00:16:51.6, 39.°08N×29.°09E, h5km, MD2.8*
CSEM ***22*** *00:16:52.1±0.1, 39.°08N×29.°06E, h5km, MD2.9, Error ellipse: s-maj=1.9km s-min=1.6km az=117.0*
ISC 22 00:16:52.2±1.0, 39.°09N±0.°02×29.°06E±0.°02, h8km±10km, n55, σ0.°41/68, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**260**	P	**Pg**	**00 16 57.6**	**-0.1**
DEMI				S	**Sg**	**00 17 01.6**	**+0.2**
DEMI	**Demirci**	**0.27**	**260**	*i* P	**Pg**	**00 16 57.6**	**-0.1**
DEMI				*i* S	**Sg**	**00 17 01.6**	**+0.2**
GDZ	**Gediz**	**0.33**	**90**	P	**Pg**	**00 16 58.8**	**+0.1**
GDZ				S	**Sg**	**00 17 03.5**	**+0.5**
GDZ	**Gediz**	**0.33**	**90**	*i* P	**Pg**	**00 16 58.8**	**+0.1**
GDZ				*i* S	**Sg**	**00 17 03.5**	**+0.5**
TVSB	**Tavsanli**	**0.47**	**41**	*e*PG	**Pg**	**00 17 01.1**	**-0.4**
TVSB				*e*SG	**Sg**	**00 17 07.3**	**-0.4**
TVSB	**Tavsanli**	**0.47**	**41**	*e*Pg	**Pg**	**00 17 01.1**	**-0.4**
TVSB				*e*Sg	**Sg**	**00 17 07.3**	**-0.4**
KULA	**Kula-Manisa**	**0.66**	**209**	*e*PG	**Pg**	**00 17 04.4**	**-0.5**
KULA	**Kula-Manisa**	**0.66**	**209**	*e*Pg	**Pg**	**00 17 04.4**	**-0.5**
DURS	**Dursunbey**	**0.68**	**318**	P	**Pb**	**00 17 06.0**	**-0.5**
DURS	**Dursunbey**	**0.68**	**318**	*i* P	**Pb**	**00 17 06.0**	**-0.5**
MANT	**Manisa**	**0.72**	**213**	P	**Pg**	**00 17 05.9**	**-0.2**
MANT				S	**Sg**	**00 17 15.4**	**-0.1**
MANT	**Manisa**	**0.72**	**213**	*i* P	**Pg**	**00 17 05.9**	**-0.2**
MANT				*i* S	**Sg**	**00 17 15.4**	**-0.1**
KHAL	**Karahalli**	**0.80**	**155**	P	**Pb**	**00 17 07.9**	**-0.5**
KHAL				S	**Sg**	**00 17 18.4**	**+0.5**
KHAL	**Karahalli**	**0.80**	**155**	*i* P	**Pb**	**00 17 07.9**	**-0.5**
KHAL				*i* S	**Sg**	**00 17 18.4**	**+0.5**
KHL	**Karahalli**	**0.85**	**155**	*e*PG	**Pg**	**00 17 08.2**	**-0.3**
KHL	**Karahalli**	**0.85**	**155**	*e*Pg	**Pg**	**00 17 08.2**	**-0.3**
ORLT	**Orhaneli**	**0.96**	**352**	*e*PG	**Pg**	**00 17 10.4**	**-0.3**
ORLT	**Orhaneli**	**0.96**	**352**	*e*Pg	**Pg**	**00 17 10.4**	**-0.3**
AKS	**Akhisar**	**1.00**	**258**	*e*PG	**Pg**	**00 17 11.1**	**-0.3**
AKS	**Akhisar**	**1.00**	**258**	*e*Pg	**Pg**	**00 17 11.1**	**-0.3**
BALB	**Balikesir**	**1.07**	**301**	*e*PN	**Pb**	**00 17 13.0**	**0.0**
BALB	**Balikesir**	**1.07**	**301**	*e*Pn	**Pb**	**00 17 13.0**	**0.0**
IGD	**Bursa**	**1.18**	**5**	*i* P	**Pg**	**00 17 13.1**	**-1.7**
IGD				*i* S	**Sg**	**00 17 30.0**	**-0.1**
CAVI	**Cavuskoy**	**1.26**	**28**	*e*PN	**Pg**	**00 17 16.2**	**-0.3**
CAVI	**Cavuskoy**	**1.26**	**28**	*e*Pn	**Pg**	**00 17 16.2**	**-0.3**
IZI	**Iznik**	**1.28**	**14**	*e*PN	**Pb**	**00 17 17.3**	**+0.6**
IZI	**Iznik**	**1.28**	**14**	*e*Pn	**Pb**	**00 17 17.3**	**+0.6**
MDNY	**Mudanya-Bursa**	**1.28**	**354**	*e*PN	**Pg**	**00 17 16.8**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.28**	**354**	*e*Pn	**Pg**	**00 17 16.8**	**-0.1**
KCTX	**Karacabey (Bur**	**1.29**	**335**	*e*PN	**Pg**	**00 17 17.0**	**0.0**
KCTX	**Karacabey (Bur**	**1.29**	**335**	*e*Pn	**Pg**	**00 17 17.0**	**0.0**
BORA	**Eskisehir**	**1.33**	**53**	P	**Pn**	**00 17 16.8**	**-0.5**
BORA				S	**Sn**	**00 17 35.4**	**+0.1**
BORA	**Eskisehir**	**1.33**	**53**	*i* P	**Pn**	**00 17 16.8**	**-0.5**
BORA				*i* S	**Sn**	**00 17 35.4**	**+0.1**
GONE	**Gonen-Balikesi**	**1.43**	**312**	*e*PN	**Pb**	**00 17 19.1**	**0.0**
GONE	**Gonen-Balikesi**	**1.43**	**312**	*e*Pn	**Pb**	**00 17 19.1**	**0.0**
ADVT	**Abdulvahap**	**1.44**	**21**	*e*PN	**Pb**	**00 17 19.1**	**-0.2**
ADVT	**Abdulvahap**	**1.44**	**21**	*e*Pn	**Pb**	**00 17 19.1**	**-0.2**
ARMT	**Armutlu**	**1.48**	**354**	*e*PN	**Pb**	**00 17 20.0**	**0.0**
ARMT	**Armutlu**	**1.48**	**354**	*e*Pn	**Pb**	**00 17 20.0**	**0.0**
EDC	**Edincik**	**1.56**	**324**	*e*PN	**Pb**	**00 17 21.1**	**-0.3**
EDC	**Edincik**	**1.56**	**324**	*e*Pn	**Pb**	**00 17 21.1**	**-0.3**
GULT	**Gulveren**	**1.75**	**39**	*e*PN	**Pn**	**00 17 23.4**	**+0.5**
GULT	**Gulveren**	**1.75**	**39**	*e*Pn	**Pn**	**00 17 23.5**	**+0.5**
HRT	**Hereke**	**1.79**	**15**	*e*PN	**Pn**	**00 17 23.4**	**-0.1**
HRT	**Hereke**	**1.79**	**15**	*e*Pn	**Pn**	**00 17 23.5**	**-0.1**
SPNC	**Sapanca-Adapaz**	**1.86**	**31**	*e*PN	**Pn**	**00 17 24.5**	**+0.1**
SPNC	**Sapanca-Adapaz**	**1.86**	**31**	*e*Pn	**Pn**	**00 17 24.5**	**+0.1**
SVRH	**Sivrihisar-ESK**	**1.94**	**79**	*e*PN	**Pn**	**00 17 26.1**	**+0.4**
SVRH	**Sivrihisar-ESK**	**1.94**	**79**	*e*Pn	**Pn**	**00 17 26.1**	**+0.4**
ISK	**Istanbul-Kandi**	**1.97**	**360**	*e*PN	**Pn**	**00 17 26.6**	**+0.6**
ISK	**Istanbul-Kandi**	**1.97**	**360**	*e*Pn	**Pn**	**00 17 26.6**	**+0.6**
SILT	**Sile**	**2.11**	**12**	*e*PN	**Pn**	**00 17 28.6**	**+0.8**
SILT	**Sile**	**2.11**	**12**	*e*Pn	**Pn**	**00 17 28.6**	**+0.8**
MDUB	**Mudurnu**	**2.15**	**49**	*e*P

SVRH	Sivrihisar-ESK	1.95	80	ePN	Pn	00 30 52.9	+0.3
SVRH	Sivrihisar-ESK	1.95	80	ePn	Pn	00 30 52.9	+0.3
MDUB	Mudurnu	2.13	51	ePN	Pn	00 30 55.3	+0.3
MDUB	Mudurnu	2.13	51	ePn	Pn	00 30 55.3	+0.3

JMA 22 00:30:37.3±0.1, 29°.30N×140°.11E, h465km, M3.6, Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	Chichi jima	2.86	140	P		00 31 44.9	+0.3
CBIJ				S	S	00 32 38.3	-0.8
BSO3	Boso 3	5.50	3	eS	S	00 33 20.1	+0.2
JHU	Hanno	6.57	354	P	P	00 32 18.5	+0.7
JHU				eS	S	00 33 37.9	-2.3
JRY	Ryogami san	6.78	352	P	P	00 32 21.3	+1.4
JRY				eS	S	00 33 43.6	-0.5
JAG	Ashikaga	7.13	356	P	P	00 32 24.2	+0.7
JAG				S	S	00 33 47.9	-2.9
JHO	Hitachi	7.30	3	P	P	00 32 27.8	+2.4

IDC ***22*** *00:42:49.9±3.4, 6°.36S×147°.97E, h0km, mb4.0/2, mb1 4.0/4, mb1mx3.6/30, mbtmp3.8/4, ML3.5/1, Error ellipse: s-maj=79.7km s-min=34.4km az=98.0*

ISCJB ***22*** *00:42:55.0±0.7, 6°.55S±0°.06×148°.1E±0°.1, h51km, mb4.6/17, Error ellipse: s-maj=21.0km s-min=7.3km az=11.5*

NEIC ***22*** *00:42:57.3±1.3, 6°.65S×148°.16E, h61km±13km, mb4.5/14, Error ellipse: s-maj=14.5km s-min=9.1km az=117.0*

ISC 22 00:42:56.5±0.9, 6°.57S±0°.07×148°.2E±0°.2, h51km, n23, σ0.78/24, mb4.4/17, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	Port Moresby	2.98	199	Pn	Pn	00 43 41.6	+0.2
PMG	8.9nm,0.3s,baz=17,slow=4.7,SNR=18			Sn	Sn	00 44 18.0	+2.0
CTAO	4.0nm,0.3s,baz=315,slow=20,SNR=2.5 Charters Tower	13.57	188	Pn	Pn	00 46 05.5	-0.9
WRAB	Tennant Creek	18.87	224	eP	P	00 47 12.6	-0.1
WRA	0.6nm,0.4s Warramunga Arr	18.88	224	P	P	00 47 12.6	-0.3
ASAR	0.2nm,0.3s,baz=47,slow=11,SNR=10.0 Alice Springs	21.83	217	P	P	00 47 44.1	-0.6
FITZ	1.5nm,0.6s,baz=51,slow=9.5,SNR=32 Fitzroy Crossi	24.76	240	P	P	00 48 13.1	-0.5
KKM	3.9nm,0.4s,baz=55,slow=7.8,SNR=27 Kota Kinabalu	34.24	291	eP	P	00 49 38.2	+0.2
YULB	6.2nm,0.8s Yu-li	39.69	319	eP	P	00 50 25.6	+1.6
YHNB	15nm,0.3s Yeheng	40.55	321	eP	P	00 50 31.9	+0.7
MAJO	4.4nm,0.6s Matsushiro	43.88	348	eP	P	00 50 57.3	-0.8
KULM	2.2nm,0.5s Kulim	48.85	283	eP	P	00 51 37.4	-0.1
COCO	2.1nm,0.6s West Island	50.87	260	eP	P	00 51 51.8	-1.0
BJT	336nm,0.4s Baijiatuan	54.94	330	eP	P	00 52 21.7	-0.6
ULN	2.9nm,0.5s Ulaanbaatar	65.15	331	eP	P	00 53 32.2	-0.2
LSA	0.6nm,0.4s Lhasa	65.49	307	P	P	00 53 35.4	0.0
MA2	3.3nm,0.4s Magadan	65.96	1	eP	P	00 53 37.7	+0.5
YAK	5.9nm,0.3s Yakutsk	69.87	351	eP	P	00 54 02.6	+0.9
DGAR	9.8nm,0.5s Diego Garcia	75.05	264	eP	P	00 54 33.6	+0.1
PMR	8.7nm,0.3s Palmer	83.22	25	eP	P	00 55 17.6	+0.4
COLA	0.7nm,0.6s College	85.23	23	P	P	00 55 27.2	0.0
ARU	0.8nm,0.5s Arti	95.19	326	eP	P	00 56 14.6	+0.2
LSZ	0.4nm,0.4s Lusaka	116.68	249	ePKPdf	PKPdf	01 01 35.6	-0.7
TORD	Torodi Ar. Bea	146.33	284	PKPbc	PKPbc	01 02 32.5	-0.3
	0.3nm,0.4s,baz=76,slow=3.7,SNR=5.1						

PRE 22 00:44:56.2±1.0, 28°.70S×20°.42E, h5km, ML1.8, South Africa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KEIM	Keimoes	0.48	90	eP	Pg	00 45 05.6	+0.1
KEIM				eS	Sg	00 45 12.0	+0.1
KEIM				AML	AML	00 45 14.9	
	comp=Z,24nm,0.3s						
UPI	Upington	0.81	66	eP	Pg	00 45 12.0	+0.3
UPI				eS	Sg	00 45 23.0	+0.8
KOMG	Komaggas	2.79	246	eP	Pn	00 45 43.0	+1.5
KOMG				eS	Sn	00 46 15.2	-0.3
KOMG				AML	AML	00 46 22.4	
	comp=Z,4.5nm,0.4s						
CVNA	Calvinia	2.83	191	eP	Pn	00 45 42.9	+0.7
CVNA				eS	Sn	00 46 15.9	-0.8
CVNA				AML	AML	00 46 20.4	
	comp=Z,5.1nm,0.7s						

NIED ***22*** *00:57:00,37°.00N×143°.70E, h5km, Mw4.0 Best double couple: M0:1.09000×10^15 NP1:φs77.00000°, δ34.00000°, λ-26.00000°. NP2:φs189.00000°, δ76.00000°, λ-121.00000°.*

IDC ***22*** *00:57:47.8±1.3, 36°.93N×144°.01E, h0km, mb3.9/16, mb1 4.0/22, mb1mx3.9/71, mbtmp3.9/22, ML3.8/5, MS3.2/3, Ms1 3.2/3, ms1mx2.6/46, Error ellipse: s-maj=30.9km s-min=17.4km az=166.0*

ISCJB ***22*** *00:57:51.1±1.4, 36°.99N±0°.04×143°.70E±0°.04, h31km±11km, mb3.9/20, MS3.6/1, Error ellipse: s-maj=7.1km s-min=4.8km az=149.6*

NEIC ***22*** *00:57:52.0±0.7, 36°.80N×143°.95E, h35km, mb4.3/4, Error ellipse: s-maj=13.5km s-min=10.6km az=145.0*

JMA ***22*** *00:57:52.0±0.2, 36°.98N×143°.70E, h57km, M4.3*

ISC 22 00:57:52.8±2.1, 37°.01N±0°.05×143°.72E±0°.05, h28km±16km, n57, σ1.02/56, mb4.1/20, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	2.30	280	P	Pn	00 58 28.2	-0.7
JFK				S	Sn	00 58 55.3	-0.9
ONAJ	Iwakimizuishiy	2.34	273	P	Pn	00 58 28.8	-0.6
ONAJ				S	Sn	00 58 56.5	-0.7
JHO	Hitachi	2.56	262	P	Pn	00 58 31.8	-0.6
JHO				eS	Sn	00 59 00.1	-2.5
JFT	Otama	2.74	282	P	Pn	00 58 35.5	+0.5
JFT				S	Sn	00 59 07.7	+0.5
JMK	Ichinoseki	2.77	315	P	Pn	00 58 34.8	-0.5
JMK				eS	Sn	00 59 07.1	-0.6
JOM	Ohasama	3.12	323	P	Pn	00 58 39.6	-0.5
JOM				S	Sn	00 59 15.4	-0.9
BSO1	Boso 1	3.24	224	P	Pn	00 58 39.7	-1.5
JYK	Kaneyama	3.27	307	P	Pn	00 58 42.4	+0.2
JYK				eS	Sn	00 59 20.6	+0.5
JAG	Ashikaga	3.47	262	P	Pn	00 58 44.9	-0.1
JAG				eS	Sn	00 59 23.1	-2.1
JANG	Nango	3.78	334	P	Pn	00 58 48.6	-0.6
JANG				eS	Sn	00 59 30.0	-2.7
JRY	Ryogami san	4.00	257	P	Pn	00 58 51.8	-0.5
JRY				eS	Sn	00 59 35.9	-2.4
JOD2	Odawara 2	4.13	246	P	Pn	00 58 53.2	-0.8
JOD2				S	Sn	00 59 39.3	-2.1
JYN	Shimob	4.44	252	P	Pn	00 58 57.1	-1.3
MJAR	Matsushiro Arr	4.45	266	Pn	Pn	00 58 59.2	+0.8
MJAR	5.7nm,0.3s,baz=87,slow=15,SNR=50			Sn	Sn	00 59 48.7	-0.5
	3.2nm,0.3s,baz=186,slow=26,SNR=4.8						
MAJO	Matsushiro	4.45	266	ePn	Pn	00 58 59.7	+1.3
MAT	Matsushiro	4.45	266	P	Pn	00 58 59.2	+0.8
MAT				eS	Sn	00 59 48.0	-1.2
JOT	Ohata	4.83	335	P	Pn	00 59 03.2	-0.5
JOT				eS	Sn	00 59 56.0	-2.7
ERM	Erimo	5.02	355	ePn	Pn	00 59 04.6	-1.6
	30nm,0.8s						
JHJ	Hachijo jima 2	5.04	221	Pn	Pn	00 59 03.8	-2.8
	19nm,0.3s,baz=90,slow=20,SNR=7.5						
JHJ				LR	LR	01 01 32.1	
	comp=Z,218nm,20.2s,baz=299,slow=44						
JKB	Kayabe	5.30	338	P	Pn	00 59 09.6	-0.4
JKB				S	Sn	01 00 05.9	-4.2
ASAJ	Asahikawa	7.15	354	Pn	Pn	00 59 34.1	-1.4
	2.9nm,0.3s,baz=182,slow=15,SNR=8.4						
ASAJ				Sn	Sn	01 00 51.3	-4.5
	2.6nm,0.3s,baz=108,slow=16,SNR=5.6						
ASAJ	Asahikawa	7.15	354	ePn	Pn	00 59 35.8	+0.3
ASAJ				eSn	Sn	01 00 55.1	-0.6
CBIJ	Chichi jima	9.97	188	Pn	Pn	01 00 07.0	-7.1
CBIJ				Sn	Sn	01 01 48.0	-17
JCJ	Chichijima	9.97	188	Pn	Pn	01 00 07.0	-7.1
	5.0nm,0.3s,baz=297,slow=22,SNR=6.7						
JCJ				Sn	Sn	01 01 48.0	-17
	baz=73,slow=18						
USRK	Ussuriysk Ar.	11.44	313	Pn	Pn	01 00 34.4	+0.1
	0.2nm,0.3s,baz=112,slow=13,SNR=2.7						
KSRS	Korea Array	12.60	277	Pn	Pn	01 00 51.8	+1.7
	0.2nm,0.3s,baz=91,slow=12,SNR=5.7						
KSRS				LR	LR	01 06 26.7	
	comp=Z,54nm,18.5s,baz=95,slow=40						
KSAR	Wonju Array Be	12.63	277	Pn	Pn	01 00 51.8	+1.2
MDJ	Mudanjiang	13.11	310	Pn	Pn	01 00 59.3	+2.2
KLR	Kul'dur	14.99	328	Pn	Pn	01 01 23.4	+0.7
	0.2nm,0.3s,baz=143,slow=15,SNR=4.4						
SEY	Seymchan	26.50	9	P	P	01 03 26.8	-0.7
	4.5nm,0.8s,baz=167,slow=3.0,SNR=12						
YAK	Yakutsk	26.53	345	eP	P	01 03 26.9	-0.9
	6.2nm,0.6s						
H11N2	WAKE ISLAND Hy	26.58	124	T	T	01 30 30.6	
	baz=316,slow=75,SNR=25						
H11N1	WAKE ISLAND Hy	26.59	124	T	T	01 30 28.5	
	baz=316,slow=75,SNR=13						
H11N3	WAKE ISLAND Hy	26.59	124	T	T	01 30 27.9	
	baz=316,slow=75,SNR=15						
H11S1	WAKE ISLAND Hy	27.33	126	T	T	01 31 25.9	
	baz=318,slow=76,SNR=8.2						
H11S3	WAKE ISLAND Hy	27.33	126	T	T	01 31 27.1	
	baz=318,slow=76,SNR=5.7						
H11S2	WAKE ISLAND Hy	27.34	126	T	T	01 31 27.1	
	baz=318,slow=76,SNR=3.2						
ENH	Enshi	29.17	267	eP	P	01 03 51.6	-0.2
	2.4nm,0.4s						
SONM	Songino Array	29.33	304	P	P	01 03 56.0	+2.8
	0.9nm,0.6s,baz=106,slow=9.6,SNR=5.7						
ZALV	Zalesovo Beam	43.29	312	P	P	01 05 52.6	+0.8
	0.4nm,0.3s,baz=88,slow=7.1,SNR=2.5						
MKAR	Makanchi Array	45.69	303	P	P	01 06 11.8	+0.6
	0.2nm,0.7s,baz=84,slow=7.0,SNR=2.7						
KURK	Kurchatov	47.40	308	eP	P	01 06 24.7	+0.4
	2.0nm,0.6s						
KURBB	Kurchatov Arra	47.47	308	P	P	01 06 25.9	+0.9
	0.3nm,0.4s,baz=81,slow=7.9,SNR=5.7						
COLA	College	48.12	32	eP	P	01 06 28.7	-1.0
	1.3nm,0.5s						
ILAR	Eielson Array	48.53	32	P	P	01 06 30.2	-2.8
	0.9nm,0.7s,baz=266,slow=6.5,SNR=12						
INK	Inuvik	53.57	27	P	P	01 07 09.9	-0.8
	0.7nm,0.4s,baz=290,slow=5.7,SNR=5.3						
YKA	Yellowknife Ar	62.90	31	P	P	01 08 15.0	-1.0
	0.7nm,0.7s,baz=304,slow=7.5,SNR=5.2						
ARCES	ARCESS Array B	64.66	340	P	P	01 08 28.6	+1.0
	2.1nm,0.8s,baz=40,slow=8.5,SNR=2.9						
AFI	Afiamalu	65.72	132	LR	LR	01 29 38.6	
	comp=Z,42nm,21.2s,baz=290,slow=29						
FINES	FINESS Array B	69.69	333	P	P	01 08 59.1	-0.4
	2.0nm,0.8s,baz=32,slow=11,SNR=5.5						
KBZ	Khabaz	72.31	312	P	P	01 09 17.3	+1.6
	1.5nm,0.8s,baz=20,slow=4.6,SNR=3.8						
NVAR	Mina Array Bea	73.52	54	P	P	01 09 22.9	-0.4
	0.4nm,0.7s,baz=276,slow=8.0,SNR=3.3						
HFS	Hagfors	74.86	337	P	P	01 09 31.4	+1.0
	1.3nm,0.6s,baz=62,slow=6.7,SNR=6.7						
NB2	NORSAR Subarra	74.91	338	P	P	01 09 31.1	+0.3
	comp=Z,1.0nm,0.6s,baz=40,slow=5.9						
NOA	NORSAR Array B	74.91	338	P	P	01 09 31.4	+0.6
	comp=Z,1.6nm,0.7s,baz=40,slow=5.7,SNR=6.1						
GERES	GERESS Array B	83.69	329	P	P	01 10 19.4	+0.4
	comp=Z,0.1nm,0.3s,baz=48,slow=8.0,SNR=5.6						
TXAR	Lajitas Array	88.66	54	P	P	01 10 43.0	-0.8
	comp=Z,0.6nm,0.7s,baz=303,slow=3.4,SNR=9.8						

ISCJB ***22*** *00:59:19.6±0.2, 7°.30S±0°.03×129°.17E±0°.04, h131km, mb4.5/42, Error ellipse: s-maj=6.1km s-min=4.1km az=150.2*

IDC ***22*** *00:59:20.7±2.8, 7°.28S×128°.97E, h124km±26km, mb3.8/15, mb1 4.0/18, mb1mx3.8/47, mbtmp4.3/18, MS2.9/2, Ms1 2.9/2, ms1mx2.6/39, Error ellipse: s-maj=21.8km s-min=11.9km az=65.0*

NEIC ***22*** *00:59:24.7±0.5, 7°.40S×129°.21E, h170km±5km, mb4.8/31, Error ellipse: s-maj=5.8km s-min=4.4km az=223.0*

DJA ***22*** *00:59:24.8±0.3, 7°.S±3°.×12°.9E±°, h165km±6km, M5.0/22, mb4.7/22, mB5.4/6, MLv5.3/9, Mw(mB)4.8/6*

ISC 22 00:59:21.0±0.3, 7°.44S±0°.04×129°.17E±0°.05, h131km, n118, σ2.00/117, mb4.4/42, 1C, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SAUI	Saumlaki	2.18	105	P	Pn	01 00 04.6	+7.3
SAUI	Saumlaki	2.18	105	ePn	Pn	01 00 03.8	+6.5
BNDI	Bandanaira	2.99	14	P	Pn	01 00 13.1	+5.5
SOEI	Soe	5.36	244	P	Pn	01 00 42.5	+3.3
	330nm,0.8s,3μm2.2nm						
SOEI	Soe	5.36	244	ePn	Pn	01 00 43.4	+4.2
FAKI	Fak Fak	5.44	35	P	Pn	01 00 41.5	+1.4
	112nm,0.8s,8μm2.4nm						
FAKI	Fak Fak	5.44	35	ePn	Pn	01 00 43.5	+3.4
MTN	Manton Dam	5.71	160	ePn	Pn	01 00 48.7	+5.0
SANI	Sanana	6.22	329	P	Pn	01 00 53.8	+3.3
	132nm,0.8s,2μm0.4nm						
LBMI	Labuha	6.96	346	P	Pn	01 01 03.1	+2.6
	339nm,0.8s,1.3nm						
MMRI	Maumere	6.96	260	P	Pn	01 01 03.7	+3.1
	111nm,1.0s,0.4nm						
MMRI	Maumere	6.96	260	ePn	Pn	01 01 05.0	+4.5
RKPI	Ransiki, Papua	7.72	41	P	Pn	01 01 13.7	+2.9
	316nm,0.5s,12μm3.7nm						
LUWI	Luwuk	9.00	315	ePn	Pn	01 01 31.2	+3.2
KAPI	Kappang	9.66	284	ePn	Pn	01 01 41.4	+4.5
MRSI	Marisa	10.66	317	P	Pn	01 01 54.1	+3.8
	116nm,1.1s						
FITZ	Fitzroy Crossi	11.14	198	P	Pn	01 01 57.6	+0.9
	2.0nm,0.3s,baz=14,slow=12,SNR=86						
FITZ				S	Sn	01 03 55.1	-4.4
	7.1nm,0.3s,baz=97,slow=22,SNR=6.8						
FITZ				LR	LR	01 07 30.0	
	comp=Z,30nm,21.6s,baz=64,slow=44						
FITZ	Fitzroy Crossi	11.14	198	ePn	Pn	01 01 58.1	+1.4
FITZ				S	Sn	01 03 55.1	-4.4
PLAI	Plampang	11.36	262	P	Pn	01 02 00.1	+0.5
	79nm,0.8s						
TWSI	Taliwang, Sumb	12.23	263	P	Pn	01 02 11.2	+0.2
	32nm,1.0s						
JAY	Jayapura	12.49	68	P	Pn	01 02 15.5	+1.0
	0.0nm,0.3s,baz=270,slow=20,SNR=2.0						
JAY	Jayapura	12.49	68	P	Pn	01 02 17.7	+3.3
	15nm,1.0s						
WRAB	Tennant Creek	13.40	158	ePn	Pn	01 02 26.6	+0.5
WRA	Warramunga Arr	13.41	159	P	Pn	01 02 26.9	+0.7
	12nm,0.3s,baz=330,slow=14,SNR=203						
WRA				S	Sn	01 04 51.3	-3.0
	8.5nm,0.3s,baz=333,slow=23,SNR=7.2						
WB2	Warramunga Arr	13.41	158	ePn	Pn	01 02 26.7	+0.4
JAGI	Jajag, Banyuwa	14.90	265	P	Pn	01 02 45.1	-0.2
	48nm,1.5s						
COEN	Coen	15.21	116	ePn	P	01 02 51.7	+0.7
	79nm,1.4s						
MYLDM	Lahad Datu	16.44	319	eP	P	01 03 06.0	+1.4
	20nm,1.0s						
AS31	Alice Springs	16.77	165	eP	P	01 03 10.9	+2.7
	20nm,0.4s						
ASAR	Alice Springs	16.77	165	P	P	01 03 10.9	+2.7
	8.8nm,0.3s,baz=339,slow=9.1,SNR=380						
ASAR				S	Sn	01 06 13.7	-1.5
	1.8nm,0.3s,baz=343,slow=24,SNR=4.3						
AS01	Alice Springs	16.78	165	eP	Pn	01 03 10.6	+2.3
PWJI	Pagerwojo	17.21	267	P	P	01 03 11.2	-2.0
	38nm,1.1s						
PMG	Port Moresby	17.91	98	P	Pn	01 03 24.6	+2.6
	0.8nm,0.3s,baz=208,slow=12,SNR=3.7						
PMG	Port Moresby	17.91	98	eP	Pn	01 03 22.1	+0.1
	19nm,0.8s						
UGM	Wanagama	18.48	267	P	P	01 03 26.4	-0.7
	126nm,2.0s						
UGM	Wanagama	18.48	267	eP	Pn	01 03 29.9	+1.0
	201nm,1.3s						
MANU	Manus Island	18.91	74	eP	Pn	01 03 33.1	-0.7
	12nm,0.8s						
SBUM	Sibu	19.55	300	eP	Pn	01 03 40.5	-0.9
	22nm,0.9s						
KSM	Kuching	20.79	294	eP	Pn	01 03 54.3	-1.6
	39nm,0.8s						
CTA	Charters Tower	20.80	129	P	Pn	01 03 56.2	+0.3
	9.2nm,0.8s,baz=295,slow=32,SNR=6.6						
CISI	Cisompet, Garu	21.17	268	eP	P	01 03 58.3	+2.1
	66nm,0.9s						
GUMO	Guam	26.07	37	LR	LR	01 16 02.8	
	comp=Z,60nm,20.1s,baz=238,slow=38						
MYKOM	Kota Tinggi	26.87	289	eP	P	01 04 50.5	+0.7
	9.9nm,0.7s						
STKA	Stephens Creek	26.94	156	P	P	01 04 51.8	+1.6
	5.0nm,0.6s,baz=330,slow=8.8,SNR=8.2						
STKA	Stephens Creek	26.94	156	eP	P	01 04 50.8	+0.6
STKA				epP	pP	01 05 20.9	+2.7
NWAO	Narrogin (SRO)	27.68	202	eP	P	01 04 56.9	+0.1
	143nm,1.9s						
HNR	Honiara	30.51	96	eP	P	01 05 21.4	-0.6
	76nm,0.7s						
KULM	Kulim	31.14	293	eP	P	01 05 28.2	+0.6
	7.6nm,0.8s						
YULB	Yu-li	31.59	346	eP	P	01 05 31.8	+0.3
	5.1nm,1.0s						
PSI	Prapat	31.84	288	eP	P	01 05 32.4	-1.6
	8.8nm,0.9s						
SSLB	Suanglung	32.05	346	eP	P	01 05 36.0	+0.5
	5.2nm,0.7s						
SSLB				eS	S	01 10 33.8	-4.3
COCO	West Island	32.19	259	eP	P	01 05 37.2	+0.3
	689nm,1.8s						
YOJ	Yonaguni jima	32.27	349	eP	P	01 05 38.5	+1.1
	53nm,1.0s						
GSI	Gunungsitoli	32.69	284	eP	P	01 05 42.0	+0.7
	7.4nm,0.8s						
TATO	Taipei	33.07	347	eP	P	01 05 44.3	-0.1
	64nm,1.4s						
LHMI	Lhok Sumawe	34.52	290	eP	P	01 05 57.4	+0.3
	45nm,1.0s						
CBIJ	Chichi jima	36.57	20	eP	P	01 06 13.1	-1.3
	42nm,0.9s						
LHI	Lord Howe Isla	36.76	135	eP	P	01 06 15.4	-0.6
	302nm,1.8s						
TAU	Tasmania Unive	38.78	159	eP	P	01 06 33.2	+0.5
	56nm,1.3s						
CM01	Chiang Mai Arr	39.35	311	eP	P	01 06 37.1	-0.8
CMAR	Chiang Mai Arr	39.38	311	P	P	01 06 37.3	-0.9
	1.8nm,0.4s,baz=145,slow=3.5,SNR=8.4						
CHTO	Chiang Mai	39.60	312	eP	P	01 06 38.7	-1.3
	8.0nm,1.2s						
WHN	Wuhan	40.35	340	P	P	01 06 48.3	+2.4
KMI	Kunming	41.35	322	P	P	01 06 56.9	+2.4
KMI				pmax	pmax		
	comp=Z,12nm,0.7s						
KMI				pmax	pmax		
	comp=Z,93nm,4.8s						
TARA	Tarawa	44.52	80	eP	P	01 07 19.4	-0.6
	comp=Z,78nm,1.0s						
KS15	Wonju Array Si	44.66	359	eP	P	01 07 20.4	-0.2
KSAR	Wonju Array Be	44.66	359	P	P	01 07 20.5	-0.2
KSRS	Korea Array	44.67	359	P	P	01 07 20.5	-0.2
	comp=Z,0.6nm,0.5s,baz=176,slow=9.1,SNR=5.9						
KS01	Wonju Array Si	44.70	359	eP	P	01 07 20.8	-0.2
CD2	Chengdu	45.24	329	P	P	01 07 25.4	0.0
CD2				pmax	pmax		
	comp=Z,2.0nm,0.6s						
BJI	Beijing	48.74	347	P	P	01 07 53.0	+0.6
BJI				pmax	pmax		
	comp=Z,7.0nm,1.0s						
LZH	Lanzhou	49.41	333	eP	P	01 07 59.0	+1.2
LZH				pP	pP	01 08 39.8	+12
LZH				sP	sP	01 09 00.0	+17
LZH				PP	PP	01 09 56.5	+3.3
LZH				pmax	pmax		
	comp=Z,22nm,1.3s						
LZH				pmax	pmax		
	comp=Z,75nm,5.4s						
HHC	Hu-ho-hao-te	50.71	343	eP	P	01 08 08.1	+0.7
HHC				pmax	pmax		
	comp=Z,34nm,1.1s						
HHC				pmax	pmax		
	comp=Z,120nm,6.7s						
CN2	Changchun	51.11	357	eP	P	01 08 14.0	+3.8
GUN	Gumba	54.62	312	eP	P	01 08 35.5	-1.3
	comp=Z,25nm,0.6s						
PKIN	Phulchoki	54.80	311	eP	P	01 08 36.0	-2.0
	comp=Z,8.6nm,0.6s						
KKN	Kakani	55.00	311	eP	P	01 08 38.0	-1.4
	comp=Z,9.8nm,0.6s						
DMN	Daman	55.03	311	eP	P	01 08 38.4	-1.2
	comp=Z,20nm,0.8s						
GKN	Gorkha	55.59	311	eP	P	01 08 42.1	-1.4
	comp=Z,18nm,0.5s						
KOLN	Koldanda	56.25	310	eP	P	01 08 47.1	-1.2
	comp=Z,22nm,0.7s						
PYUN	Piuthan	56.88	310	eP	P	01 08 51.9	-0.8
	comp=Z,54nm,0.8s						
ULN	Ulaanbaatar	58.43	343	eP	P	01 09 02.8	-0.3
	comp=Z,1.8nm,0.7s						
SONM	Songino Array	58.60	342	P	P	01 09 02.5	-1.8
	comp=Z,0.5nm,0.6s,baz=158,slow=8.5,SNR=4.0						
SONA1	Songino Array	58.60	342	eP	P	01 09 03.7	-0.6
KNTN	Kanton	59.03	89	eP	P	01 09 06.2	-1.6
	comp=Z,92nm,1.0s						
CASY	Casey	60.15	189	eP	P	01 09 13.2	-1.2
	comp=Z,19nm,1.4s						
WMQ	Urumqi	63.31	328	eP	P	01 09 36.9	+0.8
PETK	Petropavlovsk-	65.00	19	P	P	01 09 46.6	-0.2
	comp=Z,0.8nm,0.5s,baz=155,slow=4.9,SNR=6.7						
KSH	Kashi	67.78	318	eP	P	01 10 06.4	+1.3
KSH				epP	pP	01 10 48.8	+12
KSH				esP	sP	01 11 07.4	+16
KSH				eScP		01 14 17.6	
KSH				PcS		01 14 34.5	
KSH				S	S	01 18 47.5	-5.3
KSH				ScS	SKiKP	01 19 44.1	-4.8
KSH				pmax	pmax		
	comp=Z,73nm,4.3s						
KSH				LR	LR		
	comp=N,100nm,5.8s						
KSH				LR	LR		
	comp=E,110nm,4.3s						
KSH				LR	LR		
	comp=Z,180nm,7.2s						
MK01	Makanchi Array	68.12	327	eP	P	01 10 06.0	-0.9
MK31	Makanchi Array	68.14	327	eP	P	01 10 05.8	-1.2
MKAR	Makanchi Array	68.14	327	P	P	01 10 06.3	-0.7
	comp=Z,2.1nm,0.5s,baz=116,slow=7.6,SNR=26	

comp=Z,0.3nm,0.6s,baz=286,slow=0.7,SNR=5.4
TORD Torodi Ar. Bea 128.08 281 PKP **PKPdf 01 18 12.1 -0.6**
comp=Z,1.5nm,0.8s,baz=68,slow=2.6,SNR=9.1
TKL Tuckaleechee C 138.80 42 PKP **PKPdf 01 18 33.0 +0.7**
comp=Z,1.7nm,0.6s,baz=355,slow=19,SNR=2.2
CPUP Villa Florida 145.85 170 PKPbc **PKPab 01 18 46.6 +0.3**
comp=Z,8.4nm,0.8s,baz=200,slow=2.2,SNR=19
ATAH Atahualpa 148.94 117 PKPbc **PKPab 01 18 57.4 -2.1**
comp=Z,3.7nm,0.7s,baz=268,slow=7.3,SNR=4.4
LPAZ La Paz 150.87 144 PKPbc **PKPbc 01 18 59.8 -0.1**

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*ISCJB **22** 01:11:11.3±0.5, 23°.66N±0°.03×122°.05E±0°.02, h21km±4km, Error ellipse: s-maj=4.7km s-min=2.5km az=156.6*
*JMA **22** 01:11:11.2±0.2, 23°.66N×122°.00E, h26km±5km, M2.5*
*TAP **22** 01:11:12.2, 23°.69N×121°.95E, h17km±1km, ML2.8, D*
ISC 22 01:11:10.7±1.1**, 23°.67N**±0°.03×**122°.02E**±0°.02**, h16**km±9km**, n35**, σ0.9**50**/65**, 6C-2D, Taiwan region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TEGC	**Jichi Village**	**0.44**	**275**	*eP*	**Pn**	**01 11 21.7**	**-0.7**
	baz=272						
TEGC				*e*S	**Sn**	**01 11 28.7**	**-1.3**
	baz=272						
ESL	**Shilin**	**0.56**	**285**	*e*P	**Pb**	**01 11 22.3**	**+0.3**
	baz=284						
TWD	**Chiawan**	**0.56**	**317**	⇑P	**Pb**	**01 11 22.9**	**+0.7**
	baz=321						
TWD				S	**Sb**	**01 11 30.8**	**+0.8**
	baz=321						
EHY	**Hungye**	**0.66**	**256**	⇑*i*P	**Pb**	**01 11 24.3**	**+0.5**
	baz=251						
EHY				*i* S	**Sb**	**01 11 33.4**	**+0.6**
	baz=251						
TWF1	**Yuli**	**0.73**	**245**	⇑*i*P	**Pb**	**01 11 25.5**	**+0.4**
	baz=240						
TWF1				*i* S	**Sb**	**01 11 35.4**	**+0.5**
	baz=240						
ENA	**Nanau**	**0.80**	**341**	*e*S	**Sb**	**01 11 37.7**	**+1.0**
	baz=346						
WDT	**Danda**	**0.82**	**276**	⇑P	**Pb**	**01 11 26.9**	**+0.1**
	baz=274						
WDT				*e*S	**Sg**	**01 11 37.7**	**+0.1**
	baz=274						
WHF	**Hehuan Shan**	**0.84**	**305**	P	**Pb**	**01 11 27.3**	**+0.2**
	baz=306						
WHF				S	**Sb**	**01 11 38.5**	**+0.2**
	baz=306						
TWC	**Suao**	**0.95**	**351**	*e*S	**Sn**	**01 11 42.5**	**-0.1**
	baz=355						
TWT	**Tachien**	**0.97**	**307**	⇑P	**Pn**	**01 11 29.8**	**0.0**
	baz=307						
TWT				S	**Sb**	**01 11 41.8**	**0.0**
	baz=307						
NNS	**Nan Shan**	**0.97**	**323**	P	**Pg**	**01 11 29.6**	**+0.1**
	baz=325						
NNS				S	**Sb**	**01 11 41.9**	**+0.1**
	baz=325						
YUS	**Yu-Shan**	**1.00**	**260**	⇑P	**Pb**	**01 11 30.0**	**+0.1**
	baz=257						
YUS				*e*S	**Sb**	**01 11 42.5**	**-0.4**
	baz=257						
SMLT	**Sun Moon Lake**	**1.05**	**282**	P	**Pb**	**01 11 30.7**	**+0.2**
	baz=281						
SMLT				*e*S	**Sn**	**01 11 45.5**	**+0.3**
	baz=281						
ENTT	**Nioudou**	**1.05**	**337**	*e*P	**Pg**	**01 11 31.6**	**+0.5**
	baz=340						
ENTT				S	**Sg**	**01 11 44.7**	**-0.1**
	baz=340						
TYC	**Yuchr**	**1.09**	**283**	*e*P	**Pb**	**01 11 31.1**	**-0.1**
	baz=282						
TYC				*e*S	**Sg**	**01 11 46.1**	**+0.1**
	baz=282						
ALS	**Alishan**	**1.12**	**262**	⇓P	**Pg**	**01 11 32.5**	**-0.1**
	baz=260						
ALS				S	**Sb**	**01 11 46.8**	**+0.3**
	baz=260						
JYNG	**Yonagunijimaku**	**1.15**	**47**	P	**Pg**	**01 11 32.6**	**-0.3**
JYNG				S	**Sg**	**01 11 47.7**	**-0.3**
NSK	**Sanguang**	**1.17**	**329**	P	**Pg**	**01 11 33.3**	**0.0**
	baz=331						
NSK				S	**Sb**	**01 11 46.7**	**-0.8**
	baz=331						
YOJ	**Yonaguni jima**	**1.20**	**49**	P	**Pb**	**01 11 33.3**	**+0.2**
YOJ				*e*S	**Sn**	**01 11 48.7**	**-0.1**
TWG	**Pinlang**	**1.21**	**226**	*e*P	**Pg**	**01 11 34.1**	**0.0**
	baz=222						
TWG				*e*S	**Sn**	**01 11 49.2**	**+0.1**
	baz=222						
CHN5	**Tsauling**	**1.23**	**267**	⇓P	**Pg**	**01 11 34.2**	**-0.3**
	baz=265						
CHN5				*e*S	**Sb**	**01 11 49.8**	**+0.4**
	baz=265						
TCU	**Taichung**	**1.32**	**291**	*e*S	**Sn**	**01 11 50.8**	**-0.9**
	baz=291						
TWQ1	**Liyutan**	**1.32**	**301**	*e*P	**Pg**	**01 11 36.4**	**+0.1**
	baz=301						
TWQ1				*e*S	**Sg**	**01 11 53.1**	**-0.5**
	baz=301						
NSTT	**Nanjuang**	**1.33**	**316**	*e*P	**Pg**	**01 11 36.3**	**-0.1**
	baz=317						
NSTT				*e*S	**Sb**	**01 11 52.6**	**+0.4**
	baz=317						
CHN4	**Tsaushan**	**1.35**	**257**	*e*P	**Pb**	**01 11 36.1**	**+0.5**
	baz=254						
CHN4				*e*S	**Sg**	**01 11 53.7**	**-0.6**
	baz=254						
WTP	**Ta-pu**	**1.36**	**252**	*e*P	**Pb**	**01 11 35.8**	**0.0**
	baz=249						
WTP				S	**Sb**	**01 11 53.1**	**+0.2**
	baz=249						
NSY	**Sanyi**	**1.37**	**303**	*e*S	**Sg**	**01 11 54.7**	**-0.3**
	baz=303						
SGST	**Jiashian**	**1.44**	**246**	*e*P	**Pn**	**01 11 36.3**	**+0.1**
	baz=243						
SGST				*e*S	**Sn**	**01 11 54.9**	**+0.1**
	baz=243						
CHN1	**Nanshi**	**1.45**	**251**	*e*P	**Pb**	**01 11 37.5**	**+0.2**
	baz=248						
CHN1				*e*S	**Sn**	**01 11 55.3**	**+0.3**
	baz=248						
TWK	**Hsinying**	**1.46**	**254**	*e*P	**Pb**	**01 11 38.0**	**+0.4**
	baz=252						
TWK				*e*S	**Sb**	**01 11 56.2**	**+0.3**
	baz=252						
HATJ	**Hateruma jima**	**1.68**	**76**	P	**Pn**	**01 11 39.4**	**0.0**
HATJ				S	**Sn**	**01 12 00.5**	**-0.1**
IRIF	**Iriomote-Funau**	**1.70**	**67**	P	**Pn**	**01 11 40.1**	**+0.4**
IRIF				S	**Sn**	**01 12 01.2**	**+0.1**
JKRS	**Kuro-shima**	**1.91**	**72**	P	**Pn**	**01 11 42.8**	**+0.3**
JKRS				*e*S	**Sn**	**01 12 07.0**	**+0.8**
JIJ	**Ishigaki jima**	**2.06**	**70**	P	**Pn**	**01 11 44.7**	**0.0**
JIJ				S	**Sn**	**01 12 08.6**	**-1.4**
JISG	**Ishigakijimahi**	**2.28**	**66**	P	**Pn**	**01 11 47.5**	**-0.2**
JISG				S	**Sn**	**01 12 13.9**	**-1.6**

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*CSEM **22** 01:12:22.5, 38°.46N×26°.79W, h0km, ML2.5*
PDA 22 01:12:22.5±1.2**, 38°.46N**×**26°.79W, h0**km±5km**, MD3.5, ML2.5, Error ellipse: s-maj=8.3km s-min=1.5km az=32.0, Azores Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ADH	**Angra Heroismo**	**0.40**	**299**	*e*P	Pg	01 12 29.7	-0.5
ADH				*e*S	Sg	01 12 35.3	0.0
ADH	**Angra Heroismo**	**0.40**	**299**	*e*P	Pg	01 12 29.7	-0.5
ADH				*e*S	Sg	01 12 35.3	0.0
ADH				A	A	01 12 41.5	
	141nm,0.5s						
PMAN	**Manadas**	**1.03**	**280**	*e*P	Pg	01 12 38.6	-3.7
PMAN				*e*S	Sg	01 12 52.0	-3.7
PMAN	**Manadas**	**1.03**	**280**	*e*P	Pg	01 12 38.6	-3.7
PMAN				*e*S	Sg	01 12 52.0	-3.7
PMAN				A	A	01 12 53.0	
	103nm,0.2s						
PSET	**Sete Cidades**	**1.06**	**127**	*e*P	Pg	01 12 39.9	-2.8
PSET				*e*S	Sg	01 12 52.3	-4.1
PSET	**Sete Cidades**	**1.06**	**127**	*e*P	Pg	01 12 39.9	-2.8
PSET				*e*S	Sg	01 12 52.3	-4.1
PSET				A	A	01 12 58.0	
	47nm,0.3s						
PGRA	**Graciosa**	**1.09**	**302**	*e*P	Pg	01 12 40.4	-3.0
PGRA				*e*S	Sg	01 12 53.6	-4.0
PGRA	**Graciosa**	**1.09**	**302**	*e*P	Pg	01 12 40.4	-3.0
PGRA				*e*S	Sg	01 12 53.6	-4.0
PGRA				A	A	01 12 54.9	
	31nm,0.6s						
PDA	**Ponta Delgada**	**1.14**	**128**	*e*S	Sg	01 12 54.4	-4.7
PDA	**Ponta Delgada**	**1.14**	**128**	*e*S	Sg	01 12 54.4	-4.7
PDA				A	A	01 12 55.0	
	25nm,0.2s						
PPNO	**Prainha do Nor**	**1.16**	**271**	*e*P	Pg	01 12 40.9	-3.8
PPNO				*e*S	Sg	01 12 55.1	-4.6
PPNO	**Prainha do Nor**	**1.16**	**271**	*e*P	Pg	01 12 40.9	-3.8
PPNO				*e*S	Sg	01 12 55.1	-4.6
PPNO				A	A	01 12 59.0	
	43nm,0.3s						
ROSA	**Rosais**	**1.17**	**283**	*e*P	Pg	01 12 40.8	-4.1
ROSA				*e*S	Sg	01 12 55.3	-4.7
ROSA	**Rosais**	**1.17**	**283**	*e*P	Pg	01 12 40.8	-4.1
ROSA				*e*S	Sg	01 12 55.3	-4.7
ROSA				A	A	01 12 56.8	
	34nm,0.3s						
CMLA	**Cha da Macela**	**1.22**	**124**	*e*P	Pg	01 12 41.6	-4.2
CMLA				*e*S	Sg	01 12 56.6	-5.0
CMLA	**Cha da Macela**	**1.22**	**124**	*e*P	Pg	01 12 41.6	-4.2
CMLA				*e*S	Sg	01 12 56.6	-5.0
PCALD	**Caldeiras da R**	**1.22**	**122**	*e*S	Sg	01 12 56.3	-5.4
PCALD				A	A	01 12 57.6	
	165nm,0.4s						
PICO	**Pico**	**1.28**	**272**	*e*P	Pg	01 12 42.8	-4.3
PICO				*e*S	Sg	01 12 58.3	-5.5
PICO	**Pico**	**1.28**	**272**	*e*P	Pg	01 12 42.8	-4.3
PICO				*e*S	Sg	01 12 58.3	-5.5
PICO				A	A	01 13 02.1	
	51nm,0.2s						
PCAN	**Candelaria**	**1.33**	**271**	*e*P	Pg	01 12 43.1	-4.9
PCAN				*e*S	Sg	01 12 59.5	-5.8
PCAN	**Candelaria**	**1.33**	**271**	*e*P	Pg	01 12 43.1	-4.9
PCAN				*e*S	Sg	01 12 59.5	-5.8
PCAN				A	A	01 13 07.5	
	19nm,0.2s						
BART	**Pico Bartolome**	**1.45**	**118**	*e*P	Sg	01 13 01.4	-7.6
CALA	**Caldeira**	**1.50**	**275**	*e*P	Pn	01 12 46.3	-4.5
CALA				*e*S	Sg	01 13 03.4	-7.4
CALA	**Caldeira**	**1.50**	**275**	*e*P	Pn	01 12 46.3	-4.5
CALA				*e*S	Sg	01 13 03.4	-7.4
PCED	**Cedros**	**1.51**	**277**	*e*P	Pn	01 12 45.7	-5.1
PCED				*e*S	Sg	01 13 03.3	-7.7
PCED	**Cedros**	**1.51**	**277**	*e*P	Pn	01 12 45.7	-5.1
PCED				*e*S	Sg	01 13 03.3	-7.7
PCED				A	A	01 13 05.6	
	15nm,0.1s						
PSMA	**Santa Maria**	**1.97**	**137**	*e*P	Pn	01 12 52.5	-4.6
PSMA				*e*S	Sn	01 13 14.5	-8.0
PSMA				A	A	01 13 15.3	
	7.6nm,0.1s						
PSMN	**Pico do Norte,**	**2.00**	**136**	*e*P	Pn	01 12 53.2	-4.3
PSMN				*e*S	Sn	01 13 15.3	-7.9
PSMN	**Pico do Norte,**	**2.00**	**136**	*e*P	Pn	01 12 53.2	-4.3
PSMN				*e*S	Sn	01 13 15.3	-7.9
PSMN				A	A	01 13 19.4	
	4.2nm,0.2s						

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*CSEM **22** 01:14:34.7, 43°.30N×12°.74E, h10km, MD1.8/13*
ROM 22 01:14:34.7±0.1**, 43°.30N**×**12°.74E, h10**km**, Md1.8**/13**, Ml1.2/8, Error ellipse: s-maj=0.9km s-min=0.8km az=58.0, Central Italy**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SSFR	**Montelago di S**	**0.14**	**13**	Pg	Pg	01 14 38.7	+0.7
SSFR				Sg	Sg	01 14 41.7	+1.3
	115nm,0.2s						
SSFR	**Montelago di S**	**0.14**	**13**	Pg	Pg	01 14 38.7	+0.7
SSFR				Sg	Sg	01 14 41.7	+1.3
	115nm,0.2s						
SNTG	**Esanatoglia**	**0.15**	**105**	Pg	Pg	01 14 38.7	+0.5
SNTG				Sg	Sg	01 14 41.7	+1.1
	50nm,0.2s						
SNTG	**Esanatoglia**	**0.15**	**105**	Pg	Pg	01 14 38.7	+0.5
SNTG				Sg	Sg	01 14 41.7	+1.1
	50nm,0.2s						
MURB	**Monte Urbino**	**0.16**	**258**	Pg	Pg	01 14 38.8	+0.6
MURB				Sg	Sg	01 14 41.9	+1.2
	84nm,0.2s						
MURB	**Monte Urbino**	**0.16**	**258**	Pg	Pg	01 14 38.8	+0.6
MURB				Sg	Sg	01 14 41.9	+1.2
	84nm,0.2s						
FRON	**Frontone**	**0.22**	**358**	Pg	Pg	01 14 39.8	+0.5
FRON				Sg	Sg	01 14 43.6	+1.1
	34nm,0.1s						
FRON	**Frontone**	**0.22**	**358**	Pg	Pg	01 14 39.8	+0.5
FRON				Sg	Sg	01 14 43.6	+1.1
	34nm,0.1s						
ARVD	**Arcevia**	**0.25**	**36**	Pg	Pg	01 14 40.5	+0.6
ARVD				Sg	Sb	01 14 44.9	-0.9
ARVD	**Arcevia**	**0.25**	**36**	Pg	Pg	01 14 40.5	+0.6
ARVD				Sg	Sb	01 14 44.9	-0.9
ATVO	**AVT- Monte Val**	**0.26**	**290**	Pg	Pg	01 14 40.4	+0.5
ATVO				Sg	Sg	01 14 44.6	+1.1
ATVO	**AVT- Monte Val**	**0.26**	**290**	Pg	Pg	01 14 40.4	+0.5
ATVO				Sg	Sg	01 14 44.6	+1.1
ATPC	**Poggio Castell**	**0.28**	**312**	Pg	Pg	01 14 40.8	+0.5
ATPC				Sg	Sb	01 14 45.7	-0.8
	30nm,0.2s						
ATPC	**Poggio Castell**	**0.28**	**312**	Pg	Pg	01 14 40.8	+0.5
ATPC				Sg	Sb	01 14 45.7	-0.8
	30nm,0.2s						
PIEI	**Pieia**	**0.28**	**329**	Pg	Pg	01 14 40.8	+0.4
PIEI				Sg	Sb	01 14 45.8	-0.9
	20nm,0.2s						
PIEI	**Pieia**	**0.28**	**329**	Pg	Pg	01 14 40.8	+0.4
PIEI				Sg	Sb	01 14 45.8	-0.9
	20nm,0.2s						
CESI	**CESI - Serrava**	**0.32**	**157**	Pg	Pg	01 14 41.2	+0.2
CESI				Sg	Sb	01 14 46.9	-0.8
	3.0nm,0.1s						
CESI	**CESI - Serrava**	**0.32**	**157**	Pg	Pg	01 14 41.2	+0.2
CESI				Sg	Sb	01 14 46.9	-0.8
	3.0nm,0.1s						
FSSB	**Fossombrone**	**0.40**	**4**	Pg	Pg	01 14 43.0	+0.4
FSSB				Sg	Sb	01 14 49.8	-0.2
	33nm,0.3s						
FSSB	**Fossombrone**	**0.40**	**4**	Pg	Pg	01 14 43.0	+0.4
FSSB				Sg	Sb	01 14 49.8	-0.2
	33nm,0.3s						
BADI	**Badiali**	**0.42**	**301**	Pg	Pg	01 14 43.5	+0.6
BADI				Sg	Sb	01 14 50.4	-0.2
BADI	**Badiali**	**0.42**	**301**	Pg	Pg	01 14 43.5	+0.6
BADI				Sg	Sb	01 14 50.4	-0.2
NRCA	**Norcia**	**0.54**	**149**	Pg	Pg	01 14 45.4	+0.2
NRCA				Sg	Sb	01 14 53.6	-0.5
NRCA	**Norcia**	**0.54**	**149**	Pg	Pg	01 14 45.4	+0.2
NRCA				Sg	Sb	01 14 53.6	-0.5
MGAB	**Montegabbione**	**0.60**	**230**	Pg	Pb	01 14 46.8	-0.4
MGAB	**Montegabbione**	**0.60**	**230**	Pg	Pb	01 14 46.8	-0.4

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*IDC **22** 01:16:13.2±1.2, 37°.03N×143°.75E, h0km, mb3.6/5, mb1 3.8/7, mb1mx3.5/52, mbtmp3.6/7, ML3.5/2, Error ellipse: s-maj=31.0km s-min=22.3km az=89.0*
*ISCJB **22** 01:16:16.6±0.7, 37°.08N±0°.04×143°.44E±0°.06, h33km, mb3.7/5, Error ellipse: s-maj=6.4km s-min=5.3km az=18.7*
*JMA **22** 01:16:17.1±0.2, 37°.11N×143°.42E, h47km, M3.4*
ISC 22 01:16:18.8±1.1**, 37°.12N**±0°.05×**143°.43E**±0°.08**, h35**km**, n21, σ1.9**07**/33, mb3.5/5, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**2.06**	**278**	P	**Pn**	**01 16 50.1**	**-0.9**
JFK				*e*S	**Sn**	**01 17 14.3**	**-1.1**
ONAJ	**Iwakimizuishiy**	**2.11**	**270**	P	**Pn**	**01 16 51.1**	**-0.5**
ONAJ				*e*S	**Sn**	**01 17 16.0**	**-0.7**
JIO	**Ouri**	**2.12**	**310**	P	**Pn**	**01 16 51.1**	**-0.7**
JIO				*e*S	**Sn**	**01 17 15.4**	**-1.6**
JMM	**Marumori**	**2.23**	**290**	P	**Pn**	**01 16 52.6**	**-0.7**
JMM				*e*S	**Sn**	**01 17 19.1**	**-0.5**
JFT	**Otama**	**2.50**	**280**	P	**Pn**	**01 16 57.3**	**+0.3**
JFT				S	**Sn**	**01 17 27.4**	**+1.1**
JMK	**Ichinoseki**	**2.53**	**317**	P	**Pn**	**01 16 56.6**	**-0.8**
JMK				S	**Sn**	**01 17 27.2**	**+0.1**
JOM	**Ohasama**	**2.90**	**325**	P	**Pn**	**01 17 02.5**	**+0.1**
JOM				S	**Sn**	**01 17 34.9**	**-1.1**
JYK	**Kaneyama**	**3.02**	**307**	P	**Pn**	**01 17 04.2**	**0.0**
BSO1	**Boso 1**	**3.16**	**220**	P	**Pn**	**01 17 04.9**	**-0.7**
BSO1				S	**Sn**	**01 17 42.3**	**+0.4**
JAG	**Ashikaga**	**3.27**	**259**	P	**Pn**	**01 17 07.3**	**-0.3**
JAG				S	**Sn**	**01 17 44.1**	**-1.2**
JANG	**Nango**	**3.58**	**336**	P	**Pn**	**01 17 10.9**	**-1.0**
JRY	**Ryogami san**	**3.81**	**255**	P	**Pn**	**01 17 14.4**	**-0.6**
JRY				*e*S	**Sn**	**01 17 57.0**	**-1.6**
JOD2	**Odawara 2**	**3.97**	**244**	P	**Pn**	**01 17 16.4**	**-0.9**
JOD2				*e*S	**Sn**	**01 18 00.3**	**-2.3**
MJAR	**Matsushiro Arr**	**4.23**	**264**	Pn	**Pn**	**01 17 21.3**	**+0.5**
	2.1nm,0.3s,baz=92,slow=16,SNR=23						
MAT	**Matsushiro**	**4.23**	**264**	P	**Pn**	**01 17 21.6**	**+0.8**
MAT				S	**Sn**	**01 18 08.0**	**-1.0**
ASAJ	**Asahikawa**	**7.02**	**355**	Pn	**Pn**	**01 17 57.9**	**-1.2**
	0.9nm,0.3s,baz=156,slow=19,SNR=3.0						
SONM	**Songino Array**	**29.09**	**303**	P	**P**	**01 22 18.0**	**+2.0**
	0.5nm,0.5s,baz=117,slow=9.0,SNR=3.9						
MKAR	**Makanchi Array**	**45.44**	**302**	P	**P**	**01 24 36.1**	**+1.9**
	0.4nm,0.6s,baz=88,slow=7.8,SNR=3.4						
ILAR	**Eielson Array**	**48.56**	**32**	P	**P**	**01 24 57.4**	**-0.9**
	0.3nm,0.9s,baz=273,slow=7.0,SNR=2.9						
WRA	**Warramunga Arr**	**57.40**	**190**	P	**P**	**01 26 03.0**	**-0.9**
	1.5nm,0.6s,baz=7.9,slow=7.1,SNR=8.1						
ASAR	**Alice Springs**	**61.12**	**190**	P	**P**	**01 26 29.1**	**-0.5**
	0.5nm,0.6s,baz=11,slow=7.3,SNR=5.0						

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*ISCJB **22** 01:16:40.7±0.4, 33°.32N±0°.02×35°.40E±0°.03, h7km±3km, Error ellipse: s-maj=5.3km s-min=2.5km az=27.7*
*NSSC **22** 01:16:40.6±1.0, 33°.14N×35°.43E, h32km±7km, ML2.3*
*GRAL **22** 01:16:41.7±0.2, 33°.32N×35°.40E, h3km±1km, MD3.0*
*GII **22** 01:16:41.0±0.0, 33°.22N×35°.43E, h1km, MD2.2/4*
*CSEM **22** 01:16:41.0±0.1, 33°.33N×35°.40E, h5km, MD2.2, Error ellipse: s-maj=2.9km s-min=1.3km az=116.0*
ISC 22 01:16:41.4±0.8**, 33°.31N**±0°.02×**35°.44E**±0°.02**, h15**km±6km**, n54, σ1.9**16**/87, Jordan-Syria region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSDI	**Kefar Szold**	**0.21**	**122**	Pg	**Pg**	**01 16 46.1**	**-0.2**
KSDI				Sg	**Sg**	**01 16 50.4**	**+0.8**
KSDI	**Kefar Szold**	**0.21**	**122**	Pg	**Pg**	**01 16 46.1**	**-0.2**
KSDI				Sg	**Sg**	**01 16 50.4**	**+0.8**
MMA0B	**Mount Meron ar**	**0.29**	**186**	Pg	**Pg**	**01 16 47.1**	**-0.5**
MMA0B	**Mount Meron ar**	**0.29**	**186**	Pg	**Pg**	**01 16 47.1**	**-0.5**
NAQL	**Naqoura**	**0.32**	**233**	*e*P	**Pg**	**01 16 47.1**	**-0.8**
NAQL				*e*S	**Sg**	**01 16 51.1**	**-1.3**
NAQL	**Naqoura**	**0.32**	**233**	*e*P	**Pg**	**01 16 47.1**	**-0.8**
NAQL				*e*S	**Sg**	**01 16 51.2**	**-1.3**
HNTI	**Hanita**	**0.32**	**225**	Pg	**Pg**	**01 16 47.4**	**-0.6**
HNTI				Sg	**Sg**	**01 16 52.4**	**-0.1**
HNTI	**Hanita**	**0.32**	**225**	Pg	**Pg**	**01 16 47.4**	**-0.6**
HNTI				Sg	**Sg**	**01 16 52.4**	**-0.1**
RCY	**Rachaya**	**0.38**	**60**	*e*P	**Pg**	**01 16 49.0**	**-0.2**
RCY				*e*S	**Sg**	**01 16 54.5**	**-0.1**
DQRL	**Deir Qamar**	**0.41**	**15**	*e*P	**Pg**	**01 16 49.0**	**-0.7**
DQRL				*e*S	**Sg**	**01 16 54.6**	**-0.9**
DQRL	**Deir Qamar**	**0.41**	**15**	*e*P	**Pg**	**01 16 49.0**	**-0.7**
DQRL				*e*S	**Sg**	**01 16 54.6**	**-0.9**
KSHT	**Keshet**	**0.45**	**136**	Pg	**Pg**	**01 16 50.7**	**+0.3**
KSHT	**Keshet**	**0.45**	**136**	Pg	**Pg**	**01 16 50.7**	**+0.3**
BEYL	**Beirut**	**0.57**	**4**	*e*P	**Pg**	**01 16 51.8**	**-0.8**
BEYL	**Beirut**	**0.57**	**4**	*e*P	**Pg**	**01 16 51.8**	**-0.8**
BLGI	**Bet Lehem HaGe**	**0.61**	**200**	Pg	**Pg**	**01 16 53.0**	**-0.3**
BLGI	**Bet Lehem HaGe**	**0.61**	**200**	Pg	**Pg**	**01 16 53.0**	**-0.3**
BHL	**Bhannes**	**0.62**	**17**	*e*P	**Pg**	**01 16 52.9**	**-0.8**
BHL				*e*S	**Sg**	**01 17 01.1**	**-0.8**
BHL	**Bhannes**	**0.62**	**17**	*e*P	**Pg**	**01 16 52.9**	**-0.8**
BHL				*e*S	**Sg**	**01 17 01.1**	**-0.8**
QASN	**Qassioun**	**0.73**	**72**	*e*P	**Pb**	**01 16 56.4**	**+0.5**
QASN				*e*S	**Sb**	**01 17 06.8**	**+1.0**
QASN				AML	AML	01 17 09.1	
	comp=N,453nm,0.8s						
QASN	**Qassioun**	**0.73**	**72**	*e*P	**Pb**	**01 16 56.4**	**+0.5**
QASN				*e*S	**Sb**	**01 17 06.8**	**+1.0**
	comp=N,453nm,0.8s						
TCHB	**Talchebab**	**0.78**	**145**	*e*P	**Pg**	**01 16 52.5**	**-4.0**
TCHB				*e*S	**Sg**	**01 17 02.7**	**-4.0**
TCHB				AML	AML	01 17 05.5	
	comp=E,173nm,0.4s						
TCHB	**Talchebab**	**0.78**	**145**	*e*P	**Pg**	**01 16 52.5**	**-4.0**
TCHB				*e*S	**Sg**	**01 17 02.7**	**-4.0**
	comp=E,173nm,0.4s						
OFRI	**'Ofer**	**0.78**	**209**	Pg	**Pg**	**01 16 56.1**	**-0.5**
OFRI	**'Ofer**	**0.78**	**209**	Pg	**Pg**	**01 16 56.1**	**-0.5**
TOTH	**TOTAH**	**0.83**	**86**	*e*P	**Pg**	**01 16 57.5**	**0.0**
TOTH				*e*S	**Sg**	**01 17 08.1**	**-0.3**
TOTH				AML	AML	01 17 26.0	
	comp=N,36nm,0.9s						
TOTH	**TOTAH**	**0.83**	**86**	*e*P	**Pg**	**01 16 57.5**	**0.0**
TOTH				*e*S	**Sg**	**01 17 08.1**	**-0.3**
	comp=N,37nm,0.9s						
MMLI	**Mount Malkishu**	**0.87**	**181**	Pg	**Pg**	**01 16 57.5**	**-0.7**
MMLI				Sg	**Sg**	**01 17 09.5**	**-0.1**
MMLI	**Mount Malkishu**	**0.87**	**181**	Pg	**Pg**	**01 16 57.5**	**-0.7**
MMLI				Sg	**Sg**	**01 17 09.5**	**-0.1**
HMDT	**Nahal Hemdat**	**1.05**	**176**	Pg	**Pb**	**01 17 00.8**	**-0.5**
HMDT				Sg	**Sn**	**01 17 16.4**	**+0.5**
HMDT	**Nahal Hemdat**	**1.05**	**176**	Pg	**Pb**	**01 17 00.8**	**-0.5**
HMDT				Sg	**Sn**	**01 17 16.4**	**+0.5**
HWQ	**Hawqa**	**1.06**	**23**	*e*P	**Pb**	**01 17 00.8**	**-0.6**
HWQ				*e*S	**Sb**	**01 17 14.8**	**-0.3**
HWQ	**Hawqa**	**1.06**	**23**	*e*P	**Pb**	**01 17 00.8**	**-0.6**
HWQ				*e*S	**Sb**	**01 17 14.8**	**-0.3**
SLTI	**Sal'it**	**1.11**	**198**	Pg	**Pb**	**01 17 01.9**	**-0.4**
SLTI				Sg	**Sg**

σ19°27′/16, mb3.7/9, 1D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTBH	Cotabato--PC H	1.54	35	⇓iP	P	01 19 33.3	-0.3
WRA	Warramunga Arr	27.90	158	P	P	01 23 28.9	+0.4
	7.1nm,0.5s,baz=340,slow=9.3,SNR=88						
WRA				PcP	PcP	01 26 25.3	+0.1
	0.2nm,0.4s,baz=354,slow=2.5,SNR=3.2						
WRA				S	S	01 27 29.6	-3.2
	0.6nm,0.6s,baz=335,slow=15,SNR=4.1						
WRA				ScP	ScP	01 29 11.5	-0.8
	0.4nm,0.4s,baz=343,slow=3.2,SNR=7.5						
ASAR	Alice Springs	31.18	161	P	P	01 23 58.2	+1.4
	2.8nm,0.3s,baz=338,slow=7.3,SNR=56						
ASAR				S	S	01 28 22.8	-0.5
	1.2nm,1.0s,baz=351,slow=22,SNR=5.1						
STKA	Stephens Creek	41.44	156	P	P	01 25 22.3	+1.3
	2.6nm,0.4s,baz=337,slow=7.2,SNR=4.8						
SONM	Songino Array	44.19	344	P	P	01 25 42.3	0.0
	0.3nm,0.4s,baz=145,slow=10,SNR=2.0						
MKAR	Makanchi Array	53.84	326	P	P	01 26 54.5	+1.1
	1.5nm,0.4s,baz=120,slow=7.9,SNR=20						
MKAR				PcP	PcP	01 27 48.9	-0.9
	0.6nm,0.4s,baz=111,slow=4.6,SNR=5.5						
ZALV	Zalesovo Beam	57.12	334	P	P	01 27 17.4	+1.5
	0.3nm,0.3s,baz=146,slow=8.2,SNR=2.3						
BVAR	Borovoye Array	63.65	327	P	P	01 27 58.8	-0.2
	0.8nm,0.8s,baz=103,slow=6.4,SNR=4.8						
BRTR	Keskin Array B	86.03	309	P	P	01 30 03.5	-0.8
	0.3nm,0.4s,baz=139,slow=3.4,SNR=6.4						
FINES	FINESS Array B	88.30	332	P	P	01 30 13.5	-0.8
	0.7nm,0.5s,baz=42,slow=6.2,SNR=7.2						
TORD	Torodi Ar. Bea	119.05	289	PKP	PKPdf	01 36 08.1	-0.6
	0.3nm,0.4s,baz=85,slow=2.1,SNR=9.0						

DDA ***22*** *01:19:46.0, 39.°13N×29.°05E, h7km, Md2.7*
ISCJB ***22*** *01:19:46.2±0.5, 39.°11N±0.°03×29.°05E±0.°03, h1km±6km, Error ellipse: s-maj=4.7km s-min=3.9km az=174.6*
ISK ***22*** *01:19:46.4, 39.°11N×29.°04E, h6km, MD3.0*
CSEM ***22*** *01:19:46.5±0.1, 39.°11N×29.°05E, h2km, MD2.7, Error ellipse: s-maj=1.4km s-min=1.2km az=119.0*
ISC 22 01:19:46.7±1.1, **39.°11N**±0.°02×**29.°05E**±0.°02, **h2**km±13km, **n57**, σ0°31′/70, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.27	255	P	Pg	01 19 52.0	+0.1
DEMI				S	Sg	01 19 55.7	+0.3
DEMI	Demirci	0.27	255	*i* P	Pg	01 19 52.0	+0.1
DEMI				*i* S	Sg	01 19 55.7	+0.3
GDZ	Gediz	0.34	94	P	Pg	01 19 53.2	0.0
GDZ				S	Sg	01 19 57.8	+0.1
GDZ	Gediz	0.34	94	*i* P	Pg	01 19 53.2	0.0
GDZ				*i* S	Sg	01 19 57.8	+0.1
TVSB	Tavsanli	0.46	44	*e*PG	Pg	01 19 55.3	-0.3
TVSB	Tavsanli	0.46	44	*e*Pg	Pg	01 19 55.3	-0.3
DURS	Dursunbey	0.66	318	P	Pg	01 19 59.3	-0.1
DURS	Dursunbey	0.66	318	*i* P	Pg	01 19 59.3	-0.1
KULA	Kula-Manisa	0.67	207	*e*PG	Pg	01 19 59.2	-0.4
KULA	Kula-Manisa	0.67	207	*e*Pg	Pg	01 19 59.2	-0.4
MANT	Manisa	0.73	212	P	Pg	01 20 00.5	-0.3
MANT				S	Sg	01 20 09.6	-0.6
MANT	Manisa	0.73	212	*i* P	Pg	01 20 00.5	-0.3
MANT				*i* S	Sg	01 20 09.6	-0.6
KHAL	Karahalli	0.82	155	P	Pg	01 20 02.4	0.0
KHAL				S	Sg	01 20 12.9	-0.1
KHAL	Karahalli	0.82	155	*i* P	Pg	01 20 02.4	0.0
KHAL				*i* S	Sg	01 20 12.9	-0.1
KHL	Karahalli	0.87	155	*e*PG	Pg	01 20 03.8	+0.4
KHL	Karahalli	0.87	155	*e*Pg	Pg	01 20 03.8	+0.4
AKHS	Akhisar	0.99	257	P	Pg	01 20 05.6	-0.1
AKHS				S	Sg	01 20 19.0	+0.4
AKHS	Akhisar	0.99	257	*i* P	Pg	01 20 05.6	-0.1
AKHS				*i* S	Sg	01 20 18.9	+0.4
AKS	Akhisar	0.99	257	*e*PG	Pg	01 20 05.5	-0.2
AKS	Akhisar	0.99	257	*e*Pg	Pg	01 20 05.5	-0.2
BALB	Balikesir	1.05	301	*e*PG	Pg	01 20 07.0	+0.2
BALB				*e*SG	Sb	01 20 21.9	+0.2
BALB	Balikesir	1.05	301	*e*Pg	Pg	01 20 07.0	+0.2
BALB				*e*Sg	Sb	01 20 21.9	+0.2
IGD	Bursa	1.16	6	*i* P	Pg	01 20 07.2	-1.7
IGD				*i* S	Sg	01 20 23.9	0.0
CAVI	Cavuskoy	1.25	29	*e*PN	Pg	01 20 10.7	+0.1
CAVI	Cavuskoy	1.25	29	*e*Pn	Pg	01 20 10.7	+0.1
MDNY	Mudanya-Bursa	1.26	354	*e*PN	Pg	01 20 11.0	+0.1
MDNY	Mudanya-Bursa	1.26	354	*e*Pn	Pg	01 20 11.0	+0.1
IZI	Iznik	1.27	15	*e*PN	Pg	01 20 11.1	+0.1
IZI	Iznik	1.27	15	*e*Pn	Pg	01 20 11.1	+0.1
KCTX	Karacabey (Bur	1.27	335	*e*PN	Pb	01 20 11.3	-0.1
KCTX	Karacabey (Bur	1.27	335	*e*Pn	Pb	01 20 11.3	-0.1
GEMT	Gemlik	1.32	5	*e*PN	Pg	01 20 12.1	0.0
GEMT	Gemlik	1.32	5	*e*Pn	Pg	01 20 12.1	0.0
DENT	Denizli	1.36	181	*e*PN	Pg	01 20 12.8	0.0
DENT	Denizli	1.36	181	*e*Pn	Pg	01 20 12.8	0.0
GONE	Gonen-Balikesi	1.41	312	*e*PN	Pn	01 20 13.1	-0.2
GONE	Gonen-Balikesi	1.41	312	*e*Pn	Pn	01 20 13.1	-0.2
ADVT	Abdulvahap	1.42	22	*e*PN	Pn	01 20 13.5	-0.1
ADVT	Abdulvahap	1.42	22	*e*Pn	Pn	01 20 13.5	-0.1
ARMT	Armutlu	1.46	354	*e*PN	Pn	01 20 13.8	-0.2
ARMT	Armutlu	1.46	354	*e*Pn	Pn	01 20 13.8	-0.2
GPA	Golpazari	1.52	39	*e*PN	Pn	01 20 14.9	-0.1
GPA	Golpazari	1.52	39	*e*Pn	Pn	01 20 14.9	-0.1
EDC	Edincik	1.53	324	*e*PN	Pn	01 20 14.9	-0.2
EDC	Edincik	1.53	324	*e*Pn	Pn	01 20 14.9	-0.2
GULT	Gulveren	1.74	40	*e*PN	Pn	01 20 18.2	+0.3
GULT	Gulveren	1.74	40	*e*Pn	Pn	01 20 18.3	+0.3
HRT	Hereke	1.77	15	*e*PN	Pn	01 20 18.4	0.0
HRT	Hereke	1.77	15	*e*Pn	Pn	01 20 18.4	0.0
SVRH	Sivrihisar-ESK	1.95	79	*e*PN	Pn	01 20 21.0	+0.1
SVRH	Sivrihisar-ESK	1.95	79	*e*Pn	Pn	01 20 21.0	+0.1
ISK	Istanbul-Kandi	1.95	0	*e*PN	Pn	01 20 21.1	+0.3
ISK	Istanbul-Kandi	1.95	0	*e*Pn	Pn	01 20 21.1	+0.3
SILT	Sile	2.09	12	*e*PN	Pn	01 20 22.7	0.0
SILT	Sile	2.09	12	*e*Pn	Pn	01 20 22.7	0.0
MDUB	Mudurnu	2.14	50	*e*PN	Pn	01 20 23.6	+0.1
MDUB	Mudurnu	2.14	50	*e*Pn	Pn	01 20 23.6	+0.1

NNC 22 01:21:12.0±2.7, **37.°59N×71.°04E, h0km, mb3.5, mpv3.2, 4C-2D, Error ellipse: s-maj=22.0km s-min=10.2km az=163.0, Afghanistan-Tajikistan border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	Dzherino	2.12	305	⇓Pn	Pn	01 21 48.9	0.0
	8.2nm,0.3s						
DZET				⇑Sn	Sn	01 22 17.1	+1.0
	62nm,0.4s						
MNAS	Manas	5.02	12	⇓Pn	Pn	01 22 29.3	+0.6
	0.6nm,0.5s						
MNAS				⇑Sn	Sn	01 23 27.9	+0.5
	3.5nm,0.4s						
KK31	Karatay Array	5.52	356	Pn	Pn	01 22 36.4	+0.9
	1.8nm,0.3s,baz=182,slow=13,SNR=22						
KK31				⇑Sn	Sn	01 23 41.6	+1.9
	1.1nm,0.3s,baz=186,slow=25,SNR=4.5						
AB31	Akbulak array	14.15	329	⇑Pn	Pn	01 24 29.5	-4.2
	0.2nm,0.3s,baz=143,slow=13,SNR=13						

MAN 22 01:24:56, 17.°24N×121.°94E, h27km, mb4.4, ML3.3, MS3.1, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CAUP	Cauayan	0.31	200	*e*P	Pn	01 25 05.1	+0.3
CAUP				*e*S	Sn	01 25 12.0	+1.5
CVP	Callao Caves	0.47	347	*e*P	Pn	01 25 07.3	+0.3
CVP				*e*S	Sn	01 25 14.4	-0.1
APYP	Conner	0.91	313	*e*P	Pb	01 25 13.6	+0.5
APYP				*e*S	Sn	01 25 26.2	+1.0
BALP	Baler	1.53	193	*e*P	Pn	01 25 22.6	+1.0
BALP				*e*S	Sb	01 25 42.1	-0.6

NEIC ***22*** *01:25:38.7, 40.°42S×175.°10E, h28km, ML3.9(WEL), After WEL.*
NEIC Felt in the Kapiti-Manawatu area.
WEL 22 01:25:38.6±0.1, **40.°44S×175.°08E, h27**km±1km, **ML3.9**/46, **20C-19D, Error ellipse: s-maj=0.8km s-min=0.5km**

az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OHWZ	Ohakea	0.29	38	P*	Pb	01 25 45.5	-0.2
OHWZ				S*	Sb	01 25 51.4	+0.9
OGWZ	Otaki Gorge	0.39	169	⇑P*	Pb	01 25 47.4	+0.3
OGWZ	Otaki Gorge	0.39	169	⇑P*	Pb	01 25 47.4	+0.3
KIW	Kapiti Island	0.44	197	⇑P*	Pb	01 25 47.9	-0.1
KIW				AML	AML	01 25 56.6	
KIW				AML	AML	01 25 56.7	
KIW	Kapiti Island	0.44	197	P*	Pb	01 25 47.9	-0.1
MRZ	Mangatainoka R	0.44	120	⇓P*	Pb	01 25 48.3	+0.3
MRZ				S*	Sn	01 25 55.4	-1.0
MRZ	Mangatainoka R	0.44	120	⇓P*	Pb	01 25 48.3	+0.3
MRZ				S*	Sn	01 25 55.4	-1.0
POWZ	Post Office Ro	0.53	85	⇓P*	Pb	01 25 49.3	-0.1
POWZ	Post Office Ro	0.53	85	P*	Pb	01 25 49.3	-0.1
HOWZ	Holdsworth Sta	0.57	144	⇓P*	Pb	01 25 50.3	+0.2
HOWZ	Holdsworth Sta	0.57	144	P*	Pb	01 25 50.3	+0.2
CAW	Cannon Point	0.67	181	⇑P*	Pb	01 25 51.4	-0.3
CAW				AML	AML	01 26 05.1	
CAW				AML	AML	01 26 05.2	
CAW	Cannon Point	0.67	181	P*	Pb	01 25 51.4	-0.3
WAZ	Wanganui	0.69	354	⇓P*	Pb	01 25 51.1	-0.8
WAZ				S*	Sb	01 26 00.8	-0.3
WAZ				AML	AML	01 26 02.2	
WAZ	Wanganui	0.69	354	P*	Pb	01 25 51.1	-0.8
WAZ				S*	Sb	01 26 00.8	-0.3
PRWZ	Pori Road	0.69	100	⇓P*	Pb	01 25 52.3	+0.2
PRWZ	Pori Road	0.69	100	P*	Pb	01 25 52.3	+0.2
TIWZ	Tintock	0.70	119	⇓P*	Pb	01 25 52.5	+0.2
TIWZ				AML	AML	01 26 04.5	
TIWZ				AML	AML	01 26 04.6	
TIWZ	Tintock	0.70	119	P*	Pb	01 25 52.5	+0.2
TSZ	Takapari Road	0.78	61	⇓P*	Pb	01 25 52.7	-0.8
TSZ				AML	AML	01 26 03.0	
TSZ				AML	AML	01 26 07.4	
TSZ	Takapari Road	0.78	61	P*	Pb	01 25 52.7	-0.8
MTW	Mount Morrison	0.79	156	⇑P*	Pb	01 25 53.8	+0.1
MTW				AML	AML	01 26 07.0	
MTW				AML	AML	01 26 07.8	
MTW	Mount Morrison	0.79	156	P*	Pb	01 25 53.9	+0.1
DVHZ	Dannevirke	0.84	81	⇓P*	Pb	01 25 54.3	-0.4
DVHZ	Dannevirke	0.84	81	P*	Pb	01 25 54.3	-0.4
WEL	Wellington	0.88	195	P*	Pn	01 25 54.6	-0.6
WEL				AML	AML	01 25 55.4	
WEL				AML	AML	01 26 10.8	
WEL	Wellington	0.88	195	P*	Pn	01 25 54.6	-0.6
TMWZ	Te Maipa	0.91	137	⇓P*	Pn	01 25 55.4	-0.3
TMWZ	Te Maipa	0.91	137	P*	Pn	01 25 55.4	-0.3
SNZO	South Karori	0.92	198	*e*Pn	Pn	01 25 54.7	-1.0
SNZO				*e*Sn	Sb	01 26 06.6	-1.0
BFZ	Birch Farm	0.93	106	P*	Pn	01 25 55.0	-0.8
BFZ				AML	AML	01 26 13.3	
BFZ				AML	AML	01 26 13.3	
BFZ				AML	AML	01 26 13.7	
BFZ				AML	AML	01 26 13.7	
BFZ	Birch Farm	0.93	106	P*	Pn	01 25 55.0	-0.8
DUWZ	D'Urville Isla	0.95	247	⇓P*	Pn	01 25 55.0	-1.2
DUWZ				AML	AML	01 26 11.3	
DUWZ				AML	AML	01 26 12.9	
DUWZ	D'Urville Isla	0.95	247	P*	Pn	01 25 55.0	-1.2
DUWZ				P*	Pb	01 26 08.1	+12
CPWZ	Castlepoint	0.98	119	P*	Pb	01 25 56.8	-0.1
CPWZ	Castlepoint	0.98	119	P*	Pb	01 25 56.8	-0.1
PAWZ	Paruwai Farm	0.98	164	P*	Pn	01 25 56.1	-0.5
PAWZ				AML	AML	01 26 12.3	
PAWZ				AML	AML	01 26 12.4	
PAWZ	Paruwai Farm	0.98	164	P*	Pn	01 25 56.1	-0.5
BHW	Baring Head	0.98	189	P*	Pn	01 25 56.4	-0.2
BHW				AML	AML	01 26 12.3	
BHW				AML	AML	01 26 13.0	
BHW	Baring Head	0.98	189	P*	Pn	01 25 56.4	-0.2
TCW	Tory Channel	0.98	218	⇑P*	Pn	01 25 55.5	-1.1
TCW				AML	AML	01 26 12.9	
TCW				AML	AML	01 26 13.1	
TCW	Tory Channel	0.98	218	P*	Pn	01 25 55.5	-1.1
MSWZ	Moikau Station	0.99	172	⇓P*	Pn	01 25 56.5	-0.2
MSWZ				S*	Sn	01 26 10.6	+0.8
MSWZ				AML	AML	01 26 12.5	
MSWZ	Moikau Station	0.99	172	P*	Pn	01 25 56.5	-0.2
MSWZ				S*	Sn	01 26 10.6	+0.8
PNHZ	Pukenui	1.01	59	⇑P*	Pn	01 25 56.3	-0.7
PNHZ	Pukenui	1.01	59	P*	Pn	01 25 56.4	-0.7
TRWZ	Traveller	1.07	154	P*	Pb	01 25 58.4	-0.1
TRWZ				AML	AML	01 26 17.9	
TRWZ				AML	AML	01 26 18.1	
TRWZ	Traveller	1.07	154	P*	Pb	01 25 58.4	-0.1
ANWZ	Angora Road	1.07	92	P*	Pn	01 25 57.7	-0.1
MTVZ	Mangateitei	1.09	16	⇑PN	Pn	01 25 56.8	-1.4
MTVZ				AML	AML	01 26 15.0	
MTVZ				AML	AML	01 26 22.3	
MTVZ	Mangateitei	1.09	16	Pn	Pn	01 25 56.8	-1.4
LREZ	Lake Rotokare	1.10	332	PN	Pn	01 25 57.9	-0.4
WPHZ	Waipukurau	1.11	71	P*	Pn	01 25 58.1	-0.2
WPHZ	Waipukurau	1.11	71	P*	Pn	01 25 58.1	-0.2
PLWZ	Palliser	1.14	173	P*	Pn	01 25 58.2	-0.6
PLWZ	Palliser	1.14	173	P*	Pn	01 25 58.2	-0.6
MOVZ	Moawhango	1.15	27	⇑PN	Pn	01 25 57.3	-1.8
MOVZ				AML	AML	01 26 16.9	
MOVZ				AML	AML	01 26 18.3	
MOVZ	Moawhango	1.15	27	Pn	Pn	01 25 57.3	-1.8
PKVZ	Pokaka	1.17	10	PN	Pn	01 25 57.8	-1.4
PKVZ				AML	AML	01 26 17.2	
PKVZ				AML	AML	01 26 21.9	
PKVZ	Pokaka	1.17	10	Pn	Pn	01 25 57.8	-1.4
WNVZ	Wahianoa	1.18	20	⇑PN	Pn	01 25 58.1	-1.4
WNVZ	Wahianoa	1.18	20	Pn	Pn	01 25 58.1	-1.4
TRVZ	Turoa	1.19	18	PN	Pn	01 25 58.1	-1.7
TRVZ				AML	AML	01 26 18.3	
TRVZ				AML	AML	01 26 18.7	
TRVZ	Turoa	1.19	18	Pn	Pn	01 25 58.1	-1.7
PRHZ	Porangahau	1.20	82	P*	Pn	01 25 59.4	-0.3
PRHZ	Porangahau	1.20	82	P*	Pn	01 25 59.4	-0.3
BHHZ	Black Hill Sta	1.21	39	PN	Pn	01 25 58.6	-1.2
BHHZ	Black Hill Sta	1.21	39	Pn	Pn	01 25 58.6	-1.2
WHVZ	Whangaehu Hut	1.22	19	⇑PN	Pn	01 25 58.7	-1.3
WHVZ	Whangaehu Hut	1.22	19	Pn	Pn	01 25 58.8	-1.3
DRZ	Dome Shelter	1.22	18	PN	Pn	01 25 59.0	-1.2
DRZ				AML	AML	01 26 20.8	
DRZ				AML	AML	01 26 28.8	
DRZ	Dome Shelter	1.22	18	Pn	Pn	01 25 59.0	-1.2
FWVZ	Far West T-bar	1.24	17	PN	Pn	01 25 58.7	-1.7
FWVZ				AML	AML	01 26 18.5	
FWVZ				AML	AML	01 26 19.1	
FWVZ	Far West T-bar	1.24	17	Pn	Pn	01 25 58.7	-1.6
TUVZ	Tukino	1.25	21	⇑PN	Pn	01 25 59.3	-1.1
TUVZ				AML	AML	01 26 20.7	
TUVZ				AML	AML	01 26 20.8	
TUVZ	Tukino	1.25	21	Pn	Pn	01 25 59.3	-1.1
KRHZ	Kereru	1.27	52	PN	Pn	01 26 00.3	-0.3
PREZ	Palmer Road	1.30	327	PN	Pn	01 26 00.8	-0.2
PREZ	Palmer Road	1.30	327	Pn	Pn	01 26 00.8	-0.2
TUWZ	Tuamarina	1.31	221	P*	Pn	01 26 00.9	-0.3
TUWZ				AML	AML	01 26 21.4	
TUWZ				AML	AML	01 26 23.1	
TUWZ	Tuamarina	1.31	221	P*	Pn	01 26 00.9	-0.3
NGZ	Ngauruhoe	1.32	18	PN	Pn	01 26 00.3	-1.1
NGZ				AML	AML	01 26 26.3	
NGZ				AML	AML	01 26 36.2	
NGZ	Ngauruhoe	1.32	18	Pn	Pn	01 26 00.3	-1.1
VRZ	Vera Road	1.33	349	PN	Pn	01 26 00.3	-1.1
VRZ				AML	AML	01 26 18.8	
VRZ				AML	AML	01 26 19.4	
VRZ	Vera Road	1.33	349	Pn	Pn	01 26 00.3	-1.1
OTVZ	Oturere	1.35	20	PN	Pn	01 26 00.8	-1.0
OTVZ				AML	AML	01 26 24.7	
OTVZ				AML	AML	01 26 26.4	
OTVZ	Oturere	1.35	20	Pn	Pn	01 26 00.8	-1.0
NMEZ	Namu Road	1.38	318	PN	Pn	01 26 02.1	+0.1
NMEZ	Namu Road	1.38	318	Pn	Pn	01 26 02.1	+0.1
WTVZ	West Tongariro	1.38	17	⇓PN	Pn	01 26 01.1	-1.0
WTVZ				AML	AML	01 26 22.3	
WTVZ				AML	AML	01 26 23.0	
WTVZ	West Tongariro	1.38	17	Pn	Pn	01 26 01.1	-1.0
NEZ	North Egmont	1.39	327	⇓PN	Pn	01 26 01.9	-0.3
NEZ	North Egmont	1.39	327	Pn	Pn	01 26 01.9	-0.3
TWVZ	Taurewa	1.39	12	PN	Pn	01 26 00.8	-1.6
TWVZ				AML	AML	01 26 23.2	
TWVZ				AML	AML	01 26 32.9	
TWVZ	Taurewa	1.39	12	Pn	Pn	01 26 00.8	-1.6
KHEZ	Kahui Hut	1.40	324	⇓PN	Pn	01 26 02.4	-0.1
KHEZ	Kahui Hut	1.40	324	Pn	Pn	01 26 02.4	-0.1
KRVZ	Karewarewa	1.41	18	PN	Pn	01 26 01.6	-1.0
KRVZ				AML	AML	01 26 23.9	
KRVZ				AML	AML	01 26 24.0	
KRVZ	Karewarewa	1.41	18	Pn	Pn	01 26 01.6	-1.0
DREZ	Durham Road	1.42	331	PN	Pn	01 26 02.6	0.0
DREZ	Durham Road	1.42	331	Pn	Pn	01 26 02.6	0.0
PXZ	Pawanui	1.43	74	PN	Pn	01 26 01.9	-0.8
PXZ				AML	AML	01 26 30.1	
PXZ				AML	AML	01 26 30.1	
PXZ				AML	AML	01 26 33.9	
PXZ				AML	AML	01 26 33.9	
PXZ	Pawanui	1.43	74	Pn	Pn	01 26 01.9	-0.8
KWHZ	Kaweka Forest	1.45	46	⇑PN	Pn	01 26 02.8	-0.3
CMWZ	Cape Campbell	1.46	206	PN	Pn	01 26 03.8	+0.6
CMWZ				AML	AML	01 26 34.0	
CMWZ				AML	AML	01 26 37.7	
CMWZ	Cape Campbell	1.46	206	Pn	Pn	01 26 03.9	+0.6
MHEZ	Mangahewa	1.48	337	PN	Pn	01 26 03.4	0.0
MHEZ	Mangahewa	1.48	337	Pn	Pn	01 26 03.4	0.0
NWEZ	Newall Road	1.49	321	PN	Pn	01 26 03.5	-0.1
NWEZ	Newall Road	1.49	321	Pn	Pn	01 26 03.5	-0.1
PKE	Pukeiti	1.50	326	PN	Pn	01 26 03.6	-0.1
PKE				AML	AML	01 26 23.9	
PKE				AML	AML	01 26 24.4	
PKE	Pukeiti	1.50	326	Pn	Pn	01 26 03.6	-0.1
NNZ	Nelson	1.50	238	⇓PN	Pn	01 26 03.5	-0.2
NNZ				AML	AML	01 26 26.2	
NNZ				AML	AML	01 26 26.7	
NNZ				AML	AML	01 26 28.5	
NNZ				AML	AML	01 26 28.5	
NNZ	Nelson	1.50	238	Pn	Pn	01 26 03.5	-0.2
KAHZ	Kahuranaki	1.52	66	⇓PN	Pn	01 26 03.4	-0.7
KAHZ	Kahuranaki	1.52	66	Pn	Pn	01 26 03.4	-0.7
KATZ	Kakaramea	1.54	18	PN	Pn	01 26 03.6	-0.8
KATZ				AML	AML	01 26 40.9	
KATZ	Kakaramea	1.54	18	Pn	Pn	01 26 03.6	-0.7
BSWZ	Blackbirch Sta	1.57	215	PN	Pn	01 26 04.7	+0.1
BSWZ				AML	AML	01 26 30.7	
BSWZ				AML	AML	01 26 37.8	
BSWZ	Blackbirch Sta	1.57	215	Pn	Pn	01 26 04.8	+0.1
RITZ	Rihia Road	1.58	23	⇓PN	Pn	01 26 04.6	-0.3
RITZ				AML	AML	01 26 09.5	
RITZ				AML	AML	01 26 11.3	
RITZ	Rihia Road	1.58	23	Pn	Pn	01 26 04.6	-0.3
MCHZ	McNeill Hill	1.59	52	PN	Pn	01 26 04.3	-0.7
MCHZ	McNeill Hill	1.59	52	Pn	Pn	01 26 04.3	-0.7
RATZ	Rangitukua	1.66	19	PN	Pn	01 26 05.7	-0.2
RATZ				AML	AML	01 26 38.1	
RATZ				AML	AML	01 26 49.9	
RATZ	Rangitukua	1.66	19	Pn	Pn	01 26 05.7	-0.2
BKZ	Black Stump Fm	1.68	41	⇑PN	Pn	01 26 05.8	-0.4
BKZ				AML	AML	01 26 30.6	
BKZ				AML	AML	01 26 32.3	
BKZ	Black Stump Fm	1.68	41	Pn	Pn	01 26 05.8	-0.4
CKHZ	Cape Kidnapper	1.72	64	PN	Pn	01 26 06.1	-0.7
CKHZ	Cape Kidnapper	1.72	64	Pn	Pn	01 26 06.1	-0.7
WATZ	Wairara	1.80	17	PN	Pn	01 26 07.7	-0.2
WATZ				AML	AML	01 26 44.9	
WATZ				AML	AML	01 26 45.7	
WATZ	Wairara	1.80	17	Pn	Pn	01 26 07.7	-0.2
ARHZ	Aropaoanui	1.89	52	PN	Pn	01 26 08.5	-0.6
ARHZ	Aropaoanui	1.89	52	Pn	Pn	01 26 08.5	-0.6
NMHZ	Naumai	1.89	45	⇑PN	Pn	01 26 08.7	-0.5
NMHZ	Naumai	1.89	45	Pn	Pn	01 26 08.7	-0.5
MRHZ	Matea Rd	1.91	33	PN	Pn	01 26 08.6	-0.8
HIZ	Hauiti	1.93	355	⇑PN	Pn	01 26 08.6	-1.0
HIZ				AML	AML	01 26 35.9	
HIZ				AML	AML	01 26 39.2	
HIZ	Hauiti	1.93	355	Pn	Pn	01 26 08.6	-1.0
QRZ	Quartz Range	1.98	258	PN	Pn	01 26 09.6	-0.7
QRZ				AML	AML	01 26 35.7	
QRZ				AML	AML	01 26 35.7	
QRZ				AML	AML	01 26 43.7	
QRZ				AML	AML	01 26 43.7	
QRZ	Quartz Range	1.98	258	Pn	Pn	01 26 09.6	-0.7
THZ	Tophouse	2.11	230	PN	Pn	01 26 12.3	+0.1
THZ				AML	AML	01 26 46.5	
THZ				AML	AML	01 26 54.5	

*IDC **22** 01:30:25.9±1.1,21°.87S×179°.80W,h20km±5km,mb3.3/3, mb1 3.7/4,mb1mx3.5/27,mbtmp3.6/4,ML3.8/1,Error ellipse: s-maj=59.4km s-min=23.7km az=160.0*

*ISCJB **22** 01:30:26.3±1.3,21°.9S±0°.2×179°.8W±0°.2,h33km,mb3.3/3, Error ellipse: s-maj=29.3km s-min=25.4km az=18.9*

ISC 22 01:30:27.3±0.9,21°.9S±0°.2×179.9W±0°.2,h35km,n7, σ2§34/11,mb3.3/3,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**16.52**	**188**	Pn	**Pn**	**01 34 16.5**	**+0.3**
	0.4nm,0.3s,baz=37,slow=5.1,SNR=3.1						
ASAR	**Alice Springs**	**42.53**	**258**	P	**P**	**01 38 20.7**	**+0.9**
	0.5nm,1.0s,baz=101,slow=7.5,SNR=3.4						
ASAR				pP	**pP**	**01 38 26.6**	**-3.4**
	0.6nm,0.8s,baz=97,slow=7.1,SNR=4.3						
WRA	**Warramunga Arr**	**42.71**	**264**	P	**P**	**01 38 22.4**	**+1.2**
	0.3nm,0.4s,baz=96,slow=8.4,SNR=16						
WRA				pP	**pP**	**01 38 29.5**	**-2.1**
	1.3nm,0.3s,baz=95,slow=8.3,SNR=7.9						
TXAR	**Lajitas Array**	**89.26**	**58**	P	**P**	**01 43 20.6**	**+0.5**
	0.1nm,0.6s,baz=213,slow=6.5,SNR=2.8						
TXAR				pP	**pP**	**01 43 27.9**	**-3.4**
	0.6nm,0.7s,baz=219,slow=6.1,SNR=7.6						
FINES	**FINESS Array B**	**136.59**	**342**	PKP	**PKPdf**	**01 49 47.1**	**+1.9**
	1.3nm,0.9s,baz=72,slow=6.2,SNR=3.4						
AKASG	**Malin Array Be**	**143.34**	**329**	PKP	**PKPdf**	**01 49 57.2**	**-0.6**
	0.6nm,0.3s,baz=41,slow=4.4,SNR=4.2						
BRTR	**Keskin Array B**	**146.44**	**310**	PKPbc	**PKPbc**	**01 50 04.9**	**-0.1**
	0.3nm,0.7s,baz=62,slow=3.4,SNR=3.3						
BRTR				pPKPbc	**PKiKP**	**01 50 11.2**	**+3.1**
	0.6nm,0.6s,baz=78,slow=3.3,SNR=4.9						

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*NIED **22** 01:34:00,24°.10N×121°.70E,h23km,Mw5.0 Best double couple: M03.30000×10^16 NP1:φ212.00000°,δ81.00000°, λ8.00000°. NP2:φ121.00000°,δ82.00000°,λ171.00000°.*

*IDC **22** 01:34:11.1±0.6,24°.14N×121°.94E,h0km,mb4.3/25, mb1 4.4/26,mb1mx4.3/35,mbtmp4.3/26,ML3.8/1,MS4.5/38, Ms1 4.5/38,ms1mx4.4/59,Error ellipse: s-maj=17.6km s-min=13.4km az=68.0*

*TAP **22** 01:34:11.9,24°.12N×121°.76E,h6km,ML5.0,C*

*JMA **22** 01:34:11.6±0.2,24°.11N×121°.72E,h0km,M5.3*

*NEIC **22** 01:34:12.3±0.7,24°.09N×121°.76E,h6km±4km,mb5.0/67, MS4.8/111,MW5.0,ML4.8(TAP),Error ellipse: s-maj=4.7km s-min=3.7km az=113.0,Moment Tensor Solution. s10 Moment tensor: Scale 10^16Nm; Mrr2.07; Mθθ-3.60; Mφφ1.53; Mrθ3.16; Mθφ-1.14; Mφr-0.37; Best double couple: M0 4.60000×10^16 NP1:φ226.00000°, δ29.00000°,λ41.00000°. NP2:φ99.00000°,δ71.00000°, λ113.00000°. Principal axes: T 3.7800, Plg57.0000°, Azm40.0000°; N 1.3500, Plg22.0000°, Azm271.0000°; P -5.1300, Plg23.0000°, Azm172.0000°;*

NEIC Felt [III] at Hualien and [II] at Taipei. Also felt at Puli. Recorded [5 TAP] in Hualien; [4 TAP] in Yilan; [2 TAP] in Nantou and Taichung; [1 TAP] in Taoyuan.

*GCMT **22** 01:34:12.3±0.2,24°.12N×121°.65E,h13km±1km,MW5.0/94, Moment Tensor Solution. s40,c56; s94,c157; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr1.73±.15; Mθθ-3.88±.12; Mφφ2.15±.11; Mrθ2.65±.34; Mθφ-1.75±.09; Mφr0.90±.30; Best double couple: M0 4.17500×10^16 NP1:φ53.00000°,δ72.00000°,λ61.00000°. NP2: φ293.00000°,δ34.00000°,λ145.00000°. Principal axes: T 2.9120, Plg54.0000°, Azm287.0000°; N 2.5270, Plg27.0000°, Azm63.0000°; P -5.4390, Plg21.0000°, Azm164.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

*ISCJB **22** 01:34:13.3±0.2,24°.14N±0°.01×121°.82E±0°.01,h19km±1km, mb4.7/120,MS4.7/161 Error ellipse: s-maj=2.5km s-min=1.7km az=31.1*

*BJI **22** 01:34:13.3,24°.15N×121°.60E,h10km,mb4.5/49,mB5.0/55, ML5.5/7,Ms5.3/78,Ms7 5.1/73*

*MOS **22** 01:34:15.1±1.4,24°.15N×121°.92E,h35km,mb5.0/49, MS4.7/27,Error ellipse: s-maj=8.3km s-min=4.9km az=115.5*

*BKK **22** 01:34:17.9±0.7,25°.N±5°.×12°.2E±°,h10km,M4.8/20, mB5.2/12,mb4.5/20,MLv5.2/1,Mw(mB)4.6/12*

ISC 22 01:34:14.4±0.5,24°.12N±0°.02×121°.77E±0°.02,h16km±2km, n539,σ2§07/502,mb4.8/128,MS4.7/162,42C-17D,Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWD	**Chiawan**	**0.17**	**258**	⇓*i*P	**Pg**	**01 34 15.8**	**-2.8**
	baz=259						
NACB	**Ninganchiao**	**0.17**	**290**	*e*Pg	**Pg**	**01 34 15.5**	**-3.2**
NACB				*e*Sg	**Sg**	**01 34 18.2**	**-3.4**
EHP	**Heping Village**	**0.20**	**351**	*e*P	**Pg**	**01 34 16.9**	**-2.2**
	baz=354						
EHP				*e*S	**Sg**	**01 34 20.4**	**-1.8**
	baz=354						
HWA	**Hwalien**	**0.21**	**228**	⇓*i*P	**Pg**	**01 34 17.3**	**-1.9**
	baz=241						
ENA	**Nanau**	**0.31**	**355**	⇑*i*P	**Pg**	**01 34 18.7**	**-2.3**
	baz=357						
ESF	**Shoufeng Towns**	**0.34**	**225**	*e*P	**Pg**	**01 34 20.2**	**-1.3**
	baz=240						
ESF				*e*S	**Sg**	**01 34 25.4**	**-1.0**
	baz=240						
ESL	**Shilin**	**0.43**	**226**	⇓*i*P	**Pg**	**01 34 21.0**	**-2.1**
	baz=243						
TEGC	**Jichi Village**	**0.46**	**208**	*e*P	**Pb**	**01 34 23.7**	**-0.4**
	baz=206						
WHF	**Hehuan Shan**	**0.47**	**274**	P	**Pg**	**01 34 21.4**	**-2.5**
	baz=279						
NNS	**Nan Shan**	**0.49**	**312**	⇑*i*P	**Pg**	**01 34 21.9**	**-2.2**
	baz=314						
TWC	**Suao**	**0.50**	**8**	⇑*i*P	**Pg**	**01 34 22.4**	**-2.0**
	baz=8.0						
ENTT	**Nioudou**	**0.56**	**340**	⇑*i*P	**Pg**	**01 34 23.4**	**-2.0**
	baz=339						
TWT	**Tachien**	**0.56**	**284**	⇑P	**Pg**	**01 34 23.8**	**-1.8**
	baz=288						
TWT				*e*S	**Sg**	**01 34 31.8**	**-1.4**
	baz=288						
TWE	**Neicheng**	**0.61**	**351**	P	**Pg**	**01 34 24.6**	**-1.9**
	baz=352						
TWE				S	**Sg**	**01 34 33.4**	**-1.2**
	baz=352						
ILA	**Ilan**	**0.65**	**358**	P	**Pg**	**01 34 25.7**	**-1.5**
	baz=358						
ILA				S	**Sg**	**01 34 35.1**	**-0.6**
	baz=358						
YHNB	**Yeheng**	**0.66**	**327**	*e*Pg	**Pg**	**01 34 25.2**	**-2.2**
YHNB				*e*Sg	**Sg**	**01 34 33.5**	**-2.6**
NSK	**Sanguang**	**0.67**	**326**	⇑*i*P	**Pg**	**01 34 25.8**	**-1.9**
	baz=327						
NSK				*e*S	**Sg**	**01 34 35.3**	**-1.4**
	baz=327						
WDT	**Danda**	**0.69**	**239**	⇓*i*P	**Pg**	**01 34 25.8**	**-2.2**
	baz=252						
EHY	**Hungye**	**0.73**	**214**	*e*P	**Pg**	**01 34 26.8**	**-2.0**
	baz=233						
EHY				*e*S	**Sb**	**01 34 38.8**	**+0.1**
	baz=233						
SSLB	**Suanglung**	**0.82**	**247**	*e*Pg	**Pg**	**01 34 27.8**	**-2.5**
SSLB				*e*Sg	**Sg**	**01 34 39.0**	**-2.1**
SMLT	**Sun Moon Lake**	**0.83**	**254**	P	**Pg**	**01 34 28.6**	**-2.0**
	baz=258						
SMLT				*e*S	**Sg**	**01 34 38.2**	**-3.4**
	baz=258						
YULB	**Yu-li**	**0.84**	**211**	*e*Pg	**Pg**	**01 34 28.4**	**-2.4**
YULB				*e*Sn	**Sb**	**01 34 43.0**	**+1.3**
TYC	**Yuchr**	**0.86**	**256**	⇓*i*P	**Pg**	**01 34 29.0**	**-2.2**
	baz=261						
TYC				*e*S	**Sg**	**01 34 39.4**	**-3.1**
	baz=261						
NSTT	**Nanjuang**	**0.87**	**306**	⇑P	**Pg**	**01 34 29.8**	**-1.6**
	baz=308						
NSTT				*e*S	**Sg**	**01 34 40.6**	**-2.2**
	baz=308						
TWF1	**Yuli**	**0.88**	**210**	*e*P	**Pg**	**01 34 29.7**	**-1.7**
	baz=230						
TWA	**Mucha**	**0.88**	**349**	⇑P	**Pg**	**01 34 29.9**	**-1.6**
	baz=348						
TWA				S	**Sg**	**01 34 41.5**	**-1.5**
	baz=348						
TATO	**Taipei**	**0.90**	**343**	*e*Pg	**Pg**	**01 34 29.7**	**-2.1**
TATO				*e*Sg	**Sg**	**01 34 41.6**	**-2.0**
TWB1	**Santiao Chiao**	**0.91**	**12**	P	**Pg**	**01 34 30.2**	**-1.9**
	baz=3.0						
TWQ1	**Liyutan**	**0.94**	**284**	⇑P	**Pg**	**01 34 31.6**	**-1.1**
	baz=289						
TAP1	**Taipei**	**0.95**	**346**	*e*P	**Pg**	**01 34 30.8**	**-2.0**
	baz=345						
NWF	**Wu-fen Shan**	**0.95**	**0**	⇑P	**Pg**	**01 34 31.1**	**-1.8**
	baz=349						
NWF				S	**Sg**	**01 34 44.3**	**-1.1**
	baz=349						
TAP	**Taipei**	**0.95**	**345**	*e*P	**Pg**	**01 34 30.9**	**-2.0**
	baz=345						
NSY	**Sanyi**	**0.97**	**288**	P	**Pg**	**01 34 32.5**	**-0.8**
	baz=292						
NSY				*e*S	**Sb**	**01 34 45.9**	**+0.3**
	baz=292						
YUS	**Yu-Shan**	**0.98**	**231**	*e*P	**Pg**	**01 34 31.4**	**-2.0**
	baz=235						
YUS				*e*S	**Sb**	**01 34 46.8**	**+0.7**
	baz=235						
HSN	**Hsinchu**	**1.00**	**313**	*e*P	**Pg**	**01 34 33.1**	**-0.7**
	baz=317						
TCU	**Taichung**	**1.00**	**272**	⇓*i*P	**Pg**	**01 34 33.1**	**-0.8**
	baz=270						
TCU				S	**Sb**	**01 34 47.1**	**+0.7**
	baz=270						
NCU	**National Centr**	**1.00**	**328**	*e*P	**Pg**	**01 34 32.8**	**-1.1**
	baz=328						
NCU				*e*S	**Sn**	**01 34 47.5**	**-0.3**
	baz=328						
WNT	**Mingjian**	**1.02**	**257**	⇓P	**Pg**	**01 34 33.4**	**-0.8**
	baz=262						
WNT				*e*S	**Sb**	**01 34 47.6**	**+0.6**
	baz=262						
TWS1	**Kuangyinshan**	**1.03**	**342**	⇑P	**Pg**	**01 34 33.4**	**-1.0**
	baz=350						
TWS1				*e*S	**Sb**	**01 34 48.1**	**+0.8**
	baz=350						
ALS	**Alishan**	**1.07**	**236**	⇓*e*P	**Pg**	**01 34 33.2**	**-2.0**
	baz=243						
ALS				*e*S	**Sn**	**01 34 49.9**	**+0.1**
	baz=243						
CHKT	**Chengkung**	**1.08**	**200**	*e*P	**Pb**	**01 34 32.6**	**-2.1**
	baz=190						
JYNG	**Yonagunijimaku**	**1.12**	**72**	P	**Pb**	**01 34 34.9**	**-0.5**
CHN5	**Tsauling**	**1.13**	**243**	⇓P	**Pb**	**01 34 34.8**	**-0.8**
	baz=235						
ELDTW	**Lidau**	**1.15**	**217**	*e*P	**Pb**	**01 34 34.9**	**-1.1**
	baz=203						
ELDTW				*e*S	**Sb**	**01 34 50.3**	**-0.5**
	baz=203						
TWY	**Chenhua**	**1.17**	**352**	⇓P	**Pb**	**01 34 35.5**	**-0.7**
	baz=335						
YOJ	**Yonaguni jima**	**1.18**	**73**	P	**Pb**	**01 34 35.9**	**-0.5**
YOJ				*e*S	**Sb**	**01 34 51.9**	**+0.4**
YOJ	**Yonaguni jima**	**1.18**	**73**	P	**Pb**	**01 34 35.9**	**-0.5**
	baz=55						
YOJ	**Yonaguni jima**	**1.18**	**73**	*e*P	**Pb**	**01 34 36.0**	**-0.5**
YOJ	**Yonaguni jima**	**1.18**	**73**	*e*Pn	**Pb**	**01 34 36.0**	**-0.4**
WGK	**Gukeng**	**1.19**	**249**	*e*P	**Pb**	**01 34 36.2**	**-0.4**
	baz=258						
CHN4	**Tsaushan**	**1.32**	**235**	⇑P	**Pn**	**01 34 38.4**	**+0.1**
	baz=244						
CHN4				S	**Sg**	**01 34 57.9**	**+0.8**
	baz=244						
CHN2	**Minshiung**	**1.32**	**244**	*e*P	**Pn**	**01 34 38.6**	**+0.4**
	baz=253						
CHN2				*e*S	**Sg**	**01 34 57.2**	**+0.1**
	baz=253						
TPUB	**Ta-pu**	**1.32**	**232**	*e*Pn	**Pn**	**01 34 38.0**	**-0.4**
STYT	**Tauyuan**	**1.33**	**225**	⇑P	**Pn**	**01 34 37.6**	**-0.8**
	baz=233						
STYT				*e*S	**Sg**	**01 34 57.1**	**-0.3**
	baz=233						
WTP	**Ta-pu**	**1.37**	**231**	⇑P	**Pn**	**01 34 38.8**	**-0.2**
	baz=240						
WTP				S	**Sg**	**01 34 57.9**	**-0.8**
	baz=240						
CHY	**Chiayi**	**1.38**	**244**	⇓*i*P	**Pn**	**01 34 39.2**	**+0.2**
	baz=253						
CHY				S	**Sg**	**01 34 58.4**	**-0.5**
	baz=253						
WTCT	**Ta-ch'eng**	**1.39**	**260**	*e*P	**Pn**	**01 34 38.5**	**-0.7**
	baz=267						
WTCT				*e*S	**Sn**	**01 34 57.9**	**+0.7**
	baz=267						
TWG	**Pinlang**	**1.44**	**207**	*e*P	**Pn**	**01 34 37.2**	**-2.7**
	baz=207						
TWG	**Pinlang**	**1.44**	**207**	*e*Pn	**Pn**	**01 34 36.8**	**-3.1**
TWG				*e*Sg	**Sn**	**01 34 59.2**	**+0.7**
TWK	**Hsinying**	**1.45**	**235**	*e*P	**Pn**	**01 34 40.4**	**+0.3**
	baz=244						
TWK				*e*S	**Sg**	**01 35 01.2**	**0.0**
	baz=244						
CHN1	**Nanshi**	**1.47**	**231**	⇑P	**Pn**	**01 34 40.7**	**+0.4**
	baz=241						
CHN1				*e*S	**Sg**	**01 35 02.7**	**+0.9**
	baz=241						
TTN	**Taitung**	**1.47**	**203**	*e*P	**Pn**	**01 34 38.5**	**-1.8**
	baz=202						
WSF	**Szhu**	**1.50**	**252**	*e*P	**Pn**	**01 34 40.7**	**0.0**
	baz=260						
WSF				*e*S	**Sg**	**01 35 02.6**	**-0.1**
	baz=260						
SGST	**Jiashian**	**1.50**	**227**	*e*P	**Pn**	**01 34 40.7**	**0.0**
	baz=237						
SGST				S	**Sg**	**01 35 02.8**	**0.0**
	baz=237						
PCYT	**Pengchaiyu**	**1.53**	**10**	*e*P	**Pn**	**01 34 40.6**	**-0.5**
	baz=6.0						
CHN8	**Yiju**	**1.62**	**242**	*e*P	**Pn**	**01 34 42.3**	**-0.1**
	baz=251						
CHN8				*e*S	**Sg**	**01 35 05.5**	**-1.2**
	baz=251						
CHN3	**Shinhua**	**1.66**	**232**	*e*P	**Pb**	**01 34 44.3**	**-0.3**
	baz=243						
ECL	**Taimali**	**1.69**	**207**	*e*P	**Pn**	**01 34 43.8**	**+0.5**
	baz=192						
SSD	**Sandimen**	**1.72**	**218**	*e*P	**Pn**	**01 34 43.2**	**-0.6**
	baz=242						
SSD				*e*S	**Sg**	**01 35 08.5**	**-1.3**
	baz=242						
SCLT	**Jiali**	**1.72**	**237**	*e*P	**Pn**	**01 34 44.6**	**+0.9**
	baz=247						
SCLT				*e*S	**Sb**	**01 35 08.0**	**+0.8**
	baz=247						
TAI1	**Yung-k'ang**	**1.78**	**233**	*e*P	**Pn**	**01 34 45.4**	**+1.0**
	baz=245						
TWM1	**Shoushan**	**1.79**	**224**	*e*P	**Pb**	**01 34 46.3**	**-0.6**
	baz=236						
IRIF	**Iriomote-Funau**	**1.80**	**83**	P	**Pn**	**01 34 44.5**	**-0.3**
IRIF				*e*S	**Sn**	**01 35 08.4**	**+1.0**
HATJ	**Hateruma jima**	**1.86**	**91**	P	**Pn**	**01 34 46.4**	**+0.8**
EAST	**Anshuo**	**1.92**	**206**	*e*P	**Pn**	**01 34 44.2**	**-2.4**
	baz=195						
TAW	**Tawu**	**1.93**	**205**	*e*P	**Pn**	**01 34 46.5**	**0.0**
	baz=204						
SCZT	**Fangliau**	**2.03**	**212**	*e*P	**Pn**	**01 34 48.2**	**+0.2**
	baz=196						
JKRS	**Kuro-shima**	**2.05**	**86**	P	**Pn**	**01 34 48.5**	**+0.3**
KAU	**Kaohsiung**	**2.05**	**221**	*e*P	**Pn**	**01 34 49.6**	**+1.4**
	baz=251						
LAY	**Lan-yu**	**2.08**	**186**	*e*P	**Pn**	**01 34 45.3**	**-3.3**
	baz=186						
PNG	**Penghu**	**2.10**	**255**	*e*P	**Pn**	**01 34 48.4**	**-0.6**
	baz=262						
PNG				*e*S	**Sn**	**01 35 16.7**	**+1.8**
	baz=262						
WDGT	**Dungji**	**2.12**	**247**	*e*P	**Pn**	**01 34 48.8**	**-0.3**
	baz=242						
WDGT				*e*S	**Sn**	**01 35 15.7**	**+0.6**
	baz=242						
JIJ	**Ishigaki jima**	**2.18**	**83**	P	**Pn**	**01 34 49.8**	**-0.2**
TWP	**Hsiaoliuchiu**	**2.19**	**217**	*e*P	**Pn**	**01 34 51.5**	**+1.4**
	baz=231						
HEN	**Hengchun**	**2.31**	**205**	*e*P	**Pn**	**01 34 52.8**	**+1.0**
	baz=193						
TSEB	**Hengchuen, Pin**	**2.35**	**200**	*e*P	**Pn**	**01 34 51.1**	**-1.3**
	baz=191						
JISG	**Ishigakijimahi**	**2.36**	**78**	P	**Pn**	**01 34 52.1**	**-0.4**
JTJ	**Tarama**	**2.72**	**78**	P	**Pn**	**01 34 58.2**	**+0.7**
QZH	**Quanzhou**	**3.01**	**287**	⇑*i*Pn	Pn	01 34 54.6	-6.9
QZH				Sn	**Sn**	**01 35 30.3**	**-7.0**
QZH				smax	smax		
	comp=N,9μm,1.2s						
QZH				smax	smax		
	comp=E,9μm,1.3s						
QZH				LR	LR		
	comp=N,94μm,13.3s						
QZH				LR	LR		
	comp=E,30μm,9.8s						
QZH				LR	LR		
	comp=Z,38μm,8.5s						
KNM	**Kinmen**	**3.06**	**276**	*e*P	**Pn**	**01 35 03.0**	**+0.8**
	baz=284						
JIRB	**Irabujima**	**3.18**	**76**	P	**Pn**	**01 35 04.4**	**+0.6**
JIKM	**Ikemajima**	**3.27**	**75**	P	**Pn**	**01 35 06.1**	**+1.1**
JMJ	**Miyako jima 2**	**3.28**	**77**	P	**Pn**	**01 35 07.1**	**+1.9**
JKE	**Kume jima 2**	**5.04**	**63**	P	**Pn**	**01 35 30.4**	**+0.9**
JAGN	**Aguni-jima**	**5.53**	**62**	P	**Pn**	**01 35 38.4**	**+2.3**
SGCP	**Mt. Cagua**	**5.85**	**177**	*e*P	**Pn**	**01 35 39.8**	**-0.7**
JNTH	**Nagotoyohara**	**6.14**	**66**	P	**Pn**	**01 35 44.3**	**-0.2**
JIH	**Iheya**	**6.30**	**61**	P	**Pn**	**01 35 47.1**	**+0.4**
JOW	**Kunigami**	**6.47**	**64**	P	**Pn**	**01 35 48.4**	**-0.6**
JOW	**Kunigami**	**6.47**	**64**	*e*P	**Pn**	**01 35 48.5**	**-0.6**
	baz=61						
JOW	**Kunigami**	**6.47**	**64**	*e*Pn	**Pn**	**01 35 48.5**	**-0.6**
ABRA	**Dolores**	**6.51**	**189**	*e*P	**Pn**	**01 35 49.4**	**-0.2**
ABRA				*e*S	**Sn**	**01 37 12.1**	**+8.5**
JOKE	**Okinoerabujima**	**6.93**	**61**	P	**Pn**	**01 35 55.4**	**0.0**
SSE	**Sheshan**	**6.97**	**356**	P	**Pn**	**01 35 55.3**	**-0.6**
SSE				S	**Sn**	**01 37 16.3**	**+1.4**
SSE				LR	LR		
	comp=N,9μm,10.3s						
SSE				LR	LR		
	comp=E,5μm,10.3s						
SSE				LR	LR		
	comp=Z,11μm,9.5s						
CAUP	**Cauayan**	**7.13**	**180**	*e*P	**Pn**	**01 35 59.9**	**+1.7**
CAUP				*e*S	**Sn**	**01 37 21.0**	**+2.0**
HKC	**Hong Kong Obse**	**7.22**	**257**	P	Pn	01 36 09.0	+10
JTK	**Tokunoshima**	**7.42**	**59**	P	**Pn**	**01 36 01.4**	**-0.7**
GZH	**Guangzhou**	**7.80**	**264**	P	**Pn**	**01 36 02.9**	**-4.4**
GZH				smax	smax		
	comp=N,1μm,0.9s						
GZH				smax	smax		
	comp=E,1μm,1.0s						
JAM	**Amami Oshima**	**8.23**	**57**	P	**Pn**	**01 36 14.0**	**+0.8**
NJ2	**Nanjing**	**8.32**	**343**	*e*P	**Pn**	**01 36 12.9**	**-1.5**
NJ2				S	**Sn**	**01 37 48.5**	**+0.5**
NJ2				smax	smax		
	comp=N,300nm,1.2s						
NJ2				smax	smax		
	comp=E,340nm,1.6s						
NJ2				LR	LR		
	comp=N,10μm,11.9s						
NJ2				LR	LR		
	comp=E,9μm,12.5s						
NJ2				LR	LR		
	comp=Z,6μm,17.1s						
WHN	**Wuhan**	**9.19**	**316**	P	**Pn**	**01 36 25.5**	**-0.9**
WHN				S	**Sn**	**01 38 06.3**	**-3.3**
WHN				LR	LR		
	comp=N,29μm,6.3s						
WHN				LR	LR		
	comp=E,29μm,9.8s						
WHN				LR	LR		
	comp=Z,32μm,9.4s						
JNU	**Nakatsue**	**12.01**	**40**	Pn	**Pn**	**01 37 07.4**	**+2.3**
	0.2nm,0.3s,baz=220,slow=3.5,SNR=6.9						
JNU	**Nakatsue**	**12.01**	**40**	*e*Pn	**Pn**	**01 37 07.1**	**+2.0**
QIZ	**Qiongzhong**	**12.20**	**248**	P	**Pn**	**01 37 06.8**	**-0.8**
QIZ				pmax	pmax		
	comp=Z,45nm,2.6s						
QIZ				LR	LR		
	comp=N,7μm,17.4s						
QIZ				LR	LR		
	comp=Z,2μm,17.4s						
QIZ	**Qiongzhong**	**12.20**	**248**	*e*Pn	**Pn**	**01 37 06.4**	**-1.2**
	51nm,1.4s						
ENH	**Enshi**	**12.53**	**302**	*e*Pn	**Pn**	**01 37 11.2**	**-1.0**
	17nm,0.9s						
ENH				*e*Lg	Lg	01 40 44.4	
TIA	**Tai'an**	**12.71**	**343**	⇑P	Pn	01 37 20.8	+6.3
TIA				S	**Sn**	**01 39 39.0**	**+3.3**
TIA				pmax	pmax		
	comp=Z,390nm,7.5s						
TIA				LR	LR		
	comp=N,8μm,12.0s						
TIA				LR	LR		
	comp=E,8μm,10.0s						
TIA				LR	LR		
	comp=Z,11μm,12.0s						
TJN	**Taejon**	**13.14**	**20**	*e*P	**Pn**	**01 37 17.4**	**-3.0**
GYA	**Guiyang**	**13.87**	**283**	⇑*i*P	**Pn**	**01 37 30.6**	**+0.1**
GYA				PP	**P**	**01 37 42.0**	**+3.2**
GYA				S	**Sn**	**01 39 56.1**	**-8.2**
GYA				SS	**S**	**01 40 23.3**	**-3.1**
GYA				pmax	pmax		
	comp=Z,30nm,0.8s						
GYA				pmax	pmax		
	comp=Z,120nm,5.9s						
GYA				LR	LR		
	comp=N,7μm,7.8s						
GYA				LR	LR		
	comp=E,5μm,9.0s						
GYA				LR	LR		
	comp=Z,5μm,8.4s						
KS15	**Wonju Array Si**	**14.28**	**20**	*e*P	**P**	**01 37 43.9**	**+0.7**
KSAR	**Wonju Array Be**	**14.28**	**20**	P	**Pn**	**01 37 39.7**	**+3.7**
KSAR	**Wonju Array Be**	**14.28**	**20**	Pn	**Pn**	**01 37 39.7**	**+3.7**
KSRS	**Korea Array**	**14.30**	**20**	Pn	**Pn**	**01 37 39.7**	**+3.4**
	1.9nm,0.3s,baz=198,slow=12,SNR=40						
KSRS				LR	LR	01 43 51.6	
	comp=Z,4μm,18.2s,baz=200,slow=41						
KS01	**Wonju Array Si**	**14.31**	**20**	*e*Pn	**Pn**	**01 37 40.0**	**+3.6**
DL2	**Dalian**	**14.75**	**360**	⇓P	**P**	**01 37 46.5**	**-1.8**
DL2				S	**S**	**01 40 35.8**	**-8.2**
DL2				pmax	pmax		
	comp=Z,45nm,1.0s						
DL2				pmax	pmax		
	comp=Z,440nm,4.9s						
DL2				LR	LR		
	comp=N,5μm,15.1s						
DL2				LR	LR		
	comp=Z,8μm,14.1s						
XAN	**Xi'an**	**14.95**	**314**	P	**Pn**	**01 37 45.0**	**-0.3**
XAN				pP	P	01 37 51.8	+1.0
XAN				S	**Sn**	**01 40 31.8**	**+1.2**
XAN				pmax	pmax		
	comp=Z,7.0nm,1.5s						
XAN				LR	LR		
	comp=N,5μm,7.7s						
XAN				LR	LR		
	comp=E,6μm,11.4s						
XAN				LR	LR		
	comp=Z,9μm,10.6s						
TIY	**Taiyuan**	**15.73**	**332**	*e*P	**P**	**01 38 00.0**	**+0.6**
TIY				S	**Sn**	**01 40 53.9**	**+4.3**
TIY				pmax	pmax		
	comp=Z,350nm,4.5s						
TIY				LR	LR		
	comp=N,6μm,9.4s						
TIY				LR	LR		
	comp=E,3μm,8.0s						
TIY				LR	LR		
	comp=Z,6μm,8.8s						
BJI	**Beijing**	**16.57**	**345**	P	**Pn**	**01 38 00.4**	**-5.6**
BJI				S	**S**	**01 41 27.9**	**+6.7**
BJI				pmax	pmax		
	comp=Z,9.0nm,1.0s						
BJI				pmax	pmax		
	comp=Z,270nm,8.7s						
BJI				LR	LR		
	comp=E,3μm,14.0s						
BJI				LR	LR		
	comp=N,5μm,12.6s						
BJI				LR	LR		
	comp=Z,2μm,16.8s						
KMI	**Kunming**	**17.34**	**277**	P	**Pn**	**01 38 16.1**

KMI LR LR
comp=Z,6μm,11.8s
CD2 Chengdu 17.34 297 P **Pn** **01 38 14.9 -1.1**
CD2 sP pP 01 38 20.6 -1.1
CD2 PP **PnPn** **01 38 30.9 +4.8**
CD2 S **Sn** **01 41 29.0 +0.2**
CD2 SS **SnSn** **01 41 49.4 +7.2**
CD2 pmax pmax
comp=Z,60nm,0.9s
CD2 pmax pmax
comp=Z,160nm,3.3s
CD2 LR LR
comp=Z,14μm,14.4s
CD2 LR LR
comp=Z,6μm,9.0s
PANO Nakornpanom 17.48 250 P **P** **01 38 22.6 +3.7**
comp=Z,85nm,1.0s,comp=Z,3μm
UBPT Khong Chiam 17.67 243 P P 01 38 28.3 +7.3
comp=Z,29nm,2.5s,comp=Z,1μm
SNY Shenyang 17.73 4 ⇓P **P** **01 38 23.4 +2.0**
SNY pmax pmax
comp=Z,10.0nm,0.5s
SNY pmax pmax
comp=Z,1μm,5.9s
SNY LR LR
comp=Z,7μm,12.4s
SNY LR LR
comp=Z,2μm,9.8s
SNY LR LR
comp=Z,10μm,12.3s
SKNT Sakolnakorn 18.10 250 P **P** **01 38 31.8 +6.1**
comp=Z,79nm,1.8s
NONG Nongkai 18.39 254 P **P** **01 38 33.8 +5.0**
comp=Z,23nm,1.8s,comp=Z,5μm
KKM Kota Kinabalu 18.75 197 *e*P **P** **01 38 32.1 -0.8**
comp=Z,307nm,2.0s
HHC Hu-ho-hao-te 18.75 335 *e*P **Pn** **01 38 35.8 +2.5**
HHC S **S** **01 42 07.8 +1.9**
HHC pmax pmax
comp=Z,53nm,0.8s
HHC pmax pmax
comp=Z,1μm,3.8s
HHC LR LR
comp=Z,3μm,8.7s
HHC LR LR
comp=Z,1μm,9.1s
HHC LR LR
comp=Z,2μm,9.2s
MAJO Matsushiro 18.80 45 *e*P **P** **01 38 33.0 -0.2**
MAJO pmax pmax
comp=Z,9.0nm,0.8s
MAJO Matsushiro 18.80 45 *e*P **P** **01 38 33.0 -0.2**
comp=Z,9.1nm,0.8s
MJAR Matsushiro Arr 18.80 45 P **P** **01 38 31.4 -1.9**
comp=Z,0.3nm,0.3s,baz=233,slow=10.0,SNR=11
MJAR LR LR 01 46 30.1
comp=Z,1μm,19.7s,baz=240,slow=40
BTO Baotou 19.18 332 *e*P **Pn** **01 38 42.4 +4.0**
LZH Lanzhou 19.53 312 *e*P **P** **01 38 41.0 -0.5**
LZH pP Pn 01 38 43.6 +0.8
LZH sP sP 01 38 46.0 -2.0
LZH PP **PnPn** **01 38 59.0 +2.8**
LZH *e*S **Sn** **01 42 15.0 -6.8**
LZH sS S 01 42 21.3 -0.5
LZH SS **SnSn** **01 42 40.0 +3.9**
LZH pmax pmax
comp=Z,110nm,1.1s
LZH pmax pmax
comp=Z,560nm,5.0s
LZH LR LR
comp=Z,5μm,10.2s
LZH LR LR
comp=Z,4μm,11.0s
LZH LR LR
comp=Z,6μm,12.5s
CN2 Changchun 19.87 8 ⇓P **P** **01 38 45.3 +0.4**
CN2 *e*S **S** **01 42 23.9 -4.1**
CN2 pmax pmax
comp=Z,20nm,1.2s
CN2 pmax pmax
comp=Z,200nm,6.0s
CN2 LR LR
comp=Z,5μm,13.0s
CN2 LR LR
comp=Z,3μm,13.0s
CN2 LR LR
comp=Z,5μm,14.0s
CRAI Chiangrai 20.19 263 P Pn 01 38 53.1 +2.6
comp=Z,129nm,2.0s,comp=Z,18μm
LOEI Loei 20.25 255 P **P** **01 38 50.1 +0.8**
comp=Z,46nm,1.8s
CHAI Chaiyaphum 20.29 250 P Pn 01 38 54.5 +2.8
comp=Z,6.0nm,1.1s,comp=Z,122nm
VLA Vladivostok 20.71 21 ⇑*i*P **P** **01 38 50.4 -3.6**
VLA *e**SP **sP** **01 39 03.1 +2.6**
VLA *e*S **S** **01 42 37.0 -7.8**
VLA *e* 01 43 01.3
VLA pmax pmax
comp=Z,24nm,1.7s
PBKT Sadao Pong 20.88 253 P Pn 01 38 59.8 +1.2
comp=Z,39nm,1.8s,comp=Z,1μm
SRAK Srakaew 21.16 245 P **P** **01 38 58.5 -0.6**
LAMP Lampang 21.35 259 P **P** **01 39 05.4 +4.2**
comp=Z,8.8nm,1.0s
MDJ Mudanjiang 21.43 15 P **P** **01 39 01.1 -0.6**
MDJ S **S** **01 43 02.3 +3.4**
MDJ PcS **PcS** **01 46 42.3 -0.6**
MDJ pmax pmax
comp=Z,140nm,5.5s
MDJ LR LR
comp=Z,2μm,14.0s
MDJ LR LR
comp=Z,5μm,15.0s
MDJ LR LR
comp=Z,4μm,14.0s
MDJ Mudanjiang 21.43 15 PFAKE 01 39 10.0 +8.3
MDJ LR LR
comp=Z,2μm,20.0s
SUKH Sukhothai 21.71 257 P **P** **01 39 09.7 +4.7**
comp=Z,5.0nm,1.6s,comp=Z,81nm
USRK Ussuriysk Ar. 21.71 20 P **P** **01 39 04.8 0.0**
comp=Z,4.9nm,0.8s,baz=205,slow=10,SNR=12
USRK LR LR 01 48 20.1
comp=Z,2μm,18.0s,baz=188,slow=39
CHTO Chiang Mai 21.88 260 P **P** **01 39 10.9 +4.0**
comp=Z,137nm,1.3s,comp=Z,2μm
CHTO Chiang Mai 21.88 260 *e*P **P** **01 39 04.9 -2.0**
CHTO pmax pmax
comp=Z,31nm,1.0s
CHTO MLR MLR
comp=Z,2μm,20.0s
CHTO Chiang Mai 21.88 260 *e*P **P** **01 39 04.9 -2.0**
comp=Z,31nm,1.0s
CHTO LR LR
comp=Z,2μm,20.0s
CM01 Chiang Mai Arr 21.99 259 *e*P **P** **01 39 11.5 +3.5**
CMAR Chiang Mai Arr 21.99 260 P **P** **01 39 10.0 +1.9**
comp=Z,4.1nm,0.7s,baz=74,slow=7.6,SNR=11
CMAR LR LR 01 49 06.2
comp=Z,1μm,18.6s,baz=74,slow=40
CMAR Chiang Mai Arr 21.99 260 P **P** **01 39 10.0 +1.9**
SBUM Sibu 23.43 205 *e*P **P** **01 39 21.6 -1.6**
comp=Z,49nm,1.1s
MRSI Marisa 23.50 180 P P 01 39 37.1 +13
GTA Gaotai 24.02 315 ⇑P **P** **01 39 28.8 +0.1**
GTA pP sP 01 39 33.6 -1.9
GTA sP pP 01 39 35.9 +2.4
GTA S **S** **01 43 46.4 +1.1**
GTA sS sS 01 43 48.6 -4.5
GTA SS **SnSn** **01 44 33.4 +7.5**
GTA pmax pmax
comp=Z,310nm,5.2s
GTA LR LR
comp=Z,3μm,15.2s
GTA LR LR
comp=Z,3μm,16.9s
GTA LR LR
comp=Z,2μm,16.6s
GUMO Guam 24.20 111 PFAKE 01 39 40.0 +10
GUMO LR LR
comp=Z,1μm,22.0s
KSM Kuching 25.10 208 *e*P **P** **01 39 37.6 -1.0**
comp=Z,110nm,1.4s
KSM LR LR
comp=Z,834nm,21.0s
HIA Hailar 25.16 357 *e*P **P** **01 39 38.5 -0.4**
HIA pmax pmax
comp=Z,20nm,0.8s
HIA MLR MLR
comp=Z,2μm,21.0s
HIA Hailar 25.16 357 *e*P **P** **01 39 38.5 -0.4**
comp=Z,20nm,0.8s
HIA LR LR
comp=Z,2μm,21.0s
ERM Erimo 25.18 40 PFAKE 01 39 50.0 +11
ERM LR LR
comp=Z,977nm,21.0s
KLR Kul'dur 26.27 15 P **P** **01 39 48.7 -0.2**
comp=Z,9.9nm,0.9s,baz=229,slow=9.0,SNR=23
ULN Ulaanbaatar 26.43 337 *d i*P **P** **01 39 50.5 -0.1**
ULN pmax pmax
comp=Z,36nm,1.3s
ULN Ulaanbaatar 26.43 337 *e*P **P** **01 39 50.6 -0.1**
comp=Z,56nm,1.5s
ULN LR LR
comp=Z,2μm,22.0s
HABR Khabarovsk 26.48 20 *e*P **P** **01 39 47.5 -3.3**
HABR *e**PP **sP** **01 39 57.2 -0.4**
HABR *e**SP **pP** **01 40 01.3 +5.7**
HABR *e*PPP PPP 01 40 35.6
HABR *e* 01 43 13.6
HABR *e*S **S** **01 44 18.0 -6.1**
HABR *e**SS **sS** **01 44 34.7 +2.7**
HABR *e*SSS SSS 01 45 34.5
HABR *e* 01 50 40.1
HABR pmax pmax
comp=Z,14nm,2.0s
HABR pmax pmax
comp=Z,23nm,2.0s
HABR pmax pmax
comp=E,28nm,1.9s
HABR MLR MLR
comp=Z,2μm,18.0s
SONM Songino Array 26.64 337 P **P** **01 39 52.2 -0.3**
comp=Z,7.5nm,0.9s,baz=154,slow=9.6,SNR=26
SONM LR LR 01 51 28.3
comp=Z,3μm,19.5s,baz=152,slow=39
SONA1 Songino Array 26.65 337 *e*P **P** **01 39 52.0 -0.5**
SHL Shillong 27.14 279 *e*P **P** **01 40 00.0 +2.7**
KULM Kulim 27.63 231 *e*P **P** **01 39 59.4 -2.1**
comp=Z,52nm,1.6s
KULM LR LR
comp=Z,1μm,19.0s
LSA Lhasa 27.82 288 *e*P **P** **01 40 03.5 -0.2**
LSA pmax pmax
comp=Z,16nm,0.7s
LSA MLR MLR
comp=Z,1μm,20.0s
LSA Lhasa 27.82 288 *e*P **P** **01 40 03.5 -0.2**
comp=Z,16nm,0.7s
LSA LR LR
comp=Z,1μm,20.0s
IPM Ipoh 27.94 229 *e*P **P** **01 40 04.7 +0.4**
comp=Z,85nm,1.8s
YSS Yuzh-Sakhalins 28.31 31 *e*P P 01 39 55.0 -12
YSS *e* 01 41 08.0
YSS *e* 01 44 44.0
YSS MLR MLR
comp=Z,1μm,18.0s
YSS MLR MLR
comp=N,1μm,16.0s
KAPI Kappang 29.02 184 PFAKE 01 40 30.0 +16
KAPI LR LR
comp=Z,825nm,21.0s
ZAK Zakamensk 29.90 336 *e*P **P** **01 40 20.7 -0.8**
ZAK pmax pmax
comp=Z,4.0nm,1.3s
PSI Prapat 30.60 230 *e*P **P** **01 40 30.6 +2.6**
PSI pmax pmax
comp=Z,28nm,1.2s
PSI Prapat 30.60 230 *e*P **P** **01 40 30.6 +2.6**
comp=Z,28nm,1.2s
TLY Talaya 30.84 338 LR LR 01 54 04.0
comp=Z,2μm,19.3s,baz=138,slow=39
TLY Talaya 30.84 338 *e*P **P** **01 40 30.5 +0.8**
TLY pmax pmax
comp=Z,13nm,1.4s
TLY MLR MLR
comp=Z,2μm,19.0s
TLY Talaya 30.84 338 *e*P **P** **01 40 29.4 -0.3**
comp=Z,7.4nm,0.9s
IRK Irkutsk 31.10 339 *e*P **P** **01 40 31.9 -0.1**
IRK pmax pmax
comp=Z,40nm,2.4s
MNSI Mandailing Nat 31.62 226 P **P** **01 40 40.2 +3.3**
comp=Z,43nm,1.4s
MOY Mondy 31.80 335 *e*P **P** **01 40 40.0 +1.8**
PPI Padang Panjang 32.04 223 P **P** **01 40 44.2 +3.6**
comp=Z,24nm,1.6s
GUN Gumba 32.41 285 *e*P **P** **01 40 47.9 +3.7**
comp=Z,61nm,1.1s
KKN Kakani 32.94 284 *e*P **P** **01 40 50.4 +1.7**
comp=Z,18nm,0.6s
DMN Daman 33.10 284 *e*P **P** **01 40 50.6 +0.5**
GKN Gorkha 33.50 285 *e*P **P** **01 40 55.8 +2.3**
WMQ Urumqi 34.09 314 P **P** **01 40 59.3 +0.9**
WMQ pP sP 01 41 03.8 -1.3
WMQ sP pP 01 41 08.3 +5.1
WMQ S **S** **01 46 17.0 -6.7**
WMQ sS sS 01 46 30.0 -1.6
WMQ PcS **PcS** **01 47 24.3 +2.6**
WMQ SS **SnSn** **01 48 26.6 -4.6**
WMQ pmax pmax
comp=Z,6.0nm,1.0s
WMQ pmax pmax
comp=Z,44nm,4.2s
WMQ LR LR
comp=Z,840nm,12.2s
WMQ LR LR
comp=Z,1μm,9.2s
BOD Bodaibo 34.13 353 *e*P **P** **01 40 55.4 -3.0**
BOD pmax pmax
comp=Z,4.0nm,1.2s
KOLN Koldanda 34.43 284 *e*P **P** **01 41 00.7 -0.9**
comp=Z,16nm,0.7s
PYUN Piuthan 34.95 285 *e*P **P** **01 41 06.7 +0.5**
comp=Z,39nm,0.9s
YAK Yakutsk 38.28 6 *e*P **P** **01 41 31.6 -2.2**
YAK *e* 01 43 07.4
YAK *e*S **S** **01 47 30.5 +3.5**
YAK *e* 01 51 38.8
YAK pmax pmax
comp=Z,10.0nm,0.9s
YAK pmax pmax
comp=N,7.0nm,1.1s
YAK pmax pmax
comp=Z,111nm,4.3s
YAK pmax pmax
comp=N,62nm,4.3s
YAK pmax pmax
comp=E,32nm,4.1s
YAK smax smax
comp=N,36nm,1.8s
YAK smax smax
comp=E,15nm,2.0s
YAK MLR MLR
comp=Z,3μm,15.0s
YAK MLR MLR
comp=E,559nm,13.0s
YAK MLR MLR
comp=N,2μm,13.0s
YAK Yakutsk 38.28 6 PFAKE 01 41 50.0 +16
YAK LR LR
comp=Z,1μm,19.0s
MK01 Makanchi Array 38.75 316 *e*P **P** **01 41 37.3 -0.7**
MK31 Makanchi Array 38.76 316 *e*P **P** **01 41 37.7 -0.4**
MK31 pmax pmax
comp=Z,11nm,0.8s
MK31 Makanchi Array 38.76 316 *e*P **P** **01 41 38.0 -0.2**
MKAR Makanchi Array 38.76 316 P **P** **01 41 37.8 -0.3**
comp=Z,4.0nm,0.7s,baz=102,slow=11,SNR=25
MKAR PcP **PcP** **01 43 48.5 -1.0**
comp=Z,0.9nm,0.7s,baz=84,slow=5.5,SNR=2.6
MAKZ Makanchi 38.97 316 *e*P **P** **01 41 39.7 -0.1**
MAKZ pmax pmax
comp=Z,11nm,0.8s
MAKZ Makanchi 38.97 316 *e*P **P** **01 41 39.7 -0.1**
comp=Z,11nm,0.8s
PDGK Podgornoye 39.55 310 P **P** **01 41 44.6 -0.1**
PDGK pmax pmax
comp=Z,29nm,1.1s
PETK Petropavlovsk- 39.62 34 LR LR 01 58 31.5
comp=Z,806nm,19.9s,baz=228,slow=37
PET Petropavlovsk 40.07 34 PFAKE 01 42 00.0 +11
PET LR LR
comp=Z,1μm,19.0s
ZAA0 Zalesovo Array 40.59 327 *e*P **P** **01 41 52.6 -0.7**
ZALV Zalesovo Beam 40.59 327 P **P** **01 41 52.7 -0.5**
comp=Z,6.5nm,0.7s,baz=111,slow=8.1,SNR=17
ZALV PcP **PcP** **01 43 52.5 -2.6**
comp=Z,0.5nm,0.4s,baz=104,slow=3.6,SNR=2.5
ZALV LR LR 01 59 52.6
comp=Z,1μm,19.1s,baz=89,slow=38
MA2 Magadan 40.84 22 PFAKE 01 42 10.0 +15
MA2 LR LR
comp=Z,1μm,19.0s
KSH Kashi 41.39 303 *e*P **P** **01 42 03.3 +3.1**
KSH *e*pP sP 01 42 07.3 +0.3
KSH *e*PcP **PcP** **01 43 59.9 +1.7**
KSH *e*ScP **ScP** **01 47 48.5 +0.8**
KSH PcS **PcS** **01 47 50.3 +0.8**
KSH S **S** **01 48 20.4 +5.9**
KSH ScS **ScS** **01 52 04.0 +0.1**
KSH pmax pmax
comp=Z,77nm,3.6s
KSH LR LR
comp=Z,2μm,15.4s
KSH LR LR
comp=Z,740nm,11.9s
KSH LR LR
comp=Z,1μm,16.9s
PMG Port Moresby 41.53 140 *e*P **P** **01 42 00.5 -0.8**
PMG pmax pmax
comp=Z,44nm,1.2s
PMG MLR MLR
comp=Z,428nm,19.0s
PMG Port Moresby 41.53 140 *e*P **P** **01 42 00.5 -0.8**
comp=Z,44nm,1.2s
PMG LR LR
comp=Z,428nm,19.0s
NVS Novosibirsk 41.85 327 *e*P **P** **01 42 05.2 +1.6**
NVS *e* 01 42 15.1
NVS pmax pmax
comp=Z,14nm,1.5s
NVS pmax pmax
comp=N,7.0nm,1.7s
NVS pmax pmax
comp=E,10.0nm,1.5s
H11N1 WAKE ISLAND Hy 41.95 87 T T 02 27 08.2
baz=280
H11N2 WAKE ISLAND Hy 41.95 87 T T 02 27 07.1
baz=280
H11N3 WAKE ISLAND Hy 41.97 87 T T 02 27 08.8
baz=280
H11S3 WAKE ISLAND Hy 42.08 89 T T 02 27 13.2
baz=280
H11S1 WAKE ISLAND Hy 42.09 89 T T 02 27 16.3
baz=280,slow=74,SNR=69
H11S2 WAKE ISLAND Hy 42.10 89 T T 02 27 15.7
baz=280,slow=74,SNR=62
FITZ Fitzroy Crossi 42.13 175 LR LR 01 59 27.8
comp=E,75nm,21.9s,slow=36
TKM2 Tokmak 2 42.23 308 P **P** **01 42 08.4 +1.3**
TKM2 pmax pmax
comp=Z,13nm,1.2s
TKM2 Tokmak 2 42.23 308 *e*P **P** **01 42 07.2 +0.1**
comp=Z,10.0nm,0.9s
TKM2 LR LR
comp=Z,1μm,20.0s
KURK Kurchatov 42.49 320 P **P** **01 42 08.4 -0.4**
KURK pmax pmax
comp=Z,33nm,1.3s
KURK Kurchatov 42.49 320 *e*P **P** **01 42 07.8 -1.0**
comp=Z,16nm,1.2s
KURK LR LR
comp=Z,878nm,19.0s
KURBB Kurchatov Arra 42.51 320 P **P** **01 42 08.3 -0.7**
comp=Z,3.6nm,0.2s,baz=119,slow=7.5,SNR=19
AAK Ala-Archa 42.98 307 P **P** **01 42 14.7 +1.5**
comp=Z,1.3nm,0.4s,baz=153,slow=16,SNR=3.7
AAK LR LR 02 02 08.3
comp=Z,960nm,18.8s,baz=78,slow=39
COEN Coen 43.23 149 *e*P **P** **01 42 14.6 -0.6**
comp=Z,50nm,1.3s
EKS2 Erkin-Say 43.50 307 *e*P **P** **01 42 16.3 -1.0**
EKS2 pmax pmax
comp=Z,16nm,1.5s
EKS2 MLR MLR
comp=Z,1μm,19.0s
EKS2 Erkin-Say 43.50 307 *e*P **P** **01 42 16.3 -1.0**
comp=Z,16nm,1.5s
EKS2 LR LR
comp=Z,1μm,19.0s
SEY Seymchan 43.86 20 *e*P **P** **01 42 19.8 +0.1**
MNAS Manas 44.40 307 P **P** **01 42 25.1 +0.5**
MNAS pmax pmax
comp=Z,19nm,1.3s
MBWA Marble Bar 45.05 183 *e*P **P** **01 42 27.5 -2.1**
comp=Z,63nm,1.1s
MBWA LR LR
comp=Z,584nm,21.0s
WRAB Tennant Creek 45.47 163 *e*P **P** **01 42 31.3 -1.7**
WRAB pmax pmax
comp=Z,42nm,1.6s
WRAB Tennant Creek 45.47 163 *e*P **P** **01 42 31.3 -1.7**
comp=Z,42nm,1.6s
WRA Warramunga Arr 45.47 163 P **P** **01 42 31.1 -2.0**
comp=Z,7.7nm,0.9s,baz=345,slow=8.7,SNR=16
WRA LR LR 02 04 39.2
comp=Z,138nm,18.3s,baz=0.0,slow=40
WB2 Warramunga Arr 45.47 163 *e*P **P** **01 42 33.3 +0.2**
comp=Z,22nm,1.2s
KK31 Karatay Array 45.94 307 *i* P **P** **01 42 41.0 +4.4**
KK31 pmax pmax
comp=Z,2.0nm,0.5s
KKAR Karatay Array 45.94 307 *e*P **P** **01 42 36.8 +0.2**
KKAR pmax pmax
comp=Z,3.0nm,0.6s
KKAR Karatay Array 45.94 307 *e*P **P** **01 42 36.8 +0.2**
comp=Z,3.1nm,0.6s
KBL Kabul 46.68 295 *e*P **P** **01 42 42.6 -0.2**
KBL pmax pmax
comp=Z,16nm,1.0s
KBL Kabul 46.68 295 *e*P **P** **01 42 42.6 -0.2**
comp=Z,16nm,1.0s
TIXI Tiksi 47.73 3 *ce*P **P** **01 42 47.9 -2.3**
TIXI pmax pmax
comp=Z,41nm,1.7s
TIXI Tiksi 47.73 3 *e*P **P** **01 42 47.9 -2.3**
comp=Z,41nm,1.4s
TIXI LR LR
comp=Z,2μm,21.0s
BVA0 Borovoye Array 48.07 321 *i* P **P** **01 42 52.8 -0.3**
BVA0 pmax pmax
comp=Z,10.0nm,1.2s
BVAR Borovoye Array 48.07 321 LR LR 02 05 58.0
comp=Z,428nm,18.4s,baz=80,slow=40
BRVK Borovoye 48.14 321 *e*P **P** **01 42 52.2 -1.4**
BRVK pmax pmax
comp=Z,11nm,1.0s
BRVK MLR MLR
comp=Z,551nm,20.0s
BRVK Borovoye 48.14 321 *e*P **P** **01 42 52.1 -1.4**
comp=Z,11nm,1.0s
BRVK LR LR
comp=Z,551nm,20.0s
ZRNK Zerenda 48.85 320 *e*P **P** **01 42 58.6 -0.5**
ZRNK pmax pmax
comp=Z,14nm,1.0s
ZRNK Zerenda 48.85 320 *e*P **P** **01 42 58.6 -0.5**
comp=Z,14nm,1.0s
ASAR Alice Springs 48.94 165 P **P** **01 42 59.3 -0.8**
comp=Z,3.5nm,0.8s,baz=344,slow=7.0,SNR=22
ASAR LR LR 02 04 54.9
comp=Z,204nm,21.1s,baz=342,slow=38
AS01 Alice Springs 48.94 165 *e*P **P** **01 42 59.0 -1.1**
NRIK Noril'sk 49.61 345 P **P** **01 43 03.0 -1.6**
comp=Z,4.1nm,0.8s,baz=147,slow=9.2,SNR=8.0
NRIK LR LR 02 05 20.7
comp=Z,905nm,20.0s,baz=128,slow=38
CTAO Charters Tower 49.99 149 *e*P **P** **01 43 07.4 -0.7**
CTAO pmax pmax
comp=Z,142nm,1.2s
CTAO MLR MLR
comp=Z,1μm,22.0s
CTAO Charters Tower 49.99 149 *e*P **P** **01 43 07.4 -0.7**
comp=Z,142nm,1.2s
CTAO LR LR
comp=Z,1μm,22.0s

HNR Honiara 50.01 127 PFAKE 01 43 20.0 +12
HNR LR LR
comp=Z,361nm,21.0s
BILL Bilibino 51.57 20⇓ *e*P **P 01 43 18.5 -1.0**
BILL *e**SP **sP 01 43 24.4 -2.0**
BILL *e* 01 44 38.8
BILL pmax pmax
comp=Z,3.0nm,0.9s
BILL MLR MLR
comp=Z,1μm,17.0s
BILL Bilibino 51.57 20 *e*P **P 01 43 18.1 -1.3**
comp=Z,8.7nm,1.1s
BILL LR LR
comp=Z,807nm,19.0s
AB31 Akbulak array 53.87 314 *e*P **P 01 43 36.2 -0.6**
AB31 pmax pmax
comp=Z,8.0nm,1.0s
ABKAR Akbulak array 53.87 314 *e*P **P 01 43 36.6 -0.2**
AKTO Aktyubinsk 55.20 316 P **P 01 43 45.2 -1.2**
AKTO pmax pmax
comp=Z,5.0nm,0.8s
GEYT Alibeck 55.30 300 P **P 01 43 47.8 +0.4**
comp=Z,2.4nm,0.8s,baz=106,slow=4.8,SNR=9.1
GEYT LR LR 02 09 55.5
comp=Z,790nm,18.5s,baz=65,slow=39
ARU Arti 55.49 323*c i*P **P 01 43 49.3 +0.9**
ARU 01 44 48.2
ARU pmax pmax
comp=Z,15nm,1.2s
ARU Arti 55.49 323 *e*P **P 01 43 46.6 -1.8**
comp=Z,17nm,1.3s
ARU LR LR
comp=Z,823nm,21.0s
DGAR Diego Garcia 57.41 243 PFAKE 01 44 10.0 +7.3
DGAR LR LR
comp=Z,665nm,21.0s
STKA Stephens Creek 58.81 160 P **P 01 44 11.9 -0.3**
comp=Z,5.7nm,0.8s,baz=338,slow=6.7,SNR=8.0
STKA LR LR 02 09 46.1
comp=Z,141nm,21.9s,baz=5.7,slow=36
DZM Mont Dzumac 63.19 133 *e*LR LR 02 03 33.2
comp=Z,1μm,24.6s
CAN Canberra 64.50 156 *e*P **P 01 44 49.8 -0.7**
CAN pmax pmax
comp=Z,26nm,1.4s
CAN Canberra 64.50 156 *e*P **P 01 44 49.8 -0.7**
comp=Z,26nm,1.4s
GNI Garni 65.28 305 LR LR 02 16 08.7
comp=Z,319nm,20.0s,baz=66,slow=38
GNI Garni 65.28 305 *e*P **P 01 44 53.7 -2.2**
GNI pmax pmax
comp=Z,122nm,1.4s
GNI Garni 65.28 305 *e*P **P 01 44 53.7 -2.2**
comp=Z,122nm,1.4s
TT01 Tatalina 65.30 30 *e*P **P 01 44 55.0 -0.4**
TTA Tatalina 65.30 30 *e*P **P 01 44 54.6 -0.9**
TTA pmax pmax
comp=Z,28nm,1.8s
TTA Tatalina 65.30 30 *e*P **P 01 44 54.6 -0.9**
comp=Z,28nm,1.8s
ZEI Tsey 65.40 308 *e*P **P 01 44 56.0 -0.7**
ZEI pmax pmax
comp=Z,19nm,0.9s
VRH Novokhopyorsk 65.47 317 *e*P **P 01 44 55.3 -1.4**
VRH pmax pmax
comp=Z,9.0nm,0.5s
KLMR Klimovskoe 65.51 328 *e*P **P 01 44 56.2 -0.5**
KLMR *e* 01 45 27.9
KLMR pmax pmax
comp=Z,28nm,1.3s
ONI Oni 65.76 308 P **P 01 45 00.6 +1.8**
ONI Oni 65.76 308 *e*P **P 01 45 00.6 +1.8**
KBZ Khabaz 65.94 309 P **P 01 45 00.8 +0.9**
comp=Z,2.0nm,0.8s,baz=60,slow=7.2,SNR=8.4
KBZ LR LR 02 15 37.8
comp=Z,534nm,18.4s,baz=72,slow=38
KVAR Kislovodsk Arr 66.04 309 LR LR 02 17 12.5
comp=Z,557nm,18.2s,slow=39
KIV Kislovodsk 66.05 309 *e*P **P 01 45 00.7 0.0**
KIV MLR MLR
comp=Z,483nm,19.0s
KIV Kislovodsk 66.05 309 *e*P **P 01 45 00.7 0.0**
KIV LR LR
comp=Z,483nm,19.0s
NEY Neytrino 66.16 308 *e*P **P 01 45 03.7 +2.2**
NEY pmax pmax
comp=Z,1.0nm,1.1s
LVZ Lovozero 66.83 336 PFAKE 01 45 20.0 +15
LVZ LR LR
comp=Z,382nm,19.0s
LPSR Galich'ya Gora 66.96 319 *e*P **P 01 45 10.8 +4.6**
LPSR pmax pmax
comp=Z,10.0nm,0.9s
CAST Castle Rocks 67.02 29 *e*P **P 01 45 06.4 0.0**
comp=Z,12nm,1.0s
PPLA Purkeypile 67.04 30 *e*P **P 01 45 06.3 -0.4**
comp=Z,73nm,1.8s
VSR Storozhevoye 67.06 317 *e*P **P 01 45 05.7 -1.1**
VSR pmax pmax
comp=Z,10.0nm,1.1s
MOS Moscow 67.19 322 *e*P **P 01 45 05.2 -2.4**
MOS *e* 01 45 23.8
COLD Coldfoot 67.26 25 *e*P **P 01 45 07.0 -0.9**
comp=Z,6.1nm,1.1s
SPU Mount Spurr 67.36 32 *e*P **P 01 45 08.2 -0.5**
MLY Manley 67.36 27 *e*P **P 01 45 08.8 +0.1**
comp=Z,11nm,1.0s
BPAW Bear Paw Mtn. 67.40 28 *e*P **P 01 45 08.7 -0.1**
comp=Z,7.9nm,1.0s
KTH Kantishna Hill 67.51 29 *e*P **P 01 45 09.3 -0.3**
comp=Z,7.6nm,1.0s
TRF Thorofare Moun 67.81 29 *e*P **P 01 45 11.2 -0.4**
comp=Z,8.8nm,0.9s
OBN Obninsk 67.89 322 LR LR 02 17 21.7
comp=Z,549nm,19.6s,baz=82,slow=38
OBN Obninsk 67.89 322⇑ *e*P **P 01 45 13.4 +1.4**
OBN *e* 01 45 29.9
OBN *e* 01 45 35.3
OBN *e*S **S 01 54 12.8 +3.0**
OBN *e*SS **SS 01 58 37.1 +6.0**
OBN pmax pmax
comp=Z,4.0nm,1.3s
OBN MLR MLR
comp=Z,472nm,17.0s
OBN Obninsk 67.89 322 PFAKE 01 45 20.0 +8.0
OBN LR LR
comp=Z,14μm,20.0s
MCK McKinley 68.35 29 *e*P **P 01 45 12.9 -2.0**
MCK pmax pmax
comp=Z,18nm,1.1s
MCK McKinley 68.35 29 *e*P **P 01 45 12.9 -2.0**
comp=Z,18nm,1.1s
RND Reindeer 68.45 29 *e*P **P 01 45 14.2 -1.3**
RND pmax pmax
comp=Z,27nm,0.8s
RND Reindeer 68.45 29 *e*P **P 01 45 14.2 -1.3**
comp=Z,26nm,0.8s
WRH Wood River Hil 68.58 28 *e*P **P 01 45 16.5 +0.2**
comp=Z,15nm,1.1s
COLA College 68.60 27 *e*P **P 01 45 16.1 -0.2**
COLA pmax pmax
comp=Z,8.0nm,0.9s
COLA MLR MLR
comp=Z,332nm,19.0s
COLA College 68.60 27 *e*P **P 01 45 16.1 -0.2**
comp=Z,7.8nm,0.9s
COLA LR LR
comp=Z,332nm,19.0s
PMR Palmer 68.67 31 *e*P **P 01 45 15.8 -1.0**
PMR pmax pmax
comp=Z,11nm,1.0s
PMR Palmer 68.67 31 *e*P **P 01 45 15.8 -1.0**
comp=Z,11nm,1.0s
SML Sawmill 69.00 31 *e*P **P 01 45 17.8 -1.1**
SML pmax pmax
comp=Z,15nm,0.8s
SML Sawmill 69.00 31 *e*P **P 01 45 17.8 -1.1**
comp=Z,15nm,0.8s
IL1 Eielson Array 69.03 27 *e*P **P 01 45 18.7 -0.3**
ILAR Eielson Array 69.03 27 P **P 01 45 16.8 -2.2**
comp=Z,0.9nm,0.8s,baz=299,slow=6.2,SNR=14
ILAR LR LR 02 19 01.1
comp=Z,243nm,18.1s,baz=280,slow=39
KEV Kevo 69.24 338 PFAKE 01 45 30.0 +10
KEV LR LR
comp=Z,455nm,19.0s

SCM Sheep Creek Mo 69.46 30 *e*P **P 01 45 21.4 -0.5**
SCM pmax pmax
comp=Z,28nm,0.9s
SCM Sheep Creek Mo 69.46 30 *e*P **P 01 45 21.4 -0.5**
comp=Z,28nm,0.9s
ANN Anapa 69.55 311 *e*P **P 01 45 21.0 -1.5**
ANN *e*S **S 01 54 27.5 -2.4**
ANN pmax pmax
comp=Z,40nm,1.5s
ANN MLR MLR
comp=Z,211nm,11.0s
ARCES ARCESS Array B 69.80 338 P **P 01 45 23.4 -0.4**
comp=Z,3.7nm,0.9s,baz=69,slow=11,SNR=3.3
ARCES LR LR 02 21 07.3
comp=Z,274nm,18.1s,baz=80,slow=40
PAX Paxson 70.04 29 *e*P **P 01 45 24.9 -0.6**
PAX pmax pmax
comp=Z,8.0nm,1.0s
PAX Paxson 70.04 29 *e*P **P 01 45 24.9 -0.6**
comp=Z,8.5nm,1.0s
KLU Klutina 70.19 31 *e*P **P 01 45 26.2 -0.2**
comp=Z,9.2nm,0.7s
KBS Kingsbay 70.20 349 PFAKE 01 45 40.0 +14
KBS LR LR
comp=Z,1μm,19.0s
DIV Divide 70.35 31 *e*P **P 01 45 27.0 -0.3**
comp=Z,30nm,1.4s
DOT Dot Lake 70.49 28 *e*P **P 01 45 27.0 -1.1**
comp=Z,20nm,1.0s
EYAK Cordova Ski Ar 70.51 32 *e*P **P 01 45 28.5 +0.3**
comp=Z,21nm,1.2s
MENT Mentasta 70.83 29 *e*P **P 01 45 29.7 -0.5**
comp=Z,11nm,0.8s
BMRM Bremner River 70.94 31 *e*P **P 01 45 29.8 -1.1**
comp=Z,21nm,0.9s
EGAK Eagle 71.40 27 *e*P **P 01 45 32.2 -1.3**
comp=Z,14nm,1.1s
EGAK LR LR
comp=Z,309nm,20.0s
FINES FINESS Array B 71.78 330 P **P 01 45 34.6 -1.3**
comp=Z,3.4nm,0.8s,baz=66,slow=5.2,SNR=8.3
FINES LR LR 02 20 07.6
comp=Z,1μm,18.9s,baz=76,slow=38
FINES FINESS Array B 71.78 330*ce*P **P 01 45 37.2 +1.4**
FINES pmax pmax
comp=Z,3.0nm,0.8s
DAWY Dawson 72.35 27 *e*P **P 01 45 38.3 -1.0**
comp=Z,12nm,0.9s
INK Inuvik 73.09 22 *e*P **P 01 45 42.4 -1.1**
INK pmax pmax
comp=Z,9.0nm,0.9s
INK Inuvik 73.09 22 *e*P **P 01 45 42.4 -1.1**
comp=Z,8.8nm,0.9s
AKASG Malin Array Be 73.28 318 P **P 01 45 44.0 -1.0**
comp=Z,0.3nm,0.3s,baz=60,slow=5.5,SNR=14
AKASG Malin Array Be 73.28 318 P **P 01 45 44.0 -1.0**
KIEV Kiev 73.29 318 *e*P **P 01 45 44.2 -0.9**
KIEV pmax pmax
comp=Z,2.0nm,1.0s
KIEV Kiev 73.29 318 *e*P **P 01 45 44.1 -0.9**
comp=Z,2.0nm,0.7s
KIEV LR LR
comp=Z,483nm,20.0s
ASF Jabal al Asfar 73.47 298 LR LR 02 20 36.8
comp=Z,363nm,18.7s,baz=54,slow=38
BR131 Keskin Array S 73.65 307 *e*P **P 01 45 47.2 -0.3**
BRTR Keskin Array B 73.65 307 P **P 01 45 47.4 -0.2**
comp=Z,2.3nm,0.8s,baz=104,slow=5.2,SNR=16
BRTR LR LR 02 21 04.0
comp=Z,244nm,20.4s,baz=73,slow=38
BRTR Keskin Array B 73.65 307*ce*P **P 01 45 49.2 +1.6**
BRTR pmax pmax
comp=Z,2.0nm,0.8s
MMAI Mount Meron Ar 74.40 299 LR LR 02 23 04.9
comp=Z,189nm,18.4s,baz=345,slow=39
CSS Mathiatis 75.39 302 *e*P **P 01 45 56.9 -0.8**
comp=Z,3.3nm,1.0s
CSS LR LR
comp=Z,56nm,19.0s
CFR Carcaliu 75.75 313⇓ *i*P **P 01 45 58.6 -0.8**
TIRR Tirgusor 75.80 312⇑ *i*P **P 01 46 02.5 +2.8**
TIRR Tirgusor 75.80 312 ⇑P **P 01 46 02.6 +2.8**
TIRR Tirgusor 75.80 312 *e*P **P 01 45 58.1 -1.6**
comp=Z,23nm,1.8s
SKAG Skagway 75.81 31 *e*P **P 01 45 58.3 -1.2**
comp=Z,22nm,1.0s
EIL Elat 75.87 296 LR LR 02 21 38.9
comp=Z,332nm,18.0s,baz=70,slow=38
TESR Tescani 76.26 315⇑ *i*P **P 01 46 01.7 -0.7**
MSAB Monastry St. A 76.33 312⇑ *i*P **P 01 46 03.0 +0.2**
VRI Vrincioaia 76.44 314⇑ *i*P **P 01 46 01.7 -1.7**
VRI Vrincioaia 76.44 314 ⇑P **P 01 46 01.7 -1.7**
PLOR Plostina 76.49 314⇑ *i*P **P 01 46 03.9 +0.1**
PLOR Plostina 76.49 314 ⇑P **P 01 46 03.9 +0.1**
ISP Isparta 76.57 306 PFAKE 01 46 20.0 +16
ISP LR LR
comp=Z,250nm,20.0s
LVV L'vov 76.71 319 *e*P P 01 46 09.7 +4.8
MLR Muntele Rosu 77.08 314⇑ *i*P **P 01 46 08.9 +1.7**
MLR Muntele Rosu 77.08 314 ⇑P **P 01 46 08.9 +1.7**
KWP Kalwaria Pacla 77.58 319 *e*P **P 01 46 10.4 +0.6**
KWP Kalwaria Pacla 77.58 319⇑ *i*P **P 01 46 09.8 0.0**
KWP Kalwaria Pacla 77.58 319 ⇑P **P 01 46 09.8 0.0**
HFS Hagfors 77.89 331 LR LR 02 24 05.7
comp=Z,1μm,18.7s,baz=64,slow=38
ARR Arges 77.99 314⇑ *i*P **P 01 46 14.1 +1.9**
NB2 NORSAR Subarra 78.54 332 P **P 01 46 13.1 -1.8**
comp=Z,7.0nm,1.1s,baz=63,slow=5.6
NOA NORSAR Array B 78.54 332 P **P 01 46 13.1 -1.8**
comp=Z,1.3nm,0.8s,baz=60,slow=5.3,SNR=4.5
NOA LR LR 02 23 12.1
comp=Z,634nm,19.3s,baz=70,slow=37
CRVS Cervenica-Dubn 78.62 319 *e*P **P 01 46 15.9 +0.3**
CRVS Cervenica-Dubn 78.62 319 *e*P **P 01 46 15.9 +0.3**
DRGR 78.68 316⇑ *i*P **P 01 46 18.1 +2.1**
DRGR 78.68 316 ⇑P **P 01 46 18.1 +2.1**
DLBC Dease Lake 78.73 31 *e*P **P 01 46 16.3 +0.3**
OJC Ojcow 79.07 320 *e*P **P 01 46 18.6 +0.6**
OJC Ojcow 79.07 320 *e*P **P 01 46 18.6 +0.6**
NIE Niedzica 79.11 319 *e*P **P 01 46 18.6 +0.4**
NIE Niedzica 79.11 319 *e*P **P 01 46 18.6 +0.4**
KECS Kecovo 79.38 318 *e*P **P 01 46 21.7 +2.0**
KECS pmax pmax
comp=Z,3.0nm,1.1s
KECS Kecovo 79.38 318 *e*P **P 01 46 21.7 +2.0**
KONO Kongsberg 79.93 331 PFAKE 01 46 30.0 +7.5
KONO LR LR
comp=Z,1μm,20.0s
PSZ Piszkesteto 79.97 318 *e*P **P 01 46 22.8 -0.3**
PSZ pmax pmax
comp=Z,13nm,1.4s
PSZ MLR MLR
comp=Z,392nm,21.0s
PSZ Piszkesteto 79.97 318 *e*P **P 01 46 22.8 -0.3**
comp=Z,13nm,1.4s
PSZ LR LR
comp=Z,392nm,21.0s
MDVR Moldovita 80.12 315⇑ *i*P **P 01 46 25.4 +1.5**
OKC Ostrava-Krasne 80.20 320 AMS AMS 02 21 00.0
comp=Z,500nm,16.4s
VYHS Vyhne 80.37 319 *e*P **P 01 46 27.3 +2.2**
VYHS pmax pmax
comp=Z,4.0nm,1.2s
VYHS Vyhne 80.37 319 *e*P **P 01 46 27.3 +2.2**
URZ Urewera 80.88 139 LR LR 02 18 10.2
comp=Z,140nm,21.3s,baz=327,slow=33
DPC Dobruska-Polom 81.02 321 *e*P **P 01 46 29.4 +0.8**
DPC *ex* x 01 46 33.5
DPC AMS AMS 02 22 50.0
comp=Z,500nm,14.4s
DPC Dobruska-Polom 81.02 321 *e*P **P 01 46 29.4 +0.8**
DPC MLR MLR
comp=Z,500nm,14.4s
UPC Upice 81.13 322 AMS AMS 02 26 30.0
comp=Z,600nm,17.9s
LAST Lasithi 81.32 305⇑ *i*P **P 01 46 29.6 -1.0**
VRAC Vranov 81.34 320 LR LR 02 26 23.7
comp=Z,375nm,18.4s,baz=59,slow=38
PVCC Panska Ves 81.94 322 AMS AMS 02 27 00.0
comp=Z,600nm,15.8s
TREC Trest 81.99 321 *e*P **P 01 46 35.2 +1.5**
TREC AMS AMS 02 26 20.0
comp=Z,600nm,14.0s
TREC Trest 81.99 321 *e*P **P 01 46 35.2 +1.5**
TREC MLR MLR
comp=Z,600nm,14.0s

AGG Agios Georgios 82.07 309 *e*P **P 01 46 32.9 -1.5**
AGG pmax pmax
comp=Z,12nm,0.9s
AGG Agios Georgios 82.07 309 *e*P **P 01 46 32.9 -1.5**
comp=Z,12nm,0.9s
GOPC GO Pecny, Ondr 82.10 321 AMS AMS 02 26 50.0
comp=Z,500nm,13.6s
BRG Berggiesshubel 82.12 322 *e*(P) **P 01 46 36.1 +1.8**
comp=Z,11nm,1.7s
BRG Berggiesshubel 82.12 322 *e*P **P 01 46 36.1 +1.8**
BRG pmax pmax
comp=Z,11nm,1.7s
PRU Pruhonice 82.21 322 *e*P **P 01 46 36.8 +2.0**
PRU AMS AMS 02 26 50.0
comp=Z,500nm,13.6s
PRU Pruhonice 82.21 322 *e*P **P 01 46 36.8 +2.0**
PRU MLR MLR
comp=Z,500nm,13.6s
CONA Conrad Observa 82.40 319 *i* PKPab P 01 46 30.4 -5.6
comp=Z,9.4nm,1.7s
CLL Collm 82.43 323 *e*P **P 01 46 37.0 +1.1**
CLL Lm MLR 02 27 00.0
comp=Z,900nm,18.0s
CLL Collm 82.43 323 *e*P **P 01 46 37.0 +1.1**
CLL MLR MLR
comp=Z,900nm,18.0s
SUMG Summit 82.62 354 *e*P **P 01 46 35.9 -1.2**
SUMG pmax pmax
comp=Z,5.0nm,0.9s
SUMG Summit 82.62 354 *e*P **P 01 46 35.9 -1.2**
comp=Z,5.1nm,0.9s
YKW3 Yellowknife Ar 82.78 23 *e*P **P 01 46 36.0 -1.5**
TIR Tirane 82.79 312 PFAKE 01 46 50.0 +12
TIR LR LR
comp=Z,267nm,21.0s
YKA Yellowknife Ar 82.82 23 P **P 01 46 36.3 -1.4**
comp=Z,3.7nm,0.7s,baz=314,slow=4.9,SNR=42
YKA LR LR 02 26 27.8
comp=Z,24nm,19.8s,baz=0.0,slow=38
YKB5 Yellowknife Ar 82.82 23 *e*P **P 01 46 35.7 -2.1**
KHC Kasperske Hory 83.17 321 *e*P **P 01 46 41.3 +1.4**
KHC AMS AMS 02 28 30.0
comp=Z,600nm,13.5s
KHC Kasperske Hory 83.17 321 *e*P **P 01 46 41.3 +1.4**
KHC MLR MLR
comp=Z,600nm,13.5s
KHC Kasperske Hory 83.17 321 *e*P **P 01 46 41.5 +1.6**
comp=Z,12nm,2.0s
GEC2 GERESS Array S 83.24 321 *e*P **P 01 46 42.1 +1.8**
GEC2 GERESS Array S 83.24 321 *e*P **P 01 46 42.0 +1.8**
GERES GERESS Array B 83.24 321 P **P 01 46 38.7 -1.6**
comp=Z,0.2nm,0.4s,baz=14,slow=6.9,SNR=7.5
GEA0 GERESS Array S 83.24 321 *e*P **P 01 46 40.7 +0.4**
MOA Molln 83.39 320 *i* pPKPab **P 01 46 42.2 +1.1**
comp=Z,8.4nm,1.2s
SOKA Soboth 83.49 318 *i* pPKPab **P 01 46 42.2 +0.5**
comp=Z,7.9nm,1.5s
OBKA Obir 83.86 318 *i* pPKPab **P 01 46 45.0 +1.5**
comp=Z,6.0nm,1.3s
ABTA Abfaltersbach 84.97 319 *i* pPKPab **P 01 46 47.1 -2.1**
comp=Z,5.1nm,1.2s
WATA Walderalm 85.22 320 *i* pPKPab **P 01 46 52.7 +2.2**
comp=Z,0.2nm,0.4s
KMBO Kilima Mbogo 85.45 267 P **P 01 46 52.4 +0.1**
comp=Z,1.9nm,0.7s,baz=31,slow=9.4,SNR=6.0
KMBO Kilima Mbogo 85.45 267 *e*P **P 01 46 50.5 -1.8**
KMBO pmax pmax
comp=Z,19nm,1.6s
KMBO MLR MLR
comp=Z,180nm,20.0s
KMBO Kilima Mbogo 85.45 267 *e*P **P 01 46 50.5 -1.8**
comp=Z,19nm,1.6s
KMBO LR LR
comp=Z,180nm,20.0s
MOTA Moosalm 85.50 320 *i* pPKPab **P 01 46 54.1 +2.2**
comp=Z,6.0nm,1.4s
RETA Reutte 85.62 321 *i* PKPab P 01 46 46.2 -6.2
comp=Z,4.4nm,1.5s
FETA Feichten 85.88 320 *i* pPKPab **P 01 46 54.0 +0.2**
comp=Z,3.6nm,0.9s
TIP Timpagrande 85.89 311 PFAKE 01 47 00.0 +6.1
TIP LR LR
comp=Z,278nm,19.0s
CUC Castrocucco 86.15 312 PFAKE 01 47 10.0 +15
CUC LR LR
comp=Z,243nm,20.0s
DAVA Damuels 86.24 321 *i* pPKPab **P 01 46 54.8 -0.8**
comp=Z,5.6nm,1.3s
DAVOX Davos/Dischmat 86.50 320 LR LR 02 26 32.0
comp=Z,337nm,18.8s,baz=50,slow=36
BFO Black Forest 86.56 322 PFAKE 01 47 10.0 +13
BFO LR LR
comp=Z,705nm,20.0s
AQU L'Aquila 86.60 315 PFAKE 01 47 10.0 +13
AQU LR LR
comp=Z,288nm,19.0s
CEL Celeste 86.92 311 PFAKE 01 47 10.0 +11
CEL LR LR
comp=Z,274nm,19.0s
BORG Borgarnes 86.93 345 PFAKE 01 47 10.0 +12
BORG LR LR
comp=Z,405nm,19.0s
TUE Stuetta 86.98 320 PFAKE 01 47 10.0 +11
TUE LR LR
comp=Z,426nm,19.0s
WLF Walferdange 87.01 324 *e*P **P 01 46 58.0 -1.1**
WLF pmax pmax
comp=Z,15nm,1.3s
WLF MLR MLR
comp=Z,531nm,20.0s
WLF Walferdange 87.01 324 *e*P **P 01 46 58.0 -1.1**
comp=Z,15nm,1.3s
WLF LR LR
comp=Z,531nm,20.0s
VLC Villacollemand 87.58 318 PFAKE 01 47 10.0 +8.0
VLC LR LR
comp=Z,171nm,19.0s
EKA Eskdalemuir Ar 88.02 332 LR LR 02 30 09.5
comp=Z,585nm,19.6s,baz=40,slow=38
ESK Eskdalemuir 88.06 332 PFAKE 01 47 10.0 +6.0
ESK LR LR
comp=Z,1μm,19.0s
D05A Enumclaw 88.76 38 *e*P **P 01 47 08.7 +1.2**
SFJD Kangerlussuaq 88.99 357 PFAKE 01 47 20.0 +12
SFJD LR LR
comp=Z,253nm,19.0s
CLTB Caltabellotta 89.10 311 PFAKE 01 47 20.0 +11
CLTB LR LR
comp=Z,187nm,20.0s
F04A Amboy 89.23 39 *e*P **P 01 47 10.7 +1.0**
BNI Bardonecchia 89.32 320 PFAKE 01 47 20.0 +10
BNI LR LR
comp=Z,771nm,19.0s
B08A Colville Reser 89.53 36 *e*P **P 01 47 11.7 +0.5**
SSB Saint Sauveur 90.43 321 PFAKE 01 47 30.0 +15
SSB LR LR
comp=Z,446nm,21.0s
VSL Villasalto 90.69 314 PFAKE 01 47 30.0 +13
VSL LR LR
comp=Z,197nm,19.0s
NEW Newport 90.75 35 *e*P **P 01 47 18.1 +1.2**
NEW Newport 90.75 35 *e*P **P 01 47 18.1 +1.2**
K05A Summer Lake 91.98 41 *e*P **P 01 47 24.5 +1.6**
BSMT Bassoo Peak 92.22 34 *e*P **P 01 47 25.1 +1.2**
FCC Fort Churchill 92.25 18 *e*P **P 01 47 22.8 -0.6**
FCC Fort Churchill 92.25 18 *e*P **P 01 47 22.8 -0.6**
KEST Kesra 92.72 311 LR LR 02 36 02.2
comp=Z,98nm,20.1s,baz=287,slow=40
BMO Blue Mountains 92.77 38 PFAKE 01 47 40.0 +14
BMO LR LR
comp=Z,233nm,19.0s
MOD Modoc Plateau 92.81 41 *e*P **P 01 47 26.4 -0.3**
SWMT Swartz Lake 92.85 34 *e*P **P 01 47 27.6 +0.9**
FFC Flin Flon 92.98 24 *e*P **P 01 47 26.6 -0.3**
FFC pmax pmax
comp=Z,12nm,1.1s
FFC MLR MLR
comp=Z,285nm,20.0s
FFC Flin Flon 92.98 24 *e*P **P 01 47 26.6 -0.3**
comp=Z,12nm,1.1s
FFC LR LR
comp=Z,285nm,20.0s
WVOR Wild Horse Val 93.49 40 *e*P **P 01 47 31.3 +1.5**
WVOR MLR MLR
comp=Z,116nm,20.0s
WVOR Wild Horse Val 93.49 40 *e*P **P 01 47 31.3 +1.5**

WVOR LR LR
comp=Z,116nm,20.0s
MFID Camas Ranch 94.50 38 *eP* **P 01 47 36.0 +1.6**
EGMT Eagleton 94.62 32 *eP* **P 01 47 35.2 +0.4**
EGMT LR LR
comp=Z,255nm,19.0s
PAHR Pah Rah Range 94.68 43 *eP* **P 01 47 36.8 +1.5**
DLMT Dillon 95.00 35 *eP* **P 01 47 37.0 +0.3**
HLID Hailey 95.20 37 *eP* **P 01 47 38.0 +0.3**
HLID LR LR
comp=Z,181nm,21.0s
BOZ Bozeman (W) 95.31 34 PFAKE 01 47 50.0 +12
BOZ LR LR
comp=Z,154nm,19.0s
PPT Papeete 95.82 107 LR LR 02 22 30.2
comp=Z,202nm,21.5s,baz=304,slow=30
PPT2 Papeete2 95.83 107 *e*LR LR 02 18 39.7
comp=Z,456nm,23.8s
NVAR Mina Array Bea 96.11 43 P **P 01 47 41.7 -0.3**
comp=Z,0.8nm,0.7s,baz=300,slow=5.6,SNR=5.0
NVAR LR LR 02 29 36.6
comp=Z,95nm,21.6s,baz=296,slow=35
LKWY Lake 96.69 35 PFAKE 01 48 00.0 +15
LKWY LR LR
comp=Z,401nm,20.0s
DGMT Dagmar 96.86 29 PFAKE 01 48 00.0 +15
DGMT LR LR
comp=Z,349nm,20.0s
LAO LASA Array 97.25 31 PFAKE 01 48 00.0 +13
LAO LR LR
comp=Z,314nm,20.0s
AHID Auburn Hatcher 97.54 36 PFAKE 01 48 00.0 +12
AHID LR LR
comp=Z,173nm,19.0s
HWUT Hardware Ranch 98.07 37 PFAKE 01 48 00.0 +9.2
HWUT LR LR
comp=Z,200nm,19.0s
TBI Tubuai 98.17 112 *e*LR LR 02 19 44.9
comp=Z,195nm,24.5s
DUG Dugway, Tooele 98.30 39 PFAKE 01 48 00.0 +8.2
DUG LR LR
comp=Z,202nm,19.0s
BW06 Boulder Array 98.37 36 PFAKE 01 48 00.0 +7.9
BW06 LR LR
comp=Z,193nm,19.0s
PDAR Pinedale Array 98.37 36 P **P 01 47 51.2 -0.9**
comp=Z,0.2nm,0.6s,baz=264,slow=0.9,SNR=2.9
PDAR LR LR 02 35 23.1
comp=Z,59nm,18.4s,baz=350,slow=37
ULM Lac du Bonnet 98.80 23 LR LR 02 39 38.4
comp=Z,151nm,19.6s,baz=26,slow=40
PAB San Pablo 99.14 321 PFAKE 01 48 10.0 +15
PAB LR LR
comp=Z,343nm,19.0s
LSZ Lusaka 99.30 257 PFAKE 01 48 10.0 +14
LSZ LR LR
comp=Z,257nm,20.0s
MTE Manteigas 100.36 323 PFAKE 01 48 10.0 +9.2
MTE LR LR
comp=Z,378nm,20.0s
TAOE Nuku Hiva Isla 100.90 95 *e*LR LR 02 21 01.6
comp=Z,160nm,25.2s
WUAZ Wupatki 102.25 42 PFAKE 01 48 20.0 +11
WUAZ LR LR
comp=Z,117nm,21.0s
EYMN Ely 102.29 22 PFAKE 01 48 20.0 +11
EYMN LR LR
comp=Z,328nm,22.0s
TAM Tamanrasset 102.50 302 PFAKE 01 48 20.0 +9.2
TAM LR LR
comp=Z,170nm,19.0s
ISCO Idaho Springs 102.57 36 PFAKE 01 48 20.0 +9.1
ISCO LR LR
comp=Z,202nm,19.0s
MVCO Mesa Verde 102.80 39 PFAKE 01 48 20.0 +8.0
MVCO LR LR
comp=Z,202nm,21.0s
OGNE Ogallala 103.55 33 PFAKE 01 48 30.0 +15
OGNE LR LR
comp=Z,304nm,20.0s
ECSD EROS Data Cent 103.84 28 PFAKE 01 48 30.0 +14
ECSD LR LR
comp=Z,418nm,19.0s
SDCO Great Sand Dun 104.11 37 PFAKE 01 48 30.0 +12
SDCO LR LR
comp=Z,372nm,20.0s
RTC Rabat Centre 104.35 318 PFAKE 01 48 30.0 +11
RTC LR LR
comp=Z,738nm,19.0s
COWI Conover 104.70 22 PFAKE 01 48 30.0 +10
COWI LR LR
comp=Z,377nm,21.0s
ANMO Albuquerque 105.57 39 PFAKE 01 52 50.0
ANMO LR LR
comp=Z,241nm,19.0s
SCIA State Center 106.76 27 PFAKE 01 52 50.0
SCIA LR LR
comp=Z,288nm,20.0s
JFWS Jewell Farm 107.07 24 PFAKE 01 52 50.0
JFWS LR LR
comp=Z,404nm,19.0s
KSU1 Kansas State U 107.58 30 PFAKE 01 52 50.0
KSU1 LR LR
comp=Z,246nm,20.0s
HDIL Hopedale 109.46 25 PFAKE 01 53 00.0
HDIL LR LR
comp=Z,400nm,20.0s
AAM Ann Arbor 109.86 20 PFAKE 01 53 00.0
AAM LR LR
comp=Z,420nm,21.0s
WMOK Wichita Mounta 109.96 35 PFAKE 01 53 00.0
WMOK LR LR
comp=Z,228nm,21.0s
LONY Lake Ozonia 109.98 12 PFAKE 01 53 00.0
LONY LR LR
comp=Z,360nm,19.0s
TSUM Tsumeb 110.15 257 PFAKE 01 53 00.0
TSUM LR LR
comp=Z,254nm,20.0s
PKME Peaks-Kenny Pk 110.22 8 PFAKE 01 53 00.0
PKME LR LR
comp=Z,511nm,20.0s
RKT Rikitea 110.58 107 *e*LR LR 02 25 32.9
comp=Z,378nm,26.5s
ACSO Alum Creek Sta 111.95 20 PFAKE 01 53 00.0
ACSO LR LR
comp=Z,437nm,19.0s
JCT Junction City 112.65 38 PFAKE 01 53 00.0
JCT LR LR
comp=Z,212nm,22.0s
MIAR Mount Ida 112.70 31 PFAKE 01 53 00.0
MIAR LR LR
comp=Z,293nm,19.0s
NATX Nacogdoches 114.42 34 PFAKE 01 53 10.0 +16
NATX LR LR
comp=Z,351nm,20.0s
CBN Corbin Frederi 115.45 17 PFAKE 01 53 10.0 +14
CBN LR LR
comp=Z,353nm,19.0s
BLA Blacksburg 115.52 20 PFAKE 01 53 10.0 +14
BLA LR LR
comp=Z,356nm,21.0s
GOGA Godfrey 117.95 24 PFAKE 01 53 10.0 +9.2
GOGA LR LR
comp=Z,310nm,19.0s
BRAL Brewton 118.49 28 PFAKE 01 53 10.0 +8.1
BRAL LR LR
comp=Z,269nm,19.0s
NHSC New Hope 119.37 21 PFAKE 01 53 10.0 +6.5
NHSC LR LR
comp=Z,354nm,20.0s
BBSR BB Station 123.49 7 PFAKE 01 53 20.0 +8.5
BBSR LR LR
comp=Z,145nm,19.0s
TEIG Tepich 127.09 36 PFAKE 01 53 30.0 +11
TEIG LR LR
comp=Z,88nm,19.0s
GRTK Grand Turk 132.94 17 PFAKE 01 53 40.0 +10
GRTK LR LR
comp=Z,299nm,20.0s
GTBY Guantanamo Bay 133.24 22 PFAKE 01 53 40.0 +10
GTBY LR LR
comp=Z,231nm,19.0s
MTDJ Mount Denham 133.89 26 PFAKE 01 53 40.0 +8.2
MTDJ LR LR
comp=Z,266nm,22.0s

ASCN Ascension 135.09 284 PFAKE 01 53 50.0 +16
ASCN LR LR
comp=Z,710nm,21.0s
SDDR Presa de Saban 135.31 18 PFAKE 01 53 50.0 +16
SDDR LR LR
comp=Z,306nm,20.0s
SJG San Juan 137.32 11 PFAKE 01 53 50.0 +12
SJG LR LR
comp=Z,230nm,21.0s
ANWB Willy Bob 138.32 5 PFAKE 01 53 50.0 +10
ANWB LR LR
comp=Z,170nm,21.0s
BCIP Isla Barro Col 140.76 35 PFAKE 01 54 00.0 +16
BCIP LR LR
comp=Z,178nm,21.0s
MOTC Monteria, Cord 143.14 30 *e*P PKPpre 01 53 39.4
GRGR Grenville 143.82 6 PFAKE 01 54 00.0 +10
GRGR LR LR
comp=Z,188nm,20.0s
SDV Santo Domingo 145.03 22 PFAKE 01 54 00.0 +7.8
SDV LR LR
comp=Z,238nm,20.0s
PAMC Pamplona, Colo 145.69 26 *e*P PKPpre 01 53 49.3
BARC Barichara 146.17 27 *e*P **PKPdf 01 53 54.6 +0.4**
GUYC Guyana, Colomb 146.38 32 *e*P **PKPdf 01 53 53.3 -1.6**
RUSC La Rusia 146.84 28 *e*P **PKPdf 01 53 53.3 -2.4**
POPC Popayan, Colom 148.00 37 *e*P **PKPdf 01 53 57.3 0.0**
VILC Villavicencio, 148.16 30 *e*P **PKPbc 01 53 59.9 -0.8**
LPAZ La Paz 167.88 52 PKP **PKPdf 01 54 22.0 +0.3**
comp=Z,2.7nm,1.2s,baz=2.9,slow=4.6,SNR=4.9

TAP 22 01:38:25.1, 24.°15N×121.°67E, h12km, ML2.3, C, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWD	**Chiawan** baz=221	**0.10**	**225**	*i* P	Pg	01 38 28.0	+0.1
TWD	baz=221			*i* S	Sg	01 38 30.1	+0.2
ENA	**Nanau** baz=14	**0.28**	**12**	P	Pg	01 38 31.2	+0.3
WHF	**Hehuan Shan** baz=269	**0.37**	**269**	*e*P	Pg	01 38 33.1	+0.4
ENTT	**Nioudou** baz=348	**0.50**	**349**	*e*P	Pb	01 38 35.8	0.0

TAP 22 01:38:29.5, 24.°13N×121.°73E, h8km±2km, ML2.8, C, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWD	**Chiawan** baz=258	**0.13**	**250**	*i* P	Pg	01 38 32.7	+0.4
TWD	baz=258			*i* S	Sg	01 38 34.8	+0.6
ENA	**Nanau** baz=1.0	**0.30**	**2**	P	Pg	01 38 35.9	+0.4
ENA	baz=1.0			*e*S	Sg	01 38 39.9	+0.3
ENA	**Nanau** baz=14	**0.30**	**2**	S	Pg	01 38 35.5	0.0
ESL	**Shilin** baz=235	**0.41**	**221**	*e*P	Pg	01 38 37.9	+0.3
WHF	**Hehuan Shan** baz=275	**0.42**	**273**	*e*P	Pg	01 38 38.3	+0.4
WHF	**Hehuan Shan** baz=269	**0.42**	**273**	*e*S	Pg	01 38 38.6	+0.7
NNS	**Nan Shan** baz=314	**0.45**	**314**	*e*P	Pb	01 38 39.1	-0.7
NNS	baz=314			*e*S	Sg	01 38 45.1	+0.9
TWT	**Tachien** baz=285	**0.52**	**284**	*e*P	Pb	01 38 40.5	-0.5
TWT	baz=285			*e*S	Sb	01 38 47.7	-1.1
ENTT	**Nioudou** baz=342	**0.53**	**344**	*e*P	Pb	01 38 40.6	-0.6
ENTT	baz=342			*i* S	Sb	01 38 48.3	-0.8
ENTT	**Nioudou** baz=348	**0.53**	**344**	*e*S	Pb	01 38 40.5	-0.7
NSK	**Sanguang** baz=328	**0.64**	**329**	*e*P	Pg	01 38 42.4	+0.4
NSK	baz=328			*e*S	Sb	01 38 51.6	-0.7
WDT	**Danda** baz=248	**0.66**	**236**	*e*P	Pg	01 38 42.4	+0.1

IDC 22 01:40:28.5±272.0, 63.°88N×18.°46W, h0km, Error ellipse: s-maj=184.6km s-min=143.3km az=25.0, Iceland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I18DK	**QAANAAQ INFRAS** baz=109,slow=323,SNR=1.5	**20.60**	**331**	*i*		03 46 10.0	
I26DE	**FREYUNG INFRAS** baz=323,slow=318,SNR=7.2	**22.96**	**116**	*i*		04 01 20.0	
I42PT	**GRACIOSA ISLAN** baz=17,slow=307,SNR=16	**25.51**	**197**	*i*		04 17 05.0	
I10CA	**LAC DU BONNET** baz=36,slow=327,SNR=1.0	**41.56**	**289**	*i*		05 56 10.0	
I53US	**FAIRBANKS INFR** baz=32,slow=314,SNR=3.7	**46.30**	**333**	*i*		06 04 40.0	

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*SCB **22** 01:40:59.8±0.5, 18.°97S×69.°33W, h10km, Ml4.0/2, Error ellipse: s-maj=14.5km s-min=3.7km az=76.0*
*ISCJB **22** 01:41:03.4±0.3, 19.°11S±0.°03×69.°66W±0.°05, h116km±2km, mb4.1/29, Error ellipse: s-maj=7.4km s-min=4.5km az=1.4*
*IDC **22** 01:41:04.2±0.6, 18.°94S×69.°31W, h105km±4km, mb4.1/14, mb1 4.2/17, mb1mx4.1/29, mbtmp4.4/17, Error ellipse: s-maj=16.2km s-min=13.3km az=84.0*
*GUC **22** 01:41:04.2±0.4, 19.°06S×69.°50W, h94km±3km, ML4.3*
*NEIC **22** 01:41:04.0, 19.°06S×69.°50W, h94km, mb4.0/17, After GUC.*
NEIC Felt [III] at Codpa and [II] at Arica, Cuya, Huara and Pisagua.

ISC 22 01:41:03.3±0.5, 19.°06S±0.°03×69.°63W±0.°05, h103km±4km, n64, σ1°79/77, mb4.0/29, 5C-1D, Northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB11	**IPOC Station P**	**0.69**	**182**	*i* P	**Pn**	**01 41 21.9**	**+0.7**
PB11				*i* S	**Sn**	**01 41 35.3**	**+0.7**
PSGC	**Pisagua**	**0.71**	**221**	*i* P	**Pn**	**01 41 22.4**	**+1.2**
PSGC				*i* S	**Sn**	**01 41 36.2**	**+1.6**
PSGC	comp=E,19μm,0.3s			IAML		01 41 40.6	
PB13	**IPOC Station P**	**0.73**	**10**	*i* P	**Pn**	**01 41 22.7**	**+0.7**
PB13				*i* S	**Sn**	**01 41 36.9**	**+1.0**
PB12	**IPOC Station P**	**0.80**	**304**	*i* P	**Pn**	**01 41 23.6**	**+1.6**
PB12				*i* S	**Sn**	**01 41 38.1**	**+2.1**
PB08	**IPOC Station P**	**1.16**	**157**	*i* P	**Pn**	**01 41 26.7**	**+0.5**
PB08				*i* S	**Sn**	**01 41 43.8**	**+0.4**
PB08	comp=N,6μm,0.6s			IAML		01 41 45.4	
BBOJ	**La Paz, Jacaqu**	**2.49**	**34**	↑*i* Pn	**Pn**	**01 41 44.9**	**+2.0**
BBOJ				*e*Sn	**Sn**	**01 42 15.8**	**+2.7**
BBOD	**La Paz, Gloria**	**2.60**	**22**	↑*i* Pn	**Pn**	**01 41 46.2**	**+1.7**
BBOD				*e*Sn	**Sn**	**01 42 20.3**	**+4.4**
BBOD	comp=N,210nm,0.5s						
BBOE	**La Paz, Chanca**	**2.73**	**35**	↑*i* Pn	**Pn**	**01 41 47.9**	**+1.8**
LPAZ	**La Paz**	**3.11**	**28**	P	**Pn**	**01 41 53.0**	**+1.8**
LPAZ	comp=N,54nm,0.3s,baz=194,slow=3.2,SNR=1999			S	**Sn**	**01 42 26.3**	**-1.6**
LPAZ	comp=N,7.9nm,0.3s,baz=241,slow=12,SNR=4.8						
LPAZ	**La Paz**	**3.11**	**28**	↑*i* Pn	**Pn**	**01 41 53.0**	**+1.8**
LPAZ				*e*Sn	**Sn**	**01 42 31.1**	**+3.1**
BBOB	**La Paz, Bander**	**3.24**	**26**	↓*i* Pn	**Pn**	**01 41 54.4**	**+1.6**
BBOB				*e*Sn	**Sn**	**01 42 33.8**	**+2.9**
BBOB	comp=N,264nm,0.6s						
LVC	**Limon Verde**	**3.59**	**169**	P	**Pn**	**01 41 58.9**	**+1.4**
LVC	comp=N,398nm,0.3s,baz=354,slow=9.8,SNR=60			S	**Sn**	**01 42 39.3**	**+0.1**
LVC	comp=N,2μm,0.3s,baz=66,slow=20,SNR=9.4						
MOCB	**Mochara**	**4.34**	**121**	↑*i* Pn	**Pn**	**01 42 09.9**	**+2.4**
MOCB				*e*Sn	**Sn**	**01 43 01.5**	**+4.2**
SIV	**San Ignacio**	**8.72**	**71**	P	**Pn**	**01 43 03.2**	**-3.4**
NNA	**Nana**	**9.89**	**314**	S	**Sn**	**01 45 08.9**	**-2.9**
NNA	comp=N,1.8nm,0.3s,baz=213,slow=17,SNR=2.0						
NNA	**Nana**	**9.89**	**314**	*e*Pn	**Pn**	**01 43 20.9**	**-1.7**
NNA				S	**Sn**	**01 45 08.9**	**-2.9**
NNA				*e*Sn	Sn	01 45 11.0	-0.8
SAML	**Samuel** comp=N,7.0nm,0.5s	**11.84**	**33**	*e*Pn	**Pn**	**01 43 44.5**	**-4.3**
CPUP	**Villa Florida** comp=N,0.1nm,0.3s,baz=306,slow=12,SNR=4.3	**13.46**	**125**	P	**Pn**	**01 44 08.9**	**-1.1**
TRQA	**Tornquist** comp=N,17nm,0.9s	**20.07**	**162**	*e*P	**P**	**01 45 28.6**	**+0.1**
PTGA	**Pitinga** comp=N,19nm,0.3s,baz=204,slow=20,SNR=47	**20.54**	**29**	P	**P**	**01 45 31.0**	**-2.7**
OTAV	**Otavalo** comp=N,2.6nm,0.6s	**21.04**	**335**	*e*P	**P**	**01 45 40.5**	**+0.9**
PLCA	**Paso Flores** comp=N,14nm,0.9s,baz=22,slow=10,SNR=15	**21.61**	**182**	P	**P**	**01 45 46.5**	**+1.4**
PCRV	**Puerto La Cruz** comp=N,9.6nm,0.9s,baz=285,slow=6.6,SNR=5.6	**29.47**	**10**	P	**P**	**01 46 56.9**	**-0.9**
RCBR	**Riachuelo** comp=N,7.6nm,0.7s,baz=233,slow=5.8,SNR=5.4	**35.38**	**73**	P	**P**	**01 47 48.2**	**-1.2**
RCBR	**Riachuelo** comp=N,17nm,1.0s	**35.38**	**73**	*e*P	**P**	**01 47 47.5**	**-2.0**
USHA	**Ushuaia** comp=N,44nm,1.0s,baz=27,slow=6.8,SNR=3.0	**35.72**	**179**	P	**P**	**01 47 54.0**	**+2.2**
JCT	**Junction City** comp=N,3.3nm,0.6s	**57.18**	**329**	*e*P	**P**	**01 50 40.6**	**+0.9**
TXAR	**Lajitas Array** comp=N,0.9nm,0.8s,baz=148,slow=7.7,SNR=8.6	**58.25**	**325**	P	**P**	**01 50 48.8**	**+1.4**
WCI	**Wyandotte Cave**	**59.10**	**345**	*e*P	**P**	**01 50 52.5**	**-0.5**
WMOK	**Wichita Mounta** comp=N,1.1nm,0.7s	**60.26**	**332**	*e*P	**P**	**01 51 00.6**	**-0.3**
ANMO	**Albuquerque** comp=N,1.3nm,0.7s	**64.10**	**327**	*e*P	**P**	**01 51 28.3**	**+1.4**
TUC	**Tucson** comp=N,0.9nm,0.6s	**64.51**	**322**	*e*P	**P**	**01 51 31.4**	**+1.9**
SNAA	**Sanae** comp=N,192nm,0.7s	**64.79**	**161**	*e*P	**P**	**01 51 31.3**	**+0.6**
SDCO	**Great Sand Dun** comp=N,3.1nm,0.8s	**65.81**	**329**	*e*P	**P**	**01 51 39.6**	**+1.6**
DBIC	**Dimbokro** comp=N,3.6nm,0.6s,baz=213,slow=8.5,SNR=10.0	**68.72**	**75**	P	**P**	**01 51 54.2**	**-2.3**
DBIC				pP	**pP**	**01 52 21.0**	**-1.4**
RSSD	**Black Hills** comp=N,1.3nm,0.6s	**70.32**	**334**	*e*P	**P**	**01 52 07.0**	**+1.0**
DUG	**Dugway, Tooele** comp=N,2.0nm,0.8s	**71.36**	**326**	*e*P	**P**	**01 52 14.1**	**+1.8**
PDAR	**Pinedale Array** comp=N,0.3nm,0.5s,baz=134,slow=7.8,SNR=3.7	**71.67**	**330**	P	**P**	**01 52 13.2**	**-1.0**
HWUT	**Hardware Ranch** comp=N,1.6nm,0.8s	**71.77**	**328**	*e*P	**P**	**01 52 16.4**	**+1.6**
MOOW	**Moose Ponds** comp=N,0.7nm,0.6s	**72.98**	**330**	*e*P	**P**	**01 52 23.4**	**+1.4**
ELK	**Elko** comp=N,0.8nm,0.5s	**73.04**	**325**	*e*P	**P**	**01 52 23.1**	**+0.7**
NVAR	**Mina Array Bea** comp=N,1.2nm,0.8s,baz=150,slow=4.5,SNR=7.8	**73.17**	**322**	P	**P**	**01 52 23.1**	**-0.1**
SCHQ	**Schefferville** comp=N,4.4nm,1.0s,baz=348,slow=4.6,SNR=4.2	**73.63**	**2**	P	**P**	**01 52 24.5**	**-0.8**
HLID	**Hailey** comp=N,2.1nm,0.8s	**74.63**	**328**	*e*P	**P**	**01 52 34.1**	**+2.5**
BOZ	**Bozeman (W)** comp=N,1.6nm,0.9s	**74.83**	**331**	*e*P	**P**	**01 52 33.2**	**+0.6**
TORD	**Torodi Ar. Bea** comp=N,1.6nm,0.4s,baz=247,slow=5.4,SNR=26	**77.19**	**71**	P	**P**	**01 52 44.7**	**-1.8**
TORD				pP	**pP**	**01 53 12.9**	**0.0**
VNDA	**Vanda** comp=N,1.0nm,0.9s,baz=136,slow=3.7,SNR=4.6	**79.12**	**190**	P	**P**	**01 52 56.8**	**+0.7**
TSUM	**Tsumeb** comp=N,1.3nm,0.7s	**81.40**	**107**	*e*P	**P**	**01 53 09.0**	**-0.6**
TAM	**Tamanrasset** comp=N,0.7nm,0.5s	**84.34**	**64**	*e*P	**P**	**01 53 23.7**	**-0.9**
ESDC	**Sonseca Array** comp=N,0.2nm,0.5s,baz=251,slow=5.9,SNR=7.9	**84.59**	**45**	P	**P**	**01 53 24.3**	**-1.1**
ESDC				pP	**pP**	**01 53 52.5**	**+0.3**
YKA	**Yellowknife Ar** comp=N,5.8nm,0.7s,baz=133,slow=4.8,SNR=47	**88.67**	**341**	P	**P**	**01 53 46.0**	**+1.4**
YKA				pP	**pP**	**01 54 12.0**	**+0.4**
YKA	comp=N,2.2nm,0.7s,baz=135,slow=4.8,SNR=6.4			sP	**sP**	**01 54 23.4**	**+0.9**
H11S2	**WAKE ISLAND Hyl** baz=102,slow=75,SNR=163	**26.86**	**279**	T	T	04 19 28.8	
H11S1	**WAKE ISLAND Hyl** baz=102,slow=75,SNR=49	**26.87**	**279**	T	T	04 19 26.8	
H11S3	**WAKE ISLAND Hyl** baz=102,slow=75,SNR=138	**26.88**	**279**	T	T	04 19 29.4	
H11N3	**WAKE ISLAND Hyl** baz=99,slow=74,SNR=57	**26.88**	**281**	T	T	04 19 21.4	
H11N2	**WAKE ISLAND Hyl** baz=99,slow=74,SNR=66	**26.90**	**281**	T	T	04 19 22.3	
H11N1	**WAKE ISLAND Hyl** baz=99,slow=74,SNR=36	**26.90**	**281**	T	T	04 19 24.8	
ASAR	**Alice Springs** comp=N,0.8nm,0.6s,baz=136,slow=1.6,SNR=13	**131.72**	**209**	PKP	**PKPdf**	**02 00 06.2**	**+1.1**
WRA	**Warramunga Arr** comp=N,2.0nm,0.6s,baz=145,slow=1.7,SNR=27	**134.67**	**213**	PKP	**PKPdf**	**02 00 12.1**	**+1.4**
ZALV	**Zalesovo Beam** comp=N,1.0nm,0.5s,baz=282,slow=1.4,SNR=5.1	**140.02**	**23**	PKP	**PKPdf**	**02 00 20.6**	**+1.2**
KLR	**Kul'dur** comp=N,2.7nm,0.5s,baz=40,slow=3.3,SNR=10	**145.34**	**335**	PKPbc	**PKPdf**	**02 00 29.6**	**+0.6**
USRK	**Ussuriysk Ar.** comp=N,2.6nm,0.6s,baz=28,slow=0.5,SNR=8.7	**149.09**	**329**	PKPbc	**PKPbc**	**02 00 40.9**	**+1.2**
MJAR	**Matsushiro Arr** comp=N,1.7nm,0.7s,baz=95,slow=1.7,SNR=7.8	**150.00**	**311**	PKPbc	**PKPbc**	**02 00 43.2**	**+1.0**
SONM	**Songino Array** comp=N,2.9nm,0.5s,baz=321,slow=1.5,SNR=14	**151.12**	**6**	PKPbc	**PKPbc**	**02 00 45.9**	**+1.3**
SONM	comp=N,1.4nm,0.7s,baz=332,slow=1.8,SNR=2.8			pPKPbc	**pPKPbc**	**02 01 13.9**	**+1.2**

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*DDA **22** 01:43:38.9, 39.°17N×29.°08E, h7km, Md2.7*
*ISCJB **22** 01:43:39.6±0.7, 39.°15N±0.°05×29.°10E±0.°04, h9km, Error ellipse: s-maj=7.8km s-min=4.4km az=167.8*
*CSEM **22** 01:43:39.7±0.3, 39.°15N×29.°12E, h5km, MD2.6, Error ellipse: s-maj=7.4km s-min=4.5km az=167.0*
*ISK **22** 01:43:40.7, 39.°28N×29.°13E, h3km, MD2.6*

ISC 22 01:43:39.7±1.0, 39.°16N±0.°04×29.°09E±0.°03, h9km, n26, σ0°32/32, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.31**	**103**	P	**Pg**	**01 43 45.8**	**-0.1**
GDZ				S	**Sg**	**01 43 50.3**	**+0.2**
GDZ	**Gediz**	**0.31**	**103**	*i* P	**Pg**	**01 43 45.9**	**-0.1**
GDZ				*i* S	**Sg**	**01 43 50.3**	**+0.2**
DEMI	**Demirci**	**0.31**	**248**	P	**Pg**	**01 43 45.8**	**-0.2**
DEMI				S	**Sg**	**01 43 49.7**	**-0.4**
DEMI	**Demirci**	**0.31**	**248**	*i* P	**Pg**	**01 43 45.8**	**-0.2**
DEMI				*i* S	**Sg**	**01 43 49.7**	**-0.4**
TVSB	**Tavsanli**	**0.41**	**45**	*e*PG	**Pg**	**01 43 47.7**	**0.0**
TVSB				*e*SG	**Sg**	**01 43 52.8**	**-0.3**
TVSB	**Tavsanli**	**0.41**	**45**	*e*Pg	**Pg**	**01 43 47.7**	**0.0**
TVSB				*e*Sg	**Sg**	**01 43 52.8**	**-0.3**
DURS	**Dursunbey**	**0.65**	**313**	P	**Pg**	**01 43 52.5**	**+0.2**
DURS	**Dursunbey**	**0.65**	**313**	*i* P	**Pg**	**01 43 52.5**	**+0.2**
BALB	**Balikesir**	**1.05**	**297**	*e*PG	**Pn**	**01 44 01.3**	**+0.7**
BALB	**Balikesir**	**1.05**	**297**	*e*Pg	**Pn**	**01 44 01.3**	**+0.7**
CAVI	**Cavuskoy**	**1.19**	**29**	*e*PG	**Pb**	**01 44 02.1**	**-0.4**
CAVI	**Cavuskoy**	**1.19**	**29**	*e*Pg	**Pb**	**01 44 02.1**	**-0.4**
IZI	**Iznik**	**1.21**	**14**	*e*PN	**Pb**	**01 44 02.4**	**-0.5**
IZI	**Iznik**	**1.21**	**14**	*e*Pn	**Pb**	**01 44 02.4**	**-0.5**
MDNY	**Mudanya-Bursa**	**1.22**	**353**	*e*PN	**Pg**	**01 44 02.9**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.22**	**353**	*e*Pn	**Pg**	**01 44 02.9**	**-0.2**
KCTX	**Karacabey (Bur**	**1.24**	**333**	*e*PN	**Pg**	**01 44 03.7**	**+0.2**
KCTX	**Karacabey (Bur**	**1.24**	**333**	*e*Pn	**Pg**	**01 44 03.7**	**+0.2**
ADVT	**Abdulvahap**	**1.37**	**21**	*e*PN	**Pb**	**01 44 05.3**	**-0.1**
ADVT	**Abdulvahap**	**1.37**	**21**	*e*Pn	**Pb**	**01 44 05.3**	**-0.1**
ARMT	**Armutlu**	**1.42**	**353**	*e*PN	**Pg**	**01 44 06.6**	**-0.2**
ARMT	**Armutlu**	**1.42**	**353**	*e*Pn	**Pg**	**01 44 06.6**	**-0.2**
EDC	**Edincik**	**1.52**	**322**	*e*PN	**Pg**	**01 44 08.7**	**-0.1**
EDC	**Edincik**	**1.52**	**322**	*e*Pn	**Pg**	**01 44 08.7**	**-0.1**
GULT	**Gulveren**	**1.68**	**40**	*e*PN	**Pb**	**01 44 10.6**	**-0.2**
GULT	**Gulveren**	**1.68**	**40**	*e*Pn	**Pb**	**01 44 10.6**	**-0.2**

NNC 22 01:43:49.4±2.2, 37.°49N×71.°77E, h241km±25km, mb2.6, mpv3.7, 7C-5D, Error ellipse: s-maj=30.5km s-min=12.4km az=137.0, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino** 29nm,0.5s	**2.66**	**300**	↓P	Pn	01 44 37.2	-0.6

DZET					⇓S	S	01 45 16.4	+0.5
	65nm,0.5s							
MNAS	**Manas**	**5.02**	**6**	⇓P		Pn	01 45 06.5	+1.3
	6.4nm,0.5s							
MNAS					⇑S	S	01 46 07.5	+1.9
	25nm,0.7s							
AAK	**Ala-Archa**	**5.55**	**21**	P		Pn	01 45 12.5	+0.8
	3.7nm,0.4s							
AAK					S	S	01 46 19.1	+1.7
	6.7nm,0.7s							
KK31	**Karatay Array**	**5.69**	**351**	P		Pn	01 45 15.0	+1.7
	1.3nm,0.4s,baz=158,slow=11,SNR=20							
KK31					⇓S	S	01 46 19.1	-1.2
	3.5nm,0.4s,baz=161,slow=15,SNR=12							
TKM2	**Tokmak 2**	**6.17**	**27**	⇑P		Pn	01 45 19.9	+0.4
	11nm,0.7s							
TKM2					⇑S	S	01 46 29.2	-2.3
	2.6nm,0.8s							
MAKZ	**Makanchi**	**11.99**	**36**	⇑P		Pn	01 46 31.5	-1.5
	2.9nm,0.4s							
MK31	**Makanchi Array**	**12.13**	**37**	⇓P		Pn	01 46 34.1	-0.5
	0.7nm,0.5s,baz=203,slow=11,SNR=12							
KURBB	**Kurchatov Arra**	**13.99**	**18**	⇑P		Pn	01 46 56.9	-0.5
	2.0nm,0.5s							
AB31	**Akbulak array**	**14.54**	**328**	⇑P		P	01 47 04.8	+0.3
	0.4nm,0.6s,baz=136,slow=12,SNR=4.0							
BVA0	**Borovoye Array**	**15.56**	**357**	⇑P		P	01 47 15.1	-0.6
	2.0nm,0.8s,baz=159,slow=12,SNR=6.5							

GUC 22 01:47:30.2±0.4, 22°.87S×68°.93W, h101km±24km, ML3.9, Northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB06	**IPOC Station P**	**0.62**	**285**	*i* P	Pn	01 47 47.4	+0.2
PB06				*i* S	Sn	01 48 00.7	+0.8
PB06				IAML		01 48 01.8	
	comp=E,4μm,0.3s						
PB09	**IPOC Station P**	**1.11**	**345**	*i* P	Pn	01 47 52.9	+0.8
PB09				*i* S	Sn	01 48 09.6	+1.1
PB09				IAML		01 48 11.6	
	comp=N,5μm,0.3s						
PB07	**IPOC Station P**	**1.45**	**322**	*i* P	Pn	01 47 56.7	+0.6
PB07				*i* S	Sn	01 48 16.8	+1.2
PB07				IAML		01 48 19.6	
	comp=E,2μm,0.6s						
PB10	**IPOC Station P**	**1.63**	**247**	*i* P	Pn	01 47 58.5	+0.4
PB10				*i* S	Sn	01 48 20.5	+1.1
PB10				IAML		01 48 30.1	
	comp=N,2μm,0.3s						

IDC 22 01:50:54.8±3.2, 6°.36S×147°.58E, h0km, mb3.5/2, mb1 3.6/4, mb1mx3.3/44, mbtmp3.4/4, ML3.1/1, Error ellipse: s-maj=72.4km s-min=33.5km az=94.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**3.05**	**188**	Pn	Pn	01 51 45.4	+1.0
	4.9nm,0.3s,baz=4.0,slow=9.4,SNR=6.6						
PMG				Sn	Sn	01 52 20.9	-0.7
	2.6nm,0.3s,baz=342,slow=20,SNR=3.1						
WRA	**Warramunga Arr**	**18.65**	**222**	P	Pn	01 55 15.0	+0.4
	0.1nm,0.3s,baz=48,slow=11,SNR=4.1						
ASAR	**Alice Springs**	**21.66**	**216**	P	P	01 55 46.8	-0.3
	0.9nm,0.6s,baz=52,slow=9.1,SNR=14						
FITZ	**Fitzroy Crossi**	**24.38**	**239**	P	P	01 56 14.7	-0.2
	1.9nm,0.8s,baz=61,slow=6.3,SNR=3.8						
TORD	**Torodi Ar. Bea**	**145.74**	**284**	PKPbc	PKPdf	02 10 35.9	-0.6
	0.1nm,0.3s,baz=66,slow=3.5,SNR=3.6						

IDC 22 01:57:58.6±3.2, 35°.95N×70°.78E, h80km±27km, mb3.5/10, mb1 3.6/16, mb1mx3.4/59, mbtmp3.9/16, MS3.6/1, Ms1 3.6/1, ms1mx3.0/36, Error ellipse: s-maj=24.1km s-min=16.3km az=175.0

NNC 22 01:58:03.1±2.2, 36°.36N×70°.73E, h150km±18km, mb3.4, mpv4.1, Error ellipse: s-maj=18.9km s-min=12.2km az=163.0

ISC 22 01:58:01.6±0.9, 36°.25N±0°.08×70°.70E±0°.07, h100km, n32, σ1°.75/33, mb3.7/9, 7C-4D, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**2.95**	**330**	⇓P		**Pn**	**01 58 48.0**	**+1.2**
	18nm,0.5s						
DZET				⇑S		**Sn**	**01 59 25.1**	**+3.5**
	54nm,0.4s						
THN	**Thein Dam**	**5.63**	**131**	*e*P		Pn	01 59 14.0	-8.9
THN				*e*S		Sn	02 00 14.0	-12
MNAS	**Manas**	**6.38**	**12**	⇓P		**Pn**	**01 59 33.7**	**+0.5**
	9.9nm,0.5s						
MNAS				⇓S		**Sn**	**02 00 44.1**	**-0.5**
	22nm,0.5s						
KK31	**Karatay Array**	**6.84**	**359**	⇑P		**Pn**	**01 59 40.0**	**+0.7**
	8.3nm,0.5s,baz=187,slow=14,SNR=133						
KK31				⇑S		**Sn**	**02 00 56.5**	**+0.8**
	20nm,0.6s,baz=187,slow=27,SNR=3.6						
AAK	**Ala-Archa**	**7.02**	**24**	P		**Pn**	**01 59 42.4**	**+0.5**
	7.4nm,0.3s,baz=172,slow=5.7,SNR=49						
AAK				S		**Sn**	**02 00 59.2**	**-1.0**
	2.4nm,0.3s,baz=153,slow=9.0,SNR=6.4						
AAK	**Ala-Archa**	**7.02**	**24**	⇑P		**Pn**	**01 59 42.2**	**+0.3**
	12nm,0.5s						
AAK				S		**Sn**	**02 00 59.6**	**-0.6**
	14nm,0.6s						
TKM2	**Tokmak 2**	**7.66**	**28**	⇑P		**Pn**	**01 59 50.3**	**-0.3**
	6.0nm,0.5s						
TKM2				⇑S		**Sn**	**02 01 15.9**	**+0.1**
	7.8nm,0.8s						
GEYT	**Alibeck**	**10.19**	**283**	P		**Pn**	**02 00 24.0**	**-0.9**
	0.8nm,0.3s,baz=97,slow=12,SNR=7.3						
GEYT				S		**Sn**	**02 02 16.2**	**-1.0**
	1.4nm,0.3s,baz=94,slow=20,SNR=6.6						
PYUN	**Piuthan**	**13.20**	**125**	*e*P		Pn	02 00 56.2	-9.1
	13nm,0.4s						
MKAR	**Makanchi Array**	**13.63**	**36**	P		**Pn**	**02 01 13.1**	**+2.4**
	0.1nm,0.3s,baz=213,slow=11,SNR=3.0						
KOLN	**Koldanda**	**13.82**	**124**	*e*P		Pn	02 01 04.5	-8.9
	5.5nm,0.3s						
GKN	**Gorkha**	**14.38**	**121**	*e*P		Pn	02 01 11.2	-9.4
	9.0nm,0.3s						
KKN	**Kakani**	**14.96**	**120**	*e*P		Pn	02 01 19.5	-8.6
	10.0nm,0.5s						
PKIN	**Phulchoki**	**15.17**	**121**	*e*P		Pn	02 01 22.4	-8.4
	5.9nm,0.3s						
AB31	**Akbulak array**	**15.19**	**332**	P		**Pn**	**02 01 30.3**	**-0.2**
	2.6nm,0.5s,baz=146,slow=12,SNR=54						
AB31				S		**Sn**	**02 04 13.5**	**-4.5**
	1.2nm,0.5s,baz=152,slow=24,SNR=4.5						
GUN	**Gumba**	**15.31**	**119**	*e*P		Pn	02 01 24.2	-8.4
	10nm,0.4s						
KURBB	**Kurchatov Arra**	**15.44**	**19**	P		**P**	**02 01 36.2**	**+0.2**
	0.1nm,0.3s,baz=207,slow=11,SNR=7.8						
BVAR	**Borovoye Array**	**16.77**	**359**	P		**P**	**02 01 51.1**	**+0.3**
	0.2nm,0.3s,baz=163,slow=11,SNR=8.8						
AKTO	**Aktyubinsk**	**16.88**	**331**	P		**P**	**02 01 53.1**	**+1.2**
	0.5nm,0.3s,baz=149,slow=14,SNR=17						
AKTO	**Aktyubinsk**	**16.88**	**331**	⇓P		**P**	**02 01 52.4**	**+0.5**
	7.4nm,0.9s						
AKTO				⇑S		**Sn**	**02 04 54.0**	**-4.8**
	3.1nm,1.0s						
ZALV	**Zalesovo Beam**	**20.24**	**25**	P		**P**	**02 02 28.9**	**+0.3**
	2.2nm,0.4s,baz=225,slow=10,SNR=8.5						
SONM	**Songino Array**	**28.68**	**55**	P		**P**	**02 03 49.0**	**-0.1**
	0.4nm,0.5s,baz=264,slow=6.8,SNR=2.9						
FINES	**FINESS Array B**	**37.55**	**326**	P		**P**	**02 05 07.5**	**+1.7**
	1.7nm,1.0s,baz=123,slow=9.8,SNR=4.4						
ARCES	**ARCESS Array B**	**41.28**	**338**	P		**P**	**02 05 38.4**	**+1.8**
	2.1nm,0.7s,baz=92,slow=6.3,SNR=5.1						
NB2	**NORSAR Subarra**	**44.43**	**323**	P		**P**	**02 06 04.5**	**+2.3**
	comp=Z,0.8nm,0.6s,baz=97,slow=7.9						
NOA	**NORSAR Array B**	**44.43**	**323**	P		**P**	**02 06 03.4**	**+1.1**
	comp=Z,1.1nm,0.6s,baz=98,slow=7.8,SNR=4.7						
VAE	**Valguarnera**	**44.47**	**289**	LR		LR	02 28 01.4	
	comp=Z,64nm,18.4s,baz=148,slow=40						
TORD	**Torodi Ar. Bea**	**65.47**	**269**	P		**P**	**02 08 34.1**	**-0.2**
	comp=Z,0.6nm,0.6s,baz=45,slow=6.0,SNR=14						
INK	**Inuvik**	**74.19**	**9**	P		**P**	**02 09 27.1**	**+0.3**
	comp=Z,0.9nm,0.5s,baz=12,slow=11,SNR=5.2						
YKA	**Yellowknife Ar**	**81.50**	**2**	P		**P**	**02 10 08.4**	**+0.9**
	comp=Z,0.4nm,0.5s,baz=350,slow=6.1,SNR=6.8						
WRA	**Warramunga Arr**	**82.07**	**122**	P		**P**	**02 10 09.0**	**-2.1**
	comp=Z,0.4nm,0.5s,baz=325,slow=5.0,SNR=5.3						
ASAR	**Alice Springs**	**84.31**	**125**	P		**P**	**02 10 20.8**	**-1.9**
	comp=Z,0.3nm,0.6s,baz=312,slow=5.5,SNR=3.7						

NEIC 22 02:02:05.1, 19°.07N×67°.64W, h26km, MD3.2(RSPR), After RSPR.

RSPR 22 02:02:05.1, 19°.07N×67°.64W, h26km±29km, MD3.2/8, 10C-6D, Mona Passage

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AGPR	**Aguadilla, PR**	**0.78**	**140**	⇑*e*P	Pb	02 02 17.6	-2.4
AGPR	**Aguadilla, PR**	**0.78**	**140**	⇑*e*P	Pb	02 02 17.6	-2.4
AGPR				*e*S	Sb	02 02 27.5	-2.8
LSP	**Las Mesas**	**1.03**	**149**	⇑*e*P	Pn	02 02 21.4	-2.5
LSP	**Las Mesas**	**1.03**	**149**	⇑*e*P	Pn	02 02 21.4	-2.5
LSP				*e*S	Sb	02 02 34.3	-3.2
LRS	**Lares**	**1.08**	**136**	⇑*e*P	Pn	02 02 22.0	-2.6
LRS				*e*S	Sn	02 02 35.8	-3.1
LRS	**Lares**	**1.08**	**136**	⇑*e*P	Pn	02 02 22.0	-2.6
AOPR	**Arecibo Observ**	**1.11**	**130**	⇓*e*P	Pn	02 02 22.6	-2.4
AOPR	**Arecibo Observ**	**1.11**	**130**	⇓*e*P	Pn	02 02 22.6	-2.4
AOPR				*e*S	Sn	02 02 36.5	-2.9
CRPR	**Cabo Rojo, PR**	**1.17**	**154**	⇑*e*P	Pn	02 02 24.1	-1.7
CRPR	**Cabo Rojo, PR**	**1.17**	**154**	⇑*e*P	Pn	02 02 24.1	-1.7
GBPR	**Guanica, Bosqu**	**1.31**	**146**	⇑*e*P	Pn	02 02 26.3	-1.4
GBPR	**Guanica, Bosqu**	**1.31**	**146**	⇑*e*P	Pn	02 02 26.3	-1.4
GBPR				*e*S	Sn	02 02 42.1	-2.2
CELP	**Cerrillos**	**1.41**	**134**	⇓*e*P	Pn	02 02 27.2	-1.9
CELP				*e*S	Sn	02 02 44.9	-2.1
CELP	**Cerrillos**	**1.41**	**134**	⇓*e*P	Pn	02 02 27.2	-1.9
OBIP	**Obispado Ponce**	**1.42**	**136**	⇓*e*P	Pn	02 02 27.3	-1.9
OBIP	**Obispado Ponce**	**1.42**	**136**	⇓*e*P	Pn	02 02 27.3	-1.9
OBIP				*e*S	Sn	02 02 44.8	-2.3
SJG	**San Juan**	**1.71**	**124**	*e*Pn	Pn	02 02 31.5	-1.6
SJG				*e*Sn	Sn	02 02 52.1	-2.0
SDDR	**Presa de Saban**	**3.45**	**269**	*e*Pn	Pn	02 02 56.8	-0.5
SDDR				*e*Sn	Sn	02 03 35.9	-1.4

ATH 22 02:03:26.8, 40°.48N×20°.98E, h27km, ML2.1/14, Error ellipse: s-maj=1.2km s-min=0.7km az=308.0

CSEM 22 02:03:27.3±0.1, 40°.49N×20°.96E, h13km±1km, ML2.1, Error ellipse: s-maj=2.9km s-min=2.0km az=112.0

SKO 22 02:03:28.4, 40°.47N×20°.99E, h0km, M1.7, ML2.0

THE 22 02:03:28.3, 40°.51N×20°.97E, h9km, ML2.3/9, 3D, Error ellipse: s-maj=0.8km s-min=0.3km az=129.0, Greece-Albania border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NEST	**Nestorio**	**0.12**	**149**	P	Pg	02 03 31.6	+0.6
NEST				S	Sg	02 03 33.1	+0.1
NEST	**Nestorio**	**0.12**	**149**	P	Pg	02 03 31.6	+0.6
NEST				S	Sg	02 03 33.8	+0.8
NEST	**Nestorio**	**0.12**	**149**	P	Pg	02 03 31.4	+0.3
NEST				S	Sg	02 03 33.8	+0.8
NEST				AML	AML	02 03 34.8	
	comp=E,6384μm,0.2s						
NEST				AML	AML	02 03 35.4	
	comp=N,3779μm,0.2s						
PENT	**Pentalofos**	**0.34**	**158**	P	Pg	02 03 34.9	-0.2
PENT	**Pentalofos**	**0.34**	**158**	P	Pg	02 03 34.9	-0.2
PENT				S	Sg	02 03 39.2	-0.4
PENT	**Pentalofos**	**0.34**	**158**	P	Pg	02 03 35.4	+0.3
PENT				S	Sg	02 03 39.2	-0.4
PENT				AML	AML	02 03 43.1	
	comp=E,1020μm,0.3s						
PENT				AML	AML	02 03 43.2	
	comp=N,1278μm,0.3s						
FNA	**Florina**	**0.41**	**49**	P	Pg	02 03 36.3	0.0
FNA				S	Sg	02 03 42.4	+0.7
FNA	**Florina**	**0.41**	**49**	P	Pg	02 03 36.3	0.0
FNA				S	Sg	02 03 42.4	+0.7
FNA	**Florina**	**0.41**	**49**	P	Pg	02 03 36.2	-0.1
FNA				S	Sg	02 03 42.5	+0.8
FNA				AML	AML	02 03 45.2	
	comp=E,1667μm,0.1s						
FNA				AML	AML	02 03 45.9	
	comp=N,1489μm,0.2s						
BIA	**Bitola**	**0.57**	**28**	P	Pg	02 03 38.8	-0.6
BIA				S	Sg	02 03 47.7	+0.8
BIA	**Bitola**	**0.57**	**28**	⇓*i*Pg	Pg	02 03 38.9	-0.5
BIA				*i* Sg	Sg	02 03 47.7	+0.8
BIA	**Bitola**	**0.57**	**28**	P	Pg	02 03 38.8	-0.6
BIA				S	Sg	02 03 47.7	+0.8
OHR	**Ohrid**	**0.61**	**348**	⇓*i*Pg	Pg	02 03 39.7	-0.4
OHR				*i* Sg	Sb	02 03 49.4	-0.6
OHR				*e*Lg	Lg	02 03 49.5	
	comp=E,207nm,0.4s						
OHR				*e*Lg	Lg	02 03 51.8	
	comp=N,109nm,0.4s						
OHR	**Ohrid**	**0.61**	**348**	⇓*i*Pg	Pg	02 03 39.7	-0.4
OHR				*i* Sg	Sb	02 03 49.3	-0.7
OHR				*e*Lg	Lg	02 03 49.4	
	comp=N,207nm,0.4s						
KPRO	**Kipourio**	**0.63**	**152**	P	Pg	02 03 40.2	-0.4
KPRO	**Kipourio**	**0.63**	**152**	P	Pg	02 03 39.2	-1.4
KPRO				S	Sg	02 03 47.8	-1.0
KPRO	**Kipourio**	**0.63**	**152**	P	Pg	02 03 39.2	-1.3
KPRO				S	Sg	02 03 47.8	-1.1
KPRO				AML	AML	02 03 51.5	
	comp=E,915μm,0.3s						
KPRO				AML	AML	02 03 52.1	
	comp=N,581μm,0.2s						
KZN	**Kozani**	**0.64**	**108**	P	Pg	02 03 40.3	-0.5
KZN				S	Sb	02 03 50.1	-0.8
KZN	**Kozani**	**0.64**	**108**	P	Pg	02 03 40.5	-0.3
KZN				S	Sg	02 03 48.6	-0.6
JAN	**Janina**	**0.86**	**186**	P	Pg	02 03 44.3	-0.6
JAN				S	Sb	02 03 56.9	-0.2
JAN	**Janina**	**0.86**	**186**	P	Pg	02 03 42.8	-2.1
JAN				S	Sg	02 03 55.7	-0.4
JAN	**Janina**	**0.86**	**186**	AML	AML	02 04 03.1	
	comp=E,159μm,0.3s						
SGD	**Sagiada**	**1.06**	**212**	P	Pg	02 03 48.0	-0.7
SGD				S	Sb	02 04 03.5	+0.6
SGD	**Sagiada**	**1.06**	**212**	P	Pg	02 03 46.5	-2.2
SGD				S	Sb	02 04 03.5	+0.6
SGD	**Sagiada**	**1.06**	**212**	P	Pg	02 03 46.5	-2.2
IGT	**Igoumenitsa**	**1.10**	**207**	P	Pg	02 03 49.1	-0.2
IGT				S	Sn	02 04 05.0	-0.2
IGT	**Igoumenitsa**	**1.10**	**207**	P	Pg	02 03 47.7	-1.6
IGT				S	Sg	02 04 02.3	-1.3
IGT	**Igoumenitsa**	**1.10**	**207**	P	Pg	02 03 47.7	-1.6
IGT				S	Sg	02 04 02.3	-1.3
IGT				AML	AML	02 04 10.0	
	comp=E,97μm,0.3s						
IGT				AML	AML	02 04 15.5	
	comp=N,110μm,0.5s						
GRG	**Griva**	**1.17**	**67**	P	Pb	02 03 50.0	-0.8
GRG				S	Sn	02 04 06.9	-0.2
GRG	**Griva**	**1.17**	**67**	P	Pb	02 03 50.0	-0.8
GRG				S	Sg	02 04 05.0	-1.1
GRG	**Griva**	**1.17**	**67**	P	Pb	02 03 48.9	-1.9
GRG				S	Sg	02 04 05.0	-1.0
GRG				AML	AML	02 04 11.8	
	comp=N,160μm,0.5s						
GRG				AML	AML	02 04 12.6	
	comp=E,115μm,0.4s						
TIR	**Tirane**	**1.18**	**315**	P	Pn	02 03 51.3	+0.2
TIR	**Tirane**	**1.18**	**315**	P	Pn	02 03 51.3	+0.3
KEK	**Kerkira**	**1.20**	**229**	P	Pb	02 03 50.3	-1.0
KEK				S	Sn	02 04 08.2	+0.4
KEK	**Kerkira**	**1.20**	**229**	P	Pb	02 03 49.1	-2.2
KEK				S	Sb	02 04 05.1	-1.9
LIT	**Litokhoron**	**1.23**	**109**	P	Pn	02 03 50.7	-1.1
LIT				S	Sn	02 04 08.7	+0.1
LIT	**Litokhoron**	**1.23**	**109**	P	Pn	02 03 49.9	-1.9
LIT				S	Sb	02 04 07.5	-0.3
LIT	**Litokhoron**	**1.23**	**109**	P	Pn	02 03 49.9	-1.8
LIT				S	Sb	02 04 07.5	-0.3
LIT				AML	AML	02 04 14.2	
	comp=N,118μm,0.4s						
LIT				AML	AML	02 04 14.8	
	comp=E,139μm,0.4s						
THL	**Klokotos Trika**	**1.24**	**139**	P	Pn	02 03 50.4	-1.4
THL				S	Sb	02 04 05.7	-2.3
DSL	**Palaion Diasel**	**1.38**	**176**	P	Pn	02 03 52.2	-1.6
DSL				S	Sb	02 04 10.8	-1.3
DSL	**Palaion Diasel**	**1.38**	**176**	P	Pn	02 03 52.2	-1.6
DSL				S	Sb	02 04 10.8	-1.3
DSL				AML	AML	02 04 19.6	
	comp=N,123μm,0.4s						
DSL				AML	AML	02 04 24.0	
	comp=E,127μm,0.4s						
VAY	**Valandovo**	**1.46**	**56**	P	Pn	02 03 53.8	-1.0
VAY	**Valandovo**	**1.46**	**56**	*i* Pg	Pn	02 03 54.3	-0.5
VAY				*i* Sg	Sg	02 04 15.2	+0.1
VAY				*e*Lg	Lg	02 04 16.1	
	comp=E,12nm,0.4s						
VAY				*e*Lg	Lg	02 04 18.5	
	comp=N,17nm,0.5s						
VAY	**Valandovo**	**1.46**	**56**	P	Pn	02 03 53.8	-1.0
VAY				*i* Sg	Sg	02 04 15.2	+0.1
VAY				*e*Lg	Lg	02 04 16.1	
	comp=N,12nm,0.4s						
SKO	**Skopje**	**1.50**	**13**	*i* Pg	Pn	02 03 55.2	-0.3
SKO				*i* Sg	Sg	02 04 17.1	+0.6
SKO	**Skopje**	**1.50**	**13**	*i* Pg	Pn	02 03 55.1	-0.3
SKO				*i* Sg	Sg	02 04 17.0	+0.5
KNT	**Kendrikon**	**1.60**	**65**	P	Pn	02 03 55.8	-1.0
KNT				S	Sn	02 04 15.7	-1.9
KNT	**Kendrikon**	**1.60**	**65**	P	Pn	02 03 55.8	-1.0
KNT				S	Sn	02 04 15.7	-1.9
KNT				AML	AML	02 04 25.8	
	comp=N,43μm,0.3s						
KNT				AML	AML	02 04 28.2	
	comp=E,32μm,0.4s						
HORT	**Hortiatis**	**1.62**	**86**	P	Pn	02 03 55.2	-2.0
HORT	**Hortiatis**	**1.62**	**86**	P	Pn	02 03 55.2	-2.0
EVR	**Evrytania**	**1.72**	**158**	P	Pn	02 03 56.0	-2.6
EVR				S	Sn	02 04 19.0	-1.7
EVR	**Evrytania**	**1.72**	**158**	P	Pn	02 03 56.0	-2.6
EVR				S	Sn	02 04 19.1	-1.7
EVR				AML	AML	02 04 29.8	
	comp=N,66μm,0.4s						
LKD2	**Lefkada island**	**1.74**	**188**	P	Pn	02 03 55.6	-3.1
LKD2	**Lefkada island**	**1.74**	**188**	P	Pn	02 03 55.6	-3.2
AGG	**Agios Georgios**	**1.82**	**144**	P	Pn	02 03 57.8	-2.1
AGG				S	Sn	02 04 20.8	-2.3
AGG	**Agios Georgios**	**1.82**	**144**	P	Pn	02 03 57.8	-2.1
AGG				S	Sn	02 04 20.8	-2.3
AGG				AML	AML	02 04 28.1	
	comp=E,133μm,0.4s						
AGG				AML	AML	02 04 33.8	
	comp=N,141μm,0.3s						
SOH	**Sokhos**	**1.84**	**80**	P	Pn	02 03 59.0	-1.1
SOH	**Sokhos**	**1.84**	**80**	P	Pn	02 03 59.0	-1.2
PLG	**Polygyros**	**1.89**	**93**	P	Pn	02 04 00.1	-0.8
PLG				S	Sn	02 04 22.9	-2.0
PLG	**Polygyros**	**1.89**	**93**	P	Pn	02 04 00.1	-0.8
PLG				S	Sn	02 04 22.9	-2.0
PLG				AML	AML	02 04 32.8	
	comp=E,20μm,0.4s						
PLG				AML	AML	02 04 34.7	
	comp=N,28μm,0.7s						
PDO	**Prodromos**	**1.92**	**175**	P	Pn	02 03 58.4	-2.8
PDO	**Prodromos**	**1.92**	**175**	P	Pn	02 03 58.4	-2.8
XOR	**Xorichti**	**2.06**	**123**	P	Pn	02 04 02.6	-0.5
XOR				S	Sn	02 04 28.7	-0.2
XOR	**Xorichti**	**2.06**	**123**	P	Pn	02 04 01.2	-1.9
XOR				S	Sn	02 04 28.7	-0.2
XOR	**Xorichti**	**2.06**	**123**	P	Pn	02 04 01.2	-1.9
SRS	**Serrai**	**2.08**	**72**	P	Pn	02 04 01.9	-1.5
SRS	**Serrai**	**2.08**	**72**	P	Pn	02 04 01.9	-1.5
NEO	**Neokhori**	**2.11**	**124**	P	Pn	02 04 02.9	-0.9
NEO				S	Sn	02 04 27.2	-3.0
NEO	**Neokhori**	**2.11**	**124**	P	Pn	02 04 02.9	-1.0
NEO				S	Sn	02 04 27.2	-3.0
NEO				AML	AML	02 04 30.3	
	comp=N,41μm,0.5s						
NEO				AML	AML	02 04 30.3	
	comp=E,43μm,0.3s						
PAIG	**Paliouri**	**2.15**	**105**	P	Pn	02 04 02.9	-1.5
PAIG	**Paliouri**	**2.15**	**105**	P	Pn	02 04 02.9	-1.5
NVR	**Nevrokopi**	**2.34**	**68**	P	Pn	02 04 06.7	-0.4
NVR				S	Sn	02 04 34.5	-1.5
VLS	**Valsamata**	**2.35**	**187**	P	Pn	02 04 05.7	-1.5
KFL	**Anninata**	**2.41**	**183**	P	Pn	02 04 06.6	-1.3
KFL	**Anninata**	**2.41**	**183**	P	Pn	02 04 06.6	-1.3
AOS	**Alonnisos**	**2.61**	**120**	P	Pn	02 04 09.3	-1.4
AOS	**Alonnisos**	**2.61**	**120**	P	Pn	02 04 09.3	-1.4
ZKS	**Zakynthos**	**2.82**	**183**	P	Pn	02 04 11.0	-2.5
ZKS	**Zakynthos**	**2.82**	**183**	P	Pn	02 04 11.0	-2.6
UDBI	**Udbina**	**5.56**	**318**	*i* Pn	Pn	02 04 52.7	+1.5
UDBI				Sn	Sn	02 05 53.2	-2.1

CSEM 22 02:04:30.4, 39°.18N×28°.97E, h6km, MD2.7

ISK 22 02:04:30.4, 39°.18N×28°.97E, h6km, MD2.7, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TVSB	**Tavsanli**	**0.47**	**54**	*e*PG	Pg	02 04 40.0	+0.6
TVSB				*e*SG	Sg	02 04 46.4	+0.8
TVSB	**Tavsanli**	**0.47**	**54**	*e*Pg	Pg	02 04 40.0	+0.6
TVSB				*e*Sg	Sg	02 04 46.4	+0.9
KULA	**Kula-Manisa**	**0.71**	**200**	PG	Pg	02 04 44.5	+0.6
KULA	**Kula-Manisa**	**0.71**	**200**	*i* Pg	Pg	02 04 44.5	+0.5
AKS	**Akhisar**	**0.95**	**252**	*e*PG	Pg	02 04 48.5	-0.1
AKS	**Akhisar**	**0.95**	**252**	*e*Pg	Pg	02 04 48.5	-0.1
BALB	**Balikesir**	**0.96**	**299**	*e*PG	Pb	02 04 49.3	-0.2
BALB	**Balikesir**	**0.96**	**299**	*e*Pg	Pb	02 04 49.3	-0.2
KCTX	**Karacabey (Bur**	**1.18**	**337**	*e*PN	P

AGPR	Aguadilla, PR	0.60 139	eP	Pb	02 06 54.2	-1.2
AGPR	Aguadilla, PR	0.60 139	eP	Pb	02 06 54.2	-1.2
AGPR			eS	Sb	02 07 04.2	+0.5
MPR	Mayaguez	0.80 152	eP	Pb	02 06 58.1	-0.6
MPR	Mayaguez	0.80 152	eP	Pb	02 06 58.1	-0.6
MPR			eS	Sb	02 07 10.2	+1.0
LSP	Las Mesas	0.85 150	eP	Pb	02 06 59.2	-0.5
LSP	Las Mesas	0.85 150	eP	Pb	02 06 59.2	-0.5
LRS	Lares	0.90 134	eP	Pn	02 06 59.2	-1.0
LRS	Lares	0.90 134	eP	Pn	02 06 59.2	-1.0
AOPR	Arecibo Observ	0.93 128	eP	Pn	02 06 59.9	-0.7
AOPR	Arecibo Observ	0.93 128	eP	Pn	02 06 59.9	-0.7
AOPR			eS	Sb	02 07 12.5	-0.5
GBPR	Guanica, Bosqu	1.13 147	eP	Pn	02 07 03.0	-0.2
GBPR	Guanica, Bosqu	1.13 147	eP	Pn	02 07 03.0	-0.2
GBPR			eS	Sn	02 07 17.0	-0.7
CELP	Cerrillos	1.23 133	eP	Pn	02 07 04.1	-0.6
CELP	Cerrillos	1.23 133	eP	Pn	02 07 04.1	-0.6
OBIP	Obispado Ponce	1.24 135	eP	Pn	02 07 04.1	-0.6
OBIP	Obispado Ponce	1.24 135	eP	Pn	02 07 04.1	-0.6
ICMP	Isla Caja de M	1.40 137	eP	Pn	02 07 06.9	-0.1
ICMP	Isla Caja de M	1.40 137	eP	Pn	02 07 06.9	-0.1
SJG	San Juan	1.54 121	eP	Pn	02 07 08.2	-0.6
SJG	San Juan	1.54 121	Pn	Pn	02 07 08.3	-0.6
	110nm,0.3s,baz=306,slow=11,SNR=107					
SJG			Sn	Sn	02 07 27.8	-0.1
	284nm,0.3s,baz=30,slow=20,SNR=21					
CBYP	Canovanas	1.71 112	eP	Pn	02 07 10.8	-0.6
CBYP	Canovanas	1.71 112	eP	Pn	02 07 10.8	-0.6
DR12	Loma Pena Alta	1.76 266	eP	Pn	02 07 11.8	-0.2
DR12			eS	Sn	02 07 34.4	+0.9
DR12	Loma Pena Alta	1.76 266	eP	Pn	02 07 11.8	-0.2
ABVI	Anegada Island	3.03 93	eP	Pn	02 07 29.1	-0.4
ABV	Anegada	3.04 93	eP	Pn	02 07 29.1	-0.4
SDDR	Presa de Saban	3.56 272	ePn	Pn	02 07 37.2	+0.4
SDDR			eSn	Sn	02 08 18.9	+1.0
PCRV	Puerto La Cruz	9.13 162	Pn	Pn	02 08 55.9	+2.5
	1.0nm,0.3s,baz=301,slow=5.1,SNR=7.9					
PCRV			Sn	Sn	02 10 30.5	-4.8
	0.8nm,0.3s,baz=340,slow=8.6,SNR=2.6					
TKL	Tuckaleechee C	22.00 323	S	S	02 15 27.4	-9.2
	1.0nm,0.5s,baz=77,slow=19,SNR=3.3					
TXAR	Lajitas Array	34.45 294	P	P	02 13 29.5	+0.7
	0.4nm,0.6s,baz=102,slow=10,SNR=5.6					
SCHQ	Schefferville	35.85 1	P	P	02 13 40.9	+0.4
	1.2nm,0.5s,baz=198,slow=18,SNR=2.8					
H07S1	FLORES T-PHASE	37.36 49	T	T	02 53 07.1	
	SNR=7.4					
LPIG	La Paz	40.02 285	LR	LR	02 32 57.5	
	comp=Z,70nm,20.3s,baz=252,slow=39					
PDAR	Pinedale Array	42.62 313	PcP	PcP	02 16 33.4	+4.0
	0.6nm,0.7s,baz=110,slow=4.3,SNR=5.6					
NVAR	Mina Array Bea	47.96 305	P	P	02 15 21.6	+1.8
	0.3nm,0.7s,baz=85,slow=10.0,SNR=2.6					
YKA	Yellowknife Ar	54.21 335	P	P	02 16 05.1	-1.0
	0.9nm,0.7s,baz=113,slow=7.6,SNR=7.6					
ESDC	Sonseca Array	57.98 55	P	P	02 16 33.8	+0.2
	1.1nm,0.8s,baz=269,slow=6.7,SNR=9.1					
DBIC	Dimbokro	62.04 92	P	P	02 17 01.9	+0.2
	2.0nm,0.6s,baz=278,slow=9.1,SNR=5.1					
TORD	Torodi Ar. Bea	66.42 84	P	P	02 17 30.4	-0.1
	0.4nm,0.6s,baz=287,slow=7.3,SNR=7.7					
NOA	NORSAR Array B	68.19 31	P	P	02 17 41.7	+0.7
	1.1nm,0.8s,baz=270,slow=6.4,SNR=2.9					
ILAR	Eielson Array	68.52 333	P	P	02 17 41.5	-1.4
	0.6nm,0.7s,baz=98,slow=4.4,SNR=6.7					
ARCES	ARCESS Array B	73.50 21	P	P	02 18 13.2	+0.3
	0.9nm,0.5s,baz=289,slow=3.7,SNR=8.5					
ASAR	Alice Springs	159.49 253	PKPab	PKPab	02 27 21.7	+3.6
	0.4nm,0.7s,baz=94,slow=4.3,SNR=2.9					

DDA ***22*** *02:08:38.6, 39°.14N×29°.02E, h7km, Md3.1*
ISK ***22*** *02:08:38.4, 39°.12N×29°.02E, h5km, ML3.2*
CSEM ***22*** *02:08:39.4±0.1, 39°.11N×29°.02E, h2km, MD3.1, Error ellipse: s-maj=2.5km s-min=2.1km az=125.0*
ISC 22 02:08:39.4±1.2, 39°.12N±0°.02×29°.02E±0°.02, h1km±14km, n58, σ0§36/68, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.25	252	P	Pg	02 08 44.4	+0.2
DEMI				S	Sg	02 08 48.0	+0.6
DEMI	Demirci	0.25	252	iP	Pg	02 08 44.4	+0.2
DEMI				iS	Sg	02 08 48.0	+0.6
GDZ	Gediz	0.36	95	P	Pg	02 08 46.1	-0.2
GDZ				S	Sg	02 08 51.1	+0.1
GDZ	Gediz	0.36	95	iP	Pg	02 08 46.1	-0.2
GDZ				iS	Sg	02 08 51.1	+0.1
TVSB	Tavsanli	0.47	46	PG	Pg	02 08 48.3	-0.2
TVSB	Tavsanli	0.47	46	iPg	Pg	02 08 48.3	-0.2
DURS	Dursunbey	0.64	319	P	Pg	02 08 51.4	-0.3
DURS	Dursunbey	0.64	319	iP	Pg	02 08 51.4	-0.3
KULA	Kula-Manisa	0.67	205	PG	Pg	02 08 51.8	-0.4
KULA	Kula-Manisa	0.67	205	iPg	Pg	02 08 51.8	-0.4
MANT	Manisa	0.72	210	P	Pg	02 08 52.7	-0.6
MANT				S	Sg	02 09 02.2	-0.5
MANT	Manisa	0.72	210	iP	Pg	02 08 52.7	-0.6
MANT				iS	Sg	02 09 02.2	-0.5
KHAL	Karahalli	0.83	154	P	Pg	02 08 55.5	+0.1
KHAL	Karahalli	0.83	154	iP	Pg	02 08 55.5	+0.1
KHL	Karahalli	0.89	154	ePG	Pg	02 08 57.0	+0.6
KHL	Karahalli	0.89	154	ePg	Pg	02 08 57.0	+0.6
ORLT	Orhaneli	0.93	354	ePG	Pg	02 08 57.8	+0.5
ORLT	Orhaneli	0.93	354	ePg	Pg	02 08 57.8	+0.5
AKHS	Akhisar	0.97	256	P	Pg	02 08 57.8	-0.2
AKHS				S	Sb	02 09 11.8	-0.6
AKHS	Akhisar	0.97	256	iP	Pg	02 08 57.8	-0.2
AKHS				iS	Sb	02 09 11.8	-0.6
AKS	Akhisar	0.97	256	ePG	Pg	02 08 58.4	+0.3
AKS	Akhisar	0.97	256	ePg	Pg	02 08 58.4	+0.3
BALB	Balikesir	1.02	301	ePG	Pg	02 08 59.2	+0.1
BALB				eSG	Sb	02 09 14.1	+0.1
BALB	Balikesir	1.02	301	ePg	Pg	02 08 59.2	+0.1
BALB				eSg	Sb	02 09 14.1	+0.1
BALY	Balya	1.25	300	P	Pg	02 09 03.4	0.0
BALY	Balya	1.25	300	iP	Pg	02 09 03.4	0.0
MDNY	Mudanya-Bursa	1.25	355	ePN	Pg	02 09 02.5	-0.9
MDNY	Mudanya-Bursa	1.25	355	ePn	Pg	02 09 02.5	-0.9
CAVI	Cavuskoy	1.25	30	ePN	Pg	02 09 03.3	-0.2
CAVI	Cavuskoy	1.25	30	ePn	Pg	02 09 03.3	-0.2
KCTX	Karacabey (Bur	1.25	336	ePN	Pg	02 09 03.5	0.0
KCTX	Karacabey (Bur	1.25	336	ePn	Pg	02 09 03.5	0.0
IZI	Iznik	1.27	16	ePN	Pn	02 09 04.3	-0.1
IZI	Iznik	1.27	16	ePn	Pn	02 09 04.3	-0.1
GEMT	Gemlik	1.32	6	ePN	Pg	02 09 04.8	0.0
GEMT	Gemlik	1.32	6	ePn	Pg	02 09 04.8	0.0
DENT	Denizli	1.36	180	ePN	Pb	02 09 05.8	0.0
DENT	Denizli	1.36	180	ePn	Pb	02 09 05.8	0.0
ADVT	Abdulvahap	1.42	23	ePN	Pn	02 09 06.2	-0.3
ADVT	Abdulvahap	1.42	23	ePn	Pn	02 09 06.2	-0.3
ARMT	Armutlu	1.45	355	ePN	Pn	02 09 06.6	-0.3
ARMT	Armutlu	1.45	355	ePn	Pn	02 09 06.6	-0.3
EDC	Edincik	1.52	324	ePN	Pn	02 09 07.9	+0.1
EDC	Edincik	1.52	324	ePn	Pn	02 09 07.9	+0.1
GPA	Golpazari	1.53	40	ePN	Pn	02 09 08.1	+0.1
GPA	Golpazari	1.53	40	ePn	Pn	02 09 08.1	+0.1
GULT	Gulveren	1.75	41	ePN	Pn	02 09 11.4	+0.4
GULT	Gulveren	1.75	41	ePn	Pn	02 09 11.4	+0.4
HRT	Hereke	1.77	16	ePN	Pn	02 09 11.6	+0.3
HRT	Hereke	1.77	16	ePn	Pn	02 09 11.6	+0.3
SPNC	Sapanca-Adapaz	1.85	32	ePN	Pn	02 09 12.5	+0.1
SPNC	Sapanca-Adapaz	1.85	32	ePn	Pn	02 09 12.5	+0.1
ISK	Istanbul-Kandi	1.94	1	ePN	Pn	02 09 13.8	+0.2
ISK	Istanbul-Kandi	1.94	1	ePn	Pn	02 09 13.8	+0.2
SVRH	Sivrihisar-ESK	1.97	80	ePN	Pn	02 09 14.3	+0.2
SVRH	Sivrihisar-ESK	1.97	80	ePn	Pn	02 09 14.3	+0.2
MDUB	Mudurnu	2.15	50	ePN	Pn	02 09 17.1	+0.5
MDUB	Mudurnu	2.15	50	ePn	Pn	02 09 17.1	+0.5

IDC 22 02:08:55.3±1.8, 25°.38N×141°.98E, h0km, mb3.6/4, mb1 3.7/4, mb1mx3.4/56, mbtmp3.6/4, Error ellipse: s-maj=58.6km s-min=21.1km az=93.0, Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCJ	Chichijima	1.72	6	Pn	Pn	02 09 26.7	+0.2
	60nm,0.3s,baz=210,slow=8.1,SNR=43						
JCJ				Sn	Sg	02 09 50.9	+0.3
	48nm,0.3s,baz=113,slow=23,SNR=8.7						

SONM	Songino Array	35.84 318	P	P	02 15 56.4	-0.4
	0.2nm,0.4s,baz=123,slow=8.6,SNR=2.5					
WRA	Warramunga Arr	45.66 190	P	P	02 17 18.0	+0.1
	0.6nm,0.6s,baz=9.7,slow=8.5,SNR=8.2					
MKAR	Makanchi Array	51.44 311	P	P	02 18 03.0	+0.8
	0.1nm,0.3s,baz=99,slow=8.9,SNR=3.1					
FINES	FINESS Array B	79.40 334	P	P	02 21 02.3	-0.7
	0.7nm,0.5s,baz=67,slow=5.0,SNR=8.6					

ISCJB ***22*** *02:11:20.2±0.6, 67°.81N±0°.03×20°.20E±0°.08, h0km, Error ellipse: s-maj=4.2km s-min=3.7km az=166.3*
UPP ***22*** *02:11:20.9, 67°.88N×20°.10E, h0km, ML0.6, Mining explosion.*
CSEM ***22*** *02:11:20.9±0.3, 67°.82N×20°.16E, h1km±1km, ML0.6, Error ellipse: s-maj=6.1km s-min=4.6km az=149.0, Mining explosion.*
NAO ***22*** *02:11:21.7±1.5, 67°.82N×20°.36E, ML2.1*
HEL ***22*** *02:11:21.5±0.1, 67°.85N×20°.13E, h0km, ML1.8, ML0.6(UPP), Explosion*
BER ***22*** *02:11:24.0±3.5, 67°.83N×20°.21E, h0km, ML1.8, Suspected explosion*
ISC 22 02:11:21.3±0.9, 67°.84N±0°.03×20°.17E±0°.03, h0km, n38, σ1§03/56, Sweden

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUA	Kurravaara	0.14	28	iP	Pg	02 11 23.5	-0.4
KUA				iS	Sg	02 11 25.4	-0.2
KUA	Kurravaara	0.14	28	P	Pg	02 11 23.5	-0.4
KUA				S	Sg	02 11 25.4	-0.3
NIKU	Nikkaluokta	0.43	275	iP	Pg	02 11 28.7	-0.9
NIKU	Nikkaluokta	0.43	275	P	Pg	02 11 28.7	-0.8
LANU	Lannavaara	0.72	72	ePB	Pb	02 11 36.2	-0.5
LANU				eS	Sg	02 11 43.6	-0.8
LANU	Lannavaara	0.72	72	P	Pg	02 11 34.6	-0.5
LANU	Lannavaara	0.72	72	Pb	Pb	02 11 36.2	-0.5
LANU				Sg	Sg	02 11 43.5	-0.9
SALU	Saltoluokta	0.78	235	iP	Pg	02 11 35.7	-0.5
SALU	Saltoluokta	0.78	235	P	Pg	02 11 35.7	-0.6
MASU	Masugnsbyn	0.80	118	iP	Pg	02 11 36.7	+0.2
MASU	Masugnsbyn	0.80	118	P	Pg	02 11 36.7	+0.2
KIF	Kilpisjarvi	1.20	11	Pg	Pn	02 11 45.2	0.0
KIF				Lg	Lg	02 12 00.8	
KIF	Kilpisjarvi	1.20	11	Pg	Pn	02 11 45.2	0.0
KIF				Lg	Lg	02 12 00.8	
KIF	Kilpisjarvi	1.20	11	ePN	Pn	02 11 46.1	+0.8
	baz=185						
KIF				eSB	Sb	02 12 00.8	0.0
KIF	Kilpisjarvi	1.20	11	Pg	Pn	02 11 45.2	0.0
	SNR=90						
KIF				Sg	Sb	02 12 00.8	0.0
HEF	Hetta	1.43	65	ePN	Pn	02 11 47.9	-0.5
HEF				MSG		02 12 04.5	
	comp=Z,5.0nm,0.2s						
HEF				eSN	Sn	02 12 08.0	0.0
HEF	Hetta	1.43	65	Pg	Pn	02 11 47.9	-0.6
HEF				Sg	Sn	02 12 07.9	-0.1
KTK1	Kautokeino	1.64	42	eSg	Sg	02 12 15.6	+1.7
KTK1				IAML		02 12 18.9	
	comp=Z,13nm,0.2s						
KTK1	Kautokeino	1.64	42	eSg	Sg	02 12 15.6	+1.7
	SNR=90						
TRO	Tromso	1.86	347	eSg	Sg	02 12 22.0	+1.0
TRO				IAML		02 12 25.7	
	comp=Z,22nm,0.4s						
TRO	Tromso	1.86	347	eSg	Sg	02 12 22.0	+1.0
	SNR=90						
TOF	Tornio	2.40	135	eP	Pn	02 12 03.0	+1.2
TOF				eSG	Sb	02 12 35.5	0.0
TOF	Tornio	2.40	135	Pg	Pn	02 12 02.9	+1.1
RNF	Rovaniemi	2.59	116	ePB	Pn	02 12 06.0	+1.7
RNF				eSB	Sb	02 12 39.5	-1.3
ARE0	ARCESS Array S	2.59	46	ePB	Pn	02 12 06.4	+2.0
	baz=226						
ARE0				eSB	Sb	02 12 38.9	-2.1
ARE0	ARCESS Array S	2.59	46	Pb	Pn	02 12 06.4	+2.0
ARE0				Sb	Sb	02 12 38.9	-2.1
ARA0	ARCESS Array S	2.59	46	Pn	Pn	02 12 04.5	+0.1
	baz=229,slow=16						
ARA0				Sn	Sn	02 12 38.2	+1.6
	baz=226,slow=28						
ARA0				Lg	Lg	02 12 42.3	
	baz=225,slow=28						
ARA0	ARCESS Array S	2.59	46	Pn	Pn	02 12 04.5	+0.1
	baz=229,slow=16						
ARA0				Sn	Sn	02 12 38.2	+1.6
	baz=226,slow=28						
ARA0				Lg	Lg	02 12 42.3	
	baz=225,slow=28						
ARA0	ARCESS Array S	2.59	46	Pn	Pn	02 12 04.6	+0.1
	SNR=50						
ARA0				Sn	Sn	02 12 38.2	+1.6
	SNR=50						
ARA0				Lg	Lg	02 12 42.3	
	SNR=4.5						
KEV	Kevo	3.15	49	eS	Sn	02 12 52.1	+1.9
KEV				MSG		02 12 54.7	
	comp=Z,3.5nm,0.2s						
KEV	Kevo	3.15	49	Sn	Sn	02 12 52.1	+1.9
VRF	Varrio	3.59	87	eSB	Sb	02 13 08.5	-1.0
APA0	Apatity Array	4.89	87	Pn	Pn	02 12 35.1	-0.8
APA0				Sn	Sn	02 13 33.6	+0.5
	baz=284,slow=28						
APA0				Lg	Lg	02 13 51.2	
	baz=288,slow=28						
APA0	Apatity Array	4.89	87	Pn	Pn	02 12 35.1	-0.8
	SNR=50						
APA0				Sn	Sn	02 13 33.6	+0.5
	SNR=50						
FIA0	FINESS Array S	6.90	156	Pn	Pn	02 13 03.8	+0.3
FIA0				Lg	Lg	02 14 57.0	
	baz=337,slow=37						
FIA0	FINESS Array S	6.90	156	Pn	Pn	02 13 03.8	+0.3
FIA0				Lg	Lg	02 14 57.0	
	baz=337,slow=37						
FIA0	FINESS Array S	6.90	156	Pn	Pn	02 13 03.8	+0.3
	SNR=50						
FIA0				Lg	Lg	02 14 57.0	
	SNR=3.5						

ISCJB ***22*** *02:12:07.4±0.2, 36°.01N±0°.02×31°.30E±0°.02, h80km±4km, mb3.6/12, Error ellipse: s-maj=3.2km s-min=2.4km az=37.7*
IDC ***22*** *02:12:07.9±1.1, 36°.11N×31°.28E, h62km±14km, mb3.5/12, mb1 3.6/21, mb1mx3.4/44, mbtmp3.7/21, Error ellipse: s-maj=9.4km s-min=9.1km az=25.0*
ISK ***22*** *02:12:07.3, 36°.01N×31°.34E, h51km, ML4.0*
HLW ***22*** *02:12:08.4, 36°.01N×31°.16E, h33km±27km, Ml4.1*
CSEM ***22*** *02:12:08.8±0.1, 36°.02N×31°.32E, h40km, ML4.0, Error ellipse: s-maj=2.2km s-min=1.5km az=46.0*
DDA ***22*** *02:12:08.6, 36°.33N×31°.40E, h14km, Ml4.0*
THE ***22*** *02:12:09.2, 36°.02N×31°.35E, h38km±1km, ML4.2/8, Error ellipse: s-maj=1.6km s-min=0.6km az=115.0*
NIC ***22*** *02:12:10.0±0.2, 36°.10N×31°.58E, h46km, mb4.4, ML4.3*
ISC 22 02:12:09.0±0.7, 36°.00N±0°.03×31°.33E±0°.02, h78km±9km, n196, σ1§41/250, mb3.5/12, 4C-9D, Cyprus region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GAZI	Gazipasa	0.83	73	P	Sn	02 12 39.8	+1.2
GAZI	Gazipasa	0.83	73	iP	Sn	02 12 39.8	+1.2
AKMC	Akamas	1.26	140	P	Pn	02 12 31.3	+0.1
	baz=330						
AKMC	Akamas	1.26	140	P	Pn	02 12 31.3	+0.1
KORT	Korkueli	1.28	322	P	Pn	02 12 29.6	-1.9
KORT	Korkueli	1.28	322	iP	Pn	02 12 29.6	-1.9
ALFC	Alefka	1.33	129	P	Pn	02 12 31.3	-0.8
	baz=318						
ALFC				S	Sn	02 12 47.8	-1.6
ALFC	Alefka	1.33	129	P	Pn	02 12 31.3	-0.8
ALFC				S	Sn	02 12 47.8	-1.6
ELL	Elmali	1.37	304	ePN	Pn	02 12 31.9	-0.8
ELL	Elmali	1.37	304	ePn	Pn	02 12 31.9	-0.8
AKAS	Kas	1.42	280	P	Pn	02 12 32.1	-1.2
AKAS				S	Sn	02 12 56.6	+5.0
AKAS	Kas	1.42	280	iP	Pn	02 12 32.1	-1.2
AKAS				iS	Sn	02 12 56.6	+5.0
KSL	Kastellorizon	1.43	277	P	Pn	02 12 32.2	-1.1
KSL				S	Sn	02 12 49.9	-1.7
KSL	Kastellorizon	1.43	277	P	Pn	02 12 32.2	-1.1
KSL				S	Sn	02 12 49.9	-1.7
ERMK	Ermenek	1.43	63	iP	Pn	02 12 32.3	-1.2
AKDN	Akdeniz- K¯–br	1.50	117	ePN	Pn	02 12 33.4	-0.9
AKDN	Akdeniz- K¯–br	1.50	117	ePn	Pn	02 12 33.4	-0.9
SUTC	Sutluce-Ispart	1.50	350	ePN	Pn	02 12 32.8	-1.6
SUTC				eSN	Sn	02 12 50.9	-2.7
SUTC	Sutluce-Ispart	1.50	350	ePn	Pn	02 12 32.8	-1.6
SUTC				eSn	Sn	02 12 50.9	-2.7
LEF	Lefka	1.54	124	ePN	Pn	02 12 33.2	-1.6
LEF				eSN	Sn	02 12 51.4	-2.8
LEF	Lefka	1.54	124	ePn	Pn	02 12 33.2	-1.6
LEF				eSn	Sn	02 12 51.4	-2.8
BCK	Bucak	1.58	338	ePN	Pn	02 12 33.9	-1.5
BCK	Bucak	1.58	338	ePn	Pn	02 12 33.9	-1.5
MAMC	Mammari	1.74	118	P	Pn	02 12 36.8	-0.6
	baz=305						
MAMC	Mammari	1.74	118	P	Pn	02 12 36.8	-0.6
GLHS	Gihisar (BURDU	1.88	309	ePN	Pn	02 12 38.1	-1.2
GLHS	Gihisar (BURDU	1.88	309	ePn	Pn	02 12 38.1	-1.2
GOLH	Golhisar	1.89	312	P	Pn	02 12 40.3	+0.8
GOLH	Golhisar	1.89	312	iP	Pn	02 12 40.3	+0.8
FETY	Fethiye	1.93	290	ePN	Pn	02 12 38.8	-1.1
FETY	Fethiye	1.93	290	P	Pn	02 12 39.5	-0.4
FETY				S	Sn	02 13 01.9	-1.5
FETY	Fethiye	1.93	290	ePn	Pn	02 12 38.8	-1.1
FETY	Fethiye	1.93	290	P	Pn	02 12 39.5	-0.4
FETY				S	Sn	02 13 01.9	-1.5
CSS	Mathiatis	1.93	122	P	Pn	02 12 38.9	-1.0
	baz=309						
CSS				S	Sn	02 13 02.1	-1.3
CSS	Mathiatis	1.93	122	P	Pn	02 12 38.4	-1.5
CSS				S	Sn	02 13 02.4	-1.0
CSS	Mathiatis	1.93	122	P	Pn	02 12 38.9	-1.0
CSS				S	Sn	02 13 02.1	-1.3
LFK	Lefkose	1.93	111	ePN	Pn	02 12 39.0	-0.9
LFK	Lefkose	1.93	111	ePn	Pn	02 12 39.0	-0.9
ISP	Isparta	1.94	341	ePN	Pn	02 12 38.4	-1.7
ISP	Isparta	1.94	341	P	Pn	02 12 38.5	-1.6
ISP				S	Sn	02 13 02.2	-1.6
ISP	Isparta	1.94	341	P	Pn	02 12 38.5	-1.6
ISP				S	Sn	02 13 02.2	-1.6
KMER	Konya-Meram	1.96	25	P	Pn	02 12 39.8	-0.6
KMER	Konya-Meram	1.96	25	iP	Pn	02 12 39.8	-0.6
BAGO	Egridir - ISPA	2.04	348	iP	Pn	02 12 40.7	-0.7
KONT	Konya--Tatoy	2.11	23	ePN	Pn	02 12 41.4	-1.0
KONT	Konya--Tatoy	2.11	23	ePn	Pn	02 12 41.4	-1.0
DALY	Dalyan (Mu¯la	2.31	292	ePN	Pn	02 12 44.0	-1.0
DALY	Dalyan (Mu¯la	2.31	292	ePn	Pn	02 12 44.0	-1.0
LADK	Ladik-KONYA	2.35	20	ePN	Pn	02 12 44.7	-0.9
LADK	Ladik-KONYA	2.35	20	ePn	Pn	02 12 44.7	-0.9
TURN	Turunc	2.37	292	iP	Pn	02 12 48.5	+2.8
DNZL	Cakiroluk	2.50	313	P	Pn	02 12 50.8	+3.2
DNZL	Cakiroluk	2.50	313	iP	Pn	02 12 50.9	+3.2
DENT	Denizli	2.55	314	ePN	Pn	02 12 47.4	-0.8
DENT	Denizli	2.55	314	ePn	Pn	02 12 47.4	-0.8
ARG	Arkhangelos	2.61	276	P	Pn	02 12 48.0	-1.0
ARG				S	Sn	02 13 19.2	-0.5
ARG	Arkhangelos	2.61	276	P	Pn	02 12 48.0	-1.0
ARG				S	Sn	02 13 19.2	-0.5
YER	Yerkesik	2.71	296	ePN	Pn	02 12 50.2	-0.2
YER	Yerkesik	2.71	296	P	Pn	02 12 49.9	-0.5
YER				S	Sn	02 13 21.1	-1.1
YER	Yerkesik	2.71	296	P	Pn	02 12 49.9	-0.5
YER	Yerkesik	2.71	296	ePn	Pn	02 12 50.2	-0.2
YER				S	Sn	02 13 21.1	-1.1
BOLV	Bolvadin	2.73	354	iP	Pn	02 12 50.1	-0.8
KHL	Karahalli	2.74	329	ePN	Pn	02 12 50.5	-0.3
KHL	Karahalli	2.74	329	ePn	Pn	02 12 50.5	-0.3
KHAL	Karahalli	2.79	329	P	Pn	02 12 52.1	+0.5
KHAL	Karahalli	2.79	329	iP	Pn	02 12 52.1	+0.5
CHBY	Cihanbeyli	2.87	25	ePN	Pn	02 12 51.8	-0.8
CHBY	Cihanbeyli	2.87	25	ePn	Pn	02 12 51.8	-0.8
KIZT	Kizilcal	2.91	8	ePN	Pn	02 12 52.1	-1.1
KIZT	Kizilcal	2.91	8	ePn	Pn	02 12 52.1	-1.1
KULA	Kula-Manisa	3.30	320	ePN	Pn	02 12 58.0	-0.4
KULA	Kula-Manisa	3.30	320	P	Pn	02 12 56.9	-1.5
KULA				S	Sn	02 13 35.0	-1.6
KULA	Kula-Manisa	3.30	320	P	Pn	02 12 56.9	-1.5
KULA	Kula-Manisa	3.30	320	ePn	Pn	02 12 58.0	-0.4
KULA				S	Sn	02 13 35.0	-1.6
AYDB	Zeytinkoy-Aydi	3.38	306	ePN	Pn	02 12 58.8	-0.7
AYDB	Zeytinkoy-Aydi	3.38	306	ePn	Pn	02 12 58.8	-0.7
BODT	Bodrum	3.41	289	ePN	Pn	02 12 59.4	-0.5
BODT	Bodrum	3.41	289	P	Pn	02 12 59.3	-0.6
BODT				S	Sn	02 13 38.1	-1.1
BODT	Bodrum	3.41	289	P	Pn	02 12 59.3	-0.6
BODT				S	Sn	02 13 38.1	-1.1
NIS1	Nisyros Isl.	3.41	281

RSH		5.40 158	P	Pn	02 13 27.7	+0.6
SIVA	Sivas	5.41 262	P	Pn	02 13 27.2	+0.1
SIVA			S	Sn	02 14 27.8	-0.2
SIVA	Sivas	5.41 262	P	Pn	02 13 27.2	+0.1
SIVA			S	Sn	02 14 27.8	-0.2
MATC	Matruh	5.76 218	P	Pn	02 13 31.0	-0.9
	baz=217					
ASF	Jabal al Asfar	5.99 128	P	Pn	02 13 37.0	+1.9
	0.6nm,0.3s,baz=256,slow=17,SNR=7.8					
ASF			S	Sn	02 14 43.9	+1.6
	0.6nm,0.3s,baz=270,slow=9.1,SNR=3.2					
IMMV	Iera Moni Meta	6.00 267	P	Pn	02 13 35.2	0.0
IMMV			S	Sn	02 14 42.1	-0.5
IMMV	Iera Moni Meta	6.00 267	P	Pn	02 13 35.2	0.0
IMMV			S	Sn	02 14 42.1	-0.5
HMAT	Matruh	6.03 217	P	Pn	02 13 35.1	-0.6
	baz=216					
HMAT	Matruh	6.03 217	P	Pn	02 13 35.1	-0.6
HHAG	Hagoal	6.06 174	P	Pn	02 13 36.1	0.0
	baz=172					
HHAG	Hagoal	6.06 174	P	Pn	02 13 36.1	0.0
KOT	Kottamia	6.07 176	P	Pn	02 13 36.8	+0.6
	baz=174					
KOT	Kottamia	6.07 176	P	Pn	02 13 36.8	+0.6
LIA	Limnos Island	6.23 311	P	Pn	02 13 37.8	-0.5
LIA			S	Sn	02 14 47.0	-1.0
LIA	Limnos Island	6.23 311	P	Pn	02 13 37.8	-0.5
LIA			S	Sn	02 14 47.0	-1.0
SUZ	Suez	6.26 168	P	Pn	02 13 39.6	+0.8
	baz=166					
SUZ	Suez	6.26 168	P	Pn	02 13 39.6	+0.8
HNAT	Natroun	6.37 186	P	Pn	02 13 40.4	+0.1
	baz=185					
HNAT	Natroun	6.37 186	P	Pn	02 13 40.4	+0.1
SMTH	Samothraki Isl	6.39 316	P	Pn	02 13 39.7	-0.8
SMTH			S	Sn	02 14 50.5	-1.4
SMTH	Samothraki Isl	6.39 316	P	Pn	02 13 39.7	-0.8
SMTH			S	Sn	02 14 50.5	-1.4
GLL	Jalalah	6.41 177	P	Pn	02 13 41.4	+0.6
	baz=175					
GLL	Jalalah	6.41 177	P	Pn	02 13 41.4	+0.6
HNKL	Nakhl	6.45 159	P	Pn	02 13 42.4	+1.1
	baz=157					
HNKL			S	Sn	02 14 50.5	-3.0
	baz=157					
HNKL	Nakhl	6.45 159	P	Pn	02 13 42.4	+1.1
HNKL			S	Sn	02 14 50.5	-3.0
SLUM	Salum	6.79 230	P	Pn	02 13 45.2	-0.8
	baz=230					
SLUM			S	Sn	02 14 55.1	-6.8
	baz=230					
SLUM	Salum	6.79 230	P	Pn	02 13 45.2	-0.8
SLUM			S	Sn	02 14 55.1	-6.8
VLI	Veliai	6.81 279	P	Pn	02 13 45.6	-0.7
VLI	Veliai	6.81 279	P	Pn	02 13 45.6	-0.7
EDRB	Edirne	6.85 330	P	Pn	02 13 46.6	-0.1
EDRB			S	Sn	02 15 02.4	-0.8
EDRB	Edirne	6.85 330	P	Pn	02 13 46.6	-0.1
EDRB			S	Sn	02 15 02.4	-0.8
EIL	Elat	7.00 153	P	Pn	02 13 49.2	+0.3
	0.5nm,0.3s,baz=353,slow=3.2,SNR=11					
EIL			S	Sn	02 15 07.4	+0.4
	1.5nm,0.3s,baz=304,slow=18,SNR=3.3					
PYL	PYLOS	7.78 279	P	Pn	02 13 59.0	-0.5
PYL	PYLOS	7.78 279	P	Pn	02 13 59.0	-0.5
TR2	Tor 2	7.85 164	P	Pn	02 14 01.8	+1.3
	baz=163					
TR2	Tor 2	7.85 164	P	Pn	02 14 01.8	+1.3
AWBH		7.92 196	P	Pn	02 14 01.6	+0.1
	baz=195					
AWBH		7.92 196	P	Pn	02 14 01.6	+0.1
SWA2		8.36 218	P	Pn	02 14 06.6	-0.8
	baz=218					
SWA2		8.36 218	P	Pn	02 14 06.6	-0.8
MSAB	Monastry St. A	8.52 343⇑	iP	Pn	02 14 12.8	+3.3
TIRR	Tirgusor	8.74 346⇓	iP	Pn	02 14 12.3	-0.2
HARR	Harsova	9.06 344⇑	iP	Pn	02 14 18.7	+1.8
CFR	Carcaliu	9.49 346⇑	iP	Pn	02 14 22.6	-0.1
MLR	Muntele Rosu	10.33 338⇓	iP	Pn	02 14 35.3	+1.0
VRI	Vrincioaia	10.46 342⇑	iP	Pn	02 14 38.2	+2.3
PLOR	Plostina	10.46 342⇓	iP	Pn	02 14 46.6	+11
VOIR		10.56 335⇓	iP	Pn	02 14 35.1	-2.4
PDG	Podgorica	11.36 308⇓	iP	Pn	02 14 54.0	+5.8
MDVR	Moldovita	11.43 323⇓	iP	Pn	02 14 52.4	+3.2
KBZ	Khabaz	11.77 45	P	Pn	02 14 55.9	+2.2
	0.1nm,0.3s,baz=243,slow=7.5,SNR=4.6					
TIP	Timpagrande	11.99 290	iP	Pn	02 14 55.7	-1.2
AKASG	Malin Array Be	14.78 355	P	Pn	02 15 32.0	-1.6
	0.4nm,0.3s,baz=174,slow=10,SNR=5.6					
KEST	Kesra	17.82 276	P	P	02 16 11.7	+0.1
	0.2nm,0.3s,baz=145,slow=14,SNR=7.5					
GERES	GERESS Array B	18.23 320	P	P	02 16 14.8	-1.1
	0.1nm,0.3s,baz=116,slow=9.1,SNR=5.9					
MOTA	Moosalm	18.83 313	i Pn	Pn	02 16 23.6	-0.4
	4.4nm,1.1s					
FETA	Feichten	18.90 312	i Pn	Pn	02 16 25.1	+0.3
	8.2nm,1.3s					
RETA	Reutte	19.11 313	i P	P	02 16 22.4	-3.1
	5.0nm,1.3s					
DAVOX	Davos/Dischmat	19.31 311	P	P	02 16 26.5	-1.4
	0.1nm,0.3s,baz=144,slow=11,SNR=4.2					
DAVA	Damuels	19.54 312	i Pn	P	02 16 30.5	+0.2
	6.6nm,0.6s					
GEYT	Alibeck	21.47 77	P	P	02 16 52.9	+1.9
	1.3nm,0.5s,baz=295,slow=14,SNR=2.8					
AKTO	Aktyubinsk	24.05 45	P	P	02 17 16.2	-0.5
	1.3nm,0.6s,baz=236,slow=11,SNR=6.8					
FINES	FINESS Array B	25.69 354	P	P	02 17 30.2	-1.1
	1.1nm,0.4s,baz=157,slow=11,SNR=19					
HFS	Hagfors	26.70 340	P	P	02 17 39.9	-0.7
	0.8nm,0.7s,baz=154,slow=8.0,SNR=4.0					
ESDC	Sonseca Array	28.01 288	P	P	02 17 53.0	+0.5
	0.6nm,0.7s,baz=87,slow=10.0,SNR=6.0					
NOA	NORSAR Array B	28.15 339	P	P	02 17 52.4	-1.1
	0.2nm,0.4s,baz=140,slow=9.3,SNR=2.5					
ARCES	ARCESS Array B	33.75 356	P	P	02 18 41.7	-0.9
	4.0nm,1.0s,baz=170,slow=9.2,SNR=9.1					
TORD	Torodi Ar. Bea	35.03 237	P	P	02 18 56.0	+1.7
	1.3nm,0.8s,baz=28,slow=9.0,SNR=10					
MKAR	Makanchi Array	39.09 58	P	P	02 19 28.3	-0.1
	0.3nm,0.7s,baz=270,slow=6.9,SNR=2.6					
ZALV	Zalesovo Beam	40.78 47	P	P	02 19 41.1	-1.2
	0.8nm,0.3s,baz=270,slow=10,SNR=3.6					
DBIC	Dimbokro	44.14 237	P	P	02 20 11.3	+1.4
	3.8nm,0.9s,baz=24,slow=7.3,SNR=5.5					
SONM	Songino Array	55.02 53	P	P	02 21 32.7	+0.2
	0.2nm,0.5s,baz=272,slow=8.6,SNR=2.2					

CSEM ***22*** *02:13:14.1±0.1,45°.74N×6°.44E,h5km,ML2.3/29,Error ellipse: s-maj=2.2km s-min=1.9km az=77.0*
GEN ***22*** *02:13:15.5,45°.75N×6°.54E,h12km,ML1.3*
LDG ***22*** *02:13:15.2±0.1,45°.73N×6°.48E,h2km,Md2.4/2,Ml2.3/25, Error ellipse: s-maj=1.2km s-min=1.0km az=83.0*
ZUR ***22*** *02:13:15.4,45°.74N×6°.49E,h5km±2km,ML1.8/13*
ISC 22 02:13:15.2±0.8,45°.75N±0°.01×6°.48E±0°.02,h11km±6km, n92,σ1°55/143,6C-5D,France

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RSL	Roselend	0.12	120	⇓iPg	Pg	02 13 17.9	-0.5
	2μm,0.1s						
RSL				i Sg	Sg	02 13 19.7	-0.9
	2μm,0.1s						
RSL	Roselend	0.12	120	⇓iPg	Pg	02 13 17.9	-0.5
	2μm,0.1s						
RSL				i Sg	Sg	02 13 19.7	-0.9
	2μm,0.1s						
LPL	La Plagne	0.29	142	ePg	Pg	02 13 20.9	-0.3
LPL				eSg	Sg	02 13 24.5	-0.8
	34nm,0.2s,SNR=1.0						
LPL	La Plagne	0.29	142	ePg	Pg	02 13 20.9	-0.3
LPL				eSg	Sg	02 13 24.5	-0.8
	17nm,0.2s,SNR=1.0						
LPG	La Plagne	0.32	142	ePg	Pg	02 13 21.4	-0.3
LPG				eSg	Sg	02 13 24.9	-1.1
	74nm,0.2s,SNR=1.0						
LPG	La Plagne	0.32	142	ePg	Pg	02 13 21.4	-0.3
LPG				eSg	Sg	02 13 24.9	-1.1
	37nm,0.2s,SNR=1.0						
MRGE	Morge	0.41	87	⇓iPg	Pg	02 13 23.3	-0.1
	226nm,0.1s						
MRGE				i Sg	Sg	02 13 28.8	0.0
	226nm,0.1s						
MRGE	Morge	0.41	87	⇓iPg	Pg	02 13 23.3	-0.1
	226nm,0.1s						
MRGE				i Sg	Sg	02 13 28.8	0.0
	226nm,0.1s						
EMV	Vieux Emosson	0.43	43	⇑iPg	Pg	02 13 23.8	0.0
	98nm,0.1s						
EMV				i Sg	Sg	02 13 29.4	-0.2
	98nm,0.1s						
EMV	Vieux Emosson	0.43	43	⇑iPg	Pg	02 13 23.8	0.0
	98nm,0.1s						
EMV				i Sg	Sg	02 13 29.4	-0.2
	98nm,0.1s						
SALAN	Lac Salanfe	0.53	41	⇑iPg	Pg	02 13 25.4	-0.1
	22nm,0.2s						
SALAN				eSg	Pg	02 13 25.5	-0.1
	22nm,0.2s						
SALAN	Lac Salanfe	0.53	41	⇑iPg	Pg	02 13 25.4	-0.1
	22nm,0.2s						
LSD	Lago del Serru	0.54	122	⇓iPg	Pn	02 13 32.3	+3.2
	73nm,0.4s						
GRYON	Gryon	0.67	41	ePg	Pg	02 13 28.2	0.0
	8.9nm,0.2s						
GRYON	Gryon	0.67	41	ePg	Pg	02 13 28.2	0.0
	8.9nm,0.2s						
AIGLE	Aigle	0.68	29	ePg	Pg	02 13 28.3	-0.1
	36nm,0.5s						
AIGLE	Aigle	0.68	29	ePg	Pg	02 13 28.3	-0.1
	36nm,0.5s						
NOV1	NOV1	0.68	20	ePg	Pg	02 13 28.4	-0.1
	88nm,0.2s						
NOV1	NOV1	0.68	20	ePg	Pg	02 13 28.4	-0.1
	88nm,0.2s						
NOV2	NOV2	0.68	24	ePg	Pg	02 13 28.6	+0.1
	35nm,0.3s						
NOV2	NOV2	0.68	24	ePg	Pg	02 13 28.6	+0.1
	35nm,0.3s						
NOV4	La Tour-de-Pel	0.75	21	ePg	Pg	02 13 28.8	-0.9
	52nm,0.3s						
NOV4	La Tour-de-Pel	0.75	21	ePg	Pg	02 13 28.8	-0.9
	52nm,0.3s						
CIRO	Champorcher	0.78	100	ePg	Pn	02 13 38.4	+6.0
	41nm,0.3s						
CIRO	Champorcher	0.78	100	S	Sg	02 13 38.8	-1.7
RSP	Reno Superiore	0.82	137	S	Sg	02 13 40.1	-1.5
SENIN	Lac Senin/Sane	0.84	43	⇑iPg	Pg	02 13 29.7	-1.8
	54nm,0.2s						
SENIN	Lac Senin/Sane	0.84	43	⇑iPg	Pg	02 13 29.7	-1.8
	54nm,0.2s						
RRL	Rocca Remolon	0.85	165	S	Sg	02 13 42.0	-0.9
CABF	La Chapelle	0.91	343	ePg	Pg	02 13 32.8	+0.1
CABF	La Chapelle	0.91	343	ePn	Pn	02 13 34.5	+0.5
	SNR=1.0						
CABF				eSg	Sg	02 13 44.4	-0.1
	9.8nm,0.2s,SNR=1.0						
CABF	La Chapelle	0.91	343	ePg	Pg	02 13 32.8	+0.1
CABF	La Chapelle	0.91	343	ePn	Pn	02 13 34.5	+0.5
	SNR=1.0						
CABF				eSg	Sg	02 13 44.4	-0.1
	4.9nm,0.2s,SNR=1.0						
TRAV	Traversella	0.92	104	P	Pg	02 13 32.0	-1.0
TRAV				S	Sg	02 13 43.0	-2.0
ORIF	Oris-en-Rattie	0.93	207	ePg	Pg	02 13 31.6	-1.5
	SNR=1.0						
ORIF				eSg	Sg	02 13 44.0	-1.3
	12nm,0.2s,SNR=1.0						
ORIF	Oris-en-Rattie	0.93	207	ePg	Pg	02 13 31.6	-1.5
	SNR=1.0						
ORIF				eSg	Sg	02 13 44.0	-1.3
	5.8nm,0.2s,SNR=1.0						
SATI	Passo dei Sala	0.98	82	P	Pg	02 13 32.6	-1.6
SATI				S	Sg	02 13 44.6	-2.4
MBDF	Montbardon	1.04	168	ePg	Pg	02 13 34.4	-0.9
	SNR=1.0						
MBDF				eSg	Sg	02 13 48.0	-0.8
	12nm,0.5s,SNR=1.0						
TORNY	Torny/Romont	1.08	18	ePg	Pg	02 13 29.8	-6.2
	62nm,0.4s						
VIVF	Saint-Julien-I	1.56	236	ePn	Pn	02 13 42.5	-0.3
	SNR=1.0						
VIVF	Saint-Julien-I	1.56	236	ePg	Pn	02 13 44.1	+1.3
VIVF				eSn	Sn	02 14 01.3	-1.7
	48nm,0.2s,SNR=1.0						
VIVF				eSg	Sb	02 14 04.0	+0.3
	46nm,0.2s						
VIVF	Saint-Julien-I	1.56	236	ePn	Pn	02 13 42.5	-0.3
	SNR=1.0						
VIVF	Saint-Julien-I	1.56	236	ePg	Pn	02 13 44.1	+1.3
VIVF				eSn	Sn	02 14 01.3	-1.7
	24nm,0.2s,SNR=1.0						
VIVF				eSg	Sb	02 14 04.0	+0.3
	23nm,0.2s						
SMRF	Simiane la Rot	1.88	200	ePg	Pb	02 13 50.1	+0.5
	SNR=1.0						
SMRF				eSg	Sb	02 14 13.7	+0.6
	0.5nm,0.1s						
SMRF	Simiane la Rot	1.88	200	ePg	Pb	02 13 50.1	+0.5
	SNR=1.0						
SMRF				eSg	Sb	02 14 13.7	+0.6
	0.2nm,0.1s						
SBF	Sospel	2.00	160	ePg	Pb	02 13 52.4	+0.7
	SNR=1.0						
SBF				eSg	Sb	02 14 18.0	+1.4
	5.1nm,0.4s,SNR=1.0						
SBF	Sospel	2.00	160	ePg	Pb	02 13 52.4	+0.7
	SNR=1.0						
SBF				eSg	Sb	02 14 18.0	+1.4
	2.5nm,0.4s,SNR=1.0						
SMF	Signal de Mont	2.04	297	ePn	Pn	02 13 49.2	-0.3
	SNR=1.0						
SMF	Signal de Mont	2.04	297	ePg	Pb	02 13 52.9	+0.6
SMF				eSg	Sb	02 14 19.3	+1.7
	11nm,0.2s,SNR=1.0						
SMF	Signal de Mont	2.04	297	ePn	Pn	02 13 49.2	-0.3
	SNR=1.0						
SMF	Signal de Mont	2.04	297	ePg	Pb	02 13 52.9	+0.6
SMF				eSg	Sb	02 14 19.3	+1.7
	5.4nm,0.2s,SNR=1.0						
HINF	Hinteralfeld	2.09	7	ePn	Pn	02 13 49.4	-0.7
	SNR=1.0						
HINF	Hinteralfeld	2.09	7	ePg	Pb	02 13 54.5	+1.4
	SNR=1.0						
HINF				eSg	Sb	02 14 21.0	+2.0
	3.5nm,0.3s,SNR=1.0						
HINF	Hinteralfeld	2.09	7	ePn	Pn	02 13 49.4	-0.7
	SNR=1.0						
HINF	Hinteralfeld	2.09	7	ePg	Pb	02 13 54.5	+1.4
	SNR=1.0						
HINF				eSg	Sb	02 14 21.0	+2.0
	1.8nm,0.3s,SNR=1.0						
FRF	La Foret Royal	2.19	177	ePn	Pn	02 13 52.8	+1.3
	SNR=1.0						
FRF	La Foret Royal	2.19	177	ePg	Pb	02 13 55.8	+1.0
FRF				eSg	Sb	02 14 23.6	+1.7
	1.4nm,0.2s						
FRF	La Foret Royal	2.19	177	ePn	Pn	02 13 52.8	+1.3
	SNR=1.0						
FRF	La Foret Royal	2.19	177	ePg	Pb	02 13 55.8	+1.0
FRF				eSg	Sb	02 14 23.6	+1.7
	0.7nm,0.2s						
HAU	Haudompre	2.26	358	ePn	Pn	02 13 52.1	-0.4
	SNR=1.0						
HAU	Haudompre	2.26	358	ePg	Pb	02 13 57.5	+1.5
	SNR=1.0						
HAU				eSg	Sb	02 14 26.1	+2.1
	3.3nm,0.2s,SNR=1.0						
HAU	Haudompre	2.26	358	ePn	Pn	02 13 52.1	-0.4
	SNR=1.0						
HAU	Haudompre	2.26	358	ePg	Pb	02 13 57.5	+1.5
	SNR=1.0						
HAU				eSg	Sb	02 14 26.1	+2.1
	1.6nm,0.2s,SNR=1.0						
LOR	Lormes	2.36	311	ePg	Pg	02 13 59.8	-0.7
LOR				eSg	Sb	02 14 29.7	+2.7
	3.5nm,0.2s,SNR=1.0						
AVF	Avril sur Loir	2.41	297	ePn	Pn	02 13 54.0	-0.5
	SNR=1.0						
AVF	Avril sur Loir	2.41	297	ePg	Pg	02 14 00.8	-0.5
AVF				eSn	Sn	02 14 21.8	-2.1
	SNR=1.0						
AVF				eSg	Sb	02 14 30.4	+2.3
	5.6nm,0.4s,SNR=1.0						
AVF	Avril sur Loir	2.41	297	ePn	Pn	02 13 54.0	-0.5
	SNR=1.0						
AVF				eSn	Sn	02 14 21.8	-2.1
	SNR=1.0						
AVF				eSg	Sb	02 14 30.4	+2.3
	2.8nm,0.4s,SNR=1.0						
LMR	La Mourre	2.41	179	eP	Pn	02 13 55.0	+0.4
	SNR=1.0						
LMR	La Mourre	2.41	179	ePg	Pb	02 13 59.6	+1.0
LMR				eSg	Sb	02 14 30.5	+2.2
	0.6nm,0.2s,SNR=1.0						
LMR	La Mourre	2.41	179	eP	Pn	02 13 55.0	+0.4
	SNR=1.0						
LMR	La Mourre	2.41	179	ePg	Pb	02 13 59.6	+1.0
LMR				eSg	Sb	02 14 30.5	+2.2
	0.3nm,0.2s,SNR=1.0						
SSF	Saint Saulge	2.44	304	ePg	Pb	02 13 58.0	-1.1
	SNR=1.0						
SSF				eSg	Sb	02 14 32.0	+2.9
	2.2nm,0.3s,SNR=1.0						
SSF	Saint Saulge	2.44	304	ePg	Pb	02 13 58.0	-1.1
	SNR=1.0						
SSF				eSg	Sb	02 14 32.0	+2.9
	1.1nm,0.3s,SNR=1.0						
LASF	Ste Croix	2.50	229	ePn	Pn	02 13 55.0	-0.8
	SNR=1.0						
LASF				eSg	Sb	02 14 33.6	+2.7
	1.8nm,0.2s,SNR=1.0						
SFTF	Sexfontaines	2.65	339	eSg	Sg	02 14 39.0	-1.3
	0.9nm,0.1s						
SFTF	Sexfontaines	2.65	339	eSg	Sg	02 14 39.0	-1.3
	0.4nm,0.1s						
BGF	Bois d'Agland	2.65	289	ePn	Pn	02 13 57.7	-0.2
BGF	Bois d'Agland	2.65	289	ePg	Pb	02 14 04.9	+2.2
BGF				eSg	Sb	02 14 38.5	+3.3
	2.2nm,0.2s						
BGF	Bois d'Agland	2.65	289	ePn	Pn	02 13 57.7	-0.2
BGF				eSg	Sb	02 14 38.5	+3.3
	1.1nm,0.2s						
CDF	Champ du Feu	2.72	11	ePn	Pn	02 13 57.5	-1.4
	SNR=1.0						
CDF				eSn	Sn	02 14 29.9	-1.9
	SNR=1.0						
CDF				eSg	Sg	02 14 40.8	-1.8
	1.0nm,0.2s,SNR=1.0						
CDF	Champ du Feu	2.72	11	ePn	Pn	02 13 57.5	-1.4
	SNR=1.0						
CDF				eSn	Sn	02 14 29.9	-1.9
	SNR=1.0						
CDF				eSg	Sg	02 14 40.8	-1.8
	0.5nm,0.2s,SNR=1.0						
PAGF	Fort de Pagny	2.86	350	eSg	Sg	02 14 45.5	-1.4
	0.3nm,0.2s						
PAGF	Fort de Pagny	2.86	350	eSg	Sg	02 14 45.5	-1.4
	0.2nm,0.2s						
MEZF	Maizieres J'vi	2.92	341	eSn	Sn	02 14 34.1	-2.5
	4.3nm,0.3s,SNR=1.0						
MEZF				eSg	Sg	02 14 47.8	-1.3
	1.0nm,0.2s						
MEZF	Maizieres J'vi	2.92	341	eSn	Sn	02 14 34.1	-2.5
	2.2nm,0.3s,SNR=1.0						
MEZF				eSg	Sg	02 14 47.8	-1.3
	0.5nm,0.2s						
TCF	Toulx Ste Croi	3.02	282	eSg	Sb	02 14 49.8	+3.9
	1.0nm,0.3s,SNR=1.0						
TCF	Toulx Ste Croi	3.02	282	eSg	Sb	02 14 49.8	+3.9
	0.5nm,0.3s,SNR=1.0						
CAF	Calviac	3.22	257	ePn	Pn	02 14 06.5	+0.8
	SNR=1.0						
CAF				eSg	Sb	02 14 54.2	+2.6
	2.0nm,0.4s,SNR=1.0						
MTLF	Montolieu	3.88	233	eSg	Sb	02 15 15.6	+5.0
	1.0nm,0.4s,SNR=1.0						
MTLF	Montolieu	3.88	233	eSg	Sb	02 15 15.6	+5.0
	0.5nm,0.4s,SNR=1.0						
BAIF	Baives	4.58	341	ePn	Pn	02 14 24.6	+0.3
	SNR=1.0						
BAIF	Baives	4.58	341	ePn	Pn	02 14 24.6	+0.3
	SNR=1.0						

KRSC 22 02:18:31.5±1.6,49°.58N×156°.62E,h6km±5km,ML3.7, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	Severo-Kuril's	1.15	344	eP	Pg	02 18 52.5	-1.1
SKR				eS	Sg	02 19 08.3	-0.2
PAU	Pauzhetka	1.89	4	eS	Sb	02 19 30.1	-0.2
ASAK	Asacha	2.92	16	P	Pn	02 19 20.8	+2.3
RUS	Russkaya	3.10	22	P	Pn	02 19 22.4	+1.6
UGLR	Uglovaya	3.89	20	P	Pn	02 19 36.1	+4.3
AVH	Avacha	3.92	19	P	Pb	02 19 36.7	-4.3
SMAR	Somma	3.93	19	P	Pn	02 19 36.5	+4.0
SDLR	Sedlovina	3.96	20	P	Pn	02 19 36.2	+3.3
KRX	Arik	3.99	18	P	Pn	02 19 37.5	+4.2
GNL	Ganaly	4.20	11	P	Pn	02 19 40.0	+3.8

IDC ***22*** *02:20:46.9±1.3,29°.30S×176°.34W,h0km,mb4.1/3, mb1 4.2/5,mb1mx3.9/29,mbtmp4.1/5,ML3.7/2,Error ellipse: s-maj=37.7km s-min=23.9km az=4.0*
ISCJB ***22*** *02:20:47.4±1.5,29°.52S±0°.08×176°.3W±0°.1,h21km, mb4.3/5,Error ellipse: s-maj=17.8km s-min=10.8km az=161.9*
NEIC ***22*** *02:20:53.2±3.2,29°.46S×176°.50W,h42km±22km,mb4.4/1, Error ellipse: s-maj=33.1km s-min=14.7km az=63.0*
ISC 22 02:20:50.0±1.0,29°.45±0°.1×176°.38W±0°.10,h21km,n15, σ0°85/17,mb4.3/5,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	Raoul Island	1.35	276	Pn	Pb	02 21 15.0	+0.4
	272nm,0.3s,baz=65,slow=19,SNR=12						
RAO				Sn	Sb	02 21 31.9	+0.4
	577nm,0.3s,baz=114,slow=20,SNR=11						
URZ	Urewera	10.36	210	Pn	Pn	02 23 17.5	+0.2
	0.3nm,0.3s,baz=76,slow=4.2,SNR=2.7						
URZ				Sn	Sn	02 25 12.4	-0.3
	0.8nm,0.3s,baz=316,slow=15,SNR=7.4						
KHZ	Kahutara	15.32	209	ePn	Pn	02 24 23.7	-1.2
RPZ	Rata Peaks	17.46	212	Pn	P	02 24 53.4	+0.1
	0.6nm,0.3s,baz=4.8,slow=12,SNR=3.1						
CTA	Charters Tower	35.05	277	P	P	02 27 41.9	+0.3
	2.9nm,0.8s,baz=79,slow=16,SNR=3.3						
PMG	Port Moresby	39.49	293	eP	P	02 28 17.2	-2.0
	10nm,0.8s						
ASAR	Alice Springs	44.58	265	P	P	02 29 01.2	+0.4
	1.3nm,0.5s,baz=103,slow=6.6,SNR=21						
WRAB	Tennant Creek	45.48	270	eP	P	02 29 07.7	-0.2
	2.3nm,0.4s						
WRA	Warramunga Arr	45.48	270	P	P	02 29 07.9	-0.1
	2.3nm,0.6s,baz=108,slow=7.6,SNR=20						
KURK	Kurchatov	121.37	314	ePKPdf	PKPdf	02 39 42.1	+0.9
LSZ	Lusaka	129.65	211	ePKPdf	PKPdf	02 39 58.3	-0.1
FINES	FINESS Array B	144.67	341	PKP	PKPdf

MANT				S		Sg	02 21 41.6	-0.6
MANT	**Manisa**	**0.73**	**208**	*i* P		**Pg**	**02 21 32.4**	**-0.2**
MANT				*i* S		**Sg**	**02 21 41.6**	**-0.6**
KHL	**Karahalli**	**0.91**	**153**	*e*PG		**Pg**	**02 21 36.3**	**+0.3**
KHL	**Karahalli**	**0.91**	**153**	*e*Pg		**Pg**	**02 21 36.3**	**+0.3**
AKHS	**Akhisar**	**0.96**	**255**	S		**Sg**	**02 21 49.7**	**+0.3**
AKHS	**Akhisar**	**0.96**	**255**	*i* S		**Sg**	**02 21 36.5**	**-0.4**
AKHS				*i* S		**Sg**	**02 21 49.7**	**+0.3**
AKS	**Akhisar**	**0.96**	**255**	*e*PG		**Pg**	**02 21 36.3**	**-0.6**
AKS	**Akhisar**	**0.96**	**255**	*e*Pg		**Pg**	**02 21 36.3**	**-0.6**
BALB	**Balikesir**	**1.00**	**300**	*e*PG		**Pg**	**02 21 37.6**	**-0.1**
BALB				*e*SG		**Sb**	**02 21 52.0**	**+0.4**
BALB	**Balikesir**	**1.00**	**300**	*e*Pg		**Pg**	**02 21 37.7**	**-0.1**
BALB				*e*Sg		**Sb**	**02 21 52.0**	**+0.4**
KCTX	**Karacabey (Bur**	**1.23**	**336**	*e*PN		**Pn**	**02 21 41.6**	**-0.6**
KCTX	**Karacabey (Bur**	**1.23**	**336**	*e*Pn		**Pn**	**02 21 41.6**	**-0.6**
MDNY	**Mudanya-Bursa**	**1.23**	**356**	*e*PN		**Pn**	**02 21 42.0**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.23**	**356**	*e*Pn		**Pn**	**02 21 42.0**	**-0.2**
CAVI	**Cavuskoy**	**1.25**	**31**	*e*PN		**Pb**	**02 21 42.5**	**0.0**
CAVI	**Cavuskoy**	**1.25**	**31**	*e*Pn		**Pb**	**02 21 42.5**	**0.0**
IZI	**Iznik**	**1.25**	**17**	*e*PN		**Pb**	**02 21 42.6**	**0.0**
IZI	**Iznik**	**1.25**	**17**	*e*Pn		**Pb**	**02 21 42.6**	**0.0**
GONE	**Gonen-Balikesi**	**1.36**	**312**	*e*PN		**Pn**	**02 21 43.8**	**-0.2**
GONE	**Gonen-Balikesi**	**1.36**	**312**	*e*Pn		**Pn**	**02 21 43.8**	**-0.2**
ADVT	**Abdulvahap**	**1.41**	**24**	*e*PN		**Pb**	**02 21 45.1**	**-0.2**
ADVT	**Abdulvahap**	**1.41**	**24**	*e*Pn		**Pb**	**02 21 45.1**	**-0.2**
ARMT	**Armutlu**	**1.43**	**356**	*e*PN		**Pn**	**02 21 45.1**	**+0.1**
ARMT	**Armutlu**	**1.43**	**356**	*e*Pn		**Pn**	**02 21 45.1**	**+0.1**
EDC	**Edincik**	**1.49**	**324**	*e*PN		**Pb**	**02 21 46.2**	**-0.4**
EDC	**Edincik**	**1.49**	**324**	*e*Pn		**Pb**	**02 21 46.2**	**-0.4**
GULT	**Gulveren**	**1.74**	**42**	*e*PN		**Pn**	**02 21 49.6**	**+0.3**
GULT	**Gulveren**	**1.74**	**42**	*e*Pn		**Pn**	**02 21 49.6**	**+0.3**
ISK	**Istanbul-Kandi**	**1.93**	**1**	*e*PN		**Pn**	**02 21 52.5**	**+0.8**
ISK	**Istanbul-Kandi**	**1.93**	**1**	*e*Pn		**Pn**	**02 21 52.5**	**+0.8**
SVRH	**Sivrihisar-ESK**	**1.98**	**80**	*e*PN		**Pn**	**02 21 53.0**	**+0.4**
SVRH	**Sivrihisar-ESK**	**1.98**	**80**	*e*Pn		**Pn**	**02 21 53.0**	**+0.4**

*ISCJB **22** 02:22:22.3±0.8, 51°.56N±0°.08×173°.36W±0°.06, h37km, mb3.6/4, Error ellipse: s-maj=11.5km s-min=5.0km az=177.3*
*IDC **22** 02:22:24.7±11.0, 51°.96N×172°.22W, h0km, mb3.4/3, mb1 3.9/4, mb1mx3.4/41, mbtmp3.4/4, ML4.3/1, Error ellipse: s-maj=217.7km s-min=60.3km az=84.0*
*NEIC **22** 02:22:24.9, 51°.75N×173°.55W, h50km, ML3.2(AEIC), After AEIC.*

ISC 22 02:22:24.1±1.0, 51°.69N±0°.10×173°.46W±0°.04, h37km, n26, σ1§22/23, mb3.5/4, Andreanof Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KOFP	**Korovin Flat P**	**0.71**	**326**	P	**Pn**	**02 22 38.0**	**+0.3**
KOSE	**Korovin Southe**	**0.76**	**331**	P	**Pn**	**02 22 39.0**	**+0.8**
KOKL	**Mount Kliuchef**	**0.79**	**324**	P	**Pn**	**02 22 39.0**	**+0.3**
KOKL				S	**Sn**	**02 22 51.0**	**+1.6**
KONE	**Korovin Northe**	**0.82**	**330**	P	**Pn**	**02 22 39.9**	**+0.8**
KOWE	**Korovin West**	**0.84**	**324**	P	**Pn**	**02 22 40.1**	**+0.6**
GSCK	**Great Sitkin C**	**1.71**	**282**	P	**Pn**	**02 22 51.7**	**+0.3**
ADAG	**Mount Adagdak**	**1.98**	**280**	P	**Pn**	**02 22 55.9**	**+1.0**
KIKV	**Kanaga Island**	**2.32**	**276**	P	**Pn**	**02 23 00.7**	**+1.0**
OKRE	**Okmok R'deer P**	**3.71**	**58**	P	**Pn**	**02 23 20.6**	**+1.7**
OKTU	**Okmok Mt. Tuli**	**3.72**	**61**	P	**Pn**	**02 23 20.6**	**+1.6**
MSOM	**Makushin Julie**	**4.49**	**59**	P	**Pn**	**02 23 30.5**	**+1.0**
AMKA	**Amchitka**	**4.53**	**269**	P	**Pn**	**02 23 30.2**	**+0.1**
AMKA				S	**Sn**	**02 24 23.7**	**+2.2**
UNV	**Unalaska Valle**	**4.74**	**60**	P	**Pn**	**02 23 33.9**	**+0.9**
UNV				S	**Sn**	**02 24 27.7**	**+1.0**
ILAR	**Eielson Array**	**18.97**	**36**	P	**P**	**02 26 39.8**	**-2.1**
	0.4nm,0.3s,baz=232,slow=9.6,SNR=27						
DOT	**Dot Lake**	**19.54**	**41**	*e*P	**P**	**02 26 47.4**	**-0.8**
	2.4nm,0.5s						
EGAK	**Eagle**	**21.16**	**39**	*e*P	**P**	**02 27 04.7**	**-0.9**
	8.3nm,0.7s						
YKA	**Yellowknife Ar**	**32.58**	**48**	P	**P**	**02 28 50.0**	**-1.5**
	0.2nm,0.4s,baz=274,slow=9.1,SNR=3.7						
YKA	**Yellowknife Ar**	**32.58**	**48**	P	**P**	**02 28 50.0**	**-1.5**
H11N2	**WAKE ISLAND Hy**	**35.42**	**213**	T	T	03 07 15.9	
	baz=21,slow=76,SNR=11						
H11N3	**WAKE ISLAND Hy**	**35.43**	**213**	T	T	03 07 15.4	
	baz=21,slow=76,SNR=11						
H11N1	**WAKE ISLAND Hy**	**35.44**	**213**	T	T	03 07 16.2	
	baz=21,slow=76,SNR=11						
H11S1	**WAKE ISLAND Hy**	**36.62**	**213**	T	T	03 08 37.4	
	baz=20,slow=76,SNR=19						
H11S2	**WAKE ISLAND Hy**	**36.64**	**213**	T	T	03 08 36.6	
	baz=20,slow=76,SNR=14						
H11S3	**WAKE ISLAND Hy**	**36.64**	**213**	T	T	03 08 37.1	
	baz=20,slow=76,SNR=5.9						
PDAR	**Pinedale Array**	**43.02**	**76**	P	**P**	**02 30 20.0**	**0.0**
	0.6nm,0.5s,baz=297,slow=4.0,SNR=11						
TXAR	**Lajitas Array**	**55.30**	**85**	P	**P**	**02 31 54.0**	**0.0**
	0.1nm,0.3s,baz=306,slow=6.9,SNR=4.1						

*ISCJB **22** 02:28:52.7±1.2, 50°.93N±0°.10×179°.82W±0°.08, h10km, mb3.6/3, Error ellipse: s-maj=14.8km s-min=4.4km az=22.5*
*NEIC **22** 02:28:53.7, 51°.04N×179°.81W, h5km, ML3.5(AEIC), After AEIC.*
*IDC **22** 02:29:12.7±2.7, 52°.01N×175°.43W, h0km, mb3.5/3, mb1 3.7/5, mb1mx3.4/39, mbtmp3.4/5, ML3.3/2, Error ellipse: s-maj=67.8km s-min=41.4km az=4.0*

ISC 22 02:28:52.7±1.3, 51°.0N±0°.1×179°.79W±0°.04, h10km, n26, σ1§72/29, mb3.6/3, Andreanof Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AMKA	**Amchitka**	**0.67**	**301**	P	**Pb**	**02 29 06.2**	**-0.1**
AMKA				S	**Sb**	**02 29 16.0**	**+0.4**
CESW	**Semis' Southwe**	**0.95**	**335**	P	**Pb**	**02 29 12.0**	**+0.7**
GALAA	**Gareloi Lava P**	**0.96**	**41**	P	**Pb**	**02 29 12.0**	**+0.6**
CERB	**Semis' Cerberu**	**0.96**	**338**	P	**Pn**	**02 29 12.4**	**+0.2**
CERB				S	**Sn**	**02 29 26.7**	**+0.7**
GAEA	**Gareloi East**	**0.99**	**41**	P	**Pb**	**02 29 12.3**	**+0.4**
CETU	**Semis' Tuman**	**1.03**	**334**	P	**Pn**	**02 29 13.4**	**+0.2**
CEAP	**Semis' Anvil P**	**1.04**	**338**	P	**Pn**	**02 29 13.9**	**+0.6**
LSSE	**Little Sitkin**	**1.36**	**312**	P	**Pb**	**02 29 18.7**	**+0.5**
LSPA	**Little Sitkin**	**1.38**	**312**	P	**Pn**	**02 29 18.4**	**+0.5**
LSPA				S	**Sg**	**02 29 39.0**	**+2.1**
TAFP	**Tanaga Falls P**	**1.42**	**52**	P	**Pn**	**02 29 18.7**	**+0.2**
TAPA	**Tanaga Point A**	**1.46**	**57**	P	**Pn**	**02 29 19.1**	**0.0**
KIKV	**Kanaga Island**	**1.84**	**62**	P	**Pn**	**02 29 25.0**	**+0.7**
KICM	**Kanaga Island**	**1.84**	**60**	P	**Pg**	**02 29 27.7**	**-0.3**
ADAG	**Mount Adagdak**	**2.20**	**63**	P	**Pb**	**02 29 31.9**	**-0.6**
GSCK	**Great Sitkin C**	**2.46**	**65**	P	**Pn**	**02 29 34.7**	**+1.8**
GSTD	**Great Sitkin T**	**2.49**	**64**	P	**Pb**	**02 29 36.7**	**-0.8**
GSMY	**Great Sitkin M**	**2.54**	**65**	P	**Pn**	**02 29 35.7**	**+1.8**
KOWE	**Korovin West**	**3.69**	**67**	P	**Pn**	**02 29 53.0**	**+3.3**
KOKL	**Mount Kliuchef**	**3.71**	**68**	P	**Pn**	**02 29 52.8**	**+2.8**
KOFP	**Korovin Flat P**	**3.75**	**69**	P	**Pn**	**02 29 53.3**	**+2.7**
NIKH	**Nikolski High**	**7.02**	**70**	P	**Pn**	**02 30 38.0**	**+2.6**
KTH	**Kantishna Hill**	**19.78**	**40**	*e*P	**P**	**02 33 22.1**	**-0.6**
	3.0nm,0.6s						
ILAR	**Eielson Array**	**21.90**	**39**	P	**P**	**02 33 41.8**	**-3.7**
	0.0nm,0.3s,baz=229,slow=8.2,SNR=3.2						
YKA	**Yellowknife Ar**	**35.91**	**46**	P	**P**	**02 35 50.2**	**-2.3**
	0.4nm,0.5s,baz=282,slow=7.2,SNR=4.3						
PDAR	**Pinedale Array**	**47.00**	**71**	P	**P**	**02 37 22.2**	**-1.9**
	0.4nm,0.4s,baz=318,slow=3.9,SNR=5.8						
TXAR	**Lajitas Array**	**59.32**	**80**	P	**P**	**02 38 57.2**	**+2.4**
	0.3nm,0.8s,baz=322,slow=5.7,SNR=3.5						

*ISK **22** 02:31:52.8, 38°.42N×39°.03E, h5km, MD3.0*
*DDA **22** 02:31:52.4, 38°.42N×38°.99E, h16km, Md3.1*
*IASPEI **22** 02:31:53.3±1.0, 38°.43N±0°.03×39°.01E±0°.04, h12km±6km, Error ellipse: s-maj=4.2km s-min=3.9km az=7.7, GT5 selection from ISC bulletin GT5 identified by Bond˜¡r and McLaughlin (2009) selection criteria Bond˜¡r and McLaughlin, A new ground truth data set for seismic studies, Seism. Res. Let., 80, 465-472, 2009*
*ISCJB **22** 02:31:53.1±0.5, 38°.41N±0°.03×39°.01E±0°.04, h6km±4km, Error ellipse: s-maj=4.7km s-min=4.4km az=170.3*
*CSEM **22** 02:31:53.1±0.2, 38°.42N×39°.01E, h2km, MD3.1, Error ellipse: s-maj=4.6km s-min=4.4km az=7.0*

ISC 22 02:31:53.6±0.9, 38°.41N±0°.02×39°.02E±0°.02, h9km±6km, n52, σ0§97/65, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ELZG	**Elazig**	**0.09**	**343**	P	**Pg**	**02 31 55.9**	**-0.3**
ELZG				S	**Sg**	**02 31 57.9**	**-0.1**
ELZG	**Elazig**	**0.09**	**343**	*i* P	**Pg**	**02 31 55.9**	**-0.3**
ELZG				*i* S	**Sg**	**02 31 57.9**	**-0.1**
SVRC	**Sivrice-ELAZID**	**0.23**	**98**	PG	**Pg**	**02 31 57.9**	**-0.5**
SVRC				SG	**Sg**	**02 32 01.4**	**-0.2**
SVRC	**Sivrice-ELAZID**	**0.23**	**98**	*i* Pg	**Pg**	**02 31 57.9**	**-0.5**
SVRC				*i* Sg	**Sg**	**02 32 01.4**	**-0.2**
PTK	**Pertek**	**0.56**	**31**	PG	**Pg**	**02 32 03.4**	**-1.1**
PTK	**Pertek**	**0.56**	**31**	*i* Pg	**Pg**	**02 32 03.4**	**-1.1**
TNCL	**Tunceli-Merkez**	**0.81**	**30**	P	**Pg**	**02 32 08.0**	**-1.3**
TNCL				S	**Sg**	**02 32 19.3**	**-0.6**
TNCL	**Tunceli-Merkez**	**0.81**	**30**	*i* P	**Pg**	**02 32 08.0**	**-1.3**
TNCL				*i* S	**Sg**	**02 32 19.3**	**-0.6**
AKCD	**Akcadag**	**0.87**	**263**	P	**Pg**	**02 32 08.8**	**-1.5**
AKCD				S	**Sg**	**02 32 21.0**	**-0.6**
AKCD	**Akcadag**	**0.87**	**263**	*i* P	**Pg**	**02 32 08.8**	**-1.5**
AKCD				*i* S	**Sg**	**02 32 21.0**	**-0.6**
KEMA	**Kemaliye**	**0.95**	**335**	P	**Pg**	**02 32 10.4**	**-1.4**
KEMA				S	**Sg**	**02 32 23.3**	**-0.9**
KEMA	**Kemaliye**	**0.95**	**335**	*i* P	**Pg**	**02 32 10.4**	**-1.4**
KEMA				*i* S	**Sg**	**02 32 23.3**	**-0.9**
URFA	**Urfa**	**0.98**	**189**	*e*PG	**Pg**	**02 32 12.3**	**-0.2**
URFA	**Urfa**	**0.98**	**189**	*e*Pg	**Pg**	**02 32 12.3**	**-0.2**
DYBB	**Diyarbakir**	**1.00**	**117**	*e*PG	**Pg**	**02 32 12.4**	**-0.3**
DIY	**Diyarbakir**	**1.08**	**118**	*e*Pg	**Pg**	**02 32 12.4**	**-2.0**
ILIC	**ilic-Erzincan**	**1.09**	**341**	*e*PN	**Pg**	**02 32 14.2**	**-0.4**
ILIC	**ilic-Erzincan**	**1.09**	**341**	*e*Pn	**Pg**	**02 32 14.3**	**-0.4**
DARE	**Darende-Malaty**	**1.21**	**278**	*e*PN	**Pg**	**02 32 16.8**	**-0.1**
DARE	**Darende-Malaty**	**1.21**	**278**	*e*Pn	**Pg**	**02 32 16.8**	**-0.1**
BINT	**Bingol**	**1.24**	**68**	*e*Pn	**Pn**	**02 32 20.2**	**+3.0**
ERZN	**Erzincan**	**1.29**	**25**	*e*PN	**Pg**	**02 32 17.9**	**-0.6**
EZC	**Erzincan**	**1.36**	**11**	*e*PN	**Pg**	**02 32 17.9**	**-1.9**
BNGB	**Bing¨¶**	**1.42**	**66**	*e*PN	**Pn**	**02 32 20.2**	**+0.5**
MAZI	**Mazidag**	**1.48**	**130**	*e*PN	**Pn**	**02 32 20.6**	**+0.2**
MAZI	**Mazidag**	**1.48**	**130**	*e*Pn	**Pn**	**02 32 20.6**	**+0.2**
GZT	**Gaziantep**	**1.56**	**228**	*i* P	**Pn**	**02 32 20.1**	**-1.6**
SURC	**SANLIURFA_SURC**	**1.56**	**192**	P	**Pn**	**02 32 22.4**	**+0.8**
SURC				S	**Sb**	**02 32 43.5**	**+0.9**
SURC	**SANLIURFA_SURC**	**1.56**	**192**	*i* P	**Pn**	**02 32 22.4**	**+0.8**
SURC				*i* S	**Sb**	**02 32 43.5**	**+0.9**
YEDI	**Yedisu-Bingol**	**1.57**	**49**	*e*PN	**Pn**	**02 32 22.3**	**+0.5**
YEDI	**Yedisu-Bingol**	**1.57**	**49**	*e*Pn	**Pn**	**02 32 22.3**	**+0.5**
SVAN	**Silvan-Diyarba**	**1.74**	**98**	*e*PN	**Pn**	**02 32 24.2**	**+0.3**
SVAN	**Silvan-Diyarba**	**1.74**	**98**	*e*Pn	**Pn**	**02 32 24.3**	**+0.3**
CUZAR	**Zara_SIVAS**	**1.76**	**327**	P	**Pn**	**02 32 25.8**	**+1.4**
CUZAR	**Zara_SIVAS**	**1.76**	**327**	*i* P	**Pn**	**02 32 25.8**	**+1.4**
CUZAR				*i* S	**Sg**	**02 32 51.4**	**+1.1**
GAZ	**Gaziantep**	**1.89**	**230**	*e*PN	**Pn**	**02 32 26.6**	**+0.5**
GAZ	**Gaziantep**	**1.89**	**230**	*e*Pn	**Pn**	**02 32 26.6**	**+0.5**
GUMT	**Gumushane**	**2.08**	**10**	*e*PN	**Pn**	**02 32 29.6**	**+0.9**
GUMT	**Gumushane**	**2.08**	**10**	*e*Pn	**Pn**	**02 32 29.6**	**+0.9**
BAYT	**Ayd¨–ntepe-Bay**	**2.16**	**23**	*e*PN	**Pn**	**02 32 30.6**	**+0.7**
BAYT	**Ayd¨–ntepe-Bay**	**2.16**	**23**	*e*Pn	**Pn**	**02 32 30.6**	**+0.7**
SVSK	**Karacayir**	**2.17**	**314**	*e*PN	**Pn**	**02 32 30.6**	**+0.7**
SVSK	**Karacayir**	**2.17**	**314**	*e*Pn	**Pn**	**02 32 30.6**	**+0.7**
EZM	**Erzurum**	**2.35**	**50**	*e*PN	**Pn**	**02 32 33.7**	**+1.0**
RSDY	**Resadiye-TOKAT**	**2.38**	**327**	*e*PN	**Pn**	**02 32 33.5**	**+0.8**
RSDY	**Resadiye-TOKAT**	**2.38**	**327**	*e*Pn	**Pn**	**02 32 33.5**	**+0.8**
ESPY	**Espiye-Giresun**	**2.51**	**355**	*e*PN	**Pn**	**02 32 35.2**	**+0.6**
ESPY	**Espiye-Giresun**	**2.51**	**355**	*e*Pn	**Pn**	**02 32 35.2**	**+0.6**
BNN	**Bunyan**	**2.52**	**281**	*e*PN	**Pn**	**02 32 35.8**	**+1.0**
BNN	**Bunyan**	**2.52**	**281**	*e*Pn	**Pn**	**02 32 35.8**	**+1.0**
TOKT	**Tokat**	**2.70**	**316**	*e*PN	**Pn**	**02 32 37.9**	**+0.7**
TOKT	**Tokat**	**2.70**	**316**	*e*Pn	**Pn**	**02 32 37.9**	**+0.7**

*DDA **22** 02:54:42.5, 39°.12N×28°.99E, h10km, Md2.8*
*ISCJB **22** 02:54:43.0±0.4, 39°.12N±0°.03×28°.99E±0°.03, h7km±5km, Error ellipse: s-maj=4.4km s-min=4.2km az=161.4*
*CSEM **22** 02:54:43.3±0.1, 39°.13N×28°.99E, h5km, MD2.8, Error ellipse: s-maj=2.7km s-min=2.5km az=105.0*
*ISK **22** 02:54:43.3, 39°.16N×29°.00E, h8km, MD2.8*

ISC 22 02:54:43.2±1.0, 39°.12N±0°.02×28°.99E±0°.02, h7km±11km, n49, σ0§45/62, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.23**	**249**	P	**Pg**	**02 54 48.0**	**+0.2**
DEMI				S	**Sg**	**02 54 51.2**	**+0.3**
DEMI	**Demirci**	**0.23**	**249**	*i* P	**Pg**	**02 54 48.0**	**+0.2**
DEMI				*i* S	**Sg**	**02 54 51.2**	**+0.3**
GDZ	**Gediz**	**0.38**	**95**	P	**Pg**	**02 54 50.7**	**-0.1**
GDZ				S	**Sg**	**02 54 56.0**	**+0.2**
GDZ	**Gediz**	**0.38**	**95**	*i* P	**Pg**	**02 54 50.7**	**-0.1**
GDZ				*i* S	**Sg**	**02 54 56.0**	**+0.2**
TVSB	**Tavsanli**	**0.49**	**48**	*e*PG	**Pg**	**02 54 52.7**	**0.0**
TVSB				*e*SG	**Sg**	**02 54 59.6**	**+0.4**
TVSB	**Tavsanli**	**0.49**	**48**	*e*Pg	**Pg**	**02 54 52.7**	**0.0**
TVSB				*e*Sg	**Sg**	**02 54 59.6**	**+0.4**
DURS	**Dursunbey**	**0.62**	**320**	P	**Pg**	**02 54 54.2**	**-1.1**
DURS	**Dursunbey**	**0.62**	**320**	*i* P	**Pg**	**02 54 54.2**	**-1.1**
KULA	**Kula-Manisa**	**0.66**	**203**	*e*PG	**Pb**	**02 54 56.6**	**-0.4**
KULA	**Kula-Manisa**	**0.66**	**203**	*e*Pg	**Pb**	**02 54 56.7**	**-0.4**
MANT	**Manisa**	**0.72**	**208**	P	**Pg**	**02 54 56.8**	**-0.3**
MANT				S	**Sg**	**02 55 06.0**	**-0.4**
MANT	**Manisa**	**0.72**	**208**	*i* P	**Pg**	**02 54 56.8**	**-0.3**
MANT				*i* S	**Sg**	**02 55 06.0**	**-0.4**
KHAL	**Karahalli**	**0.85**	**152**	P	**Pg**	**02 54 59.4**	**-0.1**
KHAL				S	**Sg**	**02 55 10.0**	**-0.5**
KHAL	**Karahalli**	**0.85**	**152**	*i* P	**Pg**	**02 54 59.4**	**-0.1**
KHAL				*i* S	**Sg**	**02 55 10.0**	**-0.5**
KHL	**Karahalli**	**0.90**	**152**	*e*PG	**Pn**	**02 55 02.1**	**-0.3**
KHL	**Karahalli**	**0.90**	**152**	*e*Pg	**Pn**	**02 55 02.1**	**-0.3**
AKS	**Akhisar**	**0.95**	**255**	*e*PG	**Pb**	**02 55 02.3**	**+0.3**
AKS	**Akhisar**	**0.95**	**255**	*e*Pg	**Pb**	**02 55 02.3**	**+0.3**
BALB	**Balikesir**	**1.00**	**301**	*e*PG	**Pb**	**02 55 02.8**	**-0.1**
BALB				*e*SG	**Sb**	**02 55 16.9**	**+0.6**
BALB	**Balikesir**	**1.00**	**301**	*e*Pg	**Pb**	**02 55 02.8**	**-0.1**
BALB				*e*Sg	**Sb**	**02 55 16.9**	**+0.6**
IGD	**Bursa**	**1.15**	**8**	*i* P	**Pg**	**02 55 04.4**	**-1.0**
IGD				*i* S	**Sg**	**02 55 19.1**	**-1.2**
KCTX	**Karacabey (Bur**	**1.24**	**337**	*e*PN	**Pg**	**02 55 06.9**	**-0.2**
KCTX	**Karacabey (Bur**	**1.24**	**337**	*e*Pn	**Pg**	**02 55 06.9**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.25**	**356**	*e*PN	**Pn**	**02 55 07.3**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.25**	**356**	*e*Pn	**Pn**	**02 55 07.3**	**+0.3**
CAVI	**Cavuskoy**	**1.26**	**31**	*e*PN	**Pg**	**02 55 07.1**	**-0.4**
CAVI	**Cavuskoy**	**1.26**	**31**	*e*Pn	**Pg**	**02 55 07.1**	**-0.4**
IZI	**Iznik**	**1.27**	**17**	*e*PN	**Pg**	**02 55 07.5**	**-0.1**
IZI	**Iznik**	**1.27**	**17**	*e*Pn	**Pg**	**02 55 07.5**	**-0.1**
GONE	**Gonen-Balikesi**	**1.37**	**313**	*e*PN	**Pg**	**02 55 09.4**	**0.0**
GONE	**Gonen-Balikesi**	**1.37**	**313**	*e*Pn	**Pg**	**02 55 09.4**	**0.0**
ADVT	**Abdulvahap**	**1.43**	**24**	*e*PN	**Pn**	**02 55 10.0**	**+0.5**
ADVT	**Abdulvahap**	**1.43**	**24**	*e*Pn	**Pn**	**02 55 10.0**	**+0.5**
ARMT	**Armutlu**	**1.44**	**356**	*e*PN	**Pn**	**02 55 10.0**	**+0.2**
ARMT	**Armutlu**	**1.44**	**356**	*e*Pn	**Pn**	**02 55 10.0**	**+0.2**
EDC	**Edincik**	**1.50**	**325**	*e*PN	**Pn**	**02 55 10.6**	**+0.1**
EDC	**Edincik**	**1.50**	**325**	*e*Pn	**Pn**	**02 55 10.6**	**+0.1**
GULT	**Gulveren**	**1.76**	**41**	*e*PN	**Pb**	**02 55 15.4**	**-0.4**
GULT	**Gulveren**	**1.76**	**41**	*e*Pn	**Pb**	**02 55 15.4**	**-0.4**
HRT	**Hereke**	**1.77**	**17**	*e*PN	**Pn**	**02 55 14.8**	**+0.4**
HRT	**Hereke**	**1.77**	**17**	*e*Pn	**Pn**	**02 55 14.8**	**+0.4**
SPNC	**Sapanca-Adapaz**	**1.86**	**33**	*e*PN	**Pn**	**02 55 15.3**	**-0.2**
SPNC	**Sapanca-Adapaz**	**1.86**	**33**	*e*Pn	**Pn**	**02 55 15.3**	**-0.2**
ISK	**Istanbul-Kandi**	**1.94**	**2**	*e*PN	**Pn**	**02 55 16.9**	**+0.3**
ISK	**Istanbul-Kandi**	**1.94**	**2**	*e*Pn	**Pn**	**02 55 16.9**	**+0.3**
SVRH	**Sivrihisar-ESK**	**1.99**	**80**	*e*PN	**Pn**	**02 55 17.9**	**+0.5**
SVRH	**Sivrihisar-ESK**	**1.99**	**80**	*e*Pn	**Pn**	**02 55 17.9**	**+0.5**
MDUB	**Mudurnu**	**2.17**	**51**	*e*PN	**Pn**	**02 55 20.7**	**+0.9**
MDUB	**Mudurnu**	**2.17**	**51**	*e*Pn	**Pn**	**02 55 20.7**	**+0.9**

SCB 22 02:56:01.1±0.4, 17°.13S×69°.85W, h125km, MI3.8/1, 1C-2D, Error ellipse: s-maj=13.0km s-min=9.1km az=147.0, Peru-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BBOD	**La Paz, Gloria**	**1.30**	**68**	*e*Pn	Pn	02 56 31.4	+4.2
BBOD				*e*Sn	Sn	02 56 53.2	+6.3
BBOJ	**La Paz, Jacaqu**	**1.60**	**85**	‖ *i*Pn	Pn	02 56 34.6	+4.1
BBOJ				*e*Sn	Sn	02 56 59.4	+6.6
BBOE	**La Paz, Chanca**	**1.82**	**80**	‖ *i*Pn	Pn	02 56 38.0	+4.9
LPAZ	**La Paz**	**1.85**	**63**	*e*Pn	Pn	02 56 38.2	+4.6
LPAZ				*e*Sn	Sn	02 57 05.0	+6.7
BBOB	**La Paz, Bander**	**1.92**	**59**	‖ *i*Pn	Pn	02 56 39.0	+4.6
BBOB				*e*Sn	Sn	02 57 05.5	+5.8
	259nm,0.6s						

*ISCJB **22** 02:58:43.8±0.5, 39°.01N±0°.04×29°.17E±0°.05, h9km, Error ellipse: s-maj=6.8km s-min=4.1km az=137.2*
*ISK **22** 02:58:43.6, 39°.04N×29°.16E, h9km, MD2.5, ML2.5*
*CSEM **22** 02:58:44.1±0.1, 39°.02N×29°.16E, h10km, MD2.3, Error ellipse: s-maj=2.4km s-min=1.7km az=134.0*
*DDA **22** 02:58:46.4, 38°.95N×29°.04E, h7km, Md2.3*

ISC 22 02:58:44.5±0.9, 39°.04N±0°.03×29°.14E±0°.03, h9km, n38, σ0§66/44, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.27**	**78**	*i* P	**Pn**	**02 58 54.7**	**-0.1**
GDZ				*i* S	**Sb**	**02 58 59.1**	**+2.8**
DEMI	**Demirci**	**0.33**	**271**	P	**Pb**	**02 58 51.8**	**-0.8**
DEMI				S	**Sg**	**02 58 56.6**	**+1.1**
DEMI	**Demirci**	**0.33**	**271**	*i* P	**Pb**	**02 58 51.8**	**-0.8**
DEMI				*i* S	**Sg**	**02 58 56.6**	**+1.1**
TVSB	**Tavsanli**	**0.48**	**31**	*e*PG	**Pg**	**02 58 53.6**	**-0.3**
TVSB				*e*SG	**Sg**	**02 59 00.2**	**-0.1**
TVSB	**Tavsanli**	**0.48**	**31**	*e*Pg	**Pg**	**02 58 53.6**	**-0.3**
TVSB				*e*Sg	**Sg**	**02 59 00.2**	**-0.1**
KULA	**Kula-Manisa**	**0.64**	**216**	*e*PG	**Pg**	**02 58 56.5**	**-0.3**
KULA	**Kula-Manisa**	**0.64**	**216**	*e*Pg	**Pg**	**02 58 56.6**	**-0.3**
MANT	**Manisa**	**0.71**	**220**	*i* P	**Pn**	**02 59 01.5**	**+0.6**
MANT				*i* S	**Sg**	**02 59 06.7**	**-0.8**
KHL	**Karahalli**	**0.77**	**157**	*e*PG	**Pg**	**02 58 58.9**	**-0.4**
KHL	**Karahalli**	**0.77**	**157**	*e*Pg	**Pg**	**02 58 58.9**	**-0.4**
AKS	**Akhisar**	**1.05**	**262**	*e*PG	**Pg**	**02 59 04.2**	**-0.4**
AKS	**Akhisar**	**1.05**	**262**	*e*Pg	**Pg**	**02 59 04.2**	**-0.4**
BALB	**Balikesir**	**1.15**	**302**	*e*PN	**Pb**	**02 59 06.1**	**-0.4**

BIA			*i* Sg	Sb	03 11 31.5	+0.4
OHR	**Ohrid**	**0.61 347**	*i* Pg	Pg	03 11 21.8	-1.2
OHR			*i* Sg	Sb	03 11 32.0	-0.4
OHR			*e*Lg	Lg	03 11 32.2	
	comp=E,104nm,0.3s					
OHR			*e*Lg	Lg	03 11 34.3	
	comp=N,55nm,0.4s					
OHR	**Ohrid**	**0.61 347**	*i* Sg	Sb	03 11 32.0	-0.5
OHR			*e*Lg	Lg	03 11 32.2	
	comp=N,104nm,0.3s					
KPRO	**Kipourio**	**0.64 153**	P	Pg	03 11 22.9	-0.6
KPRO	**Kipourio**	**0.64 153**	P	Pg	03 11 23.4	-0.1
KPRO			S	Sg	03 11 32.5	+0.6
KPRO	**Kipourio**	**0.64 153**	P	Pg	03 11 23.4	-0.1
KPRO			S	Sg	03 11 32.5	+0.6
KPRO			AML	AML	03 11 34.2	
	comp=E,397μm,0.4s					
KPRO			AML	AML	03 11 36.1	
	comp=N,163μm,0.3s					
KZN	**Kozani**	**0.64 109**	P	Pg	03 11 23.4	-0.2
KZN			S	Sb	03 11 33.2	-0.1
KZN	**Kozani**	**0.64 109**	P	Pg	03 11 23.7	+0.1
KZN			S	Sb	03 11 32.7	-0.6
JAN	**Janina**	**0.87 187**	P	Pg	03 11 27.4	-0.6
JAN			S	Sg	03 11 39.6	+0.3
JAN	**Janina**	**0.87 187**	AML	AML	03 11 45.8	
	comp=E,92μm,0.3s					
SGD	**Sagiada**	**1.08 213**	P	Pb	03 11 31.1	-0.7
SGD			S	Sn	03 11 47.1	0.0
SGD	**Sagiada**	**1.08 213**	P	Pb	03 11 30.7	-1.1
SGD			S	Sn	03 11 47.1	0.0
SGD	**Sagiada**	**1.08 213**	P	Pb	03 11 30.7	-1.1
IGT	**Igoumenitsa**	**1.11 207**	P	Pb	03 11 32.2	-0.2
IGT			S	Sn	03 11 48.0	0.0
IGT	**Igoumenitsa**	**1.11 207**	P	Pb	03 11 31.1	-1.3
IGT			S	Sb	03 11 46.3	-0.5
IGT	**Igoumenitsa**	**1.11 207**	P	Pb	03 11 31.1	-1.2
IGT			S	Sb	03 11 46.3	-0.6
IGT			AML	AML	03 11 52.7	
	comp=E,61μm,0.4s					
IGT			AML	AML	03 11 53.4	
	comp=N,56μm,0.5s					
GRG	**Griva**	**1.16 68**	P	Pb	03 11 32.6	-0.7
GRG			S	Sn	03 11 49.3	0.0
GRG	**Griva**	**1.16 68**	P	Pb	03 11 32.6	-0.7
GRG			S	Sn	03 11 49.3	0.0
GRG	**Griva**	**1.16 68**	P	Pb	03 11 32.4	-0.9
KEK	**Kerkira**	**1.22 229**	P	Pn	03 11 33.2	-1.0
KEK			S	Sg	03 11 50.5	+0.1
KEK	**Kerkira**	**1.22 229**	P	Pn	03 11 33.2	-1.0
KEK			S	Sg	03 11 50.5	+0.1
LIT	**Litokhoron**	**1.23 110**	P	Pn	03 11 33.2	-1.1
LIT			S	Sg	03 11 50.6	0.0
LIT	**Litokhoron**	**1.23 110**	P	Pn	03 11 34.1	-0.2
LIT			S	Sn	03 11 50.8	-0.1
LIT	**Litokhoron**	**1.23 110**	P	Pn	03 11 34.1	-0.2
LIT			S	Sn	03 11 50.8	-0.1
LIT			AML	AML	03 11 57.6	
	comp=E,75μm,0.4s					
LIT			AML	AML	03 11 59.4	
	comp=N,71μm,0.3s					
THL	**Klokotos Trika**	**1.24 140**	P	Pn	03 11 33.3	-1.2
THL			S	Sg	03 11 51.0	-0.1
THL	**Klokotos Trika**	**1.24 140**	P	Pn	03 11 33.3	-1.2
THL			S	Sg	03 11 51.0	-0.1
DSL	**Palaion Diasel**	**1.39 176**	P	Pn	03 11 36.8	+0.2
DSL			S	Sg	03 11 56.6	+0.7
DSL	**Palaion Diasel**	**1.39 176**	P	Pn	03 11 36.9	+0.3
DSL			S	Sg	03 11 56.6	+0.7
DSL			AML	AML	03 12 02.4	
	comp=N,59μm,0.4s					
DSL			AML	AML	03 12 06.8	
	comp=E,53μm,0.4s					
VAY	**Valandovo**	**1.44 56**	*i* Pg	Pn	03 11 37.0	-0.3
VAY			*e*Lg	Lg	03 12 01.4	
	comp=N,13nm,0.5s					
VAY			*e*Lg	Lg	03 12 02.9	
	comp=E,6.8nm,0.5s					
VAY	**Valandovo**	**1.44 56**	*i* Pg	Pn	03 11 37.0	-0.3
VAY			*e*Lg	Lg	03 12 01.4	
	comp=E,13nm,0.5s					
KNT	**Kendrikon**	**1.58 66**	P	Pn	03 11 39.1	-0.2
KNT	**Kendrikon**	**1.58 66**	P	Pn	03 11 39.1	-0.2
KNT			S	Sb	03 12 00.5	0.0
KNT			AML	AML	03 12 06.5	
	comp=E,12μm,0.4s					
KNT			AML	AML	03 12 08.5	
	comp=N,19μm,0.3s					
EVR	**Evrytania**	**1.72 158**	P	Pn	03 11 41.9	+0.7
EVR			S	Sb	03 12 04.6	-0.1
EVR	**Evrytania**	**1.72 158**	P	Pn	03 11 41.9	+0.7
EVR			S	Sb	03 12 04.6	-0.1
EVR			AML	AML	03 12 12.5	
	comp=N,30μm,0.4s					
LKD2	**Lefkada island**	**1.75 188**	P	Pn	03 11 42.1	+0.6
LKD2	**Lefkada island**	**1.75 188**	P	Pn	03 11 42.1	+0.5
AGG	**Agios Georgios**	**1.82 145**	P	Pn	03 11 42.3	-0.2
AGG			S	Sb	03 12 07.3	-0.1
AGG	**Agios Georgios**	**1.82 145**	P	Pn	03 11 42.3	-0.2
AGG			S	Sb	03 12 07.3	-0.1
AGG			AML	AML	03 12 10.5	
	comp=E,43μm,0.3s					
AGG			AML	AML	03 12 16.5	
	comp=N,60μm,0.2s					
PDO	**Prodromos**	**1.93 175**	P	Pn	03 11 43.7	-0.2
PDO	**Prodromos**	**1.93 175**	P	Pn	03 11 43.7	-0.2
PVO	**Paravola**	**1.95 167**	P	Pn	03 11 44.7	+0.5
PVO	**Paravola**	**1.95 167**	P	Pn	03 11 44.7	+0.5
XOR	**Xorichti**	**2.05 124**	P	Pn	03 11 44.8	-0.9
XOR	**Xorichti**	**2.05 124**	P	Pn	03 11 44.8	-0.8
PAIG	**Paliouri**	**2.15 105**	P	Pn	03 11 46.7	-0.2
PAIG	**Paliouri**	**2.15 105**	P	Pn	03 11 46.7	-0.3
EFP	**Efpalio**	**2.21 161**	P	Pn	03 11 48.5	+0.7
EFP	**Efpalio**	**2.21 161**	P	Pn	03 11 48.5	+0.7
SERG	**Sergoula**	**2.26 158**	P	Pn	03 11 49.2	+0.6

NIED ***22*** *03:12:00, 40°.70N×142°.70E, h35km, Mw3.6 Best double couple: M₀2.61000×10¹⁴ NP1:φ₀195.00000°, δ18.00000°, λ74.00000°. NP2:φ₀32.00000°, δ73.00000°, λ95.00000°.*

JMA 22 03:12:13.7±0.2, 40°.70N×142°.67E, h23km±4km, M3.5, 4D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JANG	**Nango**	**0.94**	**250**	‖P	Pb	03 12 31.1	-0.2
JTH	**Tanohata**	**0.98**	**219**	‖P	Pb	03 12 31.5	-0.5
JTM	**Tenmabayashi**	**1.22**	**275**	‖P	Pn	03 12 35.4	+0.1
JTM				S	Sn	03 12 50.6	-0.5
JEM	**Erimo**	**1.36**	**15**	P	Pb	03 12 38.3	-0.2
JOT	**Ohata**	**1.40**	**300**	P	Pn	03 12 37.7	-0.1
JOM	**Ohasama**	**1.62**	**221**	P	Pn	03 12 41.6	+0.8
JOM				eS	Sn	03 13 01.4	+0.5
JAH	**Hinai**	**1.63**	**252**	‖P	Pb	03 12 42.2	-0.9
JAH				eS	Sb	03 13 02.4	-0.9
JKB	**Kayabe**	**1.71**	**314**	P	Pn	03 12 42.3	+0.2
JKB				S	Sn	03 13 03.0	-0.2
JSR	**Shiriuchi**	**1.89**	**297**	P	Pn	03 12 45.4	+0.8
JCH	**Churui**	**1.98**	**15**	P	Pn	03 12 46.7	+0.9

DDA ***22*** *03:15:29.8, 39°.12N×29°.02E, h7km, Md3.2*
ISCJB ***22*** *03:15:30.4±0.4, 39°.10N±0°.02×29°.02E±0°.03, h4km±3km, Error ellipse: s-maj=3.6km s-min=2.9km az=42.5*
ISK ***22*** *03:15:30.5, 39°.09N×29°.04E, h7km, ML3.4*
CSEM ***22*** *03:15:30.7±0.1, 39°.08N×29°.03E, h2km, MD3.2, Error ellipse: s-maj=2.9km s-min=2.4km az=121.0*
THE ***22*** *03:15:32.7, 39°.01N×28°.84E, h0km, ML3.0/4, Error ellipse: s-maj=0.7km s-min=0.3km az=94.0*

ISC 22 03:15:30.8±1.0, 39°.10N±0°.02×29°.02E±0°.02, h4km±9km, n92, σ0°.81/123, 10D, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**258**	P	**Pg**	**03 15 36.1**	**+0.7**
DEMI				S	**Sg**	**03 15 39.7**	**+1.1**
DEMI	**Demirci**	**0.24**	**258**	*i* P	**Pg**	**03 15 36.1**	**+0.7**
DEMI				*i* S	**Sg**	**03 15 39.7**	**+1.1**
GDZ	**Gediz**	**0.36**	**91**	P	**Pg**	**03 15 37.7**	**-0.1**
GDZ				S	**Sg**	**03 15 42.5**	**-0.1**
GDZ	**Gediz**	**0.36**	**91**	*i* P	**Pg**	**03 15 37.7**	**-0.1**
GDZ				*i* S	**Sg**	**03 15 42.5**	**-0.1**
TVSB	**Tavsanli**	**0.49**	**44**	*e*PG	**Pg**	**03 15 39.9**	**-0.4**
TVSB				*e*SG	**Sg**	**03 15 46.2**	**-0.6**
TVSB	**Tavsanli**	**0.49**	**44**	*e*Pg	**Pg**	**03 15 39.9**	**-0.4**
TVSB				*e*Sg	**Sg**	**03 15 46.2**	**-0.6**
KULA	**Kula-Manisa**	**0.64**	**206**	*e*PG	**Pg**	**03 15 43.1**	**0.0**
KULA	**Kula-Manisa**	**0.64**	**206**	P	**Pg**	**03 15 43.2**	**+0.1**
KULA				S	**Sg**	**03 15 51.7**	**+0.2**
KULA	**Kula-Manisa**	**0.64**	**206**	*e*Pg	**Pg**	**03 15 43.1**	**0.0**
KULA				S	**Sg**	**03 15 51.7**	**+0.2**
DURS	**Dursunbey**	**0.66**	**320**	P	**Pg**	**03 15 41.7**	**-1.7**
DURS	**Dursunbey**	**0.66**	**320**	*i* P	**Pg**	**03 15 41.7**	**-1.7**
MANT	**Manisa**	**0.70**	**211**	P	**Pg**	**03 15 44.2**	**-0.1**
MANT				S	**Sg**	**03 15 53.6**	**+0.2**
MANT	**Manisa**	**0.70**	**211**	*i* P	**Pg**	**03 15 44.2**	**-0.1**
MANT				*i* S	**Sg**	**03 15 53.6**	**+0.2**
KHAL	**Karahalli**	**0.81**	**153**	S	**Sg**	**03 15 56.9**	**0.0**
KHAL	**Karahalli**	**0.81**	**153**	*i* S	**Sg**	**03 15 56.9**	**0.0**
KHL	**Karahalli**	**0.87**	**153**	*e*PG	**Pg**	**03 15 47.4**	**0.0**
KHL	**Karahalli**	**0.87**	**153**	*e*Pg	**Pg**	**03 15 47.4**	**0.0**
ORLT	**Orhaneli**	**0.95**	**354**	*e*PG	**Pg**	**03 15 49.5**	**+0.4**
ORLT	**Orhaneli**	**0.95**	**354**	*e*Pg	**Pg**	**03 15 49.5**	**+0.4**
AKHS	**Akhisar**	**0.96**	**257**	P	**Pb**	**03 15 49.9**	**-0.1**
AKHS				S	**Sb**	**03 16 03.0**	**0.0**
AKHS	**Akhisar**	**0.96**	**257**	*i* P	**Pb**	**03 15 49.9**	**-0.1**
AKHS				*i* S	**Sb**	**03 16 03.0**	**0.0**
AKS	**Akhisar**	**0.96**	**257**	*e*PG	**Pb**	**03 15 49.8**	**-0.2**
AKS	**Akhisar**	**0.96**	**257**	*e*Pg	**Pb**	**03 15 49.8**	**-0.2**
BALB	**Balikesir**	**1.04**	**302**	*e*PG	**Pb**	**03 15 51.1**	**-0.1**
BALB				*e*SG	**Sn**	**03 16 06.3**	**-0.6**
BALB	**Balikesir**	**1.04**	**302**	*e*Pg	**Pb**	**03 15 51.2**	**-0.1**
BALB				*e*Sg	**Sn**	**03 16 06.3**	**-0.6**
IGD	**Bursa**	**1.18**	**7**	*i* P	**Pg**	**03 15 51.4**	**-1.9**
IGD				*i* S	**Sg**	**03 16 07.5**	**-1.1**
CAVI	**Cavuskoy**	**1.28**	**30**	*e*PN	**Pn**	**03 15 55.4**	**0.0**
CAVI	**Cavuskoy**	**1.28**	**30**	*e*Pn	**Pn**	**03 15 55.4**	**0.0**
KCTX	**Karacabey (Bur**	**1.28**	**337**	*e*PN	**Pg**	**03 15 55.1**	**-0.1**
KCTX	**Karacabey (Bur**	**1.28**	**337**	*e*Pn	**Pg**	**03 15 55.2**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.28**	**355**	*e*PN	**Pg**	**03 15 55.2**	**0.0**
MDNY	**Mudanya-Bursa**	**1.28**	**355**	*e*Pn	**Pg**	**03 15 55.2**	**0.0**
IZI	**Iznik**	**1.29**	**16**	*e*PN	**Pb**	**03 15 55.8**	**+0.2**
IZI	**Iznik**	**1.29**	**16**	*e*Pn	**Pb**	**03 15 55.8**	**+0.2**
DENT	**Denizli**	**1.34**	**179**	*e*PN	**Pn**	**03 15 56.1**	**-0.1**
DENT	**Denizli**	**1.34**	**179**	*e*Pn	**Pn**	**03 15 56.1**	**-0.1**
GEMT	**Gemlik**	**1.34**	**6**	*e*PN	**Pb**	**03 15 56.5**	**0.0**
GEMT	**Gemlik**	**1.34**	**6**	*e*Pn	**Pb**	**03 15 56.5**	**0.0**
GONE	**Gonen-Balikesi**	**1.40**	**313**	*e*PN	**Pn**	**03 15 57.0**	**0.0**
GONE	**Gonen-Balikesi**	**1.40**	**313**	*e*Pn	**Pn**	**03 15 57.0**	**0.0**
DNZL	**Cakiroluk**	**1.40**	**179**	P	**Pn**	**03 15 56.8**	**-0.4**
DNZL	**Cakiroluk**	**1.40**	**179**	*i* P	**Pn**	**03 15 56.8**	**-0.4**
DNZL				*i* S	**Sn**	**03 16 18.1**	**+1.8**
ADVT	**Abdulvahap**	**1.45**	**22**	*e*PN	**Pb**	**03 15 58.1**	**-0.2**
ADVT	**Abdulvahap**	**1.45**	**22**	*e*Pn	**Pb**	**03 15 58.1**	**-0.2**
ARMT	**Armutlu**	**1.47**	**355**	*e*PN	**Pn**	**03 15 58.3**	**+0.2**
ARMT	**Armutlu**	**1.47**	**355**	*e*Pn	**Pn**	**03 15 58.3**	**+0.2**
EDC	**Edincik**	**1.54**	**325**	*e*PN	**Pn**	**03 15 59.0**	**+0.1**
EDC	**Edincik**	**1.54**	**325**	*e*Pn	**Pn**	**03 15 59.0**	**+0.1**
GPA	**Golpazari**	**1.55**	**39**	*e*PN	**Pn**	**03 15 59.4**	**+0.2**
GPA	**Golpazari**	**1.55**	**39**	*e*Pn	**Pn**	**03 15 59.4**	**+0.2**
AYDN	**Tasoluk**	**1.69**	**212**	P	**Pn**	**03 16 01.5**	**+0.5**
AYDN				S	**Sg**	**03 16 24.5**	**-0.5**
AYDN	**Tasoluk**	**1.69**	**212**	*i* P	**Pn**	**03 16 01.5**	**+0.5**
AYDN				*i* S	**Sg**	**03 16 24.5**	**-0.5**
GULT	**Gulveren**	**1.77**	**40**	*e*PN	**Pn**	**03 16 02.3**	**+0.2**
GULT	**Gulveren**	**1.77**	**40**	*e*Pn	**Pn**	**03 16 02.3**	**+0.2**
HRT	**Hereke**	**1.80**	**16**	*e*PN	**Pn**	**03 16 02.7**	**+0.2**
HRT	**Hereke**	**1.80**	**16**	*e*Pn	**Pn**	**03 16 02.7**	**+0.2**
SPNC	**Sapanca-Adapaz**	**1.87**	**32**	*e*PN	**Pn**	**03 16 03.8**	**+0.2**
SPNC	**Sapanca-Adapaz**	**1.87**	**32**	*e*Pn	**Pn**	**03 16 03.8**	**+0.2**
ISK	**Istanbul-Kandi**	**1.97**	**1**	*e*PN	**Pn**	**03 16 05.3**	**+0.4**
ISK	**Istanbul-Kandi**	**1.97**	**1**	P	**Pb**	**03 16 07.0**	**-0.1**
ISK				S	**Sg**	**03 16 34.3**	**+0.3**
ISK	**Istanbul-Kandi**	**1.97**	**1**	*e*Pn	**Pn**	**03 16 05.3**	**+0.4**
ISK	**Istanbul-Kandi**	**1.97**	**1**	P	**Pb**	**03 16 07.0**	**-0.1**
ISK				S	**Sg**	**03 16 34.3**	**+0.3**
SVRH	**Sivrihisar-ESK**	**1.98**	**79**	*e*PN	**Pn**	**03 16 05.2**	**+0.1**
SVRH	**Sivrihisar-ESK**	**1.98**	**79**	*e*Pn	**Pn**	**03 16 05.2**	**+0.1**
YER	**Yerkesik**	**2.04**	**197**	P	**Pn**	**03 16 05.7**	**-0.2**
YER	**Yerkesik**	**2.04**	**197**	P	**Pn**	**03 16 05.7**	**-0.2**
PRK	**Paraskevi**	**2.14**	**275**	P	**Pn**	**03 16 06.5**	**-0.7**
PRK	**Paraskevi**	**2.14**	**275**	P	**Pn**	**03 16 06.5**	**-0.7**
MDUB	**Mudurnu**	**2.17**	**50**	*e*PN	**Pn**	**03 16 07.9**	**+0.1**
MDUB	**Mudurnu**	**2.17**	**50**	*e*Pn	**Pn**	**03 16 07.9**	**+0.1**
EZN	**Ezine**	**2.21**	**290**	P	**Pn**	**03 16 08.2**	**+0.1**
EZN				S	**Sn**	**03 16 35.5**	**-0.3**
EZN	**Ezine**	**2.21**	**290**	P	**Pn**	**03 16 08.2**	**+0.1**
EZN				S	**Sn**	**03 16 35.5**	**-0.3**
CHOS	**Chios island**	**2.42**	**254**	P	**Pn**	**03 16 10.5**	**-0.7**
CHOS				S	**Sn**	**03 16 39.5**	**-1.7**
CHOS	**Chios island**	**2.42**	**254**	P	**Pn**	**03 16 10.5**	**-0.7**
CHOS				S	**Sn**	**03 16 39.5**	**-1.7**
SIGR	**SIGRI**	**2.46**	**274**	P	**Pn**	**03 16 11.1**	**-0.5**
SIGR				S	**Sn**	**03 16 40.9**	**-1.2**
SIGR	**SIGRI**	**2.46**	**274**	P	**Pn**	**03 16 11.1**	**-0.5**
SIGR				S	**Sn**	**03 16 40.9**	**-1.2**
ENEZ	**Enez**	**2.75**	**308**	P	**Pn**	**03 16 16.2**	**+0.7**
ENEZ				S	**Sn**	**03 16 50.2**	**+1.1**
ENEZ	**Enez**	**2.75**	**308**	P	**Pn**	**03 16 16.2**	**+0.7**
ENEZ				S	**Sn**	**03 16 50.2**	**+1.1**
ALN	**Alexandroupoli**	**2.91**	**309**	P	**Pn**	**03 16 17.8**	**+0.1**
ALN				S	**Sn**	**03 16 54.2**	**+1.1**
ALN	**Alexandroupoli**	**2.91**	**309**	P	**Pn**	**03 16 17.8**	**+0.1**
ALN				S	**Sn**	**03 16 54.2**	**+1.1**
SMTH	**Samothraki Isl**	**3.02**	**298**	P	**Pn**	**03 16 19.1**	**+0.2**
SMTH				S	**Sn**	**03 16 56.0**	**+0.1**
EDRB	**Edirne**	**3.25**	**328**	P	**Pn**	**03 16 24.0**	**+1.5**
EDRB				S	**Sn**	**03 17 03.9**	**+2.3**
TIRR	**Tirgusor**	**5.38**	**355**	‖*i*P	**Pn**	**03 16 53.5**	**+1.8**
TIRR	**Tirgusor**	**5.38**	**355**	‖*i*P	**Pn**	**03 16 53.5**	**+1.8**
CFR	**Carcaliu**	**6.11**	**354**	‖*i*P	**Pn**	**03 17 02.6**	**+0.8**
CFR	**Carcaliu**	**6.11**	**354**	‖*i*P	**Pn**	**03 17 02.6**	**+0.8**
MLR	**Muntele Rosu**	**6.79**	**341**	‖*i*P	**Pb**	**03 17 27.0**	**-2.3**
PLOR	**Plostina**	**6.97**	**346**	‖*i*P	Pn	03 17 19.5	+5.8
VRI	**Vrincioaia**	**6.98**	**347**	‖*i*P	**Pn**	**03 17 15.9**	**+2.2**
VRI	**Vrincioaia**	**6.98**	**347**	‖*i*P	**Pn**	**03 17 15.9**	**+2.2**
VOIR		**6.99**	**336**	‖*i*P	**Pn**	**03 17 15.8**	**+1.9**
VOIR		**6.99**	**336**	‖*i*P	**Pn**	**03 17 15.8**	**+1.9**

NIED ***22*** *03:16:00, 39°.80N×142°.30E, h44km, Mw4.3 Best double couple: M₀2.90000×10¹⁵ NP1:φ₀179.00000°, δ12.00000°, λ79.00000°. NP2:φ₀11.00000°, δ78.00000°, λ92.00000°.*
ISCJB ***22*** *03:16:03.3±0.5, 39°.84N±0°.03×142°.29E±0°.06, h53km±3km, mb4.2/29, MS3.5/8, Error ellipse: s-maj=8.0km s-min=4.5km az=16.4*
NEIC ***22*** *03:16:04.8±0.6, 39°.81N×142°.24E, h53km±5km, mb4.5/13, Error ellipse: s-maj=7.3km s-min=4.9km az=126.0*
NEIC Recorded [1 JMA] in Aomori, Iwate and Miyagi.
JMA ***22*** *03:16:04.2±0.1, 39°.83N×142°.27E, h43km±1km, M4.1*
JMA Felt I J1.
IDC ***22*** *03:16:07.6±1.9, 39°.78N×142°.15E, h76km±17km, mb3.8/16, mb1 4.0/22, mb1mx3.8/50, mbtmp4.1/22, MS3.4/14, Ms1 3.4/14, ms1mx3.1/42, Error ellipse: s-maj=16.1km s-min=12.7km az=99.0*

ISC 22 03:16:04.3±1.0, 39°.81N±0°.04×142°.27E±0°.08, h47km±8km, n68, σ1°.12/70, mb4.3/29, MS3.5/8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**0.33**	**292**	P	**Pn**	**03 16 13.2**	**-0.2**
JTH				S	**Sn**	**03 16 19.3**	**-0.6**
MIYJ	**Miyakonagasawa**	**0.42**	**236**	P	**Pn**	**03 16 14.1**	**-0.2**
MIYJ				S	**Sn**	**03 16 21.0**	**-0.4**
JKZ	**Kuzumaki**	**0.74**	**284**	P	**Pn**	**03 16 18.5**	**0.0**
JKZ				S	**Sn**	**03 16 28.5**	**-0.2**
JANG	**Nango**	**0.80**	**315**	P	**Pn**	**03 16 18.6**	**-0.7**
JANG				S	**Sn**	**03 16 28.8**	**-1.4**
JOM	**Ohasama**	**0.82**	**246**	P	**Pn**	**03 16 19.6**	**+0.1**
JOM				S	**Sn**	**03 16 30.6**	**0.0**
OFUJ	**Ofunato**	**0.86**	**212**	P	**Pn**	**03 16 20.1**	**0.0**
OFUJ				S	**Sn**	**03 16 31.3**	**-0.3**
JMK	**Ichinoseki**	**1.18**	**224**	P	**Pn**	**03 16 24.7**	**+0.4**
JMK				S	**Sn**	**03 16 39.7**	**+0.4**
JAH	**Hinai**	**1.31**	**287**	P	**Pn**	**03 16 26.4**	**+0.3**
JAH				eS	**Sn**	**03 16 42.8**	**+0.4**
JRG	**Rokugo**	**1.33**	**252**	P	**Pn**	**03 16 26.6**	**+0.3**
JRG				eS	**Sn**	**03 16 44.6**	**+1.7**
JTM	**Tenmabayashi**	**1.34**	**317**	P	**Pn**	**03 16 26.3**	**-0.2**
JTM				S	**Sn**	**03 16 43.1**	**0.0**
ERM	**Erimo**	**2.30**	**17**	*e*Pn	**Pn**	**03 16 38.8**	**-0.9**
ERM				*e*Sn	**Sn**	**03 17 05.8**	**-1.0**
ASAJ	**Asahikawa**	**4.31**	**3**	P	**Pn**	**03 17 10.1**	**+2.8**
ASAJ				S	**Sn**	**03 17 55.4**	**-0.8**
ASAJ	**Asahikawa**	**4.31**	**3**	*e*Pn	**Pn**	**03 17 08.4**	**+1.2**
ASAJ				S	**Sn**	**03 17 55.4**	**-0.8**
MJAR	**Matsushiro Arr**	**4.57**	**226**	P	**Pn**	**03 17 13.8**	**+3.0**
MJAR				LR	LR	03 19 19.1	
	comp=Z,283nm,21.9s,baz=40,slow=43						
MAJO	**Matsushiro**	**4.57**	**226**	*e*Pn	**Pn**	**03 17 11.5**	**+0.6**
MAT	**Matsushiro**	**4.57**	**226**	P	**Pn**	**03 17 12.6**	**+1.8**
MAT				*e*S	Sn	03 18 11.0	+8.3
JHJ	**Hachijo jima 2**	**6.97**	**197**	P	**Pn**	**03 17 46.3**	**+2.5**
JHJ				S	**Sn**	**03 18 56.8**	**-4.9**
	16nm,0.3s,baz=6.0,slow=19,SNR=4.2						
	5.4nm,0.3s,baz=25,slow=19,SNR=2.5						
USRK	**Ussurisk Ar.**	**8.82**	**303**	P	**Pn**	**03 18 11.9**	**+2.9**
USRK				LR	LR	03 21 29.9	
	0.7nm,0.3s,baz=117,slow=14,SNR=14						
	comp=Z,166nm,18.9s,baz=116,slow=37						
MDJ	**Mudanjiang**	**10.55**	**301**	*e*Pn	**Pn**	**03 18 34.0**	**+1.2**
	37nm,1.1s						
JNU	**Nakatsue**	**11.34**	**237**	P	**Pn**	**03 18 44.0**	**+0.4**
	0.3nm,0.3s,baz=36,slow=8.7,SNR=2.9						
JNU				LR	LR	03 23 52.8	
	comp=Z,108nm,18.1s,baz=130,slow=41						
KSRS	**Korea Array**	**11.46**	**263**	P	Pn	03 18 50.0	+4.8
	0.6nm,0.3s,baz=73,slow=14,SNR=11						
KSRS				LR	LR	03 22 49.6	
	comp=Z,135nm,20.1s,baz=76,slow=35						
KSAR	**Wonju Array Be**	**11.50**	**263**	P	Pn	03 18 50.0	+4.3
KLR	**Kul'dur**	**12.03**	**325**	P	Pn	03 18 57.1	+4.2
	0.1nm,0.3s,baz=101,slow=16,SNR=2.6						
KLR				LR	LR	03 23 33.7	
	comp=Z,127nm,19.5s,baz=128,slow=37						
PETK	**Petropavlovsk-**	**16.98**	**33**	LR	LR	03 26 15.6	
	comp=Z,19nm,18.0s,baz=227,slow=36						
YHNB	**Yeheng**	**23.16**	**236**	*e*P	**P**	**03 21 06.9**	**+0.2**
	5.9nm,0.6s						
ULN	**Ulaanbaatar**	**26.46**	**299**	*e*P	**P**	**03 21 35.8**	**-1.2**
	1.7nm,0.6s						
SONM	**Songino Array**	**26.90**	**299**	P	**P**	**03 21 41.1**	**+0.2**
	1.5nm,0.7s,baz=82,slow=8.0,SNR=10						
SONM				LR	LR	03 33 01.6	
	comp=Z,130nm,18.0s,baz=102,slow=38						
ENH	**Enshi**	**28.34**	**261**	*e*P	**P**	**03 21 53.0**	**-0.8**
	8.9nm,0.6s						
H11N2	**WAKE ISLAND Hy**	**29.12**	**126**	T	T	03 52 36.1	
	baz=318,slow=75,SNR=306						
H11N1	**WAKE ISLAND Hy**	**29.13**	**126**	T	T	03 52 38.4	
	baz=318,slow=75,SNR=432						
H11N3	**WAKE ISLAND Hy**	**29.14**	**126**	T	T	03 52 36.5	
	baz=318,slow=75,SNR=440						
H11S1	**WAKE ISLAND Hy**	**29.93**	**128**	T	T	03 53 44.0	
	baz=320,slow=76,SNR=78						
H11S3	**WAKE ISLAND Hy**	**29.93**	**128**	T	T	03 53 42.9	
	baz=320,slow=76,SNR=79						
H11S2	**WAKE ISLAND Hy**	**29.94**	**128**	T	T	03 53 43.5	
	baz=320,slow=76,SNR=75						
ZALV	**Zalesovo Beam**	**40.59**	**310**	P	**P**	**03 23 39.0**	**-0.1**
	2.7nm,0.5s,baz=80,slow=7.4,SNR=8.7						
ZALV				LR	LR	03 41 08.7	
	comp=Z,49nm,18.2s,baz=68,slow=37						
NRIK	**Noril'sk**	**41.05**	**334**	LR	LR	03 41 45.9	
	comp=Z,73nm,18.1s,baz=131,slow=38						
CMAR	**Chiang Mai Arr**	**42.90**	**253**	P	**P**	**03 23 57.6**	**-0.7**
	0.7nm,0.3s,baz=45,slow=6.6,SNR=5.4						
CMAR				LR	LR	03 41 25.5	
	comp=Z,18nm,18.6s

	baz=233						
TWT				*e*S	Sn	03 24 09.1	+0.6
	baz=233						
TWT	**Tachien**	**0.55**	**233**	*e*P	Pn	03 23 59.9	+1.1
	baz=277						
WHF	**Hehuan Shan**	**0.56**	**220**	*e*P	Pn	03 23 59.0	-0.3
	baz=218						
WHF				S	Sn	03 24 09.3	+0.1
	baz=218						
WHF	**Hehuan Shan**	**0.56**	**220**	P	Pn	03 23 59.0	-0.3
	baz=255						
ALS	**Alishan**	**1.32**	**216**	*e*S	Sn	03 24 26.9	+1.4
	baz=215						

TAP 22 03:23:53.0, 24°.20N×121°.53E, h12km±1km, ML2.0, B, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWD	**Chiawan**	**0.14**	**155**	*e*P	Pb	03 23 57.7	+0.1
	baz=152						
TWD				S	Sg	03 23 59.8	+1.2
	baz=152						
ENA	**Nanau**	**0.29**	**40**	*e*P	Pb	03 24 00.9	+0.6
	baz=41						
ENA				S	Sb	03 24 05.0	-0.2
	baz=41						
TWT	**Tachien**	**0.33**	**279**	*e*S	Sb	03 24 08.2	+1.9
	baz=277						
ESL	**Shilin**	**0.40**	**193**	*e*P	Pb	03 24 01.8	-0.3
	baz=192						
WDT	**Danda**	**0.58**	**220**	*e*P	Pg	03 24 04.3	0.0
	baz=218						

NIED ***22*** *03:25:00, 37°.30N×142°.40E, h11km, Mw3.6 Best double couple: M₀2.38000×10¹⁴ NP1:φs147.00000°, δ29.00000°, λ-157.00000°. NP2:φs36.00000°, δ79.00000°, λ-63.00000°.*
IDC ***22*** *03:25:02.9±1.9, 36°.85N×142°.44E, h0km, mb3.7/5, mb1 3.7/7, mb1mx3.5/46, mbtmp3.6/7, ML2.5/2, MS2.7/1, Ms1 2.7/1, ms1mx2.1/42, Error ellipse: s-maj=51.0km s-min=30.0km az=68.0*
JMA ***22*** *03:25:05.8±0.3, 37°.28N×142°.44E, h4km±4km, M4.0*
ISC 22 03:25:04.1±2.5, 37°.06N±0°.08×142°.50E±0°.10, h7km±13km, n27, σ1°52/27, mb3.8/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.33**	**284**	P	**Pb**	**03 25 29.3**	**-0.1**
ONAJ	**Iwakimizuishiy**	**1.36**	**272**	P	**Pg**	**03 25 30.4**	**+0.2**
JMM	**Marumori**	**1.58**	**301**	P	**Pn**	**03 25 31.8**	**-0.6**
JMM				*e*S	**Sn**	**03 25 51.6**	**-1.5**
JIO	**Ouri**	**1.66**	**327**	P	**Pn**	**03 25 32.4**	**-1.2**
JIO				*e*S	**Sn**	**03 25 52.4**	**-2.8**
JFT	**Otama**	**1.78**	**285**	P	**Pb**	**03 25 36.7**	**-0.4**
JFT				S	**Sn**	**03 25 57.6**	**-0.6**
JOU	**Okura**	**1.95**	**312**	P	**Pn**	**03 25 37.9**	**+0.3**
JOU				*e*S	**Sn**	**03 26 00.6**	**-1.8**
JMK	**Ichinoseki**	**2.14**	**332**	P	**Pn**	**03 25 40.5**	**+0.3**
JYS	**Shirataka**	**2.25**	**302**	P	**Pb**	**03 25 43.9**	**-1.2**
JFY	**Yanaizu**	**2.25**	**280**	P	**Pb**	**03 25 44.9**	**-0.3**
JFY				*e*S	**Sn**	**03 26 10.6**	**+0.7**
JYK	**Kaneyama**	**2.51**	**318**	P	**Pn**	**03 25 46.4**	**+1.1**
JOM	**Ohasama**	**2.59**	**339**	P	**Pn**	**03 25 46.1**	**-0.3**
JRG	**Rokugo**	**2.75**	**328**	P	**Pn**	**03 25 49.2**	**+0.5**
JRG				*e*S	**Sn**	**03 26 20.6**	**-1.6**
MJAR	**Matsushiro Arr**	**3.48**	**263**	Pn	**Pn**	**03 25 55.5**	**-3.1**
	1.2nm,0.3s,baz=95,slow=14,SNR=16						
MAT	**Matsushiro**	**3.48**	**263**	P	**Pn**	**03 25 55.8**	**-2.9**
MAT				S	**Sn**	**03 26 42.0**	**+1.8**
USRK	**Ussuriysk Ar.**	**10.70**	**315**	Pn	**Pn**	**03 27 39.9**	**+2.2**
	0.2nm,0.3s,baz=108,slow=14,SNR=3.8						
KSRS	**Korea Array**	**11.62**	**276**	LR		03 32 33.5	
	comp=Z,36nm,18.1s,baz=10.0,slow=39						
H11N2	**WAKE ISLAND Hy 27.42**	**122**		T	T	03 59 38.3	
	baz=315,slow=75,SNR=70						
H11N1	**WAKE ISLAND Hy 27.43**	**122**		T	T	03 59 37.2	
	baz=315,slow=75,SNR=59						
H11N3	**WAKE ISLAND Hy 27.44**	**122**		T	T	03 59 39.4	
	baz=315,slow=75,SNR=60						
H11S1	**WAKE ISLAND Hy 28.15**	**124**		T	T	04 00 35.3	
	baz=317,slow=76,SNR=47						
H11S3	**WAKE ISLAND Hy 28.15**	**125**		T	T	04 00 34.7	
	baz=317,slow=76,SNR=36						
H11S2	**WAKE ISLAND Hy 28.17**	**124**		T	T	04 00 35.8	
	baz=317,slow=76,SNR=37						
SONM	**Songino Array**	**28.49**	**304**	P	**P**	**03 31 01.5**	**+1.5**
	1.3nm,0.7s,baz=93,slow=9.4,SNR=8.1						
MKAR	**Makanchi Array**	**44.84**	**302**	P	**P**	**03 33 19.7**	**+1.0**
	0.7nm,0.7s,baz=91,slow=9.7,SNR=4.0						
WRA	**Warramunga Arr**	**57.22**	**189**	P	**P**	**03 34 50.7**	**-1.3**
	0.3nm,0.8s,baz=2.6,slow=7.5,SNR=4.0						
FINES	**FINESS Array B**	**69.19**	**333**	P	**P**	**03 36 11.2**	**+0.2**
	1.4nm,0.9s,baz=55,slow=7.3,SNR=3.2						
AKASG	**Malin Array Be**	**74.80**	**323**	P	**P**	**03 36 45.3**	**+0.5**
	0.5nm,0.4s,baz=49,slow=6.1,SNR=3.1						

ISCJB ***22*** *03:27:06.0±0.6, 39°.10N±0°.05×29°.04E±0°.05, h10km±7km, Error ellipse: s-maj=9.8km s-min=5.0km az=150.4*
ISK ***22*** *03:27:05.1, 39°.05N×29°.14E, h17km, MD2.5*
DDA ***22*** *03:27:06.3, 39°.09N×29°.04E, h7km, Md2.7*
CSEM ***22*** *03:27:06.0±0.1, 39°.10N×29°.04E, h10km, MD2.5, Error ellipse: s-maj=3.3km s-min=2.6km az=128.0*
ISC 22 03:27:05.8±1.0, 39°.08N±0°.03×29°.07E±0°.03, h13km±9km, n18, σ0°.20/28, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**262**	P	**Pg**	**03 27 11.7**	**+0.1**
DEMI				S	**Sg**	**03 27 15.3**	**-0.2**
DEMI	**Demirci**	**0.27**	**262**	*i* P	**Pg**	**03 27 11.7**	**+0.1**
DEMI				*i* S	**Sg**	**03 27 15.3**	**-0.2**
GDZ	**Gediz**	**0.32**	**89**	P	**Pb**	**03 27 13.7**	**+0.2**
GDZ				S	**Sb**	**03 27 18.4**	**-0.3**
GDZ	**Gediz**	**0.32**	**89**	*i* P	**Pb**	**03 27 13.7**	**+0.2**
GDZ				*i* S	**Sb**	**03 27 18.4**	**-0.3**
TVSB	**Tavsanli**	**0.48**	**40**	*e*PG	**Pg**	**03 27 15.2**	**-0.2**
TVSB				*e*SG	**Sg**	**03 27 22.0**	**+0.2**
TVSB	**Tavsanli**	**0.48**	**40**	*e*Pg	**Pg**	**03 27 15.2**	**-0.2**
TVSB				*e*Sg	**Sg**	**03 27 22.0**	**+0.2**
KULA	**Kula-Manisa**	**0.65**	**209**	*e*PG	**Pg**	**03 27 18.6**	**+0.1**
KULA				*e*SG	**Sb**	**03 27 27.8**	**-0.2**
KULA	**Kula-Manisa**	**0.65**	**209**	*e*Pg	**Pg**	**03 27 18.6**	**+0.1**
KULA				*e*Sg	**Sb**	**03 27 27.8**	**-0.2**
DURS	**Dursunbey**	**0.69**	**319**	P	**Pg**	**03 27 19.4**	**+0.1**
DURS	**Dursunbey**	**0.69**	**319**	*i* P	**Pg**	**03 27 19.4**	**+0.1**
IZI	**Iznik**	**1.29**	**14**	*e*PN	**Pn**	**03 27 29.6**	**0.0**
IZI	**Iznik**	**1.29**	**14**	*e*Pn	**Pn**	**03 27 29.6**	**0.0**
MDNY	**Mudanya-Bursa**	**1.29**	**354**	*e*PN	**Pn**	**03 27 29.4**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.29**	**354**	*e*Pn	**Pn**	**03 27 29.4**	**-0.1**
KCTX	**Karacabey (Bur**	**1.30**	**335**	*e*PN	**Pb**	**03 27 30.0**	**-0.1**
KCTX				*e*SN	**Sg**	**03 27 48.1**	**+0.3**
KCTX	**Karacabey (Bur**	**1.30**	**335**	*e*Pn	**Pb**	**03 27 30.0**	**-0.1**
KCTX				*e*Sn	**Sg**	**03 27 48.2**	**+0.3**
ARMT	**Armutlu**	**1.49**	**354**	*e*PN	**Pn**	**03 27 32.5**	**+0.2**
ARMT	**Armutlu**	**1.49**	**354**	*e*Pn	**Pn**	**03 27 32.5**	**+0.2**

SKO 22 03:30:25.2, 40°.51N×20°.99E, h0km, M0.7, ML1.2, Greece-Albania border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BIA	**Bitola**	**0.57**	**26**	*i* Pg	Pg	03 30 36.2	+0.1
BIA				*e*Sg	Sg	03 30 43.1	-0.3
OHR	**Ohrid**	**0.62**	**346**	*i* Pg	Pg	03 30 36.6	-0.4
OHR				*e*Lg	Lg	03 30 43.0	
	comp=N,6.4nm,1.1s						
OHR				*e*Sg	Sg	03 30 44.4	-0.7
OHR				*e*Lg	Lg	03 30 44.6	
	comp=E,2.9nm,0.3s						

IDC 22 03:39:09.9±2.5, 26°.83N×143°.65E, h0km, mb3.5/2, mb1 3.8/3, mb1mx3.4/34, mbtmp3.5/3, ML3.5/1, MS3.5/1, Ms1 3.6/1, ms1mx2.5/33, Error ellipse: s-maj=50.2km s-min=22.3km az=46.0, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCJ	**Chichijima**	**1.33**	**282**	Pn	Pn	03 39 36.8	+0.9
	5.2nm,0.3s,baz=107,slow=19,SNR=14						
JCJ				Sn	Sb	03 39 53.4	0.0
	53nm,0.3s,baz=15,slow=20,SNR=23						
MJAR	**Matsushiro Arr**	**10.73**	**336**	Pn	Pn	03 41 43.6	-1.3
	0.3nm,0.3s,baz=149,slow=12,SNR=5.5						
WRA	**Warramunga Arr**	**47.36**	**192**	P	P	03 47 45.4	-0.4
	1.5nm,0.8s,baz=13,slow=8.6,SNR=7.9						
ASAR	**Alice Springs**	**51.07**	**192**	P	P	03 48 14.3	0.0
	0.1nm,0.6s,baz=9.2,slow=7.5,SNR=3.3						
ILAR	**Eielson Array**	**57.33**	**28**	LR	LR	04 16 05.3	
	comp=Z,38nm,18.3s,baz=168,slow=39						

ISK ***22*** *03:40:04.9, 39°.15N×29°.04E, h2km, MD2.8*
ISCJB ***22*** *03:40:05.5±0.5, 39°.13N±0°.04×29°.02E±0°.04, h4km±6km, Error ellipse: s-maj=6.8km s-min=3.8km az=151.2*
CSEM ***22*** *03:40:05.7±0.1, 39°.14N×29°.03E, h5km, MD2.7, Error ellipse: s-maj=2.5km s-min=1.8km az=136.0*
DDA ***22*** *03:40:05.5, 39°.10N×29°.03E, h7km, Md2.7*
ISC 22 03:40:06.0±1.0, 39°.14N±0°.03×29°.03E±0°.02, h6km±13km, n48, σ0°.38/58, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**248**	P	**Pg**	**03 40 11.3**	**+0.1**
DEMI				S	**Sg**	**03 40 14.6**	**-0.1**
DEMI	**Demirci**	**0.26**	**248**	*i* P	**Pg**	**03 40 11.3**	**+0.1**
DEMI				*i* S	**Sg**	**03 40 14.6**	**-0.1**
GDZ	**Gediz**	**0.36**	**99**	P	**Pg**	**03 40 12.9**	**-0.1**
GDZ				S	**Sg**	**03 40 17.9**	**+0.2**
GDZ	**Gediz**	**0.36**	**99**	*i* P	**Pg**	**03 40 12.9**	**-0.1**
GDZ				*i* S	**Sg**	**03 40 17.9**	**+0.2**
TVSB	**Tavsanli**	**0.45**	**48**	PG	**Pg**	**03 40 14.5**	**-0.3**
TVSB				SG	**Sg**	**03 40 21.4**	**+0.6**
TVSB	**Tavsanli**	**0.45**	**48**	*i* Pg	**Pg**	**03 40 14.5**	**-0.3**
TVSB				*i* Sg	**Sg**	**03 40 21.4**	**+0.6**
KULA	**Kula-Manisa**	**0.69**	**205**	*e*PG	**Pg**	**03 40 18.8**	**-0.5**
KULA	**Kula-Manisa**	**0.69**	**205**	*e*Pg	**Pg**	**03 40 18.8**	**-0.5**
MANT	**Manisa**	**0.75**	**210**	P	**Pg**	**03 40 19.9**	**-0.5**
MANT				S	**Sg**	**03 40 29.3**	**-0.8**
MANT	**Manisa**	**0.75**	**210**	*i* P	**Pg**	**03 40 19.9**	**-0.5**
MANT				*i* S	**Sg**	**03 40 29.3**	**-0.8**
KHL	**Karahalli**	**0.91**	**155**	*e*PG	**Pg**	**03 40 23.2**	**-0.2**
KHL	**Karahalli**	**0.91**	**155**	*e*Pg	**Pg**	**03 40 23.2**	**-0.2**
ORLT	**Orhaneli**	**0.91**	**354**	*e*PG	**Pg**	**03 40 23.0**	**-0.4**
ORLT	**Orhaneli**	**0.91**	**354**	*e*Pg	**Pg**	**03 40 23.0**	**-0.4**
AKHS	**Akhisar**	**0.98**	**255**	P	**Pg**	**03 40 25.1**	**+0.2**
AKHS				S	**Sg**	**03 40 37.8**	**+0.2**
AKHS	**Akhisar**	**0.98**	**255**	*i* P	**Pg**	**03 40 25.1**	**+0.2**
AKHS				*i* S	**Sg**	**03 40 37.8**	**+0.2**
AKS	**Akhisar**	**0.98**	**255**	*e*PG	**Pg**	**03 40 24.9**	**0.0**
AKS	**Akhisar**	**0.98**	**255**	*e*Pg	**Pg**	**03 40 24.9**	**0.0**
BALB	**Balikesir**	**1.02**	**299**	*e*PG	**Pg**	**03 40 25.7**	**+0.2**
BALB	**Balikesir**	**1.02**	**299**	*e*Pg	**Pg**	**03 40 25.7**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.23**	**355**	*e*PN	**Pg**	**03 40 29.0**	**-0.6**
MDNY	**Mudanya-Bursa**	**1.23**	**355**	*e*Pn	**Pg**	**03 40 29.0**	**-0.6**
CAVI	**Cavuskoy**	**1.23**	**30**	*e*PN	**Pg**	**03 40 29.2**	**-0.4**
CAVI	**Cavuskoy**	**1.23**	**30**	*e*Pn	**Pg**	**03 40 29.2**	**-0.4**
KCTX	**Karacabey (Bur**	**1.23**	**335**	*e*PN	**Pg**	**03 40 29.0**	**-0.7**
KCTX	**Karacabey (Bur**	**1.23**	**335**	*e*Pn	**Pg**	**03 40 29.0**	**-0.7**
IZI	**Iznik**	**1.24**	**16**	*e*PN	**Pg**	**03 40 29.2**	**-0.6**
IZI	**Iznik**	**1.24**	**16**	*e*Pn	**Pg**	**03 40 29.2**	**-0.6**
GONE	**Gonen-Balikesi**	**1.37**	**311**	*e*PN	**Pb**	**03 40 32.2**	**+0.1**
GONE	**Gonen-Balikesi**	**1.37**	**311**	*e*Pn	**Pb**	**03 40 32.2**	**+0.1**
ADVT	**Abdulvahap**	**1.40**	**23**	*e*PN	**Pn**	**03 40 32.1**	**0.0**
ADVT	**Abdulvahap**	**1.40**	**23**	*e*Pn	**Pn**	**03 40 32.1**	**0.0**
ARMT	**Armutlu**	**1.43**	**355**	*e*PN	**Pn**	**03 40 32.4**	**-0.1**
ARMT	**Armutlu**	**1.43**	**355**	*e*Pn	**Pn**	**03 40 32.4**	**-0.1**
EDC	**Edincik**	**1.50**	**324**	*e*PN	**Pn**	**03 40 33.8**	**+0.3**
EDC	**Edincik**	**1.50**	**324**	*e*Pn	**Pn**	**03 40 33.8**	**+0.3**
GULT	**Gulveren**	**1.72**	**41**	*e*PN	**Pn**	**03 40 36.8**	**+0.1**
GULT	**Gulveren**	**1.72**	**41**	*e*Pn	**Pn**	**03 40 36.8**	**+0.1**
HRT	**Hereke**	**1.75**	**16**	*e*PN	**Pn**	**03 40 37.1**	**+0.1**
HRT	**Hereke**	**1.75**	**16**	*e*Pn	**Pn**	**03 40 37.1**	**+0.1**
SPNC	**Sapanca-Adapaz**	**1.83**	**32**	*e*PN	**Pn**	**03 40 38.2**	**+0.2**
SPNC	**Sapanca-Adapaz**	**1.83**	**32**	*e*Pn	**Pn**	**03 40 38.2**	**+0.2**
ISK	**Istanbul-Kandi**	**1.92**	**1**	*e*PN	**Pn**	**03 40 39.6**	**+0.3**
ISK	**Istanbul-Kandi**	**1.92**	**1**	*e*Pn	**Pn**	**03 40 39.6**	**+0.3**
SVRH	**Sivrihisar-ESK**	**1.96**	**80**	*e*PN	**Pn**	**03 40 40.3**	**+0.4**
SVRH	**Sivrihisar-ESK**	**1.96**	**80**	*e*Pn	**Pn**	**03 40 40.3**	**+0.4**
MDUB	**Mudurnu**	**2.13**	**51**	*e*PN	**Pn**	**03 40 42.5**	**+0.2**
MDUB	**Mudurnu**	**2.13**	**51**	*e*Pn	**Pn**	**03 40 42.5**	**+0.2**

CSEM ***22*** *03:55:14.1±0.6, 40°.55N×20°.71E, h2km, ML1.3, Error ellipse: s-maj=12.8km s-min=3.7km az=95.0*
SKO ***22*** *03:55:18.6, 40°.55N×21°.03E, h12km, M0.8, ML1.3*
THE 22 03:55:15.4, 40°.56N×20°.81E, h2km±22km, ML1.3/2, Error ellipse: s-maj=22.9km s-min=0.6km az=0.0, Greece-Albania border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NEST	**Nestorio**	**0.23**	**129**	P	Pg	03 55 19.5	-0.3
NEST				S	Sg	03 55 23.7	+0.8
NEST	**Nestorio**	**0.23**	**129**	P	Pg	03 55 19.5	-0.3
NEST				S	Sg	03 55 23.7	+0.8
PENT	**Pentalofos**	**0.44**	**145**	P	Pg	03 55 23.8	0.0
PENT				S	Sg	03 55 30.1	+0.5
PENT	**Pentalofos**	**0.44**	**145**	P	Pg	03 55 23.8	0.0
PENT				S	Sg	03 55 30.1	+0.5
FNA	**Florina**	**0.48**	**62**	P	Pg	03 55 24.6	-0.1
FNA				S	Sg	03 55 31.6	+0.6
FNA	**Florina**	**0.48**	**62**	P	Pg	03 55 24.6	-0.1
FNA				S	Sg	03 55 31.6	+0.6
OHR	**Ohrid**	**0.55**	**359**	*i* Pg	Pn	03 55 30.0	-0.4
OHR				*i* Sg	Sn	03 55 38.3	-1.9
OHR				*e*Lg	Lg	03 55 38.7	
	comp=E,7.5nm,0.3s						
OHR				*e*Lg	Lg	03 55 39.3	
	comp=N,3.9nm,0.3s						
OHR	**Ohrid**	**0.55**	**359**	*e*Lg	Lg	03 55 38.6	
	comp=N,7.5nm,0.3s						
BIA	**Bitola**	**0.60**	**40**	P	Pg	03 55 26.9	0.0
BIA				S	Sg	03 55 35.7	+0.9
BIA	**Bitola**	**0.60**	**40**	*i* Pg	Pg	03 55 27.4	+0.4
BIA				*i* Sg	Sb	03 55 37.3	-0.4
BIA	**Bitola**	**0.60**	**40**	P	Pg	03 55 26.9	0.0
BIA	**Bitola**	**0.60**	**40**	*i* Pg	Pg	03 55 27.3	+0.4
BIA				S	Sg	03 55 35.7	+0.9
BIA				*i* Sg	Sb	03 55 37.3	-0.4
KPRO	**Kipourio**	**0.74**	**145**	P	Pg	03 55 29.3	-0.2
KPRO	**Kipourio**	**0.74**	**145**	P	Pg	03 55 29.3	-0.2

BKK 22 04:00:32.9±1.2, 21°N±6°×100°E±°, h10km, MLv3.8/5, Laos

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRAI	**Chiangrai**	**0.51**	**169**	P	Pg	04 00 43.0	+0.2
CRAI				S	Sg	04 00 49.5	0.0
LAMP	**Lampang**	**2.28**	**195**	P	Pn	04 01 10.9	+0.3
LAMP				S	Sb	04 01 41.4	-1.0
CHTO	**Chiang Mai**	**2.28**	**213**	P	Pn	04 01 10.8	+0.2
CHTO				S	Sb	04 01 41.3	-1.1
UTTA	**Uttaradit**	**2.98**	**175**	P	Pn	04 01 21.1	+0.8
UTTA				S	Sb	04 02 01.6	-1.1
SUKH	**Sukhothai**	**3.29**	**191**	P	Pn	04 01 24.0	-0.5
LOEI	**Loei**	**3.34**	**163**	P	Pn	04 01 27.9	+2.7

ISCJB ***22*** *04:01:19.4±0.4, 39°.11N±0°.03×29°.10E±0°.03, h7km±4km, Error ellipse: s-maj=4.7km s-min=3.7km az=144.0*
CSEM ***22*** *04:01:19.5±0.1, 39°.12N×29°.08E, h5km, MD2.9, Error ellipse: s-maj=3.2km s-min=2.5km az=124.0*
ISK ***22*** *04:01:19.1, 39°.14N×29°.10E, h5km, MD2.9*
DDA ***22*** *04:01:19.0, 39°.13N×29°.09E, h7km, Md2.9*
ISC 22 04:01:19.1±0.9, 39°.13N±0°.02×29°.08E±0°.02, h13km±9km, n56, σ0°.47/68, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.30**	**254**	P	**Pb**	**04 01 26.2**	**-0.2**
DEMI				S	**Sb**	**04 01 30.4**	**-0.8**
DEMI	**Demirci**	**0.30**	**254**	*i* P	**Pb**	**04 01 26.2**	**-0.2**
DEMI				*i* S	**Sb**	**04 01 30.4**	**-0.8**
GDZ	**Gediz**	**0.31**	**97**	P	**Pg**	**04 01 25.9**	**+0.3**
GDZ				S	**Sg**	**04 01 30.3**	**+0.3**
GDZ	**Gediz**	**0.31**	**97**	*i* P	**Pg**	**04 01 25.9**	**+0.3**
GDZ				*i* S	**Sg**	**04 01 30.3**	**+0.3**
TVSB	**Tavsanli**	**0.44**	**42**	*e*PG	**Pb**	**04 01 28.2**	**-0.6**
TVSB				*e*SG	**Sg**	**04 01 33.6**	**-0.1**
TVSB	**Tavsanli**	**0.44**	**42**	*e*Pg	**Pb**	**04 01 28.2**	**-0.6**
TVSB				*e*Sg	**Sg**	**04 01 33.7**	**-0.1**
DURS	**Dursunbey**	**0.67**	**315**	P	Pn	04 01 41.6	+7.2
DURS				S	**Sn**	**04 01 45.3**	**+0.5**
DURS	**Dursunbey**	**0.67**	**315**	*i* P	Pn	04 01 41.6	+7.2
DURS				*i* S	**Sn**	**04 01 45.3**	**+0.5**
KULA	**Kula-Manisa**	**0.69**	**209**	*e*PG	**Pb**	**04 01 33.1**	**0.0**
KULA	**Kula-Manisa**	**0.69**	**209**	*e*Pg	**Pb**	**04 01 33.1**	**0.0**
MANT	**Manisa**	**0.76**	**213**	P	**Pb**	**04 01 34.2**	**0.0**
MANT				S	**Sg**	**04 01 44.1**	**+0.3**
MANT	**Manisa**	**0.76**	**213**	*i* P	**Pb**	**04 01 34.2**	**0.0**
MANT				*i* S	**Sg**	**04 01 44.1**	**+0.3**
KHAL	**Karahalli**	**0.82**	**157**	P	**Pg**	**04 01 34.0**	**-1.0**
KHAL				S	**Sb**	**04 01 46.5**	**+0.3**
KHAL	**Karahalli**	**0.82**	**157**	*i* P	**Pg**	**04 01 34.0**	**-1.0**
KHAL				*i* S	**Sb**	**04 01 46.5**	**+0.3**
KHL	**Karahalli**	**0.87**	**157**	*e*PG	**Pb**	**04 01 36.3**	**+0.2**
KHL	**Karahalli**	**0.87**	**157**	*e*Pg	**Pb**	**04 01 36.3**	**+0.2**
ORLT	**Orhaneli**	**0.93**	**351**	*e*PG	**Pb**	**04 01 37.1**	**0.0**
ORLT	**Orhaneli**	**0.93**	**351**	*e*Pg	**Pb**	**04 01 37.1**	**0.0**
AKHS	**Akhisar**	**1.02**	**256**	P	**Pb**	**04 01 37.6**	**-1.0**
AKHS				S	**Sn**	**04 01 53.3**	**0.0**
AKHS	**Akhisar**	**1.02**	**256**	*i* P	**Pb**	**04 01 37.6**	**-1.0**
AKHS				*i* S	**Sn**	**04 01 53.3**	**0.0**
AKS	**Akhisar**	**1.02**	**256**	*e*PG	**Pn**	**04 01 39.5**	**+0.5**
AKS	**Akhisar**	**1.02**	**256**	*e*Pg	**Pn**	**04 01 39.6**	**+0.5**
BALB	**Balikesir**	**1.06**	**299**	*e*PG	**Pn**	**04 01 40.4**	**+0.7**
BALB	**Balikesir**	**1.06**	**299**	*e*Pg	**Pn**	**04 01 40.4**	**+0.7**
CAVI	**Cavuskoy**	**1.23**	**28**	*e*PN	**Pg**	**04 01 42.5**	**-0.2**
CAVI	**Cavuskoy**	**1.23**	**28**	*e*Pn	**Pg**	**04 01 42.5**	**-0.2**
IZI	**Iznik**	**1.25**	**14**	*e*PN	**Pg**	**04 01 43.0**	**-0.1**
IZI	**Iznik**	**1.25**	**14**	*e*Pn	**Pg**	**04 01 43.0**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.25**	**353**	*e*PN	**Pg**	**04 01 43.0**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.25**	**353**	*e*Pn	**Pg**	**04 01 43.0**	**-0.2**
KCTX	**Karacabey (Bur**	**1.27**	**334**	*e*PN	**Pg**	**04 01 43.3**	**-0.3**
KCTX	**Karacabey (Bur**	**1.27**	**334**	*e*Pn	**Pg**	**04 01 43.3**	**-0.3**
GEMT	**Gemlik**	**1.31**	**4**	*e*PN	**Pg**	**04 01 44.1**	**-0.3**
GEMT	**Gemlik**	**1.31**	**4**	*e*Pn	**Pg**	**04 01 44.1**	**-0.3**
ADVT	**Abdulvahap**	**1.40**	**21**	*e*PN	**Pg**	**04 01 45.7**	**-0.4**
ADVT	**Abdulvahap**	**1.40**	**21**	*e*Pn	**Pg**	**04 01 45.7**	**-0.4**
GONE	**Gonen-Balikesi**	**1.42**	**311**	*e*PN	**Pg**	**04 01 46.4**	**0.0**
GONE	**Gonen-Balikesi**	**1.42**	**311**	*e*Pn	**Pg**	**04 01 46.4**	**0.0**
ARMT	**Armutlu**	**1.45**	**353**	*e*PN	**Pg**	**04 01 46.8**	**-0.2**
ARMT	**Armutlu**	**1.45**	**353**	*e*Pn	**Pg**	**04 01 46.8**	**-0.2**
GPA	**Golpazari**	**1.50**	**39**	*e*PN	**Pg**	**04 01 47.9**	**-0.1**
GPA	**Golpazari**	**1.50**	**39**	*e*Pn	**Pg**	**04 01 47.9**	**-0.1**
EDC	**Edincik**	**1.54**	**323**	*e*PN	**Pb**	**04 01 47.9**	**+0.4**
EDC	**Edincik**	**1.54**	**323**	*e*Pn	**Pb**	**04 01 47.9**	**+0.4**
GULT	**Gulveren**	**1.71**	**40**	*e*PN	**Pb**	**04 01 50.3**	**-0.2**
GULT	**Gulveren**	**1.71**	**40**	*e*Pn	**Pb**	**04 01 50.3**	**-0.2**
HRT	**Hereke**	**1.75**	**15**	*e*PN	**Pb**	**04 01 51.3**	**+0.1**
HRT	**Hereke**	**1.75**	**15**	*e*Pn	**Pb**	**04 01 51.3**	**+0.1**
SPNC	**Sapanca-Adapaz**	**1.82**	**31**	*e*PN	**Pb**	**04 01 51.6**	**-0.7**
SPNC	**Sapanca-Adapaz**	**1.82**	**31**	*e*Pn	**Pb**	**04 01 51.6**	**-0.7**
SVRH	**Sivrihisar-ESK**	**1.92**	**80**	*e*PN	**Pb**	**04 01 53.5**	**-0.5**
SVRH	**Sivrihisar-ESK**	**1.92**	**80**	*e*Pn	**Pb**	**04 01 53.5**	**-0.5**
ISK	**Istanbul-Kandi**	**1.94**	**359**	*e*PN	**Pb**	**04 01 53.5**	**-0.8**
ISK	**Istanbul-Kandi**	**1.94**	**359**	*e*Pn	**Pb**	**04 01 53.5**	**-0.8**
MDUB	**Mudurnu**	**2.11**	**50**	*e*PN	**Pb**	**04 01 56.5**	**-0.8**
MDUB	**Mudurnu**	**2.11**	**50**	*e*Pn	**Pb**	**04 01 56.5**	**-0.8**

NIED ***22*** *04:04:00, 34°.90N×142°

KLR LR LR 04 14 44.8
comp=Z,130nm,18.7s,baz=160,slow=37
PETK Petropavlovsk- 20.99 25 LR LR 04 16 17.6
comp=Z,35nm,20.3s,baz=155,slow=34
BJI Beijing 21.86 292 P **P** **04 09 24.3 -1.3**
BJI S **S** **04 13 18.9 -7.0**
BJI pmax pmax
comp=Z,11nm,1.0s
BJI pmax pmax
comp=Z,98nm,3.9s
BJI LR LR
comp=N,180nm,23.4s
BJI LR LR
comp=E,110nm,26.2s
BJI LR LR
comp=Z,250nm,31.8s
WHN Wuhan 24.45 268 *e*P **P** **04 09 50.9 -0.8**
WHN S **S** **04 14 08.3 -1.9**
WHN LR LR
comp=N,260nm,9.7s
WHN LR LR
comp=E,600nm,11.6s
WHN LR LR
comp=Z,730nm,14.2s
HHC Hu-ho-hao-te 25.43 293 *e*P **P** **04 10 03.8 +3.2**
HHC S **S** **04 14 26.8 +0.8**
HHC pmax pmax
comp=Z,26nm,0.9s
HHC pmax pmax
comp=Z,100nm,4.2s
HHC LR LR
comp=N,220nm,11.8s
HHC LR LR
comp=E,320nm,12.8s
HHC LR LR
comp=Z,360nm,12.1s
H11N2 WAKE ISLAND Hy 25.96 119 T T 04 37 24.6
baz=311,slow=75,SNR=16
H11N1 WAKE ISLAND Hy 25.97 119 T T 04 37 23.3
baz=311,slow=75,SNR=13
H11N3 WAKE ISLAND Hy 25.98 119 T T 04 37 24.1
baz=311,slow=75,SNR=14
H11S3 WAKE ISLAND Hy 26.63 122 T T 04 38 12.8
baz=312,slow=75,SNR=19
H11S1 WAKE ISLAND Hy 26.63 122 T T 04 38 06.3
baz=312,slow=75,SNR=16
H11S2 WAKE ISLAND Hy 26.65 122 T T 04 38 16.2
baz=312,slow=75,SNR=17
XAN Xi'an 28.03 278 P **P** **04 10 23.8 -0.3**
XAN pP sP 04 10 33.4 -1.5
XAN S **S** **04 15 12.0 +4.9**
XAN pmax pmax
comp=Z,16nm,1.0s
XAN pmax pmax
comp=Z,66nm,5.4s
XAN LR LR
comp=N,120nm,21.2s
XAN LR LR
comp=E,180nm,22.2s
XAN LR LR
comp=Z,160nm,23.2s
YAK Yakutsk 28.44 347 *e*P **P** **04 10 26.9 -0.4**
YAK *e* 04 11 24.7
YAK pmax pmax
comp=Z,10.0nm,0.8s
YAK pmax pmax
comp=N,2.0nm,0.8s
YAK pmax pmax
comp=Z,29nm,2.7s
YAK pmax pmax
comp=N,19nm,2.5s
YAK pmax pmax
comp=E,24nm,2.7s
YAK MLR MLR
comp=Z,139nm,14.0s
YAK MLR MLR
comp=N,123nm,13.0s
ENH Enshi 28.53 270 *e*P **P** **04 10 27.8 -0.7**
comp=N,10nm,0.5s
SEY Seymchan 28.68 9 P **P** **04 10 30.2 +0.7**
comp=N,3.2nm,0.6s,baz=201,slow=8.8,SNR=12
SEY Seymchan 28.68 9*ce*P **P** **04 10 30.7 +1.3**
ULN Ulaanbaatar 29.64 307*ce*P **P** **04 10 38.8 +0.4**
ULN pmax pmax
comp=Z,8.0nm,1.7s
ULN Ulaanbaatar 29.64 307 *e*P **P** **04 10 38.9 +0.5**
comp=Z,2.3nm,0.6s
SONA1 Songino Array 30.07 307 *e*P **P** **04 10 42.4 +0.3**
SONM Songino Array 30.07 307 P **P** **04 10 43.1 +1.0**
comp=Z,2.2nm,0.7s,baz=108,slow=8.6,SNR=8.8
SONM LR LR 04 24 20.8
comp=Z,37nm,18.0s,baz=124,slow=40
LZH Lanzhou 31.76 284 *e*P **P** **04 10 57.8 +0.6**
LZH pP sP 04 11 07.3 -0.8
LZH sP pP 04 11 11.3 +6.4
LZH *e*PP **PnPn** **04 12 02.3 +0.7**
LZH pmax pmax
comp=Z,20nm,1.2s
LZH pmax pmax
comp=Z,63nm,4.8s
LZH LR LR
comp=N,290nm,12.7s
LZH LR LR
comp=E,290nm,13.2s
LZH LR LR
comp=Z,370nm,16.5s
CD2 Chengdu 33.04 274 P **P** **04 11 07.3 -1.0**
CD2 pmax pmax
comp=Z,1.0nm,0.6s
GTA Gaotai 34.47 290 *e*P **P** **04 11 22.6 +1.8**
GTA pP sP 04 11 32.3 +0.6
GTA sP pP 04 11 36.3 +7.8
GTA PcP **PcP** **04 13 57.3 +1.6**
GTA S **S** **04 16 48.8 +1.1**
GTA sS sS 04 17 04.9 +4.5
GTA SS **SnSn** **04 19 01.6 +2.4**
GTA pmax pmax
comp=Z,5.0nm,0.8s
GTA pmax pmax
comp=Z,120nm,4.0s
GTA LR LR
comp=N,110nm,14.7s
GTA LR LR
comp=E,150nm,14.5s
GTA LR LR
comp=Z,160nm,14.0s
BILL Bilibino 35.75 15⅞ *e*P **P** **04 11 31.9 +0.6**
BILL *PP **sP** **04 11 42.0 -0.2**
BILL 04 14 03.0
BILL pmax pmax
comp=Z,7.0nm,1.6s
BILL MLR MLR
comp=Z,55nm,16.0s
BILL Bilibino 35.75 15 *e*P **P** **04 11 31.7 +0.5**
KMI Kunming 35.99 265 P **P** **04 11 35.0 +0.9**
KMI pmax pmax
comp=Z,10.0nm,0.7s
KMI pmax pmax
comp=Z,55nm,3.7s
TIXI Tiksi 37.57 353*d i*P **P** **04 11 47.0 +0.2**
TIXI pmax pmax
comp=Z,2.0nm,0.6s
CMAR Chiang Mai Arr 42.27 259 P **P** **04 12 26.2 -0.2**
comp=Z,2.5nm,0.5s,baz=55,slow=7.2,SNR=6.8
CMAR LR LR 04 30 47.6
comp=Z,52nm,20.1s,baz=66,slow=37
WMQ Urumqi 42.98 299 P **P** **04 12 32.3 +0.3**
WMQ pP pP 04 12 40.4 +0.6
WMQ sP sP 04 12 48.8 +5.8
WMQ pmax pmax
comp=Z,6.0nm,2.0s
WMQ pmax pmax
comp=Z,55nm,3.6s
WMQ LR LR
comp=N,77nm,17.0s
WMQ LR LR
comp=E,51nm,7.4s
WMQ LR LR
comp=Z,35nm,22.8s
ZAA0 Zalesovo Array 44.31 314 *e*P **P** **04 12 43.1 +0.6**
ZALV Zalesovo Beam 44.31 314 P **P** **04 12 42.7 +0.2**
comp=Z,1.7nm,0.5s,baz=98,slow=9.1,SNR=5.2
ZALV LR LR 04 31 08.5
comp=Z,45nm,19.9s,baz=68,slow=36
KSM Kuching 45.07 230 *e*P **P** **04 12 48.8 -0.2**
comp=Z,11nm,1.0s

NVS Novosibirsk 45.26 315 *e*P P 04 12 58.8 +8.8
NRIK Noril'sk 45.75 336 P **P** **04 12 52.1 -1.6**
comp=Z,1.2nm,0.3s,baz=81,slow=3.3,SNR=3.9
MK01 Makanchi Array 46.36 304 *e*P **P** **04 12 59.2 +0.3**
MK31 Makanchi Array 46.36 304 *e*P **P** **04 12 59.3 +0.4**
MK31 Makanchi Array 46.36 304 *e*P **P** **04 12 59.3 +0.4**
MKAR Makanchi Array 46.36 304 P **P** **04 12 59.2 +0.3**
comp=Z,2.6nm,0.7s,baz=90,slow=9.7,SNR=9.8
MKAR LR LR 04 33 13.8
comp=Z,44nm,18.1s,baz=88,slow=37
KURK Kurchatov 48.28 310 *e*P **P** **04 13 13.6 -0.1**
KURK pmax pmax
comp=Z,10.0nm,0.8s
KURK Kurchatov 48.28 310 *e*P **P** **04 13 13.6 -0.1**
comp=Z,9.8nm,0.8s
ILAR Eielson Array 50.64 31 P **P** **04 13 32.1 +0.6**
comp=Z,0.7nm,0.7s,baz=268,slow=6.3,SNR=8.1
TKM2 Tokmak 2 51.80 300 *e*P **P** **04 13 40.5 -0.3**
TKM2 pmax pmax
comp=Z,14nm,1.1s
TKM2 Tokmak 2 51.80 300 *e*P **P** **04 13 40.5 -0.3**
comp=Z,14nm,1.1s
DOT Dot Lake 51.89 33 *e*P **P** **04 13 41.6 +0.6**
comp=Z,3.0nm,0.7s
KSH Kashi 52.48 296 *e*P **P** **04 13 49.5 +3.7**
KSH *e*pP sP 04 13 59.8 +2.9
KSH *e*PcP **PcP** **04 14 59.4 +3.2**
KSH PcS **PcS** **04 18 57.8 +3.1**
KSH S **S** **04 21 12.9 +2.2**
KSH Kashi 52.48 296 SS **SS** **04 24 50.1 +1.5**
KSH pmax pmax
comp=Z,96nm,4.4s
KSH LR LR
comp=N,100nm,8.6s
KSH LR LR
comp=E,82nm,9.7s
KSH LR LR
comp=Z,110nm,6.6s
AAK Ala-Archa 52.66 300 LR LR 04 36 47.8
comp=Z,75nm,21.3s,baz=56,slow=37
BVAR Borovoye Array 52.97 314 P **P** **04 13 50.6 +1.5**
comp=Z,0.7nm,0.5s,baz=80,slow=7.3,SNR=4.9
BRVK Borovoye 53.03 314 *e*P **P** **04 13 51.2 +1.7**
BRVK pmax pmax
comp=Z,6.0nm,1.6s
BRVK Borovoye 53.03 314 *e*P **P** **04 13 48.2 -1.3**
comp=Z,2.9nm,0.8s
EKS2 Erkin-Say 53.16 300 *e*P **P** **04 13 50.3 -0.5**
EKS2 pmax pmax
comp=Z,5.0nm,1.1s
EKS2 Erkin-Say 53.16 300 *e*P **P** **04 13 50.3 -0.5**
comp=Z,4.7nm,1.1s
ZRNK Zerenda 53.81 314 *e*P **P** **04 13 55.3 +0.1**
ZRNK pmax pmax
comp=Z,16nm,1.6s
ZRNK Zerenda 53.81 314 *e*P **P** **04 13 55.3 +0.1**
comp=Z,16nm,1.6s
GSI Gunungsitoli 53.86 242 *e*P **P** **04 13 56.4 +0.3**
comp=Z,24nm,1.0s
WRAB Tennant Creek 55.13 190*ce*P **P** **04 14 05.7 +0.6**
WRAB pmax pmax
comp=Z,51nm,1.2s
WRAB Tennant Creek 55.13 190 *e*P **P** **04 14 05.0 -0.1**
comp=Z,14nm,1.0s
WB2 Warramunga Arr 55.14 190 *e*P **P** **04 14 05.4 +0.2**
comp=Z,16nm,1.0s
WRA Warramunga Arr 55.14 190 P **P** **04 14 04.8 -0.5**
comp=Z,7.4nm,0.8s,baz=8.5,slow=7.5,SNR=52
WRA Warramunga Arr 55.14 190*ce*P **P** **04 14 05.0 -0.2**
WRA pmax pmax
comp=Z,7.0nm,0.7s
FITZ Fitzroy Crossi 55.22 200 *e*P **P** **04 14 06.7 +1.0**
comp=Z,35nm,1.7s
KKAR Karatay Array 55.33 302 *e*P **P** **04 14 05.9 -0.5**
KKAR pmax pmax
comp=Z,9.0nm,1.1s
KKAR Karatay Array 55.33 302 *e*P **P** **04 14 05.9 -0.5**
comp=Z,9.5nm,1.1s
INK Inuvik 55.72 27 P **P** **04 14 10.1 +1.3**
comp=Z,2.6nm,0.9s,baz=302,slow=11,SNR=5.3
ARU Arti 58.82 320*d i*P **P** **04 14 31.0 +0.1**
ARU S **S** **04 22 35.3 +0.8**
ARU SS **SS** **04 26 26.0 -1.4**
ARU pmax pmax
comp=Z,7.0nm,1.2s
ARU Arti 58.82 320 *e*P **P** **04 14 30.5 -0.4**
comp=Z,16nm,1.3s
AS01 Alice Springs 58.86 190 *e*P **P** **04 14 31.5 0.0**
AS31 Alice Springs 58.87 190 *e*P **P** **04 14 31.9 +0.3**
comp=Z,1.5nm,0.6s
ASAR Alice Springs 58.87 190 P **P** **04 14 31.6 +0.1**
comp=Z,2.8nm,0.8s,baz=17,slow=12,SNR=25
ASAR Alice Springs 58.87 190 P **P** **04 14 31.7 +0.1**
ASAR pmax pmax
comp=Z,2.0nm,0.7s
MBWA Marble Bar 59.96 205 *e*P **P** **04 14 39.2 +0.1**
ABKAR Akbulak array 60.31 312 *e*P **P** **04 14 40.6 -0.7**
comp=Z,3.6nm,0.8s
AKTO Aktyubinsk 61.07 313 LR LR 04 41 23.0
comp=Z,39nm,19.8s,slow=36
YKA Yellowknife Ar 65.02 30 P **P** **04 15 12.7 +0.3**
comp=Z,0.7nm,0.9s,baz=297,slow=6.8,SNR=6.0
ARCES ARCESS Array B 66.45 340 P **P** **04 15 21.6 0.0**
comp=Z,4.1nm,0.9s,baz=37,slow=9.1,SNR=3.7
OBN Obninsk 70.58 324‖ *e*P **P** **04 15 50.0 +2.4**
OBN *PP **sP** **04 15 58.0 -0.9**
OBN *SP **pP** **04 16 02.0 +6.2**
OBN SS SS 04 29 32.0 +1.8
OBN pmax pmax
comp=Z,4.0nm,0.5s
OBN MLR MLR
comp=Z,64nm,17.0s
FINES FINESS Array B 71.31 333 P **P** **04 15 51.9 0.0**
comp=Z,2.9nm,0.8s,baz=53,slow=5.9,SNR=18
SUMG Summit 72.82 0 *e*P **P** **04 16 02.3 +1.0**
SUMG pmax pmax
comp=Z,3.0nm,0.5s
SUMG Summit 72.82 0 *e*P **P** **04 16 02.3 +1.0**
comp=Z,2.9nm,0.5s
KBZ Khabaz 73.28 312 P **P** **04 16 04.7 +0.7**
comp=Z,2.7nm,0.8s,baz=73,slow=4.2,SNR=5.7
KIV Kislovodsk 73.29 312 *e*P **P** **04 16 06.0 +1.8**
KIV pmax pmax
comp=Z,9.0nm,0.9s
KIV MLR MLR
comp=Z,39nm,17.0s
FFC Flin Flon 74.81 33 *e*P **P** **04 16 13.7 +0.9**
FFC pmax pmax
comp=Z,3.0nm,0.8s
FFC Flin Flon 74.81 33 *e*P **P** **04 16 13.7 +0.9**
comp=Z,2.7nm,0.8s
NVAR Mina Array Bea 75.24 53 P **P** **04 16 18.1 +2.2**
comp=Z,2.7nm,0.7s,baz=294,slow=6.9,SNR=21
NVAR LR LR 04 42 56.4
comp=Z,34nm,20.3s,baz=234,slow=31
FCC Fort Churchill 75.34 27 *e*P **P** **04 16 16.4 +0.7**
FCC pmax pmax
comp=Z,14nm,1.6s
FCC Fort Churchill 75.34 27 *e*P **P** **04 16 16.4 +0.7**
comp=Z,14nm,1.6s
NB2 NORSAR Subarra 76.66 338 P **P** **04 16 23.5 +0.3**
comp=Z,1.2nm,0.7s,baz=41,slow=5.9
NOA NORSAR Array B 76.66 338 P **P** **04 16 23.6 +0.4**
comp=Z,1.6nm,0.7s,baz=40,slow=5.7,SNR=7.8
AKASG Malin Array Be 76.78 323 P **P** **04 16 24.1 +0.1**
comp=Z,1.4nm,0.4s,baz=47,slow=5.9,SNR=14
AKASG LR LR 04 53 19.2
comp=Z,53nm,18.6s,baz=270,slow=38
KIEV Kiev 76.79 323 *e*P **P** **04 16 24.1 0.0**
KIEV pmax pmax
comp=Z,8.0nm,1.2s
KIEV Kiev 76.79 323 *e*P **P** **04 16 24.1 0.0**
comp=Z,8.2nm,1.2s
AK11 Malin Array Si 76.82 323 *e*P **P** **04 16 24.5 +0.2**
R11A Troy Canyon, C 77.07 52 *e*P **P** **04 16 28.2 +2.0**
comp=Z,3.7nm,1.4s
DUG Dugway, Tooele 77.78 49 *e*P **P** **04 16 31.4 +1.3**
DUG pmax pmax
comp=Z,12nm,1.6s
DUG Dugway, Tooele 77.78 49 *e*P **P** **04 16 31.4 +1.3**
comp=Z,12nm,1.6s
PSUT Pine Spring 78.08 51 *e*P **P** **04 16 34.5 +2.6**
comp=Z,6.3nm,1.4s
PDAR Pinedale Array 78.25 46 P **P** **04 16 33.4 +0.6**
comp=Z,0.4nm,0.6s,baz=278,slow=3.0,SNR=3.8
SHPR Sheep Range 78.39 54 *e*P **P** **04 16 36.4 +2.8**

comp=Z,4.9nm,1.3s
LCMT Little Creek M 79.36 52 *e*P **P** **04 16 41.2 +2.4**
comp=Z,2.3nm,0.9s
MTPU Mount Pierson 79.44 51 *e*P **P** **04 16 42.1 +2.6**
comp=Z,9.9nm,1.7s
KNB Kanab 79.63 52 *e*P **P** **04 16 42.9 +2.6**
KNB pmax pmax
comp=Z,5.0nm,1.0s
KNB Kanab 79.63 52 *e*P **P** **04 16 42.9 +2.6**
comp=Z,4.7nm,1.0s
SRU San Rafael Swe 79.85 49 *e*P **P** **04 16 43.5 +2.0**
SRU pmax pmax
comp=Z,4.0nm,0.7s
SRU San Rafael Swe 79.85 49 *e*P **P** **04 16 43.5 +2.0**
comp=Z,3.8nm,0.7s
BRTR Keskin Array B 81.24 313 P **P** **04 16 48.9 0.0**
comp=Z,0.9nm,0.8s,baz=100,slow=3.8,SNR=5.7
BRTR Keskin Array B 81.24 313 *i* P **P** **04 16 49.2 +0.3**
BRTR pmax pmax
comp=Z,1.0nm,0.8s
PV01 Paradox Valley 81.66 49 *e*P **P** **04 16 51.8 +0.5**
BR231 Keskin MP Arra 81.69 313 *e*P **P** **04 16 49.6 -1.7**
ISCO Idaho Springs 82.42 46 *e*P **P** **04 16 56.3 +1.0**
ISCO pmax pmax
comp=Z,1.0nm,0.7s
ISCO Idaho Springs 82.42 46 *e*P **P** **04 16 56.3 +1.0**
comp=Z,1.4nm,0.7s
PPT Papeete 82.52 117 LR LR 04 49 41.3
comp=Z,144nm,18.8s,baz=92,slow=33
DPC Dobruska-Polom 82.95 329 *e*P **P** **04 16 59.8 +2.2**
DPC Dobruska-Polom 82.95 329 *e*P **P** **04 16 59.8 +2.2**
CLL Collm 83.59 331 *e*P **P** **04 17 01.0 +0.2**
CLL Collm 83.59 331 *e*P **P** **04 17 01.0 +0.2**
SDCO Great Sand Dun 83.79 48 *e*P **P** **04 17 04.2 +1.7**
comp=Z,2.5nm,1.3s
PRU Pruhonice 83.98 329 *e*P **P** **04 17 03.7 +0.9**
PRU *e*pP **sP** **04 17 13.4 -0.8**
PRU Pruhonice 83.98 329 *e*P **P** **04 17 03.7 +0.9**
PRU *e* 04 17 13.4
T25A Trinidad 84.84 48 *e*P **P** **04 17 09.9 +2.2**
comp=Z,6.0nm,1.1s
CONA Conrad Observa 84.97 327 *i* P **P** **04 17 05.1 -2.9**
comp=Z,3.5nm,1.1s
KHC Kasperske Hory 85.04 329 *e*P **P** **04 17 08.6 +0.4**
KHC *e*pP **sP** **04 17 19.0 -0.7**
KHC Kasperske Hory 85.04 329 *e*P **P** **04 17 08.6 +0.4**
KHC *e* 04 17 19.0
GERES GERESS Array B 85.21 329 P **P** **04 17 09.2 0.0**
comp=Z,0.6nm,0.4s,baz=44,slow=5.9,SNR=11
ARSA Arzberg 85.64 327 *i* PcP **P** **04 17 11.6 +0.4**
comp=Z,1.3nm,0.9s
MOA Molln 85.73 328 *i* P P 04 17 05.9 -5.8
comp=Z,1.6nm,0.9s
SOKA Soboth 86.29 327 *i* PcP **P** **04 17 15.0 +0.4**
comp=Z,4.5nm,1.4s
RETA Reutte 87.50 330 *i* P **P** **04 17 17.9 -2.5**
comp=Z,2.0nm,0.8s
TXAR Lajitas Array 90.39 53 P **P** **04 17 35.8 +1.3**
comp=Z,0.3nm,0.7s,baz=312,slow=3.1,SNR=6.6
TORD Torodi Ar. Bea 119.75 315 PKP **PKPdf** **04 23 22.0 -1.3**
comp=Z,0.5nm,1.0s,baz=36,slow=1.4,SNR=3.7
LPAZ La Paz 146.57 64 PKPbc **PKPbc** **04 24 15.8 +0.4**
comp=Z,1.6nm,0.6s,baz=295,slow=3.5,SNR=9.5

ISCJB ***22*** *04:06:31.6±0.5,39°.11N±0°.03×29°.01E±0°.04,h3km±7km, Error ellipse: s-maj=5.5km s-min=4.4km az=154.9*
CSEM ***22*** *04:06:31.9±0.1,39°.12N×29°.01E,h5km,MD2.7,Error ellipse: s-maj=1.7km s-min=1.4km az=96.0*
ISK ***22*** *04:06:31.6,39°.12N×29°.03E,h6km,MD2.8*
DDA ***22*** *04:06:31.7,39°.09N×29°.01E,h7km,Md2.7*
ISC 22 04:06:32.1±1.0,39°.12N±0°.02×29°.01E±0°.02,h8km±12km, n44,σ0s27/54,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**251**	P	**Pg**	**04 06 37.1**	**+0.1**
DEMI				S	**Sg**	**04 06 40.3**	**+0.1**
DEMI	**Demirci**	**0.24**	**251**	*i* P	**Pg**	**04 06 37.1**	**+0.1**
DEMI				*i* S	**Sg**	**04 06 40.4**	**+0.1**
GDZ	**Gediz**	**0.37**	**95**	P	**Pg**	**04 06 39.5**	**+0.1**
GDZ				S	**Sg**	**04 06 44.3**	**0.0**
GDZ	**Gediz**	**0.37**	**95**	*i* P	**Pg**	**04 06 39.5**	**+0.1**
GDZ				*i* S	**Sg**	**04 06 44.3**	**0.0**
TVSB	**Tavsanli**	**0.48**	**47**	*e*PG	**Pg**	**04 06 41.5**	**0.0**
TVSB				*e*SG	**Sg**	**04 06 47.7**	**-0.1**
TVSB	**Tavsanli**	**0.48**	**47**	*e*Pg	**Pg**	**04 06 41.5**	**0.0**
TVSB				*e*Sg	**Sg**	**04 06 47.7**	**-0.1**
DURS	**Dursunbey**	**0.63**	**319**	P	**Pg**	**04 06 43.9**	**-0.4**
DURS	**Dursunbey**	**0.63**	**319**	*i* P	**Pg**	**04 06 43.9**	**-0.4**
KULA	**Kula-Manisa**	**0.66**	**204**	*e*PG	**Pg**	**04 06 44.8**	**-0.1**
KULA	**Kula-Manisa**	**0.66**	**204**	*e*Pg	**Pg**	**04 06 44.8**	**-0.1**
MANT	**Manisa**	**0.72**	**209**	P	**Pg**	**04 06 45.6**	**-0.4**
MANT				S	**Sg**	**04 06 55.1**	**-0.3**
MANT	**Manisa**	**0.72**	**209**	*i* P	**Pg**	**04 06 45.6**	**-0.4**
MANT				*i* S	**Sg**	**04 06 55.1**	**-0.3**
KHAL	**Karahalli**	**0.84**	**153**	P	**Pg**	**04 06 48.3**	**0.0**
KHAL				S	**Sg**	**04 06 58.8**	**-0.4**
KHAL	**Karahalli**	**0.84**	**153**	*i* P	**Pg**	**04 06 48.3**	**0.0**
KHAL				*i* S	**Sg**	**04 06 58.8**	**-0.4**
KHL	**Karahalli**	**0.89**	**153**	*e*PG	**Pg**	**04 06 49.3**	**0.0**
KHL	**Karahalli**	**0.89**	**153**	*e*Pg	**Pg**	**04 06 49.3**	**0.0**
ORLT	**Orhaneli**	**0.93**	**355**	*e*PG	**Pg**	**04 06 49.6**	**-0.4**
ORLT	**Orhaneli**	**0.93**	**355**	*e*Pg	**Pg**	**04 06 49.6**	**-0.4**
AKS	**Akhisar**	**0.96**	**256**	*e*PG	**Pg**	**04 06 50.7**	**+0.1**
AKS	**Akhisar**	**0.96**	**256**	*e*Pg	**Pg**	**04 06 50.7**	**+0.1**
BALB	**Balikesir**	**1.02**	**301**	*e*PG	**Pb**	**04 06 52.0**	**0.0**
BALB	**Balikesir**	**1.02**	**301**	*e*Pg	**Pb**	**04 06 52.0**	**0.0**
KCTX	**Karacabey (Bur**	**1.25**	**336**	*e*PN	**Pg**	**04 06 56.1**	**0.0**
KCTX	**Karacabey (Bur**	**1.25**	**336**	*e*Pn	**Pg**	**04 06 56.1**	**0.0**
MDNY	**Mudanya-Bursa**	**1.25**	**356**	*e*PN	**Pn**	**04 06 55.9**	**0.0**
MDNY	**Mudanya-Bursa**	**1.25**	**356**	*e*Pn	**Pn**	**04 06 55.9**	**0.0**
CAVI	**Cavuskoy**	**1.26**	**31**	*e*PN	**Pb**	**04 06 56.1**	**0.0**
CAVI	**Cavuskoy**	**1.26**	**31**	*e*Pn	**Pb**	**04 06 56.1**	**0.0**
IZI	**Iznik**	**1.27**	**16**	*e*PN	**Pn**	**04 06 56.2**	**0.0**
IZI	**Iznik**	**1.27**	**16**	*e*Pn	**Pn**	**04 06 56.2**	**0.0**
GEMT	**Gemlik**	**1.32**	**6**	*e*PN	**Pb**	**04 06 57.2**	**0.0**
GEMT	**Gemlik**	**1.32**	**6**	*e*Pn	**Pb**	**04 06 57.2**	**0.0**
GONE	**Gonen-Balikesi**	**1.38**	**313**	*e*PN	**Pb**	**04 06 58.3**	**+0.2**
GONE	**Gonen-Balikesi**	**1.38**	**313**	*e*Pn	**Pb**	**04 06 58.3**	**+0.2**
ADVT	**Abdulvahap**	**1.43**	**23**	*e*PN	**Pn**	**04 06 58.1**	**-0.2**
ADVT	**Abdulvahap**	**1.43**	**23**	*e*Pn	**Pn**	**04 06 58.1**	**-0.2**
ARMT	**Armutlu**	**1.45**	**356**	*e*PN	**Pn**	**04 06 58.8**	**+0.2**
ARMT	**Armutlu**	**1.45**	**356**	*e*Pn	**Pn**	**04 06 58.8**	**+0.2**
EDC	**Edincik**	**1.51**	**325**	*e*PN	**Pb**	**04 07 00.2**	**-0.2**
EDC	**Edincik**	**1.51**	**325**	*e*Pn	**Pb**	**04 07 00.2**	**-0.2**
HRT	**Hereke**	**1.77**	**16**	*e*PN	**Pn**	**04 07 03.4**	**+0.2**
HRT	**Hereke**	**1.77**	**16**	*e*Pn	**Pn**	**04 07 03.4**	**+0.2**
ISK	**Istanbul-Kandi**	**1.94**	**1**	*e*PN	**Pn**	**04 07 06.3**	**+0.9**
ISK	**Istanbul-Kandi**	**1.94**	**1**	*e*Pn	**Pn**	**04 07 06.3**	**+0.9**

IDC ***22*** *04:06:49.2±0.6,34°.71N×142°.80E,h0km,mb3.9/14, mb1 4.1/17,mb1mx3.9/42,mbtmp4.0/17,ML4.2/3,Error ellipse: s-maj=20.1km s-min=15.6km az=106.0*
ISCJB ***22*** *04:06:52.0±0.4,34°.68N±0°.05×142°.68E±0°.05,h35km, mb4.0/22,Error ellipse: s-maj=6.8km s-min=5.5km az=12.0*
JMA ***22*** *04:06:51.5±0.2,34°.87N×142°.76E,h90km,M3.7*
NEIC ***22*** *04:06:54.1±0.4,34°.68N×142°.67E,h35km,mb4.3/8,Error ellipse: s-maj=10.4km s-min=8.6km az=65.0*
ISC 22 04:06:54.1±0.6,34°.73N±0°.05×142°.67E±0°.07,h35km,n45, σ2s28/47,mb4.0/22,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.77**	**304**	P	**Pn**	**04 07 21.3**	**-0.9**
CHOJ				*e*S	**Sn**	**04 07 43.3**	**-0.2**
JCN	**Nagara**	**2.14**	**289**	S	**Sn**	**04 07 54.9**	**+2.4**
JHJ2	**Mitsune**	**2.87**	**237**	P	**Pn**	**04 07 37.5**	**+0.2**
JHJ	**Hachijo jima 2**	**2.89**	**237**	Pn	**Pn**	**04 07 37.5**	**-0.1**
	75nm,0.3s,baz=72,slow=20,SNR=2.4						
JHJ				Sn	**Sn**	**04 08 09.7**	**-1.3**
	89nm,0.3s,baz=75,slow=20,SNR=5.9						
JOD2	**Odawara 2**	**2.99**	**281**	P	**Pn**	**04 07 38.2**	**-0.8**
JOD2				S	**Sn**	**04 08 12.9**	**-0.7**
JAG	**Ashikaga**	**3.12**	**304**	P	**Pn**	**04 07 39.7**	**-1.1**
JFT	**Otama**	**3.36**	**327**	P	**Pn**	**04 07 41.8**	**-2.3**
JFT				*e*S	**Sn**	**04 08 18.4**	**-4.4**
JYN	**Shimob**	**3.47**	**284**	P	**Pn**	**04 07 45.0**	**-0.6**
JYN				*e*S	**Sn**	**04 08 26.0**	**+0.5**

MJAR	**Matsushiro Arr**	**4.06 298**	Pn	**Pn**	**04 07 53.1**	**-0.6**
	5.5nm,0.3s,baz=95,slow=9.5,SNR=5.1					
MAJO	**Matsushiro**	**4.06 298**	*e*Pn	**Pn**	**04 07 52.9**	**-0.8**
MAT	**Matsushiro**	**4.06 298**	P	**Pn**	**04 07 52.9**	**-0.8**
MAT			S	**Sn**	**04 08 35.6**	**-4.4**
JNS	**Sasagawa**	**4.10 320**	P	**Pn**	**04 07 52.9**	**-1.4**
JMK	**Ichinoseki**	**4.37 345**	P	**Pn**	**04 07 53.9**	**-4.1**
JMK			*e*S	**Sn**	**04 08 41.4**	**-6.2**
CBIJ	**Chichi jima**	**7.62 183**	*e*Pn	**Pn**	**04 08 40.4**	**-2.2**
CBIJ			Sn	**Sn**	**04 10 01.2**	**-6.6**
JCJ	**Chichijima**	**7.62 183**	Pn	**Pn**	**04 08 40.1**	**-2.5**
	9.8nm,0.3s,baz=287,slow=19,SNR=2.6					
JCJ			Sn	**Sn**	**04 10 01.2**	**-6.6**
	12nm,0.3s,baz=270,slow=20,SNR=5.2					
ASAJ	**Asahikawa**	**9.38 360**	Pn	Pn	04 09 01.2	-5.4
	2.8nm,0.3s,baz=217,slow=5.1,SNR=3.4					
ASAJ			Sn	Sn	04 10 40.7	-10
	0.9nm,0.3s,baz=174,slow=19,SNR=2.5					
H11N2	**WAKE ISLAND Hy**	**26.12 119**	T	T	04 39 39.9	
	baz=311,slow=75,SNR=7.3					
H11N1	**WAKE ISLAND Hy**	**26.13 119**	T	T	04 39 38.7	
	baz=311,slow=75,SNR=6.8					
H11N3	**WAKE ISLAND Hy**	**26.14 119**	T	T	04 39 39.6	
	baz=311,slow=75,SNR=6.8					
H11S1	**WAKE ISLAND Hy**	**26.78 121**	T	T	04 40 29.0	
	baz=312,slow=75,SNR=8.5					
H11S3	**WAKE ISLAND Hy**	**26.78 121**	T	T	04 40 29.2	
	baz=312,slow=75,SNR=8.7					
H11S2	**WAKE ISLAND Hy**	**26.79 121**	T	T	04 40 29.4	
	baz=312,slow=75,SNR=8.4					
SEY	**Seymchan**	**28.88 9**	P	**P**	**04 12 49.9**	**+0.8**
	0.4nm,0.3s,baz=174,slow=11,SNR=5.8					
SONM	**Songino Array**	**29.95 307**	P	**P**	**04 13 00.6**	**+1.6**
	1.0nm,0.9s,baz=108,slow=8.4,SNR=1.7					
MKAR	**Makanchi Array**	**46.23 304**	P	**P**	**04 15 17.3**	**+1.5**
	0.6nm,0.6s,baz=90,slow=8.3,SNR=2.7					
KURK	**Kurchatov**	**48.17 310**	*e*P	**P**	**04 15 30.3**	**-0.4**
	7.7nm,0.7s					
ILAR	**Eielson Array**	**50.91 31**	P	**P**	**04 15 50.3**	**-1.1**
	0.5nm,0.7s,baz=265,slow=6.6,SNR=3.6					
BRVK	**Borovoye**	**52.94 314**	*e*P	**P**	**04 16 06.8**	**+0.1**
	1.0nm,0.5s					
EKS2	**Erkin-Say**	**53.01 301**	*e*P	**P**	**04 16 07.2**	**-0.3**
	0.8nm,0.5s					
WRAB	**Tennant Creek**	**54.93 190**	*e*P	**P**	**04 16 21.4**	**-0.1**
	6.7nm,0.8s					
WRA	**Warramunga Arr**	**54.94 190**	P	**P**	**04 16 21.9**	**+0.3**
	6.0nm,0.8s,baz=8.9,slow=7.6,SNR=13					
INK	**Inuvik**	**55.98 26**	P	**P**	**04 16 28.1**	**-0.5**
	1.2nm,0.8s,baz=315,slow=5.1,SNR=3.6					
ASAR	**Alice Springs**	**58.67 189**	P	**P**	**04 16 48.5**	**+0.5**
	2.2nm,0.8s,baz=15,slow=8.9,SNR=12					
ARU	**Arti**	**58.77 320**	*e*P	**P**	**04 16 48.7**	**+0.4**
	3.6nm,0.7s					
ABKAR	**Akbulak array**	**60.21 312**	*e*P	**P**	**04 16 58.9**	**+0.5**
	1.9nm,0.9s					
YKA	**Yellowknife Ar**	**65.29 30**	P	**P**	**04 17 33.0**	**+0.9**
	0.3nm,0.5s,baz=286,slow=5.7,SNR=3.4					
FINES	**FINESS Array B**	**71.32 333**	P	**P**	**04 18 10.5**	**+0.7**
	1.4nm,0.8s,baz=61,slow=6.7,SNR=3.2					
SUMG	**Summit**	**72.98 0**	*e*P	**P**	**04 18 20.1**	**0.0**
	4.3nm,0.9s					
NVAR	**Mina Array Bea**	**75.55 53**	P	**P**	**04 18 35.0**	**-0.5**
	1.0nm,0.6s,baz=296,slow=6.3,SNR=6.0					
NOA	**NORSAR Array B**	**76.70 338**	P	**P**	**04 18 42.2**	**+1.0**
	1.1nm,0.7s,baz=40,slow=5.7,SNR=3.3					
AKASG	**Malin Array Be**	**76.74 323**	P	**P**	**04 18 41.5**	**-0.1**
	0.3nm,0.4s,baz=49,slow=6.3,SNR=3.3					
R11A	**Troy Canyon, C**	**77.38 52**	*e*P	**P**	**04 18 44.9**	**-0.8**
	0.7nm,0.7s					
BRTR	**Keskin Array B**	**81.15 312**	P	**P**	**04 19 07.7**	**+1.5**
	1.3nm,1.1s,baz=101,slow=4.1,SNR=3.8					
TXAR	**Lajitas Array**	**90.70 53**	P	**P**	**04 19 55.6**	**+1.9**
	0.1nm,0.4s,baz=308,slow=3.2,SNR=3.1					
LPAZ	**La Paz**	**146.88 64**	PKPbc	**PKPbc**	**04 26 33.7**	**-0.3**
	0.6nm,0.6s,baz=6.6,slow=2.9,SNR=3.2					

*ISCJB **22** 04:08:19.5±0.5, 39.°12N±0.°03×29.°02E±0.°03, h4km±6km,*
Error ellipse: s-maj=5.1km s-min=4.2km az=14.9
*CSEM **22** 04:08:19.8±0.1, 39.°12N×29.°02E, h5km, MD2.7, Error*
ellipse: s-maj=2.2km s-min=2.0km az=105.0
*ISK **22** 04:08:19.6, 39.°13N×29.°03E, h8km, MD2.9*
*DDA **22** 04:08:19.4, 39.°12N×29.°03E, h10km, Md2.7*
ISC 22 04:08:19.8±1.1, 39.°14N±0.°03×29.°02E±0.°02, h3km±13km,
n54, σ0°32/64, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**247**	P	**Pg**	**04 08 24.9**	**+0.2**
DEMI				S	**Sg**	**04 08 28.5**	**+0.5**
DEMI	**Demirci**	**0.25**	**247**	*i* P	**Pg**	**04 08 24.9**	**+0.2**
DEMI				*i* S	**Sg**	**04 08 28.5**	**+0.5**
GDZ	**Gediz**	**0.36**	**98**	P	**Pg**	**04 08 26.7**	**-0.2**
GDZ				S	**Sg**	**04 08 32.0**	**+0.3**
GDZ	**Gediz**	**0.36**	**98**	*i* P	**Pg**	**04 08 26.7**	**-0.2**
GDZ				*i* S	**Sg**	**04 08 32.0**	**+0.3**
TVSB	**Tavsanli**	**0.46**	**48**	*e*PG	**Pg**	**04 08 28.7**	**0.0**
TVSB	**Tavsanli**	**0.46**	**48**	*e*Pg	**Pg**	**04 08 28.7**	**0.0**
DURS	**Dursunbey**	**0.62**	**318**	P	**Pg**	**04 08 31.5**	**-0.3**
DURS	**Dursunbey**	**0.62**	**318**	*i* P	**Pg**	**04 08 31.5**	**-0.3**
KULA	**Kula-Manisa**	**0.68**	**204**	*e*PG	**Pg**	**04 08 32.8**	**-0.1**
KULA	**Kula-Manisa**	**0.68**	**204**	*e*Pg	**Pg**	**04 08 32.8**	**-0.1**
MANT	**Manisa**	**0.74**	**209**	P	**Pg**	**04 08 33.8**	**-0.2**
MANT				S	**Sg**	**04 08 42.9**	**-0.8**
MANT	**Manisa**	**0.74**	**209**	*i* P	**Pg**	**04 08 33.8**	**-0.2**
MANT				*i* S	**Sg**	**04 08 42.9**	**-0.8**
KHAL	**Karahalli**	**0.85**	**154**	P	**Pg**	**04 08 36.2**	**0.0**
KHAL				S	**Sg**	**04 08 47.2**	**-0.1**
KHAL	**Karahalli**	**0.85**	**154**	*i* P	**Pg**	**04 08 36.2**	**0.0**
KHAL				*i* S	**Sg**	**04 08 47.2**	**-0.1**
KHL	**Karahalli**	**0.91**	**154**	*e*PG	**Pg**	**04 08 37.0**	**-0.2**
KHL	**Karahalli**	**0.91**	**154**	*e*Pg	**Pg**	**04 08 37.0**	**-0.2**
ORLT	**Orhaneli**	**0.91**	**354**	*e*PG	**Pb**	**04 08 38.3**	**0.0**
ORLT	**Orhaneli**	**0.91**	**354**	*e*Pg	**Pb**	**04 08 38.3**	**0.0**
AKHS	**Akhisar**	**0.97**	**255**	P	**Pg**	**04 08 38.8**	**+0.3**
AKHS	**Akhisar**	**0.97**	**255**	*i* P	**Pg**	**04 08 38.8**	**+0.3**
AKS	**Akhisar**	**0.97**	**255**	*e*PG	**Pb**	**04 08 39.2**	**-0.2**
AKS	**Akhisar**	**0.97**	**255**	*e*Pg	**Pb**	**04 08 39.2**	**-0.2**
BALB	**Balikesir**	**1.01**	**300**	*e*PG	**Pb**	**04 08 39.9**	**-0.1**
BALB				*e*SG	**Sb**	**04 08 54.2**	**+0.4**
BALB	**Balikesir**	**1.01**	**300**	*e*Pg	**Pb**	**04 08 39.9**	**-0.1**
BALB				*e*Sg	**Sb**	**04 08 54.2**	**+0.4**
MDNY	**Mudanya-Bursa**	**1.23**	**355**	*e*PN	**Pg**	**04 08 43.3**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.23**	**355**	*e*Pn	**Pg**	**04 08 43.3**	**-0.1**
KCTX	**Karacabey (Bur**	**1.23**	**336**	*e*PN	**Pg**	**04 08 43.3**	**-0.2**
KCTX	**Karacabey (Bur**	**1.23**	**336**	*e*Pn	**Pg**	**04 08 43.3**	**-0.2**
BALY	**Balya**	**1.24**	**299**	P	**Pg**	**04 08 43.0**	**-0.5**
BALY	**Balya**	**1.24**	**299**	*i* P	**Pg**	**04 08 43.0**	**-0.5**
CAVI	**Cavuskoy**	**1.24**	**31**	*e*PN	**Pn**	**04 08 44.2**	**+0.1**
CAVI	**Cavuskoy**	**1.24**	**31**	*e*Pn	**Pn**	**04 08 44.2**	**+0.1**
IZI	**Iznik**	**1.25**	**16**	*e*PN	**Pb**	**04 08 43.9**	**-0.2**
IZI	**Iznik**	**1.25**	**16**	*e*Pn	**Pb**	**04 08 43.9**	**-0.2**
GEMT	**Gemlik**	**1.30**	**6**	*e*PN	**Pn**	**04 08 44.9**	**0.0**
GEMT	**Gemlik**	**1.30**	**6**	*e*Pn	**Pn**	**04 08 44.9**	**0.0**
GONE	**Gonen-Balikesi**	**1.37**	**312**	*e*PN	**Pn**	**04 08 46.0**	**+0.1**
GONE	**Gonen-Balikesi**	**1.37**	**312**	*e*Pn	**Pn**	**04 08 46.0**	**+0.1**
ADVT	**Abdulvahap**	**1.41**	**23**	*e*PN	**Pb**	**04 08 46.8**	**0.0**
ADVT	**Abdulvahap**	**1.41**	**23**	*e*Pn	**Pb**	**04 08 46.8**	**0.0**
ARMT	**Armutlu**	**1.43**	**355**	*e*PN	**Pn**	**04 08 46.0**	**-0.8**
ARMT	**Armutlu**	**1.43**	**355**	*e*Pn	**Pn**	**04 08 46.0**	**-0.8**
EDC	**Edincik**	**1.50**	**324**	*e*PN	**Pn**	**04 08 47.8**	**+0.2**
EDC	**Edincik**	**1.50**	**324**	*e*Pn	**Pn**	**04 08 47.8**	**+0.2**
GULT	**Gulveren**	**1.73**	**41**	*e*PN	**Pn**	**04 08 50.5**	**-0.5**
GULT	**Gulveren**	**1.73**	**41**	*e*Pn	**Pn**	**04 08 50.5**	**-0.5**
HRT	**Hereke**	**1.75**	**16**	*e*PN	**Pn**	**04 08 51.0**	**-0.2**
HRT	**Hereke**	**1.75**	**16**	*e*Pn	**Pn**	**04 08 51.0**	**-0.2**
SPNC	**Sapanca-Adapaz**	**1.83**	**32**	*e*PN	**Pn**	**04 08 52.6**	**+0.3**
SPNC	**Sapanca-Adapaz**	**1.83**	**32**	*e*Pn	**Pn**	**04 08 52.6**	**+0.3**
ISK	**Istanbul-Kandi**	**1.92**	**1**	*e*PN	**Pn**	**04 08 53.9**	**+0.4**
ISK	**Istanbul-Kandi**	**1.92**	**1**	*e*Pn	**Pn**	**04 08 53.9**	**+0.4**
SVRH	**Sivrihisar-ESK**	**1.97**	**80**	*e*PN	**Pn**	**04 08 54.5**	**+0.2**
SVRH	**Sivrihisar-ESK**	**1.97**	**80**	*e*Pn	**Pn**	**04 08 54.5**	**+0.2**

MEX 22 04:13:07.3±0.5, 33.°27N×116.°62W, h14km±999km, MD3.6,
Southern California

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TJIG	**Tijuana**	**0.84**	**183**	*e*P	Pg	04 13 20.9	-2.7
TJIG				*e*S	Sg	04 13 30.8	-3.8
CBX	**Cerro Bola**	**0.96**	**182**	*e*P	Pb	04 13 22.8	-2.9
CBX				*e*S	Sb	04 13 34.4	-4.0
SPIG	**San Pedro Mart**	**2.43**	**156**	*e*P	Pn	04 13 42.6	-4.2
SPIG				*e*S	Sn	04 14 12.5	-4.0

*ISCJB **22** 04:16:35.0±0.5, 39.°10N±0.°03×29.°02E±0.°04, h7km±6km,*
Error ellipse: s-maj=5.8km s-min=4.5km az=138.9
*ISK **22** 04:16:34.8, 39.°12N×29.°04E, h8km, MD2.7*
*CSEM **22** 04:16:35.2±0.0.0, 39.°11N×29.°02E, h8km, MD2.8, Error*
ellipse: s-maj=1.1km s-min=0.9km az=111.0
*DDA **22** 04:16:35.2, 39.°10N×29.°02E, h7km, Md2.8*
ISC 22 04:16:35.3±0.9, 39.°11N±0.°02×29.°02E±0.°02, h10km±11km,
n26, σ0°19/36, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**255**	P	**Pg**	**04 16 40.5**	**+0.1**
DEMI				S	**Sg**	**04 16 43.9**	**+0.1**
DEMI	**Demirci**	**0.25**	**255**	*i* P	**Pg**	**04 16 40.5**	**+0.1**
DEMI				*i* S	**Sg**	**04 16 43.9**	**+0.1**
GDZ	**Gediz**	**0.36**	**93**	P	**Pg**	**04 16 42.5**	**0.0**
GDZ				S	**Sg**	**04 16 47.4**	**+0.1**
GDZ	**Gediz**	**0.36**	**93**	*i* P	**Pg**	**04 16 42.5**	**0.0**
GDZ				*i* S	**Sg**	**04 16 47.4**	**+0.1**
TVSB	**Tavsanli**	**0.48**	**45**	*e*PG	**Pg**	**04 16 44.7**	**-0.1**
TVSB				*e*SG	**Sg**	**04 16 51.0**	**-0.2**
TVSB	**Tavsanli**	**0.48**	**45**	*e*Pg	**Pg**	**04 16 44.7**	**-0.1**
TVSB				*e*Sg	**Sg**	**04 16 51.0**	**-0.2**
DURS	**Dursunbey**	**0.65**	**319**	P	**Pg**	**04 16 47.9**	**-0.1**
DURS	**Dursunbey**	**0.65**	**319**	*i* P	**Pg**	**04 16 47.9**	**-0.1**
KULA	**Kula-Manisa**	**0.66**	**206**	*e*PG	**Pg**	**04 16 48.1**	**+0.1**
KULA	**Kula-Manisa**	**0.66**	**206**	*e*Pg	**Pg**	**04 16 48.1**	**+0.1**
MANT	**Manisa**	**0.71**	**211**	P	**Pg**	**04 16 49.3**	**+0.1**
MANT				S	**Sg**	**04 16 58.0**	**-0.6**
MANT	**Manisa**	**0.71**	**211**	*i* P	**Pg**	**04 16 49.3**	**+0.1**
MANT				*i* S	**Sg**	**04 16 58.0**	**-0.6**
KHAL	**Karahalli**	**0.82**	**153**	P	**Pb**	**04 16 51.6**	**-0.1**
KHAL				S	**Sg**	**04 17 02.1**	**+0.2**
KHAL	**Karahalli**	**0.82**	**153**	*i* P	**Pb**	**04 16 51.6**	**-0.1**
KHAL				*i* S	**Sg**	**04 17 02.1**	**+0.2**
KHL	**Karahalli**	**0.88**	**153**	*e*PG	**Pg**	**04 16 52.1**	**-0.1**
KHL	**Karahalli**	**0.88**	**153**	*e*Pg	**Pg**	**04 16 52.1**	**-0.1**
AKS	**Akhisar**	**0.97**	**257**	*e*PG	**Pg**	**04 16 54.0**	**0.0**
AKS	**Akhisar**	**0.97**	**257**	*e*Pg	**Pg**	**04 16 54.0**	**0.0**
CAVI	**Cavuskoy**	**1.26**	**30**	*e*PN	**Pb**	**04 16 59.1**	**-0.1**
CAVI	**Cavuskoy**	**1.26**	**30**	*e*Pn	**Pb**	**04 16 59.1**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.26**	**355**	*e*PN	**Pb**	**04 16 59.1**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.26**	**355**	*e*Pn	**Pb**	**04 16 59.1**	**-0.1**
IZI	**Iznik**	**1.28**	**16**	*e*PN	**Pb**	**04 16 59.4**	**-0.1**
IZI	**Iznik**	**1.28**	**16**	*e*Pn	**Pb**	**04 16 59.4**	**-0.1**
ARMT	**Armutlu**	**1.46**	**355**	*e*PN	**Pn**	**04 17 02.0**	**+0.3**
ARMT	**Armutlu**	**1.46**	**355**	*e*Pn	**Pn**	**04 17 02.0**	**+0.3**

*CSEM **22** 04:25:23.2, 44.°25N×11.°65E, h32km, ML2.0/13*
ROM 22 04:25:23.2±0.1, 44.°25N×11.°65E, h32km±2km, Ml2.0/13,
Error ellipse: s-maj=2.5km s-min=2.0km az=58.0,
Northern Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IMOL	**Imola, Italy**	**0.12**	**32**	Pg	Pn	04 25 28.6	-0.4
IMOL				Sg	Sb	04 25 34.4	+1.5
IMOL	**Imola, Italy**	**0.12**	**32**	Pg	Pn	04 25 28.6	-0.4
IMOL				Sg	Sb	04 25 34.4	+1.5
MTRZ	**Monterenzio**	**0.18**	**313**	Pg	Pb	04 25 29.3	-0.2
	61nm,0.4s						
MTRZ	**Monterenzio**	**0.18**	**313**	Pg	Pb	04 25 29.3	-0.2
	61nm,0.4s						
SEI	**Scarperia**	**0.29**	**227**	Pg	Pb	04 25 30.4	-0.4
SEI				Sg	Sn	04 25 36.9	+0.4
	67nm,0.2s						
SEI	**Scarperia**	**0.29**	**227**	Pg	Pb	04 25 30.4	-0.4
SEI				Sg	Sn	04 25 36.9	+0.4
	67nm,0.2s						
VMG	**Vicchio**	**0.30**	**195**	Pg	Pb	04 25 31.1	+0.2
VMG				Sg	Sn	04 25 37.5	+0.7
	65nm,0.3s						
VMG	**Vicchio**	**0.30**	**195**	Pg	Pb	04 25 31.1	+0.2
VMG				Sg	Sn	04 25 37.5	+0.7
	65nm,0.3s						
CMPO	**Campotto Po**	**0.35**	**19**	Pg	Pb	04 25 30.7	-0.8
CMPO				Sg	Sn	04 25 38.3	+0.5
	201nm,0.2s						
CMPO	**Campotto Po**	**0.35**	**19**	Pg	Pb	04 25 30.7	-0.8
CMPO				Sg	Sn	04 25 38.3	+0.5
	201nm,0.2s						
SFI	**Santa Sofia**	**0.38**	**158**	Pg	Pb	04 25 31.4	-0.5
SFI				Sg	Sn	04 25 39.3	+0.7
	37nm,0.5s						
SFI	**Santa Sofia**	**0.38**	**158**	Pg	Pb	04 25 31.4	-0.5
SFI				Sg	Sn	04 25 39.3	+0.7
	37nm,0.5s						
FNVD	**Fontana Vidola**	**0.39**	**258**	Pg	Pb	04 25 31.4	-0.7
FNVD				Sg	Sn	04 25 39.2	+0.2
	22nm,0.5s						
FNVD	**Fontana Vidola**	**0.39**	**258**	Pg	Pb	04 25 31.4	-0.7
FNVD				Sg	Sn	04 25 39.2	+0.2
	22nm,0.5s						
FIU	**Minerbio Fiu**	**0.40**	**344**	Pg	Pb	04 25 32.3	0.0
FIU				Sg	Sn	04 25 39.8	+0.6
	1μm,0.3s						
FIU	**Minerbio Fiu**	**0.40**	**344**	Pg	Pb	04 25 32.3	0.0
FIU				Sg	Sn	04 25 39.8	+0.6
	1μm,0.3s						
ASQU	**Asqua**	**0.47**	**168**	Pg	Pb	04 25 33.3	0.0
ASQU				Sg	Sn	04 25 41.8	+0.9
	27nm,0.8s						
ASQU	**Asqua**	**0.47**	**168**	Pg	Pb	04 25 33.3	0.0
ASQU				Sg	Sn	04 25 41.8	+0.9
	27nm,0.8s						
RAVA	**Ravarino**	**0.63**	**323**	Pg	Pb	04 25 35.8	0.0
RAVA				Sg	Sn	04 25 46.3	+1.4
	471nm,0.5s						
RAVA	**Ravarino**	**0.63**	**323**	Pg	Pb	04 25 35.8	0.0
RAVA				Sg	Sn	04 25 46.3	+1.4
	471nm,0.5s						
PARC	**Parchiule**	**0.74**	**145**	Pg	Pn	04 25 37.0	-0.4
	18nm,0.5s						
PARC	**Parchiule**	**0.74**	**145**	Pg	Pn	04 25 37.0	-0.4
	18nm,0.5s						
BDI	**Bagni Di Lucca**	**0.78**	**256**	Pg	Pn	04 25 37.9	-0.2
	28nm,0.3s						
BDI	**Bagni Di Lucca**	**0.78**	**256**	Pg	Pn	04 25 37.9	-0.2
	28nm,0.3s						
BADI	**Badiali**	**0.86**	**150**	Pg	Pn	04 25 39.3	+0.2
	39nm,0.3s						
BADI	**Badiali**	**0.86**	**150**	Pg	Pn	04 25 39.3	+0.2
	39nm,0.3s						
ERBM	**Eremo**	**0.90**	**281**	Pg	Pb	04 25 41.0	+0.5
ERBM	**Eremo**	**0.90**	**281**	Pg	Pb	04 25 41.0	+0.5
PESA	**Pesaro**	**0.91**	**110**	Pg	Pb	04 25 40.5	0.0
PESA	**Pesaro**	**0.91**	**110**	Pg	Pb	04 25 40.5	0.0
CAFI	**Castiglion Fio**	**0.95**	**166**	Pg	Pb	04 25 41.1	-0.1
CAFI	**Castiglion Fio**	**0.95**	**166**	Pg	Pb	04 25 41.1	-0.1
PIEI	**Pieia**	**0.96**	**138**	Pg	Pb	04 25 41.1	-0.3
	27nm,0.2s						
PIEI	**Pieia**	**0.96**	**138**	Pg	Pb	04 25 41.1	-0.3
	27nm,0.2s						
FSSB	**Fossombrone**	**0.99**	**124**	Pg	Pb	04 25 41.5	-0.3
FSSB	**Fossombrone**	**0.99**	**124**	Pg	Pb	04 25 41.5	-0.3
ATVO	**AVT- Monte Val**	**1.03**	**148**	Pg	Pb	04 25 42.7	+0.2
	39nm,0.7s						
ATVO	**AVT- Monte Val**	**1.03**	**148**	Pg	Pb	04 25 42.7	+0.2
	39nm,0.7s						
SSFR	**Montelago di S**	**1.16**	**135**	Pg	Pb	04 25 44.5	-0.2
	122nm,0.2s						
SSFR	**Montelago di S**	**1.16**	**135**	Pg	Pb	04 25 44.5	-0.2
	122nm,0.2s						
ATTE	**AVT- Monte Tez**	**1.17**	**154**	Pg	Pb	04 25 44.6	-0.3
ATTE	**AVT- Monte Tez**	**1.17**	**154**	Pg	Pb	04 25 44.6	-0.3

*LDG **22** 04:25:45.9±0.2, 44.°33N×11.°86E, h30km, Ml2.7/8, Error*
ellipse: s-maj=3.9km s-min=3.3km az=146.0
*ISCJB **22** 04:25:45.1±0.3, 44.°32N±0.°02×11.°65E±0.°03, h57km±4km,*
Error ellipse: s-maj=4.2km s-min=2.9km az=146.1
*CSEM **22** 04:25:46.3±0.2, 44.°33N×11.°66E, h30km, ML2.8/14, Error*
ellipse: s-maj=4.3km s-min=3.7km az=135.0
*PRU **22** 04:25:46.5, 44.°41N×11.°91E, h11km*
*GEN **22** 04:25:46.4, 44.°09N×11.°70E, h14km, ML2.3*

*ROM **22** 04:25:47.2±0.1, 44.°26N×11.°61E, h33km±2km, Ml2.3/11,*
Error ellipse: s-maj=2.4km s-min=2.3km az=87.0
ISC 22 04:25:46.1±1.3, 44.°32N±0.°02×11.°67E±0.°02, h37km, n102,
σ1°50/153, Northern Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IMOL	**Imola, Italy**	**0.07**	**52**	Pg	**Pn**	**04 25 52.7**	**+0.5**
IMOL				Sg	**Sn**	**04 25 58.4**	**+1.9**
	92nm,0.4s						
IMOL	**Imola, Italy**	**0.07**	**52**	Pg	**Pn**	**04 25 52.7**	**+0.5**
IMOL				Sg	**Sn**	**04 25 58.4**	**+1.9**
	92nm,0.4s						
MTRZ	**Monterenzio**	**0.16**	**292**	Pg	**Pn**	**04 25 53.5**	**-3.4**
MTRZ	**Monterenzio**	**0.16**	**292**	Pg	**Pn**	**04 25 53.5**	**-3.4**
CMPO	**Campotto Po**	**0.28**	**20**	Pg	**Pn**	**04 25 54.8**	**+0.5**
CMPO				Sg	**Sn**	**04 26 02.4**	**+0.7**
	201nm,0.2s						
CMPO	**Campotto Po**	**0.28**	**20**	Pg	**Pn**	**04 25 54.8**	**+0.5**
CMPO				Sg	**Sn**	**04 26 02.4**	**+0.7**
	201nm,0.2s						
FIU	**Minerbio Fiu**	**0.35**	**338**	Pg	**Pn**	**04 25 56.0**	**+1.5**
FIU				Sg	**Sn**	**04 26 03.9**	**+2.6**
	1μm,0.3s						
FIU	**Minerbio Fiu**	**0.35**	**338**	Pg	**Pn**	**04 25 56.0**	**+1.5**
FIU				Sg	**Sn**	**04 26 03.9**	**+2.6**
	1μm,0.3s						
SEI	**Scarperia**	**0.35**	**221**	Pg	**Pn**	**04 25 54.4**	**-0.2**
SEI				Sg	**Sn**	**04 26 00.9**	**-0.5**
SEI	**Scarperia**	**0.35**	**221**	Pg	**Pn**	**04 25 54.4**	**-0.2**
SEI				Sg	**Sn**	**04 26 00.9**	**-0.5**
VMG	**Vicchio**	**0.37**	**194**	Pg	**Pn**	**04 25 55.1**	**+0.4**
VMG				Sg	**Sn**	**04 26 01.7**	**+0.2**
VMG	**Vicchio**	**0.37**	**194**	Pg	**Pn**	**04 25 55.1**	**+0.4**
VMG				Sg	**Sn**	**04 26 01.7**	**+0.2**
FNVD	**Fontana Vidola**	**0.42**	**249**	Pg	**Pn**	**04 25 55.5**	**0.0**
FNVD				Sg	**Sn**	**04 26 03.3**	**+0.8**
FNVD	**Fontana Vidola**	**0.42**	**249**	Pg	**Pn**	**04 25 55.5**	**0.0**
FNVD				Sg	**Sn**	**04 26 03.3**	**+0.8**
SFI	**Santa Sofia**	**0.43**	**163**	Pg	**Pn**	**04 25 55.5**	**-0.1**
SFI				Sg	**Sn**	**04 26 03.4**	**+0.8**
SFI	**Santa Sofia**	**0.43**	**163**	Pg	**Pn**	**04 25 55.5**	**-0.1**
SFI				Sg	**Sn**	**04 26 03.4**	**+0.8**
ASQU	**Asqua**	**0.53**	**171**	Pg	**Pn**	**04 25 57.2**	**-0.1**
ASQU				Sg	**Sn**	**04 26 05.9**	**+0.9**
ASQU	**Asqua**	**0.53**	**171**	Pg	**Pn**	**04 25 57.2**	**-0.1**
ASQU				Sg	**Sn**	**04 26 05.9**	**+0.9**
RAVA	**Ravarino**	**0.59**	**318**	Pg	**Pn**	**04 25 59.8**	**+1.7**
	471nm,0.5s						
RAVA	**Ravarino**	**0.59**	**318**	Pg	**Pn**	**04 25 59.8**	**+1.7**
	471nm,0.5s						
BLLA	**Bellaria**	**0.60**	**107**	Pg	**Pn**	**04 26 00.2**	**+2.0**
BLLA				Sg	**Sn**	**04 26 10.3**	**+3.6**
BLLA	**Bellaria**	**0.60**	**107**	Pg	**Pn**	**04 26 00.2**	**+2.0**
PARC	**Parchiule**	**0.79**	**148**	Pg	**Pn**	**04 26 01.2**	**+0.5**
PARC	**Parchiule**	**0.79**	**148**	Pg	**Pn**	**04 26 01.2**	**+0.5**
BDI	**Bagni Di Lucca**	**0.81**	**252**	Pg	**Pn**	**04 26 02.3**	**+1.2**
BDI				Sg	**Sn**	**04 26 13.9**	**+1.9**
BDI	**Bagni Di Lucca**	**0.81**	**252**	Pg	**Pn**	**04 26 02.3**	**+1.2**
BDI				Sg	**Sn**	**04 26 13.9**	**+1.9**
NOVE	**Novellara**	**0.83**	**305**	Pg	**Pn**	**04 26 03.7**	**+2.4**

LPG				*e*Sn	**Sn**	**04 27 23.2**	**+0.1**
	1.2nm,0.3s						
LPG	**La Plagne**	**3.69**	**290**	*e*Pn	**Pn**	**04 26 38.6**	**-2.2**
LPG				*e*Sn	**Sn**	**04 27 23.2**	**+0.1**
	0.6nm,0.3s						
FRF	**La Foret Royal**	**3.71**	**260**	*e*Pn	**Pn**	**04 26 41.4**	**+0.6**
FRF				*e*Sn	**Sn**	**04 27 22.8**	**-0.3**
	6.5nm,0.2s						
FRF	**La Foret Royal**	**3.71**	**260**	*e*Pn	**Pn**	**04 26 41.4**	**+0.6**
FRF				*e*Sn	**Sn**	**04 27 22.8**	**-0.3**
	3.2nm,0.2s						
LMR	**La Mourre**	**3.86**	**257**	*e*Pn	**Pn**	**04 26 42.5**	**-0.4**
LMR				*e*Sn	**Sn**	**04 27 26.5**	**-0.5**
	3.2nm,0.3s						
LMR	**La Mourre**	**3.86**	**257**	*e*Pn	**Pn**	**04 26 42.5**	**-0.4**
LMR				*e*Sn	**Sn**	**04 27 26.5**	**-0.5**
	1.6nm,0.3s						
MOA	**Molln**	**3.97**	**26**	*e*Pn	**Pn**	**04 26 44.5**	**+0.2**
	0.5nm,0.2s						
MOA				*e*Sn	**Sn**	**04 27 30.1**	**+0.5**
	2.7nm,0.2s						
MOA	**Molln**	**3.97**	**26**	Pn	**Pn**	**04 26 44.5**	**+0.2**
	0.5nm,0.2s						
MOA				Sg	**Sn**	**04 27 30.1**	**+0.5**
	2.7nm,0.2s						
SMRF	**Simiane la Rot**	**4.40**	**268**	*e*Pn	**Pn**	**04 26 52.1**	**+1.8**
SMRF	**Simiane la Rot**	**4.40**	**268**	*e*Pn	**Pn**	**04 26 52.1**	**+1.8**
CABF	**La Chapelle**	**4.55**	**302**	*e*Pn	**Pn**	**04 26 52.3**	**-0.1**
CABF	**La Chapelle**	**4.55**	**302**	*e*Pn	**Pn**	**04 26 52.3**	**-0.1**
CONA	**Conrad Observa**	**4.64**	**37**	*e*Pn	**Pn**	**04 26 53.9**	**+0.3**
	0.3nm,0.1s						
CONA				Sn	**Sn**	**04 27 45.1**	**-1.2**
	0.6nm,0.2s						
CONA	**Conrad Observa**	**4.64**	**37**	Pn	**Pn**	**04 26 53.9**	**+0.3**
	0.3nm,0.1s						
CONA				Sg	**Sn**	**04 27 45.1**	**-1.2**
	0.6nm,0.2s						
HINF	**Hinteralfeld**	**4.84**	**318**	*e*Pn	**Pn**	**04 26 55.9**	**-0.5**
HINF				*e*Sn	**Sn**	**04 27 48.7**	**-2.5**
	1.0nm,0.2s						
HINF	**Hinteralfeld**	**4.84**	**318**	*e*Pn	**Pn**	**04 26 55.9**	**-0.5**
HINF				*e*Sn	**Sn**	**04 27 48.7**	**-2.5**
	0.5nm,0.2s						
KHC	**Kasperske Hory**	**4.99**	**15**	*e*PN	**Pn**	**04 26 58.3**	**-0.1**
KHC				*ex*	x	04 27 24.0	
KHC				*e*SN	**Sn**	**04 27 52.3**	**-2.5**
KHC				*ex*	x	04 28 24.5	
KHC	**Kasperske Hory**	**4.99**	**15**	Pn	**Pn**	**04 26 58.3**	**-0.1**
KHC				Sn	**Sn**	**04 27 52.3**	**-2.5**
VIVF	**Saint-Julien-l**	**5.03**	**279**	*e*Pn	**Pn**	**04 26 58.8**	**-0.1**
VIVF	**Saint-Julien-l**	**5.03**	**279**	*e*Pn	**Pn**	**04 26 58.8**	**-0.1**
CDF	**Champ du Feu**	**5.10**	**325**	*e*Pn	**Pn**	**04 26 59.6**	**-0.4**
CDF				*e*Sn	**Sn**	**04 27 54.4**	**-3.2**
	1.7nm,0.3s						
CDF	**Champ du Feu**	**5.10**	**325**	*e*Pn	**Pn**	**04 26 59.6**	**-0.4**
CDF				*e*Sn	**Sn**	**04 27 54.4**	**-3.2**
	0.9nm,0.3s						
HAU	**Haudompre**	**5.22**	**317**	*e*Pn	**Pn**	**04 27 01.3**	**-0.3**
HAU	**Haudompre**	**5.22**	**317**	*e*Pn	**Pn**	**04 27 01.3**	**-0.3**
SMF	**Signal de Mont**	**5.98**	**296**	*e*Pn	**Pn**	**04 27 11.6**	**-0.3**
SMF	**Signal de Mont**	**5.98**	**296**	*e*Pn	**Pn**	**04 27 11.6**	**-0.3**

IDC 22 04:29:15.0±3.3, 6°38S×147°69E, h0km, mb3.3/2, mb1 3.5/4, mb1mx3.3/42, mbtmp3.3/4, ML3.3/1, Error ellipse: s-maj=74.0km s-min=33.8km az=94.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**3.05**	**190**	Pn	Pn	04 30 06.0	+1.5
	3.0nm,0.3s,baz=51,slow=13,SNR=6.1						
PMG				Sn	Sn	04 30 41.7	-0.1
	0.4nm,0.3s,baz=343,slow=19,SNR=2.3						
WRA	**Warramunga Arr**	**18.70**	**223**	P	P	04 33 35.3	+0.1
	0.1nm,0.3s,baz=47,slow=11,SNR=7.2						
ASAR	**Alice Springs**	**21.70**	**216**	P	P	04 34 06.8	-1.0
	0.4nm,0.5s,baz=53,slow=9.1,SNR=4.9						
FITZ	**Fitzroy Crossi**	**24.46**	**240**	P	P	04 34 35.5	-0.3
	0.9nm,0.5s,baz=41,slow=9.3,SNR=4.3						
TORD	**Torodi Ar. Bea**	**145.84**	**284**	PKPbc	PKPdf	04 48 57.0	+0.1
	0.2nm,0.6s,baz=63,slow=3.3,SNR=5.8						

IDC 22 04:29:51.2±1.4, 34°80N×142°87E, h0km, mb3.7/4, mb1 3.7/6, mb1mx3.4/52, mbtmp3.7/6, ML3.1/1, Error ellipse: s-maj=45.9km s-min=21.1km az=82.0
ISCJB 22 04:29:53.9±0.9, 34°91N±0°07×142°84E±0°07, h33km, mb3.7/4, Error ellipse: s-maj=10.6km s-min=8.3km az=22.2
JMA 22 04:29:54.8±0.3, 34°86N×142°76E, h66km, M3.4
ISC 22 04:29:56.0±1.2, 34°90N±0°08×142°80E±0°09, h35km, n15, σ1°24/21, mb3.8/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**1.52**	**261**	P	**Pn**	**04 30 19.5**	**-0.6**
BSO1				*e*S	**Sn**	**04 30 39.3**	**+1.0**
CHOJ	**Chosi**	**1.78**	**297**	P	**Pn**	**04 30 24.4**	**+0.2**
CHOJ				*e*S	**Sn**	**04 30 45.2**	**-0.3**
BSO3	**Boso 3**	**1.88**	**268**	P	**Pn**	**04 30 25.5**	**+0.1**
BSO3				S	**Sn**	**04 30 49.1**	**+1.3**
JOD2	**Odawara 2**	**3.06**	**278**	P	**Pn**	**04 30 41.0**	**-0.9**
JOD2				*e*S	**Sn**	**04 31 14.8**	**-2.5**
JAG	**Ashikaga**	**3.12**	**300**	P	**Pn**	**04 30 42.4**	**-0.3**
JFT	**Otama**	**3.29**	**323**	P	**Pn**	**04 30 44.3**	**-0.7**
JFT				S	**Sn**	**04 31 20.8**	**-2.0**
JRY	**Ryogami san**	**3.37**	**290**	P	**Pn**	**04 30 46.7**	**+0.6**
JYN	**Shimob**	**3.53**	**281**	P	**Pn**	**04 30 48.6**	**+0.2**
MJAR	**Matsushiro Arr**	**4.08**	**295**	Pn	**Pn**	**04 30 56.4**	**+0.6**
	1.1nm,0.3s,baz=120,slow=7.4,SNR=14						
MAT	**Matsushiro**	**4.08**	**295**	P	**Pn**	**04 30 56.2**	**+0.3**
MAT				S	**Sn**	**04 31 41.3**	**-1.1**
JCJ	**Chichijima**	**7.79**	**184**	Pn	**Pn**	**04 31 43.9**	**-3.0**
	baz=330,slow=20						
JCJ				Sn	Sn	04 33 05.8	-8.1
	6.3nm,0.3s,baz=290,slow=22,SNR=6.0						
SEY	**Seymchan**	**28.69**	**9**	P	**P**	**04 35 50.5**	**+1.1**
	0.6nm,0.2s,baz=217,slow=20,SNR=2.7						
KURBB	**Kurchatov Arra**	**48.21**	**310**	P	**P**	**04 38 33.5**	**+0.6**
	0.3nm,0.5s,baz=84,slow=7.6,SNR=2.8						
WRA	**Warramunga Arr**	**55.12**	**190**	P	**P**	**04 39 24.7**	**-0.1**
	0.9nm,0.8s,baz=9.6,slow=7.4,SNR=8.8						
ASAR	**Alice Springs**	**58.85**	**190**	P	**P**	**04 39 51.5**	**+0.4**
	0.5nm,0.9s,baz=3.5,slow=7.0,SNR=4.1						

ISK 22 04:38:02.8, 39°14N×29°01E, h5km, MD2.9
DDA 22 04:38:02.6, 39°14N×29°00E, h7km, Ml3.3
CSEM 22 04:38:03.3±0.1, 39°13N×28°99E, h5km, ML3.3, Error ellipse: s-maj=2.0km s-min=1.6km az=118.0
ISC 22 04:38:02.7±0.9, 39°14N±0°02×29°00E±0°02, h17km±7km, n57, σ0°33/71, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**247**	P	**Pb**	**04 38 08.5**	**-0.2**
DEMI				S	**Sg**	**04 38 11.8**	**-0.3**
DEMI	**Demirci**	**0.24**	**247**	*i* P	**Pb**	**04 38 08.5**	**-0.2**
DEMI				*i* S	**Sg**	**04 38 11.8**	**-0.3**
GDZ	**Gediz**	**0.37**	**98**	P	**Pg**	**04 38 10.8**	**+0.2**
GDZ				S	**Sg**	**04 38 15.8**	**0.0**
GDZ	**Gediz**	**0.37**	**98**	*i* P	**Pg**	**04 38 10.8**	**+0.2**
GDZ				*i* S	**Sg**	**04 38 15.8**	**0.0**
TVSB	**Tavsanli**	**0.47**	**49**	PG	**Pg**	**04 38 12.3**	**0.0**
TVSB				SG	**Sg**	**04 38 18.6**	**-0.2**
TVSB	**Tavsanli**	**0.47**	**49**	*i* Pg	**Pg**	**04 38 12.3**	**0.0**
KULA	**Kula-Manisa**	**0.68**	**203**	*e*PG	**Pg**	**04 38 16.1**	**0.0**
KULA	**Kula-Manisa**	**0.68**	**203**	*e*Pg	**Pg**	**04 38 16.1**	**0.0**
MANT	**Manisa**	**0.73**	**208**	P	**Pb**	**04 38 17.3**	**+0.1**
MANT				S	**Sg**	**04 38 26.6**	**-0.3**
MANT	**Manisa**	**0.73**	**208**	*i* P	**Pb**	**04 38 17.3**	**+0.1**
MANT				*i* S	**Sg**	**04 38 26.6**	**-0.3**
KHAL	**Karahalli**	**0.86**	**153**	P	**Pn**	**04 38 20.0**	**-0.1**
KHAL				S	**Sg**	**04 38 30.8**	**0.0**
KHAL	**Karahalli**	**0.86**	**153**	*i* P	**Pn**	**04 38 19.9**	**-0.1**
KHAL				*i* S	**Sg**	**04 38 30.8**	**0.0**
KHL	**Karahalli**	**0.91**	**153**	*e*PG	**Pn**	**04 38 21.0**	**+0.2**
KHL	**Karahalli**	**0.91**	**153**	*e*Pg	**Pn**	**04 38 21.0**	**+0.2**
ORLT	**Orhaneli**	**0.91**	**355**	*e*PG	**Pg**	**04 38 20.6**	**+0.2**
ORLT	**Orhaneli**	**0.91**	**355**	*e*Pg	**Pg**	**04 38 20.6**	**+0.2**
AKHS	**Akhisar**	**0.96**	**255**	P	**Pn**	**04 38 21.9**	**+0.4**
AKHS				*i* S	**Sn**	**04 38 34.4**	**-0.3**
AKS	**Akhisar**	**0.96**	**255**	*e*PG	**Pn**	**04 38 21.6**	**+0.2**
AKS	**Akhisar**	**0.96**	**255**	*e*Pg	**Pn**	**04 38 21.6**	**+0.2**
BALB	**Balikesir**	**1.00**	**300**	*e*PG	**Pn**	**04 38 22.6**	**+0.6**
BALB	**Balikesir**	**1.00**	**300**	*e*Pg	**Pn**	**04 38 22.6**	**+0.6**
IGD	**Bursa**	**1.13**	**8**	*i* P	**Pn**	**04 38 23.4**	**-0.4**
IGD				*i* S	**Sb**	**04 38 38.7**	**+0.4**
KCTX	**Karacabey (Bur**	**1.23**	**336**	*e*PN	**Pg**	**04 38 27.1**	**+0.6**
KCTX	**Karacabey (Bur**	**1.23**	**336**	*e*Pn	**Pg**	**04 38 27.1**	**+0.6**
MDNY	**Mudanya-Bursa**	**1.23**	**356**	*e*PN	**Pg**	**04 38 26.5**	**0.0**
MDNY	**Mudanya-Bursa**	**1.23**	**356**	*e*Pn	**Pg**	**04 38 26.5**	**0.0**
CAVI	**Cavuskoy**	**1.24**	**31**	*e*PN	**Pg**	**04 38 26.7**	**0.0**
CAVI	**Cavuskoy**	**1.24**	**31**	*e*Pn	**Pg**	**04 38 26.7**	**0.0**
IZI	**Iznik**	**1.25**	**17**	*e*PN	**Pg**	**04 38 27.4**	**+0.6**
IZI	**Iznik**	**1.25**	**17**	*e*Pn	**Pg**	**04 38 27.5**	**+0.6**
GEMT	**Gemlik**	**1.30**	**6**	*e*PN	**Pg**	**04 38 27.9**	**0.0**
GEMT	**Gemlik**	**1.30**	**6**	*e*Pn	**Pg**	**04 38 27.9**	**0.0**
GONE	**Gonen-Balikesi**	**1.36**	**312**	*e*PN	**Pg**	**04 38 29.0**	**0.0**
GONE	**Gonen-Balikesi**	**1.36**	**312**	*e*Pn	**Pg**	**04 38 29.0**	**0.0**
ADVT	**Abdulvahap**	**1.41**	**23**	*e*PN	**Pg**	**04 38 30.0**	**+0.1**
ADVT	**Abdulvahap**	**1.41**	**23**	*e*Pn	**Pg**	**04 38 30.0**	**+0.1**
ARMT	**Armutlu**	**1.43**	**356**	*e*PN	**Pg**	**04 38 30.0**	**-0.3**
ARMT	**Armutlu**	**1.43**	**356**	*e*Pn	**Pg**	**04 38 30.0**	**-0.3**
EDC	**Edincik**	**1.49**	**324**	*e*PN	**Pg**	**04 38 31.1**	**-0.4**
EDC	**Edincik**	**1.49**	**324**	*e*Pn	**Pg**	**04 38 31.1**	**-0.4**
GPA	**Golpazari**	**1.53**	**41**	*e*PN	**Pg**	**04 38 31.7**	**-0.4**
GPA	**Golpazari**	**1.53**	**41**	*e*Pn	**Pg**	**04 38 31.7**	**-0.4**
BUY	**Buyukada**	**1.71**	**3**	P	**Pg**	**04 38 35.0**	**-0.6**
BUY				S	**Sb**	**04 38 55.3**	**+0.3**
BUY	**Buyukada**	**1.71**	**3**	*i* P	**Pg**	**04 38 35.0**	**-0.6**
BUY				*i* S	**Sb**	**04 38 55.3**	**+0.3**
GULT	**Gulveren**	**1.74**	**42**	*e*PN	**Pb**	**04 38 34.5**	**+0.3**
GULT	**Gulveren**	**1.74**	**42**	*e*Pn	**Pb**	**04 38 34.5**	**+0.3**
HRT	**Hereke**	**1.76**	**17**	*e*PN	**Pb**	**04 38 34.7**	**+0.2**
HRT	**Hereke**	**1.76**	**17**	*e*Pn	**Pb**	**04 38 34.7**	**+0.2**
SPNC	**Sapanca-Adapaz**	**1.84**	**33**	*e*PN	**Pb**	**04 38 36.2**	**+0.4**
SPNC	**Sapanca-Adapaz**	**1.84**	**33**	*e*Pn	**Pb**	**04 38 36.3**	**+0.4**
ISK	**Istanbul-Kandi**	**1.93**	**1**	*e*PN	**Pb**	**04 38 37.0**	**-0.3**
ISK	**Istanbul-Kandi**	**1.93**	**1**	*e*Pn	**Pb**	**04 38 37.0**	**-0.3**
SVRH	**Sivrihisar-ESK**	**1.98**	**80**	*e*PN	**Pb**	**04 38 38.1**	**-0.1**
SVRH	**Sivrihisar-ESK**	**1.98**	**80**	*e*Pn	**Pb**	**04 38 38.2**	**-0.1**
MDUB	**Mudurnu**	**2.15**	**51**	*e*PN	**Pb**	**04 38 40.6**	**-0.6**
MDUB	**Mudurnu**	**2.15**	**51**	*e*Pn	**Pb**	**04 38 40.6**	**-0.6**

IDC 22 04:42:30.9±1.4, 34°72N×142°81E, h0km, mb3.7/3, mb1 3.9/5, mb1mx3.5/41, mbtmp3.8/5, ML3.7/2, Error ellipse: s-maj=40.9km s-min=29.0km az=99.0
JMA 22 04:42:32.9±0.5, 34°82N×142°88E, h64km, M3.5
ISCJB 22 04:42:33.8±0.9, 34°78N±0°07×142°75E±0°07, h33km, mb3.7/3, Error ellipse: s-maj=10.8km s-min=8.2km az=13.3
ISC 22 04:42:34.2±1.1, 34°76N±0°07×142°87E±0°09, h35km, n17, σ2°02/22, mb3.7/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**1.56**	**267**	P	**Pn**	**04 42 59.0**	**+0.1**
BSO1				*e*S	**Sn**	**04 43 18.7**	**+1.0**
CHOJ	**Chosi**	**1.90**	**300**	P	**Pn**	**04 43 03.5**	**-0.5**
BSO3	**Boso 3**	**1.94**	**272**	P	**Pn**	**04 43 04.8**	**+0.4**
BSO4	**Boso 4**	**2.09**	**277**	P	**Pn**	**04 43 07.2**	**+0.6**
JHJ	**Hachijo jima 2**	**3.04**	**238**	Sn	**Sn**	**04 43 52.7**	**-2.3**
	20nm,0.3s,baz=90,slow=20,SNR=3.1						
JOD2	**Odawara 2**	**3.14**	**280**	P	**Pn**	**04 43 20.4**	**-0.8**
JOD2				*e*S	**Sn**	**04 43 55.8**	**-1.7**
JAG	**Ashikaga**	**3.24**	**302**	P	**Pn**	**04 43 22.0**	**-0.5**
JFT	**Otama**	**3.43**	**324**	P	**Pn**	**04 43 23.8**	**-1.4**
JFT				*e*S	**Sn**	**04 44 00.4**	**-4.2**
JRY	**Ryogami san**	**3.48**	**292**	P	**Pn**	**04 43 25.6**	**-0.2**
JYN	**Shimob**	**3.62**	**283**	S	**Sn**	**04 44 09.5**	**+0.2**
MJAR	**Matsushiro Arr**	**4.19**	**296**	Pn	**Pn**	**04 43 34.9**	**-0.7**
	2.7nm,0.3s,baz=107,slow=8.3,SNR=27						
MAT	**Matsushiro**	**4.19**	**296**	P	**Pn**	**04 43 35.8**	**+0.2**
MAT				S	**Sn**	**04 44 20.7**	**-2.7**
MAT	**Matsushiro**	**4.19**	**296**	P	**Pn**	**04 43 36.0**	**+0.4**
JCJ	**Chichijima**	**7.66**	**185**	Pn	**Pn**	**04 44 21.2**	**-2.1**
	1.7nm,0.3s,baz=312,slow=18,SNR=5.9						
JCJ				Sn	**Sn**	**04 45 44.4**	**-4.5**
	3.5nm,0.3s,baz=287,slow=19,SNR=2.6						
WRA	**Warramunga Arr**	**55.00**	**190**	P	**P**	**04 52 04.0**	**+1.9**
	1.1nm,0.8s,baz=8.4,slow=7.2,SNR=8.4						
ASAR	**Alice Springs**	**58.72**	**190**	P	**P**	**04 52 30.6**	**+2.1**
	0.4nm,0.6s,baz=1.8,slow=6.5,SNR=5.7						
NVAR	**Mina Array Bea**	**75.40**	**53**	P	**P**	**04 54 17.1**	**+2.5**
	0.5nm,0.6s,baz=270,slow=7.1,SNR=4.6						

IDC 22 04:43:12.4±1.0, 34°75N×142°86E, h0km, mb3.7/5, mb1 3.9/7, mb1mx3.6/40, mbtmp3.7/7, ML3.6/2, Error ellipse: s-maj=35.1km s-min=21.8km az=102.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHJ	**Hachijo jima 2**	**3.03**	**238**	Sn	Sn	04 44 36.0	-2.6
	152nm,0.3s,baz=72,slow=20,SNR=5.9						
MJAR	**Matsushiro Arr**	**4.19**	**297**	Pn	Pn	04 44 16.7	-0.9
	1.5nm,0.3s,baz=91,slow=12,SNR=8.7						
MAT	**Matsushiro**	**4.19**	**297**	P	Pn	04 44 18.1	+0.5
MAT				S	Sn	04 45 02.3	-5.0
JCJ	**Chichijima**	**7.65**	**185**	Pn	Pn	04 45 05.2	+0.1
	2.1nm,0.3s,baz=315,slow=19,SNR=2.8						
JCJ				Sn	Sn	04 46 25.4	-7.1
	6.9nm,0.3s,baz=307,slow=20,SNR=3.7						
ILAR	**Eielson Array**	**50.81**	**31**	P	P	04 52 13.8	-0.3
	0.3nm,0.8s,baz=270,slow=6.8,SNR=3.2						
WRA	**Warramunga Arr**	**54.99**	**190**	P	P	04 52 45.7	+0.2
	1.7nm,0.7s,baz=9.3,slow=7.4,SNR=11						
ASAR	**Alice Springs**	**58.71**	**190**	P	P	04 53 11.3	-0.6
	0.3nm,0.6s,baz=16,slow=12,SNR=5.0						
NVAR	**Mina Array Bea**	**75.41**	**53**	P	P	04 54 58.5	+0.2
	0.6nm,0.7s,baz=283,slow=5.9,SNR=4.6						
BRTR	**Keskin Array B**	**81.25**	**313**	P	P	04 55 31.0	+0.4
	0.5nm,0.7s,baz=95,slow=2.5,SNR=4.1						

ISCJB 22 04:43:14.9±0.4, 39°12N±0°03×28°99E±0°03, h6km±5km, Error ellipse: s-maj=4.9km s-min=4.1km az=139.0
ISK 22 04:43:14.8, 39°12N×29°02E, h9km, MD2.8
DDA 22 04:43:14.7, 39°11N×28°99E, h7km, Ml3.1
CSEM 22 04:43:15.2±0.1, 39°11N×28°99E, h8km, ML3.1, Error ellipse: s-maj=1.4km s-min=1.2km az=114.0
ISC 22 04:43:15.2±0.9, 39°12N±0°02×29°00E±0°02, h11km±9km, n45, σ0°40/58, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.23**	**252**	P	**Pg**	**04 43 20.0**	**0.0**
DEMI				S	**Sg**	**04 43 23.2**	**-0.1**
DEMI	**Demirci**	**0.23**	**252**	*i* P	**Pg**	**04 43 20.0**	**0.0**
DEMI				*i* S	**Sg**	**04 43 23.2**	**-0.1**
GDZ	**Gediz**	**0.38**	**94**	P	**Pg**	**04 43 22.9**	**+0.1**
GDZ				S	**Sg**	**04 43 28.2**	**+0.3**
GDZ	**Gediz**	**0.38**	**94**	*i* P	**Pg**	**04 43 22.9**	**+0.1**
GDZ				*i* S	**Sg**	**04 43 28.2**	**+0.3**
TVSB	**Tavsanli**	**0.49**	**47**	*e*PG	**Pg**	**04 43 24.9**	**0.0**
TVSB				*e*SG	**Sg**	**04 43 31.5**	**+0.1**
TVSB	**Tavsanli**	**0.49**	**47**	*e*Pg	**Pg**	**04 43 24.9**	**0.0**
TVSB				*e*Sg	**Sg**	**04 43 31.5**	**+0.1**
KULA	**Kula-Manisa**	**0.66**	**204**	*e*PG	**Pg**	**04 43 28.0**	**+0.1**
KULA	**Kula-Manisa**	**0.66**	**204**	*e*Pg	**Pg**	**04 43 28.0**	**+0.1**
MANT	**Manisa**	**0.71**	**209**	P	**Pg**	**04 43 28.9**	**-0.1**
MANT				S	**Sg**	**04 43 38.0**	**-0.4**
MANT	**Manisa**	**0.71**	**209**	*i* P	**Pg**	**04 43 28.9**	**-0.1**
MANT				*i* S	**Sg**	**04 43 38.0**	**-0.4**
KHAL	**Karahalli**	**0.84**	**152**	P	**Pg**	**04 43 31.5**	**+0.1**
KHAL				S	**Sb**	**04 43 42.9**	**-0.3**
KHAL	**Karahalli**	**0.84**	**152**	*i* P	**Pg**	**04 43 31.6**	**+0.1**
KHAL				*i* S	**Sb**	**04 43 42.9**	**-0.3**
KHL	**Karahalli**	**0.89**	**152**	*e*PG	**Pg**	**04 43 32.3**	**-0.1**
KHL	**Karahalli**	**0.89**	**152**	*e*Pg	**Pg**	**04 43 32.3**	**-0.1**
ORLT	**Orhaneli**	**0.93**	**355**	*e*PG	**Pg**	**04 43 33.2**	**0.0**
ORLT	**Orhaneli**	**0.93**	**355**	*e*Pg	**Pg**	**04 43 33.2**	**0.0**
AKS	**Akhisar**	**0.95**	**256**	*e*PG	**Pg**	**04 43 33.7**	**+0.2**
AKS	**Akhisar**	**0.95**	**256**	*e*Pg	**Pg**	**04 43 33.7**	**+0.2**
BALB	**Balikesir**	**1.01**	**302**	*e*PG	**Pb**	**04 43 35.1**	**+0.4**
BALB	**Balikesir**	**1.01**	**302**	*e*Pg	**Pb**	**04 43 35.1**	**+0.4**
IGD	**Bursa**	**1.16**	**8**	*i* P	**Pb**	**04 43 36.3**	**-1.0**
IGD				*i* S	**Sb**	**04 43 50.9**	**-1.4**
KCTX	**Karacabey (Bur**	**1.25**	**337**	*e*PN	**Pg**	**04 43 39.5**	**+0.3**
KCTX	**Karacabey (Bur**	**1.25**	**337**	*e*Pn	**Pg**	**04 43 39.5**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.25**	**356**	*e*PN	**Pn**	**04 43 38.7**	**0.0**
MDNY	**Mudanya-Bursa**	**1.25**	**356**	*e*Pn	**Pn**	**04 43 38.7**	**0.0**
CAVI	**Cavuskoy**	**1.27**	**31**	*e*PN	**Pn**	**04 43 39.1**	**+0.2**
CAVI	**Cavuskoy**	**1.27**	**31**	*e*Pn	**Pn**	**04 43 39.1**	**+0.2**
IZI	**Iznik**	**1.27**	**17**	*e*PN	**Pn**	**04 43 39.1**	**0.0**
IZI	**Iznik**	**1.27**	**17**	*e*Pn	**Pn**	**04 43 39.1**	**0.0**
BORA	**Eskisehir**	**1.36**	**55**	P	**Pn**	**04 43 40.7**	**+0.4**
BORA				S	**Sg**	**04 43 59.3**	**+0.2**
BORA	**Eskisehir**	**1.36**	**55**	*i* P	**Pn**	**04 43 40.7**	**+0.4**
BORA				*i* S	**Sg**	**04 43 59.3**	**+0.2**
GONE	**Gonen-Balikesi**	**1.37**	**313**	*e*PN	**Pn**	**04 43 40.8**	**+0.4**
GONE	**Gonen-Balikesi**	**1.37**	**313**	*e*Pn	**Pn**	**04 43 40.8**	**+0.4**
ADVT	**Abdulvahap**	**1.44**	**23**	*e*PN	**Pn**	**04 43 41.6**	**+0.4**
ADVT	**Abdulvahap**	**1.44**	**23**	*e*Pn	**Pn**	**04 43 41.6**	**+0.4**
ARMT	**Armutlu**	**1.45**	**356**	*e*PN	**Pn**	**04 43 42.1**	**+0.6**
ARMT	**Armutlu**	**1.45**	**356**	*e*Pn	**Pn**	**04 43 42.1**	**+0.6**
EDC	**Edincik**	**1.51**	**325**	*e*PN	**Pn**	**04 43 42.7**	**+0.5**
EDC	**Edincik**	**1.51**	**325**	*e*Pn	**Pn**	**04 43 42.7**	**+0.5**
GULT	**Gulveren**	**1.76**	**41**	*e*PN	**Pn**	**04 43 46.3**	**+0.5**
GULT	**Gulveren**	**1.76**	**41**	*e*Pn	**Pn**	**04 43 46.3**	**+0.5**
HRT	**Hereke**	**1.78**	**17**	*e*PN	**Pn**	**04 43 46.7**	**+0.7**
HRT	**Hereke**	**1.78**	**17**	*e*Pn	**Pn**	**04 43 46.7**	**+0.7**
SVRH	**Sivrihisar-ESK**	**1.99**	**80**	*e*PN	**Pn**	**04 43 49.4**	**+0.5**
SVRH	**Sivrihisar-ESK**	**1.99**	**80**	*e*Pn	**Pn**	**04 43 49.4**	**+0.5**

NIED 22 04:45:00, 34°90N×142°70E, h5km, Mw4.2 Best double couple: M0=2.22000×10^15 NP1:φs=16.00000°, δ=25.00000°, λ=-122.00000°. NP2:φs=230.00000°, δ=69.00000°, λ=-76.00000°.
IDC 22 04:45:36.0±0.5, 34°82N×142°87E, h0km, mb4.1/19, mb1 4.3/24, mb1mx4.2/41, mbtmp4.1/24, ML3.5/5, MS3.0/11, Ms1 3.0/11, ms1mx2.9/38, Error ellipse: s-maj=15.5km s-min=13.9km az=133.0
NEIC 22 04:45:37.5±2.6, 34°79N×142°80E, h7km±16km, mb4.6/41, Error ellipse: s-maj=5.7km s-min=4.5km az=121.0
JMA 22 04:45:40.0±0.3, 34°87N×142°72E, h54km, M4.3
MOS 22 04:45:40.7±1.2, 34°79N×142°73E, h41km, mb4.6/36, Error ellipse: s-maj=10.5km s-min=7.5km az=119.4
ISCJB 22 04:45:41.1±0.2, 34°88N±0°03×142°63E±0°03, h42km, mb4.4/81, MS3.4/10, Error ellipse: s-maj=4.5km s-min=3.0km az=1.6
ISC 22 04:45:42.3±0.4, 34°98N±0°05×142°72E±0°05, h42km, n186, σ1°93/171, mb4.4/81, MS3.2/11, 11C-4D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**1.47**	**258**	P	**Pn**	**04 46 04.1**	**-1.7**
BSO1				S	**Sn**	**04 46 22.2**	**-1.3**
CHOJ	**Chosi**	**1.68**	**296**	P	**Pn**	**04 46 08.7**	**-0.5**
CHOJ				*e*S	**Sn**	**04 46 29.3**	**-0.3**
BSO3	**Boso 3**	**1.82**	**265**	P	**Pn**	**04 46 09.7**	**-1.2**
BSO4	**Boso 4**	**1.95**	**271**	P	**Pn**	**04 46 12.6**	**-0.2**
BSO4			

BJI pmax pmax
comp=Z,32nm,3.0s
WHN Wuhan 24.22 267 P **P** **04 50 55.5 +0.4**
WHN S S 04 55 29.1 +18
WHN LR LR
comp=N,720nm,20.5s
WHN LR LR
comp=E,630nm,15.9s
WHN LR LR
comp=Z,420nm,16.2s
MA2 Magadan 25.17 10 LR LR 05 03 07.3
comp=Z,30nm,18.2s,baz=128,slow=42
HHC Hu-ho-hao-te 25.19 293 *e*P **P** **04 51 06.8 +2.9**
HHC pmax pmax
comp=Z,38nm,0.8s
HHC pmax pmax
comp=Z,130nm,4.2s
H11N2 WAKE ISLAND Hy 26.21 119 T T 05 18 18.0
baz=311,slow=75,SNR=16
H11N1 WAKE ISLAND Hy 26.21 119 T T 05 18 20.2
baz=311,slow=75,SNR=17
H11N3 WAKE ISLAND Hy 26.22 119 T T 05 18 21.9
baz=311,slow=75,SNR=18
H11S1 WAKE ISLAND Hy 26.87 121 T T 05 19 13.9
baz=312,slow=75,SNR=26
H11S3 WAKE ISLAND Hy 26.87 121 T T 05 19 14.4
baz=312,slow=75,SNR=27
H11S2 WAKE ISLAND Hy 26.89 121 T T 05 19 15.0
baz=312,slow=75,SNR=25
XAN Xi'an 27.79 278 P **P** **04 51 28.3 +0.9**
XAN pP pP 04 51 37.8 -1.0
XAN S **S** **04 56 09.3 +1.8**
XAN pmax pmax
comp=Z,4.0nm,1.0s
XAN pmax pmax
comp=Z,43nm,4.8s
XAN LR LR
comp=E,99nm,13.1s
XAN LR LR
comp=Z,97nm,12.1s
ENH Enshi 28.30 270 *e*P **P** **04 51 32.1 +0.1**
comp=Z,6.6nm,0.5s
YAK Yakutsk 28.31 347 *e*P P 04 51 41.5 +10
YAK *e* 04 52 38.6
YAK *e* 04 54 42.1
YAK *e* 05 02 18.8
YAK pmax pmax
comp=Z,16nm,0.9s
YAK pmax pmax
comp=E,5.0nm,0.9s
YAK pmax pmax
comp=N,7.0nm,0.9s
YAK pmax pmax
comp=Z,94nm,4.3s
YAK pmax pmax
comp=N,60nm,4.8s
YAK pmax pmax
comp=E,39nm,4.6s
YAK MLR MLR
comp=Z,125nm,15.0s
YAK MLR MLR
comp=N,78nm,13.0s
SEY Seymchan 28.63 9*ce*P P 04 51 38.3 +3.9
ULN Ulaanbaatar 29.41 307*ce*P P 04 51 45.4 +3.6
ULN pmax pmax
comp=Z,7.0nm,2.5s
ULN Ulaanbaatar 29.41 307 *e*P **P** **04 51 43.4 +1.6**
comp=Z,2.8nm,0.7s
SONA1 Songino Array 29.83 307 *e*P **P** **04 51 46.8 +1.3**
SONM Songino Array 29.84 307 P **P** **04 51 47.4 +1.8**
comp=Z,1.6nm,0.9s,baz=102,slow=7.7,SNR=6.7
LZH Lanzhou 31.52 283 *e*P P 04 52 03.3 +2.8
LZH pP sP 04 52 12.8 -4.2
LZH sP pP 04 52 16.8 +4.9
LZH *e*PP **PP** **04 53 08.5 -3.6**
LZH pmax pmax
comp=Z,22nm,1.1s
LZH pmax pmax
comp=Z,65nm,5.4s
LZH LR LR
comp=N,280nm,12.9s
LZH LR LR
comp=E,300nm,13.1s
LZH LR LR
comp=Z,390nm,16.7s
ZAK Zakamensk 32.39 311 *e*P **P** **04 52 09.8 +1.8**
ZAK pmax pmax
comp=Z,2.0nm,1.2s
TLY Talaya 32.49 313 LR LR 05 08 02.2
comp=Z,45nm,18.1s,baz=109,slow=41
CD2 Chengdu 32.80 274 P **P** **04 52 11.8 +0.1**
CD2 pmax pmax
comp=Z,2.0nm,0.5s
GTA Gaotai 34.22 290 *e*P P 04 52 27.0 +2.9
GTA pP sP 04 52 36.3 -4.3
GTA sP pP 04 52 40.4 +4.8
GTA PcP **PcP** **04 55 00.3 +0.2**
GTA S **S** **04 57 53.0 +4.9**
GTA sS sS 04 58 09.1 +1.9
GTA SS **SS** **05 00 05.8 -11**
GTA pmax pmax
comp=Z,5.0nm,1.1s
GTA pmax pmax
comp=Z,48nm,4.8s
GTA LR LR
comp=N,130nm,17.8s
GTA LR LR
comp=E,110nm,17.3s
GTA LR LR
comp=Z,110nm,15.7s
BILL Bilibino 35.72 15‖ *e*P **P** **04 52 38.3 +1.8**
BILL *e**SP **sP** **04 52 50.8 -2.2**
BILL *e*PPP PPP 04 54 15.8
BILL *e*SS SS 05 00 30.3 -16
BILL pmax pmax
comp=Z,5.0nm,1.5s
KMI Kunming 35.77 265 P P 04 52 39.9 +2.2
KMI pmax pmax
comp=Z,10.0nm,0.5s
KMI pmax pmax
comp=Z,59nm,4.3s
TIXI Tiksi 37.46 353 *e*P **P** **04 52 53.3 +2.1**
TIXI pmax pmax
comp=Z,4.0nm,1.7s
CMAR Chiang Mai Arr 42.06 259 P **P** **04 53 30.5 +0.3**
comp=Z,1.2nm,0.5s,baz=31,slow=8.9,SNR=5.1
CMAR LR LR 05 12 36.0
comp=Z,12nm,18.4s,baz=80,slow=38
CMAR Chiang Mai Arr 42.06 259*ce*P **P** **04 53 31.0 +0.9**
CMAR pmax pmax
comp=Z,1.0nm,0.6s
WMQ Urumqi 42.74 299 *e*P P 04 53 37.8 +2.4
WMQ pmax pmax
comp=Z,8.0nm,0.6s
WMQ pmax pmax
comp=Z,50nm,4.6s
WMQ LR LR
comp=N,31nm,25.0s
WMQ LR LR
comp=E,45nm,34.8s
WMQ LR LR
comp=Z,23nm,19.4s
ZAA0 Zalesovo Array 44.09 314 *e*P **P** **04 53 47.7 +1.6**
ZALV Zalesovo Beam 44.09 314 P **P** **04 53 47.2 +1.2**
comp=Z,1.4nm,0.5s,baz=93,slow=7.1,SNR=7.8
ZALV PcP **PcP** **04 55 31.6 +1.0**
comp=Z,1.7nm,0.6s,baz=129,slow=2.2,SNR=3.9
ZALV LR LR 05 12 52.3
comp=Z,21nm,20.8s,baz=59,slow=37
ZALV Zalesovo Beam 44.09 314 P **P** **04 53 47.3 +1.2**
ZALV 04 55 31.6
ZALV pmax pmax
comp=Z,3.0nm,0.5s
ZALV pmax pmax
comp=Z,2.0nm,0.6s
ZALV MLR MLR
comp=Z,21nm,20.8s
KSM Kuching 44.96 229 *e*P **P** **04 53 54.0 +0.6**
comp=Z,14nm,0.9s
NVS Novosibirsk 45.03 315 *e*P P 04 54 01.2 +7.6
MK01 Makanchi Array 46.12 304 *e*P P 04 54 04.3 +1.9
MKAR Makanchi Array 46.12 304 P P 04 54 04.3 +1.9
comp=Z,2.4nm,0.6s,baz=80,slow=10.0,SNR=8.5
MKAR LR LR 05 13 30.6
comp=Z,20nm,18.1s,baz=21,slow=36
MKAR Makanchi Array 46.12 304*ce*P P 04 54 08.5 +6.1
MKAR pmax pmax
comp=Z,3.0nm,0.6s
KDAK Kodiak Island 47.94 41*ce*P **P** **04 54 16.7 +0.4**
KURK Kurchatov 48.04 310 *e*P P 04 54 19.9 +2.7
KURK pmax pmax
comp=Z,10.0nm,0.8s
KURK Kurchatov 48.04 310 *e*P P 04 54 19.9 +2.6
comp=Z,10.0nm,0.8s
MTN Manton Dam 48.81 195 *e*P **P** **04 54 22.3 -1.1**
comp=Z,21nm,0.8s
IPM Ipoh 49.03 241 *e*P **P** **04 54 24.2 -1.0**
comp=Z,14nm,0.9s
IL1 Eielson Array 50.68 31 *e*P **P** **04 54 37.3 +0.2**
ILAR Eielson Array 50.68 31 P **P** **04 54 37.0 -0.1**
comp=Z,1.5nm,0.9s,baz=263,slow=6.1,SNR=12
ILAR Eielson Array 50.68 31 P **P** **04 54 37.0 -0.1**
ILAR pmax pmax
comp=Z,2μm,0.9s
DIV Divide 51.30 36 *e*P **P** **04 54 43.4 +1.4**
comp=Z,3.0nm,0.5s
TKM2 Tokmak 2 51.56 300 *e*P P 04 54 46.6 +2.3
TKM2 pmax pmax
comp=Z,5.0nm,0.8s
TKM2 Tokmak 2 51.56 300 *e*P P 04 54 46.6 +2.2
comp=Z,5.0nm,0.8s
DOT Dot Lake 51.94 33 *e*P **P** **04 54 48.5 +1.8**
comp=Z,3.0nm,0.7s
KSH Kashi 52.23 296 *e*P P 04 54 55.4 +6.1
KSH *e*pP pP 04 55 06.0 +4.7
KSH *e*PP PP 04 56 56.3 +8.5
KSH S S 05 02 19.5 +8.2
KSH Kashi 52.23 296 SS SS 05 05 59.3 +10
KSH pmax pmax
comp=Z,65nm,4.7s
KSH LR LR
comp=N,150nm,6.5s
KSH LR LR
comp=E,68nm,5.3s
BRVK Borovoye 52.80 314 *e*P **P** **04 54 52.5 -0.7**
BRVK pmax pmax
comp=Z,4.0nm,0.9s
BRVK Borovoye 52.80 314 *e*P **P** **04 54 52.5 -0.7**
comp=Z,4.1nm,0.9s
EKS2 Erkin-Say 52.92 300 *e*P **P** **04 54 55.4 +1.1**
EKS2 pmax pmax
comp=Z,2.0nm,0.8s
EKS2 Erkin-Say 52.92 300 *e*P **P** **04 54 55.4 +1.1**
comp=Z,1.9nm,0.8s
ZRNK Zerenda 53.58 314 *e*P P 04 55 02.1 +3.2
ZRNK pmax pmax
comp=Z,3.0nm,0.6s
ZRNK Zerenda 53.58 314 *e*P P 04 55 02.1 +3.2
comp=Z,3.3nm,0.6s
GSI Gunungsitoli 53.70 242 *e*P **P** **04 55 00.2 0.0**
comp=Z,16nm,0.7s
KKAR Karatay Array 55.09 302 *e*P P 04 55 12.0 +2.0
KKAR pmax pmax
comp=Z,2.0nm,0.7s
KKAR Karatay Array 55.09 302 *e*P P 04 55 12.0 +2.0
comp=Z,2.5nm,0.7s
WRAB Tennant Creek 55.18 190*ce*P **P** **04 55 09.8 -1.0**
WRAB pmax pmax
comp=Z,47nm,0.7s
WRAB Tennant Creek 55.18 190 *e*P **P** **04 55 09.4 -1.3**
comp=Z,22nm,0.8s
WB2 Warramunga Arr 55.19 190 *e*P **P** **04 55 09.7 -1.2**
comp=Z,24nm,0.8s
WRA Warramunga Arr 55.19 190 P **P** **04 55 09.4 -1.4**
comp=Z,21nm,0.8s,baz=8.9,slow=7.5,SNR=92
FITZ Fitzroy Crossi 55.22 200 *e*P **P** **04 55 11.0 -0.1**
comp=Z,41nm,1.6s
INK Inuvik 55.74 27 P **P** **04 55 14.4 +0.2**
comp=Z,2.2nm,0.7s,baz=285,slow=4.8,SNR=8.9
INK Inuvik 55.74 27 *e*P **P** **04 55 15.2 +0.9**
INK pmax pmax
comp=Z,3.0nm,0.8s
INK Inuvik 55.74 27 *e*P **P** **04 55 15.2 +0.9**
comp=Z,2.9nm,0.8s
ARU Arti 58.60 320*d*P P 04 55 37.7 +3.0
ARU Arti 58.60 320 *e*P **P** **04 55 36.2 +1.6**
comp=Z,7.4nm,1.0s
AS01 Alice Springs 58.91 189 *e*P **P** **04 55 36.0 -1.1**
AS31 Alice Springs 58.91 189 *e*P **P** **04 55 36.3 -0.9**
comp=Z,4.3nm,0.6s
ASAR Alice Springs 58.92 189 P **P** **04 55 36.0 -1.1**
comp=Z,8.1nm,0.8s,baz=15,slow=10,SNR=58
ASAR Alice Springs 58.92 189 P **P** **04 55 36.1 -1.1**
ASAR pmax pmax
comp=Z,7.0nm,0.7s
ABKAR Akbulak array 60.08 311 *e*P **P** **04 55 46.5 +1.4**
comp=Z,1.9nm,0.6s
YKA Yellowknife Ar 65.06 30 P **P** **04 56 17.4 -0.6**
comp=Z,1.1nm,0.8s,baz=295,slow=6.7,SNR=8.2
YKB5 Yellowknife Ar 65.06 30 *e*P **P** **04 56 18.4 +0.4**
STKA Stephens Creek 66.51 181 P **P** **04 56 26.7 -0.8**
comp=Z,3.5nm,0.7s,baz=332,slow=8.5,SNR=4.0
OBN Obninsk 70.38 324 *e*P P 04 56 56.2 +4.6
OBN *e**SP **PcP** **04 57 08.9 -4.0**
OBN SS SS 05 10 34.0 +2.9
OBN pmax pmax
comp=Z,8.0nm,0.8s
FINES FINESS Array B 71.12 333 P **P** **04 56 57.0 +1.0**
comp=Z,2.7nm,0.8s,baz=70,slow=6.3,SNR=6.3
K05A Summer Lake 71.43 51 *e*P P 04 57 00.3 +1.8
comp=Z,22nm,1.4s
BMO Blue Mountains 72.55 47 *e*P **P** **04 57 05.5 +0.4**
comp=Z,2.4nm,0.6s
SUMG Summit 72.74 0 *e*P **P** **04 57 07.1 +1.1**
SUMG pmax pmax
comp=Z,3.0nm,0.6s
SUMG Summit 72.74 0 *e*P **P** **04 57 07.1 +1.1**
comp=Z,3.1nm,0.6s
KBZ Khabaz 73.05 312 P **P** **04 57 08.6 +0.7**
comp=Z,1.0nm,0.6s,baz=343,slow=6.3,SNR=3.6
KIV Kislovodsk 73.06 312 *e*P P 04 57 09.8 +1.7
KIV pmax pmax
comp=Z,7.0nm,1.1s
FFC Flin Flon 74.86 33 *e*P **P** **04 57 18.6 +0.3**
FFC pmax pmax
comp=Z,8.0nm,1.3s
FFC Flin Flon 74.86 33 *e*P **P** **04 57 18.6 +0.3**
comp=Z,8.0nm,1.3s
BMN Battle Mountai 74.98 51 *e*P **P** **04 57 20.9 +1.5**
BMN pmax pmax
comp=Z,4.0nm,0.8s
BMN Battle Mountai 74.98 51 *e*P **P** **04 57 20.9 +1.5**
comp=Z,3.7nm,0.8s
FCC Fort Churchill 75.36 27 *e*P **P** **04 57 21.3 +0.2**
FCC pmax pmax
comp=Z,25nm,1.9s
FCC Fort Churchill 75.36 27 *e*P **P** **04 57 21.2 +0.2**
comp=Z,25nm,1.9s
NV01 Mina Array Sit 75.37 53 *e*P **P** **04 57 22.4 +0.6**
NVAR Mina Array Bea 75.37 53 P **P** **04 57 22.8 +1.0**
comp=Z,4.4nm,0.7s,baz=291,slow=6.7,SNR=34
ANN Anapa 75.72 315 *e*P **P** **04 57 19.6 -3.8**
ANN pmax pmax
comp=Z,14nm,1.0s
NB2 NORSAR Subarra 76.49 338 P **P** **04 57 28.5 +1.0**
comp=Z,3.1nm,0.8s,baz=41,slow=5.9
NOA NORSAR Array B 76.49 338 P **P** **04 57 28.2 +0.7**
comp=Z,1.5nm,0.7s,baz=40,slow=5.7,SNR=6.4
AKASG Malin Array Be 76.57 323 P **P** **04 57 29.1 +1.0**
comp=Z,1.7nm,0.6s,baz=43,slow=6.3,SNR=10
AKASG Malin Array Be 76.57 323*ce*P P 04 57 30.8 +2.7
AKASG pmax pmax
comp=Z,2.0nm,0.5s
KIEV Kiev 76.58 323 *e*P **P** **04 57 29.6 +1.4**
KIEV pmax pmax
comp=Z,6.0nm,1.2s
H17A Grant Village 76.78 45 *e*P **P** **04 57 31.4 +1.6**
comp=Z,2.8nm,0.8s
R11A Troy Canyon, C 77.19 52 *e*P **P** **04 57 33.1 +1.0**
comp=Z,2.2nm,0.8s
TPNV Topopah Spring 77.55 54 *e*P **P** **04 57 34.7 +0.6**
TPNV pmax pmax
comp=Z,3.0nm,0.8s
TPNV Topopah Spring 77.55 54 *e*P **P** **04 57 34.6 +0.6**
comp=Z,2.6nm,0.8s
HWUT Hardware Ranch 77.84 48 *e*P **P** **04 57 37.1 +1.4**
comp=Z,6.3nm,1.4s
DUG Dugway, Tooele 77.90 49 *e*P **P** **04 57 37.1 +1.1**
DUG pmax pmax
comp=Z,5.0nm,0.7s
DUG Dugway, Tooele 77.90 49 *e*P **P** **04 57 37.1 +1.1**
comp=Z,5.1nm,0.7s
PSUT Pine Spring 78.20 51 *e*P **P** **04 57 38.9 +1.1**
comp=Z,2.7nm,0.9s
PDAR Pinedale Array 78.35 46 P **P** **04 57 38.2 -0.3**
comp=Z,0.6nm,0.7s,baz=288,slow=2.0,SNR=5.2
SHPR Sheep Range 78.52 53 *e*P **P** **04 57 39.9 +0.4**
comp=Z,2.7nm,1.1s
LCMT Little Creek M 79.48 52 *e*P **P** **04 57 46.0 +1.3**
comp=Z,3.4nm,0.8s
MTPU Mount Pierson 79.56 51 *e*P **P** **04 57 46.7 +1.3**
comp=Z,2.7nm,1.1s
KNB Kanab 79.75 52 *e*P **P** **04 57 47.8 +1.6**
KNB pmax pmax
comp=Z,5.0nm,0.9s
KNB Kanab 79.75 52 *e*P **P** **04 57 47.8 +1.6**
comp=Z,4.7nm,0.9s
SRU San Rafael Swe 79.96 49 *e*P **P** **04 57 48.4 +1.1**
SRU pmax pmax
comp=Z,7.0nm,0.7s
SRU San Rafael Swe 79.96 49 *e*P **P** **04 57 48.4 +1.1**
comp=Z,6.8nm,0.7s
U15A North Rim 80.44 52 *e*P **P** **04 57 51.4 +1.3**
comp=Z,3.0nm,0.8s
BRTR Keskin Array B 81.01 312 P **P** **04 57 54.4 +1.5**
comp=Z,1.6nm,1.0s,baz=104,slow=2.5,SNR=4.7
BRTR Keskin Array B 81.01 312*ce*P P 04 57 55.0 +2.1
BRTR pmax pmax
comp=Z,2.0nm,1.0s
Y14A Wickenburg 81.45 55 *e*P **P** **04 57 56.0 +0.8**
comp=Z,33nm,1.8s
BR231 Keskin MP Arra 81.46 313 *e*P **P** **04 57 55.6 +0.3**
113A Mohawk Valley, 81.62 56 *e*P **P** **04 57 57.1 +1.0**
comp=Z,3.7nm,1.1s
N23A Red Feather La 81.63 46 *e*P **P** **04 57 57.9 +1.6**
comp=Z,4.4nm,0.9s
PV01 Paradox Valley 81.77 49 *e*P **P** **04 57 57.6 +0.5**
PSZ Piszkesteto 82.94 325 *e*P **P** **04 58 04.5 +1.7**
PSZ pmax pmax
comp=Z,3.0nm,0.9s
PSZ Piszkesteto 82.94 325 *e*P **P** **04 58 04.5 +1.7**
comp=Z,3.0nm,0.9s
CLL Collm 83.40 331 *e*P P 04 58 08.0 +3.0
CLL Collm 83.40 331 *e*P P 04 58 08.0 +3.0
SDCO Great Sand Dun 83.90 48 *e*P **P** **04 58 09.6 +1.4**
comp=Z,5.2nm,1.3s
KHC Kasperske Hory 84.85 329 *e*P **P** **04 58 13.8 +1.4**
KHC *e*pP **pP** **04 58 19.8 -5.3**
KHC Kasperske Hory 84.85 329 *e*P **P** **04 58 13.8 +1.4**
T25A Trinidad 84.95 48 *e*P **P** **04 58 14.0 +0.6**
comp=Z,4.9nm,1.0s
GERES GERESS Array B 85.02 329 P **P** **04 58 14.2 +0.8**
comp=Z,0.5nm,0.5s,baz=28,slow=6.0,SNR=7.2
ANMO Albuquerque 85.09 50‖ *e*P **P** **04 58 15.0 +0.8**
ANMO pmax pmax
comp=Z,3.0nm,1.1s
WMOK Wichita Mounta 89.94 46 *e*P **P** **04 58 37.1 -0.2**
WMOK pmax pmax
comp=Z,4.0nm,1.0s
WMOK Wichita Mounta 89.94 46 *e*P **P** **04 58 37.0 -0.2**
comp=Z,3.5nm,1.0s
TXAR Lajitas Array 90.52 53 P **P** **04 58 40.1 -0.1**
comp=Z,0.4nm,0.6s,baz=0.0,slow=3.8,SNR=5.3
SAML Samuel 144.89 49 *e*PKPdf **PKPdf** **05 05 14.5 -0.8**
LPAZ La Paz 146.74 64 PKPbc **PKPab** **05 05 20.4 -1.7**
comp=Z,1.9nm,0.6s,baz=308,slow=1.3,SNR=10
PLCA Paso Flores 153.22 112 PKPbc **PKPbc** **05 05 35.1 -0.4**
comp=Z,1.2nm,0.7s,baz=259,slow=2.1,SNR=3.8

IDC 22 04:49:13.3±418.0, 64°.21N×16°.25W, h0km, Error ellipse: s-maj=288.3km s-min=154.3km az=92.0, Iceland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I18DK	QAANAAQ INFRAS	20.78	331	*i*		06 56 00.0	
baz=106,slow=311,SNR=1.6							
I26DE	FREYUNG INFRAS	22.26	119	*i*		07 20 00.0	
baz=322,slow=313,SNR=8.7							
I42PT	GRACIOSA ISLAN	26.14	201	*i*		07 30 00.0	
baz=18,slow=303,SNR=14							
I10CA	LAC DU BONNET	42.37	290	*i*		09 11 10.0	
baz=36,slow=324,SNR=0.6							
I53US	FAIRBANKS INFR	46.44	334	*i*		09 30 45.0	
baz=32,slow=321,SNR=2.1							

IDC 22 04:49:14.0±999.0, 68°.58N×28°.29W, h0km, Error ellipse: s-maj=1061.0km s-min=298.3km az=124.0, Eastern Kalaallit Nunaat

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I18DK	QAANAAQ INFRAS	14.49	325	*i*		06 20 20.0	
baz=106,slow=165,SNR=3.4							
I10CA	LAC DU BONNET	36.67	275	*i*		08 35 00.0	
baz=37,slow=326,SNR=2.2							
I53US	FAIRBANKS INFR	40.21	325	*i*		08 53 30.0	
baz=32,slow=322,SNR=2.8							

*IDC **22** 05:07:16.7±1.1, 31°.94N×134°.80E, h0km, mb3.6/7, mb1 3.7/8, mb1mx3.5/56, mbtmp3.6/8, ML3.4/1, MS2.4/1, Ms1 2.4/1, ms1mx2.0/37, Error ellipse: s-maj=34.8km s-min=21.8km az=63.0*
*ISCJB **22** 05:07:19.3±0.7, 32°.02N±0°.04×134°.85E±0°.05, h33km, mb3.5/7, Error ellipse: s-maj=6.4km s-min=5.7km az=142.2*
*JMA **22** 05:07:19.0±0.3, 31°.97N×134°.80E, h46km±1km, M2.9*
ISC 22 05:07:21.2±0.9, 32°.02N±0°.07×134°.88E±0°.06, h35km, n21, σ1§80/30, mb3.6/7, Shikoku

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MRT2	Murotomisaki 2	1.50	336	P	Pn	05 07 44.6	-1.0
MRT2				S	Sn	05 08 02.5	-1.4
JWZ	Kozaga	1.66	25	P	Pn	05 07 46.3	-1.6
JWZ				*e*S	Sn	05 08 05.0	-3.0
JAI	Aioi	1.80	349	P	Pn	05 07 49.1	-0.7
JAI				*e*S	Sn	05 08 10.2	-1.3
JWM	Minabe	1.87	12	*e*S	Sn	05 08 09.9	-3.2
JMN	Monobe	1.90	334	P	Pn	05 07 50.7	-0.5
JMN				*e*S	Sn	05 08 13.5	-0.4
JTO	Tosashimizu	1.94	296	P	Pn	05 07 49.4	-2.3
JTO				*e*S	Sn	05 08 11.4	-3.5
JKU	Kubokawa	2.00	311	P	Pn	05 07 51.2	-1.3
JKU				*e*S	Sn	05 08 14.6	-1.7
UWA2	Uwa jima 2	2.24	303	P	Pn	05 07 54.3	-1.6
JET	Tanbara	2.33	319	P	Pn	05 07 56.3	-0.8
JET				*e*S	Sn	05 08 24.0	-0.6
JIE	Ise	2.82	32	*e*S	Sn	05 08 33.2	-3.3
JTZ	Takazaki	3.22	269	P	Pn	05 08 07.2	-2.1
JTZ				S	Sn	05 08 43.8	-2.7
JHS	Saijyo	3.31	334	P	Pn	05 08 10.5	-0.1
JHT	Toyohira	3.34	323	P	Pn	05 08 10.7	-0.3
JNU	Nakatsue	3.55	289	Pn	Pn	05 08 12.9	-1.0
4.9nm,0.3s,baz=91,slow=2.6,SNR=27							
JNU				Sn	Sn	05 08 54.4	-0.2
4.0nm,0.3s,baz=333,slow=22,SNR=11							
JNU				LR	LR	05 09 45.0	
comp=Z,58nm,21.3s,baz=121,slow=42							
SONM	Songino Array	26.75	314	P	P	05 12 59.7	+2.0
0.6nm,0.8s,baz=122,slow=10,SNR=2.5							
WRA	Warramunga Arr	51.67	181	P	P	05 16 24.3	-0.5
0.5nm,0.7s,baz=355,slow=8.0,SNR=5.3							
ASAR	Alice Springs	55.38	181	P	P	05 16 52.5	+0.6
0.4nm,0.7s,baz=9.9,slow=13,SNR=4.9							
ILAR	Eielson Array	56.57	30	P	P	05 17 01.6	+1.7
0.3nm,0.9s,baz=285,slow=7.2,SNR=3.6							
FINES	FINESS Array B	70.66	331	P	P	05 18 33.1	+0.2
1.4nm,0.9s,baz=56,slow=8.5,SNR=3.5							
AKASG	Malin Array Be	74.84	321	P	P	05 18 58.6	+0.6
0.4nm,0.5s,baz=53,slow=6.0,SNR=3.6							
BRTR	Keskin Array B	77.98	309	P	P	05 19 17.4	+1.2
0.3nm,0.4s,baz=54,slow=4.3,SNR=3.0							

*IDC **22** 05:07:29.4±2.1, 34°.89N×143°.05E, h0km, mb3.7/2, mb1 3.8/5, mb1mx3.4/51, mbtmp3.8/5, ML3.7/3, MS2.8/1, Ms1 2.8/1, ms1mx2.2/41, Error ellipse: s-maj=64.8km s-min=27.3km az=75.0*
*ISCJB **22** 05:07:32.3±1.0, 34°.98N±0°.06×142°.89E±0°.08, h33km, mb3.8/2, MS2.7/1, Error ellipse: s-maj=9.3km s-min=7.8km az=21.1*
*JMA **22** 05:07:33.5±0.5, 34°.83N×142°.80E, h72km, M3.4*

ISC 22 05:07:34.5±1.5, 34°.98N±0°.08×142°.9E±0°.1, h35km, n17, σ0°69/15, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**1.57**	**259**	P	**Pn**	**05 07 58.9**	**-0.5**
BSO1				S	**Sn**	**05 08 18.2**	**-0.1**
CHOJ	**Chosi**	**1.78**	**295**	P	**Pn**	**05 08 03.5**	**+0.7**
BSO3	**Boso 3**	**1.93**	**265**	P	**Pn**	**05 08 04.6**	**0.0**
JOD2	**Odawara 2**	**3.10**	**276**	*e*S	**Sn**	**05 08 55.2**	**-1.5**
JAG	**Ashikaga**	**3.12**	**299**	P	**Pn**	**05 08 21.9**	**+0.7**
JFT	**Otama**	**3.25**	**322**	P	**Pn**	**05 08 23.6**	**+0.6**
JFT				*e*S	**Sn**	**05 09 01.0**	**+0.6**
JYN	**Shimob**	**3.56**	**280**	*e*S	**Sn**	**05 09 08.3**	**0.0**
MJAR	**Matsushiro Arr**	**4.08**	**294**	Pn	**Pn**	**05 08 35.1**	**+0.6**
	1.5nm,0.3s,baz=106,slow=8.1,SNR=16						
JMK	**Ichinoseki**	**4.18**	**342**	P	**Pn**	**05 08 35.9**	**+0.2**
JMK				S	**Sn**	**05 09 22.6**	**-0.6**
JCJ	**Chichijima**	**7.88**	**184**	Pn	Pn	05 09 22.1	-4.5
	3.1nm,0.3s,baz=276,slow=23,SNR=5.1						
JCJ				Sn	Sn	05 10 44.1	-10
	2.2nm,0.3s,baz=311,slow=19,SNR=3.4						
ASAJ	**Asahikawa**	**9.13**	**359**	Pn	**Pn**	**05 09 43.0**	**-0.7**
	1.0nm,0.3s,baz=229,slow=14,SNR=4.1						
H11S3	**WAKE ISLAND Hy**	**26.78**	**122**	T	T	05 41 11.0	
	baz=314						
H11S1	**WAKE ISLAND Hy**	**26.78**	**122**	T	T	05 41 11.3	
	baz=314						
H11S2	**WAKE ISLAND Hy**	**26.79**	**122**	T	T	05 41 12.1	
	baz=314						
SONM	**Songino Array**	**29.92**	**307**	LR	LR	05 27 05.0	
	comp=Z,20nm,20.9s,baz=107,slow=39						
WRA	**Warramunga Arr**	**55.21**	**190**	P	**P**	**05 17 03.9**	**-0.1**
	1.3nm,0.7s,baz=8.2,slow=7.4,SNR=7.1						
ASAR	**Alice Springs**	**58.94**	**190**	P	**P**	**05 17 30.3**	**+0.1**
	0.4nm,0.8s,baz=13,slow=8.7,SNR=3.5						

*NNC **22** 05:08:35.6±3.2, 37°.08N×71°.44E, h0km, mb4.0, mpv3.6, Error ellipse: s-maj=25.4km s-min=13.8km az=164.0*
*IDC **22** 05:08:36.5±9.3, 36°.91N×71°.05E, h221km±56km, mb3.2/3, mb1 3.1/6, mb1mx2.8/48, mbtmp3.6/6, MS2.8/1, Ms1 2.8/1, ms1mx2.2/34, Error ellipse: s-maj=97.2km s-min=43.7km az=165.0*

ISC 22 05:08:34.9±2.3, 36°.9N±0°.2×70°.9E±0°.1, h200km, n10, σ0°79/13, mb3.5/3, 3C-2D, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**2.56**	**320**	⇑Pn	**Pn**	**05 09 20.2**	**+0.7**
	20nm,0.2s						
DZET				⇑Sn	**Sn**	**05 09 54.9**	**+0.5**
	105nm,0.4s						
MNAS	**Manas**	**5.75**	**12**	⇓Pn	**Pn**	**05 09 59.0**	**+0.2**
	2.0nm,0.3s						
MNAS				⇑Sn	**Sn**	**05 11 04.4**	**-1.0**
	5.1nm,0.5s						
KK31	**Karatay Array**	**6.24**	**357**	Pn	**Pn**	**05 10 05.8**	**+0.7**
	1.0nm,0.3s,baz=175,slow=12,SNR=12						
KK31				⇓Sn	**Sn**	**05 11 16.2**	**-0.5**
	2.4nm,0.5s,baz=184,slow=23,SNR=8.4						
AAK	**Ala-Archa**	**6.38**	**24**	P	**Pn**	**05 10 08.1**	**+1.0**
	1.1nm,0.3s,baz=201,slow=10,SNR=8.6						
AAK				S	**Sn**	**05 11 21.2**	**+0.9**
	0.9nm,0.3s,baz=138,slow=22,SNR=8.0						
KURBB	**Kurchatov Arra**	**14.80**	**19**	P	**Pn**	**05 11 55.0**	**+0.7**
	0.0nm,0.3s,baz=206,slow=12,SNR=2.6						
ZALV	**Zalesovo Beam**	**19.61**	**25**	P	**P**	**05 12 47.0**	**-0.8**
	0.3nm,0.3s,baz=207,slow=9.3,SNR=3.4						
KVAR	**Kislovodsk Arr**	**22.57**	**297**	LR	LR	05 24 03.1	
	comp=Z,24nm,18.6s,baz=324,slow=41						
FINES	**FINESS Array B**	**37.15**	**326**	P	**P**	**05 15 26.1**	**0.0**
	0.4nm,0.3s,baz=106,slow=10,SNR=5.7						
ARCES	**ARCESS Array B**	**40.79**	**337**	P	**P**	**05 15 56.2**	**+0.1**
	2.4nm,0.9s,baz=101,slow=9.3,SNR=3.6						
NOA	**NORSAR Array B**	**44.06**	**323**	P	**P**	**05 16 21.7**	**-0.9**
	0.7nm,0.7s,baz=96,slow=7.8,SNR=2.9						

*CSEM **22** 05:10:51.5, 34°.34N×23°.55E, h22km, ML2.0/3*

ATH 22 05:10:51.5, 34°.34N×23°.55E, h22km±3km, ML2.0/2, Error ellipse: s-maj=5.0km s-min=2.1km az=29.0, Crete

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GVD	**Gavdhos**	**0.67**	**42**	P	Pn	05 11 05.3	-0.3
GVD	**Gavdhos**	**0.67**	**42**	P	Pn	05 11 05.3	-0.3
IMMV	**Iera Moni Meta**	**1.17**	**17**	P	Pb	05 11 13.3	+0.3
IMMV				S	Sn	05 11 30.2	+2.4
IMMV	**Iera Moni Meta**	**1.17**	**17**	P	Pb	05 11 13.3	+0.3
IMMV				S	Sn	05 11 30.2	+2.3
IMMV				AML	AML	05 11 41.9	
	comp=E,104μm,0.8s						
IMMV				AML	AML	05 11 42.4	
	comp=N,126μm,0.6s						
VAM	**Vamos**	**1.19**	**27**	P	Pb	05 11 14.1	+0.8
VAM				S	Sb	05 11 30.5	+2.2
SIVA	**Sivas**	**1.24**	**57**	P	Pb	05 11 14.6	+0.4
SIVA				S	Sb	05 11 32.1	+2.4
SIVA	**Sivas**	**1.24**	**57**	P	Pb	05 11 14.6	+0.4
SIVA				S	Sb	05 11 32.1	+2.4
SIVA				AML	AML	05 11 38.9	
	comp=N,192μm,0.6s						
SIVA				AML	AML	05 11 42.2	
	comp=E,190μm,0.6s						
IDI	**Anoyia**	**1.45**	**49**	P	Pb	05 11 18.3	+0.5
IDI	**Anoyia**	**1.45**	**49**	P	Pb	05 11 18.3	+0.5
LAST	**Lasithi**	**1.79**	**62**	P	Pb	05 11 23.5	-0.1
LAST	**Lasithi**	**1.79**	**62**	P	Pb	05 11 23.5	-0.1

*ISCJB **22** 05:12:38.6±0.5, 41°.25N±0°.02×25°.55E±0°.02, h3km±4km, Error ellipse: s-maj=3.9km s-min=2.7km az=14.3*
*ATH **22** 05:12:38.8, 41°.22N×25°.52E, h21km±1km, ML2.0/8, Error ellipse: s-maj=2.2km s-min=0.9km az=29.0*
*ISK **22** 05:12:38.9, 41°.27N×25°.57E, h10km, MD2.9*
*CSEM **22** 05:12:39.2±0.1, 41°.26N×25°.55E, h8km, ML2.0*
*SOF **22** 05:12:39.3, 41°.32N×25°.54E, h5km, MD2.6*
*THE **22** 05:12:39.1, 41°.27N×25°.55E, h8km±1km, ML2.1/6, Error ellipse: s-maj=1.5km s-min=0.6km az=108.0*
*DDA **22** 05:12:40.9, 41°.11N×25°.65E, h6km, Ml3.1*

ISC 22 05:12:38.7±1.0, 41°.26N±0°.02×25°.51E±0°.01, h10km±9km, n85, σ0°54/122, Greece-Bulgaria border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KDZ	**Kurdzhali**	**0.39**	**350**	*i* Pg	**Pg**	**05 12 46.7**	**+0.2**
ALN	**Alexandroupoli**	**0.55**	**132**	PG	**Pb**	**05 12 50.3**	**-0.1**
ALN				SG	**Sg**	**05 12 57.4**	**+0.8**
ALN	**Alexandroupoli**	**0.55**	**132**	P	**Pg**	**05 12 49.3**	**-0.1**
ALN				S	**Sg**	**05 12 56.8**	**+0.2**
ALN	**Alexandroupoli**	**0.55**	**132**	P	**Pg**	**05 12 49.4**	**0.0**
ALN	**Alexandroupoli**	**0.55**	**132**	*i* Pg	**Pb**	**05 12 50.3**	**-0.1**
ALN				S	**Sg**	**05 12 56.8**	**+0.2**
ALN				*i* Sg	**Sb**	**05 12 57.4**	**-0.9**
ALN	**Alexandroupoli**	**0.55**	**132**	P	**Pg**	**05 12 49.4**	**0.0**
ALN				S	**Sg**	**05 12 56.1**	**-0.5**
ALN				AML	AML	05 12 57.2	
	comp=E,203μm,0.1s						
ALN				AML	AML	05 12 57.6	
	comp=N,219μm,0.2s						
ENEZ	**Enez**	**0.72**	**137**	*e*PG	**Pg**	**05 12 52.8**	**+0.2**
ENEZ				*e*SG	**Sg**	**05 13 02.5**	**+0.5**
ENEZ	**Enez**	**0.72**	**137**	P	**Pg**	**05 12 52.9**	**+0.3**
ENEZ				S	**Sg**	**05 13 02.5**	**+0.5**
ENEZ	**Enez**	**0.72**	**137**	*e*Pg	**Pg**	**05 12 52.8**	**+0.2**
ENEZ				S	**Sg**	**05 13 02.5**	**+0.5**
RZN	**Rozhen**	**0.73**	**306**	*i* Pg	**Pb**	**05 12 53.3**	**-0.4**
DIM	**Dimitrovgrad**	**0.79**	**2**	*i* Pg	**Pg**	**05 12 53.8**	**-0.1**
SMTH	**Samothraki Isl**	**0.79**	**179**	P	**Pg**	**05 12 54.2**	**+0.2**
SMTH				S	**Sb**	**05 13 06.3**	**+0.9**
SMTH	**Samothraki Isl**	**0.79**	**179**	P	**Pb**	**05 12 54.4**	**-0.2**
SMTH				S	**Sg**	**05 13 03.5**	**-0.8**
SMTH	**Samothraki Isl**	**0.79**	**179**	P	**Pb**	**05 12 54.4**	**-0.2**
SMTH				S	**Sg**	**05 13 03.5**	**-0.8**
SMTH				AML	AML	05 13 07.8	
	comp=E,281μm,0.2s						
SMTH				AML	AML	05 13 08.5	
	comp=N,193μm,0.1s						
KAVA	**Kavala**	**0.80**	**251**	P	**Pb**	**05 12 54.4**	**-0.2**
KAVA				S	**Sb**	**05 13 06.4**	**+1.0**
KAVA	**Kavala**	**0.80**	**251**	P	**Pb**	**05 12 54.7**	**+0.1**
KAVA				S	**Sb**	**05 13 05.9**	**+0.5**
KAVA	**Kavala**	**0.80**	**251**	P	**Pb**	**05 12 54.7**	**+0.1**
ERIK	**Erikli-Kesan**	**0.96**	**127**	*e*PG	**Pg**	**05 12 56.7**	**-0.6**
ERIK	**Erikli-Kesan**	**0.96**	**127**	*e*Pg	**Pg**	**05 12 56.7**	**-0.6**
KESN	**Edirne-Kesan**	**0.99**	**116**	P	**Pg**	**05 12 57.8**	**0.0**
KESN				S	**Sg**	**05 13 10.9**	**+0.2**
KESN	**Edirne-Kesan**	**0.99**	**116**	*i* P	**Pg**	**05 12 57.8**	**0.0**
KESN				*i* S	**Sg**	**05 13 10.9**	**+0.2**
PLD	**Plovdiv**	**1.03**	**325**	Pg	**Pn**	**05 12 59.0**	**-0.3**
EDRB	**Edirne**	**1.10**	**57**	*e*PG	**Pg**	**05 12 59.5**	**-0.3**
EDRB	**Edirne**	**1.10**	**57**	P	**Pg**	**05 12 58.7**	**-1.1**
EDRB				S	**Sb**	**05 13 14.6**	**+0.4**
EDRB	**Edirne**	**1.10**	**57**	P	**Pg**	**05 12 58.7**	**-1.1**
EDRB	**Edirne**	**1.10**	**57**	*e*Pg	**Pg**	**05 12 59.5**	**-0.3**
EDRB				S	**Sb**	**05 13 14.6**	**+0.4**
GELI	**Tayfur-Gelibol**	**1.13**	**139**	*e*PN	**Pg**	**05 13 00.5**	**0.0**
GELI	**Tayfur-Gelibol**	**1.13**	**139**	*e*Pn	**Pg**	**05 13 00.5**	**0.0**
NVR	**Nevrokopi**	**1.24**	**275**	P	**Pg**	**05 13 02.8**	**+0.2**
NVR				S	**Sn**	**05 13 20.2**	**+1.2**
NVR	**Nevrokopi**	**1.24**	**275**	P	**Pg**	**05 13 02.8**	**+0.2**
NVR				S	**Sn**	**05 13 18.9**	**-0.1**
LPK	**Lapseki**	**1.30**	**133**	*e*PN	**Pb**	**05 13 03.5**	**+0.2**
LPK	**Lapseki**	**1.30**	**133**	*e*Pn	**Pb**	**05 13 03.5**	**+0.2**
MMB	**Musomiste**	**1.38**	**284**	*i* P	**Pg**	**05 13 05.3**	**+0.1**
LIA	**Limnos Island**	**1.39**	**190**	P	**Pn**	**05 13 03.5**	**-0.6**
LIA				S	**Sg**	**05 13 23.4**	**+0.1**
LIA	**Limnos Island**	**1.39**	**190**	P	**Pn**	**05 13 03.5**	**-0.6**
LIA				S	**Sb**	**05 13 22.3**	**-0.1**
RKY	**Sarkoy-Tekirda**	**1.39**	**114**	*e*PN	**Pn**	**05 13 04.4**	**+0.2**
RKY	**Sarkoy-Tekirda**	**1.39**	**114**	*e*Pn	**Pn**	**05 13 04.4**	**+0.2**
SART	**Tekirdag**	**1.39**	**114**	P	**Pn**	**05 13 04.1**	**-0.2**
SART				S	**Sb**	**05 13 22.6**	**-0.1**
SART	**Tekirdag**	**1.39**	**114**	*i* P	**Pn**	**05 13 04.1**	**-0.2**
SART				*i* S	**Sb**	**05 13 22.6**	**-0.1**
SRS	**Serrai**	**1.45**	**265**	P	**Pb**	**05 13 05.6**	**-0.2**
SRS				S	**Sg**	**05 13 25.5**	**+0.1**
SRS	**Serrai**	**1.45**	**265**	P	**Pb**	**05 13 05.6**	**-0.2**
SRS				S	**Sg**	**05 13 25.5**	**+0.1**
SRS	**Serrai**	**1.45**	**265**	P	**Pn**	**05 13 05.2**	**+0.2**
SRS				S	**Sg**	**05 13 27.3**	**+1.8**
SRS				AML	AML	05 13 30.3	
	comp=N,107μm,0.5s						
SRS				AML	AML	05 13 33.8	
	comp=E,86μm,0.3s						
BOZC	**Bozcaada**	**1.48**	**163**	*i* P	**Pn**	**05 13 05.9**	**+0.5**
BOZC				*i* S	Sn	05 13 24.2	-0.6
OUR	**Ouranopolis**	**1.48**	**232**	*e*PN	**Pg**	**05 13 07.0**	**-0.2**
OUR	**Ouranopolis**	**1.48**	**232**	P	**Pn**	**05 13 05.8**	**+0.3**
OUR	**Ouranopolis**	**1.48**	**232**	*e*Pn	**Pg**	**05 13 07.0**	**-0.2**
OUR				S	**Sg**	**05 13 26.2**	**-0.2**
OUR	**Ouranopolis**	**1.48**	**232**	P	**Pn**	**05 13 05.8**	**+0.3**
OUR				S	**Sg**	**05 13 26.2**	**-0.2**
OUR				AML	AML	05 13 29.1	
	comp=E,190μm,0.4s						
OUR				AML	AML	05 13 30.1	
	comp=N,164μm,0.3s						
TKR	**Tekirdag**	**1.56**	**99**	*e*PN	**Pn**	**05 13 06.8**	**+0.3**
TKR	**Tekirdag**	**1.56**	**99**	*e*Pn	**Pn**	**05 13 06.8**	**+0.3**
EZN	**Ezine**	**1.57**	**156**	*e*PN	**Pb**	**05 13 07.4**	**-0.4**
EZN	**Ezine**	**1.57**	**156**	*e*Pn	**Pb**	**05 13 07.4**	**-0.4**
KRBG	**Karabiga-Canak**	**1.61**	**122**	*e*PN	**Pb**	**05 13 08.0**	**-0.6**
KRBG	**Karabiga-Canak**	**1.61**	**122**	*e*Pn	**Pb**	**05 13 08.0**	**-0.6**
SOH	**Sokhos**	**1.69**	**256**	P	**Pg**	**05 13 10.5**	**-0.6**
SOH	**Sokhos**	**1.69**	**256**	P	**Pg**	**05 13 10.5**	**-0.6**
MRMT	**Marmara Adasi**	**1.71**	**112**	*e*PN	**Pn**	**05 13 09.1**	**+0.4**
MRMT	**Marmara Adasi**	**1.71**	**112**	*e*Pn	**Pn**	**05 13 09.1**	**+0.4**
PLG	**Polygyros**	**1.80**	**241**	P	**Pb**	**05 13 11.9**	**+0.1**
PLG				S	**Sb**	**05 13 35.0**	**+0.6**
PLG	**Polygyros**	**1.80**	**241**	P	**Pb**	**05 13 11.9**	**+0.1**
PLG				S	**Sb**	**05 13 35.0**	**+0.6**
PLG				AML	AML	05 13 39.7	
	comp=N,75μm,0.5s						
PLG				AML	AML	05 13 40.1	
	comp=E,115μm,0.3s						
KKB	**Krupnik**	**1.92**	**289**	P	**Pg**	**05 13 14.7**	**-0.8**
PAIG	**Paliouri**	**1.93**	**227**	P	**Pn**	**05 13 09.9**	**-1.6**
PAIG	**Paliouri**	**1.93**	**227**	P	**Pn**	**05 13 09.9**	**-1.6**
HORT	**Hortiatis**	**1.94**	**251**	P	**Pb**	**05 13 13.4**	**-0.8**
HORT				S	**Sb**	**05 13 39.2**	**+0.7**
HORT	**Hortiatis**	**1.94**	**251**	P	**Pb**	**05 13 13.4**	**-0.8**
HORT				S	**Sb**	**05 13 39.2**	**+0.7**
HORT				AML	AML	05 13 44.0	
	comp=E,30μm,0.3s						
HORT				AML	AML	05 13 44.6	
	comp=N,21μm,0.3s						
KNT	**Kendrikon**	**1.97**	**268**	P	**Pb**	**05 13 14.1**	**-0.6**
KNT				S	**Sb**	**05 13 39.4**	**+0.1**
KNT	**Kendrikon**	**1.97**	**268**	P	**Pb**	**05 13 14.1**	**-0.6**
KNT				S	**Sb**	**05 13 39.4**	**+0.1**
KNT				AML	AML	05 13 45.6	
	comp=N,43μm,0.4s						
KNT				AML	AML	05 13 45.9	
	comp=E,32μm,0.3s						
EDC	**Edincik**	**2.01**	**116**	*e*PN	**Pn**	**05 13 13.2**	**+0.5**
EDC	**Edincik**	**2.01**	**116**	*e*Pn	**Pn**	**05 13 13.2**	**+0.5**
SIGR	**SIGRI**	**2.07**	**172**	*e*PN	**Pn**	**05 13 14.4**	**+0.9**
SIGR	**SIGRI**	**2.07**	**172**	P	**Pn**	**05 13 13.6**	**+0.1**
SIGR	**SIGRI**	**2.07**	**172**	*e*Pn	**Pn**	**05 13 14.4**	**+0.9**
SIGR	**SIGRI**	**2.07**	**172**	P	**Pn**	**05 13 13.6**	**+0.1**
PRK	**Paraskevi**	**2.10**	**164**	P	**Pn**	**05 13 14.1**	**+0.2**
PRK				S	**Sn**	**05 13 39.8**	**-0.2**
PRK	**Paraskevi**	**2.10**	**164**	P	**Pn**	**05 13 14.1**	**+0.2**
PRK				S	**Sn**	**05 13 39.8**	**-0.2**
PRK				AML	AML	05 13 47.2	
	comp=E,56μm,0.5s						
PRK				AML	AML	05 13 48.2	
	comp=N,40μm,0.4s						
CTYL	**Yalikoy Yolu**	**2.11**	**83**	*e*PN	**Pn**	**05 13 14.3**	**+0.3**
CTYL	**Yalikoy Yolu**	**2.11**	**83**	*e*Pn	**Pn**	**05 13 14.3**	**+0.3**
CTKS	**Kestanelik-??a**	**2.26**	**90**	*e*PN	**Pn**	**05 13 16.6**	**+0.4**
CTKS	**Kestanelik-??a**	**2.26**	**90**	*e*Pn	**Pn**	**05 13 16.6**	**+0.4**
KCTX	**Karacabey (Bur**	**2.38**	**114**	*e*PN	**Pn**	**05 13 18.5**	**+0.6**
KCTX	**Karacabey (Bur**	**2.38**	**114**	*e*Pn	**Pn**	**05 13 18.5**	**+0.6**
MPEP	**Malo Peshtene**	**2.47**	**329**	*i* P	**Pb**	**05 13 22.8**	**-0.4**
ARMT	**Armutlu**	**2.64**	**104**	*e*PN	**Pn**	**05 13 22.2**	**+0.9**
ARMT	**Armutlu**	**2.64**	**104**	*e*Pn	**Pn**	**05 13 22.2**	**+0.9**
CHOS	**Chios island**	**2.90**	**171**	P	**Pn**	**05 13 25.2**	**+0.1**
CHOS	**Chios island**	**2.90**	**171**	P	**Pn**	**05 13 25.2**	**+0.1**

*DDA **22** 05:24:03.2, 39°.11N×29°.01E, h7km, Ml2.7*
*ISK **22** 05:24:03.9, 39°.08N×29°.10E, h6km, MD2.7*
*CSEM **22** 05:24:04.1±0.1, 39°.10N×29°.03E, h2km, ML2.7, Error ellipse: s-maj=3.1km s-min=2.5km az=98.0*

ISC 22 05:24:03.8±1.0, 39°.11N±0°.02×29°.01E±0°.02, h6km±13km, n38, σ0°55/50, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**255**	P	**Pg**	**05 24 08.5**	**0.0**
DEMI				S	**Sg**	**05 24 11.8**	**+0.1**
DEMI	**Demirci**	**0.24**	**255**	*i* P	**Pg**	**05 24 08.5**	**0.0**
DEMI				*i* S	**Sg**	**05 24 11.8**	**+0.1**
GDZ	**Gediz**	**0.36**	**93**	P	**Pg**	**05 24 10.9**	**0.0**
GDZ				S	**Sg**	**05 24 16.0**	**+0.3**
GDZ	**Gediz**	**0.36**	**93**	*i* P	**Pg**	**05 24 10.9**	**0.0**
GDZ				*i* S	**Sg**	**05 24 16.0**	**+0.3**
TVSB	**Tavsanli**	**0.49**	**45**	*e*PG	**Pg**	**05 24 13.2**	**0.0**
TVSB				*e*SG	**Sg**	**05 24 19.3**	**-0.3**
TVSB	**Tavsanli**	**0.49**	**45**	*e*Pg	**Pg**	**05 24 13.2**	**0.0**
TVSB				*e*Sg	**Sg**	**05 24 19.3**	**-0.3**
DURS	**Dursunbey**	**0.65**	**320**	P	**Pg**	**05 24 15.7**	**-0.5**
DURS				S	**Sg**	**05 24 25.0**	**+0.3**
DURS	**Dursunbey**	**0.65**	**320**	*i* P	**Pg**	**05 24 15.7**	**-0.5**
DURS				*i* S	**Sg**	**05 24 25.0**	**+0.3**
KULA	**Kula-Manisa**	**0.65**	**205**	*e*PG	**Pg**	**05 24 16.8**	**+0.5**
KULA	**Kula-Manisa**	**0.65**	**205**	*e*Pg	**Pg**	**05 24 16.8**	**+0.5**
MANT	**Manisa**	**0.71**	**210**	P	**Pg**	**05 24 17.5**	**0.0**
MANT				S	**Sg**	**05 24 26.5**	**-0.2**
MANT	**Manisa**	**0.71**	**210**	*i* P	**Pg**	**05 24 17.5**	**0.0**
MANT				*i* S	**Sg**	**05 24 26.5**	**-0.2**
KHAL	**Karahalli**	**0.82**	**153**	P	**Pg**	**05 24 19.9**	**+0.3**
KHAL				S	**Sg**	**05 24 31.2**	**+0.9**
KHAL	**Karahalli**	**0.82**	**153**	*i* P	**Pg**	**05 24 19.9**	**+0.3**
KHAL				*i* S	**Sg**	**05 24 31.2**	**+0.9**
KHL	**Karahalli**	**0.88**	**153**	*e*PG	**Pg**	**05 24 20.8**	**+0.2**
KHL	**Karahalli**	**0.88**	**153**	*e*Pg	**Pg**	**05 24 20.8**	**+0.2**
ORLT	**Orhaneli**	**0.94**	**354**	*e*PG	**Pn**	**05 24 23.2**	**-0.4**
ORLT	**Orhaneli**	**0.94**	**354**	*e*Pg	**Pn**	**05 24 23.2**	**-0.4**
AKS	**Akhisar**	**0.96**	**257**	*e*PG	**Pn**	**05 24 23.8**	**-0.1**
AKS	**Akhisar**	**0.96**	**257**	*e*Pg	**Pn**	**05 24 23.8**	**-0.1**
BALB	**Balikesir**	**1.03**	**302**	*e*PN	**Pn**	**05 24 25.1**	**+0.3**
BALB	**Balikesir**	**1.03**	**302**	*e*Pn	**Pn**	**05 24 25.1**	**+0.3**
KCTX	**Karacabey (Bur**	**1.26**	**337**	*e*PN	**Pg**	**05 24 29.4**	**+1.5**
KCTX	**Karacabey (Bur**	**1.26**	**337**	*e*Pn	**Pg**	**05 24 29.5**	**+1.5**
MDNY	**Mudanya-Bursa**	**1.27**	**355**	*e*PN	**Pg**	**05 24 29.0**	**+1.0**
MDNY	**Mudanya-Bursa**	**1.27**	**355**	*e*Pn	**Pg**	**05 24 29.0**	**+1.0**
CAVI	**Cavuskoy**	**1.27**	**30**	*e*PN	**Pg**	**05 24 28.6**	**+0.5**
CAVI	**Cavuskoy**	**1.27**	**30**	*e*Pn	**Pg**	**05 24 28.6**	**+0.5**
IZI	**Iznik**	**1.28**	**16**	*e*PN	**Pg**	**05 24 29.3**	**+1.0**
IZI	**Iznik**	**1.28**	**16**	*e*Pn	**Pg**	**05 24 29.3**	**+1.0**
ADVT	**Abdulvahap**	**1.44**	**23**	*e*PN	**Pg**	**05 24 31.4**	**+0.1**
ADVT	**Abdulvahap**	**1.44**	**23**	*e*Pn	**Pg**	**05 24 31.4**	**+0.1**
ARMT	**Armutlu**	**1.46**	**355**	*e*PN	**Pg**	**05 24 32.1**	**+0.3**
ARMT	**Armutlu**	**1.46**	**355**	*e*Pn	**Pg**	**05 24 32.1**	**+0.3**
EDC	**Edincik**	**1.52**	**325**	*e*PN	**Pg**	**05 24 33.3**	**+0.3**
EDC	**Edincik**	**1.52**	**325**	*e*Pn	**Pg**	**05 24 33.3**	**+0.3**
GULT	**Gulveren**	**1.76**	**41**	*e*PN	**Pb**	**05 24 35.9**	**-0.6**
GULT	**Gulveren**	**1.76**	**41**	*e*Pn	**Pb**	**05 24 35.9**	**-0.6**

*ISCJB **22** 05:25:49.7±0.5, 39°.14N±0°.05×29°.05E±0°.04, h4km±7km, Error ellipse: s-maj=7.8km s-min=4.5km az=164.7*
*CSEM **22** 05:25:49.9±0.1, 39°.13N×29°.07E, h8km, ML2.6, Error ellipse: s-maj=1.9km s-min=1.5km az=144.0*
*ISK **22** 05:25:49.6, 39°.14N×29°.07E, h8km, MD2.8*
*DDA **22** 05:25:49.5, 39°.13N×29°.06E, h7km, Ml2.6*

ISC 22 05:25:49.6±0.9, 39°.11N±0°.03×29°.09E±0°.03, h14km±9km, n37, σ0°43/46, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.30**	**257**	P	**Pg**	**05 25 55.6**	**-0.2**
DEMI				S	**Sg**	**05 26 00.0**	**0.0**
DEMI	**Demirci**	**0.30**	**257**	*i* P	**Pg**	**05 25 55.6**	**-0.2**
DEMI				*i* S	**Sg**	**05 26 00.0**	**0.0**
GDZ	**Gediz**	**0.31**	**94**	P	**Pb**	**05 25 56.5**	**-0.4**
GDZ				S	**Sb**	**05 26 01.2**	**-0.7**
GDZ	**Gediz**	**0.31**	**94**	*i* P	**Pb**	**05 25 56.5**	**-0.4**
GDZ				*i* S	**Sb**	**05 26 01.2**	**-0.7**
TVSB	**Tavsanli**	**0.45**	**41**	*e*PG	**Pg**	**05 25 58.7**	**+0.2**
TVSB				*e*SG	**Sg**	**05 26 04.8**	**+0.2**
TVSB	**Tavsanli**	**0.45**	**41**	*e*Pg	**Pg**	**05 25 58.7**	**+0.2**
TVSB				*e*Sg	**Sg**	**05 26 04.8**	**+0.2**
KULA	**Kula-Manisa**	**0.68**	**209**	*e*PG	**Pb**	**05 26 03.5**	**+0.2**
KULA	**Kula-Manisa**	**0.68**	**209**	*e*Pg	**Pb**	**05 26 03.5**	**+0.2**
KHL	**Karahalli**	**0.86**	**156**	*e*PG	**Pn**	**05 26 07.2**	**-0.1**
KHL	**Karahalli**	**0.86**	**156**	*e*Pg	**Pn**	**05 26 07.2**	**-0.1**
ORLT	**Orhaneli**	**0.94**	**351**	*e*PG	**Pg**	**05 26 07.7**	**-0.1**
ORLT	**Orhaneli**	**0.94**	**351**	*e*Pg	**Pg**	**05 26 07.7**	**-0.1**
AKS	**Akhisar**	**1.02**	**257**	*e*PG	**Pg**	**05 26 09.3**	**+0.1**
AKS	**Akhisar**	**1.02**	**257**	*e*Pg	**Pg**	**05 26 09.3**	**+0.1**
BALB	**Balikesir**	**1.07**	**300**	*e*PG	**Pg**	**05 26 10.1**	**-0.2**
BALB	**Balikesir**	**1.07**	**300**	*e*Pg	**Pg**	**05 26 10.1**	**-0.2**
IGD	**Bursa**	**1.15**	**4**	*i* P	**Pb**	**05 26 10.5**	**-0.8**
IGD				*i* S	**Sn**	**05 26 27.6**	**+0.7**
CAVI	**Cavuskoy**	**1.24**	**28**	*e*PN	**Pg**	**05 26 13.1**	**-0.3**
CAVI	**Cavuskoy**	**1.24**	**28**	*e*Pn	**Pg**	**05 26 13.1**	**-0.3**
IZI	**Iznik**	**1.26**	**14**	*e*PN	**Pg**	**05 26 13.9**	**+

ARMT	Armutlu	1.46	356	ePN	Pn	05 38 00.5 -0.3
ARMT	Armutlu	1.46	356	ePn	Pn	05 38 00.5 -0.3
EDC	Edincik	1.51	325	ePN	Pn	05 38 01.7 +0.1
EDC	Edincik	1.51	325	ePn	Pn	05 38 01.7 +0.1
GULT	Gulveren	1.76	41	ePN	Pn	05 38 05.1 0.0
GULT	Gulveren	1.76	41	ePn	Pn	05 38 05.1 0.0

*ISK **22** 05:39:09.7, 39°.06N×29°.12E, h9km, MD2.6*
*ISCJB **22** 05:39:10.4±0.5, 39°.10N±0°.05×29°.05E±0°.04, h4km±7km, Error ellipse: s-maj=8.6km s-min=3.7km az=148.2*
*CSEM **22** 05:39:10.4±0.1, 39°.09N×29°.06E, h8km, ML2.7, Error ellipse: s-maj=3.4km s-min=1.6km az=138.0*
*DDA **22** 05:39:10.3, 39°.11N×29°.04E, h7km, Ml2.7*
ISC 22 05:39:10.0±1.0, 39°.05N±0°.04×29°.09E±0°.03, h11km±10km, n26, σ0°.40/40, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.29	268	P	Pg	05 39 16.1	+0.1
DEMI				S	Sg	05 39 19.9	-0.2
DEMI	Demirci	0.29	268	*i* P	Pg	05 39 16.1	+0.1
DEMI				*i* S	Sg	05 39 19.9	-0.2
GDZ	Gediz	0.30	83	P	Pb	05 39 17.4	-0.2
GDZ				S	Sb	05 39 22.4	-0.3
GDZ	Gediz	0.30	83	*i* P	Pb	05 39 17.4	-0.2
GDZ				*i* S	Sb	05 39 22.4	-0.3
TVSB	Tavsanli	0.49	36	*e*PG	Pg	05 39 19.6	-0.1
TVSB				*e*SG	Sg	05 39 26.1	-0.1
TVSB	Tavsanli	0.49	36	*e*Pg	Pg	05 39 19.6	-0.1
TVSB				*e*Sg	Sg	05 39 26.1	-0.1
KULA	Kula-Manisa	0.64	212	*e*PG	Pb	05 39 22.9	-0.3
KULA				*e*SG	Sb	05 39 32.1	0.0
KULA	Kula-Manisa	0.64	212	*e*Pg	Pb	05 39 22.9	-0.3
KULA				*e*Sg	Sb	05 39 32.1	0.0
MANT	Manisa	0.70	217	P	Pb	05 39 24.6	+0.2
MANT				S	Sb	05 39 33.9	-0.2
MANT	Manisa	0.70	217	*i* P	Pb	05 39 24.6	+0.2
MANT				*i* S	Sb	05 39 33.9	-0.2
AKHS	Akhisar	1.01	261	P	Pg	05 39 29.4	-0.1
AKHS				S	Sb	05 39 43.3	+0.4
AKHS	Akhisar	1.01	261	*i* P	Pg	05 39 29.4	-0.1
AKHS				*i* S	Sb	05 39 43.3	+0.4
AKS	Akhisar	1.01	261	*e*PG	Pn	05 39 30.1	-0.1
AKS	Akhisar	1.01	261	*e*Pg	Pn	05 39 30.1	-0.1
CAVI	Cavuskoy	1.29	27	*e*PN	Pb	05 39 34.1	-0.2
CAVI	Cavuskoy	1.29	27	*e*Pn	Pb	05 39 34.1	-0.2
IZI	Iznik	1.32	13	*e*PN	Pb	05 39 34.6	-0.2
IZI	Iznik	1.32	13	*e*Pn	Pb	05 39 34.6	-0.2
BORA	Eskisehir	1.34	51	P	Pg	05 39 35.4	-0.4
BORA				S	Sg	05 39 54.6	+1.4
BORA	Eskisehir	1.34	51	*i* P	Pg	05 39 35.4	-0.4
BORA				*i* S	Sg	05 39 54.6	+1.4
KCTX	Karacabey (Bur	1.34	335	*e*PN	Pb	05 39 35.1	0.0
KCTX	Karacabey (Bur	1.34	335	*e*Pn	Pb	05 39 35.2	0.0
ADVT	Abdulvahap	1.47	20	*e*PN	Pn	05 39 36.5	+0.1
ADVT	Abdulvahap	1.47	20	*e*Pn	Pn	05 39 36.5	+0.1
ARMT	Armutlu	1.52	353	*e*PN	Pb	05 39 37.8	-0.5
ARMT	Armutlu	1.52	353	*e*Pn	Pb	05 39 37.8	-0.5

*DDA **22** 05:41:38.2, 38°.97N×29°.20E, h7km, Ml2.9*
*ISCJB **22** 05:41:40.6±0.4, 39°.09N±0°.03×29°.16E±0°.04, h9km, Error ellipse: s-maj=5.3km s-min=3.4km az=143.6*
*CSEM **22** 05:41:40.3±0.1, 39°.10N×29°.17E, h2km, ML2.9, Error ellipse: s-maj=3.8km s-min=2.6km az=128.0*
*ISK **22** 05:41:40.1, 39°.10N×29°.23E, h7km, MD2.9*
ISC 22 05:41:40.6±0.8, 39°.11N±0°.03×29°.17E±0°.03, h9km, n52, σ0°.66/58, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	Gediz	0.24	94	*i* P	Pg	05 41 37.7	-7.9
GDZ				*i* S	Sg	05 41 50.1	+1.1
DEMI	Demirci	0.36	260	P	Pg	05 41 47.5	-0.1
DEMI				S	Sg	05 41 52.3	-0.1
DEMI	Demirci	0.36	260	*i* P	Pg	05 41 47.5	-0.1
DEMI				*i* S	Sg	05 41 52.3	-0.1
TVSB	Tavsanli	0.41	34	*e*PG	Pg	05 41 47.9	-0.8
TVSB				*e*SG	Sg	05 41 54.0	-0.1
TVSB	Tavsanli	0.41	34	*e*Pg	Pg	05 41 47.9	-0.8
TVSB				*e*Sg	Sg	05 41 54.1	-0.1
KULA	Kula-Manisa	0.71	214	*e*PG	Pg	05 41 54.5	+0.2
KULA	Kula-Manisa	0.71	214	*e*Pg	Pg	05 41 54.5	+0.2
DURS	Dursunbey	0.73	313	P	Pg	05 41 53.8	-0.9
DURS	Dursunbey	0.73	313	*i* P	Pg	05 41 53.8	-0.9
MANT	Manisa	0.78	218	*i* P	Pg	05 41 51.3	-4.3
MANT				*i* S	Sg	05 42 05.3	-0.5
KHL	Karahalli	0.83	160	*e*PG	Pg	05 41 55.9	-0.7
KHL	Karahalli	0.83	160	*e*Pg	Pg	05 41 55.9	-0.7
ORLT	Orhaneli	0.96	348	*e*PG	Pb	05 41 59.6	+0.2
ORLT	Orhaneli	0.96	348	*e*Pg	Pb	05 41 59.6	+0.2
AKS	Akhisar	1.08	258	*e*PN	Pn	05 42 02.1	+0.3
AKS	Akhisar	1.08	258	*e*Pn	Pn	05 42 02.2	+0.3
BALB	Balikesir	1.13	298	*e*PN	Pg	05 42 02.6	+0.3
BALB	Balikesir	1.13	298	*e*Pn	Pg	05 42 02.6	+0.3
IZI	Iznik	1.25	11	*e*PN	Pg	05 42 05.0	+0.4
IZI	Iznik	1.25	11	*e*Pn	Pg	05 42 05.0	+0.4
BORA	Eskisehir	1.26	52	P	Pg	05 42 04.4	-0.4
BORA				S	Sn	05 42 21.8	+0.2
BORA	Eskisehir	1.26	52	*i* P	Pg	05 42 04.4	-0.4
BORA				*i* S	Sn	05 42 21.8	+0.2
MDNY	Mudanya-Bursa	1.28	350	*e*PN	Pn	05 42 04.3	-0.3
MDNY	Mudanya-Bursa	1.28	350	*e*Pn	Pn	05 42 04.3	-0.3
KCTX	Karacabey (Bur	1.31	332	*e*PN	Pn	05 42 05.0	-0.1
KCTX	Karacabey (Bur	1.31	332	*e*Pn	Pn	05 42 05.0	-0.1
ADVT	Abdulvahap	1.40	18	*e*PN	Pb	05 42 06.4	-0.4
ADVT	Abdulvahap	1.40	18	*e*Pn	Pb	05 42 06.4	-0.4
ARMT	Armutlu	1.48	351	*e*PN	Pg	05 42 08.6	-0.3
ARMT	Armutlu	1.48	351	*e*Pn	Pg	05 42 08.6	-0.3
AYDB	Zeytinkoy-Aydi	1.53	221	*e*PN	Pb	05 42 09.1	-0.1
AYDB	Zeytinkoy-Aydi	1.53	221	*e*Pn	Pb	05 42 09.1	-0.1
EDC	Edincik	1.59	321	*e*PN	Pb	05 42 09.9	-0.3
EDC	Edincik	1.59	321	*e*Pn	Pb	05 42 09.9	-0.3
GULT	Gulveren	1.68	38	*e*PN	Pn	05 42 10.6	+0.3
GULT	Gulveren	1.68	38	*e*Pn	Pn	05 42 10.6	+0.3
MRMT	Marmara Adasi	1.92	322	*e*PN	Pn	05 42 14.6	+1.0
MRMT	Marmara Adasi	1.92	322	*e*Pn	Pn	05 42 14.6	+1.0
MDUB	Mudurnu	2.07	48	*e*PN	Pn	05 42 16.0	+0.3
MDUB	Mudurnu	2.07	48	*e*Pn	Pn	05 42 16.0	+0.3
SILT	Sile	2.08	10	*e*PN	Pn	05 42 16.7	+1.1
SILT	Sile	2.08	10	*e*Pn	Pn	05 42 16.7	+1.1
BGKT	Bogazkoy	2.09	352	*e*PN	Pn	05 42 16.3	+0.5
BGKT	Bogazkoy	2.09	352	*e*Pn	Pn	05 42 16.3	+0.5
KLYT	Kilyos	2.15	357	*e*PN	Pn	05 42 17.4	+0.9
KLYT	Kilyos	2.15	357	*e*Pn	Pn	05 42 17.4	+0.9
CTKS	Kestanelik-??a	2.19	347	*e*PN	Pn	05 42 18.5	+1.4
CTKS	Kestanelik-??a	2.19	347	*e*Pn	Pn	05 42 18.5	+1.4
RKY	Sarkoy-Tekirda	2.20	317	*e*PN	Pb	05 42 19.1	-1.4
RKY	Sarkoy-Tekirda	2.20	317	*e*Pn	Pb	05 42 19.1	-1.4
CTYL	Yalikoy Yolu	2.46	344	*e*PN	Pn	05 42 21.7	+0.9
CTYL	Yalikoy Yolu	2.46	344	*e*Pn	Pn	05 42 21.7	+0.9

IDC 22 05:43:41.5±5.9, 0°.37S×99°.79E, h0km, mb3.4/2, mb1 3.7/2, mb1mx3.2/33, mbtmp3.4/2, Error ellipse: s-maj=299.6km s-min=86.2km az=48.0, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08S2	Diego Garcia H	28.15	254	T	T	06 17 08.3	
	baz=77,slow=75,SNR=130						
H08S3	Diego Garcia H	28.16	254	T	T	06 17 07.7	
	baz=77,slow=75,SNR=159						
H08S1	Diego Carcia H	28.17	254	T	T	06 17 08.7	
	baz=77,slow=75,SNR=113						
WRA	Warramunga Arr	39.02	122	P	P	05 51 10.4	+0.2
	0.4nm,0.5s,baz=300,slow=9.1,SNR=6.0						
ASAR	Alice Springs	40.39	127	P	P	05 51 21.2	-0.5
	0.3nm,0.6s,baz=298,slow=7.8,SNR=3.9						
TXAR	Lajitas Array	143.53	36	PKP	PKPdf	06 03 18.8	-0.4
	0.2nm,0.6s,baz=260,slow=1.6,SNR=3.6						

*ISCJB **22** 05:45:38.1±0.9, 37°.61N±0°.04×143°.57E±0°.06, h33km, mb4.0/2, Error ellipse: s-maj=7.4km s-min=5.4km az=7.6*
*JMA **22** 05:45:38.3±0.2, 37°.67N×143°.55E, h45km, M3.4*
*IDC **22** 05:45:41.9±3.6, 36°.76N×143°.31E, h0km, mb3.9/2, mb1 4.0/4, mb1mx3.5/35, mbtmp4.0/4, ML3.4/1, MS2.5/3, Ms1 2.5/3, ms1mx2.3/50, Error ellipse: s-maj=64.3km s-min=33.8km az=34.0*
ISC 22 05:45:39.4±1.3, 37°.64N±0°.05×143°.62E±0°.08, h35km, n23, σ1°.50/26, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	1.97	295	*e*S	Sn	05 46 32.1	-1.6
JFK	Kawauchi	2.20	264	P	Pn	05 46 12.6	-0.9
JFK				*e*S	Sn	05 46 38.5	-1.1
JOM	Ohasama	2.58	316	S	Sn	05 46 48.1	-0.8
JFT	Otama	2.61	268	S	Sn	05 46 49.5	-0.2
JYK	Kaneyama	2.87	297	P	Pn	05 46 22.6	0.0
JYK				S	Sn	05 46 56.6	+0.7
JANG	Nango	3.18	330	P	Pn	05 46 27.8	+0.8
JANG				S	Sn	05 47 03.3	-0.4
JAG	Ashikaga	3.55	251	P	Pn	05 46 32.3	+0.3
JAG				S	Sn	05 47 12.2	-0.6
BSO1	Boso 1	3.67	216	P	Pn	05 46 32.4	-0.8
BSO1				*e*S	Sn	05 47 14.3	-0.7
JRY	Ryogami san	4.12	248	P	Pn	05 46 39.8	-0.1
JRY				S	Sn	05 47 24.1	-2.8
JOT	Ohata	4.23	333	S	Sn	05 47 26.9	-2.6
JOD2	Odawara 2	4.36	238	P	Pn	05 46 42.4	-0.8
JOD2				*e*S	Sn	05 47 29.7	-3.0
MJAR	Matsushiro Arr	4.47	257	Pn	Pn	05 46 45.6	+1.0
	2.6nm,0.3s,baz=90,slow=15,SNR=31						
MJAR				Sn	Sn	05 47 36.0	+0.6
	1.3nm,0.3s,baz=71,slow=22,SNR=5.3						
MAT	Matsushiro	4.47	257	P	Pn	05 46 45.5	+0.8
MAT				S	Sn	05 47 35.6	+0.2
JCH	Churui	4.97	358	P	Pn	05 46 52.0	+0.5
JCH				S	Sn	05 47 44.3	-3.4
JCJ	Chichijima	10.59	187	Pn	Pn	05 48 03.4	-5.2
	baz=72,slow=19						
JCJ				Sn	Sn	05 49 53.7	-12
	1.8nm,0.3s,baz=342,slow=20,SNR=4.0						
JNU	Nakatsue	11.34	250	LR	LR	05 52 27.0	
	comp=Z,29nm,18.2s,baz=295,slow=37						
KSRS	Korea Array	12.47	274	LR	LR	05 53 03.5	
	comp=Z,13nm,19.6s,baz=72,slow=36						
KLR	Kul'dur	14.42	327	LR	LR	05 55 04.1	
	comp=Z,27nm,18.5s,baz=250,slow=37						
H11N2	WAKE ISLAND Hy	27.00	125	T	T	06 19 45.1	
	baz=316						
H11N1	WAKE ISLAND Hy	27.01	125	T	T	06 19 40.4	
	baz=316						
H11N3	WAKE ISLAND Hy	27.02	125	T	T	06 19 43.4	
	baz=316						
WRA	Warramunga Arr	57.94	190	P	P	05 55 28.8	+0.6
	2.3nm,0.7s,baz=11,slow=7.3,SNR=22						
ASAR	Alice Springs	61.66	190	P	P	05 55 56.0	+2.2
	0.4nm,0.6s,baz=12,slow=13,SNR=4.3						

*ISCJB **22** 05:48:27.4±1.1, 37°.95N±0°.07×72°.59E±0°.08, h119km, mb3.4/4, Error ellipse: s-maj=11.2km s-min=7.4km az=147.7*
*IDC **22** 05:48:28.7±7.1, 37°.79N×72°.82E, h141km±61km, mb3.1/4, mb1 3.2/6, mb1mx2.9/35, mbtmp3.6/6, Error ellipse: s-maj=60.2km s-min=35.0km az=149.0*
*NNC **22** 05:48:32.2±2.3, 38°.17N×72°.44E, h139km±34km, mb2.8, mpv3.5, Error ellipse: s-maj=22.8km s-min=8.9km az=143.0*
ISC 22 05:48:28.7±1.4, 38°.0N±0°.1×72°.57E±0°.08, h119km, n13, σ1°.93/19, mb3.4/4, 6C-7D, Tajikistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	Dzherino	3.05	287	⇑P	Pn	05 49 18.1	+2.4
	3.8nm,0.4s						
DZET				⇓S	Sn	05 49 53.6	+1.7
	107nm,0.5s						
MNAS	Manas	4.49	359	⇓P	Pn	05 49 37.0	+2.1
	6.7nm,0.7s						
MNAS				⇑S	Sn	05 50 26.9	+0.7
	31nm,0.4s						
AAK	Ala-Archa	4.86	17	⇓P	Pn	05 49 42.0	+2.1
	3.4nm,0.4s						
AAK				⇓S	Sn	05 50 37.8	+2.5
	35nm,0.5s						
KK31	Karatay Array	5.34	344	⇑P	Pn	05 49 48.5	+2.3
	16nm,0.3s,baz=154,slow=12,SNR=421						
KK31				⇑S	Sn	05 50 46.3	-0.2
	18nm,0.3s,baz=163,slow=23,SNR=4.4						
TKM2	Tokmak 2	5.44	24	⇓P	Pn	05 49 49.0	+1.3
	0.7nm,0.3s						
TKM2				⇑S	Sn	05 50 49.4	+0.2
	6.4nm,0.6s						
MKAR	Makanchi Array	11.35	36	P	Pn	05 51 07.4	+0.2
	0.1nm,0.3s,baz=209,slow=12,SNR=3.1						
AB31	Akbulak array	14.48	325	⇓P	Pn	05 51 48.2	+0.4
	1.2nm,0.5s						
AKTO	Aktyubinsk	16.20	325	⇓P	Pn	05 52 09.0	-0.2
	3.8nm,0.7s						
AKTO				⇑S	Sn	05 55 03.9	-5.0
	2.4nm,0.9s						
ZALV	Zalesovo Beam	18.04	24	P	P	05 52 29.8	-0.6
	0.4nm,0.3s,baz=211,slow=12,SNR=5.1						
FINES	FINESS Array B	36.97	325	P	P	05 55 26.3	+0.3
	0.4nm,0.3s,baz=115,slow=9.4,SNR=8.0						
NOA	NORSAR Array B	43.96	322	P	P	05 56 23.5	-0.1
	0.4nm,0.5s,baz=95,slow=7.6,SNR=2.6						
TORD	Torodi Ar. Bea	67.00	269	P	P	05 59 08.0	-1.1
	0.2nm,0.4s,baz=57,slow=5.6,SNR=4.1						
YKA	Yellowknife Ar	79.69	3	P	P	06 00 21.4	-1.3
	0.2nm,0.5s,baz=350,slow=6.0,SNR=3.0						

IDC 22 05:49:13.7±392.0, 64°.03N×17°.47W, h0km, Error ellipse: s-maj=269.5km s-min=156.8km az=87.0, Iceland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I18DK	QAANAAQ INFRAS	20.67	331	*i*		07 57 00.0	
	baz=106,slow=312,SNR=1.2						
I42PT	GRACIOSA ISLAN	25.80	199	*i*		08 27 20.0	
	baz=16,slow=308,SNR=11						
I10CA	LAC DU BONNET	41.92	289	*i*		10 06 30.0	
	baz=36,slow=324,SNR=1.3						
I53US	FAIRBANKS INFR	46.36	333	*i*		10 30 25.0	
	baz=31,slow=320,SNR=3.2						

*CSEM **22** 05:51:53.7±0.1, 39°.10N×29°.06E, h2km, ML2.9, Error ellipse: s-maj=4.1km s-min=3.0km az=134.0*
*ISK **22** 05:51:53.4, 39°.11N×29°.08E, h5km, MD2.6*
*DDA **22** 05:51:53.2, 39°.07N×29°.08E, h7km, Ml2.9*
ISC 22 05:51:53.4±0.9, 39°.10N±0°.03×29°.04E±0°.02, h12km±8km, n33, σ0°.41/45, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.26	257	P	Pg	05 51 58.9	+0.1
DEMI				S	Sg	05 52 02.5	0.0
DEMI	Demirci	0.26	257	*i* P	Pg	05 51 58.9	+0.1
DEMI				*i* S	Sg	05 52 02.5	0.0
GDZ	Gediz	0.34	92	P	Pg	05 52 00.3	0.0
GDZ				S	Sg	05 52 05.2	+0.2
GDZ	Gediz	0.34	92	*i* P	Pg	05 52 00.3	0.0
GDZ				*i* S	Sg	05 52 05.2	+0.2
TVSB	Tavsanli	0.48	43	*e*PG	Pg	05 52 02.5	-0.3
TVSB				*e*SG	Sg	05 52 08.8	-0.4
TVSB	Tavsanli	0.48	43	*e*Pg	Pg	05 52 02.5	-0.3
TVSB				*e*Sg	Sg	05 52 08.8	-0.4
KULA	Kula-Manisa	0.66	207	*e*PG	Pg	05 52 06.2	+0.1
KULA	Kula-Manisa	0.66	207	*e*Pg	Pg	05 52 06.2	+0.1
DURS	Dursunbey	0.67	319	P	Pg	05 52 06.0	-0.3
DURS				S	Sn	05 52 18.4	-0.6
DURS	Dursunbey	0.67	319	*i* P	Pg	05 52 06.0	-0.3
DURS				*i* S	Sn	05 52 18.4	-0.6
MANT	Manisa	0.72	212	P	Pg	05 52 07.3	0.0
MANT				S	Sg	05 52 16.7	0.0
MANT	Manisa	0.72	212	*i* P	Pg	05 52 07.3	0.0
MANT				*i* S	Sg	05 52 16.7	0.0
KHL	Karahalli	0.86	154	*e*PG	Pn	05 52 11.4	0.0
KHL	Karahalli	0.86	154	*e*Pg	Pn	05 52 11.4	0.0
AKS	Akhisar	0.98	257	*e*PG	Pn	05 52 13.2	+0.3
AKS	Akhisar	0.98	257	*e*Pg	Pn	05 52 13.2	+0.3
BALB	Balikesir	1.05	301	*e*PG	Pn	05 52 14.6	+0.8
MDNY	Mudanya-Bursa	1.27	355	*e*PN	Pg	05 52 18.3	+0.5
MDNY	Mudanya-Bursa	1.27	355	*e*Pn	Pg	05 52 18.3	+0.5
KCTX	Karacabey (Bur	1.28	336	*e*PN	Pg	05 52 18.0	+0.1
IZI	Iznik	1.28	15	*e*PN	Pg	05 52 18.4	+0.4
IZI	Iznik	1.28	15	*e*Pn	Pg	05 52 18.4	+0.4
BORA	Eskisehir	1.34	54	P	Pb	05 52 18.6	+0.1
BORA				S	Sg	05 52 36.5	-0.1
BORA	Eskisehir	1.34	54	*i* P	Pb	05 52 18.6	+0.1
BORA				*i* S	Sg	05 52 36.5	-0.1
ADVT	Abdulvahap	1.44	22	*e*PN	Pg	05 52 20.9	0.0
ADVT	Abdulvahap	1.44	22	*e*Pn	Pg	05 52 20.9	0.0
AYDB	Zeytinkoy-Aydi	1.46	218	*e*PN	Pg	05 52 22.1	+0.7
ARMT	Armutlu	1.47	355	*e*PN	Pg	05 52 21.7	+0.1
GULT	Gulveren	1.75	40	*e*PN	Pb	05 52 25.1	-0.3
GULT	Gulveren	1.75	40	*e*Pn	Pb	05 52 25.1	-0.3
SILT	Sile	2.10	13	*e*PN	Pn	05 52 29.8	+1.5
RKY	Sarkoy-Tekirda	2.14	318	*e*PN	Pb	05 52 31.4	-0.6
RKY	Sarkoy-Tekirda	2.14	318	*e*Pn	Pb	05 52 31.4	-0.6

*IDC **22** 05:52:46.0±1.8, 36°.95N×84°.79E, h0km, mb3.6/3, mb1 3.7/6, mb1mx3.4/34, mbtmp3.6/6, ML3.4/2, Error ellipse: s-maj=54.9km s-min=25.8km az=65.0*
*BJI **22** 05:52:47.4, 37°.05N×84°.79E, h9km, ML3.5/4, Ms3.4/1*
*NNC **22** 05:52:53.1±3.8, 37°.48N×84°.81E, h0km, mb4.0, mpv3.8, Error ellipse: s-maj=35.6km s-min=28.7km az=58.0*
ISC 22 05:52:49.1±1.4, 37°.2N±0°.1×85°.0E±0°.2, h10km, n9, σ1°.55/13, mb3.5/3, 5C-1D, Southern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PDGK	Podgornoye	7.44	327	⇑Pn	Pn	05 54 38.3	+0.7
	3.9nm,0.7s						
PDGK				⇑Sn	Sn	05 56 02.2	+0.1
	33nm,0.9s						
MK31	Makanchi Array	9.82	349	⇑Pn	Pn	05 55 11.2	+0.9
	0.7nm,0.5s,baz=168,slow=13,SNR=19						
MK31				⇑Sn	Sn	05 56 58.7	-1.9
	2.9nm,0.7s,baz=170,slow=21,SNR=4.8						
MKAR	Makanchi Array	9.82	349	Pn	Pn	05 55 10.8	+0.5
	0.5nm,0.3s,baz=172,slow=13,SNR=14						
MKAR				Sn	Sn	05 56 58.3	-2.3
	0.4nm,0.3s,baz=175,slow=23,SNR=3.7						
MKAR				Lg	Lg	05 57 59.3	
	0.1nm,0.3s,baz=167,slow=27,SNR=2.3						
MAKZ	Makanchi	9.88	348	⇑Pn	Pn	05 55 11.9	+0.7
	2.0nm,0.5s						
MAKZ				⇓Sn	Sn	05 57 01.0	-1.1
	2.2nm,0.6s						
ZALV	Zalesovo Beam	16.78	360	Pn	Pn	05 56 46.0	+2.1
	0.5nm,0.3s,baz=188,slow=10,SNR=6.9						
SONM	Songino Array	18.99	49	P	P	05 57 13.0	+2.2
	baz=253,slow=9.9,SNR=2.6						
ARCES	ARCESS Array B	45.10	335	P	P	06 01 05.1	+0.1
	2.2nm,1.0s,baz=102,slow=8.4,SNR=3.3						
ILAR	Eielson Array	70.60	21	P	P	06 04 03.3	-0.8
	0.2nm,0.6s,baz=324,slow=7.0,SNR=3.2						
WRA	Warramunga Arr	73.42	132	P	P	06 04 20.2	-1.4
	0.3nm,0.7s,baz=323,slow=6.3,SNR=4.1						

*ISCJB **22** 06:05:29.7±0.6, 39°.11N±0°.04×29°.03E±0°.05, h12km±6km, Error ellipse: s-maj=8.7km s-min=4.5km az=137.6*
*CSEM **22** 06:05:29.7±0.1, 39°.12N×29°.01E, h10km, ML2.7, Error ellipse: s-maj=2.6km s-min=1.5km az=126.0*
*ISK **22** 06:05:29.0, 39°.13N×29°.00E, h7km, MD2.4*
*DDA **22** 06:05:30.1, 39°.08N×29°.03E, h7km, Ml2.7*
ISC 22 06:05:29.6±1.0, 39°.12N±0°.03×29°.01E±0°.04, h17km±10km, n16, σ0°.21/26, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.24	250	P	Pb	06 05 35.6	+0.1
DEMI				S	Sg	06 05 39.0	+0.2
DEMI	Demirci	0.24	250	*i* P	Pb	06 05 35.6	+0.1
DEMI				*i* S	Sg	06 05 39.0	+0.2
GDZ	Gediz	0.37	95	P	Pg	06 05 37.3	0.0
GDZ				S	Sg	06 05 42.5	-0.1
GDZ	Gediz	0.37	95	*i* P	Pg	06 05 37.3	0.0
GDZ				*i* S	Sg	06 05 42.5	-0.1
TVSB	Tavsanli	0.48	47	*e*PG	Pg	06 05 39.2	-0.1
TVSB				*e*SG	Sg	06 05 45.6	-0.2
TVSB	Tavsanli	0.48	47	*e*Pg	Pg	06 05 39.2	-0.1
TVSB				*e*Sg	Sg	06 05 45.6	-0.2
KULA	Kula-Manisa	0.67	204	PG	Pg	06 05 42.4	-0.3
KULA				SG	Sb	06 05 51.9	+0.1
KULA	Kula-Manisa	0.67	204	*i* Pg	Pg	06 05 42.4	-0.3
KULA				*i* Sg	Sb	06 05 51.9	+0.1
MANT	Manisa	0.72	209	P	Pb	06 05 44.1	+0.2
MANT				S	Sg	06 05 53.2	-0.2
MANT	Manisa	0.72	209	*i* P	Pb	06 05 44.1	+0.2
MANT				*i* S	Sg	06 05 53.2	-0.2
KCTX	Karacabey (Bur	1.25	336	*e*PN	Pb	06 05 52.9	+0.3
KCTX	Karacabey (Bur	1.25	336	*e*Pn	Pb	06 05 52.9	+0.3
IZI	Iznik	1.26	16	*e*PN	Pg	06 05 53.7	-0.3
IZI	Iznik	1.26	16	*e*Pn	Pg	06 05 53.7	-0.3
ARMT	Armutlu	1.44	356	*e*PN	Pb	06 05 56.3	+0.2
ARMT	Armutlu	1.44	356	*e*Pn	P

DEMI				S	Sg	06 11 32.3	0.0
DEMI	**Demirci**	**0.25**	**240**	*i* P	Pg	06 11 28.5	+0.3
DEMI				*i* S	Sg	06 11 32.3	0.0
GDZ	**Gediz**	**0.39**	**102**	P	Pb	06 11 30.7	-0.1
GDZ				S	Sg	06 11 35.9	-0.2
GDZ	**Gediz**	**0.39**	**102**	*i* P	Pb	06 11 30.7	-0.1
GDZ				*i* S	Sg	06 11 35.9	-0.2
TVSB	**Tavsanli**	**0.46**	**52**	*e*PG	Pb	06 11 32.3	+0.4
TVSB				*e*SG	Sb	06 11 39.2	+0.8
TVSB	**Tavsanli**	**0.46**	**52**	*e*Pg	Pb	06 11 32.3	+0.4
TVSB				*e*Sg	Sb	06 11 39.2	+0.8
KULA	**Kula-Manisa**	**0.70**	**202**	*e*PG	Pb	06 11 36.0	+0.1
KULA				*e*SG	Sb	06 11 45.1	-0.2
KULA	**Kula-Manisa**	**0.70**	**202**	*e*Pg	Pb	06 11 36.1	+0.1
KULA				*e*Sg	Sb	06 11 45.1	-0.2
MANT	**Manisa**	**0.76**	**207**	P	Pg	06 11 37.5	+0.2
MANT				S	Sb	06 11 46.4	-0.6
MANT	**Manisa**	**0.76**	**207**	*i* P	Pg	06 11 37.5	+0.2
MANT				*i* S	Sb	06 11 46.4	-0.6
KCTX	**Karacabey (Bur**	**1.20**	**336**	*e*PN	Pg	06 11 45.5	-0.1
KCTX	**Karacabey (Bur**	**1.20**	**336**	*e*Pn	Pg	06 11 45.5	-0.1
IZI	**Iznik**	**1.22**	**17**	*e*PN	Pg	06 11 47.0	+0.9
IZI	**Iznik**	**1.22**	**17**	*e*Pn	Pg	06 11 47.0	+0.9
GONE	**Gonen-Balikesi**	**1.34**	**311**	*e*PN	Pg	06 11 48.1	-0.1
GONE	**Gonen-Balikesi**	**1.34**	**311**	*e*Pn	Pg	06 11 48.1	-0.1
ARMT	**Armutlu**	**1.40**	**356**	*e*PN	Pg	06 11 49.6	+0.2
ARMT	**Armutlu**	**1.40**	**356**	*e*Pn	Pg	06 11 49.6	+0.2
AYDB	**Zeytinkoy-Aydi**	**1.50**	**216**	*e*PN	Pb	06 11 50.0	+0.4
AYDB	**Zeytinkoy-Aydi**	**1.50**	**216**	*e*Pn	Pb	06 11 50.0	+0.4
GULT	**Gulveren**	**1.72**	**42**	*e*PN	Pg	06 11 54.5	-1.0
GULT	**Gulveren**	**1.72**	**42**	*e*Pn	Pg	06 11 54.5	-1.0
RKY	**Sarkoy-Tekirda**	**2.06**	**318**	*e*PN	Pb	06 11 59.0	-0.2
RKY	**Sarkoy-Tekirda**	**2.06**	**318**	*e*Pn	Pb	06 11 59.0	-0.2
KLYT	**Kilyos**	**2.08**	**1**	*e*PN	Pb	06 11 59.1	-0.4
KLYT	**Kilyos**	**2.08**	**1**	*e*Pn	Pb	06 11 59.1	-0.4
CTKS	**Kestanelik-??a**	**2.10**	**350**	*e*PN	Pb	06 11 59.7	-0.1
CTKS	**Kestanelik-??a**	**2.10**	**350**	*e*Pn	Pb	06 11 59.7	-0.1

NIED ***22*** *06:17:00,37.°60N×141.°60E,h56km,Mw3.7 Best double couple: M=4.39000×10^14 NP1:φ=200.00000°,δ38.00000°, λ97.00000°. NP2:φ=11.00000°,δ52.00000°,λ84.00000°.*
ISCJB ***22*** *06:17:09.3±0.9,37.°62N±0.°04×141.°75E±0.°08,h50km±7km, mb3.7/8,Error ellipse: s-maj=11.3km s-min=5.9km az=18.1*
JMA ***22*** *06:17:11.3,37.°65N×141.°60E,h45km±2km,M3.7*
JMA Felt I J1.
IDC ***22*** *06:17:12.2±3.1,37.°64N×141.°70E,h61km±28km,mb3.4/8, mb1 3.6/11,mb1mx3.4/43,mbtmp3.7/11,ML2.6/2,MS2.6/2, Ms1 2.6/2,ms1mx2.3/30,Error ellipse: s-maj=23.6km s-min=17.3km az=78.0*
ISC 22 06:17:10.8±1.0,37.°64N±0.°05×141.°69E±0.°08,h46km±9km, n30,σ1.9°10/33,mb3.8/8,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.70**	**248**	P	**Pn**	**06 17 24.1**	**-0.4**
JFK				S	**Sn**	**06 17 32.9**	**-1.4**
JMM	**Marumori**	**0.75**	**288**	P	**Pn**	**06 17 24.6**	**-0.4**
JMM				S	**Sn**	**06 17 34.0**	**-1.3**
JIO	**Ouri**	**0.86**	**342**	P	**Pn**	**06 17 26.7**	**+0.2**
JIO				S	**Sn**	**06 17 37.4**	**-0.5**
ONAJ	**Iwakimizuishiy**	**0.89**	**233**	P	**Pn**	**06 17 26.7**	**-0.3**
ONAJ				S	**Sn**	**06 17 37.4**	**-1.4**
JFT	**Otama**	**1.08**	**264**	P	**Pn**	**06 17 29.8**	**+0.2**
JFT				S	**Sn**	**06 17 42.8**	**-0.6**
JOU	**Okura**	**1.09**	**312**	P	**Pn**	**06 17 29.4**	**-0.2**
JOU				S	**Sn**	**06 17 43.5**	**-0.1**
JHO	**Hitachi**	**1.36**	**222**	P	**Pn**	**06 17 32.9**	**-0.5**
JMK	**Ichinoseki**	**1.36**	**344**	P	**Pn**	**06 17 33.9**	**+0.6**
JMK				S	**Sn**	**06 17 50.1**	**-0.1**
JYS	**Shiratake**	**1.41**	**295**	P	**Pn**	**06 17 34.1**	**+0.1**
JFY	**Yanaizu**	**1.60**	**262**	P	**Pn**	**06 17 36.6**	**0.0**
JFY				S	**Sn**	**06 17 55.5**	**-0.5**
MJAR	**Matsushiro Arr**	**2.99**	**250**	P	**Pn**	**06 17 56.3**	**+0.6**
	2.2nm,0.3s,baz=53,slow=11,SNR=26						
MJAR				S	**Sn**	**06 18 32.9**	**+2.5**
	2.6nm,0.3s,baz=84,slow=29,SNR=5.2						
MAT	**Matsuhiro**	**2.99**	**250**	P	**Pn**	**06 17 56.6**	**+0.9**
MAT				*e*S	**Sn**	**06 18 33.9**	**+3.5**
USRK	**Ussuriysk Ar.**	**9.84**	**315**	P	**Pn**	**06 19 30.5**	**+0.9**
	0.2nm,0.3s,baz=120,slow=14,SNR=2.9						
JNU	**Nakatsue**	**9.91**	**246**	LR	LR	06 23 49.1	
	comp=Z,38nm,19.5s,baz=300,slow=40						
JCJ	**Chichijima**	**10.52**	**178**	P	**Pn**	**06 19 38.2**	**-0.7**
	baz=299,slow=19						
KSRS	**Korea Array**	**10.94**	**273**	P	Pn	06 19 49.1	+4.6
	0.2nm,0.3s,baz=82,slow=12,SNR=4.6						
KSRS				LR	LR	06 23 21.6	
	comp=Z,25nm,19.6s,baz=115,slow=34						
SONM	**Songino Array**	**27.64**	**303**	P	**P**	**06 22 53.9**	**-0.2**
	0.5nm,0.6s,baz=105,slow=9.2,SNR=3.1						
H11N2	**WAKE ISLAND Hy**	**28.27**	**122**	T	T	06 53 23.3	
	baz=316,slow=76,SNR=54						
H11N1	**WAKE ISLAND Hy**	**28.28**	**122**	T	T	06 53 19.4	
	baz=316,slow=76,SNR=31						
H11N3	**WAKE ISLAND Hy**	**28.29**	**122**	T	T	06 53 25.3	
	baz=316,slow=76,SNR=50						
H11S1	**WAKE ISLAND Hy**	**29.01**	**124**	T	T	06 54 15.0	
	baz=317,slow=76,SNR=32						
H11S3	**WAKE ISLAND Hy**	**29.01**	**124**	T	T	06 54 21.3	
	baz=317,slow=76,SNR=41						
H11S2	**WAKE ISLAND Hy**	**29.02**	**124**	T	T	06 54 16.6	
	baz=317,slow=76,SNR=23						
MKAR	**Makanchi Array**	**43.99**	**302**	P	**P**	**06 25 13.2**	**-0.3**
	0.6nm,0.7s,baz=89,slow=9.2,SNR=4.0						
INK	**Inuvik**	**53.75**	**27**	P	**P**	**06 26 28.8**	**+0.9**
	0.7nm,0.5s,baz=330,slow=8.1,SNR=4.3						
WRA	**Warramunga Arr**	**57.69**	**188**	P	**P**	**06 26 56.3**	**-0.3**
	0.6nm,0.5s,baz=5.7,slow=6.8,SNR=14						
WRA				pP	**pP**	**06 27 11.4**	**+1.8**
	0.6nm,0.5s,baz=5.1,slow=7.5,SNR=3.8						
ASAR	**Alice Springs**	**61.42**	**188**	P	**P**	**06 27 22.3**	**0.0**
	0.8nm,0.9s,baz=7.8,slow=7.5,SNR=4.3						
FINES	**FINESS Array B**	**68.38**	**332**	P	**P**	**06 28 06.5**	**-0.6**
	0.7nm,0.6s,baz=29,slow=6.8,SNR=4.8						
AKASG	**Malin Array Be**	**73.95**	**322**	P	**P**	**06 28 40.0**	**-1.1**
	0.3nm,0.3s,baz=46,slow=6.3,SNR=3.9						
TXAR	**Lajitas Array**	**89.58**	**53**	P	**P**	**06 30 04.2**	**+0.5**
	0.1nm,0.5s,baz=318,slow=1.2,SNR=2.8						

ISCJB ***22*** *06:20:22.9±0.6,39.°08N±0.°03×29.°08E±0.°05,h11km±6km, Error ellipse: s-maj=6.5km s-min=4.9km az=29.6*
CSEM ***22*** *06:20:22.9±0.1,39.°08N×29.°08E,h10km,ML2.6,Error ellipse: s-maj=3.7km s-min=2.7km az=118.0*
ISK ***22*** *06:20:22.6,39.°07N×29.°09E,h16km,MD2.4*
DDA ***22*** *06:20:22.7,39.°10N×29.°07E,h7km,Ml2.6*
ISC 22 06:20:23.0±0.9,39.°08N±0.°03×29.°08E±0.°03,h13km±8km, n15,σ0.8°25/26,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**262**	P	**Pg**	**06 20 29.2**	**+0.3**
DEMI				S	**Sg**	**06 20 32.9**	**-0.1**
DEMI	**Demirci**	**0.28**	**262**	*i* P	**Pg**	**06 20 29.2**	**+0.3**
DEMI				*i* S	**Sg**	**06 20 32.9**	**-0.1**
GDZ	**Gediz**	**0.31**	**88**	P	**Pg**	**06 20 29.4**	**-0.1**
GDZ				S	**Sg**	**06 20 33.8**	**-0.1**
GDZ	**Gediz**	**0.31**	**88**	*i* P	**Pg**	**06 20 29.4**	**-0.1**
GDZ				*i* S	**Sg**	**06 20 33.9**	**-0.1**
TVSB	**Tavsanli**	**0.47**	**39**	*e*PG	**Pg**	**06 20 32.4**	**+0.1**
TVSB	**Tavsanli**	**0.47**	**39**	*e*Pg	**Pg**	**06 20 32.4**	**+0.1**
KULA	**Kula-Manisa**	**0.65**	**210**	*e*PG	**Pg**	**06 20 35.8**	**+0.1**
KULA				*e*SG	**Sb**	**06 20 44.9**	**-0.3**
KULA	**Kula-Manisa**	**0.65**	**210**	*e*Pg	**Pg**	**06 20 35.8**	**+0.1**
KULA				*e*Sg	**Sb**	**06 20 44.9**	**-0.3**
DURS	**Dursunbey**	**0.70**	**318**	P	**Pg**	**06 20 36.2**	**-0.4**
DURS				S	**Sg**	**06 20 45.7**	**-0.1**
DURS	**Dursunbey**	**0.70**	**318**	*i* P	**Pg**	**06 20 36.2**	**-0.4**
DURS				*i* S	**Sg**	**06 20 45.7**	**-0.1**
MANT	**Manisa**	**0.72**	**215**	P	**Pb**	**06 20 37.3**	**-0.1**
MANT				S	**Sb**	**06 20 46.8**	**-0.4**
MANT	**Manisa**	**0.72**	**215**	*i* P	**Pb**	**06 20 37.3**	**-0.1**
MANT				*i* S	**Sb**	**06 20 46.8**	**-0.4**
ORLT	**Orhaneli**	**0.97**	**352**	*e*PG	**Pb**	**06 20 41.8**	**+0.1**
ORLT				*e*SG	**Sn**	**06 20 56.5**	**+0.5**
KCTX	**Karacabey (Bur**	**1.31**	**335**	*e*PN	**Pn**	**06 20 47.1**	**+0.2**
KCTX	**Karacabey (Bur**	**1.31**	**335**	*e*Pn	**Pn**	**06 20 47.1**	**+0.2**

IDC 22 06:21:38.7±1.4,53.°61S×140.°50E,h0km,mb3.7/5, mb1 4.0/5,mb1mx3.8/24,mbtmp3.8/5,MS3.5/2,Ms1 3.4/2, ms1mx2.9/26,Error ellipse: s-maj=93.9km s-min=22.2km az=84.0,West of Macquarie Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**21.73**	**3**	P	P	06 26 32.5	+1.1
	5.0nm,0.9s,baz=176,slow=12,SNR=3.5						
VNDA	**Vanda**	**25.23**	**169**	P	P	06 27 05.5	-0.3
	0.6nm,0.7s,baz=349,slow=8.1,SNR=3.7						
VNDA				LR	LR	06 35 26.8	
	comp=Z,83nm,18.9s,baz=149,slow=33						
H01W1	**Cape Leeuwin H**	**26.33**	**305**	T	T	06 54 50.0	
	baz=142,slow=76,SNR=7.7						
H01W2	**Cape Leeuwin H**	**26.33**	**305**	T	T	06 54 52.0	
	baz=142,slow=76,SNR=7.3						
H01W3	**Cape Leeuwin H**	**26.34**	**305**	T	T	06 54 49.7	
	baz=142,slow=76,SNR=5.9						
ASAR	**Alice Springs**	**30.31**	**348**	P	P	06 27 51.4	-0.3
	0.6nm,0.6s,baz=167,slow=10,SNR=9.9						
WRA	**Warramunga Arr**	**33.94**	**350**	P	P	06 28 22.7	-0.8
	1.0nm,0.7s,baz=170,slow=7.6,SNR=11						
FITZ	**Fitzroy Crossi**	**37.27**	**336**	P	P	06 28 52.0	-0.1
	1.3nm,0.8s,baz=158,slow=10,SNR=2.4						
MAW	**Mawson**	**37.75**	**218**	LR	LR	06 42 17.8	
	comp=Z,71nm,20.3s,baz=64,slow=33						
H08S2	**Diego Garcia H**	**70.89**	**283**	T	T	07 50 35.2	
	baz=142						
H08S1	**Diego Garcia H**	**70.90**	**283**	T	T	07 50 33.5	
	baz=142						
H08S3	**Diego Garcia H**	**70.91**	**283**	T	T	07 50 35.4	
	baz=142						
FINES	**FINESS Array B**	**145.35**	**310**	PKPbc	PKPbc	06 41 16.8	-0.1
	0.9nm,0.8s,baz=72,slow=9.2,SNR=2.1						
GERES	**GERESS Array B**	**147.00**	**284**	PKPbc	PKPbc	06 41 21.6	-0.9
	0.2nm,0.5s,baz=134,slow=2.8,SNR=3.5						
ESDC	**Sonseca Array**	**152.24**	**254**	PKPbc	PKPbc	06 41 35.5	-0.1
	0.1nm,0.3s,baz=48,slow=1.9,SNR=2.8						

MOS ***22*** *06:23:44.3±2.1,50.°19N×105.°39E,h7km,mb4.3/1,Error ellipse: s-maj=23.9km s-min=11.8km az=99.1*
BYKL 22 06:23:44.2±0.5,50.°20N×105.°38E,3C-4D, Tuva-Buryatia-Mongolia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZAK	**Zakamensk**	**1.36**	**279**	⇓*i*Pg	Pg	06 24 09.2	-1.0
ZAK				*e*		06 24 13.0	
ZAK				*e*Sg	Sg	06 24 27.9	+0.1
ZAK				Pmax			
	66nm,0.2s						
ZAK				Smax			
	508nm,0.2s						
ZAK	**Zakamensk**	**1.36**	**279**	*e*PG	Pg	06 24 08.9	-1.3
ZAK				*e*		06 24 27.4	
ZAK				pmax	pmax		
	comp=Z,113nm,0.2s						
ZAK				smax	smax		
	comp=N,508nm,0.1s						
LSTR	**Listvyanka**	**1.71**	**349**	*e*Pg	Pn	06 24 14.8	-0.4
LSTR				*e*Sg	Sb	06 24 38.4	0.0
LSTR				*e*		06 24 41.5	
LSTR				Pmax			
	comp=N,33nm,0.1s						
LSTR				max			
	comp=N,232nm,0.2s						
LSTR	**Listvyanka**	**1.71**	**349**	*e*PN	Pb	06 24 15.9	-0.5
LSTR				*e*		06 24 38.0	
LSTR				pmax	pmax		
	comp=Z,35nm,0.2s						
LSTR				smax	smax		
	comp=E,264nm,0.1s						
HRMR	**Khuramsha**	**1.74**	**34**	⇓*i*Pg	Pn	06 24 15.2	-0.5
HRMR				*e*Sg	Sb	06 24 39.5	0.0
HRMR				Pmax			
	comp=E,295nm,0.2s						
HRMR				Smax			
	comp=E,1μm,0.4s						
TLY	**Talaya**	**1.84**	**324**	⇑*i*Pg	Pn	06 24 17.1	0.0
TLY				*e*Sg	Sn	06 24 41.3	+0.1
TLY				Pmax			
	comp=E,24nm,0.2s						
TLY				Smax			
	comp=E,272nm,0.3s						
TLY	**Talaya**	**1.84**	**324**	*e*PN	Pn	06 24 17.1	0.0
TLY				*e*		06 24 17.5	
TLY				*e*		06 24 41.3	
TLY				pmax	pmax		
	comp=Z,39nm,0.4s						
TLY				smax	smax		
	comp=N,278nm,0.4s						
KAB	**Kabansk**	**2.02**	**23**	*e*Pg	Pn	06 24 20.0	+0.5
KAB				*e*Sg	Sb	06 24 47.0	-0.4
KAB				Smax			
	comp=N,1μm,0.6s						
KAB	**Kabansk**	**2.02**	**23**	*e*PN	Pn	06 24 20.2	+0.7
KAB				*e*		06 24 48.3	
KAB				pmax	pmax		
	comp=Z,159nm,0.4s						
KAB				smax	smax		
	comp=N,1μm,1.0s						
IRK	**Irkutsk**	**2.16**	**342**	*e*Pg	Pn	06 24 22.6	+1.1
IRK				*e*Sg	Sb	06 24 51.7	+0.2
IRK				Pmax			
	comp=N,123nm,0.2s						
IRK				Smax			
	comp=N,1μm,0.5s						
IRK	**Irkutsk**	**2.16**	**342**	*e*PN	Pb	06 24 23.4	-0.8
IRK				*e*		06 24 51.1	
IRK				pmax	pmax		
	comp=Z,124nm,0.2s						
IRK				smax	smax		
	comp=E,1μm,0.4s						
UUDB	**Ulan-Yde**	**2.21**	**40**	*e*Pn	Pn	06 24 22.2	+0.1
UUDB				⇓*i*Pg	Pb	06 24 23.5	-1.5
UUDB				*e*Sg	Sg	06 24 54.3	-0.7
UUDB				Pmax			
	comp=E,719nm,0.4s						
UUDB				Smax			
	comp=E,461nm,0.3s						
ARS	**Arshan**	**2.54**	**314**	*e*Pg	Pb	06 24 28.7	-2.0
ARS				*e*Sg	Sg	06 25 04.2	-1.5
ARS				Pmax			
	comp=E,24nm,0.5s						
ARS				Smax			
	comp=E,202nm,0.7s						
ULN	**Ulaanbaatar**	**2.58**	**154**	⇓*i*Pg	Pb	06 24 31.0	-0.5
ULN				*e*		06 25 00.3	
ULN				*e*Sg	Sg	06 25 05.7	-1.4
ZRHB	**Zarechye**	**2.61**	**25**	⇑*i*Pg	Pb	06 24 30.2	-1.6
ZRHB				*e*Sg	Sb	06 25 05.6	+1.3
ZRHB				*e*SgSg	SnSn	06 25 13.5	+2.5
ZRHB				Pmax			
	comp=E,166nm,0.3s						
ZRHB				max			
	comp=E,2μm,1.0s						
TRG	**Tyrgan**	**2.63**	**13**	*e*Pg	Pn	06 24 29.2	+1.2
TRG				*e*PgPg	Pb	06 24 33.2	+0.9
TRG				*e*Sg	Sb	06 25 04.2	-1.0
TRG				max			
	comp=E,40nm,0.4s						
TRG				Smax			
	comp=E,196nm,0.3s						
MOY	**Mondy**	**3.14**	**300**	*e*Pg	Pb	06 24 41.0	+0.1
MOY				*e*Sg	Sg	06 25 22.9	-2.1
MOY				*e*		06 25 25.7	
MOY				Pmax			
	comp=E,17nm,0.7s						
MOY				max			
	comp=E,223nm,1.3s						
MOY	**Mondy**	**3.14**	**300**	*e*PN	Pb	06 24 41.5	+0.6
MOY				*e*		06 25 22.8	
MOY				pmax	pmax		
	comp=Z,13nm,0.3s						
MOY				smax	smax		
	comp=N,224nm,0.8s						
OGRR	**Ongureny**	**3.71**	**21**	⇑*i*Pn	Pn	06 24 43.0	+0.2
OGRR				*e*Pg	Pb	06 24 50.4	-0.2
OGRR				*e*Sg	Sb	06 25 39.4	+3.3
OGRR				Pmax			
	comp=N,12nm,0.5s						
OGRR				Smax			
	comp=N,103nm,1.1s						
OGRR	**Ongureny**	**3.71**	**21**	*e*PN	Pn	06 24 42.9	+0.1
OGRR				*e*		06 24 51.5	
OGRR				*e*		06 25 39.3	
OGRR				pmax	pmax		
	comp=Z,13nm,0.8s						
OGRR				smax	smax		
	comp=E,103nm,1.2s						
ORL	**Orlik**	**4.20**	**306**	*e*	Pn	06 24 52.9	+3.3
ORL				*e*Pg	Pb	06 24 59.0	0.0
ORL				*e*Sg	Sg	06 25 55.0	-4.1
ORL				Pmax			
	comp=E,5.0nm,0.3s						
ORL				Smax			
	comp=E,74nm,1.4s						
ORL	**Orlik**	**4.20**	**306**	*e*PN	Pb	06 24 58.7	-0.3
ORL				*e*		06 25 54.5	
ORL				pmax	pmax		
	comp=Z,18nm,1.1s						
ORL				smax	smax		
	comp=N,74nm,1.1s						
SYVR	**Suvo**	**4.49**	**38**	*e*Pn	Pn	06 24 53.4	-0.1
SYVR				*e*Pg	Pb	06 25 03.6	-0.3
SYVR				*e*Sg	Sb	06 26 03.4	+4.9
SYVR				*e*		06 26 07.0	
SYVR				Pmax			
	comp=N,14nm,0.3s						
SYVR				max			
	comp=N,88nm,1.0s						
SYVR	**Suvo**	**4.49**	**38**	*e*PN	Pn	06 24 53.0	-0.5
SYVR				*e*		06 25 03.6	
SYVR				*e*		06 26 04.2	
SYVR				pmax	pmax		
	comp=Z,14nm,0.3s						
SYVR				smax	smax		
	comp=N,90nm,1.1s						
KPC	**Khapcheranga**	**4.55**	**94**	*e*Pn	Pn	06 24 53.0	-1.3
KPC				*e*Pg	Pb	06 25 05.7	+0.8
KPC				*e*Sn	Sn	06 25 44.1	-3.8
KPC				*e*Sg	Sg	06 26 05.8	-4.4
KPC				Pmax			
	comp=N,8.0nm,0.5s						
KPC				Smax			
	comp=N,85nm,0.9s						
YLYR	**Ulyunkhan**	**5.86**	**35**	*e*Pn	Pn	06 25 11.9	-0.4
YLYR				*e*Pg	Pb	06 25 29.3	+2.1
YLYR				*e*		06 25 32.4	
YLYR				*e*Sg	Sg	06 26 46.6	-5.8
YLYR				max			
	comp=N,3.0nm,0.3s						
YLYR				Smax			
	comp=N,40nm,1.4s						
NIZ	**Nizh Angarsk**	**6.12**	**23**	*e*	Pb	06 25 31.7	0.0
NIZ				*e*Pg	Pg	06 25 33.8	-7.6
NIZ				*e*Sg	Sb	06 26 53.0	+7.6
NIZ				Pmax			
	comp=N,3.0nm,0.1s						
NIZ				Smax			
	comp=N,20nm,1.0s						
KMO	**Kumora**	**6.69**	**29**	*e*Pg	Pb	06 25 42.3	+1.0
KMO				*e*		06 26 59.0	
KMO				*e*Sg	Sb	06 27 09.8	+8.1
KMO				Pmax			
	comp=N,5.0nm,0.5s						
KMO				Smax			
	comp=N,44nm,1.1s						
YOA	**Uoyan**	**7.06**	**30**	*e*Sg	Sg	06 27 22.7	-8.0
YOA				Smax			
	comp=N,169nm,1.8s						
UKT	**Uakit**	**7.28**	**40**	*e*Pn	Pn	06 25 31.6	-0.2
UKT				*e*		06 25 41.1	
UKT				*e*Pg	Pb	06 25 53.6	+2.3
UKT				*e*		06 27 08.2	
UKT				*e*Sg	Sg	06 27 29.3	-8.4
UKT				Pmax			
	comp=N,4.0nm,1.9s						
UKT				Smax			
	comp=N,25nm,1.8s						
SVKR	**Severomuysk**	**7.70**	**37**	*e*Sg	Sg	06 27 43.8	-7.4
SVKR				Smax			
	comp=N,30nm,0.2s						
BOD	**Bodaibo**	**9.16**	**30**	*e*Sg	Sn	06 28 29.1	+48
BOD				Smax			
	comp=N,12nm,1.3s						
TUP	**Tupik**	**9.87**	**59**	*e*Pn	Pn	06 26 05.4	-1.9
TUP				*e*Pg		06 26 42.5	
TUP				*e*		06 28 11.4	
TUP				*e*Sg	Sn	06 28 51.9	+53
TUP				Smax			
	comp=N,47nm,1.4s						
CRS	**Chara**	**10.18**	**44**	*e*Sg	Sn	06 28 59.7	+53

ISCJB ***22*** *06:29:33.8±0.5,39.°15N±0.°03×29.°14E±0.°03,h4km±5km, Error ellipse: s-maj=5.0km s-min=4.1km az=153.9*
ISK ***22*** *06:29:33.8,39.°16N×29.°19E,h8km,MD2.9*
DDA ***22*** *06:29:33.8,39.°16N×29.°13E,h7km,Ml2.8*
CSEM ***22*** *06:29:34.0±0.1,39.°15N×29.°15E,h5km,ML2.8,Error ellipse: s-maj=1.9km s-min=1.5km az=103.0*
ISC 22 06:29:34.3±0.9,39.°15N±0.°02×29.°14E±0.°02,h10km±11km, n52,σ0.9°39/62,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.27**	**102**	P	**Pg**	**06 29 39.8**	**-0.1**
GDZ				S	**Sg**	**06 29 43.9**	**+0.3**
GDZ	**Gediz**	**0.27**	**102**	*i* P	**Pg**	**06 29 39.8**	**-0.1**
GDZ				*i* S	**Sg**	**06 29 43.9**	**+0.3**
DEMI	**Demirci**	**0.34**	**253**	P	**Pg**	**06 29 41.0**	**-0.2**
DEMI				S	**Sg**	**06 29 46.1**	**+0.3**
DEMI	**Demirci**	**0.34**	**253**	*i* P	**Pg**	**06 29 41.0**	**-0.2**
DEMI				*i* S	**Sg**	**06 29 46.1**	**+0.3**
TVSB	**Tavsanli**	**0.39**	**39**	*e*PG	**Pg**	**06 29 41.9**	**-0.2**
TVSB				*e*SG	**Sg**	**06 29 47.1**	**-0.2**
TVSB	**Tavsanli**	**0.39**	**39**	*e*Pg	**Pg**	**06 29 41.9**	**-0.2**
TVSB				*e*Sg	**Sg**	**06 29 47.1**	**-0.2**
DURS	**Dursunbey**	**0.69**	**312**	P	**Pg**	**06 29 47.2**	**-0.4**
DURS				S	**Sg**	**06 29 56.6**	**0.0**
DURS	**Dursunbey**	**0.69**	**312**	*i* P	**Pg**	**06 29 47.2**	**-0.4**
DURS				*i* S	**Sg**	**06 29 56.6**	**0.0**
KULA	**Kula-Manisa**	**0.73**	**211**	*e*PG	**Pg**	**06 29 48.1**	**-0.4**
KULA	**Kula-Manisa**	**0.73**	**211**	*e*Pg	**Pg**	**06 29 48.1**	**-0.4**
MANT	**Manisa**	**0.80**	**215**	P	**Pg**	**06 29 49.2**	**-0.5**
MANT				S	**Sg**	**06 29 59.5**	**-0.6**
MANT	**Manisa**	**0.80**	**215**	*i* P	**Pg**	**06 29 49.1**	**-0.5**
MANT				*i* S	**Sg**	**06 29 59.5**	**-0.6**
KHAL	**Karahalli**	**0.82**	**160**	P	**Pg**	**06 29 49.8**	**-0.3**
KHAL	**Karahalli**	**0.82**	**160**	*i* P	**Pg**	**06 29 49.9**	**-0.3**
KHL	**Karahalli**	**0.88**	**160**	*e*PG	**Pg

KIZT	**Kizilcal**	**2.15**	**96**	*e*Pn	**Pn**	**06 30 10.5**	**+0.1**
RKY	**Sarkoy-Tekirda**	**2.15**	**316**	*e*PN	**Pn**	**06 30 10.5**	**+0.1**
RKY	**Sarkoy-Tekirda**	**2.15**	**316**	*e*Pn	**Pn**	**06 30 10.5**	**+0.1**

RSNC ***22*** *06:32:49.6±1.9, 7°.29N×72°.57W, h2km±6km, ML2.8*
FUNV ***22*** *06:32:50.2, 7°.34N×72°.48W, h3km, MW3.0*
ISC 22 06:32:48.0±1.3, 7°.25N±0°.04×72°.50W±0°.04, h7km±11km, n23, σ1ᵍ15/33, 1C-1D, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PAMC	**Pamplona, Colo**	**0.22**	**295**	⇑*i*P	**Pg**	**06 32 52.5**	**0.0**
PAMC				*e*S	**Sg**	**06 32 55.5**	**0.0**
CBRI	**Barrientos, No**	**0.55**	**328**	*i* P	**Pg**	**06 32 58.6**	**-0.1**
GRMC	**Gramalote, San**	**0.56**	**327**	*i* P	**Pb**	**06 33 01.2**	**+1.0**
GRMC				*e*S	**Sb**	**06 33 10.1**	**+1.6**
GRMC				*i*		06 33 10.7	
	comp=Z,302nm,0.3s						
CAPV	**Capacho**	**0.64**	**17**	*e*P	**Pg**	**06 33 00.4**	**-0.1**
CAPV				*e*S	**Sg**	**06 33 09.2**	**+0.3**
GIRC	**Giron, Santand**	**0.71**	**256**	*i* P	**Pg**	**06 33 01.6**	**0.0**
BTLC	**Betulia, Santa**	**0.83**	**247**	*i* P	**Pg**	**06 33 03.9**	**-0.1**
BARC	**Barichara**	**0.94**	**226**	*i* P	**Pg**	**06 33 06.0**	**-0.1**
BRRC	**Barranca, Sant**	**1.21**	**263**	⇓*i*P	**Pb**	**06 33 11.5**	**+0.2**
BRRC				*i*		06 33 15.2	
	comp=Z,136nm,0.1s						
BRRC				*e*S	**Sg**	**06 33 25.7**	**-1.3**
OCAC	**Ocana**	**1.28**	**321**	*e*P	**Pg**	**06 33 11.9**	**-0.6**
OCAC				*e*S	**Sg**	**06 33 26.8**	**-2.4**
OCAC				*i*		06 33 30.1	
	comp=Z,207nm,0.3s						
RUSC	**La Rusia**	**1.46**	**203**	*e*P	**Pn**	**06 33 15.6**	**+0.3**
RUSC				*i*		06 33 19.2	
	comp=Z,106nm,0.3s						
RUSC				*e*S	**Sb**	**06 33 35.4**	**+0.4**
SOCV	**Socops**	**1.93**	**58**	*e*P	**Pn**	**06 33 22.2**	**+0.9**
SOCV				*e*S	**Sn**	**06 33 46.3**	**+0.4**
VIGV	**El Vigia**	**1.94**	**35**	*e*P	**Pn**	**06 33 22.8**	**+1.3**
VIGV				*e*S	**Sn**	**06 33 47.0**	**+0.7**
HELC	**Santa Helena**	**3.18**	**251**	*e*P	**Pn**	**06 33 40.9**	**+2.0**
HELC				*i*		06 34 32.1	
	comp=Z,23nm,0.5s						
VIRV	**Villa del Rosa**	**3.24**	**2**	*e*P	**Pn**	**06 33 39.4**	**+0.1**
VIRV				*e*S	**Sn**	**06 34 16.2**	**-2.0**
SANV	**Sanarito**	**3.69**	**52**	*e*P	**Pn**	**06 33 45.6**	**-0.1**
CURV	**Curarigua**	**3.72**	**42**	*e*P	**Pn**	**06 33 46.9**	**+0.9**
TEPV	**Terepaima**	**4.24**	**50**	*e*P	**Pn**	**06 33 54.0**	**+0.9**
SIQV	**Siquisique**	**4.30**	**38**	*e*P	**Pn**	**06 33 54.4**	**+0.4**
BAUV	**El Baul**	**4.73**	**69**	*e*P	**Pn**	**06 34 00.8**	**+1.0**
BAUV				*e*S	**Sn**	**06 34 51.5**	**-3.5**
MAPV	**Macapo**	**4.75**	**57**	*e*P	**Pn**	**06 34 01.0**	**+0.8**
MONV	**Montecano**	**5.30**	**28**	*e*P	**Pn**	**06 34 07.6**	**-0.1**
TURV	**Turiamo**	**5.60**	**55**	*e*P	**Pn**	**06 34 11.6**	**-0.2**
CUPV	**Cœpira**	**7.20**	**67**	*e*P	**Pn**	**06 34 33.2**	**-0.7**

ATH ***22*** *06:36:18.3, 40°.52N×20°.92E, h20km±1km, ML2.0/7, Error ellipse: s-maj=1.6km s-min=1.0km az=120.0*
ISCJB ***22*** *06:36:19.2±0.6, 40°.52N±0°.02×20°.94E±0°.04, h10km±3km, Error ellipse: s-maj=5.6km s-min=3.6km az=11.5*
CSEM ***22*** *06:36:19.1±0.1, 40°.51N×20°.95E, h10km, ML2.0, Error ellipse: s-maj=3.1km s-min=2.0km az=103.0*
THE ***22*** *06:36:19.5, 40°.52N×20°.97E, h11km, ML2.0/6, Error ellipse: s-maj=0.9km s-min=0.4km az=111.0*
SKO ***22*** *06:36:20.7, 40°.56N×21°.01E, h15km*
ISC 22 06:36:19.3±0.9, 40°.52N±0°.02×20°.96E±0°.03, h14km±5km, n37, σ0ᵍ47/71, 2D, Greece-Albania border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NEST	**Nestorio**	**0.12**	**145**	P	**Pg**	**06 36 22.7**	**-0.1**
NEST				S	**Sg**	**06 36 25.1**	**-0.1**
NEST	**Nestorio**	**0.12**	**145**	P	**Pg**	**06 36 22.7**	**-0.1**
NEST				S	**Sg**	**06 36 25.4**	**+0.2**
NEST	**Nestorio**	**0.12**	**145**	P	**Pg**	**06 36 22.6**	**-0.2**
NEST				S	**Sg**	**06 36 25.4**	**+0.2**
NEST				AML	AML	06 36 25.9	
	comp=E,2607μm,0.2s						
NEST				AML	AML	06 36 26.5	
	comp=N,1504μm,0.2s						
PENT	**Pentalofos**	**0.35**	**156**	P	**Pg**	**06 36 26.1**	**-0.4**
PENT	**Pentalofos**	**0.35**	**156**	P	**Pg**	**06 36 26.2**	**-0.3**
PENT				S	**Sg**	**06 36 31.7**	**+0.4**
PENT	**Pentalofos**	**0.35**	**156**	P	**Pg**	**06 36 26.2**	**-0.3**
PENT				S	**Sg**	**06 36 31.7**	**+0.4**
PENT				AML	AML	06 36 34.2	
	comp=E,513μm,0.3s						
PENT				AML	AML	06 36 34.3	
	comp=N,631μm,0.3s						
FNA	**Florina**	**0.42**	**50**	P	**Pg**	**06 36 27.4**	**-0.3**
FNA				S	**Sg**	**06 36 33.5**	**+0.1**
FNA	**Florina**	**0.42**	**50**	P	**Pg**	**06 36 27.4**	**-0.3**
FNA				S	**Sg**	**06 36 33.5**	**+0.1**
FNA	**Florina**	**0.42**	**50**	P	**Pg**	**06 36 27.4**	**-0.3**
FNA				S	**Sb**	**06 36 34.0**	**-0.8**
FNA				AML	AML	06 36 35.8	
	comp=E,616μm,0.1s						
FNA				AML	AML	06 36 37.0	
	comp=N,584μm,0.2s						
BIA	**Bitola**	**0.57**	**29**	P	**Pg**	**06 36 29.9**	**-0.7**
BIA				S	**Sg**	**06 36 38.7**	**+0.4**
BIA	**Bitola**	**0.57**	**29**	*i* Pg	**Pg**	**06 36 30.1**	**-0.6**
BIA				*i* Sg	**Sb**	**06 36 40.2**	**+0.8**
BIA	**Bitola**	**0.57**	**29**	*i* Pg	**Pg**	**06 36 30.0**	**-0.7**
BIA				S	**Sg**	**06 36 38.7**	**+0.4**
BIA				*i* Sg	**Sb**	**06 36 40.2**	**+0.8**
OHR	**Ohrid**	**0.61**	**349**	⇓*i*Pg	**Pg**	**06 36 30.9**	**-0.4**
OHR				*i* Sg	**Sb**	**06 36 40.5**	**+0.3**
OHR				*e*Lg	Lg	06 36 40.7	
	comp=E,98nm,0.3s						
OHR				*e*Lg	Lg	06 36 43.0	
	comp=N,51nm,0.4s						
OHR	**Ohrid**	**0.61**	**349**	⇓*i*Pg	**Pg**	**06 36 30.8**	**-0.4**
OHR				*i* Sg	**Sb**	**06 36 40.5**	**+0.3**
OHR				*e*Lg	Lg	06 36 40.7	
	comp=N,98nm,0.3s						
KPRO	**Kipourio**	**0.64**	**151**	P	**Pg**	**06 36 31.5**	**-0.3**
KPRO	**Kipourio**	**0.64**	**151**	P	**Pg**	**06 36 31.6**	**-0.3**
KPRO				S	**Sg**	**06 36 40.7**	**+0.3**
KPRO	**Kipourio**	**0.64**	**151**	P	**Pg**	**06 36 31.6**	**-0.3**
KPRO				S	**Sg**	**06 36 40.7**	**+0.3**
KPRO				AML	AML	06 36 42.6	
	comp=E,397μm,0.4s						
KPRO				AML	AML	06 36 43.2	
	comp=N,256μm,0.2s						
KZN	**Kozani**	**0.66**	**108**	P	**Pg**	**06 36 31.5**	**-0.7**
KZN				S	**Sb**	**06 36 41.7**	**0.0**
KZN	**Kozani**	**0.66**	**108**	P	**Pg**	**06 36 31.9**	**-0.3**
KZN				S	**Sb**	**06 36 41.7**	**0.0**
IGT	**Igoumenitsa**	**1.09**	**206**	P	**Pb**	**06 36 40.4**	**+0.4**
IGT				S	**Sn**	**06 36 55.7**	**+0.5**
IGT	**Igoumenitsa**	**1.09**	**206**	P	**Pb**	**06 36 40.4**	**+0.4**
IGT				S	**Sb**	**06 36 53.8**	**-0.4**
IGT	**Igoumenitsa**	**1.09**	**206**	P	**Pb**	**06 36 38.6**	**-1.5**
IGT				S	**Sb**	**06 36 53.8**	**-0.4**
IGT				AML	AML	06 37 01.1	
	comp=E,61μm,0.4s						
IGT				AML	AML	06 37 01.8	
	comp=N,56μm,0.4s						
GRG	**Griva**	**1.18**	**68**	P	**Pb**	**06 36 41.3**	**-0.3**
GRG				S	**Sn**	**06 36 57.8**	**+0.3**
GRG	**Griva**	**1.18**	**68**	P	**Pb**	**06 36 41.7**	**+0.1**
GRG				S	**Sn**	**06 36 57.8**	**+0.3**
GRG	**Griva**	**1.18**	**68**	P	**Pb**	**06 36 41.7**	**+0.1**
KEK	**Kerkira**	**1.20**	**228**	P	**Pn**	**06 36 41.6**	**-0.1**
LIT	**Litokhoron**	**1.25**	**109**	P	**Pn**	**06 36 42.0**	**-0.4**
LIT				S	**Sg**	**06 36 59.0**	**-0.5**
LIT	**Litokhoron**	**1.25**	**109**	P	**Pn**	**06 36 42.0**	**-0.4**
LIT				S	**Sg**	**06 36 59.0**	**-0.5**
LIT	**Litokhoron**	**1.25**	**109**	P	**Pn**	**06 36 41.8**	**-0.6**
LIT				S	**Sn**	**06 37 00.4**	**+1.4**
LIT				AML	AML	06 37 06.0	
	comp=E,70μm,0.4s						
LIT				AML	AML	06 37 07.8	
	comp=N,58μm,0.4s						
THL	**Klokotos Trika**	**1.25**	**139**	P	**Pn**	**06 36 41.8**	**-0.6**
THL				S	**Sb**	**06 36 59.2**	**+0.5**
THL	**Klokotos Trika**	**1.25**	**139**	P	**Pn**	**06 36 41.8**	**-0.6**
THL				S	**Sb**	**06 36 59.2**	**+0.5**
DSL	**Palaion Diasel**	**1.39**	**175**	P	**Pn**	**06 36 44.6**	**+0.3**
DSL				S	**Sg**	**06 37 03.8**	**-0.2**
DSL	**Palaion Diasel**	**1.39**	**175**	P	**Pn**	**06 36 44.6**	**+0.3**
DSL				S	**Sg**	**06 37 03.8**	**-0.2**
KNT	**Kendrikon**	**1.61**	**66**	P	**Pn**	**06 36 47.4**	**0.0**
KNT				S	**Sb**	**06 37 09.1**	**0.0**
KNT	**Kendrikon**	**1.61**	**66**	P	**Pn**	**06 36 47.4**	**0.0**
KNT				S	**Sb**	**06 37 09.1**	**0.0**
AGG	**Agios Georgios**	**1.83**	**144**	P	**Pn**	**06 36 51.1**	**+0.7**
AGG				S	**Sb**	**06 37 15.4**	**-0.1**
AGG	**Agios Georgios**	**1.83**	**144**	P	**Pn**	**06 36 51.1**	**+0.7**
AGG				S	**Sb**	**06 37 15.4**	**-0.1**
AGG				AML	AML	06 37 23.1	
	comp=E,49μm,0.3s						
AGG				AML	AML	06 37 24.9	
	comp=N,57μm,0.3s						

ISK 22 06:39:04.2, 37°.07N×28°.29E, h27km, MD2.3, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.07**	**357**	*e*PG	Pb	06 39 09.4	+0.3
YER				*e*SG	Sb	06 39 12.8	+0.4
DALY	**Dalyan (Mu¨la**	**0.39**	**130**	*e*PG	Pn	06 39 13.4	-0.6
DALY				*e*SG	Sn	06 39 19.6	-0.8
BODT	**Bodrum**	**0.78**	**270**	*e*PG	Pn	06 39 19.6	+0.2

ISCJB ***22*** *06:39:39.6±0.5, 39°.13N±0°.02×28°.99E±0°.04, h5km±5km, Error ellipse: s-maj=4.8km s-min=4.0km az=21.4*
DDA ***22*** *06:39:39.4, 39°.18N×28°.99E, h7km, ml2.9*
ISK ***22*** *06:39:39.1, 39°.07N×29°.08E, h10km, MD2.7*
CSEM ***22*** *06:39:40.0±0.1, 39°.13N×28°.99E, h5km, ML2.9, Error ellipse: s-maj=3.4km s-min=2.6km az=96.0*
ISC 22 06:39:39.7±0.9, 39°.13N±0°.02×28°.99E±0°.02, h14km±8km, n33, σ0ᵍ36/48, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.23**	**248**	P	**Pg**	**06 39 45.0**	**+0.2**
DEMI				S	**Sg**	**06 39 48.2**	**-0.1**
DEMI	**Demirci**	**0.23**	**248**	*i* P	**Pg**	**06 39 45.0**	**+0.2**
DEMI				*i* S	**Sg**	**06 39 48.2**	**-0.1**
GDZ	**Gediz**	**0.38**	**96**	P	**Pg**	**06 39 47.4**	**-0.1**
GDZ				S	**Sg**	**06 39 52.9**	**+0.2**
GDZ	**Gediz**	**0.38**	**96**	*i* P	**Pg**	**06 39 47.4**	**-0.1**
GDZ				*i* S	**Sg**	**06 39 52.9**	**+0.2**
TVSB	**Tavsanli**	**0.48**	**48**	*e*PG	**Pg**	**06 39 49.1**	**-0.2**
TVSB				*e*SG	**Sg**	**06 39 55.9**	**0.0**
TVSB	**Tavsanli**	**0.48**	**48**	*e*Pg	**Pg**	**06 39 49.1**	**-0.2**
TVSB				*e*Sg	**Sg**	**06 39 55.9**	**+0.1**
DURS	**Dursunbey**	**0.62**	**320**	P	**Pg**	**06 39 51.8**	**-0.1**
DURS				S	**Sg**	**06 39 59.7**	**-0.4**
DURS	**Dursunbey**	**0.62**	**320**	*i* P	**Pg**	**06 39 51.8**	**-0.1**
DURS				*i* S	**Sg**	**06 39 59.7**	**-0.4**
KULA	**Kula-Manisa**	**0.67**	**203**	*e*PG	**Pg**	**06 39 52.4**	**-0.4**
KULA				*e*SG	**Sg**	**06 40 01.0**	**-0.6**
KULA	**Kula-Manisa**	**0.67**	**203**	*e*Pg	**Pg**	**06 39 52.4**	**-0.4**
KULA				*e*Sg	**Sg**	**06 40 01.0**	**-0.6**
MANT	**Manisa**	**0.72**	**208**	P	**Pg**	**06 39 53.8**	**-0.1**
MANT				S	**Sg**	**06 40 03.3**	**-0.1**
MANT	**Manisa**	**0.72**	**208**	*i* P	**Pg**	**06 39 53.8**	**-0.1**
MANT				*i* S	**Sg**	**06 40 03.3**	**-0.1**
KHAL	**Karahalli**	**0.85**	**153**	P	**Pn**	**06 39 58.0**	**+0.5**
KHAL				S	**Sg**	**06 40 07.4**	**0.0**
KHAL	**Karahalli**	**0.85**	**153**	*i* P	**Pn**	**06 39 58.0**	**+0.5**
KHAL				*i* S	**Sg**	**06 40 07.5**	**0.0**
ORLT	**Orhaneli**	**0.92**	**355**	*e*PG	**Pn**	**06 39 58.6**	**+0.2**
ORLT	**Orhaneli**	**0.92**	**355**	*e*Pg	**Pn**	**06 39 58.6**	**+0.3**
IGD	**Bursa**	**1.15**	**8**	*i* P	**Pb**	**06 40 00.7**	**-0.6**
IGD				*i* S	**Sb**	**06 40 15.0**	**-1.1**
KCTX	**Karacabey (Bur**	**1.24**	**337**	*e*PN	**Pg**	**06 40 03.9**	**+0.4**
KCTX	**Karacabey (Bur**	**1.24**	**337**	*e*Pn	**Pg**	**06 40 03.9**	**+0.4**
MDNY	**Mudanya-Bursa**	**1.24**	**356**	*e*PN	**Pg**	**06 40 03.5**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.24**	**356**	*e*Pn	**Pg**	**06 40 03.5**	**-0.2**
IZI	**Iznik**	**1.26**	**17**	*e*PN	**Pg**	**06 40 04.3**	**+0.2**
IZI	**Iznik**	**1.26**	**17**	*e*Pn	**Pg**	**06 40 04.3**	**+0.2**
GONE	**Gonen-Balikesi**	**1.36**	**313**	*e*PN	**Pg**	**06 40 06.2**	**+0.2**
GONE	**Gonen-Balikesi**	**1.36**	**313**	*e*Pn	**Pg**	**06 40 06.2**	**+0.2**
ADVT	**Abdulvahap**	**1.42**	**24**	*e*PN	**Pb**	**06 40 06.0**	**0.0**
ADVT	**Abdulvahap**	**1.42**	**24**	*e*Pn	**Pb**	**06 40 06.1**	**0.0**
ARMT	**Armutlu**	**1.44**	**356**	*e*PN	**Pg**	**06 40 07.3**	**-0.1**
ARMT	**Armutlu**	**1.44**	**356**	*e*Pn	**Pg**	**06 40 07.3**	**-0.1**
EDC	**Edincik**	**1.50**	**325**	*e*PN	**Pb**	**06 40 07.8**	**+0.5**
EDC	**Edincik**	**1.50**	**325**	*e*Pn	**Pb**	**06 40 07.8**	**+0.5**
GULT	**Gulveren**	**1.75**	**42**	*e*PN	**Pn**	**06 40 10.4**	**+0.6**
GULT	**Gulveren**	**1.75**	**42**	*e*Pn	**Pn**	**06 40 10.4**	**+0.6**

ISCJB ***22*** *06:41:39.2±1.3, 36°.43N±0°.09×70°.64E±0°.09, h102km, mb3.5/3, Error ellipse: s-maj=15.5km s-min=7.0km az=145.4*
IDC ***22*** *06:41:39.9±4.8, 36°.16N×70°.90E, h126km±33km, mb3.5/4, mb1 3.4/8, mb1mx3.1/55, mbtmp3.8/8, MS3.2/1, Ms1 3.4/1, ms1mx2.1/48, Error ellipse: s-maj=61.7km s-min=24.2km az=147.0*
NNC ***22*** *06:41:46.8±1.8, 36°.81N×70°.55E, h176km±19km, mb2.9, mpv3.9, Error ellipse: s-maj=18.8km s-min=11.0km az=141.0*
ISC 22 06:41:38.6±1.6, 36°.3N±0°.1×70°.81E±0°.09, h102km, n16, σ1ᵍ94/22, mb3.5/3, 6C-5D, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**3.00**	**329**	⇓P	**Pn**	**06 42 28.6**	**+4.1**
	12nm,0.4s						
DZET				⇑S	**Sn**	**06 43 00.9**	**+1.1**
	121nm,0.4s						
MNAS	**Manas**	**6.37**	**11**	⇑P	**Pn**	**06 43 11.6**	**+1.6**
	10nm,0.6s						
MNAS				⇑S	**Sn**	**06 44 20.2**	**-1.1**
	13nm,0.7s						
KK31	**Karatay Array**	**6.85**	**358**	⇑P	**Pn**	**06 43 18.2**	**+1.8**
	6.3nm,0.3s,baz=177,slow=12,SNR=171						
KK31				S	**Sn**	**06 44 29.4**	**-3.4**
	10nm,0.5s,baz=183,slow=22,SNR=13						
AAK	**Ala-Archa**	**6.99**	**23**	P	**Pn**	**06 43 21.0**	**+2.6**
	3.6nm,0.3s,baz=152,slow=4.0,SNR=18						
AAK				S	**Sn**	**06 44 34.5**	**-1.9**
	0.7nm,0.3s,baz=143,slow=20,SNR=8.5						
AAK	**Ala-Archa**	**6.99**	**23**	⇓P	**Pn**	**06 43 20.6**	**+2.2**
	4.7nm,0.4s						
AAK				⇑S	**Sn**	**06 44 36.5**	**+0.1**
	12nm,0.6s						
TKM2	**Tokmak 2**	**7.62**	**28**	⇓P	**Pn**	**06 43 28.9**	**+1.8**
	6.8nm,0.7s						
TKM2				⇓S	**Sn**	**06 44 52.0**	**+0.1**
	3.9nm,0.6s						
GEYT	**Alibeck**	**10.28**	**283**	P	**Pn**	**06 44 05.2**	**+2.2**
	0.7nm,0.3s,baz=87,slow=7.5,SNR=3.4						
GEYT				S	**Sn**	**06 45 53.6**	**-2.7**
	2.4nm,0.3s,baz=126,slow=14,SNR=3.7						
MKAR	**Makanchi Array**	**13.59**	**36**	P	**Pn**	**06 44 47.3**	**+0.3**
	0.1nm,0.3s,baz=220,slow=14,SNR=9.5						
AB31	**Akbulak array**	**15.23**	**332**	⇑P	**Pn**	**06 45 08.3**	**+0.3**
	0.2nm,0.3s,baz=151,slow=12,SNR=15						
AB31				⇓S	Sn	06 47 45.1	-11
	1.4nm,0.7s,baz=153,slow=23,SNR=5.8						
KURBB	**Kurchatov Arra**	**15.41**	**19**	P	**Pn**	**06 45 08.5**	**-1.7**
	0.0nm,0.3s,baz=211,slow=10,SNR=3.3						
BVAR	**Borovoye Array**	**16.78**	**359**	P	**Pn**	**06 45 26.8**	**-0.3**
	0.2nm,0.3s,baz=173,slow=13,SNR=4.8						
ZALV	**Zalesovo Beam**	**20.21**	**24**	P	**P**	**06 46 05.2**	**+0.1**
	15nm,0.4s,baz=222,slow=11,SNR=56						
CMAR	**Chiang Mai Arr**	**30.47**	**118**	LR	LR	07 02 17.1	
	comp=Z,43nm,19.9s,baz=171,slow=41						
FINES	**FINESS Array B**	**37.61**	**326**	P	**P**	**06 48 43.4**	**+0.4**
	0.3nm,0.3s,baz=118,slow=11,SNR=5.7						
NOA	**NORSAR Array B**	**44.49**	**323**	P	**P**	**06 49 38.8**	**-0.6**
	0.3nm,0.5s,baz=97,slow=7.8,SNR=2.7						
TORD	**Torodi Ar. Bea**	**65.55**	**269**	P	**P**	**06 52 10.7**	**-0.9**
	0.4nm,0.6s,baz=41,slow=6.4,SNR=3.5						

IDC 22 06:44:28.8±9.6, 18°.27S×178°.18W, h588km±97km, mb3.0/4, mb1 3.3/4, mb1mx2.8/38, mbtmp4.0/4, Error ellipse: s-maj=253.8km s-min=34.4km az=156.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**33.60**	**261**	P	P	06 50 22.0	+0.1
	1.7nm,0.4s,baz=73,slow=11,SNR=3.3						
WRA	**Warramunga Arr**	**44.78**	**260**	P	P	06 51 51.2	-0.4
	1.3nm,0.5s,baz=95,slow=7.6,SNR=13						
WRA				PcP	PcP	06 53 20.4	-0.3
	0.7nm,1.1s,baz=91,slow=4.1,SNR=2.9						
ASAR	**Alice Springs**	**44.91**	**255**	P	P	06 51 52.5	-0.1
	4.7nm,0.6s,baz=89,slow=8.7,SNR=37						
ASAR				PcP	PcP	06 53 20.9	-0.2
	0.3nm,0.5s,baz=106,slow=4.2,SNR=4.3						
TXAR	**Lajitas Array**	**86.00**	**58**	P	P	06 56 08.2	-0.1
	0.2nm,0.7s,baz=202,slow=9.4,SNR=3.0						

NIED ***22*** *06:49:00.38°.00N×144°.60E, h8km, Mw3.8 Best double couple: M0:5.42000×10¹⁴ NP1:φs24.00000°, δ24.00000°, λ-96.00000°. NP2:φs211.00000°, δ66.00000°, λ-87.00000°.*
IDC ***22*** *06:49:34.2±0.8, 37°.64N×145°.00E, h0km, mb3.6/9, mb1 3.9/13, mb1mx3.6/66, mbtmp3.7/13, ML3.3/4, MS2.6/4, Ms1 2.6/4, ms1mx2.4/50, Error ellipse: s-maj=20.9km s-min=19.3km az=74.0*
ISCJB ***22*** *06:49:37.9±0.7, 38°.01N±0°.04×144°.72E±0°.05, h33km, mb3.6/9, Error ellipse: s-maj=6.5km s-min=5.5km az=161.6*
JMA ***22*** *06:49:38.2±0.2, 37°.96N×144°.65E, h40km, M4.0*
ISC 22 06:49:39.6±0.7, 37°.92N±0°.06×144°.77E±0°.06, h35km, n38, σ1ᵍ95/37, mb3.5/9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.69**	**296**	P	**Pn**	**06 50 19.2**	**-1.2**
OFUJ				S	**Sn**	**06 50 50.1**	**-1.7**
JIO	**Ouri**	**2.75**	**282**	P	**Pn**	**06 50 19.8**	**-1.3**
JIO				S	**Sn**	**06 50 50.4**	**-2.7**
JMK	**Ichinoseki**	**2.97**	**291**	P	**Pn**	**06 50 23.4**	**-0.8**
JMK				S	**Sn**	**06 50 57.2**	**-1.4**
JOM	**Ohasama**	**3.13**	**301**	P	**Pn**	**06 50 25.7**	**-0.7**
JOM				*e*S	**Sn**	**06 51 01.8**	**-0.8**
JANG	**Nango**	**3.52**	**315**	P	**Pn**	**06 50 30.6**	**-1.2**
JFT	**Otama**	**3.54**	**265**	P	**Pn**	**06 50 31.6**	**-0.4**
JFT				S	**Sn**	**06 51 10.5**	**-2.1**
JYK	**Kaneyama**	**3.60**	**287**	P	**Pn**	**06 50 32.4**	**-0.5**
JYK				S	**Sn**	**06 51 12.9**	**-1.3**
JOT	**Ohata**	**4.49**	**321**	P	**Pn**	**06 50 44.8**	**-0.3**
JOT				*e*S	**Sn**	**06 51 34.4**	**-1.7**
JCH	**Churui**	**4.81**	**348**	P	**Pn**	**06 50 48.2**	**-1.3**
JCH				S	**Sn**	**06 51 40.8**	**-3.1**
JKB	**Kayabe**	**4.89**	**325**	P	**Pn**	**06 50 50.4**	**-0.2**
JKB				S	**Sn**	**06 51 43.2**	**-2.8**
JRY	**Ryogami san**	**5.07**	**250**	S	**Sn**	**06 51 45.4**	**-5.0**
JOD2	**Odawara 2**	**5.28**	**242**	*e*S	Sn	06 51 50.3	-5.4
MJAR	**Matsushiro Arr**	**5.41**	**257**	Pn	**Pn**	**06 50 56.8**	**-1.0**
	0.6nm,0.3s,baz=72,slow=13,SNR=2.8						
MJAR				Sn	**Sn**	**06 51 56.5**	**-2.4**
	0.2nm,0.3s,baz=82,slow=20,SNR=4.5						
MJAR				LR	LR	06 53 32.7	
	comp=Z,36nm,21.2s,baz=90,slow=43						
NEM2	**Nemuro 2**	**5.49**	**7**	P	Pn	06 50 55.5	-3.3
NEM2				*e*S	Sn	06 51 54.7	-5.9
JOSM	**Okushiri--Mats**	**5.81**	**317**	P	**Pn**	**06 51 03.4**	**+0.2**
JTKR	**Abashiri--Toko**	**6.08**	**354**	P	**Pn**	**06 51 05.3**	**-1.6**
JTKR				*e*S	**Sn**	**06 52 10.5**	**-4.7**
ASAJ	**Asahikawa**	**6.40**	**346**	Pn	**Pn**	**06 51 10.6**	**-0.8**
	7.0nm,0.3s,baz=202,slow=11,SNR=16						
ASAJ				Sn	**Sn**	**06 52 22.1**	**-1.1**
	0.8nm,0.3s,baz=139,slow=19,SNR=5.1						
JCJ	**Chichijima**	**11.01**	**192**	Pn	Pn	06 52 08.2	-6.4
	1.8nm,0.3s,baz=109,slow=23,SNR=5.9						
USRK	**Ussuriysk Ar.**	**11.50**	**307**	Pn	**Pn**	**06 52 22.7**	**+1.5**
	0.3nm,0.3s,baz=104,slow=14,SNR=5.7						
JNU	**Nakatsue**	**12.28**	**251**	LR	LR	06 58 26.1	
	comp=Z,20nm,18.8s,baz=114,slow=43						
KSRS	**Korea Array**	**13.35**	**273**	Pn	**Pn**	**06 52 48.9**	**+2.3**
	0.2nm,0.3s,baz=86,slow=15,SNR=2.9						
KLR	**Kul'dur**	**14.70**	**324**	LR	LR	06 58 37.0	
	comp=Z,33nm,19.6s,baz=118,slow=36						
PETK	**Petropavlovsk-**	**17.64**	**26**	LR	LR	07 02 39.6	
	comp=Z,23nm,18.3s,baz=127,slow=44						
H11N2	**WAKE ISLAND Hy**	**26.43**	**127**	T	T	07 22 30.3	
	baz=319,slow=74,SNR=18						
H11N1	**WAKE ISLAND Hy**	**26.44**	**127**	T	T	07 22 28.6	
	baz=319,slow=74,SNR=10						
H11N3	**WAKE ISLAND Hy**	**26.45**	**127**	T	T	07 22 31.4	
	baz=319,slow=74,SNR=13						
H11S1	**WAKE ISLAND Hy**	**27.22**	**129**	T	T	07 23 42.1	
	baz=

EDC	**Edincik**	**1.52**	**324**	*e*Pn	**Pb**	**06 50 47.9**	**+0.1**
GULT	**Gulveren**	**1.75**	**41**	*e*PN	**Pn**	**06 50 50.1**	**+0.2**
GULT	**Gulveren**	**1.75**	**41**	*e*Pn	**Pn**	**06 50 50.1**	**+0.2**
SILT	**Sile**	**2.09**	**13**	*e*PN	**Pn**	**06 50 54.9**	**+0.5**
SILT	**Sile**	**2.09**	**13**	*e*Pn	**Pn**	**06 50 54.9**	**+0.5**

IDC 22 06:53:38.4±2.9, 26°.96N×143°.81E, h0km, mb3.4/2, mb1 3.6/3, mb1mx3.2/56, mbtmp3.3/3, ML2.8/1, Error ellipse: s-maj=62.0km s-min=28.2km az=54.0, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCJ	**Chichijima**	**1.45**	**276**	Pn	Pg	06 54 06.2	0.0
	7.4nm,0.3s,baz=79,slow=18,SNR=9.4						
JCJ				Sn	Sg	06 54 22.9	-2.3
	29nm,0.3s,baz=82,slow=19,SNR=22						
MJAR	**Matsushiro Arr**	**10.67**	**335**	Pn	Pn	06 56 11.8	-0.7
	0.1nm,0.3s,baz=157,slow=9.5,SNR=3.5						
WRA	**Warramunga Arr**	**47.52**	**192**	P	P	07 02 15.3	-0.2
	0.3nm,0.5s,baz=9.8,slow=8.5,SNR=4.9						
ASAR	**Alice Springs**	**51.23**	**192**	P	P	07 02 43.8	-0.1
	0.5nm,1.0s,baz=13,slow=8.6,SNR=2.9						

*ISCJB **22** 06:55:42.7±0.4, 67°.15N±0°.02×20°.72E±0°.08, h0km, Error ellipse: s-maj=4.5km s-min=2.8km az=14.4*
*UPP **22** 06:55:43.8, 67°.17N×20°.64E, h0km, ML1.4, Mining explosion.*
*CSEM **22** 06:55:43.8±0.3, 67°.04N×21°.11E, h1km, ML1.4, Error ellipse: s-maj=13.6km s-min=5.7km az=106.0, Mining explosion.*
*NAO **22** 06:55:44.3±0.9, 67°.14N×20°.95E, ML2.7*
*IDC **22** 06:55:44.2±1.0, 67°.13N×20°.96E, h0km, mb1 3.0/4, mb1mx2.9/51, mbtmp3.0/4, ML2.6/4, Error ellipse: s-maj=16.2km s-min=8.2km az=108.0*
*HEL **22** 06:55:44.2±0.2, 67°.15N×20°.64E, h0km, ML2.0, ML1.4(UPP), Explosion*
*BER **22** 06:55:46.9±3.8, 67°.13N×20°.87E, h0km, MD2.4, ML2.5, ML2.7(NAO), Suspected explosion*

ISC 22 06:55:43.3±0.7, 67°.15N±0°.02×20°.65E±0°.03, h0km, n56, σ1°.34/87, Sweden

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MASU	**Masugnsbyn**	**0.61**	**59**	*i* P	**Pg**	**06 55 55.3**	**+0.3**
MASU				*i* S	**Sg**	**06 56 03.4**	**+0.6**
KUA	**Kurravaara**	**0.82**	**352**	*i* P	**Pg**	**06 55 58.5**	**-0.4**
ERTU	**Ertsjaerv**	**0.85**	**134**	*i* P	**Pg**	**06 55 59.9**	**+0.3**
ERTU	**Ertsjaerv**	**0.85**	**134**	P	**Pg**	**06 55 59.9**	**+0.3**
SALU	**Saltoluokta**	**0.86**	**287**	*i* P	**Pg**	**06 56 00.0**	**+0.2**
NIKU	**Nikkaluokta**	**0.95**	**320**	*e*P	**Pg**	**06 56 01.3**	**-0.2**
PAJU	**Pajala**	**0.97**	**96**	*e*P	**Pg**	**06 56 01.9**	**-0.1**
HARU	**Harads**	**1.00**	**172**	*e*P	**Pg**	**06 56 02.7**	**+0.3**
HARU	**Harads**	**1.00**	**172**	P	**Pg**	**06 56 02.7**	**+0.3**
LANU	**Lannavaara**	**1.04**	**29**	*e*P	**Pg**	**06 56 02.7**	**-0.6**
LANU	**Lannavaara**	**1.04**	**29**	Pn	**Pg**	**06 56 02.6**	**-0.6**
HEF	**Hetta**	**1.71**	**41**	*e*P	**Pn**	**06 56 13.9**	**-0.4**
HEF				*e*S	**Sn**	**06 56 36.0**	**-0.8**
HEF	**Hetta**	**1.71**	**41**	*e*P	**Pn**	**06 56 14.2**	**-0.1**
	baz=222						
HEF				*e*S	**Sn**	**06 56 36.1**	**-0.6**
HEF				MSG		06 56 36.3	
	comp=Z,10nm,0.2s						
HEF	**Hetta**	**1.71**	**41**	*e*P	**Pn**	**06 56 13.9**	**-0.4**
	SNR=50						
HEF				*e*S	**Sn**	**06 56 36.0**	**-0.8**
	SNR=50						
KIF	**Kilpisjarvi**	**1.86**	**2**	Pn	**Pb**	**06 56 17.6**	**-0.5**
KIF				Lg	Lg	06 56 43.7	
KIF	**Kilpisjarvi**	**1.86**	**2**	Pn	**Pb**	**06 56 17.6**	**-0.5**
KIF				*e*P	**Pb**	**06 56 17.7**	**-0.5**
KIF				*e*S	**Sg**	**06 56 43.7**	**+0.5**
KIF				Lg	Lg	06 56 43.7	
KIF	**Kilpisjarvi**	**1.86**	**2**	*e*P	**Pb**	**06 56 17.5**	**-0.6**
KIF				MSG		06 56 40.7	
	comp=Z,11nm,0.2s						
KIF				*e*SG	**Sg**	**06 56 43.2**	**+0.1**
KIF	**Kilpisjarvi**	**1.86**	**2**	*e*P	**Pb**	**06 56 17.7**	**-0.5**
	SNR=50						
KIF				Sg	**Sg**	**06 56 43.2**	**+0.1**
LILU	**Lilltraesk**	**1.90**	**190**	*e*P	**Pb**	**06 56 18.3**	**-0.5**
LILU	**Lilltraesk**	**1.90**	**190**	P	**Pb**	**06 56 18.3**	**-0.5**
KTK1	**Kautokeino**	**2.11**	**26**	*e*P	**Pb**	**06 56 21.5**	**-0.8**
KTK1				*e*S	**Sb**	**06 56 47.8**	**-1.3**
KTK1				IAML		06 56 51.2	
	comp=Z,59nm,0.6s						
KTK1	**Kautokeino**	**2.11**	**26**	*e*P	**Pb**	**06 56 21.5**	**-0.8**
	SNR=50						
KTK1				*e*S	**Sb**	**06 56 47.8**	**-1.3**
	SNR=50						
RNF	**Rovaniemi**	**2.19**	**102**	*e*PB	Pn	**06 56 22.1**	**+1.2**
RNF				*e*SG	**Sb**	**06 56 51.6**	**+0.3**
RNF	**Rovaniemi**	**2.19**	**102**	Pg	Pn	**06 56 22.1**	**+1.2**
RNF				Sg	**Sb**	**06 56 51.6**	**+0.3**
SGF	**Sodankyl**	**2.30**	**80**	*e*SG	**Sg**	**06 56 56.9**	**-0.3**
SGF	**Sodankyl**	**2.30**	**80**	Sg	**Sg**	**06 56 56.8**	**-0.3**
BURU	**Burvik**	**2.59**	**173**	*e*PB	**Pn**	**06 56 28.3**	**+1.9**
BURU				*e*SB	**Sb**	**06 57 01.5**	**-1.5**
BURU	**Burvik**	**2.59**	**173**	Pg	**Pn**	**06 56 28.3**	**+1.9**
BURU				Sg	**Sb**	**06 57 01.5**	**-1.5**
ARCES	**ARCESS Array B**	**3.00**	**35**	Pn	**Pn**	**06 56 32.3**	**+0.3**
	comp=Z,0.8nm,0.3s,baz=213,slow=13,SNR=34						
ARCES				Sn	**Sn**	**06 57 08.3**	**-0.3**
	comp=Z,0.9nm,0.3s,baz=215,slow=23,SNR=3.9						
ARE0	**ARCESS Array S**	**3.00**	**35**	*e*P	**Pn**	**06 56 32.1**	**+0.1**
ARE0				*e*S	**Sn**	**06 57 10.1**	**+1.5**
ARE0	**ARCESS Array S**	**3.00**	**35**	Pn	**Pn**	**06 56 32.1**	**+0.1**
ARE0				Sb	**Sn**	**06 57 10.1**	**+1.5**
ARA0	**ARCESS Array S**	**3.00**	**35**	Pn	**Pn**	**06 56 32.6**	**+0.6**
	baz=217,slow=14						
ARA0				Sn	**Sn**	**06 57 09.2**	**+0.5**
	baz=210,slow=22						
ARA0	**ARCESS Array S**	**3.00**	**35**	Pn	**Pn**	**06 56 32.6**	**+0.6**
	baz=217,slow=14						
ARA0				Sn	**Sn**	**06 57 09.2**	**+0.5**
	baz=210,slow=22						
ARA0	**ARCESS Array S**	**3.00**	**35**	Pn	**Pn**	**06 56 32.6**	**+0.6**
	SNR=50						
ARA0				Sn	**Sn**	**06 57 09.1**	**+0.5**
	SNR=50						
OUFX	**Oulainen**	**3.26**	**147**	*e*P	**Pn**	**06 56 36.9**	**+1.3**
OUFX	**Oulainen**	**3.26**	**147**	Pg	**Pn**	**06 56 36.9**	**+1.3**
UMAU	**Umeaa**	**3.28**	**180**	*e*P	**Pn**	**06 56 37.5**	**+1.7**
UMAU				*e*S	**Sn**	**06 57 17.3**	**+1.8**
UMAU	**Umeaa**	**3.28**	**180**	Pg	**Pn**	**06 56 37.5**	**+1.7**
UMAU				Sg	**Sn**	**06 57 17.3**	**+1.8**
KEV	**Kevo**	**3.52**	**39**	*e*PG	**Pb**	**06 56 47.2**	**+0.9**
	baz=228						
KEV				*e*S	**Sn**	**06 57 21.4**	**+0.1**
KEV	**Kevo**	**3.52**	**39**	Sn	**Sn**	**06 57 21.4**	**+0.1**
KU6	**Riekki**	**3.86**	**103**	*e*P	**Pn**	**06 56 44.8**	**+1.0**
	baz=294						
KU6	**Riekki**	**3.86**	**103**	Pb	**Pn**	**06 56 44.8**	**+1.0**
VAF	**Ylistaro**	**4.21**	**167**	*e*P	**Pn**	**06 56 51.5**	**+2.9**
HEMU	**Hemsoen**	**4.63**	**195**	*e*	**Sn**	**06 57 53.3**	**+4.6**
FIA0	**FINESS Array S**	**6.19**	**155**	Pn	**Pn**	**06 57 17.2**	**+1.3**
	baz=342,slow=16						
FIA0				Sn	**Sn**	**06 58 25.8**	**-1.5**
	baz=344,slow=22						
FIA0				Lg	Lg	06 58 55.4	
	baz=342,slow=37						
FIA0	**FINESS Array S**	**6.19**	**155**	Pn	**Pn**	**06 57 17.2**	**+1.3**
	baz=342,slow=16						
FIA0				Sn	**Sn**	**06 58 25.8**	**-1.5**
	baz=344,slow=22						
FIA0				Lg	Lg	06 58 55.4	
	baz=342,slow=37						
FIA0	**FINESS Array S**	**6.19**	**155**	Sn	**Sn**	**06 58 25.8**	**-1.5**
	SNR=50						
FIA0				Lg	Lg	06 58 55.4	
	SNR=5.5						
FINES	**FINESS Array B**	**6.19**	**155**	Pn	**Pn**	**06 57 17.1**	**+1.3**
	comp=Z,0.2nm,0.3s,baz=344,slow=12,SNR=13						
FINES				Sn	**Sn**	**06 58 25.9**	**-1.4**
	comp=Z,0.5nm,0.3s,baz=344,slow=20,SNR=8.8						
FINES				Lg	Lg	06 58 55.2	
	comp=Z,1.0nm,0.3s,baz=342,slow=26,SNR=7.9						
NB2	**NORSAR Subarra**	**7.38**	**218**	Pn	**Pn**	**06 57 33.5**	**+1.3**
NB2				Lg	Lg	06 59 37.0	
NB2	**NORSAR Subarra**	**7.38**	**218**	Pn	**Pn**	**06 57 33.5**	**+1.3**
	SNR=50						
NOA	**NORSAR Array B**	**7.38**	**218**	Pn	**Pn**	**06 57 33.2**	**+0.9**
	comp=Z,0.2nm,0.3s,baz=28,slow=11,SNR=3.8						
NOA				Sn	**Sn**	**06 58 52.7**	**-4.0**
	comp=Z,0.5nm,0.3s,baz=43,slow=24,SNR=9.3						
NOA				Lg	Lg	06 59 33.7	
	comp=Z,0.8nm,0.3s,baz=41,slow=14,SNR=4.6						
HFS	**Hagfors**	**7.69**	**207**	Pn	**Pn**	**06 57 36.5**	**+0.2**
	baz=50,slow=16						
HFS				Sn	**Sn**	**06 59 01.9**	**-2.1**
	baz=27,slow=22						
HFS				Lg	Lg	06 59 44.6	
	baz=28,slow=28						
HFS	**Hagfors**	**7.69**	**207**	Pn	**Pn**	**06 57 35.8**	**-0.5**
	comp=Z,0.2nm,0.3s,baz=26,slow=14,SNR=5.6						
HFS				Sn	**Sn**	**06 58 59.2**	**-4.8**
	comp=Z,0.4nm,0.3s,baz=28,slow=25,SNR=7.3						
HFS				Lg	Lg	06 59 42.9	
	comp=Z,0.3nm,0.3s,baz=40,slow=32,SNR=3.0						
HFS	**Hagfors**	**7.69**	**207**	Pn	**Pn**	**06 57 36.5**	**+0.2**
	baz=50,slow=16						
HFS				Sn	**Sn**	**06 59 01.9**	**-2.1**
	baz=27,slow=22						
HFS				Lg	Lg	06 59 44.6	
	baz=28,slow=28						
HFS	**Hagfors**	**7.69**	**207**	Pn	**Pn**	**06 57 36.5**	**+0.2**
	SNR=50						
HFS				Sn	**Sn**	**06 59 01.9**	**-2.1**
	SNR=50						

*IDC **22** 06:57:40.8±12.0, 35°.43N×143°.65E, h0km, mb3.8/2, mb1 3.9/3, mb1mx3.4/55, mbtmp3.6/3, ML3.4/1, Error ellipse: s-maj=307.3km s-min=41.4km az=42.0*
*ISCJB **22** 06:57:49.8±1.1, 34°.88N±0°.07×142°.73E±0°.09, h42km, mb3.9/2, Error ellipse: s-maj=11.9km s-min=8.8km az=136.4*
*JMA **22** 06:57:49.1±0.7, 34°.80N×142°.79E, h50km, M3.3*

ISC 22 06:57:51.4±1.7, 34°.88N±0°.09×142°.7E±0°.1, h42km, n18, σ0°.79/17, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**1.44**	**261**	P	**Pn**	**06 58 14.0**	**-0.6**
BSO1				*e*S	**Sn**	**06 58 32.5**	**+0.5**
CHOJ	**Chosi**	**1.72**	**299**	P	**Pn**	**06 58 19.1**	**+0.2**
BSO3	**Boso 3**	**1.81**	**268**	P	**Pn**	**06 58 20.0**	**+0.1**
BSO4	**Boso 4**	**1.95**	**274**	P	**Pn**	**06 58 22.8**	**+0.9**
JOD2	**Odawara 2**	**2.99**	**278**	P	**Pn**	**06 58 35.8**	**-0.6**
JOD2				*e*S	**Sn**	**06 59 09.9**	**-1.2**
JAG	**Ashikaga**	**3.07**	**301**	P	**Pn**	**06 58 37.3**	**-0.1**
JAG				*e*S	**Sn**	**06 59 14.4**	**+1.6**
JFT	**Otama**	**3.25**	**325**	P	**Pn**	**06 58 39.9**	**-0.1**
JFT				*e*S	**Sn**	**06 59 16.3**	**-1.2**
JRY	**Ryogami san**	**3.31**	**291**	P	**Pn**	**06 58 41.6**	**+0.9**
JYN	**Shimob**	**3.47**	**281**	P	**Pn**	**06 58 42.6**	**-0.3**
JYN				*e*S	**Sn**	**06 59 22.2**	**-0.6**
MJAR	**Matsushiro Arr**	**4.02**	**296**	Pn	**Pn**	**06 58 50.5**	**+0.1**
	1.9nm,0.3s,baz=98,slow=9.3,SNR=22						
H11N2	**WAKE ISLAND Hy**	**26.17**	**119**	T	T	07 30 30.3	
	baz=313,slow=75						
H11N1	**WAKE ISLAND Hy**	**26.17**	**119**	T	T	07 30 38.7	
	baz=313						
H11N3	**WAKE ISLAND Hy**	**26.18**	**119**	T	T	07 30 32.0	
	baz=313,slow=75						
H11S1	**WAKE ISLAND Hy**	**26.83**	**121**	T	T	07 31 24.1	
	baz=312,slow=76,SNR=10						
H11S3	**WAKE ISLAND Hy**	**26.83**	**121**	T	T	07 31 19.7	
	baz=312,slow=76,SNR=7.2						
H11S2	**WAKE ISLAND Hy**	**26.84**	**121**	T	T	07 31 23.9	
	baz=312,slow=76,SNR=6.0						
WRA	**Warramunga Arr**	**55.10**	**190**	P	**P**	**07 07 19.0**	**-0.3**
	1.1nm,0.8s,baz=8.6,slow=7.4,SNR=7.6						
ASAR	**Alice Springs**	**58.83**	**189**	P	**P**	**07 07 46.2**	**+0.5**
	0.8nm,0.8s,baz=7.0,slow=8.4,SNR=5.4						

*CSEM **22** 07:04:45.8±0.1, 39°.07N×29°.08E, h2km, ML3.5, Error ellipse: s-maj=3.2km s-min=2.2km az=122.0*
*ISK **22** 07:04:45.2, 39°.07N×29°.11E, h4km, MD2.8*
*DDA **22** 07:04:45.5, 39°.09N×29°.06E, h7km, Ml3.5*

ISC 22 07:04:46.0±1.1, 39°.08N±0°.02×29°.08E±0°.02, h4km±13km, n55, σ0°.54/65, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**262**	P	**Pg**	**07 04 51.3**	**-0.3**
DEMI				S	**Sg**	**07 04 55.1**	**-0.2**
DEMI	**Demirci**	**0.28**	**262**	*i* P	**Pg**	**07 04 51.3**	**-0.3**
DEMI				*i* S	**Sg**	**07 04 55.1**	**-0.2**
GDZ	**Gediz**	**0.31**	**89**	P	**Pg**	**07 04 52.4**	**+0.2**
GDZ				S	**Sg**	**07 04 57.2**	**+0.9**
GDZ	**Gediz**	**0.31**	**89**	*i* P	**Pg**	**07 04 52.4**	**+0.2**
GDZ				*i* S	**Sg**	**07 04 57.2**	**+0.9**
TVSB	**Tavsanli**	**0.47**	**39**	*e*PG	**Pg**	**07 04 54.8**	**-0.4**
TVSB				*e*SG	**Sg**	**07 05 01.3**	**0.0**
TVSB	**Tavsanli**	**0.47**	**39**	*e*Pg	**Pg**	**07 04 54.8**	**-0.4**
TVSB				*e*Sg	**Sg**	**07 05 01.3**	**0.0**
KULA	**Kula-Manisa**	**0.65**	**210**	*e*PG	**Pg**	**07 04 58.4**	**-0.2**
KULA				*e*SG	**Sg**	**07 05 07.2**	**+0.1**
KULA	**Kula-Manisa**	**0.65**	**210**	*e*Pg	**Pg**	**07 04 58.4**	**-0.2**
KULA				*e*Sg	**Sg**	**07 05 07.2**	**+0.1**
MANT	**Manisa**	**0.72**	**215**	P	**Pg**	**07 04 59.6**	**-0.2**
MANT				S	**Sg**	**07 05 08.8**	**-0.3**
MANT	**Manisa**	**0.72**	**215**	*i* P	**Pg**	**07 04 59.6**	**-0.2**
MANT				*i* S	**Sg**	**07 05 08.8**	**-0.3**
KHL	**Karahalli**	**0.83**	**155**	*e*PG	**Pg**	**07 05 01.4**	**-0.6**
KHL	**Karahalli**	**0.83**	**155**	*e*Pg	**Pg**	**07 05 01.4**	**-0.6**
ORLT	**Orhaneli**	**0.97**	**352**	*e*PG	**Pg**	**07 05 03.9**	**-0.8**
ORLT	**Orhaneli**	**0.97**	**352**	*e*Pg	**Pg**	**07 05 03.9**	**-0.8**
AKS	**Akhisar**	**1.01**	**259**	*e*PG	**Pg**	**07 05 05.1**	**-0.2**
AKS	**Akhisar**	**1.01**	**259**	*e*Pg	**Pg**	**07 05 05.1**	**-0.2**
BALB	**Balikesir**	**1.08**	**301**	*e*PN	**Pg**	**07 05 06.9**	**+0.1**
BALB	**Balikesir**	**1.08**	**301**	*e*Pn	**Pg**	**07 05 06.9**	**+0.1**
IGD	**Bursa**	**1.19**	**5**	*i* P	**Pg**	**07 05 06.8**	**-2.0**
IZI	**Iznik**	**1.29**	**14**	*e*PN	**Pg**	**07 05 10.5**	**-0.3**
IZI	**Iznik**	**1.29**	**14**	*e*Pn	**Pg**	**07 05 10.5**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.29**	**353**	*e*PN	**Pg**	**07 05 10.6**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.29**	**353**	*e*Pn	**Pg**	**07 05 10.6**	**-0.2**
KCTX	**Karacabey (Bur**	**1.31**	**335**	*e*PN	**Pg**	**07 05 10.8**	**-0.3**
KCTX	**Karacabey (Bur**	**1.31**	**335**	*e*Pn	**Pg**	**07 05 10.8**	**-0.3**
ADVT	**Abdulvahap**	**1.44**	**20**	*e*PN	**Pn**	**07 05 13.0**	**0.0**
ADVT	**Abdulvahap**	**1.44**	**20**	*e*Pn	**Pn**	**07 05 13.0**	**0.0**
GONE	**Gonen-Balikesi**	**1.44**	**312**	*e*PN	**Pn**	**07 05 13.1**	**+0.2**
GONE	**Gonen-Balikesi**	**1.44**	**312**	*e*Pn	**Pn**	**07 05 13.1**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**220**	*e*PN	**Pb**	**07 05 13.9**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**220**	*e*Pn	**Pb**	**07 05 13.9**	**-0.1**
ARMT	**Armutlu**	**1.49**	**354**	*e*PN	**Pn**	**07 05 14.1**	**+0.5**
ARMT	**Armutlu**	**1.49**	**354**	*e*Pn	**Pn**	**07 05 14.1**	**+0.5**
EDC	**Edincik**	**1.57**	**324**	*e*PN	**Pn**	**07 05 15.1**	**+0.4**
EDC	**Edincik**	**1.57**	**324**	*e*Pn	**Pn**	**07 05 15.1**	**+0.4**
GULT	**Gulveren**	**1.75**	**39**	*e*PN	**Pn**	**07 05 17.8**	**+0.6**
GULT	**Gulveren**	**1.75**	**39**	*e*Pn	**Pn**	**07 05 17.8**	**+0.6**
HRT	**Hereke**	**1.80**	**14**	*e*PN	**Pn**	**07 05 17.8**	**0.0**
HRT	**Hereke**	**1.80**	**14**	*e*Pn	**Pn**	**07 05 17.8**	**0.0**
MRMT	**Marmara Adasi**	**1.90**	**324**	*e*PN	**Pn**	**07 05 20.1**	**+0.8**
MRMT	**Marmara Adasi**	**1.90**	**324**	*e*Pn	**Pn**	**07 05 20.1**	**+0.8**
SVRH	**Sivrihisar-ESK**	**1.93**	**78**	*e*PN	**Pn**	**07 05 19.2**	**-0.6**
SVRH	**Sivrihisar-ESK**	**1.93**	**78**	*e*Pn	**Pn**	**07 05 19.2**	**-0.6**
ISK	**Istanbul-Kandi**	**1.98**	**360**	*e*PN	**Pn**	**07 05 20.6**	**+0.3**
ISK	**Istanbul-Kandi**	**1.98**	**360**	*e*Pn	**Pn**	**07 05 20.6**	**+0.3**
SILT	**Sile**	**2.11**	**12**	*e*PN	**Pn**	**07 05 21.9**	**-0.2**
SILT	**Sile**	**2.11**	**12**	*e*Pn	**Pn**	**07 05 21.9**	**-0.2**
MDUB	**Mudurnu**	**2.14**	**49**	*e*PN	**Pn**	**07 05 22.9**	**+0.2**
MDUB	**Mudurnu**	**2.14**	**49**	*e*Pn	**Pn**	**07 05 22.9**	**+0.2**
KLYT	**Kilyos**	**2.17**	**359**	*e*PN	**Pn**	**07 05 23.9**	**+1.1**
KLYT	**Kilyos**	**2.17**	**359**	*e*Pn	**Pn**	**07 05 24.0**	**+1.1**
RKY	**Sarkoy-Tekirda**	**2.17**	**318**	*e*PN	**Pn**	**07 05 23.6**	**+0.6**
RKY	**Sarkoy-Tekirda**	**2.17**	**318**	*e*Pn	**Pn**	**07 05 23.6**	**+0.6**
CTKS	**Kestanelik-??a**	**2.20**	**349**	*e*PN	**Pn**	**07 05 24.3**	**+1.0**
CTKS	**Kestanelik-??a**	**2.20**	**349**	*e*Pn	**Pn**	**07 05 24.3**	**+1.0**

WEL 22 07:06:47.5±0.2, 43°.49S×172°.78E, h7km±1km, ML3.5/14, 2C-5D, Error ellipse: s-maj=1.5km s-min=0.9km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRLZ	**Canterbury Las**	**0.15**	**232**	⇓PG	Pg	07 06 50.8	+0.2
CRLZ				AML	AML	07 06 54.6	
CRLZ				AML	AML	07 06 57.6	
MQZ	**McQueen's Vall**	**0.24**	**203**	PG	Pg	07 06 52.7	+0.3
MQZ				SG	Sg	07 06 56.1	+0.6
MQZ				AML	AML	07 06 56.2	
MQZ				AML	AML	07 06 58.7	
OXZ	**Oxford**	**0.57**	**286**	P*	Pg	07 06 58.3	-0.2
LTZ	**Lake Taylor**	**0.80**	**332**	⇓P*	Pb	07 07 03.5	-0.2
LTZ				AML	AML	07 07 15.5	
LTZ				AML	AML	07 07 16.2	
KHZ	**Kahutara**	**1.21**	**28**	P*	Pb	07 07 09.8	-0.8
INZ	**Inchbonnie**	**1.24**	**307**	P*	Pn	07 07 10.1	-1.1
RPZ	**Rata Peaks**	**1.28**	**259**	⇑P*	Pn	07 07 10.4	-1.4
RPZ				AML	AML	07 07 36.9	
RPZ				AML	AML	07 07 40.4	
WVZ	**Waitaha Valley**	**1.55**	**285**	PN	Pn	07 07 15.0	-0.5
WVZ				AML	AML	07 07 40.4	
WVZ				AML	AML	07 07 49.0	
THZ	**Tophouse**	**1.73**	**3**	PN	Pn	07 07 17.3	-0.6
THZ				AML	AML	07 07 41.8	
THZ				AML	AML	07 07 44.7	
DSZ	**Denniston Nort**	**1.88**	**337**	⇓PN	Pn	07 07 19.7	-0.4
DSZ				AML	AML	07 07 53.0	
DSZ				AML	AML	07 07 55.8	
DSZ				AML	AML	07 07 55.9	
DSZ				AML	AML	07 07 56.1	
BSWZ	**Blackbirch Sta**	**1.94**	**25**	PN	Pn	07 07 20.6	-0.3
LBZ	**Lake Benmore**	**2.08**	**243**	PN	Pn	07 07 22.4	-0.5
LBZ				AML	AML	07 08 00.5	
LBZ				AML	AML	07 08 01.2	
FOZ	**Fox Glacier**	**2.16**	**268**	PN	Pn	07 07 24.3	+0.5
FOZ				AML	AML	07 07 52.6	
ODZ	**Otahua Downs**	**2.19**	**224**	⇓PN	Pn	07 07 23.3	-1.0
ODZ				AML	AML	07 07 57.6	
ODZ				AML	AML	07 07 57.8	
ODZ				AML	AML	07 08 02.0	
ODZ				AML	AML	07 08 02.2	
TUWZ	**Tuamarina**	**2.23**	**23**	PN	Pn	07 07 24.1	-0.7
NNZ	**Nelson**	**2.31**	**11**	⇑PN	Pn	07 07 25.9	-0.1
TCW	**Tory Channel**	**2.53**	**26**	PN	Pn	07 07 27.9	-1.1
PLWZ	**Palliser**	**2.65**	**44**	PN	Pn	07 07 29.4	-1.2
WEL	**Wellington**	**2.65**	**34**	PN	Pn	07 07 29.4	-1.1
QRZ	**Quartz Range**	**2.67**	**356**	PN	Pn	07 07 30.3	-0.6
QRZ				AML	AML	07 08 25.6	
DUWZ	**D'Urville Isla**	**2.81**	**18**	PN	Pn	07 07 32.4	-0.5
HHSZ	**Highcliff Hill**	**2.86**	**212**	PN	Pn	07 07 32.5	-1.0
CAW	**Cannon Point**	**2.92**	**36**	PN	Pn	07 07 33.0	-1.3
JCZ	**Jackson Bay**	**2.95**	**257**	PN	Pn	07 07 34.3	-0.6
JCZ				AML	AML	07 08 29.3	
WKZ	**Wanaka**	**3.02**	**242**	PN	Pn	07 07 35.2	-0.6
EAZ	**Earnscleugh**	**3.04**	**234**	PN	Pn	07 07 35.0	-1.1
EAZ				AML	AML	07 08 30.7	
KIW	**Kapiti Island**	**3.06**	**32**	PN	Pn	07 07 35.2	-1.1
MTW	**Mount Morrison**	**3.08**	**42**	PN	Pn	07 07 35.1	-1.5
OGWZ	**Otaki Gorge**	**3.20**	**34**	PN	Pn	07 07 36.8	-1.4
TUZ	**Tuapeka**	**3.34**	**221**	PN	Pn	07 07 39.1	-1.0
TUZ				AML	AML	07 08 40.3	
TUZ				AML	AML	07 08 44.8	
MRZ	**Mangatainoka R**	**3.51**	**37**	PN	Pn	07 07 40.9	-1.5
TIWZ	**Tintock**	**3.56**	**41**	PN	Pn	07 07 42.7	-0.5
BFZ	**Birch Farm**	**3.81**	**44**	PN	Pn	07 07 44.6	-2.0
MLZ	**Mavora Lakes**	**3.83**	**239**	PN	Pn	07 07 45.7	-1.2
SYZ	**Scrubby Hill**	**4.00**	**219**	⇓PN	Pn	07 07 48.7	-0.4
ANWZ	**Angora Road**	**4.09**	**44**	PN	Pn	07 07 49.0	-1.4
TSZ	**Takapari Road**	**4.17**	**36**	PN	Pn	07 07 49.7	-1.9
WHZ	**Wether Hill Ro**	**4.20**	**233**	PN	Pn	07 07 49.8	-2.2
NEZ	**North Egmont**	**4.33**	**14**	PN	Pn	07 07 54.8	+1.1
DREZ	**Durham Road**	**4.42**	**14**	PN	Pn	07 07 55.9	+0.8
MTVZ	**Mangateitei**	**4.57**	**27**	PN	Pn	07 07 57.3	+0.2
VRZ	**Vera Road**	**4.60**	**20**	PN	Pn	07 07 58.4	+0.9
PKVZ	**Pokaka**	**4.62**	**26**	PN

KSL			AML	AML	07 08 57.1	
	comp=E,540µm,0.8s					
KSL			AML	AML	07 08 58.4	
	comp=N,369µm,0.7s					
KARP	**Karpathos**	**1.65 211**	P	**Pn**	**07 08 33.5**	**-0.4**
KARP			S	**Sb**	**07 08 56.0**	**-0.4**
KARP	**Karpathos**	**1.65 211**	P	**Pn**	**07 08 33.6**	**-0.4**
KARP			S	**Sb**	**07 08 56.0**	**-0.4**
KARP	**Karpathos**	**1.65 211**	P	**Pn**	**07 08 33.6**	**-0.4**
KARP			S	**Sn**	**07 08 55.9**	**+0.4**
KARP			AML	AML	07 09 02.1	
	comp=E,795µm,0.3s					
KARP			AML	AML	07 09 03.4	
	comp=N,771µm,0.4s					
APE	**Apeiranthos**	**2.15 273**	P	**Pn**	**07 08 41.4**	**+0.6**
APE	**Apeiranthos**	**2.15 273**	P	**Pn**	**07 08 41.4**	**+0.6**
CHOS	**Chios island**	**2.22 310**	P	**Pn**	**07 08 41.0**	**-0.8**
CHOS			S	**Sn**	**07 09 09.2**	**-0.3**
CHOS	**Chios island**	**2.22 310**	P	**Pn**	**07 08 42.0**	**+0.2**
CHOS			S	**Sn**	**07 09 09.2**	**-0.3**
CHOS	**Chios island**	**2.22 310**	P	**Pn**	**07 08 42.0**	**+0.2**
ZKR	**Zakros**	**2.46 222**	P	**Pn**	**07 08 44.3**	**-0.7**
ZKR	**Zakros**	**2.46 222**	P	**Pn**	**07 08 45.4**	**+0.4**
ZKR	**Zakros**	**2.46 222**	P	**Pn**	**07 08 45.4**	**+0.4**
BALB	**Balikesir**	**2.68 355**	*e*PG	**Pb**	**07 08 52.9**	**+0.1**
BALB	**Balikesir**	**2.68 355**	*e*Pg	**Pb**	**07 08 52.9**	**+0.1**
NPS	**Neapolis**	**2.71 232**	P	**Pn**	**07 08 48.8**	**+0.4**
NPS	**Neapolis**	**2.71 232**	P	**Pn**	**07 08 48.9**	**+0.4**
PRK	**Paraskevi**	**2.74 327**	P	**Pn**	**07 08 49.7**	**+0.8**
PRK	**Paraskevi**	**2.74 327**	P	**Pn**	**07 08 49.7**	**+0.8**
LAST	**Lasithi**	**2.86 232**	P	**Pn**	**07 08 51.1**	**+0.5**
LAST	**Lasithi**	**2.86 232**	P	**Pn**	**07 08 51.1**	**+0.5**
SIGR	**SIGRI**	**2.91 321**	P	**Pn**	**07 08 50.5**	**-0.7**
SIGR	**SIGRI**	**2.91 321**	P	**Pn**	**07 08 51.3**	**+0.1**
SIGR	**SIGRI**	**2.91 321**	P	**Pn**	**07 08 51.3**	**+0.1**
IDI	**Anoyia**	**3.17 239**	P	**Pn**	**07 08 55.2**	**+0.3**
IDI			S	**Sn**	**07 09 32.1**	**-0.8**
IDI	**Anoyia**	**3.17 239**	P	**Pn**	**07 08 55.2**	**+0.3**
IDI			S	**Sn**	**07 09 32.1**	**-0.8**
IDI			AML	AML	07 09 41.5	
	comp=E,57µm,0.9s					
IDI			AML	AML	07 09 50.8	
	comp=N,64µm,0.5s					
SIVA	**Sivas**	**3.38 236**	P	**Pn**	**07 08 57.0**	**-0.6**
SIVA	**Sivas**	**3.38 236**	P	**Pn**	**07 08 57.0**	**-0.6**
LIA	**Limnos Island**	**3.77 322**	P	**Pn**	**07 09 03.5**	**+0.5**
SMTH	**Samothraki Isl**	**4.08 330**	P	**Pn**	**07 09 07.0**	**-0.2**
SMTH	**Samothraki Isl**	**4.08 330**	P	**Pn**	**07 09 07.0**	**-0.2**
MDUB	**Mudurnu**	**4.20 33**	*e*PN	**Pn**	**07 09 08.2**	**-0.9**
MDUB	**Mudurnu**	**4.20 33**	*e*Pn	**Pn**	**07 09 08.2**	**-0.9**
ALN	**Alexandroupoli**	**4.27 337**	P	**Pn**	**07 09 09.4**	**-0.5**
ALN	**Alexandroupoli**	**4.27 337**	P	**Pn**	**07 09 09.4**	**-0.5**

DDA ***22*** *07:08:29.3, 39.°09N×29.°10E, h7km, Ml3.0*
ISCJB ***22*** *07:08:30.2±0.6, 39.°10N±0.°05×29.°09E±0.°04, h9km, Error ellipse: s-maj=7.0km s-min=4.3km az=162.0*
CSEM ***22*** *07:08:30.2±0.2, 39.°11N×29.°06E, h2km, ML3.0, Error ellipse: s-maj=5.9km s-min=4.8km az=143.0*
ISK ***22*** *07:08:33.3, 39.°33N×29.°11E, h8km, MD2.7*
ISC 22 07:08:30.0±1.0, 39.°11N±0.°03×29.°10E±0.°02, h9km, n41, σ0$57/46, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.29**	**93**	P	**Pg**	**07 08 35.8**	**-0.1**
GDZ				S	**Sg**	**07 08 39.8**	**-0.1**
GDZ	**Gediz**	**0.29**	**93**	*i* P	**Pg**	**07 08 35.8**	**-0.1**
GDZ				*i* S	**Sg**	**07 08 39.8**	**-0.1**
DEMI	**Demirci**	**0.31**	**258**	P	**Pg**	**07 08 36.0**	**-0.1**
DEMI				S	**Sg**	**07 08 40.3**	**0.0**
DEMI	**Demirci**	**0.31**	**258**	*i* P	**Pg**	**07 08 36.0**	**-0.1**
DEMI				*i* S	**Sg**	**07 08 40.3**	**0.0**
TVSB	**Tavsanli**	**0.44**	**39**	*e*PG	**Pb**	**07 08 39.6**	**-0.4**
TVSB				*e*SG	**Sg**	**07 08 43.8**	**-0.7**
TVSB	**Tavsanli**	**0.44**	**39**	*e*Pg	**Pb**	**07 08 39.6**	**-0.4**
TVSB				*e*Sg	**Sg**	**07 08 43.8**	**-0.7**
KULA	**Kula-Manisa**	**0.69**	**210**	*e*PG	Pn	07 08 51.0	+5.0
DURS	**Dursunbey**	**0.69**	**316**	P	**Pg**	**07 08 42.8**	**-0.6**
DURS	**Dursunbey**	**0.69**	**316**	*i* P	**Pg**	**07 08 42.9**	**-0.6**
MANT	**Manisa**	**0.75**	**215**	P	**Pg**	**07 08 43.8**	**-0.6**
MANT	**Manisa**	**0.75**	**215**	*i* P	**Pg**	**07 08 43.8**	**-0.6**
ORLT	**Orhaneli**	**0.95**	**350**	*e*PG	**Pg**	**07 08 47.5**	**-0.8**
ORLT	**Orhaneli**	**0.95**	**350**	*e*Pg	**Pg**	**07 08 47.5**	**-0.8**
IZI	**Iznik**	**1.26**	**13**	*e*PG	**Pg**	**07 08 54.5**	**+0.3**
IZI	**Iznik**	**1.26**	**13**	*e*Pg	**Pg**	**07 08 54.5**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.27**	**352**	*e*PG	**Pg**	**07 08 54.3**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.27**	**352**	*e*Pg	**Pg**	**07 08 54.3**	**-0.1**
KCTX	**Karacabey (Bur**	**1.29**	**334**	*e*PN	**Pg**	**07 08 54.7**	**-0.1**
KCTX	**Karacabey (Bur**	**1.29**	**334**	*e*Pn	**Pg**	**07 08 54.7**	**-0.1**
ADVT	**Abdulvahap**	**1.41**	**20**	*e*PN	**Pg**	**07 08 56.9**	**-0.2**
ADVT	**Abdulvahap**	**1.41**	**20**	*e*Pn	**Pg**	**07 08 56.9**	**-0.2**
GONE	**Gonen-Balikesi**	**1.44**	**311**	*e*PN	**Pg**	**07 08 57.7**	**0.0**
GONE	**Gonen-Balikesi**	**1.44**	**311**	*e*Pn	**Pg**	**07 08 57.7**	**0.0**
ARMT	**Armutlu**	**1.47**	**353**	*e*PN	**Pb**	**07 08 57.7**	**+0.2**
ARMT	**Armutlu**	**1.47**	**353**	*e*Pn	**Pb**	**07 08 57.7**	**+0.2**
GPA	**Golpazari**	**1.50**	**38**	*e*PN	**Pg**	**07 08 58.5**	**-0.4**
GPA	**Golpazari**	**1.50**	**38**	*e*Pn	**Pg**	**07 08 58.5**	**-0.4**
GULT	**Gulveren**	**1.71**	**39**	*e*PN	**Pb**	**07 09 01.9**	**+0.2**
GULT	**Gulveren**	**1.71**	**39**	*e*Pn	**Pb**	**07 09 01.9**	**+0.2**
HRT	**Hereke**	**1.77**	**14**	*e*PN	**Pb**	**07 09 02.1**	**-0.4**
HRT	**Hereke**	**1.77**	**14**	*e*Pn	**Pb**	**07 09 02.2**	**-0.4**
SPNC	**Sapanca-Adapaz**	**1.83**	**30**	*e*PN	**Pb**	**07 09 02.9**	**-0.7**
SPNC	**Sapanca-Adapaz**	**1.83**	**30**	*e*Pn	**Pb**	**07 09 02.9**	**-0.7**
SVRH	**Sivrihisar-ESK**	**1.91**	**79**	*e*PN	**Pg**	**07 09 06.3**	**-0.3**
SVRH	**Sivrihisar-ESK**	**1.91**	**79**	*e*Pn	**Pg**	**07 09 06.3**	**-0.3**
ISK	**Istanbul-Kandi**	**1.96**	**359**	*e*PN	**Pb**	**07 09 04.5**	**-1.3**
ISK	**Istanbul-Kandi**	**1.96**	**359**	*e*Pn	**Pb**	**07 09 04.5**	**-1.3**
SILT	**Sile**	**2.09**	**11**	*e*PN	**Pb**	**07 09 07.2**	**-0.8**
SILT	**Sile**	**2.09**	**11**	*e*Pn	**Pb**	**07 09 07.2**	**-0.8**
KLYT	**Kilyos**	**2.15**	**359**	*e*PN	**Pn**	**07 09 07.2**	**+1.3**
KLYT	**Kilyos**	**2.15**	**359**	*e*Pn	**Pn**	**07 09 07.2**	**+1.3**

DDA ***22*** *07:10:09.4, 39.°10N×29.°06E, h7km, Ml3.6*
ISK ***22*** *07:10:09.2, 39.°07N×29.°06E, h5km, MD3.0*
CSEM ***22*** *07:10:10.3±0.1, 39.°08N×29.°06E, h2km, ML3.6, Error ellipse: s-maj=2.5km s-min=2.1km az=109.0*
ISC 22 07:10:09.3±0.9, 39.°08N±0.°02×29.°08E±0.°02, h17km±7km, n67, σ0$43/78, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**263**	P	**Pg**	**07 10 15.4**	**-0.2**
DEMI				S	**Sg**	**07 10 19.2**	**-0.7**
DEMI	**Demirci**	**0.28**	**263**	*i* P	**Pg**	**07 10 15.4**	**-0.2**
DEMI				*i* S	**Sg**	**07 10 19.2**	**-0.7**
GDZ	**Gediz**	**0.31**	**88**	P	**Pb**	**07 10 16.5**	**0.0**
GDZ				S	**Sg**	**07 10 21.3**	**+0.6**
GDZ	**Gediz**	**0.31**	**88**	*i* P	**Pb**	**07 10 16.5**	**0.0**
GDZ				*i* S	**Sg**	**07 10 21.3**	**+0.6**
TVSB	**Tavsanli**	**0.48**	**38**	*e*PG	**Pg**	**07 10 19.1**	**+0.2**
TVSB	**Tavsanli**	**0.48**	**38**	*e*Pg	**Pg**	**07 10 19.1**	**+0.2**
KULA	**Kula-Manisa**	**0.65**	**210**	*e*PG	**Pb**	**07 10 22.6**	**+0.3**
KULA				*e*SG	**Sb**	**07 10 31.5**	**+0.5**
KULA	**Kula-Manisa**	**0.65**	**210**	*e*Pg	**Pb**	**07 10 22.6**	**+0.3**
KULA				*e*Sg	**Sb**	**07 10 31.5**	**+0.5**
MANT	**Manisa**	**0.71**	**215**	P	**Pg**	**07 10 23.6**	**+0.2**
MANT				S	**Sb**	**07 10 33.0**	**0.0**
MANT	**Manisa**	**0.71**	**215**	*i* P	**Pg**	**07 10 23.6**	**+0.2**
MANT				*i* S	**Sb**	**07 10 33.0**	**0.0**
KHAL	**Karahalli**	**0.78**	**155**	P	**Pn**	**07 10 25.7**	**+0.1**
KHAL				S	**Sn**	**07 10 36.2**	**-0.7**
KHAL	**Karahalli**	**0.78**	**155**	*i* P	**Pn**	**07 10 25.7**	**+0.1**
KHAL				*i* S	**Sn**	**07 10 36.2**	**-0.7**
KHL	**Karahalli**	**0.83**	**155**	*e*PG	**Pn**	**07 10 26.4**	**+0.1**
KHL	**Karahalli**	**0.83**	**155**	*e*Pg	**Pn**	**07 10 26.4**	**+0.1**
ORLT	**Orhaneli**	**0.98**	**352**	*e*PG	**Pn**	**07 10 28.2**	**-0.1**
ORLT	**Orhaneli**	**0.98**	**352**	*e*Pg	**Pn**	**07 10 28.2**	**-0.1**
AKS	**Akhisar**	**1.01**	**259**	*e*PG	**Pg**	**07 10 29.0**	**+0.2**
AKS	**Akhisar**	**1.01**	**259**	*e*Pg	**Pg**	**07 10 29.0**	**+0.2**
BALB	**Balikesir**	**1.09**	**302**	*e*PG	**Pg**	**07 10 31.2**	**+0.8**
BALB	**Balikesir**	**1.09**	**302**	*e*Pg	**Pg**	**07 10 31.2**	**+0.8**
IGD	**Bursa**	**1.19**	**5**	*i* P	**Pn**	**07 10 30.9**	**-0.3**
IGD				*i* S	**Sg**	**07 10 47.8**	**0.0**
IZI	**Iznik**	**1.29**	**13**	*e*PN	**Pg**	**07 10 35.2**	**+0.9**
IZI	**Iznik**	**1.29**	**13**	*e*Pn	**Pg**	**07 10 35.2**	**+0.9**
MDNY	**Mudanya-Bursa**	**1.30**	**353**	*e*PN	**Pg**	**07 10 34.6**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.30**	**353**	*e*Pn	**Pg**	**07 10 34.6**	**+0.2**
KCTX	**Karacabey (Bur**	**1.31**	**335**	*e*PN	**Pg**	**07 10 35.0**	**+0.4**
KCTX	**Karacabey (Bur**	**1.31**	**335**	*e*Pn	**Pg**	**07 10 35.0**	**+0.4**
GEMT	**Gemlik**	**1.36**	**4**	*e*PN	**Pg**	**07 10 36.2**	**+0.7**
GEMT	**Gemlik**	**1.36**	**4**	*e*Pn	**Pg**	**07 10 36.2**	**+0.7**
ADVT	**Abdulvahap**	**1.45**	**20**	*e*PN	**Pg**	**07 10 37.0**	**-0.1**
ADVT	**Abdulvahap**	**1.45**	**20**	*e*Pn	**Pg**	**07 10 37.1**	**-0.1**
GONE	**Gonen-Balikesi**	**1.45**	**312**	*e*PN	**Pg**	**07 10 37.3**	**+0.1**
GONE	**Gonen-Balikesi**	**1.45**	**312**	*e*Pn	**Pg**	**07 10 37.3**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**1.46**	**220**	*e*PN	**Pg**	**07 10 37.4**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**1.46**	**220**	*e*Pn	**Pg**	**07 10 37.4**	**-0.2**
ARMT	**Armutlu**	**1.50**	**354**	*e*PN	**Pb**	**07 10 37.3**	**+0.7**
ARMT	**Armutlu**	**1.50**	**354**	*e*Pn	**Pb**	**07 10 37.3**	**+0.7**
GPA	**Golpazari**	**1.54**	**38**	*e*PN	**Pg**	**07 10 38.9**	**0.0**
GPA	**Golpazari**	**1.54**	**38**	*e*Pn	**Pg**	**07 10 38.9**	**0.0**
EDC	**Edincik**	**1.58**	**324**	*e*PN	**Pg**	**07 10 39.4**	**-0.3**
EDC	**Edincik**	**1.58**	**324**	*e*Pn	**Pg**	**07 10 39.4**	**-0.3**
DKL	**Dikili**	**1.69**	**270**	*e*PN	**Pb**	**07 10 40.7**	**+0.7**
DKL	**Dikili**	**1.69**	**270**	*e*Pn	**Pb**	**07 10 40.7**	**+0.7**
GULT	**Gulveren**	**1.75**	**39**	*e*PN	**Pg**	**07 10 42.7**	**-0.3**
GULT	**Gulveren**	**1.75**	**39**	*e*Pn	**Pg**	**07 10 42.7**	**-0.3**
SPNC	**Sapanca-Adapaz**	**1.86**	**30**	*e*PN	**Pb**	**07 10 43.3**	**+0.4**
SPNC	**Sapanca-Adapaz**	**1.86**	**30**	*e*Pn	**Pb**	**07 10 43.3**	**+0.4**
SVRH	**Sivrihisar-ESK**	**1.93**	**78**	*e*PN	**Pb**	**07 10 44.1**	**0.0**
SVRH	**Sivrihisar-ESK**	**1.93**	**78**	*e*Pn	**Pb**	**07 10 44.1**	**0.0**
ISK	**Istanbul-Kandi**	**1.99**	**360**	*e*PN	**Pb**	**07 10 45.2**	**+0.2**
ISK	**Istanbul-Kandi**	**1.99**	**360**	*e*Pn	**Pb**	**07 10 45.2**	**+0.2**
BGKT	**Bogazkoy**	**2.12**	**354**	*e*PN	**Pb**	**07 10 47.6**	**+0.4**
BGKT	**Bogazkoy**	**2.12**	**354**	*e*Pn	**Pb**	**07 10 47.6**	**+0.4**
SILT	**Sile**	**2.12**	**12**	*e*PN	**Pb**	**07 10 47.0**	**-0.2**
SILT	**Sile**	**2.12**	**12**	*e*Pn	**Pb**	**07 10 47.0**	**-0.2**
MDUB	**Mudurnu**	**2.15**	**49**	*e*PN	**Pb**	**07 10 47.8**	**+0.1**
MDUB	**Mudurnu**	**2.15**	**49**	*e*Pn	**Pb**	**07 10 47.8**	**+0.1**
KLYT	**Kilyos**	**2.17**	**359**	*e*PN	**Pb**	**07 10 48.0**	**-0.2**
KLYT	**Kilyos**	**2.17**	**359**	*e*Pn	**Pb**	**07 10 48.0**	**-0.2**
RKY	**Sarkoy-Tekirda**	**2.17**	**318**	*e*PN	**Pb**	**07 10 48.1**	**-0.1**
RKY	**Sarkoy-Tekirda**	**2.17**	**318**	*e*Pn	**Pb**	**07 10 48.1**	**-0.1**
KIZT	**Kizilcal**	**2.19**	**94**	*e*PN	**Pb**	**07 10 48.6**	**+0.1**
KIZT	**Kizilcal**	**2.19**	**94**	*e*Pn	**Pb**	**07 10 48.6**	**+0.1**
CTKS	**Kestanelik-??a**	**2.20**	**349**	*e*PN	**Pb**	**07 10 48.6**	**0.0**
CTKS	**Kestanelik-??a**	**2.20**	**349**	*e*Pn	**Pb**	**07 10 48.6**	**0.0**
CTYL	**Yalikoy Yolu**	**2.47**	**346**	*e*PN	**Pb**	**07 10 52.1**	**-1.1**
CTYL	**Yalikoy Yolu**	**2.47**	**346**	*e*Pn	**Pb**	**07 10 52.1**	**-1.1**

IDC ***22*** *07:21:35.0±0.7, 43.°48N×126.°97W, h0km, mb4.0/18, mb1 4.2/24, mb1mx4.1/50, mbtmp4.0/24, ML3.8/6, MS3.8/33, Ms1 3.8/33, ms1mx3.8/46, Error ellipse: s-maj=17.7km s-min=9.1km az=38.0*
ISCJB ***22*** *07:21:37.2±0.2, 43.°53N±0.°02×126.°97W±0.°03, h14km, mb4.4/72, MS3.8/30, Error ellipse: s-maj=3.2km s-min=2.0km az=142.7*
NEIC ***22*** *07:21:38.2±0.2, 43.°53N×127.°03W, h10km, mb4.6/76, Error ellipse: s-maj=4.2km s-min=2.4km az=48.0*
NEIC Felt at Florence, Gresham, Medford and Salem. Also felt at Crescent City, California.
GCMT ***22*** *07:21:38.2±0.3, 43.°30N×127.°45W, h20km±1km, MW4.9/88, Moment Tensor Solution. s27,c31; s88,c126; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-0.11±.11; $M_{\theta\theta}$-1.95±.09; $M_{\phi\phi}$2.06±.09; $M_{r\theta}$-0.85±.21; $M_{\theta\phi}$-1.72±.08; $M_{\phi r}$0.26±.16; Best double couple: $M_0$2.78900×10^{16} NP1:ϕ_s115.00000°, δ87.00000°, λ-161.00000°. NP2: ϕ_s24.00000°, δ72.00000°, λ-3.00000°. Principal axes: T 2.7980, Plg11.0000°, Azm248.0000°; N -0.0220, Plg71.0000°, Azm124.0000°; P -2.7790, Plg15.0000°, Azm341.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
ISC 22 07:21:37.7±0.5, 43.°45N±0.°06×127.°12W±0.°06, h14km, n468, σ1$32/454, mb4.6/73, MS3.9/30, Off coast of Oregon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I03D	**Drain, OR**	**2.75**	**83**	P	**Pn**	**07 22 18.5**	**-2.9**
	baz=268,SNR=1000						
DBO	**Dodson Butte**	**2.85**	**95**	*e*Pn	**Pn**	**07 22 19.9**	**-2.9**
L02D	**Cave Junction,**	**2.89**	**115**	P	**Pn**	**07 22 21.2**	**-2.2**
	baz=300,SNR=6.3						
COR	**Corvallis**	**2.98**	**66**	*e*Pn	**Pn**	**07 22 22.6**	**-1.9**
HUMO	**Hull Mountain**	**3.17**	**104**	*e*Pn	**Pn**	**07 22 24.2**	**-2.9**
HUMO				*e*Sn	**Sn**	**07 23 03.7**	**-1.0**
G03D	**McMinnville, O**	**3.28**	**56**	P	**Pn**	**07 22 27.4**	**-1.2**
	baz=239,SNR=818						
I04A	**Tendick Farm,**	**3.44**	**83**	P	**Pn**	**07 22 29.4**	**-1.4**
	baz=267,SNR=512						
JCC	**Jacoby Creek,**	**3.49**	**138**	*e*Pn	**Pn**	**07 22 33.9**	**+2.4**
F03A	**Seaside**	**3.55**	**44**	*e*Pn	**Pn**	**07 22 30.9**	**-1.5**
KHMM	**Horse Mountain**	**3.60**	**134**	*e*Pn	**Pn**	**07 22 32.5**	**-0.6**
YBH	**Yreka Blue Hor**	**3.68**	**116**	Pn	**Pn**	**07 22 32.5**	**-1.8**
	6.9nm,0.3s,baz=308,slow=12,SNR=36						
YBH				Sn	**Sn**	**07 23 12.9**	**-4.6**
	1.6nm,0.3s,baz=79,slow=24,SNR=5.6						
YBH	**Yreka Blue Hor**	**3.68**	**116**	*e*Pn	**Pn**	**07 22 32.6**	**-1.7**
YBH				*e*Sn	**Sn**	**07 23 16.1**	**-1.3**
G04A	**Mulino**	**3.77**	**61**	*e*Pn	**Pn**	**07 22 34.6**	**-0.7**
WIFE	**Three Sisters-**	**3.89**	**79**	*e*Pn	**Pn**	**07 22 36.0**	**-1.2**
F04D	**Rainier, OR**	**3.94**	**47**	P	**Pn**	**07 22 37.0**	**-0.6**
	baz=230,SNR=26						
E03A	**Lebam**	**4.00**	**38**	*e*Pn	**Pn**	**07 22 36.9**	**-1.5**
K04D	**Chiloquin, OR**	**4.02**	**100**	P	**Pn**	**07 22 37.1**	**-1.9**
	baz=285,SNR=36						
N02D	**Trinity Center**	**4.11**	**126**	P	**Pn**	**07 22 37.9**	**-2.2**
	baz=310						
F04A	**Amboy**	**4.17**	**52**	*e*Pn	**Pn**	**07 22 40.5**	**-0.5**
M04C	**Macdoel**	**4.24**	**111**	P	**Pn**	**07 22 41.1**	**-0.9**
	baz=296,SNR=12						
I05D	**Terrebonne, OR**	**4.27**	**76**	P	**Pn**	**07 22 40.7**	**-1.6**
	baz=261,SNR=96						
J05D	**Fort Rock, OR**	**4.29**	**90**	P	**Pn**	**07 22 40.8**	**-1.9**
	baz=275,SNR=52						
WDC	**Whiskeytown Da**	**4.45**	**128**	*e*Pn	**Pn**	**07 22 45.2**	**+0.4**
SEPW	**September Lobe**	**4.46**	**50**	*e*Pn	**Pn**	**07 22 46.0**	**+0.9**
G05D	**Wamic, OR**	**4.53**	**65**	P	**Pn**	**07 22 45.2**	**-0.8**
	baz=249,SNR=126						
NLWA	**Neilton Lookou**	**4.56**	**29**	*e*Pn	**Pn**	**07 22 45.3**	**-1.0**
KCPM	**Cahto Peak**	**4.60**	**144**	*e*Pn	**Pn**	**07 22 50.2**	**+3.3**
K05A	**Summer Lake**	**4.62**	**97**	*e*Pn	**Pn**	**07 22 45.4**	**-1.9**
G06A	**Carlson Farm,**	**4.98**	**67**	*e*Pn	**Pn**	**07 22 50.9**	**-1.2**
LON	**Longmire**	**5.00**	**47**	*e*Pn	**Pn**	**07 22 52.2**	**-0.2**
OBSR	**Observation Ro**	**5.10**	**46**	*e*Pn	**Pn**	**07 22 53.5**	**-0.3**
GNW	**Green Mountain**	**5.11**	**35**	*e*Pn	**Pn**	**07 22 52.8**	**-0.9**
GNW				*e*Sn	**Sn**	**07 23 51.7**	**-0.7**
C04A	**Brinnon**	**5.17**	**33**	*e*Pn	**Pn**	**07 22 54.2**	**-0.4**
C04A				*e*Sn	**Sn**	**07 23 54.4**	**+0.5**
D05A	**Enumclaw**	**5.20**	**42**	*e*Pn	**Pn**	**07 22 55.2**	**+0.2**
MOD	**Modoc Plateau**	**5.26**	**105**	*e*Pn	**Pn**	**07 22 56.5**	**+0.5**
B04A	**Port Angeles**	**5.26**	**27**	*e*Pn	**Pn**	**07 22 55.7**	**-0.1**
HOPS	**Hopland Field**	**5.39**	**144**	*e*Pn	**Pn**	**07 22 57.8**	**+0.1**
BLN	**Blyn Mountain**	**5.41**	**31**	*e*Pn	**Pn**	**07 22 58.2**	**+0.3**
C05A	**Tolt Reservoir**	**5.71**	**40**	*e*Pn	**Pn**	**07 23 02.0**	**0.0**
ORV	**Oroville**	**5.74**	**131**	*e*Pn	**Pn**	**07 23 03.9**	**+1.5**
PGC	**Sidney**	**5.80**	**25**	*e*Pn	**Pn**	**07 23 03.2**	**0.0**
LTY	**Liberty**	**5.93**	**48**	*e*Pn	**Pn**	**07 23 04.4**	**-0.8**
B05A	**Bryant**	**5.96**	**34**	P	**Pn**	**07 23 05.0**	**-0.4**
	baz=218						
JCW	**Jim Creek**	**5.97**	**36**	*e*Pn	**Pn**	**07 23 05.4**	**-0.2**
E07A	**Sunnyside**	**6.02**	**56**	*e*Pn	**Pn**	**07 23 06.0**	**-0.3**
A04D	**Lummi Island**	**6.10**	**29**	P	**Pn**	**07 23 07.2**	**-0.2**
	baz=212						
RSW	**Rattlesnake Hi**	**6.10**	**59**	*e*Pn	**Pn**	**07 23 07.1**	**-0.4**
G08A	**Pilot Rock**	**6.13**	**70**	*e*Pn	**Pn**	**07 23 06.9**	**-1.0**
HAWA	**Hanford**	**6.14**	**59**	*e*Pn	**Pn**	**07 23 07.3**	**-0.6**
GPW	**Glacier Peak**	**6.27**	**40**	*e*Pn	**Pn**	**07 23 10.0**	**+0.1**
WVOR	**Wild Horse Val**	**6.31**	**96**	*e*Pn	**Pn**	**07 23 07.8**	**-2.5**
RPW	**Rockport**	**6.35**	**36**	*e*Pn	**Pn**	**07 23 10.6**	**-0.2**
AFDM	**Forest Hills D**	**6.46**	**132**	*e*Pn	**Pn**	**07 23 13.1**	**+0.8**
D08A	**Wollman Farm,**	**6.82**	**55**	*e*Pn	**Pn**	**07 23 17.3**	**0.0**
PAHR	**Pah Rah Range**	**6.90**	**120**	*e*Pn	**Pn**	**07 23 20.8**	**+2.2**
E09A	**Wood Farm, Sta**	**7.06**	**61**	*e*Pn	**Pn**	**07 23 19.2**	**-1.4**
BMO	**Blue Mountains**	**7.20**	**75**	*e*Pn	**Pn**	**07 23 21.1**	**-1.5**
B08A	**Colville Reser**	**7.32**	**45**	*e*Pn	**Pn**	**07 23 23.6**	**-0.5**
CMB	**Columbia Colle**	**7.44**	**134**	*e*Pn	**Pn**	**07 23 28.0**	**+2.1**
F10A	**Beach Ranch, E**	**7.49**	**67**	*e*Pn	**Pn**	**07 23 25.3**	**-1.2**
C09A	**Chrisman Ranch**	**7.58**	**52**	*e*Pn	**Pn**	**07 23 27.2**	**-0.4**
WAKR	**Walker**	**7.62**	**128**	*e*Pn	**Pn**	**07 23 30.5**	**+2.0**
PNT	**Penticton**	**7.83**	**39**	*e*Pn	**Pn**	**07 23 30.8**	**-0.4**
SAO	**San Andreas Ge**	**7.96**	**145**	*e*Pn	**Pn**	**07 23 34.2**	**+1.2**
MFID	**Camas Ranch**	**8.22**	**86**	*e*Pn	**Pn**	**07 23 36.4**	**-0.3**
NV01	**Mina Array Sit**	**8.34**	**124**	*e*Pn	**Pn**	**07 23 40.0**	**+1.6**
NVAR	**Mina Array Bea**	**8.34**	**124**	Pn	**Pn**	**07 23 38.9**	**+0.5**
	0.3nm,0.3s,baz=299,slow=14,SNR=7.0						
NVAR				LR	LR	07 26 30.1	
	comp=Z,262nm,22.0s,baz=309,slow=35						
NV11	**Mina Array Sit**	**8.43**	**123**	*e*Pn	**Pn**	**07 23 43.5**	**+4.0**
NEW	**Newport**	**8.48**	**52**	Pn	**Pn**	**07 23 39.2**	**-0.8**
	2.2nm,0.3s,baz=212,slow=10,SNR=19						
NEW				LR	LR	07 26 58.6	
	comp=Z,2µm,20.7s,baz=241,slow=39						
NEW	**Newport**	**8.48**	**52**	P	**Pn**	**07 23 39.4**	**-0.6**
	baz=239						
NEW	**Newport**	**8.48**	**52**	*e*Pn	**Pn**	**07 23 38.8**	**-1.2**
BBB	**Bella Bella**	**8.77**	**356**	Pn	**Pn**	**07 23 45.6**	**+1.7**
	0.9nm,0.3s,baz=185,slow=11,SNR=24						
BBB				Sn	**Sn**	**07 25 20.6**	**-1.9**
	0.2nm,0.3s,baz=156,slow=18,SNR=4.3						
BBB				LR	LR	07 26 30.5	
	comp=Z,895nm,19.3s,baz=184,slow=34						
ELK	**Elko**	**9.24**	**103**	*e*Pn	**Pn**	**07 23 51.9**	**+1.3**
HLID	**Hailey**	**9.24**	**85**	P	**Pn**	**07 23 51.7**	**+1.1**
	baz=274						
HLID	**Hailey**	**9.24**	**85**	*e*Pn	**Pn**	**07 23 51.8**	**+1.2**
BSMT	**Bassoo Peak**	**9.69**	**59**	*e*Pn	**Pn**	**07 23 57.2**	**+0.4**
VES	**Vestal, Richgr**	**9.80**	**138**	P	**Pn**	**07 23 58.7**	**+0.5**
	baz=324						
CWC	**Cottonwood Cre**	**9.85**	**132**	P	**Pn**	**07

baz=297
S22A 4UR Ranch, Cre 16.42 103 ePn Pn 07 25 28.2 +0.3
16nm,1.4s
ISCO Idaho Springs 16.48 95 P Pn 07 25 28.0 -0.8
baz=290
ISCO Idaho Springs 16.48 95 ePn Pn 07 25 26.4 -2.3
22nm,1.3s
RSSD Black Hills 16.68 80 P P 07 25 33.7 +0.2
baz=276
RSSD Black Hills 16.68 80 ePn P 07 25 34.2 +0.7
39nm,1.5s
DGMT Dagmar 16.69 65 ePn Pn 07 25 28.2 -2.8
160nm,1.7s
SKAG Skagway 16.81 345 ePn Pn 07 25 33.1 +0.8
90nm,1.8s
I25A Rochford 16.91 80 P P 07 25 36.4 +0.5
baz=276
H25A Fruitdale 16.95 78 P P 07 25 37.7 +1.4
baz=274
TUC Tucson 16.99 125 P P 07 25 37.5 +0.7
baz=316
TUC Tucson 16.99 125 ePn Pn 07 25 34.9 -0.1
30nm,1.7s
G25A Newell 17.04 76 P Pn 07 25 35.0 -0.5
baz=273
E25A Miller Ranch, 17.04 71 P Pn 07 25 35.0 -0.6
baz=268
Q24A Divide 17.12 98 P Pn 07 25 36.5 -0.3
baz=293
Q24A Divide 17.12 98 eP P 07 25 41.1 +2.7
D25A Fairfield 17.13 69 P Pn 07 25 36.7 +0.1
baz=266
SDCO Great Sand Dun 17.36 102 P Pn 07 25 39.1 -0.6
baz=296
SDCO Great Sand Dun 17.36 102 ePn Pn 07 25 38.6 -1.1
38nm,1.4s
J26A Sides Ranch, S 17.47 82 P P 07 25 43.0 +0.9
baz=279
F26A Lodgepole 17.55 74 P Pn 07 25 40.5 -1.3
baz=271
G26A Maurine 17.61 75 P Pn 07 25 42.5 -0.2
baz=273
E26A Carlson Angus 17.69 72 P Pn 07 25 42.3 -1.3
baz=269
D26A Manning 17.73 70 P Pn 07 25 43.2 -0.8
baz=268
LAZ Ladron 17.95 114 ePn P 07 25 48.3 +0.8
B26A Jensen Ranch, 17.97 65 P Pn 07 25 46.7 -0.3
baz=264
H27A Howes 18.03 78 P P 07 25 49.2 +1.0
baz=275
G27A Dupree 18.08 75 P Pn 07 25 46.8 -1.6
baz=273
ANMO Albuquerque 18.09 111 P Pn 07 25 47.2 -1.5
0.1nm,0.3s,baz=304,slow=13,SNR=15
ANMO LR LR 07 32 29.6
comp=Z,225nm,20.3s,baz=302,slow=36
ANMO Albuquerque 18.09 111 P Pn 07 25 48.8 +0.1
baz=305
ANMO Albuquerque 18.09 111 ePn Pn 07 25 48.4 -0.3
16nm,1.3s
E27A Carson 18.31 72 P P 07 25 53.0 +1.7
baz=270
LPM Los Pinos Moun 18.34 113 ePn Pn 07 25 48.3 -3.5
T25A Trinidad 18.41 102 P Pn 07 25 52.8 +0.2
baz=297
T25A Trinidad 18.41 102 ePn Pn 07 25 52.9 +0.2
36nm,1.5s
BNM Barren Site 18.43 113 eP P 07 25 53.4 +0.4
319A Douglas 18.56 125 eP Pn 07 25 58.4 +4.0
37nm,1.6s
B27A Peters Farms, 18.62 66 P Pn 07 25 54.9 0.0
baz=264
121A Cookes Peak, D 18.69 119 P Pn 07 25 57.5 +1.5
baz=312
121A Cookes Peak, D 18.69 119 eP Pn 07 25 57.8 +1.8
23nm,1.4s
I28A Midland 18.75 79 P Pn 07 25 57.0 +0.5
baz=278
E28A Huff 18.91 71 P P 07 25 57.4 -0.5
baz=270
KSCO Kaye Shedlock' 18.92 95 P Pn 07 25 58.9 +0.1
baz=292
KSCO Kaye Shedlock' 18.92 95 eP Pn 07 25 59.4 +0.6
B28A Dugan Ranch, T 19.22 66 P Pn 07 26 02.2 0.0
baz=265
A28A Rude Farm, Bot 19.33 64 P Pn 07 26 03.5 0.0
baz=264
E29A Napoleon 19.64 71 P P 07 26 06.5 +0.7
baz=271
D29A Pettibone, Tap 19.67 70 P Pn 07 26 07.1 -0.5
baz=270
MDND Maddock 19.69 67 P Pn 07 26 07.4 -0.4
baz=267
MDND Maddock 19.69 67 eP Pn 07 26 08.1 +0.3
70nm,1.2s
FFC Flin Flon 19.84 47 eP P 07 26 08.6 +0.6
37nm,1.1s
B29A Wagenman Farm, 19.89 66 P Pn 07 26 09.6 -0.6
baz=266
A29A Manning Farm, 20.01 64 P P 07 26 10.4 +0.5
baz=265
J30A Dallas 20.05 81 P P 07 26 10.6 +0.2
baz=280
G30A Faulkton 20.06 75 P P 07 26 10.2 -0.2
baz=275
K30A Basset 20.08 83 P P 07 26 11.2 +0.5
baz=282
F30A Leola 20.09 73 P P 07 26 11.0 +0.2
baz=274
E30A Jud 20.14 71 P P 07 26 12.1 +0.7
baz=272
D30A Buchanan 20.24 70 P P 07 26 13.1 +0.7
baz=270
BMRM Bremner River 20.44 335 eP Pn 07 26 19.5 +3.0
25nm,1.3s
C30A Mose, Pekin 20.44 68 P P 07 26 14.8 +0.3
baz=269
YKA Yellowknife Ar 20.44 17 P P 07 26 14.3 0.0
2.8nm,0.6s,baz=207,slow=11,SNR=16
YKA LR LR 07 33 15.8
comp=Z,8.2nm,21.7s,baz=180,slow=34
YKB5 Yellowknife Ar 20.44 17 eP P 07 26 14.7 +0.3
YKW3 Yellowknife Ar 20.50 17 eP P 07 26 16.4 +1.4
17nm,1.0s
B30A Myrvik Farm, E 20.57 66 P P 07 26 16.5 +0.5
baz=267
H31A Wolsey 20.60 77 P P 07 26 16.2 -0.1
baz=277
A30A Hoffart Farm, 20.62 64 P P 07 26 16.9 +0.4
baz=266
F31A Hecla 20.63 73 P P 07 26 16.9 +0.3
baz=274
G31A Conde 20.71 75 P P 07 26 17.3 -0.2
baz=276
K31A O'Neill 20.71 82 P P 07 26 17.4 -0.1
baz=282
MNTX Cornudas Mount 20.78 117 P P 07 26 19.4 +1.1
baz=311
MNTX Cornudas Mount 20.78 117 eP P 07 26 19.8 +1.5
32nm,2.0s
E31A Nome 20.85 71 P P 07 26 19.2 +0.3
baz=272
M31A Lambtecht Ranc 20.85 86 P P 07 26 19.4 +0.3
baz=286
DIV Divide 20.93 334 eP P 07 26 21.3 +1.5
23nm,1.0s
O31A Woolen Ranch, 20.94 89 P P 07 26 19.6 -0.4
baz=288
C31A Landman Farms, 20.94 68 P P 07 26 20.1 +0.2
baz=269
D31A Mcclaflin, Tow 20.95 70 P P 07 26 20.4 +0.4
baz=271
B31A Greenbush Farm 21.02 66 P P 07 26 21.2 +0.4
baz=268
CBKS Cedar Bluff 21.09 93 P P 07 26 22.0 +0.3
baz=292
CBKS Cedar Bluff 21.09 93 eP P 07 26 23.2 +1.5
60nm,1.4s
MSTX Muleshoe 21.16 108 P P 07 26 23.6 +1.1
baz=304
MSTX Muleshoe 21.16 108 eP P 07 26 24.0 +1.5
41nm,1.8s
J32A Parkston 21.22 80 P P 07 26 22.4 -0.6
baz=281
KLU Klutina 21.25 335 eP P 07 26 24.8 +1.6
27nm,1.0s
H32A Carlson Farm, 21.34 77 P P 07 26 24.4 +0.2
baz=278
I32A Karley and Nic 21.39 78 P P 07 26 24.7 -0.1
baz=279
E32A Braaten, Kindr 21.41 71 P P 07 26 24.8 -0.1
baz=273
F32A Veblen 21.41 73 P P 07 26 25.0 -0.1
baz=274
AMTX Amarillo 21.44 105 eP P 07 26 27.1 +1.6
23nm,1.0s
SEW Seward 21.48 329 eP P 07 26 26.5 +1.0
41nm,1.2s
P32A Huiting Farm, 21.64 90 P P 07 26 27.3 -0.2
baz=290
C32A Crookston 21.76 68 P P 07 26 29.0 +0.3
baz=270
B32A Ashes, Strandq 21.76 66 P P 07 26 28.7 0.0
baz=268
MENT Mentasta 21.78 339 eP P 07 26 30.0 +1.1
38nm,1.2s
MENT eS S 07 30 28.2 -1.0
A32A Rocking H Ranc 21.81 65 P P 07 26 29.3 0.0
baz=267
DAWY Dawson 21.82 345 eP P 07 26 29.9 +0.7
37nm,1.2s
BRLK Bradley Lake 21.82 327 eP P 07 26 30.1 +0.8
36nm,1.1s
I33A Coleman 21.86 78 P P 07 26 29.6 -0.3
baz=279
J33A Davis 21.86 80 P P 07 26 29.8 -0.1
baz=281
Q32A Meitler Ranch, 21.89 92 P P 07 26 30.0 -0.2
baz=291
SCM Sheep Creek Mo 21.95 334 eP P 07 26 32.1 +1.4
57nm,1.1s
G33A Ortonville 21.96 75 P P 07 26 31.0 +0.1
baz=277
R32A Long Quarter, 21.99 93 P P 07 26 31.1 -0.2
baz=293
F33A 5 Mile Ranch, 22.00 73 P P 07 26 31.9 +0.6
baz=275
ECSD EROS Data Cent 22.04 79 P P 07 26 31.8 0.0
baz=280
ECSD EROS Data Cent 22.04 79 eP P 07 26 31.9 +0.1
15nm,1.0s
E33A Westby DABS, E 22.15 71 P P 07 26 33.0 0.0
baz=274
D33A AnnSam, Waubun 22.23 70 P P 07 26 33.4 -0.4
baz=272
O33A Hebron 22.23 89 P P 07 26 33.3 -0.6
baz=289
SML Sawmill 22.26 333 eP P 07 26 34.9 +0.9
40nm,1.1s
C33A Trail 22.27 68 P P 07 26 33.5 -0.7
baz=271
PAX Paxson 22.27 338 eP P 07 26 35.9 +1.7
20nm,1.4s
ULM Lac du Bonnet 22.31 61 P P 07 26 34.0 -0.6
22nm,1.1s,baz=272,slow=11,SNR=16
ULM LR LR 07 35 31.9
comp=Z,585nm,20.1s,baz=254,slow=38
ULM Lac du Bonnet 22.31 61 eP P 07 26 34.4 -0.2
45nm,1.1s
P33A Williams Farm, 22.36 90 P P 07 26 35.2 -0.1
baz=290
PMR Palmer 22.37 332 eP P 07 26 35.0 -0.1
68nm,1.8s
B33A Robert and Kas 22.39 67 P P 07 26 35.3 -0.2
baz=270
Q33A Connelly Farm, 22.41 91 P P 07 26 35.4 -0.5
baz=291
DOT Dot Lake 22.46 340 eP P 07 26 37.2 +1.0
24nm,1.1s
H34A Spellman Lake, 22.49 76 P P 07 26 36.4 -0.2
baz=278
G34A Benson 22.52 74 P P 07 26 36.8 -0.1
baz=277
K34A Le Mars 22.62 81 P P 07 26 37.3 -0.7
baz=283
D34A Park Rapids 22.68 70 P P 07 26 37.9 -0.6
baz=273
F34A Alexandria 22.72 73 P P 07 26 39.1 0.0
baz=276
E34A Wadena 22.73 71 P P 07 26 38.4 -0.7
baz=274
N34A Lincoln 22.79 86 P P 07 26 40.1 +0.3
baz=287
EGAK Eagle 22.79 344 eP P 07 26 40.5 +0.9
7.2nm,0.9s
S33A Kaszmaul Farm, 22.83 95 P P 07 26 39.7 -0.6
baz=294
O34A Beatrice 22.85 88 P P 07 26 40.5 0.0
baz=288
V32A Arapaho 22.90 100 P P 07 26 41.4 +0.4
baz=299
P34A Walnut Farm, R 22.96 89 P P 07 26 41.1 -0.4
baz=290
B34A Aery, Baudette 23.02 66 P P 07 26 41.1 -1.0
baz=270
W32A Sentinel 23.04 102 P P 07 26 42.5 0.0
baz=300
R34A Isabella, Hill 23.10 93 P P 07 26 43.0 0.0
baz=293
H35A Sunnyside Ranc 23.16 76 P P 07 26 43.8 +0.2
baz=278
SPU Mount Spurr 23.16 329 eP P 07 26 44.5 +1.1
F35A Swanville 23.19 73 P P 07 26 43.8 -0.1
baz=276
M35A Neola 23.20 84 P P 07 26 43.2 -0.8
baz=286
U33A Lingo Farm, Me 23.24 98 P P 07 26 44.1 -0.4
baz=297
KSU1 Kansas State U 23.27 90 P P 07 26 45.3 +0.6
baz=291
KSU1 Kansas State U 23.27 90 eP P 07 26 46.1 +1.4
68nm,1.5s
G35A Watkins 23.33 74 P P 07 26 45.3 0.0
baz=278
V33A Lossen Ranch, 23.39 99 P P 07 26 45.8 -0.2
baz=298
N35A Tabor 23.41 85 P P 07 26 46.5 +0.4
baz=287
TX31 Lajitas Ar. Si 23.45 119 eP P 07 26 48.3 +1.5
TXAR Lajitas Array 23.45 119 P P 07 26 47.0 +0.3
1.3nm,0.8s,baz=297,slow=8.0,SNR=20
TXAR PcP PcP 07 30 31.8 -0.9
0.3nm,0.8s,baz=326,slow=1.9,SNR=3.3
D35A Remer 23.45 70 P P 07 26 45.9 -0.7
baz=273
C35A Jirik Farms, M 23.48 68 P P 07 26 45.7 -1.0
baz=272
WMOK Wichita Mounta 23.56 102 P P 07 26 47.5 -0.2
baz=300
WMOK Wichita Mounta 23.56 102 eP P 07 26 48.0 +0.3
22nm,1.0s
RND Reindeer 23.59 335 eP P 07 26 48.8 +1.0
17nm,1.2s
B35A Bob, Littlefor 23.63 66 P P 07 26 47.4 -0.9
baz=271
T34A McClaskey Farm 23.65 96 P P 07 26 47.9 -0.7
baz=295
U34A Anderson Ranch 23.66 97 eP P 07 26 48.9 +0.3
29nm,1.1s
LPIG La Paz 23.74 139 LR LR 07 35 19.8
comp=Z,316nm,20.1s,baz=311,slow=35
J36A Seneca 1, Swea 23.74 79 P P 07 26 48.7 -0.7
baz=282
K36A Gilmore City 23.81 81 P P 07 26 49.4 -0.7
baz=283
G36A St. Michael 23.84 74 P P 07 26 50.6 +0.4
baz=278
MCK McKinley 23.86 336 eP P 07 26 51.2 +0.9
18nm,1.2s
X33A Lawton 23.86 102 P P 07 26 50.7 +0.1
baz=301
F36A Milaca 23.92 72 P P 07 26 51.5 +0.5
baz=276
V34A Guthrie 23.94 98 P P 07 26 51.0 -0.4
baz=298
V34A Guthrie 23.94 98 eP P 07 26 51.5 +0.2
21nm,0.9s
HPIG 23.95 126 eP P 07 26 53.1 +1.4
16nm,1.4s
S35A Otter Creek Ra 24.01 93 P P 07 26 51.6 -0.4
baz=294
W34A Bridge Creek, 24.04 100 eP P 07 26 53.1 +0.8
27nm,1.1s
E36A McGregor 24.04 71 P P 07 26 52.5 +0.3
baz=275
Y33A Hilltop Ranch, 24.05 103 P P 07 26 52.1 -0.3
baz=302
D36A Goodland 24.05 69 P P 07 26 52.2 -0.1
baz=274
TRF Thorofare Moun 24.07 334 eP P 07 26 53.0 +0.5
50nm,1.6s
IL1 Eielson Array 24.09 339 eP P 07 26 51.5 -1.0
ILAR Eielson Array 24.09 339 P P 07 26 52.6 +0.2
7.5nm,0.9s,baz=153,slow=8.4,SNR=87
ILAR PcP PcP 07 30 32.9 -0.4
0.5nm,0.6s,baz=176,slow=1.8,SNR=8.6
ILAR LR LR 07 34 43.2
comp=Z,344nm,21.9s,baz=151,slow=33
ILB Eielson Array 24.09 339 eP P 07 26 52.7 +0.2
WRH Wood River Hil 24.18 338 eP P 07 26 54.0 +0.7
33nm,1.3s
T35A Sooner Cattle 24.19 95 P P 07 26 53.4 -0.2
baz=296
C36A Pine Crest Far 24.25 68 P P 07 26 54.3 +0.2
baz=273
I37A Lemond, Waseca 24.28 77 P P 07 26 54.5 +0.1
baz=281
X34A Smith Ranch, M 24.31 101 P P 07 26 56.4 +1.7
baz=300
PPLA Purkeypile 24.31 332 eP P 07 26 55.2 +0.5
35nm,0.9s
KTH Kantishna Hill 24.34 334 eP P 07 26 55.4 +0.5
11nm,1.0s
BWN Browne 24.34 336 eP P 07 26 57.4 +2.6
52nm,1.2s
COLA College 24.43 339 eP P 07 26 56.5 +1.0
9.3nm,0.9s
L37A Phoenix Point, 24.43 82 P P 07 26 55.2 -0.6
baz=285
SPMN Marine on St. 24.50 74 P P 07 26 57.3 +0.8
baz=278
SPMN Marine on St. 24.50 74 eP P 07 26 58.0 +1.6
67nm,1.4s
D37A Cotton 24.56 69 P P 07 26 57.5 +0.6
baz=274
133A Hamilton Ranch 24.60 107 P P 07 26 57.3 -0.1
baz=305
E37A Wrenshall 24.63 71 P P 07 26 58.0 +0.5
baz=276
CAST Castle Rocks 24.63 333 eP P 07 26 57.5 +0.1
7.1nm,1.0s
C37A Embarrass 24.69 68 P P 07 26 57.3 -0.8
baz=273
W35A Tecumseh 24.73 99 P P 07 26 59.3 +0.8
baz=299
BPAW Bear Paw Mtn. 24.75 335 eP P 07 26 58.2 -0.3
14nm,1.0s
233A Rising Star 24.95 108 P P 07 27 01.1 +0.6
baz=306
K38A Parkersburg 25.02 80 P P 07 27 03.0 +1.9
baz=284
X35A Drake 25.02 101 P P 07 27 01.7 +0.5
baz=300
M38A Pleasantville 25.02 83 P P 07 27 02.2 +1.1
baz=286
I38A Scanlan Farm, 25.03 77 P P 07 27 01.8 +0.6
baz=281
V36A Jenks 25.10 97 P P 07 27 02.9 +1.0
baz=298
EYMN Ely 25.14 67 P P 07 27 02.8 +0.7
baz=273
EYMN Ely 25.14 67 eP P 07 27 03.5 +1.3
56nm,1.4s
INK Inuvik 25.15 354 P P 07 27 01.7 -0.2
6.9nm,0.9s,baz=163,slow=10,SNR=9.1
INK LR LR 07 36 44.9
comp=Z,459nm,18.4s,baz=159,slow=36
INK Inuvik 25.15 354 eP P 07 27 02.4 +0.4
22nm,1.3s
TUL1 Leonard 25.15 97 P P 07 27 03.4 +1.0
baz=297
TUL1 Leonard 25.15 97 eP P 07 27 04.0 +1.6
18nm,1.1s
FYU Fort Yukon 25.19 343 eP P 07 27 04.4 +2.0
53nm,1.3s
W36A Wetumka 25.20 99 P P 07 27 03.7 +0.9
baz=299
134A White-Moore Ra 25.20 106 P P 07 27 03.9 +1.0
baz=304
JCT Junction City 25.25 112 P P 07 27 03.9 +0.6
baz=309
JCT Junction City 25.25 112 eP P 07 27 04.1 +0.8
20nm,1.4s
T37A Cheneyville 18 25.26 93 P P 07 27 04.1 +0.7
baz=295
333A Richland Sprin 25.29 109 P P 07 27 03.2 -0.5
baz=307
P38A Dawn 25.33 87 P P 07 27 06.2 +2.2
baz=290
MLY Manley 25.35 337 eP P 07 27 04.4 +0.4
28nm,1.1s
X36A Centrahoma 25.38 100 P P 07 27 03.8 -0.6
baz=300
FCC Fort Churchill 25.44 41 eP P 07 27 05.4 +0.7
22nm,1.1s
234A Clairette 25.49 107 P P 07 27 06.0 +0.6
baz=305
433A Art 25.56 110 P P 07 27 05.9 -0.2
baz=308
R38A Fenwick Farm, 25.57 90 P P 07 27 06.8 +0.6
baz=293
V37A Hulbert 25.64 96 P P 07 27 07.7 +1.0
baz=297
TT01 Tatalina 25.69 329 eP P 07 27 07.3 +0.3
TTA Tatalina 25.70 329 eP P 07 27 07.6 +0.4
18nm,1.0s
T38A Diamond 25.75 93 P P 07 27 07.4 -0.4
baz=295
S38A Stockton 25.79 92 P P 07 27 08.3 +0.2
baz=294
P39B Salisbury 25.94 87 P P 07 27 10.1 +0.6
baz=290
434A Burnet 26.09 109 P P 07 27 10.3 -0.6
baz=307
R39A Chumby, Stover 26.16 90 P P 07 27 12.8 +1.4
baz=292
S39A Bolivar 26.19 91 P P 07 27 12.8 +1.0
baz=294
HHAR Hobbs 26.33 94 eP P 07 27 15.8 +2.7
7.0nm,1.0s
O40A La Belle 26.37 85 P P 07 27 15.6 +2.2
baz=289
T39A Clever 26.42 92 P P 07 27 14.3 +0.5
baz=295
534A Blanco 26.43 111 P P 07 27 13.7 -0.4
baz=309
Q40A Laux Farm, Aux 26.61 88 P P 07 27 16.1 +0.5
baz=291
U39A Green Forest 26.62 94 P P 07 27 16.3 +0.6
baz=296
JFWS Jewell Farm 26.76 78 eP P 07 27 21.8 +4.9
14nm,1.1s
S40A Lebanon 26.82 91 P P 07 27 17.6 +0.1
baz=294
COLD Coldfoot 26.87 340 eP P 07 27 18.9 +1.3
14nm,1.4s
W39A Magazine 26.93 96 P P 07 27 19.1 +0.6
baz=298
X39A Fountain Ranch 27.02 98 P P 07 27 20.4 +1.0
baz=300
MIAR Mount Ida 27.39 98 eP P 07 27 27.8 +5.2
22nm,1.5s
CCM Cathedral Cave 27.56 89 eP P 07 27 28.6 +4.5
36nm,1.8s
X301 Greenbrier Sit 27.92 95 eP P 07 27 28.2 +0.9
15nm,1.5s
HDIL Hopedale 28.10 83 eP P 07 27 34.5 +5.6
OXF Oxford 30.43 94 eP P 07 27 50.7 +1.1
12nm,0.9s
GOGA Godfrey 35.28 92 eP P 07 28 31.8 -0.3
6.0nm,1.0s
SCHQ Schefferville 39.85 52 LR LR 07 45 47.1
comp=Z,495nm,18.3s,baz=260,slow=36
BILL Bilibino 41.95 329 eP P 07 29 26.9 -0.7
10nm,1.4s
SEY Seymchan 48.37 323 P P 07 30 16.9 -1.7
3.2nm,1.0s,baz=86,slow=4.5,SNR=5.1
PETK Petropavlovsk- 48.77 309 P P 07 30 20.4 -1.5
5.0nm,0.9s,baz=83,slow=12,SNR=5.6
PETK LR LR 07 47 02.9
comp=Z,41nm,21.9s,baz=80,slow=31
MA2 Magadan 50.15 319 LR LR 07 50 10.2
comp=Z,135nm,20.1s,baz=105,slow=34

TIXI	Tiksi	53.55	338	P		P	07 30 56.2	-1.3
	0.7nm,0.3s,baz=61,slow=6.8,SNR=4.4							
SPITS	Spitsbergen Ar	56.65	8	LR		LR	07 54 54.8	
	comp=Z,73nm,19.2s,baz=320,slow=35							
YAK	Yakutsk	58.27	327	LR		LR	07 56 40.2	
	comp=Z,106nm,18.3s,baz=72,slow=36							
H11N3	WAKE ISLAND Hy	59.39	269	T		T	08 35 55.7	
	baz=50,slow=75,SNR=240							
H11N2	WAKE ISLAND Hy	59.39	269	T		T	08 35 43.6	
	baz=50,slow=75,SNR=134							
H11N1	WAKE ISLAND Hy	59.40	269	T		T	08 35 45.2	
	baz=50,slow=75,SNR=151							
ROSC	El Rosal	60.25	114	LR		LR	08 02 52.8	
	comp=Z,14nm,18.0s,baz=256,slow=41							
H11S1	WAKE ISLAND Hy	60.31	268	T		T	08 36 56.7	
	baz=50,slow=75,SNR=811							
H11S2	WAKE ISLAND Hy	60.32	268	T		T	08 36 56.1	
	baz=50,slow=75,SNR=993							
H11S3	WAKE ISLAND Hy	60.33	268	T		T	08 36 58.0	
	baz=50,slow=75,SNR=1186							
OTAV	Otavalo	61.07	121	*e*P		P	07 31 53.0	+1.2
NRIK	Noril'sk	64.66	347	P		P	07 32 13.2	-1.2
	0.8nm,0.3s,baz=34,slow=7.0,SNR=3.8							
NRIK				LR		LR	08 02 39.5	
	comp=Z,28nm,19.4s,baz=105,slow=38							
KLR	Kul'dur	64.83	315	P		P	07 32 16.9	+1.1
	1.6nm,0.7s,baz=360,slow=6.4,SNR=5.8							
ARCES	ARCESS Array B	65.54	10	LR		LR	08 02 15.0	
	comp=Z,76nm,19.2s,baz=346,slow=37							
USRK	Ussuriysk Ar.	67.85	310	P		P	07 32 32.8	-2.5
	1.9nm,0.8s,baz=75,slow=7.6,SNR=4.0							
AFI	Afiamalu	70.16	227	LR		LR	07 55 11.0	
	comp=Z,122nm,21.6s,baz=156,slow=29							
NB2	NORSAR Subarra	70.50	20	P		P	07 32 52.0	+0.5
	comp=Z,6.5nm,1.1s,baz=330,slow=6.5							
NOA	NORSAR Array B	70.50	20	P		P	07 32 50.5	-0.9
	comp=Z,0.8nm,0.8s,baz=330,slow=6.3,SNR=2.9							
NOA				LR		LR	08 02 12.2	
	comp=Z,39nm,20.1s,baz=285,slow=35							
CN2	Changchun	71.66	313	*e*P		P	07 32 59.5	+0.7
HFS	Hagfors	71.90	19	LR		LR	08 03 33.6	
	comp=Z,49nm,18.9s,slow=35							
FINES	FINESS Array B	73.23	13	P		P	07 33 08.2	+0.4
	comp=Z,1.8nm,0.8s,baz=337,slow=3.2,SNR=3.1							
FINES				LR		LR	08 03 34.6	
	comp=Z,87nm,18.6s,baz=346,slow=34							
KSRS	Korea Array	74.61	307	P		P	07 33 15.8	-0.5
	comp=Z,0.4nm,0.6s,baz=41,slow=5.9,SNR=3.3							
KSAR	Wonju Array Be	74.64	307	P		P	07 33 15.8	-0.7
SONM	Songino Array	77.61	326	P		P	07 33 32.7	-0.7
	comp=Z,0.5nm,0.4s,baz=36,slow=2.1,SNR=4.7							
SONM				LR		LR	08 07 36.7	
	comp=Z,56nm,18.9s,baz=50,slow=36							
BJI	Beijing	79.17	316	P		P	07 33 41.3	-0.7
BJI				pmax		pmax		
	comp=Z,10.0nm,0.5s							
CLL	Collm	79.48	24	*e*(P)		P	07 33 52.0	+8.6
LPAZ	La Paz	80.25	123	P		P	07 33 47.8	-1.0
	comp=Z,3.0nm,1.1s,baz=320,slow=8.0,SNR=4.9							
LPAZ				LR		LR	08 09 56.8	
	comp=Z,28nm,21.6s,baz=332,slow=36							
HHC	Hu-ho-hao-te	80.83	319	*e*P		P	07 33 50.1	-1.0
HHC				pmax		pmax		
	comp=Z,31nm,1.1s							
HHC				pmax		pmax		
	comp=Z,83nm,7.3s							
GERES	GERESS Array B	81.87	25	LR		LR	08 11 42.3	
	comp=Z,76nm,18.6s,baz=326,slow=37							
ESDC	Sonseca Array	82.63	41	LR		LR	08 08 14.9	
	comp=Z,31nm,21.1s,baz=165,slow=34							
BRVK	Borovoye	82.71	350	*e*P		P	07 34 01.9	+1.3
	comp=Z,4.6nm,0.9s							
BVAR	Borovoye Array	82.73	349	P		P	07 34 00.7	0.0
	comp=Z,1.3nm,0.9s,baz=7.6,slow=4.4,SNR=7.6							
AKASG	Malin Array Be	84.00	15	P		P	07 34 05.7	-1.6
	comp=Z,0.1nm,0.2s,baz=347,slow=4.8,SNR=4.1							
AKASG				LR		LR	08 12 25.0	
	comp=Z,58nm,18.3s,baz=350,slow=36							
MKAR	Makanchi Array	86.45	340	P		P	07 34 20.9	+1.2
	comp=Z,0.8nm,0.9s,baz=15,slow=6.0,SNR=3.6							
MKAR				LR		LR	08 15 47.7	
	comp=Z,37nm,18.5s,baz=16,slow=38							
ABKAR	Akbulak array	87.47	355	*e*P		P	07 34 21.9	-2.7
	comp=Z,1.5nm,0.8s							
WMQ	Urumqi	87.71	336	*e*P		P	07 34 25.9	0.0
WMQ				pmax		pmax		
	comp=Z,3.0nm,0.6s							
WMQ				pmax		pmax		
	comp=Z,63nm,6.4s							
WMQ				LR		LR		
	comp=N,38nm,25.0s							
WMQ				LR		LR		
	comp=Z,29nm,22.8s							
LZH	Lanzhou	88.26	321	*e*P		P	07 34 27.4	-1.4
LZH				pP		PcP	07 34 30.8	+0.2
LZH				sP		pP	07 34 32.3	-1.2
LZH				*e*PP		PP	07 37 56.5	+1.2
LZH				pmax		pmax		
	comp=Z,18nm,1.5s							
LZH				pmax		pmax		
	comp=Z,63nm,9.3s							
LZH				LR		LR		
	comp=N,240nm,15.6s							
LZH				LR		LR		
	comp=E,270nm,16.0s							
LZH				LR		LR		
	comp=Z,360nm,19.5s							
CD2	Chengdu	92.56	318	P		P	07 34 47.3	-1.5
CD2				pmax		pmax		
	comp=Z,1.0nm,0.5s							
KBZ	Khabaz	92.75	7	LR		LR	08 19 40.8	
	comp=Z,50nm,18.8s,baz=2.5,slow=38							
CPUP	Villa Florida	94.39	122	LR		LR	08 18 20.4	
	comp=Z,28nm,19.5s,baz=330,slow=36							
BRTR	Keskin Array B	95.40	15	LR		LR	08 19 45.2	
	comp=Z,40nm,18.7s,baz=338,slow=37							
URZ	Urewera	95.74	221	LR		LR	08 09 42.0	
	comp=Z,98nm,20.3s,baz=83,slow=30							
GEYT	Alibeck	98.86	356	LR		LR	08 22 48.3	
	comp=Z,32nm,20.2s,baz=225,slow=37							

*ISCJB **22** 07:23:14.6±0.7,5°.63S±0°.07×102°.61E±0°.06, h38km, mb4.0/9, Error ellipse: s-maj=10.2km s-min=7.0km az=31.8*
*DJA **22** 07:23:16.0±0.7,4°.5S±10°.×10°.4E±°, h153km±10km, M4.5/4, mb5.1/3, mB5.5/3, MLv4.2/4, Mw(mB)5.0/3*
*IDC **22** 07:23:20.9±1.3,5°.47S×102°.70E, h75km±7km, mb3.7/9, mb1 3.8/9, mb1mx3.5/43, mbtmp4.0/9, Error ellipse: s-maj=51.8km s-min=15.1km az=51.0*
ISC 22 07:23:17.7±0.9,5°.49S±0°.09×102°.78E±0°.09, h38km, n26, σ1°.76/24, mb4.0/9, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MNAI	Manna	1.14	9	P	Pn	07 23 39.1	+1.9
MNAI				S	Sn	07 23 54.1	+2.5
LWLI	Liwa	1.36	70	P	Pn	07 23 42.2	+1.9
LWLI				S	Sn	07 23 58.3	+1.1
KASI	Kota Agung	1.71	91	P	Pn	07 23 46.9	+1.9
KASI				S	Sn	07 24 06.0	+0.3
KLI	Kotabumi	2.17	73	P	Pn	07 23 47.8	-3.5
MASI	Maura Aman, Be	2.40	347	P	Pn	07 23 55.3	+0.8
BLSI	Bandar Lampung	2.46	87	P	Pn	07 23 54.4	-1.0
CGJI	Cibinong	3.11	111	P	Pn	07 24 05.7	+1.5
CNJI	Cibinong	4.69	113	P	Pn	07 24 27.1	+1.1
LEM	Lembang	4.99	106	P	Pn	07 24 39.6	+9.3
	7.5nm,0.3s,baz=319,slow=20,SNR=3.6						
LEM				S	Sn	07 25 36.6	+10
	8.6nm,0.3s,baz=342,slow=19,SNR=2.6						
LEM	Lembang	4.99	106	P	Pn	07 24 39.4	+9.1
CMAR	Chiang Mai Arr	24.10	351	P	P	07 28 28.7	-1.3
	3.4nm,0.5s,baz=181,slow=9.0,SNR=16						
H08S2	Diego Garcia H	30.16	264	T	T	08 00 32.3	
	baz=87,slow=75,SNR=11						
H08S3	Diego Garcia H	30.16	264	T	T	08 00 34.6	
	baz=87,slow=75,SNR=9.6						
H08S1	Diego Carcia H	30.18	264	T	T	08 00 33.9	
	baz=87,slow=75,SNR=8.9						
H01W3	Cape Leeuwin H	31.07	162	T	T	08 03 00.5	
	baz=338						
H01W2	Cape Leeuwin H	31.09	162	T	T	08 03 07.2	
	baz=338,slow=74						
H01W1	Cape Leeuwin H	31.09	162	T	T	08 02 54.5	
	baz=338,slow=74						
WRA	Warramunga Arr	33.88	118	P	P	07 29 56.7	-0.5
	0.9nm,0.8s,baz=304,slow=9.4,SNR=7.3						
WRA				pP	sP	07 30 14.7	+2.1
	0.7nm,0.6s,baz=293,slow=9.7,SNR=3.5						
ASAR	Alice Springs	34.99	124	P	P	07 30 06.9	+0.1
	0.2nm,0.4s,baz=300,slow=8.0,SNR=3.9						
ASAR				pP	sP	07 30 25.0	+2.9
	1.1nm,0.6s,baz=302,slow=7.9,SNR=5.3						
KSRS	Korea Array	48.73	27	P	P	07 31 57.7	-1.0
	0.9nm,0.9s,baz=220,slow=7.8,SNR=4.4						
SONM	Songino Array	53.20	3	P	P	07 32 32.0	-0.3
	2.0nm,0.5s,baz=181,slow=9.1,SNR=11						
MKAR	Makanchi Array	55.14	343	P	P	07 32 45.2	-1.1
	1.1nm,0.5s,baz=148,slow=9.2,SNR=15						
MKAR				pP	sP	07 33 04.4	+2.4
	0.2nm,0.5s,baz=161,slow=9.2,SNR=2.2						
ZALV	Zalesovo Beam	61.11	348	P	P	07 33 26.7	-1.2
	2.4nm,0.4s,baz=165,slow=4.2,SNR=8.0						
BVAR	Borovoye Array	64.41	339	P	P	07 33 48.1	-1.8
	0.4nm,0.3s,baz=145,slow=10,SNR=4.2						
KBZ	Khabaz	72.74	319	P	P	07 34 41.0	-1.1
	0.7nm,0.4s,baz=127,slow=5.1,SNR=2.9						
TXAR	Lajitas Array	145.55	43	PKPbc	PKPab	07 42 52.3	-0.9
	1.5nm,0.7s,baz=298,slow=1.3,SNR=25						
TXAR				pPKPbc	pPKPbc	07 43 12.0	+6.9
	0.5nm,0.8s,baz=248,slow=1.2,SNR=3.4						

*DDA **22** 07:35:14.7,39°.11N×29°.06E, h7km, Ml2.6*
*ISK **22** 07:35:14.8,39°.11N×29°.11E, h7km, MD2.8*
*CSEM **22** 07:35:15.3±0.1,39°.12N×29°.06E, h2km, ML2.6, Error ellipse: s-maj=3.4km s-min=2.7km az=95.0*
ISC 22 07:35:15.4±1.2,39°.12N±0°.02×29°.07E±0°.03, h0km±15km, n31, σ0°.30/44, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	Gediz	0.32	95	P	Pg	07 35 21.6	0.0
GDZ				S	Sg	07 35 26.3	+0.5
GDZ	Gediz	0.32	95	*i* P	Pg	07 35 21.6	0.0
GDZ				*i* S	Sg	07 35 26.3	+0.5
TVSB	Tavsanli	0.45	42	*e*PG	Pg	07 35 23.9	-0.1
TVSB				*e*SG	Sg	07 35 29.9	0.0
TVSB	Tavsanli	0.45	42	*e*Pg	Pg	07 35 24.0	-0.1
TVSB				*e*Sg	Sg	07 35 29.9	0.0
DURS	Dursunbey	0.67	317	P	Pg	07 35 28.4	+0.2
DURS				S	Sg	07 35 37.2	+0.3
DURS	Dursunbey	0.67	317	*i* P	Pg	07 35 28.4	+0.2
DURS				*i* S	Sg	07 35 37.1	+0.3
KULA	Kula-Manisa	0.68	208	*e*PG	Pg	07 35 28.2	-0.2
KULA	Kula-Manisa	0.68	208	*e*Pg	Pg	07 35 28.2	-0.2
MANT	Manisa	0.74	213	P	Pg	07 35 29.5	-0.1
MANT				S	Sg	07 35 39.5	+0.3
MANT	Manisa	0.74	213	*i* P	Pg	07 35 29.5	-0.1
MANT				*i* S	Sg	07 35 39.5	+0.3
KHAL	Karahalli	0.82	156	P	Pb	07 35 32.6	+0.1
KHAL				S	Sg	07 35 41.6	0.0
KHAL	Karahalli	0.82	156	*i* P	Pb	07 35 32.6	+0.1
KHAL				*i* S	Sg	07 35 41.6	0.0
KHL	Karahalli	0.87	156	*e*PG	Pg	07 35 31.4	-0.6
KHL	Karahalli	0.87	156	*e*Pg	Pg	07 35 31.4	-0.6
IGD	Bursa	1.15	5	*i* P	Pg	07 35 36.8	-0.6
IGD				*i* S	Sb	07 35 53.6	0.0
CAVI	Cavuskoy	1.24	29	*e*PN	Pg	07 35 38.8	-0.3
CAVI	Cavuskoy	1.24	29	*e*Pn	Pg	07 35 38.8	-0.3
MDNY	Mudanya-Bursa	1.26	354	*e*PN	Pb	07 35 40.0	0.0
MDNY	Mudanya-Bursa	1.26	354	*e*Pn	Pb	07 35 40.0	0.0
KCTX	Karacabey (Bur	1.27	335	*e*PN	Pg	07 35 39.3	-0.5
KCTX	Karacabey (Bur	1.27	335	*e*Pn	Pg	07 35 39.3	-0.5
BORA	Eskisehir	1.31	54	P	Pg	07 35 40.6	0.0
BORA				S	Sg	07 35 57.9	+0.2
BORA	Eskisehir	1.31	54	*i* P	Pg	07 35 40.6	0.0
BORA				*i* S	Sg	07 35 57.9	+0.2
ARMT	Armutlu	1.46	354	*e*PN	Pn	07 35 42.8	-0.1
ARMT	Armutlu	1.46	354	*e*Pn	Pn	07 35 42.8	-0.1
AYDB	Zeytinkoy-Aydi	1.49	219	*e*PN	Pn	07 35 43.6	+0.1
AYDB	Zeytinkoy-Aydi	1.49	219	*e*Pn	Pn	07 35 43.6	+0.1
MRMT	Marmara Adasi	1.87	323	*e*PN	Pn	07 35 48.3	-0.4
MRMT	Marmara Adasi	1.87	323	*e*Pn	Pn	07 35 48.3	-0.4
RKY	Sarkoy-Tekirda	2.14	318	*e*PN	Pn	07 35 52.6	+0.2
RKY	Sarkoy-Tekirda	2.14	318	*e*Pn	Pn	07 35 52.6	+0.2

*KRSC **22** 07:39:35.3±2.1,48°.62N×156°.70E, h16km±10km, ML4.2*
*MOS **22** 07:39:35.3±2.3,48°.62N×156°.69E, h16km, mb4.3/1, Error ellipse: s-maj=71.6km s-min=7.1km az=82.2*
*SKHL **22** 07:39:36.4±1.4,48°.63N×155°.67E, h18km±3km, mb4.2/3*
ISC 22 07:39:38.3±2.4,48°.6N±0°.2×155°.9E±0°.1, h35km, n36, σ0°.99/53, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	Severo-Kuril's	2.12	4	P	Pn	07 40 09.5	-1.7
SKR				S	Sn	07 40 34.9	-1.3
SKR	Severo-Kuril's	2.12	4	PN	Pn	07 40 09.5	-1.7
SKR				S	Sn	07 40 34.9	-1.3
SKR	Severo-Kuril's	2.12	4	*e*P	Pn	07 40 10.5	-0.7
SKR				AMB	AMB	07 40 11.0	
	60nm,0.5s						
SKR				*e*S	Sn	07 40 35.0	-1.3
SKR				A	A	07 40 43.5	
	350nm,0.2s						
SKR				A	A	07 40 43.5	
	310nm,0.2s						
PAU	Pauzhetka	2.95	11	P	Pn	07 40 22.6	-0.1
PAU				S	Sn	07 40 57.6	+0.7
PAU	Pauzhetka	2.95	11	PN	Pn	07 40 22.6	-0.1
PAU				S	Sn	07 40 57.6	+0.7
PAU	Pauzhetka	2.95	11	*e*P	Pn	07 40 22.1	-0.6
PAU				*e*S	Sn	07 40 57.4	+0.5
PAU				A	A	07 41 04.7	
	330nm,0.4s						
ASAK	Asacha	4.02	18	P	Pn	07 40 37.4	0.0
ASAK	Asacha	4.02	18	PN	Pn	07 40 37.4	0.0
RUS	Russkaya	4.21	22	*e*P	Pn	07 40 38.5	-1.4
RUS				*e*S	Sn	07 41 27.8	+0.1
RUS	Russkaya	4.21	22	PN	Pn	07 40 38.5	-1.4
RUS				S	Sn	07 41 27.8	+0.1
RUS	Russkaya	4.21	22	*e*P	Pn	07 40 38.5	-1.4
RUS				*e*S	Sn	07 41 27.8	+0.1
KRMR	Karymshinskiy	4.49	18	P	Pn	07 40 45.8	+2.0
KRMR	Karymshinskiy	4.49	18	PN	Pn	07 40 45.8	+2.0
UGLR	Uglovaya	4.99	21	P	Pn	07 40 51.1	+0.3
UGLR				S	Sn	07 41 48.5	+1.2
UGLR	Uglovaya	4.99	21	PN	Pn	07 40 51.1	+0.3
UGLR				S	Sn	07 41 48.5	+1.2
AVH	Avacha	5.03	20	P	Pn	07 40 53.0	+1.8
AVH				S	Sn	07 41 47.8	-0.3
AVH	Avacha	5.03	20	PN	Pn	07 40 53.0	+1.8
AVH				S	Sn	07 41 47.8	-0.3
AVH	Avacha	5.03	20	*e*P	Pn	07 40 53.0	+1.8
SMAR	Somma	5.04	20	P	Pn	07 40 51.5	0.0
SMAR	Somma	5.04	20	PN	Pn	07 40 51.5	0.0
KRER	Koryakskii	5.07	20	P	Pn	07 40 52.6	+0.7
KRER				S	Sn	07 41 49.1	-0.1
KRER	Koryakskii	5.07	20	PN	Pn	07 40 52.6	+0.7
KRER				S	Sn	07 41 49.1	-0.1
SDLR	Sedlovina	5.07	21	P	Pn	07 40 51.2	-0.7
SDLR				S	Sn	07 41 49.5	+0.2
SDLR	Sedlovina	5.07	21	PN	Pn	07 40 51.2	-0.7
SDLR				S	Sn	07 41 49.5	+0.2
NLC	Nalytchevo	5.09	24	S	Sn	07 41 48.6	-0.9
KRX	Arik	5.09	19	P	Pn	07 40 53.3	+1.1
KRX				S	Sn	07 41 50.9	+1.0
KRX	Arik	5.09	19	PN	Pn	07 40 53.3	+1.1
KRX				S	Sn	07 41 50.9	+1.0
GNL	Ganaly	5.29	13	P	Pn	07 40 55.3	+0.5
GNL	Ganaly	5.29	13	PN	Pn	07 40 55.3	+0.5
MKZ	Mys Kozlova	7.00	29	P	Pn	07 41 17.9	-0.3
MKZ	Mys Kozlova	7.00	29	PN	Pn	07 41 17.9	-0.3
MKZ	Mys Kozlova	7.00	29	*e*P	Pn	07 41 17.9	-0.3
TYV	Tymovskoe	8.89	290	*e*P	Pn	07 41 45.4	+1.3
TYV				AMB	AMB	07 41 47.7	
	6.0nm,0.6s						
BKI	Bering	9.09	39	S	Sn	07 43 22.7	-5.2
UGL	Uglegorsk	9.15	278	*e*P	Pn	07 41 47.1	-0.6
EKMR	Ekimchan	15.16	296	*e*P	Pn	07 43 04.0	-5.7
EKMR				AMB	AMB	07 43 04.6	
	4.0nm,0.7s						

*NIED **22** 07:41:00,34°.90N×142°.90E, h5km, Mw3.8 Best double couple: M0=5.41000×10^14 NP1:φs=355.00000°, δ25.00000°, λ-98.00000°. NP2:φs=184.00000°, δ66.00000°, λ-86.00000°.*
*IDC **22** 07:41:07.8±0.6,34°.82N×142°.99E, h0km, mb3.9/15, mb1 4.1/18, mb1mx3.9/70, mbtmp4.0/18, ML4.2/3, MS2.9/4, Ms1 2.9/4, ms1mx2.6/42, Error ellipse: s-maj=19.7km s-min=14.7km az=123.0*
*JMA **22** 07:41:09.8±0.4,34°.93N×142°.93E, h56km, M3.8*
*ISCJB **22** 07:41:10.9±0.4,34°.91N±0°.04×142°.76E±0°.04, h33km, mb4.0/19, MS3.6/1, Error ellipse: s-maj=5.2km s-min=4.5km az=171.3*
*NEIC **22** 07:41:13.1±0.4,34°.88N×142°.83E, h35km, mb4.5/4, Error ellipse: s-maj=9.9km s-min=8.2km az=138.0*
ISC 22 07:41:13.3±0.7,34°.98N±0°.05×142°.83E±0°.07, h35km, n47, σ2°.02/59, mb4.0/19, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	Boso 1	1.55	259	P	Pn	07 41 36.3	-1.6
BSO1				S	Sn	07 41 57.4	+0.8
CHOJ	Chosi	1.76	295	P	Pn	07 41 40.5	-0.8
BSO3	Boso 3	1.91	265	P	Pn	07 41 42.2	-0.9
BSO4	Boso 4	2.04	271	P	Pn	07 41 44.4	-0.7
BSO4				*e*S	Sn	07 42 10.8	+1.5
JFK	Kawauchi	2.86	327	P	Pn	07 41 54.6	-1.8
JFK				S	Sn	07 42 25.9	-3.8
JOD2	Odawara 2	3.08	276	P	Pn	07 41 57.7	-1.7
JOD2				S	Sn	07 42 32.4	-2.6
JAG	Ashikaga	3.10	299	P	Pn	07 41 58.8	-0.9
JAG				*e*S	Sn	07 42 34.8	-0.8
JHJ2	Mitsune	3.12	234	P	Pn	07 41 57.4	-2.5
JHJ2				*e*S	Sn	07 42 30.9	-5.0
JHJ2	Mitsune	3.12	234	*e*Pn	Pn	07 41 57.5	-2.5
JHJ2				*e*Sn	Sn	07 42 31.4	-4.4
JHJ	Hachijo jima 2	3.13	235	Pn	Pn	07 41 57.6	-2.6
	146nm,0.3s,baz=66,slow=20,SNR=5.7						
JHJ				Sn	Sn	07 42 30.7	-5.6
	99nm,0.3s,baz=207,slow=22,SNR=8.0						
JFT	Otama	3.24	322	P	Pn	07 42 00.8	-0.8
JFT				S	Sn	07 42 37.1	-1.8
JRY	Ryogami san	3.37	289	P	Pn	07 42 02.9	-0.5
JRY				S	Sn	07 42 43.3	+1.2
JYN	Shimob	3.54	280	P	Pn	07 42 04.5	-1.4
JYN				*e*S	Sn	07 42 44.0	-2.6
MJAR	Matsushiro Arr	4.07	294	Pn	Pn	07 42 12.6	-0.4
	4.9nm,0.3s,baz=98,slow=9.4,SNR=46						
MJAR				Sn	Sn	07 42 59.3	-0.1
	2.0nm,0.3s,baz=103,slow=15,SNR=4.1						
MJAR				LR	LR	07 44 20.4	
	comp=Z,83nm,20.4s,baz=140,slow=46						
MAJO	Matsushiro	4.07	294	*e*Pn	Pn	07 42 12.6	-0.5
MAJO				*e*Sn	Sn	07 42 59.3	-0.2
MAT	Matsushiro	4.07	294	P	Pn	07 42 12.4	-0.6
MAT				S	Sn	07 42 57.3	-2.1
MAT	Matsushiro	4.07	294	P	Pn	07 42 12.7	-0.3
JMK	Ichinoseki	4.17	343	P	Pn	07 42 12.7	-1.7
JMK				*e*S	Sn	07 42 58.2	-3.7
JYK	Kaneyama	4.40	334	P	Pn	07 42 16.3	-1.3
JYK				*e*S	Sn	07 43 04.7	-2.9
ERM	Erimo	7.03	2	*e*Pn	Pn	07 42 53.2	-0.5
ERM				*e*Sn	Sn	07 44 12.1	-0.3
CBIJ	Chichi jima	7.88	184	Pn	Pn	07 43 00.1	-5.2
CBIJ				Sn	Sn	07 44 19.7	-14
JCJ	Chichijima	7.88	184	Pn	Pn	07 43 00.1	-5.2
	5.2nm,0.3s,baz=70,slow=22,SNR=9.1						
JCJ				Sn	Sn	07 44 19.7	-14
	8.1nm,0.3s,baz=73,slow=19,SNR=5.0						
ASAJ	Asahikawa	9.13	359	Pn	Pn	07 43 18.0	-4.4
	0.4nm,0.3s,baz=267,slow=19,SNR=2.6						
ASAJ				Sn	Sn	07 44 54.3	-10
	0.4nm,0.3s,baz=143,slow=20,SNR=2.1						
ASAJ	Asahikawa	9.13	359	*e*Pn	Pn	07 43 18.9	-3.6
ASAJ				Sn	Sn	07 44 54.3	-10
JNU	Nakatsue	10.08	263	LR	LR	07 47 28.0	
	comp=Z,37nm,19.1s,baz=306,slow=37						
KSRS	Korea Array	12.29	286	LR	LR	07 48 38.9	
	comp=Z,48nm,19.9s,baz=84,slow=36						
ENH	Enshi	28.39	270	*e*P	P	07 47 03.8	-0.6
	4.6nm,0.7s						
SEY	Seymchan	28.61	9	P	P	07 47 07.3	+1.4
	0.8nm,0.5s,baz=111,slow=5.2,SNR=6.7						
SONM	Songino Array	29.91	307	P	P	07 47 19.6	+1.8
	0.4nm,0.4s,baz=99,slow=8.9,SNR=2.9						
CMAR	Chiang Mai Arr	42.15	259	P	P	07 49 03.3	+0.8
	0.6nm,0.4s,baz=48,slow=6.7,SNR=3.9						
KURK	Kurchatov	48.11	310	*e*P	P	07 49 50.3	+0.8
	13nm,0.6s						
ILAR	Eielson Array	50.63	31	P	P	07 50 08.2	-0.3
	0.4nm,0.7s,baz=270,slow=6.3,SNR=6.1						
BRVK	Borovoye	52.87	314	P	P	07 50 25.8	+0.5
	2.5nm,0.4s						
WRAB	Tennant Creek	55.20	190	*e*P	P	07 50 41.9	-0.8
	4.3nm,0.9s						
WRA	Warramunga Arr	55.21	190	P	P	07 50 41.4	-1.3
	2.6nm,0.8s,baz=9.2,slow=7.5,SNR=20						
INK	Inuvik	55.70	27	P	P	07 50 46.6	+0.9
	1.1nm,0.7s,baz=318,slow=6.1,SNR=3.7						
ASAR	Alice Springs	58.93	190	P	P	07 51 08.2	-0.8
	0.8nm,0

AKS	**Akhisar**	**1.02**	**256**	*e*PG	**Pb**	**07 45 41.0**	**-0.2**
AKS	**Akhisar**	**1.02**	**256**	*e*Pg	**Pb**	**07 45 41.0**	**-0.2**
BALB	**Balikesir**	**1.06**	**299**	*e*PG	**Pb**	**07 45 41.5**	**-0.2**
BALB	**Balikesir**	**1.06**	**299**	*e*Pg	**Pb**	**07 45 41.6**	**-0.2**
IGD	**Bursa**	**1.13**	**4**	*i* P	**Pg**	**07 45 40.9**	**-1.7**
IGD				*i* S	**Sg**	**07 45 55.3**	**-1.9**
CAVI	**Cavuskoy**	**1.21**	**29**	*e*PN	**Pg**	**07 45 44.0**	**-0.2**
CAVI	**Cavuskoy**	**1.21**	**29**	*e*Pn	**Pg**	**07 45 44.0**	**-0.2**
IZI	**Iznik**	**1.23**	**14**	*e*PN	**Pg**	**07 45 44.5**	**-0.1**
IZI	**Iznik**	**1.23**	**14**	*e*Pn	**Pg**	**07 45 44.5**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.24**	**353**	PN	**Pg**	**07 45 44.5**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.24**	**353**	*i* Pn	**Pg**	**07 45 44.5**	**-0.2**
KCTX	**Karacabey (Bur**	**1.26**	**334**	*e*PN	**Pg**	**07 45 45.0**	**-0.1**
KCTX	**Karacabey (Bur**	**1.26**	**334**	*e*Pn	**Pg**	**07 45 45.0**	**-0.1**
BORA	**Eskisehir**	**1.29**	**55**	P	**Pg**	**07 45 44.8**	**-0.9**
BORA				S	**Sg**	**07 46 01.9**	**-0.6**
BORA	**Eskisehir**	**1.29**	**55**	*i* P	**Pg**	**07 45 44.8**	**-0.9**
BORA				*i* S	**Sg**	**07 46 01.9**	**-0.6**
GEMT	**Gemlik**	**1.30**	**3**	*e*PN	**Pg**	**07 45 45.8**	**0.0**
GEMT	**Gemlik**	**1.30**	**3**	*e*Pn	**Pg**	**07 45 45.8**	**0.0**
ADVT	**Abdulvahap**	**1.39**	**21**	*e*PN	**Pn**	**07 45 47.2**	**+0.3**
ADVT	**Abdulvahap**	**1.39**	**21**	*e*Pn	**Pn**	**07 45 47.2**	**+0.3**
GONE	**Gonen-Balikesi**	**1.41**	**310**	*e*PN	**Pn**	**07 45 47.2**	**0.0**
GONE	**Gonen-Balikesi**	**1.41**	**310**	*e*Pn	**Pn**	**07 45 47.2**	**0.0**
ARMT	**Armutlu**	**1.44**	**353**	PN	**Pn**	**07 45 48.0**	**+0.4**
ARMT	**Armutlu**	**1.44**	**353**	*i* Pn	**Pn**	**07 45 48.0**	**+0.4**
GPA	**Golpazari**	**1.49**	**39**	*e*PN	**Pn**	**07 45 49.1**	**+0.8**
GPA	**Golpazari**	**1.49**	**39**	*e*Pn	**Pn**	**07 45 49.1**	**+0.8**
AYDB	**Zeytinkoy-Aydi**	**1.52**	**219**	*e*PN	**Pn**	**07 45 49.1**	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**1.52**	**219**	*e*Pn	**Pn**	**07 45 49.1**	**+0.3**
GULT	**Gulveren**	**1.70**	**40**	PN	**Pn**	**07 45 52.1**	**+0.8**
GULT	**Gulveren**	**1.70**	**40**	*i* Pn	**Pn**	**07 45 52.1**	**+0.8**
SPNC	**Sapanca-Adapaz**	**1.81**	**31**	*e*PN	**Pn**	**07 45 53.3**	**+0.6**
SPNC	**Sapanca-Adapaz**	**1.81**	**31**	*e*Pn	**Pn**	**07 45 53.3**	**+0.6**
MRMT	**Marmara Adasi**	**1.86**	**322**	*e*PN	**Pn**	**07 45 53.5**	**0.0**
MRMT	**Marmara Adasi**	**1.86**	**322**	*e*Pn	**Pn**	**07 45 53.5**	**0.0**
SVRH	**Sivrihisar-ESK**	**1.92**	**80**	*e*PN	**Pn**	**07 45 54.9**	**+0.6**
SVRH	**Sivrihisar-ESK**	**1.92**	**80**	*e*Pn	**Pn**	**07 45 54.9**	**+0.6**
ISK	**Istanbul-Kandi**	**1.92**	**359**	*e*PN	**Pn**	**07 45 54.8**	**+0.5**
ISK	**Istanbul-Kandi**	**1.92**	**359**	*e*Pn	**Pn**	**07 45 54.8**	**+0.5**
SILT	**Sile**	**2.06**	**12**	*e*PN	**Pn**	**07 45 56.4**	**+0.3**
SILT	**Sile**	**2.06**	**12**	*e*Pn	**Pn**	**07 45 56.4**	**+0.3**
MDUB	**Mudurnu**	**2.10**	**50**	*e*PN	**Pn**	**07 45 57.8**	**+1.0**
MDUB	**Mudurnu**	**2.10**	**50**	*e*Pn	**Pn**	**07 45 57.8**	**+1.0**
KLYT	**Kilyos**	**2.11**	**359**	*e*PN	**Pn**	**07 45 57.6**	**+0.7**
KLYT	**Kilyos**	**2.11**	**359**	*e*Pn	**Pn**	**07 45 57.6**	**+0.7**
RKY	**Sarkoy-Tekirda**	**2.13**	**317**	*e*PN	**Pn**	**07 45 58.0**	**+0.8**
RKY	**Sarkoy-Tekirda**	**2.13**	**317**	*e*Pn	**Pn**	**07 45 58.0**	**+0.8**
CTKS	**Kestanelik-??a**	**2.14**	**348**	*e*PN	**Pn**	**07 45 57.8**	**+0.5**
CTKS	**Kestanelik-??a**	**2.14**	**348**	*e*Pn	**Pn**	**07 45 57.8**	**+0.5**
KIZT	**Kizilcal**	**2.19**	**96**	*e*PN	**Pn**	**07 45 59.0**	**+0.9**
KIZT	**Kizilcal**	**2.19**	**96**	*e*Pn	**Pn**	**07 45 59.0**	**+0.9**
CTYL	**Yalikoy Yolu**	**2.41**	**346**	*e*PN	**Pn**	**07 46 01.5**	**+0.5**
CTYL	**Yalikoy Yolu**	**2.41**	**346**	*e*Pn	**Pn**	**07 46 01.5**	**+0.5**

*IDC **22** 07:46:15.4±0.8, 35°.80N×78°.12E, h0km, mb3.6/11, mb1 3.8/15, mb1mx3.6/63, mbtmp3.7/15, ML4.4/5, MS3.4/1, Ms1 3.4/1, ms1mx2.4/41, Error ellipse: s-maj=22.4km s-min=14.0km az=46.0*

*ISCJB **22** 07:46:24.9±0.3, 36°.09N±0°.02×78°.29E±0°.06, h88km, mb3.5/10, Error ellipse: s-maj=6.4km s-min=3.0km az=173.8*

*BJI **22** 07:46:30.6, 36°.33N×78°.36E, h117km, mb4.0/5, mB4.3/5*

*NNC **22** 07:46:33.8±2.5, 36°.53N×77°.89E, h119km±15km, mb3.8, mpv4.4, Error ellipse: s-maj=20.0km s-min=14.6km az=162.0*

ISC 22 07:46:25.5±0.5, 36°.06N±0°.04×78°.12E±0°.05, h88km, n52, σ3°.25/73, mb3.5/10, 12C-10D, Kashmir-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSH	**Kashi**	**3.84**	**334**	P	**Pn**	**07 47 24.3**	**+1.8**
KSH				S	**Sn**	**07 48 03.0**	**-3.7**
KSH				smax	smax		
	comp=N,1μm,0.6s						
KSH				smax	smax		
	comp=E,1μm,0.4s						
JWA	**Jwalamukhi**	**4.44**	**200**	*e*P	**Pn**	**07 47 34.0**	**+3.5**
JWA				*e*S	**Sn**	**07 48 23.0**	**+2.0**
PONG	**Pong**	**4.48**	**204**	*e*P	Pn	07 47 36.0	+5.0
PONG				*e*S	**Sn**	**07 48 26.0**	**+4.1**
SMLA	**Simla**	**4.99**	**189**	*e*P	**Pn**	**07 47 42.0**	**+4.0**
SMLA				*e*S	**Sn**	**07 48 35.3**	**+1.0**
SMLA				IAML		07 48 37.9	
	comp=N,438nm,0.4s						
SMLA				IAML		07 48 39.1	
	comp=E,464nm,0.1s						
KKR	**Kurukshetra**	**6.18**	**191**	*e*P	**Pn**	**07 47 57.9**	**+3.7**
KKR				*e*S	**Sn**	**07 49 03.5**	**0.0**
TKM2	**Tokmak 2**	**7.12**	**345**	⇓P	**Pn**	**07 48 10.6**	**+3.4**
	comp=E,13nm,0.4s						
TKM2				⇓S	**Sn**	**07 49 25.6**	**-1.0**
	comp=E,32nm,0.9s						
AAK	**Ala-Archa**	**7.14**	**338**	Pn	**Pn**	**07 48 10.9**	**+3.6**
	comp=E,15nm,0.3s,baz=149,slow=6.8,SNR=97						
AAK				Sn	**Sn**	**07 49 29.4**	**+2.4**
	comp=E,5.9nm,0.3s,baz=262,slow=16,SNR=3.3						
AAK	**Ala-Archa**	**7.14**	**338**	⇓P	**Pn**	**07 48 10.9**	**+3.6**
	comp=E,40nm,0.7s						
AAK				⇑S	**Sn**	**07 49 24.6**	**-2.4**
	comp=E,26nm,0.6s						
PDGK	**Podgornoye**	**7.33**	**8**	⇑P	**Pn**	**07 48 12.5**	**+2.7**
	comp=E,230nm,0.5s						
PDGK				⇓S	**Sn**	**07 49 31.0**	**-0.3**
	comp=E,100nm,0.5s						
NDI	**New Delhi**	**7.40**	**186**	*e*P	**Pn**	**07 48 06.5**	**-4.3**
NDI				*e*S	**Sn**	**07 49 25.0**	**-8.2**
BHGR	**Bahadurgarh**	**7.42**	**188**	*e*P	**Pn**	**07 48 13.8**	**+2.7**
BHGR				*ex*	**Sn**	**07 49 29.4**	**-4.4**
MNAS	**Manas**	**7.75**	**328**	⇓P	**Pn**	**07 48 19.7**	**+4.0**
	comp=E,2.7nm,0.4s						
MNAS				⇓S	**Sn**	**07 49 37.4**	**-4.6**
	comp=E,25nm,1.2s						
DZET	**Dzherino**	**7.89**	**293**	⇑P	**Pn**	**07 48 20.3**	**+2.7**
	comp=E,5.9nm,0.4s						
DZET				⇑S	**Sn**	**07 49 41.8**	**-3.4**
	comp=E,81nm,0.5s						
KUDL	**Kundal**	**8.02**	**190**	*e*P	**Pn**	**07 48 21.6**	**+2.4**
KUDL				*e*S	**Sn**	**07 49 45.3**	**-3.0**
KUDL				IAML		07 49 50.0	
	comp=E,59nm,0.1s						
KUDL				IAML		07 49 50.6	
	comp=N,58nm,0.6s						
PYUN	**Piuthan**	**8.95**	**151**	*e*Pn	**Pn**	**07 48 32.5**	**+0.4**
PYUN				*e*Sn	**Sn**	**07 50 04.7**	**-6.6**
	comp=N,329nm,0.6s						
KK31	**Karatay Array**	**9.16**	**322**	P	**Pn**	**07 48 37.1**	**+2.4**
	comp=N,1.1nm,0.3s,baz=124,slow=12,SNR=31						
KK31				⇑S	**Sn**	**07 50 13.0**	**-3.1**
	comp=N,15nm,0.7s,baz=148,slow=24,SNR=5.3						
KOLN	**Koldanda**	**9.48**	**149**	*e*Pn	**Pn**	**07 48 39.9**	**+0.4**
KOLN				*e*Sn	**Sn**	**07 50 17.6**	**-6.9**
	comp=N,227nm,0.6s						
GKN	**Gorkha**	**9.75**	**144**	*e*Pn	**Pn**	**07 48 43.2**	**+0.2**
GKN				*e*Sn	Sn	07 50 21.7	-9.1
	comp=N,109nm,0.3s						
KKN	**Kakani**	**10.24**	**142**	*e*Pn	**Pn**	**07 48 49.2**	**-0.6**
KKN				*e*Sn	Sn	07 50 33.3	-10
	comp=N,70nm,0.6s						
DMN	**Daman**	**10.31**	**143**	*e*Pn	**Pn**	**07 48 50.1**	**-0.6**
DMN				*e*Sn	Sn	07 50 35.5	-9.0
	comp=N,65nm,0.5s						
GUN	**Gumba**	**10.46**	**139**	*e*Pn	**Pn**	**07 48 52.4**	**-0.4**
PKIN	**Phulchoki**	**10.48**	**142**	*e*Pn	**Pn**	**07 48 52.3**	**-0.7**
PKIN				*e*Sn	Sn	07 50 39.6	-9.1
	comp=N,58nm,0.4s						
JASL	**Jaisalmer**	**10.99**	**216**	*e*P	**Pn**	**07 49 01.3**	**+1.5**
JASL				*e*S	**Sn**	**07 50 55.6**	**-5.3**
MAKZ	**Makanchi**	**11.12**	**14**	⇓P	**Pn**	**07 49 01.6**	**+0.2**
	comp=N,31nm,0.3s						
MAKZ				⇑S	**Sn**	**07 50 57.6**	**-6.0**
	comp=N,17nm,0.5s						
MK31	**Makanchi Array**	**11.16**	**15**	P	**Pn**	**07 49 02.3**	**+0.2**
	comp=N,7.9nm,0.3s,baz=195,slow=12,SNR=380						
MK31				⇑S	**Sn**	**07 51 00.3**	**-4.6**
	comp=N,37nm,0.8s,baz=190,slow=20,SNR=19						
MKAR	**Makanchi Array**	**11.16**	**15**	Pn	**Pn**	**07 49 02.5**	**+0.4**
	comp=N,11nm,0.3s,baz=196,slow=13,SNR=160						
MKAR				Sn	**Sn**	**07 50 58.6**	**-6.3**
	comp=N,6.7nm,0.3s,baz=198,slow=22,SNR=12						

KURBB	**Kurchatov Arra**	**14.56**	**1**	Pn	**Pn**	**07 49 45.4**	**-1.5**
	comp=N,0.1nm,0.3s,baz=190,slow=10,SNR=8.3						
KURBB	**Kurchatov Arra**	**14.56**	**1**	⇑P	**P**	**07 49 49.0**	**-2.0**
	comp=N,6.5nm,0.9s						
KURK	**Kurchatov**	**14.65**	**1**	⇑P	**Pn**	**07 49 47.4**	**-0.7**
	comp=N,22nm,1.4s						
GEYT	**Alibeck**	**16.09**	**283**	Pn	**Pn**	**07 50 04.1**	**-2.5**
	comp=N,0.4nm,0.3s,baz=104,slow=12,SNR=4.2						
GEYT				Sn	**Sn**	**07 52 55.1**	**-9.4**
	comp=N,0.8nm,0.3s,baz=105,slow=22,SNR=4.4						
GTA	**Gaotai**	**17.47**	**72**	*e*P	**Pn**	**07 50 27.9**	**+4.3**
BVA0	**Borovoye Array**	**17.81**	**345**	P	**Pn**	**07 50 28.7**	**+1.2**
	comp=N,0.2nm,0.5s,baz=141,slow=7.0,SNR=25						
BVAR	**Borovoye Array**	**17.81**	**345**	P	**Pn**	**07 50 29.5**	**+2.0**
	comp=N,1.2nm,0.3s,baz=144,slow=10,SNR=17						
BRVK	**Borovoye**	**17.87**	**344**	⇑P	**Pn**	**07 50 28.1**	**0.0**
	comp=N,7.6nm,0.7s						
ZRNK	**Zerenda**	**18.07**	**342**	⇓P	**Pn**	**07 50 30.8**	**+0.3**
	comp=N,9.7nm,1.0s						
CHKZ	**Chkalovo**	**18.38**	**346**	⇓P	**P**	**07 50 32.8**	**-0.4**
	comp=N,3.0nm,0.7s						
ZALV	**Zalesovo Beam**	**18.48**	**13**	P	**P**	**07 50 34.5**	**+0.1**
	comp=N,1.3nm,0.3s,baz=195,slow=12,SNR=8.3						
AB31	**Akbulak array**	**18.71**	**320**	P	**Pn**	**07 50 40.0**	**+1.7**
	comp=N,0.8nm,0.5s,baz=128,slow=11,SNR=15						
AB31				⇑S	**S**	**07 54 01.4**	**-3.6**
	comp=N,1.3nm,0.6s,baz=122,slow=25,SNR=4.2						
AKTO	**Aktyubinsk**	**20.42**	**321**	P	**P**	**07 50 56.5**	**+1.1**
	comp=N,1.9nm,0.4s,baz=119,slow=12,SNR=5.9						
AKTO	**Aktyubinsk**	**20.42**	**321**	⇑P	**P**	**07 50 56.3**	**+0.9**
	comp=N,3.2nm,0.7s						
AKTO				⇓S	**S**	**07 54 34.8**	**-4.4**
	comp=N,2.6nm,1.2s						
LZH	**Lanzhou**	**20.77**	**82**	*e*P	Pn	07 51 05.0	+2.2
LZH				*e*PP	sP	07 51 26.0	-1.9
LZH				pmax	pmax		
	comp=N,21nm,1.0s						
LZH				pmax	pmax		
	comp=N,65nm,5.2s						
LZH				LR	LR		
	comp=N,250nm,10.5s						
LZH				LR	LR		
	comp=N,280nm,11.2s						
LZH				LR	LR		
	comp=N,380nm,13.6s						
SONM	**Songino Array**	**23.95**	**52**	P	**P**	**07 51 34.0**	**+2.4**
	comp=N,0.8nm,0.6s,baz=258,slow=9.6,SNR=5.8						
TLY	**Talaya**	**23.95**	**41**	LR	LR	08 02 32.4	
	comp=N,94nm,21.3s,baz=37,slow=40						
CMAR	**Chiang Mai Arr**	**25.40**	**128**	P	**P**	**07 51 44.5**	**-0.3**
	comp=N,0.7nm,0.4s,baz=314,slow=11,SNR=3.4						
AKASG	**Malin Array Be**	**37.72**	**308**	P	**P**	**07 53 34.0**	**+1.7**
	comp=N,0.6nm,0.5s,baz=78,slow=7.8,SNR=2.9						
KSRS	**Korea Array**	**39.55**	**73**	P	**P**	**07 53 48.2**	**+0.3**
	comp=N,0.5nm,0.6s,baz=278,slow=8.4,SNR=2.7						
FINES	**FINESS Array B**	**41.11**	**325**	P	**P**	**07 54 02.5**	**+2.0**
	comp=N,0.7nm,0.4s,baz=110,slow=9.2,SNR=9.8						
ARCES	**ARCESS Array B**	**43.81**	**336**	P	**P**	**07 54 24.1**	**+1.9**
	comp=N,0.9nm,0.4s,baz=100,slow=8.4,SNR=13						
TORD	**Torodi Ar. Bea**	**71.48**	**273**	P	**P**	**07 57 38.4**	**+1.4**
	comp=N,0.2nm,0.5s,baz=44,slow=5.6,SNR=2.5						
WRA	**Warramunga Arr**	**76.99**	**127**	P	**P**	**07 58 09.2**	**+0.3**
	comp=N,0.3nm,0.5s,baz=330,slow=5.9,SNR=13						
ASAR	**Alice Springs**	**79.41**	**130**	P	**P**	**07 58 22.8**	**+0.6**
	comp=N,0.4nm,0.6s,baz=327,slow=6.6,SNR=7.6						
YKA	**Yellowknife Ar**	**81.25**	**6**	P	**P**	**07 58 32.5**	**+1.0**
	comp=N,0.2nm,0.4s,baz=339,slow=5.7,SNR=2.9						

*IDC **22** 07:49:21.2±0.8, 39°.27N×20°.49E, h0km, mb4.0/17, mb1 4.0/26, mb1mx3.9/52, mbtmp3.9/26, ML3.9/9, Error ellipse: s-maj=14.6km s-min=12.9km az=21.0*

*ISCJB **22** 07:49:22.9±0.4, 39°.25N±0°.01×20°.48E±0°.02, h8km±2km, mb4.0/20, Error ellipse: s-maj=2.4km s-min=1.6km az=146.4*

*THE **22** 07:49:23.9, 39°.25N×20°.55E, h0km, ML3.9/23, Error ellipse: s-maj=0.9km s-min=0.3km az=234.0*

*ATH **22** 07:49:23.2, 39°.25N×20°.56E, h17km, ML3.8/15, Error ellipse: s-maj=0.8km s-min=0.5km az=262.0*

*PDG **22** 07:49:23.9±1.1, 39°.27N×20°.55E, h10km±1km, ML3.9/13, Error ellipse: s-maj=1.0km s-min=1.0km az=90.0*

*CSEM **22** 07:49:24.2±0.1, 39°.24N×20°.52E, h10km, ML3.8, Error ellipse: s-maj=2.6km s-min=1.7km az=53.0*

*NEIC **22** 07:49:27.1±0.5, 39°.26N×20°.59E, h44km±6km, mb4.0/3, Error ellipse: s-maj=6.6km s-min=5.0km az=188.0*

ISC 22 07:49:23.8±0.8, 39°.25N±0°.01×20°.55E±0°.02, h15km±5km, n371, σ1°.58/487, mb3.9/20, 40C-26D, Greece-Albania border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IGT	**Igoumenitsa**	**0.33**	**330**	P	**Pg**	**07 49 30.1**	**-0.5**
IGT				S	**Sg**	**07 49 35.4**	**+0.2**
IGT	**Igoumenitsa**	**0.33**	**330**	P	**Pg**	**07 49 30.1**	**-0.5**
IGT				S	**Sg**	**07 49 35.4**	**+0.2**
IGT	**Igoumenitsa**	**0.33**	**330**	P	**Pg**	**07 49 30.6**	**-0.1**
IGT				S	**Sg**	**07 49 35.6**	**+0.4**
IGT				AML	AML	07 49 39.6	
	comp=E,44027μm,0.7s						
IGT				AML	AML	07 49 40.5	
	comp=N,37900μm,0.5s						
SGD	**Sagiada**	**0.44**	**326**	P	**Pg**	**07 49 32.5**	**0.0**
SGD				S	**Sg**	**07 49 38.9**	**+0.4**
SGD	**Sagiada**	**0.44**	**326**	P	**Pg**	**07 49 32.5**	**0.0**
SGD				S	**Sg**	**07 49 38.4**	**-0.1**
SGD	**Sagiada**	**0.44**	**326**	P	**Pg**	**07 49 32.8**	**+0.3**
SGD				S	**Sg**	**07 49 38.4**	**-0.1**
DSL	**Palaion Diasel**	**0.44**	**105**	P	**Pg**	**07 49 31.5**	**-1.1**
DSL				S	**Sg**	**07 49 38.7**	**0.0**
DSL	**Palaion Diasel**	**0.44**	**105**	P	**Pg**	**07 49 31.6**	**-1.1**
DSL				S	**Sg**	**07 49 38.7**	**0.0**
DSL	**Palaion Diasel**	**0.44**	**105**	P	**Pg**	**07 49 31.6**	**-1.1**
DSL				S	**Sg**	**07 49 38.9**	**+0.2**
DSL				AML	AML	07 49 42.6	
	comp=E,35400μm,0.5s						
DSL				AML	AML	07 49 44.0	
	comp=N,39412μm,0.7s						
LKD2	**Lefkada island**	**0.47**	**169**	P	**Pg**	**07 49 32.7**	**-0.4**
LKD2				S	**Sg**	**07 49 39.8**	**+0.4**
LKD2	**Lefkada island**	**0.47**	**169**	P	**Pg**	**07 49 32.7**	**-0.4**
LKD2				S	**Sg**	**07 49 39.8**	**+0.4**
LKD2	**Lefkada island**	**0.47**	**169**	P	**Pg**	**07 49 32.7**	**-0.4**
JAN	**Janina**	**0.47**	**30**	P	**Pg**	**07 49 32.3**	**-0.9**
JAN				S	**Sg**	**07 49 39.9**	**+0.4**
JAN	**Janina**	**0.47**	**30**	P	**Pg**	**07 49 32.4**	**-0.8**
JAN				S	**Sg**	**07 49 39.9**	**+0.4**
JAN	**Janina**	**0.47**	**30**	AML	AML	07 49 40.6	
	comp=E,67750μm,0.5s						
KEK	**Kerkira**	**0.74**	**309**	P	**Pg**	**07 49 37.7**	**-0.6**
KEK				S	**Sb**	**07 49 49.1**	**+0.7**
KEK	**Kerkira**	**0.74**	**309**	P	**Pg**	**07 49 37.9**	**-0.4**
KEK				S	**Sg**	**07 49 48.2**	**+0.2**
PDO	**Prodromos**	**0.82**	**142**	P	**Pg**	**07 49 39.0**	**-0.7**
PDO				S	**Sb**	**07 49 51.9**	**+1.3**
PDO	**Prodromos**	**0.82**	**142**	P	**Pg**	**07 49 39.0**	**-0.7**
PDO				S	**Sg**	**07 49 50.4**	**-0.1**
PDO	**Prodromos**	**0.82**	**142**	P	**Pg**	**07 49 38.9**	**-0.8**
PDO				S	**Sg**	**07 49 50.4**	**-0.1**
PDO				AML	AML	07 49 56.7	
	comp=N,15554μm,0.5s						
PDO				AML	AML	07 49 59.1	
	comp=E,12231μm,0.5s						
KPRO	**Kipourio**	**0.94**	**42**	P	**Pg**	**07 49 40.7**	**-1.4**
KPRO	**Kipourio**	**0.94**	**42**	P	**Pg**	**07 49 40.7**	**-1.4**
KPRO	**Kipourio**	**0.94**	**42**	P	**Pg**	**07 49 40.2**	**-2.0**
PVO	**Paravola**	**0.99**	**129**	P	**Pg**	**07 49 42.4**	**-0.5**
PVO				S	**Sn**	**07 49 57.4**	**+0.4**
PVO	**Paravola**	**0.99**	**129**	P	**Pg**	**07 49 42.5**	**-0.5**
PVO				S	**Sb**	**07 49 55.9**	**+0.3**
PVO	**Paravola**	**0.99**	**129**	P	**Pg**	**07 49 42.5**	**-0.4**
PVO				S	**Sb**	**07 49 55.9**	**+0.3**
EVR	**Evrytania**	**1.04**	**108**	P	**Pg**	**07 49 43.2**	**-0.7**
EVR				S	**Sb**	**07 49 58.1**	**+1.1**
EVR	**Evrytania**	**1.04**	**108**	P	**Pg**	**07 49 43.5**	**-0.4**
EVR				S	**Sg**	**07 49 57.0**	**-0.4**
EVR	**Evrytania**	**1.04**	**108**	P	**Pg**	**07 49 43.5**	**-0.4**
EVR				S	**Sg**	**07 49 57.0**	**-0.4**
EVR				AML	AML	07 50 04.5	
	comp=N,10111μm,0.5s						
PENT	**Pentalofos**	**1.05**	**26**	P	**Pg**	**07 49 42.9**	**-1.2**
PENT	**Pentalofos**	**1.05**	**26**	P	**Pg**	**07 49 42.9**	**-1.2**
PENT				S	**Sg**	**07 49 57.0**	**-0.8**

PENT	**Pentalofos**	**1.05**	**26**	P	**Pg**	**07 49 42.7**	**-1.4**
PENT				S	**Sg**	**07 49 57.0**	**-0.8**
PENT				AML	AML	07 50 04.7	
	comp=E,2973μm,0.5s						
PENT				AML	AML	07 50 05.6	
	comp=N,3244μm,0.5s						
VLS	**Valsamata**	**1.07**	**178**	P	**Pb**	**07 49 44.4**	**+0.3**
VLS				S	**Sn**	**07 50 00.0**	**+1.0**
VLS	**Valsamata**	**1.07**	**178**	P	**Pb**	**07 49 44.4**	**+0.3**
VLS				S	**Sg**	**07 49 58.2**	**-0.3**
KFL	**Anninata**	**1.15**	**171**	P	**Pn**	**07 49 45.9**	**+0.4**
KFL				S	**Sn**	**07 50 02.8**	**+1.8**
KFL	**Anninata**	**1.15**	**171**	P	**Pn**	**07 49 45.9**	**+0.4**
KFL				S	**Sg**	**07 50 00.7**	**-0.4**
KFL	**Anninata**	**1.15**	**171**	P	**Pg**	**07 49 44.3**	**-1.8**
KFL				S	**Sg**	**07 50 00.7**	**-0.4**
THL	**Klokotos Trika**	**1.18**	**74**	P	**Pn**	**07 49 46.4**	**+0.6**
THL				S	**Sn**	**07 50 03.0**	**+1.4**
THL	**Klokotos Trika**	**1.18**	**74**	P	**Pn**	**07 49 46.4**	**+0.6**
THL				S	**Sn**	**07 50 03.0**	**+1.4**
NEST	**Nestorio**	**1.23**	**18**	P	**Pb**	**07 49 46.5**	**-0.3**
NEST				S	**Sn**	**07 50 04.5**	**+1.5**
NEST	**Nestorio**	**1.23**	**18**	P	**Pb**	**07 49 46.5**	**-0.3**
NEST				S	**Sn**	**07 50 04.5**	**+1.5**
NEST	**Nestorio**	**1.23**	**18**	P	**Pb**	**07 49 46.0**	**-0.8**
NEST				S	**Sg**	**07 50 02.0**	**-1.4**
NEST				AML	AML	07 50 11.1	
	comp=E,8139μm,0.6s						
NEST				AML	AML	07 50 12.5	
	comp=N,5964μm,0.5s						
AXS	**Araxos**	**1.24**	**148**	P	**Pn**	**07 49 46.2**	**-0.4**
AXS	**Araxos**	**1.24**	**148**	P	**Pn**	**07 49 46.2**	**-0.4**
AXS				S	**Sn**	**07 50 03.7**	**+0.7**
AXS	**Araxos**	**1.24**	**148**	P	**Pn**	**07 49 45.6**	**-1.0**
AXS				S	**Sn**	**07 50 03.7**	**+0.7**
ANX	**Ano Chora**	**1.26**	**121**	P	**Pg**	**07 49 47.8**	**-0.2**
ANX				S	**Sn**	**07 50 05.3**	**+1.6**
ANX	**Ano Chora**	**1.26**	**121**	P	**Pg**	**07 49 47.8**	**-0.2**
ANX				S	**Sn**	**07 50 05.3**	**+1.6**
EFP	**Efpalio**	**1.34**	**127**	P	**Pg**	**07 49 49.7**	**0.0**
EFP	**Efpalio**	**1.34**	**127**	P	**Pg**	**07 49 49.7**	**0.0**
UPR	**University Cam**	**1.37**	**134**	P	**Pg**	**07 49 49.7**	**-0.4**
UPR	**University Cam**	**1.37**	**134**	P	**Pg**	**07 49 49.7**	**-0.4**
RLS	**Riolos of Patr**	**1.39**	**149**	P	**Pn**	**07 49 48.9**	**+0.2**
RLS	**Riolos of Patr**	**1.39**	**149**	P	**Pn**	**07 49 48.9**	**+0.2**
RLS				S	**Sb**	**07 50 07.4**	**+0.3**
RLS	**Riolos of Patr**	**1.39**	**149**	S	**Sb**	**07 50 07.4**	**+0.3**
RLS				AML	AML	07 50 15.8	
	comp=N,3926μm,0.9s						
RLS				AML	AML	07 50 17.0	
	comp=E,3525μm,0.7s						
AGG	**Agios Georgios**	**1.41**	**99**	P	**Pn**	**07 49 49.6**	**+0.6**
AGG				S	**Sg**	**07 50 10.2**	**+1.0**
AGG	**Agios Georgios**	**1.41**	**99**	P	**Pn**	**07 49 49.6**	**+0.6**
AGG				S	**Sg**	**07 50 09.2**	**0.0**
AGG	**Agios Georgios**	**1.41**	**99**	P	**Pn**	**07 49 49.2**	**+0.2**
AGG				S	**Sg**	**07 50 09.2**	**0.0**
AGG				AML	AML	07 50 16.6	
	comp=N,18645μm,0.7s						
AGG				AML	AML	07 50 17.6	
	comp=E,14478μm,0.6s						
KZN	**Kozani**	**1.42**	**41**	P	**Pb**	**07 49 50.2**	**+0.2**
KZN				S	**Sg**	**07 50 10.1**	**+0.6**
KZN	**Kozani**	**1.42**	**41**	P	**Pb**	**07 49 50.2**	**+0.2**
KZN				S	**Sg**	**07 50 10.

VLX	Vlachokerasia	2.37	142	P	Pn	07 50 03.4 +1.1
VLX	Vlachokerasia	2.37	142	P	Pn	07 50 03.4 +1.1
HORT	Hortiatis	2.38	55	P	Pn	07 50 03.5 +1.1
HORT				S	Sb	07 50 34.5 -1.2
HORT	Hortiatis	2.38	55	P	Pn	07 50 03.5 +1.1
HORT				S	Sb	07 50 34.5 -1.2
HORT	Hortiatis	2.38	55	P	Pn	07 50 03.5 +1.1
PLG	Polygyros	2.50	62	P	Pn	07 50 04.9 +0.9
PLG	Polygyros	2.50	62	P	Pn	07 50 05.2 +1.2
PLG				S	Sn	07 50 36.0 +1.7
PLG	Polygyros	2.50	62	P	Pn	07 50 05.2 +1.2
PLG				S	Sn	07 50 36.0 +1.7
PLG				AML	AML	07 50 41.0
	comp=N,793μm,0.7s					
PLG				AML	AML	07 50 42.9
	comp=E,498μm,0.4s					
PAIG	Paliouri	2.51	73	P	Pn	07 50 05.5 +1.3
PAIG	Paliouri	2.51	73	P	Pn	07 50 05.5 +1.3
PAIG	Paliouri	2.51	73	P	Pn	07 50 04.8 +0.7
PYL	PYLOS	2.53	158	P	Pn	07 50 05.7 +1.3
PYL	PYLOS	2.53	158	P	Pn	07 50 05.7 +1.3
PYL	PYLOS	2.53	158	P	Pn	07 50 05.3 +0.9
VAY	Valandovo	2.58	36	P	Pn	07 50 06.5 +1.4
VAY	Valandovo	2.58	36	*i* Pn	Pn	07 50 07.2 +2.1
VAY	Valandovo	2.58	36	P	Pn	07 50 06.5 +1.4
VAY	Valandovo	2.58	36	*i* Pn	Pn	07 50 07.2 +2.1
AOS	Alonnisos	2.59	91	P	Pn	07 50 06.4 +1.2
AOS	Alonnisos	2.59	91	P	Pn	07 50 07.2 +1.9
AOS	Alonnisos	2.59	91	P	Pn	07 50 07.2 +1.9
KNT	Kendrikon	2.62	43	P	Pn	07 50 07.3 +1.6
KNT				S	Sn	07 50 40.4 +3.1
KNT	Kendrikon	2.62	43	P	Pn	07 50 07.3 +1.6
KNT				S	Sn	07 50 40.4 +3.1
KNT	Kendrikon	2.62	43	P	Pn	07 50 07.3 +1.6
SOH	Sokhos	2.67	53	P	Pn	07 50 08.0 +1.7
SOH	Sokhos	2.67	53	P	Pn	07 50 08.0 +1.7
SOH	Sokhos	2.67	53	P	Pn	07 50 08.3 +2.0
DID	Didima	2.74	129	P	Pn	07 50 08.7 +1.4
DID	Didima	2.74	129	P	Pn	07 50 08.7 +1.4
DID	Didima	2.74	129	P	Pn	07 50 08.6 +1.3
KRND	KRANIDI	2.77	131	P	Pn	07 50 09.2 +1.5
KRND	KRANIDI	2.77	131	P	Pn	07 50 09.2 +1.5
KRND	KRANIDI	2.77	131	P	Pn	07 50 09.4 +1.7
ATH	Athens Observa	2.79	116	P	Pn	07 50 09.4 +1.4
SKO	Skopje	2.80	14	P	Pn	07 50 09.8 +1.6
SKO				S	Sn	07 50 45.5 +3.8
SKO	Skopje	2.80	14	*i* Pn	Pn	07 50 10.2 +2.0
SKO	Skopje	2.80	14	P	Pn	07 50 09.8 +1.6
SKO	Skopje	2.80	14	*i* Pn	Pn	07 50 10.1 +1.9
SKO				S	Sn	07 50 45.5 +3.8
TAR1	Taranto	2.81	298	*e*Pn	Pn	07 50 09.0 +0.7
OUR	Ouranopolis	2.86	67	P	Pn	07 50 10.1 +1.2
OUR	Ouranopolis	2.86	67	P	Pn	07 50 10.1 +1.2
OUR	Ouranopolis	2.86	67	P	Pn	07 50 11.2 +2.2
PTL	Penteli	2.86	114	P	Pn	07 50 10.3 +1.3
PTL	Penteli	2.86	114	P	Pn	07 50 10.3 +1.3
ULC	Ulcinj	2.89	340	⇓*i* Pn	Pn	07 50 10.2 +0.9
ULC				*e*Sn	Sn	07 50 46.9 +3.1
ULC	Ulcinj	2.89	340	⇓*i* Pn	Pn	07 50 10.2 +0.9
ULC				*e*Sn	Sn	07 50 46.9 +3.1
VLY	Voula,Athens	2.90	118	P	Pn	07 50 11.4 +1.9
VLY	Voula,Athens	2.90	118	P	Pn	07 50 11.1 +1.5
VLY	Voula,Athens	2.90	118	P	Pn	07 50 11.1 +1.5
TIP	Timpagrande	2.94	270	⇓*i* P	Pn	07 50 11.4 +1.2
TIP	Timpagrande	2.94	270	P	Pn	07 50 11.2 +1.0
TIP				S	Sn	07 50 48.6 +3.3
TIP	Timpagrande	2.94	270	P	Pn	07 50 11.2 +1.0
TIP				*e*Sn	Sn	07 50 47.1 +1.8
TIP				S	Sn	07 50 48.6 +3.3
TIP	Timpagrande	2.94	270	P	Pn	07 50 10.8 +0.6
TIP	Timpagrande	2.94	270	*e*Pn	Pn	07 50 11.1 +1.0
TIP				*e*Sn	Sn	07 50 47.1 +1.8
SRS	Serrai	2.99	50	P	Pn	07 50 11.9 +1.2
SRS	Serrai	2.99	50	P	Pn	07 50 12.6 +1.9
SRS	Serrai	2.99	50	P	Pn	07 50 12.6 +1.9
NOCI	Noci	3.08	301	P	Pn	07 50 11.9 -0.1
NOCI	Noci	3.08	301	P	Pn	07 50 11.9 -0.1
DRME	Dracevica, Mon	3.11	341	⇓*i* Pn	Pn	07 50 13.3 +0.9
DRME				*e*Sn	Sn	07 50 52.4 +3.1
DRME	Dracevica, Mon	3.11	341	⇓*i* Pn	Pn	07 50 13.3 +0.9
DRME				*e*Sn	Sn	07 50 52.4 +3.1
VLI	Veliai	3.15	142	P	Pn	07 50 14.7 +1.7
VLI	Veliai	3.15	142	P	Pn	07 50 14.5 +1.5
VLI	Veliai	3.15	142	P	Pn	07 50 14.5 +1.5
MATE	Matera	3.27	297	⇓*i* P	Pn	07 50 15.9 +1.4
MATE	Matera	3.27	297	⇓*i* P	Pn	07 50 15.9 +1.4
NVR	Nevrokopi	3.29	49	P	Pn	07 50 16.8 +1.9
NVR	Nevrokopi	3.29	49	P	Pn	07 50 16.8 +1.9
BUM	Brajici-Budva	3.30	338	⇓*i* Pn	Pn	07 50 15.5 +0.5
BUM				*e*Sn	Sn	07 50 56.8 +2.8
BUM	Brajici-Budva	3.30	338	⇓*i* Pn	Pn	07 50 15.5 +0.5
BUM				*e*Sn	Sn	07 50 56.8 +2.8
PDG	Podgorica	3.33	343	⇓*i* P	Pn	07 50 16.5 +1.2
PDG	Podgorica	3.33	343	⇓*i* P	Pn	07 50 16.5 +1.2
PDG				*e*Sn	Sn	07 50 57.4 +2.8
TTG	Podgorica	3.33	343	⇑*i* Pn	Pn	07 50 16.3 +1.0
TTG				*e*Sn	Sn	07 50 57.4 +2.8
BAI	Bari	3.37	305	*e*Pn	Pn	07 50 17.8 +1.9
SG1	Sgolgore (BA)	3.37	299	*e*Pn	Pn	07 50 16.8 +0.9
PVY	Plav	3.37	353	*e*Pn	Pn	07 50 18.0 +1.9
PVY				*e*Sn	Sn	07 50 59.1 +3.2
PVY	Plav	3.37	353	*e*Pn	Pn	07 50 18.0 +1.9
PVY				*e*Sn	Sn	07 50 59.1 +3.2
KAVA	Kavala	3.51	59	P	Pn	07 50 19.4 +1.6
KAVA	Kavala	3.51	59	P	Pn	07 50 19.4 +1.6
KAVA	Kavala	3.51	59	P	Pn	07 50 19.4 +1.6
CEME	Cevo	3.52	340	⇑*i* Pn	Pn	07 50 18.5 +0.5
CEME				*e*Sn	Sn	07 51 01.9 +2.5
CEME	Cevo	3.52	340	⇑*i* Pn	Pn	07 50 18.5 +0.5
CEME				*e*Sn	Sn	07 51 01.9 +2.5
HCY	Herceg Novi	3.55	335	⇑*i* Pn	Pn	07 50 18.4 -0.1
HCY				*e*Sn	Sn	07 51 02.4 +2.2
HCY	Herceg Novi	3.55	335	⇑*i* Pn	Pn	07 50 18.4 -0.1
HCY				*e*Sn	Sn	07 51 02.4 +2.2
KYTH	Kithira	3.58	146	P	Pn	07 50 20.8 +1.9
KYTH	Kithira	3.58	146	P	Pn	07 50 20.8 +1.9
LIA	Limnos Island	3.64	78	P	Pn	07 50 20.9 +1.3
LIA	Limnos Island	3.64	78	P	Pn	07 50 21.0 +1.3
BEY	Berane	3.65	352	⇑*i* Pn	Pn	07 50 22.0 +2.1
BEY				*e*Sn	Sn	07 51 05.4 +2.6
IVA	Berane	3.65	352	⇑*i* Pn	Pn	07 50 22.0 +2.1
IVA				*e*Sn	Sn	07 51 05.4 +2.6
BARS	Barje	3.69	15	⇑*i* Pn	Pn	07 50 21.8 +1.4
NKME	Niksic	3.71	342	⇑*i* Pn	Pn	07 50 21.9 +1.2
NKME				*e*Sn	Sn	07 51 06.8 +2.5
NKME	Niksic	3.71	342	⇑*i* Pn	Pn	07 50 21.9 +1.2
NKME				*e*Sn	Sn	07 51 06.8 +2.5
CUC	Castrocucco	3.73	283	*e*Pn	Pn	07 50 22.6 +1.7
CUC	Castrocucco	3.73	283	P	Pn	07 50 23.3 +2.4
CUC	Castrocucco	3.73	283	P	Pn	07 50 23.3 +2.4
CUC	Castrocucco	3.73	283	*e*Pn	Pn	07 50 22.6 +1.7
NKY	Niksic	3.75	342	⇓*i* Pn	Pn	07 50 22.2 +0.9
NKY				*e*Sn	Sn	07 51 08.1 +2.9
NKY	Niksic	3.75	342	⇓*i* Pn	Pn	07 50 22.2 +0.9
NKY				*e*Sn	Sn	07 51 08.1 +2.9
CDT	Castel del Mon	3.75	301	*e*Pn	Pn	07 50 22.1 +0.9
CEL	Celeste	3.77	256	*e*Pn	Pn	07 50 22.7 +1.2
CEL				*e*Sn	Sn	07 51 05.3 -0.4
CEL	Celeste	3.77	256	*e*Pn	Pn	07 50 22.7 +1.2
CEL				*e*Sn	Sn	07 51 05.3 -0.4
TREB	Trebinje	3.84	335	*e*Pn	Pn	07 50 22.2 -0.2
BRY	Bratogost	3.95	338	⇓*i* Pn	Pn	07 50 24.7 +0.6
BRY				*e*Sn	Sn	07 51 12.3 +2.1
BRY	Bratogost	3.95	338	⇓*i* Pn	Pn	07 50 24.7 +0.6
BRY				*e*Sn	Sn	07 51 12.3 +2.1
ANKY	Antikythira Is	4.02	146	P	Pn	07 50 27.2 +2.3
ANKY				S	Sn	07 51 14.1 +2.2
ANKY	Antikythira Is	4.02	146	P	Pn	07 50 27.2 +2.3
ANKY				S	Sn	07 51 14.1 +2.2
ANKY				AML	AML	07 51 16.5
	comp=N,529μm,0.6s					
ANKY				AML	AML	07 51 19.4
	comp=E,326μm,0.6s					
SMTH	Samothraki Isl	4.03	71	P	Pn	07 50 26.6 +1.6
SMTH	Samothraki Isl	4.03	71	P	Pn	07 50 26.6 +1.6
SMTH	Samothraki Isl	4.03	71	P	Pn	07 50 26.4 +1.5
SIGR	SIGRI	4.12	89	P	Pn	07 50 28.5 +2.2
SIGR	SIGRI	4.12	89	P	Pn	07 50 28.5 +2.2
UPM	Unac-Piva	4.14	343	⇓*i* Pn	Pn	07 50 28.3 +1.6
UPM				*e*Sn	Sn	07 51 17.3 +2.4
UPM	Unac-Piva	4.14	343	⇓*i* Pn	Pn	07 50 28.3 +1.6
UPM				*e*Sn	Sn	07 51 17.3 +2.4
PLE	Pljevlja	4.17	348	⇓*i* Pn	Pn	07 50 29.1 +2.1
PLE				*e*Sn	Sn	07 51 18.0 +2.4
PLE	Pljevlja	4.17	348	⇓*i* Pn	Pn	07 50 29.1 +2.1
PLE				*e*Sn	Sn	07 51 18.0 +2.4
IVAS	Ivanjica	4.33	356	*e*Pn	Pn	07 50 30.1 +0.9
CHOS	Chios island	4.39	100	P	Pn	07 50 31.7 +1.7
CHOS	Chios island	4.39	100	P	Pn	07 50 31.7 +1.7
PRK	Paraskevi	4.45	88	P	Pn	07 50 32.3 +1.6
PRK	Paraskevi	4.45	88	P	Pn	07 50 32.3 +1.6
APE	Apeiranthos	4.49	117	⇑*i* P	Pn	07 50 33.3 +1.9
APE	Apeiranthos	4.49	117	P	Pn	07 50 32.6 +1.2
APE	Apeiranthos	4.49	117	P	Pn	07 50 32.6 +1.2
ALN	Alexandroupoli	4.53	67	P	Pn	07 50 33.4 +1.6
ALN	Alexandroupoli	4.53	67	P	Pn	07 50 33.4 +1.6
ALN	Alexandroupoli	4.53	67	P	Pn	07 50 33.7 +1.8
GRUS	Gruza	4.64	2	*e*Pn	Pn	07 50 34.2 +0.8
IMMV	Iera Moni Meta	4.67	143	P	Pn	07 50 35.6 +1.8
IMMV	Iera Moni Meta	4.67	143	P	Pn	07 50 35.6 +1.8
BBLS	Lazići	4.69	350	⇑*i* Pn	Pn	07 50 34.4 +0.2
BOLS	Boljevac	4.70	13	*e*Pn	Pn	07 50 33.7 -0.5
VAM	Vamos	4.81	142	P	Pn	07 50 37.5 +1.7
DIVS	Divibare	4.86	355	⇑*i* Pn	Pn	07 50 36.7 +0.2
TRUS	Trudelj	4.97	359	⇑*i* Pn	Pn	07 50 38.3 +0.3
HAPS	Han Pijesak,BI	4.98	347	*e*Pn	Pn	07 50 37.2 -1.0
VAE	Valguarnera	5.13	252	Pn	Pn	07 50 42.3 +2.0
	baz=56,slow=11,SNR=2.3					
VAE				Sn	Sn	07 51 42.6 +3.3
	comp=E,4.0nm,0.3s,baz=53,slow=20,SNR=5.4					
IDI	Anoyia	5.26	137	Pn	Pn	07 50 41.1 -0.8
	comp=E,1.8nm,0.3s,baz=29,slow=13,SNR=12					
IDI				Sn	Sn	07 51 39.4 -2.9
	comp=E,3.1nm,0.3s,baz=282,slow=20,SNR=3.9					
IDI	Anoyia	5.26	137	⇑*i* P	Pn	07 50 42.2 +0.2
IDI	Anoyia	5.26	137	P	Pn	07 50 42.1 +0.1
IDI	Anoyia	5.26	137	P	Pn	07 50 42.1 +0.1
TEKS	Tekeris	5.35	352	*i* Pn	Pn	07 50 43.3 +0.1
MDVR	Moldovita	5.59	9	⇑*i* P	Pn	07 50 48.4 +1.8
MDVR	Moldovita	5.59	9	⇑*i* P	Pn	07 50 48.4 +1.8
LAST	Lasithi	5.67	135	⇑*i* P	Pn	07 50 48.4 +0.8
LAST	Lasithi	5.67	135	⇑*i* P	Pn	07 50 48.4 +0.8
LAST	Lasithi	5.67	135	P	Pn	07 50 46.1 -1.5
FGSL	Fruska Gora	5.93	355	⇑*i* Pn	Pn	07 50 50.9 -0.2
BLY	Banja Luka	6.04	337	⇑*i* Pn	Pn	07 50 53.2 +0.6
BLY	Banja Luka	6.04	337	⇑*i* Pn	Pn	07 50 52.8 +0.2
BLY	Banja Luka	6.04	337	⇑*i* Pn	Pn	07 50 53.2 +0.6
AQU	L'Aquila	6.25	302	*e*Pn	Pn	07 50 57.5 +2.0
	comp=E,24nm,0.8s					
AQU	L'Aquila	6.25	302	*e*Pn	Pn	07 50 57.5 +2.0
	comp=E,24nm,0.8s					
GZR	Gura Zlata	6.36	14	⇑*i* P	Pn	07 50 59.1 +2.0
GZR	Gura Zlata	6.36	14	⇑*i* P	Pn	07 50 59.1 +2.0
UDBI	Udbina	6.37	327	*i* Pn	Pn	07 50 58.0 +0.8
UDBI				Sn	Sn	07 52 05.8 -3.8
UDBI	Udbina	6.37	327	*i* Pn	Pn	07 50 58.0 +0.8
BZS	Buzias	6.41	7	⇑*i* P	Pn	07 51 00.9 +3.2
BZS	Buzias	6.41	7	⇑*i* P	Pn	07 51 00.9 +3.2
KARP	Karpathos	6.43	123	P	Pn	07 51 00.4 +2.3
KARP	Karpathos	6.43	123	P	Pn	07 51 00.5 +2.3
NVLJ	Novalja	6.79	323	*e*Pn	Pn	07 51 02.9 0.0
NVLJ				Sn	Sn	07 52 15.1 -4.8
NVLJ	Novalja	6.79	323	*e*Pn	Pn	07 51 02.9 0.0
ARR	Arges	6.82	25	⇑*i* P	Pn	07 51 05.4 +2.0
ARR	Arges	6.82	25	⇑*i* P	Pn	07 51 05.4 +2.0
VOIR		7.02	27	⇑*i* P	Pn	07 51 08.9 +2.7
VOIR		7.02	27	⇑*i* P	Pn	07 51 08.9 +2.7
SIRR	Siria	7.06	6	⇑*i* P	Pn	07 51 09.2 +2.5
SIRR	Siria	7.06	6	⇑*i* P	Pn	07 51 09.2 +2.5
ISR	Istrita	7.36	35	⇓*i* P	Pn	07 51 13.6 +2.8
ISR	Istrita	7.36	35	⇓*i* P	Pn	07 51 13.6 +2.8
MLR	Muntele Rosu	7.41	31	Pn	Pn	07 51 13.8 +2.3
	comp=E,0.3nm,0.3s,baz=250,slow=5.3,SNR=17					
MLR				Sn	Sn	07 52 35.3 0.0
	comp=E,0.0nm,0.3s,baz=264,slow=18,SNR=1.6					
MLR	Muntele Rosu	7.41	31	⇓*i* P	Pn	07 51 14.9 +3.4
MLR	Muntele Rosu	7.41	31	⇓*i* P	Pn	07 51 14.9 +3.4
CRES	Cresnjev	7.57	332	⇑*i* Pn	Pn	07 51 13.1 -0.5
DRGR		7.70	11	⇑*i* P	Pn	07 51 17.5 +2.0
DRGR		7.70	11	⇑*i* P	Pn	07 51 17.5 +2.0
TIRR	Tirgusor	7.84	46	*e*Pn	Pn	07 51 11.4 -5.9
	comp=E,4.3nm,0.8s					
CEY	Cerknica	7.90	327	*e*Pn	Pn	07 51 18.1 -0.1
PLOR	Plostina	7.99	32	⇓*i* P	Pn	07 51 23.1 +3.7
PLOR	Plostina	7.99	32	⇓*i* P	Pn	07 51 23.1 +3.7
VRI	Vrincioaia	8.03	33	⇑*i* P	Pn	07 51 23.4 +3.4
VRI	Vrincioaia	8.03	33	⇑*i* P	Pn	07 51 23.4 +3.4
LJU	Ljubljana	8.11	329	*e*Pn	Pn	07 51 20.6 -0.4
SOKA	Soboth	8.45	333	*i* Pn	Pn	07 51 25.4 -0.4
	comp=E,8.6nm,0.5s,SNR=11					
SOKA	Soboth	8.45	333	P	Pn	07 51 25.4 -0.4
	comp=E,8.6nm,0.5s,SNR=11					
OBKA	Obir	8.48	331	*i* Pn	Pn	07 51 25.8 -0.4
	comp=E,6.0nm,0.3s,SNR=7.9					
OBKA	Obir	8.48	331	P	Pn	07 51 25.8 -0.4
	comp=E,6.0nm,0.3s,SNR=7.9					
ARSA	Arzberg	8.79	337	*i* Pn	Pn	07 51 29.9 -0.5
	comp=E,2.6nm,0.3s					
ARSA	Arzberg	8.79	337	P	Pn	07 51 29.9 -0.5
	comp=E,2.6nm,0.3s					
MYKA	Terra Mystica	8.94	328	*i* Pn	Pn	07 51 34.1 +1.6
	comp=E,2.4nm,0.3s					
MYKA	Terra Mystica	8.94	328	P	Pn	07 51 34.1 +1.6
	comp=E,2.4nm,0.3s					
BURAR	Bucovina Array	9.02	21	⇑*i* P	Pn	07 51 37.5 +3.9
BURAR	Bucovina Array	9.02	21	⇑*i* P	Pn	07 51 37.5 +3.9
KECS	Kecovo	9.23	360	*e*Pn	Pn	07 51 37.6 +1.2
KECS	Kecovo	9.23	360	*e*PN	Pn	07 51 37.6 +1.2
CONA	Conrad Observa	9.31	340	*i* Pn	Pn	07 51 38.9 +1.3
	comp=E,0.7nm,0.2s					
CONA	Conrad Observa	9.31	340	P	Pn	07 51 38.9 +1.3
	comp=E,0.7nm,0.2s					
VYHS	Vyhne	9.32	353	*e*Pn	Pn	07 51 37.8 +0.1
VYHS	Vyhne	9.32	353	*e*PN	Pn	07 51 37.8 +0.1
KBA	Koelnbreinsper	9.43	328	*i* Pn	Pn	07 51 38.8 -0.4
	comp=E,3.2nm,0.3s					
KBA	Koelnbreinsper	9.43	328	P	Pn	07 51 38.8 -0.4
	comp=E,3.2nm,0.3s					
ABTA	Abfaltersbach	9.52	324	*i* Pn	Pn	07 51 40.3 -0.2
	comp=E,1.1nm,0.2s					
ABTA	Abfaltersbach	9.52	324	P	Pn	07 51 40.3 -0.2
	comp=E,1.1nm,0.2s					
MOA	Molln	9.73	334	*i* Pn	Pn	07 51 43.2 0.0
	comp=E,5.5nm,0.4s					
MOA	Molln	9.73	334	P	Pn	07 51 43.2 0.0
	comp=E,5.5nm,0.4s					
BRTR	Keskin Array B	10.13	83	Pn	Pn	07 51 52.0 +3.0
	comp=E,0.3nm,0.3s,baz=270,slow=12,SNR=7.0					
BRTR	Keskin Array B	10.13	83	Pn	Pn	07 51 52.0 +3.0
WTTA	Wattenberg	10.31	324	*i* Pn	Pn	07 51 52.7 +1.4
	comp=E,4.5nm,0.7s					
WTTA	Wattenberg	10.31	324	P	Pn	07 51 52.7 +1.4
	comp=E,4.5nm,0.7s					
WATA	Walderalm	10.39	324	*i* Pn	Pn	07 51 53.5 +1.1
	comp=E,5.6nm,0.5s,SNR=6.0					
WATA	Walderalm	10.39	324	P	Pn	07 51 53.5 +1.1
	comp=E,5.6nm,0.5s,SNR=6.0					
FETA	Feichten	10.57	320	*i* Pn	Pn	07 51 56.4 +1.6
	comp=E,4.0nm,0.8s					
FETA	Feichten	10.57	320	P	Pn	07 51 56.4 +1.6
	comp=E,4.0nm,0.8s					
MOTA	Moosalm	10.61	323	*i* Pn	Pn	07 51 56.8 +1.3
	comp=E,18nm,0.9s,SNR=11					
MOTA	Moosalm	10.61	323	P	Pn	07 51 56.8 +1.3
	comp=E,18nm,0.9s,SNR=11					
GERES	GERESS Array B	10.78	335	Pn	Pn	07 51 56.3 -1.3
	comp=E,0.7nm,0.3s,baz=157,slow=13,SNR=23					
GERES				Sn	Sn	07 53 51.6 -6.4
	comp=E,0.2nm,0.3s,baz=154,slow=23,SNR=3.0					
DAVOX	Davos/Dischmat	10.84	317	Pn	Pn	07 52 00.9 +2.3
	comp=E,0.8nm,0.3s,baz=156,slow=21,SNR=7.0					
DAVOX				Sn	Sn	07 53 57.6 -2.1
	comp=E,0.8nm,0.3s,baz=130,slow=16,SNR=4.9					
RETA	Reutte	10.88	322	*i* Pn	Pn	07 52 01.5 +2.5
	comp=E,4.6nm,1.1s					
RETA	Reutte	10.88	322	P	Pn	07 52 01.5 +2.5
	comp=E,4.6nm,1.1s					
KHC	Kasperske Hory	11.07	335	*e*P	Pn	07 52 00.1 -1.5
KHC				*e*S	Sn	07 54 00.5 -4.5
DAVA	Damuels	11.17	319	*i* P	Pn	07 52 06.5 +3.4
	comp=E,3.4nm,0.7s					
DAVA	Damuels	11.17	319	P	Pn	07 52 06.5 +3.4
	comp=E,3.4nm,0.7s					
DPC	Dobruska-Polom	11.49	346	AMS	AMS	07 57 20.0
	comp=E,300nm,9.8s					
AKASG	Malin Array Be	12.98	25	Pn	Pn	07 52 28.1 +0.5
	comp=E,0.3nm,0.3s,baz=207,slow=12,SNR=3.0					
MMAI	Mount Meron Ar	13.52	113	Pn	Pn	07 52 36.5 +1.4
	comp=E,1.4nm,0.3s,baz=318,slow=9.7,SNR=2.8					
EIL	Elat	15.23	124	Pn	Pn	07 52 58.9 +0.5
	comp=E,0.3nm,0.3s,baz=312,slow=14,SNR=2.3					
KBZ	Khabaz	17.32	68	P	Pn	07 53 26.2 +1.3
	comp=E,0.2nm,0.3s,baz=284,slow=8.3,SNR=4.4					
ESDC	Sonseca Array	18.92	279	P	P	07 53 44.2 +0.1
	comp=E,0.2nm,0.3s,baz=74,slow=11,SNR=7.9					
HFS	Hagfors	21.35	351	P	P	07 54 09.2 -1.0
	comp=E,2.6nm,0.6s,baz=158,slow=12,SNR=17					
FINES	FINESS Array B	22.48	7	P	P	07 54 20.6 -1.7
	comp=E,2.1nm,0.4s,baz=182,slow=11,SNR=10					
NB2	NORSAR Subarra	22.57	348	P	P	07 54 22.3 -1.1
	comp=Z,3.2nm,0.7s,baz=153,slow=10					
NB2	NORSAR Subarra	22.57	348	P	P	07 54 22.3 -1.1
	comp=Z,3.2nm,0.7s,SNR=8.7					
NOA	NORSAR Array B	22.57	348	P	P	07 54 22.8 -0.7
	comp=Z,2.2nm,0.6s,baz=164,slow=10,SNR=6.1					
EKA	Eskdalemuir Ar	22.57	323	P	P	07 54 23.1 -0.4
	comp=Z,7.8nm,0.8s,baz=121,slow=9.9,SNR=13					
GEYT	Alibeck	29.26	81	P	P	07 55 25.6 +0.3
	comp=Z,1.3nm,0.5s,baz=263,slow=8.7,SNR=4.1					
ABKAR	Akbulak array	29.64	57	*e*P	P	07 55 26.9 -1.6
	comp=Z,2.1nm,1.0s					
ARU	Arti	30.25	43	P	P	07 55 32.9 -0.9
	comp=Z,2.1nm,0.4s,baz=271,slow=18,SNR=3.4					
ARCES	ARCESS Array B	30.46	3	P	P	07 55 34.0 -1.7
	comp=Z,1.2nm,0.6s,baz=188,slow=12,SNR=8.5					
TORD	Torodi Ar. Bea	30.88	218	P	P	07 55 40.5 +0.7
	comp=Z,1.2nm,0.6s,baz=30,slow=8.7,SNR=7.8					
KKAR	Karatay Array	37.36	68	*e*P	P	07 56 35.3 -0.5
	comp=Z,2.0nm,0.5s					
KKAR	Karatay Array	37.36	68	*e*P	P	07 56 35.4 -0.5
	comp=Z,2.0nm,0.5s					
EKS2	Erkin-Say	39.80	67	*e*P	P	07 56 56.2 -0.2
	comp=Z,0.9nm,0.3s					
EKS2	Erkin-Say	39.80	67	*e*P	P	07 56 56.2 -0.2
	comp=Z,0.9nm,0.3s					
KURBB	Kurchatov Arra	41.58	54	P	P	07 57 09.5 -1.4
	comp=Z,1.3nm,0.7s,baz=281,slow=9.0,SNR=5.1					
KURK	Kurchatov	41.63	54	P	P	07 57 09.5 -1.7
MKAR	Makanchi Array	44.73	59	P	P	07 57 35.3 -1.2
	comp=Z,2.1nm,0.6s,baz=284,slow=7.2,SNR=12					
ZALV	Zalesovo Beam	44.97	49	P	P	07 57 37.0 -1.1
	comp=Z,3.3nm,0.4s,baz=278,slow=8.4,SNR=10					
NRIK	Noril'sk	45.83	27	P	P	07 57 45.6 +0.8
	comp=Z,2.1nm,0.6s,baz=274,slow=3.7,SNR=4.7					
SCHQ	Schefferville	57.69	317	P	P	07 59 13.1 -0.4
	comp=Z,1.1nm,0.4s,baz=57,slow=6.6,SNR=6.0					
YKA	Yellowknife Ar	72.39	340	P	P	08 00 47.8 -1.1
	comp=Z,0.4nm,0.6s,baz=39,slow=5.

BRG				SG	Sg	08 03 44.3	+0.3
	14nm,0.4s						
KRLC	**Kraliky**	**1.57 162**	*e*PG		**Pb**	08 03 26.0	-0.1
KRLC			*e*SG		**Sn**	08 03 45.8	-0.6
GOPC	**GO Pecny, Ondr**	**1.83 206**	*e*PG		**Pb**	08 03 30.7	0.0
GOPC			*e*SG		**Sb**	08 03 54.3	+0.2
PRU	**Pruhonice**	**1.84 212**	*e*SG		**Sg**	08 03 54.4	-0.9
	comp=Z,3.5nm,0.2s						
CLL	**Collm**	**1.91 263**	*e*Pn		**Pn**	08 03 29.0	-1.1
CLL			*e*Pg		**Pb**	08 03 32.0	0.0
CLL			*e*Sg		**Sg**	08 03 58.0	+0.3
NKC	**Novy Kostel**	**2.63 241**	*e*PN		**Pn**	08 03 40.6	+0.6
NKC			*e*PG		**Pg**	08 03 46.8	+0.1
NKC			*e*SG		**Sg**	08 04 21.0	+0.2
	comp=Z,6.6nm,0.4s						
KHC	**Kasperske Hory**	**2.90 214**	*e*PG		**Pb**	08 03 49.7	+0.8
KHC			*e*SN		**Sn**	08 04 18.2	-1.1
KHC			*e*SG		**Sg**	08 04 27.9	-1.5

NIED ***22*** *08:08:00, 34°.90N×142°.80E, h5km, Mw3.5 Best double couple: M0 1.92000×10^14 NP1:φs 54.00000°, δ51.00000°, λ-35.00000°. NP2:φs 168.00000°, δ64.00000°, λ-136.00000°.*
IDC ***22*** *08:08:13.4±1.2, 34°.81N×142°.87E, h0km, mb3.6/5, mb1 3.8/6, mb1mx3.5/37, mbtmp3.5/6, ML3.3/1, MS2.3/2, Ms1 2.3/2, ms1mx2.2/45, Error ellipse: s-maj=36.3km s-min=24.4km az=59.0*
ISCJB ***22*** *08:08:16.9±0.8, 34°.82N±0°.07×142°.76E±0°.07, h33km, mb3.6/5, Error ellipse: s-maj=11.0km s-min=6.6km az=32.1*
JMA ***22*** *08:08:16.6±0.4, 34°.87N×142°.76E, h27km, M3.6*
ISC 22 08:08:18.5±1.1, 34°.82N±0°.07×142°.77E±0°.09, h35km, n18, σ1§41/26, mb3.6/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**1.48 264**		P	**Pn**	08 08 41.9	**-0.3**
BSO1				X		08 09 01.9	
CHOJ	**Chosi**	**1.79 300**		P	**Pn**	08 08 46.1	**-0.9**
CHOJ				*e*S	**Sn**	08 09 08.6	**+0.1**
BSO3	**Boso 3**	**1.86 270**		P	**Pn**	08 08 47.9	**+0.3**
BSO3				*e*X		08 09 11.9	
BSO4	**Boso 4**	**2.01 275**		P	**Pn**	08 08 50.7	**+0.9**
BSO4				*e*X		08 09 15.4	
JHJ2	**Mitsune**	**2.99 236**		P	**Pn**	08 09 03.0	**-0.4**
JHJ2				*e*S	**Sn**	08 09 34.5	**-3.5**
JOD2	**Odawara 2**	**3.05 279**		P	**Pn**	08 09 03.6	**-0.7**
JOD2				S	**Sn**	08 09 38.6	**-1.0**
JAG	**Ashikaga**	**3.14 302**		P	**Pn**	08 09 05.1	**-0.4**
JAG				*e*S	**Sn**	08 09 40.8	**-1.0**
JFT	**Otama**	**3.33 325**		P	**Pn**	08 09 07.0	**-1.2**
JFT				S	**Sn**	08 09 43.6	**-3.0**
JRY	**Ryogami san**	**3.38 292**		P	**Pn**	08 09 09.2	**+0.4**
JRY				*e*S	**Sn**	08 09 47.2	**-0.5**
JYN	**Shimob**	**3.53 282**		P	**Pn**	08 09 11.6	**+0.7**
JYN				*e*S	**Sn**	08 09 51.6	**+0.2**
MJAR	**Matsushiro Arr**	**4.09 296**		Pn	**Pn**	08 09 17.3	**-1.3**
	1.9nm,0.3s,baz=100,slow=7.9,SNR=11						
MJAR				Sn	**Sn**	08 10 07.2	**+2.0**
	1.4nm,0.3s,baz=163,slow=24,SNR=4.2						
MJAR				LR	LR	08 11 09.7	
	comp=Z,26nm,18.8s,baz=135,slow=43						
MAT	**Matsushiro**	**4.09 296**		P	**Pn**	08 09 19.1	**+0.5**
MAT				S	**Sn**	08 10 02.4	**-2.9**
KSRS	**Korea Array**	**12.29 287**		LR	LR	08 15 56.5	
	comp=Z,24nm,22.0s,baz=125,slow=37						
MKAR	**Makanchi Array**	**46.25 304**		P	**P**	08 16 42.1	**+1.7**
	0.2nm,0.3s,baz=98,slow=8.9,SNR=2.8						
WRA	**Warramunga Arr**	**55.05 190**		P	**P**	08 17 47.2	**+0.3**
	0.9nm,0.8s,baz=8.4,slow=7.2,SNR=6.7						
ASAR	**Alice Springs**	**58.77 190**		P	**P**	08 18 12.9	**-0.2**
	0.4nm,0.7s,baz=5.4,slow=7.3,SNR=4.9						
NVAR	**Mina Array Bea**	**75.43 53**		P	**P**	08 19 59.2	**0.0**
	0.2nm,0.3s,baz=300,slow=7.2,SNR=3.0						
AKASG	**Malin Array Be**	**76.72 323**		P	**P**	08 20 06.3	**+0.3**
	0.6nm,0.5s,baz=48,slow=6.1,SNR=4.3						

DDA 22 08:14:15.4, 39°.09N×28°.99E, h7km, MI2.7, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.22 257**		*i* P	Pg	08 14 20.3	+0.4
DEMI				*i* S	Sg	08 14 23.6	+0.7
GDZ	**Gediz**	**0.38 90**		*i* P	Pg	08 14 23.1	+0.3
GDZ				*i* S	Sg	08 14 28.8	+0.9
MANT	**Manisa**	**0.69 210**		*i* P	Pg	08 14 29.0	+0.3
MANT				*i* S	Sg	08 14 38.1	+0.3

ISCJB ***22*** *08:14:50.5±0.4, 39°.27N±0°.01×20°.48E±0°.03, h8km±3km, Error ellipse: s-maj=3.8km s-min=2.0km az=152.9*
THE ***22*** *08:14:50.9, 39°.26N×20°.56E, h0km±1km, ML3.0/15, Error ellipse: s-maj=1.2km s-min=0.4km az=259.0*
ATH ***22*** *08:14:50.8, 39°.26N×20°.57E, h14km±3km, ML2.9/11, Error ellipse: s-maj=3.7km s-min=0.6km az=285.0*
CSEM ***22*** *08:14:51.1±0.2, 39°.25N×20°.55E, h10km, ML2.9, Error ellipse: s-maj=5.0km s-min=2.6km az=68.0*
PDG ***22*** *08:14:52.0±0.3, 39°.31N×20°.50E, h18km±1km, ML3.3/11, Error ellipse: s-maj=1.4km s-min=0.9km az=90.0*
ISC 22 08:14:50.7±0.9, 39°.26N±0°.01×20°.57E±0°.02, h11km±8km, n107, σ0§98/174, 7C-4D, Greece-Albania border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IGT	**Igoumenitsa**	**0.33 326**		P	**Pg**	08 14 57.0	**-0.2**
IGT	**Igoumenitsa**	**0.33 326**		P	**Pg**	08 14 56.6	**-0.7**
IGT	**Igoumenitsa**	**0.33 326**		P	**Pg**	08 14 56.6	**-0.7**
IGT				S	**Sb**	08 15 04.2	**+0.5**
IGT				AML	AML	08 15 06.8	
	comp=E,6107μm,0.5s						
IGT				AML	AML	08 15 07.7	
	comp=N,4230μm,0.4s						
DSL	**Palaion Diasel**	**0.43 107**		P	**Pg**	08 14 59.1	**-0.1**
DSL				S	**Sb**	08 15 05.8	**-1.0**
DSL	**Palaion Diasel**	**0.43 107**		P	**Pg**	08 14 59.1	**-0.1**
DSL				S	**Sb**	08 15 05.8	**-1.0**
DSL	**Palaion Diasel**	**0.43 107**		P	**Pg**	08 14 57.4	**-1.7**
DSL				S	**Sb**	08 15 06.5	**-0.3**
DSL				AML	AML	08 15 07.7	
	comp=E,4717μm,0.3s						
DSL				AML	AML	08 15 08.2	
	comp=N,5886μm,0.3s						
SGD	**Sagiada**	**0.43 324**		P	**Pg**	08 14 59.3	**0.0**
SGD				S	**Sg**	08 15 06.1	**+1.1**
SGD	**Sagiada**	**0.43 324**		P	**Pg**	08 14 59.2	**0.0**
SGD				S	**Sg**	08 15 06.1	**+1.1**
SGD	**Sagiada**	**0.43 324**		P	**Pg**	08 14 59.2	**0.0**
SGD				S	**Sb**	08 15 06.6	**-0.3**
JAN	**Janina**	**0.45 29**		P	**Pg**	08 14 59.2	**-0.4**
JAN				S	**Sg**	08 15 06.4	**+0.8**
JAN	**Janina**	**0.45 29**		P	**Pg**	08 14 59.2	**-0.4**
JAN				S	**Sg**	08 15 06.4	**+0.8**
JAN	**Janina**	**0.45 29**		AML	AML	08 15 07.4	
	comp=E,11886μm,0.4s						
LKD2	**Lefkada island**	**0.48 171**		P	**Pg**	08 14 59.5	**-0.5**
LKD2				S	**Sg**	08 15 07.0	**+0.6**
LKD2	**Lefkada island**	**0.48 171**		P	**Pg**	08 14 59.5	**-0.5**
LKD2				S	**Sg**	08 15 07.0	**+0.6**
LKD2	**Lefkada island**	**0.48 171**		P	**Pg**	08 14 58.9	**-1.2**
LKD2				S	**Sb**	08 15 07.5	**-0.6**
LKD2				AML	AML	08 15 08.7	
	comp=N,1486μm,0.3s						
LKD2				AML	AML	08 15 10.0	
	comp=E,2396μm,0.2s						
KEK	**Kerkira**	**0.74 307**		P	**Pg**	08 15 04.7	**-0.4**
KEK				S	**Sb**	08 15 15.8	**0.0**
KEK	**Kerkira**	**0.74 307**		P	**Pg**	08 15 04.7	**-0.4**
KEK				S	**Sb**	08 15 15.8	**0.0**
PDO	**Prodromos**	**0.82 144**		P	**Pg**	08 15 05.7	**-0.8**
PDO				S	**Sb**	08 15 18.1	**+0.2**
PDO	**Prodromos**	**0.82 144**		P	**Pg**	08 15 05.0	**-1.5**
PDO				S	**Sg**	08 15 17.0	**-0.2**
PDO	**Prodromos**	**0.82 144**		P	**Pg**	08 15 05.0	**-1.5**
PDO				S	**Sg**	08 15 17.0	**-0.2**
PDO				AML	AML	08 15 23.1	
	comp=E,1669μm,0.7s						
PDO				AML	AML	08 15 23.1	
	comp=N,2010μm,0.5s						
KPRO	**Kipourio**	**0.93 41**		P	**Pb**	08 15 07.8	**-1.0**
KPRO	**Kipourio**	**0.93 41**		P	**Pb**	08 15 07.1	**-1.6**
KPRO				S	**Sn**	08 15 22.4	**-0.6**
KPRO	**Kipourio**	**0.93 41**		P	**Pb**	08 15 07.1	**-1.6**
KPRO				S	**Sn**	08 15 22.4	**-0.6**
KPRO				AML	AML	08 15 30.7	
	comp=N,934μm,0.6s						
KPRO				AML	AML	08 15 31.4	
	comp=E,1543μm,0.5s						
PVO	**Paravola**	**0.99 130**		P	**Pb**	08 15 09.3	**-0.4**
PVO	**Paravola**	**0.99 130**		P	**Pn**	08 15 10.0	**-0.4**
PVO				S	**Sb**	08 15 22.4	**-0.3**
PVO	**Paravola**	**0.99 130**		P	**Pn**	08 15 10.0	**-0.4**
PVO				S	**Sb**	08 15 22.4	**-0.3**
PVO				AML	AML	08 15 29.3	
	comp=N,1104μm,0.4s						
PVO				AML	AML	08 15 29.3	
	comp=E,1019μm,0.5s						
EVR	**Evrytania**	**1.03 109**		P	**Pb**	08 15 10.0	**-0.5**
EVR				S	**Sn**	08 15 25.3	**-0.1**
EVR	**Evrytania**	**1.03 109**		P	**Pg**	08 15 10.5	**+0.1**
EVR				S	**Sg**	08 15 23.8	**0.0**
EVR	**Evrytania**	**1.03 109**		P	**Pg**	08 15 10.5	**+0.1**
EVR				S	**Sg**	08 15 23.8	**0.0**
EVR				AML	AML	08 15 31.0	
	comp=N,1072μm,0.5s						
PENT	**Pentalofos**	**1.03 25**		P	**Pb**	08 15 09.9	**-0.7**
PENT	**Pentalofos**	**1.03 25**		P	**Pb**	08 15 09.8	**-0.7**
PENT				S	**Sn**	08 15 25.1	**-0.5**
PENT	**Pentalofos**	**1.03 25**		P	**Pb**	08 15 09.8	**-0.7**
PENT				S	**Sn**	08 15 25.1	**-0.5**
PENT				AML	AML	08 15 28.7	
	comp=E,624μm,0.4s						
PENT				AML	AML	08 15 30.2	
	comp=N,477μm,0.7s						
VLS	**Valsamata**	**1.08 179**		P	**Pb**	08 15 11.2	**-0.2**
VLS				S	**Sn**	08 15 27.4	**+0.7**
VLS	**Valsamata**	**1.08 179**		P	**Pg**	08 15 11.5	**0.0**
VLS				S	**Sn**	08 15 27.4	**+0.7**
THL	**Klokotos Trika**	**1.16 74**		P	**Pn**	08 15 12.5	**-0.3**
THL				S	**Sg**	08 15 30.2	**+2.1**
THL	**Klokotos Trika**	**1.16 74**		P	**Pn**	08 15 12.5	**-0.3**
THL				S	**Sg**	08 15 30.2	**+2.1**
KFL	**Anninata**	**1.16 171**		P	**Pb**	08 15 12.6	**-0.2**
KFL				S	**Sg**	08 15 29.3	**+1.1**
KFL	**Anninata**	**1.16 171**		P	**Pb**	08 15 12.6	**-0.2**
KFL				S	**Sg**	08 15 28.4	**+0.2**
KFL	**Anninata**	**1.16 171**		P	**Pn**	08 15 12.5	**-0.4**
KFL				S	**Sg**	08 15 28.4	**+0.2**
NEST	**Nestorio**	**1.21 18**		P	**Pn**	08 15 13.4	**-0.2**
NEST				S	**Sg**	08 15 31.2	**+1.5**
NEST	**Nestorio**	**1.21 18**		P	**Pn**	08 15 13.1	**-0.5**
NEST				S	**Sg**	08 15 31.2	**+1.5**
NEST	**Nestorio**	**1.21 18**		P	**Pn**	08 15 13.1	**-0.5**
AXS	**Araxos**	**1.24 149**		P	**Pn**	08 15 12.8	**-1.0**
AXS				S	**Sg**	08 15 32.1	**+1.5**
AXS	**Araxos**	**1.24 149**		P	**Pn**	08 15 12.8	**-1.0**
AXS				S	**Sg**	08 15 32.1	**+1.5**
ANX	**Ano Chora**	**1.25 122**		P	**Pg**	08 15 14.7	**0.0**
ANX				S	**Sg**	08 15 33.0	**+2.0**
ANX	**Ano Chora**	**1.25 122**		P	**Pg**	08 15 14.7	**0.0**
ANX				S	**Sg**	08 15 33.0	**+2.0**
EFP	**Efpalio**	**1.34 128**		P	**Pg**	08 15 16.5	**+0.1**
EFP	**Efpalio**	**1.34 128**		P	**Pg**	08 15 16.4	**+0.1**
AGG	**Agios Georgios**	**1.39 99**		P	**Pb**	08 15 16.5	**-0.2**
AGG				S	**Sg**	08 15 36.7	**+1.2**
AGG	**Agios Georgios**	**1.39 99**		P	**Pb**	08 15 16.5	**-0.2**
AGG				S	**Sg**	08 15 36.7	**+1.2**
AGG	**Agios Georgios**	**1.39 99**		P	**Pb**	08 15 16.3	**-0.4**
AGG				S	**Sg**	08 15 36.8	**+1.2**
AGG				AML	AML	08 15 43.3	
	comp=E,1502μm,0.5s						
AGG				AML	AML	08 15 43.4	
	comp=N,2509μm,0.6s						
RLS	**Riolos of Patr**	**1.39 149**		P	**Pn**	08 15 15.7	**-0.3**
RLS	**Riolos of Patr**	**1.39 149**		S	**Sg**	08 15 37.8	**+2.2**
RLS				AML	AML	08 15 42.5	
	comp=E,436μm,0.5s						
RLS				AML	AML	08 15 42.5	
	comp=N,500μm,0.8s						
KZN	**Kozani**	**1.40 41**		P	**Pb**	08 15 16.8	**0.0**
KZN				S	**Sg**	08 15 36.7	**+1.1**
KZN	**Kozani**	**1.40 41**		P	**Pb**	08 15 16.8	**0.0**
KZN				S	**Sg**	08 15 36.7	**+0.6**
SERG	**Sergoula**	**1.44 126**		P	**Pb**	08 15 17.2	**-0.3**
SERG	**Sergoula**	**1.44 126**		P	**Pb**	08 15 17.2	**-0.3**
LAKA	**Lakka**	**1.50 132**		P	**Pb**	08 15 18.8	**+0.2**
LAKA	**Lakka**	**1.50 132**		P	**Pb**	08 15 18.8	**+0.2**
ZKS	**Zakynthos**	**1.57 174**		P	**Pb**	08 15 19.5	**-0.2**
ZKS				S	**Sg**	08 15 41.3	**0.0**
ZKS	**Zakynthos**	**1.57 174**		P	**Pb**	08 15 19.5	**-0.2**
ZKS				S	**Sg**	08 15 41.3	**0.0**
ZKS	**Zakynthos**	**1.57 174**		P	**Pn**	08 15 18.7	**+0.2**
DRO	**Drossia**	**1.59 145**		P	**Pg**	08 15 22.6	**+1.5**
FNA	**Florina**	**1.64 22**		P	**Pb**	08 15 20.4	**-0.6**
FNA				S	**Sg**	08 15 43.0	**-0.5**
FNA	**Florina**	**1.64 22**		P	**Pb**	08 15 20.4	**-0.6**
FNA				S	**Sg**	08 15 43.0	**-0.5**
LIT	**Litokhoron**	**1.70 60**		P	**Pb**	08 15 21.5	**-0.5**
LIT				S	**Sg**	08 15 44.9	**-0.6**
LIT	**Litokhoron**	**1.70 60**		P	**Pb**	08 15 21.5	**-0.5**
LIT				S	**Sg**	08 15 44.9	**-0.6**
LIT	**Litokhoron**	**1.70 60**		P	**Pb**	08 15 22.9	**-0.5**
KLV	**Kalavryta, Ach**	**1.74 134**		P	**Pb**	08 15 22.1	**-0.5**
KLV	**Kalavryta, Ach**	**1.74 134**		P	**Pb**	08 15 22.1	**-0.5**
KLV	**Kalavryta, Ach**	**1.74 134**		P	**Pb**	08 15 22.7	**+0.1**
DSF	**Desfina**	**1.75 118**		P	**Pg**	08 15 24.4	**+0.1**
DSF	**Desfina**	**1.75 118**		P	**Pg**	08 15 24.4	**+0.1**
BIA	**Bitola**	**1.85 18**	*i* Pn		**Pg**	08 15 26.7	**+0.5**
BIA	**Bitola**	**1.85 18**	*i* Pn		**Pg**	08 15 26.6	**+0.5**
OHR	**Ohrid**	**1.85 5**	*i* Pn		**Pg**	08 15 26.0	**-0.3**
OHR	**Ohrid**	**1.85 5**	*i* Pn		**Pg**	08 15 25.9	**-0.3**
PLG	**Polygyros**	**2.48 62**	P		**Pn**	08 15 32.5	**+1.5**
PLG	**Polygyros**	**2.48 62**	P		**Pn**	08 15 32.5	**+1.5**
VAY	**Valandovo**	**2.56 36**	*i* Pn		**Pb**	08 15 35.2	**-1.5**
VAY	**Valandovo**	**2.56 36**	*i* Pn		**Pb**	08 15 35.1	**-1.5**
DID	**Didima**	**2.73 129**	P		**Pn**	08 15 35.2	**+0.7**
DID	**Didima**	**2.73 129**	P		**Pn**	08 15 35.2	**+0.7**
SKO	**Skopje**	**2.79 14**	*i* Pn		**Pb**	08 15 38.7	**-1.8**
SKO	**Skopje**	**2.79 14**	*i* Pn		**Pb**	08 15 38.6	**-1.8**
ULC	**Ulcinj**	**2.88 340**	⇑*i*Pn		**Pn**	08 15 37.0	**+0.5**
ULC			*e*Sn		**Sn**	08 16 12.4	**+1.3**
DRME	**Dracevica, Mon**	**3.10 341**	⇑*i*Pn		**Pn**	08 15 40.4	**+0.9**
DRME			*e*Sn		**Sn**	08 16 18.2	**+1.6**
BUM	**Brajici-Budva**	**3.29 338**	⇑*i*Pn		**Pn**	08 15 42.3	**+0.2**
BUM			*e*Sn		**Sn**	08 16 22.1	**+0.8**
PVY	**Plav**	**3.36 352**	⇑*i*Pn		**Pn**	08 15 44.3	**+1.1**
PVY			*e*Sn		**Sn**	08 16 23.9	**+0.8**
PVY	**Plav**	**3.36 352**	⇑*i*Pn		**Pn**	08 15 44.3	**+1.1**
PVY			*e*Sn		**Sn**	08 16 23.9	**+0.8**
CEME	**Cevo**	**3.51 340**	⇓*i*Pn		**Pn**	08 15 45.8	**+0.6**
CEME			*e*Sn		**Sn**	08 16 27.6	**+0.9**
HCY	**Herceg Novi**	**3.55 334**	⇑*i*Pn		**Pn**	08 15 45.9	**+0.3**
HCY			*e*Sn		**Sn**	08 16 28.4	**+0.9**
BEY	**Berane**	**3.64 352**	⇓*i*Pn		**Pn**	08 15 48.5	**+1.5**
BEY			*e*Sn		**Sn**	08 16 30.4	**+0.4**
IVA	**Berane**	**3.64 352**	⇓*i*Pn		**Pn**	08 15 48.5	**+1.5**
IVA			*e*Sn		**Sn**	08 16 30.4	**+0.4**
BARS	**Barje**	**3.67 14**	*e*Pn		**Pn**	08 15 49.1	**+1.7**
NKME	**Niksic**	**3.71 341**	⇓*i*Pn		**Pn**	08 15 48.6	**+0.7**
NKME			*e*Sn		**Sn**	08 16 32.5	**+1.0**
NKY	**Niksic**	**3.74 342**	*e*Pn		**Pn**	08 15 49.0	**+0.6**
NKY			*e*Sn		**Sn**	08 16 33.0	**+0.6**
BRY	**Bratogost**	**3.94 338**	⇑*i*Pn		**Pn**	08 15 52.4	**+1.2**
BRY			*e*Sn		**Sn**	08 16 38.4	**+0.9**
UPM	**Unac-Piva**	**4.13 343**	*e*Pn		**Pn**	08 15 54.9	**+1.1**
UPM			*e*Sn		**Sn**	08 16 41.9	**-0.3**
UPM	**Unac-Piva**	**4.13 343**	*e*Pn		**Pn**	08 15 54.9	**+1.1**
UPM			*e*Sn		**Sn**	08 16 41.9	**-0.3**
PLE	**Pljevlja**	**4.16 348**	*e*Pn		**Pn**	08 15 55.9	**+1.8**
PLE			*e*Sn		**Sn**	08 16 42.9	**+0.1**
PLE	**Pljevlja**	**4.16 348**	*e*Pn		**Pn**	08 15 55.9	**+1.8**
PLE			*e*Sn		**Sn**	08 16 42.9	**+0.1**
BBLS	**Lazići**	**4.68 350**	*e*Pn		**Pn**	08 16 03.1	**+1.8**
DIVS	**Divibare**	**4.85 355**	*e*Pn		**Pn**	08 16 03.7	**+0.1**
TEKS	**Tekeris**	**5.34 352**	*e*Pn		**Pn**	08 16 08.2	**-2.0**
UDBI	**Udbina**	**6.36 327**	*e*Pn		**Pn**	08 16 25.1	**+0.7**
UDBI				Sn	**Sn**	08 17 34.5	**-2.5**
NVLJ	**Novalja**	**6.79 323**	*e*Pn		**Pn**	08 16 31.4	**+1.3**
NVLJ				Sn	**Sn**	08 17 43.1	**-4.2**

NIED ***22*** *08:18:00, 34°.90N×142°.60E, h5km, Mw3.9 Best double couple: M0 7.29000×10^14 NP1:φs 39.00000°, δ33.00000°, λ-84.00000°. NP2:φs 212.00000°, δ57.00000°, λ-94.00000°.*
IDC ***22*** *08:18:17.1±0.7, 34°.85N×142°.82E, h0km, mb3.9/18, mb1 4.1/21, mb1mx4.0/40, mbtmp3.9/21, ML3.6/2, Error ellipse: s-maj=16.8km s-min=15.6km az=138.0*
JMA ***22*** *08:18:20.3±0.4, 34°.92N×142°.64E, h14km, M3.8*
NEIC ***22*** *08:18:21.7±0.4, 34°.73N×142°.78E, h35km, mb4.2/2, Error ellipse: s-maj=9.1km s-min=8.3km az=124.0*
ISC 22 08:18:18.1±4.5, 34°.76N±0°.05×142°.80E±0°.07, h11km±28km, n52, σ1§80/60, mb4.0/20, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**1.51 267**		P	**Pn**	08 18 45.1	**+0.6**
BSO1				S	**Sn**	08 19 03.0	**-0.9**
CHOJ	**Chosi**	**1.85 301**		P	**Pn**	08 18 49.8	**+0.1**
CHOJ				*e*S	**Sn**	08 19 11.2	**-1.9**
BSO3	**Boso 3**	**1.89 272**		P	**Pn**	08 18 51.2	**+1.2**
BSO3				S	**Sn**	08 19 14.8	**+1.1**
BSO4	**Boso 4**	**2.04 277**		P	**Pn**	08 18 53.4	**+1.1**
BSO4				S	**Sn**	08 19 19.1	**+1.4**
JCN	**Nagara**	**2.23 288**		P	**Pn**	08 18 56.3	**+1.3**
JIM2	**Oshima 3**	**2.78 270**		P	**Pn**	08 19 01.8	**-0.7**
JIM2				*e*S	**Sn**	08 19 34.7	**-1.3**
JHJ2	**Mitsune**	**2.97 237**		P	**Pn**	08 19 05.4	**+0.2**
JHJ2	**Mitsune**	**2.97 237**		*e*Pn	**Pn**	08 19 05.6	**+0.4**
JHJ2				*e*Sn	**Sn**	08 19 39.6	**-1.3**
JHJ	**Hachijo jima 2**	**2.99 238**		Pn	**Pn**	08 19 06.3	**+0.8**
	27nm,0.3s,baz=340,slow=22,SNR=11						
JHJ				Sn	**Sn**	08 19 38.6	**-2.8**
	22nm,0.3s,baz=61,slow=21,SNR=6.3						
JOD2	**Odawara 2**	**3.09 280**		P	**Pn**	08 19 06.5	**-0.3**
JOD2				*e*S	**Sn**	08 19 40.9	**-2.9**
JAG	**Ashikaga**	**3.20 302**		P	**Pn**	08 19 08.2	**-0.1**
JAG				*e*S	**Sn**	08 19 43.3	**-3.1**
JFT	**Otama**	**3.40 325**		P	**Pn**	08 19 10.0	**-1.1**
JFT				S	**Sn**	08 19 46.2	**-5.3**
JRY	**Ryogami san**	**3.43 293**		P	**Pn**	08 19 11.8	**+0.3**
JRY				*e*S	**Sn**	08 19 52.1	**0.0**
MJAR	**Matsushiro Arr**	**4.14 297**		Pn	**Pn**	08 19 21.4	**+0.1**
	2.7nm,0.3s,baz=107,slow=8.0,SNR=25						
MJAR				Sn	**Sn**	08 20 08.6	**-1.2**
	1.5nm,0.3s,baz=7.3,slow=30,SNR=5.7						
MAJO	**Matsushiro**	**4.14 297**		*e*Pn	**Pn**	08 19 22.1	**+0.8**
MAJO				*e*Sn	**Sn**	08 20 08.6	**-1.2**
MAT	**Matsushiro**	**4.14 297**		P	**Pn**	08 19 21.6	**+0.3**
MAT				S	**Sn**	08 20 08.0	**-1.8**
ERM	**Erimo**	**7.25 2**		*e*Pn	**Pn**	08 20 00.9	**-3.1**
ERM				*e*Sn	Sn	08 21 16.6	-10
CBIJ	**Chichi jima**	**7.65 184**		Pn	**Pn**	08 20 08.0	**-1.5**
CBIJ				Sn	**Sn**	08 21 30.4	**-5.9**
JCJ	**Chichijima**	**7.65 184**		Pn	**Pn**	08 20 08.0	**-1.5**
	5.1nm,0.3s,baz=271,slow=23,SNR=12						
JCJ				Sn	**Sn**	08 21 30.4	**-5.9**
	baz=165,slow=20						
ASAJ	**Asahikawa**	**9.35 359**		Pn	Pn	08 20 28.9	-3.8
	3.7nm,0.3s,baz=250,slow=13,SNR=8.7						
ASAJ	**Asahikawa**	**9.35 359**		*e*Pn	Pn	08 20 28.8	-3.9
	3.2nm,0.4s						
USRK	**Ussuriysk Ar.**	**12.59 322**		Pn	**Pn**	08 21 15.7	**-1.4**
	0.1nm,0.3s,baz=112,slow=12,SNR=2.5						
PETK	**Petropavlovsk-**	**21.18 25**		P	**P**	08 23 03.8	**+0.5**
	2.9nm,0.9s,baz=225,slow=16,SNR=3.1						
H11N2	**WAKE ISLAND Hy**	**26.04 119**		T	T	08 51 02.2	
	baz=308						
H11N1	**WAKE ISLAND Hy**	**26.05 119**		T	T	08 51 01.5	
	baz=308						
H11N3	**WAKE ISLAND Hy**	**26.06 119**		T	T	08 51 06.8	
	baz=308						
H11S1	**WAKE ISLAND Hy**	**26.70 121**		T	T	08 51 50.5	
	baz=313,slow=74						
H11S3	**WAKE ISLAND Hy**	**26.70 121**		T	T	08 51 51.2	
	baz=313,slow=74						
H11S2	**WAKE ISLAND Hy**	**26.71 121**		T	T

3.7nm,0.3s,baz=86,slow=15,SNR=8.6
MAT Matsushiro 4.42 263 P **Pn 08 21 25.3 +1.5**
MAT eS **Sn 08 22 15.3 +1.3**
JHJ Hachijo jima 2 5.17 219 Pn **Pn 08 21 33.9 -0.4**
6.9nm,0.3s,baz=286,slow=17,SNR=3.0
JHJ Sn **Sn 08 22 28.9 -3.8**
7.0nm,0.3s,baz=45,slow=20,SNR=4.1
JCH Churui 5.39 358 P Pn 08 21 29.4 -7.8
JCH eS Sn 08 22 32.8 -5.2
ASAJ Asahikawa 6.93 354 Pn **Pn 08 21 57.2 -1.2**
1.3nm,0.3s,baz=180,slow=16,SNR=4.0
JCJ Chichijima 10.17 187 Pn **Pn 08 22 40.8 -2.0**
baz=307,slow=20,SNR=2.0
JCJ Sn Sn 08 24 25.3 -10
2.1nm,0.3s,baz=294,slow=20,SNR=4.4
SONM Songino Array 29.17 303 P P 08 26 22.1 +4.8
0.3nm,0.4s,baz=118,slow=12,SNR=2.8
KURBB Kurchatov Arra 47.29 308 P P 08 28 54.4 +5.3
1.1nm,0.6s,baz=84,slow=8.3,SNR=5.3
ILAR Eielson Array 48.38 32 P **P 08 28 57.6 +0.3**
0.5nm,0.6s,baz=271,slow=6.4,SNR=5.8
WRA Warramunga Arr 57.53 190 P **P 08 30 06.3 +1.1**
0.4nm,0.5s,baz=10,slow=7.2,SNR=3.6
ASAR Alice Springs 61.25 190 P **P 08 30 32.6 +1.7**
0.5nm,0.9s,baz=19,slow=6.1,SNR=3.0
TXAR Lajitas Array 88.58 54 P **P 08 33 10.9 +2.0**
0.3nm,0.7s,baz=308,slow=3.1,SNR=4.2

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*CSEM **22** 08:24:25.9±0.2, 36°.99N×28°.22E, h8km, ML2.5, Error ellipse: s-maj=4.5km s-min=3.4km az=29.0*
*THE **22** 08:24:25.5, 36°.99N×28°.22E, h2km±3km, ML2.5/2, Error ellipse: s-maj=3.3km s-min=0.8km az=291.0*
*DDA **22** 08:24:25.3, 36°.97N×28°.26E, h7km, Ml3.1*
ISC 22 08:24:25.6±1.0, 36°.98N±0°.02×28°.23E±0°.02, h5km±9km, n24, σ1§15/46, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.16**	**16**	P	**Pg**	**08 24 28.8**	**-0.1**
YER				S	**Sg**	**08 24 31.7**	**+0.6**
YER	**Yerkesik**	**0.16**	**16**	P	**Pg**	**08 24 28.8**	**-0.1**
YER				S	**Sg**	**08 24 31.7**	**+0.6**
TURN	**Turunc**	**0.32**	**109**	*i* P	**Pg**	**08 24 29.3**	**-2.5**
TURN				*i* S	**Sg**	**08 24 33.1**	**-2.9**
BDRM	**Kayabasi**	**0.63**	**278**	P	**Pg**	**08 24 37.8**	**+0.1**
BDRM				S	**Sb**	**08 24 47.6**	**-0.6**
BDRM	**Kayabasi**	**0.63**	**278**	*i* P	**Pg**	**08 24 37.8**	**+0.1**
BDRM				*i* S	**Sb**	**08 24 47.6**	**-0.6**
AYDN	**Tasoluk**	**0.73**	**338**	P	**Pg**	**08 24 39.8**	**+0.1**
AYDN				S	**Sg**	**08 24 49.7**	**+0.4**
AYDN	**Tasoluk**	**0.73**	**338**	*i* P	**Pg**	**08 24 39.8**	**+0.1**
AYDN				*i* S	**Sg**	**08 24 49.7**	**+0.4**
BODT	**Bodrum**	**0.74**	**277**	P	**Pg**	**08 24 40.0**	**+0.3**
BODT	**Bodrum**	**0.74**	**277**	P	**Pg**	**08 24 40.0**	**+0.3**
ARG	**Arkhangelos**	**0.77**	**186**	P	**Pg**	**08 24 40.0**	**-0.3**
ARG				S	**Sb**	**08 24 52.8**	**+0.7**
ARG	**Arkhangelos**	**0.77**	**186**	P	**Pg**	**08 24 40.0**	**-0.3**
ARG				S	**Sb**	**08 24 52.8**	**+0.7**
FETY	**Fethiye**	**0.77**	**116**	P	**Pb**	**08 24 41.4**	**-0.1**
FETY				S	**Sb**	**08 24 52.0**	**-0.2**
FETY	**Fethiye**	**0.77**	**116**	P	**Pb**	**08 24 41.4**	**-0.1**
FETY				S	**Sb**	**08 24 52.0**	**-0.2**
DNZL	**Cakiroluk**	**0.97**	**42**	P	**Pg**	**08 24 43.5**	**-0.6**
DNZL				S	**Sn**	**08 25 01.0**	**+0.8**
DNZL	**Cakiroluk**	**0.97**	**42**	*i* P	**Pg**	**08 24 43.5**	**-0.6**
DNZL				*i* S	**Sn**	**08 25 01.0**	**+0.8**
GCAM	**G?zelcaml?**	**1.07**	**313**	P	**Pn**	**08 24 46.7**	**-0.5**
GCAM				S	**Sn**	**08 25 01.4**	**-1.0**
GCAM	**G?zelcaml?**	**1.07**	**313**	*i* P	**Pn**	**08 24 46.7**	**-0.5**
GCAM				*i* S	**Sn**	**08 25 01.4**	**-1.0**
GOLH	**Golhisar**	**1.10**	**76**	P	**Pn**	**08 24 48.4**	**+0.7**
GOLH				S	**Sn**	**08 25 02.8**	**-0.5**
GOLH	**Golhisar**	**1.10**	**76**	*i* P	**Pn**	**08 24 48.4**	**+0.7**
GOLH				*i* S	**Sn**	**08 25 02.9**	**-0.5**
AKAS	**Kas**	**1.34**	**123**	P	**Pb**	**08 24 51.2**	**0.0**
AKAS				S	**Sg**	**08 25 12.4**	**+3.9**
AKAS	**Kas**	**1.34**	**123**	*i* P	**Pb**	**08 24 51.2**	**0.0**
AKAS				*i* S	**Sg**	**08 25 12.4**	**+3.9**
KSL	**Kastellorizon**	**1.37**	**127**	P	**Pb**	**08 24 51.4**	**-0.3**
KSL				S	**Sn**	**08 25 09.7**	**-0.2**
KARP	**Karpathos**	**1.67**	**211**	P	**Pn**	**08 24 55.1**	**-0.4**
KARP				S	**Sn**	**08 25 16.5**	**-0.8**
KARP	**Karpathos**	**1.67**	**211**	P	**Pn**	**08 24 55.1**	**-0.4**
KARP				S	**Sn**	**08 25 16.5**	**-0.8**

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*ISCJB **22** 08:24:31.4±0.6, 39°.11N±0°.04×29°.09E±0°.05, h10km±6km, Error ellipse: s-maj=8.0km s-min=5.1km az=139.3*
*DDA **22** 08:24:31.5, 39°.09N×29°.09E, h7km, Ml2.6*
*ISK **22** 08:24:31.5, 39°.12N×29°.17E, h13km, MD2.3*
*CSEM **22** 08:24:31.3±0.1, 39°.12N×29°.09E, h8km, ML2.6, Error ellipse: s-maj=2.6km s-min=1.8km az=123.0*
ISC 22 08:24:30.9±1.0, 39°.13N±0°.03×29°.05E±0°.04, h14km±15km, n14, σ0§20/24, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**252**	P	**Pb**	**08 24 37.7**	**0.0**
DEMI				S	**Sb**	**08 24 42.0**	**-0.2**
DEMI	**Demirci**	**0.28**	**252**	*i* P	**Pb**	**08 24 37.7**	**0.0**
DEMI				*i* S	**Sb**	**08 24 42.0**	**-0.2**
GDZ	**Gediz**	**0.34**	**97**	P	**Pg**	**08 24 37.9**	**0.0**
GDZ				S	**Sg**	**08 24 42.4**	**-0.2**
GDZ	**Gediz**	**0.34**	**97**	*i* P	**Pg**	**08 24 37.9**	**0.0**
GDZ				*i* S	**Sg**	**08 24 42.4**	**-0.2**
TVSB	**Tavsanli**	**0.45**	**45**	*e*PG	**Pg**	**08 24 39.8**	**-0.1**
TVSB				*e*SG	**Sg**	**08 24 46.1**	**+0.1**
TVSB	**Tavsanli**	**0.45**	**45**	*e*Pg	**Pg**	**08 24 39.8**	**-0.1**
TVSB				*e*Sg	**Sg**	**08 24 46.1**	**+0.1**
MANT	**Manisa**	**0.75**	**211**	P	**Pb**	**08 24 46.0**	**+0.2**
MANT				S	**Sg**	**08 24 55.5**	**+0.1**
MANT	**Manisa**	**0.75**	**211**	*i* P	**Pb**	**08 24 46.0**	**+0.2**
MANT				*i* S	**Sg**	**08 24 55.5**	**+0.1**
KHL	**Karahalli**	**0.89**	**155**	*e*PG	**Pb**	**08 24 48.2**	**+0.1**
KHL	**Karahalli**	**0.89**	**155**	*e*Pg	**Pb**	**08 24 48.2**	**+0.1**
IZI	**Iznik**	**1.25**	**15**	*e*PN	**Pg**	**08 24 54.9**	**-0.1**
IZI	**Iznik**	**1.25**	**15**	*e*Pn	**Pg**	**08 24 54.9**	**-0.1**
ARMT	**Armutlu**	**1.44**	**354**	*e*PN	**Pg**	**08 24 58.4**	**-0.2**
ARMT				*e*SN	**Sg**	**08 25 17.8**	**+0.4**
ARMT	**Armutlu**	**1.44**	**354**	*e*Pn	**Pg**	**08 24 58.4**	**-0.2**
ARMT				*e*Sn	**Sg**	**08 25 17.8**	**+0.4**

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*IDC **22** 08:26:21.7±2.5, 34°.92N×142°.92E, h0km, mb3.4/3, mb1 3.6/6, mb1mx3.3/49, mbtmp3.6/6, ML3.5/3, Error ellipse: s-maj=57.6km s-min=26.5km az=64.0*
*ISCJB **22** 08:26:24.6±1.3, 34°.8N±0°.1×142°.8E±0°.1, h33km, mb3.5/3, Error ellipse: s-maj=16.1km s-min=15.3km az=11.7*
ISC 22 08:26:27.0±1.6, 34°.8N±0°.1×142°.8E±0°.2, h35km, n6, σ0§99/7, mb3.5/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHJ	**Hachijo jima 2**	**3.00**	**237**	Pn	**Pn**	**08 27 12.2**	**+0.2**
19nm,0.3s,baz=67,slow=20,SNR=10							
JHJ				Sn	**Sn**	**08 27 46.8**	**+0.1**
27nm,0.3s,baz=118,slow=22,SNR=5.8							
MJAR	**Matsushiro Arr**	**4.09**	**296**	Pn	**Pn**	**08 27 27.2**	**+0.1**
1.1nm,0.3s,baz=109,slow=8.8,SNR=6.3							
JCJ	**Chichijima**	**7.71**	**184**	Pn	**Pn**	**08 28 15.7**	**-1.1**
1.2nm,0.3s,baz=26,slow=22,SNR=7.7							
KURBB	**Kurchatov Arra**	**48.25**	**310**	P	**P**	**08 35 03.7**	**-0.6**
0.2nm,0.4s,baz=86,slow=7.3,SNR=4.1							
WRA	**Warramunga Arr**	**55.03**	**190**	P	**P**	**08 35 56.5**	**+1.3**
0.6nm,0.7s,baz=7.2,slow=7.5,SNR=6.5							
ASAR	**Alice Springs**	**58.76**	**190**	P	**P**	**08 36 22.4**	**+0.8**
0.3nm,0.8s,baz=1.6,slow=6.5,SNR=4.1							

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*NIED **22** 08:26:00, 34°.90N×142°.90E, h5km, Mw3.9 Best double couple: M0 7.39000×10^14 NP1:φs5.00000°, δ23.00000°, λ-96.00000°. NP2:φs191.00000°, δ67.00000°, λ-87.00000°.*
*IDC **22** 08:26:48.4±0.6, 34°.88N×142°.86E, h0km, mb3.9/20, mb1 4.1/23, mb1mx4.0/49, mbtmp3.9/23, ML3.8/2, Error ellipse: s-maj=17.3km s-min=14.1km az=124.0*
*NEIC **22** 08:26:50.0±0.3, 34°.86N×142°.86E, h10km, mb4.2/2, Error ellipse: s-maj=6.9km s-min=5.5km az=147.0*
*JMA **22** 08:26:50.8±0.4, 34°.86N×142°.88E, h55km, M3.8*

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*ISCJB **22** 08:26:51.1±0.4, 34°.86N±0°.04×142°.83E±0°.04, h33km, mb3.9/22, Error ellipse: s-maj=5.6km s-min=4.0km az=160.6*
ISC 22 08:26:53.4±0.5, 34°.87N±0°.06×142°.86E±0°.06, h35km, n73, σ1§46/83, mb3.9/22, 1C, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**1.56**	**263**	P	**Pn**	**08 27 16.7**	**-1.4**
BSO1				S	**Sn**	**08 27 36.2**	**-0.7**
CHOJ	**Chosi**	**1.83**	**298**	P	**Pn**	**08 27 21.3**	**-1.1**
CHOJ				*e*S	**Sn**	**08 27 43.8**	**-0.6**
BSO3	**Boso 3**	**1.93**	**269**	P	**Pn**	**08 27 22.8**	**-0.7**
BSO3				*e*S	**Sn**	**08 27 47.3**	**+0.9**
BSO4	**Boso 4**	**2.07**	**274**	P	**Pn**	**08 27 25.1**	**-0.5**
BSO4				*e*S	**Sn**	**08 27 50.8**	**+0.7**
JHJ2	**Mitsune**	**3.07**	**236**	P	**Pn**	**08 27 37.5**	**-1.9**
JHJ2	**Mitsune**	**3.07**	**236**	*e*Pn	**Pn**	**08 27 37.9**	**-1.6**
JHJ2				*e*Sn	**Sn**	**08 28 12.5**	**-2.5**
JHJ	**Hachijo jima 2**	**3.09**	**237**	Pn	**Pn**	**08 27 36.7**	**-3.0**
57nm,0.3s,baz=288,slow=22,SNR=14							
JHJ				Sn	**Sn**	**08 28 12.2**	**-3.2**
53nm,0.3s,baz=73,slow=20,SNR=7.4							
JOD2	**Odawara 2**	**3.12**	**278**	P	**Pn**	**08 27 38.3**	**-1.8**
JOD2				S	**Sn**	**08 28 13.3**	**-2.8**
JAG	**Ashikaga**	**3.18**	**300**	P	**Pn**	**08 27 39.7**	**-1.2**
JFT	**Otama**	**3.34**	**323**	P	**Pn**	**08 27 41.6**	**-1.5**
JFT				S	**Sn**	**08 28 18.0**	**-3.6**
JRY	**Ryogami san**	**3.43**	**291**	P	**Pn**	**08 27 44.0**	**-0.3**
JRY				S	**Sn**	**08 28 23.6**	**-0.1**
JYN	**Shimob**	**3.59**	**281**	P	**Pn**	**08 27 45.0**	**-1.6**
JYN				*e*S	**Sn**	**08 28 25.6**	**-2.2**
MJAR	**Matsushiro Arr**	**4.13**	**295**	Pn	**Pn**	**08 27 52.9**	**-1.2**
3.4nm,0.3s,baz=103,slow=9.4,SNR=19							
MJAR	**Matsushiro Arr**	**4.13**	**295**	Pn	**Pn**	**08 27 52.9**	**-1.2**
MAJO	**Matsushiro**	**4.14**	**295**	*e*Pn	**Pn**	**08 27 53.1**	**-0.9**
MAT	**Matsushiro**	**4.14**	**295**	P	**Pn**	**08 27 53.4**	**-0.7**
MAT				S	**Sn**	**08 28 42.6**	**+1.4**
MAT	**Matsushiro**	**4.14**	**295**	P	**Pn**	**08 27 52.9**	**-1.2**
JMK	**Ichinoseki**	**4.28**	**343**	P	**Pn**	**08 27 53.4**	**-2.7**
JYK	**Kaneyama**	**4.51**	**334**	P	**Pn**	**08 27 56.9**	**-2.3**
JSD	**Sado**	**4.87**	**312**	P	**Pn**	**08 28 02.5**	**-1.7**
ERM	**Erimo**	**7.14**	**2**	*e*Pn	**Pn**	**08 28 34.6**	**-0.7**
ASAJ	**Asahikawa**	**9.24**	**359**	Pn	**Pn**	**08 28 60.0**	**-4.2**
1.6nm,0.3s,baz=297,slow=30,SNR=4.2							
ASAJ				Sn	**Sn**	**08 30 49.7**	**+2.9**
4.6nm,0.3s,baz=36,slow=20,SNR=5.7							
ASAJ	**Asahikawa**	**9.24**	**359**	Pn	**Pn**	**08 28 60.0**	**-4.2**
ASAJ				Sn	**Sn**	**08 30 49.7**	**+2.9**
KSRS	**Korea Array**	**12.34**	**286**	Pn	**Pn**	**08 29 47.2**	**+0.6**
baz=91,slow=14,SNR=3.8							
KSAR	**Wonju Array Be**	**12.37**	**286**	Pn	**Pn**	**08 29 47.2**	**+0.2**
PETK	**Petropavlovsk-**	**21.06**	**25**	P	**P**	**08 31 34.3**	**+0.1**
3.7nm,0.9s,baz=216,slow=14,SNR=3.9							
PETK	**Petropavlovsk-**	**21.06**	**25**	P	**P**	**08 31 34.4**	**+0.1**
PET	**Petropavlovsk**	**21.34**	**27**	*e*P	**P**	**08 31 36.2**	**-1.0**
20nm,1.2s							
SEY	**Seymchan**	**28.72**	**9**	P	**P**	**08 32 47.6**	**+0.5**
2.6nm,0.6s,baz=192,slow=7.8,SNR=11							
SEY	**Seymchan**	**28.72**	**9**	P	**P**	**08 32 47.6**	**+0.5**
SONM	**Songino Array**	**29.99**	**307**	P	**P**	**08 32 59.8**	**+1.1**
0.3nm,0.4s,baz=127,slow=12,SNR=2.6							
SONM	**Songino Array**	**29.99**	**307**	P	**P**	**08 32 59.8**	**+1.1**
SNPH	**Sibulan**	**31.11**	**220**	⇑*i*P	P	08 33 03.2	-5.5
CMAR	**Chiang Mai Arr**	**42.15**	**259**	P	**P**	**08 34 42.2**	**-0.5**
0.6nm,0.4s,baz=47,slow=7.2,SNR=5.6							
CMAR	**Chiang Mai Arr**	**42.15**	**259**	P	**P**	**08 34 42.2**	**-0.5**
ZALV	**Zalesovo Beam**	**44.25**	**314**	P	**P**	**08 34 58.2**	**-1.0**
0.7nm,0.4s,baz=95,slow=11,SNR=2.8							
ZALV	**Zalesovo Beam**	**44.25**	**314**	P	**P**	**08 34 58.2**	**-1.0**
MKAR	**Makanchi Array**	**46.28**	**304**	P	**P**	**08 35 16.3**	**+0.8**
0.9nm,0.7s,baz=86,slow=8.1,SNR=4.9							
MKAR	**Makanchi Array**	**46.28**	**304**	P	**P**	**08 35 16.3**	**+0.8**
KURK	**Kurchatov**	**48.20**	**310**	P	**P**	**08 35 30.5**	**+0.2**
KURBB	**Kurchatov Arra**	**48.27**	**310**	P	**P**	**08 35 30.5**	**-0.3**
0.7nm,0.5s,baz=84,slow=8.1,SNR=6.0							
ILAR	**Eielson Array**	**50.71**	**31**	P	**P**	**08 35 49.1**	**-0.1**
0.9nm,0.8s,baz=264,slow=6.1,SNR=12							
ILAR	**Eielson Array**	**50.71**	**31**	P	**P**	**08 35 49.1**	**-0.1**
WRA	**Warramunga Arr**	**55.10**	**190**	P	**P**	**08 36 22.4**	**+0.3**
2.2nm,0.7s,baz=8.9,slow=7.6,SNR=16							
WRA	**Warramunga Arr**	**55.10**	**190**	P	**P**	**08 36 22.4**	**+0.3**
INK	**Inuvik**	**55.79**	**27**	P	**P**	**08 36 26.8**	**+0.4**
1.6nm,0.7s,baz=292,slow=6.4,SNR=5.6							
INK	**Inuvik**	**55.79**	**27**	P	**P**	**08 36 26.8**	**+0.4**
ASAR	**Alice Springs**	**58.83**	**190**	P	**P**	**08 36 48.8**	**+0.3**
0.8nm,0.7s,baz=17,slow=13,SNR=12							
ASAR	**Alice Springs**	**58.83**	**190**	P	**P**	**08 36 48.8**	**+0.3**
YKA	**Yellowknife Ar**	**65.09**	**30**	P	**P**	**08 37 28.4**	**-1.7**
0.8nm,0.8s,baz=298,slow=6.4,SNR=6.7							
YKA	**Yellowknife Ar**	**65.09**	**30**	P	**P**	**08 37 28.4**	**-1.7**
STKA	**Stephens Creek**	**66.40**	**181**	P	**P**	**08 37 39.7**	**+0.9**
2.9nm,0.9s,baz=276,slow=9.2,SNR=2.5							
STKA	**Stephens Creek**	**66.40**	**181**	P	**P**	**08 37 39.7**	**+0.9**
FINES	**FINESS Array B**	**71.27**	**333**	P	**P**	**08 38 08.7**	**-0.1**
1.9nm,0.8s,baz=58,slow=7.2,SNR=4.9							
FINES	**FINESS Array B**	**71.27**	**333**	P	**P**	**08 38 08.7**	**-0.1**
FFC	**Flin Flon**	**74.89**	**33**	*e*P	**P**	**08 38 30.5**	**+0.2**
1.7nm,0.9s							
NVAR	**Mina Array Bea**	**75.35**	**53**	P	**P**	**08 38 34.4**	**+0.8**
2.3nm,0.7s,baz=290,slow=6.2,SNR=14							
NVAR	**Mina Array Bea**	**75.35**	**53**	P	**P**	**08 38 34.4**	**+0.8**
NB2	**NORSAR Subarra**	**76.63**	**338**	P	**P**	**08 38 40.4**	**+0.1**
comp=Z,1.3nm,0.7s,baz=42,slow=5.9							
NOA	**NORSAR Array B**	**76.63**	**338**	P	**P**	**08 38 40.3**	**+0.1**
comp=Z,1.1nm,0.8s,baz=41,slow=5.5,SNR=4.4							
NOA	**NORSAR Array B**	**76.63**	**338**	P	**P**	**08 38 40.3**	**+0.1**
PDAR	**Pinedale Array**	**78.34**	**46**	P	**P**	**08 38 50.9**	**+0.5**
comp=Z,0.3nm,0.7s,baz=308,slow=3.2,SNR=3.7							
PDAR	**Pinedale Array**	**78.34**	**46**	P	**P**	**08 38 50.9**	**+0.5**
BRTR	**Keskin Array B**	**81.17**	**313**	P	**P**	**08 39 06.8**	**+1.2**
comp=Z,0.4nm,0.7s,baz=22,slow=4.7,SNR=2.9							
BRTR	**Keskin Array B**	**81.17**	**313**	P	**P**	**08 39 06.8**	**+1.2**
PPT2	**Papeete2**	**82.62**	**117**	*e*LR	LR	09 07 28.4	
comp=Z,235nm,22.5s							
TAOE	**Nuku Hiva Isla**	**84.50**	**105**	*e*LR	LR	09 08 06.0	
comp=Z,167nm,23.9s							
GERES	**GERESS Array B**	**85.17**	**329**	P	**P**	**08 39 26.2**	**+0.2**
comp=Z,0.4nm,0.7s,baz=38,slow=6.8,SNR=4.0							
GERES	**GERESS Array B**	**85.17**	**329**	P	**P**	**08 39 26.2**	**+0.2**
TXAR	**Lajitas Array**	**90.50**	**53**	P	**P**	**08 39 52.6**	**+0.6**
comp=Z,0.2nm,0.6s,baz=305,slow=4.4,SNR=3.4							
TXAR	**Lajitas Array**	**90.50**	**53**	P	**P**	**08 39 52.6**	**+0.6**
LPAZ	**La Paz**	**146.68**	**64**	PKPbc	**PKPab**	**08 46 33.3**	**-0.6**
comp=Z,0.9nm,0.6s,baz=305,slow=3.0,SNR=7.1							
LPAZ	**La Paz**	**146.68**	**64**	PKPbc	**PKPab**	**08 46 33.3**	**-0.6**

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*NIED **22** 08:28:00, 39°.10N×142°.90E, h35km, Mw4.7 Best double couple: M0 1.29000×10^16 NP1:φs181.00000°, δ16.00000°, λ64.00000°. NP2:φs28.00000°, δ75.00000°, λ97.00000°.*
*JMA **22** 08:28:20.1±0.1, 39°.13N×142°.98E, h22km±2km, M4.7*
JMA Felt I J1.
*ISCJB **22** 08:28:20.4±0.8, 39°.16N±0°.03×142°.94E±0°.04, h27km±5km, mb4.7/96, MS4.3/18, Error ellipse: s-maj=5.5km s-min=3.5km az=39.2*
*MOS **22** 08:28:23.4±0.9, 39°.38N×142°.73E, h37km, mb4.9/44, MS4.3/7, Error ellipse: s-maj=7.4km s-min=4.6km az=109.1*
*NEIC **22** 08:28:23.4±0.3, 39°.15N×142°.95E, h35km, mb4.7/18, Error ellipse: s-maj=6.7km s-min=4.1km az=127.0*
NEIC Recorded [1 JMA] in Iwate and Miyagi.
*IDC **22** 08:28:23.3±0.6, 39°.11N×142°.87E, h35km±3km, mb4.2/28, mb1 4.3/37, mb1mx4.2/52, mbtmp4.4/37, ML4.0/8, Error ellipse: s-maj=12.8km s-min=10.5km az=115.0*
ISC 22 08:28:21.8±0.4, 39°.16N±0°.04×142°.90E±0°.04, h25km±1km, h25km:pP-P, n290, σ1§51/356, mb4.7/96, MS4.4/20, 31C-16D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**0.94**	**297**	P	**Pb**	**08 28 38.3**	**-1.1**
MIYJ				*e*S	**Sn**	**08 28 51.6**	**-0.3**
OFUJ	**Ofunato**	**0.96**	**266**	P	**Pn**	**08 28 38.9**	**-0.8**
OFUJ				S	**Sb**	**08 28 51.1**	**-1.0**
JTH	**Tanohata**	**1.12**	**314**	P	**Pn**	**08 28 41.2**	**-0.6**
JOM	**Ohasama**	**1.29**	**285**	P	**Pn**	**08 28 44.0**	**-0.1**
JOM				*e*S	**Sn**	**08 29 00.4**	**-0.2**
JMK	**Ichinoseki**	**1.33**	**262**	P	**Pn**	**08 28 44.5**	**-0.2**
JMK				S	**Sn**	**08 29 01.7**	**+0.2**
JIO	**Ouri**	**1.40**	**240**	P	**Pn**	**08 28 45.1**	**-0.6**
JIO				S	**Sn**	**08 29 02.1**	**-1.3**
JANG	**Nango**	**1.62**	**319**	P	**Pn**	**08 28 48.6**	**-0.1**
JRG	**Rokugo**	**1.78**	**278**	P	**Pn**	**08 28 51.7**	**+0.8**
JRG				*e*S	**Sb**	**08 29 15.9**	**+0.4**
JOU	**Okura**	**1.92**	**246**	P	**Pn**	**08 28 53.7**	**+0.8**
JOU				*e*S	**Sn**	**08 29 17.6**	**+1.4**
JYK	**Kaneyama**	**2.00**	**264**	P	**Pn**	**08 28 55.1**	**+1.2**
ERM	**Erimo**	**2.86**	**4**	*c i*P	**Pn**	**08 29 05.3**	**-0.4**
ERM	**Erimo**	**2.86**	**4**	*e*Pn	**Pn**	**08 29 05.5**	**-0.3**
ERM				Sn	**Sn**	**08 29 40.0**	**+0.7**
MJAR	**Matsushiro Arr**	**4.54**	**236**	Pn	**Pn**	**08 29 30.8**	**+1.9**
33nm,0.3s,baz=36,slow=13,SNR=77							
MJAR	**Matsushiro Arr**	**4.54**	**236**	Pn	**Pn**	**08 29 30.8**	**+1.9**
MAJO	**Matsushiro**	**4.54**	**236**	*c i*P	**Pn**	**08 29 31.6**	**+2.7**
MAJO	**Matsushiro**	**4.54**	**236**	*e*Pn	**Pn**	**08 29 31.7**	**+2.8**
MAT	**Matsushiro**	**4.54**	**236**	P	**Pn**	**08 29 31.1**	**+2.2**
MAT				*e*S	**Sb**	**08 30 30.4**	**-4.7**
MJB9	**Matsu-Tunnel**	**4.54**	**236**	*e*Pn	**Pn**	**08 29 31.8**	**+2.8**
ASAJ	**Asahikawa**	**4.96**	**357**	Pn	**Pn**	**08 29 34.8**	**+0.2**
3.4nm,0.3s,baz=221,slow=12,SNR=6.3							
ASAJ				Sn	**Sn**	**08 30 30.4**	**-0.7**
4.6nm,0.3s,baz=25,slow=30,SNR=5.5							
ASAJ	**Asahikawa**	**4.96**	**357**	*e*Pn	**Pn**	**08 29 37.5**	**+2.9**
ASAJ				Sn	**Sn**	**08 30 30.4**	**-0.7**
YUK	**Yuzh-Kuril'sk**	**5.35**	**24**	⇓*i*P	**Pn**	**08 29 38.9**	**-1.1**
INU	**Inuyama**	**6.04**	**233**	*e*Pn	**Pn**	**08 29 51.6**	**+2.1**
JHJ2	**Mitsune**	**6.53**	**203**	*e*Pn	**Pn**	**08 29 56.9**	**+0.6**
JHJ	**Hachijo jima 2**	**6.53**	**204**	Pn	**Pn**	**08 29 55.7**	**-0.6**
18nm,0.3s,baz=59,slow=17,SNR=6.4							
JHJ				Sn	**Sn**	**08 31 03.8**	**-6.2**
42nm,0.3s,baz=45,slow=20,SNR=3.5							
KUR	**Kuril'sk**	**7.10**	**30**	*e*P	**Pn**	**08 30 04.3**	**+0.3**
KUR				*i* S	**Sn**	**08 31 18.5**	**-5.3**
KUR				pmax	pmax		
comp=N,18nm,0.6s							
KUR				pmax	pmax		
comp=E,22nm,0.6s							
KUR				pmax	pmax		
comp=Z,35nm,0.6s							
KUR				smax	smax		
comp=N,54nm,0.6s							
KUR				smax	smax		
comp=E,64nm,0.6s							
YSS	**Yuzh-Sakhalins**	**7.79**	**359**	⇓*e*P	**Pn**	**08 30 16.4**	**+2.9**
YSS				*e*S	**Sn**	**08 31 40.5**	**-0.3**
YSS				MLR	MLR		
comp=Z,700nm,16.0s							
VLA	**Vladivostok**	**9.20**	**299**	⇑*e*P	**Pn**	**08 30 33.6**	**+0.8**
USRK	**Ussurisk Ar.**	**9.59**	**305**	Pn	**Pn**	**08 30 40.1**	**+1.9**
comp=Z,2.1nm,0.3s,baz=110,slow=12,SNR=48							
HABR	**Khabarovsk**	**10.89**	**331**	*e*P	**Pn**	**08 30 54.3**	**-1.7**
HABR				*e*S	**Sn**	**08 32 55.2**	**-1.8**
HABR				pmax	pmax		
comp=N,15nm,1.7s							
HABR				pmax	pmax		
comp=E,26nm,1.7s							
HABR				pmax	pmax		
comp=Z,33nm,1.7s							
HABR				MLR	MLR		
comp=Z,533nm,12.0s							
MDJ	**Mudanjiang**	**11.32**	**303**	P	**Pn**	**08 31 03.9**	**+2.1**
MDJ				S	**Sn**	**08 33 07.5**	**+0.2**
MDJ				PcP	**PcP**	**08 36 55.4**	**+0.3**
MDJ				ScP	**ScP**	**08 40 24.9**	**-1.1**
MDJ				PcS	**PcS**	**08 40 29.3**	**+0.5**
MDJ	**Mudanjiang**	**11.32**	**303**	ScS	ScS	08 44 01.6	+0.3
MDJ				pmax	pmax		
comp=Z,15nm,1.0s							
MDJ				pmax	pmax		
comp=Z,90nm,4.9s							
MDJ				LR	LR		
comp=N,440nm,16.1s							
MDJ				LR	LR		
comp=E,1μm,16.1s							
MDJ				LR	LR		
comp=Z,2μm,14.8s							
MDJ	**Mudanjiang**	**11.32**	**303**	*e*Pn	**Pn

comp=E,11nm,1.1s
YHNB Yeheng 23.21 238 *e*P **P 08 33 24.4 -2.5**
comp=E,16nm,0.6s
HHC Hu-ho-hao-te 24.00 284 *e*P **P 08 33 32.1 -2.4**
HHC S **S 08 37 40.3 -10**
HHC pmax pmax
comp=Z,34nm,0.9s
HHC pmax pmax
comp=Z,150nm,4.4s
HHC LR LR
comp=N,500nm,11.6s
HHC LR LR
comp=E,680nm,11.8s
HHC LR LR
comp=Z,840nm,11.8s
CIT Chita 24.04 312 *e*P **P 08 33 34.9 +0.2**
CIT *e* 08 33 45.3
CIT pmax pmax
comp=Z,149nm,1.3s
SSLB Suanglung 24.10 237 *e*P **P 08 33 32.0 -3.4**
comp=Z,13nm,0.7s
YULB Yu-li 24.16 236 *e*P **P 08 33 32.3 -3.6**
comp=Z,13nm,0.5s
YAK Yakutsk 24.29 345 P **P 08 33 34.7 -2.1**
comp=Z,2.0nm,0.4s,baz=339,slow=21,SNR=6.4
YAK Yakutsk 24.29 345 *e*P **P 08 33 34.2 -2.6**
YAK *e* 08 37 24.9
YAK *e*S **S 08 37 48.6 -5.4**
YAK *e* 08 44 38.0
YAK pmax pmax
comp=Z,65nm,1.0s
YAK pmax pmax
comp=N,10.0nm,1.0s
YAK pmax pmax
comp=E,3.0nm,1.0s
YAK pmax pmax
comp=Z,40nm,0.9s
YAK pmax pmax
comp=N,34nm,1.0s
YAK pmax pmax
comp=E,37nm,1.5s
YAK smax smax
comp=N,38nm,2.0s
YAK smax smax
comp=E,42nm,2.3s
YAK MLR MLR
comp=Z,493nm,20.0s
YAK MLR MLR
comp=N,267nm,18.0s
YAK MLR MLR
comp=E,117nm,23.0s
YAK Yakutsk 24.29 345 *e*P **P 08 33 35.0 -1.8**
comp=E,57nm,0.8s
SEY Seymchan 24.49 10 P **P 08 33 39.2 +0.6**
comp=E,17nm,0.7s,baz=192,slow=7.7,SNR=31
SEY Seymchan 24.49 10 *ce*P **P 08 33 39.9 +1.3**
SEY *e**PP **sP 08 33 50.1 +1.0**
SEY Seymchan 24.49 10 P **P 08 33 39.2 +0.6**
TPUB Ta-pu 24.65 237 *e*P **P 08 33 38.0 -2.5**
comp=E,16nm,0.6s
TWG Pinlang 24.71 235 *e*P **P 08 33 41.9 +0.9**
comp=E,88nm,0.6s
WHN Wuhan 24.88 259⇓ *i*P **P 08 33 42.3 -0.1**
WHN pP **sP 08 33 51.9 -1.1**
WHN S **S 08 38 02.8 -1.2**
WHN pmax pmax
comp=Z,92nm,1.0s
WHN LR LR
comp=N,1μm,15.0s
WHN LR LR
comp=E,1μm,12.1s
WHN LR LR
comp=Z,2μm,16.4s
ULN Ulaanbaatar 27.21 300 *d i*P **P 08 34 04.3 +0.7**
ULN pmax pmax
comp=Z,11nm,1.2s
ULN Ulaanbaatar 27.21 300 *e*P **P 08 34 04.2 +0.7**
comp=Z,7.7nm,0.7s
SONA1 Songino Array 27.65 300 *e*P **P 08 34 07.4 -0.1**
SONM Songino Array 27.65 300 P **P 08 34 08.2 +0.7**
comp=Z,7.0nm,0.6s,baz=90,slow=8.2,SNR=26
SONM Songino Array 27.65 300 P **P 08 34 08.2 +0.7**
XAN Xi'an 27.65 270 P **P 08 34 06.1 -1.4**
XAN pP pP 08 34 14.5 -0.5
XAN S S 08 39 14.0 +26
XAN pmax pmax
comp=Z,11nm,0.6s
XAN pmax pmax
comp=Z,93nm,5.8s
XAN LR LR
comp=E,410nm,17.1s
XAN LR LR
comp=Z,31nm,17.1s
H11N2 WAKE ISLAND Hy 28.34 126 T T 09 04 52.7
baz=317,slow=75,SNR=259
H11N1 WAKE ISLAND Hy 28.35 126 T T 09 04 49.9
baz=317,slow=75,SNR=253
H11N3 WAKE ISLAND Hy 28.36 126 T T 09 04 50.5
baz=317,slow=75,SNR=278
ENH Enshi 28.73 262 *e*P **P 08 34 16.6 -0.6**
comp=Z,35nm,0.8s
H11S1 WAKE ISLAND Hy 29.14 128 T T 09 06 01.0
baz=319,slow=76,SNR=34
H11S3 WAKE ISLAND Hy 29.14 128 T T 09 05 51.2
baz=319,slow=76,SNR=38
H11S2 WAKE ISLAND Hy 29.15 128 T T 09 06 02.3
baz=319,slow=76,SNR=34
TLY Talaya 29.89 308 P **P 08 34 27.7 +0.4**
comp=Z,5.1nm,0.6s,baz=140,slow=3.4,SNR=3.6
TLY Talaya 29.89 308 *e*P **P 08 34 28.1 +0.8**
TLY *e* 08 34 38.6
TLY pmax pmax
comp=Z,8.0nm,0.8s
TLY MLR MLR
comp=Z,588nm,16.0s
TLY Talaya 29.89 308 *e*P **P 08 34 28.0 +0.7**
comp=Z,16nm,1.0s
ZAK Zakamensk 29.94 305 *e*P **P 08 34 27.8 0.0**
ZAK pmax pmax
comp=Z,15nm,1.2s
ZAK pmax pmax
comp=Z,3.0nm,1.3s
LZH Lanzhou 30.93 277 *e*P **P 08 34 35.4 -1.3**
LZH pP pP 08 34 44.5 +0.3
LZH sP sP 08 34 48.8 +1.5
LZH *e*PP **PnPn 08 35 37.5 -0.1**
LZH *e*S **S 08 39 35.3 -4.3**
LZH sS sS 08 39 50.5 -1.5
LZH *e*SS **SnSn 08 41 19.5 -0.7**
LZH pmax pmax
comp=Z,31nm,1.2s
LZH pmax pmax
comp=Z,120nm,5.0s
LZH LR LR
comp=N,350nm,11.5s
LZH LR LR
comp=E,540nm,13.0s
LZH LR LR
comp=Z,690nm,16.3s
MOY Mondy 31.52 307 *e*P P 08 34 49.6 +7.8
BILL Bilibino 31.66 17⇓ *i*P **P 08 34 43.3 +0.7**
BILL *e**SP **sP 08 34 53.5 +0.3**
BILL pmax pmax
comp=Z,3.0nm,0.7s
BILL Bilibino 31.66 17 *e*P **P 08 34 42.7 +0.1**
comp=Z,4.9nm,0.8s
GYA Guiyang 32.77 258⇑ *i*P **P 08 34 52.3 -0.6**
GYA pP sP 08 35 02.8 -0.7
GYA PP **PnPn 08 36 04.0 +2.5**
GYA PcP **PcP 08 37 40.3 +2.4**
GYA S **S 08 40 07.6 -0.9**
GYA sS sS 08 40 22.8 +2.0
GYA ScP **ScP 08 41 20.0 -0.1**
GYA SS **SnSn 08 42 05.6 +0.5**
GYA Guiyang 32.77 258 ScS ScS 08 45 18.9 -1.4
GYA pmax pmax
comp=Z,60nm,0.7s
GYA pmax pmax
comp=Z,120nm,5.2s
GYA LR LR
comp=N,370nm,14.6s
GYA LR LR
comp=E,310nm,16.5s
GYA LR LR
comp=Z,480nm,15.2s
GYA Guiyang 32.77 258 PP **ScP 08 41 20.3 +0.1**

CD2 Chengdu 32.89 268 P **P 08 34 52.5 -1.4**
CD2 pmax pmax
comp=Z,3.0nm,0.6s
GTA Gaotai 33.12 284⇑ P **P 08 34 56.0 +0.1**
GTA pP sP 08 35 05.6 -0.9
GTA sP pP 08 35 09.5 +6.1
GTA S **S 08 40 12.4 -1.3**
GTA sS sS 08 40 28.3 +2.2
GTA SS **SnSn 08 42 14.9 +1.7**
GTA pmax pmax
comp=Z,16nm,1.2s
GTA pmax pmax
comp=Z,87nm,5.0s
GTA LR LR
comp=N,270nm,16.2s
GTA LR LR
comp=E,710nm,18.1s
GTA LR LR
comp=Z,870nm,19.0s
TIXI Tiksi 33.34 352 P **P 08 34 56.7 -0.5**
comp=Z,2.4nm,0.7s,baz=154,slow=7.6,SNR=4.3
TIXI Tiksi 33.34 352 *ce*P **P 08 34 57.3 +0.1**
TIXI pmax pmax
comp=Z,3.0nm,0.8s
TIXI Tiksi 33.34 352 *e*P **P 08 34 57.1 -0.2**
TIXI *e*pP **pP 08 35 01.3 -3.4**
QIZ Qiongzhong 34.89 244 P **P 08 35 11.9 +0.6**
QIZ S **S 08 40 43.3 +2.2**
QIZ LR LR
comp=N,390nm,14.6s
QIZ LR LR
comp=E,260nm,13.4s
QIZ LR LR
comp=Z,500nm,15.0s
KMI Kunming 36.47 260 P **P 08 35 25.4 +0.3**
KMI pmax pmax
comp=Z,56nm,1.1s
KMI pmax pmax
comp=Z,83nm,4.0s
KRAR Krasnoyarsk 36.79 314⇓ *e*P **P 08 35 27.2 +0.1**
KRAR pmax pmax
comp=Z,12nm,0.4s
NONG Nongkai 40.32 250 P **P 08 35 58.1 +0.9**
comp=Z,34nm,0.8s
SKNT Sakolnakorn 40.42 248 P **P 08 35 58.6 +0.6**
comp=Z,16nm,1.2s
WMQ Urumqi 40.97 295⇓ *i*P **P 08 36 03.5 +1.1**
WMQ pP sP 08 36 12.4 -0.7
WMQ sP pP 08 36 17.3 +7.2
WMQ PP **PnPn 08 37 42.3 +1.0**
WMQ PcP **PcP 08 38 03.8 +1.5**
WMQ pmax pmax
comp=Z,11nm,0.6s
WMQ pmax pmax
comp=Z,100nm,3.8s
CRAI Chiangrai 41.04 255 P **P 08 36 03.8 +0.6**
comp=Z,154nm,0.9s
ZALV Zalesovo Beam 41.39 311 P **P 08 36 05.9 +0.3**
comp=Z,9.0nm,0.5s,baz=86,slow=7.1,SNR=19
ZALV PcP **PcP 08 38 03.4 0.0**
comp=Z,3.4nm,0.6s,baz=88,slow=3.9,SNR=5.0
ZALV Zalesovo Beam 41.39 311 P **P 08 36 05.9 +0.3**
ZALV PcP **PcP 08 38 03.4 0.0**
NRIK Noril'sk 41.85 334 P **P 08 36 08.6 -0.7**
comp=Z,3.3nm,0.4s,baz=81,slow=6.2,SNR=3.7
LOEI Loei 42.05 251 P **P 08 36 09.2 -2.3**
comp=Z,12nm,1.2s,comp=Z,517nm
NVS Novosibirsk 42.26 312 *e*P **P 08 36 12.7 0.0**
NVS pmax pmax
comp=Z,17nm,1.2s
NVS pmax pmax
comp=N,2.0nm,0.6s
NVS pmax pmax
comp=E,11nm,1.2s
UTTA Uttaradit 42.43 252 P **P 08 36 15.6 +1.1**
comp=E,3.7nm,1.1s
CHAI Chaiyaphum 42.56 249 P **P 08 36 15.8 +0.2**
comp=E,6.9nm,1.0s
LAMP Lampang 42.63 254 P **P 08 36 17.7 +1.5**
comp=E,7.8nm,0.9s
PBKT Sadao Pong 42.87 250 P **P 08 36 18.7 +0.6**
comp=E,12nm,1.1s,comp=E,1μm
CHTO Chiang Mai 42.97 255 P **P 08 36 19.2 +0.3**
comp=E,81nm,0.8s
CHTO Chiang Mai 42.97 255 *e*P **P 08 36 19.1 +0.2**
CHTO pmax pmax
comp=Z,10.0nm,0.8s
CHTO Chiang Mai 42.97 255 *e*P **P 08 36 19.1 +0.2**
comp=Z,9.9nm,0.8s
CMAR Chiang Mai Arr 43.19 254 P **P 08 36 21.1 +0.4**
comp=Z,3.8nm,0.8s,baz=52,slow=6.3,SNR=19
CMAR Chiang Mai Arr 43.19 254 P **P 08 36 21.1 +0.4**
CM01 Chiang Mai Arr 43.20 254 *e*P **P 08 36 21.1 +0.3**
SUKH Sukhothai 43.28 253 P **P 08 36 22.2 +0.8**
comp=Z,6.2nm,0.9s,comp=Z,56nm
SRAK Srakaew 43.78 247 P **P 08 36 23.8 -1.6**
comp=Z,35nm,1.2s
MK01 Makanchi Array 44.02 300 *e*P **P 08 36 27.1 -0.1**
MK31 Makanchi Array 44.02 301 *e*P **P 08 36 27.4 +0.2**
MK31 Makanchi Array 44.02 301 *e*P **P 08 36 27.4 +0.2**
MKAR Makanchi Array 44.02 301 P **P 08 36 27.3 +0.2**
comp=Z,17nm,0.8s,baz=84,slow=9.1,SNR=56
MKAR Makanchi Array 44.02 301 *e*P **P 08 36 27.4 +0.2**
MKAR Makanchi Array 44.02 301 *e*P **P 08 36 27.4 +0.2**
MAKZ Makanchi 44.23 301 *e*P **P 08 36 29.1 +0.3**
MAKZ pmax pmax
comp=Z,21nm,0.9s
MAKZ Makanchi 44.23 301 *e*P **P 08 36 29.1 +0.3**
comp=Z,21nm,0.9s
SHL Shillong 44.63 268 *e*P **P 08 36 34.0 +1.6**
KTH Kantishna Hill 45.33 35 *e*P **P 08 36 39.5 +2.1**
comp=Z,8.8nm,1.0s
MLY Manley 45.43 33 *e*P **P 08 36 40.3 +2.2**
MLY *e*pP **pP 08 36 47.3 +1.4**
KURK Kurchatov 45.58 307 P **P 08 36 39.9 +0.5**
KURK pmax pmax
comp=Z,40nm,0.6s
KURK Kurchatov 45.58 307 *e*P **P 08 36 39.0 -0.4**
comp=Z,47nm,0.9s
KURBB Kurchatov Arra 45.65 307 P **P 08 36 39.9 -0.1**
comp=Z,40nm,0.6s,baz=80,slow=8.5,SNR=101
PHET Kaeng Krachan 46.24 248 P **P 08 36 46.6 +1.5**
comp=Z,9.6nm,0.8s,comp=Z,152nm
COLA College 46.66 33⇑ *i*P **P 08 36 49.2 +1.5**
COLA pmax pmax
comp=Z,2.0nm,0.7s
PDGK Podgornoye 46.85 297 P **P 08 36 49.4 -0.1**
PDGK pmax pmax
comp=Z,13nm,0.9s
IL1 Eielson Array 47.08 33 *e*P **P 08 36 51.4 +0.4**
ILAR Eielson Array 47.08 33 P **P 08 36 52.0 +0.9**
comp=Z,2.4nm,0.8s,baz=268,slow=6.2,SNR=23
ILAR pP **sP 08 37 03.1 +1.3**
comp=Z,3.3nm,0.8s,baz=263,slow=5.0,SNR=8.2
ILAR Eielson Array 47.08 33 P **P 08 36 52.0 +0.9**
ILAR *PP **sP 08 37 03.1 +1.3**
ILAR pmax pmax
comp=Z,3.0nm,0.8s
ILAR pmax pmax
comp=Z,3.0nm,0.8s
ILAR Eielson Array 47.08 33 P **P 08 36 52.0 +0.9**
ILAR pP **sP 08 37 03.0 +1.3**
ILB Eielson Array 47.08 33 *e*P **P 08 36 51.0 0.0**
KSM Kuching 47.87 227 *e*P **P 08 36 58.9 +1.2**
GUN Gumba 48.14 275 *e*P **P 08 37 00.3 +0.1**
comp=Z,82nm,0.7s
KKN Kakani 48.66 275 *e*P **P 08 37 04.3 +0.2**
comp=Z,52nm,0.6s
PKIN Phulchoki 48.67 274 *e*P **P 08 37 03.3 -0.9**
comp=Z,9.8nm,0.5s
DMN Daman 48.88 275 *e*P **P 08 37 05.9 +0.1**
comp=Z,13nm,0.5s
GKN Gorkha 49.05 275 *e*P **P 08 37 06.7 -0.3**
comp=Z,21nm,0.5s
TKM2 Tokmak 2 49.68 297 P **P 08 37 12.3 +0.6**
TKM2 pmax pmax
comp=Z,28nm,0.8s
TKM2 Tokmak 2 49.68 297 *e*P **P 08 37 12.4 +0.8**
KRAB Krabi 49.78 244 P **P 08 37 13.4 +0.9**
KOLN Koldanda 49.97 276 *e*P **P 08 37 14.2 +0.1**
BVAR Borovoye Array 50.03 311 P **P 08 37 14.1 +0.2**
comp=Z,14nm,0.8s,baz=70,slow=8.5,SNR=43
BVAR pP **sP 08 37 24.3 -0.5**
comp=Z,12nm,0.7s,baz=70,slow=9.9,SNR=15
BVAR PcP **PcP 08 38 34.0 +0.5**
comp=Z,3.3nm,0.7s,baz=66,slow=5.0,SNR=3.9

BVAR Borovoye Array 50.03 311 P **P 08 37 14.1 +0.2**
BVAR pP **sP 08 37 24.3 -0.5**
BVAR PcP **PcP 08 38 34.0 +0.5**
BRVK Borovoye 50.09 311 *c i*P **P 08 37 14.4 +0.1**
BRVK pmax pmax
comp=Z,15nm,0.8s
BRVK Borovoye 50.09 311 *e*P **P 08 37 14.8 +0.4**
comp=Z,21nm,0.9s
OTUK Ortayu 50.16 305 P **P 08 37 15.0 0.0**
OTUK pmax pmax
comp=Z,10.0nm,0.9s
PYUN Piuthan 50.28 276 *e*P **P 08 37 16.9 +0.5**
comp=Z,151nm,0.8s
FRU Bishkek 50.38 297 *i*P **P 08 37 17.0 +0.2**
FRU *i* 08 37 28.0
AAK Ala-Archa 50.54 297 P **P 08 37 18.3 +0.2**
comp=Z,6.3nm,0.8s,baz=94,slow=4.8,SNR=13
AAK pP **sP 08 37 28.5 -0.5**
comp=Z,16nm,1.2s,baz=58,slow=9.5,SNR=5.1
AAK Ala-Archa 50.54 297 *e*P **P 08 37 18.4 +0.2**
AAK pP **sP 08 37 28.5 -0.5**
KSH Kashi 50.63 293 P **P 08 37 23.4 +4.5**
KSH *e*pP sP 08 37 32.8 +3.1
KSH *e*PcP **PcP 08 38 39.0 +2.9**
KSH *e*PP **PP 08 39 21.3 +6.6**
KSH *e*ScP **ScP 08 42 31.6 +1.1**
KSH S **S 08 44 36.5 +4.3**
KSH pmax pmax
comp=Z,8.0nm,0.8s
KSH pmax pmax
comp=Z,71nm,6.1s
KSH LR LR
comp=N,140nm,11.8s
KSH LR LR
comp=E,170nm,9.0s
KSH LR LR
comp=Z,190nm,15.5s
ZRNK Zerenda 50.86 311 *e*P **P 08 37 20.6 +0.4**
ZRNK Zerenda 50.86 311 *e*P **P 08 37 20.6 +0.4**
EKS2 Erkin-Say 51.02 298 *e*P **P 08 37 21.7 0.0**
EKS2 Erkin-Say 51.02 298 *e*P **P 08 37 21.7 0.0**
IPM Ipoh 51.25 239 *e*P P 08 37 29.9 +6.3
INK Inuvik 51.96 28 P **P 08 37 29.3 +1.1**
comp=Z,2.5nm,0.9s,baz=294,slow=6.2,SNR=7.9
INK Inuvik 51.96 28 P **P 08 37 29.3 +1.1**
MNAS Manas 51.96 298 P **P 08 37 29.3 +0.5**
MNAS pmax pmax
comp=Z,27nm,0.9s
KK31 Karatay Array 53.10 299 P **P 08 37 36.6 -0.4**
KK31 pmax pmax
comp=Z,8.0nm,0.9s
KKAR Karatay Array 53.10 299 *e*P **P 08 37 36.9 -0.1**
KKAR Karatay Array 53.10 299 *e*P **P 08 37 36.9 -0.1**
SVE Sverdlovsk 54.35 318 *e*P **P 08 37 46.7 +0.8**
SVE pmax pmax
comp=Z,60nm,0.9s
SVE MLR MLR
comp=Z,818nm,18.0s
SOKR Solikamsk 55.37 322 *e*P P 08 38 00.7 +7.5
SOKR pmax pmax
comp=Z,16nm,0.9s
SOKR MLR MLR
comp=Z,262nm,20.0s
ARU Arti 55.56 318 *c i*P **P 08 37 54.7 0.0**
ARU *PP **sP 08 38 05.5 -0.1**
ARU 08 38 52.4
ARU 08 39 57.5
ARU S **S 08 45 39.5 +1.0**
ARU SS **SS 08 49 17.3 -5.7**
ARU pmax pmax
comp=Z,30nm,1.2s
ARU MLR MLR
comp=Z,498nm,17.0s
ARU Arti 55.56 318 *e*P **P 08 37 54.8 +0.1**
AB31 Akbulak array 57.48 310 P **P 08 38 08.2 -0.3**
AB31 pmax pmax
comp=Z,6.0nm,0.6s
ABKAR Akbulak array 57.48 310 *e*P **P 08 38 08.4 0.0**
KBL Kabul 57.77 290 *e*P **P 08 38 11.0 0.0**
KBL Kabul 57.77 290 *e*P **P 08 38 11.0 0.0**
WRAB Tennant Creek 59.33 189 *ce*P **P 08 38 21.7 +0.1**
WRAB pmax pmax
comp=Z,16nm,1.0s
WRAB Tennant Creek 59.33 189 *e*P **P 08 38 20.9 -0.7**
WRA Warramunga Arr 59.34 189 P **P 08 38 20.6 -1.1**
comp=Z,3.9nm,0.8s,baz=6.9,slow=6.9,SNR=19
WRA pP **sP 08 38 32.1 -0.5**
comp=Z,6.1nm,0.6s,baz=7.2,slow=7.0,SNR=14
WRA Warramunga Arr 59.34 189 P **P 08 38 20.6 -1.1**
WRA pP **sP 08 38 32.1 -0.5**
YKA Yellowknife Ar 61.38 31 P **P 08 38 35.3 +0.2**
comp=Z,0.5nm,0.6s,baz=298,slow=5.9,SNR=5.1
YKA Yellowknife Ar 61.38 31 P **P 08 38 35.3 +0.2**
ARCES ARCESS Array B 62.42 339 P **P 08 38 42.3 +0.1**
comp=Z,2.3nm,0.8s,baz=37,slow=9.1,SNR=6.8
ARCES ARCESS Array B 62.42 339 P **P 08 38 42.3 +0.1**
KLMR Klimovskoe 62.59 328 *e*P **P 08 38 41.9 -1.4**
KLMR *e* 08 39 20.0
KLMR *e* 08 40 59.6
KLMR pmax pmax
comp=Z,13nm,1.2s
ASAR Alice Springs 63.06 189 P **P 08 38 46.4 -0.5**
comp=Z,1.0nm,0.7s,baz=12,slow=6.3,SNR=9.8
ASAR Alice Springs 63.06 189 P **P 08 38 46.4 -0.5**
DAG Danmarks Havn 63.76 355 *i*P **P 08 38 50.9 +0.1**
comp=Z,6.4nm,0.8s
DAG *i* 08 39 03.4
DAG Danmarks Havn 63.76 355 *i*P **P 08 38 50.9 +0.1**
DAG *i* 08 39 03.4
DAG pmax pmax
comp=Z,5.0nm,0.8s
GEYT Alibeck 63.84 299 P **P 08 38 51.9 -0.1**
comp=Z,6.9nm,0.8s,baz=20,slow=4.7,SNR=9.4
GEYT pP **sP 08 39 02.3 -0.7**
comp=Z,13nm,1.0s,baz=46,slow=4.3,SNR=8.2
DZM Mont Dzumac 64.77 156 *e*LR LR 08 58 19.2
comp=Z,222nm,23.9s
VRH Novokhopyorsk 66.80 318 *e*P **P 08 39 10.3 -0.6**
VRH pmax pmax
comp=Z,10.0nm,1.1s
OBN Obninsk 67.10 323⇓ *e*P **P 08 39 13.0 +0.3**
OBN *i* *SP **sP 08 39 24.0 +0.3**
OBN 08 39 41.0
OBN MLR MLR
comp=Z,250nm,16.0s
LPSR Galich'ya Gora 67.43 320 *e*P **P 08 39 14.5 -0.4**
LPSR pmax pmax
comp=Z,8.0nm,0.9s
FINES FINESS Array B 67.48 332 P **P 08 39 15.2 +0.1**
comp=Z,3.0nm,0.7s,baz=58,slow=7.2,SNR=9.6
FINES pP **sP 08 39 25.8 -0.2**
comp=Z,5.0nm,0.6s,baz=46,slow=8.2,SNR=6.4
FINES FINESS Array B 67.48 332 P **P 08 39 15.2 +0.1**
FINES pP **sP 08 39 25.8 -0.2**
VSR Storozhevoye 68.11 319 *e*P **P 08 39 18.4 -0.8**
VSR pmax pmax
comp=Z,7.0nm,0.7s
SUMG Summit 68.56 0 *i*P **P 08 39 23.3 +1.1**
comp=Z,7.2nm,0.7s
SUMG Summit 68.56 0 *i*P **P 08 39 23.3 +1.1**
SUMG pmax pmax
comp=Z,7.0nm,0.7s
SUMG Summit 68.56 0 *e*P **P 08 39 22.9 +0.8**
comp=Z,14nm,1.1s
VSU Vasula 69.22 330⇓ *i*P **P 08 39 26.6 +0.6**
VSU pmax pmax
comp=Z,30nm,1.0s
ZEI Tsey 70.36 309 *e*P **P 08 39 32.3 -1.3**
ZEI pmax pmax
comp=Z,8.0nm,0.6s
KIV Kislovodsk 70.40 311 *e*P **P 08 39 35.1 +1.4**
KIV pmax pmax
comp=Z,30nm,1.1s
KIV Kislovodsk 70.40 311 *e*P **P 08 39 34.8 +1.1**
comp=Z,43nm,1.1s
KBZ Khabaz 70.41 311 P **P 08 39 34.5 +0.9**
comp=Z,8.1nm,0.9s,baz=60,slow=3.4,SNR=16
KBZ Khabaz 70.41 311 P **P 08 39 34.5 +0.9**
NEY Neytrino 70.79 310⇓ *i*P **P 08 39 37.5 +1.3**
NEY pmax pmax
comp=Z,1.0nm,0.9s
FFC Flin Flon 71.29 34 *e*P **P 08 39 38.8 +0.1**
FFC pmax pmax
comp=Z,5.0nm,1.1s
FFC Flin Flon 71.29 34 *e*P **P 08 39 38.8 +0.1**

comp=Z,4.8nm,1.1s
GNI Garni 71.38 307 ⇓ *i*P **P 08 39 40.7 +0.9**
GNI pmax pmax
comp=Z,15nm,0.9s
NB2 NORSAR Subarra 72.68 338 P **P 08 39 46.7 -0.3**
comp=Z,5.8nm,0.8s,baz=40,slow=6.2
NOA NORSAR Array B 72.68 338 P **P 08 39 47.1 0.0**
comp=Z,6.0nm,0.8s,baz=40,slow=5.9,SNR=15
NOA pP **sP 08 39 58.5 +0.4**
comp=Z,2.1nm,0.6s,baz=38,slow=6.0,SNR=4.5
NOA NORSAR Array B 72.68 338 P **P 08 39 47.1 0.0**
NOA pP **sP 08 39 58.5 +0.4**
NVAR Mina Array Bea 72.79 54 P **P 08 39 49.7 +1.4**
comp=Z,0.7nm,0.8s,baz=301,slow=7.3,SNR=3.6
NVAR Mina Array Bea 72.79 54 P **P 08 39 49.7 +1.4**
AKASG Malin Array Be 73.33 323 P **P 08 39 50.8 -0.2**
comp=Z,4.4nm,0.7s,baz=44,slow=6.3,SNR=11
AKASG pP **sP 08 40 02.2 +0.2**
comp=Z,4.8nm,0.6s,baz=45,slow=6.0,SNR=8.3
AKASG Malin Array Be 73.33 323 P **P 08 39 50.8 -0.2**
AKASG pP **sP 08 40 02.2 +0.2**
KIEV Kiev 73.34 323 ⇑ *i*P **P 08 39 50.9 -0.2**
KIEV pmax pmax
comp=Z,7.0nm,0.9s
SIM Simferopol' 74.63 316 *e*P **P 08 39 59.3 +0.6**
SIM pmax pmax
comp=Z,12nm,0.7s
SIM MLR MLR
comp=N,120nm,17.7s
PDAR Pinedale Array 75.35 47 P **P 08 40 03.7 +0.5**
comp=N,0.3nm,0.5s,baz=191,slow=1.1,SNR=5.2
PDAR Pinedale Array 75.35 47 P **P 08 40 03.8 +0.5**
BURAR Bucovina Array 77.37 322 ⇑ *i*P **P 08 40 14.8 +0.4**
BURAR Bucovina Array 77.37 322 ⇑ P **P 08 40 14.8 +0.4**
TESR Tescani 77.45 321 ⇑ *i*P **P 08 40 15.3 +0.5**
CFR Carcaliu 77.63 319 ⇑ *i*P **P 08 40 16.0 +0.3**
CFR Carcaliu 77.63 319 ⇑ P **P 08 40 16.0 +0.3**
VRI Vrincioaia 77.86 320 ⇑ *i*P **P 08 40 18.9 +1.8**
VRI Vrincioaia 77.86 320 ⇑ P **P 08 40 18.9 +1.8**
STHS Stebnicka Huta 77.89 325 *e*P **P 08 40 18.7 +1.5**
STHS Stebnicka Huta 77.89 325 *e*P **P 08 40 18.7 +1.5**
BRTR Keskin Array B 78.31 312 P **P 08 40 20.1 +0.3**
comp=N,1.1nm,0.6s,baz=86,slow=3.8,SNR=7.6
BRTR PP **PP 08 43 17.1 +0.7**
comp=N,0.7nm,0.8s,baz=81,slow=8.9,SNR=4.6
BRTR Keskin Array B 78.31 312 P **P 08 40 20.1 +0.3**
BRTR PP **PP 08 43 17.1 +0.7**
DOPR Dopca 78.45 321 ⇓ *i*P **P 08 40 22.4 +2.0**
MLR Muntele Rosu 78.52 320 ⇓ *i*P **P 08 40 21.4 +0.5**
MLR Muntele Rosu 78.52 320 ⇓ P **P 08 40 21.4 +0.5**
OKC Ostrava-Krasne 78.91 327 AMS AMS 09 16 10.0
comp=N,400nm,18.3s
VOIR 79.00 321 ⇑ *i*P **P 08 40 25.1 +1.7**
VOIR 79.00 321 ⇑ P **P 08 40 25.1 +1.7**
DRGR 79.14 323 ⇓ *i*P **P 08 40 24.7 +0.5**
DRGR 79.14 323 ⇓ P **P 08 40 24.7 +0.5**
MORC Moravsky Berou 79.21 327 ⇑ *i*P **P 08 40 25.3 +0.8**
MORC Moravsky Berou 79.21 327 ⇑ P **P 08 40 25.3 +0.8**
ARR Arges 79.25 321 ⇑ *i*P **P 08 40 26.0 +1.2**
DPC Dobruska-Polom 79.28 328 *e*P **P 08 40 25.7 +0.9**
DPC *e*pP **sP 08 40 36.9 +1.0**
DPC *e*PP **PP 08 43 25.3 +1.3**
DPC Dobruska-Polom 79.28 328 *e*P **P 08 40 25.7 +0.9**
DPC *e* 08 40 36.9
DPC *e* 08 43 25.3
KRLC Kraliky 79.30 328 *e*P **P 08 40 26.0 +1.0**
KRLC *e*pP **sP 08 40 35.4 -0.7**
KRLC Kraliky 79.30 328 *e*P **P 08 40 26.0 +1.0**
KRLC *e* 08 40 35.4
VYHS Vyhne 79.64 326 *e*P **P 08 40 27.5 +0.7**
VYHS Vyhne 79.64 326 *e*P **P 08 40 27.5 +0.7**
BRG Berggiesshubel 79.81 330 *e*P **P 08 40 27.7 0.0**
comp=N,3.9nm,0.8s
BRG *e* 08 40 38.8
comp=N,3.3nm,0.7s
BRG *e*PP PP 08 43 41.1 +13
comp=N,4.6nm,1.0s
BRG Berggiesshubel 79.81 330 *e*P **P 08 40 27.7 0.0**
BRG *e* 08 40 38.8
BRG pmax pmax
comp=Z,4.0nm,0.8s
BRG pmax pmax
comp=Z,3.0nm,0.7s
BRG pmax pmax
comp=Z,5.0nm,1.0s
CLL Collm 79.83 331 ⇑ *i*P **P 08 40 27.7 -0.1**
comp=Z,9.0nm,0.9s
CLL *i* 08 40 39.1
CLL *e* 08 40 57.0
CLL *e*PP **PP 08 43 32.0 +3.5**
CLL Lm MLR 09 20 00.0
comp=N,100nm,18.2s
CLL Lm MLR 09 20 00.0
comp=E,200nm,18.1s
CLL Collm 79.83 331 ⇑ *i*P **P 08 40 27.7 -0.1**
CLL *i* 08 40 39.1
CLL pmax pmax
comp=Z,9.0nm,0.9s
PVCC Panska Ves 79.84 329 *e*P **P 08 40 29.1 +1.3**
PVCC Panska Ves 79.84 329 *e*P **P 08 40 29.1 +1.3**
VRAC Vranov 79.97 328 ⇑ *i*P **P 08 40 29.7 +1.1**
VRAC Vranov 79.97 328 ⇑ P **P 08 40 29.7 +1.1**
PRU Pruhonice 80.28 329 *e*P **P 08 40 31.3 +1.1**
PRU AMS AMS 09 18 50.0
comp=Z,200nm,18.0s
PRU Pruhonice 80.28 329 *e*P **P 08 40 31.3 +1.1**
PRU MLR MLR
comp=Z,200nm,18.0s
NKC Novy Kostel 80.90 330 *e*P **P 08 40 34.4 +0.8**
NKC Novy Kostel 80.90 330 *e*P **P 08 40 34.4 +0.8**
KHC Kasperske Hory 81.34 329 *e*P **P 08 40 36.5 +0.5**
KHC *e*pP **sP 08 40 47.3 +0.2**
KHC *e*x x 08 41 05.3
KHC Kasperske Hory 81.34 329 *e*P **P 08 40 36.5 +0.5**
KHC *e* 08 40 47.3
KHC Kasperske Hory 81.34 329 *e*P **P 08 40 35.6 -0.3**
comp=Z,1.6nm,1.0s
GERES GERESS Array B 81.52 329 P **P 08 40 37.1 +0.1**
comp=Z,1.5nm,0.7s,baz=32,slow=7.8,SNR=11
GERES pP **sP 08 40 48.3 +0.2**
comp=Z,0.4nm,0.4s,baz=33,slow=5.9,SNR=3.5
GERES GERESS Array B 81.52 329 P **P 08 40 37.1 +0.1**
GERES pP **sP 08 40 48.3 +0.2**
ANMO Albuquerque 82.33 51 ⇑ *i*P **P 08 40 43.0 +1.4**
ANMO pmax pmax
comp=Z,1.0nm,1.0s
MEM Membach 82.93 334 P **P 08 40 44.5 +0.3**
SNF Seneffe 83.59 335 P **P 08 40 48.3 +0.7**
BFO Black Forest 84.01 331 *i*P **P 08 40 50.9 +1.0**
TXAR Lajitas Array 87.90 53 P **P 08 41 10.1 +0.6**
comp=Z,0.3nm,0.6s,baz=305,slow=3.2,SNR=4.7
TXAR Lajitas Array 87.90 53 P **P 08 41 10.1 +0.6**
ESDC Sonseca Array 95.89 335 P **P 08 41 46.3 0.0**
comp=Z,0.5nm,0.6s,baz=19,slow=4.3,SNR=5.8
ESDC Sonseca Array 95.89 335 P **P 08 41 46.3 0.0**
TORD Torodi Ar. Bea 116.62 317 PKP **PKPdf 08 47 02.8 -1.3**
comp=Z,0.3nm,0.7s,baz=45,slow=3.4,SNR=2.9
TORD pPKP pPKPdf 08 47 15.3 +2.7
comp=Z,0.7nm,1.0s,baz=219,slow=0.8,SNR=3.8
TORD PP **PP 08 48 09.5 -1.3**
comp=Z,1.0nm,1.0s,baz=48,slow=4.7,SNR=4.1
TORD Torodi Ar. Bea 116.62 317 PKP **PKPdf 08 47 02.8 -1.3**
TORD pPKP pPKPdf 08 47 15.3 +2.7
TORD PP **PP 08 48 09.5 -1.3**
SNAA Sanae 143.12 197 PKP PKPab 08 47 48.1 +0.2
VNA2 Neumayer--Watz 144.68 196 PKP **PKPab 08 47 53.4 -0.4**
baz=101,slow=1.8
VNA3 Neumayer Olymp 144.92 195 PKP **PKPab 08 47 54.4 -0.3**

*ISK **22** 08:30:35.4, 39°.08N×29°.10E, h5km, MD2.3*
*CSEM **22** 08:30:36.2±0.1, 39°.11N×29°.05E, h2km, ML2.7, Error ellipse: s-maj=2.7km s-min=1.5km az=127.0*
*DDA **22** 08:30:36.1, 39°.09N×29°.05E, h7km, Ml2.7*
ISC 22 08:30:35.8±1.0, 39°.09N±0°.03×29°.08E±0°.03, h14km±11km, n20, σ0°.26/30, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.29**	**260**	P	**Pg**	**08 30 41.9**	**+0.1**
DEMI				S	**Sg**	**08 30 45.6**	**-0.3**
DEMI	**Demirci**	**0.29**	**260**	*i* P	**Pg**	**08 30 41.9**	**+0.1**
DEMI				*i* S	**Sg**	**08 30 45.6**	**-0.3**
GDZ	**Gediz**	**0.31**	**91**	P	**Pb**	**08 30 43.1**	**-0.1**
GDZ				S	**Sb**	**08 30 47.9**	**-0.3**
GDZ	**Gediz**	**0.31**	**91**	*i* P	**Pb**	**08 30 43.1**	**-0.1**
GDZ				*i* S	**Sb**	**08 30 47.9**	**-0.3**
TVSB	**Tavsanli**	**0.46**	**40**	*e*PG	**Pg**	**08 30 45.1**	**+0.1**
TVSB				*e*SG	**Sg**	**08 30 51.4**	**+0.2**
TVSB	**Tavsanli**	**0.46**	**40**	*e*Pg	**Pg**	**08 30 45.1**	**+0.1**
TVSB				*e*Sg	**Sg**	**08 30 51.4**	**+0.2**
KULA	**Kula-Manisa**	**0.67**	**210**	*e*PG	**Pg**	**08 30 48.8**	**+0.1**
KULA				*e*SG	**Sg**	**08 30 57.9**	**+0.4**
KULA	**Kula-Manisa**	**0.67**	**210**	*e*Pg	**Pg**	**08 30 48.8**	**+0.1**
KULA				*e*Sg	**Sg**	**08 30 57.9**	**+0.4**
MANT	**Manisa**	**0.73**	**214**	P	**Pb**	**08 30 50.4**	**0.0**
MANT				S	**Sg**	**08 30 59.7**	**+0.1**
MANT	**Manisa**	**0.73**	**214**	*i* P	**Pb**	**08 30 50.4**	**0.0**
MANT				*i* S	**Sg**	**08 30 59.7**	**+0.1**
ORLT	**Orhaneli**	**0.96**	**352**	*e*PG	**Pb**	**08 30 54.1**	**-0.2**
ORLT	**Orhaneli**	**0.96**	**352**	*e*Pg	**Pb**	**08 30 54.1**	**-0.2**
AKS	**Akhisar**	**1.01**	**258**	*e*PG	**Pb**	**08 30 55.0**	**-0.1**
AKS	**Akhisar**	**1.01**	**258**	*e*Pg	**Pb**	**08 30 55.0**	**-0.1**
IZI	**Iznik**	**1.28**	**14**	*e*PN	**Pg**	**08 31 00.8**	**+0.4**
IZI	**Iznik**	**1.28**	**14**	*e*Pn	**Pg**	**08 31 00.8**	**+0.4**
KCTX	**Karacabey (Bur**	**1.30**	**335**	*e*PN	**Pg**	**08 31 01.2**	**+0.5**
KCTX	**Karacabey (Bur**	**1.30**	**335**	*e*Pn	**Pg**	**08 31 01.2**	**+0.5**
ARMT	**Armutlu**	**1.48**	**354**	*e*PN	**Pg**	**08 31 04.0**	**-0.1**
ARMT	**Armutlu**	**1.48**	**354**	*e*Pn	**Pg**	**08 31 04.1**	**-0.1**

*NIED **22** 08:31:00, 34°.90N×142°.80E, h5km, Mw4.4 Best double couple: M0 3.91000×10^15 NP1:φ=38.00000°, δ=30.00000°, λ=-76.00000°. NP2:φ=203.00000°, δ=61.00000°, λ=-98.00000°.*
*IDC **22** 08:31:20.1±0.6, 34°.81N×142°.85E, h0km, mb4.3/26, mb1 4.5/30, mb1mx4.3/55, mbtmp4.3/30, ML4.1/2, MS4.0/2, Ms1 4.0/2, ms1mx3.1/45, Error ellipse: s-maj=15.5km s-min=13.2km az=164.0*
*JMA **22** 08:31:22.7±0.3, 34°.88N×142°.83E, h43km, M4.3*
*ISCJB **22** 08:31:23.1±0.3, 34°.79N±0°.04×142°.75E±0°.03, h33km, mb4.4/38, MS4.1/2, Error ellipse: s-maj=5.5km s-min=4.0km az=170.9*
*NEIC **22** 08:31:24.9±0.3, 34°.72N×142°.80E, h35km, mb4.6/11, Error ellipse: s-maj=6.8km s-min=6.0km az=140.0*
ISC 22 08:31:24.9±0.5, 34°.85N±0°.04×142°.80E±0°.04, h35km, n72, σ1s22/77, mb4.4/38, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**1.51**	**263**	P	**Pn**	**08 31 48.1**	**-0.8**
BSO1				S	**Sn**	**08 32 07.6**	**+0.5**
BSO2	**Boso 2**	**1.68**	**267**	S	**Sn**	**08 32 12.9**	**+1.2**
CHOJ	**Chosi**	**1.80**	**299**	P	**Pn**	**08 31 52.6**	**-0.8**
CHOJ				*e*S	**Sn**	**08 32 14.6**	**-0.4**
BSO3	**Boso 3**	**1.88**	**269**	P	**Pn**	**08 31 54.5**	**+0.2**
BSO3				S	**Sn**	**08 32 18.1**	**+1.4**
BSO4	**Boso 4**	**2.02**	**275**	P	**Pn**	**08 31 56.1**	**-0.3**
JCN	**Nagara**	**2.20**	**286**	P	**Pn**	**08 31 59.0**	**+0.1**
JHJ2	**Mitsune**	**3.02**	**236**	P	**Pn**	**08 32 09.0**	**-1.2**
JHJ2				*e*S	**Sn**	**08 32 41.7**	**-3.5**
JHJ2	**Mitsune**	**3.02**	**236**	*e*Pn	**Pn**	**08 32 08.8**	**-1.5**
JHJ2				*e*Sn	**Sn**	**08 32 44.5**	**-0.7**
JHJ	**Hachijo jima 2**	**3.04**	**236**	Pn	**Pn**	**08 32 09.0**	**-1.5**
95nm,0.3s,baz=306,slow=16,SNR=18							
JHJ				Sn	**Sn**	**08 32 41.9**	**-3.8**
217nm,0.3s,baz=130,slow=23,SNR=7.8							
JOD2	**Odawara 2**	**3.07**	**279**	P	**Pn**	**08 32 09.6**	**-1.3**
JOD2				*e*S	**Sn**	**08 32 44.7**	**-1.7**
JAG	**Ashikaga**	**3.14**	**301**	P	**Pn**	**08 32 10.9**	**-1.0**
JFT	**Otama**	**3.32**	**324**	P	**Pn**	**08 32 13.0**	**-1.4**
JFT				*e*S	**Sn**	**08 32 49.2**	**-3.4**
JRY	**Ryogami san**	**3.39**	**291**	P	**Pn**	**08 32 15.1**	**-0.2**
JRY				*e*S	**Sn**	**08 32 53.5**	**-0.7**
JYN	**Shimob**	**3.54**	**282**	P	**Pn**	**08 32 16.6**	**-0.8**
JYN				*e*S	**Sn**	**08 32 56.5**	**-1.6**
JNS	**Sasagawa**	**4.08**	**318**	P	**Pn**	**08 32 24.4**	**-0.4**
JNS				S	**Sn**	**08 33 09.4**	**-1.9**
MJAR	**Matsushiro Arr**	**4.10**	**296**	Pn	**Pn**	**08 32 24.4**	**-0.6**
8.1nm,0.3s,baz=91,slow=13,SNR=8.5							
MJAR				Sn	**Sn**	**08 33 12.6**	**+0.8**
6.0nm,0.3s,baz=256,slow=26,SNR=3.7							
MAJO	**Matsushiro**	**4.10**	**296**	*e*Pn	**Pn**	**08 32 25.3**	**+0.2**
MAT	**Matsushiro**	**4.10**	**296**	P	**Pn**	**08 32 24.5**	**-0.5**
MAT				*e*S	**Sn**	**08 33 09.2**	**-2.6**
MAT	**Matsushiro**	**4.10**	**296**	P	**Pn**	**08 32 25.0**	**0.0**
MAT				*e*S	**Sn**	**08 33 10.5**	**-1.3**
ERM	**Erimo**	**7.16**	**2**	*e*Pn	Pn	08 33 03.5	-3.5
CBIJ	**Chichi jima**	**7.75**	**184**	Pn	Pn	08 33 10.9	-4.3
CBIJ				Sn	Sn	08 34 33.6	-8.2
JCJ	**Chichijima**	**7.75**	**184**	Pn	Pn	08 33 10.9	-4.3
14nm,0.3s,baz=100,slow=23,SNR=11							
JCJ				Sn	Sn	08 34 33.6	-8.2
30nm,0.3s,baz=315,slow=23,SNR=5.6							
ASAJ	**Asahikawa**	**9.26**	**359**	Pn	Pn	08 33 32.4	-3.4
5.2nm,0.3s,baz=261,slow=15,SNR=5.8							
ASAJ	**Asahikawa**	**9.26**	**359**	*e*Pn	Pn	08 33 32.2	-3.6
JNU	**Nakatsue**	**10.05**	**263**	*e*Pn	**Pn**	**08 33 46.7**	**0.0**
KSRS	**Korea Array**	**12.30**	**286**	Pn	**Pn**	**08 34 18.3**	**+0.8**
baz=92,slow=14,SNR=2.8							
KSAR	**Wonju Array Be**	**12.33**	**286**	Pn	**Pn**	**08 34 18.3**	**+0.4**
USRK	**Ussuriysk Ar.**	**12.51**	**321**	Pn	**Pn**	**08 34 18.8**	**-1.5**
0.2nm,0.3s,baz=108,slow=12,SNR=4.3							
PETK	**Petropavlovsk-**	**21.09**	**26**	P	**P**	**08 36 05.4**	**-0.7**
3.9nm,0.8s,baz=191,slow=15,SNR=4.0							
BJT	**Baijiatuau**	**21.73**	**292**	*e*P	**P**	**08 36 12.6**	**-0.5**
12nm,0.8s							
ENH	**Enshi**	**28.36**	**270**	*e*P	**P**	**08 37 15.6**	**-0.2**
12nm,0.7s							
SEY	**Seymchan**	**28.74**	**9**	P	**P**	**08 37 19.8**	**+1.1**
6.3nm,0.6s,baz=190,slow=8.4,SNR=13							
ULN	**Ulaanbaatar**	**29.54**	**307**	*e*P	**P**	**08 37 23.2**	**-2.9**
4.3nm,1.1s							
SONM	**Songino Array**	**29.96**	**307**	P	P	08 37 32.3	+2.4
0.9nm,0.5s,baz=97,slow=12,SNR=4.9							
CMAR	**Chiang Mai Arr**	**42.10**	**259**	P	**P**	**08 39 14.3**	**+0.6**
1.0nm,0.6s,baz=48,slow=7.2,SNR=4.7							
ZALV	**Zalesovo Beam**	**44.22**	**314**	P	**P**	**08 39 31.3**	**+0.8**
3.9nm,0.8s,baz=94,slow=7.7,SNR=5.0							
ZALV				PcP	**PcP**	**08 41 14.7**	**+0.2**
1.3nm,0.4s,baz=90,slow=2.9,SNR=3.7							
KSM	**Kuching**	**44.92**	**229**	*e*P	**P**	**08 39 36.6**	**+0.1**
19nm,1.1s							
MKAR	**Makanchi Array**	**46.25**	**304**	P	**P**	**08 39 47.7**	**+1.0**
3.3nm,0.8s,baz=94,slow=9.7,SNR=7.8							
KURK	**Kurchatov**	**48.17**	**310**	*e*P	**P**	**08 40 02.1**	**+0.6**
KURBB	**Kurchatov Arra**	**48.24**	**310**	P	**P**	**08 40 02.6**	**+0.5**
2.4nm,0.5s,baz=84,slow=7.9,SNR=8.1							
IPM	**Ipoh**	**49.03**	**242**	*e*P	**P**	**08 40 06.6**	**-2.0**
11nm,0.8s							
ILAR	**Eielson Array**	**50.75**	**31**	P	**P**	**08 40 21.0**	**0.0**
2.6nm,0.9s,baz=264,slow=6.4,SNR=9.6							
TKM2	**Tokmak 2**	**51.68**	**300**	*e*P	P	08 40 30.4	+1.9
15nm,1.2s							
BVAR	**Borovoye Array**	**52.88**	**314**	P	**P**	**08 40 38.1**	**+1.1**
0.6nm,0.5s,baz=54,slow=7.3,SNR=2.5							
EKS2	**Erkin-Say**	**53.04**	**300**	*e*P	**P**	**08 40 39.9**	**+1.3**
6.2nm,1.2s							
LEM	**Lembang**	**53.10**	**226**	LR	LR	09 04 31.7	
comp=Z,57nm,18.7s,baz=176,slow=38							
WRAB	**Tennant Creek**	**55.07**	**190**	*e*P	**P**	**08 40 53.1**	**-0.2**
26nm,0.9s							
WRA	**Warramunga Arr**	**55.08**	**190**	P	**P**	**08 40 53.2**	**-0.2**
19nm,0.8s,baz=8.8,slow=7.6,SNR=30							
FITZ	**Fitzroy Crossi**	**55.13**	**200**	*e*P	**P**	**08 40 52.6**	**-1.1**
20nm,1.2s							
KKAR	**Karatay Array**	**55.21**	**302**	*e*P	**P**	**08 40 54.4**	**+0.2**
8.1nm,1.0s							
INK	**Inuvik**	**55.83**	**27**	P	**P**	**08 40 58.9**	**+0.7**
3.8nm,0.8s,baz=296,slow=6.0,SNR=7.3							
ARU	**Arti**	**58.74**	**320**	P	**P**	**08 41 19.5**	**+0.5**
3.0nm,0.5s,baz=26,slow=2.3,SNR=4.6							
ARU	**Arti**	**58.74**	**320**	*e*P	**P**	**08 41 19.2**	**+0.2**
4.8nm,0.6s							
ASAR	**Alice Springs**	**58.80**	**190**	P	**P**	**08 41 20.0**	**+0.3**
7.5nm,0.8s,baz=13,slow=8.0,SNR=22							
ABKAR	**Akbulak array**	**60.21**	**311**	*e*P	**P**	**08 41 29.7**	**+0.4**
1.8nm,0.6s							
AKTO	**Aktyubinsk**	**60.98**	**313**	P	**P**	**08 41 35.4**	**+0.9**
2.9nm,0.7s,baz=65,slow=14,SNR=3.7							
YKA	**Yellowknife Ar**	**65.13**	**30**	P	**P**	**08 42 01.9**	**+0.2**
1.7nm,0.8s,baz=295,slow=6.5,SNR=8.8							
GEYT	**Alibeck**	**65.89**	**300**	P	P	08 42 08.7	+1.5
1.9nm,0.6s,baz=92,slow=14,SNR=3.8							
NEW	**Newport**	**70.91**	**44**	P	P	08 42 39.6	+1.2
2.8nm,0.7s,baz=275,slow=7.6,SNR=2.9							
FINES	**FINESS Array B**	**71.26**	**333**	P	**P**	**08 42 40.6**	**+0.4**
4.8nm,0.8s,baz=114,slow=2.3,SNR=6.2							
FINES				LR	LR	09 16 15.6	
comp=Z,274nm,20.8s,baz=25,slow=38							
KBZ	**Khabaz**	**73.18**	**312**	P	**P**	**08 42 53.3**	**+1.3**
3.7nm,0.9s,baz=33,slow=9.7,SNR=4.5							
FFC	**Flin Flon**	**74.93**	**33**	*e*P	**P**	**08 43 02.2**	**+0.2**
5.2nm,0.9s							
NVAR	**Mina Array Bea**	**75.39**	**53**	P	P	08 43 06.5	+1.2
5.9nm,0.8s,baz=292,slow=6.5,SNR=28							
NB2	**NORSAR Subarra**	**76.63**	**338**	P	**P**	**08 43 12.0**	**+0.3**
comp=Z,1.6nm,0.6s,baz=41,slow=5.6							
NOA	**NORSAR Array B**	**76.63**	**338**	P	**P**	**08 43 12.6**	**+1.0**
comp=Z,3.8nm,0.9s,baz=40,slow=5.7,SNR=8.6							
AKASG	**Malin Array Be**	**76.71**	**323**	P	**P**	**08 43 12.6**	**+0.3**
comp=Z,1.3nm,0.4s,baz=45,slow=5.8,SNR=5.8							
PDAR	**Pinedale Array**	**78.39**	**46**	P	**P**	**08 43 22.8**	**+0.7**
comp=Z,0.8nm,0.7s,baz=299,slow=2.8,SNR=5.8							
BRTR	**Keskin Array B**	**81.14**	**312**	P	**P**	**08 43 38.2**	**+1.3**
comp=Z,2.9nm,1.0s,baz=102,slow=4.3,SNR=7.4							
KHC	**Kasperske Hory**	**84.99**	**329**	*e*P	**P**	**08 43 57.4**	**+0.9**
KHC				*e*pP	**pP**	**08 44 06.9**	**-0.7**
GERES	**GERESS Array B**	**85.16**	**329**	P	**P**	**08 43 57.9**	**+0.4**
comp=Z,0.7nm,0.5s,baz=38,slow=6.8,SNR=6.2							
TXAR	**Lajitas Array**	**90.55**	**53**	P	**P**	**08 44 24.5**	**+0.8**
comp=Z,0.5nm,0.6s,baz=300,slow=2.7,SNR=5.7							
LPAZ	**La Paz**	**146.73**	**64**	PKPbc	**PKPab**	**08 51 04.4**	**-1.2**
comp=Z,2.8nm,0.6s,baz=290,slow=4.9,SNR=16							

*CSEM **22** 08:32:35.6±0.1, 39°.11N×29°.10E, h2km, ML2.7, Error ellipse: s-maj=2.9km s-min=2.1km az=100.0*
*ISK **22** 08:32:35.7, 39°.13N×29°.14E, h8km, MD2.8*
*DDA **22** 08:32:35.0, 39°.12N×29°.10E, h7km, Ml2.7*
ISC 22 08:32:35.7±1.0, 39°.11N±0°.02×29°.11E±0°.03, h8km±12km, n27, σ0s51/40, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.31**	**257**	P	**Pg**	**08 32 42.1**	**+0.2**
DEMI				S	**Sg**	**08 32 46.3**	**+0.3**
DEMI	**Demirci**	**0.31**	**257**	*i* P	**Pg**	**08 32 42.1**	**+0.2**
DEMI				*i* S	**Sg**	**08 32 46.3**	**+0.3**
TVSB	**Tavsanli**	**0.43**	**39**	PG	**Pg**	**08 32 44.1**	**0.0**
TVSB				SG	**Sg**	**08 32 49.9**	**+0.1**
TVSB	**Tavsanli**	**0.43**	**39**	*i* Pg	**Pg**	**08 32 44.1**	**0.0**
TVSB				*i* Sg	**Sg**	**08 32 49.9**	**+0.1**
DURS	**Dursunbey**	**0.69**	**315**	P	**Pg**	**08 32 49.0**	**0.0**
DURS				S	**Sg**	**08 32 57.6**	**-0.5**
DURS	**Dursunbey**	**0.69**	**315**	*i* P	**Pg**	**08 32 49.0**	**0.0**
DURS				*i* S	**Sg**	**08 32 57.6**	**-0.5**
KULA	**Kula-Manisa**	**0.69**	**210**	*e*PG	**Pg**	**08 32 49.1**	**+0.1**
KULA	**Kula-Manisa**	**0.69**	**210**	*e*Pg	**Pg**	**08 32 49.1**	**+0.1**
MANT	**Manisa**	**0.76**	**215**	P	**Pg**	**08 32 50.3**	**0.0**
MANT				S	**Sg**	**08 32 59.6**	**-0.5**
MANT	**Manisa**	**0.76**	**215**	*i* P	**Pg**	**08 32 50.3**	**0.0**
MANT				*i* S	**Sg**	**08 32 59.6**	**-0.5**
KHAL	**Karahalli**	**0.80**	**158**	P	**Pg**	**08 32 50.0**	**-1.1**
KHAL				S	**Sg**	**08 33 02.3**	**+0.8**
KHAL	**Karahalli**	**0.80**	**158**	*i* P	**Pg**	**08 32 50.0**	**-1.1**
KHAL				*i* S	**Sg**	**08 33 02.3**	**+0.8**
KHL	**Karahalli**	**0.85**	**158**	*e*PG	**Pb**	**08 32 53.1**	**+0.3**
KHL	**Karahalli**	**0.85**	**158**	*e*Pg	**Pb**	**08 32 53.1**	**+0.3**
ORLT	**Orhaneli**	**0.94**	**350**	*e*PG	**Pg**	**08 32 53.8**	**0.0**
ORLT	**Orhaneli**	**0.94**	**350**	*e*Pg	**Pg**	**08 32 53.8**	**0.0**
IGD	**Bursa**	**1.15**	**4**	*i* P	**Pg**	**08 32 56.1**	**-1.6**
IGD				*i* S	**Sg**	**08 33 12.6**	**-0.1**
IZI	**Iznik**	**1.25**	**13**	*e*PN	**Pg**	**08 33 00.4**	**+0.7**
IZI	**Iznik**	**1.25**	**13**	*e*Pn	**Pg**	**08 33 00.4**	**+0.7**
KCTX	**Karacabey (Bur**	**1.29**	**333**	*e*PN	**Pg**	**08 33 00.7**	**+0.3**
KCTX	**Karacabey (Bur**	**1.29**	**333**	*e*Pn	**Pg**	**08 33 00.7**	**+0.3**
BORA	**Eskisehir**	**1.29**	**53**	P	**Pb**	**08 33 00.4**	**+0.1**
BORA				S	**Sn**	**08 33 17.8**	**+0.1**
BORA	**Eskisehir**	**1.29**	**53**	*i* P	**Pb**	**08 33 00.5**	**+0.1**
BORA				*i* S	**Sn**	**08 33 17.8**	**+0.1**
GONE	**Gonen-Balikesi**	**1.44**	**311**	*e*PN	**Pb**	**08 33 02.6**	**-0.2**
GONE	**Gonen-Balikesi**	**1.44**	**311**	*e*Pn	**Pb**	**08 33 02.6**	**-0.2**
ARMT	**Armutlu**	**1.46**	**353**	*e*PN	**Pb**	**08 33 02.9**	**-0.3**
ARMT	**Armutlu**	**1.46**	**353**	*e*Pn	**Pb**	**08 33 02.9**	**-0.3**

*NIED **22** 08:33:00, 39°.10N×143°.00E, h29km, Mw4.7 Best double couple: M0 1.14000×10^16 NP1:φ=178.00000°, δ=22.00000°, λ=65.00000°. NP2:φ=24.00000°, δ=70.00000°, λ=100.00000°.*
*JMA **22** 08:33:37.2±0.1, 39°.12N×143°.01E, h21km±2km, M4.7*
JMA Felt II J1.
*ISCJB **22** 08:33:39.7±0.5, 39°.14N±0°.03×142°.89E±0°.04, h39km±3km, mb4.7/111, MS4.3/26, Error ellipse: s-maj=5.7km s-min=3.8km az=42.1*
*IDC **22** 08:33:40.7±0.5, 39°.12N×142°.90E, h35km±3km, mb4.3/33, mb1 4.4/41, mb1mx4.3/58, mbtmp4.5/41, ML4.1/7, MS4.0/13, Ms1 4.0/13, ms1mx3.6/48, Error ellipse: s-maj=12.2km s-min=10.5km az=107.0*
*MOS **22** 08:33:40.7±1.0, 39°.41N×142°.71E, h33km, mb5.0/48, Error ellipse: s-maj=7.2km s-min=4.8km az=111.1*
*NEIC **22** 08:33:41.4±0.3, 39°.21N×142°

VLA pmax pmax
comp=Z,54nm,1.3s
USRK Ussuriysk Ar. 9.52 305 Pn **Pn 08 35 58.6 +3.1**
comp=Z,2.3nm,0.3s,baz=116,slow=13,SNR=35
MDJ Mudanjiang 11.25 303 P **Pn 08 36 18.3 -0.9**
MDJ S **Sn 08 38 22.9 -0.7**
MDJ PcP **PcP 08 42 13.9 +1.1**
MDJ ScP **ScP 08 45 43.8 +1.2**
MDJ PcS **PcS 08 45 47.9 +1.4**
MDJ ScS **ScS 08 49 19.0 +1.1**
MDJ pmax pmax
comp=Z,11nm,0.9s
MDJ pmax pmax
comp=Z,460nm,6.9s
MDJ LR LR
comp=Z,500nm,16.3s
MDJ LR LR
comp=Z,1μm,16.3s
MDJ LR LR
comp=Z,2μm,17.4s
MDJ Mudanjiang 11.25 303 *e*Pn **Pn 08 36 18.2 -0.9**
comp=Z,71nm,1.1s
JNU Nakatsue 11.42 242 Pn **Pn 08 36 22.0 +0.5**
comp=Z,0.8nm,0.3s,baz=143,slow=1.8,SNR=5.9
JNU LR LR 08 40 59.3
comp=Z,2μm,19.1s,baz=56,slow=38
TYV Tymovskoe 11.65 359 *e*P **Pn 08 36 23.8 -0.8**
TYV pmax pmax
comp=Z,44nm,1.0s
KSRS Korea Array 11.85 266 Pn **Pn 08 36 29.9 +2.5**
comp=Z,0.9nm,0.3s,baz=82,slow=13,SNR=14
KSRS LR LR 08 40 47.0
comp=Z,857nm,18.3s,baz=88,slow=36
KS15 Wonju Array Si 11.88 266 *e*Pn **Pn 08 36 29.9 +2.1**
KSAR Wonju Array Be 11.88 266 P **Pn 08 36 29.9 +2.0**
KSAR Wonju Array Be 11.88 266 Pn **Pn 08 36 29.9 +2.0**
CBIJ Chichi jima 12.10 183 Sn Sn 08 38 32.1 -12
JCJ Chichijima 12.10 183 Sn Sn 08 38 32.1 -12
comp=Z,3.8nm,0.3s,baz=72,slow=20,SNR=3.7
JCJ LR LR 08 42 52.7
comp=Z,165nm,20.5s,baz=326,slow=46
TJN Taejon 12.57 262⇑*i*P **Pn 08 36 38.8 +1.6**
KLR Kul'dur 12.78 325 Pn **Pn 08 36 41.6 +1.7**
comp=Z,0.4nm,0.3s,baz=136,slow=13,SNR=6.6
CN2 Changchun 13.82 295 *e*P **P 08 36 59.1 -3.0**
CN2 *es*P sP 08 37 06.5
CN2 *e*S **Sn 08 39 30.8 +4.5**
CN2 pmax pmax
comp=Z,10.0nm,1.0s
CN2 LR LR
comp=N,500nm,16.0s
CN2 LR LR
comp=E,700nm,16.0s
CN2 LR LR
comp=Z,700nm,18.0s
NKL Nikolayevsk 14.02 355 *e*P **P 08 37 04.0 -0.3**
PETK Petropavlovsk- 17.24 31 P **Pn 08 37 39.1 +0.2**
comp=Z,0.1nm,0.3s,baz=185,slow=8.0,SNR=3.1
PETK LR LR 08 43 44.8
comp=Z,205nm,20.9s,baz=213,slow=35
HIA Hailar 19.29 309 *e*P **P 08 38 00.8 -1.9**
HIA pmax pmax
comp=Z,17nm,0.7s
HIA Hailar 19.29 309 *e*P **P 08 38 00.8 -1.9**
comp=Z,17nm,0.7s
SSE Sheshan 19.44 252 P **P 08 38 04.8 +0.4**
SSE pmax pmax
comp=Z,72nm,0.7s
SSE pmax pmax
comp=Z,96nm,4.1s
BJI Beijing 20.54 281 P **P 08 38 14.3 -1.9**
BJI S **S 08 42 02.8 -1.2**
BJI pmax pmax
comp=Z,15nm,1.0s
BJI LR LR
comp=Z,230nm,13.7s
BJI LR LR
comp=Z,700nm,16.5s
TIA Tai'an 20.55 270⇑P **P 08 38 15.8 -0.6**
TIA pmax pmax
comp=Z,40nm,0.9s
MA2 Magadan 21.00 11 P **P 08 38 21.5 +0.4**
comp=Z,51nm,0.7s,baz=218,slow=10,SNR=18
MA2 Magadan 21.00 11 *e*P **P 08 38 21.4 +0.4**
MA2 pmax pmax
comp=Z,236nm,0.9s
MA2 Magadan 21.00 11 *e*P **P 08 38 21.4 +0.4**
comp=Z,236nm,0.9s
CLNS Chul'man 21.22 332 *e*P **P 08 38 19.5 -4.0**
CLNS pmax pmax
comp=Z,25nm,1.0s
CLNS pmax pmax
comp=N,31nm,1.3s
CLNS pmax pmax
comp=E,13nm,1.0s
YHNB Yeheng 23.20 238 *e*P **P 08 38 41.7 -3.1**
comp=E,22nm,0.7s
HHC Hu-ho-hao-te 23.95 284 *e*P **P 08 38 49.9 -2.0**
HHC S S 08 42 53.4 -13
HHC pmax pmax
comp=E,36nm,0.9s
HHC pmax pmax
comp=E,180nm,4.3s
HHC LR LR
comp=E,990nm,12.4s
HHC LR LR
comp=E,1μm,11.7s
HHC LR LR
comp=E,2μm,12.3s
CIT Chita 23.98 312 *e*P **P 08 38 52.3 +0.3**
CIT *e* 08 39 02.9
CIT pmax pmax
comp=Z,152nm,1.3s
SSLB Suanglung 24.09 237 *e*P **P 08 38 50.0 -3.3**
comp=Z,51nm,1.6s
YAK Yakutsk 24.23 345 P **P 08 38 53.0 -1.1**
comp=Z,3.2nm,0.3s,baz=335,slow=21,SNR=4.9
YAK Yakutsk 24.23 345 *e*P **P 08 38 52.6 -1.5**
YAK *e* 08 39 20.9
YAK *e*S **S 08 43 07.9 -2.2**
YAK *e*SS **SnSn 08 43 50.0 -3.9**
YAK *e* 08 49 55.6
YAK pmax pmax
comp=Z,60nm,0.8s
YAK pmax pmax
comp=E,7.0nm,1.1s
YAK pmax pmax
comp=N,19nm,1.1s
YAK pmax pmax
comp=Z,31nm,1.0s
YAK pmax pmax
comp=N,22nm,1.2s
YAK pmax pmax
comp=E,19nm,1.6s
YAK smax smax
comp=E,36nm,2.0s
YAK smax smax
comp=N,31nm,1.9s
YAK MLR MLR
comp=Z,509nm,16.0s
YAK MLR MLR
comp=N,266nm,14.0s
YAK MLR MLR
comp=E,143nm,17.0s
YAK Yakutsk 24.23 345 *e*P **P 08 38 53.0 -1.1**
comp=E,75nm,0.8s
SEY Seymchan 24.44 11 P **P 08 38 57.0 +0.9**
comp=E,22nm,0.7s,baz=188,slow=8.7,SNR=26
SEY Seymchan 24.44 11 *ce*P **P 08 38 57.8 +1.7**
TWG Pinlang 24.70 235 *e*P **P 08 38 56.6 -2.2**
comp=E,97nm,0.8s
WHN Wuhan 24.85 258⇓*i*P **P 08 38 59.5 -0.6**
WHN pP **pP 08 39 09.6 -0.3**
WHN pmax pmax
comp=E,98nm,1.1s
ULN Ulaanbaatar 27.15 300 *ce*P **P 08 39 22.0 +1.1**
ULN pmax pmax
comp=Z,14nm,1.2s
ULN Ulaanbaatar 27.15 300 *e*P **P 08 39 20.8 -0.2**
comp=Z,8.3nm,0.8s
SONA1 Songino Array 27.58 300 *e*P **P 08 39 25.3 +0.5**
SONM Songino Array 27.59 300 P **P 08 39 25.5 +0.6**
comp=Z,7.4nm,0.6s,baz=90,slow=8.4,SNR=13
SONM Songino Array 27.59 300 P **P 08 39 25.5 +0.6**
SONM pmax pmax
comp=Z,8.0nm,0.6s

XAN Xi'an 27.61 270 P **P 08 39 24.3 -0.8**
XAN pP pP 08 39 34.8 -0.2
XAN pmax pmax
comp=Z,10.0nm,0.8s
XAN LR LR
comp=Z,350nm,17.1s
XAN LR LR
comp=Z,390nm,13.1s
H11N2 WAKE ISLAND Hy 28.41 126 T T 09 10 11.8
baz=318,slow=76,SNR=92
H11N1 WAKE ISLAND Hy 28.42 126 T T 09 10 12.3
baz=318,slow=76,SNR=90
H11N3 WAKE ISLAND Hy 28.42 126 T T 09 10 06.7
baz=318,slow=76,SNR=108
ENH Enshi 28.70 262 *e*P **P 08 39 34.0 -0.8**
comp=Z,37nm,0.8s
TLY Talaya 29.82 308 P **P 08 39 45.5 +0.9**
comp=Z,4.7nm,0.7s,baz=236,slow=2.4,SNR=6.5
TLY Talaya 29.82 308 *ci*P **P 08 39 44.8 +0.2**
TLY pmax pmax
comp=Z,8.0nm,0.8s
TLY MLR MLR
comp=Z,452nm,13.0s
TLY Talaya 29.82 308 *e*P **P 08 39 44.6 0.0**
comp=Z,92nm,2.0s
ZAK Zakamensk 29.87 305 *e*P **P 08 39 45.3 +0.2**
ZAK pmax pmax
comp=Z,10.0nm,1.6s
LZH Lanzhou 30.88 277 *e*P **P 08 39 52.8 -1.4**
LZH pP pP 08 40 04.0 -0.2
LZH sP sP 08 40 07.8 -0.6
LZH *e*PP **PnPn 08 40 53.0 -2.2**
LZH *e*S **S 08 44 48.3 -7.6**
LZH sS sS 08 45 09.0 -3.4
LZH *e*SS **SnSn 08 46 37.0 +0.2**
LZH pmax pmax
comp=Z,32nm,1.1s
LZH pmax pmax
comp=Z,170nm,4.6s
LZH LR LR
comp=Z,460nm,12.5s
LZH LR LR
comp=Z,600nm,12.7s
LZH LR LR
comp=Z,890nm,15.2s
MOY Mondy 31.46 307 *e*P **P 08 39 59.5 +0.4**
BILL Bilibino 31.62 17⇑*e*P **P 08 40 00.3 +0.1**
BILL *e* 08 40 13.4
BILL pmax pmax
comp=Z,4.0nm,1.0s
BILL MLR MLR
comp=Z,146nm,18.0s
BILL Bilibino 31.62 17 *e*P **P 08 40 00.2 +0.1**
comp=Z,4.9nm,0.8s
GYA Guiyang 32.74 258⇑*i*P **P 08 40 09.8 -0.8**
GYA pP pP 08 40 22.0 +1.4
GYA PcP **PcP 08 42 57.8 +2.3**
GYA S **S 08 45 21.3 -3.7**
GYA sS sS 08 45 41.0 -0.5
GYA ScP **ScP 08 46 38.4 +1.7**
GYA SS **SnSn 08 47 21.0 -1.1**
GYA ScS **ScS 08 50 35.6 -1.2**
GYA pmax pmax
comp=Z,60nm,0.7s
GYA pmax pmax
comp=Z,120nm,5.0s
GYA LR LR
comp=Z,290nm,15.2s
GYA LR LR
comp=Z,370nm,18.3s
GYA LR LR
comp=Z,390nm,17.9s
CD2 Chengdu 32.85 268 P **P 08 40 10.8 -0.6**
CD2 sP sP 08 40 25.1 -0.5
CD2 PP **PP 08 41 24.9 -1.0**
CD2 PcP **PcP 08 42 55.8 +0.1**
CD2 S **S 08 45 25.3 -1.2**
CD2 sS sS 08 45 42.3 -0.8
CD2 pmax pmax
comp=Z,30nm,0.8s
CD2 pmax pmax
comp=Z,40nm,4.2s
CD2 LR LR
comp=Z,530nm,16.8s
CD2 LR LR
comp=Z,550nm,12.6s
GTA Gaotai 33.06 284 P **P 08 40 13.5 +0.2**
GTA pP pP 08 40 23.5 +0.2
GTA sP sP 08 40 27.4 -0.1
GTA S **S 08 45 29.6 -0.3**
GTA sS sS 08 45 44.8 -1.6
GTA SS **SnSn 08 47 28.6 -1.1**
GTA pmax pmax
comp=Z,21nm,1.1s
GTA pmax pmax
comp=Z,72nm,4.5s
GTA LR LR
comp=Z,480nm,17.6s
GTA LR LR
comp=Z,800nm,19.0s
GTA LR LR
comp=Z,960nm,17.6s
TIXI Tiksi 33.28 352 P **P 08 40 14.1 -0.5**
comp=Z,4.4nm,0.8s,baz=143,slow=6.0,SNR=5.1
TIXI Tiksi 33.28 352 *ce*P **P 08 40 14.7 +0.1**
TIXI pmax pmax
comp=Z,4.0nm,0.8s
QIZ Qiongzhong 34.87 244 P **P 08 40 29.5 +0.5**
QIZ S **S 08 46 00.5 +2.6**
QIZ LR LR
comp=Z,370nm,15.1s
QIZ LR LR
comp=Z,500nm,14.1s
DAV Davao City (W) 35.58 210 LR LR 08 56 40.6
comp=Z,137nm,18.5s,baz=7.0,slow=39
KMI Kunming 36.44 259 P **P 08 40 42.8 +0.1**
KMI pP pP 08 40 53.6 +0.8
KMI sP sP 08 40 57.6 +0.7
KMI PP **PP 08 42 07.5 +1.6**
KMI S **S 08 46 20.8 -1.5**
KMI sS sS 08 46 38.4 -0.5
KMI SS **SnSn 08 48 46.1 -5.9**
KMI pmax pmax
comp=Z,61nm,1.0s
KMI pmax pmax
comp=Z,180nm,4.9s
KMI LR LR
comp=Z,400nm,15.6s
KMI LR LR
comp=Z,390nm,14.9s
KMI LR LR
comp=Z,440nm,16.8s
NONG Nongkai 40.30 250 P **P 08 41 15.7 +0.8**
comp=Z,29nm,0.9s
WMQ Urumqi 40.91 295 P **P 08 41 20.6 +0.8**
WMQ pP pP 08 41 31.5 +1.5
WMQ sP sP 08 41 37.3 +3.2
WMQ S **S 08 47 26.4 -2.6**
WMQ sS sS 08 47 46.5 +0.7
WMQ SS **SS 08 50 27.3 -3.8**
WMQ pmax pmax
comp=Z,24nm,0.6s
WMQ pmax pmax
comp=Z,77nm,3.6s
WMQ LR LR
comp=Z,76nm,15.0s
WMQ LR LR
comp=Z,140nm,16.4s
CRAI Chiangrai 41.01 255 P **P 08 41 21.7 +0.9**
comp=Z,137nm,0.9s,comp=Z,16μm
ZAA0 Zalesovo Array 41.32 311 *e*P **P 08 41 23.4 +0.4**
ZALV Zalesovo Beam 41.32 311 P **P 08 41 23.2 +0.3**
comp=Z,7.7nm,0.4s,baz=89,slow=7.7,SNR=11
ZALV PcP **PcP 08 43 21.0 +0.2**
comp=Z,3.1nm,0.5s,baz=81,slow=3.6,SNR=4.8
LOEI Loei 42.03 251 P **P 08 41 26.8 -2.4**
comp=Z,12nm,1.1s,comp=Z,551nm
NVS Novosibirsk 42.19 312 *e*P **P 08 41 30.1 +0.1**
NVS pmax pmax
comp=E,15nm,1.3s
NVS pmax pmax
comp=Z,18nm,1.3s
UTTA Uttaradit 42.40 252 P **P 08 41 33.0 +0.8**
comp=Z,4.2nm,1.1s
CHAI Chaiyaphum 42.54 249 P **P 08 41 33.6 +0.3**

comp=Z,6.3nm,1.0s
LAMP Lampang 42.60 254 P **P 08 41 34.9 +1.1**
comp=Z,7.5nm,0.9s
PBKT Sadao Pong 42.84 250 P **P 08 41 36.4 +0.6**
comp=Z,13nm,1.1s
CHTO Chiang Mai 42.94 255 P **P 08 41 37.1 +0.5**
comp=Z,62nm,1.0s
CHTO Chiang Mai 42.94 255 *e*P **P 08 41 36.6 0.0**
CHTO pmax pmax
comp=Z,12nm,0.9s
CHTO Chiang Mai 42.94 255 *e*P **P 08 41 36.5 0.0**
comp=Z,12nm,0.9s
CMAR Chiang Mai Arr 43.16 254 P **P 08 41 38.5 +0.2**
comp=Z,3.6nm,0.8s,baz=49,slow=6.5,SNR=13
CMAR LR LR 08 59 19.7
comp=Z,98nm,18.4s,baz=62,slow=36
LSA Lhasa 43.17 274 *e*P **P 08 41 40.2 +1.3**
LSA pmax pmax
comp=Z,8.0nm,0.9s
LSA Lhasa 43.17 274 *e*P **P 08 41 40.2 +1.3**
comp=Z,7.9nm,0.9s
CM01 Chiang Mai Arr 43.17 254 *e*P **P 08 41 38.4 0.0**
SUKH Sukhothai 43.25 253 P **P 08 41 40.0 +0.9**
comp=Z,6.2nm,1.0s,comp=Z,61nm
MK01 Makanchi Array 43.95 300 *e*P **P 08 41 44.7 +0.2**
MK31 Makanchi Array 43.95 300 *e*P **P 08 41 44.8 +0.3**
MK31 Makanchi Array 43.95 300 *e*P **P 08 41 44.8 +0.3**
MKAR Makanchi Array 43.95 300 P **P 08 41 44.8 +0.3**
comp=Z,21nm,0.8s,baz=82,slow=9.9,SNR=29
MAKZ Makanchi 44.16 301 *e*P **P 08 41 46.2 0.0**
MAKZ pmax pmax
comp=Z,29nm,1.0s
MAKZ Makanchi 44.16 301 *e*P **P 08 41 46.2 0.0**
comp=Z,29nm,1.0s
CAST Castle Rocks 44.80 35 *e*P **P 08 41 54.5 +3.5**
comp=Z,6.5nm,1.0s
BPAW Bear Paw Mtn. 45.29 34 *e*P **P 08 41 55.1 +0.3**
comp=Z,1.1nm,0.9s
KTH Kantishna Hill 45.32 35 *e*P **P 08 41 57.4 +2.2**
comp=Z,12nm,1.0s
MLY Manley 45.41 33 *e*P **P 08 41 58.0 +2.2**
comp=Z,4.2nm,0.9s
KURK Kurchatov 45.51 307 P **P 08 41 57.4 +0.7**
KURK pmax pmax
comp=Z,44nm,0.6s
KURK Kurchatov 45.51 307 *e*P **P 08 41 56.7 -0.1**
comp=Z,66nm,1.0s
KURBB Kurchatov Arra 45.58 307 P **P 08 41 57.4 +0.1**
comp=Z,45nm,0.6s,baz=81,slow=8.5,SNR=83
RC01 Rabbit Creek A 45.95 39 *e*P **P 08 42 01.2 +1.1**
PHET Kaeng Krachan 46.22 248 P **P 08 42 04.2 +1.4**
comp=Z,10nm,0.8s
ILAR Eielson Array 47.05 33 P **P 08 42 09.3 +0.6**
comp=Z,2.6nm,0.7s,baz=270,slow=6.2,SNR=11
ILB Eielson Array 47.05 33 *e*P **P 08 42 09.4 +0.6**
IL1 Eielson Array 47.06 33 *e*P **P 08 42 08.6 -0.1**
KLU Klutina 47.75 38 *e*P **P 08 42 16.5 +2.3**
comp=Z,12nm,1.1s
KSM Kuching 47.87 226 *e*P **P 08 42 16.4 +0.7**
comp=Z,16nm,1.3s
GUN Gumba 48.09 274 *e*P **P 08 42 18.0 +0.3**
comp=Z,95nm,0.8s
KKN Kakani 48.61 275 *e*P **P 08 42 21.8 +0.3**
comp=Z,59nm,0.7s
PKIN Phulchoki 48.62 274 *e*P **P 08 42 21.5 -0.2**
comp=Z,8.2nm,0.5s
DMN Daman 48.83 275 *e*P **P 08 42 23.4 +0.1**
comp=Z,29nm,0.8s
GKN Gorkha 49.01 275 *e*P **P 08 42 24.5 0.0**
comp=Z,20nm,0.4s
TKM2 Tokmak 2 49.61 297 *e*P **P 08 42 30.0 +1.0**
TKM2 pmax pmax
comp=Z,47nm,0.9s
TKM2 Tokmak 2 49.61 297 *e*P **P 08 42 30.0 +1.0**
comp=Z,47nm,0.9s
CHKZ Chkalovo 49.67 312 P **P 08 42 28.8 -0.2**
CHKZ pmax pmax
comp=Z,15nm,0.8s
KOLN Koldanda 49.92 276 *e*P **P 08 42 31.7 +0.2**
comp=Z,20nm,0.6s
BVA0 Borovoye Array 49.97 311 P **P 08 42 31.3 0.0**
BVA0 pmax pmax
comp=Z,13nm,0.8s
BVAR Borovoye Array 49.97 311 P **P 08 42 31.6 +0.3**
comp=Z,12nm,0.7s,baz=70,slow=8.7,SNR=19
BVAR pP **pP 08 42 41.3 -0.3**
comp=Z,12nm,0.8s,baz=72,slow=9.5,SNR=13
BVAR PcP **PcP 08 43 51.5 +0.6**
comp=Z,3.4nm,0.7s,baz=69,slow=4.8,SNR=3.0
BRVK Borovoye 50.02 311 *ce*P **P 08 42 32.3 +0.6**
BRVK pmax pmax
comp=Z,19nm,0.8s
BRVK Borovoye 50.02 311 *e*P **P 08 42 32.2 +0.5**
comp=Z,25nm,0.9s
OTUK Ortayu 50.09 305 P **P 08 42 32.1 -0.2**
OTUK pmax pmax
comp=Z,12nm,1.0s
PYUN Piuthan 50.23 276 *e*P **P 08 42 34.3 +0.4**
comp=Z,199nm,0.9s
FRU Bishkek 50.32 297 *e*P **P 08 42 33.0 -1.2**
FRU *i* 08 42 45.0
AAK Ala-Archa 50.47 297 P **P 08 42 35.6 +0.1**
comp=Z,5.0nm,0.6s,baz=39,slow=4.3,SNR=7.6
AAK Ala-Archa 50.47 297 *e*P **P 08 42 35.8 +0.3**
AAK pmax pmax
comp=Z,21nm,1.1s
AAK Ala-Archa 50.47 297 *e*P **P 08 42 35.8 +0.3**
comp=Z,20nm,1.1s
KSH Kashi 50.57 293 P **P 08 42 40.6 +4.4**
KSH *ep*P sP 08 42 50.4 -0.3
KSH *es*P pP 08 42 54.6 +8.0
KSH PcS **PcS 08 47 55.4 +4.3**
KSH S **S 08 49 52.6 +4.2**
KSH SS **SS 08 53 26.9 +4.5**
KSH pmax pmax
comp=Z,9.0nm,0.9s
KSH pmax pmax
comp=Z,82nm,3.8s
KSH LR LR
comp=Z,300nm,11.1s
KSH LR LR
comp=Z,200nm,12.9s
KSH LR LR
comp=Z,290nm,17.8s
ZRNK Zerenda 50.79 311 *e*P **P 08 42 38.0 +0.5**
ZRNK pmax pmax
comp=Z,25nm,0.8s
ZRNK Zerenda 50.79 311 *e*P **P 08 42 38.0 +0.5**
comp=Z,25nm,0.8s
EKS2 Erkin-Say 50.96 297 *e*P **P 08 42 39.6 +0.5**
EKS2 pmax pmax
comp=Z,13nm,0.8s
EKS2 Erkin-Say 50.96 297 *e*P **P 08 42 39.6 +0.5**
comp=Z,13nm,0.8s
IPM Ipoh 51.24 238 *e*P **P 08 42 41.0 -0.3**
comp=Z,24nm,1.3s
MNAS Manas 51.90 298 P **P 08 42 46.5 +0.3**
MNAS pmax pmax
comp=Z,33nm,0.9s
INK Inuvik 51.94 28 P **P 08 42 46.9 +1.0**
comp=Z,1.8nm,0.5s,baz=291,slow=6.3,SNR=11
KK31 Karatay Array 53.03 299 P **P 08 42 54.4 0.0**
KK31 pmax pmax
comp=Z,5.0nm,0.7s
KKAR Karatay Array 53.03 299 *e*P **P 08 42 54.7 +0.3**
KKAR Karatay Array 53.03 299 *e*P **P 08 42 54.7 +0.3**
SVE Sverdlovsk 54.28 318⇑*e*P **P 08 43 04.4 +1.2**
SVE pmax pmax
comp=Z,76nm,0.9s
SVE MLR MLR
comp=Z,812nm,17.0s
SOKR Solikamsk 55.30 322 *e*P **P 08 43 09.2 -1.3**
SOKR pmax pmax
comp=Z,16nm,1.0s
ARU Arti 55.49 318 P **P 08 43 12.2 +0.1**
comp=Z,12nm,0.7s,baz=70,slow=4.2,SNR=15
ARU Arti 55.49 318 *di*P **P 08 43 12.1 +0.1**
ARU *PP **pP 08 43 22.5 0.0**
ARU 08 44 13.6
ARU 08 45 15.7
ARU S **S 08 50 56.2 +1.7**
ARU SS **SS 08 54 34.7 -4.3**
ARU pmax pmax
comp=Z,33nm,1.2s
ARU MLR MLR
comp=Z,539nm,16.0s

ARU	Arti	55.49	318	eP	P	08 43 12.4 +0.4
	comp=Z,43nm,0.8s					
DLBC	Dease Lake	56.22	39	P	P	08 43 17.3 -0.1
	comp=Z,1.1nm,0.6s,baz=184,slow=16,SNR=2.0					
AB31	Akbulak array	57.41	309	i P	P	08 43 25.6 -0.2
AB31				pmax	pmax	
	comp=Z,6.0nm,0.6s					
ABKAR	Akbulak array	57.41	309	eP	P	08 43 25.9 0.0
KBL	Kabul	57.70	290	eP	P	08 43 28.5 +0.1
KBL				pmax	pmax	
	comp=Z,27nm,1.0s					
KBL	Kabul	57.70	290	eP	P	08 43 28.5 +0.1
	comp=Z,27nm,1.0s					
AKTO	Aktyubinsk	58.07	311	P	P	08 43 30.6 +0.2
	comp=Z,7.2nm,0.8s,baz=70,slow=13,SNR=8.0					
WRAB	Tennant Creek	59.37	189	eP	P	08 43 45.7 +6.0
WRAB				pmax	pmax	
	comp=Z,18nm,1.4s					
WRAB	Tennant Creek	59.37	189	eP	P	08 43 45.7 +6.0
	comp=Z,18nm,1.4s					
WB2	Warramunga Arr	59.38	189	eP	P	08 43 39.3 -0.4
	comp=Z,9.1nm,0.8s					
WRA	Warramunga Arr	59.38	189	P	P	08 43 38.3 -1.5
	comp=Z,2.9nm,0.6s,baz=7.2,slow=7.1,SNR=12					
WRA				pP	pP	08 43 49.5 -0.9
	comp=Z,7.2nm,0.7s,baz=7.7,slow=7.0,SNR=12					
YKA	Yellowknife Ar	61.36	31	P	P	08 43 53.3 +0.4
	comp=Z,0.5nm,0.6s,baz=310,slow=6.2,SNR=4.9					
ARCES	ARCESS Array B	62.36	339	P	P	08 44 00.1 +0.6
	comp=Z,2.6nm,0.7s,baz=46,slow=8.7,SNR=8.5					
ARCES	ARCESS Array B	62.36	339	P	P	08 44 00.1 +0.6
ARCES				pmax	pmax	
	comp=Z,2.0nm,0.7s					
KLMR	Klimovskoe	62.52	328	eP	P	08 43 58.8 -1.9
KLMR				e		08 44 37.7
KLMR				pmax	pmax	
	comp=Z,16nm,1.3s					
ASAR	Alice Springs	63.11	189	P	P	08 44 03.6 -1.4
	comp=Z,1.0nm,0.7s,baz=16,slow=7.7,SNR=6.1					
ASAR				pP	pP	08 44 14.9 -0.6
	comp=Z,3.3nm,0.7s,baz=11,slow=6.2,SNR=9.4					
ASAR				LR	LR	09 11 24.8
	comp=Z,59nm,19.7s,baz=23,slow=36					
DAG	Danmarks Havn	63.70	355	⇑i P	P	08 44 08.3 0.0
	comp=Z,7.5nm,1.0s					
DAG	Danmarks Havn	63.70	355	i P	P	08 44 08.3 0.0
DAG				pmax	pmax	
	comp=Z,8.0nm,1.0s					
GEYT	Alibeck	63.78	299	P	P	08 44 09.4 0.0
	comp=Z,5.3nm,0.6s,baz=29,slow=3.4,SNR=10					
GEYT				pP	pP	08 44 19.8 -0.3
	comp=Z,18nm,1.1s,baz=47,slow=2.8,SNR=8.7					
VRH	Novokhopyorsk	66.73	318	eP	P	08 44 26.4 -1.8
VRH				e*PP	pP	08 44 36.6 -2.3
VRH				pmax	pmax	
	comp=Z,7.0nm,0.4s					
OBN	Obninsk	67.03	323	⇓eP	P	08 44 30.5 +0.4
OBN				e*PP	pP	08 44 41.5 +0.7
OBN				*SP	sP	08 44 46.0 +1.2
OBN						08 44 59.0
OBN				e		08 53 43.7
OBN				pmax	pmax	
	comp=Z,5.0nm,0.5s					
OBN				MLR	MLR	
	comp=Z,315nm,16.0s					
LPSR	Galich'ya Gora	67.36	320	eP	P	08 44 31.1 -1.1
LPSR				e*PP	pP	08 44 42.3 -0.6
LPSR				pmax	pmax	
	comp=Z,10.0nm,1.1s					
FINES	FINESS Array B	67.41	332	P	P	08 44 32.4 0.0
	comp=Z,4.9nm,0.7s,baz=55,slow=7.2,SNR=7.9					
FINES				pP	pP	08 44 44.2 +1.0
	comp=Z,6.9nm,0.7s,baz=33,slow=7.1,SNR=8.6					
VSR	Storozhevoye	68.04	319	eP	P	08 44 34.6 -2.0
VSR				e*PP	pP	08 44 45.6 -1.7
VSR				pmax	pmax	
	comp=Z,20nm,1.7s					
SUMG	Summit	68.51	0	i P	P	08 44 40.6 +0.9
	comp=Z,12nm,0.8s					
SUMG	Summit	68.51	0	i P	P	08 44 40.6 +0.9
SUMG				pmax	pmax	
	comp=Z,12nm,0.8s					
SUMG	Summit	68.51	0	eP	P	08 44 40.6 +0.9
	comp=Z,11nm,0.7s					
SUMG				epP	pP	08 44 47.0 -3.4
VSU	Vasula	69.15	330	ceP	P	08 44 44.1 +0.8
VSU				pmax	pmax	
	comp=Z,30nm,1.2s					
ZEI	Tsey	70.29	309	eP	P	08 44 50.0 -1.0
ZEI				pmax	pmax	
	comp=Z,29nm,1.5s					
KVAR	Kislovodsk Arr	70.33	311	P	P	08 44 52.2 +1.1
	comp=Z,23nm,1.0s,baz=162,slow=0.8,SNR=15					
KVAR				pP	pP	08 45 03.2 +1.4
	comp=Z,53nm,1.2s,baz=122,slow=4.2,SNR=8.2					
KVAR				LR	LR	09 16 37.7
	comp=Z,158nm,18.0s,baz=29,slow=37					
KIV	Kislovodsk	70.33	311	eP	P	08 44 52.7 +1.6
KIV				pmax	pmax	
	comp=Z,36nm,1.1s					
KIV	Kislovodsk	70.33	311	eP	P	08 44 52.2 +1.2
	comp=Z,48nm,1.1s					
KBZ	Khabaz	70.34	311	P	P	08 44 51.8 +0.9
	comp=Z,7.3nm,0.8s,baz=47,slow=6.2,SNR=8.4					
STKA	Stephens Creek	70.74	181	LR	LR	09 21 54.6
	comp=Z,51nm,18.5s,baz=26,slow=41					
FFC	Flin Flon	71.27	34	eP	P	08 44 58.0 +1.6
FFC				pmax	pmax	
	comp=Z,23nm,1.9s					
FFC	Flin Flon	71.27	34	eP	P	08 44 58.0 +1.6
	comp=Z,23nm,1.9s					
GNI	Garni	71.31	307	P	P	08 44 58.3 +1.1
	comp=Z,3.9nm,0.5s,baz=125,slow=9.3,SNR=3.1					
UOSS	Minazif	72.22	288	eP	P	08 45 02.8 +0.2
	comp=Z,1.0nm,0.8s					
BOZ	Bozeman (W)	72.37	45	eP	P	08 45 05.4 +2.0
BOZ				pmax	pmax	
	comp=Z,4.0nm,0.8s					
BOZ	Bozeman (W)	72.37	45	eP	P	08 45 05.4 +2.0
	comp=Z,3.8nm,0.8s					
NB2	NORSAR Subarra	72.61	338	P	P	08 45 04.1 -0.3
	comp=Z,7.1nm,0.8s,baz=39,slow=6.2					
NOA	NORSAR Array B	72.61	338	P	P	08 45 04.4 0.0
	comp=Z,6.9nm,0.8s,baz=39,slow=5.9,SNR=13					
NOA				pP	pP	08 45 15.6 +0.5
	comp=Z,1.6nm,0.7s,baz=52,slow=7.0,SNR=3.3					
NOA				LR	LR	09 22 14.2
	comp=Z,103nm,19.1s,baz=35,slow=40					
AKASG	Malin Array Be	73.26	323	P	P	08 45 08.2 -0.2
	comp=Z,2.2nm,0.4s,baz=43,slow=6.5,SNR=9.2					
AKASG				pP	pP	08 45 19.6 +0.4
	comp=Z,4.3nm,0.6s,baz=44,slow=6.3,SNR=9.2					
AKASG	Malin Array Be	73.26	323	ceP	P	08 45 08.1 -0.3
AKASG				pmax	pmax	
	comp=Z,2.0nm,0.4s					
KIEV	Kiev	73.27	323	eP	P	08 45 08.2 -0.2
KIEV				e*PP	pP	08 45 18.9 -0.3
KIEV	Kiev	73.27	323	eP	P	08 45 08.2 -0.2
KIEV				epP	pP	08 45 18.9 -0.3
H17A	Grant Village	73.74	46	eP	P	08 45 16.7 +5.0
R11A	Troy Canyon, C	74.54	53	eP	P	08 45 14.5 -1.9
SIM	Simferopol'	74.56	316	eP	P	08 45 16.9 +0.8
SIM				pmax	pmax	
	comp=Z,10.0nm,0.9s					
SIM				MLR	MLR	
	comp=N,110nm,17.7s					
BW06	Boulder Array	75.34	47	eP	P	08 45 21.2 +0.2
PDAR	Pinedale Array	75.34	47	P	P	08 45 21.6 +0.6
	comp=N,0.5nm,0.5s,baz=281,slow=0.6,SNR=4.7					
LCMT	Little Creek M	76.83	53	eP	P	08 45 32.9 +3.5
SRU	San Rafael Swe	77.14	50	eP	P	08 45 32.6 +1.4
SRU	San Rafael Swe	77.14	50	eP	P	08 45 32.6 +1.4
BUR08	Bucovina Ar. S	77.28	322	eP	P	08 45 32.6 +0.8
BURAR	Bucovina Array	77.30	322	⇑i P	P	08 45 32.3 +0.5
BURAR	Bucovina Array	77.30	322	⇑P	P	08 45 32.3 +0.5
CFR	Carcaliu	77.56	319	⇓i P	P	08 45 33.5 +0.4
CFR	Carcaliu	77.56	319	⇓P	P	08 45 33.5 +0.4
VRI	Vrincioaia	77.79	320	⇓i P	P	08 45 35.2 +0.7
VRI	Vrincioaia	77.79	320	⇓P	P	08 45 35.2 +0.7
STHS	Stebnicka Huta	77.82	325	eP	P	08 45 36.2 +1.6
STHS				pmax	pmax	
	comp=Z,3.0nm,0.9s					
STHS	Stebnicka Huta	77.82	325	eP	P	08 45 36.2 +1.6
OJC	Ojcow	77.85	327	eP	P	08 45 35.3 +0.6
OJC	Ojcow	77.85	327	eP	P	08 45 35.3 +0.6
TIRR	Tirgusor	77.91	318	⇑i P	P	08 45 35.3 +0.2
TIRR	Tirgusor	77.91	318	⇑P	P	08 45 35.3 +0.2
BRTR	Keskin Array B	78.25	312	P	P	08 45 37.9 +0.6
	comp=Z,1.2nm,0.5s,baz=92,slow=4.0,SNR=7.0					
BRTR				pP	pP	08 45 49.0 +0.9
	comp=Z,1.4nm,0.5s,baz=77,slow=3.9,SNR=4.4					
BRTR				PP	PP	08 48 37.0 +3.3
	comp=Z,1.5nm,0.9s,baz=62,slow=5.7,SNR=4.4					
DOPR	Dopca	78.38	321	⇑i P	P	08 45 40.0 +2.2
MLR	Muntele Rosu	78.45	320	⇓i P	P	08 45 40.2 +1.9
MLR	Muntele Rosu	78.45	320	⇓P	P	08 45 40.2 +1.9
PV10	Paradox Valley	78.50	50	eP	P	08 45 40.4 +1.5
BR231	Keskin MP Arra	78.67	312	eP	P	08 45 38.4 -1.1
DRGR		79.08	323	⇓i P	P	08 45 42.4 +0.8
DRGR		79.08	323	⇓P	P	08 45 42.4 +0.8
MORC	Moravsky Berou	79.14	327	⇑i P	P	08 45 42.3 +0.4
MORC	Moravsky Berou	79.14	327	eP	P	08 45 43.0 +1.1
MORC				e*PP	pP	08 45 52.8 0.0
MORC	Moravsky Berou	79.14	327	eP	P	08 45 43.0 +1.1
MORC				epP	pP	08 45 52.8 0.0
ARR	Arges	79.18	321	⇓i P	P	08 45 43.9 +1.7
DPC	Dobruska-Polom	79.21	328	eP	P	08 45 43.3 +1.1
DPC				epP	PcP	08 45 51.6 +1.1
DPC	Dobruska-Polom	79.21	328	eP	P	08 45 43.3 +1.1
DPC				e		08 45 51.6
KRLC	Kraliky	79.23	328	eP	P	08 45 43.1 +0.7
KRLC	Kraliky	79.23	328	eP	P	08 45 43.1 +0.7
VYHS	Vyhne	79.57	326	eP	P	08 45 45.2 +1.0
VYHS				pmax	pmax	
	comp=Z,6.0nm,0.2s					
VYHS	Vyhne	79.57	326	eP	P	08 45 45.2 +1.0
BRG	Berggiesshubel	79.75	330	eP	P	08 45 45.5 +0.4
	comp=Z,3.3nm,0.8s					
BRG				e		08 45 57.2
	comp=Z,3.5nm,0.8s					
BRG	Berggiesshubel	79.75	330	eP	P	08 45 45.5 +0.4
BRG				e		08 45 57.2
BRG				pmax	pmax	
	comp=Z,3.0nm,0.8s					
BRG				pmax	pmax	
	comp=Z,4.0nm,0.8s					
CLL	Collm	79.76	331	⇑i P	P	08 45 45.2 +0.1
	comp=Z,12nm,1.0s					
CLL				i		08 45 56.4
CLL				e		08 46 03.0
CLL				ePP	PP	08 48 49.0 +3.2
CLL	Collm	79.76	331	eP	P	08 45 45.3 +0.1
CLL	Collm	79.76	331	eP	P	08 45 45.3 +0.1
VRAC	Vranov	79.90	328	⇓i P	P	08 45 47.3 +1.3
VRAC	Vranov	79.90	328	⇓P	P	08 45 47.3 +1.3
GOPC	GO Pecny, Ondr	80.17	329	eP	P	08 45 47.8 +0.4
GOPC	GO Pecny, Ondr	80.17	329	eP	P	08 45 47.8 +0.4
PRU	Pruhonice	80.21	329	eP	P	08 45 48.3 +0.7
PRU	Pruhonice	80.21	329	eP	P	08 45 48.3 +0.7
TREC	Trest	80.37	328	eP	P	08 45 49.2 +0.7
TREC	Trest	80.37	328	eP	P	08 45 49.2 +0.7
ASF	Jabal al Asfar	81.22	304	LR	LR	09 25 12.5
	comp=Z,259nm,19.0s,slow=38					
KHC	Kasperske Hory	81.27	329	eP	P	08 45 54.0 +0.6
KHC				ePCP	PcP	08 45 58.7 -0.8
KHC				epP	pP	08 46 03.5 -0.8
KHC	Kasperske Hory	81.27	329	eP	P	08 45 54.0 +0.6
KHC				e		08 46 03.5
KHC	Kasperske Hory	81.27	329	eP	P	08 45 54.0 +0.6
GERES	GERESS Array B	81.45	329	P	P	08 45 54.1 -0.3
	comp=Z,0.9nm,0.5s,baz=46,slow=5.8,SNR=6.7					
GERES				pP	pP	08 46 06.0 +0.7
	comp=Z,0.9nm,0.6s,baz=34,slow=5.8,SNR=4.1					
GERES				LR	LR	09 25 16.4
	comp=Z,187nm,18.6s,baz=32,slow=38					
GERES	GERESS Array B	81.45	329	P	P	08 45 54.1 -0.3
GERES				*PP	pP	08 46 06.0 +0.7
GERES				pmax	pmax	
	comp=Z,1.0nm,0.7s					
GERES				pmax	pmax	
	comp=Z,1.0nm,0.6s					
GERES				MLR	MLR	
	comp=Z,187nm,18.6s					
PERS	Pernice	82.60	327	i P	P	08 46 00.8 +0.4
SOKA	Soboth	82.61	327	i P	P	08 46 00.8 +0.3
	comp=Z,4.7nm,0.8s					
MEM	Membach	82.86	334	P	P	08 46 02.8 +1.1
KBA	Koelnbreinsper	83.00	328	i PcP	P	08 46 03.8 +1.2
	comp=Z,0.3nm,0.2s					
BCLA	Clavier	83.26	334	P	P	08 46 04.0 +0.3
VISS	Visnje	83.38	326	i P	P	08 46 04.3 -0.1
BOJS	Bojanci	83.43	326	i P	P	08 46 04.9 +0.2
JAVS	Javornik	83.64	327	i P	P	08 46 05.1 -0.7
MOTA	Moosalm	83.69	329	i P	P	08 46 06.5 +0.3
	comp=Z,5.2nm,0.8s					
RETA	Reutte	83.71	330	i P	P	08 46 06.8 +0.6
	comp=Z,5.4nm,0.8s					
BFO	Black Forest	83.95	331	ceP	P	08 46 09.1 +1.8
FETA	Feichten	84.10	329	i P	P	08 46 08.7 +0.4
	comp=Z,3.7nm,0.8s					
DAVA	Damuels	84.22	330	i P	P	08 46 09.3 +0.4
	comp=Z,8.5nm,0.9s					
FUORN	Ofenpass-Fuorn	84.61	329	eP	P	08 46 11.6 +0.6
FUORN				epP	pP	08 46 23.0 +1.0
TUE	Stuetta	85.10	330	eP	P	08 46 13.9 +0.5
TXAR	Lajitas Array	87.91	53	P	P	08 46 27.6 +0.3
	comp=Z,0.3nm,0.5s,baz=279,slow=2.4,SNR=4.8					
TXAR				pP	pP	08 46 38.7 +0.4
	comp=Z,0.4nm,0.5s,baz=299,slow=3.1,SNR=6.3					
CCM	Cathedral Cave	88.46	40	eP	P	08 46 31.4 +1.7
CCM	Cathedral Cave	88.46	40	eP	P	08 46 31.4 +1.7
ESDC	Sonseca Array	95.82	335	P	P	08 47 03.1 -0.6
	comp=Z,0.1nm,0.4s,baz=18,slow=4.4,SNR=4.4					
ESDC				LR	LR	09 37 49.3
	comp=Z,70nm,18.5s,baz=10,slow=40					
TORD	Torodi Ar. Bea	116.56	317	PKP	PKPdf	08 52 20.5 -1.2
	comp=Z,0.2nm,0.5s,baz=49,slow=1.1,SNR=3.4					
TORD				pPKP	pPKPdf	08 52 31.9 -1.1
	comp=Z,0.4nm,0.7s,baz=29,slow=3.3,SNR=2.0					
TORD				PP	PP	08 53 25.9 -2.3
	comp=Z,1.1nm,1.0s,baz=42,slow=6.6,SNR=3.6					
SNAA	Sanae	143.16	197	PKP	PKPab	08 53 04.9 -0.8
LPAZ	La Paz	144.61	59	PKP	PKPbc	08 53 14.0 +0.3
	comp=Z,0.6nm,0.5s,baz=200,slow=12,SNR=3.9					
VNA2	Neumayer-Watz	144.72	196	PKP	PKPab	08 53 11.1 -0.6
	baz=116,slow=2.4					
VNA3	Neumayer Olymp	144.96	195	PKP	PKPbc	08 53 11.6 -1.0
PLCA	Paso Flores	154.44	104	PKPbc	PKPbc	08 53 36.7 -0.8
	comp=Z,0.7nm,0.7s,baz=322,slow=8.3,SNR=3.2					

IDC ***22*** *08:39:44.8±1.1, 18°.58N×120°.24E, h0km, mb3.4/5, mb1 3.7/6, mb1mx3.4/51, mbtmp3.5/6, ML3.3/1, Error ellipse: s-maj=36.5km s-min=21.7km az=71.0*
ISCJB ***22*** *08:39:47.5±0.8, 18°.90N±0°.07×120°.22E±0°.08, h28km, mb3.5/4, Error ellipse: s-maj=13.3km s-min=7.3km az=137.5*
MAN ***22*** *08:39:47, 18°.93N×120°.34E, h15km, mb4.6, ML3.5, MS3.4*
ISC 22 08:39:49.0±0.9, 18°.80N±0°.07×120°.34E±0°.08, h28km, n12, σ1§74/15, mb3.5/4, 2D, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ABRA	Dolores	1.20	163	eP	Pn	08 40 09.5	-0.4
ABRA				eS	Sb	08 40 29.2	+3.0
APYP	Conner	1.27	137	eP	Pb	08 40 11.3	-0.9
APYP				eS	Sb	08 40 30.4	+2.3
SGCP	Mt. Cagua	1.71	109	eP	Pn	08 40 16.6	-0.3
SGCP				eS	Sb	08 40 40.5	-0.3
CVP	Callao Caves	1.78	128	⇓eP	Pn	08 40 18.8	+0.9
BCPH	Baguio City Da	2.42	175	⇓eP	Pb	08 40 31.6	-0.4
BALP	Baler	3.27	159	eP	Pb	08 40 44.1	-2.1
KSRS	Korea Array	19.73	18	P	Pn	08 44 18.4	+0.4
	0.1nm,0.3s,baz=199,slow=12,SNR=3.3						
CMAR	Chiang Mai Arr	20.29	272	P	P	08 44 22.4	-0.3
	0.5nm,0.4s,baz=76,slow=8.7,SNR=2.9						
WRA	Warramunga Arr	40.88	160	P	P	08 47 26.1	-2.7
	0.3nm,0.6s,baz=342,slow=8.9,SNR=3.7						
ASAR	Alice Springs	44.24	162	P	P	08 47 55.3	-0.8
	0.3nm,0.4s,baz=339,slow=6.6,SNR=6.1						
KURBB	Kurchatov Arra	45.84	324	P	P	08 48 08.1	-0.4
	0.6nm,0.8s,baz=124,slow=8.1,SNR=3.8						
YKA	Yellowknife Ar	88.21	22	P	P	08 52 39.9	+2.6
	0.4nm,0.8s,baz=312,slow=4.6,SNR=2.9						

ISK ***22*** *08:41:20.7, 39°.13N×29°.08E, h7km, ML2.6*
DDA ***22*** *08:41:20.8, 39°.13N×29°.11E, h6km, Ml2.7*
ISCJB ***22*** *08:41:21.1±0.5, 39°.13N±0°.03×29°.10E±0°.04, h9km±5km, Error ellipse: s-maj=5.5km s-min=3.9km az=33.6*
CSEM ***22*** *08:41:21.2±0.1, 39°.13N×29°.11E, h8km, ML2.7, Error ellipse: s-maj=1.8km s-min=1.2km az=107.0*
ISC 22 08:41:21.2±0.9, 39°.13N±0°.02×29°.11E±0°.03, h13km±9km, n34, σ0§36/45, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	Gediz	0.29	99	P	Pg	08 41 27.2	-0.1
GDZ				S	Sg	08 41 31.5	+0.1
GDZ	Gediz	0.29	99	i P	Pg	08 41 27.2	-0.1
GDZ				i S	Sg	08 41 31.5	+0.1
DEMI	Demirci	0.32	254	P	Pg	08 41 28.0	+0.1
DEMI				S	Sg	08 41 32.3	0.0
DEMI	Demirci	0.32	254	i P	Pg	08 41 28.0	+0.1
DEMI				i S	Sg	08 41 32.4	0.0
TVSB	Tavsanli	0.41	40	ePG	Pg	08 41 29.8	+0.2
TVSB				eSG	Sg	08 41 35.3	+0.1
TVSB	Tavsanli	0.41	40	ePg	Pg	08 41 29.8	+0.2
TVSB				eSg	Sg	08 41 35.3	+0.1
KULA	Kula-Manisa	0.71	210	ePG	Pg	08 41 35.0	-0.1
KULA				eSG	Sg	08 41 44.4	-0.1
KULA	Kula-Manisa	0.71	210	ePg	Pg	08 41 35.0	-0.1
KULA				eSg	Sg	08 41 44.4	-0.1
MANT	Manisa	0.78	214	P	Pg	08 41 36.9	-0.3
MANT				S	Sg	08 41 45.9	-0.6
MANT	Manisa	0.78	214	i P	Pg	08 41 36.0	-0.3
MANT				i S	Sg	08 41 45.9	-0.6
KHAL	Karahalli	0.82	159	P	Pb	08 41 37.3	0.0
KHAL				S	Sg	08 41 47.8	0.0
KHAL	Karahalli	0.82	159	i P	Pb	08 41 37.3	0.0
KHAL				i S	Sg	08 41 47.8	0.0
KHL	Karahalli	0.87	158	ePG	Pb	08 41 38.1	-0.1
KHL	Karahalli	0.87	158	ePg	Pb	08 41 38.1	-0.1
ORLT	Orhaneli	0.93	350	ePG	Pg	08 41 38.9	-0.3
ORLT	Orhaneli	0.93	350	ePg	Pg	08 41 38.9	-0.3
IGD	Bursa	1.13	3	i P	Pb	08 41 41.5	-1.1
IZI	Iznik	1.23	13	ePN	Pg	08 41 44.8	-0.2
IZI	Iznik	1.23	13	ePn	Pg	08 41 44.8	-0.2
MDNY	Mudanya-Bursa	1.25	352	PN	Pg	08 41 45.0	-0.2
MDNY	Mudanya-Bursa	1.25	352	i Pn	Pg	08 41 45.0	-0.2
KCTX	Karacabey (Bur	1.27	333	ePN	Pg	08 41 45.5	-0.3
KCTX	Karacabey (Bur	1.27	333	ePn	Pg	08 41 45.5	-0.3
BORA	Eskisehir	1.28	54	P	Pn	08 41 44.9	+0.1
BORA	Eskisehir	1.28	54	i P	Pn	08 41 44.9	+0.1
ADVT	Abdulvahap	1.38	20	ePN	Pb	08 41 47.2	+0.3
ADVT	Abdulvahap	1.38	20	ePn	Pb	08 41 47.2	+0.3
ARMT	Armutlu	1.44	352	ePN	Pb	08 41 47.9	-0.1
ARMT	Armutlu	1.44	352	ePn	Pb	08 41 47.9	-0.1
GULT	Gulveren	1.69	39	ePN	Pb	08 41 51.6	-0.6
GULT	Gulveren	1.69	39	ePn	Pb	08 41 51.6	-0.6
RKY	Sarkoy-Tekirda	2.15	317	ePN	Pn	08 41 57.7	+0.9
RKY	Sarkoy-Tekirda	2.15	317	ePn	Pn	08 41 57.7	+0.9
SNF	Seneffe	20.86	311	P	Pn	08 46 05.4	+0.3

ISK ***22*** *08:43:03.9, 37°.15N×28°.62E, h18km, MD2.7*
ISCJB ***22*** *08:43:04.8±0.7, 37°.18N±0°.04×28°.61E±0°.05, h8km±7km, Error ellipse: s-maj=7.4km s-min=6.7km az=21.0*
CSEM ***22*** *08:43:04.8±0.2, 37°.13N×28°.61E, h20km, MD2.7, Error ellipse: s-maj=5.5km s-min=4.8km az=49.0*
DDA ***22*** *08:43:05.9, 37°.13N×28°.50E, h7km, Ml2.8*
ISC 22 08:43:04.6±1.1, 37°.14N±0°.03×28°.60E±0°.03, h16km±10km, n19, σ0§64/29, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	Yerkesik	0.26	268	ePG	Pb	08 43 10.2	-0.7
YER				eSG	Sb	08 43 14.9	-0.2
YER	Yerkesik	0.26	268	ePg	Pb	08 43 10.2	-0.7
YER				eSg	Sb	08 43 14.9	-0.2
TURN	Turunc	0.27	180	i P	Pn	08 43 13.1	-0.8
TURN				i S	Sn	08 43 20.6	+1.0
DALY	Dalyan (Mu¨la	0.33	173	ePG	Pg	08 43 11.5	+0.1
DALY				eSG	Sb	08 43 17.1	+0.1
DALY	Dalyan (Mu¨la	0.33	173	ePg	Pg	08 43 11.5	+0.1
DALY				eSg	Sb	08 43 17.2	+0.1
FETY	Fethiye	0.64	143	ePG	Pb	08 43 16.8	-0.5
FETY	Fethiye	0.64	143	ePg	Pb	08 43 16.8	-0.5
DNZL	Cakiroluk	0.65	33	P	Pn	08 43 19.0	-0.4
DNZL	Cakiroluk	0.65	33	i P	Pn	08 43 19.0	-0.4
DNZL				i S	Sn	08 43 31.3	+1.9
DENT	Denizli	0.70	29	ePG	Pb	08 43 17.6	-0.8
DENT	Denizli	0.70	29	ePg	Pb	08 43 17.7	-0.8
AYDN	Tasoluk	0.78	312	P	Pg	08 43 20.1	+0.4
AYDN				S	Sb	08 43 29.5	-0.6
AYDN	Tasoluk	0.78	312	i P	Pg	08 43 20.1	+0.4
AYDN				i S	Sb	08 43 29.5	-0.6
BDRM	Kayabasi	0.93	266	P	Pg	08 43 22.9	+0.3
BDRM				S	Sg	08 43 35.4	+0.6
BDRM	Kayabasi	0.93	266	i P	Pg	08 43 22.9	+0.3
BDRM				i S	Sg	08 43 35.4	+0.6
AYDB	Zeytinkoy-Aydi	0.98	325	ePG	Pg	08 43 23.8	+0.2
AYDB	Zeytinkoy-Aydi	0.98	325	ePg	Pg	08 43 23.8	+0.2
BODT	Bodrum	1.04	266	ePG	Pb	08 43 23.8	-0.4
BODT	Bodrum	1.04	266	ePg	Pb	08 43 23.8	-0.4

JMA 22 08:50:40.0±0.4, 34°.84N×142°.77E, h67km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	Boso 1	1.49	263	P	Pn	08 51 04.9	+0.7
BSO1				eS	Sn	08 51 24.0	+1.5
BSO4	Boso 4	2

TWT				S		Sg	08 55 51.6	+0.2
	baz=283							
TWE	**Neicheng**	**0.59**	**351**	⇑*i* P		**Pg**	08 55 44.9	0.0
	baz=354							
TWE				S		Sg	08 55 52.7	0.0
	baz=354							
NSK	**Sanguang**	**0.66**	**326**	⇓*i* P		**Pg**	08 55 46.1	0.0
	baz=327							
NSK				*i* S		Sg	08 55 54.8	+0.1
	baz=327							
WDT	**Danda**	**0.69**	**237**	*e*P		**Pg**	08 55 46.1	-0.6
	baz=237							
WDT				S		Sg	08 55 56.1	+0.3
	baz=237							
EHY	**Hungye**	**0.74**	**213**	*e*P		**Pg**	08 55 47.4	-0.3
	baz=214							
SMLT	**Sun Moon Lake**	**0.83**	**253**	P		**Pg**	08 55 48.8	-0.6
	baz=254							
SMLT				S		Sg	08 55 59.4	-0.8
	baz=254							
NSTT	**Nanjuang**	**0.86**	**306**	P		**Pb**	08 55 50.3	-0.1
	baz=307							
NSTT				S		Sg	08 56 01.3	+0.3
	baz=307							
TWA	**Mucha**	**0.86**	**349**	*e*P		**Pg**	08 55 49.6	-0.3
	baz=349							
TYC	**Yuchr**	**0.86**	**255**	P		**Pg**	08 55 49.5	-0.5
	baz=256							
TYC				*e*S		Sg	08 55 59.9	-1.3
	baz=256							
TWF1	**Yuli**	**0.89**	**209**	*e*P		**Pg**	08 55 49.8	-0.7
	baz=224							
TWB1	**Santiao Chiao**	**0.90**	**13**	*e*P		**Pg**	08 55 50.2	-0.4
	baz=6.0							
TWB1				*e*S		Sg	08 56 02.4	+0.1
	baz=6.0							
TAP1	**Taipei**	**0.93**	**346**	*e*P		**Pb**	08 55 51.9	+0.2
	baz=345							
TWQ1	**Liyutan**	**0.93**	**284**	*e*P		**Pb**	08 55 51.8	0.0
	baz=286							
TAP	**Taipei**	**0.94**	**345**	*e*P		**Pn**	08 55 52.2	-0.5
	baz=345							
NWF	**Wu-fen Shan**	**0.94**	**1**	*e*P		**Pg**	08 55 51.6	+0.2
	baz=353							
NWF				*e*S		Sg	08 56 03.7	+0.1
	baz=353							
NSY	**Sanyi**	**0.96**	**287**	*e*P		**Pn**	08 55 52.7	-0.4
	baz=289							
YUS	**Yu-Shan**	**0.98**	**230**	*e*P		**Pg**	08 55 52.4	+0.1
	baz=233							
HSN	**Hsinchu**	**0.99**	**313**	*e*P		**Pn**	08 55 53.2	-0.2
	baz=316							
NCU	**National Centr**	**0.99**	**328**	*e*P		**Pn**	08 55 53.2	-0.2
	baz=328							
NCU				*e*S		Sn	08 56 07.1	-0.5
	baz=328							
TCU	**Taichung**	**1.00**	**271**	*e*P		**Pn**	08 55 54.0	+0.4
	baz=273							
TCU				*e*S		Sn	08 56 07.5	-0.3
	baz=273							
TWS1	**Kuangyinshan**	**1.02**	**342**	*e*P		**Pn**	08 55 53.8	-0.1
	baz=351							
TWS1				*e*S		Sb	08 56 07.4	+0.8
	baz=351							
WNT	**Mingjian**	**1.02**	**256**	*e*P		**Pn**	08 55 53.8	-0.1
	baz=253							
WNT				*e*S		Sn	08 56 07.7	-0.7
	baz=253							
ALS	**Alishan**	**1.08**	**235**	*e*P		**Pg**	08 55 53.8	-0.3
	baz=239							
CHKT	**Chengkung**	**1.09**	**200**	*e*P		**Pb**	08 55 53.9	-0.5
	baz=195							
JYNG	**Yonagunijimaku**	**1.12**	**73**	P		**Pn**	08 55 55.4	+0.1
JYNG				S		Sn	08 56 11.9	+1.1
CHN5	**Tsauling**	**1.13**	**242**	P		**Pn**	08 55 55.5	0.0
	baz=244							
CHN5				*e*S		Sn	08 56 12.3	+1.1
	baz=244							
TWY	**Chenhua**	**1.15**	**352**	*e*P		**Pg**	08 55 56.4	+0.9
	baz=337							
ELDTW	**Lidau**	**1.16**	**216**	*e*P		**Pb**	08 55 53.7	-2.0
	baz=221							
YOJ	**Yonaguni jima**	**1.18**	**74**	P		**Pg**	08 55 56.1	0.0
YOJ				S		Sn	08 56 12.6	+0.3
YOJ	**Yonaguni jima**	**1.18**	**74**	*e*P		**Pg**	08 55 56.4	+0.3
	baz=57							
CHN2	**Minshiung**	**1.32**	**244**	*e*P		**Pg**	08 55 59.5	+0.7
	baz=249							
CHN4	**Tsaushan**	**1.33**	**234**	*e*P		**Pg**	08 55 59.2	+0.3
	baz=225							
CHN4				*e*S		Sg	08 56 18.5	+2.4
	baz=225							
STYT	**Tauyuan**	**1.34**	**224**	*e*P		**Pn**	08 55 58.1	-0.2
	baz=229							
WTP	**Ta-pu**	**1.38**	**230**	*e*P		**Pg**	08 55 59.9	+0.1
	baz=233							
WTP				*e*S		Sg	08 56 19.8	+2.2
	baz=233							
CHY	**Chiayi**	**1.38**	**243**	*e*P		**Pg**	08 56 00.6	+0.7
	baz=246							
CHY				*e*S		Sg	08 56 18.8	+1.0
	baz=246							
TWG	**Pinlang**	**1.45**	**206**	*e*P		**Pb**	08 56 00.6	0.0
	baz=212							
TWK	**Hsinying**	**1.45**	**234**	*e*P		**Pg**	08 56 01.3	0.0
	baz=239							
CHN1	**Nanshi**	**1.48**	**231**	*e*P		**Pg**	08 56 01.7	0.0
	baz=234							
CHN1				*e*S		Sg	08 56 22.7	+1.9
	baz=234							
SGST	**Jiashian**	**1.51**	**226**	*e*P		**Pb**	08 56 01.7	+0.2
	baz=231							
PCYT	**Pengchaiyu**	**1.52**	**10**	*e*P		**Pn**	08 56 00.9	+0.2
	baz=7.0							
IRIF	**Iriomote-Funau**	**1.80**	**83**	P		**Pb**	08 56 05.4	-1.2
EAST	**Anshuo**	**1.93**	**206**	*e*P		**Pn**	08 56 07.3	+0.8
	baz=200							
SCZT	**Fangliau**	**2.04**	**211**	*e*P		**Pb**	08 56 09.1	-1.6
	baz=202							
JKRS	**Kuro-shima**	**2.05**	**87**	P		**Pb**	08 56 09.5	-1.3
JKRS				S		Sb	08 56 36.2	-0.2
WDGT	**Dungji**	**2.12**	**246**	*e*P		**Pn**	08 56 09.9	+0.9
	baz=252							
JIJ	**Ishigaki jima**	**2.18**	**83**	P		**Pn**	08 56 09.9	0.0
JIJ				S		Sb	08 56 39.4	-0.8
JISG	**Ishigakijimahi**	**2.36**	**78**	P		**Pn**	08 56 13.0	+0.6

*DDA **22** 09:05:02.6,39.°11N±29.°01E,h7km,Ml3.4*
*ISK **22** 09:05:02.5,39.°10N±28.°99E,h5km,MD2.9*
*CSEM **22** 09:05:02.9±0.1,39.°11N±29.°01E,h2km,ML3.4,Error ellipse: s-maj=1.7km s-min=1.4km az=115.0*
ISC 22 09:05:03.3±1.0,**39.°12N**±0.°02×**29.°01E**±0.°02,**h7**km±12km,
n59,σ0°**49**/69,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**252**	P	**Pg**	**09 05 08.2**	**+0.1**
DEMI				S	**Sg**	**09 05 11.8**	**+0.5**
DEMI	**Demirci**	**0.24**	**252**	*i* P	**Pg**	**09 05 08.2**	**+0.1**
DEMI				*i* S	**Sg**	**09 05 11.8**	**+0.5**
GDZ	**Gediz**	**0.37**	**94**	P	**Pg**	**09 05 10.2**	**-0.3**
GDZ				S	**Sg**	**09 05 15.4**	**+0.1**
GDZ	**Gediz**	**0.37**	**94**	*i* P	**Pg**	**09 05 10.2**	**-0.3**
GDZ				*i* S	**Sg**	**09 05 15.4**	**+0.1**
TVSB	**Tavsanli**	**0.48**	**46**	*e*PG	**Pg**	**09 05 12.2**	**-0.4**
TVSB	**Tavsanli**	**0.48**	**46**	*e*Pg	**Pg**	**09 05 12.2**	**-0.4**
DURS	**Dursunbey**	**0.64**	**320**	P	**Pg**	**09 05 15.4**	**-0.2**
DURS				S	**Sg**	**09 05 23.9**	**0.0**
DURS	**Dursunbey**	**0.64**	**320**	*i* P	**Pg**	**09 05 15.3**	**-0.2**
DURS				*i* S	**Sg**	**09 05 23.9**	**0.0**
KULA	**Kula-Manisa**	**0.66**	**205**	*e*PG	**Pg**	**09 05 15.3**	**-0.7**
KULA				*e*SG	**Sg**	**09 05 24.1**	**-0.5**
KULA	**Kula-Manisa**	**0.66**	**205**	*e*Pg	**Pg**	**09 05 15.3**	**-0.7**
KULA				*e*Sg	**Sg**	**09 05 24.1**	**-0.5**
MANT	**Manisa**	**0.72**	**210**	P	**Pg**	**09 05 16.9**	**-0.2**
MANT				S	**Sg**	**09 05 26.2**	**-0.2**
MANT	**Manisa**	**0.72**	**210**	*i* P	**Pg**	**09 05 16.9**	**-0.2**
MANT				*i* S	**Sg**	**09 05 26.2**	**-0.2**
KHL	**Karahalli**	**0.89**	**153**	*e*PG	**Pg**	**09 05 20.0**	**-0.3**
KHL	**Karahalli**	**0.89**	**153**	*e*Pg	**Pg**	**09 05 20.0**	**-0.3**
ORLT	**Orhaneli**	**0.93**	**355**	*e*PG	**Pg**	**09 05 20.7**	**-0.5**
ORLT	**Orhaneli**	**0.93**	**355**	*e*Pg	**Pg**	**09 05 20.7**	**-0.5**
AKS	**Akhisar**	**0.96**	**256**	*e*PG	**Pg**	**09 05 21.2**	**-0.5**
AKS	**Akhisar**	**0.96**	**256**	*e*Pg	**Pg**	**09 05 21.3**	**-0.5**
BALB	**Balikesir**	**1.02**	**301**	*e*PG	**Pg**	**09 05 22.5**	**-0.4**
BALB	**Balikesir**	**1.02**	**301**	*e*Pg	**Pg**	**09 05 22.5**	**-0.4**
IGD	**Bursa**	**1.16**	**7**	*i* P	**Pg**	**09 05 23.6**	**-1.9**
BALY	**Balya**	**1.25**	**300**	P	**Pg**	**09 05 26.8**	**-0.3**
BALY	**Balya**	**1.25**	**300**	*i* P	**Pg**	**09 05 26.8**	**-0.3**
KCTX	**Karacabey (Bur**	**1.25**	**336**	*e*PN	**Pg**	**09 05 26.8**	**-0.5**
KCTX	**Karacabey (Bur**	**1.25**	**336**	*e*Pn	**Pg**	**09 05 26.8**	**-0.5**
MDNY	**Mudanya-Bursa**	**1.25**	**356**	*e*PN	**Pn**	**09 05 27.0**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.25**	**356**	*e*Pn	**Pn**	**09 05 27.0**	**-0.3**
CAVI	**Cavuskoy**	**1.26**	**30**	*e*PN	**Pb**	**09 05 27.6**	**+0.2**
CAVI	**Cavuskoy**	**1.26**	**30**	*e*Pn	**Pb**	**09 05 27.6**	**+0.2**
IZI	**Iznik**	**1.27**	**16**	*e*PN	**Pb**	**09 05 27.8**	**+0.2**
IZI	**Iznik**	**1.27**	**16**	*e*Pn	**Pb**	**09 05 27.8**	**+0.2**
GEMT	**Gemlik**	**1.32**	**6**	*e*PN	**Pg**	**09 05 28.6**	**-0.1**
GEMT	**Gemlik**	**1.32**	**6**	*e*Pn	**Pg**	**09 05 28.6**	**-0.1**
GONE	**Gonen-Balikesi**	**1.38**	**313**	*e*PN	**Pb**	**09 05 29.4**	**-0.1**
GONE	**Gonen-Balikesi**	**1.38**	**313**	*e*Pn	**Pb**	**09 05 29.4**	**-0.1**
DNZL	**Cakiroluk**	**1.43**	**179**	P	**Pn**	**09 05 29.9**	**+0.2**
DNZL	**Cakiroluk**	**1.43**	**179**	*i* P	**Pn**	**09 05 29.9**	**+0.2**
ADVT	**Abdulvahap**	**1.43**	**23**	*e*PN	**Pb**	**09 05 30.2**	**0.0**
ADVT	**Abdulvahap**	**1.43**	**23**	*e*Pn	**Pb**	**09 05 30.2**	**0.0**
ARMT	**Armutlu**	**1.45**	**356**	*e*PN	**Pn**	**09 05 29.6**	**-0.4**
ARMT	**Armutlu**	**1.45**	**356**	*e*Pn	**Pn**	**09 05 29.6**	**-0.4**
EDC	**Edincik**	**1.51**	**325**	*e*PN	**Pn**	**09 05 31.1**	**+0.3**
EDC	**Edincik**	**1.51**	**325**	*e*Pn	**Pn**	**09 05 31.1**	**+0.3**
GPA	**Golpazari**	**1.54**	**40**	*e*PN	**Pn**	**09 05 31.8**	**+0.5**
GPA	**Golpazari**	**1.54**	**40**	*e*Pn	**Pn**	**09 05 31.8**	**+0.5**
GULT	**Gulveren**	**1.75**	**41**	*e*PN	**Pn**	**09 05 34.6**	**+0.5**
GULT	**Gulveren**	**1.75**	**41**	*e*Pn	**Pn**	**09 05 34.7**	**+0.5**
HRT	**Hereke**	**1.78**	**16**	*e*PN	**Pn**	**09 05 35.0**	**+0.5**
HRT	**Hereke**	**1.78**	**16**	*e*Pn	**Pn**	**09 05 35.0**	**+0.5**
SPNC	**Sapanca-Adapaz**	**1.86**	**32**	*e*PN	**Pn**	**09 05 36.5**	**+1.0**
SPNC	**Sapanca-Adapaz**	**1.86**	**32**	*e*Pn	**Pn**	**09 05 36.5**	**+1.0**
ISK	**Istanbul-Kandi**	**1.95**	**1**	*e*PN	**Pn**	**09 05 37.7**	**+0.9**
ISK	**Istanbul-Kandi**	**1.95**	**1**	*e*Pn	**Pn**	**09 05 37.7**	**+0.9**
SVRH	**Sivrihisar-ESK**	**1.98**	**80**	*e*PN	**Pn**	**09 05 37.5**	**+0.2**
SVRH	**Sivrihisar-ESK**	**1.98**	**80**	*e*Pn	**Pn**	**09 05 37.5**	**+0.2**
SILT	**Sile**	**2.09**	**13**	*e*PN	**Pn**	**09 05 39.2**	**+0.5**
SILT	**Sile**	**2.09**	**13**	*e*Pn	**Pn**	**09 05 39.3**	**+0.5**
MDUB	**Mudurnu**	**2.16**	**51**	*e*PN	**Pn**	**09 05 40.2**	**+0.5**
MDUB	**Mudurnu**	**2.16**	**51**	*e*Pn	**Pn**	**09 05 40.3**	**+0.5**

*ISCJB **22** 09:11:11.1±1.1,10.°26N±0.°04×62.°29W±0.°03,h5km±8km,*
Error ellipse: s-maj=7.8km s-min=4.1km az=155.5
*TRN **22** 09:11:11.6,10.°22N×62.°23W,h10km,MD3.4*
*FUNV **22** 09:11:11.4,10.°25N×62.°25W,h1km,MW2.8*
ISC 22 09:11:10.5±1.8,**10.°29N**±0.°04×**62.°27W**±0.°04,**h5**km±16km,
n15,σ0°**59**/23,**1C-1D**,**Near coast of Venezuela**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUIV	**Guiria**	**0.35**	**8**	⇑*i* P	**Pb**	**09 11 19.4**	**0.0**
GUIV				*e*S	**Sb**	**09 11 24.6**	**-0.7**
TCE	**Chacachacare**	**0.65**	**52**	*e*P	**Pb**	**09 11 24.8**	**+0.4**
TCE				*e*S	**Sb**	**09 11 33.9**	**+0.2**
GUNV	**Guanoco**	**0.67**	**259**	*e*P	**Pb**	**09 11 24.9**	**+0.1**
GUNV				*e*S	**Sb**	**09 11 35.1**	**+0.7**
TRN	**Trinidad (W)**	**0.92**	**67**	*e*P	**Pb**	**09 11 29.6**	**+0.6**
TRN				*e*S	**Sn**	**09 11 43.1**	**-0.7**
CRUV	**Carupano**	**1.02**	**292**	⇓*e*P	**Pg**	**09 11 30.1**	**-0.1**
CRUV				*e*S	**Sg**	**09 11 43.5**	**+0.1**
TBH	**Brigand Hill**	**1.20**	**81**	*e*P	**Pn**	**09 11 34.5**	**+0.5**
TBH				*e*S	**Sn**	**09 11 51.4**	**+0.7**
ORIV	**Oritupano**	**1.65**	**223**	*e*P	**Pb**	**09 11 41.3**	**-0.2**
ORIV				*e*S	**Sb**	**09 12 03.3**	**+0.7**
GRW	**Mount Saint Ca**	**1.95**	**18**	*e*P	**Pb**	**09 11 46.3**	**-0.3**
GRW				*e*S	**Sb**	**09 12 10.8**	**-0.4**
TOSP	**Speyside**	**1.98**	**59**	*e*P	**Pn**	**09 11 44.8**	**+0.2**
GRSS	**Sisters**	**2.10**	**18**	*e*P	**Pb**	**09 11 48.8**	**-0.2**
PCRV	**Puerto La Cruz**	**2.33**	**267**	*e*P	**Pn**	**09 11 49.6**	**0.0**
GURV	**El Guri**	**2.64**	**198**	*e*P	**Pn**	**09 11 53.5**	**-0.3**
CUPV	**Cœpira**	**3.47**	**266**	*e*P	**Pn**	**09 12 06.3**	**+1.0**
LUEV	**Luepa**	**4.49**	**170**	*e*P	**Pn**	**09 12 18.3**	**-1.2**
BAUV	**El Baul**	**5.85**	**257**	*e*P	**Pn**	**09 12 37.3**	**-0.6**

*ISCJB **22** 09:14:00.3±0.4,39.°11N±0.°02×29.°02E±0.°02,h5km±3km,*
Error ellipse: s-maj=3.2km s-min=2.9km az=155.9
*DDA **22** 09:14:00.1,39.°10N×29.°05E,h7km,Ml3.6*
*ISK **22** 09:14:00.0,39.°09N×29.°03E,h5km,MD3.3,ML3.3*
*CSEM **22** 09:14:00.4±0.1,39.°09N×29.°04E,h2km,ML3.6,Error ellipse: s-maj=1.3km s-min=1.2km az=106.0*
*THE **22** 09:14:02.0,39.°11N×28.°99E,h2km±2km,ML3.2/6,Error ellipse: s-maj=2.1km s-min=1.0km az=129.0*
ISC 22 09:14:00.5±1.0,**39.°09N**±0.°02×**29.°04E**±0.°02,**h5**km±9km,
n110,σ0°**47**/148,**2C-1D**,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**259**	P	**Pg**	**09 14 05.7**	**+0.2**
DEMI				S	**Sg**	**09 14 09.3**	**+0.4**
DEMI	**Demirci**	**0.26**	**259**	*i* P	**Pg**	**09 14 05.7**	**+0.2**
DEMI				*i* S	**Sg**	**09 14 09.3**	**+0.4**
GDZ	**Gediz**	**0.34**	**91**	P	**Pg**	**09 14 07.2**	**-0.1**
GDZ				S	**Sg**	**09 14 12.0**	**+0.2**
GDZ	**Gediz**	**0.34**	**91**	*i* P	**Pg**	**09 14 07.2**	**-0.1**
GDZ				*i* S	**Sg**	**09 14 12.0**	**+0.2**
TVSB	**Tavsanli**	**0.48**	**43**	*e*PG	**Pg**	**09 14 09.8**	**-0.1**
TVSB	**Tavsanli**	**0.48**	**43**	*e*Pg	**Pg**	**09 14 09.8**	**-0.1**
KULA	**Kula-Manisa**	**0.65**	**207**	*e*PG	**Pg**	**09 14 12.9**	**-0.1**
KULA				*e*SG	**Sg**	**09 14 21.5**	**+0.1**
KULA	**Kula-Manisa**	**0.65**	**207**	P	**Pg**	**09 14 12.9**	**-0.1**
KULA	**Kula-Manisa**	**0.65**	**207**	*e*Pg	**Pg**	**09 14 13.0**	**-0.1**
KULA				*e*Sg	**Sg**	**09 14 21.5**	**+0.1**
DURS	**Dursunbey**	**0.67**	**319**	P	**Pg**	**09 14 13.1**	**-0.3**
DURS				S	**Sg**	**09 14 22.5**	**+0.4**
DURS	**Dursunbey**	**0.67**	**319**	*i* P	**Pg**	**09 14 13.2**	**-0.3**
DURS				*i* S	**Sg**	**09 14 22.5**	**+0.4**
MANT	**Manisa**	**0.71**	**212**	P	**Pg**	**09 14 14.1**	**-0.1**
MANT				S	**Sg**	**09 14 23.4**	**0.0**
MANT	**Manisa**	**0.71**	**212**	*i* P	**Pg**	**09 14 14.1**	**-0.1**
MANT				*i* S	**Sg**	**09 14 23.4**	**0.0**
KHL	**Karahalli**	**0.86**	**154**	*e*PG	**Pg**	**09 14 17.4**	**+0.4**
KHL				*e*SG	**Sb**	**09 14 29.3**	**-0.4**
KHL	**Karahalli**	**0.86**	**154**	*e*Pg	**Pg**	**09 14 17.4**	**+0.4**
KHL				*e*Sg	**Sb**	**09 14 29.3**	**-0.4**
ORLT	**Orhaneli**	**0.96**	**353**	*e*PG	**Pg**	**09 14 18.6**	**-0.3**
ORLT	**Orhaneli**	**0.96**	**353**	*e*Pg	**Pg**	**09 14 18.6**	**-0.3**
AKHS	**Akhisar**	**0.98**	**258**	P	**Pg**	**09 14 19.5**	**+0.2**
AKHS				S	**Sb**	**09 14 33.1**	**-0.1**
AKHS	**Akhisar**	**0.98**	**258**	*i* P	**Pg**	**09 14 19.5**	**+0.2**
AKHS				*i* S	**Sb**	**09 14 33.1**	**-0.1**
AKS	**Akhisar**	**0.98**	**258**	*e*PG	**Pg**	**09 14 19.2**	**-0.1**
AKS				*e*SG	**Sb**	**09 14 33.2**	**0.0**
AKS	**Akhisar**	**0.98**	**258**	*e*Pg	**Pg**	**09 14 19.2**	**-0.1**
AKS				*e*Sg	**Sb**	**09 14 33.2**	**0.0**
BALB	**Balikesir**	**1.05**	**302**	*e*PG	**Pg**	**09 14 20.8**	**+0.1**
BALB	**Balikesir**	**1.05**	**302**	*e*Pg	**Pg**	**09 14 20.8**	**+0.1**
IGD	**Bursa**	**1.18**	**6**	*i* P	**Pg**	**09 14 20.9**	**-2.2**
CAVI	**Cavuskoy**	**1.27**	**29**	*e*PN	**Pg**	**09 14 24.8**	**-0.1**
CAVI	**Cavuskoy**	**1.27**	**29**	*e*Pn	**Pg**	**09 14 24.8**	**-0.1**
BALY	**Balya**	**1.27**	**301**	P	**Pg**	**09 14 24.6**	**-0.4**
BALY	**Balya**	**1.27**	**301**	*i* P	**Pg**	**09 14 24.6**	**-0.4**
MDNY	**Mudanya-Bursa**	**1.28**	**355**	*e*PN	**Pn**	**09 14 24.6**	**-0.4**
MDNY	**Mudanya-Bursa**	**1.28**	**355**	*e*Pn	**Pn**	**09 14 24.6**	**-0.4**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*PN	**Pn**	**09 14 25.2**	**+0.1**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*Pn	**Pn**	**09 14 25.2**	**+0.1**
DENT	**Denizli**	**1.34**	**180**	*e*PN	**Pb**	**09 14 26.0**	**-0.1**
DENT	**Denizli**	**1.34**	**180**	*e*Pn	**Pb**	**09 14 26.0**	**-0.1**
GEMT	**Gemlik**	**1.34**	**5**	*e*PN	**Pg**	**09 14 26.5**	**+0.2**
GEMT	**Gemlik**	**1.34**	**5**	*e*Pn	**Pg**	**09 14 26.5**	**+0.2**
DNZL	**Cakiroluk**	**1.40**	**180**	P	**Pn**	**09 14 26.6**	**-0.3**
DNZL	**Cakiroluk**	**1.40**	**180**	*i* P	**Pn**	**09 14 26.6**	**-0.3**
ADVT	**Abdulvahap**	**1.44**	**22**	*e*PN	**Pn**	**09 14 27.5**	**+0.2**
ADVT	**Abdulvahap**	**1.44**	**22**	*e*Pn	**Pn**	**09 14 27.5**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**1.46**	**219**	*e*PN	**Pn**	**09 14 27.0**	**-0.6**
AYDB	**Zeytinkoy-Aydi**	**1.46**	**219**	*e*Pn	**Pn**	**09 14 27.0**	**-0.6**
ARMT	**Armutlu**	**1.48**	**355**	*e*PN	**Pb**	**09 14 28.2**	**-0.3**
ARMT	**Armutlu**	**1.48**	**355**	*e*Pn	**Pb**	**09 14 28.2**	**-0.3**
GPA	**Golpazari**	**1.54**	**39**	*e*PN	**Pb**	**09 14 29.4**	**-0.3**
GPA	**Golpazari**	**1.54**	**39**	*e*Pn	**Pb**	**09 14 29.4**	**-0.3**
EDC	**Edincik**	**1.55**	**324**	*e*PN	**Pn**	**09 14 29.2**	**+0.5**
EDC	**Edincik**	**1.55**	**324**	*e*Pn	**Pn**	**09 14 29.2**	**+0.5**
ISP	**Isparta**	**1.72**	**137**	*e*PN	**Pn**	**09 14 31.3**	**+0.1**
ISP	**Isparta**	**1.72**	**137**	P	**Pb**	**09 14 32.1**	**-0.6**
ISP				S	**Sb**	**09 14 54.8**	**+0.1**
ISP	**Isparta**	**1.72**	**137**	*e*Pn	**Pn**	**09 14 31.3**	**+0.1**
ISP	**Isparta**	**1.72**	**137**	P	**Pb**	**09 14 32.1**	**-0.6**
ISP				S	**Sb**	**09 14 54.8**	**+0.1**
GULT	**Gulveren**	**1.76**	**40**	*e*PN	**Pn**	**09 14 31.9**	**+0.2**
GULT	**Gulveren**	**1.76**	**40**	*e*Pn	**Pn**	**09 14 31.9**	**+0.2**
HRT	**Hereke**	**1.79**	**15**	*e*PN	**Pn**	**09 14 32.8**	**+0.6**
HRT	**Hereke**	**1.79**	**15**	*e*Pn	**Pn**	**09 14 32.8**	**+0.6**
KRBG	**Karabiga-Canak**	**1.87**	**315**	*e*PN	**Pn**	**09 14 33.9**	**+0.8**
KRBG	**Karabiga-Canak**	**1.87**	**315**	*e*Pn	**Pn**	**09 14 33.9**	**+0.8**
SPNC	**Sapanca-Adapaz**	**1.87**	**31**	*e*PN	**Pn**	**09 14 33.8**	**+0.7**
SPNC	**Sapanca-Adapaz**	**1.87**	**31**	*e*Pn	**Pn**	**09 14 33.8**	**+0.7**
MRMT	**Marmara Adasi**	**1.87**	**324**	*e*PN	**Pn**	**09 14 33.2**	**-0.1**
MRMT	**Marmara Adasi**	**1.87**	**324**	*e*Pn	**Pn**	**09 14 33.2**	**-0.1**
SVRH	**Sivrihisar-ESK**	**1.96**	**79**	*e*PN	**Pn**	**09 14 35.0**	**+0.5**
SVRH	**Sivrihisar-ESK**	**1.96**	**79**	*e*Pn	**Pn**	**09 14 35.0**	**+0.5**
ISK	**Istanbul-Kandi**	**1.97**	**0**	*e*PN	**Pn**	**09 14 35.1**	**+0.6**
ISK	**Istanbul-Kandi**	**1.97**	**0**	P	**Pn**	**09 14 33.9**	**-0.6**
ISK				S	**Sn**	**09 15 00.1**	**+0.5**
ISK	**Istanbul-Kandi**	**1.97**	**0**	P	**Pn**	**09 14 33.9**	**-0.6**
ISK	**Istanbul-Kandi**	**1.97**	**0**	*e*Pn	**Pn**	**09 14 35.1**	**+0.6**
ISK				S	**Sn**	**09 15 00.1**	**+0.5**
YER	**Yerkesik**	**2.04**	**197**	P	**Pb**	**09 14 37.5**	**-0.7**
YER	**Yerkesik**	**2.04**	**197**	P	**Pb**	**09 14 37.5**	**-0.7**
BGKT	**Bogazkoy**	**2.10**	**355**	*e*PN	**Pn**	**09 14 36.9**	**+0.7**
BGKT	**Bogazkoy**	**2.10**	**355**	*e*Pn	**Pn**	**09 14 36.9**	**+0.7**
SILT	**Sile**	**2.11**	**13**	*e*PN	**Pn**	**09 14 36.9**	**+0.5**
SILT	**Sile**	**2.11**	**13**	*e*Pn	**Pn**	**09 14 36.9**	**+0.5**
PRK	**Paraskevi**	**2.16**	**275**	P	**Pn**	**09 14 37.3**	**+0.2**
PRK				S	**Sn**	**09 15 04.1**	**-0.1**
PRK	**Paraskevi**	**2.16**	**275**	P	**Pn**	**09 14 37.3**	**+0.2**
PRK				S	**Sn**	**09 15 04.1**	**-0.1**
KLYT	**Kilyos**	**2.16**	**0**	*e*PN	**Pn**	**09 14 36.9**	**-0.2**
KLYT	**Kilyos**	**2.16**	**0**	*e*Pn	**Pn**	**09 14 36.9**	**-0.2**
MDUB	**Mudurnu**	**2.16**	**50**	*e*PN	**Pn**	**09 14 38.0**	**+0.7**
MDUB	**Mudurnu**	**2.16**	**50**	*e*Pn	**Pn**	**09 14 38.0**	**+0.7**
CTKS	**Kestanelik-??a**	**2.18**	**349**	*e*PN	**Pn**	**09 14 37.7**	**+0.3**
CTKS	**Kestanelik-??a**	**2.18**	**349**	*e*Pn	**Pn**	**09 14 37.7**	**+0.3**
EZN	**Ezine**	**2.22**	**290**	*e*PN	**Pn**	**09 14 38.4**	**+0.4**
EZN	**Ezine**	**2.22**	**290**	P	**Pn**	**09 14 38.2**	**+0.2**
EZN				S	**Sn**	**09 15 06.1**	**+0.3**
EZN	**Ezine**	**2.22**	**290**	*e*Pn	**Pn**	**09 14 38.4**	**+0.4**
EZN				S	**Sn**	**09 15 06.1**	**+0.3**
GELI	**Tayfur-Gelibol**	**2.37**	**304**	*e*PN	**Pn**	**09 14 40.6**	**+0.6**
GELI	**Tayfur-Gelibol**	**2.37**	**304**	*e*Pn	**Pn**	**09 14 40.6**	**+0.6**
CHOS	**Chios island**	**2.44**	**254**	P	**Pn**	**09 14 40.9

SILT	Sile	2.11	13	ePn	Pn	09 20 34.9	+0.6
KLYT	Kilyos	2.16	0	ePN	Pn	09 20 34.9	0.0
KLYT	Kilyos	2.16	0	ePn	Pn	09 20 34.9	0.0
MDUB	Mudurnu	2.17	50	ePN	Pn	09 20 35.9	+0.7
MDUB	Mudurnu	2.17	50	ePn	Pn	09 20 35.9	+0.7
CTKS	Kestanelik-??a	2.18	350	ePN	Pn	09 20 35.4	+0.2
CTKS	Kestanelik-??a	2.18	350	ePn	Pn	09 20 35.4	+0.2
CTYL	Yalikoy Yolu	2.45	347	ePN	Pn	09 20 39.1	+0.2
CTYL	Yalikoy Yolu	2.45	347	ePn	Pn	09 20 39.1	+0.2

ISCJB ***22*** *09:21:25.8±0.6, 39°.09N±0°.04×29°.06E±0°.04, h1km±8km, Error ellipse: s-maj=7.9km s-min=4.1km az=145.6*
CSEM ***22*** *09:21:25.9±0.1, 39°.08N×29°.07E, h3km±1km, ML2.8, Error ellipse: s-maj=3.4km s-min=1.8km az=139.0*
ISK ***22*** *09:21:25.3, 39°.06N×29°.11E, h6km, MD2.9*
DDA ***22*** *09:21:25.7, 39°.08N×29°.06E, h7km, Ml2.8*
ISC 22 09:21:26.2±1.0, 39°.09N±0°.03×29°.07E±0°.03, h7km±13km, n36, σ0°.24/46, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.28	261	P	Pg	09 21 31.7	0.0
DEMI				S	Sg	09 21 35.4	+0.1
DEMI	Demirci	0.28	261	*i* P	Pg	09 21 31.7	0.0
DEMI				*i* S	Sg	09 21 35.4	+0.1
GDZ	Gediz	0.32	89	P	Pg	09 21 32.5	0.0
GDZ				S	Sg	09 21 37.2	+0.4
GDZ	Gediz	0.32	89	*i* P	Pg	09 21 32.5	0.0
GDZ				*i* S	Sg	09 21 37.2	+0.4
TVSB	Tavsanli	0.47	40	ePG	Pg	09 21 34.9	-0.5
TVSB				eSG	Sg	09 21 41.5	-0.2
TVSB	Tavsanli	0.47	40	ePg	Pg	09 21 34.9	-0.5
TVSB				eSg	Sg	09 21 41.5	-0.2
KULA	Kula-Manisa	0.65	209	ePG	Pg	09 21 38.5	-0.3
KULA				eSG	Sg	09 21 47.3	0.0
KULA	Kula-Manisa	0.65	209	ePg	Pg	09 21 38.5	-0.3
KULA				eSg	Sg	09 21 47.3	0.0
MANT	Manisa	0.71	214	P	Pg	09 21 39.9	0.0
MANT				S	Sg	09 21 49.3	0.0
MANT	Manisa	0.71	214	*i* P	Pg	09 21 39.9	0.0
MANT				*i* S	Sg	09 21 49.3	0.0
ORLT	Orhaneli	0.97	352	ePG	Pg	09 21 44.7	-0.1
ORLT	Orhaneli	0.97	352	ePg	Pg	09 21 44.7	-0.1
AKS	Akhisar	1.00	259	ePG	Pg	09 21 45.3	-0.1
AKS	Akhisar	1.00	259	ePg	Pg	09 21 45.3	-0.1
BALB	Balikesir	1.07	301	ePN	Pb	09 21 47.2	+0.1
BALB	Balikesir	1.07	301	ePn	Pb	09 21 47.2	+0.1
CAVI	Cavuskoy	1.27	28	ePN	Pg	09 21 50.7	+0.3
CAVI	Cavuskoy	1.27	28	ePn	Pg	09 21 50.7	+0.3
IZI	Iznik	1.29	14	ePN	Pg	09 21 51.0	+0.1
IZI	Iznik	1.29	14	ePn	Pg	09 21 51.0	+0.1
MDNY	Mudanya-Bursa	1.29	354	ePN	Pb	09 21 50.8	0.0
MDNY	Mudanya-Bursa	1.29	354	ePn	Pb	09 21 50.8	0.0
KCTX	Karacabey (Bur	1.30	335	ePN	Pn	09 21 50.7	-0.1
KCTX	Karacabey (Bur	1.30	335	ePn	Pn	09 21 50.7	-0.1
GONE	Gonen-Balikesi	1.44	312	ePN	Pb	09 21 53.4	+0.2
GONE	Gonen-Balikesi	1.44	312	ePn	Pb	09 21 53.4	+0.2
ADVT	Abdulvahap	1.44	21	ePN	Pb	09 21 53.4	+0.1
ADVT	Abdulvahap	1.44	21	ePn	Pb	09 21 53.4	+0.1
ARMT	Armutlu	1.49	354	ePN	Pb	09 21 54.0	-0.1
ARMT	Armutlu	1.49	354	ePn	Pb	09 21 54.0	-0.1
EDC	Edincik	1.56	324	ePN	Pb	09 21 55.1	-0.4
EDC	Edincik	1.56	324	ePn	Pb	09 21 55.1	-0.4
GULT	Gulveren	1.75	39	ePN	Pn	09 21 56.6	-0.4
GULT	Gulveren	1.75	39	ePn	Pn	09 21 56.6	-0.4
HRT	Hereke	1.79	15	ePN	Pn	09 21 58.1	+0.5
HRT	Hereke	1.79	15	ePn	Pn	09 21 58.1	+0.5

ISCJB ***22*** *09:28:19.6±1.5, 6°.3S±0°.1×147°.9E±0°.3, h47km, mb4.1/3, MS3.2/2, Error ellipse: s-maj=39.9km s-min=13.3km az=11.4*
IDC ***22*** *09:28:25.2±5.2, 6°.77S×148°.39E, h90km±51km, mb3.8/3, mb1 3.9/5, mb1mx3.4/40, mbtmp4.0/5, ML3.8/1, MS3.3/2, Ms1 3.3/2, ms1mx2.7/39, Error ellipse: s-maj=84.8km s-min=32.5km az=136.0*
ISC 22 09:28:21.2±1.5, 6°.4S±0°.2×148°.0E±0°.4, h47km, n7, σ0°.84/7, mb4.0/3, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	Port Moresby	3.15	196	P	Pn	09 29 08.6	+0.3
PMG	14nm,0.3s,baz=22,slow=7.1,SNR=34			S	Sn	09 29 44.8	+0.1
WRA	5.3nm,0.3s,baz=353,slow=10.0,SNR=4.3 Warramunga Arr	18.95	223	P	P	09 32 37.7	-0.9
ASAR	0.3nm,0.3s,baz=52,slow=10,SNR=18 Alice Springs	21.92	217	P	P	09 33 10.0	-0.8
ASAR	3.5nm,0.5s,baz=53,slow=9.2,SNR=103 comp=Z,72nm,18.4s,baz=44,slow=37			LR	LR	09 41 55.7	
FITZ	Fitzroy Crossi	24.76	240	P	P	09 33 38.8	+0.2
STKA	7.8nm,0.5s,baz=52,slow=8.3,SNR=47 Stephens Creek	26.09	193	LR	LR	09 44 32.4	
ILAR	comp=Z,65nm,18.5s,baz=26,slow=38 Eielson Array	85.41	23	P	P	09 40 53.0	-0.4
TORD	0.4nm,0.7s,baz=259,slow=5.4,SNR=4.2 Torodi Ar. Bea	146.17	284	PKPbc	PKPbc	09 47 58.5	+1.1
	0.3nm,0.3s,baz=62,slow=3.6,SNR=10.0						

IDC ***22*** *09:35:42.5±2.0, 34°.83N×142°.92E, h0km, mb3.5/2, mb1 3.7/6, mb1mx3.5/60, mbtmp3.8/6, ML3.8/4, Error ellipse: s-maj=45.2km s-min=27.1km az=77.0*
ISCJB ***22*** *09:35:43.7±1.2, 34°.85N±0°.09×143°.0E±0°.2, h33km, mb3.6/2, Error ellipse: s-maj=23.2km s-min=13.3km az=175.5*
ISC 22 09:35:46.2±1.3, 34°.75N±0°.09×142°.9E±0°.2, h35km, n6, σ2°.38/7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHJ	Hachijo jima 2	3.07	239	Pn	Pn	09 36 32.3	+0.1
MJAR	22nm,0.3s,baz=93,slow=23,SNR=19 Matsushiro Arr	4.23	296	Pn	Pn	09 36 47.5	-0.7
JCJ	1.3nm,0.3s,baz=107,slow=9.1,SNR=14 Chichijima	7.65	185	Pn	Pn	09 37 35.2	0.0
JCJ	1.8nm,0.3s,baz=301,slow=19,SNR=5.7			Sn	Sn	09 38 57.5	-3.1
ASAJ	5.5nm,0.3s,baz=288,slow=19,SNR=2.7 Asahikawa	9.36	359	Pn	Pn	09 37 57.2	-1.4
WRA	2.7nm,0.3s,baz=199,slow=14,SNR=5.3 Warramunga Arr	54.99	190	P	P	09 45 16.4	+2.3
ASAR	0.9nm,0.8s,baz=7.7,slow=6.7,SNR=6.1 Alice Springs	58.72	190	P	P	09 45 42.7	+2.2
	0.3nm,0.8s,baz=6.4,slow=7.0,SNR=3.6						

NIED ***22*** *09:35:00, 34°.90N×142°.90E, h8km, Mw4.1 Best double couple: M0 1.80000×10^15 NP1:φs 17.00000°, δ30.00000°, λ-81.00000°. NP2:φs 187.00000°, δ60.00000°, λ-95.00000°.*
ISCJB ***22*** *09:35:48.7±1.4, 34°.89N±0°.05×142°.87E±0°.03, h10km±8km, mb4.3/34, MS3.5/2, Error ellipse: s-maj=8.0km s-min=4.5km az=3.2*
IDC ***22*** *09:35:48.8±0.5, 34°.85N×142°.92E, h0km, mb4.2/21, mb1 4.3/27, mb1mx4.2/63, mbtmp4.2/27, ML3.8/5, MS3.4/2, Ms1 3.5/2, ms1mx2.6/49, Error ellipse: s-maj=14.9km s-min=12.7km az=118.0*
JMA ***22*** *09:35:50.4±0.3, 34°.89N×142°.94E, h41km, M4.3*
NEIC ***22*** *09:35:50.9±3.4, 34°.86N×142°.89E, h14km±20km, mb4.6/14, Error ellipse: s-maj=7.9km s-min=6.0km az=114.0*
ISC 22 09:35:51.3±4.4, 34°.93N±0°.05×142°.90E±0°.06, h16km±27km, n75, σ1°.69/82, mb4.3/34, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	Boso 1	1.60	261	P	Pn	09 36 17.1	-1.4
BSO1				S	Sn	09 36 37.3	-1.3
CHOJ	Chosi	1.84	295	P	Pn	09 36 21.5	-0.7
CHOJ				eS	Sn	09 36 43.8	-1.3
BSO3	Boso 3	1.97	267	P	Pn	09 36 23.0	-0.8
BSO3				eS	Sn	09 36 47.5	-0.5
BSO4	Boso 4	2.10	272	P	Pn	09 36 25.1	-0.7
BSO4				eS	Sn	09 36 51.1	-0.5
KTR	Katsuura	2.13	277	P	Pn	09 36 25.3	-0.9
KTR				eS	Sn	09 36 50.9	-1.5
JCN	Nagara	2.26	283	P	Pn	09 36 28.0	0.0
JCN				eS	Sn	09 36 55.6	0.0
JOD2	Odawara 2	3.14	277	P	Pn	09 36 38.5	-1.7
JOD2				eS	Sn	09 37 13.4	-4.0
JHJ	Hachijo jima 2	3.16	236	Pn	Pn	09 36 38.3	-2.0
JHJ	115nm,0.3s,baz=312,slow=14,SNR=97			Sn	Sn	09 37 11.1	-6.6
JAG	174nm,0.3s,baz=211,slow=23,SNR=13 Ashikaga	3.18	299	P	Pn	09 36 39.9	-0.7
JFT	Otama	3.31	322	P	Pn	09 36 41.8	-0.7
JFT				S	Sn	09 37 18.2	-3.3
JRY	Ryogami san	3.44	290	P	Pn	09 36 43.8	-0.5
JRY				eS	Sn	09 37 22.2	-2.5
JYN	Shimob	3.61	280	P	Pn	09 36 45.2	-1.5
JNS	Sasagawa	4.08	316	P	Pn	09 36 53.0	-0.1
JNS				eS	Sn	09 37 38.6	-1.9
MJAR	Matsushiro Arr	4.14	294	Pn	Pn	09 36 53.3	-0.6
MJAR	1.5nm,0.3s,baz=299,slow=26,SNR=34			Sn	Sn	09 37 42.6	+0.6
MAJO	3.6nm,0.3s,baz=146,slow=12,SNR=4.6 Matsushiro	4.14	294	ePn	Pn	09 36 53.6	-0.3
MAT	Matsushiro	4.14	294	P	Pn	09 36 53.1	-0.8
MAT				S	Sn	09 37 40.0	-2.0
MAT	Matsushiro	4.14	294	P	Pn	09 36 54.3	+0.4
MAT				eS	Sn	09 37 43.0	+1.0
JMK	Ichinoseki	4.23	342	eS	Sn	09 37 39.6	-4.6
JYK	Kaneyama	4.47	334	P	Pn	09 36 57.6	-0.8
JYK				eS	Sn	09 37 46.3	-3.8
ERM	Erimo	7.08	2	ePn	Pn	09 37 32.6	-1.5
CBIJ	Chichi jima	7.83	185	Pn	Pn	09 37 41.3	-3.3
CBIJ				Sn	Sn	09 39 02.5	-10
JCJ	Chichijima	7.83	185	Pn	Pn	09 37 41.3	-3.3
JCJ	6.3nm,0.3s,baz=334,slow=12,SNR=5.7			Sn	Sn	09 39 02.5	-11
ASAJ	30nm,0.3s,baz=279,slow=22,SNR=8.2 Asahikawa	9.18	359	Sn	Sn	09 39 40.1	-5.8
JNU	0.4nm,0.3s,baz=288,slow=19,SNR=4.1 Nakatsue	10.14	263	Pn			
KSRS	0.6nm,0.3s,baz=96,slow=4.3,SNR=5.8 Korea Array	12.36	286	Pn	Pn	09 38 15.9	-0.4
KSAR	0.2nm,0.3s,baz=94,slow=14,SNR=10 Wonju Array Be	12.39	286	Pn	Pn	09 38 48.1	+1.5
USRK	Ussuriysk Ar.	12.50	321	Pn	Pn	09 38 48.1	+1.1
H11N2	0.3nm,0.3s,baz=171,slow=29,SNR=4.5 WAKE ISLAND Hy 26.05	119		T	T	09 38 47.9	-0.6
H11N1	baz=311,slow=75,SNR=14 WAKE ISLAND Hy 26.06	119		T	T	10 08 34.0	
H11N3	baz=311,slow=75,SNR=12 WAKE ISLAND Hy 26.07	119		T	T	10 08 36.7	
H11S1	baz=311,slow=75,SNR=12 WAKE ISLAND Hy 26.72	122		T	T	10 08 35.6	
H11S3	baz=313,slow=76,SNR=20 WAKE ISLAND Hy 26.72	122		T	T	10 09 21.9	
H11S2	baz=313,slow=76,SNR=15 WAKE ISLAND Hy 26.74	122		T	T	10 09 32.7	
ENH	baz=313,slow=76,SNR=14 Enshi	28.45	270	eP	P	09 41 44.5	-1.1
SEY	11nm,0.7s Seymchan	28.65	9	P	P	09 41 48.0	+1.1
SONM	4.5nm,0.7s,baz=178,slow=6.7,SNR=13 Songino Array	29.98	307	P	P	09 42 00.6	+1.5
CMAR	0.8nm,0.6s,baz=105,slow=9.1,SNR=5.9 Chiang Mai Arr	42.20	259	P	P	09 43 44.0	+0.4
CMAR	1.9nm,0.6s,baz=46,slow=7.6,SNR=13			LR	LR	10 03 05.0	
ZALV	comp=Z,40nm,18.3s,baz=32,slow=39 Zalesovo Beam	44.23	314	P	P	09 44 00.1	+0.5
KSM	1.1nm,0.6s,baz=103,slow=6.5,SNR=4.2 Kuching	45.04	230	eP	P	09 44 06.8	+0.3
MKAR	7.2nm,0.9s Makanchi Array	46.27	304	P	P	09 44 15.8	-0.2
KURK	1.7nm,0.8s,baz=84,slow=12,SNR=9.8 Kurchatov	48.19	310	eP	P	09 44 36.5	+5.7
ILAR	32nm,1.1s Eielson Array	50.64	31	P	P	09 44 49.5	+0.2
TKM2	2.3nm,1.0s,baz=264,slow=6.2,SNR=18 Tokmak 2	51.71	300	eP	P	09 44 57.6	-0.4
BVAR	8.8nm,1.3s Borovoye Array	52.88	314	PcP	PcP	09 46 15.3	+0.1
WRAB	0.5nm,0.4s,baz=64,slow=3.4,SNR=3.8 Tennant Creek	55.16	190	eP	P	09 45 22.5	-0.7
WRA	13nm,1.0s Warramunga Arr	55.17	190	P	P	09 45 22.4	-0.8
FITZ	7.1nm,0.7s,baz=8.5,slow=7.6,SNR=49 Fitzroy Crossi	55.23	200	P	P	09 45 23.5	-0.1
KKAR	3.2nm,0.7s,baz=35,slow=3.9,SNR=9.2 Karatay Array	55.24	302	eP	P	09 45 24.7	+1.1
INK	2.7nm,0.8s Inuvik	55.72	27	P	P	09 45 27.4	+0.9
INK	2.9nm,0.7s,baz=297,slow=8.0,SNR=8.3 Inuvik	55.72	27	eP	P	09 45 27.2	+0.6
ASAR	2.4nm,0.6s Alice Springs	58.90	190	P	P	09 45 49.2	-0.4
ABKAR	2.3nm,0.7s,baz=15,slow=11,SNR=31 Akbulak array	60.22	311	eP	P	09 45 58.5	0.0
YKA	0.8nm,0.5s Yellowknife Ar	65.02	30	P	P	09 46 30.4	+0.1
ARCES	1.4nm,0.9s,baz=295,slow=6.4,SNR=11 ARCESS Array B	66.38	340	P	P	09 46 39.5	+0.5
FINES	1.8nm,0.9s,baz=82,slow=8.3,SNR=2.6 FINESS Array B	71.23	333	P	P	09 47 09.6	+0.3
KBZ	3.5nm,0.8s,baz=45,slow=5.7,SNR=8.7 Khabaz	73.19	312	P	P	09 47 22.0	+0.7
CMB	0.9nm,0.4s,baz=308,slow=5.6,SNR=4.6 Columbia Colle	74.11	55	eP	P	09 47 27.9	+1.0
FFC	34nm,1.2s Flin Flon	74.81	33	eP	P	09 47 30.9	+0.2
NVAR	7.6nm,1.1s Mina Array Bea	75.28	53	P	P	09 47 34.3	+0.4
FCC	5.3nm,0.7s,baz=292,slow=6.2,SNR=42 Fort Churchill	75.33	27	eP	P	09 47 33.3	-0.2
HFS	6.2nm,1.2s Hagfors	76.50	336	P	P	09 47 40.3	+0.2
NB2	baz=64,slow=9.8 NORSAR Subarra	76.58	338	P	P	09 47 40.8	+0.1
NOA	comp=Z,2.7nm,0.8s,baz=40,slow=5.9 NORSAR Array B	76.58	338	P	P	09 47 41.1	+0.4
AKASG	comp=Z,2.3nm,0.8s,baz=39,slow=5.6,SNR=7.3 Malin Array Be	76.70	323	P	P	09 47 41.5	0.0
PDAR	comp=Z,1.4nm,0.6s,baz=46,slow=6.5,SNR=8.7 Pinedale Array	78.27	46	P	P	09 47 51.0	+0.3
BRTR	comp=Z,0.5nm,0.7s,baz=268,slow=2.4,SNR=6.7 Keskin Array B	81.15	313	P	P	09 48 07.3	+1.0
WUAZ	comp=Z,1.0nm,0.8s,baz=90,slow=3.7,SNR=7.2 Wupatki	81.49	53	eP	P	09 48 09.2	+1.0
ECSD	comp=Z,3.4nm,0.8s EROS Data Cent	84.81	39	eP	P	09 48 24.7	-0.3
KHC	comp=Z,2.0nm,0.9s Kasperske Hory	84.96	329	eP	P	09 48 26.3	+0.6
KHC				ex	x	09 48 35.8	
GERES	GERESS Array B	85.13	329	P	P	09 48 26.4	-0.3
LPIG	comp=Z,0.3nm,0.4s,baz=28,slow=6.0,SNR=5.6 La Paz	89.17	61	LR	LR	10 20 38.6	
TXAR	comp=Z,24nm,20.1s,baz=227,slow=30 Lajitas Array	90.43	53	P	P	09 48 53.1	+0.7
MIAR	comp=Z,3.6nm,0.9s Mount Ida	93.03	44	eP	P	09 49 04.7	+0.4
QSPA	comp=Z,3.6nm,0.9s South Pole Qui	124.68	180	ePKPdf	PKPdf	09 54 48.2	-1.0
LPAZ	La Paz	146.62	64	PKPbc	PKPdf	09 55 32.8	+0.9
	comp=Z,2.2nm,0.7s,baz=155,slow=1.3,SNR=6.7						

NIED ***22*** *09:37:00, 34°.90N×142°.80E, h5km, Mw4.2 Best double couple: M0 1.96000×10^15 NP1:φs 14.00000°, δ39.00000°, λ-79.00000°. NP2:φs 180.00000°, δ52.00000°, λ-98.00000°.*
IDC ***22*** *09:37:49.2±0.5, 34°.83N×142°.88E, h0km, mb4.2/25, mb1 4.3/30, mb1mx4.2/64, mbtmp4.2/30, ML4.0/4, Error ellipse: s-maj=14.7km s-min=12.8km az=98.0*
NEIC ***22*** *09:37:50.5±2.4, 34°.82N×142°.89E, h8km±15km, mb4.7/13, Error ellipse: s-maj=6.7km s-min=5.2km az=97.0*
JMA ***22*** *09:37:51.5±0.2, 34°.94N×142°.80E, h97km, M3.9*
ISCJB ***22*** *09:37:52.5±0.3, 34°.84N±0°.04×142°.78E±0°.03, h33km, mb4.3/39, Error ellipse: s-maj=5.1km s-min=3.7km az=175.0*
ISC 22 09:37:54.4±0.5, 34°.92N±0°.05×142°.88E±0°.06, h35km, n77, σ2°.03/83, mb4.4/38, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	Boso 1	1.59	261	eS	Sn	09 38 37.6	-1.0
BSO2	Boso 2	1.76	265	eS	Sn	09 38 42.9	-0.2
CHOJ	Chosi	1.83	296	P	Pn	09 38 21.4	-1.9
CHOJ				eS	Sn	09 38 43.6	-1.7
BSO3	Boso 3	1.96	267	eS	Sn	09 38 47.8	-0.2
KTR	Katsuura	2.12	277	eS	Sn	09 38 51.0	-1.4
JCN	Nagara	2.25	283	eS	Sn	09 38 55.9	+0.2
JHJ2	Mitsune	3.12	236	P	Pn	09 38 38.5	-2.6
JHJ2				eS	Sn	09 39 12.1	-5.1
JHJ2	Mitsune	3.12	236	ePn	Pn	09 38 38.5	-2.6
JHJ2				eSn	Sn	09 39 13.1	-4.1
JOD2	Odawara 2	3.13	277	P	Pn	09 38 38.8	-2.4
JOD2				S	Sn	09 39 13.8	-3.6
JHJ	Hachijo jima 2	3.14	236	Pn	Pn	09 38 38.9	-2.5
JHJ	86nm,0.3s,baz=231,slow=14,SNR=6.0			Sn	Sn	09 39 13.0	-4.6
JAG	112nm,0.3s,baz=53,slow=23,SNR=8.0 Ashikaga	3.17	299	eS	Sn	09 39 16.5	-1.8
JFT	Otama	3.31	322	S	Sn	09 39 18.5	-3.3
JYN	Shimob	3.60	280	eS	Sn	09 39 26.8	-2.2
JNS	Sasagawa	4.08	316	eS	Sn	09 39 38.7	-2.0
MJAR	Matsushiro Arr	4.13	294	Pn	Pn	09 38 53.9	-1.1
MJAR	4.8nm,0.3s,baz=92,slow=13,SNR=10			Sn	Sn	09 39 43.2	+1.1
MAJO	5.8nm,0.3s,baz=352,slow=26,SNR=5.1 Matsushiro	4.13	294	ePn	Pn	09 38 53.6	-1.5
MAT	Matsushiro	4.13	294	P	Pn	09 38 53.5	-1.5
MAT				S	Sn	09 39 39.1	-3.1
JMK	Ichinoseki	4.24	342	eS	Sn	09 39 40.1	-4.5
JYK	Kaneyama	4.47	334	eS	Sn	09 39 47.8	-2.6
JOM	Ohasama	4.72	345	eS	Sn	09 39 51.8	-4.7
ERM	Erimo	7.08	2	ePn	Pn	09 39 35.6	+0.1
CBIJ	Chichi jima	7.83	185	Pn	Pn	09 39 42.0	-3.7
CBIJ				Sn	Sn	09 41 03.2	-10
JCJ	Chichijima	7.83	185	Pn	Pn	09 39 42.0	-3.7
JCJ	10nm,0.3s,baz=277,slow=19,SNR=2.5			Sn	Sn	09 41 03.2	-10
ASAJ	29nm,0.3s,baz=301,slow=22,SNR=7.7 Asahikawa	9.19	359	Pn	Pn	09 40 01.6	-2.7
ASAJ	1.9nm,0.3s,baz=201,slow=8.6,SNR=3.6			Sn	Sn	09 41 39.6	-6.8
KSRS	0.6nm,0.3s,baz=217,slow=20,SNR=2.7 Korea Array	12.35	286	Pn	Pn	09 40 49.8	+2.2
KSAR	0.1nm,0.3s,baz=96,slow=14,SNR=7.1 Wonju Array Be	12.38	286	Pn	Pn	09 40 49.8	+1.8
USRK	Ussuriysk Ar.	12.50	321	Pn	Pn	09 40 49.2	-0.5
KLR	baz=120,slow=10,SNR=2.7 Kul'dur	16.49	334	Pn	Pn	09 41 43.3	+0.5
PETK	0.1nm,0.3s,baz=116,slow=12,SNR=3.9 Petropavlovsk-	21.00	25	P	P	09 42 35.5	+0.9
H11N2	2.6nm,0.8s,baz=177,slow=8.2,SNR=3.0 WAKE ISLAND Hy 26.06	119		T	T	10 10 39.9	
H11N3	baz=314,slow=75,SNR=6.8 WAKE ISLAND Hy 26.08	119		T	T	10 10 36.0	
H11S1	baz=320,slow=75,SNR=6.2 WAKE ISLAND Hy 26.73	122		T	T	10 11 29.6	
H11S3	baz=312,slow=75,SNR=6.5 WAKE ISLAND Hy 26.73	122		T	T	10 11 32.3	
H11S2	baz=312,slow=75,SNR=8.2 WAKE ISLAND Hy 26.74	122		T	T	10 11 33.6	
ENH	baz=312,slow=75,SNR=7.2 Enshi	28.44	270	eP	P	09 43 45.6	-0.3
SEY	11nm,0.6s Seymchan	28.66	9	P	P	09 43 48.7	+1.3
SONM	3.4nm,0.6s,baz=189,slow=7.9,SNR=11 Songino Array	29.98	307	P	P	09 44 00.8	+1.3
CMAR	1.9nm,0.9s,baz=102,slow=8.9,SNR=6.3 Chiang Mai Arr	42.19	259	P	P	09 45 44.0	0.0
ZALV	1.5nm,0.5s,baz=50,slow=6.7,SNR=5.5 Zalesovo Beam	44.23	314	P	P	09 46 00.4	+0.5
ZALV	3.1nm,0.8s,baz=93,slow=7.4,SNR=6.0			PcP	PcP	09 47 44.1	0.0
KSM	2.3nm,0.7s,baz=72,slow=4.7,SNR=4.4 Kuching	45.03	230	eP	P	09 46 07.1	+0.3
MKAR	8.2nm,0.9s Makanchi Array	46.27	304	P	P	09 46 16.9	+0.6
MKAR	2.2nm,0.7s,baz=90,slow=9.6,SNR=8.2			PcP	PcP	09 47 51.8	+0.5
KURK	0.3nm,0.4s,baz=99,slow=4.5,SNR=2.1 Kurchatov	48.18	310	eP	P	09 46 31.1	0.0
COEN	13nm,0.8s Coen	48.61	180	eP	P	09 46 35.5	+0.8
ILAR	5.6nm,0.8s Eielson Array	50.65	31	P	P	09 46 50.0	+0.3
TKM2	0.9nm,0.7s,baz=260,slow=5.9,SNR=7.4 Tokmak 2	51.70	300	eP	P	09 46 59.7	+1.5
AAK	15nm,1.3s Ala-Archa	52.56	300	eP	P	09 47 05.0	+0.5
BVAR	3.5nm,0.9s Borovoye Array	52.88	314	P	P	09 47 06.9	+0.3
BVAR	0.7nm,0.6s,baz=90,slow=7.6,SNR=4.1			PcP	PcP	09 48 15.6	+0.3
CTA	1.2nm,0.6s,baz=81,slow=4.7,SNR=4.2 Charters Tower	54.80	176	P	P	09 47 20.4	-0.4
WRAB	4.6nm,0.9s,baz=41,slow=11,SNR=3.2 Tennant Creek	55.15	190	eP	P	09 47 22.6	-0.7
WRA	9.5nm,0.8s Warramunga Arr	55.16	190	P	P	09 47 22.8	-0.7
KKAR	9.4nm,0.8s,baz=9.1,slow=7.6,SNR=24 Karatay Array	55.23	302	eP	P	09 47 23.7	-0.2
INK	2.5nm,0.9s Inuvik	55.73	27	P	P	09 47 28.0	+1.0
ASAR	2.0nm,0.7s,baz=286,slow=8.4,SNR=6.4 Alice Springs	58.89	190	P	P	09 47 49.5	-0.3
ABKAR	3.3nm,0.8s,baz=12,slow=8.0,SNR=17 Akbulak array	60.22	311	eP	P	09 47 58.0	-0.8
YKA	3.5nm,0.9s Yellowknife Ar	65.03	30	P	P	09 48 30.8	+0.2
GEYT	0.7nm,0.8s,baz=295,slow=6.5,SNR=5.3 Alibeck	65.92	300	P	P	09 48 37.1	+0.2
FINES	1.5nm,0.4s,baz=116,slow=6.6,SNR=2.7 FINESS Array B	71.23	333	P	P	09 49 10.0	+0.5
KBZ	3.6nm,0.8s,baz=57,slow=7.0,SNR=9.3 Khabaz	73.19	312	P	P	09 49 22.9	+1.4
CMB	3.4nm,0.8s,baz=79,slow=4.8,SNR=8.1 Columbia Colle	74.12	55	eP	P	09 49 28.1	+0.9
NVAR	36nm,1.4s Mina Array Bea	75.29	53	P	P	09 49 35.7	+1.5
FCC	2.5nm,0.7s,baz=293,slow=6.7,SNR=14 Fort Churchill	75.35	27	eP	P	09 49 33.7	-0.1
HFS	9.4nm,1.3s Hagfors	76.50	336	P	P	09 49 40.8	+0.4
NB2	2.2nm,0.6s,baz=154,slow=4.1,SNR=8.2 NORSAR Subarra	76.59	338	P	P	09

Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**1.56**	**260**	P	**Pn**	**09 41 56.1**	**-1.2**
BSO1				*e*S	**Sn**	**09 42 15.6**	**-0.5**
CHOJ	**Chosi**	**1.80**	**296**	P	**Pn**	**09 42 00.4**	**-0.6**
CHOJ				*e*S	**Sn**	**09 42 22.6**	**0.0**
BSO3	**Boso 3**	**1.93**	**267**	P	**Pn**	**09 42 01.9**	**-0.6**
KTR	**Katsuura**	**2.09**	**277**	*e*S	**Sn**	**09 42 29.4**	**-0.4**
JOD2	**Odawara 2**	**3.10**	**277**	P	**Pn**	**09 42 17.3**	**-1.7**
JOD2				*e*S	**Sn**	**09 42 52.3**	**-2.5**
JHJ2	**Mitsune**	**3.10**	**235**	P	**Pn**	**09 42 16.9**	**-2.1**
JHJ2	**Mitsune**	**3.10**	**235**	*e*Pn	**Pn**	**09 42 17.2**	**-1.8**
JHJ2				*e*Sn	**Sn**	**09 42 52.5**	**-2.4**
JHJ	**Hachijo jima 2**	**3.12**	**235**	Pn	**Pn**	**09 42 17.1**	**-2.1**
	126nm,0.3s,baz=87,slow=3.6,SNR=17						
JHJ				Sn	**Sn**	**09 42 51.8**	**-3.5**
	180nm,0.3s,baz=265,slow=22,SNR=9.5						
JAG	**Ashikaga**	**3.14**	**299**	P	**Pn**	**09 42 18.8**	**-0.7**
JAG				*e*S	**Sn**	**09 42 54.7**	**-1.0**
JFT	**Otama**	**3.28**	**323**	P	**Pn**	**09 42 20.6**	**-0.9**
JFT				*e*S	**Sn**	**09 42 56.9**	**-2.4**
JRY	**Ryogami san**	**3.40**	**290**	P	**Pn**	**09 42 22.8**	**-0.2**
JYN	**Shimob**	**3.57**	**280**	P	**Pn**	**09 42 24.1**	**-1.3**
JYN				*e*S	**Sn**	**09 43 05.9**	**-0.5**
JNS	**Sasagawa**	**4.05**	**316**	P	**Pn**	**09 42 31.9**	**-0.1**
JNS				*e*S	**Sn**	**09 43 17.2**	**-1.0**
MJAR	**Matsushiro Arr**	**4.10**	**294**	Pn	**Pn**	**09 42 32.1**	**-0.6**
	8.0nm,0.3s,baz=107,slow=8.7,SNR=17						
MJAR				Sn	**Sn**	**09 43 21.4**	**+2.0**
	4.6nm,0.3s,baz=136,slow=20,SNR=4.8						
MJAR				LR	LR	09 44 12.7	
	comp=Z,355nm,19.1s,baz=130,slow=40						
MAJO	**Matsushiro**	**4.10**	**294**	*e*Pn	**Pn**	**09 42 33.4**	**+0.6**
MAT	**Matsushiro**	**4.10**	**294**	P	**Pn**	**09 42 32.1**	**-0.6**
MAT				*e*S	**Sn**	**09 43 17.0**	**-2.5**
MAT	**Matsushiro**	**4.10**	**294**	P	**Pn**	**09 42 33.0**	**+0.3**
MJB9	**Matsu-Tunnel**	**4.11**	**294**	*e*Pn	**Pn**	**09 42 33.0**	**+0.2**
JMK	**Ichinoseki**	**4.22**	**342**	P	**Pn**	**09 42 32.4**	**-1.9**
JMK				*e*S	**Sn**	**09 43 18.8**	**-3.5**
JYK	**Kaneyama**	**4.45**	**334**	P	**Pn**	**09 42 36.7**	**-0.8**
INU	**Inuyama**	**4.80**	**277**	*e*Pn	**Pn**	**09 42 42.9**	**+0.6**
ERM	**Erimo**	**7.08**	**2**	*e*Pn	**Pn**	**09 43 11.1**	**-2.4**
CBIJ	**Chichi jima**	**7.83**	**184**	*e*Pn	Pn	09 43 18.8	-5.2
CBIJ				Sn	Sn	09 44 41.0	-10
JCJ	**Chichijima**	**7.83**	**184**	Pn	Pn	09 43 18.7	-5.3
	baz=315,slow=17						
JCJ				Sn	Sn	09 44 41.0	-10
	baz=270,slow=20						
ASAJ	**Asahikawa**	**9.18**	**359**	Pn	**Pn**	**09 43 39.3**	**-3.0**
	2.6nm,0.3s,baz=215,slow=8.1,SNR=8.5						
ASAJ				Sn	Sn	09 45 17.3	-7.0
	0.6nm,0.3s,baz=50,slow=18,SNR=2.8						
JNU	**Nakatsue**	**10.10**	**263**	Pn	**Pn**	**09 43 53.0**	**-2.1**
	0.3nm,0.3s,baz=135,slow=4.3,SNR=3.6						
KSRS	**Korea Array**	**12.32**	**286**	Pn	Pn	09 44 27.3	+2.0
	0.2nm,0.3s,baz=95,slow=14,SNR=7.9						
KSRS				LR	LR	09 48 57.6	
	comp=Z,225nm,20.3s,baz=108,slow=36						
KSAR	**Wonju Array Be**	**12.35**	**286**	Pn	Pn	09 44 27.4	+1.6
USRK	**Ussuriysk Ar.**	**12.47**	**321**	Pn	Pn	09 44 29.2	+1.8
	0.2nm,0.3s,baz=137,slow=15,SNR=5.4						
USRK				LR	LR	09 48 50.2	
	comp=Z,72nm,20.1s,baz=133,slow=35						
KLR	**Kul'dur**	**16.46**	**334**	Pn	**P**	**09 45 20.5**	**-2.6**
	0.1nm,0.3s,baz=136,slow=8.8,SNR=4.1						
KLR				LR	LR	09 51 22.3	
	comp=Z,66nm,18.2s,baz=142,slow=36						
YOJ	**Yonaguni jima**	**20.11**	**244**	*e*P	Pn	09 46 02.8	-2.5
	88nm,1.2s						
BJI	**Beijing**	**21.73**	**291**	P	**P**	**09 46 17.9**	**-2.8**
BJI				pmax	pmax		
	comp=Z,3.0nm,0.5s						
WHN	**Wuhan**	**24.33**	**268**	‖P	**P**	**09 46 48.4**	**+1.5**
HHC	**Hu-ho-hao-te**	**25.30**	**293**	*e*P	P	09 46 59.3	+3.5
HHC				S	**S**	**09 51 24.5**	**+4.9**
HHC				pmax	pmax		
	comp=Z,30nm,0.8s						
HHC				pmax	pmax		
	comp=Z,110nm,4.4s						
HHC				LR	LR		
	comp=N,500nm,12.2s						
HHC				LR	LR		
	comp=E,680nm,11.5s						
HHC				LR	LR		
	comp=Z,780nm,12.1s						
H11N2	**WAKE ISLAND Hy**	**26.09**	**119**	T	T	10 14 25.6	
	baz=310,slow=75,SNR=6.7						
H11N1	**WAKE ISLAND Hy**	**26.10**	**119**	T	T	10 14 19.9	
	baz=310,slow=75,SNR=6.2						
H11N3	**WAKE ISLAND Hy**	**26.11**	**119**	T	T	10 14 22.3	
	baz=310,slow=75,SNR=7.1						
H11S1	**WAKE ISLAND Hy**	**26.76**	**122**	T	T	10 15 01.7	
	baz=313,slow=76,SNR=11						
H11S3	**WAKE ISLAND Hy**	**26.76**	**122**	T	T	10 15 07.3	
	baz=313,slow=76,SNR=13						
H11S2	**WAKE ISLAND Hy**	**26.77**	**122**	T	T	10 15 06.0	
	baz=313,slow=76,SNR=10						
XAN	**Xi'an**	**27.91**	**278**	P	**P**	**09 47 20.3**	**+1.0**
XAN				pP	sP	09 47 30.3	-3.3
XAN				pmax	pmax		
	comp=Z,12nm,1.0s						
XAN				LR	LR		
	comp=E,180nm,18.1s						
XAN				LR	LR		
	comp=Z,190nm,16.1s						
ENH	**Enshi**	**28.41**	**270**	*e*P	P	09 47 24.8	+1.0
ENH				*ep*P	pP	09 47 25.6	-8.3
SEY	**Seymchan**	**28.65**	**9**	P	P	09 47 27.1	+1.6
	comp=Z,1.2nm,0.4s,baz=225,slow=20,SNR=7.3						
ULN	**Ulaanbaatar**	**29.52**	**307**	*e*P	P	09 47 35.6	+2.0
	comp=Z,16nm,2.0s						
SONA1	**Songino Array**	**29.95**	**307**	*e*P	**P**	**09 47 38.0**	**+0.6**
SONM	**Songino Array**	**29.95**	**307**	P	P	09 47 39.2	+1.8
	comp=Z,1.2nm,0.6s,baz=113,slow=10,SNR=6.9						
LZH	**Lanzhou**	**31.63**	**284**	*e*P	**P**	**09 47 52.0**	**-0.4**
LZH				pP	pP	09 48 00.8	-1.7
LZH				sP	sP	09 48 04.3	-2.4
LZH				*e*PP	**PnPn**	**09 48 56.5**	**-0.1**
LZH				pmax	pmax		
	comp=Z,22nm,1.0s						
LZH				pmax	pmax		
	comp=Z,64nm,5.4s						
LZH				LR	LR		
	comp=N,350nm,13.2s						
LZH				LR	LR		
	comp=E,380nm,13.5s						
LZH				LR	LR		
	comp=Z,450nm,17.0s						
TLY	**Talaya**	**32.60**	**313**	LR	LR	10 01 06.2	
	comp=Z,39nm,20.0s,baz=112,slow=36						
CD2	**Chengdu**	**32.91**	**274**	P	**P**	**09 48 02.3**	**-1.3**
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
GTA	**Gaotai**	**34.34**	**290**	*e*P	P	09 48 17.0	+1.0
GTA				pP	pP	09 48 21.8	-4.3
GTA				sP	sP	09 48 24.0	-6.3
GTA				pmax	pmax		
	comp=Z,5.0nm,0.9s						
KMI	**Kunming**	**35.87**	**265**	P	P	09 48 30.8	+1.4
KMI				pmax	pmax		
	comp=Z,13nm,0.9s						
KMI				pmax	pmax		
	comp=Z,100nm,4.7s						
CM31	**Chiang Mai Arr**	**42.16**	**259**	*e*P	P	09 49 16.8	-5.0
CMAR	**Chiang Mai Arr**	**42.16**	**259**	P	P	09 49 22.8	+0.9
	comp=Z,1.8nm,0.6s,baz=42,slow=8.1,SNR=5.6						
WMQ	**Urumqi**	**42.85**	**299**	P	P	09 49 30.0	+2.7
WMQ				pP	pP	09 49 36.3	-1.3
WMQ				sP	sP	09 49 39.0	-2.8
WMQ				S	**S**	**09 55 52.3**	**+2.9**
WMQ				SS	**SS**	**09 58 56.3**	**-4.8**
WMQ				pmax	pmax		
	comp=Z,6.0nm,0.8s						
WMQ				pmax	pmax		
	comp=Z,42nm,3.6s						
WMQ				LR	LR		
	comp=N,29nm,23.4s						
WMQ				LR	LR		
	comp=E,130nm,39.6s						
WMQ				LR	LR		
	comp=Z,17nm,23.4s						
ZAA0	**Zalesovo Array**	**44.20**	**314**	*e*P	P	09 49 39.0	+1.1
ZALV	**Zalesovo Beam**	**44.20**	**314**	P	**P**	**09 49 38.9**	**+1.0**
	comp=Z,1.3nm,0.4s,baz=89,slow=6.5,SNR=5.7						
CHGN	**Chignik**	**44.69**	**43**	*e*P	P	09 49 43.9	+2.2
KSM	**Kuching**	**45.01**	**229**	*e*P	**P**	**09 49 44.9**	**+0.1**
	comp=Z,14nm,1.2s						
MK01	**Makanchi Array**	**46.23**	**304**	*e*P	P	09 49 55.5	+1.3
MK31	**Makanchi Array**	**46.24**	**304**	*e*P	**P**	**09 49 55.2**	**+1.0**
MKAR	**Makanchi Array**	**46.24**	**304**	P	P	09 49 55.6	+1.4
	comp=Z,1.9nm,0.7s,baz=97,slow=5.6,SNR=7.4						
MKAR				LR	LR	10 09 20.9	
	comp=Z,28nm,18.3s,baz=84,slow=36						
MKAR	**Makanchi Array**	**46.24**	**304**	*e*P	P	09 49 55.3	+1.1
KURK	**Kurchatov**	**48.16**	**310**	*e*P	**P**	**09 50 10.0**	**+1.0**
	comp=Z,8.3nm,0.8s						
IPM	**Ipoh**	**49.10**	**242**	*e*P	**P**	**09 50 16.5**	**-0.3**
	comp=Z,7.0nm,0.8s						
IL1	**Eielson Array**	**50.66**	**31**	*e*P	**P**	**09 50 28.5**	**+0.5**
ILAR	**Eielson Array**	**50.66**	**31**	P	**P**	**09 50 28.3**	**+0.3**
	comp=Z,1.2nm,0.9s,baz=264,slow=7.0,SNR=9.2						
TKM2	**Tokmak 2**	**51.67**	**300**	*e*P	P	09 50 38.3	+2.1
	comp=Z,16nm,1.4s						
AAK	**Ala-Archa**	**52.53**	**300**	*e*P	**P**	**09 50 43.4**	**+0.9**
	comp=Z,3.7nm,1.1s						
BVAR	**Borovoye Array**	**52.85**	**314**	P	**P**	**09 50 44.7**	**+0.2**
	comp=Z,0.4nm,0.4s,baz=83,slow=12,SNR=4.4						
ZRNK	**Zerenda**	**53.69**	**314**	*e*P	P	09 50 51.9	+1.3
	comp=Z,8.6nm,1.4s						
WRAB	**Tennant Creek**	**55.16**	**190**	*e*P	**P**	**09 51 01.5**	**-0.1**
	comp=Z,49nm,1.9s						
WB2	**Warramunga Arr**	**55.16**	**190**	*e*P	**P**	**09 51 01.6**	**0.0**
	comp=Z,8.2nm,0.9s						
WRA	**Warramunga Arr**	**55.17**	**190**	P	**P**	**09 51 01.3**	**-0.4**
	comp=Z,4.8nm,0.7s,baz=8.1,slow=7.5,SNR=20						
KKAR	**Karatay Array**	**55.20**	**302**	*e*P	P	09 51 03.0	+1.2
FITZ	**Fitzroy Crossi**	**55.22**	**200**	*e*P	P	09 51 02.5	+0.5
	comp=Z,24nm,1.7s						
ARU	**Arti**	**58.71**	**320**	*e*P	**P**	**09 51 26.8**	**+0.5**
	comp=Z,7.7nm,1.1s						
AS01	**Alice Springs**	**58.88**	**190**	*e*P	**P**	**09 51 27.5**	**-0.4**
ASAR	**Alice Springs**	**58.89**	**190**	P	**P**	**09 51 28.1**	**+0.1**
	comp=Z,2.6nm,0.7s,baz=13,slow=8.7,SNR=20						
ABKAR	**Akbulak array**	**60.19**	**311**	*e*P	**P**	**09 51 37.5**	**+0.7**
YKA	**Yellowknife Ar**	**65.04**	**30**	P	**P**	**09 52 08.6**	**-0.2**
	comp=Z,0.9nm,1.0s,baz=297,slow=6.4,SNR=5.0						
ARCES	**ARCESS Array B**	**66.37**	**340**	LR	LR	10 24 44.3	
	comp=Z,22nm,18.4s,baz=72,slow=39						
FIA1	**FINESS Array S**	**71.21**	**333**	*e*P	**P**	**09 52 48.5**	**+0.9**
FINES	**FINESS Array B**	**71.21**	**333**	P	**P**	**09 52 48.1**	**+0.5**
	comp=Z,2.5nm,0.9s,baz=7.1,slow=7.7,SNR=5.9						
KBZ	**Khabaz**	**73.16**	**312**	P	P	09 53 00.5	+1.0
	comp=Z,1.9nm,0.7s,baz=147,slow=2.6,SNR=5.4						
KIV	**Kislovodsk**	**73.17**	**312**	*e*P	P	09 53 01.4	+1.7
	comp=Z,6.9nm,0.6s						
CMB	**Columbia Colle**	**74.14**	**55**	*e*P	P	09 53 09.2	+3.8
	comp=Z,6.1nm,1.2s						
NV01	**Mina Array Sit**	**75.31**	**53**	*e*P	P	09 53 13.7	+1.2
NVAR	**Mina Array Bea**	**75.31**	**53**	P	P	09 53 14.1	+1.6
	comp=Z,2.0nm,0.8s,baz=295,slow=6.3,SNR=12						
FCC	**Fort Churchill**	**75.35**	**27**	*e*P	P	09 53 13.6	+1.6
	comp=Z,8.4nm,1.3s						
HFS	**Hagfors**	**76.48**	**336**	P	**P**	**09 53 18.8**	**+0.4**
	comp=Z,1.0nm,0.5s,baz=60,slow=3.6,SNR=7.9						
NB2	**NORSAR Subarra**	**76.57**	**338**	P	**P**	**09 53 19.4**	**+0.4**
	comp=Z,0.8nm,0.6s,baz=39,slow=5.9						
NOA	**NORSAR Array B**	**76.57**	**338**	P	**P**	**09 53 19.7**	**+0.8**
	comp=Z,1.8nm,0.8s,baz=39,slow=5.7,SNR=4.2						
NOA				LR	LR	10 30 15.8	
	comp=Z,15nm,20.6s,baz=290,slow=38						
AKASG	**Malin Array Be**	**76.67**	**323**	P	**P**	**09 53 20.3**	**+0.6**
	comp=Z,0.9nm,0.4s,baz=47,slow=6.2,SNR=9.5						
AKASG				LR	LR	10 29 19.7	
	comp=Z,33nm,19.0s,baz=320,slow=37						
KIEV	**Kiev**	**76.68**	**323**	*e*P	**P**	**09 53 19.6**	**-0.1**
	comp=Z,4.0nm,1.0s						
R11A	**Troy Canyon, C**	**77.13**	**52**	*e*P	P	09 53 24.3	+1.5
	comp=Z,2.8nm,1.0s						
PDAR	**Pinedale Array**	**78.30**	**46**	P	**P**	**09 53 29.8**	**+0.5**
	comp=Z,0.2nm,0.5s,baz=270,slow=2.7,SNR=2.9						
LCMT	**Little Creek M**	**79.42**	**52**	*e*P	P	09 53 37.8	+2.4
	comp=Z,2.9nm,0.8s						
KNB	**Kanab**	**79.69**	**52**	*e*P	P	09 53 39.1	+2.2
	comp=Z,5.2nm,1.0s						
SRU	**San Rafael Swe**	**79.91**	**49**	*e*P	P	09 53 39.8	+1.7
	comp=Z,4.2nm,0.8s						
BRTR	**Keskin Array B**	**81.12**	**313**	P	P	09 53 46.1	+1.7
	comp=Z,2.6nm,1.1s,baz=97,slow=3.5,SNR=7.9						
PV10	**Paradox Valley**	**81.28**	**49**	*e*P	P	09 53 47.5	+2.0
Y14A	**Wickenburg**	**81.38**	**55**	*e*P	P	09 53 47.6	+1.7
	comp=Z,20nm,1.4s						
PV01	**Paradox Valley**	**81.72**	**49**	*e*P	P	09 53 49.0	+1.2
CLL	**Collm**	**83.50**	**331**	*e*P	P	09 53 58.0	+1.5
VRAC	**Vranov**	**83.52**	**328**	P	P	09 53 58.2	+1.6
	comp=Z,1.2nm,0.4s,baz=137,slow=5.7,SNR=3.5						
SDCO	**Great Sand Dun**	**83.85**	**48**	*e*P	P	09 54 00.4	+1.5
	comp=Z,2.5nm,1.1s						
T25A	**Trinidad**	**84.90**	**48**	*e*P	P	09 54 06.5	+2.3
	comp=Z,3.8nm,1.0s						
KHC	**Kasperske Hory**	**84.94**	**329**	*e*P	P	09 54 05.2	+1.3
KHC				*ep*P	sP	09 54 14.9	-4.1
KHC	**Kasperske Hory**	**84.94**	**329**	*e*P	P	09 54 05.3	+1.4
	comp=Z,3.2nm,1.5s						
ANMO	**Albuquerque**	**85.04**	**50**	*e*P	P	09 54 07.7	+2.8
	comp=Z,2.6nm,1.2s						
GERES	**GERESS Array B**	**85.11**	**329**	P	**P**	**09 54 05.4**	**+0.6**
	comp=Z,0.3nm,0.4s,baz=33,slow=5.6,SNR=4.7						
GEA0	**GERESS Array S**	**85.11**	**329**	*e*P	**P**	**09 54 05.3**	**+0.4**
TXAR	**Lajitas Array**	**90.46**	**53**	P	**P**	**09 54 29.7**	**-1.2**
	comp=Z,0.1nm,0.7s,baz=305,slow=3.2,SNR=2.4						
TORD	**Torodi Ar. Bea**	**119.64**	**315**	PKP	**PKPdf**	**10 00 19.5**	**+0.2**
	comp=Z,0.4nm,0.8s,baz=48,slow=4.5,SNR=3.2						
LPAZ	**La Paz**	**146.66**	**64**	PKPbc	**PKPab**	**10 01 12.5**	**-0.4**
	comp=Z,1.1nm,0.7s,baz=318,slow=6.0,SNR=4.4						
LPAZ	**La Paz**	**146.66**	**64**	*e*PKPdf	**PKPab**	**10 01 12.1**	**-0.8**

MOS ***22*** *09:45:43.5±2.6, 46°.74N×152°.86E, h55km, mb4.1/4, Error ellipse: s-maj=20.7km s-min=8.1km az=66.7*
JMA ***22*** *09:45:43.4±0.5, 46°.64N×152°.97E, h30km, M4.1*
SKHL ***22*** *09:45:46.1±1.0, 46°.72N×152°.63E, h79km±4km, mb4.6/3*
KRSC ***22*** *09:45:48.8±1.3, 46°.71N×155°.37E, h6km±5km, ML4.4*
IDC ***22*** *09:45:48.5±3.1, 46°.77N×152°.73E, h79km±26km, mb3.4/9, mb1 3.5/11, mb1mx3.2/57, mbtmp3.7/11, Error ellipse: s-maj=33.7km s-min=17.8km az=104.0*
ISC 22 09:45:43.0±1.0, 46°.5N±0°.1×153°.0E±0°.1, h40km, n60, σ2°.69/61, mb3.8/8, 3D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUR	**Kuril'sk**	**3.78**	**252**	*d i*PN	**Pn**	**09 46 41.8**	**+3.1**
KUR				*i* S	**Sn**	**09 47 24.0**	**+2.1**
KUR				pmax	pmax		
	comp=Z,38nm,0.3s						
KUR				pmax	pmax		
	comp=E,14nm,0.4s						
KUR				pmax	pmax		
	comp=N,15nm,0.3s						
KUR				smax	smax		
	comp=E,50nm,0.2s						
KUR				smax	smax		
	comp=N,92nm,0.3s						
KUR	**Kuril'sk**	**3.78**	**252**	*e*P	**Pn**	**09 46 40.7**	**+2.0**
KUR				AMB	AMB	09 46 43.2	
	comp=N,20nm,0.3s						
KUR				AMB	AMB	09 46 43.2	
	comp=N,10.0nm,0.3s						
KUR				AMB	AMB	09 46 43.2	
	comp=N,40nm,0.3s						
KUR				*i* S	**Sn**	**09 47 21.2**	**-0.7**
KUR				A	A	09 47 34.3	
	comp=N,90nm,0.3s						
KUR				A	A	09 47 34.3	
	comp=N,90nm,0.2s						
SKR	**Severo-Kuril's**	**4.66**	**26**	P	**Pn**	**09 46 53.8**	**+3.1**
SKR				S	**Sn**	**09 47 42.3**	**-1.1**
SKR	**Severo-Kuril's**	**4.66**	**26**	*e*PN	Pn	09 46 43.3	-7.4
SKR	**Severo-Kuril's**	**4.66**	**26**	*e*P	**Pn**	**09 46 53.3**	**+2.6**
SKR				*e*S	**Sn**	**09 47 43.3**	**-0.1**
SKR				A	A	09 47 44.1	
	comp=N,60nm,0.2s						
SHO	**Shikotan**	**5.08**	**241**	‖ *i*PN	**Pn**	**09 46 57.6**	**+1.1**
SHO	**Shikotan**	**5.08**	**241**	‖ *i*P	**Pn**	**09 46 57.8**	**+1.3**
SHO				*i* S	**Sn**	**09 47 52.5**	**-1.4**
SHO				A	A	09 47 57.2	
	comp=N,50nm,0.3s						
SHO				A	A	09 47 57.2	
	comp=N,70nm,0.3s						
PAU	**Pauzhetka**	**5.55**	**26**	S	**Sn**	**09 48 04.3**	**-1.2**
PAU	**Pauzhetka**	**5.55**	**26**	*e*P	**Pn**	**09 47 05.4**	**+2.4**
PAU				AMB	AMB	09 47 06.6	
	comp=N,80nm,1.0s						
PAU				*e*S	**Sn**	**09 48 05.5**	**0.0**
PAU				A	A	09 48 10.3	
	comp=N,250nm,0.8s						
YUK	**Yuzh-Kuril'sk**	**5.59**	**246**	*e*P	**Pn**	**09 47 03.0**	**-0.6**
YUK				AMB	AMB	09 47 03.3	
	comp=N,60nm,0.4s						
YUK				*e*S	**Sn**	**09 48 04.8**	**-1.7**
YUK				A	A	09 48 14.1	
	comp=N,150nm,0.8s						
NEM2	**Nemuro 2**	**6.02**	**241**	P	**Pn**	**09 47 10.7**	**+1.3**
NEM2				*e*S	**Sn**	**09 48 15.3**	**-1.6**
JRA	**Rausu**	**6.11**	**248**	P	**Pn**	**09 47 14.7**	**+4.1**
JNK	**Nakash**	**6.53**	**246**	P	**Pn**	**09 47 19.3**	**+2.8**
ASAK	**Asacha**	**6.69**	**27**	P	**Pn**	**09 47 22.9**	**+4.3**
JAK	**Akkeshi**	**6.86**	**242**	P	**Pn**	**09 47 22.0**	**+1.1**
JAK				*e*S	**Sn**	**09 48 34.4**	**-3.2**
RUS	**Russkaya**	**6.93**	**29**	P	**Pn**	**09 47 22.3**	**+0.5**
RUS				S	**Sn**	**09 48 34.1**	**-5.2**
RUS	**Russkaya**	**6.93**	**29**	PN	**Pn**	**09 47 22.3**	**+0.5**
RUS	**Russkaya**	**6.93**	**29**	*e*P	**Pn**	**09 47 22.3**	**+0.5**
YSS	**Yuzh-Sakhalins**	**7.02**	**277**	*e*P	**Pn**	**09 47 23.7**	**+0.5**
JMP	**Maruseppu**	**7.22**	**253**	P	**Pn**	**09 47 30.6**	**+4.6**
PETK	**Petropavlovsk-**	**7.26**	**23**	P	**Pn**	**09 47 29.1**	**+2.6**
	comp=N,0.3nm,0.3s,baz=207,slow=11,SNR=4.4						
JAR	**Ashorobuto**	**7.28**	**247**	P	**Pn**	**09 47 29.1**	**+2.4**
JAR				*e*S	**Sn**	**09 48 46.7**	**-1.3**
JOB	**Onbets**	**7.44**	**244**	*e*S	**Sn**	**09 48 49.0**	**-2.9**
JKK2	**Kamakawa 2**	**7.68**	**253**	P	**Pn**	**09 47 36.4**	**+4.1**
UGLR	**Uglovaya**	**7.68**	**27**	P	**Pn**	**09 47 35.0**	**+2.7**
JKA	**Kamikawa-asahi**	**7.69**	**255**	*e*P	**Pn**	**09 47 36.7**	**+4.4**
ASAJ	**Asahikawa**	**7.69**	**255**	P	**Pn**	**09 47 36.7**	**+4.3**
	comp=N,0.5nm,0.3s,baz=93,slow=18,SNR=3.6						
AVH	**Avacha**	**7.70**	**27**	P	**Pn**	**09 47 36.5**	**+3.9**
AVH	**Avacha**	**7.70**	**27**	PN	**Pn**	**09 47 36.5**	**+3.9**
AVH	**Avacha**	**7.70**	**27**	*e*P	**Pn**	**09 47 36.5**	**+3.9**
KRER	**Koryakskii**	**7.74**	**27**	P	**Pn**	**09 47 36.6**	**+3.4**
SDLR	**Sedlovina**	**7.76**	**27**	P	**Pn**	**09 47 35.1**	**+1.7**
SDLR	**Sedlovina**	**7.76**	**27**	PN	**Pn**	**09 47 35.1**	**+1.7**
GNL	**Ganaly**	**7.85**	**22**	P	**Pn**	**09 47 39.1**	**+4.4**
GNL	**Ganaly**	**7.85**	**22**	PN	**Pn**	**09 47 39.1**	**+4.4**
JCH	**Churui**	**7.89**	**244**	*e*S	**Sn**	**09 49 00.1**	**-2.9**
TYV	**Tymovskoe**	**8.07**	**306**	*e*P	**Pn**	**09 47 37.8**	**+0.2**
MYR	**Moyori**	**8.12**	**242**	*e*S	**Sn**	**09 49 04.9**	**-3.7**
JNBK	**Urakawa-nobuka**	**8.45**	**243**	*e*S	**Sn**	**09 49 10.9**	**-5.8**
MKZ	**Mys Kozlova**	**9.78**	**32**	P	**Pn**	**09 48 01.0**	**+0.1**
MKZ	**Mys Kozlova**	**9.78**	**32**	PN	**Pn**	**09 48 01.0**	**+0.1**
MKZ	**Mys Kozlova**	**9.78**	**32**	*e*P	**Pn**	**09 48 01.0**	**+0.1**
BKI	**Bering**	**11.94**	**39**	S	Sn	09 50 28.4	-14
EKMR	**Ekimchan**	**14.45**	**304**	*e*P	**Pn**	**09 49 04.5**	**-0.2**
KSRS	**Korea Array**	**20.63**	**253**	P	Pn	09 50 22.3	+1.0
	comp=N,0.5nm,0.5s,baz=63,slow=8.8,SNR=4.2						
H11N2	**WAKE ISLAND Hy**	**29.08**	**152**	T	T	10 22 43.9	
	baz=340,slow=75,SNR=141						
H11N1	**WAKE ISLAND Hy**	**29.09**	**152**	T	T	10 23 02.1	
	baz=340,slow=75,SNR=124						
H11N3	**WAKE ISLAND Hy**	**29.09**	**152**	T	T	10 23 05.2	
	baz=340,slow=75,SNR=75						
H11S1	**WAKE ISLAND Hy**	**30.16**	**153**	T	T	10 24 27.4	
	baz=340,slow=76,SNR=82						
H11S3	**WAKE ISLAND Hy**	**30.17**	**153**	T	T	10 24 20.9	
	baz=340,slow=76,SNR=85						
H11S2	**WAKE ISLAND Hy**	**30.18**	**153**	T	T	10 24 19.8	
	baz=340,slow=76,SNR=86						
MKAR	**Makanchi Array**	**46.94**	**297**	P	**P**	**09 54 07.6**	**-1.9**
	comp=N,0.2nm,0.3s,baz=69,slow=8.7,SNR=2.1						
FINES	**FINESS Array B**	**64.19**	**335**	P	**P**	**09 56 12.6**	**-0.4**
	comp=N,0.8nm,0.4s,baz=33,slow=7.6,SNR=12						
WRA	**Warramunga Arr**	**68.27**	**199**	P	**P**	**09 56 41.1**	**+1.5**
	comp=N,0.5nm,1.0s,baz=22,slow=7.3,SNR=3.1						
NOA	**NORSAR Array B**	**68.40**	**341**	P	**P**	**09 56 40.1**	**0.0**
	comp=N,0.9nm,0.6s

YER	**Yerkesik**	**1.21**	**68**	P		**Pn**	**09 52 17.8**	**+2.2**
YER				S		**Sn**	**09 52 35.9**	**+4.0**
YER	**Yerkesik**	**1.21**	**68**	P		**Pn**	**09 52 17.8**	**+2.2**
YER				S		**Sn**	**09 52 35.9**	**+4.0**
AYDN	**Tasoluk**	**1.25**	**39**	P		**Pg**	**09 52 18.2**	**+1.3**
AYDN				S		**Sn**	**09 52 37.2**	**+4.2**
AYDN	**Tasoluk**	**1.25**	**39**	*i* P		**Pg**	**09 52 18.2**	**+1.3**
AYDN				*i* S		**Sn**	**09 52 37.2**	**+4.2**
TURN	**Turunc**	**1.40**	**82**	*i* P		**Pn**	**09 52 15.6**	**-2.4**
TURN				*i* S		**Sb**	**09 52 32.6**	**-3.9**
ZKR	**Zakros**	**1.66**	**199**	P		**Pb**	**09 52 23.3**	**-0.1**
ZKR				S		**Sg**	**09 52 45.0**	**-1.3**
ZKR	**Zakros**	**1.66**	**199**	P		**Pb**	**09 52 23.3**	**-0.1**
ZKR				S		**Sg**	**09 52 45.0**	**-1.3**
ZKR	**Zakros**	**1.66**	**199**	P		**Pb**	**09 52 23.6**	**+0.2**
ZKR				S		**Sg**	**09 52 45.4**	**-0.9**
ZKR				AML		AML	09 52 46.6	
	comp=E,388μm,0.4s							
ZKR				AML		AML	09 52 49.2	
	comp=N,224μm,0.7s							
NPS	**Neapolis**	**1.76**	**216**	P		**Pn**	**09 52 24.1**	**+1.0**
NPS				S		**Sn**	**09 52 46.5**	**+1.1**
NPS	**Neapolis**	**1.76**	**216**	P		**Pn**	**09 52 24.1**	**+1.0**
NPS				S		**Sn**	**09 52 46.5**	**+1.1**
NPS	**Neapolis**	**1.76**	**216**	P		**Pn**	**09 52 23.9**	**+0.8**
NPS				S		**Sn**	**09 52 46.5**	**+1.1**
NPS				AML		AML	09 52 48.4	
	comp=N,554μm,0.2s							
NPS				AML		AML	09 52 49.2	
	comp=E,528μm,0.2s							
LAST	**Lasithi**	**1.91**	**217**	P		**Pn**	**09 52 25.8**	**+0.6**
LAST				S		**Sn**	**09 52 50.1**	**+1.0**
LAST	**Lasithi**	**1.91**	**217**	P		**Pn**	**09 52 25.8**	**+0.6**
LAST				S		**Sn**	**09 52 49.8**	**+0.7**
LAST	**Lasithi**	**1.91**	**217**	P		**Pn**	**09 52 25.6**	**+0.4**
DNZL	**Cakiroluk**	**2.00**	**59**	P		**Pn**	**09 52 26.4**	**-0.1**
DNZL				S		**Sb**	**09 52 52.2**	**-1.8**
DNZL	**Cakiroluk**	**2.00**	**59**	*i* P		**Pn**	**09 52 26.4**	**-0.1**
DNZL				*i* S		**Sb**	**09 52 52.2**	**-1.8**
IDI	**Anoyia**	**2.14**	**230**	P		**Pn**	**09 52 28.7**	**+0.3**
IDI				S		**Sn**	**09 52 55.1**	**+0.2**
IDI	**Anoyia**	**2.14**	**230**	P		**Pn**	**09 52 28.7**	**+0.3**
IDI				S		**Sn**	**09 52 55.1**	**+0.2**
IDI	**Anoyia**	**2.14**	**230**	P		**Pn**	**09 52 28.6**	**+0.3**
IDI				S		**Sn**	**09 52 54.9**	**0.0**
IDI				AML		AML	09 52 56.0	
	comp=E,342μm,0.1s							
IDI				AML		AML	09 52 56.4	
	comp=N,258μm,0.2s							
GOLH	**Golhisar**	**2.21**	**75**	P		**Pn**	**09 52 29.0**	**-0.5**
GOLH				S		**Sn**	**09 52 55.9**	**-0.9**
GOLH	**Golhisar**	**2.21**	**75**	*i* P		**Pn**	**09 52 28.9**	**-0.5**
GOLH				*i* S		**Sn**	**09 52 55.9**	**-0.9**
AKAS	**Kas**	**2.24**	**101**	P		**Pn**	**09 52 28.4**	**-1.5**
AKAS				S		**Sn**	**09 52 54.8**	**-2.8**
AKAS	**Kas**	**2.24**	**101**	*i* P		**Pn**	**09 52 28.4**	**-1.5**
AKAS				*i* S		**Sn**	**09 52 54.8**	**-2.8**
VAM	**Vamos**	**2.52**	**240**	P		**Pn**	**09 52 34.0**	**+0.4**
VAM				S		**Sn**	**09 53 05.0**	**+0.7**
VAM	**Vamos**	**2.52**	**240**	P		**Pn**	**09 52 34.0**	**+0.4**
VAM				S		**Sn**	**09 53 05.0**	**+0.7**
IMMV	**Iera Moni Meta**	**2.65**	**243**	P		**Pn**	**09 52 36.3**	**+0.9**
IMMV				S		**Sn**	**09 53 07.8**	**+0.4**
IMMV	**Iera Moni Meta**	**2.65**	**243**	P		**Pn**	**09 52 36.3**	**+0.9**
IMMV				S		**Sn**	**09 53 07.0**	**-0.4**
IMMV	**Iera Moni Meta**	**2.65**	**243**	P		**Pn**	**09 52 36.3**	**+0.9**
IMMV				S		**Sn**	**09 53 07.0**	**-0.4**
IMMV				AML		AML	09 53 13.7	
	comp=E,434μm,0.4s							
IMMV				AML		AML	09 53 13.7	
	comp=N,394μm,0.3s							
KORT	**Korkueli**	**2.80**	**83**	P		**Pn**	**09 52 36.3**	**-1.2**
KORT				S		**Sn**	**09 53 09.9**	**-1.4**
KORT	**Korkueli**	**2.80**	**83**	*i* P		**Pn**	**09 52 36.3**	**-1.2**
KORT				*i* S		**Sn**	**09 53 09.8**	**-1.4**
GVD	**Gavdhos**	**2.93**	**232**	P		**Pn**	**09 52 39.8**	**+0.7**
GVD				S		**Sn**	**09 53 14.0**	**-0.3**
GVD	**Gavdhos**	**2.93**	**232**	P		**Pn**	**09 52 39.8**	**+0.7**
GVD				S		**Sn**	**09 53 14.0**	**-0.3**
ANKY	**Antikythira Is**	**3.01**	**255**	P		**Pn**	**09 52 40.9**	**+0.7**
ANKY				S		**Sn**	**09 53 16.0**	**-0.2**
ANKY	**Antikythira Is**	**3.01**	**255**	P		**Pn**	**09 52 40.9**	**+0.7**
ANKY				S		**Sn**	**09 53 16.0**	**-0.2**

NIED ***22*** *09:53:00, 34.°90N×142.°90E, h5km, Mw3.5 Best double couple: M₀1.98000×10¹⁴ NP1:φ≈1.00000°, δ≈24.00000°, λ-123.00000°. NP2:φ≈217.00000°, δ70.00000°, λ-76.00000°.*
IDC ***22*** *09:53:01.2±1.4, 34.°77N×142.°88E, h0km, mb3.8/3, mb1 4.0/6, mb1mx3.5/61, mbtmp3.9/6, ML3.8/3, Error ellipse: s-maj=34.6km s-min=26.8km az=121.0*
ISCJB ***22*** *09:53:02.3±0.8, 35.°01N±0.°04×142.°96E±0.°06, h33km, mb3.8/3, Error ellipse: s-maj=7.1km s-min=5.5km az=26.4*
JMA ***22*** *09:53:02.8±0.4, 34.°88N×142.°94E, h56km, M3.6*
ISC 22 09:53:04.2±1.0, 34.°95N±0.°06×142.°96E±0.°07, h35km, n23, σ1°74/35, mb3.8/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**1.66**	**260**	P	**Pn**	**09 53 29.4**	**-0.9**
BSO1				*e*S	**Sn**	**09 53 49.4**	**-0.7**
BSO2	**Boso 2**	**1.82**	**264**	*e*S	**Sn**	**09 53 54.4**	**-0.2**
CHOJ	**Chosi**	**1.87**	**294**	P	**Pn**	**09 53 34.0**	**+0.3**
CHOJ				*e*S	**Sn**	**09 53 56.3**	**+0.2**
BSO3	**Boso 3**	**2.02**	**266**	P	**Pn**	**09 53 35.4**	**-0.1**
BSO3				*e*S	**Sn**	**09 53 59.3**	**-0.1**
BSO4	**Boso 4**	**2.15**	**272**	P	**Pn**	**09 53 37.8**	**+0.3**
JOD2	**Odawara 2**	**3.19**	**277**	P	**Pn**	**09 53 50.8**	**-1.1**
JOD2				*e*S	**Sn**	**09 54 25.8**	**-2.9**
JHJ2	**Mitsune**	**3.19**	**236**	P	**Pn**	**09 53 50.5**	**-1.4**
JAG	**Ashikaga**	**3.21**	**298**	P	**Pn**	**09 53 51.9**	**-0.2**
JHJ	**Hachijo jima 2**	**3.21**	**236**	Pn	**Pn**	**09 53 50.7**	**-1.4**
	31nm,0.3s,baz=76,slow=23,SNR=14						
JHJ				Sn	**Sn**	**09 54 24.1**	**-5.1**
	39nm,0.3s,baz=254,slow=22,SNR=9.6						
JFT	**Otama**	**3.32**	**321**	P	**Pn**	**09 53 53.9**	**+0.2**
JFT				*e*S	**Sn**	**09 54 30.6**	**-1.4**
JRY	**Ryogami san**	**3.48**	**289**	P	**Pn**	**09 53 56.2**	**+0.4**
JYN	**Shimob**	**3.66**	**280**	P	**Pn**	**09 53 57.4**	**-0.9**
JYN				*e*S	**Sn**	**09 54 38.9**	**-1.3**
MJAR	**Matsushiro Arr**	**4.18**	**294**	Pn	**Pn**	**09 54 05.8**	**+0.3**
	2.8nm,0.3s,baz=107,slow=8.8,SNR=23						
MJAR				Sn	**Sn**	**09 54 52.4**	**-0.7**
	0.7nm,0.3s,baz=52,slow=46,SNR=3.0						
MAT	**Matsushiro**	**4.18**	**294**	P	**Pn**	**09 54 06.2**	**+0.7**
MAT				S	**Sn**	**09 54 54.2**	**+1.1**
MAT	**Matsushiro**	**4.18**	**294**	P	**Pn**	**09 54 06.2**	**+0.7**
JMK	**Ichinoseki**	**4.23**	**341**	P	**Pn**	**09 54 05.7**	**-0.4**
JMK				*e*S	**Sn**	**09 54 52.4**	**-1.8**
JYK	**Kaneyama**	**4.47**	**333**	P	**Pn**	**09 54 09.3**	**-0.2**
JOM	**Ohasama**	**4.70**	**344**	P	**Pn**	**09 54 12.4**	**-0.2**
JOM				*e*S	**Sn**	**09 55 04.1**	**-1.8**
JCJ	**Chichijima**	**7.86**	**185**	Pn	**Pn**	**09 54 52.9**	**-3.2**
	4.0nm,0.3s,baz=4.0,slow=23,SNR=16						
JCJ				Sn	Sn	09 56 14.0	-10
	baz=288,slow=19						
ASAJ	**Asahikawa**	**9.15**	**358**	Pn	**Pn**	**09 55 13.0**	**-0.8**
	0.7nm,0.3s,baz=201,slow=14,SNR=5.9						
ASAJ				Sn	**Sn**	**09 56 51.3**	**-4.1**
	0.1nm,0.3s,baz=143,slow=20,SNR=1.9						
WRA	**Warramunga Arr**	**55.20**	**190**	P	**P**	**10 02 34.5**	**+0.9**
	1.4nm,0.7s,baz=11,slow=7.5,SNR=11						
ASAR	**Alice Springs**	**58.93**	**190**	P	**P**	**10 03 01.1**	**+1.2**
	0.6nm,0.8s,baz=358,slow=5.8,SNR=7.8						
NVAR	**Mina Array Bea**	**75.22**	**53**	P	**P**	**10 04 47.0**	**+3.3**
	0.7nm,0.8s,baz=292,slow=6.7,SNR=5.1						

ISCJB ***22*** *09:57:22.8±0.6, 34.°68N±0.°06×142.°81E±0.°08, h10km, mb4.1/8, Error ellipse: s-maj=9.7km s-min=8.1km az=26.2*
IDC ***22*** *09:57:23.4±0.9, 34.°80N×142.°81E, h0km, mb3.8/6, mb1 3.9/9, mb1mx3.6/58, mbtmp3.8/9, ML3.6/3, MS2.9/1, Ms1 2.9/1, ms1mx2.2/35, Error ellipse: s-maj=27.3km s-min=18.3km az=107.0*
NEIC ***22*** *09:57:24.5±0.7, 34.°82N×142.°85E, h10km, mb4.8/2, Error ellipse: s-maj=16.1km s-min=11.3km az=91.0*
ISC 22 09:57:23.2±0.7, 34.°75N±0.°06×142.°86E±0.°08, h10km, n23, σ3°21/22, mb4.0/8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHJ2	**Mitsune**	**3.02**	**238**	*e*Pn	**Pn**	**09 58 11.9**	**+0.9**
JHJ2				*e*Pg	**Pg**	**09 58 20.8**	**-0.2**
JHJ	**Hachijo jima 2**	**3.04**	**238**	Pn	**Pn**	**09 58 12.2**	**+1.0**
	18nm,0.3s,baz=66,slow=22,SNR=8.6						
JHJ				Sn	**Sn**	**09 58 45.3**	**-2.4**
	54nm,0.3s,baz=92,slow=22,SNR=7.7						
MJAR	**Matsushiro Arr**	**4.19**	**297**	Pn	**Pn**	**09 58 27.4**	**+0.3**
	0.9nm,0.3s,baz=106,slow=9.1,SNR=13						
MAJO	**Matsushiro**	**4.19**	**297**	*e*Pn	**Pn**	**09 58 28.4**	**+1.2**
MAT	**Matsushiro**	**4.19**	**297**	P	**Pn**	**09 58 28.3**	**+1.1**
MAT				*e*S	**Sn**	**09 59 12.3**	**-3.9**
CBIJ	**Chichi jima**	**7.66**	**185**	Pn	**Pn**	**09 59 15.2**	**+0.4**
CBIJ				Sn	**Sn**	**10 00 35.7**	**-6.0**
JCJ	**Chichijima**	**7.66**	**185**	Pn	**Pn**	**09 59 15.2**	**+0.4**
	3.3nm,0.3s,baz=288,slow=23,SNR=5.9						
JCJ				Sn	**Sn**	**10 00 35.7**	**-6.0**
	3.0nm,0.3s,baz=287,slow=19,SNR=4.3						
ASAJ	**Asahikawa**	**9.35**	**359**	Pn	**Pn**	**09 59 35.3**	**-2.7**
	1.2nm,0.3s,baz=226,slow=12,SNR=10						
ASAJ				Sn	**Sn**	**10 01 15.5**	**-7.7**
	0.3nm,0.3s,baz=12,slow=20,SNR=2.1						
KSRS	**Korea Array**	**12.38**	**287**	LR	LR	10 05 11.6	
	comp=Z,55nm,19.0s,baz=99,slow=38						
H11N2	**WAKE ISLAND Hy**	**25.99**	**119**	T	T	10 30 27.9	
	baz=312						
H11N1	**WAKE ISLAND Hy**	**26.00**	**119**	T	T	10 30 30.3	
	baz=312						
H11N3	**WAKE ISLAND Hy**	**26.01**	**119**	T	T	10 30 30.7	
	baz=312						
H11S1	**WAKE ISLAND Hy**	**26.65**	**121**	T	T	10 31 16.5	
	baz=308						
H11S3	**WAKE ISLAND Hy**	**26.65**	**121**	T	T	10 31 19.2	
	baz=308						
H11S2	**WAKE ISLAND Hy**	**26.67**	**121**	T	T	10 31 20.7	
	baz=308						
SEY	**Seymchan**	**28.82**	**9**	P	**P**	**10 03 22.5**	**+1.2**
	1.0nm,0.6s,baz=101,slow=23,SNR=4.7						
MKAR	**Makanchi Array**	**46.35**	**304**	P	**P**	**10 05 50.4**	**+1.0**
	0.2nm,0.3s,baz=95,slow=7.7,SNR=3.2						
KURK	**Kurchatov**	**48.28**	**310**	*e*P	**P**	**10 06 07.5**	**+3.2**
	6.0nm,0.6s						
WRAB	**Tennant Creek**	**54.98**	**190**	*e*P	**P**	**10 06 56.5**	**+1.8**
	16nm,1.6s						
WRA	**Warramunga Arr**	**54.99**	**190**	P	**P**	**10 06 57.0**	**+2.2**
	1.4nm,0.8s,baz=8.8,slow=7.5,SNR=10						
INK	**Inuvik**	**55.89**	**27**	P	**P**	**10 07 01.8**	**+1.2**
	3.2nm,1.2s,baz=320,slow=4.8,SNR=5.7						
ASAR	**Alice Springs**	**58.72**	**190**	P	**P**	**10 07 23.5**	**+2.3**
	0.5nm,0.8s,baz=1.8,slow=6.1,SNR=5.5						
NVAR	**Mina Array Bea**	**75.41**	**53**	P	**P**	**10 09 09.7**	**+2.2**
	0.8nm,0.6s,baz=294,slow=6.6,SNR=7.8						

ISCJB ***22*** *10:02:49.4±0.5, 39.°11N±0.°02×29.°11E±0.°03, h1km±6km, Error ellipse: s-maj=4.0km s-min=3.9km az=19.2*
CSEM ***22*** *10:02:49.7±0.1, 39.°11N×29.°11E, h2km, ML2.9, Error ellipse: s-maj=2.1km s-min=1.6km az=97.0*
ISK ***22*** *10:02:49.6, 39.°12N×29.°14E, h6km, MD3.0*
DDA ***22*** *10:02:49.2, 39.°10N×29.°10E, h7km, Ml2.9*
ISC 22 10:02:49.8±1.0, 39.°11N±0.°02×29.°09E±0.°02, h6km±11km, n63, σ0°49/78, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.30**	**257**	P	**Pg**	**10 02 55.9**	**+0.2**
DEMI				S	**Sg**	**10 03 00.3**	**+0.6**
DEMI	**Demirci**	**0.30**	**257**	*i* P	**Pg**	**10 02 55.9**	**+0.2**
DEMI				*i* S	**Sg**	**10 03 00.3**	**+0.6**
GDZ	**Gediz**	**0.30**	**94**	P	**Pg**	**10 02 55.4**	**-0.3**
GDZ				S	**Sg**	**10 02 59.9**	**+0.1**
GDZ	**Gediz**	**0.30**	**94**	*i* P	**Pg**	**10 02 55.4**	**-0.3**
GDZ				*i* S	**Sg**	**10 02 59.9**	**+0.1**
TVSB	**Tavsanli**	**0.44**	**40**	*e*PG	**Pg**	**10 02 58.3**	**-0.1**
TVSB				*e*SG	**Sg**	**10 03 04.0**	**-0.2**
TVSB	**Tavsanli**	**0.44**	**40**	*e*Pg	**Pg**	**10 02 58.3**	**-0.1**
TVSB				*e*Sg	**Sg**	**10 03 04.0**	**-0.2**
KULA	**Kula-Manisa**	**0.68**	**210**	*e*PG	**Pg**	**10 03 02.8**	**-0.2**
KULA	**Kula-Manisa**	**0.68**	**210**	*e*Pg	**Pg**	**10 03 02.8**	**-0.2**
DURS	**Dursunbey**	**0.69**	**316**	P	**Pg**	**10 03 02.8**	**-0.2**
DURS				S	**Sb**	**10 03 13.5**	**-0.5**
DURS	**Dursunbey**	**0.69**	**316**	*i* P	**Pg**	**10 03 02.8**	**-0.2**
DURS				*i* S	**Sb**	**10 03 13.5**	**-0.5**
MANT	**Manisa**	**0.75**	**214**	P	**Pg**	**10 03 03.7**	**-0.5**
MANT				S	**Sg**	**10 03 13.5**	**-0.4**
MANT	**Manisa**	**0.75**	**214**	*i* P	**Pg**	**10 03 03.7**	**-0.5**
MANT				*i* S	**Sg**	**10 03 13.5**	**-0.4**
KHAL	**Karahalli**	**0.80**	**157**	P	**Pg**	**10 03 05.1**	**-0.1**
KHAL				S	**Sg**	**10 03 15.4**	**-0.2**
KHAL	**Karahalli**	**0.80**	**157**	*i* P	**Pg**	**10 03 05.1**	**-0.1**
KHAL				*i* S	**Sg**	**10 03 15.3**	**-0.2**
KHL	**Karahalli**	**0.85**	**157**	*e*PG	**Pg**	**10 03 06.2**	**0.0**
KHL				*e*SG	**Sb**	**10 03 18.6**	**-0.2**
KHL	**Karahalli**	**0.85**	**157**	*e*Pg	**Pg**	**10 03 06.2**	**0.0**
KHL				*e*Sg	**Sb**	**10 03 18.6**	**-0.2**
ORLT	**Orhaneli**	**0.95**	**351**	*e*PG	**Pg**	**10 03 07.7**	**-0.3**
ORLT	**Orhaneli**	**0.95**	**351**	*e*Pg	**Pg**	**10 03 07.7**	**-0.3**
AKS	**Akhisar**	**1.02**	**257**	*e*PG	**Pn**	**10 03 10.5**	**-0.2**
AKS	**Akhisar**	**1.02**	**257**	*e*Pg	**Pn**	**10 03 10.5**	**-0.2**
BALB	**Balikesir**	**1.08**	**300**	*e*PN	**Pn**	**10 03 11.5**	**+0.1**
BALB	**Balikesir**	**1.08**	**300**	*e*Pn	**Pn**	**10 03 11.5**	**+0.1**
IGD	**Bursa**	**1.16**	**4**	*i* P	**Pg**	**10 03 09.8**	**-2.1**
IGD				*i* S	**Sb**	**10 03 27.5**	**+0.1**
CAVI	**Cavuskoy**	**1.23**	**28**	*e*PN	**Pb**	**10 03 13.7**	**+0.2**
CAVI	**Cavuskoy**	**1.23**	**28**	*e*Pn	**Pb**	**10 03 13.7**	**+0.2**
IZI	**Iznik**	**1.26**	**13**	*e*PN	**Pg**	**10 03 14.0**	**0.0**
IZI	**Iznik**	**1.26**	**13**	*e*Pn	**Pg**	**10 03 14.0**	**0.0**
MDNY	**Mudanya-Bursa**	**1.27**	**353**	*e*PN	**Pn**	**10 03 14.3**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.27**	**353**	*e*Pn	**Pn**	**10 03 14.3**	**+0.3**
KCTX	**Karacabey (Bur**	**1.29**	**334**	*e*PN	**Pg**	**10 03 14.2**	**-0.3**
KCTX	**Karacabey (Bur**	**1.29**	**334**	*e*Pn	**Pg**	**10 03 14.2**	**-0.3**
BALY	**Balya**	**1.30**	**299**	P	**Pb**	**10 03 14.7**	**0.0**
BALY	**Balya**	**1.30**	**299**	*i* P	**Pb**	**10 03 14.7**	**0.0**
ADVT	**Abdulvahap**	**1.41**	**20**	*e*PN	**Pn**	**10 03 16.4**	**+0.4**
ADVT	**Abdulvahap**	**1.41**	**20**	*e*Pn	**Pn**	**10 03 16.4**	**+0.4**
DNZL	**Cakiroluk**	**1.42**	**182**	P	**Pn**	**10 03 16.6**	**+0.3**
DNZL	**Cakiroluk**	**1.42**	**182**	*i* P	**Pn**	**10 03 16.6**	**+0.3**
GONE	**Gonen-Balikesi**	**1.44**	**311**	*e*PN	**Pb**	**10 03 16.9**	**0.0**
GONE	**Gonen-Balikesi**	**1.44**	**311**	*e*Pn	**Pb**	**10 03 16.9**	**0.0**
ARMT	**Armutlu**	**1.47**	**353**	*e*PN	**Pb**	**10 03 17.4**	**0.0**
ARMT	**Armutlu**	**1.47**	**353**	*e*Pn	**Pb**	**10 03 17.5**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**1.50**	**219**	*e*PN	**Pg**	**10 03 18.2**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**1.50**	**219**	*e*Pn	**Pg**	**10 03 18.2**	**-0.3**
GPA	**Golpazari**	**1.50**	**38**	*e*PN	**Pn**	**10 03 17.5**	**+0.2**
GPA	**Golpazari**	**1.50**	**38**	*e*Pn	**Pn**	**10 03 17.5**	**+0.2**
EDC	**Edincik**	**1.56**	**323**	*e*PN	**Pn**	**10 03 18.0**	**0.0**
EDC	**Edincik**	**1.56**	**323**	*e*Pn	**Pn**	**10 03 18.0**	**0.0**
GULT	**Gulveren**	**1.72**	**39**	*e*PN	**Pn**	**10 03 20.5**	**+0.2**
GULT	**Gulveren**	**1.72**	**39**	*e*Pn	**Pn**	**10 03 20.5**	**+0.2**
HRT	**Hereke**	**1.77**	**14**	*e*PN	**Pn**	**10 03 20.8**	**-0.1**
HRT	**Hereke**	**1.77**	**14**	*e*Pn	**Pn**	**10 03 20.8**	**-0.1**
MRMT	**Marmara Adasi**	**1.89**	**323**	*e*PN	**Pn**	**10 03 23.4**	**+0.8**
MRMT	**Marmara Adasi**	**1.89**	**323**	*e*Pn	**Pn**	**10 03 23.4**	**+0.8**
SVRH	**Sivrihisar-ESK**	**1.92**	**79**	*e*PN	**Pn**	**10 03 23.4**	**+0.4**
SVRH	**Sivrihisar-ESK**	**1.92**	**79**	*e*Pn	**Pn**	**10 03 23.4**	**+0.4**
ISK	**Istanbul-Kandi**	**1.95**	**359**	*e*PN	**Pn**	**10 03 24.4**	**+1.0**
ISK	**Istanbul-Kandi**	**1.95**	**359**	*e*Pn	**Pn**	**10 03 24.4**	**+1.0**
SILT	**Sile**	**2.08**	**11**	*e*PN	**Pn**	**10 03 25.9**	**+0.8**
SILT	**Sile**	**2.08**	**11**	*e*Pn	**Pn**	**10 03 26.0**	**+0.8**
KLYT	**Kilyos**	**2.14**	**359**	*e*PN	**Pn**	**10 03 27.1**	**+1.1**
KLYT	**Kilyos**	**2.14**	**359**	*e*Pn	**Pn**	**10 03 27.1**	**+1.1**
CTKS	**Kestanelik-??a**	**2.17**	**348**	*e*PN	**Pn**	**10 03 27.4**	**+1.0**
CTKS	**Kestanelik-??a**	**2.17**	**348**	*e*Pn	**Pn**	**10 03 27.4**	**+1.0**

SJA ***22*** *10:09:11.2±0.8, 24.°47S×68.°90W, h428km±35km, ML3.0, MW2.7*
ISCJB ***22*** *10:09:19.6±0.6, 24.°42S±0.°05×69.°68W±0.°05, h80km, Error ellipse: s-maj=7.8km s-min=5.9km az=41.5*
GUC ***22*** *10:09:19.6±0.6, 24.°34S×69.°52W, h34km±20km, ML3.3*
ISC 22 10:09:20.4±1.2, 24.°39S±0.°04×69.°73W±0.°05, h80km, n10, σ2°35/17, 1C-3D, Northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB14	**IPOC Station P**	**0.66**	**249**	⇓*i* P	**Pn**	**10 09 35.4**	**-0.6**
PB14				*i* S	**Sn**	**10 09 47.7**	**+0.1**
PB14				IAML		10 09 49.9	
	comp=E,1μm,0.2s						
PB10	**IPOC Station P**	**1.15**	**319**	⇓*i* P	**Pn**	**10 09 41.7**	**+0.3**
PB10				*i* S	**Sn**	**10 09 57.8**	**+0.8**
PB10				IAML		10 10 03.5	
	comp=N,2μm,0.3s						
PB06	**IPOC Station P**	**1.68**	**5**	⇓*i* P	**Pn**	**10 09 47.6**	**-0.7**
PB06				*i* S	**Sn**	**10 10 09.4**	**0.0**
PB06				IAML		10 10 13.8	
	comp=E,455nm,0.2s						
FSA	**Cafayete**	**3.81**	**118**	*e*Pg	**Pn**	**10 10 15.1**	**-1.7**
FSA				IAML		10 10 19.0	
	comp=Z,1.9nm,0.5s						
FSA				*e*S	**Sn**	**10 11 01.2**	**+0.7**
HJA	**Humahuaca**	**4.13**	**74**	⇓*e*P	**Pn**	**10 10 22.1**	**+0.6**
AZAP	**Zapla**	**4.26**	**89**	*e*P	**Pn**	**10 10 21.7**	**-1.4**
YJA	**Yavi**	**4.46**	**61**	*e*P	**Pn**	**10 10 26.2**	**+0.2**
YJA				IAML		10 10 27.5	
	comp=Z,5.0nm,0.5s						
VCA	**Vinchina**	**4.54**	**163**	*e*P	**Pn**	**10 10 26.0**	**-0.8**
VCA				IAML		10 10 29.6	
	comp=Z,50nm,0.5s						
VCA				*e*S	**Sn**	**10 11 22.9**	**+4.5**
AGUA	**GUANDACOL**	**5.20**	**168**	*e*P	**Pn**	**10 10 35.9**	**+0.2**
AGUA				*e*S	**Sn**	**10 11 39.1**	**+4.7**
RTLL	**Cerro Villicun**	**7.00**	**171**	*e*P	**Pn**	**10 10 56.5**	**-3.8**
RTLL				*e*S	**Sn**	**10 12 15.0**	**-3.5**

ISCJB ***22*** *10:10:18.4±0.8, 43.°42N±0.°03×127.°04W±0.°08, h14km, mb2.8/2, MS3.1/2, Error ellipse: s-maj=8.2km s-min=4.0km az=163.5*
IDC ***22*** *10:10:19.4±1.9, 43.°48N×126.°64W, h0km, mb3.0/3, mb1 3.6/9, mb1mx3.4/43, mbtmp3.3/9, ML3.6/6, MS3.1/3, Ms1 3.2/3, ms1mx2.6/13, Error ellipse: s-maj=30.9km s-min=13.0km az=59.0*
NEIC ***22*** *10:10:20.1±0.7, 43.°38N×126.°97W, h10km, ML3.3, Error ellipse: s-maj=8.9km s-min=4.2km az=70.0*
ISC 22 10:10:18.9±1.4, 43.°37N±0.°05×127.°2W±0.°1, h14km, n70, σ1°02/73, Off coast of Oregon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I03D	**Drain, OR**	**2.81**	**82**	P	**Pn**	**10 11 01.6**	**-1.7**
	baz=264,SNR=40						
DBO	**Dodson Butte**	**2.89**	**94**	*e*Pn	**Pn**	**10 11 03.0**	**-1.5**
L02D	**Cave Junction,**	**2.90**	**114**	P	**Pn**	**10 11 03.9**	**-0.8**
	baz=298,SNR=25						
L02D				S	**Sn**	**10 11 37.9**	**-1.4**
	baz=298						
COR	**Corvallis**	**3.05**	**65**	*e*Pn	**Pn**	**10 11 05.8**	**-0.8**
HUMO	**Hull Mountain**	**3.19**	**102**	*e*Pn	**Pn**	**10 11 07.2**	**-1.5**
HUMO				*e*Sn	**Sn**	**10 11 46.3**	**-0.2**
G03D	**McMinnville, O**	**3.36**	**55**	P	**Pn**	**10 11 09.9**	**-1.0**
	baz=237,SNR=226						
I04A	**Tendick Farm,**	**3.49**	**81**	P	**Pn**	**10 11 12.5**	**-0.3**
	baz=264,SNR=42						
F03A	**Seaside**	**3.64**	**44**	*e*Pn	**Pn**	**10 11 14.2**	**-0.5**
F03A				*e*Sn	**Sn**	**10 11 57.3**	**-0.1**
YBH	**Yreka Blue Hor**	**3.69**	**115**	Pn	**Pn**	**10 11 15.5**	**0.0**
	1.8nm,0.3s,baz=300,slow=10,SNR=43						
YBH				Sn	**Sn**	**10 11 59.3**	**+0.5**
	1.0nm,0.3s,baz=136,slow=17,SNR=8.1						
YBH	**Yreka Blue Hor**	**3.69**	**115**	*e*Pn	**Pn**	**10 11 15.9**	**+0.4**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
25nm,0.5s							
RNI2	**Rionero Sannit**	**0.17**	**328**	Pg	Pg	10 28 19.8	+0.2
RNI2				Sg	Sb	10 28 23.2	-0.7
25nm,0.5s							
CERA	**Filignano**	**0.19**	**282**	Pg	Pg	10 28 20.2	+0.3
CERA				Sg	Sb	10 28 23.8	-0.8
26nm,0.3s							
CERA	**Filignano**	**0.19**	**282**	Pg	Pg	10 28 20.2	+0.3
CERA				Sg	Sb	10 28 23.8	-0.8
26nm,0.3s							

*ISCJB **22** 10:32:58.7±0.4,39°.12N±0°.02×28°.99E±0°.02,h7km±3km, Error ellipse: s-maj=3.1km s-min=2.8km az=20.6*
*DDA **22** 10:32:58.4,39°.11N×28°.99E,h7km,Ml3.5*
*ISK **22** 10:32:58.7,39°.14N×29°.03E,h7km,ML3.3*
*CSEM **22** 10:32:58.8±0.1,39°.11N×29°.01E,h2km,ML3.5,Error ellipse: s-maj=2.7km s-min=2.2km az=94.0*
*THE **22** 10:33:00.1,39°.09N×28°.93E,h2km±1km,ML3.1/6,Error ellipse: s-maj=1.5km s-min=0.7km az=82.0*
ISC 22 10:32:59.1±1.0,39°.12N±0°.02×29°.01E±0°.02,h6km±8km, n120,σ0s78/152,12C-8D,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**251**	P	**Pg**	**10 33 03.7**	**-0.1**
DEMI				S	**Sg**	**10 33 07.0**	**0.0**
DEMI	**Demirci**	**0.24**	**251**	*i* P	**Pg**	**10 33 03.7**	**-0.1**
DEMI				*i* S	**Sg**	**10 33 07.0**	**0.0**
GDZ	**Gediz**	**0.37**	**95**	P	**Pg**	**10 33 06.3**	**0.0**
GDZ				S	**Sg**	**10 33 11.7**	**+0.5**
GDZ	**Gediz**	**0.37**	**95**	*i* P	**Pg**	**10 33 06.3**	**0.0**
GDZ				*i* S	**Sg**	**10 33 11.7**	**+0.5**
TVSB	**Tavsanli**	**0.48**	**47**	*e*PG	**Pg**	**10 33 08.1**	**-0.3**
TVSB				*e*SG	**Sg**	**10 33 14.8**	**0.0**
TVSB	**Tavsanli**	**0.48**	**47**	*e*Pg	**Pg**	**10 33 08.1**	**-0.3**
TVSB				*e*Sg	**Sg**	**10 33 14.8**	**0.0**
DURS	**Dursunbey**	**0.63**	**320**	P	**Pg**	**10 33 11.1**	**-0.2**
DURS				S	**Sg**	**10 33 19.3**	**-0.2**
DURS	**Dursunbey**	**0.63**	**320**	*i* P	**Pg**	**10 33 11.1**	**-0.2**
DURS				*i* S	**Sg**	**10 33 19.3**	**-0.2**
KULA	**Kula-Manisa**	**0.66**	**204**	*e*PG	**Pg**	**10 33 11.5**	**-0.3**
KULA	**Kula-Manisa**	**0.66**	**204**	P	**Pg**	**10 33 11.5**	**-0.3**
KULA				S	**Sg**	**10 33 20.9**	**+0.5**
KULA	**Kula-Manisa**	**0.66**	**204**	P	**Pg**	**10 33 11.5**	**-0.3**
KULA				S	**Sg**	**10 33 20.9**	**+0.5**
MANT	**Manisa**	**0.72**	**209**	P	**Pg**	**10 33 12.7**	**-0.2**
MANT				S	**Sg**	**10 33 21.5**	**-0.7**
MANT	**Manisa**	**0.72**	**209**	*i* P	**Pg**	**10 33 12.7**	**-0.2**
MANT				*i* S	**Sg**	**10 33 21.5**	**-0.7**
KHAL	**Karahalli**	**0.84**	**153**	P	**Pg**	**10 33 15.1**	**-0.1**
KHAL	**Karahalli**	**0.84**	**153**	*i* P	**Pg**	**10 33 15.1**	**-0.1**
ORLT	**Orhaneli**	**0.93**	**355**	*e*PG	**Pg**	**10 33 16.5**	**-0.4**
ORLT	**Orhaneli**	**0.93**	**355**	*e*Pg	**Pg**	**10 33 16.5**	**-0.4**
AKHS	**Akhisar**	**0.96**	**256**	P	**Pg**	**10 33 17.4**	**-0.1**
AKHS	**Akhisar**	**0.96**	**256**	*i* P	**Pg**	**10 33 17.4**	**-0.1**
BALB	**Balikesir**	**1.02**	**301**	*e*PG	**Pb**	**10 33 18.8**	**-0.2**
BALB				*e*SG	**Sb**	**10 33 33.0**	**+0.4**
BALB	**Balikesir**	**1.02**	**301**	*e*Pg	**Pb**	**10 33 18.8**	**-0.2**
IGD	**Bursa**	**1.15**	**7**	*i* P	**Pg**	**10 33 20.0**	**-1.2**
BALY	**Balya**	**1.24**	**300**	P	**Pg**	**10 33 22.6**	**-0.3**
BALY	**Balya**	**1.24**	**300**	*i* P	**Pg**	**10 33 22.6**	**-0.3**
KCTX	**Karacabey (Bur**	**1.25**	**337**	*e*PN	**Pg**	**10 33 22.7**	**-0.3**
KCTX	**Karacabey (Bur**	**1.25**	**337**	*e*Pn	**Pg**	**10 33 22.7**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.25**	**356**	*e*PN	**Pn**	**10 33 22.6**	**-0.5**
MDNY	**Mudanya-Bursa**	**1.25**	**356**	*e*Pn	**Pn**	**10 33 22.6**	**-0.5**
CAVI	**Cavuskoy**	**1.26**	**31**	*e*PN	**Pn**	**10 33 23.0**	**-0.2**
CAVI	**Cavuskoy**	**1.26**	**31**	*e*Pn	**Pn**	**10 33 23.0**	**-0.2**
GEMT	**Gemlik**	**1.32**	**6**	*e*PN	**Pn**	**10 33 23.9**	**-0.1**
GEMT	**Gemlik**	**1.32**	**6**	*e*Pn	**Pn**	**10 33 23.9**	**-0.1**
DENT	**Denizli**	**1.36**	**179**	*e*PN	**Pg**	**10 33 25.1**	**-0.1**
DENT	**Denizli**	**1.36**	**179**	*e*Pn	**Pg**	**10 33 25.1**	**-0.1**
DNZL	**Cakiroluk**	**1.43**	**179**	P	**Pn**	**10 33 24.6**	**-1.0**
DNZL	**Cakiroluk**	**1.43**	**179**	*i* P	**Pn**	**10 33 24.6**	**-1.0**
ADVT	**Abdulvahap**	**1.43**	**23**	*e*PN	**Pn**	**10 33 25.3**	**-0.2**
ADVT	**Abdulvahap**	**1.43**	**23**	*e*Pn	**Pn**	**10 33 25.3**	**-0.2**
ARMT	**Armutlu**	**1.45**	**356**	*e*PN	**Pn**	**10 33 25.7**	**-0.1**
ARMT	**Armutlu**	**1.45**	**356**	*e*Pn	**Pn**	**10 33 25.7**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**1.46**	**217**	*e*PN	**Pb**	**10 33 26.8**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**1.46**	**217**	*e*Pn	**Pb**	**10 33 26.8**	**+0.1**
ESKT	**Eskisehir**	**1.49**	**74**	*i* P	**Pn**	**10 33 26.5**	**+0.1**
SEYT	**Eskypehyr**	**1.49**	**74**	P	**Pn**	**10 33 26.5**	**+0.1**
EDC	**Edincik**	**1.51**	**325**	*e*PN	**Pn**	**10 33 26.8**	**+0.2**
EDC	**Edincik**	**1.51**	**325**	*e*Pn	**Pn**	**10 33 26.8**	**+0.2**
KNL	**Bat¨-kesir**	**1.62**	**316**	*i* P	**Pn**	**10 33 27.9**	**-0.2**
GULT	**Gulveren**	**1.75**	**41**	*e*PN	**Pn**	**10 33 30.0**	**-0.1**
GULT	**Gulveren**	**1.75**	**41**	*e*Pn	**Pn**	**10 33 30.0**	**-0.1**
ISP	**Isparta**	**1.76**	**137**	*e*PN	**Pn**	**10 33 30.3**	**+0.2**
ISP	**Isparta**	**1.76**	**137**	P	**Pn**	**10 33 29.5**	**-0.6**
ISP				S	**Sb**	**10 33 54.0**	**-0.1**
ISP	**Isparta**	**1.76**	**137**	P	**Pn**	**10 33 29.5**	**-0.6**
ISP	**Isparta**	**1.76**	**137**	*e*Pn	**Pn**	**10 33 30.3**	**+0.2**
ISP				S	**Sb**	**10 33 54.0**	**-0.1**
HRT	**Hereke**	**1.77**	**16**	*e*PN	**Pn**	**10 33 29.6**	**-0.7**
HRT	**Hereke**	**1.77**	**16**	*e*Pn	**Pn**	**10 33 29.6**	**-0.7**
KRBG	**Karabiga-Canak**	**1.83**	**315**	*e*PN	**Pn**	**10 33 31.8**	**+0.8**
KRBG	**Karabiga-Canak**	**1.83**	**315**	*e*Pn	**Pn**	**10 33 31.8**	**+0.8**
SPNC	**Sapanca-Adapaz**	**1.86**	**32**	*e*PN	**Pn**	**10 33 31.8**	**+0.4**
SPNC	**Sapanca-Adapaz**	**1.86**	**32**	*e*Pn	**Pn**	**10 33 31.8**	**+0.4**
ISK	**Istanbul-Kandi**	**1.94**	**1**	*e*PN	**Pn**	**10 33 33.0**	**+0.4**
ISK	**Istanbul-Kandi**	**1.94**	**1**	P	**Pn**	**10 33 32.4**	**-0.2**
ISK				S	**Sb**	**10 33 59.0**	**-0.4**
ISK	**Istanbul-Kandi**	**1.94**	**1**	P	**Pn**	**10 33 32.4**	**-0.2**
ISK	**Istanbul-Kandi**	**1.94**	**1**	*e*Pn	**Pn**	**10 33 33.0**	**+0.4**
ISK				S	**Sb**	**10 33 59.0**	**-0.4**
DGB	**¯zmir**	**1.98**	**238**	*i* P	**Pg**	**10 33 37.0**	**+0.1**
SVRH	**Sivrihisar-ESK**	**1.98**	**80**	*e*PN	**Pn**	**10 33 33.6**	**+0.4**
SVRH	**Sivrihisar-ESK**	**1.98**	**80**	*e*Pn	**Pn**	**10 33 33.6**	**+0.4**
YER	**Yerkesik**	**2.06**	**196**	*e*PN	**Pn**	**10 33 34.8**	**+0.6**
YER	**Yerkesik**	**2.06**	**196**	P	**Pn**	**10 33 33.9**	**-0.3**
YER				S	**Sn**	**10 33 59.5**	**-0.8**
YER	**Yerkesik**	**2.06**	**196**	P	**Pn**	**10 33 33.9**	**-0.3**
YER	**Yerkesik**	**2.06**	**196**	*e*Pn	**Pn**	**10 33 34.8**	**+0.6**
BGKT	**Bogazkoy**	**2.07**	**355**	*e*PN	**Pn**	**10 33 34.5**	**+0.3**
BGKT	**Bogazkoy**	**2.07**	**355**	*e*Pn	**Pn**	**10 33 34.5**	**+0.3**
SILT	**Sile**	**2.09**	**13**	*e*PN	**Pn**	**10 33 34.8**	**+0.2**
SILT	**Sile**	**2.09**	**13**	*e*Pn	**Pn**	**10 33 34.8**	**+0.2**
RKY	**Sarkoy-Tekirda**	**2.10**	**319**	*e*PN	**Pn**	**10 33 35.1**	**+0.3**
RKY	**Sarkoy-Tekirda**	**2.10**	**319**	*e*Pn	**Pn**	**10 33 35.1**	**+0.3**
PRK	**Paraskevi**	**2.13**	**274**	P	**Pn**	**10 33 34.9**	**-0.2**
PRK				S	**Sn**	**10 34 01.2**	**-0.6**
PRK	**Paraskevi**	**2.13**	**274**	P	**Pn**	**10 33 34.9**	**-0.2**
PRK				S	**Sn**	**10 34 01.2**	**-0.6**
KLYT	**Kilyos**	**2.13**	**1**	*e*PN	**Pn**	**10 33 34.5**	**-0.6**
KLYT	**Kilyos**	**2.13**	**1**	*e*Pn	**Pn**	**10 33 34.5**	**-0.6**
LPK	**Lapseki**	**2.14**	**307**	*e*PN	**Pn**	**10 33 35.7**	**+0.5**
LPK	**Lapseki**	**2.14**	**307**	*e*Pn	**Pn**	**10 33 35.7**	**+0.5**
CTKS	**Kestanelik-??a**	**2.15**	**350**	*e*PN	**Pn**	**10 33 35.7**	**+0.3**
CTKS	**Kestanelik-??a**	**2.15**	**350**	*e*Pn	**Pn**	**10 33 35.7**	**+0.3**
MDUB	**Mudurnu**	**2.16**	**51**	*e*PN	**Pn**	**10 33 35.7**	**0.0**
MDUB	**Mudurnu**	**2.16**	**51**	*e*Pn	**Pn**	**10 33 35.7**	**0.0**
CHOS	**Chios island**	**2.42**	**253**	P	**Pn**	**10 33 39.0**	**-0.2**
CHOS				S	**Sn**	**10 34 08.2**	**-0.9**
CHOS	**Chios island**	**2.42**	**253**	P	**Pn**	**10 33 39.0**	**-0.2**
CHOS				S	**Sn**	**10 34 08.2**	**-0.9**
SIGR	**SIGRI**	**2.45**	**273**	P	**Pn**	**10 33 39.7**	**+0.2**
SIGR				S	**Sn**	**10 34 09.6**	**-0.2**
SIGR	**SIGRI**	**2.45**	**273**	P	**Pn**	**10 33 39.7**	**+0.2**
SIGR				S	**Sn**	**10 34 09.6**	**-0.2**
FETY	**Fethiye**	**2.48**	**179**	P	**Pn**	**10 33 40.5**	**+0.5**
FETY				S	**Sn**	**10 34 10.9**	**+0.3**
FETY	**Fethiye**	**2.48**	**179**	P	**Pn**	**10 33 40.5**	**+0.5**
FETY				S	**Sn**	**10 34 10.9**	**+0.3**
ALN	**Alexandroupoli**	**2.88**	**309**	P	**Pn**	**10 33 45.2**	**-0.3**
ALN				S	**Sn**	**10 34 20.5**	**0.0**
ALN	**Alexandroupoli**	**2.88**	**309**	P	**Pn**	**10 33 45.2**	**-0.3**
ALN				S	**Sn**	**10 34 20.5**	**0.0**
SMTH	**Samothraki Isl**	**3.00**	**298**	P	**Pn**	**10 33 47.4**	**+0.3**
SMTH				S	**Sn**	**10 34 23.3**	**0.0**
SMTH	**Samothraki Isl**	**3.00**	**298**	P	**Pn**	**10 33 47.4**	**+0.3**
SMTH				S	**Sn**	**10 34 23.3**	**0.0**
LIA	**Limnos Island**	**3.06**	**286**	P	**Pn**	**10 33 47.8**	**-0.1**
LIA				S	**Sn**	**10 34 25.1**	**+0.4**
LIA	**Limnos Island**	**3.06**	**286**	P	**Pn**	**10 33 47.8**	**-0.1**
LIA				S	**Sn**	**10 34 25.1**	**+0.4**
EDRB	**Edirne**	**3.23**	**328**	P	**Pn**	**10 33 50.2**	**0.0**
EDRB	**Edirne**	**3.23**	**328**	P	**Pn**	**10 33 50.2**	**0.0**
TIRR	**Tirgusor**	**5.35**	**355**	⇓*i*P	**Pn**	**10 34 19.3**	**-0.1**
TIRR	**Tirgusor**	**5.35**	**355**	⇓*i*P	**Pn**	**10 34 19.3**	**-0.1**
TLCR		**6.06**	**359**	⇑*i*P	**Pn**	**10 34 30.1**	**+0.9**
TLCR		**6.06**	**359**	⇑*i*P	**Pn**	**10 34 30.1**	**+0.9**
CFR	**Carcaliu**	**6.09**	**354**	⇑*i*P	**Pn**	**10 34 29.6**	**+0.1**
CFR	**Carcaliu**	**6.09**	**354**	⇑*i*P	**Pn**	**10 34 29.6**	**+0.1**
MLR	**Muntele Rosu**	**6.76**	**341**	⇓*i*P	**Pn**	**10 34 41.1**	**+2.2**
MLR	**Muntele Rosu**	**6.76**	**341**	⇓*i*P	**Pn**	**10 34 41.1**	**+2.2**
PLOR	**Plostina**	**6.95**	**346**	⇓*i*P	**Pn**	**10 34 43.5**	**+2.1**
PLOR	**Plostina**	**6.95**	**346**	⇓*i*P	**Pn**	**10 34 43.5**	**+2.1**
VRI	**Vrincioaia**	**6.95**	**347**	⇑*i*P	**Pn**	**10 34 44.0**	**+2.6**
VRI	**Vrincioaia**	**6.95**	**347**	⇑*i*P	**Pn**	**10 34 44.0**	**+2.6**
VOIR		**6.96**	**336**	⇑*i*P	**Pn**	**10 34 43.8**	**+2.2**
VOIR		**6.96**	**336**	⇑*i*P	**Pn**	**10 34 43.8**	**+2.2**
ARR	**Arges**	**7.04**	**334**	⇓*i*P	**Pn**	**10 34 45.2**	**+2.6**
ARR	**Arges**	**7.04**	**334**	⇓*i*P	**Pn**	**10 34 45.2**	**+2.6**
MDVR	**Moldovita**	**7.84**	**319**	⇑*i*P	**Pn**	**10 34 55.4**	**+1.7**
MDVR	**Moldovita**	**7.84**	**319**	⇑*i*P	**Pn**	**10 34 55.4**	**+1.7**
BURAR	**Bucovina Array**	**8.93**	**343**	⇑*i*P	**Pn**	**10 35 10.1**	**+1.5**
BURAR	**Bucovina Array**	**8.93**	**343**	⇑*i*P	**Pn**	**10 35 10.1**	**+1.5**

*ISCJB **22** 10:41:10.6±0.6,39°.10N±0°.04×29°.04E±0°.04,h6km±9km, Error ellipse: s-maj=7.2km s-min=4.7km az=149.9*
*DDA **22** 10:41:10.2,39°.09N×29°.04E,h7km,Ml2.7*
*CSEM **22** 10:41:10.9±0.2,39°.12N×29°.01E,h5km,ML2.7,Error ellipse: s-maj=5.3km s-min=4.1km az=111.0*
*ISK **22** 10:41:12.0,39°.21N×29°.05E,h5km,MD2.4*
ISC 22 10:41:10.7±0.9,39°.11N±0°.03×29°.04E±0°.03,h10km±9km, n20,σ0s50/33,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**256**	P	**Pg**	**10 41 16.2**	**+0.1**
DEMI				S	**Sg**	**10 41 19.8**	**+0.2**
DEMI	**Demirci**	**0.26**	**256**	*i* P	**Pg**	**10 41 16.2**	**+0.1**
DEMI				*i* S	**Sg**	**10 41 19.8**	**+0.2**
GDZ	**Gediz**	**0.34**	**93**	P	**Pg**	**10 41 17.6**	**0.0**
GDZ				S	**Sg**	**10 41 22.3**	**+0.1**
GDZ	**Gediz**	**0.34**	**93**	*i* P	**Pg**	**10 41 17.6**	**0.0**
GDZ				*i* S	**Sg**	**10 41 22.3**	**+0.1**
TVSB	**Tavsanli**	**0.47**	**43**	*e*PG	**Pg**	**10 41 19.9**	**-0.1**
TVSB				*e*SG	**Sg**	**10 41 26.4**	**+0.1**
TVSB	**Tavsanli**	**0.47**	**43**	*e*Pg	**Pg**	**10 41 19.9**	**-0.1**
TVSB				*e*Sg	**Sg**	**10 41 26.4**	**+0.1**
MANT	**Manisa**	**0.72**	**212**	P	**Pg**	**10 41 24.5**	**-0.2**
MANT				S	**Sg**	**10 41 33.7**	**-0.4**
MANT	**Manisa**	**0.72**	**212**	*i* P	**Pg**	**10 41 24.5**	**-0.2**
MANT				*i* S	**Sg**	**10 41 33.7**	**-0.4**
KHAL	**Karahalli**	**0.81**	**154**	P	**Pn**	**10 41 28.7**	**+0.3**
KHAL				S	**Sg**	**10 41 37.3**	**+0.2**
KHAL	**Karahalli**	**0.81**	**154**	*i* P	**Pn**	**10 41 28.7**	**+0.3**
KHAL				*i* S	**Sg**	**10 41 37.3**	**+0.2**
IGD	**Bursa**	**1.16**	**6**	*i* P	**Pb**	**10 41 30.5**	**-2.4**
IGD				*i* S	**Sn**	**10 41 49.0**	**0.0**
CAVI	**Cavuskoy**	**1.26**	**29**	*e*PN	**Pg**	**10 41 35.0**	**+0.1**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*PN	**Pg**	**10 41 35.2**	**0.0**
KCTX				*e*SN	**Sn**	**10 41 52.0**	**+0.2**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*Pn	**Pg**	**10 41 35.2**	**0.0**
KCTX				*e*Sn	**Sn**	**10 41 52.0**	**+0.2**
IZI	**Iznik**	**1.27**	**15**	*e*PN	**Pb**	**10 41 34.9**	**+0.1**
IZI	**Iznik**	**1.27**	**15**	*e*Pn	**Pb**	**10 41 34.9**	**+0.1**
ARMT	**Armutlu**	**1.47**	**355**	*e*PN	**Pb**	**10 41 38.3**	**+0.2**
ARMT	**Armutlu**	**1.47**	**355**	*e*Pn	**Pb**	**10 41 38.3**	**+0.2**
GULT	**Gulveren**	**1.75**	**40**	*e*PN	**Pb**	**10 41 42.6**	**-0.3**
GULT	**Gulveren**	**1.75**	**40**	*e*Pn	**Pb**	**10 41 42.6**	**-0.3**

DDA 22 10:47:08.0,39°.10N×29°.11E,h7km,Ml2.7,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.29**	**92**	*i* P	Pg	10 47 14.3	+0.5
GDZ				*i* S	Sg	10 47 18.5	+0.7
MANT	**Manisa**	**0.74**	**215**	*i* P	Pg	10 47 22.6	+0.2
MANT				*i* S	Sg	10 47 32.2	+0.2
KHAL	**Karahalli**	**0.79**	**157**	*i* P	Pb	10 47 23.8	-0.4
KHAL				*i* S	Sb	10 47 34.4	-0.6

*CSEM **22** 10:47:30.5,39°.07N×29°.06E,h7km,ML2.6*
DDA 22 10:47:30.5,39°.07N×29°.06E,h7km,Ml2.6,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**264**	P	Pg	10 47 36.2	+0.4
DEMI				S	Sg	10 47 40.1	+0.8
DEMI	**Demirci**	**0.27**	**264**	*i* P	Pg	10 47 36.2	+0.5
DEMI				*i* S	Sg	10 47 40.1	+0.8
GDZ	**Gediz**	**0.33**	**87**	P	Pg	10 47 37.5	+0.4
GDZ				S	Sg	10 47 42.1	+0.6
GDZ	**Gediz**	**0.33**	**87**	*i* P	Pg	10 47 37.5	+0.5
GDZ				*i* S	Sg	10 47 42.1	+0.6
MANT	**Manisa**	**0.70**	**214**	P	Pg	10 47 44.4	+0.4
MANT				S	Sg	10 47 53.8	+0.7
MANT	**Manisa**	**0.70**	**214**	*i* P	Pg	10 47 44.4	+0.4
MANT				*i* S	Sg	10 47 53.8	+0.7
KHAL	**Karahalli**	**0.78**	**154**	P	Pn	10 47 48.2	+0.2
KHAL				S	Sb	10 47 57.0	-0.3
KHAL	**Karahalli**	**0.78**	**154**	*i* P	Pn	10 47 48.2	+0.1
KHAL				*i* S	Sb	10 47 57.0	-0.3

*IDC **22** 10:52:00.9±0.5,41°.99N×82°.33E,h0km,mb4.4/32, mb1 4.4/40,mb1mx4.4/55,mbtmp4.4/40,ML4.1/8,MS3.6/21, Ms1 3.6/21,ms1mx3.5/46,Error ellipse: s-maj=10.5km s-min=8.9km az=10.0*
*ISCJB **22** 10:52:01.4±0.1,41°.94N±0°.02×82°.31E±0°.02,h13km, mb4.6/113,MS4.0/34,Error ellipse: s-maj=3.1km s-min=2.5km az=31.1*
*BJI **22** 10:52:02.1,41°.95N×82°.28E,h10km,mb4.5/39,mB4.6/27, ML4.6/11,Ms4.5/36,Ms7 4.2/33*
*NNC **22** 10:52:04.6±1.4,42°.06N×82°.19E,h1km±6km,mb5.0, mpv4.7,Error ellipse: s-maj=10.2km s-min=5.6km az=127.0*
*MOS **22** 10:52:04.6±1.0,42°.02N×82°.34E,h34km,mb4.8/44,Error ellipse: s-maj=6.3km s-min=4.3km az=121.5*
*SOME **22** 10:52:06.9,41°.93N×81°.95E,h5km,MS4.4*
*NEIC **22** 10:52:06.6±0.5,42°.01N×82°.32E,h37km±4km,mb4.9/55, Error ellipse: s-maj=4.3km s-min=3.2km az=174.0*
ISC 22 10:52:02.9±0.3,41°.87N±0°.03×82°.21E±0°.02,h13km,n352, σ2s00/422,mb4.7/113,MS4.0/35,49C-38D,Southern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHLS	**Shalkode**	**2.15**	**308**	*e*P	**Pg**	**10 52 44.1**	**-0.1**
2μm,0.5s							
SHLS				*e*S	**Sb**	**10 53 11.3**	**+2.8**
6μm,0.5s							
PDGK	**Podgornoye**	**2.49**	**307**	⇑Pn	**Pn**	**10 52 45.6**	**+2.5**
572nm,0.8s							
PDGK				⇓Lg	Lg	10 53 20.0	
250nm,0.2s							
UZB	**Uzynbulak**	**2.68**	**300**	*e*P	**Pb**	**10 52 52.3**	**+1.5**
386nm,0.4s							
UZB				*e*S	**Sb**	**10 53 25.2**	**+1.5**
2μm,0.6s							
DJR	**Jarkent**	**3.04**	**325**	*e*P	**Pb**	**10 52 58.4**	**+1.6**
1μm,0.4s							
DJR				*e*S	**Sb**	**10 53 35.5**	**+1.7**
765nm,0.3s							
KPKS	**Kokpek**	**3.05**	**303**	*e*P	**Pb**	**10 52 59.1**	**+1.9**
983nm,0.3s							
KPKS				*e*S	**Sb**	**10 53 37.1**	**+2.8**
4μm,0.2s							
SATY	**Saty**	**3.06**	**294**	*e*P	**Pg**	**10 53 00.4**	**-1.1**
917nm,0.4s							
SATY				*e*S	**Sg**	**10 53 39.2**	**-1.8**
2μm,0.3s							
ZHN	**Zhinishke**	**3.08**	**296**	*e*P	**Pb**	**10 52 59.3**	**+1.7**
607nm,0.3s							
ZHN				*e*S	**Sb**	**10 53 37.8**	**+2.7**
4μm,0.3s							
MNBS	**Baschi**	**3.56**	**310**	*e*P	**Pb**	**10 53 05.6**	**-0.2**
385nm,0.3s							
MNBS				*e*S	**Sb**	**10 53 48.2**	**-0.8**
2μm,0.4s							
ARXS	**Arharly**	**3.98**	**308**	*e*P	**Pb**	**10 53 15.1**	**+2.2**
470nm,0.6s							
ARXS				*e*S	**Sb**	**10 54 04.8**	**+3.9**
423nm,0.5s							
KAPS	**Kapalarasan**	**4.00**	**330**	*e*P	**Pb**	**10 53 14.9**	**+1.7**

*TIF **22** 10:20:58.0,42°.70N×41°.91E,h12km±1km*
*CSEM **22** 10:20:57.2±0.6,42°.77N×41°.78E,h2km,ML2.5,Error ellipse: s-maj=12.7km s-min=6.2km az=141.0*
*DDA **22** 10:20:58.5,42°.62N×41°.75E,h7km,Ml3.1*
ISC 22 10:20:56.9±2.3,42°.8N±0°.1×41°.79E±0°.07,h11km±9km,n19, σ0s35/38,Western Caucasus

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHVG	**Ch'k'valeri**	**0.23**	**108**	P	**Pg**	**10 21 02.0**	**+0.3**
CHVG				S	**Sg**	**10 21 04.8**	**-0.2**
CHVG	**Ch'k'valeri**	**0.23**	**108**	P	**Pg**	**10 21 02.0**	**+0.3**
CHVG				S	**Sg**	**10 21 04.8**	**-0.2**
ONI	**Oni**	**1.24**	**99**	P	**Pn**	**10 21 20.4**	**+0.1**
ONI				S	**Sb**	**10 21 36.3**	**-0.1**
ONI	**Oni**	**1.24**	**99**	P	**Pn**	**10 21 20.4**	**+0.1**
ONI				S	**Sb**	**10 21 36.3**	**-0.1**
DBOC	**Borcka**	**1.45**	**184**	P	**Pn**	**10 21 22.9**	**-0.1**
DBOC				S	**Sb**	**10 21 42.3**	**+0.1**
DBOC	**Borcka**	**1.45**	**184**	*i* P	**Pn**	**10 21 22.9**	**-0.1**
DBOC				*i* S	**Sb**	**10 21 42.3**	**+0.1**
EPOS	**Posof**	**1.46**	**151**	P	**Pn**	**10 21 23.8**	**+0.4**
EPOS				S	**Sb**	**10 21 42.8**	**-0.1**
EPOS	**Posof**	**1.46**	**151**	*i* P	**Pn**	**10 21 23.8**	**+0.4**
EPOS				*i* S	**Sb**	**10 21 42.8**	**-0.1**
ARTV	**Artvin**	**1.61**	**176**	P	**Pb**	**10 21 26.4**	**-0.3**
ARTV				S	**Sb**	**10 21 47.4**	**+0.3**
ARTV	**Artvin**	**1.61**	**176**	*i* P	**Pb**	**10 21 26.4**	**-0.3**
ARTV				*i* S	**Sb**	**10 21 47.4**	**+0.3**
DAGI	**Agillar**	**1.71**	**177**	*i* P	**Pb**	**10 21 27.7**	**-0.8**
DAGI				*i* S	**Sb**	**10 21 49.5**	**-0.5**
DBAD	**Bademkaya**	**1.77**	**182**	P	**Pn**	**10 21 28.1**	**+0.6**
DBAD				S	**Sb**	**10 21 51.5**	**-0.2**
DBAD	**Bademkaya**	**1.77**	**182**	*i* P	**Pn**	**10 21 28.1**	**+0.6**
DBAD				*i* S	**Sb**	**10 21 51.5**	**-0.2**
AKH	**Akhalkalaki**	**1.87**	**137**	P	**Pb**	**10 21 31.2**	**0.0**
AKH				S	**Sb**	**10 21 54.8**	**+0.1**
AKH	**Akhalkalaki**	**1.87**	**137**	P	**Pb**	**10 21 31.2**	**0.0**
AKH				S	**Sb**	**10 21 54.8**	**+0.1**
DDEM	**Demirkent**	**1.90**	**181**	P	**Pb**	**10 21 31.2**	**-0.4**
DDEM				S	**Sb**	**10 21 55.5**	**+0.2**
DDEM	**Demirkent**	**1.90**	**181**	*i* P	**Pb**	**10 21 31.2**	**-0.4**
DDEM				*i* S	**Sb**	**10 21 55.5**	**+0.2**
BGD	**Bogdanovka**	**2.04**	**138**	P	**Pb**	**10 21 33.2**	**-0.8**
BGD				S	**Sb**	**10 21 58.8**	**-0.6**
BGD	**Bogdanovka**	**2.04**	**138**	P	**Pb**	**10 21 34.0**	**0.0**
BGD				S	**Sb**	**10 21 59.6**	**+0.2**

*CSEM **22** 10:28:15.5,41°.56N×14°.27E,h13km,MD1.8/4*
ROM 22 10:28:15.5±0.1,41°.56N×14°.27E,h13km±1km,Md1.8/4, Ml1.1/3,Error ellipse: s-maj=0.8km s-min=0.4km az=91.0,Southern Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIDA	**Miranda**	**0.08**	**351**	Pg	Pg	10 28

559nm,0.4s
KAPS eS **Sb** **10 54 03.3 +1.9**
458nm,0.3s
KOTS Kotyrbulak 4.01 292 eP **Pg** **10 53 17.5 -2.1**
792nm,0.5s
KOTS eS **Sb** **10 54 07.0 +5.1**
549nm,0.5s
MDOK Medeo 4.03 290 eP **Pb** **10 53 16.6 +2.8**
234nm,0.5s
MDOK eS **Sb** **10 54 06.7 +4.2**
569nm,1.0s
TNSS Tian-Shan 4.07 289 eP **Pb** **10 53 17.7 +3.0**
516nm,0.8s
TNSS eS **Sb** **10 54 08.3 +4.4**
619nm,0.7s
KNDC Almaty 4.11 291 ⇑Pn **Pn** **10 53 08.4 +3.0**
250nm,0.6s
KNDC ⇓Lg Lg 10 54 10.8
2μm,0.9s
AAA Alma-Ata 4.13 292 eP **Pb** **10 53 18.2 +2.7**
1μm,0.8s
AAA eS **Sb** **10 54 08.5 +3.1**
1μm,0.7s
AAA Alma-Ata 4.13 292 ePN **Pn** **10 53 09.4 +3.6**
AAA eS **Sb** **10 54 08.5 +3.1**
AAA pmax pmax
comp=Z,1μm,1.0s
AAA smax smax
comp=N,1μm,1.4s
TDK Taldyqorghan 4.19 320 eP **Pg** **10 53 20.3 -2.7**
comp=N,686nm,0.5s
TDK eS **Sg** **10 54 14.4 -2.9**
comp=N,1μm,0.5s
IZV Izvestkoviy 4.30 288 eP **Pb** **10 53 22.6 +4.1**
comp=N,540nm,0.6s
IZV eS **Sb** **10 54 16.8 +6.3**
comp=N,1μm,0.6s
CHKK Chushkaly 4.32 299 eP **Pg** **10 53 23.4 -2.3**
comp=N,299nm,0.6s
CHKK eS **Sg** **10 54 18.1 -3.5**
comp=N,628nm,0.3s
MTBS Maitube 4.46 288 eP **Pb** **10 53 23.6 +2.6**
comp=N,356nm,0.4s
MTBS eS **Sb** **10 54 19.7 +4.9**
comp=N,203nm,0.3s
WMQ Urumqi 4.48 62 Pn **Pn** **10 53 14.1 +3.6**
WMQ Sn **Sn** **10 54 05.3 +2.8**
WMQ smax smax
comp=N,530nm,0.4s
WMQ smax smax
comp=N,570nm,0.6s
KUU Kurty 4.77 297 eP **Pg** **10 53 31.4 -2.7**
comp=N,295nm,0.8s
KUU eS **Sb** **10 54 30.8 +7.3**
comp=N,332nm,0.7s
KST Kastek 4.77 286 eP **Pb** **10 53 29.4 +3.0**
comp=N,96nm,0.6s
KST eS **Sb** **10 54 27.0 +3.2**
comp=N,356nm,1.5s
MK01 Makanchi Array 4.90 1 ePn **Pn** **10 53 17.2 +0.9**
MK01 eSn **Sn** **10 54 13.3 +0.4**
MK31 Makanchi Array 4.93 1 Pn **Pn** **10 53 17.5 +0.9**
comp=N,40nm,0.5s,baz=183,slow=12,SNR=786
MK31 ⇓Pg **Pb** **10 53 31.1 +2.2**
comp=N,31nm,0.3s
MK31 ⇓Sn **Sn** **10 54 13.4 0.0**
comp=N,86nm,0.6s
MK31 ⇓Lg Lg 10 54 32.5
comp=N,270nm,0.6s,baz=182,slow=30,SNR=4.3
MK31 Makanchi Array 4.93 1 ePN **Pn** **10 53 17.6 +0.9**
MK31 Makanchi Array 4.93 1 ePn **Pn** **10 53 17.6 +0.9**
MKAR Makanchi Array 4.93 1 Pn **Pn** **10 53 17.3 +0.7**
comp=N,32nm,0.3s,baz=182,slow=14,SNR=294
MKAR Sn **Sn** **10 54 11.9 -1.5**
comp=N,25nm,0.3s,baz=184,slow=18,SNR=4.7
MKAR Lg Lg 10 54 33.3
comp=N,69nm,0.3s,baz=187,slow=31,SNR=5.9
MKAR Makanchi Array 4.93 1 ePN **Pn** **10 53 17.8 +1.2**
MKAR 10 54 11.9
MKAR 10 54 33.3
MKAR Makanchi Array 4.93 1 ePn **Pn** **10 53 17.8 +1.2**
MKAR Sn **Sn** **10 54 11.9 -1.5**
MKAR Lg Lg 10 54 33.3
MAKZ Makanchi 4.94 358 ⇓Pn **Pn** **10 53 17.7 +0.9**
comp=N,82nm,0.5s
MAKZ ⇓Pg **Pb** **10 53 31.6 +2.4**
comp=N,180nm,0.7s
MAKZ ⇑Sn **Sn** **10 54 15.5 +1.7**
comp=N,132nm,0.5s
MAKZ ⇓Lg Lg 10 54 35.1
MAKZ Makanchi 4.94 358 ePN **Pn** **10 53 18.1 +1.3**
MAKZ e 10 54 16.5
MAKZ Makanchi 4.94 358 ePn **Pn** **10 53 18.1 +1.3**
MAKZ eSn **Sn** **10 54 16.5 +2.7**
DGS Degeres 4.95 288 eP **Pg** **10 53 34.8 -2.9**
comp=N,158nm,0.5s
DGS eS **Sg** **10 54 39.1 -2.7**
comp=N,324nm,0.4s
TKM2 Tokmak 2 5.01 284 ⇑Pn **Pn** **10 53 20.8 +2.8**
comp=N,53nm,0.6s
TKM2 ⇑Lg Lg 10 54 43.8
comp=N,652nm,1.1s
TKM2 Tokmak 2 5.01 284 ePN **Pn** **10 53 21.0 +3.1**
TKM2 Tokmak 2 5.01 284 ePn **Pn** **10 53 21.0 +3.1**
KSH Kashi 5.29 246 Pn **Pb** **10 53 31.8 -3.5**
KSH Sn **Sb** **10 54 35.3 -3.5**
KSH smax smax
comp=N,770nm,0.8s
KSH smax smax
comp=N,1μm,1.1s
FRU Bishkek 5.71 282 ePN **Pn** **10 53 29.5 +2.1**
FRU i 10 53 52.0
FRU pmax pmax
comp=Z,860nm,1.8s
AAK Ala-Archa 5.78 280 Pn **Pn** **10 53 31.2 +2.7**
comp=Z,5.7nm,0.3s,baz=92,slow=11,SNR=29
AAK Lg Lg 10 55 06.3
comp=Z,8.0nm,0.3s,baz=261,slow=19,SNR=3.7
AAK Ala-Archa 5.78 280 ⇓Pn **Pn** **10 53 31.6 +3.1**
comp=Z,81nm,1.3s
AAK Lg Lg 10 55 06.7
comp=Z,618nm,1.0s
ZSN Zaisan 5.80 15 eP **Pg** **10 53 51.7 -2.1**
comp=Z,82nm,0.6s
ZSN eS **Sg** **10 55 08.2 -0.6**
comp=Z,416nm,1.1s
EKS2 Erkin-Say 6.31 280 ePN **Pn** **10 53 39.6 +3.9**
EKS2 Erkin-Say 6.31 280 ePn **Pn** **10 53 39.6 +3.9**
MRKS Merke 6.72 280 eP **Pg** **10 54 08.1 -3.4**
comp=Z,73nm,0.6s
MRKS eS **Sg** **10 55 35.2 -3.3**
comp=Z,80nm,0.5s
MNAS Manas 7.24 278 ⇓Pn **Pn** **10 53 51.7 +3.2**
comp=Z,56nm,1.2s
MNAS ⇑Pg Pb 10 54 15.8 +7.3
comp=Z,56nm,1.2s
MNAS ⇑Lg Lg 10 55 55.7
comp=Z,217nm,1.3s
KK31 Karatay Array 8.74 282 ⇓Pn **Pn** **10 54 10.9 +2.0**
comp=Z,20nm,1.0s,baz=83,slow=13,SNR=23
KK31 ⇓Pg Pg 10 54 44.4 -5.6
comp=Z,36nm,0.9s
KK31 Lg Lg 10 56 41.3
comp=Z,34nm,0.7s,baz=96,slow=27,SNR=4.5
KKAR Karatay Array 8.74 282 eP **Pn** **10 54 11.3 +2.4**
KKAR Karatay Array 8.74 282 ePn **Pn** **10 54 11.2 +2.4**
KURBB Kurchatov Arra 9.12 345 Pn **Pn** **10 54 12.6 -1.5**
comp=Z,0.9nm,0.3s,baz=171,slow=12,SNR=62
KURBB Sn **Sn** **10 55 56.9 +0.4**
comp=Z,1.7nm,0.3s,baz=140,slow=29,SNR=4.9
KURBB Lg Lg 10 56 47.8
comp=Z,1.6nm,0.3s,baz=161,slow=31,SNR=7.4
KURBB Kurchatov Arra 9.12 345 ⇑Pn **Pn** **10 54 13.2 -0.9**
comp=Z,22nm,0.7s
KURBB ⇑Sn **Sn** **10 55 58.3 +1.8**
comp=Z,168nm,0.7s
KURBB ⇓Lg Lg 10 56 48.4
comp=Z,944nm,1.4s
KURK Kurchatov 9.19 346 ⇑Pn **Pn** **10 54 13.4 -1.6**
comp=Z,24nm,0.6s
KURK ⇓Sn **Sn** **10 55 58.8 +0.5**
comp=Z,153nm,1.0s
KURK ⇓Lg Lg 10 56 47.6
comp=Z,840nm,1.2s
KURK Kurchatov 9.19 346 eP **Pn** **10 54 13.5 -1.6**
KURK 10 55 56.9
KURK Kurchatov 9.19 346 ePn **Pn** **10 54 13.5 -1.6**
KURK Sn **Sn** **10 55 56.9 -1.3**
KURK Lg Lg 10 56 47.8
OTUK Ortayu 9.46 316 ⇑Pn **Pn** **10 54 19.5 +0.8**
comp=Z,20nm,0.8s
OTUK ⇑Sn **Sn** **10 56 05.2 +0.4**
comp=Z,18nm,0.5s
OTUK ⇑Lg Lg 10 56 57.4
comp=Z,123nm,1.0s
DZET Dzherino 10.67 258 ⇓Pn **Pn** **10 54 36.3 +0.9**
comp=Z,21nm,0.9s
THN Thein Dam 10.74 211 eP **Pn** **10 54 34.0 -2.4**
THN ex **Sn** **10 56 35.0 -1.5**
CHCP Chirah Chowk 10.82 224 P **Pn** **10 54 39.6 +2.0**
CEP Cherat 11.43 229 P **Pn** **10 54 47.0 +1.1**
CEP S **Sn** **10 56 53.0 -0.5**
SMLA Simla 11.46 202 eP **Pn** **10 54 44.7 -1.4**
SMLA ex **Sn** **10 56 46.3 -7.7**
ZAA0 Zalesovo Array 12.21 7 ePn **Pn** **10 54 54.4 -2.0**
ZALV Zalesovo Beam 12.21 7 Pn **Pn** **10 54 54.6 -1.8**
comp=Z,3.1nm,0.3s,baz=191,slow=13,SNR=25
ZALV Sn **Sn** **10 57 06.1 -6.2**
comp=Z,0.4nm,0.3s,baz=192,slow=17,SNR=2.5
ZALV Lg Lg 10 58 23.8
comp=Z,0.8nm,0.3s,baz=180,slow=30,SNR=2.6
ZALV LR LR 10 59 21.8
comp=Z,228nm,21.0s,baz=271,slow=36
THW Thamme Wali 12.30 226 P **Pn** **10 54 57.8 +0.1**
KBL Kabul 12.67 239 eP **Pn** **10 55 05.3 +2.3**
KBL Kabul 12.67 239 ePn **Pn** **10 55 05.3 +2.3**
NVS Novosibirsk 13.00 3 eP **Pn** **10 55 09.4 +2.3**
NVS pmax pmax
comp=N,57nm,1.3s
NVS pmax pmax
comp=E,17nm,1.3s
NVS pmax pmax
comp=Z,34nm,1.3s
GTA Gaotai 13.59 95 eP **Pn** **10 55 13.6 -1.8**
GTA pP P 10 55 19.1 -5.3
GTA sP 10 55 24.6
GTA S **Sn** **10 57 43.1 -3.2**
GTA sS S 10 57 52.3 -17
GTA SS **SnSn** **10 57 58.6 +0.2**
GTA pmax pmax
comp=Z,100nm,4.0s
GTA LR LR
comp=Z,1μm,8.1s
GTA LR LR
comp=Z,2μm,8.8s
GTA LR LR
comp=Z,1μm,10.5s
BVA0 Borovoye Array 13.71 329 ⇑Pn **Pn** **10 55 17.5 +0.7**
comp=Z,20nm,0.7s,baz=142,slow=14,SNR=86
BVA0 ⇑Sn **Sn** **10 57 48.3 -0.6**
comp=Z,22nm,1.4s
BVA0 ⇑Lg Lg 10 59 15.0
comp=Z,154nm,1.4s
BVAR Borovoye Array 13.71 329 Pn **Pn** **10 55 15.4 -1.5**
comp=Z,1.7nm,0.3s,baz=141,slow=15,SNR=23
BVAR Lg Lg 10 59 07.7
comp=Z,0.5nm,0.3s,baz=157,slow=23,SNR=3.8
PYUN Piuthan 13.75 177 eP **Pn** **10 55 16.8 -0.9**
comp=Z,74nm,0.8s
BRVK Borovoye 13.78 328 ⇓Pn **Pn** **10 55 18.8 +1.0**
comp=Z,44nm,0.6s
BRVK ⇓Sn **Sn** **10 57 49.1 -1.4**
comp=Z,20nm,0.8s
BRVK ⇓Lg Lg 10 59 13.9
comp=Z,109nm,1.2s
BRVK Borovoye 13.78 328 *c iP* **Pn** **10 55 18.7 +1.0**
BRVK pmax pmax
comp=Z,20nm,1.2s
BRVK Borovoye 13.78 328 ePn **Pn** **10 55 18.7 +1.0**
BHGR Bahadurgarh 13.83 200 eP **Pn** **10 55 15.6 -3.0**
BHGR ex x 10 57 39.9
GKN Gorkha 13.97 171 eP **Pn** **10 55 22.0 +1.3**
comp=Z,27nm,0.6s
KOLN Koldanda 14.11 175 eP **Pn** **10 55 21.8 -0.8**
comp=Z,60nm,1.0s
CHKZ Chkalovo 14.13 331 Pn **Pn** **10 55 21.6 -1.0**
ZRNK Zerenda 14.22 326 ⇑Pn **Pn** **10 55 22.5 -1.2**
comp=Z,25nm,0.6s
ZRNK ⇑Lg Lg 10 59 27.5
comp=Z,90nm,1.2s
ZRNK Zerenda 14.22 326 eP **Pn** **10 55 22.6 -1.2**
ZRNK Zerenda 14.22 326 ePn **Pn** **10 55 22.6 -1.2**
GUN Gumba 14.24 167 eP **Pn** **10 55 26.1 +1.5**
comp=Z,126nm,0.9s
KKN Kakani 14.27 169 eP **Pn** **10 55 25.5 +0.7**
comp=Z,24nm,0.5s
KUDL Kundal 14.47 201 eP **Pn** **10 55 24.3 -3.0**
KUDL eS **Sn** **10 58 02.8 -4.7**
PKIN Phulchoki 14.49 169 eP **Pn** **10 55 27.4 -0.5**
comp=Z,41nm,0.6s
MOY Mondy 16.13 46 eP **P** **10 55 53.0 +0.5**
MOY pmax pmax
comp=Z,20nm,2.1s
ZAK Zakamensk 16.86 53 eP **Pn** **10 55 55.8 -2.8**
ZAK pmax pmax
comp=Z,14nm,1.5s
AB31 Akbulak array 17.22 303 Pn **Pn** **10 56 01.4 -1.6**
comp=Z,30nm,1.1s,baz=98,slow=12,SNR=136
AB31 ⇑Lg Lg 11 01 08.4
comp=Z,28nm,1.4s,baz=101,slow=26,SNR=3.6
ABKAR Akbulak array 17.22 303 ePn **Pn** **10 56 01.4 -1.6**
JASL Jaisalmer 17.56 215 eP **Pn** **10 56 02.7 -4.6**
JASL IAmb IAmb 10 56 03.2
comp=Z,19nm,0.5s
TLY Talaya 17.60 49 eP **P** **10 56 08.0 -0.7**
TLY pmax pmax
comp=Z,2.0nm,0.5s
LZH Lanzhou 17.76 102 eP **P** **10 56 11.4 +0.6**
LZH pP sP 10 56 18.0 +1.9
LZH sP pP 10 56 22.3 +7.9
LZH eS **Sn** **10 59 23.5 -4.3**
LZH sS S 10 59 35.5 +0.6
LZH eSS **SnSn** **10 59 49.3 +8.1**
LZH pmax pmax
comp=Z,25nm,1.0s
LZH pmax pmax
comp=Z,130nm,4.5s
LZH LR LR
comp=Z,1μm,12.0s
LZH LR LR
comp=Z,900nm,11.5s
LZH LR LR
comp=Z,1μm,13.6s
SONM Songino Array 18.12 63 P **Pn** **10 56 13.7 -0.5**
comp=Z,0.5nm,0.3s,baz=260,slow=9.5,SNR=21
SONM LR LR 11 02 48.2
comp=Z,85nm,21.1s,baz=256,slow=36
SONA1 Songino Array 18.12 63 ePn **P** **10 56 14.2 -0.4**
ULN Ulaanbaatar 18.56 63 ⇑*i P* **Pn** **10 56 20.4 +0.7**
ULN pmax pmax
comp=Z,8.0nm,1.7s
ULN Ulaanbaatar 18.56 63 eP **P** **10 56 17.2 -2.2**
comp=Z,15nm,1.3s
AKTO Aktyubinsk 18.76 305 P **P** **10 56 21.5 +0.1**
comp=Z,0.9nm,0.3s,baz=104,slow=12,SNR=16
AKTO Lg Lg 11 01 57.6
comp=Z,0.1nm,0.3s,baz=19,slow=9.5,SNR=3.9
AKTO LR LR 11 03 59.4
comp=Z,428nm,20.0s,baz=113,slow=38
AKTO Aktyubinsk 18.76 305 ⇑Pn **P** **10 56 21.6 +0.1**
comp=Z,26nm,1.4s
AKTO ⇑Lg Lg 11 01 58.8
comp=Z,42nm,1.4s
GEYT Alibeck 18.88 266 P **P** **10 56 23.4 +0.5**
comp=Z,0.5nm,0.3s,baz=89,slow=6.1,SNR=13
GEYT LR LR 11 05 39.9
comp=Z,68nm,18.5s,baz=65,slow=43
SVE Sverdlovsk 20.40 325 ⇑eP **P** **10 56 39.4 +0.1**
SVE pmax pmax
comp=Z,71nm,1.3s
CD2 Chengdu 20.45 115 P **P** **10 56 39.8 -0.3**
CD2 sP sP 10 56 48.1 +2.6
CD2 PP **PnPn** **10 57 00.5 +3.2**
CD2 S **S** **11 00 25.0 -3.8**
CD2 sS Sn 11 00 32.3 -0.2
CD2 SS **SnSn** **11 00 54.5 +7.4**
CD2 pmax pmax
comp=Z,20nm,1.1s
CD2 pmax pmax
comp=Z,100nm,6.5s
CD2 LR LR
comp=Z,590nm,10.2s
CD2 LR LR
comp=Z,620nm,12.3s
ARU Arti 21.10 322 P **P** **10 56 46.6 -0.3**
comp=Z,56nm,0.5s,baz=114,slow=6.5,SNR=94
ARU Lg Lg 11 03 06.7
comp=Z,1.4nm,0.3s,baz=247,slow=11,SNR=4.7
ARU Arti 21.10 322 *c iP* **P** **10 56 46.4 -0.4**
ARU 10 57 05.3
ARU S **S** **11 00 40.6 -0.6**
ARU SS **SnSn** **11 00 58.6 -3.9**
ARU pmax pmax
comp=Z,49nm,0.5s
ARU MLR MLR
comp=Z,417nm,17.0s
ARU Arti 21.10 322 eP **P** **10 56 46.6 -0.3**
comp=Z,72nm,0.5s
ARU Lg Lg 11 03 06.7
HHC Hu-ho-hao-te 22.01 83 eP **P** **10 56 58.0 +1.1**
HHC S **S** **11 00 56.0 -3.5**
HHC sS sS 11 01 04.3 -1.2
HHC pmax pmax
comp=Z,47nm,0.7s
HHC pmax pmax
comp=Z,220nm,3.7s
HHC LR LR
comp=Z,2μm,10.8s
HHC LR LR
comp=Z,1μm,11.6s
HHC LR LR
comp=Z,2μm,10.3s
XAN Xi'an 22.40 102 P **P** **10 57 02.4 +1.3**
XAN pP sP 10 57 11.3 +4.8
XAN S **S** **11 01 05.3 -1.6**
XAN pmax pmax
comp=Z,11nm,1.4s
XAN LR LR
comp=Z,540nm,12.3s
XAN LR LR
comp=Z,380nm,11.7s
XAN LR LR
comp=Z,470nm,14.6s
SOKR Solikamsk 23.71 327 eP **P** **10 57 12.9 -1.2**
SOKR pmax pmax
comp=Z,11nm,0.8s
SOKR MLR MLR
comp=Z,329nm,12.0s
KMI Kunming 23.82 128 P **P** **10 57 16.1 +0.3**
KMI pP sP 10 57 24.0 +2.6
KMI sP pP 10 57 27.4 +7.7
KMI PP **PnPn** **10 57 50.0 +6.4**
KMI S **S** **11 01 27.4 -4.0**
KMI sS sS 11 01 40.4 +2.5
KMI SS **SnSn** **11 02 17.9 +7.9**
KMI pmax pmax
comp=Z,17nm,0.7s
KMI pmax pmax
comp=Z,99nm,5.4s
KMI LR LR
comp=Z,370nm,10.0s
KMI LR LR
comp=Z,280nm,10.4s
KMI LR LR
comp=Z,410nm,13.2s
HYB Hyderabad 24.57 188 *i* P **P** **10 57 25.0 +2.4**
GYA Guiyang 25.29 120 P **P** **10 57 30.8 +1.7**
GYA pP sP 10 57 38.3 +3.6
GYA PP **PnPn** **10 58 08.9 +5.3**
GYA PcP **PcP** **11 01 03.4 +1.3**
GYA S **S** **11 01 51.0 -3.8**
GYA sS sS 11 02 03.8 +2.5
GYA SS **SnSn** **11 02 52.3 +6.5**
GYA ScP **ScP** **11 04 40.0 -0.8**
GYA pmax pmax
comp=Z,20nm,0.8s
GYA pmax pmax
comp=Z,120nm,5.7s
GYA LR LR
comp=Z,430nm,15.2s
GYA LR LR
comp=Z,370nm,16.3s
GYA LR LR
comp=Z,410nm,15.9s
BJI Beijing 25.62 83 P **P** **10 57 31.0 -0.9**
BJI pmax pmax
comp=Z,7.0nm,1.6s
BJI pmax pmax
comp=Z,51nm,3.3s
BJI LR LR
comp=Z,280nm,8.8s
BJI LR LR
comp=Z,400nm,12.6s
BOD Bodaibo 25.65 41 eP **P** **10 57 30.8 -1.2**
BOD pmax pmax
comp=Z,12nm,1.3s
CHTO Chiang Mai 27.04 143 eP **P** **10 57 45.3 +0.4**
CHTO pmax pmax
comp=Z,17nm,1.4s
CHTO Chiang Mai 27.04 143 eP **P** **10 57 45.3 +0.4**
comp=Z,17nm,1.4s
WSAR Wadi Sarin 27.06 234 P **P** **10 57 47.5 +2.4**
comp=Z,4.1nm,0.8s,baz=214,slow=3.9,SNR=4.4
WSAR LR LR 11 11 18.1
comp=Z,118nm,20.3s,baz=78,slow=42
CMAR Chiang Mai Arr 27.35 144 P **P** **10 57 49.4 +1.7**
comp=Z,1.6nm,0.8s,baz=319,slow=8.0,SNR=7.7
CMAR LR LR 11 11 28.7
comp=Z,64nm,20.7s,baz=332,slow=43
CMAR Chiang Mai Arr 27.35 144 P **P** **10 57 49.4 +1.7**
CMAR pmax pmax
comp=Z,1.0nm,0.6s
CMAR MLR MLR
comp=Z,64nm,20.7s
CM01 Chiang Mai Arr 27.39 144 eP **P** **10 57 50.8 +2.8**
NRIK Noril'sk 27.68 4 P **P** **10 57 49.4 -0.8**
comp=Z,2.6nm,0.4s,baz=198,slow=5.9,SNR=5.9
NRIK LR LR 11 08 56.2
comp=Z,76nm,19.2s,baz=324,slow=37
NRIK Noril'sk 27.68 4 P **P** **10 57 49.4 -0.8**
NRIK pmax pmax
comp=Z,4.0nm,0.6s
NRIK MLR MLR
comp=Z,76nm,19.2s
WHN Wuhan 28.13 103 P **P** **10 57 55.0 +0.4**
WHN S **S** **11 02 42.3 +2.9**
WHN LR LR
comp=Z,780nm,9.2s
WHN LR LR
comp=Z,900nm,13.0s
WHN LR LR
comp=Z,950nm,13.9s
GNI Garni 28.19 279 P **P** **10 57 57.2 +2.0**
comp=Z,3.0nm,0.5s,baz=179,slow=5.0,SNR=4.4
GNI LR LR 11 10 26.6
comp=Z,46nm,22.0s,baz=44,slow=39
GNI Garni 28.19 279 ⇑eP **P** **10 57 59.5 +4.3**
GNI pmax pmax
comp=Z,51nm,1.3s
NCK Nalchik 28.27 286 ⇑*i P* **P** **10 57 59.2 +3.5**
NCK pmax pmax
comp=Z,7.0nm,0.8s
KBZ Khabaz 28.73 287 LR LR 11 12 01.8
comp=Z,107nm,19.6s,baz=68,slow=42
KVAR Kislovodsk Arr 28.83 288 LR LR 11 10 13.9
comp=Z,83nm,20.4s,baz=219,slow=38
KIV Kislovodsk 28.84 288 eP **P** **10 58 01.7 +0.8**
KIV pmax pmax
comp=Z,4.0nm,1.1s
KIV MLR MLR
comp=Z,108nm,15.0s
VSR Storozhevoye 30.66 303 eP **P** **10 58 15.7 -1.1**
VSR pmax pmax
comp=Z,10.0nm,1.4s
LPSR Galich'ya Gora 30.85 305 eP **P** **10 58 17.6 -0.8**
LPSR pmax pmax
comp=Z,10.0nm,0.9s
CN2 Changchun 31.50 72 eP **P** **10 58 25.4 +1.1**
MOS Moscow 31.88 311 eP **P** **10 58 27.0 -0.4**
MOS *e* 10 59 34.1
MOS *e* 11 09 01.5
MOS pmax pmax
comp=Z,44nm,1.1s
KLMR Klimovskoe 31.95 321 eP **P** **10 58 25.4 -2.6**
KLMR pmax pmax
comp=Z,12nm,0.9s
OBN Obninsk 32.41 310 *d iP* **P** **10 58 32.5 +0.4**
OBN pmax pmax
comp=Z,29nm,1.3s

OBN MLR MLR
comp=Z,224nm,17.0s
OBN Obninsk 32.41 310 *eP* **P 10 58 32.8 +0.7**
comp=Z,26nm,1.2s
QIZ Qiongzhong 32.70 126 P **P 10 58 36.5 +1.5**
QIZ S **S 11 03 56.4 +5.3**
QIZ pmax pmax
comp=Z,11nm,2.0s
QIZ LR LR
comp=Z,230nm,14.5s
QIZ LR LR
comp=Z,240nm,13.2s
QIZ LR LR
comp=Z,320nm,13.8s
MDJ Mudanjiang 34.25 69 P **P 10 58 48.1 -0.2**
MDJ pP sP 10 58 53.9 0.0
MDJ sP pP 10 58 56.8 +4.5
MDJ PP **PP 11 00 05.0 -0.8**
MDJ PcP **PcP 11 01 24.8 +0.2**
MDJ S **S 11 04 12.8 -1.9**
MDJ sS sS 11 04 25.5 +4.2
MDJ ScP **ScP 11 05 07.9 -1.3**
MDJ PcS **PcS 11 05 11.0 +0.3**
MDJ pmax pmax
comp=Z,5.0nm,0.7s
MDJ pmax pmax
comp=Z,33nm,5.3s
MDJ LR LR
comp=Z,790nm,12.2s
MDJ LR LR
comp=Z,680nm,12.2s
MDJ LR LR
comp=Z,1μm,14.2s
YAK Yakutsk 34.47 38 P **P 10 58 48.6 -1.3**
comp=Z,1.1nm,0.4s,baz=73,slow=19,SNR=5.3
YAK Yakutsk 34.47 38 *eP* **P 10 58 48.7 -1.3**
YAK *e* 11 01 27.2
YAK *e*S **S 11 04 14.3 -3.4**
YAK *e*SS **SnSn 11 06 31.1 +2.8**
YAK *e* 11 09 05.0
YAK pmax pmax
comp=Z,17nm,1.2s
YAK pmax pmax
comp=E,15nm,1.4s
YAK pmax pmax
comp=N,3.0nm,1.4s
YAK pmax pmax
comp=Z,59nm,3.6s
YAK pmax pmax
comp=N,33nm,2.7s
YAK smax smax
comp=N,74nm,1.9s
YAK smax smax
comp=E,33nm,1.9s
YAK MLR MLR
comp=Z,291nm,11.0s
YAK MLR MLR
comp=E,242nm,10.0s
YAK MLR MLR
comp=N,97nm,12.0s
YAK Yakutsk 34.47 38 *eP* **P 10 58 49.0 -1.0**
comp=N,18nm,0.9s
KLR Kul'dur 34.93 61 P **P 10 58 53.3 -0.8**
comp=N,4.3nm,0.5s,baz=270,slow=7.7,SNR=26
KS01 Wonju Array Si 35.12 82 *eP* **P 10 58 54.7 -1.1**
KSAR Wonju Array Be 35.12 82 P **P 10 58 55.5 -0.5**
KSAR Wonju Array Be 35.12 82 P **P 10 58 55.5 -0.5**
KSRS Korea Array 35.14 82 P **P 10 58 55.5 -0.7**
comp=N,1.3nm,0.6s,baz=281,slow=8.1,SNR=8.0
VLA Vladivostok 36.22 71 *deP* **P 10 59 05.3 0.0**
VLA *i* *PP **sP 10 59 11.8 +0.9**
VLA *i* 11 00 24.8
VLA *i* S **S 11 04 43.0 -2.0**
VLA pmax pmax
comp=Z,28nm,2.0s
BR131 Keskin Array S 36.45 283 *eP* **P 10 59 09.4 +1.9**
BRTR Keskin Array B 36.45 283 P **P 10 59 08.6 +1.1**
comp=Z,3.3nm,0.7s,baz=96,slow=8.8,SNR=18
BRTR Keskin Array B 36.45 283 *ceP* **P 10 59 09.3 +1.8**
BRTR pmax pmax
comp=Z,3.0nm,0.7s
AKASG Malin Array Be 36.96 302 P **P 10 59 11.0 -0.5**
comp=Z,1.1nm,0.6s,baz=69,slow=8.8,SNR=10.0
AKBB Malin Array Si 36.96 302 *eP* **P 10 59 12.3 +0.8**
AKBB pmax pmax
comp=Z,9.0nm,1.0s
AKBB Malin Array Si 36.96 302 *eP* **P 10 59 12.3 +0.8**
comp=Z,9.2nm,1.0s
KIEV Kiev 36.97 302 ⇑*iP* **P 10 59 12.1 +0.5**
KIEV pmax pmax
comp=Z,7.0nm,1.0s
KIEV Kiev 36.97 302 *eP* **P 10 59 11.1 -0.5**
comp=Z,7.7nm,0.9s
BR231 Keskin MP Arra 37.03 284 *eP* **P 10 59 10.0 -2.4**
TIXI Tiksi 37.53 22 P **P 10 59 14.6 -1.5**
comp=Z,6.4nm,0.6s,baz=255,slow=5.6,SNR=19
TIXI LR LR 11 14 41.2
comp=Z,150nm,18.2s,baz=249,slow=36
TIXI Tiksi 37.53 22 *ceP* **P 10 59 14.7 -1.4**
TIXI pmax pmax
comp=Z,7.0nm,0.7s
TIXI Tiksi 37.53 22 *eP* **P 10 59 14.7 -1.4**
comp=Z,7.0nm,0.7s
MMAI Mount Meron Ar 37.81 272 P **P 10 59 19.8 +0.8**
comp=Z,1.0nm,0.4s,baz=72,slow=14,SNR=3.4
SORM Soroca 37.93 298 ⇓*iP* **P 10 59 20.6 +0.8**
SORM Soroca 37.93 298 ⇓P **P 10 59 20.6 +0.8**
VSU Vasula 37.99 315 *ceP* **P 10 59 21.0 +0.9**
VSU pmax pmax
comp=Z,45nm,1.0s
FIA1 FINESS Array S 38.45 320 *eP* **P 10 59 23.9 -0.1**
FINES FINESS Array B 38.45 320 P **P 10 59 23.7 -0.3**
comp=Z,1.7nm,0.4s,baz=102,slow=10,SNR=16
FINES LR LR 11 15 56.0
comp=Z,339nm,18.5s,baz=126,slow=37
CFR Carcaliu 38.74 294 ⇓*iP* **P 10 59 27.9 +1.3**
CFR Carcaliu 38.74 294 ⇓P **P 10 59 27.9 +1.3**
TESR Tescani 39.41 296 ⇑*iP* **P 10 59 31.9 -0.4**
VRI Vrincioaia 39.52 295 ⇑*iP* **P 10 59 33.3 +0.1**
VRI Vrincioaia 39.52 295 ⇑P **P 10 59 33.3 +0.1**
PLOR Plostina 39.58 295 ⇓*iP* **P 10 59 34.6 +0.9**
PLOR Plostina 39.58 295 ⇓P **P 10 59 34.6 +0.9**
ISR Istrita 39.84 294 ⇑*iP* **P 10 59 36.5 +0.6**
ISR Istrita 39.84 294 ⇑P **P 10 59 36.5 +0.6**
ARA0 ARCESS Array S 39.95 333 *eP* **P 10 59 36.6 +0.2**
ARCES ARCESS Array B 39.95 333 P **P 10 59 36.2 -0.3**
comp=Z,6.6nm,0.5s,baz=90,slow=9.1,SNR=79
ARCES LR LR 11 16 51.4
comp=Z,186nm,19.6s,baz=104,slow=37
BURAR Bucovina Array 40.10 298 ⇓*iP* **P 10 59 37.8 -0.3**
BURAR Bucovina Array 40.10 298 ⇓P **P 10 59 37.8 -0.3**
BUR08 Bucovina Ar. S 40.11 298 *eP* **P 10 59 38.8 +0.6**
MLR Muntele Rosu 40.15 295 ⇓*iP* **P 10 59 39.4 +0.8**
MLR Muntele Rosu 40.15 295 ⇓P **P 10 59 39.4 +0.8**
MLR Muntele Rosu 40.15 295 *eP* **P 10 59 39.4 +0.8**
comp=Z,25nm,1.7s
SUW Suwalki 40.22 308 *eP* **P 10 59 39.4 +0.6**
SUW Suwalki 40.22 308 *eP* **P 10 59 39.4 +0.6**
LVV L'vov 40.39 302 *eP* **P 10 59 40.5 +0.2**
DOPR Dopca 40.40 296 ⇑*iP* **P 10 59 42.5 +2.0**
VOIR 40.77 295 ⇑*iP* **P 10 59 44.0 +0.4**
VOIR 40.77 295 ⇑P **P 10 59 44.0 +0.4**
ARCR ARCALIA 40.80 298 ⇑*iP* **P 10 59 45.9 +2.1**
ARR Arges 41.07 295 ⇑*iP* **P 10 59 46.3 +0.2**
KWP Kalwaria Pacla 41.27 302 *eP* **P 10 59 49.2 +1.6**
KWP Kalwaria Pacla 41.27 302 ⇑*iP* **P 10 59 48.2 +0.6**
KWP Kalwaria Pacla 41.27 302 ⇑P **P 10 59 48.2 +0.6**
LOT Lotru 41.63 295 ⇓*iP* **P 10 59 51.4 +0.6**
KLNR Kaliningrad 41.86 310 *iP* **P 10 59 53.4 +1.1**
KLNR pmax pmax
comp=Z,50nm,0.9s
DRGR 41.96 298 ⇓*iP* **P 10 59 52.7 -0.7**
DRGR 41.96 298 ⇓P **P 10 59 52.7 -0.7**
STHS Stebnicka Huta 42.25 302 *eP* **P 10 59 54.7 -0.9**
STHS pmax pmax
comp=Z,5.0nm,1.4s
STHS Stebnicka Huta 42.25 302 *eP* **P 10 59 54.7 -0.9**
GSI Gunungsitoli 42.69 157 *eP* **P 11 00 00.8 +1.3**
comp=Z,60nm,1.0s
SIRR Siria 42.81 297 ⇑*iP* **P 11 00 00.6 +0.4**
NIE Niedzica 42.84 302 *eP* **P 11 00 02.2 +1.7**
NIE Niedzica 42.84 302 *eP* **P 11 00 02.2 +1.7**
OJC Ojcow 42.97 303 *eP* **P 11 00 02.4 +1.0**
OJC Ojcow 42.97 303 *eP* **P 11 00 01.9 +0.5**
OJC pmax pmax
comp=Z,17nm,1.0s
OJC Ojcow 42.97 303 *eP* **P 11 00 01.9 +0.5**
comp=Z,17nm,1.0s
MJAR Matsushiro Arr 43.06 78 P **P 11 00 01.0 -1.4**
comp=Z,1.4nm,0.7s,baz=296,slow=8.9,SNR=3.8
MDVR Moldovita 43.22 295 ⇑*iP* **P 11 00 03.5 -0.1**
ASAJ Asahikawa 43.35 66 P **P 11 00 03.4 -1.3**
comp=Z,4.3nm,0.8s,baz=0.9,slow=9.2,SNR=4.1
VYHS Vyhne 44.02 301 *eP* **P 11 00 11.8 +1.9**
VYHS pmax pmax
comp=Z,5.0nm,1.6s
VYHS Vyhne 44.02 301 *eP* **P 11 00 11.8 +1.9**
OKC Ostrava-Krasne 44.09 303 *eP* **P 11 00 11.8 +1.3**
OKC Ostrava-Krasne 44.09 303 *eP* **P 11 00 11.8 +1.3**
LAST Lasithi 44.20 281 *eP* **P 11 00 12.4 +0.8**
comp=Z,13nm,0.8s
MYKOM Kota Tinggi 44.39 148 *eP* **P 11 00 13.0 -0.2**
comp=Z,22nm,0.3s
SPITS Spitsbergen Ar 44.47 344 P **P 11 00 13.1 -0.1**
comp=Z,4.5nm,0.9s,baz=160,slow=14,SNR=3.8
MORC Moravsky Berou 44.49 303 ⇓*iP* **P 11 00 11.3 -2.4**
MORC Moravsky Berou 44.49 303 ⇓P **P 11 00 11.3 -2.4**
MORC Moravsky Berou 44.49 303 *eP* **P 11 00 14.8 +1.1**
comp=Z,31nm,1.0s
IDI Anoyia 44.58 281 ⇑*iP* **P 11 00 15.1 +0.4**
IDI Anoyia 44.58 281 *eP* **P 11 00 14.9 +0.2**
comp=Z,30nm,1.5s
MA2 Magadan 44.66 42 P **P 11 00 13.6 -1.3**
comp=Z,3.4nm,0.7s,baz=249,slow=18,SNR=2.4
SIVA Sivas 44.76 281 ⇑*iP* **P 11 00 14.4 -1.6**
KRLC Kraliky 44.88 304 *eP* **P 11 00 18.0 +1.1**
KRLC Kraliky 44.88 304 *eP* **P 11 00 18.0 +1.1**
SEY Seymchan 44.99 37 P **P 11 00 16.4 -1.1**
comp=Z,0.9nm,0.4s,baz=93,slow=24,SNR=6.0
DPC Dobruska-Polom 45.09 304 *eP* **P 11 00 19.3 +0.8**
DPC *ex* x 11 00 24.0
DPC *es*P sP 11 00 34.0 +10
DPC AMS AMS 11 19 40.0
comp=Z,300nm,13.5s
DPC Dobruska-Polom 45.09 304 *eP* **P 11 00 19.3 +0.8**
DPC *e* 11 00 34.0
DPC MLR MLR
comp=Z,300nm,13.5s
UPC Upice 45.24 305 *eP* **P 11 00 20.8 +1.2**
UPC AMS AMS 11 19 50.0
comp=Z,300nm,13.4s
UPC Upice 45.24 305 *eP* **P 11 00 20.8 +1.2**
UPC MLR MLR
comp=Z,300nm,13.4s
NC405 NORSAR Array S 45.38 320 *eP* **P 11 00 20.8 +0.1**
NC602 NORSAR Array S 45.52 319 *eP* **P 11 00 21.4 -0.4**
NC303 NORSAR Array S 45.53 320 *eP* **P 11 00 22.1 +0.2**
NB201 NORSAR Array S 45.60 320 *eP* **P 11 00 21.9 -0.5**
NB2 NORSAR Subarra 45.64 320 P **P 11 00 22.1 -0.6**
comp=Z,5.7nm,0.7s,baz=80,slow=7.9
NOA NORSAR Array B 45.64 320 P **P 11 00 22.3 -0.4**
comp=Z,3.6nm,0.5s,baz=81,slow=8.0,SNR=13
NOA LR LR 11 20 36.1
comp=Z,137nm,18.5s,baz=75,slow=38
NBO02 NORSAR Array S 45.81 320 *eP* **P 11 00 23.9 -0.1**
NC204 NORSAR Array S 45.81 320 *eP* **P 11 00 23.5 -0.6**
NAO01 NORSAR Array S 45.83 320 *eP* **P 11 00 23.5 -0.6**
NBO00 NORSAR Array S 45.85 320 *eP* **P 11 00 24.2 -0.2**
TREC Trest 45.91 303 AMS AMS 11 20 10.0
CONA Conrad Observa 46.09 301 *iP* **P 11 00 27.9 +1.4**
comp=Z,12nm,1.2s,SNR=7.6
PVCC Panska Ves 46.12 305 *eP* **P 11 00 28.2 +1.6**
PVCC Panska Ves 46.12 305 *eP* **P 11 00 28.2 +1.6**
GOPC GO Pecny, Ondr 46.16 304 *eP* **P 11 00 28.5 +1.5**
GOPC AMS AMS 11 20 20.0
GOPC GO Pecny, Ondr 46.16 304 *eP* **P 11 00 28.5 +1.5**
PRU Pruhonice 46.29 304 *eP* **P 11 00 29.0 +1.1**
PRU *ex* x 11 00 33.0
PRU *es*P sP 11 00 42.4 +8.8
PRU AMS AMS 11 20 20.0
comp=Z,300nm,12.4s
PRU Pruhonice 46.29 304 *eP* **P 11 00 29.0 +1.1**
PRU *e* 11 00 42.4
PRU MLR MLR
comp=Z,300nm,12.4s
BRG Berggiesshubel 46.40 306 *eP* **P 11 00 29.9 +1.1**
comp=Z,24nm,1.8s
BRG *e*PCP **PcP 11 02 04.1 +0.6**
comp=Z,9.8nm,1.5s
BRG Berggiesshubel 46.40 306 *eP* **P 11 00 29.9 +1.1**
BRG *e* 11 02 04.1
BRG pmax pmax
comp=Z,24nm,1.8s
BRG pmax pmax
comp=Z,10.0nm,1.5s
ARSA Arzberg 46.52 300 *iP* **P 11 00 30.5 +0.6**
comp=Z,3.7nm,1.2s
CLL Collm 46.84 306 *iP* **P 11 00 32.3 +0.1**
comp=Z,16nm,1.1s
CLL *i* 11 00 36.4
CLL LmV 11 23 00.0
comp=Z,100nm,18.4s
CLL Collm 46.84 306 *iP* **P 11 00 32.3 +0.1**
CLL pmax pmax
comp=Z,16nm,1.1s
CLL Collm 46.84 306 *eP* **P 11 00 32.4 +0.2**
comp=Z,11nm,0.9s
SOKA Soboth 47.03 300 *iP* **P 11 00 34.9 +1.0**
comp=Z,13nm,1.3s,SNR=9.1
MOA Molln 47.13 302 *iP* **P 11 00 35.1 +0.5**
comp=Z,5.5nm,1.4s
KHC Kasperske Hory 47.15 303 *eP* **P 11 00 35.5 +0.8**
KHC Kasperske Hory 47.15 303 *eP* **P 11 00 35.5 +0.8**
GEC2 GERESS Array S 47.16 303 *eP* **P 11 00 36.3 +1.4**
GEC2 pmax pmax
comp=Z,9.0nm,1.3s
GEC2 GERESS Array S 47.16 303 *eP* **P 11 00 36.3 +1.4**
comp=Z,9.1nm,1.3s
GERES GERESS Array B 47.16 303 P **P 11 00 35.4 +0.5**
comp=Z,1.2nm,0.6s,baz=65,slow=7.5,SNR=13
GERES LR LR 11 22 58.8
comp=Z,62nm,18.7s,baz=88,slow=39
GEA0 GERESS Array S 47.16 303 *eP* **P 11 00 35.5 +0.6**
OBKA Obir 47.40 300 *iP* **P 11 00 37.6 +0.8**
comp=Z,7.8nm,1.1s
NKC Novy Kostel 47.50 305 *eP* **P 11 00 38.8 +1.4**
NKC Novy Kostel 47.50 305 *eP* **P 11 00 38.8 +1.4**
MYKA Terra Mystica 47.94 300 *iP* **P 11 00 42.5 +1.5**
comp=Z,3.9nm,0.9s
KBA Koelnbreinsper 47.98 301 *iP* **P 11 00 41.2 -0.2**
comp=Z,4.7nm,1.0s
ABTA Abfaltersbach 48.63 301 *iP* **P 11 00 45.4 -0.9**
comp=Z,3.9nm,1.3s
TIP Timpagrande 48.74 290 ⇓*iP* **P 11 00 48.4 +1.2**
TIP Timpagrande 48.74 290 *eP* **P 11 00 48.0 +0.7**
comp=Z,20nm,1.3s
WTTA Wattenberg 49.00 302 *iP* **P 11 00 50.0 +0.7**
comp=Z,15nm,1.3s
WATA Walderalm 49.01 302 *iP* **P 11 00 50.3 +0.9**
comp=Z,11nm,1.1s,SNR=5.6
CUC Castrocucco 49.05 291 *eP* **P 11 00 49.7 +0.2**
comp=Z,8.9nm,1.1s
MOTA Moosalm 49.31 302 *iP* **P 11 00 51.8 +0.2**
comp=Z,8.8nm,1.0s,SNR=7.3
RETA Reutte 49.48 302 *iP* **P 11 00 52.7 -0.1**
comp=Z,5.1nm,0.8s
FETA Feichten 49.67 302 *iP* **P 11 00 52.9 -1.5**
comp=Z,10nm,1.4s
BILL Bilibino 49.82 29 *deP* **P 11 00 55.2 +0.2**
BILL *e**PP **sP 11 01 00.6 -0.1**
BILL *e* 11 01 08.4
BILL *e* 11 02 16.4
BILL *e* 11 02 48.3
BILL PPP PPP 11 03 43.0
BILL pmax pmax
comp=Z,5.0nm,1.2s
BILL MLR MLR
comp=Z,221nm,15.0s
BILL Bilibino 49.82 29 *eP* **P 11 00 55.1 +0.1**
comp=Z,4.5nm,1.0s
PEA0 Petropavlovsk- 49.96 50 *eP* **P 11 00 57.0 +0.7**
PETK Petropavlovsk- 49.96 50 P **P 11 00 55.9 -0.4**
comp=Z,2.2nm,0.6s,baz=305,slow=5.5,SNR=8.6
PETK LR LR 11 23 24.1
comp=Z,189nm,18.0s,baz=258,slow=38
FUORN Ofenpass-Fuorn 50.11 301 *eP* **P 11 00 58.1 +0.2**
comp=Z,17nm,1.5s
BFO Black Forest 50.69 304 *ceP* **P 11 01 03.2 +1.3**
BFO Black Forest 50.69 304 *eP* **P 11 01 01.8 -0.1**
comp=Z,15nm,1.3s
DAV Davao City (W) 51.67 120 LR LR 11 24 41.9
comp=Z,91nm,19.9s,baz=24,slow=38
KEST Kesra 55.55 289 P **P 11 01 38.1 +0.2**
comp=Z,6.4nm,0.9s,baz=8.1,slow=12,SNR=3.2
KEST Kesra 55.55 289 *eP* **P 11 01 38.9 +0.9**
comp=Z,98nm,1.8s
ES19 SONSECA Array 62.48 300 *eP* **P 11 02 26.3 +0.4**
ESDC Sonseca Array 62.53 300 P **P 11 02 26.4 +0.1**
comp=Z,1.5nm,0.5s,baz=52,slow=7.1,SNR=16
ESLA Sonseca Array 62.53 300 *eP* **P 11 02 26.7 +0.4**
comp=Z,8.2nm,1.1s
PAB San Pablo 62.85 300 *eP* **P 11 02 28.9 +0.4**
PAB pmax pmax
comp=Z,27nm,1.8s
PAB San Pablo 62.85 300 *eP* **P 11 02 28.9 +0.4**
comp=Z,27nm,1.8s
COLD Coldfoot 64.21 20 *eP* **P 11 02 36.0 -0.8**
comp=Z,4.9nm,0.8s
SFJD Kangerlussuaq 65.68 342 *eP* **P 11 02 46.0 -0.4**
SFJD pmax pmax
comp=Z,8.0nm,0.9s
SFJD Kangerlussuaq 65.68 342 *eP* **P 11 02 46.0 -0.4**
comp=Z,7.9nm,0.9s
MLY Manley 65.73 22 *eP* **P 11 02 46.5 -0.4**
comp=Z,4.7nm,1.0s
BPAW Bear Paw Mtn. 66.37 23 *eP* **P 11 02 50.3 -0.7**
comp=Z,6.0nm,0.8s
CAST Castle Rocks 66.56 23 *eP* **P 11 02 51.9 -0.3**
comp=Z,6.3nm,0.9s
BWN Browne 66.74 22 *eP* **P 11 02 53.8 +0.5**
comp=Z,16nm,0.8s
KTH Kantishna Hill 66.80 23 *eP* **P 11 02 52.6 -1.2**
comp=Z,9.8nm,0.8s
PPLA Purkeypile 66.93 24 *eP* **P 11 02 54.1 -0.6**
comp=Z,16nm,0.6s
INK Inuvik 66.93 14 P **P 11 02 53.6 -0.8**
comp=Z,3.8nm,0.5s,baz=344,slow=5.2,SNR=31
INK Inuvik 66.93 14 *eP* **P 11 02 53.9 -0.5**
INK pmax pmax
comp=Z,21nm,1.4s
INK Inuvik 66.93 14 *eP* **P 11 02 53.9 -0.5**
comp=Z,21nm,1.4s
IL1 Eielson Array 66.97 21 *eP* **P 11 02 53.0 -1.7**
ILAR Eielson Array 66.97 21 P **P 11 02 53.4 -1.4**
comp=Z,2.3nm,0.6s,baz=325,slow=4.5,SNR=31
ILAR PP **PP 11 05 17.9 -3.8**
comp=Z,1.2nm,1.1s,baz=309,slow=5.7,SNR=4.7
ILB Eielson Array 66.97 21 *eP* **P 11 02 53.1 -1.7**
TRF Thorofare Moun 67.07 23 *eP* **P 11 02 55.9 +0.3**
comp=Z,27nm,2.0s
RND Reindeer 67.51 22 *eP* **P 11 02 56.9 -1.4**
RND pmax pmax
comp=Z,8.0nm,1.2s
RND Reindeer 67.51 22 *eP* **P 11 02 56.9 -1.4**
comp=Z,7.6nm,1.2s
EGAK Eagle 68.40 18 *eP* **P 11 03 03.1 -0.7**
DOT Dot Lake 68.61 20 *eP* **P 11 03 04.4 -0.8**
comp=Z,29nm,1.8s
SML Sawmill 68.92 23 *eP* **P 11 03 06.4 -0.7**
SML pmax pmax
comp=Z,11nm,0.6s
SML Sawmill 68.92 23 *eP* **P 11 03 06.3 -0.7**
comp=Z,11nm,0.6s
SCM Sheep Creek Mo 69.19 23 *eP* **P 11 03 08.2 -0.6**
SCM pmax pmax
comp=Z,15nm,0.7s
SCM Sheep Creek Mo 69.19 23 *eP* **P 11 03 08.2 -0.6**
comp=Z,15nm,0.7s
DAWY Dawson 69.42 18 *eP* **P 11 03 09.2 -1.0**
comp=Z,5.2nm,1.0s
BRLK Bradley Lake 69.73 26 *eP* **P 11 03 11.8 -0.3**
comp=Z,34nm,1.4s
FITZ Fitzroy Crossi 71.91 137 *eP* **P 11 03 25.9 +0.1**
comp=Z,14nm,1.4s
TOA0 Torodi Ar. Sit 74.33 274 *eP* **P 11 03 40.4 +0.1**
comp=Z,9.0nm,0.9s
TORD Torodi Ar. Bea 74.33 274 P **P 11 03 40.1 -0.2**
comp=Z,6.4nm,0.5s,baz=45,slow=5.0,SNR=109
SKAG Skagway 74.38 19 *eP* **P 11 03 40.3 +0.4**
comp=Z,14nm,1.3s
YKW3 Yellowknife Ar 75.04 8 *eP* **P 11 03 42.3 -1.4**
comp=Z,6.5nm,1.0s
YKA Yellowknife Ar 75.11 8 P **P 11 03 42.7 -1.4**
comp=Z,2.9nm,0.6s,baz=340,slow=5.9,SNR=27
YKA LR LR 11 40 30.5
comp=Z,7.7nm,18.0s,baz=0.0,slow=39
YKB5 Yellowknife Ar 75.11 8 *eP* **P 11 03 42.2 -1.9**
WRAB Tennant Creek 78.11 131 ⇑*iP* **P 11 04 03.0 +1.4**
WRAB pmax pmax
comp=Z,57nm,2.5s
WRAB Tennant Creek 78.11 131 *eP* **P 11 04 02.1 +0.5**
comp=Z,44nm,1.9s
WRA Warramunga Arr 78.12 131 P **P 11 04 01.6 -0.1**
comp=Z,2.9nm,0.6s,baz=329,slow=5.4,SNR=26
WB2 Warramunga Arr 78.12 131 *eP* **P 11 04 01.9 +0.2**
comp=Z,27nm,1.6s
ASAR Alice Springs 80.84 133 P **P 11 04 16.6 +0.1**
comp=Z,2.2nm,0.6s,baz=325,slow=5.2,SNR=18
AS01 Alice Springs 80.87 133 *eP* **P 11 04 16.6 0.0**
DBIC Dimbokro 83.42 273 P **P 11 04 29.6 -0.7**
comp=Z,9.6nm,1.2s,baz=22,slow=5.7,SNR=4.9
DBIC Dimbokro 83.42 273 *eP* **P 11 04 30.2 -0.1**
comp=Z,46nm,1.8s
FFC Flin Flon 83.71 2 *eP* **P 11 04 29.7 -1.4**
FFC pmax pmax
comp=Z,6.0nm,0.6s
FFC Flin Flon 83.71 2 *eP* **P 11 04 29.7 -1.4**
comp=Z,6.3nm,0.6s
TSUM Tsumeb 85.12 239 *eP* **P 11 04 40.5 +1.7**
comp=Z,4.4nm,1.0s
ULM Lac du Bonnet 88.25 359 LR LR 11 49 14.5
comp=Z,72nm,18.6s,baz=0.5,slow=39
BSMT Bassoo Peak 89.41 11 *eP* **P 11 04 59.3 -0.1**
CHMT Chamberlain Mo 90.54 11 *eP* **P 11 05 04.0 -0.8**
STKA Stephens Creek 91.48 133 LR LR 11 53 22.9
comp=Z,39nm,18.8s,baz=24,slow=40
LKWY Lake 93.21 9 *eP* **P 11 05 18.3 +1.1**
LKWY pmax pmax
comp=Z,4.0nm,0.6s
LKWY Lake 93.21 9 *eP* **P 11 05 18.2 +1.1**
comp=Z,3.7nm,0.6s
RSSD Black Hills 94.21 5 *eP* **P 11 05 21.3 -0.5**
RSSD pmax pmax
comp=Z,4.0nm,0.6s
RSSD Black Hills 94.21 5 *eP* **P 11 05 21.3 -0.5**
comp=Z,3.8nm,0.6s
ECSD EROS Data Cent 94.78 359 *eP* **P 11 05 23.3 -0.8**
comp=Z,18nm,2.0s
BW06 Boulder Array 95.08 9 *eP* **P 11 05 25.0 -0.8**
PDAR Pinedale Array 95.08 9 P **P 11 05 24.6 -1.2**
comp=Z,0.6nm,0.5s,baz=57,slow=3.5,SNR=6.8
PDAR LR LR 11 54 14.9
comp=Z,32nm,18.2s,baz=296,slow=39
SSPA Standing Stone 95.92 345 *eP* **P 11 05 29.1 -0.3**
comp=Z,31nm,1.9s
HWUT Hardware Ranch 95.98 10 *eP* **P 11 05 30.2 +0.3**
comp=Z,16nm,1.9s
LPAZ La Paz 143.97 306 PKP PKPab 11 11 37.0 +0.5
comp=Z,0.7nm,0.8s,baz=27,slow=6.8,SNR=3.6
LPAZ La Paz 143.97 306 PKIKP PKPab 11 11 37.0 +0.6
LPAZ pmax pmax
comp=Z,1.0nm,0.8s
NNA Nana 145.06 322 *e*PKIKP **PKPdf 11 11 40.4 0.0**
NNA Nana 145.06 322 *e*PKPbc **PKPdf 11 11 40.4 0.0**
LVC Limon Verde 149.15 300 *e*PKPbc **PKPbc 11 11 52.5 +0.8**
PB04 IPOC Station P 149.75 301 *e*PKPbc **PKPbc 11 11 55.0 +2.1**
TRQA Tornquist 152.42 266 *e*PKPbc **PKPbc 11 11 58.9 +0.4**

ISK ***22*** *10:59:17.9, 39.°07N×29.°10E, h5km, MD2.9*
ISCJB ***22*** *10:59:18.5±0.4, 39.°09N±0.°03×29.°05E±0.°04, h5km±7km,*
Error ellipse: s-maj=5.5km s-min=4.0km az=137.2
CSEM ***22*** *10:59:18.7±0.1, 39.°09N×29.°06E, h5km, ML2.9, Error*
ellipse: s-maj=3.5km s-min=2.7km az=100.0
DDA ***22*** *10:59:18.7, 39.°07N×29.°06E, h7km, Ml2.9*
ISC 22 10:59:18.5±0.9, 39.°07N±0.°02×29.°06E±0.°02, h12km±9km,
n31, σ0.°39/43, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**265**	P	**Pg**	**10 59 24.0**	**-0.1**
DEMI				S	**Sg**	**10 59 28.0**	**+0.1**
DEMI	**Demirci**	**0.27**	**265**	*i* P	**Pg**	**10 59 24.0**	**-0.1**
DEMI				*i* S	**Sg**	**10 59 28.0**	**+0.1**
GDZ	**Gediz**	**0.33**	**86**	P	**Pg**	**10 59 25.3**	**+0.1**

GDZ				S	Sg	10 59 30.2	+0.6
GDZ	**Gediz**	**0.33**	**86**	*i* P	**Pg**	**10 59 25.3**	**+0.1**
GDZ				*i* S	**Sg**	**10 59 30.2**	**+0.6**
TVSB	**Tavsanli**	**0.49**	**39**	*e*PG	**Pg**	**10 59 27.5**	**-0.7**
TVSB				*e*SG	**Sg**	**10 59 34.2**	**-0.6**
TVSB	**Tavsanli**	**0.49**	**39**	*e*Pg	**Pg**	**10 59 27.5**	**-0.7**
TVSB				*e*Sg	**Sg**	**10 59 34.2**	**-0.6**
KULA	**Kula-Manisa**	**0.63**	**210**	*e*PG	**Pb**	**10 59 31.3**	**-0.2**
KULA				*e*SG	**Sb**	**10 59 40.0**	**-0.3**
KULA	**Kula-Manisa**	**0.63**	**210**	*e*Pg	**Pb**	**10 59 31.3**	**-0.2**
KULA				*e*Sg	**Sb**	**10 59 40.1**	**-0.3**
MANT	**Manisa**	**0.70**	**215**	P	**Pb**	**10 59 32.5**	**-0.2**
MANT				S	**Sb**	**10 59 41.8**	**-0.5**
MANT	**Manisa**	**0.70**	**215**	*i* P	**Pb**	**10 59 32.5**	**-0.2**
MANT				*i* S	**Sb**	**10 59 41.8**	**-0.5**
DURS	**Dursunbey**	**0.70**	**320**	P	**Pb**	**10 59 32.6**	**-0.1**
DURS	**Dursunbey**	**0.70**	**320**	*i* P	**Pb**	**10 59 32.6**	**-0.1**
KHAL	**Karahalli**	**0.77**	**154**	P	**Pn**	**10 59 35.1**	**-0.2**
KHAL				S	**Sb**	**10 59 45.3**	**+0.9**
KHAL	**Karahalli**	**0.77**	**154**	*i* P	**Pn**	**10 59 35.1**	**-0.2**
KHAL				*i* S	**Sb**	**10 59 45.3**	**+0.9**
KHL	**Karahalli**	**0.82**	**154**	*e*PG	**Pg**	**10 59 34.4**	**-0.1**
KHL	**Karahalli**	**0.82**	**154**	*e*Pg	**Pg**	**10 59 34.4**	**-0.1**
ORLT	**Orhaneli**	**0.99**	**353**	*e*PG	**Pg**	**10 59 37.6**	**+0.1**
AKS	**Akhisar**	**0.99**	**260**	*e*PG	**Pg**	**10 59 37.7**	**+0.1**
BALB	**Balikesir**	**1.08**	**302**	*e*PN	**Pn**	**10 59 39.8**	**+0.3**
BALB	**Balikesir**	**1.08**	**302**	*e*Pn	**Pn**	**10 59 39.8**	**+0.3**
CAVI	**Cavuskoy**	**1.29**	**28**	*e*PN	**Pb**	**10 59 42.5**	**-0.1**
CAVI	**Cavuskoy**	**1.29**	**28**	*e*Pn	**Pb**	**10 59 42.6**	**-0.1**
IZI	**Iznik**	**1.31**	**14**	*e*PN	**Pb**	**10 59 43.1**	**0.0**
MDNY	**Mudanya-Bursa**	**1.31**	**354**	*e*PN	**Pb**	**10 59 43.1**	**0.0**
MDNY	**Mudanya-Bursa**	**1.31**	**354**	*e*Pn	**Pb**	**10 59 43.1**	**0.0**
KCTX	**Karacabey (Bur**	**1.32**	**336**	*e*PN	**Pg**	**10 59 44.1**	**+0.4**
KCTX	**Karacabey (Bur**	**1.32**	**336**	*e*Pn	**Pg**	**10 59 44.2**	**+0.4**
AYDB	**Zeytinkoy-Aydi**	**1.45**	**220**	*e*PN	**Pb**	**10 59 45.4**	**0.0**
ADVT	**Abdulvahap**	**1.46**	**21**	*e*PN	**Pb**	**10 59 45.3**	**-0.4**
ARMT	**Armutlu**	**1.51**	**354**	*e*PN	**Pb**	**10 59 46.6**	**+0.2**
ARMT	**Armutlu**	**1.51**	**354**	*e*Pn	**Pb**	**10 59 46.6**	**+0.2**

SOME ***22*** *11:03:21.5, 42.°13N×82.°42E, h0km*
NNC ***22*** *11:03:26.2±3.1, 42.°09N×82.°21E, h0km, mb3.2, mpv2.8, Error ellipse: s-maj=27.2km s-min=16.9km az=142.0*
ISC 22 11:03:23.9±2.4, 41.°9N±0.°1×82.°06E±0.°08, h14km, n14, σ1§52/27, 5C-2D, Southern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHLS	**Shalkode**	**2.06**	**309**	*e*P	**Pg**	**11 04 02.6**	**-0.9**
SHLS	29nm,0.2s			*e*S	**Sg**	**11 04 32.3**	**+2.0**
	51nm,0.8s						
PDGK	**Podgornoye**	**2.40**	**308**	⇑Pn	**Pb**	**11 04 06.7**	**-0.2**
PDGK	6.7nm,0.4s			⇓Lg	Lg	11 04 40.8	
	61nm,0.9s						
UZB	**Uzynbulak**	**2.58**	**301**	*e*P	**Pb**	**11 04 11.0**	**+0.9**
UZB	7.3nm,0.3s			*e*S	**Sg**	**11 04 47.7**	**+0.7**
	26nm,0.5s						
SATY	**Saty**	**2.95**	**295**	*e*P	**Pg**	**11 04 19.0**	**-1.6**
SATY	5.2nm,0.2s			*e*S	**Sg**	**11 05 00.4**	**+1.6**
	18nm,0.4s						
KPKS	**Kokpek**	**2.96**	**304**	*e*P	**Pb**	**11 04 17.2**	**+0.7**
KPKS	23nm,0.2s			*e*S	**Sg**	**11 04 57.4**	**-1.5**
	30nm,0.3s						
DJR	**Jarkent**	**2.97**	**327**	*e*P	**Pb**	**11 04 15.7**	**-1.0**
DJR	8.5nm,0.3s			*e*S	**Sb**	**11 04 55.0**	**+2.1**
	9.6nm,0.2s						
ZHN	**Zhinishke**	**2.98**	**297**	*e*P	**Pg**	**11 04 19.3**	**-1.7**
ZHN	8.2nm,0.3s			*e*S	**Sg**	**11 05 00.2**	**+0.6**
	35nm,0.3s						
MNBS	**Baschi**	**3.48**	**311**	*e*P	**Pb**	**11 04 22.3**	**-3.0**
MNBS	1.8nm,0.3s			*e*S	**Sb**	**11 05 07.7**	**+0.2**
	22nm,0.6s						
MDOK	**Medeo**	**3.92**	**291**	*e*P	**Pg**	**11 04 37.2**	**-1.9**
MDOK	2.1nm,0.5s			*e*S	**Sg**	**11 05 30.8**	**+0.8**
	5.8nm,0.5s						
KAPS	**Kapalarasan**	**3.94**	**331**	*e*P	**Pb**	**11 04 30.7**	**-2.5**
KAPS	4.3nm,0.2s			*e*S	**Sb**	**11 05 20.4**	**-0.4**
	8.1nm,0.6s						
TNSS	**Tian-Shan**	**3.96**	**289**	*e*P	**Pb**	**11 04 35.6**	**+1.8**
TNSS	4.3nm,0.3s			*e*S	**Sg**	**11 05 30.9**	**-0.4**
	2.7nm,0.9s						
DGS	**Degeres**	**4.84**	**289**	*e*P	**Pg**	**11 04 54.9**	**-1.8**
DGS	2.5nm,0.5s			*e*S	**Sg**	**11 06 00.9**	**+1.5**
	7.3nm,0.4s						
MK31	**Makanchi Array**	**4.93**	**2**	Pn	**Pn**	**11 04 38.0**	**+0.4**
MK31	0.2nm,0.3s,baz=191,slow=13,SNR=12			⇑Pg	**Pb**	**11 04 50.9**	**+0.9**
	0.6nm,0.4s,baz=197,slow=16,SNR=4.5						
MK31				⇓Lg	Lg	11 05 53.5	
	2.6nm,0.6s,baz=190,slow=28,SNR=3.8						
MAKZ	**Makanchi**	**4.94**	**359**	⇑Pn	**Pn**	**11 04 37.6**	**-0.1**
MAKZ	1.0nm,0.3s			⇑Sn	**Sn**	**11 05 36.5**	**+1.9**
	1.0nm,0.3s						
MAKZ				⇑Lg	Lg	11 05 54.3	
	2.2nm,0.8s						

NIED ***22*** *11:06:00, 37.°60N×142.°10E, h8km, Mw4.6 Best double couple: M0=7.90000×10^15 NP1:φs=217.00000°, δ=26.00000°, λ=-75.00000°. NP2:φs=21.00000°, δ=65.00000°, λ=-97.00000°.*
IDC ***22*** *11:06:54.0±0.5, 37.°56N×141.°97E, h0km, mb4.5/30, mb1 4.6/35, mb1mx4.5/50, mbtmp4.5/35, ML4.1/4, MS3.8/20, Ms1 3.8/20, ms1mx3.6/39, Error ellipse: s-maj=13.9km s-min=11.6km az=110.0*
JMA ***22*** *11:06:55.9±0.1, 37.°58N×142.°06E, h27km±3km, M4.7*
JMA Felt II J1.
ISCJB ***22*** *11:06:57.2±0.6, 37.°62N±0.°03×141.°94E±0.°03, h26km±4km, mb4.6/197, MS4.0/34, Error ellipse: s-maj=4.5km s-min=3.2km az=147.5*
NEIC ***22*** *11:06:58.5±1.1, 37.°66N×141.°95E, h23km±7km, mb4.7/127, Error ellipse: s-maj=4.1km s-min=2.7km az=145.0*
NEIC Recorded [2 JMA] in Miyagi.
MOS ***22*** *11:07:00.1±0.9, 37.°92N×141.°89E, h40km, mb4.9/71, Error ellipse: s-maj=6.9km s-min=4.5km az=103.0*
ISC 22 11:06:58.3±0.6, 37.°65N±0.°04×142.°04E±0.°04, h27km±3km, n432, σ1§49/465, mb4.7/199, MS4.1/35, 28C-20D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.97**	**253**	P	**Pn**	**11 07 13.5**	**-2.7**
JFK				*e*S	**Sb**	**11 07 26.1**	**-2.8**
JIO	**Ouri**	**0.97**	**326**	P	**Pn**	**11 07 14.6**	**-1.5**
JIO				S	**Sb**	**11 07 27.7**	**-1.2**
JMM	**Marumori**	**1.01**	**283**	P	**Pn**	**11 07 14.6**	**-2.1**
JMM				*e*S	**Sb**	**11 07 28.0**	**-2.1**
ONAJ	**Iwakimizuishiy**	**1.13**	**241**	P	**Pn**	**11 07 15.6**	**-2.8**
ONAJ				*e*S	**Sn**	**11 07 30.3**	**-2.8**
JOU	**Okura**	**1.30**	**304**	P	**Pn**	**11 07 19.8**	**-0.9**
JOU				S	**Sn**	**11 07 37.1**	**-0.2**
JFT	**Otama**	**1.36**	**265**	P	**Pn**	**11 07 20.3**	**-1.2**
JFT				S	**Sn**	**11 07 38.4**	**-0.3**
JMK	**Ichinoseki**	**1.45**	**334**	P	**Pn**	**11 07 23.5**	**+0.8**
JYS	**Shirataka**	**1.66**	**291**	P	**Pn**	**11 07 25.0**	**-0.7**
JFY	**Yanaizu**	**1.88**	**263**	P	**Pn**	**11 07 27.7**	**-0.9**
MJAR	**Matsushiro Arr**	**3.26**	**251**	Pn	**Pn**	**11 07 47.5**	**-0.1**
MAJO	**Matsushiro**	**3.26**	**251**	*d* *i*P	**Pn**	**11 07 48.3**	**+0.6**
MAJO	**Matsushiro**	**3.26**	**251**	*e*Pn	**Pn**	**11 07 48.2**	**+0.6**
MAT	**Matsushiro**	**3.26**	**251**	P	**Pn**	**11 07 47.3**	**-0.3**
MAT				*e*S	**Sb**	**11 08 30.6**	**-4.1**
MJB9	**Matsu-Tunnel**	**3.26**	**251**	*e*Pn	**Pn**	**11 07 48.0**	**+0.3**
ERM	**Erimo**	**4.44**	**11**	⇑*i*P	**Pn**	**11 08 03.7**	**-0.1**
ERM				pmax	pmax		
	comp=Z,77nm,1.0s						
ERM	**Erimo**	**4.44**	**11**	*e*Pn	**Pn**	**11 08 02.8**	**-1.0**
ERM				*e*Sn	**Sn**	**11 08 57.8**	**+3.1**
INU	**Inuyama**	**4.66**	**242**	*e*Pn	**Pn**	**11 08 07.4**	**+0.6**
JHJ2	**Mitsune**	**4.88**	**203**	*e*Pn	**Pn**	**11 08 08.6**	**-1.3**
JHJ2				*e*Sn	**Sn**	**11 09 03.8**	**-1.7**
JHJ	**Hachijo jima 2**	**4.88**	**203**	Pn	**Pn**	**11 08 07.9**	**-2.0**
	comp=Z,34nm,0.3s,baz=321,slow=23,SNR=33						
JHJ				Sn	**Sn**	**11 09 02.5**	**-3.0**
	comp=Z,69nm,0.3s,baz=42,slow=23,SNR=6.4						
ASAJ	**Asahikawa**	**6.47**	**4**	Pn	**Pn**	**11 08 32.1**	**+0.4**
	comp=Z,3.8nm,0.3s,baz=219,slow=12,SNR=22						
ASAJ	**Asahikawa**	**6.47**	**4**	*e*Pn	**Pn**	**11 08 30.2**	**-1.5**
YUK	**Yuzh-Kuril'sk**	**7.00**	**23**	⇑*i*P	**Pn**	**11 08 37.7**	**-1.3**
KUR	**Kuril'sk**	**8.74**	**28**	*e*P	**Pn**	**11 08 59.5**	**-3.4**
KUR				*e*S	**Sn**	**11 10 34.9**	**-5.6**
KUR				pmax	pmax		
	comp=N,18nm,0.9s						
KUR				pmax	pmax		
	comp=E,16nm,0.9s						
KUR				pmax	pmax		
	comp=Z,30nm,0.9s						
KUR				smax	smax		
	comp=N,72nm,0.5s						
KUR				smax	smax		
	comp=E,24nm,0.3s						
YSS	**Yuzh-Sakhalins**	**9.31**	**3**	*e*P	Pn	11 09 05.0	-5.6
YSS				MLR	MLR		
	comp=N,400nm,15.0s						
YSS				MLR	MLR		
	comp=Z,500nm,15.0s						
YSS				MLR	MLR		
	comp=E,400nm,19.0s						
VLA	**Vladivostok**	**9.48**	**308**	*d* *i*P	**Pn**	**11 09 15.5**	**+2.6**
VLA				pmax	pmax		
	comp=Z,40nm,1.0s						
USRK	**Ussuriysk Ar.**	**10.03**	**314**	Pn	**Pn**	**11 09 23.0**	**+2.5**
	comp=Z,0.8nm,0.3s,baz=128,slow=12,SNR=21						
USRK				LR	LR	11 12 52.1	
	comp=Z,540nm,21.8s,baz=116,slow=36						
JNU	**Nakatsue**	**10.17**	**247**	Pn	**Pn**	**11 09 23.7**	**+1.1**
	comp=Z,0.4nm,0.3s,baz=67,slow=4.9,SNR=6.4						
JNU				LR	LR	11 13 15.1	
	comp=Z,200nm,19.6s,baz=83,slow=38						
JNU	**Nakatsue**	**10.17**	**247**	*e*Pn	**Pn**	**11 09 24.2**	**+1.7**
CBIJ	**Chichi jima**	**10.53**	**179**	*e*Pn	**Pn**	**11 09 24.5**	**-2.9**
CBIJ				Sn	Sn	11 11 13.6	-11
JCJ	**Chichijima**	**10.53**	**179**	Pn	**Pn**	**11 09 23.6**	**-3.7**
	comp=Z,5.5nm,0.3s,baz=300,slow=21,SNR=12						
JCJ				Sn	Sn	11 11 13.6	-11
JCJ				LR	LR	11 14 42.5	
	comp=Z,78nm,20.7s,baz=312,slow=45						
KSRS	**Korea Array**	**11.21**	**273**	Pn	**Pn**	**11 09 38.3**	**+1.6**
	comp=Z,0.3nm,0.3s,baz=85,slow=13,SNR=13						
KS15	**Wonju Array Si**	**11.24**	**273**	*e*Pn	**Pn**	**11 09 40.1**	**+3.0**
KSAR	**Wonju Array Be**	**11.24**	**273**	P	**Pn**	**11 09 38.3**	**+1.1**
KSAR	**Wonju Array Be**	**11.24**	**273**	Pn	**Pn**	**11 09 38.3**	**+1.1**
HABR	**Khabarovsk**	**11.96**	**337**	*e*P	**Pn**	**11 09 44.8**	**-2.0**
HABR				*e*S	**Sn**	**11 11 57.3**	**-1.9**
HABR				pmax	pmax		
	comp=N,21nm,1.3s						
HABR				pmax	pmax		
	comp=E,12nm,0.7s						
HABR				pmax	pmax		
	comp=Z,18nm,1.3s						
TYV	**Tymovskoe**	**13.22**	**2**	*e*P	**Pn**	**11 10 03.5**	**-0.5**
TYV				pmax	pmax		
	comp=Z,22nm,1.0s						
TYV				MLR	MLR		
	comp=N,1μm,14.0s						
TYV				MLR	MLR		
	comp=Z,1μm,14.0s						
KLR	**Kul'dur**	**13.76**	**331**	Pn	**Pn**	**11 10 11.2**	**-0.3**
	comp=Z,0.2nm,0.3s,baz=132,slow=13,SNR=8.5						
CN2	**Changchun**	**13.99**	**301**	*e*P	**Pn**	**11 10 16.8**	**+2.1**
NKL	**Nikolayevsk**	**15.53**	**357**	*e*P	Pn	11 10 24.0	-11
JOW	**Kunigami**	**15.86**	**231**	*e*Pn	**Pn**	**11 10 40.6**	**+1.0**
	comp=Z,23nm,1.1s						
PEA0	**Petropavlovsk-**	**18.90**	**30**	*e*P	**P**	**11 11 16.8**	**+0.2**
PETK	**Petropavlovsk-**	**18.90**	**30**	P	**P**	**11 11 16.3**	**-0.3**
	comp=Z,0.1nm,0.3s,baz=207,slow=8.6,SNR=7.4						
PET	**Petropavlovsk**	**19.23**	**32**	*e*P	**P**	**11 11 19.5**	**-0.6**
PET				*e*S	**Sn**	**11 14 45.6**	**-10**
PET				pmax	pmax		
	comp=Z,22nm,0.9s						
PET				MLR	MLR		
	comp=Z,200nm,17.0s						
PET				MLR	MLR		
	comp=Z,300nm,19.0s						
PET	**Petropavlovsk**	**19.23**	**32**	*e*P	**Pn**	**11 11 21.9**	**+0.7**
	comp=Z,17nm,0.9s						
TIA	**Tai'an**	**19.96**	**273**	⇑P	**P**	**11 11 26.8**	**-1.5**
TIA				pmax	pmax		
	comp=Z,10.0nm,1.2s						
BJI	**Beijing**	**20.27**	**285**	P	**P**	**11 11 30.1**	**-1.5**
BJI				S	Sn	11 15 20.4	-0.7
BJI				pmax	pmax		
	comp=Z,11nm,1.6s						
BJI				pmax	pmax		
	comp=Z,230nm,8.1s						
BJI				LR	LR		
	comp=N,360nm,12.9s						
BJI				LR	LR		
	comp=E,210nm,13.6s						
BJI				LR	LR		
	comp=Z,150nm,30.8s						
NACB	**Ninganchiao**	**22.03**	**238**	*e*P	**P**	**11 11 51.0**	**+0.2**
	comp=Z,12nm,1.0s						
MA2	**Magadan**	**22.65**	**12**	P	**P**	**11 11 57.2**	**+0.2**
	comp=Z,27nm,0.8s,baz=225,slow=9.7,SNR=12						
HHC	**Hu-ho-hao-te**	**23.76**	**287**	*e*P	**P**	**11 12 08.4**	**-0.1**
HHC				PP	**PnPn**	**11 12 44.8**	**+8.3**
HHC				S	**S**	**11 16 21.5**	**-0.8**
HHC				pmax	pmax		
	comp=Z,46nm,0.7s						
HHC				pmax	pmax		
	comp=Z,220nm,4.8s						
HHC				LR	LR		
	comp=N,1μm,12.8s						
HHC				LR	LR		
	comp=E,2μm,13.4s						
HHC				LR	LR		
	comp=Z,2μm,12.7s						
WHN	**Wuhan**	**23.95**	**261**	⇓*i*P	**P**	**11 12 10.0**	**-0.2**
WHN				sP	**sP**	**11 12 21.9**	**+0.5**
WHN				S	**S**	**11 16 25.6**	**+0.4**
WHN				pmax	pmax		
	comp=Z,76nm,1.2s						
WHN				LR	LR		
	comp=N,2μm,14.3s						
WHN				LR	LR		
	comp=E,1μm,15.0s						
WHN				LR	LR		
	comp=Z,2μm,11.5s						
GUMO	**Guam**	**24.09**	**173**	LR	LR	11 22 04.7	
	comp=Z,48nm,21.4s,baz=50,slow=38						
CIT	**Chita**	**24.59**	**315**	*e*P	**P**	**11 12 16.4**	**+0.4**
CIT				*e*		11 12 27.0	
CIT				*e*		11 12 29.6	
CIT				pmax	pmax		
	comp=Z,146nm,1.3s						
YAK	**Yakutsk**	**25.58**	**346**	P	**P**	**11 12 25.3**	**+0.5**
	comp=Z,4.8nm,0.6s,baz=344,slow=23,SNR=11						
YAK	**Yakutsk**	**25.58**	**346**	*d* *i*P	**P**	**11 12 23.9**	**-0.9**
YAK				*e*		11 12 57.2	
YAK				*e*		11 15 53.3	
YAK				*e*S	**S**	**11 16 50.1**	**-0.7**
YAK				*e*SS	**SnSn**	**11 17 47.5**	**+2.1**
YAK				*e*		11 23 21.8	
YAK				pmax	pmax		
	comp=Z,66nm,0.9s						
YAK				pmax	pmax		
	comp=N,34nm,1.1s						
YAK				pmax	pmax		
	comp=E,13nm,1.1s						
YAK				pmax	pmax		
	comp=Z,35nm,1.1s						
YAK				pmax	pmax		
	comp=N,39nm,1.1s						
YAK				pmax	pmax		
	comp=E,31nm,1.2s						
YAK				smax	smax		
	comp=N,151nm,3.3s						
YAK				smax	smax		
	comp=E,97nm,3.7s						
YAK				MLR	MLR		
	comp=Z,330nm,15.0s						
YAK				MLR	MLR		
	comp=E,81nm,12.0s						
YAK				MLR	MLR		
	comp=N,235nm,13.0s						
YAK	**Yakutsk**	**25.58**	**346**	*e*P	**P**	**11 12 25.3**	**+0.5**
	comp=N,76nm,0.9s						
SEY	**Seymchan**	**26.09**	**11**	P	**P**	**11 12 30.6**	**+1.2**
	comp=N,22nm,1.0s,baz=206,slow=6.2,SNR=30						
SEY	**Seymchan**	**26.09**	**11**	⇑*i*P	**P**	**11 12 30.2**	**+0.8**
XAN	**Xi'an**	**27.01**	**272**	P	**P**	**11 12 36.9**	**-1.2**
XAN				pP	pP	11 12 46.4	+0.4
XAN				S	S	11 17 02.5	-12
XAN				pmax	pmax		
	comp=Z,9.0nm,1.3s						
XAN				pmax	pmax		
	comp=Z,120nm,6.7s						
XAN				LR	LR		
	comp=E,330nm,14.1s						
XAN				LR	LR		
	comp=Z,390nm,14.1s						
BOD	**Bodaibo**	**27.28**	**327**	⇑*i*P	**P**	**11 12 39.4**	**-0.8**
BOD				pmax	pmax		
	comp=Z,16nm,0.8s						
ULN	**Ulaanbaatar**	**27.43**	**303**	⇑*i*P	**P**	**11 12 42.7**	**+0.9**
ULN				pmax	pmax		
	comp=Z,9.0nm,0.7s						
ULN	**Ulaanbaatar**	**27.43**	**303**	*e*P	**P**	**11 12 42.4**	**+0.6**
	comp=Z,8.4nm,0.6s						
SONA1	**Songino Array**	**27.86**	**303**	*e*P	**P**	**11 12 46.5**	**+0.8**
SONM	**Songino Array**	**27.86**	**303**	P	**P**	**11 12 46.3**	**+0.6**
	comp=Z,13nm,0.8s,baz=96,slow=9.1,SNR=35						
SONM				PcP	**PcP**	**11 16 02.9**	**+1.9**
	comp=Z,0.4nm,0.4s,baz=132,slow=2.2,SNR=4.3						
SONM				LR	LR	11 24 05.1	
	comp=Z,147nm,19.3s,baz=70,slow=37						
H11N2	**WAKE ISLAND Hy**	**28.04**	**123**	T	T	11 42 00.9	
	baz=315,slow=75,SNR=3790						
H11N1	**WAKE ISLAND Hy**	**28.05**	**123**	T	T	11 42 07.4	
	baz=315,slow=75,SNR=2155						
H11N3	**WAKE ISLAND Hy**	**28.06**	**123**	T	T	11 42 02.2	
	baz=315,slow=75,SNR=2759						
H11S1	**WAKE ISLAND Hy**	**28.79**	**125**	T	T	11 43 03.5	
	baz=317,slow=76,SNR=2464						
H11S3	**WAKE ISLAND Hy**	**28.79**	**125**	T	T	11 43 03.7	
	baz=317,slow=76,SNR=2449						
H11S2	**WAKE ISLAND Hy**	**28.80**	**125**	T	T	11 42 59.6	
	baz=317,slow=76,SNR=1618						
ZAK	**Zakamensk**	**30.29**	**307**	*e*P	**P**	**11 13 05.8**	**-1.3**
ZAK				pmax	pmax		
	comp=Z,9.0nm,1.0s						
TLY	**Talaya**	**30.31**	**310**	LR	LR	11 25 55.0	
	comp=Z,277nm,19.2s,baz=115,slow=38						
TLY	**Talaya**	**30.31**	**310**	*e*P	**P**	**11 13 07.7**	**+0.5**
TLY				pmax	pmax		
	comp=Z,7.0nm,0.8s						
TLY				MLR	MLR		
	comp=Z,376nm,13.0s						
TLY	**Talaya**	**30.31**	**310**	*e*P	**P**	**11 13 07.6**	**+0.4**
	comp=Z,6.9nm,0.8s						
LZH	**Lanzhou**	**30.46**	**279**	*e*P	**P**	**11 13 07.3**	**-1.6**
LZH				pP	pP	11 13 15.0	-1.9
LZH				sP	sP	11 13 18.3	-1.9
LZH				PP	**PnPn**	**11 14 07.0**	**-0.9**
LZH				*e*S	**S**	**11 18 05.8**	**-2.7**
LZH				sS	sS	11 18 18.5	-3.1
LZH				*e*SS	**SnSn**	**11 19 42.3**	**-2.9**
LZH				pmax	pmax		
	comp=Z,27nm,1.2s						
LZH				pmax	pmax		
	comp=Z,130nm,5.4s						
LZH				LR	LR		
	comp=N,420nm,10.5s						
LZH				LR	LR		
	comp=E,570nm,12.5s						
LZH				LR	LR		
	comp=Z,700nm,15.4s						
GYA	**Guiyang**	**31.82**	**260**	⇓*i*P	**P**	**11 13 19.5**	**-1.4**
GYA				pP	pP	11 13 30.0	+1.1
GYA				PP	**PnPn**	**11 14 27.4**	**+1.7**
GYA				PcP	**PcP**	**11 16 14.8**	**+3.3**
GYA				S	**S**	**11 18 30.3**	**+0.5**
GYA				sS	sS	11 18 42.0	-0.9
GYA				ScP	**ScP**	**11 19 54.4**	**+1.4**
GYA				SS	**SnSn**	**11 20 20.3**	**+2.0**
GYA	**Guiyang**	**31.82**	**260**	ScS	ScS	11 23 51.0	-0.6
GYA				pmax	pmax		
	comp=Z,30nm,1.0s						
GYA				pmax	pmax		
	comp=Z,120nm,5.0s						
GYA				LR	LR		
	comp=N,290nm,15.2s						
GYA				LR	LR		
	comp=E,370nm,18.3s						
GYA				LR	LR		
	comp=Z,390nm,17.9s						
CD2	**Chengdu**	**32.18**	**270**	P	**P**	**11 13 23.8**	**-0.1**
CD2				pmax	pmax		
	comp=Z,2.0nm,0.7s						
GTA	**Gaotai**	**32.87**	**286**	*e*P	**P**	**11 13 29.3**	**-0.7**
GTA				pP	pP	11 13 36.3	-1.6
GTA				sP	sP	11 13 39.8	-1.4
GTA				PcP	**PcP**	**11 16 15.4**	**+1.2**
GTA				S	**S**	**11 18 44.0**	**-1.9**
GTA				sS	sS	11 18 55.3	-3.8
GTA				pmax	pmax		
	comp=Z,6.0nm,1.0s						
GTA				pmax	pmax		
	comp=Z,79nm,4.8s						
GTA				LR	LR		
	comp=N,220nm,15.0s						
GTA				LR	LR		
	comp=E,210nm,17.3s						
GTA				LR	LR		
	comp=Z,250nm,16.6s						
BILL	**Bilibino**	**33.30**	**16**	*c* *i*P	**P**	**11 13 33.3**	**+0.1**
BILL				*e**PP	**sP**	**11 13 45.5**	**+1.0**
BILL				*e*		11 14 45.7	
BILL				*e*PPP	PPP	11 14 56.2	
BILL						11 16 16.0	
BILL				*e*S	**S**	**11 18 47.7**	**-4.0**
BILL				pmax	pmax		
	comp=Z,8.0nm,1.0s						
BILL				MLR	MLR		
	comp=Z,116nm,17.0s						
BILL	**Bilibino**	**33.30**	**16**	*e*P	**P**	**11 13 33.2**	**0.0**
	comp=Z,10nm,1.1s						
QIZ	**Qiongzhong**	**33.64**	**246**	P	**P**	**11 13 38.0**	**+1.3**
QIZ				S	**S**	**11 19 02.8**	**+4.8**
QIZ				LR	LR		
	comp=N,310nm,13.9s						
QIZ				LR	LR		
	comp=E,190nm,15.1s						
QIZ				LR	LR		
	comp=Z,250nm,14.5s						
TIXI	**Tiksi**	**34.74**	**353**	P	**P**	**11 13 45.1**	**-0.6**
	comp=Z,3.2nm,0.6s,baz=145,slow=5.9,SNR=13						
TIXI	**Tiksi**	**34.74**	**353**	⇓*i*P	**P**	**11 13 45.2**	**-0.5**
TIXI				pmax	pmax		
	comp=Z,4.0nm,0.8s						
TIXI	**Tiksi**	**34.74**	**353**	*e*P	**P**	**11 13 44.9**	**-0.8**
	comp=Z,3.8nm,0.6s						
KMI	**Kunming**	**35.55**	**261**	P	**P**	**11 13 53.8**	**+0.3**
KMI				pmax	pmax		
	comp=Z,29nm,1.1s						
KMI				pmax	pmax		
	comp=Z,190nm,5.2s						
NONG	**Nongkai**	**39.18

CHAI Chaiyaphum 41.39 249 P **P 11 14 44.0 +1.6**
comp=Z,3.9nm,1.0s,comp=Z,350nm
PBKT Sadao Pong 41.73 251 P **P 11 14 48.9 +3.8**
comp=Z,7.2nm,1.4s
ZAA0 Zalesovo Array 41.87 312 *e*P **P 11 14 46.1 +0.2**
ZALV Zalesovo Beam 41.87 312 P **P 11 14 46.1 +0.2**
comp=Z,19nm,0.8s,baz=89,slow=7.3,SNR=40
ZALV PcP **PcP 11 16 41.0 -0.2**
comp=Z,6.1nm,0.9s,baz=98,slow=3.2,SNR=4.7
ZALV LR LR 11 32 10.2
comp=Z,115nm,18.2s,baz=80,slow=36
CHTO Chiang Mai 41.93 256 P **P 11 14 47.8 +1.0**
comp=Z,33nm,1.2s
CHTO Chiang Mai 41.93 256 *e*P **P 11 14 46.9 +0.1**
CHTO pmax pmax
comp=Z,6.0nm,1.0s
CHTO Chiang Mai 41.93 256 *e*P **P 11 14 46.9 +0.1**
comp=Z,6.3nm,1.0s
CMAR Chiang Mai Arr 42.14 255 P **P 11 14 47.1 -1.3**
comp=Z,1.0nm,0.6s,baz=44,slow=7.3,SNR=5.9
CMAR LR LR 11 32 43.6
comp=Z,79nm,18.3s,baz=56,slow=37
SUKH Sukhothai 42.19 253 P **P 11 14 53.3 +4.4**
comp=Z,3.0nm,0.8s
SRAK Srakaew 42.56 247 P **P 11 14 52.7 +0.8**
comp=Z,22nm,0.9s
NVS Novosibirsk 42.78 313 *e*P **P 11 14 53.5 +0.3**
NVS pmax pmax
comp=N,7.0nm,1.0s
NVS pmax pmax
comp=E,11nm,1.0s
NVS pmax pmax
comp=Z,19nm,1.0s
NRIK Noril'sk 42.92 335 P **P 11 14 53.9 -0.3**
comp=Z,3.6nm,0.6s,baz=118,slow=8.1,SNR=6.5
NRIK LR LR 11 33 36.0
comp=Z,300nm,18.4s,baz=117,slow=37
MK01 Makanchi Array 44.22 302 *e*P **P 11 15 05.2 +0.1**
MK31 Makanchi Array 44.22 302 *e*P **P 11 15 05.4 +0.4**
MK31 Makanchi Array 44.22 302 *e*P **P 11 15 05.4 +0.4**
MKAR Makanchi Array 44.22 302 P **P 11 15 05.0 0.0**
comp=Z,8.6nm,0.8s,baz=82,slow=10,SNR=4.1
MKAR LR LR 11 33 31.6
comp=Z,75nm,18.0s,baz=74,slow=36
MKAR Makanchi Array 44.22 302 *e*P **P 11 15 05.6 +0.6**
MKAR Makanchi Array 44.22 302 *e*P **P 11 15 05.7 +0.6**
MAKZ Makanchi 44.43 302 *e*P **P 11 15 06.8 +0.1**
MAKZ pmax pmax
comp=Z,28nm,1.4s
MAKZ Makanchi 44.43 302 *e*P **P 11 15 06.8 +0.1**
comp=Z,28nm,1.4s
KURK Kurchatov 45.95 308 *e*P **P 11 15 18.2 -0.4**
KURK pmax pmax
comp=Z,39nm,0.8s
KURK Kurchatov 45.95 308 *e*P **P 11 15 18.2 -0.4**
comp=Z,39nm,0.8s
KURBB Kurchatov Arra 46.02 308 P **P 11 15 19.1 -0.1**
comp=Z,19nm,0.6s,baz=82,slow=8.0,SNR=53
RSO Redoubt South 46.11 39 *e*P **P 11 15 19.1 -0.9**
KSM Kuching 46.34 227 *e*P **P 11 15 22.6 +0.6**
comp=Z,7.3nm,1.0s
CAST Castle Rocks 46.43 35 *e*P **P 11 15 23.8 +1.5**
comp=Z,3.7nm,0.9s
KTH Kantishna Hill 46.96 34 *e*P **P 11 15 28.1 +1.6**
comp=Z,11nm,1.2s
MLY Manley 47.06 32 *e*P **P 11 15 29.0 +1.7**
comp=Z,5.9nm,1.0s
TRF Thorofare Moun 47.24 34 *e*P **P 11 15 29.7 +0.9**
comp=Z,10.0nm,1.3s
RC01 Rabbit Creek A 47.57 38 *e*P **P 11 15 31.9 +0.7**
comp=Z,15nm,1.0s
GUN Gumba 47.59 275 *e*P **P 11 15 32.4 +0.1**
comp=Z,91nm,0.9s
BWN Browne 47.60 33 *e*P **P 11 15 31.9 +0.4**
comp=Z,16nm,0.9s
PMR Palmer 47.83 37 *e*P **P 11 15 34.0 +0.8**
PMR pmax pmax
comp=Z,12nm,1.2s
PMR Palmer 47.83 37 *e*P **P 11 15 34.0 +0.8**
comp=Z,12nm,1.2s
RND Reindeer 47.89 35 *e*P **P 11 15 34.3 +0.6**
RND pmax pmax
comp=Z,13nm,1.4s
RND Reindeer 47.89 35 *e*P **P 11 15 34.3 +0.6**
comp=Z,13nm,1.4s
KKN Kakani 48.12 276 *e*P **P 11 15 36.2 0.0**
comp=Z,63nm,0.8s
PKIN Phulchoki 48.13 275 *e*P **P 11 15 36.3 0.0**
comp=Z,19nm,0.8s
WRH Wood River Hil 48.20 33 *e*P **P 11 15 37.2 +1.2**
comp=Z,4.7nm,0.8s
SML Sawmill 48.20 37 *e*P **P 11 15 37.1 +1.0**
SML pmax pmax
comp=Z,10.0nm,1.0s
SML Sawmill 48.20 37 *e*P **P 11 15 37.1 +1.0**
comp=Z,10nm,1.0s
COLA College 48.29 33⇑*i*P **P 11 15 37.9 +1.2**
COLA pmax pmax
comp=Z,3.0nm,1.0s
DMN Daman 48.34 275 *e*P **P 11 15 37.3 -0.6**
comp=Z,26nm,0.8s
GKN Gorkha 48.53 276 *e*P **P 11 15 39.2 -0.1**
comp=Z,139nm,0.9s
SCM Sheep Creek Mo 48.67 37 *e*P **P 11 15 41.3 +1.5**
SCM pmax pmax
comp=Z,14nm,0.8s
SCM Sheep Creek Mo 48.67 37 *e*P **P 11 15 41.3 +1.5**
comp=Z,14nm,0.8s
IL1 Eielson Array 48.71 33 *e*P **P 11 15 40.4 +0.5**
ILAR Eielson Array 48.71 33 P **P 11 15 40.3 +0.4**
comp=Z,4.0nm,0.9s,baz=266,slow=6.1,SNR=38
ILB Eielson Array 48.71 33 *e*P **P 11 15 40.3 +0.4**
KLU Klutina 49.37 37 *e*P **P 11 15 46.4 +1.2**
comp=Z,6.9nm,0.9s
KOLN Koldanda 49.46 276 *e*P **P 11 15 46.6 +0.2**
comp=Z,41nm,0.9s
DIV Divide 49.48 37 *e*P **P 11 15 47.3 +1.3**
comp=Z,14nm,1.0s
EYAK Cordova Ski Ar 49.56 38 *e*P **P 11 15 47.3 +0.8**
comp=Z,17nm,1.2s
TKM2 Tokmak 2 49.78 298 *e*P **P 11 15 49.6 +0.9**
TKM2 Tokmak 2 49.78 298 *e*P **P 11 15 49.6 +0.9**
comp=Z,32nm,1.0s
PYUN Piuthan 49.79 277 *e*P **P 11 15 49.1 +0.1**
comp=Z,200nm,1.1s
IPM Ipoh 49.89 239 *e*P **P 11 15 48.8 -0.8**
comp=Z,3.4nm,0.8s
DOT Dot Lake 50.01 34 *e*P **P 11 15 50.4 +0.5**
comp=Z,14nm,1.2s
BMRM Bremner River 50.07 38 *e*P **P 11 15 51.8 +1.3**
comp=Z,10nm,1.0s
MENT Mentasta 50.24 35 *e*P **P 11 15 53.6 +1.9**
comp=Z,7.6nm,0.9s
BVAR Borovoye Array 50.53 312 P **P 11 15 53.9 -0.1**
comp=Z,3.2nm,0.6s,baz=68,slow=8.2,SNR=12
BVAR PcP **PcP 11 17 12.1 +0.5**
comp=Z,3.9nm,0.7s,baz=84,slow=6.1,SNR=4.1
BRVK Borovoye 50.59 312*d i*P **P 11 15 54.4 +0.1**
BRVK pmax pmax
comp=Z,6.0nm,0.7s
BRVK Borovoye 50.59 312 *e*P **P 11 15 54.5 +0.1**
comp=Z,8.7nm,0.7s
KSH Kashi 50.61 294 P **P 11 15 59.3 +4.3**
KSH *e*pP sP 11 16 06.8 +0.3
KSH *e*PcP **PcP 11 17 16.5 +4.2**
KSH PcS **PcS 11 21 12.6 +2.8**
KSH S **S 11 23 12.1 +4.0**
KSH pmax pmax
comp=Z,110nm,4.0s
KSH LR LR
comp=N,340nm,11.1s
KSH LR LR
comp=E,160nm,8.7s
KSH LR LR
comp=Z,410nm,13.9s
AAK Ala-Archa 50.64 298 *e*P **P 11 15 55.7 +0.5**
AAK Ala-Archa 50.64 298 *e*P **P 11 15 55.7 +0.5**
comp=Z,6.7nm,0.9s
EKS2 Erkin-Say 51.13 298 *e*P **P 11 15 59.7 +0.9**
EKS2 pmax pmax
comp=Z,7.0nm,0.8s
EKS2 Erkin-Say 51.13 298 *e*P **P 11 15 59.7 +0.9**
comp=Z,7.0nm,0.8s
EGAK Eagle 51.15 32 *e*P **P 11 15 58.6 +0.1**
comp=Z,4.7nm,1.0s
ZRNK Zerenda 51.36 312 *e*P **P 11 16 00.4 +0.2**
ZRNK pmax pmax
comp=Z,11nm,0.8s
ZRNK Zerenda 51.36 312 *e*P **P 11 16 00.4 +0.2**
comp=Z,11nm,0.8s
KKAR Karatay Array 53.25 300 *e*P **P 11 16 15.3 +0.8**
KKAR Karatay Array 53.25 300 *e*P **P 11 16 15.3 +0.8**
INK Inuvik 53.61 27 P **P 11 16 16.9 +0.3**
comp=Z,4.4nm,1.1s,baz=267,slow=10,SNR=4.5
INK Inuvik 53.61 27 *e*P **P 11 16 17.9 +1.3**
INK pmax pmax
comp=Z,7.0nm,1.1s
INK Inuvik 53.61 27 *e*P **P 11 16 17.9 +1.3**
comp=Z,7.4nm,1.1s
SVE Sverdlovsk 55.02 318 *e*P **P 11 16 27.6 +0.5**
SVE pmax pmax
comp=Z,45nm,1.1s
SVE MLR MLR
comp=Z,591nm,16.0s
SOKR Solikamsk 56.14 322 *e*P **P 11 16 33.6 -1.4**
SOKR pmax pmax
comp=Z,20nm,0.9s
SOKR MLR MLR
comp=Z,196nm,19.0s
ARU Arti 56.23 318 P **P 11 16 35.9 +0.1**
comp=Z,16nm,0.7s,baz=69,slow=3.1,SNR=26
ARU Arti 56.23 318*d i*P **P 11 16 35.5 -0.2**
ARU 11 18 38.4
ARU S **S 11 24 24.6 +1.0**
ARU SS **SS 11 28 06.5 -3.3**
ARU pmax pmax
comp=Z,44nm,1.2s
ARU MLR MLR
comp=Z,316nm,17.0s
ARU Arti 56.23 318 *e*P **P 11 16 35.6 -0.2**
comp=Z,33nm,1.0s
FITZ Fitzroy Crossi 57.56 199 *e*P **P 11 16 46.1 +0.5**
comp=Z,12nm,1.4s
KBL Kabul 57.66 291 *e*P **P 11 16 46.5 -0.1**
KBL pmax pmax
comp=Z,15nm,0.9s
KBL Kabul 57.66 291 *e*P **P 11 16 46.5 -0.1**
comp=Z,15nm,0.9s
WRAB Tennant Creek 57.73 189⇑*i*P **P 11 16 46.4 -0.3**
WRAB pmax pmax
comp=Z,48nm,1.2s
WRAB Tennant Creek 57.73 189 *e*P **P 11 16 45.9 -0.8**
comp=Z,13nm,0.9s
WB2 Warramunga Arr 57.74 189 *e*P **P 11 16 46.1 -0.6**
comp=Z,12nm,0.9s
WRA Warramunga Arr 57.74 189 P **P 11 16 45.7 -1.1**
comp=Z,8.6nm,0.8s,baz=7.0,slow=7.3,SNR=53
DLBC Dease Lake 57.83 38 P **P 11 16 49.4 +2.2**
comp=Z,2.5nm,0.8s,baz=314,slow=2.9,SNR=6.7
DLBC Dease Lake 57.83 38 *e*P **P 11 16 49.5 +2.4**
comp=Z,7.3nm,1.3s
ABKAR Akbulak array 57.93 310 *e*P **P 11 16 47.5 -0.3**
AS01 Alice Springs 61.46 188 *e*P **P 11 17 12.0 -0.4**
AS31 Alice Springs 61.47 188 *e*P **P 11 17 12.2 -0.3**
comp=Z,1.8nm,0.7s
ASAR Alice Springs 61.47 188 P **P 11 17 11.8 -0.6**
comp=Z,5.8nm,0.7s,baz=15,slow=6.8,SNR=57
YKA Yellowknife Ar 63.02 30 P **P 11 17 22.6 +0.2**
comp=Z,1.6nm,0.7s,baz=303,slow=6.7,SNR=21
YKB5 Yellowknife Ar 63.02 30 *e*P **P 11 17 23.6 +1.2**
KLMR Klimovskoe 63.50 328 *e*P **P 11 17 24.6 -1.0**
KLMR *e* 11 19 43.8
KLMR pmax pmax
comp=Z,24nm,1.5s
ARA0 ARCESS Array S 63.60 339 *e*P **P 11 17 26.6 +0.4**
ARCES ARCESS Array B 63.60 339 P **P 11 17 26.5 +0.3**
comp=Z,3.9nm,0.8s,baz=60,slow=7.3,SNR=6.8
ARCES LR LR 11 50 06.2
comp=Z,124nm,18.2s,baz=84,slow=41
GEYT Alibeck 63.98 299 P **P 11 17 28.8 -0.4**
comp=Z,1.9nm,0.5s,baz=9.5,slow=3.6,SNR=7.5
GEYT LR LR 11 48 13.8
comp=Z,69nm,19.5s,baz=335,slow=39
DAG Danmarks Havn 65.20 355 *i* P **P 11 17 36.3 -0.2**
comp=Z,8.7nm,1.0s
DAG Danmarks Havn 65.20 355 *i* P **P 11 17 36.3 -0.2**
DAG pmax pmax
comp=Z,9.0nm,1.0s
VRH Novokhopyorsk 67.46 318 *e*P **P 11 17 50.5 -0.9**
VRH pmax pmax
comp=Z,20nm,1.4s
OBN Obninsk 67.90 323⇑*i*P **P 11 17 54.4 +0.3**
OBN *e**SP **sP 11 18 06.4 +0.6**
OBN 11 18 19.0
OBN pmax pmax
comp=Z,9.0nm,0.6s
OBN MLR MLR
comp=Z,110nm,15.0s
LPSR Galich'ya Gora 68.15 320 *e*P **P 11 17 54.5 -1.2**
LPSR pmax pmax
comp=Z,10.0nm,0.7s
FIA1 FINESS Array S 68.50 332 *e*P **P 11 17 58.1 +0.4**
comp=Z,16nm,0.9s
FINES FINESS Array B 68.50 332 P **P 11 17 57.9 +0.2**
comp=Z,12nm,0.9s,baz=52,slow=7.5,SNR=24
FINES LR LR 11 48 53.3
comp=Z,92nm,19.7s,baz=26,slow=37
VSR Storozhevoye 68.80 319 *e*P **P 11 17 59.4 -0.4**
VSR pmax pmax
comp=Z,10.0nm,1.1s
GOF Gofitskoye 70.06 312⇑*e*P **P 11 18 07.8 +0.1**
SUMG Summit 70.07 0 *i* P **P 11 18 08.3 +0.5**
comp=Z,11nm,1.1s
SUMG Summit 70.07 0 *e*P **P 11 18 08.7 +0.9**
SUMG pmax pmax
comp=Z,9.0nm,1.0s
SUMG Summit 70.07 0 *e*P **P 11 18 08.7 +0.9**
comp=Z,9.3nm,1.0s
VSU Vasula 70.18 330⇓*i*P **P 11 18 09.1 +1.0**
VSU pmax pmax
comp=Z,62nm,1.2s
ZEI Tsey 70.80 309 *e*P **P 11 18 10.8 -1.7**
ZEI pmax pmax
comp=Z,13nm,0.8s
KBZ Khabaz 70.88 311 P **P 11 18 12.8 +0.1**
comp=Z,6.2nm,0.8s,baz=59,slow=3.2,SNR=16
KBZ LR LR 11 53 52.3
comp=Z,53nm,20.1s,baz=38,slow=40
KIV Kislovodsk 70.88 311 *e*P **P 11 18 14.3 +1.4**
KIV pmax pmax
comp=Z,25nm,1.1s
KIV MLR MLR
comp=Z,63nm,17.0s
KIV Kislovodsk 70.88 311 *e*P **P 11 18 14.6 +1.7**
comp=Z,21nm,0.9s
NEY Neytrino 71.26 310⇓*e*P **P 11 18 16.8 +1.5**
NEY pmax pmax
comp=Z,2.0nm,1.4s
GNI Garni 71.74 307 ⇑P **P 11 18 19.8 +1.6**
GNI pmax pmax
comp=Z,46nm,1.7s
CHVG Ch'k'valeri 71.94 310⇑*i*P **P 11 18 18.9 -0.3**
UOSS Minazif 72.10 288 *e*P **P 11 18 20.9 +0.5**
comp=Z,0.9nm,0.8s
MFID Camas Ranch 72.84 48 *e*P **P 11 18 26.1 +1.4**
comp=Z,6.6nm,1.4s
FFC Flin Flon 72.92 33 *e*P **P 11 18 25.5 +0.8**
FFC pmax pmax
comp=Z,7.0nm,0.8s
FFC Flin Flon 72.92 33 *e*P **P 11 18 25.5 +0.8**
comp=Z,6.9nm,0.8s
FCC Fort Churchill 73.23 27 *e*P **P 11 18 26.3 -0.2**
FCC Fort Churchill 73.23 27 *e*P **P 11 18 26.2 -0.2**
LRM Limekiln Ridge 73.36 45 *e*P **P 11 18 29.0 +1.2**
DLMT Dillon 73.55 45 *e*P **P 11 18 30.2 +1.3**
comp=Z,7.6nm,1.1s
HLID Hailey 73.59 47 *e*P **P 11 18 30.7 +1.6**
comp=Z,3.0nm,1.0s
NC204 NORSAR Array S 73.76 338 *e*P **P 11 18 30.0 +0.2**
NB201 NORSAR Array S 73.78 337 *e*P **P 11 18 30.4 +0.6**
NB2 NORSAR Subarra 73.81 337 P **P 11 18 29.8 -0.2**
comp=Z,11nm,0.8s,baz=40,slow=6.2
NOA NORSAR Array B 73.81 337 P **P 11 18 29.8 -0.2**
comp=Z,6.6nm,0.7s,baz=43,slow=5.4,SNR=21
NOA LR LR 11 53 36.8
comp=Z,103nm,20.5s,baz=40,slow=38
NOA NORSAR Array B 73.81 337 P **P 11 18 29.8 -0.2**
NOA pmax pmax
comp=Z,5.0nm,0.8s
NOA MLR MLR
comp=Z,103nm,20.5s
NBO02 NORSAR Array S 73.91 338 *e*P **P 11 18 31.1 +0.6**
BOZ Bozeman (W) 73.92 44 *e*P **P 11 18 32.1 +1.0**
BOZ pmax pmax
comp=Z,6.0nm,1.1s
BOZ Bozeman (W) 73.92 44 *e*P **P 11 18 32.1 +1.0**
comp=Z,6.4nm,1.1s
AKASG Malin Array Be 74.12 322 P **P 11 18 31.7 -0.2**
comp=Z,4.9nm,0.6s,baz=46,slow=6.2,SNR=18
AKASG LR LR 11 52 44.7
comp=Z,53nm,18.2s,baz=65,slow=37
AKBB Malin Array Si 74.12 322 *e*P **P 11 18 32.1 +0.2**
AKBB pmax pmax
comp=Z,9.0nm,1.0s
AKBB Malin Array Si 74.12 322 *e*P **P 11 18 32.1 +0.2**
comp=Z,9.2nm,1.0s
KIEV Kiev 74.13 322⇑*i*P **P 11 18 32.3 +0.4**
KIEV pmax pmax
comp=Z,6.0nm,0.9s
KIEV Kiev 74.13 322 *e*P **P 11 18 31.9 -0.1**
comp=Z,8.8nm,1.0s
AK11 Malin Array Si 74.16 322 *e*P **P 11 18 32.1 0.0**
NV01 Mina Array Sit 74.22 54 *e*P **P 11 18 34.0 +1.0**
NVAR Mina Array Bea 74.22 54 P **P 11 18 34.0 +0.9**
comp=Z,2.5nm,0.9s,baz=292,slow=6.1,SNR=13
NV11 Mina Array Sit 74.31 54 *e*P **P 11 18 35.9 +2.4**
comp=Z,6.6nm,1.4s
QLMT Earthquake Lak 74.53 45 *e*P **P 11 18 35.6 +0.9**
ELK Elko 74.77 50 *e*P **P 11 18 37.6 +1.4**
ELK pmax pmax
comp=Z,3.0nm,0.9s
ELK Elko 74.77 50 *e*P **P 11 18 37.6 +1.4**
comp=Z,2.7nm,0.9s
YMR Madison River 74.89 45 *e*P **P 11 18 37.8 +1.0**
comp=Z,8.8nm,1.4s
YFT Old Faithful 75.10 45 *e*P **P 11 18 40.9 +2.8**
comp=Z,6.0nm,1.0s
SIM Simferopol' 75.24 316 P **P 11 18 38.9 +0.4**
SIM pmax pmax
comp=Z,9.0nm,0.7s
SIM MLR MLR
comp=E,80nm,16.5s
LKWY Lake 75.27 45 *e*P **P 11 18 41.2 +2.1**
LKWY pmax pmax
comp=Z,6.0nm,0.9s
LKWY Lake 75.27 45 *e*P **P 11 18 41.2 +2.1**
comp=Z,5.5nm,0.9s
H17A Grant Village 75.28 45 *e*P **P 11 18 41.8 +2.7**
comp=Z,9.1nm,1.0s
IMW Indian Meadow 75.38 46 *e*P **P 11 18 41.8 +2.0**
comp=Z,5.7nm,1.0s
FLWY Flagg Ranch 75.40 45 *e*P **P 11 18 42.1 +2.4**
comp=Z,12nm,1.4s
RLMT Red Lodge 75.55 44 *e*P **P 11 18 41.8 +1.2**
comp=Z,6.3nm,1.3s
MOOW Moose Ponds 75.59 46 *e*P **P 11 18 42.2 +1.4**
comp=Z,3.8nm,1.0s
HVU Hansel Valley 75.62 48 *e*P **P 11 18 42.8 +1.8**
HVU pmax pmax
comp=Z,4.0nm,1.0s
HVU Hansel Valley 75.62 48 *e*P **P 11 18 42.8 +1.8**
comp=Z,4.4nm,1.0s
LOHW Long Hollow 75.75 46 *e*P **P 11 18 43.5 +1.8**
comp=Z,2.2nm,0.8s
SNOW Snow King Moun 75.76 46 *e*P **P 11 18 44.2 +2.4**
comp=Z,6.3nm,1.1s
REDW Red Top Meadow 75.77 46 *e*P **P 11 18 44.1 +2.2**
comp=Z,5.5nm,1.1s
R11A Troy Canyon, C 75.99 52 *e*P **P 11 18 44.4 +1.2**
comp=Z,4.7nm,1.1s
AHID Auburn Hatcher 75.99 47 *e*P **P 11 18 44.1 +0.9**
comp=Z,5.8nm,1.3s
SORM Soroca 76.23 321⇓*i*P **P 11 18 44.0 -0.1**
TPNV Topopah Spring 76.41 54 *e*P **P 11 18 46.8 +1.2**
TPNV pmax pmax
comp=Z,7.0nm,1.0s
TPNV Topopah Spring 76.41 54 *e*P **P 11 18 46.8 +1.2**
comp=Z,7.3nm,1.0s
HWUT Hardware Ranch 76.44 48 *e*P **P 11 18 47.3 +1.6**
comp=Z,10.0nm,1.2s
DUG Dugway, Tooele 76.57 49 *e*P **P 11 18 47.6 +1.2**
DUG pmax pmax
comp=Z,6.0nm,1.0s
DUG Dugway, Tooele 76.57 49 *e*P **P 11 18 47.6 +1.2**
comp=Z,6.1nm,1.0s
TCUT Toone Canyon 76.84 48 *e*P **P 11 18 49.6 +1.6**
comp=Z,9.4nm,1.0s
BW06 Boulder Array 76.88 46 *e*P **P 11 18 49.0 +0.8**
comp=Z,3.2nm,0.8s
PD31 Pinedale Array 76.88 46 *e*P **P 11 18 49.0 +0.8**
PDAR Pinedale Array 76.88 46 P **P 11 18 48.6 +0.4**
comp=Z,1.4nm,0.6s,baz=277,slow=3.7,SNR=13
PSUT Pine Spring 76.96 51 *e*P **P 11 18 50.5 +1.8**
comp=Z,6.2nm,1.2s
BSD Bornholm Skovb 77.14 332 *i* P **P 11 18 47.8 -1.3**
comp=Z,13nm,1.0s
BSD Bornholm Skovb 77.14 332 *i* P **P 11 18 47.8 -1.3**
BSD pmax pmax
comp=Z,13nm,1.0s
JLU Jordanelle 77.14 48 *e*P **P 11 18 51.6 +1.9**
comp=Z,4.0nm,1.1s
NLU North Lily Min 77.17 49 *e*P **P 11 18 51.5 +1.6**
comp=Z,7.8nm,1.5s
LVV L'vov 77.18 324 *e*P **P 11 18 49.3 -0.1**
SHPR Sheep Range 77.37 54 *e*P **P 11 18 52.5 +1.5**
comp=Z,3.9nm,1.0s
MSU Marysvale 78.00 51 *e*P **P 11 18 55.6 +1.0**
MSU Marysvale 78.00 51 *e*P **P 11 18 55.6 +1.0**
TMUT Trail Mountain 78.10 49 *e*P **P 11 18 56.1 +0.9**
comp=Z,3.8nm,1.1s
BUR08 Bucovina Ar. S 78.13 322 *e*P **P 11 18 55.8 +0.8**
BURAR Bucovina Array 78.14 322⇑*i*P **P 11 18 55.2 +0.2**
TESR Tescani 78.18 320⇑*i*P **P 11 18 55.0 -0.1**
P17A Butcher Ranch, 78.27 49 *e*P **P 11 18 57.6 +1.6**
comp=Z,12nm,1.3s
LCMT Little Creek M 78.27 52 *e*P **P 11 18 57.7 +1.7**
comp=Z,7.3nm,1.2s
LDFC Landfair 78.27 55 *e*P **P 11 18 56.9 +1.0**
comp=Z,15nm,1.2s
MTPU Mount Pierson 78.29 51 *e*P **P 11 18 58.4 +2.0**
comp=Z,3.6nm,0.9s
CFR Carcaliu 78.32 319⇑*i*P **P 11 18 55.8 0.0**
Q16A Castle Valley 78.36 50 *e*P **P 11 18 58.6 +2.1**
comp=Z,9.4nm,1.4s
P18A Preston Nutter 78.47 49 *e*P **P 11 18 58.8 +1.6**
comp=Z,4.9nm,0.9s
KNB Kanab 78.54 52 *e*P **P 11 18 59.3 +1.8**
KNB pmax pmax
comp=Z,10.0nm,1.2s
KNB Kanab 78.54 52 *e*P **P 11 18 59.3 +1.8**
comp=Z,10nm,1.2s
VRI Vrincioaia 78.58 320⇑*i*P **P 11 18 57.6 +0.3**
SRU San Rafael Swe 78.63 49 *e*P **P 11 18 59.2 +1.2**
SRU pmax pmax
comp=Z,8.0nm,1.1s
SRU San Rafael Swe 78.63 49 *e*P **P 11 18 59.2 +1.2**
comp=Z,7.8nm,1.1s
PLOR Plostina 78.63 320⇓*i*P **P 11 18 57.5 -0.2**
ULM Lac du Bonnet 78.71 34 P **P 11 18 57.7 -0.2**
comp=Z,4.2nm,0.8s,baz=321,slow=4.6,SNR=3.0
STHS Stebnicka Huta 78.74 325 *e*P **P 11 18 59.3 +1.1**
STHS pmax pmax
comp=Z,6.0nm,1.2s
STHS Stebnicka Huta 78.74 325 *e*P **P 11 18 59.3 +1.1**
OJC Ojcow 78.81 326 *e*P **P 11 18 59.2 +0.7**
OJC Ojcow 78.81 326 *e*P **P 11 18 59.0 +0.5**
OJC pmax pmax
comp=Z,19nm,1.1s
OJC Ojcow 78.81 326 *e*P **P 11 18 59.0 +0.5**
comp=Z,19nm,1.1s
BR131 Keskin Array S 78.82 312 *e*P **P 11 18 59.5 +0.6**
BRTR Keskin Array B 78.82 312 P **P 11 18 58.9 -0.1**
comp=Z,1.6nm,0.8s,baz=86,slow=5.1,SNR=11
BRTR LR LR 11 58 19.5
comp=Z,36nm,18.1s,baz=56,slow=39
BRTR Keskin Array B 78.82 312*ce*P **P 11 19 00.0 +1.1**
BRTR pmax pmax
comp=Z,2.0nm,0.7s
ARCR ARCALIA 78.93 322⇑*i*P **P 11 18 59.1 -0.1**
RSSD Black Hills 79.04 42 *e*P **P 11 19 00.7 +0.6**
RSSD pmax pmax
comp=Z,3.0nm,0.7s
RSSD Black Hills 79.04 42 *e*P **P 11 19 00.7 +0.6**
comp=Z,2.6nm,0.7s
NIE Niedzica 79.17 326 *e*P **P 11 19 01.9 +1.4**
NIE Niedzica 79.17 326 *e*P **P 11 19 01.9 +1.4**
DOPR Dopca 79.19 321⇑*i*P **P 11 19 02.7 +2.0**
MSAB Monastry St. A 79.21 318⇑*i*P **P 11 19 01.8 +1.0**
U15A North Rim 79.24 52 *e*P **P 11 19 03.1 +1.7**

comp=Z,6.6nm,1.1s
MLR Muntele Rosu 79.24 320⇓ iP P 11 19 02.6 +1.5
BR231 Keskin MP Arra 79.25 312 eP P 11 18 59.7 -1.5
O20A White River Ci 79.32 47 eP P 11 19 03.3 +1.5
comp=Z,5.2nm,1.0s
GLA Glamis 79.70 56 eP P 11 19 04.7 +0.9
GLA pmax pmax
comp=Z,6.0nm,0.9s
GLA Glamis 79.70 56 eP P 11 19 04.7 +0.9
comp=Z,5.8nm,0.9s
VOIR 79.73 320⇑ iP P 11 19 03.7 0.0
LANS Liptovska Anna 79.73 326 eP P 11 19 05.2 +1.6
LANS Liptovska Anna 79.73 326 eP P 11 19 05.2 +1.6
OKC Ostrava-Krasne 79.81 327 eP P 11 19 05.0 +1.1
OKC epP PcP 11 19 10.1 -1.5
OKC Ostrava-Krasne 79.81 327 eP P 11 19 05.0 +1.1
OKC e 11 19 10.1
PV09 Paradox Valley 79.86 49 eP P 11 19 06.4 +1.6
DRGR 79.93 323⇑ iP P 11 19 04.5 -0.3
ARR Arges 79.99 321⇓ iP P 11 19 06.3 +1.2
PV10 Paradox Valley 79.99 49 eP P 11 19 07.2 +1.7
MORC Moravsky Berou 80.11 327⇓ iP P 11 19 06.6 +0.9
MORC Moravsky Berou 80.11 327 eP P 11 19 06.7 +1.0
MORC pmax pmax
comp=Z,37nm,1.0s
MORC Moravsky Berou 80.11 327 eP P 11 19 06.7 +1.0
comp=Z,37nm,1.0s
N23A Red Feather La 80.14 46 eP P 11 19 07.8 +1.5
comp=Z,9.0nm,1.1s
PV05 Paradox Valley 80.15 49 eP P 11 19 08.0 +1.6
DPC Dobruska-Polom 80.20 328 eP P 11 19 07.1 +1.0
DPC ex x 11 19 24.9
DPC ePP PP 11 22 04.8 -3.2
DPC Dobruska-Polom 80.20 328 eP P 11 19 07.1 +1.0
DPC e 11 19 24.9
DPC e 11 22 04.8
UPC Upice 80.21 328 eP P 11 19 06.9 +0.8
UPC epP PcP 11 19 12.3 -1.0
UPC Upice 80.21 328 eP P 11 19 06.9 +0.8
UPC e 11 19 12.3
KRLC Kraliky 80.22 328 eP P 11 19 07.2 +1.0
KRLC Kraliky 80.22 328 eP P 11 19 07.2 +1.0
Y14A Wickenburg 80.34 55 eP P 11 19 08.5 +1.3
comp=Z,30nm,1.1s
WUAZ Wupatki 80.39 52 eP P 11 19 09.2 +1.6
comp=Z,9.7nm,1.1s
PV01 Paradox Valley 80.43 49 eP P 11 19 09.1 +1.2
PSZ Piszkesteto 80.45 325⇑ iP P 11 19 08.4 +0.9
PSZ Piszkesteto 80.45 325 eP P 11 19 08.8 +1.3
PSZ pmax pmax
comp=Z,12nm,1.0s
PSZ Piszkesteto 80.45 325 eP P 11 19 08.8 +1.3
comp=Z,12nm,1.0s
VYHS Vyhne 80.50 326 eP P 11 19 08.8 +1.1
VYHS pmax pmax
comp=Z,3.0nm,1.0s
VYHS Vyhne 80.50 326 eP P 11 19 08.8 +1.1
SMCO Snowmass 80.69 47 eP P 11 19 10.7 +1.3
comp=Z,5.9nm,1.1s
BRG Berggiesshubel 80.78 330 eP P 11 19 09.5 +0.4
comp=Z,7.9nm,0.9s
BRG Berggiesshubel 80.78 330 eP P 11 19 09.5 +0.4
BRG pmax pmax
comp=Z,8.0nm,1.0s
CLL Collm 80.81 330⇓ iP P 11 19 09.3 0.0
comp=Z,14nm,0.9s
CLL i 11 19 14.0
CLL Collm 80.81 330⇓ iP P 11 19 09.3 0.0
CLL pmax pmax
comp=Z,14nm,0.9s
CLL Collm 80.81 330 eP P 11 19 09.4 +0.2
comp=Z,12nm,0.9s
VRAC Vranov 80.88 327⇓ iP P 11 19 09.9 +0.2
GZR Gura Zlata 80.90 321⇓ iP P 11 19 10.5 +0.5
X16A Lo Mia Camp, P 81.04 53 eP P 11 19 12.1 +1.0
comp=Z,5.8nm,1.0s
ISCO Idaho Springs 81.06 46 eP P 11 19 12.3 +1.0
ISCO pmax pmax
comp=Z,14nm,2.0s
ISCO Idaho Springs 81.06 46 eP P 11 19 12.3 +1.0
comp=Z,14nm,2.0s
MVCO Mesa Verde 81.07 50 eP P 11 19 12.7 +1.4
comp=Z,6.0nm,1.1s
GOPC GO Pecny, Ondr 81.17 329 eP P 11 19 12.4 +1.1
GOPC GO Pecny, Ondr 81.17 329 eP P 11 19 12.4 +1.1
PRU Pruhonice 81.22 329 eP P 11 19 12.3 +0.8
PRU epP PcP 11 19 17.4 -0.3
PRU Pruhonice 81.22 329 eP P 11 19 12.3 +0.8
TREC Trest 81.36 328 eP P 11 19 13.2 +0.9
TREC epP PcP 11 19 18.2 -0.2
TREC Trest 81.36 328 eP P 11 19 13.2 +0.9
S22A 4UR Ranch, Cre 81.72 48 eP P 11 19 16.5 +1.7
comp=Z,8.4nm,1.3s
MDVR Moldovita 81.86 322⇑ iP P 11 19 15.5 +0.4
NKC Novy Kostel 81.87 330 eP P 11 19 15.7 +0.7
NKC Novy Kostel 81.87 330 eP P 11 19 15.7 +0.7
CONA Conrad Observa 82.24 327 iP P 11 19 18.4 +1.3
comp=Z,9.6nm,1.1s,SNR=6.3
KHC Kasperske Hory 82.28 329 eP P 11 19 17.5 +0.3
KHC Kasperske Hory 82.28 329 eP P 11 19 17.5 +0.3
GEC2 GERESS Array S 82.45 328 eP P 11 19 18.6 +0.4
GEC2 pmax pmax
comp=Z,4.0nm,0.9s
GEC2 GERESS Array S 82.45 328 eP P 11 19 18.6 +0.4
comp=Z,4.3nm,0.9s
GERES GERESS Array B 82.45 328 P P 11 19 18.2 0.0
comp=Z,2.4nm,0.8s,baz=35,slow=4.9,SNR=21
GERES LR LR 11 58 22.7
comp=Z,114nm,19.4s,baz=0.5,slow=37
GEA0 GERESS Array S 82.46 328 eP P 11 19 18.1 -0.1
SDCO Great Sand Dun 82.50 48 eP P 11 19 20.3 +1.4
comp=Z,4.1nm,1.3s
ARSA Arzberg 82.91 327 iP P 11 19 21.4 +0.9
comp=Z,5.1nm,1.0s
MOA Molln 82.99 328 iP P 11 19 21.6 +0.7
comp=Z,6.6nm,1.2s
ECSD EROS Data Cent 83.12 39 eP P 11 19 22.0 +0.4
comp=Z,4.9nm,0.9s
T25A Trinidad 83.55 47 eP P 11 19 24.8 +0.5
comp=Z,4.4nm,0.8s
SOKA Soboth 83.56 326 iP P 11 19 24.2 +0.3
comp=Z,13nm,1.1s,SNR=8.6
LAZ Ladron 83.75 51 eP P 11 19 26.9 +1.6
ANMO Albuquerque 83.81 50⇓ iP P 11 19 26.5 +0.9
ANMO pmax pmax
comp=Z,7.0nm,1.2s
ANMO Albuquerque 83.81 50 eP P 11 19 27.0 +1.5
comp=Z,5.5nm,1.0s
OBKA Obir 83.90 327 iP P 11 19 25.6 -0.1
comp=Z,2.9nm,0.8s
VAY Valandovo 83.92 319 iP P 11 19 26.5 +0.8
KBA Koelnbreinsper 83.98 328 iPcP P 11 19 27.5 +1.3
comp=Z,5.8nm,0.8s
MEM Membach 83.98 334 P P 11 19 26.7 +0.8
SKO Skopje 84.03 320 iP P 11 19 27.7 +1.3
LPM Los Pinos Moun 84.12 51 eP P 11 19 28.4 +1.2
MYKA Terra Mystica 84.20 327 iP P 11 19 27.1 -0.1
comp=Z,2.5nm,0.6s
BNM Barren Site 84.23 51 eP P 11 19 29.1 +1.3
BCLA Clavier 84.39 334 P P 11 19 25.1 -2.8
319A Douglas 84.39 55 eP P 11 19 29.4 +0.9
319A epP P 11 19 29.8 +1.3
121A Cookes Peak, D 84.59 53 eP P 11 19 30.4 +0.9
comp=Z,7.4nm,1.1s
ABTA Abfaltersbach 84.59 328 iP P 11 19 25.2 -4.0
comp=Z,5.1nm,1.2s
MOTA Moosalm 84.71 329 iP P 11 19 30.0 +0.1
comp=Z,5.8nm,0.9s
RETA Reutte 84.73 329 iPcP P 11 19 30.6 +0.8
comp=Z,14nm,1.1s,SNR=5.7
DOU Dourbes 84.91 334 P P 11 19 31.0 +0.4
OHR Ohrid 84.99 320 iP P 11 19 31.6 +0.4
BFO Black Forest 85.01 331 eP P 11 19 32.0 +0.8
BFO Black Forest 85.01 331 eP P 11 19 31.7 +0.5
comp=Z,12nm,0.9s
FETA Feichten 85.12 329 iP P 11 19 31.4 -0.5
comp=Z,5.1nm,0.9s
DAVA Damuels 85.25 330 iP P 11 19 30.6 -1.9
comp=Z,10nm,0.8s
KARP Karpathos 85.43 312 eP P 11 19 33.8 +0.3
comp=Z,12nm,1.0s
FUORN Ofenpass-Fuorn 85.63 329 eP P 11 19 35.3 +0.7
comp=Z,15nm,0.8s
MNTX Cornudas Mount 86.66 52 eP P 11 19 40.5 +0.9
comp=Z,2.3nm,1.0s
LAST Lasithi 86.68 313⇑ iP P 11 19 39.2 -0.6
AMTX Amarillo 86.71 48 eP P 11 19 41.3 +1.3
comp=Z,9.5nm,0.9s
V34A Guthrie 88.41 44 eP P 11 19 49.0 +1.0
comp=Z,9.0nm,1.0s
WMOK Wichita Mounta 88.49 46 eP P 11 19 49.0 +0.6
WMOK pmax pmax
comp=Z,5.0nm,1.1s
WMOK Wichita Mounta 88.49 46 eP P 11 19 49.0 +0.6
comp=Z,5.3nm,1.1s
TX31 Lajitas Ar. Si 89.35 53 eP P 11 19 53.5 +0.8
TXAR Lajitas Array 89.35 53 P P 11 19 53.1 +0.5
comp=Z,1.5nm,0.8s,baz=297,slow=3.1,SNR=13
TXAR LR LR 11 57 05.4
comp=Z,30nm,20.7s,baz=0.0,slow=34
CCM Cathedral Cave 90.07 39 eP P 11 19 56.2 +0.5
CCM pmax pmax
comp=Z,10.0nm,1.1s
CCM Cathedral Cave 90.07 39 eP P 11 19 56.2 +0.5
comp=Z,9.5nm,1.1s
SFIN Lafayette 90.24 35 eP P 11 19 57.3 +0.9
comp=Z,19nm,1.6s
WHTX Lake Whitney, 91.24 47 eP P 11 20 02.8 +1.6
comp=Z,9.1nm,0.8s
SIUC Southern Illin 91.34 38 eP P 11 20 02.0 +0.4
comp=Z,9.0nm,1.0s
PBMO Poplar Bluff 91.47 40 eP P 11 20 03.3 +1.1
comp=Z,3.9nm,0.9s
MIAR Mount Ida 91.53 43 eP P 11 20 03.4 +0.9
MIAR pmax pmax
comp=Z,5.0nm,0.8s
MIAR Mount Ida 91.53 43 eP P 11 20 03.4 +0.9
comp=Z,5.5nm,0.8s
X201 Greenbrier Sit 91.61 42 eP P 11 20 03.8 +0.9
comp=Z,5.0nm,0.9s
X301 Greenbrier Sit 91.63 42 eP P 11 20 03.8 +0.8
comp=Z,5.2nm,1.1s
WHAR Wooly Hollow 91.65 42 eP P 11 20 03.5 +0.4
comp=Z,8.2nm,0.8s
ESDC Sonseca Array 96.96 334 LR LR 12 09 13.4
comp=Z,64nm,18.9s,baz=15,slow=38
TORD Torodi Ar. Bea 117.25 316 PKP **PKPdf 11 25 40.5 -1.1**
comp=Z,0.3nm,0.5s,baz=27,slow=1.0,SNR=5.2
TORD PP **PP 11 26 48.6 -2.9**
comp=Z,0.5nm,0.9s,baz=45,slow=6.3,SNR=3.6
SNAA Sanae 141.48 197 PKP PKPpre 11 26 16.9
SNAA Sanae 141.48 197 ePKHKP PKPpre 11 26 20.3
SNAA Sanae 141.48 197 ePKPpre PKPpre 11 26 20.2
VNA2 Neumayer--Watz 143.05 196 PKP PKPbc 11 26 24.7 -0.6
baz=104,slow=2.8
VNA3 Neumayer Olymp 143.29 195 PKP PKPbc 11 26 25.5 -0.5
LPAZ La Paz 145.95 60 PKPbc **PKPab 11 26 37.0 -0.1**
comp=Z,7.3nm,0.8s,baz=304,slow=4.6,SNR=7.9
LPAZ La Paz 145.95 60 ePKP2 **PKPbc 11 26 36.6 +0.1**
LPAZ La Paz 145.95 60 ePKPdf **PKPbc 11 26 36.6 +0.1**
SIV San Ignacio 150.30 50 PKPbc **PKPbc 11 26 47.7 +0.3**
comp=Z,4.5nm,0.8s,baz=234,slow=4.3,SNR=3.1

*ISCJB **22** 11:09:19.1±0.5, 39.°10N±0.°03×29.°05E±0.°03, h0km±7km,*
Error ellipse: s-maj=5.2km s-min=3.7km az=159.7
*CSEM **22** 11:09:19.4±0.1, 39.°10N×29.°06E, h5km, MD2.7, Error*
ellipse: s-maj=2.1km s-min=1.9km az=117.0
*ISK **22** 11:09:19.1, 39.°11N×29.°08E, h7km, MD2.9*
*DDA **22** 11:09:19.2, 39.°08N×29.°04E, h7km, Md2.7*
ISC 22 11:09:19.5±1.0, 39.°09N±0.°02×29.°05E±0.°02, h7km±9km,
n45, σ0°40/61, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**260**	P	**Pg**	**11 09 24.7**	**-0.1**
DEMI				S	**Sg**	**11 09 28.3**	**0.0**
DEMI	**Demirci**	**0.27**	**260**	*i* P	**Pg**	**11 09 24.7**	**-0.1**
DEMI				*i* S	**Sg**	**11 09 28.3**	**0.0**
GDZ	**Gediz**	**0.33**	**90**	P	**Pg**	**11 09 26.4**	**+0.4**
GDZ				S	**Sg**	**11 09 31.2**	**+0.7**
GDZ	**Gediz**	**0.33**	**90**	*i* P	**Pg**	**11 09 26.4**	**+0.4**
GDZ				*i* S	**Sg**	**11 09 31.2**	**+0.7**
TVSB	**Tavsanli**	**0.48**	**41**	PG	**Pg**	**11 09 28.4**	**-0.4**
TVSB				SG	**Sg**	**11 09 34.8**	**-0.3**
TVSB	**Tavsanli**	**0.48**	**41**	*i* Pg	**Pg**	**11 09 28.4**	**-0.4**
TVSB				*i* Sg	**Sg**	**11 09 34.8**	**-0.3**
KULA	**Kula-Manisa**	**0.65**	**208**	*e*PG	**Pg**	**11 09 31.9**	**-0.1**
KULA	**Kula-Manisa**	**0.65**	**208**	*e*Pg	**Pg**	**11 09 31.9**	**-0.1**
DURS	**Dursunbey**	**0.68**	**319**	P	**Pg**	**11 09 32.2**	**-0.4**
DURS	**Dursunbey**	**0.68**	**319**	*i* P	**Pg**	**11 09 32.2**	**-0.4**
DURS				*i* S	**Sn**	**11 09 45.9**	**-0.6**
MANT	**Manisa**	**0.71**	**213**	P	**Pg**	**11 09 32.9**	**-0.3**
MANT				S	**Sg**	**11 09 42.5**	**0.0**
MANT	**Manisa**	**0.71**	**213**	*i* P	**Pg**	**11 09 32.9**	**-0.3**
MANT				*i* S	**Sg**	**11 09 42.5**	**0.0**
KHAL	**Karahalli**	**0.80**	**154**	P	**Pb**	**11 09 35.1**	**-0.6**
KHAL				S	**Sb**	**11 09 46.3**	**-0.3**
KHAL	**Karahalli**	**0.80**	**154**	*i* P	**Pb**	**11 09 35.1**	**-0.6**
KHAL				*i* S	**Sb**	**11 09 46.3**	**-0.3**
KHL	**Karahalli**	**0.85**	**154**	*e*PG	**Pb**	**11 09 36.4**	**-0.1**
KHL	**Karahalli**	**0.85**	**154**	*e*Pg	**Pb**	**11 09 36.4**	**-0.1**
ORLT	**Orhaneli**	**0.96**	**353**	*e*PG	**Pg**	**11 09 38.0**	**0.0**
ORLT	**Orhaneli**	**0.96**	**353**	*e*Pg	**Pg**	**11 09 38.0**	**0.0**
AKHS	**Akhisar**	**0.99**	**258**	P	**Pb**	**11 09 38.9**	**0.0**
AKHS				S	**Sb**	**11 09 52.1**	**0.0**
AKHS	**Akhisar**	**0.99**	**258**	*i* P	**Pb**	**11 09 38.9**	**0.0**
AKHS				*i* S	**Sb**	**11 09 52.1**	**0.0**
AKS	**Akhisar**	**0.99**	**258**	*e*PG	**Pb**	**11 09 38.8**	**-0.1**
AKS	**Akhisar**	**0.99**	**258**	*e*Pg	**Pb**	**11 09 38.8**	**-0.1**
BALB	**Balikesir**	**1.06**	**302**	*e*PG	**Pb**	**11 09 40.2**	**0.0**
BALB	**Balikesir**	**1.06**	**302**	*e*Pg	**Pb**	**11 09 40.2**	**0.0**
IGD	**Bursa**	**1.18**	**6**	*i* P	**Pg**	**11 09 41.4**	**-0.7**
IGD				*i* S	**Sn**	**11 09 58.2**	**-0.4**
CAVI	**Cavuskoy**	**1.27**	**28**	*e*PN	**Pn**	**11 09 43.2**	**-0.4**
CAVI	**Cavuskoy**	**1.27**	**28**	*e*Pn	**Pn**	**11 09 43.2**	**-0.4**
MDNY	**Mudanya-Bursa**	**1.28**	**354**	*e*PN	**Pn**	**11 09 43.1**	**-0.7**
MDNY	**Mudanya-Bursa**	**1.28**	**354**	*e*Pn	**Pn**	**11 09 43.1**	**-0.7**
BALY	**Balya**	**1.29**	**301**	P	**Pg**	**11 09 44.2**	**0.0**
BALY				S	**Sn**	**11 10 02.4**	**+1.0**
BALY	**Balya**	**1.29**	**301**	*i* P	**Pg**	**11 09 44.2**	**0.0**
BALY				*i* S	**Sn**	**11 10 02.4**	**+1.0**
IZI	**Iznik**	**1.29**	**14**	*e*PN	**Pg**	**11 09 44.2**	**0.0**
IZI	**Iznik**	**1.29**	**14**	*e*Pn	**Pg**	**11 09 44.2**	**0.0**
KCTX	**Karacabey (Bur**	**1.29**	**336**	*e*PN	**Pb**	**11 09 44.1**	**0.0**
KCTX	**Karacabey (Bur**	**1.29**	**336**	*e*Pn	**Pb**	**11 09 44.1**	**0.0**
ADVT	**Abdulvahap**	**1.44**	**21**	*e*PN	**Pn**	**11 09 45.9**	**-0.1**
ADVT	**Abdulvahap**	**1.44**	**21**	*e*Pn	**Pn**	**11 09 45.9**	**-0.1**
ARMT	**Armutlu**	**1.48**	**354**	*e*PN	**Pn**	**11 09 46.6**	**+0.1**
ARMT	**Armutlu**	**1.48**	**354**	*e*Pn	**Pn**	**11 09 46.6**	**+0.1**
GULT	**Gulveren**	**1.75**	**40**	*e*PN	**Pn**	**11 09 50.6**	**+0.3**
GULT	**Gulveren**	**1.75**	**40**	*e*Pn	**Pn**	**11 09 50.6**	**+0.3**
HRT	**Hereke**	**1.79**	**15**	*e*PN	**Pn**	**11 09 51.4**	**+0.6**
HRT	**Hereke**	**1.79**	**15**	*e*Pn	**Pn**	**11 09 51.4**	**+0.6**
MRMT	**Marmara Adasi**	**1.88**	**324**	*e*PN	**Pn**	**11 09 52.6**	**+0.5**
MRMT	**Marmara Adasi**	**1.88**	**324**	*e*Pn	**Pn**	**11 09 52.6**	**+0.5**

*SOME **22** 11:10:57.2, 42.°60N×82.°82E, h5km*
*IDC **22** 11:11:00.7±3.6, 42.°07N×81.°78E, h0km, mb3.8/2,*
mb1 3.6/5, mb1mx3.4/45, mbtmp3.7/5, ML3.1/3, MS4.2/1,
Ms1 4.2/1, ms1mx2.6/37, Error ellipse: s-maj=76.2km
s-min=21.0km az=110.0
*NNC **22** 11:11:03.0±1.6, 42.°04N×82.°16E, h0km, mb4.2, mpv3.8,*
Error ellipse: s-maj=13.9km s-min=7.3km az=141.0
ISC 22 11:11:03.0±1.7, 42.°07N±0.°09×82.°33E±0.°07, h13km, n26,
σ2°31/38, 9C-4D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHLS	**Shalkode**	**2.10**	**302**	*e*P	**Pb**	**11 11 39.6**	**-1.6**
137nm,0.2s							
SHLS				*e*S	**Sg**	**11 12 09.9**	**-0.8**
469nm,0.5s							
PDGK	**Podgornoye**	**2.44**	**302**	⇑Pn	**Pn**	**11 11 42.8**	**+0.3**
53nm,0.5s							
PDGK				⇑Lg	Lg	11 12 18.4	
359nm,0.9s							
UZB	**Uzynbulak**	**2.67**	**295**	*e*P	**Pb**	**11 11 48.5**	**-2.2**
43nm,0.4s							
UZB				*e*S	**Sb**	**11 12 25.6**	**+2.2**
159nm,0.6s							
DJR	**Jarkent**	**2.92**	**322**	*e*P	**Pn**	**11 11 50.5**	**+1.2**
37nm,0.4s							
DJR				*e*S	**Sb**	**11 12 28.6**	**-2.1**
63nm,0.4s							
KPKS	**Kokpek**	**3.02**	**299**	*e*P	**Pb**	**11 11 54.9**	**-1.9**
69nm,0.2s							
KPKS				*e*S	**Sb**	**11 12 35.5**	**+1.9**
157nm,0.5s							
SATY	**Saty**	**3.06**	**290**	*e*P	**Pb**	**11 11 55.6**	**-1.8**
70nm,0.4s							
SATY				*e*S	**Sb**	**11 12 38.0**	**+3.3**
108nm,0.6s							
ZHN	**Zhinishke**	**3.07**	**292**	*e*P	**Pb**	**11 11 55.9**	**-1.8**
40nm,0.5s							
ZHN				*e*S	**Sb**	**11 12 38.1**	**+3.0**
53nm,0.3s							
MNBS	**Baschi**	**3.51**	**306**	*e*P	**Pn**	**11 11 59.1**	**+1.8**
16nm,0.5s							
MNBS				*e*S	**Sb**	**11 12 44.0**	**-3.5**
178nm,0.8s							
KAPS	**Kapalarasan**	**3.87**	**327**	*e*P	**Pn**	**11 12 04.3**	**+2.1**
24nm,0.3s							
KAPS				*e*S	**Sn**	**11 12 51.6**	**+4.1**
47nm,0.5s							
ARXS	**Arharly**	**3.93**	**305**	*e*P	**Pb**	**11 12 09.1**	**-3.0**
35nm,0.6s							
ARXS				*e*S	**Sb**	**11 13 00.8**	**+1.2**
43nm,0.8s							
TDK	**Taldyqorghan**	**4.09**	**317**	*e*P	Pb	11 12 10.2	-4.7
24nm,0.2s							
TDK				*e*S	**Sb**	**11 13 02.5**	**-1.8**
25nm,1.1s							
TNSS	**Tian-Shan**	**4.09**	**286**	*e*P	**Pb**	**11 12 15.9**	**+0.8**
15nm,0.4s							
TNSS				*e*S	**Sg**	**11 13 11.5**	**-2.9**
31nm,0.8s							
MTBS	**Maitube**	**4.48**	**286**	*e*P	**Pb**	**11 12 24.1**	**+2.5**
14nm,0.4s							
MTBS				*e*S	**Sg**	**11 13 26.7**	**-0.1**
19nm,0.4s							
MK31	**Makanchi Array**	**4.72**	**360**	Pn	**Pn**	**11 12 15.4**	**+1.5**
2.8nm,0.5s,baz=187,slow=13,SNR=104							
MK31				Pg	Pg	11 12 29.8	-3.7
3.8nm,0.4s,baz=171,slow=16,SNR=9.2							
MK31				⇓Lg	Lg	11 13 30.5	
22nm,0.7s,baz=190,slow=28,SNR=4.0							
MKAR	**Makanchi Array**	**4.72**	**360**	Pn	**Pn**	**11 12 15.7**	**+1.7**
3.0nm,0.3s,baz=190,slow=13,SNR=65							
MKAR				Sn	**Sn**	**11 13 11.1**	**+2.5**
3.2nm,0.3s,baz=174,slow=16,SNR=5.9							
MKAR				Lg	Lg	11 13 31.1	
4.9nm,0.3s,baz=180,slow=28,SNR=6.3							
MAKZ	**Makanchi**	**4.74**	**357**	⇓Pn	**Pn**	**11 12 15.3**	**+1.1**
7.0nm,0.3s							
MAKZ				⇑Pg	Pb	11 12 29.9	+3.9
10nm,0.6s							
MAKZ				⇑Sn	**Sn**	**11 13 13.6**	**+4.5**
8.2nm,0.5s							
MAKZ				⇑Lg	Lg	11 13 32.0	
25nm,0.8s							
DGS	**Degeres**	**4.97**	**286**	*e*P	**Pb**	**11 12 31.3**	**+1.3**
19nm,0.4s							
DGS				*e*S	**Sg**	**11 13 41.5**	**-1.2**
29nm,0.9s							
TKM2	**Tokmak 2**	**5.05**	**282**	⇑Pn	**Pn**	**11 12 18.4**	**-0.1**
8.2nm,0.5s							
TKM2				⇓Lg	Lg	11 13 40.1	
25nm,0.6s							
AAK	**Ala-Archa**	**5.83**	**278**	⇑Pg	**Pb**	**11 12 46.7**	**+2.0**
2.7nm,0.4s							
AAK				⇑Lg	Lg	11 14 03.8	
28nm,1.1s							
KURBB	**Kurchatov Arra**	**8.95**	**344**	Pn	**Pn**	**11 13 09.0**	**-2.9**
0.1nm,0.3s,baz=173,slow=12,SNR=2.9							
KURBB	**Kurchatov Arra**	**8.95**	**344**	⇑Pn	Pn	11 13 14.9	+3.1
5.9nm,0.7s							
KURK	**Kurchatov**	**9.02**	**345**	⇓Pn	**Pn**	**11 13 15.5**	**+2.7**
11nm,0.8s							
ZALV	**Zalesovo Beam**	**12.00**	**7**	Pn	**Pn**	**11 13 55.0**	**+1.4**
0.5nm,0.3s,baz=189,slow=15,SNR=4.1							
ARU	**Arti**	**20.99**	**321**	P	**P**	**11 15 44.1**	**-1.7**
3.8nm,0.5s,baz=107,slow=11,SNR=9.3							
YAK	**Yakutsk**	**34.26**	**38**	LR	LR	11 32 13.6	
comp=Z,439nm,20.9s,baz=271,slow=37							
TORD	**Torodi Ar. Bea**	**74.40**	**274**	P	**P**	**11 22 38.1**	**-2.7**
0.2nm,0.4s,baz=45,slow=5.5,SNR=6.9							

*IDC **22** 11:19:57.7±0.8, 34.°02S×72.°26W, h0km, mb4.3/6,*
mb1 4.4/9, mb1mx4.2/26, mbtmp4.3/9, ML4.3/3, MS3.7/3,
Ms1 3.7/3, ms1mx3.3/17, Error ellipse: s-maj=33.1km
s-min=19.6km az=81.0
*ISCJB **22** 11:19:59.2±1.3, 34.°01S±0.°03×72.°40W±0.°07, h20km±9km,*
mb4.6/17, MS3.1/1, Error ellipse: s-maj=10.0km
s-min=5.2km az=12.1
*NEIC **22** 11:20:01.0, 34.°03S×72.°14W, h18km, mb4.7/15,*
ML4.2(GUC), After GUC.
*GUC **22** 11:20:01.2±0.6, 34.°03S×72.°14W, h18km±3km, ML4.2*
ISC 22 11:20:00.1±1.7, 34.°01S±0.°04×72.°35W±0.°08, h15km±9km,
n64, σ1°40/69, mb4.6/17, 2D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHPI	**Pichilemu**	**0.48**	**143**	*i* P	**Pg**	**11 20 08.8**	**-0.9**
CHPI				*i* S	**Sg**	**11 20 15.3**	**-0.8**
TALC	**Talca**	**1.51**	**157**	*i* P	**Pn**	**11 20 26.5**	**-0.1**
TALC				*i* S	**Sn**	**11 20 45.2**	**-0.7**
ROC1	**El Roble**	**1.52**	**48**	*e*P	**Pn**	**11 20 26.5**	**-0.5**
ROC1				⇓*e*S	**Sn**	**11 20 46.5**	**-0.1**
ROC1	**El Roble**	**1.52**	**48**	*e*Pn	**Pn**	**11 20 26.6**	**-0.4**
ROC1				*e*Sn	**Sg**	**11 20 52.4**	**+3.2**
ROCH	**El Roble**	**1.52**	**48**	*i* P	**Pn**	**11 20 26.4**	**-0.7**
ROCH				*i* S	**Sn**	**11 20 45.9**	**-0.9**
ROCH				IAML		11 20 53.4	
comp=E,8μm,0.6s							
PEL	**Peldehue**	**1.64**	**59**	*i* P	**Pn**	**11 20 27.7**	**-0.8**
PEL				*i* S	**Sn**	**11 20 47.2**	**-2.1**
PEL				IAML		11 20 57.8	
comp=N,6μm,0.5s							
AUSP	**Uspallata**	**3.06**	**55**	*e*P	**Pn**	**11 20 50.3**	**+2.1**
RTLS	**Leoncito**	**3.39**	**50**	*e*P	**Pn**	**11 20 54.9**	**+2.2**
RTCV	**Cerro Valdivia**	**3.85**	**57**	*e*P	**Pn**	**11 21 02.7**	**+3.7**
CANA	**Caviahue**	**4.01**	**165**	*e*P	**Pn**	**11 21 04.8**	**+3.6**
RTLL	**Cerro Villicun**	**4.22**	**52**	*e*P	**Pn**	**11 21 05.7**	**+1.6**
AMOG	**MOGNA**	**4.47**	**48**	*e*P	**Pn**	**11 21 08.4**	**+0.9**
ACAN	**Cantantal**	**4.66**	**70**	*e*P	**Pn**	**11 21 12.0**	**+1.9**
LCO	**Las Campanas**	**5.18**	**16**	*e*Pn	**Pn**	**11 21 16.2**	**-1.2**
LCO				*e*Sn	**Sn**	**11 22 14.8**	**-2.1**
AGUA	**GUANDACOL**	**5.58**	**37**	*e*P	**Pn**	**11 21 23.7**	**+1.0**
MRA	**San Martin**	**5.78**	**76**	⇓*e*P	**Pn**	**11 21 26.5**	**+1.0**
MRA				IAML		11 23 15.8	
comp=Z,95nm,0.6s							
VCA	**Vinchina**	**6.34**	**35**	*e*P	**Pn**	**11 21 33.9**	**+0.7**
VCA				IAML		11 23 20.0	
comp=Z,98nm,0.5s							
PLCA	**Paso Flores**	**6.86**	**168**	Pn	**Pn**	**11 21 40.4**	**0.0**
comp=Z,1.9nm,0.3s,baz=358,slow=12,SNR=22							
PLCA				Sn	Sb	11 23 10.7	-10
comp=Z,0.7nm,0.3s,baz=54,slow=14,SNR=3.0							
PLCA	**Paso Flores**	**6.86**	**168**	*e*Pn	**Pn**	**11 21 40.7**	**+0.4**
PLCA				Sn	Sb	11 23 10.7	-10
TCA	**Tanti**	**7.06**	**70**	*e*P	**Pn**	**11 21 41.9**	**-1.2**
TCA				IAML		11 23 49.1	
comp=Z,68nm,0.7s							
CYA	**Choya**	**7.89**	**47**	*e*P	**Pn**	**11 21 50.6**	**-3.8**
CYA				IAML		11 24 16.4	
comp=Z,37nm,0.6s							
TRQA	**Tornquist**	**9.32**	**

ROSC	El Rosal	38.68	357	LR	LR	11 42 09.6	
	comp=Z,33nm,20.4s,baz=190,slow=34						
SNAA	Sanae	51.67	158	*e*P	P	11 29 06.7	+0.6
	comp=Z,6.4nm,1.0s						
TEIG	Tepich	56.03	342	P	P	11 29 38.1	-0.2
	comp=Z,4.1nm,0.5s,baz=270,slow=24,SNR=8.5						
TEIG	Tepich	56.03	342	*e*P	P	11 29 38.1	-0.2
	comp=Z,66nm,1.9s						
QSPA	South Pole Qui	56.23	180	*e*P	P	11 29 40.7	+1.2
TXAR	Lajitas Array	69.61	331	P	P	11 31 09.8	+1.0
	comp=Z,0.4nm,0.5s,baz=157,slow=8.6,SNR=12						
TX31	Lajitas Ar. Si	69.62	331	*e*P	P	11 31 10.1	+1.2
CPCT	Cooper Cave	70.03	349	*e*P	P	11 31 11.2	0.0
	comp=Z,2.7nm,1.0s						
PLAL	Pickwick Lake	70.19	346	*e*P	P	11 31 12.2	+0.1
	comp=Z,3.3nm,0.6s						
WVT	Waverly	71.26	347	*e*P	P	11 31 18.6	0.0
	comp=Z,10nm,0.9s						
MNTX	Cornudas Mount	72.39	331	*e*P	P	11 31 25.5	-0.1
	comp=Z,1.7nm,0.8s						
MAW	Mawson	73.25	164	P	P	11 31 30.5	+0.3
	comp=Z,2.1nm,0.5s,baz=223,slow=7.5,SNR=11						
MAW	Mawson	73.25	164	*e*P	P	11 31 30.9	+0.7
	comp=Z,3.4nm,1.6s						
DBIC	Dimbokro	75.43	71	*e*P	P	11 31 43.4	-0.4
	comp=Z,47nm,1.8s						
LMN	Caledonia Moun	79.78	5	*e*P	P	11 32 08.2	+0.9
	comp=Z,142nm,1.9s						
BOSA	Boshof	80.30	118	P	P	11 32 10.3	-0.6
	comp=Z,1.5nm,0.5s,baz=244,slow=3.0,SNR=4.6						
ECSD	EROS Data Cent	80.48	342	*e*P	P	11 32 11.5	+0.4
	comp=Z,4.5nm,1.1s						
LBTB	Lobatse	82.54	115	*e*P	P	11 32 22.3	-0.5
	comp=Z,26nm,1.8s						
TOA0	Torodi Ar. Sit	84.46	70	*e*P	P	11 32 32.2	-0.4
	comp=Z,6.3nm,0.8s						
TORD	Torodi Ar. Bea	84.46	70	P	P	11 32 32.2	-0.4
	comp=Z,3.6nm,0.7s,baz=260,slow=4.2,SNR=22						
WRA	Warramunga Arr	120.63	209	PKP	PKPdf	11 38 50.6	-1.3
	comp=Z,0.3nm,0.5s,baz=159,slow=1.8,SNR=7.9						
BRTR	Keskin Array B	122.07	61	PKP	PKPdf	11 38 53.6	-0.6
	comp=Z,0.5nm,0.6s,baz=197,slow=3.9,SNR=3.6						
ARCES	ARCESS Array B	124.13	25	PKP	PKPdf	11 38 56.6	-0.4
	comp=Z,1.3nm,0.9s,baz=232,slow=1.4,SNR=4.1						
ZRNK	Zerenda	146.70	43	*e*PKPbc	PKPab	11 39 41.5	-0.6
BRVK	Borovoye	147.39	43	*e*PKPbc	PKPbc	11 39 43.7	+0.9
KSM	Kuching	147.54	185	*e*PKPdf	PKPbc	11 39 43.6	-0.8
KURK	Kurchatov	153.06	43	*e*PKPbc	PKPbc	11 39 56.7	+0.1
ZALV	Zalesovo Beam	154.37	32	PKPbc	PKPbc	11 39 59.3	0.0
	comp=Z,4.9nm,0.5s,baz=298,slow=3.4,SNR=8.6						
MKAR	Makanchi Array	156.97	49	PKPab	PKPab	11 40 24.5	-0.5
	comp=Z,1.3nm,0.6s,baz=287,slow=4.3,SNR=9.0						
JNU	Nakatsue	160.62	274	*e*PKPdf	PKPdf	11 40 00.7	+1.1
CD2	Chengdu	175.49	132	PKP	PKPdf	11 40 08.9	-0.9
LZH	Lanzhou	176.25	55	*e*PKP	PKPdf	11 40 09.1	-0.9
LZH				pPKP	pPKPdf	11 40 14.0	-1.2
LZH				sPKP		11 40 15.8	
LZH				PKP	PKPab	11 41 51.3	+0.9
LZH				LR	LR		
	comp=N,180nm,18.1s						
LZH				LR	LR		
	comp=E,170nm,18.2s						
LZH				LR	LR		
	comp=Z,200nm,20.0s						

IDC ***22*** *11:29:15.3±0.4, 47°.36N×47°.54E, h0km,* **Error ellipse: s-maj=230.1km s-min=163.1km az=45.0, Ukraine-Moldova-Southwestern Russia region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I31KZ	AKTYUBINSK INF	7.56	62	*i*		12 18 15.0	
	baz=250,slow=300,SNR=20						
I43RU	DUBNA INFRASONI	1.31	330	*i*		12 38 10.0	
	baz=140,slow=316,SNR=0.9						
I46RU	ZALESOVO INFRA	24.32	60	*i*		14 25 20.0	
	baz=265,slow=295,SNR=3.3						

CSEM ***22*** *11:29:35.5±0.3, 49°.88N×18°.50E, h1km, Error ellipse: s-maj=13.3km s-min=4.2km az=5.0*

PRU 22 11:29:36.1, 49°.83N×18°.50E, h0km, Czech and Slovak Republics

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OKC	Ostrava-Krasne	0.23	272	*e*PG	Pg	11 29 40.8	+0.3
OKC				*e*SG	Sg	11 29 44.8	+1.4
OKC	Ostrava-Krasne	0.23	272	Pg	Pg	11 29 40.8	+0.3
OKC				Sg	Sg	11 29 44.8	+1.4
OJC	Ojcow	0.92	65	*e*Pg	Pg	11 29 53.2	-0.6
OJC				*e*Sg	Sg	11 30 06.2	+0.4
OJC	Ojcow	0.92	65	*e*Pg	Pg	11 29 53.2	-0.6
OJC				*e*Sg	Sg	11 30 06.2	+0.4
KRLC	Kraliky	1.14	283	*e*PG	Pg	11 29 56.3	-1.6
KRLC				*e*SG	Sb	11 30 13.4	-0.6
KRLC	Kraliky	1.14	283	Pg	Pg	11 29 56.3	-1.6
KRLC				Sg	Sb	11 30 13.4	-0.6
KRLC	Kraliky	1.14	283	*e*	Pg	11 29 56.3	-1.6
KRLC				*e*	Sb	11 30 13.4	-0.6
NIE	Niedzica	1.24	109	*e*Pg	Pg	11 29 59.4	-0.5
NIE				*e*Sg	Sb	11 30 16.7	-0.3
DPC	Dobruska-Polom	1.50	291	*e*PG	Pn	11 30 03.4	-0.9
DPC				*e*SG	Sg	11 30 24.1	0.0
	comp=Z,2.4nm,0.4s						
DPC	Dobruska-Polom	1.50	291	Pg	Pn	11 30 03.4	-0.9
DPC				Sg	Sg	11 30 24.1	0.0
	2.4nm,0.4s						
UPC	Upice	1.74	294	*e*PG	Pn	11 30 07.9	+0.4
UPC				*e*SG	Sb	11 30 31.4	+0.2
UPC	Upice	1.74	294	Pg	Pn	11 30 07.9	+0.4
UPC				Sg	Sb	11 30 31.4	+0.2

DDA ***22*** *11:30:38.8, 39°.11N×29°.04E, h7km, Ml3.4*
ISK ***22*** *11:30:38.7, 39°.12N×29°.06E, h4km, MD3.0*
CSEM ***22*** *11:30:39.0±0.1, 39°.12N×29°.06E, h0km±1km, ML3.4, Error ellipse: s-maj=2.0km s-min=1.9km az=111.0*

ISC 22 11:30:39.2±1.1, 39°.12N±0°.02×29°.05E±0°.02, h3km±12km, n77, σ0§38/98, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.27	254	P	Pg	11 30 44.3	-0.1
DEMI				S	Sg	11 30 48.2	+0.2
DEMI	Demirci	0.27	254	*i* P	Pg	11 30 44.3	-0.1
DEMI				*i* S	Sg	11 30 48.2	+0.2
GDZ	Gediz	0.34	95	P	Pg	11 30 45.7	0.0
GDZ				S	Sg	11 30 50.5	+0.4
GDZ	Gediz	0.34	95	*i* P	Pg	11 30 45.7	0.0
GDZ				*i* S	Sg	11 30 50.5	+0.4
TVSB	Tavsanli	0.46	44	*e*PG	Pg	11 30 47.8	-0.3
TVSB				*e*SG	Sg	11 30 54.5	+0.4
TVSB	Tavsanli	0.46	44	*e*Pg	Pg	11 30 47.8	-0.3
TVSB				*e*Sg	Sg	11 30 54.5	+0.4
DURS	Dursunbey	0.66	317	P	Pg	11 30 52.0	+0.1
DURS				S	Sb	11 31 02.9	-0.1
DURS	Dursunbey	0.66	317	*i* P	Pg	11 30 52.0	+0.1
DURS				*i* S	Sb	11 31 02.9	-0.1
KULA	Kula-Manisa	0.68	207	*e*PG	Pg	11 30 51.7	-0.4
KULA	Kula-Manisa	0.68	207	*e*Pg	Pg	11 30 51.7	-0.4
MANT	Manisa	0.73	212	P	Pg	11 30 52.7	-0.6
MANT				S	Sg	11 31 02.3	-0.6
MANT	Manisa	0.73	212	*i* P	Pg	11 30 52.7	-0.6
MANT				*i* S	Sg	11 31 02.3	-0.6
KHAL	Karahalli	0.82	155	P	Pg	11 30 55.1	+0.1
KHAL				S	Sg	11 31 04.9	-0.7
KHAL	Karahalli	0.82	155	*i* P	Pg	11 30 55.1	+0.1
KHAL				*i* S	Sg	11 31 04.9	-0.7
KHL	Karahalli	0.88	155	*e*PG	Pg	11 30 56.4	+0.4
KHL	Karahalli	0.88	155	*e*Pg	Pg	11 30 56.4	+0.4
ORLT	Orhaneli	0.94	353	*e*PG	Pg	11 30 56.9	-0.2
ORLT	Orhaneli	0.94	353	*e*Pg	Pg	11 30 56.9	-0.2
AKHS	Akhisar	0.99	257	P	Pg	11 30 58.0	-0.3
AKHS				S	Sg	11 31 11.4	+0.3
AKHS	Akhisar	0.99	257	*i* P	Pg	11 30 58.0	-0.3
AKHS				*i* S	Sg	11 31 11.4	+0.3
AKS	Akhisar	0.99	257	*e*PG	Pg	11 30 58.1	-0.1
AKS	Akhisar	0.99	257	*e*Pg	Pg	11 30 58.1	-0.1
BALB	Balikesir	1.05	300	*e*PG	Pg	11 30 59.2	-0.1
BALB	Balikesir	1.05	300	*e*Pg	Pg	11 30 59.2	-0.1
IGD	Bursa	1.15	6	*i* P	Pg	11 30 59.6	-1.7
IGD				*i* S	Sg	11 31 16.2	0.0
CAVI	Cavuskoy	1.24	29	*e*PN	Pg	11 31 02.7	-0.4
CAVI	Cavuskoy	1.24	29	*e*Pn	Pg	11 31 02.7	-0.4
MDNY	Mudanya-Bursa	1.26	354	*e*PN	Pg	11 31 03.0	-0.3
MDNY	Mudanya-Bursa	1.26	354	*e*Pn	Pg	11 31 03.0	-0.3
IZI	Iznik	1.26	15	*e*PN	Pg	11 31 03.4	0.0
IZI	Iznik	1.26	15	*e*Pn	Pg	11 31 03.4	0.0
KCTX	Karacabey (Bur	1.27	335	*e*PN	Pb	11 31 03.7	0.0
KCTX	Karacabey (Bur	1.27	335	*e*Pn	Pb	11 31 03.7	0.0
BALY	Balya	1.27	300	P	Pg	11 31 03.5	-0.1
BALY				S	Sg	11 31 19.9	-0.2
BALY	Balya	1.27	300	*i* P	Pg	11 31 03.5	-0.1
BALY				*i* S	Sg	11 31 19.9	-0.2
GEMT	Gemlik	1.32	5	*e*PN	Pn	11 31 04.5	0.0
GEMT	Gemlik	1.32	5	*e*Pn	Pn	11 31 04.5	0.0
GONE	Gonen-Balikesi	1.41	312	*e*PN	Pn	11 31 05.5	-0.1
GONE	Gonen-Balikesi	1.41	312	*e*Pn	Pn	11 31 05.5	-0.1
ADVT	Abdulvahap	1.42	22	*e*PN	Pb	11 31 06.2	-0.1
ADVT	Abdulvahap	1.42	22	*e*Pn	Pb	11 31 06.2	-0.1
DNZL	Cakiroluk	1.43	180	P	Pn	11 31 05.9	-0.2
DNZL				S	Sb	11 31 25.2	+0.1
DNZL	Cakiroluk	1.43	180	*i* P	Pn	11 31 05.9	-0.2
DNZL				*i* S	Sb	11 31 25.2	+0.1
ARMT	Armutlu	1.45	354	*e*PN	Pn	11 31 05.8	-0.5
ARMT	Armutlu	1.45	354	*e*Pn	Pn	11 31 05.8	-0.5
AYDB	Zeytinkoy-Aydi	1.48	218	*e*PN	Pn	11 31 07.0	+0.2
AYDB	Zeytinkoy-Aydi	1.48	218	*e*Pn	Pn	11 31 07.0	+0.2
GPA	Golpazari	1.52	39	*e*PN	Pn	11 31 07.3	0.0
GPA	Golpazari	1.52	39	*e*Pn	Pn	11 31 07.3	0.0
EDC	Edincik	1.53	324	*e*PN	Pn	11 31 07.5	+0.1
EDC	Edincik	1.53	324	*e*Pn	Pn	11 31 07.5	+0.1
AYDN	Tasoluk	1.72	213	P	Pb	11 31 11.5	+0.1
AYDN				S	Sg	11 31 35.3	+0.8
AYDN	Tasoluk	1.72	213	*i* P	Pb	11 31 11.5	+0.1
AYDN				*i* S	Sg	11 31 35.3	+0.8
GULT	Gulveren	1.73	40	*e*PN	Pn	11 31 10.2	0.0
GULT	Gulveren	1.73	40	*e*Pn	Pn	11 31 10.2	0.0
HRT	Hereke	1.77	15	*e*PN	Pn	11 31 10.6	-0.1
HRT	Hereke	1.77	15	*e*Pn	Pn	11 31 10.6	-0.1
SPNC	Sapanca-Adapaz	1.84	31	*e*PN	Pn	11 31 11.7	0.0
SPNC	Sapanca-Adapaz	1.84	31	*e*Pn	Pn	11 31 11.7	0.0
MRMT	Marmara Adasi	1.86	323	*e*PN	Pn	11 31 12.3	+0.3
MRMT	Marmara Adasi	1.86	323	*e*Pn	Pn	11 31 12.3	+0.3
ISK	Istanbul-Kandi	1.95	0	*e*PN	Pn	11 31 13.6	+0.5
ISK	Istanbul-Kandi	1.95	0	*e*Pn	Pn	11 31 13.6	+0.5
SVRH	Sivrihisar-ESK	1.95	79	*e*PN	Pn	11 31 13.0	-0.2
SVRH	Sivrihisar-ESK	1.95	79	*e*Pn	Pn	11 31 13.0	-0.2
BGKT	Bogazkoy	2.07	354	*e*PN	Pn	11 31 15.0	+0.2
BGKT	Bogazkoy	2.07	354	*e*Pn	Pn	11 31 15.0	+0.2
SILT	Sile	2.08	12	*e*PN	Pn	11 31 15.2	+0.2
SILT	Sile	2.08	12	*e*Pn	Pn	11 31 15.2	+0.2
RKY	Sarkoy-Tekirda	2.13	318	*e*PN	Pn	11 31 16.2	+0.5
RKY	Sarkoy-Tekirda	2.13	318	*e*Pn	Pn	11 31 16.2	+0.5
KLYT	Kilyos	2.13	360	*e*PN	Pn	11 31 16.1	+0.4
KLYT	Kilyos	2.13	360	*e*Pn	Pn	11 31 16.1	+0.4
MDUB	Mudurnu	2.14	50	*e*PN	Pn	11 31 16.1	+0.3
MDUB	Mudurnu	2.14	50	*e*Pn	Pn	11 31 16.1	+0.3
CTKS	Kestanelik-??a	2.16	349	*e*PN	Pn	11 31 16.8	+0.8
CTKS	Kestanelik-??a	2.16	349	*e*Pn	Pn	11 31 16.8	+0.8

ISCJB ***22*** *11:42:52.0±0.4, 39°.09N±0°.03×29°.07E±0°.03, h3km±6km, Error ellipse: s-maj=4.5km s-min=3.8km az=146.9*
ISK ***22*** *11:42:51.6, 39°.09N×29°.09E, h6km, MD2.9*
DDA ***22*** *11:42:52.0, 39°.08N×29°.08E, h7km, Ml2.9*
CSEM ***22*** *11:42:52.2±0.1, 39°.10N×29°.07E, h5km, ML2.9, Error ellipse: s-maj=1.8km s-min=1.4km az=113.0*

ISC 22 11:42:52.3±0.9, 39°.10N±0°.02×29°.06E±0°.02, h9km±9km, n49, σ0§32/65, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.28	258	P	Pg	11 42 58.1	+0.2
DEMI				S	Sg	11 43 02.1	+0.5
DEMI	Demirci	0.28	258	*i* P	Pg	11 42 58.1	+0.2
DEMI				*i* S	Sg	11 43 02.1	+0.5
GDZ	Gediz	0.33	92	P	Pg	11 42 58.7	-0.1
GDZ				S	Sg	11 43 03.3	+0.1
GDZ	Gediz	0.33	92	*i* P	Pg	11 42 58.7	-0.1
GDZ				*i* S	Sg	11 43 03.3	+0.1
TVSB	Tavsanli	0.46	42	*e*PG	Pg	11 43 00.9	-0.5
TVSB				*e*SG	Sg	11 43 07.2	-0.3
TVSB	Tavsanli	0.46	42	*e*Pg	Pg	11 43 00.9	-0.5
TVSB				*e*Sg	Sg	11 43 07.2	-0.3
KULA	Kula-Manisa	0.67	208	*e*PG	Pg	11 43 04.8	-0.4
KULA				*e*SG	Sg	11 43 13.9	0.0
KULA	Kula-Manisa	0.67	208	*e*Pg	Pg	11 43 04.8	-0.4
KULA				*e*Sg	Sg	11 43 13.9	0.0
DURS	Dursunbey	0.68	318	P	Pg	11 43 05.3	-0.1
DURS				S	Sb	11 43 15.7	-0.2
DURS	Dursunbey	0.68	318	*i* P	Pg	11 43 05.3	-0.1
DURS				*i* S	Sb	11 43 15.7	-0.2
MANT	Manisa	0.73	213	P	Pg	11 43 06.3	-0.1
MANT				S	Sg	11 43 15.8	-0.1
MANT	Manisa	0.73	213	*i* P	Pg	11 43 06.3	-0.1
MANT				*i* S	Sg	11 43 15.8	-0.1
KHAL	Karahalli	0.80	155	P	Pg	11 43 07.9	+0.1
KHAL				S	Sg	11 43 18.3	0.0
KHAL	Karahalli	0.80	155	*i* P	Pg	11 43 07.9	+0.1
KHAL				*i* S	Sg	11 43 18.3	0.0
KHL	Karahalli	0.86	155	*e*PG	Pg	11 43 08.9	+0.1
KHL	Karahalli	0.86	155	*e*Pg	Pg	11 43 08.9	+0.1
ORLT	Orhaneli	0.95	352	*e*PG	Pg	11 43 10.6	-0.1
ORLT	Orhaneli	0.95	352	*e*Pg	Pg	11 43 10.6	-0.1
AKS	Akhisar	1.00	258	*e*PG	Pg	11 43 11.0	-0.5
AKS	Akhisar	1.00	258	*e*Pg	Pg	11 43 11.0	-0.5
BALB	Balikesir	1.06	301	*e*PN	Pn	11 43 13.2	-0.2
BALB	Balikesir	1.06	301	*e*Pn	Pn	11 43 13.2	-0.2
CAVI	Cavuskoy	1.25	28	*e*PN	Pn	11 43 16.1	+0.1
CAVI	Cavuskoy	1.25	28	*e*Pn	Pn	11 43 16.1	+0.1
IZI	Iznik	1.27	14	*e*PN	Pb	11 43 16.5	0.0
IZI	Iznik	1.27	14	*e*Pn	Pb	11 43 16.5	0.0
MDNY	Mudanya-Bursa	1.27	354	*e*PN	Pg	11 43 16.6	-0.1
MDNY	Mudanya-Bursa	1.27	354	*e*Pn	Pg	11 43 16.7	-0.1
KCTX	Karacabey (Bur	1.28	335	*e*PN	Pg	11 43 17.1	+0.1
KCTX	Karacabey (Bur	1.28	335	*e*Pn	Pg	11 43 17.1	+0.1
BORA	Eskisehir	1.33	54	P	Pg	11 43 17.8	0.0
BORA				S	Sn	11 43 35.0	+0.1
BORA	Eskisehir	1.33	54	*i* P	Pg	11 43 17.8	0.0
BORA				*i* S	Sn	11 43 35.0	+0.1
GONE	Gonen-Balikesi	1.42	312	*e*PN	Pg	11 43 19.4	-0.2
GONE	Gonen-Balikesi	1.42	312	*e*Pn	Pg	11 43 19.4	-0.2
ADVT	Abdulvahap	1.43	21	*e*PN	Pb	11 43 18.4	0.0
ADVT	Abdulvahap	1.43	21	*e*Pn	Pb	11 43 18.4	0.0
ARMT	Armutlu	1.47	354	*e*PN	Pb	11 43 19.5	-0.3
ARMT	Armutlu	1.47	354	*e*Pn	Pb	11 43 19.5	-0.3
AYDB	Zeytinkoy-Aydi	1.48	219	*e*PN	Pb	11 43 19.7	-0.3
AYDB	Zeytinkoy-Aydi	1.48	219	*e*Pn	Pb	11 43 19.7	-0.3
GPA	Golpazari	1.53	39	*e*PN	Pn	11 43 20.2	+0.4
GPA	Golpazari	1.53	39	*e*Pn	Pn	11 43 20.2	+0.4
EDC	Edincik	1.55	324	*e*PN	Pb	11 43 20.9	-0.3
EDC	Edincik	1.55	324	*e*Pn	Pb	11 43 20.9	-0.3
GULT	Gulveren	1.74	40	*e*PN	Pn	11 43 22.9	+0.2
GULT	Gulveren	1.74	40	*e*Pn	Pn	11 43 22.9	+0.2
KLYT	Kilyos	2.15	360	*e*PN	Pn	11 43 29.3	+1.0
KLYT	Kilyos	2.15	360	*e*Pn	Pn	11 43 29.3	+1.0
RKY	Sarkoy-Tekirda	2.15	318	*e*PN	Pn	11 43 29.2	+0.9

IDC ***22*** *11:43:18.5±2.0, 34°.76N×142°.95E, h0km, mb3.5/4, mb1 3.7/8, mb1mx3.5/52, mbtmp3.7/8, ML3.8/4, Error ellipse: s-maj=46.7km s-min=22.0km az=65.0*
JMA ***22*** *11:43:18.7±0.5, 34°.84N×143°.10E, h60km, M3.5*
ISCJB ***22*** *11:43:19.2±0.9, 34°.86N±0°.07×143°.06E±0°.09, h33km, mb3.6/4, Error ellipse: s-maj=11.1km s-min=9.3km az=158.0*

ISC 22 11:43:22.7±1.3, 34°.82N±0°.09×142°.9E±0°.1, h35km, n18, σ1§52/20, mb3.6/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	Boso 1	1.60	265	P	Pn	11 43 47.3	-0.7
BSO3	Boso 3	1.98	270	P	Pn	11 43 53.2	-0.2
BSO3				S	Sn	11 44 17.9	+1.1
JCN	Nagara	2.30	286	P	Pn	11 43 58.3	+0.2
JHO	Hitachi	2.61	314	P	Pn	11 44 00.5	-1.9
JYT	Yasato	2.62	303	P	Pn	11 44 01.4	-1.1
JFK	Kawauchi	3.03	328	P	Pn	11 44 05.8	-2.4
JHJ	Hachijo jima 2	3.10	238	Pn	Pn	11 44 08.5	-0.7
	14nm,0.3s,baz=323,slow=23,SNR=12						
JHJ				Sn	Sn	11 44 41.9	-3.1
	25nm,0.3s,baz=34,slow=23,SNR=10						
JHU	Hanno	3.14	290	P	Pn	11 44 09.4	-0.3
JOD2	Odawara 2	3.17	279	P	Pn	11 44 08.8	-1.3
JAG	Ashikaga	3.24	301	P	Pn	11 44 10.2	-0.8
MJAR	Matsushiro Arr	4.20	296	Pn	Pn	11 44 23.7	-0.5
	2.2nm,0.3s,baz=109,slow=8.8,SNR=18						
JCJ	Chichijima	7.72	185	Pn	Pn	11 45 11.1	-1.6
	2.4nm,0.3s,baz=74,slow=21,SNR=5.8						
ASAJ	Asahikawa	9.29	359	Pn	Pn	11 45 32.1	-1.9
	0.3nm,0.3s,baz=237,slow=16,SNR=4.4						
JNU	Nakatsue	10.14	264	Pn	Pn	11 45 45.9	+0.1
	0.9nm,0.3s,baz=82,slow=5.6,SNR=20						
MKAR	Makanchi Array	46.34	304	P	P	11 51 45.4	+0.2
	0.2nm,0.3s,baz=74,slow=11,SNR=2.8						
KURBB	Kurchatov Arra	48.34	310	P	P	11 52 03.1	+2.5
	0.3nm,0.3s,baz=78,slow=7.7,SNR=2.7						
WRA	Warramunga Arr	55.07	190	P	P	11 52 51.2	+0.1
	0.6nm,0.7s,baz=9.5,slow=7.4,SNR=5.4						
ASAR	Alice Springs	58.79	190	P	P	11 53 18.8	+1.4
	0.4nm,0.9s,baz=357,slow=5.6,SNR=5.1						

NIED ***22*** *11:44:00, 34°.90N×142°.90E, h8km, Mw3.6 Best double couple: M0=2.71000×10^14 NP1:φs=18.00000°, δ=30.00000°, λ=-95.00000°. NP2:φs=204.00000°, δ=60.00000°, λ=-87.00000°.*
IDC ***22*** *11:44:27.8±1.1, 34°.81N×142°.87E, h0km, mb3.7/6, mb1 3.9/9, mb1mx3.6/52, mbtmp3.8/9, ML3.9/3, MS2.5/1, Ms1 2.5/1, ms1mx2.1/47, Error ellipse: s-maj=29.1km s-min=19.6km az=69.0*
JMA ***22*** *11:44:29.2±0.4, 34°.87N×142°.94E, h58km, M3.7*
ISCJB ***22*** *11:44:30.1±0.8, 34°.78N±0°.07×142°.86E±0°.07, h33km, mb3.8/6, Error ellipse: s-maj=9.9km s-min=7.7km az=16.4*

ISC 22 11:44:28.5±1.9, 34°.75N±0°.08×143°.1E±0°.1, h35km, n21, σ1§30/20, mb3.8/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	Boso 1	1.74	267	P	Pn	11 44 56.0	+0.3
BSO1				*e*S	Sn	11 45 15.5	-0.8
CHOJ	Chosi	2.05	298	P	Pn	11 45 00.3	-0.3
BSO3	Boso 3	2.12	272	P	Pn	11 45 01.9	+0.7
BSO3				S	Sn	11 45 26.7	+0.6
BSO4	Boso 4	2.27	277	*e*S	Sn	11 45 30.4	+0.3
JCN	Nagara	2.45	287	P	Pn	11 45 06.8	+0.7
JHO	Hitachi	2.76	313	P	Pn	11 45 09.1	-1.2
JYT	Yasato	2.78	303	P	Pn	11 45 09.8	-0.7
JIM2	Oshima 3	3.01	270	P	Pn	11 45 13.1	-0.6
JHJ	Hachijo jima 2	3.19	240	Pn	Pn	11 45 17.1	+1.0
	26nm,0.3s,baz=269,slow=23,SNR=2.9						
JHJ				Sn	Sn	11 45 50.0	-3.0
	43nm,0.3s,baz=214,slow=24,SNR=6.9						
JHU	Hanno	3.30	291	P	Pn	11 45 18.2	+0.5
JRY	Ryogami san	3.64	292	P	Pn	11 45 23.0	+0.6
MJAR	Matsushiro Arr	4.35	296	Pn	Pn	11 45 32.4	+0.2
	4.9nm,0.3s,baz=92,slow=11,SNR=19						
MAT	Matsushiro	4.35	296	P	Pn	11 45 32.4	+0.2
MAT				S	Sn	11 46 19.5	-2.3
JCJ	Chichijima	7.67	186	Pn	Pn	11 46 19.4	+1.7
	4.8nm,0.3s,baz=277,slow=23,SNR=7.7						
JCJ				Sn	Sn	11 47 41.3	-2.1
	3.7nm,0.3s,baz=289,slow=23,SNR=3.5						
KSRS	Korea Array	12.55	287	LR	LR	11 51 37.2	
	comp=Z,22nm,19.0s,baz=108,slow=35						
SONM	Songino Array	30.21	307	P	P	11 50 40.3	+4.6
	0.4nm,0.5s,baz=120,slow=10,SNR=2.9						
MKAR	Makanchi Array	46.50	304	P	P	11 52 53.6	+1.3
	0.3nm,0.4s,baz=91,slow=10,SNR=2.8						
KURBB	Kurchatov Arra	48.49	310	P	P	11 53 10.1	+2.5
	0.5nm,0.4s,baz=

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time h m s	Res
CCIG	**Comitan**	**2.73**	**59**	*eP*		Pn	11 48 51.0	-2.4
CCIG				*eS*		Sn	11 49 22.1	-4.1
VHO	**Vista Hermosa**	**3.02**	**317**	*eP*		Pn	11 48 55.4	-2.0
VHO				*eS*		Sn	11 49 29.8	-3.6
VHO	**Vista Hermosa**	**3.02**	**317**	*eP*		Pn	11 48 55.4	-2.0
VHO				*eS*		Sn	11 49 29.8	-3.6
TEIG	**Tepich**	**8.02**	**47**	*ePn*		Pn	11 50 04.0	-1.9
TEIG				*eSn*		Sn	11 51 35.9	-0.5

ISCJB ***22*** *11:50:14.7±0.8, 40°.54N±0°.05×73°.24E±0°.05, h10km, Error ellipse: s-maj=8.3km s-min=4.0km az=152.4*
NNC ***22*** *11:50:15.8±2.2, 40°.73N×73°.30E, h0km, mb2.9, mpv2.5, Error ellipse: s-maj=16.5km s-min=9.8km az=178.0*
KRNET ***22*** *11:50:16.3±0.1, 40°.76N×73°.30E, h26km, mb2.5*
SOME ***22*** *11:50:16.6, 40°.78N×73°.27E, h0km*

ISC 22 11:50:13.5±1.1, 40°.61N±0°.05×73°.27E±0°.03, h10km, n18, σ0§95/33, 16C-10D, Kyrgyzstan

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time h m s	Res
OHH	**Osh**	**0.38**	**257**	⇑*iP*		**Pg**	**11 50 20.0**	**-1.1**
OHH	baz=263							
				⇑*iS*		**Sg**	**11 50 25.4**	**-0.7**
OHH	baz=263							
ARLS	**Aral**	**1.48**	**32**	⇓*eP*		**Pn**	**11 50 40.1**	**-0.2**
ARLS	baz=30							
				⇓*eS*		**Sg**	**11 51 01.2**	**+0.3**
ARLS	baz=30							
ARK	**Arkit**	**1.54**	**321**	⇑*eP*		**Pn**	**11 50 41.6**	**+0.5**
ARK	baz=320							
				⇑*iS*		**Sg**	**11 51 03.5**	**+0.4**
ARK	baz=320							
AML	**Almayashu**	**1.55**	**12**	⇓*iP*		**Pg**	**11 50 43.6**	**+0.4**
AML	baz=12							
				⇓*iS*		**Sg**	**11 51 03.2**	**-0.1**
AML	baz=12							
UCH	**Uchtor**	**1.86**	**30**	⇑*iP*		**Pg**	**11 50 48.6**	**-0.6**
UCH	baz=31							
				⇑*iS*		**Sg**	**11 51 12.8**	**-0.6**
UCH	baz=31							
BTK	**Batken**	**1.96**	**254**	⇑*eP*		**Pn**	**11 50 47.9**	**+1.1**
BTK	baz=256							
				⇑*eS*		**Sb**	**11 51 14.9**	**+1.1**
BTK	baz=256							
MNAS	**Manas**	**1.96**	**343**	⇓Pg		**Pb**	**11 50 49.8**	**+0.5**
MNAS	1.7nm,0.4s							
				⇑Lg		Lg	11 51 15.4	
MNAS	5.6nm,0.3s							
EKS2	**Erkin-Say**	**2.08**	**10**	⇑*iP*		**Pb**	**11 50 52.1**	**+0.7**
EKS2	baz=11							
				⇑*iS*		**Sg**	**11 51 18.9**	**-1.4**
EKS2	baz=11							
KZA	**Kyzart**	**2.09**	**45**	⇓*iP*		**Pg**	**11 50 52.8**	**-0.7**
KZA	baz=47							
				⇓*iS*		**Sg**	**11 51 19.8**	**-0.7**
KZA	baz=47							
MRKS	**Merke**	**2.13**	**359**	*eP*		**Pb**	**11 50 53.2**	**+1.0**
MRKS	9.6nm,0.4s							
				eS		**Sb**	**11 51 20.1**	**+1.4**
MRKS	21nm,0.3s							
AAK	**Ala-Archa**	**2.22**	**24**	⇑*iP*		**Pb**	**11 50 54.2**	**+0.4**
AAK	baz=25							
				⇑*iS*		**Sg**	**11 51 22.8**	**-2.0**
AAK	baz=25							
AAK	**Ala-Archa**	**2.22**	**24**	⇑Pg		**Pb**	**11 50 54.0**	**+0.3**
AAK	3.0nm,0.4s							
				⇑Lg		Lg	11 51 23.1	
AAK	3.9nm,0.3s							
NRN	**Naryn**	**2.22**	**67**	⇓*eP*		**Pn**	**11 50 51.4**	**+0.8**
NRN	baz=67							
				⇓*iS*		**Sb**	**11 51 20.6**	**-0.9**
NRN	baz=67							
IUG	**Iuzhnay**	**2.88**	**303**	*eP*		**Pg**	**11 51 07.6**	**-1.0**
IUG	7.2nm,0.3s							
				eS		**Sg**	**11 51 44.6**	**-1.4**
IUG	8.8nm,0.4s							
KK31	**Karatay Array**	**3.23**	**321**	⇓Pg		**Pg**	**11 51 14.1**	**-1.3**
KK31	0.3nm,0.3s,baz=134,slow=16,SNR=5.1							
				⇑Lg		Lg	11 51 54.0	
KK31	0.9nm,0.3s,baz=140,slow=29,SNR=8.8							
BRLS	**Borolday**	**3.46**	**310**	*eP*		**Pg**	**11 51 18.8**	**-0.9**
BRLS	0.5nm,0.1s							
				eS		**Sg**	**11 52 03.2**	**-1.2**
BRLS	2.7nm,0.4s							
TNSS	**Tian-Shan**	**3.66**	**47**	*eP*		**Pg**	**11 51 23.4**	**-0.2**
TNSS	0.6nm,0.3s							
				eS		**Sg**	**11 52 11.1**	**+0.1**
TNSS	2.0nm,0.5s							
MDOK	**Medeo**	**3.80**	**47**	*eP*		**Pg**	**11 51 24.9**	**-1.3**
MDOK	1.3nm,0.4s							
				eS		**Sg**	**11 52 14.7**	**-0.7**
MDOK	3.8nm,0.7s							

IDC 22 12:10:26.4±1.2, 14°.78S×172°.80W, h0km, mb3.7/3, mb1 3.9/3, mb1mx3.5/47, mbtmp3.7/3, MS3.6/3, Ms1 3.6/3, ms1mx3.0/29, Error ellipse: s-maj=54.7km s-min=22.5km az=143.0, Samoa Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time h m s	Res
AFI	**Afiamalu**	**1.32**	**49**	Pn		Pg	12 10 51.5	-0.1
AFI	100nm,0.3s,baz=147,slow=1.9,SNR=116							
						Sg	12 11 06.7	-2.0
AFI	777nm,0.3s,baz=236,slow=24,SNR=23							
WRA	**Warramunga Arr**	**50.55**	**256**	P		P	12 19 26.6	-0.5
WRA	0.5nm,0.9s,baz=95,slow=6.1,SNR=1.9							
ASAR	**Alice Springs**	**50.85**	**251**	P		P	12 19 28.6	-0.8
ASAR	1.0nm,0.7s,baz=90,slow=7.5,SNR=7.6							
				LR		LR	12 39 31.1	
ASAR	comp=Z,42nm,19.4s,baz=92,slow=34							
VNDA	**Vanda**	**64.05**	**186**	P		P	12 21 01.9	+0.3
VNDA	0.8nm,0.9s,baz=5.6,slow=5.5,SNR=3.4							
YBH	**Yreka Blue Hor**	**72.76**	**37**	LR		LR	12 45 29.9	
YBH	comp=Z,62nm,20.8s,baz=266,slow=29							
PDAR	**Pinedale Array**	**81.42**	**42**	LR		LR	12 54 13.5	
PDAR	comp=Z,37nm,20.3s,baz=287,slow=32							
BRTR	**Keskin Array B**	**146.03**	**322**	PKPbc		PKPab	12 30 09.5	+0.2
BRTR	0.5nm,0.6s,baz=129,slow=2.0,SNR=2.7							

IDC 22 12:11:40.9±541.0, 50°.92N×113°.71E, h0km, Error ellipse: s-maj=197.6km s-min=112.9km az=62.0, Tuva-Buryatia-Mongolia border region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time h m s	Res
I34MN	**SONGINO INFRAS**	**5.70**	**240**	*i*			12 47 00.0	
I34MN	baz=55,slow=324,SNR=6.2							
I45RU	**USSURIYSK INFR**	**14.03**	**112**	*i*			13 41 10.0	
I45RU	baz=304,slow=372,SNR=2.9							
I46RU	**ZALESOVO INFRA**	**17.82**	**291**	*i*			14 03 20.0	
I46RU	baz=85,slow=324,SNR=0.8							

NIED ***22*** *12:21:00, 39°.30N×143°.00E, h17km, Mw3.5 Best double couple: M0=1.75000×10^14 NP1:φ=139.00000°, δ=23.00000°, λ=-20.00000°. NP2:φ=247.00000°, δ=83.00000°, λ=-112.00000°.*

JMA 22 12:21:42.1±0.1, 39°.33N×142°.99E, h16km±2km, M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time h m s	Res
MIYJ	**Miyakonagasawa**	**0.94**	**286**	P		Pb	12 21 59.5	-0.5
MIYJ				S		Sb	12 22 12.4	+0.2
OFUJ	**Ofunato**	**1.06**	**257**	P		Pb	12 22 01.6	-0.4
JTH	**Tanohata**	**1.06**	**305**	P		Pb	12 22 01.6	-0.5
JTH				S		Sb	12 22 15.6	-0.1
JOM	**Ohasama**	**1.32**	**277**	P		Pn	12 22 06.0	+0.1
JOM				S		Sb	12 22 23.3	0.0
JMK	**Ichinoseki**	**1.43**	**255**	P		Pn	12 22 07.7	+0.4
JKZ	**Kuzumaki**	**1.44**	**298**	P		Pn	12 22 08.0	+0.4
JKZ				S		Sb	12 22 26.5	-0.2
JANG	**Nango**	**1.54**	**313**	P		Pn	12 22 09.0	+0.1
JRG	**Rokugo**	**1.83**	**273**	P		Pb	12 22 14.5	-0.7

IDC 22 12:23:08.1±944.0, 50°.91N×114°.03E, h0km, Error ellipse: s-maj=322.6km s-min=119.4km az=71.0, Tuva-Buryatia-Mongolia border region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time h m s	Res
I34MN	**SONGINO INFRAS**	**5.87**	**241**	*i*			13 00 05.0	
I34MN	baz=55,slow=323,SNR=4.1							
I45RU	**USSURIYSK INFR**	**13.84**	**112**	*i*			13 56 40.0	
I45RU	baz=304,slow=372,SNR=1.8							
I46RU	**ZALESOVO INFRA**	**18.01**	**291**	*i*			14 16 00.0	
I46RU	baz=86,slow=325,SNR=1.3							

GUC ***22*** *12:27:57.8±0.3, 36°.20S×73°.56W, h35km±2km, ML4.2*

ISC 22 12:27:54.3±2.2, 36°.07S±0°.04×73°.6W±0°.1, h2km±12km, n21, σ1§55/30, 3C-6D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time h m s	Res
COCH	**Cobquecura**	**0.67**	**96**	⇓*iP*		**Pb**	**12 28 09.7**	**+1.0**
COCH				*i S*		**Sb**	**12 28 18.9**	**+0.4**
COCH					AML	AML	12 28 21.0	
	comp=N,25μm,0.5s							
CCSP	**San Pedro de C**	**0.88**	**153**	⇓*iP*		**Pg**	**12 28 11.6**	**+0.5**
CCSP				*i S*		**Sg**	**12 28 21.8**	**-0.7**
CCSP					AML	AML	12 28 28.1	
	comp=N,4μm,0.4s							
CCHI	**Chillan**	**1.35**	**114**	⇑*iP*		**Pg**	**12 28 19.9**	**-0.3**
CCHI				*i S*		**Sb**	**12 28 38.1**	**+0.1**
CCHI					AML	AML	12 28 44.0	
	comp=E,6μm,0.5s							
TALC	**Talca**	**1.74**	**68**	⇓*iP*		**Pg**	**12 28 27.6**	**-0.1**
TALC				*eS*		**Sg**	**12 28 50.3**	**0.0**
CANA	**Caviahue**	**2.73**	**132**	*eP*		**Pb**	**12 28 42.7**	**-1.4**
CANA				*eS*		**Sb**	**12 29 18.2**	**+0.1**
RCDM	**Rinconada Maip**	**3.46**	**43**	*eP*		**Pn**	**12 28 50.7**	**+1.5**
RCDM				*eS*		**Sn**	**12 29 25.9**	**-4.9**
ANTU	**Antumapu**	**3.50**	**45**	*i S*		**Sn**	**12 29 33.7**	**+2.0**
CLCH	**Cerro Calan**	**3.68**	**44**	⇑*iP*		**Pn**	**12 28 53.4**	**+1.1**
CLCH				*eS*		**Sg**	**12 29 51.5**	**-0.9**
CLCH					AML	AML	12 30 04.1	
	comp=N,714nm,0.7s							
ROC1	**El Roble**	**3.75**	**36**	*eP*		**Pn**	**12 28 53.6**	**+0.1**
ROCH	**El Roble**	**3.76**	**36**	*eP*		**Pn**	**12 28 53.4**	**-0.2**
ROCH				*i S*		**Sg**	**12 29 54.5**	**-0.6**
ROCH					AML	AML	12 30 12.2	
	comp=N,310nm,0.5s							
PEL	**Peldehue**	**3.79**	**40**	⇑*iP*		**Pn**	**12 28 55.2**	**+1.4**
PEL				*eS*		**Sg**	**12 29 55.4**	**-0.6**
PEL					AML	AML	12 30 09.8	
	comp=E,274nm,0.6s							
AUSP	**Uspallata**	**5.19**	**44**	*eP*		**Pn**	**12 29 16.0**	**+2.6**
RTLS	**Leoncito**	**5.57**	**41**	*eP*		**Pn**	**12 29 20.9**	**+2.5**
RTCV	**Cerro Valdivia**	**5.94**	**47**	⇓*eP*		**Pn**	**12 29 25.6**	**+2.2**
RTLL	**Cerro Villicun**	**6.38**	**44**	⇓*eP*		**Pn**	**12 29 30.5**	**+1.2**
ACAN	**Cantantal**	**6.53**	**56**	⇓*eP*		**Pn**	**12 29 33.0**	**+1.5**
AMOG	**MOGNA**	**6.67**	**41**	*eP*		**Pn**	**12 29 34.2**	**+0.9**
MRA	**San Martin**	**7.48**	**63**	*eP*		**Pn**	**12 29 45.6**	**+1.0**
AGUA	**GUANDACOL**	**7.85**	**35**	*eP*		**Pn**	**12 29 50.0**	**+0.3**
VCA	**Vinchina**	**8.62**	**34**	*eP*		**Pn**	**12 30 01.0**	**+0.8**
VCA					IAML		12 30 05.9	
	comp=Z,7.7nm,0.2s							
TCA	**Tanti**	**8.87**	**60**	*eP*		**Pn**	**12 30 03.4**	**-0.2**
TCA					IAML		12 30 04.4	
	comp=Z,8.2nm,0.4s							

IDC 22 12:35:03.7±470.0, 50°.79N×114°.05E, h0km, Error ellipse: s-maj=192.6km s-min=109.2km az=64.0, Tuva-Buryatia-Mongolia border region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time h m s	Res
I34MN	**SONGINO INFRAS**	**5.82**	**242**	*i*			13 10 00.0	
I34MN	baz=56,slow=324,SNR=5.6							
I45RU	**USSURIYSK INFR**	**13.78**	**112**	*i*			14 00 40.0	
I45RU	baz=303,slow=378,SNR=1.2							
I46RU	**ZALESOVO INFRA**	**18.07**	**291**	*i*			14 22 40.0	
I46RU	baz=86,slow=325,SNR=1.6							
I31KZ	**AKTYUBINSK INF**	**34.83**	**292**	*i*			16 11 50.0	
I31KZ	baz=64,slow=323,SNR=0.5							

SOME ***22*** *12:35:04.7, 40°.72N×69°.35E, h5km*
NNC ***22*** *12:35:05.9±1.2, 40°.76N×69°.69E, h0km, mb2.9, mpv2.5, Error ellipse: s-maj=19.9km s-min=8.0km az=115.0*
ISCJB ***22*** *12:35:11.1±1.1, 40°.65N±0°.07×69°.7E±0°.2, h33km, Error ellipse: s-maj=27.4km s-min=9.1km az=9.5*

ISC 22 12:35:12.6±1.6, 40°.73N±0°.08×69°.6E±0°.2, h35km, n5, σ2§13/7, 6C-1D, Tajikistan

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time h m s	Res
IUG	**Iuzhnay**	**1.46**	**14**	*eP*		**Pn**	**12 35 34.1**	**-2.5**
IUG	47nm,0.2s							
				eS		**Sn**	**12 35 55.9**	**+1.3**
IUG	32nm,0.4s							
DZET	**Dzherino**	**2.00**	**197**	⇑Pg		**Pn**	**12 35 43.5**	**-0.5**
DZET	1.9nm,0.4s							
				⇑Lg		Lg	12 36 12.2	
DZET	5.1nm,0.3s							
BRLS	**Borolday**	**2.06**	**3**	⇑*iP*		**Pn**	**12 35 43.0**	**-1.7**
BRLS	3.5nm,0.4s							
				eS		**Sn**	**12 36 11.7**	**+2.5**
BRLS	19nm,0.2s							
KK31	**Karatay Array**	**2.48**	**16**	⇓Pg		**Pn**	**12 35 50.9**	**+0.4**
KK31	1.0nm,0.3s,baz=199,slow=16,SNR=29							
				⇑Lg		Lg	12 36 23.3	
KK31	1.5nm,0.3s,baz=196,slow=28,SNR=11							
MNAS	**Manas**	**2.82**	**51**	⇑Pg		**Pn**	**12 35 54.5**	**-0.8**
MNAS	0.9nm,0.5s							
				⇑Lg		Lg	12 36 31.7	
MNAS	1.1nm,0.5s							

IDC ***22*** *12:36:29.8±9.2, 30°.48S×179°.38W, h383km±95km, mb3.1/2, mb1 3.3/3, mb1mx2.9/37, mbtmp3.8/3, Error ellipse: s-maj=96.1km s-min=47.1km az=16.0*

ISC 22 12:36:33.5±3.2, 30°.4S±0°.1×179°.6E±0°.4, h350km, n13, σ1§71/15, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time h m s	Res
MXZ	**Matakaoa Point**	**7.24**	**188**	PN		Pn	12 38 21.0	+2.4
MXZ				SN		**S**	**12 39 45.4**	**+1.3**
WMGZ	**Waiomatatini S**	**7.48**	**187**	PN		Pn	12 38 23.6	+2.2
HAZ	**Te Kaha**	**7.50**	**191**	PN		**Pn**	**12 38 23.6**	**+1.9**
HAZ				SN		**S**	**12 39 52.1**	**+2.3**
MWZ	**Matawai**	**8.11**	**191**	PN		**P**	**12 38 30.9**	**-1.0**
URZ	**Urewera**	**8.12**	**194**	P		**Pn**	**12 38 27.4**	**-1.5**
URZ	0.6nm,0.3s,baz=270,slow=4.4,SNR=14							
				S		**S**	**12 40 05.1**	**+2.0**
URZ	2.2nm,0.3s,baz=101,slow=22,SNR=13							
URZ	**Urewera**	**8.12**	**194**	PN		**P**	**12 38 29.5**	**-2.4**
URZ				SN		**S**	**12 40 04.5**	**+1.4**
TKGZ	**Te Karaka**	**8.16**	**190**	SN		**S**	**12 40 04.6**	**+0.5**
RTZ	**Ruatahuna**	**8.49**	**194**	PN		**P**	**12 38 35.5**	**-0.6**
BFZ	**Birch Farm**	**10.63**	**194**	PN		**P**	**12 38 58.8**	**-1.0**
BFZ				SN		**S**	**12 40 56.0**	**-2.1**
MRZ	**Mangatainoka R**	**10.76**	**196**	SN		**S**	**12 40 59.9**	**-1.2**
ASAR	**Alice Springs**	**41.02**	**268**	P		**P**	**12 43 45.3**	**+1.3**
ASAR	0.7nm,0.7s,baz=102,slow=7.5,SNR=9.7							
WRA	**Warramunga Arr**	**42.00**	**273**	P		**P**	**12 43 51.9**	**-0.1**
WRA	1.7nm,0.7s,baz=115,slow=6.6,SNR=18							
FINES	**FINESS Array B**	**144.38**	**338**	PKP		PKPbc	12 55 20.6	-6.4
FINES	1.3nm,0.5s,baz=46,slow=4.1,SNR=14							

KRSC ***22*** *12:43:01.8±1.8, 49°.48N×156°.60E, h100km±35km, ML4.0*
MOS ***22*** *12:43:01.8±1.4, 49°.48N×156°.60E, h100km, mb4.2/1, Error ellipse: s-maj=51.5km s-min=6.8km az=78.6*

ISC 22 12:43:02.5±3.9, 49°.3N±0°.2×156°.77E±0°.09, h53km, n31, σ1§29/43, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time h m s	Res
SKR	**Severo-Kuril's**	**1.42**	**343**	*eP*		**Pn**	**12 43 25.1**	**-0.7**
SKR				*eS*		**Sn**	**12 43 43.3**	**-0.1**
SKR	**Severo-Kuril's**	**1.42**	**343**	PN		**Pn**	**12 43 25.1**	**-0.7**
SKR				S		**Sn**	**12 43 43.3**	**-0.1**
PAU	**Pauzhetka**	**2.14**	**1**	*eP*		**Pn**	**12 43 35.6**	**-0.1**
PAU				*eS*		**Sn**	**12 44 02.1**	**+1.1**
PAU	**Pauzhetka**	**2.14**	**1**	PN		**Pn**	**12 43 35.6**	**-0.1**
PAU				S		**Sn**	**12 44 02.1**	**+1.1**
ASAK	**Asacha**	**3.14**	**13**	*eP*		**Pn**	**12 43 50.6**	**+1.2**
ASAK	**Asacha**	**3.14**	**13**	PN		**Pn**	**12 43 50.6**	**+1.2**
MTVR	**Mutnovka**	**3.28**	**15**	P		**Pn**	**12 43 52.7**	**+1.3**
MTVR	**Mutnovka**	**3.28**	**15**	PN		**Pn**	**12 43 52.7**	**+1.3**
RUS	**Russkaya**	**3.30**	**19**	*eP*		**Pn**	**12 43 52.1**	**+0.6**
RUS				S		**Sn**	**12 44 30.8**	**+1.4**
RUS	**Russkaya**	**3.30**	**19**	PN		**Pn**	**12 43 52.1**	**+0.6**
RUS				S		**Sn**	**12 44 30.8**	**+1.4**
KRMR	**Karymshinskiy**	**3.61**	**13**	*eP*		**Pn**	**12 43 56.9**	**+1.1**
KRMR	**Karymshinskiy**	**3.61**	**13**	PN		**Pn**	**12 43 56.9**	**+1.1**
UGLR	**Uglovaya**	**4.09**	**18**	*eP*		**Pn**	**12 44 03.9**	**+1.4**
UGLR	**Uglovaya**	**4.09**	**18**	PN		**Pn**	**12 44 03.9**	**+1.4**
AVH	**Avacha**	**4.13**	**17**	*eP*		**Pn**	**12 44 04.5**	**+1.5**
AVH	**Avacha**	**4.13**	**17**	PN		**Pn**	**12 44 04.5**	**+1.5**
SMAR	**Somma**	**4.14**	**17**	*eP*		**Pn**	**12 44 04.3**	**+1.0**
SMAR	**Somma**	**4.14**	**17**	PN		**Pn**	**12 44 04.3**	**+1.0**
KRER	**Koryakskii**	**4.17**	**17**	*eP*		**Pn**	**12 44 04.9**	**+1.3**
KRER	**Koryakskii**	**4.17**	**17**	PN		**Pn**	**12 44 04.9**	**+1.3**
SDLR	**Sedlovina**	**4.17**	**18**	*eP*		**Pn**	**12 44 04.4**	**+0.8**
SDLR				S		**Sn**	**12 44 51.1**	**+0.1**
SDLR	**Sedlovina**	**4.17**	**18**	PN		**Pn**	**12 44 04.4**	**+0.8**
SDLR				S		**Sn**	**12 44 51.1**	**+0.1**
NLC	**Nalytchevo**	**4.17**	**22**	S		**Sn**	**12 44 50.0**	**-0.9**
KRX	**Arik**	**4.20**	**16**	*eP*		**Pn**	**12 44 04.5**	**+0.4**
KRX	**Arik**	**4.20**	**16**	PN		**Pn**	**12 44 04.5**	**+0.4**
GNL	**Ganaly**	**4.43**	**9**	*eP*		**Pn**	**12 44 06.5**	**-0.7**
GNL	**Ganaly**	**4.43**	**9**	PN		**Pn**	**12 44 06.5**	**-0.7**
MKZ	**Mys Kozlova**	**6.06**	**28**	*eP*		**Pn**	**12 44 29.4**	**0.0**
MKZ				S		**Sn**	**12 45 34.2**	**-3.2**
MKZ	**Mys Kozlova**	**6.06**	**28**	PN		**Pn**	**12 44 29.4**	**0.0**
MKZ				S		**Sn**	**12 45 34.2**	**-3.2**
BKI	**Bering**	**8.15**	**40**	*eP*		**Pn**	**12 44 59.4**	**+1.5**
BKI				*eS*		**Sn**	**12 46 26.4**	**-2.1**
BKI	**Bering**	**8.15**	**40**	PN		**Pn**	**12 44 59.4**	**+1.5**
BKI				S		**Sn**	**12 46 26.4**	**-2.1**

ISCJB ***22*** *12:44:32.8±1.0, 24°.96N±0°.08×123°.50E±0°.04, h28km±11km, mb3.3/6, MS3.0/5, Error ellipse: s-maj=14.0km s-min=6.2km az=8.0*
JMA ***22*** *12:44:32.4±0.3, 25°.00N×123°.54E, h12km, M2.8*
IDC ***22*** *12:44:33.2±1.4, 25°.58N×123°.61E, h0km, mb3.4/6, mb1 3.6/6, mb1mx3.3/57, mbtmp3.4/6, MS3.0/9, Ms1 3.0/9, ms1mx2.9/26, Error ellipse: s-maj=51.8km s-min=20.0km az=65.0*

ISC 22 12:44:33.8±1.2, 24°.89N±0°.07×123°.54E±0°.04, h29km±12km, n25, σ0§84/19, mb3.5/6, MS3.0/5, Southwestern Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time h m s	Res
IRIF	**Iriomote-Funau**	**0.58**	**163**	P		**Pn**	**12 44 45.9**	**-0.2**
IRIF				*eS*		**Sb**	**12 44 53.6**	**+0.2**
YOJ	**Yonaguni jima**	**0.65**	**228**	P		**Pb**	**12 44 46.1**	**-0.5**
YOJ				S		**Sb**	**12 44 55.9**	**+0.6**
JYNG	**Yonagunijimaku**	**0.70**	**231**	P		**Pb**	**12 44 46.8**	**-0.6**
JYNG				S		**Sb**	**12 44 56.6**	**-0.1**
JIJ	**Ishigaki jima**	**0.76**	**134**	P		**Pb**	**12 44 47.9**	**-0.5**
JIJ				S		**Sn**	**12 44 59.4**	**+0.3**
JISG	**Ishigakijimahi**	**0.76**	**113**	P		**Pb**	**12 44 47.5**	**-1.0**
JKRS	**Kuro-shima**	**0.78**	**147**	P		**Pb**	**12 44 48.7**	**-0.1**
HATJ	**Hateruma jima**	**0.87**	**164**	P		**Pn**	**12 44 50.6**	**+0.6**
JTJ	**Tarama**	**1.08**	**103**	P		**Pn**	**12 44 53.0**	**0.0**
JTJ				S		**Sb**	**12 45 07.8**	**+0.1**
JIRB	**Irabujima**	**1.48**	**92**	P		**Pb**	**12 44 59.8**	**-0.8**
JIKM	**Ikemajima**	**1.55**	**89**	P		**Pb**	**12 45 01.3**	**-0.5**
JNU	**Nakatsue**	**10.41**	**36**	LR		LR	12 51 50.9	
	comp=Z,75nm,18.4s,baz=122,slow=44							
KSRS	**Korea Array**	**13.07**	**16**	Pn		**Pn**	**12 47 39.5**	**+2.1**
	0.1nm,0.3s,baz=192,slow=11,SNR=3.0							
KSRS				LR		LR	12 53 31.3	
	comp=Z,65nm,18.5s,baz=196,slow=44							
MJAR	**Matsushiro Arr**	**17.12**	**44**	LR		LR	12 55 45.6	
	comp=Z,30nm,20.1s,baz=245,slow=40							
DAV	**Davao City (W)**	**17.83**	**173**	LR		LR	12 55 30.4	
	comp=Z,57nm,21.2s,baz=338,slow=36							
GUMO	**Guam**	**23.02**	**115**	LR		LR	12 57 48.5	
	comp=Z,20nm,21.0s,baz=98,slow=34							
CMAR	**Chiang Mai Arr**	**23.72**	**259**	P		P	12 49 49.4	+5.8
	0.2nm,0.3s,baz=74,slow=7.8,SNR=3.7							
KLR	**Kul'dur**	**25.13**	**13**	LR		LR	13 00 08.5	
	comp=Z,51nm,19.3s,baz=198,slow=38							
SONM	**Songino Array**	**26.62**	**334**	P		**P**	**12 50 09.3**	**-0.5**
	0.1nm,0.3s,baz=134,slow=10,SNR=2.6							
TLY	**Talaya**	**30.77**	**336**	LR		LR	13 03 48.3	
	comp=Z,33nm,21.6s,baz=127,slow=38							
PETK	**Petropavlovsk-**	**38.09**	**33**	LR		LR	13 08 15.1	
	comp=Z,35nm,18.8s,baz=131,slow=38							
MKAR	**Makanchi Array**	**39.35**	**314**	P		**P**	**12 51 59.9**	**-0.7**
	0.9nm,0.8s,baz=94,slow=9.7,SNR=6.5							
ZALV	**Zalesovo Beam**	**40.85**	**326**	P		**P**	**12 52 11.4**	**-1.4**
	0.4nm,0.5s,baz=128,slow=9.3,SNR=2.2							
WRA	**Warramunga Arr**	**45.79**	**166**	P		P	12 53 01.9	+8.8
	0.6nm,0.7s,baz=347,slow=8.8,SNR=4.9							
NRIK	**Noril'sk**	**49.30**	**344**	LR		LR	13 15 29.1	
	comp=Z,34nm,18.2s,baz=92,slow=38							
ASAR	**Alice Springs**	**49.31**	**167**	P		P	12 53 29.1	+8.7
	0.4nm,0.8s,baz=353,slow=7.0,SNR=3.5							

JMA 22 12:58:18.3±0.1, 36°.26N×140°.91E, h45km±1km, M2.8, Near east coast of eastern Honshu

| Code | Station Name | Δ° | AZ° | Phase | Op |

comp=N,0.4nm,0.4s,baz=246,slow=5.5,SNR=5.1
MKAR Makanchi Array 145.39 36 PKPbc **PKPab 13 20 49.8 +0.5**
comp=N,0.4nm,0.7s,baz=305,slow=4.3,SNR=3.7

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*ISCJB **22** 13:11:10.6±0.9, 9°.89S±0°.09×107°.82E±0°.08, h22km, mb3.8/6, MS2.7/1, Error ellipse: s-maj=15.1km s-min=7.6km az=42.4*
*IDC **22** 13:11:10.3±2.2, 9°.88S×107°.96E, h0km, mb3.9/6, mb1 4.0/7, mb1mx3.8/29, mbtmp3.9/7, ML3.9/1, MS2.6/2, Ms1 2.7/2, ms1mx2.5/38, Error ellipse: s-maj=77.0km s-min=19.1km az=54.0*
*DJA **22** 13:11:10.0±0.5, 10°S±5°×10°8E±°, h10km, M4.6/15, mB5.0/1, mb4.8/4, MLv4.5/15, Mw(mB)4.3/1*

ISC 22 13:11:13.2±1.1, 9°.83S±0°.09×107°.9E±0°.1, h22km, n25, σ1°07/21, mb3.9/6, South of Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMJI	**Cimerak**	**2.11**	**16**	P	**Pn**	**13 11 46.2**	**-1.1**
CISI	**Cisompet, Garu**	**2.26**	**359**	P	**Pn**	**13 11 47.6**	**-1.7**
CNJI	**Cibinong**	**2.61**	**344**	P	**Pn**	**13 11 52.1**	**-1.9**
LEM	**Lembang**	**2.99**	**355**	Pn	**Pb**	**13 12 05.2**	**-0.8**
	41nm,0.3s,baz=191,slow=15,SNR=24						
LEM				Sn	**Sb**	**13 12 42.2**	**0.0**
	40nm,0.3s,baz=331,slow=23,SNR=18						
LEM				LR	LR	13 12 48.0	
	comp=Z,66nm,21.8s,baz=206,slow=32						
LEM	**Lembang**	**2.99**	**355**	P	**Pb**	**13 12 05.6**	**-0.4**
SKJI	**Sukabumi**	**3.09**	**335**	P	**Pn**	**13 12 00.2**	**-0.5**
UGM	**Wanagama**	**3.25**	**54**	P	**Pn**	**13 12 04.5**	**+1.6**
PCJI	**Pacitan**	**3.66**	**64**	P	**Pn**	**13 12 08.4**	**-0.1**
CGJI	**Cibinong**	**3.85**	**326**	P	**Pn**	**13 12 09.7**	**-1.4**
PWJI	**Pagerwojo**	**4.29**	**66**	P	**Pn**	**13 12 17.8**	**+0.6**
JAGI	**Jajag, Banyuwa**	**6.36**	**78**	P	**Pn**	**13 12 45.9**	**+0.3**
	88nm,0.7s,0.4nm						
TWSI	**Taliwang, Sumb**	**8.97**	**84**	P	**Pn**	**13 13 21.6**	**+0.1**
	33nm,0.8s,721nm						
PLAI	**Plampang**	**9.84**	**85**	P	**Pn**	**13 13 33.3**	**-0.1**
FITZ	**Fitzroy Crossi**	**19.10**	**117**	P	**Pn**	**13 15 35.6**	**+0.1**
	0.3nm,0.3s,baz=309,slow=9.2,SNR=28						
WRA	**Warramunga Arr**	**27.45**	**115**	P	**P**	**13 16 56.9**	**-1.0**
	1.6nm,0.6s,baz=285,slow=11,SNR=17						
ASAR	**Alice Springs**	**28.41**	**122**	P	**P**	**13 17 05.9**	**-0.5**
	1.2nm,0.6s,baz=298,slow=8.5,SNR=17						
CMAR	**Chiang Mai Arr**	**29.45**	**343**	LR	LR	13 30 43.6	
	comp=Z,17nm,18.5s,baz=200,slow=40						
H08S2	**Diego Garcia H**	**35.02**	**271**	T	T	13 55 45.0	
	SNR=4.3						
H08S3	**Diego Garcia H**	**35.03**	**271**	T	T	13 55 49.9	
	baz=322,slow=74,SNR=3.4						
H08S1	**Diego Garcia H**	**35.03**	**271**	T	T	13 55 57.4	
	baz=93,slow=74,SNR=3.1						
STKA	**Stephens Creek**	**38.15**	**130**	P	**P**	**13 18 30.2**	**-0.9**
	2.0nm,0.4s,baz=302,slow=8.1,SNR=3.7						
MJAR	**Matsushiro Arr**	**54.24**	**30**	P	**P**	**13 20 38.2**	**+0.6**
	0.4nm,0.3s,baz=246,slow=7.1,SNR=4.8						
SONM	**Songino Array**	**57.42**	**359**	P	**P**	**13 21 00.2**	**0.0**
	0.6nm,0.5s,baz=177,slow=7.8,SNR=6.5						
MKAR	**Makanchi Array**	**60.82**	**340**	P	**P**	**13 21 25.8**	**+2.1**
	0.1nm,0.4s,baz=81,slow=24,SNR=7.7						
TXAR	**Lajitas Array**	**144.70**	**52**	PKP	PKPbc	13 30 48.5	+0.5
	0.9nm,0.8s,baz=262,slow=1.7,SNR=11						

GUC 22 13:32:41.3±0.4, 24°.05S×68°.90W, h121km±5km, ML3.8, 4C-3D, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LVC	**Limon Verde**	**1.43**	**359**	⇓*i*P	Pn	13 33 09.1	+0.6
LVC				*i* S	Sn	13 33 30.2	+1.2
PB06	**IPOC Station P**	**1.48**	**335**	⇑*i*P	Pn	13 33 09.7	+0.9
PB06				*e*S	Sn	13 33 30.8	+1.2
PB06				AML	AML	13 33 33.6	
	comp=E,1μm,0.1s						
PB10	**IPOC Station P**	**1.61**	**289**	⇑*i*P	Pn	13 33 10.8	+0.6
PB10				*i* S	Sn	13 33 33.0	+1.0
PB10				AML	AML	13 33 37.6	
	comp=N,1μm,0.3s						
PB04	**IPOC Station P**	**2.06**	**326**	⇑*i*P	Pn	13 33 16.8	+1.0
PB04				*e*S	Sn	13 33 42.4	+0.2
PB04				AML	AML	13 33 47.8	
	comp=N,484nm,0.1s						
PB09	**IPOC Station P**	**2.27**	**352**	⇓*i*P	Pn	13 33 20.0	+1.7
PB09				*e*S	Sn	13 33 48.7	+2.0
PB09				AML	AML	13 33 56.7	
	comp=N,761nm,0.4s						
PB07	**IPOC Station P**	**2.49**	**338**	⇓*i*P	Pn	13 33 22.1	+1.0
PB07				*i* S	Sn	13 33 53.7	+1.9
PB07				AML	AML	13 33 55.0	
	comp=E,375nm,0.3s						
PB08	**IPOC Station P**	**3.90**	**356**	⇑*i*P	Pn	13 33 40.4	+0.5

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*ISK **22** 13:43:27.9, 39°.10N×29°.11E, h6km, MD2.3*
*ISCJB **22** 13:43:28.3±0.5, 39°.10N±0°.02×29°.11E±0°.04, h8km±5km, Error ellipse: s-maj=5.6km s-min=3.9km az=4.7*
*DDA **22** 13:43:28.4, 39°.10N×29°.10E, h7km, Ml2.6*
*CSEM **22** 13:43:28.5±0.2, 39°.10N×29°.09E, h8km, ML2.6, Error ellipse: s-maj=4.2km s-min=2.9km az=90.0*

ISC 22 13:43:27.8±1.1, 39°.09N±0°.03×29°.08E±0°.03, h14km±10km, n23, σ0°59/38, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.29**	**261**	P	**Pb**	**13 43 35.3**	**+0.6**
DEMI				S	**Sb**	**13 43 39.3**	**-0.1**
DEMI	**Demirci**	**0.29**	**261**	*i* P	**Pb**	**13 43 35.3**	**+0.6**
DEMI				*i* S	**Sb**	**13 43 39.3**	**-0.1**
TVSB	**Tavsanli**	**0.47**	**39**	*e*PG	**Pg**	**13 43 36.8**	**-0.3**
TVSB				*e*SG	**Sg**	**13 43 42.9**	**-0.5**
TVSB	**Tavsanli**	**0.47**	**39**	*e*Pg	**Pg**	**13 43 36.8**	**-0.3**
TVSB				*e*Sg	**Sg**	**13 43 42.9**	**-0.5**
KULA	**Kula-Manisa**	**0.66**	**210**	*e*PG	**Pb**	**13 43 41.5**	**+0.4**
KULA				*e*SG	**Sb**	**13 43 50.9**	**+0.7**
KULA	**Kula-Manisa**	**0.66**	**210**	*e*Pg	**Pb**	**13 43 41.5**	**+0.4**
KULA				*e*Sg	**Sb**	**13 43 50.9**	**+0.7**
DURS	**Dursunbey**	**0.70**	**318**	P	**Pg**	**13 43 41.3**	**0.0**
DURS				S	**Sn**	**13 43 53.0**	**-1.0**
DURS	**Dursunbey**	**0.70**	**318**	*i* P	**Pg**	**13 43 41.3**	**0.0**
DURS				*i* S	**Sn**	**13 43 53.0**	**-1.0**
MANT	**Manisa**	**0.72**	**215**	P	**Pn**	**13 43 42.8**	**-1.0**
MANT				S	**Sb**	**13 43 52.4**	**+0.3**
MANT	**Manisa**	**0.72**	**215**	*i* P	**Pn**	**13 43 42.8**	**-1.0**
MANT				*i* S	**Sb**	**13 43 52.4**	**+0.3**
KHAL	**Karahalli**	**0.79**	**156**	P	**Pn**	**13 43 44.4**	**-0.2**
KHAL				S	**Sb**	**13 43 54.7**	**+0.9**
KHAL	**Karahalli**	**0.79**	**156**	*i* P	**Pn**	**13 43 44.4**	**-0.2**
KHAL				*i* S	**Sb**	**13 43 54.7**	**+0.9**
KHL	**Karahalli**	**0.84**	**155**	*e*PG	**Pb**	**13 43 44.5**	**+0.4**
KHL				*e*SG	**Sn**	**13 43 56.8**	**-0.6**
KHL	**Karahalli**	**0.84**	**155**	*e*Pg	**Pb**	**13 43 44.5**	**+0.4**
KHL				*e*Sg	**Sn**	**13 43 56.8**	**-0.6**
BALB	**Balikesir**	**1.08**	**301**	*e*PN	**Pn**	**13 43 49.2**	**+0.7**
BALB	**Balikesir**	**1.08**	**301**	*e*Pn	**Pn**	**13 43 49.2**	**+0.7**
IGD	**Bursa**	**1.18**	**5**	*i* P	**Pb**	**13 43 49.9**	**0.0**
IGD				*i* S	**Sb**	**13 44 05.6**	**+0.5**
CAVI	**Cavuskoy**	**1.26**	**28**	*e*PN	**Pg**	**13 43 52.7**	**+0.7**
CAVI	**Cavuskoy**	**1.26**	**28**	*e*Pn	**Pg**	**13 43 52.7**	**+0.7**
KCTX	**Karacabey (Bur**	**1.30**	**335**	*e*PN	**Pg**	**13 43 53.3**	**+0.5**
KCTX	**Karacabey (Bur**	**1.30**	**335**	*e*Pn	**Pg**	**13 43 53.3**	**+0.5**
ARMT	**Armutlu**	**1.49**	**354**	*e*PN	**Pg**	**13 43 56.2**	**-0.1**
ARMT	**Armutlu**	**1.49**	**354**	*e*Pn	**Pg**	**13 43 56.2**	**-0.1**

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*IDC **22** 13:50:28.3±3.2, 37°.84N×95°.74E, h0km, mb3.7/2, mb1 3.7/7, mb1mx3.5/54, mbtmp3.7/7, ML3.3/5, MS3.0/1, Ms1 3.0/1, ms1mx2.2/48, Error ellipse: s-maj=72.2km s-min=23.8km az=19.0*
*ISCJB **22** 13:50:32.1±1.8, 38°.1N±0°.2×95°.7E±0°.1, h33km, mb3.6/2, MS3.0/1, Error ellipse: s-maj=31.1km s-min=13.3km az=12.2*

ISC 22 13:50:32.7±2.2, 38°.0N±0°.2×95°.6E±0°.1, h35km, n8, σ1°21/8, Qinghai

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SONM	**Songino Array**	**12.65**	**35**	Pn	**Pn**	**13 53 30.1**	**+0.1**
	0.1nm,0.3s,baz=217,slow=15,SNR=5.5						
MKAR	**Makanchi Array**	**13.18**	**316**	Pn	**Pn**	**13 53 37.0**	**-0.2**
	0.4nm,0.3s,baz=125,slow=14,SNR=16						
MKAR				Sn	**Sn**	**13 56 01.6**	**-0.8**
	0.1nm,0.3s,baz=132,slow=25,SNR=2.7						
AAK	**Ala-Archa**	**16.72**	**293**	Pn	**P**	**13 54 25.5**	**-0.8**
	0.4nm,0.3s,baz=121,slow=8.0,SNR=5.2						
KURBB	**Kurchatov Arra**	**17.52**	**322**	P	**P**	**13 54 34.8**	**0.0**
	0.1nm,0.3s,baz=134,slow=11,SNR=14						
ZALV	**Zalesovo Beam**	**17.61**	**339**	P	**P**	**13 54 36.5**	**+0.7**
	0.1nm,0.3s,baz=153,slow=13,SNR=4.2						
BVAR	**Borovoye Array**	**23.03**	**319**	P	**P**	**13 55 36.7**	**+2.3**
	1.4nm,0.7s,baz=111,slow=8.1,SNR=7.0						
KSRS	**Korea Array**	**25.54**	**81**	P	**P**	**13 55 57.4**	**-0.6**
	1.3nm,0.5s,baz=278,slow=9.3,SNR=9.3						
JAY	**Jayapura**	**57.98**	**123**	LR	LR	14 24 15.7	
	comp=Z,14nm,22.0s,baz=186,slow=35						

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*IDC **22** 14:01:03.8±1.1, 53°.61N×164°.99W, h0km, mb3.8/12, mb1 4.0/13, mb1mx3.7/56, mbtmp3.9/13, ML3.9/1, MS3.0/3, Ms1 3.0/3, ms1mx2.6/39, Error ellipse: s-maj=32.9km s-min=16.5km az=180.0*
*ISCJB **22** 14:01:05.9±0.5, 53°.44N±0°.05×164°.78W±0°.05, h27km, mb3.9/12, MS2.9/3, Error ellipse: s-maj=6.6km s-min=4.4km az=7.1*
*NEIC **22** 14:01:08.1, 53°.58N×164°.84W, h21km, mb4.1/1, ML3.5(AEIC), After AEIC.*

ISC 22 14:01:07.5±0.7, 53°.49N±0°.06×164°.89W±0°.04, h27km, n49, σ0°78/46, mb3.9/12, MS2.8/3, Unimak Island region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKSA	**Akutan Strait**	**0.80**	**324**	P	**Pb**	**14 01 22.5**	**-0.3**
AKSA				S	**Sb**	**14 01 33.1**	**-0.2**
AKA	**Akutan**	**0.83**	**321**	P	**Pn**	**14 01 23.5**	**+0.2**
AKUT	**Akutan**	**0.83**	**321**	P	**Pb**	**14 01 23.2**	**-0.1**
AKUT				S	**Sn**	**14 01 35.0**	**+0.4**
ZRO	**Akutan Zero**	**0.88**	**313**	P	**Pn**	**14 01 24.0**	**0.0**
AKRB	**Akutan Reef Bi**	**0.94**	**313**	P	**Pn**	**14 01 25.0**	**0.0**
AKRB				S	**Sn**	**14 01 39.0**	**+1.4**
LVA	**Lava Point**	**0.95**	**315**	P	**Pn**	**14 01 25.1**	**0.0**
AKGG	**Akutan Green G**	**0.96**	**318**	P	**Pn**	**14 01 25.2**	**0.0**
AKGG				S	**Sn**	**14 01 39.4**	**+1.4**
UNV	**Unalaska Valle**	**1.02**	**291**	P	**Pn**	**14 01 25.4**	**-0.5**
WESN	**West Dahl Nort**	**1.09**	**10**	P	**Pn**	**14 01 26.2**	**-0.9**
WEBT	**Westdahl Beart**	**1.10**	**4**	P	**Pn**	**14 01 26.6**	**-0.6**
MTBL	**Makushin Table**	**1.16**	**295**	P	**Pn**	**14 01 28.0**	**0.0**
MGOD	**Makushin Gods**	**1.22**	**285**	P	**Pn**	**14 01 28.5**	**-0.3**
MSOM	**Makushin Julie**	**1.27**	**286**	P	**Pn**	**14 01 29.1**	**-0.3**
SSLS	**Shishaldin Sou**	**1.33**	**23**	P	**Pn**	**14 01 30.6**	**+0.2**
SSLW	**Shishaldin Wes**	**1.36**	**19**	P	**Pn**	**14 01 29.4**	**-1.3**
SSLN	**Shishaldin Nor**	**1.42**	**21**	P	**Pn**	**14 01 30.4**	**-1.2**
FALS	**False Pass**	**1.62**	**32**	P	**Pn**	**14 01 32.4**	**-1.8**
OKTU	**Okmok Mt. Tuli**	**1.89**	**268**	P	**Pb**	**14 01 40.0**	**-1.2**
OKER	**Okmok East Rim**	**1.89**	**270**	P	**Pb**	**14 01 40.8**	**-0.5**
OKAK	**Okmok**	**2.07**	**274**	P	**Pb**	**14 01 42.8**	**-1.5**
BALA	**Baldy Mountain**	**2.10**	**35**	P	**Pn**	**14 01 42.0**	**+1.1**
DT1	**Dutton Round H**	**2.23**	**42**	P	**Pn**	**14 01 42.6**	**0.0**
DTNA	**Dutton South F**	**2.27**	**42**	P	**Pn**	**14 01 43.6**	**+0.4**
NIKH	**Nikolski High**	**2.44**	**259**	P	**Pn**	**14 01 46.3**	**+0.9**
SDPT	**Sand Point**	**3.18**	**52**	P	**Pn**	**14 01 55.3**	**-0.4**
BPAW	**Bear Paw Mtn.**	**12.81**	**28**	*e*Pn	**Pn**	**14 04 08.4**	**+0.8**
DLBC	**Dease Lake**	**19.98**	**62**	P	**Pn**	**14 05 39.1**	**-0.2**
	0.2nm,0.3s,baz=275,slow=13,SNR=3.0						
INK	**Inuvik**	**20.93**	**33**	P	**P**	**14 05 48.7**	**+1.2**
	1.8nm,0.8s,baz=266,slow=6.9,SNR=6.5						
INK	**Inuvik**	**20.93**	**33**	P	**P**	**14 05 48.7**	**+1.2**
INK				*e*Pn	Pn	14 05 50.9	+0.7
PETK	**Petropavlovsk-**	**22.20**	**284**	P	**P**	**14 06 01.7**	**+0.3**
	1.7nm,0.4s,baz=87,slow=13,SNR=9.1						
PETK				LR	LR	14 13 40.7	
	comp=Z,30nm,19.5s,baz=90,slow=34						
NVAR	**Mina Array Bea**	**35.03**	**96**	P	**P**	**14 07 58.6**	**+0.7**
	0.9nm,0.8s,baz=296,slow=8.5,SNR=4.5						
KLR	**Kul'dur**	**38.63**	**290**	LR	LR	14 25 22.3	
	comp=Z,40nm,18.3s,baz=68,slow=38						
H11N2	**WAKE ISLAND Hy**	**40.08**	**224**	T	T	14 51 37.5	
	baz=26,slow=76,SNR=18						
H11N3	**WAKE ISLAND Hy**	**40.09**	**224**	T	T	14 51 31.2	
	baz=26,slow=76,SNR=18						
H11N1	**WAKE ISLAND Hy**	**40.10**	**224**	T	T	14 51 28.5	
	baz=26,slow=76,SNR=16						
H11S1	**WAKE ISLAND Hy**	**41.26**	**223**	T	T	14 53 00.1	
	baz=25,slow=76,SNR=46						
H11S2	**WAKE ISLAND Hy**	**41.27**	**223**	T	T	14 52 57.6	
	baz=25,slow=76,SNR=43						
H11S3	**WAKE ISLAND Hy**	**41.28**	**223**	T	T	14 52 57.8	
	baz=25,slow=76,SNR=17						
MJAR	**Matsushiro Arr**	**42.42**	**270**	P	**P**	**14 08 59.7**	**+0.1**
	0.7nm,0.6s,baz=35,slow=5.8,SNR=4.3						
MJAR				LR	LR	14 24 39.0	
	comp=Z,12nm,21.6s,baz=110,slow=33						
KSRS	**Korea Array**	**47.94**	**279**	P	**P**	**14 09 43.5**	**+0.2**
	1.7nm,0.9s,baz=48,slow=9.0,SNR=6.6						
KSAR	**Wonju Array Be**	**47.97**	**279**	P	**P**	**14 09 43.5**	**-0.1**
TXAR	**Lajitas Array**	**50.06**	**93**	P	**P**	**14 10 00.4**	**+0.5**
	0.9nm,0.7s,baz=301,slow=5.3,SNR=12						
SONM	**Songino Array**	**53.02**	**303**	P	**P**	**14 10 21.5**	**-0.2**
	0.9nm,0.7s,baz=51,slow=6.6,SNR=7.4						
ARCES	**ARCESS Array B**	**57.05**	**356**	P	**P**	**14 10 49.6**	**-0.8**
	1.2nm,0.6s,baz=10,slow=7.5,SNR=7.4						
MKAR	**Makanchi Array**	**64.95**	**316**	P	**P**	**14 11 43.4**	**-1.0**
	0.1nm,0.3s,baz=44,slow=5.6,SNR=4.3						
FINES	**FINESS Array B**	**65.08**	**354**	P	**P**	**14 11 44.3**	**-0.6**
	1.8nm,0.5s,baz=19,slow=7.8,SNR=19						
KKAR	**Karatay Array**	**72.69**	**321**	*e*P	**P**	**14 12 32.4**	**-0.3**
	1.0nm,0.6s						
AKASG	**Malin Array Be**	**75.50**	**351**	P	**P**	**14 12 47.9**	**-0.9**
	1.2nm,0.6s,baz=8.7,slow=5.5,SNR=5.0						
CMAR	**Chiang Mai Arr**	**78.96**	**286**	P	**P**	**14 13 09.0**	**+0.3**
	0.6nm,0.5s,baz=17,slow=7.0,SNR=4.2						

IDC 22 14:23:50.8±1.7, 3°.49S×141°.93E, h0km, mb3.6/2, mb1 3.9/3, mb1mx3.4/22, mbtmp3.5/3, ML3.6/1, Error ellipse: s-maj=34.8km s-min=23.0km az=72.0, New Guinea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAY	**Jayapura**	**1.56**	**308**	Pn	Pb	14 24 20.4	-0.1
	4.0nm,0.3s,baz=258,slow=21,SNR=135						
JAY				Sn	Sg	14 24 42.7	+1.8
	4.0nm,0.3s,baz=95,slow=24,SNR=11						
WRA	**Warramunga Arr**	**17.95**	**204**	P	Pn	14 28 01.6	-0.4
	0.2nm,0.3s,baz=16,slow=13,SNR=18						
ASAR	**Alice Springs**	**21.51**	**200**	P	P	14 28 42.1	+0.5
	0.7nm,0.7s,baz=26,slow=10,SNR=12						
ILAR	**Eielson Array**	**85.22**	**24**	P	P	14 36 28.3	-0.7
	0.7nm,0.6s,baz=269,slow=5.1,SNR=6.9						

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*SOME **22** 14:23:55.2, 41°.88N×81°.22E, h5km*
*NNC **22** 14:24:00.8±2.0, 42°.40N×81°.45E, h0km, mb3.5, mpv3.1, Error ellipse: s-maj=16.3km s-min=7.3km az=149.0*

ISC 22 14:23:55.0±2.5, 42°.04N±0°.08×81°.33E±0°.07, h1km±13km, n31, σ1°66/52, 24C-11D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHLS	**Shalkode**	**1.55**	**317**	*e*P	**Pg**	**14 24 26.2**	**+1.6**
	34nm,0.3s						
SHLS				⇑*i*S	**Sb**	**14 24 47.7**	**+3.0**
	243nm,0.3s						
PDGK	**Podgornoye**	**1.87**	**314**	⇓Pg	**Pg**	**14 24 31.6**	**+0.7**
	22nm,0.5s						
PDGK				⇑Lg	Lg	14 24 56.9	
	69nm,0.6s						
PDGK	**Podgornoye**	**1.87**	**314**	⇓Pg	**Pg**	**14 24 31.6**	**+0.7**
	22nm,0.5s						
PDGK				⇑Lg	Lg	14 24 56.9	
	69nm,0.6s						
UZB	**Uzynbulak**	**2.03**	**304**	*e*P	**Pg**	**14 24 34.6**	**+0.7**
	35nm,0.5s						
UZB				*e*S	**Sg**	**14 25 03.1**	**+2.9**
	68nm,0.5s						
SATY	**Saty**	**2.39**	**296**	*e*P	**Pg**	**14 24 40.8**	**+0.1**
	31nm,0.5s						
SATY				*e*S	**Sg**	**14 25 14.3**	**+2.7**
	170nm,0.4s						
KPKS	**Kokpek**	**2.42**	**307**	*e*P	**Pb**	**14 24 39.3**	**0.0**
	34nm,0.3s						
KPKS				*e*S	**Sg**	**14 25 12.2**	**-0.3**
	408nm,0.5s						
ZHN	**Zhinishke**	**2.42**	**299**	*e*P	**Pg**	**14 24 41.2**	**-0.1**
	8.6nm,0.4s						
ZHN				*e*S	**Sg**	**14 25 15.0**	**+2.4**
	52nm,0.2s						
DJR	**Jarkent**	**2.56**	**334**	*e*P	**Pb**	**14 24 41.8**	**+0.2**
	11nm,0.5s						
DJR				*e*S	**Sg**	**14 25 15.7**	**-1.4**
	134nm,0.6s						
MNBS	**Baschi**	**2.96**	**315**	*e*P	**Pb**	**14 24 47.5**	**-1.1**
	1.6nm,0.5s						
MNBS				*e*S	**Sb**	**14 25 25.1**	**-0.3**
	260nm,0.4s						
MDOK	**Medeo**	**3.35**	**291**	*e*P	**Pb**	**14 24 55.1**	**-0.2**
	3.9nm,0.6s						
MDOK				*e*S	**Sb**	**14 25 38.3**	**+1.6**
	9.5nm,0.7s						
ARXS	**Arharly**	**3.36**	**311**	*e*P	**Pg**	**14 24 57.6**	**-1.8**
	8.9nm,0.6s						
ARXS				*e*S	**Sg**	**14 25 42.2**	**-0.7**
	39nm,0.5s						
TNSS	**Tian-Shan**	**3.39**	**289**	*e*P	**Pb**	**14 24 57.8**	**+1.7**
	7.0nm,0.5s						
TNSS				⇓*i*S	**Sg**	**14 25 43.1**	**-0.9**
	19nm,0.6s						
KAPS	**Kapalarasan**	**3.55**	**337**	*e*P	**Pg**	**14 25 01.8**	**-1.2**
	5.5nm,0.5s						
KAPS				*e*S	**Sg**	**14 25 48.8**	**-0.1**
	15nm,0.4s						
TDK	**Taldyqorghan**	**3.65**	**325**	*e*P	**Pg**	**14 25 03.1**	**-1.8**
	15nm,0.1s						
TDK				*e*S	**Sg**	**14 25 51.5**	**-0.7**
	41nm,0.2s						
CHKK	**Chushkaly**	**3.67**	**301**	*e*P	**Pg**	**14 25 03.2**	**-2.0**
	6.0nm,0.5s						
CHKK				*e*S	**Sg**	**14 25 51.5**	**-1.3**
	38nm,0.5s						
MTBS	**Maitube**	**3.78**	**288**	*e*P	**Pb**	**14 25 03.2**	**+0.7**
	5.5nm,0.4s						
MTBS				*e*S	**Sg**	**14 25 53.7**	**-2.7**
	9.6nm,0.6s						
KST	**Kastek**	**4.09**	**286**	⇑*i*P	**Pb**	**14 25 08.2**	**+0.4**
	2.2nm,0.4s						
KST				⇓*i*S	**Sb**	**14 26 00.8**	**+3.0**
	6.3nm,0.9s						
KUU	**Kurty**	**4.10**	**299**	⇓*i*P	**Pg**	**14 25 11.4**	**-2.2**
	12nm,0.7s						
KUU				*e*S	**Sg**	**14 26 06.3**	**-0.4**
	25nm,0.5s						
DGS	**Degeres**	**4.27**	**288**	*e*P	**Pb**	**14 25 12.8**	**+1.9**
	8.5nm,0.6s						
DGS				*e*S	**Sg**	**14 26 08.8**	**-3.4**
	29nm,0.6s						
TKM2	**Tokmak 2**	**4.33**	**284**	⇑Pn	**Pb**	**14 25 10.7**	**-1.3**
	4.2nm,0.6s						
TKM2				⇑Lg	Lg	14 26 17.3	
	10nm,0.5s						
TKM2	**Tokmak 2**	**4.33**	**284**	⇑Pn	**Pb**	**14 25 10.7**	**-1.3**
	4.2nm,0.6s						
TKM2				⇑Lg	Lg	14 26 17.3	
	10nm,0.5s						
MAKZ	**Makanchi**	**4.79**	**5**	⇑Pn	**Pn**	**14 25 09.4**	**+1.1**
	3.9nm,1.0s						
MAKZ				⇑Sn	**Sn**	**14 26 03.0**	**-1.5**
	2.8nm,0.5s						
MAKZ				⇓Lg	Lg	14 26 22.5	
	11nm,0.8s						
MAKZ	**Makanchi**	**4.79**	**5**	⇑Pn	**Pn**	**14 25 09.4**	**+1.1**
	3.9nm,1.0s						
MAKZ				⇑Sn	**Sn**	**14 26 03.0**	**-1.5**
	2.8nm,0.5s						
MAKZ				⇓Lg	Lg	14 26 22.5	
	11nm,0.8s						
MK31	**Makanchi Array**	**4.80**	**8**	Pn	**Pn**	**14 25 09.5**	**+1.0**
	0.9nm,0.6s,baz=190,slow=13,SNR=11						
MK31				Pg	**Pb**	**14 25 21.1**	**+1.1**
	1.6nm,0.6s,baz=185,slow=18,SNR=8.4						
MK31				⇑Sn	**Sn**	**14 26 02.2**	**-2.7**
	1.9nm,0.6s,baz=221,slow=16,SNR=4.8						
MK31				Lg	Lg	14 26 22.0	
	13nm,0.6s,baz=186,slow=29,SNR=8.5						
MK31	**Makanchi Array**	**4.80**	**8**	Pn	**Pn**	**14 25 09.5**	**+1.0**
	0.9nm,0.6s,baz=190,slow=13,SNR=11						
MK31				Pg	**Pb**	**14 25 21.1**	**+1.1**
	1.6nm,0.6s,baz=185,slow=18,SNR=8.4						
MK31				⇑Sn	**Sn**	**14 26 02.2**	**-2.7**
	1.9nm,0.6s,baz=221,slow=16,SNR=4.8						
MK31				Lg	Lg	14 26 22.0	
	13nm,0.6s,baz=186,slow=29,SNR=8.5						
AAK	**Ala-Archa**	**5.10**	**279**	⇑Pg	**Pg**	**14 25 32.6**	**-0.1**
	1.0nm,0.4s						
AAK				⇑Lg	Lg	14 26 41.7	
	5.0nm,0.6s						
AAK	**Ala-Archa**	**5.10**	**279**	⇑Pg	**Pg**	**14 25 32.6**	**-0.1**
	1.0nm,0.4s						
AAK				⇑Lg	Lg	14 26 41.7	
	5.0nm,0.6s						
KK31	**Karatay Array**	**8.05**	**281**	⇓Pg	**Pg**	**14 26 27.3

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VHO				eS	Sn	14 31 57.9	-2.2
VHO	**Vista Hermosa**	**1.97**	**284**	iP	Pn	14 31 35.4	-0.8
VHO				eS	Sn	14 31 57.9	-2.2
CCIG	**Comitan**	**2.51**	**97**	eP	Pn	14 31 41.2	-2.3
CCIG				iS	Sn	14 32 12.2	-1.0
CCIG	**Comitan**	**2.51**	**97**	eP	Pn	14 31 41.2	-2.3
CCIG				iS	Sn	14 32 12.2	-1.0
TPIG	**Tehuac#an**	**3.09**	**306**	eP	Pn	14 31 51.4	0.0
TPIG				iS	Sn	14 32 26.0	-1.2
TPIG	**Tehuac#an**	**3.09**	**306**	eP	Pn	14 31 51.4	0.0
TPIG				iS	Sn	14 32 26.0	-1.2
PNIG	**Pinotepa**	**3.27**	**267**	iP	Pn	14 31 52.1	-1.6
PNIG				iS	Sn	14 32 30.0	-1.5
PNIG	**Pinotepa**	**3.27**	**267**	iP	Pn	14 31 52.1	-1.6
PNIG				iS	Sn	14 32 30.0	-1.5
TEIG	**Tepich** 24nm,0.4s	**7.10**	**59**	ePn	Pn	14 32 39.7	-6.5
TEIG				eSn	Sn	14 33 54.9	-11

WEL 22 14:36:48.8±0.1, 40°.95S×174°.98E, h64km±1km, ML3.6/19, 12C-25D, Error ellipse: s-maj=0.9km s-min=0.7km az=90.0, Cook Strait

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KIW	**Kapiti Island**	**0.10**	**329**	⇓PN	Pn	14 36 57.9	-0.4
KIW				SN	Sn	14 37 04.5	-0.7
KIW				AML	AML	14 37 05.3	
CAW	**Cannon Point**	**0.18**	**157**	⇓PN	Pn	14 36 58.4	-0.2
CAW				AML	AML	14 37 06.4	
CAW				AML	AML	14 37 06.5	
OGWZ	**Otaki Gorge**	**0.20**	**49**	⇑PN	Pn	14 36 58.4	-0.3
OGWZ				SN	Sn	14 37 05.3	-0.5
WEL	**Wellington**	**0.37**	**205**	⇓PN	Pn	14 36 59.6	-0.3
WEL				AML	AML	14 37 09.3	
WEL				AML	AML	14 37 09.3	
HOWZ	**Holdsworth Sta**	**0.41**	**84**	⇓PN	Pn	14 36 59.8	-0.4
MTW	**Mount Morrison**	**0.45**	**118**	⇑PN	Pn	14 37 00.4	-0.2
MTW				SN	Sn	14 37 09.0	-0.2
MTW				AML	AML	14 37 09.9	
BHW	**Baring Head**	**0.47**	**190**	⇓PN	Pn	14 37 00.4	-0.4
BHW				AML	AML	14 37 10.1	
BHW				AML	AML	14 37 10.2	
MSWZ	**Moikau Station**	**0.51**	**156**	⇑PN	Pn	14 37 01.1	-0.2
MSWZ				AML	AML	14 37 11.0	
MSWZ				AML	AML	14 37 11.4	
MRZ	**Mangatainoka R**	**0.54**	**58**	⇓PN	Pn	14 37 00.9	-0.6
PAWZ	**Paruwai Farm**	**0.55**	**142**	⇑PN	Pn	14 37 01.5	-0.1
PAWZ				SN	Sn	14 37 11.1	0.0
PAWZ				AML	AML	14 37 12.1	
TCW	**Tory Channel**	**0.59**	**243**	⇓PN	Pn	14 37 01.5	-0.6
TCW				AML	AML	14 37 12.6	
TCW				AML	AML	14 37 12.7	
PLWZ	**Palliser**	**0.66**	**161**	⇑PN	Pn	14 37 02.5	-0.3
TRWZ	**Traveller**	**0.70**	**130**	PN	Pn	14 37 03.1	-0.2
TRWZ				AML	AML	14 37 16.0	
TRWZ				AML	AML	14 37 16.6	
TIWZ	**Tintock**	**0.71**	**77**	⇓PN	Pn	14 37 02.9	-0.5
TIWZ				AML	AML	14 37 14.3	
TIWZ				AML	AML	14 37 14.9	
TMWZ	**Te Maipa**	**0.71**	**103**	⇓PN	Pn	14 37 03.2	-0.2
OHWZ	**Ohakea**	**0.78**	**19**	PN	Pn	14 37 04.3	+0.1
DUWZ	**D'Urville Isla**	**0.81**	**280**	⇓PN	Pn	14 37 04.0	-0.7
POWZ	**Post Office Ro**	**0.82**	**48**	PN	Pn	14 37 03.9	-0.9
PRWZ	**Pori Road**	**0.85**	**63**	⇓PN	Pn	14 37 04.6	-0.5
TUWZ	**Tuamarina**	**0.92**	**238**	⇓PN	Pn	14 37 05.1	-0.9
TUWZ				AML	AML	14 37 18.0	
TUWZ				AML	AML	14 37 18.1	
CPWZ	**Castlepoint**	**0.93**	**88**	PN	Pn	14 37 06.0	0.0
CMWZ	**Cape Campbell**	**0.99**	**215**	PN	Pn	14 37 06.8	-0.1
CMWZ				AML	AML	14 37 22.3	
CMWZ				AML	AML	14 37 24.5	
BFZ	**Birch Farm**	**1.00**	**75**	PN	Pn	14 37 06.1	-0.9
BFZ				AML	AML	14 37 20.4	
BFZ				AML	AML	14 37 20.4	
BFZ				AML	AML	14 37 20.7	
BFZ				AML	AML	14 37 20.7	
DVHZ	**Dannevirke**	**1.11**	**55**	⇓PN	Pn	14 37 07.3	-1.2
BSWZ	**Blackbirch Sta**	**1.13**	**227**	⇓PN	Pn	14 37 07.9	-0.8
BSWZ				AML	AML	14 37 24.1	
BSWZ				AML	AML	14 37 24.9	
TSZ	**Takapari Road**	**1.16**	**41**	⇓PN	Pn	14 37 08.2	-1.0
TSZ				SN	Sn	14 37 23.3	-0.9
TSZ				AML	AML	14 37 24.5	
WAZ	**Wanganui**	**1.19**	**0**	PN	Pn	14 37 09.7	+0.2
NNZ	**Nelson**	**1.24**	**257**	⇓PN	Pn	14 37 09.2	-0.8
PNHZ	**Pukenui**	**1.39**	**43**	⇓PN	Pn	14 37 10.9	-1.2
WPHZ	**Waipukurau**	**1.42**	**52**	PN	Pn	14 37 11.0	-1.5
PRHZ	**Porangahau**	**1.43**	**62**	⇓PN	Pn	14 37 11.3	-1.4
LREZ	**Lake Rotokare**	**1.55**	**343**	PN	Pn	14 37 14.5	+0.3
MTVZ	**Mangateitei**	**1.60**	**14**	PN	Pn	14 37 14.7	-0.4
MOVZ	**Moawhango**	**1.65**	**21**	PN	Pn	14 37 14.6	-1.0
BHHZ	**Black Hill Sta**	**1.68**	**30**	PN	Pn	14 37 15.3	-0.8
PKVZ	**Pokaka**	**1.68**	**10**	⇓PN	Pn	14 37 15.7	-0.4
KRHZ	**Kereru**	**1.68**	**40**	PN	Pn	14 37 14.8	-1.3
WNVZ	**Wahianoa**	**1.69**	**17**	⇑PN	Pn	14 37 15.7	-0.5
TRVZ	**Turoa**	**1.70**	**15**	PN	Pn	14 37 16.1	-0.4
PXZ	**Pawanui**	**1.70**	**58**	⇑PN	Pn	14 37 14.8	-1.5
PXZ				AML	AML	14 37 38.2	
PREZ	**Palmer Road**	**1.72**	**338**	⇑PN	Pn	14 37 17.3	+0.7
WHVZ	**Whangaehu Hut**	**1.73**	**16**	PN	Pn	14 37 16.3	-0.6
FWVZ	**Far West T-bar**	**1.75**	**15**	PN	Pn	14 37 16.5	-0.6
NMEZ	**Namu Road**	**1.75**	**331**	PN	Pn	14 37 17.3	+0.4
TUVZ	**Tukino**	**1.75**	**17**	PN	Pn	14 37 16.7	-0.4
THZ	**Tophouse**	**1.76**	**242**	PN	Pn	14 37 15.7	-1.4
NEZ	**North Egmont**	**1.80**	**338**	PN	Pn	14 37 18.0	+0.3
KHEZ	**Kahui Hut**	**1.81**	**336**	PN	Pn	14 37 18.1	+0.3
KHZ	**Kahutara**	**1.82**	**216**	⇓PN	Pn	14 37 16.8	-1.1
VRZ	**Vera Road**	**1.83**	**355**	⇑PN	Pn	14 37 17.8	-0.2
NGZ	**Ngauruhoe**	**1.83**	**15**	PN	Pn	14 37 17.9	-0.3
DREZ	**Durham Road**	**1.85**	**341**	PN	Pn	14 37 18.9	+0.6
KAHZ	**Kahuranaki**	**1.85**	**52**	⇑PN	Pn	14 37 16.8	-1.5
OTVZ	**Oturere**	**1.86**	**17**	PN	Pn	14 37 18.2	-0.4
QRZ	**Quartz Range**	**1.86**	**273**	⇓PN	Pn	14 37 17.3	-1.1
NWEZ	**Newall Road**	**1.87**	**333**	PN	Pn	14 37 18.8	+0.2
WTVZ	**West Tongariro**	**1.89**	**15**	PN	Pn	14 37 18.5	-0.4
TWVZ	**Taurewa**	**1.91**	**11**	PN	Pn	14 37 18.4	-0.7
PKE	**Pukeiti**	**1.91**	**336**	PN	Pn	14 37 19.2	+0.1
KRVZ	**Karewarewa**	**1.92**	**16**	PN	Pn	14 37 18.9	-0.4
MHEZ	**Mangahewa**	**1.93**	**345**	PN	Pn	14 37 20.3	+0.8
RITZ	**Rihia Road**	**2.08**	**19**	PN	Pn	14 37 21.8	+0.3
BKZ	**Black Stump Fm**	**2.12**	**34**	⇑PN	Pn	14 37 20.4	-1.7
BKZ				AML	AML	14 37 48.7	
BKZ				AML	AML	14 37 53.0	
ARHZ	**Aropaoanui**	**2.29**	**43**	PN	Pn	14 37 22.7	-1.5
NMHZ	**Naumai**	**2.32**	**38**	⇓PN	Pn	14 37 23.2	-1.5
MRHZ	**Matea Rd**	**2.38**	**28**	PN	Pn	14 37 23.6	-2.0
HIZ	**Hauiti**	**2.43**	**358**	PN	Pn	14 37 25.9	-0.3
DSZ	**Denniston Nort**	**2.52**	**250**	⇓PN	Pn	14 37 25.9	-1.5
TLZ	**Tolley Road**	**2.65**	**10**	PN	Pn	14 37 28.3	-0.9
LTZ	**Lake Taylor**	**2.73**	**227**	⇓PN	Pn	14 37 28.5	-1.8
RTZ	**Ruatahuna**	**2.79**	**34**	PN	Pn	14 37 29.1	-2.0
SNGZ	**Shannon Statio**	**2.82**	**41**	PN	Pn	14 37 28.9	-2.7
KNZ	**Kokohu**	**2.83**	**48**	PN	Pn	14 37 28.8	-2.7
MHGZ	**Mahia Peninsul**	**2.88**	**52**	PN	Pn	14 37 29.7	-2.5
PRGZ	**Paritu Road**	**3.01**	**49**	PN	Pn	14 37 31.2	-3.0
RIGZ	**Rimuhau**	**3.10**	**45**	PN	Pn	14 37 32.3	-3.0
URZ	**Urewera**	**3.15**	**32**	PN	Pn	14 37 33.0	-2.9
URZ				AML	AML	14 38 09.4	
CRLZ	**Canterbury Las**	**3.16**	**213**	PN	Pn	14 37 33.8	-2.3
INZ	**Inchbonnie**	**3.18**	**235**	⇓PN	Pn	14 37 34.3	-2.1
OXZ	**Oxford**	**3.23**	**222**	PN	Pn	14 37 34.1	-3.0
TOZ	**Tahuroa Road**	**3.23**	**7**	PN	Pn	14 37 36.4	-0.8
MQZ	**McQueen's Vall**	**3.25**	**211**	PN	Pn	14 37 34.3	-3.1
MWZ	**Matawai**	**3.27**	**38**	PN	Pn	14 37 34.5	-3.2
MWZ				AML	AML	14 38 12.7	
MWZ				AML	AML	14 38 13.6	
TKGZ	**Te Karaka**	**3.34**	**42**	PN	Pn	14 37 35.2	-3.4
TWGZ	**Tauwhareparae**	**3.61**	**41**	PN	Pn	14 37 40.1	-2.2
WVZ	**Waitaha Valley**	**3.81**	**235**	PN	Pn	14 37 42.6	-2.3
PUZ	**Puketiti**	**3.83**	**43**	PN	Pn	14 37 40.3	-5.0
MKAZ	**Moumakai**	**3.84**	**2**	PN	Pn	14 37 44.4	-1.0
KBAZ	**Karaka Road Bo**	**3.84**	**359**	⇑PN	Pn	14 37 45.2	-0.3
HAZ	**Te Kaha**	**3.86**	**35**	PN	Pn	14 37 42.8	-2.8
AWAZ	**Awhitu Peninsu**	**3.88**	**356**	PN	Pn	14 37 45.7	-0.3
ETAZ	**East Tamaki Re**	**3.99**	**359**	PN	Pn	14 37 46.7	-0.7
RPZ	**Rata Peaks**	**4.01**	**225**	PN	Pn	14 37 45.0	-2.8
WMGZ	**Waiomatatini S**	**4.10**	**42**	PN	Pn	14 37 45.3	-3.7
RVAZ	**Riverhead Bore**	**4.18**	**356**	PN	Pn	14 37 49.6	-0.5
KUZ	**Kuaotunu**	**4.23**	**8**	PN	Pn	14 37 49.4	-1.4
FOZ	**Fox Glacier**	**4.62**	**234**	PN	Pn	14 37 52.8	-3.3
LBZ	**Lake Benmore**	**4.93**	**224**	PN	Pn	14 37 58.3	-2.0
ODZ	**Otahua Downs**	**5.18**	**216**	PN	Pn	14 38 00.4	-3.4
JCZ	**Jackson Bay**	**5.54**	**234**	PN	Pn	14 38 05.4	-3.3
TUZ	**Tuapeka**	**6.34**	**216**	PN	Pn	14 38 17.5	-2.1

ARO 22 14:37:15.9, 10°N±15°×4°3E±5°1, h15km±99km, ML4.0, Ethiopia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GBR	**Grand-Bara**	**1.68**	**329**	eP	Pn	14 37 42.8	-2.0
GBR				eS	Sn	14 38 01.8	-4.2
ATA	**Atar**	**1.74**	**356**	eP	Pn	14 37 43.9	-1.7
SGH	**Sud-Ghoubbet**	**1.85**	**338**	eP	Pn	14 37 45.9	-1.4
ATD	**Arta Tunnel**	**1.88**	**345**	eP	Pn	14 37 46.0	-1.5
ATD				eS	Sn	14 38 10.1	-0.9
MCAD	**Moucha**	**2.02**	**356**	eP	Pn	14 37 48.0	-1.5
LDLD	**Lac de Lave**	**2.04**	**336**	eP	Pn	14 37 48.2	-1.6
TDD	**Tadjoura Ara**	**2.13**	**349**	eP	Pn	14 37 49.1	-1.9
OBO	**Obock**	**2.27**	**359**	eP	Pn	14 37 51.4	-1.5

ROM 22 14:42:11.0±0.1, 42°.89N×12°.90E, h10km, Md1.4/3, Ml0.9/3, Error ellipse: s-maj=1.1km s-min=0.4km az=92.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CESI	**CESI - Serrava**	**0.12**	**3**	Pg	Pg	14 42 14.4	+0.5
CESI				Sg	Sg	14 42 16.7	+0.7
	36nm,0.2s						
FDMO	**Fiordimonte**	**0.20**	**43**	Pg	Pg	14 42 15.9	+0.6
FDMO				Sg	Sg	14 42 19.7	+1.4
	12nm,0.2s						
LNSS	**Leonessa**	**0.30**	**159**	Pg	Pg	14 42 17.8	+0.7
LNSS				Sg	Sb	14 42 22.8	-0.9
	12nm,0.5s						

*INMG **22** 14:45:12.9±1.1, 42°.98N×1°.29W, h1km±2km, ML2.7, Error ellipse: s-maj=1.9km s-min=1.3km az=44.0*
*CSEM **22** 14:45:12.0±0.1, 43°.00N×1°.27W, h10km, ML3.3/21, Error ellipse: s-maj=2.2km s-min=1.6km az=158.0*
*MDD **22** 14:45:12.8±0.1, 42°.99N×1°.28W, h4km±2km, mbLg3.0/33, Error ellipse: s-maj=1.5km s-min=1.1km az=45.0, PRXIMO*
MDD EMS: III INTENSIDAD MAXIMA.
*LDG **22** 14:45:13.3±0.1, 43°.02N×1°.27W, h2km, Md3.2/2, Ml3.4/28, Error ellipse: s-maj=1.4km s-min=1.1km az=149.0*
*STR **22** 14:45:13.8±0.2, 43°.09N×1°.20W, h3km, Ml3.0, Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*
*IGIL **22** 14:45:14.5, 42°.98N×1°.29W, h2km*

ISC 22 14:45:11.9±0.8, 43°.02N±0°.02×1°.29W±0°.02, h18km±3km, n259, σ1°60/413, 9C-3D, Pyrenees

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SJPF	**Ste Jean**	**0.10**	**28**	Pg	**Pg**	**14 45 16.0**	**+0.4**
SJPF				Lg	Lg	14 45 17.8	
	3μm,0.2s						
SJPF	**Ste Jean**	**0.10**	**28**	ePg	**Pg**	**14 45 16.0**	**+0.4**
SJPF				eSg	**Sg**	**14 45 17.8**	**-0.4**
	7μm,0.2s,SNR=1.0						
SJPF	**Ste Jean**	**0.10**	**28**	ePg	**Pg**	**14 45 16.0**	**+0.4**
SJPF				eSg	**Sg**	**14 45 17.8**	**-0.4**
	3μm,0.2s,SNR=1.0						
IELO	**Elcoad**	**0.18**	**167**	⇑Pg	**Pg**	**14 45 15.5**	**-1.1**
	490nm,0.1s,SNR=18						
IELO				Lg	Lg	14 45 17.3	
	5μm,0.1s,SNR=7.9						
IELO	**Elcoad**	**0.18**	**167**	Pg	**Pg**	**14 45 15.5**	**-1.1**
	490nm,0.1s,SNR=18						
IELO				Lg	Lg	14 45 17.3	
	5μm,0.1s,SNR=7.9						
IZUN	**Zunzarren**	**0.20**	**217**	⇑Pg	**Pg**	**14 45 16.1**	**-0.8**
	275nm,0.1s,SNR=18						
IZUN				Lg	Lg	14 45 18.3	
	314nm,0.1s,SNR=7.9						
IZUN	**Zunzarren**	**0.20**	**217**	Pg	**Pg**	**14 45 16.0**	**-0.8**
	275nm,0.1s,SNR=18						
IZUN				Lg	Lg	14 45 18.3	
	314nm,0.1s,SNR=7.9						
IUSE	**Utxeti**	**0.20**	**248**	⇓Pg	**Pg**	**14 45 16.5**	**-0.4**
	916nm,0.1s,SNR=18						
IUSE				Lg	Lg	14 45 19.2	
	3μm,0.1s,SNR=7.9						
IUSE	**Utxeti**	**0.20**	**248**	Pg	**Pg**	**14 45 16.5**	**-0.4**
	916nm,0.1s,SNR=18						
IUSE				Lg	Lg	14 45 19.2	
	3μm,0.1s,SNR=7.9						
IPRE	**Itoiz**	**0.22**	**192**	⇑Pg	**Pg**	**14 45 16.3**	**-0.8**
	344nm,0.2s,SNR=18						
IPRE				Lg	Lg	14 45 19.3	
	665nm,0.1s,SNR=7.9						
IPRE	**Itoiz**	**0.22**	**192**	Pg	**Pg**	**14 45 16.3**	**-0.8**
	344nm,0.2s,SNR=18						
IPRE				Lg	Lg	14 45 19.3	
	665nm,0.1s,SNR=7.9						
LARF	**Larrau**	**0.22**	**86**	Pg	**Pg**	**14 45 17.1**	**-0.1**
LARF				Sg	**Sg**	**14 45 20.3**	**-0.6**
LARF	**Larrau**	**0.22**	**86**	Pg	**Pg**	**14 45 17.1**	**-0.1**
LARF				Sg	**Sg**	**14 45 20.3**	**-0.6**
OSSF	**Osses**	**0.23**	**5**	Pg	**Pg**	**14 45 18.1**	**+0.7**
OSSF				Sg	**Sg**	**14 45 19.5**	**-1.6**
OSSF	**Osses**	**0.23**	**5**	Pg	**Pg**	**14 45 18.1**	**+0.7**
OSSF				Sg	**Sg**	**14 45 19.5**	**-1.6**
IEPA	**Eparoz**	**0.24**	**176**	⇑Pg	**Pg**	**14 45 16.6**	**-0.9**
	1μm,0.1s,SNR=18						
IEPA				Lg	Lg	14 45 19.3	
	4μm,0.1s,SNR=7.9						
IEPA	**Eparoz**	**0.24**	**176**	Pg	**Pg**	**14 45 16.6**	**-0.9**
	1μm,0.1s,SNR=18						
IEPA				Lg	Lg	14 45 19.3	
	4μm,0.1s,SNR=7.9						
EALK	**Alkurruntz**	**0.25**	**322**	⇑Pg	**Pb**	**14 45 18.2**	**+0.4**
	2μm,0.3s,SNR=18						
EALK				Lg	Lg	14 45 22.2	
	2μm,0.1s,SNR=5.0						
EALK	**Alkurruntz**	**0.25**	**322**	Pg	**Pb**	**14 45 18.2**	**+0.4**
	2μm,0.3s,SNR=18						
EALK				Lg	Lg	14 45 22.2	
	2μm,0.1s,SNR=5.0						
YASP	**Aspurt**	**0.31**	**162**	⇑Pg	**Pg**	**14 45 17.8**	**-0.8**
	263nm,0.1s,SNR=18						
YASP				Lg	Lg	14 45 21.5	
	2μm,0.2s,SNR=7.9						
YASP	**Aspurt**	**0.31**	**162**	Pg	**Pg**	**14 45 17.8**	**-0.8**
	263nm,0.1s,SNR=18						
YASP				Lg	Lg	14 45 21.5	
	2μm,0.2s,SNR=7.9						
ORDF	**Ordiarp**	**0.32**	**54**	Pg	**Pg**	**14 45 18.7**	**-0.1**
ORDF				Sg	**Sg**	**14 45 22.1**	**-1.5**
ORDF	**Ordiarp**	**0.32**	**54**	Pg	**Pg**	**14 45 18.7**	**-0.1**
ORDF				Sg	**Sg**	**14 45 22.1**	**-1.5**
EARA	**Aranguren**	**0.33**	**220**	⇑Pg	**Pg**	**14 45 18.6**	**-0.3**
	13nm,0.1s,SNR=18						
EARA				Lg	Lg	14 45 23.3	
	1μm,0.1s,SNR=5.0						
EARA	**Aranguren**	**0.33**	**220**	Pg	**Pg**	**14 45 18.6**	**-0.3**
	13nm,0.1s,SNR=18						
EARA				Lg	Lg	14 45 23.3	
	1μm,0.1s,SNR=5.0						
YARA	**Arangoiti**	**0.38**	**169**	⇑Pg	**Pg**	**14 45 19.2**	**-0.7**
	34nm,0.2s,SNR=18						
YARA				Lg	Lg	14 45 23.9	
	2μm,0.2s,SNR=7.9						
YARA	**Arangoiti**	**0.38**	**169**	Pg	**Pg**	**14 45 19.2**	**-0.7**
	34nm,0.2s,SNR=18						
YARA				Lg	Lg	14 45 23.9	
	2μm,0.2s,SNR=7.9						
ATE	**Arette**	**0.44**	**81**	Pg	**Pg**	**14 45 21.1**	**+0.3**
ATE				Sg	**Sg**	**14 45 25.5**	**-1.4**
ATE	**Arette**	**0.44**	**81**	Pg	**Pg**	**14 45 21.1**	**+0.3**
ATE				Sg	**Sg**	**14 45 25.5**	**-1.4**
YSIG	**Sigues**	**0.44**	**150**	Pg	**Pg**	**14 45 20.3**	**-0.6**
	33nm,0.1s,SNR=7.9						
YSIG				Lg	Lg	14 45 25.7	
	362nm,0.2s,SNR=7.9						
YSIG	**Sigues**	**0.44**	**150**	Pg	**Pg**	**14 45 20.3**	**-0.6**
	33nm,0.1s,SNR=7.9						
YSIG				Lg	Lg	14 45 25.7	
	362nm,0.2s,SNR=7.9						
YUND	**Undues**	**0.46**	**165**	Pg	**Pg**	**14 45 20.6**	**-0.7**
	33nm,0.2s,SNR=7.9						
YUND				Lg	Lg	14 45 26.5	
	238nm,0.2s,SNR=7.9						
YUND	**Undues**	**0.46**	**165**	Pg	**Pg**	**14 45 20.6**	**-0.7**
	33nm,0.2s,SNR=7.9						
YUND				Lg	Lg	14 45 26.5	
	238nm,0.2s,SNR=7.9						
YMUS	**Pe˜–a Musera**	**0.48**	**155**	Pg	**Pg**	**14 45 21.0**	**-0.6**
	14nm,0.2s,SNR=7.9						
YMUS				Lg	Lg	14 45 27.0	
	552nm,0.2s,SNR=7.9						
YMUS	**Pe˜–a Musera**	**0.48**	**155**	Pg	**Pg**	**14 45 21.0**	**-0.6**
	14nm,0.2s,SNR=7.9						
YMUS				Lg	Lg	14 45 27.0	
	552nm,0.2s,SNR=7.9						
YBER	**Berdun**	**0.52**	**148**	Pg	**Pg**	**14 45 21.9**	**-0.4**
	44nm,0.3s,SNR=7.9						
YBER				Lg	Lg	14 45 28.8	
	656nm,0.2s,SNR=7.9						
YBER	**Berdun**	**0.52**	**148**	Pg	**Pg**	**14 45 21.9**	**-0.4**
	44nm,0.3s,SNR=7.9						
YBER				Lg	Lg	14 45 28.8	
	656nm,0.2s,SNR=7.9						
ETSF	**Etsaut**	**0.55**	**103**	Pg	**Pg**	**14 45 22.4**	**-0.5**
ETSF				Lg	Lg	14 45 29.7	
	217nm,0.3s						
ETSF	**Etsaut**	**0.55**	**103**	ePg	**Pg**	**14 45 22.4**	**-0.5**
ETSF				eSg	**Sg**	**14 45 29.7**	**-0.7**
	434nm,0.3s,SNR=1.0						
ETSF	**Etsaut**	**0.55**	**103**	ePg	**Pg**	**14 45 22.4**	**-0.5**
ETSF				eSg	**Sg**	**14 45 29.7**	**-0.7**
	217nm,0.3s,SNR=1.0						
REYF	**Montagne du Re**	**0.66**	**86**	Pg	**Pg**	**14 45 25.0**	**0.0**
REYF				Sg	**Sb**	**14 45 34.2**	**+0.5**
REYF	**Montagne du Re**	**0.66**	**86**	Pg	**Pg**	**14 45 25.0**	**0.0**
REYF				Sg	**Sb**	**14 45 34.2**	**+0.5**
VIEF	**Viey**	**0.98**	**98**	Pg	**Pg**	**14 45 30.9**	**+0.1**
VIEF				Sg	**Sg**	**14 45 43.5**	**-0.2**
VIEF	**Viey**	**0.98**	**98**	Pg	**Pg**	**14 45 30.9**	**+0.1**
VIEF				Sg	**Sg**	**14 45 43.5**	**-0.2**
LABF	**Labassere**	**1.00**	**88**	Pg	**Pg**	**14 45 31.0**	**-0.3**
LABF				Sg	**Sb**	**14 45 44.7**	**+1.1**
LABF	**Labassere**	**1.00**	**88**	Pg	**Pg**	**14 45 31.0**	**-0.3**
LABF				Sg	**Sb**	**14 45 44.7**	**+1.1**
ECHI	**Chisagues Biel**	**1.15**	**108**	Pg	**Pg**	**14 45 33.1**	**-1.1**
	0.8nm,0.1s,SNR=69						
ECHI				Lg	Lg	14 45 50.0	
	112nm,0.1s,SNR=7.9						
ECHI	**Chisagues Biel**	**1.15**	**108**	Pg	**Pg**	**14 45 33.1**	**-1.1**
	0.8nm,0.1s,SNR=69						
ECHI				Lg	Lg	14 45 50.0	
	112nm,0.1s,SNR=7.9						
EPF	**Esparros**	**1.20**	**89**	Pn	**Pg**	**14 45 34.4**	**-0.6**
EPF				Lg	Lg	14 45 50.4	
	96nm,0.2s						
EPF	**Esparros**	**1.20**	**89**	ePn	**Pg**	**14 45 34.4**	**-0.6**
	SNR=1.0						
EPF				eSg	**Sb**	**14 45 50.4**	**+1.2**
	191nm,0.2s,SNR=1.0						
EPF	**Esparros**	**1.20**	**89**	ePn	**Pg**	**14 45 34.4**	**-0.6**
	SNR=1.0						
EPF				eSg	**Sb**	**14 45 50.4**	**+1.2**
	96nm,0.2s,SNR=1.0						
RESF	**Ens**	**1.22**	**100**	Pn	**Pg**	**14 45 35.2**	**-0.2**
RESF	**Ens**	**1.22**	**100**	Pg	**Pn**	**14 45 36.1**	**+2.0**
RESF				Sg	**Sn**	**14 45 52.2**	**+2.0**
RESF	**Ens**	**1.22**	**100**	Pn	**Pg**	**14 45 35.2**	**-0.2**
RESF	**Ens**	**1.22**	**100**	Pg	**Pn**	**14 45 36.1**	**+2.0**
RESF				Sg	**Sn**	**14 45 52.2**	**+2.0**
ESAC	**San Caprasio**	**1.44**	**155**	⇑Pg	**Pn**	**14 45 38.4**	**+1.4**
	142nm,0.2s,SNR=18						
ESAC				Lg	Lg	14 45 58.5	
	838nm,0.4s,SNR=11						
ESAC	**San Caprasio**	**1.44**	**155**	Pg	**Pn**	**14 45 38.4**	**+1.4**
	142nm,0.2s,SNR=18						
ESAC				Lg	Lg	14 45 58.5	
	838nm,0.4s,SNR=11						
MELF	**Melles**	**1.51**	**95**	Pn	**Pn**	**14 45 39.9**	**+1.8**
MELF	**Melles**	**1.51**	**95**	Pg	**Pg**	**14 45 42.1**	**+1.1**
MELF				Sg	**Sg**	**14 46 01.5**	**+0.7**
MELF	**Melles**	**1.51**	**95**	Pn	**Pn**	**14 45 39.9**	**+1.8**
**MELF

MTLF	**Montolieu**	**2.59**	**82**	*e*Pn	**Pn**	**14 45 54.5**	**+1.7**
	SNR=1.0						
EMOS	**Mosqueruela**	**2.73**	**167**	Pn	**Pn**	**14 45 57.1**	**+2.2**
	0.5nm,0.2s,SNR=15						
EMOS				Pg	**Pb**	**14 46 01.5**	**+1.3**
	1.1nm,0.1s,SNR=14						
EMOS				Lg	Lg	14 46 38.5	
	17nm,0.3s,SNR=5.0						
EMOS	**Mosqueruela**	**2.73**	**167**	Pn	**Pn**	**14 45 57.1**	**+2.2**
	0.5nm,0.2s,SNR=15						
FILF	**Fillols**	**2.87**	**98**	Pn	**Pn**	**14 45 56.8**	**0.0**
FILF	**Fillols**	**2.87**	**98**	Pg	**Pb**	**14 46 04.4**	**+1.8**
FILF				Sg	**Sg**	**14 46 41.8**	**-2.4**
FILF	**Fillols**	**2.87**	**98**	Pn	**Pn**	**14 45 56.8**	**0.0**
FILF	**Fillols**	**2.87**	**98**	Pg	**Pb**	**14 46 04.4**	**+1.8**
FILF				Sg	**Sg**	**14 46 41.8**	**-2.4**
EARI	**Arriondas**	**2.88**	**277**	Pn	**Pn**	**14 45 59.4**	**+2.5**
	1.5nm,0.1s,SNR=40						
EARI				Sn	**Sn**	**14 46 33.7**	**+2.6**
	5.8nm,0.2s,SNR=7.9						
EARI	**Arriondas**	**2.88**	**277**	Pn	**Pn**	**14 45 59.4**	**+2.5**
	1.5nm,0.1s,SNR=40						
EARI				Sn	**Sn**	**14 46 33.7**	**+2.6**
	5.8nm,0.2s,SNR=7.9						
CFON	**Fontmartina**	**3.04**	**113**	Pn	**Pn**	**14 46 01.3**	**+2.3**
	3.2nm,0.2s,SNR=7.5						
CFON				Pg	**Pb**	**14 46 07.9**	**+2.5**
	13nm,0.2s,SNR=19						
CFON				Lg	Lg	14 46 49.0	
	118nm,0.3s,SNR=5.0						
CFON	**Fontmartina**	**3.04**	**113**	Pn	**Pn**	**14 46 01.3**	**+2.3**
	3.2nm,0.2s,SNR=7.5						
CFON	**Fontmartina**	**3.04**	**113**	Pg	**Pb**	**14 46 07.9**	**+2.5**
	13nm,0.2s,SNR=19						
CFON				Lg	Lg	14 46 49.0	
	118nm,0.3s,SNR=5.0						
RJF	**Les Rejaudoux**	**3.05**	**41**	Pn	**Pn**	**14 45 59.9**	**+0.8**
RJF				Sn	**Sn**	**14 46 34.9**	**-0.3**
	27nm,0.2s						
RJF	**Les Rejaudoux**	**3.05**	**41**	*e*Pn	**Pn**	**14 45 59.9**	**+0.8**
	SNR=1.0						
RJF				*e*Sn	**Sn**	**14 46 34.9**	**-0.3**
	54nm,0.2s,SNR=1.0						
RJF	**Les Rejaudoux**	**3.05**	**41**	*e*Pn	**Pn**	**14 45 59.9**	**+0.8**
	SNR=1.0						
RJF				Sn	**Sn**	**14 46 34.9**	**-0.3**
	27nm,0.2s						
CAF	**Calviac**	**3.08**	**51**	Pn	**Pn**	**14 46 00.9**	**+1.3**
CAF				P	**Pb**	**14 46 03.4**	**-2.7**
CAF				Sn	**Sn**	**14 46 35.6**	**-0.4**
	12nm,0.2s						
CAF	**Calviac**	**3.08**	**51**	*e*Pn	**Pn**	**14 46 00.9**	**+1.3**
	SNR=1.0						
CAF	**Calviac**	**3.08**	**51**	*e*Pn	**Pn**	**14 46 00.9**	**+1.3**
	SNR=1.0						
SJAF	**Saint Jean de**	**3.12**	**98**	Pn	**Pn**	**14 46 03.6**	**+3.4**
	0.3nm,0.1s,SNR=7.9						
SJAF				Pg	**Pb**	**14 46 09.7**	**+2.9**
	4.2nm,0.2s,SNR=7.9						
SJAF				Lg	Lg	14 46 50.6	
	10nm,0.2s,SNR=7.9						
SJAF	**Saint Jean de**	**3.12**	**98**	Pn	**Pn**	**14 46 03.6**	**+3.4**
	0.3nm,0.1s,SNR=7.9						
EJON	**La Jonquera**	**3.13**	**99**	Pn	**Pn**	**14 46 02.6**	**+2.2**
	0.3nm,0.1s,SNR=7.9						
EJON				Pg	**Pb**	**14 46 09.8**	**+2.8**
	12nm,0.3s,SNR=16						
EJON				Lg	Lg	14 46 51.2	
	20nm,0.3s,SNR=7.3						
EJON	**La Jonquera**	**3.13**	**99**	Pn	**Pn**	**14 46 02.6**	**+2.2**
	0.3nm,0.1s,SNR=7.9						
GUD	**Guadarrama**	**3.20**	**223**	Pn	**Pn**	**14 46 03.3**	**+2.0**
	1.6nm,0.2s,SNR=6.8						
GUD				Pg	**Pg**	**14 46 12.4**	**-0.7**
	5.5nm,0.3s,SNR=9.3						
GUD				Sn	**Sn**	**14 46 40.0**	**+1.0**
	22nm,0.3s,SNR=7.9						
GUD				Lg	Lg	14 46 52.6	
	2.8nm,0.4s,SNR=5.0						
GUD	**Guadarrama**	**3.20**	**223**	Pn	**Pn**	**14 46 03.3**	**+2.0**
	1.6nm,0.2s,SNR=6.8						
MFF	**Saint Martin d**	**3.67**	**12**	Pn	**Pn**	**14 46 09.0**	**+1.3**
MFF				Sn	**Sn**	**14 46 50.1**	**-0.4**
	6.4nm,0.2s						
MFF	**Saint Martin d**	**3.67**	**12**	*e*Pn	**Pn**	**14 46 09.0**	**+1.3**
	SNR=1.0						
MFF				*e*Sn	**Sn**	**14 46 50.1**	**-0.4**
	13nm,0.2s						
MFF	**Saint Martin d**	**3.67**	**12**	*e*Pn	**Pn**	**14 46 09.0**	**+1.3**
	SNR=1.0						
MFF				Sn	**Sn**	**14 46 50.1**	**-0.4**
	6.4nm,0.2s						
LASF	**Ste Croix**	**3.89**	**73**	Pn	**Pn**	**14 46 11.7**	**+1.0**
LASF				Sn	**Sn**	**14 46 54.1**	**-1.8**
	7.2nm,0.3s						
LASF	**Ste Croix**	**3.89**	**73**	*e*Pn	**Pn**	**14 46 11.7**	**+1.0**
	SNR=1.0						
LASF				*e*Sn	**Sn**	**14 46 54.1**	**-1.8**
	14nm,0.3s						
LASF	**Ste Croix**	**3.89**	**73**	*e*Pn	**Pn**	**14 46 11.7**	**+1.0**
	SNR=1.0						
LASF				Sn	**Sn**	**14 46 54.1**	**-1.8**
	7.2nm,0.3s						
ESDC	**Sonseca Array**	**3.90**	**212**	Pn	**Pn**	**14 46 11.8**	**+0.9**
	1.2nm,0.2s,baz=37,slow=14,SNR=24						
ESDC				Pg	**Pb**	**14 46 23.5**	**+3.4**
	5.4nm,0.5s,baz=36,slow=13,SNR=4.8						
ESDC				Sn	**Sn**	**14 46 55.9**	**-0.4**
	2.3nm,0.2s,baz=34,slow=23,SNR=4.5						
ESDC				Lg	Lg	14 47 15.8	
	3.9nm,0.5s,baz=26,slow=28,SNR=7.9						
ESDC	**Sonseca Array**	**3.90**	**212**	Pn	**Pn**	**14 46 11.8**	**+0.9**
	1.2nm,0.2s,SNR=24						
ESDC	**Sonseca Array**	**3.90**	**212**	Pg	**Pb**	**14 46 23.5**	**+3.4**
	5.4nm,0.5s,SNR=4.8						
ESDC				Sn	**Sn**	**14 46 55.9**	**-0.4**
	2.3nm,0.2s,SNR=4.5						
ESDC				Lg	Lg	14 47 15.8	
	3.9nm,0.5s,SNR=7.9						
TCF	**Toulx Ste Croi**	**4.11**	**36**	Pn	**Pn**	**14 46 14.5**	**+0.7**
TCF				Sn	**Sn**	**14 46 59.8**	**-1.6**
	0.0nm,0.3s						
TCF	**Toulx Ste Croi**	**4.11**	**36**	*e*Pn	**Pn**	**14 46 14.5**	**+0.7**
	SNR=1.0						
TCF				*e*Sn	**Sn**	**14 46 59.8**	**-1.6**
	15nm,0.3s,SNR=1.0						
TCF	**Toulx Ste Croi**	**4.11**	**36**	*e*Pn	**Pn**	**14 46 14.5**	**+0.7**
	SNR=1.0						
TCF				Sn	**Sn**	**14 46 59.8**	**-1.6**
	10nm,0.3s						
ECAL	**Calabor**	**4.17**	**257**	Pn	**Pn**	**14 46 16.3**	**+1.7**
	6.3nm,0.2s,SNR=42						
ECAL				Sn	**Sn**	**14 47 03.5**	**+0.6**
	9.6nm,0.3s,SNR=7.9						
ECAL				Lg	Lg	14 47 22.9	
	13nm,0.2s,SNR=4.6						
ECAL	**Calabor**	**4.17**	**257**	Pn	**Pn**	**14 46 16.3**	**+1.7**
	6.3nm,0.2s,SNR=42						
ECAL				Sn	**Sn**	**14 47 03.5**	**+0.6**
	9.6nm,0.3s,SNR=7.9						
ECAL				Lg	Lg	14 47 22.9	
	13nm,0.2s,SNR=4.6						
PBRG	**Braganca**	**4.21**	**255**	*e*Pn	**Pn**	**14 46 16.9**	**+1.7**
PBRG				*e*Sn	**Sn**	**14 47 05.2**	**+1.2**
PBRG				A	A	14 47 33.3	
	10nm,0.3s						
PBRG	**Braganca**	**4.21**	**255**	Pn	**Pn**	**14 46 16.9**	**+1.7**
PBRG				Sn	**Sn**	**14 47 05.2**	**+1.2**
	5.2nm,0.3s						
PBRG	**Braganca**	**4.21**	**255**	*e*Pn	**Pn**	**14 46 16.9**	**+1.7**
PBRG				Sn	**Sn**	**14 47 05.2**	**+1.2**
	5.2nm,0.3s						
EPON	**Pontenova**	**4.29**	**276**	Pn	**Pn**	**14 46 18.9**	**+2.6**
	0.8nm,0.1s,SNR=11						
EPON				Sn	**Sn**	**14 47 07.8**	**+1.9**
	2.5nm,0.3s,SNR=4.0						
EPON	**Pontenova**	**4.29**	**276**	Pn	**Pn**	**14 46 18.9**	**+2.6**
	0.8nm,0.1s,SNR=11						
EPON				Sn	**Sn**	**14 47 07.8**	**+1.9**
	2.5nm,0.3s,SNR=4.0						
ETOB	**Tobarra**	**4.38**	**183**	Pn	**Pn**	**14 46 19.1**	**+1.6**
	2.7nm,0.4s,SNR=6.7						
ETOB	**Tobarra**	**4.38**	**183**	Pn	**Pn**	**14 46 19.1**	**+1.6**
	2.7nm,0.4s,SNR=6.7						
EIBI	**Ibiza**	**4.46**	**153**	Pn	**Pn**	**14 46 19.2**	**+0.6**
	3.7nm,0.3s,SNR=7.0						
EIBI				Sn	**Sn**	**14 47 07.8**	**-2.2**
	2.0nm,0.1s,SNR=7.9						
EIBI	**Ibiza**	**4.46**	**153**	Pn	**Pn**	**14 46 19.2**	**+0.6**
	3.7nm,0.3s,SNR=7.0						
EIBI				Sn	**Sn**	**14 47 07.8**	**-2.2**
	2.0nm,0.1s,SNR=7.9						
EVIA	**Vianos**	**4.47**	**192**	Pn	**Pn**	**14 46 20.5**	**+1.7**
	2.1nm,0.2s,SNR=7.9						
EVIA				Lg	Lg	14 47 34.8	
	18nm,0.5s,SNR=7.9						
EVIA	**Vianos**	**4.47**	**192**	Pn	**Pn**	**14 46 20.5**	**+1.7**
	2.1nm,0.2s,SNR=7.9						
EVIA				Lg	Lg	14 47 34.8	
	18nm,0.5s,SNR=7.9						
ETOS	**Mallorca**	**4.48**	**135**	Pn	**Pn**	**14 46 20.4**	**+1.5**
	1.1nm,0.2s,SNR=9.0						
ETOS				Sn	**Sn**	**14 47 08.5**	**-2.1**
	1.0nm,0.2s,SNR=7.9						
ETOS	**Mallorca**	**4.48**	**135**	Pn	**Pn**	**14 46 20.4**	**+1.5**
	1.1nm,0.2s,SNR=9.0						
ETOS				Sn	**Sn**	**14 47 08.5**	**-2.1**
	1.0nm,0.2s,SNR=7.9						
BGF	**Bois d'Agland**	**4.60**	**38**	Pn	**Pn**	**14 46 21.0**	**+0.5**
BGF				Sn	**Sn**	**14 47 11.8**	**-1.6**
	28nm,0.3s						
BGF				Lg	Lg	14 47 36.8	
	27nm,0.4s						
BGF	**Bois d'Agland**	**4.60**	**38**	*e*Pn	**Pn**	**14 46 21.0**	**+0.5**
	SNR=1.0						
BGF				*e*Sn	**Sn**	**14 47 11.8**	**-1.6**
	57nm,0.3s						
BGF				*e*Sg	**Sg**	**14 47 36.8**	**-2.7**
	54nm,0.4s,SNR=1.0						
BGF	**Bois d'Agland**	**4.60**	**38**	*e*Pn	**Pn**	**14 46 21.0**	**+0.5**
	SNR=1.0						
BGF				Sn	**Sn**	**14 47 11.8**	**-1.6**
	28nm,0.3s						
BGF				Lg	Lg	14 47 36.8	
	27nm,0.4s						
EPLA	**Plasencia**	**4.65**	**232**	Pn	**Pn**	**14 46 22.3**	**+1.1**
	0.4nm,0.1s,SNR=7.9						
EPLA				Sn	**Sn**	**14 47 13.8**	**-0.9**
	3.8nm,0.1s,SNR=7.9						
EPLA				Lg	Lg	14 47 38.5	
	4.9nm,0.2s,SNR=7.9						
EPLA	**Plasencia**	**4.65**	**232**	Pn	**Pn**	**14 46 22.3**	**+1.1**
	0.4nm,0.1s,SNR=7.9						
EPLA				Sn	**Sn**	**14 47 13.8**	**-0.9**
	3.8nm,0.1s,SNR=7.9						
EPLA				Lg	Lg	14 47 38.5	
	4.9nm,0.2s,SNR=7.9						
MVO	**Moncorvo**	**4.65**	**248**	⇓*i*Pn	**Pn**	**14 46 20.8**	**-0.5**
MVO				*e*Sn	**Sn**	**14 47 12.0**	**-2.8**
MVO				A	A	14 47 14.6	
	14nm,0.4s						
MVO	**Moncorvo**	**4.65**	**248**	⇓Pn	**Pn**	**14 46 20.8**	**-0.5**
	5.1nm,0.1s,SNR=18						
MVO				Sn	**Sn**	**14 47 12.0**	**-2.8**
	44nm,0.3s,SNR=7.9						
MVO				Lg	Lg	14 47 35.0	
	4.9nm,0.2s,SNR=7.9						
MVO	**Moncorvo**	**4.65**	**248**	Pn	**Pn**	**14 46 20.8**	**-0.5**
	5.1nm,0.1s,SNR=18						
MVO				*e*Sn	**Sn**	**14 47 12.0**	**-2.8**
	14nm,0.4s						
MVO				Lg	Lg	14 47 35.0	
	4.9nm,0.2s,SNR=7.9						
VIVF	**Saint-Julien-l**	**4.68**	**65**	Pn	**Pn**	**14 46 22.0**	**+0.4**
VIVF				Sn	**Sn**	**14 47 13.4**	**-2.1**
VIVF				Lg	Lg	14 47 39.3	
	4.2nm,0.4s						
VIVF	**Saint-Julien-l**	**4.68**	**65**	*e*Pn	**Pn**	**14 46 22.0**	**+0.4**
	SNR=1.0						
VIVF				*e*Sn	**Sn**	**14 47 13.4**	**-2.1**
	SNR=1.0						
VIVF				*e*Sg	**Sg**	**14 47 39.3**	**-2.8**
	8.4nm,0.4s,SNR=1.0						
VIVF	**Saint-Julien-l**	**4.68**	**65**	*e*Pn	**Pn**	**14 46 22.0**	**+0.4**
	SNR=1.0						
VIVF				Sn	**Sn**	**14 47 13.4**	**-2.1**
VIVF				Lg	Lg	14 47 39.3	
	4.2nm,0.4s						
EAGO	**Agolada(Pontev**	**5.00**	**270**	Pn	**Pn**	**14 46 27.6**	**+1.7**
	SNR=7.9						
EAGO				Pn	**Pn**	**14 46 27.6**	**+1.7**
	3.0nm,0.1s,SNR=7.9						
EAGO				Sn	**Sn**	**14 47 23.5**	**+0.3**
	1.5nm,0.1s,SNR=7.9						
EAGO	**Agolada(Pontev**	**5.00**	**270**	Pn	**Pn**	**14 46 27.6**	**+1.7**
	3.0nm,0.1s,SNR=7.9						
EAGO				Sn	**Sn**	**14 47 23.5**	**+0.3**
	1.5nm,0.1s,SNR=7.9						
AVF	**Avril sur Loir**	**5.01**	**40**	Pn	**Pn**	**14 46 26.9**	**+0.9**
AVF				Sn	**Sn**	**14 47 21.2**	**-2.2**
	5.8nm,0.4s						
AVF	**Avril sur Loir**	**5.01**	**40**	*e*Pn	**Pn**	**14 46 26.9**	**+0.9**
	SNR=1.0						
AVF				*e*Sn	**Sn**	**14 47 21.2**	**-2.2**
	12nm,0.4s,SNR=1.0						
AVF	**Avril sur Loir**	**5.01**	**40**	*e*Pn	**Pn**	**14 46 26.9**	**+0.9**
	SNR=1.0						
AVF				Sn	**Sn**	**14 47 21.2**	**-2.2**
	5.8nm,0.4s						
QUIF	**Quistinic**	**5.07**	**346**	Pn	**Pn**	**14 46 28.3**	**+1.4**
QUIF				Sn	**Sn**	**14 47 23.5**	**-1.4**
	5.3nm,0.2s						
QUIF	**Quistinic**	**5.07**	**346**	*e*Pn	**Pn**	**14 46 28.3**	**+1.4**
	SNR=1.0						
QUIF				*e*Sn	**Sn**	**14 47 23.5**	**-1.4**
	11nm,0.2s,SNR=1.0						
QUIF	**Quistinic**	**5.07**	**346**	*e*Pn	**Pn**	**14 46 28.3**	**+1.4**
	SNR=1.0						
QUIF				Sn	**Sn**	**14 47 23.5**	**-1.4**
	5.3nm,0.2s						
HYF	**Humbligny**	**5.08**	**32**	Pn	**Pn**	**14 46 27.8**	**+0.8**
HYF	**Humbligny**	**5.08**	**32**	*e*Pn	**Pn**	**14 46 27.8**	**+0.8**
HYF	**Humbligny**	**5.08**	**32**	*e*Pn	**Pn**	**14 46 27.8**	**+0.8**
SMRF	**Simiane la Rot**	**5.09**	**77**	Pn	**Pn**	**14 46 28.1**	**+0.9**
SMRF				Sn	**Sn**	**14 47 24.2**	**-1.2**
	3.3nm,0.3s						
SMRF	**Simiane la Rot**	**5.09**	**77**	*e*Pn	**Pn**	**14 46 28.1**	**+0.9**
SMRF				*e*Sn	**Sn**	**14 47 24.2**	**-1.2**
	3.3nm,0.3s,SNR=1.0						
SMRF	**Simiane la Rot**	**5.09**	**77**	*e*Pn	**Pn**	**14 46 28.1**	**+0.9**
SMRF				Sn	**Sn**	**14 47 24.2**	**-1.2**
	3.3nm,0.3s						
POLO	**Lamas de Olo**	**5.10**	**253**	*e*Pn	**Pn**	**14 46 28.9**	**+1.4**
POLO				*e*Sn	**Sn**	**14 47 24.9**	**-1.0**
POLO	**Lamas de Olo**	**5.10**	**253**	*e*Pn	**Pn**	**14 46 28.9**	**+1.4**
POLO				*e*Sn	**Sn**	**14 47 24.9**	**-1.0**
ELOB	**Lobios**	**5.14**	**259**	Pn	**Pn**	**14 46 29.3**	**+1.3**
	1.4nm,0.2s,SNR=21						
ELOB				Sn	**Sn**	**14 47 24.6**	**-2.2**
	1.1nm,0.2s,SNR=7.9						
ELOB				Lg	Lg	14 47 53.1	
	2.6nm,0.2s,SNR=7.9						
ELOB	**Lobios**	**5.14**	**259**	Pn	**Pn**	**14 46 29.3**	**+1.3**
	1.4nm,0.2s,SNR=21						
ELOB				Sn	**Sn**	**14 47 24.6**	**-2.2**
	1.1nm,0.2s,SNR=7.9						
ELOB				Lg	Lg	14 47 53.1	
	2.6nm,0.2s,SNR=7.9						
SMF	**Signal de Mont**	**5.14**	**43**	Sn	**Sn**	**14 47 25.4**	**-1.4**
	3.1nm,0.3s						
SMF	**Signal de Mont**	**5.14**	**43**	*e*Sn	**Sn**	**14 47 25.4**	**-1.4**
	6.2nm,0.3s						
SMF	**Signal de Mont**	**5.14**	**43**	Sn	**Sn**	**14 47 25.4**	**-1.4**
	3.1nm,0.3s						
EMUR	**La Murta**	**5.17**	**180**	Pn	**Pn**	**14 46 30.2**	**+1.8**
	0.8nm,0.3s,SNR=7.9						
EMUR				Pg	**Pg**	**14 46 48.6**	**-2.3**
	1.5nm,0.3s,SNR=7.9						
EMUR	**La Murta**	**5.17**	**180**	Pn	**Pn**	**14 46 30.2**	**+1.8**
	0.8nm,0.3s,SNR=7.9						
PGAV	**Gavieira, Arco**	**5.27**	**261**	*e*Pn	**Pn**	**14 46 31.1**	**+1.4**
PGAV				*e*Sn	**Sn**	**14 47 30.8**	**+0.8**
PGAV				A	A	14 48 03.5	
	4.8nm,0.9s						
PGAV	**Gavieira, Arco**	**5.27**	**261**	*e*Pn	**Pn**	**14 46 31.1**	**+1.4**
PGAV				*e*Sn	**Sn**	**14 47 30.8**	**+0.8**
	4.8nm,0.9s						
SSF	**Saint Saulge**	**5.28**	**38**	Pn	**Pn**	**14 46 31.5**	**+1.7**
SSF				Sn	**Sn**	**14 47 28.7**	**-1.4**
	4.1nm,0.4s						
SSF	**Saint Saulge**	**5.28**	**38**	*e*Pn	**Pn**	**14 46 31.5**	**+1.7**
	SNR=1.0						
SSF				*e*Sn	**Sn**	**14 47 28.7**	**-1.4**
	8.1nm,0.4s						
SSF	**Saint Saulge**	**5.28**	**38**	*e*Pn	**Pn**	**14 46 31.5**	**+1.7**
	SNR=1.0						
SSF				Sn	**Sn**	**14 47 28.7**	**-1.4**
	4.1nm,0.4s						
SGMF	**Saint Gilles**	**5.31**	**351**	Pn	**Pn**	**14 46 31.5**	**+1.3**
SGMF				Sn	**Sn**	**14 47 29.7**	**-1.1**
	2.5nm,0.3s						
SGMF	**Saint Gilles**	**5.31**	**351**	*e*Pn	**Pn**	**14 46 31.5**	**+1.3**
	SNR=1.0						
SGMF				*e*Sn	**Sn**	**14 47 29.7**	**-1.1**
	4.9nm,0.3s						
SGMF	**Saint Gilles**	**5.31**	**351**	*e*Pn	**Pn**	**14 46 31.5**	**+1.3**
	SNR=1.0						
SGMF				Sn	**Sn**	**14 47 29.7**	**-1.1**
	2.5nm,0.3s						
GRR	**Gorron**	**5.38**	**3**	Pn	**Pn**	**14 46 31.0**	**-0.1**
GRR				Sn	**Sn**	**14 47 30.5**	**-2.0**
	2.8nm,0.3s						
GRR	**Gorron**	**5.38**	**3**	*e*Pn	**Pn**	**14 46 31.0**	**-0.1**
	SNR=1.0						
GRR				*e*Sn	**Sn**	**14 47 30.5**	**-2.0**
	5.6nm,0.3s,SNR=1.0						
GRR	**Gorron**	**5.38**	**3**	*e*Pn	**Pn**	**14 46 31.0**	**-0.1**
	SNR=1.0						
GRR				Sn	**Sn**	**14 47 30.5**	**-2.0**
	2.8nm,0.3s						
EQES	**Quesada**	**5.39**	**195**	Pn	**Pn**	**14 46 33.5**	**+2.1**
	0.6nm,0.2s,SNR=7.9						
EQES				Pg	**Pg**	**14 46 52.1**	**-2.9**
	1.6nm,0.2s,SNR=9.2						
EQES				Lg	Lg	14 48 02.4	
	8.1nm,0.5s,SNR=7.9						
EQES	**Quesada**	**5.39**	**195**	Pn	**Pn**	**14 46 33.5**	**+2.1**
	0.6nm,0.2s,SNR=7.9						
EADA	**Adamuz**	**5.46**	**208**	Pn	**Pn**	**14 46 33.6**	**+1.3**
	1.0nm,0.1s,SNR=7.9						
EADA				Sn	**Sn**	**14 47 33.5**	**-1.1**
	2.6nm,0.3s,SNR=7.9						
EADA				Lg	Lg	14 48 04.1	
	1.9nm,0.4s,SNR=7.9						
EADA	**Adamuz**	**5.46**	**208**	Pn	**Pn**	**14 46 33.6**	**+1.3**
	1.0nm,0.1s,SNR=7.9						
EADA				Lg	Lg	14 48 04.1	
	1.9nm,0.4s,SNR=7.9						
ROSF	**Rostrenen**	**5.49**	**346**	Pn	**Pn**	**14 46 34.1**	**+1.4**
ROSF				Sn	**Sn**	**14 47 33.5**	**-1.9**
	2.4nm,0.1s						
ROSF	**Rostrenen**	**5.49**	**346**	*e*Pn	**Pn**	**14 46 34.1**	**+1.4**
	SNR=1.0						
ROSF				*e*Sn	**Sn**	**14 47 33.5**	**-1.9**
	4.8nm,0.1s						
ROSF	**Rostrenen**	**5.49**	**346**	*e*Pn	**Pn**	**14 46 34.1**	**+1.4**
	SNR=1.0						
ORIF	**Oris-en-Rattie**	**5.51**	**67**	Pn	**Pn**	**14 46 35.1**	**+2.0**
ORIF				Sn	**Sn**	**14 47 33.9**	**-2.1**
	1.9nm,0.4s						
ORIF	**Oris-en-Rattie**	**5.51**	**67**	*e*Pn	**Pn**	**14 46 35.1**	**+2.0**
	SNR=1.0						
ORIF				*e*Sn	**Sn**	**14 47 33.9**	**-2.1**
	3.8nm,0.4s						
ORIF	**Oris-en-Rattie**	**5.51**	**67**	*e*Pn	**Pn**	**14 46 35.1**	**+2.0**
	SNR=1.0						
LOR	**Lormes**	**5.59**	**39**	Pn	**Pn**	**14 46 35.6**	**+1.5**
LOR				Sn	**Sn**	**14 47 36.4**	**-1.5**
	2.0nm,0.2s						
LOR	**Lormes**	**5.59**	**39**	*e*Pn	**Pn**	**14 46 35.6**	**+1.5**
	baz=223,SNR=1.0						
LOR				*e*Sn	**Sn**	**14 47 36.4**	**-1.5**
	4.0nm,0.2s						
LOR	**Lormes**	**5.59**	**39**	*e*Pn	**Pn**	**14 46 35.6**	**+1.5**
	SNR=1.0						
PCBR	**Castelo Branco**	**5.63**	**238**	*e*Pn	**Pn**	**14 46 35.4**	**+0.8**
PCBR				*e*Sn	**Sn**	**14 47 36.2**	**-2.6**
PCBR				A	A	14 48 14.3	
	5.0nm,0.8s						
PCBR	**Castelo Branco**	**5.63**	**238**	Pn	**Pn**	**14 46 35.4**	**+0.8**
PCBR				Sn	**Sn**	**14 47 36.2**	**-2.6**
	2.5nm,0.8s						
PCBR	**Castelo Branco**	**5.63**	**238**	*e*Pn	**Pn**	**14 46 35.4**	**+0.8**
LDF	**La Druitiere**	**5.63**	**8**	*e*Pn	**Pn**	**14 46 36.1**	**+1.5**
	SNR=1.0						
LDF				*e*Sn	**Sn**	**14 47 35.8**	**-3.0**
	3.8nm,0.2s,SNR=1.0						
LDF	**La Druitiere**	**5.63**	**8**	*e*Pn	**Pn**	**14 46 36.1**	**+1.5**
	SNR=1.0						
EMAZ	**Mazaricos**	**5.64**	**272**	Pn	**Pn**	**14 46 36.4**	**+1.7**
	2.3nm,0.1s,SNR=7.9						
EMAZ				Sn	**Sn**	**14 47 39.6**	**+0.6**
	3.1nm,0.2s,SNR=7.9						
EMAZ	**Mazaricos**	**5.64**	**272**	Pn	**Pn**	**14 46 36.4**	**+1.7**
	2.3nm,0.1s,SNR=7.9						
EMAZ				Sn	**Sn**	**14 47 39.6**	**+0.6**
	3.1nm,0.2s,SNR=7.9						
LMR	**La Mourre**	**5.71**	**84**	Pn	**Pn**	**14 46 37.0**	**+1.3**
LMR				Sn	**Sn**	**14 47 39.8**	**-1.0**
	1.9nm,0.5s						
LMR	**La Mourre**	**5.71**	**84**	*e*Pn	**Pn**	**14 46 37.0**	**+1.3**
	SNR=1.0						
LMR				*e*Sn	**Sn**	**14 47 39.8**	**-1.0**
	3.9nm,0.5s,SNR=1.0						
LMR	**La Mourre**	**5.71**	**84**	*e*Pn	**Pn**	**14 46 37.0**	**+1.3**
	SNR=1.0						
LMR				Sn	**Sn**	**14 47 39.8**	**-1.0**
	1.9nm,0.5s						
FLN	**La Foliniere**	**5.77**	**5

PESTR	Estremoz	6.32 231	*e*Pn	Pn	14 46 45.2 +1.1
PBAR	Barrancos	6.52 224	*e*Pn	Pn	14 46 48.9 +2.0
PBAR			*e*Sn	Sn	14 47 58.4 -2.4
PBAR			A	A	14 48 45.8
	8.8nm,0.5s				
PBAR	Barrancos	6.52 224	Pn	Pn	14 46 48.9 +2.0
PBAR			Sn	Sn	14 47 58.4 -2.4
	8.8nm,0.5s				
PBAR	Barrancos	6.52 224	*e*Pn	Pn	14 46 48.9 +2.0
PMTG	Montargil	6.56 235	*e*Pn	Pn	14 46 48.4 +1.0
PMTG			*e*Sn	Sn	14 47 58.7 -3.0
PMTG	Montargil	6.56 235	*e*Pn	Pn	14 46 48.4 +1.0
EMIN	Mina Concepcio	6.66 220	Pn	Pn	14 46 49.9 +1.1
	0.3nm,0.2s,SNR=7.9				
EMIN			Sn	Sn	14 48 00.1 -4.1
	0.7nm,0.2s,SNR=7.9				
EMIN			Lg	Lg	14 48 41.6
	1.0nm,0.3s,SNR=7.9				
EMIN	Mina Concepcio	6.66 220	Pn	Pn	14 46 49.9 +1.1
	0.3nm,0.2s,SNR=7.9				
EMIN			Lg	Lg	14 48 41.6
	1.0nm,0.3s,SNR=7.9				
ESPR	Espera	7.07 211	Sn	Sn	14 48 15.7 +1.3
	1.7nm,0.3s,SNR=4.0				
ESPR	Espera	7.07 211	Sn	Sn	14 48 15.7 +1.3
	1.7nm,0.3s,SNR=4.0				
EGRO	El Granado	7.24 223	Pn	Pn	14 46 58.3 +1.6
	0.5nm,0.3s,SNR=7.9				
EGRO			Sn	Sn	14 48 14.4 -4.1
	1.2nm,0.6s,SNR=7.9				
EGRO	El Granado	7.24 223	Pn	Pn	14 46 58.3 +1.6
	0.5nm,0.3s,SNR=7.9				
PNCL	Nicolau / Gran	7.37 231	*e*Pn	Pn	14 46 59.8 +1.3
PNCL			*e*Sn	Sn	14 48 19.2 -2.5
PNCL			A	A	14 48 21.8
	3.0nm,0.8s				
PNCL	Nicolau / Gran	7.37 231	*e*Pn	Pn	14 46 59.8 +1.3
PCVE	Castro Verde	7.45 226	*e*Pn	Pn	14 47 01.1 +1.5
PCVE			*e*Sn	Sn	14 48 20.5 -3.1
PCVE	Castro Verde	7.45 226	Pn	Pn	14 47 01.1 +1.5
PCVE			Sn	Sn	14 48 20.5 -3.1
PCVE	Castro Verde	7.45 226	*e*Pn	Pn	14 47 01.1 +1.5
PVAQ	Vaqueiros	7.46 223	*e*Pn	Pn	14 47 00.7 +1.0
PVAQ			*e*Sn	Sn	14 48 20.1 -3.7
PVAQ	Vaqueiros	7.46 223	Pn	Pn	14 47 00.7 +1.0
PVAQ			Sn	Sn	14 48 20.1 -3.7
PVAQ	Vaqueiros	7.46 223	*e*Pn	Pn	14 47 00.7 +1.0
PGF	Pioggiola	7.59 90	Pn	Pn	14 47 03.2 +1.6
PGF			Sn	Sn	14 48 23.5 -3.6
	2.6nm,0.4s				
PGF	Pioggiola	7.59 90	*e*Pn	Pn	14 47 03.2 +1.6
	SNR=1.0				
PGF			*e*Sn	Sn	14 48 23.5 -3.6
	5.2nm,0.4s				
PGF	Pioggiola	7.59 90	*e*Pn	Pn	14 47 03.2 +1.6
	SNR=1.0				
MORF	Marmelete	8.02 227	*e*P	Pn	14 47 08.2 +0.7
MORF	Marmelete	8.02 227	*e*Pn	Pn	14 47 08.3 +0.8
MORF	Marmelete	8.02 227	Pn	Pn	14 47 08.3 +0.8
MORF	Marmelete	8.02 227	*e*Pn	Pn	14 47 08.3 +0.8
PFVI	Vila Bisbo	8.24 227	*e*Pn	Pn	14 47 11.8 +1.3
PFVI	Vila Bisbo	8.24 227	*e*Pn	Pn	14 47 11.8 +1.3

NIED **22** *14:46:00,37.°60N×143.°40E,h11km,Mw5.5 Best double couple: M0=2.21000×10^17 NP1:φs=60.00000°,δ68.00000°, λ-8.00000°. NP2:φs=153.00000°,δ83.00000°, λ-158.00000°.*

IDC **22** *14:46:07.3±0.4,37.°59N×143.°60E,h0km,mb5.2/43, mb1 5.3/49,mb1mx5.3/56,mbtmp5.2/49,ML4.7/6,MS5.0/36, Ms1 5.0/36,ms1mx4.9/46,Error ellipse: s-maj=11.5km s-min=10.6km az=109.0*

ISCJB **22** *14:46:08.1±0.5,37.°62N±0.°02×143.°49E±0.°01,h14km±2km, mb5.4/392,MS5.2/359,Error ellipse: s-maj=3.0km s-min=1.6km az=159.8*

JMA **22** *14:46:10.2±0.2,37.°58N×143.°46E,h45km,M5.6*

JMA Felt II J1.

NEIC **22** *14:46:11.7±0.5,37.°60N×143.°49E,h29km±3km,mb5.5/259, MS5.2/279,MW5.6,Error ellipse: s-maj=3.2km s-min=2.1km az=149.0,Moment Tensor Solution. s32 Moment tensor: Scale 10^17Nm; Mrr-0.56; Mθθ-2.07; Mφφ2.63; Mrθ0.28; Mθφ1.11; Mφr0.22; Best double couple: M0=2.70000×10^17 NP1:φs=237.00000°,δ88.00000°, λ-8.00000°. NP2:φs=328.00000°,δ82.00000°, λ-178.00000°. Principal axes: T 2.9000, Plg5.0000°, Azm283.0000°; N -0.5600, Plg81.0000°, Azm44.0000°; P -2.3500, Plg7.0000°, Azm192.0000°;*

NEIC Recorded [2 JMA] in Fukushima and Miyagi.

GCMT **22** *14:46:11.7±0.1,37.°59N×143.°59E,h17km,MW5.6/122, Moment Tensor Solution. s90,c173; s122,c317; Duration: 1s5 Moment tensor: Scale 10^17Nm; Mrr-0.85±.03; Mθθ-2.17±.03; Mφφ3.02±.03; Mrθ0.05±.08; Mφθ1.36±.03; Mφr1.05±.09; Best double couple: M0=3.06300×10^17 NP1:φs=329.00000°,δ86.00000°, λ165.00000°. NP2:φs=60.00000°,δ75.00000°,λ4.00000°. Principal axes: T 3.5940, Plg13.0000°, Azm283.0000°; N -1.0670, Plg75.0000°, Azm135.0000°; P -2.5320, Plg8.0000°, Azm15.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*

MOS **22** *14:46:13.4±0.8,37.°99N×143.°47E,h40km,mb5.7/130, MS5.2/104 Error ellipse: s-maj=5.9km s-min=3.4km az=105.7*

BJI **22** *14:46:14.3,37.°76N×142.°85E,h29km,mb5.4/79,mB5.6/58, Ms5.6/91,Ms7 5.3/86*

ISC 22 14:46:11.5±0.3,37.°64N±0.°03×143.°53E±0.°03,h28km±1km, h28km:pP-P,n1399,σ1933/1413,mb5.5/419,MS5.2/362, 61C-77D,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	1.90	296	⇑P	Pn	14 46 41.0	-1.0
JIO				S	Sn	14 47 03.9	-1.1
OFUJ	Ofunato	2.05	315	⇓P	Pn	14 46 42.9	-1.2
JFK	Kawauchi	2.13	263	⇑P	Pn	14 46 43.4	-1.8
JFK				S	Sn	14 47 08.8	-1.9
JMK	Ichinoseki	2.24	306	⇑P	Pn	14 46 45.8	-0.9
ONAJ	Iwakimizuishiy	2.24	257	⇑P	Pn	14 46 45.0	-1.8
MIYJ	Miyakonagasawa	2.35	326	⇓P	Pn	14 46 46.5	-1.7
JOM	Ohasama	2.53	317	⇓P	Pn	14 46 50.1	-0.6
JOM				S	Sn	14 47 20.3	-0.3
JFT	Otama	2.54	268	⇑P	Pn	14 46 50.1	-0.7
JFT				S	Sn	14 47 19.5	-1.3
JHO	Hitachi	2.58	247	P	Pn	14 46 49.2	-2.2
JTH	Tanohata	2.63	331	⇓P	Pn	14 46 50.6	-1.6
JYS	Shiratake	2.80	283	⇑P	Pn	14 46 53.9	-0.5
JYK	Kaneyama	2.80	298	⇑P	Pn	14 46 54.0	-0.4
JYK				*e*S	Sn	14 47 26.5	-0.7
JKZ	Kuzumaki	2.90	324	P	Pn	14 46 55.1	-0.8
JSB	Shiboa	2.95	258	P	Pn	14 46 55.9	-0.7
JFY	Yanaizu	3.05	267	P	Pn	14 46 57.1	-0.8
JANG	Nango	3.14	331	P	Pn	14 46 59.0	-0.2
JANG				*e*S	Sn	14 47 32.7	-3.1
JYA	Atsumi	3.15	289	P	Pn	14 46 59.0	-0.3
JNS	Sasagawa	3.34	274	P	Pn	14 47 01.4	-0.5
JAH	Hinai	3.40	319	P	Pn	14 47 02.2	-0.4
JAW	Awa shima	3.47	285	P	Pn	14 47 03.7	0.0
JAG	Ashikaga	3.48	251	P	Pn	14 47 02.3	-1.5
JAG				S	Sn	14 47 43.2	-0.8
JKT	Katashina	3.53	257	P	Pn	14 47 04.1	-0.4
TOK	Tokyo	3.60	238	P	Pn	14 47 04.7	-0.7
JHK	Hiroka	3.61	265	P	Pn	14 47 04.9	-0.7
JHK				S	Sn	14 47 45.5	-1.8
BSO1	Boso 1	3.63	215	P	Pn	14 47 03.1	-2.2
BSO4	Boso 4	3.69	225	P	Pn	14 47 05.2	-1.4
BSO3	Boso 3	3.74	222	P	Pn	14 47 05.1	-2.0
BSO3				S	Sn	14 47 46.6	-3.5
JIZZ	Izumozaki	3.83	270	P	Pn	14 47 09.1	+0.6
JRY	Ryogami san	4.05	248	P	Pn	14 47 10.3	-1.4
JRY				S	Sn	14 47 55.1	-3.1
JGK	Kuni	4.05	256	P	Pn	14 47 11.7	0.0
JSD	Sado	4.19	277	P	Pn	14 47 12.2	-1.3
JOT	Ohata	4.20	334	P	Pn	14 47 13.2	-0.4
JOT				*e*S	Sn	14 47 58.9	-2.8
JOD2	Odawara 2	4.29	238	P	Pn	14 47 13.1	-1.9
JOD2				*e*S	Sn	14 47 59.7	-4.5
JJN	Nakama	4.31	264	P	Pn	14 47 15.5	+0.4
ERM	Erimo	4.38	356	*c i*P	Pn	14 47 14.5	-1.6
ERM	Erimo	4.38	356	*e*Pn	Pn	14 47 14.2	-1.8
MJAR	Matsushiro Arr	4.39	257	Pn	Pn	14 47 16.0	-0.4
	173nm,0.3s,baz=75,slow=11,SNR=840						
MJAR				LR	LR	14 49 12.4	
	comp=Z,26μm,18.7s,baz=80,slow=42						
MAJO	Matsushiro	4.39	257	*c i*P	Pn	14 47 17.2	+0.8
MAJO	Matsushiro	4.39	257	*e*Pn	Pn	14 47 16.4	0.0
MAT	Matsushiro	4.39	257	P	Pn	14 47 16.1	-0.3
MAT				*e*S	Sn	14 48 05.1	-1.5
MAT	Matsushiro	4.39	257	P	Pn	14 47 16.4	0.0
MAT				S	Sn	14 48 06.6	0.0
MJB9	Matsu-Tunnel	4.39	257	*e*Pn	Pn	14 47 16.4	0.0
JIM2	Oshima 3	4.42	230	P	Pn	14 47 13.6	-3.1
JIM2				S	Sn	14 48 03.3	-3.9
AJI	Ajiro2	4.42	235	P	Pn	14 47 14.2	-2.5
JNG	Nsakai	4.51	256	P	Pn	14 47 18.0	-0.1
JYN	Shimob	4.55	243	P	Pn	14 47 17.6	-0.9
JYN				S	Sn	14 48 07.3	-3.1
JKB	Kayabe	4.65	336	P	Pn	14 47 19.6	-0.3
JKB				S	Sn	14 48 11.0	-1.9
JNT	Takato	4.67	249	P	Pn	14 47 20.4	+0.1
JNT				S	Sn	14 48 13.8	+0.2
JIZS	Izushimoda	4.76	234	P	Pn	14 47 18.9	-2.5
JIZS				S	Sn	14 48 10.4	-5.2
JSZ	Suzu	4.90	270	P	Pn	14 47 23.6	+0.3
JKO	Kozu shima	4.96	227	P	Pn	14 47 22.6	-1.5
JCH	Churui	4.97	359	P	Pn	14 47 22.1	-2.1
JCH				*e*S	Sn	14 48 15.6	-5.1
SHZ3	Shizuoka 3	5.00	241	P	Pn	14 47 24.2	-0.6
SHZ3				S	Sn	14 48 19.9	-1.8
JTT	Ttatey	5.06	260	P	Pn	14 47 26.8	+1.3
JNY	Yasuok	5.10	245	P	Pn	14 47 26.0	-0.1
JNY				S	Sn	14 48 24.1	0.0
JGN	Niukaw	5.17	256	P	Pn	14 47 27.7	+0.6
JSG	Sagara	5.24	237	S	Sn	14 48 27.2	-0.2
JHG	Hegura jima	5.24	274	P	Pn	14 47 29.1	+1.1
JOB	Onbets	5.26	2	P	Pn	14 47 26.2	-2.0
JYZW	Yoshizawa	5.37	242	P	Pn	14 47 29.0	-0.8
JJH	Hakui	5.43	264	P	Pn	14 47 30.7	+0.2
JHJ2	Mitsune	5.44	215	P	Pn	14 47 27.4	-3.4
JHJ2				*e*S	Sn	14 48 27.1	-5.3
JHJ2	Mitsune	5.44	215	*e*Pn	Pn	14 47 27.3	-3.5
JHJ	Hachijo jima 2	5.45	215	Pn	Pn	14 47 27.1	-3.7
	608nm,0.3s,baz=86,slow=20,SNR=169						
JHJ				Sn	Sn	14 48 27.5	-5.2
	768nm,0.3s,baz=43,slow=23,SNR=7.2						
JHJ				LR	LR	14 49 14.4	
	comp=Z,6μm,21.1s,baz=60,slow=34						
HMMJ	Hamamatsu 2	5.45	241	P	Pn	14 47 30.3	-0.6
HMMJ				S	Sn	14 48 34.0	+1.3
JAO	Obara	5.58	247	P	Pn	14 47 33.8	+1.1
JAO				S	Sn	14 48 35.5	-0.4
JAR	Ashorobuto	5.65	2	P	Pn	14 47 31.1	-2.5
INU	Inuyama	5.72	248	*e*Pn	Pn	14 47 34.4	-0.2
JKG	Kaga	5.92	259	P	Pn	14 47 38.2	+0.9
JAA	Atsumi	5.98	242	P	Pn	14 47 38.1	0.0
JNK	Nakash	6.00	8	P	Pn	14 47 35.4	-3.1
JIE	Ise	6.41	242	P	Pn	14 47 43.7	-0.3
JIE				S	Sn	14 48 57.1	+0.9
JFM	Mihama	6.43	253	P	Pn	14 47 45.3	+1.0
TSUJ	Tsu 2	6.45	245	P	Pn	14 47 44.5	-0.1
ASAJ	Asahikawa	6.50	354	Pn	Pn	14 47 44.0	-1.3
	117nm,0.3s,baz=203,slow=21,SNR=452						
ASAJ				Sn	Sn	14 48 54.8	-3.8
	101nm,0.3s,baz=28,slow=26,SNR=6.7						
YUK	Yuzh-Kuril'sk	6.62	15	*i* P	Pn	14 47 44.5	-2.4
JKN2	Miekihoku	6.79	242	P	Pn	14 47 48.6	-0.7
KUR	Kuril'sk	8.25	22	*c i*P	Pn	14 48 06.6	-2.7
KUR				*i* S	Sn	14 49 33.5	-8.0
KUR				pmax	pmax		
	comp=N,262nm,0.6s						
KUR				pmax	pmax		
	comp=E,257nm,0.6s						
KUR				pmax	pmax		
	comp=Z,487nm,0.6s						
KUR				pmax	pmax		
	comp=Z,2μm,3.2s						
KUR				smax	smax		
	comp=N,601nm,0.6s						
KUR				smax	smax		
	comp=E,425nm,0.4s						
KUR				pmax	pmax		
	comp=N,4μm,3.2s						
KUR				pmax	pmax		
	comp=E,2μm,2.7s						
KUR				MLR	MLR		
	comp=E,3μm,9.0s						
KUR				MLR	MLR		
	comp=Z,5μm,9.0s						
YSS	Yuzh-Sakhalins	9.32	357	⇑*e*P	Pn	14 48 22.7	-1.2
YSS				*e*S	Sn	14 50 03.6	-4.2
YSS				pmax	pmax		
	comp=Z,260nm,0.7s						
YSS				MLR	MLR		
	comp=N,13μm,15.0s						
YSS				MLR	MLR		
	comp=Z,14μm,15.0s						
VLA	Vladivostok	10.43	305	*c i*P	Pn	14 48 40.6	+1.5
CBIJ	Chichi jima	10.58	187	P	Pn	14 48 34.8	-6.4
CBIJ				S	Sn	14 50 24.4	-14
CBIJ	Chichi jima	10.58	187	*e*Pn	Pn	14 48 34.9	-6.4
CBIJ				Sn	Sn	14 50 24.9	-14
JCJ	Chichijima	10.58	187	Pn	Pn	14 48 35.1	-6.2
	baz=270,slow=20						
JCJ				Sn	Sn	14 50 24.9	-14
JCJ				LR	LR	14 53 59.4	
	comp=Z,3μm,20.6s,baz=2.0,slow=45						
USRK	Ussuriysk Ar.	10.91	311	Pn	Pn	14 48 47.3	+1.7
	comp=Z,6.0nm,0.3s,baz=119,slow=14,SNR=94						
USRK				LR	LR	14 53 30.7	
	comp=Z,4μm,18.8s,baz=117,slow=40						
JNU	Nakatsue	11.27	250	Pn	Pn	14 48 50.2	-0.4
	comp=Z,2.0nm,0.3s,baz=56,slow=6.4,SNR=42						
JNU				LR	LR	14 53 26.4	
	comp=Z,8μm,20.7s,baz=71,slow=39						
JNU	Nakatsue	11.27	250	*e*Pn	Pn	14 48 49.7	-0.9
UGL	Uglegorsk	11.48	355	*c i*P	Pn	14 48 51.4	-2.0
UGL				*i* S	Sn	14 50 58.0	-2.6
UGL				pmax	pmax		
	comp=N,900nm,2.0s						
UGL				pmax	pmax		
	comp=E,400nm,2.0s						
UGL				pmax	pmax		
	comp=Z,1μm,2.0s						
UGL				pmax	pmax		
	comp=Z,200nm,0.7s						
UGL				smax	smax		
	comp=E,2μm,4.0s						
UGL				smax	smax		
	comp=N,700nm,3.0s						
UGL				MLR	MLR		
	comp=N,11μm,15.0s						
UGL				MLR	MLR		
	comp=E,14μm,15.0s						
UGL				MLR	MLR		
	comp=Z,9μm,15.0s						
KSRS	Korea Array	12.39	274	Pn	Pn	14 49 08.1	+2.2
	comp=Z,2.4nm,0.3s,baz=89,slow=13,SNR=155						
KSRS				LR	LR	14 53 43.3	
	comp=Z,6μm,18.7s,baz=79,slow=36						
KS15	Wonju Array Si	12.42	274	*e*Pn	Pn	14 49 07.8	+1.5
KSAR	Wonju Array Be	12.42	274	P	Pn	14 49 08.1	+1.7
KSAR	Wonju Array Be	12.42	274	Pn	Pn	14 49 08.1	+1.7
HABR	Khabarovsk	12.46	333	*d i*P	Pn	14 49 05.0	-1.9
HABR				*e*S	Sn	14 51 22.5	-2.2
HABR				pmax	pmax		
	comp=N,63nm,1.1s						
HABR				pmax	pmax		
	comp=E,56nm,1.1s						
HABR				pmax	pmax		
	comp=Z,148nm,1.1s						
HABR				MLR	MLR		
	comp=N,1μm,14.0s						
HABR				MLR	MLR		
	comp=E,11μm,14.0s						
HABR				MLR	MLR		
	comp=Z,4μm,14.0s						
MDJ	Mudanjiang	12.60	308	P	Pn	14 49 09.5	+0.8
MDJ				S	Sn	14 51 30.3	+2.3
MDJ				PcP	PcP	14 54 46.9	+1.0
MDJ				ScP	ScP	14 58 19.3	+2.4
MDJ				PcS	PcS	14 58 21.4	+1.4
MDJ				ScS	ScS	15 01 54.8	+1.8
MDJ				pmax	pmax		
	comp=Z,85nm,1.5s						
MDJ				pmax	pmax		
	comp=Z,2μm,7.8s						
MDJ				LR	LR		
	comp=Z,18μm,13.2s						
MDJ				LR	LR		
	comp=Z,7μm,12.0s						
MDJ				LR	LR		
	comp=Z,6μm,13.2s						
MDJ	Mudanjiang	12.60	308	*e*Pn	Pn	14 49 08.3	-0.4
TJN	Taejon	12.98	269	⇓*i*P	Pn	14 49 15.6	+1.5
TYV	Tymovskoe	13.23	358	*e*P	Pn	14 49 15.5	-1.9
TYV				*e*S	Sn	14 51 41.0	-2.4
TYV				pmax	pmax		
	comp=Z,187nm,0.8s						
TYV				pmax	pmax		
	comp=N,2μm,4.0s						
TYV				pmax	pmax		
	comp=Z,2μm,5.0s						
TYV				smax	smax		
	comp=E,4μm,8.0s						
TYV				MLR	MLR		
	comp=N,10μm,18.0s						
TYV				MLR	MLR		
	comp=Z,11μm,16.0s						
INCN	Inchon	13.41	274	P	Pn	14 49 20.5	+0.6
	SNR=25						
INCN	Inchon	13.41	274	Pn	Pn	14 49 20.5	+0.6
	SNR=25						
INCN	Inchon	13.41	274	*e*Pn	Pn	14 49 20.3	+0.4
KLR	Kul'dur	14.38	327	Pn	Pn	14 49 30.6	-2.4
	comp=Z,3.5nm,0.3s,baz=133,slow=12,SNR=221						
KLR				LR	LR	14 55 19.9	
	comp=Z,7μm,18.5s,baz=144,slow=38						
KLR	Kul'dur	14.38	327	P	Pn	14 49 30.6	-2.4
KLR				pmax	pmax		
	comp=Z,4.0nm,0.3s						
KLR				MLR	MLR		
	comp=Z,7μm,18.5s						
NKL	Nikolayevsk	15.63	354	*i* P	Pn	14 49 46.0	-3.7
NKL				*e*S	Sn	14 52 35.0	-6.9
NKL				pmax	pmax		
	comp=N,1μm,5.0s						
NKL				pmax	pmax		
	comp=Z,1μm,5.0s						
NKL				pmax	pmax		
	comp=N,140nm,1.2s						
NKL				pmax	pmax		
	comp=Z,220nm,1.2s						
NKL				smax	smax		
	comp=E,1μm,9.0s						
NKL				MLR	MLR		
	comp=N,8μm,17.0s						
NKL				MLR	MLR		
	comp=E,8μm,17.0s						
NKL				MLR	MLR		
	comp=Z,11μm,17.0s						
SNY	Shenyang	15.90	291	⇑P	Pn	14 49 51.9	-1.3
SNY				PP	sP	14 50 06.4	-1.4
SNY				S	Sn	14 52 47.1	-1.4
SNY				pmax	pmax		
	comp=Z,85nm,1.3s						
SNY				LR	LR		
	comp=Z,1μm,14.7s						
SNY				LR	LR		
	comp=Z,2μm,17.8s						
SNY				LR	LR		
	comp=Z,19μm,14.7s						
JOW	Kunigami	16.79	234	*e*Pn	P	14 50 06.0	-0.6
	comp=Z,101nm,0.9s						
DL2	Dalian	17.24	281	⇑P	Pn	14 50 08.8	-1.4
DL2				S	Sn	14 53 17.9	-3.2
DL2				pmax	pmax		
	comp=Z,270nm,0.9s						
DL2				pmax	pmax		
	comp=Z,3μm,5.4s						
DL2				LR	LR		
	comp=Z,7μm,12.1s						
DL2				LR	LR		
	comp=Z,8μm,12.7s						
PEA0	Petropavlovsk-	18.34	28	*e*P	P	14 50 20.3	-3.2
PEA0B	Petropavlovsk-	18.34	28	*e*P	P	14 50 21.2	-2.3
	comp=Z,478nm,1.4s						
PETK	Petropavlovsk-	18.34	28	P	P	14 50 21.3	-2.2
	comp=Z,2.2nm,0.3s,baz=198,slow=9.2,SNR=22						
PETK				LR	LR	14 58 11.8	
	comp=Z,4μm,20.2s,baz=211,slow=40						
PET	Petropavlovsk	18.64	30	*d i*P	P	14 50 24.3	-2.4
PET				*e*S	Sn	14 53 47.0	-7.6
PET				pmax	pmax		
	comp=Z,2μm,7.8s						
PET				pmax	pmax		
	comp=Z,179nm,1.9s						
PET				pmax	pmax		
	comp=Z,3μm,9.3s						
PET				MLR	MLR		
	comp=Z,7μm,17.0s						
PET				MLR	MLR		
	comp=Z,5μm,20.0s						
PET	Petropavlovsk	18.64	30	*e*P	P	14 50 24.4	-2.4
	comp=Z,793nm,1.9s						
SSE	Sheshan	19.54	257	P	P	14 50 34.8	-2.1
SSE				sP	sP	14 50 47.5	-0.5
SSE				S	S	14 54 07.4	-8.6
SSE				pmax	pmax		
	comp=Z,94nm,1.2s						
SSE				pmax	pmax		
	comp=Z,920nm,7.2s						
SSE				LR	LR		
	comp=Z,19μm,19.8s						
SSE				LR	LR		
	comp=Z,10μm,20.2s						
SSE				LR	LR		
	comp=Z,7μm,17.4s						
HIA	Hailar	20.72	312	*e*P	P	14 50 47.1	-2.5
HIA				pmax	pmax		
	comp=Z,101nm,0.8s						
HIA				MLR	MLR		
	comp=Z,4μm,22.0s						
HIA	Hailar	20.72	312	*e*P	P	14 50 47.1	-2.5
	comp=Z,101nm,0.8s						
HIA				LR	LR		
	comp=Z,4μm,22.0s						
NJ2	Nanjing	20.98	262	*e*P	P	14 50 50.1	-2.4
NJ2				S	S	14 54 44.6	-0.1
NJ2				pmax	pmax		
	comp=Z,44nm,0.6s						
NJ2				LR	LR		
	comp=Z,16μm,22.8s						
NJ2				LR	LR		
	comp=Z,10μm,16.3s						
NJ2				LR	LR		
	comp=Z,8μm,22.8s						
TIA	Tai'an	21.14	274	⇑P	P	14 50 52.8	-1.4
TIA				S	S	14 54 45.0	-2.9
TIA				pmax	pmax		
	comp=Z,430nm,1.1s						
TIA				pmax	pmax		
	comp=Z,910nm,4.0s						
TIA				LR	LR		
	comp=Z,15μm,13.0s						
TIA				LR	LR		
	comp=Z,6μm,15.0s						
TIA				LR	LR		
	comp=Z,8μm,17.0s						
BJI	Beijing	21.41	285	P	P	14 50 55.5	-1.5
BJI				pP	pP	14 51 03.8	-0.9
BJI				sP	sP	14 51 05.4	-2.9
BJI				sS	Sn	14 55 00.3	-1.3
BJI				pmax	pmax		
	comp=Z,170nm,1.2s						
BJI				LR	LR		
	comp=Z,12μm,14.0s						
BJI				LR	LR		
	comp=Z,4μm,18.2s						
BJI				LR	LR		
	comp=Z,4μm,22.4s						
BJT	Baijiatuau	21.42	285	*e*P	P	14 50 54.8	-2.3
BJT				pmax	pmax		
	comp=Z,631nm,1.2s						
BJT				MLR	MLR		
	comp=Z,5μm,22.0s						
BJT	Baijiatuau	21.42	285	*e*P	P	14 50 54.8	-2.3
	comp=Z,631nm,1.2s						
BJT				LR	LR		
	comp=Z,5μm,22.0s						

YOJ Yonaguni jima 21.89 239 PFAKE 14 51 10.0 +7.8
YOJ LR LR
comp=Z,4μm,18.0s
MA2 Magadan 22.44 10 P **P** **14 51 07.8 -0.2**
comp=Z,89nm,0.7s,baz=220,slow=9.3,SNR=53
MA2 LR LR 15 00 58.0
comp=Z,3μm,19.5s,baz=224,slow=40
MA2 Magadan 22.44 10 *e*P **P** **14 51 07.8 -0.2**
comp=Z,415nm,0.8s
TATO Taipei 22.61 242 PFAKE 14 51 20.0 +10
TATO LR LR
comp=Z,6μm,19.0s
CLNS Chul'man 22.86 333 *e*P **P** **14 51 11.3 -1.1**
CLNS *e**PP **pP** **14 51 18.2 -1.9**
CLNS *e* 14 51 30.9
CLNS *e* 14 54 59.1
CLNS *e*SS SS 14 56 08.6
CLNS pmax pmax
comp=Z,106nm,1.3s
CLNS pmax pmax
comp=N,85nm,1.2s
CLNS pmax pmax
comp=E,52nm,0.9s
CLNS pmax pmax
comp=E,112nm,1.0s
CLNS pmax pmax
comp=Z,128nm,1.1s
CLNS pmax pmax
comp=N,135nm,0.9s
CLNS MLR MLR
comp=E,5μm,13.0s
CLNS MLR MLR
comp=N,4μm,12.0s
CLNS MLR MLR
comp=Z,3μm,13.0s
YHNB Yeheng 22.88 242 *e*P **P** **14 51 10.0 -3.0**
comp=Z,86nm,0.9s
YHNB LR LR
comp=Z,8μm,20.0s
NACB Ninganchiao 23.05 241 *e*P **P** **14 51 12.4 -2.2**
comp=Z,60nm,0.8s
NACB LR LR
comp=Z,4μm,20.0s
SSLB Suanglung 23.74 241 *e*P **P** **14 51 19.9 -1.6**
comp=Z,98nm,1.0s
SSLB LR LR
comp=Z,5μm,19.0s
YULB Yu-li 23.76 240 *e*P **P** **14 51 20.4 -1.3**
comp=Z,107nm,0.8s
YULB LR LR
comp=Z,2μm,20.0s
GUMO Guam 23.99 177 P **P** **14 51 23.0 -0.8**
comp=Z,104nm,1.0s,baz=186,slow=10,SNR=4.0
GUMO LR LR 14 59 52.5
comp=Z,2μm,20.4s,baz=2.0,slow=34
GUMO Guam 23.99 177 *e*P **P** **14 51 18.7 -5.0**
GUMO pmax pmax
comp=Z,820nm,1.4s
GUMO Guam 23.99 177 *e*P **P** **14 51 20.9 -2.8**
comp=Z,822nm,1.4s
TPUB Ta-pu 24.28 240 *e*P **P** **14 51 25.2 -1.3**
comp=Z,524nm,1.1s
TPUB LR LR
comp=Z,7μm,19.0s
TWG Pinlang 24.30 239 *e*P **P** **14 51 26.1 -0.6**
comp=Z,390nm,0.8s
TWG LR LR
comp=Z,8μm,21.0s
TIY Taiyuan 24.56 280 *e*P **P** **14 51 26.9 -2.1**
TIY S **S** **14 55 46.8 -1.3**
TIY pmax pmax
comp=Z,98nm,1.2s
TIY pmax pmax
comp=Z,1μm,7.6s
TIY LR LR
comp=Z,4μm,12.0s
TIY LR LR
comp=Z,7μm,14.6s
TIY LR LR
comp=Z,8μm,15.4s
QZH Quanzhou 24.70 246⇑*i*P P 14 51 23.0 -7.2
QZH S S 14 55 38.3 -12
QZH pmax pmax
comp=Z,400nm,1.0s
QZH pmax pmax
comp=Z,2μm,5.0s
QZH LR LR
comp=N,7μm,12.2s
QZH LR LR
comp=E,10μm,13.3s
QZH LR LR
comp=Z,10μm,15.6s
HHC Hu-ho-hao-te 24.89 287 *e*P **P** **14 51 31.1 -0.9**
HHC pP pP 14 51 39.3 -0.8
HHC sP sP 14 51 46.0 +2.4
HHC PP **PnPn** **14 52 06.8 +1.7**
HHC S **S** **14 55 47.5 -5.9**
HHC pmax pmax
comp=Z,140nm,0.7s
HHC pmax pmax
comp=Z,930nm,4.3s
HHC LR LR
comp=Z,10μm,12.7s
HHC LR LR
comp=Z,6μm,11.8s
HHC LR LR
comp=Z,7μm,12.9s
WHN Wuhan 25.11 262⇓P **P** **14 51 33.5 -0.4**
WHN sP **sP** **14 51 47.8 +2.2**
WHN S **S** **14 55 58.3 +1.4**
WHN pmax pmax
comp=Z,3μm,2.8s
WHN LR LR
comp=Z,25μm,15.8s
CIT Chita 25.43 314 *e*P **P** **14 51 37.0 +0.3**
CIT *e* 14 51 47.3
CIT *e* 14 52 17.2
CIT *e*S **S** **14 56 02.7 +0.9**
CIT pmax pmax
comp=Z,700nm,2.5s
YAK Yakutsk 25.88 345 P **P** **14 51 40.9 +0.4**
comp=Z,22nm,0.6s,baz=329,slow=22,SNR=56
YAK LR LR 15 02 34.6
comp=Z,8μm,19.6s,baz=156,slow=38
YAK Yakutsk 25.88 345*d i*P **P** **14 51 40.0 -0.6**
YAK *e* 14 52 21.2
YAK *e* 14 55 07.7
YAK *e*S **S** **14 56 10.7 +2.2**
YAK *e*SS **SnSn** **14 57 13.7 +8.0**
YAK *e* 15 02 35.0
YAK pmax pmax
comp=Z,177nm,0.8s
YAK pmax pmax
comp=E,22nm,0.9s
YAK pmax pmax
comp=N,34nm,1.1s
YAK pmax pmax
comp=Z,123nm,1.0s
YAK pmax pmax
comp=N,91nm,1.0s
YAK pmax pmax
comp=E,90nm,1.1s
YAK smax smax
comp=N,3μm,3.9s
YAK smax smax
comp=E,2μm,2.3s
YAK MLR MLR
comp=Z,8μm,16.0s
YAK MLR MLR
comp=N,5μm,14.0s
YAK MLR MLR
comp=E,3μm,14.0s
YAK Yakutsk 25.88 345 *e*P **P** **14 51 39.7 -0.9**
comp=E,283nm,0.7s
SEY Seymchan 25.89 9 P **P** **14 51 42.0 +1.4**
comp=E,98nm,0.6s,baz=194,slow=7.6,SNR=390
SEY LR LR 15 03 26.3
comp=E,3μm,18.8s,baz=153,slow=40
SEY Seymchan 25.89 9⇓*i*P **P** **14 51 42.1 +1.4**
SEY *i* *PP **pP** **14 51 48.3 -0.6**
SMY Shemya 26.05 45 *e*P **P** **14 51 43.2 +1.0**
SMY pmax pmax
comp=Z,104nm,1.0s
SMY MLR MLR
comp=Z,3μm,21.0s
SMY Shemya 26.05 45 *e*P **P** **14 51 43.2 +1.0**
comp=Z,104nm,1.0s
SMY LR LR
comp=Z,3μm,21.0s
BTO Baotou 26.07 287 *e*P **P** **14 51 43.4 +0.7**
SGCP Mt. Cagua 26.97 230 *e*P **P** **14 51 50.9 +0.1**
H11N2 WAKE ISLAND Hy 27.06 125 T T 15 20 05.4
baz=317,slow=75,SNR=228
H11N1 WAKE ISLAND Hy 27.07 125 T T 15 20 10.2
baz=317,slow=75,SNR=145
H11N3 WAKE ISLAND Hy 27.08 125 T T 15 20 06.7
baz=317,slow=75,SNR=170
APYP Conner 27.75 231 *e*P **P** **14 51 57.2 -0.6**
H11S1 WAKE ISLAND Hy 27.82 127 T T 15 21 06.5
baz=318,slow=76,SNR=35
H11S3 WAKE ISLAND Hy 27.83 127 T T 15 21 07.0
baz=318,slow=76,SNR=24
H11S2 WAKE ISLAND Hy 27.84 127 T T 15 21 10.7
baz=318,slow=76,SNR=32
BOD Bodaibo 27.94 326⇑*i*P **P** **14 51 59.0 -0.2**
BOD pmax pmax
comp=Z,134nm,1.8s
CAUP Cauayan 28.11 229 *e*P P 14 52 14.0 +13
XAN Xi'an 28.19 273 P **P** **14 52 01.3 -0.4**
XAN pP sP 14 52 12.5 -0.9
XAN S **S** **14 56 42.6 -3.0**
XAN pmax pmax
comp=Z,130nm,1.2s
XAN pmax pmax
comp=Z,880nm,8.4s
XAN LR LR
comp=Z,11μm,16.1s
XAN LR LR
comp=Z,5μm,18.1s
ABRA Dolores 28.24 231 *e*P **P** **14 52 05.9 +3.7**
ULN Ulaanbaatar 28.42 303*c i*P **P** **14 52 05.5 +1.7**
ULN *i* *PP **sP** **14 52 14.7 -0.8**
ULN pmax pmax
comp=Z,357nm,2.5s
ULN MLR MLR
comp=Z,3μm,12.0s
ULN Ulaanbaatar 28.42 303 P **P** **14 52 05.1 +1.3**
SNR=72
ULN Ulaanbaatar 28.42 303 P **P** **14 52 05.1 +1.3**
SNR=72
ULN Ulaanbaatar 28.42 303 *e*P **P** **14 52 04.6 +0.7**
comp=Z,103nm,0.9s
ULN LR LR
comp=Z,3μm,20.0s
SONA1 Songino Array 28.86 303 *e*P **P** **14 52 08.5 +0.8**
SONM Songino Array 28.86 303 P **P** **14 52 08.9 +1.2**
comp=Z,43nm,1.0s,baz=87,slow=8.7,SNR=68
SONM LR LR 15 03 44.4
comp=Z,3μm,19.9s,baz=96,slow=36
ENH Enshi 29.06 266 *e*P **P** **14 52 10.1 +0.6**
comp=Z,499nm,1.1s
ENH LR LR
comp=Z,8μm,20.0s
BALP Baler 29.20 228 *e*P **P** **14 52 13.0 +2.3**
BCPH Baguio City Da 29.29 230⇓*e*P **P** **14 52 13.7 +1.9**
HKC Hong Kong Obse 29.52 247 P **P** **14 52 16.0 +2.5**
GZH Guangzhou 29.66 249 P **P** **14 52 11.3 -3.4**
GZH S **S** **14 57 03.3 -5.4**
GZH LR LR
comp=Z,14μm,15.3s
GZH LR LR
comp=Z,9μm,15.7s
MCO Taipa Grande 30.08 248 P P 14 52 34.0 +16
IRK Irkutsk 30.96 311 *e*P **P** **14 52 28.8 +2.8**
IRK pmax pmax
comp=Z,160nm,1.7s
PLP Palo 31.18 217⇓*e*P **P** **14 52 25.9 -2.3**
TLY Talaya 31.22 310*d i*P **P** **14 52 29.1 +0.7**
TLY *e* 14 53 51.5
TLY *e*S **S** **14 57 35.2 +2.4**
TLY pmax pmax
comp=Z,61nm,0.8s
TLY MLR MLR
comp=Z,4μm,15.0s
TLY Talaya 31.22 310 *e*P **P** **14 52 27.9 -0.5**
comp=Z,50nm,0.8s
TLY LR LR
comp=Z,4μm,20.0s
ZAK Zakamensk 31.23 307 *e*P **P** **14 52 28.5 -0.1**
ZAK pmax pmax
comp=Z,57nm,1.2s
LZH Lanzhou 31.63 279⇑P **P** **14 52 33.3 +1.0**
LZH pP sP 14 52 42.3 -1.7
LZH sP pP 14 52 45.1 +4.6
LZH PP **PnPn** **14 53 37.5 +1.3**
LZH S **S** **14 57 38.0 -1.7**
LZH sS sS 14 57 54.1 +0.7
LZH pmax pmax
comp=Z,200nm,1.2s
LZH pmax pmax
comp=Z,1μm,6.0s
LZH LR LR
comp=Z,8μm,14.2s
LZH LR LR
comp=Z,6μm,13.0s
LZH LR LR
comp=Z,9μm,15.0s
MOY Mondy 32.85 309 *e*P **P** **14 52 43.2 +0.5**
MOY pmax pmax
comp=Z,137nm,2.4s
BILL Bilibino 32.98 15 *i* P **P** **14 52 43.0 -0.6**
BILL *e* 14 52 53.8
BILL *e**SP **sP** **14 52 58.6 +3.3**
BILL *e* 14 53 57.8
BILL *e*S **S** **14 57 57.7 -2.1**
BILL *i* SSS SSS 15 00 25.2
BILL pmax pmax
comp=Z,75nm,1.1s
BILL MLR MLR
comp=Z,2μm,15.0s
BILL Biiibino 32.98 15 *e*P **P** **14 52 43.0 -0.6**
comp=Z,56nm,1.0s
BILL LR LR
comp=Z,3μm,19.0s
GYA Guiyang 32.98 261⇓*i*P **P** **14 52 44.6 +0.4**
GYA pP pP 14 52 54.0 +1.5
GYA PP **PnPn** **14 53 52.8 -0.9**
GYA PcP **PcP** **14 55 29.3 +1.5**
GYA S **S** **14 58 03.8 +2.9**
GYA sS sS 14 58 14.4 -0.2
GYA ScP **ScP** **14 59 10.5 +0.6**
GYA ScS **ScS** **15 03 08.8 -1.6**
GYA pmax pmax
comp=Z,100nm,1.1s
GYA pmax pmax
comp=Z,390nm,8.7s
GYA LR LR
comp=Z,9μm,20.8s
GYA LR LR
comp=Z,5μm,20.2s
GYA LR LR
comp=Z,4μm,21.0s
CD2 Chengdu 33.35 270 P **P** **14 52 46.5 -0.8**
CD2 sP sP 14 52 58.9 -0.1
CD2 PP **PP** **14 54 02.0 -0.9**
CD2 PcP **PcP** **14 55 28.3 -0.4**
CD2 S **S** **14 58 01.1 -5.4**
CD2 sS sS 14 58 20.3 +0.1
CD2 pmax pmax
comp=Z,150nm,0.9s
CD2 pmax pmax
comp=Z,820nm,5.9s
CD2 LR LR
comp=Z,12μm,18.0s
CD2 LR LR
comp=Z,10μm,16.7s
PATS Pohnpei 33.48 153 PFAKE 14 53 00.0 +12
PATS LR LR
comp=Z,3μm,21.0s
MIDW Midway 33.94 94 PFAKE 14 53 00.0 +7.7
MIDW LR LR
comp=Z,2μm,18.0s
GTA Gaotai 34.00 287⇓P **P** **14 52 54.1 +1.2**
GTA pP pP 14 53 01.5 +0.3
GTA sP sP 14 53 05.3 +0.6
GTA sS sS 14 58 30.3 +0.2
GTA ScS **ScS** **15 03 14.8 -0.6**
GTA pmax pmax
comp=Z,92nm,1.7s
GTA pmax pmax
comp=Z,910nm,5.5s
GTA LR LR
comp=Z,8μm,16.6s
GTA LR LR
comp=Z,5μm,15.7s
GTA LR LR
comp=Z,6μm,17.1s
DAV Davao City (W) 34.53 213 PFAKE 14 53 10.0 +12
DAV LR LR
comp=Z,3μm,21.0s
QIZ Qiongzhong 34.72 247 P P 14 53 05.1 +5.9
QIZ PP **PP** **14 54 18.4 +0.3**
QIZ S **S** **14 58 29.9 +2.3**
QIZ pmax pmax
comp=Z,470nm,10.8s
QIZ LR LR
comp=Z,4μm,23.9s
QIZ LR LR
comp=Z,3μm,25.4s
QIZ LR LR
comp=Z,4μm,14.6s
QIZ Qiongzhong 34.72 247 PFAKE 14 53 10.0 +11
QIZ LR LR
comp=Z,3μm,18.0s
TIXI Tiksi 34.91 352 P **P** **14 52 59.8 -0.5**
comp=Z,21nm,0.7s,baz=145,slow=6.8,SNR=96
TIXI Tiksi 34.91 352*d i*P **P** **14 52 59.6 -0.6**
TIXI pmax pmax
comp=Z,21nm,0.7s
TIXI MLR MLR
comp=Z,4μm,17.0s
TIXI Tiksi 34.91 352 *e*P **P** **14 52 59.7 -0.5**
comp=Z,21nm,0.7s
TIXI LR LR
comp=Z,5μm,18.0s
CTBH Cotabato--PC H 34.98 215⇓*i*P **P** **14 53 03.3 +1.9**
KWAJ Kwajalein Atol 36.03 137 PFAKE 14 53 20.0 +10
KWAJ LR LR
comp=Z,3μm,20.0s
NIKH Nikolski High 36.10 49 PFAKE 14 53 20.0 +9.3
NIKH LR LR
comp=Z,3μm,19.0s
KMI Kunming 36.72 262 P **P** **14 53 17.4 +0.9**
KMI pP pP 14 53 26.0 +1.1
KMI sP sP 14 53 29.5 +1.2
KMI PP **PP** **14 54 41.8 +1.5**
KMI S **S** **14 58 58.0 -0.6**
KMI sS sS 14 59 12.3 -0.1
KMI pmax pmax
comp=Z,65nm,1.1s
KMI pmax pmax
comp=Z,530nm,4.0s
KMI LR LR
comp=Z,9μm,17.4s
KMI LR LR
comp=Z,4μm,16.2s
KMI LR LR
comp=Z,5μm,17.4s
GAMB Gambell 37.33 31 PFAKE 14 53 30.0 +9.0
GAMB LR LR
comp=Z,1μm,20.0s
UNV Unalaska Valle 37.59 48 *e*P **P** **14 53 22.9 -0.4**
UNV LR LR
comp=Z,2μm,19.0s
KRAR Krasnoyarsk 38.20 315*c i*P **P** **14 53 29.2 +0.7**
KRAR pmax pmax
comp=Z,431nm,1.4s
KRAR MLR MLR
comp=Z,2μm,12.0s
TNA Tin City 39.50 29 *e*P **P** **14 53 40.0 +0.8**
comp=Z,66nm,0.8s
TNA LR LR
comp=Z,2μm,19.0s
MYLDM Lahad Datu 39.56 221⇓P **P** **14 53 41.5 +1.2**
MYLDM Lahad Datu 39.56 221 *e*P **P** **14 53 42.6 +2.3**
comp=Z,107nm,1.0s
MYLDM LR LR
comp=Z,4μm,18.0s
MANU Manus Island 39.65 174 PFAKE 14 53 50.0 +9.0
MANU LR LR
comp=Z,1μm,18.0s
PANO Nakornpanom 39.76 250 P P 14 53 47.3 +5.4
comp=Z,30nm,1.3s,comp=Z,2μm
SWI Sorong 39.96 199 P **P** **14 53 43.0 -0.6**
comp=Z,87nm,0.9s,comp=Z,1μm
KKM Kota Kinabalu 40.09 225⇑P **P** **14 53 45.7 +0.9**
GENI Genyem 40.15 185 P **P** **14 53 45.6 +0.4**
comp=Z,239nm,1.6s,comp=Z,3μm
NONG Nongkai 40.30 252 P **P** **14 53 48.5 +2.1**
comp=Z,46nm,0.9s
UBPT Khong Chiam 40.31 247 P P 14 53 52.6 +6.0
comp=Z,67nm,1.2s
SKNT Sakolnakorn 40.34 250 P **P** **14 53 48.6 +1.8**
comp=Z,45nm,2.4s
TSM Tawau 40.64 222⇓P **P** **14 53 49.8 +0.6**
CRAI Chiangrai 41.16 257 P **P** **14 53 55.1 +1.5**
comp=Z,390nm,1.4s
KHON Khomkaen 41.60 251 P P 14 54 02.3 +5.2
comp=Z,21nm,0.9s
FAKI Fak Fak 41.69 197 *e*P **P** **14 53 55.8 -2.1**
comp=Z,117nm,1.4s
FAKI LR LR
comp=Z,2μm,21.0s
MRSI Marisa 42.00 213 P **P** **14 54 01.2 +0.8**
comp=Z,111nm,1.3s,comp=Z,2μm
LOEI Loei 42.06 253 P **P** **14 53 59.6 -1.3**
comp=Z,47nm,1.6s,comp=Z,956nm
UTTA Uttaradit 42.46 254 P **P** **14 54 05.8 +1.6**
comp=Z,11nm,1.2s,comp=Z,132nm
CHAI Chaiyaphum 42.50 251 P **P** **14 54 06.0 +1.5**
comp=Z,22nm,1.0s
SANI Sanana 42.71 206 P **P** **14 54 05.0 -1.1**
comp=Z,232nm,1.0s,comp=Z,2μm
LAMP Lampang 42.71 256 P **P** **14 54 07.9 +1.7**
comp=Z,41nm,1.0s,comp=Z,396nm
ZAA0 Zalesovo Array 42.76 312 *e*P **P** **14 54 06.3 +0.1**
ZALV Zalesovo Beam 42.76 312 P **P** **14 54 06.9 +0.7**
comp=Z,23nm,0.6s,baz=88,slow=7.1,SNR=104
ZALV PcP **PcP** **14 55 57.4 +0.1**
comp=Z,28nm,0.7s,baz=86,slow=2.2,SNR=5.9
ZALV LR LR 15 11 53.4
comp=Z,2μm,18.4s,baz=84,slow=36
PBKT Sadao Pong 42.85 252 P **P** **14 54 08.9 +1.6**
comp=Z,76nm,1.6s,comp=Z,1μm
LUWI Luwuk 43.01 211 *e*P **P** **14 54 06.0 -2.6**
comp=Z,78nm,0.9s
LUWI LR LR
comp=Z,1μm,20.0s
CHTO Chiang Mai 43.07 257 P **P** **14 54 10.3 +1.1**
comp=Z,399nm,1.2s,comp=Z,5μm
CHTO Chiang Mai 43.07 257 *e*P **P** **14 54 09.4 +0.3**
CHTO pmax pmax
comp=Z,91nm,1.1s
CHTO MLR MLR
comp=Z,4μm,19.0s
CHTO Chiang Mai 43.07 257 P **P** **14 54 10.1 +0.9**
SNR=30
CHTO P **P** **14 54 10.1 +0.9**
SNR=30
CHTO Chiang Mai 43.07 257 P **P** **14 54 10.1 +0.9**
SNR=30
CHTO Chiang Mai 43.07 257 *e*P **P** **14 54 09.4 +0.3**
comp=Z,91nm,1.1s
CHTO LR LR
comp=Z,4μm,19.0s
CM31 Chiang Mai Arr 43.28 256 *e*P **P** **14 54 11.9 +1.0**
CMAR Chiang Mai Arr 43.28 256 P **P** **14 54 12.1 +1.2**
comp=Z,7.8nm,0.7s,baz=49,slow=6.0,SNR=33
CMAR LR LR 15 13 53.4
comp=Z,3μm,18.1s,baz=50,slow=38
CM01 Chiang Mai Arr 43.29 256 *e*P **P** **14 54 11.9 +1.0**
SUKH Sukhothai 43.32 255 P **P** **14 54 12.7 +1.6**
comp=Z,24nm,1.0s,comp=Z,167nm
NRIK Noril'sk 43.43 335 P **P** **14 54 11.5 +0.1**
comp=Z,16nm,0.8s,baz=110,slow=9.1,SNR=32
NRIK LR LR 15 13 09.1
comp=Z,6μm,19.4s,baz=107,slow=37
NVS Novosibirsk 43.64 313⇑*i*P **P** **14 54 14.6 +1.3**
NVS pmax pmax
comp=N,10.0nm,0.8s
NVS pmax pmax
comp=E,69nm,0.8s
NVS pmax pmax
comp=Z,101nm,0.8s
SRAK Srakaew 43.65 249 P **P** **14 54 13.3 -0.5**
comp=Z,128nm,1.0s,comp=Z,1μm
ZSN Zaisan 43.69 303 *i* P P 14 54 21.3 +7.4
comp=Z,398nm,1.5s
ZSN *e*S **S** **15 00 48.5 +6.5**

ZSN LR LR 15 12 34.9
comp=Z,2μm,13.1s
LSA Lhasa 43.83 276 P **P 14 54 17.0 +1.3**
LSA S **S 15 00 49.9 +4.6**
LSA LR LR
comp=Z,2μm,18.0s
LSA LR LR
comp=Z,1μm,28.8s
LSA LR LR
comp=Z,3μm,21.6s
LSA Lhasa 43.83 276 *e*P **P 14 54 17.0 +1.3**
comp=Z,37nm,1.0s
LSA LR LR
comp=Z,4μm,19.0s
TT01 Tatalina 43.95 35 *e*P **P 14 54 16.1 +0.4**
TTA Tatalina 43.96 35 *e*P **P 14 54 16.4 +0.5**
comp=Z,106nm,1.5s
PCI Palu 44.17 215 P **P 14 54 17.6 -0.4**
comp=Z,98nm,1.4s,comp=Z,1μm
MHMT Maesarieng 44.22 257 P **P 14 54 20.6 +2.2**
comp=Z,72nm,1.1s,comp=Z,881nm
CHBT CHBT 44.26 247 P P 14 54 24.0 +5.3
comp=Z,72nm,0.9s,comp=Z,1μm
TARA Tarawa 45.11 136 PFAKE 14 54 40.0 +15
TARA LR LR
comp=Z,2μm,18.0s
OHAK Old Harbor 45.16 43 *e*P **P 14 54 25.0 -0.4**
OHAK LR LR
comp=Z,2μm,20.0s
MK01 Makanchi Array 45.22 302 *e*P **P 14 54 26.1 -0.1**
MK31 Makanchi Array 45.22 302 *i* P **P 14 54 26.7 +0.6**
MK31 pmax pmax
comp=Z,70nm,0.9s
MK31 Makanchi Array 45.22 302 *e*P **P 14 54 26.4 +0.3**
MKAR Makanchi Array 45.22 302 P **P 14 54 26.6 +0.5**
comp=Z,14nm,0.6s,baz=88,slow=9.5,SNR=123
MKAR LR LR 15 13 20.0
comp=Z,2μm,18.2s,baz=84,slow=36
MKAR Makanchi Array 45.22 302 *e*P **P 14 54 26.3 +0.2**
MKAR Makanchi Array 45.22 302 *e*P **P 14 54 26.3 +0.2**
SBUM Sibu 45.30 227 ⇑P **P 14 54 28.0 +1.0**
SBUM Sibu 45.30 227 *e*P **P 14 54 27.4 +0.4**
comp=Z,18nm,0.8s
SBUM LR LR
comp=Z,2μm,21.0s
MAKZ Makanchi 45.43 302 *e*P **P 14 54 28.1 +0.3**
MAKZ pmax pmax
comp=Z,284nm,1.7s
MAKZ MLR MLR
comp=Z,3μm,20.0s
MAKZ Makanchi 45.43 302 *e*P **P 14 54 28.1 +0.3**
comp=Z,284nm,1.7s
MAKZ LR LR
comp=Z,3μm,20.0s
KDAK Kodiak Island 45.52 42 *e*P **P 14 54 28.5 +0.3**
KDAK pmax pmax
comp=Z,400nm,1.5s
KDAK Kodiak Island 45.52 42 *e*P **P 14 54 28.5 +0.3**
comp=Z,402nm,1.5s
KDAK LR LR
comp=Z,3μm,19.0s
SRDT SRDT 45.62 252 P P 14 54 36.9 +7.4
comp=Z,276nm,1.1s,comp=Z,4μm
PPLA Purkeypile 45.70 35 *e*P **P 14 54 31.1 +1.3**
comp=Z,359nm,1.5s
PPLA LR LR
comp=Z,1μm,20.0s
KDI Kendari 45.73 210 P **P 14 54 31.4 +1.1**
comp=Z,51nm,1.2s,comp=Z,973nm
SPU Mount Spurr 45.73 38 *e*P **P 14 54 30.6 +0.7**
CAST Castle Rocks 45.77 34 *e*P **P 14 54 31.3 +1.0**
comp=Z,187nm,1.4s
CAST LR LR
comp=Z,2μm,18.0s
SEM Semipalatinsk 45.91 307 *i* P **P 14 54 30.7 -0.8**
comp=Z,568nm,0.9s
SEM *e*S **S 15 01 12.9 -1.1**
SEM LR LR 15 13 58.5
comp=Z,2μm,13.9s
PHET Kaeng Krachan 46.15 250 P **P 14 54 36.7 +3.0**
comp=Z,85nm,0.9s,comp=Z,602nm
BPAW Bear Paw Mtn. 46.29 34 *e*P **P 14 54 34.9 +0.6**
comp=Z,135nm,1.5s
BPAW LR LR
comp=Z,1μm,20.0s
KTH Kantishna Hill 46.30 34 *e*P **P 14 54 35.0 +0.6**
comp=Z,286nm,1.4s
KTH LR LR
comp=Z,2μm,19.0s
BRLK Bradley Lake 46.32 40 *e*P **P 14 54 35.9 +1.3**
comp=Z,225nm,1.9s
BRLK LR LR
comp=Z,2μm,18.0s
MLY Manley 46.44 32 *e*P **P 14 54 36.7 +1.3**
comp=Z,99nm,1.2s
MLY LR LR
comp=Z,2μm,18.0s
TRF Thorofare Moun 46.58 34 *e*P **P 14 54 37.2 +0.5**
comp=Z,265nm,1.7s
TRF LR LR
comp=Z,2μm,20.0s
COLD Coldfoot 46.80 29 *e*P **P 14 54 39.1 +0.9**
comp=Z,43nm,1.1s
COLD LR LR
comp=Z,1μm,18.0s
RC01 Rabbit Creek A 46.85 38 *e*P **P 14 54 38.8 +0.1**
comp=Z,219nm,1.4s
RC01 LR LR
comp=Z,2μm,19.0s
KURK Kurchatov 46.88 308 *e*P **P 14 54 39.1 0.0**
KURK pmax pmax
comp=Z,160nm,0.8s
KURK Kurchatov 46.88 308 *e*P **P 14 54 39.1 0.0**
comp=Z,164nm,0.8s
KURK LR LR
comp=Z,3μm,20.0s
PMG Port Moresby 46.92 175⇓*e*P **P 14 54 39.3 -0.4**
PMG MLR MLR
comp=Z,2μm,18.0s
PMG Port Moresby 46.92 175 *e*P **P 14 54 38.5 -1.2**
comp=Z,75nm,1.1s
BWN Browne 46.96 33 *e*P **P 14 54 40.8 +1.3**
comp=Z,568nm,1.3s
BWN LR LR
comp=Z,2μm,18.0s
SEW Seward 47.03 39 *e*P **P 14 54 39.9 -0.2**
comp=Z,123nm,1.2s
SEW LR LR
comp=Z,2μm,19.0s
PMR Palmer 47.13 37 *e*P **P 14 54 40.8 0.0**
PMR pmax pmax
comp=Z,214nm,1.4s
PMR MLR MLR
comp=Z,1μm,19.0s
PMR Palmer 47.13 37 *e*P **P 14 54 40.8 0.0**
comp=Z,214nm,1.4s
PMR LR LR
comp=Z,1μm,19.0s
MCK McKinley 47.19 34 *e*P **P 14 54 41.6 +0.3**
MCK pmax pmax
comp=Z,129nm,1.3s
MCK MLR MLR
comp=Z,2μm,18.0s
MCK McKinley 47.19 34 *e*P **P 14 54 41.6 +0.3**
comp=Z,129nm,1.3s
MCK LR LR
comp=Z,2μm,18.0s
KSM Kuching 47.20 228 *e*P **P 14 54 42.9 +1.0**
comp=Z,34nm,0.8s
KSM LR LR
comp=Z,900nm,19.0s
RND Reindeer 47.23 35 *e*P **P 14 54 41.5 -0.2**
RND pmax pmax
comp=Z,192nm,1.4s
RND MLR MLR
comp=Z,2μm,19.0s
RND Reindeer 47.23 35 *e*P **P 14 54 41.5 -0.2**
comp=Z,192nm,1.4s
RND LR LR
comp=Z,2μm,19.0s
SML Sawmill 47.50 37 *e*P **P 14 54 44.1 +0.3**
SML pmax pmax
comp=Z,249nm,1.4s
SML MLR MLR
comp=Z,2μm,19.0s
SML Sawmill 47.50 37 *e*P **P 14 54 44.0 +0.3**
comp=Z,249nm,1.4s
SML LR LR
comp=Z,2μm,19.0s
MDM Murphy Dome 47.50 32 PFAKE 14 55 00.0 +16
MDM LR LR
comp=Z,900nm,18.0s
WRH Wood River Hil 47.56 33 *e*P **P 14 54 44.7 +0.5**
comp=Z,45nm,0.7s
WRH LR LR
comp=Z,2μm,19.0s
STKI Sintang 47.66 226 P **P 14 54 47.1 +1.6**
COLA College 47.66 33 *e*P **P 14 54 45.8 +0.9**
COLA pmax pmax
comp=Z,60nm,0.7s
COLA MLR MLR
comp=Z,1μm,19.0s
COLA College 47.66 33 *e*P **P 14 54 45.8 +0.9**
comp=Z,60nm,0.7s
COLA LR LR
comp=Z,1μm,19.0s
KAPI Kappang 47.86 213 *e*P **P 14 54 49.1 +2.0**
comp=Z,76nm,1.2s
SCM Sheep Creek Mo 47.98 37 *e*P **P 14 54 48.1 +0.6**
SCM pmax pmax
comp=Z,188nm,1.3s
SCM MLR MLR
comp=Z,2μm,19.0s
SCM Sheep Creek Mo 47.98 37 *e*P **P 14 54 48.1 +0.6**
comp=Z,188nm,1.3s
SCM LR LR
comp=Z,2μm,19.0s
PDGK Podgornoye 47.98 298 P **P 14 54 48.3 +0.6**
PDGK pmax pmax
comp=Z,108nm,1.0s
HDA Harding Lake 48.05 33 *e*P **P 14 54 48.0 0.0**
comp=Z,84nm,0.7s
HDA LR LR
comp=Z,2μm,18.0s
IL1 Eielson Array 48.08 33 *e*P **P 14 54 48.0 -0.1**
ILAR Eielson Array 48.08 33 P **P 14 54 48.7 +0.5**
comp=Z,72nm,0.6s,baz=262,slow=6.3,SNR=292
ILAR LR LR 15 19 14.9
comp=Z,562nm,18.6s,baz=274,slow=41
ILB Eielson Array 48.08 33 *e*P **P 14 54 48.3 +0.1**
UZB Uzynbulak 48.36 298 *i* P **P 14 54 50.7 -0.1**
comp=Z,218nm,1.1s
UZB *e*S **S 15 01 49.7 +0.3**
UZB LR LR 15 15 51.1
comp=Z,2μm,13.9s
KPKS Kokpek 48.50 298 *i* P **P 14 54 50.9 -1.0**
comp=Z,519nm,1.3s
KPKS *e*S **S 15 01 49.9 -1.5**
KPKS LR LR 15 14 33.2
comp=Z,2μm,13.4s
KLU Klutina 48.67 37 *e*P **P 14 54 53.5 +0.7**
comp=Z,148nm,1.2s
KLU LR LR
comp=Z,1μm,18.0s
FYU Fort Yukon 48.74 30 *e*P **P 14 54 54.9 +1.7**
comp=Z,589nm,1.8s
FYU LR LR
comp=Z,1μm,20.0s
GUN Gumba 48.77 276 *e*P **P 14 54 55.2 +0.8**
comp=Z,259nm,0.8s
DIV Divide 48.77 38 *e*P **P 14 54 54.4 +0.8**
comp=Z,423nm,1.5s
PAX Paxson 48.77 35 *e*P **P 14 54 54.5 +0.8**
PAX pmax pmax
comp=Z,82nm,1.4s
PAX MLR MLR
comp=Z,2μm,18.0s
PAX Paxson 48.77 35 *e*P **P 14 54 54.5 +0.8**
comp=Z,82nm,1.4s
PAX LR LR
comp=Z,2μm,18.0s
SATY Saty 48.81 298 *e*P **P 14 54 54.2 -0.2**
comp=Z,270nm,1.6s
SATY *e*S **S 15 01 55.1 -0.7**
SATY LR LR 15 15 38.1
comp=Z,2μm,14.3s
EYAK Cordova Ski Ar 48.84 38 *e*P **P 14 54 54.9 +0.9**
comp=Z,136nm,1.2s
EYAK LR LR
comp=Z,2μm,21.0s
KTGM Kuala Trenggan 48.84 239 ⇑P **P 14 54 54.4 -0.2**
HNR Honiara 49.29 158 PFAKE 14 55 10.0 +12
HNR LR LR
comp=Z,2μm,20.0s
KKN Kakani 49.30 276 *e*P **P 14 54 59.0 +0.7**
comp=Z,184nm,0.6s
PKIN Phulchoki 49.30 276 *e*P **P 14 54 58.8 +0.4**
comp=Z,30nm,0.5s
BMRM Bremner River 49.35 38 *e*P **P 14 54 58.9 +0.8**
comp=Z,312nm,1.5s
BMRM LR LR
comp=Z,2μm,19.0s
DOT Dot Lake 49.36 34 *e*P **P 14 54 58.1 +0.1**
comp=Z,146nm,0.6s
DOT LR LR
comp=Z,6μm,19.0s
SURT Suratani 49.37 246 P P 14 55 05.4 +6.7
comp=Z,37nm,1.4s,comp=Z,598nm
RAGM Ragged Mountai 49.38 38 *e*P **P 14 55 00.1 +1.8**
comp=Z,52nm,0.8s
TRTT Trang 49.48 245 P **P 14 55 04.0 +4.4**
comp=Z,75nm,1.5s,comp=Z,1μm
DMN Daman 49.52 276 *e*P **P 14 55 00.8 +0.8**
MENT Mentasta 49.57 35 *e*P **P 14 55 01.0 +1.3**
comp=Z,86nm,1.0s
MENT LR LR
comp=Z,2μm,18.0s
GKN Gorkha 49.70 277 *e*P **P 14 55 01.9 +0.5**
comp=Z,305nm,0.9s
MDOK Medeo 49.73 298 *i* P **P 14 55 00.1 -1.2**
comp=Z,258nm,1.4s
MDOK *i* PP **PP 14 56 56.8 +0.9**
MDOK *e*S **S 15 02 06.5 -2.2**
MDOK *i* SS **SS 15 05 43.4 +2.4**
MDOK LR LR 15 16 12.7
comp=Z,1μm,15.4s
AAA Alma-Ata 49.77 299 *e*P **P 14 55 02.7 +1.1**
AAA *e*S **S 15 02 12.1 +3.0**
AAA pmax pmax
comp=Z,700nm,5.6s
AAA smax smax
comp=N,2μm,16.6s
AAA MLR MLR
comp=Z,2μm,15.0s
KUU Kurty 50.01 300⇓*i* P **P 14 55 03.5 +0.2**
comp=Z,602nm,1.1s
KUU *i* PP **PP 14 56 59.3 +1.1**
KUU *e*S **S 15 02 12.6 +0.3**
KUU LR LR 15 16 45.5
comp=Z,2μm,14.2s
PKDT Phuket 50.42 246 P P 14 55 12.8 +6.1
comp=Z,204nm,1.0s,comp=Z,2μm
BALM Baldy 50.44 37 *e*P **P 14 55 07.0 +0.6**
BALM pmax pmax
comp=Z,281nm,1.8s
BALM MLR MLR
comp=Z,2μm,22.0s
BALM Baldy 50.44 37 *e*P **P 14 55 07.0 +0.6**
comp=Z,281nm,1.8s
BALM LR LR
comp=Z,2μm,22.0s
SOEI Soe 50.48 205 *e*P **P 14 55 06.3 -0.9**
comp=Z,176nm,1.1s
SOEI LR LR
comp=Z,2μm,20.0s
EGAK Eagle 50.52 32 *e*P **P 14 55 07.1 +0.2**
comp=Z,144nm,1.6s
KULM Kulim 50.58 241 *e*P **P 14 55 08.8 +0.9**
comp=Z,146nm,1.6s
KULM LR LR
comp=Z,2μm,21.0s
KOLN Koldanda 50.63 277 *e*P **P 14 55 08.9 +0.5**
BRZS Berezniki 50.76 308 *i* P **P 14 55 08.2 -0.6**
comp=Z,111nm,0.8s
BRZS *e*S **S 15 02 21.2 -1.3**
TKM2 Tokmak 2 50.82 299 *e*P **P 14 55 10.8 +1.1**
TKM2 pmax pmax
comp=Z,140nm,0.8s
TKM2 Tokmak 2 50.82 299 *e*P **P 14 55 10.8 +1.1**
comp=Z,135nm,0.8s
TKM2 LR LR
comp=Z,3μm,18.0s
IPM Ipoh 50.90 240 *e*P **P 14 55 10.7 +0.4**
comp=Z,44nm,0.7s
IPM LR LR
comp=Z,2μm,20.0s
PYUN Piuthan 50.96 278 *e*P **P 14 55 11.7 +0.8**
comp=Z,131nm,0.4s
MYKOM Kota Tinggi 50.98 235 *e*P **P 14 55 12.1 +1.2**
comp=Z,64nm,1.5s
MYKOM LR LR
comp=Z,1μm,21.0s
CHKZ Chkalovo 51.13 313 P **P 14 55 11.4 -0.1**
CHKZ pmax pmax
comp=Z,37nm,0.8s
COEN Coen 51.33 180 *e*P **P 14 55 13.4 0.0**
comp=Z,111nm,1.3s
COEN LR LR
comp=Z,1μm,22.0s
DAWY Dawson 51.37 33 *e*P **P 14 55 14.1 +0.8**
comp=Z,150nm,1.9s
DAWY LR LR
comp=Z,2μm,20.0s
FRIM Kepong 51.39 239⇓P **P 14 55 14.6 +0.6**
BVA0 Borovoye Array 51.41 312 P **P 14 55 13.7 0.0**
BVA0 pmax pmax
comp=Z,49nm,0.9s
BRVK Borovoye 51.46 312*d i*P **P 14 55 14.6 +0.5**
BRVK pmax pmax
comp=Z,65nm,0.8s
BRVK MLR MLR
comp=Z,2μm,16.0s
BRVK Borovoye 51.46 312 *e*P **P 14 55 14.3 +0.2**
comp=Z,70nm,0.9s
BRVK LR LR
comp=Z,19.0s
FRU Bishkek 51.53 299 *e*P **P 14 55 15.0 +0.2**
FRU *i* 14 55 22.5
FRU *i* 14 57 16.0
FRU *e*S **S 15 02 32.0 -1.5**
FRU pmax pmax
comp=Z,100nm,1.9s
FRU MLR MLR
comp=E,3μm,14.0s
MTN Manton Dam 51.55 196 *e*P **P 14 55 13.7 -1.3**
comp=E,110nm,0.9s
MTN LR LR
comp=Z,1μm,20.0s
AAK Ala-Archa 51.68 299 *e*P **P 14 55 16.8 +0.7**
AAK pmax pmax
comp=Z,38nm,0.8s
AAK Ala-Archa 51.68 299 *e*P **P 14 55 16.5 +0.4**
comp=Z,38nm,0.8s
AAK LR LR
comp=Z,2μm,19.0s
KSH Kashi 51.69 294 P **P 14 55 20.9 +4.7**
KSH *e*pP sP 14 55 30.6 +2.5
KSH *e*sP pP 14 55 35.0 +10
KSH *e*PP **PP 14 57 18.8 +5.1**
KSH *e*ScP **ScP 15 00 23.5 -0.6**
KSH S **S 15 02 40.1 +4.1**
KSH pmax pmax
comp=Z,57nm,1.1s
KSH pmax pmax
comp=Z,780nm,3.5s
KSH LR LR
comp=Z,1μm,12.7s
KSH LR LR
comp=Z,4μm,14.8s
KSH LR LR
comp=Z,2μm,18.4s
EKS2 Erkin-Say 52.17 299 *e*P **P 14 55 20.3 +0.6**
EKS2 pmax pmax
comp=Z,35nm,0.9s
EKS2 Erkin-Say 52.17 299 *e*P **P 14 55 20.1 +0.4**
comp=Z,35nm,0.9s
EKS2 LR LR
comp=Z,3μm,18.0s
ZRNK Zerenda 52.24 312 P **P 14 55 20.1 +0.2**
ZRNK pmax pmax
comp=Z,46nm,0.8s
ZRNK Zerenda 52.24 312 *e*P **P 14 55 20.3 +0.4**
comp=Z,55nm,0.8s
ZRNK LR LR
comp=Z,2μm,21.0s
INK Inuvik 53.07 27 P **P 14 55 26.6 +0.9**
comp=Z,28nm,0.5s,baz=296,slow=6.9,SNR=132
INK Inuvik 53.07 27 *e*P **P 14 55 26.4 +0.7**
comp=Z,30nm,0.6s
INK LR LR
comp=Z,2μm,18.0s
MNAS Manas 53.12 299 P **P 14 55 27.7 +1.0**
MNAS pmax pmax
comp=Z,101nm,0.7s
LHMI Lhok Sumawe 53.24 245 PFAKE 14 55 40.0 +12
LHMI LR LR
comp=Z,2μm,19.0s
PSI Prapat 53.56 241 *e*P **P 14 55 30.7 +0.5**
PSI pmax pmax
comp=Z,47nm,0.9s
PSI MLR MLR
comp=Z,2μm,18.0s
PSI Prapat 53.56 241 *e*P **P 14 55 30.7 +0.5**
comp=Z,46nm,0.9s
PSI LR LR
comp=Z,2μm,18.0s
BKNI Bangkinang 53.93 237 PFAKE 14 55 40.0 +7.2
BKNI LR LR
comp=Z,1μm,20.0s
SMRI Semarang 54.13 222 *e*P **P 14 55 33.3 -0.9**
comp=Z,31nm,0.5s
SMLA Simla 54.14 284 *e*P **P 14 55 34.3 +0.1**
SMLA IAML 14 55 49.1
comp=E,121nm,0.8s
SKAG Skagway 54.18 38 *e*P **P 14 55 35.4 +1.4**
comp=E,234nm,2.0s
KK31 Karatay Array 54.27 300 *i* P **P 14 55 35.3 +0.3**
KK31 pmax pmax
comp=Z,59nm,1.0s
KKAR Karatay Array 54.27 300 *e*P **P 14 55 35.1 +0.1**
KKAR Karatay Array 54.27 300 *e*P **P 14 55 35.0 +0.1**
CHLP Challavanipeta 54.93 267 *e*P **P 14 55 41.1 +1.1**
CHLP IAmb IAmb 14 55 56.5
comp=Z,70nm,1.3s
CHLP *e*S **S 15 03 19.7 -0.5**
CHLP IVMs_BB IVMs_BB 15 21 08.7
comp=Z,730nm,18.5s
IUG Iuzhnay 54.95 299 *i* P **P 14 55 39.5 -0.6**
comp=Z,891nm,1.2s
IUG *e*S **S 15 03 19.7 -0.4**
IUG LR LR 15 19 47.5
comp=Z,597nm,14.8s
GSI Gunungsitoli 55.56 241 *e*P **P 14 55 45.5 +0.8**
comp=Z,246nm,1.1s
SVE Sverdlovsk 55.80 319*c i*P **P 14 55 46.8 +1.0**
SVE *e*S **S 15 03 32.4 +1.6**
SVE pmax pmax
comp=Z,137nm,0.8s
SVE MLR MLR
comp=Z,5μm,16.0s
SVE MLR MLR
comp=E,4μm,17.0s
WRAK Wrangell Islan 56.58 41 *e*P **P 14 55 52.6 +1.2**
comp=E,33nm,1.0s
SOKR Solikamsk 56.87 323*d i*P **P 14 55 52.2 -1.1**
SOKR 14 58 07.3
SOKR S **S 15 03 45.1 +0.4**
SOKR SS **SS 15 07 29.7 -2.8**
SOKR pmax pmax
comp=Z,59nm,1.1s
SOKR MLR MLR
comp=Z,1μm,16.0s
ARU Arti 57.02 319 P **P 14 55 55.1 +0.6**
comp=Z,74nm,0.6s,baz=76,slow=3.9,SNR=157
ARU Arti 57.02 319*d i*P **P 14 55 55.0 +0.6**
ARU 14 56 50.1
ARU 14 58 00.3
ARU PPP PPP 14 59 18.7
ARU S **S 15 03 48.3 +1.4**
ARU 15 05 36.0
ARU SS **SS 15 07 35.8 +0.7**
ARU pmax pmax
comp=Z,115nm,0.8s
ARU MLR MLR
comp=Z,4μm,18.0s
ARU Arti 57.02 319 *e*P **P 14 55 54.8 +0.3**
comp=Z,100nm,0.7s
ARU LR LR
comp=Z,2μm,18.0s
DLBC Dease Lake 57.10 39 *e*P **P 14 55 56.8 +1.6**

comp=Z,64nm,1.1s
CTAO Charters Tower 57.48 177 PFAKE 14 56 10.0 +12
CTAO LR LR
comp=Z,900nm,20.0s
PVM Polavaram 57.55 267 *e*P **P** **14 55 58.7 0.0**
PVM IAmb IAmb 14 56 13.8
comp=Z,86nm,1.5s
PVM *e*S **S** **15 03 54.2 -0.7**
PVM IVMs_BB IVMs_BB 15 24 25.5
comp=Z,510nm,15.8s
WB9 Warramunga Arr 57.77 190 PFAKE 14 56 10.0 +10
WB9 LR LR
comp=Z,2μm,22.0s
WRAB Tennant Creek 57.92 190 *i* P **P** **14 55 59.9 -1.2**
WRAB pmax pmax
comp=Z,319nm,0.9s
WRAB MLR MLR
comp=Z,1μm,18.0s
WRAB Tennant Creek 57.92 190 *e*P **P** **14 55 59.3 -1.8**
comp=Z,105nm,0.8s
WB2 Warramunga Arr 57.93 190 *e*P **P** **14 55 59.5 -1.7**
comp=Z,116nm,0.8s
WR1 Warramunga Arr 57.93 190 PFAKE 14 56 10.0 +8.8
WR1 LR LR
comp=Z,800nm,19.0s
WRA Warramunga Arr 57.93 190 P **P** **14 55 59.5 -1.7**
comp=Z,76nm,0.7s,baz=8.3,slow=7.1,SNR=314
WRA LR LR 15 18 41.1
comp=Z,532nm,21.5s,baz=0.0,slow=34
WRA PKP2bc 15 25 56.9
comp=Z,1.5nm,0.9s,baz=206,slow=2.1,SNR=8.5
FITZ Fitzroy Crossi 57.95 200 *e*P **P** **14 56 01.2 -0.1**
comp=Z,112nm,1.5s
RPR Rampur 58.52 270 *e*P **P** **14 56 06.9 +1.3**
RPR IAmb IAmb 14 56 19.4
comp=Z,161nm,1.4s
RPR *e*S **S** **15 04 06.8 -0.8**
RPR IVMs_BB IVMs_BB 15 21 05.6
comp=Z,495nm,13.8s
KBL Kabul 58.77 292 *e*P **P** **14 56 07.1 -0.3**
KBL pmax pmax
comp=Z,71nm,0.8s
KBL MLR MLR
comp=Z,2μm,20.0s
KBL Kabul 58.77 292 *e*P **P** **14 56 07.1 -0.3**
comp=Z,71nm,0.8s
KBL LR LR
comp=Z,2μm,20.0s
AB31 Akbulak array 58.83 310 P **P** **14 56 07.4 +0.1**
AB31 pmax pmax
comp=Z,34nm,0.7s
ABKAR Akbulak array 58.83 310 *e*P **P** **14 56 07.5 +0.2**
SRSP Sriramsagar 59.24 271 *e*P **P** **14 56 10.4 -0.2**
SRSP IAmb IAmb 14 56 25.0
comp=Z,159nm,1.0s
SRSP *e*S **S** **15 04 18.1 +1.2**
SRSP IVMs_BB IVMs_BB 15 23 28.6
comp=Z,712nm,19.8s
AKTO Aktyubinsk 59.52 312 P **P** **14 56 12.1 +0.1**
comp=Z,34nm,0.6s,baz=74,slow=7.4,SNR=105
ADKI Addanki 59.65 267 *e*P **P** **14 56 14.2 +0.8**
ADKI IAmb IAmb 14 56 28.0
comp=Z,71nm,1.3s
ADKI *e*S **S** **15 04 20.1 -2.2**
ADKI IVMs_BB IVMs_BB 15 24 25.5
comp=Z,742nm,15.4s
NJS Nagarjunasagar 59.78 268 *e*P **P** **14 56 16.9 +2.6**
NJS IAmb IAmb 14 56 28.2
comp=Z,55nm,1.1s
NJS *e*S **S** **15 04 24.2 +0.3**
NJS IVMs_BB IVMs_BB 15 22 07.0
comp=Z,730nm,21.8s
HOPEN Hopen 59.85 346 *e*P **P** **14 56 14.7 +0.8**
HOPEN IAmb IAmb 14 56 15.2
comp=Z,62nm,0.9s
HYBB Hyderabad (bro 59.90 269 *e*P **P** **14 56 17.5 +2.3**
HYBB IAmb IAmb 14 56 28.9
comp=Z,133nm,1.1s
HYBB *e*S **S** **15 04 26.2 +0.7**
HYBB IVMs_BB IVMs_BB 15 23 03.4
comp=Z,404nm,4.5s
HYB Hyderabad 59.90 269 *i* P **P** **14 56 15.0 -0.2**
HYB *e*S **S** **15 04 26.0 +0.5**
SPA0 Spitsbergen Ar 60.25 349 *e*P **P** **14 56 17.5 +0.9**
SPA0 Spitsbergen Ar 60.25 349 *e*P **P** **14 56 16.9 +0.3**
SPITS Spitsbergen Ar 60.25 349 P **P** **14 56 16.9 +0.3**
comp=Z,14nm,0.6s,baz=81,slow=6.8,SNR=33
KBS Kingsbay 60.34 350 *e*P **P** **14 56 18.1 +0.9**
KBS IAmb IAmb 14 56 19.3
comp=Z,31nm,0.8s
KBS Kingsbay 60.34 350 *e*P **P** **14 56 17.5 +0.2**
KBS pmax pmax
comp=Z,73nm,1.2s
KBS MLR MLR
comp=Z,2μm,20.0s
KBS Kingsbay 60.34 350 *e*P **P** **14 56 17.5 +0.2**
comp=Z,73nm,1.2s
KBS LR LR
comp=Z,2μm,20.0s
SRLM Srisailam 60.36 268 *e*P **P** **14 56 18.2 -0.1**
SRLM IAmb IAmb 14 56 32.1
comp=Z,64nm,1.1s
SRLM *e*S **S** **15 04 27.8 -3.7**
SRLM IVMs_BB IVMs_BB 15 26 45.4
comp=Z,773nm,14.4s
RCLA Racherla 60.68 267 *e*P **P** **14 56 21.6 +1.2**
RCLA IAmb IAmb 14 56 34.5
comp=Z,79nm,1.1s
RCLA *e*S **S** **15 04 30.4 -5.1**
RCLA IVMs_BB IVMs_BB 15 25 50.0
comp=Z,592nm,4.2s
SKHT Srikalahasti 61.06 265 *e*P **P** **14 56 24.3 +1.3**
SKHT IAmb IAmb 14 56 38.4
comp=Z,41nm,1.0s
SKHT *e*S **S** **15 04 43.5 +3.1**
SKHT IVMs_BB IVMs_BB 15 21 17.0
comp=Z,397nm,4.5s
KLRI Killari 61.09 271 *e*P **P** **14 56 23.1 -0.2**
KLRI IAmb IAmb 14 56 37.3
comp=Z,150nm,0.9s
KLRI *e*S **S** **15 04 40.8 0.0**
KLRI IVMs_BB IVMs_BB 15 23 45.8
comp=Z,1μm,15.2s
HSPB Hornsund (broa 61.20 348 *e*P **P** **14 56 23.8 +0.7**
HSPB IAmb IAmb 14 56 25.9
comp=Z,90nm,1.2s
HSPB Hornsund (broa 61.20 348 *e*P **P** **14 56 24.3 +1.2**
RES Resolute Bay 61.59 15 *e*P **P** **14 56 26.3 +0.6**
RES Resolute Bay 61.59 15 *e*P **P** **14 56 26.4 +0.6**
RES LR LR
comp=Z,1μm,18.0s
AS01 Alice Springs 61.64 190 *e*P **P** **14 56 25.2 -1.5**
AS31 Alice Springs 61.65 190 *e*P **P** **14 56 25.6 -1.2**
comp=Z,8.8nm,0.8s
ASAR Alice Springs 61.65 190 P **P** **14 56 25.6 -1.2**
comp=Z,26nm,0.8s,baz=11,slow=6.0,SNR=137
ASAR LR LR 15 22 38.0
comp=Z,567nm,21.9s,baz=15,slow=36
ASAR PKPPKP **P'P'df** **15 25 34.8 +3.2**
comp=Z,0.3nm,0.7s,baz=169,slow=2.2,SNR=4.3
LVZ Lovozero 62.24 336⇑ *i*P **P** **14 56 31.0 +0.7**
LVZ pmax pmax
comp=Z,17nm,0.8s
LVZ MLR MLR
comp=Z,1μm,19.0s
LVZ Lovozero 62.24 336 *e*P **P** **14 56 30.3 0.0**
comp=Z,27nm,0.7s
LVZ LR LR
comp=Z,3μm,19.0s
YKW3 Yellowknife Ar 62.39 31 *e*P **P** **14 56 31.1 -0.2**
comp=Z,31nm,0.6s
YKA Yellowknife Ar 62.43 31 P **P** **14 56 31.7 +0.2**
comp=Z,24nm,0.7s,baz=303,slow=6.6,SNR=159
YKA PKP2ab 15 25 58.8
comp=Z,0.7nm,0.8s,baz=117,slow=3.2,SNR=4.3
YKA LR LR 15 28 02.5
comp=Z,71nm,18.0s,baz=0.0,slow=40
YKB5 Yellowknife Ar 62.43 31 *e*P **P** **14 56 31.1 -0.4**
MBWA Marble Bar 62.63 205 *e*P **P** **14 56 33.2 -0.2**
comp=Z,103nm,0.8s
APA Apatity 62.82 336⇑ *i*P **P** **14 56 34.2 +0.1**
APA pmax pmax
comp=Z,54nm,0.8s
APA MLR MLR
comp=Z,2μm,17.0s
TMCR Tamitsa 63.01 332 *e*P **P** **14 56 35.8 +0.4**
TMCR pmax pmax
comp=Z,59nm,0.8s
EIDS Eidsvold 63.08 172 *e*P **P** **14 56 35.3 -1.0**
comp=Z,29nm,1.0s
EIDS LR LR
comp=Z,900nm,20.0s
DZM Mont Dzumac 63.19 156 *e*S **S** **15 05 05.5 -1.4**
comp=Z,849nm,25.8s
DZM *e*LQ LQ 15 12 23.3
comp=Z,6μm,29.9s
DZM *e*LR LR 15 15 20.0
comp=Z,2μm,23.4s
DZM Mont Dzumac 63.19 156 *e*P **P** **14 56 36.2 -1.0**
comp=Z,133nm,1.4s
DZM LR LR
comp=Z,2μm,19.0s
KEV Kevo 63.46 340 *e*P **P** **14 56 38.6 +0.3**
KEV pmax pmax
comp=Z,33nm,0.8s
KEV MLR MLR
comp=Z,2μm,19.0s
KEV Kevo 63.46 340 *e*P **P** **14 56 38.6 +0.3**
comp=Z,33nm,0.8s
KEV LR LR
comp=Z,2μm,19.0s
HAMF Hammerfest 63.79 341 *e*P **P** **14 56 40.8 +0.3**
ARA0 ARCESS Array S 64.01 340 *e*P **P** **14 56 42.1 +0.1**
ARCES ARCESS Array B 64.01 340 P **P** **14 56 42.4 +0.4**
comp=Z,21nm,0.7s,baz=31,slow=5.7,SNR=78
ARCES LR LR 15 27 45.2
comp=Z,2μm,20.3s,baz=54,slow=39
ARCES ARCESS Array B 64.01 340 P **P** **14 56 42.4 +0.4**
ARCES pmax pmax
comp=Z,21nm,0.7s
ARCES MLR MLR
comp=Z,2μm,20.3s
ARE0 ARCESS Array S 64.01 340 *e*P **P** **14 56 42.4 +0.4**
comp=Z,26nm,0.9s
ARE0 LR LR
comp=Z,3μm,20.0s
KLMR Klimovskoe 64.14 328 *e*P **P** **14 56 41.7 -1.2**
KLMR *e* 14 57 16.3
KLMR pmax pmax
comp=Z,22nm,0.8s
PALK Pallekele 64.14 259 *es*P **sP** **14 56 56.9 +1.1**
PALK LR LR
comp=Z,1μm,19.0s
OSR Olympics--Salm 64.95 48 P **P** **14 56 51.2 +2.6**
KTK1 Kautokeino 64.97 340 *e*P **P** **14 56 48.7 +0.4**
KTK1 IAmb IAmb 14 56 50.5
comp=Z,44nm,0.7s
GEYT Alibeck 65.01 300 P **P** **14 56 50.0 +0.9**
comp=Z,34nm,1.0s,baz=31,slow=4.0,SNR=36
NLWA Neilton Lookou 65.06 48 *e*P **P** **14 56 51.0 +1.8**
comp=Z,90nm,1.2s
NLWA LR LR
comp=Z,1μm,20.0s
DAG Danmarks Havn 65.31 356⇓ *i*P **P** **14 56 50.2 -0.1**
comp=Z,32nm,0.8s
comp=Z,800nm,16.0s
DAG Danmarks Havn 65.31 356⇓ *i*P **P** **14 56 50.2 -0.1**
DAG pmax pmax
comp=Z,24nm,0.8s
DAG MLR MLR
comp=Z,810nm,16.0s
B05A Bryant 65.67 47 P **P** **14 56 54.5 +1.4**
baz=300,SNR=7.6
TRO Tromso 65.68 342 *e*P **P** **14 56 53.4 +0.6**
TRO IAmb IAmb 14 56 54.8
comp=Z,28nm,0.7s
JCW Jim Creek 65.80 47 P **P** **14 56 55.3 +1.3**
D05A Enumclaw 66.27 48 *e*P **P** **14 56 59.5 +2.5**
comp=Z,86nm,1.3s
G03D McMinnville, O 66.50 50 P **P** **14 57 00.9 +2.4**
baz=300
LON Longmire 66.60 48 *e*P **P** **14 56 59.9 +0.7**
LON pmax pmax
comp=Z,12nm,1.0s
LON Longmire 66.60 48 *e*P **P** **14 56 59.9 +0.7**
comp=Z,12nm,1.0s
F04A Amboy 66.65 49 *e*P **P** **14 57 00.7 +1.3**
comp=Z,40nm,1.0s
COR Corvallis 66.79 51 P **P** **14 56 59.6 -0.7**
COR Corvallis 66.79 51 P **P** **14 56 59.6 -0.7**
KULLO Kullorsuaq 67.21 6 *i* P **P** **14 57 02.4 -0.1**
comp=Z,20nm,0.8s
comp=Z,2μm,17.0s
KULLO Kullorsuaq 67.21 6 *i* P **P** **14 57 02.4 -0.1**
KULLO pmax pmax
comp=Z,20nm,0.8s
KULLO MLR MLR
comp=Z,2μm,17.0s
B08A Colville Reser 67.21 46 *e*P **P** **14 57 03.3 +0.3**
comp=Z,58nm,1.4s
I03D Drain, OR 67.21 52 P **P** **14 57 05.5 +2.4**
baz=301
H04A Detroit Lake 67.43 50 *e*P **P** **14 57 05.1 +0.6**
comp=Z,80nm,1.4s
VFP Flag Point 67.54 50 P **P** **14 57 07.2 +1.9**
I04A Tendick Farm, 67.75 51 P **P** **14 57 08.3 +1.8**
baz=301
MOS Moscow 67.76 324 *e*P **P** **14 57 05.2 -1.1**
MOS *e* 14 57 18.4
MOS *e* 14 57 28.3
MOS *e*S **S** **15 06 02.8 +0.8**
MOS *e* 15 06 45.3
MOS pmax pmax
comp=Z,90nm,1.2s
MOS pmax pmax
comp=Z,300nm,2.1s
MOS smax smax
comp=N,1μm,4.2s
MOS smax smax
comp=E,900nm,4.2s
L02D Cave Junction, 67.84 53 P **P** **14 57 09.4 +2.3**
baz=301
HUMO Hull Mountain 68.02 53 *e*P **P** **14 57 09.2 +1.0**
comp=E,22nm,1.3s
G06A Carlson Farm, 68.08 49 *e*P **P** **14 57 09.0 +0.4**
comp=E,112nm,1.7s
C09A Chrisman Ranch 68.11 46 *e*P **P** **14 57 08.8 +0.1**
comp=E,25nm,0.8s
I05D Terrebonne, OR 68.12 50 P **P** **14 57 10.8 +1.9**
baz=302
HAWA Hanford 68.13 48 *e*P **P** **14 57 09.8 +1.0**
ARMA Armidale 68.13 172 *e*P **P** **14 57 09.6 +0.6**
comp=E,63nm,1.4s
VTHM Trough 68.15 49 P **P** **14 57 10.9 +1.9**
VRH Novokhopyorsk 68.25 318 *e*P **P** **14 57 09.3 -0.1**
VRH pmax pmax
comp=Z,50nm,0.6s
VRH MLR MLR
comp=Z,4μm,16.0s
NEW Newport 68.51 45 P **P** **14 57 12.0 +0.8**
baz=303,SNR=5.1
NEW Newport 68.51 45 *e*P **P** **14 57 11.3 +0.1**
NEW pmax pmax
comp=Z,28nm,1.0s
NEW Newport 68.51 45 *e*P **P** **14 57 11.3 +0.1**
comp=Z,28nm,1.0s
PUL Pulkovo 68.52 330⇑ *i*P **P** **14 57 12.2 +1.3**
PUL pmax pmax
comp=Z,90nm,0.6s
PUL MLR MLR
comp=Z,2μm,17.0s
OBN Obninsk 68.61 324 P **P** **14 57 11.8 +0.2**
comp=Z,24nm,0.5s,baz=68,slow=1.4,SNR=12
OBN Obninsk 68.61 324*c i*P **P** **14 57 11.8 +0.2**
OBN *e* 14 59 48.3
OBN *e*S **S** **15 06 11.8 -0.3**
OBN *e* 15 07 03.9
OBN pmax pmax
comp=Z,107nm,1.7s
OBN Obninsk 68.61 324 *e*P **P** **14 57 11.4 -0.2**
comp=Z,56nm,0.9s
OBN LR LR
comp=Z,2μm,19.0s
YBH Yreka Blue Hor 68.63 53 *e*P **P** **14 57 14.4 +2.2**
YBH Yreka Blue Hor 68.63 53 *e*P **P** **14 57 14.4 +2.2**
M02C Callahan 68.72 54 P **P** **14 57 15.4 +2.7**
baz=302
J05D Fort Rock, OR 68.74 51 P **P** **14 57 15.2 +2.3**
baz=302,SNR=10
LPSR Galich'ya Gora 68.91 321 *e*P **P** **14 57 13.8 +0.3**
LPSR pmax pmax
comp=Z,40nm,0.7s
LPSR MLR MLR
comp=Z,2μm,15.0s
N02D Trinity Center 69.04 54 P **P** **14 57 16.7 +2.1**
baz=302
FIA1 FINESS Array S 69.05 333 *e*P **P** **14 57 14.4 +0.1**
comp=Z,65nm,0.8s
FINES FINESS Array B 69.05 333 P **P** **14 57 14.6 +0.3**
comp=Z,64nm,0.7s,baz=46,slow=8.2,SNR=190
FINES LR LR 15 29 49.2
comp=Z,2μm,19.1s,baz=51,slow=38
G08A Pilot Rock 69.05 49 PFAKE 14 57 30.0 +15
G08A LR LR
comp=Z,800nm,22.0s
M04C Macdoel 69.16 53 P **P** **14 57 17.7 +2.2**
baz=302,SNR=5.2
STKA Stephens Creek 69.19 182 P **P** **14 57 15.9 +0.5**
comp=Z,10nm,0.8s,baz=341,slow=8.2,SNR=8.2
STKA LR LR 15 28 20.5
comp=Z,550nm,20.7s,baz=1.7,slow=37
STKA Stephens Creek 69.19 182 *e*P **P** **14 57 15.7 +0.4**
STKA *e**PP **pP** **14 57 23.7 -0.5**
STKA Stephens Creek 69.19 182 *e*P **P** **14 57 14.8 -0.5**
comp=Z,3.3nm,0.8s
K05A Summer Lake 69.25 52 *e*P **P** **14 57 16.5 +0.4**
comp=Z,169nm,1.6s
WDC Whiskeytown Da 69.35 54 *e*P **P** **14 57 16.4 -0.1**
WDC pmax pmax
comp=Z,30nm,1.2s
WDC Whiskeytown Da 69.35 54 *e*P **P** **14 57 16.4 -0.1**
comp=Z,30nm,1.2s
VSR Storozhevoye 69.57 319 *e*P **P** **14 57 18.0 +0.3**
VSR pmax pmax
comp=Z,40nm,0.7s
VSR MLR MLR
comp=Z,2μm,15.0s
F10A Beach Ranch, E 69.70 47 *e*P **P** **14 57 18.1 -0.6**
comp=Z,13nm,0.9s
O03D Paynes Creek 69.98 54 P **P** **14 57 22.1 +1.6**
baz=303,SNR=5.7
BSMT Bassoo Peak 70.05 45 *e*P **P** **14 57 21.1 +0.2**
SUMG Summit 70.07 1⇓ *i*P **P** **14 57 21.7 +0.8**
comp=Z,40nm,0.7s
SUMG Summit 70.07 1 *e*P **P** **14 57 21.1 +0.2**
SUMG pmax pmax
comp=Z,43nm,0.8s
SUMG MLR MLR
comp=Z,2μm,19.0s
SUMG Summit 70.07 1 *e*P **P** **14 57 21.1 +0.2**
comp=Z,43nm,0.8s
SUMG LR LR
comp=Z,2μm,19.0s
BLMT Blacktail Moun 70.19 44 *e*P **P** **14 57 22.1 +0.2**
BMO Blue Mountains 70.27 48 *e*P **P** **14 57 24.5 +2.2**
BMO Blue Mountains 70.27 48 *e*P **P** **14 57 22.5 +0.2**
comp=Z,10nm,0.8s
HEL Helsinki 70.31 332 PFAKE 14 57 30.0 +8.0
HEL LR LR
comp=Z,1μm,22.0s
JTMT Jette 70.39 44 *e*P **P** **14 57 23.1 +0.1**
YBMT Yellow Bay 70.47 44 *e*P **P** **14 57 24.1 +0.6**
SWMT Swartz Lake 70.68 45 *e*P **P** **14 57 25.0 +0.3**
VSU Vasula 70.77 330*d i*P **P** **14 57 25.7 +0.8**
VSU pmax pmax
comp=Z,147nm,0.8s
VSU MLR MLR
comp=Z,7μm,19.0s
WVOR Wild Horse Val 70.81 51 *e*P **P** **14 57 26.4 +0.8**
WVOR pmax pmax
comp=Z,37nm,1.3s
WVOR Wild Horse Val 70.81 51 *e*P **P** **14 57 26.4 +0.8**
comp=Z,37nm,1.3s
GOF Gofitskoye 70.93 312⇑ *e*P **P** **14 57 27.6 +1.5**
GOF pmax pmax
comp=Z,112nm,0.8s
MSO Missoula 71.10 45 P **P** **14 57 27.6 +0.3**
baz=305,SNR=6.6
MSO Missoula 71.10 45 *e*P **P** **14 57 26.4 -0.9**
comp=Z,13nm,0.9s
AFDM Forest Hills D 71.25 55 *e*P **P** **14 57 29.1 +0.9**
CHMT Chamberlain Mo 71.44 45 *e*P **P** **14 57 29.0 -0.5**
NCK Nalchik 71.49 311⇑ *i*P **P** **14 57 30.6 +1.0**
NCK pmax pmax
comp=Z,20nm,0.6s
NCK MLR MLR
comp=Z,1μm,16.0s
GUDG Gudauri 71.54 310 P **P** **14 57 31.8 +1.7**
SCO Scoresbysund 71.67 355 *i* P **P** **14 57 30.8 +0.7**
comp=Z,10.0nm,0.8s
SCO Scoresbysund 71.67 355 *e*P **P** **14 57 30.8 +0.7**
SCO pmax pmax
comp=Z,10.0nm,0.8s
ZEI Tsey 71.70 310 *e*P **P** **14 57 30.1 -1.0**
ZEI *e* 14 57 42.0
ZEI pmax pmax
comp=Z,66nm,0.6s
ZEI MLR MLR
comp=Z,3μm,13.0s
KIV Kislovodsk 71.77 312 *i* P **P** **14 57 32.5 +1.2**
SNR=38
KIV Kislovodsk 71.77 312 *i* P **P** **14 57 33.3 +2.0**
KIV pmax pmax
comp=Z,194nm,0.9s
KIV Kislovodsk 71.77 312 *e*P **P** **14 57 31.6 +0.3**
comp=Z,204nm,0.9s
KIV LR LR
comp=Z,1μm,18.0s
KBZ Khabaz 71.77 311 P **P** **14 57 32.3 +1.1**
comp=Z,42nm,0.8s,baz=69,slow=4.6,SNR=84
TBLG Delisi 71.79 309 P **P** **14 57 31.7 +0.3**
TBLG Delisi 71.79 309 *e*P **P** **14 57 31.7 +0.3**
PAHR Pah Rah Range 71.86 54 *e*P **P** **14 57 32.5 +0.5**
comp=Z,34nm,1.3s
MFID Camas Ranch 71.96 49 *e*P **P** **14 57 30.5 -2.0**
comp=Z,78nm,1.8s
ONI Oni 72.09 310 *e*P **P** **14 57 34.7 +1.5**
CMB Columbia Colle 72.14 56 *e*P **P** **14 57 34.4 +0.8**
CMB pmax pmax
comp=Z,39nm,1.3s
CMB Columbia Colle 72.14 56 *e*P **P** **14 57 34.4 +0.8**
comp=Z,39nm,1.3s
NEY Neytrino 72.15 311⇑ *i*P **P** **14 57 35.7 +1.9**
NEY pmax pmax
comp=Z,5.0nm,0.7s
NEY MLR MLR
comp=Z,1μm,15.0s
FFC Flin Flon 72.27 34 *e*P **P** **14 57 34.1 +0.1**
FFC pmax pmax
comp=Z,61nm,0.8s
FFC MLR MLR
comp=Z,700nm,19.0s
FFC Flin Flon 72.27 34 *e*P **P** **14 57 34.1 +0.1**
comp=Z,61nm,0.8s
FFC LR LR
comp=Z,700nm,19.0s
HRY Holter Researc 72.35 44 *e*P **P** **14 57 34.4 -0.4**
WAKR Walker 72.50 55 *e*P **P** **14 57 37.0 +1.1**
LRM Limekiln Ridge 72.53 45 *e*P **P** **14 57 36.6 +0.6**
BANOM Banah 72.60 290 *i* P **P** **14 57 37.2 +0.7**
SNR=6.8
BANOM Banah 72.60 290 P **P** **14 57 37.4 +0.9**
SNR=6.8
BANOM P **P** **14 57 37.4 +0.9**
BANOM Banah 72.60 290 P **P** **14 57 37.4 +0.9**
SNR=6.8
GNI Garni 72.68 307 P **P** **14 57 38.3 +1.3**
comp=Z,7.7nm,0.4s,baz=187,slow=11,SNR=4.6
GNI Garni 72.68 307*c i*P **P** **14 57 39.5 +2.5**
GNI pmax pmax
comp=Z,107nm,1.2s
GNI MLR MLR
comp=Z,3μm,17.0s
GNI Garni 72.68 307 *e*P **P** **14 57 37.8 +0.8**
comp=Z,56nm,0.9s
GNI LR LR
comp=Z,2μm,20.0s
FCC Fort Churchill 72.69 27 *e*P **P** **14 57 36.2 -0.2**
FCC pmax pmax
comp=Z,43nm,0.6s
FCC MLR MLR
comp=Z,2μm,20.0s
FCC Fort Churchill 72.69 27 *e*P **P** **14 57 36.2 -0.2**
comp=Z,43nm,0.6s
FCC LR LR
comp=Z,2μm,20.0s
DLMT Dillon 72.72 46 *e*P **P** **14 57 37.5 +0.5**
comp=Z,29nm,1.0s

HLID	Hailey	72.72	48	P	P	14 57 37.8 +0.7
	baz=306,SNR=9.9					
HLID	Hailey	72.72	48	eP	P	14 57 38.2 +1.1
	comp=Z,8.4nm,0.9s					
AKH	Akhalkalaki	72.74	309⇑	iP	P	14 57 39.4 +2.1
AKH	Akhalkalaki	72.74	309	P	P	14 57 38.9 +1.6
AKH	Akhalkalaki	72.74	309	eP	P	14 57 38.9 +1.6
CAN	Canberra	72.77	175	PFAKE		14 57 50.0 +13
CAN				LR	LR	
	comp=Z,1μm,19.0s					
IZAR	Zarasai	72.79	328	eP	P	14 57 37.7 +0.6
IZAR				IAmb	IAmb	14 57 38.8
	comp=Z,21nm,0.7s					
BMN	Battle Mountai	72.81	52	eP	P	14 57 38.0 +0.3
BMN				pmax	pmax	
	comp=Z,17nm,0.9s					
BMN	Battle Mountai	72.81	52	eP	P	14 57 38.0 +0.3
	comp=Z,18nm,0.9s					
CHVG	Ch'k'valeri	72.84	311⇑	iP	P	14 57 39.7 +2.1
CHVG	Ch'k'valeri	72.84	311	P	P	14 57 39.1 +1.4
IDID	Didziasalis	72.87	328	eP	P	14 57 38.2 +0.6
IDID				IAmb	IAmb	14 57 40.1
	comp=Z,25nm,0.7s					
MCMT	McKenzie Canyo	72.89	46	eP	P	14 57 38.2 0.0
ILULI	Ilulissat	72.91	5⇓	iP	P	14 57 37.8 +0.3
	comp=Z,40nm,0.8s					
	comp=Z,1μm,15.0s					
ILULI	Ilulissat	72.91	5⇓	iP	P	14 57 37.8 +0.3
ILULI				pmax	pmax	
	comp=Z,40nm,0.8s					
ILULI				MLR	MLR	
	comp=Z,1μm,15.0s					
MICGM	Minsk	72.92	327	eP	P	14 57 39.0 +1.1
MICGM				eS	SKiKP	15 07 06.0 -2.7
MICGM				eSS	SS	15 13 08.0 +86
MICGM				eLQ	LQ	15 23 24.0
MICGM				LQM		15 27 54.0
	comp=N,4.1nm,14.0s					
MICGM				LQM		15 27 54.0
	comp=E,5.4nm,14.0s					
MICGM				eLR	LR	15 28 20.0
MICGM				LRM	MLR	15 32 36.0
	comp=Z,4.1nm,14.0s					
MICGM				LRM	MLR	15 32 40.0
	comp=N,2.7nm,14.0s					
MICGM				LRM	MLR	15 33 06.0
	comp=E,5.4nm,14.0s					
MNK	Minsk	72.92	327	eP	P	14 57 39.0 +1.1
MNK				eS	SKiKP	15 07 06.0 -2.7
MNK				MLR	MLR	
	comp=Z,4μm,14.0s					
MNK				MLR	MLR	
	comp=N,3μm,14.0s					
MNK				MLR	MLR	
	comp=E,5μm,14.0s					
ISAL	Salakas	72.96	328	eP	P	14 57 38.8 +0.7
ISAL				IAmb	IAmb	14 57 40.0
	comp=Z,40nm,0.8s					
BOZ	Bozeman (W)	73.09	45	P	P	14 57 40.1 +0.8
	baz=307,SNR=47					
BOZ	Bozeman (W)	73.09	45	eP	P	14 57 39.8 +0.5
BOZ				pmax	pmax	
	comp=Z,24nm,0.8s					
BOZ	Bozeman (W)	73.09	45	eP	P	14 57 39.8 +0.5
	comp=Z,24nm,0.8s					
NACGM	Naroch	73.13	327	eP	P	14 57 38.0 -1.1
NACGM				PM		14 57 40.0
	comp=Z,0.3nm,0.9s					
NACGM				eLR	LR	15 26 27.0
UOSS	Minazif	73.22	289	eP	P	14 57 40.4 +0.3
	comp=Z,3.3nm,0.9s					
UOSS				LR	LR	
	comp=Z,900nm,21.0s					
NV01	Mina Array Sit	73.27	54	eP	P	14 57 40.9 +0.4
NVAR	Mina Array Bea	73.27	54	P	P	14 57 42.2 +1.7
	comp=Z,5.8nm,0.7s,baz=297,slow=6.4,SNR=31					
HATD	Hatta, Dubai	73.34	289	iP	P	14 57 41.8 +0.9
	SNR=5.7					
NV11	Mina Array Sit	73.36	54	eP	P	14 57 41.0 -0.1
	comp=Z,56nm,1.6s					
ASHO	Ashiyiah	73.47	289	iP	P	14 57 42.4 +0.7
	SNR=5.1					
QLMT	Earthquake Lak	73.70	46	eP	P	14 57 43.5 +0.5
SOC	Sochi	73.73	313d	iP	P	14 57 43.1 +0.2
SOC				i *SP	sP	14 57 55.3 +0.2
SOC				ePPP	PPP	15 02 17.5
SOC				eS	S	15 07 12.2 +0.3
SOC				e		15 07 46.6
SOC				eSS	SS	15 11 53.7 -1.2
SOC				pmax	pmax	
	comp=Z,38nm,0.8s					
SOC				MLR	MLR	
	comp=Z,2μm,16.0s					
FAQ	Al Faqa, Dubai	73.79	289	P	P	14 57 43.8 +0.3
ELK	Elko	73.86	51	eP	P	14 57 45.2 +1.2
ELK				pmax	pmax	
	comp=Z,17nm,1.4s					
ELK	Elko	73.86	51	eP	P	14 57 45.2 +1.2
	comp=Z,17nm,1.4s					
YHH	Holmes Hill	74.05	45	eP	P	14 57 46.0 +0.9
NC405	NORSAR Array S	74.06	338	eP	P	14 57 44.9 +0.4
YMR	Madison River	74.06	46	eP	P	14 57 46.2 +1.1
	comp=Z,25nm,0.8s					
NC303	NORSAR Array S	74.07	338	eP	P	14 57 44.8 +0.3
GCMT	Greycliff	74.10	44	eP	P	14 57 45.8 +0.6
NC204	NORSAR Array S	74.21	338	eP	P	14 57 45.5 +0.1
HFS	Hagfors	74.22	336	P	P	14 57 45.6 +0.2
	comp=Z,27nm,0.6s,baz=56,slow=5.6,SNR=78					
HFS	Hagfors	74.22	336	P	P	14 57 45.6 +0.2
HFS				pmax	pmax	
	comp=Z,24nm,0.6s					
MCID	Moose Creek	74.22	46	eP	P	14 57 47.9 +1.9
NB201	NORSAR Array S	74.23	338	eP	P	14 57 45.6 +0.1
NB2	NORSAR Subarra	74.26	338	P	P	14 57 46.0 +0.3
	comp=Z,23nm,0.6s,baz=40,slow=6.2					
NB2	NORSAR Subarra	74.26	338	P	P	14 57 46.0 +0.3
	baz=40,slow=6.2					
NOA	NORSAR Array B	74.26	338	P	P	14 57 46.0 +0.3
	comp=Z,26nm,0.6s,baz=39,slow=5.8,SNR=123					
NOA				LR	LR	15 35 17.0
	comp=Z,3μm,19.9s,baz=55,slow=40					
NOA	NORSAR Array B	74.26	338	P	P	14 57 46.0 +0.3
NOA				pmax	pmax	
	comp=Z,24nm,0.6s					
NOA				MLR	MLR	
	comp=Z,3μm,19.9s					
YFT	Old Faithful	74.26	46	eP	P	14 57 47.9 +1.6
	comp=Z,42nm,1.1s					
ANN	Anapa	74.31	315d	iP	P	14 57 46.3 +0.1
ANN				i S	S	15 07 18.6 +0.3
ANN				i		15 07 47.8
ANN				pmax	pmax	
	comp=Z,41nm,0.9s					
ANN				MLR	MLR	
	comp=Z,2μm,16.0s					
NBO02	NORSAR Array S	74.36	338	eP	P	14 57 46.6 +0.3
NWAO	Narrogin (SRO)	74.36	203	LR	LR	15 28 29.6
	comp=Z,242nm,21.2s,slow=34					
NBO00	NORSAR Array S	74.40	338	eP	P	14 57 46.6 +0.2
LKWY	Lake	74.44	45	eP	P	14 57 49.5 +2.2
LKWY				pmax	pmax	
	comp=Z,24nm,1.0s					
LKWY	Lake	74.44	45	eP	P	14 57 49.5 +2.2
	comp=Z,24nm,1.0s					
H17A	Grant Village	74.45	46	P	P	14 57 49.7 +2.3
	baz=308,SNR=41					
H17A	Grant Village	74.45	46	eP	P	14 57 49.8 +2.4
	comp=Z,40nm,0.8s					
NAO01	NORSAR Array S	74.52	338	eP	P	14 57 47.2 0.0
IMW	Indian Meadow	74.54	46	eP	P	14 57 49.4 +1.4
	comp=Z,34nm,0.8s					
CWC	Cottonwood Cre	74.56	56	P	P	14 57 49.1 +1.1
	baz=306					
FLWY	Flagg Ranch	74.57	46	eP	P	14 57 49.7 +1.7
	comp=Z,84nm,1.6s					
GRAC	Grapevine Rang	74.70	55	P	P	14 57 49.9 +1.2
	baz=306					
RLMT	Red Lodge	74.74	45	P	P	14 57 50.1 +1.2
	baz=308,SNR=9.3					
RLMT	Red Lodge	74.74	45	eP	P	14 57 49.7 +0.7
	comp=Z,67nm,1.8s					
MOOW	Moose Ponds	74.74	46	eP	P	14 57 50.4 +1.3
	comp=Z,20nm,0.9s					
HVU	Hansel Valley	74.75	49	eP	P	14 57 50.7 +1.7
HVU				pmax	pmax	
	comp=Z,14nm,0.9s					
HVU				MLR	MLR	
	comp=Z,600nm,20.0s					
HVU	Hansel Valley	74.75	49	eP	P	14 57 50.7 +1.7
	comp=Z,14nm,0.9s					
HVU				LR	LR	
	comp=Z,600nm,20.0s					
AKASG	Malin Array Be	74.83	323	P	P	14 57 49.3 +0.2
	comp=Z,37nm,0.7s,baz=45,slow=6.0,SNR=169					
AKASG				LR	LR	15 34 16.4
	comp=Z,3μm,18.1s,baz=50,slow=39					
AKBB	Malin Array Si	74.83	323	eP	P	14 57 49.2 +0.1
AKBB				pmax	pmax	
	comp=Z,42nm,0.7s					
AKBB				MLR	MLR	
	comp=Z,4μm,18.0s					
AKBB	Malin Array Si	74.83	323	eP	P	14 57 49.2 +0.1
	comp=Z,42nm,0.7s					
AKBB				LR	LR	
	comp=Z,4μm,18.0s					
KIEV	Kiev	74.85	323d	iP	P	14 57 49.4 +0.2
KIEV				pmax	pmax	
	comp=Z,40nm,0.7s					
KIEV				MLR	MLR	
	comp=Z,3μm,18.0s					
KIEV	Kiev	74.85	323	eP	P	14 57 49.2 +0.1
	comp=Z,41nm,0.7s					
KIEV				LR	LR	
	comp=Z,4μm,18.0s					
AK11	Malin Array Si	74.88	323	eP	P	14 57 49.2 -0.2
LOHW	Long Hollow	74.91	46	eP	P	14 57 50.8 +0.8
	comp=Z,9.9nm,0.8s					
SNOW	Snow King Moun	74.91	47	eP	P	14 57 50.8 +0.7
	comp=Z,19nm,0.8s					
REDW	Red Top Meadow	74.92	47	eP	P	14 57 51.0 +0.9
	comp=Z,20nm,0.9s					
R11A	Troy Canyon, C	75.06	53	P	P	14 57 51.9 +1.0
	baz=306,SNR=6.4					
R11A	Troy Canyon, C	75.06	53	eP	P	14 57 51.4 +0.5
	comp=Z,22nm,1.2s					
BGU	Big Grassy Mou	75.11	50	eP	P	14 57 52.0 +0.9
	comp=Z,55nm,1.9s					
SFJD	Kangerlussuaq	75.12	6⇓	iP	P	14 57 50.7 +0.2
	comp=Z,43nm,0.7s					
	comp=Z,1μm,18.0s					
SFJD	Kangerlussuaq	75.12	6⇓	iP	P	14 57 50.7 +0.2
SFJD				pmax	pmax	
	comp=Z,43nm,0.7s					
SFJD				MLR	MLR	
	comp=Z,1μm,18.0s					
SFJD	Kangerlussuaq	75.12	6	eP	P	14 57 50.8 +0.2
	comp=Z,50nm,0.8s					
SFJD				LR	LR	
	comp=Z,1μm,20.0s					
AHID	Auburn Hatcher	75.14	47	eP	P	14 57 51.9 +0.6
	comp=Z,17nm,0.8s					
AHID				LR	LR	
	comp=Z,700nm,20.0s					
MPMC	Manual Prospec	75.17	56	P	P	14 57 52.6 +1.0
	baz=306,SNR=6.0					
SPUT	South Promonto	75.22	49	eP	P	14 57 50.4 -1.4
	comp=Z,33nm,1.3s					
SUW	Suwalki	75.27	328	eP	P	14 57 51.9 +0.3
SUW	Suwalki	75.27	328	eP	P	14 57 51.9 +0.3
DGMT	Dagmar	75.31	40	P	P	14 57 52.2 +0.2
	baz=311					
DGMT	Dagmar	75.31	40	eP	P	14 57 52.2 +0.2
LRMC	Laurel Mtn Rad	75.38	56	P	P	14 57 54.0 +1.3
	baz=306					
LAO	LASA Array	75.41	42	eP	P	14 57 49.4 -3.2
TPNV	Topopah Spring	75.45	55	P	P	14 57 54.4 +1.2
	baz=306,SNR=6.8					
TPNV	Topopah Spring	75.45	55	eP	P	14 57 53.4 +0.2
TPNV				pmax	pmax	
	comp=Z,25nm,1.0s					
TPNV				MLR	MLR	
	comp=Z,900nm,20.0s					
TPNV	Topopah Spring	75.45	55	eP	P	14 57 53.4 +0.2
	comp=Z,25nm,1.0s					
TPNV				LR	LR	
	comp=Z,900nm,20.0s					
EDW2	Edwards Air Fo	75.52	57	P	P	14 57 54.5 +1.0
	baz=306,SNR=6.6					
HWUT	Hardware Ranch	75.57	48	eP	P	14 57 54.7 +0.9
	comp=Z,34nm,1.3s					
DUG	Dugway, Tooele	75.68	50	P	P	14 57 55.6 +1.2
	baz=307,SNR=13					
DUG	Dugway, Tooele	75.68	50	eP	P	14 57 54.9 +0.5
DUG				pmax	pmax	
	comp=Z,14nm,0.8s					
DUG				MLR	MLR	
	comp=Z,600nm,20.0s					
DUG	Dugway, Tooele	75.68	50	eP	P	14 57 54.9 +0.5
	comp=Z,14nm,0.8s					
DUG				LR	LR	
	comp=Z,600nm,20.0s					
PASC	Pasadena Art C	75.81	58	PFAKE		14 58 10.0 +15
PASC				LR	LR	
	comp=Z,1μm,21.0s					
KONO	Kongsberg	75.86	338	PFAKE		14 58 10.0 +15
KONO				LR	LR	
	comp=Z,3μm,19.0s					
TCUT	Toone Canyon	75.96	49	eP	P	14 57 56.8 +0.6
	comp=Z,36nm,1.0s					
BW06	Boulder Array	76.03	47	P	P	14 57 56.9 +0.4
	baz=309,SNR=20					
BW06	Boulder Array	76.03	47	eP	P	14 57 56.6 +0.1
	comp=Z,14nm,0.7s					
PD31	Pinedale Array	76.03	47	eP	P	14 57 56.6 +0.1
PDAR	Pinedale Array	76.03	47	P	P	14 57 56.6 +0.1
	comp=Z,13nm,0.6s,baz=268,slow=1.8,SNR=91					
PSUT	Pine Spring	76.04	52	eP	P	14 57 57.0 +0.5
	comp=Z,72nm,2.0s					
KLNR	Kaliningrad	76.06	330	eP	P	14 57 55.9 -0.1
KLNR				pmax	pmax	
	comp=Z,111nm,0.7s					
SIM	Simferopol'	76.06	316d	iP	P	14 57 56.6 +0.3
SIM				i		14 58 09.0
SIM				ePPP	PPP	15 02 41.0
SIM				i S	S	15 07 39.9 +2.1
SIM				pmax	pmax	
	comp=Z,41nm,0.8s					
SIM				pmax	pmax	
	comp=Z,90nm,11.4s					
SIM				MLR	MLR	
	comp=E,940nm,13.0s					
GSC	Goldstone, Bar	76.06	56	P	P	14 57 57.5 +0.9
	baz=306					
A26A	Wade Farm, Ken	76.10	38	P	P	14 57 57.0 +0.5
	baz=312,SNR=7.9					
JLU	Jordanelle	76.25	49	eP	P	14 57 58.3 +0.5
	comp=E,12nm,0.8s					
JLU				LR	LR	
	comp=Z,800nm,18.0s					
NLU	North Lily Min	76.27	50	eP	P	14 57 58.5 +0.6
	comp=Z,12nm,1.0s					
SHPR	Sheep Range	76.42	54	eP	P	14 58 00.0 +1.3
	comp=Z,40nm,1.7s					
A27A	Ledoux Ranch,	76.45	38	P	P	14 57 59.4 +0.9
	baz=312					
D25A	Fairfield	76.62	40	P	P	14 58 00.1 +0.6
	baz=312,SNR=7.0					
C26A	Wahner Farm, P	76.79	39	P	P	14 58 00.7 +0.3
	baz=312,SNR=6.1					
MURC	Murrieta	76.81	58	P	P	14 58 01.8 +1.0
	baz=306					
A28A	Rude Farm, Bot	76.95	37	P	P	14 58 02.1 +0.7
	baz=313,SNR=16					
SORM	Soroca	76.98	322⇓	iP	P	14 58 02.1 +0.7
E25A	Miller Ranch,	77.00	41	P	P	14 58 02.3 +0.6
	baz=312,SNR=8.2					
MSU	Marysvale	77.09	51	eP	P	14 58 03.0 +0.4
MSU	Marysvale	77.09	51	eP	P	14 58 03.0 +0.4
GMRC	Granite Mounta	77.13	56	P	P	14 58 04.0 +1.3
	baz=307					
D26A	Manning	77.15	40	P	P	14 58 02.6 +0.1
	baz=312,SNR=7.2					
C27A	Sayler Ranch,	77.16	39	P	P	14 58 02.9 +0.4
	baz=312					
TMUT	Trail Mountain	77.21	50	eP	P	14 58 03.8 +0.5
	comp=Z,8.2nm,0.8s					
TMUT				LR	LR	
	comp=Z,600nm,18.0s					
B28A	Dugan Ranch, T	77.22	38	P	P	14 58 03.4 +0.6
	baz=313,SNR=16					
PFO	Pinyon Flats O	77.30	57	P	P	14 58 04.0 +0.3
	comp=Z,2.1nm,0.7s,baz=330,slow=4.3,SNR=5.7					
PFO	Pinyon Flats O	77.30	57	P	P	14 58 04.0 +0.3
PFO				pmax	pmax	
	comp=Z,2.0nm,0.7s					
PFO	Pinyon Flats O	77.30	57	eP	P	14 58 04.2 +0.5
	comp=Z,23nm,1.3s					
PFO				LR	LR	
	comp=Z,1μm,18.0s					
LCMT	Little Creek M	77.34	53	eP	P	14 58 04.7 +0.8
	comp=Z,21nm,1.1s					
F25A	Bowman	77.36	41	P	P	14 58 04.8 +1.1
	baz=312					
BELC	Belle Mtn. Jos	77.37	57	P	P	14 58 04.2 +0.1
	baz=307					
MTPU	Mount Pierson	77.38	52	eP	P	14 58 05.4 +1.1
	comp=Z,10nm,0.8s					
P17A	Butcher Ranch,	77.38	50	eP	P	14 58 04.8 +0.7
	comp=Z,113nm,1.8s					
A29A	Manning Farm,	77.44	37	P	P	14 58 04.3 +0.3
	baz=314,SNR=7.0					
Q16A	Castle Valley	77.46	50	eP	P	14 58 05.4 +0.8
	comp=Z,29nm,1.2s					
KIS	Kishinev	77.51	320	eP	P	14 58 05.0 +0.6
KIS	Kishinev	77.51	320	ePcP	PcP	14 58 19.0 +4.3
KIS	Kishinev	77.51	320	ePP	PP	15 01 01.0 +2.3
KIS	Kishinev	77.51	320	ePsP		15 03 50.0
KIS				eS	S	15 07 54.0 +0.4
KIS				LRM	MLR	15 36 18.0
	comp=Z,2μm,16.0s					
KIS	Kishinev	77.51	320	eP	P	14 58 05.0 +0.6
KIS				i		14 58 19.0
KIS				e		15 01 01.0
KIS				eS	S	15 07 54.0 +0.4
KIS				e		15 08 02.0
KIS				e		15 08 25.0
KIS				MLR	MLR	
	comp=Z,2μm,15.0s					
KIS				MLR	MLR	
	comp=N,2μm,14.0s					
KIS				MLR	MLR	
	comp=E,2μm,16.0s					
KIS				MLR	MLR	
	comp=Z,2μm,16.0s					
D27A	Center	77.56	39	P	P	14 58 04.8 0.0
	baz=313					
P18A	Preston Nutter	77.58	49	eP	P	14 58 06.2 +0.8
	comp=Z,14nm,0.8s					
P18A				LR	LR	
	comp=Z,800nm,20.0s					
KNB	Kanab	77.61	53	eP	P	14 58 07.1 +1.7
KNB				pmax	pmax	
	comp=Z,56nm,1.5s					
KNB	Kanab	77.61	53	eP	P	14 58 07.1 +1.7
	comp=Z,56nm,1.5s					
OUZ	Omahuta	77.68	155	eP	P	14 58 07.1 +1.8
	comp=Z,27nm,1.3s					
OUZ				LR	LR	
	comp=Z,1μm,18.0s					
BSD	Bornholm Skovb	77.69	333⇓	iP	P	14 58 05.4 +0.1
	comp=Z,43nm,0.9s					
	comp=Z,3μm,15.0s					
BSD	Bornholm Skovb	77.69	333⇓	iP	P	14 58 05.4 +0.1
BSD				pmax	pmax	
	comp=Z,43nm,0.9s					
BSD				MLR	MLR	
	comp=Z,3μm,15.0s					
B29A	Wagenman Farm,	77.70	37	P	P	14 58 05.8 +0.3
	baz=314,SNR=8.1					
SRU	San Rafael Swe	77.74	50	eP	P	14 58 06.6 +0.5
SRU				pmax	pmax	
	comp=Z,27nm,0.7s					
SRU	San Rafael Swe	77.74	50	eP	P	14 58 06.5 +0.5
	comp=Z,27nm,0.7s					
MONP2	Monument Peak	77.75	58	P	P	14 58 06.7 +0.4
	baz=307					
F26A	Lodgepole	77.82	41	P	P	14 58 06.9 +0.7
	baz=312,SNR=7.7					
K22A	Casper	77.83	45	P	P	14 58 06.8 +0.2
	baz=310,SNR=10.0					
K22A	Casper	77.83	45	eP	P	14 58 06.8 +0.2
	comp=Z,30nm,1.0s					
K22A				LR	LR	
	comp=Z,600nm,20.0s					
IRM	Iron Mountain	77.84	56	P	P	14 58 07.6 +1.0
	baz=307					
BEL	Belsk	77.84	328	eP	P	14 58 07.5 +1.3
BEL	Belsk	77.84	328	eP	P	14 58 07.5 +1.3
LVV	L'vov	77.87	325	eP	P	14 58 06.3 -0.1
LVV				e		15 01 00.7
LVV				e		15 02 49.9
LVV				eS	S	15 07 58.3 +1.0
LVV				e		15 08 41.1
LVV				e		15 12 49.5
LVV				e		15 16 15.5
LVV				MLR	MLR	
	comp=N,2μm,17.0s					
LVV				MLR	MLR	
	comp=E,1μm,17.0s					
LVV				MLR	MLR	
	comp=Z,2μm,17.0s					
A30A	Hoffart Farm,	77.87	36	P	P	14 58 06.7 +0.3
	baz=314,SNR=23					
D28A	Regan	77.98	39	P	P	14 58 07.6 +0.5
	baz=313,SNR=6.2					
E27A	Carson	78.00	40	P	P	14 58 07.7 +0.4
	baz=313					
MDND	Maddock	78.00	38	P	P	14 58 07.6 +0.4
	baz=314,SNR=9.9					
MDND	Maddock	78.00	38	eP	P	14 58 07.3 +0.1
	comp=Z,64nm,1.0s					
ULM	Lac du Bonnet	78.06	34	P	P	14 58 07.5 +0.1
	comp=Z,17nm,0.8s,baz=310,slow=6.2,SNR=16					
ULM				LR	LR	15 37 47.3
	comp=Z,278nm,19.0s,baz=352,slow=40					
ULM	Lac du Bonnet	78.06	34	eP	P	14 58 07.0 -0.5
	comp=Z,26nm,0.8s					
W13A	Hualapai Mount	78.10	55	eP	P	14 58 08.5 +0.3
	comp=Z,24nm,1.7s					
COP	Copenhagen	78.13	334	iP	P	14 58 07.9 +0.3
	comp=Z,55nm,0.7s					
	comp=Z,1μm,22.0s					
COP	Copenhagen	78.13	334	iP	P	14 58 07.9 +0.3
COP				pmax	pmax	
	comp=Z,55nm,0.7s					
COP				MLR	MLR	
	comp=Z,2μm,22.0s					
H25A	Fruitdale	78.15	42	P	P	14 58 08.4 +0.3
	baz=312					
LEOM	Leova	78.16	320⇑	iP	P	14 58 09.2 +1.2
B30A	Myrvik Farm, E	78.20	37	P	P	14 58 08.4 +0.2
	baz=314,SNR=25					
G26A	Maurine	78.23	41	P	P	14 58 09.2 +0.6
	baz=312,SNR=15					
RSSD	Black Hills	78.25	43	P	P	14 58 09.1 +0.2
	baz=312					
RSSD	Black Hills	78.25	43	eP	P	14 58 08.7 -0.2
RSSD				pmax	pmax	
	comp=Z,23nm,0.8s					
RSSD	Black Hills	78.25	43	eP	P	14 58 08.7 -0.2
	comp=Z,23nm,0.8s					
U15A	North Rim	78.30	53	eP	P	14 58 09.9 +0.5
	comp=Z,96nm,1.9s					
E28A	Huff	78.34	39	P	P	14 58 09.1 0.0
	baz=313					
O20A	White River Ci	78.46	48	P	P	14 58 10.5 +0.4
	baz=310,SNR=5.9					
O20A	White River Ci	78.46	48	eP	P	14 58 10.5 +0.4
	comp=Z,20nm,1.0s					
I25A	Rochford	78.48	43	P	P	14 58 10.1 0.0
	baz=312,SNR=8.4					
G27A	Dupree	78.52	41	P	P	14 58 10.4 +0.3
	baz=313,SNR=8.2					
B31A	Greenbush Farm	78.54	37	P	P	14 58 10.6 +0.4
	baz=315,SNR=17					
PRAR	RASCA	78.55	322⇓	iP	P	14 58 11.2 +1.0
H26A	Fairpoint	78.59	42	P	P	14 58 10.9 +0.4
	baz=312,SNR=6.9					
MUD	Monsted U'grnd	78.59	336	iP	P	14 58 11.2 +1.0
	comp=Z,37nm,0.9s					
	comp=Z,3μm,18.0s					
MUD	Monsted U'grnd	78.59	336	iP	P	14 58 11.2 +1.0
MUD				pmax	pmax	
	comp=Z,37nm,0.9s					
MUD				MLR	MLR	
	comp=Z,3μm,18.0s					
KWP	Kalwaria Pacla	78.60	325⇑	iP	P	14 58 10.8 +0.3
GLA	Glamis	78.72	57	PFAKE		14 58 20.0 +8.5
GLA				LR	LR	
	comp=Z,1μm,18.0s					

A32A	**Rocking H Ranc**	78.73	36	P		P	14 58 11.1 -0.1
	baz=316,SNR=9.8						
BUR08	**Bucovina Ar. S**	78.85	323		eP	P	14 58 12.8 +0.8
BURAR	**Bucovina Array**	78.86	323	⇑	iP	P	14 58 12.6 +0.5
D30A	**Buchanan**	78.93	38	P		P	14 58 12.7 +0.4
	baz=314						
TESR	**Tescani**	78.93	321	⇑	iP	P	14 58 13.6 +1.3
C31A	**Landman Farms,**	78.94	37	P		P	14 58 12.6 +0.2
	baz=315,SNR=14						
H27A	**Howes**	78.95	41	P		P	14 58 13.2 +0.7
	baz=313,SNR=5.8						
PV09	**Paradox Valley**	78.97	50		eP	P	14 58 13.1 0.0
B32A	**Ashes, Strandq**	79.08	36	P		P	14 58 12.8 -0.3
	baz=316,SNR=29						
PV10	**Paradox Valley**	79.10	50		eP	P	14 58 14.4 +0.7
PV04	**Paradox Valley**	79.17	50		eP	P	14 58 14.2 +0.2
RAR	**Rarotonga**	79.17	127	LR		LR	15 32 26.1
	comp=Z,506nm,18.4s,baz=270,slow=35						
A33A	**Warroad**	79.22	35	P		P	14 58 13.8 -0.1
	baz=316,SNR=23						
ODBI	**Odobesti**	79.25	320	⇑	iP	P	14 58 14.1 +0.1
PV05	**Paradox Valley**	79.25	50		eP	P	14 58 15.2 +0.7
E30A	**Jud**	79.28	39	P		P	14 58 14.4 +0.2
	baz=314,SNR=6.0						
F29A	**Eureka**	79.28	39	P		P	14 58 14.5 +0.2
	baz=314						
J26A	**Sides Ranch, S**	79.30	43	P		P	14 58 14.8 +0.2
	baz=312						
N23A	**Red Feather La**	79.30	46	P		P	14 58 15.6 +0.8
	baz=311,SNR=20						
N23A	**Red Feather La**	79.30	46		eP	P	14 58 15.2 +0.4
	comp=Z,32nm,1.0s						
N23A				LR		LR	
	comp=Z,700nm,20.0s						
VRI	**Vrincioaia**	79.34	321	⇑	iP	P	14 58 16.1 +1.5
Y14A	**Wickenburg**	79.38	55		eP	P	14 58 15.6 +0.5
	comp=Z,141nm,1.7s						
PLOR	**Plostina**	79.39	321	⇓	iP	P	14 58 16.7 +1.8
STHS	**Stebnicka Huta**	79.42	326		eP	P	14 58 16.4 +1.5
STHS				pmax		pmax	
	comp=Z,30nm,0.8s						
STHS	**Stebnicka Huta**	79.42	326		eP	P	14 58 16.4 +1.5
STHS					ePP	PP	15 01 11.8 -2.8
TIRR	**Tirgusor**	79.44	319	⇓	iP	P	14 58 15.8 +0.6
TIRR	**Tirgusor**	79.44	319		eP	P	14 58 15.7 +0.6
TIRR				pmax		pmax	
	comp=Z,13nm,1.0s						
TIRR				MLR		MLR	
	comp=Z,2μm,18.0s						
TIRR	**Tirgusor**	79.44	319		eP	P	14 58 15.7 +0.6
	comp=Z,13nm,1.0s						
TIRR				LR		LR	
	comp=Z,2μm,18.0s						
WUAZ	**Wupatki**	79.45	53	P		P	14 58 17.0 +1.4
	baz=309,SNR=7.2						
WUAZ	**Wupatki**	79.45	53		eP	P	14 58 16.5 +0.9
	comp=Z,18nm,1.0s						
OJC	**Ojcow**	79.46	327		eP	P	14 58 16.1 +1.0
OJC	**Ojcow**	79.46	327		eP	P	14 58 15.6 +0.5
OJC				pmax		pmax	
	comp=Z,56nm,0.8s						
OJC	**Ojcow**	79.46	327		eP	P	14 58 15.6 +0.5
	comp=Z,56nm,0.8s						
D31A	**Mcclaflin, Tow**	79.48	38	P		P	14 58 15.6 +0.3
	baz=315,SNR=5.4						
C32A	**Crookston**	79.49	36	P		P	14 58 15.4 0.0
	baz=316						
UZH	**Uzhgorod**	79.51	325		eP	P	14 58 14.8 -0.6
UZH					e		14 58 26.4
UZH					eS	S	15 08 13.2 -1.7
HARR	**Harsova**	79.53	319	⇓	iP	P	14 58 16.9 +1.3
PV01	**Paradox Valley**	79.54	50		eP	P	14 58 16.3 +0.2
113A	**Mohawk Valley,**	79.60	57		eP	P	14 58 16.4 +0.1
	comp=Z,12nm,1.1s						
113A				LR		LR	
	comp=Z,1μm,18.0s						
BMR	**Baia Mare**	79.64	324	⇓	iP	P	14 58 16.8 +0.6
ARCR	**ARCALIA**	79.65	323	⇑	iP	P	14 58 17.7 +1.4
BR131	**Keskin Array S**	79.69	313		eP	P	14 58 17.0 +0.2
BRTR	**Keskin Array B**	79.69	313		P	P	14 58 17.4 +0.5
	comp=Z,3.5nm,0.7s,baz=90,slow=4.9,SNR=20						
BRTR				LR		LR	15 36 43.2
	comp=Z,883nm,19.5s,baz=36,slow=38						
BRTR	**Keskin Array B**	79.69	313		ceP	P	14 58 17.3 +0.5
BRTR				pmax		pmax	
	comp=Z,3.0nm,0.7s						
E31A	**Nome**	79.74	38	P		P	14 58 16.7 -0.1
	baz=315,SNR=13						
TRPA	**Tarpa**	79.76	324	⇓	eP	P	14 58 17.9 +1.1
SMCO	**Snowmass**	79.82	48		eP	P	14 58 18.0 +0.2
	comp=Z,66nm,1.8s						
NIE	**Niedzica**	79.83	326		eP	P	14 58 18.7 +1.4
I28A	**Midland**	79.86	42	P		P	14 58 17.9 +0.4
	baz=313,SNR=27						
PGOR	**Pogoanele**	79.87	320	⇓	iP	P	14 58 19.6 +2.2
B34A	**Aery, Baudette**	79.89	35	P		P	14 58 17.1 -0.4
	baz=317,SNR=12						
C33A	**Trail**	79.90	36	P		P	14 58 17.5 -0.1
	baz=316,SNR=9.6						
H29A	**Onida**	79.92	41	P		P	14 58 17.9 +0.1
	baz=314						
ISR	**Istrita**	79.95	320	⇑	iP	P	14 58 19.0 +1.0
MLR	**Muntele Rosu**	80.00	321		eP	P	14 58 18.8 +0.5
MLR				pmax		pmax	
	comp=Z,27nm,1.1s						
MLR				MLR		MLR	
	comp=Z,2μm,19.0s						
MLR	**Muntele Rosu**	80.00	321		eP	P	14 58 18.8 +0.5
	comp=Z,27nm,1.1s						
MLR				LR		LR	
	comp=Z,2μm,19.0s						
MSAB	**Monastry St. A**	80.00	319	⇑	iP	P	14 58 19.9 +1.7
F31A	**Hecla**	80.06	39	P		P	14 58 18.3 -0.1
	baz=315						
ANTO	**Ankara**	80.09	313		eP	P	14 58 19.6 +0.7
ANTO				pmax		pmax	
	comp=Z,28nm,0.8s						
ANTO				MLR		MLR	
	comp=Z,1μm,21.0s						
ANTO	**Ankara**	80.09	313		eP	P	14 58 19.6 +0.7
	comp=Z,28nm,0.8s						
ANTO				LR		LR	
	comp=Z,1μm,21.0s						
X16A	**Lo Mia Camp, P**	80.10	54		eP	P	14 58 19.6 +0.5
	comp=Z,14nm,1.1s						
G30A	**Faulkton**	80.12	40	P		P	14 58 18.9 0.0
	baz=314,SNR=15						
BR231	**Keskin MP Arra**	80.12	313		eP	P	14 58 17.7 -1.3
MVCO	**Mesa Verde**	80.17	50	P		P	14 58 21.2 +1.6
	baz=310,SNR=5.4						
MVCO	**Mesa Verde**	80.17	50		eP	P	14 58 20.7 +1.2
	comp=Z,17nm,0.9s						
MVCO				LR		LR	
	comp=Z,800nm,18.0s						
ISCO	**Idaho Springs**	80.21	47	P		P	14 58 21.5 +1.7
	baz=311,SNR=11						
ISCO	**Idaho Springs**	80.21	47		eP	P	14 58 19.9 +0.1
ISCO				pmax		pmax	
	comp=Z,24nm,1.4s						
ISCO				MLR		MLR	
	comp=Z,800nm,22.0s						
ISCO	**Idaho Springs**	80.21	47		eP	P	14 58 19.9 +0.1
	comp=Z,24nm,1.4s						
ISCO				LR		LR	
	comp=Z,800nm,22.0s						
RAC	**Raciborz**	80.25	328		eP	P	14 58 20.7 +1.3
RAC				MLR		MLR	
	comp=Z,3μm,19.6s						
SECR		80.25	320	⇑	iP	P	14 58 21.0 +1.5
CJR	**Cluj-Napoca**	80.28	323	⇑	iP	P	14 58 20.4 +0.7
I29A	**Vivian Onida**	80.29	41	P		P	14 58 20.2 +0.4
	baz=314						
D33A	**AnnSam, Waubun**	80.31	37	P		P	14 58 19.6 -0.2
	baz=316						
LANS	**Liptovska Anna**	80.40	327		eP	P	14 58 21.8 +1.5
LANS					e		15 01 23.9
LANS	**Liptovska Anna**	80.40	327		eP	P	14 58 21.8 +1.5
LANS					ePP	PP	15 01 23.9 +1.2
B35A	**Bob, Littlefor**	80.40	35	P		P	14 58 20.0 -0.3
	baz=318,SNR=12						
SULR		80.41	320	⇓	iP	P	14 58 22.0 +1.7
BIGH	**Upper Bighouse**	80.43	343		eP	P	14 58 21.0 +0.8
KECS	**Kecovo**	80.44	326		eP	P	14 58 21.1 +0.6
KECS				pmax		pmax	
	comp=Z,8.0nm,0.8s						
KECS	**Kecovo**	80.44	326		eP	P	14 58 21.1 +0.6
KECS					ePP	PP	15 01 24.3 +1.2
OKC	**Ostrava-Krasne**	80.45	328	⇓	eP	P	14 58 21.6 +1.1
OKC					ex	x	14 58 34.4
OKC					eS	S	15 08 24.2 -0.6
OKC					AMS	AMS	15 36 20.0
	comp=Z,3μm,17.7s						
OKC	**Ostrava-Krasne**	80.45	328		eP	P	14 58 21.6 +1.1
OKC					e		14 58 34.4
OKC					eS	S	15 08 24.2 -0.6
OKC					MLR	MLR	
	comp=Z,3μm,17.7s						
KSP	**Ksiaz**	80.46	329		eP	P	14 58 21.5 +1.0
KSP	**Ksiaz**	80.46	329		eP	P	14 58 21.5 +1.0
VOIR		80.48	321	⇑	iP	P	14 58 22.3 +1.4
G31A	**Conde**	80.52	39	P		P	14 58 21.3 +0.3
	baz=315,SNR=7.6						
F32A	**Veblen**	80.60	38	P		P	14 58 21.3 -0.1
	baz=316,SNR=10.0						
DRGR		80.65	323	⇓	iP	P	14 58 22.6 +0.9
D34A	**Park Rapids**	80.66	36	P		P	14 58 21.6 -0.1
	baz=317,SNR=8.8						
E33A	**Westby DABS, E**	80.69	37	P		P	14 58 22.1 +0.2
	baz=316,SNR=9.1						
SUSD	**Miller**	80.70	40	P		P	14 58 22.2 +0.3
	baz=315,SNR=5.9						
ARR	**Arges**	80.74	321	⇓	iP	P	14 58 23.6 +1.4
214A	**Organ Pipe Nat**	80.74	57		eP	P	14 58 20.7 -1.7
	comp=Z,15nm,0.8s						
MORC	**Moravsky Berou**	80.75	328	⇓	iP	P	14 58 22.6 +0.4
MORC	**Moravsky Berou**	80.75	328		eP	P	14 58 22.9 +0.7
MORC				pmax		pmax	
	comp=Z,108nm,0.8s						
MORC	**Moravsky Berou**	80.75	328		eP	P	14 58 22.9 +0.7
	comp=Z,108nm,0.8s						
C35A	**Jirik Farms, M**	80.77	35	P		P	14 58 21.9 -0.4
	baz=317,SNR=12						
DPC	**Dobruska-Polom**	80.82	329		eP	P	14 58 23.8 +1.2
DPC					ePCP	PcP	14 58 27.4 -1.7
DPC					esP	sP	14 58 36.7 +1.9
DPC					ePP	PP	15 01 20.6 -5.6
DPC					eS	S	15 08 31.2 +2.4
DPC					AMS	AMS	15 35 50.0
	comp=Z,2μm,16.6s						
DPC	**Dobruska-Polom**	80.82	329		eP	P	14 58 23.8 +1.2
DPC					e		14 58 36.7
DPC					e		15 01 20.6
DPC					eS	S	15 08 31.2 +2.4
DPC					MLR	MLR	
	comp=Z,2μm,16.6s						
I30A	**Oacoma**	80.82	41	P		P	14 58 23.3 +0.6
	baz=314,SNR=9.4						
UPC	**Upice**	80.83	329	⇓	eP	P	14 58 23.6 +1.1
UPC					esP	sP	14 58 37.1 +2.3
UPC					eS	S	15 08 31.0 +2.2
UPC					AMS	AMS	15 41 50.0
	comp=Z,3μm,14.1s						
UPC	**Upice**	80.83	329		eP	P	14 58 23.6 +1.1
UPC					e		14 58 37.1
UPC					eS	S	15 08 31.0 +2.2
UPC					MLR	MLR	
	comp=Z,3μm,14.1s						
PRD	**Provadia**	80.84	318		P	P	14 58 24.6 +1.9
S22A	**4UR Ranch, Cre**	80.84	49		P	P	14 58 24.5 +1.3
	baz=311,SNR=13						
S22A	**4UR Ranch, Cre**	80.84	49		eP	P	14 58 23.6 +0.4
	comp=Z,22nm,1.2s						
KRLC	**Kraliky**	80.84	328		eP	P	14 58 23.7 +1.0
KRLC	**Kraliky**	80.84	328		eP	P	14 58 23.7 +1.0
G32A	**Webster**	80.86	39	P		P	14 58 23.5 +0.7
	baz=315,SNR=5.9						
X18A	**Snowflake**	80.98	53		eP	P	14 58 25.5 +1.6
	comp=Z,32nm,1.7s						
MVH1	**Achvaich**	81.01	343		eP	P	14 58 24.3 +1.0
F33A	**5 Mile Ranch,**	81.03	38	P		P	14 58 23.7 0.0
	baz=316,SNR=22						
Q24A	**Divide**	81.03	47	PFAKE			14 58 40.0 +16
Q24A				LR		LR	
	comp=Z,700nm,19.0s						
HIZ	**Hauiti**	81.09	156	PFAKE			14 58 40.0 +16
HIZ				LR		LR	
	comp=Z,800nm,19.0s						
LOT	**Lotru**	81.11	322	⇑	iP	P	14 58 25.2 +1.0
PSZ	**Piszkesteto**	81.12	325	⇑	iP	P	14 58 25.8 +1.6
PSZ	**Piszkesteto**	81.12	325	⇓	eP	P	14 58 25.3 +1.1
PSZ	**Piszkesteto**	81.12	325		eP	P	14 58 25.0 +0.7
PSZ				pmax		pmax	
	comp=Z,30nm,0.8s						
PSZ				MLR		MLR	
	comp=Z,2μm,21.0s						
PSZ	**Piszkesteto**	81.12	325		eP	P	14 58 24.9 +0.7
	comp=Z,30nm,0.8s						
PSZ				LR		LR	
	comp=Z,2μm,21.0s						
VYHS	**Vyhne**	81.17	326		eP	P	14 58 25.2 +0.8
VYHS				pmax		pmax	
	comp=Z,11nm,0.9s						
VYHS	**Vyhne**	81.17	326		eP	P	14 58 25.2 +0.8
VYHS					ePP	PP	15 01 29.8 +0.7
VYHS					eL	L	15 32 03.1
D35A	**Remer**	81.19	36	P		P	14 58 24.7 +0.1
	baz=317,SNR=5.3						
J30A	**Dallas**	81.20	41	P		P	14 58 24.8 +0.1
	baz=314,SNR=6.8						
DEV	**Deva**	81.21	323	⇑	iP	P	14 58 26.0 +1.4
C36A	**Pine Crest Far**	81.25	35	P		P	14 58 24.2 -0.6
	baz=318						
NRS	**Narsarsuaq**	81.28	4		iP	P	14 58 25.0 +0.4
	comp=Z,970nm,16.0s						
NRS	**Narsarsuaq**	81.28	4		eP	P	14 58 25.0 +0.4
NRS				MLR		MLR	
	comp=Z,970nm,16.0s						
BRG	**Berggiesshubel**	81.37	330		iP	P	14 58 26.0 +0.6
	comp=Z,32nm,0.9s						
BRG					iPP	PP	15 01 36.2 +5.6
	comp=Z,10nm,1.2s						
BRG					S	S	15 08 35.0 +0.6
BRG					ePKKP	PKKPdf	15 16 25.6 -22
	comp=Z,43nm,2.6s						
	comp=N,2μm,14.7s						
	comp=E,3μm,15.5s						
	comp=Z,2μm,16.4s						
BRG	**Berggiesshubel**	81.37	330		iP	P	14 58 26.0 +0.6
BRG					i		15 01 36.2
BRG					S	S	15 08 35.0 +0.6
BRG				pmax		pmax	
	comp=Z,32nm,0.9s						
BRG				pmax		pmax	
	comp=Z,10.0nm,1.2s						
BRG				pmax		pmax	
	comp=Z,43nm,2.6s						
BRG				MLR		MLR	
	comp=N,2μm,14.7s						
BRG				MLR		MLR	
	comp=E,3μm,15.5s						
BRG				MLR		MLR	
	comp=Z,2μm,16.4s						
CLL	**Collm**	81.39	331	⇓	iP	P	14 58 25.9 +0.4
	comp=Z,45nm,0.8s						
CLL					i		14 58 38.5
CLL					ePP	PP	15 01 31.0 +0.2
CLL					eS	S	15 08 34.0 -0.5
CLL					e		15 15 36.0
CLL					eSSS	SSS	15 17 18.0
CLL					eSSSS		15 19 48.0
CLL					LmV		15 41 00.0
	comp=Z,2μm,18.0s						
CLL	**Collm**	81.39	331	⇓	iP	P	14 58 25.9 +0.4
CLL					i		14 58 38.5
CLL					eS	S	15 08 34.0 -0.5
CLL				pmax		pmax	
	comp=Z,45nm,0.8s						
CLL				MLR		MLR	
	comp=Z,2μm,18.0s						
CLL	**Collm**	81.39	331		eP	P	14 58 25.5 +0.1
	comp=Z,42nm,0.7s						
CLL				LR		LR	
	comp=Z,2μm,18.0s						
PVCC	**Panska Ves**	81.39	330	⇓	eP	P	14 58 26.7 +1.2
PVCC				AMS		AMS	15 38 50.0
	comp=Z,2μm,16.5s						
PVCC	**Panska Ves**	81.39	330		eP	P	14 58 26.7 +1.2
PVCC				MLR		MLR	
	comp=Z,2μm,16.5s						
H32A	**Carlson Farm,**	81.42	39	P		P	14 58 25.5 -0.3
	baz=316,SNR=6.4						
G33A	**Ortonville**	81.42	38	P		P	14 58 26.1 +0.3
	baz=316,SNR=18						
VRAC	**Vranov**	81.51	328	P		P	14 58 27.4 +1.2
	comp=Z,33nm,0.7s,baz=43,slow=4.2,SNR=63						
VRAC	**Vranov**	81.51	328	⇓	iP	P	14 58 27.0 +0.8
SIRR	**Siria**	81.53	323	⇓	iP	P	14 58 27.9 +1.6
D36A	**Goodland**	81.53	35	P		P	14 58 25.1 -1.2
	baz=318						
C37A	**Embarrass**	81.56	34	P		P	14 58 25.1 -1.3
	baz=319						
K30A	**Basset**	81.59	42	P		P	14 58 27.0 +0.2
	baz=314						
GZR	**Gura Zlata**	81.63	322	⇑	iP	P	14 58 27.8 +0.8
URZ	**Urewera**	81.63	154	LR		LR	15 31 42.6
	comp=Z,414nm,19.2s,baz=358,slow=34						
SDCO	**Great Sand Dun**	81.63	48	P		P	14 58 28.1 +0.7
	baz=312,SNR=11						
SDCO	**Great Sand Dun**	81.63	48		eP	P	14 58 27.7 +0.3
	comp=Z,18nm,1.4s						
H33A	**Prehn Over Nor**	81.64	39	P		P	14 58 27.1 +0.1
	baz=316,SNR=25						
KAC	**Achnashellach**	81.65	344		eP	P	14 58 27.4 +0.7
EYMN	**Ely**	81.70	34	P		P	14 58 26.0 -1.2
	baz=319,SNR=5.3						
EYMN	**Ely**	81.70	34		eP	P	14 58 27.0 -0.3
	comp=Z,19nm,0.8s						
EYMN				LR		LR	
	comp=Z,800nm,18.0s						
SMOL	**Smolenice**	81.76	327		eP	P	14 58 29.1 +1.6
SMOL	**Smolenice**	81.76	327		eP	P	14 58 29.1 +1.6
GOPC	**GO Pecny, Ondr**	81.79	329		eP	P	14 58 28.6 +1.0
GOPC					ex	x	14 58 40.8
GOPC					eS	S	15 08 38.4 -0.4
GOPC					AMS	AMS	15 42 40.0
	comp=Z,3μm,13.6s						
GOPC	**GO Pecny, Ondr**	81.79	329		eP	P	14 58 28.6 +1.0
GOPC					e		14 58 40.8
GOPC					eS	S	15 08 38.4 -0.4
GOPC					MLR	MLR	
	comp=Z,3μm,13.6s						
PRU	**Pruhonice**	81.83	330	⇓	eP	P	14 58 28.7 +0.9
PRU					esP	sP	14 58 41.7 +1.6
PRU					eS	S	15 08 39.3 +0.2
PRU					AMS	AMS	15 41 50.0
	comp=Z,3μm,14.4s						
PRU	**Pruhonice**	81.83	330		eP	P	14 58 28.7 +0.9
PRU					e		14 58 41.7
PRU					eS	S	15 08 39.3 +0.2
PRU					MLR	MLR	
	comp=Z,3μm,14.4s						
F35A	**Swanville**	81.84	37	P		P	14 58 27.8 -0.2
	baz=317						
TUC	**Tucson**	81.85	55		eP	P	14 58 29.3 +0.9
TUC				pmax		pmax	
	comp=Z,26nm,1.6s						
TUC				MLR		MLR	
	comp=Z,800nm,20.0s						
TUC	**Tucson**	81.85	55		eP	P	14 58 29.3 +0.9
	comp=Z,26nm,1.6s						
TUC				LR		LR	
	comp=Z,800nm,20.0s						
KPL	**Plockton**	81.87	344		eP	P	14 58 29.1 +1.2
KPL				AMB		AMB	14 58 31.1
	comp=Z,79nm,2.9s						
KSB	**Sheil Bridge**	81.94	344		eP	P	14 58 29.1 +0.9
EDU	**Dundee**	81.97	342		eP	P	14 58 29.5 +1.0
C38A	**Sawbill Land.**	81.98	34	P		P	14 58 28.3 -0.4
	baz=319,SNR=9.2						
E36A	**McGregor**	81.98	36	P		P	14 58 28.5 -0.2
	baz=318						
TREC	**Trest**	81.98	329	⇓	eP	P	14 58 29.6 +0.9
TREC					epP	sP	14 58 40.9 -0.1
TREC					ex	x	14 58 46.8
TREC				AMS		AMS	15 36 40.0
	comp=Z,2μm,19.3s						
TREC	**Trest**	81.98	329		eP	P	14 58 29.6 +0.9
TREC					e		14 58 40.9
TREC					e		14 58 46.8
TREC				MLR		MLR	
	comp=Z,2μm,19.3s						
BZS	**Buzias**	82.03	323	⇓	iP	P	14 58 30.0 +1.1
I33A	**Coleman**	82.07	39	P		P	14 58 29.6 +0.3
	baz=316,SNR=5.4						
K31A	**O'Neill**	82.08	41	P		P	14 58 29.6 +0.3
	baz=315,SNR=7.4						
H34A	**Spellman Lake,**	82.13	38	P		P	14 58 29.6 +0.1
	baz=316						
F36A	**Milaca**	82.34	36	P		P	14 58 31.0 +0.4
	baz=318						
L31A	**Butterfield Fa**	82.35	42	P		P	14 58 31.2 +0.5
	baz=315,SNR=14						
G35A	**Watkins**	82.35	37	P		P	14 58 31.0 +0.3
	baz=317						
ECSD	**EROS Data Cent**	82.39	39	P		P	14 58 30.9 0.0
	baz=316,SNR=22						
ECSD	**EROS Data Cent**	82.39	39		eP	P	14 58 30.5 -0.4
	comp=Z,24nm,0.8s						
ECSD				LR		LR	
	comp=Z,1μm,18.0s						
C39A	**Grand Marais**	82.40	33	P		P	14 58 30.8 -0.1
	baz=320						
NKC	**Novy Kostel**	82.46	331	⇓	eP	P	14 58 32.0 +0.8
NKC					esP	sP	14 58 44.3 +0.8
NKC				AMS		AMS	15 42 20.0
	comp=Z,4μm,17.1s						
NKC	**Novy Kostel**	82.46	331		eP	P	14 58 32.0 +0.8
NKC					e		14 58 44.3
NKC				MLR		MLR	
	comp=Z,4μm,17.1s						
J33A	**Davis**	82.51	40	P		P	14 58 31.6 0.0
	baz=316						
H35A	**Sunnyside Ranc**	82.57	38	P		P	14 58 32.4 +0.6
	baz=317,SNR=31						
MDVR	**Moldovita**	82.59	322	⇑	iP	P	14 58 32.6 +0.6
MPEP	**Malo Peshtene**	82.62	320		iP	P	14 58 34.0 +1.9
T25A	**Trinidad**	82.68	48	P		P	14 58 33.1 +0.3
	baz=312,SNR=18						
T25A	**Trinidad**	82.68	48		eP	P	14 58 33.2 +0.3
	comp=Z,24nm,0.9s						
T25A				LR		LR	
	comp=Z,600nm,21.0s						
SOP	**Sopron**	82.78	327	⇓	eP	P	14 58 33.9 +1.1
ISP	**Isparta**	82.78	313		eP	P	14 58 33.4 +0.2
ISP				pmax		pmax	
	comp=Z,20nm,0.9s						
ISP				MLR		MLR	
	comp=Z,1μm,21.0s						
ISP	**Isparta**	82.78	313		eP	P	14 58 33.4 +0.2
	comp=Z,20nm,0.9s						
ISP				LR		LR	
	comp=Z,1μm,21.0s						
LAZ	**Ladron**	82.83	52		eP	P	14 58 34.8 +1.1
CONA	**Conrad Observa**	82.88	328		iPcP	P	14 58 34.7 +1.2
	comp=Z,28nm,0.7s,SNR=24						
KHC	**Kasperske Hory**	82.89	330		eP	P	14 58 34.5 +1.1
KHC					esP	sP	14 58 47.0 +1.3
KHC	**Kasperske Hory**	82.89	330		eP	P	14 58 34.5 +1.1
KHC					e		14 58 47.0
ANMO	**Albuquerque**	82.90	51	P		P	14 58 34.6 +0.6
	comp=Z,6.7nm,1.1s,baz=307,slow=4.8,SNR=19						
ANMO	**Albuquerque**	82.90	51	P		P	14 58 34.5 +0.5
	baz=311						
ANMO	**Albuquerque**	82.90	51	*d*	iP	P	14 58 34.7 +0.7
ANMO				pmax		pmax	
	comp=Z,24nm,1.6s						
ANMO				MLR		MLR	
	comp=Z,430nm,18.0s						
ANMO	**Albuquerque**	82.90	51		eP	P	14 58 34.5 +0.5
	comp=Z,18nm,1.1s						
ANMO				LR		LR	
	comp=Z,600nm,20.0s						
L32A	**Elgin**	82.91	41	P		P	14 58 33.8 +0.1
	baz=315,SNR=5.1						
MMAI	**Mount Meron Ar**	82.97	306	P		P	14 58 35.8 +1.6
	comp=

comp=Z,16nm,0.8s
GEC2 MLR MLR
comp=Z,3µm,18.0s
GEC2 GERESS Array S 83.07 329 *e*P **P 14 58 34.6 +0.2**
comp=Z,16nm,0.8s
GEC2 LR LR
comp=Z,3µm,18.0s
GERES GERESS Array B 83.07 329 P P 14 58 34.8 +0.3
comp=Z,15nm,0.7s,baz=32,slow=5.2,SNR=138
GERES LR LR 15 38 37.5
comp=Z,3µm,18.1s,baz=26,slow=38
GEA0 GERESS Array S 83.07 329 *e*P **P 14 58 34.5 +0.1**
H36A Jessenland, He 83.09 37 P **P 14 58 35.3 +0.7**
baz=318,SNR=15
EKA Eskdalemuir Ar 83.10 342 P **P 14 58 35.4 +1.0**
comp=Z,9.8nm,0.6s,baz=23,slow=5.1,SNR=27
I35A Creekview Farm 83.11 38 P **P 14 58 35.0 +0.3**
baz=317
SPMN Marine on St. 83.15 36 P **P 14 58 34.5 -0.3**
baz=318
SPMN Marine on St. 83.15 36 *e*P **P 14 58 34.0 -0.8**
comp=Z,60nm,1.7s
SPMN LR LR
comp=Z,900nm,20.0s
ALN Alexandroupoli 83.17 317 P **P 14 58 35.1 +0.1**
ALN Alexandroupoli 83.17 317 P **P 14 58 35.1 +0.1**
ALN Alexandroupoli 83.17 317 P **P 14 58 35.1 +0.1**
Y22D IRIS PASSCAL I 83.19 52 PFAKE 14 58 50.0 +15
Y22D LR LR
comp=Z,800nm,19.0s
BGNE Belgrade 83.26 42 *e*P **P 14 58 35.0 -0.5**
comp=Z,43nm,0.8s
BGNE LR LR
comp=Z,800nm,19.0s
RZN Rozhen 83.31 319 *i*P **P 14 58 37.4 +1.4**
BNM Barren Site 83.32 52 *e*P **P 14 58 37.0 +0.8**
PPT Papeete 83.42 118 LR LR 15 31 29.4
comp=Z,510nm,19.0s,baz=310,slow=33
PPT2 Papeete2 83.43 118 *e*LQ LQ 15 20 21.3
comp=Z,2µm,29.8s
PPT2 *e*LR LR 15 24 18.5
comp=Z,2µm,25.2s,baz=313
319A Douglas 83.43 55 *e*P **P 14 58 37.3 +0.6**
comp=Z,27nm,0.9s
319A LR LR
comp=Z,800nm,20.0s
THZ Tophouse 83.46 158 *e*P **P 14 58 35.6 -0.6**
comp=Z,56nm,1.4s
I36A Fitzsimmons Fa 83.47 38 P **P 14 58 35.2 -1.2**
baz=318
BFZ Birch Farm 83.51 156 *e*P **P 14 58 35.7 -0.7**
comp=Z,21nm,0.9s
BFZ LR LR
comp=Z,1µm,20.0s
ARSA Arzberg 83.56 327 *i*P **P 14 58 37.7 +0.8**
comp=Z,18nm,0.6s,SNR=22
H37A Dierke Farm, C 83.58 37 P **P 14 58 37.2 +0.2**
baz=318,SNR=7.9
MOA Molln 83.62 328 *i*P **P 14 58 38.0 +0.7**
comp=Z,8.7nm,0.6s,SNR=9.8
M33A Taylor Creek F 83.64 41 P **P 14 58 37.4 -0.1**
baz=316
121A Cookes Peak, D 83.65 54 P **P 14 58 38.7 +0.9**
baz=311,SNR=11
121A Cookes Peak, D 83.65 54 *e*P **P 14 58 38.5 +0.7**
comp=Z,17nm,0.8s
SMTH Samothraki Isl 83.75 317 P **P 14 58 37.8 -0.2**
SMTH Samothraki Isl 83.75 317 P **P 14 58 37.8 -0.2**
I37A Lemond, Waseca 83.77 37 P **P 14 58 38.3 +0.2**
baz=318,SNR=14
J36A Seneca 1, Swea 83.81 38 P **P 14 58 38.4 +0.1**
baz=318
HSIG 83.83 58 *e*P **P 14 58 38.8 +0.2**
HSIG LR LR
comp=Z,900nm,19.0s
MMB Musomiste 83.90 319 *i*P **P 14 58 39.9 +1.1**
KAVA Kavala 83.91 318 P **P 14 58 39.3 +0.5**
KAVA Kavala 83.91 318 P **P 14 58 39.3 +0.5**
DIVS Divibare 83.93 323 P **P 14 58 38.8 -0.1**
NVR Nevrokopi 84.00 319 P **P 14 58 39.8 +0.5**
NVR Nevrokopi 84.00 319 P **P 14 58 39.8 +0.5**
KKB Krupnik 84.03 320 *i*P **P 14 58 40.8 +1.4**
COWI Conover 84.16 34 *e*P **P 14 58 39.5 -0.5**
comp=Z,11nm,0.8s
PERS Pernice 84.21 327 *i*P **P 14 58 40.7 +0.4**
SOKA Soboth 84.21 327 *i*PcP **P 14 58 40.8 +0.5**
comp=Z,32nm,0.6s,SNR=46
J37A Redenius Farm, 84.22 38 P **P 14 58 40.4 0.0**
baz=318,SNR=5.8
I38A Scanlan Farm, 84.26 37 P **P 14 58 40.3 -0.3**
baz=319,SNR=6.4
SCHQ Schefferville 84.27 17 P **P 14 58 39.7 -0.7**
comp=Z,12nm,0.8s,baz=339,slow=5.7,SNR=10
SCHQ LR LR 15 40 12.8
comp=Z,934nm,19.3s,baz=336,slow=38
SCHQ Schefferville 84.27 17 *e*P **P 14 58 40.4 0.0**
comp=Z,24nm,1.2s
P32A Huiting Farm, 84.28 43 P **P 14 58 39.4 -1.4**
baz=315
SRS Serrai 84.31 319 P **P 14 58 39.9 -1.0**
SRS Serrai 84.31 319 P **P 14 58 39.9 -1.0**
SRS Serrai 84.31 319 P **P 14 58 39.9 -1.0**
LIA Limnos Island 84.34 317 P **P 14 58 41.1 +0.1**
LIA Limnos Island 84.34 317 P **P 14 58 41.1 +0.1**
BEBN Eben Emael 84.46 335 P **P 14 58 42.1 +0.8**
SIGR SIGRI 84.46 316 P **P 14 58 41.4 -0.2**
SIGR SIGRI 84.46 316 P **P 14 58 41.4 -0.2**
SIGR SIGRI 84.46 316 P **P 14 58 41.4 -0.2**
M35A Neola 84.50 40 P **P 14 58 41.7 -0.1**
baz=317,SNR=5.4
MEM Membach 84.51 334 P **P 14 58 41.9 +0.3**
comp=Z,17nm,0.9s
MEM XP **sP 14 58 54.9 +0.9**
OBKA Obir 84.55 327 *i*P **P 14 58 42.2 +0.2**
comp=Z,20nm,0.7s,SNR=20
K37A Belmond 84.58 38 P **P 14 58 42.2 +0.1**
baz=318
KBA Koelnbreinsper 84.61 328 *i*PcP **P 14 58 43.3 +0.8**
comp=Z,30nm,0.7s,SNR=29
KNT Kendrikon 84.64 319 P **P 14 58 42.8 +0.3**
KNT Kendrikon 84.64 319 P **P 14 58 42.8 +0.3**
KNT Kendrikon 84.64 319 P **P 14 58 42.8 +0.3**
OXZ Oxford 84.65 160 *e*P **P 14 58 42.0 -0.2**
OUR Ouranopolis 84.67 318 P **P 14 58 42.9 +0.3**
OUR Ouranopolis 84.67 318 P **P 14 58 42.9 +0.3**
OUR Ouranopolis 84.67 318 P **P 14 58 42.9 +0.3**
VAY Valandovo 84.69 320 P **P 14 58 43.1 +0.4**
VAY Valandovo 84.69 320 *i*P **P 14 58 43.3 +0.6**
VAY Valandovo 84.69 320 P **P 14 58 43.1 +0.4**
VAY Valandovo 84.69 320 P **P 14 58 43.1 +0.4**
TAOE Nuku Hiva Isla 84.69 105 *e*LR LR 15 24 58.9
comp=Z,3µm,32.6s,baz=313
RPZ Rata Peaks 84.74 160 LR LR 15 34 26.2
comp=Z,573nm,18.5s,baz=332,slow=34
BLY Banja Luka 84.75 325 ⇓*i*P **P 14 58 44.3 +1.3**
SKO Skopje 84.79 321 P **P 14 58 44.0 +0.7**
SKO Skopje 84.79 321 *i*P **P 14 58 44.6 +1.4**
SKO Skopje 84.79 321 P **P 14 58 44.0 +0.7**
SKO Skopje 84.79 321 P **P 14 58 44.0 +0.7**
MYKA Terra Mystica 84.84 328 *i*P **P 14 58 43.3 -0.2**
comp=Z,21nm,0.6s,SNR=20
STU Stuttgart 84.89 332 *e*P **P 14 58 44.0 +0.4**
STU pmax pmax
comp=Z,77nm,0.8s
STU MLR MLR
comp=Z,2µm,18.0s
STU Stuttgart 84.89 332 *e*P **P 14 58 44.0 +0.4**
comp=Z,77nm,0.8s
STU LR LR
comp=Z,2µm,18.0s
O34A Beatrice 84.90 42 P **P 14 58 42.3 -1.5**
baz=316
BCLA Clavier 84.91 335 P **P 14 58 44.0 +0.4**
comp=Z,30nm,1.5s
BCLA XP **sP 14 58 57.0 +1.0**
PLG Polygyros 84.92 318 P **P 14 58 43.9 -0.1**
PLG Polygyros 84.92 318 P **P 14 58 43.9 -0.1**
PLG Polygyros 84.92 318 P **P 14 58 43.9 -0.1**
CHOS Chios island 84.93 316 P **P 14 58 44.1 0.0**
CHOS Chios island 84.93 316 P **P 14 58 44.1 0.0**
CHOS Chios island 84.93 316 P **P 14 58 44.1 0.0**
CWF Charnwood Fore 84.94 339 *e*P **P 14 58 44.2 +0.4**
CWF LR LR
comp=Z,2µm,21.0s
VISS Visnje 84.98 327 *i*P **P 14 58 43.8 -0.3**

L37A Phoenix Point, 85.00 39 P **P 14 58 43.9 -0.4**
baz=318
BOJS Bojanci 85.03 326 *e*P **P 14 58 44.4 0.0**
K38A Parkersburg 85.09 38 P **P 14 58 43.7 -1.0**
baz=319
WATA Walderalm 85.13 329 *i*PcP **P 14 58 45.5 +0.4**
comp=Z,20nm,0.7s,SNR=14
LBZ Lake Benmore 85.14 161 *e*P **P 14 58 44.7 +0.1**
comp=Z,42nm,1.1s
Q33A Connelly Farm, 85.14 43 P **P 14 58 44.7 -0.3**
baz=316,SNR=5.5
WTTA Wattenberg 85.16 329 *i*PcP **P 14 58 45.8 +0.6**
comp=Z,14nm,0.8s,SNR=5.9
SNF Seneffe 85.17 335 P **P 14 58 45.7 +0.7**
SNF XP **sP 14 58 58.4 +1.1**
ABTA Abfaltersbach 85.22 329 *i*PcP **P 14 58 46.1 +0.6**
comp=Z,6.6nm,0.2s,SNR=12
LANF Langenberg 85.23 333⇑*e*P **P 14 58 46.2 +0.8**
JAVS Javornik 85.24 327 *i*P **P 14 58 44.9 -0.7**
WLF Walferdange 85.25 334 P **P 14 58 47.4 +2.0**
WLF Walferdange 85.25 334 *e*P **P 14 58 46.2 +0.8**
WLF pmax pmax
comp=Z,156nm,1.9s
WLF MLR MLR
comp=Z,4µm,21.0s
WLF Walferdange 85.25 334 *e*P **P 14 58 46.2 +0.8**
comp=Z,156nm,1.9s
WLF LR LR
comp=Z,4µm,21.0s
P34A Walnut Farm, R 85.29 42 P **P 14 58 45.4 -0.4**
baz=316,SNR=14
MOTA Moosalm 85.31 330 *i*PcP **P 14 58 46.3 +0.3**
comp=Z,28nm,0.7s,SNR=37
FOEL Foel Wylfa 85.31 341 *e*P **P 14 58 47.0 +1.3**
FOEL AMB AMB 14 58 48.1
comp=Z,102nm,0.8s
RETA Reutte 85.33 330 *i*PcP **P 14 58 46.7 +0.7**
comp=Z,67nm,0.7s,SNR=41
N36A Muff Farm, Cla 85.35 40 P **P 14 58 46.3 +0.2**
baz=317,SNR=6.4
L38A Oak Wood Farm, 85.38 38 P **P 14 58 46.1 -0.1**
baz=318
DOU Dourbes 85.42 335 P **P 14 58 46.2 0.0**
SCIA State Center 85.43 39 *e*P **P 14 58 46.4 0.0**
SCIA LR LR
comp=Z,900nm,20.0s
TRI Trieste 85.52 327 *e*P **P 14 58 46.1 -0.7**
TRI pmax pmax
comp=Z,28nm,0.8s
TRI MLR MLR
comp=Z,2µm,20.0s
TRI Trieste 85.52 327 *e*P **P 14 58 46.1 -0.7**
comp=Z,28nm,0.8s
TRI LR LR
comp=Z,2µm,20.0s
PDG Podgorica 85.53 322⇑*i*P **P 14 58 47.6 +0.7**
R33A Olander Ranch, 85.55 44 P **P 14 58 47.0 -0.2**
baz=316
BIA Bitola 85.55 320 *i*P **P 14 58 47.4 +0.3**
BFO Black Forest 85.58 332 *e*P **P 14 58 47.0 -0.1**
BFO pmax pmax
comp=Z,59nm,0.8s
BFO MLR MLR
comp=Z,2µm,20.0s
BFO Black Forest 85.58 332 *e*P **P 14 58 47.0 -0.1**
comp=Z,59nm,0.8s
BFO LR LR
comp=Z,2µm,20.0s
LIT Litokhoron 85.63 319 P **P 14 58 46.8 -0.7**
LIT Litokhoron 85.63 319 P **P 14 58 46.8 -0.7**
LIT Litokhoron 85.63 319 P **P 14 58 46.8 -0.7**
Q34A Chapman 85.68 43 P **P 14 58 47.9 +0.1**
baz=316,SNR=6.4
FNA Florina 85.70 320 P **P 14 58 47.4 -0.5**
FNA Florina 85.70 320 P **P 14 58 47.4 -0.5**
FNA Florina 85.70 320 P **P 14 58 47.4 -0.5**
FETA Feichten 85.72 330 *i*P **P 14 58 46.8 -1.2**
comp=Z,33nm,0.8s,SNR=25
MNTX Cornudas Mount 85.73 53 P **P 14 58 48.5 +0.3**
baz=312,SNR=8.7
MNTX Cornudas Mount 85.73 53 *e*P **P 14 58 48.3 +0.2**
comp=Z,9.6nm,1.0s
KSU1 Kansas State U 85.73 43 P **P 14 58 47.5 -0.5**
baz=316,SNR=7.2
KSU1 Kansas State U 85.73 43 *e*P **P 14 58 47.5 -0.5**
comp=Z,29nm,0.9s
KSU1 LR LR
comp=Z,800nm,19.0s
P35A Duane Minner, 85.74 42 P **P 14 58 46.8 -1.2**
baz=317,SNR=6.6
OHR Ohrid 85.75 320 *i*P **P 14 58 48.3 +0.1**
N37A Leo Faris, Mou 85.78 40 P **P 14 58 48.5 +0.3**
baz=318
XOR Xorichti 85.79 318 P **P 14 58 47.4 -0.9**
XOR Xorichti 85.79 318 P **P 14 58 47.4 -0.9**
M38A Pleasantville 85.80 39 P **P 14 58 47.1 -1.2**
baz=318
MSTX Muleshoe 85.81 50 *e*P **P 14 58 48.5 -0.1**
comp=Z,15nm,1.1s
T32A Huddler Ranch, 85.83 45 P **P 14 58 48.9 +0.3**
baz=315,SNR=7.1
AMTX Amarillo 85.84 48 P **P 14 58 49.7 +1.0**
baz=314
AMTX Amarillo 85.84 48 *e*P **P 14 58 49.0 +0.3**
comp=Z,24nm,0.9s
DAVA Damuels 85.84 330 *i*PcP **P 14 58 49.0 +0.4**
comp=Z,64nm,0.7s,SNR=36
O36A Bolckow 85.85 41 P **P 14 58 48.9 +0.3**
baz=317,SNR=7.7
STRD Stroud 86.03 339 *e*P **P 14 58 50.3 +1.0**
STRD AMB AMB 14 58 51.7
comp=Z,148nm,0.8s
TIR Tirane 86.05 321⇑*i*P **P 14 58 50.4 +0.9**
TIR Tirane 86.05 321 *e*P **P 14 58 49.7 +0.2**
TIR pmax pmax
comp=Z,31nm,0.7s
TIR MLR MLR
comp=Z,2µm,18.0s
TIR Tirane 86.05 321 *e*P **P 14 58 49.7 +0.2**
comp=Z,31nm,0.7s
TIR LR LR
comp=Z,2µm,18.0s
S33A Kaszmaul Farm, 86.05 44 P **P 14 58 49.9 +0.2**
baz=316,SNR=6.2
MCH1 Michaelchurch 86.06 340 *e*P **P 14 58 50.2 +0.8**
MCH1 AMB AMB 14 58 51.8
comp=Z,81nm,0.9s
P36A Good Intent, A 86.10 41 P **P 14 58 49.2 -0.6**
baz=317
JFWS Jewell Farm 86.10 36 *e*P **P 14 58 49.3 -0.5**
JFWS pmax pmax
comp=Z,16nm,0.8s
JFWS Jewell Farm 86.10 36 *e*P **P 14 58 49.3 -0.5**
comp=Z,16nm,0.8s
ECH Echery 86.11 332⇑*e*P **P 14 58 50.4 +0.7**
HMNX Herstmonceux 86.11 338 *e*P **P 14 58 51.2 +1.6**
NEST Nestorio 86.14 320 P **P 14 58 50.2 +0.1**
MONM Monmouth 86.15 340 *e*P **P 14 58 50.6 +0.8**
MONM AMB AMB 14 58 52.3
comp=Z,66nm,0.9s
WOL Wolverton 86.18 339 *e*P **P 14 58 50.7 +0.7**
WOL AMB AMB 14 58 51.0
comp=Z,79nm,1.1s
Q35A Mercer Eighty, 86.21 42 P **P 14 58 50.4 0.0**
baz=317,SNR=18
FUORN Ofenpass-Fuorn 86.24 330 *e*P **P 14 58 51.1 +0.4**
comp=Z,68nm,0.8s
FUORN LR LR
comp=Z,2µm,20.0s
LPW Lampeter 86.25 341 *e*P **P 14 58 51.3 +1.1**
LPW AMB AMB 14 58 53.3
comp=Z,89nm,3.0s
N38A Joes South For 86.25 40 P **P 14 58 50.5 0.0**
baz=318
O37A Wolven Farm, M 86.25 40 P **P 14 58 50.3 -0.2**
baz=318
DAVOX Davos/Dischmat 86.26 330 P **P 14 58 51.1 +0.4**
comp=Z,23nm,0.8s,baz=44,slow=5.2,SNR=32
THL Klokotos Trika 86.27 319 P **P 14 58 49.1 -1.5**
KARP Karpathos 86.30 313 P P 14 58 45.4 -5.5
KARP Karpathos 86.30 313 *e*P **P 14 58 51.8 +0.9**
comp=Z,19nm,0.9s
KARP LR LR
comp=Z,300nm,19.0s
LKR Lokris 86.41 317 P **P 14 58 50.3 -1.1**
LKR Lokris 86.41 317 P **P 14 58 50.3 -1.1**

MOF Molkenrain 86.42 332⇑*e*P **P 14 58 52.1 +0.7**
S34A Willow Spring 86.47 44 P **P 14 58 51.6 -0.1**
baz=316,SNR=6.4
AGG Agios Georgios 86.50 318 *e*P **P 14 58 51.6 -0.2**
AGG pmax pmax
comp=Z,30nm,1.0s
AGG MLR MLR
comp=Z,5µm,18.0s
AGG Agios Georgios 86.50 318 *e*P **P 14 58 51.6 -0.2**
comp=Z,30nm,1.0s
AGG LR LR
comp=Z,5µm,18.0s
R35A Emporia Munici 86.52 43 P **P 14 58 52.4 +0.5**
baz=317,SNR=6.6
N39A Derby Farms, D 86.55 39 P **P 14 58 52.2 +0.2**
baz=319,SNR=7.8
P37A Lathrop 86.57 41 P **P 14 58 52.1 -0.1**
baz=318,SNR=9.2
O38A Galt 86.63 40 P **P 14 58 52.5 +0.1**
baz=318
SANT Santorini 86.70 314 PFAKE 14 59 00.0 +7.1
SANT LR LR
comp=Z,900nm,18.0s
TUE Stuetta 86.72 330 *e*P **P 14 58 52.9 -0.1**
comp=Z,27nm,0.8s
TUE LR LR
comp=Z,2µm,20.0s
V32A Arapaho 86.79 46 P **P 14 58 54.7 +1.3**
baz=315
U33A Lingo Farm, Me 86.82 45 P **P 14 58 53.3 -0.2**
baz=316,SNR=8.7
R36A Gordon, Harris 86.89 42 P **P 14 58 53.7 0.0**
baz=317,SNR=8.9
T34A McClaskey Farm 86.91 44 P **P 14 58 54.1 +0.2**
baz=316
S35A Otter Creek Ra 86.91 43 P **P 14 58 54.0 +0.2**
baz=317,SNR=10
LOMF Lomont 86.95 332⇑*e*P **P 14 58 54.7 +0.7**
P38A Dawn 86.97 40 P **P 14 58 53.8 -0.2**
baz=318,SNR=6.6
O39A Kirksville 87.00 39 P **P 14 58 55.4 +1.2**
baz=319
W32A Sentinel 87.10 47 P **P 14 58 56.3 +1.5**
baz=315,SNR=6.7
U34A Anderson Ranch 87.14 45 P **P 14 58 54.9 -0.1**
baz=316
U34A Anderson Ranch 87.14 45 *e*P **P 14 58 55.0 0.0**
comp=Z,28nm,0.8s
SGD Sagiada 87.16 320 P **P 14 58 54.5 -0.5**
R37A Teagarden Farm 87.26 42 P **P 14 58 54.3 -1.2**
baz=318
LAKA Lakka 87.26 318 P **P 14 58 59.5 +3.9**
LAKA Lakka 87.26 318 P **P 14 58 59.5 +3.9**
S36A Lake Cedric, C 87.28 43 P **P 14 58 55.7 +0.1**
baz=317,SNR=5.6
KEK Kerkira 87.30 320 P **P 14 58 54.9 -0.8**
KEK Kerkira 87.30 320 P **P 14 58 54.9 -0.8**
KLV Kalavryta, Ach 87.31 318 P **P 14 58 54.4 -1.5**
KLV Kalavryta, Ach 87.31 318 P **P 14 58 54.4 -1.5**
TBI Tubuai 87.41 122 *e*LQ LQ 15 22 28.2
comp=Z,1µm,32.5s
TBI *e*LR LR 15 26 11.6
comp=Z,1µm,31.8s,baz=313
Q38A Cooks Store, C 87.42 41 P **P 14 58 56.1 -0.2**
baz=318,SNR=6.7
O40A La Belle 87.44 39 P **P 14 58 56.3 0.0**
baz=319,SNR=9.5
P39B Salisbury 87.47 40 P **P 14 58 56.4 -0.1**
baz=319
W33A Caddo, Fort Co 87.53 46 P **P 14 58 56.7 -0.2**
baz=316
LAST Lasithi 87.55 314⇓*i*P **P 14 58 57.9 +0.8**
LAST Lasithi 87.55 314 P **P 14 58 57.1 0.0**
LAST Lasithi 87.55 314 *e*P **P 14 58 57.1 0.0**
comp=Z,48nm,1.0s
LAST LR LR
comp=Z,1µm,21.0s
LKD2 Lefkada island 87.55 319 P **P 14 58 56.5 -0.4**
LKD2 Lefkada island 87.55 319 P **P 14 58 56.5 -0.4**
X32A Elmer 87.57 47 P **P 14 58 58.7 +1.6**
baz=315,SNR=6.3
V34A Guthrie 87.58 45 P **P 14 58 57.6 +0.5**
baz=316,SNR=7.5
V34A Guthrie 87.58 45 *e*P **P 14 58 57.1 0.0**
comp=Z,35nm,0.9s
V34A LR LR
comp=Z,700nm,21.0s
SENIN Lac Senin/Sane 87.61 331 *e*P **P 14 58 57.6 +0.3**
comp=Z,14nm,0.7s
SENIN LR LR
comp=Z,3µm,20.0s
T36A Boggs Farm, Ca 87.61 44 P **P 14 58 57.5 +0.3**
baz=317,SNR=9.3
DRO Drossia 87.61 318 P **P 14 58 56.6 -0.7**
WMOK Wichita Mounta 87.64 47 P **P 14 58 58.7 +1.2**
baz=315,SNR=6.6
WMOK Wichita Mounta 87.64 47 *e*P **P 14 58 57.5 0.0**
WMOK pmax pmax
comp=Z,14nm,1.0s
WMOK MLR MLR
comp=Z,700nm,20.0s
WMOK Wichita Mounta 87.64 47 *e*P **P 14 58 57.5 0.0**
comp=Z,14nm,1.0s
WMOK LR LR
comp=Z,700nm,20.0s
S37A Fort Scott 87.66 42 P **P 14 58 57.5 0.0**
baz=318,SNR=5.9
Q39A Willow Grove F 87.68 41 P **P 14 58 57.4 -0.2**
baz=319,SNR=11
DYA Yadsworthy 87.73 340 PFAKE 14 59 10.0 +12
DYA LR LR
comp=Z,2µm,21.0s
IDI Anoyia 87.79 314 P **P 14 58 56.9 -1.3**
IDI Anoyia 87.79 314 *e*P **P 14 58 58.1 -0.2**
comp=Z,22nm,0.9s
IDI LR LR
comp=Z,700nm,20.0s
P40A Paris 87.80 40 P **P 14 58 58.5 +0.4**
baz=319,SNR=18
W34A Bridge Creek, 87.87 46 P **P 14 58 58.9 +0.3**
baz=316
W34A Bridge Creek, 87.87 46 *e*P **P 14 58 58.8 +0.3**
comp=Z,26nm,1.0s
W34A LR LR
comp=Z,700nm,19.0s
X33A Lawton 87.94 47 P **P 14 59 00.3 +1.4**
baz=316
V35A Meyer Ranch, C 88.02 45 P **P 14 59 00.1 +0.9**
baz=316
T37A Cheneyville 18 88.08 43 P **P 14 58 59.6 +0.1**
baz=318
MATE Matera 88.13 322⇑*i*P **P 14 58 59.9 +0.3**
U36A Oologah 88.17 44 P **P 14 58 59.8 -0.1**
baz=317
Q40A Laux Farm, Aux 88.19 40 P **P 14 58 60.0 0.0**
baz=319,SNR=7.4
VLC Villacollemand 88.19 328 PFAKE 14 59 10.0 +10
VLC LR LR
comp=Z,2µm,20.0s
R39A Chumby, Stover 88.20 41 P **P 14 58 60.0 0.0**
baz=319
DAMY Dhamar 88.28 287 PFAKE 14 59 10.0 +8.9
DAMY LR LR
comp=Z,900nm,18.0s
AQU L'Aquila 88.34 325 *e*P **P 14 59 01.0 +0.3**
AQU pmax pmax
comp=Z,37nm,0.6s
AQU MLR MLR
comp=Z,2µm,18.0s
AQU L'Aquila 88.34 325 *e*P **P 14 59 01.0 +0.3**
comp=Z,37nm,0.6s
AQU LR LR
comp=Z,2µm,18.0s
JSA Saint Aubin 88.35 338 *e*P **P 14 59 02.2 +1.7**
HDIL Hopedale 88.37 37 P **P 14 59 01.1 +0.4**
baz=321
HDIL Hopedale 88.37 37 *e*P **P 14 59 00.7 -0.1**
comp=Z,36nm,0.8s
HDIL LR LR
comp=Z,900nm,21.0s
PYL PYLOS 88.38 317 P **P 14 58 58.9 -2.0**
TX31 Lajitas Ar. Si 88.41 54 *e*P **P 14 59 01.4 +0.1**
TXAR Lajitas Array 88.41 54 P **P 14 59 01.2 -0.1**
comp=Z,2.6nm,0.6s,baz=291,slow=2.9,SNR=23
TXAR PKKPbc PKKPbc 15 16 57.0 +15
comp=Z,0.2nm,0.7s,baz=138,slow=5.3,SNR=3.8
T38A Diamond 88.48 43 P **P 14 59 01.3 -0.1**

baz=318,SNR=7.2
TUL1 Leonard 88.49 44 P **P** 14 59 02.0 +0.6
baz=317
TUL1 Leonard 88.49 44 *e*P **P** 14 59 01.6 +0.2
comp=Z,5.8nm,0.7s
TUL1 LR LR
comp=Z,1µm,20.0s
V36A Jenks 88.50 44 P **P** 14 59 01.1 -0.4
baz=317
U37A Salina 88.50 44 P **P** 14 59 01.5 +0.1
baz=317
S39A Bolivar 88.52 42 P **P** 14 59 01.1 -0.4
baz=318
R40A Maddies Statio 88.62 41 P **P** 14 59 01.8 -0.2
baz=319,SNR=8.9
ABTX Abilene, Hawle 88.63 49 PFAKE 14 59 10.0 +7.8
ABTX LR LR
comp=Z,600nm,18.0s
Z33A Whitaker Ranch 88.68 48 P **P** 14 59 03.3 +0.9
baz=316
HPIG 88.72 57 PFAKE 14 59 10.0 +7.1
HPIG LR LR
comp=Z,1µm,19.0s
V37A Hulbert 88.87 44 P **P** 14 59 03.1 -0.1
baz=317,SNR=7.1
U38A Gravette 88.88 43 P **P** 14 59 03.3 +0.1
baz=318,SNR=6.2
BNI Bardonecchia 88.94 331 PFAKE 14 59 20.0 +16
BNI LR LR
comp=Z,3µm,22.0s
Q42A Golden Eagle 89.03 39 P **P** 14 59 04.0 +0.1
baz=320
CUC Castrocucco 89.07 323 PFAKE 14 59 20.0 +16
CUC LR LR
comp=Z,1µm,20.0s
Z34A Collier Ranch, 89.12 47 P **P** 14 59 04.6 +0.2
baz=316
X36A Centrahoma 89.15 46 P **P** 14 59 05.2 +0.7
baz=317,SNR=9.2
HHAR Hobbs 89.23 43 *e*P **P** 14 59 04.5 -0.4
comp=Z,16nm,1.1s
TIP Timpagrande 89.24 321 ||*i*P **P** 14 59 05.9 +0.9
TIP Timpagrande 89.24 321 P **P** 14 59 04.9 -0.1
TIP Timpagrande 89.24 321 *e*P **P** 14 59 05.1 +0.2
comp=Z,25nm,1.1s
TIP LR LR
comp=Z,2µm,22.0s
W37B Quinton 89.26 45 P **P** 14 59 04.7 -0.4
baz=317
V38A Canehill 89.29 44 P **P** 14 59 05.3 +0.1
baz=318,SNR=8.7
PLDF La Plantade 89.29 333 *e*P **P** 14 59 05.8 +0.7
CCM Cathedral Cave 89.32 40 *e*P **P** 14 59 04.9 -0.4
CCM pmax pmax
comp=Z,26nm,1.0s
CCM MLR MLR
comp=Z,700nm,19.0s
CCM Cathedral Cave 89.32 40 *e*P **P** 14 59 04.8 -0.4
comp=Z,26nm,1.0s
CCM LR LR
comp=Z,700nm,19.0s
T40A Mansfield 89.34 42 P **P** 14 59 05.4 -0.1
baz=319
SADO Sadowa 89.36 29 PFAKE 14 59 20.0 +15
SADO LR LR
comp=Z,900nm,21.0s
SLM Saint Louis 89.39 39 *e*P **P** 14 59 05.4 -0.2
SLM pmax pmax
comp=Z,28nm,0.7s
SLM MLR MLR
comp=Z,700nm,18.0s
SLM Saint Louis 89.39 39 *e*P **P** 14 59 05.4 -0.2
comp=Z,28nm,0.7s
SLM LR LR
comp=Z,700nm,18.0s
AGO Saint Agoulin 89.40 334 *e*P **P** 14 59 06.1 +0.6
U39A Green Forest 89.41 43 P **P** 14 59 05.5 -0.3
baz=318,SNR=14
SSB Saint Sauveur 89.55 332 *e*P **P** 14 59 06.8 +0.5
SSB pmax pmax
comp=Z,14nm,0.7s
SSB Saint Sauveur 89.55 332 *e*P **P** 14 59 06.8 +0.5
comp=Z,14nm,0.7s
SFIN Lafayette 89.56 36 P **P** 14 59 06.8 +0.5
baz=322,SNR=9.6
SFIN Lafayette 89.56 36 *e*P **P** 14 59 06.3 -0.1
comp=Z,25nm,0.9s
SFIN LR LR
comp=Z,1µm,21.0s
AAM Ann Arbor 89.57 33 PFAKE 14 59 20.0 +14
AAM LR LR
comp=Z,800nm,19.0s
Y36A Durant 89.68 46 P **P** 14 59 07.7 +0.7
baz=317
X37A Clayton 89.69 45 P **P** 14 59 06.6 -0.5
baz=317
V39A Pettigrew 89.72 43 P **P** 14 59 07.1 -0.2
baz=318,SNR=7.5
U40A Yellville 89.76 42 P **P** 14 59 07.2 -0.2
baz=319,SNR=22
T41A Mountain View 89.82 41 P **P** 14 59 07.5 -0.1
baz=319,SNR=9.9
X38A Whitesboro 89.94 45 P **P** 14 59 08.7 +0.5
baz=318,SNR=9.9
LMQ La Malbaie 89.95 22 *e*P **P** 14 59 07.8 -0.2
comp=Z,24nm,0.9s
LMQ LR LR
comp=Z,1µm,21.0s
234A Clairette 89.96 48 P **P** 14 59 08.6 +0.2
baz=316
135A Vickery Place, 90.00 48 P **P** 14 59 10.0 +1.5
baz=316
Y37A Hugo 90.00 46 P **P** 14 59 09.9 +1.4
baz=317
JCT Junction City 90.04 50 *e*P **P** 14 59 08.8 0.0
JCT pmax pmax
comp=Z,8.0nm,0.8s
JCT MLR MLR
comp=Z,600nm,21.0s
JCT Junction City 90.04 50 *e*P **P** 14 59 08.8 0.0
comp=Z,7.8nm,0.8s
JCT LR LR
comp=Z,600nm,21.0s
Z36A Blue Ridge 90.05 46 P **P** 14 59 10.0 +1.2
baz=317,SNR=5.7
LBL Lubilhac 90.06 333 *e*P **P** 14 59 09.8 +1.1
W39A Magazine 90.12 44 P **P** 14 59 09.3 +0.2
baz=318
V40A Witts Springs 90.19 43 P **P** 14 59 08.9 -0.6
baz=319,SNR=6.1
S43A Fulton Ridge, 90.29 40 P **P** 14 59 09.6 -0.2
baz=320
OLIL Olney 90.37 38 *e*P **P** 14 59 09.2 -1.0
comp=Z,21nm,0.6s
OLIL LR LR
comp=Z,700nm,21.0s
CEL Celeste 90.38 321 *e*P **P** 14 59 09.6 -0.7
comp=Z,31nm,0.9s
CEL LR LR
comp=Z,2µm,20.0s
WHTX Lake Whitney, 90.38 48 P **P** 14 59 11.1 +0.8
baz=316
WHTX Lake Whitney, 90.38 48 *e*P **P** 14 59 10.8 +0.5
WHTX LR LR
comp=Z,700nm,21.0s
334A Lometa 90.38 49 P **P** 14 59 10.5 +0.1
baz=316,SNR=8.4
X39A Fountain Ranch 90.45 44 P **P** 14 59 10.8 +0.2
baz=318,SNR=10
W40A Ferguson Farm, 90.52 43 P **P** 14 59 10.7 -0.2
baz=319,SNR=7.3
Y38A Idabel 90.54 45 P **P** 14 59 11.0 0.0
baz=318,SNR=5.3
V41A Mountainview 90.56 42 P **P** 14 59 10.9 -0.3
baz=319
Z37A Pogue Cattle C 90.57 46 P **P** 14 59 11.0 -0.2
baz=317
SIUC Southern Illin 90.61 39 PFAKE 14 59 20.0 +8.7
SIUC LR LR
comp=Z,700nm,19.0s
MIAR Mount Ida 90.72 44 P **P** 14 59 12.0 +0.1
baz=318,SNR=19
MIAR Mount Ida 90.72 44 *e*P **P** 14 59 11.4 -0.5
MIAR pmax pmax
comp=Z,29nm,0.9s
MIAR MLR MLR
comp=Z,700nm,20.0s
MIAR Mount Ida 90.72 44 *e*P **P** 14 59 11.4 -0.5
comp=Z,29nm,0.9s
MIAR LR LR
comp=Z,700nm,20.0s
BLO Bloomington 90.78 37 PFAKE 14 59 20.0 +7.9
BLO LR LR
comp=Z,1µm,21.0s
X201 Greenbrier Sit 90.82 43 *e*P **P** 14 59 11.7 -0.6
comp=Z,21nm,0.8s
X201 LR LR
comp=Z,700nm,19.0s
X301 Greenbrier Sit 90.84 43 *e*P **P** 14 59 12.0 -0.4
comp=Z,82nm,1.8s
X301 LR LR
comp=Z,600nm,20.0s
WHAR Wooly Hollow 90.86 43 *e*P **P** 14 59 12.2 -0.3
comp=Z,32nm,0.8s
WHAR LR LR
comp=Z,600nm,20.0s
Y39A Lockesburg 90.89 45 P **P** 14 59 12.1 -0.5
baz=318,SNR=5.5
V42A Cord 90.95 42 P **P** 14 59 12.8 -0.1
baz=320
W41A Tony Mavity, V 90.97 43 P **P** 14 59 12.8 -0.2
baz=319,SNR=11
W41B Gary Mavity, V 90.97 43 P **P** 14 59 12.6 -0.4
baz=319
LONY Lake Ozonia 91.17 26 PFAKE 14 59 30.0 +16
LONY LR LR
comp=Z,700nm,20.0s
X40A Basin Creek Fa 91.17 43 P **P** 14 59 14.1 +0.1
baz=319,SNR=5.3
USIN University of 91.18 38 PFAKE 14 59 30.0 +16
USIN LR LR
comp=Z,700nm,20.0s
ERPA Erie 91.26 31 PFAKE 14 59 30.0 +16
ERPA LR LR
comp=Z,600nm,20.0s
Y40A Okolona 91.28 44 P **P** 14 59 15.0 +0.5
baz=318
FRNY Flat Rock 91.32 25 PFAKE 14 59 30.0 +16
FRNY LR LR
comp=Z,1µm,19.0s
X41A Kaden, Bauxite 91.34 43 P **P** 14 59 15.4 +0.7
baz=319
PVMO Portageville 91.37 40 PFAKE 14 59 30.0 +15
PVMO LR LR
comp=Z,700nm,20.0s
ACSO Alum Creek Sta 91.55 34 *e*P **P** 14 59 15.3 -0.3
comp=Z,20nm,1.3s
ACSO LR LR
comp=Z,1µm,19.0s
WLAR White Oak Lake 91.62 44 *e*P **P** 14 59 16.4 +0.3
comp=Z,31nm,0.9s
WCI Wyandotte Cave 91.64 37 *e*P **P** 14 59 16.3 +0.2
WCI pmax pmax
comp=Z,17nm,1.1s
WCI MLR MLR
comp=Z,800nm,20.0s
WCI Wyandotte Cave 91.64 37 *e*P **P** 14 59 16.3 +0.2
comp=Z,17nm,1.1s
WCI LR LR
comp=Z,800nm,20.0s
Z40A Long Farm, Mag 91.78 45 P **P** 14 59 17.5 +0.7
baz=318
NATX Nacogdoches 92.17 46 PFAKE 14 59 30.0 +11
NATX LR LR
comp=Z,700nm,19.0s
CCAR Cane Creek 92.18 43 *e*P **P** 14 59 18.9 +0.2
comp=Z,36nm,0.8s
CLTB Caltabellotta 92.22 323 PFAKE 14 59 30.0 +11
CLTB LR LR
comp=Z,2µm,18.0s
N54A Moraine State 92.22 31 P **P** 14 59 18.8 +0.1
baz=327
Y42A Garnett, Star 92.23 43 P **P** 14 59 20.0 +1.1
baz=319
PKME Peaks-Kenny Pk 92.32 23 PFAKE 14 59 30.0 +11
PKME LR LR
comp=Z,900nm,20.0s
LBNH Lisbon 92.40 25 PFAKE 14 59 30.0 +10
LBNH LR LR
comp=Z,900nm,21.0s
VSL Villasalto 92.44 326 *e*P **P** 14 59 19.3 -0.5
comp=Z,76nm,2.0s
VSL LR LR
comp=Z,2µm,18.0s
WVT Waverly 92.54 39 *e*P **P** 14 59 20.0 -0.3
WVT pmax pmax
comp=Z,7.0nm,0.8s
WVT MLR MLR
comp=Z,700nm,18.0s
WVT Waverly 92.54 39 *e*P **P** 14 59 20.0 -0.3
comp=Z,7.0nm,0.8s
WVT LR LR
comp=Z,700nm,18.0s
BINY Binghamton 92.75 28 PFAKE 14 59 30.0 +8.8
BINY LR LR
comp=Z,900nm,20.0s
WVL Waterville 92.84 23 PFAKE 14 59 30.0 +8.5
WVL LR LR
comp=Z,1µm,19.0s
OXF Oxford 92.98 41 PFAKE 14 59 30.0 +7.7
OXF LR LR
comp=Z,800nm,19.0s
LMN Caledonia Moun 93.06 19 PFAKE 14 59 30.0 +7.5
LMN LR LR
comp=Z,1µm,21.0s
TRY Troy 93.14 26 PFAKE 14 59 30.0 +7.1
TRY LR LR
comp=Z,2µm,21.0s
FFD Franklin Falls 93.18 25 PFAKE 14 59 30.0 +6.9
FFD LR LR
comp=Z,2µm,21.0s
PLAL Pickwick Lake 93.31 40 PFAKE 14 59 40.0 +16
PLAL LR LR
comp=Z,700nm,20.0s
SSPA Standing Stone 93.35 30 PFAKE 14 59 40.0 +16
SSPA LR LR
comp=Z,900nm,21.0s
MCWV Mont Chateau 93.37 32 PFAKE 14 59 40.0 +16
MCWV LR LR
comp=Z,400nm,18.0s
KSPA Keystone Colle 93.39 28 PFAKE 14 59 40.0 +16
KSPA LR LR
comp=Z,1µm,21.0s
O56A Blue Knob Stat 93.39 31 P **P** 14 59 24.2 0.0
baz=328
ZAIG Zacatecas 93.61 58 PFAKE 14 59 40.0 +14
ZAIG LR LR
comp=Z,1µm,19.0s
QUA2 Belchertown 94.00 26 PFAKE 14 59 40.0 +13
QUA2 LR LR
comp=Z,800nm,18.0s
HRV Adam Dziewonsk 94.07 25 PFAKE 14 59 40.0 +13
HRV LR LR
comp=Z,800nm,19.0s
VBMS Vicksburg 94.15 43 PFAKE 14 59 40.0 +12
VBMS LR LR
comp=Z,500nm,18.0s
SWET Sewanee 94.21 39 *e*P **P** 14 59 27.1 -0.9
comp=Z,2.9nm,0.8s
SWET LR LR
comp=Z,200nm,20.0s
ODNJ Ogdensburg 94.24 28 PFAKE 14 59 40.0 +12
ODNJ LR LR
comp=Z,700nm,20.0s
WES Weston 94.25 25 PFAKE 14 59 40.0 +12
WES LR LR
comp=Z,2µm,18.0s
LUPA Lehigh Univers 94.37 29 PFAKE 14 59 40.0 +11
LUPA LR LR
comp=Z,1µm,21.0s
MVL Millersville 94.51 30 PFAKE 14 59 40.0 +11
MVL LR LR
comp=Z,700nm,19.0s
PAL Palisades 94.56 27 PFAKE 14 59 40.0 +11
PAL LR LR
comp=Z,1µm,21.0s
BRNJ Basking Ridge 94.60 28 PFAKE 14 59 40.0 +10
BRNJ LR LR
comp=Z,1µm,18.0s
YLE Yale 94.64 27 PFAKE 14 59 40.0 +10
YLE LR LR
comp=Z,1µm,19.0s
CPCT Cooper Cave 94.71 38 *e*P **P** 14 59 30.2 0.0
comp=Z,4.4nm,1.1s
CPCT LR LR
comp=Z,400nm,21.0s
TKL Tuckaleechee C 94.90 37 *e*P **P** 14 59 30.7 -0.5
TKL pmax pmax
comp=Z,8.0nm,0.8s
TKL MLR MLR
comp=Z,900nm,19.0s
TKL Tuckaleechee C 94.90 37 *e*P **P** 14 59 30.7 -0.5
comp=Z,7.7nm,0.8s
TKL LR LR
comp=Z,900nm,19.0s
BLA Blacksburg 95.17 34 PFAKE 14 59 40.0 +7.6
BLA LR LR
comp=Z,800nm,20.0s
LRAL Lakeview Retre 95.39 41 PFAKE 14 59 40.0 +6.6
LRAL LR LR
comp=Z,800nm,19.0s
KEST Kesra 95.54 324 P **P** 14 59 34.1 0.0
comp=Z,8.5nm,0.8s,baz=314,slow=2.5,SNR=5.9
KEST LR LR 15 48 19.7
comp=Z,1µm,18.1s,baz=338,slow=39
CBN Corbin Frederi 95.63 31 PFAKE 14 59 50.0 +16
CBN LR LR
comp=Z,700nm,19.0s
FURI Furi 96.17 286 PFAKE 14 59 50.0 +12
FURI LR LR
comp=Z,500nm,18.0s
KMSC Kings Mountain 96.47 36 PFAKE 14 59 50.0 +12
KMSC LR LR
comp=Z,1µm,21.0s
BRAL Brewton 96.83 42 PFAKE 14 59 50.0 +10
BRAL LR LR
comp=Z,700nm,21.0s
GOGA Godfrey 96.87 38 PFAKE 14 59 50.0 +10
GOGA LR LR
comp=Z,700nm,22.0s
ES19 SONSECA Array 97.42 335 *e*P **P** 14 59 42.4 -0.2
ESDC Sonseca Array 97.47 335 P Pdif 14 59 43.1 +0.2
comp=Z,3.0nm,0.7s,baz=19,slow=4.2,SNR=24
ESDC LR LR 15 48 34.0
comp=Z,2µm,18.1s,baz=60,slow=38
ESLA Sonseca Array 97.47 335 PFAKE 14 59 50.0 +7.1
ESLA LR LR
comp=Z,2µm,20.0s
PAB San Pablo 97.71 335 PFAKE 15 00 00.0 +16
PAB LR LR
comp=Z,2µm,20.0s
CNNC Cliffs of the 97.93 33 PFAKE 15 00 00.0 +15
CNNC LR LR
comp=Z,900nm,20.0s
MTE Manteigas 97.93 338 PFAKE 15 00 00.0 +15
MTE LR LR
comp=Z,2µm,21.0s
TIGA Tifton 98.40 39 PFAKE 15 00 00.0 +13
TIGA LR LR
comp=Z,700nm,20.0s
NHSC New Hope 98.69 36 PFAKE 15 00 00.0 +12
NHSC LR LR
comp=Z,900nm,19.0s
PFVI Vila Bisbo 101.33 338 PFAKE 15 00 10.0 +10
PFVI LR LR
comp=Z,2µm,18.0s
DWPF Disney Wildern 102.19 40 PFAKE 15 00 20.0 +16
DWPF LR LR
comp=Z,700nm,18.0s
KMBO Kilima Mbogo 103.55 279 PFAKE 15 00 20.0 +9.4
KMBO LR LR
comp=Z,600nm,20.0s
RTC Rabat Centre 103.59 335 PFAKE 15 00 20.0 +10
RTC LR LR
comp=Z,5µm,19.0s
TAM Tamanrasset 108.07 319 PFAKE 15 04 50.0
TAM LR LR
comp=Z,800nm,20.0s
TGUH Tegucigalpa,Un 109.88 53 PFAKE 15 04 50.0
TGUH LR LR
comp=Z,600nm,19.0s
GTBY Guantanamo Bay 112.17 39 PFAKE 15 05 00.0
GTBY LR LR
comp=Z,600nm,22.0s
MTDJ Mount Denham 112.32 42 PFAKE 15 05 00.0
MTDJ LR LR
comp=Z,500nm,20.0s
GRTK Grand Turk 112.72 35 PFAKE 15 05 00.0
GRTK LR LR
comp=Z,600nm,20.0s
PAPH Port-au-Prince 114.75 38 PFAKE 15 05 00.0 +10
PAPH LR LR
comp=Z,600nm,22.0s
SDDR Presa de Saban 114.84 37 PFAKE 15 05 00.0 +10
SDDR LR LR
comp=Z,600nm,20.0s
MPR Mayaguez 117.39 33 PFAKE 15 05 10.0 +15
MPR LR LR
comp=Z,300nm,20.0s
CBYP Canovanas 117.89 32 PFAKE 15 05 10.0 +14
CBYP LR LR
comp=Z,700nm,20.0s
SJG San Juan 117.91 32 PFAKE 15 05 10.0 +14
SJG LR LR
comp=Z,500nm,21.0s
HUMP Col San Antoni 118.00 32 PFAKE 15 05 10.0 +14
HUMP LR LR
comp=Z,500nm,20.0s
TOC1 Torodi Ar. Sit 118.04 317 PFAKE 15 05 10.0 +14
TOC1 LR LR
comp=Z,1µm,19.0s
TOC2 Torodi Ar. Sit 118.04 317 PFAKE 15 05 10.0 +14
TOC2 LR LR
comp=Z,900nm,19.0s
TOB1 Torodi Ar. Sit 118.06 317 PFAKE 15 05 10.0 +14
TOB1 LR LR
comp=Z,1µm,19.0s
TOB2 Torodi Ar. Sit 118.06 317 PFAKE 15 05 10.0 +14
TOB2 LR LR
comp=Z,900nm,19.0s
TOC3 Torodi Ar. Sit 118.06 317 PFAKE 15 05 10.0 +14
TOC3 LR LR
comp=Z,900nm,19.0s
TOC7 Torodi Ar. Sit 118.06 317 PFAKE 15 05 10.0 +14
TOC7 LR LR
comp=Z,900nm,19.0s
TOA1 Torodi Ar. Sit 118.06 317 PFAKE 15 05 10.0 +14
TOA1 LR LR
comp=Z,900nm,18.0s
TOA0 Torodi Ar. Sit 118.07 317 *e*PKPdf **PKPdf** 15 04 55.4 -0.9
TOA0 *e*PP **PP** 15 06 09.6 -0.6
TOA0 LR LR
comp=Z,900nm,18.0s
TORD Torodi Ar. Bea 118.07 317 PKP **PKPdf** 15 04 55.6 -0.6
comp=Z,1.4nm,0.6s,baz=31,slow=2.1,SNR=11
TORD PKKPbc **PKKPbc** 15 15 16.6 +2.3
comp=Z,0.7nm,0.6s,baz=215,slow=2.4,SNR=4.1
TOB3 Torodi Ar. Sit 118.07 317 PFAKE 15 05 10.0 +14
TOB3 LR LR
comp=Z,900nm,18.0s
TOB5 Torodi Ar. Sit 118.07 317 PFAKE 15 05 10.0 +14
TOB5 LR LR
comp=Z,1µm,19.0s
TOB4 Torodi Ar. Sit 118.08 317 PFAKE 15 05 10.0 +14
TOB4 LR LR
comp=Z,900nm,18.0s
TOC4 Torodi Ar. Sit 118.08 317 PFAKE 15 05 10.0 +14
TOC4 LR LR
comp=Z,900nm,19.0s
TOC5 Torodi Ar. Sit 118.09 317 PFAKE 15 05 10.0 +14
TOC5 LR LR
comp=Z,1µm,19.0s
SMRT St. Maarten 119.21 29 PFAKE 15 05 10.0 +12
SMRT LR LR
comp=Z,400nm,19.0s
SABA Saba 119.53 30 PFAKE 15 05 10.0 +11
SABA LR LR
comp=Z,300nm,22.0s
SEUS St. Eustatius 119.75 29 PFAKE 15 05 10.0 +11
SEUS LR LR
comp=Z,400nm,22.0s
ANWB Willy Bob 120.05 28 PFAKE 15 05 10.0 +10
ANWB LR LR
comp=Z,500nm,22.0s
MAW Mawson 120.82 206 PKP **PKPdf** 15 05 00.3 +0.5
comp=Z,2.5nm,0.7s,baz=97,slow=5.8,SNR=11
MATP Matopo 121.73 268 PKP **PKPdf** 15 05 03.5 +0.3
comp=Z,1.7nm,0.6s,baz=162,slow=2.6,SNR=5.9
FDF Fort de France 122.97 29 PFAKE 15 05 20.0 +14
FDF LR LR

comp=Z,700nm,21.0s
SDV Santo Domingo 123.76 42 PFAKE 15 05 20.0 +13
SDV LR LR
comp=Z,500nm,21.0s
LBTB Lobatse 126.38 265 *e*PKIKP **PKPdf 15 05 11.7 -0.3**
LBTB Lobatse 126.38 265 *e*PKPdf **PKPdf 15 05 11.7 -0.3**
DBIC Dimbokro 126.96 319 PKP **PKPdf 15 05 13.9 -0.4**
comp=Z,2.6nm,0.6s,baz=23,slow=3.1,SNR=4.7
DBIC PP **PP 15 07 08.3 -2.1**
comp=Z,10.0nm,0.8s,baz=14,slow=6.0,SNR=7.3
DBIC Dimbokro 126.96 319 *e*PKIKP **PKPdf 15 05 13.0 -0.4**
DBIC *e* 15 07 08.1
DBIC Dimbokro 126.96 319 *e*PKPdf **PKPdf 15 05 13.0 -0.4**
DBIC *e*PP **PP 15 07 08.1 -2.4**
TIC Toumodi 127.07 319 *e*P **PP 15 07 09.2 -2.0**
KIC Kosan Boka 127.17 319 *e*P **PP 15 07 09.1 -2.7**
comp=Z,32nm,1.0s
QSPA South Pole Qui 127.39 180 *e*PKPdf **PKPdf 15 05 12.3 -0.3**
LIC Lamto 127.43 319 *e*P **PP 15 07 10.9 -2.7**
comp=Z,78nm,1.7s
BOSA Boshof 128.34 261 PKP **PKPdf 15 05 16.7 +1.0**
comp=Z,1.6nm,0.7s,baz=58,slow=5.0,SNR=4.8
TSUM Tsumeb 129.73 276 PKP **PKPdf 15 05 19.8 +1.2**
comp=Z,2.0nm,0.8s,baz=18,slow=5.7,SNR=5.0
TSUM Tsumeb 129.73 276 PKP **PKPdf 15 05 19.8 +1.2**
TSUM LR LR
comp=Z,600nm,21.0s
PTGA Pitinga 137.36 36 PKP **PKPdf 15 05 33.7 +0.7**
comp=Z,4.4nm,0.7s,baz=239,slow=3.6,SNR=7.1
PTGA Pitinga 137.36 36 *e*PKPdf **PKPdf 15 05 33.0 0.0**
PTGA *e*PP **PP 15 08 17.8 +0.6**
SNAA Sanae 141.82 196 PKP PKPpre 15 05 33.1
SNAA Sanae 141.82 196 *e*PKHKP PKPpre 15 05 32.7
SNAA Sanae 141.82 196 *e*PKPpre PKPpre 15 05 32.7
SAML Samuel 142.61 47 *e*PKPpre PKPpre 15 05 38.1
VNA2 Neumayer--Watz 143.36 196 PKP PKPbc 15 05 39.1 -0.2
baz=116,slow=2.4
VNA3 Neumayer Olymp 143.58 194 PKP PKPab 15 05 38.9 -0.1
VNA1 Neumayer--Stat 143.76 195 PKP PKPbc 15 05 40.5 +0.1
LPAZ La Paz 144.93 61 PKP **PKPdf 15 05 47.0 -0.2**
comp=Z,5.7nm,0.6s,baz=304,slow=2.1,SNR=29
LPAZ La Paz 144.93 61 *e*PKPbc **PKPdf 15 05 46.9 -0.3**
PB11 IPOC Station P 146.11 68 *e*PKPdf **PKPab 15 05 50.9 +0.8**
PB01 IPOC Station P 147.02 69 *e*PKPdf **PKPdf 15 05 50.0 +0.1**
RCBR Riachuelo 148.33 359 PKPbc **PKPbc 15 05 56.2 +0.5**
comp=Z,31nm,0.7s,baz=333,slow=2.7,SNR=24
RCBR Riachuelo 148.33 359 *e*PKPbc **PKPbc 15 05 55.6 -0.1**
LVC Limon Verde 148.38 71 *e*PKPdf **PKPdf 15 05 53.7 +1.2**
LCO Las Campanas 150.26 83 *e*PKPbc **PKPbc 15 06 00.1 -0.3**
YJA Yavi 150.63 67 *e*P **PKPbc 15 06 02.3 +0.6**
HJA Humahuaca 151.34 68 *e*P **PKPbc 15 06 04.4 +1.1**
VCA Vinchina 152.10 81 *e*P **PKPbc 15 06 05.5 +0.9**
AZAP Zapla 152.19 69‖ *e*P **PKPbc 15 06 05.3 +0.3**
AGUA GUANDACOL 152.21 83 *e*P **PKPbc 15 06 05.6 +0.9**
RTLS Leoncito 152.49 88 *e*P **PKPbc 15 06 06.6 +1.1**
FSA Cafayete 152.54 74‖ *e*P **PKPbc 15 06 06.3 +0.6**
AUSP Uspallata 152.57 89‖ *e*P **PKPbc 15 06 06.8 +1.2**
ALOL LOMAS DE OLMED 152.75 67 *e*P **PKPbc 15 06 07.3 +1.3**
AMOG MOGNA 152.80 85‖ *e*P **PKPbc 15 06 06.7 +0.7**
RTCV Cerro Valdivia 153.11 87 *e*P **PKPbc 15 06 06.8 +0.3**
AHML Horco Molle 153.39 74‖ *e*P **PKPbc 15 06 08.3 +1.0**
PLCA Paso Flores 153.50 107 PKPbc **PKPbc 15 06 08.3 +1.1**
comp=Z,2.1nm,0.6s,baz=301,slow=1.7,SNR=9.9
CYA Choya 153.84 78‖ *e*P **PKPbc 15 06 08.7 +0.4**
TCA Tanti 156.03 83‖ *e*P **PKPdf 15 06 03.9 +0.6**
CPUP Villa Florida 159.07 63 PKPab **PKPab 15 06 43.3 -0.5**
comp=Z,2.4nm,0.6s,baz=324,slow=3.9,SNR=7.3

IDC ***22*** *14:48:42.8±1.6,4°.92S×106°.40W,h0km,mb3.8/7, mb1 4.2/7,mb1mx4.0/32,mbtmp3.8/7,MS4.3/9,Ms1 4.3/9, ms1mx4.1/24,Error ellipse: s-maj=63.8km s-min=19.3km az=52.0*
GCMT ***22*** *14:48:44.6±0.3,4°.63S×105°.45W,h26km±1km,MW5.1/91, Moment Tensor Solution. s28,c35; s91,c125; Duration: 0 Moment tensor: Scale 10^16Nm; M_{rr}-0.34±.20; $M_{\theta\theta}$1.37±.16; $M_{\phi\phi}$-1.02±.17; $M_{r\theta}$-0.25±.32; $M_{\phi\phi}$4.93±.14; $M_{\phi r}$-1.05±.30; Best double couple: $M_0$5.18500×10^16 NP1:ϕs187.00000°,δ90.00000°,λ168.00000°. NP2: ϕs277.00000°,δ78.00000°,λ0.00000°. Principal axes: T 5.3750, Plg9.0000°, Azm141.0000°; N -0.3740, Plg78.0000°, Azm6.0000°; P -4.9950, Plg8.0000°, Azm233.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
NEIC ***22*** *14:48:44.6±1.4,4°.88S×106°.21W,h10km,mb4.5/5 Error ellipse: s-maj=48.5km s-min=14.1km az=53.0*
ISCJB ***22*** *14:48:47.9±0.8,4°.2S±0°.1×105°.4W±0°.1,h13km,mb4.1/12, MS4.2/9,Error ellipse: s-maj=21.6km s-min=12.8km az=139.5*

ISC 22 14:48:49.3±0.9,4°.3S±0°.1×105°.4W±0°.1,h13km,n31, σ1§29/15,mb4.2/12,MS4.2/9,Central East Pacific Rise

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H06S1	**SOCORRO T**	**23.50**	**347**	T	T	15 18 39.3	
SNR=6.6							
H06E1	**SOCORRO T-PHAS**	**23.54**	**347**	T	T	15 18 40.7	
SNR=7.2							
ATAH	**Atahualpa**	**27.02**	**97**	LR	LR	15 02 37.3	
comp=Z,385nm,19.4s,baz=270,slow=30							
LPIG	**La Paz**	**28.59**	**351**	LR	LR	15 03 18.6	
comp=Z,715nm,19.9s,baz=196,slow=30							
NNA	**Nana**	**29.27**	**107**	LR	LR	15 03 13.6	
comp=Z,535nm,20.4s,baz=276,slow=29							
ROSC	**El Rosal**	**32.33**	**74**	LR	LR	15 05 48.2	
comp=Z,362nm,20.9s,baz=264,slow=31							
TXAR	**Lajitas Array**	**33.44**	**3**	P	**P**	**14 55 28.7**	**+0.5**
0.5nm,0.9s,baz=216,slow=5.7,SNR=3.7							
TXAR				LR	LR	15 06 50.2	
comp=Z,335nm,21.2s,baz=0.0,slow=32							
TAOE	**Nuku Hiva Isla**	**34.81**	**261**	*e*LR	LR	15 04 37.5	
941nm,25.8s							
LPAZ	**La Paz**	**38.48**	**111**	P	**P**	**14 56 12.5**	**+0.3**
0.5nm,0.6s,baz=318,slow=5.5,SNR=2.7							
LPAZ				LR	LR	15 08 31.2	
comp=Z,177nm,20.3s,baz=268,slow=30							
LVC	**Limon Verde**	**39.72**	**121**	P	**P**	**14 56 23.5**	**+1.2**
27nm,1.1s,baz=263,slow=6.1,SNR=3.8							
LVC	**Limon Verde**	**39.72**	**121**	P	**P**	**14 56 23.1**	**+0.8**
49nm,1.7s							
SAML	**Samuel**	**42.17**	**99**	*e*P	**P**	**14 56 41.0**	**-1.2**
11nm,1.3s							
R11A	**Troy Canyon, C**	**43.44**	**348**	*e*P	**P**	**14 56 51.5**	**-0.8**
4.0nm,1.1s							
NVAR	**Mina Array Bea**	**44.13**	**345**	P	**P**	**14 56 57.3**	**-0.5**
1.9nm,1.0s,baz=168,slow=7.5,SNR=7.0							
PPT2	**Papeete2**	**45.22**	**249**	*e*S	**S**	**15 03 47.5**	**+0.6**
125nm,25.5s							
PPT2				*e*LQ	LQ	15 07 49.3	
738nm,29.2s							
PPT2				*e*LR	LR	15 09 33.3	
974nm,25.2s							
TBI	**Tubuai**	**46.55**	**242**	*e*LQ	LQ	15 08 19.1	
609nm,30.8s							
TBI				*e*LR	LR	15 10 19.5	
728nm,29.0s							
PDAR	**Pinedale Array**	**46.96**	**356**	P	**P**	**14 57 20.6**	**+0.4**
0.3nm,0.5s,baz=169,slow=7.3,SNR=3.7							
PLCA	**Paso Flores**	**47.94**	**144**	LR	LR	15 12 19.6	
comp=Z,680nm,19.5s,baz=10,slow=30							
RSSD	**Black Hills**	**48.18**	**1**	P	**P**	**14 57 30.8**	**+1.1**
7.3nm,1.3s							
ECSD	**EROS Data Cent**	**48.43**	**9**	P	**P**	**14 57 34.1**	**+2.8**
7.9nm,1.3s							
CPUP	**Villa Florida**	**50.90**	**121**	P	**P**	**14 57 50.2**	**-0.3**
6.2nm,1.1s,baz=271,slow=6.6,SNR=4.5							
CPUP				LR	LR	15 15 38.1	
comp=Z,272nm,21.2s,baz=293,slow=31							
YKA	**Yellowknife Ar**	**66.94**	**355**	P	**P**	**14 59 40.5**	**-0.7**
2.1nm,0.9s,baz=160,slow=6.0,SNR=3.6							
ILAR	**Eielson Array**	**75.32**	**343**	P	**P**	**15 00 29.8**	**-2.3**
1.4nm,0.8s,baz=144,slow=4.4,SNR=8.5							
H11N3	**WAKE ISLAND Hy**	**89.25**	**290**	T	T	16 40 29.4	
baz=95,slow=75,SNR=131							
H11N2	**WAKE ISLAND Hy**	**89.27**	**290**	T	T	16 40 25.9	
baz=95,slow=75,SNR=91							
H11N1	**WAKE ISLAND Hy**	**89.27**	**290**	T	T	16 40 24.5	
baz=95,slow=75,SNR=77							
H11S2	**WAKE ISLAND Hy**	**89.34**	**288**	T	T	16 40 21.1	
baz=101,slow=74,SNR=284							
H11S1	**WAKE ISLAND Hy**	**89.35**	**288**	T	T	16 40 20.0	
baz=101,slow=74,SNR=252							
H11S3	**WAKE ISLAND Hy**	**89.36**	**288**	T	T	16 40 22.4	
baz=101,slow=74,SNR=219							
PETK	**Petropavlovsk-**	**97.54**	**323**	LR	LR	15 38 03.1	
comp=Z,266nm,20.4s,baz=90,slow=30							
CMAR	**Chiang Mai Arr**	**152.34**	**303**	PKPbc	**PKPdf**	**15 08 39.8**	**+0.4**
0.9nm,0.9s,baz=355,slow=0.6,SNR=7.1							

NEIC 22 14:49:06.8,65°.49N×166°.62W,h10km,ML3.5(AEIC), After AEIC.,Northern Alaska

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TNA	**Tin City**	**0.55**	**278**	P	Pg	14 49 17.5	0.0
TNA				S	Sg	14 49 25.3	+0.6
GAMB	**Gambell**	**2.79**	**234**	P	Pn	14 49 51.4	0.0
GAMB				S	Sb	14 50 30.3	-0.4
TTA	**Tatalina**	**5.30**	**114**	P	Pn	14 50 27.5	+1.5
TTA				S	Sn	14 51 27.0	0.0
TT01	**Tatalina**	**5.31**	**114**	P	Pn	14 50 27.6	+1.5
IM04	**Indian Mountai**	**5.32**	**79**	P	Pn	14 50 28.1	+1.9
CHUM	**Lake Minchumin**	**6.34**	**98**	P	Pn	14 50 42.2	+2.0
CAST	**Castle Rocks**	**6.62**	**102**	P	Pn	14 50 45.4	+1.3
CAST				S	Sn	14 52 00.7	+1.2
MLY	**Manley**	**6.68**	**87**	P	Pn	14 50 46.9	+2.0
PPLA	**Purkeypile**	**6.81**	**106**	P	Pn	14 50 48.3	+1.4
BPAW	**Bear Paw Mtn.**	**6.82**	**95**	P	Pn	14 50 48.3	+1.5

HLW ***22*** *14:51:19.5,36°.76N×27°.26E,h33km±29km,Ml3.9*
ISCJB ***22*** *14:51:20.5±0.2,36°.66N±0°.02×27°.17E±0°.02,h137km±2km, mb4.1/12,Error ellipse: s-maj=2.7km s-min=2.2km az=1.2*
NSSC ***22*** *14:51:20.3±1.2,36°.42N×27°.52E,h135km±271km,MD2.6, ML3.0*
ATH ***22*** *14:51:21.0,36°.70N×27°.15E,h137km±3km,ML4.0/5,Error ellipse: s-maj=4.0km s-min=1.1km az=126.0*
IDC ***22*** *14:51:21.1±0.8,36°.66N×27°.10E,h128km±10km,mb3.8/8, mb1 3.7/16,mb1mx3.4/58,mbtmp4.1/16,Error ellipse: s-maj=15.9km s-min=8.4km az=153.0*
DDA ***22*** *14:51:21.6,36°.79N×27°.18E,h7km,Ml3.7*
CSEM ***22*** *14:51:21.4±0.1,36°.66N×27°.17E,h134km±1km,ML4.0, Error ellipse: s-maj=2.5km s-min=2.0km az=16.0*
ISK ***22*** *14:51:22.3,36°.78N×27°.11E,h128km,MD3.8*
NEIC ***22*** *14:51:22.5,36°.72N×27°.13E,h121km,mb4.2/1,After CSEM.*
NIC ***22*** *14:51:23.1±0.2,36°.92N×27°.54E,h81km,mb4.6,ML4.2*
THE ***22*** *14:51:24.5,36°.71N×27°.13E,h126km±1km,ML3.7/14, Error ellipse: s-maj=1.6km s-min=0.6km az=112.0*
GII ***22*** *14:51:26.2±0.0,36°.17N×27°.58E,h15km,MD3.7/2*

ISC 22 14:51:21.5±0.6,36°.65N±0°.03×27°.20E±0°.03,h129km±5km, n318,σ1§48/410,mb4.1/12,8C-7D,Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NIS1	**Nisyros Isl.**	**0.05**	**197**	*e*PG	**Pn**	**14 51 40.2**	**+1.2**
NIS1	**Nisyros Isl.**	**0.05**	**197**	P	**Pn**	**14 51 40.3**	**+1.3**
NIS1				S	**Sn**	**14 51 54.3**	**+2.1**
NIS1	**Nisyros Isl.**	**0.05**	**197**	P	**Pn**	**14 51 39.6**	**+0.6**
NIS1	**Nisyros Isl.**	**0.05**	**197**	*e*Pg	**Pn**	**14 51 40.2**	**+1.2**
NIS1				S	**Sn**	**14 51 54.3**	**+2.1**
NIS1	**Nisyros Isl.**	**0.05**	**197**	P	**Pn**	**14 51 39.6**	**+0.6**
BODT	**Bodrum**	**0.42**	**12**	*e*PG	**Pn**	**14 51 40.9**	**+0.8**
BODT				*e*SG	**Sn**	**14 51 54.0**	**-0.1**
BODT	**Bodrum**	**0.42**	**12**	P	**Pn**	**14 51 40.8**	**+0.8**
BODT				S	**Sn**	**14 51 53.1**	**-1.0**
BODT	**Bodrum**	**0.42**	**12**	P	**Pn**	**14 51 40.8**	**+0.8**
BODT				S	**Sn**	**14 51 53.1**	**-1.0**
BODT				*e*Sg	**Sn**	**14 51 54.0**	**-0.1**
BDRM	**Kayabasi**	**0.46**	**25**	P	**Pn**	**14 51 41.1**	**+0.9**
BDRM				S	**Sn**	**14 51 55.1**	**+0.6**
BDRM	**Kayabasi**	**0.46**	**25**	*i* P	**Pn**	**14 51 41.1**	**+0.9**
BDRM				*i* S	**Sn**	**14 51 55.1**	**+0.6**
ARG	**Arkhangelos**	**0.86**	**120**	P	**Pn**	**14 51 45.0**	**+1.9**
ARG				S	**Sn**	**14 51 59.2**	**-0.2**
ARG	**Arkhangelos**	**0.86**	**120**	P	**Pn**	**14 51 45.0**	**+1.9**
ARG				S	**Sn**	**14 52 01.8**	**+2.4**
YER	**Yerkesik**	**1.00**	**61**	*e*PG	**Pn**	**14 51 45.9**	**+1.6**
YER				*e*SG	**Sn**	**14 52 02.7**	**+1.0**
YER	**Yerkesik**	**1.00**	**61**	P	**Pn**	**14 51 45.9**	**+1.6**
YER				S	**Sn**	**14 52 00.4**	**-1.2**
YER	**Yerkesik**	**1.00**	**61**	P	**Pn**	**14 51 45.9**	**+1.6**
YER				S	**Sn**	**14 52 00.4**	**-1.2**
YER				*e*Sg	**Sn**	**14 52 02.7**	**+1.0**
GCAM	**G?zelcaml?**	**1.05**	**2**	P	**Pn**	**14 51 44.9**	**+0.2**
GCAM				S	**Sn**	**14 52 01.7**	**-0.7**
GCAM	**G?zelcaml?**	**1.05**	**2**	*i* P	**Pn**	**14 51 44.9**	**+0.2**
GCAM				*i* S	**Sn**	**14 52 01.7**	**-0.7**
SMG	**Samos**	**1.10**	**345**	P	**Pn**	**14 51 45.1**	**-0.1**
SMG				S	**Sn**	**14 52 00.9**	**-2.4**
SMG	**Samos**	**1.10**	**345**	P	**Pn**	**14 51 45.1**	**-0.1**
SMG				S	**Sn**	**14 52 00.9**	**-2.4**
SMG	**Samos**	**1.10**	**345**	P	**Pn**	**14 51 44.7**	**-0.5**
KARP	**Karpathos**	**1.10**	**181**	*e*PN	**Pn**	**14 51 47.9**	**+2.6**
KARP	**Karpathos**	**1.10**	**181**	P	**Pn**	**14 51 46.8**	**+1.5**
KARP				S	**Sn**	**14 52 04.0**	**+0.6**
KARP	**Karpathos**	**1.10**	**181**	P	**Pn**	**14 51 46.8**	**+1.5**
KARP				*e*Sn	**Sn**	**14 52 00.7**	**-2.7**
KARP				S	**Sn**	**14 52 04.0**	**+0.6**
KARP	**Karpathos**	**1.10**	**181**	P	**Pn**	**14 51 47.1**	**+1.8**
KARP				S	**Sn**	**14 52 05.1**	**+1.7**
KARP				AML	AML	14 52 09.1	
comp=N,9890μm,0.2s							
KARP				AML	AML	14 52 11.8	
comp=E,4726μm,0.4s							
KARP	**Karpathos**	**1.10**	**181**	*e*Pn	**Pn**	**14 51 46.9**	**+1.5**
KARP				*e*Sn	**Sn**	**14 52 00.7**	**-2.7**
AYDN	**Tasoluk**	**1.15**	**28**	P	**Pn**	**14 51 46.4**	**+0.6**
AYDN				S	**Sn**	**14 52 04.3**	**0.0**
AYDN	**Tasoluk**	**1.15**	**28**	*i* P	**Pn**	**14 51 46.4**	**+0.6**
AYDN				*i* S	**Sn**	**14 52 04.3**	**0.0**
DALY	**Dalyan (Mu¨la**	**1.18**	**81**	*e*PN	**Pn**	**14 51 48.1**	**+2.1**
DALY	**Dalyan (Mu¨la**	**1.18**	**81**	*e*Pn	**Pn**	**14 51 48.1**	**+2.1**
APE	**Apeiranthos**	**1.40**	**288**	*e*PN	**Pn**	**14 51 48.8**	**+0.4**
APE	**Apeiranthos**	**1.40**	**288**	*i*‖ *i*P	**Pn**	**14 51 48.8**	**+0.4**
APE	**Apeiranthos**	**1.40**	**288**	P	**Pn**	**14 51 48.9**	**+0.4**
APE				S	**Sn**	**14 52 07.1**	**-1.8**
APE	**Apeiranthos**	**1.40**	**288**	*e*Pn	**Pn**	**14 51 48.8**	**+0.4**
APE	**Apeiranthos**	**1.40**	**288**	P	**Pn**	**14 51 49.1**	**+0.7**
APE				S	**Sn**	**14 52 07.1**	**-1.8**
APE	**Apeiranthos**	**1.40**	**288**	P	**Pn**	**14 51 49.1**	**+0.7**
AYDB	**Zeytinkoy-Aydi**	**1.41**	**23**	*e*PN	**Pn**	**14 51 49.0**	**+0.4**
AYDB	**Zeytinkoy-Aydi**	**1.41**	**23**	*e*Pn	**Pn**	**14 51 49.0**	**+0.4**
DGB	**˜zmir**	**1.42**	**350**	*i* P	**Pn**	**14 51 48.1**	**-0.5**
DGB				*i* S	**Sn**	**14 52 07.8**	**-1.5**
SANT	**Santorini**	**1.43**	**259**	P	**Pn**	**14 51 49.5**	**+0.8**
SANT				S	**Sn**	**14 52 08.2**	**-1.2**
SANT	**Santorini**	**1.43**	**259**	P	**Pn**	**14 51 49.5**	**+0.8**
SANT				S	**Sn**	**14 52 08.2**	**-1.2**
SANT	**Santorini**	**1.43**	**259**	P	**Pn**	**14 51 49.9**	**+1.2**
SANT	**Santorini**	**1.43**	**259**	*e*Pn	**Pn**	**14 51 49.5**	**+0.8**
THR2	**Thira Island,**	**1.43**	**262**	P	**Pn**	**14 51 49.4**	**+0.7**
THR2	**Thira Island,**	**1.43**	**262**	P	**Pn**	**14 51 49.4**	**+0.7**
CMBO	**Columbo, Santo**	**1.45**	**264**	P	**Pn**	**14 51 50.2**	**+1.3**
CMBO	**Columbo, Santo**	**1.45**	**264**	P	**Pn**	**14 51 50.2**	**+1.3**
THR6	**Thira Island,**	**1.48**	**259**	P	**Pn**	**14 51 50.1**	**+0.9**
THR6	**Thira Island,**	**1.48**	**259**	P	**Pn**	**14 51 50.1**	**+0.9**
THR5	**Thira Island,**	**1.51**	**262**	*e*PN	**Pn**	**14 51 50.6**	**+1.0**
THR5	**Thira Island,**	**1.51**	**262**	P	**Pn**	**14 51 50.1**	**+0.5**
THR5	**Thira Island,**	**1.51**	**262**	P	**Pn**	**14 51 50.1**	**+0.5**
THR5	**Thira Island,**	**1.51**	**262**	*e*Pn	**Pn**	**14 51 50.6**	**+1.0**
FETY	**Fethiye**	**1.52**	**90**	*e*PN	**Pn**	**14 51 51.4**	**+1.7**
FETY	**Fethiye**	**1.52**	**90**	P	**Pn**	**14 51 51.4**	**+1.7**
FETY	**Fethiye**	**1.52**	**90**	P	**Pn**	**14 51 51.4**	**+1.7**
ZEY	**˜zmir**	**1.68**	**341**	*i* P	**Pn**	**14 51 51.1**	**-0.5**
ZEY				*i* S	**Sn**	**14 52 12.9**	**-1.6**
ZKR	**Zakros**	**1.73**	**208**	P	**Pn**	**14 51 54.0**	**+1.9**
ZKR				S	**Sn**	**14 52 16.6**	**+1.1**
ZKR	**Zakros**	**1.73**	**208**	P	**Pn**	**14 51 54.0**	**+1.9**
ZKR				S	**Sn**	**14 52 16.6**	**+1.1**
ZKR	**Zakros**	**1.73**	**208**	P	**Pn**	**14 51 54.8**	**+2.7**
ZKR				S	**Sn**	**14 52 16.7**	**+1.1**
URLA	**Izmir**	**1.77**	**345**	P	**Pn**	**14 51 52.2**	**-0.5**
URLA				S	**Sn**	**14 52 14.6**	**-1.9**
URLA	**Izmir**	**1.77**	**345**	*i* P	**Pn**	**14 51 52.2**	**-0.5**
URLA				*i* S	**Sn**	**14 52 14.7**	**-1.9**
DNZL	**Cakiroluk**	**1.81**	**54**	P	**Pn**	**14 51 54.3**	**+1.0**
DNZL				S	**Sn**	**14 52 18.0**	**+0.5**
DNZL	**Cakiroluk**	**1.81**	**54**	*i* P	**Pn**	**14 51 54.3**	**+1.0**
DNZL				*i* S	**Sn**	**14 52 18.1**	**+0.5**
DENT	**Denizli**	**1.83**	**52**	*e*Pn	**Pn**	**14 51 54.7**	**+1.3**
DENT	**Denizli**	**1.83**	**52**	*e*Pn	**Pn**	**14 51 54.7**	**+1.3**
NPS	**Neapolis**	**1.89**	**223**	P	**Pn**	**14 51 55.1**	**+1.0**
NPS				S	**Sn**	**14 52 19.6**	**+0.7**
NPS	**Neapolis**	**1.89**	**223**	P	**Pn**	**14 51 55.1**	**+1.0**
NPS				S	**Sn**	**14 52 19.6**	**+0.7**
NPS	**Neapolis**	**1.89**	**223**	P	**Pn**	**14 51 55.1**	**+1.0**
GLHS	**Gihisar (BURDU**	**1.91**	**74**	*e*PN	**Pn**	**14 51 56.3**	**+1.8**
GLHS	**Gihisar (BURDU**	**1.91**	**74**	*e*Pn	**Pn**	**14 51 56.3**	**+1.8**
CHOS	**Chios island**	**1.96**	**333**	*e*PN	**Pn**	**14 51 54.6**	**-0.4**
CHOS	**Chios island**	**1.96**	**333**	P	**Pn**	**14 51 54.7**	**-0.3**
CHOS	**Chios island**	**1.96**	**333**	P	**Pn**	**14 51 54.7**	**-0.3**
GOLH	**Golhisar**	**1.98**	**72**	P	**Pn**	**14 51 57.2**	**+1.9**
GOLH	**Golhisar**	**1.98**	**72**	*i* P	**Pn**	**14 51 57.2**	**+1.9**
AKAS	**Kas**	**1.99**	**101**	P	**Pn**	**14 51 56.9**	**+1.6**
AKAS				S	**Sn**	**14 52 22.8**	**+1.6**
AKAS	**Kas**	**1.99**	**101**	*i* P	**Pn**	**14 51 56.9**	**+1.6**
AKAS				*i* S	**Sn**	**14 52 22.8**	**+1.6**
KSL	**Kastellorizon**	**1.99**	**104**	P	**Pn**	**14 51 56.2**	**+1.0**
KSL				S	**Sn**	**14 52 21.3**	**+0.2**
KSL	**Kastellorizon**	**1.99**	**104**	P	**Pn**	**14 51 56.2**	**+1.0**
KSL				S	**Sn**	**14 52 21.3**	**+0.2**
KSL				AML	AML	14 52 24.5	
comp=N,909μm,0.6s							
KSL				AML	AML	14 52 24.7	
comp=E,1958μm,0.3s							
LAST	**Lasithi**	**2.04**	**224‖**	*i* P	**Pn**	**14 51 56.7**	**+0.8**
LAST	**Lasithi**	**2.04**	**224**	P	**Pn**	**14 51 56.6**	**+0.7**
LAST				S	**Sn**	**14 52 22.8**	**+0.5**
LAST	**Lasithi**	**2.04**	**224**	*e*Pn	**Pn**	**14 51 56.4**	**+0.5**
LAST				*e*Sn	**Sn**	**14 52 22.0**	**-0.3**
LAST	**Lasithi**	**2.04**	**224**	P	**Pn**	**14 51 56.4**	**+0.5**
LAST	**Lasithi**	**2.04**	**224**	*e*Pn	**Pn**	**14 51 56.4**	**+0.5**
LAST				*e*Sn	**Sn**	**14 52 22.0**	**-0.3**
MANT	**Manisa**	**2.13**	**30**	P	**Pn**	**14 51 57.4**	**+0.1**
MANT				S	**Sn**	**14 52 23.6**	**-1.1**
MANT	**Manisa**	**2.13**	**30**	*i* P	**Pn**	**14 51 57.4**	**+0.1**
MANT				*i* S	**Sn**	**14 52 23.6**	**-1.1**
ELL	**Elmali**	**2.18**	**87**	*e*PN	**Pn**	**14 52 00.1**	**+2.4**
ELL	**Elmali**	**2.18**	**87**	*e*Pn	**Pn**	**14 52 00.1**	**+2.4**
IACM	**Heraklion**	**2.18**	**233**	P	**Pn**	**14 51 58.8**	**+1.2**
IACM				S	**Sn**	**14 52 25.4**	**+0.1**
IACM	**Heraklion**	**2.18**	**233**	P	**Pn**	**14 51 58.8**	**+1.2**
IACM				S	**Sn**	**14 52 25.4**	**+0.1**
IACM	**Heraklion**	**2.18**	**233**	P	**Pn**	**14 51 58.9**	**+1.2**
KULA	**Kula-Manisa**	**2.20**	**32**	*e*PN	**Pn**	**14 51 58.5**	**+0.6**
KULA	**Kula-Manisa**	**2.20**	**32**	P	**Pn**	**14 51 58.2**	**+0.3**
KULA				S	**Sn**	**14 52 25.3**	**-0.5**
KULA	**Kula-Manisa**	**2.20**	**32**	P	**Pn**	**14 51 58.2**	**+0.3**
KULA	**Kula-Manisa**	**2.20**	**32**	*e*Pn	**Pn**	**14 51 58.5**	**+0.6**
KULA				S	**Sn**	**14 52 25.3**	**-0.5**
AKS	**Akhisar**	**2.28**	**12**	*e*PN	**Pn**	**14 51 58.8**	**0.0**
AKS	**Akhisar**	**2.28**	**12**	*e*Pn	**Pn**	**14 51 58.8**	**0.0**
IDI	**Anoyia**	**2.31**	**235**	P	**Pn**	**14 51 59.7**	**+0.4**
comp=E,39nm,0.3s,baz=32,slow=5.3,SNR=368							
IDI				S	**Sn**	**14 52 26.8**	**-1.5**
comp=E,207nm,0.3s,baz=315,slow=18,SNR=35							
IDI	**Anoyia**	**2.31**	**235‖**	*i* P	**Pn**	**14 51 59.8**	**+0.4**
IDI	**Anoyia**	**2.31**	**235**	P	**Pn**	**14 51 59.8**	**+0.4**
IDI				S	**Sn**	**14 52 28.2**	**-0.1**
IDI	**Anoyia**	**2.31**	**235**	*e*Pn	**Pn**	**14 51 59.7**	**+0.4**
IDI				*e*Sn	**Sn**	**14 52 27.4**	**-0.9**
IDI				S	**Sn**	**14 52 28.2**	**-0.1**
IDI	**Anoyia**	**2.31**	**235**	P	**Pn**	**14 51 59.4**	**0.0**
IDI	**Anoyia**	**2.31**	**235**	*e*Pn	**Pn**	**14 51 59.7**	**+0.4**
IDI				*e*Sn	**Sn**	**14 52 27.4**	**-0.9**
DKL	**Dikili**	**2.43**	**355**	*e*PN	**Pn**	**14 52 01.0**	**+0.3**
DKL	**Dikili**	**2.43**	**355**	*e*Pn	**Pn**	**14 52 01.0**	**+0.3**
KHL	**Karahalli**	**2.49**	**47**	*e*PN	**Pn**	**14 52 02.7**	**+1.1**
KHL	**Karahalli**	**2.49**	**47**	*e*Pn	**Pn**

ITM	**Ithomi**	**4.26 279**	P	**Pn**	**14 52 26.4**	**+1.8**
PYL	**PYLOS**	**4.39 275**	P	**Pn**	**14 52 25.7**	**-0.6**
PYL	**PYLOS**	**4.39 275**	P	**Pn**	**14 52 25.7**	**-0.6**
PYL	**PYLOS**	**4.39 275**	P	**Pn**	**14 52 24.7**	**-1.6**
AKMC	**Akamas**	**4.47 110**	P	**Pn**	**14 52 27.7**	**+0.2**
	baz=297					
AKMC	**Akamas**	**4.47 110**	P	**Pn**	**14 52 27.7**	**+0.2**
AGG	**Agios Georgios**	**4.52 303**	*e*Pn	**Pn**	**14 52 28.9**	**+0.7**
AGG	**Agios Georgios**	**4.52 303**	*e*Pn	**Pn**	**14 52 28.9**	**+0.7**
PPCY	**Paphos**	**4.54 111**	P	**Pn**	**14 52 28.5**	**+0.1**
	baz=298					
PPCY	**Paphos**	**4.54 111**	P	**Pn**	**14 52 28.5**	**+0.1**
ANX	**Ano Chora**	**4.62 296**	P	**Pn**	**14 52 30.0**	**+0.5**
ANX	**Ano Chora**	**4.62 296**	P	**Pn**	**14 52 30.0**	**+0.5**
ALFC	**Alefka**	**4.63 107**	P	**Pn**	**14 52 29.8**	**+0.1**
	baz=294					
ALFC			S	**Sn**	**14 53 21.2**	**-1.4**
ALFC	**Alefka**	**4.63 107**	P	**Pn**	**14 52 29.8**	**+0.1**
ALFC			S	**Sn**	**14 53 21.2**	**-1.4**
SZAC	**Souni**	**5.00 111**	P	**Pn**	**14 52 35.0**	**+0.4**
	baz=297					
SZAC	**Souni**	**5.00 111**	P	**Pn**	**14 52 35.0**	**+0.4**
THL	**Klokotos Trika**	**5.02 307**	P	**Pn**	**14 52 34.7**	**0.0**
THL	**Klokotos Trika**	**5.02 307**	P	**Pn**	**14 52 34.7**	**0.0**
ZKS	**Zakynthos**	**5.23 283**	P	**Pn**	**14 52 36.4**	**-1.2**
ZKS	**Zakynthos**	**5.23 283**	P	**Pn**	**14 52 36.4**	**-1.2**
CSS	**Mathiatis**	**5.26 107**	P	**Pn**	**14 52 37.9**	**-0.2**
	baz=294					
CSS			S	**Sn**	**14 53 37.2**	**-0.5**
CSS	**Mathiatis**	**5.26 107**	P	**Pn**	**14 52 37.2**	**-0.9**
CSS	**Mathiatis**	**5.26 107**	Pn	**Pn**	**14 52 37.2**	**-0.9**
CSS	**Mathiatis**	**5.26 107**	*e*Pn	**Pn**	**14 52 37.4**	**-0.7**
CSS	**Mathiatis**	**5.26 107**	P	**Pn**	**14 52 37.9**	**-0.2**
CSS			S	**Sn**	**14 53 37.2**	**-0.5**
CSS	**Mathiatis**	**5.26 107**	*e*Pn	**Pn**	**14 52 37.4**	**-0.7**
CSS			*e*Sn	**Sn**	**14 53 33.2**	**-4.5**
MATC	**Matruh**	**5.29 180**	P	**Pn**	**14 52 37.9**	**-0.5**
	baz=181					
SLUM	**Salum**	**5.40 198**	P	**Pn**	**14 52 39.9**	**-0.1**
	baz=199					
SLUM			AMP		14 53 00.0	
	comp=E,110μm,0.2s,logA/T=5.7,baz=199					
SLUM	**Salum**	**5.40 198**	P	**Pn**	**14 52 39.9**	**-0.1**
BR231	**Keskin MP Arra**	**5.43 52**	*e*Pn	Pn	14 52 47.4	+7.1
HMAT	**Matruh**	**5.54 181**	S	**Sn**	**14 53 41.1**	**-3.3**
	baz=182					
HMAT			AMP		14 53 00.0	
	comp=N,130μm,0.3s,logA/T=5.7,baz=182					
BR131	**Keskin Array S**	**5.93 57**	*e*Pn	**Pn**	**14 52 49.3**	**+2.2**
BR131	**Keskin Array S**	**5.93 57**	*e*Pn	**Pn**	**14 52 49.3**	**+2.2**
BRTR	**Keskin Array B**	**5.93 57**	P	**Pn**	**14 52 49.3**	**+2.2**
	comp=N,0.7nm,0.3s,baz=224,slow=13,SNR=40					
BRTR			S	**Sn**	**14 53 56.3**	**+2.3**
	comp=N,0.3nm,0.3s,baz=222,slow=23,SNR=5.3					
HBRG	**Burj al ʻArab**	**6.45 159**	P	**Pn**	**14 52 53.9**	**-0.1**
	baz=160					
HBRG	**Burj al ʻArab**	**6.45 159**	P	**Pn**	**14 52 53.9**	**-0.1**
ARNB	**Al Arnab**	**7.13 94**	*e*P	**Pn**	**14 53 00.1**	**-3.2**
ARNB			*e*S	Sn	14 54 12.9	-10
ARNB			AML	AML	14 54 26.9	
	comp=E,16nm,0.6s					
ARNB			AML	AML	14 54 27.9	
	comp=N,13nm,0.6s					
TIR	**Tirane**	**7.39 312**	⇓*i*P	**Pn**	**14 53 07.2**	**+0.6**
TIR	**Tirane**	**7.39 312**	*e*Pn	**Pn**	**14 53 06.0**	**-0.6**
TIR	**Tirane**	**7.39 312**	⇓*i*P	**Pn**	**14 53 07.2**	**+0.6**
TIR	**Tirane**	**7.39 312**	*e*Pn	**Pn**	**14 53 06.0**	**-0.6**
BTCH	**Batrach**	**7.50 92**	*e*P	**Pn**	**14 53 05.9**	**-2.3**
BTCH			*e*S	Sn	14 54 20.4	-11
BTCH			AML	AML	14 54 27.2	
	comp=E,44nm,0.2s					
BTCH			AML	AML	14 54 30.7	
	comp=N,104nm,0.3s					
BTCH	**Batrach**	**7.50 92**	*e*P	**Pn**	**14 53 05.9**	**-2.3**
SWA2		**7.53 192**	AMP		14 54 00.0	
	comp=N,100μm,0.3s,logA/T=5.5,baz=192					
HNAT	**Natroun**	**7.56 157**	P	**Pn**	**14 53 09.2**	**+0.2**
	baz=157					
HNAT	**Natroun**	**7.56 157**	P	**Pn**	**14 53 09.2**	**+0.2**
BIDA	**Albida**	**7.59 100**	*e*P	**Pn**	**14 53 06.2**	**-3.3**
BIDA			*e*S	Sn	14 54 23.4	-11
BIDA			AML	AML	14 54 32.2	
	comp=E,18nm,0.4s					
BIDA			AML	AML	14 54 36.4	
	comp=N,51nm,0.4s					
DRWC	**Darouich**	**7.62 87**	*e*P	**Pn**	**14 53 07.6**	**-2.2**
DRWC			*e*S	Sn	14 54 24.9	-10
DRWC			AML	AML	14 54 45.5	
	comp=E,8.8nm,0.2s					
DRWC			AML	AML	14 54 47.4	
	comp=N,9.4nm,1.0s					
DRWC	**Darouich**	**7.62 87**	*e*P	**Pn**	**14 53 07.6**	**-2.2**
MMA0B	**Mount Meron ar**	**7.66 116**	Pn	**Pn**	**14 53 09.5**	**-0.9**
MMA0B			Sn	**Sn**	**14 54 32.6**	**-3.1**
MMA0B	**Mount Meron ar**	**7.66 116**	Pn	**Pn**	**14 53 09.5**	**-0.9**
MMAI	**Mount Meron Ar**	**7.66 116**	P	**Pn**	**14 53 09.9**	**-0.5**
	comp=N,30nm,0.3s,baz=312,slow=12,SNR=66					
MMAI			S	**Sn**	**14 54 32.5**	**-3.2**
	comp=N,11nm,0.3s,baz=310,slow=25,SNR=8.9					
KOT	**Kottamia**	**7.74 149**	P	**Pn**	**14 53 11.7**	**+0.2**
	baz=149					
KOT			S	**Sn**	**14 54 33.7**	**-4.0**
	baz=149					
KOT	**Kottamia**	**7.74 149**	P	**Pn**	**14 53 11.7**	**+0.2**
KSDI	**Kefar Szold**	**7.76 114**	Pn	**Pn**	**14 53 11.1**	**-0.6**
KSDI	**Kefar Szold**	**7.76 114**	Pn	**Pn**	**14 53 11.1**	**-0.6**
HAWK	**Haweek**	**7.80 103**	*e*P	**Pn**	**14 53 09.3**	**-3.0**
HAWK			*e*S	Sn	14 54 27.5	-12
HAWK			AML	AML	14 54 36.4	
	comp=E,16nm,0.7s					
HAWK			AML	AML	14 54 38.1	
	comp=N,35nm,0.5s					
HHAG	**Hagoal**	**7.84 147**	P	**Pn**	**14 53 12.8**	**0.0**
	baz=147					
HHAG			S	**Sn**	**14 54 35.1**	**-4.8**
	baz=147					
HHAG	**Hagoal**	**7.84 147**	P	**Pn**	**14 53 12.8**	**0.0**
RSH		**7.85 134**	P	**Pn**	**14 53 12.9**	**-0.1**
	baz=135					
RSH		**7.85 134**	P	**Pn**	**14 53 12.9**	**-0.1**
TIRR	**Tirgusor**	**7.86 6**	⇑*i*P	**Pn**	**14 53 12.8**	**-0.1**
TIRR	**Tirgusor**	**7.86 6**	*e*Pn	**Pn**	**14 53 12.3**	**-0.6**
TIRR	**Tirgusor**	**7.86 6**	⇑*i*P	**Pn**	**14 53 12.8**	**-0.1**
TIRR	**Tirgusor**	**7.86 6**	*e*Pn	**Pn**	**14 53 12.3**	**-0.6**
BRBR	**Barbar**	**7.87 112**	*e*P	**Pn**	**14 53 09.9**	**-3.5**
BRBR			*e*S	Sn	14 54 29.7	-11
BRBR			AML	AML	14 54 40.7	
	comp=E,30nm,0.5s					
BRBR			AML	AML	14 54 45.8	
	comp=N,13nm,0.5s					
KSHT	**Keshet**	**7.97 115**	Pn	**Pn**	**14 53 14.5**	**-0.1**
KSHT	**Keshet**	**7.97 115**	Pn	**Pn**	**14 53 14.5**	**-0.1**
MMLI	**Mount Malkishu**	**7.98 119**	Pn	**Pn**	**14 53 14.8**	**+0.1**
MMLI			Sn	**Sn**	**14 54 39.6**	**-3.8**
MMLI	**Mount Malkishu**	**7.98 119**	Pn	**Pn**	**14 53 14.8**	**+0.1**
GLL	**Jalalah**	**8.00 151**	P	**Pn**	**14 53 14.8**	**-0.2**
	baz=151					
GLL	**Jalalah**	**8.00 151**	P	**Pn**	**14 53 14.8**	**-0.2**
MARH	**Ras Al Marh**	**8.03 106**	*e*P	**Pn**	**14 53 13.1**	**-2.5**
MARH			*e*S	Sn	14 54 33.7	-11
MARH			AML	AML	14 54 51.3	
	comp=E,11nm,0.4s					
MARH			AML	AML	14 54 51.6	
	comp=N,22nm,0.5s					
HMDT	**Nahal Hemdat**	**8.16 120**	Pn	**Pn**	**14 53 17.2**	**+0.2**
HMDT			Sn	**Sn**	**14 54 43.9**	**-3.7**
HMDT	**Nahal Hemdat**	**8.16 120**	Pn	**Pn**	**14 53 17.2**	**+0.2**
AMAZ	**Amatzia**	**8.19 126**	Sn	**Sn**	**14 54 44.3**	**-4.1**
TCHB	**Talchebab**	**8.24 116**	*e*P	**Pn**	**14 53 14.1**	**-4.2**
TCHB			*e*S	Sn	14 54 37.2	-13
TCHB			AML	AML	14 54 58.3	
	comp=N,54nm,0.5s					
TCHB			AML	AML	14 54 58.7	
	comp=E,32nm,0.3s					
SUZ	**Suez**	**8.27 144**	P	**Pn**	**14 53 18.9**	**+0.4**
	baz=144					
SUZ	**Suez**	**8.27 144**	P	**Pn**	**14 53 18.9**	**+0.4**
KZIT	**Kziot**	**8.29 132**	Pn	**Pn**	**14 53 18.6**	**-0.2**
KZIT			Sn	**Sn**	**14 54 46.1**	**-4.7**
KZIT	**Kziot**	**8.29 132**	Pn	**Pn**	**14 53 18.6**	**-0.2**
PDG	**Podgorica**	**8.42 316**	⇑*i*P	**Pn**	**14 53 20.3**	**-0.2**
PDG	**Podgorica**	**8.42 316**	⇑*i*P	**Pn**	**14 53 20.3**	**-0.2**
AWBH		**8.43 170**	P	**Pn**	**14 53 20.6**	**-0.1**
	baz=170					
AWBH		**8.43 170**	P	**Pn**	**14 53 20.6**	**-0.1**
DSI	**Dead Sea**	**8.47 124**	Pn	**Pn**	**14 53 20.5**	**-0.7**
DSI	**Dead Sea**	**8.47 124**	Pn	**Pn**	**14 53 20.5**	**-0.7**
MZDA	**Masada**	**8.62 126**	Pn	**Pn**	**14 53 22.6**	**-0.6**
MZDA			Sn	**Sn**	**14 54 54.9**	**-3.9**
MZDA	**Masada**	**8.62 126**	Pn	**Pn**	**14 53 22.6**	**-0.6**
TIP	**Timpagrande**	**8.63 290**	*e*Pn	**Pn**	**14 53 20.9**	**-2.5**
TAR1	**Taranto**	**8.67 300**	*e*Pn	**Pn**	**14 53 22.0**	**-1.9**
HNKL	**Nakhl**	**8.78 138**	P	**Pn**	**14 53 25.9**	**+0.4**
	baz=138					
HNKL	**Nakhl**	**8.78 138**	P	**Pn**	**14 53 25.9**	**+0.4**
MLR	**Muntele Rosu**	**8.88 354**	P	**Pn**	**14 53 26.7**	**-0.1**
	comp=E,0.0nm,0.3s,baz=188,slow=5.3,SNR=8.2					
MLR	**Muntele Rosu**	**8.88 354**	⇓*i*P	**Pn**	**14 53 27.3**	**+0.4**
MLR	**Muntele Rosu**	**8.88 354**	*e*Pn	**Pn**	**14 53 26.6**	**-0.3**
MLR	**Muntele Rosu**	**8.88 354**	⇓*i*P	**Pn**	**14 53 27.3**	**+0.4**
MLR	**Muntele Rosu**	**8.88 354**	*e*Pn	**Pn**	**14 53 26.6**	**-0.3**
PRNI	**Paran**	**9.05 132**	Pn	**Pn**	**14 53 28.3**	**-0.8**
PRNI			Sn	**Sn**	**14 55 04.2**	**-5.1**
PRNI	**Paran**	**9.05 132**	Pn	**Pn**	**14 53 28.3**	**-0.8**
KRMI	**Paran Flat**	**9.05 134**	Pn	**Pn**	**14 53 27.9**	**-1.3**
KRMI			Sn	**Sn**	**14 55 04.0**	**-5.5**
KRMI	**Paran Flat**	**9.05 134**	Pn	**Pn**	**14 53 27.9**	**-1.3**
ZALF	**Zalf**	**9.13 111**	*e*P	**Pn**	**14 53 27.3**	**-2.8**
ZALF			*e*S	Sn	14 54 58.9	-12
ZALF			AML	AML	14 55 23.6	
	comp=E,6.0nm,0.6s					
ZALF			AML	AML	14 55 27.9	
	comp=N,4.8nm,0.5s					
CEL	**Celeste**	**9.13 284**	*e*Pn	**Pn**	**14 53 28.1**	**-2.0**
CEL	**Celeste**	**9.13 284**	*e*Pn	**Pn**	**14 53 28.1**	**-2.0**
ASF	**Jabal al Asfar**	**9.17 116**	P	**Pn**	**14 53 31.0**	**+0.2**
	comp=N,1.3nm,0.3s,baz=95,slow=21,SNR=9.8					
VRI	**Vrincioaia**	**9.22 358**	⇑*i*P	**Pn**	**14 53 32.0**	**+0.8**
VRI	**Vrincioaia**	**9.22 358**	⇑*i*P	**Pn**	**14 53 32.0**	**+0.8**
HRFI	**Mount Harif**	**9.30 133**	Pn	**Pn**	**14 53 32.3**	**-0.1**
HRFI	**Mount Harif**	**9.30 133**	Pn	**Pn**	**14 53 32.3**	**-0.1**
MBRI	**Mt Berech**	**9.40 134**	Pn	**Pn**	**14 53 33.3**	**-0.6**
MBRI	**Mt Berech**	**9.40 134**	Pn	**Pn**	**14 53 33.3**	**-0.6**
EIL	**Elat**	**9.52 135**	P	**Pn**	**14 53 35.2**	**-0.1**
	comp=N,1.6nm,0.3s,baz=289,slow=1.1,SNR=6.8					
EIL			S	**Sn**	**14 55 13.5**	**-7.2**
	comp=N,3.9nm,0.3s,baz=328,slow=11,SNR=4.1					
EIL	**Elat**	**9.52 135**	Pn	**Pn**	**14 53 34.6**	**-0.8**
EIL			Sn	**Sn**	**14 55 16.0**	**-4.7**
EIL	**Elat**	**9.52 135**	Pn	**Pn**	**14 53 34.6**	**-0.8**
CUC	**Castrocucco**	**9.55 294**	*e*Pn	**Pn**	**14 53 33.5**	**-2.2**
CUC	**Castrocucco**	**9.55 294**	*e*Pn	**Pn**	**14 53 33.5**	**-2.2**
GRB	**Gharib**	**9.59 149**	P	**Pn**	**14 53 36.9**	**+0.5**
	baz=149					
GRB	**Gharib**	**9.59 149**	P	**Pn**	**14 53 36.9**	**+0.5**
SORM	**Soroca**	**11.51 4**	⇑*i*P	**P**	**14 54 09.9**	**-0.2**
KBZ	**Khabaz**	**13.92 55**	P	**P**	**14 54 38.9**	**+1.9**
	comp=N,0.2nm,0.3s,baz=251,slow=7.0,SNR=15					
KIEV	**Kiev**	**14.12 5**	*e*Pn	**P**	**14 54 37.2**	**-1.9**
KIEV	**Kiev**	**14.12 5**	*e*Pn	**P**	**14 54 37.2**	**-1.9**
AKASG	**Malin Array Be**	**14.12 5**	P	**P**	**14 54 37.8**	**-1.4**
	comp=N,1.6nm,0.3s,baz=193,slow=12,SNR=12					
AKBB	**Malin Array Si**	**14.12 5**	*e*Pn	**Pn**	**14 54 37.2**	**+1.6**
AKBB	**Malin Array Si**	**14.12 5**	*e*Pn	**Pn**	**14 54 37.2**	**+1.6**
GNI	**Garni**	**14.20 70**	*e*Pn	**Pn**	**14 54 37.5**	**+0.7**
	comp=N,178nm,0.4s					
GNI	**Garni**	**14.20 70**	*e*Pn	**Pn**	**14 54 37.5**	**+0.7**
	comp=N,178nm,0.4s					
KEST	**Kesra**	**14.45 272**	P	**Pn**	**14 54 39.4**	**-0.6**
	comp=N,0.2nm,0.3s,baz=63,slow=4.5,SNR=2.3					
GERES	**GERESS Array B**	**15.68 325**	P	**Pn**	**14 54 54.7**	**-0.6**
	comp=N,0.1nm,0.3s,baz=137,slow=14,SNR=10					
SENIN	**Lac Senin/Sane**	**17.74 309**	*e*P	**P**	**14 55 19.7**	**+0.2**
	comp=N,8.1nm,0.6s					
SENIN	**Lac Senin/Sane**	**17.74 309**	*e*P	**P**	**14 55 19.7**	**+0.2**
	comp=N,8.1nm,0.6s					
ES19	**SONSECA Array**	**24.57 287**	*e*P	**P**	**14 56 28.2**	**-1.3**
ES19	**SONSECA Array**	**24.57 287**	*e*P	**P**	**14 56 28.2**	**-1.3**
ESDC	**Sonseca Array**	**24.62 287**	P	**P**	**14 56 28.9**	**-0.9**
	comp=N,3.7nm,0.4s,baz=84,slow=9.4,SNR=48					
ESDC	**Sonseca Array**	**24.62 287**	P	**P**	**14 56 29.0**	**-0.9**
FINES	**FINESS Array B**	**24.83 359**	P	**P**	**14 56 30.4**	**-1.0**
	comp=N,0.6nm,0.4s,baz=166,slow=11,SNR=6.6					
HFS	**Hagfors**	**25.05 344**	P	**P**	**14 56 32.2**	**-1.3**
	comp=N,0.9nm,0.4s,baz=151,slow=11,SNR=18					
TOA0	**Torodi Ar. Sit**	**32.71 231**	*e*P	**P**	**14 57 41.7**	**-0.1**
TOA0	**Torodi Ar. Sit**	**32.71 231**	*e*P	**P**	**14 57 41.7**	**-0.1**
TORD	**Torodi Ar. Bea**	**32.71 231**	P	**P**	**14 57 42.0**	**+0.2**
	comp=N,4.0nm,0.5s,baz=35,slow=8.8,SNR=67					
MKAR	**Makanchi Array**	**41.58 58**	P	**P**	**14 58 56.5**	**0.0**
	comp=N,1.9nm,0.3s,baz=269,slow=8.4,SNR=19					
DBIC	**Dimbokro**	**41.78 232**	P	**P**	**14 58 58.0**	**-0.4**
	comp=N,3.1nm,0.9s,baz=30,slow=8.5,SNR=4.1					
ZALV	**Zalesovo Beam**	**42.78 47**	P	**P**	**14 59 05.4**	**-0.6**
	comp=N,2.3nm,0.4s,baz=273,slow=7.2,SNR=3.7					
WMQ	**Urumqi**	**45.83 61**	*e*P	**P**	**14 59 32.4**	**+1.8**
WMQ			pmax	pmax		
	comp=Z,4.0nm,1.2s					
WMQ			pmax	pmax		
	comp=Z,92nm,6.0s					
WMQ			LR	LR		
	comp=N,1μm,13.2s					
WMQ			LR	LR		
	comp=E,900nm,13.2s					
WMQ			LR	LR		
	comp=Z,390nm,20.4s					
SONM	**Songino Array**	**57.27 52**	P	**P**	**15 00 55.6**	**0.0**
	comp=Z,0.5nm,0.5s,baz=286,slow=6.8,SNR=3.0					
LZH	**Lanzhou**	**60.07 65**	*e*P	**P**	**15 01 18.3**	**+3.1**
LZH			pP	pP	15 01 47.5	+1.5
LZH			sP	sP	15 02 00.4	+0.3
LZH			PP	**PP**	**15 03 34.0**	**+5.1**
LZH			pmax	pmax		
	comp=Z,18nm,1.4s					
LZH			pmax	pmax		
	comp=Z,47nm,7.5s					
CD2	**Chengdu**	**62.33 71**	P	**P**	**15 01 30.8**	**+0.5**
CD2			pmax	pmax		
	comp=Z,1.0nm,0.5s					
HHC	**Hu-ho-hao-te**	**63.44 58**	*e*P	**P**	**15 01 39.6**	**+2.0**
HHC			pmax	pmax		
	comp=Z,19nm,1.2s					
HHC			pmax	pmax		
	comp=Z,98nm,7.0s					

*ISK **22** 14:57:58.4, 39.°12N×29.°02E, h8km, MD2.6*
*ISCJB **22** 14:57:59.9±0.5, 39.°16N±0.°03×29.°06E±0.°04, h11km±5km, Error ellipse: s-maj=6.3km s-min=4.9km az=41.8*
*CSEM **22** 14:57:59.8±0.2, 39.°16N×29.°05E, h8km, ML2.6, Error ellipse: s-maj=6.6km s-min=4.9km az=108.0*
*DDA **22** 14:58:00.6, 39.°08N×29.°09E, h7km, Ml2.6*
ISC 22 14:58:00.0±1.9, 39.°15N±0.°03×29.°06E±0.°03, h21km±2km, n24, σ0.°76/34, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.29 248**		P	**Pb**	**14 58 06.9**	**+0.3**
DEMI				S	**Sb**	**14 58 11.3**	**+0.1**
DEMI	**Demirci**	**0.29 248**		*i* P	**Pb**	**14 58 06.9**	**+0.3**
DEMI				*i* S	**Sb**	**14 58 11.3**	**+0.1**
GDZ	**Gediz**	**0.34 101**		P	**Pb**	**14 58 06.8**	**-0.5**
GDZ				S	**Sb**	**14 58 11.4**	**-0.9**
GDZ	**Gediz**	**0.34 101**		*i* P	**Pb**	**14 58 06.8**	**-0.5**
GDZ				*i* S	**Sb**	**14 58 11.4**	**-0.9**
TVSB	**Tavsanli**	**0.43 46**		*e*PG	**Pb**	**14 58 08.2**	**-0.8**
TVSB				*e*SG	**Sb**	**14 58 15.1**	**+0.1**
TVSB	**Tavsanli**	**0.43 46**		*e*Pg	**Pb**	**14 58 08.2**	**-0.8**
TVSB				*e*Sg	**Sb**	**14 58 15.1**	**+0.1**
KULA	**Kula-Manisa**	**0.71 206**		*e*PG	**Pb**	**14 58 11.7**	**-2.0**
KULA	**Kula-Manisa**	**0.71 206**		*e*Pg	**Pb**	**14 58 11.7**	**-2.0**
MANT	**Manisa**	**0.77 211**		P	**Pb**	**14 58 14.9**	**+0.2**
MANT				S	**Sb**	**14 58 25.0**	**+0.2**
MANT	**Manisa**	**0.77 211**		*i* P	**Pb**	**14 58 14.9**	**+0.2**
MANT				*i* S	**Sb**	**14 58 25.0**	**+0.2**
KHAL	**Karahalli**	**0.85 156**		P	**Pb**	**14 58 16.3**	**+0.1**
KHAL				S	**Sb**	**14 58 27.0**	**-0.1**
KHAL	**Karahalli**	**0.85 156**		*i* P	**Pb**	**14 58 16.3**	**+0.1**
KHAL				*i* S	**Sb**	**14 58 27.1**	**-0.1**
ORLT	**Orhaneli**	**0.90 352**		*e*PG	**Pb**	**14 58 16.3**	**-0.7**
ORLT	**Orhaneli**	**0.90 352**		*e*Pg	**Pb**	**14 58 16.3**	**-0.7**
CAVI	**Cavuskoy**	**1.21 30**		*e*PN	**Pb**	**14 58 23.0**	**+0.7**
CAVI	**Cavuskoy**	**1.21 30**		*e*Pn	**Pb**	**14 58 23.0**	**+0.7**
IZI	**Iznik**	**1.23 15**		*e*PN	**Pb**	**14 58 22.8**	**+0.2**
IZI	**Iznik**	**1.23 15**		*e*Pn	**Pb**	**14 58 22.8**	**+0.2**
KCTX	**Karacabey (Bur**	**1.24 334**		*e*PN	**Pb**	**14 58 22.8**	**+0.1**
KCTX	**Karacabey (Bur**	**1.24 334**		*e*Pn	**Pb**	**14 58 22.8**	**+0.1**
ARMT	**Armutlu**	**1.42 354**		*e*PN	**Pb**	**14 58 25.7**	**-0.1**
ARMT	**Armutlu**	**1.42 354**		*e*Pn	**Pb**	**14 58 25.7**	**-0.1**
ISP	**Isparta**	**1.76 139**		P	**Pb**	**14 58 32.8**	**+1.2**
ISP	**Isparta**	**1.76 139**		P	**Pb**	**14 58 32.8**	**+1.2**

*ISCJB **22** 15:02:48.5±0.5, 39.°09N±0.°04×29.°05E±0.°04, h9km, Error ellipse: s-maj=6.6km s-min=4.0km az=145.1*
*CSEM **22** 15:02:48.5±0.1, 39.°10N×29.°05E, h5km, ML2.6, Error ellipse: s-maj=2.9km s-min=1.8km az=125.0*
*ISK **22** 15:02:48.1, 39.°09N×29.°11E, h8km, MD2.7*
*DDA **22** 15:02:48.5, 39.°09N×29.°03E, h7km, Ml2.6*
ISC 22 15:02:48.8±0.9, 39.°10N±0.°03×29.°05E±0.°03, h9km, n22, σ0.°31/30, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26 257**		P	**Pg**	**15 02 53.9**	**-0.2**
DEMI				S	**Sg**	**15 02 57.7**	**0.0**
DEMI	**Demirci**	**0.26 257**		*i* P	**Pg**	**15 02 53.9**	**-0.2**
DEMI				*i* S	**Sg**	**15 02 57.6**	**0.0**
GDZ	**Gediz**	**0.34 92**		P	**Pg**	**15 02 55.6**	**0.0**
GDZ				S	**Sg**	**15 03 00.6**	**+0.5**
GDZ	**Gediz**	**0.34 92**		*i* P	**Pg**	**15 02 55.6**	**0.0**
GDZ				*i* S	**Sg**	**15 03 00.6**	**+0.5**
TVSB	**Tavsanli**	**0.47 43**		*e*PG	**Pg**	**15 02 57.5**	**-0.6**
TVSB				*e*SG	**Sg**	**15 03 04.0**	**-0.4**
TVSB	**Tavsanli**	**0.47 43**		*e*Pg	**Pg**	**15 02 57.5**	**-0.6**
TVSB				*e*Sg	**Sg**	**15 03 04.0**	**-0.4**
KULA	**Kula-Manisa**	**0.66 207**		*e*PG	**Pg**	**15 03 01.5**	**0.0**
KULA	**Kula-Manisa**	**0.66 207**		*e*Pg	**Pg**	**15 03 01.5**	**0.0**
MANT	**Manisa**	**0.72 212**		P	**Pg**	**15 03 02.5**	**-0.2**
MANT				S	**Sg**	**15 03 12.0**	**-0.1**
MANT	**Manisa**	**0.72 212**		*i* P	**Pg**	**15 03 02.5**	**-0.2**
MANT				*i* S	**Sg**	**15 03 12.0**	**-0.1**
ORLT	**Orhaneli**	**0.95 353**		*e*PG	**Pg**	**15 03 07.3**	**+0.2**
ORLT	**Orhaneli**	**0.95 353**		*e*Pg	**Pg**	**15 03 07.3**	**+0.2**
BALB	**Balikesir**	**1.05 301**		*e*PN	**Pn**	**15 03 09.6**	**-0.1**
BALB	**Balikesir**	**1.05 301**		*e*Pn	**Pn**	**15 03 09.6**	**-0.1**
CAVI	**Cavuskoy**	**1.26 29**		*e*PN	**Pn**	**15 03 12.3**	**-0.4**
CAVI	**Cavuskoy**	**1.26 29**		*e*Pn	**Pn**	**15 03 12.3**	**-0.4**
MDNY	**Mudanya-Bursa**	**1.27 354**		*e*PN	**Pb**	**15 03 13.1**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.27 354**		*e*Pn	**Pb**	**15 03 13.1**	**+0.1**
KCTX	**Karacabey (Bur**	**1.28 336**		*e*PN	**Pb**	**15 03 13.3**	**+0.2**
KCTX	**Karacabey (Bur**	**1.28 336**		*e*Pn	**Pb**	**15 03 13.3**	**+0.2**
ARMT	**Armutlu**	**1.47 355**		*e*PN	**Pn**	**15 03 15.9**	**+0.5**
ARMT	**Armutlu**	**1.47 355**		*e*Pn	**Pn**	**15 03 16.0**	**+0.5**

*ISN **22** 15:05:24.9±1.3, 32.°71N×45.°66E, h0km±5km, ML3.2*
*CSEM **22** 15:05:26.9±0.3, 32.°98N×46.°13E, h2km, ML3.2, Error ellipse: s-maj=7.7km s-min=7.0km az=117.0*
TEH 22 15:05:27.7, 32.°90N×46.°22E, h8km, ML3.2, Iran-Iraq border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IGHG	**Ghaleghazi**	**1.46 11**		*e*Pg	Pn	15 05 53.7	-0.9
IGHG				*e*Sg	Sn	15 06 13.4	-0.6
IGHG				*e*AMB	AMB	15 06 17.7	
	comp=Z,3μm,0.2s						
IGHG	**Ghaleghazi**	**1.46 11**		*e*Pg	Pn	15 05 53.7	-0.9
IGHG				*e*Sg	Sn	15 06 13.4	-0.6
IKFM	**Kafar-mosalman**	**1.50 65**		*e*Pn	Pn	15 05 54.6	-0.3
IKFM				*e*AMB	AMB	15 05 55.9	
	comp=Z,99nm,0.2s						
IKFM				*e*Sg	Sn	15 06 14.4	-0

ASAR	**Alice Springs**	**60.49 187**	P	**P**	**15 25 14.9**	**-0.5**
	0.3nm,0.8s,baz=357,slow=5.8,SNR=4.2					
NVAR	**Mina Array Bea**	**75.68 53**	P	**P**	**15 26 51.1**	**0.0**
	0.4nm,0.6s,baz=294,slow=6.2,SNR=5.0					

*ISCJB **22** 15:18:14.3±0.5, 6°85N±0°04×73°09W±0°04, h162km±4km, Error ellipse: s-maj=8.6km s-min=4.4km az=38.2*
*FUNV **22** 15:18:15.4, 6°79N×73°15W, h169km, MW3.1*
*RSNC **22** 15:18:16.9±0.9, 6°79N×73°13W, h148km±4km, ML3.2*

ISC 22 15:18:13.6±1.4, 6°83N±0°04×73°10W±0°05, h168km±7km, n31, σ1°43/46, 1C-1D, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BTLC	**Betulia, Santa**	**0.19**	**298**	*e*P	**Pn**	**15 18 36.9**	**+0.5**
BTLC				*e*S	**Sn**	**15 18 52.3**	**-1.5**
BARC	**Barichara**	**0.25**	**199**	*i* P	**Pn**	**15 18 36.6**	**+0.1**
BARC				*e*S	**Sn**	**15 18 51.6**	**-2.5**
BARC				*i*		15 18 53.2	
	comp=Z,496nm,0.2s						
GIRC	**Giron, Santand**	**0.26**	**339**	*e*P	**Pn**	**15 18 36.7**	**+0.2**
GIRC				*e*S	**Sn**	**15 18 52.5**	**-1.5**
PAMC	**Pamplona, Colo**	**0.64**	**38**	*e*P	**Pn**	**15 18 39.6**	**+1.2**
PAMC				*e*S	**Sn**	**15 18 56.8**	**-0.5**
BRRC	**Barranca, Sant**	**0.67**	**294**	*i* P	**Pn**	**15 18 38.5**	**+0.6**
BRRC				*e*S	**Sn**	**15 18 55.1**	**-1.4**
BRRC				*i*		15 18 58.2	
	comp=Z,252nm,0.2s						
GRMC	**Gramalote, San**	**0.93**	**18**	*i* P	**Pn**	**15 18 42.5**	**+2.6**
GRMC				*e*S	**Sn**	**15 19 02.1**	**+2.0**
GRMC				*i*		15 19 06.6	
	comp=Z,130nm,0.3s						
CBRI	**Barrientos, No**	**0.93**	**19**	*i* P	**Pn**	**15 18 41.2**	**+1.4**
CBRI				*e*S	**Sn**	**15 18 60.0**	**-0.1**
RUSC	**La Rusia**	**0.93**	**179**	⇑*i* P	**Pn**	**15 18 40.5**	**+0.2**
RUSC				*e*S	**Sn**	**15 18 59.1**	**-1.6**
RUSC				*i*		15 19 00.5	
	comp=Z,183nm,0.2s						
CAPV	**Capacho**	**1.29**	**37**	⇓*i* P	**Pn**	**15 18 44.6**	**+1.7**
CAPV				*e*S	**Sn**	**15 19 06.0**	**+0.5**
OCAC	**Ocana**	**1.42**	**351**	*e*P	**Pn**	**15 18 45.2**	**+1.2**
OCAC				*i*		15 19 11.8	
	comp=Z,149nm,0.3s						
NORC	**Norcasia**	**2.16**	**235**	*e*P	**Pn**	**15 18 52.6**	**+0.8**
ROSC	**El Rosal**	**2.32**	**212**	*e*P	**Pn**	**15 18 56.3**	**+2.3**
ROSC				*i*		15 19 31.4	
	comp=Z,164nm,0.4s						
HELC	**Santa Helena**	**2.50**	**255**	*e*P	**Pn**	**15 18 57.0**	**+1.0**
HELC				*i*		15 19 37.1	
	comp=Z,114nm,0.4s						
VIGV	**El Vigia**	**2.63**	**41**	*e*P	**Pn**	**15 18 59.1**	**+1.7**
VIGV				*e*S	**Sn**	**15 19 31.3**	**0.0**
SOCV	**Socops**	**2.65**	**57**	*e*P	**Pn**	**15 18 59.0**	**+1.5**
SOCV				*e*S	**Sn**	**15 19 31.0**	**-0.6**
VILC	**Villavicencio,**	**2.76**	**192**	*e*P	**Pn**	**15 18 59.9**	**+0.8**
VILC				*e*S	**Sn**	**15 19 33.9**	**-0.4**
GUYC	**Guyana, Colomb**	**2.78**	**235**	*e*P	**Pn**	**15 19 01.5**	**+1.9**
GUYC				*i*		15 19 44.5	
	comp=Z,209nm,0.4s						
DBBC	**Dabeiba**	**3.09**	**274**	*e*P	**Pn**	**15 19 04.5**	**+1.5**
TOLC	**Tolima**	**3.14**	**225**	*e*P	**Pn**	**15 19 05.6**	**+1.7**
MOTC	**Monteria, Cord**	**3.19**	**307**	*e*P	**Pn**	**15 19 03.8**	**-0.4**
MOTC				*i*		15 19 44.6	
	comp=Z,27nm,0.5s						
PRAC	**Prado**	**3.57**	**210**	*e*P	**Pn**	**15 19 09.8**	**+0.8**
ELOV	**Elorza**	**3.59**	**87**	*e*P	**Pn**	**15 19 10.9**	**+1.6**
SJAC	**San Juan de Ar**	**3.63**	**194**	*e*P	**Pn**	**15 19 10.3**	**+0.5**
SJCC	**San Jacinto, C**	**3.68**	**326**	*e*P	**Pn**	**15 19 10.5**	**+0.2**
VIRV	**Villa del Rosa**	**3.71**	**11**	*e*P	**Pn**	**15 19 11.3**	**+0.6**
VIRV				*e*S	**Sn**	**15 19 53.6**	**-1.7**
SANV	**Sanarito**	**4.42**	**53**	*e*P	**Pn**	**15 19 21.0**	**+1.1**
SANV				*e*S	**Sn**	**15 20 09.9**	**-1.8**
URIC	**Uribia, Colomb**	**4.96**	**13**	*e*P	**Pn**	**15 19 27.2**	**+0.3**
TEPV	**Terepaima**	**4.96**	**51**	*e*P	**Pn**	**15 19 28.2**	**+1.2**
BAUV	**El Baul**	**5.43**	**67**	*e*P	**Pn**	**15 19 33.0**	**-0.1**
BAUV				*e*S	**Sn**	**15 20 31.6**	**-3.8**
MAPV	**Macapo**	**5.48**	**57**	*e*P	**Pn**	**15 19 34.6**	**+0.9**
MONV	**Montecano**	**5.96**	**31**	*e*P	**Pn**	**15 19 40.9**	**+0.9**

*IDC **22** 15:20:38.5±1.0, 13°88N×121°41E, h0km, mb3.9/6, mb1 4.0/6, mb1mx3.5/52, mbtmp3.9/6, Error ellipse: s-maj=52.0km s-min=18.4km az=60.0*
*NEIC **22** 15:20:43.6±0.5, 13°83N×121°29E, h35km, mb4.0/3, Error ellipse: s-maj=22.6km s-min=9.3km az=54.0*
*ISCJB **22** 15:20:53.8±0.4, 13°61N±0°04×120°64E±0°05, h135km±4km, mb3.7/9, Error ellipse: s-maj=8.4km s-min=6.0km az=171.8*
*MAN **22** 15:20:55, 13°63N×120°66E, h110km, mb4.3, ML3.1, MS2.9*

ISC 22 15:20:54.8±0.7, 13°62N±0°04×120°63E±0°05, h130km±6km, n24, σ1°44/34, mb3.8/9, 2C-2D, Mindoro

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PGP	**Puerto Galera**	**0.33**	**110**	⇑*e*P	**Pn**	**15 21 12.5**	**-0.5**
PGP				*i* S	**Sn**	**15 21 26.1**	**-0.7**
LUBP	**Lubang**	**0.39**	**288**	*e*P	**Pn**	**15 21 13.6**	**+0.4**
LUBP				*e*S	**Sn**	**15 21 26.9**	**-0.2**
TGY	**Tagaytay City**	**0.57**	**32**	⇑*i* P	**Pn**	**15 21 14.8**	**+0.5**
LQP	**Lukban**	**1.01**	**61**	⇓*e*P	**Pn**	**15 21 18.3**	**+0.4**
BOAC	**Boac**	**1.19**	**97**	*e*P	**Pn**	**15 21 19.7**	**+0.2**
SJMP	**San Jose**	**1.24**	**157**	*e*P	**Pn**	**15 21 20.3**	**+0.3**
SJMP				*e*S	**Sn**	**15 21 38.3**	**-0.9**
BUSP	**Coron**	**1.66**	**195**	*e*P	**Pn**	**15 21 25.2**	**+0.5**
BUSP				*e*S	**Sn**	**15 21 47.5**	**+0.1**
GQP	**Guinayangan**	**1.79**	**80**	⇓*i* P	**Pn**	**15 21 26.5**	**+0.4**
GQP				*i* S	**Sn**	**15 21 53.0**	**+2.9**
OTRP	**Odiongan**	**1.84**	**132**	*e*P	**Pn**	**15 21 26.0**	**-0.8**
OTRP				*e*S	**Sn**	**15 21 50.1**	**-1.2**
AUQP	**San Andres**	**2.01**	**98**	*e*P	**Pn**	**15 21 29.8**	**+1.0**
AUQP				*e*S	**Sn**	**15 21 58.5**	**+3.6**
SCZP	**Santa Cruz**	**2.26**	**342**	*e*P	**Pn**	**15 21 32.0**	**+0.1**
SCZP				*e*S	**Sn**	**15 21 59.2**	**-1.2**
ENPP	**El Nido**	**2.67**	**206**	*e*P	**Pn**	**15 21 38.7**	**+1.6**
ENPP				*e*S	**Sn**	**15 22 11.9**	**+2.2**
CUYO	**Cuyo Island**	**2.77**	**172**	*e*P	**Pn**	**15 21 39.3**	**+0.8**
CUYO				*e*S	**Sn**	**15 22 12.0**	**-0.1**
CMAR	**Chiang Mai Arr**	**21.39**	**286**	P	**P**	**15 25 34.8**	**+2.5**
	2.9nm,0.8s,baz=96,slow=7.9,SNR=20						
CHTO	**Chiang Mai**	**21.45**	**287**	*e*P	**P**	**15 25 34.9**	**+1.9**
	1.6nm,0.7s						
WRAB	**Tennant Creek**	**35.97**	**158**	*e*P	**P**	**15 27 41.0**	**-2.2**
WRA	**Warramunga Arr**	**35.97**	**158**	P	**P**	**15 27 40.8**	**-2.5**
	0.6nm,0.4s,baz=331,slow=10,SNR=16						
ASAR	**Alice Springs**	**39.26**	**161**	P	**P**	**15 28 09.2**	**-1.7**
	0.5nm,0.7s,baz=334,slow=7.6,SNR=13						
MKAR	**Makanchi Array**	**46.06**	**324**	P	**P**	**15 29 06.3**	**+0.7**
	0.5nm,0.3s,baz=135,slow=9.6,SNR=10.0						
ZALV	**Zalesovo Beam**	**49.10**	**333**	P	**P**	**15 29 28.5**	**-0.4**
	1.0nm,0.3s,baz=120,slow=6.6,SNR=6.2						
KURK	**Kurchatov**	**50.22**	**326**	*e*P	**P**	**15 29 37.8**	**+0.4**
	13nm,0.9s						
ABKAR	**Akbulak array**	**60.75**	**319**	*e*P	**P**	**15 30 52.2**	**-0.6**
	0.5nm,0.5s						
ARCES	**ARCESS Array B**	**79.14**	**339**	P	**P**	**15 32 44.8**	**+0.1**
	2.8nm,1.0s,baz=76,slow=6.5,SNR=6.1						
TXAR	**Lajitas Array**	**119.58**	**45**	PKP	**PKPdf**	**15 39 29.4**	**-0.6**
	0.1nm,0.5s,baz=265,slow=4.4,SNR=3.2						

*ISCJB **22** 15:21:14.7±1.0, 27°03N±0°09×143°87E±0°08, h33km, mb3.9/5, MS4.3/1, Error ellipse: s-maj=13.6km s-min=9.5km az=27.2*
*IDC **22** 15:21:14.9±1.4, 26°72N×143°57E, h0km, mb3.9/5, mb1 4.0/5, mb1mx3.5/49, mbtmp3.9/5, MS4.3/1, Ms1 4.3/1, ms1mx3.2/45, Error ellipse: s-maj=32.8km s-min=19.4km az=64.0*
*NEIC **22** 15:21:16.0±1.1, 26°86N×143°65E, h15km, mb4.2/1, Error ellipse: s-maj=32.9km s-min=12.7km az=79.0*

ISC 22 15:21:18.4±1.3, 26°9N±0°1×143°7E±0°1, h35km, n12, σ0°94/12, mb4.0/5, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**1.36**	**277**	*e*P	**Pn**	**15 21 40.7**	**-0.1**
CBIJ				Sn	**Sn**	**15 21 57.7**	**+0.1**
JCJ	**Chichijima**	**1.36**	**277**	Pn	**Pn**	**15 21 40.9**	**0.0**
	13nm,0.3s,baz=291,slow=22,SNR=27						
JCJ				Sn	**Sn**	**15 21 57.7**	**+0.1**
	78nm,0.3s,baz=284,slow=21,SNR=21						
MJAR	**Matsushiro Arr**	**10.65**	**335**	Pn	**Pn**	**15 23 47.5**	**-1.0**
	0.8nm,0.3s,baz=150,slow=11,SNR=12						
MAJO	**Matsushiro**	**10.65**	**335**	*e*P	**Pn**	**15 23 47.5**	**-0.9**
KLR	**Kul'dur**	**24.10**	**341**	P	**P**	**15 26 32.6**	**+2.0**
	1.3nm,0.5s,baz=193,slow=3.6,SNR=6.4						
WRAB	**Tennant Creek**	**47.47**	**192**	*e*P	**P**	**15 29 48.8**	**-1.1**
WRA	**Warramunga Arr**	**47.48**	**192**	P	**P**	**15 29 49.3**	**-0.8**
	2.1nm,0.7s,baz=13,slow=8.6,SNR=8.7						
FITZ	**Fitzroy Crossi**	**48.08**	**203**	P	**P**	**15 29 54.9**	**+0.2**
	1.7nm,0.7s,baz=25,slow=11,SNR=5.4						
FITZ	**Fitzroy Crossi**	**48.08**	**203**	*e*P	**P**	**15 29 54.7**	**0.0**
	1.9nm,0.7s						
ASAR	**Alice Springs**	**51.19**	**192**	P	**P**	**15 30 17.9**	**-0.5**
	0.2nm,0.5s,baz=13,slow=5.6,SNR=6.1						
NRIK	**Noril'sk**	**53.29**	**338**	LR	LR	15 54 12.4	
	comp=Z,304nm,21.5s,baz=352,slow=37						
FINES	**FINESS Array B**	**78.68**	**334**	P	P	15 33 20.2	+3.6
	1.7nm,1.0s,baz=72,slow=4.5,SNR=2.5						

*ISK **22** 15:31:07.8, 39°08N×29°02E, h9km, MD2.6*
*ISCJB **22** 15:31:08.6±0.6, 39°12N±0°03×28°98E±0°04, h6km±7km, Error ellipse: s-maj=6.8km s-min=4.4km az=43.0*
*CSEM **22** 15:31:08.6±0.1, 39°12N×28°97E, h8km, ML2.7, Error ellipse: s-maj=3.7km s-min=2.4km az=116.0*
*DDA **22** 15:31:08.7, 39°14N×28°99E, h7km, Ml2.7*

ISC 22 15:31:08.2±1.1, 39°10N±0°03×28°99E±0°03, h15km±10km, n20, σ0°36/32, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.22**	**255**	P	**Pb**	**15 31 13.9**	**-0.1**
DEMI				S	**Sb**	**15 31 17.3**	**-0.6**
DEMI	**Demirci**	**0.22**	**255**	*i* P	**Pb**	**15 31 13.9**	**-0.1**
DEMI				*i* S	**Sb**	**15 31 17.3**	**-0.6**
GDZ	**Gediz**	**0.38**	**92**	P	**Pb**	**15 31 16.7**	**-0.1**
GDZ				S	**Sb**	**15 31 22.0**	**-0.5**
GDZ	**Gediz**	**0.38**	**92**	*i* P	**Pb**	**15 31 16.7**	**-0.1**
GDZ				*i* S	**Sb**	**15 31 22.0**	**-0.5**
TVSB	**Tavsanli**	**0.50**	**46**	*e*PG	**Pg**	**15 31 18.1**	**-0.1**
TVSB				*e*SG	**Sg**	**15 31 25.4**	**+0.4**
TVSB	**Tavsanli**	**0.50**	**46**	*e*Pg	**Pg**	**15 31 18.1**	**-0.1**
TVSB				*e*Sg	**Sg**	**15 31 25.4**	**+0.4**
KULA	**Kula-Manisa**	**0.64**	**204**	*e*PG	**Pg**	**15 31 20.4**	**-0.4**
KULA				*e*SG	**Sb**	**15 31 29.6**	**-0.3**
KULA	**Kula-Manisa**	**0.64**	**204**	*e*Pg	**Pg**	**15 31 20.4**	**-0.4**
KULA				*e*Sg	**Sb**	**15 31 29.6**	**-0.3**
MANT	**Manisa**	**0.70**	**209**	P	**Pb**	**15 31 22.8**	**+0.6**
MANT				S	**Sb**	**15 31 31.9**	**+0.2**
MANT	**Manisa**	**0.70**	**209**	*i* P	**Pb**	**15 31 22.8**	**+0.6**
MANT				*i* S	**Sb**	**15 31 31.9**	**+0.2**
KHAL	**Karahalli**	**0.83**	**152**	P	**Pn**	**15 31 25.4**	**-0.1**
KHAL				S	**Sn**	**15 31 37.8**	**+0.3**
KHAL	**Karahalli**	**0.83**	**152**	*i* P	**Pn**	**15 31 25.4**	**-0.1**
KHAL				*i* S	**Sn**	**15 31 37.8**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.27**	**356**	*e*PN	**Pg**	**15 31 32.6**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.27**	**356**	*e*Pn	**Pg**	**15 31 32.6**	**-0.1**
CAVI	**Cavuskoy**	**1.28**	**31**	*e*PN	**Pg**	**15 31 32.5**	**-0.3**
CAVI	**Cavuskoy**	**1.28**	**31**	*e*Pn	**Pg**	**15 31 32.6**	**-0.3**
IZI	**Iznik**	**1.29**	**17**	*e*PN	**Pb**	**15 31 32.5**	**+0.3**
IZI	**Iznik**	**1.29**	**17**	*e*Pn	**Pb**	**15 31 32.5**	**+0.3**
ARMT	**Armutlu**	**1.47**	**356**	*e*PN	**Pb**	**15 31 35.4**	**+0.2**
ARMT	**Armutlu**	**1.47**	**356**	*e*Pn	**Pb**	**15 31 35.4**	**+0.2**

IDC 22 15:31:50.8±3.6, 36°85N×143°50E, h0km, mb3.4/2, mb1 3.5/3, mb1mx3.2/36, mbtmp3.2/3, ML2.8/1, Error ellipse: s-maj=84.8km s-min=40.9km az=54.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**4.26**	**267**	Pn	Pn	15 32 56.8	-0.2
	0.6nm,0.3s,baz=90,slow=14,SNR=5.5						
MKAR	**Makanchi Array**	**45.63**	**303**	P	P	15 40 12.5	-0.3
	0.1nm,0.3s,baz=94,slow=9.4,SNR=1.6						
WRA	**Warramunga Arr**	**57.15**	**190**	P	P	15 41 39.4	+0.1
	0.4nm,0.7s,baz=9.2,slow=7.1,SNR=2.7						

*IDC **22** 15:34:06.2±1.5, 37°50N×143°70E, h0km, mb3.6/3, mb1 3.7/5, mb1mx3.4/38, mbtmp3.5/5, ML3.3/2, Error ellipse: s-maj=37.2km s-min=26.9km az=108.0*
*ISCJB **22** 15:34:09.3±1.3, 37°67N±0°09×143°5E±0°1, h33km, mb3.6/3, Error ellipse: s-maj=17.0km s-min=8.9km az=36.2*

ISC 22 15:34:11.5±1.3, 37°6N±0°1×143°5E±0°1, h35km, n6, σ1°14/8, mb3.6/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**4.39**	**257**	Pn	**Pn**	**15 35 15.8**	**+0.2**
	1.9nm,0.3s,baz=70,slow=11,SNR=20						
MAT	**Matsushiro**	**4.39**	**257**	P	**Pn**	**15 35 15.8**	**+0.1**
MAT				S	**Sn**	**15 36 04.3**	**-1.3**
ASAJ	**Asahikawa**	**6.52**	**354**	Pn	**Pn**	**15 35 43.8**	**-1.0**
	0.5nm,0.3s,baz=247,slow=13,SNR=5.5						
ASAJ				Sn	**Sn**	**15 36 57.9**	**-0.2**
	0.2nm,0.3s,baz=179,slow=31,SNR=2.4						
MKAR	**Makanchi Array**	**45.24**	**302**	P	**P**	**15 42 26.6**	**+1.4**
	0.6nm,0.8s,baz=94,slow=9.8,SNR=4.9						
ILAR	**Eielson Array**	**48.09**	**33**	P	**P**	**15 42 48.0**	**+0.7**
	0.3nm,0.7s,baz=253,slow=5.8,SNR=4.3						
WRA	**Warramunga Arr**	**57.91**	**190**	P	**P**	**15 43 59.0**	**-1.0**
	0.8nm,0.7s,baz=8.4,slow=7.0,SNR=6.7						

WEL 22 15:47:10.9±0.2, 37°62S×176°99E, h5km, ML3.5/13, 7C-4D, Error ellipse: s-maj=1.4km s-min=1.1km az=0.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WIZ	**White Island**	**0.19**	**60**	⇓PG	Pg	15 47 15.2	+0.7
WIZ				SG	Sg	15 47 17.9	+0.9
WIZ				SG		15 47 18.5	
OPRZ	**Ohinepanea**	**0.41**	**237**	⇑PG	Pg	15 47 18.7	-0.1
OPRZ				SG	Sg	15 47 24.7	+0.6
MARZ	**Manawahe**	**0.44**	**214**	⇓PG	Pg	15 47 19.2	-0.2
MARZ				SG	Sg	15 47 26.4	+1.2
EDRZ	**Edgecumbe**	**0.52**	**202**	PG	Pb	15 47 22.3	-0.3
EDRZ				AML	AML	15 47 45.6	
EDRZ				AML	AML	15 47 49.1	
TGRZ	**Tauranga**	**0.58**	**259**	⇑PG	Pg	15 47 22.6	+0.5
TGRZ				AML	AML	15 47 33.7	
TGRZ				AML	AML	15 47 34.3	
LIRZ	**Lichensteins R**	**0.61**	**231**	P*	Pg	15 47 23.3	+0.7
HAZ	**Te Kaha**	**0.65**	**102**	P*	Pg	15 47 22.9	-0.5
HAZ				S*	Sg	15 47 31.0	-0.8
URZ	**Urewera**	**0.65**	**171**	⇑P*	Pg	15 47 22.1	-1.2
URZ				S*	Sg	15 47 31.0	-0.8
URZ				AML	AML	15 47 31.1	
MKRZ	**Makatiti**	**0.66**	**218**	P*	Pg	15 47 24.2	+0.6
MKRZ				AML	AML	15 47 35.2	
MKRZ				AML	AML	15 47 36.6	
MYRZ	**Mayor Island**	**0.68**	**300**	P*	Pb	15 47 24.9	-0.4
OMRZ	**Omania**	**0.69**	**225**	P*	Pg	15 47 24.5	+0.4
KARZ	**Kaharoa**	**0.71**	**235**	P*	Pg	15 47 24.9	+0.3
TARZ	**Mount Tarawera**	**0.72**	**211**	P*	Pg	15 47 25.3	+0.5
HLRZ	**Highlands Stat**	**0.81**	**218**	P*	Pg	15 47 26.6	+0.2
RRRZ	**Republican Roa**	**0.81**	**207**	P*	Pg	15 47 26.7	+0.2
MWZ	**Matawai**	**0.83**	**149**	⇑P*	Pg	15 47 25.7	-1.2
MWZ				S*	Sg	15 47 36.4	-1.3
MWZ				AML	AML	15 47 39.1	
MWZ				AML	AML	15 47 39.4	
MWZ				AML	AML	15 47 40.1	
UTU	**Utuhina**	**0.84**	**228**	P*	Pn	15 47 29.0	-0.4
UTU				AML	AML	15 47 43.7	
UTU				AML	AML	15 47 51.6	
KMRZ	**Kaimai**	**0.86**	**254**	P*	Pg	15 47 27.1	-0.3
MUGZ	**Murupara**	**0.87**	**191**	P*	Pg	15 47 26.2	-1.4
HSRZ	**Hossack Road**	**0.91**	**220**	P*	Pg	15 47 28.6	+0.3
RAGZ	**Rawiri**	**0.94**	**159**	P*	Pg	15 47 27.7	-1.2
HRRZ	**Handcock Road**	**0.95**	**216**	P*	Pb	15 47 29.8	-0.1
TWGZ	**Tauwhareparae**	**0.96**	**126**	⇑P*	Pg	15 47 29.4	0.0
PRRZ	**Plateau Road**	**0.99**	**208**	P*	Pg	15 47 29.1	-0.9
RTZ	**Ruatahuna**	**0.99**	**180**	P*	Pg	15 47 28.6	-1.4
MXZ	**Matakaoa Point**	**1.05**	**87**	P*	Pg	15 47 30.5	-0.5
MXZ				AML	AML	15 47 59.0	
MXZ				AML	AML	15 48 02.7	
TKGZ	**Te Karaka**	**1.06**	**140**	⇓P*	Pg	15 47 31.1	-0.2
PUZ	**Puketiti**	**1.10**	**115**	P*	Pg	15 47 31.8	-0.3
PUZ				AML	AML	15 47 52.6	
PUZ				AML	AML	15 47 54.6	
TOZ	**Tahuroa Road**	**1.18**	**264**	P*	Pg	15 47 31.6	-2.0
TOZ				AML	AML	15 47 44.8	
TOZ				AML	AML	15 47 58.0	
SNGZ	**Shannon Statio**	**1.19**	**167**	⇑P*	Pg	15 47 32.8	-1.0
RIGZ	**Rimuhau**	**1.25**	**151**	P*	Pg	15 47 34.6	-0.2
MRHZ	**Matea Rd**	**1.29**	**200**	P*	Pn	15 47 33.5	-2.2
CNGZ	**Carnagh Statio**	**1.29**	**132**	P*	Pb	15 47 35.9	+0.1
RAHZ	**Arahi**	**1.30**	**177**	⇓P*	Pn	15 47 34.8	-0.9
KUZ	**Kuaotunu**	**1.33**	**310**	⇑P*	Pn	15 47 33.6	-2.6
KUZ				AML	AML	15 47 40.5	
KUZ				AML	AML	15 47 41.9	
KUZ				AML	AML	15 47 56.8	
KUZ				AML	AML	15 48 01.6	
PRGZ	**Paritu Road**	**1.48**	**152**	PN	Pn	15 47 37.8	-0.5
NMHZ	**Naumai**	**1.48**	**185**	PN	Pn	15 47 37.0	-1.3
KNZ	**Kokohu**	**1.50**	**159**	PN	Pn	15 47 38.6	+0.1
KNZ				AML	AML	15 48 05.1	
KNZ				AML	AML	15 48 08.7	
MKAZ	**Moumakai**	**1.54**	**289**	PN	Pn	15 47 37.0	-2.1
MKAZ				AML	AML	15 47 45.1	
MKAZ				AML	AML	15 48 06.9	
BKZ	**Black Stump Fm**	**1.59**	**194**	P*	Pn	15 47 37.5	-2.3
BKZ				AML	AML	15 48 11.5	
BKZ				AML	AML	15 48 11.8	
ARHZ	**Aropaoanui**	**1.64**	**180**	PN	Pb	15 47 41.4	-0.3
WIAZ	**Waiheke Island**	**1.69**	**299**	PN	Pn	15 47 39.2	-1.9
KBAZ	**Karaka Road Bo**	**1.75**	**287**	PN	Pn	15 47 40.7	-1.2
ETAZ	**East Tamaki Re**	**1.77**	**291**	PN	Pn	15 47 41.2	-1.0
GRZ	**Great Barrier**	**1.83**	**318**	PN	Pn	15 47 41.0	-2.1
MCHZ	**McNeill Hill**	**1.84**	**187**	PN	Pn	15 47 43.2	+0.1
HIZ	**Hauiti**	**1.90**	**241**	PN	Pn	15 47 42.6	-1.4
AWAZ	**Awhitu Peninsu**	**1.95**	**286**	PN	Pn	15 47 43.2	-1.5
WCZ	**Waipu Caves**	**2.70**	**308**	PN	Pn	15 47 53.5	-1.5

*ISK **22** 15:48:42.1, 39°77N×35°29E, h3km, MD2.7*
*ISCJB **22** 15:48:44.3±1.4, 39°94N±0°06×35°32E±0°09, h8km±19km, Error ellipse: s-maj=12.1km s-min=9.5km az=15.7*
*DDA **22** 15:48:44.0, 39°93N×35°29E, h7km, Ml2.4*
*CSEM **22** 15:48:44.0±0.3, 39°91N×35°27E, h15km, ML2.4, Error ellipse: s-maj=10.8km s-min=5.7km az=24.0*

ISC 22 15:48:43.9±1.2, 39°95N±0°05×35°29E±0°03, h18km±6km, n12, σ0°47/21, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
COAL	**Corum-Alaca**	**0.39**	**323**	P	**Pg**	**15 48 51.7**	**-0.2**
COAL				S	**Sb**	**15 48 58.4**	**+0.4**
COAL	**Corum-Alaca**	**0.39**	**323**	*i* P	**Pg**	**15 48 51.7**	**-0.2**
COAL				*i* S	**Sb**	**15 48 58.4**	**+0.4**
CORM	**Corum**	**0.56**	**295**	*e*PG	**Pb**	**15 48 55.5**	**+0.3**
CORM				*e*SG	**Sn**	**15 49 05.3**	**-0.7**
CORM	**Corum**	**0.56**	**295**	*e*Pg	**Pb**	**15 48 55.5**	**+0.3**
CORM				*e*Sg	**Sn**	**15 49 05.3**	**-0.7**
CDAG	**Cicekdag**	**0.78**	**246**	P	**Pg**	**15 48 59.1**	**0.0**
CDAG	**Cicekdag**	**0.78**	**246**	*i* P	**Pg**	**15 48 59.1**	**0.0**
CDAG				*i* S	**Sn**	**15 49 12.1**	**+0.7**
CUSAR	**Sarkisla-SIVAS**	**0.91**	**125**	P	**Pb**	**15 49 00.9**	**-0.3**
CUSAR				S	**Sn**	**15 49 14.8**	**+0.2**
CUSAR	**Sarkisla-SIVAS**	**0.91**	**125**	*i* P	**Pb**	**15 49 00.9**	**-0.3**
CUSAR				*i* S	**Sn**	**15 49 14.8**	**+0.2**
SVSK	**Karacayir**	**1.31**	**91**	*e*PN	**Pb**	**15 49 07.9**	**-0.1**
SVSK				*e*SN	**Sg**	**15 49 27.0**	**+0.7**
SVSK	**Karacayir**	**1.31**	**91**	*e*Pn	**Pb**	**15 49 07.9**	**-0.1**
SVSK				*e*Sn	**Sg**	**15 49 27.0**	**+0.7**
KAMT	**Kaman**	**1.35**	**245**	*e*PN	**Pn**	**15 49 07.4**	**-0.5**
KAMT	**Kaman**	**1.35**	**245**	*e*Pn	**Pn**	**15 49 07.4**	**-0.5**

IDC 22 15:50:14.2±4.9, 3°63S×153°15E, h0km, mb3.3/2, mb1 3.6/2, mb1mx3.2/42, mbtmp3.3/2, Error ellipse: s-maj=225.4km s-min=58.4km az=117.0, New Ireland region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**24.49**	**227**	P	P	15 55 35.4	0.0
	0.5nm,0.5s,baz=53,slow=9.6,SN

comp=Z,64nm,21.5s,baz=212,slow=39
WRA Warramunga Arr 31.63 250 P P 16 02 39.9 +0.3
0.5nm,0.8s,baz=77,slow=6.9,SNR=3.4
ASAR Alice Springs 32.93 243 P P 16 02 50.7 -0.3
0.6nm,0.7s,baz=68,slow=9.8,SNR=4.4
MKAR Makanchi Array 93.66 317 P P 16 09 33.0 -0.1
0.5nm,0.7s,baz=97,slow=5.2,SNR=4.0

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*KRNET **22** 16:00:11.8±0.1,39.97N×70.60E,mb2.8*
*SOME **22** 16:00:11.8,40.05N×70.67E,h0km*
*NNC **22** 16:00:13.8±0.6,40.09N×70.66E,h0km,mb3.4,mpv3.0, Error ellipse: s-maj=11.4km s-min=3.5km az=131.0*
ISC 22 16:00:13.5±1.4,40.07N±0.05×70.68E±0.05,h2km±11km, n15,σ1°90/29,20C-8D,Tajikistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BTK	**Batken**	**0.11**	**95**	⇑*eP*	**Pg**	**16 00 15.7**	**+0.1**
	baz=62						
BTK				⇑*iS*	**Sg**	**16 00 18.1**	**+1.0**
	baz=62						
DZET	**Dzherino**	**1.91**	**229**	⇑Pg	**Pb**	**16 00 48.0**	**-1.0**
DZET				⇓Lg	Lg	16 01 15.9	
ARK	**Arkit**	**1.98**	**29**	⇑*iP*	**Pb**	**16 00 50.0**	**-0.3**
	baz=30						
ARK				⇑*iS*	**Sg**	**16 01 17.8**	**+0.6**
	baz=30						
IUG	**Iuzhnay**	**2.13**	**347**	*eP*	**Pb**	**16 00 52.7**	**-0.1**
	161nm,0.3s						
IUG				*eS*	**Sg**	**16 01 23.1**	**+1.0**
	165nm,0.3s						
ARSB	**Arslanbob**	**2.16**	**54**	⇑*eP*	**Pb**	**16 00 52.0**	**-1.3**
	baz=52						
ARSB				⇑*eS*	**Sg**	**16 01 22.5**	**-0.3**
	baz=52						
MNAS	**Manas**	**2.78**	**29**	⇓*eP*	**Pn**	**16 01 00.3**	**+1.2**
	baz=29						
MNAS				⇓*eS*	**Sb**	**16 01 37.0**	**-1.5**
	baz=29						
MNAS	**Manas**	**2.78**	**29**	⇑Pn	**Pn**	**16 00 59.6**	**+0.5**
MNAS				⇓Pg	**Pb**	**16 01 04.3**	**+0.3**
	7.2nm,0.5s						
MNAS				⇓Sn	**Sb**	**16 01 34.7**	**-3.9**
	1.5nm,0.3s						
MNAS				⇓Lg	Lg	16 01 41.6	
	9.5nm,0.4s						
KK31	**Karatay Array**	**3.04**	**358**	Pn	**Pn**	**16 01 03.0**	**+0.6**
	0.3nm,0.2s,baz=175,slow=12,SNR=128						
KK31				Pg	**Pb**	**16 01 08.8**	**+0.6**
	2.8nm,0.4s,baz=185,slow=17,SNR=9.2						
KK31				⇓Lg	Lg	16 01 49.2	
	3.9nm,0.2s,baz=184,slow=29,SNR=12						
AML	**Almayashu**	**3.08**	**47**	⇑*iP*	**Pn**	**16 01 04.7**	**+1.3**
	baz=46						
AML				⇑*iS*	**Sb**	**16 01 44.5**	**-2.7**
	baz=46						
ARLS	**Aral**	**3.29**	**56**	⇑*eP*	**Pn**	**16 01 08.0**	**+1.9**
	baz=55						
ARLS				⇑*eS*	**Sb**	**16 01 50.0**	**-3.2**
	baz=55						
MRKS	**Merke**	**3.29**	**35**	*eP*	**Pb**	**16 01 13.8**	**+1.1**
	17nm,0.3s						
MRKS				*eS*	**Sg**	**16 01 57.9**	**-1.3**
	24nm,0.4s						
EKS2	**Erkin-Say**	**3.49**	**41**	⇑*iP*	**Pn**	**16 01 10.9**	**+2.1**
	baz=41						
EKS2				⇑*iS*	**Sb**	**16 01 54.5**	**-4.3**
	baz=41						
UCH	**Uchtor**	**3.61**	**52**	⇑*iP*	**Pn**	**16 01 12.8**	**+2.0**
	baz=51						
UCH				⇑*iS*	**Sn**	**16 01 56.8**	**+2.6**
	baz=51						
AAK	**Ala-Archa**	**3.85**	**47**	⇑Pn	**Pn**	**16 01 15.9**	**+2.0**
	1.9nm,0.3s						
AAK				⇑Sn	**Sn**	**16 02 00.8**	**+1.1**
	2.3nm,0.4s						
AAK				⇓Lg	Lg	16 02 14.8	
	6.8nm,0.5s						
TKM2	**Tokmak 2**	**4.67**	**51**	⇑Pn	**Pn**	**16 01 26.1**	**+1.0**
	3.7nm,0.5s						
TKM2				⇑Lg	Lg	16 02 41.9	
	6.6nm,0.8s						

IDC 22 16:01:15.3±5.2,7.49S×147.14E,h75km±60km,mb3.2/2, mb1 3.4/3,mb1mx3.1/32,mbtmp3.6/3,ML3.1/1,MS3.8/1, Ms1 3.8/1,ms1mx2.9/17,Error ellipse: s-maj=91.9km s-min=41.6km az=122.0,Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**1.90**	**180**	P	Pn	16 01 45.0	-0.8
	25nm,0.3s,baz=339,slow=6.0,SNR=37						
PMG				S	Sn	16 02 12.4	+3.5
	13nm,0.3s,baz=138,slow=23,SNR=5.7						
WRA	**Warramunga Arr**	**17.53**	**224**	P	Pn	16 05 13.3	-1.6
	0.1nm,0.3s,baz=48,slow=11,SNR=4.3						
ASAR	**Alice Springs**	**20.49**	**217**	P	P	16 05 47.8	+0.4
	2.7nm,0.9s,baz=37,slow=11,SNR=9.3						
JNU	**Nakatsue**	**43.25**	**340**	LR	LR	16 25 34.3	
	comp=Z,103nm,19.4s,baz=310,slow=34						
MKAR	**Makanchi Array**	**78.73**	**321**	P	P	16 13 09.2	-0.5
	0.5nm,0.7s,baz=101,slow=6.3,SNR=5.1						
TORD	**Torodi Ar. Bea**	**145.57**	**282**	PKPbc	PKPab	16 20 46.8	+0.1
	1.1nm,0.6s,baz=88,slow=4.1,SNR=8.2						

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*DDA **22** 16:02:50.9,39.16N×29.12E,h7km,Md2.4*
*ISK **22** 16:02:50.9,39.13N×29.17E,h9km,MD2.7*
*ISCJB **22** 16:02:51.0±0.6,39.13N±0.04×29.13E±0.06,h9km,Error ellipse: s-maj=7.3km s-min=5.4km az=20.9*
*CSEM **22** 16:02:51.0±0.1,39.13N×29.12E,h6km±1km,MD2.7,Error ellipse: s-maj=2.6km s-min=2.3km az=107.0*
ISC 22 16:02:51.1±1.0,39.13N±0.03×29.12E±0.03,h9km,n27, σ0°29/29,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.29**	**98**	P	**Pg**	**16 02 57.1**	**+0.2**
GDZ	**Gediz**	**0.29**	**98**	*i* P	**Pg**	**16 02 57.1**	**+0.2**
DEMI	**Demirci**	**0.32**	**254**	P	**Pg**	**16 02 57.8**	**+0.3**
DEMI	**Demirci**	**0.32**	**254**	*i* P	**Pg**	**16 02 57.8**	**+0.3**
TVSB	**Tavsanli**	**0.42**	**40**	*e*PG	**Pg**	**16 02 59.2**	**0.0**
TVSB				*e*SG	**Sg**	**16 03 04.8**	**0.0**
TVSB	**Tavsanli**	**0.42**	**40**	*e*Pg	**Pg**	**16 02 59.2**	**0.0**
TVSB				*e*Sg	**Sg**	**16 03 04.8**	**0.0**
DURS	**Dursunbey**	**0.68**	**314**	P	**Pg**	**16 03 04.3**	**0.0**
DURS	**Dursunbey**	**0.68**	**314**	*i* P	**Pg**	**16 03 04.3**	**0.0**
MANT	**Manisa**	**0.77**	**214**	P	**Pg**	**16 03 05.9**	**-0.1**
MANT	**Manisa**	**0.77**	**214**	*i* P	**Pg**	**16 03 05.9**	**-0.1**
KHAL	**Karahalli**	**0.81**	**159**	P	**Pb**	**16 03 07.2**	**-0.3**
KHAL	**Karahalli**	**0.81**	**159**	*i* P	**Pb**	**16 03 07.2**	**-0.3**
KHL	**Karahalli**	**0.87**	**158**	*e*PG	**Pg**	**16 03 07.7**	**-0.1**
KHL	**Karahalli**	**0.87**	**158**	*e*Pg	**Pg**	**16 03 07.7**	**-0.1**
IGD	**Bursa**	**1.13**	**3**	*i* P	**Pb**	**16 03 11.7**	**-1.2**
CAVI	**Cavuskoy**	**1.21**	**27**	*e*PN	**Pb**	**16 03 14.1**	**0.0**
CAVI	**Cavuskoy**	**1.21**	**27**	*e*Pn	**Pb**	**16 03 14.1**	**0.0**
IZI	**Iznik**	**1.23**	**13**	*e*PN	**Pn**	**16 03 14.6**	**0.0**
IZI	**Iznik**	**1.23**	**13**	*e*Pn	**Pn**	**16 03 14.6**	**0.0**
MDNY	**Mudanya-Bursa**	**1.25**	**352**	*e*PN	**Pg**	**16 03 15.0**	**0.0**
MDNY	**Mudanya-Bursa**	**1.25**	**352**	*e*Pn	**Pg**	**16 03 15.0**	**0.0**
KCTX	**Karacabey (Bur**	**1.27**	**333**	*e*PN	**Pg**	**16 03 15.6**	**+0.1**
KCTX	**Karacabey (Bur**	**1.27**	**333**	*e*Pn	**Pg**	**16 03 15.6**	**+0.1**
ARMT	**Armutlu**	**1.45**	**352**	*e*PN	**Pb**	**16 03 18.3**	**+0.1**
ARMT	**Armutlu**	**1.45**	**352**	*e*Pn	**Pb**	**16 03 18.3**	**+0.1**
GULT	**Gulveren**	**1.69**	**39**	*e*PN	**Pn**	**16 03 21.2**	**+0.4**
GULT	**Gulveren**	**1.69**	**39**	*e*Pn	**Pn**	**16 03 21.2**	**+0.4**

IDC 22 16:03:31.1±5.5,18.90S×173.70W,h0km,mb4.0/3, mb1 4.2/3,mb1mx3.6/37,mbtmp4.0/3,MS3.7/1,Ms1 3.6/1, ms1mx2.8/34,Error ellipse: s-maj=257.7km s-min=60.4km az=149.0,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**37.70**	**261**	P	P	16 10 49.0	+0.3
	3.2nm,0.9s,baz=100,slow=11,SNR=2.8						
STKA	**Stephens Creek**	**42.12**	**243**	LR	LR	16 26 44.2	
	comp=Z,95nm,20.1s,baz=18,slow=33						
ASAR	**Alice Springs**	**48.83**	**255**	P	P	16 12 18.2	-0.5
	0.9nm,0.6s,baz=92,slow=8.1,SNR=26						
WRA	**Warramunga Arr**	**48.85**	**260**	P	P	16 12 18.8	-0.1
	0.5nm,0.3s,baz=97,slow=7.5,SNR=37						

BRTR	**Keskin Array B**	**148.60**	**317**	PKPbc	PKPbc	16 23 19.9	-0.6
	0.5nm,0.7s,baz=38,slow=2.6,SNR=4.1						

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*ISCJB **22** 16:05:44.9±0.5,39.11N±0.04×29.12E±0.06,h9km,Error ellipse: s-maj=6.8km s-min=4.8km az=21.9*
*ISK **22** 16:05:44.5,39.12N×29.15E,h6km,MD2.8*
*CSEM **22** 16:05:45.0±0.1,39.11N×29.12E,h8km,MD2.8,Error ellipse: s-maj=2.7km s-min=1.9km az=98.0*
*DDA **22** 16:05:45.3,39.10N×29.10E,h7km,Md2.3*
ISC 22 16:05:44.6±1.0,39.10N±0.03×29.08E±0.03,h9km,n33, σ0°34/35,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.29**	**258**	P	**Pb**	**16 05 51.5**	**-0.5**
DEMI	**Demirci**	**0.29**	**258**	*i* P	**Pb**	**16 05 51.5**	**-0.5**
GDZ	**Gediz**	**0.32**	**93**	P	**Pg**	**16 05 51.3**	**+0.4**
GDZ	**Gediz**	**0.32**	**93**	*i* P	**Pg**	**16 05 51.4**	**+0.4**
TVSB	**Tavsanli**	**0.46**	**41**	*e*PG	**Pg**	**16 05 53.5**	**-0.1**
TVSB				*e*SG	**Sg**	**16 05 58.8**	**-0.8**
TVSB	**Tavsanli**	**0.46**	**41**	*e*Pg	**Pg**	**16 05 53.5**	**-0.1**
TVSB				*e*Sg	**Sg**	**16 05 58.8**	**-0.8**
KULA	**Kula-Manisa**	**0.67**	**209**	*e*PG	**Pb**	**16 05 58.5**	**0.0**
KULA	**Kula-Manisa**	**0.67**	**209**	*e*Pg	**Pb**	**16 05 58.5**	**0.0**
DURS	**Dursunbey**	**0.68**	**317**	P	**Pb**	**16 05 59.0**	**+0.3**
DURS	**Dursunbey**	**0.68**	**317**	*i* P	**Pb**	**16 05 59.0**	**+0.3**
MANT	**Manisa**	**0.73**	**214**	P	**Pb**	**16 05 59.7**	**0.0**
MANT	**Manisa**	**0.73**	**214**	*i* P	**Pb**	**16 05 59.7**	**0.0**
KHAL	**Karahalli**	**0.80**	**156**	P	**Pb**	**16 06 01.0**	**+0.2**
KHAL	**Karahalli**	**0.80**	**156**	*i* P	**Pb**	**16 06 01.0**	**+0.2**
KHL	**Karahalli**	**0.85**	**156**	*e*PG	**Pg**	**16 06 00.9**	**-0.2**
KHL	**Karahalli**	**0.85**	**156**	*e*Pg	**Pg**	**16 06 00.9**	**-0.2**
ORLT	**Orhaneli**	**0.95**	**352**	*e*PG	**Pg**	**16 06 02.7**	**-0.2**
ORLT	**Orhaneli**	**0.95**	**352**	*e*Pg	**Pg**	**16 06 02.7**	**-0.2**
BALB	**Balikesir**	**1.07**	**300**	*e*PN	**Pn**	**16 06 06.3**	**+0.5**
BALB	**Balikesir**	**1.07**	**300**	*e*Pn	**Pn**	**16 06 06.3**	**+0.5**
IGD	**Bursa**	**1.16**	**5**	*i* P	**Pb**	**16 06 06.6**	**-0.3**
CAVI	**Cavuskoy**	**1.25**	**28**	*e*PN	**Pn**	**16 06 08.4**	**+0.1**
CAVI	**Cavuskoy**	**1.25**	**28**	*e*Pn	**Pn**	**16 06 08.4**	**+0.1**
IZI	**Iznik**	**1.27**	**14**	*e*PN	**Pb**	**16 06 08.9**	**+0.1**
IZI	**Iznik**	**1.27**	**14**	*e*Pn	**Pb**	**16 06 08.9**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.27**	**353**	*e*PN	**Pg**	**16 06 09.2**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.27**	**353**	*e*Pn	**Pg**	**16 06 09.2**	**+0.2**
KCTX	**Karacabey (Bur**	**1.29**	**335**	*e*PN	**Pg**	**16 06 09.7**	**+0.4**
KCTX	**Karacabey (Bur**	**1.29**	**335**	*e*Pn	**Pg**	**16 06 09.7**	**+0.4**
ARMT	**Armutlu**	**1.47**	**354**	*e*PN	**Pb**	**16 06 12.1**	**0.0**
ARMT	**Armutlu**	**1.47**	**354**	*e*Pn	**Pb**	**16 06 12.1**	**0.0**
GULT	**Gulveren**	**1.73**	**39**	*e*PN	**Pn**	**16 06 15.2**	**+0.3**
GULT	**Gulveren**	**1.73**	**39**	*e*Pn	**Pn**	**16 06 15.2**	**+0.3**

MEX 22 16:17:40.6±0.7,16.79N×95.41W,h120km±14km,MD3.9, Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HUIG	**Huatulco**	**1.22**	**213**	*i* P	Pn	16 18 03.4	-1.4
HUIG				*i* S	Sn	16 18 21.8	-1.5
VHO	**Vista Hermosa**	**1.30**	**283**	*e*P	Pn	16 18 05.2	-0.6
VHO				*e*S	Sn	16 18 22.7	-2.3
PCIG		**2.37**	**117**	*e*P	Pn	16 18 17.1	-1.6
PCIG				*i* S	Sn	16 18 46.2	-1.6
TPIG	**Tehuac#an**	**2.46**	**311**	*i* P	Pn	16 18 19.5	-0.6
TPIG				*i* S	Sn	16 18 48.6	-1.8
PNIG	**Pinotepa**	**2.63**	**262**	*e*P	Pn	16 18 20.6	-1.6
PNIG				*i* S	Sn	16 18 52.5	-1.6
CCIG	**Comitan**	**3.18**	**99**	*i* P	Pn	16 18 28.6	-0.8
CCIG				*i* S	Sn	16 19 05.3	-1.8

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*NIED **22** 16:18:00,33.00N×130.70E,h11km,Mw3.5 Best double couple: M0:1.69000×10^14 NP1:φs125.00000°,δ70.00000°, λ14.00000°. NP2:φs30.00000°,δ77.00000°,λ159.00000°.*
JMA 22 16:18:12.5,33.03N×130.72E,h12km±1km,M3.5,2C-1D Broadband fault plane solution: P waves. NP1: φs130.00000°,δ65.00000°,λ-30.00000°. **NP2:** φs233.00000°,δ63.00000°,λ-152.00000°. **Principal axes:** T Plg1.0000°, Azm182.0000°; N Plg52.0000°, Azm273.0000°; P Plg38.0000°, Azm91.0000°; **Kyushu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JNU	**Nakatsue**	**0.16**	**55**	⇑P	Pg	16 18 16.5	+0.2
JNU				S	Sg	16 18 19.2	+0.3
JTA	**Tamana**	**0.17**	**247**	⇓P	Pg	16 18 16.5	+0.1
JTA				S	Sg	16 18 19.2	+0.1
JIU2	**Izumi 2**	**0.49**	**171**	⇑P	Pg	16 18 21.9	-0.2
JIU2				S	Sg	16 18 28.4	-0.2

MEX 22 16:26:46.0±0.5,17.17N×100.25W,h34km±4km,MD3.9, Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CAIG	**El Cayaco**	**0.12**	**187**	*i* P	Pn	16 26 50.4	+1.4
CAIG				*e*S	Sb	16 26 54.7	-1.6
MEIG	**Mezcala**	**0.96**	**39**	*e*P	Pn	16 27 01.1	-2.1
MEIG				*e*S	Sn	16 27 13.2	-2.5
ARIG	**Puente Sto Nin**	**1.11**	**355**	*e*P	Pn	16 27 03.5	-1.7
ARIG				*i* S	Sn	16 27 16.2	-3.0
ZIIG	**Zihuatanejo**	**1.24**	**291**	*i* P	Pn	16 27 05.0	-1.8
ZIIG				*i* S	Sn	16 27 20.2	-2.2
PLIG	**Platanillo**	**1.41**	**30**	*i* P	Pn	16 27 08.0	-1.4
PLIG				*i* S	Sn	16 27 24.2	-2.5
TLIG	**Tlapa**	**1.66**	**76**	*e*P	Pn	16 27 11.5	-1.3
TLIG				*i* S	Sn	16 27 30.7	-2.2
YAIG	**Yautepec**	**2.02**	**34**	*e*P	Pn	16 27 17.2	-0.7
YAIG				*i* S	Sn	16 27 39.9	-2.2
PNIG	**Pinotepa**	**2.18**	**111**	*e*P	Pn	16 27 17.8	-2.0
PNIG				*i* S	Sn	16 27 43.6	-2.1

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*IDC **22** 16:27:35.4±1.0,34.78N×142.82E,h0km,mb3.6/5, mb1 3.7/8,mb1mx3.4/38,mbtmp3.6/8,ML3.3/3,Error ellipse: s-maj=29.0km s-min=20.1km az=98.0*
*ISCJB **22** 16:27:38.2±0.8,34.71N±0.07×142.69E±0.09,h33km, mb3.6/5,Error ellipse: s-maj=10.5km s-min=10.0km az=37.3*
ISC 22 16:27:40.3±1.0,34.71N±0.09×142.71E±0.10,h35km,n9, σ0°91/10,mb3.6/5,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHJ	**Hachijo jima 2**	**2.90**	**238**	Pn	**Pn**	**16 28 24.2**	**+0.3**
	9.3nm,0.3s,baz=72,slow=20,SNR=3.4						
JHJ				Sn	**Sn**	**16 28 56.8**	**-0.8**
	11nm,0.3s,baz=72,slow=19,SNR=4.4						
MJAR	**Matsushiro Arr**	**4.10**	**298**	Pn	**Pn**	**16 28 40.2**	**-0.2**
	0.8nm,0.3s,baz=107,slow=9.0,SNR=14						
MJAR				Sn	**Sn**	**16 29 26.7**	**-0.4**
	0.9nm,0.3s,baz=108,slow=31,SNR=4.7						
JCJ	**Chichijima**	**7.60**	**184**	Pn	**Pn**	**16 29 27.5**	**-1.1**
	0.9nm,0.3s,baz=287,slow=19,SNR=3.5						
JCJ				Sn	Sn	16 30 47.5	-6.0
	2.9nm,0.3s,baz=299,slow=19,SNR=4.1						
ASAJ	**Asahikawa**	**9.40**	**360**	Pn	Pn	16 29 47.7	-5.5
	0.5nm,0.3s,baz=196,slow=15,SNR=6.8						
SEY	**Seymchan**	**28.89**	**9**	P	**P**	**16 33 34.4**	**-1.0**
	0.6nm,0.5s,baz=204,slow=20,SNR=3.7						
MKAR	**Makanchi Array**	**46.27**	**304**	P	**P**	**16 36 02.5**	**+0.3**
	0.2nm,0.5s,baz=100,slow=6.0,SNR=2.8						
WRA	**Warramunga Arr**	**54.92**	**190**	P	**P**	**16 37 08.9**	**+1.2**
	0.8nm,0.8s,baz=9.6,slow=7.2,SNR=6.9						
ASAR	**Alice Springs**	**58.65**	**189**	P	**P**	**16 37 35.0**	**+0.9**
	0.6nm,0.9s,baz=0.1,slow=5.6,SNR=5.2						
NVAR	**Mina Array Bea**	**75.54**	**53**	P	**P**	**16 39 22.0**	**+0.5**
	0.3nm,0.5s,baz=308,slow=7.3,SNR=4.1						

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*ISCJB **22** 16:29:04.6±0.8,38.16N±0.05×142.53E±0.07,h14km, mb3.4/3,Error ellipse: s-maj=8.2km s-min=7.8km az=6.5*
*JMA **22** 16:29:08.8±0.2,38.29N×142.33E,h32km±2km,M3.9*
*IDC **22** 16:29:08.6±2.7,38.16N×142.71E,h40km±25km,mb3.2/3, mb1 3.6/8,mb1mx3.2/39,mbtmp3.7/8,ML3.1/5,MS2.6/1, Ms1 2.6/1,ms1mx2.3/24,Error ellipse: s-maj=24.4km s-min=18.2km az=99.0*
ISC 22 16:29:06.1±0.9,38.18N±0.05×142.48E±0.06,h14km,n17, σ2°17/20,mb3.5/3,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.93**	**287**	P	**Pg**	**16 29 23.5**	**-0.6**
JIO				S	**Sg**	**16 29 33.0**	**-3.3**
OFUJ	**Ofunato**	**1.10**	**325**	P	**Pb**	**16 29 25.9**	**-1.0**
JMM	**Marumori**	**1.37**	**257**	P	**Pn**	**16 29 30.1**	**-0.7**
JOU	**Okura**	**1.44**	**278**	P	**Pn**	**16 29 31.6**	**-0.2**
JOU				S	**Sn**	**16 29 48.7**	**-1.8**
JOM	**Ohasama**	**1.59**	**325**	P	**Pn**	**16 29 33.4**	**-0.4**
JYK	**Kaneyama**	**1.82**	**295**	P	**Pn**	**16 29 37.1**	**+0.1**
JFT	**Otama**	**1.82**	**249**	S	**Sn**	**16 29 58.4**	**-1.5**
MJAR	**Matsushiro Arr**	**3.77**	**246**	P	Pn	16 30 06.4	+2.5
	1.6nm,0.3s,baz=61,slow=10,SNR=5.8						
MJAR				S	**Sn**	**16 30 51.8**	**+3.7**
	1.0nm,0.3s,baz=258,slow=25,SNR=4.2						
MAT	**Matsushiro**	**3.77**	**246**	P	Pn	16 30 06.5	+2.6
MAT				S	**Sb**	**16 30 54.7**	**-3.4**
JHJ	**Hachijo jima 2**	**5.50**	**204**	P	**Pn**	**16 30 28.3**	**+0.6**
	6.4nm,0.3s,baz=24,slow=20,SNR=2.5						
JHJ				S	**Sn**	**16 31 26.3**	**-4.5**
	5.9nm,0.3s,baz=73,slow=19,SNR=2.3						
ASAJ	**Asahikawa**	**5.93**	**1**	P	**Pn**	**16 30 35.0**	**+1.5**
	0.3nm,0.3s,baz=220,slow=14,SNR=4.0						
ASAJ				S	**Sn**	**16 31 38.5**	**-2.8**
	0.5nm,0.3s,baz=192,slow=17,SNR=2.1						
USRK	**Ussuriysk Ar.**	**9.93**	**311**	P	**Pn**	**16 31 30.4**	**+2.1**
	0.2nm,0.3s,baz=120,slow=11,SNR=4.0						
JCJ	**Chichijima**	**11.06**	**181**	P	**Pn**	**16 31 42.6**	**-1.2**
	0.8nm,0.3s,baz=345,slow=20,SNR=3.0						
KSRS	**Korea Array**	**11.54**	**271**	LR	LR	16 36 14.9	
	comp=Z,31nm,21.8s,baz=328,slow=36						
ZALV	**Zalesovo Beam**	**41.78**	**311**	P	**P**	**16 36 54.8**	**0.0**
	0.4nm,0.4s,baz=93,slow=7.2,SNR=2.5						
MKAR	**Makanchi Array**	**44.24**	**301**	P	**P**	**16 37 14.5**	**-0.4**
	0.3nm,0.7s,baz=82,slow=11,SNR=2.8						
WRA	**Warramunga Arr**	**58.32**	**189**	P	**P**	**16 38 59.9**	**-0.7**
	0.4nm,0.8s,baz=6.0,slow=7.0,SNR=2.9						

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*ISCJB **22** 16:31:55.7±0.5,39.05N±0.03×29.05E±0.05,h9km,Error ellipse: s-maj=5.6km s-min=4.0km az=25.5*
*CSEM **22** 16:31:55.8±0.1,39.04N×29.07E,h10km,MD2.7,Error ellipse: s-maj=4.1km s-min=2.8km az=100.0*
*ISK **22** 16:31:55.1,39.04N×29.12E,h9km,MD2.7*
*DDA **22** 16:31:56.1,39.02N×29.05E,h7km,Md2.7*
ISC 22 16:31:55.4±0.9,39.04N±0.03×29.07E±0.03,h9km,n26, σ0°27/34,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.32**	**81**	P	**Pb**	**16 32 03.1**	**-0.3**
GDZ				S	**Sb**	**16 32 08.4**	**-0.3**
GDZ	**Gediz**	**0.32**	**81**	*i* P	**Pb**	**16 32 03.1**	**-0.3**
GDZ				*i* S	**Sb**	**16 32 08.4**	**-0.3**
TVSB	**Tavsanli**	**0.51**	**36**	*e*PG	**Pg**	**16 32 05.5**	**+0.2**
TVSB				*e*SG	**Sg**	**16 32 12.2**	**+0.2**
TVSB	**Tavsanli**	**0.51**	**36**	*e*Pg	**Pg**	**16 32 05.5**	**+0.2**
TVSB				*e*Sg	**Sg**	**16 32 12.2**	**+0.2**
KULA	**Kula-Manisa**	**0.61**	**212**	*e*PG	**Pb**	**16 32 07.9**	**-0.4**
KULA	**Kula-Manisa**	**0.61**	**212**	*e*Pg	**Pb**	**16 32 07.9**	**-0.4**
MANT	**Manisa**	**0.68**	**216**	P	**Pg**	**16 32 08.7**	**+0.2**
MANT				S	**Sb**	**16 32 18.9**	**-0.2**
MANT	**Manisa**	**0.68**	**216**	*i* P	**Pg**	**16 32 08.7**	**+0.2**
MANT				*i* S	**Sb**	**16 32 18.9**	**-0.2**
KHAL	**Karahalli**	**0.74**	**154**	P	**Pb**	**16 32 11.0**	**+0.4**
KHAL				S	**Sb**	**16 32 21.1**	**+0.3**
KHAL	**Karahalli**	**0.74**	**154**	*i* P	**Pb**	**16 32 11.0**	**+0.4**
KHAL				*i* S	**Sb**	**16 32 21.1**	**+0.3**
KHL	**Karahalli**	**0.80**	**154**	*e*PG	**Pg**	**16 32 10.5**	**-0.2**
KHL	**Karahalli**	**0.80**	**154**	*e*Pg	**Pg**	**16 32 10.5**	**-0.2**
BALB	**Balikesir**	**1.10**	**303**	*e*PN	**Pn**	**16 32 17.1**	**+0.1**
BALB	**Balikesir**	**1.10**	**303**	*e*Pn	**Pn**	**16 32 17.1**	**+0.1**
CAVI	**Cavuskoy**	**1.30**	**27**	*e*PN	**Pn**	**16 32 19.9**	**+0.1**
CAVI	**Cavuskoy**	**1.30**	**27**	*e*Pn	**Pn**	**16 32 19.9**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.33**	**354**	*e*PN	**Pb**	**16 32 20.7**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.33**	**354**	*e*Pn	**Pb**	**16 32 20.7**	**+0.2**
KCTX	**Karacabey (Bur**	**1.34**	**336**	*e*PN	**Pb**	**16 32 20.7**	**0.0**
KCTX	**Karacabey (Bur**	**1.34**	**336**	*e*Pn	**Pb**	**16 32 20.7**	**0.0**
ARMT	**Armutlu**	**1.53**	**354**	*e*PN	**Pb**	**16 32 23.6**	**-0.3**
ARMT	**Armutlu**	**1.53**	**354**	*e*Pn	**Pb**	**16 32 23.6**	**-0.3**
EDC	**Edincik**	**1.60**	**325**	*e*PN	**Pb**	**16 32 24.9**	**-0.2**
EDC	**Edincik**	**1.60**	**325**	*e*Pn	**Pb**	**16 32 24.9**	**-0.2**
GULT	**Gulveren**	**1.78**	**38**	*e*PN	**Pn**	**16 32 26.2**	**-0.2**
GULT	**Gulveren**	**1.78**	**38**	*e*Pn	**Pn**	**16 32 26.2**	**-0.2**

**IDC 22 16:36:02.3±6.4,36.70N

MANT	**Manisa**	**0.73 209**	P	**Pb**	**16 41 53.7**	**-0.7**
MANT			S	**Sb**	**16 42 03.8**	**-0.3**
MANT	**Manisa**	**0.73 209**	*i* P	**Pb**	**16 41 53.7**	**-0.7**
MANT			*i* S	**Sb**	**16 42 03.8**	**-0.3**
KHAL	**Karahalli**	**0.85 154**	P	**Pn**	**16 41 57.1**	**-0.1**
KHAL			S	**Sb**	**16 42 07.2**	**-0.2**
KHAL	**Karahalli**	**0.85 154**	*i* P	**Pn**	**16 41 57.1**	**-0.1**
KHAL			*i* S	**Sb**	**16 42 07.2**	**-0.2**
KHL	**Karahalli**	**0.90 153**	*e*PG	**Pn**	**16 41 58.9**	**+1.0**
KHL	**Karahalli**	**0.90 153**	*e*Pg	**Pn**	**16 41 58.9**	**+1.0**
ORLT	**Orhaneli**	**0.92 354**	*e*PG	**Pb**	**16 41 57.3**	**-0.2**
ORLT	**Orhaneli**	**0.92 354**	*e*Pg	**Pb**	**16 41 57.3**	**-0.2**
AKHS	**Akhisar**	**0.97 255**	P	**Pg**	**16 41 59.3**	**+0.3**
AKHS			S	**Sn**	**16 42 11.7**	**-0.2**
AKHS	**Akhisar**	**0.97 255**	*i* P	**Pg**	**16 41 59.3**	**+0.3**
AKHS			*i* S	**Sn**	**16 42 11.7**	**-0.2**
AKS	**Akhisar**	**0.97 255**	*e*PG	**Pg**	**16 41 58.9**	**-0.1**
AKS	**Akhisar**	**0.97 255**	*e*Pg	**Pg**	**16 41 58.9**	**-0.1**
BALB	**Balikesir**	**1.01 300**	*e*PG	**Pg**	**16 41 59.7**	**-0.2**
BALB	**Balikesir**	**1.01 300**	*e*Pg	**Pg**	**16 41 59.7**	**-0.2**
IGD	**Bursa**	**1.14 7**	*i* P	**Pb**	**16 42 01.2**	**0.0**
IGD			*i* S	**Sg**	**16 42 18.5**	**+1.3**
MDNY	**Mudanya-Bursa**	**1.24 355**	*e*PN	**Pg**	**16 42 03.9**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.24 355**	*e*Pn	**Pg**	**16 42 03.9**	**-0.3**
KCTX	**Karacabey (Bur**	**1.24 336**	*e*PN	**Pg**	**16 42 03.9**	**-0.3**
KCTX	**Karacabey (Bur**	**1.24 336**	*e*Pn	**Pg**	**16 42 03.9**	**-0.3**
CAVI	**Cavuskoy**	**1.25 31**	*e*PN	**Pg**	**16 42 04.4**	**+0.1**
CAVI	**Cavuskoy**	**1.25 31**	*e*Pn	**Pg**	**16 42 04.4**	**+0.1**
IZI	**Iznik**	**1.25 16**	*e*PN	**Pg**	**16 42 04.4**	**-0.1**
IZI	**Iznik**	**1.25 16**	*e*Pn	**Pg**	**16 42 04.4**	**-0.1**
GONE	**Gonen-Balikesi**	**1.37 312**	*e*PN	**Pg**	**16 42 06.2**	**-0.5**
GONE	**Gonen-Balikesi**	**1.37 312**	*e*Pn	**Pg**	**16 42 06.2**	**-0.5**
ADVT	**Abdulvahap**	**1.42 23**	*e*PN	**Pg**	**16 42 07.3**	**-0.2**
ADVT	**Abdulvahap**	**1.42 23**	*e*Pn	**Pg**	**16 42 07.3**	**-0.2**
ARMT	**Armutlu**	**1.44 355**	*e*PN	**Pg**	**16 42 07.5**	**-0.4**
ARMT	**Armutlu**	**1.44 355**	*e*Pn	**Pg**	**16 42 07.5**	**-0.4**
EDC	**Edincik**	**1.50 324**	*e*PN	**Pb**	**16 42 07.8**	**+0.4**
EDC	**Edincik**	**1.50 324**	*e*Pn	**Pb**	**16 42 07.8**	**+0.4**
GULT	**Gulveren**	**1.74 41**	*e*PN	**Pb**	**16 42 11.8**	**+0.3**
GULT	**Gulveren**	**1.74 41**	*e*Pn	**Pb**	**16 42 11.8**	**+0.3**
SVRH	**Sivrihisar-ESK**	**1.97 80**	*e*PN	**Pb**	**16 42 15.7**	**+0.1**
SVRH	**Sivrihisar-ESK**	**1.97 80**	*e*Pn	**Pb**	**16 42 15.7**	**+0.1**
SILT	**Sile**	**2.08 13**	*e*PN	**Pb**	**16 42 16.6**	**-0.6**
SILT	**Sile**	**2.08 13**	*e*Pn	**Pb**	**16 42 16.6**	**-0.6**
MDUB	**Mudurnu**	**2.15 51**	*e*PN	**Pb**	**16 42 17.8**	**-0.8**
MDUB	**Mudurnu**	**2.15 51**	*e*Pn	**Pb**	**16 42 17.8**	**-0.8**

MOS ***22*** *16:42:22.5±0.9, 13°.61N×120°.84E, h143km, mb5.4/99, MS4.7/24, Error ellipse: s-maj=6.6km s-min=3.7km az=115.0*

NEIC ***22*** *16:42:23.0±0.0, 13°.67N×120°.72E, h134km, Moment Tensor Solution. s41 Moment tensor: Scale 10^{17}Nm; M_{rr}3.80; $M_{\theta\theta}$-0.50; $M_{\phi\phi}$-3.20; $M_{r\theta}$0.30; $M_{\phi\theta}$0.70; $M_{\phi r}$1.20; Best double couple: $M_0$4.00000×10^{17} NP1:ϕ_s354.00000°, δ54.00000°, λ98.00000°. NP2:ϕ_s160.00000°, δ36.00000°, λ78.00000°. Principal axes: T 4.0000, Plg78.0000°, Azm295.0000°; N -0.4000, Plg6.0000°, Azm169.0000°; P -3.6000, Plg8.0000°, Azm78.0000°;*

ISCJB ***22*** *16:42:23.8±0.2, 13°.63N±0°.01×120°.85E±0°.02, h154km±2km, mb5.4/287 Error ellipse: s-maj=2.7km s-min=2.4km az=167.8*

MAN ***22*** *16:42:23, 13°.65N×120°.71E, h103km, mb6.0, ML5.1, MS5.7*

MAN INTENSITY IV - ILIJAN BATANGAS; INTENSITY III - TAGAYTAY CITY; MALATE MANILA; PTO GALERA ORIENTAL MINDORO; TAGAYTAY CITY; ALABANG MUNTINLUPA; CLARK PAMPANGA; INTENSITY II - MALOLOS BULACAN; INTENSITY I - NICHOLS PASAY.

BJI ***22*** *16:42:23.1, 13°.58N×120°.94E, h158km, mb5.5/81, mB5.6/68*

IDC ***22*** *16:42:23.1±0.4, 13°.59N×120°.75E, h133km±3km, mb5.1/41, mb1 5.2/43, mb1mx5.1/48, mbtmp5.5/43, MS4.5/21, Ms1 4.5/21, ms1mx4.3/46, Error ellipse: s-maj=7.2km s-min=5.4km az=83.0*

KLM ***22*** *16:42:24.1, 13°.66N×120°.80E, h141km, mb5.7, MS6.1*

NEIC ***22*** *16:42:24.5±0.4, 13°.60N×120°.75E, h149km±4km, mb5.5/173, MW5.7, MW5.7, Error ellipse: s-maj=3.3km s-min=2.5km az=92.0, Moment Tensor Solution. s35 Moment tensor: Scale 10^{17}Nm; M_{rr}3.95; $M_{\theta\theta}$-0.28; $M_{\phi\phi}$-3.67; $M_{r\theta}$0.64; $M_{\phi\theta}$0.60; $M_{\phi r}$1.44; Best double couple: $M_0$4.20000×10^{17} NP1:ϕ_s160.00000°, δ37.00000°, λ72.00000°. NP2:ϕ_s1.00000°, δ55.00000°, λ103.00000°. Principal axes: T 4.3300, Plg76.0000°, Azm310.0000°; N -0.3400, Plg10.0000°, Azm174.0000°; P -4.0000, Plg10.0000°, Azm83.0000°;*

NEIC Felt [IV PIVS] at Abra de Ilog and [III PIVS] at Calapan and Puerto Galera. Also felt at Naujan. Felt [IV PIVS] at Ilijan; [III PIVS] at Alabang, Clark Field, Malate and Tagaytay; [II PIVS] at Malolos; [I PIVS] at Nichols; [IV] at Batangas and Olongapo; [II] at Cavite, Manila and Santa Rosa, Luzon. Felt widely in central Luzon and as far as Abucay.

GCMT ***22*** *16:42:24.5±0.1, 13°.67N×120°.68E, h128km, MW5.7/128, Moment Tensor Solution. s121,c223; s128,c328; Duration: 1s7 Moment tensor: Scale 10^{17}Nm; M_{rr}4.04±.03; $M_{\theta\theta}$-0.59±.04; $M_{\phi\phi}$-3.45±.04; $M_{r\theta}$0.23±.03; $M_{\phi\theta}$0.74±.04; $M_{\phi r}$1.36±.04; Best double couple: $M_0$4.07100×10^{17} NP1:ϕ_s353.00000°, δ55.00000°, λ98.00000°. NP2:ϕ_s160.00000°, δ36.00000°, λ79.00000°. Principal axes: T 4.3050, Plg79.0000°, Azm292.0000°; N -0.4720, Plg6.0000°, Azm169.0000°; P -3.8360, Plg9.0000°, Azm78.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*

BKK ***22*** *16:42:28.3±0.6, 14°N±4°×12°1E±°, h171km±5km, M5.5/65, mb5.7/65, mB5.8/56, MLv6.0/3, Mw(mB)5.4/56, Mwp5.8/8*

DJA ***22*** *16:42:29.7±0.4, 14°N±2°×12°1E±°, h196km±5km, M5.5/66, mb5.7/66, mB5.8/63, Mw(mB)5.4/63, Mwp5.7/12*

ISC 22 16:42:23.5±0.2, 13°.62N±0°.02×120°.81E±0°.03, h139km±1km, h139km:pP-P,n1422,σ1§50/1745,mb5.5/318,105C-57D, Mindoro

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PGP	**Puerto Galera**	**0.18**	**130**	⇑*e*P	**Pn**	**16 42 39.7**	**-2.8**
PGP				*i* S	**Sn**	**16 42 54.1**	**-2.8**
TGY	**Tagaytay City**	**0.49**	**15**	⇑*e*P	**Pn**	**16 42 42.3**	**-1.4**
TGY				*e*S	**Sn**	**16 42 58.1**	**-1.0**
LQP	**Lukban**	**1.19**	**65**	⇓*i*P	**Pn**	**16 42 45.9**	**-0.5**
SJMP	**San Jose**	**1.19**	**165**	*e*P	**Sn**	**16 43 06.2**	**-2.5**
GQP	**Guinayangan**	**1.62**	**80**	⇓*i*P	**Pn**	**16 42 54.0**	**+0.5**
GQP				*i* S	**Sn**	**16 43 20.3**	**+3.8**
KALP	**Kalibo**	**2.44**	**142**	⇑*e*P	**Pn**	**16 43 03.4**	**0.0**
RCP	**Roxas**	**2.79**	**137**	⇑*e*P	**Pn**	**16 43 08.3**	**+0.5**
RCP				*e*S	**Sn**	**16 43 43.8**	**+1.8**
MMPH	**Masbate**	**3.02**	**114**	⇓*e*P	**Pn**	**16 43 11.6**	**+0.8**
MMPH				*i* S	**Sn**	**16 43 49.9**	**+2.8**
JAP	**San Jose, Anti**	**3.07**	**159**	⇓*i*P	**Pn**	**16 43 13.0**	**+1.6**
PVCP	**Virac**	**3.25**	**90**	*e*P	**Pn**	**16 43 15.2**	**+1.4**
GUIM	**Jordan**	**3.45**	**149**	*e*P	**Pn**	**16 43 17.4**	**+1.1**
GUIM				*e*S	**Sn**	**16 44 02.3**	**+5.1**
CVP	**Callao Caves**	**4.17**	**13**	*e*P	**Pn**	**16 43 25.7**	**-0.1**
OCLP	**Ormoc**	**4.51**	**124**	*e*P	**Pn**	**16 43 32.5**	**+2.2**
LLP	**Lapu-Lapu**	**4.51**	**136**	⇓*e*P	**Pn**	**16 43 31.6**	**+1.3**
LLP				*e*S	**Sn**	**16 44 22.5**	**+0.3**
PIP	**Pasuquin**	**4.68**	**358**	⇓*e*P	**Pn**	**16 43 33.5**	**+1.0**
PLP	**Palo**	**4.75**	**120**	⇓*e*P	**Pn**	**16 43 35.2**	**+1.7**
SNPH	**Sibulan**	**4.87**	**151**	⇓*e*P	**Pn**	**16 43 36.0**	**+0.8**
IPIL	**Ipil**	**6.05**	**163**	*e*P	**Pn**	**16 43 52.3**	**+1.4**
IPIL				*e*S	**Sn**	**16 45 02.7**	**+3.6**
PAGZ	**Pagadian**	**6.27**	**156**	*e*P	**Pn**	**16 43 56.2**	**+2.4**
CGP	**Cagayan de Oro**	**6.40**	**143**	⇑*i*P	**Pn**	**16 43 57.7**	**+2.2**
BUKP	**Musuan**	**7.07**	**143**	*e*P	**Pn**	**16 44 08.2**	**+3.6**
CTBH	**Cotabato--PC H**	**7.20**	**152**	⇓*e*P	**Pn**	**16 44 08.2**	**+1.9**
KDM	**Kudat**	**7.73**	**211**	⇑P	**Pn**	**16 44 14.2**	**+0.8**
DAV	**Davao City (W)**	**8.03**	**144**	P	**Pn**	**16 44 20.8**	**+3.4**
	34nm,0.3s,baz=346,slow=2.9,SNR=45						
DAV				LR	LR	16 48 20.0	
	comp=Z,3μm,19.4s,baz=328,slow=44						
DAV	**Davao City (W)**	**8.03**	**144**	⇓*e*P	**Pn**	**16 44 17.9**	**+0.5**
DAV	**Davao City (W)**	**8.03**	**144**	⇓S	**Sn**	**16 45 47.6**	**+0.9**
DAV	**Davao City (W)**	**8.03**	**144**	*e*Pn	**Pn**	**16 44 22.0**	**+4.6**

MATI	**Mati**	**8.53**	**141**	*e*P	**Pn**	**16 44 28.0**	**+3.9**
MYLDM	**Lahad Datu**	**8.69**	**195**	⇑P	**Pn**	**16 44 28.7**	**+2.4**
MYLDM	**Lahad Datu**	**8.69**	**195**	*e*Pn	**Pn**	**16 44 29.6**	**+3.3**
SDKM	**Sandakan**	**8.69**	**205**	⇑P	**Pn**	**16 44 27.8**	**+1.4**
KKM	**Kota Kinabalu**	**8.79**	**211**	⇑P	**Pn**	**16 44 29.4**	**+1.8**
KKM	**Kota Kinabalu**	**8.79**	**211**	*e*Pn	**Pn**	**16 44 28.0**	**+0.4**
TWG	**Pinlang**	**9.15**	**2**	*e*Pn	**Pn**	**16 44 32.1**	**-0.3**
TPUB	**Ta-pu**	**9.63**	**359**	*e*Pn	**Pn**	**16 44 39.4**	**+0.7**
YULB	**Yu-li**	**9.73**	**3**	*e*Pn	**Pn**	**16 44 39.6**	**-0.5**
SSLB	**Suanglung**	**10.11**	**1**	*e*Pn	**Pn**	**16 44 46.0**	**+0.7**
NACB	**Ninganchiao**	**10.52**	**4**	*e*Pn	**Pn**	**16 44 52.2**	**+1.5**
MCO	**Taipa Grande**	**10.91**	**322**	P	**Pn**	**16 44 57.0**	**+1.2**
YOJ	**Yonaguni jima**	**10.98**	**11**	*e*P	**Pn**	**16 44 58.0**	**+1.2**
YOJ	**Yonaguni jima**	**10.98**	**11**	*e*Pn	**Pn**	**16 44 58.0**	**+1.2**
YHNB	**Yeheng**	**11.00**	**3**	*e*Pn	**Pn**	**16 44 58.1**	**+1.0**
TATO	**Taipei**	**11.31**	**3**	*e*Pn	**Pn**	**16 44 58.9**	**-2.2**
QZH	**Quanzhou**	**11.45**	**350**	⇑*i*P	Pn	16 44 56.3	-6.7
QZH				sP	sP	16 45 30.4	
QZH				S	**Sn**	**16 47 02.3**	**-7.1**
QZH				pmax	pmax		
	comp=Z,230nm,1.1s						
QZH				LR	LR		
	comp=N,4μm,11.6s						
QZH				LR	LR		
	comp=E,3μm,13.2s						
QZH				LR	LR		
	comp=Z,5μm,17.6s						
GZH	**Guangzhou**	**11.78**	**324**	P	**Pn**	**16 45 10.9**	**+3.7**
GZH				S	**Sn**	**16 47 21.3**	**+4.1**
GZH				LR	LR		
	comp=Z,6μm,12.1s						
GZH				LR	LR		
	comp=Z,7μm,12.8s						
QIZ	**Qiongzhong**	**11.82**	**299**	P	**Pn**	**16 45 07.9**	**+0.1**
QIZ				S	**Sn**	**16 47 19.3**	**+1.0**
QIZ				pmax	pmax		
	comp=Z,320nm,1.0s						
QIZ				pmax	pmax		
	comp=Z,1μm,8.5s						
QIZ				LR	LR		
	comp=Z,8μm,15.7s						
QIZ				LR	LR		
	comp=Z,3μm,19.2s						
QIZ				LR	LR		
	comp=Z,5μm,22.2s						
QIZ	**Qiongzhong**	**11.82**	**299**	*e*Pn	**Pn**	**16 45 07.8**	**0.0**
BTM	**Bintulu**	**12.86**	**217**	⇑P	**Pn**	**16 45 20.8**	**-0.7**
MRSI	**Marisa**	**13.11**	**175**	P	**P**	**16 45 27.1**	**-2.5**
	comp=Z,656nm,0.8s,comp=Z,5μm						
KMSI	**Cibinong**	**13.34**	**166**	P	**P**	**16 45 33.9**	**+1.8**
	comp=Z,2μm,0.9s,comp=Z,16μm						
SBUM	**Sibu**	**13.98**	**218**	*e*Pn	**Pn**	**16 45 37.0**	**+1.3**
PCI	**Palu**	**14.47**	**184**	P	**P**	**16 45 45.2**	**+0.5**
	comp=Z,296nm,1.0s,comp=Z,4μm						
LUWI	**Luwuk**	**14.70**	**172**	P	**P**	**16 45 47.9**	**+0.7**
	comp=Z,1μm,0.9s,comp=Z,11μm						
LUWI	**Luwuk**	**14.70**	**172**	*e*Pn	**P**	**16 45 46.1**	**-1.1**
JOW	**Kunigami**	**14.89**	**27**	*e*Pn	**P**	**16 45 49.3**	**0.0**
UBPT	**Khong Chiam**	**14.95**	**278**	P	**P**	**16 45 49.4**	**-0.6**
	comp=Z,290nm,1.2s,comp=Z,4μm						
BKB	**Balikpapan**	**15.29**	**195**	P	**P**	**16 45 56.8**	**+3.0**
	comp=Z,504nm,1.7s,comp=Z,7μm						
KSM	**Kuching**	**15.93**	**222**	⇑P	**P**	**16 46 01.9**	**+1.0**
KSM	**Kuching**	**15.93**	**222**	*e*Pn	**P**	**16 46 01.2**	**+0.4**
	comp=Z,1μm,0.9s						
PANO	**Nakornpanom**	**16.00**	**285**	P	**P**	**16 46 02.7**	**+1.0**
	comp=Z,207nm,1.0s,comp=Z,3μm						
STKI	**Sintang**	**16.34**	**215**	P	**P**	**16 46 07.5**	**+2.1**
	comp=Z,330nm,1.5s,comp=Z,6μm						
SANI	**Sanana**	**16.40**	**161**	P	**Pn**	**16 46 03.2**	**-2.6**
	comp=Z,242nm,0.9s,comp=Z,3μmcomp=Z,9μm						
SKNT	**Sakolnakorn**	**16.57**	**284**	P	**P**	**16 46 09.4**	**+1.4**
	comp=Z,187nm,1.4s,comp=Z,5μm						
TTSI	**Tana Toraja**	**16.59**	**183**	P	**P**	**16 46 10.0**	**+1.8**
	comp=Z,305nm,0.8s,comp=Z,3μm						
SSE	**Sheshan**	**17.39**	**1**	P	**Pn**	**16 46 17.8**	**+0.1**
SSE				S	**S**	**16 49 30.0**	**-0.9**
SSE				PcP	**PcP**	**16 50 54.5**	**+3.3**
SSE				pmax	pmax		
	comp=Z,36nm,0.9s						
SSE				pmax	pmax		
	comp=Z,820nm,5.6s						
SSE				LR	LR		
	comp=Z,830nm,22.1s						
SSE				LR	LR		
	comp=Z,1μm,22.1s						
SSE				LR	LR		
	comp=Z,1μm,19.8s						
SPSI	**Sidrap Palu**	**17.50**	**183**	P	**Pn**	**16 46 20.4**	**+1.3**
	comp=Z,596nm,0.7s,comp=Z,4μmcomp=Z,12μm						
NONG	**Nongkai**	**17.55**	**287**	P	**Pn**	**16 46 21.1**	**+1.3**
	comp=Z,243nm,1.2s,comp=Z,2μm						
KDI	**Kendari**	**17.56**	**174**	P	**Pn**	**16 46 20.6**	**+0.8**
	comp=Z,363nm,0.8s,comp=Z,6μm						
KHON	**Khomkaen**	**17.58**	**281**	P	**Pn**	**16 46 21.4**	**+1.3**
	comp=Z,183nm,0.8s,comp=Z,1μm						
SIJI	**Sorong**	**17.74**	**143**	P	**Pn**	**16 46 22.4**	**+0.4**
	comp=Z,4.1nm,0.3s,baz=184,slow=14,SNR=2.1						
WHN	**Wuhan**	**17.86**	**342**	⇑P	**Pn**	**16 46 23.9**	**+0.6**
WHN				sP	**sP**	**16 47 06.3**	**+2.2**
WHN				S	**S**	**16 49 40.9**	**+0.6**
WHN				pmax	pmax		
	comp=Z,3μm,4.9s						
WHN				LR	LR		
	comp=Z,4μm,13.2s						
WHN				LR	LR		
	comp=Z,5μm,11.0s						
WHN				LR	LR		
	comp=Z,4μm,12.4s						
CHBT	**CHBT**	**18.01**	**269**	P	**Pn**	**16 46 25.7**	**+0.5**
	comp=Z,577nm,1.3s,comp=Z,7μm						
SRAK	**Srakaew**	**18.23**	**273**	P	**P**	**16 46 22.1**	**-4.1**
CHAI	**Chaiyaphum**	**18.34**	**279**	P	**Pn**	**16 46 29.1**	**0.0**
	comp=Z,255nm,1.0s,comp=Z,2μm						
GYA	**Guiyang**	**18.41**	**316**	⇑*i*P	**Pn**	**16 46 30.3**	**+0.4**
GYA				PP	**pP**	**16 46 52.0**	**-0.7**
GYA				sP	sP	16 47 14.6	+4.3
GYA				S	**S**	**16 49 47.8**	**-3.6**
GYA				SS	SS	16 50 21.3	
GYA				PcP	**PcP**	**16 50 54.4**	**+1.2**
GYA				pmax	pmax		
	comp=Z,150nm,0.9s						
GYA				pmax	pmax		
	comp=Z,1μm,8.7s						
GYA				LR	LR		
	comp=Z,4μm,15.8s						
GYA				LR	LR		
	comp=Z,3μm,17.0s						
GYA				LR	LR		
	comp=Z,2μm,16.2s						
NJ2	**Nanjing**	**18.43**	**355**	*e*P	**Pn**	**16 46 29.8**	**-0.2**
NJ2				sP	**sP**	**16 47 14.8**	**+4.4**
NJ2				S	**Sn**	**16 49 54.6**	**-2.5**
NJ2				pmax	pmax		
	comp=Z,39nm,1.3s						
NJ2				LR	LR		
	comp=Z,2μm,13.0s						
NJ2				LR	LR		
	comp=Z,2μm,14.1s						
NJ2				LR	LR		
	comp=Z,2μm,13.0s						
KAPI	**Kappang**	**18.55**	**183**	P	**P**	**16 46 29.9**	**+0.3**
	comp=Z,45nm,0.3s,baz=8.5,slow=7.8,SNR=132						
KAPI				S	**S**	**16 49 54.5**	**+0.5**
	baz=108,slow=9.6,SNR=1.4						
KAPI	**Kappang**	**18.55**	**183**	*e*P	**Pn**	**16 46 31.1**	**-0.4**
	comp=Z,509nm,0.8s						
KAPI				S	**S**	**16 49 54.5**	**+0.5**
MSAI	**Masohi**	**18.68**	**154**	P	**Pn**	**16 46 33.8**	**+0.6**
	comp=Z,188nm,1.0s,comp=Z,1μm						
LOEI	**Loei**	**19.22**	**284**	P	**P**	**16 46 34.9**	**-2.1**
	comp=Z,172nm,1.3s,comp=Z,5μm						
KTGM	**Kuala Trenggan**	**19.27**	**246**	⇑P	**P**	**16 46 37.9**	**+0.3**
PBKT	**Sadao Pong**	**19.38**	**281**	P	**Pn**	**16 46 40.6**	**-0.6**
	comp=Z,281nm,1.5s,comp=Z,4μm						
PATY	**Pattaya**	**19.42**	**270**	P	**Pn**	**16 46 41.5**	**-0.3**
	comp=Z,99nm,1.0s						
ENH	**Enshi**	**19.59**	**330**	*e*P	**P**	**16 46 41.4**	**+0.4**
	comp=Z,215nm,0.8s						
BSSI	**Bau Bau, Buton**	**19.64**	**181**	P	**P**	**16 46 41.9**	**+0.4**
	comp=Z,766nm,0.7s,comp=Z,7μm						
UTTA	**Uttaradit**	**19.92**	**284**	P	**P**	**16 46 46.0**	**+1.4**
	comp=Z,88nm,0.8s,comp=Z,655nm						
FAKI	**Fak Fak**	**19.97**	**145**	P	**P**	**16 46 45.5**	**+0.4**
	comp=Z,133nm,0.9s,comp=Z,3μm						
FAKI	**Fak Fak**	**19.97**	**145**	*e*P	**P**	**16 46 45.6**	**+0.5**

	comp=Z,124nm,0.9s					
NANT	**Nan**	**19.98**	**288**	P	**P**	**16 46 46.0**	**+0.8**
	comp=Z,212nm,0.9s,comp=Z,1μm					
BNDI	**Bandanaira**	**20.16**	**153**	P	Pn	16 46 49.3	-1.1
	comp=Z,758nm,0.9s					
TPRI	**Tanjung Pinang**	**20.47**	**233**	P	**P**	**16 46 51.9**	**+1.4**
	comp=Z,246nm,1.2s,comp=Z,3μmcomp=Z,15μm					
MYKOM	**Kota Tinggi**	**20.48**	**236**	⇑P	**P**	**16 46 52.2**	**+1.6**
MYKOM	**Kota Tinggi**	**20.48**	**236**	*e*P	**P**	**16 46 51.7**	**+1.0**
	comp=Z,217nm,0.7s					
KMI	**Kunming**	**20.50**	**307**	P	**P**	**16 46 51.9**	**+0.9**
KMI				PP	**PnPn**	**16 47 20.6**	**+3.4**
KMI				sP	sP	16 47 39.0	+5.6
KMI				S	**S**	**16 50 27.8**	**-5.2**
KMI				SS	SS	16 51 11.3	
KMI				pmax	pmax		
	comp=Z,200nm,0.9s						
KMI				pmax	pmax		
	comp=Z,2μm,5.1s						
KMI				LR	LR		
	comp=Z,5μm,17.1s						
KMI				LR	LR		
	comp=Z,4μm,15.9s						
KMI				LR	LR		
	comp=Z,3μm,25.6s						
PHET	**Kaeng Krachan**	**20.63**	**270**	P	**P**	**16 46 54.0**	**+1.9**
	comp=Z,84nm,0.8s,comp=Z,754nm						
SUKH	**Sukhothai**	**20.76**	**283**	P	**P**	**16 46 55.2**	**+1.7**
	comp=Z,274nm,1.0s,comp=Z,2μm						
KGM	**Kluang**	**20.79**	**238**	⇑P	**P**	**16 46 54.9**	**+1.0**
LAMP	**Lampang**	**20.92**	**286**	P	**P**	**16 46 56.7**	**+1.4**
	comp=Z,250nm,0.8s,comp=Z,2μm					
SRDT	**SRDT**	**21.06**	**275**	P	**P**	**16 46 58.4**	**+1.6**
	comp=Z,688nm,0.9s,comp=Z,8μm					
JNU	**Nakatsue**	**21.47**	**24**	P	**P**	**16 47 02.0**	**+0.9**
	comp=Z,102nm,0.9s,baz=184,slow=4.8,SNR=36					
JNU				S	**S**	**16 50 52.6**	**+1.7**
	comp=Z,4.8nm,0.8s,baz=66,slow=19,SNR=1.3					
JNU				PcP	**PcP**	**16 50 59.3**	**+0.7**
	comp=Z,17nm,0.8s,baz=18,slow=1.6,SNR=4.8					
JNU	**Nakatsue**	**21.47**	**24**	*e*P	**P**	**16 47 00.6**	**-0.5**
	comp=Z,113nm,0.9s					
JNU				S	**S**	**16 50 52.6**	**+1.7**
JNU				PcP	**PcP**	**16 50 59.3**	**+0.7**
TRTT	**Trang**	**21.52**	**257**	P	**P**	**16 47 03.0**	**+1.2**
	comp=Z,451nm,0.8s,comp=Z,5μm					
KULM	**Kulim**	**21.52**	**249**	⇑P	**P**	**16 47 01.5**	**-0.3**
KULM	**Kulim**	**21.52**	**249**	*e*P	**P**	**16 47 02.1**	**+0.3**
	comp=Z,175nm,0.6s					
IPM	**Ipoh**	**21.53**	**247**	⇑P	**P**	**16 47 01.8**	**0.0**
IPM	**Ipoh**	**21.53**	**247**	*e*P	**P**	**16 47 01.2**	**-0.6**
	comp=Z,545nm,1.5s					
CM01	**Chiang Mai Arr**	**21.53**	**286**	*e*P	**P**	**16 47 02.3**	**+0.5**
CM31	**Chiang Mai Arr**	**21.55**	**286**	*e*P	**P**	**16 47 03.5**	**+1.4**
CMAR	**Chiang Mai Arr**	**21.55**	**286**	P	**P**	**16 47 02.8**	**+0.7**
	comp=Z,403nm,0.8s,baz=96,slow=7.6,SNR=787					
CMAR				S	**S**	**16 50 52.5**	**+0.1**
	comp=Z,2.6nm,1.1s,baz=87,slow=15,SNR=3.1					
CMAR				PcP	**PcP**	**16 50 59.6**	**+0.7**
	comp=Z,24nm,0.8s,baz=133,slow=0.8,SNR=16					
CMAR				ScP	**ScP**	**16 54 23.9**	**+0.7**
	comp=Z,7.3nm,0.8s,baz=61,slow=1.1,SNR=13					
CMAR				PKiKP	**PKiKP**	**16 58 45.0**	**-0.8**
	comp=Z,3.6nm,1.0s,baz=281,slow=1.8,SNR=12					
CMAR				P3KPbc		17 20 53.2	
	comp=Z,1.1nm,0.9s,baz=273,slow=5.1,SNR=5.5					
KHLT	**Khaolaem Dam**	**21.57**	**276**	P	**P**	**16 47 03.8**	**+1.5**
	comp=Z,141nm,1.5s,comp=Z,2μm					
FRIM	**Kepong**	**21.58**	**243**	⇑P	**P**	**16 47 03.2**	**+0.8**
CHTO	**Chiang Mai**	**21.61**	**287**	P	**P**	**16 47 03.3**	**+0.6**
	comp=Z,2μm,0.9s,comp=Z,20μm					
CHTO	**Chiang Mai**	**21.61**	**287**	*e*P	**P**	**16 47 03.0**	**+0.3**
CHTO				pmax	pmax		
	comp=Z,304nm,0.8s					
CHTO	**Chiang Mai**	**21.61**	**287**	P	**P**	**16 47 03.5**	**+0.8**
	SNR=98					
CHTO	**Chiang Mai**	**21.61**	**287**	P	**P**	**16 47 03.5**	**+0.8**
	SNR=98					
CHTO	**Chiang Mai**	**21.61**	**287**	*e*P	**P**	**16 47 03.0**	**+0.3**
	comp=Z,304nm,0.8s					
SURT	**Suratani**	**22.07**	**260**	P	**P**	**16 47 08.6**	**+1.1**
	comp=Z,190nm,1.1s,comp=Z,2μm					
MMRI	**Maumere**	**22.16**	**

TSI Tuntungan 24.16 247 P **P** **16 47 28.6 +1.6**
comp=Z,1μm,1.2s,comp=Z,13μm
LEM Lembang 24.17 214 P **P** **16 47 32.7 +5.4**
comp=Z,192nm,0.7s,baz=342,slow=7.0,SNR=54
LEM S **S** **16 51 45.2 +10**
comp=Z,26nm,1.0s,baz=305,slow=19,SNR=2.1
LEM Lembang 24.17 214 P **P** **16 47 32.7 +5.4**
LEM pmax pmax
comp=Z,254nm,0.7s
INCN Inchon 24.32 11 *e*P **P** **16 47 28.2 -0.1**
comp=Z,254nm,1.7s
INCN *e*PcP **PcP** **16 51 05.1 +0.7**
BLSI Bandar Lampung 24.39 220 P **P** **16 47 30.6 +1.5**
comp=Z,1μm,0.7s,comp=Z,10μm
KS15 Wonju Array Si 24.55 14 *e*P **P** **16 47 30.8 +0.5**
KS15 *e*PcP **PcP** **16 51 05.4 +0.6**
KSAR Wonju Array Be 24.55 14 P **P** **16 47 30.8 +0.5**
KSAR 16 51 05.4
KSAR S **S** **16 51 42.8 +1.9**
KSAR Wonju Array Be 24.55 14 P **P** **16 47 30.8 +0.5**
KSAR PcP **PcP** **16 51 05.3 +0.5**
KSAR S **S** **16 51 42.8 +1.9**
KSAR ScP **ScP** **16 54 32.4 +1.6**
KSAR PKiKP **PKiKP** **16 58 45.6 -1.1**
CMJI Cimerak 24.55 211 P **P** **16 47 31.7 +1.2**
comp=Z,511nm,0.8s,comp=Z,7μm
KSRS Korea Array 24.57 14 P **P** **16 47 30.8 +0.4**
comp=Z,36nm,1.0s,baz=192,slow=9.5,SNR=86
KSRS PcP **PcP** **16 51 05.3 +0.5**
comp=Z,11nm,0.8s,baz=180,slow=1.9,SNR=13
KSRS S **S** **16 51 42.8 +1.6**
comp=Z,2.2nm,0.9s,baz=205,slow=5.4,SNR=2.2
KSRS ScP **ScP** **16 54 32.4 +1.5**
comp=Z,3.7nm,0.9s,baz=200,slow=3.3,SNR=7.6
KSRS PKiKP **PKiKP** **16 58 45.6 -1.1**
comp=Z,2.4nm,0.8s,baz=182,slow=1.4,SNR=10
MNSI Mandailing Nat 24.58 241 P **P** **16 47 32.2 +1.4**
comp=Z,1μm,1.0s,comp=Z,11μm
KS01 Wonju Array Si 24.58 14 *e*P **P** **16 47 30.1 -0.5**
PPI Padang Panjang 24.59 237 P **P** **16 47 32.0 +1.1**
comp=Z,672nm,1.3s,comp=Z,8μm
PDSI Padang 24.80 236 P **P** **16 47 33.2 +0.3**
comp=Z,307nm,0.7s,comp=Z,8μm
CNJI Cibinong 24.84 214 P **P** **16 47 33.3 +0.2**
comp=Z,665nm,0.9s,comp=Z,6μm
KCSI Kotacane, Aceh 24.86 248 P **P** **16 47 33.5 0.0**
comp=Z,340nm,1.2s,comp=Z,4μm
LWLI Liwa 24.89 223 P **P** **16 47 35.1 +1.3**
comp=Z,1μm,0.7s,comp=Z,12μm
LHMI Lhok Sumawe 24.95 253 P **P** **16 47 36.0 +1.8**
comp=Z,1μm,1.0s,comp=Z,11μm
LHMI Lhok Sumawe 24.95 253 *e*P **P** **16 47 35.5 +1.3**
comp=Z,685nm,0.8s
KASI Kota Agung 24.98 221 P **P** **16 47 35.0 +0.5**
comp=Z,611nm,0.8s,comp=Z,7μm
CGJI Cibinong 25.09 218 P **P** **16 47 34.9 -0.5**
comp=Z,410nm,1.0s,comp=Z,3μm
TIY Taiyuan 25.13 344 *e*P **P** **16 47 34.5 -1.1**
TIY pP **pP** **16 48 06.8 +1.8**
TIY S **S** **16 51 47.5 -2.7**
TIY SS **SnSn** **16 53 07.5 +10**
TIY pmax pmax
comp=Z,83nm,0.9s
TIY pmax pmax
comp=Z,740nm,11.6s
TIY LR LR
comp=Z,1μm,13.1s
TIY LR LR
comp=Z,1μm,11.8s
TIY LR LR
comp=Z,1μm,16.5s
MNAI Manna 25.16 226 *e*P **P** **16 47 37.1 +0.9**
comp=Z,1μm,0.7s
JAY Jayapura 25.43 128 P **P** **16 47 38.5 -0.1**
comp=Z,1.9nm,1.0s,baz=89,slow=23,SNR=4.2
JAY LR LR 16 57 51.9
comp=Z,27nm,20.6s,baz=298,slow=36
MLSI Meulaboh, Aceh 25.81 251 P **P** **16 47 41.2 -0.8**
comp=Z,450nm,0.8s,comp=Z,4μm
JHJ Hachijo jima 2 25.99 39 P **P** **16 47 44.5 +1.1**
comp=Z,245nm,1.2s,baz=221,slow=6.9,SNR=2.6
JHJ PcP **PcP** **16 51 08.6 +0.4**
comp=Z,99nm,0.9s,baz=19,slow=22,SNR=3.2
GSI Gunungsitoli 26.05 244 P **P** **16 47 43.6 -0.5**
comp=Z,2μm,0.9s,comp=Z,13μm
GSI Gunungsitoli 26.05 244 *e*P **P** **16 47 43.4 -0.7**
comp=Z,1μm,0.9s
GSI *e*PcP **PcP** **16 51 09.0 +0.3**
INU Inuyama 26.11 31 *e*P **P** **16 47 44.3 -0.2**
comp=Z,212nm,1.2s
BJT Baijiatuau 26.61 352 *e*P **P** **16 47 48.5 -0.4**
BJT pmax pmax
comp=Z,82nm,1.1s
BJT Baijiatuau 26.61 352 *e*P **P** **16 47 48.5 -0.4**
comp=Z,82nm,1.1s
BJI Beijing 26.63 352 P **P** **16 47 49.3 +0.3**
BJI pP **pP** **16 48 21.4 +2.9**
BJI sP **sP** **16 48 37.8 +3.1**
BJI PcP **PcP** **16 51 09.1 -0.4**
BJI S **S** **16 52 12.5 -1.2**
BJI sS **sS** **16 53 08.4 +2.7**
BJI ScP **ScP** **16 54 36.8 +0.1**
BJI PcS **PcS** **16 54 50.0 -0.8**
BJI ScS **ScS** **16 58 26.9 -0.4**
BJI pmax pmax
comp=Z,34nm,1.2s
BJI pmax pmax
comp=Z,850nm,10.1s
LZH Lanzhou 27.07 329 ⇑P **P** **16 47 54.5 +1.3**
LZH pP pP 16 48 25.4 +2.7
LZH sP sP 16 48 42.0 +3.1
LZH PP **PnPn** **16 48 47.3 +2.7**
LZH PcP **PcP** **16 51 12.1 +1.2**
LZH S **S** **16 52 17.0 -4.1**
LZH sS sS 16 53 15.0 +1.9
LZH SS **SnSn** **16 53 47.3 +2.6**
LZH ScS **ScS** **16 58 28.1 -1.8**
LZH pmax pmax
comp=Z,550nm,1.3s
LZH pmax pmax
comp=Z,1μm,5.0s
LZH LR LR
comp=Z,3μm,13.0s
LZH LR LR
comp=Z,3μm,13.2s
LZH LR LR
comp=Z,4μm,15.0s
MAJO Matsushiro 27.64 31*c i*P **P** **16 47 57.2 -1.0**
MAJO *i* *PP **pP** **16 48 26.8 -1.0**
MAJO Matsushiro 27.64 31 *e*P **P** **16 47 56.3 -1.9**
comp=Z,54nm,1.2s
MAJO *e*PcP **PcP** **16 51 12.9 +0.8**
MAT Matsushiro 27.64 31 P **P** **16 47 56.4 -1.8**
MAT S **S** **16 52 24.8 -5.0**
MJAR Matsushiro Arr 27.64 31 P **P** **16 47 57.2 -0.9**
comp=Z,20nm,1.1s,baz=212,slow=7.8,SNR=41
MJAR PcP **PcP** **16 51 12.9 +0.8**
comp=Z,16nm,0.8s,baz=183,slow=2.5,SNR=14
MJAR S **S** **16 52 31.1 +1.3**
comp=Z,1.0nm,1.0s,baz=223,slow=16,SNR=2.3
MJAR ScP **ScP** **16 54 41.2 +1.2**
comp=Z,2.8nm,0.8s,baz=188,slow=2.3,SNR=6.3
MJAR P3KPbc 17 20 25.5
comp=Z,3.2nm,1.0s,baz=30,slow=4.5,SNR=5.8
MJB9 Matsu-Tunnel 27.64 31 *e*P **P** **16 47 57.1 -1.0**
comp=Z,14nm,1.2s
MJB9 *e*PcP **PcP** **16 51 13.3 +1.3**
SNY Shenyang 28.20 4 ⇑P **P** **16 48 02.4 -0.7**
SNY PP **PnPn** **16 48 58.3 -0.9**
SNY S **S** **16 52 36.8 -1.6**
SNY pmax pmax
comp=Z,27nm,1.3s
SNY pmax pmax
comp=Z,450nm,12.0s
SNY LR LR
comp=Z,760nm,21.0s
SNY LR LR
comp=Z,2μm,18.4s
SNY LR LR
comp=Z,2μm,16.5s
MTN Manton Dam 28.22 158 *e*P **P** **16 48 01.5 -1.9**
comp=Z,79nm,1.1s
XMIS Christmas Isla 28.28 213 *e*P **P** **16 48 02.5 -1.5**
comp=Z,220nm,0.9s
HHC Hu-ho-hao-te 28.30 345 *e*P **P** **16 48 04.5 +0.4**
HHC pP pP 16 48 33.8 0.0
HHC PP **PnPn** **16 49 00.8 +0.1**
HHC S **S** **16 52 39.4 -0.9**
HHC sS sS 16 53 35.9 +3.4
HHC pmax pmax
comp=Z,100nm,1.0s
HHC pmax pmax
comp=Z,770nm,4.1s
BTO Baotou 28.49 343 *e*P **P** **16 48 05.6 -0.2**
SHL Shillong 29.65 298 ⇑*i*P **P** **16 48 17.0 +0.6**
comp=Z,85nm,1.0s
SHL *e*S **S** **16 53 03.0 +1.0**
CN2 Changchun 30.34 7 *e*P **P** **16 48 21.3 -0.6**
CN2 *e*PcP **PcP** **16 51 18.9 +0.2**
CN2 *e*ScP **ScP** **16 54 49.4 +1.1**
CN2 pmax pmax
comp=Z,10.0nm,1.0s
CN2 pmax pmax
comp=Z,200nm,5.0s
CN2 LR LR
comp=Z,1μm,16.0s
CN2 LR LR
comp=Z,1μm,16.0s
CN2 LR LR
comp=Z,1μm,18.0s
VLA Vladivostok 30.91 16 ⇓*i*P **P** **16 48 25.6 -1.3**
VLA *e**PP **pP** **16 48 55.1 -1.7**
VLA *e**SP **sP** **16 49 11.8 -1.0**
VLA *i* 16 49 32.2
VLA *e* 16 51 18.1
VLA pmax pmax
comp=Z,47nm,1.5s
GTA Gaotai 31.66 328 ⇑P **P** **16 48 34.8 +1.0**
GTA pP pP 16 49 05.3 +1.6
GTA sP sP 16 49 21.8 +2.0
GTA PcP **PcP** **16 51 23.5 +1.0**
GTA S **S** **16 53 34.9 +1.9**
GTA sS sS 16 54 28.1 +2.7
GTA ScP **ScP** **16 54 54.3 +1.3**
GTA SS **SnSn** **16 55 38.0 +1.9**
GTA ScS **ScS** **16 58 50.4 -1.0**
GTA pmax pmax
comp=Z,340nm,1.3s
GTA pmax pmax
comp=Z,1μm,5.5s
GTA LR LR
comp=Z,2μm,17.8s
GTA LR LR
comp=Z,2μm,17.1s
GTA LR LR
comp=Z,2μm,18.1s
LSA Lhasa 31.74 305 P **P** **16 48 36.4 +1.4**
LSA S **S** **16 53 35.3 +0.2**
LSA pmax pmax
comp=Z,120nm,0.9s
LSA LR LR
comp=Z,830nm,19.7s
LSA LR LR
comp=Z,1μm,18.6s
LSA LR LR
comp=Z,1μm,21.9s
LSA Lhasa 31.74 305 *e*P **P** **16 48 36.2 +1.2**
LSA *e* 16 51 24.8
LSA *e* 16 58 52.1
LSA pmax pmax
comp=Z,217nm,1.1s
LSA Lhasa 31.74 305 *e*P **P** **16 48 36.2 +1.2**
comp=Z,217nm,1.1s
LSA *e*PcP **PcP** **16 51 24.8 +1.4**
LSA *e*ScS ScS 16 58 52.1 -0.7
MDJ Mudanjiang 31.79 12 P **P** **16 48 35.3 +0.7**
MDJ pP pP 16 49 03.8 -0.8
MDJ PP **PP** **16 49 49.3 +0.1**
MDJ PcP **PcP** **16 51 23.5 +0.9**
MDJ S **S** **16 53 37.6 +3.1**
MDJ ScP **ScP** **16 54 54.1 +1.0**
MDJ pmax pmax
comp=Z,29nm,0.9s
MDJ pmax pmax
comp=Z,230nm,5.2s
MDJ LR LR
comp=Z,860nm,15.7s
MDJ LR LR
comp=Z,430nm,19.1s
MDJ LR LR
comp=Z,1μm,15.7s
MDJ Mudanjiang 31.79 12 *e*P **P** **16 48 34.6 0.0**
MDJ *e*pP **pP** **16 49 05.3 +0.7**
FITZ Fitzroy Crossi 31.88 171 *e*P **P** **16 48 34.3 -1.4**
comp=Z,39nm,0.9s
USRK Ussuriysk Ar. 31.94 15 P **P** **16 48 36.6 +0.6**
comp=Z,28nm,0.9s,baz=204,slow=8.2,SNR=37
USRK pP **pP** **16 49 05.8 -0.1**
comp=Z,24nm,0.9s,baz=204,slow=8.5,SNR=4.6
USRK S **S** **16 53 40.0 +3.2**
comp=Z,1.0nm,0.6s,baz=177,slow=29,SNR=2.6
USRK ScP **ScP** **16 54 54.9 +1.3**
comp=Z,4.1nm,0.8s,baz=328,slow=1.0,SNR=5.2
USRK LR LR 17 00 47.3
comp=Z,1μm,21.7s,baz=179,slow=34
ERM Erimo 34.30 30*d i*P **P** **16 48 57.6 +1.1**
ERM pmax pmax
comp=Z,84nm,1.7s
ERM Erimo 34.30 30 *e*P **P** **16 48 56.3 -0.2**
comp=Z,52nm,1.0s
MBWA Marble Bar 34.58 182 *e*P **P** **16 48 58.0 -1.2**
comp=Z,1μm,0.8s
PMG Port Moresby 34.75 130 ⇓*i*P **P** **16 49 00.2 -0.5**
PMG pmax pmax
comp=Z,226nm,1.0s
PMG Port Moresby 34.75 130 *e*P **P** **16 48 59.8 -0.9**
comp=Z,137nm,1.4s
COCO West Island 34.97 224*ce*P **P** **16 49 04.3 +1.8**
COCO West Island 34.97 224 *e*P **P** **16 49 01.6 -0.9**
comp=Z,306nm,0.7s
COEN Coen 35.23 140 *e*P **P** **16 49 03.0 -1.9**
comp=Z,38nm,1.0s
GUN Gumba 35.47 299 *e*P **P** **16 49 08.1 +0.9**
comp=Z,2μm,0.8s
HIA Hailar 35.55 359 *e*P **P** **16 49 05.8 -1.4**
HIA *e**PP **pP** **16 49 39.0 +1.5**
HIA *e* 16 51 34.0
HIA Hailar 35.55 359 *e*P **P** **16 49 05.8 -1.4**
HIA *e*pP **pP** **16 49 39.0 +1.5**
HIA *e*PcP **PcP** **16 51 34.0 +0.8**
CHLP Challavanipeta 35.61 283 *e*P **P** **16 49 08.8 +0.7**
CHLP lAmb lAmb 16 49 11.2
comp=Z,294nm,1.2s
CHLP *e*S **S** **16 54 33.2 -0.8**
ASAJ Asahikawa 35.65 27 P **P** **16 49 08.2 +0.1**
comp=Z,40nm,0.9s,baz=240,slow=9.0,SNR=16
ASAJ PcP **PcP** **16 51 34.7 +1.1**
comp=Z,28nm,0.8s,baz=270,slow=8.6,SNR=5.0
ASAJ Asahikawa 35.65 27 *e*P **P** **16 49 08.4 +0.3**
comp=Z,89nm,1.2s
ASAJ *e*PcP **PcP** **16 51 34.9 +1.3**
PKIN Phulchoki 35.79 298 *e*P **P** **16 49 10.0 +0.1**
comp=Z,344nm,0.8s
RABL Rabaul 35.80 117 *e*P **P** **16 49 10.5 +0.7**
comp=Z,108nm,0.9s
WRAB Tennant Creek 35.91 158*c i*P **P** **16 49 09.4 -1.2**
WRAB *i* *PP **pP** **16 49 40.7 -0.2**
WRAB pmax pmax
comp=Z,305nm,1.0s
WRAB Tennant Creek 35.91 158 *e*P **P** **16 49 08.8 -1.7**
comp=Z,152nm,0.9s
WRA Warramunga Arr 35.91 158 P **P** **16 49 09.3 -1.3**
comp=Z,80nm,0.5s,baz=336,slow=9.6,SNR=281
WRA pP **pP** **16 49 39.5 -1.5**
comp=Z,120nm,0.8s,baz=337,slow=9.5,SNR=9.8
WRA sP **sP** **16 49 53.8 -3.1**
comp=Z,88nm,1.0s,baz=336,slow=9.4,SNR=3.1
WRA S **S** **16 54 32.9 -5.8**
comp=Z,33nm,1.0s,baz=337,slow=16,SNR=12
WRA ScP **ScP** **16 55 08.9 +0.8**
comp=Z,12nm,0.8s,baz=345,slow=4.2,SNR=6.5
WB2 Warramunga Arr 35.92 158 *e*P **P** **16 49 09.2 -1.5**
comp=Z,146nm,0.8s
KKN Kakani 35.95 299 *e*P **P** **16 49 11.5 +0.3**
comp=Z,858nm,0.9s
ULN Ulaanbaatar 36.01 344*c i*P **P** **16 49 12.1 +0.8**
ULN *i* *PP **pP** **16 49 43.6 +1.9**
ULN pmax pmax
comp=Z,60nm,1.0s
ULN Ulaanbaatar 36.01 344 P **P** **16 49 11.6 +0.3**
SNR=37
ULN Ulaanbaatar 36.01 344 *e*P **P** **16 49 11.4 +0.1**
comp=Z,42nm,0.8s
DMN Daman 36.05 298 *e*P **P** **16 49 12.4 +0.3**
comp=Z,1μm,0.9s
SONM Songino Array 36.16 343 P **P** **16 49 12.9 +0.4**
comp=Z,38nm,0.8s,baz=160,slow=9.3,SNR=134
SONM pP **pP** **16 49 43.3 +0.3**
comp=Z,15nm,0.8s,baz=157,slow=10,SNR=2.5
SONM PcP **PcP** **16 51 35.2 0.0**
comp=Z,9.0nm,0.8s,baz=147,slow=2.3,SNR=3.6
SONM S **S** **16 54 39.2 -2.9**
comp=Z,0.5nm,0.5s,baz=208,slow=15,SNR=2.4
SONM ScP **ScP** **16 55 08.1 -0.6**
comp=Z,5.8nm,0.9s,baz=161,slow=4.5,SNR=5.9
SONM LR LR 17 05 53.5
comp=Z,927nm,20.4s,baz=156,slow=39
SONA1 Songino Array 36.17 344 *e*P **P** **16 49 12.7 0.0**
GKN Gorkha 36.56 299 *e*P **P** **16 49 16.4 +0.2**
comp=Z,760nm,0.9s
KLR Kul'dur 36.63 12 P **P** **16 49 16.8 +0.5**
comp=Z,72nm,0.9s,baz=215,slow=7.8,SNR=157
KLR pP **pP** **16 49 46.7 -0.1**
comp=Z,57nm,1.1s,baz=209,slow=10,SNR=4.7
KLR PcP **PcP** **16 51 37.0 +0.6**
comp=Z,31nm,0.8s,baz=291,slow=4.0,SNR=6.5
KLR S **S** **16 54 47.3 -1.7**
comp=Z,0.8nm,0.2s,baz=143,slow=20,SNR=3.0
KLR ScP **ScP** **16 55 10.2 -0.1**
comp=Z,5.3nm,0.8s,baz=270,slow=3.8,SNR=4.7
KLR LR LR 17 04 03.6
comp=Z,918nm,20.4s,baz=200,slow=36
HABR Khabarovsk 36.70 16*de*P **P** **16 49 15.5 -1.4**
HABR *e**PP **pP** **16 49 45.9 -1.4**
HABR *e**SP **sP** **16 50 02.6 -0.7**
HABR *e* 16 50 42.0
HABR *e* 16 51 34.7
HABR *e*S **S** **16 54 49.2 -0.7**
HABR *e**SS **sS** **16 55 43.1 +0.1**
HABR *e* 16 59 15.3
HABR pmax pmax
comp=N,11nm,1.6s
HABR pmax pmax
comp=E,25nm,1.6s
HABR pmax pmax
comp=Z,19nm,1.6s
HABR MLR MLR
comp=Z,347nm,17.0s
KOLN Koldanda 37.38 298 *e*P **P** **16 49 23.6 +0.3**
comp=Z,606nm,0.8s
PATS Pohnpei 37.48 97 *e*P **P** **16 49 25.5 +1.5**
comp=Z,772nm,1.5s
PVM Polavaram 37.90 281 *e*P **P** **16 49 28.4 +0.9**
PVM lAmb lAmb 16 49 30.4
comp=Z,203nm,0.9s
PVM *e*S **S** **16 55 09.7 +0.8**
YSS Yuzh-Sakhalins 37.98 25 ⇑*i*P **P** **16 49 28.5 +0.8**
YSS *i* 16 49 59.0
YSS *e* 16 51 01.0
YSS *e*S **S** **16 55 10.8 +1.4**
YSS pmax pmax
comp=Z,40nm,0.9s
YSS pmax pmax
comp=Z,300nm,3.0s
YSS MLR MLR
comp=Z,900nm,16.0s
YSS MLR MLR
comp=N,600nm,15.0s
YSS MLR MLR
comp=E,700nm,20.0s
PYUN Piuthan 37.99 298 *e*P **P** **16 49 29.0 +0.6**
comp=E,2μm,0.9s
CIT Chita 38.74 353 *e*P **P** **16 49 34.4 +0.3**
CIT *e* 16 51 07.0
CIT *e* 16 51 43.4
CIT *e* 16 55 18.7
CIT pmax pmax
comp=Z,87nm,1.5s
KUR Kuril'sk 38.98 31 *e*P **P** **16 49 39.2 +3.1**
KUR *e*S **S** **16 55 27.9 +3.5**
AS31 Alice Springs 39.21 161 *e*P **P** **16 49 37.4 -0.9**
comp=Z,29nm,0.6s
ASAR Alice Springs 39.21 161 P **P** **16 49 37.3 -1.0**
comp=Z,43nm,0.6s,baz=335,slow=6.7,SNR=804
ASAR pP **pP** **16 50 08.4 -0.6**
comp=Z,72nm,0.7s,baz=338,slow=7.7,SNR=8.9
ASAR PcP **PcP** **16 51 45.0 +0.1**
comp=Z,35nm,0.9s,baz=336,slow=3.2,SNR=8.2
ASAR ScP **ScP** **16 55 21.4 +0.9**
comp=Z,4.0nm,0.7s,baz=344,slow=2.9,SNR=4.9
AS01 Alice Springs 39.22 161 *e*P **P** **16 49 37.1 -1.4**
ZAK Zakamensk 39.35 342 *e*P **P** **16 49 38.1 -1.2**
ZAK pmax pmax
comp=Z,23nm,1.0s
ADKI Addanki 39.52 278 *e*P **P** **16 49 42.1 +1.1**
ADKI lAmb lAmb 16 49 44.1
comp=Z,185nm,1.1s
ADKI *e*S **S** **16 55 30.1 -3.2**
SKHT Srikalahasti 39.90 275 *e*P **P** **16 49 44.4 +0.2**
SKHT lAmb lAmb 16 49 47.2
comp=Z,278nm,0.8s
SKHT *e*S **S** **16 55 38.4 -0.6**
PALK Pallekele 39.90 265 *i* P **P** **16 49 45.3 +1.1**
SNR=14
PALK Pallekele 39.90 265*ce*P **P** **16 49 46.0 +1.7**
PALK Pallekele 39.90 265 *e*P **P** **16 49 44.9 +0.6**
comp=Z,91nm,1.0s
NJS Nagarjunasagar 40.13 280 *e*P **P** **16 49 46.5 +0.5**
NJS lAmb lAmb 16 49 48.7
comp=Z,228nm,0.8s
NJS *e*S **S** **16 55 39.0 -3.4**
RPR Rampur 40.13 283 *e*P **P** **16 49 46.2 +0.1**
RPR lAmb lAmb 16 49 48.7
comp=Z,244nm,1.0s
RPR *e*S **S** **16 55 41.9 -0.5**
TLY Talaya 40.40 344 P **P** **16 49 47.9 0.0**
comp=Z,16nm,0.7s,baz=176,slow=5.0,SNR=23
TLY PcP **PcP** **16 51 48.9 +0.7**
comp=Z,13nm,0.9s,baz=158,slow=5.4,SNR=2.9
TLY ScP **ScP** **16 55 24.7 0.0**
comp=Z,3.6nm,0.8s,baz=232,slow=5.1,SNR=4.0
TLY Talaya 40.40 344*c i*P **P** **16 49 48.1 +0.2**
TLY *e* 16 50 19.7
TLY *e* 16 51 21.8
TLY *e*S **S** **16 55 47.2 +1.6**
TLY *e* 16 59 38.1
TLY pmax pmax
comp=Z,35nm,1.0s
TLY MLR MLR
comp=Z,429nm,15.0s
TLY Talaya 40.40 344 *e*P **P** **16 49 47.8 0.0**
comp=Z,71nm,1.4s
TLY PcP **PcP** **16 51 48.9 +0.7**
TLY ScP **ScP** **16 55 24.7 0.0**
RCLA Racherla 40.51 278 *e*P **P** **16 49 49.6 +0.4**
RCLA lAmb lAmb 16 49 51.7
comp=Z,209nm,1.0s
RCLA *e*S **S** **16 55 43.7 -4.4**
SRLM Srisailam 40.54 279 *e*P **P** **16 49 49.4 -0.1**
SRLM lAmb lAmb 16 49 51.9
comp=Z,243nm,1.2s
SRLM *e*S **S** **16 55 48.3 -0.3**
IRK Irkutsk 40.74 344 *e*P **P** **16 49 50.3 -0.3**
IRK *e* 16 50 21.8
IRK *e* 16 55 51.5
IRK pmax pmax
comp=Z,71nm,1.2s
HYB Hyderabad 40.83 281 *i* P **P** **16 49 52.0 +0.1**
HYB *e*S **S** **16 55 52.0 -0.9**
HYBB Hyderabad (bro 40.83 281 *e*P **P** **16 49 52.2 +0.3**
HYBB lAmb lAmb 16 49 54.4
comp=Z,218nm,0.8s
HYBB *e*S **S** **16 55 54.7 +1.8**
SRSP Sriramsagar 41.03 283 *e*P **P** **16 49 53.4 -0.1**
SRSP lAmb lAmb 16 49 55.9
comp=Z,258nm,1.0s
SRSP *e*S **S** **16 55 56.9 +1.1**
TYV Tymovskoe 41.16 21 *e*P **P** **16 49 56.0 +2.0**
TYV pmax pmax
comp=Z,44nm,1.0s
MOY Mondy 41.17 341 *e*P **P** **16 49 54.7 +0.4**
MOY pmax pmax
comp=Z,79nm,2.0s
WMQ Urumqi 41.33 323 ⇑*i*P **P** **16 49 56.9 +1.2**

WMQ				pP	pP	16 50 26.8 +0.2
WMQ				PP	**PP**	**16 51 35.5 +1.6**
WMQ				PcP	**PcP**	**16 51 51.9 +0.4**
WMQ				S	**S**	**16 56 00.8 +1.1**
WMQ				sS	sS	16 56 55.8 +2.2
WMQ				SS	**SS**	**16 59 05.8 -3.2**
WMQ				pmax	pmax	
	comp=Z,89nm,0.8s					
WMQ				pmax	pmax	
	comp=Z,600nm,3.6s					
WMQ				LR	LR	
	comp=Z,2μm,15.0s					
WMQ				LR	LR	
	comp=Z,1μm,16.4s					
WMQ				LR	LR	
	comp=Z,670nm,21.0s					
CTAO	**Charters Tower**	**41.82**	**143**	*e*P	**P**	**16 49 59.9 +0.1**
CTAO				pmax	pmax	
	comp=Z,66nm,0.9s					
CTAO	**Charters Tower**	**41.82**	**143**	*e*P	**P**	**16 49 59.9 +0.1**
	comp=Z,66nm,0.9s					
NKL	**Nikolayevsk**	**42.48**	**18**	*e*P	**P**	**16 50 05.0 +0.3**
NKL				*e*		16 50 36.0
NKL				*e*		16 56 18.0
NKL				pmax	pmax	
	comp=N,22nm,1.0s					
NKL				pmax	pmax	
	comp=E,22nm,1.0s					
NKL				pmax	pmax	
	comp=Z,77nm,1.0s					
NKL				pmax	pmax	
	comp=Z,500nm,4.0s					
KLRI	**Killari**	**42.69**	**282**	*e*P	**P**	**16 50 07.2 +0.2**
KLRI				IAmb	IAmb	16 50 09.3
	comp=Z,363nm,0.8s					
KLRI				*e*S	**S**	**16 56 20.1 -0.2**
CLNS	**Chul'man**	**43.24**	**3**	*e*P	**P**	**16 50 10.3 -0.5**
CLNS				pmax	pmax	
	comp=N,23nm,1.0s					
CLNS				pmax	pmax	
	comp=Z,26nm,1.2s					
CLNS				pmax	pmax	
	comp=E,18nm,0.9s					
SMLA	**Simla**	**43.64**	**301**	*e*P	**P**	**16 50 14.6 +0.3**
BOD	**Bodaibo**	**44.41**	**355**	*e*P	**P**	**16 50 19.8 -0.3**
BOD				pmax	pmax	
	comp=Z,17nm,1.2s					
HNR	**Honiara**	**45.10**	**118**	P	**P**	**16 50 26.8 +0.7**
	comp=Z,44nm,0.6s,baz=150,slow=8.5,SNR=2.5					
MK01	**Makanchi Array**	**46.14**	**324**	*e*P	**P**	**16 50 34.6 +0.6**
PDGK	**Podgornoye**	**46.15**	**318**	P	**P**	**16 50 35.4 +1.4**
PDGK				pmax	pmax	
	comp=Z,322nm,1.0s					
MK31	**Makanchi Array**	**46.16**	**324**	*e*P	**P**	**16 50 35.0 +0.9**
MK31	**Makanchi Array**	**46.16**	**324**	*e*P	**P**	**16 50 35.0 +0.9**
MKAR	**Makanchi Array**	**46.16**	**324**	P	**P**	**16 50 35.0 +0.9**
	comp=Z,198nm,0.9s,baz=124,slow=7.4,SNR=729					
MKAR				PcP	**PcP**	**16 52 07.2 -0.6**
	comp=Z,21nm,0.9s,baz=120,slow=5.2,SNR=2.9					
MKAR				ScP	**ScP**	**16 55 47.4 -0.8**
	comp=Z,13nm,1.0s,baz=132,slow=4.1,SNR=6.6					
MKAR				S	**S**	**16 57 10.8 +1.2**
	comp=Z,2.9nm,1.0s,baz=116,slow=18,SNR=2.4					
MKAR				P4KPbc		17 28 19.0
	comp=Z,1.4nm,0.9s,baz=111,slow=5.4,SNR=9.7					
MAKZ	**Makanchi**	**46.35**	**323**	*e*P	**P**	**16 50 36.4 +0.8**
MAKZ				pmax	pmax	
	comp=Z,202nm,1.2s					
MAKZ	**Makanchi**	**46.35**	**323**	*e*P	**P**	**16 50 36.4 +0.8**
	comp=Z,202nm,1.2s					
NWAO	**Narrogin (SRO)**	**46.41**	**184**	*e*P	**P**	**16 50 35.7 -0.5**
NWAO				pmax	pmax	
	comp=Z,260nm,0.8s					
NWAO	**Narrogin (SRO)**	**46.41**	**184**	*e*P	**P**	**16 50 35.5 -0.7**
	comp=Z,215nm,0.8s					
KSH	**Kashi**	**47.03**	**312**	P	**P**	**16 50 43.8 +2.6**
KSH				*e*pP	pP	16 51 16.1 +3.3
KSH				sP	sP	16 51 32.6 +4.2
KSH				*e*PP	**PP**	**16 52 36.8 +3.7**
KSH				*e*ScP	**ScP**	**16 55 53.8 +1.7**
KSH				PcS	**PcS**	**16 56 07.8 +1.3**
KSH				S	**S**	**16 57 25.8 +3.3**
KSH				SS	**SS**	**17 00 50.0 -1.2**
KSH				pmax	pmax	
	comp=Z,160nm,1.0s					
KSH				pmax	pmax	
	comp=Z,730nm,6.1s					
KSH				LR	LR	
	comp=Z,1μm,14.8s					
KSH				LR	LR	
	comp=Z,570nm,13.2s					
KSH				LR	LR	
	comp=Z,1μm,16.2s					
KRAR	**Krasnoyarsk**	**47.47**	**339**⇓	*i*P	**P**	**16 50 44.7 +0.6**
KRAR				pmax	pmax	
	comp=Z,43nm,1.1s					
AAA	**Alma-Ata**	**47.79**	**317**	*e*P	**P**	**16 50 43.9 -3.0**
AAA				*e*S	**S**	**16 57 40.3 +7.3**
AAA				pmax	pmax	
	comp=Z,1μm,6.9s					
AAA				smax	smax	
	comp=E,4μm,19.4s					
AAA				MLR	MLR	
	comp=Z,1μm,16.0s					
BBOO	**Buckleboo**	**48.42**	**163**	*e*P	**P**	**16 50 50.5 -1.2**
	comp=Z,78nm,0.9s					
TKM2	**Tokmak 2**	**48.55**	**316**	*e*P	**P**	**16 50 53.5 +0.5**
TKM2				pmax	pmax	
	comp=Z,100nm,1.0s					
TKM2	**Tokmak 2**	**48.55**	**316**	*e*P	**P**	**16 50 53.9 +0.9**
	comp=Z,104nm,1.0s					
H01W3	**Cape Leeuwin H**	**48.65**	**187**	P	**P**	**16 50 54.4 +1.2**
	baz=28,slow=5.5,SNR=5.3					
H01W1	**Cape Leeuwin H**	**48.66**	**187**	P	**P**	**16 50 54.5 +1.3**
	baz=28,slow=5.5,SNR=5.5					
H01W2	**Cape Leeuwin H**	**48.67**	**187**	P	**P**	**16 50 53.8 +0.6**
	baz=28,slow=5.5,SNR=4.0					
EIDS	**Eidsvold**	**48.71**	**143**	*e*P	**P**	**16 50 53.0 -1.1**
	comp=Z,48nm,0.8s					
YAK	**Yakutsk**	**48.76**	**6**	P	**P**	**16 50 54.2 +0.4**
	comp=Z,4.0nm,0.4s,baz=16,slow=20,SNR=23					
YAK				PcP	**PcP**	**16 52 16.9 +0.2**
	comp=Z,3.7nm,0.8s,baz=202,slow=23,SNR=3.1					
YAK				ScP	**ScP**	**16 55 58.7 0.0**
	comp=Z,0.4nm,0.3s,baz=161,slow=22,SNR=2.1					
YAK				S	**S**	**16 57 44.9 -0.9**
	comp=Z,0.3nm,0.3s,baz=233,slow=20,SNR=3.9					
YAK				LR	LR	17 14 08.4
	comp=Z,307nm,18.7s,baz=224,slow=39					
YAK	**Yakutsk**	**48.76**	**6**	*c i*P	**P**	**16 50 53.4 -0.5**
YAK				*e*		16 52 16.0
YAK				*e*		16 52 48.4
YAK				*e*S	**S**	**16 57 42.3 -3.5**
YAK				*e*		17 00 27.2
YAK				*e*SS	**SS**	**17 01 13.4 -4.6**
YAK				pmax	pmax	
	comp=Z,193nm,0.9s					
YAK				pmax	pmax	
	comp=N,78nm,1.1s					
YAK				pmax	pmax	
	comp=E,26nm,1.1s					
YAK				pmax	pmax	
	comp=Z,147nm,3.1s					
YAK				pmax	pmax	
	comp=N,81nm,2.8s					
YAK				pmax	pmax	
	comp=E,62nm,2.9s					
YAK				smax	smax	
	comp=E,40nm,2.2s					
YAK				smax	smax	
	comp=N,73nm,2.3s					
YAK	**Yakutsk**	**48.76**	**6**	*e*P	**P**	**16 50 53.6 -0.2**
	comp=N,170nm,0.9s					
YAK				PcP	**PcP**	**16 52 16.9 +0.2**
YAK				ScP	**ScP**	**16 55 58.7 0.0**
YAK				S	**S**	**16 57 44.9 -0.9**
PETK	**Petropavlovsk-**	**49.04**	**29**	P	**P**	**16 50 57.3 +1.1**
	comp=N,53nm,1.0s,baz=191,slow=4.2,SNR=29					
PETK				pP	**pP**	**16 51 27.9 -0.2**
	comp=N,34nm,1.0s,baz=208,slow=4.4,SNR=3.3					
PETK				LR	LR	17 13 34.9
	comp=N,285nm,19.7s,baz=228,slow=38					
PETK	**Petropavlovsk-**	**49.04**	**29**	P	**P**	**16 50 57.3 +1.1**
PETK				*PP	**pP**	**16 51 27.9 -0.2**
PETK				pmax	pmax	
	comp=Z,51nm,1.0s					
PETK				pmax	pmax	
	comp=Z,34nm,1.0s					
PETK				MLR	MLR	
	comp=Z,285nm,19.7s					
ZAA0	**Zalesovo Array**	**49.17**	**333**	*e*P	**P**	**16 50 57.0 -0.3**
ZALV	**Zalesovo Beam**	**49.17**	**333**	P	**P**	**16 50 57.1 -0.1**
	comp=Z,101nm,0.8s,baz=126,slow=6.3,SNR=208					
ZALV				PP	**PP**	**16 52 51.9 -0.4**
	comp=Z,19nm,0.9s,baz=133,slow=10,SNR=3.1					
ZALV				S	**S**	**16 57 51.0 -1.0**
	comp=Z,7.5nm,0.9s,baz=116,slow=13,SNR=8.7					
ZALV				LR	LR	17 13 14.2
	comp=Z,854nm,19.2s,baz=92,slow=38					
FRU	**Bishkek**	**49.19**	**315**⇑	*i*P	**P**	**16 50 58.0 +0.4**
FRU				*e*S	**S**	**16 57 54.0 +1.4**
FRU				*e*		16 58 48.0
FRU				pmax	pmax	
	comp=Z,160nm,2.0s					
FRU				MLR	MLR	
	comp=E,1μm,16.0s					
AAK	**Ala-Archa**	**49.20**	**315**	P	**P**	**16 50 58.7 +0.9**
	comp=E,61nm,0.9s,baz=106,slow=5.3,SNR=75					
AAK	**Ala-Archa**	**49.20**	**315**	*e*P	**P**	**16 50 59.1 +1.3**
AAK				pmax	pmax	
	comp=Z,92nm,1.0s					
AAK	**Ala-Archa**	**49.20**	**315**	*e*P	**P**	**16 50 58.7 +0.9**
	comp=Z,92nm,1.0s					
STKA	**Stephens Creek**	**49.44**	**157**	P	**P**	**16 50 58.6 -0.9**
	comp=Z,19nm,0.5s,baz=338,slow=8.1,SNR=38					
STKA				pP	**pP**	**16 51 30.8 -0.6**
	comp=Z,63nm,1.0s,baz=322,slow=7.6,SNR=6.7					
STKA				S	**S**	**16 57 50.3 -5.8**
	comp=Z,6.1nm,0.9s,baz=66,slow=19,SNR=5.0					
PET	**Petropavlovsk**	**49.44**	**29**	*e*P	**P**	**16 50 59.4 +0.2**
PET				*e**PP	**pP**	**16 51 29.4 -1.8**
PET				*e*S	**S**	**16 57 51.7 -3.9**
PET				*e**SS	**sS**	**16 58 48.0 -2.9**
PET				pmax	pmax	
	comp=Z,500nm,5.5s					
PET				pmax	pmax	
	comp=Z,41nm,0.9s					
PET				MLR	MLR	
	comp=Z,200nm,20.0s					
PET				MLR	MLR	
	comp=Z,300nm,16.0s					
PET	**Petropavlovsk**	**49.44**	**29**	*e*P	**P**	**16 51 00.3 +1.1**
	comp=Z,35nm,1.0s					
EKS2	**Erkin-Say**	**49.70**	**315**	*e*P	**P**	**16 51 02.9 +1.3**
EKS2				pmax	pmax	
	comp=Z,120nm,0.9s					
EKS2	**Erkin-Say**	**49.70**	**315**	*e*P	**P**	**16 51 02.6 +1.0**
	comp=Z,125nm,0.9s					
KURBB	**Kurchatov Arra**	**50.31**	**326**	P	**P**	**16 51 06.5 +0.6**
	comp=Z,307nm,0.9s,baz=120,slow=8.4,SNR=1027					
KURBB				ScP	**ScP**	**16 56 05.1 -0.5**
	comp=Z,8.5nm,1.1s,baz=120,slow=3.9,SNR=4.5					
KURK	**Kurchatov**	**50.31**	**326**	*e*P	**P**	**16 51 06.6 +0.7**
KURK				pmax	pmax	
	comp=Z,814nm,0.9s					
KURK	**Kurchatov**	**50.31**	**326**	*e*P	**P**	**16 51 06.6 +0.7**
	comp=Z,814nm,0.9s					
KURK				ScP	**ScP**	**16 56 05.1 -0.5**
NVS	**Novosibirsk**	**50.46**	**333**⇓	*i*P	**P**	**16 51 07.2 +0.3**
NVS				*e*S	**S**	**16 58 04.8 -5.0**
NVS				pmax	pmax	
	comp=N,60nm,0.9s					
NVS				pmax	pmax	
	comp=E,60nm,0.9s					
NVS				pmax	pmax	
	comp=Z,136nm,0.9s					
NVS				smax	smax	
	comp=N,19nm,1.3s					
NVS				smax	smax	
	comp=E,37nm,1.3s					
MNAS	**Manas**	**50.52**	**314**	P	**P**	**16 51 08.9 +1.1**
MNAS				pmax	pmax	
	comp=Z,223nm,1.2s					
MA2	**Magadan**	**50.94**	**19**	P	**P**	**16 51 11.5 +1.1**
	comp=Z,48nm,1.0s,baz=233,slow=7.9,SNR=17					
MA2				PcP	**PcP**	**16 52 25.3 +0.5**
	comp=Z,30nm,0.9s,baz=177,slow=1.8,SNR=4.4					
MA2	**Magadan**	**50.94**	**19**	*e*P	**P**	**16 51 11.2 +0.7**
	comp=Z,287nm,1.0s					
MA2				PcP	**PcP**	**16 52 25.3 +0.5**
KBL	**Kabul**	**51.04**	**304**	*e*P	**P**	**16 51 12.6 +0.7**
KBL				pmax	pmax	
	comp=Z,380nm,0.9s					
KBL	**Kabul**	**51.04**	**304**	*e*P	**P**	**16 51 12.2 +0.3**
	comp=Z,383nm,0.8s					
KK31	**Karatay Array**	**52.10**	**314**	*i* P	**P**	**16 51 19.7 +0.3**
KK31				pmax	pmax	
	comp=Z,113nm,0.8s					
KKAR	**Karatay Array**	**52.10**	**314**	*e*P	**P**	**16 51 19.9 +0.5**
KKAR	**Karatay Array**	**52.10**	**314**	*e*P	**P**	**16 51 19.6 +0.1**
DGAR	**Diego Garcia**	**52.36**	**249**	*c i*P	**P**	**16 51 22.3 +0.6**
DGAR	**Diego Garcia**	**52.36**	**249**	*e*P	**P**	**16 51 22.0 +0.3**
	comp=Z,401nm,0.9s					
OTUK	**Ortayu**	**52.78**	**321**	P	**P**	**16 51 25.2 +0.9**
OTUK				pmax	pmax	
	comp=Z,155nm,0.9s					
ARMA	**Armidale**	**52.89**	**146**	*e*P	**P**	**16 51 25.4 0.0**
	comp=Z,324nm,1.8s					
H08N1	**Diego Garcia H**	**53.26**	**251**	P	**P**	**16 51 30.8 +2.8**
	baz=93,slow=4.0,SNR=8.6					
H08N2	**Diego Garcia H**	**53.27**	**251**	P	**P**	**16 51 29.8 +1.8**
	baz=93,slow=4.0,SNR=6.3					
H08N3	**Diego Garcia H**	**53.28**	**251**	P	**P**	**16 51 29.9 +1.8**
	baz=93,slow=4.0,SNR=3.4					
SEY	**Seymchan**	**54.05**	**17**	P	**P**	**16 51 35.0 +1.7**
	comp=Z,77nm,1.0s,baz=223,slow=5.2,SNR=119					
SEY				PcP	**PcP**	**16 52 37.2 +0.8**
	comp=Z,25nm,0.9s,baz=140,slow=3.7,SNR=4.2					
CAN	**Canberra**	**55.53**	**152**	*e*P	**P**	**16 51 43.5 -0.9**
CAN				*e**PP	**pP**	**16 52 18.3 +1.3**
CAN	**Canberra**	**55.53**	**152**	*e*P	**P**	**16 51 43.8 -0.6**
	comp=Z,111nm,1.2s					
BVA0	**Borovoye Array**	**55.90**	**326**	*i* P	**P**	**16 51 46.9 +0.2**
BVA0				pmax	pmax	
	comp=Z,153nm,1.3s					
BRVK	**Borovoye**	**55.97**	**326**	*c i*P	**P**	**16 51 48.0 +0.8**
BRVK				pmax	pmax	
	comp=Z,308nm,1.0s					
BRVK	**Borovoye**	**55.97**	**326**	*e*P	**P**	**16 51 47.6 +0.4**
	comp=Z,309nm,1.0s					
CHKZ	**Chkalovo**	**56.05**	**327**	P	**P**	**16 51 47.6 -0.2**
CHKZ				pmax	pmax	
	comp=Z,67nm,1.0s					
ZRNK	**Zerenda**	**56.63**	**325**	P	**P**	**16 51 52.4 +0.5**
ZRNK				pmax	pmax	
	comp=Z,153nm,1.0s					
ZRNK	**Zerenda**	**56.63**	**325**	*e*P	**P**	**16 51 51.9 0.0**
	comp=Z,127nm,0.8s					
DZM	**Mont Dzumac**	**57.10**	**128**	*e*P	**P**	**16 51 55.1 -0.7**
	comp=Z,89nm,0.9s					
DZM				*e*S	**S**	**16 59 36.9 -3.4**
	comp=Z,1μm,31.4s					
DZM				*e*LR	LR	17 08 53.9
	comp=Z,2μm,31.3s					
DZM	**Mont Dzumac**	**57.10**	**128**	*e*P	**P**	**16 51 55.7 -0.1**
SMY	**Shemya**	**57.37**	**35**	*e*P	**P**	**16 51 59.5 +2.4**
SMY				pmax	pmax	
	comp=Z,200nm,1.2s					
SMY	**Shemya**	**57.37**	**35**	*e*P	**P**	**16 51 59.1 +2.0**
	comp=Z,202nm,1.2s					
TIXI	**Tiksi**	**58.20**	**3**	P	**P**	**16 52 02.0 -0.6**
	comp=Z,176nm,0.9s,baz=164,slow=5.2,SNR=562					
TIXI				S	**S**	**16 59 51.6 -1.5**
	comp=Z,3.2nm,0.9s,baz=67,slow=19,SNR=12					
TIXI				LR	LR	17 20 22.1
	comp=Z,778nm,18.4s,baz=190,slow=39					
TIXI				PKP2bc		17 21 54.3
	comp=Z,0.3nm,0.3s,baz=36,slow=1.7,SNR=3.9					
TIXI				PKP2ab		17 22 07.4
	comp=Z,2.2nm,0.8s,baz=344,slow=1.3,SNR=6.8					
TIXI	**Tiksi**	**58.20**	**3**	*c i*P	**P**	**16 52 02.2 -0.4**
TIXI				pmax	pmax	
	comp=Z,256nm,1.1s					
TIXI	**Tiksi**	**58.20**	**3**	*e*P	**P**	**16 52 01.8 -0.8**
	comp=Z,221nm,1.0s					
TIXI				S	**S**	**16 59 51.6 -1.5**
TIXI				⇑*e*		17 21 54.3
TIXI				P'P'ab	**P'P'ab**	**17 22 07.4 -1.2**
NRIK	**Noril'sk**	**59.51**	**347**	P	**P**	**16 52 11.8 0.0**
	comp=Z,134nm,0.9s,baz=127,slow=6.5,SNR=72					
NRIK				PcP	**PcP**	**16 52 58.4 +0.6**
	comp=Z,51nm,0.9s,baz=134,slow=6.2,SNR=6.6					
NRIK				S	**S**	**17 00 09.1 -1.0**
	comp=Z,2.9nm,0.4s,baz=60,slow=23,SNR=8.7					
NRIK				LR	LR	17 18 49.8
	comp=Z,631nm,19.5s,baz=140,slow=37					
BIDO	**Bidbid**	**59.84**	**289**	P	**P**	**16 52 14.6 -0.1**
	SNR=26					
BIDO	**Bidbid**	**59.84**	**289**	P	**P**	**16 52 14.6 -0.1**
	SNR=26					
SMDO	**Samad**	**59.93**	**289**	P	**P**	**16 52 14.5 -1.0**
	SNR=25					
SMDO	**Samad**	**59.93**	**289**	P	**P**	**16 52 14.5 -1.0**
	SNR=25					
GEYT	**Alibeck**	**60.27**	**306**	P	**P**	**16 52 18.7 +1.2**
	comp=Z,296nm,0.9s,baz=127,slow=3.9,SNR=476					
GEYT				LR	LR	17 20 13.4
	comp=Z,603nm,20.0s,baz=75,slow=38					
GEYT				PKPPKP	**P'P'df**	**17 21 34.5 -6.4**
	comp=Z,1.5nm,0.9s,baz=298,slow=3.2,SNR=3.8					
AB31	**Akbulak array**	**60.86**	**319**	*i* P	**P**	**16 52 21.4 +0.2**
AB31				pmax	pmax	
	comp=Z,192nm,0.9s					
ABKAR	**Akbulak array**	**60.86**	**319**	*e*P	**P**	**16 52 21.1 -0.1**
BANOM	**Banah**	**61.41**	**292**	*i* P	**P**	**16 52 25.9 +0.5**
	SNR=89					
BANOM	**Banah**	**61.41**	**292**	P	**P**	**16 52 24.4 -1.0**
	SNR=31					
BANOM	**Banah**	**61.41**	**292**	P	**P**	**16 52 24.4 -1.0**
	SNR=31					
UOSS	**Minazif**	**61.53**	**291**	*e*P	**P**	**16 52 25.5 -0.8**
	comp=Z,3.1nm,0.8s					
HATD	**Hatta, Dubai**	**61.60**	**291**	*i* P	**P**	**16 52 26.7 0.0**
	SNR=25					
ASHO	**Ashiyiah**	**61.68**	**291**	*i* P	**P**	**16 52 27.2 -0.1**
	SNR=29					
ASHO	**Ashiyiah**	**61.68**	**291**	P	**P**	**16 52 27.1 -0.1**
	SNR=10					
ASHO	**Ashiyiah**	**61.68**	**291**	P	**P**	**16 52 27.1 -0.1**
	SNR=10					
BILL	**Bilibino**	**61.75**	**18**	*i* P	**P**	**16 52 27.5 +0.6**
BILL				*i **PP	**pP**	**16 52 59.7 -0.4**
BILL				*i*		16 53 05.6
BILL				*i **SP	**sP**	**16 53 14.3 -1.1**
BILL				*i* S	**S**	**17 00 40.2 +1.6**
BILL				*e*		17 01 22.2
BILL				pmax	pmax	
	comp=Z,100nm,1.0s					
BILL	**Bilibino**	**61.75**	**18**	*e*P	**P**	**16 52 27.1 +0.3**
	comp=Z,95nm,1.0s					
FUNA	**Funafuti**	**61.99**	**107**	*e*P	**P**	**16 52 31.0 +1.6**
	comp=Z,142nm,1.0s					
NAZ	**Nazwa, Dubai**	**62.02**	**291**	*i* P	**P**	**16 52 29.3 -0.2**
	SNR=6.8					
FAQ	**Al Faqa, Dubai**	**62.10**	**291**	*i* P	**P**	**16 52 29.5 -0.5**
	SNR=18					
AKTO	**Aktyubinsk**	**62.34**	**320**	P	**P**	**16 52 30.8 -0.4**
AKTO				pmax	pmax	
	comp=Z,144nm,0.9s					
SVE	**Sverdlovsk**	**62.53**	**327**	*d i*P	**P**	**16 52 32.4 +0.1**
SVE				pmax	pmax	
	comp=Z,202nm,1.0s					
SHAO	**Shalim**	**62.60**	**283**	P	**P**	**16 52 33.9 +0.5**
	SNR=8.4					
SHAO	**Shalim**	**62.60**	**283**	P	**P**	**16 52 33.9 +0.5**
	SNR=8.4					
ARU	**Arti**	**63.51**	**327**	*c i*P	**P**	**16 52 38.0 -0.7**
ARU				*PP	**pP**	**16 53 12.1 -0.1**
ARU						16 54 57.7
ARU				PPP	PPP	16 56 33.9
ARU				S	**S**	**17 01 01.3 +0.4**
ARU						17 02 14.9
ARU				pmax	pmax	
	comp=Z,136nm,1.0s					
ARU	**Arti**	**63.51**	**327**	*e*P	**P**	**16 52 38.0 -0.7**
	comp=Z,108nm,0.8s					
MSVF	**Nonsavu**	**64.50**	**117**	*e*P	**P**	**16 52 47.8 +1.9**
MSVF				pmax	pmax	
	comp=Z,33nm,0.8s					
MSVF	**Nonsavu**	**64.50**	**117**	*e*P	**P**	**16 52 47.8 +1.9**
	comp=Z,33nm,0.8s					
ABTO	**Aybut**	**64.88**	**283**	P	**P**	**16 52 48.4 -0.1**
	SNR=24					
ABTO	**Aybut**	**64.88**	**283**	P	**P**	**16 52 48.4 -0.1**
	SNR=24					
SOKR	**Solikamsk**	**65.28**	**330**	*c i*P	**P**	**16 52 48.1 -2.1**
SOKR				pmax	pmax	
	comp=Z,61nm,1.1s					
SOKR				MLR	MLR	
	comp=Z,730nm,19.0s					
NIKH	**Nikolski High**	**67.41**	**38**	*e*P	**P**	**16 53 04.4 +0.5**
	comp=Z,273nm,1.0s					
GAMB	**Gambell**	**67.97**	**26**	*e*P	**P**	**16 53 08.7 +1.5**
	comp=Z,66nm,1.0s					
UNV	**Unalaska Valle**	**68.90**	**37**	*e*P	**P**	**16 53 13.9 +0.7**
	comp=Z,90nm,1.3s					
OUZ	**Omahuta**	**69.69**	**136**	*e*P	**P**	**16 53 19.1 +0.8**
	comp=Z,9.6nm,0.9s					
TNA	**Tin City**	**69.96**	**25**	*e*P	**P**	**16 53 20.6 +1.2**
	comp=Z,22nm,0.9s					
TBLG	**Delisi**	**70.71**	**310**	P	**P**	**16 53 24.9 +0.3**
TBLG	**Delisi**	**70.71**	**310**	*e*P	**P**	**16 53 24.8 +0.3**
GNI	**Garni**	**70.75**	**308**	*i* P	**P**	**16 53 26.1 +1.1**
	SNR=27					
GNI	**Garni**	**70.75**	**308**	*c i*P	**P**	**16 53 26.2 +1.2**
GNI				pmax	pmax	
	comp=Z,534nm,1.7s					
GNI	**Garni**	**70.75**	**308**	*e*P	**P**	**16 53 25.7 +0.7**
	comp=Z,167nm,0.9s					
MRIV	**Mauritius Mete**	**70.78**	**243**	*e*P	**P**	**16 53 25.6 +0.3**
FALS	**False Pass**	**70.79**	**36**	*e*P	**P**	**16 53 25.0 +0.3**
	comp=Z,105nm,1.2s					
GUDG	**Gudauri**	**70.89**	**310**	P	**P**	**16 53 28.0 +2.1**
ZEI	**Tsey**	**71.31**	**311**	*e*P	**P**	**16 53 27.1 -1.3**
ZEI				pmax	pmax	
	comp=Z,353nm,0.9s					
NCK	**Nalchik**	**71.51**	**312**⇓	*i*P	**P**	**16 53 29.6 +0.2**
NCK				pmax	pmax	
	comp=Z,61nm,0.9s					
BGD	**Bogdanovka**	**71.58**	**309**	P	**P**	**16 53 31.8 +1.7**
EAK	**Akyaka**	**71.59**	**309**	*i* P	**P**	**16 53 31.9 +1.8**
ONI	**Oni**	**71.64**	**311**	P	**P**	**16 53 31.1 +0.9**
ONI	**Oni**	**71.64**	**311**	*e*P	**P**	**16 53 31.1 +0.9**
AKH	**Akhalkalaki**	**71.65**	**309**⇓	*i*P	**P**	**16 53 32.2 +1.8**
AKH	**Akhalkalaki**	**71.65**	**309**	P	**P**	**16 53 31.5 +1.1**
AKH	**Akhalkalaki**	**71.65**	**309**	*e*P	**P**	**16 53 31.5 +1.1**
HAKT	**HAKKARI**	**71.67**	**305**	*i* P	**P**	**16 53 31.6 +0.9**
GOF	**Gofitskoye**	**71.87**	**313**⇑	*i*P	**P**	**16 53 31.9 +0.5**
GOF				pmax	pmax	
	comp=Z,107nm,1.0s					
KBZ	**Khabaz**	**72.01**	**312**	P	**P**	**16 53 32.4 +0.1**
	comp=Z,128nm,0.9s,baz=98,slow=5.0,SNR=154					
GEVA	**Gevas**	**72.14**	**306**	*i* P	**P**	**16 53 34.4 +1.0**
AFI	**Afiamalu**	**72.14**	**110**	LR	LR	17 21 59.4
	comp=Z,236nm,20.7s,baz=296,slow=33					
NEY	**Neytrino**	**72.16**	**311**	*d i*P	**P**	**16 53 35.0 +1.6**
NEY				pmax	pmax	
	comp=Z,22nm,0.9s					
KIV	**Kislovodsk**	**72.16**	**312**	*i* P	**P**	**16 53 33.6 +0.3**
	SNR=109					
KIV	**Kislovodsk**	**72.16**	**312**	*e*P	**P**	**16 53 33.4 +0.1**
KIV				*e**PP	**pP**	**16 54 07.8 +0.3**
KIV				*e*		16 56 15.8
KIV				*e*S	**S**	**17 02 45.1 +0.5**
KIV				pmax	pmax	
	comp=Z,317nm,1.0s					
KIV				pmax	pmax	
	comp=Z,219nm,4.7s					
KIV				MLR	MLR	
	comp=Z,452nm,18.0s					
KIV	**Kislovodsk**	**72.16**	**312**	*e*P	**P**	**16 53 33.2 -0.1**
	comp=Z,281nm,0.9s					
**DC

comp=E,430nm,2.7s
INZ Inchbonnie 72.77 143 *e*PN **P** 16 53 35.4 -1.3
ARTV Artvin 72.84 309 *i* P **P** 16 53 38.5 +0.9
EKAR Karacoban 72.85 307 *i* P **P** 16 53 40.2 +2.5
DAGI Agillar 72.86 309 *i* P **P** 16 53 38.3 +0.8
DDEM Demirkent 72.99 309 *i* P **P** 16 53 39.1 +0.8
DBAD Bademkaya 73.03 309 *i* P **P** 16 53 39.4 +0.9
THZ Tophouse 73.05 142 *e*P **P** 16 53 37.0 -1.4
comp=E,29nm,0.9s
LBZ Lake Benmore 73.10 145 *e*P **P** 16 53 37.9 -0.7
comp=E,50nm,0.8s
LBZ *ep*P **pP** 16 54 11.9 -1.0
RPZ Rata Peaks 73.16 144 *e*P **P** 16 53 38.2 -0.7
comp=E,56nm,0.7s
LTZ Lake Taylor 73.29 143 *e*P **P** 16 53 38.6 -1.2
LTZ Lake Taylor 73.29 143 PN **P** 16 53 39.7 -0.1
OXZ Oxford 73.48 144 *e*P **P** 16 53 39.6 -1.3
BNGL BINGOL 73.58 307 *i* P **P** 16 53 44.0 +2.1
CHGN Chignik 73.67 35 *e*P **P** 16 53 40.4 -1.4
URZ Urewera 73.72 137 *e*P **P** 16 53 40.5 -1.8
comp=E,17nm,0.8s
DAMY Dhamar 73.76 281 *e*P **P** 16 53 44.8 +1.3
comp=E,238nm,1.1s
BKZ Black Stump Fm 73.81 138 *e*P **P** 16 53 42.5 -0.4
comp=E,54nm,0.8s
KHZ Kahutara 73.82 142 *e*P **P** 16 53 41.3 -1.5
comp=E,17nm,0.7s
KHZ Kahutara 73.82 142 PN **P** 16 53 41.7 -1.1
BGOL Bingol 73.95 307 *i* P **P** 16 53 45.6 +1.7
KLMR Klimovskoe 73.97 330⇑*i*P **P** 16 53 42.5 -0.9
KLMR *e*S **SKiKP** 17 03 01.0 +3.1
KLMR pmax pmax
comp=Z,117nm,0.9s
KOPT Kop Dagi 74.00 308 *i* P **P** 16 53 46.6 +2.1
MARD Mardin 74.01 305 *i* P **P** 16 53 45.6 +1.2
MQZ McQueen's Vall 74.07 144 *e*P **P** 16 53 43.3 -1.0
comp=Z,23nm,0.9s
MQZ McQueen's Vall 74.07 144 *e*PN **P** 16 53 44.2 0.0
MXZ Matakaoa Point 74.15 136 *e*P **P** 16 53 43.9 -0.9
comp=Z,34nm,0.8s
MZRK Al-Mazaregh 74.25 304 *e*P **P** 16 53 47.3 +1.6
VSR Storozhevoye 74.29 320 *e*P **P** 16 53 44.7 -0.8
VSR *e**PP **pP** 16 54 17.1 -2.8
VSR *e* 16 56 33.2
VSR *e*S **S** 17 03 05.0 -3.1
VSR pmax pmax
comp=Z,110nm,1.1s
VSR smax smax
comp=N,120nm,2.0s
SOC Sochi 74.33 312*c i*P **P** 16 53 45.2 -0.7
SOC *e**SP **sP** 16 54 32.5 -2.7
SOC *e* 16 56 37.9
SOC *e*PPP PPP 16 58 17.4
SOC *e*S **S** 17 03 06.8 -2.0
SOC *e* 17 03 47.0
SOC *e**SS **sS** 17 04 07.6 -0.5
SOC *e*SSS SSS 17 11 14.5
SOC pmax pmax
comp=Z,140nm,0.9s
LPSR Galich'ya Gora 74.38 321 *e*P **P** 16 53 45.5 -0.5
LPSR *e**PP **pP** 16 54 18.5 -1.9
LPSR *e* 16 56 33.2
LPSR *e*S **S** 17 03 05.7 -3.4
LPSR pmax pmax
comp=Z,80nm,0.6s
LPSR smax smax
comp=N,260nm,2.2s
DIYA Diyarbakir 74.48 306 *i* P **P** 16 53 48.9 +1.9
BFZ Birch Farm 74.48 139 *e*P **P** 16 53 45.6 -1.1
comp=N,27nm,0.7s
SFNV Sufian 74.63 304 *e*P **P** 16 53 48.9 +1.0
TMCR Tamitsa 74.69 333 *e*P **P** 16 53 47.0 -0.6
TMCR pmax pmax
comp=Z,97nm,0.9s
TNCL Tunceli-Merkez 74.82 307 *i* P **P** 16 53 50.3 +1.3
TT01 Tatalina 74.87 28 *e*P **P** 16 53 49.8 +1.1
TTA Tatalina 74.88 28 *e*P **P** 16 53 50.1 +1.3
TTA Tatalina 74.88 28 *e*P **P** 16 53 50.1 +1.3
comp=Z,47nm,1.0s
KELT Kelkit 74.94 308 *i* P **P** 16 53 50.7 +0.9
MOS Moscow 75.03 324 *e*P **P** 16 53 47.0 -2.7
MOS *e**PP **pP** 16 54 20.5 -3.6
MOS *e* 16 56 40.1
MOS *e*S **S** 17 03 10.9 -5.3
MOS *e* 17 03 40.8
MOS pmax pmax
comp=Z,106nm,0.7s
MOS pmax pmax
comp=Z,100nm,0.9s
SVW2 Sparrevohn 75.10 30 *e*P **P** 16 53 51.8 +1.8
comp=Z,39nm,1.4s
KEKH Kekaha 75.41 71 *e*P **P** 16 53 56.1 +3.6
KEMA Kemaliye 75.61 307 *i* P **P** 16 53 55.3 +1.7
OBN Obninsk 75.66 324*c i*P **P** 16 53 52.3 -1.0
OBN *i* *P **pP** 16 54 26.1 -1.7
OBN *i* *SP **sP** 16 54 45.0 +2.3
OBN *e* 16 56 47.7
OBN *i* S **S** 17 03 18.3 -4.8
OBN *e* 17 04 01.7
OBN *i* SS **SS** 17 08 23.7 +6.7
OBN pmax pmax
comp=Z,66nm,0.9s
OBN Obninsk 75.66 324 *e*P **P** 16 53 52.0 -1.3
comp=Z,69nm,0.8s
SUSE Susehri 75.74 308 *i* P **P** 16 53 55.0 +0.7
ANN Anapa 75.87 313*c i*P **P** 16 53 53.8 -0.9
ANN *i* *PP **pP** 16 54 33.9 +4.7
ANN *e*S **S** 17 03 24.9 -0.9
ANN *e* 17 03 50.5
ANN pmax pmax
comp=Z,162nm,0.9s
LVZ Lovozero 76.04 337⇓*i*P **P** 16 53 56.3 +1.0
LVZ pmax pmax
comp=Z,34nm,0.8s
LVZ Lovozero 76.04 337 *e*P **P** 16 53 55.1 -0.2
comp=Z,34nm,0.9s
OHAK Old Harbor 76.46 34 *e*P **P** 16 53 57.6 -0.2
comp=Z,45nm,1.0s
RSO Redoubt South 76.51 31 *e*P **P** 16 53 58.9 +0.6
APA Apatity 76.53 337⇑*i*P **P** 16 53 57.8 -0.2
APA *i* 16 54 31.8
APA MLR MLR
comp=Z,1µm,18.0s
PPLA Purkeypile 76.63 28 *e*P **P** 16 53 59.2 +0.4
comp=Z,284nm,2.0s
CAST Castle Rocks 76.64 28 *e*P **P** 16 53 60.0 +1.2
comp=Z,129nm,0.9s
ERBA Erbaa 76.79 309 *i* P **P** 16 54 01.0 +0.9
KDAK Kodiak Island 76.80 33 *e*P **P** 16 53 59.9 +0.2
KDAK *e**PP **pP** 16 54 34.9 +0.7
KDAK pmax pmax
comp=Z,73nm,1.1s
KDAK Kodiak Island 76.80 33 *e*P **P** 16 53 59.9 +0.2
comp=Z,73nm,1.1s
KDAK *ep*P **pP** 16 54 34.9 +0.7
SPU Mount Spurr 76.81 30 *e*P **P** 16 53 59.8 0.0
BPAW Bear Paw Mtn. 77.08 27 *e*P **P** 16 54 01.9 +0.7
comp=Z,108nm,0.9s
MLY Manley 77.11 26 *e*P **P** 16 54 02.3 +0.9
comp=Z,71nm,0.9s
KTH Kantishna Hill 77.15 27 *e*P **P** 16 54 02.7 +1.0
comp=Z,89nm,1.4s
COLD Coldfoot 77.16 24 *e*P **P** 16 54 02.3 +0.7
comp=Z,33nm,0.8s
ROOS tl_alroos 77.18 302 *e*P **P** 16 54 03.1 +0.6
RABH Abou Rabah 77.22 303 *e*P **P** 16 54 03.5 +0.9
ZALF Zalf 77.32 301 *e*P **P** 16 54 04.3 +1.1
DRWC Darouich 77.36 305 *e*P **P** 16 54 02.3 -1.1
KFRA Kufra 77.44 303 *e*P **P** 16 54 03.1 -0.7
TRF Thorofare Moun 77.44 27 *e*P **P** 16 54 03.8 +0.3
comp=Z,122nm,1.5s
BRLK Bradley Lake 77.50 31 *e*P **P** 16 54 03.8 +0.2
comp=Z,64nm,0.9s
BTCH Batrach 77.60 304 *e*P **P** 16 54 03.8 -0.9
WRDH Warideh 77.72 304 *e*P **P** 16 54 04.6 -0.8
BWN Browne 77.74 27 *e*P **P** 16 54 06.5 +1.7
SALA Sala 77.85 301 *e*P **P** 16 54 06.2 -0.1
BIDA Albida 77.86 303 *e*P **P** 16 54 04.9 -1.3
HAWK Haweek 77.86 303 *e*P **P** 16 54 05.9 -0.3
MARH Ras Al Marh 77.87 302 *e*P **P** 16 54 06.5 -0.1
YAYL Yayladag 77.89 304 *i* P **P** 16 54 06.0 -0.4
FKH Fakeheh 77.89 303 *e*P **P** 16 54 07.7 +1.2
RC01 Rabbit Creek A 77.93 30 *e*P **P** 16 54 06.4 +0.5
comp=Z,41nm,0.9s
MCK McKinley 78.02 27 *e*P **P** 16 54 06.6 +0.2
MCK McKinley 78.02 27 *e*P **P** 16 54 06.4 0.0
comp=Z,122nm,0.9s
ARNB Al Arnab 78.02 304 *e*P **P** 16 54 06.0 -1.1
RND Reindeer 78.09 27 *e*P **P** 16 54 06.9 0.0
RND Reindeer 78.09 27 *e*P **P** 16 54 06.4 -0.4
comp=Z,51nm,0.9s
PMR Palmer 78.17 29 *e*P **P** 16 54 07.2 0.0
PMR Palmer 78.17 29 *e*P **P** 16 54 06.8 -0.4
comp=Z,52nm,0.9s
COAL Corum-Alaca 78.18 309 *i* P **P** 16 54 08.7 +0.8
SEW Seward 78.19 31 *e*P **P** 16 54 08.1 +0.8
comp=Z,53nm,0.9s
SIM Simferopol' 78.19 314*c i*P **P** 16 54 07.5 -0.2
SIM *e**PP **sP** 16 54 55.0 -2.2
SIM *e* 16 57 01.0
SIM pmax pmax
comp=Z,109nm,1.0s
SIM pmax pmax
comp=Z,60nm,7.7s
HWQ Hawqa 78.27 303 *e*P **P** 16 54 09.3 +0.7
WRH Wood River Hil 78.30 26 *e*P **P** 16 54 08.6 +0.7
comp=Z,24nm,1.0s
COLA College 78.35 26*c i*P **P** 16 54 08.6 +0.4
COLA pmax pmax
comp=Z,51nm,1.0s
COLA College 78.35 26 *e*P **P** 16 54 08.6 +0.4
comp=Z,47nm,0.9s
BRBR Barbar 78.40 302 *e*P **P** 16 54 09.0 -0.3
RCY Rachaya 78.48 302 *e*P **P** 16 54 10.8 +1.1
AVNS Nevsehir-Avano 78.49 307 *i* P **P** 16 54 10.6 +1.0
TCHB Talchebab 78.49 301 *e*P **P** 16 54 09.6 -0.1
SML Sawmill 78.52 29 *e*P **P** 16 54 10.2 +1.0
SML Sawmill 78.52 29 *e*P **P** 16 54 10.2 +1.0
BHL Bhannes 78.57 302 *e*P **P** 16 54 11.0 +0.9
PUL Pulkovo 78.60 329⇑*i*P **P** 16 54 10.0 +0.4
KEV Kevo 78.64 339 *e*P **P** 16 54 09.4 -0.2
KEV Kevo 78.64 339 *e*P **P** 16 54 09.9 +0.3
KEV Kevo 78.64 339 *e*P **P** 16 54 09.3 -0.4
comp=Z,36nm,0.9s
DQRL Deir Qamar 78.67 302 *e*P **P** 16 54 11.7 +1.0
ILAR Eielson Array 78.77 26 P **P** 16 54 10.1 -0.5
comp=Z,12nm,0.8s,baz=253,slow=4.0,SNR=65
ILAR pP **pP** 16 54 44.8 -0.4
comp=Z,2.8nm,0.9s,baz=268,slow=4.9,SNR=4.9
ILAR PKKPbc **PKKPbc** 17 13 02.9 -3.3
comp=Z,3.0nm,0.8s,baz=126,slow=1.7,SNR=16
ILAR PKPPKP **P'P'df** 17 21 06.5 -1.4
comp=Z,1.6nm,0.9s,baz=93,slow=0.5,SNR=8.5
ILAR LR LR 17 29 09.2
comp=Z,162nm,21.7s,baz=306,slow=36
ILB Eielson Array 78.77 26 *e*P **P** 16 54 09.6 -0.9
IL1 Eielson Array 78.77 26 *e*P **P** 16 54 09.2 -1.4
FYU Fort Yukon 79.18 24 *e*P **P** 16 54 13.8 +1.2
comp=Z,51nm,0.9s
ARA0 ARCESS Array S 79.19 339 *e*P **P** 16 54 12.0 -0.7
ARCES ARCESS Array B 79.19 339 P **P** 16 54 12.9 +0.2
comp=Z,58nm,0.8s,baz=79,slow=6.3,SNR=90
ARCES pP **pP** 16 54 47.2 -0.3
comp=Z,4.7nm,0.5s,baz=77,slow=6.7,SNR=1.1
ARCES PKiKP **PKiKP** 16 59 44.4 -0.4
comp=Z,1.6nm,0.8s,baz=115,slow=1.7,SNR=7.2
ARCES LR LR 17 35 23.9
comp=Z,246nm,18.3s,baz=93,slow=40
ARE0 ARCESS Array S 79.19 339 *e*P **P** 16 54 12.7 0.0
ARE0 lAmb lAmb 16 54 14.3
comp=Z,55nm,0.8s
ARE0 ARCESS Array S 79.19 339 *e*P **P** 16 54 12.1 -0.7
comp=Z,52nm,0.8s
KERG Konya-Eregli 79.26 306 *i* P **P** 16 54 13.8 -0.1
BR131 Keskin Array S 79.28 308 *e*P **P** 16 54 13.2 -0.8
BRTR Keskin Array B 79.28 308 P **P** 16 54 13.7 -0.3
comp=Z,27nm,0.9s,baz=116,slow=5.6,SNR=27
BRTR PP **PP** 16 57 19.4 +4.0
comp=Z,10nm,0.9s,baz=99,slow=7.6,SNR=6.0
BRTR PKKPbc **PKKPbc** 17 13 03.5 -0.7
comp=Z,0.7nm,0.9s,baz=205,slow=5.5,SNR=3.6
HAMF Hammerfest 79.61 340 *e*P **P** 16 54 14.8 -0.1
HAMF lAmb lAmb 16 54 16.3
comp=Z,77nm,0.9s
PAX Paxson 79.67 28 *e*P **P** 16 54 16.1 +0.6
PAX pmax pmax
comp=Z,23nm,1.0s
PAX Paxson 79.67 28 *e*P **P** 16 54 16.1 +0.6
comp=Z,23nm,1.0s
SPA0 Spitsbergen Ar 79.69 348 *e*P **P** 16 54 15.4 +0.2
SPA0 lAmb lAmb 16 54 16.3
comp=Z,78nm,1.2s
SPA0 Spitsbergen Ar 79.69 348 *e*P **P** 16 54 15.3 0.0
KLU Klutina 79.70 29 *e*P **P** 16 54 17.0 +1.2
DIV Divide 79.84 29 *e*P **P** 16 54 16.5 0.0
comp=Z,45nm,1.0s
ANTO Ankara 79.90 309 *e*P **P** 16 54 17.6 +0.4
ANTO Ankara 79.90 309 *e*P **P** 16 54 17.0 -0.2
comp=Z,62nm,1.1s
BR231 Keskin MP Arra 79.92 309 *e*P **P** 16 54 17.5 +0.1
KKUL Konya-Kulu 79.92 308 *i* P **P** 16 54 17.8 +0.4
EYAK Cordova Ski Ar 79.94 30 *e*P **P** 16 54 17.6 +0.8
comp=Z,159nm,1.7s
BTIN Bart'–n 80.02 310 *i* P **P** 16 54 18.3 +0.6
CASY Casey 80.04 184 *e*P **P** 16 54 15.9 -1.2
comp=Z,60nm,0.8s
HEF Hetta 80.06 338 *e*P **P** 16 54 17.0 -0.4
KTK1 Kautokeino 80.09 339 *e*P **P** 16 54 17.2 -0.4
KTK1 lAmb lAmb 16 54 18.9
comp=Z,32nm,0.9s
DOT Dot Lake 80.17 27 *e*P **P** 16 54 18.3 +0.1
comp=Z,78nm,1.0s
CSS Mathiatis 80.29 304 P **P** 16 54 20.7 +1.4
CSS Mathiatis 80.29 304 P **P** 16 54 19.1 -0.2
CSS Mathiatis 80.29 304 *e*P **P** 16 54 19.4 +0.1
comp=Z,63nm,1.0s
FURI Furi 80.36 277 *e*P **P** 16 54 21.8 +1.4
FIA1 FINESS Array S 80.40 331 *e*P **P** 16 54 18.4 -1.0
comp=Z,53nm,1.0s
FINES FINESS Array B 80.40 331 P **P** 16 54 19.0 -0.3
comp=Z,44nm,1.0s,baz=94,slow=7.6,SNR=54
FINES PKiKP **PKiKP** 16 59 48.2 +1.4
comp=Z,4.5nm,0.9s,baz=121,slow=4.1,SNR=5.1
FINES LR LR 17 33 39.2
comp=Z,388nm,18.2s,baz=88,slow=38
FINES FINESS Array B 80.40 331 P **P** 16 54 19.0 -0.3
FINES pmax pmax
comp=Z,44nm,1.0s
BMRM Bremner River 80.42 30 *e*P **P** 16 54 20.2 +0.7
comp=Z,29nm,1.0s
MENT Mentasta 80.46 27 *e*P **P** 16 54 21.3 +1.6
comp=Z,18nm,0.8s
RAGM Ragged Mountai 80.50 30 *e*P **P** 16 54 21.7 +1.7
comp=Z,36nm,1.2s
AKASG Malin Array Be 80.59 320 P **P** 16 54 19.3 -1.2
comp=Z,10.0nm,0.8s,baz=66,slow=5.8,SNR=42
AKASG pP **pP** 16 54 53.2 -2.2
comp=Z,5.4nm,0.8s,baz=69,slow=4.7,SNR=3.0
AKASG PP **PP** 16 57 28.5 +2.7
comp=Z,15nm,1.0s,baz=69,slow=7.9,SNR=6.7
AKASG LR LR 17 34 10.1
comp=Z,391nm,18.4s,baz=70,slow=39
AKBB Malin Array Si 80.59 320 *e*P **P** 16 54 19.5 -1.1
AKBB *e* 16 57 30.0
AKBB pmax pmax
comp=Z,22nm,0.9s
AKBB Malin Array Si 80.59 320 *e*P **P** 16 54 19.4 -1.1
comp=Z,22nm,0.9s
AKBB *ep*PP **PP** 16 57 30.0 +4.2
KIEV Kiev 80.60 320⇓*i*P **P** 16 54 19.8 -0.8
KIEV pmax pmax
comp=Z,22nm,0.9s
KIEV Kiev 80.60 320 *e*P **P** 16 54 19.2 -1.4
comp=Z,24nm,1.0s
KIEV *ep*PP **PP** 16 57 29.5 +3.7
AK11 Malin Array Si 80.63 320 *e*P **P** 16 54 19.9 -0.8
AK11 *ep*PP **PP** 16 57 30.0 +3.9
VSU Vasula 80.63 328*c i*P **P** 16 54 20.1 -0.5
VSU pmax pmax
comp=Z,342nm,0.9s
KDHN Kadinhani 80.64 307 *i* P **P** 16 54 20.3 -0.9
SZAC Souni 80.69 304 P **P** 16 54 22.1 +0.6
MICGM Minsk 80.73 324 *e* P 16 54 13.0 -8.2
MICGM *e*LR LR 17 31 10.0
MNK Minsk 80.73 324 *e*P **P** 16 54 18.0 -3.2
ALFC Alefka 80.85 304 P **P** 16 54 22.7 +0.4
GAZI Gazipasa 80.89 305 *i* P **P** 16 54 22.4 -0.1
KIF Kilpisjarvi 80.94 339 *e*P **P** 16 54 21.6 -0.4
AKMC Akamas 81.09 304 P **P** 16 54 23.8 +0.2
PPCY Paphos 81.10 304 P **P** 16 54 24.0 +0.4
EGAK Eagle 81.19 25 *e*P **P** 16 54 23.6 +0.2
comp=Z,41nm,0.9s
IDID Didziasalis 81.22 325 *e*P **P** 16 54 23.5 -0.4
IDID lAmb lAmb 16 54 25.9
comp=Z,37nm,0.9s
NACGM Naroch 81.28 324 *e*P **P** 16 54 23.0 -1.1
NACGM PM 16 54 25.0
comp=Z,0.3nm,0.9s
IZAR Zarasai 81.41 325 *e*P **P** 16 54 24.5 -0.3
IZAR lAmb lAmb 16 54 26.9
comp=Z,34nm,0.9s
TRO Tromso 81.42 340 *e*P **P** 16 54 24.2 -0.4
TRO lAmb lAmb 16 54 25.8
comp=Z,71nm,1.0s
ISAL Salakas 81.52 325 *e*P **P** 16 54 25.0 -0.3
ISAL lAmb lAmb 16 54 27.4
comp=Z,25nm,0.9s
KIS Kishinev 81.52 316⇑*i*P **P** 16 54 27.0 +1.4
comp=Z,200nm,1.8s
KIS *ep*P **pP** 16 55 07.0 +6.5
KIS Kishinev 81.52 316⇑*i*P **P** 16 54 27.0 +1.4
KIS *e**PP **pP** 16 55 07.0 +6.5
KIS pmax pmax
comp=Z,150nm,1.8s
SORM Soroca 81.61 317⇓*i*P **P** 16 54 25.7 -0.3
SORM Soroca 81.61 317 ⇓P **P** 16 54 25.7 -0.3
TLCR 81.86 314⇓*i*P **P** 16 54 27.6 +0.2
TLCR 81.86 314 ⇓P **P** 16 54 27.6 +0.2
LEOM Leova 82.00 316⇓*i*P **P** 16 54 28.3 +0.2
LEOM Leova 82.00 316 ⇓P **P** 16 54 28.3 +0.2
ISP Isparta 82.01 307 *e*P **P** 16 54 27.6 -0.9
ISP Isparta 82.01 307 *e*P **P** 16 54 27.2 -1.3
comp=Z,100nm,1.0s
DAWY Dawson 82.10 26 *e*P **P** 16 54 28.6 +0.3
comp=Z,45nm,0.9s
TIRR Tirgusor 82.28 314⇓*i*P **P** 16 54 29.7 +0.1
TIRR Tirgusor 82.28 314 ⇓P **P** 16 54 29.7 +0.1
TIRR Tirgusor 82.28 314 *e*P **P** 16 54 27.2 -2.4
comp=Z,42nm,1.0s
KORT Korkueli 82.30 306 *i* P **P** 16 54 30.0 0.0
CFR Carcaliu 82.33 315⇓*i*P **P** 16 54 30.2 +0.4
CFR Carcaliu 82.33 315 ⇓P **P** 16 54 30.2 +0.4
MIR Mirnyy 82.55 191 *i* P **P** 16 54 30.0 -0.3
MIR pmax pmax
comp=Z,8.0nm,0.9s
HARR Harsova 82.58 314⇓*i*P **P** 16 54 31.5 +0.4
HARR Harsova 82.58 314 ⇓P **P** 16 54 31.5 +0.4
PSN Preselentsi 82.60 313 P **P** 16 54 31.8 +0.5
MSAB Monastry St. A 82.77 314⇑*i*P **P** 16 54 32.5 +0.4
AKAS Kas 83.04 305 *i* P **P** 16 54 33.1 -0.7
TESR Tescani 83.08 316⇓*i*P **P** 16 54 33.9 +0.2
INK Inuvik 83.13 21 P **P** 16 54 33.8 +0.3
comp=Z,71nm,0.9s,baz=290,slow=5.5,SNR=89
INK pP **pP** 16 55 07.5 -1.0
comp=Z,33nm,1.1s,baz=277,slow=5.3,SNR=3.0
INK PKKP **PKKPdf** 17 12 42.9 -3.2
comp=Z,3.0nm,0.6s,baz=115,slow=4.3,SNR=8.0
INK PKKPbc **PKKPbc** 17 12 52.7 -3.6
comp=Z,5.6nm,0.9s,baz=94,slow=3.3,SNR=7.9
INK Inuvik 83.13 21 *e*P **P** 16 54 33.8 +0.3
comp=Z,80nm,0.9s
INK pP **pP** 16 55 07.5 -1.0
INK PKKP **PKKPdf** 17 12 42.9 -3.2
INK PKKPbc **PKKPbc** 17 12 52.7 -3.6
VRI Vrincioaia 83.16 315⇑*i*P **P** 16 54 35.6 +1.4
VRI Vrincioaia 83.16 315 ⇑P **P** 16 54 35.6 +1.4
PRAR RASCA 83.17 317⇓*i*P **P** 16 54 34.3 +0.1
PGOR Pogoanele 83.19 314⇑*i*P **P** 16 54 36.0 +1.7
PLOR Plostina 83.22 315⇓*i*P **P** 16 54 35.3 +0.8
PLOR Plostina 83.22 315 ⇓P **P** 16 54 35.3 +0.8
FETY Fethiye 83.37 306 P **P** 16 54 35.0 -0.4
ISR Istrita 83.45 315⇓*i*P **P** 16 54 36.9 +1.2
ISR Istrita 83.45 315 ⇓P **P** 16 54 36.9 +1.2
SUW Suwalki 83.53 324 *e*P **P** 16 54 35.2 -0.6
SUW Suwalki 83.53 324 *e*P **P** 16 54 35.2 -0.6
TURN Turunc 83.69 306 *i* P **P** 16 54 40.6 +3.6
SULR 83.75 314⇑*i*P **P** 16 54 38.0 +0.9
MLR Muntele Rosu 83.78 315 *e*P **P** 16 54 37.5 0.0
MLR Muntele Rosu 83.78 315 *e*P **P** 16 54 37.0 -0.5
comp=Z,57nm,0.9s
BUR08 Bucovina Ar. S 83.79 317 *e*P **P** 16 54 37.2 -0.2
SECR 83.80 315⇑*i*P **P** 16 54 38.6 +1.2
YER Yerkesik 83.89 307 P **P** 16 54 38.1 0.0
KMBO Kilima Mbogo 84.00 267 LR LR 17 31 48.2
comp=Z,304nm,18.2s,baz=94,slow=35
KMBO Kilima Mbogo 84.00 267 *e*P **P** 16 54 40.4 +1.1
KMBO pmax pmax
comp=Z,116nm,1.0s
KMBO Kilima Mbogo 84.00 267 *e*P **P** 16 54 40.4 +1.1
comp=Z,116nm,1.0s
JMB Yambol 84.01 312 P **P** 16 54 38.8 +0.3
EDRB Edirne 84.03 311 P **P** 16 54 38.5 -0.1
EDRB Edirne 84.03 311 P **P** 16 54 38.5 -0.1
LVV L'vov 84.03 320 *e*P **P** 16 54 39.3 +0.8
LVV *e* 16 55 10.7
LVV *e* 16 57 55.5
LVV *e*S **S** 17 04 50.3 -0.9
LVV *e* 17 10 27.5
LVV *e* 17 13 56.9
LVV MLR MLR
comp=N,300nm,17.0s
LVV MLR MLR
comp=E,400nm,17.0s
LVV MLR MLR
comp=Z,400nm,17.0s
DOPR Dopca 84.05 316⇓*i*P **P** 16 54 39.2 +0.5
ARG Arkhangelos 84.21 306 P **P** 16 54 39.7 0.0
SZH Strazhica 84.29 313 P **P** 16 54 39.6 -0.4
VOIR 84.41 315⇓*i*P **P** 16 54 40.3 -0.3
VOIR 84.41 315 ⇓P **P** 16 54 40.3 -0.3
ARCR ARCALIA 84.48 317⇑*i*P **P** 16 54 42.2 +1.4
GOLR 84.61 315⇓*i*P **P** 16 54 41.9 +0.4
BODT Bodrum 84.66 307 P **P** 16 54 41.5 -0.5
HUMR Humele 84.67 314⇓*i*P **P** 16 54 41.8 0.0
ARR Arges 84.71 315⇓*i*P **P** 16 54 42.6 +0.5
ENEZ Enez 84.71 310 P **P** 16 54 41.7 -0.4
ALN Alexandroupoli 84.75 311 P **P** 16 54 41.4 -0.9
ALN Alexandroupoli 84.75 311 P **P** 16 54 41.4 -0.9
ALN Alexandroupoli 84.75 311 P **P** 16 54 41.4 -0.9
SMG Samos 84.89 307 P **P** 16 54 42.9 -0.2
SMG Samos 84.89 307 P **P** 16 54 42.9 -0.2
BMR Baia Mare 84.90 318⇑*i*P **P** 16 54 44.2 +1.3
BMR Baia Mare 84.90 318 ⇑P **P** 16 54 44.2 +1.3
KWP Kalwaria Pacla 84.91 320 *e*P **P** 16 54 43.2 +0.3
KWP Kalwaria Pacla 84.91 320⇑*i*P **P** 16 54 43.9 +1.0
KWP Kalwaria Pacla 84.91 320 ⇑P **P** 16 54 43.9 +1.0
PRK Paraskevi 84.97 309 P **P** 16 54 42.8 -0.6
KDZ Kurdzhali 85.04 312 P **P** 16 54 43.7 -0.1
KLNR Kaliningrad 85.05 325 *i* P **P** 16 54 44.4 +0.9
KLNR pmax pmax
comp=Z,119nm,0.1s
CJR Cluj-Napoca 85.08 317⇑*i*P **P** 16 54 45.3 +1.4
CJR Cluj-Napoca 85.08 317 ⇑P **P** 16 54 45.3 +1.4
KARP Karpathos 85.12 305 P **P** 16 54 44.4 +0.1
KARP Karpathos 85.12 305 *e*P **P** 16 54 44.2 -0.1
comp=Z,204nm,1.1s
KARP *ep*PP **PP** 16 58 08.2 +4.9
LOT Lotru 85.28 315⇑*i*P **P** 16 54 45.0 0.0
SKAG Skagway 85.28 30 *e*P **P** 16 54 46.0 +1.5
comp=Z,68nm,0.9s
CHOS Chios island 85.33 308 P **P** 16 54 44.7 -0.7
CHOS Chios island 85.33 308 P **P** 16 54 44.7 -0.7
KOLS Kolonicke sedl 85.37 319 *e*P **P** 16 54 45.4 +0.2
KOLS pmax pmax
comp=Z,27nm,1.0s
KOLS Kolonicke sedl 85.37 319 *e*P **P** 16 54 45.4 +0.2
TRPA Tarpa 85.41 318⇑*e*P **P** 16 54 45.1 -0.3
UZH Uzhgorod 85.43 319*c i*P **P** 16 54 45.6 +0.1
UZH *e* 16 55 24.4
BEL Belsk 85.49 322 *e*P **P** 16 54 46.0 +0.2
BEL Belsk 85.49 322 *e*P **P** 16 54 46.0 +0.2
RZN Rozhen 85.54 312 P **P** 16 54 45.9 -0.6
LIA Limnos Island 85.63 310 P **P** 16 54 45.7 -1.0
DRGR 85.64 317⇓*i*P **P** 16 54 47.5 +0.8
DRGR 85.64 317 ⇓P **P** 16 54 47.5 +0.8
NSS Namsos 85.68 336 *e*P **P** 16 54 45.6 -0.8
PGB Panagyurishte 85.72 313 P **P** 16 54 47.3 +0.1
MPEP Malo Peshtene 85.82 313 P **P** 16 54 47.5 -0.1
KAVA Kavala 85.86 311 P **P** 16 54 46.8 -1.0
KAVA Kavala 85.86 311 P **P** 16 54 46.8 -1.0
SRE Strehaia 85.86 315⇓*i*P **P** 16 54 48.5 +0.7

SRE Strehaia 85.86 315 ⇓P **P 16 54 48.5 +0.7**
STHS Stebnicka Huta 85.89 320 *e*P **P 16 54 48.2 +0.4**
STHS pmax pmax
comp=Z,31nm,1.0s
STHS Stebnicka Huta 85.89 320 *e*P **P 16 54 48.2 +0.4**
ZKR Zakros 85.97 305 P **P 16 54 47.9 -0.6**
APE Apeiranthos 86.05 307 *c i*P **P 16 54 47.1 -1.8**
APE pmax pmax
comp=Z,68nm,1.1s
NVR Nevrokopi 86.24 311 P **P 16 54 48.5 -1.3**
NVR Nevrokopi 86.24 311 P **P 16 54 48.5 -1.3**
SANT Santorini 86.27 306 ⇑*i*P **P 16 54 48.9 -1.1**
SANT Santorini 86.27 306 *e*P **P 16 54 48.3 -1.7**
comp=Z,197nm,1.2s
MMB Musomiste 86.28 312 P **P 16 54 47.7 -2.2**
THR3 Thira Island, 86.31 306 P **P 16 54 50.3 +0.2**
THR3 Thira Island, 86.31 306 P **P 16 54 50.3 +0.2**
THR5 Thira Island, 86.35 306 P **P 16 54 49.6 -0.7**
OUR Ouranopolis 86.41 310 P **P 16 54 49.4 -1.1**
OUR Ouranopolis 86.41 310 P **P 16 54 49.4 -1.1**
OUR Ouranopolis 86.41 310 P **P 16 54 49.4 -1.1**
NIE Niedzica 86.48 320 *e*P **P 16 54 51.2 +0.5**
NIE Niedzica 86.48 320 *e*P **P 16 54 51.3 +0.5**
SIRR Siria 86.48 317 ⇑*i*P **P 16 54 51.5 +0.7**
LAST Lasithi 86.55 305 ⇓*i*P **P 16 54 51.8 +0.4**
LAST Lasithi 86.55 305 P **P 16 54 51.2 -0.2**
LAST Lasithi 86.55 305 *e*P **P 16 54 50.8 -0.6**
comp=Z,84nm,1.1s
LAST *e*PP **PP 16 58 20.4 +5.5**
OJC Ojcow 86.56 321 *e*P **P 16 54 51.1 +0.1**
OJC Ojcow 86.56 321 *e*P **P 16 54 51.1 +0.1**
OJC Ojcow 86.56 321 *e*P **P 16 54 50.3 -0.7**
comp=Z,130nm,0.9s
OJC *e*PP **PP 16 58 18.5 +4.1**
KECS Kecovo 86.63 319 *e*P **P 16 54 51.8 +0.4**
KECS pmax pmax
comp=Z,30nm,0.9s
KECS Kecovo 86.63 319 *e*P **P 16 54 51.8 +0.4**
KECS *e*PP **PP 16 58 14.1 -0.9**
KKB Krupnik 86.67 312 P **P 16 54 51.3 -0.5**
BZS Buzias 86.69 316 ⇑*i*P **P 16 54 52.1 +0.3**
BZS Buzias 86.69 316 ⇑P **P 16 54 52.1 +0.3**
DAG Danmarks Havn 86.70 351 *i* P **P 16 54 49.9 -1.3**
comp=Z,24nm,0.9s
DAG Danmarks Havn 86.70 351 *i* P **P 16 54 49.9 -1.3**
DAG pmax pmax
comp=Z,20nm,0.9s
PAIG Paliouri 86.74 310 P **P 16 54 50.9 -1.2**
PAIG Paliouri 86.74 310 P **P 16 54 50.9 -1.2**
PAIG Paliouri 86.74 310 P **P 16 54 50.9 -1.2**
AOS Alonnisos 86.79 309 P **P 16 54 50.7 -1.7**
MDVR Moldovita 86.86 315 ⇑*i*P **P 16 54 53.2 +0.5**
TBLU Trondheim 86.89 335 *e*P **P 16 54 51.8 -0.6**
TBLU lAmb lAmb 16 54 52.9
comp=Z,58nm,0.9s
IDI Anoyia 86.99 305 ⇑*i*P **P 16 54 53.5 0.0**
IDI Anoyia 86.99 305 P **P 16 54 52.5 -1.0**
IDI Anoyia 86.99 305 *e*P **P 16 54 52.6 -0.9**
comp=Z,29nm,0.9s
KNT Kendrikon 87.00 312 P **P 16 54 52.0 -1.4**
KNT Kendrikon 87.00 312 P **P 16 54 52.0 -1.4**
KNT Kendrikon 87.00 312 P **P 16 54 52.0 -1.4**
LANS Liptovska Anna 87.08 320 *e*P **P 16 54 54.4 +0.8**
LANS Liptovska Anna 87.08 320 *e*P **P 16 54 54.4 +0.8**
PTL Penteli 87.09 308 P **P 16 54 52.9 -1.0**
PTL Penteli 87.09 308 P **P 16 54 52.9 -1.0**
SIVA Sivas 87.12 305 ⇓*i*P **P 16 54 54.5 +0.4**
SIVA Sivas 87.12 305 P **P 16 54 53.9 -0.2**
NC405 NORSAR Array S 87.12 333 *e*P **P 16 54 52.6 -0.9**
PSZ Piszkesteto 87.17 319 ⇑*i*P **P 16 54 54.6 +0.4**
PSZ Piszkesteto 87.17 319 ⇑*e*P **P 16 54 53.9 -0.3**
PSZ Piszkesteto 87.17 319 ⇑P **P 16 54 54.6 +0.4**
PSZ Piszkesteto 87.17 319 *e*P **P 16 54 53.9 -0.3**
comp=Z,19nm,0.9s
VAY Valandovo 87.19 312 *i* P **P 16 54 53.1 -1.2**
NC303 NORSAR Array S 87.23 333 *e*P **P 16 54 52.5 -1.5**
NB201 NORSAR Array S 87.34 333 *e*P **P 16 54 53.6 -1.0**
NC602 NORSAR Array S 87.35 332 *e*P **P 16 54 53.1 -1.5**
NB2 NORSAR Subarra 87.38 333 P **P 16 54 53.6 -1.2**
comp=Z,62nm,0.9s,baz=69,slow=4.6
NB2 NORSAR Subarra 87.38 333 P **P 16 54 53.6 -1.2**
baz=69,slow=4.6
NOA NORSAR Array B 87.38 333 P **P 16 54 53.8 -1.0**
comp=Z,51nm,0.9s,baz=68,slow=4.7,SNR=95
NOA pP **pP 16 55 27.7 -2.5**
comp=Z,16nm,0.8s,baz=68,slow=4.8,SNR=4.0
NOA PP **PP 16 58 18.5 -2.2**
comp=Z,6.7nm,0.9s,baz=72,slow=8.4,SNR=5.7
NOA LR LR 17 37 34.5
comp=Z,504nm,18.4s,baz=55,slow=38
NC204 NORSAR Array S 87.48 333 *e*P **P 16 54 54.1 -1.2**
VAM Vamos 87.50 306 P **P 16 54 56.0 +0.1**
NBO02 NORSAR Array S 87.53 333 *e*P **P 16 54 53.6 -1.9**
NBO00 NORSAR Array S 87.58 333 *e*P **P 16 54 54.5 -1.2**
LIT Litokhoron 87.58 311 P **P 16 54 54.5 -1.7**
LIT Litokhoron 87.58 311 P **P 16 54 54.5 -1.7**
LIT Litokhoron 87.58 311 P **P 16 54 54.5 -1.7**
NAO01 NORSAR Array S 87.60 333 *e*P **P 16 54 54.8 -1.0**
IMMV Iera Moni Meta 87.66 306 P **P 16 54 56.5 -0.2**
VYHS Vyhne 87.67 319 *e*P **P 16 54 56.6 +0.1**
VYHS pmax pmax
comp=Z,11nm,1.0s
VYHS Vyhne 87.67 319 *e*P **P 16 54 56.6 +0.1**
VYHS *e*PP **PP 16 58 17.6 -5.8**
OKC Ostrava-Krasne 87.69 321 *e*P **P 16 54 56.6 +0.1**
OKC *e*pP **pP 16 55 30.7 -1.2**
OKC *e*PP **PP 16 58 24.9 +1.4**
OKC AMS AMS 17 39 30.0
comp=Z,300nm,18.0s
OKC Ostrava-Krasne 87.69 321 *e*P **P 16 54 56.6 +0.1**
OKC *e**PP **pP 16 55 30.7 -1.2**
OKC *e* 16 58 24.9
OKC MLR MLR
comp=Z,300nm,18.0s
BSD Bornholm Skovb 87.79 326 *i* P **P 16 54 56.4 -0.4**
comp=Z,41nm,1.0s
BSD Bornholm Skovb 87.79 326 *i* P **P 16 54 56.4 -0.4**
BSD pmax pmax
comp=Z,41nm,1.0s
KRND KRANIDI 87.81 308 P **P 16 54 55.8 -1.5**
WRAK Wrangell Islan 87.82 32 *e*P **P 16 54 56.4 -0.5**
comp=Z,17nm,0.9s
SKO Skopje 87.83 313 *i* P **P 16 54 56.4 -1.0**
AGG Agios Georgios 87.99 310 P **P 16 54 55.7 -2.5**
AGG Agios Georgios 87.99 310 *e*P **P 16 54 55.7 -2.5**
AGG pmax pmax
comp=Z,48nm,1.0s
AGG Agios Georgios 87.99 310 *e*P **P 16 54 55.7 -2.5**
comp=Z,48nm,1.0s
KZN Kozani 88.05 311 P **P 16 54 57.3 -1.2**
KZN Kozani 88.05 311 P **P 16 54 57.3 -1.2**
KZN Kozani 88.05 311 P **P 16 54 57.3 -1.2**
THL Klokotos Trika 88.08 310 P **P 16 54 55.3 -3.2**
MORC Moravsky Berou 88.08 321 ⇓*i*P **P 16 54 59.1 +0.7**
MORC Moravsky Berou 88.08 321 ⇓P **P 16 54 59.1 +0.7**
MORC Moravsky Berou 88.08 321 *e*P **P 16 54 58.3 -0.1**
comp=Z,95nm,1.0s
ANKY Antikythira Is 88.09 306 P **P 16 54 57.6 -1.1**
VLI Veliai 88.15 307 P **P 16 54 55.5 -3.4**
BIA Bitola 88.18 312 *i* P **P 16 54 58.7 -0.4**
DLBC Dease Lake 88.21 30 P **P 16 55 00.1 +1.3**
comp=Z,6.9nm,0.9s,baz=298,slow=5.5,SNR=12
DLBC Dease Lake 88.21 30 *e*P **P 16 55 00.0 +1.1**
comp=Z,40nm,1.6s
DLBC *e*PKKPdf **PKKPbc 17 12 42.5 -1.6**
DIVS Divibare 88.23 315 P **P 16 54 58.8 -0.5**
KLV Kalavryta, Ach 88.39 309 P **P 16 54 57.7 -2.5**
KLV Kalavryta, Ach 88.39 309 P **P 16 54 57.7 -2.5**
VLX Vlachokerasia 88.40 308 P **P 16 54 58.6 -1.7**
VLX Vlachokerasia 88.40 308 P **P 16 54 58.6 -1.7**
ANX Ano Chora 88.41 309 P **P 16 55 01.0 +0.7**
KRLC Kraliky 88.44 321 *e*P **P 16 55 00.1 0.0**
KRLC *e*pP **pP 16 55 34.3 -1.3**
KRLC Kraliky 88.44 321 *e*P **P 16 55 00.1 0.0**
KRLC *e**PP **pP 16 55 34.3 -1.3**
KPRO Kipourio 88.45 311 P **P 16 54 58.1 -2.3**
LAKA Lakka 88.47 309 P **P 16 54 58.8 -1.7**
LAKA Lakka 88.47 309 P **P 16 54 58.8 -1.7**
KSP Ksiaz 88.48 322 *e*P **P 16 55 00.4 +0.2**
KSP Ksiaz 88.48 322 *e*P **P 16 55 00.4 +0.2**
OHR Ohrid 88.53 312 *i* P **P 16 54 59.3 -1.4**
DPC Dobruska-Polom 88.63 322 *e*P **P 16 55 01.1 +0.1**

DPC *ex* x 16 55 05.1
DPC *e*pP **pP 16 55 35.2 -1.3**
DPC *e*PP **PP 16 58 28.2 -2.8**
DPC AMS AMS 17 34 30.0
comp=Z,400nm,21.4s
DPC Dobruska-Polom 88.63 322 *e*P **P 16 55 01.1 +0.1**
DPC *e**PP **pP 16 55 35.2 -1.3**
DPC *e* 16 58 28.2
DPC MLR MLR
comp=Z,400nm,21.4s
IVA Berane 88.66 314 ⇑*i*P **P 16 55 00.7 -0.7**
PVY Plav 88.70 313 ⇑*i*P **P 16 55 00.6 -1.0**
PVO Paravola 88.70 309 P **P 16 55 00.4 -1.1**
DRO Drossia 88.75 309 P **P 16 55 00.9 -0.9**
UPC Upice 88.76 322 *e*P **P 16 55 01.7 +0.1**
UPC *e*PP **PP 16 58 32.5 +0.5**
UPC *e*S **S 17 05 33.1 -3.9**
UPC AMS AMS 17 34 10.0
comp=Z,500nm,21.7s
UPC Upice 88.76 322 *e*P **P 16 55 01.7 +0.1**
UPC *e* 16 58 32.5
UPC *e*S **S 17 05 33.1 -3.9**
UPC MLR MLR
comp=Z,500nm,21.7s
ITM Ithomi 88.80 308 P **P 16 55 00.7 -1.3**
VRAC Vranov 88.81 321 ⇑*i*P **P 16 55 03.1 +1.3**
VRAC Vranov 88.81 321 ⇑P **P 16 55 03.1 +1.3**
AMT Artemida-Makis 88.87 308 P **P 16 55 00.4 -2.0**
DSL Palaion Diasel 88.88 310 P **P 16 55 00.7 -1.7**
DSL Palaion Diasel 88.88 310 P **P 16 55 00.7 -1.7**
PLE Pljevlja 88.88 314 ⇑*i*P **P 16 55 02.4 0.0**
PYL PYLOS 89.02 308 P **P 16 55 01.3 -1.8**
RES Resolute Bay 89.09 9 P **P 16 55 03.0 +0.5**
comp=Z,45nm,0.9s,baz=325,slow=5.2,SNR=14
RES Resolute Bay 89.09 9 *e*P **P 16 55 02.5 -0.1**
comp=Z,51nm,0.9s
TIR Tirane 89.14 312 ⇑*i*P **P 16 55 03.5 0.0**
TIR Tirane 89.14 312 ⇑P **P 16 55 03.5 0.0**
TIR Tirane 89.14 312 *e*P **P 16 55 02.8 -0.7**
comp=Z,50nm,0.9s
PDG Podgorica 89.25 313 ⇓*i*P **P 16 55 04.4 +0.4**
TTG Podgorica 89.25 313 ⇑*i*P **P 16 55 03.5 -0.5**
UPM Unac-Piva 89.25 314 *e*P **P 16 55 03.2 -1.1**
LKD2 Lefkada island 89.31 310 P **P 16 55 02.8 -1.6**
LKD2 Lefkada island 89.31 310 P **P 16 55 02.8 -1.6**
IGT Igoumenitsa 89.33 310 P **P 16 55 02.9 -1.6**
IGT Igoumenitsa 89.33 310 P **P 16 55 02.9 -1.6**
IGT Igoumenitsa 89.33 310 P **P 16 55 02.9 -1.6**
NKME Niksic 89.36 314 *e*P **P 16 55 03.7 -0.9**
DRME Dracevica, Mon 89.37 313 ⇑*i*P **P 16 55 04.0 -0.6**
SOP Sopron 89.38 319 *e*P **P 16 55 04.6 +0.1**
ULC Ulcinj 89.39 313 ⇑*i*P **P 16 55 03.9 -0.8**
CEME Cevo 89.45 314 ⇑*i*P **P 16 55 04.1 -0.9**
TREC Trest 89.50 321 *e*P **P 16 55 05.1 0.0**
TREC AMS AMS 17 35 00.0
comp=Z,500nm,21.8s
TREC Trest 89.50 321 *e*P **P 16 55 05.1 0.0**
TREC MLR MLR
comp=Z,500nm,21.8s
BUM Brajici-Budva 89.54 313 ⇑*i*P **P 16 55 04.2 -1.3**
BRY Bratogost 89.60 314 ⇑*i*P **P 16 55 04.9 -0.9**
PVCC Panska Ves 89.62 322 *e*P **P 16 55 05.6 +0.1**
PVCC *ex* x 16 55 13.4
PVCC *e*pP **pP 16 55 40.0 -1.1**
PVCC *e*PP **PP 16 58 37.9 -0.9**
PVCC AMS AMS 17 34 40.0
comp=Z,400nm,21.1s
PVCC Panska Ves 89.62 322 *e*P **P 16 55 05.6 +0.1**
PVCC *e**PP **pP 16 55 40.0 -1.1**
PVCC *e* 16 58 37.9
PVCC MLR MLR
comp=Z,400nm,21.1s
KEK Kerkira 89.67 311 P **P 16 55 04.5 -1.5**
GOPC GO Pecny, Ondr 89.71 322 *e*P **P 16 55 06.1 +0.1**
GOPC *ex* x 17 06 39.6
GOPC AMS AMS 17 38 50.0
comp=Z,500nm,18.7s
GOPC GO Pecny, Ondr 89.71 322 *e*P **P 16 55 06.1 +0.1**
GOPC MLR MLR
comp=Z,500nm,18.7s
CONA Conrad Observa 89.74 319 *i* PcP **P 16 55 06.0 -0.3**
comp=Z,7.4nm,0.9s,SNR=6.1
HCY Herceg Novi 89.78 314 ⇑*i*P **P 16 55 05.7 -0.8**
PRU Pruhonice 89.83 322 *e*P **P 16 55 06.5 0.0**
PRU *ex* x 16 55 12.1
PRU *e*pP **pP 16 55 40.4 -1.6**
PRU *e*PP **PP 16 58 36.4 -4.1**
PRU *e*S **S 17 05 44.1 -2.8**
PRU *ex* x 17 06 41.9
PRU AMS AMS 17 38 30.0
comp=Z,500nm,19.3s
PRU Pruhonice 89.83 322 *e*P **P 16 55 06.5 0.0**
PRU *e**PP **pP 16 55 40.4 -1.6**
PRU *e* 16 58 36.4
PRU *e*S **S 17 05 44.1 -2.8**
PRU MLR MLR
comp=Z,500nm,19.3s
BRG Berggiesshubel 89.87 323 *i* P **P 16 55 06.7 0.0**
comp=Z,45nm,1.0s
BRG *i* pP **pP 16 55 40.0 -2.2**
BRG comp=Z,20nm,1.1s *i* sP **sP 16 55 53.2 -3.7**
BRG comp=Z,27nm,1.2s *e*PP **PP 16 58 36.5 -4.3**
BRG comp=Z,11nm,1.2s S **S 17 05 42.0 -5.2**
BRG SS **SS 17 11 38.0 -9.2**
comp=N,278nm,15.4s
comp=E,440nm,26.3s
comp=Z,471nm,23.0s
BRG Berggiesshubel 89.87 323 *i* P **P 16 55 06.7 0.0**
BRG *i **PP **pP 16 55 40.0 -2.2**
BRG *e* 16 58 36.5
BRG S **S 17 05 42.0 -5.2**
BRG pmax pmax
comp=Z,45nm,1.0s
BRG pmax pmax
comp=Z,20nm,1.2s
BRG pmax pmax
comp=N,27nm,1.2s
BRG pmax pmax
comp=Z,11nm,1.2s
BRG MLR MLR
comp=N,278nm,15.4s
BRG MLR MLR
comp=E,440nm,26.3s
BRG MLR MLR
comp=Z,471nm,23.0s
BLY Banja Luka 89.94 316 ⇑*i*P **P 16 55 08.0 +0.8**
ARSA Arzberg 90.19 319 *i* PcP **P 16 55 08.0 -0.3**
comp=Z,12nm,0.9s,SNR=13
MBAR Mbarara 90.21 269 *e*P **P 16 55 08.6 -0.6**
MBAR pmax pmax
comp=Z,69nm,0.8s
MBAR Mbarara 90.21 269 *e*P **P 16 55 08.6 -0.6**
comp=Z,69nm,0.8s
MUD Monsted U'grnd 90.25 329 *i* P **P 16 55 07.6 -0.7**
comp=Z,45nm,1.0s
MUD Monsted U'grnd 90.25 329 *i* P **P 16 55 07.6 -0.7**
MUD pmax pmax
comp=Z,45nm,1.0s
CLL Collm 90.25 323 ⇑*i*P **P 16 55 08.0 -0.5**
comp=Z,26nm,0.9s
CLL *e*pP **pP 16 55 41.0 -3.0**
CLL *e*sP **sP 16 55 55.0 -3.6**
CLL *e* 16 58 21.0
CLL *e*PP **PP 16 58 42.0 -1.8**
comp=Z,15nm,1.1s
CLL *e* 16 58 47.0
CLL *e*PS **SP 17 06 52.0 -5.3**
CLL *e*PPS PPS 17 07 51.0
CLL *e*SS **SS 17 11 54.0 +1.3**
CLL *e*sSS 17 12 48.0
CLL *e*SSS SSS 17 17 00.0
CLL *e* 17 18 00.0
CLL *e*SSSS 17 18 48.0
CLL *e* 17 20 24.0
CLL LmV 17 40 00.0
comp=Z,400nm,19.0s
CLL Collm 90.25 323 ⇑*i*P **P 16 55 08.0 -0.5**
CLL *e**PP **pP 16 55 41.0 -3.0**
CLL *e* 16 58 42.0
CLL pmax pmax
comp=Z,26nm,0.9s
CLL pmax pmax
comp=Z,15nm,1.1s
CLL Collm 90.25 323 *e*P **P 16 55 07.2 -1.3**
comp=Z,29nm,1.0s
CLL *e*PP **PP 16 58 42.4 -1.5**
SOKA Soboth 90.70 318 *i* PcP **P 16 55 10.5 -0.3**
comp=Z,21nm,0.8s,SNR=32
KHC Kasperske Hory 90.73 321 *e*P **P 16 55 10.5 -0.3**
KHC *e*sP **sP 16 56 06.0 +5.0**
KHC Kasperske Hory 90.73 321 *e*P **P 16 55 10.5 -0.3**
KHC *e* 16 56 06.0
GEC2 GERESS Array S 90.76 321 *e*P **P 16 55 10.3 -0.7**
GEC2 pmax pmax
comp=Z,26nm,0.9s
GEC2 GERESS Array S 90.76 321 *e*P **P 16 55 10.3 -0.7**
comp=Z,26nm,0.9s
GERES GERESS Array B 90.76 321 P **P 16 55 10.8 -0.2**
comp=Z,18nm,0.8s,baz=69,slow=4.4,SNR=105
GERES PP **PP 16 58 52.9 +4.9**
comp=Z,3.5nm,0.8s,baz=60,slow=7.9,SNR=4.2
GERES PKKPbc **PKKPbc 17 12 37.1 -0.5**
comp=Z,0.7nm,0.8s,baz=197,slow=1.4,SNR=6.8
GERES LR LR 17 36 18.6
comp=Z,408nm,20.8s,baz=75,slow=36
GEA0 GERESS Array S 90.76 321 *e*P **P 16 55 10.2 -0.8**
MOA Molln 90.77 320 *i* PcP **P 16 55 11.1 +0.1**
comp=Z,53nm,0.8s,SNR=56
NKC Novy Kostel 90.99 322 *e*P **P 16 55 11.9 -0.1**
NKC Novy Kostel 90.99 322 *e*P **P 16 55 11.9 -0.1**
MAW Mawson 91.05 199 P **P 16 55 11.4 -0.2**
comp=Z,22nm,1.0s,baz=45,slow=6.8,SNR=21
MAW PKKP **PKKPdf 17 12 33.3 -1.1**
comp=Z,2.3nm,0.8s,baz=247,slow=5.4,SNR=4.4
MAW LR LR 17 31 04.2
comp=Z,115nm,20.5s,baz=58,slow=32
MAW Mawson 91.05 199 *e*P **P 16 55 11.0 -0.6**
comp=Z,5.8nm,1.0s
MAW PKKP **PKKPdf 17 12 33.3 -1.1**
OBKA Obir 91.08 318 *i* PcP **P 16 55 12.2 -0.3**
comp=Z,28nm,0.9s,SNR=27
MYKA Terra Mystica 91.61 319 *i* PcP **P 16 55 14.3 -0.7**
comp=Z,6.1nm,0.6s
MATE Matera 91.63 312 ⇑*i*P **P 16 55 14.8 -0.3**
KBA Koelnbreinsper 91.64 319 *i* PcP **P 16 55 14.5 -0.8**
comp=Z,23nm,0.8s,SNR=26
BBB Bella Bella 91.77 35 P **P 16 55 15.6 +0.1**
comp=Z,6.3nm,1.0s,baz=15,slow=12,SNR=3.5
TRI Trieste 91.88 318 *e*P **P 16 55 14.8 -1.3**
TRI *e* 16 58 59.4
TRI pmax pmax
comp=Z,33nm,0.9s
TRI Trieste 91.88 318 *e*P **P 16 55 14.8 -1.3**
comp=Z,33nm,0.9s
TRI *e*PP **PP 16 58 59.4 +2.6**
KULLO Kullorsuaq 91.97 359 ⇑*i*P **P 16 55 15.6 -0.4**
comp=Z,35nm,0.9s
KULLO Kullorsuaq 91.97 359 ⇑*i*P **P 16 55 15.6 -0.4**
KULLO pmax pmax
comp=Z,35nm,0.9s
TIP Timpagrande 92.08 311 ⇓*i*P **P 16 55 17.7 +0.4**
TIP Timpagrande 92.08 311 P **P 16 55 14.6 -2.7**
TIP Timpagrande 92.08 311 *e*P **P 16 55 16.6 -0.7**
comp=Z,37nm,1.0s
TIP *e*PP **PP 16 59 01.9 +3.2**
SCO Scoresbysund 92.28 348 *i* P **P 16 55 19.3 +1.9**
comp=Z,12nm,1.0s
SCO Scoresbysund 92.28 348 *e*P **P 16 55 19.3 +1.9**
SCO pmax pmax
comp=Z,12nm,1.0s
ABTA Abfaltersbach 92.29 319 *i* PcP **P 16 55 17.3 -0.8**
comp=Z,24nm,0.8s,SNR=15
CUC Castrocucco 92.49 312 *e*P **P 16 55 17.8 -1.3**
comp=Z,10.0nm,0.9s
CUC *e*PP **PP 16 59 06.9 +5.1**
WTTA Wattenberg 92.64 320 *i* PcP **P 16 55 19.1 -0.8**
comp=Z,53nm,0.8s,SNR=24
WATA Walderalm 92.65 320 *i* PcP **P 16 55 19.2 -0.7**
comp=Z,34nm,0.9s,SNR=24
YKW3 Yellowknife Ar 92.76 22 *e*P **P 16 55 20.0 +0.2**
comp=Z,44nm,0.9s
YKW3 *e*PKKPdf **PKKPdf 17 12 28.6 -0.9**
YKA Yellowknife Ar 92.81 23 P **P 16 55 20.4 +0.4**
comp=Z,37nm,0.9s,baz=309,slow=4.5,SNR=184
YKA pP **pP 16 55 53.4 -2.2**
comp=Z,9.1nm,0.9s,baz=308,slow=4.6,SNR=3.6
YKA PKiKP **PKiKP 17 00 07.7 +0.6**
comp=Z,0.7nm,0.6s,baz=308,slow=2.1,SNR=3.9
YKA PKKP **PKKPdf 17 12 28.8 -0.6**
comp=Z,5.1nm,0.7s,baz=126,slow=2.4,SNR=31
YKB5 Yellowknife Ar 92.81 23 *e*P **P 16 55 19.5 -0.6**
SUMG Summit 92.91 354 ⇑*i*P **P 16 55 20.9 0.0**
comp=Z,37nm,1.1s
SUMG Summit 92.91 354 ⇑*i*P **P 16 55 20.9 0.0**
SUMG pmax pmax
comp=Z,37nm,1.1s
SUMG Summit 92.91 354 *e*P **P 16 55 20.6 -0.3**
comp=Z,37nm,1.1s
MOTA Moosalm 92.94 320 *i* PcP **P 16 55 20.7 -0.5**
comp=Z,62nm,0.8s,SNR=72
CEL Celeste 93.02 310 *e*P **P 16 55 21.0 -0.6**
comp=Z,73nm,1.0s
RETA Reutte 93.10 320 *i* PcP **P 16 55 21.2 -0.7**
comp=Z,10nm,0.7s,SNR=9.9
FETA Feichten 93.31 320 *i* PcP **P 16 55 22.7 -0.2**
comp=Z,45nm,0.8s,SNR=28
AQU L'Aquila 93.35 315 *e*P **P 16 55 23.3 +0.2**
AQU pmax pmax
comp=Z,53nm,0.9s
AQU L'Aquila 93.35 315 *e*P **P 16 55 23.2 +0.2**
comp=Z,53nm,0.9s
STU Stuttgart 93.52 322 *e*P **P 16 55 24.0 +0.3**
STU pmax pmax
comp=Z,37nm,0.9s
STU Stuttgart 93.52 322 *e*P **P 16 55 24.0 +0.3**
comp=Z,37nm,0.9s
PPT Papeete 93.67 107 LR LR 17 30 00.7
comp=Z,144nm,21.9s,baz=326,slow=30
PPT2 Papeete2 93.67 107 *e*S **S 17 06 19.0 -3.6**
comp=Z,613nm,24.8s
PPT2 Papeete2 93.67 107 *e*LR LR 17 25 45.6
comp=Z,2µm,34.8s
DAVA Damuels 93.73 320 *i* PcP **P 16 55 24.4 -0.4**
comp=Z,15nm,0.9s,SNR=9.3
FUORN Ofenpass-Fuorn 93.76 320 *e*P **P 16 55 24.8 -0.3**
comp=Z,68nm,0.8s
FUORN *e*PP **PP 16 59 13.0 +1.2**
VNDA Vanda 93.95 172 P **P 16 55 24.4 -0.5**
comp=Z,16nm,0.8s,baz=317,slow=5.7,SNR=77
VNDA PKKPbc **PKKPdf 17 12 28.1 -1.3**
comp=Z,2.8nm,0.8s,baz=185,slow=0.4,SNR=9.9
VNDA LR LR 17 35 38.1
comp=Z,92nm,20.9s,baz=344,slow=34
VNDA Vanda 93.95 172 *e*P **P 16 55 23.8 -1.1**
comp=Z,15nm,0.8s
VNDA *e*PKKPdf **PKKPdf 17 12 25.9 -3.5**
BFO Black Forest 94.23 322 *e*P **P 16 55 26.3 -0.7**
BFO pmax pmax
comp=Z,13nm,0.9s
BFO Black Forest 94.23 322 *e*P **P 16 55 26.3 -0.7**
comp=Z,13nm,0.9s
LANF Langenberg 94.26 323 *e*P **P 16 55 27.1 0.0**
TUE Stuetta 94.40 320 *e*P **P 16 55 26.5 -1.5**
comp=Z,15nm,0.9s
TUE *e*PP **PP 16 59 19.0 +2.3**
MEM Membach 94.56 325 P **P 16 55 28.3 0.0**
comp=Z,13nm,1.1s
VLC Villacollemand 94.69 317 *e*P **P 16 55 28.0 -1.2**
comp=Z,11nm,0.9s
SBA Scott Base 94.91 171 *e*P **P 16 55 29.2 0.0**
SBA pmax pmax
comp=Z,17nm,1.5s
SBA Scott Base 94.91 171 *e*P **P 16 55 29.2 0.0**
comp=Z,17nm,1.5s
WLF Walferdange 94.91 324 P **P 16 55 31.1 +1.1**
comp=Z,26nm,1.0s
WLF Walferdange 94.91 324 *e*P **P 16 55 30.6 +0.6**
WLF pmax pmax
comp=Z,40nm,0.9s
WLF Walferdange 94.91 324 *e*P **P 16 55 30.6 +0.6**
comp=Z,40nm,0.9s
ECH Echery 94.98 322 *e*P **P 16 55 29.5 -0.9**
BCLA Clavier 95.04 325 P **P 16 55 29.8 -0.7**
TBI Tubuai 95.05 113 *e*S **S 17 06 27.5 -6.8**
comp=Z,460nm,29.2s
TBI Tubuai 95.05 113 *e*LR LR 17 26 30.7
comp=Z,824nm,39.0s

MOF	Molkenrain	95.16	322	eP	P	16 55 30.8	-0.5
LOMF	Lomont	95.57	321	eP	P	16 55 32.3	-0.9
DOU	Dourbes	95.60	325	P	P	16 55 33.2	+0.1
SENIN	Lac Senin/Sane	95.72	320	eP	P	16 55 32.9	-1.2
	comp=Z,15nm,0.8s						
LSZ	Lusaka	95.98	256	eP	P	16 55 35.5	-0.2
LSZ				pmax	pmax		
	comp=Z,18nm,0.7s						
LSZ	Lusaka	95.98	256	eP	P	16 55 35.5	-0.2
	comp=Z,18nm,0.7s						
PGC	Sidney	96.02	37	eP	P	16 55 35.8	+0.7
	comp=Z,30nm,1.3s						
ILULI	Ilulissat	97.18	357	i P	P	16 55 39.7	-0.2
	comp=Z,20nm,0.8s						
ILULI	Ilulissat	97.18	357	i P	P	16 55 39.7	-0.2
ILULI				pmax	pmax		
	comp=Z,20nm,0.8s						
VSL	Villasalto	97.27	313	eP	P	16 55 39.3	-1.7
	comp=Z,14nm,0.9s						
F04A	Amboy	97.93	39	eP	Pdif	16 55 45.0	+1.3
	comp=Z,13nm,0.9s						
SSB	Saint Sauveur	97.94	320	eP	P	16 55 43.5	-0.3
SSB				e		16 59 43.4	
SSB				pmax	pmax		
	comp=Z,10.0nm,0.9s						
SSB	Saint Sauveur	97.94	320	eP	P	16 55 43.5	-0.3
	comp=Z,10nm,0.9s						
SSB				ePP	PP	16 59 43.4	-0.3
PLDF	La Plantade	98.17	321	eP	Pdif	16 55 45.5	+0.5
AGO	Saint Agoulin	98.43	321	eP	Pdif	16 55 47.6	+1.6
LBL	Lubilhac	98.76	321	eP	Pdif	16 55 47.9	+0.3
I04A	Tendick Farm,	98.96	41	P	Pdif	16 55 49.2	+0.7
	baz=299						
SFJD	Kangerlussuaq	99.36	357	i P	Pdif	16 55 49.4	-0.2
	comp=Z,19nm,0.8s						
SFJD	Kangerlussuaq	99.36	357	i P	Pdif	16 55 49.4	-0.2
SFJD				pmax	pmax		
	comp=Z,19nm,0.8s						
SFJD	Kangerlussuaq	99.36	357	ePdif	Pdif	16 55 48.6	-1.0
	comp=Z,25nm,0.9s						
C09A	Chrisman Ranch	99.44	36	ePKKPbc	PKKPbc	17 12 13.2	-1.2
SYO	Syowa Base	99.49	201	eX	Pdif	16 55 47.2	-2.8
NEW	Newport	99.83	35	P	Pdif	16 55 52.8	+0.5
	comp=Z,9.1nm,0.9s,baz=309,slow=4.2,SNR=7.9						
NEW	Newport	99.83	35	P	Pdif	16 55 53.3	+1.0
	baz=303						
NEW	Newport	99.83	35	eP	Pdif	16 55 53.3	+1.0
NEW				pmax	pmax		
	comp=Z,9.0nm,0.9s						
NEW	Newport	99.83	35	ePdif	Pdif	16 55 53.2	+1.0
	comp=Z,9.1nm,0.9s						
J05D	Fort Rock, OR	99.96	41	P	Pdif	16 55 54.3	+1.2
	baz=299						
LBTB	Lobatse	100.28	247	eP	Pdif	16 55 54.6	-0.2
LBTB	Lobatse	100.28	247	ePdif	Pdif	16 55 54.6	-0.2
TAOE	Nuku Hiva Isla	100.77	97	eLR	LR	17 28 52.5	
	comp=Z,545nm,28.7s						
BOSA	Boshof	101.20	243	P	Pdif	16 55 58.2	-0.5
	comp=Z,13nm,0.8s,baz=80,slow=4.0,SNR=23						
BOSA				PP	PP	17 00 07.4	-2.3
	comp=Z,6.6nm,0.9s,baz=56,slow=9.0,SNR=5.9						
WVOR	Wild Horse Val	102.04	41	eP	Pdif	16 56 03.0	+0.7
WVOR	Wild Horse Val	102.04	41	ePdif	Pdif	16 56 03.0	+0.7
MSO	Missoula	102.42	35	ePKKPbc	PKKPbc	17 12 04.9	-1.1
FCC	Fort Churchill	102.47	18	eP	Pdif	16 56 02.8	-0.8
FCC	Fort Churchill	102.47	18	ePdif	Pdif	16 56 02.8	-0.8
PAHR	Pah Rah Range	102.94	43	ePdif	Pdif	16 56 09.6	+3.2
PAHR				ePP	PP	17 00 20.7	-1.1
QSPA	South Pole Qui	103.47	180	ePdif	Pdif	16 56 07.5	-0.4
	comp=Z,20nm,0.7s						
DLMT	Dillon	104.04	36	ePdif	Pdif	16 56 12.8	+1.6
	comp=Z,3.8nm,0.8s						
NVAR	Mina Array Bea	104.31	44	Pdiff	Pdif	16 56 13.7	+1.1
	comp=Z,2.1nm,0.9s,baz=272,slow=4.7,SNR=9.5						
NVAR				PKiKP	PKiKP	17 00 30.2	+1.6
	comp=Z,2.5nm,0.8s,baz=264,slow=2.4,SNR=8.5						
NVAR				PKKPbc	PKKPbc	17 11 59.8	-0.5
	comp=Z,3.1nm,0.7s,baz=136,slow=3.9,SNR=7.9						
NVAR				PKKPab	PKKPab	17 12 18.4	-2.0
	comp=Z,3.5nm,0.7s,baz=132,slow=4.4,SNR=8.5						
ELK	Elko	105.09	41	ePKKPab	PKKPab	17 12 14.7	-2.3
DAC	Darwin (Calif)	105.89	46	ePKKPab	PKKPab	17 12 12.0	-1.3
HVU	Hansel Valley	106.04	39	ePKiKP	PKiKP	17 00 32.9	+1.2
RLMT	Red Lodge	106.05	34	ePKKPab	PKKPab	17 12 10.5	-2.4
MOOW	Moose Ponds	106.07	36	ePKKPab	PKKPab	17 12 09.5	-3.2
MPMC	Manual Prospec	106.07	46	P	PKiKP	17 00 32.9	+1.0
	baz=301						
R11A	Troy Canyon, C	106.17	43	P	PKiKP	17 00 32.1	+0.1
	baz=303						
R11A	Troy Canyon, C	106.17	43	ePKiKP	PKiKP	17 00 33.5	+1.5
R11A				ePKKPab	PKKPab	17 12 10.6	-1.5
ESDC	Sonseca Array	106.21	319	PP	PP	17 00 46.0	+0.2
	comp=Z,3.9nm,0.9s,baz=58,slow=7.9,SNR=7.2						
SNOW	Snow King Moun	106.24	36	ePKiKP	PKiKP	17 00 33.4	+1.3
REDW	Red Top Meadow	106.24	37	ePKiKP	PKiKP	17 00 32.7	+0.7
EDW2	Edwards Air Fo	106.31	47	P	PKiKP	17 00 33.9	+1.8
	baz=300						
TSUM	Tsumeb	106.66	254	PKKPbc	PKKPbc	17 11 53.2	+0.8
	comp=Z,0.8nm,0.8s,baz=10,slow=3.7,SNR=3.6						
TSUM				PKKPab	PKKPab	17 12 09.0	+1.0
	comp=Z,7.0nm,1.0s,baz=240,slow=4.2,SNR=9.1						
TSUM	Tsumeb	106.66	254	ePdif	Pdif	16 56 23.6	+0.3
TSUM				ePKiKP	PKiKP	17 00 33.2	0.0
TSUM				PKKPbc	PKKPbc	17 11 53.2	+0.8
TSUM				PKKPab	PKKPab	17 12 09.0	+1.0
HWUT	Hardware Ranch	106.88	38	ePKiKP	PKiKP	17 00 34.1	+0.8
HWUT				ePKKPbc	PKKPbc	17 11 51.8	-0.8
HWUT				ePKKPdf	PKKPab	17 12 07.0	-2.0
DUG	Dugway, Tooele	106.93	40	ePKiKP	PKiKP	17 00 33.9	+0.6
DUG				ePKKPdf	PKKPab	17 12 07.2	-1.5
GSC	Goldstone, Bar	106.94	46	P	PKiKP	17 00 33.7	+0.3
	baz=301						
GSC	Goldstone, Bar	106.94	46	ePKiKP	PKiKP	17 00 35.8	+2.4
PSUT	Pine Spring	107.21	42	ePKiKP	PKiKP	17 00 36.2	+2.2
PSUT				ePKKPdf	PKKPab	17 12 06.3	-1.2
PDAR	Pinedale Array	107.36	36	Pdiff	Pdif	16 56 26.3	+0.2
	comp=Z,0.7nm,0.9s,baz=294,slow=1.5,SNR=5.7						
PDAR				PKiKP	PKiKP	17 00 34.6	+0.5
	comp=Z,0.5nm,0.4s,baz=64,slow=1.6,SNR=8.0						
PDAR				PP	PP	17 00 52.9	-1.5
	comp=Z,1.9nm,0.9s,baz=346,slow=1.9,SNR=6.8						
PDAR				PKKPbc	PKKPbc	17 11 49.4	-1.8
	comp=Z,2.3nm,0.7s,baz=124,slow=4.5,SNR=16						
PDAR				PKKPab	PKKPdf	17 12 04.0	+0.8
	comp=Z,7.2nm,0.8s,baz=120,slow=4.9,SNR=30						
SHPR	Sheep Range	107.44	44	ePKKPdf	PKKPdf	17 12 05.2	+2.3
NLU	North Lily Min	107.53	40	ePKiKP	PKiKP	17 00 36.6	+2.1
POLO	Lamas de Olo	107.60	322	ePKiKP	PKiKP	17 00 34.6	+0.2
GMRC	Granite Mounta	108.01	46	P	PKiKP	17 00 36.2	+0.8
	baz=302						
BELC	Belle Mtn. Jos	108.17	47	P	PKiKP	17 00 37.0	+1.2
	baz=301						
PCBR	Castelo Branco	108.33	320	ePKiKP	PKiKP	17 00 36.2	+0.5
A29A	Manning Farm,	108.36	27	P	PKiKP	17 00 35.7	+0.2
	baz=319						
LCMT	Little Creek M	108.46	43	ePKKPab	PKKPab	17 12 00.8	-1.1
TMUT	Trail Mountain	108.46	40	ePKiKP	PKiKP	17 00 38.2	+1.8
PMRV	Marv??o	108.52	320	ePP	PP	17 01 06.1	+3.5
MTPU	Mount Pierson	108.57	42	ePKiKP	PKiKP	17 00 38.7	+2.0
ULM	Lac du Bonnet	108.73	24	PKKPab	PKKPab	17 11 56.4	-4.3
	comp=Z,6.2nm,0.7s,baz=138,slow=1.5,SNR=5.4						
KNB	Kanab	108.73	43	ePKKPab	PKKPab	17 11 58.6	-2.1
BC3	Big Chuckawall	108.74	47	P	PKiKP	17 00 38.2	+1.3
	baz=302						
IKP	In-Ko-Pah, Jac	108.79	48	P	PKiKP	17 00 36.6	-0.3
	baz=301						
PESTR	Estremoz	108.98	320	ePKiKP	PKiKP	17 00 37.4	+0.4
SRU	San Rafael Swe	109.00	40	ePKiKP	PKiKP	17 00 38.0	+0.8
SRU				ePKKPab	PKKPab	17 11 57.1	-2.4
MDND	Maddock	109.00	28	ePKiKP	PKiKP	17 00 36.5	-0.3
MDND				ePKKPbc	PKKPbc	17 11 43.5	-2.4
MDND				ePKKPab	PKKPab	17 11 56.5	-3.0
PBAR	Barrancos	109.03	319	ePKiKP	PKiKP	17 00 38.3	+1.2
U15A	North Rim	109.42	43	ePKKPab	PKKPab	17 11 56.0	-1.7
G26A	Maurine	109.44	31	P	PKiKP	17 00 37.9	+0.2
	baz=315						
RSSD	Black Hills	109.52	33	P	PKiKP	17 00 38.3	+0.2
	baz=314						
RSSD	Black Hills	109.52	33	ePKiKP	PKiKP	17 00 38.2	+0.2
RSSD				ePKKPbc	PKKPbc	17 11 42.6	-1.9
PBEJ	Beja	109.65	319	ePP	PP	17 01 11.3	+0.5
G27A	Dupree	109.71	31	P	PKiKP	17 00 38.7	+0.4
	baz=316						
I25A	Rochford	109.75	33	P	PKiKP	17 00 38.5	0.0
	baz=314						
O20A	White River Ci	109.77	38	P	PKiKP	17 00 38.9	+0.2
	baz=309						
O20A	White River Ci	109.77	38	ePKiKP	PKiKP	17 00 39.7	+1.0
O20A				ePKKPab	PKKPab	17 11 54.6	-1.5
C31A	Landman Farms,	109.87	27	P	PKiKP	17 00 38.1	-0.3
	baz=320						
B32A	Ashes, Strandq	109.92	25	P	PKiKP	17 00 38.0	-0.4
	baz=321						
PVAQ	Vaqueiros	109.92	318	ePP	PP	17 01 12.1	-0.7
A33A	Warroad	109.96	24	P	PKiKP	17 00 38.4	-0.1
	baz=322						
MESJ	Messejana	109.98	319	ePP	PP	17 01 13.0	-0.2
PCVE	Castro Verde	109.99	319	ePKiKP	PKiKP	17 00 39.6	+0.7
PNCL	Nicolau / Gran	110.02	320	ePKiKP	PKiKP	17 00 40.3	+1.4
PBDV	Barranco-do-Ve	110.15	318	ePP	PP	17 01 14.8	+0.3
H27A	Howes	110.17	31	P	PKiKP	17 00 39.4	+0.3
	baz=315						
Y14A	Wickenburg	110.31	46	ePKKPab	PKKPab	17 11 51.2	-2.2
D31A	Mcclaflin, Tow	110.45	27	P	PKiKP	17 00 39.6	+0.1
	baz=320						
WUAZ	Wupatki	110.55	43	P	PKiKP	17 00 40.6	+0.3
	baz=305						
WUAZ	Wupatki	110.55	43	ePKiKP	PKiKP	17 00 41.6	+1.3
WUAZ				ePKKPab	PKKPab	17 11 51.0	-1.5
PV01	Paradox Valley	110.81	40	ePKiKP	PKiKP	17 00 41.7	+0.9
SMCO	Snowmass	111.13	38	ePKiKP	PKiKP	17 00 42.5	+0.9
SMCO				ePKKPab	PKKPab	17 11 49.0	-1.3
G30A	Faulkton	111.24	29	P	PKiKP	17 00 41.2	+0.1
	baz=318						
MVCO	Mesa Verde	111.42	41	P	PKiKP	17 00 42.3	+0.3
	baz=308						
MVCO	Mesa Verde	111.42	41	ePKKPab	PKKPab	17 11 47.0	-1.8
I29A	Vivian Onida	111.49	31	P	PKiKP	17 00 41.8	+0.2
	baz=317						
SCHQ	Schefferville	111.51	5	PKiKP	PKiKP	17 00 41.5	+0.2
	comp=Z,4.7nm,0.9s,baz=5.8,slow=2.8,SNR=4.7						
214A	Organ Pipe Nat	111.53	47	P	PKiKP	17 00 42.9	+0.8
	baz=303						
ISCO	Idaho Springs	111.54	37	ePKKPab	PKKPab	17 11 46.6	-1.9
F33A	5 Mile Ranch,	112.01	27	P	PKiKP	17 00 42.7	+0.3
	baz=321						
X18A	Snowflake	112.07	44	ePKiKP	PKiKP	17 00 44.8	+1.6
EYMN	Ely	112.29	23	P	PKiKP	17 00 42.5	-0.5
	baz=326						
EYMN	Ely	112.29	23	ePKiKP	PKiKP	17 00 42.3	-0.7
J30A	Dallas	112.40	31	P	PKiKP	17 00 43.3	-0.1
	baz=317						
G33A	Ortonville	112.44	28	P	PKiKP	17 00 43.2	-0.2
	baz=321						
E36A	McGregor	112.76	25	P	PKiKP	17 00 43.7	-0.2
	baz=324						
TUC	Tucson	112.77	46	P	PKiKP	17 00 46.1	+1.6
	baz=304						
TUC	Tucson	112.77	46	ePKIKP	PKiKP	17 00 45.8	+1.4
TUC				e		17 01 32.9	
TUC	Tucson	112.77	46	ePKiKP	PKiKP	17 00 45.8	+1.4
TUC				ePP	PP	17 01 32.9	-0.6
SDCO	Great Sand Dun	112.94	38	P	PKiKP	17 00 45.5	+0.6
	baz=310						
SDCO	Great Sand Dun	112.94	38	ePKiKP	PKiKP	17 00 44.9	0.0
SDCO				ePKKPab	PKKPab	17 11 40.5	-1.6
SNAA	Sanae	113.11	197	P	PKiKP	17 00 43.5	-0.3
SNAA	Sanae	113.11	197	PKP	PKKPbc	17 11 29.1	-4.2
SNAA	Sanae	113.11	197	ePKiKP	PKiKP	17 00 42.4	-1.4
SNAA	Sanae	113.11	197	ePKiKP	PKiKP	17 00 42.4	-1.4
SNAA				ePKKPbc	PKKPbc	17 11 29.9	-3.3
SNAA				ePKKPab	PKKPab	17 11 37.8	0.0
H34A	Spellman Lake,	113.15	28	P	PKiKP	17 00 45.0	+0.3
	baz=321						
F36A	Milaca	113.18	25	P	PKiKP	17 00 44.5	-0.2
	baz=324						
ECSD	EROS Data Cent	113.48	29	P	PKiKP	17 00 45.3	-0.1
	baz=320						
ECSD	EROS Data Cent	113.48	29	ePKiKP	PKiKP	17 00 44.9	-0.5
ECSD				ePKKPbc	PKKPbc	17 11 28.7	-2.5
ECSD				ePKKPab	PKKPab	17 11 36.4	-3.1
H35A	Sunnyside Ranc	113.54	27	P	PKiKP	17 00 45.7	+0.3
	baz=322						
K32A	Verdigre	113.64	30	P	PKiKP	17 00 46.0	+0.2
	baz=318						
T25A	Trinidad	113.99	38	P	PKiKP	17 00 48.0	+1.2
	baz=311						
T25A	Trinidad	113.99	38	ePKiKP	PKiKP	17 00 47.8	+1.0
T25A				ePKKPab	PKKPab	17 11 35.7	-1.7
LAZ	Ladron	114.01	42	ePKKPab	PKKPab	17 11 35.9	-1.4
H36A	Jessenland, He	114.03	26	P	PKPdf	17 00 46.5	+0.1
	baz=323						
TOA0	Torodi Ar. Sit	114.07	291	ePKiKP	PKPdf	17 00 46.6	-0.6
TORD	Torodi Ar. Bea	114.07	291	PKP	PKPdf	17 00 46.4	-0.8
	comp=Z,10nm,0.8s,baz=54,slow=1.7,SNR=41						
TORD				PKKPbc	PKKPbc	17 11 27.6	-0.7
	comp=Z,2.7nm,0.9s,baz=272,slow=3.0,SNR=7.9						
TORD				PKKPab	PKKPab	17 11 36.8	+0.7
	comp=Z,4.1nm,0.8s,baz=259,slow=4.0,SNR=11						
ANMO	Albuquerque	114.11	41	P	PKPdf	17 00 48.3	+1.2
	baz=309						
ANMO	Albuquerque	114.11	41	ePKIKP	PKPdf	17 00 47.9	+0.8
ANMO	Albuquerque	114.11	41	ePKiKP	PKiKP	17 00 47.9	+0.8
ANMO				ePKKPab	PKKPab	17 11 34.9	-1.9
J34A	George	114.13	29	P	PKPdf	17 00 46.6	0.0
	baz=320						
319A	Douglas	114.35	46	ePKiKP	PKiKP	17 00 49.2	+1.6
SRIG	Santa Rosalia	114.40	51	ePKKPab	PKKPab	17 11 34.5	-0.5
HSIG		114.46	49	ePKKPbc	PKKPbc	17 11 27.6	+0.3
HSIG				ePKKPab	PKKPab	17 11 33.5	-1.4
BGNE	Belgrade	114.49	31	ePKiKP	PKiKP	17 00 47.1	-0.3
BNM	Barren Site	114.49	42	ePKiKP	PKPdf	17 00 48.8	+0.9
BNM				ePKKPab	PKKPab	17 11 33.5	-1.6
121A	Cookes Peak, D	114.70	44	P	PKPdf	17 00 49.5	+1.2
	baz=307						
121A	Cookes Peak, D	114.70	44	ePKiKP	PKPdf	17 00 48.7	+0.4
COWI	Conover	114.71	22	ePKiKP	PKPdf	17 00 47.8	+0.1
VNA2	Neumayer--Watz	114.75	197	P	PKPdf	17 00 47.1	+0.2
	baz=77,slow=1.9						
VNA2	Neumayer--Watz	114.75	197	PKP	PKKPbc	17 11 23.7	-3.8
	baz=296,slow=1.0						
J36A	Seneca 1, Swea	114.84	28	P	PKPdf	17 00 48.0	0.0
	baz=322						
K35A	Storm Lake	114.91	29	P	PKPdf	17 00 47.9	-0.3
	baz=321						
VNA1	Neumayer--Stat	115.14	197	P	PKPdf	17 00 47.0	-0.6
VNA1	Neumayer--Stat	115.14	197	PKP	PKKPbc	17 11 22.0	-4.1
I38A	Scanlan Farm,	115.15	26	P	PKPdf	17 00 48.4	-0.2
	baz=324						
VNA3	Neumayer Olymp	115.19	196	P	PKPdf	17 00 47.6	-0.2
VNA3	Neumayer Olymp	115.19	196	PKP	PKKPbc	17 11 22.9	-3.2
L35A	Bielow Farm, R	115.23	29	P	PKPdf	17 00 48.7	-0.1
	baz=321						
O32A	Brockman Farm,	115.27	32	P	PKPdf	17 00 48.7	-0.3
	baz=318						
K36A	Gilmore City	115.33	28	P	PKPdf	17 00 49.1	+0.1
	baz=322						
K37A	Belmond	115.60	28	P	PKPdf	17 00 49.1	-0.4
	baz=323						
M35A	Neola	115.66	30	P	PKPdf	17 00 49.7	+0.1
	baz=320						
O33A	Hebron	115.76	32	P	PKPdf	17 00 49.5	-0.3
	baz=318						
R32A	Long Quarter,	116.38	34	P	PKPdf	17 00 51.5	+0.4
	baz=316						
M37A	Trindle Farm,	116.48	29	P	PKPdf	17 00 51.5	+0.2
	baz=322						
N36A	Muff Farm, Cla	116.51	30	P	PKPdf	17 00 51.5	+0.2
	baz=321						
P34A	Walnut Farm, R	116.54	32	P	PKPdf	17 00 51.0	-0.4
	baz=319						
S32A	Newby Ranch, P	116.77	35	P	PKPdf	17 00 51.7	-0.2
	baz=316						
MNTX	Cornudas Mount	116.83	44	P	PKPdf	17 00 53.1	+0.9
	baz=308						
MNTX	Cornudas Mount	116.83	44	ePKPdf	PKPdf	17 00 52.8	+0.6
MNTX				ePKKPbc	PKKPbc	17 11 21.6	+2.4
R33A	Olander Ranch,	116.85	34	P	PKPdf	17 00 52.4	+0.4
	baz=317						
M38A	Pleasantville	116.87	28	P	PKPdf	17 00 51.9	0.0
	baz=323						
N37A	Lee Faris, Mou	116.91	29	P	PKPdf	17 00 52.0	-0.1
	baz=321						
JFWS	Jewell Farm	116.94	25	ePKIKP	PKPdf	17 00 51.3	-0.8
JFWS	Jewell Farm	116.94	25	ePKPdf	PKPdf	17 00 51.3	-0.8
Q34A	Chapman	116.95	32	P	PKPdf	17 00 51.9	-0.3
	baz=318						
P35A	Duane Minner,	116.97	31	P	PKPdf	17 00 51.8	-0.5
	baz=319						
KSU1	Kansas State U	116.99	32	ePKPdf	PKPdf	17 00 52.8	+0.5
KSU1				ePKKPbc	PKKPbc	17 11 18.1	-0.9
MSTX	Muleshoe	117.07	40	P	PKPdf	17 00 52.7	0.0
	baz=311						
MSTX	Muleshoe	117.07	40	ePKPdf	PKPdf	17 00 53.0	+0.3
MSTX				ePKKPbc	PKKPab	17 11 21.8	-1.8
AMTX	Amarillo	117.14	39	P	PKPdf	17 00 53.4	+0.6
	baz=313						
AMTX	Amarillo	117.14	39	ePKPdf	PKPdf	17 00 53.4	+0.6
AMTX				ePKKPbc	PKKPab	17 11 21.3	-2.0
T32A	Huddler Ranch,	117.15	35	P	PKPdf	17 00 53.4	+0.8
	baz=316						
S33A	Kaszmaul Farm,	117.36	34	P	PKPdf	17 00 53.3	+0.2
	baz=317						
O37A	Wolven Farm, M	117.40	30	P	PKPdf	17 00 52.5	-0.5
	baz=321						
Q35A	Mercer Eighty,	117.47	32	P	PKPdf	17 00 53.1	-0.1
	baz=319						
T33A	Patterson Ranc	117.60	35	P	PKPdf	17 00 54.3	+0.8
	baz=316						
N39A	Derby Farms, D	117.61	28	P	PKPdf	17 00 53.3	-0.1
	baz=323						
U32A	Winter Ranch,	117.68	36	P	PKPdf	17 00 54.2	+0.5
	baz=316						
P37A	Lathrop	117.75	30	P	PKPdf	17 00 53.2	-0.5
	baz=321						
O39A	Kirksville	118.09	28	P	PKPdf	17 00 54.2	-0.1
	baz=323						
V32A	Arapaho	118.12	36	P	PKPdf	17 00 55.5	+0.9
	baz=315						
P38A	Dawn	118.12	30	P	PKPdf	17 00 54.1	-0.3
	baz=322						
U33A	Lingo Farm, Me	118.14	35	P	PKPdf	17 00 55.0	+0.4
	baz=316						
R36A	Gordon, Harris	118.14	32	P	PKPdf	17 00 54.4	-0.1
	baz=319						
S35A	Otter Creek Ra	118.20	33	P	PKPdf	17 00 54.9	+0.3
	baz=318						
T34A	McClaskey Farm	118.22	34	P	PKPdf	17 00 54.6	-0.1
	baz=317						
LMQ	La Malbaie	118.30	9	ePKPdf	PKPdf	17 00 53.6	-0.9
U34A	Anderson Ranch	118.46	35	ePKPdf	PKPdf	17 00 55.7	+0.5
U34A				ePKKPbc	PKKPbc	17 11 11.5	-2.1
R37A	Teagarden Farm	118.50	31	P	PKPdf	17 00 54.8	-0.4
	baz=320						
O40A	La Belle	118.51	28	P	PKPdf	17 00 54.8	-0.4
	baz=324						
S36A	Lake Cedric, C	118.55	32	P	PKPdf	17 00 54.6	-0.7
	baz=319						
Q38A	Cooks Store, C	118.60	30	P	PKPdf	17 00 54.6	-0.7
	baz=321						
P39B	Salisbury	118.60	29	P	PKPdf	17 00 55.0	-0.3
	baz=322						
T35A	Sooner Cattle	118.67	34	P	PKPdf	17 00 55.3	-0.3
	baz=318						
Q39A	Willow Grove F	118.84	30	P	PKPdf	17 00 55.6	-0.2
	baz=322						
W33A	Caddo, Fort Co	118.85	36	P	PKPdf	17 00 56.8	+0.8
	baz=316						
T36A	Boggs Farm, Ca	118.90	33	P	PKPdf	17 00 56.1	+0.1
	baz=319						
P40A	Paris	118.90	29	P	PKPdf	17 00 55.6	-0.3
	baz=323						
V34A	Guthrie	118.90	35	P	PKPdf	17 00 56.1	+0.1
	baz=317						
V34A	Guthrie	118.90	35	ePKPdf	PKPdf	17 00 56.4	+0.3
S37A	Fort Scott	118.92	32	P	PKPdf	17 00 55.7	-0.3
	baz=320						
U35A	Pawnee	118.95	34	P	PKPdf	17 00 56.4	+0.3
	baz=318						
WMOK	Wichita Mounta	118.97	37	P	PKPdf	17 00 56.0	-0.3
	baz=315						
WMOK	Wichita Mounta	118.97	37	ePKIKP	PKPdf	17 00 56.4	+0.2
WMOK	Wichita Mounta	118.97	37	ePKPdf	PKPdf	17 00 56.4	+0.2
R38A	Fenwick Farm,	119.06	31	P	PKPdf	17 00 55.2	-1.1
	baz=321						
SADO	Sadowa	119.12	16	ePKPdf	PKPdf	17 00 55.4	-0.7
SADO				ePP	PP	17 02 16.6	-0.3
W34A	Bridge Creek,	119.19	36	P	PKPdf	17 00 57.3	+0.7
	baz=316						
W34A	Bridge Creek,	119.19	36	ePKPdf	PKPdf	17 00 57.1	+0.5
X33A	Lawton	119.27	37	P	PKPdf	17 00 57.1	+0.3
	baz=315						
HDIL	Hopedale	119.29	26	P	PKPdf	17 00 56.5	-0.1
	baz=326						
HDIL	Hopedale	119.29	26	ePKPdf	PKPdf	17 00 56.8	+0.2
Q40A

233A	Rising Star	120.79	39	P	PKPdf	17 00 59.9	+0.1
	baz=314						
Z35A	Perchaven, San	120.86	37	P	PKPdf	17 01 00.1	+0.3
	baz=316						
134A	White-Moore Ra	120.90	38	P	PKPdf	17 01 00.3	+0.3
	baz=315						
BUF	Buffalo	120.91	17	*e*PKPdf	PKPdf	17 00 58.8	-0.9
V39A	Pettigrew	121.00	32	P	PKPdf	17 00 59.6	-0.6
	baz=320						
U40A	Yellville	121.00	31	P	PKPdf	17 00 59.6	-0.5
	baz=321						
Y36A	Durant	121.00	36	P	PKPdf	17 01 00.1	0.0
	baz=317						
T41A	Mountain View	121.01	30	P	PKPdf	17 01 00.0	0.0
	baz=322						
X37A	Clayton	121.01	35	P	PKPdf	17 01 00.2	+0.1
	baz=318						
NCB	Newcomb	121.07	13	*e*PKPdf	PKPdf	17 01 00.2	+0.2
W38A	Poteau	121.12	34	P	PKPdf	17 01 00.6	+0.3
	baz=319						
333A	Richland Sprin	121.21	40	P	PKPdf	17 01 00.6	0.0
	baz=314						
X38A	Whitesboro	121.25	34	P	PKPdf	17 01 01.1	+0.5
	baz=319						
MDV	Middlebury	121.25	12	*e*PKPdf	PKPdf	17 01 00.5	+0.2
LBNH	Lisbon	121.26	11	*e*PKIKP	PKPdf	17 01 00.6	+0.3
LBNH	Lisbon	121.26	11	*e*PKPdf	PKPdf	17 01 00.6	+0.3
234A	Clairette	121.27	39	P	PKPdf	17 01 01.2	+0.5
	baz=314						
JCT	Junction City	121.27	41	P	PKPdf	17 01 00.8	0.0
	baz=312						
JCT	Junction City	121.27	41	*e*PKIKP	PKPdf	17 01 01.0	+0.2
JCT	Junction City	121.27	41	*e*PKPdf	PKPdf	17 01 01.0	+0.2
JCT				*e*PKKPbc	PKKPbc	17 11 03.2	0.0
R44A	Waltonville	121.29	27	P	PKPdf	17 01 00.6	0.0
	baz=326						
135A	Vickery Place,	121.31	38	P	PKPdf	17 01 01.3	+0.6
	baz=315						
WVL	Waterville	121.31	9	*e*PKPdf	PKPdf	17 01 00.1	-0.3
OLIL	Olney	121.32	26	*e*PKPdf	PKPdf	17 01 00.8	+0.2
Y37A	Hugo	121.32	35	P	PKPdf	17 01 01.3	+0.6
	baz=318						
ERPA	Erie	121.32	18	*e*PKPdf	PKPdf	17 01 00.8	+0.3
MMNY	Mt. Morris Dam	121.35	16	*e*PKPdf	PKPdf	17 00 59.8	-0.7
Z36A	Blue Ridge	121.38	36	P	PKPdf	17 01 01.1	+0.3
	baz=317						
S43A	Fulton Ridge,	121.39	29	P	PKPdf	17 01 00.4	-0.3
	baz=324						
W39A	Magazine	121.41	33	P	PKPdf	17 01 00.8	-0.1
	baz=320						
V40A	Witts Springs	121.45	32	P	PKPdf	17 01 00.6	-0.4
	baz=321						
433A	Art	121.53	40	P	PKPdf	17 01 01.1	-0.1
	baz=313						
BLO	Bloomington	121.61	25	*e*PKIKP	PKPdf	17 01 01.2	+0.1
BLO	Bloomington	121.61	25	*e*PKPdf	PKPdf	17 01 01.2	+0.1
SIUC	Southern Illin	121.67	28	*e*PKPdf	PKPdf	17 01 01.4	+0.2
S44A	Carbondale	121.67	28	P	PKPdf	17 01 01.3	0.0
	baz=325						
334A	Lometa	121.67	39	P	PKPdf	17 01 01.1	-0.4
	baz=314						
WHTX	Lake Whitney,	121.69	38	*e*PKPdf	PKPdf	17 01 02.2	+0.7
ALLY	Alegheny Colle	121.70	18	*e*PKPdf	PKPdf	17 01 00.6	-0.7
HNH	Hanover	121.71	11	*e*PKPdf	PKPdf	17 01 01.7	+0.6
ACCN	Adirondack Com	121.74	12	*e*PKPdf	PKPdf	17 01 00.8	-0.4
X39A	Fountain Ranch	121.76	34	P	PKPdf	17 01 02.0	+0.4
	baz=319						
W40A	Ferguson Farm,	121.79	32	P	PKPdf	17 01 01.6	0.0
	baz=321						
V41A	Mountainview	121.80	31	P	PKPdf	17 01 01.1	-0.5
	baz=322						
Y38A	Idabel	121.86	35	P	PKPdf	17 01 01.4	-0.4
	baz=318						
PBMO	Poplar Bluff	121.86	29	*e*PKPdf	PKPdf	17 01 01.2	-0.4
136A	Ennis	121.89	37	P	PKPdf	17 01 02.5	+0.7
	baz=316						
M54A	Oil Creek Stat	121.98	18	P	PKPdf	17 01 01.2	-0.6
	baz=336						
434A	Burnet	122.01	40	P	PKPdf	17 01 01.9	-0.3
	baz=314						
MIAR	Mount Ida	122.02	33	P	PKPdf	17 01 02.3	+0.3
	baz=320						
533A	Kerrville	122.03	41	P	PKPdf	17 01 02.7	+0.5
	baz=313						
ACSO	Alum Creek Sta	122.04	21	*e*PKPdf	PKPdf	17 01 01.5	-0.4
X201	Greenbrier Sit	122.08	32	*e*PKPdf	PKPdf	17 01 01.3	-0.9
X301	Greenbrier Sit	122.10	32	*e*PKPdf	PKPdf	17 01 01.7	-0.5
X301				*e*PKKPbc	PKKPbc	17 10 58.6	-1.6
WHAR	Wooly Hollow	122.12	32	*e*PKPdf	PKPdf	17 01 01.2	-1.0
WHAR				*e*PKKPbc	PKKPbc	17 10 58.9	-1.3
V42A	Cord	122.17	31	P	PKPdf	17 01 01.9	-0.3
	baz=322						
Y39A	Lockesburg	122.20	34	P	PKPdf	17 01 02.6	+0.2
	baz=319						
335A	Moody	122.20	39	P	PKPdf	17 01 03.0	+0.5
	baz=315						
236A	Katherine and	122.23	38	P	PKPdf	17 01 03.5	+1.0
	baz=316						
W41B	Gary Mavity, V	122.23	32	P	PKPdf	17 01 01.9	-0.5
	baz=321						
137A	Heron Place, G	122.25	36	P	PKPdf	17 01 04.0	+1.5
	baz=317						
BINY	Binghamton	122.34	15	*e*PKPdf	PKPdf	17 01 02.7	+0.2
633A	Saathoff Ranch	122.36	42	P	PKPdf	17 01 03.3	+0.4
	baz=312						
TRY	Troy	122.37	13	*e*PKPdf	PKPdf	17 01 02.8	+0.4
N54A	Moraine State	122.38	19	P	PKPdf	17 01 02.0	-0.6
	baz=336						
DBIC	Dimbokro	122.42	287	PKP	PKPdf	17 01 03.0	-0.4
	comp=Z,24nm,0.8s,baz=33,slow=2.5,SNR=21						
DBIC				PP	PP	17 02 40.3	-0.9
	comp=Z,16nm,0.8s,baz=60,slow=7.7,SNR=6.0						
DBIC				PKKPab	PKKPab	17 10 59.5	-0.1
	comp=Z,3.5nm,1.0s,baz=224,slow=8.5,SNR=3.6						
534A	Blanco	122.42	41	P	PKPdf	17 01 02.9	-0.1
	baz=313						
KIC	Kosan Boka	122.42	287	*e*PKIKP	PKPdf	17 01 03.0	-0.3
	comp=Z,80nm,0.8s						
435B	Jarrell	122.45	39	P	PKPdf	17 01 03.2	+0.2
	baz=314						
X40A	Basin Creek Fa	122.46	33	P	PKPdf	17 01 03.7	+0.8
	baz=320						
336A	Riesel	122.48	38	P	PKPdf	17 01 03.4	+0.4
	baz=315						
WCI	Wyandotte Cave	122.51	25	*e*PKIKP	PKPdf	17 01 03.0	+0.1
WCI	Wyandotte Cave	122.51	25	*e*PKPdf	PKPdf	17 01 03.0	+0.1
TIC	Toumodi	122.58	287	*e*PKIKP	PKPdf	17 01 03.0	-0.7
Y40A	Okolona	122.58	34	P	PKPdf	17 01 03.2	+0.1
	baz=320						
138A	Matatall Enter	122.59	36	P	PKPdf	17 01 04.5	+1.3
	baz=318						
832A	Faith Ranch, C	122.61	43	P	PKPdf	17 01 04.3	+0.9
	baz=311						
X41A	Kaden, Bauxite	122.62	33	P	PKPdf	17 01 03.3	+0.1
	baz=321						
LIC	Lamto	122.73	287	*e*PKIKP	PKPdf	17 01 03.4	-0.5
	comp=Z,43nm,0.8s						
733A	Divot King Ran	122.77	42	P	PKPdf	17 01 04.8	+1.2
	baz=312						
WLAR	White Oak Lake	122.92	34	*e*PKPdf	PKPdf	17 01 03.9	+0.1
436A	Wall Ranch, Ga	122.94	39	P	PKPdf	17 01 04.9	+1.0
	baz=315						
833A	Chaparral WMA,	122.97	43	P	PKPdf	17 01 05.0	+1.0
	baz=312						
139A	Bunkhouse Ranc	122.97	35	P	PKPdf	17 01 04.8	+0.9
	baz=318						
HRV	Adam Dziewonsk	123.00	11	*e*PKIKP	PKPdf	17 01 04.2	+0.5
HRV	Adam Dziewonsk	123.00	11	*e*PKPdf	PKPdf	17 01 04.2	+0.5
Y41A	Eaglette Beard	123.04	33	P	PKPdf	17 01 04.3	+0.3
	baz=320						
Z40A	Long Farm, Mag	123.09	34	P	PKPdf	17 01 04.8	+0.7
	baz=319						
337A	Centerville	123.10	38	P	PKPdf	17 01 05.4	+1.2
	baz=316						
734A	La Parita Cree	123.17	42	P	PKPdf	17 01 05.5	+1.1
	baz=313						
536A	Bastrop	123.27	40	P	PKPdf	17 01 05.4	+0.9
	baz=315						
635A	Leesville	123.30	41	P	PKPdf	17 01 05.9	+1.3
	baz=314						
SSPA	Standing Stone	123.30	17	*e*PKPdf	PKPdf	17 01 04.3	0.0
338A	Crockett	123.41	37	P	PKPdf	17 01 05.7	+0.9
	baz=317						
O56A	Blue Knob Stat	123.44	18	P	PKPdf	17 01 04.6	-0.1
	baz=337						
140A	Cam and Jess,	123.46	35	P	PKPdf	17 01 05.7	+0.9
	baz=319						
NATX	Nacogdoches	123.50	36	P	PKPdf	17 01 05.7	+0.7
	baz=318						
NATX	Nacogdoches	123.50	36	*e*PKPdf	PKPdf	17 01 05.3	+0.4
Y42A	Garnett, Star	123.51	33	P	PKPdf	17 01 05.9	+1.0
	baz=321						
933A	Laredo	123.52	43	P	PKPdf	17 01 06.5	+1.4
	baz=312						
WVT	Waverly	123.60	28	*e*PKIKP	PKPdf	17 01 05.2	+0.2
WVT	Waverly	123.60	28	*e*PKPdf	PKPdf	17 01 05.2	+0.2
N59A	State Game Lan	123.61	15	P	PKPdf	17 01 04.9	-0.1
	baz=341						
735A	Kenedy	123.64	41	P	PKPdf	17 01 07.4	+2.1
	baz=313						
834A	Tilden	123.65	42	P	PKPdf	17 01 07.4	+2.1
	baz=312						
636A	Smothers Creek	123.69	40	P	PKPdf	17 01 07.9	+2.5
	baz=314						
537A	Green Hill Far	123.72	39	P	PKPdf	17 01 07.4	+2.0
	baz=315						
ODNJ	Ogdensburg	123.73	14	*e*PKPdf	PKPdf	17 01 05.4	+0.3
141A	Papa Simpson,	123.86	34	P	PKPdf	17 01 06.2	+0.6
	baz=320						
Y43A	Makayla and Ka	123.89	32	P	PKPdf	17 01 06.1	+0.5
	baz=322						
PAL	Palisades	123.97	13	*e*PKIKP	PKPdf	17 01 06.0	+0.4
PAL	Palisades	123.97	13	*e*PKPdf	PKPdf	17 01 06.0	+0.4
LUPA	Lehigh Univers	124.00	15	*e*PKPdf	PKPdf	17 01 05.9	+0.2
835A	Beeville	124.02	42	P	PKPdf	17 01 07.4	+1.4
	baz=313						
934A	Benavides	124.03	43	P	PKPdf	17 01 08.0	+1.9
	baz=312						
736A	Circle Diamond	124.04	40	P	PKPdf	17 01 08.2	+2.2
	baz=314						
BRNJ	Basking Ridge	124.12	14	*e*PKPdf	PKPdf	17 01 06.4	+0.6
637A	Eagle Lake	124.17	40	P	PKPdf	17 01 07.9	+1.6
	baz=315						
OXF	Oxford	124.18	30	*e*PKIKP	PKPdf	17 01 06.3	+0.1
OXF	Oxford	124.18	30	*e*PKPdf	PKPdf	17 01 06.2	+0.1
340A	Bronson	124.19	36	P	PKPdf	17 01 06.8	+0.5
	baz=318						
ZAIG	Zacatecas	124.21	50	*e*PKPdf	PKPdf	17 01 06.8	-0.1
ZAIG				*e*PKKPbc	PKKPab	17 10 52.5	-0.2
X45A	UM Field Stati	124.26	30	P	PKPdf	17 01 06.2	-0.2
	baz=324						
034A	Hebbronville	124.27	43	P	PKPdf	17 01 08.5	+1.9
	baz=312						
MVL	Millersville	124.32	16	*e*PKPdf	PKPdf	17 01 06.8	+0.5
PLAL	Pickwick Lake	124.43	29	*e*PKPdf	PKPdf	17 01 05.8	-0.9
Y45A	Yeager Farm, C	124.63	31	P	PKPdf	17 01 07.3	+0.2
	baz=324						
Z44A	Pea Ridge, Bel	124.65	32	P	PKPdf	17 01 07.4	+0.3
	baz=322						
341A	Kurthwood	124.67	36	P	PKPdf	17 01 08.1	+0.9
	baz=319						
035A	Encino	124.74	43	P	PKPdf	17 01 09.8	+2.4
	baz=312						
Z45A	Winona	124.95	31	P	PKPdf	17 01 08.2	+0.5
	baz=323						
Y46A	Houston	124.95	30	P	PKPdf	17 01 07.9	+0.2
	baz=324						
035Z	Hargill	125.08	43	P	PKPdf	17 01 09.7	+1.6
	baz=312						
342A	Flagon Creek P	125.11	35	P	PKPdf	17 01 09.3	+1.2
	baz=320						
SWET	Sewanee	125.21	27	*e*PKPdf	PKPdf	17 01 07.3	-0.9
Y47A	UCPARC, Winfie	125.42	29	P	PKPdf	17 01 08.7	+0.1
	baz=325						
VBMS	Vicksburg	125.44	33	P	PKPdf	17 01 08.6	-0.1
	baz=322						
Z46A	Louisville	125.47	31	P	PKPdf	17 01 09.3	+0.7
	baz=324						
244A	Avery, Jackson	125.48	33	P	PKPdf	17 01 09.3	+0.6
	baz=322						
CPCT	Cooper Cave	125.61	25	*e*PKPdf	PKPdf	17 01 08.8	-0.1
BLA	Blacksburg	125.63	21	*e*PKIKP	PKPdf	17 01 09.0	0.0
BLA	Blacksburg	125.63	21	*e*PKPdf	PKPdf	17 01 09.0	0.0
CBN	Corbin Frederi	125.70	18	*e*PKPdf	PKPdf	17 01 09.5	+0.5
TKL	Tuckaleechee C	125.74	25	*e*PKIKP	PKPdf	17 01 08.3	-0.9
TKL	Tuckaleechee C	125.74	25	*e*PKPdf	PKPdf	17 01 08.2	-0.9
VWCC	Virginia Weste	125.75	20	*e*PKPdf	PKPdf	17 01 08.8	-0.3
146A	Union	125.86	31	P	PKPdf	17 01 10.1	+0.6
	baz=324						
Z47A	Carrollton	125.89	30	P	PKPdf	17 01 09.9	+0.4
	baz=325						
344A	Westbrook Farm	125.92	34	P	PKPdf	17 01 10.6	+1.0
	baz=321						
Z48A	Northport	126.00	29	P	PKPdf	17 01 09.7	0.0
	baz=325						
147A	Livingston	126.22	31	P	PKPdf	17 01 10.0	-0.1
	baz=324						
URVA	University of	126.24	18	*e*PKPdf	PKPdf	17 01 10.0	0.0
345A	Thompson Farm,	126.41	33	P	PKPdf	17 01 11.7	+1.2
	baz=322						
LRAL	Lakeview Retre	126.54	29	*e*PKPdf	PKPdf	17 01 10.2	-0.6
248A	Dixon Mills	126.95	31	P	PKPdf	17 01 12.5	+0.9
	baz=325						
347A	Saraland	127.11	32	P	PKPdf	17 01 12.6	+0.7
	baz=324						
KMSC	Kings Mountain	127.15	23	P	PKPdf	17 01 12.0	+0.1
	baz=333						
KMSC	Kings Mountain	127.15	23	*e*PKPdf	PKPdf	17 01 11.5	-0.3
348A	Jackson	127.42	31	P	PKPdf	17 01 13.4	+1.0
	baz=324						
GOGA	Godfrey	127.81	26	*e*PKIKP	PKPdf	17 01 12.3	-0.9
GOGA	Godfrey	127.81	26	*e*PKPdf	PKPdf	17 01 12.3	-0.9
JSC	Jenkinsville	127.94	23	*e*PKIKP	PKPdf	17 01 13.4	0.0
JSC	Jenkinsville	127.94	23	*e*PKPdf	PKPdf	17 01 13.4	0.0
BRAL	Brewton	128.04	31	*e*PKPdf	PKPdf	17 01 14.9	+1.3
TIGA	Tifton	129.44	27	P	PKPdf	17 01 17.6	+1.3
	baz=329						
TIGA	Tifton	129.44	27	*e*PKPdf	PKPdf	17 01 17.4	+1.1
DWPF	Disney Wildern	133.25	27	*e*PKPdf	PKPdf	17 01 24.4	+0.8
BBSR	BB Station	133.97	6	*e*PKPdf	PKPdf	17 01 26.1	+1.3
CHRN	Cochrane	144.65	164	*e*PKPbc	PKPdf	17 01 44.0	+0.2
SDDR	Presa de Saban	145.48	20	*e*PKPdf	PKPbc	17 01 46.3	0.0
PAPH	Port-au-Prince	145.54	22	*e*PKPdf	PKPab	17 01 47.1	+0.3
BANI	BANI	146.34	19	*e*PKPdf	PKPbc	17 01 49.3	+0.3
SDD	Santo Domingo	146.42	19	*e*PKPdf	PKPdf	17 01 47.3	-0.3
AGP	Aguadilla	147.22	14	*e*PKPdf	PKPdf	17 01 48.5	-0.5
MPR	Mayaguez	147.41	14	*e*PKPdf	PKPdf	17 01 49.1	-0.2
MPR				*e*PKPbc	PKPbc	17 01 51.5	-0.4
ABVI	Anegada Island	147.46	9	*e*PKPbc	PKPbc	17 01 51.8	-0.1
CELP	Cerrillos	147.67	13	*e*PKPdf	PKPdf	17 01 48.7	-1.0
CELP				*e*PKPbc	PKPbc	17 01 53.0	+0.4
STVI	Saint Thomas	147.72	10	*e*PKPdf	PKPdf	17 01 50.1	+0.3
STVI				*e*PKPbc	PKPbc	17 01 53.2	+0.5
SJG	San Juan	147.73	12	*e*PKIKP	PKPdf	17 01 49.9	+0.1
SJG	San Juan	147.73	12	*e*PKPdf	PKPdf	17 01 49.9	+0.1
HUMP	Col San Antoni	147.76	12	*e*PKPbc	PKPbc	17 01 52.1	-0.7
MTP	Monte Pirata	147.86	11	*e*PKPdf	PKPbc	17 01 52.5	-0.6
SMRT	St. Maarten	148.30	7	*e*P	PKPdf	17 01 51.0	+0.2
SMRT	St. Maarten	148.30	7	*e*PKPdf	PKPdf	17 01 51.3	+0.5
SMRT				*e*PKPbc	PKPbc	17 01 51.6	-2.7
SABA	Saba	148.70	7	*e*PKPbc	PKPbc	17 01 55.2	-0.1
ANWB	Willy Bob	148.80	5	*e*PKPdf	PKPdf	17 01 49.8	-1.8
ANWB				*e*PKPbc	PKPbc	17 01 55.3	-0.3
SEUS	St. Eustatius	148.86	7	*e*PKPbc	PKPbc	17 01 55.5	-0.2
BCIP	Isla Barro Col	149.46	43	*e*PKPdf	PKPdf	17 01 52.0	-0.7
BCIP				*e*PKPbc	PKPbc	17 01 57.0	-0.4
BCIP	Isla Barro Col	149.46	43	*e*P	PKPdf	17 01 50.6	-2.1
GDHS	Morne Mazeau,	150.19	5	*e*PKPbc	PKPbc	17 01 58.8	-0.3
HMG	Houelmont	150.48	5	*e*P	PKPbc	17 01 59.9	+0.2
PLCA	Paso Flores	151.22	162	PKP	PKPdf	17 01 54.4	-0.5
	comp=Z,8.2nm,1.0s,baz=209,slow=7.8,SNR=8.3						
PLCA				PKPbc	PKiKP	17 02 01.2	-0.2
	comp=Z,43nm,1.0s,baz=202,slow=4.1,SNR=34						
CAPC	Capurgana	151.47	40	*e*P	PKPdf	17 01 54.0	-1.9
CXM	Morne La Croix	151.68	4	*e*P	PKPbc	17 02 03.0	+0.3
SJCC	San Jacinto, C	151.75	35	*e*P	PKPdf	17 01 57.9	+1.6
FDF	Fort de France	151.76	4	*e*PKIKP	PKPbc	17 02 03.2	+0.5
FDF	Fort de France	151.76	4	*e*PKPbc	PKPbc	17 02 03.2	+0.5
URIC	Uribia, Colomb	151.82	27	*e*P	PKPdf	17 01 55.7	-0.7
MOTC	Monteria, Cord	152.38	37	*e*P	PKPdf	17 01 57.4	+0.2
SOLC	Bahia Solano	153.24	44	*e*P	PKPbc	17 02 05.8	-0.2
DBBC	Dabeiba	153.43	41	*e*P	PKPdf	17 01 59.6	+0.8
OCAC	Ocana	154.15	34	*e*P	PKPdf	17 02 00.8	+0.8
HELC	Santa Helena	154.49	41	*e*P	PKPdf	17 02 00.1	-0.7
MALC	Bahia Malaga	154.88	47	*e*P	PKPdf	17 02 04.7	+3.9
SDV	Santo Domingo	154.92	28	*e*PKPdf	PKPdf	17 02 00.9	-0.2
SDV	Santo Domingo	154.92	28	*e*P	PKPdf	17 02 01.9	+0.8
GRGC	Isla de Gorgon	154.95	50	*e*P	PKPpre	17 01 48.8	
PAMC	Pamplona, Colo	155.23	34	*e*P	PKPdf	17 02 08.7	+6.8
GUYC	Guyana, Colomb	155.32	42	*e*P	PKPpre	17 01 52.3	
NORC	Norcasia	155.39	40	*e*P	PKPdf	17 02 09.8	+8.2
BARC	Barichara	155.58	36	*e*P	PKPdf	17 02 01.9	-0.2
RCBR	Riachuelo	155.79	286	PKP	PKPdf	17 02 03.3	+1.2
	comp=Z,24nm,1.1s,baz=4.6,slow=3.3,SNR=4.3						
RCBR				PKPab	PKPab	17 02 29.9	+0.5
	comp=Z,55nm,1.0s,baz=31,slow=3.6,SNR=9.0						
RCBR	Riachuelo	155.79	286	PKP	PKPdf	17 02 03.3	+1.2
RCBR				*e*PKPab	PKPab	17 02 29.4	+0.1
TOLC	Tolima	155.84	43	*e*P	PKPdf	17 02 11.5	+8.9
RUSC	La Rusia	156.21	36	*e*P	PKPdf	17 02 00.8	-2.4
ROSC	El Rosal	156.29	40	PKP	PKPdf	17 02 04.7	+1.5
	comp=Z,22nm,0.8s,baz=96,slow=12,SNR=13						
ROSC	El Rosal	156.29	40	*e*P	PKPdf	17 02 01.9	-1.3
OTAV	Otavalo	156.47	56	*e*P	PKPdf	17 02 03.0	-0.5
CRUC	La Cruz	156.81	51	*e*P	PKPdf	17 02 04.2	+0.3
VILC	Villavicencio,	157.25	40	*e*P	PKPpre	17 01 59.1	
ROC1	El Roble	157.92	153	*e*PKPdf	PKPdf	17 02 05.5	+0.9
ROC1				*e*PKPab	PKPab	17 02 44.5	+6.4
ASAL	Salagasta	159.16	157	*e*P	PKPdf	17 02 05.6	-0.3
AUSP	Uspallata	159.26	155	*e*P	PKPdf	17 02 06.8	+0.6
RTLS	Leoncito	159.67	155	*e*P	PKPdf	17 02 07.1	+0.4
ATAH	Atahualpa	160.05	73	PKP	PKPdf	17 02 09.5	+1.7
	comp=Z,22nm,0.9s,baz=266,slow=1.7,SNR=9.3						
ATAH				PKPab	PKPab	17 02 50.7	+2.5
	comp=Z,74nm,0.9s,baz=299,slow=2.7,SNR=20						
TCA	Tanti	161.68	165	*e*P	PKPdf	17 02 08.4	-0.3
AGUA	GUANDACOL	162.01	153	*e*P	PKPdf	17 02 09.3	+0.3
NNA	Nana	162.71	87	PKP	PKPdf	17 02 10.9	+0.9
	comp=Z,20nm,0.9s,baz=326,slow=3.7,SNR=9.9						
NNA				PKPab	PKPab	17 03 01.0	+1.6
	comp=Z,17nm,0.9s,baz=267,slow=8.6,SNR=4.6						
NNA	Nana	162.71	87	*e*PKIKP	PKPdf	17 02 11.6	+1.5
NNA				*e*		17 03 03.8	
NNA	Nana	162.71	87	*e*PKPdf	PKPdf	17 02 11.6	+1.5
NNA				*e*PKPab	PKPab	17 03 03.8	+4.3
VCA	Vinchina	162.78	152	*e*P	PKPdf	17 02 10.8	+0.9
CYA	Choya	164.02	158	*e*P	PKPdf	17 02 11.1	+0.2
SPB	Sao Paulo	165.09	227	*e*PKPdf	PKPdf	17 02 12.1	+0.2
SPB				*e*PKPab	PKPab	17 03 10.4	+1.0
AHML	Horco Molle	165.70	157	*e*P	PKPdf	17 02 12.3	-0.1
FSA	Cafayete	166.04	154	*e*P	PKPdf	17 02 13.7	+0.8
LVC	Limon Verde	167.15	135	PKP	PKPdf	17 02 14.9	+0.9
	comp=Z,35nm,1.0s,baz=252,slow=0.7,SNR=7.9						
LVC	Limon Verde	167.15	135	*e*PKPdf	PKPdf	17 02 14.8	+0.7
PTGA	Pitinga	167.17	3	PKP	PKPdf	17 02 13.7	-0.2
	comp=Z,19nm,0.8s,baz=9.0,slow=0.7,SNR=38						
PTGA				PKPab	PKPab	17 03 18.2	-0.4
	comp=Z,26nm,0.9s,baz=8.9,slow=6.0,SNR=11						
PTGA	Pitinga	167.17	3	*e*PKPdf	PKPdf	17 02 13.3	-0.5
PTGA				*e*PKPab	PKPab	17 03 18.1	-0.5
CPUP	Villa Florida	167.24	188	PKP	PKPdf	17 02 13.3	-0.2
	comp=Z,8.4nm,0.9s,baz=330,slow=0.8,SNR=16						
CPUP				PKPab	PKPab	17 03 18.3	-0.3
	comp=Z,17nm,0.7s,baz=165,slow=4.8,SNR=21						
PB01	IPOC Station P	167.71	128	*e*PKPdf	PKPdf	17 02 14.2	+0.1
AZAP	Zapla	168.08	153	*e*P	PKPdf	17 02 14.1	-0.5
PB11	IPOC Station P	168.26	123	*e*PKPdf	PKPdf	17 02 15.2	+0.6
PB11				*e*PKPab	PKPab	17 03 25.9	+2.0
HJA	Humahuaca	168.79	149	*e*P	PKPdf	17 02 16.7	+1.5
ALOL	LOMAS DE OLMED	168.90	157	*e*P	PKPdf	17 02 15.3	+0.5
BDFB	Brasilia	169.00	258	PKP	PKPdf	17 02 15.0	-0.1
	comp=Z,5μm,0.5s,baz=256,slow=0.0,SNR=5.1						
BDFB				PKPab	PKPab	17 03 27.5	+0.3
	comp=Z,1μm,0.3s,SNR=4.7						
BDFB	Brasilia	169.00	258	PKIKP	PKPdf	17 02 15.0	-0.1
BDFB						17 03 27.5

ISP	Isparta	1.73	138	*e*Pn	Pn	16 50 19.4	-0.6
ISP				S	Sn	16 50 40.6	-2.0
GULT	Gulveren	1.73	40	*e*PN	Pn	16 50 20.0	-0.1
GULT	Gulveren	1.73	40	*e*Pn	Pn	16 50 20.0	-0.1
BUY	Buyukada	1.74	2	P	Pn	16 50 19.5	-0.6
BUY	Buyukada	1.74	2	*i* P	Pn	16 50 19.5	-0.6
BAGO	Egridir - ISPA	1.76	129	*i* P	Pn	16 50 20.8	+0.3
HRT	Hereke	1.77	15	*e*PN	Pn	16 50 20.0	-0.6
HRT	Hereke	1.77	15	*e*Pn	Pn	16 50 20.0	-0.6
SPNC	Sapanca-Adapaz	1.84	31	*e*PN	Pn	16 50 21.5	-0.1
SPNC	Sapanca-Adapaz	1.84	31	*e*Pn	Pn	16 50 21.5	-0.1
AYVA	Ayvalik	1.85	277	P	Pg	16 50 23.7	-0.8
AYVA	Ayvalik	1.85	277	*i* P	Pg	16 50 23.7	-0.8
MRMT	Marmara Adasi	1.86	323	*e*PN	Pn	16 50 21.8	-0.1
MRMT	Marmara Adasi	1.86	323	*e*Pn	Pn	16 50 21.8	-0.1
GOLH	Golhisar	1.91	168	P	Pn	16 50 22.7	+0.1
GOLH	Golhisar	1.91	168	*i* P	Pn	16 50 22.7	+0.1
SVRH	Sivrihisar-ESK	1.95	79	*e*PN	Pn	16 50 22.8	-0.2
SVRH	Sivrihisar-ESK	1.95	79	*e*Pn	Pn	16 50 22.8	-0.2
ISK	Istanbul-Kandi	1.95	0	*e*PN	Pn	16 50 22.8	-0.2
ISK	Istanbul-Kandi	1.95	0	P	Pn	16 50 21.9	-1.1
ISK				S	Sn	16 50 47.5	-0.5
ISK	Istanbul-Kandi	1.95	0	P	Pn	16 50 21.9	-1.1
ISK	Istanbul-Kandi	1.95	0	*e*Pn	Pn	16 50 22.8	-0.2
ISK				S	Sn	16 50 47.5	-0.5
DGB	¯zmir	2.00	239	*i* P	Pg	16 50 27.3	-0.3
GCAM	G?zelcaml?	2.01	226	*i* P	Pg	16 50 30.3	+2.7
BCK	Bucak	2.04	143	*e*PN	Pn	16 50 24.9	+0.5
BCK	Bucak	2.04	143	*e*Pn	Pn	16 50 24.9	+0.5
URLA	Izmir	2.06	249	*i* P	Pg	16 50 27.9	-0.8
YER	Yerkesik	2.06	197	P	Pn	16 50 23.9	-0.7
YER				S	Sn	16 50 51.1	+0.3
YER	Yerkesik	2.06	197	P	Pn	16 50 23.9	-0.7
YER				S	Sn	16 50 51.1	+0.3
BGKT	Bogazkoy	2.08	354	*e*PN	Pn	16 50 24.7	0.0
BGKT	Bogazkoy	2.08	354	*e*Pn	Pn	16 50 24.7	0.0
SILT	Sile	2.09	12	*e*PN	Pn	16 50 25.6	+0.7
SILT	Sile	2.09	12	*e*Pn	Pn	16 50 25.6	+0.7
BTAS	Taskesti	2.09	45	P	Pn	16 50 25.6	+0.6
BTAS	Taskesti	2.09	45	*i* P	Pn	16 50 25.6	+0.6
RKY	Sarkoy-Tekirda	2.13	318	*e*PN	Pn	16 50 25.4	-0.2
RKY	Sarkoy-Tekirda	2.13	318	*e*Pn	Pn	16 50 25.4	-0.2
MDUB	Mudurnu	2.14	50	*e*PN	Pn	16 50 25.7	0.0
MDUB	Mudurnu	2.14	50	*e*Pn	Pn	16 50 25.7	0.0
KLYT	Kilyos	2.14	360	*e*PN	Pn	16 50 24.9	-0.7
KLYT	Kilyos	2.14	360	*e*Pn	Pn	16 50 24.9	-0.7
CTKS	Kestanelik-??a	2.16	349	*e*PN	Pn	16 50 25.9	0.0
CTKS	Kestanelik-??a	2.16	349	*e*Pn	Pn	16 50 25.9	0.0
PRK	Paraskevi	2.17	274	P	Pn	16 50 26.1	+0.1
PRK				S	Sb	16 50 54.8	-1.3
PRK	Paraskevi	2.17	274	P	Pn	16 50 26.1	+0.1
PRK				S	Sb	16 50 54.8	-1.3
ZEY	¯zmir	2.18	247	*i* P	Pg	16 50 30.0	-0.9
TKR	Tekirdag	2.21	329	*e*PN	Pn	16 50 26.2	-0.3
TKR	Tekirdag	2.21	329	*e*Pn	Pn	16 50 26.3	-0.3
SLVT	Silivri	2.21	343	P	Pb	16 50 28.6	-1.1
KIZT	Kizilcal	2.21	95	*e*PN	Pn	16 50 27.3	+0.5
KIZT	Kizilcal	2.21	95	*e*Pn	Pn	16 50 27.3	+0.5
SMG	Samos	2.23	232	P	Pn	16 50 26.7	-0.2
SMG				S	Sn	16 50 55.7	+0.7
SMG	Samos	2.23	232	P	Pn	16 50 26.7	-0.2
SMG				S	Sn	16 50 55.7	+0.7
CRLT	Corlu	2.25	334	*e*PN	Pn	16 50 27.3	+0.1
CRLT	Corlu	2.25	334	*e*Pn	Pn	16 50 27.3	+0.1
KORT	Korkueli	2.34	154	P	Pn	16 50 29.2	+0.7
KORT	Korkueli	2.34	154	*i* P	Pn	16 50 29.2	+0.7
CTYL	Yalikoy Yolu	2.43	346	*e*PN	Pn	16 50 29.5	-0.1
CTYL	Yalikoy Yolu	2.43	346	*e*Pn	Pn	16 50 29.5	-0.1
CHOS	Chios island	2.45	254	P	Pn	16 50 30.0	0.0
CHOS				S	Sn	16 51 01.3	+0.8
CHOS	Chios island	2.45	254	P	Pn	16 50 30.0	0.0
CHOS				S	Sn	16 51 01.3	+0.8
KDHN	Kadinhani	2.46	103	P	Pn	16 50 30.2	0.0
KDHN	Kadinhani	2.46	103	*i* P	Pn	16 50 30.2	0.0
BODT	Bodrum	2.46	214	P	Pn	16 50 29.1	-1.0
BODT				S	Sn	16 51 01.2	+0.5
BODT	Bodrum	2.46	214	P	Pn	16 50 29.1	-1.0
BODT				S	Sn	16 51 01.2	+0.5
FETY	Fethiye	2.47	179	P	Pn	16 50 29.5	-0.7
FETY				S	Sn	16 51 01.0	+0.2
FETY	Fethiye	2.47	179	P	Pn	16 50 29.5	-0.7
FETY				S	Sn	16 51 01.0	+0.2
SIGR	SIGRI	2.49	273	P	Pn	16 50 30.1	-0.3
SIGR				S	Sn	16 51 02.6	+1.4
SIGR	SIGRI	2.49	273	P	Pn	16 50 30.1	-0.3
SIGR				S	Sn	16 51 02.6	+1.4
KESN	Edirne-Kesan	2.50	314	P	Pn	16 50 31.5	+0.6
KESN	Edirne-Kesan	2.50	314	*i* P	Pn	16 50 31.5	+0.6
AKAS	Kas	2.91	171	P	Pn	16 50 37.4	+1.1
AKAS	Kas	2.91	171	*i* P	Pn	16 50 37.4	+1.1
ALN	Alexandroupoli	2.92	309	P	Pn	16 50 36.0	-0.3
ALN				S	Sn	16 51 11.8	0.0
ALN	Alexandroupoli	2.92	309	P	Pn	16 50 36.0	-0.3
ALN				S	Sn	16 51 11.8	0.0
SMTH	Samothraki Isl	3.04	298	P	Pn	16 50 37.7	-0.2
SMTH				S	Sn	16 51 15.6	+0.9
SMTH	Samothraki Isl	3.04	298	P	Pn	16 50 37.7	-0.2
SMTH				S	Sn	16 51 15.6	+0.9
LIA	Limnos Island	3.10	286	P	Pn	16 50 38.2	-0.5
LIA				S	Sn	16 51 17.1	+1.0
LIA	Limnos Island	3.10	286	P	Pn	16 50 38.2	-0.5
LIA				S	Sn	16 51 17.1	+1.0
EDRB	Edirne	3.25	328	P	Pn	16 50 40.4	-0.5
EDRB				S	Sn	16 51 20.1	+0.1
EDRB	Edirne	3.25	328	P	Pn	16 50 40.4	-0.5
EDRB				S	Sn	16 51 20.1	+0.1
KDZ	Kurdzhali	3.76	314	P	Pn	16 50 50.8	+2.9
RZN	Rozhen	4.19	309	P	Pn	16 50 54.0	0.0
PRD	Provadia	4.27	344	P	Pb	16 51 07.2	+2.4
SZH	Strazhica	4.77	331	P	Pn	16 51 02.9	+1.1
LAST	Lasithi	4.87	217 ⇑	*i*P	Pn	16 51 04.3	+1.1
LAST	Lasithi	4.87	217 ⇑	*i*P	Pn	16 51 04.3	+1.1
TIRR	Tirgusor	5.36	355 ⇓	*i*P	Pn	16 51 09.9	0.0
TIRR	Tirgusor	5.36	355 ⇓	*i*P	Pn	16 51 09.9	0.0
MPEP	Malo Peshtene	5.83	318	P	Pn	16 51 17.9	+1.5
CFR	Carcaliu	6.10	354 ⇓	*i*P	Pn	16 51 20.6	+0.6
CFR	Carcaliu	6.10	354 ⇓	*i*P	Pn	16 51 20.6	+0.6
MLR	Muntele Rosu	6.78	341 ⇓	*i*P	Pn	16 51 32.0	+2.5
PLOR	Plostina	6.97	346 ⇓	*i*P	Pn	16 51 34.7	+2.8
VRI	Vrincioaia	6.97	346 ⇓	*i*P	Pn	16 51 33.2	+1.3
VRI	Vrincioaia	6.97	346 ⇓	*i*P	Pn	16 51 33.2	+1.3
VOIR		6.98	336 ⇑	*i*P	Pn	16 51 34.1	+1.9
VOIR		6.98	336 ⇑	*i*P	Pn	16 51 34.1	+1.9
ARR	Arges	7.06	334 ⇑	*i*P	Pn	16 51 35.0	+1.7
ARR	Arges	7.06	334 ⇑	*i*P	Pn	16 51 35.0	+1.7
DOPR	Dopca	7.37	340 ⇑	*i*P	Pn	16 51 39.0	+1.6
DOPR	Dopca	7.37	340 ⇑	*i*P	Pn	16 51 39.0	+1.6
TESR	Tescani	7.60	347 ⇓	*i*P	Pn	16 51 41.8	+1.1
TESR	Tescani	7.60	347 ⇓	*i*P	Pn	16 51 41.8	+1.1
BURAR	Bucovina Array	8.95	343 ⇓	*i*P	Pn	16 52 02.2	+3.0

*IDC **22** 16:53:55.0±1.6, 11˚.85S×166˚.67E, h0km, mb4.1/7, mb1 4.4/8, mb1mx3.9/47, mbtmp4.2/8, ML5.2/1, Error ellipse: s-maj=58.8km s-min=24.0km az=151.0*

*ISCJB **22** 16:54:03.0±1.0, 11˚.6S±0˚.2×166˚.28E±0˚.09, h59km, mb4.1/7, Error ellipse: s-maj=27.3km s-min=12.8km az=7.7*

ISC 22 16:54:04.3±1.2, 11˚.6S±0˚.3×166˚.4E±0˚.1, h59km, n8, σ0§91/9, mb4.0/7, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	Honiara	6.67	288	Pn	Pn	16 55 40.3	+0.6
	47nm,0.3s,baz=143,slow=6.8,SNR=41						
HNR				Sn	Sn	16 56 53.3	-1.1
	2.4nm,0.3s,baz=270,slow=20,SNR=1.9						
WRA	Warramunga Arr	31.88	251	P	P	17 00 23.8	-0.4
	1.4nm,0.6s,baz=85,slow=9.2,SNR=7.2						
ASAR	Alice Springs	33.11	244	P	P	17 00 34.1	-0.8
	1.0nm,0.5s,baz=64,slow=11,SNR=12						
FITZ	Fitzroy Crossi	39.84	256	P	P	17 01 32.7	+0.3
	2.2nm,0.8s,baz=72,slow=6.4,SNR=3.2						
CMAR	Chiang Mai Arr	72.89	293	P	P	17 05 29.0	+1.3
	1.8nm,1.0s,baz=107,slow=4.0,SNR=9.4						
ILAR	Eielson Array	83.83	18	P	P	17 06 26.3	-0.7
	1.7nm,1.1s,baz=238,slow=5.2,SNR=4.5						
NVAR	Mina Array Bea	85.90	50	P	P	17 06 38.0	-0.3
	1.0nm,0.7s,baz=251,slow=2.7,SNR=5.2						
MKAR	Makanchi Array	94.33	317	P	P	17 07 17.6	+0.1
	1.4nm,0.7s,baz=98,slow=6.2,SNR=12						

*NIED **22** 17:10:00,38˚.00N×142˚.30E,h35km,Mw3.9 Best double couple: M0:8.90000×10^14 NP1:φ=185.00000°,δ40.00000°, λ-37.00000°. NP2:φ=305.00000°,δ67.00000°, λ-124.00000°.*

*ISCJB **22** 17:10:32.9±0.6,37˚.97N±0˚.04×142˚.46E±0˚.05,h14km, mb3.7/11,Error ellipse: s-maj=6.5km s-min=5.9km az=151.1*

*JMA **22** 17:10:36.2±0.2,38˚.04N×142˚.33E,h39km±2km,M3.9*

*IDC **22** 17:10:38.4±2.4,38˚.01N×142˚.43E,h41km±22km,mb3.5/11, mb1 3.7/16,mb1mx3.5/54,mbtmp3.7/16,ML3.6/4,Error ellipse: s-maj=21.9km s-min=14.7km az=97.0*

ISC 22 17:10:34.2±0.7,37˚.98N±0˚.05×142˚.38E±0˚.06,h14km,n36, σ1§19/36,mb3.8/11,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.94	300	P	Pg	17 10 52.4	0.0
JIO				*e*S	Sb	17 11 03.8	-0.8
OFUJ	Ofunato	1.23	333	P	Pn	17 10 56.0	-1.0
JMM	Marumori	1.26	265	P	Pn	17 10 57.2	-0.2
JMM				*e*S	Sb	17 11 13.0	-0.9
JMK	Ichinoseki	1.33	317	P	Pn	17 10 58.0	-0.4
JFK	Kawauchi	1.34	243	P	Pn	17 10 58.3	-0.3
JFK				*e*S	Sb	17 11 14.8	-1.5
JOU	Okura	1.41	286	P	Pb	17 10 59.9	-0.4
JOM	Ohasama	1.71	331	P	Pn	17 11 03.6	-0.1
JYK	Kaneyama	1.84	301	P	Pn	17 11 05.8	+0.4
JYK				*e*S	Sn	17 11 27.8	-0.8
JYS	Shiratake	1.84	278	P	Pn	17 11 06.0	+0.5
JRG	Rokugo	1.96	316	P	Pn	17 11 07.6	+0.5
JYA	Atsumi	2.19	287	P	Pn	17 11 10.7	+0.5
JFY	Yanaizu	2.20	256	P	Pn	17 11 11.5	+1.1
MJAR	Matsushiro Arr	3.63	248	P	Pn	17 11 32.8	+2.8
	2.9nm,0.3s,baz=53,slow=12,SNR=14						
MJAR				S	Sb	17 12 20.4	-1.6
	2.6nm,0.3s,baz=176,slow=24,SNR=4.3						
JHJ	Hachijo jima 2	5.29	204	P	Pn	17 11 54.4	+1.5
	25nm,0.3s,baz=241,slow=0.9,SNR=12						
JHJ				S	Sn	17 12 51.4	-2.4
	19nm,0.3s,baz=59,slow=13,SNR=4.0						
ASAJ	Asahikawa	6.13	1	P	Pn	17 12 05.7	+1.4
	1.1nm,0.3s,baz=190,slow=15,SNR=19						
ASAJ				S	Sn	17 13 12.2	-2.0
	0.7nm,0.3s,baz=76,slow=28,SNR=2.7						
USRK	Ussuriysk Ar.	10.00	312	P	Pn	17 12 59.3	+1.8
	0.2nm,0.3s,baz=122,slow=13,SNR=3.4						
JCJ	Chichijima	10.86	181	P	Pn	17 13 07.4	-1.8
	1.8nm,0.3s,baz=359,slow=21,SNR=6.3						
JCJ				S	Sn	17 14 59.0	-12
	1.7nm,0.3s,baz=274,slow=23,SNR=3.4						
KSRS	Korea Array	11.47	272	P	Pn	17 13 20.9	+3.4
	0.1nm,0.3s,baz=84,slow=14,SNR=5.3						
SONM	Songino Array	27.91	302	P	P	17 16 24.9	+1.0
	0.8nm,0.5s,baz=111,slow=9.1,SNR=3.4						
H11N2	WAKE ISLAND Hy 28.00	124		T	T	17 45 44.8	
	baz=316,slow=75,SNR=108						
H11N1	WAKE ISLAND Hy 28.01	124		T	T	17 45 51.6	
	baz=316,slow=75,SNR=69						
H11N3	WAKE ISLAND Hy 28.02	124		T	T	17 45 48.2	
	baz=316,slow=75,SNR=73						
H11S1	WAKE ISLAND Hy 28.76	126		T	T	17 46 43.7	
	baz=317,slow=76,SNR=36						
H11S3	WAKE ISLAND Hy 28.76	126		T	T	17 46 56.8	
	baz=317,slow=76,SNR=39						
H11S2	WAKE ISLAND Hy 28.77	126		T	T	17 46 46.9	
	baz=317,slow=76,SNR=34						
ZALV	Zalesovo Beam	41.85	312	P	P	17 18 24.0	+0.4
	1.0nm,0.4s,baz=85,slow=6.1,SNR=7.5						
CMAR	Chiang Mai Arr	42.48	255	P	P	17 18 30.5	+1.3
	0.5nm,0.8s,baz=46,slow=7.8,SNR=3.3						
MKAR	Makanchi Array	44.27	301	P	P	17 18 43.8	+0.5
	0.9nm,0.7s,baz=83,slow=11,SNR=8.7						
ILAR	Eielson Array	48.28	33	P	P	17 19 15.7	+1.2
	0.3nm,0.7s,baz=263,slow=6.3,SNR=3.5						
WRA	Warramunga Arr	58.11	189	P	P	17 20 27.3	0.0
	0.9nm,0.6s,baz=6.9,slow=7.0,SNR=19						
ASAR	Alice Springs	61.84	189	P	P	17 20 54.0	+1.1
	0.5nm,0.7s,baz=359,slow=5.6,SNR=10						
YKA	Yellowknife Ar	62.60	31	P	P	17 20 57.4	-0.2
	0.2nm,0.6s,baz=304,slow=6.9,SNR=2.5						
ARCES	ARCESS Array B	63.38	339	P	P	17 21 02.7	0.0
	1.9nm,0.9s,baz=31,slow=7.4,SNR=3.2						
NOA	NORSAR Array B	73.61	338	P	P	17 22 06.9	+0.2
	1.1nm,0.8s,baz=39,slow=6.1,SNR=3.7						
AKASG	Malin Array Be	74.02	323	P	P	17 22 09.2	0.0
	0.8nm,0.7s,baz=44,slow=5.5,SNR=4.9						
LPAZ	La Paz	145.55	60	PKPbc	PKPdf	17 30 11.9	-1.3
	0.9nm,0.8s,baz=284,slow=4.2,SNR=3.7						

IDC 22 17:14:13.8±3.2,19˚.15S×177˚.66W,h549km±28km, mb3.0/3,mb1 3.2/4,mb1mx2.8/39,mbtmp4.1/4,Error ellipse: s-maj=127.1km s-min=23.9km az=154.0,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	Afiamalu	7.68	48	P	P	17 16 08.4	-0.1
	4.1nm,0.3s,baz=38,slow=0.9,SNR=7.1						
AFI				S	S	17 17 48.7	+6.4
	1.4nm,0.3s,baz=27,slow=20,SNR=2.9						
CTA	Charters Tower	33.96	262	P	P	17 20 11.7	-0.5
	1.1nm,0.5s,baz=76,slow=12,SNR=3.0						
WRA	Warramunga Arr	45.12	261	P	P	17 21 41.6	-0.1
	0.5nm,0.3s,baz=98,slow=7.4,SNR=18						
WRA				PcP	PcP	17 23 10.1	-0.5
	0.4nm,0.9s,baz=98,slow=3.5,SNR=2.8						
ASAR	Alice Springs	45.15	255	P	P	17 21 42.1	+0.1
	0.9nm,0.4s,baz=86,slow=8.2,SNR=41						
ASAR				PcP	PcP	17 23 10.1	-0.6
	0.3nm,0.5s,baz=110,slow=4.0,SNR=4.5						
BRTR	Keskin Array B	146.15	314	PKPbc	PKPbc	17 32 52.6	-0.6
	0.3nm,0.5s,baz=64,slow=3.4,SNR=3.2						

*ISCJB **22** 17:15:04.9±0.2, 13˚.29N±0˚.03×90˚.53W±0˚.03, h33km, mb4.8/162, MS4.2/20, Error ellipse: s-maj=5.5km s-min=2.5km az=36.0*

*CASC **22** 17:15:07.7±1.8, 12˚.96N×90˚.41W, h13km±27km, ML3.6, mb4.8(NEIC)*

*NEIC **22** 17:15:09.6±0.8, 13˚.32N×90˚.42W, h61km±7km, mb4.8/152, Error ellipse: s-maj=7.5km s-min=4.0km az=218.0*

*IDC **22** 17:15:10.5±2.8, 13˚.25N×90˚.49W, h74km±23km, mb4.1/23, mb1 4.3/26, mb1mx4.2/44, mbtmp4.5/26, MS4.1/19, Ms1 4.1/19, ms1mx3.9/39, Error ellipse: s-maj=18.9km s-min=9.7km az=36.0*

ISC 22 17:15:03.8±0.4, 13˚.04N±0˚.05×90˚.67W±0˚.05, h24km, n532, σ1§42/522, mb4.8/163, MS4.2/20, 2C-2D, Near coast of Guatemala

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SBLS	San Blas	1.29	52	*e*P	Pb	17 15 28.6	+1.1
SBLS				*e*S	Sb	17 15 43.8	-0.1
RTR	El Retiro	1.31	49 ⇑	*e*P	Pb	17 15 29.1	+1.2
SNJE	San Jose	1.32	51	*e*P	Pb	17 15 28.7	+0.6
COLS	Colinas	1.47	65	*e*P	Pb	17 15 30.8	+0.2
COLS				*e*S	Sb	17 15 49.1	+0.1
BOQS	Boqueron	1.52	63 ⇓	*e*P	Pb	17 15 31.7	+0.2
SNET	Serv Nac Est T	1.54	65	*e*P	Pb	17 15 31.6	-0.1
SNET				AML	AML	17 16 00.9	
	comp=Z,1μm,0.7s						
LFRS	El Faro	1.67	69 ⇑	*e*P	Pb	17 15 33.5	-0.4
LFU	La Fuente	1.67	65	*e*P	Pb	17 15 33.8	-0.1
LBRS	Las Brisas	1.73	66	*e*P	Pb	17 15 34.7	-0.2
SNVI	San Vicente	1.87	72	*e*P	Pb	17 15 37.1	-0.3
PACA	Pacayal	2.33	79 ⇓	*e*P	Pb	17 15 43.3	-1.8
LCY	Lacayo	2.34	80	*e*P	Pn	17 15 43.1	+2.2
CNCH	Conchagua	2.77	85	*e*P	Pn	17 15 48.9	+2.1
TGUH	Tegucigalpa,Un	3.46	73	*e*P	Pn	17 15 57.9	+1.7
TGUH	Tegucigalpa,Un	3.46	73	*e*Pn	Pn	17 15 58.3	+2.2
CCIG	Comitan	3.52	336	*e*Pn	Pn	17 15 58.9	+1.6
TEL3	Telica 3	3.76	97	*e*P	Pn	17 16 00.8	+0.5
CNGN	Cerro Negro	3.91	97	*e*P	Pn	17 16 01.8	-0.6
CNGN				*e*S	Sn	17 16 47.5	-0.2
CNGN				AML	AML	17 16 49.8	
	comp=N,210nm,0.7s						
ESTN	Estel	4.19	89	*e*P	Pn	17 16 07.9	+1.6
HDC	Heredia	7.10	114	*e*Pn	Pn	17 16 52.1	+5.8
TEIG	Tepich	7.51	17	P	Pn	17 16 54.4	+2.6
	comp=N,0.9nm,0.3s,baz=90,slow=24,SNR=15						
TEIG				S	Sn	17 18 17.1	+0.9
	baz=90,slow=20,SNR=1.8						
TEIG				LR	LR	17 20 29.4	
	comp=N,2μm,19.1s,baz=184,slow=44						
TEIG	Tepich	7.51	17	*e*Pn	Pn	17 16 52.7	+0.9
TEIG				*e*Sn	Sn	17 18 19.8	+3.6
TLIG	Tlapa	8.85	302	*e*Pn	Pn	17 17 11.1	+0.8
BCIP	Isla Barro Col	11.30	109	*e*Pn	Pn	17 17 46.9	+3.0
BCIP				*e*Sn	Sn	17 19 51.0	+1.4
ZAIG	Zacatecas	14.88	312	*e*Pn	Pn	17 18 33.8	+0.7
MOTC	Monteria, Cord	15.33	105	*e*P	P	17 18 43.1	-0.2
DBBC	Dabeiba	15.44	111	*e*P	Pn	17 18 42.0	+1.7
SJCC	San Jacinto, C	15.50	100	*e*P	P	17 18 45.3	+0.1
034A	Hebbronville	15.85	333	P	P	17 18 49.5	+0.6
	baz=149						
HELC	Santa Helena	16.40	113	*e*P	P	17 18 57.2	+1.7
933A	Laredo	16.58	332	P	P	17 18 56.2	-0.9
	baz=148,SNR=8.1						
736A	Circle Diamond	16.92	340	P	P	17 19 01.1	+0.2
	baz=157						
GUYC	Guyana, Colomb	16.96	116	*e*P	P	17 19 06.3	+4.4
833A	Chaparral WMA,	17.25	333	P	P	17 19 04.0	-0.5
	baz=149						
NORC	Norcasia	17.26	114	*e*P	P	17 19 06.3	+1.4
POPC	Popayan, Colom	17.34	126	*e*P	P	17 19 08.5	+2.7
636A	Smothers Creek	17.40	341	P	P	17 19 07.8	+1.6
	baz=158						
832A	Faith Ranch, C	17.48	332	P	P	17 19 09.8	+2.8
	baz=147						
733A	Divot King Ran	17.55	334	P	P	17 19 08.7	+0.9
	baz=150,SNR=6.0						
OTAV	Otavalo	17.56	135	*e*Pn	P	17 19 10.0	+1.4
	comp=N,62nm,1.8s						
BRRC	Barranca, Sant	17.70	108	*e*P	Pn	17 19 08.0	-0.9
OCAC	Ocana	17.70	104	*e*P	Pn	17 19 09.1	0.0
CRUC	La Cruz	17.73	129	*e*P	P	17 19 19.3	+9.0
ROSC	El Rosal	18.08	115	P	P	17 19 17.6	+3.4
	comp=N,0.8nm,0.3s,baz=267,slow=6.4,SNR=12						
ROSC	El Rosal	18.08	115	*e*P	P	17 19 15.8	+1.7
	comp=N,29nm,1.0s						
ROSC	El Rosal	18.08	115	*e*P	P	17 19 19.3	+5.1
633A	Saathoff Ranch	18.15	336	P	Pn	17 19 14.1	-0.2
	baz=152,SNR=5.8						
342A	Flagon Creek P	18.31	355	P	Pn	17 19 18.6	+2.4
	baz=174,SNR=8.2						
344A	Westbrook Farm	18.33	360	P	Pn	17 19 20.0	+3.6
	baz=179,SNR=5.7						
GRMC	Gramalote, San	18.35	105	*e*P	Pn	17 19 17.6	+0.6
CBRI	Barrientos, No	18.35	105	*e*P	P	17 19 16.4	-0.6
BARC	Barichara	18.38	109	*e*P	Pn	17 19 22.1	+4.7
347A	Saraland	18.38	6	P	Pn	17 19 20.1	+3.0
	baz=186						
534A	Blanco	18.39	338	P	Pn	17 19 18.1	+0.9
	baz=154						
348A	Jackson	18.47	7	P	Pn	17 19 19.9	+1.8
	baz=188						
PAMC	Pamplona, Colo	18.57	106	*e*P	Pn	17 19 20.4	+0.5
533A	Kerrville	18.64	337	P	Pn	17 19 21.0	+0.7
	baz=153,SNR=8.1						
FLOC	Florencia	18.73	126	*e*P	Pn	17 19 24.4	+2.9
338A	Crockett	18.73	348	P	Pn	17 19 21.7	+0.4
	baz=165						
RUSC	La Rusia	18.73	111	*e*P	Pn	17 19 22.7	+0.7
243A	Waterproof	18.77	358	P	Pn	17 19 24.4	+2.6
	baz=177						
244A	Avery, Jackson	18.92	360	P	Pn	17 19 25.1	+1.6
	baz=179,SNR=6.8						
VILC	Villavicencio,	18.97	116	*e*P	Pn	17 19 27.8	+3.2
242A	Grayson	18.98	356	P	Pn	17 19 26.0	+1.7
	baz=175,SNR=8.4						
241A	Mo Tay, Goldon	19.01	354	P	Pn	17 19 26.3	+1.6
	baz=172						
434A	Burnet	19.03	340	P	P	17 19 24.1	-0.1
	baz=156,SNR=7.1						
VBMS	Vicksburg

baz=174,SNR=7.5
X40A **Basin Creek Fa** 21.45 355 P P 17 19 50.5 +0.2
baz=174,SNR=12
Z33A **Whitaker Ranch** 21.47 341 P P 17 19 51.0 +0.4
baz=157,SNR=7.2
Y35A **Marietta** 21.57 345 P P 17 19 51.5 -0.1
baz=162,SNR=9.1
MIAR **Mount Ida** 21.57 353 P P 17 19 51.4 -0.3
baz=172,SNR=33
MIAR **Mount Ida** 21.57 353 eP P 17 19 48.8 -2.9
comp=N,49nm,1.0s
X39A **Fountain Ranch** 21.61 352 P P 17 19 52.0 -0.1
baz=170,SNR=15
Y34A **Reagan Ranch,** 21.80 344 P P 17 19 53.2 -1.0
baz=160
X38A **Whitesboro** 21.86 351 P P 17 19 55.1 +0.2
baz=168,SNR=36
X37A **Clayton** 21.88 350 P P 17 19 55.1 +0.2
baz=167,SNR=18
PLAL **Pickwick Lake** 21.98 6 eP P 17 19 55.7 -0.3
comp=N,54nm,1.4s
X35A **Drake** 22.02 346 P P 17 19 55.9 -0.6
baz=163,SNR=7.5
X36A **Centrahoma** 22.05 347 P P 17 19 56.4 -0.4
baz=164,SNR=16
W41A **Tony Mavity, V** 22.09 357 P P 17 19 56.6 -0.6
baz=175,SNR=15
W41B **Gary Mavity, V** 22.09 357 P P 17 19 56.4 -0.7
baz=175,SNR=15
Y33A **Hilltop Ranch,** 22.10 342 P P 17 19 56.7 -0.6
baz=158
NHSC **New Hope** 22.16 24 P P 17 19 53.6 -4.3
comp=N,154nm,1.4s
X301 **Greenbrier Sit** 22.16 356 eP P 17 19 56.7 -1.3
comp=N,27nm,1.0s
W40A **Ferguson Farm,** 22.16 355 P P 17 19 57.6 -0.5
baz=173,SNR=12
WHAR **Wooly Hollow** 22.20 356 eP P 17 19 58.3 -0.2
comp=N,131nm,1.7s
W38A **Poteau** 22.21 352 P P 17 19 58.1 -0.5
baz=169,SNR=9.6
X201 **Greenbrier Sit** 22.21 356 eP P 17 19 58.3 -0.3
comp=N,33nm,1.0s
W39A **Magazine** 22.24 353 P P 17 19 58.3 -0.5
baz=171,SNR=34
W37B **Quinton** 22.42 350 P P 17 19 59.8 -1.0
baz=167,SNR=14
X34A **Smith Ranch, M** 22.43 344 P P 17 20 00.8 -0.1
baz=161
SWET **Sewanee** 22.49 10 eP P 17 20 02.3 +0.7
comp=N,23nm,1.2s
X33A **Lawton** 22.56 343 P P 17 20 00.9 -1.4
baz=159,SNR=8.2
W36A **Wetumka** 22.57 348 P P 17 20 01.3 -1.1
baz=165
V42A **Cord** 22.68 358 P P 17 20 02.7 -0.8
baz=178
X32A **Elmer** 22.68 341 P P 17 20 02.7 -0.9
baz=157,SNR=6.3
V41A **Mountainview** 22.69 357 P P 17 20 02.3 -1.4
baz=176
W35A **Tecumseh** 22.72 347 P P 17 20 02.1 -2.0
baz=164,SNR=11
V40A **Witts Springs** 22.75 355 P P 17 20 03.6 -0.8
baz=174,SNR=44
WMOK **Wichita Mounta** 22.82 343 P P 17 20 02.8 -2.2
baz=158,SNR=7.7
V39A **Pettigrew** 22.86 354 P P 17 20 04.2 -1.3
baz=172,SNR=46
MNTX **Cornudas Mount** 22.97 326 P P 17 20 06.0 -0.7
baz=140,SNR=55
MNTX **Cornudas Mount** 22.97 326 eP P 17 20 05.4 -1.3
comp=N,115nm,1.6s
V38A **Canehill** 22.98 352 P P 17 20 05.2 -1.5
baz=170,SNR=31
CPCT **Cooper Cave** 23.00 13 eP P 17 20 07.1 +0.3
comp=N,19nm,1.0s
W34A **Bridge Creek,** 23.02 345 P P 17 20 05.2 -1.9
baz=161,SNR=9.8
V37A **Hulbert** 23.10 351 P P 17 20 06.1 -1.8
baz=168,SNR=31
W33A **Caddo, Fort Co** 23.12 344 P P 17 20 06.9 -1.2
baz=160
WVT **Waverly** 23.14 6 eP P 17 20 07.8 -0.5
comp=N,38nm,1.0s
V36A **Jenks** 23.14 349 P P 17 20 06.5 -1.8
baz=166
TUL1 **Leonard** 23.24 349 P P 17 20 07.6 -1.7
baz=167
V35A **Meyer Ranch, C** 23.30 347 P P 17 20 07.9 -2.1
baz=164
U40A **Yellville** 23.30 356 P P 17 20 08.8 -1.1
baz=174,SNR=29
W32A **Sentinel** 23.32 342 P P 17 20 08.0 -2.1
baz=158,SNR=10
HHAR **Hobbs** 23.33 353 eP P 17 20 08.8 -1.5
comp=N,32nm,0.9s
TKL **Tuckaleechee C** 23.37 14 P P 17 20 10.9 +0.3
comp=N,23nm,0.8s,baz=191,slow=10,SNR=34
TKL LR LR 17 29 43.1
comp=N,1µm,21.9s,baz=236,slow=38
TKL **Tuckaleechee C** 23.37 14 eP P 17 20 10.7 +0.1
comp=N,196nm,1.8s
U39A **Green Forest** 23.38 354 P P 17 20 09.1 -1.6
baz=172,SNR=13
ATAH **Atahualpa** 23.46 148 P P 17 20 14.9 +2.8
comp=N,15nm,1.0s,baz=329,slow=9.1,SNR=8.7
ATAH LR LR 17 27 22.9
comp=N,452nm,18.4s,baz=341,slow=31
V34A **Guthrie** 23.52 346 P P 17 20 09.9 -2.3
baz=162,SNR=15
V34A **Guthrie** 23.52 346 eP P 17 20 09.4 -2.7
comp=N,77nm,1.0s
U38A **Gravette** 23.54 352 P P 17 20 10.4 -2.0
baz=170,SNR=9.6
MSTX **Muleshoe** 23.57 334 P P 17 20 10.9 -1.8
baz=148,SNR=7.8
MSTX **Muleshoe** 23.57 334 eP P 17 20 12.3 -0.4
comp=N,33nm,1.3s
KMSC **Kings Mountain** 23.57 19 eP P 17 20 09.1 -3.6
comp=N,8.9nm,0.8s
U37A **Salina** 23.61 351 P P 17 20 11.2 -1.7
baz=168,SNR=21
U36A **Oologah** 23.70 350 P P 17 20 12.4 -1.4
baz=167,SNR=7.8
V33A **Lossen Ranch,** 23.70 344 P P 17 20 12.5 -1.3
baz=161
V32A **Arapaho** 23.82 343 P P 17 20 13.7 -1.3
baz=159
U35A **Pawnee** 23.86 348 P P 17 20 13.7 -1.7
baz=165,SNR=24
T41A **Mountain View** 23.93 358 P P 17 20 15.0 -1.0
baz=177,SNR=19
AMTX **Amarillo** 23.93 337 P P 17 20 14.8 -1.3
baz=152
AMTX **Amarillo** 23.93 337 eP P 17 20 14.8 -1.3
comp=N,26nm,1.0s
T39A **Clever** 24.01 355 P P 17 20 15.5 -1.2
baz=173,SNR=28
T40A **Mansfield** 24.07 356 P P 17 20 16.2 -1.1
baz=175,SNR=17
T38A **Diamond** 24.12 353 P P 17 20 16.3 -1.5
baz=171,SNR=35
SJG **San Juan** 24.14 75 P P 17 20 17.4 -0.8
comp=N,3.5nm,0.4s,baz=325,slow=12,SNR=3.6
U33A **Lingo Farm, Me** 24.24 345 P P 17 20 17.1 -1.7
baz=161
T37A **Cheneyville 18** 24.29 352 P P 17 20 17.9 -1.4
baz=169,SNR=64
T35A **Sooner Cattle** 24.35 349 P P 17 20 18.4 -1.5
baz=165,SNR=11
T36A **Boggs Farm, Ca** 24.37 350 P P 17 20 18.4 -1.7
baz=167,SNR=14
S43A **Fulton Ridge,** 24.44 1 P P 17 20 19.6 -1.1
baz=181
S40A **Lebanon** 24.51 356 P P 17 20 20.8 -0.6
baz=175,SNR=20
S44A **Carbondale** 24.59 3 P P 17 20 20.8 -1.2
baz=183
T34A **McClaskey Farm** 24.59 347 P P 17 20 20.7 -1.4
baz=164,SNR=12
S38A **Stockton** 24.66 354 P P 17 20 22.1 -0.6
baz=172,SNR=45
S39A **Bolivar** 24.67 355 P P 17 20 22.4 -0.4
baz=173,SNR=56
SRIG **Santa Rosalia** 24.68 308 eP P 17 20 23.2 +0.2
comp=N,36nm,1.3s
T33A **Patterson Ranc** 24.89 345 P P 17 20 23.7 -1.1
baz=162

S37A **Fort Scott** 24.90 352 P P 17 20 24.2 -0.6
baz=170,SNR=35
CCM **Cathedral Cave** 24.92 359 eP P 17 20 23.9 -1.2
comp=N,19nm,0.9s
121A **Cookes Peak, D** 24.94 324 P P 17 20 27.4 +1.9
baz=136
121A **Cookes Peak, D** 24.94 324 eP P 17 20 25.9 +0.4
comp=N,423nm,1.8s
USIN **University of** 24.97 6 eP P 17 20 25.3 -0.2
comp=N,50nm,0.8s
S36A **Lake Cedric, C** 24.97 351 P P 17 20 24.4 -1.1
baz=168,SNR=54
319A **Douglas** 25.03 320 eP P 17 20 28.1 +1.8
comp=N,42nm,1.2s
S35A **Otter Creek Ra** 25.06 349 P P 17 20 24.7 -1.6
baz=166,SNR=14
R40A **Maddies Statio** 25.19 357 P P 17 20 26.2 -1.2
baz=176
R38A **Fenwick Farm,** 25.21 354 P P 17 20 26.1 -1.6
baz=172,SNR=30
S34A **Willow Spring** 25.23 348 P P 17 20 27.0 -0.8
baz=164
R39A **Chumby, Stover** 25.26 356 P P 17 20 27.6 -0.5
baz=174,SNR=16
S33A **Kaszmaul Farm,** 25.32 346 P P 17 20 28.1 -0.5
baz=162,SNR=6.2
WCI **Wyandotte Cave** 25.39 8 eP P 17 20 28.8 -0.6
comp=N,56nm,0.9s
BNM **Barren Site** 25.54 328 eP P 17 20 31.6 +0.6
R36A **Gordon, Harris** 25.55 351 P P 17 20 30.3 -0.5
baz=168
R35A **Emporia Munici** 25.66 350 P P 17 20 31.7 0.0
baz=167
LPM **Los Pinos Moun** 25.66 328 eP P 17 20 32.2 +0.1
OLIL **Olney** 25.70 5 eP P 17 20 31.7 -0.4
comp=N,32nm,0.9s
BLA **Blacksburg** 25.76 19 eP P 17 20 33.0 +0.2
comp=N,21nm,1.3s
R34A **Isabella, Hill** 25.83 348 P P 17 20 32.5 -0.9
baz=164
Q40A **Laux Farm, Aux** 25.88 357 P P 17 20 32.4 -1.4
baz=176,SNR=8.9
Q38A **Cooks Store, C** 25.95 355 P P 17 20 33.4 -1.0
baz=173,SNR=17
Q37A **Longview Farm,** 25.95 353 P P 17 20 33.8 -0.7
baz=171
Q39A **Willow Grove F** 25.98 356 P P 17 20 33.4 -1.3
baz=174,SNR=7.4
LAZ **Ladron** 26.00 328 eP P 17 20 37.0 +1.9
R33A **Olander Ranch,** 26.00 347 P P 17 20 34.1 -0.7
baz=163
ANMO **Albuquerque** 26.08 329 P P 17 20 36.4 +0.6
comp=N,1.4nm,0.6s,baz=142,slow=12,SNR=7.6
ANMO LR LR 17 33 20.3
comp=N,125nm,18.1s,baz=191,slow=42
ANMO **Albuquerque** 26.08 329 P P 17 20 36.4 +0.6
baz=142
ANMO **Albuquerque** 26.08 329 eP P 17 20 34.9 -1.0
comp=N,10nm,1.4s
Q35A **Mercer Eighty,** 26.16 350 P P 17 20 36.2 -0.1
baz=168
Q36A **Arnold C. Orve** 26.17 352 P P 17 20 36.1 -0.3
baz=169
R32A **Long Quarter,** 26.27 346 P P 17 20 36.4 -0.9
baz=161,SNR=5.6
BLO **Bloomington** 26.29 7 eP P 17 20 36.8 -0.6
comp=N,14nm,0.7s
Q34A **Chapman** 26.37 349 P P 17 20 36.8 -1.4
baz=166
P39B **Salisbury** 26.41 356 P P 17 20 36.9 -1.6
baz=175
P40A **Paris** 26.42 358 P P 17 20 37.4 -1.2
baz=176,SNR=15
KSU1 **Kansas State U** 26.49 350 eP P 17 20 37.3 -2.0
comp=N,22nm,0.9s
TUC **Tucson** 26.60 319 P P 17 20 42.2 +1.8
baz=131
TUC **Tucson** 26.60 319 eP P 17 20 41.8 +1.3
comp=N,12nm,0.9s
P38A **Dawn** 26.60 355 P P 17 20 39.6 -0.7
baz=173
Q32A **Meitler Ranch,** 26.78 346 P P 17 20 41.9 0.0
baz=162
P36A **Good Intent, A** 26.78 352 P P 17 20 41.4 -0.5
baz=170,SNR=5.9
P35A **Duane Minner,** 26.81 351 P P 17 20 41.9 -0.2
baz=168,SNR=9.1
P34A **Walnut Farm, R** 26.96 349 P P 17 20 42.7 -0.8
baz=166
T25A **Trinidad** 26.97 335 P P 17 20 43.4 -0.5
baz=149
T25A **Trinidad** 26.97 335 eP P 17 20 43.9 0.0
comp=N,14nm,1.2s
O40A **La Belle** 27.00 358 P P 17 20 42.9 -0.9
baz=177,SNR=13
O38A **Galt** 27.09 355 P P 17 20 43.8 -0.9
baz=173
SFIN **Lafayette** 27.42 6 P P 17 20 46.4 -1.2
baz=187
SFIN **Lafayette** 27.42 6 eP P 17 20 46.1 -1.4
comp=N,15nm,0.8s
O34A **Beatrice** 27.55 350 P P 17 20 47.9 -1.0
baz=167
X18A **Snowflake** 27.63 324 eP P 17 20 50.5 +0.6
comp=N,19nm,1.1s
214A **Organ Pipe Nat** 27.70 316 P P 17 20 51.6 +1.3
baz=127
N38A **Joes South For** 27.74 356 P P 17 20 49.8 -0.7
baz=174
N39A **Derby Farms, D** 27.78 357 P P 17 20 49.9 -0.9
baz=176
ACSO **Alum Creek Sta** 27.92 13 eP P 17 20 51.7 -0.4
comp=N,59nm,0.9s
SDCO **Great Sand Dun** 27.94 334 eP P 17 20 53.3 +0.7
comp=N,17nm,1.8s
KSCO **Kaye Shedlock'** 27.95 340 eP P 17 20 52.2 -0.4
comp=N,13nm,0.8s
N35A **Tabor** 28.06 352 P P 17 20 54.3 +0.9
baz=169
M38A **Pleasantville** 28.36 356 P P 17 20 55.1 -0.9
baz=174
NNA **Nana** 28.40 151 LR LR 17 30 22.4
comp=N,230nm,19.0s,baz=355,slow=32
M37A **Trindle Farm,** 28.41 355 P P 17 20 56.1 -0.4
baz=172
X16A **Lo Mia Camp, P** 28.43 322 eP P 17 20 58.5 +1.6
comp=N,13nm,0.9s
S22A **4UR Ranch, Cre** 28.52 332 P P 17 20 58.3 +0.4
baz=145,SNR=8.3
S22A **4UR Ranch, Cre** 28.52 332 eP P 17 20 58.2 +0.4
comp=N,7.8nm,1.1s
113A **Mohawk Valley,** 28.84 317 eP P 17 21 02.0 +1.6
comp=N,40nm,1.8s
MVCO **Mesa Verde** 28.88 330 P P 17 21 02.2 +1.3
baz=141
MVCO **Mesa Verde** 28.88 330 eP P 17 21 02.5 +1.6
comp=N,64nm,1.9s
L38A **Oak Wood Farm,** 29.07 356 P P 17 21 01.3 -1.0
baz=175,SNR=7.3
Y14A **Wickenburg** 29.07 319 eP P 17 21 04.2 +1.7
comp=N,45nm,1.2s
O56A **Blue Knob Stat** 29.14 19 P P 17 21 01.8 -1.3
baz=204
WUAZ **Wupatki** 29.15 324 P P 17 21 04.7 +1.3
baz=134,SNR=14
WUAZ **Wupatki** 29.15 324 eP P 17 21 04.5 +1.1
comp=N,21nm,1.0s
K38A **Parkersburg** 29.56 357 P P 17 21 05.4 -1.2
baz=175
PV01 **Paradox Valley** 29.64 331 eP P 17 21 08.4 +0.7
GLA **Glamis** 29.72 316 eP P 17 21 09.9 +1.7
comp=N,34nm,1.5s
ISCO **Idaho Springs** 29.74 336 P P 17 21 09.0 +0.4
baz=149
ISCO **Idaho Springs** 29.74 336 eP P 17 21 07.8 -0.9
comp=N,4.8nm,1.0s
SMCO **Snowmass** 29.77 334 eP P 17 21 09.1 0.0
comp=N,8.8nm,1.4s
JFWS **Jewell Farm** 29.77 1 eP P 17 21 06.3 -2.2
comp=N,14nm,0.8s
PV05 **Paradox Valley** 29.85 330 eP P 17 21 10.5 +0.9
ALLY **Alegheny Colle** 29.95 16 eP P 17 21 10.6 +0.5
comp=N,18nm,1.0s
PV04 **Paradox Valley** 30.01 331 eP P 17 21 08.0 -2.9
PDMCI **Parker Dam,Lak** 30.03 319 P P 17 21 12.3 +1.4
baz=128,SNR=7.4
PV10 **Paradox Valley** 30.06 330 eP P 17 21 13.5 +2.1
PV09 **Paradox Valley** 30.20 330 eP P 17 21 13.7 +1.0

J38A **Wedel Dairy, R** 30.21 357 P P 17 21 11.3 -1.1
baz=176
J37A **Redenius Farm,** 30.27 356 P P 17 21 11.3 -1.7
baz=174
U15A **North Rim** 30.32 324 eP P 17 21 15.7 +1.9
comp=N,18nm,1.2s
W13A **Hualapai Mount** 30.38 320 eP P 17 21 15.2 +0.9
comp=N,21nm,1.4s
BC3 **Big Chuckawall** 30.50 316 P P 17 21 16.1 +0.9
baz=126,SNR=10.0
IRM **Iron Mountain** 30.59 318 P P 17 21 17.4 +1.4
baz=127,SNR=8.3
N23A **Red Feather La** 30.81 337 P P 17 21 17.8 -0.2
baz=149
I38A **Scanlan Farm,** 30.93 358 P P 17 21 17.5 -1.2
baz=176,SNR=12
I37A **Lemond, Waseca** 30.96 356 P P 17 21 18.5 -0.5
baz=174,SNR=6.0
ECSD **EROS Data Cent** 31.01 352 P P 17 21 18.1 -1.3
baz=168,SNR=11
ECSD **EROS Data Cent** 31.01 352 eP P 17 21 18.2 -1.3
comp=N,14nm,1.1s
KNB **Kanab** 31.04 324 eP P 17 21 21.8 +1.8
comp=N,28nm,1.2s
PKCU **Pink Cliffs** 31.05 325 eP P 17 21 21.4 +1.1
comp=N,63nm,1.6s
O20A **White River Ci** 31.11 333 P P 17 21 22.3 +1.7
baz=145
O20A **White River Ci** 31.11 333 eP P 17 21 21.5 +0.9
comp=N,6.6nm,0.8s
J30A **Dallas** 31.12 347 P P 17 21 21.1 +0.6
baz=163
LCMT **Little Creek M** 31.28 324 eP P 17 21 23.5 +1.4
comp=N,11nm,1.1s
GMRC **Granite Mounta** 31.31 318 P P 17 21 23.9 +1.5
baz=127,SNR=6.6
SRU **San Rafael Swe** 31.36 329 eP P 17 21 23.4 +0.6
comp=N,41nm,1.8s
MTPU **Mount Pierson** 31.41 326 eP P 17 21 25.7 +2.2
comp=N,33nm,1.4s
H37A **Dierke Farm, C** 31.50 357 P P 17 21 22.7 -1.0
baz=175,SNR=11
Q16A **Castle Valley** 31.53 329 eP P 17 21 25.5 +1.2
comp=N,36nm,1.6s
H36A **Jessenland, He** 31.55 356 P P 17 21 23.1 -1.2
baz=173,SNR=12
MMNY **Mt. Morris Dam** 31.59 18 eP P 17 21 24.6 0.0
P18A **Preston Nutter** 31.62 330 eP P 17 21 24.6 -0.7
comp=N,29nm,1.9s
BINY **Binghamton** 31.73 21 eP P 17 21 25.3 -0.6
comp=N,55nm,1.8s
P17A **Butcher Ranch,** 31.74 330 eP P 17 21 26.6 +0.5
comp=N,39nm,1.8s
TMUT **Trail Mountain** 31.84 329 eP P 17 21 28.1 +0.9
comp=N,17nm,1.5s
H33A **Prehn Over Nor** 31.96 352 P P 17 21 26.4 -1.4
baz=168
SHPR **Sheep Range** 32.08 321 eP P 17 21 31.4 +2.2
comp=N,37nm,1.7s
SPMN **Marine on St.** 32.13 357 P P 17 21 28.1 -1.2
baz=176
SPMN **Marine on St.** 32.13 357 eP P 17 21 28.4 -0.9
comp=N,54nm,0.8s
G36A **St. Michael** 32.20 356 P P 17 21 29.1 -0.7
baz=174,SNR=8.1
K22A **Casper** 32.55 338 P P 17 21 32.9 -0.3
baz=150
K22A **Casper** 32.55 338 eP P 17 21 33.3 +0.1
comp=N,9.3nm,0.9s
G32A **Webster** 32.63 351 P P 17 21 32.4 -1.3
baz=167
PSUT **Pine Spring** 32.68 325 eP P 17 21 37.0 +2.5
comp=N,19nm,1.2s
NLU **North Lily Min** 32.77 329 eP P 17 21 37.2 +1.9
comp=N,18nm,1.6s
G30A **Faulkton** 32.79 349 P P 17 21 33.6 -1.5
baz=164
F36A **Milaca** 32.81 356 P P 17 21 33.4 -1.8
baz=174,SNR=11
I25A **Rochford** 32.85 343 P P 17 21 35.0 -0.9
baz=156
F35A **Swanville** 32.88 355 P P 17 21 34.2 -1.7
baz=172,SNR=7.8
F34A **Alexandria** 32.88 354 P P 17 21 34.3 -1.6
baz=171
JLU **Jordanelle** 32.96 330 eP P 17 21 33.9 -3.0
comp=N,19nm,1.5s
COWI **Conover** 32.98 2 eP P 17 21 35.2 -1.5
comp=N,32nm,0.8s
TPNV **Topopah Spring** 33.03 321 P P 17 21 39.2 +1.7
baz=129,SNR=7.0
TPNV **Topopah Spring** 33.03 321 eP P 17 21 39.7 +2.2
comp=N,42nm,1.6s
F33A **5 Mile Ranch,** 33.04 353 P P 17 21 35.3 -1.9
baz=169,SNR=5.8
LRMC **Laurel Mtn Rad** 33.05 317 P P 17 21 39.3 +1.5
baz=125
FURC **Furnace Creek,** 33.12 319 P P 17 21 39.8 +1.8
baz=128
SADO **Sadowa** 33.12 15 eP P 17 21 36.7 -1.3
comp=N,30nm,0.9s
MPMC **Manual Prospec** 33.27 318 P P 17 21 41.0 +1.3
baz=126,SNR=13
DUG **Dugway, Tooele** 33.33 328 P P 17 21 41.0 +1.0
baz=138,SNR=5.3
DUG **Dugway, Tooele** 33.33 328 eP P 17 21 41.9 +1.8
comp=N,9.5nm,1.3s
PTGA **Pitinga** 33.38 112 eP P 17 21 42.5 +1.8
comp=N,34nm,1.4s
E36A **McGregor** 33.44 357 P P 17 21 39.1 -1.7
baz=175,SNR=15
R11A **Troy Canyon, C** 33.55 323 P P 17 21 44.1 +2.0
baz=132,SNR=18
R11A **Troy Canyon, C** 33.55 323 eP P 17 21 43.9 +1.9
comp=N,14nm,1.1s
E35A **Pequot Lakes** 33.56 355 P P 17 21 41.3 -0.5
baz=173,SNR=8.5
E34A **Wadena** 33.58 354 P P 17 21 41.2 -0.8
baz=172,SNR=19
E33A **Westby DABS, E** 33.66 353 P P 17 21 41.1 -1.6
baz=170
GRAC **Grapevine Rang** 33.76 320 P P 17 21 45.8 +2.1
baz=128,SNR=9.8
HWUT **Hardware Ranch** 33.79 331 eP P 17 21 45.0 +0.9
comp=N,20nm,1.3s
BW06 **Boulder Array** 33.83 335 P P 17 21 44.8 +0.3
baz=145
BW06 **Boulder Array** 33.83 335 eP P 17 21 44.3 -0.2
PD31 **Pinedale Array** 33.83 335 eP P 17 21 45.2 +0.7
PDAR **Pinedale Array** 33.83 335 P P 17 21 44.4 -0.1
comp=N,1.8nm,0.8s,baz=126,slow=7.5,SNR=9.5
PDAR PcP PcP 17 24 22.8 -0.5
comp=N,0.5nm,0.7s,baz=91,slow=5.4,SNR=2.6
PDAR LR LR 17 37 06.8
comp=N,331nm,21.4s,baz=264,slow=39
BGU **Big Grassy Mou** 33.98 329 eP P 17 21 47.4 +1.7
comp=N,28nm,1.6s
D37A **Cotton** 34.05 358 P P 17 21 44.5 -1.5
baz=176,SNR=17
D35A **Remer** 34.05 356 P P 17 21 44.4 -1.7
baz=174,SNR=9.8
E30A **Jud** 34.07 350 P P 17 21 45.1 -1.2
baz=165
D36A **Goodland** 34.10 357 P P 17 21 44.6 -1.9
baz=175,SNR=12
D34A **Park Rapids** 34.15 354 P P 17 21 45.9 -1.0
baz=172
F26A **Lodgepole** 34.25 345 P P 17 21 48.0 +0.1
baz=158
D33A **AnnSam, Waubun** 34.27 354 P P 17 21 46.7 -1.3
baz=171
LONY **Lake Ozonia** 34.35 21 eP P 17 21 48.1 -0.6
comp=N,28nm,1.4s
HVU **Hansel Valley** 34.50 330 eP P 17 21 51.6 +1.3
comp=N,43nm,1.5s
E27A **Carson** 34.53 347 P P 17 21 50.0 -0.3
baz=161
C38A **Sawbill Land.** 34.58 359 P P 17 21 48.3 -2.3
baz=178,SNR=11
C37A **Embarrass** 34.61 358 P P 17 21 49.8 -1.1
baz=177
D30A **Buchanan** 34.64 350 P P 17 21 50.3 -0.9
baz=166
C36A **Pine Crest Far** 34.66 357 P P 17 21 50.3 -1.0
baz=176,SNR=25
C35A **Jirik Farms, M** 34.67 356 P P 17 21 50.2 -1.2
baz=174,SNR=17
C39A **Grand Marais** 34.67 1 P P 17 21 49.4 -2.0

baz=180
E26A Carlson Angus 34.78 346 P **P 17 21 52.6 +0.2**
baz=159
EYMN Ely 34.81 359 P **P 17 21 51.1 -1.6**
baz=178,SNR=7.6
EYMN Ely 34.81 359 *eP* **P 17 21 51.0 -1.6**
comp=N,17nm,0.8s
REDW Red Top Meadow 34.87 334 *eP* **P 17 21 54.3 +0.8**
comp=N,65nm,1.6s
SNOW Snow King Moun 34.91 334 *eP* **P 17 21 54.8 +1.0**
comp=N,16nm,0.9s
SAML Samuel 34.96 127 *eP* **P 17 21 54.3 0.0**
comp=N,21nm,1.3s
LOHW Long Hollow 34.96 334 *eP* **P 17 21 54.9 +0.6**
comp=N,39nm,1.8s
ELK Elko 35.00 327 *eP* **P 17 21 56.9 +2.2**
comp=N,12nm,1.1s
TPAW Teton Pass 35.01 334 *eP* **P 17 21 55.6 +0.8**
comp=N,21nm,1.3s
E25A Miller Ranch, 35.04 345 P **P 17 21 55.0 +0.2**
baz=158,SNR=6.8
D28A Regan 35.05 348 P **P 17 21 54.7 0.0**
baz=163,SNR=5.3
MOOW Moose Ponds 35.13 334 *eP* **P 17 21 56.2 +0.5**
comp=N,6.5nm,1.1s
NV11 Mina Array Sit 35.14 321 *eP* **P 17 21 58.0 +2.2**
comp=N,31nm,1.0s
C31A Landman Farms, 35.15 352 P **P 17 21 54.5 -1.0**
baz=168,SNR=7.4
FXWY Fox Creek 35.16 334 *eP* **P 17 21 56.7 +0.7**
comp=N,5.6nm,1.2s
C30A Mose, Pekin 35.17 351 P **P 17 21 54.5 -1.2**
baz=166,SNR=12
NV01 Mina Array Sit 35.23 321 *eP* **P 17 21 58.4 +1.8**
NVAR Mina Array Bea 35.23 321 P **P 17 21 58.5 +1.8**
comp=N,28nm,1.0s,baz=136,slow=7.8,SNR=100
NVAR PcP **PcP 17 24 28.1 +0.8**
comp=N,1.7nm,1.0s,baz=159,slow=2.7,SNR=4.4
D26A Manning 35.30 346 P **P 17 21 56.3 -0.6**
baz=159,SNR=6.1
B35A Bob, Littlefor 35.31 356 P **P 17 21 55.2 -1.7**
baz=174,SNR=13
IMW Indian Meadow 35.34 334 *eP* **P 17 21 58.0 +0.5**
comp=N,20nm,1.8s
B33A Robert and Kas 35.37 354 P **P 17 21 56.1 -1.3**
baz=171,SNR=7.8
B34A Aery, Baudette 35.50 355 P **P 17 21 56.9 -1.7**
baz=173,SNR=35
MDND Maddock 35.50 350 P **P 17 21 57.4 -1.2**
baz=164,SNR=14
MDND Maddock 35.50 350 *eP* **P 17 21 57.7 -0.9**
comp=N,72nm,0.9s
B32A Ashes, Strandq 35.59 353 P **P 17 21 57.9 -1.4**
baz=170,SNR=25
D25A Fairfield 35.63 345 P **P 17 22 00.1 +0.3**
baz=158
RLMT Red Lodge 35.69 337 P **P 17 22 00.0 -0.4**
baz=147
RLMT Red Lodge 35.69 337 *eP* **P 17 22 00.6 +0.1**
comp=N,5.6nm,1.0s
YFT Old Faithful 35.75 335 *eP* **P 17 22 03.1 +2.0**
comp=N,9.4nm,1.1s
B31A Greenbush Farm 35.75 352 P **P 17 21 59.5 -1.2**
baz=168,SNR=12
B30A Myrvik Farm, E 35.88 351 P **P 17 22 00.4 -1.4**
baz=167,SNR=29
BMN Battle Mountai 35.88 324 *eP* **P 17 22 04.3 +2.1**
comp=N,56nm,1.8s
C26A Wahner Farm, P 35.97 347 P **P 17 22 02.4 -0.3**
baz=160
YMR Madison River 35.98 335 *eP* **P 17 22 04.4 +1.4**
comp=N,22nm,1.3s
WAKR Walker 35.98 320 *eP* **P 17 22 05.6 +2.5**
A33A Warroad 36.01 355 P **P 17 22 01.6 -1.3**
baz=172,SNR=53
B29A Wagenman Farm, 36.05 350 P **P 17 22 02.3 -1.0**
baz=165,SNR=16
A32A Rocking H Ranc 36.10 353 P **P 17 22 02.0 -1.6**
baz=170,SNR=7.2
A31A Linda, St. Vin 36.19 353 P **P 17 22 02.9 -1.6**
baz=169
B28A Dugan Ranch, T 36.21 349 P **P 17 22 04.1 -0.6**
baz=163,SNR=11
CMB Columbia Colle 36.30 319 *eP* **P 17 22 07.3 +1.6**
comp=N,13nm,1.3s
A30A Hoffart Farm, 36.35 352 P **P 17 22 04.7 -1.1**
baz=167,SNR=18
GCMT Greycliff 36.40 337 *eP* **P 17 22 03.5 -3.0**
A29A Manning Farm, 36.48 350 P **P 17 22 06.1 -0.9**
baz=165,SNR=7.7
A28A Rude Farm, Bot 36.64 349 P **P 17 22 07.6 -0.8**
baz=164,SNR=5.7
HLID Hailey 36.64 331 P **P 17 22 09.7 +1.0**
baz=138,SNR=8.3
HLID Hailey 36.64 331 *eP* **P 17 22 09.9 +1.2**
comp=N,27nm,1.6s
PAHR Pah Rah Range 36.68 322 *eP* **P 17 22 11.2 +2.3**
comp=N,22nm,1.4s
LPAZ La Paz 36.68 142 P **P 17 22 11.1 +1.4**
comp=N,1.7nm,0.9s,baz=359,slow=12,SNR=5.9
LPAZ LR LR 17 37 22.6
comp=N,244nm,19.0s,baz=328,slow=36
MCMT McKenzie Canyo 36.90 333 *eP* **P 17 22 12.4 +1.5**
A26A Wade Farm, Ken 36.97 348 P **P 17 22 11.0 -0.2**
baz=161,SNR=11
BOZ Bozeman (W) 37.05 335 P **P 17 22 12.3 +0.2**
baz=144,SNR=8.0
BOZ Bozeman (W) 37.05 335 *eP* **P 17 22 12.5 +0.5**
comp=N,4.9nm,0.8s
DGMT Dagmar 37.07 345 P **P 17 22 12.4 +0.3**
baz=157
DGMT Dagmar 37.07 345 *eP* **P 17 22 12.9 +0.9**
comp=N,21nm,0.8s
DLMT Dillon 37.22 334 *eP* **P 17 22 14.8 +1.3**
comp=N,22nm,1.3s
MFID Camas Ranch 37.22 329 *eP* **P 17 22 14.8 +1.3**
comp=N,12nm,1.1s
ULM Lac du Bonnet 37.35 354 P **P 17 22 12.5 -1.9**
comp=N,41nm,0.9s,baz=173,slow=8.9,SNR=30
ULM LR LR 17 40 50.4
comp=N,357nm,18.4s,baz=251,slow=41
ULM Lac du Bonnet 37.35 354 *eP* **P 17 22 12.4 -1.9**
comp=N,51nm,0.9s
LRM Limekiln Ridge 37.53 335 *eP* **P 17 22 16.7 +0.5**
HRY Holter Researc 38.00 336 *eP* **P 17 22 20.4 +0.3**
WVOR Wild Horse Val 38.01 326 *eP* **P 17 22 21.7 +1.5**
comp=N,21nm,1.0s
O03D Paynes Creek 38.52 321 P **P 17 22 25.1 +0.7**
baz=126
MOD Modoc Plateau 38.60 324 *eP* **P 17 22 28.1 +2.9**
comp=N,11nm,1.0s
CHMT Chamberlain Mo 38.73 335 *eP* **P 17 22 26.3 0.0**
MSO Missoula 38.95 334 P **P 17 22 27.9 -0.2**
baz=142,SNR=8.5
MSO Missoula 38.95 334 *eP* **P 17 22 28.6 +0.5**
comp=N,22nm,1.3s
M04C Macdoel 39.43 322 P **P 17 22 32.9 +0.8**
baz=127
SWMT Swartz Lake 39.52 335 *eP* **P 17 22 32.9 +0.2**
F10A Beach Ranch, E 39.77 331 *eP* **P 17 22 35.5 +0.6**
comp=N,34nm,0.8s
YBMT Yellow Bay 39.80 335 *eP* **P 17 22 35.7 +0.6**
JTMT Jette 39.82 335 *eP* **P 17 22 35.8 +0.5**
YBH Yreka Blue Hor 39.92 322 P **P 17 22 35.3 -0.9**
comp=N,3.8nm,1.0s,baz=138,slow=2.4,SNR=5.6
J05D Fort Rock, OR 40.01 325 P **P 17 22 38.1 +1.2**
baz=129
BLMT Blacktail Moun 40.06 335 *eP* **P 17 22 38.0 +0.6**
BSMT Bassoo Peak 40.11 335 P **P 17 22 38.2 +0.5**
HUMO Hull Mountain 40.59 323 *eP* **P 17 22 42.8 +1.2**
I05D Terrebonne, OR 40.75 326 P **P 17 22 43.3 +0.3**
baz=130
NEW Newport 41.43 333 *eP* **P 17 22 48.6 +0.2**
comp=N,4.7nm,0.8s
H04A Detroit Lake 41.43 326 *eP* **P 17 22 50.1 +1.6**
comp=N,36nm,1.0s
I03D Drain, OR 41.47 324 P **P 17 22 49.3 +0.5**
baz=127
C09A Chrisman Ranch 41.60 332 *eP* **P 17 22 50.9 +1.0**
comp=N,17nm,0.9s
TRW Toppenish Ridg 41.63 329 P **P 17 22 51.6 +1.5**
COR Corvallis 41.99 325 *eP* **P 17 22 55.1 +2.0**
comp=N,229nm,1.9s
SAW Saint Andrews 42.05 331 P **P 17 22 54.4 +0.8**
EBG Ellensburg 42.06 329 P **P 17 22 55.4 +1.8**
NAC Naches 42.07 329 P **P 17 22 55.5 +1.8**
B08A Colville Reser 42.49 332 *eP* **P 17 22 57.7 +0.5**
comp=N,6.7nm,0.9s

FFC Flin Flon 42.53 350 *eP* **P 17 22 56.7 -0.6**
comp=N,19nm,0.9s
LON Longmire 42.58 328 *eP* **P 17 22 59.0 +1.1**
comp=N,16nm,1.1s
D05A Enumclaw 42.97 329 *eP* **P 17 23 02.1 +1.2**
comp=N,28nm,1.2s
F03A Seaside 42.97 326 *eP* **P 17 23 04.7 +3.7**
comp=N,78nm,1.4s
E03A Lebam 43.36 327 *eP* **P 17 23 05.5 +1.4**
comp=N,75nm,1.4s
JCW Jim Creek 43.62 330 P **P 17 23 06.3 +0.1**
B06A Marblemount 43.62 330 *eP* **P 17 23 07.0 +0.8**
comp=N,33nm,1.1s
NLWA Neilton Lookou 44.07 328 *eP* **P 17 23 11.5 +1.6**
comp=N,54nm,1.3s
SCHQ Schefferville 45.69 19 P **P 17 23 21.2 -1.4**
comp=N,40nm,0.8s,baz=219,slow=6.3,SNR=28
SCHQ LR LR 17 43 13.6
comp=N,445nm,20.1s,baz=296,slow=37
SCHQ Schefferville 45.69 19 *eP* **P 17 23 21.2 -1.4**
comp=N,50nm,0.9s
FCC Fort Churchill 45.71 358 *eP* **P 17 23 21.7 -1.0**
comp=N,14nm,1.1s
YKA Yellowknife Ar 52.26 346 P **P 17 24 12.1 -0.7**
comp=N,3.6nm,0.8s,baz=146,slow=7.5,SNR=39
YKA PcP **PcP 17 25 24.5 +0.6**
comp=N,3.2nm,1.0s,baz=152,slow=3.9,SNR=8.1
YKB5 Yellowknife Ar 52.26 346 *eP* **P 17 24 12.1 -0.7**
YKW3 Yellowknife Ar 52.32 346 *eP* **P 17 24 12.7 -0.6**
comp=N,12nm,1.1s
DLBC Dease Lake 54.06 336 P **P 17 24 27.5 +1.2**
comp=N,9.7nm,0.9s,baz=122,slow=4.3,SNR=15
DLBC Dease Lake 54.06 336 *eP* **P 17 24 27.9 +1.6**
comp=N,12nm,1.0s
DAWY Dawson 61.05 338 *eP* **P 17 25 15.1 -0.3**
comp=N,16nm,1.9s
BMRM Bremner River 61.60 333 *eP* **P 17 25 21.6 +2.3**
comp=N,14nm,1.2s
INK Inuvik 61.72 343 P **P 17 25 19.7 0.0**
comp=N,5.6nm,0.8s,baz=127,slow=8.9,SNR=11
EYAK Cordova Ski Ar 61.93 333 *eP* **P 17 25 23.7 +2.4**
comp=N,28nm,1.1s
EGAK Eagle 62.08 338 *eP* **P 17 25 19.6 -2.7**
comp=N,12nm,1.2s
DIV Divide 62.19 333 *eP* **P 17 25 25.1 +2.0**
comp=N,17nm,1.2s
KLU Klutina 62.41 334 *eP* **P 17 25 26.6 +2.0**
comp=N,14nm,1.1s
DOT Dot Lake 62.62 336 *eP* **P 17 25 26.6 +0.7**
comp=N,40nm,1.4s
PAX Paxson 62.87 335 *eP* **P 17 25 28.6 +0.9**
comp=N,4.2nm,0.8s
SML Sawmill 63.59 333 *eP* **P 17 25 33.2 +0.8**
comp=N,45nm,1.5s
PMR Palmer 63.85 333 *eP* **P 17 25 35.0 +0.9**
comp=N,42nm,1.6s
BRLK Bradley Lake 64.00 331 *eP* **P 17 25 36.1 +1.0**
comp=N,31nm,1.0s
IL1 Eielson Array 64.23 337 *eP* **P 17 25 35.4 -1.1**
ILAR Eielson Array 64.23 337 P **P 17 25 36.5 0.0**
comp=N,5.8nm,0.9s,baz=122,slow=4.8,SNR=34
ILAR LR LR 17 59 09.4
comp=N,186nm,18.1s,baz=75,slow=41
ILB Eielson Array 64.23 337 *eP* **P 17 25 37.0 +0.4**
RND Reindeer 64.44 335 *eP* **P 17 25 38.7 +0.7**
comp=N,28nm,1.2s
WRH Wood River Hil 64.57 336 *eP* **P 17 25 38.8 +0.1**
comp=N,4.1nm,0.9s
MCK McKinley 64.61 335 *eP* **P 17 25 40.8 +1.7**
comp=N,15nm,1.2s
SPU Mount Spurr 65.02 332 *eP* **P 17 25 42.6 +0.7**
TRF Thorofare Moun 65.06 335 *eP* **P 17 25 43.7 +1.5**
comp=N,31nm,1.4s
RSO Redoubt South 65.12 331 *eP* **P 17 25 43.4 +0.7**
KTH Kantishna Hill 65.36 335 *eP* **P 17 25 45.2 +1.2**
comp=N,8.5nm,1.0s
BPAW Bear Paw Mtn. 65.58 335 *eP* **P 17 25 45.3 -0.1**
comp=N,11nm,1.2s
PPT Papeete 65.61 244 LR LR 17 48 56.5
comp=N,180nm,20.0s,baz=14,slow=31
PPLA Purkeypile 65.66 334 *eP* **P 17 25 46.2 +0.1**
comp=N,55nm,1.8s
CAST Castle Rocks 65.80 334 *eP* **P 17 25 46.6 -0.2**
comp=N,14nm,1.3s
MLY Manley 65.83 336 *eP* **P 17 25 46.8 -0.2**
comp=N,10nm,0.9s
COLD Coldfoot 66.49 339 *eP* **P 17 25 52.0 +0.9**
comp=N,12nm,1.2s
SUMG Summit 66.82 15 *i* P **P 17 25 51.8 -1.8**
comp=N,16nm,1.2s
SUMG Summit 66.82 15 *eP* **P 17 25 52.5 -1.1**
comp=N,16nm,1.2s
TT01 Tatalina 67.33 333 *eP* **P 17 25 56.6 0.0**
TTA Tatalina 67.34 333 *eP* **P 17 25 56.7 0.0**
FALS False Pass 69.51 324 *eP* **P 17 26 08.7 -1.6**
DAG Dannerks Havn 73.30 13 *i* P **P 17 26 30.7 -2.1**
comp=N,8.0nm,1.0s
ESDC Sonseca Array 79.30 52 P **P 17 27 06.0 -1.7**
comp=N,1.9nm,0.8s,baz=286,slow=6.0,SNR=10
ES19 SONSECA Array 79.34 52 *eP* **P 17 27 06.4 -1.5**
BILL Bilibino 82.83 338 *eP* **P 17 27 25.1 -0.8**
comp=N,24nm,1.3s
NOA NORSAR Array B 84.37 29 P **P 17 27 33.2 -0.7**
comp=N,1.6nm,0.8s,baz=290,slow=5.2,SNR=2.9
NOA LR LR 18 02 32.3
comp=N,68nm,21.8s,baz=270,slow=34
DBIC Dimbokro 84.46 84 P **P 17 27 35.4 +0.1**
comp=N,4.9nm,0.7s,baz=278,slow=6.2,SNR=5.2
ARCES ARCESS Array B 86.64 18 P **P 17 27 44.5 -0.5**
comp=N,1.2nm,0.8s,baz=283,slow=5.3,SNR=2.8
ARCES LR LR 18 06 39.7
comp=N,109nm,20.3s,baz=297,slow=36
DAVOX Davos/Dischmat 87.69 43 P **P 17 27 49.9 -1.0**
comp=N,1.3nm,0.6s,baz=18,slow=20,SNR=3.3
FUORN Ofenpass-Fuorn 88.00 43 *eP* **P 17 27 52.5 +0.1**
TORD Torodi Ar. Bea 89.34 77 P **P 17 27 57.9 -1.1**
comp=N,0.9nm,0.6s,baz=299,slow=5.3,SNR=5.5
GERES GERESS Array B 89.51 40 P **P 17 27 58.2 -1.1**
comp=N,0.8nm,0.9s,baz=263,slow=1.1,SNR=5.6
SEY Seymchan 90.16 336 P **P 17 28 02.5 +0.7**
comp=N,3.7nm,1.0s,baz=355,slow=1.6,SNR=6.9
FINES FINESS Array B 90.81 25 LR LR 18 09 15.8
comp=N,157nm,18.2s,baz=322,slow=36
TIXI Tiksi 91.46 348 *eP* **P 17 28 07.0 -0.7**
MA2 Magadan 92.53 333 LR LR 18 15 21.1
comp=N,54nm,18.4s,baz=35,slow=39
VYHS Vyhne 92.81 39 *eP* **P 17 28 14.3 -0.2**
AKASG Malin Array Be 97.81 34 LR LR 18 13 45.7
comp=N,75nm,19.5s,baz=20,slow=36
NRIK Noril'sk 97.83 1 LR LR 18 15 04.1
comp=N,215nm,20.8s,baz=4.0,slow=37
YAK Yakutsk 98.77 342 LR LR 18 20 59.6
comp=N,90nm,18.1s,baz=36,slow=40
KSRS Korea Array 118.06 326 PKP **PKPdf 17 33 49.4 +0.3**
comp=N,1.2nm,0.9s,baz=29,slow=2.8,SNR=4.7
MKAR Makanchi Array 120.11 6 PKP **PKPdf 17 33 51.3 -1.6**
comp=N,0.2nm,0.4s,baz=58,slow=3.6,SNR=2.7
HHC Hu-ho-hao-te 122.57 340 *e*PKP **PKPdf 17 33 53.9 -3.9**
HHC PP **PP 17 35 35.8 +2.2**
HHC SKKS 17 42 14.0
HHC Hu-ho-hao-te 122.57 340 SS SS 17 52 07.0 -6.1
HHC AMB AMB
comp=Z,140nm,9.4s
HHC LR LR
comp=N,120nm,20.4s
HHC LR LR
comp=E,210nm,19.4s
HHC LR LR
comp=Z,160nm,20.6s
GTA Gaotai 126.92 350 *e*PKP **PKPdf 17 34 05.1 -1.2**
GTA pPKP pPKPdf 17 34 24.3 +10
GTA sPKP 17 34 33.6
LZH Lanzhou 129.25 345 *e*PKP **PKPdf 17 34 08.5 -2.4**
LZH pPKP pPKPdf 17 34 28.9 +10
LZH sPKP 17 34 37.5
LZH LR LR
comp=N,140nm,18.0s
LZH LR LR
comp=E,150nm,17.9s
LZH LR LR
comp=Z,170nm,20.0s
CD2 Chengdu 134.16 343 PKP **PKPdf 17 34 18.9 -1.2**
WRA Warramunga Arr 136.40 255 PKP **PKPdf 17 34 24.2 -0.2**
comp=Z,0.9nm,0.9s,baz=88,slow=1.9,SNR=5.5
ASAR Alice Springs 136.55 249 PKP **PKPdf 17 34 24.9 +0.3**
comp=Z,0.6nm,0.8s,baz=123,slow=3.4,SNR=4.5
CMAR Chiang Mai Arr 147.30 343 PKPbc **PKPbc 17 34 47.0 +0.7**
comp=Z,5.1nm,0.9s,baz=340,slow=3.3,SNR=35
HYB Hyderabad 147.92 20 *i* PKP **PKPbc 17 34 48.0 0.0**

IDC ***22*** *17:15:41.4±2.5, 34°.76N×142°.85E, h0km, mb3.5/3, mb1 3.7/6, mb1mx3.4/38, mbtmp3.7/6, ML3.7/3, Error ellipse: s-maj=58.1km s-min=24.8km az=62.0*
ISCJB ***22*** *17:15:43.8±1.3, 34°.9N±0°.1×142°.8E±0°.1, h33km, mb3.6/3, Error ellipse: s-maj=20.8km s-min=9.4km az=138.3*
JMA ***22*** *17:15:43.7±0.6, 34°.87N×142°.84E, h69km, M3.1*
ISC 22 17:15:45.8±1.8, 34°.8N±0°.1×142°.8E±0°.2, h35km, n12, σ1§38/14, mb3.7/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BSO1	**Boso 1**	**1.51 264**		P	**Pn**	**17 16 09.4**	**-0.4**
CHOJ	**Chosi**	**1.81 300**		P	**Pn**	**17 16 13.8**	**-0.7**
BSO3	**Boso 3**	**1.88 270**		P	**Pn**	**17 16 15.3**	**+0.1**
JHO	**Hitachi**	**2.54 315**		P	**Pn**	**17 16 22.3**	**-2.3**
JYT	**Yasato**	**2.54 304**		P	**Pn**	**17 16 23.0**	**-1.6**
JHJ	**Hachijo jima 2**	**3.02 237**		Pn	**Pn**	**17 16 30.6**	**-0.5**
	37nm,0.3s,baz=70,slow=21,SNR=21						
MJAR	**Matsushiro Arr**	**4.11 296**		Pn	**Pn**	**17 16 46.0**	**-0.2**
	1.6nm,0.3s,baz=108,slow=8.6,SNR=18						
MJAR				Sn	**Sn**	**17 17 32.1**	**-0.8**
	1.1nm,0.3s,baz=80,slow=22,SNR=4.9						
MAT	**Matsushiro**	**4.11 296**		P	**Pn**	**17 16 45.9**	**-0.2**
MAT				S	**Sn**	**17 17 33.8**	**+0.8**
JCJ	**Chichijima**	**7.72 184**		Pn	**Pn**	**17 17 32.7**	**-3.0**
	2.1nm,0.3s,baz=131,slow=19,SNR=8.1						
JCJ				Sn	Sn	17 18 53.0	-8.9
	baz=204,slow=20						
MKAR	**Makanchi Array**	**46.27 304**		P	**P**	**17 24 08.7**	**+1.0**
	0.1nm,0.3s,baz=89,slow=6.2,SNR=3.0						
WRA	**Warramunga Arr**	**55.05 190**		P	**P**	**17 25 14.5**	**+0.4**
	1.0nm,0.7s,baz=8.1,slow=7.6,SNR=9.6						
ASAR	**Alice Springs**	**58.77 190**		P	**P**	**17 25 41.4**	**+0.9**
	0.6nm,0.9s,baz=0.6,slow=6.3,SNR=6.3						

IDC ***22*** *17:22:32.9±1.7, 36°.21N×142°.65E, h0km, mb3.5/4, mb1 3.6/8, mb1mx3.4/40, mbtmp3.5/8, ML3.5/4, Error ellipse: s-maj=34.1km s-min=23.1km az=63.0*
ISCJB ***22*** *17:22:34.2±0.7, 36°.19N±0°.03×142°.55E±0°.06, h18km, mb3.5/4, Error ellipse: s-maj=6.9km s-min=4.7km az=17.2*
JMA ***22*** *17:22:36.0±0.2, 36°.18N×142°.49E, h73km, M3.3*
ISC 22 17:22:36.0±1.2, 36°.17N±0°.05×142°.50E±0°.09, h18km, n30, σ1§26/35, mb3.6/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**1.41 251**		P	**Pn**	**17 23 00.1**	**-0.7**
CHOJ				*e*S	**Sn**	**17 23 18.8**	**-0.2**
JHO	**Hitachi**	**1.62 286**		P	**Pn**	**17 23 02.7**	**-1.0**
JHO				S	**Sn**	**17 23 23.2**	**-1.0**
ONAJ	**Iwakimizuishiy**	**1.66 305**		P	**Pn**	**17 23 03.3**	**-1.0**
JFK	**Kawauchi**	**1.77 313**		P	**Pn**	**17 23 04.7**	**-1.1**
JFK				S	**Sn**	**17 23 26.7**	**-1.2**
BSO1	**Boso 1**	**1.96 220**		P	**Pn**	**17 23 08.3**	**+0.4**
BSO1				S	**Sn**	**17 23 33.2**	**+1.5**
JFT	**Otama**	**2.20 308**		P	**Pn**	**17 23 11.8**	**+0.1**
JFT				S	**Sn**	**17 23 38.3**	**-0.1**
JAG	**Ashikaga**	**2.48 277**		P	**Pn**	**17 23 15.1**	**-0.4**
JRY	**Ryogami san**	**2.92 268**		P	**Pn**	**17 23 21.1**	**-0.5**
JRY				S	**Sn**	**17 23 55.6**	**-0.7**
JOD2	**Odawara 2**	**2.92 253**		P	**Pn**	**17 23 21.3**	**-0.3**
JOD2				*e*S	**Sn**	**17 23 55.8**	**-0.5**
JMK	**Ichinoseki**	**2.96 340**		P	**Pn**	**17 23 21.4**	**-0.7**
JMK				S	**Sn**	**17 23 55.8**	**-1.3**
JYK	**Kaneyama**	**3.23 329**		P	**Pn**	**17 23 25.3**	**-0.5**
JYN	**Shimob**	**3.29 259**		P	**Pn**	**17 23 27.1**	**+0.4**
MJAR	**Matsushiro Arr**	**3.49 277**		Pn	**Pn**	**17 23 29.3**	**0.0**
	3.1nm,0.3s,baz=88,slow=15,SNR=28						
MJAR				Sn	**Sn**	**17 24 12.3**	**+2.1**
	1.6nm,0.3s,baz=92,slow=15,SNR=4.2						
MAT	**Matsushiro**	**3.49 277**		P	**Pn**	**17 23 29.8**	**+0.4**
MAT				S	**Sn**	**17 24 08.1**	**-2.1**
MAT	**Matsushiro**	**3.49 277**		P	**Pn**	**17 23 29.8**	**+0.4**
JHJ	**Hachijo jima 2**	**3.78 217**		Pn	**Pn**	**17 23 33.7**	**+0.3**
	11nm,0.3s,baz=90,slow=22,SNR=6.5						
JHJ				Sn	**Sn**	**17 24 13.5**	**-3.9**
	24nm,0.3s,baz=102,slow=21,SNR=7.4						
JSD	**Sado**	**3.87 300**		P	**Pn**	**17 23 34.1**	**-0.5**
ASAJ	**Asahikawa**	**7.94 0**		Pn	**Pn**	**17 24 29.1**	**-1.4**
	1.0nm,0.3s,baz=157,slow=8.8,SNR=10						
ASAJ				Sn	**Sn**	**17 26 02.7**	**+2.9**
	0.4nm,0.3s,baz=127,slow=20,SNR=2.6						
JCJ	**Chichijima**	**9.05 182**		Pn	Pn	17 24 42.6	-3.2
	2.2nm,0.3s,baz=290,slow=20,SNR=11						
JCJ				Sn	Sn	17 26 16.2	-11
	4.2nm,0.3s,baz=143,slow=20,SNR=4.2						
KSRS	**Korea Array**	**11.76 281**		Pn	**Pn**	**17 25 23.4**	**+0.6**
	0.1nm,0.3s,baz=90,slow=14,SNR=3.5						
H11N2	**WAKE ISLAND Hy 26.95 121**			T	T	17 56 26.0	
	baz=312,slow=75,SNR=20						
H11N1	**WAKE ISLAND Hy 26.96 121**			T	T	17 56 29.9	
	baz=312,slow=75,SNR=18						
H11N3	**WAKE ISLAND Hy 26.97 121**			T	T	17 56 27.6	
	baz=312,slow=75,SNR=17						
H11S1	**WAKE ISLAND Hy 27.65 123**			T	T	17 57 21.0	
	baz=314,slow=76,SNR=11						
H11S3	**WAKE ISLAND Hy 27.65 123**			T	T	17 57 17.8	
	baz=314,slow=76,SNR=11						
H11S2	**WAKE ISLAND Hy 27.67 123**			T	T	17 57 20.7	
	baz=314,slow=76,SNR=11						
CMAR	**Chiang Mai Arr**	**42.14 257**		P	**P**	**17 30 28.9**	**+1.3**
	0.3nm,0.6s,baz=50,slow=8.4,SNR=3.6						
MKAR	**Makanchi Array**	**45.32 303**		P	**P**	**17 30 52.7**	**-0.1**
	0.7nm,0.6s,baz=73,slow=9.7,SNR=8.2						
WRA	**Warramunga Arr**	**56.34 189**		P	**P**	**17 32 15.4**	**-0.5**
	0.7nm,1.0s,baz=8.7,slow=7.2,SNR=3.7						
ASAR	**Alice Springs**	**60.06 189**		P	**P**	**17 32 42.5**	**+0.5**
	0.4nm,0.8s,baz=360,slow=6.5,SNR=4.5						

NSSC ***22*** *17:33:43.1±1.1, 33°.75N×35°.72E, h1km±3km, MD1.3, ML1.7*
CSEM ***22*** *17:33:43.5±0.2, 33°.77N×35°.74E, h2km, ML3.0, Error ellipse: s-maj=4.0km s-min=2.4km az=96.0*
GRAL ***22*** *17:33:43.9±0.3, 33°.79N×35°.76E, h4km±9km, MD3.0*
ISC 22 17:33:43.4±0.9, 33°.78N±0°.02×35°.76E±0°.03, h9km±9km, n28, σ0§62/53, Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
BHL	**Bhannes**	**0.15 326**		*e*P	**Pg**	**17 33 46.6**	**-0.3**
BHL	**Bhannes**	**0.15 326**		*e*P	**Pg**	**17 33 46.6**	**-0.3**
DQRL	**Deir Qamar**	**0.17 246**		*e*P	**Pg**	**17 33 47.3**	**+0.2**
DQRL				*e*S	**Sg**	**17 33 49.7**	**+0.1**
DQRL	**Deir Qamar**	**0.17 246**		*e*P	**Pg**	**17 33 47.3**	**+0.2**
DQRL				*e*S	**Sg**	**17 33 49.7**	**+0.1**
BEYL	**Beirut**	**0.24 294**		*e*P	**Pg**	**17 33 48.3**	**0.0**
RCY	**Rachaya**	**0.28 167**		*e*P	**Pg**	**17 33 49.3**	**+0.1**
RCY				*e*S	**Sg**	**17 33 53.3**	**+0.3**
BRBR	**Barbar**	**0.40 156**		*e*P	**Pg**	**17 33 51.2**	**-0.1**
BRBR				*e*S	**Sg**	**17 33 56.4**	**-0.1**
BRBR				AML	AML	17 34 01.2	
	comp=E,106nm,0.6s						
BRBR				AML	AML	17 34 04.9	
	comp=N,54nm,0.4s						
BRBR	**Barbar**	**0.40 156**		*e*P	**Pg**	**17 33 51.2**	**-0.1**
BRBR				*e*S	**Sg**	**17 33 56.4**	**-0.1**
	comp=N,54nm,0.4s						
HWQ	**Hawqa**	**0.53 17**		*e*P	**Pg**	**17 33 53.1**	**-0.6**
HWQ				*e*S	**Sg**	**17 33 60.0**	**-0.6**
HWQ	**Hawqa**	**0.53 17**		*e*P	**Pg**	**17 33 53.1**	**-0.6**
HWQ				*e*S	**Sg**	**17 34 00.0**	**-0.6**
MARH	**Ras Al Marh**	**0.65 67**		*e*P	**Pb**	**17 33 56.7**	**-0.4**
MARH				*e*S	**Sb**	**17 34 07.0**	**+0.6**
MARH				AML	AML	17 34 13.4	
	comp=E,49nm,0.5s						
MARH				AML	AML	17 34 14.9	
	comp=N,124nm,0.5s						
MARH	**Ras Al Marh**	**0.65 67**		*e*P	**Pb**	**17 33 56.7**	**-0.4**
MARH				*e*S	**Sb**	**17 34 07.0**	**+0.6**
	comp=N,124nm,0.5s						
FKH	**Fakeheh**	**0.72 49**		*e*P	**Pg**	**17 33 56.6**	**-0.7**
FKH				*e*S	**Sg**	**17 34 06.0**	**-0.7**
HAWK	**Haweek**	**0.92 36**		*e*P	**Pb**	**17 34 01.1**	**-0.5**
HAWK				*e*S	**Sn**	**17 34 15.2**	**-0.7**
HAWK				AML	AML	17 34 21.4	
	comp=N,19nm,0.6s						
HAWK				AML	AML	17 34 23.2	
	comp=E,28nm,0.6s						

HAWK	**Haweek**	**0.92**	**36**	*e*P	**Pb**	**17 34 01.1**	**-0.5**
HAWK				*e*S	**Sn**	**17 34 15.2**	**-0.7**
	comp=E,28nm,0.6s						
BIDA	**Albida**	**1.32**	**21**	*e*P	**Pg**	**17 34 08.9**	**+0.1**
BIDA				*e*S	**Sg**	**17 34 27.3**	**+1.3**
BIDA				AML	AML	17 34 30.3	
	comp=E,52nm,0.6s						
BIDA				AML	AML	17 34 32.5	
	comp=N,52nm,0.6s						
BIDA	**Albida**	**1.32**	**21**	*e*P	**Pg**	**17 34 08.9**	**+0.1**
BIDA				*e*S	**Sg**	**17 34 27.3**	**+1.3**
	comp=N,52nm,0.6s						
ROOS	**tl_alroos**	**1.33**	**72**	*e*P	**Pg**	**17 34 09.1**	**+0.1**
ROOS				*e*S	**Sg**	**17 34 27.1**	**+0.8**
ROOS				AML	AML	17 34 37.8	
	comp=E,32nm,0.5s						
ROOS				AML	AML	17 34 38.1	
	comp=N,31nm,0.8s						
ROOS	**tl_alroos**	**1.33**	**72**	*e*P	**Pg**	**17 34 09.1**	**+0.1**
ROOS				*e*S	**Sg**	**17 34 27.1**	**+0.8**
	comp=N,31nm,0.8s						
SALA	**Sala**	**1.34**	**142**	*e*P	**Pb**	**17 34 08.6**	**-0.2**
SALA				*e*S	**Sg**	**17 34 26.2**	**-0.3**
SALA				AML	AML	17 34 34.9	
	comp=E,1.9nm,0.4s						
SALA				AML	AML	17 34 35.7	
	comp=N,20nm,0.3s						
SALA	**Sala**	**1.34**	**142**	*e*P	**Pb**	**17 34 08.6**	**-0.2**
SALA				*e*S	**Sg**	**17 34 26.2**	**-0.3**
	comp=N,20nm,0.3s						
RABH	**Abou Rabah**	**1.37**	**61**	*e*P	**Pg**	**17 34 09.5**	**-0.2**
RABH				*e*S	**Sg**	**17 34 29.2**	**+1.7**
RABH				AML	AML	17 34 38.3	
	comp=E,18nm,0.4s						
RABH				AML	AML	17 34 39.6	
	comp=N,11nm,0.3s						
RABH	**Abou Rabah**	**1.37**	**61**	*e*P	**Pg**	**17 34 09.5**	**-0.2**
RABH				*e*S	**Sg**	**17 34 29.2**	**+1.7**
	comp=N,11nm,0.3s						
ZALF	**Zalf**	**1.57**	**122**	*e*P	**Pb**	**17 34 12.6**	**0.0**
ZALF				*e*S	**Sg**	**17 34 33.1**	**-0.8**
ZALF				AML	AML	17 34 41.9	
	comp=E,14nm,0.6s						
ZALF				AML	AML	17 34 42.5	
	comp=N,8.1nm,0.7s						
ZALF	**Zalf**	**1.57**	**122**	*e*P	**Pb**	**17 34 12.6**	**0.0**
ZALF				*e*S	**Sg**	**17 34 33.1**	**-0.8**
	comp=N,8.0nm,0.7s						
WRDH	**Warideh**	**1.81**	**17**	*e*P	**Pb**	**17 34 16.7**	**0.0**
WRDH				*e*S	**Sb**	**17 34 39.3**	**-0.2**
WRDH				AML	AML	17 34 43.8	
	comp=E,18nm,0.6s						
WRDH				AML	AML	17 34 46.0	
	comp=N,9.5nm,0.6s						
WRDH	**Warideh**	**1.81**	**17**	*e*P	**Pb**	**17 34 16.7**	**0.0**
WRDH				*e*S	**Sb**	**17 34 39.3**	**-0.2**
	comp=N,10.0nm,0.6s						
ARNB	**Al Arnab**	**2.09**	**5**	*e*P	**Pn**	**17 34 19.4**	**+0.8**
ARNB				*e*S	**Sb**	**17 34 46.8**	**-0.8**
ARNB				AML	AML	17 34 54.7	
	comp=N,9.0nm,0.4s						
ARNB				AML	AML	17 34 58.5	
	comp=E,14nm,0.6s						

IDC 22 17:33:46.7±4.8, 20°.92S×178°.97E, h520km±38km, mb3.0/3, mb1 3.4/3, mb1mx2.8/25, mbtmp3.9/3, Error ellipse: s-maj=237.6km s-min=29.6km az=161.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**41.66**	**258**	P	P	17 40 48.8	-0.9
	0.8nm,0.4s,baz=97,slow=7.6,SNR=42						
ASAR				ScP	ScP	17 45 34.5	-0.6
	0.5nm,0.9s,baz=107,slow=4.6,SNR=5.4						
WRA	**Warramunga Arr**	**41.73**	**263**	P	P	17 40 50.9	+0.6
	1.6nm,0.6s,baz=94,slow=8.5,SNR=62						
TXAR	**Lajitas Array**	**89.68**	**58**	P	P	17 45 49.4	-0.1
	0.4nm,0.7s,baz=216,slow=5.8,SNR=4.5						

*ISCJB **22** 17:33:54.6±0.6, 39°.09N±0°.04×28°.98E±0°.05, h8km±9km, Error ellipse: s-maj=7.6km s-min=5.8km az=158.1*
*DDA **22** 17:33:54.3, 39°.08N×28°.97E, h7km, Md2.6*
*CSEM **22** 17:33:54.7±0.2, 39°.10N×28°.98E, h5km, MD2.6, Error ellipse: s-maj=4.3km s-min=3.4km az=110.0*
*ISK **22** 17:33:55.1, 39°.06N×28°.96E, h19km, MD2.7*
ISC 22 17:33:54.8±0.9, 39°.08N±0°.03×28°.96E±0°.03, h11km±8km, n20, σ0$43/28, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.19**	**260**	P	**Pg**	**17 33 58.3**	**-0.7**
DEMI				S	**Sg**	**17 34 02.9**	**+1.0**
DEMI	**Demirci**	**0.19**	**260**	*i* P	**Pg**	**17 33 58.3**	**-0.7**
DEMI				*i* S	**Sg**	**17 34 02.9**	**+1.0**
GDZ	**Gediz**	**0.41**	**88**	P	**Pg**	**17 34 02.6**	**-0.2**
GDZ				S	**Sg**	**17 34 08.1**	**-0.2**
GDZ	**Gediz**	**0.41**	**88**	*i* P	**Pg**	**17 34 02.6**	**-0.2**
GDZ				*i* S	**Sg**	**17 34 08.1**	**-0.2**
KULA	**Kula-Manisa**	**0.61**	**203**	*e*PG	**Pb**	**17 34 07.4**	**0.0**
KULA				*e*SG	**Sb**	**17 34 16.1**	**+0.1**
KULA	**Kula-Manisa**	**0.61**	**203**	*e*Pg	**Pb**	**17 34 07.4**	**0.0**
KULA				*e*Sg	**Sb**	**17 34 16.1**	**+0.1**
DURS	**Dursunbey**	**0.65**	**324**	P	**Pg**	**17 34 06.9**	**-0.4**
DURS	**Dursunbey**	**0.65**	**324**	*i* P	**Pg**	**17 34 06.9**	**-0.4**
MANT	**Manisa**	**0.66**	**208**	P	**Pb**	**17 34 08.4**	**-0.1**
MANT				S	**Sg**	**17 34 16.3**	**-0.1**
MANT	**Manisa**	**0.66**	**208**	*i* P	**Pb**	**17 34 08.4**	**-0.1**
MANT				*i* S	**Sg**	**17 34 16.3**	**-0.1**
BALB	**Balikesir**	**1.01**	**304**	*e*PG	**Pn**	**17 34 15.0**	**+0.2**
BALB	**Balikesir**	**1.01**	**304**	*e*Pg	**Pn**	**17 34 15.0**	**+0.2**
KCTX	**Karacabey (Bur**	**1.28**	**339**	*e*PN	**Pb**	**17 34 18.6**	**-0.2**
KCTX	**Karacabey (Bur**	**1.28**	**339**	*e*Pn	**Pb**	**17 34 18.7**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.29**	**357**	*e*PN	**Pb**	**17 34 18.9**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.29**	**357**	*e*Pn	**Pb**	**17 34 18.9**	**-0.2**
ARMT	**Armutlu**	**1.49**	**357**	*e*PN	**Pn**	**17 34 21.8**	**+0.3**
ARMT	**Armutlu**	**1.49**	**357**	*e*Pn	**Pn**	**17 34 21.8**	**+0.3**
GULT	**Gulveren**	**1.81**	**41**	*e*PN	**Pn**	**17 34 26.4**	**+0.5**
GULT	**Gulveren**	**1.81**	**41**	*e*Pn	**Pn**	**17 34 26.4**	**+0.5**

*ISK **22** 17:37:26.4, 39°.13N×28°.96E, h5km, MD2.9*
*ISCJB **22** 17:37:27.1±0.5, 39°.12N±0°.03×29°.00E±0°.03, h2km±7km, Error ellipse: s-maj=5.1km s-min=4.0km az=7.3*
*CSEM **22** 17:37:27.5±0.1, 39°.12N×28°.99E, h5km, MD2.8, Error ellipse: s-maj=2.5km s-min=2.3km az=103.0*
*DDA **22** 17:37:27.0, 39°.11N×29°.03E, h7km, Md2.8*
ISC 22 17:37:27.2±0.9, 39°.12N±0°.02×28°.99E±0°.02, h12km±7km, n49, σ0$37/62, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.23**	**251**	P	**Pg**	**17 37 32.2**	**0.0**
DEMI				S	**Sg**	**17 37 35.7**	**+0.2**
DEMI	**Demirci**	**0.23**	**251**	*i* P	**Pg**	**17 37 32.2**	**0.0**
DEMI				*i* S	**Sg**	**17 37 35.6**	**+0.2**
GDZ	**Gediz**	**0.38**	**94**	P	**Pg**	**17 37 34.5**	**-0.4**
GDZ				S	**Sg**	**17 37 40.0**	**-0.1**
GDZ	**Gediz**	**0.38**	**94**	*i* P	**Pg**	**17 37 34.5**	**-0.4**
GDZ				*i* S	**Sg**	**17 37 40.0**	**-0.1**
TVSB	**Tavsanli**	**0.49**	**47**	*e*PG	**Pg**	**17 37 37.3**	**+0.3**
TVSB	**Tavsanli**	**0.49**	**47**	*e*Pg	**Pg**	**17 37 37.3**	**+0.3**
DURS	**Dursunbey**	**0.63**	**320**	P	**Pg**	**17 37 39.3**	**-0.2**
DURS	**Dursunbey**	**0.63**	**320**	*i* P	**Pg**	**17 37 39.3**	**-0.2**
KULA	**Kula-Manisa**	**0.65**	**203**	*e*PG	**Pg**	**17 37 40.0**	**0.0**
KULA	**Kula-Manisa**	**0.65**	**203**	*e*Pg	**Pg**	**17 37 40.0**	**0.0**
MANT	**Manisa**	**0.71**	**209**	P	**Pg**	**17 37 41.0**	**-0.1**
MANT				S	**Sg**	**17 37 50.1**	**-0.3**
MANT	**Manisa**	**0.71**	**209**	*i* P	**Pg**	**17 37 41.0**	**-0.1**
MANT				*i* S	**Sg**	**17 37 50.1**	**-0.3**
KHAL	**Karahalli**	**0.84**	**152**	P	**Pb**	**17 37 44.1**	**+0.3**
KHAL				S	**Sg**	**17 37 54.3**	**-0.2**
KHAL	**Karahalli**	**0.84**	**152**	*i* P	**Pb**	**17 37 44.1**	**+0.3**
KHAL				*i* S	**Sg**	**17 37 54.3**	**-0.2**
KHL	**Karahalli**	**0.89**	**152**	*e*PG	**Pb**	**17 37 45.3**	**+0.6**
KHL	**Karahalli**	**0.89**	**152**	*e*Pg	**Pb**	**17 37 45.3**	**+0.6**
ORLT	**Orhaneli**	**0.93**	**355**	*e*PG	**Pb**	**17 37 45.6**	**+0.2**
ORLT	**Orhaneli**	**0.93**	**355**	*e*Pg	**Pb**	**17 37 45.6**	**+0.2**
AKHS	**Akhisar**	**0.95**	**256**	P	**Pn**	**17 37 46.4**	**0.0**
AKHS				S	**Sn**	**17 37 59.9**	**+0.1**
AKHS	**Akhisar**	**0.95**	**256**	*i* P	**Pn**	**17 37 46.4**	**0.0**
AKHS				*i* S	**Sn**	**17 37 59.9**	**+0.1**
AKS	**Akhisar**	**0.95**	**256**	*e*PG	**Pb**	**17 37 45.6**	**0.0**
AKS	**Akhisar**	**0.95**	**256**	*e*Pg	**Pb**	**17 37 45.6**	**0.0**
BALB	**Balikesir**	**1.01**	**302**	*e*PG	**Pg**	**17 37 46.3**	**-0.4**
BALB				*e*SG	**Sn**	**17 38 01.1**	**-0.1**
BALB	**Balikesir**	**1.01**	**302**	*e*Pg	**Pg**	**17 37 46.3**	**-0.4**
BALB				*e*Sg	**Sn**	**17 38 01.1**	**-0.1**
IGD	**Bursa**	**1.16**	**8**	*i* P	**Pb**	**17 37 48.6**	**-0.5**
IGD				*i* S	**Sb**	**17 38 04.4**	**+0.2**
KCTX	**Karacabey (Bur**	**1.25**	**337**	*e*PN	**Pb**	**17 37 51.0**	**+0.2**
KCTX	**Karacabey (Bur**	**1.25**	**337**	*e*Pn	**Pb**	**17 37 51.0**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.25**	**356**	*e*PN	**Pn**	**17 37 50.8**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.25**	**356**	*e*Pn	**Pn**	**17 37 50.8**	**+0.2**
IZI	**Iznik**	**1.27**	**17**	*e*PN	**Pg**	**17 37 51.8**	**0.0**
IZI	**Iznik**	**1.27**	**17**	*e*Pn	**Pg**	**17 37 51.8**	**0.0**
GEMT	**Gemlik**	**1.33**	**6**	*e*PN	**Pg**	**17 37 53.1**	**+0.3**
GEMT	**Gemlik**	**1.33**	**6**	*e*Pn	**Pg**	**17 37 53.1**	**+0.3**
GONE	**Gonen-Balikesi**	**1.37**	**313**	*e*PN	**Pb**	**17 37 52.8**	**0.0**
GONE	**Gonen-Balikesi**	**1.37**	**313**	*e*Pn	**Pb**	**17 37 52.8**	**0.0**
ADVT	**Abdulvahap**	**1.44**	**23**	*e*PN	**Pb**	**17 37 54.4**	**+0.5**
ADVT	**Abdulvahap**	**1.44**	**23**	*e*Pn	**Pb**	**17 37 54.4**	**+0.5**
ARMT	**Armutlu**	**1.45**	**356**	PN	**Pb**	**17 37 54.6**	**+0.4**
ARMT	**Armutlu**	**1.45**	**356**	*i* Pn	**Pb**	**17 37 54.6**	**+0.4**
EDC	**Edincik**	**1.51**	**325**	*e*PN	**Pb**	**17 37 55.2**	**+0.1**
EDC	**Edincik**	**1.51**	**325**	*e*Pn	**Pb**	**17 37 55.2**	**+0.1**
GULT	**Gulveren**	**1.76**	**41**	PN	**Pb**	**17 37 59.9**	**+0.4**
GULT	**Gulveren**	**1.76**	**41**	*i* Pn	**Pb**	**17 37 59.9**	**+0.4**
HRT	**Hereke**	**1.78**	**17**	*e*PN	**Pb**	**17 37 59.3**	**-0.5**
HRT	**Hereke**	**1.78**	**17**	*e*Pn	**Pb**	**17 37 59.3**	**-0.5**
ISK	**Istanbul-Kandi**	**1.95**	**1**	*e*PN	**Pb**	**17 38 01.6**	**-1.0**
ISK	**Istanbul-Kandi**	**1.95**	**1**	*e*Pn	**Pb**	**17 38 01.6**	**-1.0**
SVRH	**Sivrihisar-ESK**	**1.99**	**80**	*e*PN	**Pb**	**17 38 02.7**	**-0.7**
SVRH	**Sivrihisar-ESK**	**1.99**	**80**	*e*Pn	**Pb**	**17 38 02.7**	**-0.7**

MAN 22 17:38:15, 9°.66N×125°.66E, h33km, mb4.4, ML3.3, MS3.1, 1C-1D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLP	**Palo**	**1.64**	**336⇓**	*e*P	Pn	17 38 41.8	+0.2
PLP				*e*S	Sn	17 38 59.9	-1.6
OCLP	**Ormoc**	**1.72**	**323**	*e*P	Pn	17 38 43.0	+0.2
OCLP				*e*S	Sn	17 39 03.9	+0.3
TBP	**Tagbilaran**	**1.77**	**271⇑**	*e*P	Pn	17 38 42.6	-0.7
LLP	**Lapu-Lapu**	**1.79**	**292**	*e*P	Pn	17 38 44.6	+1.1
LLP				*e*S	Sn	17 39 01.0	-4.2
PAGZ	**Pagadian**	**2.88**	**231**	*e*P	Pn	17 38 59.4	+0.8
PAGZ				*e*S	Sn	17 39 33.1	+1.0

*ISK **22** 17:38:34.9, 39°.08N×29°.10E, h9km, MD2.6*
*DDA **22** 17:38:35.0, 39°.06N×29°.00E, h7km, Md2.5*
*ISCJB **22** 17:38:35.2±0.5, 39°.07N±0°.04×29°.02E±0°.04, h9km, Error ellipse: s-maj=5.8km s-min=3.9km az=142.9*
*CSEM **22** 17:38:35.3±0.1, 39°.08N×29°.02E, h5km, MD2.5, Error ellipse: s-maj=3.7km s-min=2.7km az=115.0*
ISC 22 17:38:34.7±0.9, 39°.06N±0°.03×29°.06E±0°.03, h9km, n24, σ0$34/32, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**266**	P	**Pg**	**17 38 39.5**	**-0.7**
DEMI				S	**Sg**	**17 38 43.6**	**-0.3**
DEMI	**Demirci**	**0.27**	**266**	*i* P	**Pg**	**17 38 39.5**	**-0.7**
DEMI				*i* S	**Sg**	**17 38 43.6**	**-0.3**
GDZ	**Gediz**	**0.33**	**85**	P	**Pb**	**17 38 42.8**	**0.0**
GDZ				S	**Sb**	**17 38 48.2**	**-0.1**
GDZ	**Gediz**	**0.33**	**85**	*i* P	**Pb**	**17 38 42.8**	**0.0**
GDZ				*i* S	**Sb**	**17 38 48.2**	**-0.1**
TVSB	**Tavsanli**	**0.49**	**39**	*e*PG	**Pb**	**17 38 45.1**	**-0.6**
TVSB				*e*SG	**Sg**	**17 38 51.0**	**+0.1**
TVSB	**Tavsanli**	**0.49**	**39**	*e*Pg	**Pb**	**17 38 45.1**	**-0.6**
TVSB				*e*Sg	**Sg**	**17 38 51.0**	**+0.1**
KULA	**Kula-Manisa**	**0.63**	**210**	*e*PG	**Pb**	**17 38 47.8**	**-0.2**
KULA	**Kula-Manisa**	**0.63**	**210**	*e*Pg	**Pb**	**17 38 47.8**	**-0.2**
MANT	**Manisa**	**0.69**	**215**	P	**Pb**	**17 38 49.6**	**+0.5**
MANT				S	**Sg**	**17 38 57.5**	**+0.2**
MANT	**Manisa**	**0.69**	**215**	*i* P	**Pb**	**17 38 49.6**	**+0.5**
MANT				*i* S	**Sg**	**17 38 57.5**	**+0.2**
KHL	**Karahalli**	**0.82**	**154**	*e*PG	**Pb**	**17 38 51.4**	**+0.2**
KHL	**Karahalli**	**0.82**	**154**	*e*Pg	**Pb**	**17 38 51.4**	**+0.2**
ORLT	**Orhaneli**	**0.99**	**353**	*e*PG	**Pb**	**17 38 54.5**	**+0.4**
ORLT	**Orhaneli**	**0.99**	**353**	*e*Pg	**Pb**	**17 38 54.5**	**+0.4**
BALB	**Balikesir**	**1.08**	**303**	*e*PN	**Pn**	**17 38 56.5**	**+0.4**
BALB	**Balikesir**	**1.08**	**303**	*e*Pn	**Pn**	**17 38 56.5**	**+0.4**
IZI	**Iznik**	**1.31**	**14**	*e*PN	**Pb**	**17 38 59.7**	**+0.1**
IZI	**Iznik**	**1.31**	**14**	*e*Pn	**Pb**	**17 38 59.7**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.31**	**354**	*e*PN	**Pg**	**17 38 59.9**	**0.0**
MDNY	**Mudanya-Bursa**	**1.31**	**354**	*e*Pn	**Pg**	**17 38 59.9**	**0.0**
GONE	**Gonen-Balikesi**	**1.45**	**313**	*e*PN	**Pb**	**17 39 01.9**	**+0.1**
GONE	**Gonen-Balikesi**	**1.45**	**313**	*e*Pn	**Pb**	**17 39 02.0**	**+0.1**
ARMT	**Armutlu**	**1.51**	**354**	*e*PN	**Pb**	**17 39 02.9**	**0.0**
ARMT	**Armutlu**	**1.51**	**354**	*e*Pn	**Pb**	**17 39 02.9**	**0.0**

*DDA **22** 17:39:03.0, 39°.03N×29°.01E, h7km, Md2.5*
*CSEM **22** 17:39:04.0±0.5, 39°.07N×29°.09E, h2km, MD2.5, Error ellipse: s-maj=12.7km s-min=8.5km az=169.0*
*ISK **22** 17:39:06.7, 39°.19N×29°.28E, h20km, MD2.7*
ISC 22 17:39:03.5±1.1, 39°.05N±0°.03×29°.05E±0°.02, h6km±11km, n31, σ1$49/40, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**269**	P	**Pg**	**17 39 08.8**	**+0.2**
DEMI				S	**Sg**	**17 39 11.6**	**-0.4**
DEMI	**Demirci**	**0.26**	**269**	*i* P	**Pg**	**17 39 08.8**	**+0.2**
DEMI				*i* S	**Sg**	**17 39 11.6**	**-0.4**
GDZ	**Gediz**	**0.34**	**83**	P	**Pg**	**17 39 11.1**	**+0.9**
GDZ				S	**Sg**	**17 39 16.1**	**+1.4**
GDZ	**Gediz**	**0.34**	**83**	*i* P	**Pg**	**17 39 11.1**	**+0.9**
GDZ				*i* S	**Sg**	**17 39 16.1**	**+1.4**
TVSB	**Tavsanli**	**0.52**	**38**	*e*PG	**Pg**	**17 39 13.7**	**+0.2**
TVSB				*e*SG	**Sg**	**17 39 18.8**	**-1.4**
TVSB	**Tavsanli**	**0.52**	**38**	*e*Pg	**Pg**	**17 39 13.7**	**+0.2**
TVSB				*e*Sg	**Sg**	**17 39 18.8**	**-1.4**
MANT	**Manisa**	**0.67**	**215**	*i* P	**Pg**	**17 39 13.3**	**-3.2**
MANT				*i* S	**Sb**	**17 39 25.8**	**-1.8**
DURS	**Dursunbey**	**0.71**	**321**	P	**Pg**	**17 39 15.6**	**-1.6**
DURS	**Dursunbey**	**0.71**	**321**	*i* P	**Pg**	**17 39 15.6**	**-1.6**
KHL	**Karahalli**	**0.81**	**153**	*e*PG	**Pn**	**17 39 24.3**	**+2.7**
KHL	**Karahalli**	**0.81**	**153**	*e*Pg	**Pn**	**17 39 24.3**	**+2.7**
BALB	**Balikesir**	**1.08**	**304**	*e*PN	**Pn**	**17 39 28.6**	**+3.3**
BALB	**Balikesir**	**1.08**	**304**	*e*Pn	**Pn**	**17 39 28.6**	**+3.3**
MDNY	**Mudanya-Bursa**	**1.33**	**355**	*e*PN	**Pg**	**17 39 29.3**	**+0.3**
MDNY				*e*SN	**Sb**	**17 39 45.4**	**-0.7**
MDNY	**Mudanya-Bursa**	**1.33**	**355**	*e*Pn	**Pg**	**17 39 29.3**	**+0.3**
MDNY				*e*Sn	**Sb**	**17 39 45.4**	**-0.7**
KCTX	**Karacabey (Bur**	**1.33**	**337**	*e*PN	**Pg**	**17 39 30.2**	**+1.2**
KCTX	**Karacabey (Bur**	**1.33**	**337**	*e*Pn	**Pg**	**17 39 30.2**	**+1.2**
GONE	**Gonen-Balikesi**	**1.45**	**314**	*e*PN	**Pg**	**17 39 33.3**	**+1.9**
GONE	**Gonen-Balikesi**	**1.45**	**314**	*e*Pn	**Pg**	**17 39 33.3**	**+1.9**
ARMT	**Armutlu**	**1.52**	**355**	*e*PN	**Pb**	**17 39 31.9**	**-0.3**
ARMT	**Armutlu**	**1.52**	**355**	*e*Pn	**Pb**	**17 39 31.9**	**-0.3**
EDC	**Edincik**	**1.59**	**325**	*e*PN	**Pg**	**17 39 34.3**	**+0.3**
EDC	**Edincik**	**1.59**	**325**	*e*Pn	**Pg**	**17 39 34.3**	**+0.3**
HRT	**Hereke**	**1.84**	**15**	*e*PN	**Pn**	**17 39 35.1**	**-0.6**
HRT	**Hereke**	**1.84**	**15**	*e*Pn	**Pn**	**17 39 35.1**	**-0.6**
SVRH	**Sivrihisar-ESK**	**1.96**	**77**	*e*PN	**Pn**	**17 39 36.9**	**-0.6**
SVRH	**Sivrihisar-ESK**	**1.96**	**77**	*e*Pn	**Pn**	**17 39 36.9**	**-0.6**
ISK	**Istanbul-Kandi**	**2.02**	**0**	*e*PN	**Pn**	**17 39 38.3**	**+0.2**
ISK	**Istanbul-Kandi**	**2.02**	**0**	*e*Pn	**Pn**	**17 39 38.3**	**+0.2**
MDUB	**Mudurnu**	**2.18**	**49**	*e*PN	**Pn**	**17 39 39.9**	**-0.6**
MDUB	**Mudurnu**	**2.18**	**49**	*e*Pn	**Pn**	**17 39 39.9**	**-0.6**

*DDA **22** 17:41:59.9, 39°.07N×29°.01E, h7km, Md2.2*
*ISK **22** 17:41:59.6, 39°.08N×29°.02E, h6km, MD2.7*
*ISCJB **22** 17:42:00.2±0.5, 39°.06N±0°.04×29°.02E±0°.05, h9km, Error ellipse: s-maj=6.6km s-min=3.8km az=137.0*
*CSEM **22** 17:42:00.1±0.1, 39°.08N×29°.01E, h5km, MD2.2, Error ellipse: s-maj=3.7km s-min=2.0km az=124.0*
ISC 22 17:42:00.2±0.9, 39°.07N±0°.03×29°.01E±0°.03, h9km, n22, σ0$46/30, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.23**	**264**	P	**Pg**	**17 42 05.0**	**0.0**
DEMI				S	**Sg**	**17 42 08.7**	**+0.5**
DEMI	**Demirci**	**0.23**	**264**	*i* P	**Pg**	**17 42 05.0**	**0.0**
DEMI				*i* S	**Sg**	**17 42 08.7**	**+0.5**
GDZ	**Gediz**	**0.36**	**87**	P	**Pg**	**17 42 07.2**	**-0.3**
GDZ				S	**Sg**	**17 42 13.2**	**+0.9**
GDZ	**Gediz**	**0.36**	**87**	*i* P	**Pg**	**17 42 07.2**	**-0.3**
GDZ				*i* S	**Sg**	**17 42 13.2**	**+0.9**
TVSB	**Tavsanli**	**0.52**	**42**	*e*PG	**Pg**	**17 42 09.9**	**-0.4**
TVSB	**Tavsanli**	**0.52**	**42**	*e*Pg	**Pg**	**17 42 09.9**	**-0.4**
KULA	**Kula-Manisa**	**0.62**	**207**	*e*PG	**Pg**	**17 42 12.3**	**+0.1**
KULA				*e*SG	**Sb**	**17 42 21.3**	**-0.8**
KULA	**Kula-Manisa**	**0.62**	**207**	*e*Pg	**Pg**	**17 42 12.3**	**+0.1**
KULA				*e*Sg	**Sb**	**17 42 21.3**	**-0.8**
MANT	**Manisa**	**0.68**	**212**	P	**Pg**	**17 42 12.9**	**-0.5**
MANT				S	**Sg**	**17 42 23.0**	**+0.8**
MANT	**Manisa**	**0.68**	**212**	*i* P	**Pg**	**17 42 12.9**	**-0.5**
MANT				*i* S	**Sg**	**17 42 23.0**	**+0.8**
KCTX	**Karacabey (Bur**	**1.30**	**337**	*e*PN	**Pn**	**17 42 24.6**	**0.0**
KCTX	**Karacabey (Bur**	**1.30**	**337**	*e*Pn	**Pn**	**17 42 24.6**	**0.0**
CAVI	**Cavuskoy**	**1.30**	**29**	*e*PN	**Pb**	**17 42 24.7**	**-0.2**
CAVI	**Cavuskoy**	**1.30**	**29**	*e*Pn	**Pb**	**17 42 24.7**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.30**	**356**	*e*PN	**Pg**	**17 42 25.0**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.30**	**356**	*e*Pn	**Pg**	**17 42 25.0**	**-0.2**
IZI	**Iznik**	**1.31**	**16**	*e*PN	**Pg**	**17 42 25.5**	**0.0**
IZI	**Iznik**	**1.31**	**16**	*e*Pn	**Pg**	**17 42 25.5**	**0.0**
ARMT	**Armutlu**	**1.50**	**356**	*e*PN	**Pn**	**17 42 27.5**	**+0.2**
ARMT	**Armutlu**	**1.50**	**356**	*e*Pn	**Pn**	**17 42 27.5**	**+0.2**
GULT	**Gulveren**	**1.79**	**40**	*e*PN	**Pn**	**17 42 31.6**	**+0.2**
GULT	**Gulveren**	**1.79**	**40**	*e*Pn	**Pn**	**17 42 31.6**	**+0.2**

*ISCJB **22** 17:43:35.9±0.7, 39°.08N±0°.06×29°.12E±0°.08, h9km, Error ellipse: s-maj=11.1km s-min=4.2km az=42.3*
*CSEM **22** 17:43:35.9±0.1, 39°.10N×29°.11E, h5km, MD2.6, Error ellipse: s-maj=4.3km s-min=1.5km az=125.0*
*ISK **22** 17:43:35.3, 39°.09N×29°.13E, h7km, MD2.6*
*DDA **22** 17:43:37.8, 39°.10N×28°.45E, h7km, Md2.4*
ISC 22 17:43:36.0±1.0, 39°.09N±0°.04×29°.12E±0°.05, h9km, n20, σ0$17/26, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.32**	**262**	P	**Pg**	**17 43 42.2**	**-0.1**
DEMI				S	**Sg**	**17 43 46.5**	**0.0**
DEMI	**Demirci**	**0.32**	**262**	*i* P	**Pg**	**17 43 42.2**	**-0.1**
DEMI				*i* S	**Sg**	**17 43 46.5**	**0.0**
TVSB	**Tavsanli**	**0.45**	**36**	*e*PG	**Pg**	**17 43 44.6**	**-0.2**
TVSB				*e*SG	**Sg**	**17 43 50.9**	**+0.1**
TVSB	**Tavsanli**	**0.45**	**36**	*e*Pg	**Pg**	**17 43 44.6**	**-0.2**
TVSB				*e*Sg	**Sg**	**17 43 50.9**	**+0.1**
KULA	**Kula-Manisa**	**0.67**	**212**	*e*PG	**Pg**	**17 43 48.8**	**-0.2**
KULA	**Kula-Manisa**	**0.67**	**212**	*e*Pg	**Pg**	**17 43 48.8**	**-0.2**
MANT	**Manisa**	**0.74**	**217**	P	**Pb**	**17 43 51.1**	**0.0**
MANT				S	**Sg**	**17 44 00.2**	**+0.3**
MANT	**Manisa**	**0.74**	**217**	*i* P	**Pb**	**17 43 51.1**	**0.0**
MANT				*i* S	**Sg**	**17 44 00.1**	**+0.3**
CAVI	**Cavuskoy**	**1.25**	**26**	*e*PN	**Pn**	**17 43 59.6**	**0.0**

ellipse: s-maj=6.4km s-min=4.3km az=116.0
ISK 22 17:51:29.4, 39.07N×29.21E, h8km, MD2.7
DDA 22 17:51:29.9, 39.12N×29.10E, h7km, Md2.8

ISC 22 17:51:29.7±1.0, 39.08N±0.03×29.13E±0.03, h9km, n32, σ0970/33, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.27**	**88**	P	**Pg**	**17 51 36.1**	**+0.9**
GDZ	**Gediz**	**0.27**	**88**	*i* P	**Pg**	**17 51 36.1**	**+0.9**
DEMI	**Demirci**	**0.32**	**264**	P	**Pg**	**17 51 36.3**	**+0.2**
DEMI	**Demirci**	**0.32**	**264**	*i* P	**Pg**	**17 51 36.3**	**+0.2**
TVSB	**Tavsanli**	**0.45**	**35**	*e*PG	**Pg**	**17 51 38.5**	**-0.1**
TVSB				*e*SG	**Sg**	**17 51 44.1**	**-0.4**
TVSB	**Tavsanli**	**0.45**	**35**	*e*Pg	**Pg**	**17 51 38.5**	**-0.1**
TVSB				*e*Sg	**Sg**	**17 51 44.1**	**-0.4**
KULA	**Kula-Manisa**	**0.67**	**213**	*e*PG	**Pg**	**17 51 43.2**	**+0.6**
KULA	**Kula-Manisa**	**0.67**	**213**	*e*Pg	**Pg**	**17 51 43.2**	**+0.6**
DURS	**Dursunbey**	**0.73**	**316**	P	**Pg**	**17 51 43.5**	**-0.3**
DURS	**Dursunbey**	**0.73**	**316**	*i* P	**Pg**	**17 51 43.5**	**-0.3**
MANT	**Manisa**	**0.74**	**218**	P	**Pg**	**17 51 44.3**	**+0.4**
MANT	**Manisa**	**0.74**	**218**	*i* P	**Pg**	**17 51 44.3**	**+0.4**
KHL	**Karahalli**	**0.81**	**158**	*e*PG	**Pg**	**17 51 45.0**	**-0.3**
KHL	**Karahalli**	**0.81**	**158**	*e*Pg	**Pg**	**17 51 45.0**	**-0.3**
BALB	**Balikesir**	**1.12**	**300**	*e*PN	**Pn**	**17 51 52.5**	**+1.0**
BALB	**Balikesir**	**1.12**	**300**	*e*Pn	**Pn**	**17 51 52.5**	**+1.0**
IGD	**Bursa**	**1.19**	**3**	*i* P	**Pb**	**17 51 51.6**	**-0.8**
CAVI	**Cavuskoy**	**1.25**	**26**	*e*PN	**Pn**	**17 51 53.4**	**0.0**
CAVI	**Cavuskoy**	**1.25**	**26**	*e*Pn	**Pn**	**17 51 53.4**	**0.0**
IZI	**Iznik**	**1.28**	**12**	*e*PN	**Pg**	**17 51 54.5**	**+0.1**
IZI	**Iznik**	**1.28**	**12**	*e*Pn	**Pg**	**17 51 54.5**	**+0.1**
KCTX	**Karacabey (Bur**	**1.33**	**334**	*e*PN	**Pb**	**17 51 55.0**	**+0.2**
KCTX	**Karacabey (Bur**	**1.33**	**334**	*e*Pn	**Pb**	**17 51 55.0**	**+0.2**
ARMT	**Armutlu**	**1.50**	**352**	*e*PN	**Pn**	**17 51 57.2**	**+0.5**
ARMT	**Armutlu**	**1.50**	**352**	*e*Pn	**Pn**	**17 51 57.3**	**+0.5**
AYDN	**Tasoluk**	**1.72**	**215**	P	**Pg**	**17 52 03.1**	**+0.4**
AYDN	**Tasoluk**	**1.72**	**215**	*i* P	**Pg**	**17 52 03.1**	**+0.4**
GULT	**Gulveren**	**1.72**	**38**	*e*PN	**Pn**	**17 52 00.1**	**+0.2**
GULT	**Gulveren**	**1.72**	**38**	*e*Pn	**Pn**	**17 52 00.1**	**+0.2**
GCAM	**G?zelcaml?**	**2.03**	**228**	*i* P	Pn	17 51 56.2	-7.7
DGB	**¯zmir**	**2.04**	**241**	*i* P	**Pn**	**17 52 01.6**	**-2.6**
ZEY	**¯zmir**	**2.22**	**249**	*i* P	**Pn**	**17 52 07.7**	**+1.1**

IDC 22 17:59:16.0±2.3, 39.35N×143.62E, h0km, mb3.2/2, mb1 3.5/5, mb1mx3.2/54, mbtmp3.5/5, ML3.1/3, MS3.7/1, Ms1 3.7/1, ms1mx2.7/23, Error ellipse: s-maj=56.7km s-min=26.0km az=87.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAJ	**Asahikawa**	**4.83**	**351**	Pn	Pn	18 00 30.8	+0.9
	0.7nm,0.3s,baz=211,slow=20,SNR=7.8						
ASAJ				Sn	Sn	18 01 24.1	-2.5
	0.5nm,0.3s,baz=255,slow=20,SNR=2.0						
MJAR	**Matsushiro Arr**	**5.11**	**238**	Pn	Pn	18 00 35.2	+1.4
	0.5nm,0.3s,baz=44,slow=12,SNR=9.2						
MAT	**Matsushiro**	**5.11**	**238**	P	Pn	18 00 34.5	+0.6
MAT				S	Sb	18 01 48.1	-0.2
JHJ	**Hachijo jima 2**	**6.94**	**208**	Pn	Pn	18 00 57.7	-1.3
	2.4nm,0.3s,baz=90,slow=20,SNR=2.4						
JHJ				Sn	Sn	18 02 13.1	-5.6
	3.3nm,0.3s,baz=105,slow=20,SNR=2.3						
MKAR	**Makanchi Array**	**44.41**	**301**	P	P	18 07 27.7	-0.7
	0.2nm,0.5s,baz=79,slow=7.3,SNR=2.8						
DLBC	**Dease Lake**	**55.74**	**39**	LR	LR	18 35 06.3	
	comp=Z,74nm,19.5s,baz=148,slow=39						
WRA	**Warramunga Arr**	**59.61**	**190**	P	P	18 09 21.9	+0.1
	0.3nm,0.8s,baz=11,slow=6.8,SNR=2.5						

DDA 22 18:08:00.6, 39.05N×29.05E, h7km, Md2.7
ISCJB 22 18:08:04.6±0.8, 38.84N±0.05×29.10E±0.06, h9km, Error ellipse: s-maj=7.5km s-min=6.6km az=34.5
CSEM 22 18:08:04.5±0.3, 38.84N×29.06E, h5km, MD2.7, Error ellipse: s-maj=8.2km s-min=6.0km az=105.0
ISK 22 18:08:04.6, 38.89N×29.13E, h5km, MD2.7

ISC 22 18:08:04.8±0.9, 38.85N±0.03×29.08E±0.04, h9km, n23, σ1921/25, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.34**	**304**	P	Pg	18 08 05.8	-5.8
DEMI				S	**Sb**	**18 08 17.5**	**-1.2**
DEMI	**Demirci**	**0.34**	**304**	*i* P	Pg	18 08 05.8	-5.8
DEMI				*i* S	**Sb**	**18 08 17.5**	**-1.2**
GDZ	**Gediz**	**0.39**	**53**	*i* P	Pg	18 08 07.6	-4.8
GDZ				*i* S	**Sb**	**18 08 21.4**	**+1.3**
MANT	**Manisa**	**0.55**	**229**	P	**Pg**	**18 08 14.1**	**-1.4**
MANT				S	**Sn**	**18 08 31.5**	**+3.2**
MANT	**Manisa**	**0.55**	**229**	*i* P	**Pg**	**18 08 14.1**	**-1.4**
MANT				*i* S	**Sn**	**18 08 31.5**	**+3.2**
KHL	**Karahalli**	**0.63**	**147**	*e*PG	**Pb**	**18 08 17.4**	**-0.5**
KHL	**Karahalli**	**0.63**	**147**	*e*Pg	**Pb**	**18 08 17.5**	**-0.5**
TVSB	**Tavsanli**	**0.66**	**26**	*e*PG	**Pg**	**18 08 16.9**	**-0.7**
TVSB				*e*SG	**Sg**	**18 08 25.9**	**-0.5**
TVSB	**Tavsanli**	**0.66**	**26**	*i* Pg	**Pg**	**18 08 16.9**	**-0.7**
TVSB				*i* Sg	**Sg**	**18 08 25.9**	**-0.5**
DURS	**Dursunbey**	**0.88**	**328**	P	Pg	18 08 14.6	-7.2
DURS	**Dursunbey**	**0.88**	**328**	*i* P	Pg	18 08 14.6	-7.2
BALB	**Balikesir**	**1.22**	**310**	*e*PN	**Pg**	**18 08 28.3**	**+0.1**
BALB	**Balikesir**	**1.22**	**310**	*e*Pn	**Pg**	**18 08 28.3**	**+0.1**
CAVI	**Cavuskoy**	**1.47**	**23**	*e*PN	**Pb**	**18 08 31.9**	**-0.4**
CAVI	**Cavuskoy**	**1.47**	**23**	*e*Pn	**Pb**	**18 08 31.9**	**-0.4**
IZI	**Iznik**	**1.51**	**11**	*e*PN	**Pb**	**18 08 32.9**	**-0.1**
IZI	**Iznik**	**1.51**	**11**	*e*Pn	**Pb**	**18 08 32.9**	**-0.1**
KCTX	**Karacabey (Bur**	**1.52**	**339**	*e*PN	**Pn**	**18 08 32.1**	**0.0**
KCTX	**Karacabey (Bur**	**1.52**	**339**	*e*Pn	**Pn**	**18 08 32.1**	**0.0**
MDNY	**Mudanya-Bursa**	**1.52**	**354**	*e*PN	**Pg**	**18 08 33.2**	**-0.8**
MDNY	**Mudanya-Bursa**	**1.52**	**354**	*e*Pn	**Pg**	**18 08 33.2**	**-0.8**
ADVT	**Abdulvahap**	**1.66**	**18**	*e*PN	**Pb**	**18 08 35.0**	**-0.4**
ADVT	**Abdulvahap**	**1.66**	**18**	*e*Pn	**Pb**	**18 08 35.0**	**-0.4**

IDC 22 18:09:53.9±4.8, 36.03N×71.55E, h69km±32km, mb3.5/6, mb1 3.6/11, mb1mx3.2/70, mbtmp3.8/11, ML4.0/4, Error ellipse: s-maj=57.7km s-min=26.2km az=145.0
NEIC 22 18:09:53.2±4.0, 36.15N×71.33E, h50km±27km, mb4.1/1, Error ellipse: s-maj=40.4km s-min=21.3km az=180.0
ISCJB 22 18:09:57.5±0.5, 36.55N±0.03×71.44E±0.06, h114km, mb3.7/5, Error ellipse: s-maj=7.3km s-min=4.2km az=155.6
NNC 22 18:10:04.6±2.0, 36.90N×71.19E, h126km±28km, mb3.5, mpv4.3, Error ellipse: s-maj=18.9km s-min=12.2km az=153.0

ISC 22 18:09:58.2±0.7, 36.50N±0.06×71.37E±0.06, h114km, n34, σ2917/47, mb3.8/5, 6C-7D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**3.06**	**319**	⇑P	**Pn**	**18 10 46.7**	**+1.6**
	73nm,0.4s						
DZET				⇑S	**Sn**	**18 11 20.0**	**-1.3**
	111nm,0.4s						
THN	**Thein Dam**	**5.42**	**137**	*e*P	**Pn**	**18 11 16.2**	**-0.5**
THN				*e*S	**Sn**	**18 12 15.0**	**-2.9**
MNAS	**Manas**	**6.04**	**8**	⇑P	**Pn**	**18 11 26.3**	**+1.2**
	9.8nm,0.5s						
MNAS				⇓S	**Sn**	**18 12 30.4**	**-2.6**
	13nm,0.6s						
EKS2	**Erkin-Say**	**6.42**	**16**	*e*P	**Pn**	**18 11 29.8**	**-0.5**
	13nm,0.6s						
EKS2				*e*Sn	**Sn**	**18 12 41.4**	**-0.9**
AAK	**Ala-Archa**	**6.58**	**21**	P	**Pn**	**18 11 34.9**	**+2.5**
	4.7nm,0.3s,baz=182,slow=9.8,SNR=34						
AAK				S	**Sn**	**18 12 45.6**	**-0.5**
	0.9nm,0.3s,baz=134,slow=23,SNR=8.1						
AAK	**Ala-Archa**	**6.58**	**21**	⇑P	**Pn**	**18 11 34.7**	**+2.2**
	13nm,0.6s						
AAK				⇑S	**Sn**	**18 12 47.5**	**+1.4**
	11nm,0.9s						
AAK	**Ala-Archa**	**6.58**	**21**	*e*Pn	**Pn**	**18 11 32.1**	**-0.4**
	18nm,0.6s						
AAK				*e*Sn	**Sn**	**18 12 43.7**	**-2.4**
KK31	**Karatay Array**	**6.62**	**355**	⇓P	**Pn**	**18 11 34.6**	**+1.7**
	18nm,0.2s,baz=184,slow=14,SNR=1457						
KK31				⇓S	**Sn**	**18 12 44.7**	**-2.3**
	3.0nm,0.3s,baz=185,slow=24,SNR=5.2						
KKAR	**Karatay Array**	**6.62**	**355**	*e*P	**Pn**	**18 11 34.4**	**+1.4**
	87nm,0.3s						
KKAR				*e*Sn	**Sn**	**18 12 44.7**	**-2.3**
TKM2	**Tokmak 2**	**7.19**	**26**	⇓P	**Pn**	**18 11 42.7**	**+2.0**
	8.8nm,0.6s						
TKM2				⇓S	**Sn**	**18 13 02.2**	**+1.2**
	2.2nm,0.6s						
TKM2	**Tokmak 2**	**7.19**	**26**	*e*P	**Pn**	**18 11 40.4**	**-0.3**
	13nm,0.7s						
TKM2				*e*Sn	**Sn**	**18 12 58.0**	**-2.9**
SMLA	**Simla**	**7.21**	**136**	*e*P	**Pn**	**18 11 42.6**	**+1.7**
SMLA				*e*S	**Sn**	**18 12 58.1**	**-3.1**
GEYT	**Alibeck**	**10.66**	**282**	P	**Pn**	**18 12 27.2**	**-0.5**
	0.8nm,0.3s,baz=80,slow=12,SNR=10						
GEYT				S	**Sn**	**18 14 22.0**	**-3.1**
	1.6nm,0.3s,baz=90,slow=16,SNR=8.1						
PYUN	**Piuthan**	**12.91**	**127**	*e*P	**Pn**	**18 12 57.3**	**-0.3**
	5.8nm,0.2s						
MKAR	**Makanchi Array**	**13.12**	**35**	P	**Pn**	**18 13 01.2**	**+1.3**
	0.0nm,0.3s,baz=221,slow=12,SNR=5.3						
KOLN	**Koldanda**	**13.53**	**127**	*e*P	**Pn**	**18 13 05.4**	**-0.2**
	6.3nm,0.4s						
GKN	**Gorkha**	**14.06**	**123**	*e*P	**Pn**	**18 13 11.8**	**-0.6**
	15nm,0.5s						
KKN	**Kakani**	**14.63**	**122**	*e*P	**Pn**	**18 13 18.2**	**-1.6**
	3.7nm,0.2s						
PKIN	**Phulchoki**	**14.84**	**123**	*e*P	**Pn**	**18 13 21.9**	**-0.6**
	5.3nm,0.3s						
GUN	**Gumba**	**14.96**	**121**	*e*P	**Pn**	**18 13 22.4**	**-1.7**
	7.5nm,0.4s						
KURBB	**Kurchatov Arra**	**15.03**	**18**	P	**Pn**	**18 13 23.9**	**-0.4**
	0.0nm,0.3s,baz=208,slow=11,SNR=3.5						
KURK	**Kurchatov**	**15.13**	**18**	P	**Pn**	**18 13 23.9**	**-1.8**
AB31	**Akbulak array**	**15.22**	**330**	⇑P	**Pn**	**18 13 27.3**	**+0.4**
	1.6nm,0.3s,baz=137,slow=14,SNR=87						
AB31				⇓S	**Sn**	**18 16 09.5**	**-5.7**
	0.5nm,0.5s						
ABKAR	**Akbulak array**	**15.22**	**330**	*e*P	**Pn**	**18 13 26.1**	**-0.7**
	3.8nm,0.3s						
ABKAR				*e*Sn	Sn	18 16 04.5	-11
BVAR	**Borovoye Array**	**16.53**	**358**	P	**P**	**18 13 45.4**	**+1.7**
	0.3nm,0.3s,baz=166,slow=11,SNR=6.0						
AKTO	**Aktyubinsk**	**16.93**	**330**	P	**P**	**18 13 50.6**	**+2.6**
	0.7nm,0.3s,baz=136,slow=14,SNR=9.7						
AKTO	**Aktyubinsk**	**16.93**	**330**	⇓P	**P**	**18 13 50.2**	**+2.2**
	1.3nm,0.4s						
ZALV	**Zalesovo Beam**	**19.79**	**24**	P	**Pn**	**18 14 21.4**	**-0.4**
	1.9nm,0.4s,baz=232,slow=11,SNR=12						
FINES	**FINESS Array B**	**37.65**	**326**	P	**P**	**18 17 05.8**	**+4.1**
	0.3nm,0.4s,baz=116,slow=8.4,SNR=6.9						
ARCES	**ARCESS Array B**	**41.25**	**337**	P	P	18 17 37.0	+5.5
	1.5nm,0.9s,baz=113,slow=8.0,SNR=3.7						
HFS	**Hagfors**	**43.25**	**322**	P	**P**	**18 17 51.8**	**+4.0**
	1.2nm,0.5s,baz=98,slow=9.2,SNR=16						
NB2	**NORSAR Subarra**	**44.55**	**323**	P	**P**	**18 18 01.4**	**+3.1**
	comp=Z,0.6nm,0.5s,baz=98,slow=7.9						
NOA	**NORSAR Array B**	**44.55**	**323**	P	**P**	**18 18 01.9**	**+3.5**
	comp=Z,0.5nm,0.7s,baz=108,slow=7.3,SNR=5.1						
TORD	**Torodi Ar. Bea**	**66.01**	**269**	P	**P**	**18 20 34.2**	**+1.4**
	comp=Z,0.6nm,0.5s,baz=49,slow=6.0,SNR=7.6						

IDC 22 18:11:22.8±2.5, 37.44N×142.43E, h0km, mb3.3/3, mb1 3.4/5, mb1mx3.2/67, mbtmp3.4/5, ML2.9/2, Error ellipse: s-maj=58.5km s-min=27.8km az=72.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**3.50**	**256**	Pn	Pn	18 12 18.8	+0.4
	0.6nm,0.3s,baz=82,slow=15,SNR=8.2						
MJAR				Sn	Sn	18 12 56.9	-3.6
	0.7nm,0.3s,baz=77,slow=31,SNR=4.2						
JHJ	**Hachijo jima 2**	**4.82**	**207**	Pn	Pn	18 12 35.9	-0.7
	2.2nm,0.3s,baz=0.0,slow=19,SNR=4.6						
JHJ				Sn	Sn	18 13 23.5	-10
	2.3nm,0.3s,baz=37,slow=17,SNR=2.6						
MKAR	**Makanchi Array**	**44.59**	**302**	P	P	18 19 36.0	-0.6
	0.1nm,0.3s,baz=78,slow=8.4,SNR=2.7						
KURBB	**Kurchatov Arra**	**46.40**	**308**	P	P	18 19 50.9	+0.2
	0.9nm,0.9s,baz=82,slow=7.9,SNR=6.3						
WRA	**Warramunga Arr**	**57.58**	**189**	P	P	18 21 14.4	0.0
	0.4nm,0.8s,baz=2.8,slow=7.5,SNR=3.6						

ISCJB 22 18:11:55.5±0.6, 36.08S±0.04×73.72W±0.06, h10km, mb3.8/5, Error ellipse: s-maj=6.9km s-min=5.6km az=12.4
IDC 22 18:11:56.4±1.4, 36.11S×73.30W, h0km, mb3.7/5, mb1 4.0/7, mb1mx3.9/28, mbtmp3.8/7, ML3.9/2, Error ellipse: s-maj=42.5km s-min=25.8km az=76.0
GUC 22 18:11:59.4±0.6, 36.23S×73.53W, h17km±12km, ML4.1
NEIC 22 18:12:02.9±1.4, 36.11S×73.13W, h43km±11km, mb4.2/1, Error ellipse: s-maj=21.5km s-min=7.9km az=92.0

ISC 22 18:11:57.6±0.8, 36.13S±0.04×73.60W±0.06, h10km, n34, σ1931/45, mb3.8/5, 2C-7D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
COCH	**Cobquecura**	**0.66**	**90**	⇓*i*P	**Pg**	**18 12 10.8**	**+0.4**
COCH				*i* S	**Sb**	**18 12 20.0**	**-0.4**
COCH				IAML		18 12 21.0	
	comp=N,18μm,0.9s						
CCHI	**Chillan**	**1.32**	**111**	⇑*i*P	**Pn**	**18 12 21.2**	**-0.9**
CCHI				*i* S	**Sn**	**18 12 39.8**	**+0.1**
CCHI				IAML		18 12 44.2	
	comp=E,8μm,0.5s						
TALC	**Talca**	**1.76**	**66**	*e*P	**Pn**	**18 12 29.8**	**+1.6**
TALC				*e*S	**Sn**	**18 12 52.2**	**+1.6**
CANA	**Caviahue**	**2.68**	**131**	*e*P	**Pn**	**18 12 43.3**	**+2.3**
CANA				⇓*e*S	**Sg**	**18 13 24.4**	**+0.5**
CLCH	**Cerro Calan**	**3.72**	**44**	*e*P	**Pn**	**18 12 54.7**	**-0.5**
CLCH				*e*S	**Sn**	**18 13 39.2**	**+0.1**
ROC1	**El Roble**	**3.81**	**35**	⇓*e*S	**Sg**	**18 13 59.8**	**-0.1**
PEL	**Peldehue**	**3.83**	**40**	⇑*i*P	**Pn**	**18 12 56.5**	**-0.2**
PEL				*e*S	**Sn**	**18 13 43.0**	**+1.1**
AAGR	**Agrelo**	**4.97**	**54**	*e*P	**Pn**	**18 13 13.9**	**+1.4**
AAGR				*e*S	**Sg**	**18 14 39.6**	**+2.2**
ARCO	**CERRO ARCO**	**5.07**	**51**	*e*P	**Pn**	**18 13 14.8**	**+1.0**
ARCO				IAML		18 13 21.8	
	comp=Z,30nm,0.5s						
PLCA	**Paso Flores**	**5.18**	**153**	Pn	**Pn**	**18 13 16.1**	**+0.8**
	comp=Z,0.9nm,0.3s,baz=350,slow=12,SNR=38						
PLCA				Lg	Lg	18 14 36.1	
	comp=Z,1.3nm,0.3s,baz=111,slow=14,SNR=3.3						
AUSP	**Uspallata**	**5.24**	**43**	*e*P	**Pn**	**18 13 17.2**	**+1.0**
ASAL	**Salagasta**	**5.29**	**50**	*e*P	**Pn**	**18 13 17.4**	**+0.6**
ASAL				⇓*e*S	**Sg**	**18 14 44.8**	**-2.9**
RTLS	**Leoncito**	**5.61**	**41**	*e*P	**Pn**	**18 13 22.3**	**+0.9**
RTLS				⇓*e*S	**Sg**	**18 14 56.3**	**-1.5**
RTCV	**Cerro Valdivia**	**5.99**	**46**	*e*P	**Pn**	**18 13 26.2**	**-0.1**
RTLL	**Cerro Villicun**	**6.42**	**43**	⇓*e*P	**Pn**	**18 13 32.0**	**-0.3**
RTLL				⇓*e*S	**Sb**	**18 15 06.8**	**+0.5**
AMOG	**MOGNA**	**6.71**	**41**	*e*P	**Pn**	**18 13 35.6**	**-0.7**
MRA	**San Martin**	**7.50**	**63**	*e*P	**Pn**	**18 13 46.5**	**-0.7**
MRA				IAML		18 14 10.3	
	comp=Z,9.5nm,0.5s						
AGUA	**GUANDACOL**	**7.90**	**34**	*e*P	**Pn**	**18 13 52.2**	**-0.5**
AGUA				*e*S	**Sb**	**18 15 52.6**	**+3.6**
VCA	**Vinchina**	**8.67**	**33**	*e*P	**Pn**	**18 14 01.2**	**-2.0**
VCA				IAML		18 14 27.5	
	comp=Z,18nm,0.6s						
TCA	**Tanti**	**8.89**	**60**	*e*P	**Pn**	**18 14 04.8**	**-1.5**
LVC	**Limon Verde**	**14.08**	**18**	*e*Pn	**Pn**	**18 15 18.3**	**+0.8**
CPUP	**Villa Florida**	**16.99**	**59**	Pn	**Pn**	**18 15 52.8**	**-2.5**
	comp=Z,0.1nm,0.3s,baz=216,slow=17,SNR=2.6						
LPAZ	**La Paz**	**20.36**	**15**	P	**P**	**18 16 35.6**	**+0.6**
	comp=Z,2.0nm,0.7s,baz=199,slow=8.8,SNR=11						
SIV	**San Ignacio**	**22.96**	**32**	P	**P**	**18 17 00.6**	**-1.7**
	comp=Z,1.5nm,0.8s,baz=222,slow=19,SNR=8.0						
VNA3	**Neumayer Olymp**	**47.89**	**157**	P	**P**	**18 20 35.6**	**+0.2**
VNA2	**Neumayer–Watz**	**48.56**	**156**	P	**P**	**18 20 41.2**	**+0.6**
	baz=287,slow=8.9						
SNAA	**Sanae**	**50.11**	**157**	P	**P**	**18 20 52.0**	**-0.5**
SNAA	**Sanae**	**50.11**	**157**	*e*P	**P**	**18 20 52.7**	**+0.2**
QSPA	**South Pole Qui**	**54.11**	**180**	*e*P	**P**	**18 21 23.3**	**+0.9**
	comp=Z,1.9nm,0.7s						
TXAR	**Lajitas Array**	**71.00**	**332**	P	**P**	**18 23 16.4**	**+0.8**
	comp=Z,0.4nm,0.6s,baz=151,slow=9.2,SNR=7.4						
BOSA	**Boshof**	**80.21**	**118**	P	**P**	**18 24 07.1**	**-1.6**
	comp=Z,1.9nm,0.7s,baz=240,slow=8.1,SNR=4.0						
TORD	**Torodi Ar. Bea**	**86.13**	**71**	P	**P**	**18 24 38.1**	**-1.1**
	comp=Z,0.5nm,0.7s,baz=242,slow=3.1,SNR=3.3						
BVAR	**Borovoye Array**	**149.71**	**45**	PKPbc	**PKPbc**	**18 31 46.6**	**-0.4**
	comp=Z,0.6nm,0.6s,baz=298,slow=3.2,SNR=6.0						
ZALV	**Zalesovo Beam**	**156.71**	**33**	PKPab	**PKPab**	**18 32 22.0**	**+0.2**
	comp=Z,0.8nm,0.8s,baz=315,slow=0.6,SNR=3.3						

NIED 22 18:14:00, 39.70N×143.60E, h23km, Mw4.1 Best double couple: M0 1.46000×10^15 NP1:φ0=175.00000°, δ26.00000°, λ45.00000°. NP2:φ0=42.00000°, δ72.00000°, λ109.00000°.
ISCJB 22 18:14:08.4±0.5, 39.67N±0.03×143.62E±0.06, h11km, mb4.0/22, MS3.4/1, Error ellipse: s-maj=6.8km s-min=3.7km az=28.8
IDC 22 18:14:09.0±0.9, 39.64N×143.52E, h0km, mb4.0/18, mb1 4.0/22, mb1mx3.9/66, mbtmp4.0/22, ML3.7/3, MS3.0/4, Ms1 3.1/4, ms1mx2.8/40, Error ellipse: s-maj=24.0km s-min=15.2km az=94.0
JMA 22 18:14:10.4±0.2, 39.68N×143.63E, h41km, M4.3
NEIC 22 18:14:14.2±0.7, 39.70N×143.49E, h35km, mb4.4/5, Error ellipse: s-maj=16.1km s-min=8.2km az=116.0

ISC 22 18:14:10.6±0.8, 39.74N±0.05×143.55E±0.07, h11km, n54, σ1968/56, mb4.1/22, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.32**	**279**	P	**Pn**	**18 14 33.8**	**-1.1**
JTH				*e*S	**Sb**	**18 14 51.5**	**-0.7**
MIYJ	**Miyakonagasawa**	**1.35**	**264**	P	**Pn**	**18 14 34.3**	**-1.1**
JANG	**Nango**	**1.69**	**293**	P	**Pn**	**18 14 39.3**	**-0.7**
JOM	**Ohasama**	**1.77**	**262**	P	**Pn**	**18 14 40.7**	**-0.4**
JOM				*e*S	**Sn**	**18 15 02.9**	**-0.7**
JMK	**Ichinoseki**	**1.97**	**247**	P	**Pn**	**18 14 42.8**	**-1.1**
JMK				*e*S	**Sn**	**18 15 06.2**	**-2.5**
ERM	**Erimo**	**2.29**	**353**	*e*Pn	**Pn**	**18 14 48.1**	**-0.2**
ERM				*e*Sn	**Sn**	**18 15 17.9**	**+1.4**
JOT	**Ohata**	**2.52**	**311**	P	**Pn**	**18 14 51.8**	**+0.4**
JNBK	**Urakawa-nobuka**	**2.61**	**347**	*e*S	**Sn**	**18 15 23.6**	**-0.7**
JYK	**Kaneyama**	**2.61**	**253**	P	**Pn**	**18 14 52.4**	**-0.3**
JKB	**Kayabe**	**2.87**	**319**	P	**Pn**	**18 14 57.8**	**+1.5**
JCH	**Churui**	**2.87**	**357**	*e*S	**Sn**	**18 15 29.6**	**-1.3**
JFT	**Otama**	**3.36**	**230**	P	**Pn**	**18 15 02.0**	**-1.0**
JFT				*e*S	**Sn**	**18 15 39.7**	**-3.2**
JAK	**Akkeshi**	**3.36**	**14**	P	**Pn**	**18 15 03.9**	**+0.8**
JAK				*e*S	**Sn**	**18 15 42.6**	**-0.4**
JEW	**Eniwo**	**3.48**	**334**	*e*S	**Sn**	**18 15 47.1**	**+1.3**
ASAJ	**Asahikawa**	**4.43**	**351**	Pn	**Pn**	**18 15 19.9**	**+2.2**
	1.9nm,0.3s,baz=198,slow=16,SNR=26						
ASAJ				Sn	**Sb**	**18 16 16.4**	**-5.4**
	2.1nm,0.3s,baz=82,slow=20,SNR=4.9						
MJAR	**Matsushiro Arr**	**5.29**	**235**	Pn	**Pn**	**18 15 29.5**	**0.0**
	2.3nm,0.3s,baz=37,slow=12,SNR=35						
MJAR				Sn	**Sn**	**18 16 33.4**	**+2.9**
	baz=259,slow=40,SNR=2.1						
MAJO	**Matsushiro**	**5.29**	**235**	*e*Pn	**Pn**	**18 15 29.2**	**-0.4**
	32nm,0.6s						
MAT	**Matsushiro**	**5.29**	**235**	P	**Pn**	**18 15 29.5**	**0.0**
MAT				S	**Sn**	**18 16 34.9**	**+4.4**
JHJ	**Hachijo jima 2**	**7.27**	**206**	Pn	**Pn**	**18 15 55.0**	**-1.8**
	9.3nm,0.3s,baz=326,slow=23,SNR=6.4						
JHJ				Sn	Sn	18 17 07.3	-12
	5.2nm,0.3s,baz=143,slow=20,SNR=3.5						
JHJ				LR	LR	18 18 18.6	
	comp=Z,17nm,20.6s,baz=62,slow=35						
USRK	**Ussuriysk Ar.**	**9.69**	**301**	Pn	**Pn**	**18 16 32.1**	**+2.2**
	0.3nm,0.3s,baz=97,slow=12,SNR=9.3						
JNU	**Nakatsue**	**12.15**	**241**	LR	LR	18 22 00.9	
	comp=Z,165nm,19.4s,baz=108,slow=39						
KSRS	**Korea Array**	**12.44**	**264**	Pn	**Pn**	**18 17 11.0**	**+3.4**
	0.1nm,0.3s,baz=94,slow=13,SNR=5.7						
KSRS				LR	LR	18 21 35.4	
	comp=Z,116

IGD	Bursa	1.15	4	*i* P	Pb	18 16 30.0	-0.3
CAVI	Cavuskoy	1.23	27	*e*PN	Pg	18 16 31.8	+0.1
CAVI	Cavuskoy	1.23	27	*e*Pn	Pg	18 16 31.8	+0.1
MDNY	Mudanya-Bursa	1.27	352	*e*PN	Pg	18 16 32.8	+0.3
MDNY	Mudanya-Bursa	1.27	352	*e*Pn	Pg	18 16 32.8	+0.3
KCTX	Karacabey (Bur	1.29	334	*e*PN	Pg	18 16 32.9	0.0
KCTX	Karacabey (Bur	1.29	334	*e*Pn	Pg	18 16 32.9	0.0
ARMT	Armutlu	1.46	353	*e*PN	Pg	18 16 35.9	-0.3
ARMT	Armutlu	1.46	353	*e*Pn	Pg	18 16 35.9	-0.3
GULT	Gulveren	1.71	39	*e*PN	Pb	18 16 39.0	-0.8
GULT	Gulveren	1.71	39	*e*Pn	Pb	18 16 39.0	-0.8

AUST ***22*** *18:16:18.2±0.0, 33°.26S×139°.33E, h10km, Error ellipse: s-maj=0.1km s-min=0.1km az=350.0*
IDC ***22*** *18:16:20.5±7.0, 32°.60S×139°.21E, h0km, mb1 3.2/3, mb1mx3.1/36, mbtmp2.9/3, ML3.0/3, Error ellipse: s-maj=90.0km s-min=26.0km az=21.0*

ISC 22 18:16:14.1±1.0, 33°.01S±0°.06×139°.29E±0°.06, h10km, n7, σ1°29/9, Near coast of South Australia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HTT	Hallett	0.52	216	P	Pg	18 16 24.5	+0.1
	baz=0.4						
STKA	Stephens Creek	2.25	61	Pn	Pg	18 16 57.1	-0.2
	3.9nm,0.3s,baz=252,slow=13,SNR=51						
STKA				Sn	Sg	18 17 27.0	+0.4
	19nm,0.3s,baz=280,slow=18,SNR=21						
STKA	Stephens Creek	2.25	61	P	Pg	18 16 57.1	-0.2
	baz=2.4						
BBOO	Buckleboo	2.72	273	P	Pb	18 17 02.5	-0.4
	baz=2.8						
ARPS	Mount Arapiles	4.30	152	P	Pn	18 17 19.0	-0.6
	baz=4.1						
ASAR	Alice Springs	10.44	332	Pn	Pn	18 18 47.4	+3.4
	0.1nm,0.3s,baz=153,slow=12,SNR=11						
ASAR				Sn	Sn	18 20 39.8	-1.3
	0.2nm,0.3s,baz=154,slow=22,SNR=9.8						
WRA	Warramunga Arr	13.74	340	Pn	Pn	18 19 31.2	+2.2
	0.1nm,0.3s,baz=162,slow=12,SNR=5.7						
WRA				Sn	Sn	18 22 00.1	-1.7
	0.1nm,0.3s,baz=162,slow=24,SNR=6.2						

IDC 22 18:18:16.6±1.3, 35°.62N×143°.04E, h0km, mb3.5/3, mb1 3.7/5, mb1mx3.3/57, mbtmp3.5/5, ML3.0/2, Error ellipse: s-maj=40.8km s-min=27.5km az=131.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHJ	Hachijo jima 2	3.67	228	Pn	Pn	18 19 14.0	-0.5
	2.3nm,0.3s,baz=86,slow=15,SNR=7.1						
JHJ				Sn	Sn	18 19 53.2	-5.3
	25nm,0.3s,baz=78,slow=23,SNR=9.9						
MJAR	Matsushiro Arr	4.02	285	Pn	Pn	18 19 19.1	-0.3
	1.7nm,0.3s,baz=89,slow=15,SNR=12						
MAT	Matsushiro	4.02	285	P	Pn	18 19 19.8	+0.4
MAT				S	Sn	18 20 05.3	-1.9
WRA	Warramunga Arr	55.87	190	P	P	18 27 55.7	-0.3
	0.5nm,0.6s,baz=7.9,slow=7.1,SNR=5.4						
ASAR	Alice Springs	59.59	190	P	P	18 28 22.4	+0.3
	0.4nm,0.8s,baz=4.8,slow=7.0,SNR=4.5						
PDAR	Pinedale Array	77.71	46	P	P	18 30 15.5	0.0
	0.2nm,0.5s,baz=289,slow=5.5,SNR=2.8						

IDC 22 18:20:12.4±3.6, 16°.51S×175°.52W, h0km, mb4.1/4, mb1 4.3/4, mb1mx3.6/41, mbtmp4.1/4, Error ellipse: s-maj=153.2km s-min=75.2km az=157.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	Stephens Creek	41.72	240	P	P	18 28 03.7	+0.4
	2.1nm,0.7s,baz=90,slow=11,SNR=4.7						
WRA	Warramunga Arr	47.61	258	P	P	18 28 50.5	-0.1
	0.8nm,0.5s,baz=96,slow=7.6,SNR=27						
WRA				PcP	PcP	18 30 20.2	-0.2
	0.3nm,0.6s,baz=90,slow=3.5,SNR=3.6						
ASAR	Alice Springs	47.83	253	P	P	18 28 52.0	-0.3
	4.4nm,0.6s,baz=87,slow=8.6,SNR=76						
ASAR				PcP	PcP	18 30 20.6	-0.6
	0.3nm,0.9s,baz=106,slow=4.0,SNR=4.1						
FITZ	Fitzroy Crossi	55.99	259	P	P	18 29 52.8	-0.3
	1.0nm,0.8s,baz=96,slow=10,SNR=3.2						

DHMR ***22*** *18:21:46.6±0.3, 11°.75N×43°.02E, h5km±7km, ML3.4*
ISCJB ***22*** *18:21:51.9±0.6, 11°.74N±0°.08×43°.12E±0°.08, h22km±9km, Error ellipse: s-maj=16.4km s-min=8.0km az=138.4*
ARO ***22*** *18:21:53.1, 11°.8N±0°.4×43°.1E±0°.5, h6km±1km, ML3.6*

ISC 22 18:21:51.3±1.1, 11°.78N±0°.06×43°.12E±0°.06, h24km±10km, n10, σ0°86/14, 1C, Ethiopia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MCAD	Moucha	0.10	119	*e*P	Pb	18 21 55.8	0.0
TDD	Tadjoura Ara	0.21	276	*e*P	Pb	18 21 57.2	+0.2
OBO	Obock	0.26	40	*e*P	Pn	18 21 58.8	-1.0
ATA	Atar	0.34	165	*e*P	Pb	18 21 59.4	+0.5
ATD	Arta Tunnel	0.36	227	*e*P	Pb	18 21 59.5	+0.2
ATD				*e*S	Sb	18 22 04.4	-0.4
SGH	Sud-Ghoubbet	0.59	234	*e*P	Pb	18 22 03.2	+0.2
GBR	Grand-Bara	0.90	226	*e*P	Pb	18 22 08.2	-0.1
TRBA	At Turbah	1.74	34	⇑*i*P	Pn	18 22 19.6	-0.6
TRBA				*i* S	Sb	18 22 45.1	+0.9
TRBA				AML	AML	18 22 49.3	
	comp=E,467nm,0.3s						
UDYN	Al 'Udayn	2.33	21	*i* P	Pn	18 22 28.6	+0.4
UDYN				*i* S	Sb	18 23 01.4	+0.4
BDHA	Al Bayda'	3.23	47	*i* P	Pn	18 22 42.1	+1.3
BDHA				*i* S	Sb	18 23 25.6	-1.7
BDHA				AML	AML	18 23 36.5	
	comp=N,150nm,0.6s						

ISCJB ***22*** *18:25:21.0±0.6, 16°.30S±0°.06×71°.91W±0°.07, h100km, mb3.5/3, Error ellipse: s-maj=11.1km s-min=5.1km az=138.2*
IDC ***22*** *18:25:23.8±1.8, 16°.13S×71°.65W, h132km±16km, mb3.4/3, mb1 3.6/8, mb1mx3.4/34, mbtmp4.0/8, Error ellipse: s-maj=19.9km s-min=17.7km az=9.0*
GUC ***22*** *18:25:26.1±0.5, 16°.61S×71°.55W, h166km±11km, ML4.7*

ISC 22 18:25:21.1±0.8, 16°.24S±0°.06×71°.83W±0°.08, h100km, n16, σ2°14/25, mb3.6/3, 5C-1D, Southern Peru

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ARCH	Arica	2.67	147	*e*S	Sn	18 26 34.9	+0.6
PB12	IPOC Station P	2.76	149	⇓*i*P	Pn	18 26 06.3	+2.6
PB12				*i* S	Sn	18 26 37.2	+0.7
PB13	IPOC Station P	3.04	134	⇑*i*P	Pn	18 26 11.5	+3.5
PB13				⇑*i*P	Pn	18 26 11.6	+3.5
PB13				*i* S	Sn	18 26 45.5	+1.4
PB13				AML	AML	18 26 49.1	
	comp=E,2μm,0.2s						
LPAZ	La Paz	3.55	91	P	Pn	18 26 17.7	+2.9
	comp=E,3.7nm,0.3s,baz=279,slow=8.9,SNR=131						
LPAZ				S	Sn	18 26 57.5	+1.2
	comp=E,1.4nm,0.3s,baz=180,slow=20,SNR=10						
MNMC	Minye Minye	3.57	144	⇑*i*P	Pn	18 26 17.0	+2.2
MNMC				*i* S	Sn	18 26 55.1	-1.2
MNMC				AML	AML	18 27 03.6	
	comp=E,786nm,0.0s						
PSGC	Pisagua	3.71	154	⇑*i*P	Pn	18 26 18.2	+1.7
PSGC				*i* S	Sn	18 26 57.6	-1.7
PSGC				AML	AML	18 27 00.5	
	comp=E,546nm,0.7s						
PB11	IPOC Station P	4.06	150	⇑*i*P	Pn	18 26 22.7	+1.4
PB11				*i* S	Sn	18 27 06.5	-1.5
PB11				AML	AML	18 27 09.2	
	comp=E,2μm,0.2s						
NNA	Nana	6.45	310	P	Pn	18 26 56.4	+2.8
	comp=E,3.2nm,0.3s,baz=133,slow=14,SNR=4.4						
NNA				S	Sn	18 28 04.7	-1.0
	comp=E,1.9nm,0.3s,baz=233,slow=20,SNR=3.3						
LVC	Limon Verde	6.91	157	P	Pn	18 27 01.8	+1.7
	comp=E,48nm,0.3s,baz=350,slow=10,SNR=20						
LVC				S	Sn	18 28 14.7	-2.7
	comp=E,350nm,0.3s,baz=227,slow=23,SNR=14						
SIV	San Ignacio	10.34	90	P	Pn	18 27 44.8	-1.7
	comp=E,0.4nm,0.3s,baz=271,slow=13,SNR=3.7						
PTGA	Pitinga	19.35	38	P	P	18 29 36.0	-2.9
	comp=E,2.5nm,0.3s,baz=195,slow=12,SNR=30						
PLCA	Paso Flores	24.43	178	P	P	18 30 31.4	+0.9
	comp=E,2.3nm,0.8s,baz=2.5,slow=9.7,SNR=6.5						
TORD	Torodi Ar. Bea	78.31	73	P	P	18 37 07.9	-2.9
	comp=E,0.9nm,0.7s,baz=248,slow=4.8,SNR=8.7						
YKA	Yellowknife Ar	85.34	342	P	P	18 37 46.7	0.0
	comp=E,0.3nm,0.7s,baz=134,slow=5.3,SNR=3.0						
ASAR	Alice Springs	133.04	213	PKP	PKPdf	18 44 25.0	-0.8
	comp=E,0.4nm,0.9s,baz=128,slow=1.2,SNR=3.7						
WRA	Warramunga Arr	135.79	217	PKP	PKPdf	18 44 30.3	-0.7
	comp=E,0.2nm,0.3s,baz=137,slow=1.8,SNR=10						

DDA ***22*** *18:34:01.5, 39°.09N×29°.11E, h7km, Md2.9*
ISK ***22*** *18:34:01.4, 39°.10N×29°.16E, h5km, MD2.9*
CSEM ***22*** *18:34:02.0±0.1, 39°.12N×29°.12E, h2km, MD2.9, Error ellipse: s-maj=4.0km s-min=3.0km az=109.0*

ISC 22 18:34:02.0±1.0, 39°.11N±0°.02×29°.12E±0°.02, h8km±9km, n51, σ0°62/67, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	Gediz	0.29	95	P	Pg	18 34 07.3	-0.4
GDZ				S	Sg	18 34 12.1	+0.5
GDZ	Gediz	0.29	95	*i* P	Pg	18 34 07.3	-0.4
GDZ				*i* S	Sg	18 34 12.1	+0.5
DEMI	Demirci	0.32	257	P	Pg	18 34 08.3	0.0
DEMI				S	Sg	18 34 12.7	+0.2
DEMI	Demirci	0.32	257	*i* P	Pg	18 34 08.3	0.0
DEMI				*i* S	Sg	18 34 12.7	+0.2
TVSB	Tavsanli	0.43	39	*e*PG	Pg	18 34 10.2	-0.2
TVSB				*e*SG	Sg	18 34 15.9	-0.2
TVSB	Tavsanli	0.43	39	*e*Pg	Pg	18 34 10.2	-0.2
TVSB				*e*Sg	Sg	18 34 15.9	-0.2
DURS	Dursunbey	0.69	315	P	Pg	18 34 15.1	-0.3
DURS	Dursunbey	0.69	315	*i* P	Pg	18 34 15.1	-0.3
KULA	Kula-Manisa	0.70	211	*e*PG	Pg	18 34 15.0	-0.4
KULA	Kula-Manisa	0.70	211	*e*Pg	Pg	18 34 15.0	-0.4
MANT	Manisa	0.76	215	P	Pg	18 34 16.3	-0.3
MANT				S	Sg	18 34 26.5	0.0
MANT	Manisa	0.76	215	*i* P	Pg	18 34 16.3	-0.3
MANT				*i* S	Sg	18 34 26.5	0.0
KHAL	Karahalli	0.80	158	P	Pg	18 34 16.3	-1.0
KHAL				S	Sg	18 34 28.0	+0.2
KHAL	Karahalli	0.80	158	*i* P	Pg	18 34 16.3	-1.0
KHAL				*i* S	Sg	18 34 27.9	+0.2
KHL	Karahalli	0.85	158	*e*PG	Pg	18 34 17.6	-0.7
KHL	Karahalli	0.85	158	*e*Pg	Pg	18 34 17.7	-0.7
AKHS	Akhisar	1.04	257	P	Pg	18 34 20.9	-1.1
AKHS				S	Sn	18 34 36.7	-0.9
AKHS	Akhisar	1.04	257	*i* P	Pg	18 34 20.9	-1.1
AKHS				*i* S	Sn	18 34 36.7	-0.9
BALB	Balikesir	1.09	299	*e*PN	Pn	18 34 23.9	+0.3
BALB	Balikesir	1.09	299	*e*Pn	Pb	18 34 23.9	+0.3
IZI	Iznik	1.25	13	*e*PN	Pb	18 34 26.0	+0.1
IZI	Iznik	1.25	13	*e*Pn	Pb	18 34 26.0	+0.1
MDNY	Mudanya-Bursa	1.27	352	*e*PN	Pb	18 34 26.2	+0.1
MDNY	Mudanya-Bursa	1.27	352	*e*Pn	Pb	18 34 26.2	+0.1
KCTX	Karacabey (Bur	1.29	333	*e*PN	Pg	18 34 26.8	0.0
KCTX	Karacabey (Bur	1.29	333	*e*Pn	Pg	18 34 26.8	0.0
GEMT	Gemlik	1.32	2	*e*PN	Pg	18 34 27.9	+0.5
GEMT	Gemlik	1.32	2	*e*Pn	Pg	18 34 27.9	+0.5
ADVT	Abdulvahap	1.40	20	*e*PN	Pg	18 34 29.1	+0.2
ADVT	Abdulvahap	1.40	20	*e*Pn	Pg	18 34 29.1	+0.2
DNZL	Cakiroluk	1.42	182	P	Pg	18 34 30.3	+1.0
DNZL				S	Sg	18 34 49.5	+1.8
DNZL	Cakiroluk	1.42	182	*i* P	Pg	18 34 30.3	+1.0
DNZL				*i* S	Sg	18 34 49.5	+1.8
GONE	Gonen-Balikesi	1.44	311	*e*PN	Pb	18 34 29.4	+0.3
GONE	Gonen-Balikesi	1.44	311	*e*Pn	Pb	18 34 29.4	+0.3
ARMT	Armutlu	1.46	352	*e*PN	Pb	18 34 29.7	+0.2
ARMT	Armutlu	1.46	352	*e*Pn	Pb	18 34 29.7	+0.2
GPA	Golpazari	1.49	38	*e*PN	Pb	18 34 29.7	-0.3
GPA	Golpazari	1.49	38	*e*Pn	Pb	18 34 29.7	-0.3
EDC	Edincik	1.56	322	*e*PN	Pb	18 34 31.2	0.0
EDC	Edincik	1.56	322	*e*Pn	Pb	18 34 31.2	0.0
KNL	Bal¨–kesir	1.68	314	*i* S	Sb	18 34 54.7	+0.2
GULT	Gulveren	1.70	39	*e*PN	Pb	18 34 32.8	-0.8
GULT	Gulveren	1.70	39	*e*Pn	Pb	18 34 32.8	-0.8
AYDN	Tasoluk	1.75	214	P	Pg	18 34 35.5	+0.1
AYDN				S	Sg	18 34 58.1	0.0
AYDN	Tasoluk	1.75	214	*i* P	Pg	18 34 35.5	+0.1
AYDN				*i* S	Sg	18 34 58.1	0.0
HRT	Hereke	1.76	14	*e*PN	Pb	18 34 33.6	-0.9
HRT	Hereke	1.76	14	*e*Pn	Pb	18 34 33.6	-0.9
SVRH	Sivrihisar-ESK	1.90	79	*e*PN	Pn	18 34 35.4	+0.6
SVRH	Sivrihisar-ESK	1.90	79	*e*Pn	Pn	18 34 35.4	+0.6
ISK	Istanbul-Kandi	1.95	359	*e*PN	Pb	18 34 36.9	-0.9
ISK	Istanbul-Kandi	1.95	359	*e*Pn	Pb	18 34 36.9	-0.9

IDC 22 18:40:16.6±2.0, 2°.56S×126°.79E, h0km, mb3.1/2, mb1 3.3/3, mb1mx3.2/31, mbtmp3.1/3, ML3.2/1, Error ellipse: s-maj=167.9km s-min=27.6km az=65.0, Ceram Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	18.78	157	P	Pn	18 44 37.9	-0.1
	0.1nm,0.3s,baz=336,slow=11,SNR=6.7						
ASAR	Alice Springs	22.08	162	P	P	18 45 12.5	-0.9
	0.2nm,0.7s,baz=346,slow=12,SNR=4.1						
MKAR	Makanchi Array	62.79	327	P	P	18 50 44.4	+0.4
	0.2nm,0.3s,baz=118,slow=8.6,SNR=4.3						

ISCJB ***22*** *18:43:19.9±0.4, 39°.08N±0°.03×29°.04E±0°.04, h9km, Error ellipse: s-maj=5.3km s-min=3.6km az=142.1*
DDA ***22*** *18:43:19.7, 39°.07N×29°.04E, h7km, Md2.8*
CSEM ***22*** *18:43:19.7±0.1, 39°.11N×29°.05E, h2km, MD2.8, Error ellipse: s-maj=3.6km s-min=2.5km az=133.0*
ISK ***22*** *18:43:19.8, 39°.12N×29°.04E, h7km, MD2.8*

ISC 22 18:43:19.9±0.8, 39°.10N±0°.02×29°.03E±0°.03, h9km, n48, σ0°62/56, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.25	256	P	Pg	18 43 24.0	-1.0
DEMI				S	Sg	18 43 28.9	+0.4
DEMI	Demirci	0.25	256	*i* P	Pg	18 43 24.0	-1.0
DEMI				*i* S	Sg	18 43 28.9	+0.4
TVSB	Tavsanli	0.48	44	*e*PG	Pg	18 43 28.7	-0.7
TVSB	Tavsanli	0.48	44	*e*Pg	Pg	18 43 28.7	-0.7
KULA	Kula-Manisa	0.66	206	*e*PG	Pg	18 43 32.4	-0.2
KULA	Kula-Manisa	0.66	206	*e*Pg	Pg	18 43 32.4	-0.2
DURS	Dursunbey	0.66	319	P	Pg	18 43 32.4	-0.3
DURS	Dursunbey	0.66	319	*i* P	Pg	18 43 32.4	-0.3
MANT	Manisa	0.71	211	P	Pg	18 43 33.0	-0.7
MANT				S	Sg	18 43 42.1	-1.0
MANT	Manisa	0.71	211	*i* P	Pg	18 43 33.0	-0.7
MANT				*i* S	Sg	18 43 42.1	-1.0
KHL	Karahalli	0.87	153	*e*PG	Pb	18 43 37.6	+0.3
KHL	Karahalli	0.87	153	*e*Pg	Pb	18 43 37.6	+0.3
AKHS	Akhisar	0.97	257	P	Pn	18 43 39.8	0.0
AKHS				S	Sb	18 43 52.9	+1.0
AKHS	Akhisar	0.97	257	*i* P	Pn	18 43 39.8	0.0
AKHS				*i* S	Sb	18 43 52.9	+1.0
AKS	Akhisar	0.97	257	*e*PG	Pb	18 43 39.0	+0.1
AKS	Akhisar	0.97	257	*e*Pg	Pb	18 43 39.1	+0.1
BALB	Balikesir	1.04	301	*e*PG	Pb	18 43 40.2	+0.1
BALB				*e*SG	Sn	18 43 55.0	-0.3
BALB	Balikesir	1.04	301	*e*Pg	Pb	18 43 40.2	+0.1
BALB				*e*Sg	Sn	18 43 55.0	-0.3
CAVI	Cavuskoy	1.27	29	*e*PN	Pg	18 43 44.1	-0.1
CAVI	Cavuskoy	1.27	29	*e*Pn	Pg	18 43 44.1	-0.1
MDNY	Mudanya-Bursa	1.27	355	*e*PN	Pg	18 43 44.2	0.0
MDNY	Mudanya-Bursa	1.27	355	*e*Pn	Pg	18 43 44.3	0.0
KCTX	Karacabey (Bur	1.27	336	*e*PN	Pg	18 43 44.4	+0.1
KCTX	Karacabey (Bur	1.27	336	*e*Pn	Pg	18 43 44.4	+0.1
IZI	Iznik	1.28	15	*e*PN	Pg	18 43 44.3	-0.2
IZI	Iznik	1.28	15	*e*Pn	Pg	18 43 44.3	-0.2
GEMT	Gemlik	1.34	5	*e*PN	Pg	18 43 45.3	-0.3
GEMT	Gemlik	1.34	5	*e*Pn	Pg	18 43 45.3	-0.3
GONE	Gonen-Balikesi	1.40	313	*e*PN	Pb	18 43 46.3	0.0
GONE	Gonen-Balikesi	1.40	313	*e*Pn	Pb	18 43 46.3	0.0
ADVT	Abdulvahap	1.44	22	*e*PN	Pb	18 43 46.7	-0.2
ADVT	Abdulvahap	1.44	22	*e*Pn	Pb	18 43 46.7	-0.2
ARMT	Armutlu	1.47	355	*e*PN	Pb	18 43 46.9	-0.5
ARMT	Armutlu	1.47	355	*e*Pn	Pb	18 43 46.9	-0.5
GULT	Gulveren	1.75	40	*e*PN	Pn	18 43 51.1	+0.5
GULT	Gulveren	1.75	40	*e*Pn	Pn	18 43 51.1	+0.5
HRT	Hereke	1.79	16	*e*PN	Pn	18 43 51.5	+0.5
HRT	Hereke	1.79	16	*e*Pn	Pn	18 43 51.5	+0.5
SPNC	Sapanca-Adapaz	1.86	31	*e*PN	Pn	18 43 52.4	+0.4
SPNC	Sapanca-Adapaz	1.86	31	*e*Pn	Pn	18 43 52.4	+0.4
ISK	Istanbul-Kandi	1.96	1	*e*PN	Pn	18 43 54.3	+0.9
ISK	Istanbul-Kandi	1.96	1	*e*Pn	Pn	18 43 54.3	+0.9
SVRH	Sivrihisar-ESK	1.96	79	*e*PN	Pn	18 43 54.3	+0.8
SVRH	Sivrihisar-ESK	1.96	79	*e*Pn	Pn	18 43 54.3	+0.8
SILT	Sile	2.10	13	*e*PN	Pb	18 43 56.5	-1.7
SILT	Sile	2.10	13	*e*Pn	Pb	18 43 56.5	-1.7
MDUB	Mudurnu	2.16	50	*e*PN	Pn	18 43 56.7	+0.5
MDUB	Mudurnu	2.16	50	*e*Pn	Pn	18 43 56.7	+0.5

ISCJB ***22*** *18:53:04.7±0.4, 39°.19N±0°.03×29°.02E±0°.05, h9km, Error ellipse: s-maj=5.6km s-min=4.4km az=41.1*
CSEM ***22*** *18:53:04.8±0.1, 39°.19N×29°.02E, h8km, MD2.8, Error ellipse: s-maj=1.7km s-min=1.5km az=115.0*
ISK ***22*** *18:53:04.4, 39°.19N×29°.04E, h10km, MD2.8*
DDA ***22*** *18:53:05.0, 39°.18N×29°.01E, h7km, Md2.8*

ISC 22 18:53:04.9±0.9, 39°.19N±0°.03×29°.02E±0°.03, h9km, n41, σ0°29/43, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.28	237	P	Pg	18 53 10.4	-0.1
DEMI	Demirci	0.28	237	*i* P	Pg	18 53 10.4	-0.1
GDZ	Gediz	0.38	106	P	Pg	18 53 12.7	+0.3
GDZ	Gediz	0.38	106	*i* P	Pg	18 53 12.7	+0.3
TVSB	Tavsanli	0.43	53	*e*PG	Pg	18 53 13.4	0.0
TVSB				*e*SG	Sg	18 53 19.1	0.0
TVSB	Tavsanli	0.43	53	*e*Pg	Pg	18 53 13.4	0.0
TVSB				*e*Sg	Sg	18 53 19.1	0.0
DURS	Dursunbey	0.58	314	P	Pg	18 53 16.8	+0.5
DURS	Dursunbey	0.58	314	*i* P	Pg	18 53 16.8	+0.5
KULA	Kula-Manisa	0.73	202	*e*PG	Pg	18 53 18.9	-0.1
KULA	Kula-Manisa	0.73	202	*e*Pg	Pg	18 53 18.9	-0.1
MANT	Manisa	0.79	207	P	Pg	18 53 19.9	-0.2
MANT	Manisa	0.79	207	*i* P	Pg	18 53 19.9	-0.2
KHAL	Karahalli	0.90	155	P	Pb	18 53 23.0	+0.2
KHAL	Karahalli	0.90	155	*i* P	Pb	18 53 23.0	+0.2
KHL	Karahalli	0.95	155	*e*PG	Pg	18 53 22.8	-0.5
KHL	Karahalli	0.95	155	*e*Pg	Pg	18 53 22.8	-0.5
AKHS	Akhisar	0.99	252	P	Pb	18 53 24.0	-0.2
AKHS	Akhisar	0.99	252	*i* P	Pb	18 53 24.1	-0.2
BALB	Balikesir	0.99	297	*e*PG	Pg	18 53 23.9	0.0
BALB	Balikesir	0.99	297	*e*Pg	Pg	18 53 23.9	0.0
AKS	Akhisar	0.99	252	*e*PG	Pb	18 53 24.1	-0.1
AKS	Akhisar	0.99	252	*e*Pg	Pb	18 53 24.1	-0.1
IGD	Bursa	1.08	8	*i* P	Pg	18 53 24.3	-1.4
MDNY	Mudanya-Bursa	1.18	355	*e*PN	Pb	18 53 27.6	+0.1
MDNY	Mudanya-Bursa	1.18	355	*e*Pn	Pb	18 53 27.6	+0.1
KCTX	Karacabey (Bur	1.19	335	*e*PN	Pn	18 53 27.8	+0.1
KCTX	Karacabey (Bur	1.19	335	*e*Pn	Pn	18 53 27.8	+0.1
CAVI	Cavuskoy	1.19	32	*e*PN	Pb	18 53 27.8	+0.1
CAVI	Cavuskoy	1.19	32	*e*Pn	Pb	18 53 27.8	+0.1
IZI	Iznik	1.20	17	*e*PN	Pb	18 53 27.8	0.0
IZI	Iznik	1.20	17	*e*Pn	Pb	18 53 27.8	0.0
GONE	Gonen-Balikesi	1.33	310	*e*PN	Pn	18 53 29.9	+0.2
GONE	Gonen-Balikesi	1.33	310	*e*Pn	Pn	18 53 29.9	+0.2
ADVT	Abdulvahap	1.36	24	*e*PN	Pn	18 53 30.2	+0.1
ADVT	Abdulvahap	1.36	24	*e*Pn	Pn	18 53 30.2	+0.1
ARMT	Armutlu	1.38	355	*e*PN	Pn	18 53 30.4	+0.1
ARMT	Armutlu	1.38	355	*e*Pn	Pn	18 53 30.4	+0.1
EDC	Edincik	1.46	323	*e*PN	Pn	18 53 31.5	+0.1
EDC	Edincik	1.46	323	*e*Pn	Pn	18 53 31.5	+0.1
GULT	Gulveren	1.69	43	*e*PN	Pn	18 53 34.9	+0.1
GULT	Gulveren	1.69	43	*e*Pn	Pn	18 53 34.9	+0.1

NIED ***22*** *19:00:00, 38°.00N×142°.90E, h11km, Mw3.9 Best double couple: M0 8.21000×10^14 NP1:φ=205.00000°, δ=34.00000°, λ=-106.00000°. NP2:φ=45.00000°, δ=58.00000°, λ=-79.00000°.*
ISCJB ***22*** *19:00:50.3±0.4, 37°.91N±0°.03×142°.89E±0°.04, h18km, mb4.0/24, Error ellipse: s-maj=5.3km s-min=4.4km az=32.8*
JMA ***22*** *19:00:50.8±0.3, 38°.03N×142°.88E, h17km±4km, M4.1*
IDC ***22*** *19:00:50.2±0

3.1nm,0.4s,baz=87,slow=7.7,SNR=13
ZALV PcP **PcP** **19 10 37.0 -0.6**
0.9nm,0.6s,baz=122,slow=1.9,SNR=3.5
MKAR Makanchi Array 44.52 302 P **P** **19 09 04.0 +1.0**
1.7nm,0.8s,baz=88,slow=9.1,SNR=15
KURK Kurchatov 46.19 308 *e*P **P** **19 09 15.6 -0.5**
12nm,0.7s
ILAR Eielson Array 48.10 33 P **P** **19 09 31.6 +0.7**
0.7nm,0.7s,baz=265,slow=6.7,SNR=10
TKM2 Tokmak 2 50.12 298 *e*P **P** **19 09 47.9 +1.0**
1.7nm,0.6s
ABKAR Abkulak array 58.14 310 *e*P **P** **19 10 43.7 -1.3**
1.1nm,0.6s
WRA Warramunga Arr 58.17 189 P **P** **19 10 45.7 +0.2**
1.8nm,0.8s,baz=7.5,slow=7.0,SNR=13
ASAR Alice Springs 61.90 189 P **P** **19 11 11.6 +0.5**
0.3nm,0.4s,baz=360,slow=5.8,SNR=8.5
YKA Yellowknife Ar 62.43 31 P **P** **19 11 14.7 +0.6**
0.4nm,0.7s,baz=304,slow=5.9,SNR=3.6
ARCES ARCESS Array B 63.47 340 P **P** **19 11 22.2 +1.2**
1.4nm,0.9s,baz=60,slow=7.2,SNR=5.1
GEYT Alibeck 64.31 299 P **P** **19 11 27.6 +0.5**
2.1nm,0.7s,baz=86,slow=7.6,SNR=4.4
FINES FINESS Array B 68.46 333 P **P** **19 11 53.6 +0.5**
2.0nm,0.7s,baz=38,slow=9.6,SNR=7.2
KBZ Khabaz 71.08 311 P **P** **19 12 10.2 +0.7**
0.6nm,0.5s,baz=139,slow=16,SNR=4.0
NVAR Mina Array Bea 73.55 54 P **P** **19 12 25.8 +1.0**
0.4nm,0.8s,baz=298,slow=10,SNR=2.5
NB2 NORSAR Subarra 73.71 338 P **P** **19 12 25.6 +0.6**
comp=Z,1.1nm,0.5s,baz=37,slow=6.2
NOA NORSAR Array B 73.71 338 P **P** **19 12 25.9 +0.9**
comp=Z,0.6nm,0.5s,baz=49,slow=5.9,SNR=7.0
AKASG Malin Array Be 74.19 323 P **P** **19 12 28.4 +0.4**
comp=Z,1.6nm,0.6s,baz=45,slow=6.2,SNR=11
PDAR Pinedale Array 76.22 46 P **P** **19 12 41.0 +0.8**
comp=Z,0.4nm,0.5s,baz=270,slow=0.5,SNR=6.7
BRTR Keskin Array B 79.01 312 P **P** **19 12 56.3 +0.7**
comp=Z,0.5nm,0.7s,baz=53,slow=4.8,SNR=4.1
GERES GERESS Array B 82.45 329 P **P** **19 13 13.7 -0.1**
comp=Z,0.4nm,0.5s,baz=46,slow=3.9,SNR=4.9
H06N1 SOCORRO T-PHAS 90.71 65 T T 20 54 17.0
SNR=23
H06E1 SOCORRO T-PHAS 90.80 65 T T 20 53 04.7
SNR=15

ISCJB ***22*** *19:02:53.6±0.5, 39.°10N±0.°03×29.°05E±0.°03, h6km±6km, Error ellipse: s-maj=5.5km s-min=4.1km az=153.6*
DDA ***22*** *19:02:53.6, 39.°09N×29.°03E, h7km, Md2.5*
ISK ***22*** *19:02:53.3, 39.°11N×29.°08E, h6km, MD2.8*
CSEM ***22*** *19:02:53.9±0.1, 39.°10N×29.°06E, h6km±1km, MD2.5, Error ellipse: s-maj=2.0km s-min=1.7km az=172.0*
ISC 22 19:02:53.2±0.9, 39.°07N±0.°03×29.°10E±0.°02, h15km±8km, n32, σ0.°26/44, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.30**	**264**	P	**Pg**	**19 02 59.7**	**+0.2**
DEMI				S	**Sg**	**19 03 03.5**	**-0.4**
DEMI	**Demirci**	**0.30**	**264**	*i* P	**Pg**	**19 02 59.7**	**+0.2**
DEMI				*i* S	**Sg**	**19 03 03.5**	**-0.4**
GDZ	**Gediz**	**0.30**	**87**	P	**Pb**	**19 03 00.5**	**+0.1**
GDZ				S	**Sb**	**19 03 05.3**	**+0.1**
GDZ	**Gediz**	**0.30**	**87**	*i* P	**Pb**	**19 03 00.5**	**+0.1**
GDZ				*i* S	**Sb**	**19 03 05.3**	**+0.1**
TVSB	**Tavsanli**	**0.47**	**37**	*e*PG	**Pg**	**19 03 02.8**	**+0.1**
TVSB				*e*SG	**Sg**	**19 03 09.1**	**0.0**
TVSB	**Tavsanli**	**0.47**	**37**	*e*Pg	**Pg**	**19 03 02.8**	**+0.1**
TVSB				*e*Sg	**Sg**	**19 03 09.1**	**0.0**
DURS	**Dursunbey**	**0.71**	**318**	P	**Pb**	**19 03 07.4**	**0.0**
DURS	**Dursunbey**	**0.71**	**318**	*i* P	**Pb**	**19 03 07.4**	**0.0**
MANT	**Manisa**	**0.72**	**216**	P	**Pb**	**19 03 07.9**	**+0.4**
MANT				S	**Sg**	**19 03 16.5**	**-0.3**
MANT	**Manisa**	**0.72**	**216**	*i* P	**Pb**	**19 03 08.0**	**+0.4**
MANT				*i* S	**Sg**	**19 03 16.5**	**-0.3**
KHAL	**Karahalli**	**0.77**	**156**	P	**Pn**	**19 03 10.0**	**+0.4**
KHAL				S	**Sn**	**19 03 20.5**	**-0.4**
KHAL	**Karahalli**	**0.77**	**156**	*i* P	**Pn**	**19 03 10.0**	**+0.4**
KHAL				*i* S	**Sn**	**19 03 20.5**	**-0.4**
KHL	**Karahalli**	**0.82**	**156**	*e*PG	**Pn**	**19 03 10.2**	**-0.1**
KHL	**Karahalli**	**0.82**	**156**	*e*Pg	**Pn**	**19 03 10.2**	**-0.1**
AKHS	**Akhisar**	**1.02**	**259**	P	**Pn**	**19 03 13.4**	**+0.5**
AKHS				S	**Sb**	**19 03 25.5**	**-0.2**
AKHS	**Akhisar**	**1.02**	**259**	*i* P	**Pn**	**19 03 13.4**	**+0.5**
AKHS				*i* S	**Sb**	**19 03 25.5**	**-0.2**
AKS	**Akhisar**	**1.02**	**259**	*e*PG	**Pn**	**19 03 13.2**	**+0.2**
AKS	**Akhisar**	**1.02**	**259**	*e*Pg	**Pn**	**19 03 13.2**	**+0.2**
BALB	**Balikesir**	**1.10**	**301**	*e*PG	**Pb**	**19 03 14.0**	**+0.1**
BALB	**Balikesir**	**1.10**	**301**	*e*Pg	**Pb**	**19 03 14.0**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.30**	**353**	*e*PN	**Pb**	**19 03 17.9**	**+0.4**
MDNY	**Mudanya-Bursa**	**1.30**	**353**	*e*Pn	**Pb**	**19 03 17.9**	**+0.4**
KCTX	**Karacabey (Bur**	**1.32**	**335**	*e*PN	**Pg**	**19 03 18.7**	**0.0**
KCTX	**Karacabey (Bur**	**1.32**	**335**	*e*Pn	**Pg**	**19 03 18.7**	**0.0**
ADVT	**Abdulvahap**	**1.45**	**20**	*e*PN	**Pb**	**19 03 20.0**	**+0.1**
ADVT	**Abdulvahap**	**1.45**	**20**	*e*Pn	**Pb**	**19 03 20.0**	**+0.1**
GONE	**Gonen-Balikesi**	**1.46**	**312**	*e*PN	**Pb**	**19 03 20.2**	**+0.1**
GONE	**Gonen-Balikesi**	**1.46**	**312**	*e*Pn	**Pb**	**19 03 20.2**	**+0.1**
ARMT	**Armutlu**	**1.50**	**353**	*e*PN	**Pb**	**19 03 20.7**	**-0.1**
ARMT	**Armutlu**	**1.50**	**353**	*e*Pn	**Pb**	**19 03 20.7**	**-0.1**
GULT	**Gulveren**	**1.74**	**38**	*e*PN	**Pb**	**19 03 24.9**	**-0.1**
GULT	**Gulveren**	**1.74**	**38**	*e*Pn	**Pb**	**19 03 24.9**	**-0.1**

NNC 22 19:06:57.1±5.6, 36.°84N×71.°55E, h0km, mb3.6, mpv3.2, 2C-3D, Error ellipse: s-maj=44.5km s-min=25.6km az=165.0, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**2.91**	**313**	⇓P	Pn	19 07 44.3	-0.6
DZET	1.4nm,0.3s						
	9.0nm,0.4s			⇓S	Sn	19 08 22.2	+1.6
MNAS	**Manas**	**5.69**	**7**	⇑P	Pn	19 08 23.8	+0.7
MNAS	1.5nm,0.7s						
	3.3nm,0.6s			⇑S	Sn	19 09 30.4	+1.3
KK31	**Karatay Array**	**6.31**	**353**	Pn	Pn	19 08 31.8	+0.4
KK31	1.6nm,0.3s,baz=181,slow=14,SNR=34						
	0.5nm,0.3s,baz=173,slow=20,SNR=5.6			⇓S	Sn	19 09 44.0	-0.1

MOS ***22*** *19:07:41.4±0.9, 5.°97N×125.°59E, h148km, mb5.3/72, Error ellipse: s-maj=8.0km s-min=4.0km az=112.9*
BJI ***22*** *19:07:43.5, 6.°02N×125.°69E, h161km, mb5.2/72, mB4.9/43*
KLM ***22*** *19:07:44.9, 6.°07N×126.°00E, h180km, mb5.4, MS6.2*
IDC ***22*** *19:07:44.5±0.5, 5.°95N×125.°61E, h161km±4km, mb4.8/46, mb1 4.9/49, mb1mx4.8/53, mbtmp5.2/49, MS3.7/10, Ms1 3.7/10, ms1mx3.3/58, Error ellipse: s-maj=10.4km s-min=5.7km az=76.0*
ISCJB ***22*** *19:07:45.2±0.3, 5.°99N±0.°02×125.°75E±0.°02, h181km±2km, mb5.2/183, Error ellipse: s-maj=3.9km s-min=2.7km az=169.0*
GCMT ***22*** *19:07:46.1±0.2, 5.°91N×125.°79E, h154km±1km, MW5.2/90, Moment Tensor Solution. s43,c56; s90,c156; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}5.24±.15; $M_{\theta\theta}$0.47±.18; $M_{\phi\phi}$-5.72±.22; $M_{r\theta}$1.07±.13; $M_{\theta\phi}$-2.73±.17; $M_{\phi r}$2.75±.17; Best double couple: $M_0$6.68300×10^{16} NP1:ϕ_s21.00000°, δ58.00000°, λ90.00000°. NP2: ϕ_s200.00000°, δ32.00000°, λ89.00000°. Principal axes: T 5.9270, Plg77.0000°, Azm292.0000°; N 1.5060, Plg0.0000°, Azm201.0000°; P -7.4380, Plg13.0000°, Azm111.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
NEIC ***22*** *19:07:46.1±0.5, 6.°01N×125.°70E, h175km±5km, mb5.3/80 Error ellipse: s-maj=4.4km s-min=3.2km az=80.0*
NEIC Felt at General Santos and Tupi.
DJA ***22*** *19:07:47.2±0.8, 6.°N±6.°×12.°6E±.°, h120km±12km, M5.4/8, mb5.4/8, mB5.6/8, MLv5.7/3, Mw(mB)5.2/8*
ISC 22 19:07:45.1±0.4, 6.°00N±0.°03×125.°76E±0.°04, h168km±2km, h168km:pP-P, n794, σ1.°36/905, mb5.2/181, 65C-59D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DAV	**Davao City (W)**	**1.08**	**350**	P	**Pn**	**19 08 12.9**	**+0.6**
DAV	641nm,0.3s,baz=92,slow=1.6,SNR=104						
				S	**Sn**	**19 08 31.4**	**-2.0**
	914nm,0.3s,baz=108,slow=20,SNR=39						
DAV				LR	LR	19 08 38.0	
	comp=Z,2μm,21.1s,baz=182,slow=48						
DAV	**Davao City (W)**	**1.08**	**350**	*e*Pn	**Pn**	**19 08 12.9**	**+0.6**
DAV				S	**Sn**	**19 08 31.4**	**-2.0**
DAV				*e*Sn	Sn	19 08 31.4	-1.9
CTBH	**Cotabato--PC H**	**1.94**	**309**	⇓*i* P	**Pn**	**19 08 21.0**	**+0.3**
BUKP	**Musuan**	**2.00**	**340**	*e*P	**Pn**	**19 08 22.4**	**+1.1**
BUKP				*e*S	**Sn**	**19 08 51.5**	**+2.0**
SGSI	**Sangihe**	**2.31**	**186**	P	**Pn**	**19 08 23.8**	**-1.1**
CGP	**Cagayan de Oro**	**2.66**	**337**	⇓*e*P	**Pn**	**19 08 28.8**	**-0.3**
CGP				*e*S	**Sn**	**19 09 05.9**	**+2.6**
PAGZ	**Pagadian**	**2.99**	**308**	*e*P	**Pn**	**19 08 34.1**	**+1.0**
IPIL	**Ipil**	**3.63**	**300**	*e*P	**Pn**	**19 08 41.7**	**+0.5**
TBP	**Tagbilaran**	**4.12**	**333**	⇑*e*P	**Pn**	**19 08 49.2**	**+1.7**
SNPH	**Sibulan**	**4.16**	**323**	⇓*e*P	**Pn**	**19 08 48.6**	**+0.6**
LLP	**Lapu-Lapu**	**4.65**	**338**	⇓*e*P	**Pn**	**19 08 55.8**	**+1.6**
LLP				*e*S	**Sn**	**19 09 50.3**	**+1.9**
OCLP	**Ormoc**	**5.15**	**347**	*e*P	**Pn**	**19 09 02.1**	**+1.3**
OCLP				*e*S	**Sn**	**19 09 56.2**	**-4.0**
PLP	**Palo**	**5.19**	**351**	⇓*e*P	**Pn**	**19 09 02.8**	**+1.4**
GUIM	**Jordan**	**5.57**	**326**	*e*P	**Pn**	**19 09 07.0**	**+0.7**
KMSI	**Cibinong**	**5.67**	**198**	P	**Pn**	**19 09 06.2**	**-1.5**
	935nm,0.8s,12μm9.3nm						
JAP	**San Jose, Anti**	**6.04**	**322**	⇓*i* P	**Pn**	**19 09 14.5**	**+1.9**
JAP				*i* S	Sn	19 10 11.0	-10
RCP	**Roxas**	**6.28**	**332**	⇓*e*P	**Pn**	**19 09 17.9**	**+2.2**
KALP	**Kalibo**	**6.58**	**329**	⇑*e*P	Pn	19 09 24.7	+5.0
MRSI	**Marisa**	**6.68**	**215**	P	**Pn**	**19 09 22.0**	**+1.0**
	183nm,0.7s,4μm						
MYLDM	**Lahad Datu**	**7.27**	**264**	⇑P	**Pn**	**19 09 32.5**	**+3.7**
MYLDM	**Lahad Datu**	**7.27**	**264**	*e*Pn	**Pn**	**19 09 31.7**	**+2.9**
LUWI	**Luwuk**	**7.60**	**203**	P	**Pn**	**19 09 34.5**	**+1.3**
	358nm,0.9s,4μm						
LUWI	**Luwuk**	**7.60**	**203**	*e*Pn	**Pn**	**19 09 35.3**	**+2.0**
LUWI				*e*Sn	**Sn**	**19 11 01.0**	**+2.5**
PVCP	**Virac**	**7.72**	**348**	*e*P	**Pn**	**19 09 38.5**	**+3.8**
SJMP	**San Jose**	**7.89**	**325**	*e*P	**Pn**	**19 09 39.1**	**+2.1**
SANI	**Sanana**	**8.00**	**178**	P	**Pn**	**19 09 34.9**	**-3.6**
	328nm,0.9s,18μm						
TSM	**Tawau**	**8.04**	**258**	⇑P	**Pn**	**19 09 41.5**	**+2.5**
PALU	**Palau**	**8.76**	**81**	P	**Pn**	**19 09 48.9**	**+0.3**
	baz=8.7,SNR=9.6						
SIJI	**Sorong**	**8.76**	**141**	P	**Pn**	**19 09 47.6**	**-1.0**
	21nm,0.3s,baz=243,slow=20,SNR=5.7						
SIJI				S	**Sn**	**19 11 18.8**	**-7.5**
	19nm,0.3s,baz=90,slow=20,SNR=3.2						
KDM	**Kudat**	**8.92**	**276**	⇑P	**Pn**	**19 09 53.3**	**+2.6**
PCI	**Palu**	**9.05**	**221**	P	**Pn**	**19 09 56.1**	**+3.6**
	86nm,1.1s,1μm						
KKM	**Kota Kinabalu**	**9.49**	**271**	⇑P	**Pn**	**19 10 00.5**	**+2.1**
KKM	**Kota Kinabalu**	**9.49**	**271**	*e*Pn	**Pn**	**19 09 58.5**	**+0.1**
TTSI	**Tana Toraja**	**10.76**	**214**	P	**Pn**	**19 10 17.6**	**+2.7**
FAKI	**Fak Fak**	**10.97**	**144**	P	**Pn**	**19 10 17.0**	**-0.7**
	792nm,1.0s,8μm						
FAKI	**Fak Fak**	**10.97**	**144**	*e*Pn	**Pn**	**19 10 17.2**	**-0.5**
KAPI	**Kappang**	**12.47**	**209**	P	**Pn**	**19 10 36.2**	**-0.8**
	1.2nm,0.3s,baz=56,slow=4.9,SNR=17						
KAPI				LR	LR	19 15 15.6	
	comp=Z,198nm,18.5s,baz=51,slow=36						
KAPI	**Kappang**	**12.47**	**209**	*e*Pn	**Pn**	**19 10 37.1**	**0.0**
BTM	**Bintulu**	**12.94**	**258**	⇑P	**Pn**	**19 10 44.7**	**+1.7**
SBUM	**Sibu**	**13.95**	**256**	*e*Pn	**P**	**19 10 58.3**	**-0.3**
SBUM				*e*ScP	**ScP**	**19 19 23.7**	**+1.1**
MMRI	**Maumere**	**14.95**	**194**	*e*Pn	**Pn**	**19 11 08.6**	**+0.4**
SOEI	**Soe**	**15.72**	**185**	*e*Pn	**P**	**19 11 18.8**	**+0.5**
	172nm,0.9s						
KSM	**Kuching**	**16.06**	**254**	⇑P	**P**	**19 11 23.4**	**+1.5**
KSM	**Kuching**	**16.06**	**254**	*e*Pn	**P**	**19 11 24.1**	**+2.2**
	89nm,0.8s						
KSM				*e*PcP	**PcP**	**19 16 08.7**	**+1.1**
KSM				*e*ScP	**ScP**	**19 19 26.4**	**+0.1**
JAY	**Jayapura**	**17.15**	**119**	P	**P**	**19 11 33.6**	**-0.4**
	2.4nm,0.3s,baz=266,slow=20,SNR=69						
JAY				S	**S**	**19 14 43.6**	**-0.8**
	baz=270,slow=20,SNR=5.1						
TWG	**Pinlang**	**17.33**	**345**	*e*P	**P**	**19 11 34.7**	**-1.1**
	150nm,0.7s						
YULB	**Yu-li**	**17.82**	**346**	*e*P	**P**	**19 11 39.9**	**-1.3**
	26nm,0.8s						
YULB				*e*S	**S**	**19 14 57.0**	**-0.5**
TPUB	**Ta-pu**	**17.90**	**344**	*e*P	**P**	**19 11 41.9**	**-0.3**
	80nm,0.9s						
TPUB				*e*S	**S**	**19 14 54.5**	**-4.6**
SSLB	**Suanglung**	**18.28**	**346**	*e*P	**P**	**19 11 44.4**	**-1.9**
	46nm,0.8s						
SSLB				*e*S	**S**	**19 15 06.2**	**-0.5**
JAGI	**Jajag, Banyuwa**	**18.45**	**219**	*e*P	**Pn**	**19 11 49.5**	**-0.8**
	166nm,1.0s						
YHNB	**Yeheng**	**19.04**	**348**	*e*P	**P**	**19 11 52.7**	**-1.8**
	29nm,0.8s						
MTN	**Manton Dam**	**19.46**	**164**	P	**P**	**19 11 59.3**	**+0.2**
	baz=20,SNR=46						
MTN	**Manton Dam**	**19.46**	**164**	*e*P	**P**	**19 11 59.1**	**0.0**
	64nm,0.8s						
HKC	**Hong Kong Obse**	**19.70**	**327**	P	**Pn**	**19 12 09.0**	**+4.1**
KDU	**Kakadu**	**19.72**	**160**	P	**P**	**19 12 02.1**	**+0.3**
	baz=20,SNR=30						
MCO	**Taipa Grande**	**19.90**	**325**	P	**Pn**	**19 12 08.0**	**+0.6**
SMRI	**Semarang**	**20.04**	**230**	*e*P	**P**	**19 12 05.7**	**+0.4**
	174nm,1.1s						
QZH	**Quanzhou**	**20.05**	**341**	⇑*i* P	**P**	**19 12 01.1**	**-4.3**
QZH				pP	**pP**	**19 12 30.3**	**-4.0**
QZH				sP	**sP**	**19 12 51.6**	**-4.0**
QZH				S	**S**	**19 15 33.3**	**-8.3**
QZH				pmax	pmax		
	comp=Z,90nm,0.7s						
QIZ	**Qiongzhong**	**20.20**	**311**	P	**P**	**19 12 08.4**	**+1.3**
QIZ				pP	**pP**	**19 12 36.5**	**+0.5**
QIZ				sP	**sP**	**19 12 56.6**	**-0.7**
QIZ				S	**S**	**19 15 47.1**	**+2.4**
QIZ				pmax	pmax		
	comp=Z,33nm,1.4s						
QIZ				pmax	pmax		
	comp=Z,150nm,5.0s						
QIZ	**Qiongzhong**	**20.20**	**311**	*e*P	**P**	**19 12 08.3**	**+1.2**
	52nm,0.9s						
UGM	**Wanagama**	**20.54**	**228**	*e*P	**P**	**19 12 12.0**	**+1.3**
	272nm,1.0s						
JOW	**Kunigami**	**20.86**	**6**	P	**P**	**19 12 14.6**	**+0.7**
	588nm,1.3s						
UBPT	**Khong Chiam**	**21.95**	**296**	P	**P**	**19 12 25.6**	**0.0**
	94nm,1.2s,2μm						
LEM	**Lembang**	**22.14**	**235**	P	P	19 12 35.1	+7.5
	258nm,0.8s,baz=54,slow=7.9,SNR=60						
MYKOM	**Kota Tinggi**	**22.25**	**260**	⇑P	**P**	**19 12 29.2**	**+0.6**
MYKOM	**Kota Tinggi**	**22.25**	**260**	*e*P	**P**	**19 12 29.2**	**+0.6**
	139nm,0.8s						
CISI	**Cisompet, Garu**	**22.40**	**233**	*e*P	**P**	**19 12 29.0**	**-1.0**
	197nm,0.9s						
KGM	**Kluang**	**22.73**	**261**	⇑P	**P**	**19 12 32.9**	**-0.1**
MANU	**Manus Island**	**23.01**	**110**	*e*P	**P**	**19 12 35.9**	**+0.3**
	397nm,1.0s						
PANO	**Nakornpanom**	**23.46**	**300**	P	**P**	**19 12 40.5**	**+0.8**
	97nm,1.3s						
SKNT	**Sakolnakorn**	**23.94**	**299**	P	**P**	**19 12 45.0**	**+1.0**
	93nm,1.1s						
FITZ	**Fitzroy Crossi**	**23.95**	**180**	P	**P**	**19 12 44.0**	**0.0**
	49nm,0.5s,baz=6.1,slow=7.9,SNR=282						
FITZ				S	**S**	**19 16 44.9**	**-3.5**
	3.5nm,0.5s,baz=156,slow=19,SNR=3.7						
FITZ	**Fitzroy Crossi**	**23.95**	**180**	P	**P**	**19 12 44.0**	**0.0**
	baz=24,SNR=56						
FITZ	**Fitzroy Crossi**	**23.95**	**180**	*e*P	**P**	**19 12 43.1**	**-0.8**
	66nm,0.9s						
FITZ				S	**S**	**19 16 44.9**	**-3.5**
CHBT	**CHBT**	**24.06**	**288**	P	**P**	**19 12 46.8**	**+1.7**
	44nm,0.8s,1μm						
FRIM	**Kepong**	**24.21**	**265**	⇑P	**P**	**19 12 47.1**	**+0.6**
SRAK	**Srakaew**	**24.66**	**291**	P	**P**	**19 12 46.8**	**-3.7**
IPM	**Ipoh**	**24.68**	**268**	⇑P	**P**	**19 12 51.6**	**+0.8**
IPM	**Ipoh**	**24.68**	**268**	*e*P	**P**	**19 12 50.9**	**+0.1**
	65nm,0.9s						
IPM				*e*PcP	**PcP**	**19 16 23.5**	**-0.2**
IPM				*e*ScP	**ScP**	**19 19 46.3**	**-0.6**
KHON	**Khomkaen**	**24.71**	**296**	P	**P**	**19 12 52.7**	**+1.7**
	32nm,0.8s						
KULM	**Kulim**	**25.00**	**270**	*e*P	**P**	**19 12 54.0**	**+0.3**
	51nm,1.0s						
KULM				*e*PcP	**PcP**	**19 16 24.2**	**-0.2**
KULM				*e*ScP	**ScP**	**19 19 47.4**	**-0.4**
NONG	**Nongkai**	**25.12**	**300**	P	**P**	**19 12 56.7**	**+2.0**
	55nm,1.0s						
CHAI	**Chaiyaphum**	**25.30**	**295**	P	**P**	**19 12 58.4**	**+2.0**
	16nm,1.0s,122nm						
BKNI	**Bangkinang**	**25.31**	**258**	*e*P	**P**	**19 12 56.9**	**+0.4**
	133nm,0.8s						
TRTT	**Trang**	**25.94**	**276**	P	**P**	**19 13 03.3**	**+1.1**
	54nm,1.3s,710nm						
CBIJ	**Chichi jima**	**26.17**	**35**	*e*P	**P**	**19 13 03.3**	**-0.8**
	192nm,0.7s						
JCJ	**Chichijima**	**26.17**	**35**	P	**P**	**19 13 04.0**	**0.0**
	141nm,0.5s,baz=234,slow=3.7,SNR=46						
PMG	**Port Moresby**	**26.25**	**126**	P	**P**	**19 13 04.9**	**0.0**
	100nm,0.9s,baz=343,slow=3.3,SNR=17						
PMG	**Port Moresby**	**26.25**	**126**	*i* P	**P**	**19 13 05.1**	**+0.2**
PMG				pmax	pmax		
	comp=Z,421nm,0.8s						
PMG	**Port Moresby**	**26.25**	**126**	*e*P	**P**	**19 13 05.0**	**+0.1**
	comp=Z,118nm,0.9s						
COEN	**Coen**	**26.30**	**139**	P	**P**	**19 13 05.5**	**+0.1**
	baz=26,SNR=14						
COEN	**Coen**	**26.30**	**139**	*e*P	**P**	**19 13 05.5**	**+0.1**
	comp=Z,215nm,0.8s						
PBKT	**Sadao Pong**	**26.45**	**295**	P	**P**	**19 13 07.5**	**+0.8**
	comp=Z,43nm,0.8s						
LOEI	**Loei**	**26.53**	**298**	P	**P**	**19 13 04.7**	**-2.7**
	comp=Z,64nm,0.8s						
PHET	**Kaeng Krachan**	**26.66**	**287**	P	**P**	**19 13 10.0**	**+1.4**
	comp=Z,34nm,0.8s,comp=Z,246nm						
WHN	**Wuhan**	**26.67**	**338**	P	**P**	**19 13 09.6**	**+1.1**
WHN				sP	**sP**	**19 14 00.9**	**-1.8**
WHN				S	**S**	**19 17 32.5**	**+1.2**
WHN				pmax	pmax		
	comp=Z,260nm,3.6s						
WHN				LR	LR		
	comp=Z,500nm,15.6s						
NJ2	**Nanjing**	**26.71**	**347**	*e*P	**P**	**19 13 08.8**	**0.0**
NJ2				pmax	pmax		
	comp=Z,13nm,0.7s						
NJ2				LR	LR		
	comp=Z,140nm,19.5s						
PSI	**Prapat**	**26.94**	**264**	*e*P	**P**	**19 13 11.3**	**0.0**
PSI				*e*		19 16 28.3	
PSI				pmax	pmax		
	comp=Z,41nm,0.8s						
PSI	**Prapat**	**26.94**	**264**	*e*P	**P**	**19 13 11.3**	**0.0**
	comp=Z,41nm,0.8s						
PSI				*e*PcP	**PcP**	**19 16 28.3**	**-0.8**
WRAB	**Tennant Creek**	**27.12**	**162**	⇓*i* P	**P**	**19 13 12.2**	**-0.4**
WRAB				pmax	pmax		
	comp=Z,54nm,0.9s						
WRAB	**Tennant Creek**	**27.12**	**162**	*e*P	**P**	**19 13 11.8**	**-0.8**
	comp=Z,56nm,0.9s						
WRA	**Warramunga Arr**	**27.12**	**162**	P	**P**	**19 13 11.7**	**-0.9**
	comp=Z,12nm,0.7s,baz=334,slow=11,SNR=104						
WRA				PcP	**PcP**	**19 16 29.3**	**+0.1**
	comp=Z,9.0nm,0.7s,baz=341,slow=3.2,SNR=5.1						
WRA				S	**S**	**19 17 33.0**	**-5.7**
	comp=Z,11nm,1.0s,baz=339,slow=15,SNR=9.0						
WRA				PKiKP	**PKiKP**	**19 24 04.5**	**-2.4**
	comp=Z,0.7nm,0.7s,baz=316,slow=1.1,SNR=4.6						
WRA				P3KPbc		19 45 43.6	
	comp=Z,0.9nm,0.8s,baz=160,slow=4.2,SNR=7.4						
UTTA	**Uttaradit**	**27.25**	**298**	P	**P**	**19 13 15.6**	**+1.8**
	comp=Z,8.3nm,1.2s,comp=Z,71nm						
PKDT	**Phuket**	**27.29**	**276**	P	**P**	**19 13 15.4**	**+1.2**
	comp=Z,95nm,0.9s,comp=Z,816nm						
JNU	**Nakatsue**	**27.41**	**9**	P	**P**	**19 13 15.6**	**+0.5**
	comp=Z,52nm,0.9s,baz=226,slow=2.5,SNR=19						
JNU	**Nakatsue**	**27.41**	**9**	*e*P	**P**	**19 13 14.8**	**-0.3**
	comp=Z,90nm,1.1s						
SRDT	**SRDT**	**27.48**	**290**	P	**P**	**19 13 17.6**	**+1.7**
	comp=Z,193nm,0.8s,comp=Z,2μm						
NANT	**Nan**	**27.53**	**300**	P	**P**	**19 13 17.2**	**+0.8**
	comp=Z,8.8nm,1.0s,comp=Z,107nm						
MBWA	**Marble Bar**	**27.63**	**192**	*e*P	**P**	**19 13 15.8**	**-1.3**
	comp=Z,145nm,1.0s						
SUKH	**Sukhothai**	**27.97**	**296**	P	**P**	**19 13 22.8**	**+2.6**
	comp=Z,6.7nm,0.8s,comp=Z,66nm						
KHLT	**Khaolaem Dam**	**28.09**	**290**	P	P	19 13 27.1	+5.8
	comp=Z,18nm,0.9s						
LAMP	**Lampang**	**28.35**	**298**	P	**P**	**19 13 26.5**	**+2.9**
	comp=Z,8.1nm,1.2s						
CRAI	**Chiangrai**	**28.42**	**302**	P	**P**	**19 13 24.8**	**+0.6**
	comp=Z,177nm,0.8s,comp=Z,32μm						
GSI	**Gunungsitoli**	**28.50**	**262**	*e*P	**P**	**19 13 24.1**	**-0.9**
	comp=Z,195nm,0.9s						
ENH	**Enshi**	**28.60**	**330**	*e*P	**P**	**19 13 23.5**	**-2.2**
	comp=Z,44nm,0.9s						
CM01	**Chiang Mai Arr**	**28.91**	**298**	*e*P	**P**	**19 13 28.4**	**-0.1**
CM31	**Chiang Mai Arr**

comp=Z,45nm,0.8s,baz=188,slow=9.9,SNR=201
KSRS PcP **PcP** **19 16 40.8 +1.1**
comp=Z,14nm,0.9s,baz=184,slow=2.6,SNR=16
KSRS ScP **ScP** **19 20 08.2 +1.1**
comp=Z,4.3nm,0.8s,baz=192,slow=3.1,SNR=11
KSRS LR LR 19 26 57.5
comp=Z,68nm,19.6s,baz=179,slow=37
KSRS Korea Array 31.37 3 P **P** **19 13 51.6 +1.6**
KSRS 19 16 40.8
KSRS pmax pmax
comp=Z,44nm,0.8s
KSRS pmax pmax
comp=Z,14nm,0.9s
KSRS pmax pmax
comp=N,4.0nm,0.8s
KSRS MLR MLR
comp=Z,68nm,19.6s
KS01 Wonju Array Si 31.39 3 *e*P **P** **19 13 50.7 +0.5**
XAN Xi'an 31.97 333 P **P** **19 13 55.0 -0.4**
XAN pP pP 19 14 32.8 +2.2
XAN pmax pmax
comp=Z,53nm,1.0s
XAN pmax pmax
comp=Z,63nm,8.2s
XAN LR LR
comp=Z,160nm,16.1s
XAN LR LR
comp=Z,180nm,13.1s
CD2 Chengdu 32.26 323 P **P** **19 13 58.3 +0.3**
CD2 pP pP 19 14 33.3 +0.1
CD2 sP sP 19 14 52.8 +0.2
CD2 PP **PP** **19 15 14.8 +0.4**
CD2 S **S** **19 19 00.3 +1.3**
CD2 sS sS 19 20 02.9 +1.6
CD2 pmax pmax
comp=Z,60nm,1.0s
CD2 pmax pmax
comp=Z,100nm,6.6s
MJAR Matsushiro Arr 32.47 19 P **P** **19 13 59.2 -0.5**
comp=Z,32nm,0.8s,baz=196,slow=9.4,SNR=117
MJAR PcP **PcP** **19 16 43.2 +0.5**
comp=Z,5.7nm,0.8s,baz=173,slow=2.5,SNR=6.2
MJAR ScP **ScP** **19 20 12.8 +1.8**
comp=Z,0.8nm,0.8s,baz=195,slow=4.2,SNR=4.8
MJAR P3KPbc 19 45 21.8
comp=Z,1.5nm,0.8s,baz=12,slow=4.4,SNR=5.0
MAJO Matsushiro 32.47 19*c i*P **P** **19 13 59.3 -0.4**
MAJO pmax pmax
comp=Z,206nm,0.8s
MAJO Matsushiro 32.47 19 *e*P **P** **19 13 59.2 -0.5**
comp=Z,44nm,0.8s
MAT Matsushiro 32.47 19 P **P** **19 13 59.3 -0.4**
MAT S **S** **19 18 58.6 -3.5**
MJB9 Matsu-Tunnel 32.47 19 *e*P **P** **19 13 59.2 -0.5**
comp=Z,11nm,0.8s
CTA Charters Tower 32.84 143 P **P** **19 14 03.2 +0.2**
comp=Z,3.3nm,0.7s,baz=318,slow=12,SNR=6.6
CTAO Charters Tower 32.84 143 *e*P **P** **19 14 03.9 +0.9**
CTAO *e* 19 16 45.7
CTAO pmax pmax
comp=Z,170nm,0.8s
CTAO Charters Tower 32.84 143 *e*P **P** **19 14 03.9 +0.9**
comp=Z,170nm,0.8s
CTAO *e*PcP **PcP** **19 16 45.7 +1.7**
DL2 Dalian 32.98 354 P **P** **19 14 05.1 +1.1**
DL2 pmax pmax
comp=Z,120nm,0.8s
DL2 pmax pmax
comp=Z,77nm,5.3s
DL2 LR LR
comp=Z,250nm,13.7s
BJT Baijiatuau 34.96 347 *e*P **P** **19 14 19.8 -1.2**
BJT pmax pmax
comp=Z,45nm,0.6s
BJT Baijiatuau 34.96 347 *e*P **P** **19 14 19.8 -1.2**
comp=Z,45nm,0.6s
BJI Beijing 34.98 347 P **P** **19 14 21.5 +0.3**
BJI pP **pP** **19 14 57.3 +0.5**
BJI PcP **PcP** **19 16 51.1 +1.3**
BJI S **S** **19 19 43.1 +2.6**
BJI ScP **ScP** **19 20 20.8 +1.2**
BJI PcS **PcS** **19 20 39.1 +2.5**
BJI ScS **ScS** **19 24 26.4 +2.8**
BJI pmax pmax
comp=Z,75nm,1.1s
SNY Shenyang 35.73 357 ⇑P **P** **19 14 28.8 +1.2**
SNY pmax pmax
comp=Z,180nm,0.8s
LZH Lanzhou 36.07 329 ⇑P **P** **19 14 32.1 +1.2**
LZH pP pP 19 15 08.1 +1.4
LZH sP sP 19 15 27.3 +1.4
LZH PP **PnPn** **19 16 01.0 +2.9**
LZH PcP **PcP** **19 16 54.3 +0.9**
LZH S **S** **19 19 57.0 -0.8**
LZH ScP **ScP** **19 20 23.3 -0.7**
LZH sS sS 19 21 01.5 +0.8
LZH pmax pmax
comp=Z,120nm,1.2s
LZH pmax pmax
comp=Z,510nm,5.0s
LZH LR LR
comp=Z,450nm,10.0s
LZH LR LR
comp=Z,380nm,10.5s
LZH LR LR
comp=Z,670nm,15.0s
MORW Morawa 36.09 195 P **P** **19 14 30.7 -0.2**
baz=36,SNR=17
HHC Hu-ho-hao-te 36.96 342 *e*P **P** **19 14 38.6 +0.4**
HHC pP pP 19 15 10.1 -4.0
HHC sP sP 19 15 33.5 +0.2
HHC pmax pmax
comp=Z,68nm,1.0s
HHC pmax pmax
comp=Z,550nm,4.8s
KMBL Kambalda 37.34 185 P **P** **19 14 41.5 +0.2**
baz=38,SNR=93
VLA Vladivostok 37.37 7*c i*P **P** **19 14 43.3 +1.9**
VLA pmax pmax
comp=Z,78nm,1.1s
BLDU Ballidu 37.42 193 P **P** **19 14 41.7 -0.3**
baz=38,SNR=21
CN2 Changchun 37.65 360 ⇑*i*P **P** **19 14 44.5 +0.6**
CN2 *ep*P pP 19 15 19.8 -0.1
CN2 PcP **PcP** **19 16 58.3 +0.5**
CN2 *e*S **S** **19 20 22.6 +1.5**
CN2 pmax pmax
comp=Z,40nm,0.7s
CN2 pmax pmax
comp=Z,200nm,3.0s
SHL Shillong 37.78 305 *ex* **P** **19 14 46.0 +0.5**
SHL *ex* x 19 20 23.0
KLBR Kellerberrin 38.15 191 P **P** **19 14 48.0 -0.2**
baz=38,SNR=26
USRK Ussuriysk Ar. 38.44 7 P **P** **19 14 52.2 +1.7**
comp=Z,50nm,0.7s,baz=193,slow=7.3,SNR=93
MDJ Mudanjiang 38.61 4 P **P** **19 14 53.8 +1.9**
MDJ pP pP 19 15 28.5 +0.4
MDJ sP sP 19 15 47.1 -0.1
MDJ PP **PP** **19 16 25.1 +1.2**
MDJ PcP **PcP** **19 17 01.3 +0.6**
MDJ ScP **ScP** **19 20 34.5 +1.4**
MDJ S **S** **19 20 38.8 +3.2**
MDJ PcS **PcS** **19 20 51.5 +1.4**
MDJ pmax pmax
comp=Z,130nm,1.0s
MDJ pmax pmax
comp=Z,140nm,5.0s
MDJ LR LR
comp=Z,180nm,17.6s
MDJ LR LR
comp=Z,220nm,20.4s
MDJ LR LR
comp=Z,310nm,16.9s
MDJ Mudanjiang 38.61 4 *e*P **P** **19 14 51.5 -0.4**
comp=Z,122nm,0.9s
MDJ *e*PcP **PcP** **19 17 01.1 +0.3**
MUN Mundaring 38.84 193 P **P** **19 14 54.3 +0.4**
baz=39
ERM Erimo 39.06 21 ⇑*i*P **P** **19 14 58.3 +2.7**
ERM pmax pmax
comp=Z,50nm,0.8s
ERM Erimo 39.06 21 *e*P **P** **19 14 56.8 +1.2**
comp=Z,55nm,0.9s
RMQ Roma 39.24 146 P P 19 15 04.1 +6.7
baz=39,SNR=6.2
NWAO Narrogin (SRO) 39.55 191 P **P** **19 15 00.2 +0.4**
comp=Z,102nm,0.8s,baz=264,slow=7.0,SNR=59
NWAO Narrogin (SRO) 39.55 191 P **P** **19 15 00.2 +0.4**
baz=40,SNR=46
NWAO Narrogin (SRO) 39.55 191 *e*P **P** **19 14 59.9 +0.1**
NWAO pmax pmax
comp=Z,143nm,0.9s
NWAO Narrogin (SRO) 39.55 191 *e*P **P** **19 14 59.9 +0.1**
comp=Z,143nm,0.9s
EIDS Eidsvold 39.72 143 P **P** **19 15 01.7 +0.3**
baz=40,SNR=4.8
EIDS Eidsvold 39.72 143 *e*P **P** **19 15 01.4 0.0**
comp=Z,28nm,1.0s
BBOO Buckleboo 39.81 166 P **P** **19 15 02.6 +0.7**
baz=40,SNR=235
BBOO Buckleboo 39.81 166 *e*P **P** **19 15 02.7 +0.7**
comp=Z,110nm,0.6s
LSA Lhasa 40.24 310 P **P** **19 15 07.3 +1.1**
LSA Lhasa 40.24 310 *e*P **P** **19 15 06.4 +0.2**
LSA *e* 19 17 06.1
LSA pmax pmax
comp=Z,21nm,0.8s
LSA Lhasa 40.24 310 *e*P **P** **19 15 06.4 +0.2**
comp=Z,21nm,0.8s
LSA *e*PcP **PcP** **19 17 06.1 -0.8**
STKA Stephens Creek 40.58 159 P **P** **19 15 09.0 +0.8**
comp=Z,57nm,0.9s,baz=330,slow=8.3,SNR=45
STKA PcP **PcP** **19 17 07.6 +0.3**
comp=Z,27nm,0.8s,baz=1.3,slow=4.4,SNR=3.6
STKA Stephens Creek 40.58 159 P **P** **19 15 09.1 +0.8**
baz=41,SNR=26
STKA Stephens Creek 40.58 159 *e*P **P** **19 15 08.9 +0.6**
STKA 19 17 07.6
STKA pmax pmax
comp=Z,13nm,0.8s
STKA Stephens Creek 40.58 159 *e*P **P** **19 15 08.9 +0.6**
comp=Z,13nm,0.8s
STKA PcP **PcP** **19 17 07.6 +0.3**
GTA Gaotai 40.67 329 ⇑P **P** **19 15 09.6 +0.4**
GTA pP pP 19 15 48.6 +3.0
GTA sP sP 19 16 08.4 +3.7
GTA PcP **PcP** **19 17 08.4 +0.8**
GTA ScP **ScP** **19 20 41.3 -0.2**
GTA PcS **PcS** **19 20 57.4 -1.3**
GTA S **S** **19 21 07.0 +0.3**
GTA sS sS 19 22 08.8 -1.7
GTA SS **SS** **19 24 07.0 -7.2**
GTA ScS **ScS** **19 24 54.1 -2.6**
GTA pmax pmax
comp=Z,33nm,0.9s
GTA pmax pmax
comp=Z,140nm,6.4s
GTA LR LR
comp=Z,230nm,22.3s
GTA LR LR
comp=Z,180nm,18.5s
GTA LR LR
comp=Z,190nm,17.6s
ASAJ Asahikawa 40.74 19 P **P** **19 15 11.7 +2.2**
comp=Z,44nm,0.7s,baz=232,slow=7.8,SNR=65
ASAJ Asahikawa 40.74 19 *e*P **P** **19 15 11.0 +1.5**
comp=Z,65nm,0.8s
HTT Hallett 41.15 163 P **P** **19 15 14.3 +1.2**
baz=41,SNR=45
RKGY Rocky Gully 41.23 191 P **P** **19 15 14.9 +1.3**
baz=41,SNR=61
H11S3 WAKE ISLAND Hy 41.77 69 T T 19 59 36.3
baz=257,slow=75,SNR=6.2
H11S1 WAKE ISLAND Hy 41.78 69 T T 19 59 39.3
baz=257,slow=75,SNR=6.8
H11S2 WAKE ISLAND Hy 41.78 69 T T 19 59 43.4
baz=257,slow=75,SNR=10
CMSA Cobar Meteorol 41.90 154 P **P** **19 15 19.9 +0.8**
baz=42,SNR=19
HABR Khabarovsk 43.06 9*de*P **P** **19 15 27.3 -0.9**
HABR *e**PP **pP** **19 16 04.3 -0.7**
HABR *e* 19 17 11.1
HABR *e* 19 17 13.2
HABR *e*PPP PPP 19 17 51.6
HABR *e*S **S** **19 21 41.6 +0.4**
HABR *e* 19 25 09.0
HABR pmax pmax
comp=N,17nm,1.1s
HABR pmax pmax
comp=E,13nm,1.1s
HABR pmax pmax
comp=Z,50nm,1.1s
HABR MLR MLR
comp=Z,84nm,19.0s
YSS Yuzh-Sakhalins 43.35 17⇑*i*P **P** **19 15 31.8 +1.3**
YSS *e* 19 17 17.0
YSS *e*S **S** **19 21 46.7 +1.2**
YSS pmax pmax
comp=Z,30nm,0.7s
YSS pmax pmax
comp=Z,200nm,4.0s
KLR Kul'dur 43.38 6 P **P** **19 15 31.9 +1.1**
comp=Z,27nm,0.8s,baz=202,slow=5.2,SNR=106
KLR PcP **PcP** **19 17 16.9 +0.7**
comp=Z,17nm,0.8s,baz=274,slow=2.4,SNR=5.7
HIA Hailar 43.42 354 *e*P **P** **19 15 31.2 +0.1**
HIA pmax pmax
comp=Z,125nm,1.4s
HIA Hailar 43.42 354 *e*P **P** **19 15 31.2 +0.1**
comp=Z,124nm,1.4s
KUR Kuril'sk 43.57 23 P **P** **19 15 33.3 +1.0**
GUN Gumba 43.63 305 *e*P **P** **19 15 33.8 +0.2**
ARMA Armidale 43.88 147 *e*P **P** **19 15 36.6 +1.4**
comp=Z,62nm,0.9s
PKIN Phulchoki 43.91 304 *e*P **P** **19 15 35.8 +0.1**
comp=Z,31nm,0.8s
KKN Kakani 44.08 304 *e*P **P** **19 15 36.8 -0.2**
comp=Z,49nm,0.5s
DMN Daman 44.16 304 *e*P **P** **19 15 37.7 0.0**
ULN Ulaanbaatar 44.68 342*c i*P **P** **19 15 41.5 +0.1**
ULN pmax pmax
comp=Z,41nm,1.7s
ULN Ulaanbaatar 44.68 342 *e*P **P** **19 15 41.5 +0.1**
comp=Z,37nm,0.9s
GKN Gorkha 44.69 304 *e*P **P** **19 15 41.5 -0.3**
comp=Z,81nm,0.7s
PALK Pallekele 44.76 274 P **P** **19 15 42.0 -0.3**
comp=Z,1.6nm,0.3s,baz=118,slow=1.5,SNR=5.7
PALK ScP **ScP** **19 20 56.9 -1.4**
comp=Z,13nm,1.0s,baz=119,slow=5.8,SNR=4.6
PALK LR LR 19 35 07.0
comp=Z,74nm,21.5s,baz=116,slow=37
SONM Songino Array 44.86 342 P **P** **19 15 42.8 +0.1**
comp=Z,4.8nm,0.4s,baz=160,slow=8.7,SNR=39
SONM PcP **PcP** **19 17 22.3 +0.8**
comp=Z,27nm,0.8s,baz=159,slow=4.0,SNR=20
SONM ScP **ScP** **19 20 57.6 -0.6**
comp=Z,2.4nm,0.9s,baz=157,slow=2.6,SNR=5.0
SONM LR LR 19 37 39.9
comp=Z,72nm,19.0s,baz=131,slow=40
SONA1 Songino Array 44.87 342 *e*P **P** **19 15 42.5 -0.3**
ARPS Mount Arapiles 45.13 162 P **P** **19 15 45.9 +1.1**
baz=45,SNR=45
YNG Young 45.43 153 P **P** **19 15 49.1 +1.9**
baz=46,SNR=16
KOLN Koldanda 45.46 303 *e*P **P** **19 15 48.1 +0.2**
PYUN Piuthan 46.08 304 *e*P **P** **19 15 53.1 +0.3**
CAN Canberra 46.56 154 *e*P **P** **19 15 57.8 +1.7**
CAN pmax pmax
comp=Z,39nm,0.9s
CAN Canberra 46.56 154 *e*P **P** **19 15 57.8 +1.7**
comp=Z,39nm,0.9s
CNB Canberra Magne 46.71 153 P **P** **19 15 59.3 +2.0**
baz=47,SNR=13
TYV Tymovskoe 46.89 15 *e*P **P** **19 16 00.5 +2.1**
TYV *e* 19 17 30.5
TYV *e* 19 25 39.0
TYV pmax pmax
comp=Z,35nm,1.0s
CIT Chita 46.98 350 *e*P **P** **19 16 00.0 +0.9**
CIT pmax pmax
comp=Z,55nm,1.2s
TOO Toolangi 47.09 159 P **P** **19 16 02.1 +1.9**
baz=47,SNR=20
HYB Hyderabad 47.47 288 *i* P **P** **19 16 04.0 +0.5**
ZAK Zakamensk 48.08 341 *e*P **P** **19 16 07.1 -0.6**
ZAK *e* 19 17 33.0
ZAK pmax pmax
comp=Z,4.0nm,1.7s
ZAK pmax pmax
comp=Z,27nm,1.0s
ZAK pmax pmax
comp=Z,5.0nm,1.3s
NKL Nikolayevsk 48.57 12 *i* P **P** **19 16 12.5 +1.2**
NKL pmax pmax
comp=N,20nm,0.8s
NKL pmax pmax
comp=Z,80nm,0.8s
DZM Mont Dzumac 48.63 126 *e*P **P** **19 16 12.4 0.0**
comp=Z,27nm,1.0s
TLY Talaya 49.09 342 P **P** **19 16 15.9 +0.5**
comp=Z,9.1nm,0.7s,baz=216,slow=5.9,SNR=13
TLY PcP **PcP** **19 17 37.1 +0.7**
comp=Z,7.2nm,0.7s,baz=40,slow=2.0,SNR=5.6
TLY Talaya 49.09 342 *e*P **P** **19 16 16.0 +0.7**
TLY *e* 19 17 37.2
TLY pmax pmax
comp=Z,29nm,1.4s
TLY Talaya 49.09 342 *e*P **P** **19 16 16.0 +0.7**
comp=Z,15nm,0.8s
TLY PcP **PcP** **19 17 37.1 +0.7**
IRK Irkutsk 49.39 343 *e*P **P** **19 16 16.6 -1.0**
IRK pmax pmax
comp=Z,40nm,1.8s
MOY Mondy 49.94 340 *e*P **P** **19 16 22.6 +0.8**
MOY pmax pmax
comp=Z,42nm,1.9s
WMQ Urumqi 50.33 325⇓*i*P **P** **19 16 25.8 +0.9**
WMQ pP pP 19 17 07.3 +4.5
WMQ sP sP 19 17 23.8 +2.4
WMQ sS sS 19 24 33.0 +2.2
WMQ SS **SS** **19 27 00.8 0.0**
WMQ pmax pmax
comp=Z,18nm,0.8s
WMQ pmax pmax
comp=Z,66nm,6.0s
WMQ LR LR
comp=Z,200nm,18.6s
WMQ LR LR
comp=Z,86nm,18.6s
WMQ LR LR
comp=Z,69nm,26.6s
BOD Bodaibo 52.50 352⇓*i*P **P** **19 16 41.2 +0.6**
BOD pmax pmax
comp=Z,56nm,0.9s
THN Thein Dam 53.45 306 *e*P **P** **19 16 44.0 -4.1**
THN *e*S **P** **19 16 49.0 +0.9**
PEA0 Petropavlovsk- 53.73 23 *e*P **P** **19 16 51.4 +1.7**
PEA0B Petropavlovsk- 53.73 23 *e*P **P** **19 16 52.0 +2.3**
PETK Petropavlovsk- 53.73 23 P **P** **19 16 51.5 +1.8**
comp=Z,51nm,0.9s,baz=193,slow=4.6,SNR=55
PETK Petropavlovsk- 53.73 23 P **P** **19 16 51.5 +1.8**
PETK pmax pmax
comp=Z,52nm,0.9s
PET Petropavlovsk 54.04 24 *e*P **P** **19 16 53.2 +1.3**
PET *e*S **S** **19 24 15.9 +1.0**
PET pmax pmax
comp=Z,73nm,1.5s
PET MLR MLR
comp=Z,500nm,16.0s
PET Petropavlovsk 54.04 24 *e*P **P** **19 16 53.3 +1.3**
comp=Z,158nm,1.5s
PDGK Podgornoye 55.07 320 P **P** **19 16 59.9 +0.4**
PDGK pmax pmax
comp=Z,81nm,0.7s
MK01 Makanchi Array 55.14 325 *e*P **P** **19 16 59.2 -0.9**
MK31 Makanchi Array 55.16 325 *i* P **P** **19 17 00.3 +0.1**
MK31 pmax pmax
comp=Z,22nm,0.5s
MK31 Makanchi Array 55.16 325 *e*P **P** **19 17 00.2 +0.1**
MKAR Makanchi Array 55.16 325 P **P** **19 17 00.2 0.0**
comp=Z,54nm,0.6s,baz=123,slow=8.2,SNR=638
MKAR PcP **PcP** **19 17 59.0 -0.3**
comp=Z,36nm,0.8s,baz=110,slow=5.3,SNR=17
MKAR ScP **ScP** **19 21 40.4 -1.8**
comp=Z,2.0nm,0.6s,baz=108,slow=4.5,SNR=5.5
MKAR LR LR 19 41 40.4
comp=Z,89nm,19.0s,baz=98,slow=37
MKAR PKPPKP P'P'df 19 46 56.4 -9.1
comp=Z,0.3nm,0.7s,baz=8.7,slow=1.6,SNR=4.5
MAKZ Makanchi 55.34 325 *e*P **P** **19 17 01.0 -0.6**
MAKZ pmax pmax
comp=Z,59nm,0.7s
MAKZ Makanchi 55.34 325 *e*P **P** **19 17 01.0 -0.6**
comp=Z,59nm,0.7s
KSH Kashi 55.77 314 P **P** **19 17 06.4 +1.5**
KSH *ep*P pP 19 17 45.0 +1.5
KSH *es*P PcP 19 18 02.8 +0.8
KSH *e*PP **PP** **19 19 13.8 +2.6**
KSH *e*ScP **ScP** **19 21 46.1 +0.9**
KSH PcS **PcS** **19 22 03.8 +1.3**
KSH S **S** **19 24 35.5 -3.3**
KSH SS **SS** **19 28 23.6 -3.4**
KSH pmax pmax
comp=Z,29nm,0.9s
KSH LR LR
comp=Z,120nm,7.3s
KSH LR LR
comp=Z,86nm,7.3s
KSH LR LR
comp=Z,130nm,6.5s
YAK Yakutsk 55.99 2 P **P** **19 17 07.1 +1.3**
comp=Z,17nm,0.6s,baz=190,slow=23,SNR=36
YAK Yakutsk 55.99 2*c i*P **P** **19 17 06.6 +0.8**
YAK *e* 19 18 02.0
YAK *e* 19 19 12.6
YAK *e*S **S** **19 24 38.3 -2.3**
YAK *e* 19 26 34.8
YAK *e*SS **SS** **19 28 31.2 +2.0**
YAK pmax pmax
comp=Z,318nm,0.9s
YAK pmax pmax
comp=N,184nm,1.1s
YAK pmax pmax
comp=E,38nm,1.3s
YAK pmax pmax
comp=Z,42nm,1.8s
YAK pmax pmax
comp=N,34nm,2.0s
YAK pmax pmax
comp=E,35nm,1.9s
YAK smax smax
comp=N,109nm,2.7s
YAK smax smax
comp=E,151nm,2.7s
YAK Yakutsk 55.99 2 *e*P **P** **19 17 06.2 +0.4**
comp=E,332nm,0.8s
KRAR Krasnoyarsk 56.30 338⇓*i*P **P** **19 17 08.4 +0.4**
KRAR pmax pmax
comp=Z,25nm,0.9s
MA2 Magadan 56.77 15 P **P** **19 17 13.0 +1.7**
comp=Z,33nm,0.7s,baz=223,slow=6.3,SNR=35
MA2 PcP **PcP** **19 18 05.9 +0.7**
comp=Z,16nm,0.7s,baz=228,slow=4.6,SNR=5.4
MA2 Magadan 56.77 15 *e*P **P** **19 17 11.3 0.0**
MA2 *e* 19 18 05.9
MA2 19 18 05.9
MA2 pmax pmax
comp=Z,98nm,0.6s
MA2 Magadan 56.77 15 *e*P **P** **19 17 11.3 0.0**
comp=Z,98nm,0.6s
MA2 *e*PcP **PcP** **19 18 05.8 +0.7**
MA2 PcP **PcP** **19 18 05.9 +0.7**
TKM2 Tokmak 2 57.42 318 *e*P **P** **19 17 16.8 +0.2**
TKM2 pmax pmax
comp=Z,41nm,0.7s
TKM2 Tokmak 2 57.42 318 *e*P **P** **19 17 16.8 +0.2**
comp=Z,41nm,0.7s
FRU Bishkek 58.04 318⇑*i*P **P** **19 17 20.0 -0.7**
FRU *e* 19 18 17.0
FRU pmax pmax
comp=Z,55nm,2.1s
AAK Ala-Archa 58.04 317 P **P** **19 17 21.3 +0.5**
comp=Z,13nm,0.7s,baz=112,slow=5.1,SNR=43
AAK PcP **PcP** **19 18 10.6 -0.2**
comp=Z,9.2nm,0.6s,baz=154,slow=4.9,SNR=4.2
AAK LR LR 19 46 52.7
comp=Z,82nm,19.8s,baz=94,slow=40
AAK Ala-Archa 58.04 317 P **P** **19 17 21.1 +0.3**
AAK pmax pmax
comp=Z,21nm,0.9s
AAK Ala-Archa 58.04 317 *e*P **P** **19 17 21.3 +0.5**
comp=Z,18nm,0.8s
AAK PcP **PcP** **19 18 10.6 -0.2**
ZAA0 Zalesovo Array 58.14 333 *e*P **P** **19 17 20.2 -0.9**
ZALV Zalesovo Beam 58.14 333 P **P** **19 17 20.1 -1.0**

comp=Z,13nm,0.4s,baz=130,slow=6.4,SNR=80
ZALV PKP2bc 19 47 09.3
comp=Z,2.5nm,0.8s,baz=296,slow=3.3,SNR=9.9
EKS2 Erkin-Say 58.54 317 *eP* **P 19 17 24.8 +0.6**
EKS2 pmax pmax
comp=Z,53nm,0.8s
EKS2 Erkin-Say 58.54 317 *eP* **P 19 17 24.8 +0.6**
comp=Z,53nm,0.8s
KURK Kurchatov 59.32 327 P **P 19 17 29.0 -0.3**
KURK pmax pmax
comp=Z,187nm,0.8s
KURK Kurchatov 59.32 327 *eP* **P 19 17 28.8 -0.5**
comp=Z,99nm,0.7s
MNAS Manas 59.34 316 P **P 19 17 30.0 +0.2**
MNAS pmax pmax
comp=Z,46nm,0.9s
KBL Kabul 59.39 307 *eP* **P 19 17 30.2 -0.2**
KBL pmax pmax
comp=Z,68nm,0.8s
KBL Kabul 59.39 307 *eP* **P 19 17 30.2 -0.2**
comp=Z,68nm,0.8s
NVS Novosibirsk 59.43 333⇓*iP* **P 19 17 29.1 -0.8**
NVS *e* 19 18 12.5
NVS *eS* **S 19 25 22.7 -2.9**
NVS pmax pmax
comp=N,12nm,0.7s
NVS pmax pmax
comp=E,15nm,0.7s
NVS pmax pmax
comp=Z,24nm,0.7s
NVS smax smax
comp=N,10.0nm,1.3s
NVS smax smax
comp=E,25nm,1.3s
SEY Seymchan 60.06 14 P **P 19 17 35.5 +1.4**
comp=E,28nm,0.8s,baz=223,slow=6.0,SNR=71
SEY Seymchan 60.06 14⇑*iP* **P 19 17 36.3 +2.2**
KK31 Karatay Array 60.93 316 *iP* **P 19 17 40.2 -0.2**
KK31 pmax pmax
comp=Z,38nm,0.8s
KKAR Karatay Array 60.93 316 *eP* **P 19 17 40.1 -0.3**
KKAR Karatay Array 60.93 316 *eP* **P 19 17 40.1 -0.3**
OTUK Ortayu 61.75 322 P **P 19 17 45.6 -0.2**
OTUK pmax pmax
comp=Z,32nm,0.8s
THZ Tophouse 64.07 142 *eP* **P 19 18 01.8 +0.5**
comp=Z,19nm,0.8s
LBZ Lake Benmore 64.09 146 *eP* **P 19 18 02.6 +1.3**
comp=Z,49nm,1.0s
RPZ Rata Peaks 64.16 145 P **P 19 18 01.9 +0.2**
comp=Z,18nm,0.8s,baz=284,slow=3.0,SNR=9.5
RPZ Rata Peaks 64.16 145 *eP* **P 19 18 03.5 +1.8**
comp=Z,26nm,1.0s
LTZ Lake Taylor 64.30 144 *eP* **P 19 18 04.4 +1.7**
comp=Z,23nm,1.1s
URZ Urewera 64.85 137 P **P 19 18 07.0 +0.8**
comp=Z,12nm,0.8s,baz=325,slow=5.2,SNR=6.7
URZ Urewera 64.85 137 *eP* **P 19 18 07.9 +1.7**
comp=Z,9.9nm,0.8s
BKZ Black Stump Fm 64.91 138 *eP* **P 19 18 07.3 +0.6**
comp=Z,24nm,0.8s
BVAR Borovoye Array 64.91 327 P **P 19 18 06.0 -0.5**
comp=Z,30nm,0.7s,baz=128,slow=8.5,SNR=217
BVAR PcP **PcP 19 18 37.5 -0.7**
comp=Z,11nm,0.7s,baz=116,slow=3.4,SNR=7.2
BVAR PKPPKP **P'P'df 19 46 54.8 +4.8**
comp=Z,0.9nm,0.9s,baz=231,slow=8.8,SNR=5.3
BRVK Borovoye 64.98 327*c iP* **P 19 18 06.3 -0.6**
BRVK pmax pmax
comp=Z,83nm,1.0s
BRVK Borovoye 64.98 327 *eP* **P 19 18 06.5 -0.4**
comp=Z,64nm,0.8s
BFZ Birch Farm 65.55 140 *eP* **P 19 18 11.7 +1.0**
comp=Z,19nm,1.0s
TIXI Tiksi 65.61 1 P **P 19 18 10.6 +0.1**
comp=Z,37nm,0.4s,baz=168,slow=4.2,SNR=314
TIXI Tiksi 65.61 1*c iP* **P 19 18 10.9 +0.3**
TIXI pmax pmax
comp=Z,164nm,1.2s
TIXI Tiksi 65.61 1 *eP* **P 19 18 10.5 -0.1**
comp=Z,97nm,0.9s
ZRNK Zerenda 65.64 326 *eP* **P 19 18 10.7 -0.4**
ZRNK pmax pmax
comp=Z,62nm,0.7s
ZRNK Zerenda 65.64 326 *eP* **P 19 18 10.7 -0.4**
comp=Z,62nm,0.7s
BILL Bilibino 67.63 15*c iP* **P 19 18 24.2 +0.7**
BILL *e* 19 18 50.1
BILL *e* 19 20 58.6
BILL pmax pmax
comp=Z,23nm,1.1s
BILL Bilibino 67.63 15 *eP* **P 19 18 22.3 -1.1**
comp=Z,14nm,0.9s
NRIK Noril'sk 68.01 346 P **P 19 18 26.1 +0.3**
comp=Z,78nm,0.7s,baz=133,slow=6.0,SNR=58
GEYT Alibeck 68.73 308 P **P 19 18 31.4 +0.3**
comp=Z,36nm,0.8s,baz=132,slow=4.2,SNR=67
BANOM Banah 68.94 295 *iP* **P 19 18 32.7 +0.2**
SNR=7.4
UOSS Minazif 68.97 294 *eP* **P 19 18 32.1 -0.6**
comp=Z,1.0nm,0.8s
HATD Hatta, Dubai 69.03 294 *iP* **P 19 18 32.1 -0.9**
SNR=9.2
ASHO Ashiyiah 69.09 294 *iP* **P 19 18 32.5 -1.0**
SNR=11
FAQ Al Faqa, Dubai 69.51 294 *iP* **P 19 18 34.9 -1.1**
SNR=5.3
AB31 Akbulak array 69.80 320 P **P 19 18 36.6 -0.6**
AB31 pmax pmax
comp=Z,14nm,0.6s
ABKAR Akbulak array 69.80 320 *eP* **P 19 18 36.7 -0.5**
NIKH Nikolski High 70.54 36 *eP* **P 19 18 42.6 +1.0**
comp=Z,54nm,0.7s
SVE Sverdlovsk 71.54 328*deP* **P 19 18 47.2 -0.4**
SVE pmax pmax
comp=Z,83nm,0.8s
UNV Unalaska Valle 72.13 35 *eP* **P 19 18 51.8 +0.6**
comp=Z,62nm,0.9s
ARU Arti 72.52 328*c iP* **P 19 18 52.2 -1.2**
ARU *PP **pP** 19 19 32.5 -1.5
ARU S **S** 19 27 58.6 -5.3
ARU pmax pmax
comp=Z,54nm,0.6s
ARU Arti 72.52 328 *eP* **P 19 18 52.0 -1.4**
comp=Z,71nm,0.7s
AKUT Akutan 72.62 35 *eP* **P 19 18 54.9 +0.8**
comp=Z,91nm,0.8s
CASY Casey 72.94 186 *eP* **P 19 18 56.2 +0.6**
comp=Z,40nm,0.8s
FALS False Pass 74.12 35 *eP* **P 19 19 03.5 +0.6**
comp=Z,111nm,0.7s
SOKR Solikamsk 74.28 330*c iP* **P 19 19 01.5 -2.1**
SOKR pmax pmax
comp=Z,29nm,0.6s
KIP Kipapa 75.03 70⇑*P* **P 19 19 11.0 +2.2**
KIP pmax pmax
comp=Z,925nm,1.4s
SDPT Sand Point 75.88 34 *eP* **P 19 19 13.9 +1.1**
MIR Mirnyy 76.13 193 *iP* **P 19 19 15.0 +1.0**
MIR pmax pmax
comp=Z,10.0nm,1.0s
CHGN Chignik 77.18 34 *eP* **P 19 19 20.6 +0.4**
DGRG David-gareji 78.86 311 P **P 19 19 30.2 +0.3**
DGRG David-gareji 78.86 311 *eP* **P 19 19 30.1 +0.3**
SVW2 Sparrevohn 79.30 29 *eP* **P 19 19 34.2 +2.4**
GNI Garni 79.30 310 *iP* **P 19 19 32.7 +0.3**
SNR=5.3
GNI Garni 79.30 310*c iP* **P 19 19 32.7 +0.3**
GNI pmax pmax
comp=Z,84nm,1.2s
GNI Garni 79.30 310 *eP* **P 19 19 34.0 +1.5**
TT01 Tatalina 79.33 27 *eP* **P 19 19 33.4 +1.5**
TTA Tatalina 79.33 27 *eP* **P 19 19 32.4 +0.4**
TTA Tatalina 79.33 27 *eP* **P 19 19 32.4 +0.4**
TBLG Delisi 79.34 311 P **P 19 19 32.2 -0.3**
TBLG Delisi 79.34 311 *eP* **P 19 19 32.1 -0.3**
GUDG Gudauri 79.55 312 P **P 19 19 34.8 +1.0**
ZEI Tsey 79.98 312 *eP* **P 19 19 34.8 -1.3**
ZEI *eS* **S** 19 29 23.0 -3.4
ZEI pmax pmax
comp=Z,82nm,0.7s
OHAK Old Harbor 80.09 33 *eP* **P 19 19 37.5 +1.5**
DAMY Dhamar 80.19 284 *eP* **P 19 19 38.5 +0.6**
BGD Bogdanovka 80.19 311 P **P 19 19 37.8 +0.5**
NCK Nalchik 80.22 313⇓*P* **P 19 19 36.9 -0.3**
NCK pmax pmax
comp=Z,21nm,0.8s
AKH Akhalkalaki 80.27 311⇓*iP* **P 19 19 38.5 +0.8**
AKH Akhalkalaki 80.27 311 P **P 19 19 38.2 +0.5**
AKH Akhalkalaki 80.27 311 *eP* **P 19 19 38.1 +0.5**
ONI Oni 80.31 312 P **P 19 19 37.6 -0.1**
ONI Oni 80.31 312 *eP* **P 19 19 37.6 -0.1**
KDAK Kodiak Island 80.51 33*ceP* **P 19 19 39.5 +1.2**
KDAK Kodiak Island 80.51 33 *eP* **P 19 19 39.7 +1.4**
RSO Redoubt South 80.61 30 *eP* **P 19 19 40.0 +0.9**
KBZ Khabaz 80.73 313 P **P 19 19 39.1 -0.7**
comp=Z,8.2nm,0.8s,baz=104,slow=3.8,SNR=18
NEY Neytrino 80.86 313⇑*iP* **P 19 19 41.5 +0.8**
NEY pmax pmax
comp=Z,4.0nm,0.8s
KVAR Kislovodsk Arr 80.88 313 LR LR 19 59 49.1
comp=Z,53nm,18.4s,baz=60,slow=39
KIV Kislovodsk 80.89 313 *iP* **P 19 19 39.8 -1.0**
SNR=5.2
KIV Kislovodsk 80.89 313 *eP* **P 19 19 41.3 +0.5**
KIV pmax pmax
comp=Z,25nm,0.9s
KIV MLR MLR
comp=Z,47nm,19.0s
KIV Kislovodsk 80.89 313 *eP* **P 19 19 40.4 -0.4**
SPU Mount Spurr 81.01 29 *eP* **P 19 19 41.8 +0.8**
PPLA Purkeypile 81.07 27 *eP* **P 19 19 42.8 +1.3**
CAST Castle Rocks 81.16 27 *eP* **P 19 19 43.1 +1.4**
CHVG Ch'k'valeri 81.32 312⇑*iP* **P 19 19 42.8 -0.2**
CHVG Ch'k'valeri 81.32 312 P **P 19 19 43.3 +0.3**
BRLK Bradley Lake 81.50 31 *eP* **P 19 19 44.2 +0.6**
VRH Novokhopyorsk 81.63 321 *eP* **P 19 19 43.0 -1.3**
VRH pmax pmax
comp=Z,60nm,0.8s
KTH Kantishna Hill 81.69 27 *eP* **P 19 19 45.9 +1.4**
BPAW Bear Paw Mtn. 81.69 26 *eP* **P 19 19 45.7 +1.2**
MLY Manley 81.85 25 *eP* **P 19 19 46.9 +1.5**
TRF Thorofare Moun 81.96 27 *eP* **P 19 19 46.8 +0.7**
RC01 Rabbit Creek A 82.13 29 *eP* **P 19 19 47.8 +1.0**
COLD Coldfoot 82.19 23 *eP* **P 19 19 49.0 +2.0**
SEW Seward 82.24 30 *eP* **P 19 19 48.7 +1.4**
BWN Browne 82.36 26 *eP* **P 19 19 49.7 +1.8**
PMR Palmer 82.43 29 *eP* **P 19 19 48.4 0.0**
PMR Palmer 82.43 29 *eP* **P 19 19 48.4 0.0**
MCK McKinley 82.58 27 *eP* **P 19 19 49.9 +0.8**
MCK McKinley 82.58 27 *eP* **P 19 19 49.9 +0.8**
RND Reindeer 82.61 27 *eP* **P 19 19 49.8 +0.5**
RND Reindeer 82.61 27 *eP* **P 19 19 49.8 +0.5**
SML Sawmill 82.82 29 *eP* **P 19 19 51.6 +1.2**
SML Sawmill 82.82 29 *eP* **P 19 19 51.6 +1.2**
WRH Wood River Hil 82.97 26 *eP* **P 19 19 52.1 +1.0**
KLMR Klimovskoe 82.97 331 *eP* **P 19 19 47.6 -3.5**
KLMR *eS* **S 19 29 48.6 -7.3**
KLMR pmax pmax
comp=Z,86nm,0.9s
COLA College 83.07 25*c iP* **P 19 19 52.1 +0.5**
COLA pmax pmax
comp=Z,31nm,0.9s
COLA College 83.07 25 *eP* **P 19 19 51.6 0.0**
VSR Storozhevoye 83.23 321 *eP* **P 19 19 51.3 -1.4**
VSR pmax pmax
comp=Z,40nm,0.9s
SCM Sheep Creek Mo 83.29 28 *eP* **P 19 19 54.6 +1.7**
SCM Sheep Creek Mo 83.29 28 *eP* **P 19 19 54.6 +1.7**
LPSR Galich'ya Gora 83.35 322 *eP* **P 19 19 52.4 -0.9**
LPSR pmax pmax
comp=Z,50nm,1.0s
ILAR Eielson Array 83.49 26 P **P 19 19 53.3 -0.4**
comp=Z,18nm,0.8s,baz=236,slow=4.9,SNR=112
ILAR Eielson Array 83.49 26 P **P 19 19 53.3 -0.4**
ILAR pmax pmax
comp=Z,17nm,0.8s
ILB Eielson Array 83.49 26 *eP* **P 19 19 53.6 -0.1**
IL1 Eielson Array 83.49 26 *eP* **P 19 19 51.8 -1.9**
TMCR Tamitsa 83.65 334 *eP* **P 19 19 53.9 -0.6**
TMCR pmax pmax
comp=Z,77nm,0.8s
KLU Klutina 83.97 29 *eP* **P 19 19 57.8 +1.5**
MOS Moscow 84.04 325 *eP* **P 19 19 54.9 -1.8**
MOS *eS* **S 19 29 59.1 -7.7**
MOS pmax pmax
comp=Z,89nm,0.9s
MOS pmax pmax
comp=Z,108nm,1.1s
DIV Divide 84.05 29 *eP* **P 19 19 58.5 +1.7**
EYAK Cordova Ski Ar 84.08 30 *eP* **P 19 19 58.4 +1.6**
PAX Paxson 84.14 27 *eP* **P 19 19 58.5 +1.3**
PAX Paxson 84.14 27 *eP* **P 19 19 58.5 +1.3**
FYU Fort Yukon 84.15 24 *eP* **P 19 19 59.2 +2.2**
BMRM Bremner River 84.63 29 *eP* **P 19 20 01.4 +1.8**
ANN Anapa 84.63 314*c iP* **P 19 19 58.4 -1.5**
ANN *e* 19 23 19.2
ANN *e* 19 30 10.5
ANN pmax pmax
comp=Z,145nm,1.0s
OBN Obninsk 84.66 325*c iP* **P 19 19 58.7 -1.1**
OBN *e* 19 20 48.9
OBN pmax pmax
comp=Z,135nm,1.0s
OBN Obninsk 84.66 325 *eP* **P 19 19 59.0 -0.8**
DOT Dot Lake 84.75 27 *eP* **P 19 20 01.3 +1.2**
MENT Mentasta 84.94 27 *eP* **P 19 20 02.6 +1.4**
MAW Mawson 85.54 200 P **P 19 20 03.8 +0.1**
comp=Z,19nm,0.7s,baz=62,slow=5.4,SNR=43
MAW Mawson 85.54 200 P **P 19 20 03.9 +0.1**
baz=86,SNR=37
BALM Baldy 85.72 29 *eP* **P 19 20 06.6 +1.5**
BALM Baldy 85.72 29 *eP* **P 19 20 06.6 +1.5**
VNDA Vanda 85.78 173 P **P 19 20 05.0 +0.1**
comp=Z,3.7nm,0.4s,baz=323,slow=5.3,SNR=44
VNDA LR LR 19 57 56.7
comp=Z,58nm,20.7s,baz=341,slow=35
EGAK Eagle 85.94 25 *eP* **P 19 20 06.2 +0.2**
comp=Z,7.7nm,0.8s
FURI Furi 86.22 279 *eP* **P 19 20 10.5 +1.7**
SBA Scott Base 86.70 172 *eP* **P 19 20 10.8 +1.4**
SBA Scott Base 86.70 172 *eP* **P 19 20 10.8 +1.4**
SIM Simferopol' 86.97 315*d iP* **P 19 20 10.5 -1.0**
SIM pmax pmax
comp=Z,13nm,0.8s
PUL Pulkovo 87.61 330⇑*iP* **P 19 20 14.1 0.0**
PUL pmax pmax
comp=Z,79nm,0.7s
BR131 Keskin Array S 87.84 310 *eP* **P 19 20 14.2 -1.7**
BRTR Keskin Array B 87.84 310 P **P 19 20 14.1 -1.8**
comp=Z,14nm,0.8s,baz=113,slow=4.5,SNR=63
BRTR PP **PP 19 23 49.4 +5.2**
comp=Z,2.2nm,0.8s,baz=104,slow=7.9,SNR=4.8
ARA0 ARCESS Array S 88.00 340 *eP* **P 19 20 14.9 -0.9**
ARCES ARCESS Array B 88.00 340 P **P 19 20 14.9 -0.9**
comp=Z,17nm,0.7s,baz=80,slow=6.0,SNR=81
ARCES PKiKP **PKiKP 19 25 16.2 -0.8**
comp=Z,1.1nm,0.7s,baz=146,slow=0.9,SNR=7.0
ARCES PKKPbc **PKKPbc 19 38 00.4 -3.2**
comp=Z,0.5nm,0.3s,baz=251,slow=3.8,SNR=16
ARCES ARCESS Array B 88.00 340 P **P 19 20 15.0 -0.9**
ARCES pmax pmax
comp=Z,17nm,0.7s
ARE0 ARCESS Array S 88.00 340 *eP* **P 19 20 15.0 -0.8**
SPA0 Spitsbergen Ar 88.08 349 *eP* **P 19 20 16.1 0.0**
INK Inuvik 88.42 21 P **P 19 20 17.4 -0.3**
comp=Z,13nm,0.9s,baz=283,slow=5.6,SNR=21
CSS Mathiatis 88.59 305 *eP* **P 19 20 17.9 -1.5**
KMBO Kilima Mbogo 88.63 269 P **P 19 20 18.9 -1.4**
comp=Z,5.7nm,1.0s,baz=45,slow=5.6,SNR=9.9
FIA1 FINESS Array S 89.39 332 *eP* **P 19 20 21.4 -1.1**
FINES FINESS Array B 89.39 332 P **P 19 20 21.4 -1.1**
comp=Z,27nm,0.8s,baz=90,slow=6.1,SNR=98
FINES PKKPbc **PKKPbc 19 37 58.2 -1.6**
comp=Z,1.7nm,0.8s,baz=205,slow=3.6,SNR=4.5
SKAG Skagway 89.40 30 *eP* **P 19 20 24.3 +1.8**
AKASG Malin Array Be 89.54 321 P **P 19 20 22.0 -1.4**
comp=Z,13nm,0.9s,baz=70,slow=4.3,SNR=40
KIEV Kiev 89.55 321*c iP* **P 19 20 22.1 -1.4**
KIEV pmax pmax
comp=Z,18nm,0.9s
VSU Vasula 89.64 329*d iP* **P 19 20 22.9 -0.8**
VSU pmax pmax
comp=Z,85nm,0.6s
NACGM Naroch 90.28 325 *e* **P 19 20 26.0 -0.8**
ISP Isparta 90.49 308⇑*iP* **P 19 20 26.1 -2.2**
ISP Isparta 90.49 308⇑*P* **P 19 20 26.1 -2.2**
ISP Isparta 90.49 308 *eP* **P 19 20 26.2 -2.1**
SORM Soroca 90.51 318⇓*iP* **P 19 20 26.3 -1.7**
SORM Soroca 90.51 318⇓*P* **P 19 20 26.3 -1.7**
TLCR 90.67 315⇓*iP* **P 19 20 28.3 -0.5**
TLCR 90.67 315⇓*P* **P 19 20 28.3 -0.5**
LEOM Leova 90.85 317⇓*iP* **P 19 20 28.5 -1.1**
LEOM Leova 90.85 317⇓*P* **P 19 20 28.5 -1.1**
TIRR Tirgusor 91.07 315⇑*iP* **P 19 20 29.1 -1.6**
TIRR Tirgusor 91.07 315⇑*P* **P 19 20 29.2 -1.5**
TIRR Tirgusor 91.07 315 *eP* **P 19 20 28.9 -1.8**
CFR Carcaliu 91.14 315⇓*iP* **P 19 20 29.8 -1.2**
CFR Carcaliu 91.14 315⇓*P* **P 19 20 29.8 -1.2**
HARR Harsova 91.37 315⇑*iP* **P 19 20 30.8 -1.3**
HARR Harsova 91.37 315⇑*P* **P 19 20 30.8 -1.3**
MSAB Monastry St. A 91.55 314⇑*iP* **P 19 20 31.9 -1.0**
WRAK Wrangell Islan 91.58 33 *eP* **P 19 20 34.4 +1.6**
GRER 91.92 316⇑*iP* **P 19 20 34.6 0.0**
TESR Tescani 91.93 317⇑*iP* **P 19 20 33.5 -1.2**
VRI Vrincioaia 92.00 316⇓*iP* **P 19 20 34.8 -0.2**
VRI Vrincioaia 92.00 316⇓*P* **P 19 20 34.8 -0.2**
PRAR RASCA 92.06 318⇑*iP* **P 19 20 34.0 -1.2**
ISR Istrita 92.27 316⇓*iP* **P 19 20 36.1 -0.2**
ISR Istrita 92.27 316⇓*P* **P 19 20 36.1 -0.2**
DLBC Dease Lake 92.30 31 P **P 19 20 36.4 +0.1**
comp=Z,8.8nm,1.0s,baz=282,slow=5.9,SNR=9.9
SUW Suwalki 92.53 325 *eP* **P 19 20 35.8 -1.4**
SUW Suwalki 92.53 325 *eP* **P 19 20 35.8 -1.4**
SULR 92.55 315⇑*iP* **P 19 20 36.8 -0.7**
MLR Muntele Rosu 92.61 316⇓*iP* **P 19 20 37.5 -0.5**
MLR Muntele Rosu 92.61 316⇓*P* **P 19 20 37.5 -0.5**
MLR Muntele Rosu 92.61 316 *eP* **P 19 20 36.8 -1.1**
BURAR Bucovina Array 92.68 318⇑*iP* **P 19 20 38.3 +0.1**
BURAR Bucovina Array 92.68 318⇑*P* **P 19 20 38.3 +0.1**
BUR08 Bucovina Ar. S 92.68 318 *eP* **P 19 20 37.5 -0.8**
DOPR Dopca 92.90 317⇓*iP* **P 19 20 38.2 -1.0**
VOIR 93.24 316⇓*iP* **P 19 20 39.5 -1.3**
VOIR 93.24 316⇓*P* **P 19 20 39.5 -1.3**
ARCR ARCALIA 93.36 318⇓*iP* **P 19 20 41.4 +0.1**
HUMR Humele 93.47 315⇓*iP* **P 19 20 40.4 -1.4**
KWP Kalwaria Pacla 93.86 321 *eP* **P 19 20 42.9 -0.6**
KWP Kalwaria Pacla 93.86 321⇑*iP* **P 19 20 43.3 -0.2**
KWP Kalwaria Pacla 93.86 321⇑*P* **P 19 20 43.3 -0.2**
CJR Cluj-Napoca 93.95 318⇑*iP* **P 19 20 44.3 +0.3**
CJR Cluj-Napoca 93.95 318⇑*P* **P 19 20 44.4 +0.4**
KLNR Kaliningrad 94.06 326 *iP* **P 19 20 43.9 -0.3**
KLNR pmax pmax
comp=Z,79nm,1.9s
LOT Lotru 94.11 316⇑*iP* **P 19 20 44.5 -0.4**
SYO Syowa Base 94.18 201⇓*eP* **P 19 20 43.0 -1.4**
SYO Syowa Base 94.18 201⇓*PcP* **P 19 20 43.8 -0.6**
UZH Uzhgorod 94.36 320*c iP* **P 19 20 44.8 -1.0**
BEL Belsk 94.48 323 *eP* **P 19 20 46.3 +0.1**
BEL Belsk 94.48 323 *eP* **P 19 20 46.3 +0.1**
DRGR 94.53 318⇓*iP* **P 19 20 46.0 -0.7**
DRGR 94.53 318⇓*P* **P 19 20 46.0 -0.7**
DEV Deva 94.61 317⇓*iP* **P 19 20 46.6 -0.4**
DEV Deva 94.61 317⇓*P* **P 19 20 46.6 -0.4**
CRVS Cervenica-Dubn 94.83 320 *eP* **P 19 20 47.5 -0.4**
CRVS Cervenica-Dubn 94.83 320 *eP* **P 19 20 47.5 -0.4**
STHS Stebnicka Huta 94.83 321 *eP* **P 19 20 47.9 -0.1**
STHS pmax pmax
comp=Z,5.0nm,0.9s
STHS Stebnicka Huta 94.83 321 *eP* **P 19 20 47.9 -0.1**
DAG Danmarks Havn 94.89 352⇑*iP* **P 19 20 47.1 -0.5**
comp=Z,61nm,0.9s
DAG Danmarks Havn 94.89 352⇑*P* **P 19 20 47.1 -0.5**
DAG pmax pmax
comp=Z,52nm,0.9s
SIRR Siria 95.36 317⇑*iP* **P 19 20 49.5 -0.9**
NIE Niedzica 95.43 321 *eP* **P 19 20 50.5 -0.2**
NIE Niedzica 95.43 321 *eP* **P 19 20 50.5 -0.2**
OJC Ojcow 95.52 322 *eP* **P 19 20 50.3 -0.8**
OJC Ojcow 95.52 322 *eP* **P 19 20 50.5 -0.6**
OJC Ojcow 95.52 322 *eP* **P 19 20 50.5 -0.6**
BZS Buzias 95.55 317⇓*iP* **P 19 20 50.2 -1.1**
BZS Buzias 95.55 317⇓*P* **P 19 20 50.2 -1.1**
KECS Kecovo 95.56 320 *eP* **P 19 20 50.8 -0.5**
KECS pmax pmax
comp=Z,6.0nm,0.8s
KECS Kecovo 95.56 320 *eP* **P 19 20 50.8 -0.5**
RES Resolute Bay 95.77 10 P **P 19 20 50.1 -1.5**
comp=Z,9.3nm,0.8s,baz=326,slow=4.5,SNR=3.9
RES Resolute Bay 95.77 10 P **P 19 20 50.1 -1.5**
RES pmax pmax
comp=Z,12nm,0.9s
QSPA South Pole Qui 95.89 180 *eP* **P 19 20 52.1 -0.3**
comp=Z,41nm,1.1s
LANS Liptovska Anna 96.02 321 *eP* **P 19 20 53.2 -0.2**
LANS Liptovska Anna 96.02 321 *eP* **P 19 20 53.2 -0.2**
PSZ Piszkesteto 96.09 319⇓*iP* **P 19 20 53.9 +0.1**
PSZ Piszkesteto 96.09 319⇓*P* **P 19 20 53.9 +0.1**
PSZ Piszkesteto 96.09 319 *eP* **P 19 20 53.0 -0.8**
NB2 NORSAR Subarra 96.34 334 P **P 19 20 52.7 -1.9**
comp=Z,14nm,0.7s,baz=66,slow=4.6
NB2 NORSAR Subarra 96.34 334 P **P 19 20 52.7 -1.9**
baz=66,slow=4.6
NOA NORSAR Array B 96.34 334 P **P 19 20 52.8 -1.9**
comp=Z,11nm,0.7s,baz=66,slow=4.6,SNR=52
AGG Agios Georgios 96.60 310 *eP* **P 19 20 53.1 -3.2**
AGG Agios Georgios 96.60 310 *eP* **P 19 20 53.0 -3.2**
VYHS Vyhne 96.61 320 *eP* **P 19 20 54.8 -1.3**
VYHS pmax pmax
comp=Z,5.0nm,1.7s
VYHS Vyhne 96.61 320 *eP* **P 19 20 54.8 -1.3**
OKC Ostrava-Krasne 96.65 322 *eP* **P 19 20 55.6 -0.6**
OKC Ostrava-Krasne 96.65 322 *eP* **P 19 20 55.6 -0.6**
BSD Bornholm Skovb 96.80 327 *iP* **P 19 20 55.2 -1.5**
comp=Z,55nm,1.0s
BSD Bornholm Skovb 96.80 327 *eP* **P 19 20 55.2 -1.5**
BSD pmax pmax
comp=Z,55nm,1.0s
MORC Moravsky Berou 97.04 322⇓*iP* **P 19 20 57.6 -0.4**
MORC Moravsky Berou 97.04 322⇓*P* **P 19 20 57.6 -0.4**
MORC Moravsky Berou 97.04 322 *eP* **P 19 20 57.8 -0.3**
KRLC Kraliky 97.42 322 *eP* **P 19 20 59.1 -0.6**
KRLC Kraliky 97.42 322 *eP* **P 19 20 59.1 -0.6**
DPC Dobruska-Polom 97.61 322 *eP* **P 19 21 00.5 0.0**
DPC Dobruska-Polom 97.61 322 *eP* **P 19 21 00.5 0.0**
UPC Upice 97.74 323 *eP* **P 19 21 00.5 -0.6**
UPC Upice 97.74 323 *eP* **P 19 21 00.5 -0.6**
YKA Yellowknife Ar 97.84 24 P Pdif 19 21 01.7 +0.4
comp=Z,6.5nm,0.8s,baz=300,slow=4.7,SNR=52
YKA PP **PP 19 25 05.3 +4.0**
comp=Z,1.1nm,1.1s,baz=304,slow=7.8,SNR=4.4
YKA PKiKP **PKiKP 19 25 34.5 +0.5**
comp=Z,0.7nm,0.6s,baz=309,slow=1.7,SNR=6.5
YKA PKKPbc **PKKPbc 19 37 34.1 -3.8**
comp=Z,1.9nm,0.6s,baz=123,slow=2.6,SNR=12
TREC Trest 98.46 322 *eP* **P 19 21 03.8 -0.6**
TREC Trest 98.46 322 *eP* **P 19 21 03.8 -0.6**
PVCC Panska Ves 98.60 323 *eP* **P 19 21 04.6 -0.3**
PVCC *ex* x 19 21 11.0
PVCC Panska Ves 98.60 323 *eP* **P 19 21 04.6 -0.3**
PRU Pruhonice 98.81 322 *eP* **P 19 21 05.2 -0.6**
PRU Pruhonice 98.81 322 *eP* **P 19 21 05.2 -0.6**
BRG Berggiesshubel 98.85 323 *iP* **P 19 21 05.5 -0.5**
comp=Z,15nm,0.8s
BRG Berggiesshubel 98.85 323 *iP* **P 19 21 05.5 -0.5**
BRG pmax pmax
comp=Z,15nm,0.9s
CLL Collm 99.25 324 *ePdif* **Pdif 19 21 07.0 -0.8**
comp=Z,11nm,1.1s
CLL Lm MLR 20 20 00.0
comp=Z,100nm,21.3s
CLL Collm 99.25 324 *eP* **Pdif 19 21 07.0 -0.8**
CLL pmax pmax
comp=Z,11nm,1.1s
KULLO Kullorsuaq 99.54 1 *iP* **Pdif 19 21 08.6 0.0**
comp=Z,14nm,0.9s
KULLO Kullorsuaq 99.54 1 *iP* **Pdif 19 21 08.6 0.0**
KULLO pmax pmax
comp=Z,14nm,0.9s
GERES GERESS Array B 99.72 322 P **Pdif 19 21 09.0 -1.1**
comp=Z,3.4nm,0.9s,baz=68,slow=4.9,SNR=30
NKC Novy Kostel 99.98 323 *ePDIFF* **Pdif 19 21 10.3 -0.8**
NKC Novy Kostel 99.98 323 *eP* **Pdif 19 21 10.3 -0.8**
SUMG Summit 100.92 355 *iP* **Pdif 19 21 15.0 -0.3**
SUMG Summit 100.92 355 *iP* **PP 19 25 23.9 -0.9**
comp=Z,7.3nm,0.9s
SUMG Summit 100.92 355 *eP* **Pdif 19 21 15.0 -0.3**
DOU Dourbes 104.60 325 P **Pdif 19 21 32.2 +0.6**
NVAR Mina Array Bea 106.11 47 Pdiff **Pdif 19 21 38.8 -0.1**
comp=Z,0.6nm,0.6s,baz=267,slow=3.6,SNR=5.2
NVAR PKiKP **PKiKP 19 25 50.2 +0.2**

comp=Z,1.6nm,0.8s,baz=273,slow=1.9,SNR=10.0
NVAR PKKPbc **PKKPbc** 19 37 09.3 -4.0
comp=Z,1.3nm,0.7s,baz=124,slow=3.7,SNR=9.7
PDAR Pinedale Array 110.28 40 PKKPbc PKKPbc 19 36 57.2 -3.2
comp=Z,1.6nm,0.8s,baz=123,slow=3.5,SNR=11
O20A White River Ci 112.43 42 P **PKiKP 19 26 02.6 +0.7**
baz=300
RSSD Black Hills 112.98 37 P **PKiKP 19 26 02.5 -0.3**
baz=305
I25A Rochford 113.22 37 P **PKiKP 19 26 03.4 +0.2**
baz=305
ULM Lac du Bonnet 113.43 28 PKiKP **PKiKP 19 26 02.2 -1.0**
comp=Z,3.3nm,0.5s,baz=220,slow=1.6,SNR=4.7
B30A Myrvik Farm, E 113.46 30 P **PKiKP 19 26 03.6 +0.3**
baz=311
G27A Dupree 113.47 35 P **PKiKP 19 26 03.5 0.0**
baz=307
J26A Sides Ranch, S 114.01 37 P PKPdf 19 26 06.6 +2.0
baz=305
C31A Landman Farms, 114.20 31 P PKPdf 19 26 05.0 +0.3
baz=312
F29A Eureka 114.36 33 P PKPdf 19 26 05.3 +0.2
baz=309
B32A Ashes, Strandq 114.39 30 P PKPdf 19 26 04.9 -0.2
baz=313
E30A Jud 114.43 32 P PKPdf 19 26 05.2 0.0
baz=310
A33A Warroad 114.57 28 P PKPdf 19 26 05.3 -0.1
baz=314
D31A Mcclaflin, Tow 114.69 31 P PKPdf 19 26 05.8 +0.1
baz=311
I28A Midland 114.73 35 P PKPdf 19 26 06.6 +0.7
baz=307
E31A Nome 114.93 32 P PKPdf 19 26 06.3 +0.1
baz=311
ESDC Sonseca Array 115.12 319 PKP **PKPdf 19 26 06.1 -0.8**
comp=Z,0.6nm,0.6s,baz=28,slow=1.8,SNR=6.1
ESDC PP **PP 19 27 10.6 +2.0**
comp=Z,0.9nm,0.7s,baz=50,slow=7.7,SNR=5.9
B34A Aery, Baudette 115.24 28 P **PKPdf 19 26 06.1 -0.6**
baz=315
B35A Bob, Littlefor 115.76 28 P **PKPdf 19 26 07.6 -0.1**
baz=316
E33A Westby DABS, E 115.94 31 P **PKPdf 19 26 08.0 -0.1**
baz=313
ANMO Albuquerque 116.19 46 P **PKPdf 19 26 10.1 +0.8**
baz=299
ANMO Albuquerque 116.19 46 *c i*PKIKP **PKPdf 19 26 11.2 +2.0**
ANMO pmax pmax
comp=Z,5.0nm,1.2s
F33A 5 Mile Ranch, 116.24 31 P **PKPdf 19 26 09.2 +0.5**
baz=312
MVO Moncorvo 116.24 322 *e*PKPdf **PKPdf 19 26 08.0 -1.0**
D35A Remer 116.51 29 P **PKPdf 19 26 08.9 -0.3**
baz=315
PGAV Gavieira, Arco 116.51 323 *e*PKPdf **PKPdf 19 26 09.9 +0.4**
T25A Trinidad 116.53 43 P **PKPdf 19 26 10.8 +1.0**
baz=302
POLO Lamas de Olo 116.58 322 *e*PKPdf **PKPdf 19 26 10.2 +0.6**
E35A Pequot Lakes 116.70 30 P **PKPdf 19 26 09.7 +0.1**
baz=314
H33A Prehn Over Nor 116.77 33 P **PKPdf 19 26 10.1 +0.3**
baz=311
G34A Benson 116.98 32 P **PKPdf 19 26 10.6 +0.5**
baz=313
MTE Manteigas 117.00 321 *e*PKPdf **PKPdf 19 26 11.2 +0.8**
EYMN Ely 117.09 27 P **PKPdf 19 26 10.4 +0.1**
baz=318
F35A Swanville 117.11 31 P **PKPdf 19 26 10.5 +0.1**
baz=314
D37A Cotton 117.23 28 P **PKPdf 19 26 10.6 0.0**
baz=316
PCBR Castelo Branco 117.28 321 *e*PKPdf **PKPdf 19 26 11.2 +0.3**
E36A McGregor 117.30 29 P **PKPdf 19 26 11.0 +0.2**
baz=315
C38A Sawbill Land. 117.36 27 P **PKPdf 19 26 10.8 0.0**
baz=318
K32A Verdigre 117.39 35 P **PKPdf 19 26 11.0 -0.1**
baz=309
ECSD EROS Data Cent 117.46 33 P **PKPdf 19 26 11.1 0.0**
baz=311
PMRV Marv??o 117.47 320 *e*PKPdf **PKPdf 19 26 11.8 +0.5**
G35A Watkins 117.59 31 P **PKPdf 19 26 11.8 +0.5**
baz=314
F36A Milaca 117.63 30 P **PKPdf 19 26 11.6 +0.2**
baz=315
H35A Sunnyside Ranc 117.77 32 P **PKPdf 19 26 12.0 +0.3**
baz=313
PCAS Casmilo, Conde 117.79 322 *e*PKPdf **PKPdf 19 26 12.3 +0.4**
C39A Grand Marais 117.80 27 P **PKPdf 19 26 11.8 +0.1**
baz=319
PESTR Estremoz 117.91 320 *e*PKPdf **PKPdf 19 26 12.4 +0.2**
PBAR Barrancos 117.95 319 *e*PKPdf **PKPdf 19 26 12.8 +0.6**
PTOM Tomar 118.00 321 *e*PKPdf **PKPdf 19 26 13.4 +1.1**
PMTG Montargil 118.20 321 *e*PKPdf **PKPdf 19 26 12.7 0.0**
H36A Jessenland, He 118.32 31 P **PKPdf 19 26 13.9 +1.2**
baz=314
EVO Evora 118.38 320 *e*PKPdf **PKPdf 19 26 13.0 -0.1**
K34A Le Mars 118.43 34 P **PKPdf 19 26 13.0 0.0**
baz=311
SCHQ Schefferville 118.49 8 PKP **PKPdf 19 26 13.5 +0.7**
comp=Z,11nm,1.0s,baz=346,slow=4.2,SNR=7.2
SCHQ PP **PP 19 27 34.1 +3.1**
comp=Z,5.3nm,0.8s,baz=26,slow=12,SNR=4.1
MNTX Cornudas Mount 118.53 49 P **PKPdf 19 26 14.6 +1.0**
baz=298
PBEJ Beja 118.57 319 *e*PKPdf **PKPdf 19 26 14.0 +0.5**
CBKS Cedar Bluff 118.68 39 P **PKPdf 19 26 13.2 -0.5**
baz=306
O32A Brockman Farm, 118.71 37 P **PKPdf 19 26 13.2 -0.5**
baz=308
PVAQ Vaqueiros 118.83 319 *e*PKPdf **PKPdf 19 26 14.6 +0.6**
H37A Dierke Farm, C 118.83 31 P **PKPdf 19 26 13.7 0.0**
baz=315
P32A Huiting Farm, 118.90 38 P **PKPdf 19 26 14.5 +0.4**
baz=308
MESJ Messejana 118.91 319 *e*P **PKPdf 19 26 14.4 +0.3**
MESJ Messejana 118.91 319 *e*PKPdf **PKPdf 19 26 14.2 +0.1**
M34A Aspy Farms, Fr 118.93 35 P **PKPdf 19 26 13.7 -0.3**
baz=310
PNCL Nicolau / Gran 118.95 320 *e*PKPdf **PKPdf 19 26 14.9 +0.7**
J36A Seneca 1, Swea 118.96 32 P **PKPdf 19 26 14.2 +0.1**
baz=313
I37A Lemond, Waseca 118.98 31 P **PKPdf 19 26 14.5 +0.5**
baz=314
PBDV Barranco-do-Ve 119.06 319 *e*PKPdf **PKPdf 19 26 15.9 +1.4**
O33A Hebron 119.24 37 P **PKPdf 19 26 14.6 -0.1**
baz=309
MSTX Muleshoe 119.32 46 P **PKPdf 19 26 15.8 +0.7**
baz=301
K36A Gilmore City 119.37 33 P **PKPdf 19 26 15.4 +0.5**
baz=313
J37A Redenius Farm, 119.39 32 P **PKPdf 19 26 15.1 +0.2**
baz=314
MORF Marmelete 119.50 319 *e*P **PKPdf 19 26 15.3 0.0**
MORF Marmelete 119.50 319 *e*PKPdf **PKPdf 19 26 15.9 +0.6**
I38A Scanlan Farm, 119.51 31 P **PKPdf 19 26 15.1 0.0**
baz=315
R32A Long Quarter, 119.56 39 P **PKPdf 19 26 16.1 +0.7**
baz=307
AMTX Amarillo 119.60 44 P **PKPdf 19 26 16.3 +0.6**
baz=303
L36A Harm Buss Farm 119.61 34 P **PKPdf 19 26 15.5 +0.1**
baz=312
O34A Beatrice 119.70 37 P **PKPdf 19 26 14.9 -0.6**
baz=310
PFVI Vila Bisbo 119.71 319 *e*PKPdf **PKPdf 19 26 16.4 +0.7**
Q33A Connelly Farm, 119.75 38 P **PKPdf 19 26 16.2 +0.5**
baz=308
P34A Walnut Farm, R 120.03 37 P **PKPdf 19 26 15.8 -0.5**
baz=309
T32A Huddler Ranch, 120.16 41 P **PKPdf 19 26 17.1 +0.5**
baz=306
Q34A Chapman 120.35 38 P **PKPdf 19 26 17.1 +0.3**
baz=309
M37A Trindle Farm, 120.42 34 P **PKPdf 19 26 17.4 +0.5**
baz=313
KSU1 Kansas State U 120.44 37 P **PKPdf 19 26 16.8 -0.2**
baz=309
L38A Oak Wood Farm, 120.52 33 P **PKPdf 19 26 17.0 0.0**
baz=314
P35A Duane Minner, 120.52 37 P **PKPdf 19 26 17.3 +0.1**
baz=310
R34A Isabella, Hill 120.54 39 P **PKPdf 19 26 17.3 +0.1**
baz=308
M38A Pleasantville 120.88 33 P **PKPdf 19 26 17.7 -0.1**
baz=313

V32A Arapaho 120.93 42 P **PKPdf 19 26 19.1 +1.1**
baz=305
Q35A Mercer Eighty, 120.94 37 P **PKPdf 19 26 18.2 +0.3**
baz=310
TXAR Lajitas Array 120.95 51 PKP **PKPdf 19 26 19.1 +0.6**
comp=Z,2.8nm,0.6s,baz=216,slow=0.9,SNR=44
TXAR PKKPbc **PKKPbc** 19 36 20.3 -2.5
comp=Z,0.4nm,0.6s,baz=134,slow=5.3,SNR=5.5
O37A Wolven Farm, M 121.20 35 P **PKPdf 19 26 18.5 0.0**
baz=312
T34A McClaskey Farm 121.36 40 P **PKPdf 19 26 19.1 +0.2**
baz=308
P37A Lathrop 121.46 36 P **PKPdf 19 26 19.1 +0.1**
baz=312
U34A Anderson Ranch 121.49 40 P **PKPdf 19 26 19.8 +0.7**
baz=307
S35A Otter Creek Ra 121.50 39 P **PKPdf 19 26 19.7 +0.6**
baz=309
R36A Gordon, Harris 121.60 38 P **PKPdf 19 26 19.5 +0.2**
baz=310
N39A Derby Farms, D 121.64 33 P **PKPdf 19 26 18.5 -0.7**
baz=314
WMOK Wichita Mounta 121.67 43 P **PKPdf 19 26 19.1 -0.5**
baz=305
T35A Sooner Cattle 121.86 39 P **PKPdf 19 26 20.5 +0.7**
baz=308
V34A Guthrie 121.86 41 P **PKPdf 19 26 20.3 +0.5**
baz=307
P38A Dawn 121.91 35 P **PKPdf 19 26 20.1 +0.3**
baz=312,SNR=7.7
X33A Lawton 121.97 43 P **PKPdf 19 26 20.3 +0.2**
baz=305
R37A Teagarden Farm 122.01 37 P **PKPdf 19 26 19.8 -0.2**
baz=310
O39A Kirksville 122.04 34 P **PKPdf 19 26 20.3 +0.2**
baz=314
W34A Bridge Creek, 122.05 42 P **PKPdf 19 26 21.4 +1.1**
baz=306
T36A Boggs Farm, Ca 122.16 39 P **PKPdf 19 26 20.9 +0.6**
baz=309
ABTX Abilene, Hawle 122.25 45 P **PKPdf 19 26 21.6 +0.9**
baz=303
Q38A Cooks Store, C 122.30 36 P **PKPdf 19 26 20.6 0.0**
baz=312
V35A Meyer Ranch, C 122.35 41 P **PKPdf 19 26 21.6 +0.8**
baz=307
S37A Fort Scott 122.37 38 P **PKPdf 19 26 20.9 +0.2**
baz=310,SNR=8.9
X34A Smith Ranch, M 122.38 42 P **PKPdf 19 26 20.8 -0.1**
baz=306
P39B Salisbury 122.45 35 P **PKPdf 19 26 21.1 +0.3**
baz=313,SNR=7.0
O40A La Belle 122.50 34 P **PKPdf 19 26 21.0 +0.1**
baz=314
Q39A Willow Grove F 122.62 35 P **PKPdf 19 26 21.5 +0.3**
baz=313,SNR=18
R38A Fenwick Farm, 122.64 37 P **PKPdf 19 26 20.8 -0.5**
baz=311,SNR=5.6
U36A Oologah 122.67 39 P **PKPdf 19 26 22.1 +0.8**
baz=309
W35A Tecumseh 122.69 41 P **PKPdf 19 26 21.4 0.0**
baz=307
T37A Cheneyville 18 122.72 38 P **PKPdf 19 26 22.1 +0.6**
baz=310
Y34A Reagan Ranch, 122.81 43 P **PKPdf 19 26 22.3 +0.6**
baz=306
P40A Paris 122.82 34 P **PKPdf 19 26 21.8 +0.2**
baz=314,SNR=6.9
V36A Jenks 122.91 40 P **PKPdf 19 26 22.6 +0.8**
baz=308,SNR=6.5
TUL1 Leonard 122.93 40 P **PKPdf 19 26 22.8 +0.9**
baz=308
S38A Stockton 123.01 37 P **PKPdf 19 26 21.5 -0.5**
baz=311,SNR=6.9
U37A Salina 123.05 39 P **PKPdf 19 26 22.6 +0.5**
baz=309
R39A Chumby, Stover 123.07 36 P **PKPdf 19 26 22.3 +0.2**
baz=312,SNR=14
233A Rising Star 123.11 45 P **PKPdf 19 26 23.0 +0.6**
baz=304
W36A Wetumka 123.12 41 P **PKPdf 19 26 22.9 +0.7**
baz=308
T38A Diamond 123.16 38 P **PKPdf 19 26 22.7 +0.3**
baz=310,SNR=11
Q40A Laux Farm, Aux 123.17 35 P **PKPdf 19 26 22.4 +0.2**
baz=313,SNR=5.4
JCT Junction City 123.28 48 P **PKPdf 19 26 23.5 +0.7**
baz=302,SNR=17
S39A Bolivar 123.32 37 P **PKPdf 19 26 22.8 +0.3**
baz=312,SNR=31
V37A Hulbert 123.36 40 P **PKPdf 19 26 23.2 +0.5**
baz=309,SNR=9.0
X36A Centrahoma 123.38 42 P **PKPdf 19 26 23.6 +0.8**
baz=307,SNR=7.7
333A Richland Sprin 123.42 46 P **PKPdf 19 26 23.4 +0.4**
baz=303,SNR=9.0
U38A Gravette 123.48 39 P **PKPdf 19 26 23.3 +0.3**
baz=310,SNR=7.7
R40A Maddies Statio 123.54 36 P **PKPdf 19 26 23.3 +0.3**
baz=313,SNR=18
HDIL Hopedale 123.58 32 P **PKPdf 19 26 23.0 0.0**
baz=317
W37B Quinton 123.64 40 P **PKPdf 19 26 24.0 +0.7**
baz=308
433A Art 123.66 47 P **PKPdf 19 26 24.1 +0.6**
baz=303,SNR=7.8
T39A Clever 123.72 37 P **PKPdf 19 26 24.0 +0.6**
baz=311,SNR=8.5
Y36A Durant 123.83 42 P **PKPdf 19 26 24.4 +0.8**
baz=307,SNR=8.2
V38A Canehill 123.84 39 P **PKPdf 19 26 23.9 +0.2**
baz=310,SNR=8.7
135A Vickery Place, 123.85 44 P **PKPdf 19 26 24.6 +0.8**
baz=305
S40A Lebanon 123.87 36 P **PKPdf 19 26 23.6 -0.1**
baz=312,SNR=8.4
334A Lometa 123.95 46 P **PKPdf 19 26 24.5 +0.5**
baz=304
X37A Clayton 124.02 41 P **PKPdf 19 26 24.6 +0.6**
baz=308
533A Kerrville 124.06 47 P **PKPdf 19 26 25.0 +0.7**
baz=302
U39A Green Forest 124.08 38 P **PKPdf 19 26 24.1 0.0**
baz=311,SNR=9.1
T40A Mansfield 124.15 37 P **PKPdf 19 26 24.4 +0.1**
baz=312,SNR=18
434A Burnet 124.22 46 P **PKPdf 19 26 25.3 +0.8**
baz=304,SNR=8.8
Y37A Hugo 124.22 42 P **PKPdf 19 26 25.3 +0.9**
baz=308
W38A Poteau 124.27 40 P **PKPdf 19 26 25.4 +0.9**
baz=309,SNR=7.2
633A Saathoff Ranch 124.28 48 P **PKPdf 19 26 25.5 +0.8**
baz=302
832A Faith Ranch, C 124.29 50 P **PKPdf 19 26 25.9 +1.2**
baz=301,SNR=7.0
X38A Whitesboro 124.32 40 P **PKPdf 19 26 25.4 +0.8**
baz=309,SNR=11
V39A Pettigrew 124.33 39 P **PKPdf 19 26 24.9 +0.2**
baz=310,SNR=9.0
U40A Yellville 124.48 38 P **PKPdf 19 26 25.3 +0.4**
baz=311,SNR=15
534A Blanco 124.49 47 P **PKPdf 19 26 25.8 +0.8**
baz=303,SNR=7.6
335A Moody 124.56 45 P **PKPdf 19 26 26.2 +1.0**
baz=304
733A Divot King Ran 124.58 49 P **PKPdf 19 26 26.5 +1.3**
baz=301
W39A Magazine 124.65 39 P **PKPdf 19 26 25.7 +0.5**
baz=310,SNR=7.9
T41A Mountain View 124.67 36 P **PKPdf 19 26 25.7 +0.5**
baz=313,SNR=10
833A Chaparral WMA, 124.71 49 P **PKPdf 19 26 27.1 +1.6**
baz=301,SNR=7.9
SFIN Lafayette 124.84 30 P **PKPdf 19 26 26.0 +0.6**
baz=319
V40A Witts Springs 124.86 38 P **PKPdf 19 26 26.2 +0.5**
baz=311,SNR=14
X39A Fountain Ranch 124.88 40 P **PKPdf 19 26 26.9 +1.2**
baz=309,SNR=20
734A La Parita Cree 125.06 48 P **PKPdf 19 26 27.3 +1.1**
baz=302
W40A Ferguson Farm, 125.10 39 P **PKPdf 19 26 26.9 +0.8**
baz=310
933A Laredo 125.16 50 P **PKPdf 19 26 27.7 +1.3**
baz=301
MIAR Mount Ida 125.20 40 P **PKPdf 19 26 27.5 +1.3**
baz=310,SNR=19

Y39A Lockesburg 125.25 41 P **PKPdf 19 26 27.0 +0.7**
baz=309
V41A Mountainview 125.28 38 P **PKPdf 19 26 25.6 -0.8**
baz=312
S43A Fulton Ridge, 125.29 35 P **PKPdf 19 26 27.0 +0.6**
baz=315
Y40A Okolona 125.73 40 P **PKPdf 19 26 28.4 +1.1**
baz=310
V42A Cord 125.73 37 P **PKPdf 19 26 27.3 +0.1**
baz=312
035A Encino 126.40 50 P **PKPdf 19 26 27.5 -1.2**
baz=301
V45A Humboldt 127.21 36 P **PKPdf 19 26 30.9 +0.8**
baz=315
M54A Oil Creek Stat 127.31 24 P **PKPdf 19 26 30.9 +0.8**
baz=328
341A Kurthwood 127.47 43 P **PKPdf 19 26 32.1 +1.4**
baz=308
N54A Moraine State 127.64 25 P **PKPdf 19 26 31.3 +0.5**
baz=327
Y46A Houston 128.56 37 P **PKPdf 19 26 33.4 +0.7**
baz=314
O56A Blue Knob Stat 128.80 24 P **PKPdf 19 26 33.8 +0.8**
baz=328
KIC Kosan Boka 129.10 283 *e*P **PKPdf 19 26 33.3 -1.0**
comp=Z,94nm,1.0s
DBIC Dimbokro 129.14 284 PKP **PKPdf 19 26 33.6 -0.7**
comp=Z,21nm,0.8s,baz=42,slow=2.1,SNR=18
DBIC SKPbc SKPab 19 29 38.6 -0.7
comp=Z,7.7nm,0.9s,baz=86,slow=4.2,SNR=4.6
Y47A UCPARC, Winfie 129.15 36 P **PKPdf 19 26 34.6 +0.8**
baz=315
TIC Toumodi 129.30 284 *e*P **PKPdf 19 26 34.2 -0.5**
N59A State Game Lan 129.31 21 P **PKPdf 19 26 34.4 +0.5**
baz=332
LIC Lamto 129.40 283 *e*P **PKPdf 19 26 35.7 +0.9**
comp=Z,30nm,0.9s
Z48A Northport 129.69 37 P **PKPdf 19 26 35.7 +0.8**
baz=315
KMSC Kings Mountain 131.78 30 P **PKPdf 19 26 39.6 +0.8**
baz=323
TIGA Tifton 133.41 35 P **PKPdf 19 26 43.3 +1.4**
baz=318
PLCA Paso Flores 142.45 159 PKhKP PKPpre 19 26 55.6
comp=Z,7.1nm,0.7s,baz=277,slow=2.8,SNR=18
MTDJ Mount Denham 146.72 43 *e*PKPbc **PKPbc 19 27 08.9 +0.6**
TRQA Tornquist 147.32 169 *e*PKPbc **PKPbc 19 27 09.4 +0.1**
ROC1 El Roble 148.94 152‖*e*P **PKPbc 19 27 14.7 +0.7**
AAGR Agrelo 149.82 155 *e*P **PKPbc 19 27 17.1 +1.1**
ARCO CERRO ARCO 149.99 155 *e*P **PKPbc 19 27 17.1 +0.5**
SDDR Presa de Saban 150.03 34 *e*PKPbc **PKPbc 19 27 17.3 +0.5**
ASAL Salagasta 150.24 155‖*e*P **PKPbc 19 27 18.1 +1.0**
AUSP Uspallata 150.32 153‖*e*P **PKPbc 19 27 18.6 +1.1**
BCIP Isla Barro Col 150.37 60 *e*PKPdf **PKPdf 19 27 12.1 -0.2**
BCIP *e*PKPbc **PKPbc 19 27 18.0 +0.3**
BCIP *e*PKPab **PKPab 19 27 24.6 0.0**
BCIP Isla Barro Col 150.37 60 *e*P **PKPbc 19 27 16.4 -1.3**
RTLS Leoncito 150.72 153‖*e*P **PKPbc 19 27 19.5 +1.1**
RTCV Cerro Valdivia 151.00 154‖*e*P **PKPbc 19 27 19.2 +0.4**
RTLL Cerro Villicun 151.48 154‖*e*P **PKPbc 19 27 20.1 +0.2**
MRA San Martin 151.61 159 *e*P **PKPbc 19 27 20.5 +0.3**
AMOG MOGNA 151.81 153‖*e*P **PKPbc 19 27 21.1 +0.4**
LCO Las Campanas 152.32 148 *e*PKPbc **PKPbc 19 27 22.7 +0.6**
CAPC Capurgana 152.76 58 *e*P **PKPdf 19 27 15.2 -0.7**
TCA Tanti 152.99 160 *e*P **PKPbc 19 27 23.6 +0.2**
AGUA GUANDACOL 153.04 152‖*e*P **PKPbc 19 27 24.5 +1.0**
SJG San Juan 153.32 26 PKPbc **PKPbc 19 27 23.2 -1.0**
comp=Z,8.2nm,0.5s,baz=92,slow=2.0,SNR=5.9
SJG PKPab **PKPab 19 27 37.6 +1.0**
comp=Z,25nm,0.8s,baz=0.7,slow=6.0,SNR=7.7
SJG San Juan 153.32 26 *e*PKIKP **PKPbc 19 27 24.0 -0.2**
SJG San Juan 153.32 26 *e*PKPbc **PKPbc 19 27 24.0 -0.2**
SJG PKPab **PKPab 19 27 37.6 +1.0**
SJG San Juan 153.32 26 *e*P **PKPbc 19 27 22.6 -1.6**
SJCC San Jacinto, C 153.84 53 *e*P **PKPdf 19 27 15.8 -1.7**
MOTC Monteria, Cord 154.08 56 *e*P **PKPdf 19 27 16.4 -1.5**
OTAV Otavalo 155.05 76 *e*P **PKPdf 19 27 18.6 -1.1**
CYA Choya 155.13 155‖*e*P PKPdf 19 27 28.4 +9.4
ATAH Atahualpa 155.98 94 PKP **PKPdf 19 27 20.6 -0.3**
comp=Z,6.6nm,0.8s,baz=240,slow=12,SNR=5.9
ATAH PKPab **PKPab 19 27 50.5 +1.6**
comp=Z,12nm,0.8s,baz=216,slow=4.0,SNR=5.0
CRUC La Cruz 156.11 72 *e*P **PKPdf 19 27 22.6 +1.5**
GUYC Guyana, Colomb 156.12 63 *e*P **PKPdf 19 27 20.3 -0.9**
OCAC Ocana 156.29 54 *e*P **PKPdf 19 27 21.4 +0.4**
NORC Norcasia 156.42 61 *e*P **PKPdf 19 27 21.4 +0.4**
TOLC Tolima 156.47 64 *e*P **PKPdf 19 27 22.0 +0.5**
BRRC Barranca, Sant 156.61 56 *e*P **PKPdf 19 27 20.3 -0.9**
GRMC Gramalote, San 157.01 54 *e*P **PKPdf 19 27 20.9 -1.1**
CBRI Barrientos, No 157.02 54 *e*P **PKPdf 19 27 21.4 -0.5**
FSA Villa Lafayette 157.07 152‖*e*P **PKPdf 19 27 19.4 -2.3**
ROSC El Rosal 157.24 62 PKP **PKPdf 19 27 22.3 -0.2**
comp=Z,12nm,0.8s,baz=73,slow=8.1,SNR=11
ROSC El Rosal 157.24 62 *e*P **PKPdf 19 27 22.0 -0.5**
PAMC Pamplona, Colo 157.31 55 *e*P **PKPdf 19 27 22.6 -0.1**
FLOC Florencia 157.33 71 *e*P **PKPdf 19 27 22.0 -0.2**
BARC Barichara 157.33 57 *e*P PKPdf 19 27 33.3 +11
RUSC La Rusia 157.79 58 *e*P **PKPdf 19 27 22.6 -0.8**
SDV Santo Domingo 157.96 48 PKP **PKPdf 19 27 23.2 0.0**
comp=Z,7.9nm,0.3s,baz=61,slow=2.2,SNR=4.4
SDV Santo Domingo 157.96 48 *e*P **PKPdf 19 27 22.0 -1.1**
LVC Limon Verde 158.24 141 PKPab **PKPab 19 27 59.7 +1.5**
comp=Z,14nm,0.7s,baz=350,slow=6.7,SNR=5.4
CPUP Villa Florida 159.56 172 PKP **PKPdf 19 27 23.8 -0.7**
comp=Z,3.2nm,0.9s,baz=31,slow=4.9,SNR=4.6
CPUP PKPab **PKPab 19 28 03.1 -0.1**
comp=Z,10.0nm,0.8s,baz=183,slow=4.2,SNR=14
LPAZ La Paz 162.97 128 PKP **PKPdf 19 27 30.2 +1.1**
comp=Z,6.8nm,1.0s,baz=42,slow=0.4,SNR=20
LPAZ PKPab **PKPab 19 28 20.4 +1.0**
comp=Z,7.8nm,0.9s,baz=220,slow=2.3,SNR=8.8
SIV San Ignacio 168.02 147 PKP **PKPdf 19 27 33.5 +0.9**
comp=Z,6.9nm,0.9s,baz=190,slow=2.0,SNR=11
SIV PKPab **PKPab 19 28 41.2 +0.4**
comp=Z,5.2nm,0.8s,baz=220,slow=3.5,SNR=7.5
SAML Samuel 170.66 109 *e*PKPdf **PKPdf 19 27 34.0 -0.1**
PTGA Pitinga 172.25 48 PKP **PKPdf 19 27 35.1 +0.2**
comp=Z,3.9nm,0.7s,baz=344,slow=3.8,SNR=7.2

ISCJB ***22*** *19:10:14.3±0.4,39°.13N±0°.03×29°.14E±0°.03, h4km±6km,*
Error ellipse: s-maj=4.7km s-min=4.2km az=144.3
DDA ***22*** *19:10:14.2,39°.13N×29°.14E, h7km, Md2.8*
ISK ***22*** *19:10:14.1,39°.13N×29°.17E, h8km, MD2.9*
CSEM ***22*** *19:10:14.5±0.1,39°.13N×29°.14E, h5km, MD2.8, Error ellipse: s-maj=2.1km s-min=1.7km az=103.0*
ISC 22 19:10:14.8±1.0, 39°.14N±0°.02×29°.14E±0°.02, h7km±11km, n47, σ0°35/60, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.27**	**101**	P	**Pg**	**19 10 20.1**	**0.0**
GDZ				S	**Sg**	**19 10 24.0**	**+0.3**
GDZ	**Gediz**	**0.27**	**101**	*i* P	**Pg**	**19 10 20.1**	**0.0**
GDZ				*i* S	**Sg**	**19 10 24.0**	**+0.3**
DEMI	**Demirci**	**0.35**	**254**	P	**Pg**	**19 10 21.7**	**0.0**
DEMI				S	**Sg**	**19 10 26.6**	**+0.4**
DEMI	**Demirci**	**0.35**	**254**	*i* P	**Pg**	**19 10 21.7**	**0.0**
DEMI				*i* S	**Sg**	**19 10 26.6**	**+0.4**
TVSB	**Tavsanli**	**0.40**	**38**	*e*PG	**Pg**	**19 10 22.2**	**-0.4**
TVSB				*e*SG	**Sg**	**19 10 27.8**	**0.0**
TVSB	**Tavsanli**	**0.40**	**38**	*e*Pg	**Pg**	**19 10 22.2**	**-0.4**
TVSB				*e*Sg	**Sg**	**19 10 27.8**	**0.0**
DURS	**Dursunbey**	**0.69**	**312**	P	**Pg**	**19 10 28.2**	**0.0**
DURS				S	**Sg**	**19 10 36.9**	**-0.4**
DURS	**Dursunbey**	**0.69**	**312**	*i* P	**Pg**	**19 10 28.2**	**0.0**
DURS				*i* S	**Sg**	**19 10 36.9**	**-0.4**
KULA	**Kula-Manisa**	**0.73**	**211**	*e*PG	**Pg**	**19 10 28.9**	**0.0**
KULA	**Kula-Manisa**	**0.73**	**211**	*e*Pg	**Pg**	**19 10 28.9**	**0.0**
MANT	**Manisa**	**0.79**	**215**	P	**Pg**	**19 10 29.8**	**-0.3**
MANT				S	**Sg**	**19 10 40.0**	**-0.4**
MANT	**Manisa**	**0.79**	**215**	*i* P	**Pg**	**19 10 29.8**	**-0.3**
MANT				*i* S	**Sg**	**19 10 40.0**	**-0.4**
KHAL	**Karahalli**	**0.81**	**160**	P	**Pg**	**19 10 30.1**	**-0.4**
KHAL				S	**Sg**	**19 10 41.4**	**+0.3**
KHAL	**Karahalli**	**0.81**	**160**	*i* P	**Pg**	**19 10 30.1**	**-0.4**
KHAL				*i* S	**Sg**	**19 10 41.4**	**+0.3**
KHL	**Karahalli**	**0.87**	**160**	*e*PG	**Pg**	**19 10 30.7**	**-0.8**
KHL	**Karahalli**	**0.87**	**160**	*e*Pg	**Pg**	**19 10 30.7**	**-0.8**
ORLT	**Orhaneli**	**0.93**	**348**	*e*PG	**Pg**	**19 10 32.5**	**-0.1**
ORLT	**Orhaneli**	**0.93**	**348**	*e*Pg	**Pg**	**19 10 32.5**	**-0.1**
AKS	**Akhisar**	**1.07**	**256**	*e*PN	**Pg**	**19 10 35.2**	**-0.2**
AKS	**Akhisar**	**1.07**	**256**	*e*Pn	**Pg**	**19 10 35.2**	**-0.2**

BALB	Balikesir	1.10	297	*e*PN	Pb	19 10 36.0	-0.1
BALB	Balikesir	1.10	297	*e*Pn	Pb	19 10 36.1	-0.1
IGD	Bursa	1.12	2	*i* P	Pg	19 10 35.8	-0.6
IGD				*i* S	Sb	19 10 51.6	+0.2
CAVI	Cavuskoy	1.19	27	*e*PN	Pg	19 10 37.4	-0.3
CAVI	Cavuskoy	1.19	27	*e*Pn	Pg	19 10 37.4	-0.3
IZI	Iznik	1.22	12	*e*PN	Pn	19 10 38.7	+0.3
IZI	Iznik	1.22	12	*e*Pn	Pn	19 10 38.7	+0.3
MDNY	Mudanya-Bursa	1.24	351	*e*PN	Pn	19 10 38.6	0.0
MDNY	Mudanya-Bursa	1.24	351	*e*Pn	Pn	19 10 38.6	0.0
KCTX	Karacabey (Bur	1.28	332	*e*PN	Pn	19 10 39.0	-0.1
KCTX	Karacabey (Bur	1.28	332	*e*Pn	Pn	19 10 39.0	-0.1
ADVT	Abdulvahap	1.37	19	*e*PN	Pn	19 10 40.0	-0.3
ADVT	Abdulvahap	1.37	19	*e*Pn	Pn	19 10 40.0	-0.3
ARMT	Armutlu	1.44	351	*e*PN	Pn	19 10 41.6	+0.3
ARMT	Armutlu	1.44	351	*e*Pn	Pn	19 10 41.6	+0.3
GONE	Gonen-Balikesi	1.45	309	*e*PN	Pn	19 10 41.6	+0.2
GONE	Gonen-Balikesi	1.45	309	*e*Pn	Pn	19 10 41.6	+0.2
EDC	Edincik	1.56	321	*e*PN	Pn	19 10 43.0	0.0
EDC	Edincik	1.56	321	*e*Pn	Pn	19 10 43.0	0.0
GULT	Gulveren	1.67	39	*e*PN	Pn	19 10 44.6	+0.1
GULT	Gulveren	1.67	39	*e*Pn	Pn	19 10 44.6	+0.1
ISK	Istanbul-Kandi	1.92	358	*e*PN	Pn	19 10 48.0	+0.1
ISK	Istanbul-Kandi	1.92	358	*e*Pn	Pn	19 10 48.0	+0.1
SILT	Sile	2.05	11	*e*PN	Pn	19 10 50.4	+0.8
SILT	Sile	2.05	11	*e*Pn	Pn	19 10 50.4	+0.8
MDUB	Mudurnu	2.07	49	*e*PN	Pn	19 10 50.7	+0.7
MDUB	Mudurnu	2.07	49	*e*Pn	Pn	19 10 50.7	+0.7

ISCJB ***22*** *19:13:29.7±0.4, 39°.10N±0°.03×29°.01E±0°.04, h9km, Error ellipse: s-maj=5.5km s-min=3.8km az=140.9*
CSEM ***22*** *19:13:29.8±0.1, 39°.10N×29°.02E, h8km, MD2.4, Error ellipse: s-maj=2.8km s-min=2.1km az=110.0*
ISK ***22*** *19:13:29.7, 39°.12N×29°.04E, h8km, MD2.7*
DDA ***22*** *19:13:29.8, 39°.07N×29°.01E, h7km, Md2.4*
ISC 22 19:13:29.7±0.8, 39°.09N±0°.03×29°.03E±0°.03, h9km, n30, σ0s27/38, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.25	259	P	Pg	19 13 34.9	+0.1
DEMI				S	Sg	19 13 38.2	0.0
DEMI	Demirci	0.25	259	*i* P	Pg	19 13 34.9	+0.1
DEMI				*i* S	Sg	19 13 38.2	0.0
GDZ	Gediz	0.35	90	P	Pg	19 13 36.4	-0.2
GDZ				S	Sb	19 13 43.1	-0.8
GDZ	Gediz	0.35	90	*i* P	Pg	19 13 36.4	-0.2
GDZ				*i* S	Sb	19 13 43.1	-0.8
TVSB	Tavsanli	0.49	43	*e*PG	Pg	19 13 39.4	+0.2
TVSB				*e*SG	Sg	19 13 45.8	+0.1
TVSB	Tavsanli	0.49	43	*e*Pg	Pg	19 13 39.4	+0.2
TVSB				*e*Sg	Sg	19 13 45.8	+0.1
KULA	Kula-Manisa	0.65	207	*e*PG	Pb	19 13 43.1	-0.1
KULA	Kula-Manisa	0.65	207	*e*Pg	Pb	19 13 43.1	-0.1
MANT	Manisa	0.71	212	P	Pg	19 13 43.2	-0.2
MANT				S	Sg	19 13 52.9	+0.3
MANT	Manisa	0.71	212	*i* P	Pg	19 13 43.2	-0.2
MANT				*i* S	Sg	19 13 52.9	+0.3
KHAL	Karahalli	0.81	153	P	Pg	19 13 45.5	+0.2
KHAL	Karahalli	0.81	153	*i* P	Pg	19 13 45.5	+0.2
KHL	Karahalli	0.86	153	*e*PG	Pb	19 13 47.1	+0.3
KHL	Karahalli	0.86	153	*e*Pg	Pb	19 13 47.1	+0.3
BALB	Balikesir	1.05	302	*e*PG	Pb	19 13 50.0	0.0
BALB	Balikesir	1.05	302	*e*Pg	Pb	19 13 50.0	0.0
CAVI	Cavuskoy	1.27	29	*e*PN	Pg	19 13 54.3	+0.1
CAVI	Cavuskoy	1.27	29	*e*Pn	Pg	19 13 54.3	+0.1
MDNY	Mudanya-Bursa	1.28	355	*e*PN	Pn	19 13 53.7	-0.1
MDNY	Mudanya-Bursa	1.28	355	*e*Pn	Pn	19 13 53.7	-0.1
KCTX	Karacabey (Bur	1.28	336	*e*PN	Pn	19 13 54.0	+0.1
KCTX	Karacabey (Bur	1.28	336	*e*Pn	Pn	19 13 54.0	+0.1
IZI	Iznik	1.29	15	*e*PN	Pn	19 13 54.0	0.0
IZI	Iznik	1.29	15	*e*Pn	Pn	19 13 54.0	0.0
ADVT	Abdulvahap	1.45	22	*e*PN	Pn	19 13 56.1	+0.1
ADVT	Abdulvahap	1.45	22	*e*Pn	Pn	19 13 56.1	+0.1
ARMT	Armutlu	1.48	355	*e*PN	Pn	19 13 56.9	+0.4
ARMT	Armutlu	1.48	355	*e*Pn	Pn	19 13 56.9	+0.4
GULT	Gulveren	1.76	40	*e*PN	Pn	19 14 00.9	+0.4
GULT	Gulveren	1.76	40	*e*Pn	Pn	19 14 00.9	+0.4

IDC ***22*** *19:21:04.4±2.1, 36°.82N×141°.50E, h0km, mb3.3/3, mb1 3.3/5, mb1mx3.1/71, mbtmp3.3/5, ML2.8/2, Error ellipse: s-maj=39.9km s-min=24.8km az=74.0*
ISCJB ***22*** *19:21:07.1±1.3, 36°.82N±0°.04×141°.37E±0°.08, h23km±7km, mb3.3/3, Error ellipse: s-maj=11.0km s-min=6.3km az=13.5*
JMA ***22*** *19:21:09.0±0.1, 36°.84N×141°.22E, h38km±1km, M3.2*
ISC 22 19:21:07.7±1.8, 36°.83N±0°.04×141°.29E±0°.07, h16km±10km, n13, σ0s94/23, mb3.2/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.48	305	P	Pb	19 21 18.5	+0.7
ONAJ				S	Sb	19 21 25.2	+0.6
JHO	Hitachi	0.62	250	P	Pb	19 21 20.4	+0.3
JHO				S	Sb	19 21 28.5	0.0
JFK	Kawauchi	0.63	328	P	Pb	19 21 20.7	+0.3
JFK				S	Sg	19 21 28.6	0.0
JFT	Otama	1.03	312	P	Pg	19 21 27.4	-0.2
JFT				*e*S	Sb	19 21 39.8	-0.5
JYT	Yasato	1.07	236	P	Pb	19 21 27.3	-0.4
JYT				S	Sb	19 21 40.1	-1.3
JSB	Shiboa	1.11	278	P	Pg	19 21 29.0	-0.1
JSB				S	Sn	19 21 43.5	0.0
JMM	Marumori	1.11	339	P	Pb	19 21 27.8	-0.7
JMM				S	Sb	19 21 41.5	-1.2
MJAR	Matsushiro Arr	2.49	264	Pn	Pn	19 21 48.7	+1.1
	1.4nm,0.3s,baz=87,slow=15,SNR=12						
MJAR				Sn	Sb	19 22 20.3	-2.2
	3.2nm,0.3s,baz=97,slow=21,SNR=7.3						
MAT	Matsushiro	2.49	264	P	Pn	19 21 49.0	+1.4
MAT				S	Sn	19 22 17.3	-0.4
JHJ	Hachijo jima 2	3.90	199	Pn	Pn	19 22 08.1	+1.1
	2.0nm,0.3s,baz=61,slow=19,SNR=3.8						
JHJ				Sn	Sn	19 22 53.4	+1.0
	4.1nm,0.3s,baz=60,slow=20,SNR=3.0						
MKAR	Makanchi Array	44.14	302	P	P	19 29 15.7	+0.3
	0.3nm,0.7s,baz=88,slow=8.6,SNR=4.1						
KURBB	Kurchatov Arra	46.05	308	P	P	19 29 30.6	+0.2
	0.4nm,0.6s,baz=81,slow=8.3,SNR=4.7						
WRA	Warramunga Arr	56.84	188	P	P	19 30 50.4	-1.1
	0.1nm,0.4s,baz=5.9,slow=7.3,SNR=4.9						

ISK ***22*** *19:24:52.7, 39°.13N×29°.07E, h11km, MD2.7*
ISCJB ***22*** *19:24:53.2±0.5, 39°.13N±0°.04×29°.03E±0°.06, h9km, Error ellipse: s-maj=6.9km s-min=5.0km az=31.1*
DDA ***22*** *19:24:53.6, 39°.10N×29°.06E, h7km, Md2.5*
CSEM ***22*** *19:24:53.3±0.2, 39°.14N×29°.02E, h10km, MD2.5, Error ellipse: s-maj=6.0km s-min=4.6km az=105.0*
ISC 22 19:24:53.3±1.1, 39°.13N±0°.03×29°.05E±0°.03, h9km, n29, σ0s40/31, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.27	252	P	Pg	19 24 59.3	+0.5
DEMI	Demirci	0.27	252	*i* P	Pg	19 24 59.3	+0.5
GDZ	Gediz	0.34	96	P	Pg	19 25 00.3	+0.2
GDZ	Gediz	0.34	96	*i* P	Pg	19 25 00.3	+0.2
TVSB	Tavsanli	0.46	45	*e*PG	Pg	19 25 02.5	+0.3
TVSB				*e*SG	Sg	19 25 08.3	+0.1
TVSB	Tavsanli	0.46	45	*e*Pg	Pg	19 25 02.5	+0.3
TVSB				*e*Sg	Sg	19 25 08.3	+0.1
KULA	Kula-Manisa	0.68	206	*e*PG	Pg	19 25 06.5	0.0
KULA	Kula-Manisa	0.68	206	*e*Pg	Pg	19 25 06.5	0.0
MANT	Manisa	0.74	211	P	Pg	19 25 07.5	-0.1
MANT	Manisa	0.74	211	*i* P	Pg	19 25 07.5	-0.1
KHAL	Karahalli	0.83	155	P	Pn	19 25 11.7	+0.4
KHAL	Karahalli	0.83	155	*i* P	Pn	19 25 11.7	+0.4
KHL	Karahalli	0.88	155	*e*PG	Pg	19 25 09.9	-0.4
KHL	Karahalli	0.88	155	*e*Pg	Pg	19 25 09.9	-0.4
BALB	Balikesir	1.04	300	*e*PG	Pg	19 25 13.2	-0.1
BALB	Balikesir	1.04	300	*e*Pg	Pg	19 25 13.2	-0.1
IGD	Bursa	1.14	6	*i* P	Pn	19 25 15.8	+0.3
CAVI	Cavuskoy	1.24	29	*e*PN	Pn	19 25 15.8	-1.0
CAVI	Cavuskoy	1.24	29	*e*Pn	Pn	19 25 15.8	-1.0
MDNY	Mudanya-Bursa	1.25	354	*e*PN	Pn	19 25 16.5	-0.4
MDNY	Mudanya-Bursa	1.25	354	*e*Pn	Pn	19 25 16.5	-0.4
IZI	Iznik	1.25	15	*e*PN	Pn	19 25 16.8	-0.3
IZI	Iznik	1.25	15	*e*Pn	Pn	19 25 16.8	-0.3
KCTX	Karacabey (Bur	1.26	335	*e*PN	Pn	19 25 16.9	-0.2
KCTX	Karacabey (Bur	1.26	335	*e*Pn	Pn	19 25 16.9	-0.2
BORA	Eskisehir	1.32	55	P	Pg	19 25 19.1	+0.4
BORA	Eskisehir	1.32	55	*i* P	Pg	19 25 19.1	+0.4
ARMT	Armutlu	1.45	354	*e*PN	Pn	19 25 19.7	+0.1
ARMT	Armutlu	1.45	354	*e*Pn	Pn	19 25 19.7	+0.1

NEIC ***22*** *19:29:21.4, 50°.97N×178°.36W, h40km, mb4.8/151, ML4.9(AEIC), After AEIC.*
GCMT ***22*** *19:29:21.4±0.4, 51°.21N×178°.12W, h37km, MW5.0/81, Moment Tensor Solution. s42,c58; s81,c120; Duration: 0 Moment tensor: Scale 10^16Nm; Mm3.57±.18; Mθθ-3.29±.12; Mφφ-0.28±.11; Mrθ1.51±.12; Mrφ-1.24±.07; Mθφ1.73±.10; Best double couple: Mo4.31600×10^16 NP1:φs56.00000°, δ61.00000°, λ75.00000°. NP2: φs264.00000°, δ32.00000°, λ115.00000°. Principal axes: T 4.3640, Plg70.0000°, Azm293.0000°; N -0.0980, Plg13.0000°, Azm63.0000°; P -4.2680, Plg15.0000°, Azm156.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
ISCJB ***22*** *19:29:23.9±0.4, 51°.39N±0°.04×178°.30W±0°.02, h61km±3km, mb4.8/191 Error ellipse: s-maj=6.8km s-min=2.2km az=179.5*
MOS ***22*** *19:29:23.0±1.0, 51°.45N×178°.30W, h50km, mb4.8/61, MS4.1/21, Error ellipse: s-maj=6.6km s-min=5.4km az=84.4*
IDC ***22*** *19:29:24.6±1.9, 51°.43N×178°.32W, h52km±16km, mb4.2/37, mb1 4.3/40, mb1mx4.2/72, mbtmp4.4/40, ML4.7/2, MS4.1/40, Ms1 4.1/40, ms1mx4.0/53, Error ellipse: s-maj=14.1km s-min=8.7km az=170.0*
ISC 22 19:29:24.5±0.6, 51°.28N±0°.08×178°.33W±0°.03, h54km±3km, h54km:pP-P, n675, σ1s07/683, mb4.8/193, MS4.1/51, 32C-28D, Andreanof Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CESW	Semis' Southwe	1.46	296	P	Pn	19 29 47.7	-0.8
AMKA	Amchitka	1.49	275	P	Pn	19 29 46.7	-2.2
AMKA				S	Sn	19 30 06.4	-0.9
CEAP	Semis' Anvil P	1.50	300	P	Pn	19 29 48.6	-0.5
CETU	Semis' Tuman	1.52	298	P	Pn	19 29 48.9	-0.5
LSSE	Little Sitkin	2.04	290	P	Pn	19 29 56.0	-0.5
KOWE	Korovin West	2.76	65	P	Pn	19 30 06.1	-0.1
KOKL	Mount Kliuchef	2.77	66	P	Pn	19 30 07.0	+0.5
KOFP	Korovin Flat P	2.81	67	P	Pn	19 30 06.9	-0.1
SMY	Shemya	4.90	290	P	Pn	19 30 35.3	-0.3
SMY				S	Sn	19 31 32.5	+1.6
SMY	Shemya	4.90	290	P	Pn	19 30 35.3	-0.3
SMY				S	Sn	19 31 32.5	+1.6
NIKH	Nikolski High	6.08	70	P	Pn	19 30 51.5	-0.2
NIKH				S	Sn	19 32 03.9	+4.1
OKTU	Okmok Mt. Tuli	6.65	67	P	Pn	19 31 01.1	+1.5
MSOM	Makushin Julie	7.39	65	P	Pn	19 31 10.7	+1.1
MSOM	Makushin Julie	7.39	65	P	Pn	19 31 10.7	+1.1
MTBL	Makushin Table	7.59	65	P	Pn	19 31 14.2	+1.8
AKRB	Akutan Reef Bi	7.98	64	P	Pn	19 31 19.4	+1.7
ZRO	Akutan Zero	8.02	65	P	Pn	19 31 19.3	+1.0
AKGG	Akutan Green G	8.04	64	P	Pn	19 31 20.1	+1.6
AKUT	Akutan	8.15	65	*e*Pn	Pn	19 31 20.8	+0.8
WEBT	Westdahl Beart	8.85	63	P	Pn	19 31 30.9	+1.4
WESN	West Dahl Nort	8.93	63	P	Pn	19 31 31.7	+0.9
SSLW	Shishaldin Wes	9.25	62	P	Pn	19 31 36.2	+1.1
FALS	False Pass	9.66	62	*e*Pn	Pn	19 31 41.1	+0.4
FALS				*e*Sn	Sn	19 33 27.1	-0.6
PET	Petropavlovsk	14.23	286	*e*P	Pn	19 32 42.3	-0.6
PET				*e*S	Sn	19 35 19.3	+0.3
PET				MLR	MLR		
	comp=Z,1μm,20.0s						
PET				MLR	MLR		
	comp=Z,900nm,19.0s						
PETK	Petropavlovsk-	14.80	286	P	Pn	19 32 51.3	+0.9
	comp=Z,0.3nm,0.3s,baz=92,slow=18,SNR=6.0						
PETK				LR	LR	19 38 18.9	
	comp=Z,1μm,21.8s,baz=92,slow=36						
TNA	Tin City	15.29	17	*e*Pn	P	19 33 01.9	+1.4
	comp=Z,73nm,1.6s						
OHAK	Old Harbor	15.74	58	*e*Pn	Pn	19 32 58.1	-4.3
	comp=Z,60nm,1.0s						
SVW2	Sparrevohn	15.94	43	*e*Pn	Pn	19 33 04.4	-0.6
	comp=Z,20nm,1.1s						
SKR	Severo-Kuril's	16.08	278	*e*P	Pn	19 33 08.0	+1.2
KDAK	Kodiak Island	16.23	56	*e*P	Pn	19 33 05.1	-3.6
KDAK				pmax	pmax		
	comp=Z,33nm,0.6s						
KDAK	Kodiak Island	16.23	56	*e*Pn	Pn	19 33 05.1	-3.6
	comp=Z,33nm,0.6s						
TT01	Tatalina	16.70	37	*e*Pn	P	19 33 15.5	-0.5
TTA	Tatalina	16.71	37	*e*P	Pn	19 33 15.2	+0.4
TTA				pmax	pmax		
	comp=Z,36nm,1.1s						
TTA	Tatalina	16.71	37	*e*Pn	Pn	19 33 15.2	+0.4
	comp=Z,36nm,1.1s						
RSO	Redoubt South	16.94	47	*e*Pn	Pn	19 33 17.9	+0.2
SPU	Mount Spurr	17.53	45	*e*Pn	P	19 33 25.3	0.0
BRLK	Bradley Lake	17.59	50	*e*Pn	Pn	19 33 24.7	-1.0
	comp=Z,30nm,1.2s						
PPLA	Purkeypile	18.20	40	*e*P	Pn	19 33 34.3	+1.2
	comp=Z,114nm,1.5s						
SEW	Seward	18.38	50	*e*P	P	19 33 33.2	-1.4
	comp=Z,39nm,0.8s						
BILL	Biiibino	18.42	342⇑	*e*P	Pn	19 33 37.5	+1.9
BILL				MLR	MLR		
	comp=Z,1μm,21.0s						
BILL	Biiibino	18.42	342	*e*P	Pn	19 33 35.6	0.0
	comp=Z,19nm,0.8s						
CAST	Castle Rocks	18.49	39	*e*P	P	19 33 36.0	+0.2
	comp=Z,32nm,0.6s						
RC01	Rabbit Creek A	18.55	47	*e*P	Pn	19 33 37.4	+0.3
	comp=Z,29nm,1.2s						
PMR	Palmer	18.99	46	*e*P	P	19 33 41.6	+0.4
PMR				pmax	pmax		
	comp=Z,27nm,1.4s						
PMR	Palmer	18.99	46	*e*P	P	19 33 41.6	+0.4
	comp=Z,27nm,1.4s						
KTH	Kantishna Hill	19.02	39	*e*P	P	19 33 41.3	-0.3
	comp=Z,67nm,0.9s						
TRF	Thorofare Moun	19.22	40	*e*P	P	19 33 43.8	-0.2
	comp=Z,108nm,1.1s						
BPAW	Bear Paw Mtn.	19.25	38	*e*P	P	19 33 44.0	-0.2
	comp=Z,29nm,0.6s						
MA2	Magadan	19.25	308	P	P	19 33 44.5	+0.3
	comp=Z,0.3nm,0.3s,baz=139,slow=9.6,SNR=4.1						
MA2				LR	LR	19 40 41.3	
	comp=Z,1μm,19.9s,baz=124,slow=35						
SML	Sawmill	19.42	46	*e*P	P	19 33 44.5	-1.5
SML				pmax	pmax		
	comp=Z,28nm,0.9s						
SML	Sawmill	19.42	46	*e*P	P	19 33 44.5	-1.5
	comp=Z,28nm,0.9s						
SEY	Seymchan	19.52	318	P	P	19 33 47.4	+0.4
	comp=Z,0.7nm,0.3s,baz=91,slow=11,SNR=17						
SEY	Seymchan	19.52	318⇑	*i* P	Pn	19 33 49.3	+0.6
RND	Reindeer	19.79	41	*e*P	P	19 33 48.6	-1.5
RND				pmax	pmax		
	comp=Z,28nm,0.9s						
RND	Reindeer	19.79	41	*e*P	P	19 33 48.6	-1.5
	comp=Z,28nm,0.9s						
MLY	Manley	19.81	35	*e*P	P	19 33 50.1	-0.2
	comp=Z,49nm,1.0s						
MLY				*e*ScP	ScP	19 41 39.9	+2.9
BWN	Browne	19.87	38	*e*P	P	19 33 48.4	-2.5
	comp=Z,159nm,1.4s						
SCM	Sheep Creek Mo	19.88	46	*e*P	P	19 33 49.2	-1.9
SCM				pmax	pmax		
	comp=Z,27nm,0.9s						
SCM	Sheep Creek Mo	19.88	46	*e*P	P	19 33 49.2	-1.9
	comp=Z,27nm,0.9s						
MCK	McKinley	19.89	40	*e*P	P	19 33 49.9	-1.2
MCK				pmax	pmax		
	comp=Z,25nm,0.7s						
MCK	McKinley	19.89	40	*e*P	P	19 33 49.9	-1.2
	comp=Z,24nm,0.7s						
EYAK	Cordova Ski Ar	20.28	50	*e*P	Pn	19 33 57.0	-0.6
	comp=Z,30nm,1.2s						
DIV	Divide	20.40	49	*e*P	Pn	19 33 58.6	-0.7
	comp=Z,19nm,0.6s						
KLU	Klutina	20.43	47	*e*P	P	19 33 58.1	+1.1
	comp=Z,21nm,0.7s						
WRH	Wood River Hil	20.54	38	*e*P	P	19 33 57.1	-1.0
	comp=Z,17nm,0.6s						
COLA	College	20.81	38⇓	*i* P	P	19 34 01.5	+0.5
COLA				pmax	pmax		
	comp=Z,24nm,0.9s						
COLA	College	20.81	38	*e*P	P	19 34 01.8	+0.8
	comp=Z,29nm,0.6s						
BMRM	Bremner River	20.92	49	*e*P	Pn	19 34 04.1	-1.2
	comp=Z,32nm,0.8s						
HDA	Harding Lake	20.97	39	*e*P	Pn	19 34 05.0	-0.8
	comp=Z,26nm,1.1s						
PAX	Paxson	21.06	44	*e*P	P	19 34 02.9	-0.9
PAX				pmax	pmax		
	comp=Z,50nm,1.2s						
PAX	Paxson	21.06	44	*e*P	P	19 34 02.9	-0.9
	comp=Z,50nm,1.2s						
IL1	Eielson Array	21.14	38	*e*P	P	19 34 04.2	-0.3
ILAR	Eielson Array	21.14	38	P	P	19 34 02.8	-1.8
	comp=Z,1.7nm,0.3s,baz=238,slow=9.5,SNR=43						
ILAR				PcP	PcP	19 38 07.5	-0.7
	comp=Z,1.3nm,0.7s,baz=283,slow=3.3,SNR=6.2						
ILAR				ScP	ScP	19 41 40.8	+0.6
	comp=Z,0.5nm,0.6s,baz=279,slow=3.4,SNR=6.1						
ILAR				LR	LR	19 43 15.5	
	comp=Z,654nm,19.7s,baz=250,slow=40						
ILB	Eielson Array	21.14	38	*e*P	P	19 34 04.5	-0.1
COLD	Coldfoot	21.19	31	*e*P	P	19 34 05.8	+0.7
	comp=Z,37nm,1.3s						
MENT	Mentasta	21.81	44	*e*P	P	19 34 10.3	-1.5
	comp=Z,16nm,0.7s						
DOT	Dot Lake	21.88	42	*e*P	P	19 34 10.6	-1.9
	comp=Z,37nm,0.7s						
FYU	Fort Yukon	22.54	35	*e*P	P	19 34 19.0	-0.5
	comp=Z,22nm,0.8s						
EGAK	Eagle	23.43	41	*e*P	P	19 34 27.0	-1.5
	comp=Z,128nm,1.9s						
DAWY	Dawson	23.98	43	*e*P	P	19 34 32.5	-1.1
	comp=Z,32nm,1.3s						
TYV	Tymovskoe	24.33	284	*e*P	P	19 34 38.8	+2.0
TYV				pmax	pmax		
	comp=Z,35nm,1.0s						
NKL	Nikolayevsk	24.95	290	*e*P	P	19 34 40.0	-2.4
NKL				MLR	MLR		
	comp=E,400nm,16.0s						
NKL				MLR	MLR		
	comp=Z,500nm,16.0s						
YUK	Yuzh-Kuril'sk	24.99	267⇑	*e*P	P	19 34 44.7	+1.8
YSS	Yuzh-Sakhalins	25.62	276⇑	*i* P	P	19 34 50.0	+1.4
YSS				*e*		19 34 58.3	
YSS				*e*		19 39 21.0	
YSS				pmax	pmax		
	comp=Z,30nm,0.8s						
ASAJ	Asahikawa	27.00	270	P	P	19 35 01.4	+0.3
	comp=Z,11nm,0.9s,baz=48,slow=4.3,SNR=7.0						
INK	Inuvik	27.38	35	P	P	19 35 02.5	-1.7
	comp=Z,1.1nm,0.3s,baz=235,slow=6.6,SNR=22						
INK				PcP	PcP	19 38 22.1	+0.5
	comp=Z,2.0nm,0.5s,baz=294,slow=2.4,SNR=7.5						
INK	Inuvik	27.38	35	*e*P	P	19 35 03.5	-0.7
INK						19 38 22.1	
INK				pmax	pmax		
	comp=Z,7.0nm,1.0s						
INK	Inuvik	27.38	35	*e*P	P	19 35 03.5	-0.7
	comp=Z,7.2nm,1.0s						
INK				PcP	PcP	19 38 22.1	+0.5
DLBC	Dease Lake	28.17	56	LR	LR	19 47 19.7	
	comp=Z,269nm,21.4s,baz=325,slow=38						
YAK	Yakutsk	29.71	311	LR	LR	19 47 32.8	
	comp=Z,796nm,18.8s,baz=103,slow=37						
HABR	Khabarovsk	29.79	283	*e*P	P	19 35 24.9	-0.9
HABR				*e*PP	pP	19 35 40.0	+0.5
HABR				*e*SP	sP	19 35 47.3	+1.4
HABR				*e*		19 36 23.3	
HABR				*e*		19 38 26.7	
HABR				*e*S	S	19 40 18.0	-0.2
HABR				*e*SS	sS	19 40 44.4	+2.9
HABR				*e*SS	SnSn	19 41 55.3	+3.1
HABR				*e*		19 45 58.6	
HABR				pmax	pmax		
	comp=N,16nm,1.8s						
HABR				pmax	pmax		
	comp=E,23nm,1.9s						
HABR				pmax	pmax		
	comp=Z,14nm,1.8s						
HABR				MLR	MLR		
	comp=Z,262nm,19.0s						
BBB	Bella Bella	30.61	68	LR	LR	19 47 31.1	
	comp=Z,224nm,18.6s,baz=278,slow=36						
TIXI	Tiksi	30.87	331	P	P	19 35 34.2	-0.9
	comp=Z,1.4nm,0.4s,baz=127,slow=12,SNR=24						
TIXI				PcP	PcP	19 38 29.5	-0.9
	comp=Z,5.2nm,0.8s,baz=93,slow=2.2,SNR=16						
TIXI				ScP	ScP	19 42 07.6	-0.7
	comp=Z,1.6nm,0.8s,baz=105,slow=5.2,SNR=7.8						
TIXI	Tiksi	30.87	331⇑	*e*P	P	19 35 36.1	+0.9
TIXI				pmax	pmax		
	comp=Z,10.0nm,3.2s						
TIXI	Tiksi	30.87	331	*e*P	P	19 35 36.0	+0.9
	comp=Z,16nm,2.0s						
TIXI				*e*PcP	PcP	19 38 29.6	-0.9
TIXI				*e*ScP	ScP	19 42 10.6	+2.3
KLR	Kul'dur	31.49	286	P	P	19 35 40.9	0.0
	comp=Z,17nm,0.5s,baz=66,slow=7.2,

comp=Z,4.4nm,0.7s
RCM Mount Rainier- 36.57 74 P **P 19 36 27.1 +1.8**
F04A Amboy 36.58 76 *e*P **P 19 36 26.5 +1.5**
comp=Z,12nm,0.6s
I03D Drain, OR 37.15 80 P **P 19 36 31.3 +1.6**
baz=301
B08A Colville Reser 37.29 71 *e*P **P 19 36 32.1 +1.0**
comp=Z,70nm,1.8s
H04A Detroit Lake 37.35 78 *e*P **P 19 36 33.1 +1.6**
comp=Z,21nm,0.9s
G05D Wamic, OR 37.60 76 P **P 19 36 35.1 +1.4**
baz=300
BPO Bald Peter 37.67 77 P **P 19 36 36.0 +1.5**
I04A Tendick Farm, 37.67 79 P **P 19 36 35.4 +1.1**
baz=301,SNR=9.2
I05D Terrebonne, OR 38.05 78 P **P 19 36 39.0 +1.5**
baz=301
D08A Wollman Farm, 38.15 72 *e*P **P 19 36 39.8 +1.6**
comp=Z,61nm,1.6s
JCJ Chichijima 38.31 246 LR LR 19 49 48.0
comp=Z,181nm,21.5s,baz=44,slow=32
YBH Yreka Blue Hor 38.60 82 P **P 19 36 42.5 +0.3**
comp=Z,3.2nm,0.7s,baz=270,slow=4.8,SNR=6.4
YBH Yreka Blue Hor 38.60 82 *e*P **P 19 36 43.9 +1.7**
YBH pmax pmax
comp=Z,6.0nm,0.9s
YBH Yreka Blue Hor 38.60 82 *e*P **P 19 36 43.9 +1.7**
comp=Z,5.9nm,0.9s
NEW Newport 38.64 70 P **P 19 36 42.7 +0.3**
comp=Z,9.4nm,0.7s,baz=292,slow=7.9,SNR=12
NEW Newport 38.64 70 P **P 19 36 42.7 +0.3**
baz=298,SNR=9.1
NEW Newport 38.64 70 *e*P **P 19 36 42.8 +0.3**
NEW pmax pmax
comp=Z,69nm,1.8s
NEW Newport 38.64 70 *e*P **P 19 36 42.8 +0.3**
comp=Z,69nm,1.8s
J05D Fort Rock, OR 38.67 79 P **P 19 36 44.5 +1.7**
baz=302,SNR=8.0
M04C Macdoel 39.12 81 P **P 19 36 47.8 +1.3**
baz=304,SNR=5.5
K05A Summer Lake 39.18 79 *e*P **P 19 36 48.9 +1.7**
comp=Z,24nm,1.1s
F10A Beach Ranch, E 39.70 73 *e*P **P 19 36 55.8 +4.4**
comp=Z,24nm,1.6s
KSRS Korea Array 39.94 271 P **P 19 36 54.4 +1.2**
comp=Z,2.6nm,0.6s,baz=58,slow=7.9,SNR=14
KS01 Wonju Array Si 39.94 271 *e*P **P 19 36 53.6 +0.4**
KSAR Wonju Array Be 39.97 271 P **P 19 36 54.4 +0.9**
KSAR Wonju Array Be 39.97 271 P **P 19 36 54.4 +0.9**
O03D Paynes Creek 39.98 83 P **P 19 36 54.9 +1.1**
baz=305
MOD Modoc Plateau 40.00 80 *e*P **P 19 36 55.1 +1.1**
comp=Z,8.2nm,0.9s
BSMT Bassoo Peak 40.21 69 P **P 19 36 56.0 +0.3**
BLMT Blacktail Mown 40.38 69 *e*P **P 19 36 57.4 +0.3**
JTMT Jette 40.56 69 *e*P **P 19 36 59.1 +0.6**
YBMT Yellow Bay 40.66 69 *e*P **P 19 36 59.7 +0.4**
WVOR Wild Horse Val 40.73 78 *e*P **P 19 37 00.9 +0.9**
WVOR pmax pmax
comp=Z,9.0nm,0.8s
WVOR Wild Horse Val 40.73 78 *e*P **P 19 37 00.8 +0.9**
comp=Z,9.1nm,0.8s
SWMT Swartz Lake 40.85 69 *e*P **P 19 37 00.7 -0.1**
JNU Nakatsue 40.85 264 P **P 19 37 01.7 +0.8**
comp=Z,15nm,0.8s,baz=58,slow=4.8,SNR=6.6
JNU Nakatsue 40.85 264 *e*P **P 19 37 02.0 +1.1**
comp=Z,28nm,1.0s
TJN Taejon 40.95 270⇑*e*P **P 19 37 02.3 +0.7**
MSO Missoula 41.22 70 P **P 19 37 04.1 +0.2**
baz=300,SNR=9.4
MSO Missoula 41.22 70 *e*P **P 19 37 04.3 +0.4**
comp=Z,55nm,1.6s
CHMT Chamberlain Mo 41.59 69 *e*P **P 19 37 07.0 0.0**
PAHR Pah Rah Range 41.83 82 *e*P **P 19 37 10.2 +1.1**
comp=Z,10.0nm,0.9s
LRM Limekiln Ridge 42.63 70 *e*P **P 19 37 15.8 +0.2**
HLID Hailey 42.68 74 P **P 19 37 16.7 +0.7**
baz=303,SNR=8.4
HLID Hailey 42.68 74 *e*P **P 19 37 16.9 +1.0**
comp=Z,13nm,1.1s
BMN Battle Mountai 42.75 80 *e*P **P 19 37 17.6 +1.1**
BMN pmax pmax
comp=Z,4.0nm,0.8s
BMN Battle Mountai 42.75 80 *e*P **P 19 37 17.6 +1.1**
comp=Z,4.0nm,0.8s
DLMT Dillon 42.79 71 *e*P **P 19 37 18.4 +1.7**
comp=Z,8.6nm,1.3s
MCMT McKenzie Canyo 42.93 72 *e*P **P 19 37 18.0 0.0**
BOZ Bozeman (W) 43.21 70 P **P 19 37 20.4 +0.3**
baz=302,SNR=22
BOZ Bozeman (W) 43.21 70 *e*P **P 19 37 20.4 +0.3**
BOZ pmax pmax
comp=Z,81nm,1.9s
BOZ Bozeman (W) 43.21 70 *e*P **P 19 37 20.4 +0.3**
comp=Z,81nm,1.9s
NV01 Mina Array Sit 43.27 83 *e*P **P 19 37 21.3 +0.5**
NVAR Mina Array Bea 43.27 83 P **P 19 37 21.8 +1.0**
comp=Z,3.1nm,1.0s,baz=303,slow=7.5,SNR=11
NVAR LR LR 19 52 11.6
comp=Z,162nm,21.5s,baz=276,slow=32
NV11 Mina Array Sit 43.36 83 *e*P **P 19 37 22.5 +1.1**
comp=Z,6.3nm,0.9s
QLMT Earthquake Lak 43.77 71 *e*P **P 19 37 25.4 +0.7**
ELK Elko 43.79 78 *e*P **P 19 37 23.6 -1.3**
ELK pmax pmax
comp=Z,7.0nm,0.9s
ELK Elko 43.79 78 *e*P **P 19 37 23.6 -1.3**
comp=Z,6.5nm,0.9s
FFC Flin Flon 43.96 54 *e*PP PP 19 39 11.0 +2.3
YMC Maple Creek 44.06 71 *e*P **P 19 37 27.5 +0.4**
YMR Madison River 44.14 71 *e*P **P 19 37 29.0 +1.3**
comp=Z,29nm,1.2s
YHH Holmes Hill 44.14 71 *e*P **P 19 37 28.0 +0.2**
GCMT Greycliff 44.29 69 *e*P **P 19 37 29.4 +0.6**
YFT Old Faithful 44.34 71 *e*P **P 19 37 32.7 +3.4**
comp=Z,10nm,0.8s
H17A Grant Village 44.52 71 P **P 19 37 31.9 +1.2**
baz=304,SNR=17
H17A Grant Village 44.52 71 *e*P **P 19 37 32.0 +1.2**
comp=Z,16nm,0.8s
LKWY Lake 44.53 71 *e*P **P 19 37 32.7 +1.8**
LKWY pmax pmax
comp=Z,10.0nm,0.8s
LKWY Lake 44.53 71 *e*P **P 19 37 32.7 +1.8**
comp=Z,10.0nm,0.8s
IMW Indian Meadow 44.59 72 *e*P **P 19 37 32.3 +1.0**
comp=Z,6.6nm,1.0s
FLWY Flagg Ranch 44.62 72 *e*P **P 19 37 32.9 +1.3**
comp=Z,31nm,1.4s
NRIK Noril'sk 44.65 330 LR LR 19 56 13.7
comp=Z,193nm,21.9s,baz=75,slow=36
FXWY Fox Creek 44.68 72 *e*P **P 19 37 33.0 +0.9**
comp=Z,14nm,1.7s
HVU Hansel Valley 44.69 75 *e*P **P 19 37 32.8 +0.8**
HVU pmax pmax
comp=Z,9.0nm,0.7s
HVU Hansel Valley 44.69 75 *e*P **P 19 37 32.8 +0.8**
comp=Z,8.8nm,0.7s
MOOW Moose Ponds 44.78 72 *e*P **P 19 37 33.6 +0.7**
MOOW epP **pP 19 37 42.0 -5.1**
TPAW Teton Pass 44.81 72 *e*P **P 19 37 34.9 +1.8**
comp=Z,24nm,1.6s
RLMT Red Lodge 44.89 70 P **P 19 37 34.3 +0.6**
baz=304,SNR=12
RLMT Red Lodge 44.89 70 *e*P **P 19 37 34.0 +0.4**
comp=Z,43nm,1.4s
REDW Red Top Meadow 44.94 73 *e*P **P 19 37 35.8 +1.7**
comp=Z,32nm,1.8s
LOHW Long Hollow 44.95 72 *e*P **P 19 37 34.9 +0.7**
comp=Z,24nm,1.8s
R11A Troy Canyon, C 45.01 81 P **P 19 37 35.2 +0.5**
baz=308,SNR=7.0
R11A Troy Canyon, C 45.01 81 *e*P **P 19 37 35.0 +0.3**
comp=Z,5.6nm,0.9s
BGU Big Grassy Mou 45.04 77 *e*P **P 19 37 35.7 +0.9**
comp=Z,25nm,1.7s
TPNV Topopah Spring 45.47 83 P **P 19 37 39.1 +0.8**
baz=309,SNR=6.9
TPNV Topopah Spring 45.47 83 *e*P **P 19 37 39.1 +0.8**
TPNV pmax pmax
comp=Z,12nm,0.8s
TPNV Topopah Spring 45.47 83 *e*P **P 19 37 39.1 +0.8**
comp=Z,12nm,0.8s
HWUT Hardware Ranch 45.53 75 *e*P **P 19 37 39.3 +0.6**
comp=Z,15nm,1.5s
DUG Dugway, Tooele 45.60 77 P **P 19 37 40.2 +0.8**
baz=307,SNR=14
DUG Dugway, Tooele 45.60 77 *e*P **P 19 37 40.1 +0.8**
DUG pmax pmax
comp=Z,45nm,1.5s
DUG Dugway, Tooele 45.60 77 *e*P **P 19 37 40.1 +0.8**
comp=Z,45nm,1.5s
BJI Beijing 45.69 282 P **P 19 37 39.4 -0.3**
BJI S **S 19 44 17.8 -0.8**
BJI pmax pmax
comp=Z,11nm,0.8s
BJI pmax pmax
comp=Z,210nm,4.4s
BJI LR LR
comp=N,170nm,26.9s
BJI LR LR
comp=E,210nm,26.2s
BJI LR LR
comp=Z,330nm,31.6s
LAO LASA Array 45.79 66 P **P 19 37 40.9 +0.3**
baz=303
FCC Fort Churchill 45.82 46 *e*P **P 19 37 39.9 -0.6**
FCC pmax pmax
comp=Z,22nm,1.8s
FCC Fort Churchill 45.82 46 *e*P **P 19 37 39.9 -0.6**
comp=Z,22nm,1.8s
PSUT Pine Spring 45.97 80 *e*P **P 19 37 45.7 +3.5**
comp=Z,6.5nm,0.8s
BW06 Boulder Array 46.06 72 P **P 19 37 43.2 +0.2**
baz=305,SNR=15
BW06 Boulder Array 46.06 72 *e*P **P 19 37 43.0 0.0**
PD31 Pinedale Array 46.06 72 *e*P **P 19 37 43.1 +0.2**
PDAR Pinedale Array 46.06 72 P **P 19 37 43.1 +0.2**
comp=Z,5.9nm,0.5s,baz=319,slow=2.5,SNR=43
PDAR LR LR 19 54 29.8
comp=Z,215nm,20.0s,baz=310,slow=33
SHOC Shoshone, Teco 46.11 84 P **P 19 37 44.0 +0.8**
baz=309
GSC Goldstone, Bar 46.16 85 P **P 19 37 44.1 +0.5**
baz=310
GSC Goldstone, Bar 46.16 85 *e*P **P 19 37 44.3 +0.6**
GSC pmax pmax
comp=Z,11nm,1.0s
GSC Goldstone, Bar 46.16 85 *e*P **P 19 37 44.3 +0.6**
comp=Z,11nm,1.0s
JLU Jordanelle 46.19 76 *e*P **P 19 37 45.0 +0.9**
comp=Z,16nm,1.2s
NLU North Lily Min 46.20 77 *e*P **P 19 37 44.7 +0.7**
comp=Z,11nm,1.1s
TLY Talaya 46.37 303 P **P 19 37 44.8 -0.2**
comp=Z,4.3nm,0.7s,baz=262,slow=6.6,SNR=3.3
TLY LR LR 19 57 40.8
comp=Z,215nm,19.3s,baz=46,slow=37
ULN Ulaanbaatar 46.57 297*c i*P **P 19 37 47.2 +0.4**
ULN pmax pmax
comp=Z,9.0nm,1.2s
ULN Ulaanbaatar 46.57 297 *e*P **P 19 37 46.8 0.0**
comp=Z,4.4nm,0.7s
SONA1 Songino Array 46.95 297 *e*P **P 19 37 50.2 +0.5**
SONM Songino Array 46.96 297 P **P 19 37 50.0 +0.2**
comp=Z,2.7nm,0.6s,baz=61,slow=8.1,SNR=15
SONM PcP **PcP 19 39 21.1 -0.3**
comp=Z,1.1nm,0.4s,baz=75,slow=1.8,SNR=5.9
SONM LR LR 19 58 29.7
comp=Z,702nm,19.9s,baz=74,slow=37
MSU Marysvale 47.02 79 *e*P **P 19 37 51.5 +1.0**
MSU Marysvale 47.02 79 *e*P **P 19 37 51.5 +1.0**
TMUT Trail Mountain 47.13 77 *e*P **P 19 37 52.5 +1.1**
comp=Z,20nm,1.1s
GMRC Granite Mounta 47.21 85 P **P 19 37 51.4 -0.5**
baz=310
ZAK Zakamensk 47.26 301 *e*P P 19 37 46.5 -5.6
ZAK pmax pmax
comp=Z,4.0nm,1.7s
LCMT Little Creek M 47.30 81 *e*P **P 19 37 53.7 +1.2**
comp=Z,8.8nm,0.9s
MTPU Mount Pierson 47.31 79 *e*P **P 19 37 54.2 +1.3**
comp=Z,23nm,1.6s
P17A Butcher Ranch, 47.31 77 *e*P **P 19 37 53.7 +1.0**
comp=Z,8.8nm,0.7s
Q16A Castle Valley 47.39 78 *e*P **P 19 37 54.2 +0.9**
comp=Z,44nm,1.7s
TIA Tai'an 47.47 278 *e*P **P 19 37 53.9 +0.1**
TIA pmax pmax
comp=Z,20nm,0.8s
C26A Wahner Farm, P 47.50 63 P **P 19 37 53.6 -0.3**
baz=304
E25A Miller Ranch, 47.51 65 P **P 19 37 54.2 +0.2**
baz=304
P18A Preston Nutter 47.52 76 *e*P **P 19 37 55.5 +1.0**
comp=Z,17nm,1.1s
SRU San Rafael Swe 47.66 77 *e*P **P 19 37 56.3 +0.8**
SRU pmax pmax
comp=Z,13nm,0.8s
SRU San Rafael Swe 47.66 77 *e*P **P 19 37 56.3 +0.8**
comp=Z,13nm,0.8s
GUMO Guam 47.88 232 LR LR 19 56 03.1
comp=Z,77nm,20.6s,baz=64,slow=33
K22A Casper 47.94 71 P **P 19 37 57.3 -0.2**
baz=306
K22A Casper 47.94 71 *e*P **P 19 37 57.3 -0.2**
comp=Z,17nm,1.3s
HHC Hu-ho-hao-te 48.00 286 *e*P **P 19 37 58.9 +0.9**
HHC pP pP 19 38 10.0 -2.3
HHC S **S 19 44 56.0 +4.1**
HHC sS sS 19 45 20.3 +4.2
HHC pmax pmax
comp=Z,31nm,1.1s
HHC pmax pmax
comp=Z,140nm,6.0s
HHC LR LR
comp=N,290nm,15.5s
HHC LR LR
comp=E,380nm,15.8s
HHC LR LR
comp=Z,440nm,15.2s
U15A North Rim 48.26 81 *e*P **P 19 38 01.2 +1.1**
O20A White River Ci 48.42 74 P **P 19 38 01.2 -0.2**
baz=308,SNR=11
O20A White River Ci 48.42 74 *e*P **P 19 38 01.1 -0.2**
comp=Z,17nm,0.6s
RSSD Black Hills 48.52 68 P **P 19 38 01.4 -0.6**
baz=306
RSSD Black Hills 48.52 68 *e*P **P 19 38 01.5 -0.6**
RSSD pmax pmax
comp=Z,43nm,1.8s
RSSD Black Hills 48.52 68 *e*P **P 19 38 01.5 -0.6**
comp=Z,43nm,1.8s
G26A Maurine 48.66 66 P **P 19 38 02.7 -0.2**
baz=306,SNR=5.6
D28A Regan 48.71 63 P **P 19 38 03.1 -0.1**
baz=305
I25A Rochford 48.76 68 P **P 19 38 03.3 -0.6**
baz=306,SNR=5.1
MDND Maddock 48.87 61 P **P 19 38 03.6 -0.8**
baz=305
MDND Maddock 48.87 61 *e*P **P 19 38 04.5 +0.1**
comp=Z,19nm,0.8s
PV09 Paradox Valley 48.90 77 *e*P **P 19 38 05.6 +0.5**
H26A Fairpoint 48.96 66 P **P 19 38 04.7 -0.5**
baz=306
G27A Dupree 49.00 65 P **P 19 38 05.1 -0.4**
baz=306,SNR=5.2
PV10 Paradox Valley 49.03 77 *e*P **P 19 38 06.8 +0.7**
PV05 Paradox Valley 49.18 77 *e*P **P 19 38 07.8 +0.6**
B30A Myrvik Farm, E 49.22 60 P **P 19 38 06.2 -0.9**
baz=305,SNR=6.7
N23A Red Feather La 49.34 72 P **P 19 38 08.7 +0.3**
baz=308
N23A Red Feather La 49.34 72 *e*P **P 19 38 09.3 +0.9**
comp=Z,12nm,1.0s
WUAZ Wupatki 49.41 81 P **P 19 38 09.3 +0.4**
baz=310
WUAZ Wupatki 49.41 81 *e*P **P 19 38 09.9 +1.0**
comp=Z,8.8nm,0.8s
PV01 Paradox Valley 49.47 77 *e*P **P 19 38 09.3 -0.1**
ULM Lac du Bonnet 49.49 57 LR LR 19 58 50.9
comp=Z,214nm,21.9s,baz=298,slow=36
B31A Greenbush Farm 49.60 60 P **P 19 38 09.4 -0.6**
baz=305
SMCO Snowmass 49.78 75 *e*P **P 19 38 11.8 -0.2**
comp=Z,3.9nm,0.8s
C31A Landman Farms, 49.92 60 P **P 19 38 10.9 -1.5**
baz=306
X16A Lo Mia Camp, P 50.09 82 *e*P **P 19 38 10.2 -3.8**
comp=Z,5.7nm,1.0s
MVCO Mesa Verde 50.10 78 P **P 19 38 14.3 +0.1**
baz=310
MVCO Mesa Verde 50.10 78 *e*P **P 19 38 14.7 +0.5**
comp=Z,16nm,1.1s
ISCO Idaho Springs 50.22 73 P **P 19 38 15.3 +0.2**
baz=308
ISCO Idaho Springs 50.22 73 *e*P **P 19 38 15.8 +0.7**
ISCO pmax pmax
comp=Z,5.0nm,1.0s
ISCO Idaho Springs 50.22 73 *e*P **P 19 38 15.8 +0.7**
comp=Z,5.3nm,1.0s
I28A Midland 50.26 66 P **P 19 38 14.9 -0.1**
baz=307,SNR=7.9
SPITS Spitsbergen Ar 50.50 356 P **P 19 38 15.5 -0.9**
comp=Z,3.7nm,0.4s,baz=54,slow=6.3,SNR=43
SPITS PcP **PcP 19 39 33.6 +0.1**
comp=Z,2.1nm,0.5s,baz=104,slow=3.5,SNR=8.1
S22A 4UR Ranch, Cre 50.78 76 P **P 19 38 20.2 +0.8**
baz=310,SNR=11
S22A 4UR Ranch, Cre 50.78 76 *e*P **P 19 38 20.2 +0.8**
comp=Z,19nm,1.4s
Q24A Divide 51.02 74 P **P 19 38 21.0 -0.3**
baz=309
B34A Aery, Baudette 51.18 58 P **P 19 38 20.6 -1.2**
baz=306,SNR=8.1
SDCO Great Sand Dun 51.59 75 P **P 19 38 25.8 +0.4**
baz=310,SNR=9.4
SDCO Great Sand Dun 51.59 75 *e*P **P 19 38 26.0 +0.6**
comp=Z,29nm,1.8s
J30A Dallas 51.63 66 P **P 19 38 25.1 -0.3**
baz=308
D34A Park Rapids 51.73 60 P **P 19 38 25.1 -0.9**
baz=307
B35A Bob, Littlefor 51.74 58 P **P 19 38 25.1 -1.0**
baz=307
TUC Tucson 51.90 84 P **P 19 38 27.7 +0.2**
baz=312
TUC Tucson 51.90 84 *e*P **P 19 38 28.2 +0.6**
TUC pmax pmax
comp=Z,4.0nm,0.8s
TUC Tucson 51.90 84 *e*P **P 19 38 28.2 +0.6**
comp=Z,3.7nm,0.8s
K30A Basset 51.96 67 P **P 19 38 27.8 -0.1**
baz=308
C35A Jirik Farms, M 52.01 59 P **P 19 38 27.0 -1.1**
baz=307
H33A Prehn Over Nor 52.35 63 P **P 19 38 29.2 -1.5**
baz=308
KSCO Kaye Shedlock' 52.51 72 *e*P **P 19 38 32.8 +0.7**
comp=Z,35nm,1.4s
T25A Trinidad 52.64 75 P **P 19 38 33.9 +0.8**
baz=310,SNR=12
T25A Trinidad 52.64 75 *e*P **P 19 38 34.2 +1.0**
comp=Z,26nm,1.1s
L31A Butterfield Fa 52.72 67 P **P 19 38 33.7 +0.2**
baz=309
LAZ Ladron 52.77 79 *e*P **P 19 38 35.4 +1.3**
F35A Swanville 52.82 61 P **P 19 38 33.4 -0.7**
baz=308
ANMO Albuquerque 52.83 78 P **P 19 38 34.7 +0.2**
baz=311
ANMO Albuquerque 52.83 78*c i*P **P 19 38 34.7 +0.2**
ANMO pmax pmax
comp=Z,8.0nm,1.7s
ANMO Albuquerque 52.83 78 *e*P **P 19 38 35.1 +0.5**
comp=Z,16nm,1.8s
C37A Embarrass 52.95 58 P **P 19 38 34.3 -0.7**
baz=308
WHN Wuhan 52.96 274 ⇑P **P 19 38 35.3 0.0**
WHN S S 19 46 09.8 +9.2
WHN LR LR
comp=Z,420nm,19.6s
FRB Frobisher Bay 52.96 32 P **P 19 38 34.1 -0.8**
comp=Z,4.8nm,0.4s,baz=316,slow=9.7,SNR=15
ECSD EROS Data Cent 53.01 64 P **P 19 38 34.5 -1.1**
baz=309
ECSD EROS Data Cent 53.01 64 *e*P **P 19 38 34.2 -1.3**
comp=Z,9.9nm,1.2s
E36A McGregor 53.13 59 P **P 19 38 35.6 -0.8**
baz=308
LPM Los Pinos Moun 53.14 79 *e*P **P 19 38 37.9 +1.0**
EYMN Ely 53.18 57 P **P 19 38 35.8 -0.9**
baz=308
BNM Barren Site 53.25 79 *e*P **P 19 38 38.8 +1.1**
F36A Milaca 53.39 60 P **P 19 38 37.5 -0.8**
baz=309
H35A Sunnyside Ranc 53.40 62 P **P 19 38 37.5 -1.0**
baz=309
SSLB Suanglung 53.59 263 *e*P **P 19 38 39.5 -0.6**
comp=Z,13nm,0.9s
121A Cookes Peak, D 53.62 82 P **P 19 38 41.0 +0.6**
baz=312
XAN Xi'an 53.97 281 P **P 19 38 42.6 -0.2**
XAN pP pP 19 38 56.4 -1.0
XAN pmax pmax
comp=Z,9.0nm,1.0s
XAN pmax pmax
comp=Z,100nm,5.9s
C39A Grand Marais 53.98 56 P **P 19 38 40.7 -1.8**
baz=309
H36A Jessenland, He 53.98 62 P **P 19 38 41.1 -1.6**
baz=309
ZALV Zalesovo Beam 54.32 314 PcP **PcP 19 39 47.7 -0.6**
comp=Z,4.7nm,0.7s,baz=31,slow=3.7,SNR=14
ZALV LR LR 20 03 11.9
comp=Z,216nm,20.2s,baz=70,slow=37
O33A Hebron 54.80 68 P **P 19 38 47.9 -0.7**
baz=310
N34A Lincoln 54.93 67 P **P 19 38 49.2 -0.3**
baz=310
Q32A Meitler Ranch, 54.93 70 P **P 19 38 49.4 -0.3**
baz=311
R32A Long Quarter, 55.22 70 P **P 19 38 51.5 -0.2**
baz=311
O34A Beatrice 55.24 67 P **P 19 38 51.3 -0.5**
baz=311,SNR=8.8
Q33A Connelly Farm, 55.35 69 P **P 19 38 52.4 -0.3**
baz=311,SNR=13
N35A Tabor 55.41 66 P **P 19 38 52.8 -0.2**
baz=311,SNR=5.0
P34A Walnut Farm, R 55.58 68 P **P 19 38 53.9 -0.4**
baz=311
COWI Conover 55.60 57 *e*P **P 19 38 52.6 -1.7**
comp=Z,7.4nm,1.1s
O35A Humboldt 55.64 67 P **P 19 38 54.2 -0.6**
baz=311
L37A Phoenix Point, 55.66 64 P **P 19 38 54.4 -0.4**
baz=311
MNTX Cornudas Mount 55.67 81 P **P 19 38 55.3 +0.3**
baz=313,SNR=12
MNTX Cornudas Mount 55.67 81 *e*P **P 19 38 55.4 +0.3**
comp=Z,7.1nm,0.9s
LZH Lanzhou 55.70 287 ⇑P **P 19 38 56.5 +1.1**
LZH pP pP 19 39 02.6 -7.4
LZH sP sP 19 39 20.3 +4.1
LZH PP **PP 19 41 02.3 +2.5**
LZH *e*S **S 19 46 36.4 -1.4**
LZH sS sS 19 47 03.1 +0.7
R33A Olander Ranch, 55.72 70 P **P 19 38 55.1 -0.2**
baz=311
MSTX Muleshoe 55.74 77 P **P 19 38 55.4 -0.2**
baz=312
MSTX Muleshoe 55.74 77 *e*P **P 19 38 55.4 -0.2**
comp=Z,44nm,1.6s
N36A Muff Farm, Cla 55.83 66 P **P 19 38 55.6 -0.5**
baz=311
GTA Gaotai 55.88 292 ⇑P **P 19 38 57.0 +0.4**
GTA pP pP 19 39 09.6 -1.7
GTA sP sP 19 39 15.6 -1.9
GTA S **S 19 46 38.3 -1.7**
GTA sS sS 19 46 59.6 -5.1
GTA Gaotai 55.88 292 SS **SS 19 50 23.3 -2.5**
GTA pmax pmax
comp=Z,35nm,0.9s
GTA pmax pmax
comp=Z,170nm,5.5s
GTA LR LR
comp=N,280nm,17.6s
GTA LR LR
comp=E,270nm,18.1s
GTA LR LR
comp=Z,410nm,18.5s
T32A Huddler Ranch, 55.91 71 P **P 19 38 56.1 -0.6**
baz=312
Q34A Chapman 55.93 69 P **P 19 38 56.4 -0.4**
baz=311,SNR=12
KSU1 Kansas State U 56.00 68 P **P 19 38 56.7 -0.6**
baz=311
KSU1 Kansas State U 56.00 68 *e*P **P 19 38 57.0 -0.4**

comp=Z,16nm,0.8s
P35A Duane Minner, 56.06 67 P **P 19 38 57.3 -0.4**
baz=311
L38A Oak Wood Farm, 56.09 63 P **P 19 38 57.4 -0.5**
baz=311
R34A Isabella, Hill 56.16 69 P **P 19 38 58.2 -0.3**
baz=311,SNR=6.4
S33A Kaszmaul Farm, 56.18 70 P **P 19 38 58.3 -0.3**
baz=312,SNR=8.2
O36A Bolckow 56.27 66 P **P 19 38 58.6 -0.6**
baz=311
N37A Lee Faris, Mou 56.29 65 P **P 19 38 59.1 -0.2**
baz=311,SNR=5.6
P36A Good Intent, A 56.47 67 P **P 19 39 00.2 -0.5**
baz=311
N38A Joes South For 56.83 65 P **P 19 39 02.6 -0.6**
baz=311
P37A Lathrop 56.99 66 P **P 19 39 03.6 -0.7**
baz=312,SNR=8.0
T34A McClaskey Farm 57.05 70 P **P 19 39 04.4 -0.4**
baz=312,SNR=8.8
W32A Sentinel 57.10 73 P **P 19 39 05.0 -0.1**
baz=312
S35A Otter Creek Ra 57.12 69 P **P 19 39 04.6 -0.6**
baz=312,SNR=6.6
O38A Galt 57.14 65 P **P 19 39 04.8 -0.6**
baz=312
R36A Gordon, Harris 57.16 68 P **P 19 39 04.9 -0.7**
baz=312,SNR=6.9
N39A Derby Farms, D 57.18 64 P **P 19 39 04.9 -0.8**
baz=312
V33A Lossen Ranch, 57.20 72 P **P 19 39 05.5 -0.4**
baz=312
U34A Anderson Ranch 57.24 71 P **P 19 39 05.8 -0.3**
baz=312
U34A Anderson Ranch 57.24 71 *e*P **P 19 39 06.1 0.0**
comp=Z,20nm,0.8s
P38A Dawn 57.43 66 P **P 19 39 06.6 -0.9**
baz=312,SNR=8.0
S36A Lake Cedric, C 57.52 69 P **P 19 39 07.3 -0.7**
baz=312
T35A Sooner Cattle 57.52 70 P **P 19 39 07.6 -0.5**
baz=312
R37A Teagarden Farm 57.56 68 P **P 19 39 07.2 -1.2**
baz=312
WMOK Wichita Mounta 57.64 73 P **P 19 39 08.8 -0.2**
baz=313,SNR=13
WMOK Wichita Mounta 57.64 73 *e*P **P 19 39 09.0 0.0**
WMOK pmax pmax
comp=Z,6.0nm,0.7s
WMOK Wichita Mounta 57.64 73 *e*P **P 19 39 09.0 0.0**
comp=Z,6.0nm,0.7s
U35A Pawnee 57.76 71 P **P 19 39 09.1 -0.7**
baz=312
T36A Boggs Farm, Ca 57.80 70 P **P 19 39 08.6 -1.4**
baz=312
S37A Fort Scott 57.94 68 P **P 19 39 09.8 -1.2**
baz=312,SNR=14
P39B Salisbury 57.97 66 P **P 19 39 10.3 -0.9**
baz=312,SNR=12
O40A La Belle 58.05 64 P **P 19 39 10.9 -0.8**
baz=312,SNR=15
Q39A Willow Grove F 58.14 66 P **P 19 39 11.2 -1.3**
baz=312,SNR=14
R38A Fenwick Farm, 58.19 67 P **P 19 39 11.3 -1.4**
baz=312
ARCES ARCESS Array B 58.24 350 P **P 19 39 11.5 -1.2**
comp=Z,3.0nm,0.5s,baz=22,slow=7.9,SNR=48
ARCES PcP **PcP 19 40 03.1 -0.2**
comp=Z,3.5nm,0.7s,baz=359,slow=5.0,SNR=6.8
X34A Smith Ranch, M 58.30 73 P **P 19 39 14.4 +0.7**
baz=313
T37A Cheneyville 18 58.32 69 P **P 19 39 12.9 -0.8**
baz=313,SNR=10
P40A Paris 58.35 65 P **P 19 39 13.0 -0.8**
baz=312,SNR=21
TX31 Lajitas Ar. Si 58.38 81 *e*P **P 19 39 14.3 0.0**
TXAR Lajitas Array 58.38 81 P **P 19 39 13.9 -0.4**
comp=Z,1.9nm,0.9s,baz=296,slow=4.3,SNR=17
TXAR LR LR 20 01 50.1
comp=Z,75nm,21.1s,baz=0.0,slow=33
W35A Tecumseh 58.50 72 P **P 19 39 15.1 +0.1**
baz=313,SNR=7.4
S38A Stockton 58.56 68 P **P 19 39 13.9 -1.5**
baz=313,SNR=20
ABTX Abilene, Hawle 58.57 76 P **P 19 39 15.7 +0.2**
baz=314
ABTX Abilene, Hawle 58.57 76 *e*P **P 19 39 15.9 +0.4**
comp=Z,22nm,1.3s
V36A Jenks 58.62 71 P **P 19 39 15.6 -0.2**
baz=313,SNR=6.5
TUL1 Leonard 58.63 71 P **P 19 39 15.4 -0.4**
baz=313
TUL1 Leonard 58.63 71 *e*P **P 19 39 15.8 0.0**
comp=Z,14nm,0.9s
U37A Salina 58.69 70 P **P 19 39 15.7 -0.6**
baz=313,SNR=9.0
Q40A Laux Farm, Aux 58.69 66 P **P 19 39 15.6 -0.7**
baz=313,SNR=5.6
T38A Diamond 58.74 69 P **P 19 39 15.5 -1.2**
baz=313,SNR=7.6
Y34A Reagan Ranch, 58.79 73 P **P 19 39 17.1 +0.1**
baz=313,SNR=7.0
S39A Bolivar 58.86 67 P **P 19 39 15.8 -1.7**
baz=313,SNR=5.5
W36A Wetumka 58.90 71 P **P 19 39 17.3 -0.4**
baz=313,SNR=5.6
X35A Drake 58.96 73 P **P 19 39 18.3 +0.1**
baz=313,SNR=10
133A Hamilton Ranch 59.02 75 P **P 19 39 17.5 -1.2**
baz=314
V37A Hulbert 59.03 70 P **P 19 39 18.1 -0.5**
baz=313,SNR=7.2
R40A Maddies Statio 59.06 66 P **P 19 39 17.3 -1.5**
baz=313,SNR=10
U38A Gravette 59.09 69 P **P 19 39 17.8 -1.3**
baz=313,SNR=5.5
HDIL Hopedale 59.20 62 P **P 19 39 19.2 -0.5**
baz=313
X36A Centrahoma 59.21 72 P **P 19 39 20.1 +0.2**
baz=313,SNR=12
Y35A Marietta 59.26 73 P **P 19 39 20.4 +0.1**
baz=314
CD2 Chengdu 59.28 282 P **P 19 39 19.8 -0.7**
CD2 pmax pmax
comp=Z,2.0nm,0.7s
T39A Clever 59.28 68 P **P 19 39 19.0 -1.4**
baz=313,SNR=10
KURK Kurchatov 59.31 314 P **P 19 39 19.3 -1.0**
KURK 19 40 08.8
KURK pmax pmax
comp=Z,1.0nm,0.4s
KURK pmax pmax
comp=Z,1.0nm,0.5s
KURK Kurchatov 59.31 314 *e*P **P 19 39 18.9 -1.4**
comp=Z,6.2nm,1.2s
KURK PcP **PcP 19 40 08.8 +1.0**
W37B Quinton 59.37 71 P **P 19 39 20.6 -0.4**
baz=313
S40A Lebanon 59.40 67 P **P 19 39 19.8 -1.4**
baz=313
KURBB Kurchatov Arra 59.41 314 P **P 19 39 19.3 -1.8**
comp=Z,1.4nm,0.4s,baz=45,slow=6.5,SNR=10
KURBB PcP **PcP 19 40 08.8 +0.5**
comp=Z,1.4nm,0.5s,baz=43,slow=5.2,SNR=7.4
233A Rising Star 59.44 76 P **P 19 39 21.2 -0.3**
baz=314
HHAR Hobbs 59.47 69 *e*P **P 19 39 20.8 -0.9**
comp=Z,7.8nm,0.6s
V38A Canehill 59.48 70 P **P 19 39 21.2 -0.6**
baz=313
134A White-Moore Ra 59.55 75 P **P 19 39 22.6 +0.3**
baz=314,SNR=6.9
Q42A Golden Eagle 59.63 65 P **P 19 39 22.2 -0.5**
baz=313
WMQ Urumqi 59.65 303 P **P 19 39 23.6 +0.7**
WMQ pP sP 19 39 43.0 -0.8
WMQ sP pP 19 39 45.9 +8.2
WMQ S **S 19 47 24.8 -4.3**
WMQ sS sS 19 48 04.3 +10
WMQ pmax pmax
comp=Z,2.0nm,0.6s
WMQ pmax pmax
comp=Z,72nm,4.8s
WMQ LR LR
comp=N,140nm,23.6s
WMQ LR LR
comp=E,130nm,20.4s
WMQ LR LR
comp=Z,180nm,22.0s
U39A Green Forest 59.66 69 P **P 19 39 22.2 -0.8**
baz=313,SNR=5.3
T40A Mansfield 59.70 67 P **P 19 39 21.7 -1.5**
baz=313,SNR=9.6
Y36A Durant 59.72 73 P **P 19 39 23.6 +0.3**
baz=314
X37A Clayton 59.78 71 P **P 19 39 23.9 +0.1**
baz=314
CCM Cathedral Cave 59.81 66 *e*P **P 19 39 22.1 -1.9**
CCM pmax pmax
comp=Z,34nm,1.6s
CCM Cathedral Cave 59.81 66 *e*P **P 19 39 22.1 -1.9**
comp=Z,34nm,1.6s
333A Richland Sprin 59.87 77 P **P 19 39 24.3 -0.2**
baz=314
SCHQ Schefferville 59.90 38 LR LR 20 07 10.3
comp=Z,364nm,18.3s,baz=280,slow=38
234A Clairette 59.91 75 P **P 19 39 25.1 +0.3**
baz=314
V39A Pettigrew 59.94 69 P **P 19 39 24.4 -0.6**
baz=314
W38A Poteau 59.96 70 P **P 19 39 25.3 +0.3**
baz=314,SNR=11
JCT Junction City 59.96 78 P **P 19 39 24.7 -0.4**
baz=314
JCT Junction City 59.96 78 *e*P **P 19 39 24.8 -0.4**
JCT pmax pmax
comp=Z,10.0nm,1.0s
JCT Junction City 59.96 78 *e*P **P 19 39 24.8 -0.4**
comp=Z,9.6nm,1.0s
U40A Yellville 60.05 68 P **P 19 39 24.5 -1.2**
baz=314,SNR=7.5
X38A Whitesboro 60.05 71 P **P 19 39 25.6 -0.1**
baz=314,SNR=6.2
433A Art 60.20 77 P **P 19 39 26.6 -0.2**
baz=314
T41A Mountain View 60.21 67 P **P 19 39 25.5 -1.2**
baz=314
W39A Magazine 60.30 70 P **P 19 39 27.2 -0.2**
baz=314,SNR=9.3
334A Lometa 60.32 76 P **P 19 39 27.8 +0.2**
baz=314
MK31 Makanchi Array 60.33 309 *e*P **P 19 39 26.7 -0.8**
MK31 Makanchi Array 60.33 309 *e*P **P 19 39 26.6 -0.8**
MKAR Makanchi Array 60.33 309 P **P 19 39 26.5 -1.0**
comp=Z,1.5nm,0.6s,baz=39,slow=6.6,SNR=34
MKAR LR LR 20 05 13.1
comp=Z,152nm,21.9s,baz=39,slow=36
MKAR Makanchi Array 60.33 309 *e*P **P 19 39 26.7 -0.8**
MKAR Makanchi Array 60.33 309 *e*P **P 19 39 26.6 -0.8**
MK01 Makanchi Array 60.34 309 *e*P **P 19 39 26.2 -1.4**
V40A Witts Springs 60.45 69 P **P 19 39 27.3 -1.1**
baz=314,SNR=12
MAKZ Makanchi 60.47 309 *e*P **P 19 39 27.8 -0.6**
MAKZ pmax pmax
comp=Z,3.0nm,0.9s
MAKZ Makanchi 60.47 309 *e*P **P 19 39 27.8 -0.6**
comp=Z,2.6nm,0.9s
SFIN Lafayette 60.54 61 P **P 19 39 28.7 -0.2**
baz=314,SNR=8.4
SFIN Lafayette 60.54 61 *e*P **P 19 39 29.1 +0.1**
comp=Z,36nm,0.8s
X39A Fountain Ranch 60.59 71 P **P 19 39 29.5 +0.1**
baz=314,SNR=12
Y38A Idabel 60.62 71 P **P 19 39 29.8 +0.2**
baz=314
GYA Guiyang 60.63 276 *e*P **P 19 39 31.0 +1.1**
GYA pmax pmax
comp=Z,10.0nm,0.8s
434A Burnet 60.66 76 P **P 19 39 29.6 -0.4**
baz=315
533A Kerrville 60.72 78 P **P 19 39 30.0 -0.3**
baz=315
W40A Ferguson Farm, 60.73 69 P **P 19 39 29.9 -0.4**
baz=314,SNR=6.0
S43A Fulton Ridge, 60.81 65 P **P 19 39 30.2 -0.7**
baz=314
V41A Mountainview 60.85 68 P **P 19 39 29.9 -1.3**
baz=314
MIAR Mount Ida 60.88 70 P **P 19 39 31.1 -0.3**
baz=314,SNR=9.4
MIAR Mount Ida 60.88 70 *e*P **P 19 39 31.3 -0.1**
MIAR pmax pmax
comp=Z,9.0nm,0.8s
MIAR Mount Ida 60.88 70 *e*P **P 19 39 31.2 -0.1**
comp=Z,9.1nm,0.8s
X201 Greenbrier Sit 61.07 69 *e*P **P 19 39 32.0 -0.6**
comp=Z,52nm,1.9s
X301 Greenbrier Sit 61.09 69 *e*P **P 19 39 32.1 -0.6**
comp=Z,12nm,1.0s
534A Blanco 61.09 77 P **P 19 39 32.6 -0.3**
baz=315
WHAR Wooly Hollow 61.12 69 *e*P **P 19 39 32.3 -0.6**
comp=Z,22nm,1.3s
OLIL Olney 61.12 63 *e*P **P 19 39 32.9 0.0**
comp=Z,41nm,0.9s
336A Riesel 61.13 75 P **P 19 39 32.8 -0.2**
baz=315
BVAR Borovoye Array 61.16 320 P **P 19 39 32.2 -0.8**
comp=Z,3.4nm,0.3s,baz=49,slow=6.2,SNR=31
BVAR PcP **PcP 19 40 15.3 0.0**
comp=Z,3.1nm,0.5s,baz=74,slow=2.9,SNR=5.9
BRVK Borovoye 61.18 320 ⇑ *i*P **P 19 39 32.7 -0.4**
BRVK pmax pmax
comp=Z,2.0nm,0.5s
BRVK Borovoye 61.18 320 *e*P **P 19 39 32.5 -0.6**
comp=Z,5.1nm,0.9s
W41A Tony Mavity, V 61.22 69 P **P 19 39 33.1 -0.6**
baz=314,SNR=5.6
W41B Gary Mavity, V 61.22 69 P **P 19 39 33.1 -0.5**
baz=314,SNR=5.7
V42A Cord 61.28 68 P **P 19 39 32.8 -1.2**
baz=314
X40A Basin Creek Fa 61.36 70 P **P 19 39 34.4 -0.1**
baz=314
S45A Carrier Mills 61.59 64 P **P 19 39 35.8 -0.3**
baz=314
BLO Bloomington 61.70 62 *e*P **P 19 39 36.7 -0.1**
BLO pmax pmax
comp=Z,49nm,1.4s
BLO Bloomington 61.70 62 *e*P **P 19 39 36.7 -0.1**
comp=Z,48nm,1.4s
ZRNK Zerenda 61.77 321 *e*P **P 19 39 37.1 +0.1**
ZRNK pmax pmax
comp=Z,5.0nm,0.5s
ZRNK Zerenda 61.77 321 *e*P **P 19 39 37.1 +0.1**
comp=Z,4.7nm,0.5s
USIN University of 61.91 64 *e*P **P 19 39 38.3 +0.1**
comp=Z,51nm,0.9s
WCI Wyandotte Cave 62.49 63 *e*P **P 19 39 41.8 -0.3**
WCI pmax pmax
comp=Z,18nm,0.8s
WCI Wyandotte Cave 62.49 63 *e*P **P 19 39 41.8 -0.3**
comp=Z,18nm,0.8s
ARU Arti 62.85 328 P **P 19 39 43.8 -0.4**
baz=60,slow=3.4
ARU Arti 62.85 328 *c i*P **P 19 39 43.8 -0.4**
ARU S **S 19 48 09.2 +0.1**
ARU pmax pmax
comp=Z,14nm,1.7s
ARU Arti 62.85 328 *e*P **P 19 39 43.6 -0.6**
comp=Z,6.0nm,0.7s
ACSO Alum Creek Sta 62.88 59 *e*P **P 19 39 44.8 +0.1**
comp=Z,56nm,1.8s
WVT Waverly 63.10 65 *e*P **P 19 39 46.1 -0.1**
WVT pmax pmax
comp=Z,42nm,1.8s
WVT Waverly 63.10 65 *e*P **P 19 39 46.1 -0.1**
comp=Z,42nm,1.8s
HNR Honiara 63.32 204 LR LR 20 04 03.1
comp=Z,102nm,18.9s,baz=31,slow=33
OXF Oxford 63.34 67 *e*P **P 19 39 47.8 0.0**
OXF pmax pmax
comp=Z,42nm,0.8s
OXF Oxford 63.34 67 *e*P **P 19 39 47.8 0.0**
comp=Z,42nm,0.8s
ALLY Alegheny Colle 63.38 56 *e*P **P 19 39 48.1 +0.2**
comp=Z,18nm,0.8s
PLAL Pickwick Lake 63.78 66 *e*P **P 19 39 50.2 -0.5**
comp=Z,10nm,0.8s
KMI Kunming 64.03 278 P **P 19 39 54.3 +1.5**
KMI pmax pmax
comp=Z,11nm,0.5s
KMI pmax pmax
comp=Z,75nm,4.0s
Y46A Houston 64.11 68 P **P 19 39 53.0 +0.1**
baz=316
Y47A UCPARC, Winfie 64.68 67 P **P 19 39 56.2 -0.4**
baz=316,SNR=9.8
SWET Sewanee 64.84 65 *e*P **P 19 39 57.4 -0.3**
comp=Z,25nm,1.9s
146A Union 64.89 69 P **P 19 39 58.2 +0.3**
baz=316
Z47A Carrollton 65.06 68 P **P 19 39 59.0 0.0**
baz=316,SNR=14
Z48A Northport 65.23 67 P **P 19 39 59.9 -0.3**
baz=316,SNR=17
SSPA Standing Stone 65.28 55 *e*P **P 19 40 00.4 0.0**
comp=Z,31nm,1.7s
CPCT Cooper Cave 65.47 64 *e*P **P 19 40 01.4 -0.3**
comp=Z,45nm,1.7s
TKL Tuckaleechee C 65.73 63 *e*P **P 19 40 03.2 -0.3**
TKL Tuckaleechee C 65.73 63 *e*P **P 19 40 03.1 -0.3**
LRAL Lakeview Retre 65.80 67 *e*P **P 19 40 03.0 -0.9**
comp=Z,45nm,1.8s
FINES FINESS Array B 65.95 347 P **P 19 40 02.6 -1.7**
comp=Z,1.6nm,0.4s,baz=35,slow=7.0,SNR=27
FINES PcP **PcP 19 40 33.0 -1.7**
comp=Z,3.2nm,0.8s,baz=20,slow=6.7,SNR=5.0
FINES LR LR 20 13 31.6
comp=Z,98nm,18.2s,baz=30,slow=40
FINES FINESS Array B 65.95 347 *c e*P **P 19 40 03.5 -0.9**
FINES pmax pmax
comp=Z,2.0nm,0.4s
248A Dixon Mills 66.05 68 P **P 19 40 05.8 +0.3**
baz=316,SNR=5.4
N59A State Game Lan 66.16 54 P **P 19 40 05.8 -0.3**
baz=318
TKM2 Tokmak 2 66.41 310 *e*P **P 19 40 09.0 +1.1**
TKM2 pmax pmax
comp=Z,7.0nm,1.3s
TKM2 Tokmak 2 66.41 310 *e*P **P 19 40 09.0 +1.1**
comp=Z,7.3nm,1.3s
BLA Blacksburg 66.45 60 *e*P **P 19 40 08.4 +0.4**
BLA pmax pmax
comp=Z,66nm,1.8s
BLA Blacksburg 66.45 60 *e*P **P 19 40 08.4 +0.4**
comp=Z,66nm,1.8s
SIJI Sorong 67.13 237 LR LR 20 10 14.6
comp=Z,98nm,18.8s,baz=4.5,slow=36
AAK Ala-Archa 67.16 310 P **P 19 40 12.4 -0.2**
comp=Z,2.7nm,0.5s,baz=316,slow=0.6,SNR=7.5
AAK Ala-Archa 67.16 310 *e*P **P 19 40 13.2 +0.6**
AAK Ala-Archa 67.16 310 *e*P **P 19 40 13.2 +0.6**
KMSC Kings Mountain 67.47 62 P **P 19 40 14.5 0.0**
baz=317,SNR=22
KMSC Kings Mountain 67.47 62 *e*P **P 19 40 14.6 +0.1**
comp=Z,28nm,0.8s
EKS2 Erkin-Say 67.48 311 *e*P **P 19 40 15.2 +0.6**
EKS2 pmax pmax
comp=Z,4.0nm,0.6s
EKS2 Erkin-Say 67.48 311 *e*P **P 19 40 15.2 +0.6**
comp=Z,4.4nm,0.6s
GOGA Godfrey 67.55 64 *e*P **P 19 40 14.4 -0.6**
GOGA pmax pmax
comp=Z,23nm,1.0s
GOGA Godfrey 67.55 64 *e*P **P 19 40 14.4 -0.6**
comp=Z,23nm,1.0s
LSA Lhasa 67.75 290 P **P 19 40 18.8 +1.9**
LSA LR LR
comp=Z,31nm,1.0s
NB2 NORSAR Subarra 67.78 355 P **P 19 40 15.2 -0.8**
comp=Z,0.8nm,0.4s,baz=8.1,slow=6.9
NOA NORSAR Array B 67.78 355 P **P 19 40 15.7 -0.3**
comp=Z,0.7nm,0.6s,baz=12,slow=6.6,SNR=14
NOA PcP **PcP 19 40 41.9 -0.5**
comp=Z,1.7nm,0.8s,baz=358,slow=3.0,SNR=5.0
NOA LR LR 20 08 24.9
comp=Z,82nm,21.7s,baz=340,slow=35
AKTO Aktyubinsk 67.94 325 P **P 19 40 17.0 -0.2**
comp=Z,4.3nm,0.7s,baz=36,slow=6.3,SNR=15
JSC Jenkinsville 68.14 62 *e*P **P 19 40 18.9 +0.2**
JSC pmax pmax
comp=Z,25nm,0.5s
JSC Jenkinsville 68.14 62 *e*P **P 19 40 18.9 +0.2**
comp=Z,25nm,0.5s
ABKAR Akbulak array 68.20 323 *e*P **P 19 40 18.3 -0.5**
TAOE Nuku Hiva Isla 68.35 139 *e*LR LR 20 01 03.5
comp=Z,550nm,23.2s
KKAR Karatay Array 68.67 313 *e*P **P 19 40 21.8 -0.1**
KKAR Karatay Array 68.67 313 *e*P **P 19 40 21.8 -0.1**
VSU Vasula 68.72 346 *i*P **P 19 40 21.5 -0.4**
VSU pmax pmax
comp=Z,15nm,1.0s
KSH Kashi 68.80 307 P P 19 40 28.0 +5.1
KSH *e*pP sP 19 40 44.5 +0.4
KSH *e*sP PcP 19 40 51.4 +4.2
KSH *e*ScP 19 44 48.4
KSH S **S 19 49 27.3 +4.9**
KSH Kashi 68.80 307 SS SS 19 53 57.9 +11
KSH pmax pmax
comp=Z,58nm,3.7s
KSH LR LR
comp=N,140nm,14.4s
KSH LR LR
comp=E,100nm,7.3s
KSH LR LR
comp=Z,240nm,14.0s
NHSC New Hope 69.62 62 *e*P **P 19 40 28.8 +0.9**
comp=Z,153nm,1.4s
RGRS Roger Stewart 69.76 63 *e*P **P 19 40 29.7 +0.9**
comp=Z,683nm,0.4s
OBN Obninsk 70.07 340 ⇓ *e*P **P 19 40 30.2 -0.1**
OBN *e*PP **pP 19 40 43.7 -1.7**
OBN *e* 19 40 51.2
OBN *e*S **S 19 49 37.0 +0.5**
OBN pmax pmax
comp=Z,28nm,2.5s
OBN MLR MLR
comp=Z,227nm,17.0s
SHL Shillong 70.36 286 *e*P **P 19 40 34.0 +1.2**
CHTO Chiang Mai 71.05 277 *e*P **P 19 40 37.2 +0.4**
CHTO Chiang Mai 71.05 277 *e*P **P 19 40 37.2 +0.4**
CMAR Chiang Mai Arr 71.32 276 P **P 19 40 38.8 +0.3**
comp=Z,3.0nm,0.7s,baz=29,slow=6.6,SNR=27
CMAR LR LR 20 13 41.6
comp=Z,94nm,20.7s,baz=54,slow=37
LPSR Galich'ya Gora 71.84 337 *e*P **P 19 40 40.2 -0.9**
LPSR pmax pmax
comp=Z,9.0nm,1.1s
LPSR MLR MLR
comp=Z,340nm,24.0s
GUN Gumba 72.17 292 *e*P **P 19 40 45.2 +1.3**
comp=Z,299nm,0.4s
VRH Novokhopyorsk 72.40 335 *e*P **P 19 40 44.9 +0.5**
VRH pmax pmax
comp=Z,8.0nm,0.8s
KKN Kakani 72.61 293 *e*P **P 19 40 47.5 +1.1**
comp=Z,90nm,0.5s
PKIN Phulchoki 72.70 292 *e*P **P 19 40 47.8 +0.8**
comp=Z,28nm,0.5s
GKN Gorkha 72.82 293 *e*P **P 19 40 48.4 +0.9**
comp=Z,53nm,0.5s
DMN Daman 72.84 293 *e*P **P 19 40 49.0 +1.2**
PPT Papeete 73.03 151 LR LR 20 04 13.2
comp=Z,220nm,20.8s,baz=4.0,slow=28
PPT2 Papeete2 73.05 151 *e*LR LR 20 03 05.5
comp=Z,396nm,27.2s
VSR Storozhevoye 73.05 336 *e*P **P 19 40 48.0 -0.3**
VSR pmax pmax
comp=Z,10.0nm,1.2s
VSR MLR MLR
comp=Z,420nm,17.0s
KOLN Koldanda 73.59 294 *e*P **P 19 40 53.0 +0.8**
comp=Z,38nm,0.8s
PYUN Piuthan 73.69 295 *e*P **P 19 40 53.5 +0.8**
comp=Z,107nm,0.9s
DZM Mont Dzumac 74.25 195 *e*LR LR 20 03 59.5
comp=Z,339nm,24.6s
AKASG Malin Array Be 75.74 342 P **P 19 41 03.0 -0.9**
comp=Z,2.4nm,0.4s,baz=20,slow=5.9,SNR=19
AKASG LR LR 20 17 31.0
comp=Z,140nm,21.2s,baz=355,slow=38
AKASG Malin Array Be 75.74 342 P **P 19 41 03.0 -0.9**
AKASG pmax pmax
comp=Z,2.0nm,0.4s
AKASG MLR MLR
comp=Z,140nm,21.2s
KIEV Kiev 75.75 342 ⇑ *i*P **P 19 41 04.0 +0.1**
KIEV pmax pmax
comp=Z,25nm,2.1s

KIEV	Kiev	75.75	342	*e*P	P	19 41 03.1 -0.9
KBL	Kabul	76.13	308	*e*P	P	19 41 06.5 -0.2
KBL	Kabul	76.13	308	*e*P	P	19 41 06.5 -0.2
CLL	Collm	77.34	353	*e*P	P	19 41 13.0 0.0
CLL	Collm	77.34	353	*e*P	P	19 41 13.0 0.0
CTA	Charters Tower	77.56	214	LR	LR	20 11 11.5
	comp=Z,60nm,21.1s,baz=32,slow=32					
GOF	Gofitskoye	77.60	331	⇑*e*P	P	19 41 15.0 +0.5
KWP	Kalwaria Pacla	77.88	346	⇓*i*P	P	19 41 15.5 -0.5
KWP	Kalwaria Pacla	77.88	346	⇓P	P	19 41 15.5 -0.5
DPC	Dobruska-Polom	77.99	350	*e*P	P	19 41 16.6 -0.1
DPC				*ex*	x	19 41 20.8
DPC	Dobruska-Polom	77.99	350	*e*P	P	19 41 16.6 -0.1
DPC				*e*		19 41 20.8
KRLC	Kraliky	78.21	350	*e*P	P	19 41 18.0 +0.1
KRLC	Kraliky	78.21	350	*e*P	P	19 41 18.0 +0.1
OKC	Ostrava-Krasne	78.29	349	AMS	AMS	20 23 10.0
	comp=Z,200nm,15.4s					
STHS	Stebnicka Huta	78.30	347	*e*P	P	19 41 19.8 +1.4
STHS				pmax	pmax	
	comp=Z,6.0nm,1.3s					
STHS	Stebnicka Huta	78.30	347	*e*P	P	19 41 19.8 +1.4
SORM	Soroca	78.36	342	⇓*i*P	P	19 41 17.6 -1.1
SORM	Soroca	78.36	342	⇓P	P	19 41 17.6 -1.1
GEYT	Alibeck	78.36	318	P	P	19 41 19.1 +0.2
	comp=Z,3.2nm,0.8s,baz=38,slow=5.6,SNR=6.9					
GEYT				LR	LR	20 18 44.9
	comp=Z,480nm,20.8s,baz=0.0,slow=38					
MORC	Moravsky Berou	78.42	350	⇑*i*P	P	19 41 18.8 -0.3
MORC	Moravsky Berou	78.42	350	⇑P	P	19 41 18.8 -0.3
TBI	Tubuai	78.53	153	*e*LR	LR	20 05 38.7
	comp=Z,334nm,27.5s,baz=342					
KIV	Kislovodsk	78.70	331	*e*P	P	19 41 21.0 +0.2
KIV				pmax	pmax	
	comp=Z,7.0nm,1.1s					
KIV				MLR	MLR	
	comp=Z,226nm,18.0s					
CRVS	Cervenica-Dubn	78.78	347	*e*P	P	19 41 21.1 +0.1
CRVS	Cervenica-Dubn	78.78	347	*e*P	P	19 41 21.1 +0.1
LANS	Liptovska Anna	78.80	348	*e*P	P	19 41 22.5 +1.3
LANS	Liptovska Anna	78.80	348	*e*P	P	19 41 22.5 +1.3
NCK	Nalchik	78.84	330	⇓*e*P	P	19 41 22.4 +0.9
NCK				pmax	pmax	
	comp=Z,51nm,1.8s					
KBZ	Khabaz	78.84	331	P	P	19 41 20.2 -1.2
	comp=Z,3.2nm,0.8s,baz=342,slow=6.1,SNR=7.6					
KBZ				LR	LR	20 21 10.5
	comp=Z,354nm,20.1s,baz=28,slow=40					
VRAC	Vranov	78.99	350	⇓*i*P	P	19 41 19.1 -3.0
VRAC	Vranov	78.99	350	⇓P	P	19 41 19.1 -3.0
KECS	Kecovo	79.32	347	*e*P	P	19 41 23.0 -1.0
KECS				pmax	pmax	
	comp=Z,3.0nm,1.1s					
KECS	Kecovo	79.32	347	*e*P	P	19 41 23.0 -1.0
ZEI	Tsey	79.38	330	*e*P	P	19 41 23.1 -1.6
ZEI				pmax	pmax	
	comp=Z,35nm,1.4s					
BUR08	Bucovina Ar. S	79.41	344	*e*P	P	19 41 23.5 -1.1
BURAR	Bucovina Array	79.43	344	⇑*i*P	P	19 41 24.4 -0.3
BURAR	Bucovina Array	79.43	344	⇑P	P	19 41 24.4 -0.3
KHC	Kasperske Hory	79.46	352	*e*P	P	19 41 25.0 +0.3
KHC	Kasperske Hory	79.46	352	*e*P	P	19 41 25.0 +0.3
VYHS	Vyhne	79.53	348	*e*P	P	19 41 25.2 +0.1
VYHS				pmax	pmax	
	comp=Z,3.0nm,1.1s					
VYHS	Vyhne	79.53	348	*e*P	P	19 41 25.2 +0.1
GERES	GERESS Array B	79.73	352	P	P	19 41 25.8 -0.5
	comp=Z,1.0nm,0.5s,baz=24,slow=5.9,SNR=14					
ARCR	ARCALIA	80.09	344	⇓*i*P	P	19 41 28.7 +0.5
RAO	Raoul Island	80.18	180	LR	LR	20 10 24.5
	comp=Z,252nm,20.6s,baz=127,slow=31					
TESR	Tescani	80.24	343	⇓*i*P	P	19 41 27.5 -1.5
CONA	Conrad Observa	80.43	350	*i*P	P	19 41 30.4 +0.3
	comp=Z,1.4nm,0.5s					
DRGR		80.65	346	⇑*i*P	P	19 41 30.7 -0.5
DRGR		80.65	346	⇑P	P	19 41 30.7 -0.5
VRI	Vrincioaia	80.85	343	⇓*i*P	P	19 41 31.7 -0.6
VRI	Vrincioaia	80.85	343	⇓P	P	19 41 31.7 -0.6
PLOR	Plostina	80.88	343	⇓*i*P	P	19 41 32.4 -0.1
PLOR	Plostina	80.88	343	⇓P	P	19 41 32.4 -0.1
ODBI	Odobesti	80.89	342	⇑*i*P	P	19 41 33.9 +1.5
DOPR	Dopca	81.00	343	⇑*i*P	P	19 41 33.4 +0.3
ARSA	Arzberg	81.13	350	*i*P	P	19 41 33.3 -0.5
	comp=Z,1.3nm,0.5s					
CFR	Carcaliu	81.24	341	⇓*i*P	P	19 41 33.0 -1.3
CFR	Carcaliu	81.24	341	⇓P	P	19 41 33.0 -1.3
RETA	Reutte	81.31	354	*i*P	P	19 41 34.4 -0.3
	comp=Z,1.4nm,0.5s					
MLR	Muntele Rosu	81.36	343	⇓*i*P	P	19 41 36.2 +1.1
MLR	Muntele Rosu	81.36	343	⇓P	P	19 41 36.2 +1.1
MLR	Muntele Rosu	81.36	343	*e*P	P	19 41 35.1 0.0
MOTA	Moosalm	81.43	354	*i*P	P	19 41 35.7 +0.2
	comp=Z,1.3nm,0.4s					
WTTA	Wattenberg	81.47	353	*i*P	P	19 41 36.3 +0.5
	comp=Z,4.4nm,0.6s					
GNI	Garni	81.49	328	*d*P	P	19 41 37.4 +1.4
GNI				pmax	pmax	
	comp=Z,29nm,1.2s					
KBA	Koelnbreinsper	81.51	352	*i*P	P	19 41 36.5 +0.5
	comp=Z,8.5nm,0.4s					
VOIR		81.57	344	⇓*i*P	P	19 41 36.5 +0.3
VOIR		81.57	344	⇓P	P	19 41 36.5 +0.3
SOKA	Soboth	81.75	351	*i*P	P	19 41 37.2 +0.1
	comp=Z,3.1nm,0.4s					
FETA	Feichten	81.77	354	*i*P	P	19 41 37.7 +0.4
	comp=Z,1.7nm,0.4s					
TIRR	Tirgusor	81.87	341	⇑*i*P	P	19 41 37.9 +0.3
TIRR	Tirgusor	81.87	341	⇑P	P	19 41 37.9 +0.3
TIRR	Tirgusor	81.87	341	*e*P	P	19 41 37.2 -0.4
ABTA	Abfaltersbach	81.91	352	*i*P	P	19 41 36.8 -1.1
	comp=Z,1.8nm,0.4s					
MYKA	Terra Mystica	81.93	352	*i*PcP	P	19 41 39.5 +1.4
	comp=Z,2.0nm,0.4s					
BZS	Buzias	81.96	346	⇓*i*P	P	19 41 36.7 -1.4
BZS	Buzias	81.96	346	⇓P	P	19 41 36.7 -1.4
OBKA	Obir	81.97	351	*i*P	P	19 41 38.0 -0.3
	comp=Z,4.5nm,0.6s					
GZR	Gura Zlata	82.00	345	⇓*i*P	P	19 41 36.6 -1.8
GZR	Gura Zlata	82.00	345	⇓P	P	19 41 36.6 -1.8
SULR		82.08	343	⇑*i*P	P	19 41 38.6 -0.1
WRA	Warramunga Arr	82.14	224	P	P	19 41 38.4 -0.9
	comp=Z,1.2nm,0.6s,baz=32,slow=5.8,SNR=24					
FUORN	Ofenpass-Fuorn	82.20	354	*e*P	P	19 41 39.8 0.0
TUE	Stuetta	82.41	355	*e*P	P	19 41 42.7 +1.9
MDVR	Moldovita	82.76	346	⇓*i*P	P	19 41 42.2 -0.2
PSI	Prapat	83.28	266	*e*P	P	19 41 46.0 +0.4
PSI	Prapat	83.28	266	*e*P	P	19 41 46.0 +0.4
HYB	Hyderabad	84.53	291	*i*P	P	19 41 52.0 +0.2
FITZ	Fitzroy Crossi	84.64	232	LR	LR	20 14 01.5
	comp=Z,12nm,20.8s,slow=32					
FITZ	Fitzroy Crossi	84.64	232	*e*P	P	19 41 53.1 +1.0
BR131	Keskin Array S	85.16	336	*e*P	P	19 41 54.6 -0.2
BRTR	Keskin Array B	85.16	336	P	P	19 41 54.9 0.0
	comp=Z,4.1nm,0.8s,baz=52,slow=2.8,SNR=32					
BRTR				LR	LR	20 24 57.0
	comp=Z,86nm,19.5s,baz=30,slow=39					
BR231	Keskin MP Arra	85.27	336	*e*P	P	19 41 54.8 -0.5
PDG	Podgorica	85.43	347	⇑*i*P	P	19 41 55.1 -0.8
SKO	Skopje	85.55	345	*i*P	P	19 41 57.2 +0.7
ASAR	Alice Springs	85.61	223	P	P	19 41 57.3 +0.4
	comp=Z,2.0nm,0.7s,baz=24,slow=5.7,SNR=31					
ASAR				LR	LR	20 15 30.0
	comp=Z,65nm,19.6s,baz=34,slow=32					
AQU	L'Aquila	86.19	351	*e*P	P	19 42 00.2 +0.4
AQU	L'Aquila	86.19	351	*e*P	P	19 42 00.2 +0.4
POO	Poona	86.37	295	*ex*	P	19 41 58.0 -3.0
MATE	Matera	87.52	349	⇑*i*P	P	19 42 05.8 -0.3
TIP	Timpagrande	88.96	348	⇓*i*P	P	19 42 12.7 -0.4
TIP	Timpagrande	88.96	348	*e*P	P	19 42 12.7 -0.4
SJG	San Juan	89.14	62	LR	LR	20 24 20.0
	comp=Z,56nm,19.1s,baz=298,slow=37					
ESDC	Sonseca Array	89.29	4	P	P	19 42 13.6 -1.0
	comp=Z,0.8nm,0.4s,baz=348,slow=4.1,SNR=10					
ESDC				LR	LR	20 23 36.8
	comp=Z,52nm,19.9s,baz=200,slow=36					
STKA	Stephens Creek	90.00	213	P	P	19 42 18.1 +0.4
	comp=Z,4.5nm,0.7s,baz=319,slow=8.7,SNR=4.8					
STKA				LR	LR	20 19 27.1
	comp=Z,154nm,20.1s,baz=24,slow=33					
LAST	Lasithi	91.42	341	⇑*i*P	P	19 42 22.6 -2.1
ROSC	El Rosal	94.95	76	LR	LR	20 29 38.6
	comp=Z,38nm,18.9s,baz=200,slow=38					
DBIC	Dimbokro	122.01	8	PKP	PKPdf	19 48 12.7 -0.3
	comp=Z,4.4nm,0.4s,baz=351,slow=2.8,SNR=28					
TIC	Toumodi	122.03	8	*e*PKP1	PKPdf	19 48 12.4 -0.7
KIC	Kosan Boka	122.33	8	*e*PKP1	PKPdf	19 48 13.0 -0.7
	comp=Z,13nm,0.9s					
LIC	Lamto	122.44	8	*e*PKP1	PKPdf	19 48 13.4 -0.5
	comp=Z,48nm,1.1s					
PMSA	Palmer Station	144.46	138	PKP	PKPdf	19 48 53.3 +0.2
	comp=Z,20nm,0.6s,baz=281,slow=5.2,SNR=9.2					
MAW	Mawson	146.58	218	PKPbc	PKPbc	19 48 57.9 -0.4
	comp=Z,5.4nm,0.9s,baz=138,slow=3.7,SNR=6.4					
BOSA	Boshof	151.26	313	PKPbc	PKPbc	19 49 12.3 +0.6
	comp=Z,8.3nm,0.7s,baz=35,slow=2.2,SNR=33					

ISCJB ***22*** *19:30:04.9±0.5, 36°.72N±0°.04×71°.29E±0°.06, h200km, mb3.2/3, Error ellipse: s-maj=7.6km s-min=4.9km az=149.4*
IDC ***22*** *19:30:06.8±5.0, 36°.90N×71°.18E, h172km±30km, mb3.1/3, mb1 3.3/10, mb1mx3.0/69, mbtmp3.8/10, Error ellipse: s-maj=66.7km s-min=20.7km az=149.0*
NNC ***22*** *19:30:09.7±2.0, 37°.03N×71°.22E, h183km±16km, mb3.0, mpv4.2, Error ellipse: s-maj=20.1km s-min=11.1km az=153.0*

ISC 22 19:30:06.3±0.9, 36°.81N±0°.07×71°.27E±0°.07, h200km, n28, σ1§91/34, mb3.4/3, 7C-7D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	Dzherino	2.78	317	⇑P	Pn	19 30 53.7	+0.2
	32nm,0.4s						
DZET				⇓S	Sn	19 31 28.5	-1.9
	165nm,0.4s						
THN	Thein Dam	5.70	139	*e*P	Pn	19 31 24.0	-5.7
THN				*e*S	Sn	19 32 26.7	-8.9
MNAS	Manas	5.75	9	⇑P	Pn	19 31 31.6	+1.1
	15nm,0.3s						
MNAS				⇓S	Sn	19 32 35.9	-1.2
	61nm,0.6s						
KK31	Karatay Array	6.32	355	P	Pn	19 31 38.8	+1.2
	7.1nm,0.4s,baz=169,slow=12,SNR=254						
KK31				⇑S	Sn	19 32 47.0	-3.0
	25nm,0.5s,baz=185,slow=24,SNR=6.2						
AAK	Ala-Archa	6.33	22	P	Pn	19 31 38.5	+0.6
	8.0nm,0.3s,baz=192,slow=6.8,SNR=64						
AAK				S	Sn	19 32 49.0	-1.5
	3.9nm,0.3s,baz=301,slow=23,SNR=25						
AAK	Ala-Archa	6.33	22	⇑P	Pn	19 31 38.8	+0.9
	15nm,0.5s						
AAK				⇑S	Sn	19 32 49.0	-1.5
	33nm,0.6s						
TKM2	Tokmak 2	6.96	27	⇑P	Pn	19 31 47.2	+1.1
	6.0nm,0.5s						
TKM2				⇓S	Sn	19 33 04.8	-0.5
	19nm,0.8s						
GEYT	Alibeck	10.53	280	P	Pn	19 32 30.5	-1.9
	0.5nm,0.3s,baz=104,slow=12,SNR=5.0						
MAKZ	Makanchi	12.78	35	⇓P	Pn	19 33 01.4	+0.5
	2.7nm,0.8s						
MK31	Makanchi Array	12.92	36	⇓P	Pn	19 33 03.0	+0.3
	0.7nm,0.5s,baz=211,slow=9.8,SNR=22						
MKAR	Makanchi Array	12.92	36	P	Pn	19 33 04.3	+1.6
	0.3nm,0.3s,baz=206,slow=9.4,SNR=14						
PYUN	Piuthan	13.16	128	*e*P	Pn	19 33 02.5	-3.5
KOLN	Koldanda	13.77	127	*e*P	Pn	19 33 10.9	-2.8
	9.7nm,0.4s						
GKN	Gorkha	14.29	124	*e*P	Pn	19 33 17.7	-2.4
	9.0nm,0.3s						
KURBB	Kurchatov Arra	14.77	18	P	P	19 33 26.8	+0.4
	0.1nm,0.3s,baz=205,slow=10,SNR=4.9						
KKN	Kakani	14.86	123	*e*P	Pn	19 33 25.2	-1.9
	19nm,0.7s						
DMN	Daman	14.86	124	*e*P	Pn	19 33 25.8	-1.4
	11nm,0.4s						
AB31	Akbulak array	14.92	330	P	P	19 33 27.6	-0.5
	3.4nm,0.8s,baz=144,slow=12,SNR=47						
AB31				⇑S	S	19 36 07.3	-5.7
	1.2nm,0.4s,baz=158,slow=24,SNR=6.3						
PKIN	Phulchoki	15.08	124	*e*P	Pn	19 33 28.6	-1.2
	12nm,0.4s						
GUN	Gumba	15.19	122	*e*P	Pn	19 33 30.1	-1.1
	12nm,0.3s						
BVA0	Borovoye Array	16.23	358	P	Pn	19 33 45.2	+2.0
	0.1nm,0.8s,baz=168,slow=8.1,SNR=9.2						
BVAR	Borovoye Array	16.23	358	P	Pn	19 33 44.5	+1.3
	0.6nm,0.3s,baz=156,slow=8.2,SNR=11						
AKTO	Aktyubinsk	16.62	329	P	Pn	19 33 49.0	+1.1
	1.8nm,0.3s,baz=138,slow=8.8,SNR=29						
AKTO	Aktyubinsk	16.62	329	⇓P	Pn	19 33 49.3	+1.3
	3.2nm,0.3s						
AKTO				⇓S	Sn	19 36 56.8	+2.0
	1.6nm,0.7s						
ZALV	Zalesovo Beam	19.55	24	P	P	19 34 19.4	+0.8
	0.9nm,0.3s,baz=220,slow=11,SNR=11						
BRTR	Keskin Array B	29.55	287	P	P	19 35 55.3	+2.9
	0.3nm,0.6s,baz=81,slow=11,SNR=3.2						
FINES	FINESS Array B	37.35	326	P	P	19 37 01.2	+2.0
	0.3nm,0.3s,baz=119,slow=11,SNR=4.2						
ARCES	ARCESS Array B	40.94	337	P	P	19 37 30.6	+1.8
	1.0nm,0.8s,baz=82,slow=10.0,SNR=4.4						

ISCJB ***22*** *19:38:07.3±1.1, 33°.39S±0°.06×70°.41W±0°.06, h109km±7km, Error ellipse: s-maj=11.1km s-min=7.3km az=149.8*
SJA ***22*** *19:38:07.4±0.9, 33°.35S×70°.41W, h106km±6km, ML3.4, MW3.9*
GUC ***22*** *19:38:08.5±0.6, 33°.43S×70°.60W, h96km±4km, ML3.6*

ISC 22 19:38:06.3±3.1, 33°.5S±0°.1×70°.45W±0°.08, h115km±18km, n18, σ0§83/30, 5C-7D, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FSR	Penalolen	0.07	248	⇑*i*P	Pn	19 38 22.6	+0.3
FSR				*i*S	Sn	19 38 33.7	-0.5
STL	Santa Lucia	0.16	275	⇑*i*P	Pn	19 38 22.7	+0.4
STL				*i*S	Sn	19 38 33.9	-0.5
SJCH	San Jose de Ma	0.20	157	⇑*i*P	Pn	19 38 23.6	+1.0
SJCH				*i*S	Sn	19 38 34.4	-0.4
PEL	Peldehue	0.37	327	⇑*i*P	Pn	19 38 23.2	+0.1
PEL				*i*S	Sn	19 38 34.5	-1.2
PEL				AML	AML	19 38 35.7	
	comp=N,6μm,0.5s						
ROC1	El Roble	0.67	315	⇓*e*S	Sn	19 38 39.4	-0.2
ROCH	El Roble	0.67	315	⇑*i*P	Pn	19 38 26.0	+0.7
ROCH				*i*S	Sn	19 38 38.7	-0.8
ROCH				AML	AML	19 38 40.0	
	comp=N,2μm,0.3s						
AAGR	Agrelo	1.41	75	*e*P	Pn	19 38 33.4	+0.9
AAGR				⇓*e*S	Sn	19 38 52.5	+0.1
ARCO	CERRO ARCO	1.41	65	*e*P	Pn	19 38 33.4	+0.8
ARCO				⇓*e*S	Sn	19 38 52.6	+0.1
ARCO				IAML		19 38 54.5	
	comp=Z,345nm,0.3s						
AUSP	Uspallata	1.52	36	*e*P	Pn	19 38 34.7	+0.7
AUSP				⇓*e*S	Sn	19 38 54.2	-0.7
ASAL	Salagasta	1.60	58	*e*P	Pn	19 38 35.5	+0.7
ASAL				⇓*e*S	Sn	19 38 54.8	-1.7
RTLS	Leoncito	1.91	31	*e*P	Pn	19 38 40.0	+1.2
RTLS				*e*S	Sn	19 39 04.3	+0.8
RTCV	Cerro Valdivia	2.26	46	*e*P	Pn	19 38 43.4	+0.4
RTCV				⇓*e*S	Sn	19 39 10.4	-0.5
SJA	San Juan	2.50	40	IAML		19 38 47.8	
	comp=Z,175nm,0.2s						
SJA				⇓*e*S	Sn	19 39 15.8	-0.6
RTLL	Cerro Villicun	2.69	39	*e*P	Pn	19 38 49.3	+0.8
RTLL				*e*S	Sn	19 39 20.5	-0.5
AMOG	MOGNA	3.00	34	*e*P	Pn	19 38 53.4	+0.8
AMOG				*e*S	Sn	19 39 26.8	-1.5
AGUA	GUANDACOL	4.29	23	*e*P	Pn	19 39 10.3	+0.5
VCA	Vinchina	5.08	23	*e*P	Pn	19 39 17.5	-2.9
TCA	Tanti	5.38	69	*e*P	Pn	19 39 23.7	-0.7
TCA				IAML		19 39 24.8	
	comp=Z,20nm,0.5s						

ISK ***22*** *19:39:25.8, 39°.09N×29°.09E, h9km, MD2.7*
ISCJB ***22*** *19:39:26.3±0.5, 39°.09N±0°.04×29°.04E±0°.05, h9km, Error ellipse: s-maj=6.1km s-min=4.7km az=33.0*
DDA ***22*** *19:39:26.4, 39°.11N×29°.01E, h7km, Md2.4*
CSEM ***22*** *19:39:26.3±0.1, 39°.10N×29°.02E, h5km, MD2.4, Error ellipse: s-maj=3.4km s-min=2.9km az=103.0*

ISC 22 19:39:26.2±0.9, 39°.10N±0°.02×29°.02E±0°.03, h9km, n35, σ0§29/37, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.24	257	P	Pg	19 39 31.1	-0.1
DEMI	Demirci	0.24	257	*i*P	Pg	19 39 31.1	-0.1
GDZ	Gediz	0.36	91	P	Pg	19 39 33.6	+0.2
GDZ	Gediz	0.36	91	*i*P	Pg	19 39 33.6	+0.2
TVSB	Tavsanli	0.49	44	*e*PG	Pg	19 39 35.6	-0.2
TVSB				*e*SG	Sg	19 39 41.9	-0.4
TVSB	Tavsanli	0.49	44	*e*Pg	Pg	19 39 35.6	-0.2
TVSB				*e*Sg	Sg	19 39 41.9	-0.4
KULA	Kula-Manisa	0.65	206	*e*PG	Pg	19 39 39.0	+0.2
KULA	Kula-Manisa	0.65	206	*e*Pg	Pg	19 39 39.0	+0.2
DURS	Dursunbey	0.66	320	P	Pg	19 39 38.4	-0.6
DURS	Dursunbey	0.66	320	*i*P	Pg	19 39 38.4	-0.6
MANT	Manisa	0.71	211	P	Pg	19 39 39.9	0.0
MANT	Manisa	0.71	211	*i*P	Pg	19 39 39.9	0.0
KHAL	Karahalli	0.81	153	P	Pb	19 39 42.8	+0.1
KHAL	Karahalli	0.81	153	*i*P	Pb	19 39 42.8	+0.1
KHL	Karahalli	0.87	153	*e*PG	Pg	19 39 42.4	-0.5
KHL	Karahalli	0.87	153	*e*Pg	Pg	19 39 42.4	-0.5
ORLT	Orhaneli	0.95	354	*e*PG	Pb	19 39 45.0	+0.1
ORLT	Orhaneli	0.95	354	*e*Pg	Pb	19 39 45.0	+0.1
AKHS	Akhisar	0.97	257	P	Pn	19 39 46.0	0.0
AKHS	Akhisar	0.97	257	*i*P	Pn	19 39 46.0	0.0
BALB	Balikesir	1.04	302	*e*PN	Pn	19 39 47.2	+0.2
BALB	Balikesir	1.04	302	*e*Pn	Pn	19 39 47.2	+0.2
IGD	Bursa	1.17	7	*i*P	Pb	19 39 48.1	-0.6
CAVI	Cavuskoy	1.27	30	*e*PN	Pg	19 39 50.9	+0.2
CAVI	Cavuskoy	1.27	30	*e*Pn	Pg	19 39 50.9	+0.2
KCTX	Karacabey (Bur	1.27	336	*e*PN	Pb	19 39 50.8	+0.4
KCTX	Karacabey (Bur	1.27	336	*e*Pn	Pb	19 39 50.8	+0.4
MDNY	Mudanya-Bursa	1.27	355	*e*PN	Pg	19 39 50.9	+0.2
MDNY	Mudanya-Bursa	1.27	355	*e*Pn	Pg	19 39 50.9	+0.2
BORA	Eskisehir	1.36	54	P	Pg	19 39 52.4	+0.1
BORA	Eskisehir	1.36	54	*i*P	Pg	19 39 52.4	+0.1
GONE	Gonen-Balikesi	1.40	313	*e*PN	Pb	19 39 52.8	+0.3
GONE	Gonen-Balikesi	1.40	313	*e*Pn	Pb	19 39 52.8	+0.3
ARMT	Armutlu	1.47	355	*e*PN	Pn	19 39 53.1	+0.1
ARMT	Armutlu	1.47	355	*e*Pn	Pn	19 39 53.1	+0.1

IDC 22 19:40:57.6±6.9, 30°.87S×178°.14W, h0km, mb3.6/2, mb1 3.9/2, mb1mx3.6/29, mbtmp3.6/2, Error ellipse: s-maj=287.9km s-min=57.2km az=156.0, Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	Alice Springs	42.96	268	P	P	19 48 58.5	-0.2
	0.4nm,0.7s,baz=108,slow=7.7,SNR=7.8						
WRA	Warramunga Arr	43.99	273	P	P	19 49 07.0	-0.1
	0.8nm,0.5s,baz=111,slow=8.1,SNR=17						
FINES	FINESS Array B	145.55	340	PKPbc	PKPdf	20 00 36.4	-0.7
	1.1nm,0.6s,baz=43,slow=3.6,SNR=6.1						

IDC ***22*** *19:50:19.1±2.1, 46°.73N×84°.70E, h0km, mb4.1/1, mb1 3.5/5, mb1mx3.2/52, mbtmp3.4/5, ML2.8/4, Error ellipse: s-maj=21.6km s-min=13.5km az=120.0*
NNC ***22*** *19:50:20.1±2.0, 46°.65N×84°.66E, h0km, mb3.6, mpv3.3, Error ellipse: s-maj=17.9km s-min=13.8km az=4.0*
SOME ***22*** *19:50:21.9, 46°.78N×84°.25E, h0km*

ISC 22 19:50:19.5±1.4, 46°.64N±0°.05×84°.63E±0°.09, h10km, n19, σ2§07/29, 6C-3D, Kazakhstan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZSN	Zaisan	0.83	349	*e*P	Pb	19 50 36.5	+0.5
	156nm,0.2s						
ZSN				*e*S	Sb	19 50 47.2	0.0
	211nm,0.4s						
MK31	Makanchi Array	1.62	276	Pn	Pb	19 50 50.6	+1.1
	23nm,0.3s,baz=95,slow=15,SNR=1261						
MK31				Sn	Sg	19 51 12.0	+0.5
	28nm,0.2s,baz=92,slow=34,SNR=16						
MKAR	Makanchi Array	1.62	276	Pn	Pb	19 50 50.8	+1.4
	38nm,0.3s,baz=91,slow=17,SNR=1469						
MKAR				Lg	Lg	19 51 11.9	
	66nm,0.3s,baz=91,slow=30,SNR=37						
MAKZ	Makanchi	1.83	276	⇑Pn	Pb	19 50 53.2	+0.1
	9.4nm,0.3s						
MAKZ				⇑Sn	Sg	19 51 19.5	+1.1
	48nm,0.3s						
KAPS	Kapalarasan	3.92	252	*e*P	Pb	19 51 31.4	+2.8
	1.7nm,0.3s						
KAPS				*e*S	Sg	19 52 22.2	-3.0
	20nm,0.5s						
DJR	Jarkent	4.11	238	*e*P	Pb	19 51 36.2	+4.2
	6.5nm,0.4s						
DJR				*e*S	Sg	19 52 30.0	-1.4
	31nm,0.4s						
SHLS	Shalkode	4.84	226	*e*P	Pg	19 51 49.8	-2.5
	3.1nm,0.2s		

JMK	Ichinoseki	2.22 306	P	Pn	19 52 31.8	0.0
JOM	Ohasama	2.51 317	P	Pn	19 52 35.8	0.0
JOM			S	Sn	19 53 05.4	-0.9
JFT	Otama	2.54 268	P	Pn	19 52 36.3	+0.1
JFT			S	Sn	19 53 05.7	-1.3
JYK	Kaneyama	2.78 298	P	Pn	19 52 40.3	+0.7
JYK			S	Sn	19 53 13.2	+0.1
JANG	Nango	3.12 331	P	Pn	19 52 45.3	+1.1
JANG			S	Sn	19 53 19.9	-1.5
JAW	Awa shima	3.46 284	P	Pn	19 52 50.3	+1.4
JAG	Ashikaga	3.48 250	P	Pn	19 52 48.7	-0.5
MJAR	Matsushiro Arr	4.39 257	Pn	Pn	19 53 01.3	-0.4
	11nm,0.3s,baz=89,slow=14,SNR=116					
MJAR			Sn	Sn	19 53 50.9	-1.9
	5.5nm,0.3s,baz=85,slow=28,SNR=5.2					
MAJO	Matsushiro	4.39 257	*e*Pn	Pn	19 53 02.5	+0.8
MAJO			*e*Sn	Sn	19 53 53.9	+1.1
MAT	Matsushiro	4.39 257	P	Pn	19 53 03.0	+1.3
MAT			S	Sn	19 53 51.9	-1.0
JHJ	Hachijo jima 2	5.47 215	Pn	Pn	19 53 12.1	-4.4
	16nm,0.3s,baz=76,slow=22,SNR=20					
JHJ			Sn	Sn	19 54 09.5	-10
	54nm,0.3s,baz=102,slow=23,SNR=8.6					
ASAJ	Asahikawa	6.48 354	Pn	Pn	19 53 30.4	0.0
	2.6nm,0.3s,baz=220,slow=9.8,SNR=19					
CBIJ	Chichi jima	10.60 186	Sn	Sn	19 56 13.2	-12
JCJ	Chichijima	10.60 186	Sn	Sn	19 56 13.2	-12
	6.4nm,0.3s,baz=296,slow=20,SNR=6.5					
USRK	Ussuriysk Ar.	10.89 310	Pn	Pn	19 54 33.8	+3.0
	0.2nm,0.3s,baz=98,slow=12,SNR=6.7					
KSRS	Korea Array	12.38 274	Pn	Pn	19 54 54.0	+2.7
	0.3nm,0.3s,baz=85,slow=14,SNR=8.6					
KSAR	Wonju Array Be	12.42 274	Pn	Pn	19 54 54.0	+2.3
KLR	Kul'dur	14.35 327	Pn	Pn	19 55 15.8	-2.2
	0.1nm,0.3s,baz=140,slow=11,SNR=11					
PETK	Petropavlovsk-	18.32 28	LR	LR	20 02 42.2	
	comp=Z,28nm,20.6s,baz=338,slow=35					
SEY	Seymchan	25.87 9	P	P	19 57 26.9	+0.5
	2.0nm,0.7s,baz=289,slow=21,SNR=6.6					
H11N2	WAKE ISLAND Hy	27.08 125	T	T	20 26 00.6	
	baz=317,slow=76,SNR=9.9					
H11N1	WAKE ISLAND Hy	27.09 125	T	T	20 26 03.6	
	baz=317,slow=76,SNR=7.2					
H11N3	WAKE ISLAND Hy	27.10 125	T	T	20 26 03.2	
	baz=317,slow=76,SNR=6.2					
ULN	Ulaanbaatar	28.41 303	P	P	19 57 49.7	+0.1
	3.9nm,0.9s					
SONM	Songino Array	28.84 303	P	P	19 57 54.1	+0.7
	1.8nm,1.0s,baz=111,slow=9.1,SNR=7.5					
ENH	Enshi	29.06 265	*e*P	P	19 57 55.4	0.0
	13nm,0.9s					
TIXI	Tiksi	34.88 352	P	P	19 58 44.7	-1.3
	0.2nm,0.3s,baz=114,slow=10.0,SNR=2.5					
ZALV	Zalesovo Beam	42.73 312	P	P	19 59 53.0	+1.0
	2.8nm,0.8s,baz=94,slow=6.2,SNR=11					
ZALV			PcP	PcP	20 01 43.4	0.0
	1.7nm,0.7s,baz=85,slow=3.6,SNR=5.8					
CHTO	Chiang Mai	43.08 257	*e*P	P	19 59 53.5	-1.7
	7.8nm,1.4s					
CMAR	Chiang Mai Arr	43.28 256	P	P	19 59 57.0	+0.2
	1.0nm,0.7s,baz=47,slow=7.1,SNR=9.4					
MKAR	Makanchi Array	45.21 302	P	P	20 00 12.9	+0.9
	2.3nm,0.9s,baz=85,slow=9.0,SNR=14					
KURK	Kurchatov	46.87 308	*e*P	P	20 00 25.2	+0.3
	34nm,0.9s					
ILAR	Eielson Array	48.05 33	P	P	20 00 34.0	0.0
	1.2nm,0.6s,baz=262,slow=6.2,SNR=22					
TKM2	Tokmak 2	50.80 299	*e*P	P	20 00 54.7	-0.9
	5.6nm,0.8s					
BVAR	Borovoye Array	51.39 312	P	P	20 01 00.6	+1.0
	2.4nm,0.6s,baz=69,slow=8.1,SNR=13					
AAK	Ala-Archa	51.69 281	P	P	20 01 02.9	+0.9
	0.7nm,0.3s,baz=83,slow=5.3,SNR=3.7					
EKS2	Erkin-Say	52.16 299	*e*P	P	20 01 05.2	-0.4
	2.6nm,1.2s					
INK	Inuvik	53.05 27	P	P	20 01 11.9	+0.3
	0.6nm,0.5s,baz=323,slow=8.7,SNR=4.9					
ARU	Arti	56.99 319	P	P	20 01 40.8	+0.5
	4.2nm,0.6s,baz=104,slow=2.2,SNR=10					
ARU	Arti	56.99 319	P	P	20 01 40.8	+0.5
	1.1nm,1.1s					
WRA	Warramunga Arr	57.95 190	P	P	20 01 44.6	-2.8
	6.5nm,0.7s,baz=8.7,slow=7.1,SNR=47					
ABKAR	Akbulak array	58.81 310	*e*P	P	20 01 52.2	-1.0
	2.9nm,0.6s					
AKTO	Aktyubinsk	59.50 312	P	P	20 01 57.8	-0.1
	3.9nm,0.8s,baz=72,slow=12,SNR=8.3					
ASAR	Alice Springs	61.68 190	P	P	20 02 11.7	-1.3
	1.7nm,0.8s,baz=10,slow=14,SNR=20					
YKA	Yellowknife Ar	62.41 31	P	P	20 02 18.1	+0.6
	0.5nm,0.6s,baz=302,slow=6.6,SNR=5.8					
ARCES	ARCESS Array B	63.99 340	P	P	20 02 28.1	+0.2
	2.6nm,1.1s,baz=55,slow=10,SNR=6.5					
GEYT	Alibeck	64.99 300	P	P	20 02 35.1	0.0
	2.6nm,0.9s,baz=320,slow=3.9,SNR=5.1					
YBH	Yreka Blue Hor	68.62 53	LR	LR	20 24 42.7	
	comp=Z,41nm,20.6s,baz=44,slow=29					
FINES	FINESS Array B	69.03 333	P	P	20 03 00.8	+0.6
	3.3nm,0.8s,baz=40,slow=9.9,SNR=12					
KVAR	Kislovodsk Arr	71.74 312	P	P	20 03 18.4	+1.0
	9.2nm,1.0s,baz=231,slow=2.3,SNR=6.5					
KBZ	Khabaz	71.75 311	P	P	20 03 18.4	+1.2
	4.3nm,0.9s,baz=55,slow=4.3,SNR=8.8					
NB2	NORSAR Subarra	74.24 338	P	P	20 03 31.9	+0.2
	comp=Z,1.5nm,0.8s,baz=40,slow=6.2					
NOA	NORSAR Array B	74.24 338	P	P	20 03 31.4	-0.2
	comp=Z,0.9nm,0.6s,baz=40,slow=5.7,SNR=4.8					
AKASG	Malin Array Be	74.81 323	P	P	20 03 34.7	-0.4
	comp=Z,1.9nm,0.5s,baz=46,slow=5.7,SNR=6.2					
PDAR	Pinedale Array	76.02 47	P	P	20 03 42.6	+0.1
	comp=Z,0.3nm,0.5s,baz=288,slow=2.5,SNR=3.7					
BRTR	Keskin Array B	79.67 313	P	P	20 04 03.4	+0.6
	comp=Z,0.5nm,0.6s,baz=76,slow=5.2,SNR=4.4					
DPC	Dobruska-Polom	80.80 329	*e*P	P	20 04 10.2	+1.6
DPC			*ex*	x	20 04 22.6	
CONA	Conrad Observa	82.86 328	*i* pP	P	20 04 21.2	+1.6
	comp=Z,1.9nm,0.7s					
KHC	Kasperske Hory	82.86 330	*e*P	P	20 04 20.5	+1.0
GERES	GERESS Array B	83.04 329	P	P	20 04 20.1	-0.4
	comp=Z,0.9nm,0.7s,baz=30,slow=6.2,SNR=10.0					
ARSA	Arzberg	83.53 327	*i* P	P	20 04 20.1	-2.9
	comp=Z,0.5nm,0.3s					
SOKA	Soboth	84.19 327	*i* pP	P	20 04 27.4	+1.0
	comp=Z,1.8nm,0.6s					
KBA	Koelnbreinsper	84.59 328	*i* pP	P	20 04 29.2	+0.7
	comp=Z,0.8nm,0.3s					
MYKA	Terra Mystica	84.82 328	*i* PcP	P	20 04 30.4	+0.8
	comp=Z,1.1nm,0.3s					
ABTA	Abfaltersbach	85.20 329	*i* PcP	P	20 04 31.7	+0.2
	comp=Z,0.6nm,0.4s					
MOTA	Moosalm	85.29 330	*i* PcP	P	20 04 33.0	+1.0
	comp=Z,1.7nm,0.7s					
RETA	Reutte	85.31 330	*i* PcP	P	20 04 33.1	+1.1
	comp=Z,3.4nm,0.6s					
FETA	Feichten	85.70 330	*i* PcP	P	20 04 35.2	+1.1
	comp=Z,2.0nm,0.6s					
DAVA	Damuels	85.82 330	*i* PcP	P	20 04 35.8	+1.1
	comp=Z,4.4nm,0.6s					
TXAR	Lajitas Array	88.40 54	P	P	20 04 47.7	+0.3
	comp=Z,0.2nm,0.6s,baz=235,slow=3.2,SNR=3.2					

*ISCJB **22** 20:08:53.5±0.4, 39°.13N±0°.02×29°.03E±0°.02, h0km±4km, Error ellipse: s-maj=3.4km s-min=2.8km az=136.3*
*DDA **22** 20:08:53.5, 39°.11N×29°.01E, h22km, Ml3.5*
*ISK **22** 20:08:53.6, 39°.14N×29°.02E, h8km, ML3.3*
*CSEM **22** 20:08:53.9±0.1, 39°.13N×29°.01E, h5km, ML3.5, Error ellipse: s-maj=1.6km s-min=1.4km az=99.0*
ISC 22 20:08:54.2±1.0, 39°.13N±0°.02×29°.01E±0°.02, h7km±9km, n97, σ0s54/120, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.25	250	P	Pg	20 08 59.3	+0.2
DEMI				S	Sg	20 09 02.6	+0.2
DEMI	Demirci	0.25	250	*i* P	Pg	20 08 59.3	+0.2
DEMI				*i* S	Sg	20 09 02.6	+0.2
GDZ	Gediz	0.36	96	P	Pg	20 09 00.9	-0.4
GDZ				S	Sg	20 09 07.1	+0.9
GDZ	Gediz	0.36	96	*i* PG	Pg	20 09 00.9	-0.4
GDZ				*i* S	Sg	20 09 07.1	+0.9
TVSB	Tavsanli	0.47	47	PG	Pg	20 09 03.3	-0.1
TVSB				SG	Sg	20 09 09.7	+0.1
TVSB	Tavsanli	0.47	47	*i* Pg	Pg	20 09 03.3	-0.1
TVSB				*i* Sg	Sg	20 09 09.7	+0.1
DURS	Dursunbey	0.63	319	P	Pg	20 09 06.0	-0.3
DURS				S	Sb	20 09 15.9	-0.8
DURS	Dursunbey	0.63	319	*i* P	Pg	20 09 06.0	-0.3
DURS				*i* S	Sb	20 09 15.9	-0.8
KULA	Kula-Manisa	0.67	204	PG	Pg	20 09 06.8	-0.3
KULA	Kula-Manisa	0.67	204	*i* Pg	Pg	20 09 06.8	-0.3
MANT	Manisa	0.73	209	P	Pg	20 09 08.0	-0.2
MANT				S	Sg	20 09 17.0	-0.7
MANT	Manisa	0.73	209	*i* P	Pg	20 09 08.0	-0.2
MANT				*i* S	Sg	20 09 17.0	-0.7
KHAL	Karahalli	0.84	154	P	Pg	20 09 10.4	0.0
KHAL				S	Sg	20 09 20.1	-1.2
KHAL	Karahalli	0.84	154	*i* P	Pg	20 09 10.4	0.0
KHAL				*i* S	Sg	20 09 20.1	-1.2
KHL	Karahalli	0.90	153	*e*PG	Pb	20 09 12.0	-0.1
KHL	Karahalli	0.90	153	*e*Pg	Pb	20 09 12.0	-0.1
ORLT	Orhaneli	0.92	354	*e*PG	Pg	20 09 11.8	-0.1
AKHS	Akhisar	0.97	256	P	Pg	20 09 12.7	0.0
AKHS				S	Sg	20 09 25.5	+0.2
AKHS	Akhisar	0.97	256	*i* P	Pg	20 09 12.7	0.0
AKHS				*i* S	Sg	20 09 25.5	+0.2
AKS	Akhisar	0.97	256	*e*PG	Pg	20 09 12.8	+0.1
AKS	Akhisar	0.97	256	*e*Pg	Pg	20 09 12.8	+0.1
BALB	Balikesir	1.02	301	*e*PG	Pg	20 09 13.7	0.0
BALB	Balikesir	1.02	301	*e*Pg	Pg	20 09 13.7	0.0
IGD	Bursa	1.15	7	*i* P	Pg	20 09 14.7	-1.4
IGD				*i* S	Sb	20 09 31.5	+0.1
BALY	Balya	1.24	300	P	Pg	20 09 17.5	-0.5
BALY	Balya	1.24	300	*i* P	Pg	20 09 17.6	-0.5
MDNY	Mudanya-Bursa	1.25	355	*e*PN	Pg	20 09 17.7	-0.4
MDNY	Mudanya-Bursa	1.25	355	*e*Pn	Pg	20 09 17.7	-0.4
KCTX	Karacabey (Bur	1.25	336	*e*PN	Pg	20 09 17.6	-0.4
KCTX	Karacabey (Bur	1.25	336	*e*Pn	Pg	20 09 17.6	-0.4
CAVI	Cavuskoy	1.25	30	*e*PN	Pg	20 09 17.8	-0.3
IZI	Iznik	1.26	16	*e*PN	Pg	20 09 18.1	-0.2
IZI	Iznik	1.26	16	*e*Pn	Pg	20 09 18.1	-0.2
GEMT	Gemlik	1.31	6	*e*PN	Pn	20 09 19.1	+0.1
GEMT	Gemlik	1.31	6	*e*Pn	Pn	20 09 19.1	+0.1
BORA	Eskisehir	1.34	55	P	Pn	20 09 19.4	-0.1
BORA				S	Sn	20 09 38.2	+0.6
BORA	Eskisehir	1.34	55	*i* P	Pn	20 09 19.4	-0.1
BORA				*i* S	Sn	20 09 38.2	+0.6
DENT	Denizli	1.37	179	*e*PN	Pb	20 09 20.1	0.0
DENT	Denizli	1.37	179	*e*Pn	Pb	20 09 20.1	0.0
GONE	Gonen-Balikesi	1.38	312	*e*PN	Pn	20 09 19.9	+0.1
GONE	Gonen-Balikesi	1.38	312	*e*Pn	Pn	20 09 19.9	+0.1
ADVT	Abdulvahap	1.42	23	*e*PN	Pn	20 09 19.9	-0.5
ADVT	Abdulvahap	1.42	23	*e*Pn	Pn	20 09 19.9	-0.5
DNZL	Cakiroluk	1.44	179	P	Pn	20 09 20.1	-0.7
DNZL	Cakiroluk	1.44	179	*i* P	Pn	20 09 20.1	-0.7
DNZL				*i* S	Sg	20 09 42.8	+2.5
ARMT	Armutlu	1.44	355	*e*PN	Pn	20 09 20.5	-0.3
ARMT	Armutlu	1.44	355	*e*Pn	Pn	20 09 20.5	-0.3
AYDB	Zeytinkoy-Aydi	1.47	217	*e*PN	Pn	20 09 20.6	-0.6
AYDB	Zeytinkoy-Aydi	1.47	217	*e*Pn	Pn	20 09 20.6	-0.6
EDC	Edincik	1.51	324	*e*PN	Pn	20 09 21.5	-0.1
EDC	Edincik	1.51	324	*e*Pn	Pn	20 09 21.5	-0.1
GPA	Golpazari	1.53	40	*e*PN	Pn	20 09 22.4	+0.4
KNL	Bal¨–kesir	1.62	315	*i* P	Pn	20 09 21.2	-1.9
KNL				*i* S	Sg	20 09 45.9	-0.3
DKL	Dikili	1.64	269	*e*PN	Pn	20 09 23.6	+0.2
DKL	Dikili	1.64	269	*e*Pn	Pn	20 09 23.7	+0.2
AYDN	Tasoluk	1.71	212	P	Pn	20 09 24.6	+0.1
AYDN				S	Sn	20 09 47.2	+0.5
AYDN	Tasoluk	1.71	212	*i* P	Pn	20 09 24.6	+0.1
AYDN				*i* S	Sn	20 09 47.2	+0.5
BUY	Buyukada	1.73	3	P	Pn	20 09 24.2	-0.4
BUY	Buyukada	1.73	3	*i* P	Pn	20 09 24.2	-0.4
GULT	Gulveren	1.74	41	*e*PN	Pn	20 09 24.5	-0.5
ISP	Isparta	1.76	137	*e*PN	Pn	20 09 24.8	-0.4
ISP	Isparta	1.76	137	*e*Pn	Pn	20 09 24.8	-0.4
HRT	Hereke	1.77	16	*e*PN	Pn	20 09 25.5	+0.3
HRT	Hereke	1.77	16	*e*Pn	Pn	20 09 25.5	+0.3
AYVA	Ayvalik	1.81	276	P	Pb	20 09 28.1	+0.4
AYVA	Ayvalik	1.81	276	*i* P	Pb	20 09 28.1	+0.4
AYVA				*i* S	Sg	20 09 52.9	+0.4
KRBG	Karabiga-Canak	1.83	314	*e*PN	Pn	20 09 25.9	-0.1
KRBG	Karabiga-Canak	1.83	314	*e*Pn	Pn	20 09 25.9	-0.1
MRMT	Marmara Adasi	1.83	324	*e*PN	Pn	20 09 26.1	0.0
MRMT	Marmara Adasi	1.83	324	*e*Pn	Pn	20 09 26.2	0.0
SPNC	Sapanca-Adapaz	1.85	32	*e*PN	Pn	20 09 26.4	+0.1
SPNC	Sapanca-Adapaz	1.85	32	*e*Pn	Pn	20 09 26.4	+0.1
ISK	Istanbul-Kandi	1.94	1	*e*PN	Pn	20 09 27.6	+0.1
ISK	Istanbul-Kandi	1.94	1	*e*Pn	Pn	20 09 27.6	+0.1
SVRH	Sivrihisar-ESK	1.97	80	*e*PN	Pn	20 09 28.4	+0.3
SVRH	Sivrihisar-ESK	1.97	80	*e*Pn	Pn	20 09 28.4	+0.3
DGB	¨zmir	1.98	238	*i* P	Pb	20 09 30.6	-0.6
DGB				*i* S	Sg	20 09 57.4	-0.6
URLA	Izmir	2.04	249	*i* P	Pb	20 09 32.0	+0.4
BGKT	Bogazkoy	2.06	355	*e*PN	Pn	20 09 28.4	-0.8
BGKT	Bogazkoy	2.06	355	*e*Pn	Pn	20 09 28.4	-0.8
SILT	Sile	2.08	13	*e*PN	Pn	20 09 29.5	0.0
SILT	Sile	2.08	13	*e*Pn	Pn	20 09 29.5	0.0
RKY	Sarkoy-Tekirda	2.10	318	*e*PN	Pn	20 09 30.3	+0.4
RKY	Sarkoy-Tekirda	2.10	318	*e*Pn	Pn	20 09 30.3	+0.4
KLYT	Kilyos	2.12	1	*e*PN	Pn	20 09 29.1	-1.0
KLYT	Kilyos	2.12	1	*e*Pn	Pn	20 09 29.1	-1.0
CTKS	Kestanelik-??a	2.14	350	*e*PN	Pn	20 09 30.7	+0.4
CTKS	Kestanelik-??a	2.14	350	*e*Pn	Pn	20 09 30.7	+0.4
MDUB	Mudurnu	2.15	51	*e*PN	Pn	20 09 30.7	+0.1
ZEY	¨zmir	2.16	247	*i* P	Pg	20 09 34.8	-0.7
TKR	Tekirdag	2.18	329	*e*PN	Pn	20 09 30.9	+0.1
TKR	Tekirdag	2.18	329	*e*Pn	Pn	20 09 30.9	+0.1
KIZT	Kizilcal	2.25	95	*e*PN	Pn	20 09 32.4	+0.5
KIZT	Kizilcal	2.25	95	*e*Pn	Pn	20 09 32.4	+0.5
BOZC	Bozcaada	2.40	288	*i* P	Pn	20 09 34.8	+0.9
CTYL	Yalikoy Yolu	2.41	347	*e*PN	Pn	20 09 34.2	+0.3
CTYL	Yalikoy Yolu	2.41	347	*e*Pn	Pn	20 09 34.3	+0.3

*IDC **22** 20:14:02.9±0.8, 60°.02S×45°.25W, h0km, mb4.0/4, mb1 4.1/4, mb1mx3.8/20, mbtmp4.0/4, MS3.3/3, Ms1 3.3/3, ms1mx3.1/17, Error ellipse: s-maj=36.6km s-min=25.6km az=65.0*
*ISCJB **22** 20:14:03.4±0.8, 60°.17S±0°.07×45°.4W±0°.2, h10km, mb3.8/5, MS3.3/2, Error ellipse: s-maj=15.6km s-min=9.2km az=17.5*
*NEIC **22** 20:14:10.3±1.9, 60°.11S×45°.26W, h57km±16km, mb4.2/1, Error ellipse: s-maj=18.2km s-min=12.5km az=72.0*
ISC 22 20:14:04.1±0.8, 60°.23S±0°.09×45°.5W±0°.1, h10km, n22, σ1s50/20, mb3.9/5, Scotia Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HOPE	Hope Point	7.71	43	*e*Pn	Pn	20 15 57.4	+1.1
HOPE				*e*Sn	Sn	20 17 25.0	+1.3
PMSA	Palmer Station	9.68	234	LR	LR	20 20 34.3	
	comp=Z,146nm,21.4s,baz=83,slow=40						
VNA3	Neumayer Olymp	18.05	142	P	Pn	20 18 11.7	-2.9
VNA1	Neumayer--Stat	18.31	140	P	P	20 18 19.3	+1.4
VNA2	Neumayer--Watz	18.66	141	P	P	20 18 22.9	+1.1
	baz=288,slow=14						
SNAA	Sanae	20.27	142	P	P	20 18 41.4	+2.0
SNAA	Sanae	20.27	142	*e*P	P	20 18 39.8	+0.3
	455nm,0.8s						
PLCA	Paso Flores	24.91	310	P	P	20 19 27.6	+0.5
	2.5nm,0.8s,baz=184,slow=8.1,SNR=5.0						
CPUP	Villa Florida	34.84	341	LR	LR	20 34 53.9	
	comp=Z,37nm,20.8s,baz=225,slow=36						
VNDA	Vanda	41.46	189	P	P	20 21 53.2	+2.9
	0.4nm,0.6s,baz=172,slow=7.1,SNR=4.8						
MAW	Mawson	42.27	147	P	P	20 21 58.0	+1.0
	1.0nm,0.7s,baz=225,slow=10.0,SNR=4.0						
MAW				LR	LR	20 37 46.3	
	comp=Z,81nm,21.4s,baz=230,slow=34						
LSZ	Lusaka	68.79	84	P	P	20 25 06.8	-1.7
	2.3nm,0.7s						
DBIC	Dimbokro	73.98	42	P	P	20 25 39.8	+0.2
	2.9nm,0.8s,baz=185,slow=6.3,SNR=3.8						
AKASG	Malin Array Be	125.83	49	PKP	PKPdf	20 33 03.3	-1.5
	0.4nm,0.5s,baz=242,slow=1.5,SNR=5.1						
CMAR	Chiang Mai Arr	131.17	133	PKP	PKPdf	20 33 14.6	-1.5
	0.3nm,0.6s,baz=230,slow=5.2,SNR=4.1						
FINES	FINESS Array B	133.18	39	PKP	PKPdf	20 33 17.2	-1.2
	1.6nm,0.8s,baz=228,slow=2.3,SNR=5.0						
YKA	Yellowknife Ar	133.21	323	PKP	PKPdf	20 33 18.0	-0.4
	0.4nm,0.6s,baz=137,slow=2.0,SNR=6.3						
ARCES	ARCESS Array B	138.95	30	PKhKP	PKPpre	20 33 18.5	
	1.7nm,1.0s,baz=202,slow=1.3,SNR=5.9						
BVAR	Borovoye Array	145.33	73	PKPbc	PKPbc	20 33 40.5	-0.1
	10nm,0.6s,baz=251,slow=4.1,SNR=85						
ILAR	Eielson Array	145.59	312	PKPbc	PKPdf	20 33 40.5	-0.4
	1.4nm,0.6s,baz=150,slow=3.5,SNR=12						
MKAR	Makanchi Array	147.13	90	PKPbc	PKPbc	20 33 45.6	-0.7
	2.4nm,0.6s,baz=239,slow=2.5,SNR=29						
SONM	Songino Array	159.56	115	PKPab	PKPab	20 34 39.8	-0.6
	0.3nm,0.6s,baz=213,slow=4.5,SNR=3.3						

*ISK **22** 20:22:44.8, 39°.00N×29°.30E, h17km, MD2.6*
*ISCJB **22** 20:22:46.8±0.6, 39°.12N±0°.04×29°.06E±0°.06, h9km, Error ellipse: s-maj=8.3km s-min=4.6km az=35.4*
*CSEM **22** 20:22:46.7±0.2, 39°.10N×29°.08E, h8km, MD2.4, Error ellipse: s-maj=7.2km s-min=4.4km az=127.0*
*DDA **22** 20:22:47.2, 39°.09N×29°.08E, h7km, Md2.4*
ISC 22 20:22:46.3±0.9, 39°.10N±0°.03×29°.08E±0°.04, h9km, n19, σ0s56/23, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.28	259	P	Pb	20 22 53.2	-0.5
DEMI	Demirci	0.28	259	*i* P	Pb	20 22 53.2	-0.5
GDZ	Gediz	0.32	92	P	Pb	20 22 53.5	-0.7
GDZ	Gediz	0.32	92	*i* P	Pb	20 22 53.5	-0.7
TVSB	Tavsanli	0.46	41	*e*PG	Pg	20 22 54.8	-0.6
TVSB				*e*SG	Sg	20 23 01.4	0.0
TVSB	Tavsanli	0.46	41	*e*Pg	Pg	20 22 54.8	-0.6
TVSB				*e*Sg	Sg	20 23 01.4	0.0
KULA	Kula-Manisa	0.67	209	*e*PG	Pg	20 22 59.1	-0.1
KULA				*e*SG	Sb	20 23 09.0	-0.6
KULA	Kula-Manisa	0.67	209	*e*Pg	Pg	20 22 59.1	-0.1
KULA				*e*Sg	Sb	20 23 09.0	-0.6
DURS	Dursunbey	0.68	317	P	Pb	20 23 00.6	+0.1
DURS	Dursunbey	0.68	317	*i* P	Pb	20 23 00.6	+0.1
MANT	Manisa	0.73	214	P	Pb	20 23 01.3	0.0
MANT	Manisa	0.73	214	*i* P	Pb	20 23 01.3	0.0
KHAL	Karahalli	0.80	156	*i* P	Pn	20 23 05.0	+1.2
KCTX	Karacabey (Bur	1.29	335	*e*PN	Pn	20 23 10.9	+0.3
KCTX	Karacabey (Bur	1.29	335	*e*Pn	Pn	20 23 10.9	+0.3
BORA	Eskisehir	1.32	53	P	Pg	20 23 12.6	+0.9
BORA	Eskisehir	1.32	53	*i* P	Pg	20 23 12.6	+0.9
ARMT	Armutlu	1.47	354	*e*PN	Pn	20 23 13.3	+0.2
ARMT	Armutlu	1.47	354	*e*Pn	Pn	20 23 13.3	+0.2

MAN 22 20:27:13, 8°.41N×126°.69E, h1km, mb4.2, ML3.0, MS2.8, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MATI	Mati	1.51	197	*e*P	Pg	20 27 42.0	-0.1
MATI				*e*S	Sg	20 28 02.1	+0.5
BUKP	Musuan	1.69	252	*e*P	Pn	20 27 44.3	+0.5
BUKP				*e*S	Sg	20 28 07.6	+0.1
BESP	Borongan	3.41	339	*e*P	Sb	20 28 54.3	-1.9

*ISCJB **22** 20:47:44.1±0.5, 7°.70S±0°.05×127°.7E±0°.1, h150km, mb3.7/7, Error ellipse: s-maj=15.6km s-min=6.1km az=167.8*
*IDC **22** 20:47:44.2±2.7, 7°.65S×127°.50E, h126km±25km, mb3.5/7, mb1 3.8/10, mb1mx3.6/28, mbtmp4.1/10, Error ellipse: s-maj=34.2km s-min=13.1km az=73.0*
ISC 22 20:47:45.9±0.6, 7.76S±0°.06×127°.8E±0°.1, h150km, n19, σ1s89/23, mb3.8/7, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SIJI	Sorong	7.68	27	P	Pn	20 49 34.2	-0.8
	12nm,0.3s,baz=358,slow=23,SNR=2.1						
FITZ	Fitzroy Crossi	10.49	191	P	Pn	20 50 11.2	-1.1
	6.2nm,0.3s,baz=24,slow=10,SNR=138						
FITZ				S	Sn	20 52 08.4	0.0
	2.9nm

MEX 22 20:58:40.4±0.7, 16°.81N×94°.54W, h127km±10km, MD4.0, Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TUIG	**Tuzandepetl**	**1.22**	**5**	*i* P	Pn	20 59 03.8	-1.5
TUIG				*e*S	Sn	20 59 22.4	-1.8
TUIG	**Tuzandepetl**	**1.22**	**5**	*i* P	Pn	20 59 03.8	-1.5
TUIG				*e*S	Sn	20 59 22.4	-1.8
PCIG		**1.68**	**131**	*e*P	Pn	20 59 09.3	-1.1
PCIG				*e*S	Sn	20 59 31.4	-1.9
PCIG		**1.68**	**131**	*e*P	Pn	20 59 09.3	-1.1
PCIG				*e*S	Sn	20 59 31.4	-1.9
HUIG	**Huatulco**	**1.83**	**236**	*i* P	Pn	20 59 08.8	-3.4
HUIG				*e*S	Sn	20 59 32.8	-3.6
HUIG	**Huatulco**	**1.83**	**236**	*i* P	Pn	20 59 08.8	-3.4
HUIG				*e*S	Sn	20 59 32.8	-3.6
VHO	**Vista Hermosa**	**2.11**	**277**	*i* P	Pn	20 59 15.0	-0.8
VHO				*e*S	Sn	20 59 40.9	-2.0
VHO	**Vista Hermosa**	**2.11**	**277**	*i* P	Pn	20 59 15.0	-0.8
VHO				*e*S	Sn	20 59 40.9	-2.0
CCIG	**Comitan**	**2.37**	**103**	*e*P	Pn	20 59 18.4	-0.6
CCIG				*i* S	Sn	20 59 46.8	-1.8
CCIG	**Comitan**	**2.37**	**103**	*e*P	Pn	20 59 18.4	-0.6
CCIG				*i* S	Sn	20 59 46.8	-1.8
TPIG	**Tehuac#an**	**3.13**	**301**	*e*P	Pn	20 59 27.9	-0.9
TPIG				*i* S	Sn	21 00 04.5	-1.6
TPIG	**Tehuac#an**	**3.13**	**301**	*e*P	Pn	20 59 27.9	-0.9
TPIG				*i* S	Sn	21 00 04.5	-1.6
PNIG	**Pinotepa**	**3.46**	**264**	*i* P	Pn	20 59 30.7	-2.3
PNIG				*i* S	Sn	21 00 11.3	-2.4
PNIG	**Pinotepa**	**3.46**	**264**	*i* P	Pn	20 59 30.7	-2.3
PNIG				*i* S	Sn	21 00 11.3	-2.4

BJI ***22*** *20:58:46.4, 20°.40S×169°.10E, h10km, mb4.8/39, mB5.1/27, Ms5.0/26, Ms7 4.6/24*
NEIC ***22*** *20:58:47.0±0.2, 20°.41S×168°.93E, h10km, mb5.1/18, Error ellipse: s-maj=9.4km s-min=7.9km az=100.0*
GCMT ***22*** *20:58:47.0±0.2, 20°.39S×168°.86E, h29km, MW5.2/105, Moment Tensor Solution. s76,c121; s105,c176; Duration: 1s0 Moment tensor: Scale 10^17^Nm; Mrr0.19±.02; Mθθ-0.61±.01; Mφφ0.41±.01; Mrθ0.41±.03; Mrφ-0.55±.01; Mθφ-0.25±.02; Best double couple: M0 0.90400×10^17^ NP1:φs108.00000°, δ80.00000°, λ146.00000°. NP2:φs205.00000°, δ57.00000°, λ12.00000°. Principal axes: T 0.8880, Plg31.0000°, Azm61.0000°; N 0.0310, Plg55.0000°, Azm273.0000°; P -0.9200, Plg15.0000°, Azm160.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
ISCJB ***22*** *20:58:49.1±0.2, 20°.48S±0°.04×168°.99E±0°.04, h31km, mb4.7/52, MS4.6/36 Error ellipse: s-maj=5.9km s-min=4.9km az=32.6*
MOS ***22*** *20:58:50.2±1.2, 20°.50S×168°.99E, h42km, mb5.0/30, MS4.5/11, Error ellipse: s-maj=11.4km s-min=9.5km az=119.2*
IDC ***22*** *20:58:52.7±3.6, 20°.42S×168°.94E, h51km±32km, mb4.2/22, mb1 4.4/25, mb1mx4.2/41, mbtmp4.5/25, ML4.7/3, MS4.5/27, Ms1 4.5/27, ms1mx4.4/40, Error ellipse: s-maj=15.3km s-min=14.2km az=93.0*

ISC 22 20:58:50.4±0.3, 20°.54S±0°.05×169°.12E±0°.06, h31km, n316, σ1s79/313, mb4.8/50, MS4.6/36, 9C-5D, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.92**	**238**	*e*Pn	**Pn**	**20 59 31.8**	**-3.1**
DZM				*e*Sn	**Sn**	**21 00 04.8**	**-4.2**
	973nm,0.2s						
DZM				*e*LR	LR	21 00 05.9	
	18μm,23.9s						
DZM	**Mont Dzumac**	**2.92**	**238**	*e*Pn	**Pn**	**20 59 31.9**	**-3.1**
DZM				*e*Sn	**Sn**	**21 00 05.7**	**-3.4**
NFK	**Norfolk Island**	**8.53**	**187**	P	**Pn**	**21 00 54.2**	**+2.3**
	baz=8.8,SNR=6.9						
HNR	**Honiara**	**14.15**	**320**	P	**Pn**	**21 02 08.6**	**-0.3**
	8.0nm,0.3s,baz=109,slow=17,SNR=2.9						
HNR				LR	LR	21 06 21.6	
	comp=Z,834nm,18.5s,baz=169,slow=32						
RAO	**Raoul Island**	**14.60**	**129**	LR	LR	21 06 19.8	
	comp=Z,760nm,18.1s,baz=252,slow=30						
OUZ	**Omahuta**	**15.15**	**166**	*e*Pn	**P**	**21 02 25.2**	**-1.7**
	58nm,1.1s						
ARMA	**Armidale**	**18.58**	**235**	P	**Pn**	**21 03 08.2**	**+2.7**
	baz=19,SNR=8.7						
HIZ	**Hauiti**	**18.59**	**166**	*e*P	**Pn**	**21 03 06.6**	**+1.2**
	407nm,1.9s						
URZ	**Urewera**	**18.96**	**160**	P	**Pn**	**21 03 12.6**	**+2.6**
	0.8nm,0.3s,baz=6.3,slow=5.2,SNR=15						
URZ	**Urewera**	**18.96**	**160**	*e*P	**P**	**21 03 09.5**	**+0.4**
	120nm,1.2s						
AFI	**Afiamalu**	**19.39**	**73**	P	**Pn**	**21 03 16.1**	**+0.7**
	2.4nm,0.3s,baz=189,slow=1.1,SNR=9.4						
AFI				LR	LR	21 09 49.1	
	comp=Z,897nm,19.2s,baz=298,slow=34						
AFI	**Afiamalu**	**19.39**	**73**	*e*P	**P**	**21 03 11.2**	**-2.9**
	171nm,1.1s						
RMQ	**Roma**	**19.58**	**249**	P	**Pn**	**21 03 19.1**	**+1.6**
	baz=20,SNR=7.3						
BKZ	**Black Stump Fm**	**19.62**	**163**	*e*P	**P**	**21 03 16.5**	**+0.1**
	64nm,1.1s						
BFZ	**Birch Farm**	**20.98**	**165**	*e*P	**P**	**21 03 30.9**	**-0.2**
	88nm,1.3s						
THZ	**Tophouse**	**21.40**	**172**	*e*P	**P**	**21 03 38.1**	**+2.5**
	194nm,1.7s						
CTA	**Charters Tower**	**21.45**	**267**	LR	LR	21 12 01.6	
	comp=Z,942nm,19.7s,baz=86,slow=37						
CNB	**Canberra Magne**	**22.77**	**226**	P	**P**	**21 03 54.5**	**+4.1**
	baz=23,SNR=4.8						
YNG	**Young**	**22.88**	**229**	P	**P**	**21 03 56.0**	**+4.5**
	baz=23,SNR=6.6						
RPZ	**Rata Peaks**	**23.16**	**176**	P	**P**	**21 03 56.7**	**+2.4**
	6.3nm,0.6s,baz=237,slow=6.6,SNR=4.1						
RPZ				LR	LR	21 12 40.4	
	comp=Z,4μm,18.3s,baz=358,slow=36						
MTSU	**Mount Surprise**	**23.52**	**272**	P	**P**	**21 03 58.5**	**+0.5**
	baz=24,SNR=16						
CMSA	**Cobar Meteorol**	**23.68**	**238**	P	**P**	**21 04 00.6**	**+1.2**
	baz=24,SNR=12						
PMG	**Port Moresby**	**23.89**	**294**	P	**P**	**21 03 59.3**	**-2.2**
	10nm,0.7s,baz=119,slow=8.9,SNR=4.4						
PMG				LR	LR	21 12 14.1	
	comp=Z,2μm,18.6s,baz=114,slow=34						
PMG	**Port Moresby**	**23.89**	**294**	*c i*P	**P**	**21 04 02.0**	**+0.4**
PMG				*i* *PP	**pP**	**21 04 10.5**	**0.0**
PMG				pmax	pmax		
	comp=Z,203nm,1.1s						
PMG	**Port Moresby**	**23.89**	**294**	*e*P	**P**	**21 03 58.4**	**-3.2**
	comp=Z,66nm,1.1s						
COEN	**Coen**	**25.61**	**281**	P	**P**	**21 04 19.6**	**+2.4**
	baz=26,SNR=4.5						
COEN	**Coen**	**25.61**	**281**	P	**P**	**21 04 13.1**	**-4.2**
	comp=Z,30nm,1.0s						
STKA	**Stephens Creek**	**27.08**	**240**	P	**P**	**21 04 28.6**	**-1.8**
	comp=Z,2.7nm,0.7s,baz=90,slow=4.0,SNR=3.0						
STKA				LR	LR	21 14 34.8	
	comp=Z,2μm,20.8s,baz=68,slow=35						
STKA	**Stephens Creek**	**27.08**	**240**	P	**P**	**21 04 33.5**	**+3.2**
	baz=27,SNR=5.0						
STKA	**Stephens Creek**	**27.08**	**240**	*e*P	**P**	**21 04 31.3**	**+0.9**
STKA				pmax	pmax		
	comp=Z,27nm,1.9s						
STKA	**Stephens Creek**	**27.08**	**240**	*e*P	**P**	**21 04 31.2**	**+0.9**
	comp=Z,27nm,1.9s						
HTT	**Hallett**	**29.70**	**238**	P	**P**	**21 04 57.1**	**+3.3**
	baz=30,SNR=4.3						
WRAB	**Tennant Creek**	**32.59**	**265**	⇑*i*P	**P**	**21 05 19.8**	**+0.4**
WRAB				pmax	pmax		
	comp=Z,52nm,1.3s						
WRAB	**Tennant Creek**	**32.59**	**265**	*e*P	**P**	**21 05 18.1**	**-1.4**
	comp=Z,25nm,1.3s						
WRA	**Warramunga Arr**	**32.60**	**265**	P	**P**	**21 05 17.9**	**-1.6**
	comp=Z,4.3nm,0.9s,baz=93,slow=8.4,SNR=22						
WRA				LR	LR	21 18 40.2	
	comp=Z,1μm,18.7s,baz=105,slow=37						
AS01	**Alice Springs**	**32.68**	**258**	*e*P	**P**	**21 05 20.1**	**-0.1**
ASAR	**Alice Springs**	**32.73**	**258**	P	**P**	**21 05 19.4**	**-1.1**
	comp=Z,5.1nm,0.7s,baz=79,slow=9.2,SNR=50						
ASAR				LR	LR	21 18 59.7	
	comp=Z,1μm,18.5s,baz=94,slow=37						
MTN	**Manton Dam**	**37.11**	**276**	P	**P**	**21 05 58.6**	**+0.2**
	baz=37,SNR=9.7						
MTN	**Manton Dam**	**37.11**	**276**	*e*P	**P**	**21 05 59.2**	**+0.8**
	comp=Z,20nm,0.6s						
WRKA	**Warakurna**	**37.80**	**255**	P	**P**	**21 06 04.8**	**+0.5**
	baz=38,SNR=9.8						
TBI	**Tubuai**	**38.43**	**102**	*e*LQ	LQ	21 14 58.4	
	comp=Z,3μm,31.8s						
TBI				*e*LR	LR	21 16 41.9	
	comp=Z,444nm,24.8s						
PPT2	**Papeete2**	**39.08**	**93**	*e*LQ	LQ	21 15 17.0	
	comp=Z,3μm,27.8s						
PPT2				*e*LR	LR	21 16 55.0	
	comp=Z,659nm,22.8s						
PPT	**Papeete**	**39.08**	**93**	LR	LR	21 21 14.4	
	comp=Z,244nm,19.0s,baz=270,slow=34						
FITZ	**Fitzroy Crossi**	**41.02**	**266**	P	**P**	**21 06 30.2**	**-0.9**
	comp=Z,14nm,0.8s,baz=138,slow=7.4,SNR=14						
FITZ	**Fitzroy Crossi**	**41.02**	**266**	P	**P**	**21 06 30.9**	**-0.2**
	baz=41,SNR=25						
FITZ	**Fitzroy Crossi**	**41.02**	**266**	*e*P	**P**	**21 06 30.9**	**-0.2**
	comp=Z,26nm,0.9s						
GUMO	**Guam**	**41.46**	**323**	LR	LR	21 22 45.6	
	comp=Z,563nm,18.4s,baz=154,slow=35						
KLBR	**Kellerberrin**	**47.06**	**246**	P	**P**	**21 07 19.3**	**-0.2**
	baz=47,SNR=4.9						
NWAO	**Narrogin (SRO)**	**47.53**	**244**	P	**P**	**21 07 21.9**	**-1.1**
	comp=Z,12nm,1.0s,baz=33,slow=15,SNR=3.6						
NWAO				LR	LR	21 27 05.2	
	comp=Z,2μm,20.6s,baz=336,slow=36						
TAOE	**Nuku Hiva Isla**	**50.24**	**84**	*e*LR	LR	21 22 08.7	
	comp=Z,567nm,27.9s						
JCJ	**Chichijima**	**54.07**	**330**	LR	LR	21 29 16.8	
	comp=Z,179nm,21.6s,baz=134,slow=34						
VNDA	**Vanda**	**57.13**	**182**	P	**P**	**21 08 34.7**	**+1.1**
	comp=Z,0.6nm,0.6s,baz=346,slow=6.1,SNR=9.0						
VNDA				LR	LR	21 29 09.8	
	comp=Z,468nm,21.9s,baz=14,slow=32						
SBA	**Scott Base**	**57.37**	**181**	*e*P	**P**	**21 08 34.6**	**-0.7**
SBA				pmax	pmax		
	comp=Z,20nm,1.0s						
SBA	**Scott Base**	**57.37**	**181**	*e*P	**P**	**21 08 34.6**	**-0.7**
	comp=Z,20nm,1.0s						
KSM	**Kuching**	**61.56**	**283**	*e*P	P	21 08 60.0	-5.2
	comp=Z,19nm,1.0s						
MJAR	**Matsushiro Arr**	**63.85**	**333**	P	**P**	**21 09 18.4**	**-1.6**
	comp=Z,3.3nm,0.9s,baz=168,slow=5.4,SNR=7.3						
MAJO	**Matsushiro**	**63.85**	**333**	⇑*e*P	**P**	**21 09 20.4**	**+0.4**
MAJO				pmax	pmax		
	comp=Z,107nm,1.8s						
JNU	**Nakatsue**	**64.66**	**325**	P	**P**	**21 09 24.2**	**-1.1**
	comp=Z,19nm,1.1s,baz=145,slow=0.9,SNR=4.4						
KSRS	**Korea Array**	**69.51**	**326**	P	**P**	**21 09 56.1**	**0.0**
	comp=Z,1.0nm,0.8s,baz=141,slow=6.1,SNR=4.3						
QSPA	**South Pole Qui**	**69.52**	**180**	*e*P	**P**	**21 09 54.6**	**-1.4**
	comp=Z,55nm,0.9s						
KSAR	**Wonju Array Be**	**69.52**	**326**	P	**P**	**21 09 56.1**	**0.0**
KSAR	**Wonju Array Be**	**69.52**	**326**	P	**P**	**21 09 56.1**	**0.0**
KS01	**Wonju Array Si**	**69.55**	**326**	*e*P	**P**	**21 09 53.9**	**-2.4**
NJ2	**Nanjing**	**71.06**	**316**	*e*P	**P**	**21 10 03.4**	**-2.3**
NJ2				pmax	pmax		
	comp=Z,11nm,0.7s						
USRK	**Ussuriysk Ar.**	**72.84**	**333**	P	**P**	**21 10 15.8**	**-0.3**
	comp=Z,8.1nm,0.9s,baz=153,slow=4.9,SNR=10						
PET	**Petropavlovsk**	**73.81**	**353**	*e*P	**P**	**21 10 22.0**	**+0.4**
PET				*e*S	**S**	**21 19 49.2**	**-1.5**
PET				pmax	pmax		
	comp=Z,100nm,15.2s						
PEA0	**Petropavlovsk-**	**74.00**	**353**	*e*P	**P**	**21 10 20.9**	**-1.8**
PETK	**Petropavlovsk-**	**74.00**	**353**	P	**P**	**21 10 21.6**	**-1.1**
	comp=Z,12nm,0.9s,baz=139,slow=5.2,SNR=8.5						
PETK				LR	LR	21 38 10.0	
	comp=Z,243nm,20.5s,baz=154,slow=32						
PETK	**Petropavlovsk-**	**74.00**	**353**	P	**P**	**21 10 21.6**	**-1.1**
PETK				pmax	pmax		
	comp=Z,3.0nm,0.5s						
PETK				MLR	MLR		
	comp=Z,243nm,20.5s						
MDJ	**Mudanjiang**	**74.21**	**332**	P	**P**	**21 10 25.3**	**+1.2**
MDJ				pP	pP	21 10 28.5	-5.4
MDJ				sP	sP	21 10 29.8	-7.7
MDJ				PcP	**PcP**	**21 10 39.9**	**+0.9**
MDJ				PP	**PP**	**21 13 10.3**	**-0.1**
MDJ				S	**S**	**21 19 58.4**	**+2.9**
MDJ				sS	sS	21 20 05.9	-5.7
MDJ				ScS	**ScS**	**21 20 35.0**	**+2.7**
MDJ				pmax	pmax		
	comp=Z,11nm,1.1s						
MDJ				pmax	pmax		
	comp=Z,66nm,4.4s						
MDJ				LR	LR		
	comp=Z,130nm,23.2s						
MDJ				LR	LR		
	comp=Z,180nm,23.2s						
MDJ				LR	LR		
	comp=Z,260nm,26.1s						
TIA	**Tai'an**	**74.84**	**319**	*e*P	**P**	**21 10 26.1**	**-1.9**
CN2	**Changchun**	**75.51**	**329**	*e*P	**P**	**21 10 30.8**	**-0.9**
CN2				*es*P	pP	21 10 39.3	-2.1
CN2				*e*S	**S**	**21 20 10.0**	**0.0**
CN2				pmax	pmax		
	comp=Z,10.0nm,1.2s						
CN2				LR	LR		
	comp=Z,200nm,18.0s						
CN2				LR	LR		
	comp=Z,200nm,18.0s						
CN2				LR	LR		
	comp=Z,200nm,18.0s						
NIKH	**Nikolski High**	**75.66**	**14**	*e*P	**P**	**21 10 31.2**	**-1.1**
	comp=Z,62nm,0.6s						
GYA	**Guiyang**	**76.47**	**305**	P	**P**	**21 10 40.0**	**+2.3**
GYA				PP	**PP**	**21 13 32.3**	**+2.2**
GYA				S	**S**	**21 20 23.6**	**+2.0**
GYA				SKS	**SKSac**	**21 20 46.4**	**-1.0**
GYA				SS	**SS**	**21 25 21.8**	**+4.6**
GYA				pmax	pmax		
	comp=Z,20nm,1.0s						
GYA				pmax	pmax		
	comp=Z,100nm,6.0s						
GYA				LR	LR		
	comp=Z,570nm,20.0s						
GYA				LR	LR		
	comp=Z,470nm,21.0s						
GYA				LR	LR		
	comp=Z,510nm,20.3s						
KLR	**Kul'dur**	**77.00**	**336**	P	**P**	**21 10 38.7**	**-1.3**
	comp=Z,3.2nm,0.5s,baz=120,slow=1.6,SNR=14						
MAW	**Mawson**	**77.19**	**202**	P	**P**	**21 10 41.1**	**+0.2**
	comp=Z,1.7nm,0.7s,baz=142,slow=8.3,SNR=6.8						
MAW				LR	LR	21 41 58.6	
	comp=Z,304nm,19.1s,baz=72,slow=34						
NKL	**Nikolayevsk**	**77.41**	**343**	*e*P	**P**	**21 10 41.0**	**-1.2**
NKL				pmax	pmax		
	comp=Z,26nm,1.0s						
BJI	**Beijing**	**77.87**	**321**	P	**P**	**21 10 45.3**	**+0.2**
BJI				S	**S**	**21 20 36.6**	**+0.6**
BJI				pmax	pmax		
	comp=Z,7.0nm,1.1s						
BJI				pmax	pmax		
	comp=Z,120nm,5.4s						
BJI				LR	LR		
	comp=Z,99nm,14.6s						
BJI				LR	LR		
	comp=Z,160nm,17.2s						
BJI				LR	LR		
	comp=Z,170nm,20.7s						
KMI	**Kunming**	**78.86**	**302**	P	**P**	**21 10 53.3**	**+2.1**
KMI				pmax	pmax		
	comp=Z,8.0nm,0.8s						
KMI				pmax	pmax		
	comp=Z,110nm,5.4s						
XAN	**Xi'an**	**78.90**	**313**	P	**P**	**21 10 50.3**	**-0.7**
XAN				pP	PcP	21 10 55.8	-3.8
XAN				pmax	pmax		
	comp=Z,5.0nm,0.9s						
XAN				LR	LR		
	comp=Z,390nm,11.1s						
XAN				LR	LR		
	comp=Z,430nm,11.6s						
XAN				LR	LR		
	comp=Z,630nm,12.5s						
CM01	**Chiang Mai Arr**	**78.91**	**294**	*e*P	**P**	**21 10 51.8**	**+0.5**
CM31	**Chiang Mai Arr**	**78.94**	**295**	*e*P	**P**	**21 10 52.8**	**+1.3**
CMAR	**Chiang Mai Arr**	**78.94**	**295**	P	**P**	**21 10 50.7**	**-0.8**
	comp=Z,2.6nm,0.9s,baz=135,slow=4.5,SNR=16						
CMAR				LR	LR	21 46 00.7	
	comp=Z,31nm,20.8s,baz=135,slow=36						
CMAR	**Chiang Mai Arr**	**78.94**	**295**	P	**P**	**21 10 50.7**	**-0.8**
CMAR				pmax	pmax		
	comp=Z,2.0nm,0.9s						
CMAR				MLR	MLR		
	comp=Z,31nm,20.8s						
CHTO	**Chiang Mai**	**79.09**	**295**	*e*P	**P**	**21 10 49.8**	**-2.5**
CHTO				pmax	pmax		
	comp=Z,10.0nm,0.9s						
CHTO	**Chiang Mai**	**79.09**	**295**	*e*P	**P**	**21 10 49.8**	**-2.5**
	comp=Z,9.8nm,0.9s						
CD2	**Chengdu**	**80.94**	**308**	P	**P**	**21 11 02.9**	**+0.8**
CD2				sP	PcP	21 11 07.5	-1.1
CD2				PP	**PP**	**21 14 07.3**	**+0.1**
CD2				S	**S**	**21 21 12.6**	**+3.5**
CD2				sS	SKSac	21 21 18.3	-0.6
CD2				SS	**SS**	**21 26 27.8**	**+3.7**
CD2				pmax	pmax		
	comp=Z,8.0nm,0.6s						
CD2				pmax	pmax		
	comp=Z,90nm,5.3s						
CD2				LR	LR		
	comp=Z,660nm,7.2s						
CD2				LR	LR		
	comp=Z,920nm,12.6s						
HHC	**Hu-ho-hao-te**	**81.13**	**320**	*e*P	**P**	**21 11 04.9**	**+1.9**
HHC				sP	pP	21 11 12.6	-0.2
HHC				PP	**PP**	**21 14 13.3**	**+4.6**
HHC				S	**S**	**21 21 16.4**	**+5.6**
HHC				sS	SKKSac	21 21 23.8	+1.3
HHC				pmax	pmax		
	comp=Z,30nm,1.3s						
HHC				pmax	pmax		
	comp=Z,180nm,7.7s						
HHC				LR	LR		
	comp=Z,320nm,17.5s						
HHC				LR	LR		
	comp=Z,360nm,17.5s						
HHC				LR	LR		
	comp=Z,390nm,17.8s						
MA2	**Magadan**	**81.23**	**351**	LR	LR	21 43 55.7	
	comp=Z,117nm,18.8s,baz=193,slow=33						
LZH	**Lanzhou**	**83.51**	**312**	*e*P	**P**	**21 11 15.4**	**-0.2**
LZH				pP	PcP	21 11 18.6	-1.3
LZH				sP	pP	21 11 20.3	-5.2
LZH				*e*PP	**PP**	**21 14 30.0**	**+1.5**
LZH				SKS	**S**	**21 21 32.4**	**-3.2**
LZH				*e*S	**SKSac**	**21 21 35.6**	**-0.6**
LZH				sS	SKKSac	21 21 44.0	+3.2
LZH				*e*SS	**SS**	**21 27 06.3**	**+3.8**
LZH				pmax	pmax		
	comp=Z,20nm,1.5s						
LZH				pmax	pmax		
	comp=Z,120nm,7.6s						
LZH				LR	LR		
	comp=Z,230nm,16.0s						
LZH				LR	LR		
	comp=Z,170nm,14.0s						
LZH				LR	LR		
	comp=Z,360nm,19.2s						
SYO	**Syowa Base**	**83.66**	**196**	‖*e*P	**P**	**21 11 14.0**	**-1.6**
SYO	**Syowa Base**	**83.66**	**196**	‖*e*pP	**P**	**21 11 18.0**	**+2.4**
SEY	**Seymchan**	**84.24**	**352**	P	**P**	**21 11 17.7**	**-0.8**
	comp=Z,1.0nm,0.4s,baz=14,slow=3.2,SNR=3.1						
SEY	**Seymchan**	**84.24**	**352**	‖*e*P	**P**	**21 11 20.0**	**+1.5**
ULN	**Ulaanbaatar**	**87.84**	**323**	⇑*i*P	**P**	**21 11 37.4**	**+0.6**
ULN				pmax	pmax		
	comp=Z,8.0nm,1.1s						
ULN	**Ulaanbaatar**	**87.84**	**323**	*e*P	**P**	**21 11 35.2**	**-1.6**
SNAA	**Sanae**	**87.86**	**183**	P	**P**	**21 11 35.2**	**-1.4**
SNAA	**Sanae**	**87.86**	**183**	‖*e*P	**P**	**21 11 38.1**	**+1.5**
SNAA				pmax	pmax		
	comp=Z,174nm,0.6s						
SNAA	**Sanae**	**87.86**	**183**	*e*P	**P**	**21 11 36.9**	**+0.3**
GTA	**Gaotai**	**87.94**	**314**	*e*P	**P**	**21 11 38.6**	**+1.1**
GTA				pP	PcP	21 11 43.3	+4.0
GTA				sP	pP	21 11 45.8	-1.6
GTA				SKS	**SKSac**	**21 22 04.3**	**+0.5**
GTA				S	**S**	**21 22 20.8**	**+2.0**
GTA				sS	ScS	21 22 29.1	+4.0
GTA				SS	**SS**	**21 28 13.3**	**+6.0**
GTA				pmax	pmax		
	comp=Z,3.0nm,1.3s						
GTA				pmax	pmax		
	comp=Z,44nm,6.2s						
GTA				LR	LR		
	comp=Z,110nm,16.6s						
GTA				LR	LR		
	comp=Z,130nm,18.1s						
GTA				LR	LR		
	comp=Z,140nm,18.5s						
N02D	**Trinity Center**	**87.94**	**45**	P	**P**	**21 11 39.4**	**+2.0**
	baz=241						
M02C	**Callahan**	**88.05**	**44**	P	**P**	**21 11 38.1**	**+0.2**
	baz=240						
YAK	**Yakutsk**	**88.07**	**343**	LR	LR	21 45 38.9	
	comp=Z,283nm,21.8s,baz=146,slow=32						
YAK	**Yakutsk**	**88.07**	**343**	*e*P	**P**	**21 11 36.2**	**-1.1**
YAK				pmax	pmax		
	comp=Z,15nm,0.9s						
YAK				pmax	pmax		
	comp=N,7.0nm,1.3s						
CMB	**Columbia Colle**	**88.10**	**48**	*e*P	**P**	**21 11 35.7**	**-2.5**
CMB	**Columbia Colle**	**88.10**	**48**	*e*P	**P**	**21 11 35.6**	**-2.5**
AFDM	**Forest Hills D**	**88.13**	**47**	*e*P	**P**	**21 11 39.5**	**+1.3**
SONM	**Songino Array**	**88.19**	**323**	P	**P**	**21 11 38.1**	**-0.3**
	comp=N,5.9nm,1.1s,baz=139,slow=3.6,SNR=18						
SONM				LR	LR	21 52 03.0	
	comp=N,140nm,18.3s,baz=130,slow=36						
SONA1	**Songino Array**	**88.19**	**323**	*e*P	**P**	**21 11 37.5**	**-1.0**
O03D	**Paynes Creek**	**88.21**	**46**	P	**P**	**21 11 39.5**	**+0.8**
	baz=241						
BILL	**Bilibino**	**88.34**	**359**	⇑*i*P	**P**	**21 11 38.2**	**-0.3**
BILL				*e**PP	**pP**	**21 11 48.5**	**0.0**
BILL				*e**SP	**sP**	**21 11 54.3**	**+2.2**
BILL				*e*S	**S**	**21 22 18.8**	**-2.4**
BILL				pmax	pmax		
	comp=Z,7.0nm,1.0s						
BILL				MLR	MLR		
	comp=Z,97nm,19.0s						
BILL	**Bilibino**	**88.34**	**359**	*e*P	**P**	**21 11 36.0**	**-2.6**
BAR	**Barrett**	**88.42**	**54**	*e*P	**P**	**21 11 39.5**	**-0.3**
VNA3	**Neumayer Olymp**	**88.46**	**180**	P	**P**	**21 11 39.6**	**+0.3**
HUMO	**Hull Mountain**	**88.58**	**43**	*e*P	**P**	**21 11 39.2**	**-1.1**
VNA2	**Neumayer--Watz**	**88.75**	**181**	P	**P**	**21 11 41.3**	**+0.6**
	baz=176,slow=4.7						
M04C	**Macdoel**	**88.90**	**44**	P	**P**	**21 11 41.4**	**-0.6**
	baz=241						
CAST	**Castle Rocks**	**89.02**	**16**	*e*P	**P**	**21 11 41.0**	**-0.9**
VNA1	**Neumayer--Stat**	**89.04**	**181**	P	**P**	**21 11 42.6**	**+0.6**
MPMC	**Manual Prospec**	**89.28**	**51**	P	**P**	**21 11 45.1**	**+1.2**
	baz=244						
I04A	**Tendick Farm,**	**89.51**	**42**	P	**P**	**21 11 44.5**	**-0.2**
	baz=241						
PAHR	**Pah Rah Range**	**89.57**	**47**	*e*P

COLA	**College**	**91.31**	**17**	⇑*i*P	**P**	**21 11 53.3**	**+0.8**
COLA				pmax	pmax		
	comp=Z,5.0nm,1.1s						
BMN	**Battle Mountai**	**91.38**	**47**	*e*P	**P**	**21 11 53.3**	**-0.3**
BMN	**Battle Mountai**	**91.38**	**47**	*e*P	**P**	**21 11 53.3**	**-0.3**
D05A	**Enumclaw**	**91.43**	**40**	*e*P	**P**	**21 11 55.4**	**+1.9**
ILAR	**Eielson Array**	**91.50**	**17**	P	**P**	**21 11 51.6**	**-1.8**
	comp=Z,2.2nm,0.8s,baz=235,slow=4.9,SNR=12						
ILAR				LR	LR	21 51 26.5	
	comp=Z,378nm,18.6s,baz=224,slow=34						
ILB	**Eielson Array**	**91.50**	**17**	*e*P	**P**	**21 11 54.0**	**+0.6**
IL1	**Eielson Array**	**91.50**	**17**	*e*P	**P**	**21 11 51.4**	**-2.0**
R11A	**Troy Canyon, C**	**91.63**	**50**	P	**P**	**21 11 54.6**	**-0.2**
	baz=245						
R11A	**Troy Canyon, C**	**91.63**	**50**	*e*P	**P**	**21 11 51.7**	**-3.2**
TLY	**Talaya**	**91.76**	**325**	*e*P	**P**	**21 11 54.8**	**-0.1**
TLY				pmax	pmax		
	comp=Z,8.0nm,1.6s						
B05A	**Bryant**	**91.89**	**39**	P	**P**	**21 11 54.8**	**-0.7**
	baz=241						
LCMT	**Little Creek M**	**92.78**	**52**	*e*P	**P**	**21 12 01.6**	**+1.5**
TUC	**Tucson**	**92.81**	**57**	P	**P**	**21 12 00.4**	**+0.1**
	baz=248						
TUC	**Tucson**	**92.81**	**57**	*e*P	**P**	**21 12 02.1**	**+1.8**
TUC	**Tucson**	**92.81**	**57**	*e*P	**P**	**21 12 02.1**	**+1.8**
X16A	**Lo Mia Camp, P**	**93.11**	**54**	*e*P	**P**	**21 12 03.2**	**+1.4**
EGAK	**Eagle**	**93.18**	**19**	*e*P	**P**	**21 12 01.8**	**+0.7**
DLBC	**Dease Lake**	**93.24**	**27**	LR	LR	21 49 23.6	
	comp=Z,511nm,18.6s,baz=249,slow=32						
DLBC	**Dease Lake**	**93.24**	**27**	*e*P	**P**	**21 12 03.0**	**+1.3**
MTPU	**Mount Pierson**	**93.96**	**51**	*e*P	**P**	**21 12 07.3**	**+1.4**
P17A	**Butcher Ranch,**	**95.55**	**50**	*e*P	**P**	**21 12 15.6**	**+2.7**
TIXI	**Tiksi**	**95.98**	**348**	⇓P	**P**	**21 12 15.0**	**+1.2**
TXAR	**Lajitas Array**	**97.48**	**62**	P	Pdif	21 12 22.2	+0.4
	comp=Z,0.8nm,0.8s,baz=225,slow=6.7,SNR=8.8						
TXAR				LR	LR	21 49 34.7	
	comp=Z,299nm,19.1s,baz=0.0,slow=31						
PDAR	**Pinedale Array**	**97.58**	**47**	P	**P**	**21 12 21.2**	**-0.9**
	comp=Z,0.2nm,0.4s,baz=203,slow=5.9,SNR=2.8						
PLCA	**Paso Flores**	**97.64**	**139**	LR	LR	21 47 50.8	
	comp=Z,115nm,21.8s,baz=250,slow=30						
WMQ	**Urumqi**	**98.02**	**314**	*e*P	**P**	**21 12 23.8**	**0.0**
WMQ				LR	LR		
	comp=Z,33nm,20.4s						
WMQ				LR	LR		
	comp=Z,45nm,24.2s						
GCMT	**Greycliff**	**98.57**	**44**	*e*P	Pdif	21 12 28.5	+2.2
YKA	**Yellowknife Ar**	**101.87**	**27**	P	**Pdif**	**21 12 40.0**	**-0.3**
	comp=Z,0.3nm,0.4s,baz=258,slow=4.8,SNR=4.1						
YKA				PKiKP	**PKiKP**	**21 17 01.7**	**-1.5**
	comp=Z,0.2nm,0.4s,baz=252,slow=1.6,SNR=5.1						
MKAR	**Makanchi Array**	**102.58**	**315**	P	**Pdif**	**21 12 44.0**	**0.0**
	comp=Z,0.2nm,0.4s,baz=79,slow=6.3,SNR=4.4						
BOSA	**Boshof**	**119.95**	**217**	PKP	**PKPdf**	**21 17 37.6**	**-1.0**
	comp=Z,0.7nm,0.4s,baz=252,slow=2.0,SNR=3.7						
ARCES	**ARCESS Array B**	**126.29**	**345**	PKP	**PKPdf**	**21 17 48.0**	**-1.3**
	comp=Z,2.9nm,0.5s,baz=25,slow=0.5,SNR=33						
KLMR	**Klimovskoe**	**126.63**	**332**	*e*PKIKP	**PKPdf**	**21 17 48.8**	**-1.3**
KLMR				pmax	pmax		
	comp=Z,13nm,1.4s						
VRH	**Novokhopyorsk**	**128.99**	**320**	*e*PKIKP	**PKPdf**	**21 17 54.6**	**-0.3**
VRH				pmax	pmax		
	comp=Z,10.0nm,0.9s						
ZEI	**Tsey**	**129.34**	**309**	*i*PKIKP	**PKPdf**	**21 17 55.0**	**-1.2**
ZEI				pmax	pmax		
	comp=Z,11nm,0.7s						
NCK	**Nalchik**	**129.46**	**310**	⇑*i*PKIKP	**PKPdf**	**21 17 55.9**	**-0.3**
KBZ	**Khabaz**	**129.92**	**310**	PKP	**PKPdf**	**21 17 56.9**	**-0.1**
	comp=Z,3.1nm,0.9s,baz=146,slow=4.0,SNR=7.0						
KIV	**Kislovodsk**	**130.03**	**311**	*i*PKIKP	**PKPdf**	**21 18 00.1**	**+2.8**
KIV				pmax	pmax		
	comp=Z,8.0nm,1.1s						
KIV				MLR	MLR		
	comp=Z,120nm,21.0s						
LPSR	**Galich'ya Gora**	**130.19**	**322**	*e*PKIKP	**PKPdf**	**21 17 57.6**	**+0.4**
LPSR				pmax	pmax		
	comp=Z,8.0nm,1.3s						
VSR	**Storozhevoye**	**130.52**	**321**	*e*PKIKP	PKPdf	21 18 05.9	+8.0
VSR				pmax	pmax		
	comp=Z,4.0nm,0.5s						
FINES	**FINESS Array B**	**131.74**	**337**	PKhKP	PKPpre	21 17 52.3	
	comp=Z,0.5nm,0.4s,baz=29,slow=4.4,SNR=11						
FINES				PKP	**PKPdf**	**21 17 59.2**	**-0.7**
	comp=Z,0.9nm,0.3s,baz=39,slow=0.9,SNR=14						
AKASG	**Malin Array Be**	**136.47**	**324**	PKP	**PKPdf**	**21 18 08.5**	**-0.5**
	comp=Z,0.3nm,0.4s,baz=56,slow=2.0,SNR=4.9						
NB2	**NORSAR Subarra**	**136.66**	**345**	PKPdf	PKPpre	21 17 59.0	
	comp=Z,0.9nm,0.5s,baz=31,slow=1.9						
NOA	**NORSAR Array B**	**136.66**	**345**	PKhKP	PKPpre	21 17 58.5	
	comp=Z,0.8nm,0.6s,baz=33,slow=2.0,SNR=3.5						
NOA				PKP	**PKPdf**	**21 18 09.1**	**-0.1**
	comp=Z,0.7nm,0.5s,baz=32,slow=2.0,SNR=3.6						
BRTR	**Keskin Array B**	**137.51**	**307**	PKP	**PKPdf**	**21 18 11.1**	**-0.5**
	comp=Z,0.2nm,0.5s,baz=250,slow=3.6,SNR=3.9						
CSS	**Mathiatis**	**138.65**	**300**	P	**PKPdf**	**21 18 15.3**	**+1.6**
CSS	**Mathiatis**	**138.65**	**300**	P	**PKPdf**	**21 18 15.3**	**+1.6**
SMTH	**Samothraki Isl**	**143.22**	**311**	P	**PKPdf**	**21 18 26.6**	**+4.9**
DPC	**Dobruska-Polom**	**143.30**	**331**	*e*PKP	PKPbc	21 18 18.4	-0.3
DPC				*ex*	x	21 18 36.6	
DPC	**Dobruska-Polom**	**143.30**	**331**	*e*PKIKP	PKPbc	21 18 18.4	-0.3
DPC				*e*		21 18 36.6	
VYHS	**Vyhne**	**143.31**	**327**	*e*PKIKP	PKPbc	21 18 18.7	0.0
VYHS	**Vyhne**	**143.31**	**327**	*e*PKP	PKPbc	21 18 18.7	0.0
VYHS				*e*		21 19 25.4	
PVCC	**Panska Ves**	**143.96**	**332**	*e*PKP	PKPbc	21 18 20.5	0.0
PVCC	**Panska Ves**	**143.96**	**332**	*e*PKIKP	PKPbc	21 18 20.5	0.0
BRG	**Berggiesshubel**	**143.98**	**333**	*e*PKP	PKPab	21 18 19.7	-0.3
	comp=Z,12nm,0.8s						
BRG				*e*		21 18 33.1	
	comp=Z,11nm,1.0s						
BRG	**Berggiesshubel**	**143.98**	**333**	*e*PKIKP	PKPab	21 18 19.7	-0.3
BRG				*e*		21 18 33.1	
BRG				pmax	pmax		
	comp=Z,12nm,0.8s						
BRG				pmax	pmax		
	comp=Z,11nm,1.0s						
NVR	**Nevrokopi**	**144.03**	**313**	P	**PKPab**	**21 18 19.7**	**-0.9**
NVR	**Nevrokopi**	**144.03**	**313**	P	**PKPab**	**21 18 19.7**	**-0.9**
CLL	**Collm**	**144.04**	**334**	⇓*i*PKPdf	**PKPab**	**21 18 19.8**	**-0.4**
	comp=Z,18nm,1.1s						
CLL				*i*		21 18 26.0	
CLL				*e*		21 18 36.0	
CLL	**Collm**	**144.04**	**334**	⇓*i*PKIKP	**PKPab**	**21 18 19.8**	**-0.4**
CLL				pmax	pmax		
	comp=Z,18nm,1.1s						
GOPC	**GO Pecny, Ondr**	**144.31**	**331**	*e*PKP	PKPbc	21 18 21.6	-0.1
GOPC	**GO Pecny, Ondr**	**144.31**	**331**	*e*PKIKP	PKPbc	21 18 21.6	-0.1
SRS	**Serrai**	**144.32**	**313**	P	**PKPab**	**21 18 18.0**	**-3.6**
OUR	**Ouranopolis**	**144.36**	**311**	P	**PKPab**	**21 18 19.6**	**-2.2**
OUR	**Ouranopolis**	**144.36**	**311**	PKIKP	**PKPab**	**21 18 19.6**	**-2.2**
OUR	**Ouranopolis**	**144.36**	**311**	P	**PKPab**	**21 18 19.6**	**-2.2**
PRU	**Pruhonice**	**144.37**	**332**	*e*PKP	**PKPab**	**21 18 21.6**	**+0.1**
PRU	**Pruhonice**	**144.37**	**332**	*e*PKIKP	**PKPab**	**21 18 21.6**	**+0.1**
TREC	**Trest**	**144.43**	**330**	*e*PKP	PKPbc	21 18 22.4	+0.3
TREC				*ex*	x	21 18 34.9	
TREC	**Trest**	**144.43**	**330**	*e*PKIKP	PKPbc	21 18 22.4	+0.3
TREC				*e*		21 18 34.9	
PAIG	**Paliouri**	**144.73**	**311**	P	**PKPab**	**21 18 21.1**	**-2.1**
PAIG	**Paliouri**	**144.73**	**311**	PKIKP	**PKPab**	**21 18 21.1**	**-2.1**
PAIG	**Paliouri**	**144.73**	**311**	P	**PKPab**	**21 18 21.1**	**-2.1**
KNT	**Kendrikon**	**144.77**	**313**	P	**PKPab**	**21 18 19.7**	**-3.6**
ESK	**Eskdalemuir**	**144.80**	**352**	*e*P	**PKPab**	**21 18 21.9**	**-1.0**
AOS	**Alonnisos**	**144.88**	**310**	P	**PKPab**	**21 18 19.0**	**-4.7**
ECK	**Cauldkaine Hil**	**144.92**	**352**	*e*P	**PKPab**	**21 18 22.3**	**-1.0**
LAST	**Lasithi**	**144.92**	**302**	P	**PKPab**	**21 18 22.8**	**-1.3**
LAST	**Lasithi**	**144.92**	**302**	P	**PKPab**	**21 18 22.8**	**-1.3**
VAY	**Valandovo**	**144.93**	**314**	*i*P	**PKPab**	**21 18 22.7**	**-1.2**
GMK	**Mull of Kintyr**	**145.02**	**355**	*e*P	**PKPbc**	**21 18 22.8**	**-0.9**
NKC	**Novy Kostel**	**145.09**	**334**	*e*PKP	**PKPbc**	**21 18 24.0**	**-0.1**
NKC				*ex*	x	21 18 37.0	
NKC	**Novy Kostel**	**145.09**	**334**	*e*PKIKP	**PKPbc**	**21 18 24.0**	**-0.1**
NKC				*e*		21 18 37.0	
CONA	**Conrad Observa**	**145.19**	**328**	*i*PKPdf	**PKPbc**	**21 18 24.3**	**-0.3**
	comp=Z,11nm,0.8s,SNR=16						
GRG	**Griva**	**145.20**	**313**	P	**PKPbc**	**21 18 22.6**	**-2.2**
GRG	**Griva**	**145.20**	**313**	PKP2	**PKPbc**	**21 18 22.6**	**-2.2**
GRG	**Griva**	**145.20**	**313**	P	**PKPbc**	**21 18 22.6**	**-2.2**
DIVS	**Divibare**	**145.23**	**320**	P	**PKPbc**	**21 18 20.1**	**-4.8**
XOR	**Xorichti**	**145.30**	**310**	P	**PKPbc**	**21 18 21.6**	**-3.6**
XOR	**Xorichti**	**145.30**	**310**	P	**PKPbc**	**21 18 21.6**	**-3.6**
SKO	**Skopje**	**145.38**	**315**	*i*P	**PKPbc**	**21 18 25.4**	**0.0**
GAL1	**Galloway**	**145.41**	**354**	*e*P	**PKPbc**	**21 18 23.7**	**-1.2**
KHC	**Kasperske Hory**	**145.42**	**331**	*e*PKP	**PKPbc**	**21 18 24.5**	**-0.8**
KHC				*e*pPKP	**PKiKP**	**21 18 29.0**	**-0.3**
KHC				*ex*	x	21 18 37.0	
KHC	**Kasperske Hory**	**145.42**	**331**	*e*PKIKP	**PKPbc**	**21 18 24.5**	**-0.8**
KHC				*e*		21 18 37.0	
KESW	**Keswick, Cumbr**	**145.50**	**352**	*e*P	**PKPdf**	**21 18 24.7**	**-0.5**
LIT	**Litokhoron**	**145.50**	**312**	P	**PKPdf**	**21 18 22.8**	**-2.9**
LIT	**Litokhoron**	**145.50**	**312**	PKP2	**PKPdf**	**21 18 22.8**	**-2.9**
LIT	**Litokhoron**	**145.50**	**312**	P	**PKPdf**	**21 18 22.8**	**-2.9**
GERES	**GERESS Array B**	**145.57**	**331**	PKPbc	**PKPdf**	**21 18 24.5**	**-1.1**
	comp=Z,5.1nm,0.6s,baz=41,slow=4.4,SNR=44						
ARSA	**Arzberg**	**145.81**	**327**	*i*PKPab	**PKPdf**	**21 18 25.2**	**-0.8**
	comp=Z,4.4nm,0.8s,SNR=10						
DID	**Didima**	**145.94**	**307**	P	**PKPdf**	**21 18 23.7**	**-2.9**
DID	**Didima**	**145.94**	**307**	P	**PKPdf**	**21 18 23.7**	**-2.9**
LTK	**Loutraki**	**145.96**	**308**	P	**PKPdf**	**21 18 24.6**	**-1.9**
LTK	**Loutraki**	**145.96**	**308**	P	**PKPdf**	**21 18 24.6**	**-1.9**
FNA	**Florina**	**145.97**	**314**	P	PKPpre	21 18 22.3	
FNA	**Florina**	**145.97**	**314**	PKHKP	PKPpre	21 18 22.3	
FNA	**Florina**	**145.97**	**314**	P	PKPpre	21 18 22.3	
IMMV	**Iera Moni Meta**	**146.02**	**303**	P	**PKPdf**	**21 18 25.9**	**-0.8**
MOA	**Molln**	**146.02**	**329**	*i*PKPab	**PKPbc**	**21 18 27.1**	**0.0**
	comp=Z,7.1nm,0.6s,SNR=14						
AGG	**Agios Georgios**	**146.05**	**310**	P	**PKPdf**	**21 18 23.8**	**-2.9**
AGG	**Agios Georgios**	**146.05**	**310**	PKIKP	**PKPdf**	**21 18 23.8**	**-2.9**
AGG	**Agios Georgios**	**146.05**	**310**	P	**PKPdf**	**21 18 23.8**	**-2.9**
DSF	**Desfina**	**146.14**	**309**	P	**PKPdf**	**21 18 25.3**	**-1.6**
DSF	**Desfina**	**146.14**	**309**	P	**PKPdf**	**21 18 25.3**	**-1.6**
GMM	**Mts of Mourne**	**146.15**	**355**	*e*P	**PKPdf**	**21 18 26.5**	**+0.2**
OHR	**Ohrid**	**146.21**	**314**	*i*P	**PKPbc**	**21 18 28.3**	**+0.3**
KPRO	**Kipourio**	**146.35**	**312**	P	**PKPab**	**21 18 29.5**	**+0.2**
ANKY	**Antikythira Is**	**146.43**	**304**	P	**PKPdf**	**21 18 25.0**	**-2.4**
ANKY	**Antikythira Is**	**146.43**	**304**	P	**PKPdf**	**21 18 25.0**	**-2.4**
VLI	**Veliai**	**146.44**	**306**	P	**PKPdf**	**21 18 23.8**	**-3.6**
VLI	**Veliai**	**146.44**	**306**	P	**PKPdf**	**21 18 23.8**	**-3.6**
SOKA	**Soboth**	**146.44**	**327**	*i*PKPab	**PKPdf**	**21 18 27.7**	**+0.5**
	comp=Z,3.3nm,0.5s,SNR=7.1						
EVR	**Evrytania**	**146.46**	**310**	P	PKPpre	21 18 19.5	
ANX	**Ano Chora**	**146.51**	**310**	P	**PKPab**	**21 18 30.6**	**+0.6**
KLV	**Kalavryta, Ach**	**146.56**	**309**	P	**PKPdf**	**21 18 27.4**	**-0.2**
KLV	**Kalavryta, Ach**	**146.56**	**309**	P	**PKPdf**	**21 18 27.4**	**-0.2**
LAKA	**Lakka**	**146.61**	**309**	P	**PKPdf**	**21 18 28.0**	**+0.4**
LAKA	**Lakka**	**146.61**	**309**	P	**PKPdf**	**21 18 28.0**	**+0.4**
PVO	**Paravola**	**146.79**	**310**	P	**PKPbc**	**21 18 28.9**	**-0.8**
OBKA	**Obir**	**146.81**	**327**	*i*pPKPbc	**PKPab**	**21 18 31.3**	**+0.5**
	comp=Z,1.7nm,0.4s						
WPS	**Cemaes, Angles**	**146.83**	**353**	*e*P	**PKPdf**	**21 18 28.3**	**+0.8**
DSL	**Palaion Diasel**	**146.88**	**311**	P	**PKPbc**	**21 18 30.5**	**+0.5**
DSL	**Palaion Diasel**	**146.88**	**311**	P	**PKPbc**	**21 18 30.5**	**+0.5**
DRO	**Drossia**	**146.91**	**309**	P	**PKPab**	**21 18 30.8**	**-0.7**
KBA	**Koelnbreinsper**	**147.01**	**329**	*i*PKPbc	**PKPdf**	**21 18 28.9**	**+0.6**
	comp=Z,3.8nm,0.3s,SNR=7.0						
CWF	**Charnwood Fore**	**147.02**	**349**	*e*P	**PKPdf**	**21 18 28.6**	**+0.8**
PDO	**Prodromos**	**147.04**	**310**	P	**PKPbc**	**21 18 29.4**	**-1.0**
BEBN	**Eben Emael**	**147.10**	**341**	PKP	**PKPbc**	**21 18 29.3**	**-0.8**
BOJS	**Bojanci**	**147.11**	**325**	*e*PKPdf	**PKPbc**	**21 18 29.7**	**-0.7**
MEM	**Membach**	**147.16**	**340**	PKPbc	**PKPbc**	**21 18 30.2**	**-0.2**
FOEL	**Foel Wylfa**	**147.17**	**351**	*e*P	**PKPbc**	**21 18 30.0**	**-0.3**
MYKA	**Terra Mystica**	**147.18**	**328**	*i*PKPbc	**PKPbc**	**21 18 29.7**	**-0.9**
	comp=Z,4.3nm,0.4s,SNR=5.2						
PYL	**PYLOS**	**147.28**	**307**	P	**PKPdf**	**21 18 29.4**	**+0.6**
PYL	**PYLOS**	**147.28**	**307**	P	**PKPdf**	**21 18 29.4**	**+0.6**
SGD	**Sagiada**	**147.28**	**312**	P	**PKPdf**	**21 18 29.2**	**+0.5**
LKD2	**Lefkada island**	**147.34**	**311**	P	**PKPdf**	**21 18 29.9**	**+1.1**
LKD2	**Lefkada island**	**147.34**	**311**	P	**PKPdf**	**21 18 29.9**	**+1.1**
UDBI	**Udbina**	**147.45**	**323**	P	**PKPbc**	**21 18 31.0**	**-0.4**
HLM1	**Long Mynd**	**147.48**	**351**	*e*P	**PKPbc**	**21 18 30.4**	**-0.8**
KEK	**Kerkira**	**147.53**	**313**	P	**PKPdf**	**21 18 30.4**	**+1.3**
KEK	**Kerkira**	**147.53**	**313**	P	**PKPdf**	**21 18 30.4**	**+1.3**
BCLA	**Clavier**	**147.55**	**341**	PKPbc	**PKPbc**	**21 18 31.8**	**+0.4**
ABTA	**Abfaltersbach**	**147.64**	**329**	*i*PKPbc	**PKPbc**	**21 18 30.7**	**-1.2**
	comp=Z,5.2nm,0.4s,SNR=7.1						
WATA	**Walderalm**	**147.65**	**331**	*i*pPKPdf	**PKPbc**	**21 18 31.2**	**-0.8**
	comp=Z,5.2nm,0.4s,SNR=10						
WTTA	**Wattenberg**	**147.68**	**331**	*i*pPKPdf	**PKPbc**	**21 18 31.1**	**-1.0**
	comp=Z,3.0nm,0.3s						
SNF	**Seneffe**	**147.78**	**342**	PKPbc	**PKPbc**	**21 18 31.8**	**-0.2**
SNF				PKPab	**PKiKP**	**21 18 34.0**	**0.0**
SSW	**Stow on the Wo**	**147.85**	**349**	*e*P	**PKPbc**	**21 18 32.0**	**-0.2**
MOTA	**Moosalm**	**147.86**	**331**	*i*pPKPdf	**PKPbc**	**21 18 31.4**	**-1.2**
	comp=Z,6.0nm,0.4s,SNR=19						
RETA	**Reutte**	**147.90**	**332**	*i*pPKPdf	**PKPbc**	**21 18 31.8**	**-0.8**
	comp=Z,6.1nm,0.4s,SNR=8.4						
LANF	**Langenberg**	**147.92**	**337**	PKP	**PKPbc**	**21 18 31.3**	**-1.2**
NVLJ	**Novalja**	**147.92**	**324**	P	**PKPbc**	**21 18 31.9**	**-0.6**
WLF	**Walferdange**	**147.93**	**339**	PKPbc	**PKPbc**	**21 18 32.2**	**-0.2**
MCH1	**Michaelchurch**	**148.01**	**351**	*e*P	**PKPbc**	**21 18 31.9**	**-0.6**
DOU	**Dourbes**	**148.05**	**341**	PKPbc	**PKPbc**	**21 18 32.5**	**-0.3**
MONM	**Monmouth**	**148.13**	**350**	*e*P	**PKPbc**	**21 18 33.0**	**+0.1**
FETA	**Feichten**	**148.27**	**331**	*i*PKPbc	**PKPdf**	**21 18 31.5**	**+1.2**
	comp=Z,8.4nm,0.4s,SNR=6.5						
WOL	**Wolverton**	**148.37**	**348**	*e*P	**PKPbc**	**21 18 33.2**	**-0.3**
DAVA	**Damuels**	**148.44**	**333**	*i*PKPbc	**PKPdf**	**21 18 32.1**	**+1.5**
	comp=Z,5.1nm,0.5s,SNR=7.2						
ECH	**Echery**	**148.79**	**336**	PKP	**PKPbc**	**21 18 33.6**	**-1.2**
MOF	**Molkenrain**	**149.10**	**336**	PKP	**PKPdf**	**21 18 31.0**	**-0.5**
LOMF	**Lomont**	**149.63**	**336**	PKP	**PKPbc**	**21 18 36.0**	**-1.0**
TIP	**Timpagrande**	**149.86**	**314**	P	**PKPdf**	**21 18 31.0**	**-2.0**
TIP	**Timpagrande**	**149.86**	**314**	P	**PKPdf**	**21 18 31.0**	**-2.0**
ESDC	**Sonseca Array**	**160.03**	**344**	PKPab	**PKPab**	**21 19 25.1**	**-1.3**
	comp=Z,0.6nm,0.4s,baz=6.8,slow=4.2,SNR=12						

*ISCJB **22** 20:59:11.6±0.5, 39.°10N±0.°03×29.°03E±0.°03, h4km±7km, Error ellipse: s-maj=5.7km s-min=4.2km az=162.5*
*CSEM **22** 20:59:11.9±0.1, 39.°11N×29.°04E, h5km, MD2.5, Error ellipse: s-maj=1.9km s-min=1.6km az=118.0*
*ISK **22** 20:59:11.5, 39.°12N×29.°07E, h7km, MD2.8*
*DDA **22** 20:59:11.6, 39.°10N×29.°03E, h7km, Md2.5*

ISC 22 20:59:11.8±0.9, 39.°10N±0.°02×29.°04E±0.°02, h13km±9km, n36, σ0°25/48, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**258**	P	**Pg**	**20 59 17.2**	**-0.1**
DEMI				S	**Sg**	**20 59 20.9**	**-0.1**
DEMI	**Demirci**	**0.26**	**258**	*i*P	**Pg**	**20 59 17.2**	**-0.1**
DEMI				*i*S	**Sg**	**20 59 20.9**	**-0.1**
GDZ	**Gediz**	**0.34**	**91**	P	**Pg**	**20 59 19.0**	**+0.1**
GDZ				S	**Sg**	**20 59 24.0**	**+0.4**
GDZ	**Gediz**	**0.34**	**91**	*i*P	**Pg**	**20 59 18.9**	**+0.1**
GDZ				*i*S	**Sg**	**20 59 24.0**	**+0.4**
TVSB	**Tavsanli**	**0.48**	**43**	*e*PG	**Pg**	**20 59 20.7**	**-0.6**
TVSB				*e*SG	**Sg**	**20 59 27.4**	**-0.3**
TVSB	**Tavsanli**	**0.48**	**43**	*e*Pg	**Pg**	**20 59 20.7**	**-0.6**
TVSB				*e*Sg	**Sg**	**20 59 27.4**	**-0.3**
KULA	**Kula-Manisa**	**0.65**	**207**	*e*PG	**Pb**	**20 59 25.2**	**+0.1**
KULA	**Kula-Manisa**	**0.65**	**207**	*e*Pg	**Pb**	**20 59 25.2**	**+0.1**
DURS	**Dursunbey**	**0.67**	**319**	P	**Pg**	**20 59 24.8**	**0.0**
DURS	**Dursunbey**	**0.67**	**319**	*i*P	**Pg**	**20 59 24.8**	**0.0**
MANT	**Manisa**	**0.71**	**212**	P	**Pg**	**20 59 25.5**	**-0.2**
MANT				S	**Sg**	**20 59 34.9**	**-0.2**
MANT	**Manisa**	**0.71**	**212**	*i*P	**Pg**	**20 59 25.5**	**-0.2**
MANT				*i*S	**Sg**	**20 59 34.9**	**-0.2**
KHAL	**Karahalli**	**0.81**	**154**	P	**Pb**	**20 59 28.0**	**+0.2**
KHAL				S	**Sb**	**20 59 38.5**	**-0.1**
KHAL	**Karahalli**	**0.81**	**154**	*i*P	**Pb**	**20 59 27.9**	**+0.2**
KHAL				*i*S	**Sb**	**20 59 38.5**	**-0.1**
KHL	**Karahalli**	**0.86**	**154**	*e*PG	**Pb**	**20 59 28.6**	**-0.1**
KHL	**Karahalli**	**0.86**	**154**	*e*Pg	**Pb**	**20 59 28.6**	**-0.1**
AKS	**Akhisar**	**0.98**	**258**	*e*PG	**Pn**	**20 59 31.2**	**-0.1**
AKS	**Akhisar**	**0.98**	**258**	*e*Pg	**Pn**	**20 59 31.2**	**-0.1**
BALB	**Balikesir**	**1.05**	**301**	*e*PG	**Pg**	**20 59 32.0**	**0.0**
BALB	**Balikesir**	**1.05**	**301**	*e*Pg	**Pg**	**20 59 32.0**	**0.0**
MDNY	**Mudanya-Bursa**	**1.27**	**355**	*e*PN	**Pb**	**20 59 35.7**	**0.0**
MDNY	**Mudanya-Bursa**	**1.27**	**355**	*e*Pn	**Pb**	**20 59 35.7**	**0.0**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*PN	**Pg**	**20 59 36.5**	**+0.1**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*Pn	**Pg**	**20 59 36.5**	**+0.1**
IZI	**Iznik**	**1.28**	**15**	*e*PN	**Pg**	**20 59 36.2**	**-0.3**
IZI	**Iznik**	**1.28**	**15**	*e*Pn	**Pg**	**20 59 36.2**	**-0.3**
BORA	**Eskisehir**	**1.34**	**54**	P	**Pg**	**20 59 37.4**	**-0.3**
BORA				S	**Sg**	**20 59 55.5**	**+0.3**
BORA	**Eskisehir**	**1.34**	**54**	*i*P	**Pg**	**20 59 37.4**	**-0.3**
BORA				*i*S	**Sg**	**20 59 55.5**	**+0.3**
GONE	**Gonen-Balikesi**	**1.41**	**313**	*e*PN	**Pb**	**20 59 38.3**	**+0.3**
GONE	**Gonen-Balikesi**	**1.41**	**313**	*e*Pn	**Pb**	**20 59 38.3**	**+0.3**
ADVT	**Abdulvahap**	**1.44**	**22**	*e*PN	**Pb**	**20 59 38.3**	**-0.1**
ADVT	**Abdulvahap**	**1.44**	**22**	*e*Pn	**Pb**	**20 59 38.3**	**-0.1**
ARMT	**Armutlu**	**1.47**	**355**	*e*PN	**Pb**	**20 59 39.1**	**0.0**
ARMT	**Armutlu**	**1.47**	**355**	*e*Pn	**Pb**	**20 59 39.1**	**0.0**
GULT	**Gulveren**	**1.75**	**40**	*e*PN	**Pn**	**20 59 42.3**	**+0.3**
GULT	**Gulveren**	**1.75**	**40**	*e*Pn	**Pn**	**20 59 42.3**	**+0.3**

KRSC 22 20:59:57.8±0.8, 52.°63N×159.°88E, h25km±10km, ML3.6, Off east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NLC	**Nalytchevo**	**0.63**	**329**	*i*P	Pb	21 00 10.4	+0.2
NLC				*i*S	Sn	21 00 19.6	-0.8
PET	**Petropavlovsk**	**0.84**	**298**	*i*P	Pb	21 00 13.7	-0.1
PET				*e*S	Sn	21 00 25.3	-0.4
RUS	**Russkaya**	**0.86**	**257**	*i*P	Pb	21 00 14.0	0.0
RUS				*e*S	Sn	21 00 26.1	+0.1
UGLR	**Uglovaya**	**0.86**	**313**	*e*P	Pb	21 00 14.3	+0.1
UGLR				*e*S	Sn	21 00 26.4	0.0
SDLR	**Sedlovina**	**0.89**	**317**	*e*P	Pb	21 00 14.3	-0.3
SDLR				*e*S	Sb	21 00 26.4	+0.3
SMAR	**Somma**	**0.91**	**315**	*e*P	Pb	21 00 14.7	-0.4
SMAR				S	Sn	21 00 27.6	-0.1
AVH	**Avacha**	**0.94**	**313**	*i*P	Pn	21 00 15.6	+0.1
AVH				*e*S	Sn	21 00 28.1	-0.1
KRER	**Kory

baz=232
HWA Hwalien 0.49 79⇑*i*P Pb 21 07 26.9 +1.1
baz=78
WGK Gukeng 0.51 247⇑*i*P Pb 21 07 26.9 +0.8
baz=247
WGK *e*S **Sb 21 07 34.1 +1.0**
baz=247
TWD Chiawan 0.52 67⇑*i*P Pb 21 07 26.8 +0.6
baz=67
TWD *e*S **Sg 21 07 33.5 +0.4**
baz=67
YULB Yu-li 0.53 157 *e*Pg Pg 21 07 25.6 -0.7
YULB *e*Sg **Sb 21 07 34.0 +0.4**
TWQ1 Liyutan 0.54 329⇑*i*P Pb 21 07 27.8 +1.1
baz=330
TWQ1 *e*S **Sb 21 07 35.7 +1.7**
baz=330
NACB Ninganchiao 0.56 59 *e*Pg Pg 21 07 25.9 -1.0
TWF1 Yuli 0.57 159⇑*i*P Pb 21 07 28.1 +1.0
baz=149
TWF1 S **Sb 21 07 35.4 +0.7**
baz=149
NSY Sanyi 0.60 332⇑*i*P Pn 21 07 29.2 -0.2
baz=333
NSY *e*S **Sn 21 07 38.1 -0.6**
baz=333
NNS Nan Shan 0.62 26⇑*i*P Pb 21 07 28.2 +0.2
baz=30
NNS *e*S **Sb 21 07 35.6 -0.8**
baz=30
CHN2 Minshiung 0.65 238⇑*i*P Pg 21 07 29.3 +0.7
baz=238
CHN2 *e*S **Sn 21 07 38.9 -0.9**
baz=238
CHN4 Tsaushan 0.69 220⇑*i*P Pg 21 07 29.8 +0.5
baz=220
CHN4 *e*S **Sn 21 07 41.0 +0.3**
baz=220
ELDTW Lidau 0.69 184 ⇑P Pg 21 07 29.9 +0.5
baz=188
CHY Chiayi 0.71 237⇑*i*P Pg 21 07 30.1 +0.5
baz=237
CHY S **Sg 21 07 40.3 +1.2**
baz=237
TPUB Ta-pu 0.71 215 *e*Pg Pb 21 07 29.2 -0.3
TPUB Sg **Sg 21 07 40.0 +0.8**
WTCT Ta-ch'eng 0.73 269 *e*P Pb 21 07 30.1 +0.3
baz=268
WTCT *e*S **Sg 21 07 40.5 +0.8**
baz=268
EHP Heping Village 0.74 55 *e*P Pn 21 07 31.3 0.0
baz=67
EHP *e*S **Sn 21 07 41.7 -0.5**
baz=67
NSTT Nanjuang 0.75 355⇓*i*P Pn 21 07 31.3 -0.1
baz=2.0
NSTT *e*S **Sg 21 07 40.9 +0.5**
baz=2.0
WTP Ta-pu 0.76 214 ⇑P Pg 21 07 31.0 +0.3
baz=213
WTP S **Sg 21 07 41.7 +0.9**
baz=213
STYT Tauyuan 0.77 202 ⇑P Pg 21 07 31.5 +0.6
baz=211
STYT S **Sg 21 07 41.9 +0.8**
baz=211
TWK Hsinying 0.81 221 *e*P Pg 21 07 31.8 +0.1
baz=221
ENA Nanau 0.82 48⇑*i*P Pb 21 07 31.8 +0.5
baz=49
ENA *e*S **Sb 21 07 42.0 0.0**
baz=49
WSF Szhu 0.82 253 *e*P Pb 21 07 31.5 +0.1
baz=253
CHKT Chengkung 0.82 161⇑*i*P Pn 21 07 33.0 +0.6
baz=161
CHKT *e*S **Sn 21 07 44.4 +0.3**
baz=161
YHNB Yeheng 0.83 19 *e*Pg Pb 21 07 31.6 -0.1
NSK Sanguang 0.83 18 ⇑P Pb 21 07 32.0 +0.4
baz=12
CHN1 Nanshi 0.86 216⇑*e*P Pg 21 07 32.5 0.0
baz=217
CHN1 S **Sg 21 07 44.5 +0.7**
baz=217
ENTT Nioudou 0.88 31 ⇑P Pb 21 07 32.7 +0.3
baz=28
SGST Jiashian 0.92 210 ⇓P Pn 21 07 34.1 +0.5
baz=211
SGST *e*S **Sn 21 07 47.0 +0.7**
baz=211
HSN Hsinchu 0.92 354 *e*P Pn 21 07 34.8 +1.0
baz=357
HSN *e*S **Sn 21 07 47.9 +1.4**
baz=357
CHN8 Yiju 0.95 236 *e*P Pb 21 07 33.6 -0.1
baz=237
CHN8 *e*S **Sn 21 07 48.2 +0.9**
baz=237
TWE Neicheng 0.99 33⇑*i*P Pn 21 07 35.0 +0.3
baz=34
TWE *e*S **Sn 21 07 49.2 +0.9**
baz=34
TWC Suao 1.01 44⇑*i*P Pn 21 07 35.4 +0.4
baz=38
TWC S **Sb 21 07 48.3 +0.7**
baz=38
CHN3 Shinhua 1.03 219 *e*P Pg 21 07 36.3 +0.5
baz=221
CHN3 *e*S **Sg 21 07 52.0 +2.6**
baz=221
TWG Pinlang 1.06 180 *e*P Pg 21 07 36.5 +0.2
baz=175
TWG *e*S **Sg 21 07 51.2 +1.1**
baz=175
TWG Pinlang 1.06 180 *e*Pn Pb 21 07 35.5 +0.1
TWG Sg **Sg 21 07 50.4 +0.2**
SCLT Jiali 1.07 229 *e*P Pn 21 07 36.3 +0.5
baz=230
SCLT *e*S **Sg 21 07 52.0 +1.5**
baz=230
ILA Ilan 1.07 35 *e*P Pg 21 07 36.7 +0.1
baz=36
ILA *e*S **Sg 21 07 51.5 +0.8**
baz=36
NCU National Centr 1.09 5 *e*P Pn 21 07 36.6 +0.6
baz=6.0
NCU *e*S **Sg 21 07 51.9 +0.8**
baz=6.0
TTN Taitung 1.12 177 *e*P Pg 21 07 37.5 0.0
baz=177
TAI1 Yung-k'ang 1.14 223 *e*P Pb 21 07 37.4 +0.5
baz=224
TAI1 *e*S **Sg 21 07 53.0 +0.1**
baz=224
TATO Taipei 1.15 19 *e*Pn Pb 21 07 37.8 +0.7
TWA Mucha 1.19 23 *e*P Pg 21 07 38.6 -0.1
baz=36
TWA S **Sg 21 07 55.9 +1.6**
baz=36
SSD Sandimen 1.20 200⇓*i*P Pb 21 07 38.6 +0.7
baz=202
SSD *e*S **Sg 21 07 55.5 +0.8**
baz=202
TWM1 Shoushan 1.21 210 *e*P Pg 21 07 39.2 0.0
baz=228
TAP Taipei 1.22 19⇓*e*P Pb 21 07 38.5 +0.3
baz=20
TAP *e*S **Sg 21 07 55.5 +0.3**
baz=20
TAP1 Taipei 1.22 19⇓*e*P Pb 21 07 38.6 +0.3
baz=20
TAP1 *e*S **Sg 21 07 56.5 +1.1**
baz=20
TWS1 Kuangyinshan 1.25 14 ⇓P Pb 21 07 39.2 +0.4
baz=15
TWS1 *e*S **Sg 21 07 56.9 +0.5**
baz=15
ECL Taimali 1.28 185⇓*e*P Pb 21 07 39.7 +0.3
baz=199
ECL *e*S **Sg 21 07 57.9 +0.5**
baz=199
NWF Wu-fen Shan 1.35 28 ⇓P Pb 21 07 41.1 +0.7
baz=30
NWF *e*S **Sg 21 08 01.1 +1.7**
baz=30
TWB1 Santiao Chiao 1.40 36⇓*e*P Pg 21 07 42.3 -0.4
baz=46
TWB1 *e*S **Sg 21 08 01.0 +0.1**
baz=46
PNG Penghu 1.43 258⇑*e*P Pn 21 07 40.5 -0.2
baz=252
PNG *e*S **Sn 21 07 59.1 +0.2**
baz=252
WDGT Dungji 1.44 245 *e*P Pn 21 07 40.5 -0.3
baz=245
WDGT *e*S **Sn 21 07 59.6 +0.3**
baz=245
TWY Chenhua 1.47 19 *e*P Pn 21 07 42.0 +0.8
baz=20
KAU Kaohsiung 1.49 208 *e*P Pb 21 07 42.9 +0.1
baz=211
EAST Anshuo 1.51 188 *e*P Pb 21 07 43.4 +0.3
baz=183
TAW Tawu 1.53 186 *e*P Pb 21 07 43.1 -0.3
baz=179
TAW *e*S **Sg 21 08 06.2 +1.2**
baz=179
SCZT Fangliau 1.56 196⇓*e*P Pb 21 07 43.8 -0.3
baz=197
TWP Hsiaoliuchiu 1.66 203 *e*P Pg 21 07 48.9 +1.1
baz=206
JYNG Yonagunijimaku 1.80 71 P Pn 21 07 46.4 +0.6
JYNG S **Sn 21 08 09.5 +1.3**
YOJ Yonaguni jima 1.86 72 P Pn 21 07 47.4 +0.8
YOJ S **Sn 21 08 11.0 +1.3**
YOJ Yonaguni jima 1.86 72⇓*i*P Pn 21 07 47.4 +0.8
baz=82
YOJ *e*S **Sn 21 08 10.8 +1.1**
baz=82
YOJ Yonaguni jima 1.86 72 *e*Pn Pn 21 07 47.5 +0.9
LAY Lan-yu 1.89 166 *e*P Pn 21 07 47.1 +0.1
baz=154
HEN Hengchun 1.89 189 *e*P Pn 21 07 48.2 +1.1
baz=198
PCYT Pengchaiyu 1.96 27 *e*P Pn 21 07 48.9 +0.8
baz=14
PCYT *e*S **Sb 21 08 14.8 -0.2**
baz=14
TSEB Hengchuen, Pin 1.98 185 *e*P Pb 21 07 50.6 -0.6
baz=181
IRIF Iriomote-Funau 2.47 79 P Pn 21 07 55.7 +0.7
IRIF S **Sn 21 08 25.9 +1.2**
KNM Kinmen 2.47 283⇑*e*P Pn 21 07 56.0 +1.0
baz=279
QZH Quanzhou 2.50 296⇑*i*Pn Pn 21 07 49.0 -6.4
QZH Sn **Sn 21 08 17.4 -8.0**
QZH smax smax
comp=N,4μm,1.2s
QZH smax smax
comp=E,2μm,0.7s
HATJ Hateruma jima 2.50 85 P Pn 21 07 56.3 +0.8
HATJ S **Sn 21 08 26.6 +1.0**
JKRS Kuro-shima 2.71 82 P Pn 21 07 59.5 +1.2
JKRS S **Sn 21 08 32.8 +2.2**
JIJ Ishigaki jima 2.84 80 P Pn 21 08 00.8 +0.6
JIJ S **Sn 21 08 34.1 +0.1**
JISG Ishigakijimahi 3.04 76 P Pn 21 08 03.3 +0.5
JISG S **Sn 21 08 39.7 +1.0**
JTJ Tarama 3.40 76 P Pn 21 08 08.8 +1.0
JTJ *e*S **Sn 21 08 48.6 +1.0**
JIRB Irabujima 3.85 75 P Pn 21 08 16.3 +2.2
JIKM Ikemajima 3.94 74 P Pn 21 08 17.0 +1.7
JIKM *e*S **Sn 21 09 02.0 +0.9**
JKE Kume jima 2 5.72 64 P Pn 21 08 42.4 +2.7
JAGN Aguni-jima 6.20 63 P Pn 21 08 48.3 +2.0
JNTH Nagotoyohara 6.82 66 P Pn 21 08 55.1 +0.3
JIH Iheya 6.97 62 P Pn 21 08 57.1 +0.1
JOW Kunigami 7.14 64 P Pn 21 08 59.1 -0.2
JOW Kunigami 7.14 64 *e*P Pn 21 08 58.9 -0.4
baz=67
JOW Kunigami 7.14 64 *e*Pn Pn 21 08 59.0 -0.3
JOKE Okinoerabujima 7.60 61 P Pn 21 09 07.1 +1.5
JTK Tokunoshima 8.09 60 P Pn 21 09 11.8 -0.5
NJ2 Nanjing 8.37 347 *e*P Pn 21 09 25.3 +9.2
NJ2 S **Sn 21 10 47.5 -2.7**
NJ2 smax smax
comp=N,220nm,0.8s
NJ2 smax smax
comp=E,80nm,1.2s
NJ2 LR LR
comp=N,680nm,9.2s
NJ2 LR LR
comp=E,470nm,8.1s
NJ2 LR LR
comp=Z,880nm,13.0s
WHN Wuhan 8.93 319⇓*i*P Pn 21 09 23.9 +0.1
WHN S **Sn 21 10 57.3 -6.7**
WHN LR LR
comp=Z,2μm,11.5s
WHN LR LR
comp=Z,2μm,8.4s
QIZ Qiongzhong 11.52 247 P Pn 21 10 01.0 +1.7
GYA Guiyang 13.30 284 P Pn 21 10 23.5 -0.3
GYA S **Sn 21 12 49.8 -1.5**
GYA pmax pmax
comp=Z,10.0nm,0.8s
GYA pmax pmax
comp=Z,110nm,4.6s
GYA LR LR
comp=Z,270nm,10.6s
GYA LR LR
comp=Z,670nm,13.0s
GYA LR LR
comp=Z,710nm,13.3s
KS15 Wonju Array Si 14.72 22 *e*Pn P 21 10 46.5 -2.5
KSAR Wonju Array Be 14.72 22 P P 21 10 46.5 -2.5
KSRS Korea Array 14.75 22 P Pn 21 10 46.5 +3.2
comp=Z,0.5nm,0.3s,baz=187,slow=8.6,SNR=28
KSRS LR LR 21 16 40.0
comp=Z,120nm,20.3s,baz=168,slow=38
LZH Lanzhou 19.22 313 *e*P Pn 21 11 39.8 -0.1
LZH pP pP 21 11 42.5 -1.7
LZH sP sP 21 11 44.6 -2.0
LZH PP **PnPn 21 11 57.0 +4.1**
LZH *e*S **Sn 21 15 11.0 -4.0**
LZH sS S 21 15 16.3 +0.2
LZH *e*SS **SnSn 21 15 37.0 +7.8**
LZH pmax pmax
comp=Z,35nm,1.3s
LZH pmax pmax
comp=Z,170nm,5.2s
LZH LR LR
comp=Z,470nm,10.0s
LZH LR LR
comp=Z,580nm,10.2s
LZH LR LR
comp=Z,1μm,12.0s
CBIJ Chichi jima 19.32 76 *e*P P 21 11 40.1 +0.1
comp=Z,63nm,1.0s
JCJ Chichijima 19.32 76 P P 21 11 40.1 +0.1
comp=Z,2.2nm,0.3s,baz=280,slow=14,SNR=4.1
MJAR Matsushiro Arr 19.42 46 P P 21 11 40.4 -0.6
comp=Z,0.2nm,0.3s,baz=224,slow=8.7,SNR=6.9
CM31 Chiang Mai Arr 21.32 260 *e*P P 21 12 04.2 +2.4
CM31 *e*S Sn 21 16 05.4 -0.3
CMAR Chiang Mai Arr 21.32 260 P P 21 12 04.2 +2.4
comp=Z,3.3nm,0.8s,baz=68,slow=7.4,SNR=11
CMAR PcP **PcP 21 16 05.4 -0.6**
comp=Z,0.7nm,0.6s,baz=32,slow=0.8,SNR=7.8
SONA0 Songino Array 26.61 338 *e*P P 21 12 53.3 +0.3
comp=Z,6.9nm,0.9s
SONM Songino Array 26.61 338 P P 21 12 53.3 +0.3
comp=Z,4.0nm,0.7s,baz=161,slow=11,SNR=5.5
SONM LR LR 21 24 22.9
comp=Z,156nm,20.4s,baz=142,slow=38
KLR Kul'dur 26.66 16 P P 21 12 54.2 +0.9
comp=Z,2.0nm,0.6s,baz=192,slow=7.4,SNR=5.0
WMQ Urumqi 33.79 314 *e*P P 21 13 58.0 +1.4
WMQ pmax pmax
comp=Z,55nm,3.6s
MK01 Makanchi Array 38.47 316 *e*P P 21 14 37.3 +0.7
MK31 Makanchi Array 38.48 316 *e*P P 21 14 37.7 +1.0
MK32 Makanchi Array 38.48 316 *e*P P 21 14 37.6 +0.9
MK32 *e*S **S 21 20 32.8 +1.5**
MKAR Makanchi Array 38.48 316 P P 21 14 37.6 +0.9
comp=Z,7.0nm,0.6s,baz=110,slow=10.0,SNR=59
MKAR ScP **S 21 20 32.8 +1.4**
comp=Z,0.3nm,0.7s,baz=132,slow=2.1,SNR=3.9
MAKZ Makanchi 38.69 316 *e*P P 21 14 39.3 +0.9
comp=Z,7.1nm,0.8s
ZAA0 Zalesovo Array 40.44 327 *e*P P 21 14 52.9 0.0
ZALV Zalesovo Beam 40.44 327 P P 21 14 52.3 -0.6
comp=Z,5.4nm,0.7s,baz=115,slow=7.9,SNR=24
ZALV PcP **PcP 21 16 54.2 -1.3**
ZAA1 Zalesovo Array 40.45 327 *e*P P 21 14 52.3 -0.6
ZAA1 *e*PcP **PcP 21 16 54.2 -1.3**
KSH Kashi 40.98 303 P P 21 15 01.8 +4.1
TKM2 Tokmak 2 41.87 308 *e*P P 21 15 06.9 +1.8
comp=Z,5.2nm,0.8s
KURK Kurchatov 42.26 320 *e*P P 21 15 08.3 +0.4
comp=Z,4.2nm,0.9s
H11N1 WAKE ISLAND Hy 42.60 86 T T 22 00 16.2
baz=283,slow=74,SNR=21
H11N2 WAKE ISLAND Hy 42.61 86 T T 22 00 15.3
baz=283,slow=74,SNR=21
AAK Ala-Archa 42.61 308 *e*P P 21 15 12.8 +1.8
comp=Z,3.0nm,0.9s
H11N3 WAKE ISLAND Hy 42.62 86 T T 22 00 17.5
baz=283,slow=74,SNR=22
H11S3 WAKE ISLAND Hy 42.73 88 T T 22 00 22.7
baz=284,slow=74,SNR=23
H11S1 WAKE ISLAND Hy 42.74 88 T T 22 00 23.2
baz=284,slow=74,SNR=15
H11S2 WAKE ISLAND Hy 42.75 88 T T 22 00 23.8
baz=284,slow=74,SNR=11
EKS2 Erkin-Say 43.13 308 *e*P P 21 15 16.8 +1.6
comp=Z,2.2nm,0.8s
WR1 Warramunga Arr 45.44 162 *e*P P 21 15 31.0 -2.7
comp=Z,36nm,2.0s
WRA Warramunga Arr 45.44 162 P P 21 15 31.0 -2.7
comp=Z,1.6nm,0.7s,baz=348,slow=8.9,SNR=15
KKAR Karatay Array 45.57 308 *e*P P 21 15 36.1 +1.5
KBL Kabul 46.20 296 *e*P P 21 15 42.0 +2.1
comp=Z,6.0nm,0.9s
BRVK Borovoye 47.91 321 *e*P P 21 15 53.9 +1.2
comp=Z,5.2nm,0.9s
TIXI Tiksi 48.00 3 P P 21 15 51.8 -1.4
comp=Z,2.1nm,0.8s,baz=150,slow=5.3,SNR=9.3
ZRNK Zerenda 48.62 321 *e*P P 21 15 59.0 +0.7
comp=Z,4.4nm,0.8s
AS31 Alice Springs 48.88 164 *e*P P 21 15 56.9 -3.7
comp=Z,3.2nm,1.4s
ASAR Alice Springs 48.88 164 P P 21 15 56.9 -3.7
comp=Z,0.8nm,0.7s,baz=353,slow=9.1,SNR=9.0
NRIK Noril'sk 49.67 345 P P 21 16 05.0 -0.9
comp=Z,3.4nm,0.4s,baz=141,slow=7.8,SNR=5.6
CTA Charters Tower 50.12 149 P P 21 16 07.7 -2.4
comp=Z,3.7nm,0.8s,baz=339,slow=9.1,SNR=5.1
ABKAR Akbulak array 53.58 315 *e*P P 21 16 36.4 +0.9
GEYT Alibeck 54.86 301 P P 21 16 45.6 +0.4
comp=Z,5.6nm,0.9s,baz=93,slow=3.0,SNR=17
ARU Arti 55.29 323 *e*P P 21 16 47.9 0.0
comp=Z,8.6nm,0.9s
STKA Stephens Creek 58.82 160 P P 21 17 11.4 -1.6
comp=Z,4.1nm,0.6s,baz=336,slow=5.8,SNR=9.3
STKA Stephens Creek 58.82 160 *e*P P 21 17 11.4 -1.6
STKA Stephens Creek 58.82 160 *e*P P 21 17 11.4 -1.6
comp=Z,1.1nm,2.0s
ARA0 ARCESS Array S 69.78 338 *e*P P 21 18 24.1 -0.4
ARCES ARCESS Array B 69.78 338 P P 21 18 24.1 -0.4
comp=Z,5.1nm,0.7s,baz=74,slow=8.9,SNR=9.5
FIA0 FINESS Array S 71.65 330 *e*P P 21 18 36.0 +0.1
FINES FINESS Array B 71.65 330 P P 21 18 36.0 +0.1
comp=Z,3.6nm,0.7s,baz=72,slow=6.2,SNR=11
AKASG Malin Array Be 73.03 318 P P 21 18 43.1 -1.2
comp=Z,1.9nm,0.7s,baz=59,slow=6.0,SNR=7.5
AKBB Malin Array Si 73.03 318 *e*P P 21 18 43.1 -1.2
comp=Z,3.7nm,0.6s
BR101 Keskin Array S 73.27 306 *e*P P 21 18 46.4 +0.1
BRTR Keskin Array B 73.27 306 P P 21 18 46.4 +0.1
comp=Z,1.8nm,0.9s,baz=136,slow=3.3,SNR=7.2
INK Inuvik 73.54 22 P P 21 18 47.0 -0.1
comp=Z,1.2nm,0.7s,baz=316,slow=7.2,SNR=3.6
INK LR LR 21 53 21.7
comp=Z,326nm,18.9s,baz=228,slow=38
INK Inuvik 73.54 22 *e*P P 21 18 47.0 -0.1
comp=Z,8.8nm,1.5s
SUW Suwalki 75.47 323 *e*PKP P 21 18 58.8 +0.3
NB2 NORSAR Subarra 78.44 332 P P 21 19 14.7 -0.6
comp=Z,6.5nm,0.7s,baz=60,slow=5.6
NB200 NORSAR Array S 78.44 332 *e*P P 21 19 15.0 -0.3
NOA NORSAR Array B 78.44 332 P P 21 19 15.0 -0.3
comp=Z,6.9nm,0.8s,baz=58,slow=5.7,SNR=19
OJC Ojcow 78.84 320 *e*PKP P 21 19 18.1 +0.5
OJC Ojcow 78.84 320 *e*P P 21 19 18.1 +0.5
comp=Z,11nm,1.0s
DPC Dobruska-Polom 80.80 321 *e*P P 21 19 28.9 +0.6
CLL Collm 82.23 323⇓*i*(P) P 21 19 36.1 +0.3
comp=Z,5.0nm,0.8s
YKA Yellowknife Ar 83.28 23 P P 21 19 40.0 -1.0
comp=Z,1.6nm,0.7s,baz=314,slow=4.9,SNR=22
YKA Yellowknife Ar 83.28 23 P P 21 19 40.0 -1.0
YKB5 Yellowknife Ar 83.28 23 *e*P P 21 19 40.0 -1.0

ISK 22 21:07:56.4, 38°.84N×38°.27E, h5km, MD2.6, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PTK	**Pertek**	**0.88**	**86**	*e*PG	Pb	21 08 14.2	0.0
PTK				*e*SG	Sn	21 08 27.8	-1.1
SVRC	**Sivrice-ELAZID**	**0.94**	**119**	*e*PG	Pb	21 08 15.6	+0.4
SVRC				*e*SG	Sn	21 08 29.5	-0.7
SVSK	**Karacayir**	**1.46**	**318**	*e*PN	Pg	21 08 25.2	+0.8
SVSK				*e*SN	Sg	21 08 45.8	+2.5

TAP 22 21:08:14.5, 23°.89N×121°.06E, h19km, ML4.4, 10C-2D, B, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SMLT	**Sun Moon Lake**	**0.15**	**267**	*i* P	Pg	21 08 19.2	+0.2
baz=266							
TYC	**Yuchr**	**0.18**	**274**	P	Pg	21 08 19.7	+0.3
baz=275							
WHF	**Hehuan Shan**	**0.32**	**37⇑*i*P**		Pg	21 08 22.1	+0.4
baz=42							
WHF				S	Sb	21 08 26.3	0.0
baz=42							
WNT	**Mingjian**	**0.34**	**268**	*i* P	Pb	21 08 22.9	+0.8
baz=267							
WNT				*i* S	Sb	21 08 28.8	+1.7
baz=267							
ESL	**Shilin**	**0.35**	**103⇑*i*P**		Pb	21 08 22.6	+0.4
baz=102							
ESL				*i* S	Sb	21 08 27.8	+0.5
baz=102							
TWT	**Tachien**	**0.38**	**17⇓*i*P**		Pg	21 08 22.4	-0.1
baz=19							
TWT				*i* S	Sg	21 08 27.2	-0.8
baz=19							
ESF	**Shoufeng Towns**	**0.41**	**93**	*e*P	Pb	21 08 24.2	+1.0
baz=99							
YUS	**Yu-Shan**	**0.41**	**194**	*i* P	Pb	21 08 23.8	+0.2
baz=194							
YUS				*i* S	Sb	21 08 29.4	-0.1
baz=194							
TCU	**Taichung**	**0.43**	**306**	*i* P	Pb	21 08 24.6	+1.0
baz=306							
ALS	**Alishan**	**0.45**	**212⇑*i*P**		Pb	21 08 24.4	+0.5
baz=206							
ALS				*i* S	Sb	21 08 31.3	+1.0
baz=206							
EHY	**Hungye**	**0.45**	**148⇑*i*P**		Pb	21 08 24.4	+0.6
baz=139							
EHY				S	Sb	21 08 30.4	+0.2
baz=139							
CHN5	**Tsauling**	**0.46**	**230**	P	Pb	21 08 24.6	+0.6
baz=231							
CHN5				S	Sb	21 08 31.9	+1.5
baz=231							
TEGC	**Jichi Village**	**0.48**	**112**	*e*P	Pn	21 08 25.7	-0.5
baz=112							
WGK	**Gukeng**	**0.50**	**246**	*i* P	Pg	21 08 25.5	+0.9
baz=245							
WGK				S	Sn	21 08 33.1	-1.5
baz=245							
HWA	**Hwalien**	**0.51**	**80**	⇑P	Pg	21 08 25.4	+0.6
baz=80							
TWQ1	**Liyutan**	**0.52**	**330**	*e*P	Pn	21 08 26.1	-0.8
baz=329							
TWQ1				S	Sn	21 08 34.2	-1.1
baz=329							
TWD	**Chiawan**	**0.53**	**69⇑*i*P**		Pg	21 08 25.2	+0.1
baz=69							
TWD				*e*S	Sb	21 08 31.7	-0.5
baz=69							
TWF1	**Yuli**	**0.58**	**158⇑*i*P**		Pg	21 08 26.7	+0.5

	baz=150						
TWF1				S	Sg	21 08 34.5	+0.6
	baz=150						
NSY	**Sanyi**	**0.59**	**333**	⇑P	Pn	21 08 27.7	-0.2
	baz=333						
NSY				*i* S	Sn	21 08 36.6	-0.3
	baz=333						
NNS	**Nan Shan**	**0.62**	**28**	⇑P	Pb	21 08 26.6	0.0
	baz=31						
NNS				*e*S	Sb	21 08 33.9	-1.0
	baz=31						
CHN2	**Minshiung**	**0.64**	**236**	⇑*i*P	Pn	21 08 28.0	-0.6
	baz=237						
CHN2				S	Sn	21 08 37.7	-0.5
	baz=237						
CHN4	**Tsaushan**	**0.69**	**219**	*e*P	Pg	21 08 28.6	+0.5
	baz=219						
ELDTW	**Lidau**	**0.70**	**183**	*e*P	Pg	21 08 28.7	+0.3
	baz=195						
CHY	**Chiayi**	**0.70**	**236**	P	Pg	21 08 28.8	+0.4
	baz=236						
CHY				S	Sn	21 08 38.9	-0.8
	baz=236						
WTCT	**Ta-ch'eng**	**0.71**	**268**	*e*P	Pg	21 08 28.9	+0.3
	baz=267						
WTCT				*e*S	Sn	21 08 39.2	-0.7
	baz=267						
NSTT	**Nanjuang**	**0.74**	**356**	P	Pn	21 08 30.0	+0.1
	baz=3.0						
NSTT				S	Sg	21 08 39.3	+0.4
	baz=3.0						
WTP	**Ta-pu**	**0.76**	**213**	*e*P	Pn	21 08 29.9	-0.3
	baz=212						
WTP				*e*S	Sg	21 08 40.1	+0.5
	baz=212						
STYT	**Tauyuan**	**0.78**	**201**	P	Pn	21 08 30.3	-0.1
	baz=211						
STYT				*e*S	Sg	21 08 40.6	+0.5
	baz=211						
WSF	**Szhu**	**0.81**	**252**	*e*P	Pg	21 08 30.3	0.0
	baz=251						
WSF				*e*S	Sn	21 08 41.8	-0.4
	baz=251						
TWK	**Hsinying**	**0.81**	**220**	*e*P	Pg	21 08 30.5	0.0
	baz=220						
ENA	**Nanau**	**0.82**	**49**	P	Pb	21 08 30.2	+0.1
	baz=50						
ENA				*e*S	Sb	21 08 40.3	-0.4
	baz=50						
NSK	**Sanguang**	**0.83**	**19**	*e*P	Pb	21 08 30.1	-0.1
	baz=20						
NSK				*e*S	Sb	21 08 40.0	-1.0
	baz=20						
CHKT	**Chengkung**	**0.84**	**160**	*e*P	Pn	21 08 31.5	+0.3
	baz=144						
CHKT				*e*S	Sn	21 08 42.9	-0.1
	baz=144						
CHN1	**Nanshi**	**0.86**	**215**	*e*P	Pg	21 08 31.1	-0.2
	baz=216						
CHN1				*e*S	Sn	21 08 43.4	-0.1
	baz=216						
ENTT	**Nioudou**	**0.88**	**32**	P	Pg	21 08 31.5	-0.1
	baz=27						
ENTT				*e*S	Sn	21 08 44.3	+0.3
	baz=27						
HSN	**Hsinchu**	**0.91**	**355**	*e*P	Pg	21 08 34.0	+1.7
	baz=357						
SGST	**Jiashian**	**0.92**	**209**	*e*P	Pg	21 08 33.1	+0.7
	baz=210						
SGST				*e*S	Sn	21 08 45.5	+0.5
	baz=210						
CHN8	**Yiju**	**0.95**	**235**	*e*P	Pg	21 08 33.1	+0.1
	baz=235						
CHN8				*e*S	Sn	21 08 46.8	+1.1
	baz=235						
TWE	**Neicheng**	**0.99**	**34**	P	Pg	21 08 33.9	0.0
	baz=44						
TWC	**Suao**	**1.01**	**45**	⇓P	Pn	21 08 33.9	+0.2
	baz=39						
TWC				S	Sg	21 08 48.0	+0.3
	baz=39						
CHN3	**Shinhua**	**1.03**	**218**	*e*P	Pg	21 08 35.2	+0.6
	baz=231						
TWG	**Pinlang**	**1.07**	**179**	*e*P	Pg	21 08 35.1	-0.1
	baz=175						
TWG				*e*S	Sg	21 08 50.1	+0.9
	baz=175						
SCLT	**Jiali**	**1.07**	**228**	*e*P	Pg	21 08 35.3	+0.1
	baz=229						
SCLT				*e*S	Sg	21 08 50.9	+1.6
	baz=229						
ILA	**Ilan**	**1.07**	**36**	*e*P	Pg	21 08 35.9	+0.5
	baz=42						
NCU	**National Centr**	**1.08**	**6**	*e*P	Pg	21 08 37.1	+1.6
	baz=7.0						
TTN	**Taitung**	**1.14**	**176**	*e*P	Pg	21 08 37.8	+1.2
	baz=177						
TAI1	**Yung-k'ang**	**1.14**	**222**	*e*P	Pb	21 08 36.0	+0.5
	baz=223						
TWA	**Mucha**	**1.18**	**24**	*e*P	Pg	21 08 38.5	+1.0
	baz=24						
SSD	**Sandimen**	**1.21**	**199**	*e*P	Pg	21 08 37.8	-0.1
	baz=200						
TAP	**Taipei**	**1.21**	**20**	*e*P	Pg	21 08 39.1	+1.1
	baz=4.0						
TAP1	**Taipei**	**1.22**	**20**	*e*P	Pg	21 08 38.6	+0.5
	baz=4.0						
TWS1	**Kuangyinshan**	**1.25**	**15**	*e*P	Pg	21 08 38.5	-0.2
	baz=16						
ECL	**Taimali**	**1.29**	**184**	*e*P	Pg	21 08 39.1	-0.4
	baz=172						
ECL				*e*S	Sg	21 08 56.4	-0.1
	baz=172						
NWF	**Wu-fen Shan**	**1.35**	**29**	*e*P	Pg	21 08 40.5	0.0
	baz=11						
TWB1	**Santiao Chiao**	**1.40**	**37**	*e*P	Pg	21 08 41.1	-0.4
	baz=47						
TWB1				*e*S	Sb	21 08 58.2	+0.8
	baz=47						
PNG	**Penghu**	**1.42**	**257**	*e*P	Pn	21 08 39.2	+0.1
	baz=256						
WDGT	**Dungji**	**1.43**	**244**	*e*P	Pn	21 08 39.7	+0.4
	baz=244						
WDGT				*e*S	Sb	21 08 59.1	+0.8
	baz=244						
EAST	**Anshuo**	**1.51**	**187**	*e*P	Pb	21 08 42.6	+0.6
	baz=182						
SCZT	**Fangliau**	**1.57**	**195**	*e*P	Pb	21 08 43.3	+0.5
	baz=214						
YOJ	**Yonaguni jima**	**1.87**	**72**	*e*P	Pn	21 08 46.2	+0.8
	baz=72						
LAY	**Lan-yu**	**1.90**	**166**	*e*P	Pn	21 08 45.5	-0.4
	baz=154						

ISCJB ***22*** *21:13:50.0±0.6, 39.°15N±0.°04×29.°15E±0.°07, h9km, Error ellipse: s-maj=7.7km s-min=5.8km az=29.2*
ISK ***22*** *21:13:49.7, 39.°15N×29.°21E, h5km, MD2.7*
DDA ***22*** *21:13:50.0, 39.°13N×29.°17E, h7km, Md2.2*
CSEM ***22*** *21:13:50.1±0.3, 39.°16N×29.°13E, h2km, MD2.7, Error ellipse: s-maj=7.3km s-min=6.0km az=102.0*
ISC 22 21:13:49.7±1.0**, 39.°14N**±0.°03×**29.°12E**±0.°04**, h9km, n20, σ0°54/22, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.29**	**99**	P	**Pg**	**21 13 55.4**	**-0.1**
GDZ	**Gediz**	**0.29**	**99**	*i* P	**Pg**	**21 13 55.4**	**-0.1**
DEMI	**Demirci**	**0.33**	**254**	P	**Pg**	**21 13 55.4**	**-0.8**
DEMI	**Demirci**	**0.33**	**254**	*i* P	**Pg**	**21 13 55.4**	**-0.8**
TVSB	**Tavsanli**	**0.41**	**40**	*e*PG	**Pg**	**21 13 57.4**	**-0.4**
TVSB				*e*SG	**Sg**	**21 14 02.5**	**-0.7**
TVSB	**Tavsanli**	**0.41**	**40**	*e*Pg	**Pg**	**21 13 57.4**	**-0.4**
TVSB				*e*Sg	**Sg**	**21 14 02.5**	**-0.7**
DURS	**Dursunbey**	**0.68**	**313**	P	**Pb**	**21 14 03.9**	**+0.1**
DURS	**Dursunbey**	**0.68**	**313**	*i* P	**Pb**	**21 14 03.9**	**+0.1**
KULA	**Kula-Manisa**	**0.72**	**210**	*e*PG	**Pb**	**21 14 04.7**	**+0.3**
KULA	**Kula-Manisa**	**0.72**	**210**	*e*Pg	**Pb**	**21 14 04.7**	**+0.3**
KHAL	**Karahalli**	**0.82**	**159**	P	**Pn**	**21 14 07.7**	**+0.2**
KHAL	**Karahalli**	**0.82**	**159**	*i* P	**Pn**	**21 14 07.7**	**+0.2**
KHL	**Karahalli**	**0.87**	**159**	*e*PG	**Pg**	**21 14 06.8**	**+0.3**
KHL	**Karahalli**	**0.87**	**159**	*e*Pg	**Pg**	**21 14 06.8**	**+0.3**
KCTX	**Karacabey (Bur**	**1.27**	**333**	*e*PN	**Pg**	**21 14 15.1**	**+1.0**
KCTX	**Karacabey (Bur**	**1.27**	**333**	*e*Pn	**Pg**	**21 14 15.1**	**+1.0**
BORA	**Eskisehir**	**1.27**	**54**	P	**Pn**	**21 14 13.5**	**-0.2**
BORA	**Eskisehir**	**1.27**	**54**	*i* P	**Pn**	**21 14 13.5**	**-0.2**
ARMT	**Armutlu**	**1.44**	**352**	*e*PN	**Pb**	**21 14 17.2**	**+0.5**
ARMT	**Armutlu**	**1.44**	**352**	*e*Pn	**Pb**	**21 14 17.2**	**+0.5**

ISCJB ***22*** *21:16:59.8±0.5, 39.°13N±0.°04×29.°03E±0.°05, h9km, Error ellipse: s-maj=6.0km s-min=4.5km az=139.1*
ISK ***22*** *21:16:59.4, 39.°15N×29.°05E, h9km, MD2.7*
CSEM ***22*** *21:16:59.9±0.2, 39.°13N×29.°03E, h8km, MD2.7, Error ellipse: s-maj=4.3km s-min=3.7km az=133.0*
DDA ***22*** *21:17:00.0, 39.°08N×29.°05E, h7km, Md2.7*
ISC 22 21:16:59.8±0.9**, 39.°11N**±0.°03×**29.°05E**±0.°03**, h9km, n36, σ0°25/38, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**255**	P	**Pg**	**21 17 05.3**	**+0.1**
DEMI	**Demirci**	**0.27**	**255**	*i* P	**Pg**	**21 17 05.3**	**+0.1**
GDZ	**Gediz**	**0.34**	**94**	P	**Pg**	**21 17 06.4**	**-0.2**
GDZ	**Gediz**	**0.34**	**94**	*i* P	**Pg**	**21 17 06.4**	**-0.2**
TVSB	**Tavsanli**	**0.47**	**44**	PG	**Pg**	**21 17 08.8**	**-0.1**
TVSB				SG	**Sg**	**21 17 14.9**	**-0.2**
TVSB	**Tavsanli**	**0.47**	**44**	*i* Pg	**Pg**	**21 17 08.8**	**-0.1**
TVSB				*i* Sg	**Sg**	**21 17 14.9**	**-0.2**
DURS	**Dursunbey**	**0.66**	**318**	P	**Pb**	**21 17 13.7**	**+0.1**
DURS	**Dursunbey**	**0.66**	**318**	*i* P	**Pb**	**21 17 13.7**	**+0.1**
KULA	**Kula-Manisa**	**0.67**	**207**	*e*PG	**Pg**	**21 17 12.7**	**0.0**
KULA	**Kula-Manisa**	**0.67**	**207**	*e*Pg	**Pg**	**21 17 12.7**	**0.0**
MANT	**Manisa**	**0.73**	**212**	P	**Pg**	**21 17 13.6**	**-0.3**
MANT	**Manisa**	**0.73**	**212**	*i* P	**Pg**	**21 17 13.6**	**-0.3**
KHAL	**Karahalli**	**0.82**	**155**	P	**Pn**	**21 17 17.4**	**-0.2**
KHAL	**Karahalli**	**0.82**	**155**	*i* P	**Pn**	**21 17 17.4**	**-0.2**
KHL	**Karahalli**	**0.87**	**155**	*e*PG	**Pb**	**21 17 17.4**	**+0.2**
KHL	**Karahalli**	**0.87**	**155**	*e*Pg	**Pb**	**21 17 17.4**	**+0.2**
AKHS	**Akhisar**	**0.99**	**257**	P	**Pg**	**21 17 19.0**	**+0.2**
AKHS	**Akhisar**	**0.99**	**257**	*i* P	**Pg**	**21 17 19.0**	**+0.2**
AKS	**Akhisar**	**0.99**	**257**	*e*PG	**Pg**	**21 17 19.1**	**+0.3**
AKS	**Akhisar**	**0.99**	**257**	*e*Pg	**Pg**	**21 17 19.1**	**+0.3**
BALB	**Balikesir**	**1.05**	**301**	*e*PG	**Pg**	**21 17 19.8**	**-0.1**
BALB	**Balikesir**	**1.05**	**301**	*e*Pg	**Pg**	**21 17 19.8**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.26**	**354**	*e*PN	**Pn**	**21 17 23.0**	**-0.6**
MDNY	**Mudanya-Bursa**	**1.26**	**354**	*e*Pn	**Pn**	**21 17 23.0**	**-0.6**
IZI	**Iznik**	**1.27**	**15**	*e*PN	**Pn**	**21 17 23.3**	**-0.5**
IZI	**Iznik**	**1.27**	**15**	*e*Pn	**Pn**	**21 17 23.3**	**-0.5**
KCTX	**Karacabey (Bur**	**1.27**	**335**	*e*PN	**Pn**	**21 17 23.8**	**0.0**
KCTX	**Karacabey (Bur**	**1.27**	**335**	*e*Pn	**Pn**	**21 17 23.8**	**0.0**
BORA	**Eskisehir**	**1.33**	**54**	P	**Pn**	**21 17 24.6**	**0.0**
BORA	**Eskisehir**	**1.33**	**54**	*i* P	**Pn**	**21 17 24.6**	**0.0**
ESKT	**Eskisehir**	**1.46**	**73**	*i* P	**Pg**	**21 17 28.1**	**+0.3**
SEYT	**Eskypehyr**	**1.46**	**73**	P	**Pg**	**21 17 28.1**	**+0.3**
ARMT	**Armutlu**	**1.46**	**354**	*e*PN	**Pn**	**21 17 26.5**	**+0.1**
ARMT	**Armutlu**	**1.46**	**354**	*e*Pn	**Pn**	**21 17 26.5**	**+0.1**
GULT	**Gulveren**	**1.74**	**40**	*e*PN	**Pn**	**21 17 30.4**	**+0.2**
GULT	**Gulveren**	**1.74**	**40**	*e*Pn	**Pn**	**21 17 30.4**	**+0.2**

ISCJB ***22*** *21:21:02.8±0.7, 12.°28N±0.°09×144.°1E±0.°1, h30km, mb3.9/12, Error ellipse: s-maj=21.3km s-min=9.3km az=28.4*
IDC ***22*** *21:21:05.8±2.7, 12.°31N×144.°22E, h40km±25km, mb3.7/12, mb1 3.9/12, mb1mx3.6/44, mbtmp3.9/12, Error ellipse: s-maj=25.7km s-min=13.9km az=101.0*
ISC 22 21:21:04.3±0.9**, 12.°3N**±0.°1×**144.°3E**±0.°2**, h30km, n20, σ0°59/15, mb4.1/12, South of Mariana Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**1.39**	**25**	P	**Pn**	**21 21 28.2**	**+0.4**
	152nm,0.3s,baz=50,slow=2.0,SNR=35						
GUMO				S	**Sb**	**21 21 46.8**	**-0.3**
	120nm,0.3s,baz=20,slow=23,SNR=10						
H11S3	**WAKE ISLAND Hy 22.46**		**71**	T	T	21 49 24.1	
	baz=300,slow=78,SNR=4.2						
H11S1	**WAKE ISLAND Hy 22.47**		**71**	T	T	21 49 32.1	
	baz=300,slow=78,SNR=3.7						
H11S2	**WAKE ISLAND Hy 22.48**		**71**	T	T	21 49 32.2	
	baz=300,slow=78,SNR=4.5						
H11N1	**WAKE ISLAND Hy 22.94**		**68**	T	T	21 49 51.4	
	baz=255,slow=75,SNR=4.8						
H11N2	**WAKE ISLAND Hy 22.95**		**68**	T	T	21 49 53.1	
	baz=255,slow=75,SNR=5.1						
H11N3	**WAKE ISLAND Hy 22.96**		**68**	T	T	21 49 53.0	
	baz=255,slow=75,SNR=5.9						
MJAR	**Matsushiro Arr**	**24.73**	**348**	P	**P**	**21 26 23.4**	**+0.3**
	0.5nm,0.4s,baz=146,slow=11,SNR=3.1						
KSRS	**Korea Array**	**29.00**	**332**	P	**P**	**21 27 01.9**	**+0.5**
	0.3nm,0.5s,baz=140,slow=10,SNR=2.7						
WRA	**Warramunga Arr**	**33.51**	**197**	P	**P**	**21 27 41.3**	**-0.2**
	2.5nm,0.6s,baz=21,slow=9.8,SNR=29						
ASAR	**Alice Springs**	**37.17**	**196**	P	**P**	**21 28 13.0**	**+0.1**
	1.9nm,0.7s,baz=19,slow=10,SNR=32						
SONM	**Songino Array**	**47.44**	**326**	P	**P**	**21 29 35.7**	**-0.7**
	0.3nm,0.5s,baz=143,slow=9.3,SNR=3.4						
MKAR	**Makanchi Array**	**62.00**	**317**	P	**P**	**21 31 22.4**	**+0.6**
	0.6nm,0.4s,baz=88,slow=9.1,SNR=8.0						
BVAR	**Borovoye Array**	**70.56**	**322**	P	**P**	**21 32 16.7**	**+0.2**
	0.8nm,0.3s,baz=104,slow=8.4,SNR=9.2						
GEYT	**Alibeck**	**79.53**	**307**	P	**P**	**21 33 09.1**	**+0.4**
	0.6nm,0.7s,baz=267,slow=2.5,SNR=3.2						
YKA	**Yellowknife Ar**	**84.25**	**27**	P	**P**	**21 33 33.0**	**+0.1**
	0.3nm,0.5s,baz=285,slow=5.2,SNR=4.8						
ARCES	**ARCESS Array B**	**88.11**	**342**	P	**P**	**21 33 50.6**	**-1.2**
	1.4nm,1.0s,baz=62,slow=8.4,SNR=3.8						
NVAR	**Mina Array Bea**	**88.17**	**51**	P	**P**	**21 33 53.2**	**+0.2**
	1.4nm,0.7s,baz=263,slow=6.2,SNR=9.7						
FINES	**FINESS Array B**	**92.06**	**335**	P	**P**	**21 34 09.3**	**-1.1**
	0.9nm,0.6s,baz=63,slow=4.9,SNR=11						
LPAZ	**La paz**	**148.38**	**101**	PKPbc	**PKPbc**	**21 40 49.7**	**+0.1**
	1.2nm,0.8s,baz=289,slow=3.8,SNR=5.8						

ISCJB ***22*** *21:24:01.7±0.5, 39.°12N±0.°04×29.°06E±0.°06, h9km, Error ellipse: s-maj=7.4km s-min=5.1km az=31.7*
CSEM ***22*** *21:24:01.8±0.1, 39.°12N×29.°06E, h10km, MD2.5, Error ellipse: s-maj=2.8km s-min=2.1km az=106.0*
ISK ***22*** *21:24:01.2, 39.°14N×29.°06E, h7km, MD2.7*
DDA ***22*** *21:24:02.3, 39.°10N×29.°05E, h7km, Md2.5*
ISC 22 21:24:01.6±1.1**, 39.°14N**±0.°03×**29.°08E**±0.°03**, h9km, n26, σ0°43/28, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.30**	**252**	P	**Pg**	**21 24 07.7**	**+0.1**
DEMI	**Demirci**	**0.30**	**252**	*i* P	**Pg**	**21 24 07.7**	**+0.1**
GDZ	**Gediz**	**0.32**	**99**	P	**Pb**	**21 24 09.0**	**-0.5**
GDZ	**Gediz**	**0.32**	**99**	*i* P	**Pb**	**21 24 09.0**	**-0.5**
TVSB	**Tavsanli**	**0.43**	**43**	*e*PG	**Pg**	**21 24 10.3**	**+0.2**
TVSB				*e*SG	**Sg**	**21 24 16.7**	**+0.9**
TVSB	**Tavsanli**	**0.43**	**43**	*e*Pg	**Pg**	**21 24 10.3**	**+0.2**
TVSB				*e*Sg	**Sg**	**21 24 16.7**	**+0.9**
DURS	**Dursunbey**	**0.66**	**315**	P	**Pb**	**21 24 15.4**	**0.0**
DURS	**Dursunbey**	**0.66**	**315**	*i* P	**Pb**	**21 24 15.4**	**0.0**
KULA	**Kula-Manisa**	**0.70**	**208**	*e*PG	**Pg**	**21 24 15.2**	**0.0**
KULA	**Kula-Manisa**	**0.70**	**208**	*e*Pg	**Pg**	**21 24 15.2**	**0.0**
MANT	**Manisa**	**0.76**	**213**	P	**Pg**	**21 24 16.3**	**-0.1**
MANT	**Manisa**	**0.76**	**213**	*i* P	**Pg**	**21 24 16.3**	**-0.1**
KHAL	**Karahalli**	**0.83**	**157**	P	**Pb**	**21 24 17.9**	**-0.3**
KHAL	**Karahalli**	**0.83**	**157**	*i* P	**Pb**	**21 24 17.9**	**-0.3**
KHL	**Karahalli**	**0.88**	**157**	*e*PG	**Pb**	**21 24 18.8**	**-0.4**
KHL	**Karahalli**	**0.88**	**157**	*e*Pg	**Pb**	**21 24 18.8**	**-0.4**
IZI	**Iznik**	**1.24**	**14**	*e*PN	**Pg**	**21 24 25.2**	**-0.2**
IZI	**Iznik**	**1.24**	**14**	*e*Pn	**Pg**	**21 24 25.2**	**-0.2**
KCTX	**Karacabey (Bur**	**1.26**	**334**	*e*PN	**Pg**	**21 24 25.4**	**-0.3**
KCTX	**Karacabey (Bur**	**1.26**	**334**	*e*Pn	**Pg**	**21 24 25.5**	**-0.3**
BORA	**Eskisehir**	**1.30**	**55**	P	**Pg**	**21 24 26.7**	**+0.2**
BORA	**Eskisehir**	**1.30**	**55**	*i* P	**Pg**	**21 24 26.7**	**+0.2**
ARMT	**Armutlu**	**1.44**	**353**	*e*PN	**Pb**	**21 24 28.1**	**-0.5**
ARMT	**Armutlu**	**1.44**	**353**	*e*Pn	**Pb**	**21 24 28.1**	**-0.5**
GULT	**Gulveren**	**1.70**	**40**	*e*PN	**Pb**	**21 24 32.4**	**-0.7**
GULT	**Gulveren**	**1.70**	**40**	*e*Pn	**Pb**	**21 24 32.4**	**-0.7**

NIED ***22*** *21:39:00, 37.°60N×141.°60E, h47km, Mw4.5 Best double couple: M0:5.63000×10^15 NP1:φ8:204.00000°, δ13.00000°, λ98.00000°. NP2:φ8:16.00000°, δ78.00000°, λ88.00000°.*
ISCJB ***22*** *21:39:52.6±0.4, 37.°58N±0.°02×141.°62E±0.°04, h51km±3km, mb4.7/114, MS4.0/12, Error ellipse: s-maj=4.8km s-min=3.6km az=24.1*
MOS ***22*** *21:39:52.1±0.9, 37.°62N×141.°57E, h46km, mb4.9/48, Error ellipse: s-maj=8.1km s-min=5.0km az=117.7*
JMA ***22*** *21:39:53.4±0.1, 37.°61N×141.°61E, h43km±2km, M4.3*
JMA Felt II J1.
NEIC ***22*** *21:39:54.8±0.4, 37.°59N×141.°59E, h57km±3km, mb4.9/47, Error ellipse: s-maj=3.5km s-min=2.7km az=129.0*
NEIC Felt at Tokyo. Recorded [2 JMA] in Fukushima and Miyagi.
IDC ***22*** *21:39:54.3±0.4, 37.°59N×141.°55E, h51km±4km, mb4.1/26, mb1 4.2/33, mb1mx4.1/52, mbtmp4.4/33, MS3.5/10, Ms1 3.5/10, ms1mx3.3/45, Error ellipse: s-maj=12.1km s-min=9.1km az=108.0*
ISC 22 21:39:53.8±0.4**, 37.°59N**±0.°03×**141.°62E**±0.°04**, h46**km±3km**, h45km:pP-P, n326,** σ1°**21**/367**, mb4.7**/117**, MS3.9**/14**, 38C-25D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.63**	**249**	P	**Pn**	**21 40 06.1**	**-0.4**
JFK				S	**Sn**	**21 40 14.5**	**-1.1**
JMM	**Marumori**	**0.71**	**293**	P	**Pn**	**21 40 07.0**	**-0.4**
JMM				*e*S	**Sn**	**21 40 16.6**	**-0.7**
ONAJ	**Iwakimizuishiy**	**0.81**	**233**	P	**Pn**	**21 40 08.5**	**-0.5**
ONAJ				S	**Sn**	**21 40 19.1**	**-0.9**
JIO	**Ouri**	**0.89**	**346**	P	**Pn**	**21 40 09.3**	**-0.5**
JIO				S	**Sn**	**21 40 20.0**	**-1.6**
JFT	**Otama**	**1.02**	**266**	P	**Pn**	**21 40 12.0**	**+0.3**
JFT				S	**Sn**	**21 40 25.4**	**+0.5**
JOU	**Okura**	**1.08**	**316**	P	**Pn**	**21 40 12.1**	**-0.4**
JOU				*e*S	**Sn**	**21 40 26.3**	**0.0**
JYS	**Shiratake**	**1.38**	**298**	P	**Pn**	**21 40 16.5**	**0.0**
JMK	**Ichinoseki**	**1.39**	**347**	P	**Pn**	**21 40 16.6**	**-0.1**
JFY	**Yanaizu**	**1.53**	**264**	P	**Pn**	**21 40 18.9**	**+0.2**
JYK	**Kaneyama**	**1.65**	**324**	P	**Pn**	**21 40 20.3**	**0.0**
MJAR	**Matsushiro Arr**	**2.92**	**250**	P	**Pn**	**21 40 38.6**	**+0.9**
	34nm,0.3s,baz=64,slow=12,SNR=198						
MJAR				LR	LR	21 42 03.0	
	comp=Z,1μm,20.7s,baz=80,slow=45						
MAJO	**Matsushiro**	**2.92**	**250**	*d* iP	**Pn**	**21 40 39.0**	**+1.3**
MAJO	**Matsushiro**	**2.92**	**250**	*e*Pn	**Pn**	**21 40 39.2**	**+1.5**
MAT	**Matsushiro**	**2.92**	**250**	P	**Pn**	**21 40 38.9**	**+1.2**
MAT				S	**Sn**	**21 41 14.9**	**+3.3**
MJB9	**Matsu-Tunnel**	**2.92**	**250**	*e*Pn	**Pn**	**21 40 39.2**	**+1.5**
INU	**Inuyama**	**4.33**	**240**	*e*Pn	**Pn**	**21 40 58.7**	**+1.7**
ERM	**Erimo**	**4.57**	**15**	*d*P	**Pn**	**21 40 59.5**	**-0.8**
ERM	**Erimo**	**4.57**	**15**	*e*Pn	**Pn**	**21 41 00.0**	**-0.3**
JHJ2	**Mitsune**	**4.71**	**199**	*e*Pn	**Pn**	**21 41 03.4**	**+1.2**
JHJ	**Hachijo jima 2**	**4.71**	**199**	P	**Pn**	**21 41 02.4**	**+0.1**
	66nm,0.3s,baz=79,slow=23,SNR=27						
JHJ				S	**Sn**	**21 41 54.9**	**-0.7**
	83nm,0.3s,baz=228,slow=23,SNR=11						
JHJ				LR	LR	21 43 18.1	
	comp=Z,243nm,20.0s,baz=24,slow=44						
ASAJ	**Asahikawa**	**6.56**	**6**	P	**Pn**	**21 41 26.4**	**-1.2**
	5.4nm,0.3s,baz=214,slow=8.9,SNR=19						
ASAJ	**Asahikawa**	**6.56**	**6**	*e*Pn	**Pn**	**21 41 28.1**	**+0.5**
VLA	**Vladivostok**	**9.25**	**310**	⇑*e*P	**Pn**	**21 42 05.6**	**+1.1**
VLA				*e*S	**Sn**	**21 43 49.2**	**+2.1**
VLA				pmax	pmax		
	comp=Z,103nm,1.1s						
USRK	**Ussuriysk Ar.**	**9.83**	**315**	P	**Pn**	**21 42 14.1**	**+1.8**
	comp=Z,1.7nm,0.3s,baz=123,slow=14,SNR=38						
USRK				LR	LR	21 45 46.7	
	comp=Z,352nm,19.4s,baz=159,slow=36						
JNU	**Nakatsue**	**9.84**	**246**	P	**Pn**	**21 42 13.7**	**+1.1**
	comp=Z,1.4nm,0.3s,baz=79,slow=5.3,SNR=12						
JNU				LR	LR	21 46 25.0	
	comp=Z,468nm,20.2s,baz=110,slow=40						
JNU	**Nakatsue**	**9.84**	**246**	*e*Pn	**Pn**	**21 42 13.8**	**+1.2**
CBIJ	**Chichi jima**	**10.48**	**177**	*e*Pn	**Pn**	**21 42 22.1**	**+0.7**
CBIJ				*e*Sn	Sn	21 44 07.4	-10
JCJ	**Chichijima**	**10.48**	**177**	P	**Pn**	**21 42 18.3**	**-3.1**
	comp=Z,7.4nm,0.3s,baz=327,slow=21,SNR=8.5						
JCJ				S	Sn	21 44 07.4	-10
	baz=258,slow=20						
KSRS	**Korea Array**	**10.88**	**273**	P	**Pn**	**21 42 27.2**	**+0.5**
	comp=Z,0.9nm,0.3s,baz=89,slow=13,SNR=36						
KSRS				LR	LR	21 46 31.5	
	comp=Z,249nm,18.8s,baz=104,slow=37						
KS01	**Wonju Array Si**	**10.90**	**274**	*e*Pn	**Pn**	**21 42 27.8**	**+0.8**
KS15	**Wonju Array Si**	**10.91**	**273**	*e*Pn	**Pn**	**21 42 28.5**	**+1.3**
KSAR	**Wonju Array Be**	**10.91**	**273**	P	**Pn**	**21 42 27.3**	**+0.1**
KSAR	**Wonju Array Be**	**10.91**	**273**	P	**Pn**	**21 42 27.2**	**+0.1**
MDJ	**Mudanjiang**	**11.46**	**312**	P	**Pn**	**21 42 38.8**	**+4.1**
MDJ				pmax	pmax		
	comp=Z,14nm,0.8s						
MDJ				pmax	pmax		
	comp=Z,32nm,4.4s						
MDJ	

comp=E,59nm,22.0s
SEY Seymchan 26.21 11 P **P 21 45 24.4 +0.5**
comp=E,3.7nm,0.6s,baz=184,slow=18
SEY Seymchan 26.21 11 *c*eP **P 21 45 25.3 +1.4**
XAN Xi'an 26.67 272 P **P 21 45 26.9 -1.6**
XAN pP pP 21 45 38.8 -1.7
XAN pmax pmax
comp=Z,13nm,0.6s
BOD Bodaibo 27.14 327 *e*P **P 21 45 30.8 -1.6**
SMY Shemya 27.16 46 *e*P **P 21 45 32.1 -0.4**
SMY pmax pmax
comp=Z,83nm,1.5s
SMY Shemya 27.16 46 *e*P **P 21 45 32.1 -0.4**
comp=Z,83nm,1.5s
ULN Ulaanbaatar 27.18 303⇑ *i*P **P 21 45 33.5 +0.5**
ULN pmax pmax
comp=Z,7.0nm,0.7s
ULN Ulaanbaatar 27.18 303 *e*P **P 21 45 32.7 -0.3**
comp=Z,7.1nm,0.6s
ENH Enshi 27.55 264 *e*P **P 21 45 35.3 -1.0**
comp=Z,55nm,0.8s
SONA1 Songino Array 27.61 303 *e*P **P 21 45 36.4 -0.5**
SONA0 Songino Array 27.61 303 *e*P **P 21 45 36.0 -0.8**
comp=Z,9.7nm,0.6s
SONM Songino Array 27.61 303 P **P 21 45 36.0 -0.8**
comp=Z,9.3nm,0.6s,baz=102,slow=9.0,SNR=44
H11N2 WAKE ISLAND Hy 28.30 122 T T 22 15 59.9
baz=315,slow=75,SNR=1322
H11N1 WAKE ISLAND Hy 28.31 122 T T 22 15 59.5
baz=315,slow=75,SNR=1387
H11N3 WAKE ISLAND Hy 28.32 122 T T 22 16 01.4
baz=315,slow=75,SNR=1181
H11S1 WAKE ISLAND Hy 29.03 124 T T 22 16 50.9
baz=317,slow=76,SNR=492
H11S3 WAKE ISLAND Hy 29.03 124 T T 22 16 52.5
baz=317,slow=76,SNR=593
H11S2 WAKE ISLAND Hy 29.05 124 T T 22 17 00.8
baz=317,slow=76,SNR=366
ZAK Zakamensk 30.05 308 *e*P **P 21 45 57.0 -1.5**
ZAK pmax pmax
comp=Z,7.0nm,0.9s
TLY Talaya 30.09 310 P **P 21 45 57.5 -1.2**
comp=Z,4.7nm,0.7s,baz=134,slow=6.1,SNR=4.2
TLY Talaya 30.09 310 *e*P **P 21 45 58.6 -0.1**
TLY pmax pmax
comp=Z,6.0nm,0.8s
TLY Talaya 30.09 310 *e*P **P 21 45 58.5 -0.2**
LZH Lanzhou 30.14 279 *e*P **P 21 45 57.5 -1.9**
LZH pP pP 21 46 09.6 -2.0
LZH sP sP 21 46 12.8 -4.2
LZH PP **PnPn 21 46 56.3 -1.6**
LZH pmax pmax
comp=Z,25nm,1.3s
LZH pmax pmax
comp=Z,93nm,6.0s
LZH LR LR
comp=N,380nm,13.0s
LZH LR LR
comp=E,400nm,13.5s
LZH LR LR
comp=Z,440nm,17.0s
GYA Guiyang 31.48 260⇓ *i*P **P 21 46 12.8 +1.5**
GYA pP pP 21 46 25.0 +1.6
GYA PP **PnPn 21 47 17.3 +1.8**
GYA PcP **PcP 21 49 05.3 +1.7**
GYA S **S 21 51 16.8 +0.5**
GYA sS sS 21 51 37.5 +0.8
GYA ScP **ScP 21 52 44.0 +1.1**
GYA SS **SnSn 21 53 05.6 +1.7**
GYA Guiyang 31.48 260 ScS ScS 21 56 40.4 -0.5
GYA pmax pmax
comp=Z,30nm,1.0s
GYA pmax pmax
comp=Z,120nm,5.0s
GYA LR LR
comp=N,490nm,15.2s
GYA LR LR
comp=E,470nm,18.3s
GYA LR LR
comp=Z,490nm,17.9s
MOY Mondy 31.70 310 *e*P **P 21 46 12.8 -0.2**
CD2 Chengdu 31.84 269 P **P 21 46 13.0 -1.3**
CD2 sP sP 21 46 30.3 -1.6
CD2 PP **PP 21 47 25.3 -1.4**
CD2 S **S 21 51 20.8 -0.9**
CD2 sS sS 21 51 41.1 -1.0
CD2 SS **SS 21 53 38.8 -0.6**
CD2 pmax pmax
comp=Z,20nm,0.8s
CD2 pmax pmax
comp=Z,130nm,5.1s
CD2 LR LR
comp=N,160nm,7.8s
CD2 LR LR
comp=Z,920nm,12.6s
GTA Gaotai 32.56 286 *e*P **P 21 46 19.6 -1.0**
GTA pP pP 21 46 29.1 -3.7
GTA sP sP 21 46 33.3 -5.0
GTA PcP **PcP 21 49 07.0 +0.7**
GTA S **S 21 51 31.8 -1.1**
GTA sS sS 21 51 46.8 -6.6
GTA SS **SnSn 21 53 29.6 -0.3**
GTA pmax pmax
comp=Z,7.0nm,0.8s
GTA pmax pmax
comp=Z,60nm,5.5s
GTA LR LR
comp=N,89nm,17.6s
GTA LR LR
comp=E,160nm,18.8s
GTA LR LR
comp=Z,160nm,18.8s
BILL Bilibino 33.45 17⇑ *e*P **P 21 46 30.2 +2.3**
BILL *e**PP **pP 21 46 40.0 -0.1**
BILL *e* 21 49 08.7
BILL MLR MLR
comp=Z,117nm,17.0s
BILL Bilibino 33.45 17 *e*P **P 21 46 27.8 -0.1**
comp=Z,6.9nm,1.5s
TIXI Tiksi 34.76 353 P **P 21 46 38.1 -1.1**
comp=Z,2.6nm,0.4s,baz=136,slow=5.5,SNR=18
TIXI Tiksi 34.76 353⇓ *i*P **P 21 46 38.7 -0.5**
TIXI pmax pmax
comp=Z,4.0nm,1.0s
TIXI Tiksi 34.76 353 *e*P **P 21 46 38.2 -0.9**
KMI Kunming 35.21 261 P **P 21 46 44.5 +0.6**
KMI pmax pmax
comp=Z,29nm,0.9s
KMI pmax pmax
comp=Z,77nm,5.0s
MIDW Midway 35.45 93 *e*P **P 21 46 45.3 -0.3**
comp=Z,290nm,1.8s
NIKH Nikolski High 37.29 49 *e*P **P 21 47 00.4 -0.7**
comp=Z,38nm,1.1s
GAMB Gambell 38.16 32 *e*P **P 21 47 08.2 -0.1**
comp=Z,97nm,1.8s
NONG Nongkai 38.84 251 P **P 21 47 15.5 +1.0**
comp=Z,26nm,1.1s
SKNT Sakolnakorn 38.90 249 P **P 21 47 16.1 +1.1**
comp=Z,14nm,1.2s
UBPT Khong Chiam 38.91 245 P **P 21 47 16.9 +1.8**
comp=Z,12nm,0.9s
AKUT Akutan 39.20 48 *e*P **P 21 47 16.6 -0.5**
comp=Z,128nm,1.4s
CRAI Chiangrai 39.67 256 P **P 21 47 21.8 +0.3**
comp=Z,420nm,1.4s
MANU Manus Island 39.80 171 *e*P **P 21 47 22.3 -0.1**
comp=Z,82nm,1.7s
TNA Tin City 40.29 30 *e*P **P 21 47 26.2 +0.2**
comp=Z,22nm,1.4s
LOEI Loei 40.60 252 P **P 21 47 26.5 -2.6**
comp=Z,166nm,1.2s
FALS False Pass 40.60 47 *e*P **P 21 47 29.2 +0.5**
comp=Z,98nm,1.8s
WMQ Urumqi 40.73 296 P **P 21 47 31.0 +0.9**
WMQ pP pP 21 47 41.3 -1.2
WMQ sP sP 21 47 50.0 +2.1
WMQ S **S 21 53 32.4 -4.9**
WMQ sS sS 21 54 03.6 +5.5
WMQ pmax pmax
comp=Z,15nm,0.8s
WMQ pmax pmax
comp=Z,26nm,5.6s
WMQ LR LR
comp=N,22nm,18.8s
WMQ LR LR
comp=E,34nm,25.2s
WMQ LR LR
comp=Z,45nm,25.2s
FAKI Fak Fak 41.23 194 *e*P **P 21 47 33.8 -0.6**
comp=Z,25nm,1.0s
CHTO Chiang Mai 41.59 255 P **P 21 47 38.1 +0.8**
comp=Z,32nm,0.9s
CHTO Chiang Mai 41.59 255 *e*P **P 21 47 37.3 0.0**
CHTO pmax pmax
comp=Z,5.0nm,0.8s
CHTO Chiang Mai 41.59 255 *e*P **P 21 47 37.3 0.0**
comp=Z,4.7nm,0.8s
ZAA0 Zalesovo Array 41.66 312 *e*P **P 21 47 37.3 -0.2**
ZAA1 Zalesovo Array 41.66 312 *e*P **P 21 47 37.4 -0.1**
ZAA1 *e*PcP **PcP 21 49 32.7 -0.8**
ZALV Zalesovo Beam 41.66 312 P **P 21 47 37.4 -0.1**
comp=Z,4.3nm,0.5s,baz=88,slow=6.9,SNR=40
ZALV PcP **PcP 21 49 32.7 -0.8**
comp=Z,1.5nm,0.6s,baz=99,slow=4.3,SNR=3.8
CM31 Chiang Mai Arr 41.80 255 *e*P **P 21 47 39.0 0.0**
CMAR Chiang Mai Arr 41.80 255 P **P 21 47 39.1 +0.1**
comp=Z,1.3nm,0.7s,baz=42,slow=8.8,SNR=10
CMAR LR LR 22 04 31.8
comp=Z,48nm,21.6s,baz=145,slow=35
CM01 Chiang Mai Arr 41.80 255 *e*P **P 21 47 39.6 +0.6**
LUWI Luwuk 42.21 209 *e*P **P 21 47 40.8 -1.5**
comp=Z,37nm,1.0s
LSA Lhasa 42.32 275 P **P 21 47 44.5 +0.8**
LSA pmax pmax
comp=Z,4.0nm,1.0s
LSA Lhasa 42.32 275 *e*P **P 21 47 45.0 +1.3**
LSA pmax pmax
comp=Z,5.0nm,0.6s
LSA Lhasa 42.32 275 *e*P **P 21 47 45.0 +1.3**
comp=Z,4.8nm,0.6s
NVS Novosibirsk 42.57 313 *e*P **P 21 47 44.3 -0.6**
NVS pmax pmax
comp=E,10.0nm,0.9s
NVS pmax pmax
comp=Z,12nm,0.9s
MK01 Makanchi Array 43.96 302 *e*P **P 21 47 55.9 -0.4**
MK31 Makanchi Array 43.96 302 *e*P **P 21 47 56.1 -0.2**
MK31 Makanchi Array 43.96 302 *e*P **P 21 47 56.0 -0.2**
MK32 Makanchi Array 43.96 302 *e*P **P 21 47 56.0 -0.2**
MKAR Makanchi Array 43.96 302 P **P 21 47 56.0 -0.2**
comp=Z,8.1nm,0.8s,baz=85,slow=9.4,SNR=57
MAKZ Makanchi 44.17 302 *e*P **P 21 47 57.8 -0.1**
MAKZ pmax pmax
comp=Z,41nm,1.8s
MAKZ Makanchi 44.17 302 *e*P **P 21 47 57.8 -0.1**
comp=Z,41nm,1.8s
PHET Kaeng Krachan 44.72 248 P **P 21 48 06.0 +3.4**
comp=Z,5.9nm,0.8s
TT01 Tatalina 44.87 35 *e*P **P 21 48 03.2 0.0**
KURK Kurchatov 45.72 308 *e*P **P 21 48 09.5 -0.6**
KURK pmax pmax
comp=Z,24nm,0.6s
KURK Kurchatov 45.72 308 *e*P **P 21 48 09.5 -0.6**
comp=Z,24nm,0.6s
KSM Kuching 46.05 226 *e*P **P 21 48 13.4 +0.2**
comp=Z,12nm,1.2s
TARA Tarawa 46.15 134 *e*P **P 21 48 13.1 -0.8**
comp=Z,205nm,1.4s
GUN Gumba 47.26 275 *e*P **P 21 48 22.9 -0.1**
comp=Z,48nm,0.5s
MLY Manley 47.29 32 *e*P **P 21 48 21.9 -0.4**
MLY *e*pP **pP 21 48 36.9 +2.0**
KKN Kakani 47.79 275 *e*P **P 21 48 26.9 0.0**
comp=Z,28nm,0.5s
PKIN Phulchoki 47.79 275 *e*P **P 21 48 25.9 -1.1**
comp=Z,8.7nm,0.4s
DMN Daman 48.01 275 *e*P **P 21 48 28.5 -0.1**
comp=Z,12nm,0.4s
GKN Gorkha 48.20 276 *e*P **P 21 48 29.9 -0.1**
comp=Z,88nm,0.9s
MDM Murphy Dome 48.36 32 *e*P **P 21 48 30.8 +0.2**
comp=Z,15nm,0.8s
SML Sawmill 48.45 37 *e*P **P 21 48 31.1 -0.2**
SML pmax pmax
comp=Z,12nm,0.9s
SML Sawmill 48.45 37 *e*P **P 21 48 31.1 -0.2**
comp=Z,12nm,0.9s
COLA College 48.52 33 P **P 21 48 33.4 +1.7**
HDA Harding Lake 48.93 33 *e*P **P 21 48 35.9 +1.0**
comp=Z,19nm,1.1s
IL1 Eielson Array 48.94 33 *e*P **P 21 48 35.1 +0.1**
ILAR Eielson Array 48.94 33 P **P 21 48 35.5 +0.6**
comp=Z,1.7nm,0.7s,baz=268,slow=6.2,SNR=22
ILAR pP **pP 21 48 49.1 +1.5**
comp=Z,3.7nm,0.8s,baz=266,slow=6.4,SNR=16
ILB Eielson Array 48.94 33 *e*P **P 21 48 34.6 -0.3**
ILB *e*pP **pP 21 48 49.1 +1.5**
KOLN Koldanda 49.13 276 *e*P **P 21 48 37.0 -0.2**
comp=Z,11nm,0.3s
PYUN Piuthan 49.46 277 *e*P **P 21 48 39.8 +0.1**
comp=Z,119nm,0.9s
TKM2 Tokmak 2 49.51 298 *e*P **P 21 48 40.4 +0.5**
TKM2 pmax pmax
comp=Z,18nm,0.8s
TKM2 Tokmak 2 49.51 298 *e*P **P 21 48 40.4 +0.5**
comp=Z,18nm,0.8s
KSH Kashi 50.33 294 P **P 21 48 50.0 +3.9**
KSH *e*pP sP 21 49 02.0 -2.1
KSH *e*sP pP 21 49 07.9 +9.1
KSH *e*PP **PP 21 50 47.5 +5.9**
KSH PcS **PcS 21 54 03.3 +1.8**
KSH S **S 21 55 59.4 +3.7**
KSH ScS **ScS 21 58 33.8 +0.5**
KSH Kashi 50.33 294 SS **SS 21 59 32.4 +3.0**
KSH pmax pmax
comp=Z,6.0nm,0.6s
KSH pmax pmax
comp=Z,94nm,4.0s
KSH LR LR
comp=N,92nm,6.1s
KSH LR LR
comp=E,96nm,5.7s
KSH LR LR
comp=Z,170nm,9.4s
AAK Ala-Archa 50.37 298 *e*P **P 21 48 46.4 0.0**
AAK pmax pmax
comp=Z,7.0nm,0.6s
AAK Ala-Archa 50.37 298 *e*P **P 21 48 46.4 0.0**
comp=Z,6.8nm,0.6s
BRVK Borovoye 50.37 312 *c i*P **P 21 48 45.9 -0.1**
BRVK pmax pmax
comp=Z,11nm,1.0s
BRVK Borovoye 50.37 312 *e*P **P 21 48 45.5 -0.5**
comp=Z,8.0nm,0.7s
EKS2 Erkin-Say 50.86 298 *e*P **P 21 48 49.9 -0.2**
EKS2 pmax pmax
comp=Z,6.0nm,0.7s
EKS2 Erkin-Say 50.86 298 *e*P **P 21 48 49.9 -0.2**
comp=Z,5.8nm,0.7s
ZRNK Zerenda 51.15 312 *e*P **P 21 48 51.3 -0.6**
ZRNK pmax pmax
comp=Z,10.0nm,0.9s
ZRNK Zerenda 51.15 312 *e*P **P 21 48 51.3 -0.6**
comp=Z,10nm,0.9s
PSI Prapat 52.22 239 *e*P **P 21 49 00.6 +0.1**
PSI pmax pmax
comp=Z,8.0nm,0.8s
PSI Prapat 52.22 239 *e*P **P 21 49 00.6 +0.1**
comp=Z,7.5nm,0.8s
KKAR Karatay Array 52.98 300 *e*P **P 21 49 05.3 -0.4**
KKAR Karatay Array 52.98 300 *e*P **P 21 49 05.3 -0.4**
INK Inuvik 53.82 27 P **P 21 49 12.1 +0.7**
comp=Z,3.5nm,0.6s,baz=285,slow=6.9,SNR=17
SVE Sverdlovsk 54.84 318⇓ *e*P **P 21 49 19.2 +0.2**
SVE pmax pmax
comp=Z,27nm,0.9s
ARU Arti 56.05 318 *c i*P **P 21 49 27.3 -0.4**
ARU 21 50 26.1
ARU 21 51 33.3
ARU S **S 21 57 14.5 +1.8**
ARU SS **SS 22 00 54.3 -4.4**
ARU pmax pmax
comp=Z,28nm,1.0s
ARU Arti 56.05 318 *e*P **P 21 49 27.4 -0.3**
comp=Z,19nm,0.6s
KBL Kabul 57.37 291 *e*P **P 21 49 37.1 -0.5**
KBL pmax pmax
comp=Z,12nm,0.9s
KBL Kabul 57.37 291 *e*P **P 21 49 37.1 -0.5**
comp=Z,12nm,0.9s
FITZ Fitzroy Crossi 57.40 198 P **P 21 49 37.5 -0.2**
comp=Z,0.9nm,0.4s,baz=0.0,slow=20,SNR=3.7
FITZ Fitzroy Crossi 57.40 198 *e*P **P 21 49 37.5 -0.2**
comp=Z,13nm,1.2s
WRAB Tennant Creek 57.63 188 *c i*P **P 21 49 38.8 -0.4**
WRAB pmax pmax
comp=Z,17nm,1.2s
WR1 Warramunga Arr 57.64 188 *e*P **P 21 49 38.8 -0.5**
WR1 *e*pP **pP 21 49 52.0 -0.3**
WRA Warramunga Arr 57.64 188 P **P 21 49 38.8 -0.5**
comp=Z,3.7nm,0.7s,baz=6.5,slow=7.3,SNR=42
WRA pP **pP 21 49 52.0 -0.3**
comp=Z,6.0nm,0.7s,baz=4.9,slow=7.3,SNR=14
ABKAR Akbulak array 57.70 310 *e*P **P 21 49 39.0 -0.6**
DLBC Dease Lake 58.09 38 pP pP 21 49 57.2 +2.1
comp=Z,2.1nm,0.5s,baz=252,slow=9.0,SNR=2.5
AS01 Alice Springs 61.36 188 *e*P **P 21 50 04.7 -0.2**
AS01 *e*pP **pP 21 50 18.5 +0.6**
AS31 Alice Springs 61.36 188 *e*P **P 21 50 05.2 +0.2**
AS31 *e*pP **pP 21 50 18.9 +1.0**
ASAR Alice Springs 61.36 188 P **P 21 50 05.2 +0.2**
comp=Z,2.6nm,0.7s,baz=10,slow=5.6,SNR=24
ASAR pP **pP 21 50 18.9 +1.0**
comp=Z,3.9nm,0.8s,baz=11,slow=6.2,SNR=15
YKA Yellowknife Ar 63.24 30 P **P 21 50 17.3 +0.2**
comp=Z,1.0nm,0.7s,baz=304,slow=6.7,SNR=11
YKB5 Yellowknife Ar 63.24 30 *e*P **P 21 50 17.3 +0.2**
YKB5 *e*pP **pP 21 50 31.3 +1.2**
KLMR Klimovskoe 63.37 328 *e*P **P 21 50 15.3 -2.6**
KLMR pmax pmax
comp=Z,10.0nm,1.1s
ARA0 ARCESS Array S 63.53 339 *e*P **P 21 50 18.9 0.0**
ARCES ARCESS Array B 63.53 339 P **P 21 50 18.9 0.0**
comp=Z,2.4nm,0.8s,baz=61,slow=5.7,SNR=8.0
GEYT Alibeck 63.71 299 P **P 21 50 20.4 -0.2**
comp=Z,4.3nm,0.8s,baz=45,slow=2.7,SNR=18
DAG Danmarks Havn 65.23 355 *i* P **P 21 50 29.3 -0.6**
comp=Z,4.8nm,0.8s
DAG *i* 21 50 42.9
DAG Danmarks Havn 65.23 355 *i* P **P 21 50 29.3 -0.6**
DAG *i* 21 50 42.9
DAG pmax pmax
comp=Z,4.0nm,0.8s
SWID South Whidbey 66.76 47 *e*P **P 21 50 39.7 -0.4**
VRH Novokhopyorsk 67.27 318 *e*P **P 21 50 42.6 -0.7**
VRH pmax pmax
comp=Z,10.0nm,0.5s
AFI Afiamalu 67.37 130 LR LR 22 15 42.1
comp=Z,36nm,21.5s,baz=36,slow=32
OBN Obninsk 67.75 323⇑ *e*P **P 21 50 46.1 -0.1**
OBN *e**PP **pP 21 50 58.1 -1.3**
OBN *SP **sP 21 51 01.0 -3.7**
OBN *e* 21 51 14.0
OBN pmax pmax
comp=Z,28nm,2.5s
LPSR Galich'ya Gora 67.98 320 *e*P **P 21 50 47.5 -0.2**
LPSR pmax pmax
comp=Z,10.0nm,0.6s
FIA1 FINESS Array S 68.39 332 *e*P **P 21 50 50.1 -0.1**
FIA0 FINESS Array S 68.39 332 *e*P **P 21 50 49.9 -0.3**
FIA0 FINESS Array S 68.39 332 *e*P **P 21 50 49.9 -0.3**
FINES FINESS Array B 68.39 332 P **P 21 50 49.9 -0.3**
comp=Z,11nm,0.8s,baz=38,slow=9.1,SNR=32
FINES FINESS Array B 68.39 332 P **P 21 50 49.9 -0.3**
FINES pmax pmax
comp=Z,12nm,0.9s
VSR Storozhevoye 68.62 319 *e*P **P 21 50 51.2 -0.6**
VSR pmax pmax
comp=Z,10.0nm,0.8s
STKA Stephens Creek 69.11 180 P **P 21 50 54.4 -0.5**
comp=Z,2.9nm,1.0s,baz=353,slow=13,SNR=2.6
STKA pP **pP 21 51 08.8 +0.6**
comp=Z,7.5nm,0.9s,baz=348,slow=4.8,SNR=4.5
GOF Gofitskoye 69.84 312⇑ *e*P P 21 51 06.7 +7.2
GOF pmax pmax
comp=Z,41nm,1.1s
VSU Vasula 70.05 330⇓ *i*P **P 21 51 01.0 +0.5**
VSU pmax pmax
comp=Z,21nm,0.8s
SUMG Summit 70.13 0 *i* P **P 21 51 02.2 +0.9**
comp=Z,2.4nm,0.7s
SUMG Summit 70.13 0 *i* P **P 21 51 02.2 +0.9**
SUMG pmax pmax
comp=Z,2.0nm,0.7s
ZEI Tsey 70.57 309 *e*P **P 21 51 02.6 -1.7**
ZEI pmax pmax
comp=Z,21nm,1.5s
KBZ Khabaz 70.66 311 P **P 21 51 04.4 -0.1**
comp=Z,7.0nm,0.9s,baz=72,slow=4.2,SNR=17
KIV Kislovodsk 70.66 311 *e*P **P 21 51 05.3 +0.6**
KIV pmax pmax
comp=Z,23nm,1.1s
KIV Kislovodsk 70.66 311 *e*P **P 21 51 04.5 -0.1**
comp=Z,18nm,0.9s
NEY Neytrino 71.03 310⇑ *i*P **P 21 51 07.5 +0.5**
NEY pmax pmax
comp=Z,1.0nm,0.8s
GNI Garni 71.50 307 *c e*P **P 21 51 10.1 +0.2**
GNI pmax pmax
comp=Z,20nm,1.2s
NC405 NORSAR Array S 73.52 337 *e*P **P 21 51 21.6 +0.2**
NC204 NORSAR Array S 73.69 338 *e*P **P 21 51 23.1 +0.7**
NB2 NORSAR Subarra 73.73 337 P **P 21 51 22.4 -0.2**
comp=Z,15nm,1.1s,baz=39,slow=6.2
NB200 NORSAR Array S 73.73 337 *e*P **P 21 51 22.4 -0.2**
NOA NORSAR Array B 73.73 337 P **P 21 51 22.4 -0.2**
comp=Z,7.7nm,0.8s,baz=39,slow=5.8,SNR=18
AKASG Malin Array Be 73.95 322 P **P 21 51 23.4 -0.6**
comp=Z,6.5nm,0.5s,baz=46,slow=6.1,SNR=73
AKBB Malin Array Si 73.95 322 *e*P **P 21 51 23.5 -0.6**
AKBB pmax pmax
comp=Z,10.0nm,0.6s
AKBB Malin Array Si 73.95 322 *e*P **P 21 51 23.4 -0.6**
comp=Z,9.7nm,0.6s
KIEV Kiev 73.97 322⇑ *i*P **P 21 51 23.5 -0.6**
KIEV pmax pmax
comp=Z,19nm,1.4s
KIEV Kiev 73.97 322 *e*P **P 21 51 23.6 -0.6**
comp=Z,26nm,1.4s
AK11 Malin Array Si 74.00 322 *e*P **P 21 51 23.9 -0.4**
BOZ Bozeman (W) 74.20 44 *e*P **P 21 51 27.3 +1.5**
BOZ pmax pmax
comp=Z,2.0nm,0.7s
BOZ Bozeman (W) 74.20 44 *e*P **P 21 51 27.3 +1.5**
comp=Z,2.2nm,0.7s
NV01 Mina Array Sit 74.53 53 *e*P **P 21 51 28.4 +0.5**
NV01 *e*pP **PcP 21 51 43.2 +1.0**
NVAR Mina Array Bea 74.53 53 P **P 21 51 28.4 +0.5**
comp=Z,1.1nm,0.9s,baz=284,slow=9.2,SNR=6.0
NVAR pP **PcP 21 51 43.2 +1.0**
comp=Z,1.8nm,0.8s,baz=297,slow=5.2,SNR=8.3
SIM Simferopol' 75.04 315 *e*P **P 21 51 30.2 -0.3**
SIM pmax pmax
comp=Z,7.0nm,1.0s
SIM MLR MLR
comp=N,110nm,17.8s
H17A Grant Village 75.56 45 *e*P **P 21 51 37.1 +3.3**
comp=N,4.3nm,0.9s
SORM Soroca 76.06 321⇑ *i*P **P 21 51 35.5 -0.7**
SORM Soroca 76.06 321 ⇑P **P 21 51 35.5 -0.7**
LVV L'vov 77.02 324 *e*P P 21 51 34.8 -6.9
BW06 Boulder Array 77.16 46 *e*P **P 21 51 43.2 +0.4**
PD31 Pinedale Array 77.16 46 *e*P **P 21 51 42.9 0.0**
PD31 *e*pP **pP 21 51 56.6 +0.3**
PDAR Pinedale Array 77.16 46 P **P 21 51 42.9 0.0**
comp=N,1.0nm,0.8s,baz=280,slow=2.4,SNR=9.3
PDAR pP **pP 21 51 56.6 +0.3**
comp=N,1.4nm,0.6s,baz=261,slow=2.0,SNR=9.9
LEOM Leova 77.22 319⇑ *i*P **P 21 51 42.3 -0.5**
LEOM Leova 77.22 319 ⇑P **P 21 51 42.3 -0.5**
KWP Kalwaria Pacla 77.77 324⇓ *i*P **P 21 51 46.4 +0.5**
KWP Kalwaria Pacla 77.77 324 ⇓P **P 21 51 46.4 +0.5**
BUR08 Bucovina Ar. S 77.96 322 *e*P **P 21 51 47.2 +0.1**
BURAR Bucovina Array 77.97 322⇑ *i*P **P 21 51 47.1 0.0**
BURAR Bucovina Array 77.97 322 ⇑P **P 21 51 47.1 0.0**
TESR Tescani 78.01 320⇓ *i*P **P 21 51 46.9 -0.3**
CFR Carcaliu 78.14 318⇑ *i*P **P 21 51 47.6 -0.3**
CFR Carcaliu 78.14 318 ⇑P **P 21 51 47.6 -0.3**
VRI Vrincioaia 78.41 320⇑ *i*P **P 21 51 50.0 +0.5**
VRI Vrincioaia 78.41 320 ⇑P **P 21 51 50.0 +0.5**
PLOR Plostina 78.45 320⇓ *i*P **P 21 51 49.7 -0.1**
PLOR Plostina 78.45 320 ⇓P **P 21 51 49.7 -0.1**
TIRR Tirgusor 78.47 318⇑ *i*P **P 21 51 48.5 -1.3**
TIRR Tirgusor 78.47 318 ⇑P **P 21 51 48.5 -1.3**
STHS Stebnicka Huta 78.59 325 *e*P **P 21 51 51.4 +1.0**
STHS pmax pmax

comp=Z,2.0nm,0.7s
STHS Stebnicka Huta 78.59 325 *e*P **P 21 51 51.4 +1.0**
BR101 Keskin Array S 78.60 312 *e*P **P 21 51 50.3 -0.5**
BR131 Keskin Array S 78.60 312 *e*P **P 21 51 50.9 +0.1**
BRTR Keskin Array B 78.60 312 P **P 21 51 50.3 -0.5**
comp=Z,1.1nm,0.6s,baz=76,slow=5.2,SNR=11
BRTR Keskin Array B 78.60 312 *ce*P **P 21 51 50.9 +0.1**
BRTR pmax pmax
comp=Z,1.0nm,0.6s
GRER 78.61 319 ⇓*i*P **P 21 51 52.3 +1.8**
OJC Ojcow 78.67 326 *e*P **P 21 51 51.0 +0.2**
OJC pmax pmax
comp=Z,10.0nm,1.1s
OJC Ojcow 78.67 326 *e*P **P 21 51 51.0 +0.2**
comp=Z,9.8nm,1.1s
ARCR ARCALIA 78.76 322 ⇑*i*P **P 21 51 52.2 +0.8**
CRVS Cervenica-Dubn 78.86 324 *e*P **P 21 51 51.7 -0.2**
CRVS Cervenica-Dubn 78.86 324 *e*P **P 21 51 51.7 -0.2**
ISR Istrita 79.01 319 ⇓*i*P **P 21 51 53.6 +0.8**
ISR Istrita 79.01 319 ⇓P **P 21 51 53.6 +0.8**
DOPR Dopca 79.02 320 ⇓*i*P **P 21 51 53.7 +0.9**
MSAB Monastry St. A 79.03 318 ⇓*i*P **P 21 51 52.4 -0.5**
BR231 Keskin MP Arra 79.04 312 *e*P **P 21 51 51.2 -2.0**
MLR Muntele Rosu 79.06 320 ⇓*i*P **P 21 51 52.1 -1.1**
MLR Muntele Rosu 79.06 320 ⇓P **P 21 51 52.1 -1.1**
VOIR 79.56 320 ⇓*i*P **P 21 51 56.3 +0.4**
VOIR 79.56 320 ⇓P **P 21 51 56.3 +0.4**
LANS Liptovska Anna 79.59 326 *e*P **P 21 51 56.6 +0.7**
LANS Liptovska Anna 79.59 326 *e*P **P 21 51 56.6 +0.7**
KECS Kecovo 79.61 325 *e*P **P 21 51 55.0 -1.0**
KECS Kecovo 79.61 325 *e*P **P 21 51 55.0 -1.0**
ARR Arges 79.82 320 ⇓*i*P **P 21 51 58.0 +0.8**
MORC Moravsky Berou 79.98 327 ⇑*i*P **P 21 51 58.3 +0.3**
MORC Moravsky Berou 79.98 327 ⇑P **P 21 51 58.3 +0.3**
MORC Moravsky Berou 79.98 327 *e*P **P 21 51 58.6 +0.6**
comp=Z,12nm,0.9s
LOT Lotru 80.20 321 ⇑*i*P **P 21 52 02.2 +2.8**
PSZ Piszkesteto 80.30 325 ⇑*i*P **P 21 51 59.8 0.0**
PSZ Piszkesteto 80.30 325 ⇑P **P 21 51 59.8 0.0**
PSZ Piszkesteto 80.30 325 *e*P **P 21 51 59.6 -0.2**
comp=Z,8.5nm,1.1s
VYHS Vyhne 80.36 325 *e*P **P 21 52 00.3 +0.3**
VYHS pmax pmax
comp=Z,2.0nm,0.9s
VYHS Vyhne 80.36 325 *e*P **P 21 52 00.3 +0.3**
RAR Rarotonga 80.36 126 LR LR 22 24 32.6
comp=Z,82nm,20.4s,baz=272,slow=33
BRG Berggiesshubel 80.65 329 *e*P **P 21 52 01.6 0.0**
comp=Z,3.8nm,0.8s
comp=N,167nm,13.7s
comp=E,157nm,18.1s
comp=Z,225nm,16.5s
BRG Berggiesshubel 80.65 329 *e*P **P 21 52 01.6 0.0**
BRG pmax pmax
comp=Z,4.0nm,0.8s
BRG MLR MLR
comp=N,167nm,13.7s
BRG MLR MLR
comp=E,157nm,18.1s
BRG MLR MLR
comp=Z,225nm,16.5s
PVCC Panska Ves 80.66 329 *e*P **P 21 52 02.4 +0.8**
PVCC Panska Ves 80.66 329 *e*P **P 21 52 02.4 +0.8**
CLL Collm 80.69 330 *i*P **P 21 52 01.5 -0.2**
comp=Z,9.0nm,1.0s
CLL Collm 80.69 330 *e*P **P 21 52 01.8 0.0**
CLL pmax pmax
comp=Z,8.0nm,1.0s
CLL Collm 80.69 330 *e*P **P 21 52 01.8 0.0**
comp=Z,8.2nm,1.0s
VRAC Vranov 80.74 327 ⇓*i*P **P 21 52 01.7 -0.4**
VRAC Vranov 80.74 327 ⇓P **P 21 52 01.7 -0.4**
GOPC GO Pecny, Ondr 81.05 328 *e*P **P 21 52 03.8 +0.1**
GOPC GO Pecny, Ondr 81.05 328 *e*P **P 21 52 03.8 +0.1**
PRU Pruhonice 81.09 329 *e*P **P 21 52 04.0 +0.1**
PRU Pruhonice 81.09 329 *e*P **P 21 52 04.0 +0.1**
BZS Buzias 81.14 322 ⇑*i*P **P 21 52 01.6 -2.7**
BZS Buzias 81.14 322 ⇑P **P 21 52 01.6 -2.7**
TREC Trest 81.22 328 *e*P **P 21 52 05.0 +0.3**
TREC Trest 81.22 328 *e*P **P 21 52 05.0 +0.3**
MDVR Moldovita 81.69 321 ⇓*i*P **P 21 52 06.7 -0.6**
CONA Conrad Observa 82.10 327 *i*P **P 21 52 09.6 +0.2**
comp=Z,0.1nm,0.2s
GERES GERESS Array B 82.32 328 P **P 21 52 10.3 -0.2**
comp=Z,1.7nm,0.6s,baz=35,slow=5.5,SNR=18
ARSA Arzberg 82.77 326 *i*P **P 21 52 12.9 +0.2**
comp=Z,1.2nm,0.7s
MOA Molln 82.85 327 *i*P **P 21 52 13.5 +0.3**
SOKA Soboth 83.42 326 *i*P **P 21 52 15.9 -0.4**
comp=Z,2.0nm,0.5s
KBA Koelnbreinsper 83.85 327 *i*PcP **P 21 52 18.7 +0.2**
comp=Z,2.2nm,0.5s
MYKA Terra Mystica 84.07 327 *i*P **P 21 52 18.9 -0.7**
comp=Z,1.1nm,0.4s
ANMO Albuquerque 84.11 50 *ce*P **P 21 52 22.8 +2.7**
ANMO pmax pmax
comp=Z,4.0nm,2.5s
WTTA Wattenberg 84.42 328 *i*PcP **PcP 21 52 27.9 +2.8**
ABTA Abfaltersbach 84.46 328 *i*P **P 21 52 20.6 -1.0**
comp=Z,0.3nm,0.3s
MOTA Moosalm 84.58 329 *i*PcP **P 21 52 22.1 -0.1**
comp=Z,0.1nm,0.1s
RETA Reutte 84.61 329 *i*P **P 21 52 21.9 -0.4**
comp=Z,2.9nm,0.6s
PDG Podgorica 84.63 321 ⇑*i*P **P 21 52 20.4 -2.0**
BFO Black Forest 84.89 331 *ce*P **P 21 52 24.0 +0.4**
FETA Feichten 84.99 329 *i*PcP **P 21 52 24.3 -0.1**
comp=Z,1.4nm,0.6s
FETA *i*PcP **PcP 21 52 27.9 +0.3**
DAVA Damuels 85.12 329 *i*P **P 21 52 23.7 -1.3**
comp=Z,3.7nm,0.8s
DAVA *i*pP **pP 21 52 37.8 -0.7**
FUORN Ofenpass-Fuorn 85.50 329 *e*P **P 21 52 27.4 +0.4**
comp=Z,7.6nm,0.8s
LAST Lasithi 86.47 313 ⇓*i*P **P 21 52 31.6 -0.2**
TX31 Lajitas Ar. Si 89.65 52 *e*P **P 21 52 47.6 +0.5**
LTX Lajitas 89.65 52 *e*P **P 21 52 47.9 +0.8**
LTX *e**PP **pP 21 53 02.4 +1.6**
LTX Lajitas 89.65 52 *e*P **P 21 52 47.9 +0.8**
LTX *e*pP **pP 21 53 02.4 +1.6**
TXAR Lajitas Array 89.65 52 P **P 21 52 47.9 +0.8**
comp=Z,0.8nm,0.7s,baz=289,slow=2.6,SNR=14
TXAR pP **pP 21 53 02.4 +1.6**
comp=Z,0.8nm,0.5s,baz=305,slow=3.0,SNR=9.5
TXAR Lajitas Array 89.65 52 P **P 21 52 47.9 +0.8**
TXAR *PP **pP 21 53 02.4 +1.6**
TXAR pmax pmax
comp=Z,1.0nm,0.7s
TXAR pmax pmax
comp=Z,1.0nm,0.5s
LPAZ La Paz 146.27 59 PKPbc **PKPbc 21 59 30.6 +0.1**
comp=Z,3.0nm,0.9s,baz=320,slow=2.5,SNR=12
LPAZ pPKPbc pPKPbc 21 59 45.6 +1.1
comp=Z,5.1nm,0.7s,baz=351,slow=5.2,SNR=9.7
PLCA Paso Flores 154.94 107 PKP **PKPdf 21 59 38.4 -3.0**
comp=Z,2.4nm,1.1s,baz=307,slow=2.7,SNR=3.3
PLCA Paso Flores 154.94 107 PKIKP **PKPdf 21 59 38.4 -3.0**
PLCA pmax pmax
comp=Z,3.0nm,1.0s

IDC 22 21:48:23.9±2.0, 7°.15S×128°.70E, h0km, mb3.1/1, mb1 3.9/4, mb1mx3.5/34, mbtmp3.6/4, ML3.9/3, Error ellipse: s-maj=85.1km s-min=27.5km az=75.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**11.28**	**195**	Pn	Pn	21 51 06.4	-0.1
	1.0nm,0.3s,baz=17,slow=10,SNR=12						
FITZ				Sn	Sn	21 53 00.7	-13
	1.0nm,0.3s,baz=340,slow=22,SNR=5.8						
WRA	**Warramunga Arr**	**13.84**	**157**	Pn	Pn	21 51 42.1	+0.6
	0.7nm,0.3s,baz=342,slow=12,SNR=11						
WRA				Sn	Sn	21 54 03.4	-13
	0.7nm,0.3s,baz=334,slow=23,SNR=6.2						
ASAR	**Alice Springs**	**17.16**	**164**	P	Pn	21 52 24.9	-0.4
	0.2nm,0.3s,baz=334,slow=10,SNR=8.8						
MKAR	**Makanchi Array**	**67.65**	**327**	P	P	21 59 22.9	0.0
	0.1nm,0.4s,baz=114,slow=5.2,SNR=3.0						

PRU 22 21:48:59.5, 49°.79N×18°.51E, h0km, Czech and Slovak Republics

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OKC	**Ostrava-Krasne**	**0.24**	**282**	*e*PG	Pg	21 49 03.8	-0.3
OKC				*e*SG	Sg	21 49 08.0	+0.8

IDC 22 21:56:11.7±1.4, 20°.35S×168°.82E, h0km, mb3.8/4, mb1 4.1/5, mb1mx3.8/24, mbtmp3.9/5, ML4.0/1, Error ellipse: s-maj=40.5km s-min=30.3km az=53.0, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**19.24**	**160**	P	Pn	22 00 38.3	-0.1
	0.4nm,0.3s,baz=33,slow=6.7,SNR=6.1						
WRA	**Warramunga Arr**	**32.34**	**265**	P	P	22 02 42.8	-0.3
	0.4nm,0.6s,baz=92,slow=8.0,SNR=5.1						
ASAR	**Alice Springs**	**32.49**	**258**	P	P	22 02 44.4	0.0
	2.2nm,0.8s,baz=82,slow=9.3,SNR=18						
VNDA	**Vanda**	**57.31**	**182**	P	P	22 06 00.7	-0.3
	0.8nm,0.8s,baz=346,slow=7.7,SNR=3.5						
SONM	**Sonqino Array**	**87.87**	**323**	P	P	22 09 04.4	+1.2
	0.5nm,0.8s,baz=102,slow=6.2,SNR=3.6						
ARCES	**ARCESS Array B**	**126.04**	**345**	PKP	PKPdf	22 15 13.8	-1.5
	1.4nm,1.0s,baz=54,slow=1.6,SNR=4.4						
GERES	**GERESS Array B**	**145.28**	**331**	PKPbc	PKPbc	22 15 50.4	-0.9
	0.3nm,0.4s,baz=355,slow=4.6,SNR=5.2						

MEX 22 22:07:39.2±0.4, 16°.19N×98°.01W, h7km±2km, MD3.5, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PNIG	**Pinotepa**	**0.23**	**330**	*i*P	Pg	22 07 43.5	-0.3
PNIG				*i*S	Sg	22 07 46.9	0.0
TLIG	**Tlapa**	**1.47**	**339**	*i*P	Pn	22 08 02.1	-4.1
TLIG				*e*S	Sn	22 08 20.8	-4.9
VHO	**Vista Hermosa**	**1.50**	**54**	*i*P	Pn	22 08 02.4	-4.4
VHO				*e*S	Sn	22 08 21.7	-5.1
HUIG	**Huatulco**	**1.88**	**103**	*i*P	Pn	22 08 09.0	-2.7
HUIG				*i*S	Sn	22 08 30.9	-4.8
MEIG	**Mezcala**	**2.31**	**318**	*i*P	Pn	22 08 14.4	-3.4
MEIG				*i*S	Sn	22 08 42.3	-4.3
PLIG	**Platanillo**	**2.61**	**327**	*i*P	Pn	22 08 18.7	-3.3
PLIG				*i*S	Sn	22 08 49.7	-4.3
YAIG	**Yautepec**	**2.84**	**339**	*i*P	Pn	22 08 22.3	-2.9
YAIG				*i*S	Sn	22 08 56.5	-3.2
ARIG	**Puente Sto Nin**	**3.05**	**313**	*i*P	Pn	22 08 25.4	-2.5
ARIG				*i*S	Sn	22 09 01.5	-3.3

*ISCJB **22** 22:13:30.4±0.5, 39°.11N±0°.04×29°.02E±0°.05, h9km, Error ellipse: s-maj=6.2km s-min=4.7km az=38.1*
*DDA **22** 22:13:30.4, 39°.12N×29°.05E, h7km, Md2.7*
*ISK **22** 22:13:30.1, 39°.12N×29°.05E, h5km, MD2.7*
*CSEM **22** 22:13:30.6±0.1, 39°.12N×29°.03E, h5km, MD2.7, Error ellipse: s-maj=1.9km s-min=1.7km az=114.0*
ISC 22 22:13:30.7±1.0, 39°.12N±0°.03×29°.04E±0°.03, h9km, n33, σ0°.24/35, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**254**	P	**Pg**	**22 13 36.0**	**0.0**
DEMI	**Demirci**	**0.26**	**254**	*i*P	**Pg**	**22 13 36.0**	**0.0**
GDZ	**Gediz**	**0.35**	**94**	P	**Pg**	**22 13 37.6**	**0.0**
GDZ	**Gediz**	**0.35**	**94**	*i*P	**Pg**	**22 13 37.6**	**0.0**
TVSB	**Tavsanli**	**0.47**	**45**	*e*PG	**Pg**	**22 13 39.7**	**-0.2**
TVSB				*e*SG	**Sg**	**22 13 46.1**	**0.0**
TVSB	**Tavsanli**	**0.47**	**45**	*e*Pg	**Pg**	**22 13 39.7**	**-0.2**
TVSB				*e*Sg	**Sg**	**22 13 46.1**	**0.0**
DURS	**Dursunbey**	**0.65**	**318**	P	**Pg**	**22 13 42.8**	**-0.5**
DURS	**Dursunbey**	**0.65**	**318**	*i*P	**Pg**	**22 13 42.8**	**-0.5**
KULA	**Kula-Manisa**	**0.67**	**206**	*e*PG	**Pg**	**22 13 43.5**	**-0.1**
KULA	**Kula-Manisa**	**0.67**	**206**	*e*Pg	**Pg**	**22 13 43.5**	**-0.1**
MANT	**Manisa**	**0.73**	**211**	P	**Pg**	**22 13 44.5**	**-0.3**
MANT	**Manisa**	**0.73**	**211**	*i*P	**Pg**	**22 13 44.5**	**-0.3**
KHAL	**Karahalli**	**0.82**	**154**	P	**Pb**	**22 13 47.3**	**0.0**
KHAL	**Karahalli**	**0.82**	**154**	*i*P	**Pb**	**22 13 47.3**	**0.0**
KHL	**Karahalli**	**0.88**	**154**	*e*PG	**Pg**	**22 13 47.4**	**-0.2**
KHL	**Karahalli**	**0.88**	**154**	*e*Pg	**Pg**	**22 13 47.4**	**-0.2**
AKS	**Akhisar**	**0.98**	**256**	*e*PG	**Pg**	**22 13 49.5**	**-0.1**
AKS	**Akhisar**	**0.98**	**256**	*e*Pg	**Pg**	**22 13 49.5**	**-0.1**
BALB	**Balikesir**	**1.04**	**301**	*e*PG	**Pg**	**22 13 50.5**	**-0.1**
BALB	**Balikesir**	**1.04**	**301**	*e*Pg	**Pg**	**22 13 50.6**	**-0.1**
IGD	**Bursa**	**1.15**	**6**	*i*P	**Pb**	**22 13 52.4**	**-0.5**
MDNY	**Mudanya-Bursa**	**1.26**	**355**	*e*PN	**Pb**	**22 13 54.5**	**0.0**
MDNY	**Mudanya-Bursa**	**1.26**	**355**	*e*Pn	**Pb**	**22 13 54.6**	**0.0**
KCTX	**Karacabey (Bur**	**1.26**	**336**	*e*PN	**Pb**	**22 13 54.8**	**+0.1**
KCTX	**Karacabey (Bur**	**1.26**	**336**	*e*Pn	**Pb**	**22 13 54.8**	**+0.1**
IZI	**Iznik**	**1.27**	**15**	*e*PN	**Pg**	**22 13 55.1**	**+0.1**
IZI	**Iznik**	**1.27**	**15**	*e*Pn	**Pg**	**22 13 55.1**	**+0.1**
BORA	**Eskisehir**	**1.34**	**55**	P	**Pn**	**22 13 55.5**	**-0.1**
BORA	**Eskisehir**	**1.34**	**55**	*i*P	**Pn**	**22 13 55.5**	**-0.1**
ARMT	**Armutlu**	**1.45**	**355**	*e*PN	**Pb**	**22 13 58.0**	**0.0**
ARMT	**Armutlu**	**1.45**	**355**	*e*Pn	**Pb**	**22 13 58.0**	**0.0**
GULT	**Gulveren**	**1.74**	**40**	*e*PN	**Pn**	**22 14 01.7**	**+0.5**
GULT	**Gulveren**	**1.74**	**40**	*e*Pn	**Pn**	**22 14 01.7**	**+0.5**

*ISCJB **22** 22:25:29.9±0.5, 40°.78N±0°.04×27°.40E±0°.04, h11km±5km, Error ellipse: s-maj=6.9km s-min=5.1km az=14.1*
*ISK **22** 22:25:29.8, 40°.77N×27°.40E, h15km, MD2.6*
*CSEM **22** 22:25:30.1±0.1, 40°.78N×27°.41E, h10km, MD2.6, Error ellipse: s-maj=2.0km s-min=1.7km az=6.0*
*DDA **22** 22:25:30.6, 40°.78N×27°.38E, h7km, Md2.7*
ISC 22 22:25:30.2±0.9, 40°.77N±0°.03×27°.40E±0°.02, h14km±7km, n43, σ0°.17/47, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SART	**Tekirdag**	**0.19**	**244**	P	**Pg**	**22 25 34.7**	**+0.1**
SART	**Tekirdag**	**0.19**	**244**	*i*P	**Pg**	**22 25 34.7**	**+0.1**
RKY	**Sarkoy-Tekirda**	**0.19**	**244**	*e*PG	**Pg**	**22 25 34.8**	**+0.1**
RKY				*e*SG	**Sg**	**22 25 37.5**	**-0.1**
RKY	**Sarkoy-Tekirda**	**0.19**	**244**	*e*Pg	**Pg**	**22 25 34.8**	**+0.1**
RKY				*e*Sg	**Sg**	**22 25 37.5**	**-0.1**
MRMT	**Marmara Adasi**	**0.22**	**139**	*e*PG	**Pg**	**22 25 35.2**	**+0.1**
MRMT				*e*SG	**Sg**	**22 25 38.5**	**0.0**
MRMT	**Marmara Adasi**	**0.22**	**139**	*e*Pg	**Pg**	**22 25 35.2**	**+0.1**
MRMT				*e*Sg	**Sg**	**22 25 38.5**	**0.0**
TKR	**Tekirdag**	**0.24**	**25**	*e*PG	**Pg**	**22 25 35.5**	**0.0**
TKR	**Tekirdag**	**0.24**	**25**	*e*Pg	**Pg**	**22 25 35.5**	**0.0**
KRBG	**Karabiga-Canak**	**0.39**	**192**	*e*PG	**Pg**	**22 25 38.1**	**+0.2**
KRBG	**Karabiga-Canak**	**0.39**	**192**	*e*Pg	**Pg**	**22 25 38.1**	**+0.2**
KNL	**Bal¨–kesir**	**0.51**	**169**	*i*P	**Pg**	**22 25 39.9**	**-0.3**
EDC	**Edincik**	**0.55**	**140**	*e*PG	**Pg**	**22 25 41.0**	**0.0**
EDC	**Edincik**	**0.55**	**140**	*e*Pg	**Pg**	**22 25 41.0**	**0.0**
KESN	**Edirne-Kesan**	**0.55**	**276**	P	**Pg**	**22 25 41.1**	**-0.1**
KESN	**Edirne-Kesan**	**0.55**	**276**	*i*P	**Pg**	**22 25 41.1**	**-0.1**
LPK	**Lapseki**	**0.63**	**231**	*e*PG	**Pg**	**22 25 42.5**	**0.0**
LPK	**Lapseki**	**0.63**	**231**	*e*Pg	**Pg**	**22 25 42.5**	**0.0**
ERIK	**Erikli-Kesan**	**0.68**	**262**	*e*PG	**Pg**	**22 25 43.6**	**+0.1**
ERIK	**Erikli-Kesan**	**0.68**	**262**	*e*Pg	**Pg**	**22 25 43.6**	**+0.1**
GONE	**Gonen-Balikesi**	**0.76**	**163**	*e*PG	**Pg**	**22 25 44.9**	**+0.1**
GONE	**Gonen-Balikesi**	**0.76**	**163**	*e*Pg	**Pg**	**22 25 44.9**	**+0.1**
GELI	**Tayfur-Gelibol**	**0.80**	**243**	*e*PG	**Pb**	**22 25 45.8**	**0.0**
GELI	**Tayfur-Gelibol**	**0.80**	**243**	*e*Pg	**Pb**	**22 25 45.8**	**0.0**
PHSR	**Pinarhisar**	**0.86**	**6**	*e*PG	**Pb**	**22 25 46.8**	**-0.2**
PHSR	**Pinarhisar**	**0.86**	**6**	*e*Pg	**Pb**	**22 25 46.8**	**-0.2**
KCTX	**Karacabey (Bur**	**0.89**	**124**	*e*PG	**Pb**	**22 25 47.0**	**-0.3**
KCTX	**Karacabey (Bur**	**0.89**	**124**	*e*Pg	**Pb**	**22 25 47.0**	**-0.3**
ENEZ	**Enez**	**0.95**	**268**	*e*PG	**Pg**	**22 25 48.6**	**0.0**
ENEZ	**Enez**	**0.95**	**268**	*e*Pg	**Pg**	**22 25 48.6**	**0.0**
ALN	**Alexandroupoli**	**1.04**	**277**	*e*PG	**Pb**	**22 25 49.5**	**-0.4**
ALN	**Alexandroupoli**	**1.04**	**277**	*e*Pg	**Pb**	**22 25 49.5**	**-0.4**
BGKT	**Bogazkoy**	**1.11**	**68**	*e*PN	**Pn**	**22 25 51.3**	**0.0**
BGKT	**Bogazkoy**	**1.11**	**68**	*e*Pn	**Pn**	**22 25 51.3**	**0.0**
ARMT	**Armutlu**	**1.13**	**100**	*e*PN	**Pb**	**22 25 51.5**	**0.0**
ARMT	**Armutlu**	**1.13**	**100**	*e*Pn	**Pb**	**22 25 51.5**	**0.0**
EDRB	**Edirne**	**1.19**	**335**	*e*PN	**Pb**	**22 25 52.6**	**+0.2**
EDRB	**Edirne**	**1.19**	**335**	*e*Pn	**Pb**	**22 25 52.6**	**+0.2**
EZN	**Ezine**	**1.25**	**221**	*e*PN	**Pn**	**22 25 53.2**	**0.0**
EZN	**Ezine**	**1.25**	**221**	*e*Pn	**Pn**	**22 25 53.2**	**0.0**
DURS	**Dursunbey**	**1.43**	**145**	P	**Pg**	**22 25 57.8**	**+0.2**
DURS	**Dursunbey**	**1.43**	**145**	*i*P	**Pg**	**22 25 57.8**	**+0.2**
SIGR	**SIGRI**	**1.96**	**218**	*e*PN	**Pn**	**22 26 03.3**	**+0.4**
SIGR	**SIGRI**	**1.96**	**218**	*e*Pn	**Pn**	**22 26 03.3**	**+0.4**

*NIED **22** 22:36:00, 38°.80N×142°.20E, h53km, Mw3.7 Best double couple: M0=4.31000×10^14 NP1:φ0=22.00000°, δ45.00000°, λ-66.00000°. NP2:φ0=169.00000°, δ49.00000°, λ-112.00000°.*
*ISCJB **22** 22:36:40.5±1.2, 38°.78N±0°.06×142°.2E±0°.1, h51km, mb3.2/2, MS2.9/1, Error ellipse: s-maj=11.6km s-min=7.3km az=19.1*
*JMA **22** 22:36:40.9±0.1, 38°.79N×142°.23E, h38km±2km, M3.5*
*IDC **22** 22:36:41.1±10.0, 38°.87N×142°.50E, h52km±72km, mb3.0/2, mb1 3.4/4, mb1mx3.0/44, mbtmp3.3/4, ML2.5/2, MS3.0/1, Ms1 3.0/1, ms1mx2.1/17, Error ellipse: s-maj=135.2km s-min=29.5km az=71.0*
ISC 22 22:36:41.7±1.5, 38°.80N±0°.07×142°.2E±0°.1, h51km, n13, σ1°.10/16, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.49**	**305**	P	**Pn**	**22 36 52.0**	**-1.0**
OFUJ				S	**Sn**	**22 36 59.6**	**-1.5**
JIO	**Ouri**	**0.74**	**243**	S	**Sn**	**22 37 04.7**	**-1.8**
JMK	**Ichinoseki**	**0.77**	**282**	P	**Pn**	**22 36 56.0**	**-0.4**
JMK				S	**Sn**	**22 37 06.6**	**-0.6**
JOM	**Ohasama**	**0.97**	**314**	P	**Pn**	**22 36 58.8**	**-0.3**
JOM				S	**Sn**	**22 37 11.7**	**-0.1**
JTH	**Tanohata**	**1.17**	**348**	P	**Pn**	**22 37 01.2**	**-0.5**
JTH				S	**Sn**	**22 37 16.5**	**-0.1**
JOU	**Okura**	**1.27**	**251**	S	**Sn**	**22 37 19.4**	**+0.2**
JRG	**Rokugo**	**1.35**	**297**	P	**Pn**	**22 37 04.4**	**+0.2**
JYK	**Kaneyama**	**1.44**	**275**	P	**Pn**	**22 37 05.6**	**+0.3**
MJAR	**Matsushiro Arr**	**3.88**	**236**	P	**Pn**	**22 37 41.1**	**+2.2**
	0.9nm,0.3s,baz=40,slow=11,SNR=14						
USRK	**Ussuriysk Ar.**	**9.36**	**308**	P	**Pn**	**22 38 55.6**	**+1.7**
	0.2nm,0.3s,baz=113,slow=14,SNR=3.1						
TLY	**Talaya**	**29.68**	**308**	LR	LR	22 55 07.3	
	comp=Z,24nm,18.1s,baz=4.0,slow=37						
MKAR	**Makanchi Array**	**43.73**	**301**	P	**P**	**22 44 42.4**	**+0.6**
	0.1nm,0.5s,baz=74,slow=11,SNR=3.2						
WRA	**Warramunga Arr**	**58.89**	**189**	P	**P**	**22 46 35.3**	**-0.2**
	0.4nm,0.8s,baz=8.9,slow=6.4,SNR=3.7						

*ISK **22** 22:36:43.5, 39°.04N×29°.08E, h5km, MD2.8*
*ISCJB **22** 22:36:44.8±0.5, 39°.09N±0°.04×29°.02E±0°.05, h9km, Error ellipse: s-maj=6.8km s-min=4.9km az=136.9*
*CSEM **22** 22:36:44.7±0.1, 39°.10N×29°.01E, h2km, MD2.3, Error ellipse: s-maj=3.2km s-min=2.9km az=116.0*
*DDA **22** 22:36:44.6, 39°.10N×29°.01E, h7km, Md2.3*
ISC 22 22:36:44.9±1.0, 39°.09N±0°.03×29°.01E±0°.03, h9km, n31, σ0°.23/33, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.23**	**258**	P	**Pg**	**22 36 49.5**	**-0.1**
DEMI	**Demirci**	**0.23**	**258**	*i*P	**Pg**	**22 36 49.5**	**-0.1**
GDZ	**Gediz**	**0.37**	**91**	P	**Pg**	**22 36 52.0**	**-0.1**
GDZ	**Gediz**	**0.37**	**91**	*i*P	**Pg**	**22 36 52.0**	**-0.1**
TVSB	**Tavsanli**	**0.50**	**44**	*e*PG	**Pg**	**22 36 54.3**	**-0.3**
TVSB				*e*SG	**Sg**	**22 37 01.1**	**0.0**
TVSB	**Tavsanli**	**0.50**	**44**	*e*Pg	**Pg**	**22 36 54.3**	**-0.3**
TVSB				*e*Sg	**Sg**	**22 37 01.1**	**0.0**
DURS	**Dursunbey**	**0.66**	**321**	P	**Pg**	**22 36 57.4**	**-0.2**
DURS	**Dursunbey**	**0.66**	**321**	*i*P	**Pg**	**22 36 57.4**	**-0.2**
MANT	**Manisa**	**0.70**	**211**	P	**Pg**	**22 36 58.1**	**-0.3**
MANT	**Manisa**	**0.70**	**211**	*i*P	**Pg**	**22 36 58.1**	**-0.3**
KHAL	**Karahalli**	**0.81**	**152**	P	**Pg**	**22 37 00.7**	**+0.1**
KHAL	**Karahalli**	**0.81**	**152**	*i*P	**Pg**	**22 37 00.7**	**+0.1**
AKHS	**Akhisar**	**0.96**	**257**	P	**Pb**	**22 37 03.8**	**+0.2**
AKHS	**Akhisar**	**0.96**	**257**	*i*P	**Pb**	**22 37 03.8**	**+0.2**
AKS	**Akhisar**	**0.96**	**257**	*e*PG	**Pg**	**22 37 02.9**	**-0.4**
AKS	**Akhisar**	**0.96**	**257**	*e*Pg	**Pg**	**22 37 02.9**	**-0.4**
BALB	**Balikesir**	**1.03**	**302**	*e*PN	**Pg**	**22 37 05.0**	**+0.3**
BALB	**Balikesir**	**1.03**	**302**	*e*Pn	**Pg**	**22 37 05.0**	**+0.3**
KCTX	**Karacabey (Bur**	**1.27**	**337**	*e*PN	**Pg**	**22 37 09.6**	**+0.2**
KCTX	**Karacabey (Bur**	**1.27**	**337**	*e*Pn	**Pg**	**22 37 09.6**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.28**	**356**	*e*PN	**Pb**	**22 37 09.3**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.28**	**356**	*e*Pn	**Pb**	**22 37 09.3**	**+0.2**
IZI	**Iznik**	**1.29**	**16**	*e*PN	**Pn**	**22 37 09.4**	**+0.2**
DNZL	**Cakiroluk**	**1.40**	**179**	P	**Pb**	**22 37 11.6**	**+0.3**
DNZL	**Cakiroluk**	**1.40**	**179**	*i*P	**Pb**	**22 37 11.6**	**+0.3**
ADVT	**Abdulvahap**	**1.45**	**23**	*e*PN	**Pn**	**22 37 11.4**	**+0.1**
ARMT	**Armutlu**	**1.47**	**356**	*e*PN	**Pb**	**22 37 12.4**	**-0.1**
ARMT	**Armutlu**	**1.47**	**356**	*e*Pn	**Pb**	**22 37 12.4**	**-0.1**
EDC	**Edincik**	**1.53**	**325**	*e*PN	**Pb**	**22 37 13.4**	**0.0**
EDC	**Edincik**	**1.53**	**325**	*e*Pn	**Pb**	**22 37 13.4**	**0.0**
GULT	**Gulveren**	**1.77**	**40**	*e*PN	**Pn**	**22 37 15.3**	**-0.5**

*IDC **22** 22:37:44.9±1.1, 56°.17N×153°.33W, h0km, mb3.8/17, mb1 4.0/18, mb1mx3.8/51, mbtmp3.8/18, ML3.3/1, MS3.2/2, Ms1 3.2/2, ms1mx2.6/49, Error ellipse: s-maj=32.1km s-min=15.1km az=29.0*
*ISCJB **22** 22:37:46.8±0.5, 56°.25N±0°.05×153°.08W±0°.08, h22km, mb3.8/16, MS3.5/1, Error ellipse: s-maj=7.1km s

baz=246,slow=74,SNR=6.3
H11N3 WAKE ISLAND Hy 47.08 236 T T 23 37 06.0
baz=28,slow=74,SNR=7.2
NRIK Noril'sk 47.19 335 P **P** **22 46 19.0 -0.2**
1.7nm,0.5s,baz=62,slow=6.3,SNR=5.6
H11S1 WAKE ISLAND Hy 48.23 235 T T 23 38 04.9
baz=29,slow=75,SNR=17
H11S2 WAKE ISLAND Hy 48.24 235 T T 23 38 06.0
baz=29,slow=75,SNR=8.6
H11S3 WAKE ISLAND Hy 48.25 235 T T 23 38 24.5
baz=29,slow=75,SNR=7.9
ARCES ARCESS Array B 54.45 1 P **P** **22 47 13.6 -0.2**
1.3nm,0.6s,baz=4.5,slow=8.8,SNR=11
SONM Songino Array 56.94 308 P **P** **22 47 32.1 -0.1**
1.1nm,0.7s,baz=38,slow=6.4,SNR=5.4
ZALV Zalesovo Beam 60.32 325 P **P** **22 47 55.8 +0.4**
0.9nm,0.6s,baz=46,slow=8.4,SNR=5.2
ZALV LR LR 23 17 26.1
comp=Z,31nm,18.4s,baz=255,slow=39
FINES FINESS Array B 62.58 0 P **P** **22 48 10.5 0.0**
1.1nm,0.9s,baz=354,slow=9.9,SNR=2.7
MKAR Makanchi Array 67.28 322 P **P** **22 48 41.4 -0.1**
0.2nm,0.5s,baz=40,slow=7.3,SNR=4.1
AKASG Malin Array Be 73.33 358 P **P** **22 49 20.2 +1.9**
0.3nm,0.3s,baz=356,slow=5.7,SNR=5.2
GERES GERESS Array B 74.63 9 P **P** **22 49 26.9 +0.8**
0.5nm,0.6s,baz=352,slow=4.7,SNR=4.0
ESDC Sonseca Array 80.87 24 P **P** **22 50 01.6 +0.6**
0.6nm,0.6s,baz=347,slow=5.3,SNR=6.3
BRTR Keskin Array B 84.15 355 P **P** **22 50 18.6 +0.5**
0.5nm,0.8s,baz=58,slow=3.1,SNR=4.6

IDC 22 22:44:10.6±1.9, 26°.91N×143°.86E, h0km, mb3.8/3, mb1 3.9/4, mb1mx3.4/48, mbtmp3.7/4, ML3.3/1, Error ellipse: s-maj=38.4km s-min=27.5km az=52.0, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCJ	**Chichijima**	**1.50**	**277**	Pn	Pb	22 44 39.4	-0.1
JCJ	9.6nm,0.3s,baz=290,slow=22,SNR=29			Sn	Sg	22 44 59.0	0.0
MJAR	**Matsushiro Arr**	**10.73**	**335**	Pn	Pn	22 46 43.9	-1.8
	28nm,0.3s,baz=287,slow=23,SNR=15						
WRA	**Warramunga Arr**	**47.48**	**192**	P	P	22 52 47.1	-0.4
	0.2nm,0.3s,baz=158,slow=10,SNR=4.5						
MKAR	**Makanchi Array**	**51.74**	**310**	P	P	22 53 20.6	+0.8
	1.2nm,0.7s,baz=14,slow=8.6,SNR=5.3						
KURBB	**Kurchatov Arra**	**54.23**	**314**	P	P	22 53 37.8	-0.4
	0.8nm,0.2s,baz=100,slow=5.2,SNR=3.5						

*ISCJB **22** 22:47:09.3±0.5, 39°.17N±0°.03×29°.13E±0°.05, h9km, Error ellipse: s-maj=6.0km s-min=4.7km az=22.5*
*CSEM **22** 22:47:09.4±0.1, 39°.17N×29°.14E, h8km, MD2.7, Error ellipse: s-maj=2.0km s-min=1.4km az=101.0*
*ISK **22** 22:47:09.0, 39°.17N×29°.14E, h8km, MD2.7*
*DDA **22** 22:47:09.8, 39°.16N×29°.14E, h7km, Md2.7*
ISC 22 22:47:09.4±0.9, 39°.17N±0°.02×29°.14E±0°.03, h9km, n38, σ0°34/40, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.28**	**107**	*i* P	**Pg**	**22 47 15.4**	**+0.3**
DEMI	**Demirci**	**0.35**	**249**	P	**Pg**	**22 47 17.0**	**+0.6**
DEMI	**Demirci**	**0.35**	**249**	*i* P	**Pg**	**22 47 17.1**	**+0.6**
TVSB	**Tavsanli**	**0.37**	**42**	*e*PG	**Pg**	**22 47 17.1**	**+0.3**
TVSB				*e*SG	**Sg**	**22 47 21.8**	**0.0**
TVSB	**Tavsanli**	**0.37**	**42**	*e*Pg	**Pg**	**22 47 17.1**	**+0.3**
TVSB				*e*Sg	**Sg**	**22 47 21.8**	**0.0**
DURS	**Dursunbey**	**0.67**	**310**	P	**Pg**	**22 47 22.8**	**+0.4**
DURS	**Dursunbey**	**0.67**	**310**	*i* P	**Pg**	**22 47 22.8**	**+0.4**
KULA	**Kula-Manisa**	**0.76**	**210**	*e*PG	**Pg**	**22 47 23.9**	**-0.1**
KULA	**Kula-Manisa**	**0.76**	**210**	*e*Pg	**Pg**	**22 47 23.9**	**-0.1**
MANT	**Manisa**	**0.82**	**214**	P	**Pg**	**22 47 25.2**	**0.0**
MANT	**Manisa**	**0.82**	**214**	*i* P	**Pg**	**22 47 25.2**	**0.0**
KHAL	**Karahalli**	**0.85**	**161**	P	**Pb**	**22 47 25.9**	**-0.5**
KHAL	**Karahalli**	**0.85**	**161**	*i* P	**Pb**	**22 47 25.9**	**-0.5**
ORLT	**Orhaneli**	**0.89**	**348**	*e*PG	**Pg**	**22 47 26.6**	**-0.1**
ORLT	**Orhaneli**	**0.89**	**348**	*e*Pg	**Pg**	**22 47 26.6**	**-0.1**
KHL	**Karahalli**	**0.90**	**160**	*e*PG	**Pg**	**22 47 26.8**	**+0.1**
KHL	**Karahalli**	**0.90**	**160**	*e*Pg	**Pg**	**22 47 26.8**	**+0.1**
BALB	**Balikesir**	**1.08**	**296**	*e*PG	**Pg**	**22 47 29.9**	**-0.3**
BALB	**Balikesir**	**1.08**	**296**	*e*Pg	**Pg**	**22 47 29.9**	**-0.3**
IGD	**Bursa**	**1.09**	**2**	*i* P	**Pg**	**22 47 29.2**	**-1.2**
CAVI	**Cavuskoy**	**1.16**	**28**	*e*PN	**Pb**	**22 47 31.6**	**-0.2**
CAVI	**Cavuskoy**	**1.16**	**28**	*e*Pn	**Pb**	**22 47 31.6**	**-0.2**
IZI	**Iznik**	**1.19**	**12**	*e*PN	**Pn**	**22 47 32.5**	**+0.1**
IZI	**Iznik**	**1.19**	**12**	*e*Pn	**Pn**	**22 47 32.5**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.21**	**351**	*e*PN	**Pg**	**22 47 32.9**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.21**	**351**	*e*Pn	**Pg**	**22 47 32.9**	**+0.2**
KCTX	**Karacabey (Bur**	**1.25**	**331**	*e*PN	**Pg**	**22 47 33.5**	**+0.1**
KCTX	**Karacabey (Bur**	**1.25**	**331**	*e*Pn	**Pg**	**22 47 33.5**	**+0.1**
ADVT	**Abdulvahap**	**1.34**	**20**	*e*PN	**Pn**	**22 47 34.6**	**+0.2**
ADVT	**Abdulvahap**	**1.34**	**20**	*e*Pn	**Pn**	**22 47 34.6**	**+0.2**
ARMT	**Armutlu**	**1.41**	**351**	*e*PN	**Pb**	**22 47 35.9**	**-0.1**
ARMT	**Armutlu**	**1.41**	**351**	*e*Pn	**Pb**	**22 47 35.9**	**-0.1**
GONE	**Gonen-Balikesi**	**1.42**	**308**	*e*PN	**Pn**	**22 47 35.6**	**+0.2**
GONE	**Gonen-Balikesi**	**1.42**	**308**	*e*Pn	**Pn**	**22 47 35.7**	**+0.2**
EDC	**Edincik**	**1.53**	**320**	*e*PN	**Pn**	**22 47 37.0**	**0.0**
EDC	**Edincik**	**1.53**	**320**	*e*Pn	**Pn**	**22 47 37.0**	**0.0**
GULT	**Gulveren**	**1.65**	**40**	*e*PN	**Pn**	**22 47 39.0**	**+0.4**
GULT	**Gulveren**	**1.65**	**40**	*e*Pn	**Pn**	**22 47 39.1**	**+0.4**

*ISK **22** 22:49:40.8, 39°.12N×29°.05E, h8km, MD2.7*
*ISCJB **22** 22:49:41.5±0.6, 39°.11N±0°.04×29°.06E±0°.07, h9km, Error ellipse: s-maj=8.3km s-min=4.3km az=22.7*
*CSEM **22** 22:49:41.7±0.1, 39°.12N×29°.05E, h9km±1km, MD2.7, Error ellipse: s-maj=3.9km s-min=2.6km az=111.0*
*DDA **22** 22:49:42.2, 39°.11N×29°.02E, h7km, Md2.3*
ISC 22 22:49:41.4±0.9, 39°.09N±0°.03×29°.10E±0°.04, h9km, n21, σ0°34/27, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.30**	**260**	P	**Pg**	**22 49 47.6**	**+0.1**
DEMI	**Demirci**	**0.30**	**260**	*i* P	**Pg**	**22 49 47.6**	**+0.1**
TVSB	**Tavsanli**	**0.45**	**38**	*e*PG	**Pg**	**22 49 50.5**	**+0.2**
TVSB				*e*SG	**Sg**	**22 49 56.7**	**+0.5**
TVSB	**Tavsanli**	**0.45**	**38**	*e*Pg	**Pg**	**22 49 50.5**	**+0.2**
TVSB				*e*Sg	**Sg**	**22 49 56.7**	**+0.5**
KULA	**Kula-Manisa**	**0.67**	**211**	*e*PG	**Pg**	**22 49 54.5**	**+0.1**
KULA				*e*SG	**Sg**	**22 50 03.9**	**+0.7**
KULA	**Kula-Manisa**	**0.67**	**211**	*e*Pg	**Pg**	**22 49 54.5**	**+0.1**
KULA				*e*Sg	**Sg**	**22 50 03.9**	**+0.7**
DURS	**Dursunbey**	**0.70**	**316**	P	**Pg**	**22 49 55.0**	**0.0**
DURS	**Dursunbey**	**0.70**	**316**	*i* P	**Pg**	**22 49 55.0**	**0.0**
MANT	**Manisa**	**0.74**	**215**	P	**Pb**	**22 49 56.1**	**-0.4**
MANT	**Manisa**	**0.74**	**215**	*i* P	**Pb**	**22 49 56.1**	**-0.4**
KHAL	**Karahalli**	**0.78**	**157**	P	**Pn**	**22 49 58.4**	**-0.3**
KHAL	**Karahalli**	**0.78**	**157**	*i* P	**Pn**	**22 49 58.4**	**-0.3**
IGD	**Bursa**	**1.17**	**4**	*i* P	**Pb**	**22 50 03.2**	**-0.6**
IZI	**Iznik**	**1.27**	**13**	*e*PN	**Pn**	**22 50 05.3**	**-0.2**
IZI	**Iznik**	**1.27**	**13**	*e*Pn	**Pn**	**22 50 05.3**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.28**	**353**	*e*PN	**Pn**	**22 50 05.5**	**0.0**
MDNY	**Mudanya-Bursa**	**1.28**	**353**	*e*Pn	**Pn**	**22 50 05.5**	**0.0**
KCTX	**Karacabey (Bur**	**1.30**	**334**	*e*PN	**Pn**	**22 50 05.6**	**-0.2**
KCTX				*e*SN	**Sb**	**22 50 23.1**	**+0.2**
KCTX	**Karacabey (Bur**	**1.30**	**334**	*e*Pn	**Pn**	**22 50 05.6**	**-0.2**
KCTX				*e*Sn	**Sb**	**22 50 23.1**	**+0.2**
ARMT	**Armutlu**	**1.48**	**353**	*e*PN	**Pn**	**22 50 08.1**	**-0.2**
ARMT	**Armutlu**	**1.48**	**353**	*e*Pn	**Pn**	**22 50 08.1**	**-0.2**

*ISK **22** 22:50:20.6, 39°.08N×29°.06E, h10km, MD2.5*
*ISCJB **22** 22:50:22.5±0.7, 39°.15N±0°.05×29°.08E±0°.08, h9km, Error ellipse: s-maj=10.0km s-min=6.4km az=26.2*
*DDA **22** 22:50:23.4, 39°.16N×29°.19E, h7km, Md2.2*
*CSEM **22** 22:50:23.2±0.3, 39°.15N×29°.15E, h20km, MD2.5, Error ellipse: s-maj=9.7km s-min=6.2km az=101.0*
ISC 22 22:50:21.1±1.0, 39°.11N±0°.04×29°.12E±0°.06, h9km, n21, σ0°80/23, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.32**	**258**	*i* P	**Pn**	**22 50 34.8**	**+2.8**
TVSB	**Tavsanli**	**0.43**	**38**	*e*PG	**Pb**	**22 50 30.6**	**-0.4**
TVSB				*e*SG	**Sb**	**22 50 37.5**	**-0.2**
TVSB	**Tavsanli**	**0.43**	**38**	*e*Pg	**Pb**	**22 50 30.6**	**-0.4**
TVSB				*e*Sg	**Sb**	**22 50 37.5**	**-0.2**
KULA	**Kula-Manisa**	**0.69**	**211**	*e*PG	**Pg**	**22 50 33.6**	**-0.9**
DURS	**Dursunbey**	**0.70**	**315**	P	**Pn**	**22 50 37.6**	**+0.3**
DURS	**Dursunbey**	**0.70**	**315**	*i* P	**Pn**	**22 50 37.6**	**+0.3**
MANT	**Manisa**	**0.76**	**215**	P	**Pn**	**22 50 37.9**	**-0.3**
MANT	**Manisa**	**0.76**	**215**	*i* P	**Pn**	**22 50 37.9**	**-0.3**
KHAL	**Karahalli**	**0.79**	**158**	P	**Pn**	**22 50 39.7**	**+1.1**
KHAL	**Karahalli**	**0.79**	**158**	*i* P	**Pn**	**22 50 39.7**	**+1.1**
IGD	**Bursa**	**1.16**	**3**	*i* P	**Pn**	**22 50 44.0**	**+0.6**
IZI	**Iznik**	**1.26**	**13**	*e*PN	**Pg**	**22 50 45.4**	**+0.2**
IZI	**Iznik**	**1.26**	**13**	*e*Pn	**Pg**	**22 50 45.4**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.27**	**352**	*e*PN	**Pg**	**22 50 45.3**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.27**	**352**	*e*Pn	**Pg**	**22 50 45.3**	**-0.2**
KCTX	**Karacabey (Bur**	**1.29**	**333**	*e*PN	**Pn**	**22 50 45.4**	**0.0**
KCTX	**Karacabey (Bur**	**1.29**	**333**	*e*Pn	**Pn**	**22 50 45.4**	**0.0**
ADVT	**Abdulvahap**	**1.41**	**20**	*e*PN	**Pb**	**22 50 47.3**	**-0.2**
ADVT	**Abdulvahap**	**1.41**	**20**	*e*Pn	**Pb**	**22 50 47.3**	**-0.2**
ARMT	**Armutlu**	**1.47**	**352**	*e*PN	**Pn**	**22 50 48.1**	**+0.3**
ARMT	**Armutlu**	**1.47**	**352**	*e*Pn	**Pn**	**22 50 48.1**	**+0.3**

*DDA **22** 23:04:10.8, 39°.14N×29°.14E, h7km, Md2.5*
*ISCJB **22** 23:04:11.4±0.5, 39°.15N±0°.03×29°.14E±0°.04, h9km±5km, Error ellipse: s-maj=5.2km s-min=4.9km az=135.5*
*CSEM **22** 23:04:11.5±0.1, 39°.16N×29°.15E, h8km, MD2.5, Error ellipse: s-maj=2.0km s-min=1.5km az=85.0*
*ISK **22** 23:04:11.2, 39°.17N×29°.16E, h10km, MD2.6*
ISC 22 23:04:11.6±1.0, 39°.16N±0°.02×29°.15E±0°.02, h10km±9km, n24, σ0°33/36, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.27**	**106**	P	**Pg**	**23 04 17.1**	**0.0**
GDZ				S	**Sg**	**23 04 20.9**	**+0.2**
GDZ	**Gediz**	**0.27**	**106**	*i* P	**Pg**	**23 04 17.1**	**0.0**
GDZ				*i* S	**Sg**	**23 04 20.9**	**+0.2**
DEMI	**Demirci**	**0.36**	**251**	P	**Pg**	**23 04 19.1**	**+0.4**
DEMI				S	**Sg**	**23 04 23.7**	**+0.2**
DEMI	**Demirci**	**0.36**	**251**	*i* P	**Pg**	**23 04 19.1**	**+0.4**
DEMI				*i* S	**Sg**	**23 04 23.7**	**+0.2**
TVSB	**Tavsanli**	**0.38**	**40**	*e*PG	**Pg**	**23 04 19.0**	**-0.1**
TVSB				*e*SG	**Sg**	**23 04 24.5**	**+0.4**
TVSB	**Tavsanli**	**0.38**	**40**	*e*Pg	**Pg**	**23 04 19.0**	**-0.1**
TVSB				*e*Sg	**Sg**	**23 04 24.5**	**+0.4**
DURS	**Dursunbey**	**0.68**	**310**	P	**Pg**	**23 04 24.5**	**-0.3**
DURS				S	**Sg**	**23 04 33.6**	**-0.2**
DURS	**Dursunbey**	**0.68**	**310**	*i* P	**Pg**	**23 04 24.6**	**-0.3**
DURS				*i* S	**Sg**	**23 04 33.6**	**-0.2**
KULA	**Kula-Manisa**	**0.75**	**211**	*e*PG	**Pg**	**23 04 26.1**	**0.0**
KULA	**Kula-Manisa**	**0.75**	**211**	*e*Pg	**Pg**	**23 04 26.1**	**0.0**
KHAL	**Karahalli**	**0.83**	**161**	P	**Pb**	**23 04 28.3**	**0.0**
KHAL				S	**Sg**	**23 04 37.7**	**-0.9**
KHAL	**Karahalli**	**0.83**	**161**	*i* P	**Pb**	**23 04 28.3**	**0.0**
KHAL				*i* S	**Sg**	**23 04 37.7**	**-0.9**
KHL	**Karahalli**	**0.89**	**161**	*e*PG	**Pg**	**23 04 28.7**	**0.0**
KHL	**Karahalli**	**0.89**	**161**	*e*Pg	**Pg**	**23 04 28.7**	**0.0**
IZI	**Iznik**	**1.20**	**12**	*e*PN	**Pg**	**23 04 34.7**	**0.0**
IZI	**Iznik**	**1.20**	**12**	*e*Pn	**Pg**	**23 04 34.7**	**0.0**
MDNY	**Mudanya-Bursa**	**1.22**	**350**	*e*PN	**Pg**	**23 04 35.0**	**-0.1**
MDNY				*e*SN	**Sn**	**23 04 52.0**	**+0.6**
MDNY	**Mudanya-Bursa**	**1.22**	**350**	*e*Pn	**Pg**	**23 04 35.0**	**-0.1**
MDNY				*e*Sn	**Sn**	**23 04 52.0**	**+0.6**
KCTX	**Karacabey (Bur**	**1.26**	**331**	*e*PN	**Pn**	**23 04 35.2**	**-0.1**
KCTX	**Karacabey (Bur**	**1.26**	**331**	*e*Pn	**Pn**	**23 04 35.3**	**-0.1**
ARMT	**Armutlu**	**1.42**	**351**	*e*PN	**Pb**	**23 04 37.9**	**-0.3**
ARMT	**Armutlu**	**1.42**	**351**	*e*Pn	**Pb**	**23 04 37.9**	**-0.3**
GULT	**Gulveren**	**1.65**	**39**	*e*PN	**Pn**	**23 04 40.7**	**0.0**
GULT	**Gulveren**	**1.65**	**39**	*e*Pn	**Pn**	**23 04 40.7**	**0.0**

IDC 22 23:06:30.9±2.7, 38°.64N×141°.62E, h0km, mb3.5/3, mb1 3.5/4, mb1mx3.2/51, mbtmp3.4/4, ML2.7/1, Error ellipse: s-maj=69.0km s-min=29.6km az=70.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**3.42**	**233**	Pn	Pn	23 07 25.6	0.0
	0.7nm,0.3s,baz=55,slow=11,SNR=5.2						
MKAR	**Makanchi Array**	**43.42**	**301**	P	P	23 14 34.3	-1.0
	0.2nm,0.3s,baz=87,slow=8.3,SNR=3.1						
KURBB	**Kurchatov Arra**	**45.16**	**307**	P	P	23 14 49.6	+0.6
	0.4nm,0.5s,baz=83,slow=8.3,SNR=3.1						
WRA	**Warramunga Arr**	**58.67**	**188**	P	P	23 16 30.1	0.0
	0.6nm,0.9s,baz=11,slow=7.5,SNR=2.9						

WEL 22 23:06:47.8±0.3, 43°.54S×172°.85E, h6km±1km, ML3.5/9, 5C-3D, Error ellipse: s-maj=2.6km s-min=1.3km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRLZ	**Canterbury Las**	**0.17**	**259**	⇑PG	Pg	23 06 51.5	+0.2
CRLZ				AML	AML	23 06 53.9	
CRLZ				AML	AML	23 06 54.7	
MQZ	**McQueen's Vall**	**0.22**	**221**	⇑PG	Pg	23 06 52.7	+0.5
MQZ				AML	AML	23 06 56.0	
MQZ				AML	AML	23 06 56.1	
OXZ	**Oxford**	**0.63**	**290**	P*	Pg	23 06 59.8	-0.2
LTZ	**Lake Taylor**	**0.87**	**330**	P*	Pg	23 07 04.8	+0.3
LTZ				AML	AML	23 07 19.1	
LTZ				AML	AML	23 07 19.6	
KHZ	**Kahutara**	**1.23**	**24**	P*	Pg	23 07 10.5	-0.9
INZ	**Inchbonnie**	**1.32**	**308**	P*	Pn	23 07 11.8	-0.9
RPZ	**Rata Peaks**	**1.32**	**262**	⇑P*	Pn	23 07 11.4	-1.4
RPZ				AML	AML	23 07 31.5	
RPZ				AML	AML	23 07 39.1	
WVZ	**Waitaha Valley**	**1.61**	**286**	⇓PN	Pn	23 07 16.6	-0.2
THZ	**Tophouse**	**1.78**	**1**	PN	Pn	23 07 18.2	-0.9
THZ				AML	AML	23 07 51.5	
THZ				AML	AML	23 07 54.6	
DSZ	**Denniston Nort**	**1.96**	**336**	PN	Pn	23 07 20.8	-0.8
DSZ				AML	AML	23 07 48.2	
DSZ				AML	AML	23 07 58.3	
BSWZ	**Blackbirch Sta**	**1.98**	**23**	PN	Pn	23 07 21.2	-0.6
LBZ	**Lake Benmore**	**2.10**	**245**	PN	Pn	23 07 22.8	-0.8
LBZ				AML	AML	23 07 58.2	
LBZ				AML	AML	23 08 04.8	
ODZ	**Otahua Downs**	**2.19**	**226**	⇓PN	Pn	23 07 23.4	-1.3
ODZ				AML	AML	23 08 01.0	
ODZ				AML	AML	23 08 01.2	
ODZ				AML	AML	23 08 01.2	
ODZ				AML	AML	23 08 07.2	
TCW	**Tory Channel**	**2.56**	**25**	PN	Pn	23 07 28.6	-1.2
WKZ	**Wanaka**	**3.04**	**244**	⇑PN	Pn	23 07 35.7	-0.8
EAZ	**Earnscleugh**	**3.05**	**235**	⇓PN	Pn	23 07 35.6	-1.0
TUZ	**Tuapeka**	**3.33**	**222**	⇑PN	Pn	23 07 39.6	-0.8
TUZ				AML	AML	23 08 39.3	
SYZ	**Scrubby Hill**	**3.99**	**220**	PN	Pn	23 07 49.0	-0.4

*CSEM **22** 23:20:37.3±0.2, 33°.08N×46°.38E, h2km, ML3.1, Error ellipse: s-maj=4.7km s-min=4.6km az=7.0*
*ISN **22** 23:20:40.7±1.2, 32°.86N×45°.84E, h0km±4km, ML3.1*
TEH 22 23:20:39.0, 33°.08N×46°.38E, h14km, ML3.2, Iran-Iraq border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IGHG	**Ghaleghazi**	**1.26**	**7**	*e*Pg	Pn	23 21 01.2	-1.2
IGHG				*e*AMB	AMB	23 21 25.2	
	comp=Z,5μm,0.2s						
IGHG	**Ghaleghazi**	**1.26**	**7**	*e*Pg	Pn	23 21 01.2	-1.2
IKFM	**Kafar-mosalman**	**1.30**	**70**	*e*AMB	AMB	23 21 03.5	
	comp=Z,99nm,0.2s						
IKFM				*e*Pg	Pn	23 21 02.4	-0.4
IVIS	**Veis**	**1.49**	**15**	*e*Sg	Sb	23 21 26.0	+0.4
IVIS				*e*Pn	Pn	23 21 05.4	-0.2
IVIS				*e*AMB	AMB	23 21 29.5	
	comp=Z,3μm,0.2s						
IDHR	**Dehrash**	**1.62**	**0**	*e*Sg	Sg	23 21 30.2	-0.9
IDHR				*e*Pn	Pn	23 21 07.3	-0.1
IDHR				*e*AMB	AMB	23 21 31.3	
	comp=Z,9μm,0.1s						
BHD	**Baghdad**	**1.69**	**277**	*e*Pg	Pb	23 21 10.0	+0.1
	SNR=9.0						
BHD				*e*Sg	Sn	23 21 29.0	-0.6
	SNR=9.0						
ILIN	**Lien**	**1.90**	**15**	*e*Pn	Pn	23 21 11.3	0.0
ILIN				*e*AMB	AMB	23 21 13.1	
	comp=Z,2μm,0.2s						
ILIN	**Lien**	**1.90**	**15**	*e*Pn	Pn	23 21 11.3	0.0
NSR	**Nassriya**	**2.07**	**186**	*e*Pn	Pn	23 21 14.0	+0.6
	SNR=3.0						
NSR				*e*Sn	Sn	23 21 37.0	-2.1
	SNR=3.0						
SNGE	**Sanandaj**	**2.16**	**21**	*e*Pn	Pn	23 21 15.7	+0.8
SNGE				*e*Sg	Sg	23 21 47.0	-1.5
KHMZ	**Khomeyn**	**3.06**	**77**	*e*Pn	Pn	23 21 27.3	0.0
ASAO	**Ashtian**	**3.37**	**63**	*e*Pn	Pn	23 21 31.9	+0.4
ASAO				*e*S	Sn	23 22 11.5	+0.1
IPIR	**Pirpir**	**3.81**	**95**	*e*Pn	Pn	23 21 37.6	-0.1
IPIR				*e*AMB	AMB	23 22 24.7	
	comp=Z,294nm,0.3s						
IPIR	**Pirpir**	**3.81**	**95**	*e*Pn	Pn	23 21 37.6	-0.1
QAM	**Ghamsar**	**4.28**	**80**	*e*Pn	Pn	23 21 43.1	-0.9
QAM				*e*AMB	AMB	23 22 38.5	
	comp=Z,338nm,0.3s						
GHVR	**GHOM**	**4.32**	**70**	*e*Pn	Pn	23 21 44.2	-0.3
IKLH	**Kolahrood**	**4.36**	**85**	*e*Pn	Pn	23 21 45.3	+0.1
IKLH				*e*AMB	AMB	23 21 46.5	
	comp=Z,229nm,0.2s						
IKLH	**Kolahrood**	**4.36**	**85**	*e*Pn	Pn	23 21 45.3	+0.1
IVRN	**Varamin**	**4.83**	**65**	*e*Pn	Pn	23 21 50.1	-1.3
IVRN				*e*AMB	AMB	23 21 51.3	
	comp=Z,212nm,0.1s						
IVRN	**Varamin**	**4.83**	**65**	*e*Pn	Pn	23 21 50.1	-1.3
IZEF	**Zefreh**	**5.00**	**90**	*e*Pn	Pn	23 21 54.0	0.0
IZEF				*e*AMB	AMB	23 22 19.1	
	comp=Z,43nm,0.2s						
IZEF	**Zefreh**	**5.00**	**90**	*e*Pn	Pn	23 21 54.0	0.0
IRAM	**Ramesheh**	**5.23**	**102**	*e*Pn	Pn	23 21 56.7	-0.3
IRAM				*e*AMB	AMB	23 23 02.1	
	comp=Z,58nm,0.2s						
IRAM	**Ramesheh**	**5.23**	**102**	*e*Pn	Pn	23 21 56.7	-0.3
IDMV	**Damavand**	**5.30**	**60**	*e*Pn	Pn	23 21 56.8	-1.2
IDMV				*e*AMB	AMB	23 21 58.7	
	comp=Z,105nm,0.1s						
IDMV	**Damavand**	**5.30**	**60**	*e*Pn	Pn	23 21 56.8	-1.2

*CSEM **22** 23:22:24.7±0.7, 32°.90N×46°.69E, h5km, ML3.1, Error ellipse: s-maj=18.7km s-min=9.9km az=101.0*
*ISN **22** 23:22:25.3±1.0, 32°.66N×46°.19E, h0km±4km, ML3.1*
TEH 22 23:22:26.2, 32°.98N×46°.35E, h3km, ML3.1, Iran-Iraq border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IGHG	**Ghaleghazi**	**1.35**	**8**	*e*Pg	Pg	23 22 50.4	-1.8
IGHG				*e*AMB	AMB	23 22 52.4	
	comp=Z,3μm,0.1s						
IGHG				*e*Sg	Sg	23 23 08.8	-1.0
IGHG	**Ghaleghazi**	**1.35**	**8**	*e*Pg	Pg	23 22 50.4	-1.8
IGHG				*e*Sg	Sg	23 23 08.8	-1.0
IKFM	**Kafar-mosalman**	**1.36**	**66**	*e*Pn	Pn	23 22 52.0	-0.2
IKFM				*e*AMB	AMB	23 22 52.9	
	comp=Z,99nm,0.1s						
IKFM	**Kafar-mosalman**	**1.36**	**66**	*e*Pn	Pn	23 22 52.0	-0.2
IVIS	**Veis**	**1.59**	**15**	*e*Pn	Pn	23 22 54.9	-0.6
IVIS				*e*Sg	Sn	23 23 15.5	-1.1
IVIS				*e*AMB	AMB	23 23 19.9	
	comp=Z,2μm,0.2s						
IVIS	**Veis**	**1.59**	**15**	*e*Pn	Pn	23 22 54.9	-0.6
IVIS				*e*Sg	Sn	23 23 15.5	-1.1
BHD	**Baghdad**	**1.68**	**280**	*e*Pg	Pg	23 23 02.0	+3.6
	SNR=9.0						
BHD				*e*Sg	Sg	23 23 27.0	+6.8
	SNR=9.0						
IDHR	**Dehrash**	**1.71**	**1**	*e*Pn	Pn	23 22 56.7	-0.5
IDHR				*e*Sg	Sn	23 23 19.7	0.0
IDHR				*e*AMB	AMB	23 23 20.7	
	comp=Z,5μm,0.1s						
IDHR	**Dehrash**	**1.71**	**1**	*e*Pn	Pn	23 22 56.7	-0.5
IDHR				*e*Sg	Sn	23 23 19.7	0.0
IKMR	**Kamar-syah**	**1.78**	**72**	*e*Pn	Pn	23 22 58.3	+0.4
IKMR				*e*AMB	AMB	23 23 25.6	
	comp=Z,99nm,0.2s						
NSR	**Nassriya**	**1.98**	**185**	*e*Pg	Pn	23 23 01.0	+0.4
	SNR=9.0						
NSR

MAN 22 23:38:58, 17°21N×121°87E, h18km, mb4.5, ML3.4, MS3.3, 1D, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CAUP	Cauayan	0.27	190	eP	Pn	23 39 05.7	-1.4
APYP	Conner	0.89	317	eP	Pb	23 39 14.7	-0.2
APYP				eS	Sn	23 39 28.5	+0.6
ABRA	Dolores	1.19	292	eP	Sg	23 39 41.7	+5.0
BCPH	Baguio City Da	1.49	237	‖eP	Pg	23 39 28.7	+1.9
BCPH				eS	Sg	23 39 47.8	+1.6
BOLP	Bolinao	2.05	247	eP	Pb	23 39 33.6	-1.1
BOLP				eS	Sg	23 40 02.6	-1.5

ISCJB 22 23:43:39.3±0.5, 39°12N±0°03×29°00E±0°04, h6km±6km, Error ellipse: s-maj=5.5km s-min=4.6km az=136.9
CSEM 22 23:43:39.4±0.1, 39°12N×28°98E, h5km, MD2.7, Error ellipse: s-maj=2.9km s-min=2.2km az=89.0
ISK 22 23:43:39.1, 39°14N×28°99E, h5km, MD2.7
DDA 22 23:43:39.3, 39°11N×29°01E, h7km, Md2.7
ISC 22 23:43:39.6±0.9, 39°12N±0°02×29°00E±0°02, h11km±9km, n28, σ0°45/39, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.23	251	P	Pg	23 43 44.7	+0.1
DEMI				S	Sg	23 43 48.0	+0.2
DEMI	Demirci	0.23	251	iP	Pg	23 43 44.7	+0.1
DEMI				iS	Sg	23 43 48.0	+0.2
GDZ	Gediz	0.37	95	P	Pg	23 43 47.0	-0.1
GDZ				S	Sg	23 43 52.2	+0.1
GDZ	Gediz	0.37	95	iP	Pg	23 43 47.0	-0.1
GDZ				iS	Sg	23 43 52.2	+0.1
TVSB	Tavsanli	0.48	47	ePG	Pg	23 43 49.4	+0.2
TVSB				eSG	Sg	23 43 55.5	-0.1
TVSB	Tavsanli	0.48	47	ePg	Pg	23 43 49.4	+0.2
TVSB				eSg	Sg	23 43 55.5	-0.1
DURS	Dursunbey	0.63	320	P	Pg	23 43 51.9	0.0
DURS	Dursunbey	0.63	320	iP	Pg	23 43 51.9	0.0
DURS				iS	Sn	23 44 06.0	+1.2
KULA	Kula-Manisa	0.66	204	ePG	Pg	23 43 52.4	0.0
KULA	Kula-Manisa	0.66	204	ePg	Pg	23 43 52.4	0.0
MANT	Manisa	0.72	209	P	Pg	23 43 53.4	-0.2
MANT				S	Sg	23 44 02.8	-0.2
MANT	Manisa	0.72	209	iP	Pg	23 43 53.4	-0.2
MANT				iS	Sg	23 44 02.8	-0.2
KHAL	Karahalli	0.84	153	P	Pg	23 43 55.2	-0.7
KHAL				S	Sb	23 44 07.6	-0.1
KHAL	Karahalli	0.84	153	iP	Pg	23 43 55.2	-0.7
KHAL				iS	Sb	23 44 07.6	-0.1
KHL	Karahalli	0.89	153	ePG	Pb	23 43 57.0	-0.2
KHL	Karahalli	0.89	153	ePg	Pb	23 43 57.1	-0.2
BALB	Balikesir	1.01	301	ePG	Pg	23 43 58.2	-0.9
BALB	Balikesir	1.01	301	ePg	Pg	23 43 58.2	-0.9
KCTX	Karacabey (Bur	1.25	337	ePN	Pg	23 44 02.6	-1.0
KCTX	Karacabey (Bur	1.25	337	ePn	Pg	23 44 02.6	-1.0
MDNY	Mudanya-Bursa	1.25	356	ePN	Pn	23 44 03.4	+0.3
MDNY	Mudanya-Bursa	1.25	356	ePn	Pn	23 44 03.4	+0.3
IZI	Iznik	1.27	16	ePN	Pg	23 44 03.7	-0.3
IZI	Iznik	1.27	16	ePn	Pg	23 44 03.7	-0.3
ARMT	Armutlu	1.45	356	ePN	Pb	23 44 06.6	-0.1
ARMT	Armutlu	1.45	356	ePn	Pb	23 44 06.6	-0.1
GULT	Gulveren	1.75	41	ePN	Pb	23 44 11.6	-0.3
GULT	Gulveren	1.75	41	ePn	Pb	23 44 11.6	-0.3

ISCJB 22 23:51:40.8±0.5, 39°08N±0°03×29°03E±0°04, h5km±7km, Error ellipse: s-maj=5.4km s-min=4.5km az=153.7
ISK 22 23:51:40.7, 39°11N×29°04E, h7km, MD2.7
CSEM 22 23:51:41.1±0.1, 39°09N×29°03E, h8km, MD2.6, Error ellipse: s-maj=2.8km s-min=2.2km az=116.0
DDA 22 23:51:41.0, 39°08N×29°04E, h7km, Md2.6
ISC 22 23:51:41.1±1.0, 39°09N±0°02×29°03E±0°02, h9km±11km, n29, σ0°34/39, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.25	259	P	Pg	23 51 46.3	+0.1
DEMI				S	Sg	23 51 49.8	+0.3
DEMI	Demirci	0.25	259	iP	Pg	23 51 46.3	+0.1
DEMI				iS	Sg	23 51 49.8	+0.3
GDZ	Gediz	0.35	90	P	Pg	23 51 48.1	-0.1
GDZ				S	Sg	23 51 53.0	+0.1
GDZ	Gediz	0.35	90	iP	Pg	23 51 48.1	-0.1
GDZ				iS	Sg	23 51 53.0	+0.1
TVSB	Tavsanli	0.49	43	ePG	Pg	23 51 50.3	-0.4
TVSB				eSG	Sg	23 51 57.1	-0.1
TVSB	Tavsanli	0.49	43	ePg	Pg	23 51 50.3	-0.4
TVSB				eSg	Sg	23 51 57.1	-0.1
KULA	Kula-Manisa	0.64	207	ePG	Pg	23 51 53.5	-0.1
KULA	Kula-Manisa	0.64	207	ePg	Pg	23 51 53.5	-0.1
DURS	Dursunbey	0.67	320	P	Pb	23 51 54.8	-0.2
DURS	Dursunbey	0.67	320	iP	Pb	23 51 54.8	-0.2
MANT	Manisa	0.70	212	P	Pg	23 51 54.7	0.0
MANT				S	Sg	23 52 02.8	-1.1
MANT	Manisa	0.70	212	iP	Pg	23 51 54.7	0.0
MANT				iS	Sg	23 52 02.8	-1.1
KHAL	Karahalli	0.81	153	P	Pb	23 51 57.4	0.0
KHAL				S	Sg	23 52 07.2	+0.1
KHAL	Karahalli	0.81	153	iP	Pb	23 51 57.4	0.0
KHAL				iS	Sg	23 52 07.2	+0.1
KHL	Karahalli	0.86	153	ePG	Pb	23 51 58.3	0.0
KHL	Karahalli	0.86	153	ePg	Pb	23 51 58.3	0.0
AKS	Akhisar	0.97	258	ePG	Pg	23 51 59.9	+0.1
AKS	Akhisar	0.97	258	ePg	Pg	23 51 59.9	+0.1
BALB	Balikesir	1.04	302	ePG	Pg	23 52 01.2	0.0
MDNY	Mudanya-Bursa	1.28	355	ePN	Pb	23 52 05.4	0.0
MDNY	Mudanya-Bursa	1.28	355	ePn	Pb	23 52 05.4	0.0
KCTX	Karacabey (Bur	1.28	336	ePN	Pg	23 52 05.8	0.0
IZI	Iznik	1.29	15	ePN	Pn	23 52 05.4	0.0
IZI	Iznik	1.29	15	ePn	Pn	23 52 05.4	0.0
ADVT	Abdulvahap	1.45	22	ePN	Pb	23 52 07.5	0.0
ADVT	Abdulvahap	1.45	22	ePn	Pn	23 52 07.5	0.0
ARMT	Armutlu	1.48	355	ePN	Pn	23 52 08.1	+0.1
GULT	Gulveren	1.76	40	ePN	Pn	23 52 12.6	+0.6
GULT	Gulveren	1.76	40	ePn	Pn	23 52 12.6	+0.6

ISCJB 22 23:53:12.3±0.6, 39°07N±0°04×29°06E±0°04, h2km±9km, Error ellipse: s-maj=6.8km s-min=4.6km az=149.6
DDA 22 23:53:12.1, 39°07N×29°05E, h7km, Md2.7
ISK 22 23:53:12.2, 39°08N×29°13E, h7km, MD2.6
CSEM 22 23:53:12.3±0.1, 39°08N×29°06E, h2km, MD2.7, Error ellipse: s-maj=3.3km s-min=2.4km az=106.0
ISC 22 23:53:11.7±1.1, 39°03N±0°03×29°11E±0°03, h8km±11km, n28, σ0°54/38, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	Gediz	0.29	78	P	Pb	23 53 19.1	-0.2
GDZ				S	Sb	23 53 24.1	-0.3
GDZ	Gediz	0.29	78	iP	Pb	23 53 19.1	-0.2
GDZ				iS	Sb	23 53 24.1	-0.3
DEMI	Demirci	0.31	273	P	Pg	23 53 16.7	-1.1
DEMI				S	Sg	23 53 22.4	+0.5
DEMI	Demirci	0.31	273	iP	Pg	23 53 16.7	-1.1
DEMI				iS	Sg	23 53 22.4	+0.5
TVSB	Tavsanli	0.50	33	ePG	Pg	23 53 21.7	+0.2
TVSB				eSG	Sg	23 53 28.1	0.0
TVSB	Tavsanli	0.50	33	ePg	Pg	23 53 21.7	+0.2
TVSB				eSg	Sg	23 53 28.1	0.0
KULA	Kula-Manisa	0.62	215	ePG	Pb	23 53 25.2	+0.4
KULA	Kula-Manisa	0.62	215	ePg	Pb	23 53 25.2	+0.4
MANT	Manisa	0.69	219	P	Pb	23 53 26.5	+0.4
MANT				S	Sg	23 53 34.8	+0.9
MANT	Manisa	0.69	219	iP	Pb	23 53 26.5	+0.4
MANT				iS	Sg	23 53 34.8	+0.9
KHAL	Karahalli	0.72	155	P	Pb	23 53 27.1	+0.6
KHAL				S	Sn	23 53 38.9	-0.6
KHAL	Karahalli	0.72	155	iP	Pb	23 53 27.1	+0.6
KHAL				iS	Sn	23 53 38.9	-0.6
KHL	Karahalli	0.77	155	ePG	Pn	23 53 28.5	-0.5
KHL	Karahalli	0.77	155	ePg	Pn	23 53 28.5	-0.5
BALB	Balikesir	1.14	303	ePN	Pn	23 53 34.3	+0.4
BALB	Balikesir	1.14	303	ePn	Pn	23 53 34.3	+0.4
IZI	Iznik	1.34	12	ePN	Pb	23 53 37.0	-0.1
IZI	Iznik	1.34	12	ePn	Pb	23 53 37.0	-0.1
MDNY	Mudanya-Bursa	1.35	353	ePN	Pg	23 53 37.5	-0.2
MDNY	Mudanya-Bursa	1.35	353	ePn	Pg	23 53 37.5	-0.2
KCTX	Karacabey (Bur	1.37	335	ePN	Pg	23 53 38.2	+0.3
KCTX	Karacabey (Bur	1.37	335	ePn	Pg	23 53 38.2	+0.3
ADVT	Abdulvahap	1.49	19	ePN	Pb	23 53 39.5	-0.1
ADVT	Abdulvahap	1.49	19	ePn	Pb	23 53 39.5	-0.1
ARMT	Armutlu	1.55	353	ePN	Pb	23 53 40.2	-0.5
ARMT	Armutlu	1.55	353	ePn	Pb	23 53 40.2	-0.5
GULT	Gulveren	1.77	37	ePN	Pn	23 53 43.6	+0.9
GULT	Gulveren	1.77	37	ePn	Pn	23 53 43.6	+0.9

ISCJB 23 00:08:50.7±0.5, 38°89N±0°03×29°15E±0°04, h4km±7km, Error ellipse: s-maj=6.4km s-min=4.5km az=140.2
ISK 23 00:08:50.6, 38°91N×29°15E, h6km, MD2.8
CSEM 23 00:08:51.0±0.1, 38°89N×29°14E, h5km, MD2.7, Error ellipse: s-maj=2.2km s-min=1.7km az=124.0
DDA 23 00:08:51.2, 38°87N×29°12E, h7km, Md2.7
ISC 23 00:08:51.2±1.1, 38°90N±0°03×29°14E±0°03, h5km±11km, n36, σ0°26/45, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	Gediz	0.33	54	P	Pg	00 08 57.4	-0.1
GDZ				S	Sg	00 09 02.0	+0.1
GDZ	Gediz	0.33	54	iP	Pg	00 08 57.4	-0.1
GDZ				iS	Sg	00 09 01.9	+0.1
DEMI	Demirci	0.36	294	P	Pg	00 08 58.2	-0.1
DEMI				S	Sg	00 09 03.2	+0.2
DEMI	Demirci	0.36	294	iP	Pg	00 08 58.2	-0.1
DEMI				iS	Sg	00 09 03.2	+0.2
KULA	Kula-Manisa	0.54	225	ePG	Pg	00 09 01.3	-0.2
KULA	Kula-Manisa	0.54	225	ePg	Pg	00 09 01.3	-0.2
KHAL	Karahalli	0.59	153	P	Pg	00 09 02.6	+0.1
KHAL	Karahalli	0.59	153	iP	Pg	00 09 02.6	+0.1
TVSB	Tavsanli	0.60	24	ePG	Pg	00 09 03.0	+0.2
TVSB				eSG	Sg	00 09 10.3	-0.4
TVSB	Tavsanli	0.60	24	ePg	Pg	00 09 03.0	+0.2
TVSB				eSg	Sg	00 09 10.3	-0.4
MANT	Manisa	0.61	229	P	Pg	00 09 02.4	-0.6
MANT				S	Sg	00 09 11.2	+0.2
MANT	Manisa	0.61	229	iP	Pg	00 09 02.4	-0.6
MANT				iS	Sg	00 09 11.2	+0.2
KHL	Karahalli	0.65	152	ePG	Pg	00 09 03.8	+0.2
KHL	Karahalli	0.65	152	ePg	Pg	00 09 03.8	+0.2
DURS	Dursunbey	0.87	324	P	Pg	00 09 08.2	+0.2
DURS	Dursunbey	0.87	324	iP	Pg	00 09 08.2	+0.2
DURS				iS	Sn	00 09 23.3	-0.1
AKHS	Akhisar	1.04	269	P	Pg	00 09 11.1	0.0
AKHS	Akhisar	1.04	269	iP	Pg	00 09 11.1	0.0
AKS	Akhisar	1.04	269	ePG	Pg	00 09 11.0	-0.1
AKS	Akhisar	1.04	269	ePg	Pg	00 09 11.0	-0.1
ORLT	Orhaneli	1.16	351	ePN	Pg	00 09 13.2	-0.3
ORLT	Orhaneli	1.16	351	ePn	Pg	00 09 13.2	-0.3
BALB	Balikesir	1.23	307	ePN	Pb	00 09 14.9	0.0
BALB	Balikesir	1.23	307	ePn	Pb	00 09 14.9	0.0
IZI	Iznik	1.46	10	ePN	Pn	00 09 18.3	+0.1
IZI	Iznik	1.46	10	ePn	Pn	00 09 18.3	+0.1
MDNY	Mudanya-Bursa	1.48	352	ePN	Pn	00 09 18.0	-0.4
MDNY	Mudanya-Bursa	1.48	352	ePn	Pn	00 09 18.0	-0.4
KCTX	Karacabey (Bur	1.50	336	ePN	Pn	00 09 18.8	+0.1
KCTX	Karacabey (Bur	1.50	336	ePn	Pn	00 09 18.8	+0.1
ADVT	Abdulvahap	1.60	16	ePN	Pn	00 09 20.1	0.0
ADVT	Abdulvahap	1.60	16	ePn	Pn	00 09 20.1	0.0
ARMT	Armutlu	1.68	353	ePN	Pn	00 09 21.7	+0.5
ARMT	Armutlu	1.68	353	ePn	Pn	00 09 21.7	+0.5
GULT	Gulveren	1.86	34	ePN	Pn	00 09 23.5	-0.2
GULT	Gulveren	1.86	34	ePn	Pn	00 09 23.5	-0.2

CSEM 23 00:13:58.7, 39°18N×28°97E, h7km, MD2.6
DDA 23 00:13:58.7, 39°18N×28°97E, h7km, Md2.6, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.24	236	P	Pg	00 14 02.7	-0.8
DEMI				S	Sg	00 14 09.6	+2.9
DEMI	Demirci	0.24	236	iP	Pg	00 13 58.9	-4.6
DEMI				iS	Sg	00 14 09.3	+2.6
DEMI	Demirci	0.24	236	iP	Pg	00 14 02.7	-0.8
DEMI				iS	Sg	00 14 09.6	+2.9
GDZ	Gediz	0.41	103	P	Pb	00 14 07.6	-0.7
GDZ				S	Sg	00 14 12.2	+0.3
GDZ	Gediz	0.41	103	iP	Pg	00 14 00.5	-6.2
GDZ	Gediz	0.41	103	iP	Pb	00 14 07.6	-0.7
GDZ				iS	Sg	00 14 12.2	+0.2
MANT	Manisa	0.76	205	P	Pb	00 14 14.6	+0.2
MANT				S	Sg	00 14 24.1	+0.9
MANT	Manisa	0.76	205	iP	Pb	00 14 14.5	+0.1
MANT				iS	Sg	00 14 23.9	+0.7
MANT	Manisa	0.76	205	iP	Pb	00 14 14.6	+0.2
MANT				iS	Sg	00 14 24.1	+0.9
KHAL	Karahalli	0.90	153	P	Pb	00 14 17.3	+0.5
KHAL				S	Sg	00 14 27.6	-0.2
KHAL	Karahalli	0.90	153	iP	Pn	00 14 17.8	-0.1
KHAL				iS	Sg	00 14 27.6	-0.2
KHAL	Karahalli	0.90	153	iP	Pb	00 14 17.3	+0.6
KHAL				iS	Sg	00 14 27.6	-0.1

NEIC 23 00:21:15.9±0.7, 6°06S×130°52E, h35km, mb4.3/9, Error ellipse: s-maj=17.7km s-min=14.9km az=194.0
ISCJB 23 00:21:23.2±0.6, 5°99S±0°08×130°4E±0°1, h124km, mb4.4/10, Error ellipse: s-maj=16.4km s-min=9.6km az=159.9
IDC 23 00:21:24.3±2.4, 6°01S×130°43E, h0km, mb3.9/1, mb1 3.7/3, mb1mx3.5/20, mbtmp3.6/3, ML3.8/2, Error ellipse: s-maj=154.5km s-min=31.1km az=70.0
ISC 23 00:21:24.5±0.8, 6°1S±0°1×130°5E±0°1, h124km, n14, σ1°19/12, mb4.4/10, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	14.25	165	Pn	P	00 24 50.3	+6.0
	0.6nm,0.3s,baz=348,slow=14,SNR=4.9						
WRA				Sn	Sn	00 27 14.2	-4.0
	0.7nm,0.3s,baz=341,slow=22,SNR=9.1						
ASAR	Alice Springs	17.76	170	P	Pn	00 25 33.8	+10
	0.2nm,0.3s,baz=347,slow=11,SNR=5.4						
ASAR				S	S	00 28 38.5	-2.8
	0.1nm,0.3s,baz=352,slow=27,SNR=3.1						
KKM	Kota Kinabalu	18.65	310	eP	P	00 25 32.6	-0.5
	2.9nm,0.5s						
KSM	Kuching	21.48	290	eP	P	00 26 03.3	-0.2
	4.9nm,0.6s						
HNR	Honiara	29.40	98	eP	P	00 27 17.5	+1.0
	20nm,0.3s						
KULM	Kulim	31.84	290	eP	P	00 27 38.0	+0.1
	6.5nm,1.0s						
COCO	West Island	33.71	257	P	P	00 27 55.0	+0.7
	42nm,0.4s						
ENH	Enshi	41.40	332	P	P	00 28 58.4	-0.4
	3.5nm,0.4s						
MAJO	Matsushiro	43.06	9	P	P	00 29 11.0	-1.1
	3.5nm,0.4s						
MDJ	Mudanjiang	50.51	359	eP	P	00 30 09.8	-0.2
	2.6nm,0.4s						
CASY	Casey	61.63	189	eP	P	00 31 29.7	+0.9
	0.3nm,0.4s						
MKAR	Makanchi Array	67.74	326	P	P	00 32 23.2	+14
	0.5nm,0.4s,baz=116,slow=7.8,SNR=11						
BILL	Bilibino	78.17	13	eP	P	00 33 10.2	+0.5
	1.0nm,0.5s						
LSZ	Lusaka	100.14	253	ePdif	Pdif	00 34 57.9	+0.7

ISCJB 23 00:23:50.3±0.5, 39°11N±0°03×29°04E±0°03, h9km±5km, Error ellipse: s-maj=5.1km s-min=4.4km az=159.1
ISK 23 00:23:50.1, 39°12N×29°06E, h10km, MD2.8
DDA 23 00:23:50.8, 39°07N×29°03E, h7km, Md2.6
CSEM 23 00:23:50.5±0.1, 39°10N×29°06E, h10km, MD2.6, Error ellipse: s-maj=2.0km s-min=1.7km az=113.0
ISC 23 00:23:50.1±0.9, 39°11N±0°02×29°07E±0°03, h12km±8km, n30, σ0°24/42, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.28	256	P	Pg	00 23 55.9	0.0
DEMI				S	Sg	00 23 59.8	-0.1
DEMI	Demirci	0.28	256	iP	Pg	00 23 55.9	0.0
DEMI				iS	Sg	00 23 59.8	-0.1
GDZ	Gediz	0.32	93	P	Pb	00 23 57.7	-0.2
GDZ				S	Sb	00 24 02.5	-0.6
GDZ	Gediz	0.32	93	iP	Pb	00 23 57.7	-0.2
GDZ				iS	Sb	00 24 02.5	-0.6
TVSB	Tavsanli	0.46	42	ePG	Pb	00 23 59.9	-0.2
TVSB				eSG	Sg	00 24 05.7	+0.4
TVSB	Tavsanli	0.46	42	ePg	Pb	00 23 59.9	-0.2
TVSB				eSg	Sg	00 24 05.7	+0.4
KULA	Kula-Manisa	0.67	208	ePG	Pg	00 24 03.3	+0.1
KULA	Kula-Manisa	0.67	208	ePg	Pg	00 24 03.3	+0.1
MANT	Manisa	0.73	213	P	Pg	00 24 04.4	+0.1
MANT				S	Sg	00 24 13.6	-0.4
MANT	Manisa	0.73	213	iP	Pg	00 24 04.4	+0.1
MANT				iS	Sg	00 24 13.6	-0.4
KHAL	Karahalli	0.81	156	P	Pb	00 24 06.1	0.0
KHAL				S	Sb	00 24 17.5	+0.5
KHAL	Karahalli	0.81	156	iP	Pb	00 24 06.1	0.0
KHAL				iS	Sb	00 24 17.5	+0.5
ORLT	Orhaneli	0.94	352	ePG	Pn	00 24 09.1	-0.1
ORLT	Orhaneli	0.94	352	ePg	Pn	00 24 09.1	-0.1
AKS	Akhisar	1.00	257	ePG	Pn	00 24 10.0	+0.1
AKS	Akhisar	1.00	257	ePg	Pn	00 24 10.0	+0.1
BALB	Balikesir	1.06	300	ePG	Pn	00 24 10.9	+0.2
BALB				eSG	Sn	00 24 25.4	0.0
BALB	Balikesir	1.06	300	ePg	Pn	00 24 10.9	+0.2
BALB				eSg	Sn	00 24 25.4	0.0
CAVI	Cavuskoy	1.25	29	ePN	Pb	00 24 13.5	0.0
CAVI	Cavuskoy	1.25	29	ePn	Pb	00 24 13.5	0.0
IZI	Iznik	1.27	14	ePN	Pg	00 24 14.6	+0.2
IZI	Iznik	1.27	14	ePn	Pg	00 24 14.6	+0.2
KCTX	Karacabey (Bur	1.28	335	ePN	Pg	00 24 14.6	-0.1
KCTX	Karacabey (Bur	1.28	335	ePn	Pg	00 24 14.6	-0.1
GONE	Gonen-Balikesi	1.42	312	ePN	Pb	00 24 16.4	0.0
GONE	Gonen-Balikesi	1.42	312	ePn	Pb	00 24 16.4	0.0
ARMT	Armutlu	1.46	354	ePN	Pb	00 24 17.2	0.0
ARMT	Armutlu	1.46	354	ePn	Pb	00 24 17.2	0.0
EDC	Edincik	1.54	324	ePN	Pb	00 24 18.5	-0.1
EDC	Edincik	1.54	324	ePn	Pb	00 24 18.5	-0.1

NEIC 23 00:25:34.2, 38°06S×176°30E, h159km, MG4.0(WEL), After WEL.
WEL 23 00:25:34.8±0.2, 38°07S×176°31E, h154km±2km, ML4.0/18, 38C-6D, Error ellipse: s-maj=1.2km s-min=1.1km az=0.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KARZ	Kaharoa	0.07	313	PN	Pn	00 25 55.3	-0.1
KARZ	Kaharoa	0.07	313	Pn	Pn	00 25 55.3	-0.1
TARZ	Mount Tarawera	0.23	137	PN	Pn	00 25 56.1	+0.3
TARZ	Mount Tarawera	0.23	137	Pn	Pn	00 25 56.1	+0.3
OPRZ	Ohinepanea	0.30	41	‖PN	Pn	00 25 55.6	-0.2
OPRZ				SN	Sn	00 26 12.0	+0.1
OPRZ	Ohinepanea	0.30	41	Pn	Pn	00 25 55.6	-0.2
RRRZ	Republican Roa	0.32	149	PN	Pn	00 25 55.9	0.0
RRRZ	Republican Roa	0.32	149	Pn	Pn	00 25 56.0	0.0
KMRZ	Kaimai	0.36	307	PN	Pn	00 25 56.1	0.0
PRRZ	Plateau Road	0.44	171	⇑PN	Pn	00 25 56.3	0.0
PRRZ				SN	Sn	00 26 13.3	+0.4
PRRZ	Plateau Road	0.44	171	Pn	Pn	00 25 56.3	0.0
MUGZ	Murupara	0.55	138	PN	Pn	00 25 56.9	0.0
URZ	Urewera	0.66	107	⇑PN	Pn	00 25 57.0	-0.5
URZ				SN	Sn	00 26 13.5	-1.3
URZ				AML	AML	00 26 14.5	
URZ	Urewera	0.66	107	Pn	Pn	00 25 57.0	-0.5
TOZ	Tahuroa Road	0.72	298	‖PN	Pn	00 25 58.0	+0.2
TOZ	Tahuroa Road	0.72	298	Pn	Pn	00 25 58.0	+0.2
RTZ	Ruatahuna	0.76	136	⇑PN	Pn	00 25 58.1	-0.1
RTZ				SN	Sn	00 26 16.2	0.0
MRHZ	Matea Rd	0.77	174	⇑PN	Pn	00 25 58.2	-0.1
MRHZ				SN	Sn	00 26 15.6	-0.7
RATZ	Rangitukua	0.90	208	PN	Pn	00 25 59.2	0.0
RATZ	Rangitukua	0.90	208	Pn	Pn	00 25 59.3	+0.1
RAGZ	Rawiri	0.97	116	⇑PN	Pn	00 25 59.8	0.0
RAGZ				SN	Sn	00 26 18.6	-0.4
RAGZ	Rawiri	0.97	116	Pn	Pn	00 25 59.8	0.0
RITZ	Rihia Road	0.97	201	⇑PN	Pn	00 26 00.1	+0.4
MWZ	Matawai	1.00	106	⇑PN	Pn	00 25 59.7	-0.3
MWZ				AML	AML	00 26 19.5	
MWZ				AML	AML	00 26 20.3	
MWZ	Matawai	1.00	106	Pn	Pn	00 25 59.7	-0.3
RAHZ	Arahi	1.04	144	⇑PN	Pn	00 26 00.6	+0.3
RAHZ	Arahi	1.04	144	Pn	Pn	00 26 00.6	+0.3
SNGZ	Shannon Statio	1.08	132	⇑PN	Pn	00 26 00.9	+0.2
SNGZ				SN	Sn	00 26 20.1	-0.4
SNGZ	Shannon Statio	1.08	132	Pn	Pn	00 26 00.9	+0.2
SNGZ				Sn	Sn	00 26 20.1	-0.4
NMHZ	Naumai	1.10	159	⇑PN	Pn	00 26 01.4	+0.6
NMHZ	Naumai	1.10	159	Pn	Pn	00 26 01.4	+0.6
BKZ	Black Stump Fm	1.11	173	⇑PN	Pn	00 26 00.6	-0.3
BKZ				AML	AML	00 26 21.6	
BKZ				AML	AML	00 26 21.7	
BKZ	Black Stump Fm	1.11	173	Pn	Pn	00 26 00.6	-0.3
KRVZ	Karewarewa	1.15	207	⇑PN	Pn	00 26 01.3	-0.1
KRVZ	Karewarewa	1.15	207	Pn	Pn	00 26 01.3	-0.1
WTVZ	West Tongariro	1.19	208	⇑PN	Pn	00 26 01.6	-0.1
WTVZ	West Tongariro	1.19	208	Pn	Pn	00 26 01.6	-0.1
OTVZ	Oturere	1.20	205	PN	Pn	00 26 02.1	+0.2
OTVZ	Oturere

MXZ	Matakaoa Point	1.66	73	Pn	Pn	00 26 06.3	0.0
WMGZ	Waiomatatini S	1.68	82	⇑PN	Pn	00 26 06.4	-0.2
WMGZ	Waiomatatini S	1.68	82	Pn	Pn	00 26 06.4	-0.2
CKHZ	Cape Kidnapper	1.70	160	⇑PN	Pn	00 26 06.8	+0.1
CKHZ	Cape Kidnapper	1.70	160	Pn	Pn	00 26 06.8	+0.1
KAHZ	Kahuranaki	1.78	166	⇑PN	Pn	00 26 07.6	-0.1
KAHZ	Kahuranaki	1.78	166	Pn	Pn	00 26 07.6	-0.1
PNHZ	Pukenui	1.84	183	PN	Pn	00 26 07.6	-0.8
PNHZ	Pukenui	1.84	183	Pn	Pn	00 26 07.6	-0.8
WAZ	Wanganui	1.98	211	PN	Pn	00 26 09.4	-0.5
WAZ	Wanganui	1.98	211	Pn	Pn	00 26 09.4	-0.5
WPHZ	Waipukurau	2.00	177	PN	Pn	00 26 09.3	-0.8
WPHZ	Waipukurau	2.00	177	Pn	Pn	00 26 09.3	-0.8
TSZ	Takapari Road	2.01	188	⇑PN	Pn	00 26 09.2	-1.0
TSZ				AML	AML	00 28 36.2	
TSZ				AML	AML	00 28 36.6	
TSZ	Takapari Road	2.01	188	Pn	Pn	00 26 09.2	-1.0
PXZ	Pawanui	2.01	168	⇑PN	Pn	00 26 09.6	-0.6
PXZ				AML	AML	00 26 39.0	
PXZ				AML	AML	00 26 40.3	
PXZ	Pawanui	2.01	168	Pn	Pn	00 26 09.6	-0.6
NEZ	North Egmont	2.11	235	PN	Pn	00 26 10.6	-0.9
NEZ	North Egmont	2.11	235	Pn	Pn	00 26 10.6	-0.9
PRHZ	Porangahau	2.21	173	⇑PN	Pn	00 26 11.7	-0.9
PRHZ	Porangahau	2.21	173	Pn	Pn	00 26 11.7	-0.9
DVHZ	Dannevirke	2.23	183	PN	Pn	00 26 11.5	-1.3
DVHZ	Dannevirke	2.23	183	Pn	Pn	00 26 11.5	-1.3
POWZ	Post Office Ro	2.36	190	PN	Pn	00 26 12.9	-1.5
POWZ	Post Office Ro	2.36	190	Pn	Pn	00 26 12.9	-1.5
ANWZ	Angora Road	2.39	177	⇑PN	Pn	00 26 13.8	-1.0
PRWZ	Pori Road	2.50	186	⇑PN	Pn	00 26 14.8	-1.3
PRWZ	Pori Road	2.50	186	Pn	Pn	00 26 14.8	-1.3
BFZ	Birch Farm	2.61	181	⇑PN	Pn	00 26 15.8	-1.6
BFZ				AML	AML	00 26 48.2	
BFZ				AML	AML	00 26 49.7	
BFZ	Birch Farm	2.61	181	Pn	Pn	00 26 15.8	-1.6
MRZ	Mangatainoka R	2.65	192	⇑PN	Pn	00 26 16.0	-1.9
MRZ	Mangatainoka R	2.65	192	Pn	Pn	00 26 16.0	-1.9
TIWZ	Tintock	2.72	187	⇑PN	Pn	00 26 17.1	-1.7
TIWZ				AML	AML	00 26 18.3	
TIWZ				AML	AML	00 26 50.5	
TIWZ	Tintock	2.72	187	Pn	Pn	00 26 17.1	-1.7
CPWZ	Castlepoint	2.84	182	PN	Pn	00 26 19.1	-1.2
CPWZ	Castlepoint	2.84	182	Pn	Pn	00 26 19.1	-1.2
OGWZ	Otaki Gorge	2.88	197	PN	Pn	00 26 18.7	-2.1
OGWZ	Otaki Gorge	2.88	197	Pn	Pn	00 26 18.7	-2.1
HOWZ	Holdsworth Sta	2.89	192	⇑PN	Pn	00 26 18.6	-2.3
HOWZ	Holdsworth Sta	2.89	192	Pn	Pn	00 26 18.6	-2.3
KIW	Kapiti Island	2.99	201	PN	Pn	00 26 19.7	-2.5
KIW				AML	AML	00 26 56.4	
KIW				AML	AML	00 26 57.8	
KIW	Kapiti Island	2.99	201	Pn	Pn	00 26 19.7	-2.5
TMWZ	Te Maipa	3.05	186	PN	Pn	00 26 20.6	-2.3
TMWZ	Te Maipa	3.05	186	Pn	Pn	00 26 20.6	-2.3
MTW	Mount Morrison	3.15	191	⇑PN	Pn	00 26 21.4	-2.7
MTW				AML	AML	00 26 59.6	
MTW				AML	AML	00 26 60.0	
MTW	Mount Morrison	3.15	191	Pn	Pn	00 26 21.4	-2.7
CAW	Cannon Point	3.18	197	PN	Pn	00 26 22.0	-2.6
CAW				AML	AML	00 27 01.1	
CAW				AML	AML	00 27 02.5	
CAW	Cannon Point	3.18	197	Pn	Pn	00 26 22.0	-2.5
DUWZ	D'Urville Isla	3.30	213	PN	Pn	00 26 23.5	-2.6
DUWZ	D'Urville Isla	3.30	213	Pn	Pn	00 26 23.5	-2.6
TRWZ	Traveller	3.36	188	PN	Pn	00 26 24.1	-2.7
TRWZ				AML	AML	00 27 04.7	
TRWZ				AML	AML	00 27 05.5	
TRWZ	Traveller	3.36	188	Pn	Pn	00 26 24.1	-2.7
PAWZ	Paruwai Farm	3.38	191	⇑PN	Pn	00 26 24.1	-2.9
PAWZ				AML	AML	00 27 04.4	
PAWZ				AML	AML	00 27 04.6	
PAWZ	Paruwai Farm	3.38	191	Pn	Pn	00 26 24.1	-2.9
WEL	Wellington	3.42	200	PN	Pn	00 26 25.1	-2.6
MSWZ	Moikau Station	3.44	193	⇑PN	Pn	00 26 24.8	-3.1
MSWZ				AML	AML	00 27 05.6	
MSWZ				AML	AML	00 27 05.8	
MSWZ	Moikau Station	3.44	193	Pn	Pn	00 26 24.8	-3.1
TCW	Tory Channel	3.51	206	PN	Pn	00 26 25.9	-2.8
TCW				AML	AML	00 27 09.0	
TCW				AML	AML	00 27 09.0	
TCW	Tory Channel	3.51	206	Pn	Pn	00 26 25.9	-2.8
BHW	Baring Head	3.52	198	⇑PN	Pn	00 26 25.6	-3.1
BHW				AML	AML	00 27 07.8	
BHW	Baring Head	3.52	198	Pn	Pn	00 26 25.6	-3.1
PLWZ	Palliser	3.59	193	⇑PN	Pn	00 26 26.5	-3.3
PLWZ	Palliser	3.59	193	Pn	Pn	00 26 26.5	-3.3
TUWZ	Tuamarina	3.82	208	PN	Pn	00 26 29.6	-3.1
TUWZ				AML	AML	00 27 15.0	
TUWZ				AML	AML	00 27 15.1	
TUWZ	Tuamarina	3.82	208	Pn	Pn	00 26 29.6	-3.1
NNZ	Nelson	3.87	215	PN	Pn	00 26 30.2	-3.2
NNZ				SN	Sn	00 27 14.7	-4.4
NNZ	Nelson	3.87	215	Pn	Pn	00 26 30.2	-3.2
QRZ	Quartz Range	4.02	226	PN	Pn	00 26 31.9	-3.4
QRZ	Quartz Range	4.02	226	Pn	Pn	00 26 31.9	-3.4
BSWZ	Blackbirch Sta	4.09	206	PN	Pn	00 26 33.5	-2.8
BSWZ	Blackbirch Sta	4.09	206	Pn	Pn	00 26 33.5	-2.8
THZ	Tophouse	4.52	214	Pn	Pn	00 26 38.5	-3.5
KHZ	Kahutara	4.83	205	PN	Pn	00 26 42.0	-3.9
KHZ	Kahutara	4.83	205	*e*PN	Pn	00 26 42.4	-3.6
DSZ	Denniston Nort	5.05	222	SN	Sn	00 27 40.8	-5.9
LTZ	Lake Taylor	5.63	212	*e*PN	Pn	00 26 51.5	-5.0
MQZ	McQueen's Vall	6.28	205	*e*PN	Pn	00 26 59.1	-6.0
CTZ	Chatham Island	7.79	139	*e*PN	Pn	00 27 24.8	-0.5
ODZ	Otahua Downs	8.16	210	*e*PN	Pn	00 27 24.7	-5.4

*DDA **23** 00:29:48.0, 39.08N×29.01E, h7km, Md2.6*
*ISK **23** 00:29:48.0, 39.08N×29.03E, h5km, MD2.8*
*CSEM **23** 00:29:48.3±0.1, 39.09N×29.03E, h2km, MD2.6, Error ellipse: s-maj=1.6km s-min=1.5km az=63.0*
ISC 23 00:29:48.5±1.1, 39.09N±0.02×29.03E±0.02, h3km±13km, n42, σ0.28/54, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.25	259	P	Pg	00 29 53.3	0.0
DEMI				S	Sg	00 29 57.0	+0.5
DEMI	Demirci	0.25	259	*i* P	Pg	00 29 53.3	0.0
DEMI				*i* S	Sg	00 29 57.0	+0.5
GDZ	Gediz	0.35	90	P	Pg	00 29 55.4	0.0
GDZ				S	Sg	00 30 00.1	+0.1
GDZ	Gediz	0.35	90	*i* P	Pg	00 29 55.4	0.0
GDZ				*i* S	Sg	00 30 00.1	+0.1
TVSB	Tavsanli	0.49	43	*e*PG	Pg	00 29 57.4	-0.6
TVSB	Tavsanli	0.49	43	*e*Pg	Pg	00 29 57.4	-0.6
KULA	Kula-Manisa	0.64	207	*e*PG	Pg	00 30 00.7	-0.2
KULA	Kula-Manisa	0.64	207	*e*Pg	Pg	00 30 00.7	-0.2
DURS	Dursunbey	0.67	320	P	Pg	00 30 00.8	-0.5
DURS				S	Sg	00 30 10.1	+0.1
DURS	Dursunbey	0.67	320	*i* P	Pg	00 30 00.8	-0.5
DURS				*i* S	Sg	00 30 10.1	+0.1
MANT	Manisa	0.70	212	P	Pg	00 30 01.7	-0.3
MANT				S	Sg	00 30 10.5	-0.7
MANT	Manisa	0.70	212	*i* P	Pg	00 30 01.7	-0.3
MANT				*i* S	Sg	00 30 10.5	-0.7
KHAL	Karahalli	0.81	153	P	Pg	00 30 04.0	0.0
KHAL				S	Sg	00 30 14.8	+0.4
KHAL	Karahalli	0.81	153	*i* P	Pg	00 30 04.0	0.0
KHAL				*i* S	Sg	00 30 14.8	+0.4
KHL	Karahalli	0.86	153	*e*PG	Pg	00 30 04.7	-0.3
KHL	Karahalli	0.86	153	*e*Pg	Pg	00 30 04.7	-0.3
AKS	Akhisar	0.97	258	*e*PG	Pg	00 30 06.9	-0.2
BALB	Balikesir	1.04	302	*e*PG	Pg	00 30 08.8	+0.2
BALB				*e*SG	Sb	00 30 23.5	+0.1
BALB	Balikesir	1.04	302	*e*Pg	Pg	00 30 08.8	+0.2
BALB				*e*Sg	Sb	00 30 23.5	+0.1
BALY	Balya	1.27	301	P	Pg	00 30 12.8	0.0
BALY	Balya	1.27	301	*i* P	Pg	00 30 12.8	0.0
CAVI	Cavuskoy	1.27	29	*e*PN	Pg	00 30 13.0	0.0
CAVI	Cavuskoy	1.27	29	*e*Pn	Pg	00 30 13.0	0.0
KCTX	Karacabey (Bur	1.28	336	*e*PN	Pg	00 30 13.0	-0.1
IZI	Iznik	1.29	15	*e*PN	Pb	00 30 13.5	-0.1
IZI	Iznik	1.29	15	*e*Pn	Pb	00 30 13.5	-0.1
GONE	Gonen-Balikesi	1.41	313	*e*PN	Pn	00 30 15.1	0.0
GONE	Gonen-Balikesi	1.41	313	*e*Pn	Pn	00 30 15.1	0.0
ADVT	Abdulvahap	1.45	22	*e*PN	Pn	00 30 15.6	0.0
ADVT	Abdulvahap	1.45	22	*e*Pn	Pn	00 30 15.6	0.0
ARMT	Armutlu	1.48	355	*e*PN	Pn	00 30 16.2	+0.1
EDC	Edincik	1.54	325	*e*PN	Pn	00 30 16.9	0.0
EDC	Edincik	1.54	325	*e*Pn	Pn	00 30 17.0	0.0
GULT	Gulveren	1.76	40	*e*PN	Pn	00 30 20.1	0.0
GULT	Gulveren	1.76	40	*e*Pn	Pn	00 30 20.1	0.0
SVRH	Sivrihisar-ESK	1.97	79	*e*PN	Pn	00 30 23.0	+0.1
SVRH	Sivrihisar-ESK	1.97	79	*e*Pn	Pn	00 30 23.0	+0.1
ISK	Istanbul-Kandi	1.97	1	*e*PN	Pn	00 30 22.8	-0.1
ISK	Istanbul-Kandi	1.97	1	*e*Pn	Pn	00 30 22.8	-0.1
SILT	Sile	2.11	13	*e*PN	Pn	00 30 25.1	+0.3
MDUB	Mudurnu	2.17	50	*e*PN	Pn	00 30 25.9	+0.2
MDUB	Mudurnu	2.17	50	*e*Pn	Pn	00 30 25.9	+0.2

IDC 23 00:31:14.1±2.5, 51.89N×173.77E, h0km, mb3.5/8, mb1 3.8/8, mb1mx3.5/45, mbtmp3.5/8, Error ellipse: s-maj=68.7km s-min=25.0km az=6.0, Near Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ILAR	Eielson Array	23.87	42	P	P	00 36 30.1	+1.3
	0.5nm,0.6s,baz=254,slow=7.7,SNR=7.1						
H11N2	WAKE ISLAND Hy	32.54	192	T	T	01 12 44.4	
	baz=8.2,slow=76,SNR=8.6						
H11N3	WAKE ISLAND Hy	32.55	192	T	T	01 12 51.2	
	baz=8.2,slow=76,SNR=7.4						
H11N1	WAKE ISLAND Hy	32.56	192	T	T	01 12 46.6	
	baz=8.2,slow=76,SNR=10						
H11S1	WAKE ISLAND Hy	33.77	192	T	T	01 14 20.4	
	baz=7.9,slow=76,SNR=7.8						
H11S3	WAKE ISLAND Hy	33.79	192	T	T	01 14 30.4	
	baz=7.9,slow=76,SNR=6.5						
H11S2	WAKE ISLAND Hy	33.79	192	T	T	01 14 16.4	
	baz=7.9,slow=76,SNR=5.4						
YKA	Yellowknife Ar	38.21	45	P	P	00 38 34.5	-0.6
	0.1nm,0.5s,baz=286,slow=7.9,SNR=3.4						
PDAR	Pinedale Array	50.49	68	P	P	00 40 13.8	-0.1
	0.3nm,0.8s,baz=311,slow=4.4,SNR=3.3						
MKAR	Makanchi Array	56.00	304	P	P	00 40 54.3	+0.1
	0.3nm,0.5s,baz=54,slow=6.3,SNR=5.5						
TXAR	Lajitas Array	63.09	76	P	P	00 41 43.2	-0.2
	0.2nm,0.3s,baz=285,slow=4.6,SNR=4.8						
NOA	NORSAR Array B	66.56	351	P	P	00 42 04.8	-0.7
	0.5nm,0.5s,baz=22,slow=7.8,SNR=2.4						
HFS	Hagfors	67.18	349	P	P	00 42 09.0	-0.4
	2.4nm,0.9s,baz=46,slow=7.0,SNR=5.1						
BRTR	Keskin Array B	82.38	330	P	P	00 43 38.9	+0.9
	0.4nm,0.6s,baz=34,slow=2.9,SNR=4.1						

*ISCJB **23** 00:35:58.6±0.5, 39.12N±0.03×29.04E±0.04, h11km±5km, Error ellipse: s-maj=5.9km s-min=4.7km az=145.1*
*DDA **23** 00:35:58.6, 39.05N×29.04E, h7km, Md2.4*
*ISK **23** 00:35:58.7, 39.17N×29.04E, h5km, MD2.7*
*CSEM **23** 00:35:58.8±0.1, 39.14N×29.03E, h5km, MD2.4, Error ellipse: s-maj=3.5km s-min=2.8km az=120.0*
ISC 23 00:35:58.5±0.9, 39.09N±0.03×29.05E±0.03, h15km±9km, n25, σ0.63/34, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.26	259	P	Pg	00 36 04.1	-0.1
DEMI				S	Sg	00 36 07.8	-0.3
DEMI	Demirci	0.26	259	*i* P	Pg	00 36 04.1	-0.1
DEMI				*i* S	Sg	00 36 07.8	-0.3
GDZ	Gediz	0.34	91	P	Pg	00 36 05.7	+0.2
GDZ				S	Sg	00 36 10.9	+0.6
GDZ	Gediz	0.34	91	*i* P	Pg	00 36 05.7	+0.2
GDZ				*i* S	Sg	00 36 10.9	+0.6
TVSB	Tavsanli	0.48	42	*e*PG	Pg	00 36 07.9	-0.2
TVSB				*e*SG	Sg	00 36 13.5	-1.0
TVSB	Tavsanli	0.48	42	*e*Pg	Pg	00 36 07.9	-0.2
TVSB				*e*Sg	Sg	00 36 13.5	-1.0
KULA	Kula-Manisa	0.65	208	*e*PG	Pn	00 36 13.1	-0.3
KULA	Kula-Manisa	0.65	208	*e*Pg	Pn	00 36 13.1	-0.3
MANT	Manisa	0.71	213	P	Pg	00 36 12.9	+0.4
MANT				S	Sg	00 36 22.1	+0.1
MANT	Manisa	0.71	213	*i* P	Pg	00 36 12.8	+0.4
MANT				*i* S	Sg	00 36 22.1	+0.1
KHAL	Karahalli	0.80	154	*i* P	Pg	00 36 11.6	-2.5
KHAL				*i* S	Sg	00 36 25.1	+0.5
KHL	Karahalli	0.85	154	*e*PG	Pn	00 36 17.0	+0.9
KHL	Karahalli	0.85	154	*e*Pg	Pn	00 36 17.0	+0.9
AKS	Akhisar	0.99	258	*e*PG	Pn	00 36 18.1	+0.2
AKS	Akhisar	0.99	258	*e*Pg	Pn	00 36 18.1	+0.2
BALB	Balikesir	1.06	301	*e*PG	Pb	00 36 18.6	+0.1
BALB	Balikesir	1.06	301	*e*Pg	Pb	00 36 18.6	+0.1
MDNY	Mudanya-Bursa	1.28	354	*e*PN	Pn	00 36 22.1	+0.2
MDNY	Mudanya-Bursa	1.28	354	*e*Pn	Pn	00 36 22.1	+0.2
IZI	Iznik	1.28	15	*e*PN	Pg	00 36 23.1	-0.1
IZI	Iznik	1.28	15	*e*Pn	Pg	00 36 23.2	-0.1
KCTX	Karacabey (Bur	1.29	336	*e*PN	Pb	00 36 22.4	-0.1
KCTX	Karacabey (Bur	1.29	336	*e*Pn	Pb	00 36 22.4	-0.1
ARMT	Armutlu	1.48	354	*e*PN	Pb	00 36 25.8	+0.1
ARMT	Armutlu	1.48	354	*e*Pn	Pb	00 36 25.8	+0.1

IDC 23 00:40:25.1±2.8, 6.30S×147.48E, h0km, mb3.7/3, mb1 3.9/5, mb1mx3.7/23, mbtmp3.7/5, ML3.7/1, MS3.4/1, Ms1 3.4/1, ms1mx2.5/28, Error ellipse: s-maj=70.3km s-min=27.5km az=97.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	Port Moresby	3.10	186	Pn	Pn	00 41 15.4	+0.1
	8.4nm,0.3s,baz=327,slow=7.8,SNR=15						
PMG				Sn	Sb	00 41 57.9	-1.7
	9.9nm,0.3s,baz=23,slow=17,SNR=6.8						
WRA	Warramunga Arr	18.62	222	P	P	00 44 43.8	-0.6
	0.3nm,0.3s,baz=46,slow=12,SNR=8.0						
ASAR	Alice Springs	21.64	216	P	P	00 45 16.9	-0.4
	0.8nm,0.4s,baz=52,slow=9.2,SNR=8.8						
ASAR				LR	LR	00 54 56.9	
	comp=Z,90nm,18.0s,baz=44,slow=40						
FITZ	Fitzroy Crossi	24.32	239	P	P	00 45 45.4	+0.7
	3.2nm,0.3s,baz=52,slow=8.2,SNR=34						
MKAR	Makanchi Array	78.03	320	P	P	00 52 25.6	-0.1
	0.1nm,0.3s,baz=106,slow=7.4,SNR=2.9						

*ISCJB **23** 00:42:14.6±0.5, 39.10N±0.03×29.04E±0.04, h9km, Error ellipse: s-maj=5.1km s-min=4.1km az=147.6*
*DDA **23** 00:42:14.6, 39.08N×29.05E, h7km, Md2.6*
*ISK **23** 00:42:14.5, 39.13N×29.02E, h9km, MD2.6*
*CSEM **23** 00:42:14.8±0.1, 39.11N×29.04E, h8km, MD2.6, Error ellipse: s-maj=3.2km s-min=2.6km az=120.0*
ISC 23 00:42:14.7±0.9, 39.11N±0.03×29.04E±0.03, h9km, n30, σ0.21/38, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.26	256	P	Pg	00 42 20.0	0.0
DEMI				S	Sg	00 42 23.9	+0.3
DEMI	Demirci	0.26	256	*i* P	Pg	00 42 20.1	0.0
DEMI				*i* S	Sg	00 42 23.9	+0.3
GDZ	Gediz	0.34	93	P	Pg	00 42 21.4	-0.1
GDZ				S	Sg	00 42 26.4	+0.3
GDZ	Gediz	0.34	93	*i* P	Pg	00 42 21.4	-0.1
GDZ				*i* S	Sg	00 42 26.4	+0.3
TVSB	Tavsanli	0.47	43	*e*PG	Pg	00 42 23.7	-0.2
TVSB	Tavsanli	0.47	43	*e*Pg	Pg	00 42 23.7	-0.2
KULA	Kula-Manisa	0.66	207	*e*PG	Pg	00 42 27.5	0.0
KULA	Kula-Manisa	0.66	207	*e*Pg	Pg	00 42 27.5	0.0
DURS	Dursunbey	0.66	319	P	Pb	00 42 28.4	-0.1
DURS	Dursunbey	0.66	319	*i* P	Pb	00 42 28.4	-0.1
MANT	Manisa	0.72	212	P	Pg	00 42 28.5	-0.2
MANT				S	Sg	00 42 38.2	+0.1
MANT	Manisa	0.72	212	*i* P	Pg	00 42 28.5	-0.2
MANT				*i* S	Sg	00 42 38.2	+0.1
KHL	Karahalli	0.87	154	*e*PG	Pn	00 42 32.8	-0.4
KHL	Karahalli	0.87	154	*e*Pg	Pn	00 42 32.8	-0.4
AKS	Akhisar	0.98	257	*e*PG	Pb	00 42 34.0	+0.1
AKS	Akhisar	0.98	257	*e*Pg	Pb	00 42 34.0	+0.1
BALB	Balikesir	1.05	301	*e*PG	Pg	00 42 34.6	-0.2
BALB	Balikesir	1.05	301	*e*Pg	Pg	00 42 34.6	-0.2
MDNY	Mudanya-Bursa	1.27	355	*e*PN	Pn	00 42 38.5	-0.1
MDNY	Mudanya-Bursa	1.27	355	*e*Pn	Pn	00 42 38.5	-0.1
IZI	Iznik	1.27	15	*e*PN	Pg	00 42 39.0	-0.1
IZI	Iznik	1.27	15	*e*Pn	Pg	00 42 39.1	-0.1
KCTX	Karacabey (Bur	1.27	336	*e*PN	Pn	00 42 38.6	-0.1
KCTX				*e*SN	Sg	00 42 55.8	+0.1
KCTX	Karacabey (Bur	1.27	336	*e*Pn	Pn	00 42 38.6	-0.1
KCTX				*e*Sn	Sg	00 42 55.8	+0.1
ADVT	Abdulvahap	1.43	22	*e*PN	Pn	00 42 41.1	+0.3
ADVT	Abdulvahap	1.43	22	*e*Pn	Pn	00 42 41.1	+0.3
ARMT	Armutlu	1.47	355	*e*PN	Pb	00 42 42.0	-0.1
ARMT	Armutlu	1.47	355	*e*Pn	Pb	00 42 42.0	-0.1
GULT	Gulveren	1.75	40	*e*PN	Pn	00 42 45.6	+0.4
GULT	Gulveren	1.75	40	*e*Pn	Pn	00 42 45.6	+0.4

*ATH **23** 00:44:38.7, 38.08N×20.30E, h12km±1km, ML2.7/12, Error ellipse: s-maj=2.3km s-min=0.9km az=66.0*
*THE **23** 00:44:39.7, 38.09N×20.35E, h2km±1km, ML2.9/8, Error ellipse: s-maj=1.5km s-min=0.9km az=73.0*
*CSEM **23** 00:44:39.3±0.2, 38.08N×20.30E, h2km, ML2.9, Error ellipse: s-maj=4.9km s-min=3.1km az=43.0*
ISC 23 00:44:39.1±1.1, 38.08N±0.02×20.30E±0.03, h10km±8km, n119, σ0.86/152, Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VLS	Valsamata	0.25	66	P	Pg	00 44 44.4	+0.2
VLS				S	Sg	00 44 47.6	0.0
VLS	Valsamata	0.25	66	P	Pg	00 44 44.3	+0.1
VLS				S	Sg	00 44 47.6	0.0
KFL	Anninata	0.39	85	P	Pg	00 44 46.6	-0.1
KFL				S	Sg	00 44 50.7	-1.1
KFL	Anninata	0.39	85	P	Pg	00 44 46.7	-0.1
KFL				S	Sg	00 44 51.8	0.0
KFL	Anninata	0.39	85	P	Pg	00 44 46.7	-0.1
KFL				S	Sg	00 44 51.8	0.0
ZKS	Zakynthos	0.54	135	P	Pg	00 44 49.5	-0.1
ZKS				S	Sg	00 44 57.9	+1.2
ZKS	Zakynthos	0.54	135	P	Pg	00 44 49.5	-0.1
ZKS				S	Sg	00 44 57.2	+0.5
ZKS	Zakynthos	0.54	135	P	Pg	00 44 49.9	+0.3
ZKS				S	Sg	00 44 57.2	+0.5
ZKS				AML	AML	00 45 01.2	
	comp=N,7257μm,0.3s						
ZKS				AML	AML	00 45 04.8	
	comp=E,6388μm,0.4s						
VTN	Vitineika	0.72	103	P	Pg	00 44 52.9	-0.1
VTN				S	Sg	00 45 02.3	-0.1
VTN	Vitineika	0.72	103	P	Pg	00 44 53.2	+0.2
VTN				S	Sg	00 45 02.3	-0.1
LKD2	Lefkada island	0.76	21	P	Pg	00 44 53.3	-0.6
LKD2	Lefkada island	0.76	21	P	Pg	00 44 53.6	-0.3
LKD2				S	Sg	00 45 03.9	0.0
LKD2	Lefkada island	0.76	21	P	Pg	00 44 53.6	-0.3
LKD2				S	Sg	00 45 03.9	0.0
LKD2				AML	AML	00 45 10.6	
	comp=E,966μm,0.4s						
LKD2				AML	AML	00 45 11.6	
	comp=N,1229μm,0.2s						
AXS	Araxos	0.86	82	P	Pg	00 44 54.6	-1.0
AXS				S	Sg	00 45 06.8	0.0
AXS	Araxos	0.86	82	P	Pg	00 44 54.8	-0.8
AXS				S	Sg	00 45 06.8	0.0
AXS	Araxos	0.86	82	P	Pg	00 44 54.8	-0.8
PDO	Prodromos	0.87	53	P	Pg	00 44 55.0	-0.8
PDO	Prodromos	0.87	53	P	Pg	00 44 55.0	-0.8
PDO				S	Sb	00 45 07.7	-0.3
PDO	Prodromos	0.87	53	P	Pg	00 44 55.0	-0.8
PDO				S	Sb	00 45 07.7	-0.3
PDO				AML	AML	00 45 13.5	
	comp=E,2275μm,0.5s						
PDO				AML	AML	00 45 15.1	
	comp=N,2375μm,0.3s						
RLS	Riolos of Patr	0.92	91	P	Pg	00 44 55.9	-0.9
RLS				S	Sb	00 45 09.7	+0.2
RLS	Riolos of Patr	0.92	91	P	Pg	00 44 56.8	0.0
RLS				S	Sb	00 45 09.7	+0.2
RLS	Riolos of Patr	0.92	91	AML	AML	00 45 13.6	
	comp=E,440μm,0.3s						
RLS				AML	AML	00 45 15.1	
	comp=N,463μm,0.3s						
PVO	Paravola	1.10	60	P	Pg	00 44 59.5	-0.8
PVO				S	Sb	00 45 15.3	+0.5
PVO	Paravola	1.10	60	P	Pg	00 44 59.7	-0.6
PVO				S	Sb	00 45 15.3	+0.5
PVO	Paravola	1.10	60	P	Pg	00 44 59.7	-0.6
DRO	Drossia	1.12	96	P	Pg	00 44 59.7	-0.9
DRO				S	Sb	00 45 15.9	+0.6

DSF	**Desfina**	**1.79**	**79**	P	**Pb**	**00 45 11.7**	**-0.2**
DSF	**Desfina**	**1.79**	**79**	P	**Pb**	**00 45 11.7**	**-0.2**
VLX	**Vlachokerasia**	**1.79**	**113**	P	**Pn**	**00 45 11.2**	**+0.9**
VLX	**Vlachokerasia**	**1.79**	**113**	P	**Pn**	**00 45 11.2**	**+0.9**
AGG	**Agios Georgios**	**1.85**	**59**	P	**Pb**	**00 45 13.3**	**+0.3**
AGG	**Agios Georgios**	**1.85**	**59**	P	**Pb**	**00 45 13.3**	**+0.3**
THL	**Klokotos Trika**	**2.00**	**42**	P	**Pb**	**00 45 15.6**	**0.0**
KPRO	**Kipourio**	**2.05**	**23**	P	**Pn**	**00 45 14.0**	**+0.2**
KPRO	**Kipourio**	**2.05**	**23**	P	**Pn**	**00 45 14.0**	**+0.2**
KPRO	**Kipourio**	**2.05**	**23**	P	**Pb**	**00 45 15.9**	**-0.6**
LTK	**Loutraki**	**2.11**	**91**	P	**Pn**	**00 45 14.2**	**-0.3**
LTK	**Loutraki**	**2.11**	**91**	P	**Pn**	**00 45 14.2**	**-0.3**
LKR	**Lokris**	**2.20**	**74**	P	**Pn**	**00 45 16.6**	**+0.9**
LKR	**Lokris**	**2.20**	**74**	P	**Pn**	**00 45 16.6**	**+0.9**
PENT	**Pentalofos**	**2.21**	**17**	P	**Pb**	**00 45 18.7**	**-0.6**
PENT	**Pentalofos**	**2.21**	**17**	P	**Pb**	**00 45 18.7**	**-0.6**
KRND	**KRANIDI**	**2.36**	**106**	P	**Pb**	**00 45 21.0**	**-0.8**
KRND	**KRANIDI**	**2.36**	**106**	P	**Pb**	**00 45 21.0**	**-0.8**
NEST	**Nestorio**	**2.41**	**14**	P	**Pb**	**00 45 21.3**	**-1.3**
NEST	**Nestorio**	**2.41**	**14**	P	**Pb**	**00 45 21.3**	**-1.3**
SMIA	**Simia**	**2.42**	**70**	P	**Pn**	**00 45 20.2**	**+1.4**
SMIA	**Simia**	**2.42**	**70**	P	**Pn**	**00 45 20.2**	**+1.4**
VLI	**Veliai**	**2.50**	**122**	P	**Pb**	**00 45 22.4**	**-1.7**
VLI	**Veliai**	**2.50**	**122**	P	**Pb**	**00 45 22.4**	**-1.7**
KZN	**Kozani**	**2.50**	**27**	P	**Pb**	**00 45 22.4**	**-1.8**
NEO	**Neokhori**	**2.60**	**61**	P	**Pn**	**00 45 23.1**	**+1.9**
NEO	**Neokhori**	**2.60**	**61**	P	**Pn**	**00 45 23.1**	**+1.9**
XOR	**Xorichti**	**2.60**	**59**	P	**Pn**	**00 45 22.3**	**+1.0**
XOR	**Xorichti**	**2.60**	**59**	P	**Pn**	**00 45 22.3**	**+1.0**
XOR	**Xorichti**	**2.60**	**59**	P	**Pn**	**00 45 22.0**	**+0.7**
LIT	**Litokhoron**	**2.64**	**39**	P	**Pn**	**00 45 22.6**	**+0.7**
LIT	**Litokhoron**	**2.64**	**39**	P	**Pn**	**00 45 22.6**	**+0.7**
VLY	**Voula,Athens**	**2.77**	**94**	P	**Pn**	**00 45 25.4**	**+1.8**
VLY	**Voula,Athens**	**2.77**	**94**	P	**Pn**	**00 45 25.4**	**+1.8**
FNA	**Florina**	**2.83**	**17**	P	**Pn**	**00 45 25.4**	**+1.0**
FNA	**Florina**	**2.83**	**17**	P	**Pn**	**00 45 25.4**	**+1.0**
KYTH	**Kithira**	**2.84**	**129**	P	**Pn**	**00 45 26.8**	**+2.2**
KYTH	**Kithira**	**2.84**	**129**	P	**Pn**	**00 45 26.8**	**+2.2**
TIP	**Timpagrande**	**2.98**	**293**	P	**Pn**	**00 45 27.1**	**+0.5**
TIP	**Timpagrande**	**2.98**	**293**	P	**Pn**	**00 45 27.1**	**+0.5**
AOS	**Alonnisos**	**3.01**	**68**	P	**Pn**	**00 45 27.1**	**+0.2**
AOS	**Alonnisos**	**3.01**	**68**	P	**Pn**	**00 45 27.1**	**+0.2**
BIA	**Bitola**	**3.04**	**15**	*e*Pn	**Pn**	**00 45 29.6**	**+2.3**
OHR	**Ohrid**	**3.06**	**7**	*e*Pn	**Pg**	**00 45 37.7**	**0.0**
GRG	**Griva**	**3.30**	**29**	P	**Pn**	**00 45 32.5**	**+1.6**
GRG	**Griva**	**3.30**	**29**	P	**Pn**	**00 45 32.5**	**+1.6**
NOCI	**Noci**	**3.69**	**318**	P	**Pn**	**00 45 36.9**	**+0.7**
NOCI	**Noci**	**3.69**	**318**	P	**Pn**	**00 45 36.9**	**+0.7**
UDBI	**Udbina**	**7.29**	**334**	*e*Pn	**Pn**	**00 46 26.8**	**+1.0**
UDBI				Sn	**Sn**	**00 47 46.8**	**-1.8**
UDBI	**Udbina**	**7.29**	**334**	*e*Pn	**Pn**	**00 46 26.7**	**+1.0**
NVLJ	**Novalja**	**7.66**	**330**	*e*Pn	**Pn**	**00 46 30.8**	**0.0**
NVLJ				Sn	**Sn**	**00 47 54.6**	**-2.8**
NVLJ	**Novalja**	**7.66**	**330**	*e*Pn	**Pn**	**00 46 30.7**	**0.0**

*ISCJB **23** 00:47:07.8±0.5, 39.°09N±0.°03×29.°05E±0.°04, h3km±7km, Error ellipse: s-maj=5.9km s-min=4.5km az=154.5*
*CSEM **23** 00:47:07.9±0.1, 39.°09N×29.°05E, h4km±1km, MD2.6, Error ellipse: s-maj=2.2km s-min=2.0km az=130.0*
*ISK **23** 00:47:07.8, 39.°10N×29.°09E, h5km, MD2.8*
*DDA **23** 00:47:07.8, 39.°07N×29.°05E, h7km, Md2.6*
ISC 23 00:47:08.1±1.0, 39.°09N±0.°03×29.°06E±0.°02, h7km±11km, n36, σ0.34/46, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**260**	P	**Pg**	**00 47 13.8**	**+0.3**
DEMI				S	**Sg**	**00 47 17.0**	**-0.2**
DEMI	**Demirci**	**0.27**	**260**	*i* P	**Pg**	**00 47 13.8**	**+0.3**
DEMI				*i* S	**Sg**	**00 47 16.9**	**-0.2**
GDZ	**Gediz**	**0.33**	**90**	P	**Pg**	**00 47 14.6**	**-0.1**
GDZ				S	**Sg**	**00 47 19.1**	**+0.1**
GDZ	**Gediz**	**0.33**	**90**	*i* P	**Pg**	**00 47 14.6**	**-0.1**
GDZ				*i* S	**Sg**	**00 47 19.1**	**+0.1**
TVSB	**Tavsanli**	**0.48**	**41**	*e*PG	**Pg**	**00 47 17.1**	**-0.3**
TVSB				*e*SG	**Sg**	**00 47 23.6**	**-0.1**
TVSB	**Tavsanli**	**0.48**	**41**	*e*Pg	**Pg**	**00 47 17.1**	**-0.3**
TVSB				*e*Sg	**Sg**	**00 47 23.6**	**-0.1**
KULA	**Kula-Manisa**	**0.65**	**209**	*e*PG	**Pg**	**00 47 20.5**	**-0.2**
KULA	**Kula-Manisa**	**0.65**	**209**	*e*Pg	**Pg**	**00 47 20.5**	**-0.2**
DURS	**Dursunbey**	**0.68**	**319**	P	**Pg**	**00 47 21.0**	**-0.3**
DURS	**Dursunbey**	**0.68**	**319**	*i* P	**Pg**	**00 47 21.0**	**-0.3**
MANT	**Manisa**	**0.71**	**213**	P	**Pg**	**00 47 21.5**	**-0.4**
MANT				S	**Sg**	**00 47 31.1**	**-0.1**
MANT	**Manisa**	**0.71**	**213**	*i* P	**Pg**	**00 47 21.5**	**-0.4**
MANT				*i* S	**Sg**	**00 47 31.1**	**-0.1**
KHAL	**Karahalli**	**0.79**	**155**	P	**Pg**	**00 47 23.5**	**+0.1**
KHAL				S	**Sb**	**00 47 34.7**	**-0.6**
KHAL	**Karahalli**	**0.79**	**155**	*i* P	**Pg**	**00 47 23.5**	**+0.1**
KHAL				*i* S	**Sb**	**00 47 34.7**	**-0.6**
KHL	**Karahalli**	**0.85**	**154**	*e*PG	**Pg**	**00 47 24.7**	**+0.3**
KHL	**Karahalli**	**0.85**	**154**	*e*Pg	**Pg**	**00 47 24.7**	**+0.3**
BALB	**Balikesir**	**1.07**	**301**	*e*PN	**Pb**	**00 47 28.9**	**0.0**
BALB	**Balikesir**	**1.07**	**301**	*e*Pn	**Pb**	**00 47 28.9**	**0.0**
MDNY	**Mudanya-Bursa**	**1.28**	**354**	*e*PN	**Pb**	**00 47 33.1**	**+0.5**
MDNY	**Mudanya-Bursa**	**1.28**	**354**	*e*Pn	**Pb**	**00 47 33.1**	**+0.5**
IZI	**Iznik**	**1.29**	**14**	*e*PN	**Pg**	**00 47 32.5**	**-0.3**
IZI	**Iznik**	**1.29**	**14**	*e*Pn	**Pg**	**00 47 32.6**	**-0.3**
KCTX	**Karacabey (Bur**	**1.29**	**335**	*e*PN	**Pn**	**00 47 32.8**	**+0.2**
KCTX	**Karacabey (Bur**	**1.29**	**335**	*e*Pn	**Pn**	**00 47 32.8**	**+0.2**
ADVT	**Abdulvahap**	**1.44**	**21**	*e*PN	**Pb**	**00 47 35.1**	**-0.1**
ADVT	**Abdulvahap**	**1.44**	**21**	*e*Pn	**Pb**	**00 47 35.2**	**-0.1**
ARMT	**Armutlu**	**1.48**	**354**	*e*PN	**Pn**	**00 47 35.7**	**+0.5**
ARMT	**Armutlu**	**1.48**	**354**	*e*Pn	**Pn**	**00 47 35.7**	**+0.5**
GULT	**Gulveren**	**1.75**	**39**	*e*PN	**Pn**	**00 47 39.1**	**+0.1**
GULT	**Gulveren**	**1.75**	**39**	*e*Pn	**Pn**	**00 47 39.1**	**+0.1**
SVRH	**Sivrihisar-ESK**	**1.95**	**79**	*e*PN	**Pn**	**00 47 41.9**	**+0.2**
SVRH	**Sivrihisar-ESK**	**1.95**	**79**	*e*Pn	**Pn**	**00 47 41.9**	**+0.2**
SILT	**Sile**	**2.11**	**12**	*e*PN	**Pn**	**00 47 44.7**	**+0.9**
SILT	**Sile**	**2.11**	**12**	*e*Pn	**Pn**	**00 47 44.7**	**+0.9**
MDUB	**Mudurnu**	**2.15**	**49**	*e*PN	**Pn**	**00 47 44.8**	**+0.3**
MDUB	**Mudurnu**	**2.15**	**49**	*e*Pn	**Pn**	**00 47 44.8**	**+0.3**

*ISCJB **23** 00:48:20.5±0.6, 38.°97N±0.°05×28.°91E±0.°06, h9km, Error ellipse: s-maj=7.8km s-min=4.9km az=138.9*
*CSEM **23** 00:48:20.4±0.3, 39.°02N×28.°86E, h1km±3km, MD2.6, Error ellipse: s-maj=8.5km s-min=5.3km az=140.0*
*DDA **23** 00:48:21.5, 38.°84N×29.°02E, h7km, Md2.6*
*ISK **23** 00:48:23.8, 39.°22N×29.°01E, h10km, MD2.6*
ISC 23 00:48:19.6±0.9, 38.°93N±0.°04×29.°00E±0.°04, h9km, n19, σ1.05/25, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**297**	P	**Pg**	**00 48 23.1**	**-1.5**
DEMI	**Demirci**	**0.25**	**297**	*i* P	**Pg**	**00 48 23.1**	**-1.5**
DEMI				*i* S	**Sb**	**00 48 32.6**	**+1.8**
GDZ	**Gediz**	**0.41**	**67**	P	**Pn**	**00 48 31.0**	**-0.7**
GDZ				S	**Sb**	**00 48 36.5**	**+1.1**
GDZ	**Gediz**	**0.41**	**67**	*i* P	**Pn**	**00 48 31.0**	**-0.7**
GDZ				*i* S	**Sb**	**00 48 36.5**	**+1.1**
KULA	**Kula-Manisa**	**0.49**	**213**	*e*PG	Pn	00 48 38.8	+5.9
MANT	**Manisa**	**0.56**	**219**	P	**Pg**	**00 48 31.2**	**+0.7**
MANT				S	**Sb**	**00 48 39.1**	**-0.7**
MANT	**Manisa**	**0.56**	**219**	*i* P	**Pg**	**00 48 31.2**	**+0.7**
MANT				*i* S	**Sb**	**00 48 39.1**	**-0.7**
TVSB	**Tavsanli**	**0.63**	**34**	*e*PG	**Pg**	**00 48 32.4**	**+0.6**
TVSB				*e*SG	**Sg**	**00 48 38.8**	**-1.3**
TVSB	**Tavsanli**	**0.63**	**34**	*e*Pg	**Pg**	**00 48 32.4**	**+0.6**
TVSB				*e*Sg	**Sg**	**00 48 38.8**	**-1.3**
BALB	**Balikesir**	**1.12**	**310**	*e*PG	**Pn**	**00 48 43.0**	**+1.5**
BALB	**Balikesir**	**1.12**	**310**	*e*Pg	**Pn**	**00 48 43.0**	**+1.5**
KCTX	**Karacabey (Bur**	**1.43**	**340**	*e*PN	**Pn**	**00 48 46.1**	**+0.5**
KCTX	**Karacabey (Bur**	**1.43**	**340**	*e*Pn	**Pn**	**00 48 46.1**	**+0.5**
MDNY	**Mudanya-Bursa**	**1.44**	**356**	*e*PN	**Pb**	**00 48 46.4**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.44**	**356**	*e*Pn	**Pb**	**00 48 46.4**	**-0.2**
ADVT	**Abdulvahap**	**1.61**	**20**	*e*PN	**Pb**	**00 48 49.0**	**-0.4**
ADVT	**Abdulvahap**	**1.61**	**20**	*e*Pn	**Pb**	**00 48 49.0**	**-0.4**
ARMT	**Armutlu**	**1.64**	**356**	*e*PN	**Pn**	**00 48 49.3**	**+0.7**
ARMT	**Armutlu**	**1.64**	**356**	*e*Pn	**Pn**	**00 48 49.3**	**+0.7**

*CSEM **23** 00:53:37.9±0.1, 33.°86N×35.°75E, h15km, ML3.2, Error ellipse: s-maj=3.5km s-min=2.2km az=103.0*
*ISCJB **23** 00:53:38.3±0.5, 33.°86N±0.°02×35.°74E±0.°04, h18km±5km, Error ellipse: s-maj=6.0km s-min=3.7km az=3.2*
*NSSC **23** 00:53:38.6±1.4, 33.°85N×35.°80E, h12km±7km, ML1.5*
*GRAL **23** 00:53:39.0±0.3, 33.°86N×35.°81E, h11km±3km, MD3.2*
ISC 23 00:53:37.8±0.9, 33.°86N±0.°02×35.°79E±0.°03, h19km±3km, n30, σ0.48/60, Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BHL	**Bhannes**	**0.12**	**290**	*e*P	**Pg**	**00 53 42.1**	**+0.1**
BHL				*e*S	**Sg**	**00 53 44.4**	**-0.5**
BHL	**Bhannes**	**0.12**	**290**	*e*P	**Pg**	**00 53 42.1**	**+0.1**
BHL				*e*S	**Sg**	**00 53 44.4**	**-0.5**
DQRL	**Deir Qamar**	**0.24**	**230**	*e*P	**Pg**	**00 53 43.9**	**+0.3**
DQRL				*e*S	**Sg**	**00 53 47.7**	**+0.1**
DQRL	**Deir Qamar**	**0.24**	**230**	*e*P	**Pg**	**00 53 43.9**	**+0.3**
DQRL				*e*S	**Sg**	**00 53 47.7**	**+0.1**
RCY	**Rachaya**	**0.37**	**175**	*e*P	**Pb**	**00 53 45.8**	**0.0**
RCY				*e*S	**Sg**	**00 53 51.0**	**0.0**
HWQ	**Hawqa**	**0.43**	**17**	*e*P	**Pb**	**00 53 47.0**	**0.0**
HWQ				*e*S	**Sg**	**00 53 53.0**	**+0.1**
HWQ	**Hawqa**	**0.43**	**17**	*e*P	**Pb**	**00 53 47.0**	**0.0**
HWQ				*e*S	**Sg**	**00 53 53.0**	**+0.1**
MARH	**Ras Al Marh**	**0.59**	**74**	*e*P	**Pg**	**00 53 49.9**	**0.0**
MARH				*e*S	**Sn**	**00 54 00.4**	**-0.3**
MARH				AML	AML	00 54 04.7	
	comp=E,94nm,0.4s						
MARH				AML	AML	00 54 05.7	
	comp=N,53nm,0.3s						
MARH	**Ras Al Marh**	**0.59**	**74**	*e*P	**Pb**	**00 53 49.6**	**0.0**
MARH				*e*S	**Sg**	**00 53 58.4**	**+0.5**
MARH				AML	AML	00 54 05.7	
	comp=N,53nm,0.3s						
MARH	**Ras Al Marh**	**0.59**	**74**	*e*P	**Pg**	**00 53 49.8**	**0.0**
MARH				*e*S	**Sn**	**00 54 00.4**	**-0.4**
	comp=N,53nm,0.3s						
FKH	**Fakeheh**	**0.64**	**53**	*e*P	**Pg**	**00 53 50.5**	**0.0**
FKH				*e*S	**Sg**	**00 53 59.1**	**0.0**
TOTH	**TOTAH**	**0.73**	**133**	*e*P	**Pn**	**00 53 53.1**	**0.0**
TOTH				*e*S	**Sn**	**00 54 02.9**	**-0.8**
TOTH				AML	AML	00 54 05.9	
	comp=E,23nm,0.3s						
TOTH				AML	AML	00 54 15.9	
	comp=N,17nm,0.7s						
TOTH	**TOTAH**	**0.73**	**133**	*e*P	**Pn**	**00 53 53.1**	**0.0**
TOTH				*e*S	**Sn**	**00 54 03.2**	**-0.5**
TOTH				AML	AML	00 54 05.9	
	comp=E,23nm,0.3s						
TOTH	**TOTAH**	**0.73**	**133**	*e*P	**Pn**	**00 53 53.1**	**0.0**
TOTH				*e*S	**Sn**	**00 54 02.9**	**-0.8**
	comp=E,17nm,0.7s						
HAWK	**Haweek**	**0.83**	**37**	*e*P	**Pg**	**00 53 54.0**	**-0.1**
HAWK				*e*S	**Sn**	**00 54 06.8**	**+0.5**
HAWK				AML	AML	00 54 09.2	
	comp=E,12nm,0.5s						
HAWK				AML	AML	00 54 11.3	
	comp=N,18nm,0.3s						
HAWK	**Haweek**	**0.83**	**37**	*e*P	**Pn**	**00 53 54.9**	**+0.4**
HAWK				*e*S	**Sn**	**00 54 06.2**	**-0.1**
HAWK				AML	AML	00 54 11.3	
	comp=N,18nm,0.3s						
HAWK	**Haweek**	**0.83**	**37**	*e*P	**Pg**	**00 53 54.0**	**-0.1**
HAWK				*e*S	**Sn**	**00 54 06.8**	**+0.5**
	comp=N,18nm,0.3s						
TCHB	**Talchebab**	**1.20**	**173**	*e*P	**Pb**	**00 53 59.9**	**0.0**
TCHB				*e*S	**Sb**	**00 54 15.0**	**0.0**
TCHB				AML	AML	00 54 18.6	
	comp=N,25nm,0.5s						
TCHB				AML	AML	00 54 19.3	
	comp=E,19nm,0.5s						
TCHB	**Talchebab**	**1.20**	**173**	*e*P	**Pb**	**00 54 00.1**	**+0.3**
TCHB				*e*S	**Sg**	**00 54 16.1**	**-0.7**
TCHB				AML	AML	00 54 18.6	
	comp=N,25nm,0.5s						
TCHB	**Talchebab**	**1.20**	**173**	*e*P	**Pb**	**00 53 59.9**	**0.0**
TCHB				*e*S	**Sb**	**00 54 15.0**	**0.0**
	comp=N,19nm,0.5s						
ROOS	**tl_alroos**	**1.28**	**76**	*e*P	**Pg**	**00 54 02.4**	**-0.1**
ROOS				*e*S	**Sg**	**00 54 19.8**	**+0.5**
ROOS				AML	AML	00 54 25.9	
	comp=N,24nm,0.4s						
ROOS				AML	AML	00 54 29.2	
	comp=E,14nm,0.5s						
ROOS	**tl_alroos**	**1.28**	**76**	*e*P	**Pg**	**00 54 02.4**	**-0.1**
ROOS				*e*S	**Sg**	**00 54 19.8**	**+0.5**
	comp=E,14nm,0.5s						
SALA	**Sala**	**1.39**	**145**	*e*P	**Pb**	**00 54 03.1**	**-0.1**
SALA				*e*S	**Sb**	**00 54 20.7**	**0.0**
SALA				AML	AML	00 54 27.8	
	comp=E,2.2nm,0.6s						
SALA				AML	AML	00 54 28.3	
	comp=N,8.5nm,0.7s						
SALA	**Sala**	**1.39**	**145**	*e*S	**Sn**	**00 54 20.4**	**+0.1**
SALA				*e*S	**Sg**	**00 54 21.9**	**-1.1**
SALA				AML	AML	00 54 27.8	
	comp=E,2.2nm,0.6s						
SALA	**Sala**	**1.39**	**145**	*e*P	**Pb**	**00 54 03.1**	**-0.1**
SALA				*e*S	**Sb**	**00 54 20.7**	**0.0**
	comp=E,9.0nm,0.7s						
ZALF	**Zalf**	**1.59**	**126**	*e*P	**Pb**	**00 54 06.2**	**-0.4**
ZALF				*e*S	**Sb**	**00 54 27.5**	**+1.1**
ZALF				AML	AML	00 54 30.5	
	comp=E,11nm,0.4s						
ZALF				AML	AML	00 54 32.1	
	comp=N,8.9nm,0.4s						
ZALF	**Zalf**	**1.59**	**126**	*e*P	**Pb**	**00 54 06.2**	**-0.4**
ZALF				*e*S	**Sb**	**00 54 27.5**	**+1.1**
	comp=N,9.0nm,0.4s						
WRDH	**Warideh**	**1.72**	**17**	*e*P	**Pb**	**00 54 08.0**	**-0.8**
WRDH				*e*S	**Sb**	**00 54 29.7**	**-0.3**
WRDH				AML	AML	00 54 39.3	
	comp=E,19nm,0.5s						
WRDH				AML	AML	00 54 40.1	
	comp=N,11nm,0.7s						
WRDH	**Warideh**	**1.72**	**17**	*e*P	**Pb**	**00 54 08.0**	**-0.8**
WRDH				*e*S	**Sb**	**00 54 29.7**	**-0.3**
	comp=N,11nm,0.7s						
ARNB	**Al Arnab**	**2.00**	**4**	*e*P	**Pn**	**00 54 11.8**	**+1.2**
ARNB				*e*S	**Sb**	**00 54 36.9**	**-1.2**
ARNB				AML	AML	00 54 48.0	
	comp=E,13nm,0.3s						

NEIC 23 00:59:27.8, 38.°62S×176.°22E, h2km, ML4.7(WEL), After WEL., North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ALRZ	**Allen Road**	**0.11**	**60**	P*	Pg	00 59 30.5	+0.6
ALRZ				S*	Sg	00 59 32.5	+1.2
WPRZ	**Whakapapatarin**	**0.11**	**334**	P*	Pg	00 59 30.5	+0.6
WPRZ				S*	Sg	00 59 32.4	+1.1
PRRZ	**Plateau Road**	**0.18**	**48**	P*	Pg	00 59 31.9	+0.7
WHTZ	**Whakaora**	**0.21**	**257**	P*	Pg	00 59 33.3	+1.4
HRRZ	**Handcock Road**	**0.23**	**12**	Pg	Pg	00 59 33.2	+0.9
KUTZ	**Kaahu Road**	**0.34**	**292**	Pg	Pg	00 59 35.2	+0.9
RRRZ	**Republican Roa**	**0.36**	**40**	Pg	Pg	00 59 35.4	+0.7
BKZ	**Black Stump Fm**	**0.59**	**159**	Pg	Pg	00 59 39.8	+0.7
NMHZ	**Naumai**	**0.66**	**137**	Pg	Pb	00 59 42.0	-0.1
BHHZ	**Black Hill Sta**	**0.88**	**188**	P*	Pg	00 59 44.4	-0.2
KAHZ	**Kahuranaki**	**1.28**	**157**	P*	Pg	00 59 52.2	-0.1
MQZ	**McQueen's Vall**	**5.75**	**207**	Pn	Pn	01 00 53.0	-1.1

*ISCJB **23** 01:01:01.5±0.4, 37.°55N±0.°04×10.°61E±0.°04, h10km, mb3.4/1, MS2.6/2, Error ellipse: s-maj=5.6km s-min=4.6km az=27.3*
*CSEM **23** 01:01:01.8±0.4, 37.°44N×10.°60E, h10km, ML3.7, Error ellipse: s-maj=12.6km s-min=9.5km az=15.0*
*IDC **23** 01:01:02.8±1.4, 37.°33N×10.°75E, h0km, mb3.4/1, mb1 3.5/6, mb1mx3.3/43, mbtmp3.4/6, ML3.6/3, MS2.8/5, Ms1 2.8/5, ms1mx2.4/32, Error ellipse: s-maj=22.4km s-min=16.1km az=155.0*
*ROM **23** 01:01:03.0±0.2, 37.°69N×10.°77E, h10km, Ml3.7/2, Error ellipse: s-maj=4.7km s-min=1.4km az=48.0*
*LDG **23** 01:01:07.0±1.0, 37.°84N×10.°17E, h2km, Ml2.9/2, Error ellipse: s-maj=22.7km s-min=5.5km az=127.0*
*CRAAG **23** 01:01:07.0, 37.°85N×10.°58E, Mb4.3*
ISC 23 01:01:02.1±0.8, 37.°45N±0.°04×10.°56E±0.°04, h10km, n52, σ1.41/46, Tunisia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PTMD	**Pantelleria Cu**	**1.32**	**119**	Pn	**Pg**	**01 01 27.3**	**-0.2**
PTMD				Sn	**Sn**	**01 01 45.1**	**+0.7**
	2μm,0.6s						
PTMD	**Pantelleria Cu**	**1.32**	**119**	Pn	**Pg**	**01 01 27.3**	**-0.2**
PTMD				Sn	**Sn**	**01 01 45.1**	**+0.7**
	2μm,0.6s						
MTGR	**Montagna Grand**	**1.80**	**75**	Pn	**Pn**	**01 01 31.7**	**-1.6**
	85nm,0.6s						
MTGR	**Montagna Grand**	**1.80**	**75**	Pn	**Pn**	**01 01 31.7**	**-1.6**
	85nm,0.6s						
MMGO	**Monte Magaggia**	**1.93**	**83**	Pn	**Pn**	**01 01 33.4**	**-1.7**
	187nm,0.6s						
MMGO	**Monte Magaggia**	**1.93**	**83**	Pn	**Pn**	**01 01 33.4**	**-1.7**
	187nm,0.6s						
KEST	**Kesra**	**1.97**	**210**	Pn	**Pb**	**01 01 37.9**	**-0.2**
	7.6nm,0.3s,baz=321,slow=2.2,SNR=52						
KEST				Sn	**Sg**	**01 02 04.5**	**-0.9**
	25nm,0.3s,baz=12,slow=10,SNR=8.3						
CRJA	**Costa Raja**	**1.98**	**79**	Pn	**Pn**	**01 01 34.5**	**-1.2**
	890nm,1.0s						
CRJA	**Costa Raja**	**1.98**	**79**	Pn	**Pn**	**01 01 34.5**	**-1.2**
	890nm,1.0s						
CLTB	**Caltabellotta**	**2.12**	**86**	Pn	**Pn**	**01 01 36.9**	**-0.8**
	559nm,0.6s						
CLTB	**Caltabellotta**	**2.12**	**86**	Pn	**Pn**	**01 01 36.9**	**-0.8**
	559nm,0.6s						
VSL	**Villasalto**	**2.25**	**336**	Pn	**Pn**	**01 01 39.1**	**-0.3**
VSL				Sn	**Sn**	**01 02 05.2**	**-2.0**
VSL	**Villasalto**	**2.25**	**336**	Pn	**Pn**	**01 01 39.1**	**-0.3**
VSL				Sn	**Sn**	**01 02 05.2**	**-2.0**
CMAH	**Djebel Manchou**	**2.64**	**253**	P	**Pn**	**01 01 45.1**	**+0.2**
CMAH	**Djebel Manchou**	**2.64**	**253**	P	**Pn**	**01 01 45.1**	**+0.2**
ABSA	**Djebel Ababsia**	**2.73**	**246**	P	**Pn**	**01 01 46.9**	**+0.7**
ABSA	**Djebel Ababsia**	**2.73**	**246**	P	**Pn**	**01 01 46.9**	**+0.7**
CAEH	**'Ain El Ouahch**	**3.04**	**258**	P	**Pn**	**01 01 50.8**	**+0.5**
CAEH	**'Ain El Ouahch**	**3.04**	**258**	P	**Pn**	**01 01 50.8**	**+0.5**
VAE	**Valguarnera**	**3.07**	**88**	Pn	**Pn**	**01 01 49.8**	**-1.0**
	0.7nm,0.3s,baz=246,slow=10.0,SNR=3.1						
VAE				Lg	Lg	01 02 35.0	
	1.9nm,0.3s,baz=149,slow=19,SNR=3.6						
CASM	**Ain Smara**	**3.47**	**251**	P	**Pn**	**01 01 54.2**	**-2.1**
CASM	**Ain Smara**	**3.47**	**251**	P	**Pn**	**01 01 54.2**	**-2.1**
DFRA	**Djebel Bou Aff**	**3.85**	**258**	P	**Pn**	**01 02 01.7**	**+0.1**
DFRA	**Djebel Bou Aff**	**3.85**	**258**	P	**Pn**	**01 02 01.7**	**+0.1**
SET	**Setif**	**4.32**	**255**	P	Pn	01 02 02.0	-6.0
SET	**Setif**	**4.32**	**255**	P	Pn	01 02 02.0	-6.0
PGF	**Pioggiola**	**5.24**	**347**	*e*P	**Pn**	**01 02 21.5**	**+0.9**
PGF				*e*Sn	Sn	01 03 11.0	-10
	4.0nm,0.4s						
PGF	**Pioggiola**	**5.24**	**347**	*e*P	**Pn**	**01 02 21.5**	**+0.9**
PGF				*e*Sn	Sn	01 03 11.0	-10
	2.0nm,0.4s						
LMR	**La Mourre**	**6.64**	**334**	*e*Pn	**Pn**	**01 02 38.1**	**-1.7**
LMR				*e*Sn	Sn	01 03 42.6	-13
	0.9nm,0.3s						
LMR	**La Mourre**	**6.64**	**334**	*e*Pn	**Pn**	**01 02 38.1**	**-1.7**
LMR				*e*Sn	Sn	01 03 42.6	-13
	0.4nm,0.3s						
FRF	**La Foret Royal**	**6.80**	**335**	*e*Pn	Pn	01 02 39.6	-2.3
FRF	**La Foret Royal**	**6.80**	**335**	*e*P	**Pn**	**01 02 43.0**	**+1.1**
FRF	**La Foret Royal**	**6.80**	**335**	*e*Pn	Pn	01 02 39.6	-2.3
FRF	**La Foret Royal**	**6.80**	**335**	*e*P	**Pn**	**01 02 43.0**	**+1.1**
SBF	**Sospel**	**6.84**	**341**	*e*Pn	Pn	01 02 39.7	-2.8
SBF	**Sospel**	**6.84**	**341**	*e*P	**Pn**	**01 02 44.3**	**+1.8**
SBF	**Sospel**	**6.84**	**341**	*e*Pn	Pn	01 02 39.7	-2.8
SBF	**Sospel**	**6.84**

KHL	Karahalli	0.87	155	*e*Pg	Pg	01 02 41.7	-0.3
KHL	Karahalli	0.87	155	*e*Pg	Pg	01 02 41.7	-0.3
IZI	Iznik	1.26	15	*e*PN	Pn	01 02 48.4	-0.8
IZI	Iznik	1.26	15	*e*Pn	Pn	01 02 48.4	-0.8
KCTX	Karacabey (Bur	1.27	335	*e*PN	Pn	01 02 49.0	-0.3
KCTX	Karacabey (Bur	1.27	335	*e*Pn	Pn	01 02 49.0	-0.3
ARMT	Armutlu	1.46	354	*e*PN	Pn	01 02 51.6	-0.2
ARMT	Armutlu	1.46	354	*e*Pn	Pn	01 02 51.6	-0.2
GULT	Gulveren	1.73	40	*e*PN	Pn	01 02 54.9	-0.8
GULT	Gulveren	1.73	40	*e*Pn	Pn	01 02 54.9	-0.8

*IDC **23** 01:09:43.3±0.8, 17°.84S×167°.51E, h0km, mb4.2/8, mb1 4.5/8, mb1mx4.0/33, mbtmp4.2/8, MS3.4/6, Ms1 3.4/6, ms1mx3.1/33, Error ellipse: s-maj=33.3km s-min=19.6km az=152.0*

*ISCJB **23** 01:09:45.2±0.8, 17°.9S±0°.2×167°.5E±0°.1, h23km, mb4.1/8, MS3.3/5, Error ellipse: s-maj=24.6km s-min=16.8km az=159.6*

ISC 23 01:09:46.8±0.8, 17°.9S±0°.2×167°.5E±0°.2, h23km, n20, σ0°73/16, mb4.1/8, MS3.3/5, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	Honiara	11.14	318	LR	LR	01 15 50.0	
	comp=Z,91nm,20.2s,baz=186,slow=33						
AFI	Afiamalu	20.31	82	LR	LR	01 20 18.5	
	comp=Z,138nm,21.4s,baz=275,slow=31						
URZ	Urewera	21.99	159	P	P	01 14 39.4	+0.2
	3.3nm,0.6s,baz=6.3,slow=9.2,SNR=2.7						
URZ				LR	LR	01 22 29.3	
	comp=Z,75nm,19.6s,baz=345,slow=35						
RPZ	Rata Peaks	25.94	174	LR	LR	01 25 12.9	
	comp=Z,65nm,18.0s,baz=28,slow=36						
STKA	Stephens Creek	27.24	234	P	P	01 15 28.8	-0.5
	1.3nm,0.3s,baz=67,slow=13,SNR=3.0						
STKA				LR	LR	01 25 22.2	
	comp=Z,119nm,18.1s,baz=24,slow=34						
WRA	Warramunga Arr	31.41	261	P	P	01 16 06.1	-0.4
	0.7nm,0.7s,baz=90,slow=8.9,SNR=6.6						
ASAR	Alice Springs	31.89	254	P	P	01 16 10.4	-0.3
	3.6nm,0.5s,baz=82,slow=8.6,SNR=42						
FITZ	Fitzroy Crossi	39.75	263	P	P	01 17 19.4	+1.3
	3.1nm,0.6s,baz=134,slow=12,SNR=11						
PPT	Papeete	40.82	96	LR	LR	01 33 39.8	
	comp=Z,58nm,18.3s,baz=0.0,slow=35						
NVAR	Mina Array Bea	89.14	49	P	P	01 22 41.7	+0.7
	1.1nm,0.5s,baz=240,slow=7.5,SNR=7.8						
ILAR	Eielson Array	89.43	18	P	P	01 22 40.7	-0.6
	1.7nm,0.7s,baz=235,slow=5.6,SNR=20						
TXAR	Lajitas Array	97.57	62	P	P	01 23 19.2	-0.6
	0.3nm,0.7s,baz=235,slow=3.2,SNR=3.4						
YKA	Yellowknife Ar	100.22	27	P	Pdif	01 23 31.0	+0.3
	0.2nm,0.6s,baz=255,slow=5.2,SNR=3.8						
ARCES	ARCESS Array B	123.33	345	PKP	PKPdf	01 28 41.6	+0.3
	1.3nm,0.7s,baz=77,slow=2.6,SNR=11						
FINES	FINESS Array B	128.70	337	PKP	PKPdf	01 28 51.7	0.0
	0.3nm,0.5s,baz=45,slow=2.7,SNR=2.9						
ABTA	Abfaltersbach	144.58	330	*i* PKPdf	PKPdf	01 29 20.7	-0.9
	4.2nm,0.6s						
MOTA	Moosalm	144.79	332	*i* PKPdf	PKPdf	01 29 22.0	0.0
	4.3nm,0.7s						
RETA	Reutte	144.84	332	*i* PKPdf	PKPdf	01 29 21.9	-0.2
	3.2nm,0.6s						
FETA	Feichten	145.20	332	*i* PKiKP	PKPdf	01 29 23.9	+1.1
	7.2nm,0.7s						
DAVA	Damuels	145.38	333	*i* PKiKP	PKPdf	01 29 24.2	+1.1
	3.9nm,0.7s						

*ISCJB **23** 01:16:15.0±0.6, 39°.12N±0°.04×29°.00E±0°.04, h11km±5km, Error ellipse: s-maj=6.4km s-min=5.1km az=155.2*

*CSEM **23** 01:16:14.9±0.1, 39°.12N×28°.99E, h10km, MD2.4, Error ellipse: s-maj=3.3km s-min=2.9km az=95.0*

*ISK **23** 01:16:14.2, 39°.14N×29°.00E, h9km, MD2.6*

*DDA **23** 01:16:15.2, 39°.10N×29°.01E, h7km, Md2.4*

ISC 23 01:16:14.7±1.0, 39°.11N±0°.04×29°.01E±0°.03, h20km±6km, n24, σ0°27/34, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.24	253	P	Pg	01 16 20.5	0.0
DEMI				S	Sb	01 16 24.0	-0.2
DEMI	Demirci	0.24	253	*i* P	Pg	01 16 20.5	0.0
DEMI				*i* S	Sb	01 16 23.9	-0.2
GDZ	Gediz	0.37	93	P	Pg	01 16 22.8	+0.2
GDZ				S	Sg	01 16 28.1	+0.1
GDZ	Gediz	0.37	93	*i* P	Pg	01 16 22.8	+0.2
GDZ				*i* S	Sg	01 16 28.1	+0.1
TVSB	Tavsanli	0.49	46	*e*PG	Pb	01 16 24.1	-0.6
TVSB				*e*SG	Sg	01 16 30.9	-0.5
TVSB	Tavsanli	0.49	46	*e*Pg	Pb	01 16 24.1	-0.6
TVSB				*e*Sg	Sg	01 16 30.9	-0.5
DURS	Dursunbey	0.64	320	P	Pg	01 16 27.5	-0.1
DURS	Dursunbey	0.64	320	*i* P	Pg	01 16 27.5	-0.1
KULA	Kula-Manisa	0.66	205	*e*PG	Pg	01 16 27.8	0.0
KULA	Kula-Manisa	0.66	205	*e*Pg	Pg	01 16 27.8	0.0
KHAL	Karahalli	0.83	153	P	Pn	01 16 31.6	+0.2
KHAL				S	Sb	01 16 41.2	-0.1
KHAL	Karahalli	0.83	153	*i* P	Pn	01 16 31.6	+0.2
KHAL				*i* S	Sb	01 16 41.1	-0.1
KCTX	Karacabey (Bur	1.26	337	*e*PN	Pb	01 16 38.2	+0.4
KCTX	Karacabey (Bur	1.26	337	*e*Pn	Pb	01 16 38.2	+0.4
MDNY	Mudanya-Bursa	1.26	356	*e*PN	Pb	01 16 37.9	+0.1
MDNY	Mudanya-Bursa	1.26	356	*e*Pn	Pb	01 16 37.9	+0.1
IZI	Iznik	1.27	16	*e*PN	Pb	01 16 38.4	+0.3
IZI	Iznik	1.27	16	*e*Pn	Pb	01 16 38.4	+0.3
BORA	Eskisehir	1.35	55	P	Pg	01 16 41.1	+0.2
BORA				S	Sg	01 16 58.8	+0.1
BORA	Eskisehir	1.35	55	*i* P	Pg	01 16 41.1	+0.2
BORA				*i* S	Sg	01 16 58.8	+0.1
ADVT	Abdulvahap	1.43	23	*e*PN	Pb	01 16 40.8	0.0
ADVT	Abdulvahap	1.43	23	*e*Pn	Pb	01 16 40.8	0.0
ARMT	Armutlu	1.46	356	*e*PN	Pb	01 16 41.1	-0.1
ARMT	Armutlu	1.46	356	*e*Pn	Pb	01 16 41.1	-0.1

*ISCJB **23** 01:23:11.0±0.5, 39°.10N±0°.03×29°.04E±0°.04, h8km±6km, Error ellipse: s-maj=5.8km s-min=4.6km az=140.2*

*DDA **23** 01:23:10.9, 39°.07N×29°.05E, h7km, Md2.4*

*ISK **23** 01:23:10.7, 39°.11N×29°.06E, h8km, MD2.6*

*CSEM **23** 01:23:11.1±0.1, 39°.10N×29°.04E, h8km, MD2.4, Error ellipse: s-maj=2.3km s-min=1.9km az=102.0*

ISC 23 01:23:11.3±0.9, 39°.10N±0°.03×29°.05E±0°.02, h11km±10km, n24, σ0°28/34, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.27	258	P	Pg	01 23 16.6	-0.1
DEMI				S	Sg	01 23 20.7	+0.3
DEMI	Demirci	0.27	258	*i* P	Pg	01 23 16.6	-0.1
DEMI				*i* S	Sg	01 23 20.7	+0.3
GDZ	Gediz	0.34	91	P	Pg	01 23 18.1	0.0
GDZ				S	Sg	01 23 22.7	+0.1
GDZ	Gediz	0.34	91	*i* P	Pg	01 23 18.1	0.0
GDZ				*i* S	Sg	01 23 22.7	+0.1
TVSB	Tavsanli	0.47	42	*e*PG	Pg	01 23 20.1	-0.5
TVSB				*e*SG	Sg	01 23 26.9	-0.1
TVSB	Tavsanli	0.47	42	*e*Pg	Pg	01 23 20.1	-0.5
TVSB				*e*Sg	Sg	01 23 26.9	-0.1
KULA	Kula-Manisa	0.66	208	*e*PG	Pg	01 23 24.1	+0.1
KULA	Kula-Manisa	0.66	208	*e*Pg	Pg	01 23 24.1	+0.1
DURS	Dursunbey	0.67	319	P	Pg	01 23 24.5	+0.2
DURS	Dursunbey	0.67	319	*i* P	Pg	01 23 24.5	+0.2
MANT	Manisa	0.72	213	P	Pg	01 23 24.5	-0.7
MANT				S	Sg	01 23 34.4	-0.2
MANT	Manisa	0.72	213	*i* P	Pg	01 23 24.5	-0.7
MANT				*i* S	Sg	01 23 34.4	-0.2
KHAL	Karahalli	0.81	154	P	Pb	01 23 27.5	+0.2
KHAL				S	Sg	01 23 37.4	+0.1
KHAL	Karahalli	0.81	154	*i* P	Pb	01 23 27.5	+0.2
KHAL				*i* S	Sg	01 23 37.4	+0.1
BALB	Balikesir	1.06	301	*e*PG	Pb	01 23 31.3	-0.2
BALB	Balikesir	1.06	301	*e*Pg	Pb	01 23 31.3	-0.2
MDNY	Mudanya-Bursa	1.28	354	*e*PN	Pn	01 23 35.2	+0.2
MDNY	Mudanya-Bursa	1.28	354	*e*Pn	Pn	01 23 35.2	+0.2
IZI	Iznik	1.28	15	*e*PN	Pn	01 23 35.2	+0.1
IZI	Iznik	1.28	15	*e*Pn	Pn	01 23 35.3	+0.1
KCTX	Karacabey (Bur	1.28	336	*e*PN	Pn	01 23 35.2	+0.1
KCTX	Karacabey (Bur	1.28	336	*e*Pn	Pn	01 23 35.3	+0.1
ARMT	Armutlu	1.47	354	*e*PN	Pn	01 23 38.1	+0.3
ARMT	Armutlu	1.47	354	*e*Pn	Pn	01 23 38.1	+0.3

IDC 23 01:24:09.6±7.9, 56°.60S×26°.51W, h284km±75km, mb3.3/3, mb1 3.4/3, mb1mx3.2/15, mbtmp4.0/3, Error ellipse: s-maj=55.5km s-min=19.9km az=52.0, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CPUP	Villa Florida	37.46	311	P	P	01 30 55.8	-0.4
	1.9nm,0.8s,baz=173,slow=8.2,SNR=4.0						
MAW	Mawson	39.48	143	P	P	01 31 12.3	-0.1
	2.1nm,1.0s,baz=212,slow=13,SNR=3.9						
VNDA	Vanda	46.04	183	P	P	01 32 04.5	-0.1
	1.6nm,0.8s,baz=186,slow=6.0,SNR=8.7						
YKA	Yellowknife Ar	136.84	317	PKP	PKPdf	01 42 54.4	-2.4
	0.1nm,0.5s,baz=102,slow=2.6,SNR=3.4						
SONM	Songino Array	150.38	87	PKPbc	PKPbc	01 43 26.3	-0.3
	0.9nm,0.5s,baz=218,slow=4.3,SNR=6.6						
ILAR	Eielson Array	150.76	311	PKPbc	PKPbc	01 43 25.9	-0.9
	0.5nm,0.8s,baz=134,slow=2.6,SNR=5.3						
ILAR				PKPab	PKPab	01 43 35.9	+0.7
	1.8nm,0.7s,baz=126,slow=3.5,SNR=15						

*IDC **23** 01:29:12.4±0.9, 26°.85N×143°.78E, h0km, mb3.8/10, mb1 4.0/13, mb1mx3.8/37, mbtmp3.8/13, ML3.5/3, Error ellipse: s-maj=24.5km s-min=17.6km az=81.0*

*NEIC **23** 01:29:14.2±0.5, 26°.86N×143°.71E, h10km, mb4.5/5, Error ellipse: s-maj=13.7km s-min=9.3km az=75.0*

*JMA **23** 01:29:14.1±0.1, 27°.28N×143°.67E, h0km*

*ISCJB **23** 01:29:15.6±0.6, 27°.04N±0°.06×143°.77E±0°.06, h33km, mb4.0/15, Error ellipse: s-maj=9.3km s-min=7.5km az=161.1*

ISC 23 01:29:18.1±0.9, 26°.9N±0°.1×143°.69E±0°.09, h35km, n28, σ1°18/31, mb4.0/15, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	Chichi jima	1.35	277	P	Pn	01 29 39.7	-0.7
CBIJ				*e*S	Sn	01 29 57.5	+0.4
CBIJ	Chichi jima	1.35	277	*e*Pn	Pn	01 29 39.2	-1.2
CBIJ				*e*S	Sn	01 29 57.2	+0.1
JCJ	Chichijima	1.35	277	Pn	Pn	01 29 39.6	-0.8
	12nm,0.3s,baz=289,slow=19,SNR=27						
JCJ				Sn	Sn	01 29 57.0	-0.1
	263nm,0.3s,baz=282,slow=19,SNR=33						
BSO4	Boso 4	8.52	341	P	Pn	01 31 17.9	-1.0
JHU	Hanno	9.64	338	P	Pn	01 31 32.4	-2.0
JRY	Ryogami san	9.92	337	P	Pn	01 31 36.9	-1.3
JAG	Ashikaga	10.12	340	P	Pn	01 31 39.0	-1.9
MJAR	Matsushiro Arr	10.64	335	Pn	Pn	01 31 46.3	-1.8
	2.5nm,0.3s,baz=152,slow=10,SNR=20						
MAJO	Matsushiro	10.64	335	*e*Pn	Pn	01 31 46.8	-1.3
	15nm,0.6s						
MAT	Matsushiro	10.64	335	P	Pn	01 31 46.8	-1.3
KSRS	Korea Array	16.94	312	Pn	Pn	01 33 12.2	-0.2
	0.3nm,0.3s,baz=123,slow=12,SNR=6.2						
KSAR	Wonju Array Be	16.96	312	Pn	Pn	01 33 12.2	-0.4
USRK	Ussuriysk Ar.	19.64	334	P	Pn	01 33 43.7	-1.5
	0.2nm,0.3s,baz=150,slow=12,SNR=4.1						
KLR	Kul'dur	24.09	341	P	P	01 34 31.2	+0.9
	4.2nm,0.7s,baz=156,slow=6.2,SNR=19						
SONM	Songino Array	35.76	316	P	P	01 36 12.9	-0.8
	0.2nm,0.3s,baz=108,slow=7.7,SNR=2.2						
WRAB	Tennant Creek	47.47	192	*e*P	P	01 37 48.1	-1.5
	3.8nm,0.6s						
WRA	Warramunga Arr	47.48	192	P	P	01 37 48.4	-1.3
	5.0nm,0.8s,baz=11,slow=8.3,SNR=20						
ZALV	Zalesovo Beam	50.48	319	P	P	01 38 13.6	+1.2
	0.6nm,0.5s,baz=115,slow=6.5,SNR=3.3						
ASAR	Alice Springs	51.19	192	P	P	01 38 16.9	-1.2
	0.5nm,0.6s,baz=12,slow=5.5,SNR=8.1						
MKAR	Makanchi Array	51.60	310	P	P	01 38 21.9	+0.9
	0.7nm,0.7s,baz=98,slow=8.8,SNR=7.7						
KURK	Kurchatov	54.05	315	*e*P	P	01 38 40.2	+1.3
	6.5nm,0.9s						
ILAR	Eielson Array	57.21	29	P	P	01 39 00.8	-0.7
	0.4nm,0.6s,baz=263,slow=5.1,SNR=5.1						
KKAR	Karatay Array	60.26	306	*e*P	P	01 39 23.9	+0.8
	2.3nm,0.7s						
DAWY	Dawson	60.42	30	*e*P	P	01 39 24.6	+0.8
	1.0nm,0.6s						
ABKAR	Akbulak array	66.16	315	P	P	01 40 04.0	+2.0
	0.6nm,0.2s						
YKA	Yellowknife Ar	71.64	29	P	P	01 40 35.9	+0.2
	0.3nm,0.7s,baz=293,slow=7.3,SNR=3.8						
FINES	FINESS Array B	78.67	334	P	P	01 41 16.8	+0.5
	1.4nm,0.9s,baz=72,slow=4.5,SNR=2.7						
BRTR	Keskin Array B	87.08	313	P	P	01 42 01.0	+0.4
	0.3nm,0.6s,baz=50,slow=8.5,SNR=3.7						

*ISCJB **23** 01:29:42.0±0.5, 39°.08N±0°.04×29°.00E±0°.05, h9km, Error ellipse: s-maj=5.9km s-min=5.5km az=30.2*

*ISK **23** 01:29:41.3, 39°.09N×29°.02E, h6km, MD2.8*

*CSEM **23** 01:29:41.7±0.1, 39°.11N×29°.02E, h2km, MD2.8, Error ellipse: s-maj=2.8km s-min=2.7km az=121.0*

*DDA **23** 01:29:42.1, 39°.11N×29°.04E, h7km, Md2.8*

ISC 23 01:29:41.9±0.9, 39°.10N±0°.03×29°.01E±0°.03, h9km, n39, σ0°39/41, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TVSB	Tavsanli	0.49	45	*e*PG	Pg	01 29 50.8	-0.8
TVSB	Tavsanli	0.49	45	*e*Pg	Pg	01 29 50.8	-0.8
KULA	Kula-Manisa	0.64	205	*e*PG	Pg	01 29 54.2	-0.2
KULA	Kula-Manisa	0.64	205	*e*Pg	Pg	01 29 54.2	-0.2
KHL	Karahalli	0.87	152	*e*PG	Pg	01 29 58.7	0.0
KHL	Karahalli	0.87	152	*e*Pg	Pg	01 29 58.7	0.0
AKS	Akhisar	0.96	257	*e*PG	Pg	01 29 59.8	-0.6
AKS	Akhisar	0.96	257	*e*Pg	Pg	01 29 59.8	-0.6
BALB	Balikesir	1.03	302	*e*PG	Pg	01 30 01.6	-0.2
BALB				*e*SG	Sn	01 30 16.8	-0.3
BALB	Balikesir	1.03	302	*e*Pg	Pg	01 30 01.6	-0.2
BALB				*e*Sg	Sn	01 30 16.8	-0.3
IGD	Bursa	1.17	7	*i* P	Pb	01 30 03.9	-0.5
BALY	Balya	1.25	301	P	Pg	01 30 06.1	0.0
BALY	Balya	1.25	301	*i* P	Pg	01 30 06.0	0.0
KCTX	Karacabey (Bur	1.27	337	*e*PN	Pg	01 30 06.4	+0.1
KCTX	Karacabey (Bur	1.27	337	*e*Pn	Pg	01 30 06.4	+0.1
MDNY	Mudanya-Bursa	1.27	356	*e*PN	Pg	01 30 06.6	+0.2
MDNY	Mudanya-Bursa	1.27	356	*e*Pn	Pg	01 30 06.6	+0.2
IZI	Iznik	1.29	16	*e*PN	Pg	01 30 06.7	0.0
IZI	Iznik	1.29	16	*e*Pn	Pg	01 30 06.7	0.0
BORA	Eskisehir	1.36	55	P	Pn	01 30 07.0	-0.2
BORA	Eskisehir	1.36	55	*i* P	Pn	01 30 07.0	-0.2
GONE	Gonen-Balikesi	1.40	313	*e*PN	Pb	01 30 08.1	-0.1
GONE	Gonen-Balikesi	1.40	313	*e*Pn	Pb	01 30 08.1	-0.1
DNZL	Cakiroluk	1.41	179	P	Pg	01 30 09.0	+0.1
DNZL	Cakiroluk	1.41	179	*i* P	Pg	01 30 09.0	+0.1
ADVT	Abdulvahap	1.45	23	*e*PN	Pb	01 30 08.7	-0.4
ADVT	Abdulvahap	1.45	23	*e*Pn	Pb	01 30 08.7	-0.4
ARMT	Armutlu	1.47	356	*e*PN	Pn	01 30 08.8	+0.1
ARMT	Armutlu	1.47	356	*e*Pn	Pn	01 30 08.8	+0.1
ESKT	Eskisehir	1.49	73	*i* P	Pb	01 30 10.0	+0.2
SEYT	Eskypehyr	1.49	73	P	Pb	01 30 10.0	+0.2
EDC	Edincik	1.53	325	*e*PN	Pn	01 30 09.7	+0.3
EDC	Edincik	1.53	325	*e*Pn	Pn	01 30 09.7	+0.3
GULT	Gulveren	1.77	41	*e*PN	Pn	01 30 13.1	+0.3
GULT	Gulveren	1.77	41	*e*Pn	Pn	01 30 13.1	+0.3
ISK	Istanbul-Kandi	1.97	1	*e*PN	Pn	01 30 16.3	+0.8
ISK	Istanbul-Kandi	1.97	1	*e*Pn	Pn	01 30 16.3	+0.8
KAND	Kocaeli-Kandir	2.19	24	P	Pb	01 30 22.3	+0.6
KAND	Kocaeli-Kandir	2.19	24	*i* P	Pb	01 30 22.3	+0.6

*NIED **23** 01:37:00, 37°.90N×143°.60E, h5km, Mw3.7 Best double couple: M0 3.65000×10^14 NP1:φ=80.00000°, δ=24.00000°, λ=-100.00000°. NP2:φ=272.00000°, δ=66.00000°, λ=-85.00000°.*

*IDC **23** 01:37:50.5±1.1, 37°.78N×144°.04E, h0km, mb3.8/12, mb1 4.0/16, mb1mx3.8/50, mbtmp3.8/16, ML4.0/2, Error ellipse: s-maj=24.3km s-min=21.8km az=148.0*

*NEIC **23** 01:37:51.9±0.9, 37°.74N×144°.00E, h10km, mb4.0/1, Error ellipse: s-maj=18.5km s-min=7.6km az=141.0*

*ISCJB **23** 01:37:54.9±0.6, 37°.90N±0°.04×143°.65E±0°.05, h33km, mb3.8/14, Error ellipse: s-maj=6.2km s-min=4.9km az=135.1*

*JMA **23** 01:37:55.1±0.2, 37°.89N×143°.57E, h36km, M3.9*

ISC 23 01:37:56.4±0.9, 37°.88N±0°.06×143°.75E±0°.07, h35km, n44, σ1°53/47, mb4.0/14, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	1.97	288	P	Pn	01 38 25.5	-1.8
JIO				*e*S	Sn	01 38 47.7	-3.1
OFUJ	Ofunato	2.02	307	P	Pn	01 38 26.3	-1.7
JMK	Ichinoseki	2.25	299	P	Pn	01 38 29.7	-1.5
JOU	Okura	2.48	282	P	Pn	01 38 33.0	-1.3
JOU				*e*S	Sn	01 39 01.2	-2.1
JOM	Ohasama	2.49	310	P	Pn	01 38 33.4	-1.1
JOM				*e*S	Sn	01 39 02.0	-1.6
JFT	Otama	2.73	263	P	Pn	01 38 36.3	-1.4
JFT				*e*S	Sn	01 39 05.9	-3.6
JYK	Kaneyama	2.85	292	S	Sn	01 39 10.9	-1.7
JRG	Rokugo	2.87	303	P	Pn	01 38 38.6	-1.0
JRG				*e*S	Sn	01 39 11.6	-1.3
JANG	Nango	3.03	326	P	Pn	01 38 41.4	-0.5
JANG				*e*S	Sn	01 39 15.5	-1.5
JAH	Hinai	3.34	315	P	Pn	01 38 45.8	-0.3
JTM	Tenmabayashi	3.57	325	P	Pn	01 38 49.6	+0.4
JTM				*e*S	Sn	01 39 27.9	-2.2
JAW	Awa shima	3.59	281	P	Pn	01 38 49.1	-0.5
JAG	Ashikaga	3.73	248	P	Pn	01 38 49.3	-2.1
JAG				*e*S	Sn	01 39 29.5	-4.6
ERM	Erimo	4.15	354	*e*Pn	Pn	01 38 57.4	+0.1
ERM				*e*S	Sn	01 39 42.3	-2.3
JRY	Ryogami san	4.30	246	P	Pn	01 38 57.3	-2.1
MJAR	Matsushiro Arr	4.62	255	Pn	Pn	01 39 03.3	-0.5
	5.1nm,0.3s,baz=90,slow=15,SNR=22						
MAJO	Matsushiro	4.62	255	*e*Pn	Pn	01 39 03.5	-0.2
MAJO				*e*S	Sn	01 39 56.0	-0.2
MAT	Matsushiro	4.62	255	P	Pn	01 39 03.5	-0.2
MAT				*e*S	Sn	01 39 53.3	-2.9
JCH	Churui	4.74	357	P	Pn	01 39 04.4	-0.9
JCH				*e*S	Sn	01 39 55.3	-3.6
ASAJ	Asahikawa	6.29	352	Pn	Pn	01 39 26.3	-0.3
	3.7nm,0.3s,baz=248,slow=22,SNR=6.4						
ASAJ				Sn	Sn	01 40 35.3	-1.9
	0.9nm,0.3s,baz=15,slow=30,SNR=2.8						
CBIJ	Chichi jima	10.84	187	*e*Pn	Pn	01 40 15.1	-14
CBIJ				S	Sn	01 42 16.0	-13
USRK	Ussuriysk Ar.	10.89	309	Pn	Pn	01 40 32.0	+2.3
	0.1nm,0.3s,baz=128,slow=13,SNR=3.6						
KSRS	Korea Array	12.55	273	Pn	Pn	01 40 54.1	+1.7
	baz=81,slow=16,SNR=3.9						
KSAR	Wonju Array Be	12.58	273	Pn	Pn	01 40 54.1	+1.3
H11N2	WAKE ISLAND Hy	27.06	125	T	T	02 11 53.8	
	baz=317,slow=75,SNR=12						
H11N1	WAKE ISLAND Hy	27.07	126	T	T	02 11 59.1	
	baz=317,slow=75,SNR=7.6						
H11N3	WAKE ISLAND Hy	27.07	125	T	T	02 11 52.9	
	baz=317,slow=75,SNR=13						
H11S1	WAKE ISLAND Hy	27.83	128	T	T	02 12 53.3	
	baz=319,slow=76,SNR=5.3						
H11S3	WAKE ISLAND Hy	27.83	128	T	T	02 12 56.9	
	baz=319,slow=76,SNR=5.7						
H11S2	WAKE ISLAND Hy	27.85	128	T	T	02 12 57.8	
	baz=319,slow=76,SNR=5.7						
SONM	Songino Array	28.88	302	P	P	01 43 53.6	+1.7
	0.6nm,0.6s,baz=95,slow=8.6,SNR=2.8						
ZALV	Zalesovo Beam	42.73	312	P	P	01 45 50.5	+0.6
	0.3nm,0.3s,baz=75,slow=8.4,SNR=2.6						
MKAR	Makanchi Array	45.24	302	P	P	01 46 11.2	+0.9
	0.5nm,0.4s,baz=83,slow=12,SNR=4.3						
KURK	Kurchatov	46.88	308	*e*P	P	01 46 23.7	+0.7
	2.3nm,0.8s						
KURBB	Kurchatov Arra	46.95	308	P	P	01 46 24.3	+0.7
	1.5nm,0.6s,baz=82,slow=8.2,SNR=18						
ILAR	Eielson Array	47.78	33	P	P	01 46 28.8	-1.1
	0.4nm,0.7s,baz=251,slow=6.5,SNR=5.8						
TKM2	Tokmak 2	50.86	298	*e*P	P	01 46 55.6	+1.7
	1.4nm,0.6s						
BVAR	Borovoye Array	51.38	312	P	P	01 46 58.7	+1.3
	0.2nm,0.3s,baz=358,slow=13,SNR=3.6						
WRA	Warramunga Arr	58.19	190	P	P	01 47 46.1	-0.9
	0.5nm,0.4s,baz=9.2,slow=7.4,SNR=4.3						
YKA	Yellowknife Ar	62.13	31	P	P	01 48 12.4	-1.1
	0.2nm,0.7s,baz=298,slow=5.7,SNR=3.4						
ARCES	ARCESS Array B	63.85	340	P	P	01 48 26.3	+1.5
	2.3nm,1.1s,baz=68,slow=11,SNR=3.7						
FINES	FINESS Array B	68.92	333	P	P	01 48 57.9	+0.5
	1.2nm,0.7s,baz=46,slow=5.5,SNR=4.9				

MAT				*e*S	**Sn**	**01 50 50.2 -0.4**
MJB9	**Matsu-Tunnel**	**4.51 255**		*e*Pn	**Pn**	**01 49 59.9 +0.7**
MJB9				*e*Sn	**Sn**	**01 50 43.0 -7.7**
JKB	**Kayabe**	**4.53 335**		P	**Pn**	**01 49 59.0 -0.3**
JKB				*e*S	**Sn**	**01 50 47.4 -3.6**
JHJ2	**Mitsune**	**5.63 215**		*e*Pn	**Pn**	**01 50 11.7 -2.8**
JHJ2				*e*Sn	Sn	01 51 08.1 -10
JHJ	**Hachijo jima 2**	**5.64 215**		Pn	**Pn**	**01 50 12.1 -2.5**
	65nm,0.3s,baz=257,slow=22,SNR=4.1					
JHJ				Sn	Sn	01 51 09.4 -9.0
	82nm,0.3s,baz=58,slow=20,SNR=2.5					
INU	**Inuyama**	**5.86 247**		*e*Pn	**Pn**	**01 50 17.2 -0.5**
ASAJ	**Asahikawa**	**6.34 353**		Pn	**Pn**	**01 50 23.4 -0.8**
	16nm,0.3s,baz=218,slow=11,SNR=22					
ASAJ				Sn	**Sn**	**01 51 31.5 -4.1**
	3.2nm,0.3s,baz=303,slow=15,SNR=2.6					
ASAJ	**Asahikawa**	**6.34 353**		*e*Pn	**Pn**	**01 50 21.9 -2.3**
ASAJ				Sn	**Sn**	**01 51 31.5 -4.1**
YUK	**Yuzh-Kuril'sk**	**6.44**	**15**	⇓*i*P	**Pn**	**01 50 22.9 -2.7**
KUR	**Kuril'sk**	**8.06**	**22**	⇑*e*P	**Pn**	**01 50 45.9 -1.9**
KUR				*i* S	Sn	01 52 08.7 -9.3
KUR				pmax	pmax	
	comp=Z,48nm,0.4s					
KUR				pmax	pmax	
	comp=E,21nm,0.3s					
KUR				pmax	pmax	
	comp=N,26nm,0.4s					
KUR				smax	smax	
	comp=E,181nm,0.5s					
KUR				smax	smax	
	comp=N,102nm,0.2s					
KUR				MLR	MLR	
	comp=N,851nm,12.0s					
KUR				MLR	MLR	
	comp=E,2μm,12.0s					
KUR				MLR	MLR	
	comp=Z,550nm,12.0s					
YSS	**Yuzh-Sakhalins**	**9.15 356**		*e*P	Pn	01 51 10.1 +7.3
YSS				*e*		01 52 38.4
YSS				MLR	MLR	
	comp=Z,2μm,16.0s					
YSS	**Yuzh-Sakhalins**	**9.15 356**		*e*Pn	**Pn**	**01 51 00.6 -2.2**
YSS				*e*Sn	**Sn**	**01 52 36.9 -7.9**
VLA	**Vladivostok**	**10.39 304**		*e*P	**Pn**	**01 51 21.6 +1.9**
VLA				*e*S	**Sn**	**01 53 19.0 +3.9**
VLA				pmax	pmax	
	comp=Z,94μm,1.4s					
CBIJ	**Chichi jima**	**10.76 187**		*e*Pn	Pn	01 51 18.9 -6.0
CBIJ				*e*Sn	Sn	01 53 09.1 -15
JCJ	**Chichijima**	**10.76 187**		Pn	Pn	01 51 20.1 -4.8
	comp=Z,27nm,0.3s,baz=102,slow=20,SNR=12					
JCJ				Sn	Sn	01 53 11.0 -13
USRK	**Ussuriysk Ar.**	**10.85 310**		Pn	**Pn**	**01 51 25.9 -0.2**
	comp=Z,1.6nm,0.3s,baz=121,slow=14,SNR=31					
USRK				LR	LR	01 55 36.5
	comp=Z,1μm,18.7s,baz=117,slow=37					
UGL	**Uglegorsk**	**11.31 355**		P	**Pn**	**01 51 34.0 +1.7**
UGL				pmax	pmax	
	comp=Z,54nm,0.8s					
UGL				MLR	MLR	
	comp=Z,2μm,15.0s					
UGL				MLR	MLR	
	comp=N,1μm,14.0s					
UGL				MLR	MLR	
	comp=E,2μm,16.0s					
JNU	**Nakatsue**	**11.39 250**		Pn	**Pn**	**01 51 32.5 -1.2**
	comp=E,0.7nm,0.3s,baz=34,slow=5.5,SNR=6.5					
JNU				LR	LR	01 56 10.5
	comp=E,817nm,19.1s,baz=101,slow=39					
JNU	**Nakatsue**	**11.39 250**		*e*Pn	**Pn**	**01 51 29.8 -3.8**
HABR	**Khabarovsk**	**12.34 332**		*e*P	**Pn**	**01 51 44.7 -1.7**
HABR				*e*S	**Sn**	**01 54 01.4 -1.5**
HABR				pmax	pmax	
	comp=E,37nm,1.0s					
HABR				pmax	pmax	
	comp=N,26nm,1.0s					
HABR				pmax	pmax	
	comp=Z,55nm,1.0s					
HABR				MLR	MLR	
	comp=Z,704nm,18.0s					
KSRS	**Korea Array**	**12.45 273**		Pn	**Pn**	**01 51 49.0 +1.0**
	comp=Z,0.5nm,0.3s,baz=88,slow=13,SNR=56					
KSRS				LR	LR	01 56 15.7
	comp=Z,890nm,19.6s,baz=72,slow=36					
KS01	**Wonju Array Si**	**12.47 273**		*e*Pn	**Pn**	**01 51 48.3 0.0**
KS15	**Wonju Array Si**	**12.49 273**		*e*Pn	**Pn**	**01 51 49.1 +0.7**
KSAR	**Wonju Array Be**	**12.49 273**		P	**Pn**	**01 51 49.0 +0.6**
KSAR	**Wonju Array Be**	**12.49 273**		Pn	**Pn**	**01 51 49.0 +0.6**
MDJ	**Mudanjiang**	**12.55 307**		P	**Pn**	**01 51 50.5 +1.2**
MDJ				S	**Sn**	**01 54 09.8 +1.8**
MDJ				PcP	**PcP**	**01 57 27.4 +0.4**
MDJ				ScP	**ScP**	**02 01 00.4 +2.4**
MDJ				ScS	**ScS**	**02 04 35.1 +1.1**
MDJ				pmax	pmax	
	comp=Z,39nm,1.1s					
MDJ				pmax	pmax	
	comp=Z,370nm,8.6s					
MDJ				LR	LR	
	comp=Z,520nm,13.6s					
MDJ				LR	LR	
	comp=Z,820nm,13.0s					
MDJ				LR	LR	
	comp=Z,1μm,13.2s					
MDJ	**Mudanjiang**	**12.55 307**		*e*Pn	**Pn**	**01 51 48.8 -0.5**
TYV	**Tymovskoe**	**13.06 357**		*e*P	**Pn**	**01 51 53.0 -3.2**
TYV				pmax	pmax	
	comp=Z,44nm,1.0s					
TYV				MLR	MLR	
	comp=N,1μm,18.0s					
TYV				MLR	MLR	
	comp=Z,1μm,16.0s					
INCN	**Inchon**	**13.47 274**		*e*Pn	**Pn**	**01 52 02.9 +1.0**
KLR	**Kul'dur**	**14.27 327**		Pn	**Pn**	**01 52 10.4 -2.4**
	comp=Z,0.7nm,0.3s,baz=135,slow=12,SNR=84					
KLR				LR	LR	01 57 40.1
	comp=Z,771nm,21.1s,baz=144,slow=37					
KLR	**Kul'dur**	**14.27 327**	*c*	*i*P	**Pn**	**01 52 08.9 -3.9**
CN2	**Changchun**	**14.99 299**		*e*P	**Pn**	**01 52 20.5 -2.1**
CN2				*e*pP	P	01 52 26.8 -0.9
CN2				*e*S	**Sn**	**01 55 05.8 -1.8**
CN2				pmax	pmax	
	comp=Z,10.0nm,1.2s					
CN2				pmax	pmax	
	comp=Z,200nm,8.0s					
CN2				LR	LR	
	comp=Z,1μm,13.0s					
CN2				LR	LR	
	comp=Z,600nm,13.0s					
NKL	**Nikolayevsk**	**15.47 353**		*e*P	**Pn**	**01 52 26.0 -2.7**
NKL				pmax	pmax	
	comp=N,22nm,1.0s					
NKL				pmax	pmax	
	comp=Z,30nm,1.0s					
SNY	**Shenyang**	**15.91 291**		⇑P	**Pn**	**01 52 32.3 -2.2**
SNY				pmax	pmax	
	comp=Z,9.0nm,0.5s					
SNY				pmax	pmax	
	comp=Z,190nm,3.5s					
SNY				LR	LR	
	comp=Z,1μm,14.7s					
SNY				LR	LR	
	comp=Z,2μm,17.8s					
SNY				LR	LR	
	comp=Z,3μm,14.7s					
JOW	**Kunigami**	**16.95 234**		*e*Pn	**Pn**	**01 52 43.1 -4.7**
	comp=Z,40nm,0.9s					
DL2	**Dalian**	**17.28 280**		⇑*i*P	**Pn**	**01 52 49.9 -2.0**
DL2				S	**Sn**	**01 55 56.5 -6.7**
DL2				pmax	pmax	
	comp=Z,52nm,1.2s					
DL2				pmax	pmax	
	comp=Z,230nm,5.1s					
DL2				LR	LR	
	comp=Z,980nm,15.1s					
DL2				LR	LR	
	comp=Z,960nm,17.9s					
PEA0	**Petropavlovsk-**	**18.15 28**		*e*P	**Pn**	**01 53 02.3 -0.1**
PEA0B	**Petropavlovsk-**	**18.15 28**		*e*P	**Pn**	**01 53 01.1 -1.4**
	comp=Z,114nm,1.3s					
PETK	**Petropavlovsk-**	**18.15 28**		P	**P**	**01 53 03.3 +0.7**
	comp=Z,0.4nm,0.3s,baz=200,slow=9.2,SNR=12					
PET	**Petropavlovsk**	**18.45 30**		*e*P	**Pn**	**01 53 06.7 +0.6**
PET				*e*S	**Sn**	**01 56 27.9 -3.3**
PET				pmax	pmax	
	comp=Z,200nm,10.3s					
PET				pmax	pmax	
	comp=Z,35nm,1.2s					
PET				MLR	MLR	
	comp=Z,300nm,18.0s					
PET				MLR	MLR	
	comp=Z,400nm,16.0s					
PET	**Petropavlovsk**	**18.45 30**		*e*P	**P**	**01 53 05.6 -0.3**
	comp=Z,45nm,1.2s					
HIA	**Hailar**	**20.66 311**		*e*P	**P**	**01 53 28.3 -1.8**
HIA				pmax	pmax	
	comp=Z,49nm,1.1s					
HIA	**Hailar**	**20.66 311**		*e*P	**P**	**01 53 28.3 -1.8**
	comp=Z,49nm,1.1s					
NJ2	**Nanjing**	**21.08 262**		*e*P	**P**	**01 53 38.0 +3.3**
NJ2				pP	**sP**	**01 53 44.4 -1.6**
NJ2				sP	**pP**	**01 53 49.9 +7.5**
NJ2				pmax	pmax	
	comp=Z,15nm,0.9s					
NJ2				LR	LR	
	comp=Z,1μm,18.4s					
NJ2				LR	LR	
	comp=Z,1μm,14.6s					
NJ2				LR	LR	
	comp=Z,970nm,12.5s					
TIA	**Tai'an**	**21.20 274**		⇓P	**P**	**01 53 34.8 -1.2**
TIA				pP	**pP**	**01 53 41.8 -1.9**
TIA				pmax	pmax	
	comp=Z,30nm,1.1s					
TIA				LR	LR	
	comp=Z,560nm,12.5s					
TIA				LR	LR	
	comp=Z,720nm,13.1s					
TIA				LR	LR	
	comp=Z,850nm,12.5s					
BJI	**Beijing**	**21.44 284**		P	**P**	**01 53 36.8 -1.7**
BJI				sP	**sP**	**01 53 51.9 +2.1**
BJI				S	**S**	**01 57 33.0 -1.8**
BJI				pmax	pmax	
	comp=Z,72nm,0.9s					
BJI				pmax	pmax	
	comp=Z,110nm,3.5s					
BJI				LR	LR	
	comp=Z,820nm,15.0s					
BJI				LR	LR	
	comp=Z,340nm,21.1s					
BJT	**Baijiatuau**	**21.45 284**		*e*P	**P**	**01 53 36.9 -1.7**
BJT				pmax	pmax	
	comp=Z,128nm,1.1s					
BJT	**Baijiatuau**	**21.45 284**		*e*P	**P**	**01 53 36.9 -1.7**
	comp=Z,128nm,1.1s					
MA2	**Magadan**	**22.25 10**		P	**P**	**01 53 48.9 +1.8**
	comp=Z,10nm,0.7s,baz=260,slow=8.1,SNR=5.0					
CLNS	**Chul'man**	**22.73 333**		*e*P	**P**	**01 53 51.2 -1.1**
CLNS				pmax	pmax	
	comp=Z,52nm,0.9s					
CLNS				pmax	pmax	
	comp=N,25nm,0.9s					
CLNS				pmax	pmax	
	comp=E,16nm,0.8s					
YULB	**Yu-li**	**23.92 239**		*e*P	**P**	**01 54 03.8 -0.4**
	comp=E,134nm,1.9s					
GUMO	**Guam**	**24.16 177**		LR	LR	02 02 22.3
	comp=E,191nm,20.7s,baz=358,slow=34					
TPUB	**Ta-pu**	**24.43 240**		*e*P	**P**	**01 54 08.8 -0.2**
	comp=E,42nm,0.6s					
TIY	**Taiyuan**	**24.60 279**		*e*P	**P**	**01 54 11.8 +1.3**
TIY				pP	**sP**	**01 54 22.8 +0.5**
TIY				PP	**PnPn**	**01 54 43.3 +1.0**
TIY				pmax	pmax	
	comp=E,40nm,0.8s					
TIY				pmax	pmax	
	comp=E,270nm,5.4s					
TIY				LR	LR	
	comp=E,310nm,12.1s					
TIY				LR	LR	
	comp=E,500nm,11.6s					
TIY				LR	LR	
	comp=E,730nm,12.8s					
QZH	**Quanzhou**	**24.84 246**		*e*P	**P**	**01 54 12.1 -0.5**
QZH				S	**S**	**01 58 29.9 -3.8**
QZH				LR	LR	
	comp=E,920nm,15.0s					
HHC	**Hu-ho-hao-te**	**24.91 287**		*e*P	**P**	**01 54 11.9 -1.4**
HHC				pP	pP	01 54 20.4 -1.2
HHC				sP	sP	01 54 26.4 +1.3
HHC				S	**S**	**01 58 30.4 -4.5**
HHC				sS	sS	01 58 43.8 -4.7
HHC				pmax	pmax	
	comp=E,50nm,0.8s					
HHC				pmax	pmax	
	comp=E,200nm,4.6s					
HHC				LR	LR	
	comp=E,1μm,12.4s					
HHC				LR	LR	
	comp=E,1μm,12.3s					
HHC				LR	LR	
	comp=E,1μm,12.9s					
WHN	**Wuhan**	**25.21 262**		P	**P**	**01 54 16.3 +0.3**
WHN				pP	**sP**	**01 54 26.5 -1.2**
WHN				S	**S**	**01 58 34.4 -5.2**
WHN				LR	LR	
	comp=E,2μm,12.0s					
WHN				LR	LR	
	comp=E,2μm,14.9s					
WHN				LR	LR	
	comp=E,2μm,13.4s					
CIT	**Chita**	**25.37 314**		*e*P	P	01 54 27.4 +10
CIT				*e*		01 54 40.8
CIT				*e*		01 54 57.9
SEY	**Seymchan**	**25.71 9**		P	**P**	**01 54 22.6 +2.4**
	comp=E,14nm,0.8s,baz=187,slow=5.9,SNR=26					
SEY	**Seymchan**	**25.71 9**	⇑	*i*P	**P**	**01 54 20.5 +0.3**
YAK	**Yakutsk**	**25.73 345**		P	**P**	**01 54 19.8 -0.6**
	comp=E,2.9nm,0.4s,baz=267,slow=20,SNR=4.2					
YAK				LR	LR	02 06 51.5
	comp=E,234nm,18.1s,baz=100,slow=42					
YAK	**Yakutsk**	**25.73 345**		*e*P	**P**	**01 54 19.8 -0.6**
YAK				*e**PP	**pP**	**01 54 29.3 +0.6**
YAK				*e*		01 55 00.2
YAK				*e*PPP	PPP	01 55 08.3
YAK				*e*		01 57 46.2
YAK				*e*SS		01 59 51.8
YAK				*e*SSS	SSS	02 00 08.3
YAK				*e*		02 05 12.9
YAK				pmax	pmax	
	comp=N,21nm,1.1s					
YAK				pmax	pmax	
	comp=Z,66nm,0.8s					
YAK				pmax	pmax	
	comp=E,16nm,1.1s					
YAK				pmax	pmax	
	comp=Z,31nm,0.6s					
YAK				pmax	pmax	
	comp=N,52nm,1.1s					
YAK				pmax	pmax	
	comp=E,50nm,1.2s					
YAK				MLR	MLR	
	comp=N,680nm,14.0s					
YAK				MLR	MLR	
	comp=Z,693nm,13.0s					
YAK				MLR	MLR	
	comp=E,247nm,14.0s					
YAK	**Yakutsk**	**25.73 345**		*e*P	**P**	**01 54 20.0 -0.4**
	comp=E,102nm,0.8s					
SMY	**Shemya**	**25.87 45**		*e*P	**P**	**01 54 22.8 +1.0**
SMY	**Shemya**	**25.87 45**		*e*P	**P**	**01 54 22.8 +1.0**
BTO	**Baotou**	**26.09 287**		*e*P	**P**	**01 54 21.1 -3.0**
H11N2	**WAKE ISLAND Hy 27.10 125**			T	T	02 22 50.8
	baz=317,slow=75,SNR=82					
H11N1	**WAKE ISLAND Hy 27.11 125**			T	T	02 22 50.7
	baz=317,slow=75,SNR=19					
H11N3	**WAKE ISLAND Hy 27.12 125**			T	T	02 23 01.0
	baz=317,slow=75,SNR=26					
BOD	**Bodaibo**	**27.84 326**		*e*P	**P**	**01 54 39.3 -0.2**
BOD				pmax	pmax	
	comp=Z,72nm,1.6s					
H11S1	**WAKE ISLAND Hy 27.87 127**			T	T	02 23 50.0
	baz=319,slow=76,SNR=15					
H11S3	**WAKE ISLAND Hy 27.87 127**			T	T	02 23 53.0
	baz=319,slow=76,SNR=15					
H11S2	**WAKE ISLAND Hy 27.89 127**			T	T	02 23 55.6
	baz=319,slow=76,SNR=14					
XAN	**Xi'an**	**28.25 273**		P	**P**	**01 54 45.4 +2.0**
XAN				pP	sP	01 54 57.3 +2.1
XAN				S	**S**	**01 59 28.4 +0.7**
XAN				pmax	pmax	
	comp=Z,15nm,0.9s					
XAN				pmax	pmax	
	comp=Z,110nm,7.5s					
XAN				LR	LR	
	comp=Z,700nm,15.2s					
XAN				LR	LR	
	comp=Z,760nm,12.1s					
ULN	**Ulaanbaatar**	**28.39 302**	⇑	*i*P	**P**	**01 54 45.4 +0.7**
ULN				*i* *PP	**sP**	**01 54 56.9 +0.4**
ULN				pmax	pmax	
	comp=Z,46nm,1.2s					
ULN	**Ulaanbaatar**	**28.39 302**		*e*P	**P**	**01 54 45.5 +0.8**
	comp=Z,49nm,1.2s					
SONA1	**Songino Array**	**28.83 302**		*e*P	**P**	**01 54 49.3 +0.8**
SONM	**Songino Array**	**28.83 302**		P	**P**	**01 54 49.7 +1.2**
	comp=Z,15nm,0.8s,baz=106,slow=9.0,SNR=37					
SONM				LR	LR	02 06 45.3
	comp=Z,518nm,18.9s,baz=96,slow=37					
ENH	**Enshi**	**29.15 265**		*e*P	**P**	**01 54 52.7 +1.3**
	comp=Z,67nm,0.9s					
TLY	**Talaya**	**31.17 309**		P	**P**	**01 55 11.6 +2.5**
	comp=Z,10nm,0.7s,baz=105,slow=6.6,SNR=5.5					
TLY	**Talaya**	**31.17 309**		*e*P	**P**	**01 55 12.1 +3.0**
TLY				*e*		01 56 26.1
TLY				*e*S	**S**	**02 00 20.0 +6.9**
TLY				*e*SS	**SnSn**	**02 01 50.7 -5.3**
TLY				pmax	pmax	
	comp=Z,50nm,1.5s					
TLY				MLR	MLR	
	comp=Z,441nm,14.0s					
TLY	**Talaya**	**31.17 309**		*e*P	**P**	**01 55 12.0 +3.0**
	comp=Z,67nm,1.5s					
ZAK	**Zakamensk**	**31.19 307**		*e*P	**P**	**01 55 09.6 +0.3**
ZAK				pmax	pmax	
	comp=Z,34nm,1.4s					
LZH	**Lanzhou**	**31.67 279**		*e*P	**P**	**01 55 14.5 +0.7**
LZH				pP	sP	01 55 25.3 -0.3
LZH				sP	pP	01 55 30.0 +7.8
LZH				PP	**PnPn**	**01 56 20.3 +2.3**
LZH				*e*S	**S**	**02 00 19.0 -2.6**
LZH				sS	sS	02 00 38.0 +2.7
LZH				pmax	pmax	
	comp=Z,35nm,1.3s					
LZH				pmax	pmax	
	comp=Z,160nm,6.0s					
LZH				LR	LR	
	comp=Z,740nm,12.5s					
LZH				LR	LR	
	comp=Z,460nm,11.2s					
LZH				LR	LR	
	comp=Z,1μm,15.3s					
BILL	**Bilibino**	**32.79 16**	⇓	*e*P	**P**	**01 55 23.4 +0.3**
BILL				*i*		01 55 34.2
BILL				*e*		01 56 30.3
BILL				*e*SS	SS	02 02 33.7 -26
BILL				pmax	pmax	
	comp=Z,15nm,1.7s					
BILL	**Bilibino**	**32.79 16**		*e*P	**P**	**01 55 23.1 0.0**
	comp=Z,64nm,1.7s					
MOY	**Mondy**	**32.80 309**		*e*P	**P**	**01 55 26.3 +2.8**
MOY				pmax	pmax	
	comp=Z,44nm,2.6s					
GYA	**Guiyang**	**33.08 261**	⇑	*i*P	**P**	**01 55 27.8 +1.6**
GYA				pP	sP	01 55 38.4 +0.4
GYA				PP	**PP**	**01 56 39.3 -1.9**
GYA				PcP	**PcP**	**01 58 11.0 +1.8**
GYA				S	**S**	**02 00 42.3 -1.3**
GYA				sS	sS	02 01 02.0 +4.6
GYA				ScP	**ScP**	**02 01 51.5 +0.1**
GYA				ScS	**ScS**	**02 05 50.8 -1.2**
GYA				pmax	pmax	
	comp=Z,20nm,0.8s					
GYA				pmax	pmax	
	comp=Z,120nm,5.2s					
GYA				LR	LR	
	comp=Z,490nm,17.2s					
GYA				LR	LR	
	comp=Z,470nm,18.3s					
GYA				LR	LR	
	comp=Z,490nm,17.9s					
CD2	**Chengdu**	**33.43 270**		P	**P**	**01 55 30.1 +1.0**
CD2				sP	sP	01 55 45.8 +4.8
CD2				S	**S**	**02 00 49.0 +0.2**
CD2				sS	sS	02 01 07.3 +4.7
CD2				pmax	pmax	
	comp=Z,20nm,0.9s					
CD2				pmax	pmax	
	comp=Z,70nm,5.5s					
CD2				LR	LR	
	comp=Z,690nm,15.6s					
CD2				LR	LR	
	comp=Z,690nm,18.0s					
GTA	**Gaotai**	**34.02 287**	⇑	P	**P**	**01 55 35.4 +1.1**
GTA				pP	sP	01 55 46.0 -0.1
GTA				sP	pP	01 55 49.9 +7.3
GTA				PcP	**PcP**	**01 58 12.8 +1.1**
GTA				S	**S**	**02 00 59.3 +1.4**
GTA				sS	sS	02 01 14.5 +2.8
GTA				pmax	pmax	
	comp=Z,17nm,1.2s					
GTA				pmax	pmax	
	comp=Z,170nm,4.3s					
GTA				LR	LR	
	comp=Z,440nm,17.1s					
GTA				LR	LR	
	comp=Z,650nm,19.5s					
GTA				LR	LR	
	comp=Z,800nm,17.1s					
TIXI	**Tiksi**	**34.74 352**		P	**P**	**01 55 39.4 -0.6**
	comp=Z,1.7nm,0.6s,baz=129,slow=4.3,SNR=4.4					
TIXI	**Tiksi**	**34.74 352**		*e*P	**P**	**01 55 39.7 -0.2**
TIXI				pmax	pmax	
	comp=Z,11nm,1.3s					
TIXI	**Tiksi**	**34.74 352**		*e*P	**P**	**01 55 39.7 -0.2**
	comp=Z,11nm,1.3s					
QIZ	**Qiongzhong**	**34.85 247**		P	**P**	**01 55 43.4 +1.9**
QIZ				S	**S**	**02 01 12.6 +1.8**
QIZ				LR	LR	
	comp=Z,440nm,10.9s					
QIZ				LR	LR	
	comp=Z,650nm,13.6s					
KMI	**Kunming**	**36.81 262**		P	**P**	**01 56 00.4 +1.9**
KMI				pP	sP	01 56 11.4 +1.0
KMI				sP	pP	01 56 15.8 +8.8
KMI				PP	**PnPn**	**01 57 26.3 +3.6**
KMI				S	**S**	**02 01 39.3 -2.0**
KMI				sS	sS	02 01 58.6 +3.5
KMI				SS	**SnSn**	**02 04 07.8 -6.0**
KMI				pmax	pmax	
	comp=Z,21nm,0.6s					
KMI				pmax	pmax	
	comp=Z,140nm,4.0s					
KMI				LR	LR	
	comp=Z,450nm,13.8s					
KMI				LR	LR	
	comp=Z,380nm,14.3s					
KMI				LR	LR	
	comp=Z,420nm,13.8s					
TNA	**Tin City**	**39.31 29**		*e*P	**P**	**01 56 18.2 -0.6**
	comp=Z,48nm,1.8s					
TNA				*e*S	**S**	**02 02 16.1 -1.6**
WMQ	**Urumqi**	**42.06 296**		P	**P**	**01 56 43.5 +1.6**
WMQ				pP	sP	01 56 53.3 -0.6
WMQ				sP	pP	01 56 59.6 +9.2
WMQ				ScS	ScS	02 06 37.3 -5.0
WMQ				pmax	pmax	
	comp=Z,10.0nm,0.8s					
WMQ				pmax	pmax	
	comp=Z,55nm,4.4s					
ZAA0	**Zalesovo Array**	**42.70 312**		*e*P	**P**	**01 56 46.8 -0.1**
ZALV	**Zalesovo Beam**	**42.70 312**		P	**P**	**01 56 47.1 +0.3**
	comp=Z,9.3nm,0.8s,baz=83,slow=7.3,SNR=17					
ZALV				PcP	**PcP**	**01 58 38.4 +0.2**
	comp=Z,3.2nm,0.5s,baz=93,slow=2.9,SNR=5.1					
ZALV				LR	LR	02 15 17.6
	comp=Z,356nm,19.6s,baz=67,slow=37					
ZALV	**Zalesovo Beam**	**42.70 312**		P	**P**	**01 56 47.1 +0.3**
ZALV						01 58 38.4
ZALV				pmax	pmax	
	comp=Z,25nm,0.7s					
ZALV				pmax	pmax	
	comp=Z,3.0nm,0.5s					
ZALV				MLR	MLR	
	comp=Z,356nm,19.6s					
NRIK	**Noril'sk**	**43.30 335**		LR	LR	02 16 23.6
	comp=Z,633nm,19.2s,baz=108,slow=38					

CMAR	Chiang Mai Arr	43.39	256	P		P	01 56 52.5 -0.3
	comp=Z,3.7nm,0.8s,baz=45,slow=6.9,SNR=11						
CMAR				LR		LR	02 16 05.6
	comp=Z,164nm,18.5s,baz=44,slow=38						
CMAR	Chiang Mai Arr	43.39	256	P		P	01 56 52.6 -0.3
CMAR				pmax		pmax	
	comp=Z,3.0nm,0.7s						
CMAR				MLR		MLR	
	comp=Z,164nm,18.5s						
CM01	Chiang Mai Arr	43.40	256	eP		P	01 56 53.8 +0.8
NVS	Novosibirsk	43.58	313	eP		P	01 56 59.7 +5.8
NVS				pmax		pmax	
	comp=Z,28nm,1.1s						
NVS				pmax		pmax	
	comp=N,26nm,0.5s						
NVS				pmax		pmax	
	comp=E,20nm,1.1s						
TT01	Tatalina	43.77	35	eP		P	01 56 55.6 +0.3
TTA	Tatalina	43.77	35	eP		P	01 56 52.5 -3.0
TTA				pmax		pmax	
	comp=Z,7.0nm,0.9s						
TTA	Tatalina	43.77	35	eP		P	01 56 52.5 -3.0
	comp=Z,6.5nm,0.9s						
SVW2	Sparrevohn	43.83	38	eP		P	01 56 55.7 -0.2
	comp=Z,10nm,0.7s						
LSA	Lhasa	43.89	276	P		P	01 57 00.6 +3.3
OHAK	Old Harbor	44.98	43	eP		P	01 57 05.5 +0.4
	comp=Z,163nm,1.8s						
SHL	Shillong	45.17	270	eP		P	01 57 07.5 +0.2
TARA	Tarawa	45.19	136	eP		P	01 57 07.1 -0.1
	comp=Z,68nm,0.9s						
MK01	Makanchi Array	45.19	302	eP		P	01 57 07.1 +0.1
MK31	Makanchi Array	45.20	302	eP		P	01 57 07.8 +0.7
MK31	Makanchi Array	45.20	302	eP		P	01 57 07.8 +0.7
MKAR	Makanchi Array	45.20	302	P		P	01 57 07.4 +0.3
	comp=Z,7.4nm,0.6s,baz=86,slow=9.4,SNR=34						
MKAR				LR		LR	02 16 43.1
	comp=Z,214nm,18.7s,baz=64,slow=37						
MKAR	Makanchi Array	45.20	302	eP		P	01 57 07.8 +0.7
MKAR	Makanchi Array	45.20	302	eP		P	01 57 07.8 +0.7
RSO	Redoubt South	45.20	39	eP		P	01 57 08.1 +1.1
KDAK	Kodiak Island	45.34	43	ceP		P	01 57 08.6 +0.7
KDAK	Kodiak Island	45.34	43	eP		P	01 57 08.6 +0.7
	comp=Z,36nm,0.9s						
MAKZ	Makanchi	45.40	302	eP		P	01 57 09.4 +0.7
MAKZ				pmax		pmax	
	comp=Z,25nm,1.0s						
MAKZ	Makanchi	45.40	302	eP		P	01 57 09.4 +0.7
	comp=Z,25nm,1.0s						
SBUM	Sibu	45.47	227	eP		P	01 57 10.1 +0.6
	comp=Z,25nm,1.4s						
PPLA	Purkeypile	45.52	35	eP		P	01 57 09.3 -0.3
	comp=Z,102nm,1.6s						
SPU	Mount Spurr	45.54	38	eP		P	01 57 09.5 -0.2
CAST	Castle Rocks	45.59	35	eP		P	01 57 10.8 +0.9
	comp=Z,97nm,1.8s						
BPAW	Bear Paw Mtn.	46.10	34	eP		P	01 57 15.2 +1.3
	comp=Z,58nm,1.8s						
KTH	Kantishna Hill	46.11	34	eP		P	01 57 14.6 +0.5
	comp=Z,77nm,1.5s						
MLY	Manley	46.25	32	eP		P	01 57 15.7 +0.5
	comp=Z,69nm,1.6s						
TRF	Thorofare Moun	46.40	35	eP		P	01 57 16.8 +0.3
	comp=Z,11nm,0.8s						
COLD	Coldfoot	46.61	29	eP		P	01 57 17.5 -0.4
	comp=Z,41nm,1.9s						
RC01	Rabbit Creek A	46.67	38	eP		P	01 57 18.0 -0.4
	comp=Z,28nm,0.8s						
BWN	Browne	46.77	34	eP		P	01 57 20.3 +1.2
	comp=Z,259nm,1.7s						
KURK	Kurchatov	46.84	308	c iP		P	01 57 20.1 +0.2
KURK				i *PP		pP	01 57 29.6 +1.1
KURK				pmax		pmax	
	comp=Z,16nm,0.7s						
KURK	Kurchatov	46.84	308	eP		P	01 57 20.0 +0.1
	comp=Z,50nm,0.8s						
PMR	Palmer	46.95	37	eP		P	01 57 20.5 0.0
PMR				pmax		pmax	
	comp=Z,22nm,0.7s						
PMR	Palmer	46.95	37	eP		P	01 57 20.5 0.0
	comp=Z,22nm,0.7s						
MCK	McKinley	47.00	34	eP		P	01 57 21.8 +0.8
MCK				pmax		pmax	
	comp=Z,63nm,1.7s						
MCK	McKinley	47.00	34	eP		P	01 57 21.8 +0.8
	comp=Z,63nm,1.7s						
RND	Reindeer	47.04	35	eP		P	01 57 21.8 +0.4
RND				pmax		pmax	
	comp=Z,40nm,1.2s						
RND	Reindeer	47.04	35	eP		P	01 57 21.8 +0.4
	comp=Z,40nm,1.2s						
SML	Sawmill	47.32	37	eP		P	01 57 23.1 -0.4
SML				pmax		pmax	
	comp=Z,28nm,0.8s						
SML	Sawmill	47.32	37	eP		P	01 57 23.1 -0.4
	comp=Z,28nm,0.8s						
WRH	Wood River Hil	47.37	33	eP		P	01 57 24.6 +0.7
	comp=Z,11nm,0.7s						
KSM	Kuching	47.37	228	eP		P	01 57 24.8 +0.3
	comp=Z,13nm,0.7s						
SCM	Sheep Creek Mo	47.79	37	eP		P	01 57 28.3 +1.0
SCM				pmax		pmax	
	comp=Z,31nm,0.9s						
SCM	Sheep Creek Mo	47.79	37	eP		P	01 57 28.3 +1.0
	comp=Z,31nm,0.9s						
ILAR	Eielson Array	47.89	33	P		P	01 57 28.2 +0.3
	comp=Z,8.1nm,0.7s,baz=263,slow=6.6,SNR=110						
ILB	Eielson Array	47.89	33	eP		P	01 57 28.2 +0.3
IL1	Eielson Array	47.89	33	eP		P	01 57 27.6 -0.3
PDGK	Podgornoye	47.97	298	P		P	01 57 30.2 +1.5
PDGK				pmax		pmax	
	comp=Z,76nm,1.3s						
KLU	Klutina	48.49	37	eP		P	01 57 33.9 +1.3
	comp=Z,23nm,0.8s						
FYU	Fort Yukon	48.55	30	eP		P	01 57 35.0 +2.1
	comp=Z,172nm,1.7s						
DIV	Divide	48.59	38	eP		P	01 57 34.8 +1.4
	comp=Z,193nm,1.8s						
PAX	Paxson	48.59	35	eP		P	01 57 34.1 +0.7
PAX				pmax		pmax	
	comp=Z,11nm,1.0s						
PAX	Paxson	48.59	35	eP		P	01 57 34.1 +0.7
	comp=Z,11nm,1.0s						
GUN	Gumba	48.82	276	eP		P	01 57 37.7 +1.7
	comp=Z,23nm,0.3s						
BMRM	Bremner River	49.17	38	eP		P	01 57 39.2 +1.4
	comp=Z,31nm,1.0s						
DOT	Dot Lake	49.17	34	eP		P	01 57 38.2 +0.4
	comp=Z,36nm,0.8s						
KKN	Kakani	49.35	276	eP		P	01 57 41.1 +1.2
	comp=Z,92nm,1.1s						
MENT	Mentasta	49.39	35	eP		P	01 57 41.2 +1.7
	comp=Z,104nm,1.8s						
DMN	Daman	49.57	276	eP		P	01 57 41.6 0.0
GKN	Gorkha	49.76	277	eP		P	01 57 43.7 +0.8
	comp=Z,171nm,1.0s						
BALM	Baldy	50.25	37	eP		P	01 57 47.9 +1.7
BALM				pmax		pmax	
	comp=Z,20nm,0.9s						
BALM	Baldy	50.25	37	eP		P	01 57 47.9 +1.7
	comp=Z,20nm,0.9s						
EGAK	Eagle	50.34	33	eP		P	01 57 47.0 +0.4
	comp=Z,46nm,1.7s						
KOLN	Koldanda	50.68	277	eP		P	01 57 50.6 +0.6
TKM2	Tokmak 2	50.80	298	eP		P	01 57 52.3 +1.6
TKM2				pmax		pmax	
	comp=Z,54nm,0.9s						
TKM2	Tokmak 2	50.80	298	eP		P	01 57 52.3 +1.6
	comp=Z,54nm,0.9s						
PYUN	Piuthan	51.01	278	eP		P	01 57 53.0 +0.6
	comp=Z,217nm,1.1s						
DAWY	Dawson	51.19	33	eP		P	01 57 55.0 +1.9
	comp=Z,37nm,1.8s						
BVA0	Borovoye Array	51.35	312	P		P	01 57 54.7 +0.3
BVA0				pmax		pmax	
	comp=Z,17nm,1.0s						
BRVK	Borovoye	51.40	312	c iP		P	01 57 55.1 +0.3
BRVK				pmax		pmax	
	comp=Z,6.0nm,0.7s						
BRVK	Borovoye	51.40	312	eP		P	01 57 55.0 +0.3
	comp=Z,17nm,0.9s						
COEN	Coen	51.50	181	eP		P	01 57 55.9 0.0
	comp=Z,36nm,0.9s						
AAK	Ala-Archa	51.66	298	LR		LR	02 20 40.2
	comp=Z,275nm,19.5s,baz=66,slow=37						
AAK	Ala-Archa	51.66	298	eP		P	01 57 58.1 +1.0
AAK				pmax		pmax	
	comp=Z,12nm,0.8s						
AAK	Ala-Archa	51.66	298	eP		P	01 57 58.1 +1.0
	comp=Z,12nm,0.8s						
KSH	Kashi	51.69	294	eP		P	01 58 01.8 +4.5
KSH				epP		sP	01 58 11.9 +2.5
KSH				esP		pP	01 58 15.6 +10
KSH				ePcP		PcP	01 59 14.8 +4.3
KSH				eScP		ScP	02 03 07.1 +1.9
KSH				S		S	02 05 20.3 +3.3
KSH				ScS		ScS	02 07 44.3 -1.3
KSH				SS		SS	02 08 54.8 +1.6
KSH				pmax		pmax	
	comp=Z,13nm,1.2s						
KSH				pmax		pmax	
	comp=Z,150nm,5.1s						
KSH				LR		LR	
	comp=Z,260nm,9.8s						
KSH				LR		LR	
	comp=Z,330nm,13.8s						
KSH				LR		LR	
	comp=Z,520nm,13.0s						
MTN	Manton Dam	51.74	196	eP		P	01 57 56.9 -0.7
	comp=Z,51nm,0.9s						
EKS2	Erkin-Say	52.15	299	eP		P	01 58 01.7 +1.0
EKS2				pmax		pmax	
	comp=Z,16nm,0.8s						
EKS2	Erkin-Say	52.15	299	eP		P	01 58 01.7 +1.0
	comp=Z,16nm,0.8s						
ZRNK	Zerenda	52.18	312	eP		P	01 58 01.3 +0.7
ZRNK				pmax		pmax	
	comp=Z,19nm,0.8s						
ZRNK	Zerenda	52.18	312	eP		P	01 58 01.3 +0.7
	comp=Z,19nm,0.8s						
INK	Inuvik	52.89	28	P		P	01 58 06.4 +0.9
	comp=Z,2.6nm,0.5s,baz=315,slow=4.5,SNR=12						
MNAS	Manas	53.10	299	P		P	01 58 08.9 +1.2
MNAS				pmax		pmax	
	comp=Z,57nm,0.9s						
PSI	Prapat	53.71	241	eP		P	01 58 12.0 -0.4
PSI				pmax		pmax	
	comp=Z,10.0nm,1.0s						
PSI	Prapat	53.71	241	eP		P	01 58 12.0 -0.4
	comp=Z,10nm,1.0s						
KK31	Karatay Array	54.25	300	i P		P	01 58 16.4 +0.4
KK31				pmax		pmax	
	comp=Z,29nm,1.1s						
THN	Thein Dam	54.70	286	eP		P	01 58 11.8 -7.6
THN				eS		P	01 58 21.0 +1.6
GSI	Gunungsitoli	55.71	241	eP		P	01 58 26.9 +0.1
	comp=Z,59nm,1.1s						
SVE	Sverdlovsk	55.72	319	eP		P	01 58 27.7 +1.3
SVE				pmax		pmax	
	comp=Z,39nm,0.9s						
SOKR	Solikamsk	56.77	323	eP		P	01 58 44.2 +10
SOKR				pmax		pmax	
	comp=Z,13nm,0.6s						
SOKR				MLR		MLR	
	comp=Z,315nm,20.0s						
DLBC	Dease Lake	56.92	39	eP		P	01 58 37.2 +2.2
	comp=Z,17nm,1.1s						
ARU	Arti	56.94	319	P		P	01 58 35.7 +0.8
	comp=Z,7.7nm,0.6s,baz=52,slow=2.9,SNR=14						
ARU				LR		LR	02 25 33.5
	comp=Z,357nm,19.3s,baz=68,slow=39						
ARU	Arti	56.94	319	d iP		P	01 58 35.8 +0.8
ARU							01 59 34.0
ARU							02 00 45.7
ARU				S		S	02 06 30.3 +3.3
ARU				SS		SS	02 10 15.6 +0.7
ARU				pmax		pmax	
	comp=Z,19nm,1.2s						
ARU				MLR		MLR	
	comp=Z,425nm,22.0s						
ARU	Arti	56.94	319	eP		P	01 58 35.8 +0.8
	comp=Z,28nm,0.8s						
WRAB	Tennant Creek	58.10	190	d iP		P	01 58 42.7 -0.9
WRAB				pmax		pmax	
	comp=Z,140nm,1.0s						
WRAB	Tennant Creek	58.10	190	eP		P	01 58 42.3 -1.3
	comp=Z,45nm,0.9s						
WB2	Warramunga Arr	58.11	190	eP		P	01 58 42.2 -1.4
	comp=Z,48nm,0.9s						
WRA	Warramunga Arr	58.11	190	P		P	01 58 42.3 -1.3
	comp=Z,32nm,0.8s,baz=10,slow=7.1,SNR=184						
FITZ	Fitzroy Crossi	58.14	200	eP		P	01 58 43.5 -0.3
	comp=Z,38nm,1.4s						
KBL	Kabul	58.77	291	eP		P	01 58 50.0 +1.5
KBL				pmax		pmax	
	comp=Z,37nm,1.2s						
KBL	Kabul	58.77	291	eP		P	01 58 50.0 +1.5
	comp=Z,37nm,1.2s						
AB31	Akbulak array	58.78	310	i P		P	01 58 48.5 +0.4
AB31				pmax		pmax	
	comp=Z,5.0nm,0.5s						
ABKAR	Akbulak array	58.78	310	eP		P	01 58 48.5 +0.5
AKTO	Aktyubinsk	59.45	312	P		P	01 58 53.9 +1.1
	comp=Z,6.3nm,0.7s,baz=76,slow=14,SNR=11						
AKTO				LR		LR	02 25 53.4
	comp=Z,132nm,20.1s,slow=37						
HYB	Hyderabad	59.98	269	i P		P	01 58 58.0 +1.2
SPITS	Spitsbergen Ar	60.09	349	LR		LR	02 26 02.5
	comp=Z,67nm,19.9s,baz=50,slow=37						
AS01	Alice Springs	61.83	190	eP		P	01 59 07.9 -1.2
AS31	Alice Springs	61.83	190	eP		P	01 59 08.4 -0.8
	comp=Z,4.4nm,1.2s						
ASAR	Alice Springs	61.84	190	P		P	01 59 08.1 -1.1
	comp=Z,8.4nm,0.8s,baz=11,slow=5.6,SNR=41						
YKW3	Yellowknife Ar	62.20	31	eP		P	01 59 11.2 0.0
	comp=Z,7.4nm,0.7s						
YKW3				ePP		PP	02 01 29.0 +1.3
YKA	Yellowknife Ar	62.24	31	P		P	01 59 11.6 +0.2
	comp=Z,2.6nm,0.7s,baz=303,slow=6.7,SNR=38						
YKB5	Yellowknife Ar	62.24	31	eP		P	01 59 10.8 -0.7
TMCR	Tamitsa	62.90	332	eP		P	01 59 17.2 +1.4
TMCR				pmax		pmax	
	comp=Z,24nm,0.8s						
ARA0	ARCESS Array S	63.88	340	eP		P	01 59 23.2 +0.9
ARCES	ARCESS Array B	63.88	340	P		P	01 59 22.7 +0.4
	comp=Z,2.0nm,0.5s,baz=60,slow=8.7,SNR=27						
ARCES				LR		LR	02 31 49.8
	comp=Z,151nm,18.1s,baz=48,slow=40						
KLMR	Klimovskoe	64.03	328	eP		P	01 59 21.6 -1.7
KLMR				e			01 59 57.6
KLMR				pmax		pmax	
	comp=Z,22nm,1.2s						
NLWA	Neilton Lookou	64.89	49	eP		P	01 59 29.5 +0.3
	comp=Z,28nm,1.3s						
GEYT	Alibeck	64.99	300	P		P	01 59 31.0 +0.9
	comp=Z,7.8nm,0.8s,baz=9.9,slow=3.5,SNR=14						
GEYT				LR		LR	02 29 51.8
	comp=Z,204nm,18.4s,baz=60,slow=38						
DAG	Danmarks Havn	65.14	356	i P		P	01 59 30.5 +0.1
	comp=Z,6.1nm,1.0s						
DAG				i			01 59 41.1
DAG	Danmarks Havn	65.14	356	i P		P	01 59 30.5 +0.1
DAG				i			01 59 41.1
DAG				pmax		pmax	
	comp=Z,6.0nm,1.0s						
JCW	Jim Creek	65.63	47	eP		P	01 59 35.3 +1.2
RPW	Rockport	65.74	47	eP		P	01 59 35.5 +0.7
G03D	McMinnville, O	66.33	50	P		P	01 59 39.8 +1.3
	baz=300						
I03D	Drain, OR	67.05	52	P		P	01 59 44.2 +1.1
	baz=301						
H04A	Detroit Lake	67.26	50	eP		P	01 59 44.1 -0.4
	comp=Z,11nm,0.8s						
I04A	Tendick Farm,	67.58	51	P		P	01 59 46.9 +0.2
	baz=301						
MOS	Moscow	67.66	324	eP		P	01 59 47.9 +1.1
MOS				e			02 00 07.8
I05D	Terrebonne, OR	67.95	50	P		P	01 59 48.8 -0.1
	baz=302						
VRH	Novokhopyorsk	68.17	318	eP		P	01 59 50.3 +0.2
VRH				e*SP		sP	02 00 01.1 -1.3
VRH				pmax		pmax	
	comp=Z,10.0nm,1.4s						
YBH	Yreka Blue Hor	68.47	53	eP		P	01 59 53.0 +0.7
YBH				pmax		pmax	
	comp=Z,7.0nm,1.0s						
YBH	Yreka Blue Hor	68.47	53	eP		P	01 59 53.0 +0.7
	comp=Z,7.4nm,1.0s						
OBN	Obninsk	68.51	324	LR		LR	02 34 57.8
	comp=Z,88nm,19.8s,baz=88,slow=40						
OBN	Obninsk	68.51	324	⇑i P		P	01 59 53.9 +1.8
OBN				i			02 00 04.2
OBN				pmax		pmax	
	comp=Z,33nm,2.5s						
OBN				MLR		MLR	
	comp=Z,223nm,14.0s						
J05D	Fort Rock, OR	68.58	51	P		P	01 59 54.5 +1.5
	baz=302						
LPSR	Galich'ya Gora	68.82	321	eP		P	01 59 55.4 +1.3
LPSR				e*SP		sP	02 00 05.6 -0.8
LPSR				pmax		pmax	
	comp=Z,9.0nm,0.8s						
FIA1	FINESS Array S	68.93	333	eP		P	01 59 54.7 +0.1
FINES	FINESS Array B	68.93	333	P		P	01 59 55.0 +0.3
	comp=Z,5.1nm,0.7s,baz=38,slow=9.6,SNR=26						
FINES				LR		LR	02 31 46.4
	comp=Z,293nm,21.5s,baz=48,slow=37						
FINES	FINESS Array B	68.93	333	P		P	01 59 55.0 +0.3
FINES				pmax		pmax	
	comp=Z,5.0nm,0.7s						
FINES				MLR		MLR	
	comp=Z,293nm,21.5s						
M04C	Macdoel	69.00	53	P		P	01 59 56.4 +0.8
	baz=302						
K05A	Summer Lake	69.08	52	eP		P	01 59 57.5 +1.2
	comp=Z,29nm,1.1s						
STKA	Stephens Creek	69.36	182	P		P	01 59 55.3 -2.2
	comp=Z,3.8nm,0.7s,baz=338,slow=9.0,SNR=4.2						
VSR	Storozhevoye	69.49	319	eP		P	01 59 58.7 +0.4
VSR				e*SP		sP	02 00 09.8 -0.8
VSR				pmax		pmax	
	comp=Z,10.0nm,1.5s						
JMIC	Jan Mayen	69.67	351	LR		LR	02 29 59.9
	comp=Z,33nm,20.0s,baz=64,slow=35						
SUMG	Summit	69.89	1	i P		P	02 00 02.0 +1.0
	comp=Z,12nm,1.0s						
SUMG				i			02 00 13.3
SUMG	Summit	69.89	1	i P		P	02 00 02.0 +1.0
SUMG				i			02 00 13.3
SUMG				pmax		pmax	
	comp=Z,12nm,1.0s						
SUMG	Summit	69.89	1	eP		P	02 00 02.0 +1.0
	comp=Z,18nm,0.8s						
SWMT	Swartz Lake	70.50	45	eP		P	02 00 05.6 +0.9
WVOR	Wild Horse Val	70.64	51	eP		P	02 00 06.8 +1.1
WVOR				pmax		pmax	
	comp=Z,8.0nm,1.0s						
WVOR	Wild Horse Val	70.64	51	eP		P	02 00 06.8 +1.1
	comp=Z,8.0nm,1.0s						
GOF	Gofitskoye	70.87	312⇑	eP		P	02 00 07.8 +0.9
GOF				pmax		pmax	
	comp=Z,29nm,0.9s						
MSO	Missoula	70.93	45	eP		P	02 00 07.8 +0.5
	comp=Z,21nm,1.8s						
GUDG	Gudauri	71.48	310	P		P	02 00 13.3 +2.4
DGRG	David-gareji	71.50	308	P		P	02 00 23.2 +12
DGRG	David-gareji	71.50	308	eP		P	02 00 23.2 +12
ZEI	Tsey	71.65	310	eP		P	02 00 09.6 -2.3
ZEI				pmax		pmax	
	comp=Z,19nm,0.6s						
PAHR	Pah Rah Range	71.69	54	eP		P	02 00 10.3 -1.9
	comp=Z,8.3nm,1.1s						
KVAR	Kislovodsk Arr	71.70	312	P		P	02 00 12.7 +0.6
	comp=Z,13nm,0.9s,baz=303,slow=0.6,SNR=18						
KVAR				LR		LR	02 33 36.8
	comp=Z,124nm,21.5s,baz=340,slow=37						
KIV	Kislovodsk	71.71	312	c iP		P	02 00 13.8 +1.6
KIV				i			02 00 25.4
KIV				pmax		pmax	
	comp=Z,48nm,1.7s						
KIV	Kislovodsk	71.71	312	eP		P	02 00 13.7 +1.6
	comp=Z,184nm,1.8s						
KBZ	Khabaz	71.72	311	P		P	02 00 13.2 +1.2
	comp=Z,7.6nm,0.9s,baz=18,slow=1.0,SNR=18						
KBZ				LR		LR	02 37 06.8
	comp=Z,122nm,18.1s,baz=54,slow=40						
TBLG	Delisi	71.74	309	P		P	02 00 14.9 +2.6
TBLG	Delisi	71.74	309	eP		P	02 00 14.8 +2.6
MFID	Camas Ranch	71.79	49	eP		P	02 00 12.4 -0.3
	comp=Z,5.1nm,0.8s						
CMB	Columbia Colle	71.98	56	eP		P	02 00 14.8 +1.0
CMB				pmax		pmax	
	comp=Z,46nm,1.9s						
CMB	Columbia Colle	71.98	56	eP		P	02 00 14.8 +1.0
	comp=Z,46nm,1.9s						
ONI	Oni	72.03	310	P		P	02 00 16.4 +2.3
ONI	Oni	72.03	310	eP		P	02 00 16.3 +2.3
NEY	Neytrino	72.09	311⇑	i P		P	02 00 17.8 +3.2
NEY				pmax		pmax	
	comp=Z,3.0nm,1.2s						
LRM	Limekiln Ridge	72.35	45	eP		P	02 00 17.0 +0.8
FCC	Fort Churchill	72.51	28	eP		P	02 00 15.8 -0.6
FCC				pmax		pmax	
	comp=Z,55nm,1.6s						
FCC	Fort Churchill	72.51	28	eP		P	02 00 15.8 -0.6
	comp=Z,55nm,1.6s						
DLMT	Dillon	72.54	46	eP		P	02 00 16.5 -0.6
	comp=Z,7.6nm,0.7s						
HLID	Hailey	72.55	48	P		P	02 00 18.2 +0.9
	baz=306						
HLID	Hailey	72.55	48	eP		P	02 00 18.4 +1.1
	comp=Z,3.6nm,0.9s						
GNI	Garni	72.64	307	P		P	02 00 20.0 +2.1
	comp=Z,3.7nm,0.5s,baz=193,slow=1.5,SNR=6.6						
GNI				LR		LR	02 35 16.1
	comp=Z,93nm,19.2s,baz=66,slow=38						
GNI	Garni	72.64	307⇑	i P		P	02 00 20.8 +3.0
GNI				pmax		pmax	
	comp=Z,45nm,1.2s						
GNI	Garni	72.64	307	eP		P	02 00 19.6 +1.7
	comp=Z,30nm,1.1s						
BMN	Battle Mountai	72.65	52	eP		P	02 00 17.8 -0.1
BMN				pmax		pmax	
	comp=Z,35nm,2.0s						
BMN	Battle Mountai	72.65	52	eP		P	02 00 17.8 -0.1
	comp=Z,35nm,2.0s						
BGD	Bogdanovka	72.71	309	P		P	02 00 26.3 +8.0
BOZ	Bozeman (W)	72.92	45	P		P	02 00 19.7 +0.3
	baz=307						
BOZ	Bozeman (W)	72.92	45	eP		P	02 00 19.4 0.0
BOZ				pmax		pmax	
	comp=Z,6.0nm,0.7s						
BOZ	Bozeman (W)	72.92	45	eP		P	02 00 19.4 0.0
	comp=Z,5.8nm,0.7s						
NACGM	Naroch	73.03	327	e		P	02 00 31.0 +11
NV01	Mina Array Sit	73.11	54	eP		P	02 00 21.0 +0.2
NVAR	Mina Array Bea	73.11	54	P		P	02 00 21.8 +1.1
	comp=Z,2.6nm,0.6s,baz=269,slow=15,SNR=4.7						
NV11	Mina Array Sit	73.20	54	eP		P	02 00 20.8 -0.4
	comp=Z,33nm,2.0s						
GCMT	Greycliff	73.92	44	eP		P	02 00 24.7 -0.6
NC204	NORSAR Array S	74.08	338	eP		P	02 00 27.0 +1.2
HFS	Hagfors	74.09	336	LR		LR	02 36 05.1
	comp=Z,244nm,18.6s,baz=41,slow=38						
YFT	Old Faithful	74.09	46	eP		P	02 00 28.2 +1.8
	comp=Z,48nm,2.0s						
NB2	NORSAR Subarra	74.13	338	P		P	02 00 26.2 +0.1
	comp=Z,15nm,1.0s,baz=40,slow=6.2						
NOA	NORSAR Array B	74.13	338	P		P	02 00 26.4 +0.3
	comp=Z,2.9nm,0.8s,baz=38,slow=5.6,SNR=11						
ANN	Anapa	74.24	315	eP		P	02 00 27.3 +0.4
ANN				pmax		pmax	
	comp=Z,27nm,1.1s						
LKWY	Lake	74.27	46	eP		P	02 00 29.3 +1.8
LKWY				pmax		pmax	
	comp=Z,6.0nm,1.0s						
LKWY	Lake	74.27	46	eP		P	02 00 29.2 +1.8
	comp=Z,6.4nm,1.0s						
H17A	Grant Village

comp=Z,5.4nm,0.8s
TPAW Teton Pass 74.61 47 *e*P **P 02 00 30.3 +0.8**
comp=Z,9.2nm,0.7s
LOHW Long Hollow 74.73 46 *e*P **P 02 00 29.7 -0.4**
comp=Z,22nm,1.8s
SNOW Snow King Moun 74.74 47 *e*P **P 02 00 30.4 +0.2**
comp=Z,7.5nm,0.8s
AKASG Malin Array Be 74.74 323 P **P 02 00 30.4 +0.7**
comp=Z,2.6nm,0.6s,baz=45,slow=6.3,SNR=8.7
AKASG LR LR 02 36 30.5
comp=Z,136nm,18.1s,baz=60,slow=38
AKASG Malin Array Be 74.74 323 P **P 02 00 30.4 +0.7**
AKASG pmax pmax
comp=Z,2.0nm,0.4s
AKASG MLR MLR
comp=Z,136nm,18.1s
REDW Red Top Meadow 74.75 47 *e*P **P 02 00 31.5 +1.3**
comp=Z,46nm,1.9s
KIEV Kiev 74.75 323⇑*i*P **P 02 00 31.2 +1.4**
KIEV pmax pmax
comp=Z,7.0nm,1.0s
R11A Troy Canyon, C 74.89 53 P **P 02 00 31.0 -0.1**
baz=306
SFJD Kangerlussuaq 74.94 6 LR LR 02 36 19.4
comp=Z,76nm,18.9s,baz=342,slow=38
MPMC Manual Prospec 75.01 56 P **P 02 00 32.1 +0.3**
baz=306
LAO LASA Array 75.23 42 *e*P **P 02 00 33.8 +1.1**
comp=Z,17nm,1.1s
TPNV Topopah Spring 75.29 55 P **P 02 00 34.0 +0.5**
baz=306
TPNV Topopah Spring 75.29 55 *e*P **P 02 00 33.9 +0.5**
TPNV pmax pmax
comp=Z,6.0nm,0.8s
TPNV Topopah Spring 75.29 55 *e*P **P 02 00 33.9 +0.5**
comp=Z,5.8nm,0.8s
HWUT Hardware Ranch 75.40 49 *e*P **P 02 00 34.5 +0.5**
comp=Z,32nm,1.6s
HWUT *e*PP **PP 02 03 25.4 +2.9**
DUG Dugway, Tooele 75.51 50 P **P 02 00 35.3 +0.7**
baz=307
DUG Dugway, Tooele 75.51 50 *e*P **P 02 00 34.5 -0.1**
DUG pmax pmax
comp=Z,7.0nm,0.8s
DUG Dugway, Tooele 75.51 50 *e*P **P 02 00 34.5 -0.1**
comp=Z,6.8nm,0.8s
TCUT Toone Canyon 75.79 49 *e*P **P 02 00 36.1 -0.2**
comp=Z,87nm,1.8s
BW06 Boulder Array 75.86 47 P **P 02 00 36.7 0.0**
baz=309
BW06 Boulder Array 75.86 47 *e*P **P 02 00 34.6 -2.1**
comp=Z,5.4nm,0.6s
PD31 Pinedale Array 75.86 47 *e*P **P 02 00 34.6 -2.1**
PDAR Pinedale Array 75.86 47 P **P 02 00 37.0 +0.3**
comp=Z,3.9nm,0.6s,baz=272,slow=1.9,SNR=33
PSUT Pine Spring 75.87 52 *e*P **P 02 00 35.6 -1.2**
comp=Z,17nm,1.6s
SIM Simferopol' 75.99 316 *e*P **P 02 00 37.3 +0.3**
SIM *e* 02 00 50.0
SIM S **S 02 10 17.0 -1.1**
SIM pmax pmax
comp=Z,7.0nm,1.1s
SIM MLR MLR
comp=N,140nm,17.7s
JLU Jordanelle 76.08 49 *e*P **P 02 00 39.1 +1.1**
comp=N,5.2nm,0.8s
NLU North Lily Min 76.11 50 *e*P **P 02 00 38.2 +0.1**
comp=N,4.9nm,0.8s
SHPR Sheep Range 76.26 54 *e*P **P 02 00 40.1 +1.1**
comp=N,4.4nm,0.9s
MPU Maple Canyon 76.33 50 *e*P **P 02 00 39.2 -0.2**
comp=N,8.2nm,0.7s
A28A Rude Farm, Bot 76.77 37 P **P 02 00 41.7 +0.2**
baz=313
D26A Manning 76.97 40 P **P 02 00 42.2 -0.4**
baz=312
GMRC Granite Mounta 76.97 56 P **P 02 00 42.4 -0.5**
baz=307
TMUT Trail Mountain 77.04 50 *e*P **P 02 00 42.5 -1.0**
comp=N,19nm,1.8s
MTPU Mount Pierson 77.21 52 *e*P **P 02 00 45.1 +0.5**
comp=N,6.3nm,0.8s
MTPU *e*PP **PP 02 03 31.9 -6.2**
P17A Butcher Ranch, 77.21 50 *e*P **P 02 00 45.4 +1.1**
comp=N,12nm,0.8s
A29A Manning Farm, 77.26 37 P **P 02 00 44.5 +0.3**
baz=314
Q16A Castle Valley 77.29 51 *e*P **P 02 00 44.3 -0.5**
comp=N,42nm,1.9s
P18A Preston Nutter 77.41 49 *e*P **P 02 00 45.3 -0.3**
comp=N,6.5nm,0.8s
KNB Kanab 77.44 53 *e*P **P 02 00 45.8 +0.1**
KNB pmax pmax
comp=Z,9.0nm,1.0s
KNB Kanab 77.44 53 *e*P **P 02 00 45.8 +0.1**
comp=Z,8.8nm,1.0s
SRU San Rafael Swe 77.57 50 *e*P **P 02 00 45.8 -0.5**
SRU pmax pmax
comp=Z,12nm,0.8s
SRU San Rafael Swe 77.57 50 *e*P **P 02 00 45.8 -0.5**
comp=Z,12nm,0.8s
K22A Casper 77.66 45 P **P 02 00 46.7 0.0**
baz=310
K22A Casper 77.66 45 *e*P **P 02 00 45.7 -1.1**
comp=Z,13nm,1.1s
A30A Hoffart Farm, 77.69 37 P **P 02 00 46.8 +0.3**
baz=314
LVV L'vov 77.77 325 *e*P **P 02 00 46.6 -0.4**
LVV *e*S **S 02 10 41.4 +4.0**
LVV MLR MLR
comp=N,300nm,13.0s
LVV MLR MLR
comp=E,300nm,13.0s
LVV MLR MLR
comp=Z,400nm,13.0s
ULM Lac du Bonnet 77.87 34 P **P 02 00 47.4 -0.1**
comp=Z,5.9nm,0.8s,baz=320,slow=6.9,SNR=5.5
ULM Lac du Bonnet 77.87 34 *e*P **P 02 00 47.4 -0.1**
comp=Z,13nm,0.8s
B30A Myrvik Farm, E 78.02 37 P **P 02 00 48.4 0.0**
baz=314
G26A Maurine 78.05 41 P **P 02 00 48.8 +0.1**
baz=312
RSSD Black Hills 78.07 43 P **P 02 00 48.7 -0.4**
baz=312
RSSD Black Hills 78.07 43 *e*P **P 02 00 49.1 +0.1**
RSSD pmax pmax
comp=Z,9.0nm,0.9s
RSSD Black Hills 78.07 43 *e*P **P 02 00 49.1 +0.1**
comp=Z,8.6nm,0.9s
U15A North Rim 78.14 53 *e*P **P 02 00 49.3 -0.3**
comp=Z,5.5nm,0.8s
O20A White River Ci 78.29 48 P **P 02 00 50.5 +0.2**
baz=310
O20A White River Ci 78.29 48 *e*P **P 02 00 49.2 -1.1**
comp=Z,8.4nm,0.9s
I25A Rochford 78.30 43 P **P 02 00 50.0 -0.3**
baz=312
KWP Kalwaria Pacla 78.50 325 *e*P **P 02 00 52.8 +1.8**
KWP Kalwaria Pacla 78.50 325⇑*i*P **P 02 00 52.4 +1.3**
KWP Kalwaria Pacla 78.50 325⇑P **P 02 00 52.4 +1.3**
A32A Rocking H Ranc 78.55 36 P **P 02 00 50.6 -0.7**
baz=316
BUR08 Bucovina Ar. S 78.76 323 *e*P **P 02 00 53.5 +0.9**
C31A Landman Farms, 78.76 37 P **P 02 00 52.0 -0.6**
baz=315
H27A Howes 78.77 42 P **P 02 00 52.8 +0.1**
baz=313
BURAR Bucovina Array 78.77 323⇓*i*P **P 02 00 53.1 +0.4**
BURAR Bucovina Array 78.77 323⇓P **P 02 00 53.1 +0.4**
TESR Tescani 78.84 321⇑*i*P **P 02 00 53.5 +0.5**
B32A Ashes, Strandq 78.90 36 P **P 02 00 52.6 -0.7**
baz=316
CFR Carcaliu 79.01 319⇓*i*P **P 02 00 52.7 -1.2**
CFR Carcaliu 79.01 319⇓P **P 02 00 52.7 -1.2**
A33A Warroad 79.04 35 P **P 02 00 53.2 -0.8**
baz=316
E30A Jud 79.10 39 P **P 02 00 53.9 -0.5**
baz=314
N23A Red Feather La 79.13 46 P **P 02 00 55.6 +0.6**
baz=311
N23A Red Feather La 79.13 46 *e*P **P 02 00 54.5 -0.6**
comp=Z,12nm,0.9s
ODBI Odobesti 79.16 320⇑*i*P sP 02 01 07.5 +0.4
VRI Vrincioaia 79.25 321⇓*i*P **P 02 00 57.6 +2.3**
VRI Vrincioaia 79.25 321⇓P **P 02 00 57.6 +2.3**
STHS Stebnicka Huta 79.31 326 *e*P **P 02 00 58.0 +2.4**
STHS pmax pmax
comp=Z,4.0nm,0.8s
STHS Stebnicka Huta 79.31 326 *e*P **P 02 00 57.9 +2.4**
OJC Ojcow 79.35 327 *e*P **P 02 00 56.7 +1.0**
OJC Ojcow 79.35 327 *e*P **P 02 00 56.7 +1.0**
OJC Ojcow 79.35 327 *e*P **P 02 00 56.5 +0.8**
comp=Z,18nm,1.0s
UZH Uzhgorod 79.42 325 *e*P **P 02 00 58.1 +2.1**
UZH *e* 02 01 07.3
UZH *e* 02 01 17.1
E31A Nome 79.56 38 P **P 02 00 56.3 -0.6**
baz=315
D32A Dogwood Acres, 79.57 37 P **P 02 00 56.6 -0.4**
baz=315
CRVS Cervenica-Dubn 79.59 325 *e*P **P 02 00 58.1 +1.0**
CRVS Cervenica-Dubn 79.59 325 *e*P **P 02 00 58.1 +1.0**
BR131 Keskin Array S 79.63 313 *e*P **P 02 00 58.1 +0.5**
BRTR Keskin Array B 79.63 313 P **P 02 00 59.1 +1.5**
comp=Z,1.9nm,1.0s,baz=85,slow=3.1,SNR=11
BRTR LR LR 02 41 27.0
comp=Z,55nm,18.9s,baz=48,slow=40
SMCO Snowmass 79.65 48 *e*P **P 02 00 57.3 -0.8**
comp=Z,36nm,2.0s
I28A Midland 79.67 42 P **P 02 00 57.5 -0.1**
baz=313
B34A Aery, Baudette 79.70 35 P **P 02 00 56.8 -0.9**
baz=317
C33A Trail 79.71 36 P **P 02 00 57.2 -0.5**
baz=316
DOPR Dopca 79.85 321⇓*i*P **P 02 00 59.4 +0.9**
MLR Muntele Rosu 79.91 321⇑*i*P **P 02 00 55.4 -3.6**
MLR Muntele Rosu 79.91 321⇑P **P 02 00 55.4 -3.6**
MLR Muntele Rosu 79.91 321 *e*P **P 02 00 59.7 +0.7**
comp=Z,23nm,1.6s
MSAB Monastry St. A 79.92 319⇓*i*P **P 02 01 01.0 +2.1**
X16A Lo Mia Camp, P 79.94 54 *e*P **P 02 00 58.8 -0.6**
comp=Z,3.2nm,0.8s
G30A Faulkton 79.94 40 P **P 02 00 58.6 -0.4**
baz=314
MVCO Mesa Verde 80.01 50 P **P 02 01 00.3 +0.5**
baz=310
MVCO Mesa Verde 80.01 50 *e*P **P 02 00 59.2 -0.6**
comp=Z,43nm,1.9s
ISCO Idaho Springs 80.04 47 P **P 02 01 00.5 +0.5**
baz=311
ISCO Idaho Springs 80.04 47 *e*P **P 02 00 59.7 -0.3**
ISCO pmax pmax
comp=Z,30nm,1.9s
ISCO Idaho Springs 80.04 47 *e*P **P 02 00 59.7 -0.3**
comp=Z,30nm,1.9s
BR231 Keskin MP Arra 80.06 313 *e*P **P 02 00 59.0 -0.9**
B35A Bob, Littlefor 80.21 35 P **P 02 01 00.1 -0.3**
baz=317
SULR 80.32 320⇓*i*P sP 02 01 13.4 0.0
OKC Ostrava-Krasne 80.34 328 *e*P **P 02 01 02.9 +1.8**
OKC *e*pP **sP 02 01 13.5 0.0**
OKC Ostrava-Krasne 80.34 328 *e*P **P 02 01 02.9 +1.8**
OKC *e* 02 01 13.5
D34A Park Rapids 80.47 36 P **P 02 01 01.5 -0.3**
baz=317
DRGR 80.56 323⇓*i*P **P 02 01 03.1 +0.7**
DRGR 80.56 323⇓P **P 02 01 03.1 +0.7**
C35A Jirik Farms, M 80.59 35 P **P 02 01 02.0 -0.4**
baz=317
I30A Oacoma 80.64 41 P **P 02 01 03.2 +0.4**
baz=314
MORC Moravsky Berou 80.65 328⇑*i*P **P 02 01 04.2 +1.4**
MORC Moravsky Berou 80.65 328⇑P **P 02 01 04.2 +1.4**
MORC Moravsky Berou 80.65 328 *e*P **P 02 01 03.0 +0.3**
comp=Z,50nm,1.0s
ARR Arges 80.65 321⇑*i*P **P 02 01 04.5 +1.6**
S22A 4UR Ranch, Cre 80.67 49 P **P 02 01 04.2 +0.8**
baz=311
S22A 4UR Ranch, Cre 80.67 49 *e*P **P 02 01 04.4 +0.9**
comp=Z,41nm,1.9s
DPC Dobruska-Polom 80.71 329 *e*P **P 02 01 04.5 +1.4**
DPC *e*sP **sP 02 01 16.0 +0.5**
DPC *e*PP **PP 02 04 05.0 -1.5**
DPC AMS AMS 02 40 10.0
comp=Z,200nm,17.7s
DPC Dobruska-Polom 80.71 329 *e*P **P 02 01 04.5 +1.4**
DPC *e* 02 01 16.0
DPC *e* 02 04 05.0
DPC MLR MLR
comp=Z,200nm,17.7s
UPC Upice 80.72 329 *e*P **P 02 01 05.2 +2.1**
UPC AMS AMS 02 41 40.0
comp=Z,300nm,15.2s
UPC Upice 80.72 329 *e*P **P 02 01 05.2 +2.1**
UPC MLR MLR
comp=Z,300nm,15.2s
KRLC Kraliky 80.74 329 *e*P **P 02 01 04.9 +1.7**
KRLC *e*pP **sP 02 01 14.5 -1.1**
KRLC Kraliky 80.74 329 *e*P **P 02 01 04.9 +1.7**
KRLC *e* 02 01 14.5
F33A 5 Mile Ranch, 80.85 38 P **P 02 01 03.9 +0.1**
baz=316
PSZ Piszkesteto 81.03 326⇑*i*P **P 02 01 06.1 +1.2**
PSZ Piszkesteto 81.03 326⇑P **P 02 01 06.1 +1.2**
C36A Pine Crest Far 81.06 35 P **P 02 01 04.5 -0.5**
baz=318
VYHS Vyhne 81.06 326 *e*P **P 02 01 06.3 +1.3**
VYHS *e* 02 01 16.1
VYHS pmax pmax
comp=Z,8.0nm,1.5s
VYHS Vyhne 81.06 326 *e*P **P 02 01 06.3 +1.3**
VYHS *e* 02 01 16.1
G33A Ortonville 81.24 38 P **P 02 01 05.5 -0.5**
baz=316
H32A Carlson Farm, 81.24 39 P **P 02 01 05.6 -0.4**
baz=316
BRG Berggiesshubel 81.26 330 *e*P **P 02 01 08.0 +2.1**
comp=Z,13nm,1.3s
BRG *e* 02 01 17.8
comp=Z,8.8nm,1.0s
BRG Berggiesshubel 81.26 330 *e*P **P 02 01 08.0 +2.1**
BRG *e* 02 01 17.8
BRG pmax pmax
comp=Z,13nm,1.3s
BRG pmax pmax
comp=Z,9.0nm,1.0s
CLL Collm 81.28 331⇓*i*P **P 02 01 07.4 +1.4**
comp=Z,10.0nm,0.9s
CLL *i* 02 01 17.5
comp=Z,16nm,1.0s
CLL *e*PP **PP 02 04 09.0 -2.0**
CLL *e* 02 04 18.0
CLL Collm 81.28 331⇓*i*P **P 02 01 07.4 +1.4**
CLL *i* 02 01 17.5
CLL pmax pmax
comp=Z,10.0nm,0.9s
CLL Collm 81.28 331 *e*P **P 02 01 06.7 +0.7**
comp=Z,14nm,0.9s
PVCC Panska Ves 81.28 330 *e*P **P 02 01 07.9 +1.8**
PVCC *e*sP **sP 02 01 18.8 +0.3**
PVCC AMS AMS 02 42 20.0
comp=Z,300nm,15.5s
PVCC Panska Ves 81.28 330 *e*P **P 02 01 07.9 +1.8**
PVCC *e* 02 01 18.8
PVCC MLR MLR
comp=Z,300nm,15.5s
C37A Embarrass 81.38 34 P **P 02 01 06.4 -0.3**
baz=318
VRAC Vranov 81.40 328⇑*i*P **P 02 01 09.0 +2.2**
VRAC Vranov 81.40 328⇑P **P 02 01 09.0 +2.2**
K30A Basset 81.41 42 P **P 02 01 07.6 +0.6**
baz=314
H33A Prehn Over Nor 81.46 39 P **P 02 01 07.2 +0.1**
baz=316
SDCO Great Sand Dun 81.46 49 P **P 02 01 08.3 +0.6**
baz=312
SDCO Great Sand Dun 81.46 49 *e*P **P 02 01 08.6 +0.9**
comp=Z,17nm,1.7s
G34A Benson 81.60 38 P **P 02 01 07.8 0.0**
baz=316
GOPC GO Pecny, Ondr 81.67 329 *e*P **P 02 01 10.3 +2.1**
GOPC *e*sP **sP 02 01 20.8 +0.2**
GOPC GO Pecny, Ondr 81.67 329 *e*P **P 02 01 10.3 +2.1**
GOPC *e* 02 01 20.8
PRU Pruhonice 81.72 330 *e*P **P 02 01 10.0 +1.6**
PRU *e*pP **sP 02 01 20.8 0.0**
PRU AMS AMS 02 40 00.0
comp=Z,400nm,17.5s
PRU Pruhonice 81.72 330 *e*P **P 02 01 10.0 +1.6**
PRU *e* 02 01 20.8
PRU MLR MLR
comp=Z,400nm,17.5s
C38A Sawbill Land. 81.79 34 P **P 02 01 08.2 -0.6**
baz=319
TREC Trest 81.87 329 *e*P **P 02 01 10.1 +0.8**
TREC *e*pP **pP 02 01 20.2 +1.9**
TREC Trest 81.87 329 *e*P **P 02 01 10.1 +0.8**
TREC *e* 02 01 20.2
L31A Butterfield Fa 82.17 42 P **P 02 01 10.9 0.0**
baz=315
ECSD EROS Data Cent 82.21 39 P **P 02 01 10.4 -0.7**
baz=316
ECSD EROS Data Cent 82.21 39 *e*P **P 02 01 10.7 -0.4**
comp=Z,10nm,0.8s
NKC Novy Kostel 82.35 331 *e*P **P 02 01 13.9 +2.2**
NKC Novy Kostel 82.35 331 *e*P **P 02 01 13.9 +2.2**
H35A Sunnyside Ranc 82.39 38 P **P 02 01 12.3 +0.3**
baz=317
MDVR Moldovita 82.50 322⇑*i*P **P 02 01 17.0 +4.3**
T25A Trinidad 82.51 48 P **P 02 01 13.7 +0.6**
baz=312
T25A Trinidad 82.51 48 *e*P **P 02 01 12.8 -0.3**
comp=Z,8.2nm,0.8s
LAZ Ladron 82.67 52 *e*P **P 02 01 15.2 +1.2**
ANMO Albuquerque 82.73 51 P **P 02 01 14.8 +0.6**
baz=311
ANMO Albuquerque 82.73 51⇑*i*P **P 02 01 14.9 +0.6**
ANMO pmax pmax
comp=Z,10.0nm,1.7s
ANMO Albuquerque 82.73 51 *e*P **P 02 01 14.0 -0.3**
comp=Z,11nm,1.4s
KHC Kasperske Hory 82.78 330 *e*P **P 02 01 15.5 +1.5**
KHC *e*sP **sP 02 01 26.5 +0.1**
KHC Kasperske Hory 82.78 330 *e*P **P 02 01 15.5 +1.5**
KHC *e* 02 01 26.5
CONA Conrad Observa 82.78 328 *e*PcP **P 02 01 15.4 +1.3**
comp=Z,10nm,1.3s,SNR=6.5
H36A Jessenland, He 82.91 37 P **P 02 01 14.8 +0.1**
baz=318
MMAI Mount Meron Ar 82.93 306 LR LR 02 42 12.7
comp=Z,116nm,19.1s,baz=300,slow=39
CSS Mathiatis 82.95 309 *e*P **P 02 01 12.5 -2.6**
comp=Z,2.3nm,0.7s
GERES GERESS Array B 82.95 329 P **P 02 01 15.4 +0.4**
comp=Z,0.8nm,0.7s,baz=51,slow=5.3,SNR=10
GERES LR LR 02 41 21.8
comp=Z,220nm,19.0s,baz=18,slow=38
GEA0 GERESS Array S 82.96 329 *e*P **P 02 01 14.9 -0.1**
BNM Barren Site 83.15 52 *e*P **P 02 01 17.4 +0.9**
K34A Le Mars 83.22 40 P **P 02 01 15.8 -0.6**
baz=316
319A Douglas 83.27 55 *e*P **P 02 01 17.9 +0.9**
comp=Z,8.3nm,0.8s
H37A Dierke Farm, C 83.39 37 P **P 02 01 16.9 -0.3**
baz=318
PPT Papeete 83.43 118 LR LR 02 35 36.5
comp=Z,78nm,18.6s,baz=328,slow=34
PPT2 Papeete2 83.44 118 *e*LR LR 02 27 14.3
comp=Z,291nm,24.8s
121A Cookes Peak, D 83.48 54 P **P 02 01 19.0 +0.9**
baz=311
MOA Molln 83.51 328 *i* PcP **P 02 01 20.1 +2.3**
comp=Z,12nm,1.4s
I37A Lemond, Waseca 83.58 38 P **P 02 01 18.5 +0.3**
baz=318
SCHQ Schefferville 84.09 17 LR LR 02 41 50.1
comp=Z,50nm,20.1s,baz=27,slow=38
P32A Huiting Farm, 84.10 43 P **P 02 01 20.3 -0.7**
baz=315
SOKA Soboth 84.11 327 *e*P **P 02 01 21.7 +0.7**
comp=Z,25nm,1.4s,SNR=12
M35A Neola 84.31 41 P **P 02 01 22.1 +0.1**
baz=317
K37A Belmond 84.39 38 P **P 02 01 22.3 -0.1**
baz=318
OBKA Obir 84.45 327 *e*P **P 02 01 22.1 -0.6**
comp=Z,4.6nm,0.8s
KBA Koelnbreinsper 84.50 328 *e*P **P 02 01 23.4 +0.4**
comp=Z,18nm,1.4s
Q32A Meitler Ranch, 84.57 44 P **P 02 01 22.8 -0.6**
baz=315
VAY Valandovo 84.61 320 *i* P **P 02 01 24.9 +1.4**
BLY Banja Luka 84.65 325⇓*i*P pP 02 01 34.6 +1.8
TAOE Nuku Hiva Isla 84.67 105 *e*LR LR 02 27 48.5
comp=Z,446nm,31.9s
MYKA Terra Mystica 84.73 328 *i* P **P 02 01 23.7 -0.4**
comp=Z,7.7nm,0.8s
OXZ Oxford 84.79 160 *e*P **P 02 01 23.9 0.0**
comp=Z,20nm,1.0s
Q33A Connelly Farm, 84.97 43 P **P 02 01 24.7 -0.6**
baz=316
ABTA Abfaltersbach 85.11 329 *e*PcP **P 02 01 26.7 +0.6**
comp=Z,9.5nm,1.1s
P34A Walnut Farm, R 85.11 42 P **P 02 01 25.5 -0.5**
baz=316
MOTA Moosalm 85.20 330 *e*PcP **P 02 01 26.9 +0.4**
comp=Z,8.7nm,0.9s,SNR=7.0
RETA Reutte 85.22 330 *e*PcP **P 02 01 27.4 +0.9**
comp=Z,16nm,1.1s,SNR=6.3
EIL Elat 85.41 304 LR LR 02 43 56.7
comp=Z,94nm,19.4s,baz=54,slow=39
PDG Podgorica 85.44 322⇓*i*P **P 02 01 26.5 -1.1**
BFO Black Forest 85.46 332 *c*e P **P 02 01 29.5 +1.8**
BFO Black Forest 85.46 332 *e*P **P 02 01 27.6 -0.1**
comp=Z,40nm,1.4s
KSU1 Kansas State U 85.55 43 P **P 02 01 26.8 -1.5**
baz=316
KSU1 Kansas State U 85.55 43 *e*P **P 02 01 27.9 -0.3**
comp=Z,14nm,0.8s
MNTX Cornudas Mount 85.56 53 P **P 02 01 28.6 +0.2**
baz=312
MNTX Cornudas Mount 85.56 53 *e*P **P 02 01 27.4 -1.1**
comp=Z,27nm,1.9s
FETA Feichten 85.61 330 *e*PcP **P 02 01 29.2 +0.6**
comp=Z,9.6nm,0.8s
T32A Huddler Ranch, 85.65 45 P **P 02 01 28.8 -0.1**
baz=315
AMTX Amarillo 85.67 49 P **P 02 01 29.5 +0.4**
baz=314
AMTX Amarillo 85.67 49 *e*P **P 02 01 28.5 -0.5**
comp=Z,14nm,0.9s
OHR Ohrid 85.67 320 *i* P **P 02 01 29.1 +0.3**
DAVA Damuels 85.73 330 *i* PcP **P 02 01 29.9 +0.7**
comp=Z,26nm,0.9s
Q35A Mercer Eighty, 86.03 42 P **P 02 01 30.8 +0.1**
baz=317
FUORN Ofenpass-Fuorn 86.12 330 *e*P **P 02 01 32.1 +0.8**
comp=Z,25nm,0.8s
U32A Winter Ranch, 86.18 46 P **P 02 01 31.8 +0.4**
baz=315
S34A Willow Spring 86.29 44 P **P 02 01 31.7 -0.3**
baz=316
R35A Emporia Munici 86.34 43 P **P 02 01 32.6 +0.4**
baz=317
N39A Derby Farms, D 86.37 39 P **P 02 01 32.2 -0.1**
baz=319
P37A Lathrop 86.39 41 P **P 02 01 31.9 -0.5**
baz=318
V32A Arapaho 86.62 46 P **P 02 01 34.5 +0.9**
baz=315
R36A Gordon, Harris 86.71 43 P **P 02 01 34.2 +0.2**
baz=317
S35A Otter Creek Ra 86.74 43 P **P 02 01 33.8 -0.4**
baz=317
P38A Dawn 86.78 41 P **P 02 01 34.1 -0.2**
baz=318
W32A Sentinel 86.92 47 P **P 02 01 35.5 +0.4**
baz=315
U34A Anderson Ranch 86.96 45 P **P 02 01 35.0 -0.2**
baz=316
O40A La Belle 87.25 39 P **P 02 01 35.9 -0.6**
baz=319
P39B Salisbury 87.29 40 P **P 02 01 36.6 -0.1**
baz=319
W33A Caddo, Fort Co 87.35 46 P **P 02 01 38.2 +1.0**
baz=316
V34A Guthrie 87.41 45 P **P 02 01 37.7 +0.2**
baz=316
V34A Guthrie 87.41 45 *e*P **P 02 01 38.0 +0.5**
comp=Z,16nm,0.8s
T36A Boggs Farm, Ca 87.43 44 P **P 02 01 37.4 -0.1**
baz=317
TBI Tubuai 87.44 122 *e*LR LR 02 29 03.8
comp=Z,166nm,29.0s
WMOK Wichita Mounta 87.47 47 P **P 02 01 38.2 +0.5**
baz=315
WMOK Wichita Mounta 87.47 47 *e*P **P 02 01 37.7 -0.1**

WMOK pmax pmax
comp=Z,7.0nm,0.9s
WMOK Wichita Mounta 87.47 47 *e*P **P 02 01 37.7 -0.1**
comp=Z,7.0nm,0.9s
S37A Fort Scott 87.48 43 P **P 02 01 37.4 -0.4**
baz=318
Q39A Willow Grove F 87.50 41 P **P 02 01 37.7 -0.1**
baz=319
P40A Paris 87.61 40 P **P 02 01 38.3 -0.1**
baz=319
R39A Chumby, Stover 88.02 41 P **P 02 01 39.7 -0.6**
baz=319
TX31 Lajitas Ar. Si 88.25 54 *e*P **P 02 01 40.8 -0.9**
TXAR Lajitas Array 88.25 54 P **P 02 01 41.8 +0.1**
comp=Z,2.0nm,0.8s,baz=295,slow=2.9,SNR=25
TXAR LR LR 02 41 06.7
comp=Z,38nm,18.2s,baz=0.0,slow=36
T38A Diamond 88.31 43 P **P 02 01 41.4 -0.3**
baz=318
S39A Bolivar 88.34 42 P **P 02 01 41.3 -0.6**
baz=318
S40A Lebanon 88.84 41 P **P 02 01 43.5 -0.7**
baz=319
X36A Centrahoma 88.98 46 P **P 02 01 45.0 +0.2**
baz=317
W37B Quinton 89.08 45 P **P 02 01 45.4 0.0**
baz=317
V38A Canehill 89.11 44 *e*P **P 02 01 45.0 -0.5**
baz=318
CCM Cathedral Cave 89.14 40 *e*P **P 02 01 45.6 0.0**
CCM pmax pmax
comp=Z,15nm,0.9s
CCM Cathedral Cave 89.14 40 *e*P **P 02 01 45.6 0.0**
comp=Z,15nm,0.9s
TIP Timpagrande 89.15 322 ǁ *i*P **P 02 01 45.8 +0.1**
TIP Timpagrande 89.15 322 *e*P **P 02 01 46.0 +0.3**
comp=Z,12nm,1.2s
V39A Pettigrew 89.54 43 P **P 02 01 47.4 -0.2**
baz=318
U40A Yellville 89.58 42 P **P 02 01 47.3 -0.5**
baz=319
W38A Poteau 89.64 44 P **P 02 01 47.5 -0.4**
baz=318
T41A Mountain View 89.64 41 P **P 02 01 47.5 -0.5**
baz=319
X38A Whitesboro 89.76 45 P **P 02 01 48.6 +0.1**
baz=318
WHTX Lake Whitney, 90.20 48 P **P 02 01 50.7 0.0**
baz=316
WHTX Lake Whitney, 90.20 48 *e*P **P 02 01 51.1 +0.4**
comp=Z,15nm,0.8s
334A Lometa 90.21 49 P **P 02 01 50.7 0.0**
baz=316
X39A Fountain Ranch 90.27 44 P **P 02 01 51.1 +0.1**
baz=318
W40A Ferguson Farm, 90.34 43 P **P 02 01 50.9 -0.3**
baz=319
V41A Mountainview 90.38 42 P **P 02 01 50.9 -0.6**
baz=319
S44A Carbondale 90.42 39 P **P 02 01 51.3 -0.3**
baz=321
PBMO Poplar Bluff 90.53 41 *e*P **P 02 01 50.8 -1.3**
comp=Z,10nm,0.9s
MIAR Mount Ida 90.54 44 P **P 02 01 52.2 -0.1**
baz=318
MIAR Mount Ida 90.54 44 *e*P **P 02 01 51.5 -0.7**
MIAR pmax pmax
comp=Z,13nm,0.7s
MIAR Mount Ida 90.54 44 *e*P **P 02 01 51.5 -0.7**
comp=Z,13nm,0.7s
X201 Greenbrier Sit 90.64 43 *e*P **P 02 01 52.0 -0.7**
comp=Z,8.2nm,0.7s
X301 Greenbrier Sit 90.67 43 *e*P **P 02 01 50.8 -2.0**
comp=Z,5.5nm,0.8s
WHAR Wooly Hollow 90.69 43 *e*P **P 02 01 52.7 -0.1**
comp=Z,16nm,0.8s
Y39A Lockesburg 90.71 45 P **P 02 01 53.1 +0.2**
baz=318
V42A Cord 90.77 42 P **P 02 01 52.9 -0.3**
baz=320
W41B Gary Mavity, V 90.80 43 P **P 02 01 52.9 -0.4**
baz=319
ESDC Sonseca Array 97.34 335 LR LR 02 50 20.2
comp=Z,85nm,20.3s,baz=35,slow=38
TORD Torodi Ar. Bea 117.99 317 PKP **PKPdf 02 07 36.2 -1.1**
comp=Z,0.2nm,0.4s,baz=351,slow=2.1,SNR=4.1
QSPA South Pole Qui 127.56 180 *e*PKPdf **PKPdf 02 07 53.8 -0.3**
SNAA Sanae 142.00 196 PKP PKPpre 02 08 14.8
SAML Samuel 142.44 47 *e*PKPpre PKPpre 02 08 18.4
VNA2 Neumayer--Watz 143.55 196 PKP PKPbc 02 08 20.7 -0.3
baz=107,slow=2.3
VNA3 Neumayer Olymp 143.76 194 PKP PKPab 02 08 20.2 -0.7
VNA1 Neumayer--Stat 143.95 195 PKP PKPbc 02 08 21.9 -0.1
LPAZ La Paz 144.78 61 PKP **PKPdf 02 08 27.8 -0.2**
comp=Z,3.1nm,0.8s,baz=336,slow=2.7,SNR=8.8
LPAZ La Paz 144.78 61 *e*PKPdf **PKPab 02 08 26.6 -0.3**
PB01 IPOC Station P 146.89 69 *e*PKPdf PKPpre 02 08 27.0
LVC Limon Verde 148.25 71 *e*PKPdf **PKPdf 02 08 33.4 0.0**
LCO Las Campanas 150.17 83 *e*PKPbc **PKPbc 02 08 40.6 -0.7**
ROC1 El Roble 151.46 91 *e*PKPdf **PKPdf 02 08 35.6 -2.5**
ROC1 *e*PKPbc **PKPbc 02 08 43.2 -1.0**
PLCA Paso Flores 153.48 107 PKPbc **PKPbc 02 08 48.6 +0.4**
comp=Z,2.2nm,1.0s,baz=251,slow=7.6,SNR=5.3
PLCA PKPab **PKPab 02 08 59.7 -1.1**
comp=Z,3.8nm,0.7s,baz=274,slow=2.7,SNR=8.0

*CSEM **23** 01:58:33.5±0.4, 45°.34N×14°.44E, h10km, ML2.1/7, Error ellipse: s-maj=6.9km s-min=3.2km az=14.0*
*VIE **23** 01:58:34.3±0.8, 45°.39N×14°.51E, h6km, ML1.8/3, Error ellipse: s-maj=5.0km s-min=2.6km az=173.0*
LJU 23 01:58:34.1, 45°.38N×14°.47E, h7km, ML1.2, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
KNDS	**Knezji Dol**	**0.16**	**339**	*i* Pg		Pg		01 58 37.7	+0.2
KNDS				*i* Sg		Sg		01 58 40.6	+0.7
comp=Z,33nm,0.1s									
KNDS	**Knezji Dol**	**0.16**	**339**	*i* Pg		Pg		01 58 37.7	+0.2
KNDS				*i* Sg		Sg		01 58 40.6	+0.8
comp=Z,33nm,0.1s									
GBRS	**Gornja Briga**	**0.29**	**57**	*i* Pg		Pg		01 58 40.2	+0.4
GBRS				*i* Sg		Sg		01 58 44.5	+0.9
comp=Z,16nm,0.1s									
SKDS	**Skadanscina**	**0.36**	**298**	*i* Pg		Pg		01 58 41.1	0.0
SKDS				*i* Sg		Sg		01 58 46.7	+0.8
comp=Z,12nm,0.1s									
SKDS	**Skadanscina**	**0.36**	**298**	*i* Pg		Pg		01 58 41.1	0.0
SKDS				*i* Sg		Sg		01 58 46.7	+0.8
comp=Z,12nm,0.1s									
CEY	**Cerknica**	**0.36**	**356**	*e*Pg		Pg		01 58 40.8	-0.4
comp=Z,16nm,0.1s									
CEY	**Cerknica**	**0.36**	**356**	*e*Pg		Pg		01 58 40.8	-0.4
comp=Z,16nm,0.1s									
VISS	**Visnje**	**0.50**	**31**	*i* Pg		Pg		01 58 43.8	0.0
comp=Z,8.0nm,0.1s									
VISS	**Visnje**	**0.50**	**31**	*i* Pg		Pg		01 58 43.8	0.0
comp=Z,8.0nm,0.1s									
GBAS	**Gorenja Brezov**	**0.56**	**358**	*i* Pg		Pg		01 58 45.0	0.0
GBAS				*e*Sg		Sg		01 58 53.1	+0.9
comp=Z,3.0nm,0.1s									
GBAS	**Gorenja Brezov**	**0.56**	**358**	*i* Pg		Pg		01 58 45.0	+0.1
GBAS				*e*Sg		Sg		01 58 53.1	+0.9
BOJS	**Bojanci**	**0.57**	**77**	*i* Pg		Pg		01 58 44.9	-0.2
comp=Z,2.0nm,0.1s									
BOJS	**Bojanci**	**0.57**	**77**	*i* Pg		Pg		01 58 44.9	-0.2
comp=Z,2.0nm,0.1s									
JAVS	**Javornik**	**0.59**	**332**	*i* Pg		Pg		01 58 44.8	-0.7
JAVS				*i* Sg		Sb		01 58 54.8	-0.7
comp=Z,4.0nm,0.1s									
JAVS	**Javornik**	**0.59**	**332**	*i* Pg		Pg		01 58 44.8	-0.7
JAVS				*i* Sg		Sb		01 58 54.8	-0.6
comp=Z,4.0nm,0.1s									
LJU	**Ljubljana**	**0.67**	**4**	*i* Pg		Pb		01 58 47.6	-0.5
LJU	**Ljubljana**	**0.67**	**4**	*i* Pg		Pb		01 58 47.6	-0.5
CRNS	**Crni Vrh**	**0.72**	**349**	*i* Pg		Pg		01 58 47.4	-0.5
CRNS	**Crni Vrh**	**0.72**	**349**	*i* Pg		Pg		01 58 47.4	-0.5
VOJS	**Vojsko**	**0.77**	**328**	*i* Pg		Pg		01 58 48.2	-0.7
VOJS				*e*Sg		Sb		01 59 00.5	-0.2
VOJS	**Vojsko**	**0.77**	**328**	*i* Pg		Pg		01 58 48.2	-0.8
VOJS				*e*Sg		Sb		01 59 00.5	-0.2
PDKS	**Podkum**	**0.78**	**28**	*e*Sg		Sb		01 59 00.5	-0.4
PDKS	**Podkum**	**0.78**	**28**	*e*Sg		Sb		01 59 00.5	-0.4
CRES	**Cresnjev**	**0.83**	**57**	*i* Pg		Pg		01 58 50.3	+0.2
comp=Z,3.0nm,0.2s									
CRES	**Cresnjev**	**0.83**	**57**	*i* Pg		Pg		01 58 50.3	+0.3
comp=Z,3.0nm,0.2s									
NVLJ	**Novalja**	**0.86**	**160**	*e*Pg		Pg		01 58 50.4	-0.2
NVLJ				Sg		Sn		01 59 05.1	-0.4
GORS	**Gorjuse**	**1.00**	**341**	*i* Pg		Pg		01 58 53.4	+0.2
GORS	**Gorjuse**	**1.00**	**341**	*i* Pg		Pg		01 58 53.4	+0.2
GOLS	**Golise**	**1.03**	**52**	*i* Pg		Pn		01 58 55.4	+0.4
GOLS	**Golise**	**1.03**	**52**	*i* Pg		Pn		01 58 55.4	+0.4
OBKA	**Obir**	**1.14**	**3**	Pg		Pg		01 58 56.0	+0.1
comp=Z,1.4nm,0.2s									
OBKA				Sg		Sn		01 59 11.8	-0.6
comp=Z,3.6nm,0.3s									
UDBI	**Udbina**	**1.25**	**132**	*e*Pg		Pn		01 58 57.7	-0.4
UDBI				Sg		Sn		01 59 15.8	+0.6
SOKA	**Soboth**	**1.36**	**17**	Pg		Pg		01 59 00.1	-0.1
comp=Z,0.1nm,0.1s									
SOKA				Sg		Sb		01 59 17.6	0.0
comp=Z,1.4nm,0.2s									
ABTA	**Abfaltersbach**	**1.93**	**316**	Sg		Sg		01 59 37.7	+1.6
comp=Z,1.7nm,0.3s									

*IDC **23** 02:00:29.0±1.7, 26°.81N×143°.65E, h0km, mb3.6/4, mb1 3.8/5, mb1mx3.4/46, mbtmp3.6/5, ML3.4/1, Error ellipse: s-maj=34.8km s-min=25.9km az=59.0*
*ISCJB **23** 02:00:31.6±1.3, 26°.8N±0°.2×143°.7E±0°.1, h33km, mb3.5/4, Error ellipse: s-maj=25.2km s-min=15.0km az=18.8*
ISC 23 02:00:33.3±1.5, 26°.9N±0°.1×143°.7E±0°.1, h35km, n6, σ1§86/7, mb3.6/4, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JCJ	**Chichijima**	**1.36**	**277**	Pn		**Pn**		**02 00 54.9**	**-1.0**
baz=270,slow=20									
JCJ				Sn		**Sn**		**02 01 13.4**	**+0.7**
baz=270,slow=20									
MJAR	**Matsushiro Arr**	**10.66**	**335**	Pn		**Pn**		**02 03 01.7**	**-1.9**
0.3nm,0.3s,baz=146,slow=11,SNR=4.9									
KLR	**Kul'dur**	**24.11**	**341**	P		**P**		**02 05 46.5**	**+0.8**
0.7nm,0.5s,baz=108,slow=4.1,SNR=4.4									
WRA	**Warramunga Arr**	**47.47**	**192**	P		**P**		**02 09 04.2**	**-0.7**
1.7nm,0.9s,baz=13,slow=8.7,SNR=5.2									
MKAR	**Makanchi Array**	**51.62**	**310**	P		**P**		**02 09 37.9**	**+1.5**
0.1nm,0.3s,baz=100,slow=6.0,SNR=3.1									
KURBB	**Kurchatov Arra**	**54.12**	**314**	P		**P**		**02 09 57.0**	**+2.3**
0.4nm,0.6s,baz=91,slow=8.8,SNR=6.8									

*ISCJB **23** 02:02:47.6±0.5, 40°.04N±0°.04×27°.86E±0°.04, h8km±4km, Error ellipse: s-maj=6.8km s-min=4.5km az=163.2*
*CSEM **23** 02:02:47.9±0.1, 40°.03N×27°.85E, h10km, MD2.6, Error ellipse: s-maj=3.1km s-min=2.2km az=165.0*
*ISK **23** 02:02:47.3, 40°.03N×27°.87E, h8km, MD2.6*
*DDA **23** 02:02:48.1, 40°.03N×27°.85E, h7km, Md2.4*
ISC 23 02:02:47.6±0.9, 40°.03N±0°.03×27°.86E±0°.02, h14km±7km, n46, σ0§32/52, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
GONE	**Gonen-Balikesi**	**0.13**	**276**	*e*PG		**Pg**		**02 02 51.5**	**+0.3**
GONE				*e*SG		**Sg**		**02 02 53.0**	**-0.5**
GONE	**Gonen-Balikesi**	**0.13**	**276**	*e*Pg		**Pg**		**02 02 51.5**	**+0.3**
GONE				*e*Sg		**Sg**		**02 02 53.1**	**-0.5**
EDC	**Edincik**	**0.31**	**1**	*e*PG		**Pg**		**02 02 54.3**	**+0.1**
EDC				*e*SG		**Sg**		**02 02 58.7**	**+0.1**
EDC	**Edincik**	**0.31**	**1**	*e*Pg		**Pg**		**02 02 54.3**	**+0.1**
EDC				*e*Sg		**Sg**		**02 02 58.7**	**+0.1**
BALY	**Balya**	**0.34**	**212**	P		**Pg**		**02 02 55.0**	**+0.3**
BALY	**Balya**	**0.34**	**212**	*i* P		**Pg**		**02 02 55.0**	**+0.3**
KNL	**Bal'--kesir**	**0.35**	**313**	*i* P		**Pg**		**02 02 54.2**	**-0.5**
KCTX	**Karacabey (Bur**	**0.45**	**59**	*e*PG		**Pg**		**02 02 56.9**	**+0.3**
KCTX				*e*SG		**Sg**		**02 03 02.5**	**-0.2**
KCTX	**Karacabey (Bur**	**0.45**	**59**	*e*Pg		**Pg**		**02 02 56.9**	**+0.3**
KCTX				*e*Sg		**Sg**		**02 03 02.5**	**-0.2**
DURS	**Dursunbey**	**0.64**	**132**	P		**Pb**		**02 03 00.7**	**0.0**
DURS	**Dursunbey**	**0.64**	**132**	*i* P		**Pb**		**02 03 00.7**	**0.0**
RKY	**Sarkoy-Tekirda**	**0.83**	**322**	*e*PG		**Pg**		**02 03 03.9**	**+0.1**
RKY	**Sarkoy-Tekirda**	**0.83**	**322**	*e*Pg		**Pg**		**02 03 03.9**	**+0.1**
MDNY	**Mudanya-Bursa**	**0.86**	**67**	*e*PG		**Pb**		**02 03 03.2**	**-1.1**
MDNY	**Mudanya-Bursa**	**0.86**	**67**	*e*Pg		**Pb**		**02 03 03.2**	**-1.1**
LPK	**Lapseki**	**0.90**	**292**	*e*PG		**Pb**		**02 03 04.8**	**-0.3**
LPK	**Lapseki**	**0.90**	**292**	*e*Pg		**Pb**		**02 03 04.8**	**-0.3**
ARMT	**Armutlu**	**0.94**	**55**	*e*PG		**Pn**		**02 03 06.4**	**0.0**
ARMT	**Armutlu**	**0.94**	**55**	*e*Pg		**Pn**		**02 03 06.4**	**0.0**
TKR	**Tekirdag**	**0.99**	**346**	*e*PG		**Pb**		**02 03 06.4**	**-0.1**
TKR	**Tekirdag**	**0.99**	**346**	*e*Pg		**Pb**		**02 03 06.4**	**-0.1**
IGD	**Bursa**	**1.06**	**77**	*i* P		**Pb**		**02 03 07.5**	**-0.2**
GELI	**Tayfur-Gelibol**	**1.12**	**289**	*e*PN		**Pg**		**02 03 09.5**	**+0.3**
GELI	**Tayfur-Gelibol**	**1.12**	**289**	*e*Pn		**Pg**		**02 03 09.5**	**+0.3**
EZN	**Ezine**	**1.19**	**261**	*e*PN		**Pb**		**02 03 10.1**	**+0.1**
EZN	**Ezine**	**1.19**	**261**	*e*Pn		**Pb**		**02 03 10.1**	**+0.1**
ERIK	**Erikli-Kesan**	**1.21**	**302**	*e*PN		**Pn**		**02 03 10.1**	**0.0**
ERIK	**Erikli-Kesan**	**1.21**	**302**	*e*Pn		**Pn**		**02 03 10.1**	**0.0**
DKL	**Dikili**	**1.21**	**218**	*e*PN		**Pg**		**02 03 10.9**	**0.0**
DKL	**Dikili**	**1.21**	**218**	*e*Pn		**Pg**		**02 03 10.9**	**0.0**
IZI	**Iznik**	**1.28**	**76**	*e*PN		**Pb**		**02 03 11.8**	**+0.3**
IZI	**Iznik**	**1.28**	**76**	*e*Pn		**Pb**		**02 03 11.8**	**+0.3**
CTKS	**Kestanelik-??a**	**1.30**	**22**	*e*PN		**Pb**		**02 03 12.2**	**+0.4**
CTKS	**Kestanelik-??a**	**1.30**	**22**	*e*Pn		**Pb**		**02 03 12.2**	**+0.4**
BGKT	**Bogazkoy**	**1.34**	**31**	*e*PN		**Pb**		**02 03 12.8**	**+0.2**
BGKT	**Bogazkoy**	**1.34**	**31**	*e*Pn		**Pb**		**02 03 12.8**	**+0.2**
ISK	**Istanbul-Kandi**	**1.38**	**41**	*e*PN		**Pb**		**02 03 13.3**	**+0.1**
ISK	**Istanbul-Kandi**	**1.38**	**41**	*e*Pn		**Pb**		**02 03 13.3**	**+0.1**
CTYL	**Yalikoy Yolu**	**1.48**	**13**	*e*PN		**Pb**		**02 03 14.9**	**0.0**
CTYL	**Yalikoy Yolu**	**1.48**	**13**	*e*Pn		**Pb**		**02 03 14.9**	**0.0**
ADVT	**Abdulvahap**	**1.50**	**74**	*e*PN		**Pb**		**02 03 14.9**	**-0.3**
ADVT	**Abdulvahap**	**1.50**	**74**	*e*Pn		**Pb**		**02 03 14.9**	**-0.3**
KLYT	**Kilyos**	**1.52**	**36**	*e*PN		**Pb**		**02 03 15.5**	**-0.1**
KLYT	**Kilyos**	**1.52**	**36**	*e*Pn		**Pb**		**02 03 15.5**	**-0.1**
ALN	**Alexandroupoli**	**1.63**	**303**	*e*PN		**Pb**		**02 03 17.5**	**+0.1**
ALN	**Alexandroupoli**	**1.63**	**303**	*e*Pn		**Pb**		**02 03 17.5**	**+0.1**

*DDA **23** 02:03:56.8, 39°.09N×29°.06E, h7km, Md2.7*
*ISK **23** 02:03:56.4, 39°.10N×29°.04E, h2km, MD2.8*
*ISCJB **23** 02:03:57.3±0.5, 39°.07N±0°.03×29°.02E±0°.05, h9km, Error ellipse: s-maj=5.4km s-min=4.6km az=40.1*
*CSEM **23** 02:03:57.0±0.1, 39°.09N×29°.05E, h2km, MD2.7, Error ellipse: s-maj=3.4km s-min=2.6km az=123.0*
ISC 23 02:03:57.1±0.9, 39°.09N±0°.02×29°.08E±0°.03, h9km, n51, σ0§63/53, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**261**	P		**Pg**		**02 04 02.3**	**-0.5**
DEMI	**Demirci**	**0.28**	**261**	*i* P		**Pg**		**02 04 02.3**	**-0.5**
TVSB	**Tavsanli**	**0.47**	**39**	*e*PG		**Pg**		**02 04 05.9**	**-0.3**
TVSB	**Tavsanli**	**0.47**	**39**	*e*Pg		**Pg**		**02 04 05.9**	**-0.3**
KULA	**Kula-Manisa**	**0.66**	**210**	*e*PG		**Pg**		**02 04 09.7**	**-0.1**
KULA	**Kula-Manisa**	**0.66**	**210**	*e*Pg		**Pg**		**02 04 09.7**	**-0.1**
DURS	**Dursunbey**	**0.69**	**318**	P		**Pg**		**02 04 09.3**	**-1.2**
DURS	**Dursunbey**	**0.69**	**318**	*i* P		**Pg**		**02 04 09.3**	**-1.2**
MANT	**Manisa**	**0.72**	**214**	P		**Pg**		**02 04 09.9**	**-1.1**
MANT	**Manisa**	**0.72**	**214**	*i* P		**Pg**		**02 04 09.9**	**-1.1**
KHL	**Karahalli**	**0.84**	**155**	*e*PG		**Pb**		**02 04 14.0**	**+0.1**
KHL	**Karahalli**	**0.84**	**155**	*e*Pg		**Pb**		**02 04 14.0**	**+0.1**
AKHS	**Akhisar**	**1.01**	**258**	P		**Pg**		**02 04 16.1**	**-0.3**
AKHS	**Akhisar**	**1.01**	**258**	*i* P		**Pg**		**02 04 16.1**	**-0.3**
AKS	**Akhisar**	**1.01**	**258**	*e*PG		**Pg**		**02 04 16.3**	**-0.1**
AKS	**Akhisar**	**1.01**	**258**	*e*Pg		**Pg**		**02 04 16.3**	**-0.1**
BALB	**Balikesir**	**1.08**	**301**	*e*PG		**Pg**		**02 04 17.7**	**-0.1**
BALB				*e*SG		**Sb**		**02 04 32.6**	**+0.5**
BALB	**Balikesir**	**1.08**	**301**	*e*Pg		**Pg**		**02 04 17.7**	**-0.1**
BALB				*e*Sg		**Sb**		**02 04 32.6**	**+0.5**
IGD	**Bursa**	**1.18**	**5**	*i* P		**Pb**		**02 04 17.9**	**-1.8**
IZI	**Iznik**	**1.28**	**14**	*e*PN		**Pb**		**02 04 21.6**	**+0.1**
IZI	**Iznik**	**1.28**	**14**	*e*Pn		**Pb**		**02 04 21.6**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.29**	**353**	*e*PN		**Pg**		**02 04 21.7**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.29**	**353**	*e*Pn		**Pg**		**02 04 21.7**	**-0.1**
KCTX	**Karacabey (Bur**	**1.30**	**335**	*e*PN		**Pn**		**02 04 21.6**	**+0.1**
KCTX	**Karacabey (Bur**	**1.30**	**335**	*e*Pn		**Pn**		**02 04 21.6**	**+0.1**
BORA	**Eskisehir**	**1.33**	**53**	P		**Pn**		**02 04 21.6**	**-0.3**
BORA	**Eskisehir**	**1.33**	**53**	*i* P		**Pn**		**02 04 21.6**	**-0.3**
GEMT	**Gemlik**	**1.35**	**4**	*e*PN		**Pg**		**02 04 23.2**	**+0.2**
GEMT	**Gemlik**	**1.35**	**4**	*e*Pn		**Pg**		**02 04 23.2**	**+0.2**
DNZL	**Cakiroluk**	**1.40**	**181**	P		**Pb**		**02 04 23.5**	**+0.1**
DNZL	**Cakiroluk**	**1.40**	**181**	*i* P		**Pb**		**02 04 23.5**	**+0.1**
ADVT	**Abdulvahap**	**1.44**	**21**	*e*PN		**Pb**		**02 04 24.2**	**+0.2**
ADVT	**Abdulvahap**	**1.44**	**21**	*e*Pn		**Pb**		**02 04 24.2**	**+0.2**
GONE	**Gonen-Balikesi**	**1.44**	**312**	*e*PN		**Pb**		**02 04 24.0**	**-0.1**
GONE	**Gonen-Balikesi**	**1.44**	**312**	*e*Pn		**Pb**		**02 04 24.0**	**-0.1**
ARMT	**Armutlu**	**1.48**	**354**	*e*PN		**Pb**		**02 04 24.8**	**-0.1**
ARMT	**Armutlu**	**1.48**	**354**	*e*Pn		**Pb**		**02 04 24.8**	**-0.1**
GULT	**Gulveren**	**1.74**	**39**	*e*PN		**Pb**		**02 04 29.1**	**-0.2**
GULT	**Gulveren**	**1.74**	**39**	*e*Pn		**Pb**		**02 04 29.1**	**-0.2**
HRT	**Hereke**	**1.79**	**15**	*e*PN		**Pb**		**02 04 29.6**	**-0.5**
HRT	**Hereke**	**1.79**	**15**	*e*Pn		**Pb**		**02 04 29.6**	**-0.5**
SPNC	**Sapanca-Adapaz**	**1.86**	**30**	*e*PN		**Pb**		**02 04 30.5**	**-0.7**
SPNC	**Sapanca-Adapaz**	**1.86**	**30**	*e*Pn		**Pb**		**02 04 30.5**	**-0.7**
SVRH	**Sivrihisar-ESK**	**1.93**	**79**	*e*PN		**Pb**		**02 04 31.8**	**-0.7**
SVRH	**Sivrihisar-ESK**	**1.93**	**79**	*e*Pn		**Pb**		**02 04 31.8**	**-0.7**
ISK	**Istanbul-Kandi**	**1.98**	**360**	*e*PN		**Pb**		**02 04 32.1**	**-1.1**
ISK	**Istanbul-Kandi**	**1.98**	**360**	*e*Pn		**Pb**		**02 04 32.1**	**-1.1**
SILT	**Sile**	**2.11**	**12**	*e*PN		**Pn**		**02 04 33.9**	**+1.4**
SILT	**Sile**	**2.11**	**12**	*e*Pn		**Pn**		**02 04 33.9**	**+1.4**
KAND	**Kocaeli-Kandir**	**2.18**	**23**	P		**Pb**		**02 04 37.2**	**+0.5**
KAND	**Kocaeli-Kandir**	**2.18**	**23**	*i* P		**Pb**		**02 04 37.2**	**+0.5**

*ISCJB **23** 02:08:54.7±0.9, 17°.5S±0°.3×178°.9W±0°.2, h539km, mb3.8/9, Error ellipse: s-maj=49.5km s-min=13.8km az=152.4*
*IDC **23** 02:08:55.5±2.1, 17°.53S×178°.83W, h536km±25km, mb3.4/9, mb1 3.7/10, mb1mx3.3/29, mbtmp4.3/10, Error ellipse: s-maj=54.7km s-min=13.5km az=151.0*
ISC 23 02:08:55.5±1.1, 17°.6S±0°.3×178°.8W±0°.2, h539km, n14, σ0§56/13, mb3.7/9, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**7.68**	**63**	P		**P**		**02 10 49.8**	**-0.1**
2.5nm,0.3s,baz=65,slow=20,SNR=4.7									
STKA	**Stephens Creek**	**38.47**	**241**	P		**P**		**02 15 31.7**	**+0.2**
3.5nm,0.5s,baz=92,slow=8.1,SNR=5.2									
WRA	**Warramunga Arr**	**44.33**	**259**	P		**P**		**02 16 17.6**	**-0.5**
1.9nm,0.5s,baz=95,slow=7.0,SNR=25									
ASAR	**Alice Springs**	**44.53**	**254**	P		**P**		**02 16 19.8**	**+0.2**
21nm,0.5s,baz=89,slow=8.2,SNR=324									
PETK	**Petropavlovsk-**	**73.26**	**345**	P		**P**		**02 19 32.7**	**+1.0**
1.7nm,0.6s,baz=141,slow=9.6,SNR=3.6									
NVAR	**Mina Array Bea**	**79.44**	**44**	P		**P**		**02 20 06.7**	**+0.4**
1.1nm,0.6s,baz=228,slow=8.0,SNR=8.2									
ILAR	**Eielson Array**	**85.64**	**13**	P		**P**		**02 20 36.0**	**-0.7**
0.6nm,0.4s,baz=221,slow=5.5,SNR=14									
TXAR	**Lajitas Array**	**86.13**	**58**	P		**P**		**02 20 40.7**	**+0.7**
1.4nm,0.8s,baz=220,slow=5.4,SNR=18									
PDAR	**Pinedale Array**	**87.36**	**44**	P		**P**		**02 20 45.5**	**-0.2**
0.6nm,0.5s,baz=212,slow=3.5,SNR=8.7									
YKA	**Yellowknife Ar**	**94.18**	**25**	P		**P**		**02 21 15.7**	**-0.6**
0.4nm,0.8s,baz=245,slow=4.6,SNR=4.1									
ARCES	**ARCESS Array B**	**125.92**	**350**	PKP		**PKPdf**		**02 26 55.2**	**-0.4**
3.4nm,1.1s,baz=40,slow=2.1,SNR=4.3									
BRTR	**Keskin Array B**	**144.28**	**315**	PKP		PKPbc		02 27 30.5	+0.1
0.8nm,0.5s,baz=107,slow=1.9,SNR=9.0									
GERES	**GERESS Array B**	**147.19**	**345**	PKPbc		**PKPbc**		**02 27 38.2**	**-0.1**
1.3nm,0.5s,baz=19,slow=3.3,SNR=14									
DAVOX	**Davos/Dischmat**	**150.00**	**348**	PKPbc		**PKPbc**		**02 27 45.3**	**-0.2**
3.3nm,0.6s,baz=278,slow=1.8,SNR=8.2									

*NIED **23** 02:22:00, 38°.20N×142°.20E, h38km, Mw3.5 Best double couple: M0 1.93000×10^14 NP1:φ0=86.00000°, δ41.00000°, λ-30.00000°. NP2:φ0=199.00000°, δ71.00000°, λ-127.00000°.*
JMA 23 02:22:11.9±0.1, 38°.23N×142°.16E, h40km±1km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.68**	**290**	P		Pn		02 22 25.2	+0.2
JIO				S		Sn		02 22 34.4	0.0
OFUJ	**Ofunato**	**0.93**	**336**	P		Pn		02 22 28.8	+0.3
JMK	**

SOLUN	Solunto	2.34	76	Pn		Pn	02 24 46.1	+1.6
	649nm,1.8s							
SOLUN	Solunto	2.34	76	Pn		Pn	02 24 46.1	+1.6
	649nm,1.8s							
RESU	Resuttano	2.70	87	Pn		Pb	02 24 52.8	-1.6
RESU	Resuttano	2.70	87	Pn		Pb	02 24 52.8	-1.6
CMAH	Djebel Manchou	2.75	251	P		Pn	02 24 48.7	-1.4
CMAH	Djebel Manchou	2.75	251	P		Pn	02 24 48.7	-1.4
PLLN	Pollina	2.80	80	Pn		Pn	02 24 51.4	+0.6
	503nm,1.9s							
PLLN	Pollina	2.80	80	Pn		Pn	02 24 51.4	+0.6
	503nm,1.9s							
ABSA	Djebel Ababsia	2.85	244	P		Pn	02 24 51.1	-0.5
ABSA	Djebel Ababsia	2.85	244	P		Pn	02 24 51.1	-0.5
VAE	Valguarnera	2.99	90	Pn		Pn	02 24 53.8	+0.4
	0.7nm,0.3s,baz=27,slow=4.5,SNR=2.9							
VAE				Sn		Sb	02 25 33.3	-2.6
	2.1nm,0.3s,baz=148,slow=19,SNR=3.7							
CAGR	Agira	3.06	88	Pn		Pb	02 24 58.0	-2.4
CAGR	Agira	3.06	88	Pn		Pb	02 24 58.0	-2.4
CAEH	'Ain El Ouahch	3.13	257	P		Pn	02 24 54.6	-0.8
CAEH	'Ain El Ouahch	3.13	257	P		Pn	02 24 54.6	-0.8
ECNV	Catenanuova	3.22	88	Pn		Pn	02 24 59.4	+2.7
	861nm,1.6s							
ECNV	Catenanuova	3.22	88	Pn		Pn	02 24 59.4	+2.7
	861nm,1.6s							
MNO	Monte Soro	3.23	82	Pn		Pn	02 24 59.0	+2.2
	32µm,15.0s							
MNO	Monte Soro	3.23	82	Pn		Pn	02 24 59.0	+2.2
	32µm,15.0s							
HLNI	Lentini	3.36	92	Pn		Pn	02 24 59.4	+0.9
	310nm,1.4s							
HLNI	Lentini	3.36	92	Pn		Pn	02 24 59.4	+0.9
	310nm,1.4s							
HCRL	Carlentini	3.50	93	Pn		Pn	02 25 01.5	+1.2
	371nm,0.7s							
HCRL	Carlentini	3.50	93	Pn		Pn	02 25 01.5	+1.2
	371nm,0.7s							
SSY	Sortino	3.54	95	Pn		Pn	02 25 02.0	+1.0
	246nm,0.8s							
SSY	Sortino	3.54	95	Pn		Pn	02 25 02.0	+1.0
	246nm,0.8s							
CASM	Ain Smara	3.58	250	P		Pn	02 24 55.9	-5.7
CASM	Ain Smara	3.58	250	P		Pn	02 24 55.9	-5.7
NOV	Novara	3.58	81	*eP*		Pb	02 25 07.2	-2.2
NOV	Novara	3.58	81	Pn		Pn	02 25 03.8	+2.2
	105nm,1.0s							
NOV	Novara	3.58	81	Pn		Pn	02 25 03.8	+2.2
	105nm,1.0s							
NOV	Novara	3.58	81	*eP*		Pb	02 25 07.2	-2.2
MMME	Mongiuffi-Meli	3.67	83	Pn		Pn	02 25 05.2	+2.4
	93nm,0.9s							
MMME	Mongiuffi-Meli	3.67	83	Pn		Pn	02 25 05.2	+2.4
	93nm,0.9s							
DFRA	Djebel Bou Aff	3.95	257	P		Pn	02 25 06.8	0.0
DFRA	Djebel Bou Aff	3.95	257	P		Pn	02 25 06.8	0.0
SET	Setif	4.42	254	P		Pb	02 25 24.0	+0.2
SET	Setif	4.42	254	P		Pb	02 25 24.0	+0.2
BULG	Bulgheria - Ca	4.47	54	Pn		Pn	02 25 14.5	+0.7
	28nm,0.9s							
BULG	Bulgheria - Ca	4.47	54	Pn		Pn	02 25 14.5	+0.7
	28nm,0.9s							
CMPR	Campora	4.56	51	Pn		Pn	02 25 15.5	+0.5
	32nm,0.9s							
CMPR	Campora	4.56	51	Pn		Pn	02 25 15.5	+0.5
	32nm,0.9s							
PAOL	Paolisi	4.61	40	Pn		Pn	02 25 16.8	+1.0
PAOL	Paolisi	4.61	40	Pn		Pn	02 25 16.8	+1.0
MGR	Morigerati	4.61	54	Pn		Pn	02 25 15.8	+0.1
	7.0nm,0.4s							
MGR	Morigerati	4.61	54	Pn		Pn	02 25 15.8	+0.1
	7.0nm,0.4s							
PLAC	Placanica	4.66	77	Pn		Pn	02 25 17.9	+1.6
	86nm,1.6s							
PLAC	Placanica	4.66	77	Pn		Pn	02 25 17.9	+1.6
	86nm,1.6s							
CDRU	Civita di Ruta	4.66	50	Pn		Pn	02 25 16.9	+0.5
	35nm,1.5s							
CDRU	Civita di Ruta	4.66	50	Pn		Pn	02 25 16.9	+0.5
	35nm,1.5s							
SIRI	Monte Sirino -	4.84	56	Pn		Pn	02 25 19.8	+0.8
	15nm,0.4s							
SIRI	Monte Sirino -	4.84	56	Pn		Pn	02 25 19.8	+0.8
	15nm,0.4s							
VVLD	Villa Vallelon	4.88	27	Pn		Pn	02 25 21.6	+2.1
VVLD	Villa Vallelon	4.88	27	Pn		Pn	02 25 21.6	+2.1
MAON	Monte Argentar	4.88	4	Pn		Pn	02 25 21.8	+2.4
MAON	Monte Argentar	4.88	4	Pn		Pn	02 25 21.8	+2.4
PGF	Pioggiola	5.15	346	*ePn*		Pn	02 25 25.1	+1.9
PGF				*eSn*		Sn	02 26 22.2	-0.5
	8.7nm,0.3s							
PGF	Pioggiola	5.15	346	*ePn*		Pn	02 25 25.1	+1.9
PGF				*eSn*		Sn	02 26 22.2	-0.5
	4.3nm,0.3s							
LMR	La Mourre	6.58	333	*ePn*		Pn	02 25 42.6	-0.2
LMR				*eSn*		Sn	02 26 54.1	-3.7
	2.6nm,0.3s							
LMR	La Mourre	6.58	333	*ePn*		Pn	02 25 42.6	-0.2
LMR				*eSn*		Sn	02 26 54.1	-3.7
	1.3nm,0.3s							
FRF	La Foret Royal	6.73	334	*ePn*		Pn	02 25 45.1	+0.3
FRF	La Foret Royal	6.73	334	*ePn*		Pn	02 25 45.1	+0.3
SBF	Sospel	6.76	340	*ePn*		Pn	02 25 45.0	-0.3
SBF	Sospel	6.76	340	*ePn*		Pn	02 25 45.0	-0.3
SMRF	Simiane la Rot	7.48	331	*ePn*		Pn	02 25 54.6	-0.6
SMRF	Simiane la Rot	7.48	331	*eP*		Pn	02 26 00.2	+5.0
SMRF	Simiane la Rot	7.48	331	*ePn*		Pn	02 25 54.6	-0.6
SMRF	Simiane la Rot	7.48	331	*eP*		Pn	02 26 00.2	+5.0
MBDF	Montbardon	7.74	339	*ePn*		Pn	02 25 58.5	-0.3
MBDF	Montbardon	7.74	339	*eP*		Pn	02 26 04.1	+5.3
MBDF				*eSn*		Sn	02 27 23.1	-3.5
	1.1nm,0.3s							
MBDF	Montbardon	7.74	339	*ePn*		Pn	02 25 58.5	-0.3
MBDF	Montbardon	7.74	339	*eP*		Pn	02 26 04.1	+5.3
MBDF				*eSn*		Sn	02 27 23.1	-3.5
	0.6nm,0.3s							
LASF	Ste Croix	8.31	324	*ePn*		Pn	02 26 05.5	-0.9
LASF	Ste Croix	8.31	324	*ePn*		Pn	02 26 05.5	-0.9
LPG	La Plagne	8.46	341	*eP*		Pn	02 26 14.6	+5.8
LPG	La Plagne	8.46	341	*eP*		Pn	02 26 14.6	+5.8
MTLF	Montolieu	8.65	315	*ePn*		Pn	02 26 09.2	-1.9
MTLF	Montolieu	8.65	315	*eP*		Pn	02 26 14.4	+3.3
MTLF				*eSn*		Sn	02 27 42.9	-5.7
	2.2nm,0.3s							
MTLF	Montolieu	8.65	315	*ePn*		Pn	02 26 09.2	-1.9
MTLF	Montolieu	8.65	315	*eP*		Pn	02 26 14.4	+3.3
MTLF				*eSn*		Sn	02 27 42.9	-5.7
	1.1nm,0.3s							
DAVOX	Davos/Dischmat	9.24	357	Pn		Pn	02 26 19.5	+0.1
	0.1nm,0.3s,baz=336,slow=20,SNR=2.2							
FETA	Feichten	9.46	0	*i* Pn		Pn	02 26 29.2	+6.8
	7.9nm,1.3s							
EPF	Esparros	9.59	308	*eP*		Pn	02 26 28.0	+3.9
EPF	Esparros	9.59	308	*eP*		Pn	02 26 28.0	+3.9
KBA	Koelnbreinsper	9.72	11	*i* Pn		Pn	02 26 32.2	+6.1
	6.5nm,0.8s							
MOTA	Moosalm	9.79	2	*i* Pn		Pn	02 26 33.1	+6.1
	4.5nm,0.9s							
ETSF	Etsaut	10.10	305	*eP*		Pn	02 26 34.1	+3.1
ETSF	Etsaut	10.10	305	*eP*		Pn	02 26 34.1	+3.1
ARSA	Arzberg	10.34	19	*i* Pn		Pn	02 26 45.3	+11
	2.5nm,0.8s							
MOA	Molln	10.63	13	*i* Pn		Pn	02 26 43.5	+5.2
	13nm,0.9s							
CONA	Conrad Observa	11.05	19	*i* Pn		Pn	02 26 48.4	+4.4
	3.0nm,0.9s							
GERES	GERESS Array B	11.50	10	Pn		Pn	02 26 51.7	+1.4
	0.1nm,0.3s,baz=284,slow=21,SNR=3.3							
GERES				LR		LR	02 31 39.3	
	comp=Z,170nm,19.6s,baz=207,slow=40							
ESDC	Sonseca Array	11.63	285	Pn		Pn	02 26 51.4	-0.7
	0.6nm,0.3s,baz=95,slow=14,SNR=9.9							
ARR	Arges	13.06	49	⇑*iP*		P	02 27 36.8	+15
VOIR		13.35	49	⇓*iP*		P	02 27 38.6	+13
BRG	Berggiesshubel	13.52	9	*eP*		P	02 27 32.8	+5.8
	13nm,1.5s							
BRG				*e*			02 27 37.5	
	4.7nm,1.2s							
DOPR	Dopca	13.83	48	⇓*iP*		P	02 27 34.2	+3.8
MLR	Muntele Rosu	13.92	50	Pn		Pn	02 27 26.6	+3.3
	0.0nm,0.3s,baz=294,slow=19,SNR=2.9							
MLR	Muntele Rosu	13.92	50	⇓*iP*		P	02 27 34.0	+2.5
VRI	Vrincioaia	14.58	50	⇓*iP*		Pn	02 27 31.5	-0.7
BURAR	Bucovina Array	14.68	42	⇓*iP*		Pn	02 27 30.3	-3.4
KWP	Kalwaria Pacla	14.88	32	⇑*iP*		Pn	02 27 26.6	-10
CFR	Carcaliu	15.16	54	⇓*iP*		Pn	02 27 30.2	-10
BRTR	Keskin Array B	18.08	76	P		P	02 28 18.1	+0.4
	0.0nm,0.3s,baz=233,slow=8.3,SNR=2.7							
AKASG	Malin Array Be	18.65	39	P		Pn	02 28 25.9	+1.9
	0.2nm,0.3s,baz=236,slow=10,SNR=2.8							
NOA	NORSAR Array B	23.51	1	P		P	02 29 16.7	+0.8
	1.9nm,0.9s,baz=185,slow=9.3,SNR=3.2							
TORD	Torodi Ar. Bea	25.59	201	P		P	02 29 35.7	+0.3
	3.7nm,1.2s,baz=14,slow=7.5,SNR=6.5							
TORD				LR		LR	02 39 22.0	
	comp=Z,61nm,18.5s,baz=170,slow=36							
FINES	FINESS Array B	25.79	17	P		P	02 29 36.0	-0.7
	1.2nm,0.9s,baz=232,slow=6.8,SNR=2.5							
KURBB	Kurchatov Arra	48.81	52	P		P	02 32 51.8	+0.7
	2.1nm,1.3s,baz=286,slow=8.4,SNR=4.6							
MKAR	Makanchi Array	52.19	56	P		P	02 33 16.9	+0.1
	0.2nm,0.4s,baz=289,slow=7.6,SNR=3.6							
TIXI	Tiksi	62.83	18	LR		LR	03 03 27.8	
	comp=Z,25nm,21.3s,baz=318,slow=38							
SONM	Songino Array	66.74	47	P		P	02 34 57.6	+0.2
	0.4nm,0.5s,baz=311,slow=6.7,SNR=2.4							
BOSA	Boshof	67.23	166	LR		LR	03 06 42.5	
	comp=Z,54nm,18.1s,baz=16,slow=38							
YKA	Yellowknife Ar	71.06	336	P		P	02 35 23.6	-0.2
	0.1nm,0.4s,baz=45,slow=6.1,SNR=2.9							
YKA				LR		LR	03 05 04.7	
	comp=Z,5.6nm,21.5s,baz=0.0,slow=35							

*ISK **23** 02:24:19.9,39°.10N×29°.11E,h5km,MD2.6*
*ISCJB **23** 02:24:20.8±0.5,39°.11N±0°.04×29°.11E±0°.04,h9km,Error ellipse: s-maj=5.5km s-min=4.5km az=146.6*
*DDA **23** 02:24:20.6,39°.07N×29°.10E,h7km,Md2.4*
*CSEM **23** 02:24:20.7±0.1,39°.12N×29°.09E,h5km,MD2.4,Error ellipse: s-maj=2.9km s-min=2.1km az=110.0*

ISC 23 02:24:20.2±0.9,39°.10N±0°.03×29°.05E±0°.03,h9km,n20, σ0°35/28,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.27	259	P	Pb	02 24 27.3	+0.1
DEMI				S	Sb	02 24 31.6	-0.3
DEMI	Demirci	0.27	259	*i* P	Pb	02 24 27.3	+0.1
DEMI				*i* S	Sb	02 24 31.6	-0.3
GDZ	Gediz	0.34	91	P	Pg	02 24 26.8	-0.1
GDZ				S	Sg	02 24 31.0	-0.4
GDZ	Gediz	0.34	91	*i* P	Pg	02 24 26.8	-0.1
GDZ				*i* S	Sg	02 24 31.0	-0.4
TVSB	Tavsanli	0.48	42	*e*PG	Pg	02 24 29.1	-0.4
TVSB				*e*SG	Sg	02 24 35.3	-0.5
TVSB	Tavsanli	0.48	42	*e*Pg	Pg	02 24 29.1	-0.4
TVSB				*e*Sg	Sg	02 24 35.3	-0.5
KULA	Kula-Manisa	0.66	208	*e*PG	Pb	02 24 33.5	-0.4
KULA	Kula-Manisa	0.66	208	*e*Pg	Pb	02 24 33.5	-0.4
KHAL	Karahalli	0.80	154	P	Pb	02 24 36.8	+0.4
KHAL				S	Sb	02 24 47.3	-0.1
KHAL	Karahalli	0.80	154	*i* P	Pb	02 24 36.8	+0.4
KHAL				*i* S	Sb	02 24 47.3	-0.1
IZI	Iznik	1.28	15	*e*PN	Pg	02 24 44.9	0.0
IZI	Iznik	1.28	15	*e*Pn	Pg	02 24 44.9	0.0
KCTX	Karacabey (Bur	1.29	336	*e*PN	Pg	02 24 45.1	+0.2
KCTX	Karacabey (Bur	1.29	336	*e*Pn	Pg	02 24 45.1	+0.2
ADVT	Abdulvahap	1.44	21	*e*PN	Pb	02 24 47.2	0.0
ADVT	Abdulvahap	1.44	21	*e*Pn	Pb	02 24 47.2	0.0
ARMT	Armutlu	1.48	354	*e*PN	Pb	02 24 47.8	-0.1
ARMT	Armutlu	1.48	354	*e*Pn	Pb	02 24 47.8	-0.1
GULT	Gulveren	1.75	40	*e*PN	Pn	02 24 51.5	+0.7
GULT	Gulveren	1.75	40	*e*Pn	Pn	02 24 51.5	+0.7

*IDC **23** 02:24:31.2±2.1,51°.82N×179°.93E,h0km,mb3.7/8, mb1 3.9/8,mb1mx3.5/63,mbtmp3.7/8,Error ellipse: s-maj=69.3km s-min=19.5km az=10.0*
*NEIC **23** 02:24:38.8,51°.44N×179°.85E,h62km,ML3.6(AEIC),After AEIC.*

ISC 23 02:24:38.3±0.9,51°.40N±0°.09×179°.83E±0°.06,h48km,n33, σ1°85/28,mb3.7/8,Rat Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AMKA	Amchitka	0.33	267	P	Pn	02 24 49.8	+2.3
AMKA				S	Sn	02 24 58.0	+4.0
CESW	Semis' Southwe	0.53	342	P	Pn	02 24 51.1	+1.4
CERB	Semis' Cerberu	0.55	347	P	Pn	02 24 51.4	+1.4
CERB				S	Sn	02 25 01.3	+2.9
CETU	Semis' Tuman	0.60	340	P	Pn	02 24 52.0	+1.3
CEAP	Semis' Anvil P	0.62	346	P	Pn	02 24 52.3	+1.4
LSSE	Little Sitkin	0.95	305	P	Pn	02 24 56.5	+1.3
LSPA	Little Sitkin	0.96	306	P	Pn	02 24 56.6	+1.2
LSPA				S	Sn	02 25 09.4	+1.4
LSNW	Little Sitkin	1.00	306	P	Pn	02 24 56.7	+0.9
LSNW				S	Sn	02 25 09.6	+0.8
SMY	Shemya	3.78	293	*e*Pn	Pn	02 25 35.9	+2.0
SMY				*e*S	Sn	02 26 15.4	-1.6
KOWE	Korovin West	3.80	73	P	Pn	02 25 35.2	+1.0
KOKL	Mount Kliuchef	3.82	74	P	Pn	02 25 35.7	+1.2
KOFP	Korovin Flat P	3.87	75	P	Pn	02 25 37.1	+1.9
KOSE	Korovin Southe	3.91	74	P	Pn	02 25 37.6	+1.7
NIKH	Nikolski High	7.14	73	P	Pn	02 26 21.7	+1.8
OKTU	Okmok Mt. Tuli	7.69	70	P	Pn	02 26 29.3	+1.8
MSOM	Makushin Julie	8.41	68	P	Pn	02 26 39.5	+2.2
UNV	Unalaska Valle	8.67	68	*e*Pn	Pn	02 26 41.7	+0.8
ZRO	Akutan Zero	9.02	67	P	Pn	02 26 48.2	+2.4
FALS	False Pass	10.65	64	*e*Pn	Pn	02 27 09.3	+1.3
H11N2	WAKE ISLAND Hy	33.20	203	T	T	03 06 40.1	
	baz=17,slow=76,SNR=4.9						
H11N3	WAKE ISLAND Hy	33.21	203	T	T	03 06 36.4	
	baz=17,slow=76,SNR=4.6						
H11N1	WAKE ISLAND Hy	33.22	203	T	T	03 06 54.6	
	baz=17,slow=76,SNR=5.9						
H11S1	WAKE ISLAND Hy	34.43	202	T	T	03 08 22.7	
	baz=18,slow=74						
H11S2	WAKE ISLAND Hy	34.44	202	T	T	03 08 33.5	
	baz=18,slow=74						
H11S3	WAKE ISLAND Hy	34.44	202	T	T	03 08 26.2	
	baz=18						
YKA	Yellowknife Ar	35.84	46	P	P	02 31 29.8	-2.9
	0.3nm,0.7s,baz=277,slow=8.1,SNR=3.9						
NVAR	Mina Array Bea	44.40	82	P	P	02 32 43.2	-1.1
	0.5nm,0.6s,baz=311,slow=7.1,SNR=3.2						
SONM	Songino Array	45.86	296	P	P	02 32 54.3	-1.3
	0.8nm,0.5s,baz=74,slow=8.4,SNR=4.3						
PDAR	Pinedale Array	47.12	71	P	P	02 33 02.7	-3.0
	0.5nm,0.7s,baz=297,slow=4.8,SNR=5.8						
ZALV	Zalesovo Beam	53.39	313	P	P	02 33 51.6	-0.9
	0.7nm,0.3s,baz=52,slow=7.2,SNR=3.7						
ARCES	ARCESS Array B	57.92	350	P	P	02 34 20.6	-4.2
	2.8nm,1.1s,baz=23,slow=7.9,SNR=5.8						
MKAR	Makanchi Array	59.34	308	P	P	02 34 32.1	-3.0
	0.7nm,0.4s,baz=54,slow=7.3,SNR=6.3						
TXAR	Lajitas Array	59.50	80	P	P	02 34 34.7	-1.8
	0.2nm,0.7s,baz=284,slow=5.3,SNR=3.9						

*IDC **23** 02:24:49.4±0.9,26°.79N×143°.70E,h0km,mb3.8/7, mb1 3.9/10,mb1mx3.6/58,mbtmp3.7/10,ML3.5/3,Error ellipse: s-maj=22.6km s-min=18.3km az=64.0*
*ISCJB **23** 02:24:52.6±0.8,26°.8N±0°.1×143°.71E±0°.09,h33km, mb3.7/7,Error ellipse: s-maj=16.4km s-min=10.9km az=21.3*

ISC 23 02:24:54.6±1.0,26°.9N±0°.1×143°.6E±0°.1,h35km,n11, σ1°26/12,mb3.7/7,Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCJ	Chichijima	1.32	280	Pn	Pn	02 25 15.2	-1.3
	7.3nm,0.3s,baz=287,slow=19,SNR=3.6						
JCJ				Sn	Sn	02 25 34.1	+1.2
	175nm,0.3s,baz=280,slow=22,SNR=12						
MJAR	Matsushiro Arr	10.69	336	Pn	Pn	02 27 23.1	-2.0
	1.4nm,0.3s,baz=152,slow=10,SNR=10						
KSRS	Korea Array	16.96	312	Pn	P	02 28 50.8	+0.2
	0.3nm,0.3s,baz=122,slow=13,SNR=2.8						
USRK	Ussuriysk Ar.	19.68	334	P	Pn	02 29 22.1	0.0
	0.2nm,0.3s,baz=128,slow=14,SNR=4.5						
KLR	Kul'dur	24.14	341	P	P	02 30 08.0	+0.8
	2.2nm,0.7s,baz=168,slow=4.7,SNR=8.0						
WRA	Warramunga Arr	47.41	192	P	P	02 33 24.9	-0.7
	3.3nm,0.7s,baz=12,slow=8.3,SNR=9.7						
ASAR	Alice Springs	51.12	191	P	P	02 33 53.5	-0.5
	0.5nm,0.6s,baz=10,slow=6.0,SNR=6.4						
KURBB	Kurchatov Arra	54.12	315	P	P	02 34 17.2	+1.2
	1.3nm,0.8s,baz=91,slow=7.8,SNR=11						
YKA	Yellowknife Ar	71.71	29	P	P	02 36 12.2	-0.5
	0.1nm,0.6s,baz=298,slow=6.3,SNR=2.8						
FINES	FINESS Array B	78.71	334	P	P	02 36 55.0	+2.0
	0.6nm,0.7s,baz=66,slow=4.7,SNR=2.7						
TXAR	Lajitas Array	94.69	54	P	P	02 38 12.7	+0.1
	0.1nm,0.5s,baz=270,slow=4.5,SNR=2.5						

*ISCJB **23** 02:25:59.1±0.3,37°.59N±0°.04×10°.50E±0°.03,h10km, mb3.7/11,Error ellipse: s-maj=5.3km s-min=3.6km az=25.8*
*IDC **23** 02:25:59.1±0.8,37°.49N×10°.57E,h0km,mb3.8/11, mb1 3.9/17,mb1mx3.7/60,mbtmp3.7/17,ML2.9/5,MS2.8/1, Ms1 2.8/1,ms1mx2.4/49,Error ellipse: s-maj=19.5km s-min=14.7km az=136.0*
*CSEM **23** 02:26:01.0±0.5,37°.65N×10°.65E,h10km,ML3.5,Error ellipse: s-maj=17.1km s-min=4.6km az=26.0*
*ROM **23** 02:26:02.3±0.5,37°.82N×10°.85E,h10km,Ml3.5/6,Error ellipse: s-maj=10.6km s-min=4.0km az=38.0*
*LDG **23** 02:26:02.9±0.1,37°.38N×10°.46E,h30km,Ml3.3/6,Error ellipse: s-maj=4.1km s-min=3.8km az=105.0*

ISC 23 02:26:01.0±0.7,37°.58N±0°.05×10°.58E±0°.05,h10km,n87, σ1°04/73,mb3.9/11,2C-1D,Tunisia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PTMD	Pantelleria Cu	1.38	124	Pn	Pn	02 26 27.6	+1.2
	1µm,0.7s						
PTMD	Pantelleria Cu	1.38	124	Pn	Pn	02 26 27.6	+1.2
	1µm,0.7s						
MTGR	Montagna Grand	1.76	79	Pn	Pn	02 26 29.6	-2.0
MTGR	Montagna Grand	1.76	79	Pn	Pn	02 26 29.6	-2.0
MMGO	Monte Magaggia	1.91	87	Pn	Pn	02 26 31.2	-2.4
MMGO	Monte Magaggia	1.91	87	Pn	Pn	02 26 31.2	-2.4
CRJA	Costa Raja	1.94	83	Pn	Pn	02 26 32.1	-2.0
CRJA	Costa Raja	1.94	83	Pn	Pn	02 26 32.1	-2.0
KEST	Kesra	2.09	209	Pn	Pn	02 26 35.0	-1.1
	8.4nm,0.3s,baz=153,slow=4.5,SNR=6.9						
KEST				Sn	Sn	02 27 01.5	-0.8
	59nm,0.3s,baz=350,slow=6.2,SNR=8.6						
CLTB	Caltabellotta	2.10	89	Pn	Pn	02 26 34.5	-1.8
CLTB	Caltabellotta	2.10	89	Pn	Pn	02 26 34.5	-1.8
VSL	Villasalto	2.13	334	Pn	Pn	02 26 37.0	+0.3
VSL				Sn	Sn	02 27 03.0	-0.2
VSL	Villasalto	2.13	334	Pn	Pn	02 26 37.0	+0.3
VSL				Sn	Sn	02 27 03.0	-0.2
MPG	Monte Pellegri	2.28	74	Pn	Pn	02 26 37.8	-0.9
	2µm,3.8s						
MPG	Monte Pellegri	2.28	74	Pn	Pn	02 26 37.8	-0.9
	2µm,3.8s						
USI	Ustica	2.34	60	Pn	Pn	02 26 36.6	-3.0
	557nm,0.8s						
USI	Ustica	2.34	60	Pn	Pn	02 26 36.6	-3.0
	557nm,0.8s						
SOLUN	Solunto	2.40	77	Pn	Pn	02 26 38.8	-1.5
	649nm,1.8s						
SOLUN	Solunto	2.40	77	Pn	Pn	02 26 38.8	-1.5
	649nm,1.8s						
RESU	Resuttano	2.77	88	Pn	Pn	02 26 46.8	+1.4
RESU	Resuttano	2.77	88	Pn	Pn	02 26 46.8	+1.4
PLLN	Pollina	2.86	81	Pn	Pn	02 26 45.6	-1.1
	503nm,1.9s						
PLLN	Pollina	2.86	81	Pn	Pn	02 26 45.6	-1.1
	503nm,1.9s						
VAE	Valguarnera	3.05	91	Pn	Pn	02 26 49.0	-0.4
	1.5nm,0.3s,baz=108,slow=20,SNR=2.8						
VAE				Sn	Sn	02 27 27.1	+1.2
	3.7nm,0.3s,baz=203,slow=18,SNR=3.0						
MNO	Monte Soro	3.28	83	Pn	Pn	02 26 52.6	-0.1
	32µm,15.0s						
MNO	Monte Soro	3.28	83	Pn	Pn	02 26 52.6	-0.1
	32µm,15.0s						
ECNV	Catenanuova	3.29	88	Pn	Pn	02 26 53.3	+0.7
	861nm,1.6s						
ECNV	Catenanuova	3.29	88	Pn	Pn	02 26 53.3	+0.7
	861nm,1.6s						
NOV	Novara	3.64	82	Pn	Pn	02 26 56.8	-0.7
	105nm,1.0s						
NOV	Novara	3.64	82	Pn	Pn	02 26 56.8	-0.7
	105nm,1.0s						
MMME	Mongiuffi-Meli	3.73	83	Pn	Pn	02 26 58.4	-0.2
	93nm,0.9s						
MMME	Mongiuffi-Meli	3.73	83	Pn	Pn	02 26 58.4	-0.2
	93nm,0.9s						
PGF	Piogg

HFS	Hagfors	22.66	4	P	P	02 31 03.2	+1.0
	4.6nm,1.0s,baz=193,slow=6.1,SNR=4.4						
KBZ	Khabaz	25.18	66	P	P	02 31 27.4	+1.0
	0.9nm,0.5s,baz=283,slow=6.1,SNR=3.7						
TORD	Torodi Ar. Bea	25.59	200	P	P	02 31 29.2	-1.2
	2.6nm,1.0s,baz=358,slow=7.0,SNR=8.4						
FINES	FINESS Array B	25.78	17	P	P	02 31 33.1	+1.3
	2.9nm,1.0s,baz=185,slow=15,SNR=3.1						
KURBB	Kurchatov Arra	48.85	52	P	P	02 34 45.7	-0.8
	1.6nm,1.0s,baz=286,slow=8.4,SNR=5.4						
MKAR	Makanchi Array	52.23	56	P	P	02 35 10.8	-1.3
	0.6nm,0.7s,baz=281,slow=7.3,SNR=4.6						
SCHQ	Schefferville	53.45	315	P	P	02 35 20.5	-0.5
	2.9nm,0.8s,baz=40,slow=6.1,SNR=3.8						
SONM	Songino Array	66.77	47	P	P	02 36 51.7	-0.9
	0.8nm,0.9s,baz=303,slow=8.3,SNR=4.3						
YKA	Yellowknife Ar	71.02	336	P	P	02 37 18.8	+0.2
	0.3nm,0.7s,baz=44,slow=5.6,SNR=4.9						
ILAR	Eielson Array	76.46	350	P	P	02 37 50.3	-0.2
	0.3nm,0.7s,baz=2.7,slow=5.8,SNR=3.1						
PDAR	Pinedale Array	83.27	320	P	P	02 38 28.9	+0.8
	0.5nm,0.9s,baz=62,slow=3.5,SNR=4.0						

*ISCJB **23** 02:45:56.5±0.5, 39.08N±0.04×29.06E±0.05, h9km, Error ellipse: s-maj=5.5km s-min=4.6km az=45.0*
*CSEM **23** 02:45:56.4±0.1, 39.10N×29.06E, h2km, MD2.6, Error ellipse: s-maj=2.0km s-min=1.8km az=136.0*
*ISK **23** 02:45:56.0, 39.10N×29.08E, h5km, MD2.7*
*DDA **23** 02:45:56.6, 39.09N×29.05E, h7km, Md2.6*
ISC 23 02:45:56.7±0.9, 39.10N±0.03×29.05E±0.02, h9km, n43, σ0.42/45, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	Gediz	0.34	92	P	Pg	02 46 03.4	0.0
GDZ	Gediz	0.34	92	*i* P	Pg	02 46 03.4	0.0
TVSB	Tavsanli	0.47	42	*e*PG	Pg	02 46 05.4	-0.5
TVSB				*e*SG	Sg	02 46 11.5	-0.7
TVSB	Tavsanli	0.47	42	*e*Pg	Pg	02 46 05.4	-0.5
TVSB				*e*Sg	Sg	02 46 11.5	-0.7
KULA	Kula-Manisa	0.66	208	*e*PG	Pg	02 46 09.1	-0.4
KULA	Kula-Manisa	0.66	208	*e*Pg	Pg	02 46 09.1	-0.4
DURS	Dursunbey	0.67	318	P	Pg	02 46 09.6	-0.1
DURS	Dursunbey	0.67	318	*i* P	Pg	02 46 09.6	-0.1
MANT	Manisa	0.72	212	P	Pg	02 46 10.1	-0.5
MANT	Manisa	0.72	212	*i* P	Pg	02 46 10.1	-0.5
KHAL	Karahalli	0.81	154	P	Pg	02 46 12.0	-0.2
KHAL	Karahalli	0.81	154	*i* P	Pg	02 46 12.0	-0.2
KHL	Karahalli	0.86	154	*e*PG	Pg	02 46 13.1	-0.1
KHL	Karahalli	0.86	154	*e*Pg	Pg	02 46 13.1	-0.1
AKHS	Akhisar	0.99	257	P	Pb	02 46 16.0	0.0
AKHS	Akhisar	0.99	257	*i* P	Pb	02 46 16.1	0.0
AKS	Akhisar	0.99	257	*e*PG	Pg	02 46 15.2	-0.4
AKS	Akhisar	0.99	257	*e*Pg	Pg	02 46 15.3	-0.4
BALB	Balikesir	1.05	301	*e*PG	Pg	02 46 17.1	+0.1
BALB	Balikesir	1.05	301	*e*Pg	Pg	02 46 17.1	+0.1
IGD	Bursa	1.17	6	*i* P	Pb	02 46 18.4	-0.6
MDNY	Mudanya-Bursa	1.27	354	*e*PN	Pb	02 46 21.1	+0.3
MDNY	Mudanya-Bursa	1.27	354	*e*Pn	Pb	02 46 21.1	+0.3
IZI	Iznik	1.28	15	*e*PN	Pn	02 46 20.6	-0.2
IZI	Iznik	1.28	15	*e*Pn	Pn	02 46 20.6	-0.2
BALY	Balya	1.28	300	P	Pn	02 46 21.0	+0.2
BALY	Balya	1.28	300	*i* P	Pn	02 46 21.0	+0.2
KCTX	Karacabey (Bur	1.28	336	*e*PN	Pg	02 46 21.4	+0.1
KCTX	Karacabey (Bur	1.28	336	*e*Pn	Pg	02 46 21.4	+0.1
BORA	Eskisehir	1.34	54	P	Pb	02 46 22.1	+0.1
BORA	Eskisehir	1.34	54	*i* P	Pb	02 46 22.1	+0.1
GONE	Gonen-Balikesi	1.42	312	*e*PN	Pb	02 46 23.5	+0.2
GONE	Gonen-Balikesi	1.42	312	*e*Pn	Pb	02 46 23.5	+0.2
ADVT	Abdulvahap	1.43	22	*e*PN	Pb	02 46 23.4	-0.2
ADVT	Abdulvahap	1.43	22	*e*Pn	Pb	02 46 23.4	-0.2
ARMT	Armutlu	1.47	354	*e*PN	Pn	02 46 23.8	+0.4
ARMT	Armutlu	1.47	354	*e*Pn	Pn	02 46 23.8	+0.4
EDC	Edincik	1.54	324	*e*PN	Pn	02 46 25.1	+0.7
EDC	Edincik	1.54	324	*e*Pn	Pn	02 46 25.1	+0.7
GULT	Gulveren	1.75	40	*e*PN	Pn	02 46 27.5	+0.2
GULT	Gulveren	1.75	40	*e*Pn	Pn	02 46 27.5	+0.2
SVRH	Sivrihisar-ESK	1.95	79	*e*PN	Pn	02 46 31.2	+1.1
SVRH	Sivrihisar-ESK	1.95	79	*e*Pn	Pn	02 46 31.2	+1.1

IDC 23 02:46:10.2±3.2, 20.41S×176.29W, h0km, mb4.0/3, mb1 4.2/3, mb1mx3.7/28, mbtmp4.0/3, Error ellipse: s-maj=164.0km s-min=49.1km az=147.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	Stephens Creek	39.27	244	P	P	02 53 41.5	+0.6
	3.9nm,0.9s,baz=90,slow=12,SNR=2.9						
ASAR	Alice Springs	46.10	256	P	P	02 54 36.6	+0.1
	2.1nm,0.6s,baz=95,slow=8.0,SNR=19						
ASAR				PcP	PcP	02 56 10.5	-2.3
	0.5nm,1.0s,baz=105,slow=3.5,SNR=4.4						
WRA	Warramunga Arr	46.20	262	P	P	02 54 36.8	-0.6
	0.4nm,0.3s,baz=96,slow=7.5,SNR=5.3						
AKASG	Malin Array Be	143.70	332	PKP	PKPdf	03 05 46.0	-1.0
	0.9nm,0.6s,baz=43,slow=4.1,SNR=12						
BRTR	Keskin Array B	147.96	314	PKPbc	PKPbc	03 05 58.5	+0.5
	0.3nm,0.6s,baz=116,slow=3.4,SNR=3.4						

IDC 23 02:47:59.9±2.2, 5.03S×146.63E, h0km, mb3.6/2, mb1 4.0/3, mb1mx3.5/34, mbtmp3.7/3, ML3.9/1, Error ellipse: s-maj=287.9km s-min=29.7km az=121.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	19.05	218	P	P	02 52 23.8	-0.1
	0.4nm,0.3s,baz=37,slow=11,SNR=18						
ASAR	Alice Springs	22.22	212	P	P	02 52 58.2	0.0
	1.0nm,0.7s,baz=46,slow=7.9,SNR=7.9						
ILAR	Eielson Array	84.74	23	P	P	03 00 35.7	+0.1
	0.6nm,0.8s,baz=248,slow=5.2,SNR=5.7						

*NIED **23** 02:48:00, 37.90N×143.60E, h5km, Mw3.6 Best double couple: M0:3.20000×10^14 NP1:φs=358.00000°, δ27.00000°, λ-116.00000°. NP2:φs=207.00000°, δ66.00000°, λ-78.00000°.*
*IDC **23** 02:48:09.8±1.2, 37.78N×143.98E, h0km, mb3.7/6, mb1 3.9/8, mb1mx3.6/46, mbtmp3.7/8, ML3.9/2, MS2.8/3, Ms1 2.8/3, ms1mx2.4/42, Error ellipse: s-maj=31.0km s-min=21.7km az=81.0*
*ISCJB **23** 02:48:11.6±0.7, 37.84N±0.04×143.57E±0.06, h19km, mb3.7/6, MS3.1/1, Error ellipse: s-maj=7.3km s-min=5.6km az=31.7*
*JMA **23** 02:48:13.3±0.2, 37.87N×143.55E, h39km, M3.7*
ISC 23 02:48:13.1±1.0, 37.86N±0.06×143.62E±0.08, h19km, n32, σ1.56/32, mb3.7/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	1.88	289	P	Pn	02 48 43.5	-0.7
JIO				*e*S	Sn	02 49 05.7	-1.8
OFUJ	Ofunato	1.96	309	P	Pn	02 48 44.4	-0.8
JMK	Ichinoseki	2.18	301	P	Pn	02 48 47.7	-0.6
JOU	Okura	2.38	283	P	Pn	02 48 50.9	-0.3
JOM	Ohasama	2.43	312	P	Pn	02 48 51.5	-0.3
JOM				S	Sn	02 49 19.9	-1.1
JFT	Otama	2.62	264	P	Pn	02 48 54.5	0.0
JFT				S	Sn	02 49 24.4	-1.4
JYK	Kaneyama	2.77	293	P	Pn	02 48 56.7	+0.3
JYK				*e*S	Sn	02 49 28.0	-1.4
JRG	Rokugo	2.79	304	P	Pn	02 48 56.6	-0.2
JANG	Nango	3.00	328	P	Pn	02 48 59.5	-0.1
JAH	Hinai	3.29	316	P	Pn	02 49 03.1	-0.4
JAH				*e*S	Sn	02 49 41.3	-0.8
JAG	Ashikaga	3.62	248	P	Pn	02 49 07.5	-0.7
JAG				*e*S	Sn	02 49 48.8	-1.6
JRY	Ryogami san	4.20	245	P	Pn	02 49 15.6	-0.6
JRY				S	Sn	02 50 01.5	-3.2
MJAR	Matsushiro Arr	4.51	255	Pn	Pn	02 49 21.7	+1.2
	6.4nm,0.3s,baz=90,slow=16,SNR=27						
MAT	Matsushiro	4.51	255	P	Pn	02 49 21.6	+1.1
MAT				*e*S	Sn	02 50 10.7	-1.7
JCH	Churui	4.75	358	P	Pn	02 49 22.8	-0.9
JCH				*e*S	Sn	02 50 13.7	-4.5
ASAJ	Asahikawa	6.30	353	Pn	Pn	02 49 46.7	+1.8
	2.0nm,0.3s,baz=189,slow=7.4,SNR=4.3						
ASAJ				Sn	Sn	02 50 56.0	-0.4
	baz=82,slow=14,SNR=2.1						
JCJ	Chichijima	10.80	187	Pn	Pn	02 50 42.1	-4.7
	2.3nm,0.3s,baz=241,slow=19,SNR=8.3						
JCJ				Sn	Sn	02 52 34.2	-13
	baz=254,slow=19						
KSRS	Korea Array	12.45	273	LR	LR	02 55 47.4	
	comp=Z,31nm,18.2s,baz=200,slow=36						
KLR	Kul'dur	14.23	327	LR	LR	02 56 40.0	
	comp=Z,26nm,18.1s,baz=64,slow=35						
H11N2	WAKE ISLAND Hy 27.13	125		T	T	03 22 12.2	
	baz=317,slow=75,SNR=11						
H11N1	WAKE ISLAND Hy 27.14	125		T	T	03 22 10.7	
	baz=317,slow=75,SNR=8.6						
H11N3	WAKE ISLAND Hy 27.14	125		T	T	03 22 15.3	
	baz=317,slow=75,SNR=10						
H11S1	WAKE ISLAND Hy 27.90	127		T	T	03 23 14.4	
	baz=319,slow=76,SNR=6.4						
H11S3	WAKE ISLAND Hy 27.90	127		T	T	03 23 14.0	
	baz=319,slow=76,SNR=5.9						
H11S2	WAKE ISLAND Hy 27.91	127		T	T	03 23 14.5	
	baz=319,slow=76,SNR=4.5						
SONM	Songino Array	28.80	302	P	P	02 54 12.4	+2.4
	0.3nm,0.3s,baz=106,slow=12,SNR=3.5						
MKAR	Makanchi Array	45.17	302	P	P	02 56 30.8	+2.2
	0.6nm,0.6s,baz=87,slow=9.6,SNR=7.0						
KURBB	Kurchatov Arra	46.88	308	P	P	02 56 43.1	+1.2
	1.3nm,0.5s,baz=81,slow=8.6,SNR=6.4						
ILAR	Eielson Array	47.85	33	P	P	02 56 47.7	-1.6
	0.4nm,0.7s,baz=267,slow=6.6,SNR=4.8						
WRA	Warramunga Arr	58.15	190	P	P	02 58 04.9	-0.8
	0.8nm,0.5s,baz=10.0,slow=7.1,SNR=6.6						
ASAR	Alice Springs	61.88	190	P	P	02 58 31.3	+0.1
	0.2nm,0.4s,baz=0.5,slow=5.0,SNR=5.7						
BRTR	Keskin Array B	79.60	313	LR	LR	03 38 56.6	
	comp=Z,9.3nm,18.6s,baz=335,slow=38						

MAN 23 02:48:23, 11.48N×125.53E, h27km, mb3.8, ML2.5, MS2.1, 1C, Samar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BESP	Borongan	0.15	324	*e*P	Pn	02 48 30.0	+0.5
BESP				*e*S	Sb	02 48 36.2	+4.3
PLP	Palo	0.62	240	*e*P	Pb	02 48 34.8	-0.6
PLP				*e*S	Sb	02 48 43.6	-0.2
OCLP	Ormoc	1.00	245	*e*P	Pb	02 48 41.7	+0.1
OCLP				*e*S	Sn	02 48 55.0	+0.6

IDC 23 02:59:06.4±1.3, 61.72S×54.40W, h0km, mb3.7/3, mb1 3.9/3, mb1mx3.7/18, mbtmp3.6/3, MS3.3/2, Ms1 3.2/2, ms1mx2.9/16, Error ellipse: s-maj=73.1km s-min=35.4km az=112.0, South Shetland Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLCA	Paso Flores	23.19	328	LR	LR	03 12 26.5	
	comp=Z,37nm,19.1s,baz=188,slow=34						
VNDA	Vanda	39.23	192	P	P	03 06 36.0	+0.4
	0.2nm,0.3s,baz=140,slow=7.9,SNR=5.1						
MAW	Mawson	43.24	150	LR	LR	03 24 02.4	
	comp=Z,74nm,20.0s,baz=43,slow=35						
TORD	Torodi Ar. Bea	86.55	54	P	P	03 11 52.3	+1.1
	0.4nm,0.9s,baz=194,slow=4.0,SNR=2.6						
TXAR	Lajitas Array	99.04	318	P	Pdif	03 12 48.5	-0.3
	0.1nm,0.5s,baz=160,slow=2.9,SNR=3.4						
BVAR	Borovoye Array	149.87	81	PKPbc	PKPbc	03 18 56.2	-0.9
	1.9nm,0.8s,baz=240,slow=2.8,SNR=9.0						
MKAR	Makanchi Array	151.28	101	PKPbc	PKPbc	03 18 59.2	-1.5
	0.6nm,0.7s,baz=236,slow=1.6,SNR=4.5						

*DDA **23** 03:05:44.9, 39.09N×29.03E, h7km, Md2.6*
*ISCJB **23** 03:05:45.2±0.5, 39.10N±0.04×29.05E±0.04, h6km±7km, Error ellipse: s-maj=6.1km s-min=5.2km az=169.7*
*ISK **23** 03:05:45.2, 39.11N×29.09E, h10km, MD2.6*
*CSEM **23** 03:05:45.3±0.1, 39.11N×29.06E, h5km, MD2.6, Error ellipse: s-maj=3.3km s-min=2.7km az=82.0*
ISC 23 03:05:45.1±1.0, 39.09N±0.03×29.07E±0.03, h7km±10km, n24, σ0.36/34, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.28	261	P	Pg	03 05 50.8	+0.2
DEMI				S	Sg	03 05 54.0	-0.3
DEMI	Demirci	0.28	261	*i* P	Pg	03 05 50.8	+0.2
DEMI				*i* S	Sg	03 05 54.0	-0.3
GDZ	Gediz	0.32	89	P	Pg	03 05 51.4	0.0
GDZ				S	Sb	03 05 57.8	-0.9
GDZ	Gediz	0.32	89	*i* P	Pg	03 05 51.4	0.0
GDZ				*i* S	Sb	03 05 57.8	-0.9
TVSB	Tavsanli	0.47	40	*e*PG	Pg	03 05 55.0	+0.7
TVSB				*e*SG	Sg	03 06 00.4	-0.1
TVSB	Tavsanli	0.47	40	*e*Pg	Pg	03 05 55.0	+0.7
TVSB				*e*Sg	Sg	03 06 00.4	-0.1
KULA	Kula-Manisa	0.65	209	*e*PG	Pb	03 05 58.6	-0.2
KULA	Kula-Manisa	0.65	209	*e*Pg	Pb	03 05 58.6	-0.2
KHAL	Karahalli	0.79	155	P	Pg	03 06 00.5	+0.3
KHAL				S	Sb	03 06 12.2	+0.2
KHAL	Karahalli	0.79	155	*i* P	Pg	03 06 00.5	+0.3
KHAL				*i* S	Sb	03 06 12.2	+0.2
KHL	Karahalli	0.84	155	*e*PG	Pb	03 06 02.3	+0.3
KHL	Karahalli	0.84	155	*e*Pg	Pb	03 06 02.3	+0.3
BALB	Balikesir	1.08	301	*e*PG	Pb	03 06 06.2	+0.2
BALB	Balikesir	1.08	301	*e*Pg	Pb	03 06 06.2	+0.2
IZI	Iznik	1.29	14	*e*PN	Pg	03 06 09.8	0.0
IZI	Iznik	1.29	14	*e*Pn	Pg	03 06 09.8	0.0
MDNY	Mudanya-Bursa	1.29	354	*e*PN	Pn	03 06 09.3	-0.2
MDNY	Mudanya-Bursa	1.29	354	*e*Pn	Pn	03 06 09.3	-0.2
KCTX	Karacabey (Bur	1.30	335	*e*PN	Pg	03 06 10.1	+0.1
KCTX				*e*SN	Sn	03 06 27.8	+0.4
KCTX	Karacabey (Bur	1.30	335	*e*Pn	Pg	03 06 10.1	+0.1
KCTX				*e*Sn	Sn	03 06 27.8	+0.4
ARMT	Armutlu	1.49	354	*e*PN	Pn	03 06 12.2	-0.1
ARMT	Armutlu	1.49	354	*e*Pn	Pn	03 06 12.2	-0.1
GULT	Gulveren	1.75	39	*e*PN	Pn	03 06 15.8	-0.1
GULT	Gulveren	1.75	39	*e*Pn	Pn	03 06 15.8	-0.1

*ISK **23** 03:07:11.3, 39.07N×29.13E, h4km, MD2.6*
*ISCJB **23** 03:07:12.3±0.5, 39.08N±0.04×29.07E±0.04, h9km, Error ellipse: s-maj=5.4km s-min=4.5km az=149.2*
*CSEM **23** 03:07:12.2±0.2, 39.10N×29.07E, h2km, MD2.5, Error ellipse: s-maj=4.8km s-min=3.6km az=99.0*
*DDA **23** 03:07:12.0, 39.08N×29.06E, h7km, Md2.5*
ISC 23 03:07:12.1±0.9, 39.07N±0.03×29.08E±0.03, h9km, n20, σ0.45/28, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.28	264	P	Pg	03 07 17.9	+0.1
DEMI				S	Sg	03 07 21.7	+0.1
DEMI	Demirci	0.28	264	*i* P	Pg	03 07 17.9	+0.1
DEMI				*i* S	Sg	03 07 21.7	+0.1
GDZ	Gediz	0.32	87	P	Pg	03 07 18.9	+0.4
GDZ				S	Sg	03 07 23.7	+1.0
GDZ	Gediz	0.32	87	*i* P	Pg	03 07 18.9	+0.4
GDZ				*i* S	Sg	03 07 23.7	+1.0
TVSB	Tavsanli	0.48	38	*e*PG	Pg	03 07 20.8	-0.8
TVSB				*e*SG	Sg	03 07 27.8	-0.1
TVSB	Tavsanli	0.48	38	*e*Pg	Pg	03 07 20.8	-0.8
TVSB				*e*Sg	Sg	03 07 27.8	-0.1
KULA	Kula-Manisa	0.64	210	*e*PG	Pg	03 07 24.8	+0.2
KULA	Kula-Manisa	0.64	210	*e*Pg	Pg	03 07 24.8	+0.2
KHAL	Karahalli	0.77	155	P	Pn	03 07 28.7	-0.6
KHAL				S	Sb	03 07 38.5	+0.1
KHAL	Karahalli	0.77	155	*i* P	Pn	03 07 28.7	-0.6
KHAL				*i* S	Sb	03 07 38.5	+0.1
KHL	Karahalli	0.82	155	*e*PG	Pg	03 07 27.6	-0.5
KHL	Karahalli	0.82	155	*e*Pg	Pg	03 07 27.6	-0.5
IZI	Iznik	1.30	14	*e*PN	Pb	03 07 36.7	-0.1
IZI	Iznik	1.30	14	*e*Pn	Pb	03 07 36.7	-0.1
KCTX	Karacabey (Bur	1.32	335	*e*PN	Pg	03 07 37.5	+0.1
KCTX	Karacabey (Bur	1.32	335	*e*Pn	Pg	03 07 37.5	+0.1
ARMT	Armutlu	1.50	354	*e*PN	Pb	03 07 40.1	-0.1
ARMT	Armutlu	1.50	354	*e*Pn	Pb	03 07 40.1	-0.1
GULT	Gulveren	1.75	39	*e*PN	Pn	03 07 43.2	+0.4
GULT	Gulveren	1.75	39	*e*Pn	Pn	03 07 43.2	+0.4

*ISCJB **23** 03:13:28.5±0.5, 39.06N±0.04×29.08E±0.04, h9km, Error ellipse: s-maj=6.2km s-min=4.1km az=149.2*
*CSEM **23** 03:13:28.6±0.1, 39.07N×29.08E, h4km±2km, MD2.3, Error ellipse: s-maj=3.7km s-min=2.7km az=132.0*
*ISK **23** 03:13:28.2, 39.07N×29.15E, h5km, MD2.6*
*DDA **23** 03:13:28.5, 39.05N×29.06E, h7km, Md2.3*
ISC 23 03:13:27.8±0.9, 39.00N±0.04×29.14E±0.03, h9km, n20, σ0.46/28, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	Gediz	0.28	72	P	Pb	03 13 35.4	+0.3
GDZ				S	Sb	03 13 40.3	+0.2
GDZ	Gediz	0.28	72	*i* P	Pb	03 13 35.4	+0.3
GDZ				*i* S	Sb	03 13 40.3	+0.2
DEMI	Demirci	0.33	277	P	Pg	03 13 33.9	-0.4
DEMI				S	Sg	03 13 37.9	-0.8
DEMI	Demirci	0.33	277	*i* P	Pg	03 13 33.9	-0.4
DEMI				*i* S	Sg	03 13 37.9	-0.8
TVSB	Tavsanli	0.52	29	*e*PG	Pg	03 13 37.8	0.0
TVSB				*e*SG	Sg	03 13 43.7	-0.9
TVSB	Tavsanli	0.52	29	*e*Pg	Pg	03 13 37.8	0.0
TVSB				*e*Sg	Sg	03 13 43.7	-0.9
KULA	Kula-Manisa	0.61	217	*e*PG	Pb	03 13 41.3	+0.7
KULA	Kula-Manisa	0.61	217	*e*Pg	Pb	03 13 41.3	+0.7
MANT	Manisa	0.68	222	P	Pb	03 13 42.3	+0.4
MANT				S	Sb	03 13 51.7	+0.2
MANT	Manisa	0.68	222	*i* P	Pb	03 13 42.3	+0.4
MANT				*i* S	Sb	03 13 51.7	+0.2
KHL	Karahalli	0.74	156	*e*PG	Pn	03 13 44.4	-0.1
KHL	Karahalli	0.74	156	*e*Pg	Pn	03 13 44.4	-0.1
DURS	Dursunbey	0.79	320	P	Pg	03 13 42.9	-0.1
DURS	Dursunbey	0.79	320	*i* P	Pg	03 13 42.9	-0.1
BALB	Balikesir	1.16	304	*e*PN	Pn	03 13 50.7	+0.5
BALB	Balikesir	1.16	304	*e*Pn	Pn	03 13 50.7	+0.5
IZI	Iznik	1.36	11	*e*PN	Pn	03 13 53.3	+0.3
IZI	Iznik	1.36	11	*e*Pn	Pn	03 13 53.3	+0.3
KCTX	Karacabey (Bur	1.40	335	*e*PN	Pb	03 13 54.3	+0.2
KCTX	Karacabey (Bur	1.40	335	*e*Pn	Pb	03 13 54.3	+0.2

*ISCJB **23** 03:17:10.7±0.5, 39.07N±0.03×29.08E±0.05, h9km, Error ellipse: s-maj=5.7km s-min=4.4km az=34.2*
*CSEM **23** 03:17:10.5±0.1, 39.09N×29.07E, h2km, MD2.4, Error ellipse: s-maj=3.6km s-min=2.8km az=110.0*
*ISK **23** 03:17:10.1, 39.06N×29.11E, h8km, MD2.7*
*DDA **23** 03:17:10.6, 39.08N×29.06E, h7km, Md2.4*
ISC 23 03:17:10.9±0.9, 39.09N±0.03×29.07E±0.03, h9km, n41, σ0.40/45, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.28	261	P	Pg	03 17 16.0	-0.5
DEMI	Demirci	0.28	261	*i* P	Pg	03 17 16.0	-0.5
TVSB	Tavsanli	0.47	40	*e*PG	Pg	03 17 20.0	-0.1
TVSB				*e*SG	Sg	03 17 26.6	+0.2
TVSB	Tavsanli	0.47	40	*e*Pg	Pg	03 17 20.0	-0.1
TVSB				*e*Sg	Sg	03 17 26.6	+0.2
KULA	Kula-Manisa	0.65	209	*e*PG	Pg	03 17 23.0	-0.5
KULA	Kula-Manisa	0.65	209	*e*Pg	Pg	03 17 23.0	-0.5
DURS	Dursunbey	0.69	318	P	Pg	03 17 24.1	-0.1
DURS	Dursunbey	0.69	318	*i* P	Pg	03 17 24.1	-0.1
MANT	Manisa	0.72	214	P	Pg	03 17 24.2	-0.5
MANT	Manisa	0.72	214	*i* P	Pg	03 17 24.2	-0.5
KHAL	Karahalli	0.79	155	P	Pg	03 17 25.9	-0.1
KHAL	Karahalli	0.79	155	*i* P	Pg	03 17 25.9	-0.1
KHL	Karahalli	0.84	155	*e*PG	Pg	03 17 26.1	-1.0
KHL	Karahalli	0.84	155	*e*Pg	Pg	03 17 26.1	-1.0
AKHS	Akhisar	1.00	258	P	Pb	03 17 30.5	+0.2
AKHS	Akhisar	1.00	258	*i* P	Pb	03 17 30.5	+0.2
AKS	Akhisar	1.00	258	*e*PG	Pb	03 17 30.3	-0.1
AKS	Akhisar	1.00	258	*e*Pg	Pb	03 17 30.3	-0.1
BALB	Balikesir	1.07	301	*e*PN	Pb	03 17 31.8	+0.2
BALB				*e*SN	Sn	03 17 47.6	+0.5
BALB	Balikesir	1.07	301	*e*Pn	Pb	03 17 31.8	+0.2
BALB				*e*Sn	Sn	03 17 47.6	+0.5
IGD	Bursa	1.18	5	*i* P	Pb	03 17 33.1	-0.4
CAVI	Cavuskoy	1.27	28	*e*PN	Pn	03 17 34.5	-0.3
CAVI	Cavuskoy	1.27	28	*e*Pn	Pn	03 17 34.5	-0.3
IZI	Iznik	1.29	14	*e*PN	Pb	03 17 35.3	0.0
IZI	Iznik	1.29	14	*e*Pn	Pb	03 17 35.3	0.0
MDNY	Mudanya-Bursa	1.29	354	*e*PN	Pg	03 17 35.5	-0.1
MDNY	Mudanya-Bursa	1.29	354	*e*Pn	Pg	03 17 35.5	-0.1
KCTX	Karacabey (Bur	1.30	335	*e*PN	Pb	03 17 35.5	0.0
KCTX	Karacabey (Bur	1.30	335	*e*Pn	Pb	03 17 35.5	0.0
BORA	Eskisehir	1.33	53	P	Pb	03 17 36.0	-0.1
BORA	Eskisehir	1.33	53	*i* P	Pb	03 17 36.0	-0.1
DNZL	Cakiroluk	1.39	181	P	Pg	03 17 38.5	+0.9
DNZL	Cakiroluk	1.39	181	*i* P	Pg

KSRS				LR	LR	03 32 56.3	
	comp=Z,22nm,18.8s,baz=50,slow=36						
KLR	**Kul'dur**	**13.20**	**330**	P	**Pn**	**03 29 28.0**	**+1.9**
	0.1nm,0.3s,baz=160,slow=7.4,SNR=4.5						
KLR				LR	LR	03 34 42.5	
	comp=Z,30nm,19.1s,baz=314,slow=38						
H11N2	**WAKE ISLAND Hy**	**28.54**	**123**	T	T	04 02 29.0	
	baz=316,slow=75,SNR=154						
H11N1	**WAKE ISLAND Hy**	**28.54**	**123**	T	T	04 02 27.3	
	baz=316,slow=75,SNR=220						
H11N3	**WAKE ISLAND Hy**	**28.55**	**123**	T	T	04 02 29.4	
	baz=316,slow=75,SNR=217						
H11S1	**WAKE ISLAND Hy**	**29.29**	**125**	T	T	04 03 24.4	
	baz=318,slow=76,SNR=57						
H11S3	**WAKE ISLAND Hy**	**29.29**	**125**	T	T	04 03 24.6	
	baz=318,slow=76,SNR=96						
H11S2	**WAKE ISLAND Hy**	**29.30**	**125**	T	T	04 03 25.7	
	baz=318,slow=76,SNR=78						
ZALV	**Zalesovo Beam**	**41.35**	**311**	**P**	**P**	**03 34 01.9**	**-0.1**
	3.4nm,0.6s,baz=85,slow=7.4,SNR=6.0						
CMAR	**Chiang Mai Arr**	**42.01**	**254**	LR	LR	03 51 48.6	
	comp=Z,16nm,18.6s,baz=180,slow=36						
MKAR	**Makanchi Array**	**43.74**	**301**	**P**	**P**	**03 34 21.5**	**-0.1**
	1.4nm,0.6s,baz=87,slow=10,SNR=14						
ILAR	**Eielson Array**	**48.43**	**33**	**P**	**P**	**03 34 58.6**	**+0.4**
	0.4nm,0.7s,baz=264,slow=6.2,SNR=5.7						
BVAR	**Borovoye Array**	**50.00**	**312**	**P**	**P**	**03 35 09.2**	**-1.2**
	0.8nm,0.5s,baz=66,slow=8.6,SNR=5.8						
BVAR				PcP	**PcP**	**03 36 28.9**	**-0.7**
	0.3nm,0.4s,baz=72,slow=4.8,SNR=3.5						
WRA	**Warramunga Arr**	**58.19**	**188**	P	**P**	**03 36 10.0**	**-0.3**
	1.0nm,0.4s,baz=5.4,slow=7.0,SNR=33						
ASAR	**Alice Springs**	**61.92**	**188**	P	**P**	**03 36 35.5**	**-0.2**
	0.8nm,0.6s,baz=357,slow=4.0,SNR=6.6						
YKA	**Yellowknife Ar**	**62.73**	**30**	P	**P**	**03 36 39.2**	**-1.5**
	0.3nm,0.8s,baz=302,slow=6.0,SNR=4.2						
ARCES	**ARCESS Array B**	**63.04**	**339**	**P**	**P**	**03 36 42.5**	**-0.3**
	2.9nm,1.0s,baz=52,slow=8.0,SNR=9.0						
FINES	**FINESS Array B**	**67.94**	**332**	**P**	**P**	**03 37 13.7**	**-0.7**
	1.5nm,0.6s,baz=56,slow=7.1,SNR=5.0						
NB2	**NORSAR Subarra**	**73.25**	**337**	**P**	**P**	**03 37 46.6**	**-0.3**
	comp=Z,0.9nm,0.5s,baz=39,slow=6.2						
NOA	**NORSAR Array B**	**73.25**	**337**	**P**	**P**	**03 37 46.7**	**-0.2**
	comp=Z,1.1nm,0.5s,baz=52,slow=7.1,SNR=6.6						
AKASG	**Malin Array Be**	**73.56**	**322**	**P**	**P**	**03 37 48.3**	**-0.5**
	comp=Z,1.3nm,0.6s,baz=47,slow=5.8,SNR=6.3						
PDAR	**Pinedale Array**	**76.72**	**46**	**P**	**P**	**03 38 08.5**	**+1.0**
	comp=Z,0.4nm,0.6s,baz=211,slow=2.6,SNR=3.8						
BRTR	**Keskin Array B**	**78.29**	**312**	**P**	**P**	**03 38 16.6**	**+0.4**
	comp=Z,0.3nm,0.3s,baz=96,slow=4.2,SNR=3.7						
GERES	**GERESS Array B**	**81.89**	**328**	**P**	**P**	**03 38 34.4**	**-0.9**
	comp=Z,0.2nm,0.4s,baz=35,slow=7.2,SNR=4.2						
TXAR	**Lajitas Array**	**89.26**	**53**	**P**	**P**	**03 39 13.0**	**+0.7**
	comp=Z,0.3nm,0.7s,baz=281,slow=2.2,SNR=4.4						

*ISCJB **23** 03:29:43.2±0.5, 39°.12N±0°.03×29°.08E±0°.04, h8km±5km,*
Error ellipse: s-maj=5.2km s-min=4.5km az=39.1
*CSEM **23** 03:29:43.3±0.1, 39°.12N×29°.08E, h8km, MD2.7, Error*
ellipse: s-maj=1.9km s-min=1.4km az=94.0
*ISK **23** 03:29:43.0, 39°.14N×29°.09E, h9km, MD2.7*
*DDA **23** 03:29:43.3, 39°.12N×29°.08E, h7km, Md2.7*

ISC 23 03:29:43.1±0.9, 39°.12N±0°.02×29°.09E±0°.02, h15km±8km, n34, σ0°.22/44, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.30**	**255**	P	**Pg**	**03 29 49.4**	**-0.1**
DEMI				S	**Sg**	**03 29 54.0**	**+0.2**
DEMI	**Demirci**	**0.30**	**255**	*i* P	**Pg**	**03 29 49.4**	**-0.1**
DEMI				*i* S	**Sg**	**03 29 54.0**	**+0.2**
GDZ	**Gediz**	**0.31**	**96**	P	**Pg**	**03 29 49.7**	**0.0**
GDZ				S	**Sg**	**03 29 53.9**	**-0.2**
GDZ	**Gediz**	**0.31**	**96**	*i* P	**Pg**	**03 29 49.7**	**0.0**
GDZ				*i* S	**Sg**	**03 29 53.9**	**-0.2**
TVSB	**Tavsanli**	**0.44**	**42**	*e*PG	**Pg**	**03 29 51.9**	**0.0**
TVSB				*e*SG	**Sg**	**03 29 58.0**	**+0.1**
TVSB	**Tavsanli**	**0.44**	**42**	*e*Pg	**Pg**	**03 29 51.9**	**0.0**
TVSB				*e*Sg	**Sg**	**03 29 58.0**	**+0.1**
DURS	**Dursunbey**	**0.67**	**315**	P	**Pb**	**03 29 56.6**	**0.0**
DURS	**Dursunbey**	**0.67**	**315**	*i* P	**Pb**	**03 29 56.6**	**0.0**
KULA	**Kula-Manisa**	**0.69**	**209**	*e*PG	**Pb**	**03 29 56.9**	**0.0**
KULA	**Kula-Manisa**	**0.69**	**209**	*e*Pg	**Pb**	**03 29 56.9**	**0.0**
MANT	**Manisa**	**0.76**	**213**	P	**Pg**	**03 29 57.9**	**0.0**
MANT				S	**Sg**	**03 30 07.4**	**-0.4**
MANT	**Manisa**	**0.76**	**213**	*i* P	**Pg**	**03 29 57.9**	**0.0**
MANT				*i* S	**Sg**	**03 30 07.4**	**-0.4**
KHAL	**Karahalli**	**0.81**	**157**	P	**Pb**	**03 29 59.1**	**+0.1**
KHAL				S	**Sb**	**03 30 10.2**	**+0.3**
KHAL	**Karahalli**	**0.81**	**157**	*i* P	**Pb**	**03 29 59.1**	**+0.1**
KHAL				*i* S	**Sb**	**03 30 10.2**	**+0.3**
KHL	**Karahalli**	**0.87**	**157**	*e*PG	**Pn**	**03 30 00.7**	**-0.1**
KHL	**Karahalli**	**0.87**	**157**	*e*Pg	**Pn**	**03 30 00.7**	**-0.1**
ORLT	**Orhaneli**	**0.93**	**351**	*e*PG	**Pb**	**03 30 01.0**	**0.0**
ORLT	**Orhaneli**	**0.93**	**351**	*e*Pg	**Pb**	**03 30 01.0**	**0.0**
BALB	**Balikesir**	**1.07**	**299**	*e*PG	**Pg**	**03 30 03.9**	**+0.1**
BALB	**Balikesir**	**1.07**	**299**	*e*Pg	**Pg**	**03 30 03.9**	**+0.1**
CAVI	**Cavuskoy**	**1.23**	**28**	*e*PN	**Pg**	**03 30 06.5**	**-0.2**
CAVI	**Cavuskoy**	**1.23**	**28**	*e*Pn	**Pg**	**03 30 06.5**	**-0.2**
IZI	**Iznik**	**1.25**	**14**	*e*PN	**Pg**	**03 30 07.1**	**-0.1**
IZI	**Iznik**	**1.25**	**14**	*e*Pn	**Pg**	**03 30 07.1**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.25**	**353**	*e*PN	**Pb**	**03 30 06.8**	**+0.4**
MDNY	**Mudanya-Bursa**	**1.25**	**353**	*e*Pn	**Pb**	**03 30 06.8**	**+0.4**
KCTX	**Karacabey (Bur**	**1.27**	**334**	*e*PN	**Pg**	**03 30 07.3**	**-0.3**
KCTX	**Karacabey (Bur**	**1.27**	**334**	*e*Pn	**Pg**	**03 30 07.3**	**-0.3**
ARMT	**Armutlu**	**1.45**	**353**	*e*PN	**Pb**	**03 30 10.3**	**+0.5**
ARMT	**Armutlu**	**1.45**	**353**	*e*Pn	**Pb**	**03 30 10.3**	**+0.5**
EDC	**Edincik**	**1.54**	**323**	*e*PN	**Pb**	**03 30 11.3**	**-0.1**
EDC	**Edincik**	**1.54**	**323**	*e*Pn	**Pb**	**03 30 11.3**	**-0.1**
GULT	**Gulveren**	**1.71**	**40**	*e*PN	**Pb**	**03 30 14.2**	**0.0**
GULT	**Gulveren**	**1.71**	**40**	*e*Pn	**Pb**	**03 30 14.2**	**0.0**

*IDC **23** 03:30:15.3±1.4, 37°.26N×144°.11E, h0km, mb3.4/4,*
mb1 3.6/6, mb1mx3.4/47, mbtmp3.5/6, ML3.7/2, Error
ellipse: s-maj=31.5km s-min=26.5km az=105.0
*ISCJB **23** 03:30:18.7±1.3, 38°.34N±0°.07×142°.32E±0°.09, h10km,*
mb3.4/4, Error ellipse: s-maj=11.2km s-min=7.8km
az=40.6
*JMA **23** 03:30:22.4±0.1, 38°.44N×142°.19E, h32km±1km, M2.9*

ISC 23 03:30:15.5±1.2, 38°.30N±0°.05×142°.43E±0°.07, h10km, n15, σ1°.82/16, mb3.5/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.87**	**281**	P	**Pn**	**03 30 35.1**	**+1.4**
JIO				S	**Sb**	**03 30 44.0**	**-0.2**
OFUJ	**Ofunato**	**0.99**	**323**	P	**Pn**	**03 30 36.6**	**+1.2**
OFUJ				S	**Sg**	**03 30 46.7**	**-0.6**
JMK	**Ichinoseki**	**1.16**	**305**	P	**Pg**	**03 30 39.1**	**+1.4**
JMM	**Marumori**	**1.36**	**252**	*e*S	**Sn**	**03 30 58.1**	**-0.6**
JOU	**Okura**	**1.39**	**273**	P	**Pg**	**03 30 43.4**	**+1.2**
JOU				*e*S	**Sn**	**03 30 58.7**	**-0.7**
JOM	**Ohasama**	**1.48**	**323**	P	**Pg**	**03 30 44.1**	**+0.3**
JFK	**Kawauchi**	**1.54**	**234**	P	**Pg**	**03 30 46.0**	**+0.9**
JYK	**Kaneyama**	**1.74**	**292**	P	**Pg**	**03 30 48.2**	**-0.6**
JRG	**Rokugo**	**1.78**	**309**	P	**Pg**	**03 30 49.1**	**-0.6**
MJAR	**Matsushiro Arr**	**3.79**	**244**	Pn	**Pg**	**03 31 29.5**	**+1.4**
	2.3nm,0.3s,baz=90,slow=15,SNR=13						
ASAJ	**Asahikawa**	**5.82**	**1**	Pn	**Pb**	**03 31 56.5**	**-0.5**
	1.5nm,0.3s,baz=126,slow=18,SNR=7.6						
SONM	**Songino Array**	**27.78**	**302**	P	P	03 36 21.8	+17
	0.3nm,0.5s,baz=98,slow=9.0,SNR=2.8						
MKAR	**Makanchi Array**	**44.15**	**301**	P	P	03 38 38.0	+14
	0.3nm,0.5s,baz=94,slow=8.6,SNR=2.2						
ILAR	**Eielson Array**	**48.00**	**33**	**P**	**P**	**03 38 57.4**	**+3.3**
	0.3nm,0.6s,baz=255,slow=7.2,SNR=3.9						
WRA	**Warramunga Arr**	**58.42**	**189**	P	**P**	**03 40 06.8**	**-4.5**
	0.6nm,1.1s,baz=9.0,slow=6.9,SNR=6.6						

*ISCJB **23** 03:42:46.7±0.5, 39°.13N±0°.03×29°.00E±0°.04, h10km±5km,*
Error ellipse: s-maj=4.9km s-min=4.4km az=36.8
*CSEM **23** 03:42:46.8±0.1, 39°.12N×29°.00E, h12km, MD2.6, Error*
ellipse: s-maj=2.0km s-min=1.7km az=96.0
*ISK **23** 03:42:46.2, 39°.13N×29°.03E, h12km, MD2.7*
*DDA **23** 03:42:47.0, 39°.09N×29°.01E, h7km, Md2.6*

ISC 23 03:42:46.9±0.9, 39°.12N±0°.03×29°.01E±0°.02, h14km±8km, n32, σ0°.25/44, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**251**	P	**Pg**	**03 42 52.2**	**0.0**
DEMI				S	**Sg**	**03 42 55.8**	**0.0**
DEMI	**Demirci**	**0.24**	**251**	*i* P	**Pg**	**03 42 52.2**	**0.0**
DEMI				*i* S	**Sg**	**03 42 55.8**	**0.0**
GDZ	**Gediz**	**0.37**	**95**	P	**Pg**	**03 42 54.5**	**+0.1**
GDZ				S	**Sg**	**03 43 00.0**	**+0.4**
GDZ	**Gediz**	**0.37**	**95**	*i* P	**Pg**	**03 42 54.5**	**+0.1**
GDZ				*i* S	**Sg**	**03 42 60.0**	**+0.4**
TVSB	**Tavsanli**	**0.48**	**47**	*e*PG	**Pg**	**03 42 56.2**	**-0.3**
TVSB				*e*SG	**Sg**	**03 43 02.7**	**-0.3**
TVSB	**Tavsanli**	**0.48**	**47**	*e*Pg	**Pg**	**03 42 56.2**	**-0.3**
TVSB				*e*Sg	**Sg**	**03 43 02.7**	**-0.3**
DURS	**Dursunbey**	**0.64**	**319**	P	**Pb**	**03 42 59.8**	**-0.1**
DURS	**Dursunbey**	**0.64**	**319**	*i* P	**Pb**	**03 42 59.8**	**-0.1**
KULA	**Kula-Manisa**	**0.66**	**204**	*e*PG	**Pg**	**03 42 59.8**	**-0.1**
KULA	**Kula-Manisa**	**0.66**	**204**	*e*Pg	**Pg**	**03 42 59.8**	**-0.1**
MANT	**Manisa**	**0.72**	**209**	P	**Pg**	**03 43 00.9**	**-0.1**
MANT				S	**Sg**	**03 43 10.2**	**-0.4**
MANT	**Manisa**	**0.72**	**209**	*i* P	**Pg**	**03 43 00.9**	**-0.1**
MANT				*i* S	**Sg**	**03 43 10.2**	**-0.4**
KHAL	**Karahalli**	**0.84**	**153**	P	**Pn**	**03 43 04.2**	**-0.2**
KHAL				S	**Sg**	**03 43 14.3**	**+0.1**
KHAL	**Karahalli**	**0.84**	**153**	*i* P	**Pn**	**03 43 04.2**	**-0.2**
KHAL				*i* S	**Sg**	**03 43 14.3**	**+0.1**
KHL	**Karahalli**	**0.89**	**153**	*e*PG	**Pg**	**03 43 03.8**	**-0.4**
KHL				*e*SG	**Sb**	**03 43 16.6**	**+0.6**
KHL	**Karahalli**	**0.89**	**153**	*e*Pg	**Pg**	**03 43 03.8**	**-0.4**
KHL				*e*Sg	**Sb**	**03 43 16.6**	**+0.6**
AKS	**Akhisar**	**0.96**	**256**	*e*PG	**Pg**	**03 43 05.5**	**-0.1**
AKS	**Akhisar**	**0.96**	**256**	*e*Pg	**Pg**	**03 43 05.5**	**-0.1**
BALB	**Balikesir**	**1.02**	**301**	*e*PG	**Pb**	**03 43 06.3**	**0.0**
BALB	**Balikesir**	**1.02**	**301**	*e*Pg	**Pb**	**03 43 06.3**	**0.0**
KCTX	**Karacabey (Bur**	**1.25**	**336**	*e*PN	**Pn**	**03 43 10.1**	**+0.1**
KCTX	**Karacabey (Bur**	**1.25**	**336**	*e*Pn	**Pn**	**03 43 10.1**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.25**	**356**	*e*PN	**Pn**	**03 43 09.9**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.25**	**356**	*e*Pn	**Pn**	**03 43 09.9**	**-0.1**
CAVI	**Cavuskoy**	**1.26**	**30**	*e*PN	**Pn**	**03 43 09.9**	**-0.2**
CAVI	**Cavuskoy**	**1.26**	**30**	*e*Pn	**Pn**	**03 43 09.9**	**-0.2**
IZI	**Iznik**	**1.27**	**16**	*e*PN	**Pb**	**03 43 10.5**	**-0.1**
IZI	**Iznik**	**1.27**	**16**	*e*Pn	**Pb**	**03 43 10.5**	**-0.1**
ARMT	**Armutlu**	**1.45**	**356**	*e*PN	**Pn**	**03 43 13.0**	**+0.3**
ARMT	**Armutlu**	**1.45**	**356**	*e*Pn	**Pn**	**03 43 13.0**	**+0.3**
GULT	**Gulveren**	**1.75**	**41**	*e*PN	**Pn**	**03 43 17.0**	**+0.1**
GULT	**Gulveren**	**1.75**	**41**	*e*Pn	**Pn**	**03 43 17.0**	**+0.1**

MAN 23 03:44:34.8±1.0, 1N×125°.13E, h5km, mb4.3, ML3.1, MS2.9, 2C-1D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BUKP	**Musuan**	**0.15**	**208**	*e*P	Pg	03 44 38.1	+1.0
BUKP				*e*S	Sg	03 44 39.8	+0.7
CGP	**Cagayan de Oro**	**0.62**	**315**	↑*i*P	Pb	03 44 47.9	+0.6
CGP				*i* S	Sn	03 44 58.8	-0.9
KCP	**Kidapawan**	**1.00**	**182**	↑*i*P	Pb	03 44 53.6	-0.2
CTBH	**Cotabato--PC H**	**1.18**	**228**	↓*i*P	Pb	03 44 57.0	+0.1

*ISCJB **23** 03:51:48.9±0.6, 38°.07N±0°.03×43°.05E±0°.06, h7km±8km,*
Error ellipse: s-maj=8.6km s-min=4.9km az=10.6
*CSEM **23** 03:51:48.8±0.2, 38°.08N×43°.07E, h5km, MD2.6, Error*
ellipse: s-maj=4.7km s-min=3.6km az=124.0
*ISK **23** 03:51:48.8, 38°.06N×43°.01E, h9km, ML2.8*
*DDA **23** 03:51:48.8, 38°.10N×43°.05E, h7km, Md2.6*

ISC 23 03:51:48.9±1.2, 38°.08N±0°.03×43°.06E±0°.04, h6km±12km, n23, σ0°.45/33, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GEVA	**Gevas**	**0.23**	**359**	P	**Pg**	**03 51 53.1**	**-0.5**
GEVA				S	**Sg**	**03 51 57.2**	**+0.4**
GEVA	**Gevas**	**0.23**	**359**	*i* P	**Pg**	**03 51 53.1**	**-0.5**
GEVA				*i* S	**Sg**	**03 51 57.2**	**+0.4**
TVAN	**Van**	**0.53**	**31**	P	**Pg**	**03 51 59.2**	**+0.1**
TVAN				S	**Sb**	**03 52 07.8**	**-0.9**
TVAN	**Van**	**0.53**	**31**	*i* P	**Pg**	**03 51 59.2**	**+0.1**
TVAN				*i* S	**Sb**	**03 52 07.8**	**-0.9**
SIRN	**S¨–rnak**	**0.78**	**222**	P	**Pg**	**03 52 03.8**	**0.0**
SIRN				S	**Sb**	**03 52 15.4**	**-0.3**
SIRN	**S¨–rnak**	**0.78**	**222**	*i* P	**Pg**	**03 52 03.8**	**0.0**
SIRN				*i* S	**Sb**	**03 52 15.4**	**-0.3**
CUKT	**Cukurca**	**0.93**	**152**	*e*PG	**Pg**	**03 52 06.4**	**-0.4**
CUKT				*e*SG	**Sb**	**03 52 20.4**	**+0.1**
CUKT	**Cukurca**	**0.93**	**152**	*e*Pg	**Pg**	**03 52 06.4**	**-0.4**
CUKT				*e*Sg	**Sb**	**03 52 20.4**	**+0.1**
CLDR	**Caldiran**	**1.26**	**32**	*e*PN	**Pn**	**03 52 13.7**	**+0.4**
CLDR	**Caldiran**	**1.26**	**32**	*e*Pn	**Pn**	**03 52 13.7**	**+0.4**
SVAN	**Silvan-Diyarba**	**1.47**	**273**	*e*PN	**Pn**	**03 52 15.5**	**-0.6**
SVAN				*e*SN	**Sb**	**03 52 35.8**	**0.0**
SVAN	**Silvan-Diyarba**	**1.47**	**273**	*e*Pn	**Pn**	**03 52 15.5**	**-0.6**
SVAN				*e*Sn	**Sb**	**03 52 35.8**	**0.0**
MAZI	**Mazidag**	**2.16**	**254**	*e*PN	**Pn**	**03 52 25.7**	**0.0**
MAZI	**Mazidag**	**2.16**	**254**	*e*Pn	**Pn**	**03 52 25.7**	**0.0**
DIY	**Diyarbakir**	**2.25**	**266**	*e*Pn	**Pn**	**03 52 27.1**	**+0.3**
EZM	**Erzurum**	**2.26**	**325**	*e*PN	**Pn**	**03 52 27.3**	**+0.3**
DYBB	**Diyarbakir**	**2.31**	**268**	*e*PN	**Pn**	**03 52 27.1**	**-0.6**
SVRC	**Sivrice-ELAZID**	**2.98**	**277**	*e*PN	**Pn**	**03 52 37.4**	**+0.5**
SVRC	**Sivrice-ELAZID**	**2.98**	**277**	*e*Pn	**Pn**	**03 52 37.4**	**+0.5**
PTK	**Pertek**	**2.99**	**287**	*e*PN	**Pn**	**03 52 37.6**	**+0.5**
PTK	**Pertek**	**2.99**	**287**	*e*Pn	**Pn**	**03 52 37.6**	**+0.5**
URFA	**Urfa**	**3.42**	**261**	*e*PN	**Pn**	**03 52 43.2**	**+0.4**
URFA	**Urfa**	**3.42**	**261**	*e*Pn	**Pn**	**03 52 43.3**	**+0.4**

IDC 23 03:53:06.0±3.5, 5°.96S×149°.06E, h0km, mb3.6/2, mb1 3.9/4, mb1mx3.5/27, mbtmp3.7/4, ML3.8/1, MS2.7/2, Ms1 2.7/2, ms1mx2.4/24, Error ellipse: s-maj=99.4km s-min=40.5km az=110.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**3.91**	**209**	Pn	Pn	03 54 08.7	+1.4
	9.3nm,0.3s,baz=22,slow=4.8,SNR=14						
PMG				Sn	Sn	03 54 50.9	-3.1
	8.2nm,0.3s,baz=60,slow=18,SNR=9.9						
GUMO	**Guam**	**19.86**	**348**	LR	LR	04 05 08.1	
	comp=Z,15nm,19.7s,baz=134,slow=36						
WRA	**Warramunga Arr**	**19.95**	**224**	P	P	03 57 39.9	+0.1
	0.3nm,0.3s,baz=51,slow=11,SNR=11						
ASAR	**Alice Springs**	**22.86**	**218**	P	P	03 58 10.8	-0.4
	0.3nm,0.4s,baz=44,slow=11,SNR=9.1						
ASAR				LR	LR	04 07 28.7	
	comp=Z,30nm,18.1s,baz=98,slow=38						
FITZ	**Fitzroy Crossi**	**25.85**	**240**	P	P	03 58 38.9	-0.5
	2.5nm,0.7s,baz=62,slow=7.5,SNR=8.1						
TORD	**Torodi Ar. Bea**	**147.06**	**285**	PKPbc	PKPbc	04 12 51.4	-0.6
	0.3nm,0.6s,baz=73,slow=3.4,SNR=9.9						

MEX 23 04:00:47.3±0.7, 16°.59N×99°.30W, h16km±999km, MD3.6, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CAIG	**El Cayaco**	**1.03**	**296**	*e*P	Pb	04 01 02.7	-4.1
CAIG				*e*S	Sb	04 01 16.0	-4.1
PNIG	**Pinotepa**	**1.14**	**100**	*e*P	Pn	04 01 04.9	-3.8
PNIG				*i* S	Sb	04 01 18.9	-4.5
TLIG	**Tlapa**	**1.20**	**36**	*i* P	Pn	04 01 06.1	-3.4
TLIG				*i* S	Sb	04 01 19.7	-5.3
MEIG	**Mezcala**	**1.36**	**347**	*e*P	Pn	04 01 08.1	-3.6
MEIG				*i* S	Sn	04 01 24.3	-5.2
PLIG	**Platanillo**	**1.80**	**354**	*e*P	Pn	04 01 14.5	-3.3
PLIG				*i* S	Sn	04 01 35.5	-4.9
ARIG	**Puente Sto Nin**	**1.96**	**329**	*e*P	Pn	04 01 17.5	-2.3
ARIG				*i* S	Sn	04 01 39.6	-4.5
YAIG	**Yautepec**	**2.27**	**6**	*i* P	Pn	04 01 21.3	-3.0
YAIG				*i* S	Sn	04 01 47.6	-4.5

*CSEM **23** 04:02:31.8±0.3, 40°.50N×20°.95E, h12km, ML2.7, Error*
ellipse: s-maj=5.9km s-min=4.5km az=102.0
*THE **23** 04:02:31.7, 40°.51N×20°.90E, h11km±1km, ML2.7/5, Error*
ellipse: s-maj=1.8km s-min=0.6km az=94.0
*ATH **23** 04:02:31.5, 40°.51N×20°.97E, h21km±3km, ML2.6/3, Error*
ellipse: s-maj=3.3km s-min=1.6km az=162.0
*TIR **23** 04:02:31.2, 40°.54N×20°.90E, h7km, ML2.0*
*ISCJB **23** 04:02:31.9±0.8, 40°.52N±0°.03×20°.92E±0°.06, h11km±4km,*
Error ellipse: s-maj=7.5km s-min=5.2km az=11.3

*SKO **23** 04:02:33.3, 40°.56N×21°.00E, h14km*

ISC 23 04:02:31.9±1.0, 40°.51N±0°.02×20°.97E±0°.04, h17km±6km, n26, σ0°.61/45, Greece-Albania border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NEST	**Nestorio**	**0.11**	**147**	P	**Pg**	**04 02 35.5**	**-0.1**
NEST				S	**Sb**	**04 02 38.2**	**+0.1**
NEST	**Nestorio**	**0.11**	**147**	P	**Pg**	**04 02 35.5**	**-0.1**
NEST				S	**Sb**	**04 02 38.2**	**+0.1**
NEST	**Nestorio**	**0.11**	**147**	P	**Pg**	**04 02 35.3**	**-0.3**
NEST				S	**Sg**	**04 02 37.9**	**-0.1**
NEST				AML	AML	04 02 38.5	
	comp=N,6754μm,0.2s						
NEST				AML	AML	04 02 38.7	
	comp=E,10073μm,0.2s						
PENT	**Pentalofos**	**0.34**	**158**	P	**Pg**	**04 02 38.8**	**-0.2**
PENT				S	**Sb**	**04 02 44.3**	**-0.3**
PENT	**Pentalofos**	**0.34**	**158**	P	**Pg**	**04 02 38.8**	**-0.2**
PENT				S	**Sb**	**04 02 45.2**	**+0.6**
PENT	**Pentalofos**	**0.34**	**158**	P	**Pg**	**04 02 38.8**	**-0.2**
PENT				S	**Sb**	**04 02 45.2**	**+0.6**
PENT				AML	AML	04 02 47.0	
	comp=E,1195μm,0.3s						
PENT				AML	AML	04 02 48.7	
	comp=N,823μm,0.3s						
FNA	**Florina**	**0.41**	**48**	P	**Pg**	**04 02 40.1**	**-0.3**
FNA				S	**Sb**	**04 02 47.0**	**+0.1**
FNA	**Florina**	**0.41**	**48**	P	**Pg**	**04 02 40.1**	**-0.3**
FNA				S	**Sb**	**04 02 47.5**	**+0.6**
FNA	**Florina**	**0.41**	**48**	P	**Pg**	**04 02 40.1**	**-0.3**
FNA				S	**Sb**	**04 02 47.5**	**+0.6**
FNA				AML	AML	04 02 49.1	
	comp=N,2385μm,0.1s						
FNA				AML	AML	04 02 49.2	
	comp=E,2151μm,0.2s						
BIA	**Bitola**	**0.58**	**27**	P	**Pg**	**04 02 42.8**	**-0.6**
BIA				S	**Sb**	**04 02 52.3**	**+0.7**
BIA	**Bitola**	**0.58**	**27**	P	**Pg**	**04 02 42.8**	**-0.6**
BIA				S	**Sb**	**04 02 52.3**	**+0.7**
KPRO	**Kipourio**	**0.63**	**151**	P	**Pg**	**04 02 44.0**	**-0.3**
KPRO				S	**Sb**	**04 02 54.2**	**+1.2**
KPRO	**Kipourio**	**0.63**	**151**	P	**Pg**	**04 02 44.0**	**-0.3**
KPRO				S	**Sb**	**04 02 54.2**	**+1.2**
KPRO	**Kipourio**	**0.63**	**151**	P	**Pg**	**04 02 44.3**	**0.0**
KZN	**Kozani**	**0.64**	**108**	P	**Pb**	**04 02 44.7**	**0.0**
KZN				S	**Sb**	**04 02 54.7**	**+1.3**
KZN	**Kozani**	**0.64**	**108**	P	**Pb**	**04 02 44.7**	**0.0**
KZN				S	**Sn**	**04 02 55.0**	**-1.2**
GRG	**Griva**	**1.18**	**67**	P	**Pn**	**04 02 53.7**	**+0.1**
GRG				S	**Sg**	**04 03 11.1**	**+1.1**
GRG	**Griva**	**1.18**	**67**	P	**Pn**	**04 02 53.5**	**-0.1**
GRG				S	**Sg**	**04 03 11.1**	**+1.1**
GRG	**Griva**	**1.18**	**67**	P	**Pn**	**04 02 53.5**	**-0.1**
TIR	**Tirane**	**1.19**	**315**	*i* PN	**Pg**	**04 02 54.7**	**-0.2**
TIR	**Tirane**	**1.19**	**315**	*i* Pn	**Pg**	**04 02 54.7**	**-0.2**
KEK	**Kerkira**	**1.20**	**229**	P	**Pg**	**04 02 55.0**	**0.0**
THL	**Klokotos Trika**	**1.23**	**139**	P	**Pn**	**04 02 54.2**	**-0.2**
THL	**Klokotos Trika**	**1.23**	**139**	P	**Pn**	**04 02 53.8**	**-0.6**
KNT	**Kendrikon**	**1.60**	**65**	P	**Pn**	**04 03 00.2**	**+0.7**
KNT				S	**Sg**	**04 03

TKR	**Tekirdag**	**1.19**	**56**	*e*Pn	**Pg**	**04 04 49.2**	**-0.6**
BALY	**Balya**	**1.21**	**118**	P	**Pn**	**04 04 50.3**	**+0.4**
BALY	**Balya**	**1.21**	**118**	*i* P	**Pn**	**04 04 50.4**	**+0.4**
EDC	**Edincik**	**1.25**	**89**	*e*PN	**Pb**	**04 04 50.3**	**-0.1**
EDC	**Edincik**	**1.25**	**89**	*e*Pn	**Pb**	**04 04 50.3**	**-0.1**
DKL	**Dikili**	**1.36**	**157**	*e*PN	**Pb**	**04 04 52.5**	**+0.2**
DKL	**Dikili**	**1.36**	**157**	*e*Pn	**Pb**	**04 04 52.5**	**+0.2**
CRLT	**Corlu**	**1.39**	**54**	*e*PN	**Pb**	**04 04 53.0**	**0.0**
CRLT	**Corlu**	**1.39**	**54**	*e*Pn	**Pb**	**04 04 53.0**	**0.0**
BALB	**Balikesir**	**1.44**	**118**	*e*PN	**Pn**	**04 04 53.2**	**+0.3**
BALB	**Balikesir**	**1.44**	**118**	*e*Pn	**Pn**	**04 04 53.2**	**+0.3**
EDRB	**Edirne**	**1.57**	**14**	*e*PN	**Pn**	**04 04 55.0**	**+0.3**
EDRB	**Edirne**	**1.57**	**14**	P	**Pn**	**04 04 54.1**	**-0.6**
EDRB				S	**Sn**	**04 05 13.7**	**-1.3**
EDRB	**Edirne**	**1.57**	**14**	P	**Pn**	**04 04 54.1**	**-0.6**
EDRB	**Edirne**	**1.57**	**14**	*e*Pn	**Pn**	**04 04 55.0**	**+0.3**
EDRB				S	**Sn**	**04 05 13.7**	**-1.3**
KCTX	**Karacabey (Bur**	**1.62**	**91**	*e*PN	**Pn**	**04 04 55.5**	**0.0**
KCTX	**Karacabey (Bur**	**1.62**	**91**	*e*Pn	**Pn**	**04 04 55.5**	**0.0**
OUR	**Ouranopolis**	**1.72**	**271**	*e*PN	**Pb**	**04 04 58.5**	**-0.1**
OUR	**Ouranopolis**	**1.72**	**271**	*e*Pn	**Pb**	**04 04 58.5**	**-0.1**
DURS	**Dursunbey**	**1.87**	**112**	P	**Pb**	**04 05 01.3**	**+0.2**
DURS	**Dursunbey**	**1.87**	**112**	*i* P	**Pb**	**04 05 01.3**	**+0.2**
AKS	**Akhisar**	**1.89**	**139**	*e*PN	**Pn**	**04 04 60.0**	**+0.8**
AKS	**Akhisar**	**1.89**	**139**	*e*Pn	**Pn**	**04 05 00.0**	**+0.8**
AKHS	**Akhisar**	**1.89**	**139**	P	**Pn**	**04 04 59.4**	**+0.2**
AKHS	**Akhisar**	**1.89**	**139**	*i* P	**Pn**	**04 04 59.4**	**+0.2**
CTYL	**Yalikoy Yolu**	**1.93**	**53**	*e*PN	**Pn**	**04 05 00.3**	**+0.6**
CTYL	**Yalikoy Yolu**	**1.93**	**53**	*e*Pn	**Pn**	**04 05 00.4**	**+0.6**
ORLT	**Orhaneli**	**2.06**	**97**	*e*PN	**Pn**	**04 05 01.9**	**+0.4**
ORLT	**Orhaneli**	**2.06**	**97**	*e*Pn	**Pn**	**04 05 01.9**	**+0.4**
NVR	**Nevrokopi**	**2.07**	**300**	P	**Pn**	**04 05 01.3**	**-0.4**
ZEY	**˙zmir**	**2.10**	**174**	*i* P	**Pn**	**04 05 01.6**	**-0.4**
ZEY	**˙zmir**	**2.10**	**174**	*i* P	**Pn**	**04 05 01.7**	**-0.3**
BGKT	**Bogazkoy**	**2.11**	**65**	*e*PN	**Pn**	**04 05 03.2**	**+1.1**
BGKT	**Bogazkoy**	**2.11**	**65**	*e*Pn	**Pn**	**04 05 03.2**	**+1.1**
AOS	**Alonnisos**	**2.15**	**238**	*e*PN	**Pn**	**04 05 04.3**	**+1.5**
AOS	**Alonnisos**	**2.15**	**238**	*e*Pn	**Pn**	**04 05 04.3**	**+1.5**
ISK	**Istanbul-Kandi**	**2.27**	**70**	*e*PN	**Pn**	**04 05 04.9**	**+0.5**
ISK	**Istanbul-Kandi**	**2.27**	**70**	*e*Pn	**Pn**	**04 05 04.9**	**+0.5**
KLYT	**Kilyos**	**2.32**	**66**	*e*PN	**Pn**	**04 05 05.9**	**+0.8**
KLYT	**Kilyos**	**2.32**	**66**	*e*Pn	**Pn**	**04 05 05.9**	**+0.8**
HORT	**Hortiatis**	**2.41**	**277**	*e*PN	**Pn**	**04 05 07.9**	**+1.6**
HORT	**Hortiatis**	**2.41**	**277**	*e*Pn	**Pn**	**04 05 07.9**	**+1.6**
IZI	**Iznik**	**2.48**	**89**	*e*PN	**Pn**	**04 05 08.0**	**+0.7**
IZI	**Iznik**	**2.48**	**89**	*e*Pn	**Pn**	**04 05 08.0**	**+0.7**
TVSB	**Tavsanli**	**2.63**	**108**	*e*PN	**Pn**	**04 05 10.6**	**+1.2**
TVSB	**Tavsanli**	**2.63**	**108**	*e*Pn	**Pn**	**04 05 10.6**	**+1.2**
SILT	**Sile**	**2.72**	**71**	*e*PN	**Pn**	**04 05 11.8**	**+1.3**
SILT	**Sile**	**2.72**	**71**	*e*Pn	**Pn**	**04 05 11.8**	**+1.3**

DDA 23 04:06:01.8, 36˚.96N×28˚.37E, h7km, Md2.4, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TURN	**Turunc**	**0.20**	**115**	*i* P	Pg	04 06 06.0	+0.1
BDRM	**Kayabasi**	**0.75**	**278**	*i* P	Pb	04 06 17.4	+0.1
AYDN	**Tasoluk**	**0.81**	**331**	*i* P	Pg	04 06 16.2	-1.1

*ISCJB **23** 04:14:09.8±0.4, 49˚.82N±0˚.03×18˚.41E±0˚.03, h0km, Error ellipse: s-maj=4.6km s-min=2.1km az=15.8*
*IPEC **23** 04:14:10.5±0.2, 49˚.80N×18˚.54E, h0km, ML1.8/3, Error ellipse: s-maj=2.1km s-min=1.2km az=161.0*
*CSEM **23** 04:14:10.4±0.2, 49˚.81N×18˚.45E, h2km, ML2.5/8, Error ellipse: s-maj=6.4km s-min=3.2km az=12.0*
*PRU **23** 04:14:11.9, 49˚.82N×18˚.43E, h0km*

ISC 23 04:14:10.5±0.7, 49˚.79N±0˚.03×18˚.50E±0˚.02, h0km, n34, σ0s63/62, 4D, Czech and Slovak Republics

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OKC	**Ostrava-Krasne**	**0.23**	**282**	‖ *i*PG	**Pg**	**04 14 15.7**	**+0.8**
OKC				*e*SG	**Sg**	**04 14 18.9**	**+1.0**
	comp=Z,84nm,0.5s						
OKC	**Ostrava-Krasne**	**0.23**	**282**	Pg	**Pg**	**04 14 15.7**	**+0.8**
OKC				Sg	**Sg**	**04 14 18.9**	**+1.0**
	84nm,0.5s						
MORC	**Moravsky Berou**	**0.62**	**269**	*e*Pg	**Pg**	**04 14 23.0**	**+0.7**
MORC				*e*Sg	**Sg**	**04 14 30.8**	**+0.5**
	26nm,0.5s						
LANS	**Liptovska Anna**	**0.90**	**135**	*e*PG	**Pb**	**04 14 28.4**	**-0.5**
LANS				*e*SG	**Sb**	**04 14 42.1**	**+0.6**
OJC	**Ojcow**	**0.94**	**62**	*e*Pg	**Pg**	**04 14 28.3**	**-0.3**
OJC				*e*Sg	**Sg**	**04 14 41.3**	**+0.5**
OJC	**Ojcow**	**0.94**	**62**	*e*Pg	**Pg**	**04 14 28.3**	**-0.3**
OJC				*e*Sg	**Sg**	**04 14 41.3**	**+0.5**
KRLC	**Kraliky**	**1.15**	**285**	*e*PG	**Pg**	**04 14 31.1**	**-1.3**
KRLC				*e*SG	**Sg**	**04 14 47.8**	**+0.6**
KRLC	**Kraliky**	**1.15**	**285**	Pg	**Pg**	**04 14 31.1**	**-1.3**
KRLC				Sg	**Sg**	**04 14 47.8**	**+0.6**
NIE	**Niedzica**	**1.23**	**107**	*e*Pg	**Pb**	**04 14 34.3**	**-0.3**
NIE				*e*Sg	**Sn**	**04 14 52.7**	**+0.4**
NIE	**Niedzica**	**1.23**	**107**	*e*Pg	**Pb**	**04 14 34.3**	**-0.3**
NIE				*e*Sg	**Sn**	**04 14 52.7**	**+0.4**
VYHS	**Vyhne**	**1.31**	**170**	*e*Pn	**Pg**	**04 14 35.5**	**-0.1**
VYHS				*e*Sn	**Sn**	**04 14 54.6**	**+0.3**
VYHS	**Vyhne**	**1.31**	**170**	*e*PN	**Pg**	**04 14 35.5**	**-0.1**
VYHS				*e*SN	**Sn**	**04 14 54.6**	**+0.3**
VYHS				*e*LG	Lg	04 14 58.4	
VRAC	**Vranov**	**1.33**	**250**	*e*Pg	**Pg**	**04 14 35.8**	**-0.1**
VRAC				*e*Sg	**Sg**	**04 14 53.2**	**+0.1**
	13nm,0.4s						
DPC	**Dobruska-Polom**	**1.51**	**293**	*e*PG	**Pn**	**04 14 38.3**	**-0.5**
DPC				*e*SG	**Sg**	**04 14 58.7**	**-0.2**
	comp=Z,9.0nm,0.4s						
DPC	**Dobruska-Polom**	**1.51**	**293**	Pg	**Pn**	**04 14 38.3**	**-0.5**
DPC				Sg	**Sg**	**04 14 58.7**	**-0.2**
	9.0nm,0.4s						
KRUC	**Moravsky**	**1.55**	**243**	*e*Pg	**Pn**	**04 14 39.2**	**-0.1**
KRUC				*e*Sg	**Sb**	**04 15 00.3**	**0.0**
	7.1nm,0.2s						
UPC	**Upice**	**1.75**	**295**	‖ *e*PG	**Pn**	**04 14 42.3**	**+0.2**
UPC				*e*SG	**Sb**	**04 15 06.1**	**+0.1**
	comp=Z,11nm,0.6s						
UPC	**Upice**	**1.75**	**295**	Pg	**Pn**	**04 14 42.3**	**+0.2**
UPC				Sg	**Sb**	**04 15 06.1**	**+0.1**
	11nm,0.6s						
KSP	**Ksiaz**	**1.76**	**308**	*e*Pn	**Pn**	**04 14 41.5**	**-0.7**
KSP				*e*Pg	**Pg**	**04 14 44.2**	**-0.1**
KSP				*e*Sg	**Sb**	**04 15 06.1**	**-0.2**
KSP	**Ksiaz**	**1.76**	**308**	*e*Pn	**Pn**	**04 14 41.5**	**-0.7**
STHS	**Stebnicka Huta**	**1.82**	**101**	*e*Pn	**Pg**	**04 14 45.3**	**-0.1**
STHS	**Stebnicka Huta**	**1.82**	**101**	*e*PN	**Pg**	**04 14 45.3**	**-0.1**
STHS				*e*SN	**Sg**	**04 15 11.9**	**+2.8**
STHS				*e*LG	Lg	04 15 15.1	
KECS	**Kecovo**	**1.85**	**134**	*e*Pn	**Pn**	**04 14 43.3**	**-0.1**
KECS				*e*Sn	**Sb**	**04 15 08.7**	**0.0**
KECS	**Kecovo**	**1.85**	**134**	*e*PN	**Pn**	**04 14 43.3**	**-0.1**
KECS				*e*SN	**Sb**	**04 15 08.7**	**0.0**
KECS				*e*LG	Lg	04 15 12.4	
TREC	**Trest**	**2.02**	**257**	‖ *e*SG	**Sb**	**04 15 14.2**	**+0.4**
	comp=Z,7.4nm,0.6s						
TREC	**Trest**	**2.02**	**257**	Sg	**Sb**	**04 15 14.2**	**+0.4**
	7.4nm,0.6s						
CRVS	**Cervenica-Dubn**	**2.13**	**113**	*e*Pn	**Pg**	**04 14 50.7**	**-0.6**
CRVS				*e*Sn	**Sg**	**04 15 18.5**	**-0.4**
CRVS	**Cervenica-Dubn**	**2.13**	**113**	*e*PN	**Pg**	**04 14 50.7**	**-0.6**
CRVS				*e*SN	**Sg**	**04 15 18.5**	**-0.4**
PRU	**Pruhonice**	**2.57**	**276**	‖ *e*PG	**Pb**	**04 14 56.9**	**-0.4**
PRU				*e*SG	**Sg**	**04 15 32.4**	**-0.4**
	comp=Z,3.4nm,0.4s						
PRU	**Pruhonice**	**2.57**	**276**	Pg	**Pb**	**04 14 56.9**	**-0.4**
PRU				Sg	**Sg**	**04 15 32.4**	**-0.4**
	3.4nm,0.4s						
BRG	**Berggiesshubel**	**3.11**	**292**	PG	**Pb**	**04 15 07.0**	**+0.4**
BRG				SG	**Sg**	**04 15 50.6**	**+0.2**
	5.6nm,0.9s						
KHC	**Kasperske Hory**	**3.28**	**260**	*e*SG	**Sg**	**04 15 55.5**	**-0.1**
KHC	**Kasperske Hory**	**3.28**	**260**	Sg	**Sg**	**04 15 55.5**	**-0.1**
CLL	**Collm**	**3.82**	**296**	*e*Sg	**Sg**	**04 16 14.0**	**+0.9**

*IDC **23** 04:32:08.6±1.3, 4˚.81N×93˚.75E, h0km, mb3.8/9, mb1 3.9/9, mb1mx3.7/61, mbtmp3.8/9, MS2.5/1, Ms1 2.7/1, ms1mx2.3/46, Error ellipse: s-maj=42.8km s-min=26.2km az=55.0*
*ISCJB **23** 04:32:12.1±1.1, 4˚.9N±0˚.2×93˚.8E±0˚.2, h34km, mb3.8/9,*

Error ellipse: s-maj=37.1km s-min=21.5km az=145.9

ISC 23 04:32:13.9±1.2, 4˚.9N±0˚.2×93˚.8E±0˚.3, h34km, n16, σ0s66/9, mb3.8/9, Off west coast of northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**14.42**	**20**	LR	LR	04 41 15.0	
	comp=Z,20nm,20.2s,baz=130,slow=38						
H08S3	**Diego Garcia H**	**24.63**	**240**	T	T	05 02 48.0	
	baz=60,slow=76,SNR=476						
H08S2	**Diego Garcia H**	**24.64**	**240**	T	T	05 02 46.4	
	baz=60,slow=76,SNR=576						
H08S1	**Diego Carcia H**	**24.65**	**240**	T	T	05 02 47.5	
	baz=60,slow=76,SNR=696						
MKAR	**Makanchi Array**	**42.95**	**348**	P	**P**	**04 40 10.2**	**+0.6**
	0.5nm,0.4s,baz=166,slow=7.9,SNR=8.3						
H01W3	**Cape Leeuwin H**	**43.91**	**156**	T	T	05 27 03.6	
	baz=332						
H01W2	**Cape Leeuwin H**	**43.93**	**156**	T	T	05 27 05.8	
	baz=332						
H01W1	**Cape Leeuwin H**	**43.93**	**156**	T	T	05 27 10.7	
	baz=332						
SONM	**Songino Array**	**44.16**	**12**	P	**P**	**04 40 19.6**	**+0.1**
	1.3nm,0.7s,baz=198,slow=8.0,SNR=6.9						
WRA	**Warramunga Arr**	**46.83**	**123**	P	**P**	**04 40 40.8**	**-0.2**
	0.7nm,0.8s,baz=300,slow=8.8,SNR=6.5						
KURBB	**Kurchatov Arra**	**47.39**	**347**	P	**P**	**04 40 44.9**	**+0.2**
	0.6nm,0.6s,baz=175,slow=6.8,SNR=8.1						
ZALV	**Zalesovo Beam**	**49.49**	**353**	P	**P**	**04 41 01.2**	**+0.4**
	3.0nm,0.4s,baz=175,slow=6.6,SNR=8.6						
BVAR	**Borovoye Array**	**51.74**	**342**	P	**P**	**04 41 17.5**	**-0.3**
	0.9nm,0.6s,baz=160,slow=9.0,SNR=4.7						
BRTR	**Keskin Array B**	**64.17**	**312**	P	**P**	**04 42 44.5**	**-1.0**
	0.3nm,0.4s,baz=123,slow=5.3,SNR=3.5						
ARCES	**ARCESS Array B**	**77.98**	**340**	P	**P**	**04 44 08.1**	**-0.3**
	1.4nm,0.8s,baz=87,slow=6.3,SNR=5.9						
TORD	**Torodi Ar. Bea**	**90.97**	**283**	P	**P**	**04 45 16.2**	**+0.9**
	0.2nm,0.9s,baz=109,slow=3.0,SNR=3.2						

SKO 23 04:33:04.1, 40˚.47N×20˚.92E, h11km, M1.3, ML1.6, Greece-Albania border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BIA	**Bitola**	**0.63**	**29**	*i* Pg	Pg	04 33 15.3	-1.1
BIA				*i* Sg	Sb	04 33 25.5	-0.5
BIA				*e*Lg	Lg	04 33 25.8	
	comp=N,19nm,0.2s						
BIA				*e*Lg	Lg	04 33 26.0	
	comp=E,15nm,0.3s						
OHR	**Ohrid**	**0.65**	**352**	*i* Pg	Pg	04 33 16.2	-0.5
OHR				*i* Sg	Sg	04 33 25.8	+0.5
OHR				*e*Lg	Lg	04 33 25.9	
	comp=E,42nm,0.3s						
OHR				*e*Lg	Lg	04 33 26.1	
	comp=N,10nm,0.4s						

*NIED **23** 04:36:00, 37˚.70N×141˚.80E, h56km, Mw3.9 Best double couple: M0 6.74000×10^14 NP1:φ=13.00000°, δ21.00000°, λ99.00000°. NP2:φ=183.00000°, δ69.00000°, λ87.00000°.*
*ISCJB **23** 04:36:40.3±1.0, 37˚.68N±0˚.04×141˚.89E±0˚.09, h51km±9km, mb3.7/10, Error ellipse: s-maj=12.5km s-min=6.3km az=16.4*
*JMA **23** 04:36:41.5, 37˚.71N×141˚.79E, h44km±2km, M4.1*
*IDC **23** 04:36:43.0±3.3, 37˚.64N×141˚.99E, h65km±30km, mb3.4/10, mb1 3.6/13, mb1mx3.4/57, mbtmp3.7/13, ML3.1/3, MS2.7/4, Ms1 2.7/4, ms1mx2.4/25, Error ellipse: s-maj=24.8km s-min=17.7km az=93.0*

ISC 23 04:36:40.6±2.0, 37˚.70N±0˚.06×141˚.9E±0˚.1, h40km±18km, n33, σ1s22/33, mb3.6/10, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.88**	**329**	P	**Pn**	**04 36 56.8**	**+0.2**
JIO				S	**Sn**	**04 37 07.3**	**-0.9**
JFK	**Kawauchi**	**0.90**	**249**	P	**Pn**	**04 36 56.6**	**-0.2**
JFK				S	**Sn**	**04 37 07.0**	**-1.6**
JMM	**Marumori**	**0.91**	**281**	P	**Pn**	**04 36 56.7**	**-0.3**
JMM				S	**Sn**	**04 37 07.4**	**-1.5**
ONAJ	**Iwakimizuishiy**	**1.08**	**237**	P	**Pn**	**04 36 59.3**	**0.0**
ONAJ				S	**Sn**	**04 37 11.9**	**-1.1**
JOU	**Okura**	**1.20**	**304**	P	**Pn**	**04 37 01.1**	**+0.2**
JOU				S	**Sn**	**04 37 15.3**	**-0.7**
JFT	**Otama**	**1.27**	**262**	P	**Pn**	**04 37 02.4**	**+0.4**
JFT				S	**Sn**	**04 37 17.3**	**-0.6**
JMK	**Ichinoseki**	**1.37**	**336**	P	**Pn**	**04 37 04.1**	**+0.8**
JYS	**Shirataka**	**1.56**	**290**	P	**Pn**	**04 37 06.0**	**+0.1**
JYS				S	**Sn**	**04 37 24.6**	**-0.3**
JYK	**Kaneyama**	**1.73**	**315**	P	**Pn**	**04 37 08.6**	**+0.3**
JYK				*e*S	**Sn**	**04 37 29.0**	**-0.2**
JFY	**Yanaizu**	**1.79**	**261**	P	**Pn**	**04 37 09.3**	**+0.3**
JOM	**Ohasama**	**1.84**	**345**	P	**Pn**	**04 37 11.0**	**+1.3**
JOM				S	**Sn**	**04 37 32.5**	**+0.7**
MJAR	**Matsushiro Arr**	**3.19**	**250**	P	**Pn**	**04 37 29.8**	**+1.5**
	5.5nm,0.3s,baz=52,slow=11,SNR=20						
MJAR				LR	LR	04 39 00.2	
	comp=Z,118nm,20.8s,baz=50,slow=43						
MAT	**Matsushiro**	**3.19**	**250**	P	**Pn**	**04 37 29.9**	**+1.6**
MAT				*e*S	**Sn**	**04 38 09.4**	**+4.4**
USRK	**Ussuriysk Ar.**	**9.93**	**314**	P	Pn	04 39 04.5	+3.8
	0.4nm,0.3s,baz=130,slow=14,SNR=7.8						
JNU	**Nakatsue**	**10.10**	**246**	LR	LR	04 43 23.1	
	comp=Z,62nm,19.3s,baz=111,slow=40						
KSRS	**Korea Array**	**11.12**	**273**	P	Pn	04 39 21.1	+4.1
	0.2nm,0.3s,baz=80,slow=14,SNR=7.6						
KSRS				LR	LR	04 43 04.9	
	comp=Z,43nm,21.9s,baz=124,slow=34						
KLR	**Kul'dur**	**13.68**	**331**	LR	LR	04 44 58.8	
	comp=Z,25nm,18.2s,baz=116,slow=36						
SONM	**Songino Array**	**27.76**	**303**	P	**P**	**04 42 27.4**	**+1.8**
	0.5nm,0.4s,baz=87,slow=10,SNR=4.6						
H11N2	**WAKE ISLAND Hy**	**28.15**	**123**	T	T	05 12 05.4	
	baz=315,slow=75,SNR=36						
H11N1	**WAKE ISLAND Hy**	**28.16**	**123**	T	T	05 12 07.2	
	baz=315,slow=75,SNR=48						
H11N3	**WAKE ISLAND Hy**	**28.16**	**123**	T	T	05 12 09.1	
	baz=315,slow=75,SNR=24						
H11S1	**WAKE ISLAND Hy**	**28.89**	**125**	T	T	05 13 35.2	
	baz=317,slow=76,SNR=22						
H11S3	**WAKE ISLAND Hy**	**28.89**	**125**	T	T	05 13 48.0	
	baz=317,slow=76,SNR=24						
H11S2	**WAKE ISLAND Hy**	**28.90**	**125**	T	T	05 13 40.4	
	baz=317,slow=76,SNR=24						
MKAR	**Makanchi Array**	**44.12**	**302**	P	**P**	**04 44 45.2**	**+0.3**
	1.1nm,0.9s,baz=83,slow=9.9,SNR=6.7						
KURBB	**Kurchatov Arra**	**45.92**	**308**	P	**P**	**04 44 59.3**	**+0.2**
	1.4nm,0.4s,baz=83,slow=8.0,SNR=11						
ILAR	**Eielson Array**	**48.72**	**33**	P	**P**	**04 45 20.6**	**-0.1**
	0.4nm,0.9s,baz=275,slow=6.0,SNR=4.3						
WRA	**Warramunga Arr**	**57.77**	**188**	P	**P**	**04 46 27.3**	**-0.4**
	0.7nm,0.8s,baz=6.3,slow=7.3,SNR=22						
ASAR	**Alice Springs**	**61.50**	**188**	P	**P**	**04 46 52.5**	**-0.8**
	0.4nm,0.5s,baz=5.9,slow=6.7,SNR=3.5						
YKA	**Yellowknife Ar**	**63.03**	**30**	P	**P**	**04 47 02.7**	**-0.4**
	0.3nm,0.7s,baz=306,slow=6.8,SNR=7.6						
AKASG	**Malin Array Be**	**74.02**	**322**	P	**P**	**04 48 11.0**	**-0.9**
	0.2nm,0.3s,baz=43,slow=6.3,SNR=4.6						
PDAR	**Pinedale Array**	**76.91**	**46**	P	**P**	**04 48 27.8**	**-1.2**
	0.3nm,0.6s,baz=222,slow=1.2,SNR=4.3						
TXAR	**Lajitas Array**	**89.39**	**53**	P	**P**	**04 49 34.4**	**+1.0**
	0.2nm,0.7s,baz=334,slow=3.8,SNR=4.1						

*NIED **23** 04:43:00, 38˚.60N×143˚.20E, h5km, Mw3.6 Best double couple: M0 2.69000×10^14 NP1:φ=137.00000°, δ11.00000°, λ-10.00000°. NP2:φ=237.00000°, δ88.00000°, λ-101.00000°.*

JMA 23 04:43:35.2±0.3, 38˚.63N×143˚.15E, h11km±5km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**1.24**	**292**	P	Pn	04 43 58.1	-0.4
OFUJ				S	Sg	04 44 14.9	-0.3
MIYJ	**Miyakonagasawa**	**1.40**	**313**	P	Pn	04 44 00.3	-0.4
JIO	**Ouri**	**1.42**	**263**	P	Pn	04 44 01.2	+0.2
JIO				*e*S	Sn	04 44 18.8	-0.9
JMK	**Ichinoseki**	**1.54**	**283**	P	Pn	04 44 02.8	+0.2
JMK				*e*S	Sb	04 44 23.6	+0.3
JOM	**Ohasama**	**1.67**	**301**	P	Pn	04 44 04.8	+0.4
JOU	**Okura**	**1.97**	**263**	P	Pn	04 44 09.6	+1.1
JMM	**Marumori**	**2.01**	**248**	P	Pn	04 44 09.1	+0.1
JRG	**Rokugo**	**2.10**	**292**	P	Pn	04 44 11.3	+0.9
JANG	**Nango**	**2.15**	**325**	P	Pb	04 44 13.2	-1.0

*ISCJB **23** 04:46:30.4±0.5, 39˚.10N±0˚.03×29˚.04E±0˚.04, h9km, Error ellipse: s-maj=5.4km s-min=3.9km az=143.3*
*CSEM **23** 04:46:30.5±0.1, 39˚.11N×29˚.04E, h5km, MD2.4, Error ellipse: s-maj=2.2km s-min=1.7km az=110.0*
*ISK **23** 04:46:30.3, 39˚.12N×29˚.05E, h7km, MD2.7*
*DDA **23** 04:46:30.4, 39˚.07N×29˚.05E, h7km, Md2.4*

ISC 23 04:46:30.6±0.9, 39˚.11N±0˚.03×29˚.04E±0˚.02, h9km, n28, σ0s24/36, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**255**	P	**Pg**	**04 46 36.2**	**+0.2**
DEMI				S	**Sg**	**04 46 39.6**	**+0.1**
DEMI	**Demirci**	**0.26**	**255**	*i* P	**Pg**	**04 46 36.2**	**+0.2**
DEMI				*i* S	**Sg**	**04 46 39.6**	**+0.1**
GDZ	**Gediz**	**0.34**	**94**	P	**Pg**	**04 46 37.1**	**-0.3**
GDZ				S	**Sg**	**04 46 42.4**	**+0.4**
GDZ	**Gediz**	**0.34**	**94**	*i* P	**Pg**	**04 46 37.1**	**-0.3**
GDZ				*i* S	**Sg**	**04 46 42.4**	**+0.4**
TVSB	**Tavsanli**	**0.47**	**44**	*e*PG	**Pg**	**04 46 40.0**	**+0.2**
TVSB				*e*SG	**Sg**	**04 46 46.1**	**+0.1**
TVSB	**Tavsanli**	**0.47**	**44**	*e*Pg	**Pg**	**04 46 40.0**	**+0.2**
TVSB				*e*Sg	**Sg**	**04 46 46.1**	**+0.1**
DURS	**Dursunbey**	**0.66**	**318**	P	**Pb**	**04 46 44.1**	**-0.2**
DURS	**Dursunbey**	**0.66**	**318**	*i* P	**Pb**	**04 46 44.1**	**-0.2**
KULA	**Kula-Manisa**	**0.67**	**207**	*e*PG	**Pg**	**04 46 43.7**	**+0.2**
KULA	**Kula-Manisa**	**0.67**	**207**	*e*Pg	**Pg**	**04 46 43.7**	**+0.2**
MANT	**Manisa**	**0.73**	**212**	P	**Pg**	**04 46 44.5**	**-0.2**
MANT				S	**Sg**	**04 46 54.3**	**+0.1**
MANT	**Manisa**	**0.73**	**212**	*i* P	**Pg**	**04 46 44.5**	**-0.2**
MANT				*i* S	**Sg**	**04 46 54.3**	**+0.1**
KHL	**Karahalli**	**0.87**	**154**	*e*PG	**Pb**	**04 46 47.7**	**-0.3**
KHL	**Karahalli**	**0.87**	**154**	*e*Pg	**Pb**	**04 46 47.7**	**-0.3**
ORLT	**Orhaneli**	**0.94**	**353**	*e*PG	**Pg**	**04 46 48.5**	**-0.2**
ORLT	**Orhaneli**	**0.94**	**353**	*e*Pg	**Pg**	**04 46 48.5**	**-0.2**
BALB	**Balikesir**	**1.04**	**301**	*e*PG	**Pg**	**04 46 50.3**	**-0.4**
BALB	**Balikesir**	**1.04**	**301**	*e*Pg	**Pg**	**04 46 50.3**	**-0.4**
CAVI	**Cavuskoy**	**1.25**	**29**	*e*PN	**Pg**	**04 46 54.6**	**-0.1**
CAVI	**Cavuskoy**	**1.25**	**29**	*e*Pn	**Pg**	**04 46 54.6**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.26**	**354**	*e*PN	**Pn**	**04 46 54.5**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.26**	**354**	*e*Pn	**Pn**	**04 46 54.5**	**+0.1**
IZI	**Iznik**	**1.27**	**15**	*e*PN	**Pg**	**04 46 55.1**	**+0.1**
IZI	**Iznik**	**1.27**	**15**	*e*Pn	**Pg**	**04 46 55.1**	**+0.1**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*PN	**Pg**	**04 46 55.1**	**+0.1**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*Pn	**Pg**	**04 46 55.1**	**+0.1**
ARMT	**Armutlu**	**1.46**	**355**	*e*PN	**Pn**	**04 46 57.5**	**+0.3**
ARMT	**Armutlu**	**1.46**	**355**	*e*Pn	**Pn**	**04 46 57.5**	**+0.3**

*ISCJB **23** 04:47:00.0±0.3, 6˚.23S±0˚.03×131˚.35E±0˚.04, h10km, mb4.5/40, MS3.6/8, Error ellipse: s-maj=6.3km s-min=4.3km az=159.6*
*IDC **23** 04:47:00.7±0.6, 6˚.16S×131˚.24E, h0km, mb4.4/14, mb1 4.4/18, mb1mx4.3/36, mbtmp4.4/18, ML3.6/4, MS3.6/8, Ms1 3.6/8, ms1mx3.0/48, Error ellipse: s-maj=24.4km s-min=13.2km az=77.0*
*NEIC **23** 04:47:01.5±2.9, 6˚.21S×131˚.30E, h6km±19km, mb4.6/19, Error ellipse: s-maj=8.3km s-min=6.5km az=75.0*
*DJA **23** 04:47:05.7±0.4, 6˚.S±3˚×13˚.1E±˚, h

comp=Z,1.7nm,0.8s,baz=183,slow=7.9,SNR=7.0
XAN Xi'an 45.35 334 P P 04 55 18.6 -1.5
XAN pP sP 04 55 28.6 +4.1
XAN sP pP 04 55 33.6 +10
XAN pmax pmax
comp=Z,6.0nm,1.2s
CD2 Chengdu 45.42 326 P P 04 55 20.9 +0.2
CD2 pmax pmax
comp=Z,20nm,1.1s
BJI Beijing 48.14 344 P P 04 55 41.5 -0.2
BJI pmax pmax
comp=Z,11nm,0.7s
LZH Lanzhou 49.41 330 *e*P **P 04 55 52.5 +0.7**
LZH pP sP 04 56 02.4 +6.2
LZH sP pP 04 56 06.5 +12
LZH PP **PP 04 57 47.0 +1.0**
LZH pmax pmax
comp=Z,20nm,1.3s
LZH pmax pmax
comp=Z,72nm,6.5s
LZH LR LR
comp=N,350nm,14.0s
LZH LR LR
comp=E,380nm,14.3s
LZH LR LR
comp=Z,410nm,18.2s
CN2 Changchun 50.10 354 *e*P **P 04 55 57.6 +0.9**
CN2 pmax pmax
comp=Z,10.0nm,0.7s
USRK Ussuriysk Ar. 50.22 1 P **P 04 55 58.1 +0.6**
comp=Z,4.3nm,0.7s,baz=189,slow=8.3,SNR=7.5
HHC Hu-ho-hao-te 50.27 340 *e*P **P 04 55 59.3 +1.1**
HHC pmax pmax
comp=Z,23nm,1.1s
HHC pmax pmax
comp=Z,120nm,6.5s
MDJ Mudanjiang 50.66 358 P **P 04 56 03.1 +2.2**
MDJ pP sP 04 56 12.3 +7.0
MDJ sP pP 04 56 16.0 +12
MDJ PP **PP 04 57 55.3 -1.7**
MDJ S **S 05 03 16.8 +1.0**
MDJ ScS **ScS 05 05 48.6 -3.4**
MDJ Mudanjiang 50.66 358 SS **SS 05 06 51.3 +0.9**
MDJ pmax pmax
comp=Z,5.0nm,0.5s
MDJ pmax pmax
comp=Z,44nm,4.5s
MDJ LR LR
comp=N,34nm,17.6s
MDJ LR LR
comp=E,39nm,19.4s
MDJ LR LR
comp=Z,40nm,20.7s
GTA Gaotai 53.99 330 *e*P **P 04 56 25.6 -0.4**
GTA pP sP 04 56 29.9 -0.5
GTA sP pP 04 56 32.6 +3.5
GTA S **S 05 03 59.3 -2.7**
GTA sS sS 05 04 07.4 +0.1
GTA pmax pmax
comp=Z,6.0nm,1.1s
GTA pmax pmax
comp=Z,73nm,5.2s
GTA LR LR
comp=N,62nm,16.6s
GTA LR LR
comp=E,99nm,16.4s
GTA LR LR
comp=Z,83nm,17.1s
GUN Gumba 55.50 310 *e*P **P 04 56 36.5 -0.9**
comp=Z,56nm,0.7s
DMN Daman 55.94 309 *e*P **P 04 56 39.6 -0.8**
comp=Z,22nm,0.7s
AFI Afiamalu 56.38 102 LR LR 05 21 10.9
comp=Z,81nm,21.2s,baz=268,slow=36
GKN Gorkha 56.49 309 *e*P **P 04 56 43.6 -0.7**
comp=Z,23nm,0.4s
KOLN Koldanda 57.18 309 *e*P **P 04 56 48.6 -0.6**
comp=Z,14nm,0.4s
PYUN Piuthan 57.81 309 *e*P **P 04 56 53.0 -0.7**
comp=Z,59nm,0.8s
ULN Ulaanbaatar 57.99 341 *e*P **P 04 56 55.4 +0.9**
comp=Z,4.4nm,0.8s
SONM Songino Array 58.18 340 P **P 04 56 56.2 +0.5**
comp=Z,2.8nm,0.7s,baz=163,slow=6.7,SNR=18
SONA1 Songino Array 58.19 340 *e*P **P 04 56 56.1 +0.3**
PETK Petropavlovsk- 63.20 17 P **P 04 57 30.7 +1.0**
comp=Z,6.3nm,0.8s,baz=192,slow=5.6,SNR=6.3
WMQ Urumqi 63.52 326 P **P 04 57 32.9 +0.7**
WMQ pP sP 04 57 44.3 +7.7
WMQ sP pP 04 57 48.0 +13
WMQ S **S 05 05 59.0 -6.7**
WMQ pmax pmax
comp=Z,7.0nm,0.8s
WMQ pmax pmax
comp=Z,51nm,7.4s
WMQ LR LR
comp=E,58nm,35.4s
WMQ LR LR
comp=Z,12nm,39.6s
MK01 Makanchi Array 68.33 326 *e*P **P 04 58 03.2 +0.1**
MK31 Makanchi Array 68.36 326 *e*P **P 04 58 03.5 +0.3**
MKAR Makanchi Array 68.36 326 P **P 04 58 03.5 +0.3**
comp=Z,10.0nm,0.6s,baz=119,slow=8.2,SNR=111
KSH Kashi 68.39 317 P **P 04 58 04.5 +0.8**
KSH epP sP 04 58 14.8 +6.6
KSH esP PcP 04 58 18.9 -10
KSH ePP **PP 05 00 37.3 +2.5**
KSH S **S 05 07 00.8 -4.6**
KSH Kashi 68.39 317 SS SS 05 11 27.9 -1.4
KSH pmax pmax
comp=Z,8.0nm,1.0s
KSH pmax pmax
comp=Z,77nm,4.6s
KSH LR LR
comp=N,180nm,10.0s
KSH LR LR
comp=E,110nm,7.6s
KSH LR LR
comp=Z,130nm,7.1s
MAKZ Makanchi 68.54 326 *e*P **P 04 58 04.5 +0.2**
comp=Z,9.8nm,0.7s
TKM2 Tokmak 2 70.28 320 *e*P **P 04 58 15.4 0.0**
comp=Z,5.8nm,0.6s
SEY Seymchan 70.83 10 P **P 04 58 19.1 +1.1**
comp=Z,5.1nm,0.7s,baz=345,slow=9.6,SNR=20
AAK Ala-Archa 70.86 319 *e*P **P 04 58 19.6 +0.7**
comp=Z,8.0nm,1.1s
KBL Kabul 71.33 309 *e*P **P 04 58 21.9 -0.1**
comp=Z,12nm,1.0s
EKS2 Erkin-Say 71.34 319 *e*P **P 04 58 22.4 +0.7**
comp=Z,6.7nm,0.8s
ZAA0 Zalesovo Array 71.52 333 *e*P **P 04 58 22.0 -0.4**
ZALV Zalesovo Beam 71.52 333 P **P 04 58 21.3 -1.1**
comp=Z,2.0nm,0.4s,baz=108,slow=4.8,SNR=13
KURK Kurchatov 72.60 328 *e*P **P 04 58 28.6 -0.3**
comp=Z,6.6nm,0.8s
VNDA Vanda 73.03 173 P **P 04 58 34.0 +2.8**
comp=Z,1.0nm,0.8s,baz=327,slow=5.9,SNR=5.2
VNDA LR LR 05 30 43.2
comp=Z,43nm,18.8s,baz=296,slow=36
KKAR Karatay Array 73.68 318 *e*P **P 04 58 35.4 -0.2**
comp=Z,1.0nm,0.6s
MAW Mawson 76.14 202 P **P 04 58 51.1 +1.8**
comp=Z,1.9nm,0.6s,baz=78,slow=5.9,SNR=7.1
TIXI Tiksi 77.76 359 *e*P **P 04 58 58.2 -0.1**
comp=Z,3.2nm,1.0s
BRVK Borovoye 78.23 327 *e*P **P 04 59 00.8 -0.5**
comp=Z,6.6nm,0.9s
ZRNK Zerenda 78.88 327 *e*P **P 04 59 04.5 -0.3**
comp=Z,7.1nm,1.0s
ABKAR Akbulak array 82.77 321 *e*P **P 04 59 25.4 -0.4**
comp=Z,0.3nm,0.5s
QSPA South Pole Qui 83.72 180 *e*P **P 04 59 32.0 +1.4**
ILAR Eielson Array 92.09 25 P **P 05 00 10.1 -0.6**
comp=Z,0.5nm,0.6s,baz=268,slow=4.7,SNR=5.4
YKA Yellowknife Ar 106.48 26 PKiKP **PKiKP 05 05 26.4 0.0**
comp=Z,0.1nm,0.5s,baz=294,slow=1.9,SNR=4.9
TORD Torodi Ar. Bea 129.99 282 PKP **PKPdf 05 06 12.8 +0.2**
comp=Z,0.6nm,0.5s,baz=94,slow=1.7,SNR=13
CPUP Villa Florida 146.53 166 PKPbc **PKPab 05 06 45.3 +0.5**
comp=Z,2.1nm,0.8s,baz=195,slow=8.7,SNR=3.5
LPAZ La Paz 150.44 139 *e*PKPbc **PKPbc 05 06 57.8 +2.6**

*IDC **23** 05:07:30.8±1.9, 40°.01N×77°.14E, h0km, mb3.7/2, mb1 3.7/4, mb1mx3.3/46, mbtmp3.6/4, ML3.2/2, Error*

ellipse: s-maj=30.5km s-min=23.6km az=63.0
*SOME **23** 05:07:31.3, 40°.10N×77°.27E, h10km*
*KRNET **23** 05:07:32.1±0.1, 40°.14N×77°.09E, mb4.1*
*NNC **23** 05:07:34.9±1.1, 40°.21N×77°.00E, h0km, mb3.9, mpv3.6, Error ellipse: s-maj=10.6km s-min=6.5km az=153.0*
ISC 23 05:07:33.8±1.2, 40°.23N±0°.06×77°.18E±0°.04, h10km, n49, σ1§78/89, 44C-16D, Kyrgyzstan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
NRN	**Naryn**	**1.50**	**324**	⇑*e*P		**Pn**	**05 08 01.3**	**+0.3**
NRN				⇑*e*S		**Sg**	**05 08 23.0**	**+1.0**
KDJ	**Kajisay**	**1.90**	**0**	⇑*e*P		**Pb**	**05 08 08.5**	**-0.2**
KDJ				⇑*e*S		**Sg**	**05 08 35.9**	**+1.0**
ULHL	**Ulahol**	**2.13**	**341**	⇑*i*P		**Pb**	**05 08 12.5**	**-0.2**
ULHL				⇑*i*S		**Sg**	**05 08 41.8**	**-0.6**
KZA	**Kyzart**	**2.35**	**322**	⇑*i*P		**Pb**	**05 08 15.1**	**-1.4**
KZA				⇑*i*S		**Sb**	**05 08 46.6**	**+0.9**
PRZ	**Przheval'sk**	**2.44**	**22**	⇑*e*P		**Pb**	**05 08 17.1**	**-0.7**
PRZ				⇑*e*S		**Sg**	**05 08 50.0**	**-2.0**
BOOM	**Boomskoye usch**	**2.44**	**338**	⇑*e*P		**Pb**	**05 08 17.0**	**-0.9**
BOOM				⇑*e*S		**Sb**	**05 08 49.0**	**+0.8**
ANVS	**Anan'yevo**	**2.58**	**8**	⇑*e*P		**Pb**	**05 08 19.0**	**-1.3**
ANVS				⇑*e*S		**Sb**	**05 08 52.9**	**+0.8**
ARLS	**Aral**	**2.70**	**308**	⇓*e*P		**Pn**	**05 08 18.6**	**+1.1**
ARLS				⇓*e*S		**Sn**	**05 08 52.5**	**+2.2**
TNSS	**Tian-Shan**	**2.82**	**357**	*e*P		**Pb**	**05 08 24.9**	**+0.5**
TNSS				*e*S		**Sg**	**05 09 03.6**	**-0.7**
UCH	**Uchtor**	**2.83**	**316**	⇑*i*P		**Pb**	**05 08 22.9**	**-1.8**
UCH				⇑*i*S		**Sb**	**05 09 00.7**	**+1.1**
IZV	**Izvestkoviy**	**2.84**	**352**	*e*P		**Pb**	**05 08 25.7**	**+1.1**
IZV				*e*S		**Sg**	**05 09 05.0**	**+0.1**
MDOK	**Medeo**	**2.94**	**358**	*e*P		**Pb**	**05 08 26.9**	**+0.6**
MDOK				⇓*i*S		**Sg**	**05 09 06.8**	**-1.2**
TKM2	**Tokmak 2**	**2.94**	**337**	⇑*i*P		**Pb**	**05 08 24.7**	**-1.7**
TKM2				⇑*i*S		**Sb**	**05 09 02.9**	**+0.4**
TKM2	**Tokmak 2**	**2.94**	**337**	⇓Pn		**Pb**	**05 08 23.6**	**-2.8**
TKM2				⇑Pg		**Pg**	**05 08 27.2**	**-2.9**
TKM2				⇑Lg		Lg	05 09 07.3	
KBK	**Karagaybulak**	**2.95**	**326**	⇑*i*P		**Pb**	**05 08 25.0**	**-1.5**
KBK				⇑*i*S		**Sb**	**05 09 03.7**	**+1.0**
MTBS	**Maitube**	**2.95**	**349**	*e*P		**Pb**	**05 08 27.4**	**+0.8**
MTBS				⇓*i*S		**Sg**	**05 09 07.9**	**-0.7**
KST	**Kastek**	**2.96**	**343**	⇓*i*P		**Pb**	**05 08 28.0**	**+1.4**
KST				*e*S		**Sg**	**05 09 08.6**	**-0.2**
SATY	**Saty**	**2.98**	**18**	*e*P		**Pb**	**05 08 27.4**	**+0.4**
SATY				*e*S		**Sg**	**05 09 07.8**	**-1.6**
KNDC	**Almaty**	**2.99**	**357**	⇓Pn		**Pb**	**05 08 25.0**	**-2.1**
KNDC				⇑Lg		Lg	05 09 09.8	
KOTS	**Kotyrbulak**	**3.00**	**359**	*e*P		**Pb**	**05 08 28.6**	**+1.1**
KOTS				*e*S		**Sg**	**05 09 09.9**	**-0.4**
AAA	**Alma-Ata**	**3.05**	**357**	*e*P		**Pb**	**05 08 28.7**	**+0.5**
AAA				*e*S		**Sg**	**05 09 10.0**	**-1.6**
ZHN	**Zhinishke**	**3.09**	**17**	*e*P		**Pb**	**05 08 29.0**	**+0.1**
ZHN				*e*S		**Sg**	**05 09 10.7**	**-2.2**
AAK	**Ala-Archa**	**3.14**	**321**	Pn		**Pb**	**05 08 27.4**	**-2.3**
AAK				Pg		**Pg**	**05 08 31.4**	**-2.5**
AAK				Lg		Lg	05 09 14.0	
AAK	**Ala-Archa**	**3.14**	**321**	⇑*i*P		**Pb**	**05 08 26.9**	**-2.8**
AAK				⇑*i*S		**Sb**	**05 09 07.9**	**-0.2**
AAK	**Ala-Archa**	**3.14**	**321**	⇑Pn		**Pn**	**05 08 25.5**	**+2.0**
AAK				⇑Pg		**Pb**	**05 08 31.2**	**+1.5**
AAK				⇓Lg		Lg	05 09 13.6	
DGS	**Degeres**	**3.19**	**341**	*e*P		**Pb**	**05 08 32.0**	**+1.4**
DGS				*e*S		**Sg**	**05 09 15.9**	**-0.3**
FRU1	**Bishkek**	**3.21**	**324**	⇓*e*P		**Pn**	**05 08 27.1**	**+2.8**
FRU1				⇓*e*S		**Sn**	**05 09 05.9**	**+3.2**
CHMS	**Chumysh**	**3.31**	**328**	⇑*i*P		**Pb**	**05 08 29.7**	**-2.9**
CHMS				⇑*i*S		**Sb**	**05 09 11.9**	**-1.1**
ARSB	**Arslanbob**	**3.37**	**290**	⇑*e*P		**Pn**	**05 08 28.2**	**+1.6**
ARSB				⇑*e*S		**Sn**	**05 09 08.8**	**+2.1**
KPKS	**Kokpek**	**3.43**	**19**	*e*P		**Pb**	**05 08 35.8**	**+1.1**
KPKS				*e*S		**Sg**	**05 09 21.9**	**-1.9**
PDGK	**Podgornoye**	**3.55**	**28**	⇓Pn		**Pn**	**05 08 32.1**	**+3.3**
PDGK				⇑Pg		**Pg**	**05 08 40.6**	**-1.1**
PDGK				⇑Lg		Lg	05 09 28.1	
SHLS	**Shalkode**	**3.56**	**34**	*e*P		**Pb**	**05 08 38.3**	**+1.3**
SHLS				*e*S		**Sg**	**05 09 26.5**	**-1.7**
CHKK	**Chushkaly**	**3.64**	**358**	*e*P		**Pb**	**05 08 39.2**	**+1.0**
CHKK				*e*S		**Sg**	**05 09 28.7**	**-2.0**
TOKL	**Toktogul**	**3.68**	**299**	⇑*e*P		**Pn**	**05 08 32.2**	**+1.4**
TOKL				⇑*e*S		**Sn**	**05 09 16.1**	**+1.9**
KUU	**Kurty**	**3.71**	**351**	*e*P		**Pb**	**05 08 39.3**	**-0.2**
KUU				*e*S		**Sb**	**05 09 28.1**	**+3.5**
MRKS	**Merke**	**3.89**	**312**	*e*P		**Pb**	**05 08 44.3**	**+1.8**
MRKS				⇑*i*S		**Sg**	**05 09 36.9**	**-1.8**
MNBS	**Baschi**	**3.96**	**13**	*e*P		**Pb**	**05 08 43.8**	**+0.1**
MNBS				*e*S		**Sg**	**05 09 36.0**	**-4.7**
ARXS	**Arharly**	**4.01**	**7**	*e*P		**Pb**	**05 08 44.9**	**+0.3**
ARXS				*e*S		**Sg**	**05 09 38.0**	**-4.5**
MNAS	**Manas**	**4.18**	**304**	⇑Pn		**Pn**	**05 08 38.4**	**+0.7**
MNAS				⇑Pg		**Pb**	**05 08 47.4**	**-0.1**
MNAS				⇑Lg		Lg	05 09 44.0	
ARK	**Arkit**	**4.24**	**293**	⇑*e*P		**Pn**	**05 08 39.7**	**+1.1**
ARK				⇑*e*S		**Sn**	**05 09 29.0**	**+0.8**
DJR	**Jarkent**	**4.54**	**24**	⇓*i*P		**Pb**	**05 08 55.8**	**+2.3**
DJR				⇓*i*S		**Sg**	**05 09 56.1**	**-3.3**
KK31	**Karatay Array**	**5.76**	**302**	⇓Pn		**Pn**	**05 09 01.0**	**+1.7**
KK31				⇑Pg		**Pb**	**05 09 17.6**	**+3.3**
KK31				⇑Lg		Lg	05 10 34.8	
DZET	**Dzherino**	**6.61**	**260**	⇓Pn		**Pn**	**05 09 10.8**	**-0.3**
DZET				⇓Sn		**Sn**	**05 10 27.3**	**+0.8**
MK31	**Makanchi Array**	**7.54**	**28**	⇑Pn		**Pn**	**05 09 26.1**	**+2.4**
MKAR	**Makanchi Array**	**7.54**	**28**	Pn		**Pn**	**05 09 25.4**	**+1.6**
MKAR				Lg		Lg	05 11 30.9	
KURBB	**Kurchatov Arra**	**10.44**	**5**	Lg		Lg	05 13 01.4	
BVAR	**Borovoye Array**	**13.61**	**342**	Lg		Lg	05 14 45.6	
ARCES	**ARCESS Array B**	**39.72**	**334**	P		**P**	**05 15 06.2**	**+0.3**
TORD	**Torodi Ar. Bea**	**70.59**	**271**	P		**P**	**05 18 47.6**	**-1.8**

*IDC **23** 05:07:32.2±0.6, 26°.84N×143°.72E, h0km, mb4.2/21, mb1 4.4/24, mb1mx4.2/43, mbtmp4.2/24, ML3.7/3, MS3.6/4, Ms1 3.7/4, ms1mx2.8/59, Error ellipse: s-maj=16.8km s-min=15.3km az=87.0*
*JMA **23** 05:07:34.5±0.1, 27°.32N×143°.57E, h0km, M4.7*
*NEIC **23** 05:07:34.2±0.3, 26°.85N×143°.58E, h10km, mb4.6/18, Error ellipse: s-maj=8.2km s-min=7.7km az=94.0*
*ISCJB **23** 05:07:36.1±0.3, 26°.94N±0°.04×143°.62E±0°.04, h33km, mb4.3/43, MS3.7/6, Error ellipse: s-maj=6.2km s-min=5.3km az=12.8*
ISC 23 05:07:37.8±0.5, 26°.87N±0°.07×143°.54E±0°.07, h35km, n86, σ1§55/92, mb4.4/43, MS3.7/6, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**1.23**	**281**	P		**Pn**	**05 07 58.7**	**+0.1**
CBIJ				*e*S		**Sn**	**05 08 16.0**	**+2.0**
CBIJ	**Chichi jima**	**1.23**	**281**	*e*Pn		**Pn**	**05 07 58.0**	**-0.6**
CBIJ				*e*Sn		**Sn**	**05 08 10.7**	**-3.4**
JCJ	**Chichijima**	**1.23**	**281**	Pn		**Pn**	**05 07 58.7**	**+0.1**
JCJ				Sn		**Sn**	**05 08 16.2**	**+2.2**
JHJ2	**Mitsune**	**7.01**	**333**	*e*Pn		**Pn**	**05 09 16.7**	**-1.3**
JHJ2				*e*Sn		**Sn**	**05 10 40.6**	**+4.0**
BSO4	**Boso 4**	**8.55**	**342**	P		**Pn**	**05 09 36.4**	**-2.6**
JHU	**Hanno**	**9.67**	**339**	P		**Pn**	**05 09 51.5**	**-3.0**
JRY	**Ryogami san**	**9.95**	**338**	P		**Pn**	**05 09 55.5**	**-2.8**
JAG	**Ashikaga**	**10.15**	**341**	P		**Pn**	**05 09 58.2**	**-2.8**
MJAR	**Matsushiro Arr**	**10.66**	**336**	Pn		**Pn**	**05 10 05.3**	**-2.7**
MAJO	**Matsushiro**	**10.66**	**336**	*e*Pn		**Pn**	**05 10 06.2**	**-1.9**
MAJO				*e*Sn		**Sn**	**05 12 06.6**	**+0.4**
MAT	**Matsushiro**	**10.66**	**336**	P		**Pn**	**05 10 06.0**	**-2.1**
MAT				S		**Sn**	**05 12 02.8**	**-3.4**
MJB9	**Matsu-Tunnel**	**10.67**	**336**	*e*Pn		**Pn**	**05 10 06.2**	**-1.9**
MJB9				*e*Sn		**Sn**	**05 12 06.7**	**+0.4**
KSRS	**Korea Array**	**16.90**	**313**	P		**P**	**05 11 33.0**	**-0.3**
USRK	**Ussuriysk Ar.**	**19.65**	**335**	P		**P**	**05 12 03.7**	**+0.2**
SSLB	**Suanglung**	**20.64**	**266**	*e*P		**P**	**05 12 14.3**	**-0.2**
MDJ	**Mudanjiang**	**20.97**	**331**	P		**P**	**05 12 18.6**	**+0.8**
NJ2	**Nanjing**	**22.09**	**289**	*e*P		**P**	**05 12 31.9**	**+1.9**
CN2	**Changchun**	**22.36**	**324**	*e*P		**P**	**05 12 31.9**	**-0.8**
KLR	**Kul'dur**	**24.12**	**341**	P		**P**	**05 12 50.8**	**+0.5**
DAV	**Davao City (W)**	**26.06**	**224**	LR		LR	05 22 04.7	
BJI	**Beijing**	**26.23**	**307**	P		**P**	**05 13 04.3**	**-5.1**
HHC	**Hu-ho-hao-te**	**29.81**	**306**	*e*P		**P**	**05 13 43.3**	**+1.7**
QIZ	**Qiongzhong**	**31.93**	**263**	P		**P**	**05 13 58.8**	**-1.5**
QIZ				S		**S**	**05 19 10.1**	**+0.8**
LZH	**Lanzhou**	**34.88**	**295**	*e*P		**P**	**05 14 26.0**	**-0.2**
LZH				pP		pP	05 14 37.0	+0.7
LZH				sP		sP	05 14 41.3	+0.8
LZH				*e*PP		**PnPn**	**05 15 44.0**	**+0.7**
CD2	**Chengdu**	**34.94**	**286**	P		**P**	**05 14 25.8**	**-0.8**
SONA0	**Songino Array**	**35.72**	**316**	*e*P		**P**	**05 14 35.2**	**+2.0**
SONM	**Songino Array**	**35.72**	**316**	P		**P**	**05 14 35.2**	**+2.0**
SEY	**Seymchan**	**36.54**	**7**	P		**P**	**05 14 39.2**	**-0.5**
KMI	**Kunming**	**36.61**	**277**	P		**P**	**05 14 42.0**	**+0.9**
GTA	**Gaotai**	**38.34**	**300**	*e*P		**P**	**05 14 54.0**	**-1.6**
GTA				pP		pP	05 15 01.1	-4.7
GTA				sP		sP	05 15 04.8	-5.2
KAPI	**Kappang**	**39.17**	**220**	P		**P**	**05 15 03.2**	**+0.7**
KAPI	**Kappang**	**39.17**	**220**	*e*P		**P**	**05 15 03.2**	**+0.7**
TIXI	**Tiksi**	**45.57**	**354**	P		**P**	**05 15 52.8**	**-1.1**
TIXI	**Tiksi**	**45.57**	**354**	*e*P		**P**	**05 15 55.3**	**+1.5**
WB2	**Warramunga Arr**	**47.38**	**192**	*e*P		**P**	**05 16 07.7**	**-1.0**
WR1	**Warramunga Arr**	**47.38**	**192**	*e*P		**P**	**05 16 07.6**	**-1.1**
WRA	**Warramunga Arr**	**47.38**	**192**	P		**P**	**05 16 07.6**	**-1.1**
WMQ	**Urumqi**	**47.69**	**306**	*e*P		**P**	**05 16 12.1**	**+1.0**
WMQ				pP		pP	05 16 21.8	+0.3
WMQ				sP		sP	05 16 31.8	+6.2
FITZ	**Fitzroy Crossi**	**47.96**	**203**	*e*P		**P**	**05 16 13.5**	**+0.3**
ZAA1	**Zalesovo Array**	**50.46**	**319**	*e*P		**P**	**05 16 33.6**	**+1.7**
ZALV	**Zalesovo Beam**	**50.46**	**319**	P		**P**	**05 16 33.6**	**+1.7**

comp=Z,1.1nm,0.4s,baz=94,slow=8.9,SNR=4.3
MK01 Makanchi Array 51.55 310 *e*P **P 05 16 41.1 +0.8**
MK31 Makanchi Array 51.55 310 *e*P **P 05 16 41.2 +0.8**
MK32 Makanchi Array 51.55 310 *e*P **P 05 16 40.9 +0.5**
MKAR Makanchi Array 51.55 310 P **P 05 16 40.9 +0.5**
comp=Z,1.3nm,0.6s,baz=90,slow=8.2,SNR=9.3
MKAR PcP **PcP 05 17 55.0 +0.9**
comp=Z,1.2nm,0.7s,baz=82,slow=6.4,SNR=3.5
MKAR Makanchi Array 51.55 310 *e*P **P 05 16 41.3 +0.9**
MAKZ Makanchi 51.77 310 *e*P **P 05 16 43.1 +1.1**
comp=Z,2.2nm,0.8s
KURK Kurchatov 54.01 315 *e*P **P 05 16 59.0 +0.6**
KURBB Kurchatov Arra 54.07 315 P **P 05 16 58.7 -0.1**
comp=Z,4.6nm,0.7s,baz=91,slow=8.1,SNR=25
CAST Castle Rocks 54.88 30 *e*P **P 05 17 04.0 -0.6**
comp=Z,5.8nm,1.1s
COLD Coldfoot 56.35 25 *e*P **P 05 17 15.1 0.0**
comp=Z,4.9nm,1.0s
IL1 Eielson Array 57.33 28 *e*P **P 05 17 21.7 -0.3**
ILAR Eielson Array 57.33 28 P **P 05 17 19.8 -2.3**
comp=Z,1.8nm,0.9s,baz=259,slow=5.5,SNR=16
ILB Eielson Array 57.33 28 *e*P **P 05 17 20.8 -1.3**
STKA Stephens Creek 58.44 182 P **P 05 17 28.8 -1.3**
comp=Z,1.4nm,0.6s,baz=28,slow=6.9,SNR=3.3
STKA Stephens Creek 58.44 182 *e*P **P 05 17 28.8 -1.3**
comp=Z,9.3nm,1.7s
BVAR Borovoye Array 59.03 318 P **P 05 17 34.1 0.0**
comp=Z,1.9nm,0.6s,baz=95,slow=4.8,SNR=7.4
KKAR Karatay Array 60.20 306 *e*P **P 05 17 43.0 +0.7**
DAWY Dawson 60.55 29 *e*P **P 05 17 43.9 -0.5**
comp=Z,3.4nm,0.9s
INK Inuvik 62.73 25 P **P 05 17 57.4 -1.6**
comp=Z,0.6nm,0.4s,baz=303,slow=4.3,SNR=6.0
INK Inuvik 62.73 25 *e*P **P 05 17 57.4 -1.6**
comp=Z,14nm,1.8s
DLBC Dease Lake 65.70 35 LR LR 05 44 15.1
comp=Z,63nm,19.9s,baz=246,slow=34
ABKAR Akbulak array 66.12 315 *e*P **P 05 18 22.0 +0.5**
BBB Bella Bella 68.28 41 LR LR 05 44 12.2
comp=Z,37nm,20.2s,baz=274,slow=32
YKA Yellowknife Ar 71.77 29 P **P 05 18 56.3 0.0**
comp=Z,1.0nm,0.8s,baz=291,slow=6.2,SNR=12
FIA0 FINESS Array S 78.68 334 *e*P **P 05 19 36.1 0.0**
FINES FINESS Array B 78.68 334 P **P 05 19 36.1 0.0**
comp=Z,1.1nm,0.6s,baz=90,slow=5.6,SNR=4.3
KBZ Khabaz 79.05 313 P **P 05 19 39.2 +0.8**
comp=Z,1.7nm,0.8s,baz=38,slow=4.7,SNR=4.3
NV01 Mina Array Sit 79.70 52 *e*P **P 05 19 43.4 +0.9**
NVAR Mina Array Bea 79.70 52 P **P 05 19 43.0 +0.6**
comp=Z,1.3nm,0.7s,baz=297,slow=5.9,SNR=7.9
NVAR LR LR 05 48 48.9
comp=Z,61nm,19.3s,baz=274,slow=31
LRM Limekiln Ridge 80.20 44 *e*P **P 05 19 45.6 +0.6**
BOZ Bozeman (W) 80.79 43 *e*P **P 05 19 49.2 +1.1**
comp=Z,1.5nm,0.7s
R11A Troy Canyon, C 81.65 51 *e*P **P 05 19 53.6 +0.8**
comp=Z,2.0nm,1.1s
H17A Grant Village 82.06 44 *e*P **P 05 19 58.5 +3.5**
comp=Z,3.3nm,0.9s
IMW Indian Meadow 82.08 45 *e*P **P 05 19 57.2 +2.1**
comp=Z,2.2nm,0.8s
RLMT Red Lodge 82.50 43 *e*P **P 05 19 58.5 +1.3**
comp=Z,3.2nm,0.6s
AKASG Malin Array Be 83.51 324 P **P 05 20 03.0 +1.0**
comp=Z,1.7nm,0.6s,baz=50,slow=5.6,SNR=9.4
PD31 Pinedale Array 83.52 45 *e*P **P 05 20 03.4 +0.9**
PDAR Pinedale Array 83.52 45 P **P 05 20 02.6 +0.1**
comp=Z,0.7nm,0.7s,baz=270,slow=1.5,SNR=7.4
MTPU Mount Pierson 84.15 50 *e*P P 05 20 01.2 -4.8
comp=Z,6.0nm,0.7s
BR101 Keskin Array S 87.04 313 *e*P **P 05 20 20.1 +0.1**
BRTR Keskin Array B 87.04 313 P **P 05 20 20.1 0.0**
comp=Z,0.9nm,0.8s,baz=70,slow=4.1,SNR=5.0
BR231 Keskin MP Arra 87.54 314 *e*P **P 05 20 20.8 -1.6**
LTX Lajitas 94.76 54 *e*P **P 05 20 56.8 +0.5**
TXAR Lajitas Array 94.76 54 P **P 05 20 56.8 +0.5**
comp=Z,0.3nm,0.7s,baz=318,slow=3.0,SNR=5.2
LPAZ La Paz 148.80 77 PKPbc **PKPbc 05 27 22.7 -0.4**
comp=Z,4.3nm,0.9s,baz=52,slow=3.5,SNR=9.7

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*ISK **23** 05:11:47.8, 39°.08N×29°.10E, h5km, MD2.7*
*DDA **23** 05:11:47.8, 39°.07N×29°.03E, h7km, Md2.5*
*ISCJB **23** 05:11:48.1±0.4, 39°.05N±0°.03×29°.05E±0°.04, h9km, Error ellipse: s-maj=5.4km s-min=3.5km az=147.7*
*CSEM **23** 05:11:48.0±0.1, 39°.08N×29°.05E, h2km, MD2.5, Error ellipse: s-maj=2.5km s-min=1.9km az=134.0*
ISC 23 05:11:48.4±0.9, 39°.08N±0°.03×29°.04E±0°.02, h9km, n40, σ0°39/48, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**262**	P	**Pg**	**05 11 53.4**	**-0.1**
DEMI				S	**Sg**	**05 11 57.0**	**0.0**
DEMI	**Demirci**	**0.26**	**262**	*i* P	**Pg**	**05 11 53.4**	**-0.1**
DEMI				*i* S	**Sg**	**05 11 57.0**	**0.0**
GDZ	**Gediz**	**0.34**	**88**	P	**Pg**	**05 11 54.9**	**-0.3**
GDZ				S	**Sg**	**05 12 00.1**	**+0.3**
GDZ	**Gediz**	**0.34**	**88**	*i* P	**Pg**	**05 11 54.9**	**-0.3**
GDZ				*i* S	**Sg**	**05 12 00.1**	**+0.3**
TVSB	**Tavsanli**	**0.49**	**41**	*e*PG	**Pg**	**05 11 57.5**	**-0.5**
TVSB				*e*SG	**Sg**	**05 12 04.0**	**-0.5**
TVSB	**Tavsanli**	**0.49**	**41**	*e*Pg	**Pg**	**05 11 57.5**	**-0.5**
TVSB				*e*Sg	**Sg**	**05 12 04.0**	**-0.5**
KULA	**Kula-Manisa**	**0.64**	**208**	*e*PG	**Pg**	**05 12 00.4**	**-0.3**
KULA	**Kula-Manisa**	**0.64**	**208**	*e*Pg	**Pg**	**05 12 00.4**	**-0.3**
DURS	**Dursunbey**	**0.68**	**320**	P	**Pg**	**05 12 00.7**	**-0.8**
DURS	**Dursunbey**	**0.68**	**320**	*i* P	**Pg**	**05 12 00.7**	**-0.8**
MANT	**Manisa**	**0.70**	**213**	P	**Pg**	**05 12 01.5**	**-0.4**
MANT				S	**Sg**	**05 12 10.6**	**-0.4**
MANT	**Manisa**	**0.70**	**213**	*i* P	**Pg**	**05 12 01.4**	**-0.4**
MANT				*i* S	**Sg**	**05 12 10.6**	**-0.4**
KHL	**Karahalli**	**0.84**	**153**	*e*PG	**Pg**	**05 12 04.1**	**-0.5**
KHL	**Karahalli**	**0.84**	**153**	*e*Pg	**Pg**	**05 12 04.1**	**-0.5**
AKS	**Akhisar**	**0.98**	**259**	*e*PG	**Pb**	**05 12 07.8**	**+0.3**
AKS	**Akhisar**	**0.98**	**259**	*e*Pg	**Pb**	**05 12 07.8**	**+0.3**
BALB	**Balikesir**	**1.06**	**302**	*e*PN	**Pb**	**05 12 09.3**	**+0.4**
BALB	**Balikesir**	**1.06**	**302**	*e*Pn	**Pb**	**05 12 09.3**	**+0.4**
CAVI	**Cavuskoy**	**1.28**	**29**	*e*PN	**Pn**	**05 12 12.4**	**-0.1**
CAVI	**Cavuskoy**	**1.28**	**29**	*e*Pn	**Pn**	**05 12 12.4**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.29**	**355**	*e*PN	**Pb**	**05 12 13.2**	**+0.4**
MDNY	**Mudanya-Bursa**	**1.29**	**355**	*e*Pn	**Pb**	**05 12 13.2**	**+0.4**
KCTX	**Karacabey (Bur**	**1.30**	**336**	*e*PN	**Pg**	**05 12 13.5**	**+0.3**
KCTX	**Karacabey (Bur**	**1.30**	**336**	*e*Pn	**Pg**	**05 12 13.5**	**+0.3**
IZI	**Iznik**	**1.30**	**15**	*e*PN	**Pn**	**05 12 12.8**	**0.0**
IZI	**Iznik**	**1.30**	**15**	*e*Pn	**Pn**	**05 12 12.8**	**0.0**
GONE	**Gonen-Balikesi**	**1.42**	**313**	*e*PN	**Pb**	**05 12 15.2**	**+0.1**
GONE	**Gonen-Balikesi**	**1.42**	**313**	*e*Pn	**Pb**	**05 12 15.2**	**+0.1**
ADVT	**Abdulvahap**	**1.45**	**21**	*e*PN	**Pn**	**05 12 15.2**	**+0.4**
ADVT	**Abdulvahap**	**1.45**	**21**	*e*Pn	**Pn**	**05 12 15.2**	**+0.4**
ARMT	**Armutlu**	**1.49**	**355**	*e*PN	**Pb**	**05 12 16.2**	**0.0**
ARMT	**Armutlu**	**1.49**	**355**	*e*Pn	**Pb**	**05 12 16.2**	**0.0**
EDC	**Edincik**	**1.56**	**325**	*e*PN	**Pb**	**05 12 17.3**	**-0.1**
EDC	**Edincik**	**1.56**	**325**	*e*Pn	**Pb**	**05 12 17.3**	**-0.1**
GULT	**Gulveren**	**1.77**	**40**	*e*PN	**Pn**	**05 12 19.6**	**+0.4**
GULT	**Gulveren**	**1.77**	**40**	*e*Pn	**Pn**	**05 12 19.6**	**+0.4**
SVRH	**Sivrihisar-ESK**	**1.96**	**78**	*e*PN	**Pn**	**05 12 22.3**	**+0.4**
SVRH	**Sivrihisar-ESK**	**1.96**	**78**	*e*Pn	**Pn**	**05 12 22.3**	**+0.4**
MDUB	**Mudurnu**	**2.17**	**49**	*e*PN	**Pn**	**05 12 25.2**	**+0.5**
MDUB	**Mudurnu**	**2.17**	**49**	*e*Pn	**Pn**	**05 12 25.2**	**+0.5**

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*IDC **23** 05:16:13.8±1.2, 12°.19N×144°.35E, h0km, mb3.7/6, mb1 4.1/6, mb1mx3.7/45, mbtmp3.7/6, MS3.8/2, Ms1 3.8/2, ms1mx2.9/40, Error ellipse: s-maj=36.1km s-min=20.1km az=116.0*
*ISCJB **23** 05:16:16.6±1.0, 12°.2N±0°.1×144°.2E±0°.2, h29km, mb3.8/6, MS3.7/2, Error ellipse: s-maj=27.8km s-min=10.5km az=29.7*
ISC 23 05:16:18.3±1.1, 12°.2N±0°.1×144°.4E±0°.2, h29km, n12, σ0°71/8, mb3.8/6, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**1.45**	**21**	Pn	**Pn**	**05 16 42.5**	**0.0**
	122nm,0.3s,baz=176,slow=10,SNR=31						
GUMO				Sn	**Sb**	**05 17 02.3**	**-0.3**
	167nm,0.3s,baz=160,slow=23,SNR=20						
PMG	**Port Moresby**	**21.67**	**172**	LR	LR	05 28 59.8	
	comp=Z,103nm,18.1s,baz=42,slow=35						
H11N1	**WAKE ISLAND Hy**	**22.90**	**68**	T	T	05 45 18.2	
	baz=255,slow=75,SNR=6.3						
H11N2	**WAKE ISLAND Hy**	**22.91**	**68**	T	T	05 45 21.6	
	baz=255,slow=75,SNR=6.6						
H11N3	**WAKE ISLAND Hy**	**22.92**	**68**	T	T	05 45 11.6	
	baz=255,slow=75,SNR=7.1						
WRA	**Warramunga Arr**	**33.45**	**197**	P	**P**	**05 22 54.4**	**-0.6**
	0.6nm,0.7s,baz=22,slow=9.8,SNR=6.2						
CMAR	**Chiang Mai Arr**	**44.13**	**284**	P	**P**	**05 24 25.1**	**+0.5**
	0.7nm,0.3s,baz=73,slow=6.8,SNR=4.6						
SONM	**Songino Array**	**47.55**	**326**	P	**P**	**05 24 51.0**	**-0.3**
	0.3nm,0.4s,baz=126,slow=7.3,SNR=2.9						
MKAR	**Makanchi Array**	**62.12**	**317**	P	**P**	**05 26 36.7**	**0.0**
	0.4nm,0.5s,baz=93,slow=6.2,SNR=4.4						
BVAR	**Borovoye Array**	**70.68**	**322**	LR	LR	05 59 57.5	
	comp=Z,131nm,21.9s,baz=72,slow=37						
YKA	**Yellowknife Ar**	**84.30**	**27**	P	**P**	**05 28 46.6**	**-0.6**
	0.4nm,0.5s,baz=286,slow=5.0,SNR=9.7						
NVAR	**Mina Array Bea**	**88.17**	**51**	P	**P**	**05 29 08.2**	**+1.2**
	0.6nm,0.7s,baz=278,slow=6.3,SNR=3.5						

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*NIED **23** 05:20:00, 38°.20N×142°.20E, h5km, Mw4.4 Best double couple: M0=4.45000×10^15 NP1:φ=151.00000°, δ=45.00000°, λ=-94.00000°. NP2:φ=337.00000°, δ=45.00000°, λ=-86.00000°.*
*JMA **23** 05:20:56.8±0.2, 38°.19N×142°.15E, h16km±1km, M4.8*
JMA Felt II J1.
*ISCJB **23** 05:20:59.0±0.8, 38°.19N±0°.03×142°.06E±0°.04, h27km±5km, mb4.4/66, MS3.7/14, Error ellipse: s-maj=6.1km s-min=3.8km az=34.9*
*MOS **23** 05:21:01.5±1.2, 38°.14N×141°.92E, h47km, mb4.7/33, Error ellipse: s-maj=9.6km s-min=5.8km az=107.0*
*IDC **23** 05:21:01.8±2.9, 38°.13N×141°.99E, h39km±25km, mb3.9/20, mb1 4.2/23, mb1mx4.0/49, mbtmp4.1/23, ML3.4/3, MS3.5/11, Ms1 3.5/11, ms1mx3.2/42, Error ellipse: s-maj=17.6km s-min=14.0km az=121.0*
*NEIC **23** 05:21:04.4±0.8, 38°.22N×141°.86E, h52km±7km, mb4.6/19, Error ellipse: s-maj=9.5km s-min=6.9km az=134.0*
NEIC Recorded [2 JMA] in Iwate and Miyagi.
ISC 23 05:21:00.6±0.9, 38°.22N±0°.04×141°.92E±0°.05, h23km±5km, n174, σ1°61/181, mb4.5/66, MS3.7/15, 17C-5D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.51**	**297**	P	**Pb**	**05 21 10.1**	**-0.8**
JIO				S	**Sb**	**05 21 18.7**	**+0.8**
OFUJ	**Ofunato**	**0.88**	**347**	P	**Pb**	**05 21 14.5**	**-2.7**
OFUJ				S	**Sb**	**05 21 27.7**	**-0.8**
JMK	**Ichinoseki**	**0.91**	**323**	P	**Pb**	**05 21 16.7**	**-1.1**
JMK				S	**Sn**	**05 21 30.4**	**-0.1**
JMM	**Marumori**	**0.96**	**249**	P	**Pb**	**05 21 17.1**	**-1.5**
JMM				S	**Sn**	**05 21 32.8**	**+1.2**
JOU	**Okura**	**1.00**	**279**	P	**Pb**	**05 21 19.0**	**-0.3**
JOU				S	**Sn**	**05 21 35.0**	**+2.3**
JFK	**Kawauchi**	**1.19**	**224**	P	**Pn**	**05 21 19.3**	**-2.6**
JFK				S	**Sn**	**05 21 36.5**	**-0.9**
JOM	**Ohasama**	**1.34**	**339**	P	**Pn**	**05 21 22.3**	**-1.6**
JOM				S	**Sn**	**05 21 41.1**	**0.0**
JYK	**Kaneyama**	**1.41**	**300**	P	**Pb**	**05 21 25.7**	**-0.5**
JYK				S	**Sb**	**05 21 46.1**	**+2.3**
JFT	**Otama**	**1.44**	**241**	P	**Pn**	**05 21 24.8**	**-0.5**
JFT				S	**Sb**	**05 21 45.4**	**+0.7**
MJAR	**Matsushiro Arr**	**3.40**	**242**	Pn	**Pn**	**05 21 52.0**	**-0.3**
	3.0nm,0.3s,baz=79,slow=14,SNR=15						
MJAR				LR	LR	05 23 31.5	
	comp=Z,2μm,18.2s,baz=60,slow=44						
MAJO	**Matsushiro**	**3.40**	**242**	↑*i*P	**Pn**	**05 21 55.1**	**+2.8**
MAJO	**Matsushiro**	**3.40**	**242**	*e*Pn	**Pn**	**05 21 54.7**	**+2.4**
MAJO				*e*Sn	**Sn**	**05 22 31.9**	**-0.1**
MAT	**Matsushiro**	**3.40**	**242**	P	**Pn**	**05 21 54.1**	**+1.8**
MAT				*e*S	**Sn**	**05 22 36.1**	**+4.2**
MJB9	**Matsu-Tunnel**	**3.40**	**242**	*e*Pn	**Pn**	**05 21 54.8**	**+2.4**
ERM	**Erimo**	**3.90**	**14**	↓*i*P	**Pn**	**05 22 02.7**	**+3.6**
ERM	**Erimo**	**3.90**	**14**	*e*Pn	**Pn**	**05 22 01.6**	**+2.5**
ERM				*e*Sn	**Sn**	**05 22 47.1**	**+2.9**
INU	**Inuyama**	**4.87**	**235**	*e*Pn	**Pn**	**05 22 15.0**	**+2.6**
JHJ2	**Mitsune**	**5.38**	**199**	*e*Pn	**Pn**	**05 22 22.8**	**+3.3**
ASAJ	**Asahikawa**	**5.91**	**5**	Pn	**Pn**	**05 22 27.1**	**+0.4**
	2.4nm,0.3s,baz=211,slow=12,SNR=4.1						
ASAJ				Sn	**Sn**	**05 23 34.9**	**+1.2**
	2.3nm,0.3s,baz=211,slow=31,SNR=3.6						
ASAJ	**Asahikawa**	**5.91**	**5**	*e*Pn	**Pn**	**05 22 27.9**	**+1.2**
ASAJ				*e*Sn	**Sn**	**05 23 34.8**	**+1.2**
YSS	**Yuzh-Sakhalins**	**8.75**	**4**	↑*i*P	**Pn**	**05 23 08.6**	**+3.0**
YSS				pmax	pmax		
	comp=Z,15nm,1.0s						
VLA	**Vladivostok**	**9.06**	**306**	↓*e*P	**Pn**	**05 23 10.7**	**+0.8**
VLA				pmax	pmax		
	comp=Z,26nm,1.0s						
USRK	**Ussuriysk Ar.**	**9.57**	**312**	Pn	**Pn**	**05 23 19.0**	**+2.1**
	comp=Z,0.6nm,0.3s,baz=121,slow=13,SNR=8.5						
USRK				LR	LR	05 26 44.4	
	comp=Z,176nm,20.2s,baz=116,slow=35						
JNU	**Nakatsue**	**10.32**	**244**	LR	LR	05 27 44.4	
	comp=Z,767nm,20.5s,baz=117,slow=39						
KSRS	**Korea Array**	**11.10**	**270**	Pn	**Pn**	**05 23 42.4**	**+4.5**
	comp=Z,0.1nm,0.3s,baz=80,slow=13,SNR=4.1						
KSRS				LR	LR	05 27 41.9	
	comp=Z,378nm,19.4s,baz=81,slow=36						
KS15	**Wonju Array Si**	**11.13**	**270**	*e*Pn	**Pn**	**05 23 42.4**	**+4.1**
MDJ	**Mudanjiang**	**11.24**	**309**	P	**Pn**	**05 23 40.1**	**+0.3**
MDJ				pmax	pmax		
	comp=Z,5.0nm,0.5s						
MDJ				pmax	pmax		
	comp=Z,44nm,4.0s						
KLR	**Kul'dur**	**13.22**	**330**	LR	LR	05 29 01.0	
	comp=Z,123nm,21.3s,baz=130,slow=36						
KLR	**Kul'dur**	**13.22**	**330**	↓*i*P	P	05 24 11.6	-4.9
CN2	**Changchun**	**13.62**	**299**	*e*P	**P**	**05 24 16.9**	**-4.2**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.6s						
CN2				LR	LR		
	comp=N,200nm,10.0s						
CN2				LR	LR		
	comp=E,300nm,10.0s						
CN2				LR	LR		
	comp=Z,200nm,11.0s						
PETK	**Petropavlovsk-**	**18.46**	**31**	LR	LR	05 32 03.3	
	comp=Z,75nm,21.4s,baz=218,slow=36						
BJI	**Beijing**	**20.04**	**283**	P	**P**	**05 25 30.4**	**-1.5**
BJI				pP	**sP**	**05 25 40.0**	**-1.3**
BJI				S	**S**	**05 29 13.3**	**-2.7**
BJI				pmax	pmax		
	comp=Z,9.0nm,0.5s						
BJI				pmax	pmax		
	comp=Z,140nm,4.0s						
BJI				LR	LR		
	comp=N,320nm,16.1s						
BJI				LR	LR		
	comp=E,120nm,12.6s						
BJI				LR	LR		
	comp=Z,100nm,25.8s						
MA2	**Magadan**	**22.11**	**12**	P	**P**	**05 25 54.9**	**+0.9**
	comp=Z,6.9nm,0.6s,baz=188,slow=15,SNR=6.4						
MA2				LR	LR	05 34 28.5	
	comp=Z,60nm,18.2s,baz=170,slow=36						
HHC	**Hu-ho-hao-te**	**23.51**	**286**	*e*P	**P**	**05 26 09.0**	**+0.1**
HHC				S	**S**	**05 30 15.1**	**-6.3**
HHC				pmax	pmax		
	comp=Z,32nm,0.7s						
HHC				pmax	pmax		
	comp=Z,110nm,4.0s						
HHC				LR	LR		
	comp=N,420nm,12.0s						
HHC				LR	LR		
	comp=E,580nm,11.4s						
HHC				LR	LR		
	comp=Z,510nm,12.2s						
WHN	**Wuhan**	**23.95**	**260**	*e*P	**P**	**05 26 12.9**	**-0.2**
WHN				S	**S**	**05 30 25.8**	**-2.6**
WHN				LR	LR		
	comp=N,830nm,13.3s						
WHN				LR	LR		
	comp=E,630nm,11.5s						
WHN				LR	LR		
	comp=Z,1μm,20.4s						
GUMO	**Guam**	**24.67**	**173**	LR	LR	05 35 56.0	
	comp=Z,33nm,21.7s,baz=106,slow=36						
YAK	**Yakutsk**	**25.00**	**346**	*e*P	P	05 26 37.4	+15
YAK				pmax	pmax		
	comp=Z,29nm,0.9s						
SEY	**Seymchan**	**25.55**	**11**	P	**P**	**05 26 27.9**	**+0.5**
	comp=Z,6.0nm,0.8s,baz=211,slow=8.2,SNR=22						
SEY	**Seymchan**	**25.55**	**11**	↑*i*P	**P**	**05 26 28.3**	**+1.0**
BOD	**Bodaibo**	**26.75**	**326**	*e*P	**P**	**05 26 37.0**	**-1.3**
BOD				pmax	pmax		
	comp=Z,6.0nm,0.8s						
XAN	**Xi'an**	**26.90**	**271**	P	**P**	**05 26 43.9**	**+4.0**
XAN				pP	sP	05 26 54.0	+4.4
XAN				S	S	05 31 27.6	+12
XAN				pmax	pmax		
	comp=Z,7.0nm,1.4s						
XAN				LR	LR		
	comp=N,170nm,15.2s						
XAN				LR	LR		
	comp=E,140nm,16.2s						
XAN				LR	LR		
	comp=Z,150nm,13.2s						
ULN	**Ulaanbaatar**	**27.04**	**302**	↑*e*P	**P**	**05 26 42.5**	**+1.3**
ULN				pmax	pmax		
	comp=Z,3.0nm,1.2s						
SONA1	**Songino Array**	**27.48**	**302**	*e*P	**P**	**05 26 45.6**	**+0.5**
SONA0	**Songino Array**	**27.48**	**302**	*e*P	**P**	**05 26 45.9**	**+0.7**
	comp=Z,6.8nm,1.5s						
SONM	**Songino Array**	**27.48**	**302**	P	**P**	**05 26 45.9**	**+0.8**
	comp=Z,0.9nm,0.8s,baz=101,slow=7.5,SNR=6.0						
SONM				LR	LR	05 37 27.8	
	comp=Z,66nm,18.4s,baz=108,slow=36						
ENH	**Enshi**	**27.86**	**263**	*e*P	**P**	**05 26 48.4**	**-0.1**
	comp=Z,26nm,1.0s						
H11N2	**WAKE ISLAND Hy**	**28.43**	**123**	T	T	05 56 25.8	
	baz=316,slow=75,SNR=1890						
H11N1	**WAKE ISLAND Hy**	**28.44**	**123**	T	T	05 56 29.8	
	baz=316,slow=75,SNR=1241						
H11N3	**WAKE ISLAND Hy**	**28.45**	**123**	T	T	05 56 29.1	
	baz=316,slow=75,SNR=1254						
H11S1	**WAKE ISLAND Hy**	**29.19**	**125**	T	T	05 57 27.4	
	baz=318,slow=76,SNR=469						
H11S3	**WAKE ISLAND Hy**	**29.19**	**125**	T	T	05 57 27.5	
	baz=318,slow=76,SNR=580						
H11S2	**WAKE ISLAND Hy**	**29.21**	**125**	T	T	05 57 28.5	
	baz=318,slow=76,SNR=304						
ZAK	**Zakamensk**	**29.87**	**307**	*e*P	**P**	**05 27 03.7**	**-2.6**
ZAK				pmax	pmax		
	comp=Z,2.0nm,1.4s						
TLY	**Talaya**	**29.88**	**309**	*e*P	**P**	**05 27 10.2**	**+4.0**
TLY				pmax	pmax		
	comp=Z,6.0nm,0.8s						
TLY				MLR	MLR		
	comp=Z,124nm,15.0s						
LZH	**Lanzhou**	**30.29**	**278**	*e*P	**P**	**05 27 10.0**	**-0.2**
LZH				pP	sP	05 27 21.0	+1.0
LZH				sP	pP	05 27 25.6	+8.5
LZH				*e*PP	**PnPn**	**05 28 09.3**	**+1.0**
LZH				pmax	pmax		
	comp=Z,22nm,1.0s						
LZH				pmax	pmax		
	comp=Z,59nm,5.3s						
LZH				LR	LR		
	comp=N,360nm,12.9s						
LZH				LR	LR		
	comp=E,380nm,13.0s						
LZH				LR	LR		
	comp=Z,420nm,16.0s						
GYA	**Guiyang**	**31.83**	**259**	*e*P	**P**	**05 27 24.8**	**+0.9**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
CD2	**Chengdu**	**32.09**	**269**	P	**P**	**05 27 25.4**	**-0.6**
CD2				pmax	pmax		
	comp=Z,5.0nm,0.6s						
GTA	**Gaotai**	**32.62**	**285**	*e*P	**P**	**05 27 31.3**	**+0.6**
GTA				pP	sP	05 27 43.1	+2.7
GTA				sP	pP	05 27 48.3	+11
GTA				pmax	pmax		
	comp=Z,4.0nm,1.2s						
BILL	**Bilibino**	**32.77**	**17**	*ce*P	**P**	**05 27 35.3**	**+3.8**
BILL				pmax	pmax		
	comp=Z,5.0nm,1.2s						
BILL				MLR	MLR		
	comp=Z,75nm,21.0s						
QIZ	**Qiongzhong**	**33.80**	**245**	P	**P**	**05 27 40.8**	**-0.1**
QIZ				S	**S**	**05 33 04.6**	**+1.0**
QIZ				LR	LR		
	comp=Z,270nm,14.3s						
TIXI	**Tiksi**	**34.16**	**353**	↑*i*P	**P**	**05 27 43.3**	**-0.2**
TIXI				pmax	pmax		
	comp=Z,2.0nm,0.9s						
KMI	**Kunming**	**35.55**	**260**	P	**P**	**05 27 57.6**	**+1.2**
KMI				pmax	pmax		
	comp=Z,12nm,0.5s						
KMI				pmax	pmax		
	comp=Z,72nm,4.1s						
WMQ	**Urumqi**	**40.68**	**296**	P	**P**	**05 28 40.0**	**+0.8**
WMQ				pP	sP	05 28 53.3	+4.3
WMQ				sP	pP	05 28 58.0	+12
WMQ				pmax	pmax		
	comp=Z,10.0nm,1.0s						
WMQ				pmax	pmax		
	comp=Z,44nm,8.0s						
WMQ				LR	LR		
	comp=N,98nm,14.4s						
WMQ				LR	LR		
	comp=E,54nm,31.8s						
WMQ				LR	LR		
	comp=Z,27nm,23.6s						
ZAA0	**Zalesovo Array**	**41.42**	**311**	*e*P	**P**	**05 28 45.0**	**-0.1**
ZAA1	**Zalesovo Array**	**41.42**	**311**	*e*P	**P**	**05 28 44.8**	**-0.2**
ZALV	**Zalesovo Beam**	**41.42**	**311**	P	**P**	**05 28 44.8**	**-0.2**
	comp=Z,4.2nm,0.8s,baz=88,slow=7.0,SNR=10						
CMAR	**Chiang Mai Arr**	**42.20**	**254**	P	**P**	**05 28 50.3**	**-1.5**
	comp=Z,0.7nm,0.3s,baz=57,slow=6.6,SNR=4.2						
CMAR				LR	LR	05 46 17.8	
	comp=Z,45nm,18.5s,baz=66,slow=36						
NVS	**Novosibirsk**	**42.32**	**313**	*e*P	**P**	**05 28 51.6**	**-0.8**
MK01	**Makanchi Array**	**43.84**	**301**	*e*P	**P**	**05 29 04.5**	**-0.3**
MK31	**Makanchi Array**	**43.84**	**301**	*e*P	**P**	**05 29 05.1**	**+0.2**
MK31	**Makanchi Array**	**43.84**	**301**	*e*P	**P**	**05 29 05.0**	**+0.2**
MK32	**Makanchi Array**	**43.84**	**301**	*e*P	**P**	**05 29 04.6**	**-0.2**
MKAR	**Makanchi Array**	**43.84**	**301**	P	**P**	**05 29 04.6**	**-0.2**
	comp=Z,4.9nm,0.9s,baz=86,

WRAB Tennant Creek 58.28 188⇑ *i*P P 05 30 51.7 -1.8
WRAB pmax pmax
comp=Z,20nm,1.2s
WR1 Warramunga Arr 58.29 188 *e*P **P 05 30 52.1 -1.5**
comp=Z,44nm,1.9s
WRA Warramunga Arr 58.29 188 P **P 05 30 52.1 -1.5**
comp=Z,4.2nm,0.9s,baz=7.0,slow=7.4,SNR=16
AS01 Alice Springs 62.01 188 *e*P **P 05 31 18.0 -1.0**
ASAR Alice Springs 62.02 188 P **P 05 31 17.3 -1.8**
comp=Z,1.2nm,1.0s,baz=11,slow=5.8,SNR=5.7
YKA Yellowknife Ar 62.58 31 P **P 05 31 21.6 -0.8**
comp=Z,0.7nm,0.8s,baz=299,slow=6.6,SNR=7.5
PALK Pallekele 63.02 257 *i* P **P 05 31 26.2 +0.1**
ARA0 ARCESS Array S 63.03 339 *e*P **P 05 31 25.0 -0.3**
ARCES ARCESS Array B 63.03 339 P **P 05 31 25.0 -0.3**
comp=Z,2.2nm,0.9s,baz=52,slow=7.9,SNR=4.0
DAG Danmarks Havn 64.62 355 *i* P **P 05 31 35.0 -0.7**
comp=Z,5.0nm,0.9s
DAG Danmarks Havn 64.62 355 *i* P **P 05 31 35.0 -0.7**
DAG pmax pmax
comp=Z,4.0nm,0.9s
VRH Novokhopyorsk 66.97 318 *e*P **P 05 31 49.8 -1.4**
VRH pmax pmax
comp=Z,10.0nm,0.9s
OBN Obninsk 67.39 323|| *e*P **P 05 31 53.6 -0.1**
OBN pmax pmax
comp=Z,9.0nm,1.2s
OBN MLR MLR
comp=Z,40nm,15.0s
LPSR Galich'ya Gora 67.65 320 *e*P **P 05 31 54.4 -1.1**
LPSR pmax pmax
comp=Z,10.0nm,1.0s
FIA0 FINESS Array S 67.95 332 *e*P **P 05 31 56.8 -0.4**
FIA0 FINESS Array S 67.95 332 *e*P **P 05 31 56.8 -0.4**
FINES FINESS Array B 67.95 332 P **P 05 31 56.8 -0.4**
comp=Z,5.6nm,0.7s,baz=57,slow=7.0,SNR=14
FINES FINESS Array B 67.95 332 *i* P **P 05 31 57.2 0.0**
FINES pmax pmax
comp=Z,6.0nm,0.7s
VSR Storozhevoye 68.31 319 *e*P **P 05 31 58.4 -1.2**
VSR pmax pmax
comp=Z,10.0nm,1.3s
SUMG Summit 69.50 0 *i* P **P 05 32 07.4 +0.2**
comp=Z,7.4nm,0.8s
SUMG Summit 69.50 0 *e*P **P 05 32 07.3 +0.2**
SUMG pmax pmax
comp=Z,7.0nm,0.8s
SUMG Summit 69.50 0 *e*P **P 05 32 07.3 +0.2**
comp=Z,7.4nm,0.8s
GOF Gofitskoye 69.61 312⇑ *e*P **P 05 32 08.3 +0.5**
ZEI Tsey 70.36 309 *e*P **P 05 32 10.4 -2.4**
ZEI pmax pmax
comp=Z,8.0nm,0.9s
KIV Kislovodsk 70.44 311 *c i* P **P 05 32 13.9 +0.8**
KIV pmax pmax
comp=Z,27nm,1.2s
KIV Kislovodsk 70.44 311 *e*P **P 05 32 14.1 +1.1**
comp=Z,18nm,0.9s
KBZ Khabaz 70.44 311 P **P 05 32 13.1 +0.2**
comp=Z,5.0nm,0.9s,baz=11,slow=5.2,SNR=12
NEY Neytrino 70.81 310⇑ *i* P **P 05 32 16.3 +0.8**
NEY pmax pmax
comp=Z,1.0nm,0.9s
GNI Garni 71.32 307⇑ *e*P **P 05 32 19.9 +1.3**
GNI pmax pmax
comp=Z,15nm,0.8s
FCC Fort Churchill 72.76 27 *e*P **P 05 32 29.3 +2.7**
FCC pmax pmax
comp=Z,6.0nm,1.1s
FCC Fort Churchill 72.76 27 *e*P **P 05 32 29.3 +2.7**
comp=Z,6.0nm,1.1s
ANN Anapa 73.00 314 *e*P **P 05 32 28.2 -0.1**
ANN pmax pmax
comp=Z,22nm,1.3s
NC204 NORSAR Array S 73.20 338 *e*P **P 05 32 29.1 -0.2**
NB2 NORSAR Subarra 73.25 337 P **P 05 32 29.0 -0.6**
comp=Z,9.5nm,0.8s,baz=40,slow=6.2
NB200 NORSAR Array S 73.25 337 *e*P **P 05 32 28.9 -0.7**
NOA NORSAR Array B 73.25 337 P **P 05 32 28.9 -0.7**
comp=Z,6.5nm,0.8s,baz=39,slow=5.9,SNR=17
BOZ Bozeman (W) 73.58 45 *e*P **P 05 32 33.9 +1.9**
BOZ pmax pmax
comp=Z,7.0nm,1.5s
BOZ Bozeman (W) 73.58 45 *e*P **P 05 32 33.9 +1.9**
comp=Z,7.2nm,1.5s
AKASG Malin Array Be 73.61 322 P **P 05 32 30.6 -1.2**
comp=Z,3.3nm,0.6s,baz=45,slow=6.4,SNR=18
AKASG Malin Array Be 73.61 322 P **P 05 32 30.6 -1.2**
AKASG pmax pmax
comp=Z,4.0nm,0.7s
KIEV Kiev 73.62 322⇑ *i* P **P 05 32 31.7 -0.2**
KIEV pmax pmax
comp=Z,7.0nm,0.9s
KIEV Kiev 73.62 322 *e*P **P 05 32 31.1 -0.7**
comp=Z,7.6nm,0.8s
AK11 Malin Array Si 73.65 322 *e*P **P 05 32 31.6 -0.5**
NV01 Mina Array Sit 73.95 54 *e*P **P 05 32 34.0 -0.4**
NVAR Mina Array Bea 73.95 54 P **P 05 32 34.0 -0.4**
comp=Z,1.2nm,0.9s,baz=306,slow=7.7,SNR=4.3
H17A Grant Village 74.94 45 *e*P **P 05 32 41.9 +1.9**
comp=Z,9.4nm,1.5s
IMW Indian Meadow 75.05 46 *e*P **P 05 32 43.3 +2.5**
comp=Z,5.7nm,1.3s
MOOW Moose Ponds 75.25 46 *e*P **P 05 32 42.8 +1.0**
comp=Z,4.6nm,1.4s
BW06 Boulder Array 76.55 46 *e*P **P 05 32 48.2 -1.0**
PD31 Pinedale Array 76.55 46 *e*P **P 05 32 48.6 -0.7**
PDAR Pinedale Array 76.55 46 P **P 05 32 48.1 -1.2**
comp=Z,0.9nm,0.7s,baz=327,slow=1.2,SNR=11
BUR08 Bucovina Ar. S 77.62 322 *e*P **P 05 32 55.1 +0.1**
STHS Stebnicka Huta 78.22 325 *e*P **P 05 32 58.9 +0.7**
STHS Stebnicka Huta 78.22 325 *e*P **P 05 32 58.9 +0.7**
BR101 Keskin Array S 78.37 312 *e*P **P 05 32 59.1 -0.3**
BRTR Keskin Array B 78.37 312 P **P 05 32 59.1 -0.3**
comp=Z,2.0nm,1.0s,baz=106,slow=4.4,SNR=9.7
BR231 Keskin MP Arra 78.80 312 *e*P **P 05 32 59.9 -1.8**
MORC Moravsky Berou 79.58 327 *e*P **P 05 33 06.3 +0.6**
MORC pmax pmax
comp=Z,34nm,1.1s
MORC Moravsky Berou 79.58 327 *e*P **P 05 33 06.3 +0.6**
comp=Z,34nm,1.1s
DPC Dobruska-Polom 79.67 328 *e*P **P 05 33 06.8 +0.7**
DPC Dobruska-Polom 79.67 328 *e*P **P 05 33 06.8 +0.7**
VYHS Vyhne 79.98 326 *e*P **P 05 33 08.4 +0.6**
VYHS Vyhne 79.98 326 *e*P **P 05 33 08.4 +0.6**
BRG Berggiesshubel 80.23 330 *e*P **P 05 33 09.1 0.0**
comp=Z,4.6nm,0.8s
BRG Berggiesshubel 80.23 330 *e*P **P 05 33 09.1 0.0**
BRG pmax pmax
comp=Z,5.0nm,0.8s
CLL Collm 80.27 330⇑ *i* P **P 05 33 09.1 -0.2**
comp=Z,10.0nm,0.8s
CLL Collm 80.27 330⇑ *i* P **P 05 33 09.1 -0.2**
CLL pmax pmax
comp=Z,10.0nm,0.8s
PRU Pruhonice 80.68 329 *e*P **P 05 33 11.7 +0.2**
PRU Pruhonice 80.68 329 *e*P **P 05 33 11.7 +0.2**
X16A Lo Mia Camp, P 80.78 53 *e*P **P 05 33 14.9 +2.2**
comp=Z,2.2nm,1.0s
KHC Kasperske Hory 81.74 329 *e*P **P 05 33 17.0 -0.3**
KHC Kasperske Hory 81.74 329 *e*P **P 05 33 17.0 -0.3**
GERES GERESS Array B 81.91 328 P **P 05 33 17.9 -0.4**
comp=Z,0.7nm,0.5s,baz=45,slow=5.8,SNR=9.1
ANMO Albuquerque 83.51 50⇑ *i* P **P 05 33 29.3 +2.3**
ANMO pmax pmax
comp=Z,2.0nm,1.2s
BFO Black Forest 84.46 331 *i* P **P 05 33 31.7 +0.4**
FUORN Ofenpass-Fuorn 85.09 329 *e*P **P 05 33 35.0 +0.1**
comp=Z,7.0nm,0.8s
TX31 Lajitas Ar. Si 89.08 53 *e*P **P 05 33 53.6 -0.7**
LTX Lajitas 89.08 53 *e*P **P 05 33 52.7 -1.6**
LTX Lajitas 89.08 53 *e*P **P 05 33 52.6 -1.6**
TXAR Lajitas Array 89.08 53 P **P 05 33 52.6 -1.6**
comp=Z,0.6nm,0.6s,baz=295,slow=3.3,SNR=9.6
VNA2 Neumayer--Watz 143.57 196 P PKPbc 05 40 29.2 -0.5
baz=83,slow=3.0
VNA3 Neumayer Olymp 143.82 195 P PKPab 05 40 28.7 -1.1
VNA1 Neumayer--Stat 143.97 196 P PKPab 05 40 30.1 -0.2
LPAZ La Paz 145.74 59 PKPbc **PKPdf 05 40 38.1 -0.3**
comp=Z,3.8nm,0.9s,baz=336,slow=2.4,SNR=9.7

*CSEM **23** 05:21:10.9±0.1, 40°.57N×21°.67E, h2km, Error ellipse: s-maj=3.2km s-min=2.8km az=58.0, Suspected Mining explosion.*

*SKO **23** 05:21:12.1, 40°.57N×21°.63E, h5km, ML1.1*
ATH 23 05:21:10.9, 40°.58N×21°.66E, h5km, 38km, Error ellipse: s-maj=38.3km s-min=1.4km az=270.0, Suspected Mining explosion., Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KZN	**Kozani**	**0.28**	**162**	P	Pg	05 21 16.1	-0.3
FNA	**Florina**	**0.30**	**314**	P	Pg	05 21 16.5	-0.2
FNA	**Florina**	**0.30**	**314**	P	Pg	05 21 16.4	-0.3
NEST	**Nestorio**	**0.49**	**251**	P	Pg	05 21 20.9	+0.5
NEST	**Nestorio**	**0.49**	**251**	P	Pg	05 21 20.9	+0.6
BIA	**Bitola**	**0.51**	**330**	*i* Pg	Pg	05 21 21.0	+0.3
BIA				*i* Sg	Sb	05 21 28.8	-1.4
BIA				*e*Lg	Lg	05 21 29.4	
BIA	comp=N,18nm,0.6s			*e*Lg	Lg	05 21 29.9	
BIA	**Bitola**	**0.51**	**330**	*i* Pg	Pg	05 21 20.9	+0.2
BIA				*i* Sg	Sg	05 21 28.7	+1.3
BIA				*e*Lg	Lg	05 21 29.4	
BIA	comp=E,18nm,0.6s						
PENT	**Pentalofos**	**0.55**	**226**	P	Pg	05 21 21.7	+0.2
PENT	**Pentalofos**	**0.55**	**226**	P	Pg	05 21 21.7	+0.2
KPRO	**Kipourio**	**0.66**	**200**	P	Pg	05 21 23.4	-0.2
KPRO	**Kipourio**	**0.66**	**200**	P	Pg	05 21 23.4	-0.2
GRG	**Griva**	**0.68**	**56**	P	Pg	05 21 24.2	+0.2
GRG	**Griva**	**0.68**	**56**	P	Pg	05 21 24.2	+0.3
LIT	**Litokhoron**	**0.79**	**127**	P	Pb	05 21 26.7	-0.5
LIT	**Litokhoron**	**0.79**	**127**	P	Pb	05 21 26.7	-0.5
OHR	**Ohrid**	**0.84**	**310**	*i* Pg	Pg	05 21 27.3	+0.3
OHR				*i* Sg	Sb	05 21 39.8	+0.1
OHR				*e*Lg	Lg	05 21 41.8	
OHR	comp=N,24nm,0.8s			*e*Lg	Lg	05 21 42.6	
OHR	comp=E,24nm,0.6s						
OHR	**Ohrid**	**0.84**	**310**	*i* Pg	Pg	05 21 27.3	+0.2
OHR				*i* Sg	Sb	05 21 39.8	+0.1
OHR				*e*Lg	Lg	05 21 41.8	
OHR	comp=E,24nm,0.8s						
THL	**Klokotos Trika**	**1.05**	**165**	P	Pg	05 21 30.8	-0.2
KNT	**Kendrikon**	**1.11**	**58**	P	Pg	05 21 31.5	-0.6
KNT	**Kendrikon**	**1.11**	**58**	P	Pg	05 21 31.5	-0.6

*ISCJB **23** 05:23:11.6±0.5, 46°.31N±0°.06×152°.70E±0°.07, h40km, mb4.1/21, MS3.7/2, Error ellipse: s-maj=9.8km s-min=4.3km az=140.3*
*MOS **23** 05:23:11.7±1.2, 46°.20N×152°.85E, h45km, mb4.5/11, Error ellipse: s-maj=11.6km s-min=9.8km az=67.3*
*IDC **23** 05:23:12.4±7.0, 46°.23N×152°.84E, h33km±52km, mb3.8/12, mb1 4.0/14, mb1mx3.7/49, mbtmp4.0/14, ML2.9/2, MS3.7/2, Ms1 3.6/2, ms1mx2.8/40, Error ellipse: s-maj=24.9km s-min=18.4km az=126.0*
*SKHL **23** 05:23:13.0±0.3, 46°.30N×152°.64E, h60km±5km, mb5.4/2, Ms3.9/1, msh4.7/2*
*NEIC **23** 05:23:14.0±1.2, 46°.21N×152°.84E, h48km±11km, mb4.4/6, Error ellipse: s-maj=14.8km s-min=8.4km az=129.0*
ISC 23 05:23:13.4±0.7, 46°.27N±0°.08×152°.80E±0°.08, h40km, n76, σ1°32/79, mb4.2/21, 1D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUR	**Kuril'sk**	**3.60**	**255**	*d* iPN	**Pn**	**05 24 08.3**	**+1.6**
KUR				*e*S	**Sn**	**05 24 51.0**	**+3.1**
KUR	comp=Z,142nm,0.5s			pmax	pmax		
KUR	comp=E,23nm,0.2s			pmax	pmax		
KUR	comp=N,55nm,0.3s			pmax	pmax		
KUR	comp=E,106nm,0.6s			smax	smax		
KUR	comp=N,56nm,0.4s			smax	smax		
KUR	**Kuril'sk**	**3.60**	**255**	*e*P	**Pn**	**05 24 05.8**	**-0.9**
KUR				AMB	AMB	05 24 06.1	
KUR	comp=N,360nm,0.5s			AMB	AMB	05 24 06.9	
KUR	comp=N,700nm,2.0s						
KUR				*e*S	**Sn**	**05 24 45.6**	**-2.3**
KUR				A	A	05 24 50.6	
KUR	comp=N,700nm,2.5s			A	A	05 24 58.6	
KUR	comp=N,280nm,0.5s			A	A	05 24 58.6	
KUR	comp=N,310nm,0.5s						
SKR	**Severo-Kuril's**	**4.94**	**25**	*e*PN	Pn	05 24 15.7	-9.3
SKR	**Severo-Kuril's**	**4.94**	**25**	*e*P	**Pn**	**05 24 25.1**	**+0.1**
SKR				AMB	AMB	05 24 29.0	
SKR	comp=N,300nm,3.0s			AMB	AMB	05 24 31.7	
SKR	comp=N,690nm,0.4s						
SKR				*e*S	**Sn**	**05 25 19.0**	**-1.8**
SKR				A	A	05 25 25.8	
SKR	comp=N,900nm,0.6s			A	A	05 25 29.8	
SKR	comp=N,700nm,3.0s						
YUK	**Yuzh-Kuril'sk**	**5.39**	**248**	*e*P	**Pn**	**05 24 29.8**	**-1.4**
YUK				*e*S	**Sn**	**05 25 31.3**	**-0.7**
PAU	**Pauzhetka**	**5.84**	**26**	*e*P	**Pn**	**05 24 38.4**	**+1.0**
PAU				AMB	AMB	05 24 41.7	
PAU	comp=N,280nm,1.1s			*e*S	**Sn**	**05 25 42.0**	**-0.9**
PAU				A	A	05 25 42.9	
PAU	comp=N,250nm,0.8s						
YSS	**Yuzh-Sakhalins**	**6.95**	**279**	*e*PN	**Pn**	**05 24 52.3**	**-0.3**
YSS	**Yuzh-Sakhalins**	**6.95**	**279**	*e*P	**Pn**	**05 24 52.8**	**+0.2**
YSS				AMS	AMS	05 27 21.0	
YSS	comp=N,500nm,16.0s						
ASAJ	**Asahikawa**	**7.52**	**257**	*e*Pn	**Pn**	**05 25 03.6**	**+3.1**
ASAJ				*e*Sn	**Sn**	**05 26 23.8**	**-0.6**
PETK	**Petropavlovsk-**	**7.55**	**23**	Pn	**Pn**	**05 25 00.5**	**-0.4**
	comp=N,0.8nm,0.3s,baz=202,slow=11,SNR=6.5						
PETK	**Petropavlovsk-**	**7.55**	**23**	P	**Pn**	**05 25 00.5**	**-0.3**
PETK				pmax	pmax		
	comp=Z,1.0nm,0.3s						
PET	**Petropavlovsk**	**7.75**	**27**	AMS	AMS	05 31 25.0	
	comp=Z,300nm,18.0s						
ERM	**Erimo**	**8.13**	**242**	*e*PN	**Pn**	**05 25 09.8**	**+1.0**
ERM	**Erimo**	**8.13**	**242**	*e*Pn	**Pn**	**05 25 09.8**	**+1.0**
ERM				*e*Sn	**Sn**	**05 26 36.5**	**-2.8**
ERM	**Erimo**	**8.13**	**242**	*e*P	**Pn**	**05 25 09.8**	**+1.0**
TYV	**Tymovskoe**	**8.14**	**308**	*e*P	**Pn**	**05 25 08.7**	**-0.3**
TYV				AMS	AMS	05 30 40.0	
	comp=Z,500nm,16.0s						
NKL	**Nikolayevsk**	**10.43**	**316**	*e*P	**Pn**	**05 25 38.9**	**-1.4**
NKL				AMS	AMS	05 31 30.0	
	comp=Z,500nm,13.0s						
HABR	**Khabarovsk**	**12.23**	**287**	*e*PN	**Pn**	**05 26 01.4**	**-3.5**
HABR				pmax	pmax		
	comp=Z,23nm,1.3s						
HABR				pmax	pmax		
	comp=E,26nm,1.1s						
HABR				MLR	MLR		
	comp=Z,174nm,14.0s						
HABR	**Khabarovsk**	**12.23**	**287**	*e*P	**Pn**	**05 26 01.4**	**-3.5**
HABR				AMB	AMB	05 26 02.7	
	comp=Z,20nm,1.3s						
HABR				AMS	AMS	05 31 04.5	
	comp=Z,200nm,14.0s						
MAJO	**Matsushiro**	**14.62**	**234**	*e*P	**Pn**	**05 26 36.7**	**-0.7**
MAJO	**Matsushiro**	**14.62**	**234**	*e*Pn	**Pn**	**05 26 36.7**	**-0.7**
MAJO	**Matsushiro**	**14.62**	**234**	*e*P	**Pn**	**05 26 36.7**	**-0.7**
USRK	**Ussuriysk Ar.**	**14.80**	**269**	Pn	**Pn**	**05 26 40.4**	**+0.5**
	comp=Z,0.5nm,0.3s,baz=82,slow=12,SNR=5.2						
VLA	**Vladivostok**	**15.20**	**266**	*i* P	**Pn**	**05 26 46.2**	**+1.2**
VLA				pmax	pmax		
	comp=Z,31μm,0.7s						
VLA	**Vladivostok**	**15.20**	**266**	*i* P	**Pn**	**05 26 46.2**	**+1.2**
JHJ2	**Mitsune**	**16.48**	**222**	*e*Pn	**Pn**	**05 27 00.4**	**-1.1**
BMKR	**Bomnak**	**17.36**	**308**	*e*P	**Pn**	**05 27 08.7**	**-3.7**
KROS	**Kirovskiy**	**18.31**	**306**	*e*P	**Pn**	**05 27 25.4**	**+1.3**
KSRS	**Korea Array**	**20.45**	**253**	P	**P**	**05 27 47.5**	**+0.2**
	comp=Z,1.0nm,0.6s,baz=57,slow=12,SNR=4.1						
KSAR	**Wonju Array Be**	**20.48**	**253**	P	**P**	**05 27 47.6**	**-0.1**
KSAR	**Wonju Array Be**	**20.48**	**253**	P	**P**	**05 27 47.5**	**-0.1**
KSAR	**Wonju Array Be**	**20.48**	**253**	*e*P	**P**	**05 27 47.6**	**-0.1**
BILL	**Bilibino**	**22.91**	**13**	*e*P	**P**	**05 28 13.4**	**0.0**
BILL				pmax	pmax		
	comp=Z,2.0nm,0.7s						
BILL	**Bilibino**	**22.91**	**13**	*e*P	**P**	**05 28 13.4**	**0.0**
NRIK	**Noril'sk**	**39.06**	**329**	P	P	05 30 42.8	+6.9
NRIK				pmax	pmax		
	comp=Z,1.0nm,0.4s						
ZALV	**Zalesovo Beam**	**42.72**	**306**	LR	LR	05 50 09.4	
	comp=Z,88nm,18.3s,baz=72,slow=38						
MKAR	**Makanchi Array**	**46.97**	**298**	P	**P**	**05 31 39.6**	**-0.6**
	comp=Z,0.5nm,0.3s,baz=67,slow=7.1,SNR=4.6						
MKAR	**Makanchi Array**	**46.97**	**298**	*i* P	**P**	**05 31 40.5**	**+0.3**
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.4s						
KURK	**Kurchatov**	**47.45**	**304**	*e*P	**P**	**05 31 43.4**	**-0.4**
KURK				pmax	pmax		
	comp=Z,3.0nm,0.6s						
KURK	**Kurchatov**	**47.45**	**304**	*e*P	**P**	**05 31 43.4**	**-0.4**
	comp=Z,2.9nm,0.6s						
KURK	**Kurchatov**	**47.45**	**304**	*e*P	**P**	**05 31 43.4**	**-0.4**
YKA	**Yellowknife Ar**	**51.44**	**36**	P	**P**	**05 32 14.0**	**-0.1**
	comp=Z,0.6nm,0.8s,baz=301,slow=6.8,SNR=3.9						
YKA	**Yellowknife Ar**	**51.44**	**36**	P	**P**	**05 32 14.0**	**-0.1**
YKA				pmax	pmax		
	comp=Z,1.0nm,0.8s						
YKA	**Yellowknife Ar**	**51.44**	**36**	*e*P	**P**	**05 32 14.0**	**-0.1**
CMAR	**Chiang Mai Arr**	**52.04**	**256**	P	**P**	**05 32 20.1**	**+1.0**
	comp=Z,1.4nm,0.3s,baz=35,slow=8.6,SNR=6.2						
TKM2	**Tokmak 2**	**53.01**	**296**	*e*P	**P**	**05 32 24.6**	**-1.7**
TKM2				pmax	pmax		
	comp=Z,1.0nm,0.3s						
TKM2	**Tokmak 2**	**53.01**	**296**	*e*P	**P**	**05 32 24.6**	**-1.7**
	comp=Z,0.6nm,0.3s						
ARCES	**ARCESS Array B**	**58.23**	**341**	P	**P**	**05 33 03.5**	**+0.4**
	comp=Z,0.7nm,0.6s,baz=39,slow=7.8,SNR=5.0						
ARCES	**ARCESS Array B**	**58.23**	**341**	*e*P	**P**	**05 33 03.8**	**+0.7**
ARCES				pmax	pmax		
	comp=Z,1.0nm,0.6s						
ABKAR	**Akbulak array**	**58.57**	**310**	*e*P	**P**	**05 33 05.9**	**+0.2**
KLMR	**Klimovskoe**	**60.41**	**329**	*e*P	**P**	**05 33 16.7**	**-1.5**
KLMR				pmax	pmax		
	comp=Z,4.0nm,1.0s						
SUMG	**Summit**	**61.20**	**4**	*e*P	**P**	**05 33 26.3**	**+2.4**
SUMG				pmax	pmax		
	comp=Z,4.0nm,0.6s						
SUMG	**Summit**	**61.20**	**4**	*e*P	**P**	**05 33 26.3**	**+2.4**
	comp=Z,3.6nm,0.6s						
FFC	**Flin Flon**	**61.25**	**40**	*e*P	**P**	**05 33 24.8**	**+0.7**
FFC	**Flin Flon**	**61.25**	**40**	*e*P	**P**	**05 33 24.8**	**+0.7**
	comp=Z,0.9nm,0.3s						
FFC	**Flin Flon**	**61.25**	**40**	*e*P	**P**	**05 33 24.8**	**+0.7**
FINES	**FINESS Array B**	**64.38**	**335**	P	**P**	**05 33 44.3**	**-0.4**
	comp=Z,1.2nm,0.5s,baz=31,slow=6.5,SNR=4.7						
WRAB	**Tennant Creek**	**67.97**	**199**	*e*P	**P**	**05 34 06.9**	**-1.3**
WRAB				pmax	pmax		
	comp=Z,7.0nm,1.3s						
WRAB	**Tennant Creek**	**67.97**	**199**	*e*P	**P**	**05 34 06.9**	**-1.3**
	comp=Z,6.9nm,1.3s						
WRA	**Warramunga Arr**	**67.99**	**199**	P	**P**	**05 34 06.8**	**-1.5**
	comp=Z,0.4nm,0.6s,baz=13,slow=6.4,SNR=4.6						
NB2	**NORSAR Subarra**	**68.61**	**341**	P	**P**	**05 34 12.7**	**+0.8**
	comp=Z,1.0nm,0.6s,baz=28,slow=6.5						
NOA	**NORSAR Array B**	**68.61**	**341**	P	**P**	**05 34 11.7**	**-0.1**
	comp=Z,9.2nm,1.2s,baz=29,slow=6.6,SNR=7.6						
NOA	**NORSAR Array B**	**68.61**	**341**	*e*P	**P**	**05 34 12.3**	**+0.4**
NOA				pmax	pmax		
	comp=Z,1.0nm,0.5s						
WUAZ	**Wupatki**	**68.96**	**60**	*e*P	**P**	**05 34 15.1**	**+0.5**
	comp=Z,1.8nm,0.7s						
KBZ	**Khabaz**	**71.04**	**314**	P	**P**	**05 34 27.6**	**+0.6**
	comp=Z,2.2nm,0.5s,baz=111,slow=4.3,SNR=6.0						
KBZ				LR	LR	06 10 15.7	
	comp=Z,43nm,18.9s,baz=22,slow=40						
ZEI	**Tsey**	**71.21**	**313**	*e*P	**P**	**05 34 28.4**	**+0.1**
ZEI				pmax	pmax		
	comp=Z,6.0nm,0.6s						
ZEI	**Tsey**	**71.21**	**313**	*e*P	**P**	**05 34 28.4**	**+0.1**
ASAR	**Alice Springs**	**71.68**	**198**	P	**P**	**05 34 30.6**	**-0.4**
	comp=Z,0.4nm,0.5s,baz=13,slow=6.4,SNR=4.3						
AKASG	**Malin Array Be**	**71.82**	**326**	P	**P**	**05 34 31.3**	**-0.3**
	comp=Z,1.2nm,0.4s,baz=35,slow=6.8,SNR=5.9						
AKASG	**Malin Array Be**	**71.82**	**326**	*i* P	**P**	**05 34 31.7**	**+0.1**
AKASG				pmax	pmax		
	comp=Z,1.0nm,0.4s						
CLL	**Collm**	**76.81**	**335**	*e*(P)	**P**	**05 35 02.0**	**+1.4**
CLL	**Collm**	**76.81**	**335**	*e*P	**P**	**05 35 02.0**	**+1.4**
CLL	**Collm**	**76.81**	**335**	*e*P	**P**	**05 35 02.0**	**+1.4**
TXAR	**Lajitas Array**	**77.92**	**60**	P	**P**	**05 35 07.3**	**-0.1**
	comp=Z,0.4nm,0.5s,baz=307,slow=4.9,SNR=6.5						
BRTR	**Keskin Array B**	**78.59**	**317**	*e*P	**P**	**05 35 11.6**	**+0.7**
BRTR				pmax	pmax		
	comp=Z,1.0nm,0.3s						
PLCA	**Paso Flores**	**148.38**	**96**	PKPbc	**PKPbc**	**05 42 55.0**	**-0.1**
	comp=Z,2.1nm,0.9s,baz=263,slow=3.6,SNR=5.2						

IDC 23 05:23:53.7±2.1, 6°.81S×155°.23E, h0km, mb3.7/5, mb1 4.0/5, mb1mx3.6/45, mbtmp3.7/5, Error ellipse: s-maj=75.6km s-min=30.2km az=126.0, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**24.12**	**235**	P	P	05 29 11.5	+0.1
	0.9nm,0.6s,baz=60,slow=9.4,SNR=15						
ASAR	**Alice Springs**	**26.47**	**228**	P	P	05 29 32.9	0.0
	0.6nm,0.8s,baz=60,slow=9.8,SNR=3.2						
CMAR	**Chiang Mai Arr**	**60.92**	**295**	P	P	05 34 08.9	-0.1
	1.1nm,0.3s,baz=126,slow=6.4,SNR=5.0						
ILAR	**Eielson Array**	**83.12**	**21**	P	P	05 36 21.3	+0.1
	0.2nm,0.4s,baz=252,slow=5.2,SNR=4.2						
MKAR	**Makanchi Array**	**83.42**	**319**	P	P	05 36 23.3	+0.1
	0.3nm,0.6s,baz=116,slow=5.3,SNR=3.4						
TORD	**Torodi Ar. Bea**	**153.21**	**286**	PKPbc	PKPbc	05 43 54.4	-0.4
	0.2nm,0.5s,baz=78,slow=2.1,SNR=4.1						

*NIED **23** 05:33:00, 38°.70N×142°.30E, h53km, Mw3.7 Best double couple: M0=4.52000×10^14 NP1:φ0=254.00000°, δ16.00000°, λ139.00000°. NP2:φ0=24.00000°, δ79.00000°, λ78.00000°.*
*IDC **23** 05:33:18.1±2.8, 38°.84N×142°.80E, h0km, mb3.7/4, mb1 3.7/5, mb1mx3.4/54, mbtmp3.6/5, ML3.5/1, Error ellipse: s-maj=68.3km s-min=32.6km az=75.0*
*ISCJB **23** 05:33:24.9±1.5, 38°.69N±0°.05×142°.3E±0°.1, h48km±11km, mb3.7/4, Error ellipse: s-maj=18.6km s-min=7.9km az=10.3*
*JMA **23** 05:33:25.3±0.1, 38°.70N×142°.25E, h38km±2km, M3.9*
JMA Felt I J1.
ISC 23 05:33:24.9±2.4, 38°.71N±0°.06×142°.3E±0°.1, h33km±10km, n21, σ0°99/21, mb3.7/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.62**	**307**	P	**Pn**	**05 33 37.4**	**+0.1**
OFUJ				*e*S	**Sb**	**05 33 45.8**	**-0.1**
JIO	**Ouri**	**0.79**	**252**	P	**Pn**	**05 33 39.3**	**-0.4**
JIO				*e*S	**Sn**	**05 33 48.9**	**-1.5**
JMK	**Ichinoseki**	**0.88**	**286**	P	**Pn**	**05 33 41.0**	**0.0**
JOM	**Ohasama**	**1.10**	**314**	P	**Pn**	**05 33 44.5**	**+0.6**
JOM				*e*S	**Sn**	**05 33 58.2**	**+0.2**
JOU	**Okura**	**1.33**	**256**	P	**Pn**	**05 33 47.3**	**+0.1**
JOU				S	**Sn**	**05 34 03.6**	**-0.2**
JMM	**Marumori**	**1.46**	**235**	P	**Pn**	**05 33 48.5**	**-0.4**
JMM				*e*S	**Sn**	**05 34 05.8**	**-1.0**
JRG	**Rokugo**	**1.47**	**298**	P	**P

1.5nm,0.6s,baz=83,slow=8.3,SNR=4.1
BVAR Borovoye Array 49.98 311 P **P 05 42 15.3 -0.3**
0.4nm,0.4s,baz=68,slow=9.4,SNR=3.2
WRA Warramunga Arr 58.82 189 P **P 05 43 19.5 -0.6**
0.4nm,0.8s,baz=7.4,slow=7.0,SNR=3.3

JMA 23 05:45:21.1±0.3, 37.30N×142.82E, h22km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.55**	**273**	*e*S	Sn	05 46 07.5	+0.6
JMM	**Marumori**	**1.71**	**290**	P	Pn	05 45 50.3	+0.8
JMM				*e*S	Sn	05 46 11.5	+0.8
JFT	**Otama**	**1.99**	**277**	P	Pb	05 45 55.2	-1.4
JFT				*e*S	Sb	05 46 19.7	-1.2
JMK	**Ichinoseki**	**2.08**	**323**	*e*S	Sn	05 46 21.1	+1.3
JYK	**Kaneyama**	**2.52**	**311**	P	Pn	05 46 02.0	+1.2
JAG	**Ashikaga**	**2.84**	**253**	P	Pn	05 46 05.9	+0.8
JAG				*e*S	Sn	05 46 38.3	-0.3
JRY	**Ryogami san**	**3.40**	**249**	P	Pn	05 46 13.4	+0.5
JRY				*e*S	Sn	05 46 50.7	-1.8

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*ISCJB **23** 05:45:51.9±0.7, 31.25N±0.07×115.67W±0.05, h26km±9km, Error ellipse: s-maj=12.8km s-min=6.5km az=17.0*
*ECX **23** 05:45:53.1±0.4, 31.28N×115.68W, h5km, MD2.2, ML2.4*
*MEX **23** 05:45:54.2±0.6, 31.25N×115.57W, h16km±21km, MD3.5*
ISC 23 05:45:51.2±1.3, 31.35N±0.07×115.59W±0.06, h16km±12km, n9, σ0°24/18, 5C-1D, Baja California

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SPIG	**San Pedro Mart**	**0.32**	**160**	*i* P	**Pb**	**05 45 58.9**	**+0.2**
SPIG				*i* S	**Sg**	**05 46 02.3**	**-0.4**
SPIG	**San Pedro Mart**	**0.32**	**160⇑**	*e*P	**Pb**	**05 45 58.7**	**-0.1**
SPIG				*e*S	**Sg**	**05 46 02.8**	**0.0**
SPX	**San Pedro Mart**	**0.32**	**160⇓**	*e*P	**Pb**	**05 45 59.0**	**+0.2**
SPX				*e*S	**Sg**	**05 46 03.1**	**+0.2**
SPX			⇑	*e*		05 46 03.9	
SPX				AML	AML	05 46 03.9	
	comp=N,469nm,0.1s						
ECBX	**El Chinero**	**0.48**	**75⇑**	*e*P	**Pn**	**05 46 03.5**	**+0.1**
ECBX				*e*S	**Sn**	**05 46 11.0**	**-0.5**
ECBX				AML	AML	05 46 14.5	
	comp=E,158nm,0.1s						
ECBX				*e*		05 46 14.5	
ZAX	**El Zacaton**	**0.60**	**286⇑**	*e*P	**Pb**	**05 46 03.3**	**-0.2**
ZAX				*e*S	**Sg**	**05 46 11.0**	**-0.2**
ZAX				AML	AML	05 46 12.7	
	comp=E,214nm,0.3s						
ZAX				*e*		05 46 12.7	
ZAX			⇑	*e*		05 46 13.0	
ZAX				AML	AML	05 46 13.0	
	comp=N,189nm,0.3s						
PBX	**Punta Banda**	**1.04**	**292**	*e*P	**Pb**	**05 46 10.7**	**-0.1**
PBX				*e*S	**Sb**	**05 46 24.4**	**+0.1**
CBX	**Cerro Bola**	**1.32**	**317**	*e*P	**Pb**	**05 46 16.0**	**+0.2**
CBX				*i* S	**Sb**	**05 46 32.6**	**+0.1**
CBX	**Cerro Bola**	**1.32**	**317**	*e*P	**Pb**	**05 46 15.9**	**+0.2**
CBX				*e*S	**Sg**	**05 46 34.0**	**0.0**
TJIG	**Tijuana**	**1.42**	**320**	*i* P	**Pn**	**05 46 16.6**	**+0.2**
TJIG				*i* S	**Sn**	**05 46 34.6**	**-0.1**

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*IDC **23** 05:51:03.8±2.9, 35.88N×141.45E, h0km, mb3.6/3, mb1 3.8/5, mb1mx3.4/64, mbtmp3.7/5, ML3.9/2, MS2.9/3, Ms1 2.9/3, ms1mx2.4/33, Error ellipse: s-maj=79.6km s-min=25.4km az=62.0*
*ISCJB **23** 05:51:11.4±0.8, 35.70N±0.05×140.85E±0.09, h52km±5km, mb3.5/3, MS3.5/1, Error ellipse: s-maj=13.0km s-min=6.9km az=155.2*
*JMA **23** 05:51:12.5±0.1, 35.68N×140.72E, h45km±1km, M2.8*
ISC 23 05:51:12.1±1.1, 35.68N±0.06×140.84E±0.08, h44km±8km, n17, σ1°11/19, mb3.7/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.03**	**44**	P	**Pn**	**05 51 19.6**	**+0.6**
CHOJ				S	**Sn**	**05 51 24.1**	**+0.3**
JCN	**Nagara**	**0.58**	**243**	P	**Pn**	**05 51 23.9**	**-0.1**
JCN				*e*S	**Sn**	**05 51 32.7**	**+0.2**
JYT	**Yasato**	**0.75**	**316**	P	**Pn**	**05 51 25.9**	**-0.4**
JYT				S	**Sn**	**05 51 35.8**	**-0.8**
BSO4	**Boso 4**	**0.80**	**211**	P	**Pn**	**05 51 28.2**	**+1.3**
BSO3	**Boso 3**	**0.92**	**197**	P	**Pn**	**05 51 28.7**	**+0.3**
JHO	**Hitachi**	**0.95**	**347**	P	**Pn**	**05 51 29.7**	**+0.7**
BSO1	**Boso 1**	**1.03**	**173**	P	**Pn**	**05 51 30.2**	**+0.5**
BSO1				*e*S	**Sn**	**05 51 44.0**	**+1.3**
JAG	**Ashikaga**	**1.34**	**304**	P	**Pn**	**05 51 34.1**	**-0.3**
MJAR	**Matsushiro Arr**	**2.29**	**293**	Pn	**Pn**	**05 51 48.2**	**+0.8**
	7.0nm,0.3s,baz=99,slow=15,SNR=30						
MAT	**Matsushiro**	**2.29**	**293**	P	**Pn**	**05 51 49.4**	**+1.9**
MAT				*e*S	**Sn**	**05 52 14.9**	**+0.4**
JNU	**Nakatsue**	**8.64**	**172**	LR	LR	05 56 55.6	
	comp=Z,54nm,18.8s,baz=116,slow=38						
JCJ	**Chichijima**	**8.64**	**172**	Pn	**Pn**	**05 53 11.7**	**-2.8**
	4.7nm,0.3s,baz=288,slow=23,SNR=7.2						
JCJ				Sn	Sn	05 54 41.4	-9.3
	0.9nm,0.3s,baz=282,slow=20,SNR=2.2						
KSRS	**Korea Array**	**10.54**	**283**	LR	LR	05 57 03.2	
	comp=Z,20nm,18.5s,baz=108,slow=33						
MKAR	**Makanchi Array**	**44.45**	**303**	P	**P**	**05 59 18.6**	**-0.2**
	0.2nm,0.3s,baz=90,slow=9.3,SNR=3.6						
KURBB	**Kurchatov Arra**	**46.48**	**309**	P	**P**	**05 59 34.5**	**-0.1**
	0.5nm,0.6s,baz=81,slow=7.7,SNR=4.7						
WRA	**Warramunga Arr**	**55.66**	**187**	P	**P**	**06 00 43.6**	**-0.3**
	0.6nm,0.8s,baz=1.4,slow=7.3,SNR=4.5						
ASAR	**Alice Springs**	**59.39**	**187**	LR	LR	06 25 52.5	
	comp=Z,35nm,20.7s,baz=78,slow=35						

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*ISK **23** 05:51:28.2, 39.02N×29.22E, h10km, MD2.5*
*ISCJB **23** 05:51:29.3±0.5, 39.11N±0.03×29.06E±0.04, h8km±6km, Error ellipse: s-maj=6.7km s-min=4.2km az=137.2*
*CSEM **23** 05:51:29.3±0.1, 39.12N×29.05E, h8km, MD2.3, Error ellipse: s-maj=1.6km s-min=1.0km az=124.0*
*DDA **23** 05:51:29.5, 39.08N×29.06E, h7km, Md2.3*
ISC 23 05:51:28.6±1.1, 39.03N±0.03×29.14E±0.03, h7km±11km, n22, σ0°34/34, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.28**	**77**	P	**Pb**	**05 51 36.3**	**+0.4**
GDZ				S	**Sb**	**05 51 41.2**	**+0.4**
GDZ	**Gediz**	**0.28**	**77**	*i* P	**Pb**	**05 51 36.3**	**+0.4**
GDZ				*i* S	**Sb**	**05 51 41.2**	**+0.4**
DEMI	**Demirci**	**0.33**	**273**	P	**Pg**	**05 51 35.2**	**+0.1**
DEMI				S	**Sg**	**05 51 39.3**	**-0.1**
DEMI	**Demirci**	**0.33**	**273**	*i* P	**Pg**	**05 51 35.2**	**+0.1**
DEMI				*i* S	**Sg**	**05 51 39.3**	**-0.1**
TVSB	**Tavsanli**	**0.49**	**31**	*e*PG	**Pg**	**05 51 38.2**	**+0.1**
TVSB				*e*SG	**Sg**	**05 51 44.4**	**-0.2**
TVSB	**Tavsanli**	**0.49**	**31**	*e*Pg	**Pg**	**05 51 38.2**	**+0.1**
TVSB				*e*Sg	**Sg**	**05 51 44.4**	**-0.2**
KULA	**Kula-Manisa**	**0.63**	**216**	*e*PG	**Pb**	**05 51 42.2**	**+0.2**
KULA				*e*SG	**Sb**	**05 51 51.1**	**+0.1**
KULA	**Kula-Manisa**	**0.63**	**216**	*e*Pg	**Pb**	**05 51 42.2**	**+0.2**
KULA				*e*Sg	**Sb**	**05 51 51.1**	**+0.1**
MANT	**Manisa**	**0.70**	**220**	P	**Pb**	**05 51 43.6**	**+0.4**
MANT				S	**Sb**	**05 51 53.3**	**+0.2**
MANT	**Manisa**	**0.70**	**220**	*i* P	**Pb**	**05 51 43.6**	**+0.4**
MANT				*i* S	**Sb**	**05 51 53.4**	**+0.2**
KHAL	**Karahalli**	**0.71**	**157**	P	**Pn**	**05 51 45.7**	**+0.6**
KHAL				S	**Sn**	**05 51 56.0**	**-0.3**
KHAL	**Karahalli**	**0.71**	**157**	*i* P	**Pn**	**05 51 45.7**	**+0.6**
KHAL				*i* S	**Sn**	**05 51 56.0**	**-0.3**
KHL	**Karahalli**	**0.76**	**157**	*e*PG	**Pg**	**05 51 42.6**	**-0.7**
KHL	**Karahalli**	**0.76**	**157**	*e*Pg	**Pg**	**05 51 42.6**	**-0.7**
AKS	**Akhisar**	**1.04**	**262**	*e*PN	**Pn**	**05 51 49.5**	**-0.1**
AKS	**Akhisar**	**1.04**	**262**	*e*Pn	**Pn**	**05 51 49.5**	**-0.1**
CAVI	**Cavuskoy**	**1.29**	**25**	*e*PN	**Pn**	**05 51 53.0**	**-0.1**
CAVI	**Cavuskoy**	**1.29**	**25**	*e*Pn	**Pn**	**05 51 53.0**	**-0.1**
IZI	**Iznik**	**1.33**	**11**	*e*PN	**Pn**	**05 51 53.5**	**-0.2**
IZI	**Iznik**	**1.33**	**11**	*e*Pn	**Pn**	**05 51 53.5**	**-0.2**
ARMT	**Armutlu**	**1.55**	**352**	*e*PN	**Pn**	**05 51 56.1**	**-0.5**
ARMT	**Armutlu**	**1.55**	**352**	*e*Pn	**Pn**	**05 51 56.1**	**-0.5**

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*ISCJB **23** 05:58:24.1±0.7, 15.25S±0.2×174.2W±0.1, h100km, mb4.0/8, Error ellipse: s-maj=36.0km s-min=9.6km az=151.8*
*IDC **23** 05:58:25.9±2.8, 15.14S×174.26W, h101km±26km, mb3.6/7, mb1 4.0/8, mb1mx3.7/38, mbtmp4.0/8, MS3.2/2, Ms1 3.2/2, ms1mx2.8/37, Error ellipse: s-maj=42.3km s-min=17.1km az=144.0*
ISC 23 05:58:25.8±0.8, 15.2S±0.2×174.2W±0.2, h100km, n11, σ0°88/13, mb3.8/8, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**2.66**	**63**	P	**Pn**	**05 59 08.2**	**+1.1**
	154nm,0.3s,baz=140,slow=0.6,SNR=172						
AFI				S	**Sn**	**05 59 37.4**	**-1.4**
	224nm,0.3s,baz=78,slow=23,SNR=14						
AFI				LR	LR	06 00 09.4	
	comp=Z,224nm,21.5s,baz=257,slow=38						
WRA	**Warramunga Arr**	**49.14**	**257**	P	**P**	**06 07 02.9**	**-1.0**
	3.0nm,0.5s,baz=91,slow=7.1,SNR=74						
WRA				PcP	**PcP**	**06 08 25.9**	**-0.1**
	1.0nm,0.9s,baz=85,slow=3.7,SNR=4.9						
ASAR	**Alice Springs**	**49.45**	**252**	P	**P**	**06 07 05.2**	**-0.9**
	15nm,0.4s,baz=89,slow=7.9,SNR=234						
ASAR				PcP	**PcP**	**06 08 27.1**	**0.0**
	1.1nm,0.6s,baz=99,slow=4.0,SNR=4.4						
VNDA	**Vanda**	**63.55**	**186**	P	**P**	**06 08 45.5**	**+0.2**
	0.9nm,0.9s,baz=56,slow=2.7,SNR=3.5						
NVAR	**Mina Array Bea**	**74.67**	**42**	P	**P**	**06 09 55.1**	**+0.3**
	1.9nm,0.8s,baz=230,slow=8.7,SNR=9.4						
KLR	**Kul'dur**	**79.88**	**327**	LR	LR	06 39 55.3	
	comp=Z,24nm,20.6s,baz=216,slow=31						
ILAR	**Eielson Array**	**82.35**	**11**	P	**P**	**06 10 36.2**	**0.0**
	0.3nm,0.5s,baz=221,slow=5.7,SNR=7.0						
PDAR	**Pinedale Array**	**82.60**	**42**	P	**P**	**06 10 37.6**	**-0.6**
	0.6nm,0.6s,baz=197,slow=3.8,SNR=6.9						
YKA	**Yellowknife Ar**	**90.18**	**24**	P	**P**	**06 11 14.4**	**-0.2**
	0.2nm,0.7s,baz=237,slow=4.8,SNR=4.0						
CMAR	**Chiang Mai Arr**	**91.79**	**289**	P	**P**	**06 11 24.5**	**+1.4**
	0.6nm,0.3s,baz=103,slow=2.9,SNR=4.8						
BRTR	**Keskin Array B**	**145.47**	**321**	PKPbc	**PKPdf**	**06 17 52.3**	**-0.4**
	1.0nm,0.5s,baz=50,slow=2.1,SNR=7.7						

IDC 23 05:59:03.2±1.9, 0.01N×124.88E, h0km, mb3.5/3, mb1 3.8/3, mb1mx3.5/37, mbtmp3.6/3, Error ellipse: s-maj=194.0km s-min=26.5km az=63.0, Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**21.89**	**156**	P	P	06 03 57.2	-0.8
	0.7nm,0.5s,baz=334,slow=10,SNR=13						
ASAR	**Alice Springs**	**25.11**	**160**	P	P	06 04 30.7	+0.7
	1.3nm,0.8s,baz=342,slow=8.3,SNR=11						
MKAR	**Makanchi Array**	**59.61**	**327**	P	P	06 09 08.9	-0.2
	0.3nm,0.3s,baz=126,slow=8.5,SNR=4.2						

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*ISCJB **23** 06:12:55.0±0.5, 39.10N±0.03×29.03E±0.03, h2km±5km, Error ellipse: s-maj=5.2km s-min=3.5km az=158.6*
*ISK **23** 06:12:54.9, 39.10N×29.05E, h6km, MD2.7*
*DDA **23** 06:12:55.0, 39.11N×29.03E, h7km, Md2.6*
*CSEM **23** 06:12:55.3±0.1, 39.09N×29.03E, h5km, MD2.6, Error ellipse: s-maj=2.3km s-min=1.9km az=138.0*
ISC 23 06:12:55.4±1.0, 39.11N±0.02×29.02E±0.02, h8km±9km, n53, σ0°45/69, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**255**	P	**Pg**	**06 13 00.4**	**+0.1**
DEMI				S	**Sg**	**06 13 03.8**	**+0.2**
DEMI	**Demirci**	**0.24**	**255**	*i* P	**Pg**	**06 13 00.4**	**+0.1**
DEMI				*i* S	**Sg**	**06 13 03.8**	**+0.2**
GDZ	**Gediz**	**0.36**	**93**	P	**Pg**	**06 13 02.5**	**-0.1**
GDZ				S	**Sg**	**06 13 07.6**	**+0.3**
GDZ	**Gediz**	**0.36**	**93**	*i* P	**Pg**	**06 13 02.5**	**-0.1**
GDZ				*i* S	**Sg**	**06 13 07.6**	**+0.3**
TVSB	**Tavsanli**	**0.49**	**45**	*e*PG	**Pg**	**06 13 05.0**	**+0.1**
TVSB				*e*SG	**Sg**	**06 13 11.1**	**-0.2**
TVSB	**Tavsanli**	**0.49**	**45**	*e*Pg	**Pg**	**06 13 05.0**	**+0.1**
TVSB				*e*Sg	**Sg**	**06 13 11.1**	**-0.2**
DURS	**Dursunbey**	**0.65**	**320**	P	**Pg**	**06 13 07.5**	**-0.5**
DURS	**Dursunbey**	**0.65**	**320**	*i* P	**Pg**	**06 13 07.5**	**-0.5**
KULA	**Kula-Manisa**	**0.65**	**205**	*e*PG	**Pg**	**06 13 07.9**	**-0.2**
KULA	**Kula-Manisa**	**0.65**	**205**	*e*Pg	**Pg**	**06 13 07.9**	**-0.2**
MANT	**Manisa**	**0.71**	**210**	P	**Pg**	**06 13 08.8**	**-0.4**
MANT				S	**Sg**	**06 13 17.7**	**-0.7**
MANT	**Manisa**	**0.71**	**210**	*i* P	**Pg**	**06 13 08.8**	**-0.4**
MANT				*i* S	**Sg**	**06 13 17.7**	**-0.7**
KHAL	**Karahalli**	**0.82**	**153**	P	**Pg**	**06 13 11.2**	**-0.1**
KHAL	**Karahalli**	**0.82**	**153**	*i* P	**Pg**	**06 13 11.2**	**-0.1**
KHAL				*i* S	**Sn**	**06 13 26.5**	**+0.6**
KHL	**Karahalli**	**0.88**	**153**	*e*PG	**Pg**	**06 13 12.0**	**-0.3**
KHL	**Karahalli**	**0.88**	**153**	*e*Pg	**Pg**	**06 13 12.0**	**-0.3**
ORLT	**Orhaneli**	**0.94**	**354**	*e*PG	**Pg**	**06 13 13.6**	**0.0**
ORLT	**Orhaneli**	**0.94**	**354**	*e*Pg	**Pg**	**06 13 13.6**	**0.0**
AKHS	**Akhisar**	**0.96**	**257**	P	**Pg**	**06 13 14.0**	**+0.1**
AKHS				S	**Sb**	**06 13 27.6**	**+0.3**
AKHS	**Akhisar**	**0.96**	**257**	*i* P	**Pg**	**06 13 14.0**	**+0.1**
AKHS				*i* S	**Sb**	**06 13 27.6**	**+0.3**
AKS	**Akhisar**	**0.96**	**257**	*e*PG	**Pb**	**06 13 14.2**	**-0.2**
AKS	**Akhisar**	**0.96**	**257**	*e*Pg	**Pb**	**06 13 14.2**	**-0.2**
BALB	**Balikesir**	**1.03**	**301**	*e*PG	**Pb**	**06 13 15.8**	**+0.3**
BALB				*e*SG	**Sn**	**06 13 30.3**	**-0.5**
BALB	**Balikesir**	**1.03**	**301**	*e*Pg	**Pb**	**06 13 15.8**	**+0.3**
BALB				*e*Sg	**Sn**	**06 13 30.3**	**-0.5**
IGD	**Bursa**	**1.17**	**7**	*i* P	**Pg**	**06 13 16.3**	**-1.5**
IGD				*i* S	**Sb**	**06 13 33.5**	**+0.4**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*PN	**Pg**	**06 13 20.4**	**+0.7**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*Pn	**Pg**	**06 13 20.4**	**+0.7**
MDNY	**Mudanya-Bursa**	**1.27**	**355**	*e*PN	**Pn**	**06 13 19.4**	**0.0**
MDNY	**Mudanya-Bursa**	**1.27**	**355**	*e*Pn	**Pn**	**06 13 19.4**	**0.0**
CAVI	**Cavuskoy**	**1.27**	**30**	*e*PN	**Pn**	**06 13 19.3**	**-0.2**
CAVI	**Cavuskoy**	**1.27**	**30**	*e*Pn	**Pn**	**06 13 19.3**	**-0.2**
IZI	**Iznik**	**1.28**	**16**	*e*PN	**Pn**	**06 13 19.3**	**-0.4**
IZI	**Iznik**	**1.28**	**16**	*e*Pn	**Pn**	**06 13 19.3**	**-0.4**
BORA	**Eskisehir**	**1.35**	**55**	P	**Pn**	**06 13 20.2**	**-0.6**
BORA				S	**Sn**	**06 13 38.9**	**-0.1**
BORA	**Eskisehir**	**1.35**	**55**	*i* P	**Pn**	**06 13 20.2**	**-0.6**
BORA				*i* S	**Sn**	**06 13 38.9**	**-0.1**
GONE	**Gonen-Balikesi**	**1.39**	**313**	*e*PN	**Pb**	**06 13 21.9**	**+0.3**
GONE	**Gonen-Balikesi**	**1.39**	**313**	*e*Pn	**Pb**	**06 13 22.0**	**+0.3**
ADVT	**Abdulvahap**	**1.44**	**23**	*e*PN	**Pb**	**06 13 22.5**	**0.0**
ADVT	**Abdulvahap**	**1.44**	**23**	*e*Pn	**Pb**	**06 13 22.5**	**0.0**
ARMT	**Armutlu**	**1.46**	**355**	*e*PN	**Pb**	**06 13 23.0**	**+0.1**
ARMT	**Armutlu**	**1.46**	**355**	*e*Pn	**Pb**	**06 13 23.0**	**+0.1**
EDC	**Edincik**	**1.52**	**325**	*e*PN	**Pn**	**06 13 23.0**	**0.0**
EDC	**Edincik**	**1.52**	**325**	*e*Pn	**Pn**	**06 13 23.0**	**0.0**
GPA	**Golpazari**	**1.54**	**40**	*e*PN	**Pn**	**06 13 23.6**	**+0.2**
GPA	**Golpazari**	**1.54**	**40**	*e*Pn	**Pn**	**06 13 23.6**	**+0.2**
GULT	**Gulveren**	**1.76**	**41**	*e*PN	**Pn**	**06 13 26.1**	**-0.2**
GULT	**Gulveren**	**1.76**	**41**	*e*Pn	**Pn**	**06 13 26.1**	**-0.2**
HRT	**Hereke**	**1.78**	**16**	*e*PN	**Pb**	**06 13 27.7**	**-0.7**
HRT	**Hereke**	**1.78**	**16**	*e*Pn	**Pb**	**06 13 27.7**	**-0.7**
ISK	**Istanbul-Kandi**	**1.96**	**1**	*e*PN	**Pn**	**06 13 29.8**	**+0.8**
ISK	**Istanbul-Kandi**	**1.96**	**1**	*e*Pn	**Pn**	**06 13 29.8**	**+0.8**
SVRH	**Sivrihisar-ESK**	**1.97**	**79**	*e*PN	**Pn**	**06 13 30.3**	**+1.0**
SVRH	**Sivrihisar-ESK**	**1.97**	**79**	*e*Pn	**Pn**	**06 13 30.3**	**+1.0**

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*ISK **23** 06:13:32.0, 39.09N×29.01E, h5km, MD2.8*
*DDA **23** 06:13:32.5, 39.08N×29.04E, h8km, Md2.6*
*CSEM **23** 06:13:33.1±0.1, 39.09N×29.03E, h2km, MD2.6, Error ellipse: s-maj=2.3km s-min=1.9km az=124.0*
ISC 23 06:13:33.1±1.1, 39.09N±0.02×29.03E±0.02, h2km±12km, n55, σ0°47/70, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**259**	P	**Pg**	**06 13 37.8**	**-0.1**
DEMI				S	**Sg**	**06 13 41.2**	**+0.1**
DEMI	**Demirci**	**0.25**	**259**	*i* P	**Pg**	**06 13 37.8**	**-0.1**
DEMI				*i* S	**Sg**	**06 13 41.2**	**+0.1**
GDZ	**Gediz**	**0.35**	**90**	P	**Pg**	**06 13 39.4**	**-0.5**
GDZ				S	**Sg**	**06 13 45.0**	**+0.5**
GDZ	**Gediz**	**0.35**	**90**	*i* P	**Pg**	**06 13 39.4**	**-0.5**
GDZ				*i* S	**Sg**	**06 13 45.0**	**+0.5**
TVSB	**Tavsanli**	**0.49**	**43**	PG	**Pg**	**06 13 43.0**	**+0.5**
TVSB	**Tavsanli**	**0.49**	**43**	*i* Pg	**Pg**	**06 13 43.0**	**+0.5**
KULA	**Kula-Manisa**	**0.65**	**207**	PG	**Pg**	**06 13 45.2**	**-0.2**
KULA	**Kula-Manisa**	**0.65**	**207**	*i* Pg	**Pg**	**06 13 45.2**	**-0.2**
MANT	**Manisa**	**0.70**	**212**	P	**Pg**	**06 13 46.5**	**-0.1**
MANT				S	**Sg**	**06 13 55.5**	**-0.2**
MANT	**Manisa**	**0.70**	**212**	*i* P	**Pg**	**06 13 46.5**	**-0.1**
MANT				*i* S	**Sg**	**06 13 55.5**	**-0.2**
KHAL	**Karahalli**	**0.81**	**153**	P	**Pg**	**06 13 48.5**	**0.0**
KHAL				S	**Sb**	**06 14 00.6**	**-0.6**
KHAL	**Karahalli**	**0.81**	**153**	*i* P	**Pg**	**06 13 48.5**	**0.0**
KHAL				*i* S	**Sb**	**06 14 00.7**	**-0.6**
KHL	**Karahalli**	**0.86**	**153**	*e*PG	**Pg**	**06 13 50.0**	**+0.4**
KHL	**Karahalli**	**0.86**	**153**	*e*Pg	**Pg**	**06 13 50.0**	**+0.4**
ORLT	**Orhaneli**	**0.96**	**354**	*e*PG	**Pg**	**06 13 51.4**	**-0.1**
ORLT	**Orhaneli**	**0.96**	**354**	*e*Pg	**Pg**	**06 13 51.4**	**-0.1**
AKHS	**Akhisar**	**0.97**	**258**	P	**Pb**	**06 13 52.3**	**-0.3**
AKHS				S	**Sb**	**06 14 05.2**	**-0.6**
AKHS	**Akhisar**	**0.97**	**258**	*i* P	**Pb**	**06 13 52.4**	**-0.3**
AKHS				*i* S	**Sb**	**06 14 05.2**	**-0.6**
AKS	**Akhisar**	**0.97**	**258**	*e*PG	**Pg**	**06 13 51.9**	**+0.2**
AKS	**Akhisar**	**0.97**	**258**	*e*Pg	**Pg**	**06 13 51.9**	**+0.2**
BALB	**Balikesir**	**1.04**	**302**	*e*PG	**Pg**	**06 13 52.9**	**-0.2**
BALB				*e*SG	**Sb**	**06 14 08.1**	**+0.1**
BALB	**Balikesir**	**1.04**	**302**	*e*Pg	**Pg**	**06 13 52.9**	**-0.2**
BALB				*e*Sg	**Sb**	**06 14 08.1**	**+0.1**
IGD	**Bursa**	**1.18**	**6**	*i* P	**Pg**	**06 13 54.3**	**-1.3**
IGD				*i* S	**Sg**	**06 14 10.8**	**-0.1**
CAVI	**Cavuskoy**	**1.27**	**29**	*e*PN	**Pg**	**06 13 57.7**	**+0.2**
CAVI	**Cavuskoy**	**1.27**	**29**	*e*Pn	**Pg**	**06 13 57.7**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.28**	**355**	*e*PN	**Pg**	**06 13 57.4**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.28**	**355**	*e*Pn	**Pg**	**06 13 57.4**	**-0.2**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*PN	**Pg**	**06 13 57.6**	**0.0**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*Pn	**Pg**	**06 13 57.7**	**0.0**
IZI	**Iznik**	**1.29**	**15**	*e*PN	**Pb**	**06 13 58.2**	**+0.1**
IZI	**Iznik**	**1.29**	**15**	*e*Pn	**Pb**	**06 13 58.2**	**+0.1**
DENT	**Denizli**	**1.34**	**180**	*e*PN	**Pb**	**06 13 59.2**	**+0.4**
DENT	**Denizli**	**1.34**	**180**	*e*Pn	**Pb**	**06 13 59.2**	**+0.4**
BORA	**Eskisehir**	**1.35**	**54**	P	**Pg**	**06 13 57.5**	**-1.6**
BORA				S	**Sg**	**06 14 16.6**	**0.0**
BORA	**Eskisehir**	**1.35**	**54**	*i* P	**Pg**	**06 13 57.5**	**-1.6**
BORA				*i* S	**Sg**	**06 14 16.6**	**0.0**
GONE	**Gonen-Balikesi**	**1.41**	**313**	*e*PN	**Pn**	**06 13 59.5**	**-0.2**
GONE	**Gonen-Balikesi**	**1.41**	**313**	*e*Pn	**Pn**	**06 13 59.5**	**-0.2**
ADVT	**Abdulvahap**	**1.45**	**22**	*e*PN	**Pg**	**06 14 00.8**	**0.0**
ADVT	**Abdulvahap**	**1.45**	**22**	*e*Pn	**Pg**	**06 14 00.8**	**0.0**
ARMT	**Armutlu**	**1.48**	**355**	*e*PN	**Pn**	**06 14 01.1**	**+0.4**
ARMT	**Armutlu**	**1.48**	**355**	*e*Pn	**Pn**	**06 14 01.1**	**+0.4**
EDC	**Edincik**	**1.54**	**325**	*e*PN	**Pn**	**06 14 01.9**	**+0.4**
EDC	**Edincik**	**1.54**	**325**	*e*Pn	**Pn**	**06 14 01.9**	**+0.4**
GPA	**Golpazari**	**1.55**	**39**	PN	**Pn**	**06 14 01.9**	**+0.2**
GPA	**Golpazari**	**1.55**	**39**	*i* Pn	**Pn**	**06 14 01.9**	**+0.2**
GULT	**Gulveren**	**1.76**	**40**	PN	**Pn**	**06 14 05.2**	**+0.6**
GULT	**Gulveren**	**1.76**	**40**	*i* Pn	**Pn**	**06 14 05.3**	**+0.6**
HRT	**Hereke**	**1.80**	**16**	*e*PN	**Pn**	**06 14 05.5**	**+0.4**
HRT	**Hereke**	**1.80**	**16**	*e*Pn	**Pn**	**06 14 05.5**	**+0.4**
SPNC	**Sapanca-Adapaz**	**1.87**	**31**	*e*PN	**Pn**	**06 14 06.6**	**+0.5**
SPNC	**Sapanca-Adapaz**	**1.87**	**31**	*e*Pn	**Pn**	**06 14 06.6**	**+0.5**
ISK	**Istanbul-Kandi**	**1.97**	**1**	*e*PN	**Pn**	**06 14 08.1**	**+0.7**
ISK	**Istanbul-Kandi**	**1.97**	**1**	*e*Pn	**Pn**	**06 14 08.1**	**+0.7**
MDUB	**Mudurnu**	**2.17**

comp=Z,26nm,20.5s,baz=48,slow=37
WRA Warramunga Arr 54.97 190 P **P 06 41 20.2 +2.3**
2.0nm,0.7s,baz=9.0,slow=7.5,SNR=18
ASAR Alice Springs 58.69 190 P **P 06 41 47.0 +2.7**
0.8nm,0.8s,baz=16,slow=13,SNR=7.4
YKA Yellowknife Ar 65.20 30 P **P 06 42 26.7 -0.9**
0.3nm,0.8s,baz=307,slow=6.7,SNR=3.2
AKASG Malin Array Be 76.85 323 P **P 06 43 38.8 +0.4**
0.4nm,0.4s,baz=45,slow=6.1,SNR=3.8

NIED ***23*** *06:32:00, 39.°90N×144.°30E, h5km, Mw3.8 Best double couple: M₀6.20000×10¹⁴ NP1:ϕs358.00000°, δ37.00000°, λ-82.00000°. NP2:ϕs169.00000°, δ53.00000°, λ-96.00000°.*

JMA 23 06:32:20.4±0.2, 39.°95N×144.°27E, h38km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.85**	**270**	P	Pn	06 32 50.8	+1.2
MIYJ	**Miyakonagasawa**	**1.93**	**260**	P	Pn	06 32 51.7	+1.1
MIYJ				eS	Sn	06 33 15.2	+1.7
JANG	**Nango**	**2.15**	**282**	P	Pn	06 32 54.9	+1.2
JANG				S	Sn	06 33 20.5	+1.3
JOM	**Ohasama**	**2.35**	**259**	P	Pn	06 32 58.1	+1.7
JOM				eS	Sn	06 33 26.2	+2.3
JTM	**Tenmabayashi**	**2.58**	**290**	S	Sn	06 33 32.5	+2.7
JCH	**Churui**	**2.75**	**346**	P	Pn	06 33 03.6	+1.7
JCH				eS	Sn	06 33 35.1	+1.3
JAH	**Hinai**	**2.80**	**276**	P	Pn	06 33 04.9	+2.3
JAK	**Akkeshi**	**3.06**	**6**	eS	Sn	06 33 42.5	+1.0
JYK	**Kaneyama**	**3.20**	**252**	P	Pn	06 33 10.1	+2.0
JAR	**Ashorobuto**	**3.37**	**354**	P	Pn	06 33 11.4	+1.0
JAR				S	Sn	06 33 48.9	-0.1

IDC ***23*** *06:50:41.2±0.6, 1.°43S×120.°61E, h0km, mb4.3/13, mb1 4.4/15, mb1mx4.1/42, mbtmp4.3/15, ML3.8/2, MS3.2/6, Ms1 3.2/6, ms1mx2.9/30, Error ellipse: s-maj=28.6km s-min=12.0km az=70.0*
ISCJB ***23*** *06:50:43.4±0.2, 1.°51S±0.°03×120.°44E±0.°04, h23km, mb4.5/35, MS3.4/8, Error ellipse: s-maj=5.2km s-min=3.5km az=161.8*
DJA ***23*** *06:50:43.5±0.9, 1.°S±3.°×12.°0E±.°, h11km±8km, M4.7/13, mB5.2/2, mb4.8/3, MLv4.7/13, Mw(mB)4.6/2*
NEIC ***23*** *06:50:48.4±0.6, 1.°52S×120.°51E, h54km±7km, mb4.5/14, Error ellipse: s-maj=9.1km s-min=5.1km az=56.0*

ISC 23 06:50:45.4±0.4, 1.°53S±0.°04×120.°42E±0.°05, h23km, n84, σ1°38/87, mb4.6/35, MS3.2/8, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCI	**Palu**	**0.85**	**317**	P	Pb	06 50 57.4	-4.0
TTSI	**Tana Toraja**	**1.62**	**202**	P	**Pn**	**06 51 10.9**	**-1.7**
TTSI				S	**Sn**	**06 51 33.1**	**+0.3**
LUWI	**Luwuk**	**2.40**	**79**	P	**Pn**	**06 51 23.6**	**+0.3**
LUWI	**Luwuk**	**2.40**	**79**	ePn	**Pn**	**06 51 23.2**	**-0.1**
LUWI				eSn	**Sb**	**06 52 00.7**	**+3.5**
MRSI	**Marisa**	**2.50**	**37**	P	**Pn**	**06 51 23.5**	**-1.3**
MRSI				S	**Sn**	**06 51 55.3**	**+0.7**
SPSI	**Sidrap Palu**	**2.51**	**195**	P	**Pn**	**06 51 24.6**	**-0.2**
KDI	**Kendari**	**3.27**	**138**	P	**Pn**	**06 51 34.4**	**-0.8**
KAPI	**Kappang**	**3.53**	**191**	Pn	**Pn**	**06 51 40.7**	**+1.8**
28nm,0.3s,baz=347,slow=7.6,SNR=65
KAPI Sn **Sn 06 52 22.6 +2.7**
31nm,0.3s,baz=169,slow=21,SNR=6.8
KAPI Kappang 3.53 191 ePn **Pn 06 51 40.0 +1.2**
KAPI eSn **Sn 06 52 22.6 +2.7**
BSSI Bau Bau, Buton 4.59 179 P **Pn 06 51 53.5 +0.1**
SANI Sanana 5.59 95 P **Pn 06 52 07.6 +0.4**
40nm,1.0s,2μm0.2nm
BBKI Banjar Baru 5.89 251 P **Pn 06 52 10.4 -1.0**
NLAI Namlea 6.89 104 P **Pn 06 52 25.3 +0.2**
MYLDM Lahad Datu 6.93 344 ePn **Pn 06 52 28.1 +2.5**
KKM Kota Kinabalu 8.61 331 ePn Pn 06 52 52.2 +3.4
KKM eSn **Sn 06 54 28.2 +2.9**
SOEI Soe 9.03 155 ePn Pn 06 52 58.4 +3.8
DAV Davao City (W) 9.97 31 LR LR 06 57 21.2
comp=Z,131nm,20.3s,baz=166,slow=41
FAKI Fak Fak 11.90 97 ePn **Pn 06 53 33.0 -0.9**
SAUI Saumlaki 12.60 121 ePn **Pn 06 53 44.4 +1.1**
SAUI eSn Sn 06 55 47.7 -15
FITZ Fitzroy Crossi 17.25 163 P **P 06 54 45.8 -0.6**
0.1nm,0.3s,baz=346,slow=12,SNR=2.7
FITZ Fitzroy Crossi 17.25 163 P **P 06 54 47.4 +1.1**
baz=17,SNR=3.0
FITZ Fitzroy Crossi 17.25 163 ePn **Pn 06 54 45.1 +0.2**
39nm,1.9s
IPM Ipoh 20.27 287 eP **P 06 55 20.8 +1.2**
25nm,1.2s
PSI Prapat 21.91 281 eP **P 06 55 37.8 +0.4**
13nm,0.8s
WRAB Tennant Creek 22.81 144 eP **P 06 55 46.0 -0.8**
26nm,1.1s
WR1 Warramunga Arr 22.81 144 eP **P 06 55 45.5 -1.4**
16nm,0.8s
WRA Warramunga Arr 22.81 144 P **P 06 55 45.5 -1.4**
9.0nm,0.8s,baz=320,slow=11,SNR=47
WB2 Warramunga Arr 22.82 144 eP **P 06 55 46.1 -0.9**
20nm,0.9s
GSI Gunungsitoli 23.01 277 eP **P 06 55 48.9 -0.1**
33nm,1.1s
WRKA Warakurna 24.58 163 P **P 06 56 03.2 -0.8**
baz=25,SNR=4.1
AS31 Alice Springs 25.60 150 eP **P 06 56 12.6 -0.6**
2.5nm,1.1s
ASAR Alice Springs 25.60 150 P **P 06 56 12.2 -1.0**
2.0nm,0.7s,baz=329,slow=8.7,SNR=21
ASAR LR LR 07 08 01.1
comp=Z,64nm,18.8s,baz=348,slow=41
CMAR Chiang Mai Arr 28.99 314 P **P 06 56 44.4 +0.7**
1.4nm,0.3s,baz=138,slow=7.6,SNR=6.0
CMAR LR LR 07 09 22.6
comp=Z,37nm,19.4s,baz=139,slow=39
GYA Guiyang 30.83 335 eP **P 06 57 01.0 +1.1**
GYA pmax pmax
comp=Z,10.0nm,0.9s
KMI Kunming 31.55 328 P **P 06 57 09.3 +2.9**
KMI pmax pmax
comp=Z,11nm,0.7s
KMI pmax pmax
comp=Z,87nm,4.7s
NJ2 Nanjing 33.43 358 eP **P 06 57 24.6 +2.1**
NJ2 pmax pmax
comp=Z,12nm,0.5s
CD2 Chengdu 35.94 335 P **P 06 57 45.0 +0.6**
CD2 pmax pmax
comp=Z,10.0nm,0.5s
HTT Hallett 36.17 153 P **P 06 57 45.9 -0.4**
baz=36,SNR=3.3
STKA Stephens Creek 36.20 149 P **P 06 57 45.8 -0.8**
comp=Z,11nm,0.7s,baz=334,slow=8.8,SNR=12
STKA LR LR 07 12 59.8
comp=Z,49nm,20.1s,baz=17,slow=37
STKA Stephens Creek 36.20 149 P **P 06 57 46.4 -0.2**
baz=36,SNR=7.3
STKA Stephens Creek 36.20 149 eP **P 06 57 46.4 -0.2**
comp=Z,3.1nm,0.8s
CMSA Cobar Meteorol 38.22 144 P **P 06 58 03.9 +0.1**
baz=38,SNR=9.8
KSRS Korea Array 39.40 9 LR LR 07 14 07.8
comp=Z,29nm,20.8s,baz=207,slow=36
LZH Lanzhou 40.48 339 eP **P 06 58 22.5 -0.2**
LZH pP sP 06 58 36.0 +3.4
LZH sP pP 06 58 41.9 +12
LZH ePP **PnPn 07 00 00.6 +0.5**
LZH pmax pmax
comp=Z,21nm,1.1s
LZH pmax pmax
comp=Z,57nm,5.4s
LZH LR LR
comp=N,340nm,13.0s
LZH LR LR
comp=E,350nm,13.2s
LZH LR LR
comp=Z,410nm,16.3s
MJAR Matsushiro Arr 41.33 22 P **P 06 58 27.7 -1.9**
comp=Z,3.1nm,0.5s,baz=183,slow=8.8,SNR=3.9
BJI Beijing 41.55 355 P **P 06 58 31.8 +0.6**
BJI pmax pmax
comp=Z,9.0nm,1.6s
BJI pmax pmax
comp=Z,90nm,3.6s
HHC Hu-ho-hao-te 42.94 350 eP **P 06 58 45.6 +2.9**
HHC pmax pmax
comp=Z,27nm,0.9s
HHC pmax pmax
comp=Z,160nm,5.8s
GUN Gumba 44.24 314 eP **P 06 58 53.5 -0.2**
comp=Z,39nm,0.8s
KKN Kakani 44.60 313 eP **P 06 58 56.1 -0.3**
DMN Daman 44.63 313 eP **P 06 58 56.2 -0.5**
comp=Z,12nm,0.5s
GTA Gaotai 44.91 337 eP **P 06 58 58.4 -0.2**
GTA pP pP 06 59 04.4 -1.3
GTA sP sP 06 59 07.3 -1.2
GTA S **S 07 05 35.6 +0.1**
GTA pmax pmax
comp=Z,6.0nm,1.1s
GTA pmax pmax
comp=Z,74nm,5.2s
GTA LR LR
comp=N,65nm,15.9s
GTA LR LR
comp=E,91nm,15.9s
GTA LR LR
comp=Z,59nm,16.2s
GKN Gorkha 45.19 313 eP **P 06 59 00.6 -0.5**
comp=Z,15nm,0.5s
KOLN Koldanda 45.82 312 eP **P 06 59 05.8 -0.3**
comp=Z,21nm,0.7s
PYUN Piuthan 46.45 312 eP **P 06 59 10.9 -0.2**
comp=Z,58nm,0.8s
MDJ Mudanjiang 46.66 9 P **P 06 59 12.9 +0.7**
MDJ pmax pmax
comp=Z,8.0nm,0.8s
MDJ pmax pmax
comp=Z,43nm,3.6s
USRK Ussuriysk Ar. 46.68 11 P **P 06 59 11.9 -0.4**
comp=Z,2.0nm,0.5s,baz=194,slow=6.8,SNR=5.4
SONA0 Songino Array 50.66 348 eP **P 06 59 43.8 +0.7**
comp=Z,5.5nm,1.2s
SONM Songino Array 50.66 348 P **P 06 59 43.8 +0.7**
comp=Z,0.9nm,0.4s,baz=177,slow=5.8,SNR=6.6
WMQ Urumqi 53.81 331 eP **P 07 00 09.3 +2.9**
WMQ pmax pmax
comp=Z,3.0nm,0.6s
WMQ pmax pmax
comp=Z,57nm,7.2s
WMQ LR LR
comp=Z,13nm,19.6s
KSH Kashi 57.64 320 P **P 07 00 34.3 +0.2**
KSH epP sP 07 00 47.8 +3.7
KSH esP pP 07 00 52.5 +11
KSH S **S 07 08 26.3 -5.0**
KSH pmax pmax
comp=Z,8.0nm,0.6s
KSH pmax pmax
comp=Z,83nm,4.5s
MK01 Makanchi Array 58.57 330 eP **P 07 00 39.7 -0.7**
MK31 Makanchi Array 58.59 330 eP **P 07 00 40.4 -0.1**
MK32 Makanchi Array 58.59 330 eP **P 07 00 39.9 -0.7**
MKAR Makanchi Array 58.59 330 P **P 07 00 39.9 -0.7**
comp=Z,5.0nm,0.7s,baz=134,slow=7.7,SNR=49
MKAR Makanchi Array 58.59 330 eP **P 07 00 40.4 -0.2**
MAKZ Makanchi 58.76 330 eP **P 07 00 41.4 -0.3**
comp=Z,3.8nm,0.9s
TKM2 Tokmak 2 59.81 323 eP **P 07 00 49.2 -0.1**
comp=Z,9.8nm,1.4s
AAK Ala-Archa 60.31 322 P **P 07 00 52.5 -0.1**
comp=Z,3.2nm,0.7s,baz=126,slow=7.4,SNR=8.4
RPZ Rata Peaks 61.45 140 P **P 07 00 59.1 -1.1**
comp=Z,8.7nm,0.8s,baz=315,slow=4.3,SNR=4.2
ZAA0 Zalesovo Array 62.67 337 eP **P 07 01 06.5 -1.7**
ZALV Zalesovo Beam 62.67 337 P **P 07 01 06.2 -1.9**
comp=Z,1.4nm,0.4s,baz=116,slow=6.6,SNR=5.8
ZAA1 Zalesovo Array 62.67 337 eP **P 07 01 06.2 -1.9**
PETK Petropavlovsk- 62.71 24 P **P 07 01 06.0 -2.5**
comp=Z,1.0nm,0.6s,baz=193,slow=5.9,SNR=2.4
PEA1 Petropavlovsk- 62.72 24 eP **P 07 01 06.0 -2.5**
KKAR Karatay Array 63.03 321 eP **P 07 01 10.4 -0.4**
KURK Kurchatov 63.04 332 eP **P 07 01 09.8 -0.9**
comp=Z,14nm,1.2s
MA2 Magadan 65.40 16 LR LR 07 27 06.7
comp=Z,15nm,21.0s,baz=210,slow=34
BVAR Borovoye Array 68.48 330 P **P 07 01 44.6 -1.1**
comp=Z,0.3nm,0.3s,baz=124,slow=7.8,SNR=3.5
ABKAR Abkulak array 72.37 323 eP **P 07 02 09.6 0.0**
TIXI Tiksi 73.25 3 eP **P 07 02 15.1 +0.7**
comp=Z,9.7nm,1.5s
QSPA South Pole Qui 88.42 180 eP **P 07 03 34.7 -0.8**
LTX Lajitas 129.78 52 ePKPdf **PKPdf 07 09 53.5 -0.3**
TXAR Lajitas Array 129.78 52 PKP **PKPdf 07 09 53.5 -0.3**
comp=Z,0.3nm,0.6s,baz=277,slow=0.7,SNR=4.2
CPUP Villa Florida 152.22 184 PKPbc **PKPbc 07 10 38.9 -1.2**
comp=Z,1.6nm,0.7s,baz=90,slow=2.0,SNR=5.8

IDC ***23*** *06:54:47.7±3.0, 6.°52S×129.°83E, h113km±40km, mb3.5/1, mb1 4.1/5, mb1mx3.5/35, mbtmp4.4/5, Error ellipse: s-maj=78.4km s-min=21.5km az=89.0*
ISCJB ***23*** *06:54:48.3±0.7, 6.°52S±0.°05×130.°2E±0.°1, h146km, mb3.6/1, Error ellipse: s-maj=16.0km s-min=7.0km az=176.7*
DJA ***23*** *06:54:49.0±0.5, 6.°S±5.°×13.°0E±.°, h171km±15km, M4.5/5, mB5.1/2, mb4.3/4, MLv4.7/5, Mw(mB)4.5/2*

ISC 23 06:54:48.3±1.0, 6.°45S±0.°06×130.°2E±0.°1, h146km, n9, σ2°86/11, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SAUI	**Saumlaki**	**1.87**	**145**	P	**Pn**	**06 55 24.3**	**+2.6**
BNDI	**Bandanaira**	**1.94**	**351**	P	**Pn**	**06 55 24.3**	**+1.8**
FAKI	**Fak Fak**	**4.06**	**30**	P	**Pn**	**06 55 50.6**	**+1.3**
SIJI	**Sorong**	**5.64**	**11**	P	**Pn**	**06 56 11.6**	**+1.2**
12nm,0.3s,baz=2.0,slow=14,SNR=3.6
SIJI S **Sn 06 57 10.6 -3.8**
7.8nm,0.3s,baz=270,slow=24,SNR=10
SOEI Soe 6.73 240 P **Pn 06 56 25.4 +0.4**
100nm,0.9s,2μm0.3nm
FITZ Fitzroy Crossi 12.41 201 P **Pn 06 57 37.8 -2.3**
0.8nm,0.3s,baz=39,slow=12,SNR=49
FITZ S Sn 06 59 45.9 -11
4.0nm,0.3s,baz=266,slow=21,SNR=7.4
WRA Warramunga Arr 14.00 164 P **Pn 06 58 00.1 -0.5**
3.2nm,0.3s,baz=342,slow=13,SNR=43
WRA S Sn 07 00 29.8 -5.8
2.2nm,0.3s,baz=333,slow=21,SNR=6.8
ASAR Alice Springs 17.48 169 P **Pn 06 58 45.5 +2.2**
1.3nm,0.3s,baz=348,slow=9.8,SNR=36
ASAR S **S 07 01 52.1 -4.8**
0.3nm,0.3s,baz=354,slow=26,SNR=4.0
MKAR Makanchi Array 67.88 327 P **P 07 05 33.1 +2.0**
0.6nm,0.5s,baz=121,slow=7.3,SNR=7.5

JMA ***23*** *06:55:02.9±0.1, 24.°69N×122.°49E, h119km±2km, M2.7*
ISCJB ***23*** *06:55:03.5±0.8, 24.°73N±0.°06×122.°51E±0.°02, h113km±7km, Error ellipse: s-maj=9.3km s-min=3.4km az=179.1*
TAP ***23*** *06:55:03.5, 24.°74N×122.°52E, h115km±1km, ML3.4, D*

ISC 23 06:55:04.0±1.8, 24.°72N±0.°07×122.°51E±0.°03, h111km±11km, n28, σ0°54/50, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JYNG	**Yonagunijimaku**	**0.48**	**124**	P	**Pn**	**06 55 20.8**	**-0.1**
JYNG				S	**Sn**	**06 55 34.1**	**+0.6**
YOJ	**Yonaguni jima**	**0.52**	**119**	P	**Pn**	**06 55 21.1**	**-0.1**
YOJ				S	**Sn**	**06 55 34.5**	**+0.5**
TWB1	**Santiao Chiao**	**0.56**	**301**	eP	**Pn**	**06 55 21.3**	**-0.1**
baz=299
TWC Suao 0.61 260 eP **Pn 06 55 21.5 -0.3**
baz=257
TWC eS **Sn 06 55 34.3 -0.9**
baz=257
NWF Wu-fen Shan 0.75 298 eP **Pn 06 55 22.8 -0.2**
baz=296
NWF eS **Sn 06 55 37.4 +0.1**
baz=296
ENA Nanau 0.76 248 P **Pn 06 55 23.1 0.0**
baz=245
ENA eS **Sn 06 55 37.7 +0.4**
baz=245
TWE Neicheng 0.77 270 eP **Pn 06 55 23.0 -0.1**
baz=268
TWE eS **Sn 06 55 37.3 -0.1**
baz=268
ENTT Nioudou 0.86 265 eP **Pn 06 55 24.2 +0.2**
baz=262
ENTT eS **Sn 06 55 39.0 -0.1**
baz=262
PCYT Pengchaiyu 0.99 336 eP **Pn 06 55 25.4 +0.1**
baz=335
TWD Chiawan 1.05 233 eP **Pn 06 55 25.3 -0.5**
baz=231
TWD eS **Sn 06 55 42.5 +0.2**
baz=231
NSK Sanguang 1.05 268 eP **Pn 06 55 25.7 -0.2**
baz=266
NSK eS **Sn 06 55 42.0 -0.5**
baz=266
TWS1 Kuangyinshan 1.06 291 eS **Sn 06 55 44.3 +1.8**
baz=289
NNS Nan Shan 1.07 255 eP **Pn 06 55 26.2 0.0**
baz=253
NNS eS **Sn 06 55 42.4 -0.5**
baz=253
IRIF Iriomote-Funau 1.18 109 P **Pn 06 55 26.7 -0.5**
IRIF eS **Sn 06 55 44.5 -0.2**
WHF Hehuan Shan 1.27 244 eP **Pn 06 55 28.4 -0.4**
baz=242
WHF eS **Sn 06 55 46.8 -0.5**
baz=242
TWT Tachien 1.30 249 eS **Sn 06 55 48.0 +0.5**
baz=248
HATJ Hateruma jima 1.35 119 P **Pn 06 55 29.2 0.0**
HATJ S **Sn 06 55 49.8 +1.6**
NSTT Nanjuang 1.38 267 eP **Pn 06 55 29.3 -0.1**
baz=265
NSTT eS **Sn 06 55 48.0 -0.8**
baz=265
JKRS Kuro-shima 1.45 109 P **Pn 06 55 30.2 -0.1**
JKRS S **Sn 06 55 50.5 +0.3**
JIJ Ishigaki jima 1.53 103 P **Pn 06 55 30.8 -0.5**
JIJ S **Sn 06 55 51.4 -0.5**
NSY Sanyi 1.62 260 eS **Sn 06 55 53.9 -0.1**
baz=258
TWQ1 Liyutan 1.62 257 eS **Sn 06 55 53.5 -0.6**
baz=255
JISG Ishigakijimahi 1.64 94 P **Pn 06 55 32.1 -0.5**
JISG eS **Sn 06 55 54.1 -0.3**
SMLT Sun Moon Lake 1.69 241 eP **Pn 06 55 33.8 +0.5**
baz=239
SMLT eS **Sn 06 55 56.0 +0.4**
baz=239
TYC Yuchr 1.71 242 eP **Pn 06 55 34.1 +0.6**
baz=240
TYC eS **Sn 06 55 56.1 +0.2**
baz=240
TWF1 Yuli 1.75 219 eP **Pn 06 55 33.2 -0.8**
baz=218
TWF1 eS **Sn 06 57 56.6 +0.7**
baz=218
ALS Alishan 1.97 233 eP **Pn 06 55 37.6 +0.6**
baz=231
ALS eS **Sn 06 56 01.9 -0.1**
baz=231
JTJ Tarama 2.00 92 P **Pn 06 55 36.8 -0.2**
JTJ S **Sn 06 56 02.6 +0.4**

ISCJB ***23*** *06:55:38.0±0.4, 32.°58N±0.°05×115.°76W±0.°03, h12km±5km, Error ellipse: s-maj=8.2km s-min=3.9km az=19.1*
ECX ***23*** *06:55:39.0±0.6, 32.°61N×115.°77W, h3km, MD2.6, ML2.8*
MEX ***23*** *06:55:39.0±0.8, 32.°68N×115.°67W, h16km±999km, MD3.6*

ISC 23 06:55:37.5±0.9, 32.°60N±0.°04×115.°75W±0.°03, h16km±7km, n16, σ0°44/26, 8C-3D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SGL	**Mount Signal**	**0.06**	**23**	⇓iP	**Pg**	**06 55 40.1**	**-0.4**
YUH	**Yuha Desert**	**0.15**	**290**	⇑iP	**Pg**	**06 55 41.8**	**+0.2**
WESC	**Westside Schoo**	**0.16**	**6**	⇓eP	**Pg**	**06 55 42.0**	**+0.2**
WESC				eS	**Sg**	**06 55 44.7**	**+0.1**
ERPC	**Ernies Place**	**0.17**	**27**	⇑iP	**Pb**	**06 55 42.2**	**0.0**
COK	**Cook Ranch**	**0.25**	**5**	⇑iP	**Pb**	**06 55 43.7**	**0.0**
RMX	**La Rumorosa**	**0.28**	**271**	⇑eP	**Pg**	**06 55 43.7**	**+0.1**
RMX				eS	**Sg**	**06 55 47.7**	**0.0**
IKP	**In-Ko-Pah, Jac**	**0.31**	**280**	⇑eP	**Pb**	**06 55 44.6**	**0.0**
IKP				eS	**Sg**	**06 55 48.9**	**+0.3**
DREC	**Desert Rsrch C**	**0.33**	**51**	⇑eP	**Pb**	**06 55 45.4**	**+0.4**
CPBX	**Cerro Prieto**	**0.42**	**115**	eP	**Pb**	**06 55 46.7**	**+0.2**
CPBX				eS	**Sb**	**06 55 53.5**	**+0.9**
CPBX				AML	AML	06 55 57.6	
comp=E,2μm,0.2s
CPBX ‖e 06 55 57.6
CPBX ⇑e 06 56 02.3
CPBX AML AML 06 56 02.3
comp=E,3μm,0.3s
BAR Barrett 0.78 276 ⇑eP **Pg 06 55 53.1 +0.3**
BAR eS **Sb 06 56 03.1 +0.1**
TJIG Tijuana 0.80 259 iP **Pg 06 55 53.3 +0.3**
TJIG iS **Sb 06 56 03.1 -0.4**
CBX Cerro Bola 0.82 250 iP **Pg 06 55 53.8 +0.3**
CBX iS **Sg 06 56 04.5 +0.1**
CBX Cerro Bola 0.82 250 eP **Pg 06 55 53.9 +0.4**
SDRC San Diego Road 1.01 278 eP **Pb 06 55 56.9 +0.3**
SDRC eS **Sb 06 56 09.9 +0.1**
ECBX El Chinero 1.27 152 eP **Pb 06 56 01.3 +0.3**
ECBX eS **Sg 06 56 18.4 -0.1**
ECBX AML AML 06 56 21.2
comp=N,87nm,0.4s
ECBX e 06 56 21.2
SPIG San Pedro Mart 1.56 171 eP **Pn 06 56 04.7 -0.2**
SPIG iS **Sn 06 56 23.6 -1.4**

NNC 23 07:08:12.3±6.0, 37.°76N×72.°07E, h49km±426km, mb3.7, mpv3.3, 3C-3D, Error ellipse: s-maj=59.3km s-min=26.5km az=117.0, Tajikistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**2.76**	**293**	⇓P	Pn	07 08 53.1	-1.0
3.8nm,0.3s
DZET ⇓S Sn 07 09 26.2 0.0
12nm,0.5s
MNAS Manas 4.74 4 ⇑P Pn 07 09 22.1 +0.9
3.0nm,0.3s
MNAS ⇑S Sn 07 10 15.2 +0.2
2.2nm,0.4s
KK31 Karatay Array 5.47 348 ⇓P Pn 07 09 31.3 +0.1
0.9nm,0.3s,baz=165,slow=12,SNR=12
KK31 ⇑S Sn 07 10 32.5 -0.4
1.7nm,0.5s,baz=165,slow=21,SNR=9.1

JMA 23 07:10:41.2±0.2, 37.°57N×141.°82E, h27km±3km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.78**	**255**	P	Pb	07 10 56.0	-0.2
JFK eS Sb 07 11 05.7 -0.7
JMM Marumori 0.87 290 P Pn 07 10 57.1 -0.5
JMM S Sb 07 11 08.0 -0.8
ONAJ Iwakimizuishiy 0.94 240 P Pn 07 10 58.0 -0.7
ONAJ S Sb 07 11 09.8 -1.2
JIO Ouri 0.96 337 P Pn 07 10 58.3 -0.6
JIO S Sb 07 11 09.8 -1.7
JFT Otama 1.18 268 P Pb 07 11 02.8 -0.1
JFT S Sb 07 11 17.6 -0.2
JOU Okura 1.21 311 P Pn 07 11 02.8 +0.4
JOU S Sb 07 11 18.7 0.0
MAT Matsushiro 3.07 252 P Pb 07 11 38.1 +3.0
MAT S Sb 07 12 09.8 -2.3

NIED ***23*** *07:17:00, 38.°30N×141.°70E, h47km, Mw3.9 Best double couple: M₀9.31000×10¹⁴ NP1:ϕs153.00000°, δ12.00000°, λ68.00000°. NP2:ϕs356.00000°, δ79.00000°, λ95.00000°.*
IDC ***23*** *07:17:32.7±3.0, 38.°46N×142.°40E, h0km, mb3.5/2, mb1 3.6/3, mb1mx3.3/28, mbtmp3.3/3, ML3.0/1, Error ellipse: s-maj=69.3km s-min=38.5km az=61.0*
ISCJB ***23*** *07:17:41.1±1.0, 38.°28N±0.°04×141.°8E±0.°1, h55km±9km, mb3.3/2, Error ellipse: s-maj=15.1km s-min=5.8km az=19.6*
JMA ***23*** *07:17:42.0±0.1, 38.°30N×141.°74E, h51km±1km, M3.7*

JMA Felt I J1.
ISC 23 07:17:41.3±1.6, 38°27N±0°.05×141°.8E±0°.1, h46km±13km, n14, σ0°57/23, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.41**	**296**	P	**Pn**	**07 17 51.7**	**+0.4**
JIO				S	**Sn**	**07 17 58.2**	**-0.2**
OFUJ	**Ofunato**	**0.82**	**352**	P	**Pn**	**07 17 56.8**	**+0.3**
OFUJ				*e*S	**Sn**	**07 18 07.5**	**0.0**
JMK	**Ichinoseki**	**0.83**	**326**	P	**Pn**	**07 17 56.9**	**+0.3**
JMK				S	**Sn**	**07 18 07.2**	**-0.5**
JMM	**Marumori**	**0.91**	**244**	P	**Pn**	**07 17 57.6**	**-0.1**
JMM				S	**Sn**	**07 18 08.8**	**-0.9**
JOU	**Okura**	**0.91**	**276**	P	**Pn**	**07 17 58.0**	**+0.2**
JOU				S	**Sn**	**07 18 09.7**	**-0.2**
JFK	**Kawauchi**	**1.17**	**220**	P	**Pn**	**07 18 01.6**	**+0.2**
JFK				S	**Sn**	**07 18 15.9**	**-0.3**
JOM	**Ohasama**	**1.27**	**341**	P	**Pn**	**07 18 03.2**	**+0.6**
JOM				*e*S	**Sn**	**07 18 18.5**	**0.0**
JYK	**Kaneyama**	**1.31**	**300**	P	**Pn**	**07 18 03.4**	**+0.1**
JYS	**Shirataka**	**1.38**	**268**	P	**Pn**	**07 18 04.5**	**+0.3**
JYS				S	**Sn**	**07 18 21.4**	**+0.1**
JFT	**Otama**	**1.39**	**238**	P	**Pn**	**07 18 05.0**	**+0.6**
JFT				S	**Sn**	**07 18 21.4**	**-0.2**
JRG	**Rokugo**	**1.46**	**321**	P	**Pn**	**07 18 05.8**	**+0.6**
MJAR	**Matsushiro Arr**	**3.35**	**240**	Pn	**Pn**	**07 18 33.0**	**+1.8**
	1.2nm,0.3s,baz=47,slow=11,SNR=7.4						
MKAR	**Makanchi Array**	**43.75**	**301**	P	**P**	**07 25 42.0**	**-0.1**
	0.1nm,0.3s,baz=85,slow=9.1,SNR=4.5						
WRA	**Warramunga Arr**	**58.33**	**188**	P	**P**	**07 27 31.2**	**-0.5**
	0.3nm,0.5s,baz=5.6,slow=7.0,SNR=8.6						

MAN 23 07:23:10, 9°.53N×126°.21E, h31km, mb3.9, ML2.6, MS2.2, 2C-1D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BIPH	**Bislig**	**1.35**	**174⇑**	*e*P	Pn	07 23 33.2	+0.5
BIPH				*e*S	Sn	07 23 49.3	-0.3
CGP	**Cagayan de Oro**	**1.84**	**235⇑**	*e*P	Pn	07 23 40.3	+0.8
CGP				*e*S	Sn	07 24 03.5	+1.7
BUKP	**Musuan**	**2.00**	**215**	*e*P	Pb	07 23 44.7	-1.1
BUKP				*e*S	Sb	07 24 12.5	+2.2
TBP	**Tagbilaran**	**2.32**	**274⇓**	*e*P	Pn	07 23 47.9	+1.8

NIED ***23*** *07:23:00, 37°.70N×143°.40E, h17km, Mw3.8 Best double couple: M₀5.06000×10¹⁴ NP1:ϕs300.00000°, δ50.00000°, λ-172.00000°. NP2:ϕs204.00000°, δ84.00000°, λ-40.00000°.*
IDC ***23*** *07:23:30.5±0.9, 37°.41N×143°.75E, h0km, mb3.9/7, mb1 4.0/12, mb1mx3.8/45, mbtmp4.0/12, ML3.6/3, MS2.7/4, Ms1 2.7/4, ms1mx2.4/45, Error ellipse: s-maj=23.7km s-min=17.9km az=91.0*
NEIC ***23*** *07:23:31.8±0.6, 37°.44N×143°.75E, h10km, mb4.4/6, Error ellipse: s-maj=12.6km s-min=9.3km az=106.0*
ISCJB ***23*** *07:23:34.1±1.1, 37°.63N±0°.05×143°.53E±0°.07, h33km±10km, mb4.0/13, Error ellipse: s-maj=9.4km s-min=7.3km az=25.4*
JMA ***23*** *07:23:34.6±0.2, 37°.69N×143°.43E, h29km, M4.0*
ISC 23 07:23:37.0±0.9, 37°.64N±0°.09×143°.5E±0°.1, h37km±3km, n34, σ1°60/41, mb4.2/13, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.86**	**297**	P	**Pn**	**07 24 04.9**	**-1.4**
JIO				*e*S	**Sn**	**07 24 26.8**	**-1.7**
OFUJ	**Ofunato**	**2.02**	**316**	P	**Pn**	**07 24 06.9**	**-1.6**
OFUJ				*e*S	**Sn**	**07 24 30.7**	**-1.7**
JMK	**Ichinoseki**	**2.20**	**307**	P	**Pn**	**07 24 09.9**	**-1.1**
JMK				*e*S	**Sn**	**07 24 36.2**	**-0.8**
JOU	**Okura**	**2.33**	**289**	P	**Pn**	**07 24 11.9**	**-0.9**
JOU				*e*S	**Sn**	**07 24 39.0**	**-1.2**
JOM	**Ohasama**	**2.50**	**318**	P	**Pn**	**07 24 14.2**	**-0.9**
JOM				S	**Sn**	**07 24 43.6**	**-0.8**
JYK	**Kaneyama**	**2.76**	**298**	P	**Pn**	**07 24 17.8**	**-0.9**
JRG	**Rokugo**	**2.83**	**309**	P	**Pn**	**07 24 19.3**	**-0.4**
JRG				*e*S	**Sn**	**07 24 53.5**	**+1.0**
JANG	**Nango**	**3.12**	**331**	P	**Pn**	**07 24 22.8**	**-0.9**
JANG				*e*S	**Sn**	**07 24 58.4**	**-1.3**
JTM	**Tenmabayashi**	**3.65**	**330**	P	**Pn**	**07 24 30.1**	**-0.8**
JTM				*e*S	**Sn**	**07 25 11.2**	**-1.6**
MJAR	**Matsushiro Arr**	**4.35**	**257**	Pn	**Pn**	**07 24 40.3**	**-0.2**
	6.9nm,0.3s,baz=85,slow=14,SNR=49						
MJAR				Sn	**Sn**	**07 25 30.4**	**+0.5**
	baz=88,slow=15,SNR=2.8						
MJAR				LR	LR	07 26 49.7	
	comp=Z,87nm,20.5s,baz=90,slow=44						
MAJO	**Matsushiro**	**4.35**	**257**	*e*Pn	**Pn**	**07 24 40.7**	**+0.1**
MAJO				*e*Sn	**Sn**	**07 25 33.2**	**+3.2**
ERM	**Erimo**	**4.38**	**357**	*e*Pn	**Pn**	**07 24 39.5**	**-1.4**
ASAJ	**Asahikawa**	**6.50**	**354**	Pn	**Pn**	**07 25 10.0**	**0.0**
	2.3nm,0.3s,baz=192,slow=11,SNR=5.7						
ASAJ	**Asahikawa**	**6.50**	**354**	*e*Pn	**Pn**	**07 25 10.1**	**0.0**
ASAJ				*e*Sn	**Sn**	**07 26 27.4**	**+4.5**
CBIJ	**Chichi jima**	**10.57**	**186**	Pn	Pn	07 25 59.4	-6.6
JCJ	**Chichijima**	**10.57**	**186**	Pn	Pn	07 25 59.4	-6.6
JCJ				Sn	Sn	07 27 44.0	-19
	0.6nm,0.3s,baz=311,slow=19,SNR=2.0						
USRK	**Ussuriysk Ar.**	**10.88**	**311**	Pn	**Pn**	**07 26 10.4**	**+0.4**
	0.5nm,0.3s,baz=112,slow=15,SNR=4.0						
JNU	**Nakatsue**	**11.22**	**250**	LR	LR	07 30 56.5	
	comp=Z,34nm,21.1s,baz=117,slow=39						
KSRS	**Korea Array**	**12.35**	**274**	Pn	**Pn**	**07 26 31.8**	**+1.7**
	baz=91,slow=14,SNR=6.3						
KSRS				LR	LR	07 30 50.6	
	comp=Z,43nm,21.4s,baz=79,slow=35						
KSAR	**Wonju Array Be**	**12.38**	**274**	Pn	**Pn**	**07 26 31.9**	**+1.3**
KLR	**Kul'dur**	**14.36**	**328**	LR	LR	07 32 49.6	
	comp=Z,44nm,18.7s,baz=152,slow=38						
SONM	**Songino Array**	**28.82**	**303**	P	**P**	**07 29 32.7**	**+1.0**
	1.5nm,0.5s,baz=105,slow=9.1,SNR=3.1						
ZALV	**Zalesovo Beam**	**42.72**	**312**	P	**P**	**07 31 33.0**	**+2.7**
	2.6nm,0.5s,baz=81,slow=7.2,SNR=7.0						
MKAR	**Makanchi Array**	**45.19**	**302**	P	**P**	**07 31 50.4**	**+0.2**
	0.8nm,0.6s,baz=85,slow=7.9,SNR=3.6						
KURK	**Kurchatov**	**46.85**	**308**	*e*P	**P**	**07 32 03.4**	**+0.2**
	4.7nm,0.7s						
ILAR	**Eielson Array**	**48.10**	**33**	P	**P**	**07 32 12.2**	**-0.5**
	0.6nm,0.7s,baz=266,slow=6.6,SNR=9.5						
TKM2	**Tokmak 2**	**50.78**	**299**	*e*P	**P**	**07 32 36.2**	**+2.5**
	1.6nm,0.6s						
WRAB	**Tennant Creek**	**57.91**	**190**	*e*P	**P**	**07 33 23.4**	**-2.0**
	7.6nm,1.3s						
WRA	**Warramunga Arr**	**57.92**	**190**	P	**P**	**07 33 23.3**	**-2.1**
	2.3nm,0.8s,baz=11,slow=7.3,SNR=19						
ABKAR	**Akbulak array**	**58.80**	**310**	*e*P	**P**	**07 33 31.1**	**-0.3**
	0.2nm,0.3s						
ASAR	**Alice Springs**	**61.64**	**190**	P	**P**	**07 33 48.5**	**-2.5**
	0.8nm,0.9s,baz=18,slow=6.2,SNR=6.0						
YKA	**Yellowknife Ar**	**62.45**	**31**	P	**P**	**07 33 55.7**	**-0.4**
	0.2nm,0.6s,baz=305,slow=7.1,SNR=4.6						
SUMG	**Summit**	**70.07**	**1**	*e*P	**P**	**07 34 43.8**	**-1.4**
	3.4nm,1.0s						
FCC	**Fort Churchill**	**72.72**	**27**	*e*P	**P**	**07 35 02.4**	**+1.6**
	2.6nm,0.9s						

CSEM ***23*** *07:23:48.8, 38°.60N×28°.56W, h8km, ML3.8*
PDA 23 07:23:48.8±1.0, 38°.60N×28°.56W, h8km±6km, MD4.0, ML3.8, 2C-4D, Error ellipse: s-maj=6.4km s-min=2.7km az=82.0, Azores Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HOR	**Horta**	**0.09**	**220**	*e*P	Pg	07 23 50.8	-0.2
HOR				*e*S	Sg	07 23 52.9	+0.3
HOR	**Horta**	**0.09**	**220**	*e*P	Pg	07 23 50.8	-0.2
HOR				*e*S	Sg	07 23 52.9	+0.3
CALA	**Caldeira**	**0.12**	**263**	*e*P	Pg	07 23 52.3	+0.8
CALA	**Caldeira**	**0.12**	**263**	*e*P	Pg	07 23 52.3	+0.8
PCED	**Cedros**	**0.12**	**286**	*e*P	Pg	07 23 51.1	-0.4
PCED				*e*S	Sg	07 23 53.4	+0.1
PCED	**Cedros**	**0.12**	**286**	*e*P	Pg	07 23 51.1	-0.4
PCED				*e*S	Sg	07 23 53.4	+0.1
PCAN	**Candelaria**	**0.14**	**157⇑**	*i*P	Pg	07 23 51.7	-0.2
PCAN	**Candelaria**	**0.14**	**157⇑**	*i*P	Pg	07 23 51.7	-0.2
ROSA	**Rosais**	**0.28**	**63**	*e*P	Pg	07 23 53.5	-0.8
ROSA				*e*S	Sg	07 23 57.6	-0.4
ROSA	**Rosais**	**0.28**	**63**	*e*P	Pg	07 23 53.5	-0.8
ROSA				*e*S	Sg	07 23 57.6	-0.4
ROSA				A	A	07 23 58.8	
	22μm,0.3s						
PMAN	**Manadas**	**0.37**	**84⇓**	*i*P	Pg	07 23 54.8	-1.2
PMAN				*e*S	Sg	07 24 00.3	-0.6
PMAN	**Manadas**	**0.37**	**84⇓**	*i*P	Pg	07 23 54.8	-1.2
PMAN				*e*S	Sg	07 24 00.3	-0.6
PMAN				A	A	07 24 06.8	
	7μm,0.4s						
PID	**Ribeirinha**	**0.38**	**114**	*e*P	Pg	07 23 56.3	+0.1
PID	**Ribeirinha**	**0.38**	**114**	*e*P	Pg	07 23 56.3	+0.1
PGRA	**Graciosa**	**0.62**	**46**	*e*P	Pg	07 23 58.5	-2.3
PGRA				*e*S	Sg	07 24 07.1	-1.9
PGRA	**Graciosa**	**0.62**	**46**	*e*P	Pg	07 23 58.5	-2.3
PGRA				*e*S	Sg	07 24 07.1	-1.9
PGRA				A	A	07 24 13.5	
	4μm,0.5s						
ADH	**Angra Heroismo**	**1.04**	**86⇓**	*i*P	Pg	07 24 04.5	-4.2
ADH				*e*S	Sg	07 24 17.0	-5.2
ADH	**Angra Heroismo**	**1.04**	**86⇓**	*i*P	Pg	07 24 04.5	-4.2
ADH				*e*S	Sg	07 24 17.0	-5.2
ADH				A	A	07 24 19.2	
	504nm,0.4s						
PSET	**Sete Cidades**	**2.36**	**108**	*e*P	Pn	07 24 23.6	-4.3
PSET				*e*S	Sn	07 24 49.2	-7.9
PSET	**Sete Cidades**	**2.36**	**108**	*e*P	Pn	07 24 23.6	-4.3
PSET				*e*S	Sn	07 24 49.2	-7.9
PSET				A	A	07 24 53.3	
	145nm,0.4s						
PDA	**Ponta Delgada**	**2.43**	**110**	*e*P	Pn	07 24 24.3	-4.5
PDA				*e*S	Sn	07 24 50.9	-7.8
PDA	**Ponta Delgada**	**2.43**	**110**	*e*P	Pn	07 24 24.3	-4.5
PDA				*e*S	Sn	07 24 50.9	-7.8
PDA				A	A	07 24 54.4	
	83nm,0.2s						
CMLA	**Cha da Macela**	**2.53**	**108**	*e*P	Pn	07 24 25.8	-4.4
CMLA				*e*S	Sn	07 24 53.2	-8.0
CMLA	**Cha da Macela**	**2.53**	**108**	*e*P	Pn	07 24 25.8	-4.4
CMLA				*e*S	Sn	07 24 53.2	-8.0
BART	**Pico Bartolome**	**2.79**	**106**	*e*P	Pn	07 24 29.3	-4.5
BART				*e*S	Sn	07 24 59.6	-8.1
BART	**Pico Bartolome**	**2.79**	**106**	*e*P	Pn	07 24 29.3	-4.5
BART				*e*S	Sn	07 24 59.6	-8.1
BART				A	A	07 25 08.1	
	74nm,0.3s						
PSMA	**Santa Maria**	**3.15**	**119**	*e*P	Pn	07 24 33.9	-4.8
PSMA				*e*S	Sn	07 25 08.3	-8.2
PSMA				A	A	07 25 09.3	
	52nm,0.2s						
PSMN	**Pico do Norte,**	**3.19**	**119**	*e*P	Pn	07 24 34.8	-4.4
PSMN				*e*S	Sn	07 25 09.0	-8.5
PSMN	**Pico do Norte,**	**3.19**	**119**	*e*P	Pn	07 24 34.8	-4.4
PSMN				*e*S	Sn	07 25 09.0	-8.5
PSMN				A	A	07 25 12.1	
	26nm,0.2s						

ISK ***23*** *07:36:19.9, 38°.94N×29°.36E, h6km, MD2.4*
DDA ***23*** *07:36:20.3, 39°.09N×29°.02E, h7km, Md2.5*
CSEM ***23*** *07:36:21.1±0.2, 39°.10N×29°.01E, h2km, MD2.5, Error ellipse: s-maj=5.7km s-min=4.2km az=112.0*
ISC 23 07:36:20.9±1.0, 39°.08N±0°.03×29°.01E±0°.02, h8km±10km, n24, σ0°54/36, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.23**	**261**	P	**Pg**	**07 36 25.0**	**-0.4**
DEMI				S	**Sg**	**07 36 29.3**	**+0.7**
DEMI	**Demirci**	**0.23**	**261**	*i*P	**Pg**	**07 36 25.0**	**-0.4**
DEMI				*i*S	**Sg**	**07 36 29.3**	**+0.7**
GDZ	**Gediz**	**0.37**	**88**	P	**Pg**	**07 36 28.1**	**0.0**
GDZ				S	**Sg**	**07 36 33.1**	**+0.1**
GDZ	**Gediz**	**0.37**	**88**	*i*P	**Pg**	**07 36 28.1**	**0.0**
GDZ				*i*S	**Sg**	**07 36 33.1**	**+0.1**
TVSB	**Tavsanli**	**0.51**	**43**	*e*PG	**Pg**	**07 36 30.5**	**-0.3**
TVSB				*e*SG	**Sg**	**07 36 37.9**	**+0.4**
TVSB	**Tavsanli**	**0.51**	**43**	*e*Pg	**Pg**	**07 36 30.5**	**-0.3**
TVSB				*e*Sg	**Sg**	**07 36 37.9**	**+0.4**
KULA	**Kula-Manisa**	**0.62**	**206**	*e*PG	**Pb**	**07 36 33.8**	**-0.3**
KULA				*e*SG	**Sb**	**07 36 43.7**	**+0.7**
KULA	**Kula-Manisa**	**0.62**	**206**	*e*Pg	**Pb**	**07 36 33.8**	**-0.3**
KULA				*e*Sg	**Sb**	**07 36 43.7**	**+0.7**
DURS	**Dursunbey**	**0.67**	**322**	P	**Pg**	**07 36 33.2**	**-0.5**
DURS				S	**Sg**	**07 36 42.8**	**+0.4**
DURS	**Dursunbey**	**0.67**	**322**	*i*P	**Pg**	**07 36 33.2**	**-0.5**
DURS				*i*S	**Sg**	**07 36 42.8**	**+0.4**
MANT	**Manisa**	**0.68**	**211**	P	**Pg**	**07 36 34.0**	**0.0**
MANT				S	**Sb**	**07 36 44.1**	**-0.7**
MANT	**Manisa**	**0.68**	**211**	*i*P	**Pg**	**07 36 34.0**	**0.0**
MANT				*i*S	**Sb**	**07 36 44.1**	**-0.7**
KHAL	**Karahalli**	**0.80**	**152**	P	**Pb**	**07 36 37.4**	**+0.3**
KHAL				S	**Sb**	**07 36 47.8**	**-0.3**
KHAL	**Karahalli**	**0.80**	**152**	*i*P	**Pb**	**07 36 37.4**	**+0.3**
KHAL				*i*S	**Sb**	**07 36 47.8**	**-0.3**
BALB	**Balikesir**	**1.04**	**303**	*e*PN	Pn	07 36 45.8	+4.0
BALB	**Balikesir**	**1.04**	**303**	*e*Pn	Pn	07 36 45.8	+4.1
CAVI	**Cavuskoy**	**1.29**	**30**	*e*PN	**Pb**	**07 36 45.2**	**-0.3**
CAVI	**Cavuskoy**	**1.29**	**30**	*e*Pn	**Pb**	**07 36 45.2**	**-0.3**
ARMT	**Armutlu**	**1.49**	**356**	*e*PN	**Pg**	**07 36 50.7**	**+1.3**
ARMT	**Armutlu**	**1.49**	**356**	*e*Pn	**Pg**	**07 36 50.7**	**+1.3**
HRT	**Hereke**	**1.81**	**16**	*e*PN	**Pb**	**07 36 53.7**	**-0.6**
HRT	**Hereke**	**1.81**	**16**	*e*Pn	**Pb**	**07 36 53.7**	**-0.6**
SPNC	**Sapanca-Adapaz**	**1.89**	**32**	*e*PN	**Pn**	**07 36 53.4**	**-0.1**
SPNC	**Sapanca-Adapaz**	**1.89**	**32**	*e*Pn	**Pn**	**07 36 53.4**	**-0.1**

IDC 23 07:36:35.1±5.9, 9°.48S×153°.74E, h0km, mb3.5/3, mb1 3.8/3, mb1mx3.5/31, mbtmp3.6/3, Error ellipse: s-maj=169.0km s-min=41.7km az=115.0, D'Entrecasteaux Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**21.43**	**239**	P	P	07 41 26.0	+0.9
	1.8nm,1.0s,baz=64,slow=9.8,SNR=5.3						
ASAR	**Alice Springs**	**23.63**	**231**	P	P	07 41 47.4	-0.8
	1.3nm,0.9s,baz=47,slow=11,SNR=7.8						
MKAR	**Makanchi Array**	**84.45**	**319**	P	P	07 49 09.9	+0.1
	0.6nm,0.9s,baz=98,slow=5.1,SNR=4.8						

DDA ***23*** *07:37:54.7, 39°.09N×29°.06E, h7km, Md2.6*
CSEM ***23*** *07:37:55.3±0.2, 39°.05N×29°.09E, h0km±2km, MD2.6, Error ellipse: s-maj=4.0km s-min=3.2km az=139.0*
ISK ***23*** *07:37:55.2, 39°.02N×29°.15E, h5km, MD2.2*
ISC 23 07:37:54.8±1.1, 38°.99N±0°.03×29°.05E±0°.03, h19km±2km, n28, σ0°70/46, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**282**	P	**Pg**	**07 38 00.9**	**0.0**
DEMI				S	**Sb**	**07 38 04.7**	**-0.3**
DEMI	**Demirci**	**0.27**	**282**	*i*P	**Pg**	**07 38 00.9**	**0.0**
DEMI				*i*S	**Sb**	**07 38 04.7**	**-0.3**
GDZ	**Gediz**	**0.35**	**73**	P	**Pg**	**07 38 02.1**	**-0.2**
GDZ				S	**Sg**	**07 38 07.1**	**-0.3**
GDZ	**Gediz**	**0.35**	**73**	*i*P	**Pg**	**07 38 02.1**	**-0.2**
GDZ				*i*S	**Sg**	**07 38 07.1**	**-0.3**
TVSB	**Tavsanli**	**0.56**	**34**	*e*PG	**Pb**	**07 38 04.6**	**-1.4**
TVSB				*e*SG	**Sb**	**07 38 12.7**	**-0.9**
TVSB	**Tavsanli**	**0.56**	**34**	*e*Pg	**Pb**	**07 38 04.6**	**-1.4**
TVSB				*e*Sg	**Sb**	**07 38 12.7**	**-0.9**
KULA	**Kula-Manisa**	**0.56**	**213**	*e*PG	**Pn**	**07 38 07.7**	**-0.2**
KULA				*e*SG	**Sn**	**07 38 17.4**	**+0.7**
KULA	**Kula-Manisa**	**0.56**	**213**	*e*Pg	**Pn**	**07 38 07.7**	**-0.2**
KULA				*e*Sg	**Sn**	**07 38 17.4**	**+0.7**
MANT	**Manisa**	**0.63**	**218**	P	**Pn**	**07 38 09.1**	**+0.2**
MANT				S	**Sn**	**07 38 18.3**	**-0.2**
MANT	**Manisa**	**0.63**	**218**	*i*P	**Pn**	**07 38 09.1**	**+0.2**
MANT				*i*S	**Sn**	**07 38 18.3**	**-0.2**
KHAL	**Karahalli**	**0.71**	**151**	P	**Pb**	**07 38 08.5**	**0.0**
KHAL				S	**Sn**	**07 38 20.9**	**+0.6**
KHAL	**Karahalli**	**0.71**	**151**	*i*P	**Pb**	**07 38 08.5**	**0.0**
KHAL				*i*S	**Sn**	**07 38 20.9**	**+0.6**
DURS	**Dursunbey**	**0.76**	**324**	P	**Pb**	**07 38 09.6**	**+0.2**
DURS				S	**Sb**	**07 38 17.5**	**-2.0**
DURS	**Dursunbey**	**0.76**	**324**	*i*P	**Pb**	**07 38 09.6**	**+0.2**
DURS				*i*S	**Sb**	**07 38 17.5**	**-2.0**
CAVI	**Cavuskoy**	**1.36**	**26**	*e*PN	**Pb**	**07 38 20.1**	**+0.5**
CAVI				*e*SN	**Sg**	**07 38 38.8**	**+0.1**
CAVI	**Cavuskoy**	**1.36**	**26**	*e*Pn	**Pb**	**07 38 20.1**	**+0.5**
CAVI				*e*Sn	**Sg**	**07 38 38.8**	**+0.1**
KCTX	**Karacabey (Bur**	**1.39**	**337**	*e*PN	**Pg**	**07 38 21.8**	**+0.3**
KCTX	**Karacabey (Bur**	**1.39**	**337**	*e*Pn	**Pg**	**07 38 21.8**	**+0.3**
IZI	**Iznik**	**1.39**	**13**	*e*PN	**Pb**	**07 38 20.6**	**+0.6**
IZI	**Iznik**	**1.39**	**13**	*e*Pn	**Pb**	**07 38 20.7**	**+0.6**
MDNY	**Mudanya-Bursa**	**1.39**	**355**	*e*PN	**Pg**	**07 38 21.5**	**0.0**
MDNY	**Mudanya-Bursa**	**1.39**	**355**	*e*Pn	**Pg**	**07 38 21.5**	**0.0**
BORA	**Eskisehir**	**1.40**	**50**	P	**Pn**	**07 38 20.2**	**+0.7**
BORA				S	**Sb**	**07 38 38.6**	**+0.6**
BORA	**Eskisehir**	**1.40**	**50**	*i*P	**Pn**	**07 38 20.2**	**+0.7**
BORA				*i*S	**Sb**	**07 38 38.6**	**+0.6**
ARMT	**Armutlu**	**1.58**	**355**	*e*PN	**Pb**	**07 38 24.3**	**+0.9**
ARMT	**Armutlu**	**1.58**	**355**	*e*Pn	**Pb**	**07 38 24.3**	**+0.9**
GULT	**Gulveren**	**1.83**	**38**	*e*PN	**Pb**	**07 38 27.2**	**-0.5**
GULT	**Gulveren**	**1.83**	**38**	*e*Pn	**Pb**	**07 38 27.2**	**-0.5**

ISK ***23*** *07:41:12.4, 36°.07N×31°.19E, h11km, ML3.5*
DDA ***23*** *07:41:13.8, 36°.18N×31°.24E, h14km, Ml3.6*
NSSC ***23*** *07:41:14.0±1.0, 35°.99N×31°.41E, h0km±44km, ML3.2*
ISCJB ***23*** *07:41:14.4±0.7, 36°.07N±0°.02×31°.21E±0°.02, h24km±7km, Error ellipse: s-maj=3.8km s-min=2.4km az=28.2*
CSEM ***23*** *07:41:14.0±0.1, 36°.10N×31°.18E, h10km, ML3.6, Error ellipse: s-maj=4.2km s-min=2.6km az=30.0*
GII ***23*** *07:41:16.9±0.0, 36°.22N×31°.50E, h15km±5km, MD2.8/2*
THE ***23*** *07:41:16.2, 35°.97N×31°.25E, h28km±36km, ML4.0/1, Error ellipse: s-maj=36.6km s-min=1.0km az=110.0*
NIC ***23*** *07:41:19.9±0.1, 36°.09N×31°.89E, h11km, mb4.1, ML3.7*
ISC 23 07:41:13.6±1.0, 36°.08N±0°.02×31°.19E±0°.02, h13km±9km, n154, σ1°34/204, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GAZI	**Gazipasa**	**0.92**	**80**	P	**Pb**	**07 41 31.5**	**+0.1**
GAZI				S	**Sg**	**07 41 42.3**	**-1.2**
GAZI	**Gazipasa**	**0.92**	**80**	*i*P	**Pb**	**07 41 31.5**	**+0.1**
GAZI				*i*S	**Sg**	**07 41 42.3**	**-1.2**
ANTB	**Antalya**	**0.93**	**332**	*e*PG	**Pg**	**07 41 30.6**	**-0.9**
ANTB	**Antalya**	**0.93**	**332**	*e*Pg	**Pg**	**07 41 30.6**	**-0.9**
KORT	**Korkueli**	**1.14**	**324**	P	**Pb**	**07 41 35.0**	**-0.3**
KORT	**Korkueli**	**1.14**	**324**	*i*P	**Pb**	**07 41 35.0**	**-0.3**
KORT				*i*S	**Sn**	**07 41 54.0**	**+3.0**
ELL	**Elmali**	**1.23**	**303**	*e*PN	Pn	07 41 36.1	-0.5
ELL				*e*SN	**Sg**	**07 41 53.3**	**-0.1**
ELL	**Elmali**	**1.23**	**303**	*e*Pn	**Pn**	**07 41 36.1**	**-0.5**
ELL				*e*Sn	**Sg**	**07 41 53.3**	**-0.1**
AKAS	**Kas**	**1.29**	**277**	P	**Pb**	**07 41 37.8**	**-0.1**
AKAS	**Kas**	**1.29**	**277**	*i*P	**Pb**	**07 41 37.8**	**-0.1**
AKAS				*i*S	**Sg**	**07 41 57.7**	**+2.3**
KSL	**Kastellorizon**	**1.30**	**274**	P	**Pn**	**07 41 37.8**	**+0.3**
KSL				S	**Sn**	**07 41 55.0**	**+0.3**
KSL	**Kastellorizon**	**1.30**	**274**	P	**Pn**	**07 41 37.8**	**+0.3**
KSL				S	**Sn**	**07 41 55.0**	**+0.3**
AKMC	**Akamas**	**1.40**	**138**	P	**Pg**	**07 41 40.9**	**+0.4**
	baz=341						
AKMC	**Akamas**	**1.40**	**138**	P	Pg	07 41 40.9	+0.4
SUTC	**Sutluce-Ispart**	**1.41**	**354**	*e*PN	**Pn**	**07 41 38.6**	**-0.4**
SUTC				*e*SN	**Sb**	**07 41 57.6**	**0.0**
SUTC	**Sutluce-Ispart**	**1.41**	**354**	*e*Pn	**Pn**	**07 41 38.6**	**-0.4**
SUTC				*e*Sn	**Sb**	**07 41 57.6**	**0.0**
BCK	**Bucak**	**1.46**	**341**	*e*PN	**Pn**	**07 41 39.4**	**-0.3**
BCK	**Bucak**	**1.46**	**341**	*e*Pn	**Pn**	**07 41 39.4**	**-0.3**
ALFC	**Alefka**	**1.47**	**128**	P	**Pb**	**07 41 40.7**	**-0.1**
	baz=328						
ALFC				S	**Sn**	**07 41 55.7**	**-3.1**
ALFC	**Alefka**	**1.47**	**128**	P	**Pb**	**07 41 40.7**	**-0.1**
ERMK	**Ermenek**	**1.50**	**67**	P	**Pn**	**07 41 40.9**	**+0.5**
ERMK				S	**Sg**	**07 42 03.6**	**+1.7**
ERMK	**Ermenek**	**1.50**	**67**	*i*P	**Pn**	**07 41 40.9**	**+0.5**
ERMK				*i*S	**Sg**	**07 42 03.6**	**+1.7**
PPCY	**Paphos**	**1.52**	**141**	P	**Pg**	**07 41 42.8**	**+0.1**
	baz=342						
PPCY	**Paphos**	**1.52**	**141**	P	**Pg**	**07 41 42.8**	**+0.1**
AKDN	**Akdeniz- K¯–br**	**1.64**	**118**	*e*PN	**Pn**	**07 41 41.9**

AYDB	**Zeytinkoy-Aydi**	**3.23**	**306**	*e*PN	**Pn**	**07 42 04.2**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**3.23**	**306**	*e*Pn	**Pn**	**07 42 04.2**	**0.0**
BODT	**Bodrum**	**3.28**	**289**	*e*PN	**Pn**	**07 42 05.4**	**+0.7**
BODT	**Bodrum**	**3.28**	**289**	P	**Pn**	**07 42 05.3**	**+0.7**
BODT	**Bodrum**	**3.28**	**289**	P	**Pn**	**07 42 05.3**	**+0.7**
AKSY	**AKSARAY - Alti**	**3.28**	**38**	P	**Pn**	**07 42 05.6**	**+0.8**
AKSY	**AKSARAY - Alti**	**3.28**	**38**	*i* P	**Pn**	**07 42 05.6**	**+0.8**
NIS1	**Nisyros Isl.**	**3.28**	**280**	*e*PN	**Pn**	**07 42 05.3**	**+0.6**
NIS1	**Nisyros Isl.**	**3.28**	**280**	*e*Pn	**Pn**	**07 42 05.3**	**+0.6**
KARP	**Karpathos**	**3.32**	**262**	*e*PN	**Pn**	**07 42 05.9**	**+0.7**
KARP	**Karpathos**	**3.32**	**262**	P	**Pn**	**07 42 05.9**	**+0.7**
KARP				S	**Sn**	**07 42 43.0**	**-1.5**
KARP	**Karpathos**	**3.32**	**262**	P	**Pn**	**07 42 05.9**	**+0.7**
KARP				S	**Sn**	**07 42 43.0**	**-1.5**
KARA	**Karaisali**	**3.32**	**68**	*e*PN	**Pn**	**07 42 06.4**	**+1.2**
KARA	**Karaisali**	**3.32**	**68**	*e*Pn	**Pn**	**07 42 06.4**	**+1.2**
SVRH	**Sivrihisar-ESK**	**3.37**	**4**	*e*PN	**Pn**	**07 42 06.0**	**0.0**
SVRH	**Sivrihisar-ESK**	**3.37**	**4**	*e*Pn	**Pn**	**07 42 06.0**	**0.0**
NIG	**Nigde**	**3.40**	**52**	*e*PN	**Pn**	**07 42 07.9**	**+1.3**
NIG	**Nigde**	**3.40**	**52**	*e*Pn	**Pn**	**07 42 07.9**	**+1.3**
KRTS	**Karatas**	**3.41**	**80**	*e*PN	**Pn**	**07 42 08.1**	**+1.6**
KRTS	**Karatas**	**3.41**	**80**	*e*Pn	**Pn**	**07 42 08.1**	**+1.6**
TVSB	**Tavsanli**	**3.63**	**338**	*e*PN	**Pn**	**07 42 10.5**	**+0.9**
TVSB	**Tavsanli**	**3.63**	**338**	*e*Pn	**Pn**	**07 42 10.5**	**+0.9**
AFSR	**Af¨ar-Bala (A**	**3.68**	**23**	*e*PN	**Pn**	**07 42 11.2**	**+1.0**
AFSR	**Af¨ar-Bala (A**	**3.68**	**23**	*e*Pn	**Pn**	**07 42 11.2**	**+1.0**
AKO	**Adana**	**3.68**	**67**	*i* P	**Pn**	**07 42 11.8**	**+1.6**
AKO				*i* S	**Sn**	**07 42 54.1**	**+0.6**
CEYT	**Ceyhan**	**3.78**	**74**	*e*PN	**Pn**	**07 42 12.9**	**+1.4**
CEYT	**Ceyhan**	**3.78**	**74**	*e*Pn	**Pn**	**07 42 13.0**	**+1.4**
ARNB	**Al Arnab**	**3.88**	**92**	*i* P	**Pn**	**07 42 13.4**	**+0.4**
ARNB				*e*S	**Sn**	**07 42 55.9**	**-2.6**
ARNB				AML	AML	07 43 05.6	
	comp=N,149nm,0.7s						
ARNB				AML	AML	07 43 08.0	
	comp=E,130nm,0.4s						
ARNB	**Al Arnab**	**3.88**	**92**	*i* P	**Pn**	**07 42 13.4**	**+0.4**
YAYL	**Yayladag**	**3.98**	**89**	*i* P	**Pn**	**07 42 13.6**	**-0.8**
YAYL				*i* S	**Sn**	**07 42 58.9**	**-2.1**
TAHT	**Tahtakopru-Hat**	**4.05**	**84**	*e*PN	**Pn**	**07 42 16.6**	**+1.4**
TAHT	**Tahtakopru-Hat**	**4.05**	**84**	*e*Pn	**Pn**	**07 42 16.6**	**+1.4**
BTCH	**Batrach**	**4.27**	**89**	*i* P	**Pn**	**07 42 18.4**	**+0.2**
BTCH				*e*S	**Sn**	**07 43 04.2**	**-3.7**
BTCH				AML	AML	07 43 16.9	
	comp=N,138nm,0.3s						
BTCH				AML	AML	07 43 21.3	
	comp=E,169nm,0.5s						
BTCH	**Batrach**	**4.27**	**89**	*i* P	**Pn**	**07 42 18.5**	**+0.2**
HWQ	**Hawqa**	**4.29**	**113**	*e*P	**Pn**	**07 42 20.9**	**+2.3**
HWQ	**Hawqa**	**4.29**	**113**	*e*P	**Pn**	**07 42 20.9**	**+2.3**
BIDA	**Albida**	**4.32**	**103**	*i* P	**Pn**	**07 42 18.1**	**-0.9**
BIDA				*e*S	**Sn**	**07 43 05.3**	**-3.9**
BIDA				AML	AML	07 43 12.1	
	comp=N,208nm,0.5s						
BIDA				AML	AML	07 43 12.9	
	comp=E,217nm,0.5s						
BIDA	**Albida**	**4.32**	**103**	*i* P	**Pn**	**07 42 18.1**	**-0.9**
GULT	**Gulveren**	**4.38**	**353**	*e*PN	**Pn**	**07 42 20.9**	**+1.1**
GULT	**Gulveren**	**4.38**	**353**	*e*Pn	**Pn**	**07 42 20.9**	**+1.1**
DRWC	**Darouich**	**4.45**	**81**	*i* P	**Pn**	**07 42 21.4**	**+0.5**
DRWC				*e*S	**Sn**	**07 43 09.7**	**-2.9**
DRWC				AML	AML	07 43 22.8	
	comp=E,100nm,0.5s						
DRWC				AML	AML	07 43 25.6	
	comp=N,41nm,0.4s						
DRWC	**Darouich**	**4.45**	**81**	*i* P	**Pn**	**07 42 21.4**	**+0.5**
IZI	**Iznik**	**4.46**	**343**	*e*PN	**Pn**	**07 42 22.2**	**+1.2**
IZI	**Iznik**	**4.46**	**343**	*e*Pn	**Pn**	**07 42 22.2**	**+1.2**
RCY	**Rachaya**	**4.61**	**123**	*e*P	**Pn**	**07 42 24.9**	**+1.9**
RCY	**Rachaya**	**4.61**	**123**	*e*P	**Pn**	**07 42 25.0**	**+1.9**
MMA0B	**Mount Meron ar**	**4.63**	**130**	Pn	**Pn**	**07 42 25.3**	**+2.1**
MMA0B	**Mount Meron ar**	**4.63**	**130**	Pn	**Pn**	**07 42 25.3**	**+2.1**
KSDI	**Kefar Szold**	**4.67**	**127**	Pn	**Pn**	**07 42 25.4**	**+1.6**
KSDI	**Kefar Szold**	**4.67**	**127**	Pn	**Pn**	**07 42 25.4**	**+1.6**
CHOS	**Chios island**	**4.70**	**301**	*e*PN	**Pn**	**07 42 25.6**	**+1.3**
CHOS	**Chios island**	**4.70**	**301**	*e*Pn	**Pn**	**07 42 25.6**	**+1.3**
BRBR	**Barbar**	**4.74**	**123**	*i* P	**Pn**	**07 42 24.1**	**-0.8**
BRBR				*e*S	**Sn**	**07 43 16.2**	**-3.5**
BRBR				AML	AML	07 43 26.8	
	comp=E,74nm,0.4s						
BRBR				AML	AML	07 43 30.3	
	comp=N,63nm,0.3s						
BRBR	**Barbar**	**4.74**	**123**	*i* P	**Pn**	**07 42 24.1**	**-0.8**
GONE	**Gonen-Balikesi**	**4.83**	**326**	*e*PN	**Pn**	**07 42 27.1**	**+1.1**
GONE	**Gonen-Balikesi**	**4.83**	**326**	*e*Pn	**Pn**	**07 42 27.1**	**+1.1**
ARMT	**Armutlu**	**4.84**	**338**	*e*PN	**Pn**	**07 42 27.7**	**+1.6**
ARMT	**Armutlu**	**4.84**	**338**	*e*Pn	**Pn**	**07 42 27.7**	**+1.6**
KSHT	**Keshet**	**4.91**	**128**	Pn	**Pn**	**07 42 29.3**	**+2.2**
KSHT	**Keshet**	**4.91**	**128**	Pn	**Pn**	**07 42 29.3**	**+2.2**
HMDT	**Nahal Hemdat**	**5.24**	**135**	Pn	**Pn**	**07 42 33.8**	**+2.2**
HMDT				Sn	**Sn**	**07 43 33.6**	**+1.8**
HMDT	**Nahal Hemdat**	**5.24**	**135**	Pn	**Pn**	**07 42 33.8**	**+2.2**
HMDT				Sn	**Sn**	**07 43 33.6**	**+1.8**
DSI	**Dead Sea**	**5.69**	**141**	Pn	**Pn**	**07 42 40.3**	**+2.6**
DSI				Sn	**Sn**	**07 43 44.4**	**+1.5**
DSI	**Dead Sea**	**5.69**	**141**	Pn	**Pn**	**07 42 40.3**	**+2.6**
DSI				Sn	**Sn**	**07 43 44.4**	**+1.5**
PRNI	**Paran**	**6.54**	**150**	Pn	**Pn**	**07 42 52.0**	**+2.5**
PRNI	**Paran**	**6.54**	**150**	Pn	**Pn**	**07 42 52.0**	**+2.5**
MBRI	**Mt Berech**	**7.00**	**152**	Pn	**Pn**	**07 42 57.6**	**+1.7**
MBRI	**Mt Berech**	**7.00**	**152**	Pn	**Pn**	**07 42 57.6**	**+1.7**

MEX 23 07:51:05.4±0.5, 14°.81N×93°.56W, h36km±64km, MD3.6, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
PCIG		**0.95**	**20**	*i* P		Pn	07 51 20.6	-1.6
PCIG				*e*S		Sn	07 51 32.0	-2.5
THIG		**1.26**	**85**	*i* P		Pn	07 51 25.4	-1.0
THIG				*i* S		Sn	07 51 40.2	-1.9
CCIG	**Comitan**	**2.01**	**43**	*e*P		Pn	07 51 35.0	-1.9
CCIG				*i* S		Sn	07 51 58.9	-2.0

MEX 23 07:55:35.1±0.9, 15°.10N×90°.15W, h12km±274km, MD4.0, Guatemala

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
THIG		**2.06**	**265**	*e*P		Pn	07 56 05.3	-4.1
THIG				*i* S		Sn	07 56 30.3	-4.7
CCIG	**Comitan**	**2.25**	**302**	*i* P		Pn	07 56 10.0	-2.3
CCIG				*i* S		Sn	07 56 34.8	-5.3
PCIG		**3.02**	**282**	*e*P		Pn	07 56 20.7	-2.0
PCIG				*i* S		Sn	07 56 55.3	-3.6

IDC ***23*** *08:18:30.6±2.6, 19°.90S×176°.19W, h189km±24km, mb3.9/12, mb1 4.1/14, mb1mx3.9/27, mbtmp4.5/14, Error ellipse: s-maj=19.1km s-min=12.5km az=128.0*
ISCJB ***23*** *08:18:32.9±0.6, 20°.09S±0°.07×176°.22W±0°.09, h222km, mb4.3/20, Error ellipse: s-maj=12.3km s-min=9.9km az=10.4*
NEIC ***23*** *08:18:33.2±1.4, 20°.00S×176°.00W, h220km±13km, mb4.7/13, Error ellipse: s-maj=16.0km s-min=11.4km az=126.0*

ISC 23 08:18:34.0±0.6, 20°.18S±0°.09×176°.2W±0°.1, h222km, n39, σ1§84/39, mb4.3/20, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
MSVF	**Nonsavu**	**5.95**	**293**	*e*Pn		Pn	08 20 05.5	+4.4
AFI	**Afiamalu**	**7.54**	**35**	P		Pn	08 20 14.5	-7.0
	3.9nm,0.3s,baz=109,slow=18,SNR=6.2							
AFI				S		S	08 21 28.7	-19
	16nm,0.3s,baz=261,slow=20,SNR=9.1							
DZM	**Mont Dzumac**	**16.29**	**260**	*e*P		**P**	**08 22 11.1**	**+1.2**
	99nm,0.6s							
URZ	**Urewera**	**18.92**	**196**	P		**P**	**08 22 38.2**	**0.0**
	3.7nm,0.3s,baz=158,slow=2.0,SNR=28							
URZ				S		**S**	**08 25 56.9**	**-4.2**
	0.4nm,0.3s,baz=45,slow=19,SNR=7.4							
URZ	**Urewera**	**18.92**	**196**	*e*P		**P**	**08 22 38.9**	**+0.7**
	15nm,0.7s							
URZ				S		**S**	**08 25 56.9**	**-4.2**
BKZ	**Black Stump Fm**	**19.93**	**197**	*e*P		**P**	**08 22 49.4**	**+0.3**
	8.3nm,1.1s							
LTZ	**Lake Taylor**	**24.53**	**201**	*e*P		**P**	**08 23 35.9**	**+2.6**
	17nm,0.5s							
OXZ	**Oxford**	**25.09**	**201**	*e*P		**P**	**08 23 41.0**	**+2.7**
	12nm,0.7s							
RPZ	**Rata Peaks**	**25.77**	**202**	P		**P**	**08 23 47.5**	**+3.1**
	7.6nm,0.4s,baz=35,slow=7.8,SNR=14							
RPZ	**Rata Peaks**	**25.77**	**202**	*e*P		**P**	**08 23 47.8**	**+3.4**
	39nm,1.4s							
CTAO	**Charters Tower**	**35.19**	**264**	*e*P		**P**	**08 25 08.1**	**+0.8**
	26nm,0.6s							
PMG	**Port Moresby**	**36.91**	**281**	P		**P**	**08 25 21.9**	**0.0**
	24nm,0.8s,baz=117,slow=3.3,SNR=6.8							
PMG	**Port Moresby**	**36.91**	**281**	*e*P		**P**	**08 25 22.3**	**+0.4**
	25nm,0.8s							
COEN	**Coen**	**39.24**	**273**	*e*P		**P**	**08 25 42.1**	**+0.8**
	26nm,0.8s							
STKA	**Stephens Creek**	**39.43**	**244**	P		**P**	**08 25 44.8**	**+2.1**
	2.9nm,0.7s,baz=86,slow=8.9,SNR=5.2							
AS01	**Alice Springs**	**46.18**	**256**	*e*P		**P**	**08 26 37.2**	**+0.2**
AS31	**Alice Springs**	**46.22**	**256**	*e*P		**P**	**08 26 38.0**	**+0.7**
	8.1nm,0.6s							
ASAR	**Alice Springs**	**46.22**	**256**	P		**P**	**08 26 37.7**	**+0.4**
	30nm,0.7s,baz=95,slow=8.3,SNR=324							
ASAR				PcP		**PcP**	**08 28 08.8**	**-0.4**
	0.8nm,0.5s,baz=108,slow=3.9,SNR=4.5							
ASAR				S		**S**	**08 33 05.1**	**-1.8**
	1.1nm,1.1s,baz=93,slow=15,SNR=4.6							
WB2	**Warramunga Arr**	**46.29**	**261**	*e*P		**P**	**08 26 37.8**	**-0.1**
	9.9nm,0.8s							
WRAB	**Tennant Creek**	**46.30**	**261**	*e*P		**P**	**08 26 37.7**	**-0.2**
	9.0nm,0.8s							
WRA	**Warramunga Arr**	**46.30**	**261**	P		**P**	**08 26 37.4**	**-0.6**
	5.8nm,0.3s,baz=94,slow=7.4,SNR=495							
WRA				S		**S**	**08 33 04.2**	**-4.0**
	0.6nm,1.0s,baz=80,slow=14,SNR=2.5							
MTN	**Manton Dam**	**50.84**	**270**	*e*P		**P**	**08 27 15.7**	**+3.2**
	65nm,0.3s							
VNDA	**Vanda**	**58.38**	**185**	P		**P**	**08 28 07.9**	**+2.2**
	0.4nm,0.5s,baz=16,slow=7.6,SNR=5.4							
MJAR	**Matsushiro Arr**	**70.96**	**323**	P		**P**	**08 29 26.2**	**-1.2**
	1.5nm,0.7s,baz=158,slow=6.4,SNR=5.1							
PETK	**Petropavlovsk-**	**76.41**	**344**	P		**P**	**08 29 57.7**	**-1.0**
	5.4nm,0.8s,baz=114,slow=7.1,SNR=6.3							
NVAR	**Mina Array Bea**	**79.65**	**43**	P		**P**	**08 30 16.7**	**-0.5**
	1.1nm,0.7s,baz=224,slow=8.3,SNR=4.9							
TXAR	**Lajitas Array**	**85.48**	**57**	P		**P**	**08 30 47.2**	**0.0**
	1.4nm,0.9s,baz=213,slow=8.2,SNR=13							
VNA3	**Neumayer Olymp**	**88.34**	**176**	P		**P**	**08 30 59.7**	**-0.4**
VNA2	**Neumayer−Watz**	**88.80**	**176**	P		**P**	**08 31 02.2**	**-0.1**
	baz=197,slow=3.2							
CMAR	**Chiang Mai Arr**	**91.59**	**289**	P		**P**	**08 31 17.3**	**+1.1**
	0.9nm,0.4s,baz=111,slow=3.4,SNR=5.8							
YKA	**Yellowknife Ar**	**95.53**	**24**	P		**P**	**08 31 32.6**	**-0.7**
	0.1nm,0.8s,baz=241,slow=3.6,SNR=4.1							
KURK	**Kurchatov**	**114.90**	**317**	PKP		PKPdf	08 36 46.8	-1.3
KURBB	**Kurchatov Arra**	**114.95**	**317**	PKP		PKPdf	08 36 46.8	-1.4
	0.4nm,0.5s,baz=95,slow=1.9,SNR=6.0							
BVAR	**Borovoye Array**	**119.91**	**320**	PKP		**PKPdf**	**08 36 56.6**	**-1.1**
	0.6nm,0.4s,baz=169,slow=1.5,SNR=3.8							
ARCES	**ARCESS Array B**	**128.90**	**350**	PKP		**PKPdf**	**08 37 13.5**	**-1.0**
	1.6nm,0.9s,baz=35,slow=2.2,SNR=9.0							
AKASG	**Malin Array Be**	**143.53**	**333**	PKhKP		PKPpre	08 37 38.3	
	1.5nm,0.4s,baz=37,slow=4.1,SNR=5.9							
BRTR	**Keskin Array B**	**147.85**	**314**	PKPbc		**PKPbc**	**08 37 52.5**	**-0.7**
	1.3nm,0.5s,baz=123,slow=3.6,SNR=8.2							
DPC	**Dobruska-Polom**	**148.30**	**345**	*e*PKPAB		**PKPab**	**08 37 58.0**	**+0.4**
GERES	**GERESS Array B**	**150.31**	**347**	PKPbc		**PKPbc**	**08 37 58.8**	**-0.2**
	1.5nm,0.6s,baz=37,slow=2.5,SNR=8.7							

SOME ***23*** *08:38:42.6, 41°.97N×82°.28E, h10km, MS3.7*
IDC ***23*** *08:38:42.5±0.6, 41°.92N×82°.34E, h0km, mb4.2/19, mb1 4.3/27, mb1mx4.1/51, mbtmp4.1/27, ML3.7/8, MS3.2/9, Ms1 3.2/9, ms1mx2.9/35, Error ellipse: s-maj=12.7km s-min=11.1km az=44.0*
BJI ***23*** *08:38:45.5, 41°.99N×82°.27E, h10km, mb4.4/23, mB4.4/15, ML4.3/10, Ms4.2/14, Ms7 4.0/7*
MOS ***23*** *08:38:46.4±1.3, 42°.03N×82°.36E, h37km, mb4.4/16, Error ellipse: s-maj=9.6km s-min=5.9km az=116.2*
NEIC ***23*** *08:38:49.5±0.9, 42°.03N×82°.31E, h47km±7km, mb4.5/9, Error ellipse: s-maj=10.8km s-min=5.6km az=158.0*
NNC ***23*** *08:38:50.0±2.9, 42°.25N×82°.15E, h17km±12km, mb4.7, mpv4.4, Error ellipse: s-maj=19.5km s-min=9.9km az=128.0*

ISC 23 08:38:45.4±0.4, 42°.08N±0°.03×82°.28E±0°.02, h13km, n147, σ3§18/194, mb4.2/31, MS3.4/8, 24C-9D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
SHLS	**Shalkode**	**2.07**	**302**	⇑*i*P		**Pb**	**08 39 23.7**	**+0.7**
	841nm,0.6s							
SHLS				⇑*i*S		**Sg**	**08 39 53.7**	**+1.6**
	6μm,0.6s							
PDGK	**Podgornoye**	**2.41**	**302**	⇑Pn		**Pb**	**08 39 27.5**	**-1.1**
	418nm,0.9s							
PDGK				⇓Lg		Lg	08 40 02.0	
	3μm,0.8s							
PDGK	**Podgornoye**	**2.41**	**302**	PN		**Pb**	**08 39 27.5**	**-1.1**
PDGK							08 40 02.0	
PDGK				pmax		pmax		
	comp=Z,418nm,0.9s							
PDGK				pmax		pmax		
	comp=N,3μm,0.8s							
UZB	**Uzynbulak**	**2.63**	**295**	*e*P		**Pb**	**08 39 33.3**	**+0.7**
	comp=N,226nm,0.3s							
UZB				*e*S		**Sg**	**08 40 09.8**	**-0.3**
	comp=N,1μm,0.6s							
DJR	**Jarkent**	**2.90**	**322**	⇓*i*P		**Pb**	**08 39 38.0**	**+1.0**
	comp=N,394nm,0.5s							
DJR				⇓*i*S		**Sg**	**08 40 18.9**	**+0.4**
	comp=N,507nm,0.5s							
KPKS	**Kokpek**	**2.99**	**299**	*e*P		**Pb**	**08 39 38.8**	**+0.2**
	comp=N,389nm,0.5s							
KPKS				*e*S		**Sg**	**08 40 19.6**	**-1.8**
	comp=N,3μm,0.5s							
SATY	**Saty**	**3.03**	**290**	*e*P		**Pb**	**08 39 39.8**	**+0.6**
	comp=N,416nm,0.6s							
SATY				*e*S		**Sg**	**08 40 21.6**	**-1.0**
	comp=N,2μm,0.8s							
ZHN	**Zhinishke**	**3.04**	**292**	*e*P		**Pb**	**08 39 40.1**	**+0.6**
	comp=N,194nm,0.7s							
ZHN				⇓*i*S		**Sg**	**08 40 21.9**	**-1.2**
	comp=N,2μm,0.3s							
KURS	**Kuram**	**3.34**	**296**	*e*P		**Pb**	**08 39 45.2**	**+0.7**
	comp=N,76nm,0.5s							
KURS				*e*S		**Sg**	**08 40 30.3**	**-2.3**
	comp=N,296nm,0.6s							
MNBS	**Baschi**	**3.48**	**306**	*e*P		**Pb**	**08 39 45.9**	**-1.0**
	comp=N,227nm,0.7s							
MNBS				*e*S		**Sb**	**08 40 31.6**	**+2.6**
	comp=N,1μm,0.6s							
KAPS	**Kapalarasan**	**3.84**	**328**	⇑*i*P		**Pb**	**08 39 49.1**	**-4.0**
	comp=N,137nm,0.3s							
KAPS				⇓*i*S		**Sb**	**08 40 37.3**	**-2.3**
	comp=N,273nm,0.7s							
ARXS	**Arharly**	**3.90**	**305**	*e*P		**Pb**	**08 39 54.3**	**+0.3**
	comp=N,166nm,0.8s							
ARXS				*e*S		**Sb**	**08 40 46.1**	**+5.0**
	comp=N,454nm,0.6s							
KOTS	**Kotyrbulak**	**3.98**	**289**	*e*P		**Pb**	**08 39 54.3**	**-1.3**
KOTS				*e*S		**Sb**	**08 40 46.1**	**+2.4**
MDOK	**Medeo**	**4.01**	**287**	*e*P		**Pb**	**08 39 56.0**	**-0.1**
	comp=N,148nm,0.7s							
MDOK				*e*S		**Sb**	**08 40 48.7**	**+4.2**
	comp=N,512nm,0.7s							
TNSS	**Tian-Shan**	**4.06**	**286**	*e*P		**Pb**	**08 39 56.3**	**-0.7**
	comp=N,168nm,0.7s							
TNSS				*e*S		**Sb**	**08 40 49.9**	**+3.8**
	comp=N,254nm,0.5s							
TDK	**Taldyqorghan**	**4.06**	**317**	*e*P		**Pb**	**08 39 55.6**	**-1.3**
	comp=N,159nm,0.5s							
TDK				*e*S		**Sb**	**08 40 49.4**	**+3.5**
	comp=N,858nm,0.8s							
AAA	**Alma-Ata**	**4.11**	**289**	*i* PN		**Pg**	**08 40 02.6**	**-1.5**
AAA				pmax		pmax		
	comp=Z,619nm,0.6s							
CHKK	**Chushkaly**	**4.27**	**297**	*e*P		**Pb**	**08 40 01.9**	**+1.6**
	comp=Z,64nm,0.5s							
CHKK				*e*S		**Sg**	**08 40 59.1**	**-3.4**
	comp=Z,404nm,0.6s							
IZV	**Izvestkoviy**	**4.29**	**285**	*e*P		**Pb**	**08 40 00.2**	**-0.7**
	comp=Z,185nm,0.8s							
IZV				*e*S		**Sb**	**08 40 56.2**	**+3.5**
	comp=Z,685nm,1.0s							
WMQ	**Urumqi**	**4.34**	**65**	Pn		Pb	08 39 56.0	-5.6
WMQ				Sn		**Sb**	**08 40 47.3**	**-6.5**
WMQ				smax		smax		
	comp=Z,160nm,0.6s							
WMQ				smax		smax		
	comp=Z,250nm,0.8s							
MTBS	**Maitube**	**4.45**	**286**	*e*P		**Pb**	**08 40 01.3**	**-2.1**
	comp=Z,64nm,0.4s							
MTBS				⇑*i*S		**Sb**	**08 40 58.7**	**+1.8**
	comp=Z,216nm,0.6s							
MK01	**Makanchi Array**	**4.69**	**0**	*e*Pn		**Pn**	**08 39 59.1**	**+3.1**
MK01				*e*Sn		**Sn**	**08 40 46.5**	**-3.7**
MK31	**Makanchi Array**	**4.71**	**0**	Pn		**Pn**	**08 39 59.4**	**+3.1**
	comp=Z,34nm,0.8s,baz=182,slow=13,SNR=228							
MK31				⇑Pg		**Pg**	**08 40 12.6**	**-3.2**
	comp=Z,27nm,0.5s,baz=183,slow=17,SNR=4.2							
MK31				⇑Sn		**Sn**	**08 40 49.6**	**-1.2**
	comp=Z,57nm,0.6s,baz=177,slow=18,SNR=3.6							
MK31				⇑Lg		Lg	08 41 14.3	
	comp=Z,217nm,0.8s,baz=189,slow=27,SNR=4.7							
MK31	**Makanchi Array**	**4.71**	**0**	*i* PN		**Pg**	**08 40 12.5**	**-3.2**
MK31				pmax		pmax		
	comp=Z,27nm,0.5s							
MK31				pmax		pmax		
	comp=N,217nm,0.9s							
MK31	**Makanchi Array**	**4.71**	**0**	*e*Pn		**Pn**	**08 39 59.7**	**+3.4**
MK31				*e*Sn		**Sn**	**08 40 47.6**	**-3.2**
MK32	**Makanchi Array**	**4.71**	**0**	*e*Pn		**Pn**	**08 39 59.6**	**+3.4**
MK32				*e*Pg		**Pg**	**08 40 12.4**	**-3.3**
MK32				*e*Sn		**Sn**	**08 40 54.8**	**+4.0**
MKAR	**Makanchi Array**	**4.71**	**0**	Pn		**Pn**	**08 39 59.6**	**+3.4**
	comp=N,6.6nm,0.3s,baz=183,slow=14,SNR=74							
MKAR				Pg		**Pg**	**08 40 12.4**	**-3.3**
	comp=N,8.2nm,0.3s,baz=182,slow=17,SNR=25							
MKAR				Sn		**Sn**	**08 40 54.8**	**+4.0**
	comp=N,13nm,0.3s,baz=168,slow=16,SNR=7.0							
MKAR				Lg		Lg	08 41 15.7	
	comp=N,21nm,0.3s,baz=170,slow=26,SNR=6.3							
MKAR				LR		LR	08 42 15.3	
	comp=N,97nm,20.0s,baz=24,slow=44							
MKAR	**Makanchi Array**	**4.71**	**0**	*e*Pn		**Pn**	**08 39 59.7**	**+3.4**
MKAR				*e*Sn		**Sn**	**08 40 47.5**	**-3.3**
KUU	**Kurty**	**4.72**	**295**	*e*P		**Pb**	**08 40 09.9**	**+1.8**
	comp=N,146nm,0.7s							
KUU				*e*S		**Sg**	**08 41 12.7**	**-4.2**
	comp=N,320nm,0.5s							
MAKZ	**Makanchi**	**4.73**	**357**	*e*PN		**Pn**	**08 39 59.9**	**+3.4**
MAKZ				*e*			08 40 59.9	
MAKZ	**Makanchi**	**4.73**	**357**	*e*Pn		**Pn**	**08 39 59.9**	**+3.4**
MAKZ				*e*Sn		**Sb**	**08 40 59.9**	**-5.3**
DGS	**Degeres**	**4.94**	**286**	*e*P		**Pb**	**08 40 15.7**	**+3.9**
	comp=N,144nm,0.8s							
DGS				*e*S		**Sg**	**08 41 22.9**	**-1.1**
	comp=N,580nm,0.9s							
TKM2	**Tokmak 2**	**5.01**	**282**	⇑Pn		**Pn**	**08 40 02.0**	**+1.5**
	comp=N,133nm,1.0s							
TKM2				⇑Lg		Lg	08 41 24.6	
	comp=N,293nm,0.8s							
TKM2	**Tokmak 2**	**5.01**	**282**	PN		**Pn**	**08 40 02.0**	**+1.5**
TKM2				pmax		pmax		
	comp=Z,133nm,1.0s							
TKM2				pmax		pmax		
	comp=N,293nm,0.8s							
TKM2	**Tokmak 2**	**5.01**	**282**	*e*Pn		**Pn**	**08 40 03.0**	**+2.5**
TKM2				*e*Sn		**Sn**	**08 40 56.9**	**-1.5**
KSH	**Kashi**	**5.43**	**244**	*e*Pn		Pb	08 40 14.0	-6.2
KSH				Sn		**Sb**	**08 41 18.0**	**-7.2**
KSH				smax		smax		
	comp=N,340nm,0.7s							
KSH				smax		smax		
	comp=N,340nm,0.8s							
ZSN	**Zaisan**	**5.58**	**15**	*e*P		**Pg**	**08 40 29.2**	**-3.0**
	comp=N,38nm,0.7s							
ZSN				*e*S		**Sg**	**08 41 45.4**	**+1.0**
	comp=N,350nm,1.1s							
FRU	**Bishkek**	**5.72**	**280**	*e*PN		Pb	08 40 18.0	-7.1
FRU				pmax		pmax		
	comp=Z,220nm,1.7s					

GTA	**Gaotai**	**13.56**	**95**	*e*P	**P**	**08 42 05.8**	**-0.8**
GTA				pP	Pn	08 42 09.3	+12
GTA				sP		08 42 12.4	
GTA				S	S	08 44 38.6	-13
GTA				sS	Sn	08 44 43.3	+15
GTA				SS	**SnSn**	**08 44 53.1**	**+13**
GTA				pmax	pmax		
	comp=Z,3.0nm,0.8s						
GTA				pmax	pmax		
	comp=Z,34nm,4.0s						
GTA				LR	LR		
	comp=Z,230nm,7.6s						
GTA				LR	LR		
	comp=Z,270nm,9.3s						
BRVK	**Borovoye**	**13.63**	**328**	*i*P	**Pn**	**08 42 00.8**	**+2.6**
BRVK				pmax	pmax		
	comp=Z,6.0nm,0.8s						
BRVK	**Borovoye**	**13.63**	**328**	*e*Pn	**Pn**	**08 42 01.0**	**+2.7**
PYUN	**Piuthan**	**13.96**	**177**	*e*P	**Pn**	**08 42 04.2**	**+1.1**
	comp=Z,32nm,0.7s						
ZRNK	**Zerenda**	**14.07**	**325**	*e*P	**Pn**	**08 42 06.4**	**+2.0**
ZRNK	**Zerenda**	**14.07**	**325**	*e*Pn	**Pn**	**08 42 06.4**	**+2.0**
GKN	**Gorkha**	**14.17**	**171**	*e*P	**Pn**	**08 42 08.2**	**+2.2**
	comp=Z,9.6nm,0.4s						
KOLN	**Koldanda**	**14.32**	**175**	*e*P	**Pn**	**08 42 08.2**	**+0.2**
	comp=Z,22nm,0.8s						
GUN	**Gumba**	**14.44**	**167**	*e*P	**Pn**	**08 42 09.3**	**-0.5**
	comp=Z,50nm,1.0s						
ZAK	**Zakamensk**	**16.69**	**53**	*e*P	**Pn**	**08 42 36.3**	**-2.7**
ZAK				pmax	pmax		
	comp=Z,5.0nm,1.5s						
ZAK				pmax	pmax		
	comp=Z,12nm,1.6s						
AB31	**Akbulak array**	**17.15**	**302**	Pn	**Pn**	**08 42 43.6**	**-1.0**
	comp=Z,3.6nm,0.7s,baz=102,slow=11,SNR=37						
AB31	**Akbulak array**	**17.15**	**302**	*i* P	**Pn**	**08 42 43.6**	**-1.0**
AB31				pmax	pmax		
	comp=Z,4.0nm,0.7s						
ABKAR	**Akbulak array**	**17.15**	**302**	*e*Pn	**Pn**	**08 42 44.3**	**-0.3**
TLY	**Talaya**	**17.42**	**49**	*e*P	P	08 42 58.8	+10
TLY				pmax	pmax		
	comp=Z,5.0nm,1.6s						
TLY				MLR	MLR		
	comp=Z,78nm,12.0s						
LZH	**Lanzhou**	**17.76**	**103**	*e*P	**P**	**08 42 55.4**	**+2.1**
LZH				PP	**PnPn**	**08 43 11.0**	**+8.0**
LZH				*e*S	**Sn**	**08 46 00.5**	**-10**
LZH				*e*SS	**SnSn**	**08 46 31.5**	**+7.9**
LZH				pmax	pmax		
	comp=Z,27nm,1.0s						
LZH				pmax	pmax		
	comp=Z,100nm,5.4s						
LZH				LR	LR		
	comp=Z,420nm,12.0s						
LZH				LR	LR		
	comp=Z,380nm,11.7s						
LZH				LR	LR		
	comp=Z,470nm,13.5s						
SONA0	**Songino Array**	**17.98**	**63**	*e*Pn	**P**	**08 42 56.1**	**+0.5**
	comp=Z,3.9nm,0.8s						
SONM	**Songino Array**	**17.98**	**63**	Pn	**P**	**08 42 56.1**	**+0.5**
	comp=Z,0.5nm,0.3s,baz=256,slow=11,SNR=6.9						
SONM				Lg	Lg	08 48 19.8	
	comp=Z,0.5nm,0.3s,baz=259,slow=29,SNR=3.5						
SONA1	**Songino Array**	**17.98**	**63**	*e*P	**P**	**08 42 56.3**	**+0.7**
ULN	**Ulaanbaatar**	**18.42**	**63**	*e*P	**P**	**08 43 04.8**	**+4.3**
ULN				pmax	pmax		
	comp=Z,5.0nm,2.5s						
AKTO	**Aktyubinsk**	**18.68**	**305**	Pn	**Pn**	**08 43 03.7**	**+0.2**
	comp=Z,0.3nm,0.3s,baz=100,slow=14,SNR=13						
AKTO				Lg	Lg	08 48 39.9	
	baz=180,slow=19,SNR=3.5						
AKTO				LR	LR	08 50 50.3	
	comp=Z,64nm,18.3s,baz=144,slow=39						
GEYT	**Alibeck**	**18.95**	**265**	Pn	**P**	**08 43 06.3**	**+0.1**
	comp=Z,0.8nm,0.3s,baz=128,slow=2.4,SNR=4.6						
CD2	**Chengdu**	**20.49**	**116**	P	Pn	08 43 23.8	-1.5
CD2				pmax	pmax		
	comp=Z,10.0nm,0.4s						
CD2				LR	LR		
	comp=Z,220nm,6.6s						
CD2				LR	LR		
	comp=Z,180nm,7.8s						
ARU	**Arti**	**20.96**	**321**	P	**P**	**08 43 28.7**	**+0.8**
	comp=Z,36nm,0.6s,baz=115,slow=5.7,SNR=58						
ARU				LR	LR	08 52 05.5	
	comp=Z,60nm,20.5s,baz=142,slow=38						
ARU	**Arti**	**20.96**	**321**	*c i* P	**P**	**08 43 28.7**	**+0.8**
ARU						08 43 48.2	
ARU				S	**S**	**08 47 20.7**	**-0.4**
ARU				SS	**SnSn**	**08 47 44.0**	**+2.2**
ARU				pmax	pmax		
	comp=Z,40nm,0.7s						
ARU	**Arti**	**20.96**	**321**	*e*P	**P**	**08 43 28.8**	**+0.8**
	comp=Z,40nm,0.7s						
HHC	**Hu-ho-hao-te**	**21.94**	**83**	*e*P	**P**	**08 43 39.4**	**+0.7**
HHC				PP	**PnPn**	**08 44 07.5**	**+7.4**
HHC				S	**S**	**08 47 34.3**	**-6.3**
HHC				pmax	pmax		
	comp=Z,35nm,0.9s						
HHC				pmax	pmax		
	comp=Z,210nm,3.7s						
HHC				LR	LR		
	comp=Z,340nm,11.0s						
HHC				LR	LR		
	comp=Z,580nm,12.7s						
HHC				LR	LR		
	comp=Z,400nm,11.4s						
XAN	**Xi'an**	**22.39**	**102**	P	**P**	**08 43 44.8**	**+1.2**
XAN				pP	sP	08 43 54.8	+5.8
XAN				pmax	pmax		
	comp=Z,5.0nm,1.4s						
KMI	**Kunming**	**23.91**	**129**	P	**P**	**08 44 01.1**	**+1.9**
KMI				PP	**PnPn**	**08 44 36.3**	**+8.9**
KMI				S	**S**	**08 48 09.5**	**-5.9**
KMI				SS	**SnSn**	**08 49 04.8**	**+10**
KMI				pmax	pmax		
	comp=Z,15nm,0.6s						
KMI				pmax	pmax		
	comp=Z,74nm,3.7s						
KMI				LR	LR		
	comp=Z,160nm,7.8s						
KMI				LR	LR		
	comp=Z,120nm,9.3s						
BOD	**Bodaibo**	**25.46**	**41**	*e*P	**P**	**08 44 12.8**	**0.0**
BOD				pmax	pmax		
	comp=Z,6.0nm,1.5s						
WSAR	**Wadi Sarin**	**27.23**	**234**	LR	LR	08 57 17.8	
	comp=Z,43nm,18.2s,baz=53,slow=41						
CMAR	**Chiang Mai Arr**	**27.49**	**144**	P	**P**	**08 44 29.8**	**-1.8**
	comp=Z,0.5nm,0.3s,baz=332,slow=7.5,SNR=4.3						
CMAR				LR	LR	08 58 03.3	
	comp=Z,42nm,18.4s,baz=250,slow=42						
CN2	**Changchun**	**31.39**	**72**	*e*P	P	08 45 11.6	+5.7
CN2				pmax	pmax		
	comp=Z,10.0nm,0.7s						
CN2				pmax	pmax		
	comp=Z,200nm,3.0s						
CN2				LR	LR		
	comp=Z,200nm,10.0s						
CN2				LR	LR		
	comp=Z,200nm,10.0s						
CN2				LR	LR		
	comp=Z,200nm,11.0s						
KLMR	**Klimovskoe**	**31.82**	**321**	*e*P	**P**	**08 45 07.5**	**-1.9**
KLMR				pmax	pmax		
	comp=Z,6.0nm,0.9s						
MDJ	**Mudanjiang**	**34.12**	**69**	P	**P**	**08 45 30.5**	**+0.7**
MDJ				pmax	pmax		
	comp=Z,7.0nm,0.5s						
MDJ				pmax	pmax		
	comp=Z,25nm,4.7s						
BR101	**Keskin Array S**	**36.45**	**283**	*e*P	**P**	**08 45 51.0**	**+0.9**
BRTR	**Keskin Array B**	**36.45**	**283**	P	**P**	**08 45 50.9**	**+0.9**
	comp=Z,1.3nm,0.6s,baz=95,slow=8.2,SNR=9.0						
BRTR	**Keskin Array B**	**36.45**	**283**	*c e*P	**P**	**08 45 51.7**	**+1.6**
BRTR				pmax	pmax		
	comp=Z,1.0nm,0.5s						
AKASG	**Malin Array Be**	**36.89**	**302**	P	**P**	**08 45 53.5**	**0.0**
	comp=Z,0.9nm,0.6s,baz=70,slow=8.5,SNR=4.5						
AKASG	**Malin Array Be**	**36.89**	**302**	P	**P**	**08 45 53.5**	**0.0**
AKASG				pmax	pmax		
	comp=Z,2.0nm,0.6s						
BR231	**Keskin MP Arra**	**37.03**	**284**	*e*P	**P**	**08 45 51.9**	**-3.2**
TIXI	**Tiksi**	**37.31**	**22**	P	**P**	**08 45 57.0**	**+0.2**
	comp=Z,2.8nm,0.6s,baz=274,slow=6.6,SNR=10						
TIXI	**Tiksi**	**37.31**	**22**	*i* P	**P**	**08 45 57.1**	**+0.3**
TIXI				pmax	pmax		
	comp=Z,3.0nm,0.7s						
TIXI	**Tiksi**	**37.31**	**22**	*e*P	**P**	**08 45 56.8**	**0.0**
	comp=Z,3.4nm,0.8s						
FIA0	**FINESS Array S**	**38.33**	**320**	*e*P	**P**	**08 46 05.9**	**+0.4**
FIA0	**FINESS Array S**	**38.33**	**320**	*e*P	**P**	**08 46 05.9**	**+0.4**
FINES	**FINESS Array B**	**38.33**	**320**	P	**P**	**08 46 05.9**	**+0.4**
	comp=Z,3.8nm,0.9s,baz=91,slow=7.8,SNR=4.1						
FINES	**FINESS Array B**	**38.33**	**320**	*i* P	**P**	**08 46 07.3**	**+1.8**
FINES				pmax	pmax		
	comp=Z,4.0nm,0.9s						
ARA0	**ARCESS Array S**	**39.78**	**333**	*e*P	**P**	**08 46 18.4**	**+0.8**
ARCES	**ARCESS Array B**	**39.78**	**333**	P	**P**	**08 46 18.4**	**+0.8**
	comp=Z,3.6nm,0.6s,baz=89,slow=9.1,SNR=24						
ARCES				LR	LR	09 02 16.3	
	comp=Z,47nm,19.0s,baz=106,slow=35						
DPC	**Dobruska-Polom**	**45.01**	**304**	*e*P	**P**	**08 47 01.8**	**+1.3**
DPC				*e*x	x	08 47 06.6	
DPC	**Dobruska-Polom**	**45.01**	**304**	*e*P	**P**	**08 47 01.8**	**+1.3**
UPC	**Upice**	**45.16**	**304**	*e*P	**P**	**08 47 02.5**	**+0.9**
UPC	**Upice**	**45.16**	**304**	*e*P	**P**	**08 47 02.5**	**+0.9**
NB2	**NORSAR Subarra**	**45.51**	**320**	P	**P**	**08 47 04.2**	**0.0**
	comp=Z,1.7nm,0.6s,baz=81,slow=7.9						
NB200	**NORSAR Array S**	**45.51**	**320**	*e*P	**P**	**08 47 04.5**	**+0.3**
NOA	**NORSAR Array B**	**45.51**	**320**	P	**P**	**08 47 04.5**	**+0.3**
	comp=Z,2.0nm,0.6s,baz=82,slow=7.9,SNR=6.1						
NOA				LR	LR	09 05 29.8	
	comp=Z,40nm,18.6s,baz=250,slow=35						
CLL	**Collm**	**46.76**	**306**	*e*P	**P**	**08 47 15.0**	**+0.9**
CLL	**Collm**	**46.76**	**306**	*e*P	**P**	**08 47 15.0**	**+0.9**
GERES	**GERESS Array B**	**47.09**	**303**	P	**P**	**08 47 17.0**	**+0.1**
	comp=Z,0.3nm,0.3s,baz=52,slow=8.8,SNR=5.2						
PEA1	**Petropavlovsk-**	**49.78**	**50**	*e*P	**P**	**08 47 38.0**	**+0.5**
PETK	**Petropavlovsk-**	**49.78**	**50**	P	**P**	**08 47 38.0**	**+0.5**
	comp=Z,2.0nm,0.6s,baz=313,slow=4.9,SNR=3.4						
PETK				LR	LR	09 10 15.4	
	comp=Z,36nm,18.9s,baz=247,slow=38						
ES19	**SONSECA Array**	**62.42**	**300**	*e*P	**P**	**08 49 08.4**	**+0.3**
ESDC	**Sonseca Array**	**62.47**	**300**	P	**P**	**08 49 08.4**	**-0.1**
	comp=Z,1.3nm,0.6s,baz=52,slow=6.0,SNR=6.7						
MLY	**Manley**	**65.52**	**22**	*e*P	**P**	**08 49 28.6**	**+0.5**
	comp=Z,3.0nm,1.0s						
KTH	**Kantishna Hill**	**66.59**	**23**	*e*P	**P**	**08 49 35.5**	**+0.5**
	comp=Z,7.2nm,0.9s						
INK	**Inuvik**	**66.71**	**14**	P	**P**	**08 49 35.6**	**0.0**
	comp=Z,3.6nm,0.8s,baz=304,slow=7.5,SNR=6.4						
IL1	**Eielson Array**	**66.76**	**21**	*e*P	**P**	**08 49 35.6**	**-0.4**
ILAR	**Eielson Array**	**66.76**	**21**	P	**P**	**08 49 35.2**	**-0.7**
	comp=Z,1.5nm,0.8s,baz=314,slow=5.3,SNR=20						
ILB	**Eielson Array**	**66.76**	**21**	*e*P	**P**	**08 49 35.2**	**-0.7**
EGAK	**Eagle**	**68.18**	**19**	*e*P	**P**	**08 49 45.2**	**+0.2**
	comp=Z,7.6nm,1.4s						
TOA1	**Torodi Ar. Sit**	**74.36**	**274**	*e*P	**P**	**08 50 22.0**	**-1.1**
	comp=Z,5.8nm,0.9s						
TOA0	**Torodi Ar. Sit**	**74.36**	**274**	*e*P	**P**	**08 50 22.5**	**-0.6**
TORD	**Torodi Ar. Bea**	**74.36**	**274**	P	**P**	**08 50 22.0**	**-1.1**
	comp=Z,3.7nm,0.6s,baz=44,slow=5.0,SNR=44						
YKA	**Yellowknife Ar**	**74.89**	**8**	P	**P**	**08 50 24.7**	**-0.8**
	comp=Z,2.1nm,0.8s,baz=339,slow=5.8,SNR=27						
YKA	**Yellowknife Ar**	**74.89**	**8**	*c e*P	**P**	**08 50 24.8**	**-0.6**
YKA				pmax	pmax		
	comp=Z,2.0nm,0.8s						
YKB5	**Yellowknife Ar**	**74.89**	**8**	*e*P	**P**	**08 50 24.6**	**-0.8**
WR1	**Warramunga Arr**	**78.21**	**131**	*e*P	**P**	**08 50 42.9**	**-1.8**
	comp=Z,28nm,1.9s						
WRA	**Warramunga Arr**	**78.21**	**131**	P	**P**	**08 50 42.9**	**-1.8**
	comp=Z,1.3nm,0.7s,baz=330,slow=5.4,SNR=14						
AS31	**Alice Springs**	**80.95**	**133**	*e*P	**P**	**08 50 58.5**	**-1.2**
	comp=Z,1.2nm,0.9s						
ASAR	**Alice Springs**	**80.95**	**133**	P	**P**	**08 50 58.4**	**-1.2**
	comp=Z,1.1nm,0.7s,baz=323,slow=5.3,SNR=12						
DBIC	**Dimbokro**	**83.46**	**273**	P	**P**	**08 51 11.6**	**-1.5**
	comp=Z,4.8nm,0.8s,baz=105,slow=1.7,SNR=3.9						
PDAR	**Pinedale Array**	**94.87**	**9**	P	**P**	**08 52 06.6**	**-0.8**
	comp=Z,0.3nm,0.5s,baz=28,slow=4.2,SNR=3.9						
MIR	**Mirnyy**	**108.61**	**175**	*i* P	**Pdif**	**08 52 56.0**	**-12**
MIR				pmax	pmax		
	comp=Z,12nm,1.2s						

*ISCJB **23** 08:42:55.9±0.5, 39°.09N±0°.03×29°.00E±0°.04, h9km±5km, Error ellipse: s-maj=5.1km s-min=4.4km az=32.3*
*CSEM **23** 08:42:55.9±0.1, 39°.10N×29°.00E, h10km, MD2.7, Error ellipse: s-maj=1.6km s-min=1.2km az=107.0*
*DDA **23** 08:42:55.6, 39°.09N×29°.02E, h7km, Md2.7*
*ISK **23** 08:42:55.4, 39°.09N×29°.01E, h12km, MD2.3*
ISC 23 08:42:56.0±0.9, 39°.10N±0°.02×29°.01E±0°.02, h13km±8km, n26, σ0°.22/40, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**257**	P	**Pg**	**08 43 01.3**	**+0.2**
DEMI				S	**Sg**	**08 43 04.4**	**-0.2**
DEMI	**Demirci**	**0.24**	**257**	*i* P	**Pg**	**08 43 01.3**	**+0.2**
DEMI				*i* S	**Sg**	**08 43 04.4**	**-0.2**
GDZ	**Gediz**	**0.36**	**91**	P	**Pg**	**08 43 03.3**	**-0.1**
GDZ				S	**Sg**	**08 43 08.5**	**+0.1**
GDZ	**Gediz**	**0.36**	**91**	*i* P	**Pg**	**08 43 03.3**	**-0.1**
GDZ				*i* S	**Sg**	**08 43 08.5**	**+0.1**
TVSB	**Tavsanli**	**0.50**	**44**	*e*PG	**Pg**	**08 43 05.8**	**0.0**
TVSB	**Tavsanli**	**0.50**	**44**	*e*Pg	**Pg**	**08 43 05.8**	**0.0**
KULA	**Kula-Manisa**	**0.64**	**205**	*e*PG	**Pg**	**08 43 08.2**	**-0.3**
KULA				*e*SG	**Sg**	**08 43 17.3**	**+0.3**
KULA	**Kula-Manisa**	**0.64**	**205**	*e*Pg	**Pg**	**08 43 08.2**	**-0.3**
KULA				*e*Sg	**Sg**	**08 43 17.3**	**+0.3**
DURS	**Dursunbey**	**0.66**	**321**	P	**Pg**	**08 43 08.4**	**-0.4**
DURS				S	**Sg**	**08 43 17.8**	**+0.3**
DURS	**Dursunbey**	**0.66**	**321**	*i* P	**Pg**	**08 43 08.4**	**-0.4**
DURS				*i* S	**Sg**	**08 43 17.8**	**+0.3**
MANT	**Manisa**	**0.70**	**211**	P	**Pg**	**08 43 09.6**	**-0.1**
MANT				S	**Sg**	**08 43 18.6**	**-0.3**
MANT	**Manisa**	**0.70**	**211**	*i* P	**Pg**	**08 43 09.6**	**-0.1**
MANT				*i* S	**Sg**	**08 43 18.6**	**-0.3**
KHAL	**Karahalli**	**0.81**	**152**	P	**Pb**	**08 43 12.1**	**0.0**
KHAL				S	**Sb**	**08 43 22.9**	**-0.1**
KHAL	**Karahalli**	**0.81**	**152**	*i* P	**Pb**	**08 43 12.1**	**0.0**
KHAL				*i* S	**Sb**	**08 43 22.9**	**-0.1**
KCTX	**Karacabey (Bur**	**1.27**	**337**	*e*PN	**Pb**	**08 43 19.8**	**0.0**
KCTX	**Karacabey (Bur**	**1.27**	**337**	*e*Pn	**Pb**	**08 43 19.8**	**0.0**
MDNY	**Mudanya-Bursa**	**1.28**	**356**	*e*PN	**Pb**	**08 43 19.8**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.28**	**356**	*e*Pn	**Pb**	**08 43 19.8**	**-0.1**
CAVI	**Cavuskoy**	**1.28**	**30**	*e*PN	**Pb**	**08 43 19.8**	**-0.1**
CAVI	**Cavuskoy**	**1.28**	**30**	*e*Pn	**Pb**	**08 43 19.8**	**-0.1**
IZI	**Iznik**	**1.29**	**16**	*e*PN	**Pn**	**08 43 19.8**	**0.0**
IZI	**Iznik**	**1.29**	**16**	*e*Pn	**Pn**	**08 43 19.8**	**0.0**
BORA	**Eskisehir**	**1.36**	**54**	P	**Pb**	**08 43 21.4**	**0.0**
BORA				S	**Sg**	**08 43 39.9**	**-0.1**
BORA	**Eskisehir**	**1.36**	**54**	*i* P	**Pb**	**08 43 21.4**	**0.0**
BORA				*i* S	**Sg**	**08 43 39.9**	**-0.1**
ARMT	**Armutlu**	**1.47**	**356**	*e*PN	**Pn**	**08 43 22.7**	**+0.4**
ARMT	**Armutlu**	**1.47**	**356**	*e*Pn	**Pn**	**08 43 22.7**	**+0.4**

*CSEM **23** 08:47:23.4, 38°.48N×26°.78W, h0km, ML2.4*
PDA 23 08:47:23.4±1.2, 38°.48N×26°.78W, h0km±7km, MD3.5, ML2.4, Error ellipse: s-maj=12.7km s-min=3.6km az=33.0, Azores Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ADH	**Angra Heroismo**	**0.40**	**296**	*e*P	Pg	08 47 30.7	-0.3
ADH				*e*S	Sg	08 47 36.3	+0.1
ADH	**Angra Heroismo**	**0.40**	**296**	*e*P	Pg	08 47 30.7	-0.3
ADH				*e*S	Sg	08 47 36.3	+0.1
ADH				A	A	08 47 37.5	
	111nm,0.3s						
PMAN	**Manadas**	**1.04**	**279**	*e*P	Pg	08 47 39.7	-3.6
PMAN				*e*S	Sg	08 47 52.9	-3.9
PMAN	**Manadas**	**1.04**	**279**	*e*P	Pg	08 47 39.7	-3.6
PMAN				*e*S	Sg	08 47 52.9	-3.9
PMAN				A	A	08 47 53.3	
	104nm,0.2s						
PGRA	**Graciosa**	**1.09**	**301**	*e*S	Sg	08 47 54.4	-4.0
PGRA	**Graciosa**	**1.09**	**301**	*e*S	Sg	08 47 54.4	-4.0
PGRA				A	A	08 47 58.3	
	25nm,0.1s						
ROSA	**Rosais**	**1.17**	**282**	*e*P	Pg	08 47 41.8	-4.1
ROSA				*e*S	Sg	08 47 56.5	-4.6
ROSA	**Rosais**	**1.17**	**282**	*e*P	Pg	08 47 41.8	-4.1
ROSA				*e*S	Sg	08 47 56.5	-4.6
ROSA				A	A	08 47 57.1	
	42nm,0.1s						
CMLA	**Cha da Macela**	**1.22**	**126**	*e*S	Sg	08 47 57.6	-5.0
CMLA	**Cha da Macela**	**1.22**	**126**	*e*S	Sg	08 47 57.6	-5.0
CMLA				A	A	08 48 00.8	
	62nm,0.4s						
PCAN	**Candelaria**	**1.34**	**270**	*e*S	Sg	08 48 00.6	-5.9
PCAN	**Candelaria**	**1.34**	**270**	*e*S	Sg	08 48 00.6	-5.9
PCAN				A	A	08 48 03.5	
	25nm,0.1s						
CALA	**Caldeira**	**1.51**	**274**	*e*P	Pn	08 47 47.0	-4.8
CALA	**Caldeira**	**1.51**	**274**	*e*P	Pn	08 47 47.0	-4.8
PCED	**Cedros**	**1.52**	**276**	*e*S	Sg	08 48 04.6	-7.5
PCED	**Cedros**	**1.52**	**276**	*e*S	Sg	08 48 04.6	-7.5
PCED				A	A	08 48 05.9	
	33nm,0.4s						

*CSEM **23** 08:50:42.3, 39°.19N×29°.06E, h7km, MD2.5*
DDA 23 08:50:42.3, 39°.19N×29°.06E, h7km, Md2.5, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.31**	**242**	P	Pg	08 50 49.0	+0.7
DEMI				S	Sg	08 50 53.2	+0.8
DEMI	**Demirci**	**0.31**	**242**	*i* P	Pg	08 50 49.0	+0.7
DEMI				*i* S	Sg	08 50 53.2	+0.8
GDZ	**Gediz**	**0.34**	**107**	P	Pg	08 50 49.7	+0.7
GDZ				S	Sg	08 50 54.3	+0.8
GDZ	**Gediz**	**0.34**	**107**	*i* P	Pg	08 50 49.7	+0.7
GDZ				*i* S	Sg	08 50 54.3	+0.8
MANT	**Manisa**	**0.80**	**210**	P	Pg	08 50 57.5	-0.2
MANT				S	Sg	08 51 05.8	-2.3
MANT	**Manisa**	**0.80**	**210**	*i* P	Pg	08 50 57.5	-0.2
MANT				*i* S	Sg	08 51 05.8	-2.3
KHAL	**Karahalli**	**0.88**	**158**	P	Pg	08 50 59.5	+0.2
KHAL				S	Sg	08 51 10.2	-0.5
KHAL	**Karahalli**	**0.88**	**158**	*i* P	Pg	08 50 59.5	+0.3
KHAL				*i* S	Sg	08 51 10.2	-0.6
BORA	**Eskisehir**	**1.28**	**57**	P	Pg	08 51 08.0	+1.2
BORA				S	Sn	08 51 24.6	+0.5
BORA	**Eskisehir**	**1.28**	**57**	*i* P	Pg	08 51 08.0	+1.1
BORA				*i* S	Sn	08 51 24.6	+0.6

*DDA **23** 09:04:04.2, 39°.11N×29°.00E, h7km, Md2.7*
*CSEM **23** 09:04:05.3±0.1, 39°.10N×29°.00E, h2km, MD2.7, Error ellipse: s-maj=2.9km s-min=2.3km az=94.0*
*ISK **23** 09:04:05.3, 39°.07N×28°.99E, h9km, MD2.3*
ISC 23 09:04:05.4±1.2, 39°.11N±0°.02×29°.00E±0°.02, h0km±13km, n32, σ0°.41/46, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.23**	**254**	P	**Pg**	**09 04 10.0**	**+0.3**
DEMI				S	**Sg**	**09 04 13.2**	**+0.5**
DEMI	**Demirci**	**0.23**	**254**	*i* P	**Pg**	**09 04 10.0**	**+0.3**
DEMI				*i* S	**Sg**	**09 04 13.2**	**+0.5**
GDZ	**Gediz**	**0.38**	**92**	P	**Pg**	**09 04 12.1**	**-0.6**
GDZ				S	**Sg**	**09 04 17.3**	**-0.3**
GDZ	**Gediz**	**0.38**	**92**	*i* P	**Pg**	**09 04 12.1**	**-0.6**
GDZ				*i* S	**Sg**	**09 04 17.3**	**-0.3**
TVSB	**Tavsanli**	**0.50**	**46**	*e*PG	**Pg**	**09 04 15.8**	**+0.9**
TVSB	**Tavsanli**	**0.50**	**46**	*e*Pg	**Pg**	**09 04 15.9**	**+0.9**
DURS	**Dursunbey**	**0.64**	**321**	P	**Pg**	**09 04 16.6**	**-1.0**
DURS				S	**Sg**	**09 04 26.3**	**+0.3**
DURS	**Dursunbey**	**0.64**	**321**	*i* P	**Pg**	**09 04 16.6**	**-1.0**
DURS				*i* S	**Sg**	**09 04 26.3**	**+0.3**
KULA	**Kula-Manisa**	**0.65**	**204**	*e*PG	**Pg**	**09 04 17.6**	**-0.2**
KULA				*e*SG	**Sg**	**09 04 26.6**	**+0.5**
KULA	**Kula-Manisa**	**0.65**	**204**	*e*Pg	**Pg**	**09 04 17.6**	**-0.2**
KULA				*e*Sg	**Sg**	**09 04 26.6**	**+0.5**
MANT	**Manisa**	**0.70**	**209**	P	**Pg**	**09 04 18.7**	**-0.2**
MANT				S	**Sg**	**09 04 27.7**	**-0.3**
MANT	**Manisa**	**0.70**	**209**	*i* P	**Pg**	**09 04 18.7**	**-0.2**
MANT				*i* S	**Sg**	**09 04 27.7**	**-0.3**
KHAL	**Karahalli**	**0.83**	**152**	P	**Pg**	**09 04 20.9**	**-0.4**
KHAL				S	**Sg**	**09 04 32.3**	**+0.2**
KHAL	**Karahalli**	**0.83**	**152**	*i* P	**Pg**	**09 04 20.9**	**-0.4**
KHAL				*i* S	**Sg**	**09 04 32.3**	**+0.2**
KHL	**Karahalli**	**0.88**	**152**	*e*PG	**Pg**	**09 04 22.6**	**+0.2**
KHL	**Karahalli**	**0.88**	**152**	*e*Pg	**Pg**	**09 04 22.6**	**+0.2**
BALB	**Balikesir**	**1.02**	**302**	*e*PG	**Pb**	**09 04 25.8**	**0.0**
BALB	**Balikesir**	**1.02**	**302**	*e*Pg	**Pb**	**09 04 25.8**	**0.0**
KCTX	**Karacabey (Bur**	**1.26**	**337**	*e*PN	**Pn**	**09 04 30.2**	**0.0**
KCTX	**Karacabey (Bur**	**1.26**	**337**	*e*Pn	**Pn**	**09 04 30.2**	**0.0**
CAVI	**Cavuskoy**	**1.28**	**31**	*e*PN	**Pn**	**09 04 30.4**	**-0.1**
CAVI				*e*SN	**Sn**	**09 04 48.5**	**+0.2**
CAVI	**Cavuskoy**	**1.28**	**31**	*e*Pn	**Pn**	**09 04 30.4**	**-0.1**
CAVI				*e*Sn	**Sn**	**09 04 48.5**	**+0.2**
IZI	**Iznik**	**1.28**	**17**	*e*PN	**Pg**	**09 04 30.0**	**0.0**
IZI	**Iznik**	**1.28**	**17**	*e*Pn	**Pg**	**09 04 30.0**	**0.0**
ARMT	**Armutlu**	**1.46**	**356**	*e*PN	**Pn**	**09 04 32.7**	**-0.3**
ARMT	**Armutlu**	**1.46**	**356

FINES	FINESS Array B	141.61	341	PKhKP	PKPpre	09 23 00.2	
	1.4nm,0.6s,baz=69,slow=6.3,SNR=5.0						
NB2	NORSAR Subarra	145.17	352	PKP	PKPdf	09 23 12.7	-0.8
	comp=Z,3.3nm,1.0s,baz=17,slow=2.6						
NOA	NORSAR Array B	145.17	352	PKP	PKPdf	09 23 12.7	-0.8
	comp=Z,1.8nm,0.8s,baz=17,slow=3.0,SNR=5.9						
AKASG	Malin Array Be	148.06	326	PKPbc	PKPdf	09 23 20.7	+2.2
	comp=Z,2.1nm,0.5s,baz=42,slow=3.9,SNR=12						
MMAI	Mount Meron Ar	149.87	290	PKPbc	PKPbc	09 23 28.4	+1.1
	comp=Z,3.3nm,0.5s,baz=76,slow=3.5,SNR=5.7						
BRTR	Keskin Array B	150.22	304	PKPbc	PKPbc	09 23 27.3	-0.7
	comp=Z,0.7nm,0.4s,baz=122,slow=4.7,SNR=4.9						
TORD	Torodi Ar. Bea	166.35	182	PKPab	PKPab	09 24 45.9	+0.7
	comp=Z,0.6nm,0.6s,baz=182,slow=4.9,SNR=4.2						

*IDC **23** 09:06:52.0±5.0, 36.20N×69.74E, h118km±44km, mb3.3/7, mb1 3.5/12, mb1mx3.3/41, mbtmp3.8/12, Error ellipse: s-maj=33.1km s-min=21.4km az=25.0*
*ISCJB **23** 09:06:54.8±0.8, 36.49N±0.06×69.74E±0.09, h150km, mb3.2/6, Error ellipse: s-maj=11.2km s-min=8.1km az=30.1*
*NNC **23** 09:06:58.6±1.8, 36.72N×69.64E, h151km±25km, mb3.1, mpv4.1, Error ellipse: s-maj=25.0km s-min=13.3km az=132.0*

ISC 23 09:06:56.4±1.1, 36.5N±0.1×69.7E±0.1, h150km, n20, σ1§25/23, mb3.3/6, 9C-1D, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	Dzherino	2.39	343	⇑P	Pn	09 07 35.7	-0.5
	37nm,0.4s						
DZET				⇑S	Sn	09 08 05.3	-1.7
	412nm,0.5s						
MNAS	Manas	6.34	19	⇑P	Pn	09 08 28.4	+0.8
	6.2nm,0.7s						
MNAS				⇓S	Sn	09 09 37.6	-1.5
	10nm,0.4s						
THN	Thein Dam	6.41	128	eP	Pn	09 08 22.0	-6.6
THN				eS	Sn	09 09 30.0	-11
KK31	Karatay Array	6.61	5	P	Pn	09 08 31.2	+0.1
	3.2nm,0.3s,baz=190,slow=12,SNR=84						
KK31				⇑S	Sn	09 09 42.8	-2.5
	2.9nm,0.3s,baz=192,slow=18,SNR=4.4						
AAK	Ala-Archa	7.13	30	P	Pn	09 08 39.2	+0.9
	6.6nm,0.3s,baz=170,slow=5.9,SNR=34						
AAK				S	Sn	09 09 58.7	+0.5
	1.3nm,0.3s,baz=145,slow=22,SNR=10						
AAK	Ala-Archa	7.13	30	⇑P	Pn	09 08 39.0	+0.7
	8.0nm,0.4s						
AAK				⇑S	Sn	09 09 59.5	+1.3
	16nm,0.8s						
TKM2	Tokmak 2	7.84	34	⇑P	Pn	09 08 48.0	+0.3
	16nm,0.6s						
TKM2				⇑S	Sn	09 10 12.7	-2.4
	5.6nm,0.9s						
MK31	Makanchi Array	13.90	39	P	Pn	09 10 06.3	-0.6
	0.3nm,0.8s,baz=191,slow=4.9,SNR=20						
MKAR	Makanchi Array	13.90	39	P	Pn	09 10 06.2	-0.7
	0.1nm,0.3s,baz=224,slow=8.1,SNR=9.6						
AB31	Akbulak array	14.59	334	⇑P	Pn	09 10 15.6	+0.1
	1.4nm,0.5s,baz=149,slow=11,SNR=59						
KURBB	Kurchatov Arra	15.46	21	P	Pn	09 10 25.7	-0.5
	0.0nm,0.3s,baz=210,slow=11,SNR=6.6						
AKTO	Aktyubinsk	16.27	332	P	Pn	09 10 35.9	-0.3
	0.3nm,0.3s,baz=140,slow=12,SNR=5.7						
BVAR	Borovoye Array	16.51	1	P	P	09 10 39.7	+0.7
	0.6nm,0.3s,baz=170,slow=9.0,SNR=8.8						
ZALV	Zalesovo Beam	20.34	26	P	Pn	09 11 23.0	-1.4
	8.9nm,0.5s,baz=220,slow=11,SNR=19						
ARCES	ARCESS Array B	40.74	338	P	P	09 14 23.9	+1.8
	0.8nm,0.6s,baz=116,slow=8.2,SNR=5.3						
NOA	NORSAR Array B	43.74	323	P	P	09 14 46.8	+0.3
	0.5nm,0.5s,baz=103,slow=5.5,SNR=2.7						
TORD	Torodi Ar. Bea	64.68	268	P	P	09 17 17.9	-0.7
	0.2nm,0.7s,baz=48,slow=6.7,SNR=3.3						
YKA	Yellowknife Ar	81.27	2	P	P	09 18 56.4	+1.2
	0.1nm,0.4s,baz=351,slow=5.6,SNR=3.7						
WRA	Warramunga Arr	82.88	121	P	P	09 19 02.2	-2.1
	0.3nm,0.6s,baz=331,slow=4.6,SNR=5.2						
ASAR	Alice Springs	85.12	124	P	P	09 19 13.9	-1.7
	0.3nm,0.5s,baz=318,slow=4.9,SNR=6.8						

SJA 23 09:07:21.5±0.8, 31.98S×69.32W, h114km±3km, ML3.8, MW3.2, San Juan Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RTLS	Leoncito	0.18	6	iP	Pn	09 07 38.9	+1.1
RTLS				iS	Sn	09 07 51.3	+1.4
AUSP	Uspallata	0.25	194	iP	Pn	09 07 39.2	+1.3
RTCV	Cerro Valdivia	0.67	80	iP	Pn	09 07 41.5	+1.4
RTCV				iS	Sn	09 07 55.0	+0.9
SJA	San Juan	0.79	55	iP	Pn	09 07 41.4	+0.3
SJA				IAML		09 07 55.5	
	comp=Z,2μm,0.1s						
SJA				iS	Sn	09 07 56.5	+0.7
RTLL	Cerro Villicun	0.97	48	iP	Pn	09 07 43.5	+0.7
RTLL				iS	Sn	09 07 59.5	+0.7
AMOG	MOGNA	1.26	34	iP	Pn	09 07 46.9	+1.1
ROC1	El Roble	1.74	235	iP	Pn	09 07 52.4	+0.7
ROC1				iS	Sn	09 08 15.8	+1.0
ACAN	Cantantal	1.83	100	iP	Pn	09 07 53.9	+1.3
ACAN				iS	Sn	09 08 17.1	+0.8
AGUA	GUANDACOL	2.59	16	iP	Pn	09 08 03.5	+1.2
AGUA				iS	Sn	09 08 34.4	+0.7
MRA	San Martin	3.08	99	iP	Pn	09 08 09.6	+0.8

*SCB **23** 09:12:18.8±0.9, 18.11S×69.23W, h100km, Ml3.6/1, Error ellipse: s-maj=32.3km s-min=6.7km az=86.0*
*GUC **23** 09:12:19.5±0.4, 18.05S×69.48W, h122km±3km, ML3.3*

ISC 23 09:12:19.4±2.4, 18.09S±0.06×69.5W±0.1, h131km±17km, n10, σ0§40/17, 3C-2D, Northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB13	IPOC Station P	0.25	180	iP	Pn	09 12 38.5	+0.2
PB13				iS	Sn	09 12 52.4	-0.1
PB12	IPOC Station P	0.95	236	iP	Pn	09 12 42.0	0.0
PB12				iS	Sn	09 12 59.3	+0.1
MNMC	Minye Minye	1.04	185	iP	Pn	09 12 43.1	-0.1
MNMC				iS	Sn	09 13 01.3	+0.1
MNMC				IAML		09 13 01.9	
	comp=N,1μm,0.4s						
BBOJ	La Paz, Jacaqu	1.67	49	ePn	Pn	09 12 50.0	-0.1
BBOD	La Paz, Gloria	1.68	31	⇓iPn	Pn	09 12 50.6	+0.4
BBOD				eSn	Sn	09 13 14.1	+0.5
BBOE	La Paz, Chanca	1.92	49	⇓iPn	Pn	09 12 53.3	+0.2
PB08	IPOC Station P	2.07	171	iP	Pn	09 12 54.5	-0.2
PB08				iS	Sn	09 13 21.5	-0.2
PB08				IAML		09 13 21.9	
	comp=E,131nm,0.2s						
LPAZ	La Paz	2.21	36	⇑ePn	Pn	09 12 57.0	+0.3
LPAZ				eSn	Sn	09 13 24.2	-1.0
BBOB	La Paz, Bander	2.33	34	⇑iPn	Pn	09 12 58.1	0.0
BBOB				eSn	Sn	09 13 27.3	-0.4
	comp=E,125nm,0.6s						
MOCB	Mochara	4.81	131	⇑iPn	Pn	09 13 30.9	+0.4

*ISK **23** 09:20:35.6, 39.46N×40.62E, h37km, MD2.2*
*DDA **23** 09:20:37.7, 39.27N×40.36E, h7km, Md2.6*
*CSEM **23** 09:20:38.2±0.4, 39.26N×40.37E, h10km, MD2.6, Error ellipse: s-maj=8.4km s-min=7.7km az=56.0*

ISC 23 09:20:38.4±1.1, 39.27N±0.04×40.35E±0.03, h8km±10km, n13, σ0§55/23, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YEDI	Yedisu-Bingol	0.22	42	ePG	Pg	09 20 42.4	-0.6
YEDI				eSG	Sg	09 20 46.5	+0.4
YEDI	Yedisu-Bingol	0.22	42	ePg	Pg	09 20 42.4	-0.6
YEDI				eSg	Sg	09 20 46.5	+0.4
BGOL	Bingol	0.38	138	P	Pg	09 20 45.8	0.0
BGOL	Bingol	0.38	138	iP	Pg	09 20 45.8	0.0
BGOL				iS	Sb	09 20 53.4	0.0
BNGB	Bing¶	0.38	137	PG	Pg	09 20 46.1	+0.2
BNGB				SG	Sb	09 20 53.9	+0.4
BINT	Bingol	0.41	165	iPg	Pg	09 20 46.1	-0.3
BINT				iSg	Sb	09 20 53.9	-0.5
TNCL	Tunceli-Merkez	0.65	256	P	Pg	09 20 50.4	-0.5
TNCL				S	Sb	09 21 01.1	-0.2
TNCL	Tunceli-Merkez	0.65	256	iP	Pg	09 20 50.4	-0.5
TNCL				iS	Sb	09 21 01.1	-0.2
BNGL	BINGOL	0.70	117	iP	Pg	09 20 50.8	-1.1
BNGL				iS	Sn	09 21 05.2	-0.8
PTK	Pertek	0.84	243	ePN	Pb	09 20 55.2	-0.1
PTK	Pertek	0.84	243	ePn	Pb	09 20 55.2	-0.1
KELT	Kelkit	1.22	316	P	Pn	09 21 02.9	+0.9
KELT				S	Sn	09 21 18.5	-0.3
KELT	Kelkit	1.22	316	iP	Pn	09 21 02.9	+0.9
KELT				iS	Sn	09 21 18.5	-0.3

JMA 23 09:23:31.1, 39.21N×141.83E, h53km±1km, M1.5, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.18	224	P	Pn	09 23 39.7	0.0
OFUJ				S	Sn	09 23 45.7	0.0
MIYJ	Miyakonagasawa	0.37	359	P	Pn	09 23 41.1	0.0
MIYJ				S	Sn	09 23 48.1	-0.2
JOM	Ohasama	0.49	302	P	Pn	09 23 42.5	0.0
JOM				eS	Sn	09 23 50.8	+0.1
JMK	Ichinoseki	0.54	242	P	Pn	09 23 42.9	-0.1
JMK				S	Sn	09 23 51.4	-0.2
JIO	Ouri	0.84	207	P	Pn	09 23 46.4	-0.4
JIO				S	Sn	09 23 57.3	-1.0
JRG	Rokugo	0.95	282	P	Pn	09 23 48.2	0.0
JRG				S	Sn	09 24 00.7	-0.1
JYK	Kaneyama	1.18	256	P	Pn	09 23 51.3	0.0
JANG	Nango	1.19	348	P	Pn	09 23 51.3	-0.1
JANG				eS	Sn	09 24 06.5	0.0

*ISCJB **23** 09:23:47.1±0.7, 36.81N±0.03×140.57E±0.06, h10km, mb3.6/2, Error ellipse: s-maj=7.6km s-min=4.5km az=15.7*
*JMA **23** 09:23:47.2, 36.83N×140.54E, h3km±1km, M2.4*

ISC 23 09:23:47.6±1.1, 36.83N±0.04×140.51E±0.05, h10km, n11, σ1§14/14, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	Hitachi	0.22	168	P	Pg	09 23 51.6	-0.6
JHO				S	Sg	09 23 54.6	-0.6
ONAJ	Iwakimizuishiy	0.36	40	P	Pg	09 23 54.0	-0.7
JSB	Shiboa	0.49	287	P	Pb	09 23 57.9	-0.5
JFK	Kawauchi	0.61	28	P	Pg	09 23 58.6	-0.9
JYT	Yasato	0.65	203	P	Pg	09 23 59.7	-0.5
JYT				eS	Sg	09 24 08.8	+0.1
JFT	Otama	0.70	349	P	Pg	09 24 00.9	-0.3
JFT				S	Sb	09 24 10.8	-0.9
JAG	Ashikaga	0.94	245	P	Pg	09 24 04.9	-0.8
JAG				S	Sg	09 24 17.7	-0.2
MAT	Matsushiro	1.87	262	P	Pb	09 24 21.3	-0.6
MAT				S	Sb	09 24 45.9	+0.5
ASAJ	Asahikawa	7.45	12	P	Pn	09 25 30.5	-5.8
	0.6nm,0.3s,baz=342,slow=19,SNR=4.3						
SEY	Seymchan	27.14	12	P	P	09 29 33.7	+3.1
	0.8nm,0.5s,baz=139,slow=6.3,SNR=4.7						
TXAR	Lajitas Array	90.82	52	P	P	09 37 07.7	+16
	0.2nm,0.6s,baz=327,slow=4.3,SNR=3.7						

*NIED **23** 09:24:00, 38.40N×142.30E, h17km, Mw3.6 Best double couple: M≈2.56000×10^14 NP1:φs9.00000°, δ26.00000°, λ-173.00000°. NP2:φs273.00000°, δ87.00000°, λ-64.00000°.*
*IDC **23** 09:24:27.6±5.4, 39.84N×142.38E, h70km±59km, mb3.2/3, mb1 3.4/5, mb1mx3.1/49, mbtmp3.4/5, ML3.0/2, MS3.0/2, Ms1 3.0/2, ms1mx2.3/50, Error ellipse: s-maj=100.3km s-min=10.5km az=113.0*
*ISCJB **23** 09:24:34.5±1.7, 38.39N±0.05×142.3E±0.1, h26km±9km, mb4.3/2, MS3.5/1, Error ellipse: s-maj=14.3km s-min=8.3km az=13.2*
*JMA **23** 09:24:35.1±0.2, 38.44N×142.31E, h26km±2km, M3.6*

ISC 23 09:24:29.8±1.9, 38.32N±0.04×142.40E±0.08, h9km±11km, n16, σ1§39/23, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.83	279	P	Pn	09 24 49.3	+1.5
JIO				S	Sn	09 24 58.8	-1.4
OFUJ	Ofunato	0.95	323	P	Pn	09 24 50.2	+0.9
OFUJ				S	Sb	09 25 01.0	-0.1
JMK	Ichinoseki	1.12	305	P	Pn	09 24 53.2	+1.6
JMK				eS	Sg	09 25 05.8	+0.1
JMM	Marumori	1.35	251	P	Pg	09 24 57.1	+1.4
JMM				eS	Sg	09 25 13.5	+0.4
JOU	Okura	1.36	272	P	Pg	09 24 58.0	+2.0
JOU				S	Sg	09 25 14.3	+0.6
JOM	Ohasama	1.44	323	P	Pg	09 24 57.9	+0.5
JOM				eS	Sn	09 25 14.3	-0.7
JFK	Kawauchi	1.54	232	P	Pg	09 24 59.7	+0.4
JFK				S	Sb	09 25 17.8	-0.4
JYK	Kaneyama	1.70	291	P	Pg	09 25 02.8	+0.3
JRG	Rokugo	1.75	308	P	Pg	09 25 03.2	-0.1
MJAR	Matsushiro Arr	3.78	243	P	Pb	09 25 35.2	-1.5
	0.7nm,0.3s,baz=64,slow=8.9,SNR=6.6						
MJAR				S	Sg	09 26 27.8	-3.4
	0.8nm,0.3s,baz=17,slow=13,SNR=2.6						
MAT	Matsushiro	3.78	243	P	Pb	09 25 35.2	-1.5
MAT				eS	Sb	09 26 21.7	-1.0
ASAJ	Asahikawa	5.79	1	S	Pg	09 26 20.1	-0.5
	1.1nm,0.3s,baz=356,slow=16,SNR=2.7						
KLR	Kul'dur	13.33	328	LR	LR	09 32 50.4	
	comp=Z,20nm,18.4s,baz=70,slow=42						
WRA	Warramunga Arr	58.45	189	P	P	09 34 26.1	0.0
	0.3nm,0.6s,baz=9.6,slow=8.2,SNR=9.4						
ASAR	Alice Springs	62.18	189	P	P	09 34 53.4	+1.8
	6.5nm,0.4s,baz=2.5,slow=4.9,SNR=3.7						
ULM	Lac du Bonnet	78.00	34	LR	LR	10 11 25.9	
	comp=Z,24nm,19.0s,baz=66,slow=37						

*SJA **23** 09:29:49.6±0.7, 22.48S×68.16W, h204km±31km, ML3.9, MW3.3*
*ISCJB **23** 09:29:50.7±0.3, 22.59S±0.03×68.38W±0.04, h145km±4km, mb4.0/3, Error ellipse: s-maj=5.7km s-min=4.4km az=161.1*
*IDC **23** 09:29:51.2±0.9, 22.45S×68.08W, h122km±11km, mb3.9/3, mb1 4.0/6, mb1mx3.6/24, mbtmp4.3/6, Error ellipse: s-maj=36.2km s-min=20.1km az=119.0*
*SCB **23** 09:29:51.3±1.1, 22.26S×68.20W, h125km, Ml3.6/1, Error ellipse: s-maj=32.0km s-min=6.8km az=28.0*
*NEIC **23** 09:29:52.0, 22.39S×68.50W, h148km, MG4.2(GUC), After GUC.*
*GUC **23** 09:29:52.3±0.6, 22.39S×68.50W, h148km±6km, ML4.2*

ISC 23 09:29:51.4±0.7, 22.53S±0.05×68.36W±0.04, h139km±8km, n37, σ1§37/49, mb4.0/3, 1C-4D, Northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LVC	Limon Verde	0.52	261	P	Pn	09 30 12.5	+0.5
	27μm,0.3s,baz=84,slow=5.9						
LVC				S	Sn	09 30 28.1	+0.5
	6μm,0.3s,baz=310,slow=20,SNR=23						
PB09	IPOC Station P	1.10	312	iP	Pn	09 30 17.2	+1.0
PB09				iS	Sn	09 30 35.7	+0.5
PB09				IAML		09 30 36.0	
	comp=N,11μm,0.8s						
PB06	IPOC Station P	1.13	261	iP	Pn	09 30 17.5	+1.0
PB06				iS	Sn	09 30 37.2	+1.5
PB06				IAML		09 30 39.9	
	comp=E,3μm,0.1s						
PB07	IPOC Station P	1.63	299	iP	Pn	09 30 22.3	+0.6
PB07				iS	Sn	09 30 44.5	-0.4
PB07				IAML		09 30 45.7	
	comp=N,5μm,0.2s						
PB04	IPOC Station P	1.67	277	iP	Pn	09 30 23.0	+0.8
PB04				iS	Sn	09 30 46.3	+0.6
PB04				IAML		09 30 49.2	
	comp=N,2μm,0.4s						
PB01	IPOC Station P	1.82	325	iP	Pn	09 30 23.8	0.0
PB01				iS	Sn	09 30 47.8	-0.9
PB01				IAML		09 30 49.6	
	comp=E,2μm,0.4s						
PB08	IPOC Station P	2.49	343	iP	Pn	09 30 32.8	+0.5
PB08				iS	Sn	09 31 03.5	-0.2
PB08				IAML		09 31 05.3	
	comp=E,862nm,0.6s						

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YJA	Yavi	2.66	83	iP	Pn	09 30 35.0	+0.6
YJA				IAML		09 30 37.1	
	comp=Z,53nm,0.4s						
YJA				iS	Sn	09 31 08.6	+1.2
HJA	Humahuaca	2.80	104	iP	Pn	09 30 36.8	+0.7
MOCB	Mochara	2.83	64	⇓iPn	Pn	09 30 37.6	+1.0
MOCB				eSn	Sn	09 31 11.0	-0.4
	comp=Z,136nm,0.8s						
AZAP	Zapla	3.46	120	iP	Pn	09 30 45.0	+0.5
AZAP				iS	Sn	09 31 24.9	-0.7
FSA	Cafayete	4.17	149	iP	Pn	09 30 54.4	+0.6
AHML	Horco Molle	5.05	148	iP	Pn	09 31 05.0	-0.3
BBOJ	La Paz, Jacaqu	5.53	2	⇓iPn	Pn	09 31 13.3	+1.0
BBOE	La Paz, Chanca	5.70	4	⇓iPn	Pn	09 31 15.1	+0.5
BBOD	La Paz, Gloria	5.87	358	⇓iPn	Pn	09 31 17.9	+1.1
VCA	Vinchina	6.18	179	iP	Pn	09 31 21.0	+0.5
VCA				IAML		09 31 24.6	
	comp=Z,163nm,0.4s						
VCA				iS	Sn	09 32 28.2	-1.9
LPAZ	La Paz	6.22	2	iP	Pn	09 31 21.2	-0.3
LPAZ	La Paz	6.22	2	P	Pn	09 31 21.7	+0.2
	comp=Z,8.7nm,0.3s,baz=177,slow=5.2,SNR=350						
LPAZ	La Paz	6.22	2	⇑iPn	Pn	09 31 23.0	+1.5
BBOB	La Paz, Bander	6.36	2	ePn	Pn	09 31 23.2	-0.2
ARE	Arequipa	6.72	333	eP	Pn	09 31 26.0	-2.0
ARE				eS	Sn	09 32 40.0	-3.6
LCO	Las Campanas	6.79	198	ePn	Pn	09 31 27.4	-1.4
AGUA	GUANDACOL	6.93	181	iP	Pn	09 31 29.6	-0.9
AGUA				iS	Sn	09 32 45.6	-2.5
AMOG	MOGNA	8.37	181	iS	Sn	09 33 17.2	-5.7
RTLL	Cerro Villicun	8.76	181	iP	Pn	09 31 53.3	-1.7
RTLL				iS	Sn	09 33 26.1	-6.2
RTCV	Cerro Valdivia	9.29	181	iP	Pn	09 32 00.4	-1.7
TCA	Tanti	9.39	160	iP	Pn	09 32 00.9	-2.5
TCA				iS	Sn	09 33 38.9	-8.6
SIV	San Ignacio	9.47	48	P	Pn	09 32 00.7	-3.9
	comp=Z,8.4nm,0.3s,baz=240,slow=9.7,SNR=88						
SIV				S	Sn	09 33 38.5	-11
	comp=Z,3.3nm,0.3s,baz=133,slow=23,SNR=8.9						
NNA	Nana	13.25	321	Pn	Pn	09 32 55.2	+0.9
TRQA	Tornquist	16.41	162	eP	P	09 33 34.8	+0.8
PLCA	Paso Flores	18.24	185	P	Pn	09 33 56.4	+0.7
	comp=Z,0.1nm,0.3s,baz=26,slow=13,SNR=3.4						
PTGA	Pitinga	23.16	22	P	P	09 34 44.7	-1.0
	comp=Z,2.3nm,0.4s,baz=212,slow=8.2,SNR=5.9						
TORD	Torodi Ar. Bea	77.22	70	P	P	09 41 30.9	+0.3
	comp=Z,2.2nm,0.5s,baz=256,slow=5.5,SNR=54						
YKA	Yellowknife Ar	92.33	340	P	P	09 42 46.7	+1.3
	comp=Z,0.8nm,0.7s,baz=134,slow=4.5,SNR=18						
WRA	Warramunga Arr	132.32	209	PKP	PKPdf	09 48 52.2	+2.4
	comp=Z,0.5nm,0.6s,baz=164,slow=1.8,SNR=9.1						
MKAR	Makanchi Array	146.16	37	PKPbc	PKPab	09 49 16.1	-0.1
	comp=Z,1.5nm,0.6s,baz=320,slow=3.2,SNR=14						

*NIED **23** 09:32:00, 35.90N×139.70E, h92km, Mw3.9 Best double couple: M≈7.35000×10^14 NP1:φs166.00000°, δ29.00000°, λ70.00000°. NP2:φs9.00000°, δ63.00000°, λ101.00000°.*
*ISCJB **23** 09:32:24.3±0.4, 35.88N±0.04×139.65E±0.07, h96km±3km, mb3.9/10, Error ellipse: s-maj=9.6km s-min=5.5km az=160.9*
*IDC **23** 09:32:25.5±1.1, 35.84N×139.62E, h94km±10km, mb3.6/10, mb1 3.8/12, mb1mx3.5/46, mbtmp4.0/12, MS2.7/2, Ms1 2.7/2, ms1mx2.4/44, Error ellipse: s-maj=22.5km s-min=7.3km az=67.0*
*JMA **23** 09:32:25.8±0.2, 35.91N×139.68E, h85km±2km, M3.6 Broadband fault plane solution: P waves. NP1: φs2.00000°, δ56.00000°, λ88.00000°. NP2:φs186.00000°, δ34.00000°, λ93.00000°. Principal axes: T Plg79.0000°, Azm264.0000°; N Plg2.0000°, Azm4.0000°; P Plg11.0000°, Azm94.0000°;*
JMA Felt I J1.

ISC 23 09:32:25.3±0.8, 35.90N±0.04×139.67E±0.07, h90km±6km, n29, σ0§82/38, mb4.0/10, 3C-3D, Near south coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TOK	Tokyo	0.22	161	P	Pn	09 32 39.5	+1.2
JHU	Hanno	0.32	262	⇑P	Pn	09 32 39.2	+0.4
JHU				S	Sn	09 32 48.9	0.0
JAG	Ashikaga	0.56	342	⇑P	Pn	09 32 40.4	-0.1
JAG				S	Sn	09 32 51.0	-0.9
JRY	Ryogami san	0.64	281	⇓P	Pn	09 32 41.7	+0.5
JRY				S	Sn	09 32 53.7	+0.6
JOD2	Odawara 2	0.79	217	⇓P	Pn	09 32 42.4	-0.3
JOD2				S	Sn	09 32 54.6	-1.2
JKT	Katashina	0.93	339	⇑P	Pn	09 32 44.3	-0.1
JKT				S	Sn	09 32 58.2	-0.4
JYN	Shimob	1.00	247	⇓P	Pn	09 32 45.1	+0.1
JYN				S	Sn	09 32 59.6	-0.3
JIM2	Oshima 3	1.19	190	P	Pn	09 32 46.8	-0.5
JIM2				S	Sn	09 33 02.6	-1.2
BSO3	Boso 3	1.29	148	P	Pn	09 32 48.6	+0.5
MJAR	Matsushiro Arr	1.35	299	P	Pn	09 32 48.7	-0.4
	73nm,0.3s,baz=129,slow=10,SNR=696						
MJAR				S	Sn	09 33 06.8	-0.3
	40nm,0.3s,baz=83,slow=39,SNR=13						
MJAR				LR	LR	09 33 13.9	
	comp=Z,26nm,21.6s,baz=175,slow=37						
MAT	Matsushiro	1.35	299	P	Pn	09 32 49.3	+0.1
MAT				eS	Sn	09 33 05.7	-1.5
MAT	Matsushiro	1.35	299	P	Pn	09 32 49.2	+0.1
MAT				eS	Sn	09 33 07.2	0.0
BSO1	Boso 1	1.64	139	P	Pn	09 32 52.5	+0.3
JHJ	Hachijo jima 2	2.77	178	P	Pn	09 33 08.7	+1.0
	97nm,0.3s,baz=281,slow=22,SNR=20						
JHJ				S	Sn	09 33 39.6	-0.8
	60nm,0.3s,baz=59,slow=19,SNR=6.4						
JNU	Nakatsue	7.77	252	P	Pn	09 34 16.7	+1.1
	1.0nm,0.3s,baz=52,slow=3.8,SNR=8.9						
JCJ	Chichijima	9.03	166	LR	LR	09 37 40.6	
	comp=Z,102nm,20.9s,baz=150,slow=35						
KSRS	Korea Array	9.56	283	P	Pn	09 34 42.6	+2.6
	0.4nm,0.3s,baz=92,slow=14,SNR=12						
KSRS				LR	LR	09 37 34.0	
	comp=Z,24nm,18.2s,baz=60,slow=32						
USRK	Ussuriysk Ar.	10.17	327	P	Pn	09 34 52.4	+4.2
	0.2nm,0.3s,baz=143,slow=12

COLS			*e*S		**Sg**	**09 45 25.2 -0.1**
SNET	**Serv Nac Est T**	**1.76 157**	*e*P		**Pg**	**09 45 01.9 -0.6**
SNET			*e*S		**Sg**	**09 45 27.0 +1.6**
LBRS	**Las Brisas**	**1.79 151**	*e*P		**Pg**	**09 45 02.9 -0.3**
LBRS			*e*S		Sg	09 45 28.7 +2.2
LFRS	**El Faro**	**1.89 153**	*e*P		**Pg**	**09 45 04.2 -0.8**
LFRS			*e*S		Sg	09 45 31.3 +1.8
CAHU	**Cacacuatique**	**2.27 133**	*e*P		**Pg**	**09 45 12.0 -0.3**
CCIG	**Comitan**	**2.33 295**	*e*P		**Pn**	**09 45 07.4 +0.1**
CCIG			*i*S		**Sn**	**09 45 36.5 +0.5**
PACA	**Pacayal**	**2.41 140**	*e*P		**Pg**	**09 45 13.6 -1.4**
PACA			*e*S		**Sg**	**09 45 47.3 +0.9**
LCY	**Lacayo**	**2.47 140**	*e*P		**Pg**	**09 45 15.7 -0.4**
TGUH	**Tegucigalpa,Un**	**2.87 116**	*e*P		**Pg**	**09 45 22.1 -1.5**
TGUH			*e*S		Sg	09 46 05.5 +4.7
TGUH			AML		AML	09 46 15.9
	comp=Z,4μm,0.8s					
CNCH	**Conchagua**	**2.88 135**	*e*P		**Pg**	**09 45 21.8 -2.1**
PCIG		**3.19 277**	*e*P		**Pn**	**09 45 18.6 -0.4**
PCIG			*e*S		**Sn**	**09 45 55.8 -1.3**
TEL3	**Telica 3**	**4.06 132**	*e*P		**Pg**	**09 45 44.6 -1.9**
ESTN	**Estel**	**4.10 122**	*e*P		Pb	09 45 34.5 -6.6
ESTN			AML		AML	09 46 48.9
	comp=N,155nm,0.6s					
CNGN	**Cerro Negro**	**4.21 131**	*e*P		**Pg**	**09 45 48.3 -1.2**
CNGN			AML		AML	09 46 54.4
	comp=E,61nm,0.7s					
TEIG	**Tepich**	**5.13 18**	*e*P		**Pn**	**09 45 47.6 +2.0**
ESPN	**Las Esperanzas**	**6.29 119**	*e*P		Pn	09 46 05.1 +3.4

KRSC ***23*** *09:48:56.8±1.6, 54°.46N×158°.49E, h300km±12km, ML3.8*
ISCJB ***23*** *09:48:58.6±0.6, 54°.52N±0°.06×158°.4E±0°.1, h288km±4km, mb3.2/5, Error ellipse: s-maj=13.5km s-min=6.6km az=31.1*
IDC ***23*** *09:48:59.1±1.3, 54°.61N×158°.02E, h282km±23km, mb3.0/5, mb1 3.3/6, mb1mx2.9/50, mbtmp3.7/6, Error ellipse: s-maj=47.8km s-min=23.6km az=49.0*
ISC 23 09:48:59.4±0.9, 54°.53N±0°.07×158°.40E±0°.09, h281km±7km, n26, σ1°12/36, mb3.4/5, Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GNL	**Ganaly**	**0.87**	**198**	*e*P	**Pn**	**09 49 37.2**	**-0.2**
GNL				*e*S	**S**	**09 50 08.3**	**+0.8**
KRER	**Koryakskii**	**1.24**	**170**	*e*P	**Pn**	**09 49 37.5**	**-1.9**
AVH	**Avacha**	**1.28**	**171**	*e*P	**Pn**	**09 49 40.5**	**+1.1**
SDLR	**Sedlovina**	**1.28**	**167**	*e*P	**Pn**	**09 49 39.7**	**+0.2**
SDLR				*e*S	**S**	**09 50 12.6**	**+1.3**
SMAR	**Somma**	**1.29**	**169**	*e*P	**Pn**	**09 49 40.3**	**+0.6**
UGLR	**Uglovaya**	**1.34**	**169**	*e*P	**Pn**	**09 49 40.2**	**+0.3**
UGLR				*e*S	**S**	**09 50 13.4**	**+1.4**
PETK	**Petropavlovsk-**	**1.48**	**197**	P	**Pn**	**09 49 40.5**	**-0.2**
	1.3nm,0.3s,baz=352,slow=7.1,SNR=32						
KMNR	**Kamenistaya**	**1.62**	**40**	*e*P	**Pn**	**09 49 41.8**	**+0.2**
KRMR	**Karymshinskiy**	**1.71**	**185**	*e*P	**Pn**	**09 49 41.8**	**-0.4**
KRMR				*e*S	**S**	**09 50 16.1**	**-0.1**
MKZ	**Mys Kozlova**	**1.94**	**88**	*e*P	**Pn**	**09 49 43.1**	**-0.8**
MKZ				*e*S	**S**	**09 50 18.4**	**-0.9**
ZLN	**Zelenaya**	**2.03**	**42**	*e*P	**Pn**	**09 49 45.7**	**+0.9**
LGNR	**Loginova**	**2.04**	**39**	*e*P	**Pn**	**09 49 46.0**	**+0.9**
CIRR	**Tsirk**	**2.08**	**39**	*e*P	**Pn**	**09 49 46.0**	**+0.7**
RUS	**Russkaya**	**2.10**	**178**	*e*P	**Pn**	**09 49 43.7**	**-1.6**
RUS				*e*S	**S**	**09 50 19.4**	**-2.5**
KRSR	**Krestovskiy**	**2.10**	**35**	*e*P	**Pn**	**09 49 45.3**	**-0.1**
ASAK	**Asacha**	**2.17**	**188**	*e*P	**Pn**	**09 49 47.5**	**+1.4**
BDR	**Baidarnaya**	**2.60**	**37**	*e*P	**Pn**	**09 49 50.4**	**+0.6**
BDR				*e*S	**S**	**09 50 30.9**	**+0.9**
SRKR	**Sorokina**	**2.65**	**35**	*e*P	**Pn**	**09 49 50.6**	**+0.3**
SRKR				*e*S	**S**	**09 50 31.5**	**+0.6**
KBG	**Krutoberegovo**	**3.01**	**53**	*e*P	**Pn**	**09 49 53.4**	**-0.4**
KBG				*e*S	**S**	**09 50 35.4**	**-1.7**
BKI	**Bering**	**4.43**	**78**	*e*P	**Pn**	**09 50 10.2**	**+0.8**
BKI				*e*S	**S**	**09 51 04.2**	**-1.2**
SEY	**Seymchan**	**8.99**	**342**	P	**Pn**	**09 51 03.6**	**-1.2**
	0.1nm,0.3s,baz=153,slow=14,SNR=9.3						
TIXI	**Tiksi**	**21.36**	**335**	P	**P**	**09 53 22.1**	**-2.4**
	1.1nm,0.5s,baz=133,slow=9.9,SNR=4.5						
ILAR	**Eielson Array**	**28.55**	**47**	P	**P**	**09 54 28.9**	**-0.1**
	0.6nm,0.4s,baz=260,slow=6.7,SNR=16						
YKA	**Yellowknife Ar**	**42.79**	**43**	P	**P**	**09 56 29.3**	**+0.1**
	0.2nm,0.4s,baz=300,slow=7.3,SNR=7.4						
PDAR	**Pinedale Array**	**57.70**	**61**	P	**P**	**09 58 22.1**	**+1.2**
	0.6nm,0.5s,baz=338,slow=1.6,SNR=9.7						
TXAR	**Lajitas Array**	**70.99**	**66**	P	**P**	**09 59 47.4**	**+0.7**
	0.4nm,0.5s,baz=293,slow=5.4,SNR=9.8						

ISK ***23*** *09:49:42.2, 38°.98N×29°.47E, h16km, MD2.3*
ISCJB ***23*** *09:49:44.9±0.5, 39°.11N±0°.03×29°.15E±0°.03, h8km±5km, Error ellipse: s-maj=5.2km s-min=3.8km az=45.0*
DDA ***23*** *09:49:44.9, 39°.11N×29°.13E, h7km, Md2.9*
CSEM ***23*** *09:49:44.9±0.2, 39°.13N×29°.18E, h10km, MD2.9, Error ellipse: s-maj=6.3km s-min=5.2km az=120.0*
ISC 23 09:49:44.9±0.9, 39°.09N±0°.03×29°.21E±0°.02, h20km±4km, n38, σ1°21/53, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.21**	**89**	P	**Pg**	**09 49 51.0**	**+0.7**
GDZ				S	**Sg**	**09 49 54.8**	**+0.8**
GDZ	**Gediz**	**0.21**	**89**	*i*P	**Pg**	**09 49 51.0**	**+0.7**
GDZ				*i*S	**Sg**	**09 49 54.8**	**+0.8**
DEMI	**Demirci**	**0.39**	**264**	P	**Pg**	**09 49 52.0**	**-1.2**
DEMI				S	**Sg**	**09 49 56.5**	**-2.2**
DEMI	**Demirci**	**0.39**	**264**	*i*P	**Pg**	**09 49 52.0**	**-1.2**
DEMI				*i*S	**Sg**	**09 49 56.5**	**-2.2**
TVSB	**Tavsanli**	**0.41**	**28**	*e*PG	**Pg**	**09 49 53.0**	**-0.6**
TVSB				*e*SG	**Sg**	**09 49 58.8**	**-0.6**
KULA	**Kula-Manisa**	**0.71**	**217**	*e*PG	**Pb**	**09 49 58.8**	**+0.1**
KULA				*e*SG	**Sb**	**09 50 08.5**	**+0.4**
KHAL	**Karahalli**	**0.75**	**163**	P	**Pn**	**09 50 00.8**	**+0.3**
KHAL				S	**Sn**	**09 50 11.5**	**+0.2**
KHAL	**Karahalli**	**0.75**	**163**	*i*P	**Pn**	**09 50 00.8**	**+0.3**
KHAL				*i*S	**Sn**	**09 50 11.5**	**+0.2**
DURS	**Dursunbey**	**0.77**	**312**	P	**Pb**	**09 49 58.4**	**-1.3**
DURS	**Dursunbey**	**0.77**	**312**	*i*P	**Pb**	**09 49 58.4**	**-1.3**
DURS				*i*S	**Sg**	**09 50 11.2**	**+0.8**
MANT	**Manisa**	**0.78**	**221**	P	**Pb**	**09 50 00.0**	**0.0**
MANT				S	**Sb**	**09 50 09.5**	**-0.8**
MANT	**Manisa**	**0.78**	**221**	*i*P	**Pb**	**09 50 00.0**	**0.0**
MANT				*i*S	**Sb**	**09 50 09.5**	**-0.8**
ORLT	**Orhaneli**	**0.99**	**346**	*e*PN	**Pb**	**09 50 03.7**	**+0.3**
ORLT	**Orhaneli**	**0.99**	**346**	*e*Pn	**Pb**	**09 50 03.7**	**+0.3**
AKS	**Akhisar**	**1.11**	**260**	*e*PN	**Pb**	**09 50 06.3**	**+0.8**
AKS	**Akhisar**	**1.11**	**260**	*e*Pn	**Pb**	**09 50 06.3**	**+0.8**
BALB	**Balikesir**	**1.17**	**299**	*e*PN	**Pg**	**09 50 07.6**	**0.0**
BALB				*e*SN	**Sg**	**09 50 26.8**	**+3.8**
BALB	**Balikesir**	**1.17**	**299**	*e*Pn	**Pg**	**09 50 07.6**	**0.0**
BALB				*e*Sn	**Sg**	**09 50 26.8**	**+3.8**
CAVI	**Cavuskoy**	**1.22**	**23**	*e*PN	**Pn**	**09 50 05.7**	**-1.2**
CAVI	**Cavuskoy**	**1.22**	**23**	*e*Pn	**Pn**	**09 50 05.7**	**-1.2**
BORA	**Eskisehir**	**1.25**	**50**	P	**Pg**	**09 50 08.8**	**-0.3**
BORA				S	**Sg**	**09 50 25.9**	**+0.4**
BORA	**Eskisehir**	**1.25**	**50**	*i*P	**Pg**	**09 50 08.8**	**-0.3**
BORA				*i*S	**Sg**	**09 50 25.9**	**+0.4**
IZI	**Iznik**	**1.27**	**9**	*e*PN	**Pn**	**09 50 07.1**	**-0.5**
IZI	**Iznik**	**1.27**	**9**	*e*Pn	**Pn**	**09 50 07.1**	**-0.5**
MDNY	**Mudanya-Bursa**	**1.31**	**349**	*e*PN	**Pn**	**09 50 08.5**	**+0.4**
MDNY	**Mudanya-Bursa**	**1.31**	**349**	*e*Pn	**Pn**	**09 50 08.5**	**+0.4**
KCTX	**Karacabey (Bur**	**1.35**	**331**	*e*PN	**Pb**	**09 50 10.5**	**+0.9**
KCTX	**Karacabey (Bur**	**1.35**	**331**	*e*Pn	**Pb**	**09 50 10.5**	**+0.9**
ARMT	**Armutlu**	**1.50**	**350**	*e*PN	**Pn**	**09 50 11.6**	**+0.8**
ARMT	**Armutlu**	**1.50**	**350**	*e*Pn	**Pn**	**09 50 11.6**	**+0.8**
GONE	**Gonen-Balikesi**	**1.52**	**310**	*e*PN	**Pb**	**09 50 13.0**	**+0.6**
GONE	**Gonen-Balikesi**	**1.52**	**310**	*e*Pn	**Pb**	**09 50 13.0**	**+0.6**
EDC	**Edincik**	**1.63**	**321**	*e*PN	**Pb**	**09 50 14.4**	**0.0**
EDC	**Edincik**	**1.63**	**321**	*e*Pn	**Pb**	**09 50 14.4**	**0.0**
GULT	**Gulveren**	**1.68**	**36**	*e*PN	**Pn**	**09 50 10.8**	**-2.5**
GULT	**Gulveren**	**1.68**	**36**	*e*Pn	**Pn**	**09 50 10.8**	**-2.5**
HRT	**Hereke**	**1.77**	**11**	*e*PN	**Pn**	**09 50 13.9**	**-0.6**
HRT	**Hereke**	**1.77**	**11**	*e*Pn	**Pn**	**09 50 13.9**	**-0.6**

NIED ***23*** *09:49:00, 40°.00N×143°.00E, h23km, Mw3.8 Best double couple: M0=4.74000×10^14 NP1:φ0=240.00000°, δ10.00000°, λ127.00000°. NP2:φ0=22.00000°, δ82.00000°, λ84.00000°.*
JMA 23 09:49:54.8±0.2, 40°.05N×142°.97E, h16km±2km, M3.8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**0.86**	**263**	P	Pb	09 50 11.0	-0.3
JTH				S	Sb	09 50 22.5	0.0
MIYJ	**Miyakonagasawa**	**1.00**	**242**	P	Pb	09 50 13.5	-0.3
JANG	**Nango**	**1.16**	**287**	P	Pn	09 50 15.9	-0.5
JKZ	**Kuzumaki**	**1.26**	**268**	P	Pn	09 50 17.6	-0.2
JKZ				S	Sg	09 50 35.4	-0.2
JOM	**Ohasama**	**1.42**	**247**	P	Pn	09 50 20.3	+0.4
JOM				*e*S	Sb	09 50 38.8	+0.2
JTM	**Tenmabayashi**	**1.63**	**297**	P	Pb	09 50 23.8	-0.6
JMK	**Ichinoseki**	**1.74**	**232**	P	Pn	09 50 24.8	+0.4
JMK				*e*S	Sn	09 50 47.1	+0.9
JAH	**Hinai**	**1.79**	**275**	P	Pb	09 50 26.3	-1.0
JAH				S	Sb	09 50 48.8	-0.7
JRG	**Rokugo**	**1.92**	**251**	P	Pn	09 50 27.6	+0.8
JOT	**Ohata**	**1.98**	**313**	P	Pb	09 50 29.4	-1.0
JOT				*e*S	Sb	09 50 54.6	-0.1

NNC ***23*** *09:55:02.8±4.4, 54°.48N×89°.23E, h0km, mb3.8, mpv3.5, Error ellipse: s-maj=30.8km s-min=20.4km az=60.0*
IDC 23 09:55:44.8±3.0, 54°.43N×86°.97E, h0km, mb1 3.1/2, mb1mx2.9/42, mbtmp3.1/2, ML2.6/2, 5C-3D, Error ellipse: s-maj=25.3km s-min=17.5km az=60.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**1.35**	**250**	*i*		10 03 50.0	
	baz=69,slow=322,SNR=1.5						
ZALV	**Zalesovo Beam**	**1.35**	**250**	Pg	Pg	09 56 08.8	-1.9
	1.6nm,0.3s,baz=65,slow=16,SNR=8.6						
ZALV				Lg	Lg	09 56 27.0	
	2.3nm,0.3s,baz=68,slow=27,SNR=9.1						
KURK	**Kurchatov**	**6.30**	**237**	⇑Pg	Pn	09 57 19.7	+0.8
	5.7nm,0.8s						
KURK				⇓Lg	Lg	09 58 59.7	
	23nm,1.2s						
KURBB	**Kurchatov Arra**	**6.40**	**237**	Pn	Pn	09 57 21.6	+1.2
	0.1nm,0.3s,baz=54,slow=14,SNR=12						
KURBB				Lg	Lg	09 59 10.9	
	0.1nm,0.3s,baz=57,slow=32,SNR=8.8						
KURBB	**Kurchatov Arra**	**6.40**	**237**	⇑Pg	Pn	09 57 20.8	+0.5
	3.4nm,0.6s,baz=58,slow=15						
KURBB				⇑Lg	Lg	09 59 03.6	
	15nm,1.2s,baz=54,slow=32						
MK31	**Makanchi Array**	**8.20**	**203**	⇑Pg	Pn	09 57 44.7	-0.3
	0.2nm,0.3s,baz=19,slow=12,SNR=6.6						
MK31				⇓Lg	Lg	09 59 45.0	
	4.0nm,1.1s,baz=29,slow=31,SNR=3.5						
MKAR	**Makanchi Array**	**8.20**	**203**	Pn	Pn	09 57 45.9	+0.9
	0.1nm,0.3s,baz=18,slow=14,SNR=5.3						
MKAR				Sn	Sn	09 59 17.4	-0.8
	0.1nm,0.3s,baz=23,slow=26,SNR=5.3						
MKAR				Lg	Lg	10 00 06.8	
	0.1nm,0.3s,baz=29,slow=31,SNR=5.5						
MAKZ	**Makanchi**	**8.26**	**205**	⇓Pg	Pn	09 57 45.3	-0.5
	1.2nm,1.1s						
MAKZ				⇑Lg	Lg	09 59 48.0	
	7.5nm,1.4s						

DDA ***23*** *10:06:38.0, 39°.10N×27°.15E, h26km, Ml4.0*
ATH ***23*** *10:06:38.7, 39°.05N×27°.13E, h35km±3km, ML3.7/5, Error ellipse: s-maj=3.7km s-min=1.1km az=246.0*
ISCJB ***23*** *10:06:38.3±0.4, 39°.09N±0°.01×27°.13E±0°.02, h9km±3km, Error ellipse: s-maj=2.4km s-min=2.0km az=152.0*
ISK ***23*** *10:06:38.1, 39°.07N×27°.17E, h10km, ML3.6*
THE ***23*** *10:06:38.4, 39°.04N×27°.13E, h1km±1km, ML3.9/5, Error ellipse: s-maj=1.4km s-min=0.7km az=137.0*
CSEM ***23*** *10:06:38.8±0.1, 39°.06N×27°.14E, h10km, ML3.6, Error ellipse: s-maj=1.8km s-min=1.5km az=59.0*
SOF ***23*** *10:06:41.9, 39°.44N×27°.02E, h2km, MD2.9*
ISC 23 10:06:38.9±0.8, 39°.07N±0°.01×27°.15E±0°.01, h16km±6km, n221, σ0°85/285, 27C-13D, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DKL	**Dikili**	**0.19**	**271**	*e*PG	**Pg**	**10 06 43.4**	**0.0**
DKL				*e*SG	**Sg**	**10 06 46.4**	**0.0**
DKL	**Dikili**	**0.19**	**271**	*e*Pg	**Pg**	**10 06 43.4**	**0.0**
DKL				*e*Sg	**Sg**	**10 06 46.4**	**0.0**
AYVA	**Ayvalik**	**0.43**	**304**	P	**Pb**	**10 06 47.8**	**-0.3**
AYVA				S	**Sb**	**10 06 53.9**	**-0.4**
AYVA	**Ayvalik**	**0.43**	**304**	⇓*i*P	**Pb**	**10 06 47.8**	**-0.3**
AYVA				*i*S	**Sb**	**10 06 53.9**	**-0.4**
AKHS	**Akhisar**	**0.56**	**110**	P	**Pg**	**10 06 50.0**	**+0.1**
AKHS				S	**Sb**	**10 06 57.9**	**-0.1**
AKHS	**Akhisar**	**0.56**	**110**	⇓*i*P	**Pg**	**10 06 50.0**	**+0.1**
AKHS				*i*S	**Sb**	**10 06 57.9**	**-0.1**
BLCB	**Balcova**	**0.69**	**187**	*e*PG	**Pg**	**10 06 51.1**	**-1.2**
BLCB	**Balcova**	**0.69**	**187**	*e*Pg	**Pg**	**10 06 51.1**	**-1.2**
PRK	**Paraskevi**	**0.70**	**285**	P	**Pb**	**10 06 52.8**	**+0.1**
PRK				S	**Sb**	**10 07 02.6**	**+0.4**
PRK	**Paraskevi**	**0.70**	**285**	P	**Pg**	**10 06 52.5**	**-0.1**
PRK				S	**Sb**	**10 07 02.6**	**+0.4**
PRK	**Paraskevi**	**0.70**	**285**	P	**Pg**	**10 06 52.5**	**-0.1**
PRK				S	**Sb**	**10 07 02.6**	**+0.4**
PRK				AML	AML	10 07 05.7	
	comp=E,18920μm,0.4s						
PRK				AML	AML	10 07 06.0	
	comp=N,14340μm,0.5s						
BALY	**Balya**	**0.77**	**29**	P	**Pg**	**10 06 53.2**	**-0.6**
BALY				S	**Sg**	**10 07 03.6**	**-0.4**
BALY	**Balya**	**0.77**	**29**	⇑*i*P	**Pg**	**10 06 53.2**	**-0.6**
BALY				*i*S	**Sg**	**10 07 03.6**	**-0.4**
BALB	**Balikesir**	**0.81**	**45**	*e*PG	**Pg**	**10 06 54.0**	**-0.6**
BALB	**Balikesir**	**0.81**	**45**	*e*Pg	**Pg**	**10 06 54.0**	**-0.6**
URLA	**Izmir**	**0.83**	**211**	P	**Pg**	**10 06 54.2**	**-0.7**
URLA				S	**Sb**	**10 07 07.0**	**+1.2**
URLA	**Izmir**	**0.83**	**211**	⇑*i*P	**Pg**	**10 06 54.2**	**-0.7**
URLA				*i*S	**Sb**	**10 07 07.0**	**+1.2**
ZEY	**¯zmir**	**0.97**	**211**	⇑*i*P	**Pb**	**10 06 56.7**	**-0.6**
ZEY				*i*S	**Sn**	**10 07 11.2**	**0.0**
EZN	**Ezine**	**0.99**	**320**	*e*PG	**Pb**	**10 06 57.4**	**-0.2**
EZN	**Ezine**	**0.99**	**320**	P	**Pb**	**10 06 57.4**	**-0.2**
EZN				S	**Sn**	**10 07 11.8**	**+0.1**
EZN	**Ezine**	**0.99**	**320**	P	**Pb**	**10 06 57.4**	**-0.2**
EZN				S	**Sn**	**10 07 11.8**	**+0.1**
SIGR	**SIGRI**	**1.01**	**279**	P	**Pb**	**10 06 58.0**	**0.0**
SIGR				S	**Sn**	**10 07 12.3**	**-0.1**
SIGR	**SIGRI**	**1.01**	**279**	P	**Pb**	**10 06 58.3**	**+0.3**
SIGR				S	**Sg**	**10 07 11.5**	**-0.2**
SIGR	**SIGRI**	**1.01**	**279**	P	**Pb**	**10 06 58.3**	**+0.3**
SIGR				S	**Sg**	**10 07 11.5**	**-0.2**
SIGR				AML	AML	10 07 13.9	
	comp=E,7497μm,0.5s						
SIGR				AML	AML	10 07 14.1	
	comp=N,13608μm,0.5s						
DGB	**¯zmir**	**1.03**	**192**	⇑*i*P	**Pb**	**10 06 58.4**	**0.0**
DGB				*i*S	**Sg**	**10 07 12.6**	**+0.1**
GONE	**Gonen-Balikesi**	**1.06**	**23**	*e*PG	**Pb**	**10 06 58.8**	**-0.1**
GONE	**Gonen-Balikesi**	**1.06**	**23**	*e*Pg	**Pb**	**10 06 58.8**	**-0.1**
CHOS	**Chios island**	**1.09**	**232**	P	**Pb**	**10 06 59.4**	**0.0**
CHOS				S	**Sg**	**10 07 14.3**	**+0.1**
CHOS	**Chios island**	**1.09**	**232**	P	**Pb**	**10 06 59.7**	**+0.3**
CHOS				S	**Sg**	**10 07 14.3**	**+0.1**
CHOS	**Chios island**	**1.09**	**232**	P	**Pb**	**10 06 59.7**	**+0.3**
CHOS				S	**Sb**	**10 07 13.3**	**-0.2**
CHOS				AML	AML	10 07 16.5	
	comp=N,5690μm,0.5s						
CHOS				AML	AML	10 07 19.9	
	comp=E,8369μm,0.5s						
BOZC	**Bozcaada**	**1.15**	**313**	⇓*i*P	**Pb**	**10 07 00.1**	**-0.3**
BOZC				*i*S	**Sg**	**10 07 16.1**	**+0.2**
DURS	**Dursunbey**	**1.16**	**62**	P	**Pn**	**10 07 00.1**	**-0.5**
DURS				S	**Sb**	**10 07 15.4**	**-0.1**
DURS	**Dursunbey**	**1.16**	**62**	⇑*i*P	**Pn**	**10 07 00.1**	**-0.5**
DURS				*i*S	**Sb**	**10 07 15.4**	**-0.1**
DEMI	**Demirci**	**1.22**	**91**	P	**Pn**	**10 07 01.7**	**+0.2**
DEMI				S	**Sn**	**10 07 17.8**	**+0.1**
DEMI	**Demirci**	**1.22**	**91**	⇑*i*P	**Pn**	**10 07 01.7**	**+0.2**
DEMI				*i*S	**Sn**	**10 07 17.8**	**+0.1**
KNL	**Bal¯–kesir**	**1.24**	**14**	⇑*i*P	**Pn**	**10 07 00.6**	**-0.9**
KNL				*i*S	**Sb**	**10 07 17.4**	**-0.2**
MANT	**Manisa**	**1.25**	**117**	P	**Pn**	**10 07 02.2**	**+0.3**
MANT				S	**Sn**	**10 07 18.6**	**+0.1**
MANT	**Manisa**	**1.25**	**117**	⇓*i*P	**Pn**	**10 07 02.1**	**+0.3**
MANT				*i*S	**Sn**	**10 07 18.6**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**1.26**	**152**	*e*PN	**Pb**	**10 07 02.5**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**1.26**	**152**	*e*Pn	**Pb**	**10 07 02.5**	**+0.1**
KULA	**Kula-Manisa**	**1.31**	**115**	*e*PN	**Pb**	**10 07 03.1**	**0.0**
KULA	**Kula-Manisa**	**1.31**	**115**	P	**Pn**	**10 07 02.8**	**+0.2**
KULA				S	**Sn**	**10 07 20.6**	**+0.8**
KULA	**Kula-Manisa**	**1.31**	**115**	P	**Pn**	**10 07 02.8**	**+0.2**
KULA	**Kula-Manisa**	**1.31**	**115**	*e*Pn	**Pb**	**10 07 03.1**	**0.0**
KULA				S	**Sn**	**10 07 20.6**	**+0.8**
KRBG	**Karabiga-Canak**	**1.33**	**5**	*e*PN	**Pn**	**10 07 02.9**	**+0.1**
KRBG	**Karabiga-Canak**	**1.33**	**5**	*e*Pn	**Pn**	**10 07 02.9**	**+0.1**
LPK	**Lapseki**	**1.34**	**347**	*e*PN	**Pn**	**10 07 03.3**	**+0.4**
LPK	**Lapseki**	**1.34**	**347**	*e*Pn	**Pn**	**10 07 03.3**	**+0.4**
GCAM	**G?zelcaml?**	**1.37**	**177**	P	**Pb**	**10 07 04.5**	**+0.4**
GCAM				S	**Sg**	**10 07 22.6**	**-0.4**
GCAM	**G?zelcaml?**	**1.37**	**177**	⇑*i*P	**Pb**	**10 07 04.5**	**+0.4**
GCAM				*i*S	**Sg**	**10 07 22.6**	**-0.4**
SMG	**Samos**	**1.38**	**190**	P	**Pn**	**10 07 03.2**	**-0.3**
SMG				S	**Sg**	**10 07 22.8**	**-0.6**
SMG	**Samos**	**1.38**	**190**	P	**Pn**	**10 07 03.2**	**-0.3**
SMG				S	**Sn**	**10 07 21.4**	**0.0**
SMG	**Samos**	**1.38**	**190**	P	**Pn**	**10 07 02.7**	**-0.8**
SMG				S	**Sn**	**10 07 21.4**	**0.0**
SMG				AML	AML	10 07 25.6	
	comp=N,5706μm,0.4s						
SMG				AML	AML	10 07 26.3	
	comp=E,5493μm,0.3s						
EDC	**Edincik**	**1.39**	**23**	*e*PN	**Pn**	**10 07 04.1**	**+0.4**
EDC	**Edincik**	**1.39**	**23**	*e*Pn	**Pn**	**10 07 04.1**	**+0.4**
GELI	**Tayfur-Gelibol**	**1.43**	**339**	*e*PN	**Pn**	**10 07 04.6**	**+0.5**
GELI	**Tayfur-Gelibol**	**1.43**	**339**	*e*Pn	**Pn**	**10 07 04.6**	**+0.5**
KCTX	**Karacabey (Bur**	**1.52**	**38**	*e*PN	**Pn**	**10 07 05.4**	**-0.1**
KCTX	**Karacabey (Bur**	**1.52**	**38**	*e*Pn	**Pn**	**10 07 05.4**	**-0.1**
AYDN	**Tasoluk**	**1.52**	**157**	P	**Pg**	**10 07 08.6**	**+0.5**
AYDN				S	**Sb**	**10 07 27.0**	**+1.2**
AYDN	**Tasoluk**	**1.52**	**157**	*i*P	**Pg**	**10 07 08.6**	**+0.5**
AYDN				*i*S	**Sb**	**10 07 27.0**	**+1.2**
MRMT	**Marmara Adasi**	**1.57**	**13**	*e*PN	**Pn**	**10 07 06.6**	**+0.4**
MRMT	**Marmara Adasi**	**1.57**	**13**	*e*Pn	**Pn**	**10 07 06.6**	**+0.4**
RKY	**Sarkoy-Tekirda**	**1.62**	**1**	*e*PN	**Pn**	**10 07 07.3**	**+0.5**
RKY	**Sarkoy-Tekirda**	**1.62**	**1**	*e*Pn	**Pn**	**10 07 07.3**	**+0.5**
SART	**Tekirdag**	**1.62**	**1**	P	**Pn**	**10 07 07.0**	**+0.1**
SART				S	**Sn**	**10 07 27.8**	**+0.3**
SART	**Tekirdag**	**1.62**	**1**	*i*P	**Pn**	**10 07 07.0**	**+0.1**
SART				*i*S	**Sn**	**10 07 27.8**	**+0.3**
ERIK	**Erikli-Kesan**	**1.67**	**343**	*e*PN	**Pn**	**10 07 08.1**	**+0.6**
ERIK	**Erikli-Kesan**	**1.67**	**343**	*e*Pn	**Pn**	**10 07 08.1**	**+0.6**
LIA	**Limnos Island**	**1.73**	**299**	P	**Pn**	**10 07 08.7**	**+0.4**
LIA				S	**Sb**	**10 07 31.1**	**-0.7**
LIA	**Limnos Island**	**1.73**	**299**	P	**Pn**	**10 07 08.7**	**+0.4**
LIA				S	**Sn**	**10 07 30.5**	**+0.5**
KESN	**Edirne-Kesan**	**1.79**	**349**	P	**Pn**	**10 07 09.7**	**+0.2**
KESN				S	**Sg**	**10 07 35.5**	**-1.2**
KESN	**Edirne-Kesan**	**1.79**	**349**	*i*P	**Pn**	**10 07 09.7**	**+0.2**
KESN				*i*S	**Sg**	**10 07 35.5**	**-1.2**
GDZ	**Gediz**	**1.82**	**89**	P	**Pb**	**10 07 12.4**	**+0.5**
GDZ				S	**Sg**	**10 07 36.1**	**-1.4**
GDZ	**Gediz**	**1.82**	**89**	*i*P	**

SPNC	Sapanca-Adapaz	2.92	55	*e*Pn	Pn	10 07 26.1 +1.4
ISP	Isparta	2.93	114	*e*PN	Pn	10 07 25.7 +0.8
ISP	Isparta	2.93	114	*e*Pn	Pn	10 07 25.7 +0.8
GULT	Gulveren	2.93	61	*e*PN	Pn	10 07 26.1 +1.1
GULT	Gulveren	2.93	61	*e*Pn	Pn	10 07 26.1 +1.1
ARG	Arkhangelos	2.95	164	P	Pn	10 07 25.5 +0.4
THR5	Thira Island,	3.00	209	P	Pn	10 07 25.5 -0.4
THR5	Thira Island,	3.00	209	P	Pn	10 07 25.5 -0.4
SANT	Santorini	3.01	207	⇑*i*P	Pb	10 07 33.3 +1.2
SANT	Santorini	3.01	207	P	Pn	10 07 25.1 -0.8
SANT	Santorini	3.01	207	P	Pn	10 07 25.1 -0.8
ELL	Elmali	3.19	136	*e*PN	Pn	10 07 29.6 +1.1
ELL	Elmali	3.19	136	*e*Pn	Pn	10 07 29.6 +1.1
RZN	Rozhen	3.21	325	*i* P	Pn	10 07 29.6 +0.8
NVR	Nevrokopi	3.39	313	P	Pn	10 07 32.3 +1.1
SOH	Sokhos	3.40	302	P	Pn	10 07 31.3 0.0
SOH	Sokhos	3.40	302	P	Pn	10 07 31.3 0.0
SRS	Serrai	3.41	308	P	Pn	10 07 32.0 +0.6
SRS	Serrai	3.41	308	P	Pn	10 07 32.0 +0.6
SRS	Serrai	3.41	308	P	Pn	10 07 31.7 +0.3
SVRH	Sivrihisar-ESK	3.42	82	*e*PN	Pn	10 07 32.9 +1.2
SVRH	Sivrihisar-ESK	3.42	82	*e*Pn	Pn	10 07 32.9 +1.2
SUTC	Sutluce-Ispart	3.42	116	*e*PN	Pn	10 07 33.1 +1.3
SUTC	Sutluce-Ispart	3.42	116	*e*Pn	Pn	10 07 33.1 +1.3
PLD	Plovdiv	3.56	329	*i* P	Pn	10 07 34.5 +1.1
MMB	Musomiste	3.63	315	*i* P	Pn	10 07 34.9 +0.4
KNT	Kendrikon	3.87	304	P	Pn	10 07 39.0 +1.2
KNT	Kendrikon	3.87	304	P	Pn	10 07 39.0 +1.2
ZKR	Zakros	4.01	191	P	Pn	10 07 40.0 +0.2
ZKR	Zakros	4.01	191	P	Pn	10 07 40.0 +0.2
LAST	Lasithi	4.12	199	⇑*i*P	Pg	10 07 56.9 -0.9
SZH	Strazhica	4.29	348	*i* P	Pn	10 07 44.3 +0.7
SIVA	Sivas	4.45	206	⇑*i*P	Pb	10 07 52.5 -4.2
MPEP	Malo Peshtene	4.99	330	*i* P	Pn	10 07 54.3 +1.1
TIRR	Tirgusor	5.47	10	⇓*i*P	Pn	10 08 01.0 +1.3
TIRR	Tirgusor	5.47	10	⇓*i*P	Pn	10 08 01.0 +1.3
NISS		5.84	320	*e*Pn	Pn	10 08 06.1 +1.2
BOVS	Bovan	6.13	320	*i* Pn	Pn	10 08 10.2 +1.4
BOLS	Boljevac	6.15	322	*e*Pn	Pn	10 08 08.8 -0.3
SELS	Selova	6.15	314	⇓*i*Pn	Pn	10 08 09.6 +0.5
MLR	Muntele Rosu	6.48	353	⇑*i*P	Pn	10 08 15.3 +1.6
MLR	Muntele Rosu	6.48	353	⇑*i*P	Pn	10 08 15.3 +1.6
VOIR		6.55	347	⇑*i*P	Pn	10 08 15.6 +1.0
VOIR		6.55	347	⇑*i*P	Pn	10 08 15.6 +1.0
PLOR	Plostina	6.79	357	⇑*i*P	Pn	10 08 19.8 +1.9
PLOR	Plostina	6.79	357	⇑*i*P	Pn	10 08 19.8 +1.9
VRI	Vrincioaia	6.80	358	⇑*i*P	Pn	10 08 20.4 +2.4
VRI	Vrincioaia	6.80	358	⇑*i*P	Pn	10 08 20.4 +2.4
GRUS	Gruza	6.82	317	*e*Pn	Pn	10 08 19.0 +0.8
PDG	Podgorica	6.87	302	⇓*i*P	Pn	10 08 20.6 +1.7
PDG	Podgorica	6.87	302	⇓*i*P	Pn	10 08 20.6 +1.7
IVAS	Ivanjica	6.93	313	*e*Pn	Pn	10 08 20.7 +0.9
MDVR	Moldovita	7.00	326	⇓*i*P	Pn	10 08 21.5 +0.8
MDVR	Moldovita	7.00	326	⇓*i*P	Pn	10 08 21.5 +0.8
DOPR	Dopca	7.02	350	⇑*i*P	Pn	10 08 22.6 +1.6
DOPR	Dopca	7.02	350	⇑*i*P	Pn	10 08 22.6 +1.6
GZR	Gura Zlata	7.10	334	⇑*i*P	Pn	10 08 22.8 +0.6
GZR	Gura Zlata	7.10	334	⇑*i*P	Pn	10 08 22.8 +0.6
DIVS	Divibare	7.35	315	*e*Pn	Pn	10 08 26.1 +0.5
BZS	Buzias	7.72	330	⇑*i*P	Pn	10 08 31.2 +0.6
BZS	Buzias	7.72	330	⇑*i*P	Pn	10 08 31.2 +0.6
BURAR	Bucovina Array	8.66	351	⇑*i*P	Pn	10 08 45.5 +2.0
BURAR	Bucovina Array	8.66	351	⇑*i*P	Pn	10 08 45.5 +2.0

NNC ***23*** *10:14:57.1±3.9,53°.29N×87°.14E,h0km,mb3.5,mpv3.2, Error ellipse: s-maj=41.2km s-min=33.0km az=3.0*

IDC 23 10:14:49.9±3.8,53°.60N×87°.87E,h0km,mb1 3.3/2, mb1mx3.0/58,mbtmp3.3/2,ML2.8/2,2C-4D,Error ellipse: s-maj=42.0km s-min=18.8km az=83.0,Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**1.84**	**282**	*i*		10 26 20.0	
	baz=99,slow=328,SNR=1.9						
ZALV	**Zalesovo Beam**	**1.84**	**282**	Pn	Pn	10 15 22.1	-0.7
	4.0nm,0.3s,baz=104,slow=14,SNR=26						
ZALV				Sn	Sn	10 15 47.3	+0.5
	5.5nm,0.3s,baz=110,slow=25,SNR=22						
KURK	**Kurchatov**	**6.38**	**247**	⇓Pn	Pn	10 16 25.0	-0.1
	2.9nm,1.0s						
KURK				⇑Lg	Lg	10 18 04.0	
	17nm,0.7s						
KURBB	**Kurchatov Arra**	**6.48**	**246**	Pn	Pn	10 16 27.1	+0.7
	0.2nm,0.3s,baz=62,slow=14,SNR=7.5						
KURBB	**Kurchatov Arra**	**6.48**	**246**	⇓Pn	Pn	10 16 26.7	+0.3
	2.0nm,0.3s						
KURBB				⇓Lg	Lg	10 18 04.3	
	14nm,0.7s						
MK31	**Makanchi Array**	**7.70**	**210**	⇑Pn	Pn	10 16 43.7	+0.5
	0.2nm,0.4s,baz=27,slow=13,SNR=7.8						
MK31				⇓Lg	Lg	10 18 47.8	
	3.1nm,0.9s,baz=35,slow=32,SNR=5.1						
MKAR	**Makanchi Array**	**7.70**	**210**	Pn	Pn	10 16 44.5	+1.2
	0.2nm,0.3s,baz=28,slow=13,SNR=7.0						
MKAR				Sn	Sn	10 18 11.1	0.0
	0.1nm,0.3s,baz=32,slow=24,SNR=5.5						
MKAR				Lg	Lg	10 18 52.3	
	0.1nm,0.3s,baz=36,slow=32,SNR=7.8						

NIED ***23*** *10:17:00,37°.90N×143°.60E,h20km,Mw3.9 Best double couple: M*$_{\sigma}$*7.28000×10*^{14} *NP1:*ϕ_s*111.00000°,*δ*24.00000°,* λ*-73.00000°. NP2:*ϕ_s*272.00000°,*δ*67.00000°,* λ*-98.00000°.*

IDC ***23*** *10:17:34.0±0.8,37°.57N×143°.97E,h0km,mb3.7/8, mb1 3.9/11,mb1mx3.8/47,mbtmp3.8/11,ML4.0/3,MS2.9/3, Ms1 2.9/3,ms1mx2.4/59,Error ellipse: s-maj=26.3km s-min=16.4km az=112.0*

ISCJB ***23*** *10:17:34.7±0.6,37°.77N±0°.05×143°.60E±0°.05,h19km, mb3.7/8,MS2.9/1,Error ellipse: s-maj=7.2km s-min=5.4km az=138.7*

JMA ***23*** *10:17:37.1±0.2,37°.87N×143°.58E,h44km,M3.9*

ISC 23 10:17:36.8±0.8,37°.85N±0°.06×143°.58E±0°.08,h19km,n32, σ**1§42/32,mb3.8/8,Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.86**	**290**	P	**Pn**	10 18 07.4	-0.2
JIO				S	**Sn**	10 18 29.6	-1.0
OFUJ	**Ofunato**	**1.94**	**310**	P	**Pn**	10 18 08.4	-0.3
JMK	**Ichinoseki**	**2.16**	**301**	P	**Pn**	10 18 11.7	0.0
JOM	**Ohasama**	**2.42**	**313**	P	**Pn**	10 18 15.5	+0.2
JOM				S	**Sn**	10 18 44.0	-0.3
JFT	**Otama**	**2.60**	**264**	P	**Pn**	10 18 18.4	+0.6
JFT				S	**Sn**	10 18 48.4	-0.4
JYK	**Kaneyama**	**2.75**	**294**	P	**Pn**	10 18 20.7	+0.9
JANG	**Nango**	**2.99**	**328**	P	**Pn**	10 18 23.2	+0.1
JAG	**Ashikaga**	**3.59**	**248**	P	**Pn**	10 18 31.3	-0.2
JOT	**Ohata**	**4.03**	**332**	P	**Pn**	10 18 38.4	+0.9
JRY	**Ryogami san**	**4.17**	**245**	P	**Pn**	10 18 39.2	-0.3
JOD2	**Odawara 2**	**4.45**	**236**	*e*S	**Sn**	10 19 31.2	-3.2
JKB	**Kayabe**	**4.48**	**335**	P	**Pn**	10 18 44.4	+0.7
MJAR	**Matsushiro Arr**	**4.49**	**255**	Pn	**Pn**	10 18 45.2	+1.5
	3.7nm,0.3s,baz=90,slow=16,SNR=27						
MJAR				Sn	**Sn**	10 19 36.5	+1.1
	1.9nm,0.3s,baz=86,slow=27,SNR=5.2						
MAT	**Matsushiro**	**4.49**	**255**	P	**Pn**	10 18 45.3	+1.5
MAT				eS	**Sn**	10 19 33.5	-1.9
JCH	**Churui**	**4.76**	**358**	P	**Pn**	10 18 46.5	-1.0
JCH				S	**Sn**	10 19 38.3	-3.8
JHJ	**Hachijo jima 2**	**5.65**	**214**	Pn	**Pn**	10 18 57.6	-2.1
	12nm,0.3s,baz=270,slow=20,SNR=5.2						
JHJ				Sn	Sn	10 19 55.8	-8.2
	20nm,0.3s,baz=45,slow=19,SNR=3.0						
ASAJ	**Asahikawa**	**6.30**	**354**	Pn	**Pn**	10 19 09.0	+0.4
	9.5nm,0.3s,baz=202,slow=11,SNR=64						
ASAJ				Sn	**Sn**	10 20 18.6	-1.5
	2.0nm,0.3s,baz=24,slow=20,SNR=3.5						
JCJ	**Chichijima**	**10.79**	**187**	Pn	Pn	10 20 05.5	-4.8
	2.6nm,0.3s,baz=287,slow=21,SNR=7.4						
JCJ				Sn	Sn	10 21 54.4	-16
	baz=288,slow=20						
KLR	**Kul'dur**	**14.23**	**327**	Pn	**Pn**	10 20 55.8	-1.4
	0.2nm,0.3s,baz=122,slow=14,SNR=5.0						
KLR				LR	LR	10 26 38.2	
	comp=Z,58nm,18.7s,baz=130,slow=37						
PETK	**Petropavlovsk-**	**18.13**	**28**	LR	LR	10 30 28.1	
	comp=Z,13nm,18.5s,baz=189,slow=42						
SEY	**Seymchan**	**25.68**	**9**	P	**P**	**10 23 06.3**	**+1.1**
	1.3nm,0.6s,baz=51,slow=17,SNR=5.1						
YAK	**Yakutsk**	**25.69**	**345**	LR	LR	10 33 44.8	
	comp=Z,35nm,18.0s,baz=53,slow=37						
H11N2	**WAKE ISLAND Hy**	**27.14**	**125**	T	T	10 51 48.2	
	baz=317,slow=74,SNR=8.7						
H11N1	**WAKE ISLAND Hy**	**27.15**	**125**	T	T	10 51 40.2	
	baz=317,slow=74,SNR=5.8						
H11N3	**WAKE ISLAND Hy**	**27.16**	**125**	T	T	10 51 40.2	
	baz=317,slow=74,SNR=7.2						
ZALV	**Zalesovo Beam**	**42.65**	**312**	P	**P**	**10 25 34.0**	**+2.2**
	1.2nm,0.4s,baz=91,slow=8.4,SNR=2.4						
MKAR	**Makanchi Array**	**45.15**	**302**	P	P	10 25 57.3	+5.2
	0.9nm,0.7s,baz=86,slow=10,SNR=8.1						
ILAR	**Eielson Array**	**47.88**	**33**	P	**P**	**10 26 14.1**	**+0.9**
	0.6nm,0.7s,baz=261,slow=6.6,SNR=7.3						
WRA	**Warramunga Arr**	**58.14**	**190**	P	**P**	**10 27 27.9**	**-1.4**
	1.4nm,0.7s,baz=10,slow=7.2,SNR=13						
ASAR	**Alice Springs**	**61.86**	**190**	P	**P**	**10 27 53.7**	**-1.1**
	0.6nm,0.8s,baz=8.9,slow=8.9,SNR=6.5						
YKA	**Yellowknife Ar**	**62.23**	**31**	P	**P**	**10 27 57.4**	**+0.7**
	0.2nm,0.7s,baz=298,slow=6.4,SNR=3.0						
PDAR	**Pinedale Array**	**75.86**	**47**	P	**P**	**10 29 22.6**	**+0.5**
	0.3nm,0.6s,baz=322,slow=4.1,SNR=3.6						

MOS ***23*** *10:19:51.6±1.0,56°.06S×26°.97W,h42km,mb5.0/18,Error ellipse: s-maj=24.9km s-min=12.6km az=100.7*

GCMT ***23*** *10:19:53.3±0.4,55°.94S×26°.57W,h64km±3km,MW5.2/55, Moment Tensor Solution. s22,c27; s55,c73; Duration: 1s0 Moment tensor: Scale 10*^{17}*Nm; M*$_{rr}$*-0.16±.03; M*$_{\theta\theta}$*0.83±.04; M*$_{\phi\phi}$*-0.67±.03; M*$_{r\theta}$*-0.15±.03; M*$_{\theta\phi}$*-0.22±.02; M*$_{r\phi}$*0.20±.02; Best double couple: M*$_0$*0.82900×10*^{17} *NP1:*ϕ_s*142.00000°,*δ*85.00000°,*λ*-19.00000°. NP2:* ϕ_s*234.00000°,*δ*71.00000°,*λ*-175.00000°. Principal axes: T 0.8960, Plg10.0000°, Azm189.0000°; N -0.1350, Plg70.0000°, Azm308.0000°; P -0.7620, Plg17.0000°, Azm96.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

NEIC ***23*** *10:19:53.3±1.1,55°.99S×27°.07W,h50km±9km,mb5.1/19 Error ellipse: s-maj=6.9km s-min=5.2km az=51.0*

ISCJB ***23*** *10:19:53.3±0.3,55°.95S±0°.05×27°.07W±0°.10,h63km, mb5.0/28,Error ellipse: s-maj=9.0km s-min=6.5km az=136.8*

IDC ***23*** *10:19:54.6±1.6,56°.01S×27°.09W,h60km±13km,mb4.7/17, mb1 4.7/18,mb1mx4.6/26,mbtmp5.0/18,MS4.0/18, Ms1 4.0/18,ms1mx3.9/25,Error ellipse: s-maj=13.7km s-min=12.1km az=7.0*

BJI ***23*** *10:19:54.6,55°.90S×27°.10W,h51km,mB5.2/13,Ms5.3/9, Ms7 4.9/9*

ISC 23 10:19:54.8±0.3,56°.04S±0°.07×27°.15W±0°.06,h63km,n206, σ**1§18/218,mb5.0/27,1C-3D,South Sandwich Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HOPE	**Hope Point**	**5.64**	**284**	*e*Pn	**Pn**	**10 21 14.5**	**-1.4**
VNA1	**Neumayer--Stat**	**16.80**	**158**	P	**P**	**10 23 48.3**	**+1.7**
VNA1	**Neumayer--Stat**	**16.80**	**158**	P	**ScP**	**10 32 00.2**	**+1.7**
VNA3	**Neumayer Olymp**	**16.99**	**161**	P	**Pn**	**10 23 45.5**	**-2.3**
VNA3	**Neumayer Olymp**	**16.99**	**161**	P	**ScP**	**10 31 56.7**	**-2.3**
VNA2	**Neumayer--Watz**	**17.19**	**158**	P	**Pn**	**10 23 50.7**	**+0.4**
	baz=318,slow=13						
VNA2	**Neumayer--Watz**	**17.19**	**158**	P	**ScP**	**10 31 59.9**	**+0.5**
	baz=324,slow=6.8						
EFI	**East Falkland**	**18.66**	**271**	*e*P	**Pn**	**10 24 09.1**	**+0.8**
EFI				pmax	pmax		
	comp=Z,30nm,0.9s						
SNAA	**Sanae**	**18.74**	**156**	P	**P**	**10 24 07.1**	**-1.1**
SNAA	**Sanae**	**18.74**	**156**	P	**ScP**	**10 32 04.3**	**+1.5**
SNAA	**Sanae**	**18.74**	**156**	⇓*e*P	**P**	**10 24 06.4**	**-1.7**
SNAA				pmax	pmax		
	comp=Z,903nm,0.9s						
SNAA	**Sanae**	**18.74**	**156**	*e*P	**P**	**10 24 06.7**	**-1.4**
	comp=Z,48nm,1.0s						
PMSA	**Palmer Station**	**19.93**	**229**	P	**Pn**	**10 24 22.4**	**-0.7**
	comp=Z,7.7nm,0.3s,baz=70,slow=5.9,SNR=22						
PMSA	**Palmer Station**	**19.93**	**229**	*e*P	**Pn**	**10 24 25.1**	**+2.0**
	comp=Z,130nm,0.8s						
NVL	**N'lazarevskaya**	**22.26**	**147**	*e*P	**P**	**10 24 45.9**	**-0.1**
USHA	**Ushuaia**	**23.21**	**256**	P	**P**	**10 24 56.0**	**+0.1**
	comp=Z,126nm,0.9s,baz=75,slow=7.1,SNR=8.5						
USHA				LR	LR	10 31 50.0	
	comp=Z,3μm,21.7s,baz=82,slow=31						
SYO	**Syowa Base**	**31.58**	**141**	⇓*e*P	**P**	**10 26 06.4**	**-4.3**
SYO	**Syowa Base**	**31.58**	**141**	⇓*e*pP	pP	10 26 22.0	-4.1
PLCA	**Paso Flores**	**32.02**	**280**	P	**P**	**10 26 13.6**	**-1.5**
	comp=Z,2.2nm,0.9s,baz=188,slow=9.0,SNR=5.3						
PLCA				ScP	**ScP**	**10 32 41.0**	**0.0**
	comp=Z,3.7nm,1.0s,baz=190,slow=7.3,SNR=3.5						
PLCA				LR	LR	10 39 08.2	
	comp=Z,356nm,19.7s,baz=164,slow=36						
QSPA	**South Pole Qui**	**34.21**	**180**	*e*P	**P**	**10 26 34.4**	**+0.4**
CPUP	**Villa Florida**	**36.82**	**311**	P	**P**	**10 26 56.4**	**-0.1**
	comp=Z,15nm,0.9s,baz=150,slow=8.0,SNR=21						
CPUP				PcP	**PcP**	**10 29 18.1**	**+0.9**
	comp=Z,1.2nm,0.4s,baz=203,slow=0.7,SNR=5.1						
CPUP				ScP	**ScP**	**10 32 58.0**	**-0.2**
	comp=Z,4.9nm,0.9s,baz=170,slow=2.7,SNR=4.9						
CPUP				LR	LR	10 41 31.2	
	comp=Z,184nm,19.7s,baz=158,slow=35						
ROC1	**El Roble**	**37.96**	**289**	*e*P	**P**	**10 27 05.6**	**-0.8**
	comp=Z,14nm,0.7s						
MAW	**Mawson**	**40.14**	**144**	P	**P**	**10 27 24.0**	**+0.1**
	comp=Z,6.3nm,0.4s,baz=232,slow=7.7,SNR=21						
MAW				ScP	**ScP**	**10 33 13.5**	**+3.3**
	comp=Z,4.4nm,0.9s,baz=284,slow=9.6,SNR=5.3						
MAW				LR	LR	10 41 43.7	
	comp=Z,176nm,20.8s,baz=244,slow=33						
MAW	**Mawson**	**40.14**	**144**	P	**P**	**10 27 24.0**	**+0.1**
MAW				pmax	pmax		
	comp=Z,6.0nm,0.4s						
MAW				pmax	pmax		
	comp=N,4.0nm,0.9s						
MAW	**Mawson**	**40.14**	**144**	*e*P	**P**	**10 27 23.9**	**0.0**
	comp=N,10nm,1.6s						
SUR	**Sutherland**	**40.61**	**75**	P	**P**	**10 27 28.3**	**-0.1**
	comp=N,1.2nm,0.9s,baz=217,slow=11,SNR=4.4						
SUR				LR	LR	10 40 30.2	
	comp=N,26nm,20.6s,baz=206,slow=30						
LVC	**Limon Verde**	**45.32**	**300**	P	**P**	**10 28 07.1**	**+0.4**
	comp=N,122nm,0.8s,baz=144,slow=5.1,SNR=22						
LVC				PcP	**PcP**	**10 29 46.8**	**+1.3**
	comp=N,55nm,0.8s,baz=26,slow=1.6,SNR=3.2						
LVC	**Limon Verde**	**45.32**	**300**	*e*P	**P**	**10 28 06.9**	**+0.2**
	comp=N,33nm,0.8s						
LVC				PcP	**PcP**	**10 29 46.8**	**+1.3**
BOSA	**Boshof**	**45.94**	**76**	P	**P**	**10 28 10.8**	**-0.6**
	comp=N,6.9nm,0.9s,baz=190,slow=4.9,SNR=6.0						
BOSA				LR	LR	10 43 24.9	
	comp=N,428nm,21.9s,baz=212,slow=31						
BOSA	**Boshof**	**45.94**	**76**	P	**P**	**10 28 10.8**	**-0.6**
BOSA				pmax	pmax		
	comp=Z,6.0nm,0.9s						
SBA	**Scott Base**	**46.09**	**184**	*e*P	**P**	**10 28 13.0**	**+1.2**
SBA				pmax	pmax		
	comp=Z,33nm,0.9s						
SBA	**Scott Base**	**46.09**	**184**	*e*P	**P**	**10 28 13.0**	**+1.2**
	comp=Z,33nm,0.9s						
PB04	**IPOC Station P**	**46.16**	**299**	*e*P	**P**	**10 28 12.5**	**-0.6**
	comp=Z,46nm,1.0s						
VNDA	**Vanda**	**46.59**	**183**	P	**P**	**10 28 16.5**	**+0.9**
	comp=Z,48nm,0.7s,baz=186,slow=6.8,SNR=185						
VNDA	**Vanda**	**46.59**	**183**	*e*P	**P**	**10 28 16.6**	**+0.9**
VNDA				pmax	pmax		
	comp=Z,49nm,0.7s						
VNDA	**Vanda**	**46.59**	**183**	*e*P	**P**	**10 28 16.6**	**+0.9**
	comp=Z,48nm,0.7s						
PB01	**IPOC Station P**	**46.93**	**301**	*e*P	**P**	**10 28 19.2**	**+0.1**
	comp=Z,43nm,1.0s						
SIV	**San Ignacio**	**47.59**	**313**	LR	LR	10 47 17.5	
	comp=Z,137nm,20.8s,baz=177,slow=34						
H10S2	**ASCENSION HYDR**	**47.98**	**17**	T	T	11 20 48.0	
	baz=190,slow=75,SNR=44						
H10S3	**ASCENSION HYDR**	**47.98**	**17**	T	T	11 20 47.0	
	baz=190,slow=75,SNR=45						
H10S1	**ASCENSION HYDR**	**48.00**	**17**	T	T	11 20 49.3	
	baz=190,slow=75,SNR=56						
LBTB	**Lobatse**	**48.98**	**73**	P	**P**	**10 28 34.3**	**-0.6**
	comp=Z,10nm,0.8s,baz=211,slow=7.8,SNR=11						
LBTB	**Lobatse**	**48.98**	**73**	*e*P	**P**	**10 28 34.4**	**-0.6**
LBTB				pmax	pmax		
	comp=Z,18nm,1.0s						
LBTB	**Lobatse**	**48.98**	**73**	*e*P	**P**	**10 28 34.4**	**-0.6**
	comp=Z,18nm,1.0s						
H10N1	**ASCENSION HYDR**	**49.10**	**17**	T	T	11 22 09.2	
	baz=189,slow=76,SNR=120						
H10N3	**ASCENSION HYDR**	**49.10**	**17**	T	T	11 22 10.8	
	baz=189,slow=76,SNR=42						
H10N2	**ASCENSION HYDR**	**49.12**	**17**	T	T	11 22 12.3	
	baz=189,slow=76,SNR=177						
TSUM	**Tsumeb**	**49.65**	**61**	P	**P**	**10 28 39.7**	**-0.4**
	comp=Z,3.7nm,0.8s,baz=200,slow=7.3,SNR=6.2						
TSUM	**Tsumeb**	**49.65**	**61**	*e*P	**P**	**10 28 39.9**	**-0.3**
	comp=Z,19nm,1.5s						
LPAZ	**La Paz**	**50.39**	**305**	P	**P**	**10 28 46.2**	**-0.1**
	comp=Z,13nm,0.6s,baz=142,slow=6.4,SNR=50						
LPAZ				LR	LR	10 50 38.5	
	comp=Z,59nm,20.2s,baz=159,slow=37						
LPAZ	**La Paz**	**50.39**	**305**	*e*P	**P**	**10 28 46.4**	**+0.1**
LPAZ				pmax	pmax		
	comp=Z,18nm,0.8s						
LPAZ	**La Paz**	**50.39**	**305**	*e*P	**P**	**10 28 46.4**	**+0.1**
	comp=Z,18nm,0.8s						
CASY	**Casey**	**53.91**	**160**	*e*P	**P**	**10 29 11.4**	**+0.3**
	comp=Z,19nm,1.2s						
SAML	**Samuel**	**54.81**	**315**	*e*P	**P**	**10 29 16.3**	**-1.9**
	comp=Z,33nm,0.6s						
NNA	**Nana**	**58.27**	**299**	LR	LR	10 51 04.3	
	comp=Z,108nm,21.3s,baz=140,slow=32						
LSZ	**Lusaka**	**58.34**	**69**	*e*P	**P**	**10 29 42.8**	**-0.7**
LSZ				pmax	pmax		
	comp=Z,31nm,1.5s						
LSZ	**Lusaka**	**58.34**	**69**	*e*P	**P**	**10 29 42.8**	**-0.7**
	comp=Z,31nm,1.5s						
PTGA	**Pitinga**	**61.18**	**322**	*e*P	**P**	**10 30 02.0**	**-0.7**
	comp=Z,5.2nm,0.9s						
DBIC	**Dimbokro**	**65.14**	**25**	P	**P**	**10 30 29.0**	**+0.1**
	comp=Z,3.1nm,0.5s,baz=162,slow=6.8,SNR=8.8						
DBIC				LR	LR	10 52 00.0	
	comp=Z,245nm,21.3s,baz=166,slow=30						
OTAV	**Otavalo**	**69.67**	**304**	*e*P	**P**	**10 30 59.2**	**+1.0**
	comp=Z,15nm,1.0s						
ROSC	**El Rosal**	**71.89**	**310**	P	**P**	**10 31 12.1**	**+0.5**
	comp=Z,8.0nm,0.6s,baz=38,slow=8.9,SNR=4.5						
ROSC				LR	LR	11 04 16.9	
	comp=Z,57nm,20.6s,baz=238,slow=37						
ROSC	**El Rosal**	**71.89**	**310**	*e*P	**P**	**10 31 12.7**	**+1.2**
	comp=Z,10nm,0.9s						
TORD	**Torodi Ar. Bea**	**73.03**	**29**	P	**P**	**10 31 17.6**	**-0.1**
	comp=Z,13nm,0.5s,baz=201,slow=6.7,SNR=252						
TORD				LR	LR	10 56 10.5	
	comp=Z,119nm,21.8s,baz=235,slow=30						
SDV	**Santo Domingo**	**74.02**	**315**	*e*P	**P**	**10 31 25.0**	**+1.2**
	comp=Z,22nm,1.0s						
KMBO	**Kilima Mbogo**	**75.01**	**69**	LR	LR	11 03 07.4	
	comp=Z,140nm,18.5s,baz=96,slow=35						
WHZ	**Wether Hill Ro**	**77.65**	**191**	*e*P	**P**	**10 31 45.3**	**+1.4**
MQZ	**McQueen's Vall**	**79.23**	**194**	*e*P	**P**	**10 31 53.7**	**+1.1**
RPZ	**Rata Peaks**	**79.43**	**193**	P	**P**	**10 31 54.4**	**+0.5**
	comp=Z,28nm,0.7s,baz=251,slow=1.7,SNR=14						
RPZ	**Rata Peaks**	**79.43**	**193**	*e*P	**P**	**10 31 54.6**	**+0.7**
OXZ	**Oxford**	**79.69**	**194**	*e*P	**P**	**10 31 56.0**	**+0.7**
LTZ	**Lake Taylor**	**80.19**	**194**	*e*P	**P**	**10 31 58.7**	**+0.7**
KHZ	**Kahutara**	**80.36**	**195**	*e*P	**P**	**10 31 59.5**	**+0.7**
THZ	**Tophouse**	**81.10**	**195**	*e*P	**P**	**10 32 03.8**	**+0.9**
SNZO	**South Karori**	**81.26**	**196**	*e*P	**P**	**10 32 03.6**	**0.0**
BFZ	**Birch Farm**	**81.62**	**198**	*e*P	**P**	**10 32 06.3**	**+0.7**
BKZ	**Black Stump Fm**	**83.05**	**198**	*e*P	**P**	**10 32 13.7**	**+0.5**
URZ	**Urewera**	**83.82**	**199**	P	**P**	**10 32 17.0**	**0.0**
	comp=Z,20nm,1.0s,baz=138,slow=0.7,SNR=5.0						
URZ	**Urewera**	**83.82**	**199**	*e*P	**P**	**10 32 16.9**	**-0.1**
TGUH	**Tegucigalpa,Un**	**85.90**	**302**	*e*P	**P**	**10 32 28.5

LAO	LASA Array	121.81	307	ePKPdf	PKPdf	10 38 40.9 +0.3
IMW	Indian Meadow	121.87	302	ePKPdf	PKPdf	10 38 41.5 +0.3
RLMT	Red Lodge	122.01	304	P	PKPdf	10 38 41.9 +0.6
	baz=139					
DGMT	Dagmar	122.28	310	P	PKPdf	10 38 42.2 +0.7
	baz=140					
BMN	Battle Mountai	122.36	295	ePKIKP	PKPdf	10 38 42.6 +0.5
BMN	Battle Mountai	122.36	295	ePKPdf	PKPdf	10 38 42.5 +0.5
BOZ	Bozeman (W)	123.51	303	P	PKPdf	10 38 44.7 +0.6
	baz=138					
DLMT	Dillon	123.75	302	ePKPdf	PKPdf	10 38 45.6 +1.1
FINES	FINESS Array B	124.36	28	PKP	PKPdf	10 38 44.0 -0.9
	comp=Z,3.4nm,0.8s,baz=149,slow=4.0,SNR=12					
O03D	Paynes Creek	124.61	292	P	PKPdf	10 38 46.6 +0.3
	baz=137					
MOD	Modoc Plateau	125.02	294	ePKPdf	PKPdf	10 38 47.2 +0.1
CMAR	Chiang Mai Arr	125.05	110	PKP	PKPdf	10 38 47.5 -0.2
	comp=Z,1.5nm,0.6s,baz=232,slow=3.9,SNR=7.6					
MSO	Missoula	125.46	303	P	PKPdf	10 38 48.1 +0.3
	baz=136					
N02D	Trinity Center	125.58	292	P	PKPdf	10 38 49.5 +1.4
	baz=137					
M04C	Macdoel	125.72	293	P	PKPdf	10 38 49.3 +0.9
	baz=136					
M02C	Callahan	125.96	292	P	PKPdf	10 38 50.1 +1.3
	baz=136					
J05D	Fort Rock, OR	126.49	295	P	PKPdf	10 38 51.0 +1.1
	baz=136					
L02D	Cave Junction,	126.90	293	P	PKPdf	10 38 52.1 +1.7
	baz=136					
I05D	Terrebonne, OR	127.30	296	P	PKPdf	10 38 52.2 +1.0
	baz=135					
AKTO	Aktyubinsk	127.30	53	PKP	PKPdf	10 38 51.4 +0.4
	comp=Z,2.7nm,0.9s,baz=232,slow=16,SNR=7.0					
ABKAR	Akbulak array	127.34	55	ePKPdf	PKPdf	10 38 51.4 +0.3
I04A	Tendick Farm,	127.45	295	P	PKPdf	10 38 52.3 +0.8
	baz=135					
KLMR	Klimovskoe	127.80	35	ePKIKP	PKPdf	10 38 51.4 -0.1
KLMR				pmax	pmax	
	comp=Z,6.0nm,1.2s					
KSH	Kashi	128.54	74	ePKP	PKPdf	10 38 53.6 -0.3
KSH				PKS	PKSdf	10 42 29.3 -1.1
KSH				SKS	SKSdf	10 46 00.0 +0.2
KSH				AMB	AMB	
	comp=Z,50nm,3.5s					
KSH				LR	LR	
	comp=Z,180nm,6.1s					
KSH				LR	LR	
	comp=Z,120nm,9.1s					
KSH				LR	LR	
	comp=Z,110nm,6.8s					
EKS2	Erkin-Say	129.59	70	ePKIKP	PKPdf	10 38 56.1 +0.3
EKS2	Erkin-Say	129.59	70	ePKPdf	PKPdf	10 38 56.0 +0.3
AAK	Ala-Archa	129.95	71	i PKIKP	PKPdf	10 38 58.0 +1.5
B05A	Bryant	130.40	299	P	PKPdf	10 38 57.8 +0.9
	baz=133					
ARCES	ARCESS Array B	130.92	22	PKP	PKPdf	10 38 56.8 -0.5
	comp=Z,3.0nm,0.7s,baz=202,slow=1.3,SNR=7.8					
ARU	Arti	131.67	48	i PKIKP	PKPdf	10 38 59.4 +0.4
ARU						10 41 17.4
KMI	Kunming	132.51	109	PKP	PKPdf	10 39 03.3 +1.3
KMI				AMB	AMB	
	comp=Z,70nm,5.0s					
BRVK	Borovoye	134.72	57	ePKIKP	PKPdf	10 39 06.3 +1.4
BVAR	Borovoye Array	134.75	57	PKP	PKPdf	10 39 05.3 +0.4
	comp=Z,2.0nm,0.7s,baz=207,slow=3.0,SNR=11					
BVAR				SKPbc	SKPbc	10 42 28.8 -0.7
	comp=Z,2.2nm,0.8s,baz=240,slow=2.9,SNR=6.1					
GYA	Guiyang	135.65	112	ePdif	Pdif	10 36 11.8 +0.5
GYA				PKP	PKPdf	10 39 08.0 +0.3
GYA				sPKP		10 39 30.4
GYA				PP	PP	10 41 50.6 +4.5
GYA				AMB	AMB	
	comp=Z,120nm,7.8s					
YKA	Yellowknife Ar	136.18	318	PKhKP	PKPpre	10 38 53.1
	comp=Z,0.3nm,0.7s,baz=117,slow=4.3,SNR=5.4					
YKA				PKP	PKPdf	10 39 07.7 +0.4
	comp=Z,6.4nm,0.8s,baz=124,slow=2.4,SNR=47					
YKA				PP	PP	10 41 47.6 -1.4
	comp=Z,0.9nm,0.8s,baz=117,slow=6.9,SNR=5.1					
YKA				SKPbc	SKPbc	10 42 32.8 -0.7
	comp=Z,3.4nm,0.9s,baz=118,slow=2.2,SNR=14					
SPITS	Spitsbergen Ar	136.55	12	PKP	PKPdf	10 39 08.0 +0.3
	comp=Z,1.3nm,0.7s,baz=135,slow=5.1,SNR=3.6					
SPITS	Spitsbergen Ar	136.55	12	PKIKP	PKPdf	10 39 08.0 +0.3
SPITS				pmax	pmax	
	comp=Z,1.0nm,0.7s					
MKAR	Makanchi Array	136.86	71	PKhKP	PKPpre	10 39 04.5
	comp=Z,0.7nm,0.9s,baz=307,slow=2.4,SNR=3.8					
MKAR				SKPbc	SKPbc	10 42 34.9 -1.3
	comp=Z,0.3nm,0.4s,baz=238,slow=2.3,SNR=4.1					
KURK	Kurchatov	137.38	65	ePKIKP	PKPdf	10 39 11.5 +1.6
CD2	Chengdu	137.64	105	PKP	PKPdf	10 39 10.9 -0.2
CD2				PP	PP	10 41 58.4 -0.1
CD2				SKS	SKSdf	10 46 17.0 +0.8
CD2				SKKS	SKKSac	10 48 47.1 +0.2
CD2				SS	SS	11 00 05.0 +2.6
CD2				AMB	AMB	
	comp=Z,110nm,6.0s					
CD2				LR	LR	
	comp=Z,170nm,6.6s					
CD2				LR	LR	
	comp=Z,120nm,6.0s					
WMQ	Urumqi	137.88	78	ePKP	PKPdf	10 39 12.5 +1.3
WMQ				LR	LR	
	comp=Z,44nm,33.2s					
WMQ				LR	LR	
	comp=Z,82nm,31.0s					
WMQ				LR	LR	
	comp=Z,31nm,19.4s					
DLBC	Dease Lake	140.33	307	SKPbc	SKPbc	10 42 46.8 +1.2
	comp=Z,8.4nm,1.1s,baz=54,slow=0.9,SNR=5.6					
LZH	Lanzhou	141.59	100	ePKP	PKPdf	10 39 16.5 -1.8
LZH				sPKP		10 39 37.8
LZH				PP	PP	10 42 24.0 +1.0
LZH				SKKS		10 49 07.3
LZH				eSS	SS	11 00 48.0 -1.0
LZH				AMB	AMB	
	comp=Z,130nm,9.2s					
LZH				LR	LR	
	comp=Z,170nm,18.0s					
LZH				LR	LR	
	comp=Z,160nm,18.2s					
LZH				LR	LR	
	comp=Z,220nm,20.0s					
GTA	Gaotai	141.70	93	ePKP	PKPdf	10 39 22.8 +4.4
GTA				sPKP		10 39 37.1
ZALV	Zalesovo Beam	142.34	64	PKP	PKPdf	10 39 18.6 -0.3
	comp=Z,2.8nm,0.6s,baz=223,slow=5.9,SNR=5.7					
INK	Inuvik	145.81	321	PKPbc	PKPbc	10 39 25.1 0.0
	comp=Z,33nm,0.7s,baz=77,slow=4.5,SNR=66					
INK	Inuvik	145.81	321	ePKIKP	PKPdf	10 39 24.4 0.0
INK						10 39 25.1
INK	Inuvik	145.81	321	ePKPdf	PKPdf	10 39 24.4 0.0
INK				PKPbc	PKPbc	10 39 25.1 0.0
DAWY	Dawson	146.80	312	ePKPdf	PKPdf	10 39 27.3 +1.0
EGAK	Eagle	147.75	313	ePKPbc	PKPbc	10 39 30.1 -0.6
BMRM	Bremner River	148.08	305	ePKPdf	PKPdf	10 39 27.2 -1.3
DOT	Dot Lake	148.66	310	ePKPdf	PKPdf	10 39 29.1 -0.3
DOT				ePKPbc	PKPbc	10 39 33.5 +0.3
DIV	Divide	148.67	305	ePKPbc	PKPbc	10 39 33.5 +0.1
TIA	Tai'an	148.79	114	PKPbc	PKPbc	10 39 35.9 +1.5
PAX	Paxson	149.08	308	ePKP2	PKPbc	10 39 34.3 -0.1
PAX	Paxson	149.08	308	ePKPbc	PKPbc	10 39 34.3 -0.1
HHC	Hu-ho-hao-te	149.22	102	ePKPbc	PKPbc	10 39 33.8 -1.7
HHC				PP	PP	10 43 12.4 +4.1
HHC				AMB	AMB	
	comp=Z,47nm,9.7s					
HHC				LR	LR	
	comp=Z,120nm,20.3s					
HHC				LR	LR	
	comp=Z,160nm,19.6s					
HHC				LR	LR	
	comp=Z,180nm,20.0s					
SML	Sawmill	150.04	306	ePKIKP	PKPdf	10 39 30.5 -1.1
SML				e		10 39 43.8
SML	Sawmill	150.04	306	ePKPdf	PKPdf	10 39 30.5 -1.1
SML				ePKPbc	PKPbc	10 39 36.9 +0.2
SML				ePKPab	PKPab	10 39 43.8 +0.9
SEW	Seward	150.06	302	ePKPbc	PKPbc	10 39 37.0 +0.3
CBIJ	Chichi jima	150.07	161	PKPbc	PKPbc	10 39 35.9 -1.9
JCJ	Chichijima	150.07	161	PKPbc	PKPbc	10 39 35.9 -1.9
	comp=Z,51nm,0.5s,baz=90,slow=18,SNR=9.4					
ILAR	Eielson Array	150.13	312	PKP	PKPdf	10 39 29.6 -2.1
	comp=Z,1.3nm,0.8s,baz=301,slow=1.3,SNR=19					
ILAR				PKPbc	PKPbc	10 39 36.4 -0.4
	comp=Z,38nm,0.8s,baz=122,slow=1.0,SNR=177					
ZAK	Zakamensk	150.32	80	ePKIKP	PKPbc	10 39 37.6 -0.2
ZAK				pmax	pmax	
	comp=Z,7.0nm,1.3s					
PMR	Palmer	150.35	305	ePKIKP	PKPbc	10 39 37.3 -0.1
PMR	Palmer	150.35	305	ePKPbc	PKPbc	10 39 37.3 -0.1
RC01	Rabbit Creek A	150.49	304	ePKPbc	PKPbc	10 39 38.4 +0.7
COLA	College	150.55	312	ePKIKP	PKPbc	10 39 37.7 0.0
COLA	College	150.55	312	ePKPbc	PKPbc	10 39 37.7 0.0
SONM	Songino Array	150.70	86	PKPbc	PKPbc	10 39 38.6 -0.2
	comp=Z,7.3nm,0.6s,baz=231,slow=3.2,SNR=10					
MCK	McKinley	150.78	309	ePKIKP	PKPbc	10 39 38.6 +0.2
MCK	McKinley	150.78	309	ePKPbc	PKPbc	10 39 38.6 +0.2
KDAK	Kodiak Island	150.83	296	i PKIKP	PKPbc	10 39 39.5 +0.9
TLY	Talaya	151.16	78	ePKIKP	PKPbc	10 39 38.9 -0.7
TLY				pmax	pmax	
	comp=Z,6.0nm,0.8s					
TRF	Thorofare Moun	151.31	308	ePKPbc	PKPbc	10 39 39.9 +0.1
KTH	Kantishna Hill	151.62	308	ePKPbc	PKPbc	10 39 40.3 -0.1
BPAW	Bear Paw Mtn.	151.74	310	ePKPbc	PKPbc	10 39 40.5 -0.2
PPLA	Purkeypile	152.05	307	ePKPbc	PKPbc	10 39 41.1 -0.4
JNU	Nakatsue	152.48	137	PKPbc	PKPbc	10 39 44.9 +1.6
	comp=Z,7.7nm,0.8s,baz=48,slow=2.9,SNR=5.1					
BOD	Bodaibo	158.92	69	ePKP2	PKPab	10 40 20.5 -0.2
BOD				pmax	pmax	
	comp=Z,3.0nm,1.8s					
PETK	Petropavlovsk-	175.93	226	PKP	PKPdf	10 39 55.7 -0.7
	comp=Z,6.0nm,1.0s,baz=82,slow=3.1,SNR=4.0					
PETK				PKPab	PKPab	10 41 35.4 -0.5
	comp=Z,6.9nm,0.9s,baz=111,slow=6.5,SNR=6.3					

DDA ***23*** *10:27:38.6,38°.41N×25°.21E,h5km,Ml3.8*
ISK ***23*** *10:27:39.6,38°.33N×24°.86E,h18km,ML3.4*
ATH ***23*** *10:27:40.8,38°.40N×25°.31E,h39km±3km,ML3.2/7, Error ellipse: s-maj=3.1km s-min=1.0km az=76.0*
CSEM ***23*** *10:27:41.8±0.2,38°.38N×25°.26E,h20km,ML3.2, Error ellipse: s-maj=4.5km s-min=3.5km az=155.0*
THE ***23*** *10:27:42.5,38°.40N×25°.32E,h25km±2km,ML3.4/11, Error ellipse: s-maj=2.5km s-min=0.6km az=117.0*
ISC 23 10:27:40.4±1.0,38°.40N±0°.02×25°.30E±0°.01,h15km±8km, n137,σ0°.95/175,2D,Aegean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOS	Chios island	0.60	91	P	Pb	10 27 53.3	+0.7
CHOS				S	Sb	10 28 01.6	+0.7
CHOS	Chios island	0.60	91	P	Pn	10 27 53.4	-1.1
CHOS				S	Sb	10 28 01.6	+0.7
CHOS	Chios island	0.60	91	P	Pn	10 27 53.4	-1.1
CHOS				S	Sb	10 28 01.3	+0.3
CHOS				AML	AML	10 28 03.6	
	comp=N,4182μm,0.4s						
CHOS				AML	AML	10 28 05.4	
	comp=E,5498μm,0.3s						
SIGR	SIGRI	0.92	28	P	Pn	10 27 58.6	-0.3
SIGR				S	Sn	10 28 12.3	+0.4
SIGR	SIGRI	0.92	28	P	Pn	10 27 58.6	-0.3
SIGR				S	Sn	10 28 10.9	-1.0
SIGR	SIGRI	0.92	28	P	Pn	10 27 58.6	-0.3
SIGR				S	Sn	10 28 10.9	-1.0
SIGR				AML	AML	10 28 14.0	
	comp=N,3760μm,0.5s						
SIGR				AML	AML	10 28 17.0	
	comp=E,2623μm,0.4s						
ZEY	˜zmir	0.96	99	⇓i P	Pn	10 27 59.8	+0.4
ZEY				i S	Sn	10 28 13.1	+0.2
URLA	Izmir	1.02	92	P	Pn	10 28 00.7	+0.4
URLA				S	Sn	10 28 14.6	+0.2
URLA	Izmir	1.02	92	⇓i P	Pn	10 28 00.7	+0.4
URLA				i S	Sn	10 28 14.6	+0.2
PRK	Paraskevi	1.14	42	P	Pg	10 28 02.1	-0.3
PRK				S	Sn	10 28 16.9	-0.4
PRK	Paraskevi	1.14	42	P	Pg	10 28 02.1	-0.3
PRK				S	Sn	10 28 16.9	-0.4
PRK	Paraskevi	1.14	42	P	Pg	10 28 02.2	-0.3
PRK				S	Sn	10 28 17.0	-0.2
PRK				AML	AML	10 28 21.9	
	comp=N,3434μm,0.4s						
PRK				AML	AML	10 28 25.2	
	comp=E,3504μm,0.5s						
PTL	Penteli	1.18	253	P	Pn	10 28 02.3	-0.1
PTL				S	Sg	10 28 18.2	-0.3
PTL	Penteli	1.18	253	P	Pn	10 28 02.3	-0.1
PTL				S	Sg	10 28 18.2	-0.3
PTL	Penteli	1.18	253	P	Pn	10 28 02.3	-0.1
PTL				S	Sb	10 28 17.8	+0.2
PTL				AML	AML	10 28 21.3	
	comp=E,2020μm,0.5s						
PTL				AML	AML	10 28 26.5	
	comp=N,1945μm,0.5s						
DGB	˜zmir	1.30	105	i P	Pg	10 28 05.0	-0.4
DGB				i S	Sg	10 28 23.1	+0.9
VLY	Voula,Athens	1.30	246	P	Pb	10 28 04.4	-0.2
VLY	Voula,Athens	1.30	246	P	Pb	10 28 04.4	-0.2
VLY				S	Sb	10 28 20.4	-0.8
VLY	Voula,Athens	1.30	246	P	Pn	10 28 04.2	+0.1
VLY				S	Sb	10 28 20.4	-0.8
VLY				AML	AML	10 28 25.1	
	comp=E,2248μm,0.5s						
VLY				AML	AML	10 28 25.4	
	comp=N,1510μm,0.6s						
ATH	Athens Observa	1.31	252	P	Pb	10 28 04.9	+0.1
ATH				S	Sg	10 28 22.4	-0.4
ATH	Athens Observa	1.31	252	P	Pb	10 28 04.9	+0.1
ATH				S	Sb	10 28 20.9	-0.6
APE	Apeiranthos	1.34	172	ePN	Pn	10 28 04.7	+0.1
APE	Apeiranthos	1.34	172	P	Pn	10 28 04.9	+0.2
APE				S	Sb	10 28 22.1	-0.2
APE	Apeiranthos	1.34	172	P	Pn	10 28 04.9	+0.2
APE				S	Sb	10 28 22.1	-0.2
APE	Apeiranthos	1.34	172	P	Pn	10 28 04.8	+0.1
APE				S	Sn	10 28 22.6	+0.3
APE				AML	AML	10 28 23.4	
	comp=N,1035μm,0.8s						
APE				AML	AML	10 28 30.4	
	comp=E,953μm,0.3s						
AOS	Alonnisos	1.35	305	P	Pb	10 28 05.4	0.0
AOS				S	Sn	10 28 22.6	+0.2
AOS	Alonnisos	1.35	305	P	Pb	10 28 05.4	0.0
AOS				S	Sn	10 28 22.6	+0.2
AOS	Alonnisos	1.35	305	P	Pg	10 28 06.0	-0.4
SMG	Samos	1.40	119	P	Pb	10 28 05.9	-0.3
SMG	Samos	1.40	119	P	Pn	10 28 05.3	-0.1
SMG				S	Sn	10 28 22.7	-0.9
SMG	Samos	1.40	119	P	Pn	10 28 05.3	-0.1
SMG				S	Sn	10 28 22.7	-0.9
SMG				AML	AML	10 28 27.5	
	comp=E,1365μm,0.4s						
SMG				AML	AML	10 28 28.2	
	comp=N,936μm,0.5s						
AYVA	Ayvalik	1.42	50	P	Pb	10 28 06.2	-0.4
AYVA				S	Sg	10 28 25.9	-0.2
AYVA	Ayvalik	1.42	50	i P	Pb	10 28 06.2	-0.4
AYVA				i S	Sg	10 28 25.9	-0.2
DKL	Dikili	1.43	61	ePN	Pg	10 28 09.9	+2.1
DKL	Dikili	1.43	61	ePn	Pg	10 28 09.9	+2.1
LIA	Limnos Island	1.50	357	P	Pn	10 28 06.8	0.0
LIA				S	Sn	10 28 25.1	-1.1
LIA	Limnos Island	1.50	357	P	Pn	10 28 07.1	+0.3
LIA				S	Sn	10 28 25.1	-1.1
BOZC	Bozcaada	1.56	22	i P	Pn	10 28 07.5	-0.1
BOZC				i S	Sg	10 28 30.7	+0.1
EZN	Ezine	1.64	29	ePN	Pg	10 28 11.6	-0.2
EZN				eSN	Sg	10 28 35.4	+2.3
EZN	Ezine	1.64	29	ePn	Pg	10 28 11.6	-0.2
EZN				eSn	Sg	10 28 35.4	+2.3
GCAM	G?zelcaml?	1.68	114	P	Pn	10 28 09.7	+0.4
GCAM				S	Sg	10 28 35.4	+0.9
GCAM	G?zelcaml?	1.68	114	i P	Pn	10 28 09.7	+0.4
GCAM				i S	Sg	10 28 35.4	+0.9
MHLO	Agia Marina, M	1.85	203	P	Pn	10 28 12.1	+0.5
MHLO				S	Sn	10 28 33.9	-0.8
MHLO	Agia Marina, M	1.85	203	P	Pn	10 28 12.1	+0.5
MHLO				S	Sn	10 28 33.9	-0.8
DID	Didima	1.85	242	P	Pn	10 28 12.0	+0.3
DID				S	Sn	10 28 35.2	+0.2
DID	Didima	1.85	242	P	Pn	10 28 12.0	+0.3
DID				S	Sn	10 28 35.2	+0.2
DID	Didima	1.85	242	P	Pn	10 28 12.9	+1.2
LTK	Loutraki	1.87	259	P	Pn	10 28 13.0	+1.0
LTK				S	Sn	10 28 35.6	+0.2
LTK	Loutraki	1.87	259	P	Pn	10 28 12.6	+0.7
LTK				S	Sn	10 28 35.6	+0.2
LTK	Loutraki	1.87	259	P	Pn	10 28 12.6	+0.7
XOR	Xorichti	1.91	301	P	Pn	10 28 12.4	-0.1
XOR	Xorichti	1.91	301	P	Pn	10 28 12.3	-0.1
THR5	Thira Island,	1.98	179	P	Pn	10 28 13.9	+0.5
THR5	Thira Island,	1.98	179	P	Pn	10 28 13.9	+0.5
PAIG	Paliouri	1.98	321	P	Pn	10 28 12.7	-0.7
PAIG	Paliouri	1.98	321	P	Pn	10 28 12.7	-0.7
AKHS	Akhisar	2.03	76	P	Pn	10 28 15.1	+1.0
AKHS				S	Sg	10 28 46.9	+1.2
AKHS	Akhisar	2.03	76	i P	Pn	10 28 15.1	+1.0
AKHS				i S	Sg	10 28 46.9	+1.2
SMTH	Samothraki Isl	2.08	5	P	Pn	10 28 14.4	-0.4
SMTH	Samothraki Isl	2.08	5	P	Pn	10 28 14.4	-0.4
BODT	Bodrum	2.08	129	ePN	Pb	10 28 17.8	-0.1
BODT				eSN	Sg	10 28 46.0	-1.3
BODT	Bodrum	2.08	129	ePn	Pb	10 28 17.8	-0.1
BODT				eSn	Sg	10 28 46.0	-1.3
AYDB	Zeytinkoy-Aydi	2.09	102	ePN	Pg	10 28 19.7	-0.9
AYDB				eSN	Sg	10 28 48.5	+0.7
AYDB	Zeytinkoy-Aydi	2.09	102	ePn	Pg	10 28 19.7	-0.9
AYDB				eSn	Sg	10 28 48.5	+0.7
BDRM	Kayabasi	2.16	127	P	Pb	10 28 18.8	-0.5
BDRM				S	Sn	10 28 43.3	+0.8
BDRM	Kayabasi	2.16	127	i P	Pb	10 28 18.8	-0.5
BDRM				i S	Sn	10 28 43.3	+0.8
AYDN	Tasoluk	2.17	109	P	Pn	10 28 15.8	-0.3
AYDN				S	Sg	10 28 50.2	+0.1
AYDN	Tasoluk	2.17	109	i P	Pn	10 28 15.8	-0.3
AYDN				i S	Sg	10 28 50.2	+0.1
DSF	Desfina	2.17	271	P	Pn	10 28 16.8	+0.6
DSF	Desfina	2.17	271	P	Pn	10 28 16.8	+0.6
DSF	Desfina	2.17	271	P	Pn	10 28 16.3	+0.2
GELI	Tayfur-Gelibol	2.20	24	ePN	Pb	10 28 19.4	-0.4
GELI	Tayfur-Gelibol	2.20	24	ePn	Pb	10 28 19.4	-0.4
BALY	Balya	2.25	53	P	Pg	10 28 22.7	-0.9
BALY				S	Sg	10 28 53.1	+0.3
BALY	Balya	2.25	53	i P	Pg	10 28 22.7	-0.9
BALY				i S	Sg	10 28 53.1	+0.3
LPK	Lapseki	2.28	29	ePN	Pb	10 28 20.9	-0.3
LPK	Lapseki	2.28	29	ePn	Pb	10 28 20.9	-0.3
BALB	Balikesir	2.37	58	ePN	Pb	10 28 23.4	+0.7
BALB	Balikesir	2.37	58	ePn	Pb	10 28 23.4	+0.7
AGG	Agios Georgios	2.40	286	P	Pn	10 28 20.2	+0.9
AGG	Agios Georgios	2.40	286	P	Pn	10 28 20.2	+0.9
ENEZ	Enez	2.43	16	ePN	Pb	10 28 21.9	-1.8
ENEZ	Enez	2.43	16	ePn	Pb	10 28 22.0	-1.8
ERIK	Erikli-Kesan	2.46	22	ePN	Pb	10 28 22.8	-1.5
ERIK	Erikli-Kesan	2.46	22	ePn	Pb	10 28 22.8	-1.5
GONE	Gonen-Balikesi	2.48	48	ePN	Pb	10 28 24.5	-0.2
GONE	Gonen-Balikesi	2.48	48	ePn	Pb	10 28 24.5	-0.2
KLV	Kalavryta, Ach	2.50	263	P	Pn	10 28 21.2	+0.5
KLV	Kalavryta, Ach	2.50	263	P	Pn	10 28 21.2	+0.5
VLI	Veliai	2.52	229	P	Pn	10 28 20.1	-0.7
VLI	Veliai	2.52	229	P	Pn	10 28 20.1	-0.7
ALN	Alexandroupoli	2.56	13	P	Pn	10 28 21.7	+0.3
ALN				S	Sn	10 28 51.2	-1.2
ALN	Alexandroupoli	2.56	13	P	Pn	10 28 21.7	+0.3
ALN				S	Sn	10 28 51.2	-1.2
MANT	Manisa	2.56	87	P	Pg	10 28 28.2	-1.4
MANT				S	Sg	10 29 02.3	-0.5
MANT	Manisa	2.56	87	i P	Pg	10 28 28.2	-1.4
MANT				i S	Sg	10 29 02.3	-0.5
KULA	Kula-Manisa	2.64	86	ePN	Pb	10 28 27.8	+0.3
KULA	Kula-Manisa	2.64	86	ePn	Pb	10 28 27.8	+0.3
YER	Yerkesik	2.68	117	ePN	Pb	10 28 27.0	-1.2
YER	Yerkesik	2.68	117	ePn	Pb	10 28 27.0	-1.2
RKY	Sarkoy-Tekirda	2.71	32	ePN	Pb	10 28 27.0	-1.7
RKY	Sarkoy-Tekirda	2.71	32	ePn	Pb	10 28 27.0	-1.7
DURS	Dursunbey	2.75	63	P	Pn	10 28 25.2	+1.1
DURS				S	Sb	10 29 04.6	+1.6
DURS	Dursunbey	2.75	63	i P	Pn	10 28 25.2	+1.1
DURS				i S	Sb	10 29 04.6	+1.6
EDC	Edincik	2.78	45	ePN	Pb	10 28 28.9	-0.9
EDC	Edincik	2.78	45	ePn	Pb	10 28 28.9	-0.9
KCTX	Karacabey (Bur	3.02	51	ePN	Pb	10 28 32.6	-1.3
KCTX	Karacabey (Bur	3.02	51	ePn	Pb	10 28 32.6	-1.3
MDNY	Mudanya-Bursa	3.41	54	ePN	Pb	10 28 38.2	-2.3
MDNY	Mudanya-Bursa	3.41	54	ePn	Pb	10 28 38.2	-2.3
TVSB	Tavsanli	3.42	71	ePN	Pb	10 28 38.7	-2.0
TVSB	Tavsanli	3.42	71	ePn	Pb	10 28 38.7	-2.0
FETY	Fethiye	3.49	119	ePN	Pb	10 28 38.5	-3.4
FETY	Fethiye	3.49	119	ePn	Pb	10 28 38.5	-3.4
ARMT	Armutlu	3.51	51	ePN	Pb	10 28 39.6	-2.6
ARMT	Armutlu	3.51	51	ePn	Pb	10 28 39.6	-2.6
GLHS	Glhisar (BURDU	3.55	109	ePN	Pb	10 28 39.9	-3.2
GLHS	Glhisar (BURDU	3.55	109	ePn	Pb	10 28 39.9	-3.2
SLVT	Silivri	3.61	38	ePN	Pb	10 28 40.4	-3.5
SLVT	Silivri	3.61	38	ePn	Pb	10 28 40.4	-3.6
CTKS	Kestanelik-??a	3.76	40	ePN	Pb	10 28 42.9	-3.6
CTKS	Kestanelik-??a	3.76	40	ePn	Pb	10 28 42.9	-3.6
CTYL	Yalikoy Yolu	3.84	36	ePN	Pb	10 28 44.3	-3.5
CTYL	Yalikoy Yolu	3.84	36	ePn	Pb	10 28 44.3	-3.5

comp=E,95nm,0.5s
RABH Abou Rabah 0.80 93 *e*P **Pb 10 29 53.4 -0.2**
RABH *e*S **Sg 10 30 03.4 +0.3**
comp=E,95nm,0.5s
ROOS tl_alroos 0.92 109 *e*P **Pg 10 29 54.6 -0.4**
ROOS *e*S **Sb 10 30 08.0 -0.3**
ROOS AML AML 10 30 15.9
comp=E,253nm,0.6s
ROOS AML AML 10 30 17.3
comp=N,312nm,0.6s
ROOS tl_alroos 0.92 109 *e*P **Pg 10 29 54.6 -0.4**
ROOS *e*S **Sb 10 30 08.0 -0.3**
comp=N,312nm,0.6s
DQRL Deir Qamar 0.95 216 *e*P **Pb 10 29 56.0 -0.1**
DQRL Deir Qamar 0.95 216 *e*P **Pb 10 29 56.0 -0.1**
RCY Rachaya 1.03 199 *e*P **Pb 10 29 57.3 -0.2**
RCY *e*S **Sn 10 30 12.8 -0.4**
BRBR Barbar 1.09 193 *e*P **Pn 10 29 59.2 0.0**
BRBR *e*S **Sn 10 30 14.9 +0.2**
BRBR AML AML 10 30 24.3
comp=E,108nm,0.7s
BRBR AML AML 10 30 30.1
comp=N,76nm,0.6s
BRBR Barbar 1.09 193 *e*P **Pn 10 29 59.2 0.0**
BRBR *e*S **Sn 10 30 14.9 +0.2**
comp=N,76nm,0.6s
TOTH TOTAH 1.12 172 *e*P **Pn 10 29 59.5 0.0**
TOTH *e*S **Sn 10 30 15.7 +0.4**
TOTH AML AML 10 30 17.1
comp=E,122nm,0.6s
TOTH AML AML 10 30 26.9
comp=N,103nm,0.6s
TOTH TOTAH 1.12 172 *e*P **Pn 10 29 59.5 0.0**
TOTH *e*S **Sn 10 30 15.7 +0.4**
comp=N,103nm,0.6s
ARNB Al Arnab 1.40 351 *e*P **Pn 10 30 02.6 -0.8**
ARNB *e*S **Sb 10 30 21.8 -0.2**
ARNB AML AML 10 30 31.0
comp=E,129nm,0.6s
ARNB AML AML 10 30 36.4
comp=N,110nm,0.8s
ARNB Al Arnab 1.40 351 *e*P **Pn 10 30 02.6 -0.8**
ARNB *e*S **Sb 10 30 21.8 -0.2**
comp=N,110nm,0.8s
BTCH Batrach 1.57 7 *e*P **Pb 10 30 06.5 -0.2**
BTCH *e*S **Sg 10 30 27.7 0.0**
BTCH AML AML 10 30 34.7
comp=E,210nm,0.5s
BTCH AML AML 10 30 35.5
comp=N,62nm,0.4s
BTCH Batrach 1.57 7 *e*P **Pb 10 30 06.5 -0.2**
BTCH *e*S **Sg 10 30 27.7 0.0**
comp=N,62nm,0.4s
ZALF Zalf 1.80 149 *e*P **Pb 10 30 10.0 -0.6**
ZALF *e*S **Sb 10 30 34.0 +0.5**
ZALF AML AML 10 30 36.5
comp=E,70nm,0.6s
ZALF AML AML 10 30 36.7
comp=N,138nm,0.6s
ZALF Zalf 1.80 149 *e*P **Pb 10 30 10.0 -0.6**
ZALF *e*S **Sb 10 30 34.0 +0.5**
comp=N,138nm,0.6s
SALA Sala 1.81 167 *e*P **Pb 10 30 10.6 -0.3**
SALA *e*S **Sb 10 30 33.7 -0.1**
SALA AML AML 10 30 39.5
comp=E,9.8nm,0.6s
SALA AML AML 10 30 45.9
comp=N,84nm,0.6s
SALA Sala 1.81 167 *e*P **Pb 10 30 10.6 -0.3**
SALA *e*S **Sb 10 30 33.7 -0.1**
comp=N,84nm,0.6s
TCHB Talchebab 1.82 187 *e*P **Pb 10 30 11.3 +0.4**
TCHB *e*S **Sb 10 30 34.0 +0.1**
TCHB AML AML 10 30 38.4
comp=N,190nm,0.5s
TCHB AML AML 10 30 51.9
comp=E,88nm,0.6s
TCHB Talchebab 1.82 187 *e*S **Sb 10 30 34.0 +0.1**
comp=E,88nm,0.6s
DRWC Darouich 2.17 9 *e*P **Pn 10 30 15.1 +1.1**
DRWC *e*S **Sn 10 30 41.7 +0.5**
DRWC AML AML 10 30 47.7
comp=N,67nm,0.5s
DRWC AML AML 10 30 58.2
comp=E,28nm,0.5s
DRWC Darouich 2.17 9 *e*P **Pn 10 30 15.1 +1.1**
DRWC *e*S **Sn 10 30 41.7 +0.5**
comp=E,29nm,0.5s

IDC 23 10:33:21.6±5.4, 23°.57N×93°.94E, h0km, mb3.5/2, mb1 3.7/3, mb1mx3.2/55, mbtmp3.4/3, ML3.4/1, MS3.8/1, Ms1 3.8/1, ms1mx2.5/54, Error ellipse: s-maj=168.6km s-min=99.4km az=47.0, Myanmar-India border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**6.91**	**137**	Pn	Pn	10 35 04.5	+0.4
	0.2nm,0.3s,baz=310,slow=13,SNR=4.0						
KVAR	**Kislovodsk Arr**	**46.38**	**309**	LR	LR	11 04 38.6	
	comp=Z,123nm,21.8s,baz=73,slow=40						
WRA	**Warramunga Arr**	**58.50**	**134**	P	P	10 43 19.5	-0.4
	0.3nm,0.5s,baz=322,slow=7.5,SNR=12						
ASAR	**Alice Springs**	**60.92**	**138**	P	P	10 43 36.9	+0.3
	0.3nm,0.5s,baz=318,slow=6.9,SNR=7.4						

*ISCJB **23** 10:37:46.6±0.8, 36°.98N±0°.04×141°.25E±0°.08, h51km±6km, mb3.7/7, MS3.7/3, Error ellipse: s-maj=11.6km s-min=5.8km az=19.2*
*IDC **23** 10:37:48.8±2.6, 37°.03N×141°.35E, h55km±24km, mb3.5/7, mb1 3.7/10, mb1mx3.4/46, mbtmp3.8/10, ML3.6/3, MS2.8/5, Ms1 2.9/5, ms1mx2.5/51, Error ellipse: s-maj=21.9km s-min=18.8km az=138.0*
*JMA **23** 10:37:48.4±0.1, 37°.01N×141°.12E, h50km±1km, M3.9*
JMA Felt I J1.
ISC 23 10:37:47.3±1.5, 37°.00N±0°.05×141°.3E±0°.1, h40km±11km, n31, σ1°.33/33, mb3.9/7, MS3.6/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.40**	**285**	P	**Pn**	10 37 57.2	+0.5
ONAJ				S	**Sn**	10 38 03.4	+0.1
JFK	**Kawauchi**	**0.48**	**319**	P	**Pn**	10 37 58.3	+0.4
JFK				S	**Sn**	10 38 05.3	0.0
JHO	**Hitachi**	**0.69**	**236**	P	**Pn**	10 38 00.5	-0.1
JHO				S	**Sn**	10 38 09.0	-1.1
JFT	**Otama**	**0.91**	**305**	P	**Pn**	10 38 04.3	+0.7
JFT				S	**Sn**	10 38 15.6	0.0
JMM	**Marumori**	**0.94**	**336**	P	**Pn**	10 38 04.4	+0.3
JMM				S	**Sn**	10 38 16.0	-0.4
JFY	**Yanaizu**	**1.32**	**288**	P	**Pn**	10 38 09.2	0.0
JOU	**Okura**	**1.45**	**341**	P	**Pn**	10 38 12.1	+1.1
JOU				*e*S	**Sn**	10 38 29.3	+0.5
JYS	**Shiratake**	**1.55**	**322**	P	**Pn**	10 38 13.1	+0.7
JAG	**Ashikaga**	**1.57**	**249**	P	**Pn**	10 38 12.5	-0.2
JAG				*e*S	**Sn**	10 38 29.6	-2.2
JKT	**Katashina**	**1.64**	**262**	P	**Pn**	10 38 14.4	+0.7
JKT				S	**Sn**	10 38 34.1	+0.4
MJAR	**Matsushiro Arr**	**2.50**	**260**	P	**Pn**	10 38 26.2	+0.7
	8.5nm,0.3s,baz=84,slow=15,SNR=28						
MJAR				S	**Sn**	10 38 58.7	+3.9
	7.7nm,0.3s,baz=239,slow=13,SNR=7.9						
MJAR				LR	LR	10 39 52.1	
	comp=Z,63nm,20.7s,baz=105,slow=48						
MAT	**Matsushiro**	**2.51**	**260**	P	**Pn**	10 38 26.5	+1.0
MAT				*e*S	**Sn**	10 38 53.9	-1.0
JHJ	**Hachijo jima 2**	**4.06**	**198**	P	**Pn**	10 38 49.1	+2.2
	22nm,0.3s,baz=48,slow=16,SNR=5.7						
JHJ				S	**Sn**	10 39 31.3	-1.9
	10nm,0.3s,baz=48,slow=15,SNR=4.9						
ASAJ	**Asahikawa**	**7.18**	**8**	P	**Pn**	10 39 29.6	-0.1
	0.8nm,0.3s,baz=216,slow=15,SNR=9.4						
ASAJ				S	**Sn**	10 40 46.3	-3.6
	0.3nm,0.3s,baz=229,slow=20,SNR=2.0						
KSRS	**Korea Array**	**10.66**	**276**	LR	LR	10 43 43.6	
	comp=Z,40nm,20.0s,baz=67,slow=33						
KLR	**Kul'dur**	**14.05**	**333**	LR	LR	10 46 23.1	
	comp=Z,22nm,19.5s,baz=159,slow=37						
H11N2	**WAKE ISLAND Hy 28.23**	**121**		T	T	11 13 43.0	
	baz=313,slow=75,SNR=45						
H11N1	**WAKE ISLAND Hy 28.23**	**121**		T	T	11 13 43.6	
	baz=313,slow=75,SNR=61						
H11N3	**WAKE ISLAND Hy 28.24**	**121**		T	T	11 13 34.5	
	baz=313,slow=75,SNR=52						
H11S1	**WAKE ISLAND Hy 28.93**	**123**		T	T	11 14 32.3	
	baz=315,slow=76,SNR=46						
H11S3	**WAKE ISLAND Hy 28.93**	**123**		T	T	11 14 32.4	
	baz=315,slow=76,SNR=36						
H11S2	**WAKE ISLAND Hy 28.95**	**123**		T	T	11 14 35.4	
	baz=315,slow=76,SNR=27						
ZALV	**Zalesovo Beam**	**41.85**	**312**	P	**P**	**10 45 33.3**	**+0.1**
	1.5nm,0.5s,baz=86,slow=4.6,SNR=3.1						
MKAR	**Makanchi Array**	**44.04**	**302**	P	**P**	**10 45 50.8**	**-0.3**
	0.6nm,0.7s,baz=92,slow=8.5,SNR=3.9						
KAPI	**Kappang**	**46.38**	**210**	LR	LR	11 03 26.0	
	comp=Z,24nm,20.5s,baz=14,slow=33						
WRA	**Warramunga Arr**	**57.01**	**188**	P	**P**	**10 47 28.6**	**-0.4**
	0.7nm,0.9s,baz=4.8,slow=7.3,SNR=5.4						
YKA	**Yellowknife Ar**	**63.89**	**30**	P	**P**	**10 48 16.8**	**+1.2**
	0.1nm,0.7s,baz=302,slow=6.5,SNR=3.8						
ARCES	**ARCESS Array B**	**63.99**	**339**	P	**P**	**10 48 15.3**	**-0.8**
	1.2nm,0.8s,baz=49,slow=9.8,SNR=3.8						
FINES	**FINESS Array B**	**68.79**	**332**	P	**P**	**10 48 46.5**	**-0.4**
	1.5nm,0.7s,baz=59,slow=5.4,SNR=3.5						
HFS	**Hagfors**	**74.07**	**336**	LR	LR	11 25 05.5	
	comp=Z,157nm,18.2s,baz=210,slow=38						
NOA	**NORSAR Array B**	**74.17**	**337**	P	**P**	**10 49 19.2**	**-0.2**
	1.0nm,0.7s,baz=41,slow=6.0,SNR=3.7						
NOA				LR	LR	11 26 10.0	
	comp=Z,30nm,18.4s,baz=260,slow=39						

*IDC **23** 10:52:01.3±4.2, 36°.34N×71°.00E, h189km±37km, mb3.3/10, mb1 3.4/15, mb1mx3.1/63, mbtmp3.9/15, MS4.0/1, Ms1 4.0/1, ms1mx2.5/39, Error ellipse: s-maj=32.0km s-min=16.8km az=36.0*
*ISCJB **23** 10:52:02.9±0.6, 36°.65N±0°.05×70°.98E±0°.08, h200km, mb3.4/9, Error ellipse: s-maj=8.9km s-min=6.8km az=164.4*
*NNC **23** 10:52:09.1±4.9, 37°.22N×70°.51E, h247km±58km, mb2.8, mpv4.0, Error ellipse: s-maj=73.0km s-min=32.5km az=128.0*
ISC 23 10:52:03.6±0.8, 36°.64N±0°.07×71°.00E±0°.08, h200km, n23, σ1°.55/28, mb3.4/9, 4C-4D, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**2.76**	**322**	⇑P	**Pn**	10 52 52.0	+1.5
	56nm,0.3s						
DZET				⇓S	**Sn**	10 53 26.3	-1.0
	154nm,0.3s						
THN	**Thein Dam**	**5.72**	**136**	*e*S	**Sn**	10 54 34.0	+0.6
MNAS	**Manas**	**5.95**	**11**	⇑P	**Pn**	10 53 31.7	+1.4
	6.7nm,0.3s						
MNAS				⇓S	**Sn**	10 54 37.1	-1.9
	37nm,0.5s						
KK31	**Karatay Array**	**6.47**	**357**	P	**Pn**	10 53 37.5	+0.7
	3.6nm,0.4s,baz=186,slow=13,SNR=47						
KK31				S	**Sn**	10 54 46.6	-4.2
	13nm,0.5s,baz=188,slow=24,SNR=20						
AAK	**Ala-Archa**	**6.56**	**23**	P	**Pn**	10 53 40.0	+1.8
	3.5nm,0.3s,baz=186,slow=6.4,SNR=28						
AAK				S	**Sn**	10 54 52.5	-0.8
	1.5nm,0.3s,baz=128,slow=21,SNR=10.0						
AAK	**Ala-Archa**	**6.56**	**23**	⇑P	**Pn**	10 53 39.6	+1.4
	6.5nm,0.4s						
AAK				⇓S	**Sn**	10 54 51.7	-1.5
	15nm,0.8s						
TKM2	**Tokmak 2**	**7.20**	**28**	⇓P	**Pn**	10 53 47.5	+1.0
	12nm,0.8s						
TKM2				⇑S	**Sn**	10 55 06.4	-1.9
	5.8nm,0.8s						
MKAR	**Makanchi Array**	**13.18**	**36**	P	**Pn**	10 55 05.0	+1.8
	0.3nm,0.3s,baz=218,slow=9.7,SNR=9.1						
KURBB	**Kurchatov Arra**	**14.99**	**19**	P	**Pn**	10 55 25.1	-0.4
	0.1nm,0.3s,baz=207,slow=11,SNR=5.3						
BVAR	**Borovoye Array**	**16.39**	**359**	P	**Pn**	10 55 43.6	+1.3
	0.6nm,0.3s,baz=163,slow=13,SNR=6.7						
AKTO	**Aktyubinsk**	**16.66**	**330**	P	**Pn**	10 55 46.0	+0.4
	0.5nm,0.3s,baz=139,slow=9.5,SNR=13						
ZALV	**Zalesovo Beam**	**19.79**	**25**	P	**P**	**10 56 18.7**	**+0.3**
	2.1nm,0.4s,baz=222,slow=11,SNR=9.4						
FINES	**FINESS Array B**	**37.37**	**326**	P	**P**	**10 58 57.4**	**+0.8**
	1.3nm,0.4s,baz=128,slow=9.7,SNR=8.2						
VRAC	**Vranov**	**40.92**	**306**	LR	LR	11 20 09.2	
	comp=Z,187nm,19.8s,baz=182,slow=41						
ARCES	**ARCESS Array B**	**41.02**	**338**	P	**P**	**10 59 27.9**	**+1.2**
	1.6nm,0.6s,baz=108,slow=7.8,SNR=14						
HFS	**Hagfors**	**42.96**	**322**	P	**P**	**10 59 43.1**	**+0.6**
	2.2nm,0.6s,baz=104,slow=12,SNR=5.6						
NB2	**NORSAR Subarra**	**44.27**	**323**	P	**P**	**10 59 53.1**	**+0.1**
	comp=Z,0.9nm,0.5s,baz=96,slow=7.9						
NOA	**NORSAR Array B**	**44.27**	**323**	P	**P**	**10 59 52.9**	**-0.1**
	comp=Z,1.4nm,0.6s,baz=96,slow=7.9,SNR=4.3						
SPITS	**Spitsbergen Ar**	**47.36**	**347**	P	**P**	**11 00 18.4**	**+1.6**
	comp=Z,1.3nm,0.7s,baz=165,slow=6.0,SNR=4.0						
TORD	**Torodi Ar. Bea**	**65.72**	**269**	P	**P**	**11 02 25.3**	**-1.9**
	comp=Z,0.4nm,1.0s,baz=243,slow=6.5,SNR=3.7						
YKA	**Yellowknife Ar**	**81.11**	**3**	P	**P**	**11 03 56.3**	**+0.2**
	comp=Z,0.2nm,0.3s,baz=350,slow=5.4,SNR=10						
WRA	**Warramunga Arr**	**82.06**	**122**	P	**P**	**11 03 59.5**	**-2.3**
	comp=Z,0.2nm,0.9s,baz=324,slow=5.1,SNR=3.1						
ASAR	**Alice Springs**	**84.33**	**125**	P	**P**	**11 04 12.0**	**-1.3**
	comp=Z,0.4nm,0.8s,baz=311,slow=4.8,SNR=5.1						

WEL 23 11:05:27.6±0.7, 36°.36S×179°.70W, h33km, ML3.8/11, 2C-1D, Error ellipse: s-maj=6.5km s-min=5.7km az=90.0, East of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MXZ	**Matakaoa Point**	**2.00**	**233**	PN	Pn	11 05 57.7	-1.3
MXZ				AML	AML	11 06 11.2	
MXZ				SN	Sn	11 06 20.1	-2.7
WMGZ	**Waiomatatini S**	**2.10**	**226**	⇓PN	Pn	11 06 00.3	-0.1
PUZ	**Puketiti**	**2.36**	**223**	⇑PN	Pn	11 06 03.5	-0.5
PUZ				SN	Sn	11 06 31.1	-0.8
PUZ				AML	AML	11 06 31.5	
HAZ	**Te Kaha**	**2.45**	**235**	⇑PN	Pn	11 06 05.2	+0.1
HAZ				SN	Sn	11 06 33.0	-0.9
TWGZ	**Tauwhareparae**	**2.59**	**225**	PN	Pn	11 06 06.8	-0.4
CNGZ	**Carnagh Statio**	**2.69**	**218**	PN	Pn	11 06 08.6	0.0
TKGZ	**Te Karaka**	**2.85**	**223**	PN	Pn	11 06 09.9	-0.8
TKGZ				SN	Sn	11 06 42.3	-1.5
MWZ	**Matawai**	**2.96**	**228**	PN	Pn	11 06 11.3	-1.0
MWZ				SN	Sn	11 06 44.2	-2.4
RIGZ	**Rimuhau**	**3.09**	**220**	PN	Pn	11 06 13.0	-1.0
RAGZ	**Rawiri**	**3.13**	**226**	PN	Pn	11 06 14.3	-0.4
RAGZ				SN	Sn	11 06 48.8	-2.1
URZ	**Urewera**	**3.17**	**232**	PN	Pn	11 06 14.2	-0.9
URZ				AML	AML	11 06 53.1	
URZ				AML	AML	11 06 53.2	
PRGZ	**Paritu Road**	**3.20**	**216**	PN	Pn	11 06 14.5	-1.1
MHGZ	**Mahia Peninsul**	**3.37**	**214**	PN	Pn	11 06 17.1	-0.8
SNGZ	**Shannon Statio**	**3.37**	**223**	*e*PN	Pn	11 06 16.6	-1.4
KNZ	**Kokohu**	**3.38**	**217**	PN	Pn	11 06 16.2	-1.7
RTZ	**Ruatahuna**	**3.47**	**229**	PN	Pn	11 06 18.4	-0.9
RAHZ	**Arahi**	**3.61**	**224**	PN	Pn	11 06 20.5	-0.6
KUZ	**Kuaotunu**	**3.71**	**263**	PN	Pn	11 06 20.7	-1.9
ARHZ	**Aropaoanui**	**3.90**	**221**	*e*PN	Pn	11 06 23.9	-1.3
MRHZ	**Matea Rd**	**3.95**	**230**	*e*PN	Pn	11 06 24.1	-1.8
BKZ	**Black Stump Fm**	**4.12**	**226**	PN	Pn	11 06 26.9	-1.3
MKAZ	**Moumakai**	**4.20**	**258**	PN	Pn	11 06 27.9	-1.3
KAHZ	**Kaharanaki**	**4.36**	**217**	PN	Pn	11 06 29.3	-2.3
PXZ	**Pawanui**	**4.55**	**215**	PN	Pn	11 06 31.2	-3.0
PXZ				SN	Sn	11 07 21.5	-4.4
BHHZ	**Black Hill Sta**	**4.58**	**226**	*e*PN	Pn	11 06 33.2	-1.4
WNVZ	**Wahianoa**	**4.75**	**230**	PN	Pn	11 06 35.7	-1.4
TSZ	**Takapari Road**	**5.03**	**222**	*e*PN	Pn	11 06 37.1	-3.6
WAZ	**Wanganui**	**5.39**	**229**	*e*PN	Pn	11 06 44.4	-1.2
MRZ	**Mangatainoka R**	**5.67**	**219**	*e*PN	Pn	11 06 46.0	-3.5
MRZ				SN	Sn	11 07 46.5	-6.8

*ISCJB **23** 11:16:52.3±1.3, 4°.8S±0°.3×152°.6E±0°.3, h55km, mb4.0/7, MS3.0/1, Error ellipse: s-maj=59.7km s-min=10.7km az=40.4*
*IDC **23** 11:16:56.4±5.0, 4°.97S×152°.69E, h84km±42km, mb3.8/7, mb1 4.1/8, mb1mx3.7/36, mbtmp4.1/8, MS3.0/1, Ms1 3.2/1, ms1mx2.6/27, Error ellipse: s-maj=59.5km s-min=24.6km az=127.0*
ISC 23 11:16:53.5±1.6, 4°.8S±0°.3×152°.7E±0°.4, h55km, n10, σ1°.54/10, mb4.0/7, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**7.17**	**230**	P	**Pn**	11 18 37.8	+1.9
	4.0nm,0.3s,baz=58,slow=12,SNR=12						
PMG				S	**Sn**	11 19 55.7	-0.4
	2.7nm,0.3s,baz=85,slow=15,SNR=4.0						
WRA	**Warramunga Arr**	**23.39**	**228**	P	**P**	**11 21 56.5**	**-1.3**
	3.8nm,0.6s,baz=51,slow=10,SNR=64						
ASAR	**Alice Springs**	**26.11**	**222**	P	**P**	**11 22 21.6**	**-0.8**
	1.0nm,0.5s,baz=56,slow=9.0,SNR=26						
FITZ	**Fitzroy Crossi**	**29.59**	**241**	P	**P**	**11 22 52.0**	**-1.7**
	5.1nm,0.5s,baz=58,slow=6.5,SNR=36						
CMAR	**Chiang Mai Arr**	**57.78**	**295**	LR	LR	11 51 55.9	
	comp=Z,11nm,18.1s,baz=85,slow=36						
MKAR	**Makanchi Array**	**80.25**	**319**	P	**P**	**11 29 00.4**	**+2.0**
	0.2nm,0.4s,baz=110,slow=7.8,SNR=2.6						
ZALV	**Zalesovo Beam**	**81.08**	**326**	P	**P**	**11 29 01.1**	**-1.5**
	1.1nm,0.5s,baz=120,slow=8.7,SNR=3.6						
ILAR	**Eielson Array**	**82.17**	**22**	P	**P**	**11 29 07.9**	**-0.3**
	1.5nm,0.6s,baz=244,slow=5.3,SNR=18						
YKA	**Yellowknife Ar**	**95.45**	**28**	P	**P**	**11 30 12.9**	**+1.0**
	0.4nm,0.5s,baz=271,slow=5.0,SNR=18						
TORD	**Torodi Ar. Bea**	**150.21**	**288**	PKPbc	**PKPbc**	**11 36 38.9**	**-0.6**
	2.2nm,0.4s,baz=86,slow=2.5,SNR=40						

*ISCJB **23** 11:17:59.2±0.6, 39°.10N±0°.03×29°.03E±0°.05, h9km±6km, Error ellipse: s-maj=6.0km s-min=5.4km az=2.8*
*CSEM **23** 11:17:59.3±0.1, 39°.10N×29°.05E, h10km, MD2.7, Error ellipse: s-maj=2.6km s-min=2.0km az=103.0*
*ISK **23** 11:17:59.0, 39°.11N×29°.07E, h12km, MD2.4*
*DDA **23** 11:17:59.3, 39°.09N×29°.05E, h7km, Md2.7*
ISC 23 11:17:59.6±1.0, 39°.10N±0°.03×29°.05E±0°.03, h12km±10km, n30, σ0°.34/40, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**257**	P	**Pg**	11 18 05.1	-0.1
DEMI	**Demirci**	**0.27**	**257**	*i* P	**Pg**	11 18 05.1	-0.1
GDZ	**Gediz**	**0.34**	**92**	P	**Pg**	11 18 06.3	-0.1
GDZ				S	**Sg**	11 18 11.5	+0.5
GDZ	**Gediz**	**0.34**	**92**	*i* P	**Pg**	11 18 06.3	-0.1
GDZ				*i* S	**Sg**	11 18 11.5	+0.5
TVSB	**Tavsanli**	**0.47**	**42**	*e*PG	**Pg**	11 18 08.6	-0.3
TVSB	**Tavsanli**	**0.47**	**42**	*e*Pg	**Pg**	11 18 08.6	-0.3
KULA	**Kula-Manisa**	**0.66**	**208**	*e*PG	**Pg**	11 18 12.5	0.0
KULA	**Kula-Manisa**	**0.66**	**208**	*e*Pg	**Pg**	11 18 12.5	0.0
DURS	**Dursunbey**	**0.67**	**318**	P	**Pg**	11 18 12.7	+0.1
DURS	**Dursunbey**	**0.67**	**318**	*i* P	**Pg**	11 18 12.7	+0.1
MANT	**Manisa**	**0.72**	**212**	P	**Pg**	11 18 12.9	-0.7
MANT	**Manisa**	**0.72**	**212**	*i* P	**Pg**	11 18 12.9	-0.7
KHL	**Karahalli**	**0.86**	**154**	*e*PG	**Pg**	11 18 16.1	-0.1
KHL				*e*SG	**Sb**	11 18 28.5	+0.5
KHL	**Karahalli**	**0.86**	**154**	*e*Pg	**Pg**	11 18 16.1	-0.1
KHL				*e*Sg	**Sb**	11 18 28.5	+0.5
ORLT	**Orhaneli**	**0.95**	**353**	*e*PG	**Pb**	11 18 17.6	-0.4
ORLT				*e*SG	**Sb**	11 18 31.2	+0.6
ORLT	**Orhaneli**	**0.95**	**353**	*e*Pg	**Pb**	11 18 17.6	-0.4
ORLT				*e*Sg	**Sb**	11 18 31.2	+0.6
CAVI	**Cavuskoy**	**1.26**	**29**	*e*PN	**Pn**	11 18 22.7	-0.2
CAVI	**Cavuskoy**	**1.26**	**29**	*e*Pn	**Pn**	11 18 22.7	-0.2
IZI	**Iznik**	**1.28**	**15**	*e*PN	**Pn**	11 18 22.9	-0.3
IZI				*e*SN	**Sg**	11 18 40.7	0.0
IZI	**Iznik**	**1.28**	**15**	*e*Pn	**Pn**	11 18 23.0	-0.3
IZI				*e*Sn	**Sg**	11 18 40.7	0.0
BORA	**Eskisehir**	**1.33**	**54**	P	**Pb**	11 18 24.4	-0.2
BORA				S	**Sg**	11 18 42.5	-0.1
BORA	**Eskisehir**	**1.33**	**54**	*i* P	**Pb**	11 18 24.4	-0.2
BORA				*i* S	**Sg**	11 18 42.5	-0.1
GONE	**Gonen-Balikesi**	**1.42**	**312**	*e*PN	**Pb**	11 18 25.6	-0.3
GONE	**Gonen-Balikesi**	**1.42**	**312**	*e*Pn	**Pb**	11 18 25.6	-0.3
ARMT	**Armutlu**	**1.47**	**354**	*e*PN	**Pn**	11 18 26.1	+0.2
ARMT	**Armutlu**	**1.47**	**354**	*e*Pn	**Pn**	11 18 26.1	+0.2
GULT	**Gulveren**	**1.74**	**40**	*e*PN	**Pn**	11 18 29.6	-0.1
GULT	**Gulveren**	**1.74**	**40**	*e*Pn	**Pn**	11 18 29.6	-0.1
SPNC	**Sapanca-Adapaz**	**1.85**	**31**	*e*PN	**Pn**	11 18 31.3	+0.2
SPNC	**Sapanca-Adapaz**	**1.85**	**31**	*e*Pn	**Pn**	11 18 31.3	+0.2

*ISCJB **23** 11:32:35.0±0.5, 39°.09N±0°.03×29°.03E±0°.03, h4km±6km, Error ellipse: s-maj=4.4km s-min=3.9km az=176.2*
*ISK **23** 11:32:34.9, 39°.10N×29°.02E, h9km, MD3.2*
*DDA **23** 11:32:34.5, 39°.07N×29°.04E, h7km, Md2.7*
*CSEM **23** 11:32:35.2±0.1, 39°.09N×29°.04E, h5km, MD2.7, Error ellipse: s-maj=2.1km s-min=2.0km az=137.0*
ISC 23 11:32:34.7±0.9, 39°.08N±0°.03×29°.04E±0°.02, h15km±7km, n35, σ0°.22/51, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**262**	P	**Pg**	11 32 40.6	+0.2
DEMI				S	**Sg**	11 32 44.1	-0.1
DEMI	**Demirci**	**0.26**	**262**	*i* P	**Pg**	11 32 40.6	+0.2
DEMI				*i* S	**Sg**	11 32 44.1	-0.1
GDZ	**Gediz**	**0.34**	**88**	P	**Pg**	11 32 41.9	+0.1
GDZ				S	**Sg**	11 32 46.3	-0.3
GDZ	**Gediz**	**0.34**	**88**	*i* P	**Pg**	11 32 41.9	+0.1
GDZ				*i* S	**Sg**	11 32 46.3	-0.3
TVSB	**Tavsanli**	**0.49**	**41**	PG	**Pg**	11 32 44.8	+0.3
TVSB	**Tavsanli**	**0.49**	**41**	*i* Pg	**Pg**	11 32 44.8	+0.3
KULA	**Kula-Manisa**	**0.64**	**208**	PG	**Pb**	11 32 47.8	+0.2
KULA	**Kula-Manisa**	**0.64**	**208**	*i* Pg	**Pb**	11 32 47.8	+0.2
DURS	**Dursunbey**	**0.68**	**320**	P	**Pb**	11 32 48.5	+0.1
DURS				S	**Sg**	11 32 57.0	-0.1
DURS	**Dursunbey**	**0.68**	**320**	*i* P	**Pb**	11 32 48.5	+0.1
DURS				*i* S	**Sg**	11 32 57.0	-0.1
MANT	**Manisa**	**0.70**	**213**	*i* P	Pg	11 32 45.1	-3.3
MANT				*i* S	**Sg**	11 32 57.5	-0.3
KHL	**Karahalli**	**0.84**	**153**	P

ISC 23 12:03:40.6±1.0, 39°.58N±0°.02×28°.82E±0°.01, h7km±9km, n116, σ0°.66/148, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DURS	**Dursunbey**	**0.26**	**275**	P	**Pg**	**12 03 46.0**	**+0.2**
DURS				S	**Sg**	**12 03 49.8**	**+0.4**
DURS	**Dursunbey**	**0.26**	**275**	*i* P	**Pg**	**12 03 46.0**	**+0.2**
DURS				*i* S	**Sg**	**12 03 49.8**	**+0.4**
ORLT	**Orhaneli**	**0.47**	**8**	PG	**Pg**	**12 03 49.8**	**+0.1**
ORLT	**Orhaneli**	**0.47**	**8**	*i* Pg	**Pg**	**12 03 49.8**	**+0.1**
TVSB	**Tavsanli**	**0.52**	**104**	PG	**Pg**	**12 03 50.2**	**-0.4**
TVSB				SG	**Sg**	**12 03 57.4**	**+0.1**
TVSB	**Tavsanli**	**0.52**	**104**	*i* Pg	**Pg**	**12 03 50.2**	**-0.4**
TVSB				*i* Sg	**Sg**	**12 03 57.4**	**+0.1**
DEMI	**Demirci**	**0.54**	**188**	P	**Pg**	**12 03 51.1**	**+0.1**
DEMI				S	**Sg**	**12 03 58.0**	**-0.1**
DEMI	**Demirci**	**0.54**	**188**	*i* P	**Pg**	**12 03 51.1**	**+0.1**
DEMI				*i* S	**Sg**	**12 03 58.0**	**-0.1**
GDZ	**Gediz**	**0.71**	**133**	P	**Pg**	**12 03 54.1**	**-0.2**
GDZ				S	**Sg**	**12 04 03.5**	**-0.1**
GDZ	**Gediz**	**0.71**	**133**	*i* P	**Pg**	**12 03 54.1**	**-0.2**
GDZ				*i* S	**Sg**	**12 04 03.5**	**-0.1**
BALB	**Balikesir**	**0.72**	**275**	PG	**Pb**	**12 03 55.2**	**-0.3**
BALB	**Balikesir**	**0.72**	**275**	*i* Pg	**Pb**	**12 03 55.2**	**-0.3**
KCTX	**Karacabey (Bur**	**0.77**	**333**	PG	**Pg**	**12 03 55.6**	**+0.2**
KCTX	**Karacabey (Bur**	**0.77**	**333**	*i* Pg	**Pg**	**12 03 55.6**	**+0.2**
MDNY	**Mudanya-Bursa**	**0.79**	**4**	PG	**Pg**	**12 03 55.8**	**0.0**
MDNY	**Mudanya-Bursa**	**0.79**	**4**	*i* Pg	**Pg**	**12 03 55.8**	**0.0**
GEMT	**Gemlik**	**0.90**	**18**	PG	**Pg**	**12 03 57.9**	**0.0**
GEMT				SG	**Sb**	**12 04 11.7**	**+0.8**
GEMT	**Gemlik**	**0.90**	**18**	*i* Pg	**Pg**	**12 03 57.9**	**0.0**
GEMT				*i* Sg	**Sb**	**12 04 11.7**	**+0.8**
IZI	**Iznik**	**0.91**	**34**	PG	**Pg**	**12 03 58.1**	**0.0**
IZI	**Iznik**	**0.91**	**34**	*i* Pg	**Pg**	**12 03 58.1**	**0.0**
ARMT	**Armutlu**	**0.99**	**2**	PG	**Pg**	**12 03 59.7**	**+0.2**
ARMT				SG	**Sn**	**12 04 14.8**	**-0.4**
ARMT	**Armutlu**	**0.99**	**2**	*i* Pg	**Pg**	**12 03 59.7**	**+0.2**
ARMT				*i* Sg	**Sn**	**12 04 14.8**	**-0.4**
GONE	**Gonen-Balikesi**	**0.99**	**299**	PG	**Pg**	**12 03 59.5**	**0.0**
GONE	**Gonen-Balikesi**	**0.99**	**299**	*i* Pg	**Pg**	**12 03 59.5**	**0.0**
CAVI	**Cavuskoy**	**1.01**	**51**	PG	**Pg**	**12 03 59.7**	**-0.2**
CAVI	**Cavuskoy**	**1.01**	**51**	*i* Pg	**Pg**	**12 03 59.7**	**-0.2**
AKHS	**Akhisar**	**1.04**	**228**	P	**Pg**	**12 04 00.6**	**0.0**
AKHS				S	**Sb**	**12 04 15.3**	**+0.4**
AKHS	**Akhisar**	**1.04**	**228**	*i* P	**Pg**	**12 04 00.6**	**0.0**
AKHS				*i* S	**Sb**	**12 04 15.3**	**+0.4**
AKS	**Akhisar**	**1.04**	**228**	*e*PN	**Pn**	**12 04 01.3**	**-0.4**
AKS	**Akhisar**	**1.04**	**228**	*e*Pn	**Pn**	**12 04 01.3**	**-0.4**
EDC	**Edincik**	**1.06**	**317**	*e*PN	**Pg**	**12 04 01.0**	**+0.1**
EDC	**Edincik**	**1.06**	**317**	*e*Pn	**Pg**	**12 04 01.0**	**+0.1**
KULA	**Kula-Manisa**	**1.07**	**186**	PG	**Pg**	**12 04 01.0**	**-0.1**
KULA	**Kula-Manisa**	**1.07**	**186**	*i* Pg	**Pg**	**12 04 01.0**	**-0.1**
MANT	**Manisa**	**1.10**	**191**	P	**Pg**	**12 04 01.6**	**-0.2**
MANT				S	**Sg**	**12 04 15.4**	**-0.7**
MANT	**Manisa**	**1.10**	**191**	*i* P	**Pg**	**12 04 01.6**	**-0.2**
MANT				*i* S	**Sg**	**12 04 15.3**	**-0.7**
ADVT	**Abdulvahap**	**1.11**	**39**	*e*PN	**Pg**	**12 04 01.5**	**-0.4**
ADVT	**Abdulvahap**	**1.11**	**39**	*e*Pn	**Pg**	**12 04 01.5**	**-0.4**
BORA	**Eskisehir**	**1.30**	**76**	P	**Pn**	**12 04 04.9**	**-0.4**
BORA				S	**Sn**	**12 04 23.4**	**+0.5**
BORA	**Eskisehir**	**1.30**	**76**	*i* P	**Pn**	**12 04 04.9**	**-0.4**
BORA				*i* S	**Sn**	**12 04 23.4**	**+0.5**
GPA	**Golpazari**	**1.35**	**58**	*e*PN	**Pb**	**12 04 06.2**	**0.0**
GPA	**Golpazari**	**1.35**	**58**	*e*Pn	**Pb**	**12 04 06.3**	**0.0**
KHL	**Karahalli**	**1.37**	**156**	*e*PN	**Pb**	**12 04 06.2**	**-0.3**
KHL	**Karahalli**	**1.37**	**156**	*e*Pn	**Pb**	**12 04 06.3**	**-0.3**
HRT	**Hereke**	**1.40**	**27**	*e*PN	**Pn**	**12 04 05.9**	**-0.8**
HRT	**Hereke**	**1.40**	**27**	*e*Pn	**Pn**	**12 04 05.9**	**-0.8**
KRBG	**Karabiga-Canak**	**1.42**	**305**	*e*PN	**Pg**	**12 04 08.3**	**+0.4**
KRBG	**Karabiga-Canak**	**1.42**	**305**	*e*Pn	**Pg**	**12 04 08.3**	**+0.4**
ISK	**Istanbul-Kandi**	**1.50**	**7**	*e*PN	**Pb**	**12 04 08.9**	**+0.2**
ISK	**Istanbul-Kandi**	**1.50**	**7**	*e*Pn	**Pb**	**12 04 08.9**	**+0.2**
GULT	**Gulveren**	**1.56**	**56**	*e*PN	**Pb**	**12 04 09.3**	**-0.5**
GULT	**Gulveren**	**1.56**	**56**	*e*Pn	**Pb**	**12 04 09.3**	**-0.5**
DKL	**Dikili**	**1.56**	**252**	*e*PN	**Pn**	**12 04 08.6**	**-0.2**
DKL	**Dikili**	**1.56**	**252**	*e*Pn	**Pn**	**12 04 08.6**	**-0.2**
ESKT	**Eskisehir**	**1.57**	**91**	*i* P	**Pb**	**12 04 09.7**	**-0.4**
ESKT				*i* S	**Sb**	**12 04 30.5**	**+0.2**
SEYT	**Eskypehyr**	**1.57**	**91**	P	**Pb**	**12 04 09.7**	**-0.4**
SEYT				S	**Sb**	**12 04 30.5**	**+0.2**
SPNC	**Sapanca-Adapaz**	**1.59**	**46**	*e*PN	**Pb**	**12 04 10.2**	**-0.1**
SPNC	**Sapanca-Adapaz**	**1.59**	**46**	*e*Pn	**Pb**	**12 04 10.2**	**-0.1**
BGKT	**Bogazkoy**	**1.60**	**359**	*e*PN	**Pb**	**12 04 10.4**	**0.0**
BGKT	**Bogazkoy**	**1.60**	**359**	*e*Pn	**Pb**	**12 04 10.5**	**0.0**
CTKS	**Kestanelik-??a**	**1.67**	**352**	*e*PN	**Pb**	**12 04 11.7**	**0.0**
CTKS	**Kestanelik-??a**	**1.67**	**352**	*e*Pn	**Pb**	**12 04 11.7**	**0.0**
RKY	**Sarkoy-Tekirda**	**1.67**	**312**	*e*PN	**Pb**	**12 04 11.8**	**0.0**
RKY	**Sarkoy-Tekirda**	**1.67**	**312**	*e*Pn	**Pb**	**12 04 11.8**	**0.0**
SART	**Tekirdag**	**1.67**	**312**	P	**Pb**	**12 04 12.2**	**+0.4**
SART				S	**Sg**	**12 04 34.0**	**-0.4**
SART	**Tekirdag**	**1.67**	**312**	*i* P	**Pb**	**12 04 12.2**	**+0.4**
SART				*i* S	**Sg**	**12 04 34.0**	**-0.4**
KLYT	**Kilyos**	**1.68**	**6**	*e*PN	**Pb**	**12 04 11.5**	**-0.4**
KLYT	**Kilyos**	**1.68**	**6**	*e*Pn	**Pb**	**12 04 11.5**	**-0.4**
SILT	**Sile**	**1.69**	**22**	*e*PN	**Pn**	**12 04 09.7**	**-0.9**
SILT	**Sile**	**1.69**	**22**	*e*Pn	**Pn**	**12 04 09.7**	**-0.9**
TKR	**Tekirdag**	**1.72**	**326**	*e*PN	**Pb**	**12 04 12.4**	**0.0**
TKR	**Tekirdag**	**1.72**	**326**	*e*Pn	**Pb**	**12 04 12.4**	**0.0**
LPK	**Lapseki**	**1.77**	**297**	*e*PN	**Pb**	**12 04 13.5**	**+0.2**
LPK	**Lapseki**	**1.77**	**297**	*e*Pn	**Pb**	**12 04 13.5**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**1.78**	**204**	*e*PN	**Pb**	**12 04 13.2**	**-0.5**
AYDB	**Zeytinkoy-Aydi**	**1.78**	**204**	*e*Pn	**Pb**	**12 04 13.2**	**-0.5**
KAND	**Kocaeli-Kandir**	**1.84**	**34**	P	**Pn**	**12 04 12.6**	**-0.1**
KAND				S	**Sg**	**12 04 39.2**	**-0.7**
KAND	**Kocaeli-Kandir**	**1.84**	**34**	*i* P	**Pn**	**12 04 12.6**	**-0.1**
KAND				*i* S	**Sg**	**12 04 39.2**	**-0.7**
BOLV	**Bolvadin**	**1.87**	**117**	P	**Pg**	**12 04 15.8**	**-0.6**
BOLV	**Bolvadin**	**1.87**	**117**	*i* P	**Pg**	**12 04 15.8**	**-0.6**
BOLV				*i* S	**Sg**	**12 04 43.3**	**+2.6**
CTYL	**Yalikoy Yolu**	**1.94**	**348**	*e*PN	**Pb**	**12 04 15.7**	**-0.5**
CTYL	**Yalikoy Yolu**	**1.94**	**348**	*e*Pn	**Pb**	**12 04 15.7**	**-0.5**
EZN	**Ezine**	**1.94**	**278**	*e*PN	**Pb**	**12 04 15.8**	**-0.4**
EZN	**Ezine**	**1.94**	**278**	*e*Pn	**Pb**	**12 04 15.8**	**-0.4**
GELI	**Tayfur-Gelibol**	**1.98**	**295**	*e*PN	**Pb**	**12 04 16.6**	**-0.3**
GELI	**Tayfur-Gelibol**	**1.98**	**295**	*e*Pn	**Pb**	**12 04 16.6**	**-0.3**
SAHE	**Sakarya_HENDEK**	**2.01**	**50**	P	**Pn**	**12 04 14.8**	**-0.2**
SAHE				S	**Sb**	**12 04 42.5**	**-0.4**
SAHE	**Sakarya_HENDEK**	**2.01**	**50**	*i* P	**Pn**	**12 04 14.8**	**-0.2**
SAHE				*i* S	**Sb**	**12 04 42.5**	**-0.4**
MDUB	**Mudurnu**	**2.04**	**63**	*e*PN	**Pn**	**12 04 16.1**	**+0.7**
MDUB	**Mudurnu**	**2.04**	**63**	*e*Pn	**Pn**	**12 04 16.1**	**+0.7**
KESN	**Edirne-Kesan**	**2.06**	**308**	P	**Pg**	**12 04 19.9**	**-0.1**
KESN				S	**Sg**	**12 04 46.5**	**-0.1**
KESN	**Edirne-Kesan**	**2.06**	**308**	*i* P	**Pg**	**12 04 19.9**	**-0.1**
KESN				*i* S	**Sg**	**12 04 46.5**	**-0.1**
ERIK	**Erikli-Kesan**	**2.08**	**302**	*e*PN	**Pb**	**12 04 17.9**	**-0.7**
ERIK	**Erikli-Kesan**	**2.08**	**302**	*e*Pn	**Pb**	**12 04 17.9**	**-0.7**
AUMIH	**MIHALICIK**	**2.08**	**81**	P	**Pb**	**12 04 18.9**	**+0.2**
AUMIH	**MIHALICIK**	**2.08**	**81**	*i* P	**Pb**	**12 04 18.9**	**+0.2**
AUMIH				*i* S	**Sg**	**12 04 48.1**	**+0.7**
SVRH	**Sivrihisar-ESK**	**2.10**	**93**	*e*PN	**Pn**	**12 04 16.8**	**+0.6**
SVRH	**Sivrihisar-ESK**	**2.10**	**93**	*e*Pn	**Pn**	**12 04 16.8**	**+0.6**
URLA	**Izmir**	**2.12**	**236**	P	**Pb**	**12 04 19.6**	**+0.3**
URLA	**Izmir**	**2.12**	**236**	*i* P	**Pb**	**12 04 19.6**	**+0.3**
URLA				*i* S	**Sg**	**12 04 49.1**	**+0.6**
BOZC	**Bozcaada**	**2.15**	**278**	*i* P	**Pn**	**12 04 17.5**	**+0.6**
BOZC				*i* S	**Sb**	**12 04 45.1**	**-1.5**
SIGR	**SIGRI**	**2.32**	**262**	*e*PN	**Pb**	**12 04 21.8**	**-1.0**
SIGR	**SIGRI**	**2.32**	**262**	*e*Pn	**Pb**	**12 04 21.8**	**-1.0**
ENEZ	**Enez**	**2.34**	**300**	*e*PN	**Pb**	**12 04 21.5**	**-1.7**
ENEZ	**Enez**	**2.34**	**300**	*e*Pn	**Pb**	**12 04 21.5**	**-1.7**
CHOS	**Chios island**	**2.46**	**242**	*e*PN	**Pb**	**12 04 23.6**	**-1.5**
CHOS	**Chios island**	**2.46**	**242**	*e*Pn	**Pb**	**12 04 23.6**	**-1.5**
YER	**Yerkesik**	**2.48**	**190**	*e*PN	**Pn**	**12 04 22.8**	**+1.4**
YER	**Yerkesik**	**2.48**	**190**	*e*Pn	**Pn**	**12 04 22.8**	**+1.4**
KIZT	**Kizilcal**	**2.48**	**105**	*e*PN	**Pn**	**12 04 22.3**	**+0.8**
KIZT	**Kizilcal**	**2.48**	**105**	*e*Pn	**Pn**	**12 04 22.3**	**+0.8**
ALN	**Alexandroupoli**	**2.50**	**303**	*e*PN	**Pb**	**12 04 23.9**	**-1.8**
ALN	**Alexandroupoli**	**2.50**	**303**	*e*Pn	**Pb**	**12 04 23.9**	**-1.8**
EDRB	**Edirne**	**2.76**	**326**	*e*PN	**Pn**	**12 04 27.5**	**+2.2**
EDRB	**Edirne**	**2.76**	**326**	*e*Pn	**Pn**	**12 04 27.5**	**+2.2**
BCAM	**Yenicaga**	**2.78**	**63**	*i* P	**Pg**	**12 04 33.0**	**-0.8**

IDC 23 12:06:35.4±1.9, 22°.59S×179°.37W, h540km±22km, mb3.4/9, mb1 3.6/11, mb1mx3.3/27, mbtmp4.3/11, Error ellipse: s-maj=38.2km s-min=14.0km az=153.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**11.25**	**41**	P	P	12 09 06.0	-0.4
	4.8nm,0.3s,baz=177,slow=18,SNR=5.5						
URZ	**Urewera**	**15.91**	**190**	P	P	12 09 52.4	-1.7
	1.4nm,0.3s,baz=233,slow=3.7,SNR=12						
URZ				S	S	12 12 27.7	-9.1
	0.2nm,0.3s,baz=149,slow=18,SNR=2.7						
CTA	**Charters Tower**	**32.07**	**268**	P	P	12 12 18.7	+0.3
	7.3nm,0.4s,baz=92,slow=11,SNR=36						
STKA	**Stephens Creek**	**35.76**	**246**	P	P	12 12 49.8	+0.7
	6.2nm,0.4s,baz=91,slow=10,SNR=30						
ASAR	**Alice Springs**	**42.83**	**259**	P	P	12 13 45.9	-0.4
	6.1nm,0.6s,baz=91,slow=8.1,SNR=146						
WRA	**Warramunga Arr**	**43.09**	**265**	P	P	12 13 47.4	-1.0
	4.1nm,0.3s,baz=91,slow=5.6,SNR=219						
WRA				ScP	ScP	12 18 25.3	-0.7
	0.6nm,0.9s,baz=93,slow=3.9,SNR=5.5						
NVAR	**Mina Array Bea**	**83.41**	**44**	P	P	12 18 07.3	+0.8
	0.3nm,0.5s,baz=251,slow=9.0,SNR=4.0						
TXAR	**Lajitas Array**	**89.25**	**58**	P	P	12 18 34.9	+0.5
	0.6nm,0.8s,baz=218,slow=5.6,SNR=6.6						
CMAR	**Chiang Mai Arr**	**89.62**	**290**	P	P	12 18 37.0	+0.8
	0.7nm,0.6s,baz=154,slow=3.2,SNR=4.6						
ILAR	**Eielson Array**	**90.63**	**13**	P	P	12 18 39.0	-0.8
	0.2nm,0.6s,baz=223,slow=6.2,SNR=3.2						
PDAR	**Pinedale Array**	**91.35**	**44**	P	P	12 18 44.2	+0.2
	0.1nm,0.3s,baz=224,slow=3.8,SNR=2.4						
ARCES	**ARCESS Array B**	**130.72**	**349**	PKP	PKPdf	12 24 43.4	-1.1
	1.6nm,0.9s,baz=27,slow=2.2,SNR=3.4						
HFS	**Hagfors**	**141.38**	**350**	PKhKP	PKPpre	12 24 58.2	
	1.0nm,0.4s,baz=90,slow=4.5,SNR=7.8						
AKASG	**Malin Array Be**	**144.17**	**329**	PKP	PKPbc	12 25 07.0	-2.2
	0.4nm,0.3s,baz=43,slow=4.0,SNR=4.8						

*SIGU **23** 12:12:13.7±0.2, 49°.82N±0°.01×18°.49E±0°.01, h2km, mb3.0/10*
*ISCJB **23** 12:12:15.0±0.3, 49°.79N±0°.03×18°.32E±0°.03, h0km, Error ellipse: s-maj=4.3km s-min=2.1km az=20.4*
*CSEM **23** 12:12:15.4±0.2, 49°.82N×18°.42E, h1km, ML3.1/9, Error ellipse: s-maj=6.7km s-min=3.5km az=14.0*
*IPEC **23** 12:12:15.7±0.2, 49°.83N×18°.55E, h0km±4km, ML2.2/3, Error ellipse: s-maj=2.5km s-min=1.1km az=160.0*

ISC 23 12:12:16.7±0.7, 49°.80N±0°.03×18°.38E±0°.01, h0km, n50, σ1°.16/96, 4D, Czech and Slovak Republics

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OKC	**Ostrava-Krasne**	**0.15**	**283**	‖*i*PG	**Pg**	**12 12 20.8**	**+1.1**
OKC				*e*SG	**Sg**	**12 12 23.9**	**+2.2**
	comp=Z,774nm,0.6s						
OKC	**Ostrava-Krasne**	**0.15**	**283**	Pg	**Pg**	**12 12 20.8**	**+1.1**
OKC				Sg	**Sg**	**12 12 23.9**	**+2.2**
	774nm,0.6s						
RAC	**Raciborz**	**0.30**	**337**	*e*Pg	**Pg**	**12 12 21.8**	**-0.7**
RAC				*e*Sg	**Sg**	**12 12 25.6**	**-0.9**
MORC	**Moravsky Berou**	**0.54**	**267**	*e*Pg	**Pb**	**12 12 28.2**	**-0.9**
MORC				*e*Sg	**Sb**	**12 12 36.2**	**-1.3**
	50nm,0.3s						
LANS	**Liptovska Anna**	**0.96**	**132**	*e*Pg	**Pg**	**12 12 33.9**	**-1.3**
LANS				*e*Sg	**Sg**	**12 12 47.8**	**+0.2**
LANS	**Liptovska Anna**	**0.96**	**132**	*e*PG	**Pg**	**12 12 33.9**	**-1.3**
LANS				*e*SG	**Sg**	**12 12 47.8**	**+0.2**
OJC	**Ojcow**	**1.00**	**65**	*e*Pg	**Pg**	**12 12 32.9**	**-3.0**
OJC				*e*Sg	**Sg**	**12 12 47.3**	**-1.6**
OJC	**Ojcow**	**1.00**	**65**	*e*Pg	**Pg**	**12 12 32.9**	**-3.0**
OJC				*e*Sg	**Sg**	**12 12 47.3**	**-1.6**
KRLC	**Kraliky**	**1.07**	**285**	*e*PG	**Pg**	**12 12 36.3**	**-0.9**
KRLC				*e*SG	**Sb**	**12 12 51.8**	**-0.8**
KRLC	**Kraliky**	**1.07**	**285**	Pg	**Pg**	**12 12 36.3**	**-0.9**
KRLC				Sg	**Sb**	**12 12 51.8**	**-0.8**
VRAC	**Vranov**	**1.27**	**248**	*e*Pg	**Pb**	**12 12 41.1**	**-0.3**
VRAC				*e*Sg	**Sn**	**12 12 58.7**	**-0.7**
	43nm,0.4s						
NIE	**Niedzica**	**1.31**	**106**	*e*Pg	**Pg**	**12 12 39.8**	**-1.9**
NIE				*e*Sg	**Sg**	**12 12 59.1**	**+0.4**
VYHS	**Vyhne**	**1.34**	**167**	*e*Pn	**Pg**	**12 12 41.2**	**-1.2**
VYHS				*e*Sn	**Sg**	**12 12 58.6**	**-1.3**
VYHS	**Vyhne**	**1.34**	**167**	*e*PN	**Pg**	**12 12 41.1**	**-1.3**
VYHS				*e*SN	**Sg**	**12 12 58.6**	**-1.3**
VYHS				*e*LG	Lg	12 13 00.6	
DPC	**Dobruska-Polom**	**1.44**	**293**	*e*PG	**Pn**	**12 12 43.3**	**-0.7**
DPC				*e*SG	**Sb**	**12 13 03.4**	**+0.2**
	comp=Z,55nm,0.8s						
DPC	**Dobruska-Polom**	**1.44**	**293**	Pg	**Pn**	**12 12 43.3**	**-0.7**
DPC				Sg	**Sb**	**12 13 03.4**	**+0.2**
	55nm,0.8s						
KRUC	**Moravsky**	**1.49**	**241**	*e*Pg	**Pn**	**12 12 44.5**	**-0.3**
KRUC				*e*Sg	**Sn**	**12 13 05.8**	**+0.8**
	19nm,0.3s						
UPC	**Upice**	**1.68**	**296**	‖*e*PG	**Pn**	**12 12 47.5**	**+0.2**
UPC				*e*SG	**Sg**	**12 13 10.9**	**+0.3**
	comp=Z,115nm,0.9s						
UPC	**Upice**	**1.68**	**296**	Pg	**Pn**	**12 12 47.5**	**+0.2**
UPC				Sg	**Sg**	**12 13 10.9**	**+0.3**
	115nm,0.9s						
KSP	**Ksiaz**	**1.69**	**309**	*e*Pg	**Pn**	**12 12 48.3**	**+0.7**
KSP				*e*Sg	**Sg**	**12 13 11.4**	**+0.3**
KSP	**Ksiaz**	**1.69**	**309**	*e*Pg	**Pn**	**12 12 48.3**	**+0.7**
KSP				*e*Sg	**Sg**	**12 13 11.4**	**+0.3**
STHS	**Stebnicka Huta**	**1.90**	**101**	*e*Pn	**Pn**	**12 12 50.5**	**+0.1**
STHS				*e*Sn	**Sb**	**12 13 17.0**	**+0.4**
STHS	**Stebnicka Huta**	**1.90**	**101**	*e*PN	**Pn**	**12 12 50.5**	**+0.1**
STHS				*e*SN	**Sb**	**12 13 17.0**	**+0.4**
STHS				*e*LG	Lg	12 13 19.3	
KECS	**Kecovo**	**1.91**	**133**	*e*Pn	**Pn**	**12 12 49.4**	**-1.1**
KECS				*e*Sn	**Sn**	**12 13 14.8**	**-0.5**
KECS	**Kecovo**	**1.91**	**133**	*e*PN	**Pn**	**12 12 49.4**	**-1.1**
KECS				*e*SN	**Sn**	**12 13 14.8**	**-0.5**
KECS				*e*LG	Lg	12 13 20.0	
TREC	**Trest**	**1.95**	**256**	‖*e*PG	**Pb**	**12 12 52.1**	**-1.0**
TREC	**Trest**	**1.95**	**256**	Pg	**Pb**	**12 12 52.1**	**-1.0**
GOPC	**GO Pecny, Ondr**	**2.33**	**274**	*e*PG	**Pb**	**12 12 59.4**	**-0.1**
GOPC				*e*SG	**Sg**	**12 13 31.4**	**-0.1**
	comp=Z,52nm,1.0s						
GOPC	**GO Pecny, Ondr**	**2.33**	**274**	Pg	**Pb**	**12 12 59.4**	**-0.1**
GOPC				Sg	**Sg**	**12 13 31.4**	**-0.1**
	52nm,1.0s						
PRU	**Pruhonice**	**2.49**	**276**	‖*e*PG	**Pb**	**12 13 02.5**	**+0.2**
PRU				*e*SG	**Sg**	**12 13 35.1**	**-1.5**
	comp=Z,78nm,1.4s						
PRU	**Pruhonice**	**2.49**	**276**	Pg	**Pb**	**12 13 02.5**	**+0.2**
PRU				Sg	**Sg**	**12 13 35.1**	**-1.5**
	78nm,1.4s						
KOLS	**Kolonicke sedl**	**2.69**	**107**	*e*Pn	**Pn**	**12 13 03.3**	**+2.1**
KOLS	**Kolonicke sedl**	**2.69**	**107**	*e*PN	**Pn**	**12 13 03.3**	**+2.1**
KOLS				*e*LG	Lg	12 14 01.9	
UZH	**Uzhgorod**	**2.82**	**113**	*i* Pn	**Pb**	**12 13 07.7**	**-0.2**
UZH				Pnm		12 13 07.8	
UZH				*i* Sn	**Sg**	**12 13 47.9**	**+0.7**
UZH				Snm		12 13 50.5	
ONO	**Onokovtsy**	**2.83**	**112**	*i* Pn	**Pb**	**12 13 08.2**	**+0.1**
ONO				*i* Sn	**Sg**	**12 13 48.0**	**+0.4**
STZU	**Stuzhytsa**	**2.88**	**104**	*i* Pn	**Pb**	**12 13 09.6**	**+0.7**
STZU				Pnm		12 13 13.8	
STZU				*i* Sn	**Sg**	**12 13 49.6**	**+0.4**
STZU				Snm		12 13 57.0	
BRG	**Berggiesshubel**	**3.04**	**292**	PG	**Pb**	**12 13 11.9**	**+0.3**
BRG				SG	**Sg**	**12 13 53.6**	**-0.7**
MUKU	**Mukachevo**	**3.13**	**114**	*i* Pn	**Pb**	**12 13 13.7**	**+0.5**
MUKU				Pnm		12 13 14.7	
MUKU				*i* Sn	**Sg**	**12 13 57.9**	**+0.6**
MUKU				Snm		12 14 06.7	
KHC	**Kasperske Hory**	**3.21**	**260**	*e*PG	**Pb**	**12 13 16.0**	**+1.5**
KHC				*e*SG	**Sg**	**12 13 59.0**	**-0.6**
KHC	**Kasperske Hory**	**3.21**	**260**	Pg	**Pb**	**12 13 16.0**	**+1.5**
KHC				Sg	**Sg**	**12 13 59.0**	**-0.6**
BERU	**Beregovo**	**3.22**	**118**	*i* Pn	**Pb**	**12 13 15.0**	**+0.4**
BERU				*i* Sn	**Sg**	**12 14 01.0**	**+1.0**
SHIU	**Shidnytsya**	**3.30**	**98**	*i* Pn	**Pb**	**12 13 17.1**	**+1.1**
SHIU				Pnm		12 13 21.7	
SHIU				*i* Sn	**Sg**	**12 14 03.3**	**+0.7**
SHIU				Snm		12 14 10.5	
BRIU	**Brid**	**3.38**	**114**	*i* Pn	**Pb**	**12 13 19.1**	**+1.6**
BRIU				Pnm		12 13 21.5	
BRIU				*i* Sn	**Sg**	**12 14 06.5**	**+1.1**
BRIU				Snm		12 14 16.5	
KORU	**Korolevo**	**3.54**	**116**	*e*Pn	**Pb**	**12 13 22.1**	**+2.0**
KORU				*i* Sn	**Sg**	**12 14 12.1**	**+1.8**
KORU				Snm		12 14 15.5	
MEZ	**Mezhgor'ye**	**3.61**	**109**	*i* Pn	**Pb**	**12 13 22.9**	**+1.6**
MEZ				Pnm		12 13 26.3	
MEZ				*e*Sn	**Sg**	**12 14 13.3**	**+0.8**
MORU	**Morshyn**	**3.65**	**99**	*e*Pn	**Pb**	**12 13 23.3**	**+1.3**
MORU				*i* Sn	**Sg**	**12 14 15.0**	**+1.2**
CLL	**Collm**	**3.75**	**296**	*e*Pg	**Pg**	**12 13 27.0**	**-1.4**
CLL				*e*Sg	**Sg**	**12 14 16.0**	**-1.0**
	comp=Z,17nm,0.8s						
NKC	**Novy Kostel**	**3.85**	**279**	*e*PG	**Pb**	**12 13 27.0**	**+1.5**
NKC				*e*SG	**Sg**	**12 14 20.2**	**-0.1**
	comp=Z,14nm,0.6s						
NKC	**Novy Kostel**	**3.85**	**279**	Pg	**Pb**	**12 13 27.0**	**+1.5**
NKC				Sg	**Sg**	**12 14 20.2**	**-0.1**
	comp=Z,14nm,0.6s						
NSLU	**Nyzhne Selyshc**	**4.31**	**110**	*i* Pn	**Pn**	**12 13 24.9**	**+1.4**
NSLU				Pnm		12 13 28.9	
NSLU				*i* Sn	**Sn**	**12 14 17.1**	**+2.7**
NSLU				Snm		12 14 17.9	

IDC 23 12:16:49.7±6.7, 12°.27N×141°.84E, h0km, mb3.5/3, mb1 3.7/3, mb1mx3.4/43, mbtmp3.5/3, Error ellipse: s-maj=261.8km s-min=31.4km az=78.0, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**32.85**	**193**	P	P	12 23 25.1	-0.2
	0.7nm,0.7s,baz=15,slow=9.5,SNR=10						
ASAR	**Alice Springs**	**36.55**	**192**	P	P	12 23 57.5	+0.1
	0.3nm,0.8s,baz=21,slow=10,SNR=4.8						
MKAR	**Makanchi Array**	**60.41**	**317**	P	P	12 27 00.9	-0.1
	0.5nm,0.7s,baz=93,slow=8.1,SNR=4.2						

IDC 23 12:28:15.5±8.4, 18°.42S×176°.02W, h0km, mb3.5/2, mb1 3.8/2, mb1mx3.4/33, mbtmp3.5/2, MS3.0/3, Ms1 3.0/3, ms1mx2.8/21, Error ellipse: s-maj=386.2km s-min=67.8km az=144.0, Fiji Islands region

| Code | Station Name | Δ° | AZ° | Phase ID

DDA 23 12:35:41.1, 39°.16N×29°.16E, $h7^{km}$, Ml2.1, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.26**	**106**	*i* P	Pg	12 35 46.4	+0.2
GDZ				*i* S	Sg	12 35 50.7	+1.0
DURS	**Dursunbey**	**0.69**	**310**	*i* P	Pg	12 35 54.5	+0.1
BORA	**Eskisehir**	**1.23**	**54**	*i* P	Pb	12 36 04.7	0.0
BORA				*i* S	Sn	12 36 21.9	+0.2

*KRSC **23** 12:47:34.4±2.8, 50°.24N×157°.85E, $h41^{km}$±27^{km}, ML4.0*
*MOS **23** 12:47:34.4±2.3, 50°.24N×157°.85E, $h40^{km}$, mb4.2/1, Error ellipse: s-maj=31.3km s-min=6.3km az=86.3*
ISC 23 12:47:34.1±3.8, 50°.5N±0°.1×157°.81E±0°.08, $h3^{km}$±22km, n31, σ1°.40/54, 1D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**1.10**	**283**	*e*P	**Pb**	**12 47 55.5**	**-0.3**
SKR				*e*S	**Sb**	**12 48 07.8**	**-2.8**
SKR	**Severo-Kuril's**	**1.10**	**283**	⇓*i*PN	Pb	12 47 46.0	-10
SKR	comp=Z,360nm,0.4s			pmax	pmax		
SKR	comp=N,240nm,0.2s			pmax	pmax		
SKR	comp=E,240nm,0.2s			pmax	pmax		
PAU	**Pauzhetka**	**1.19**	**328**	*e*P	**Pn**	**12 47 58.6**	**+0.9**
PAU				*e*S	**Sg**	**12 48 14.4**	**+1.9**
PAU	**Pauzhetka**	**1.19**	**328**	PN	**Pn**	**12 47 58.6**	**+0.9**
PAU				S	**Sg**	**12 48 14.4**	**+1.9**
ASAK	**Asacha**	**1.93**	**2**	*e*P	**Pb**	**12 48 09.7**	**-0.3**
ASAK				*e*S	**Sg**	**12 48 36.0**	**-0.1**
ASAK	**Asacha**	**1.93**	**2**	PN	**Pb**	**12 48 09.7**	**-0.3**
ASAK				S	**Sg**	**12 48 36.0**	**-0.1**
RUS	**Russkaya**	**2.03**	**12**	*e*P	**Pb**	**12 48 11.1**	**-0.5**
RUS				*e*S	**Sb**	**12 48 35.8**	**-1.4**
RUS	**Russkaya**	**2.03**	**12**	PN	**Pb**	**12 48 11.1**	**-0.5**
RUS				S	**Sb**	**12 48 35.8**	**-1.4**
MTVR	**Mutnovka**	**2.04**	**6**	*e*P	**Pb**	**12 48 12.3**	**+0.4**
MTVR				*e*S	**Sb**	**12 48 37.7**	**-0.1**
MTVR	**Mutnovka**	**2.04**	**6**	PN	**Pb**	**12 48 12.3**	**+0.4**
MTVR				S	**Sb**	**12 48 37.7**	**-0.1**
KRMR	**Karymshinskiy**	**2.39**	**5**	*e*P	**Pb**	**12 48 17.9**	**+0.2**
KRMR				*e*S	**Sg**	**12 48 49.9**	**-0.8**
KRMR	**Karymshinskiy**	**2.39**	**5**	PN	**Pb**	**12 48 17.9**	**+0.2**
KRMR				S	**Sg**	**12 48 49.9**	**-0.8**
PET	**Petropavlovsk**	**2.62**	**11**	*e*PN	**Pb**	**12 48 20.0**	**-1.7**
PET				*e*S	**Sb**	**12 48 51.5**	**-2.8**
PET	comp=N,95nm,0.4s			smax	smax		
PET	comp=E,82nm,0.4s			smax	smax		
UGLR	**Uglovaya**	**2.83**	**12**	*e*P	**Pb**	**12 48 23.5**	**-1.8**
UGLR				*e*S	**Sb**	**12 49 00.0**	**-0.3**
UGLR	**Uglovaya**	**2.83**	**12**	PN	**Pb**	**12 48 23.5**	**-1.8**
UGLR				S	**Sb**	**12 49 00.0**	**-0.3**
AVH	**Avacha**	**2.87**	**11**	*e*P	**Pb**	**12 48 24.7**	**-1.3**
AVH				*e*S	**Sb**	**12 49 01.7**	**+0.2**
AVH	**Avacha**	**2.87**	**11**	PN	**Pb**	**12 48 24.7**	**-1.3**
AVH				S	**Sb**	**12 49 01.7**	**+0.2**
SMAR	**Somma**	**2.88**	**12**	*e*P	**Pb**	**12 48 24.9**	**-1.3**
SMAR				*e*S	**Sb**	**12 49 02.2**	**+0.3**
SMAR	**Somma**	**2.88**	**12**	PN	**Pb**	**12 48 24.9**	**-1.3**
SMAR				S	**Sb**	**12 49 02.2**	**+0.3**
KOK	**Koryaka**	**2.89**	**10**	*e*P	**Pb**	**12 48 25.4**	**-0.9**
KOK				*e*S	**Sb**	**12 49 03.0**	**+1.0**
KOK	**Koryaka**	**2.89**	**10**	PN	**Pb**	**12 48 25.4**	**-0.9**
KOK				S	**Sb**	**12 49 03.0**	**+1.0**
SDLR	**Sedlovina**	**2.90**	**13**	*e*P	**Pb**	**12 48 24.0**	**-2.6**
SDLR	**Sedlovina**	**2.90**	**13**	PN	**Pb**	**12 48 24.0**	**-2.6**
KRER	**Koryakskii**	**2.91**	**11**	*e*P	**Pb**	**12 48 25.2**	**-1.6**
KRER				*e*S	**Sb**	**12 49 02.0**	**-0.8**
KRER	**Koryakskii**	**2.91**	**11**	PN	**Pb**	**12 48 25.2**	**-1.6**
KRER				S	**Sb**	**12 49 02.0**	**-0.8**
KRX	**Arik**	**2.95**	**10**	*e*P	**Pb**	**12 48 26.0**	**-1.5**
KRX				*e*S	**Sb**	**12 49 03.4**	**-0.6**
KRX	**Arik**	**2.95**	**10**	PN	**Pb**	**12 48 26.0**	**-1.5**
KRX				S	**Sb**	**12 49 03.4**	**-0.6**
GNL	**Ganaly**	**3.25**	**1**	*e*P	**Pb**	**12 48 29.9**	**-2.5**
GNL	**Ganaly**	**3.25**	**1**	PN	**Pb**	**12 48 29.9**	**-2.5**
MKZ	**Mys Kozlova**	**4.75**	**29**	*e*P	**Pn**	**12 48 48.7**	**+2.1**
MKZ	**Mys Kozlova**	**4.75**	**29**	PN	**Pn**	**12 48 48.7**	**+2.1**

*ISN **23** 12:51:01.4±0.3, 37°.66N×42°.72E, $h0^{km}$, ML3.2*
*CSEM **23** 12:51:04.9±0.4, 37°.70N×42°.67E, $h10^{km}$, ML3.2, Error ellipse: s-maj=12.0km s-min=9.4km az=52.0*
DDA 23 12:51:05.0, 37°.76N×42°.64E, $h7^{km}$, Ml3.2, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GEVA	**Gevas**	**0.65**	**30**	P	Pg	12 51 17.7	+0.2
GEVA	**Gevas**	**0.65**	**30**	*e*P	Pg	12 51 17.7	+0.2
HAKT	**HAKKARI**	**0.87**	**103**	P	Pb	12 51 22.1	-0.4
HAKT				S	Sb	12 51 33.9	-0.5
HAKT	**HAKKARI**	**0.87**	**103**	*i* P	Pb	12 51 22.1	-0.4
HAKT				*i* S	Sb	12 51 33.9	-0.6
BTMN	**Batman**	**1.10**	**278**	P	Pn	12 51 27.6	+0.7
BTMN	**Batman**	**1.10**	**278**	*i* P	Pn	12 51 27.6	+0.7
BTMN				*i* S	Sn	12 51 46.4	+4.0
MARD	**Mardin**	**1.55**	**254**	*i* P	Pg	12 51 34.4	-0.3
MARD				*i* S	Sg	12 51 55.0	+0.2
EKAR	**Karacoban**	**1.57**	**343**	P	Pn	12 51 33.5	0.0
EKAR	**Karacoban**	**1.57**	**343**	*e*P	Pn	12 51 33.5	0.0
EKAR				*i* S	Sg	12 52 05.9	+11
BNGL	**BINGOL**	**1.68**	**316**	*i* P	Pg	12 51 38.9	+1.8
BNGL				*i* S	Sg	12 52 05.1	+6.2

IDC 23 13:04:33.1±2.5, 54°.13N×86°.39E, $h0^{km}$, mb1 3.7/2, mb1mx3.1/50, mbtmp3.7/2, ML3.5/2, Error ellipse: s-maj=20.9km s-min=13.1km az=52.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**0.94**	**260**	*i*		13 11 20.6	
	baz=80,slow=319,SNR=3.1						
ZALV	**Zalesovo Beam**	**0.94**	**260**	Pg	Pg	13 04 50.1	-1.0
	5.7nm,0.3s,baz=77,slow=16,SNR=18						
ZALV				Lg	Lg	13 05 05.2	
	2.5nm,0.3s,baz=96,slow=26,SNR=4.8						
KURBB	**Kurchatov Arra**	**5.96**	**237**	Pn	Pn	13 06 03.1	+0.7
	0.7nm,0.3s,baz=54,slow=13,SNR=10						
KURBB				Lg	Lg	13 07 40.2	
	baz=66,slow=37,SNR=3.5						
MKAR	**Makanchi Array**	**7.79**	**201**	Pn	Pn	13 06 28.8	+1.1
	1.2nm,0.3s,baz=16,slow=13,SNR=26						
MKAR				Sn	Sn	13 07 56.8	+0.2
	0.1nm,0.3s,baz=32,slow=28,SNR=3.8						
MKAR				Lg	Lg	13 08 39.6	
	0.1nm,0.3s,baz=14,slow=24,SNR=5.1						

*ISK **23** 13:06:26.7, 39°.13N×29°.03E, $h8^{km}$, MD2.6*
*ISCJB **23** 13:06:27.0±0.6, 39°.13N±0°.05×28°.99E±0°.04, $h4^{km}$±8^{km}, Error ellipse: s-maj=9.3km s-min=5.2km az=162.6*
*CSEM **23** 13:06:27.0±0.1, 39°.12N×28°.99E, $h8^{km}$, ML2.4, Error ellipse: s-maj=2.9km s-min=2.4km az=128.0*
*DDA **23** 13:06:27.1, 39°.13N×29°.00E, $h7^{km}$, Ml2.4*
ISC 23 13:06:26.7±0.9, 39°.10N±0°.04×29°.02E±0°.03, h14km±10km, n20, σ0°.39/30, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**257**	P	**Pg**	**13 06 32.1**	**+0.1**
DEMI				S	**Sg**	**13 06 35.4**	**-0.2**
DEMI	**Demirci**	**0.24**	**257**	*i* P	**Pg**	**13 06 32.1**	**+0.1**
DEMI				*i* S	**Sg**	**13 06 35.4**	**-0.2**
GDZ	**Gediz**	**0.36**	**91**	P	**Pb**	**13 06 34.9**	**-0.1**
GDZ				S	**Sb**	**13 06 40.4**	**-0.1**
GDZ	**Gediz**	**0.36**	**91**	*i* P	**Pb**	**13 06 34.9**	**-0.1**
GDZ				*i* S	**Sb**	**13 06 40.4**	**-0.1**
TVSB	**Tavsanli**	**0.49**	**44**	*e*PG	**Pg**	**13 06 36.2**	**-0.3**
TVSB				*e*SG	**Sg**	**13 06 43.1**	**-0.1**
TVSB	**Tavsanli**	**0.49**	**44**	*e*Pg	**Pg**	**13 06 36.2**	**-0.3**
TVSB				*e*Sg	**Sg**	**13 06 43.1**	**-0.1**
KULA	**Kula-Manisa**	**0.64**	**206**	*e*PG	**Pb**	**13 06 40.1**	**+0.4**
KULA	**Kula-Manisa**	**0.64**	**206**	*e*Pg	**Pb**	**13 06 40.1**	**+0.4**
DURS	**Dursunbey**	**0.66**	**320**	P	**Pg**	**13 06 39.3**	**-0.3**
DURS	**Dursunbey**	**0.66**	**320**	*i* P	**Pg**	**13 06 39.3**	**-0.3**
KHL	**Karahalli**	**0.87**	**153**	*e*PG	**Pn**	**13 06 44.2**	**-0.3**
KHL	**Karahalli**	**0.87**	**153**	*e*Pg	**Pn**	**13 06 44.2**	**-0.3**
CAVI	**Cavuskoy**	**1.28**	**30**	*e*PN	**Pb**	**13 06 50.6**	**+0.1**
CAVI				*e*SN	**Sg**	**13 07 08.7**	**+0.8**
CAVI	**Cavuskoy**	**1.28**	**30**	*e*Pn	**Pb**	**13 06 50.6**	**+0.1**
CAVI				*e*Sn	**Sg**	**13 07 08.7**	**+0.8**
IZI	**Iznik**	**1.29**	**16**	*e*PN	**Pb**	**13 06 51.0**	**+0.2**
IZI	**Iznik**	**1.29**	**16**	*e*Pn	**Pb**	**13 06 51.0**	**+0.2**
BORA	**Eskisehir**	**1.36**	**54**	P	**Pg**	**13 06 52.7**	**-0.2**
BORA				S	**Sg**	**13 07 11.4**	**+0.8**
BORA	**Eskisehir**	**1.36**	**54**	*i* P	**Pg**	**13 06 52.7**	**-0.2**
BORA				*i* S	**Sg**	**13 07 11.4**	**+0.8**
ARMT	**Armutlu**	**1.47**	**355**	*e*PN	**Pb**	**13 06 53.9**	**0.0**
ARMT	**Armutlu**	**1.47**	**355**	*e*Pn	**Pb**	**13 06 53.9**	**0.0**

IDC 23 13:09:43.8±1.8, 18°.47S×168°.34E, $h0^{km}$, mb3.9/6, mb1 4.2/6, mb1mx3.8/31, mbtmp3.9/6, MS3.6/7, Ms1 3.5/7, ms1mx3.1/35, Error ellipse: s-maj=102.7km s-min=23.1km az=150.0, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**19.62**	**80**	LR	LR	13 20 19.3	
	comp=Z,120nm,18.2s,baz=284,slow=32						
STKA	**Stephens Creek**	**27.55**	**236**	P	P	13 15 33.1	+0.6
	2.9nm,0.7s,baz=84,slow=11,SNR=4.9						
STKA				LR	LR	13 25 17.6	
	comp=Z,85nm,18.7s,baz=29,slow=34						
WRA	**Warramunga Arr**	**32.11**	**262**	P	P	13 16 13.4	+0.3
	0.5nm,0.5s,baz=92,slow=8.4,SNR=7.4						
WRA				LR	LR	13 29 33.7	
	comp=Z,64nm,18.1s,baz=145,slow=37						
ASAR	**Alice Springs**	**32.50**	**255**	P	P	13 16 16.2	-0.3
	2.5nm,0.7s,baz=81,slow=9.1,SNR=19						
FITZ	**Fitzroy Crossi**	**40.48**	**264**	P	P	13 17 23.6	-1.0
	3.0nm,0.7s,baz=144,slow=8.7,SNR=4.4						
YBH	**Yreka Blue Hor**	**87.34**	**44**	LR	LR	14 01 04.3	
	comp=Z,30nm,18.2s,baz=282,slow=35						
PFO	**Pinyon Flats O**	**88.34**	**54**	LR	LR	13 53 33.2	
	comp=Z,31nm,21.0s,baz=306,slow=30						
NVAR	**Mina Array Bea**	**88.93**	**49**	P	P	13 22 39.8	-0.9
	0.9nm,0.8s,baz=199,slow=4.4,SNR=3.2						
ILAR	**Eielson Array**	**89.75**	**18**	P	P	13 22 44.4	+0.7
	0.3nm,0.9s,baz=210,slow=10,SNR=2.9						
LPIG	**La Paz**	**89.85**	**65**	LR	LR	13 54 11.7	
	comp=Z,55nm,20.4s,baz=190,slow=30						
NEW	**Newport**	**93.73**	**40**	LR	LR	14 00 01.1	
	comp=Z,16nm,18.3s,baz=246,slow=32						
ARCES	**ARCESS Array B**	**124.11**	**345**	PKP	PKPdf	13 28 43.7	0.0
	3.7nm,0.9s,baz=58,slow=2.4,SNR=4.5						
GERES	**GERESS Array B**	**143.41**	**332**	PKP	PKPdf	13 29 20.7	+0.3
	1.0nm,0.7s,baz=27,slow=3.3,SNR=6.3						

SJA 23 13:21:43.2±1.0, 32°.13S×69°.90W, $h124^{km}$±4km, ML3.9, MW3.0, Mendoza Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AUSP	**Uspallata**	**0.44**	**102**	*i* P	Pn	13 22 03.2	+1.5
AUSP				*i* S	Sn	13 22 17.0	+1.4
RTLS	**Leoncito**	**0.61**	**57**	*i* P	Pn	13 22 03.8	+1.1
RTLS				*i* S	Sn	13 22 18.3	+1.0
ARCO	**CERRO ARCO**	**1.08**	**131**	*i* S	Sn	13 22 25.4	+1.1
RTCV	**Cerro Valdivia**	**1.18**	**77**	*i* P	Pn	13 22 08.9	+1.5
RTCV				*i* S	Sn	13 22 26.7	+0.8
ROC1	**El Roble**	**1.27**	**228**	*i* P	Pn	13 22 09.1	+0.6
ROC1				*i* S	Sn	13 22 28.4	+0.5
SJA	**San Juan**	**1.29**	**62**	*i* P	Pn	13 22 09.7	+1.1
SJA				*i* S	Sn	13 22 28.4	+0.6
AAGR	**Agrelo**	**1.31**	**137**	*i* S	Sn	13 22 30.0	+1.5
RTLL	**Cerro Villicun**	**1.45**	**57**	*i* P	Pn	13 22 11.6	+1.2
RTLL				*i* S	Sn	13 22 32.2	+1.2
AMOG	**MOGNA**	**1.69**	**46**	*i* P	Pn	13 22 14.4	+1.2
AMOG				*i* S	Sn	13 22 36.4	+0.4
ACAN	**Cantantal**	**2.30**	**94**	*i* P	Pn	13 22 21.8	+1.2
ACAN				*i* S	Sn	13 22 49.9	+0.5
AGUA	**GUANDACOL**	**2.90**	**25**	*i* P	Pn	13 22 29.6	+1.2
AGUA				*i* S	Sn	13 23 03.8	+0.5
MRA	**San Martin**	**3.55**	**96**	*i* P	Pn	13 22 38.1	+1.2
VCA	**Vinchina**	**3.69**	**24**	*i* P	Pn	13 22 40.1	+1.2
VCA				*i* S	Sn	13 23 22.3	+0.5
VCA	comp=Z,142nm,0.4s			IAML		13 23 27.2	
TCA	**Tanti**	**4.58**	**81**	*i* P	Pn	13 22 51.3	+0.5
TCA				IAML		13 22 52.2	
TCA	comp=Z,122nm,0.1s			*i* S	Sn	13 23 41.9	-1.3

*BJI **23** 13:22:27.9, 39°.48N×74°.66E, $h20^{km}$, mb4.5/30, mB4.6/19, ML4.4/8, Ms4.2/16, Ms7 3.8/17*
*NNC **23** 13:22:30.1±1.7, 39°.46N×74°.80E, $h0^{km}$, mb5.0, mpv4.7, Error ellipse: s-maj=16.3km s-min=7.8km az=145.0*
*ISCJB **23** 13:22:30.5±0.4, 39°.41N±0°.02×74°.93E±0°.03, $h37^{km}$±4^{km}, mb4.5/93, MS3.6/22, Error ellipse: s-maj=3.8km s-min=3.1km az=140.3*
*IDC **23** 13:22:31.2±0.6, 39°.38N×74°.89E, $h29^{km}$±4^{km}, mb4.3/29, mb1 4.4/36, mb1mx4.3/52, mbtmp4.5/36, ML3.9/7, MS3.6/20, Ms1 3.6/20, ms1mx3.4/53, Error ellipse: s-maj=10.2km s-min=9.1km az=123.0*
*NEIC **23** 13:22:31.6±0.4, 39°.40N×74°.85E, $h32^{km}$±3^{km}, mb4.7/32, Error ellipse: s-maj=5.0km s-min=4.4km az=168.0*
*MOS **23** 13:22:33.9±1.1, 39°.65N×74°.87E, $h57^{km}$, mb4.8/43, Error ellipse: s-maj=6.3km s-min=3.9km az=106.2*
ISC 23 13:22:31.5±0.5, 39°.39N±0°.04×74°.85E±0°.03, $h32^{km}$±3^{km}, $h31^{km}$:pP-P, n292, σ2°.02/327, mb4.7/95, MS3.7/22, 36C-19D, Southern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSH	**Kashi**	**0.88**	**81**	⇑*i*Pg	**Pn**	**13 22 43.5**	**-4.3**
KSH				Sg	**Sb**	**13 22 52.1**	**-7.8**
KSH	comp=N,61μm,0.9s			smax	smax		
KSH	comp=E,34μm,0.4s			smax	smax		
AAK	**Ala-Archa**	**3.25**	**355**	Pn	**Pn**	**13 23 23.2**	**+2.7**
	30nm,0.3s,baz=163,slow=8.6,SNR=327						
AAK				Pg	**Pb**	**13 23 30.2**	**+1.6**
	125nm,0.3s,baz=147,slow=10,SNR=57						
AAK				Lg	Lg	13 24 12.1	
	74nm,0.3s,baz=42,slow=18,SNR=9.3						
AAK				LR	LR	13 24 55.3	
	comp=Z,1μm,20.3s,baz=133,slow=44						
AAK	**Ala-Archa**	**3.25**	**355**	⇑Pn	**Pn**	**13 23 22.9**	**+2.3**
	139nm,0.6s						
AAK				⇑Pg	**Pb**	**13 23 30.0**	**+1.3**
	637nm,0.8s						
AAK				⇓Lg	Lg	13 24 10.6	
	1μm,0.8s						
AAK	**Ala-Archa**	**3.25**	**355**	PN	**Pn**	**13 23 22.8**	**+2.3**
AAK				pmax	pmax		
	comp=Z,139nm,0.6s						
AAK				pmax	pmax		
	comp=Z,637nm,0.9s						
AAK				pmax	pmax		
	comp=N,1μm,0.9s						
EKS2	**Erkin-Say**	**3.37**	**346**	*e*PN	**Pn**	**13 23 24.3**	**+2.2**
EKS2	**Erkin-Say**	**3.37**	**346**	*e*Pn	**Pn**	**13 23 24.2**	**+2.2**
FRU	**Bishkek**	**3.44**	**357**	⇑*i*PN	**Pn**	**13 23 24.0**	**+1.0**
FRU				pmax	pmax		
	comp=Z,750nm,1.5s						
MNAS	**Manas**	**3.57**	**331**	⇓Pn	**Pn**	**13 23 26.2**	**+1.3**
	comp=Z,16nm,0.4s						
MNAS				⇑Pg	**Pb**	**13 23 34.3**	**+0.3**
	comp=Z,254nm,0.9s						
MNAS				⇑Lg	Lg	13 24 19.6	
	comp=Z,764nm,0.7s						
MNAS	**Manas**	**3.57**	**331**	PN	**Pn**	**13 23 26.1**	**+1.3**
MNAS				pmax	pmax		
	comp=Z,16nm,0.4s						
MNAS				pmax	pmax		
	comp=Z,254nm,0.9s						
MNAS				pmax	pmax		
	comp=N,764nm,0.7s						
TKM2	**Tokmak 2**	**3.57**	**9**	⇑Pn	**Pn**	**13 23 27.2**	**+2.2**
	comp=N,320nm,0.6s						
TKM2				⇓Pg	**Pb**	**13 23 33.5**	**-0.7**
	comp=N,207nm,0.4s						
TKM2				⇓Sn	**Sn**	**13 24 09.7**	**+3.5**
	comp=N,676nm,0.8s						
TKM2				⇓Lg	Lg	13 24 19.7	
	comp=N,854nm,1.0s						
TKM2	**Tokmak 2**	**3.57**	**9**	PN	**Pn**	**13 23 27.1**	**+2.2**
TKM2						13 24 09.7	
TKM2				pmax	pmax		
	comp=Z,320nm,0.6s						
TKM2				pmax	pmax		
	comp=Z,207nm,0.4s						
TKM2				smax	smax		
	comp=N,677nm,0.9s						
TKM2				pmax	pmax		
	comp=N,854nm,1.0s						
TKM2	**Tokmak 2**	**3.57**	**9**	*e*Pn	**Pn**	**13 23 27.4**	**+2.5**
KNDC	**Almaty**	**4.14**	**22**	⇓Lg	Lg	13 24 38.1	
	comp=N,1μm,0.7s						
AAA	**Alma-Ata**	**4.19**	**21**	*i* PN	**Pb**	**13 23 44.1**	**-0.4**
AAA				pmax	pmax		
	comp=Z,474nm,0.4s						
DZET	**Dzherino**	**4.72**	**265**	⇓Pn	**Pn**	**13 23 43.5**	**+2.8**
	comp=Z,60nm,0.3s						
DZET				⇑Sn	**Sn**	**13 24 37.8**	**+3.3**
	comp=Z,471nm,0.5s						
DZET				⇓Lg	Lg	13 24 59.4	
	comp=Z,685nm,0.5s						
DZET	**Dzherino**	**4.72**	**265**	PN	**Pn**	**13 23 43.5**	**+2.8**
DZET				pmax	pmax		
	comp=Z,60nm,0.3s						
DZET				pmax	pmax		
	comp=N,685nm,0.5s						
KK31	**Karatay Array**	**4.95**	**320**	⇑Pn	**Pn**	**13 23 45.1**	**+1.4**
	comp=N,12nm,0.3s						
KK31				⇓Pg	**Pb**	**13 23 59.6**	**+2.2**
	comp=N,54nm,0.5s						
KK31				⇑Lg	Lg	13 25 01.7	
	comp=N,213nm,0.6s						
KK31	**Karatay Array**	**4.95**	**320**	PN	**Pn**	**13 23 45.0**	**+1.4**
KK31				pmax	pmax		
	comp=Z,12nm,0.3s						
KKAR	**Karatay Array**	**4.95**	**320**	*e*PN	**Pn**	**13 23 44.9**	**+1.3**
KKAR	**Karatay Array**	**4.95**	**320**	*e*Pn	**Pn**	**13 23 44.9**	**+1.3**
PDGK	**Podgornoye**	**5.26**	**40**	⇓Pn	**Pn**	**13 23 49.1**	**+1.3**
	comp=Z,48nm,0.7s						
PDGK				⇑Pg	**Pb**	**13 24 02.8**	**+0.2**
	comp=Z,107nm,0.8s						
PDGK				⇓Lg	Lg	13 25 11.0	
	comp=Z,449nm,0.8s						
PDGK	**Podgornoye**	**5.26**	**40**	PN	**Pn**	**13 23 49.1**	**+1.3**
PDGK				pmax	pmax		
	comp=Z,48nm,0.7s						
PDGK				pmax	pmax		
	comp=Z,107nm,0.8s						
PDGK				pmax	pmax		
	comp=N,449nm,0.8s						
CHCP	**Chirah Chowk**	**5.86**	**193**	P	Pn	13 24 03.2	+7.0
CEP	**Cherat**	**6.04**	**204**	P	Pn	13 24 04.9	+6.1
CEP				S	**Sn**	**13 25 13.0**	**+6.1**
KBL	**Kabul**	**6.71**	**226**	*e*PN	Pn	13 24 14.1	+6.0
KBL	**Kabul**	**6.71**	**226**	*e*Pn	Pn	13 24 14.1	+6.0
THN	**Thein Dam**	**6.98**	**174**	*e*P	**Pn**	**13 24 12.8**	**+1.3**
THN				*e*S	**Sn**	**13 25 25.8**	**-3.9**
THW	**Thamme Wali**	**7.05**	**202**	P	Pn	13 24 17.8	+5.3
DHRM	**DHARAMSHALA**	**7.22**	**170**	*e*P	**Pn**	**13 24 18.4**	**+3.3**
DHRM				*e*S	**Sn**	**13 25 35.6**	**-0.5**
DHRM				IAML		13 25 54.8	
	comp=N,610nm,0.5s						
DHRM				IAML		13 25 55.6	
	comp=E,870nm,0.3s						
PONG	**Pong**	**7.47**	**173**	*e*P	**Pn**	**13 24 21.0**	**+2.7**
PONG				*ex*	x	13 25 49.0	
JWA	**Jwalamukhi**	**7.60**	**170**	*e*P	**Pn**	**13 24 23.0**	**+2.9**
JWA				*ex*	x	13 25 48.0	
SARP	**Sargodha**	**7.66**	**194**	P	**Pn**	**13 24 24.9**	**+4.0**
SMLA	**Simla**	**8.46**	**166**	*e*P	**Pn**	**13 24 34.2**	**+2.4**
SMLA				*e*S	**Sn**	**13 26 00.7**	**-5.4**
OTUK	**Ortayu**	**9.04**	**349**	P	**Pn**	**13 24 38.3**	**-1.4**
OTUK				pmax	pmax		
	comp=Z,6.0nm,0.6s						
OTUK				pmax	pmax		
	comp=N,241nm,1.5s						
MAKZ	**Makanchi**	**9.06**	**33**	*e*P	**Pn**	**13 24 41.7**	**+1.6**
MAKZ	**Makanchi**	**9.06**	**33**	*e*Pn	**Pn**	**13 24 41.7**	**+1.6**
MK01	**Makanchi Array**	**9.17**	**34**	*e*Pn	**Pn**	**13 24 41.3**	**-0.2**
MK31	**Makanchi Array**	**9.18**	**34**	⇑Pn	**Pn**	**13 24 43.6**	**+1.8**
	comp=N,1.9nm,0.5s,baz=205,slow=14,SNR=20						
MK31	**Makanchi Array**	**9.18**	**34**	*e*P	**Pn**	**13 24 43.5**	**+1.8**
MK31				pmax	pmax		
	comp=Z,2.0nm,0.5s						
MK31				pmax	pmax		
	comp=N,18nm,0.8s						
MK31	**Makanchi Array**	**9.18**	**34**	*e*Pn	**Pn**	**13 24 43.8**	**+2.1**
MKAR	**Makanchi Array**	**9.18**	**34**	Pn	**Pn**	**13 24 43.2**	**+1.5**
	comp=N,0.7nm,0.3s,baz=207,slow=14,SNR=22						
MKAR				LR	LR	13 28 32.1	
	comp=N,354nm,19.7s,baz=215,slow=39						
MKAR	**Makanchi Array**	**9.18**	**34**	*e*Pn	**Pn**	**13 24 43.6**	**+1.9**
DDI	**Dehra Dun**	**9.42**	**163**	*e*P	**Pn**	**13 24 47.1**	**+2.0**
DDI				*ex*	x	13 26 31.6	
DDI				IAML		13 28 08.6	
	comp=E,279nm,0.2s						
DDI				IAML		13 28 11.0	
	comp=N,181nm,0.1s						
KKR	**Kurukshetra**	**9.54**	**170**	*e*P	**Pn**	**13 24 48.9**	**+2.1**
JOSI	**Joshimath**	**9.62**	**155**	*e*P	**Pn**	**13 24 50.0**	**+2.1**
JOSI				*ex*	x	13 26 43.1	
JOSI				IAML		13 27 00.2	
	comp=N,456nm,0.8s						
JOSI				IAML		13 27 00.5	
	comp=E,

BVA0 pmax pmax
comp=Z,26nm,1.0s
BVA0 pmax pmax
comp=N,93nm,1.4s
BVAR Borovoye Array 13.98 349 Pn **Pn 13 25 45.9 -1.4**
comp=N,0.3nm,0.3s,baz=156,slow=13,SNR=12
BVAR Lg Lg 13 29 42.0
comp=N,0.4nm,0.3s,baz=161,slow=18,SNR=5.3
BRVK Borovoye 14.03 349 *i* P **Pn 13 25 46.9 -1.0**
BRVK Borovoye 14.03 349 *e*Pn **Pn 13 25 46.4 -1.6**
ZRNK Zerenda 14.15 345 *e*P **Pn 13 25 47.5 -2.1**
ZRNK Zerenda 14.15 345 *e*Pn **Pn 13 25 47.5 -2.1**
KKN Kakani 14.46 140 *e*P **Pn 13 25 51.5 -2.6**
comp=N,59nm,0.5s
AB31 Akbulak array 14.51 318 Pn **Pn 13 25 52.2 -2.2**
comp=N,31nm,0.6s,baz=126,slow=11,SNR=368
AB31 Akbulak array 14.51 318 *i* P **Pn 13 25 52.2 -2.2**
AB31 pmax pmax
comp=Z,31nm,0.6s
ABKAR Akbulak array 14.51 318 *e*Pn **Pn 13 25 52.3 -2.1**
DMN Daman 14.52 141 *e*P **Pn 13 25 52.5 -2.5**
comp=Z,56nm,0.4s
GUN Gumba 14.66 138 *e*P **Pn 13 25 54.8 -2.2**
comp=Z,52nm,0.3s
ZAA0 Zalesovo Array 16.06 22 *e*Pn **Pn 13 26 12.9 -1.9**
ZALV Zalesovo Beam 16.06 22 Pn **Pn 13 26 14.7 -0.1**
comp=Z,1.5nm,0.3s,baz=212,slow=13,SNR=26
ZALV LR LR 13 32 37.1
comp=Z,211nm,18.8s,baz=250,slow=38
AKTO Aktyubinsk 16.21 318 Pn **Pn 13 26 16.5 -0.3**
comp=Z,1.8nm,0.3s,baz=125,slow=14,SNR=47
AKTO LR LR 13 32 50.2
comp=Z,526nm,18.3s,baz=133,slow=38
AKTO Aktyubinsk 16.21 318 ⇓*i*P **Pn 13 26 14.9 -1.9**
comp=Z,36nm,0.9s
BHPL Bhopal 16.25 172 *e*P **P 13 26 19.6 -0.6**
BHPL IAmb IAmb 13 26 21.6
comp=Z,30nm,0.3s
NVS Novosibirsk 16.46 17⇑*i*P **Pn 13 26 17.4 -2.4**
LSA Lhasa 16.52 121 P **P 13 26 23.6 -0.1**
LSA pmax pmax
comp=Z,19nm,1.1s
LSA Lhasa 16.52 121 *e*P **Pn 13 26 22.2 +0.9**
LSA pmax pmax
comp=Z,13nm,0.8s
LSA Lhasa 16.52 121 *e*Pn **Pn 13 26 22.2 +0.9**
comp=Z,13nm,0.8s
BHJ Bhuj 16.68 197 *e*P **P 13 26 26.1 +1.1**
BHJ IAmb IAmb 13 26 28.3
comp=Z,37nm,0.8s
BOK Bokaro 18.14 146 *e*P **Pn 13 26 40.7 -0.4**
NGP Nagpur 18.53 168 *e*P **P 13 26 45.2 -0.2**
NGP IAmb IAmb 13 26 53.7
comp=Z,48nm,1.5s
GTA Gaotai 19.28 82 *e*P **Pn 13 26 56.5 +1.6**
GTA pP pP 13 26 59.8 -2.3
GTA sP sP 13 27 02.6 -3.6
GTA S **Sn 13 30 26.8 -3.3**
GTA pmax pmax
comp=Z,5.0nm,0.9s
GTA pmax pmax
comp=Z,59nm,5.5s
GTA LR LR
comp=Z,210nm,13.8s
GTA LR LR
comp=Z,280nm,14.0s
GTA LR LR
comp=Z,110nm,12.4s
SVE Sverdlovsk 19.79 337⇑*i*P **P 13 26 59.3 +0.3**
SVE pmax pmax
comp=Z,27nm,0.9s
SHL Shillong 19.86 129 *e*P **P 13 27 00.0 -0.2**
ARU Arti 20.16 333 P **P 13 27 03.1 +0.1**
comp=Z,31nm,0.7s,baz=131,slow=5.5,SNR=47
ARU LR LR 13 35 11.7
comp=Z,346nm,18.5s,baz=123,slow=38
ARU Arti 20.16 333*c i*P **P 13 27 02.6 -0.3**
ARU S **S 13 30 44.2 -3.2**
ARU pmax pmax
comp=Z,41nm,0.8s
ARU Arti 20.16 333 *e*P **P 13 27 02.4 -0.5**
comp=Z,39nm,0.8s
WSAR Wadi Sarin 21.19 225 P **P 13 27 13.2 -1.2**
comp=Z,3.3nm,0.6s,baz=49,slow=5.4,SNR=2.1
WSAR LR LR 13 36 34.1
comp=Z,63nm,20.1s,baz=66,slow=40
BWNR Bhubaneshwar 21.24 150 *e*P **P 13 27 16.3 +1.5**
BWNR IAmb IAmb 13 27 17.5
comp=Z,77nm,1.0s
MOY Mondy 21.91 47 *e*P **P 13 27 24.1 +2.1**
HYB Hyderabad 22.13 171 *i* P **P 13 27 26.0 +1.5**
HYB Hyderabad 22.13 171 *e*P **P 13 27 25.1 +0.6**
HYB IAmb IAmb 13 27 29.7
comp=Z,57nm,0.2s
DGRG David-gareji 22.49 285 P **P 13 27 30.3 +1.9**
DGRG David-gareji 22.49 285 *e*P **P 13 27 30.2 +1.9**
ZAK Zakamensk 22.80 52 *e*P **P 13 27 32.1 +0.5**
ZAK pmax pmax
comp=Z,5.0nm,1.5s
TBLG Delisi 22.95 286 P **P 13 27 33.4 +0.4**
TBLG Delisi 22.95 286 *e*P **P 13 27 33.4 +0.4**
DUS Dusheti 22.95 286 P **P 13 27 37.7 +4.5**
DUS Dusheti 22.95 286 *e*P **P 13 27 37.6 +4.5**
GUDG Gudauri 23.09 287 P **P 13 27 37.3 +2.6**
GNI Garni 23.11 282 P **P 13 27 35.1 +0.2**
comp=Z,13nm,0.4s,baz=71,slow=6.7,SNR=5.2
GNI LR LR 13 38 27.1
comp=Z,47nm,21.3s,baz=80,slow=41
GNI Garni 23.11 282 *e*P **P 13 27 34.9 0.0**
comp=Z,29nm,0.8s
LZH Lanzhou 23.12 89 *e*P **P 13 27 37.9 +2.9**
LZH PP **PnPn 13 28 10.0 +9.3**
LZH *e*S **S 13 31 40.5 -3.8**
LZH *e*SS **SnSn 13 32 30.0 +12**
LZH pmax pmax
comp=Z,49nm,1.5s
LZH pmax pmax
comp=Z,130nm,5.2s
LZH LR LR
comp=Z,380nm,12.3s
LZH LR LR
comp=Z,380nm,13.0s
LZH LR LR
comp=Z,520nm,14.5s
ZEI Tsey 23.51 288 *e*P **P 13 27 38.9 +0.1**
ZEI pmax pmax
comp=Z,18nm,0.6s
BGD Bogdanovka 23.84 285 P **P 13 27 44.5 +2.5**
ONI Oni 23.85 288 P **P 13 27 43.6 +1.7**
ONI Oni 23.85 288 *e*P **P 13 27 43.6 +1.7**
AKH Akhalkalaki 23.90 285 P **P 13 27 45.9 +3.3**
AKH Akhalkalaki 23.90 285 *e*P **P 13 27 45.8 +3.3**
SONM Songino Array 24.21 59 P **P 13 27 45.9 +0.5**
comp=Z,1.7nm,0.7s,baz=265,slow=9.0,SNR=7.3
KBZ Khabaz 24.21 291 P **P 13 27 45.5 +0.3**
comp=Z,1.5nm,0.6s,baz=129,slow=9.0,SNR=5.0
KBZ LR LR 13 39 01.9
comp=Z,106nm,19.0s,baz=48,slow=41
SONA1 Songino Array 24.22 59 *e*P **P 13 27 45.1 -0.4**
NEY Neytrino 24.35 290⇑*i*P **P 13 27 49.0 +2.3**
NEY pmax pmax
comp=Z,3.0nm,1.1s
KIV Kislovodsk 24.37 291 *e*P **P 13 27 48.3 +1.6**
KIV *e* 13 28 21.0
KIV pmax pmax
comp=Z,7.0nm,0.6s
KIV MLR MLR
comp=Z,87nm,15.0s
ULN Ulaanbaatar 24.66 59⇓*i*P **P 13 27 50.2 +0.8**
ULN pmax pmax
comp=Z,4.0nm,0.8s
ULN Ulaanbaatar 24.66 59 *e*P **P 13 27 49.5 +0.1**
comp=Z,4.3nm,0.6s
CD2 Chengdu 25.02 101 P **P 13 27 52.8 +0.1**
CD2 pmax pmax
comp=Z,20nm,0.6s
VRH Novokhopyorsk 25.90 308 *e*P **P 13 27 59.7 -0.7**
VRH pmax pmax
comp=Z,10.0nm,0.7s
KMI Kunming 27.41 113 P **P 13 28 16.6 +2.1**
KMI PP **PnPn 13 29 06.0 +6.6**
KMI S **S 13 32 50.8 -2.1**
KMI SS **SnSn 13 34 10.8 +7.2**
KMI pmax pmax
comp=Z,22nm,0.5s
KMI pmax pmax
comp=Z,70nm,4.5s
KMI LR LR
comp=Z,140nm,9.7s
KMI LR LR
comp=Z,150nm,12.9s
KMI LR LR
comp=Z,170nm,13.9s
VSR Storozhevoye 27.47 307 *e*P **P 13 28 14.0 -0.6**
VSR pmax pmax
comp=Z,4.0nm,0.4s
LPSR Galich'ya Gora 27.92 310 *e*P **P 13 28 18.4 -0.1**
LPSR pmax pmax
comp=Z,10.0nm,0.6s
HHC Hu-ho-hao-te 27.98 75 *e*P **P 13 28 20.8 +1.4**
HHC PP **PnPn 13 29 14.4 +7.4**
HHC S **S 13 33 00.4 -1.2**
HHC pmax pmax
comp=Z,31nm,0.9s
HHC pmax pmax
comp=Z,220nm,4.2s
HHC LR LR
comp=Z,570nm,11.6s
HHC LR LR
comp=Z,710nm,12.4s
HHC LR LR
comp=Z,850nm,12.4s
GYA Guiyang 29.49 106 *e*P **P 13 28 33.8 +0.8**
GYA pmax pmax
comp=Z,10.0nm,0.8s
CMAR Chiang Mai Arr 29.50 128 P P 13 28 38.0 +5.1
comp=Z,0.5nm,0.3s,baz=308,slow=10,SNR=3.4
CMAR LR LR 13 41 27.6
comp=Z,56nm,21.5s,baz=344,slow=39
CMAR Chiang Mai Arr 29.50 128 P P 13 28 38.0 +5.1
CMAR pmax pmax
comp=Z,1.0nm,0.4s
CMAR MLR MLR
comp=Z,56nm,21.5s
KLMR Klimovskoe 30.61 326 *e*P **P 13 28 40.5 -1.9**
KLMR *e**SP sP 13 29 05.0 +10
KLMR pmax pmax
comp=Z,20nm,1.3s
NRIK Noril'sk 30.77 9 P **P 13 28 43.2 -0.5**
comp=Z,5.6nm,0.7s,baz=199,slow=5.9,SNR=7.9
NRIK LR LR 13 42 40.7
comp=Z,172nm,19.4s,baz=212,slow=39
BOD Bodaibo 31.18 41 *e*P **P 13 28 47.0 -0.4**
BOD pmax pmax
comp=Z,4.0nm,1.1s
BR131 Keskin Array S 31.58 284 *e*P **P 13 28 52.5 +1.1**
BRTR Keskin Array B 31.58 284 P **P 13 28 52.6 +1.3**
comp=Z,13nm,0.7s,baz=93,slow=8.2,SNR=80
BRTR LR LR 13 43 53.4
comp=Z,64nm,18.0s,baz=58,slow=41
BJI Beijing 31.59 75 P **P 13 28 49.4 -1.8**
BJI pmax pmax
comp=Z,4.0nm,0.6s
PALK Pallekele 32.41 169 *i* P P 13 29 05.3 +6.7
AKASG Malin Array Be 33.65 305 P **P 13 29 08.9 -0.2**
comp=Z,5.2nm,0.5s,baz=79,slow=7.7,SNR=22
AKASG LR LR 13 45 38.1
comp=Z,166nm,20.0s,baz=285,slow=41
AKASG Malin Array Be 33.65 305 P **P 13 29 09.0 -0.2**
AKASG pmax pmax
comp=Z,2.0nm,0.4s
AKASG MLR MLR
comp=Z,166nm,20.0s
AKBB Malin Array Si 33.65 305 *e*P **P 13 29 08.4 -0.7**
AKBB pmax pmax
comp=Z,12nm,0.8s
AKBB Malin Array Si 33.65 305 *e*P **P 13 29 08.4 -0.7**
comp=Z,12nm,0.8s
KIEV Kiev 33.66 305⇑*e*P **P 13 29 09.1 -0.1**
KIEV pmax pmax
comp=Z,13nm,0.8s
KIEV Kiev 33.66 305 *e*P **P 13 29 08.5 -0.7**
comp=Z,12nm,0.7s
AK11 Malin Array Si 33.69 305 *e*P **P 13 29 09.1 -0.4**
CFR Carcaliu 34.65 295⇓*i*P **P 13 29 18.7 +0.8**
CFR Carcaliu 34.65 295⇓P **P 13 29 18.7 +0.8**
LVZ Lovozero 36.00 335*c e*P **P 13 29 28.2 -1.0**
LVZ pmax pmax
comp=Z,11nm,1.0s
MLR Muntele Rosu 36.15 296 *e*P **P 13 29 31.5 +0.6**
MLR pmax pmax
comp=Z,12nm,0.9s
MLR Muntele Rosu 36.15 296 *e*P **P 13 29 31.5 +0.6**
comp=Z,12nm,0.9s
QIZ Qiongzhong 36.35 114 P **P 13 29 30.1 -2.6**
QIZ S **S 13 35 10.4 -1.4**
QIZ LR LR
comp=Z,83nm,19.4s
BURAR Bucovina Array 36.39 300⇓*i*P **P 13 29 33.9 +1.0**
BURAR Bucovina Array 36.39 300⇓P **P 13 29 33.9 +1.0**
BUR08 Bucovina Ar. S 36.40 300 *e*P **P 13 29 32.9 -0.1**
FINES FINESS Array B 36.90 323 P **P 13 29 37.0 +0.1**
comp=Z,6.4nm,0.4s,baz=113,slow=10,SNR=62
FINES LR LR 13 45 18.1
comp=Z,295nm,18.4s,baz=70,slow=37
FINES FINESS Array B 36.90 323 P **P 13 29 37.0 +0.1**
FINES pmax pmax
comp=Z,6.0nm,0.4s
FINES MLR MLR
comp=Z,295nm,18.4s
CN2 Changchun 37.62 66 *e*P **P 13 29 44.1 +0.9**
CN2 pmax pmax
comp=Z,10.0nm,0.6s
LOT Lotru 37.66 296⇓*i*P **P 13 29 45.7 +1.9**
KARP Karpathos 37.70 280 *e*P **P 13 29 44.6 +0.5**
comp=Z,10nm,0.8s
KWP Kalwaria Pacla 37.87 303 *e*P **P 13 29 46.1 +0.8**
KWP Kalwaria Pacla 37.87 303⇑*i*P **P 13 29 46.3 +1.0**
KWP Kalwaria Pacla 37.87 303⇑P **P 13 29 46.4 +1.1**
DRGR 38.19 299⇑*i*P **P 13 29 49.5 +1.4**
DRGR 38.19 299⇑P **P 13 29 49.5 +1.4**
KOLS Kolonicke sedl 38.22 302 *e*P **P 13 29 48.3 0.0**
KOLS pmax pmax
comp=Z,3.0nm,0.7s
KOLS Kolonicke sedl 38.22 302 *e*P **P 13 29 48.2 0.0**
KOLS *e*PP **PP 13 31 15.6 -0.2**
GZR Gura Zlata 38.36 296⇑*i*P **P 13 29 50.9 +1.3**
GZR Gura Zlata 38.36 296⇑P **P 13 29 50.9 +1.3**
LAST Lasithi 39.12 280⇑*i*P **P 13 29 57.1 +1.0**
LAST Lasithi 39.12 280 *e*P **P 13 29 57.1 +1.0**
comp=Z,18nm,0.8s
KECS Kecovo 39.45 302 *e*P **P 13 29 59.8 +1.3**
KECS pmax pmax
comp=Z,3.0nm,0.8s
KECS Kecovo 39.45 302 *e*P **P 13 29 59.8 +1.3**
NIE Niedzica 39.45 303 *e*P **P 13 29 60.0 +1.4**
NIE Niedzica 39.45 303 *e*P **P 13 30 00.0 +1.4**
OJC Ojcow 39.69 304 *e*P **P 13 30 00.9 +0.4**
OJC Ojcow 39.69 304 *e*P **P 13 30 00.8 +0.2**
OJC pmax pmax
comp=Z,17nm,0.6s
OJC Ojcow 39.69 304 *e*P **P 13 30 00.8 +0.2**
comp=Z,17nm,0.6s
ARA0 ARCESS Array S 39.72 335 *e*P **P 13 30 00.2 -0.3**
ARCES ARCESS Array B 39.72 335 P **P 13 30 00.5 0.0**
comp=Z,9.0nm,0.7s,baz=107,slow=8.7,SNR=36
ARCES LR LR 13 47 00.1
comp=Z,157nm,18.1s,baz=101,slow=37
YAK Yakutsk 39.84 37 P **P 13 30 01.0 -0.6**
comp=Z,2.0nm,0.3s,baz=2.5,slow=1.5,SNR=5.1
LANS Liptovska Anna 40.02 303 *e*P **P 13 30 02.7 -0.7**
LANS Liptovska Anna 40.02 303 *e*P **P 13 30 02.7 -0.7**
MDJ Mudanjiang 40.37 64 P **P 13 30 04.8 -1.4**
MDJ pmax pmax
comp=Z,4.0nm,0.5s
MDJ pmax pmax
comp=Z,53nm,4.5s
VYHS Vyhne 40.53 302 *e*P **P 13 30 08.4 +0.8**
VYHS pmax pmax
comp=Z,6.0nm,1.3s
VYHS Vyhne 40.53 302 *e*P **P 13 30 08.4 +0.8**
KLR Kul'dur 41.00 57 P **P 13 30 11.7 +0.3**
comp=Z,1.5nm,0.4s,baz=269,slow=7.0,SNR=11
KSAR Wonju Array Be 41.10 75 P **P 13 30 11.9 -0.5**
KSAR Wonju Array Be 41.10 75 P **P 13 30 11.8 -0.5**
KSRS Korea Array 41.13 75 P **P 13 30 11.8 -0.7**
comp=Z,0.9nm,0.5s,baz=285,slow=7.8,SNR=4.6
MORC Moravsky Berou 41.19 304 *e*P **P 13 30 13.5 +0.5**
MORC pmax pmax
comp=Z,33nm,0.7s
MORC Moravsky Berou 41.19 304 *e*P **P 13 30 13.5 +0.5**
comp=Z,33nm,0.7s
DPC Dobruska-Polom 41.88 305 *e*P **P 13 30 19.7 +1.0**
DPC *e*pP **pP 13 30 28.3 +0.2**
DPC Dobruska-Polom 41.88 305 *e*P **P 13 30 19.7 +1.0**
TIXI Tiksi 41.95 23 P **P 13 30 18.5 -0.4**
comp=Z,8.0nm,0.6s,baz=265,slow=5.1,SNR=29
TIXI pP **pP 13 30 26.6 -1.7**
comp=Z,4.9nm,0.7s,baz=260,slow=3.0,SNR=4.4
TIXI PcP **PcP 13 32 13.2 -0.5**
comp=Z,3.4nm,0.6s,baz=331,slow=2.7,SNR=5.6
TIXI Tiksi 41.95 23*c i*P **P 13 30 18.0 -0.8**
TIXI pmax pmax
comp=Z,10.0nm,0.8s
TIXI Tiksi 41.95 23 *e*P **P 13 30 18.1 -0.8**
comp=Z,8.4nm,0.6s
TIXI pP **pP 13 30 26.6 -1.7**
TIXI PcP **PcP 13 32 13.2 -0.5**
UPC Upice 42.06 305⇑*e*P **P 13 30 21.1 +1.0**
UPC *e*pP **sP 13 30 32.7 -0.6**
UPC Upice 42.06 305 *e*P **P 13 30 21.1 +1.0**
UPC *e* 13 30 32.7
VLA Vladivostok 42.33 66 *e*P **P 13 30 22.0 -0.4**
VLA *e*AP **sP 13 30 38.6 +3.0**
VLA *e*PP **PP 13 32 01.0 +0.4**
VLA *e*S **S 13 36 37.8 -3.4**
VLA pmax pmax
comp=Z,33μm,1.5s
CONA Conrad Observa 42.59 302 *i* P **P 13 30 25.4 +0.9**
comp=Z,11nm,0.7s
ARSA Arzberg 42.95 301 *i* P **P 13 30 27.8 +0.4**
comp=Z,5.7nm,0.8s
PRU Pruhonice 43.07 305⇑*e*P **P 13 30 29.2 +0.9**
PRU *e*pP **pP 13 30 38.8 +1.1**
PRU Pruhonice 43.07 305 *e*P **P 13 30 29.2 +0.9**
GOLS Golise 43.15 299 *i* P **P 13 30 29.8 +0.8**
BRG Berggiesshubel 43.30 306 *e*P **P 13 30 30.9 +0.7**
comp=Z,8.0nm,0.6s
BRG Berggiesshubel 43.30 306 *e*P **P 13 30 30.9 +0.7**
BRG pmax pmax
comp=Z,8.0nm,0.6s
SOKA Soboth 43.40 300 *i* P **P 13 30 31.9 +0.8**
comp=Z,8.8nm,0.6s
MOA Molln 43.66 302 *i* P **P 13 30 33.4 +0.3**
comp=Z,5.9nm,0.7s
VISS Visnje 43.73 299 *i* P **P 13 30 34.6 +0.9**
NC405 NORSAR Array S 43.73 321 *e*P **P 13 30 33.5 0.0**
OBKA Obir 43.76 300 *i* P **P 13 30 34.9 +0.9**
comp=Z,8.3nm,0.7s
CLL Collm 43.82 307⇑*i*P **P 13 30 34.5 +0.2**
comp=Z,7.0nm,0.7s
CLL *i* 13 30 45.8
CLL *e* 13 32 30.0
CLL Lm MLR 13 52 00.0
comp=Z,200nm,18.8s
CLL Collm 43.82 307⇑*i*P **P 13 30 34.5 +0.2**
CLL *i* 13 30 45.8
CLL pmax pmax
comp=Z,7.0nm,0.7s
CLL MLR MLR
comp=Z,200nm,18.8s
CLL Collm 43.82 307 *e*P **P 13 30 34.4 +0.1**
comp=Z,6.2nm,0.6s
GEC2 GERESS Array S 43.82 303 *e*P **P 13 30 35.2 +0.7**
GEC2 pmax pmax
comp=Z,15nm,1.0s
GEC2 GERESS Array S 43.82 303 *e*P **P 13 30 35.2 +0.7**
comp=Z,15nm,1.0s
GERES GERESS Array B 43.82 303 P **P 13 30 35.7 +1.2**
comp=Z,8.7nm,0.7s,baz=68,slow=7.5,SNR=28
GERES pP **pP 13 30 44.8 +0.9**
comp=Z,3.4nm,0.6s,baz=69,slow=7.3,SNR=5.6
GERES LR LR 13 50 09.5
comp=Z,114nm,19.5s,baz=86,slow=38
GEA0 GERESS Array S 43.82 303 *e*P **P 13 30 34.8 +0.3**
KHC Kasperske Hory 43.84 304⇑*e*P **P 13 30 35.0 +0.4**
KHC *e*PP **PP 13 32 17.5 +0.7**
KHC Kasperske Hory 43.84 304 *e*P **P 13 30 35.0 +0.4**
NC303 NORSAR Array S 43.90 321 *e*P **P 13 30 34.5 -0.3**
NB201 NORSAR Array S 43.94 321 *e*P **P 13 30 34.8 -0.4**
NB2 NORSAR Subarra 43.98 321 P **P 13 30 34.9 -0.6**
comp=Z,14nm,0.5s,baz=90,slow=8.6
NB2 NORSAR Subarra 43.98 321 P **P 13 30 34.9 -0.6**
baz=90,slow=8.6
NOA NORSAR Array B 43.98 321 P **P 13 30 35.2 -0.3**
comp=Z,14nm,0.6s,baz=91,slow=8.0,SNR=46
NOA LR LR 13 49 48.6
comp=Z,152nm,20.0s,baz=260,slow=37
NOA NORSAR Array B 43.98 321 P **P 13 30 35.2 -0.3**
NOA pmax pmax
comp=Z,16nm,0.6s
NOA MLR MLR
comp=Z,153nm,20.0s
CRNS Crni Vrh 44.05 299 *i* P **P 13 30 37.0 +0.7**
NC204 NORSAR Array S 44.19 321 *e*P **P 13 30 37.6 +0.3**
MYKA Terra Mystica 44.34 300 *i* P **P 13 30 38.5 -0.1**
comp=Z,4.5nm,0.8s
KBA Koelnbreinsper 44.44 301 *i* P **P 13 30 39.9 +0.4**
comp=Z,4.1nm,0.5s
TRI Trieste 44.48 299 *e*P **P 13 30 39.9 +0.2**
TRI pmax pmax
comp=Z,25nm,0.6s
TRI Trieste 44.48 299 *e*P **P 13 30 39.9 +0.2**
comp=Z,24nm,0.6s
CUC Castrocucco 44.69 290 *e*P **P 13 30 42.4 +0.9**
comp=Z,8.2nm,0.6s
JNU Nakatsue 45.00 80 P P 13 30 50.1 +6.1
comp=Z,18nm,1.1s,baz=221,slow=11,SNR=3.6
SPITS Spitsbergen Ar 45.41 346 P **P 13 30 47.2 +0.5**
comp=Z,3.3nm,0.6s,baz=128,slow=11,SNR=14
MOTA Moosalm 45.85 302 *i* P **P 13 30 50.9 +0.2**
comp=Z,7.4nm,0.8s
RETA Reutte 46.04 302 *i* P **P 13 30 53.1 +1.0**
comp=Z,3.7nm,0.5s
DAVA Damuels 46.67 302 *i* P **P 13 30 57.4 +0.1**
comp=Z,17nm,0.7s
SENIN Lac Senin/Sane 48.63 301 *e*P **P 13 31 12.0 -0.5**
comp=Z,9.2nm,1.1s
MJAR Matsushiro Arr 49.12 72 P **P 13 31 16.4 +0.4**
comp=Z,3.1nm,0.8s,baz=296,slow=8.8,SNR=8.2
MJAR LR LR 13 53 40.8
comp=Z,34nm,18.1s,baz=180,slow=38
KKM Kota Kinabalu 49.87 121 *e*P **P 13 31 23.4 +1.3**
comp=Z,10nm,0.7s
DAG Danmarks Havn 52.83 343⇑*i*P **P 13 31 43.0 -0.4**
comp=Z,7.6nm,0.7s
DAG Danmarks Havn 52.83 343⇑*i*P **P 13 31 43.0 -0.4**
DAG pmax pmax
comp=Z,5.0nm,0.7s
BILL Bilibino 54.66 27⇓*i*P **P 13 31 56.6 -0.3**
BILL pmax pmax
comp=Z,10.0nm,2.5s
BILL MLR MLR
comp=Z,99nm,18.0s
BILL Bilibino 54.66 27 *e*P **P 13 31 56.5 -0.3**
comp=Z,5.3nm,1.0s
ES19 SONSECA Array 58.75 298 *e*P **P 13 32 25.9 -0.6**
ESDC Sonseca Array 58.81 298 P **P 13 32 26.8 0.0**
comp=Z,2.5nm,0.6s,baz=57,slow=7.1,SNR=20
SUMG Summit 59.32 341 *i* P **P 13 32 30.6 +0.3**
comp=Z,5.9nm,0.8s
SUMG Summit 59.32 341 *i* P **P 13 32 30.6 +0.3**
SUMG pmax pmax
comp=Z,6.0nm,0.8s
SUMG Summit 59.32 341 *e*P **P 13 32 29.9 -0.3**
comp=Z,5.8nm,0.8s
ILULI Ilulissat 64.66 341 *i* P **P 13 33 05.7 0.0**
comp=Z,15nm,0.6s
ILULI Ilulissat 64.66 341 *i* P **P 13 33 05.7 0.0**
ILULI pmax pmax
comp=Z,15nm,0.6s
SFJD Kangerlussuaq 66.14 340⇑*i*P **P 13 33 14.9 -0.4**
comp=Z,6.1nm,0.6s
SFJD Kangerlussuaq 66.14 340⇑*i*P **P 13 33 14.9 -0.4**
SFJD pmax pmax
comp=Z,6.0nm,0.6s
COLD Coldfoot 68.34 17 *e*P **P 13 33 28.8 -0.5**
comp=Z,6.5nm,0.9s
TORD Torodi Ar. Bea 68.80 270 P **P 13 33 32.6 -0.3**
comp=Z,2.2nm,0.5s,baz=48,slow=5.7,SNR=40
LSZ Lusaka 69.65 228 pP pP 13 33 48.0 0.0
comp=Z,2.1nm,0.5s,baz=16,slow=6.5,SNR=3.1
INK Inuvik 70.53 11 P **P 13 33 42.7 0.0**
comp=Z,7.8nm,0.6s,baz=359,slow=6.2,SNR=22
INK Inuvik 70.53 11 *e*P **P 13 33 42.4 -0.3**
comp=Z,7.8nm,0.6s

CAST	Castle Rocks	70.95	20	eP		P	13 33 45.0	-0.4
	comp=Z,11nm,1.4s							
IL1	Eielson Array	71.14	18	eP		P	13 33 45.2	-1.3
ILAR	Eielson Array	71.14	18	P		P	13 33 45.5	-1.1
	comp=Z,2.4nm,0.8s,baz=320,slow=5.0,SNR=33							
ILB	Eielson Array	71.14	18	eP		P	13 33 45.1	-1.4
KTH	Kantishna Hill	71.15	20	eP		P	13 33 45.9	-0.8
	comp=Z,6.9nm,1.0s							
PAX	Paxson	73.00	18	eP		P	13 33 56.8	-1.0
PAX				pmax		pmax		
	comp=Z,6.0nm,1.2s							
PAX	Paxson	73.00	18	eP		P	13 33 56.8	-1.0
	comp=Z,6.3nm,1.2s							
SML	Sawmill	73.27	20	eP		P	13 33 58.6	-0.7
SML	Sawmill	73.27	20	eP		P	13 33 58.6	-0.7
DAWY	Dawson	73.38	15	eP		P	13 33 59.2	-0.8
	comp=Z,3.7nm,0.9s							
MATP	Matopo	73.60	225	P		P	13 34 02.6	+0.7
	comp=Z,1.8nm,0.8s,baz=334,slow=4.5,SNR=3.5							
MATP				pP		pP	13 34 11.2	-0.6
	comp=Z,5.2nm,0.7s,baz=22,slow=6.1,SNR=7.2							
DBIC	Dimbokro	77.85	269	P		P	13 34 26.1	-0.2
	comp=Z,4.0nm,0.7s,baz=60,slow=7.1,SNR=4.1							
KIC	Kosan Boka	77.95	268	ePKP1		P	13 34 27.1	+0.2
	comp=Z,12nm,0.7s							
TIC	Toumodi	77.99	269	ePKP1		P	13 34 27.1	0.0
YKW3	Yellowknife Ar	78.11	4	eP		P	13 34 26.5	-0.4
	comp=Z,6.0nm,0.7s							
YKA	Yellowknife Ar	78.18	4	P		P	13 34 27.0	-0.3
	comp=Z,5.2nm,0.5s,baz=348,slow=5.7,SNR=184							
YKA				LR		LR	14 12 48.6	
	comp=Z,5.2nm,18.4s,baz=0.0,slow=39							
YKA	Yellowknife Ar	78.18	4	P		P	13 34 27.0	-0.3
YKA				pmax		pmax		
	comp=Z,5.0nm,0.5s							
YKA				MLR		MLR		
	comp=Z,5.0nm,18.4s							
YKB5	Yellowknife Ar	78.18	4	eP		P	13 34 26.1	-1.2
LIC	Lamto	78.26	268	ePKP1		P	13 34 26.1	-2.5
LBTB	Lobatse	78.86	224	pP		pP	13 34 42.1	+0.4
	comp=Z,6.9nm,0.6s,baz=35,slow=5.6,SNR=6.4							
TSUM	Tsumeb	79.08	234	P		P	13 34 33.0	0.0
	comp=Z,0.8nm,0.4s,baz=45,slow=8.6,SNR=3.1							
WRA	Warramunga Arr	81.03	125	P		P	13 34 43.8	+0.4
	comp=Z,3.9nm,0.6s,baz=326,slow=5.0,SNR=62							
WRAB	Tennant Creek	81.03	125	eP		P	13 34 43.8	+0.4
WRAB				pmax		pmax		
	comp=Z,4.0nm,0.5s							
WRAB	Tennant Creek	81.03	125	eP		P	13 34 43.8	+0.4
	comp=Z,3.7nm,0.5s							
WB2	Warramunga Arr	81.04	125	eP		P	13 34 43.5	0.0
	comp=Z,7.6nm,0.6s							
FCC	Fort Churchill	81.77	354	eP		P	13 34 46.5	-0.3
FCC				pmax		pmax		
	comp=Z,6.0nm,1.0s							
FCC	Fort Churchill	81.77	354	eP		P	13 34 46.5	-0.3
	comp=Z,6.0nm,1.0s							
BOSA	Boshof	81.92	223	pP		pP	13 34 57.2	-0.9
	comp=Z,3.0nm,0.7s,baz=19,slow=3.8,SNR=2.5							
ASAR	Alice Springs	83.50	128	P		P	13 34 56.5	+0.2
	comp=Z,2.5nm,0.6s,baz=316,slow=5.1,SNR=47							
ASAR				pP		pP	13 35 05.4	-1.0
	comp=Z,1.6nm,0.6s,baz=311,slow=4.6,SNR=6.8							
AS01	Alice Springs	83.53	128	eP		P	13 34 56.4	-0.1
BSMT	Bassoo Peak	92.72	6	eP		P	13 35 40.7	+0.1
CHMT	Chamberlain Mo	93.77	6	eP		P	13 35 44.8	-0.6
BOZ	Bozeman (W)	95.14	5	eP		P	13 35 51.6	-0.1
BOZ				pmax		pmax		
	comp=Z,2.0nm,0.7s							
BOZ	Bozeman (W)	95.14	5	eP		P	13 35 51.6	-0.1
	comp=Z,1.9nm,0.7s							
ECSD	EROS Data Cent	96.90	354	eP		P	13 35 59.0	-0.6
	comp=Z,2.5nm,0.8s							
PDAR	Pinedale Array	98.13	3	P		P	13 36 05.3	0.0
	comp=Z,0.3nm,0.5s,baz=29,slow=2.8,SNR=4.8							
PDAR				LR		LR	14 24 02.1	
	comp=Z,37nm,19.0s,baz=46,slow=38							

NIED ***23*** *13:33:00,37.°20N×143.°70E,h5km,Mw3.7 Best double couple: M₀4.43000×10¹⁴ NP1:φ=25.00000°,δ33.00000°, λ-85.00000°. NP2:φ=199.00000°,δ58.00000°, λ-93.00000°.*
IDC ***23*** *13:33:17.2±0.9,37.°03N×143.°99E,h0km,mb3.8/8, mb1 4.0/13,mb1mx3.8/41,mbtmp3.9/13,ML3.5/5,MS3.0/2, Ms1 3.0/2,ms1mx2.5/54,Error ellipse: s-maj=26.0km s-min=17.2km az=100.0*
NEIC ***23*** *13:33:18.7±0.6,37.°09N×144.°06E,h10km,mb4.5/3,Error ellipse: s-maj=13.6km s-min=10.3km az=103.0*
ISCJB ***23*** *13:33:20.5±0.5,37.°17N±0.°03×143.°80E±0.°04,h33km, mb3.9/11,MS3.3/1,Error ellipse: s-maj=4.9km s-min=4.4km az=38.2*
JMA ***23*** *13:33:21.9±0.2,37.°19N×143.°72E,h44km,M4.1*

ISC 23 13:33:22.7±0.8,37.°18N±0.°04×143.°86E±0.°07,h35km,n44, σ2°15/60,mb4.0/11,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	2.36	303	P	Pn	13 33 58.0	-1.0
JIO				eS	Sn	13 34 24.4	-2.3
JFK	Kawauchi	2.39	275	P	Pn	13 33 58.2	-1.2
JFK				eS	Sn	13 34 25.1	-2.4
ONAJ	Iwakimizuishiy	2.45	269	P	Pn	13 33 59.0	-1.2
ONAJ				S	Sn	13 34 26.9	-2.1
JMM	Marumori	2.53	287	P	Pn	13 34 00.3	-1.0
JMM				S	Sn	13 34 28.8	-2.2
JMK	Ichinoseki	2.73	311	P	Pn	13 34 03.3	-0.8
JMK				eS	Sn	13 34 33.9	-2.0
JOU	Okura	2.80	296	P	Pn	13 34 04.6	-0.4
JOU				eS	Sn	13 34 36.3	-1.2
JFT	Otama	2.83	278	P	Pn	13 34 05.2	-0.2
JFT				eS	Sn	13 34 36.9	-1.4
JOM	Ohasama	3.05	319	P	Pn	13 34 07.8	-0.7
JOM				S	Sn	13 34 41.6	-2.2
JYK	Kaneyama	3.26	303	P	Pn	13 34 11.5	+0.1
JYK				eS	Sn	13 34 47.7	-1.3
JRG	Rokugo	3.37	312	P	Pn	13 34 12.8	0.0
BSO1	Boso 1	3.44	224	P	Pn	13 34 11.7	-1.6
BSO1				eS	Sn	13 34 51.3	-1.3
JAG	Ashikaga	3.62	259	P	Pn	13 34 15.5	-0.8
JAG				S	Sn	13 34 55.9	-1.8
JAH	Hinai	3.92	321	P	Pn	13 34 20.3	-0.1
JAH				eS	Sn	13 35 04.4	-0.8
JRY	Ryogami san	4.16	255	P	Pn	13 34 22.6	-1.1
JRY				eS	Sn	13 35 07.3	-3.8
JTM	Tenmabayashi	4.21	330	eS	Sn	13 35 09.6	-2.7
JOD2	Odawara 2	4.31	245	P	Pn	13 34 24.6	-1.2
JOD2				eS	Sn	13 35 10.8	-4.0
MJAR	Matsushiro Arr	4.58	264	Pn	Pn	13 34 29.6	+0.1
	4.2nm,0.3s,baz=70,slow=14,SNR=30						
MJAR				Sn	Sn	13 35 21.4	0.0
	3.5nm,0.3s,baz=204,slow=31,SNR=7.1						
MAJO	Matsushiro	4.58	264	ePn	Pn	13 34 30.1	+0.6
MAT	Matsushiro	4.58	264	P	Pn	13 34 30.2	+0.7
MAT				S	Sn	13 35 20.7	-0.8
JOT	Ohata	4.73	333	P	Pn	13 34 31.2	-0.3
JOT				eS	Sn	13 35 20.5	-4.6
ERM	Erimo	4.86	354	ePn	Pn	13 34 31.4	-1.9
JKB	Kayabe	5.18	336	P	Pn	13 34 36.6	-1.2
JKB				eS	Sn	13 35 31.6	-4.7
JHJ	Hachijo jima 2	5.25	221	Pn	Pn	13 34 35.3	-3.4
	17nm,0.3s,baz=174,slow=22,SNR=6.1						
JHJ				Sn	Sn	13 35 31.1	-6.9
	23nm,0.3s,baz=75,slow=20,SNR=6.1						
JCH	Churui	5.44	356	P	Pn	13 34 39.0	-2.3
JCH				eS	Sn	13 35 37.0	-5.6
ASAJ	Asahikawa	7.00	352	Pn	Pn	13 35 01.1	-1.6
	1.7nm,0.3s,baz=178,slow=11,SNR=16						
ASAJ	Asahikawa	7.00	352	ePn	Pn	13 35 01.2	-1.4
USRK	Ussuriysk Ar.	11.41	312	Pn	Pn	13 36 03.7	+0.6
	0.4nm,0.3s,baz=103,slow=16,SNR=4.5						
KLR	Kul'dur	14.91	328	Pn	Pn	13 36 53.3	+2.5
	0.1nm,0.3s,baz=153,slow=16,SNR=3.4						
KLR				LR	LR	13 43 25.7	
	comp=Z,33nm,18.8s,baz=254,slow=40						
SEY	Seymchan	26.31	9	P	P	13 38 56.5	+1.8
	0.3nm,0.2s,baz=189,slow=5.0,SNR=9.8						
H11N2	WAKE ISLAND Hy	26.58	125	T	T	14 05 47.3	
	baz=317,slow=75,SNR=17						
H11N1	WAKE ISLAND Hy	26.59	125	T	T	14 05 53.2	
	baz=317,slow=75,SNR=8.0						
H11N3	WAKE ISLAND Hy	26.60	125	T	T	14 05 57.2	
	baz=317,slow=75,SNR=11						
ULN	Ulaanbaatar	28.90	303	P	P	13 39 20.8	+2.4
	1.6nm,0.4s						
ZALV	Zalesovo Beam	43.26	312	PcP	PcP	13 43 09.7	+0.6
	1.2nm,0.5s,baz=96,slow=4.0,SNR=4.8						
MKAR	Makanchi Array	45.70	302	P	P	13 41 41.2	+1.1
	0.7nm,0.7s,baz=83,slow=9.9,SNR=5.1						
KURK	Kurchatov	47.38	308	eP	P	13 41 53.6	+0.4
	3.7nm,0.6s						
ILAR	Eielson Array	48.32	32	P	P	13 42 00.8	+0.5
	0.5nm,0.8s,baz=265,slow=6.8,SNR=6.4						
WRAB	Tennant Creek	57.51	191	eP	P	13 43 07.7	-0.8
	5.6nm,1.1s						
WRA	Warramunga Arr	57.52	191	P	P	13 43 07.5	-1.2
	1.0nm,0.6s,baz=12,slow=7.4,SNR=9.2						
SPITS	Spitsbergen Ar	60.75	349	LR	LR	14 11 05.5	
	comp=Z,23nm,19.6s,baz=210,slow=37						
ASAR	Alice Springs	61.24	190	P	P	13 43 33.3	-1.0
	0.4nm,0.6s,baz=16,slow=14,SNR=7.6						
NOA	NORSAR Array B	74.79	338	P	P	13 44 58.1	-0.9
	1.9nm,0.8s,baz=37,slow=6.0,SNR=3.5						
AKASG	Malin Array Be	75.36	323	P	P	13 45 03.6	+1.2
	1.0nm,0.4s,baz=49,slow=5.7,SNR=4.7						
TXAR	Lajitas Array	88.47	54	P	P	13 46 11.4	-0.4
	0.2nm,0.7s,baz=308,slow=4.5,SNR=3.1						

ISCJB ***23*** *13:44:18.3±0.9,9.°7S±0.°2×67.°08E±0.°08,h15km,mb3.8/10, MS3.2/3,Error ellipse: s-maj=26.9km s-min=11.6km az=172.9*
IDC ***23*** *13:44:18.4±1.0,9.°70S×66.°83E,h0km,mb3.8/9,mb1 3.9/9, mb1mx3.7/65,mbtmp3.8/9,MS3.3/3,Ms1 3.4/3, ms1mx2.9/44,Error ellipse: s-maj=33.0km s-min=23.2km az=160.0*
NEIC ***23*** *13:44:19.8±0.6,9.°70S×66.°82E,h10km,mb4.0/1,Error ellipse: s-maj=21.9km s-min=15.6km az=156.0*

ISC 23 13:44:20.4±1.0,9.°7S±0.°2×67.°0E±0.°1,h15km,n26, σ1°37/17,mb3.9/10,MS3.2/3,Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08N3	Diego Garcia H	5.20	50	T	T	13 51 09.2	
	baz=230,slow=75,SNR=100						
H08N1	Diego Garcia H	5.21	50	T	T	13 51 15.7	
	baz=230,slow=75,SNR=123						
H08N2	Diego Garcia H	5.22	50	T	T	13 51 16.8	
	baz=230,slow=75,SNR=92						
H08S1	Diego Garcia H	5.80	69	Pn	Pn	13 45 43.7	-2.0
	baz=276,slow=15,SNR=14						
H08S1				T	T	13 52 15.3	
	baz=245,slow=74,SNR=14						
H08S3	Diego Garcia H	5.81	69	Pn	Pn	13 45 43.8	-2.1
	baz=276,slow=15,SNR=9.2						
H08S3				T	T	13 51 58.1	
	baz=245,slow=74,SNR=7.8						
H08S2	Diego Garcia H	5.82	69	Pn	Pn	13 45 44.0	-2.0
	baz=276,slow=15,SNR=16						
H08S2				T	T	13 52 14.3	
	baz=245,slow=74,SNR=19						
PALK	Pallekele	21.72	39	LR	LR	13 55 58.9	
	comp=Z,62nm,18.2s,baz=296,slow=32						
LSZ	Lusaka	38.25	258	P	P	13 51 40.0	-0.5
	0.7nm,0.3s,baz=42,slow=12,SNR=5.2						
CMAR	Chiang Mai Arr	42.17	48	P	P	13 52 15.3	+2.4
	0.4nm,0.3s,baz=242,slow=8.9,SNR=4.3						
CMAR				LR	LR	14 08 23.6	
	comp=Z,28nm,18.6s,baz=68,slow=34						
H01W3	Cape Leeuwin H	49.69	128	T	T	14 46 37.9	
	baz=289,slow=75,SNR=3.9						
H01W2	Cape Leeuwin H	49.69	128	T	T	14 46 47.2	
	baz=289,slow=75,SNR=5.1						
H01W1	Cape Leeuwin H	49.70	128	T	T	14 46 49.3	
	baz=289,slow=75,SNR=4.4						
KAPI	Kappang	52.48	89	LR	LR	14 13 31.1	
	comp=Z,38nm,19.1s,baz=287,slow=33						
MKAR	Makanchi Array	57.91	12	P	P	13 54 11.8	-0.2
	0.4nm,0.7s,baz=212,slow=10,SNR=3.5						
ABKAR	Akbulak array	59.07	355	eP	P	13 54 19.6	-0.3
	0.5nm,0.5s						
AKTO	Aktyubinsk	60.43	353	P	P	13 54 28.1	-1.2
	0.5nm,0.3s,baz=125,slow=4.4,SNR=4.1						
BVAR	Borovoye Array	62.58	2	P	P	13 54 43.8	0.0
	1.1nm,0.7s,baz=157,slow=8.0,SNR=7.5						
ASAR	Alice Springs	65.06	112	P	P	13 55 01.6	+0.8
	0.7nm,0.8s,baz=276,slow=6.0,SNR=5.6						
SONM	Songino Array	67.11	28	P	P	13 55 15.0	+1.5
	0.5nm,0.5s,baz=213,slow=5.0,SNR=3.1						
TORD	Torodi Ar. Bea	68.70	288	P	P	13 55 23.1	-1.0
	0.3nm,0.7s,baz=89,slow=5.9,SNR=2.8						
KLR	Kul'dur	81.45	37	P	P	13 56 36.6	-0.3
	0.4nm,0.2s,baz=240,slow=3.2,SNR=3.7						
YKA	Yellowknife Ar	127.33	1	PKP	PKPdf	14 03 24.0	-0.2
	0.3nm,0.7s,baz=359,slow=2.4,SNR=7.3						
RLMT	Red Lodge	144.60	355	ePKPdf	PKPdf	14 03 56.9	-0.1
RSSD	Black Hills	144.88	349	ePKPdf	PKPbc	14 03 56.6	0.0
PDAR	Pinedale Array	146.96	355	PKPbc	PKPbc	14 04 03.2	+0.2
	0.7nm,0.6s,baz=87,slow=3.4,SNR=7.1						
NVAR	Mina Array Bea	151.04	9	PKPbc	PKPbc	14 04 15.0	+1.4
	1.5nm,0.7s,baz=300,slow=2.0,SNR=10						

ISCJB ***23*** *13:47:13.9±0.6,26.°02S±0.°04×131.°44E±0.°07,h10km, Error ellipse: s-maj=9.6km s-min=6.1km az=12.7*
AUST ***23*** *13:47:13.8±0.0,26.°00S×131.°42E,h0km,Error ellipse: s-maj=0.1km s-min=0.1km az=285.0*
IDC ***23*** *13:47:15.9±6.8,25.°97S×131.°23E,h17km±33km,mb1 3.4/3, mb1mx3.2/36,mbtmp3.3/3,ML3.1/3,Error ellipse: s-maj=56.5km s-min=30.8km az=73.0*

ISC 23 13:47:15.9±1.1,26.°02S±0.°07×131.°46E±0.°08,h10km,n19, σ1°01/23,South Australia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRKA	Warakurna	3.02	288	P	Pn	13 48 03.6	-0.3
	baz=3.0						
ASAR	Alice Springs	3.23	44	Pn	Pn	13 48 08.1	+1.4
	0.6nm,0.3s,baz=226,slow=12,SNR=59						
ASAR				Pg	Pg	13 48 16.6	-1.2
	1.6nm,0.3s,baz=224,slow=16,SNR=47						
ASAR				Sn	Sn	13 48 47.2	+2.0
	1.0nm,0.3s,baz=228,slow=17,SNR=7.2						
ASAR				Lg	Lg	13 48 56.0	
	3.1nm,0.3s,baz=225,slow=27,SNR=14						
WC4	Warramunga Arr	6.59	24	P	Pn	13 48 53.2	+0.3
	baz=6.6						
WC3	Warramunga Arr	6.60	25	P	Pn	13 48 53.7	+0.7
	baz=6.6						
WR1	Warramunga Arr	6.60	24	P	Pn	13 48 53.8	+0.7
	baz=6.6						
WRA	Warramunga Arr	6.60	24	Pn	Pn	13 48 53.6	+0.6
	0.4nm,0.3s,baz=201,slow=14,SNR=30						
WRA				Sn	Sn	13 50 07.4	-1.1
	0.4nm,0.3s,baz=207,slow=25,SNR=6.6						
WRA				Lg	Lg	13 50 39.7	
	0.3nm,0.3s,baz=202,slow=28,SNR=3.5						
WB2	Warramunga Arr	6.61	24	P	Pn	13 48 53.7	+0.6
	baz=6.6						
WR3	Warramunga Arr	6.62	25	P	Pn	13 48 53.1	-0.1
	baz=6.6						
WR5	Warramunga Arr	6.63	25	P	Pn	13 48 53.7	+0.2
	baz=6.7						
WR6	Warramunga Arr	6.64	25	P	Pn	13 48 54.2	+0.6
	baz=6.7						
WR7	Warramunga Arr	6.64	25	P	Pn	13 48 54.4	+0.7
	baz=6.7						
WR8	Warramunga Arr	6.65	26	P	Pn	13 48 54.1	+0.3
	baz=6.7						
WB7	Warramunga Arr	6.71	24	P	Pn	13 48 55.0	+0.5
	baz=6.7						
WB8	Warramunga Arr	6.74	24	P	Pn	13 48 55.5	+0.6
	baz=6.8						
BBOO	Buckleboo	7.87	150	P	Pn	13 49 11.3	+0.9
	baz=7.9						
HTT	Hallett	9.83	140	P	Pn	13 49 38.5	+1.1
	baz=9.9						
KMBL	Kambalda	9.95	235	P	Pn	13 49 39.0	0.0
	baz=9.9						
STKA	Stephens Creek	10.62	126	Pn	Pn	13 49 49.4	+1.2
	0.2nm,0.3s,baz=297,slow=13,SNR=3.3						
STKA				Sn	Sn	13 51 45.0	-2.2
	0.3nm,0.3s,baz=265,slow=7.0,SNR=4.2						
CMSA	Cobar Meteorol	13.64	117	P	Pn	13 50 29.8	+0.4
	baz=14						

SJA 23 14:01:56.4±0.8,31.°94S×70.°83W,h146km±6km,ML3.6,

MW3.3,Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AUSP	Uspallata	1.26	103	i P	Pn	14 02 24.0	+0.5
AUSP				i S	Sn	14 02 45.1	+1.0
RTLS	Leoncito	1.32	84	i P	Pn	14 02 25.2	+1.2
RTLS				i S	Sn	14 02 46.9	+1.7
ASAL	Salagasta	1.81	111	i P	Pn	14 02 30.6	+1.5
ASAL				i S	Sn	14 02 54.9	+0.6
ARCO	CERRO ARCO	1.84	120	i P	Pn	14 02 30.9	+1.4
ARCO				i S	Sn	14 02 55.7	+0.7
SJA	San Juan	1.98	79	i P	Pn	14 02 31.8	+0.7
SJA				i S	Sn	14 02 58.0	+0.3
AAGR	Agrelo	2.04	124	i P	Pn	14 02 32.2	+0.4
AAGR				i S	Sn	14 02 59.4	+0.3
AMOG	MOGNA	2.24	64	i S	Sn	14 03 03.5	+0.3
ACAN	Cantantal	3.11	97	i P	Pn	14 02 46.0	+1.0
ACAN				i S	Sn	14 03 22.7	+0.1
VCA	Vinchina	3.92	36	i P	Pn	14 02 56.8	+1.1
VCA				i S	Sn	14 03 41.1	-0.6
VCA				IAML		14 03 53.1	
	comp=Z,78nm,0.2s						
MRA	San Martin	4.36	98	i P	Pn	14 03 02.3	+0.9
MRA				i S	Sn	14 03 51.2	-0.8

IDC ***23*** *14:06:34.2±0.9,35.°78N×26.°21E,h0km,mb3.8/4, mb1 3.9/7,mb1mx3.5/45,mbtmp3.8/7,ML3.7/3,Error ellipse: s-maj=32.0km s-min=10.4km az=153.0*
ATH ***23*** *14:06:37.6,35.°69N×26.°20E,h38km±1km,ML3.6/9,Error ellipse: s-maj=2.0km s-min=0.9km az=169.0*
CSEM ***23*** *14:06:38.5±0.1,35.°71N×26.°22E,h20km,ML3.8,Error ellipse: s-maj=3.5km s-min=2.4km az=171.0*
ISK ***23*** *14:06:38.3,35.°80N×26.°29E,h21km,ML3.4*
THE ***23*** *14:06:39.9,35.°65N×26.°22E,h30km±11km,ML3.8/10, Error ellipse: s-maj=11.5km s-min=1.1km az=70.0*
DDA ***23*** *14:06:45.0,35.°84N×26.°09E,h31km,Ml3.5*

ISC 23 14:06:37.7±0.8,35.°72N±0.°02×26.°21E±0.°02,h21km±3km, n164,σ1°65/215,mb3.8/4,Crete

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZKR	Zakros	0.60	179	P	Pb	14 06 50.0	+0.3
ZKR				S	Sb	14 06 57.9	+0.1
ZKR	Zakros	0.60	179	P	Pb	14 06 50.0	+0.3
ZKR				S	Sb	14 06 57.9	+0.1
ZKR	Zakros	0.60	179	P	Pb	14 06 50.4	+0.7
ZKR				S	Sb	14 06 57.9	+0.1
ZKR				AML	AML	14 06 58.8	
	comp=N,15094μm,0.6s						
ZKR				AML	AML	14 07 01.0	
	comp=E,9654μm,0.8s						
NPS	Neapolis	0.67	227	P	Pb	14 06 51.6	+0.9
NPS				S	Sb	14 07 00.0	+0.4
NPS	Neapolis	0.67	227	P	Pb	14 06 51.6	+0.9
NPS				S	Sb	14 07 00.0	+0.4
NPS	Neapolis	0.67	227	P	Pn	14 06 52.3	+0.4
NPS				S	Sb	14 06 59.1	-0.5
KARP	Karpathos	0.80	102	PG	Pn	14 06 53.5	-0.2
KARP	Karpathos	0.80	102	P	Pb	14 06 53.2	+0.3
KARP				S	Sb	14 07 03.8	+0.5
KARP	Karpathos	0.80	102	P	Pb	14 06 53.2	+0.3
KARP	Karpathos	0.80	102	i Pg	Pn	14 06 53.5	-0.2
KARP				S	Sb	14 07 03.8	+0.5
KARP	Karpathos	0.80	102	P	Pb	14 06 53.2	+0.3
KARP				S	Sb	14 07 02.5	-0.8
LAST	Lasithi	0.81	227	P	Pb	14 06 53.6	+0.4
LAST				S	Sb	14 07 03.6	-0.2
LAST	Lasithi	0.81	227	P	Pb	14 06 53.6	+0.4
LAST				S	Sb	14 07 03.6	-0.2
LAST	Lasithi	0.81	227	P	Pn	14 06 54.2	+0.2
SANT	Santorini	0.89	317	P	Pn	14 06 55.7	+0.7
SANT				S	Sn	14 07 08.9	+1.7
SANT	Santorini	0.89	317	P	Pn	14 06 55.7	+0.7
SANT				S	Sn	14 07 07.5	+0.3
SANT	Santorini	0.89	317	P	Pn	14 06 56.3	+1.3
SANT				S	Sn	14 07 07.5	+0.3
SANT				AML	AML	14 07 09.2	
	comp=N,5303μm,0.5s						
SANT				AML	AML	14 07 10.7	
	comp=E,9532μm,0.4s						
THR6	Thira Island,	0.91	314	P	Pn	14 06 56.3	+1.0
THR6	Thira Island,	0.91	314	P	Pn	14 06 56.3	+1.0
THT1	Athinios (Pele	0.91	317	P	Pn	14 06 55.9	+0.6
THT1				S	Sn	14 07 08.0	+0.5
THT1	Athinios (Pele	0.91	317	P	Pn	14 06 55.9	+0.6
THT1				S	Sn	14 07 08.3	+0.5
THR7	Fira-Santorini	0.94	318	P	Pn	14 06 56.8	+1.1
THR7	Fira-Santorini	0.94	318	P	Pn	14 06 56.8	+1.1
THR3	Thira Island,	0.95	317	P	Pn	14 06 56.5	+0.7
THR3	Thira Island,	0.95	317	P	Pn	14 06 56.5	+0.7
THR2	Thira island,	0.96	319	P	Pn	14 06 56.9	+1.0
THR2	Thira island,	0.96	319	P	Pn	14 06 56.9	+1.0
THR5	Thira Island,	0.98	315	PG	Pn	14 06 57.2	+1.0
THR5	Thira Island,	0.98	315	P	Pn	14 06 57.0	+0.7
THR5	Thira Island,	0.98	315	P	Pn	14 06 57.0	+0.7
THR5	Thira Island,	0.98	315	i Pg	Pn	14 06 57.2	+1.0
CMBO	Columbo, Santo	0.99	319	P	Pn	14 06 57.3	+1.0
CMBO	Columbo, Santo	0.99	319	P	Pn	14 06 57.3	+1.0
CMBO				S	Sb	14 07 09.3	+0.5
CMBO	Columbo, Santo	0.99	319	P	Pn	14 06 57.7	+1.4
CMBO				S	Sb	14 07 09.3	+0.5
CMBO				AML	AML	14 07 13.2	
	comp=N,11514μm,0.4s						
CMBO				AML	AML	14 07 13.8	
	comp=E,9586μm,0.5s						

ARG	**Arkhangelos**	**1.63**	**72**	P	**Pb**	**14 07 06.3**	**-0.8**
ARG				S	**Sn**	**14 07 25.5**	**-0.1**
VAM	**Vamos**	**1.67**	**260**	P	**Pn**	**14 07 05.0**	**-0.6**
VAM	**Vamos**	**1.67**	**260**	P	**Pn**	**14 07 05.0**	**-0.6**
BDRM	**Kayabasi**	**1.67**	**36**	P	**Pn**	**14 07 05.7**	**0.0**
BDRM	**Kayabasi**	**1.67**	**36**	*i* P	**Pn**	**14 07 05.7**	**0.0**
BDRM				*i* S	**Sb**	**14 07 35.6**	**+7.1**
MHLO	**Agia Marina, M**	**1.75**	**304**	P	**Pn**	**14 07 08.1**	**+1.3**
MHLO	**Agia Marina, M**	**1.75**	**304**	P	**Pn**	**14 07 08.1**	**+1.3**
MHLO	**Agia Marina, M**	**1.75**	**304**	P	**Pb**	**14 07 09.8**	**+0.6**
IMMV	**Iera Moni Meta**	**1.83**	**262**	P	**Pn**	**14 07 08.2**	**+0.3**
IMMV	**Iera Moni Meta**	**1.83**	**262**	P	**Pn**	**14 07 08.6**	**+0.6**
IMMV	**Iera Moni Meta**	**1.83**	**262**	P	**Pn**	**14 07 08.6**	**+0.6**
GVD	**Gavdhos**	**1.94**	**244**	P	**Pb**	**14 07 11.4**	**-1.0**
GVD	**Gavdhos**	**1.94**	**244**	P	**Pb**	**14 07 11.4**	**-1.0**
GVD	**Gavdhos**	**1.94**	**244**	P	**Pb**	**14 07 13.7**	**+1.3**
SERI	**Serifos**	**2.00**	**317**	P	**Pn**	**14 07 10.2**	**0.0**
SERI	**Serifos**	**2.00**	**317**	P	**Pn**	**14 07 10.2**	**0.0**
SMG	**Samos**	**2.05**	**14**	P	**Pn**	**14 07 11.2**	**+0.3**
SMG	**Samos**	**2.05**	**14**	P	**Pn**	**14 07 11.2**	**+0.3**
SMG	**Samos**	**2.05**	**14**	P	**Pn**	**14 07 11.1**	**+0.3**
YER	**Yerkesik**	**2.19**	**49**	PN	**Pn**	**14 07 13.2**	**+0.3**
YER				SN	**Sn**	**14 07 38.2**	**-1.2**
YER	**Yerkesik**	**2.19**	**49**	P	**Pn**	**14 07 14.8**	**+1.9**
YER	**Yerkesik**	**2.19**	**49**	*i* Pn	**Pn**	**14 07 13.2**	**+0.3**
YER	**Yerkesik**	**2.19**	**49**	P	**Pn**	**14 07 14.8**	**+1.9**
YER				*i* Sn	**Sn**	**14 07 38.2**	**-1.2**
TURN	**Turunc**	**2.25**	**59**	*i* P	**Pn**	**14 07 10.7**	**-3.0**
TURN				*i* S	**Sn**	**14 07 33.3**	**-7.5**
DALY	**Dalyan (Mu¨la**	**2.26**	**60**	PN	**Pn**	**14 07 14.1**	**+0.3**
DALY	**Dalyan (Mu¨la**	**2.26**	**60**	*i* Pn	**Pn**	**14 07 14.1**	**+0.3**
ANKY	**Antikythira Is**	**2.37**	**274**	P	**Pn**	**14 07 15.8**	**+0.6**
ANKY	**Antikythira Is**	**2.37**	**274**	P	**Pn**	**14 07 15.9**	**+0.6**
ANKY	**Antikythira Is**	**2.37**	**274**	P	**Pn**	**14 07 15.9**	**+0.6**
FETY	**Fethiye**	**2.50**	**68**	PN	**Pn**	**14 07 17.8**	**+0.6**
FETY	**Fethiye**	**2.50**	**68**	P	**Pn**	**14 07 19.1**	**+2.0**
FETY	**Fethiye**	**2.50**	**68**	*i* Pn	**Pn**	**14 07 17.8**	**+0.6**
FETY	**Fethiye**	**2.50**	**68**	P	**Pn**	**14 07 19.1**	**+2.0**
AYDB	**Zeytinkoy-Aydi**	**2.60**	**31**	*e*PN	**Pn**	**14 07 19.2**	**+0.7**
AYDB	**Zeytinkoy-Aydi**	**2.60**	**31**	*e*Pn	**Pn**	**14 07 19.3**	**+0.7**
KYTH	**Kithira**	**2.62**	**283**	P	**Pn**	**14 07 19.8**	**+1.0**
KYTH	**Kithira**	**2.62**	**283**	P	**Pn**	**14 07 19.8**	**+1.0**
KYTH				S	**Sn**	**14 07 48.3**	**-1.6**
KYTH	**Kithira**	**2.62**	**283**	P	**Pn**	**14 07 20.7**	**+1.9**
URLA	**Izmir**	**2.65**	**7**	P	**Pn**	**14 07 19.3**	**+0.1**
URLA	**Izmir**	**2.65**	**7**	*i* P	**Pn**	**14 07 19.3**	**+0.1**
CHOS	**Chios island**	**2.66**	**357**	*e*PN	**Pn**	**14 07 20.3**	**+0.9**
CHOS	**Chios island**	**2.66**	**357**	P	**Pn**	**14 07 19.9**	**+0.5**
CHOS	**Chios island**	**2.66**	**357**	P	**Pn**	**14 07 19.9**	**+0.5**
CHOS	**Chios island**	**2.66**	**357**	*e*Pn	**Pn**	**14 07 20.3**	**+0.9**
CHOS	**Chios island**	**2.66**	**357**	P	**Pn**	**14 07 19.3**	**-0.2**
KSL	**Kastellorizon**	**2.77**	**80**	P	**Pn**	**14 07 23.2**	**+2.4**
KSL				S	**Sn**	**14 07 54.6**	**+0.9**
KSL	**Kastellorizon**	**2.77**	**80**	P	**Pn**	**14 07 23.2**	**+2.4**
KSL				S	**Sn**	**14 07 54.6**	**+0.9**
KSL				AML	AML	14 07 56.9	
	comp=E,668μm,0.9s						
KSL				AML	AML	14 07 59.3	
	comp=N,330μm,0.5s						
AKAS	**Kas**	**2.80**	**79**	P	**Pn**	**14 07 22.4**	**+1.0**
AKAS				S	**Sn**	**14 07 56.3**	**+1.7**
AKAS	**Kas**	**2.80**	**79**	*i* P	**Pn**	**14 07 22.4**	**+1.0**
AKAS				*i* S	**Sn**	**14 07 56.3**	**+1.7**
VLI	**Veliai**	**2.83**	**292**	P	**Pn**	**14 07 23.0**	**+1.4**
VLI	**Veliai**	**2.83**	**292**	P	**Pn**	**14 07 23.0**	**+1.4**
VLI				S	**Sn**	**14 07 53.1**	**-1.9**
VLI	**Veliai**	**2.83**	**292**	P	**Pn**	**14 07 23.4**	**+1.9**
VLI				S	**Sn**	**14 07 53.1**	**-1.9**
VLI				AML	AML	14 07 58.1	
	comp=N,1100μm,0.6s						
VLI				AML	AML	14 07 58.7	
	comp=E,805μm,0.4s						
VLY	**Voula,Athens**	**2.88**	**318**	P	**Pn**	**14 07 24.2**	**+1.9**
VLY	**Voula,Athens**	**2.88**	**318**	P	**Pn**	**14 07 24.2**	**+1.9**
KRND	**KRANIDI**	**2.97**	**305**	P	**Pb**	**14 07 27.2**	**-2.6**
KRND	**KRANIDI**	**2.97**	**305**	P	**Pb**	**14 07 27.2**	**-2.6**
DID	**Didima**	**2.98**	**308**	P	**Pn**	**14 07 25.6**	**+1.8**
DID	**Didima**	**2.98**	**308**	P	**Pn**	**14 07 25.6**	**+1.8**
DID				S	**Sn**	**14 07 59.7**	**+0.8**
DID	**Didima**	**2.98**	**308**	P	**Pn**	**14 07 26.5**	**+2.8**
DID				S	**Sn**	**14 07 59.7**	**+0.8**
GLHS	**Glhisar (BURDU**	**3.02**	**61**	*e*PN	**Pn**	**14 07 24.9**	**+0.6**
GLHS	**Glhisar (BURDU**	**3.02**	**61**	*e*Pn	**Pn**	**14 07 24.9**	**+0.6**
DENT	**Denizli**	**3.04**	**47**	*e*PN	**Pn**	**14 07 25.8**	**+1.2**
DENT	**Denizli**	**3.04**	**47**	*e*Pn	**Pn**	**14 07 25.8**	**+1.2**
GOLH	**Golhisar**	**3.10**	**60**	P	**Pn**	**14 07 28.0**	**+2.6**
GOLH				S	**Sb**	**14 08 06.5**	**-3.0**
GOLH	**Golhisar**	**3.10**	**60**	*i* P	**Pn**	**14 07 28.0**	**+2.6**
GOLH				*i* S	**Sb**	**14 08 06.5**	**-3.0**
ELL	**Elmali**	**3.16**	**70**	*e*PN	**Pn**	**14 07 27.3**	**+0.9**
ELL	**Elmali**	**3.16**	**70**	*e*Pn	**Pn**	**14 07 27.3**	**+0.9**
DKL	**Dikili**	**3.39**	**9**	*e*PN	**Pn**	**14 07 30.9**	**+1.6**
DKL	**Dikili**	**3.39**	**9**	*e*Pn	**Pn**	**14 07 30.9**	**+1.6**
LTK	**Loutraki**	**3.47**	**312**	P	**Pn**	**14 07 33.0**	**+2.6**
LTK	**Loutraki**	**3.47**	**312**	P	**Pn**	**14 07 33.0**	**+2.6**
VLX	**Vlachokerasia**	**3.49**	**299**	P	**Pn**	**14 07 33.5**	**+2.6**
VLX	**Vlachokerasia**	**3.49**	**299**	P	**Pn**	**14 07 33.5**	**+2.6**
VLX	**Vlachokerasia**	**3.49**	**299**	P	**Pn**	**14 07 34.4**	**+3.5**
SIGR	**SIGRI**	**3.50**	**356**	*e*PN	**Pn**	**14 07 31.1**	**+0.4**
SIGR	**SIGRI**	**3.50**	**356**	P	**Pn**	**14 07 31.9**	**+1.1**
SIGR	**SIGRI**	**3.50**	**356**	*e*Pn	**Pn**	**14 07 31.2**	**+0.4**
SIGR	**SIGRI**	**3.50**	**356**	P	**Pn**	**14 07 31.9**	**+1.1**
SIGR	**SIGRI**	**3.50**	**356**	P	**Pn**	**14 07 31.4**	**+0.7**
KORT	**Korkueli**	**3.58**	**68**	P	**Pn**	**14 07 34.8**	**+2.7**
KORT				S	**Sn**	**14 08 17.1**	**+3.3**
KORT	**Korkueli**	**3.58**	**68**	*i* P	**Pn**	**14 07 34.8**	**+2.7**
KORT				*i* S	**Sn**	**14 08 17.1**	**+3.3**
ITM	**Ithomi**	**3.75**	**294**	P	**Pn**	**14 07 36.3**	**+2.1**
ITM	**Ithomi**	**3.75**	**294**	P	**Pn**	**14 07 36.3**	**+2.1**
ITM	**Ithomi**	**3.75**	**294**	P	**Pb**	**14 07 41.0**	**-2.2**
PYL	**PYLOS**	**3.79**	**289**	P	**Pn**	**14 07 39.1**	**+4.2**
PYL	**PYLOS**	**3.79**	**289**	P	**Pn**	**14 07 39.1**	**+4.2**
KLV	**Kalavryta, Ach**	**3.99**	**307**	P	**Pn**	**14 07 40.4**	**+2.7**
KLV	**Kalavryta, Ach**	**3.99**	**307**	P	**Pn**	**14 07 40.4**	**+2.7**
KLV				S	**Sn**	**14 08 23.8**	**-0.1**
KLV	**Kalavryta, Ach**	**3.99**	**307**	P	**Pn**	**14 07 41.4**	**+3.7**
KLV				S	**Sn**	**14 08 23.8**	**-0.1**
KLV				AML	AML	14 08 29.5	
	comp=E,188μm,0.5s						
KLV				AML	AML	14 08 29.6	
	comp=N,199μm,0.9s						
AMT	**Artemida-Makis**	**4.04**	**298**	P	**Pn**	**14 07 40.3**	**+1.9**
AMT	**Artemida-Makis**	**4.04**	**298**	P	**Pn**	**14 07 40.3**	**+1.9**
AMT	**Artemida-Makis**	**4.04**	**298**	P	**Pb**	**14 07 45.2**	**-3.1**
LAKA	**Lakka**	**4.22**	**308**	P	**Pn**	**14 07 45.5**	**+4.8**
LAKA	**Lakka**	**4.22**	**308**	P	**Pn**	**14 07 45.5**	**+4.8**
DRO	**Drossia**	**4.24**	**303**	P	**Pn**	**14 07 43.2**	**+2.2**
DRO	**Drossia**	**4.24**	**303**	P	**Pn**	**14 07 43.2**	**+2.2**
DRO	**Drossia**	**4.24**	**303**	P	Pb	14 07 46.6	-4.9
ANX	**Ano Chora**	**4.46**	**311**	P	Pn	14 07 49.4	+5.2
BRTR	**Keskin Array B**	**7.12**	**54**	Pn	**Pn**	**14 08 23.1**	**+2.4**
	comp=N,0.6nm,0.3s,baz=223,slow=14,SNR=24						
BRTR				Sn	**Sn**	**14 09 41.8**	**+0.8**
	comp=N,0.3nm,0.3s,baz=220,slow=25,SNR=5.1						
MMAI	**Mount Meron Ar**	**8.07**	**107**	Pn	**Pn**	**14 08 31.6**	**-2.0**
	comp=N,2.2nm,0.3s,baz=289,slow=13,SNR=5.4						
MMAI				Sn	**Sn**	**14 09 60.0**	**-4.3**
	comp=N,3.1nm,0.3s,baz=309,slow=26,SNR=3.8						
EIL	**Elat**	**9.52**	**127**	Pn	**Pn**	**14 08 52.2**	**-1.4**
	comp=N,1.0nm,0.3s,baz=295,slow=2.8,SNR=8.0						
EIL				Sn	Sn	14 10 28.2	-12
	comp=N,1.6nm,0.3s,baz=330,slow=14,SNR=5.1						
AKASG	**Malin Array Be**	**15.13**	**7**	Pn	**Pn**	**14 10 12.1**	**+2.0**
	comp=N,1.5nm,0.3s,baz=200,slow=11,SNR=12						
TORD	**Torodi Ar. Bea**	**31.50**	**231**	P	**P**	**14 12 58.1**	**-0.1**
	comp=N,0.2nm,0.3s,baz=38,slow=9.4,SNR=4.6						
MKAR	**Makanchi Array**	**42.75**	**57**	P	**P**	**14 14 33.6**	**+0.2**
	comp=N,1.1nm,0.3s,baz=265,slow=8.9,SNR=20						
ZALV	**Zalesovo Beam**	**44.00**	**47**	P	**P**	**14 14 42.6**	**-0.7**
	comp=N,1.3nm,0.5s,baz=255,slow=8.0,SNR=5.5						
YKA	**Yellowknife Ar**	**77.17**	**342**	P	**P**	**14 18 27.9**	**-1.5**
	comp=N,0.3nm,0.5s,baz=33,slow=5.2,SNR=8.3						

*ISCJB **23** 14:08:30.6±0.5, 39°.09N±0°.04×29°.02E±0°.03, h6km±5km, Error ellipse: s-maj=6.2km s-min=3.9km az=170.9*
*DDA **23** 14:08:30.8, 39°.07N×29°.03E, h7km, Ml2.9*
*ISK **23** 14:08:30.2, 39°.08N×29°.04E, h12km, ML2.9*
*CSEM **23** 14:08:30.7±0.1, 39°.08N×29°.03E, h10km, ML2.9, Error ellipse: s-maj=2.2km s-min=1.8km az=161.0*

ISC 23 14:08:31.0±0.9, 39°.09N±0°.03×29°.02E±0°.02, h10km±9km, n55, σ0°38/66, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**260**	P	**Pg**	**14 08 36.1**	**0.0**
DEMI				S	**Sg**	**14 08 39.5**	**+0.1**
DEMI	**Demirci**	**0.24**	**260**	*i* P	**Pg**	**14 08 36.1**	**0.0**
DEMI				*i* S	**Sg**	**14 08 39.5**	**+0.1**
GDZ	**Gediz**	**0.36**	**89**	P	**Pg**	**14 08 38.1**	**-0.1**
GDZ				S	**Sg**	**14 08 43.1**	**+0.2**
GDZ	**Gediz**	**0.36**	**89**	*i* P	**Pg**	**14 08 38.1**	**-0.1**
GDZ				*i* S	**Sg**	**14 08 43.1**	**+0.2**
TVSB	**Tavsanli**	**0.50**	**43**	*e*PG	**Pg**	**14 08 40.5**	**-0.3**
TVSB				*e*SG	**Sg**	**14 08 47.3**	**-0.1**
TVSB	**Tavsanli**	**0.50**	**43**	*e*Pg	**Pg**	**14 08 40.5**	**-0.3**
TVSB	**Tavsanli**	**0.50**	**43**	*e*Sg	**Sg**	**14 08 47.3**	**-0.1**
KULA	**Kula-Manisa**	**0.64**	**207**	*e*PG	**Pg**	**14 08 43.1**	**-0.3**
KULA	**Kula-Manisa**	**0.64**	**207**	*e*Pg	**Pg**	**14 08 43.1**	**-0.3**
DURS	**Dursunbey**	**0.67**	**321**	P	**Pg**	**14 08 43.8**	**-0.2**
DURS				S	**Sb**	**14 08 54.3**	**+0.1**
DURS	**Dursunbey**	**0.67**	**321**	*i* P	**Pg**	**14 08 43.8**	**-0.2**
DURS				*i* S	**Sb**	**14 08 54.3**	**+0.1**
KHL	**Karahalli**	**0.85**	**153**	*e*PG	**Pg**	**14 08 47.0**	**-0.5**
KHL	**Karahalli**	**0.85**	**153**	*e*Pg	**Pg**	**14 08 47.0**	**-0.5**
AKHS	**Akhisar**	**0.96**	**258**	P	**Pb**	**14 08 50.0**	**+0.1**
AKHS	**Akhisar**	**0.96**	**258**	*i* P	**Pb**	**14 08 50.0**	**+0.1**
AKHS				*i* S	**Sn**	**14 09 05.0**	**+0.6**
AKS	**Akhisar**	**0.96**	**258**	*e*PG	**Pg**	**14 08 49.2**	**-0.4**
AKS	**Akhisar**	**0.96**	**258**	*e*Pg	**Pg**	**14 08 49.2**	**-0.4**
ORLT	**Orhaneli**	**0.96**	**354**	*e*PG	**Pg**	**14 08 49.2**	**-0.3**
ORLT	**Orhaneli**	**0.96**	**354**	*e*Pg	**Pg**	**14 08 49.3**	**-0.3**
BALB	**Balikesir**	**1.04**	**302**	*e*PG	**Pg**	**14 08 51.0**	**-0.1**
BALB	**Balikesir**	**1.04**	**302**	*e*Pg	**Pg**	**14 08 51.0**	**-0.1**
CAVI	**Cavuskoy**	**1.28**	**29**	*e*PN	**Pn**	**14 08 54.3**	**-0.7**
CAVI	**Cavuskoy**	**1.28**	**29**	*e*Pn	**Pn**	**14 08 54.3**	**-0.7**
KCTX	**Karacabey (Bur**	**1.29**	**337**	*e*PN	**Pn**	**14 08 54.7**	**-0.4**
KCTX	**Karacabey (Bur**	**1.29**	**337**	*e*Pn	**Pn**	**14 08 54.7**	**-0.4**
MDNY	**Mudanya-Bursa**	**1.29**	**355**	*e*PN	**Pn**	**14 08 54.6**	**-0.4**
MDNY	**Mudanya-Bursa**	**1.29**	**355**	*e*Pn	**Pn**	**14 08 54.7**	**-0.4**
IZI	**Iznik**	**1.30**	**15**	*e*PN	**Pn**	**14 08 54.5**	**-0.8**
IZI	**Iznik**	**1.30**	**15**	*e*Pn	**Pn**	**14 08 54.5**	**-0.8**
BORA	**Eskisehir**	**1.36**	**54**	P	**Pn**	**14 08 56.6**	**+0.4**
BORA				S	**Sg**	**14 09 15.3**	**+0.4**
BORA	**Eskisehir**	**1.36**	**54**	*i* P	**Pn**	**14 08 56.6**	**+0.4**
BORA				*i* S	**Sg**	**14 09 15.3**	**+0.4**
GONE	**Gonen-Balikesi**	**1.41**	**313**	*e*PN	**Pn**	**14 08 56.6**	**-0.1**
GONE	**Gonen-Balikesi**	**1.41**	**313**	*e*Pn	**Pn**	**14 08 56.6**	**-0.1**
ADVT	**Abdulvahap**	**1.46**	**22**	*e*PN	**Pn**	**14 08 57.0**	**-0.3**
ADVT	**Abdulvahap**	**1.46**	**22**	*e*Pn	**Pn**	**14 08 57.0**	**-0.3**
ESKT	**Eskisehir**	**1.48**	**72**	*i* P	**Pg**	**14 08 59.3**	**-0.2**
ESKT				*i* S	**Sg**	**14 09 19.8**	**+1.1**
SEYT	**Eskypehyr**	**1.48**	**72**	P	**Pg**	**14 08 59.3**	**-0.2**
ARMT	**Armutlu**	**1.48**	**355**	*e*PN	**Pn**	**14 08 57.6**	**-0.2**
ARMT	**Armutlu**	**1.48**	**355**	*e*Pn	**Pn**	**14 08 57.6**	**-0.2**
EDC	**Edincik**	**1.54**	**325**	*e*PN	**Pn**	**14 08 58.4**	**-0.2**
EDC	**Edincik**	**1.54**	**325**	*e*Pn	**Pn**	**14 08 58.4**	**-0.2**
GPA	**Golpazari**	**1.56**	**39**	*e*PN	**Pn**	**14 08 58.6**	**-0.2**
GPA	**Golpazari**	**1.56**	**39**	*e*Pn	**Pn**	**14 08 58.6**	**-0.2**
GULT	**Gulveren**	**1.77**	**40**	*e*PN	**Pn**	**14 09 01.4**	**-0.4**
GULT	**Gulveren**	**1.77**	**40**	*e*Pn	**Pn**	**14 09 01.4**	**-0.4**
HRT	**Hereke**	**1.80**	**16**	*e*PN	**Pn**	**14 09 01.8**	**-0.4**
HRT	**Hereke**	**1.80**	**16**	*e*Pn	**Pn**	**14 09 01.8**	**-0.4**
SPNC	**Sapanca-Adapaz**	**1.88**	**31**	*e*PN	**Pn**	**14 09 02.7**	**-0.5**
SPNC	**Sapanca-Adapaz**	**1.88**	**31**	*e*Pn	**Pn**	**14 09 02.7**	**-0.5**
SVRH	**Sivrihisar-ESK**	**1.97**	**79**	*e*PN	**Pn**	**14 09 04.2**	**-0.4**
SVRH	**Sivrihisar-ESK**	**1.97**	**79**	*e*Pn	**Pn**	**14 09 04.2**	**-0.4**
SILT	**Sile**	**2.12**	**13**	*e*PN	**Pn**	**14 09 06.5**	**0.0**
SILT	**Sile**	**2.12**	**13**	*e*Pn	**Pn**	**14 09 06.5**	**0.0**
MDUB	**Mudurnu**	**2.17**	**50**	*e*PN	**Pn**	**14 09 07.0**	**-0.3**
MDUB	**Mudurnu**	**2.17**	**50**	*e*Pn	**Pn**	**14 09 07.1**	**-0.3**

IDC 23 14:35:51.4±3.3, 29°.92S×177°.13W, h0km, mb3.5/2, mb1 3.7/3, mb1mx3.5/32, mbtmp3.5/3, ML2.9/1, Error ellipse: s-maj=63.4km s-min=31.0km az=77.0, Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**0.96**	**314**	Pn	Pb	14 36 11.5	+0.6
	394nm,0.3s,baz=100,slow=9.2,SNR=32						
RAO				Sn	Sg	14 36 22.8	+0.6
	7μm,0.3s,baz=217,slow=20,SNR=77						
RAO				LR	LR	14 36 35.1	
	comp=Z,380nm,19.4s,baz=145,slow=46						
URZ	**Urewera**	**9.59**	**208**	Pn	Pn	14 38 08.5	-2.1
	0.1nm,0.3s,baz=342,slow=20,SNR=1.9						
URZ				Sn	Sn	14 39 54.3	-4.8
	0.2nm,0.3s,baz=312,slow=12,SNR=3.6						
ASAR	**Alice Springs**	**43.89**	**266**	P	P	14 44 00.6	+0.6
	0.5nm,0.7s,baz=105,slow=7.6,SNR=11						
WRA	**Warramunga Arr**	**44.84**	**271**	P	P	14 44 07.8	+0.2
	0.5nm,0.5s,baz=110,slow=8.1,SNR=10.0						
FINES	**FINESS Array B**	**144.95**	**341**	PKP	PKPbc	14 55 29.1	+0.1
	2.6nm,1.0s,baz=101,slow=2.1,SNR=2.8						

*CSEM **23** 14:36:11.3±0.2, 58°.34N×11°.84E, h2km, ML2.5, Error ellipse: s-maj=5.7km s-min=4.2km az=88.0, Mining explosion.*

UPP 23 14:36:11.7±0.1, 58°.34N×11°.87E, h0km, ML2.5, Explosion, Sweden

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VANU	**Vaenersborg**	**0.19**	**35**	P	Pg	14 36 15.5	+0.2
VANU				S	Sg	14 36 18.1	+0.4
VANU	**Vaenersborg**	**0.19**	**35**	P	Pg	14 36 15.5	+0.2
VANU				S	Sg	14 36 18.1	+0.4
TJOU	**Tjoern**	**0.33**	**203**	P	Pg	14 36 18.2	+0.1
TJOU				S	Sg	14 36 22.4	+0.1
TJOU	**Tjoern**	**0.33**	**203**	P	Pg	14 36 18.2	+0.1
TJOU				S	Sg	14 36 22.4	0.0
STRU	**Stroemstad**	**0.78**	**333**	P	Pg	14 36 26.2	-0.5
STRU	**Stroemstad**	**0.78**	**333**	P	Pg	14 36 26.2	-0.5
BORU	**Boraas**	**0.85**	**145**	P	Pg	14 36 27.6	-0.4
BORU	**Boraas**	**0.85**	**145**	P	Pg	14 36 27.6	-0.4
NASU	**Vaermlandsnaes**	**0.91**	**49**	P	Pg	14 36 28.6	-0.5
NASU	**Vaermlandsnaes**	**0.91**	**49**	P	Pg	14 36 28.6	-0.5
FKPU	**Falk**	**1.00**	**100**	P	Pg	14 36 30.2	-0.6
FKPU	**Falk**	**1.00**	**100**	P	Pg	14 36 30.2	-0.6
FINU	**Finntorp**	**1.11**	**16**	P	Pg	14 36 32.2	-0.8
FINU	**Finntorp**	**1.11**	**16**	P	Pg	14 36 32.2	-0.8
FABU	**Falkenberg**	**1.42**	**161**	P	Pn	14 36 36.9	-1.7
FABU	**Falkenberg**	**1.42**	**161**	P	Pn	14 36 36.9	-1.8
GNOU	**Gnosjoe**	**1.46**	**135**	P	Pn	14 36 38.1	-1.1
GNOU	**Gnosjoe**	**1.46**	**135**	P	Pn	14 36 38.2	-1.1
ASKU	**Askersund**	**1.65**	**69**	P	Pn	14 36 41.8	0.0
ASKU	**Askersund**	**1.65**	**69**	P	Pn	14 36 41.8	0.0
LNKU	**Linkoeping**	**1.93**	**92**	P	Pn	14 36 46.5	+0.8
LNKU	**Linkoeping**	**1.93**	**92**	P	Pn	14 36 46.5	+0.9
SNART	**Snartemo**	**2.46**	**272**	*e*S	Sn	14 37 21.8	-1.8
	SNR=49						

*ISK **23** 14:38:37.3, 39°.03N×28°.99E, h8km, MD2.6*
*CSEM **23** 14:38:38.1±0.3, 39°.03N×28°.92E, h10km, ML2.9, Error ellipse: s-maj=6.0km s-min=5.3km az=110.0*
*ISCJB **23** 14:38:40.6±0.9, 39°.17N±0°.05×29°.04E±0°.05, h9km, Error ellipse: s-maj=7.6km s-min=4.8km az=23.5*
*DDA **23** 14:38:41.1, 39°.21N×29°.09E, h7km, Ml2.9*

ISC 23 14:38:40.4±0.9, 39°.20N±0°.04×29°.02E±0°.03, h9km, n17, σ0°39/22, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**236**	P	**Pb**	**14 38 48.1**	**+0.4**
DEMI	**Demirci**	**0.28**	**236**	*i* P	**Pb**	**14 38 48.1**	**+0.4**
DEMI				*i* S	Sb	14 39 03.1	+10
GDZ	**Gediz**	**0.38**	**107**	P	**Pg**	**14 38 47.7**	**-0.2**
GDZ				S	**Sg**	**14 38 52.9**	**+0.1**
GDZ	**Gediz**	**0.38**	**107**	*i* P	**Pg**	**14 38 47.7**	**-0.2**
GDZ				*i* S	**Sg**	**14 38 52.9**	**+0.1**
TVSB	**Tavsanli**	**0.42**	**54**	*e*PG	**Pg**	**14 38 49.0**	**+0.2**
TVSB				*e*SG	**Sb**	**14 38 56.2**	**-0.5**
TVSB	**Tavsanli**	**0.42**	**54**	*e*Pg	**Pg**	**14 38 49.0**	**+0.2**
TVSB				*e*Sg	**Sb**	**14 38 56.2**	**-0.5**
DURS	**Dursunbey**	**0.58**	**314**	P	**Pg**	**14 38 51.5**	**-0.2**
DURS	**Dursunbey**	**0.58**	**314**	*i* P	**Pg**	**14 38 51.5**	**-0.2**
DURS				*i* S	**Sb**	**14 39 01.5**	**+0.3**
KULA	**Kula-Manisa**	**0.74**	**202**	*e*PG	Pg	14 38 48.8	-5.9
KULA	**Kula-Manisa**	**0.74**	**202**	*e*Pg	Pg	14 38 48.8	-5.9
ORLT	**Orhaneli**	**0.85**	**354**	*e*PG	**Pb**	**14 38 57.9**	**+0.5**
ORLT				*e*SG	**Sn**	**14 39 11.4**	**+0.3**
ORLT	**Orhaneli**	**0.85**	**354**	*e*Pg	**Pb**	**14 38 57.9**	**+0.5**
ORLT				*e*Sg	**Sn**	**14 39 11.5**	**+0.3**
CAVI	**Cavuskoy**	**1.18**	**32**	*e*PN	**Pb**	**14 39 03.2**	**+0.1**
CAVI	**Cavuskoy**	**1.18**	**32**	*e*Pn	**Pb**	**14 39 03.2**	**+0.1**
BORA	**Eskisehir**	**1.30**	**58**	*i* P	**Pn**	**14 39 05.0**	**+0.2**
ARMT	**Armutlu**	**1.37**	**355**	*e*PN	**Pn**	**14 39 05.0**	**-0.7**
ARMT	**Armutlu**	**1.37**	**355**	*e*Pn	**Pn**	**14 39 05.0**	**-0.7**

*NIED **23** 14:40:00, 38°.00N×142°.60E, h17km, Mw4.6 Best double couple: M0 1.02000×10^16 NP1:φ0=247.00000°, δ15.00000°, λ161.00000°. NP2:φ0=356.00000°, δ85.00000°, λ75.00000°.*
*IDC **23** 14:40:21.5±0.6, 38°.03N×142°.57E, h0km, mb4.4/29, mb1 4.5/34, mb1mx4.4/51, mbtmp4.4/34, ML3.9/5, MS4.1/25, Ms1 4.1/25, ms1mx3.9/41, Error ellipse: s-maj=14.4km s-min=12.2km az=132.0*
*JMA **23** 14:40:22.7±0.2, 38°.06N×142°.65E, h32km±4km, M4.8*
JMA Felt II J1.
*ISCJB **23** 14:40:24.4±0.8, 38°.10N±0°.03×142°.51E±0°.03, h29km±5km, mb4.7/172, MS4.3/42, Error ellipse: s-maj=4.8km s-min=3.2km az=154.0*
*MOS **23** 14:40:25.2±0.9, 38°.15N×142°.51E, h34km, mb4.9/74, MS4.0/15, Error ellipse: s-maj=6.6km s-min=4.5km az=109.3*
*NEIC **23** 14:40:27.2±0.5, 38°.12N×142°.49E, h37km±4km, mb4.7/95, Error ellipse: s-maj=4.7km s-min=2.9km az=138.0*
NEIC Recorded [2 JMA] in Miyagi.

ISC 23 14:40:26.0±0.6, 38°.13N±0°.04×142°.60E±0°.04, h29km±3km, h28km:pP-P, n355, σ1°64/380, mb4.7/172, MS4.3/43, 10C-9D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.04**	**289**	P	**Pn**	**14 40 42.2**	**-2.4**
JIO				S	**Sn**	**14 40 56.5**	**-1.6**
OFUJ	**Ofunato**	**1.20**	**323**	P	**Pn**	**14 40 44.

comp=E,900nm,14.0s
CN2 LR LR
NKL Nikolayevsk 15.08 356 *e*P **P** **14 44 00.5 -1.4**
NKL MLR MLR
comp=N,500nm,15.0s
NKL MLR MLR
comp=E,500nm,15.0s
NKL MLR MLR
comp=Z,900nm,15.0s
DL2 Dalian 16.43 279 P **P** **14 44 15.4 -1.6**
DL2 *e*S **Sn** **14 47 13.9 -2.0**
DL2 pmax pmax
comp=Z,54nm,1.0s
DL2 pmax pmax
comp=Z,210nm,7.5s
DL2 LR LR
comp=N,710nm,14.7s
DL2 LR LR
comp=E,510nm,17.5s
DL2 LR LR
comp=Z,860nm,16.0s
PEA0 Petropavlovsk- 18.27 30 *e*P **Pn** **14 44 37.6 +0.4**
PEA0B Petropavlovsk- 18.27 30 *e*P **Pn** **14 44 38.3 +1.1**
comp=Z,60nm,1.4s
PETK Petropavlovsk- 18.27 30 P **Pn** **14 44 38.6 +1.4**
comp=Z,0.3nm,0.3s,baz=209,slow=9.0,SNR=14
PETK LR LR 14 51 18.9
comp=Z,224nm,21.3s,baz=221,slow=36
PET Petropavlovsk 18.59 32 *e*P **Pn** **14 44 41.8 +0.7**
PET pmax pmax
comp=Z,40nm,1.0s
PET Petropavlovsk 18.59 32 *e*P **Pn** **14 44 41.8 +0.7**
comp=Z,40nm,1.0s
HIA Hailar 19.85 311 *e*P **P** **14 44 53.3 -1.2**
HIA pmax pmax
comp=Z,21nm,1.1s
HIA Hailar 19.85 311 *e*P **P** **14 44 53.3 -1.2**
comp=Z,21nm,1.1s
NJ2 Nanjing 20.33 260 *e*P **P** **14 45 00.3 +0.5**
NJ2 pmax pmax
comp=Z,25nm,0.6s
NJ2 LR LR
comp=Z,2μm,13.6s
TIA Tai'an 20.38 272 ⇓P **P** **14 44 58.5 -1.8**
TIA S S 14 48 35.8 -11
TIA pmax pmax
comp=Z,20nm,1.0s
TIA LR LR
comp=N,590nm,11.9s
TIA LR LR
comp=E,780nm,15.5s
TIA LR LR
comp=Z,480nm,19.6s
BJI Beijing 20.58 284 P **P** **14 45 00.0 -2.5**
BJI pP **pP** **14 45 10.3 +0.1**
BJI S **S** **14 48 49.3 -1.8**
BJI sS **sS** **14 49 02.1 -1.3**
BJI pmax pmax
comp=Z,20nm,1.8s
BJI pmax pmax
comp=Z,160nm,3.3s
BJI LR LR
comp=E,810nm,13.7s
BJI LR LR
comp=N,240nm,14.3s
BJI LR LR
comp=Z,440nm,15.2s
MA2 Magadan 22.09 11 P **P** **14 45 19.5 +0.9**
comp=Z,20nm,0.7s,baz=211,slow=11,SNR=10
MA2 LR LR 14 54 49.4
comp=Z,338nm,19.5s,baz=224,slow=39
MA2 Magadan 22.09 11 *e*P **P** **14 45 19.3 +0.7**
MA2 pmax pmax
comp=Z,77nm,0.8s
MA2 Magadan 22.09 11 *e*P **P** **14 45 19.3 +0.7**
comp=Z,77nm,0.8s
SSLB Suanglung 23.35 238 *e*P **P** **14 45 30.7 -1.4**
TPUB Ta-pu 23.90 238 *e*P **P** **14 45 34.3 -3.0**
comp=Z,46nm,1.0s
HHC Hu-ho-hao-te 24.04 286 *e*P **P** **14 45 37.5 -1.2**
HHC PP **PnPn** **14 46 10.8 +2.9**
HHC S S 14 49 39.6 -15
HHC pmax pmax
comp=Z,38nm,0.9s
HHC pmax pmax
comp=Z,140nm,4.4s
HHC LR LR
comp=N,1μm,12.3s
HHC LR LR
comp=E,1μm,12.2s
HHC LR LR
comp=Z,1μm,13.1s
QZH Quanzhou 24.23 244 *e*P **P** **14 45 43.3 +2.9**
QZH S **S** **14 49 53.0 -4.2**
QZH LR LR
comp=N,1μm,13.0s
QZH LR LR
comp=E,1μm,11.4s
QZH LR LR
comp=Z,1μm,18.6s
WHN Wuhan 24.46 260 P **P** **14 45 41.3 -1.1**
WHN S **S** **14 50 04.4 +3.7**
WHN LR LR
comp=N,1μm,12.2s
WHN LR LR
comp=E,3μm,16.0s
WHN LR LR
comp=Z,3μm,16.6s
CIT Chita 24.57 314 *e*P **P** **14 45 41.3 -2.0**
CIT *e* 14 45 50.1
CIT *e* 14 46 12.3
CIT pmax pmax
comp=Z,211nm,1.9s
YAK Yakutsk 25.23 346 P **P** **14 45 49.0 0.0**
comp=Z,0.9nm,0.3s,baz=329,slow=19,SNR=3.5
YAK LR LR 14 56 48.8
comp=Z,259nm,19.2s,baz=152,slow=39
YAK Yakutsk 25.23 346 *e*P **P** **14 45 48.7 -0.3**
YAK *e**PP **pP** **14 45 58.2 +0.9**
YAK *e*PPP PPP 14 46 31.4
YAK *e* 14 49 26.3
YAK *e*S **S** **14 50 10.9 -1.6**
YAK *e**SS **sS** **14 50 26.9 +0.7**
YAK *e* 14 56 41.5
YAK pmax pmax
comp=Z,36nm,0.9s
YAK pmax pmax
comp=E,15nm,1.5s
YAK pmax pmax
comp=N,35nm,1.3s
YAK pmax pmax
comp=Z,32nm,0.9s
YAK pmax pmax
comp=N,59nm,1.9s
YAK pmax pmax
comp=E,47nm,1.7s
YAK smax smax
comp=E,116nm,2.3s
YAK smax smax
comp=N,285nm,2.6s
YAK MLR MLR
comp=N,288nm,14.0s
YAK MLR MLR
comp=Z,254nm,13.0s
YAK MLR MLR
comp=E,317nm,17.0s
YAK Yakutsk 25.23 346 *e*P **P** **14 45 48.9 -0.1**
comp=E,40nm,0.6s
SEY Seymchan 25.54 10 P **P** **14 45 53.6 +1.8**
comp=E,14nm,0.7s,baz=188,slow=7.1,SNR=50
SEY Seymchan 25.54 10 *e*P **P** **14 45 52.9 +1.0**
BOD Bodaibo 27.13 326 *e*P **P** **14 46 05.9 -0.4**
BOD pmax pmax
comp=Z,17nm,1.0s
XAN Xi'an 27.43 272 P **P** **14 46 07.4 -1.9**
XAN pP pP 14 46 16.8 -0.9
XAN S **S** **14 50 56.8 +8.8**
XAN SS **SnSn** **14 52 07.8 +9.2**
XAN pmax pmax
comp=Z,14nm,0.9s
XAN pmax pmax
comp=Z,58nm,4.6s
XAN LR LR
comp=N,350nm,15.2s
XAN LR LR
comp=E,270nm,18.2s
XAN LR LR
comp=Z,420nm,16.2s
ULN Ulaanbaatar 27.55 302 *d i*P **P** **14 46 10.7 +0.4**
ULN pmax pmax
comp=Z,28nm,1.7s
ULN Ulaanbaatar 27.55 302 *e*P **P** **14 46 09.9 -0.5**
comp=Z,13nm,0.9s
H11N2 WAKE ISLAND Hy 27.94 124 T T 15 15 42.3
baz=310,SNR=1906
H11N1 WAKE ISLAND Hy 27.95 124 T T 15 16 42.8
baz=310,slow=74,SNR=1549
H11N3 WAKE ISLAND Hy 27.96 124 T T 15 16 43.4
baz=310,slow=74,SNR=2048
SONA1 Songino Array 27.98 302 *e*P **P** **14 46 13.4 -0.8**
SONM Songino Array 27.98 302 P **P** **14 46 14.6 +0.4**
comp=Z,5.4nm,0.7s,baz=112,slow=9.7,SNR=32
SONM LR LR 14 57 46.0
comp=Z,393nm,18.3s,baz=95,slow=37
ENH Enshi 28.37 264 *e*P **P** **14 46 16.7 -1.1**
comp=Z,123nm,0.9s
H11S1 WAKE ISLAND Hy 28.70 126 T T 15 16 23.7
baz=318,SNR=499
H11S3 WAKE ISLAND Hy 28.70 126 T T 15 17 35.3
baz=318,slow=74,SNR=583
H11S2 WAKE ISLAND Hy 28.72 126 T T 15 17 46.4
baz=318,slow=74,SNR=342
IRK Irkutsk 30.08 310 *e*P **P** **14 46 31.5 -1.2**
IRK pmax pmax
comp=Z,38nm,2.0s
TLY Talaya 30.35 309 *e*P **P** **14 46 36.2 +1.2**
TLY *e*S **S** **14 51 35.9 +2.4**
TLY pmax pmax
comp=Z,19nm,1.8s
TLY MLR MLR
comp=Z,578nm,15.0s
TLY Talaya 30.35 309 *e*P **P** **14 46 35.3 +0.2**
comp=Z,22nm,1.5s
ZAK Zakamensk 30.35 307 *e*P **P** **14 46 34.8 -0.4**
ZAK pmax pmax
comp=Z,12nm,1.3s
LZH Lanzhou 30.83 278 *e*P **P** **14 46 40.8 +1.2**
LZH pP sP 14 46 52.0 +0.5
LZH sP pP 14 46 56.1 +8.1
LZH *e*PP **PnPn** **14 47 42.3 +2.1**
LZH pmax pmax
comp=Z,23nm,1.3s
LZH pmax pmax
comp=Z,72nm,5.6s
LZH LR LR
comp=N,370nm,12.8s
LZH LR LR
comp=E,350nm,13.0s
LZH LR LR
comp=Z,430nm,16.7s
MOY Mondy 31.97 309 *e*P **P** **14 46 49.8 +0.3**
GYA Guiyang 32.34 260 ⇓*i*P **P** **14 46 51.8 -1.1**
GYA pP sP 14 47 03.6 -1.2
GYA PP **PnPn** **14 48 01.0 +1.1**
GYA PcP **PcP** **14 49 40.3 -0.1**
GYA S **S** **14 52 02.4 -2.8**
GYA sS sS 14 52 20.8 +1.7
GYA ScP **ScP** **14 53 20.6 -1.4**
GYA SS **SnSn** **14 53 57.0 -1.4**
GYA pmax pmax
comp=Z,40nm,0.9s
GYA pmax pmax
comp=Z,120nm,5.0s
GYA LR LR
comp=N,490nm,17.8s
GYA LR LR
comp=E,470nm,18.0s
GYA LR LR
comp=Z,440nm,17.9s
CD2 Chengdu 32.62 269 P **P** **14 46 53.6 -1.7**
CD2 pmax pmax
comp=Z,13nm,0.8s
BILL Biilibino 32.71 16⇓*e*P **P** **14 46 55.3 -0.3**
BILL *i* 14 47 04.2
BILL *e*S **S** **14 52 05.9 -4.1**
BILL pmax pmax
comp=Z,9.0nm,1.3s
BILL MLR MLR
comp=Z,113nm,16.0s
BILL Biilibino 32.71 16 *e*P **P** **14 46 55.3 -0.3**
comp=Z,7.1nm,1.0s
GTA Gaotai 33.16 286 *e*P **P** **14 46 59.0 -1.0**
GTA pP pP 14 47 08.3 -0.1
GTA sP sP 14 47 12.3 +0.4
GTA PcP PcP 14 49 51.5 +9.0
GTA S **S** **14 52 13.3 -4.5**
GTA sS sS 14 52 29.9 -1.7
GTA PcS PcS 14 53 37.1 +9.0
GTA SS **SnSn** **14 54 13.8 -4.2**
GTA pmax pmax
comp=Z,21nm,1.2s
GTA pmax pmax
comp=Z,140nm,5.5s
GTA LR LR
comp=N,290nm,14.0s
GTA LR LR
comp=E,640nm,14.7s
GTA LR LR
comp=Z,800nm,17.1s
QIZ Qiongzhong 34.24 245 P **P** **14 47 09.8 +0.4**
QIZ S **S** **14 52 35.8 +1.3**
QIZ LR LR
comp=N,490nm,12.5s
QIZ LR LR
comp=E,540nm,13.9s
QIZ LR LR
comp=Z,820nm,12.5s
TIXI Tiksi 34.33 352⇓*e*P **P** **14 47 09.3 -0.3**
TIXI pmax pmax
comp=Z,6.0nm,1.0s
TIXI Tiksi 34.33 352 *e*P **P** **14 47 11.7 +2.1**
comp=Z,4.5nm,0.8s
KMI Kunming 36.06 261 P **P** **14 47 24.6 -0.7**
KMI pP sP 14 47 35.9 -1.4
KMI sP pP 14 47 39.9 +6.1
KMI PP **PP** **14 48 48.4 +0.9**
KMI S **S** **14 53 00.3 -2.7**
KMI sS sS 14 53 18.1 +1.2
KMI SS **SnSn** **14 55 22.4 -6.4**
KMI pmax pmax
comp=Z,30nm,1.0s
KMI pmax pmax
comp=Z,97nm,6.0s
KMI LR LR
comp=N,630nm,14.5s
KMI LR LR
comp=E,440nm,13.3s
KMI LR LR
comp=Z,520nm,14.7s
KRAR Krasnoyarsk 37.34 315⇑*e*P **P** **14 47 36.1 +0.5**
KRAR pmax pmax
comp=Z,19nm,0.8s
TNA Tin City 39.44 30 *e*P **P** **14 47 53.8 +0.7**
comp=Z,17nm,1.4s
NONG Nongkai 39.75 251 P P 14 48 05.7 +9.4
comp=Z,22nm,1.1s
SWI Sorong 40.19 198 P P 14 48 06.4 +6.6
comp=Z,19nm,0.9s
CRAI Chiangrai 40.56 256 P **P** **14 48 03.0 0.0**
comp=Z,109nm,0.9s
WMQ Urumqi 41.20 296 P **P** **14 48 10.3 +2.2**
WMQ pP pP 14 48 16.4 -0.2
WMQ sP sP 14 48 21.6 +1.5
WMQ PcP **PcP** **14 50 08.8 +2.0**
WMQ S **S** **14 54 17.5 -2.3**
WMQ pmax pmax
comp=Z,29nm,1.0s
WMQ pmax pmax
comp=Z,24nm,3.6s
WMQ LR LR
comp=N,81nm,26.6s
WMQ LR LR
comp=E,54nm,26.6s
WMQ LR LR
comp=Z,46nm,31.8s
LOEI Loei 41.50 252 P **P** **14 48 13.4 +2.7**
comp=Z,17nm,0.8s,comp=Z,978nm
ZAA0 Zalesovo Array 41.89 311 *e*P **P** **14 48 12.7 -0.8**
ZALV Zalesovo Beam 41.89 311 P **P** **14 48 13.8 +0.4**
comp=Z,5.8nm,0.5s,baz=85,slow=6.6,SNR=9.8
ZALV LR LR 15 06 19.9
comp=Z,408nm,18.2s,baz=68,slow=37
CHAI Chaiyaphum 41.97 249 P P 14 48 21.6 +7.0
comp=Z,3.9nm,0.9s
MRSI Marisa 42.01 212 P **P** **14 48 19.0 +4.1**
comp=Z,24nm,1.4s
LAMP Lampang 42.12 255 P P 14 48 23.9 +8.1
comp=Z,6.3nm,0.8s
PBKT Sadao Pong 42.30 251 P P 14 48 25.0 +7.7
comp=Z,10nm,1.3s
CMMT Chiang Mai 42.47 256 P **P** **14 48 18.6 -0.1**
comp=Z,12nm,1.1s,comp=Z,654nm
CHTO Chiang Mai 42.48 256 P **P** **14 48 18.7 0.0**
comp=Z,50nm,1.1s
CHTO Chiang Mai 42.48 256 *e*P **P** **14 48 17.1 -1.6**
CHTO pmax pmax
comp=Z,9.0nm,0.8s
CHTO Chiang Mai 42.48 256 *e*P **P** **14 48 17.1 -1.6**
comp=Z,8.9nm,0.8s
NRIK Noril'sk 42.68 335 P **P** **14 48 21.1 +1.4**
comp=Z,1.3nm,0.5s,baz=109,slow=4.3,SNR=3.8
NRIK LR LR 15 07 07.8
comp=Z,470nm,18.8s,baz=110,slow=38
NRIK Noril'sk 42.68 335 P **P** **14 48 21.1 +1.4**
NRIK pmax pmax
comp=Z,4.0nm,0.7s
NRIK MLR MLR
comp=Z,470nm,18.8s
CMAR Chiang Mai Arr 42.69 255 P **P** **14 48 20.4 0.0**
comp=Z,2.0nm,0.8s,baz=51,slow=5.4,SNR=13
CMAR LR LR 15 08 16.3
comp=Z,83nm,18.8s,baz=52,slow=39
CM01 Chiang Mai Arr 42.70 255 *e*P **P** **14 48 19.3 -1.2**
NVS Novosibirsk 42.78 313 *i*P **P** **14 48 21.3 +0.6**
LSA Lhasa 43.05 275 P **P** **14 48 24.4 +0.6**
LSA pmax pmax
comp=Z,7.0nm,1.1s
SRAK Srakaew 43.15 247 P **P** **14 48 28.9 +4.7**
comp=Z,40nm,0.9s
PCI Palu 44.15 214 P **P** **14 48 36.0 +3.8**
comp=Z,33nm,1.2s
MK01 Makanchi Array 44.34 301 *e*P **P** **14 48 32.8 -0.7**
MK31 Makanchi Array 44.35 301 *i*P **P** **14 48 32.7 -0.8**
MK31 pmax pmax
comp=Z,14nm,0.8s
MK31 Makanchi Array 44.35 301 *e*P **P** **14 48 33.2 -0.3**
MKAR Makanchi Array 44.35 301 P **P** **14 48 33.3 -0.2**
comp=Z,11nm,0.8s,baz=86,slow=9.3,SNR=58
MKAR LR LR 15 07 43.5
comp=Z,164nm,18.8s,baz=78,slow=37
MKAR Makanchi Array 44.35 301 *e*P **P** **14 48 33.1 -0.4**
SHL Shillong 44.36 269 *e*P **P** **14 48 34.0 -0.1**
MAKZ Makanchi 44.55 301 P **P** **14 48 34.7 -0.5**
MAKZ pmax pmax
comp=Z,10.0nm,0.9s
MAKZ Makanchi 44.55 301 *e*P **P** **14 48 34.7 -0.5**
comp=Z,11nm,0.8s
SBUM Sibu 45.10 226 *e*P **P** **14 48 39.6 -0.2**
comp=Z,6.9nm,1.0s
RSO Redoubt South 45.46 39 *e*P **P** **14 48 41.0 -1.4**
CAST Castle Rocks 45.79 35 *e*P **P** **14 48 45.1 +0.3**
comp=Z,7.1nm,1.0s
SPU Mount Spurr 45.79 38 *e*P **P** **14 48 45.9 +1.1**
KURK Kurchatov 46.01 307 P **P** **14 48 45.9 -0.6**
KURK pmax pmax
comp=Z,47nm,0.7s
KURK Kurchatov 46.01 307 *e*P **P** **14 48 46.0 -0.6**
comp=Z,44nm,0.7s
KURBB Kurchatov Arra 46.08 307 P **P** **14 48 46.8 -0.3**
comp=Z,18nm,0.5s,baz=83,slow=8.2,SNR=191
BPAW Bear Paw Mtn. 46.30 34 *e*P **P** **14 48 49.5 +0.8**
comp=Z,20nm,1.8s
KTH Kantishna Hill 46.31 35 *e*P **P** **14 48 50.0 +1.0**
comp=Z,13nm,1.0s
TRF Thorofare Moun 46.60 35 *e*P **P** **14 48 52.9 +1.6**
comp=Z,8.2nm,1.0s
KSM Kuching 46.99 227 *e*P **P** **14 48 54.4 -0.2**
comp=Z,14nm,0.8s
PDGK Podgornoye 47.11 297 P **P** **14 48 55.2 -0.1**
MCK McKinley 47.20 34 *e*P **P** **14 48 56.3 +0.5**
MCK pmax pmax
comp=Z,7.0nm,1.0s
MCK McKinley 47.20 34 *e*P **P** **14 48 56.3 +0.5**
comp=Z,7.1nm,1.0s
RND Reindeer 47.24 35 *e*P **P** **14 48 56.5 +0.3**
RND pmax pmax
comp=Z,10.0nm,1.0s
RND Reindeer 47.24 35 *e*P **P** **14 48 56.5 +0.3**
comp=Z,10.0nm,1.0s
WRH Wood River Hil 47.56 33 *e*P **P** **14 48 59.0 +0.5**
comp=Z,5.5nm,0.9s
COLA College 47.65 33 *e*P **P** **14 48 59.1 -0.1**
COLA pmax pmax
comp=Z,23nm,0.3s
COLA College 47.65 33 *e*P **P** **14 48 59.1 -0.1**
comp=Z,23nm,0.3s
GUN Gumba 47.99 275 *e*P **P** **14 49 02.6 -0.2**
comp=Z,139nm,0.9s
IL1 Eielson Array 48.07 33 *e*P **P** **14 49 02.3 -0.1**
ILAR Eielson Array 48.07 33 P **P** **14 49 02.5 +0.1**
comp=Z,5.2nm,0.8s,baz=267,slow=6.4,SNR=58
ILB Eielson Array 48.07 33 *e*P **P** **14 49 02.4 0.0**
KKN Kakani 48.52 275 *e*P **P** **14 49 06.4 -0.3**
comp=Z,75nm,0.8s
KLU Klutina 48.73 37 *e*P **P** **14 49 07.1 -0.6**
comp=Z,9.2nm,1.0s
DMN Daman 48.73 275 *e*P **P** **14 49 08.1 -0.3**
DIV Divide 48.84 38 *e*P **P** **14 49 09.4 +0.9**
comp=Z,19nm,1.2s
GKN Gorkha 48.92 276 *e*P **P** **14 49 09.5 -0.2**
comp=Z,54nm,0.7s
KRAB Krabi 49.12 244 P **P** **14 49 11.7 +0.6**
comp=Z,58nm,0.9s
MENT Mentasta 49.60 35 *e*P **P** **14 49 15.6 +1.3**
comp=Z,6.8nm,0.7s
KOLN Koldanda 49.84 276 *e*P **P** **14 49 16.8 0.0**
TKM2 Tokmak 2 49.95 298 P **P** **14 49 17.6 +0.2**
TKM2 pmax pmax
comp=Z,4.0nm,1.1s
TKM2 Tokmak 2 49.95 298 *e*P **P** **14 49 17.6 +0.2**
comp=Z,11nm,0.8s
PKDT Phuket 49.96 245 P **P** **14 49 18.5 +1.0**
PYUN Piuthan 50.17 277 *e*P **P** **14 49 19.1 -0.2**
comp=Z,113nm,0.9s
KULM Kulim 50.18 240 *e*P **P** **14 49 19.2 0.0**
comp=Z,13nm,0.9s
CHKZ Chkalovo 50.26 313 P **P** **14 49 18.8 -0.6**
CHKZ pmax pmax
comp=Z,15nm,1.1s
IPM Ipoh 50.51 239 *e*P **P** **14 49 21.2 -0.5**
comp=Z,28nm,1.1s
EGAK Eagle 50.51 33 *e*P **P** **14 49 20.8 -0.4**
BVA0 Borovoye Array 50.54 312 P **P** **14 49 20.8 -0.7**
BVA0 pmax pmax
comp=Z,6.0nm,1.1s
BVAR Borovoye Array 50.54 312 P **P** **14 49 21.4 -0.1**
comp=Z,4.6nm,0.5s,baz=80,slow=11,SNR=21
OTUK Ortayu 50.55 305 P **P** **14 49 21.4 -0.3**
OTUK pmax pmax
comp=Z,10.0nm,1.1s
BRVK Borovoye 50.59 312⇓*i*P **P** **14 49 21.0 -0.9**
BRVK pmax pmax
comp=Z,6.0nm,0.8s
BRVK pmax pmax
comp=Z,14nm,1.2s
BRVK Borovoye 50.59 312 *e*P **P** **14 49 21.5 -0.4**
comp=Z,6.9nm,0.8s
FRU Bishkek 50.66 298 *e*P **P** **14 49 21.0 -1.6**
AAK Ala-Archa 50.81 298 P **P** **14 49 23.4 -0.5**
AAK pmax pmax
comp=Z,7.0nm,1.0s
AAK Ala-Archa 50.81 298 *e*P **P** **14 49 23.4 -0.5**
comp=Z,5.9nm,0.9s
KSH Kashi 50.83 294 *e*P **P** **14 49 28.4 +4.4**
KSH *e*pP sP 14 49 38.3 +2.1
KSH *e*sP pP 14 49 42.0 +9.2
KSH *e*PP **PP** **14 51 26.0 +5.8**
KSH S **S** **14 56 41.8 +3.5**
KSH ScS **ScS** **14 59 13.5 +0.6**
KSH pmax pmax
comp=Z,8.0nm,1.0s
KSH pmax pmax
comp=Z,100nm,3.8s
KSH LR LR
comp=N,260nm,13.7s
KSH LR LR
comp=E,330nm,12.9s

KSH LR LR
comp=Z,540nm,15.6s
EKS2 Erkin-Say 51.30 298 *eP* **P 14 49 26.9 -0.6**
EKS2 pmax pmax
comp=Z,5.0nm,0.8s
EKS2 Erkin-Say 51.30 298 *eP* **P 14 49 26.9 -0.6**
comp=Z,5.5nm,0.8s
ZRNK Zerenda 51.37 312 *eP* **P 14 49 27.0 -0.8**
ZRNK pmax pmax
comp=Z,14nm,0.9s
ZRNK Zerenda 51.37 312 *eP* **P 14 49 27.0 -0.8**
comp=Z,14nm,0.9s
MTN Manton Dam 51.83 194 *eP* **P 14 49 30.2 -1.3**
comp=Z,20nm,1.0s
MNAS Manas 52.24 298 P **P 14 49 34.6 0.0**
MNAS pmax pmax
comp=Z,12nm,0.9s
INK Inuvik 52.98 28 P **P 14 49 40.7 +1.2**
comp=Z,2.7nm,0.7s,baz=3.2,slow=2.7,SNR=5.3
INK Inuvik 52.98 28 *eP* **P 14 49 40.0 +0.5**
INK pmax pmax
comp=Z,26nm,2.0s
INK Inuvik 52.98 28 *eP* **P 14 49 40.0 +0.5**
comp=Z,26nm,2.0s
PSI Prapat 53.16 240 *eP* **P 14 49 41.1 -0.5**
PSI pmax pmax
comp=Z,17nm,0.8s
PSI Prapat 53.16 240 *eP* **P 14 49 41.1 -0.5**
comp=Z,17nm,0.8s
KK31 Karatay Array 53.40 300 *i* P **P 14 49 42.9 -0.1**
KK31 pmax pmax
comp=Z,9.0nm,0.9s
KKAR Karatay Array 53.40 300 *eP* **P 14 49 42.4 -0.6**
KKAR Karatay Array 53.40 300 *eP* **P 14 49 42.4 -0.6**
BKNI Bangkinang 53.59 236 *eP* **P 14 49 44.8 +0.2**
SVE Sverdlovsk 54.95 318⇑ *eP* **P 14 49 54.7 +0.6**
SVE pmax pmax
comp=Z,22nm,0.9s
SVE MLR MLR
comp=Z,642nm,15.0s
GSI Gunungsitoli 55.17 239 *eP* **P 14 49 55.5 -0.6**
comp=Z,147nm,1.5s
SOKR Solikamsk 56.03 322 *eP* P 14 50 08.8 +7.1
SOKR pmax pmax
comp=Z,19nm,1.3s
SOKR MLR MLR
comp=Z,135nm,14.0s
ARU Arti 56.17 318*c i*P **P 14 50 02.6 -0.2**
ARU 14 51 00.1
ARU 14 52 08.1
ARU S **S 14 57 50.6 +0.6**
ARU SS **SS 15 01 37.6 +1.5**
ARU pmax pmax
comp=Z,19nm,1.7s
ARU MLR MLR
comp=Z,646nm,18.0s
ARU Arti 56.17 318 *eP* **P 14 50 02.3 -0.5**
comp=Z,16nm,0.9s
DZET Dzherino 56.23 296 P **P 14 50 03.3 -0.3**
DZET pmax pmax
comp=Z,13nm,0.7s
DLBC Dease Lake 57.19 39 *eP* **P 14 50 11.2 +1.1**
comp=Z,15nm,1.3s
KBL Kabul 57.91 291 *eP* **P 14 50 14.7 -1.0**
KBL pmax pmax
comp=Z,14nm,0.8s
KBL Kabul 57.91 291 *eP* **P 14 50 14.7 -1.0**
comp=Z,14nm,0.8s
AB31 Akbulak array 57.96 310 P **P 14 50 14.6 -1.0**
AB31 pmax pmax
comp=Z,5.0nm,0.7s
ABKAR Akbulak array 57.96 310 *eP* **P 14 50 14.8 -0.8**
FITZ Fitzroy Crossi 58.16 199 *eP* **P 14 50 17.0 -0.1**
comp=Z,9.6nm,1.0s
WRAB Tennant Creek 58.27 189 *i* P **P 14 50 17.3 -0.7**
WRAB Tennant Creek 58.27 189 *eP* **P 14 50 17.9 0.0**
comp=Z,11nm,0.8s
WB2 Warramunga Arr 58.28 189 *eP* **P 14 50 16.8 -1.2**
comp=Z,9.9nm,0.8s
WRA Warramunga Arr 58.28 189 P **P 14 50 16.8 -1.3**
comp=Z,5.2nm,0.8s,baz=6.7,slow=7.0,SNR=32
AKTO Aktyubinsk 58.65 312 P **P 14 50 20.3 -0.1**
comp=Z,6.2nm,0.8s,baz=72,slow=10,SNR=14
AKTO Aktyubinsk 58.65 312 P **P 14 50 19.9 -0.5**
AKTO pmax pmax
comp=Z,8.0nm,0.8s
HYB Hyderabad 59.17 269 *i* P **P 14 50 25.0 +0.5**
SPITS Spitsbergen Ar 59.63 349 P **P 14 50 26.6 -0.2**
comp=Z,0.9nm,0.6s,baz=284,slow=5.8,SNR=7.3
AS01 Alice Springs 62.00 189 *eP* **P 14 50 43.2 -0.3**
AS31 Alice Springs 62.01 189 *eP* **P 14 50 43.5 -0.1**
comp=Z,1.4nm,0.8s
ASAR Alice Springs 62.01 189 P **P 14 50 43.0 -0.6**
comp=Z,1.0nm,0.7s,baz=14,slow=6.8,SNR=20
ASAR Alice Springs 62.01 189 P **P 14 50 43.0 -0.6**
ASAR pmax pmax
comp=Z,1.0nm,0.7s
YKW3 Yellowknife Ar 62.35 31 *eP* **P 14 50 45.5 0.0**
comp=Z,20nm,1.8s
YKA Yellowknife Ar 62.39 31 P **P 14 50 45.8 +0.2**
comp=Z,2.7nm,0.7s,baz=304,slow=6.7,SNR=47
YKA Yellowknife Ar 62.39 31 *i* P **P 14 50 45.7 0.0**
YKA pmax pmax
comp=Z,3.0nm,0.7s
YKB5 Yellowknife Ar 62.39 31 *eP* **P 14 50 44.8 -0.8**
ARCES ARCESS Array B 63.30 339 P **P 14 50 51.7 0.0**
comp=Z,2.6nm,0.8s,baz=54,slow=6.6,SNR=4.6
KLMR Klimovskoe 63.34 328 *eP* **P 14 50 51.6 -0.4**
KLMR pmax pmax
comp=Z,25nm,1.5s
DZM Mont Dzumac 63.93 155 *e*LR LR 15 09 54.9
comp=Z,171nm,22.9s
GEYT Alibeck 64.13 299 P **P 14 50 58.0 +0.3**
comp=Z,3.8nm,0.9s,baz=236,slow=1.6,SNR=7.3
GEYT LR LR 15 19 59.2
comp=Z,145nm,19.6s,baz=60,slow=37
DAG Danmarks Havn 64.77 355 *i* P **P 14 51 01.1 -0.1**
comp=Z,2.7nm,0.8s
DAG Danmarks Havn 64.77 355 *i* P **P 14 51 01.1 -0.1**
DAG pmax pmax
comp=Z,2.0nm,0.8s
NLWA Neilton Lookou 65.28 48 *eP* **P 14 51 06.8 +1.8**
comp=Z,22nm,1.1s
MOS Moscow 66.93 324 *eP* **P 14 51 17.2 +1.8**
B08A Colville Reser 67.40 46 *eP* **P 14 51 17.3 -1.3**
comp=Z,15nm,1.3s
VRH Novokhopyorsk 67.40 318 *eP* **P 14 51 20.7 +2.2**
VRH pmax pmax
comp=Z,7.0nm,0.4s
VRH MLR MLR
comp=Z,470nm,13.0s
OBN Obninsk 67.78 323⇑ *eP* **P 14 51 21.3 +0.5**
OBN *i* 14 51 30.0
OBN pmax pmax
comp=Z,6.0nm,1.1s
OBN MLR MLR
comp=Z,233nm,15.0s
LPSR Galich'ya Gora 68.07 320 *eP* **P 14 51 22.7 +0.1**
LPSR pmax pmax
comp=Z,6.0nm,0.7s
LPSR MLR MLR
comp=Z,400nm,20.0s
FINES FINESS Array B 68.28 332 P **P 14 51 24.3 +0.4**
comp=Z,4.2nm,0.8s,baz=22,slow=6.2,SNR=7.2
FINES LR LR 15 23 24.7
comp=Z,280nm,18.8s,baz=39,slow=38
NEW Newport 68.69 45 *eP* **P 14 51 27.2 +0.5**
NEW pmax pmax
comp=Z,10.0nm,1.0s
NEW Newport 68.69 45 *eP* **P 14 51 27.2 +0.5**
comp=Z,9.9nm,1.0s
VSR Storozhevoye 68.73 319 *eP* **P 14 51 26.6 -0.2**
VSR pmax pmax
comp=Z,7.0nm,0.6s
VSR MLR MLR
comp=Z,470nm,12.0s
YBH Yreka Blue Hor 68.93 53 P **P 14 51 28.7 +0.3**
comp=Z,3.3nm,1.0s,baz=297,slow=5.4,SNR=3.9
K05A Summer Lake 69.53 51 *eP* **P 14 51 33.7 +1.5**
comp=Z,20nm,1.1s
SUMG Summit 69.59 0 *i* P **P 14 51 33.3 +1.0**
comp=Z,5.9nm,0.7s
SUMG Summit 69.59 0 *eP* **P 14 51 33.0 +0.7**
SUMG pmax pmax
comp=Z,10.0nm,1.0s
SUMG Summit 69.59 0 *eP* **P 14 51 33.0 +0.7**
comp=Z,9.6nm,1.0s
MOD Modoc Plateau 70.34 52 *eP* **P 14 51 37.8 +0.6**
YBMT Yellow Bay 70.64 44 *eP* **P 14 51 39.8 +0.9**
ZEI Tsey 70.83 310 *eP* **P 14 51 38.5 -1.7**
ZEI pmax pmax
comp=Z,17nm,0.9s
SWMT Swartz Lake 70.85 44 *eP* **P 14 51 40.8 +0.6**
KIV Kislovodsk 70.90 311*c i*P **P 14 51 41.0 +0.6**
KIV *i* 14 51 47.8
KIV *i* 14 51 58.2
KIV *e* 14 54 17.3
KIV pmax pmax
comp=Z,4.0nm,1.1s
KBZ Khabaz 70.90 311 P **P 14 51 41.3 +1.0**
comp=Z,4.3nm,0.9s,baz=31,slow=3.0,SNR=9.4
KBZ LR LR 15 27 40.1
comp=Z,175nm,18.1s,baz=26,slow=40
NEY Neytrino 71.28 311⇓ *eP* **P 14 51 44.0 +1.1**
NEY pmax pmax
comp=Z,1.0nm,0.7s
FFC Flin Flon 72.28 33 *eP* **P 14 51 48.7 +0.3**
FFC pmax pmax
comp=Z,9.0nm,0.8s
FFC Flin Flon 72.28 33 *eP* **P 14 51 48.7 +0.3**
comp=Z,8.8nm,0.8s
FCC Fort Churchill 72.60 27 *eP* **P 14 51 50.1 -0.1**
FCC pmax pmax
comp=Z,8.0nm,1.1s
FCC Fort Churchill 72.60 27 *eP* **P 14 51 50.1 -0.1**
comp=Z,8.1nm,1.1s
LRM Limekiln Ridge 72.71 45 *eP* **P 14 51 52.2 +0.7**
DLMT Dillon 72.90 45 *eP* **P 14 51 53.1 +0.6**
comp=Z,5.0nm,0.8s
HLID Hailey 72.94 48 *eP* **P 14 51 53.8 +1.0**
comp=Z,3.6nm,1.0s
BOZ Bozeman (W) 73.27 45 *eP* **P 14 51 55.5 +0.8**
BOZ pmax pmax
comp=Z,5.0nm,0.9s
BOZ Bozeman (W) 73.27 45 *eP* **P 14 51 55.5 +0.8**
comp=Z,5.3nm,0.9s
NB2 NORSAR Subarra 73.54 338 P **P 14 51 55.9 +0.1**
comp=Z,7.4nm,0.8s,baz=39,slow=6.2
NOA NORSAR Array B 73.54 338 P **P 14 51 56.9 +1.1**
comp=Z,3.0nm,0.8s,baz=38,slow=5.9,SNR=6.6
NOA LR LR 15 27 18.3
comp=Z,131nm,18.8s,baz=20,slow=38
NV01 Mina Array Sit 73.58 54 *eP* **P 14 51 57.5 +0.7**
NVAR Mina Array Bea 73.58 54 P **P 14 51 58.0 +1.3**
comp=Z,2.7nm,0.9s,baz=296,slow=7.2,SNR=13
NVAR LR LR 15 20 46.8
comp=Z,23nm,18.7s,baz=274,slow=38
NBO02 NORSAR Array S 73.64 338 *eP* **P 14 51 56.7 +0.3**
AKASG Malin Array Be 74.01 323 P **P 14 51 58.6 0.0**
comp=Z,1.0nm,0.4s,baz=44,slow=6.5,SNR=13
AKASG LR LR 15 27 15.4
comp=Z,194nm,19.0s,baz=345,slow=38
AKASG Malin Array Be 74.01 323 P **P 14 51 58.7 0.0**
AKASG pmax pmax
comp=Z,3.0nm,0.7s
AKASG MLR MLR
comp=Z,194nm,19.0s
KIEV Kiev 74.02 323⇑*i i*P **P 14 51 58.1 -0.6**
KIEV pmax pmax
comp=Z,6.0nm,1.1s
KIEV Kiev 74.02 323 *eP* **P 14 51 58.7 0.0**
comp=Z,7.2nm,0.7s
AK11 Malin Array Si 74.05 323 *eP* **P 14 51 58.7 -0.2**
H17A Grant Village 74.63 45 *eP* **P 14 52 05.4 +2.6**
comp=Z,11nm,1.0s
IMW Indian Meadow 74.74 46 *eP* **P 14 52 05.0 +1.5**
comp=Z,6.5nm,0.9s
FLWY Flagg Ranch 74.76 46 *eP* **P 14 52 05.3 +1.9**
comp=Z,14nm,1.4s
FXWY Fox Creek 74.85 46 *eP* **P 14 52 05.4 +1.4**
comp=Z,5.5nm,1.0s
RLMT Red Lodge 74.90 44 *eP* **P 14 52 05.2 +0.8**
comp=Z,6.0nm,1.1s
MOOW Moose Ponds 74.94 46 *eP* **P 14 52 06.0 +1.4**
comp=Z,5.8nm,1.0s
HVU Hansel Valley 74.98 49 *eP* **P 14 52 05.7 +1.0**
HVU pmax pmax
comp=Z,5.0nm,1.0s
HVU Hansel Valley 74.98 49 *eP* **P 14 52 05.7 +1.0**
comp=Z,5.0nm,1.0s
LOHW Long Hollow 75.10 46 *eP* **P 14 52 06.6 +1.1**
comp=Z,6.3nm,1.3s
REDW Red Top Meadow 75.12 46 *eP* **P 14 52 06.7 +1.1**
comp=Z,6.0nm,1.0s
SIM Simferopol' 75.20 316 *eP* P 14 52 13.1 +7.3
SIM *e* 14 52 23.0
SIM pmax pmax
comp=Z,8.0nm,0.6s
SIM MLR MLR
comp=N,140nm,17.2s
R11A Troy Canyon, C 75.35 53 *eP* **P 14 52 07.8 +0.8**
comp=N,5.0nm,1.1s
LAO LASA Array 75.53 42 *eP* **P 14 52 08.6 +0.8**
comp=N,14nm,1.1s
TPNV Topopah Spring 75.77 54 *eP* **P 14 52 10.2 +0.8**
TPNV pmax pmax
comp=Z,22nm,0.4s
TPNV Topopah Spring 75.77 54 *eP* **P 14 52 10.2 +0.8**
comp=Z,22nm,0.4s
HWUT Hardware Ranch 75.80 48 *eP* **P 14 52 10.7 +1.2**
comp=Z,12nm,1.3s
DUG Dugway, Tooele 75.93 50 *eP* **P 14 52 10.8 +0.6**
DUG pmax pmax
comp=Z,5.0nm,0.9s
DUG Dugway, Tooele 75.93 50 *eP* **P 14 52 10.8 +0.6**
comp=Z,5.2nm,0.9s
TCUT Toone Canyon 76.19 48 *eP* **P 14 52 12.6 +0.8**
comp=Z,20nm,1.2s
BW06 Boulder Array 76.23 46 *eP* **P 14 52 12.0 0.0**
comp=Z,0.2nm,1.1s
PD31 Pinedale Array 76.23 46 *eP* **P 14 52 11.9 0.0**
PDAR Pinedale Array 76.23 46 P **P 14 52 12.4 +0.5**
comp=Z,1.5nm,0.7s,baz=272,slow=2.3,SNR=17
PSUT Pine Spring 76.31 52 *eP* **P 14 52 13.2 +0.7**
comp=Z,5.8nm,1.1s
NLU North Lily Min 76.52 50 *eP* **P 14 52 14.4 +0.7**
comp=Z,2.6nm,0.8s
SHPR Sheep Range 76.73 54 *eP* **P 14 52 15.7 +0.8**
comp=Z,32nm,0.4s
MSU Marysvale 77.36 51 *eP* **P 14 52 19.2 +0.8**
MSU Marysvale 77.36 51 *eP* **P 14 52 19.2 +0.8**
P17A Butcher Ranch, 77.63 49 *eP* **P 14 52 20.8 +1.0**
comp=Z,8.1nm,0.9s
LCMT Little Creek M 77.64 53 *eP* **P 14 52 21.0 +1.1**
comp=Z,8.6nm,0.4s
MTPU Mount Pierson 77.65 51 *eP* **P 14 52 21.8 +1.6**
comp=Z,4.3nm,1.0s
P18A Preston Nutter 77.82 49 *eP* **P 14 52 22.0 +0.9**
comp=Z,5.5nm,0.9s
KNB Kanab 77.90 52 *eP* **P 14 52 22.0 +0.6**
KNB pmax pmax
comp=Z,10.0nm,0.6s
KNB Kanab 77.90 52 *eP* **P 14 52 22.0 +0.6**
comp=Z,10nm,0.6s
SRU San Rafael Swe 77.99 50 *eP* **P 14 52 22.5 +0.6**
SRU pmax pmax
comp=Z,10.0nm,1.0s
SRU San Rafael Swe 77.99 50 *eP* **P 14 52 22.5 +0.6**
comp=Z,10nm,1.0s
K22A Casper 78.01 45 *eP* **P 14 52 21.9 0.0**
comp=Z,8.1nm,1.1s
BUR08 Bucovina Ar. S 78.02 322 *eP* **P 14 52 22.5 +0.7**
RSSD Black Hills 78.39 42 *eP* **P 14 52 24.0 0.0**
RSSD pmax pmax
comp=Z,5.0nm,0.8s
RSSD Black Hills 78.39 42 *eP* **P 14 52 24.0 0.0**
comp=Z,4.9nm,0.8s
TIRR Tirgusor 78.59 318 *eP* **P 14 52 25.0 +0.2**
TIRR pmax pmax
comp=Z,12nm,1.5s
TIRR Tirgusor 78.59 318 *eP* **P 14 52 25.0 +0.2**
comp=Z,12nm,1.5s
STHS Stebnicka Huta 78.60 325 *eP* **P 14 52 24.9 0.0**
STHS *e* 14 52 34.0
STHS pmax pmax
comp=Z,4.0nm,0.8s
STHS Stebnicka Huta 78.60 325 *eP* **P 14 52 24.9 0.0**
STHS *e* 14 52 34.0
BRTR Keskin Array B 78.83 312 P **P 14 52 26.9 +0.4**
comp=Z,0.5nm,0.4s,baz=111,slow=5.9,SNR=6.0
BRTR LR LR 15 32 20.1
comp=Z,63nm,19.3s,baz=52,slow=40
MLR Muntele Rosu 79.16 320 *eP* **P 14 52 27.5 -0.6**
MLR pmax pmax
comp=Z,9.0nm,1.2s
MLR Muntele Rosu 79.16 320 *eP* **P 14 52 27.5 -0.6**
comp=Z,8.6nm,1.2s
BR231 Keskin MP Arra 79.25 313 *eP* **P 14 52 26.9 -1.8**
PV10 Paradox Valley 79.35 49 *eP* **P 14 52 30.3 +0.9**
N23A Red Feather La 79.50 46 *eP* **P 14 52 30.4 +0.2**
comp=Z,7.2nm,0.8s
PV05 Paradox Valley 79.50 50 *eP* **P 14 52 31.3 +1.0**
MORC Moravsky Berou 79.95 327 *eP* **P 14 52 31.4 -0.9**
MORC pmax pmax
comp=Z,30nm,1.0s
MORC Moravsky Berou 79.95 327 *eP* **P 14 52 31.4 -0.9**
comp=Z,30nm,1.0s
DPC Dobruska-Polom 80.03 328 *eP* **P 14 52 34.6 +2.0**
DPC *ep*P **pP 14 52 42.0 +0.2**
DPC Dobruska-Polom 80.03 328 *eP* **P 14 52 34.6 +2.0**
DPC *e* 14 52 42.0
SMCO Snowmass 80.04 48 *eP* **P 14 52 32.7 -0.7**
comp=Z,9.7nm,1.5s
VYHS Vyhne 80.36 326 *eP* **P 14 52 34.8 +0.4**
VYHS *e* 14 52 44.2
VYHS pmax pmax
comp=Z,5.0nm,1.4s
VYHS Vyhne 80.36 326 *eP* **P 14 52 34.8 +0.4**
VYHS *e* 14 52 44.1
BRG Berggiesshubel 80.59 330 *eP* pP 14 52 44.1 -0.6
comp=Z,6.0nm,1.1s
BRG Berggiesshubel 80.59 330 *eP* **pP 14 52 44.1 -0.6**
BRG pmax pmax
comp=Z,6.0nm,1.1s
PVCC Panska Ves 80.61 329 AMS AMS 15 30 50.0
comp=Z,500nm,14.9s
CLL Collm 80.61 331 *eP* **P 14 52 36.0 +0.3**
CLL Collm 80.61 331 *eP* **P 14 52 36.0 +0.3**
S22A 4UR Ranch, Cre 81.08 49 *eP* **P 14 52 39.7 +0.9**
comp=Z,3.3nm,0.9s
SDCO Great Sand Dun 81.86 48 *eP* **P 14 52 43.9 +0.9**
comp=Z,3.4nm,1.1s
KHC Kasperske Hory 82.10 329 *eP* **P 14 52 44.5 +0.8**
KHC *ep*P **pP 14 52 52.5 -0.3**
KHC Kasperske Hory 82.10 329 *eP* **P 14 52 44.5 +0.8**
KHC *e* 14 52 52.5
GERES GERESS Array B 82.27 329 P **P 14 52 45.0 +0.3**
comp=Z,0.4nm,0.3s,baz=57,slow=4.9,SNR=4.0
ECSD EROS Data Cent 82.48 39 *eP* **P 14 52 44.0 -1.7**
comp=Z,4.9nm,0.9s
ANMO Albuquerque 83.17 51 *eP* **P 14 52 50.5 +0.8**
ANMO pmax pmax
comp=Z,4.0nm,1.0s
ANMO Albuquerque 83.17 51 *eP* **P 14 52 50.5 +0.8**
comp=Z,3.9nm,1.0s
319A Douglas 83.76 55 *eP* **P 14 52 53.9 +1.2**
comp=Z,9.4nm,1.0s
SCHQ Schefferville 84.03 17 LR LR 15 33 18.3
comp=Z,44nm,18.5s,baz=338,slow=38
PPT2 Papeete2 84.30 117 *e*LR LR 15 19 24.5
comp=Z,150nm,24.5s
EIL Elat 84.56 304 P **P 14 52 57.6 +0.9**
comp=Z,4.5nm,0.7s,baz=21,slow=12,SNR=3.7
EIL LR LR 15 36 24.6
comp=Z,83nm,18.1s,baz=57,slow=40
BFO Black Forest 84.81 331 *i* P **P 14 52 59.1 +1.5**
FUORN Ofenpass-Fuorn 85.45 329 *eP* **P 14 52 58.9 -2.3**
comp=Z,11nm,0.9s
TAOE Nuku Hiva Isla 85.53 105 *e*LR LR 15 20 09.2
comp=Z,137nm,22.8s
JFWS Jewell Farm 86.14 36 *eP* **P 14 53 03.4 -0.9**
JFWS pmax pmax
comp=Z,14nm,0.8s
JFWS Jewell Farm 86.14 36 *eP* **P 14 53 03.4 -0.9**
comp=Z,14nm,0.8s
TXAR Lajitas Array 88.71 53 P **P 14 53 17.8 +0.7**
comp=Z,0.9nm,0.8s,baz=289,slow=3.8,SNR=5.2
TXAR LR LR 15 27 17.0
comp=Z,40nm,21.6s,baz=0.0,slow=32
CCM Cathedral Cave 89.42 40 *eP* **P 14 53 19.9 -0.2**
CCM pmax pmax
comp=Z,15nm,1.4s
CCM Cathedral Cave 89.42 40 *eP* **P 14 53 19.9 -0.2**
comp=Z,15nm,1.4s
ESDC Sonseca Array 96.72 335 LR LR 15 40 51.4
comp=Z,85nm,21.0s,baz=355,slow=38
TORD Torodi Ar. Bea 117.21 316 PKP **PKPdf 14 59 07.7 -1.3**
comp=Z,0.3nm,0.8s,baz=3.7,slow=3.4,SNR=2.9
LPAZ La Paz 145.33 60 PKPbc **PKPdf 15 00 02.4 +0.2**
comp=Z,2.2nm,0.8s,baz=287,slow=2.5,SNR=8.6
LVC Limon Verde 148.91 69 *e*PKPdf **PKPdf 15 00 08.2 +0.4**

ISCJB ***23*** *14:43:26.5±0.5,39°.13N±0°.03×29°.00E±0°.04, h6km±6km, Error ellipse: s-maj=5.9km s-min=4.8km az=168.4*
CSEM ***23*** *14:43:26.6±0.1,39°.12N×29°.01E, h8km, ML2.6, Error ellipse: s-maj=2.4km s-min=2.2km az=121.0*
ISK ***23*** *14:43:26.2,39°.13N×29°.04E, h9km, MD2.7*
DDA ***23*** *14:43:26.1,39°.17N×28°.99E, h7km, Ml2.6*
ISC 23 14:43:26.5±0.9, 39°.13N±0°.03×28°.99E±0°.02, h13km±8km, n30,σ0s32/40, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.23**	**247**	P	**Pg**	**14 43 31.7**	**+0.2**
DEMI				S	**Sg**	**14 43 34.9**	**0.0**
DEMI	**Demirci**	**0.23**	**247**	*i* P	**Pg**	**14 43 31.7**	**+0.2**
DEMI				*i* S	**Sg**	**14 43 34.9**	**0.0**
GDZ	**Gediz**	**0.39**	**96**	P	**Pg**	**14 43 34.3**	**-0.1**
GDZ				S	**Sg**	**14 43 39.7**	**0.0**
GDZ	**Gediz**	**0.39**	**96**	*i* P	**Pg**	**14 43 34.3**	**-0.1**
GDZ				*i* S	**Sg**	**14 43 39.7**	**0.0**
TVSB	**Tavsanli**	**0.49**	**49**	*e*PG	**Pg**	**14 43 35.9**	**-0.3**
TVSB				*e*SG	**Sg**	**14 43 42.2**	**-0.6**
TVSB	**Tavsanli**	**0.49**	**49**	*e*Pg	**Pg**	**14 43 35.9**	**-0.3**
TVSB				*e*Sg	**Sg**	**14 43 42.2**	**-0.6**
DURS	**Dursunbey**	**0.61**	**320**	P	**Pb**	**14 43 39.3**	**+0.1**
DURS				S	**Sg**	**14 43 46.1**	**-0.6**
DURS	**Dursunbey**	**0.61**	**320**	*i* P	**Pb**	**14 43 39.3**	**+0.1**
DURS				*i* S	**Sg**	**14 43 46.1**	**-0.6**
KULA	**Kula-Manisa**	**0.67**	**203**	*e*PG	**Pb**	**14 43 39.7**	**-0.3**
KULA	**Kula-Manisa**	**0.67**	**203**	*e*Pg	**Pb**	**14 43 39.7**	**-0.3**
KHL	**Karahalli**	**0.91**	**152**	*e*PG	**Pg**	**14 43 44.0**	**-0.1**
KHL	**Karahalli**	**0.91**	**152**	*e*Pg	**Pg**	**14 43 44.0**	**-0.1**
ORLT	**Orhaneli**	**0.92**	**356**	*e*PG	**Pg**	**14 43 44.1**	**-0.1**
ORLT				*e*SG	**Sn**	**14 43 58.3**	**+0.1**
ORLT	**Orhaneli**	**0.92**	**356**	*e*Pg	**Pg**	**14 43 44.2**	**-0.1**
ORLT				*e*Sg	**Sn**	**14 43 58.3**	**+0.1**
AKS	**Akhisar**	**0.95**	**255**	*e*PG	**Pn**	**14 43 45.5**	**0.0**
AKS	**Akhisar**	**0.95**	**255**	*e*Pg	**Pn**	**14 43 45.5**	**0.0**
KCTX	**Karacabey (Bur**	**1.23**	**337**	*e*PN	**Pg**	**14 43 50.2**	**-0.1**
KCTX	**Karacabey (Bur**	**1.23**	**337**	*e*Pn	**Pg**	**14 43 50.2**	**-0.1**
CAVI	**Cavuskoy**	**1.26**	**31**	*e*PN	**Pb**	**14 43 50.2**	**+0.1**
CAVI	**Cavuskoy**	**1.26**	**31**	*e*Pn	**Pb**	**14 43 50.2**	**+0.1**
IZI	**Iznik**	**1.26**	**17**	*e*PN	**Pg**	**14 43 50.5**	**-0.3**
IZI	**Iznik**	**1.26**	**17**	*e*Pn	**Pg**	**14 43 50.6**	**-0.3**
GONE	**Gonen-Balikesi**	**1.36**	**313**	*e*PN	**Pg**	**14 43 52.5**	**-0.2**
GONE	**Gonen-Balikesi**	**1.36**	**313**	*e*Pn	**Pg**	**14 43 52.5**	**-0.2**
ADVT	**Abdulvahap**	**1.43**	**24**	*e*PN	**Pb**	**14 43 52.8**	**-0.2**
ADVT	**Abdulvahap**	**1.43**	**24**	*e*Pn	**Pb**	**14 43 52.8**	**-0.2**
ARMT	**Armutlu**	**1.44**	**356**	*e*PN	**Pb**	**14 43 53.5**	**+0.3**
ARMT	**Armutlu**	**1.44**	**356**	*e*Pn	**Pb**	**14 43 53.5**	**+0.3**
GULT	**Gulveren**	**1.75**	**42**	*e*PN	**Pn**	**14 43 57.4**	**+0.7**
GULT	**Gulveren**	**1.75**	**42**	*e*Pn	**Pn**	**14 43 57.4**	**+0.7**

RSPR 23 14:45:53.7, 18°.89N×65°.50W, h18km±6km, MD3.3/3, 3D, Puerto Rico region

Code	Station Name	Δ°	AZ°	Phase ID Op	Phase ID ISC	Time h m s	Res ISC
CBYP	**Canovanas**	**0.70**	**209**	*e*S	Sb	14 46 15.4	-1.4
CBYP	**Canovanas**	**0.70**	**209**	‖ *i*P	Pb	14 46 05.7	-1.7
MTP	**Monte Pirata**	**0.79**	**184**	*e*S	Sb	14 46 17.3	-2.0
MTP	**Monte Pirata**	**0.79**	**184**	‖ *i*P	Pb	14 46 07.0	-1.9
CELP	**Cerrillos**	**1.31**	**232**	*e*S	Sn	14 46 30.3	-3.8
AOPR	**Arecibo Observ**	**1.31**	**246**	‖ *e*P	Pn	14 46 14.4	-2.7
AOPR	**Arecibo Observ**	**1.31**	**246**	*e*S	Sn	14 46 31.0	-3.2
CRPR	**Cabo Rojo, PR**	**1.77**	**240**	*e*S	Sn	14 46 41.8	-3.6

ISK ***23*** *14:47:23.8, 39°.08N×29°.09E, h8km, ML2.8*
ISCJB ***23*** *14:47:24.3±0.4, 39°.07N±0°.03×29°.05E±0°.03, h9km, Error ellipse: s-maj=4.6km s-min=3.7km az=162.4*

*DDA **23** 14:47:24.2, 39°.11N×29°.04E, h7km, Ml2.4*
*CSEM **23** 14:47:24.3±0.1, 39°.08N×29°.04E, h6km±1km, ML2.4, Error ellipse: s-maj=2.5km s-min=1.8km az=166.0°*
ISC 23 14:47:24.6±0.9, 39°.09N±0°.03×29°.05E±0°.02, h9km, n49, σ0°.38/57, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**261**	P	**Pg**	**14 47 30.0**	**+0.1**
DEMI				S	**Sg**	**14 47 33.8**	**+0.3**
DEMI	**Demirci**	**0.27**	**261**	*i* P	**Pg**	**14 47 30.1**	**+0.1**
DEMI				*i* S	**Sg**	**14 47 33.8**	**+0.3**
GDZ	**Gediz**	**0.33**	**90**	P	**Pg**	**14 47 31.4**	**+0.1**
GDZ				S	**Sg**	**14 47 36.7**	**+1.0**
GDZ	**Gediz**	**0.33**	**90**	*i* P	**Pg**	**14 47 31.4**	**+0.1**
GDZ				*i* S	**Sg**	**14 47 36.7**	**+1.0**
TVSB	**Tavsanli**	**0.48**	**41**	*e*PG	**Pg**	**14 47 33.9**	**-0.1**
TVSB				*e*SG	**Sg**	**14 47 40.3**	**-0.1**
TVSB	**Tavsanli**	**0.48**	**41**	*e*Pg	**Pg**	**14 47 33.9**	**-0.1**
TVSB				*e*Sg	**Sg**	**14 47 40.3**	**-0.1**
KULA	**Kula-Manisa**	**0.65**	**208**	*e*PG	**Pg**	**14 47 36.8**	**-0.3**
KULA	**Kula-Manisa**	**0.65**	**208**	*e*Pg	**Pg**	**14 47 36.8**	**-0.3**
KHL	**Karahalli**	**0.85**	**154**	*e*PG	**Pg**	**14 47 40.5**	**-0.4**
KHL				*e*SG	**Sg**	**14 47 51.7**	**-0.2**
KHL	**Karahalli**	**0.85**	**154**	*e*Pg	**Pg**	**14 47 40.5**	**-0.4**
KHL				*e*Sg	**Sg**	**14 47 51.7**	**-0.2**
ORLT	**Orhaneli**	**0.97**	**353**	*e*PG	**Pg**	**14 47 42.4**	**-0.8**
ORLT	**Orhaneli**	**0.97**	**353**	*e*Pg	**Pg**	**14 47 42.4**	**-0.8**
AKHS	**Akhisar**	**0.99**	**258**	P	**Pg**	**14 47 42.6**	**-1.0**
AKHS	**Akhisar**	**0.99**	**258**	*i* P	**Pg**	**14 47 42.6**	**-1.0**
AKS	**Akhisar**	**0.99**	**258**	*e*PG	**Pg**	**14 47 43.5**	**-0.1**
AKS	**Akhisar**	**0.99**	**258**	*e*Pg	**Pg**	**14 47 43.5**	**-0.1**
BALB	**Balikesir**	**1.06**	**302**	*e*PN	**Pn**	**14 47 45.6**	**-0.1**
BALB	**Balikesir**	**1.06**	**302**	*e*Pn	**Pn**	**14 47 45.6**	**-0.1**
CAVI	**Cavuskoy**	**1.27**	**28**	*e*PN	**Pn**	**14 47 48.2**	**-0.4**
CAVI	**Cavuskoy**	**1.27**	**28**	*e*Pn	**Pn**	**14 47 48.2**	**-0.4**
MDNY	**Mudanya-Bursa**	**1.29**	**354**	*e*PN	**Pn**	**14 47 48.7**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.29**	**354**	*e*Pn	**Pn**	**14 47 48.7**	**-0.1**
IZI	**Iznik**	**1.29**	**14**	*e*PN	**Pb**	**14 47 49.2**	**+0.1**
IZI	**Iznik**	**1.29**	**14**	*e*Pn	**Pb**	**14 47 49.2**	**+0.1**
KCTX	**Karacabey (Bur**	**1.29**	**336**	*e*PN	**Pn**	**14 47 48.9**	**0.0**
KCTX	**Karacabey (Bur**	**1.29**	**336**	*e*Pn	**Pn**	**14 47 48.9**	**0.0**
BORA	**Eskisehir**	**1.34**	**53**	P	**Pn**	**14 47 49.5**	**-0.1**
BORA	**Eskisehir**	**1.34**	**53**	*i* P	**Pn**	**14 47 49.5**	**-0.1**
GONE	**Gonen-Balikesi**	**1.43**	**313**	*e*PN	**Pn**	**14 47 50.9**	**+0.2**
GONE	**Gonen-Balikesi**	**1.43**	**313**	*e*Pn	**Pn**	**14 47 50.9**	**+0.2**
ADVT	**Abdulvahap**	**1.45**	**21**	*e*PN	**Pb**	**14 47 51.8**	**+0.1**
ADVT	**Abdulvahap**	**1.45**	**21**	*e*Pn	**Pb**	**14 47 51.8**	**+0.1**
ESKT	**Eskisehir**	**1.46**	**72**	*i* P	**Pb**	**14 47 52.0**	**0.0**
SEYT	**Eskypehyr**	**1.46**	**72**	P	**Pb**	**14 47 52.0**	**0.0**
ARMT	**Armutlu**	**1.48**	**354**	*e*PN	**Pn**	**14 47 51.8**	**+0.3**
ARMT	**Armutlu**	**1.48**	**354**	*e*Pn	**Pn**	**14 47 51.8**	**+0.3**
EDC	**Edincik**	**1.56**	**324**	*e*PN	**Pn**	**14 47 52.7**	**+0.2**
EDC	**Edincik**	**1.56**	**324**	*e*Pn	**Pn**	**14 47 52.7**	**+0.2**
GULT	**Gulveren**	**1.75**	**40**	*e*PN	**Pn**	**14 47 55.6**	**+0.3**
GULT	**Gulveren**	**1.75**	**40**	*e*Pn	**Pn**	**14 47 55.6**	**+0.3**
HRT	**Hereke**	**1.80**	**15**	*e*PN	**Pn**	**14 47 56.0**	**+0.2**
HRT	**Hereke**	**1.80**	**15**	*e*Pn	**Pn**	**14 47 56.0**	**+0.2**
SVRH	**Sivrihisar-ESK**	**1.95**	**79**	*e*PN	**Pn**	**14 47 57.7**	**-0.3**
SVRH	**Sivrihisar-ESK**	**1.95**	**79**	*e*Pn	**Pn**	**14 47 57.7**	**-0.3**
URLA	**Izmir**	**2.05**	**250**	*i* P	**Pg**	**14 48 04.5**	**+0.6**
SILT	**Sile**	**2.11**	**12**	*e*PN	**Pn**	**14 48 00.4**	**+0.3**
SILT	**Sile**	**2.11**	**12**	*e*Pn	**Pn**	**14 48 00.4**	**+0.3**
MDUB	**Mudurnu**	**2.16**	**49**	*e*PN	**Pn**	**14 48 00.6**	**-0.2**
MDUB	**Mudurnu**	**2.16**	**49**	*e*Pn	**Pn**	**14 48 00.6**	**-0.2**

TRN 23 14:47:42.9, 12°.90N×60°.30W, h18km, MD2.8, Windward Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SVB	**Belmont**	**1.00**	**292**	*e*P	Pg	14 48 03.9	+1.6
SVB				*e*S	Sn	14 48 17.6	+2.0
MCLT	**Moule a Chique**	**1.02**	**322**	*e*P	Pg	14 48 03.1	+0.4
MCLT				*e*S	Sg	14 48 18.2	+2.1
GRW	**Mount Saint Ca**	**1.52**	**241**	*e*P	Pb	14 48 11.1	+0.6
GRW				*e*S	Sb	14 48 29.9	+0.4
MVM	**Montagne Vaucl**	**1.74**	**341**	*e*P	Pn	14 48 12.7	+0.4
BIM	**Bigot**	**1.77**	**335**	*e*P	Pn	14 48 13.4	+0.7
TRMF	**Trois Ilets**	**1.78**	**336**	*e*P	Pn	14 48 13.5	+0.7
LPMF	**Morne Lapointe**	**1.79**	**339**	*e*P	Pn	14 48 13.5	+0.7
ZAM	**Aeronautique**	**1.81**	**337**	*e*P	Pn	14 48 13.8	+0.7
FDF	**Fort de France**	**2.00**	**336**	*e*P	Pn	14 48 17.2	+1.3
FDF				*e*S	Sb	14 48 42.5	-0.9
GBMF	**Grand Be**	**2.06**	**336**	*e*P	Pn	14 48 18.0	+1.2
BAMF	**Morne Balai**	**2.08**	**337**	*e*P	Pn	14 48 18.0	+1.1
CXM	**Morne La Croix**	**2.08**	**336**	*e*P	Pb	14 48 18.7	-1.5
CXM				*e*S	Sb	14 48 44.6	-1.2
PCM	**Pelee Case Pet**	**2.10**	**335**	*e*P	Pn	14 48 18.6	+1.4

*ISK **23** 15:01:02.6, 39°.09N×29°.09E, h12km, MD2.6*
*DDA **23** 15:01:02.9, 39°.04N×29°.07E, h7km, Ml2.2*
*ISCJB **23** 15:01:03.0±0.5, 39°.08N±0°.04×29°.07E±0°.03, h7km±5km, Error ellipse: s-maj=6.7km s-min=4.1km az=163.3*
*CSEM **23** 15:01:03.0±0.1, 39°.08N×29°.08E, h11km±1km, ML2.2, Error ellipse: s-maj=3.3km s-min=2.8km az=155.0*
ISC 23 15:01:02.7±1.0, 39°.05N±0°.03×29°.10E±0°.02, h12km±8km, n28, σ0°.35/42, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.30**	**82**	P	**Pb**	**15 01 09.9**	**-0.1**
GDZ				S	**Sb**	**15 01 14.7**	**-0.2**
GDZ	**Gediz**	**0.30**	**82**	*i* P	**Pb**	**15 01 09.9**	**-0.1**
GDZ				*i* S	**Sb**	**15 01 14.7**	**-0.2**
DEMI	**Demirci**	**0.30**	**269**	P	**Pg**	**15 01 09.0**	**+0.1**
DEMI				S	**Sg**	**15 01 12.8**	**-0.3**
DEMI	**Demirci**	**0.30**	**269**	*i* P	**Pg**	**15 01 09.0**	**+0.1**
DEMI				*i* S	**Sg**	**15 01 12.8**	**-0.3**
TVSB	**Tavsanli**	**0.49**	**34**	*e*PG	**Pg**	**15 01 12.5**	**+0.2**
TVSB				*e*SG	**Sg**	**15 01 18.8**	**-0.1**
TVSB	**Tavsanli**	**0.49**	**34**	*e*Pg	**Pg**	**15 01 12.5**	**+0.2**
TVSB				*e*Sg	**Sg**	**15 01 18.8**	**-0.1**
KULA	**Kula-Manisa**	**0.63**	**213**	*e*PG	**Pb**	**15 01 16.0**	**+0.3**
KULA	**Kula-Manisa**	**0.63**	**213**	*e*Pg	**Pb**	**15 01 16.0**	**+0.3**
DURS	**Dursunbey**	**0.74**	**319**	P	**Pg**	**15 01 16.9**	**-0.1**
DURS				S	**Sb**	**15 01 27.9**	**+0.4**
DURS	**Dursunbey**	**0.74**	**319**	*i* P	**Pg**	**15 01 16.9**	**-0.1**
DURS				*i* S	**Sb**	**15 01 27.9**	**+0.4**
KHL	**Karahalli**	**0.79**	**155**	*e*PG	**Pn**	**15 01 19.1**	**-0.6**
KHL	**Karahalli**	**0.79**	**155**	*e*Pg	**Pn**	**15 01 19.1**	**-0.6**
ORLT	**Orhaneli**	**1.01**	**351**	*e*PG	**Pb**	**15 01 21.5**	**-0.6**
ORLT				*e*SG	**Sg**	**15 01 35.4**	**0.0**
ORLT	**Orhaneli**	**1.01**	**351**	*e*Pg	**Pb**	**15 01 21.5**	**-0.6**
ORLT				*e*Sg	**Sg**	**15 01 35.4**	**0.0**
AKS	**Akhisar**	**1.02**	**261**	*e*PG	**Pn**	**15 01 22.6**	**-0.1**
AKS				*e*SG	**Sn**	**15 01 37.0**	**0.0**
AKS	**Akhisar**	**1.02**	**261**	*e*Pg	**Pn**	**15 01 22.7**	**-0.1**
AKS				*e*Sg	**Sn**	**15 01 37.0**	**0.0**
BALB	**Balikesir**	**1.12**	**302**	*e*PN	**Pb**	**15 01 23.9**	**0.0**
BALB	**Balikesir**	**1.12**	**302**	*e*Pn	**Pb**	**15 01 23.9**	**0.0**
CAVI	**Cavuskoy**	**1.29**	**26**	*e*PN	**Pn**	**15 01 26.4**	**0.0**
CAVI	**Cavuskoy**	**1.29**	**26**	*e*Pn	**Pn**	**15 01 26.4**	**0.0**
IZI	**Iznik**	**1.32**	**12**	*e*PN	**Pn**	**15 01 26.7**	**-0.2**
IZI	**Iznik**	**1.32**	**12**	*e*Pn	**Pn**	**15 01 26.7**	**-0.2**
BORA	**Eskisehir**	**1.33**	**51**	P	**Pg**	**15 01 28.2**	**-0.1**
BORA				S	**Sg**	**15 01 46.8**	**+1.1**
BORA	**Eskisehir**	**1.33**	**51**	*i* P	**Pg**	**15 01 28.2**	**-0.1**
BORA				*i* S	**Sg**	**15 01 46.8**	**+1.1**
KCTX	**Karacabey (Bur**	**1.35**	**335**	*e*PN	**Pn**	**15 01 27.3**	**0.0**
KCTX	**Karacabey (Bur**	**1.35**	**335**	*e*Pn	**Pn**	**15 01 27.3**	**0.0**
ARMT	**Armutlu**	**1.53**	**353**	*e*PN	**Pn**	**15 01 29.8**	**0.0**
ARMT	**Armutlu**	**1.53**	**353**	*e*Pn	**Pn**	**15 01 29.8**	**0.0**

*NIED **23** 15:09:00, 36°.90N×140°.70E, h8km, Mw3.3 Best double couple: $M_0$1.06000×10^14^ NP1:ϕ_D65.00000°, δ37.00000°, λ-69.00000°. NP2:ϕ_D219.00000°, δ55.00000°, λ-105.00000°.*
JMA 23 15:09:09.6, 36°.89N×140°.69E, h10km±1km, M3.5, 8C Broadband fault plane solution: P waves. NP1: ϕ_s181.00000°, δ70.00000°, λ-81.00000°. **NP2:** ϕ_s337.00000°, δ22.00000°, λ-112.00000°. **Principal axes:** T Plg24.0000°, Azm264.0000°; N Plg8.0000°, Azm358.0000°; P Plg64.0000°, Azm105.0000°; **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.23**	**22**	⇑P	Pg	15 09 14.4	0.0
ONAJ				*e*S	Sg	15 09 18.1	+0.5
JHO	**Hitachi**	**0.29**	**199**	⇑P	Pg	15 09 15.5	0.0
JHO				S	Sg	15 09 19.7	+0.2
JFK	**Kawauchi**	**0.50**	**17**	⇑P	Pg	15 09 19.0	-0.3
JFK				S	Sg	15 09 25.8	-0.1
JSB	**Shiboa**	**0.62**	**277**	⇑P	Pb	15 09 22.4	-0.2
JSB				S	Sb	15 09 31.1	-0.3
JFT	**Otama**	**0.69**	**336**	⇑P	Pg	15 09 22.9	0.0
JFT				S	Sg	15 09 32.1	+0.2
JYT	**Yasato**	**0.77**	**211**	⇑P	Pg	15 09 24.0	-0.5
JFY	**Yanaizu**	**0.94**	**304**	⇑P	Pg	15 09 27.3	-0.4
JFY				S	Sg	15 09 39.9	-0.1
JMM	**Marumori**	**0.98**	**5**	⇑P	Pg	15 09 27.5	-0.9
JMM				S	Sg	15 09 40.4	-0.8
MAT	**Matsushiro**	**2.02**	**261**	P	Pn	15 09 44.6	+0.8
MAT				S	Sb	15 10 11.1	-0.7

IDC 23 15:09:47.0±3.3, 6°.45S×147°.57E, h0km, mb3.6/2, mb1 3.8/4, mb1mx3.5/27, mbtmp3.6/4, ML3.5/1, MS3.2/3, Ms1 3.2/3, ms1mx2.7/24 Error ellipse: s-maj=72.4km s-min=33.5km az=92.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.96**	**188**	Pn	Pn	15 10 35.7	+0.5
	11nm,0.3s,baz=38,slow=7.8,SNR=38						
PMG				Sn	Sn	15 11 14.2	+2.6
	7.5nm,0.3s,baz=329,slow=23,SNR=12						
WRA	**Warramunga Arr**	**18.57**	**223**	P	P	15 14 05.0	-0.7
	0.2nm,0.3s,baz=50,slow=11,SNR=6.2						
GUMO	**Guam**	**20.09**	**352**	LR	LR	15 20 43.2	
	comp=Z,34nm,19.4s,baz=154,slow=33						
ASAR	**Alice Springs**	**21.57**	**216**	P	P	15 14 37.9	-0.5
	0.7nm,0.5s,baz=51,slow=9.0,SNR=42						
FITZ	**Fitzroy Crossi**	**24.32**	**240**	P	P	15 15 06.6	0.0
	1.5nm,0.4s,baz=45,slow=7.6,SNR=21						
FITZ				LR	LR	15 25 54.5	
	comp=Z,53nm,18.5s,baz=78,slow=40						
SONM	**Songino Array**	**65.07**	**331**	LR	LR	15 50 35.2	
	comp=Z,23nm,18.5s,baz=296,slow=38						
TORD	**Torodi Ar. Bea**	**145.75**	**284**	PKPbc	PKPdf	15 29 28.4	-0.3
	0.3nm,0.4s,baz=62,slow=3.4,SNR=6.5						

MAN 23 15:14:32, 14°.03N×120°.54E, h109km, mb3.7, ML2.4, MS1.9, 1C, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LUBP	**Lubang**	**0.41**	**225**	*e*P	Pn	15 14 50.8	+2.6
PGP	**Puerto Galera**	**0.66**	**143**	⇑*i*P	Pn	15 14 52.3	+2.3
PGP				*i* S	Sn	15 15 06.9	+3.4
SJMP	**San Jose**	**1.66**	**160**	*e*P	Pn	15 15 02.2	+1.6
SJMP				*e*S	Sn	15 15 24.4	+2.0

*NEIC **23** 15:30:37.9, 38°.47S×176°.00E, h152km, MG4.2(WEL), After WEL.*
WEL 23 15:30:37.8±0.2, 38°.47S×176°.01E, h153km±2km, ML4.2/20, 49C-16D, Error ellipse: s-maj=1.0km s-min=0.9km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUTZ	**Kaahu Road**	**0.15**	**263**	⇓PN	Pn	15 30 58.4	0.0
KUTZ	**Kaahu Road**	**0.15**	**263**	Pn	Pn	15 30 58.4	0.0
WHTZ	**Whakaora**	**0.20**	**192**	PN	Pn	15 30 58.6	+0.1
WHTZ	**Whakaora**	**0.20**	**192**	Pn	Pn	15 30 58.6	+0.1
HRRZ	**Handcock Road**	**0.23**	**69**	PN	Pn	15 30 58.5	-0.1
HRRZ	**Handcock Road**	**0.23**	**69**	Pn	Pn	15 30 58.5	-0.1
HSRZ	**Hossack Road**	**0.24**	**49**	⇓PN	Pn	15 30 58.5	-0.1
HSRZ				SN	Sn	15 31 14.4	0.0
ALRZ	**Allen Road**	**0.28**	**109**	PN	Pn	15 30 58.5	-0.2
PRRZ	**Plateau Road**	**0.30**	**95**	PN	Pn	15 30 57.8	-0.9
PRRZ				SN	Sn	15 31 14.1	-0.5
PRRZ	**Plateau Road**	**0.30**	**95**	Pn	Pn	15 30 58.6	-0.1
PRRZ				Sn	Sn	15 31 14.1	-0.5
WATZ	**Wairara**	**0.32**	**223**	⇑PN	Pn	15 30 58.9	+0.1
WATZ				SN	Sn	15 31 14.8	-0.1
WATZ	**Wairara**	**0.32**	**223**	Pn	Pn	15 30 58.9	+0.1
UTU	**Utuhina**	**0.33**	**26**	PN	Pn	15 30 58.8	0.0
UTU	**Utuhina**	**0.33**	**26**	Pn	Pn	15 30 58.8	0.0
TLZ	**Tolley Road**	**0.40**	**291**	PN	Pn	15 30 59.1	0.0
RRRZ	**Republican Roa**	**0.42**	**72**	⇑PN	Pn	15 30 59.0	-0.2
RRRZ				SN	Sn	15 31 14.8	-0.6
RRRZ	**Republican Roa**	**0.42**	**72**	Pn	Pn	15 30 59.0	-0.2
RRRZ				Sn	Sn	15 31 14.8	-0.6
RATZ	**Rangitukua**	**0.44**	**205**	⇑PN	Pn	15 30 59.1	-0.2
RATZ	**Rangitukua**	**0.44**	**205**	Pn	Pn	15 30 59.1	-0.2
TARZ	**Mount Tarawera**	**0.46**	**59**	*e*PN	Pn	15 30 59.1	-0.4
MRHZ	**Matea Rd**	**0.48**	**139**	⇑PN	Pn	15 30 59.1	-0.3
RITZ	**Rihia Road**	**0.52**	**193**	PN	Pn	15 30 59.9	+0.2
RITZ				SN	Sn	15 31 16.5	+0.1
RITZ	**Rihia Road**	**0.52**	**193**	Pn	Pn	15 30 59.9	+0.2
MUGZ	**Murupara**	**0.60**	**91**	PN	Pn	15 30 59.5	-0.5
KMRZ	**Kaimai**	**0.63**	**355**	⇓PN	Pn	15 31 00.2	-0.1
KRVZ	**Karewarewa**	**0.69**	**205**	PN	Pn	15 31 00.5	-0.2
KRVZ	**Karewarewa**	**0.69**	**205**	Pn	Pn	15 31 00.5	-0.2
WTVZ	**West Tongariro**	**0.72**	**207**	⇑PN	Pn	15 31 00.7	-0.2
WTVZ	**West Tongariro**	**0.72**	**207**	Pn	Pn	15 31 00.7	-0.2
OTVZ	**Oturere**	**0.74**	**201**	PN	Pn	15 31 01.1	0.0
OTVZ	**Oturere**	**0.74**	**201**	Pn	Pn	15 31 01.1	0.0
TWVZ	**Taurewa**	**0.75**	**217**	⇑PN	Pn	15 31 00.9	-0.2
TWVZ	**Taurewa**	**0.75**	**217**	Pn	Pn	15 31 00.9	-0.2
TGRZ	**Tauranga**	**0.77**	**15**	⇓PN	Pn	15 31 01.0	-0.1
TGRZ	**Tauranga**	**0.77**	**15**	Pn	Pn	15 31 01.0	-0.1
NGZ	**Ngauruhoe**	**0.77**	**204**	PN	Pn	15 31 01.1	-0.2
NGZ	**Ngauruhoe**	**0.77**	**204**	Pn	Pn	15 31 01.1	-0.2
RTZ	**Ruatahuna**	**0.77**	**101**	⇑PN	Pn	15 31 01.0	-0.2
RTZ				SN	Sn	15 31 17.8	-1.2
BKZ	**Black Stump Fm**	**0.79**	**152**	⇑PN	Pn	15 31 01.1	-0.2
BKZ				AML	AML	15 31 19.5	
BKZ				AML	AML	15 31 21.4	
BKZ	**Black Stump Fm**	**0.79**	**152**	Pn	Pn	15 31 00.7	-0.6
TOZ	**Tahuroa Road**	**0.84**	**331**	PN	Pn	15 31 01.7	+0.1
TOZ				SN	Sn	15 31 19.3	-0.4
TOZ	**Tahuroa Road**	**0.84**	**331**	Pn	Pn	15 31 01.7	+0.1
TUVZ	**Tukino**	**0.84**	**199**	⇑PN	Pn	15 31 01.8	0.0
TUVZ				SN	Sn	15 31 19.0	-1.2
TUVZ	**Tukino**	**0.84**	**199**	Pn	Pn	15 31 01.8	0.0
FWVZ	**Far West T-bar**	**0.86**	**204**	PN	Pn	15 31 01.6	-0.4
FWVZ	**Far West T-bar**	**0.86**	**204**	Pn	Pn	15 31 01.6	-0.4
WHVZ	**Whangaehu Hut**	**0.87**	**202**	⇑PN	Pn	15 31 02.0	-0.1
WHVZ	**Whangaehu Hut**	**0.87**	**202**	Pn	Pn	15 31 02.0	-0.1
NMHZ	**Naumai**	**0.88**	**135**	⇑PN	Pn	15 31 02.7	+0.7
NMHZ	**Naumai**	**0.88**	**135**	Pn	Pn	15 31 02.7	+0.7
URZ	**Urewera**	**0.89**	**77**	⇑PN	Pn	15 31 01.4	-0.6
URZ				AML	AML	15 31 18.9	
URZ				AML	AML	15 31 19.1	
URZ	**Urewera**	**0.89**	**77**	Pn	Pn	15 31 01.4	-0.6
TRVZ	**Turoa**	**0.90**	**203**	PN	Pn	15 31 02.2	-0.2
TRVZ	**Turoa**	**0.90**	**203**	Pn	Pn	15 31 02.2	-0.2
HIZ	**Hauiti**	**0.91**	**267**	⇓PN	Pn	15 31 02.1	0.0
HIZ	**Hauiti**	**0.91**	**267**	Pn	Pn	15 31 01.7	-0.4
WNVZ	**Wahianoa**	**0.91**	**201**	⇑PN	Pn	15 31 02.2	-0.2
WNVZ	**Wahianoa**	**0.91**	**201**	Pn	Pn	15 31 02.2	-0.2
RAHZ	**Arahi**	**0.95**	**118**	⇑PN	Pn	15 31 02.8	+0.4
RAHZ	**Arahi**	**0.95**	**118**	Pn	Pn	15 31 02.8	+0.4
MOVZ	**Moawhango**	**0.95**	**192**	⇑PN	Pn	15 31 02.1	-0.5
MOVZ	**Moawhango**	**0.95**	**192**	Pn	Pn	15 31 02.1	-0.5
PKVZ	**Pokaka**	**0.97**	**212**	⇑PN	Pn	15 31 02.5	-0.2
PKVZ	**Pokaka**	**0.97**	**212**	Pn	Pn	15 31 02.5	-0.2
KWHZ	**Kaweka Forest**	**1.00**	**161**	⇑PN	Pn	15 31 03.0	0.0
MTVZ	**Mangateitei**	**1.00**	**205**	PN	Pn	15 31 02.9	-0.1
MTVZ	**Mangateitei**	**1.00**	**205**	Pn	Pn	15 31 02.9	-0.1
BHHZ	**Black Hill Sta**	**1.02**	**178**	⇑PN	Pn	15 31 02.7	-0.4
BHHZ	**Black Hill Sta**	**1.02**	**178**	Pn	Pn	15 31 02.7	-0.4
SNGZ	**Shannon Statio**	**1.09**	**107**	⇑PN	Pn	15 31 03.9	+0.3
SNGZ	**Shannon Statio**	**1.09**	**107**	Pn	Pn	15 31 03.9	+0.3
ARHZ	**Aropaoanui**	**1.10**	**136**	⇑PN	Pn	15 31 04.2	+0.5
ARHZ	**Aropaoanui**	**1.10**	**136**	Pn	Pn	15 31 04.2	+0.5
RAGZ	**Rawiri**	**1.10**	**92**	⇑PN	Pn	15 31 03.7	-0.1
RAGZ	**Rawiri**	**1.10**	**92**	Pn	Pn	15 31 03.7	-0.1
MCHZ	**McNeill Hill**	**1.11**	**151**	⇑PN	Pn	15 31 04.4	+0.6
MCHZ	**McNeill Hill**	**1.11**	**151**	Pn	Pn	15 31 04.4	+0.6
WHHZ	**Waihua**	**1.13**	**123**	⇑PN	Pn	15 31 04.3	+0.3
VRZ	**Vera Road**	**1.18**	**236**	⇓PN	Pn	15 31 04.5	+0.1
VRZ	**Vera Road**	**1.18**	**236**	Pn	Pn	15 31 04.5	+0.1
MWZ	**Matawai**	**1.20**	**84**	⇑PN	Pn	15 31 04.3	-0.3
MWZ				AML	AML	15 31 24.4	
MWZ				AML	AML	15 31 24.7	
MWZ	**Matawai**	**1.20**	**84**	Pn	Pn	15 31 04.3	-0.3
KRHZ	**Kereru**	**1.20**	**167**	⇑PN	Pn	15 31 04.6	-0.1
RIGZ	**Rimuhau**	**1.39**	**100**	⇑PN	Pn	15 31 06.6	+0.1
KNZ	**Kokohu**	**1.41**	**113**	⇑PN	Pn	15 31 06.5	-0.1
KNZ				AML	AML	15 31 29.2	
KNZ				AML	AML	15 31 29.2	
KNZ	**Kokohu**	**1.41**	**113**	Pn	Pn	15 31 06.5	-0.1
TKGZ	**Te Karaka**	**1.44**	**89**	PN	Pn	15 31 07.3	+0.4
TKGZ	**Te Karaka**	**1.44**	**89**	Pn	Pn	15 31 07.3	+0.4
CKHZ	**Cape Kidnapper**	**1.45**	**145**	⇑PN	Pn	15 31 07.3	+0.3
CKHZ	**Cape Kidnapper**	**1.45**	**145**	Pn	Pn	15 31 07.3	+0.3
PNHZ	**Pukenui**	**1.45**	**174**	⇑PN	Pn	15 31 06.6	-0.5
PNHZ	**Pukenui**	**1.45**	**174**	Pn	Pn	15 31 06.6	-0.5
KAHZ	**Kahuranaki**	**1.48**	**153**	⇑PN	Pn	15 31 07.6	+0.2
KAHZ	**Kahuranaki**	**1.48**	**153**	Pn	Pn	15 31 07.6	+0.2
WAZ	**Wanganui**	**1.51**	**212**	⇑PN	Pn	15 31 07.4	-0.2
WAZ	**Wanganui**	**1.51**	**212**	Pn	Pn	15 31 07.4	-0.2
MKAZ	**Moumakai**	**1.52**	**334**	PN	Pn	15 31 07.9	+0.1
MKAZ	**Moumakai**	**1.52**	**334**	Pn	Pn	15 31 07.9	+0.1
PRGZ	**Paritu Road**	**1.53**	**108**	PN	Pn	15 31 07.7	-0.2
HAZ	**Te Kaha**	**1.57**	**63**	PN	Pn	15 31 07.4	-0.9
TWGZ	**Tauwhareparae**	**1.58**	**80**	PN	Pn	15 31 08.2	-0.2
TWGZ	**Tauwhareparae**	**1.58**	**80**	Pn	Pn	15 31 08.2	-0.2
DREZ	**Durham Road**	**1.58**	**243**	PN	Pn	15 31 08.7	+0.2
DREZ	**Durham Road**	**1.58**	**243**	Pn	Pn	15 31 08.7	+0.2
TSZ	**Takapari Road**	**1.58**	**181**	⇓PN	Pn	15 31 07.9	-0.6
TSZ				AML	AML	15 31 32.6	
TSZ				AML	AML	15 31 33.1	
TSZ	**Takapari Road**	**1.58**	**181**	Pn	Pn	15 31 07.9	-0.6
LREZ	**Lake Rotokare**	**1.59**	**231**	⇓PN	Pn	15 31 08.9	+0.4
WPHZ	**Waipukurau**	**1.62**	**168**	⇑PN	Pn	15 31 08.5	-0.4
WPHZ	**Waipukurau**	**1.62**	**168**	Pn	Pn	15 31 08.5	-0.4
MHGZ	**Mahia Peninsul**	**1.63**	**115**	⇑PN	Pn	15 31 09.1	+0.2
MHGZ	**Mahia Peninsul**	**1.63**	**115**	Pn	Pn	15 31 09.1	+0.2
PREZ	**Palmer Road

*ISK **23** 15:30:43.5, 40.′26N×29.′14E, h13km, MD2.3*
*CSEM **23** 15:30:44.7±0.2, 40.′31N×29.′14E, h8km, MD2.3, Error ellipse: s-maj=4.4km s-min=3.9km az=50.0*
*DDA **23** 15:30:45.1, 40.′32N×29.′16E, h7km, Ml2.8*
ISC 23 15:30:45.1±0.9, **40.′31N**±0.′03×**29.′14E**±0.′02, **h10**km±6km, **n36**, σ0=**80**/50, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GEMT	**Gemlik**	**0.13**	**16**	PG	**Pg**	**15 30 47.9**	**-0.3**
GEMT				SG	**Sg**	**15 30 51.1**	**+0.6**
GEMT	**Gemlik**	**0.13**	**16**	*i* Pg	**Pg**	**15 30 47.9**	**-0.3**
GEMT				*i* Sg	**Sg**	**15 30 51.1**	**+0.6**
MDNY	**Mudanya-Bursa**	**0.20**	**288**	PG	**Pg**	**15 30 48.7**	**-0.7**
MDNY	**Mudanya-Bursa**	**0.20**	**288**	*i* Pg	**Pg**	**15 30 48.7**	**-0.7**
IZI	**Iznik**	**0.26**	**83**	PG	**Pg**	**15 30 49.5**	**-0.9**
IZI	**Iznik**	**0.26**	**83**	*i* Pg	**Pg**	**15 30 49.5**	**-0.9**
ARMT	**Armutlu**	**0.33**	**321**	*e*PG	**Pg**	**15 30 51.4**	**-0.4**
ARMT	**Armutlu**	**0.33**	**321**	*e*Pg	**Pg**	**15 30 51.4**	**-0.4**
ADVT	**Abdulvahap**	**0.47**	**74**	*e*PG	**Pg**	**15 30 53.4**	**-1.0**
ADVT	**Abdulvahap**	**0.47**	**74**	*e*Pg	**Pg**	**15 30 53.4**	**-1.0**
CAVI	**Cavuskoy**	**0.55**	**101**	*e*PG	**Pg**	**15 30 54.6**	**-1.2**
CAVI	**Cavuskoy**	**0.55**	**101**	*e*Pg	**Pg**	**15 30 54.6**	**-1.2**
HRT	**Hereke**	**0.65**	**38**	*e*PG	**Pg**	**15 30 57.5**	**-0.3**
HRT	**Hereke**	**0.65**	**38**	*e*Pg	**Pg**	**15 30 57.5**	**-0.3**
ISK	**Istanbul-Kandi**	**0.76**	**355**	*e*PG	**Pg**	**15 30 59.4**	**-0.4**
ISK	**Istanbul-Kandi**	**0.76**	**355**	*e*Pg	**Pg**	**15 30 59.4**	**-0.4**
DURS	**Dursunbey**	**0.87**	**216**	P	**Pb**	**15 31 02.2**	**-0.1**
DURS				S	**Sn**	**15 31 15.9**	**-0.3**
DURS	**Dursunbey**	**0.87**	**216**	*i* P	**Pb**	**15 31 02.1**	**-0.1**
DURS				*i* S	**Sn**	**15 31 15.9**	**-0.3**
SILT	**Sile**	**0.93**	**24**	*e*PG	**Pb**	**15 31 02.8**	**-0.4**
SILT	**Sile**	**0.93**	**24**	*e*Pg	**Pb**	**15 31 02.8**	**-0.4**
KLYT	**Kilyos**	**0.95**	**356**	*e*PG	**Pb**	**15 31 03.1**	**-0.5**
KLYT	**Kilyos**	**0.95**	**356**	*e*Pg	**Pb**	**15 31 03.1**	**-0.5**
CTKS	**Kestanelik-??a**	**1.05**	**333**	*e*PN	**Pg**	**15 31 04.5**	**-0.7**
CTKS	**Kestanelik-??a**	**1.05**	**333**	*e*Pn	**Pg**	**15 31 04.5**	**-0.7**
GULT	**Gulveren**	**1.06**	**83**	*e*PG	**Pg**	**15 31 04.2**	**-1.3**
GULT	**Gulveren**	**1.06**	**83**	*e*Pg	**Pg**	**15 31 04.2**	**-1.3**
BORA	**Eskisehir**	**1.09**	**112**	P	**Pg**	**15 31 05.4**	**-0.7**
BORA				S	**Sn**	**15 31 22.2**	**+0.5**
BORA	**Eskisehir**	**1.09**	**112**	*i* P	**Pg**	**15 31 05.4**	**-0.7**
BORA				*i* S	**Sn**	**15 31 22.2**	**+0.5**
KAND	**Kocaeli-Kandir**	**1.12**	**45**	P	**Pb**	**15 31 06.2**	**-0.3**
KAND				S	**Sn**	**15 31 22.4**	**+0.1**
KAND	**Kocaeli-Kandir**	**1.12**	**45**	*i* P	**Pb**	**15 31 06.2**	**-0.3**
KAND				*i* S	**Sn**	**15 31 22.4**	**+0.1**
GDZ	**Gediz**	**1.25**	**168**	P	**Pb**	**15 31 08.0**	**-0.7**
GDZ				S	**Sn**	**15 31 26.9**	**+1.4**
GDZ	**Gediz**	**1.25**	**168**	*i* P	**Pb**	**15 31 08.0**	**-0.7**
GDZ				*i* S	**Sn**	**15 31 26.9**	**+1.4**
SAHE	**Sakarya_HENDEK**	**1.42**	**67**	P	**Pn**	**15 31 10.6**	**-0.2**
SAHE				S	**Sg**	**15 31 31.9**	**+1.3**
SAHE	**Sakarya_HENDEK**	**1.42**	**67**	*i* P	**Pn**	**15 31 10.6**	**-0.2**
SAHE				*i* S	**Sg**	**15 31 31.9**	**+1.3**
ESKT	**Eskisehir**	**1.53**	**120**	*i* P	**Pb**	**15 31 13.6**	**0.0**
ESKT				*i* S	**Sg**	**15 31 36.0**	**+1.6**
SEYT	**Eskypehyr**	**1.53**	**120**	P	**Pb**	**15 31 13.6**	**0.0**
SEYT				S	**Sg**	**15 31 36.0**	**+1.6**

*IDC **23** 15:33:25.0±8.7, 15.′17S×168.′04E, h96km±65km, mb3.6/8, mb1 3.8/9, mb1mx3.6/28, mbtmp4.0/9, ML4.6/1, MS3.6/2, Ms1 3.6/2, ms1mx2.9/23, Error ellipse: s-maj=77.4km s-min=24.4km az=125.0*
ISC 23 15:33:18.1±1.7, **15.′1S**±0.′4×**168.′2E**±0.′3, **h36**km, **n10**, σ0=**99**/9, **mb3.8**/8, **Vanuatu Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	**Honiara**	**9.79**	**304**	P	Pn	15 35 43.4	+7.1
	5.6nm,0.3s,baz=89,slow=6.5,SNR=4.1						
HNR				LR	LR	15 39 12.5	
	comp=Z,64nm,18.1s,baz=114,slow=36						
CTA	**Charters Tower**	**21.47**	**253**	P	**P**	**15 38 05.2**	**+1.6**
	2.2nm,0.7s,baz=42,slow=11,SNR=4.1						
STKA	**Stephens Creek**	**29.44**	**231**	P	**P**	**15 39 18.6**	**+0.1**
	1.2nm,0.5s,baz=41,slow=10,SNR=4.6						
WRA	**Warramunga Arr**	**32.59**	**256**	P	**P**	**15 39 44.9**	**-1.5**
	0.7nm,0.7s,baz=86,slow=9.1,SNR=3.9						
ASAR	**Alice Springs**	**33.37**	**250**	P	**P**	**15 39 52.3**	**-0.9**
	1.3nm,0.9s,baz=82,slow=9.1,SNR=13						
ASAR				PcP	**PcP**	**15 42 35.0**	**+0.4**
	0.3nm,0.7s,baz=65,slow=1.8,SNR=3.8						
JHJ	**Hachijo jima 2**	**55.05**	**331**	LR	LR	16 05 26.9	
	comp=Z,245nm,19.3s,baz=347,slow=35						
SONM	**Songino Array**	**83.28**	**323**	P	**P**	**15 45 41.4**	**+0.3**
	0.2nm,0.3s,baz=165,slow=6.0,SNR=3.7						
ILAR	**Eielson Array**	**86.58**	**18**	P	**P**	**15 45 57.0**	**-0.2**
	0.5nm,0.7s,baz=237,slow=5.2,SNR=7.6						
YKA	**Yellowknife Ar**	**97.44**	**27**	P	**P**	**15 46 47.7**	**+0.1**
	0.3nm,0.8s,baz=245,slow=4.4,SNR=3.7						
MKAR	**Makanchi Array**	**98.04**	**316**	P	**P**	**15 46 50.9**	**0.0**
	0.7nm,0.8s,baz=91,slow=5.2,SNR=6.3						

IDC 23 15:46:14.2±464.0, **47.′23N×43.′19E, h0**km, **Error ellipse: s-maj=213.3km s-min=149.8km az=169.0, Ukraine-Moldova-Southwestern Russia region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I43RU	**DUBNA INFRASONI**	**0.19**	**341**	*i*		16 41 30.0	
	baz=154,slow=307,SNR=1.9						
I31KZ	**AKTYUBINSK INF**	**10.29**	**67**	*i*		16 59 05.0	
	baz=251,slow=310,SNR=2.1						
I26DE	**FREYUNG INFRAS**	**19.73**	**286**	*i*		17 50 40.0	
	baz=81,slow=327,SNR=0.6						

IDC 23 16:14:57.4±2.4, **1.′22S×127.′21E, h0**km, **mb3.1**/2, **mb1 3.3**/3, **mb1mx3.1**/39, **mbtmp3.1**/3, **ML2.9**/1, **Error ellipse: s-maj=213.3km s-min=28.1km az=66.0, Halmahera**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**19.87**	**160**	P	P	16 19 30.3	-0.1
	0.0nm,0.3s,baz=338,slow=11,SNR=2.9						
ASAR	**Alice Springs**	**23.24**	**164**	P	P	16 20 06.6	+0.1
	0.3nm,0.9s,baz=346,slow=12,SNR=5.3						
MKAR	**Makanchi Array**	**61.90**	**327**	P	P	16 25 18.7	-0.1
	0.2nm,0.4s,baz=127,slow=7.4,SNR=3.6						

MEX 23 16:14:58.1±0.6, **17.′02N×100.′09W, h3**km±11km, **MD3.5, Guerrero**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CAIG	**El Cayaco**	**0.17**	**279**	*i* P	Pg	16 15 01.2	-0.3
CAIG				*i* S	Sg	16 15 03.6	-0.2
MEIG	**Mezcala**	**1.01**	**26**	*i* P	Pg	16 15 15.4	-2.0
MEIG				*i* S	Sg	16 15 28.5	-2.0
ARIG	**Puente Sto Nin**	**1.28**	**349**	*e*P	Pg	16 15 19.5	-3.1
ARIG				*e*S	Sg	16 15 34.7	-4.5
ZIIG	**Zihuatanejo**	**1.44**	**294**	*e*P	Pn	16 15 21.8	-3.3
ZIIG				*i* S	Sb	16 15 39.5	-4.7
PLIG	**Platanillo**	**1.47**	**22**	*e*P	Pn	16 15 21.9	-3.8
PLIG				*i* S	Sb	16 15 40.2	-5.2
TLIG	**Tlapa**	**1.55**	**69**	*i* P	Pn	16 15 22.5	-4.3
TLIG				*i* S	Sn	16 15 43.0	-4.4

*DDA **23** 16:16:48.2, 39.′11N×29.′18E, h7km, Md2.6*
*ISCJB **23** 16:16:49.8±0.7, 39.′13N±0.′03×29.′08E±0.′04, h5km±5km, Error ellipse: s-maj=5.4km s-min=5.0km az=20.3*
*ISK **23** 16:16:49.2, 39.′13N×29.′07E, h8km, MD2.7*
*CSEM **23** 16:16:50.1±0.1, 39.′13N×29.′08E, h10km, MD2.6, Error ellipse: s-maj=2.7km s-min=2.6km az=116.0*
ISC 23 16:16:49.5±1.3, **39.′10N**±0.′03×**29.′05E**±0.′03, **h7**km±11km, **n26**, σ0=**31**/42, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TVSB	**Tavsanli**	**0.47**	**43**	*e*PG	**Pg**	**16 16 58.6**	**-0.1**
TVSB				*e*SG	**Sg**	**16 17 04.8**	**0.0**
TVSB	**Tavsanli**	**0.47**	**43**	*e*Pg	**Pg**	**16 16 58.6**	**-0.1**
TVSB				*e*Sg	**Sg**	**16 17 04.8**	**0.0**
DURS	**Dursunbey**	**0.67**	**318**	P	**Pg**	**16 17 02.7**	**+0.3**
DURS				S	**Sb**	**16 17 12.9**	**-0.2**
DURS	**Dursunbey**	**0.67**	**318**	*i* P	**Pg**	**16 17 02.6**	**+0.3**
DURS				*i* S	**Sb**	**16 17 12.9**	**-0.2**
KHL	**Karahalli**	**0.86**	**154**	*e*PG	**Pb**	**16 17 06.6**	**-0.2**
KHL				*e*SG	**Sb**	**16 17 19.2**	**+0.6**
KHL	**Karahalli**	**0.86**	**154**	*e*Pg	**Pb**	**16 17 06.6**	**-0.2**
KHL				*e*Sg	**Sb**	**16 17 19.2**	**+0.6**
ORLT	**Orhaneli**	**0.95**	**353**	*e*PG	**Pg**	**16 17 07.5**	**-0.3**
ORLT				*e*SG	**Sg**	**16 17 20.5**	**+0.4**
ORLT	**Orhaneli**	**0.95**	**353**	*e*Pg	**Pg**	**16 17 07.5**	**-0.3**
ORLT				*e*Sg	**Sg**	**16 17 20.5**	**+0.4**
AKHS	**Akhisar**	**0.99**	**257**	P	**Pn**	**16 17 09.5**	**-0.3**
AKHS				S	**Sn**	**16 17 24.2**	**+0.1**
AKHS	**Akhisar**	**0.99**	**257**	*i* P	**Pn**	**16 17 09.5**	**-0.3**
AKHS				*i* S	**Sn**	**16 17 24.2**	**+0.1**
CAVI	**Cavuskoy**	**1.26**	**29**	*e*PN	**Pg**	**16 17 13.2**	**-0.4**
CAVI				*e*SN	**Sb**	**16 17 30.3**	**+0.4**
CAVI	**Cavuskoy**	**1.26**	**29**	*e*Pn	**Pg**	**16 17 13.2**	**-0.4**
CAVI				*e*Sn	**Sb**	**16 17 30.3**	**+0.4**
MDNY	**Mudanya-Bursa**	**1.27**	**354**	*e*PN	**Pg**	**16 17 13.5**	**-0.4**
MDNY	**Mudanya-Bursa**	**1.27**	**354**	*e*Pn	**Pg**	**16 17 13.5**	**-0.4**
IZI	**Iznik**	**1.27**	**15**	*e*PN	**Pg**	**16 17 13.6**	**-0.4**
IZI				*e*SN	**Sb**	**16 17 30.7**	**+0.2**
IZI	**Iznik**	**1.27**	**15**	*e*Pn	**Pg**	**16 17 13.6**	**-0.4**
IZI				*e*Sn	**Sb**	**16 17 30.7**	**+0.2**
KCTX	**Karacabey (Bur**	**1.28**	**335**	*e*PN	**Pg**	**16 17 13.7**	**-0.3**
KCTX	**Karacabey (Bur**	**1.28**	**335**	*e*Pn	**Pg**	**16 17 13.7**	**-0.3**
BORA	**Eskisehir**	**1.33**	**54**	P	**Pb**	**16 17 15.2**	**+0.3**
BORA				S	**Sb**	**16 17 32.2**	**0.0**
BORA	**Eskisehir**	**1.33**	**54**	*i* P	**Pb**	**16 17 15.2**	**+0.3**
BORA				*i* S	**Sb**	**16 17 32.2**	**0.0**
ADVT	**Abdulvahap**	**1.43**	**22**	*e*PN	**Pn**	**16 17 15.6**	**-0.3**
ADVT	**Abdulvahap**	**1.43**	**22**	*e*Pn	**Pn**	**16 17 15.6**	**-0.3**
ARMT	**Armutlu**	**1.47**	**354**	*e*PN	**Pn**	**16 17 16.4**	**0.0**
ARMT	**Armutlu**	**1.47**	**354**	*e*Pn	**Pn**	**16 17 16.4**	**0.0**
GULT	**Gulveren**	**1.74**	**40**	*e*PN	**Pn**	**16 17 20.2**	**-0.1**
GULT	**Gulveren**	**1.74**	**40**	*e*Pn	**Pn**	**16 17 20.2**	**-0.1**

*ISCJB **23** 16:19:08.3±0.7, 50.′35N±0.′04×18.′80E±0.′03, h0km, Error ellipse: s-maj=6.1km s-min=2.6km az=9.2*
*CSEM **23** 16:19:08.9±0.3, 50.′38N×18.′83E, h2km, ML2.6/5, Error ellipse: s-maj=6.3km s-min=2.4km az=7.0*
*PRU **23** 16:19:09.7, 50.′35N×18.′83E, h0km*
*IPEC **23** 16:19:09.0±0.2, 50.′39N×18.′88E, h0km±1km, ML1.7/3, Error ellipse: s-maj=2.7km s-min=0.8km az=170.0*
*WAR **23** 16:19:09.6, 50.′35N×18.′92E, h1km, Mw2.3*
ISC 23 16:19:08.9±1.0, **50.′37N**±0.′05×**18.′86E**±0.′02, **h0**km, **n28**, σ0=**59**/49, **Poland**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHZP	**Chorzow**	**0.12**	**133**	*e*Pg	**Pg**	**16 19 11.3**	**+0.2**
CHZP				*e*Sg	**Sg**	**16 19 13.0**	**+0.3**
CHZP	**Chorzow**	**0.12**	**133**	*e*Pg	**Pg**	**16 19 11.4**	**+0.2**
CHZP				*e*Sg	**Sg**	**16 19 13.0**	**+0.3**
CHZP	**Chorzow**	**0.12**	**133**	*e*Pg	**Pg**	**16 19 11.3**	**+0.2**
CHZP				*e*Sg	**Sg**	**16 19 13.0**	**+0.3**
OJC	**Ojcow**	**0.62**	**104**	*e*Pg	**Pg**	**16 19 20.6**	**-0.2**
OJC				*e*Sg	**Sg**	**16 19 29.0**	**+0.1**
OJC	**Ojcow**	**0.62**	**104**	*e*Pg	**Pg**	**16 19 20.6**	**-0.2**
OJC				*e*Sg	**Sg**	**16 19 29.0**	**+0.1**
OJC	**Ojcow**	**0.62**	**104**	*e*Pg	**Pg**	**16 19 20.6**	**-0.2**
OJC				*e*Sg	**Sg**	**16 19 29.0**	**+0.1**
OKC	**Ostrava-Krasne**	**0.70**	**221**	*e*PG	**Pg**	**16 19 23.0**	**+0.6**
OKC				*e*SG	**Sg**	**16 19 31.4**	**-0.1**
	comp=Z,9.3nm,0.4s						
OKC	**Ostrava-Krasne**	**0.70**	**221**	Pg	**Pg**	**16 19 23.0**	**+0.6**
OKC				Sg	**Sg**	**16 19 31.4**	**-0.1**
	9.3nm,0.4s						
MORC	**Moravsky Berou**	**1.04**	**235**	*e*Pg	**Pg**	**16 19 28.9**	**+0.2**
	baz=54						
MORC				*e*Sg	**Sg**	**16 19 42.1**	**0.0**
	14nm,0.3s,baz=54						
LANS	**Liptovska Anna**	**1.29**	**162**	*e*Pg	**Pg**	**16 19 33.3**	**-0.2**
LANS				*e*Sg	**Sg**	**16 19 50.4**	**+0.2**
LANS	**Liptovska Anna**	**1.29**	**162**	*e*PG	**Pg**	**16 19 33.3**	**-0.2**
LANS				*e*SG	**Sg**	**16 19 50.4**	**+0.2**
NIE	**Niedzica**	**1.34**	**135**	*e*Pg	**Pg**	**16 19 34.5**	**0.0**
NIE				*e*Sg	**Sb**	**16 19 52.8**	**+0.3**
NIE	**Niedzica**	**1.34**	**135**	*e*Pg	**Pg**	**16 19 34.5**	**0.0**
NIE				*e*Sg	**Sb**	**16 19 52.8**	**+0.3**
NIE	**Niedzica**	**1.34**	**135**	*e*Pg	**Pg**	**16 19 34.5**	**0.0**
NIE				*e*Sg	**Sb**	**16 19 52.8**	**+0.3**
KRLC	**Kraliky**	**1.36**	**258**	*e*PG	**Pg**	**16 19 34.3**	**-0.7**
KRLC				*e*SG	**Sg**	**16 19 52.5**	**-0.2**
KRLC	**Kraliky**	**1.36**	**258**	Pg	**Pg**	**16 19 34.3**	**-0.7**
KRLC				Sg	**Sg**	**16 19 52.5**	**-0.2**
DPC	**Dobruska-Polom**	**1.62**	**270**	*e*PG	**Pn**	**16 19 38.6**	**-0.2**
DPC				*e*SG	**Sg**	**16 20 01.2**	**+0.2**
	comp=Z,4.9nm,0.2s						
DPC	**Dobruska-Polom**	**1.62**	**270**	Pg	**Pn**	**16 19 38.6**	**-0.2**
DPC				Sg	**Sg**	**16 20 01.2**	**+0.2**
	4.9nm,0.2s						
VRAC	**Vranov**	**1.81**	**235**	*e*Pn	**Pn**	**16 19 41.5**	**+0.2**
VRAC				*e*Sg	**Sb**	**16 20 06.5**	**+0.3**
	4.7nm,0.3s,baz=53						
STHS	**Stebnicka Huta**	**1.82**	**121**	*e*Pn	**Pb**	**16 19 43.1**	**+0.1**
STHS	**Stebnicka Huta**	**1.82**	**121**	*e*PN	**Pb**	**16 19 43.1**	**+0.1**
STHS				*e*LG	Lg	16 20 21.6	
UPC	**Upice**	**1.82**	**275**	*e*SG	**Sg**	**16 20 08.4**	**+1.0**
UPC	**Upice**	**1.82**	**275**	Sg	**Sg**	**16 20 08.4**	**+1.0**
VYHS	**Vyhne**	**1.88**	**180**	*e*PN	**Pn**	**16 19 42.0**	**-0.3**
VYHS				*e*SN	**Sn**	**16 20 05.5**	**-1.2**
KRUC	**Moravsky**	**2.07**	**232**	*e*Pn	**Pn**	**16 19 45.2**	**+0.4**
	baz=50						
KRUC				*e*Sg	**Sb**	**16 20 14.1**	**+0.6**
	3.0nm,0.3s,baz=50						
PRU	**Pruhonice**	**2.80**	**264**	*e*SG	**Sg**	**16 20 37.5**	**-1.3**
PRU	**Pruhonice**	**2.80**	**264**	Sg	**Sg**	**16 20 37.5**	**-1.3**
BRG	**Berggiesshubel**	**3.17**	**281**	SG	**Sg**	**16 20 53.0**	**+2.3**
	2.8nm,0.7s						

*DDA **23** 16:33:01.9, 39.′06N×29.′08E, h7km, Md2.1*
*ISCJB **23** 16:33:02.6±0.6, 39.′05N±0.′05×29.′07E±0.′05, h9km, Error ellipse: s-maj=7.6km s-min=4.1km az=150.2*
*CSEM **23** 16:33:02.4±0.2, 39.′09N×29.′05E, h2km, MD2.1, Error ellipse: s-maj=6.5km s-min=3.8km az=138.0*
*ISK **23** 16:33:02.3, 39.′08N×29.′06E, h7km, MD2.6*
ISC 23 16:33:02.4±1.0, **39.′07N**±0.′04×**29.′05E**±0.′03, **h9**km, **n18**, σ0=**53**/25, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**264**	P	**Pg**	**16 33 06.6**	**-1.1**
DEMI				S	**Sg**	**16 33 12.2**	**+0.9**
DEMI	**Demirci**	**0.27**	**264**	*i* P	**Pg**	**16 33 06.6**	**-1.1**
DEMI				*i* S	**Sg**	**16 33 12.2**	**+0.9**
GDZ	**Gediz**	**0.33**	**87**	P	**Pg**	**16 33 08.7**	**-0.3**
GDZ				S	**Sg**	**16 33 12.9**	**-0.5**
GDZ	**Gediz**	**0.33**	**87**	*i* P	**Pg**	**16 33 08.7**	**-0.3**
GDZ				*i* S	**Sg**	**16 33 12.9**	**-0.5**
TVSB	**Tavsanli**	**0.49**	**40**	*e*PG	**Pg**	**16 33 12.2**	**+0.2**
TVSB	**Tavsanli**	**0.49**	**40**	*e*Pg	**Pg**	**16 33 12.2**	**+0.2**
KULA	**Kula-Manisa**	**0.64**	**209**	*e*PG	**Pg**	**16 33 15.3**	**+0.6**
KULA				*e*SG	**Sb**	**16 33 24.4**	**-0.3**
KULA	**Kula-Manisa**	**0.64**	**209**	*e*Pg	**Pg**	**16 33 15.3**	**+0.6**
KULA				*e*Sg	**Sb**	**16 33 24.4**	**-0.3**
DURS	**Dursunbey**	**0.69**	**320**	*i* P	Pg	16 33 10.7	-5.1
CAVI	**Cavuskoy**	**1.28**	**28**	*e*PN	**Pg**	**16 33 27.1**	**+0.1**
CAVI	**Cavuskoy**	**1.28**	**28**	*e*Pn	**Pg**	**16 33 27.1**	**+0.1**
IZI	**Iznik**	**1.30**	**14**	*e*PN	**Pg**	**16 33 27.4**	**-0.1**
KCTX	**Karacabey (Bur**	**1.31**	**336**	*e*PN	**Pg**	**16 33 27.5**	**0.0**
KCTX	**Karacabey (Bur**	**1.31**	**336**	*e*Pn	**Pg**	**16 33 27.5**	**0.0**
BORA	**Eskisehir**	**1.35**	**53**	P	**Pb**	**16 33 28.0**	**+0.1**
BORA				S	**Sg**	**16 33 46.2**	**+0.4**
BORA	**Eskisehir**	**1.35**	**53**	*i* P	**Pb**	**16 33 27.9**	**+0.1**
BORA				*i* S	**Sg**	**16 33 46.2**	**+0.4**
ARMT	**Armutlu**	**1.50**	**354**	*e*PN	**Pb**	**16 33 30.4**	**0.0**
ARMT	**Armutlu**	**1.50**	**354**	*e*Pn	**Pb**	**16 33 30.4**	**0.0**

*IGQ **23** 16:33:15, 0.′92N×79.′63W, h12km±4km, Mb4.1, Error ellipse: s-maj=7.2km s-min=2.1km az=76.9*
*IDC **23** 16:33:16.6±0.8, 1.′01N×79.′61W, h23km±5km, mb3.7/8, mb1 4.0/10, mb1mx3.9/29, mbtmp3.9/10, ML2.8/2, MS3.6/10, Ms1 3.6/10, ms1mx3.3/31, Error ellipse: s-maj=31.1km s-min=14.6km az=68.0*
ISC 23 16:33:15.8±0.6, **0.′84N**±0.′05×**79.′70W**±0.′04, **h20**km, **n62**, σ0=**84**/58, **mb3.9**/7, **MS3.5**/7, **4C-13D**, **Near coast of Ecuador**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AMOM	**Mompiche**	**0.48**	**225**	⇑P	**Pb**	**16 33 25.7**	**+0.1**
	baz=224						
AMOM				⇑S	**Sn**	**16 33 35.0**	**-0.5**
	baz=224						
MAG1	**Magdalena**	**0.90**	**184**	⇑P	**Pn**	**16 33 33.1**	**-0.3**
	baz=188						
JAMA	**Jama**	**1.20**	**205**	P	**Pb**	**16 33 37.9**	**0.0**
	baz=205						
ASDO	**Santo Domingo**	**1.23**	**152**	P	**Pb**	**16 33 38.8**	**+0.3**
	baz=156						
OTAV	**Otavalo**	**1.39**	**115**	⇓P	**Pn**	**16 33 40.2**	**-0.2**
	baz=120						
OTAV				⇓S	**Sb**	**16 33 58.3**	**-0.5**
	baz=120						
OTAV	**Otavalo**	**1.39**	**115**	*e*P	**Pn**	**16 33 40.2**	**-0.2**
CUIC	**Cuicocha-Domo**	**1.44**	**111**	⇓P	**Pb**	**16 33 42.0**	**-0.3**
	baz=115						
COTA	**Cotacachi**	**1.45**	**110**	⇓P	**Pn**	**16 33 41.3**	**-0.1**
	baz=114						
PINO	**Pino**	**1.47**	**132**	⇓P	**Pb**	**16 33 42.2**	**-0.7**
	baz=136						
YANA	**Yana**	**1.48**	**130**	⇓P	**Pb**	**16 33 42.3**	**-0.6**
	baz=134						
URCU	**Urcuqui**	**1.50**	**105**	⇓P	**Pb**	**16 33 42.7**	**-0.5**
	baz=109						
URCU				⇓S	**Sb**	**16 34 04.1**	**+2.1**
	baz=109						
JUA2	**San Juan 2**	**1.51**	**133**	⇓P	**Pb**	**16 33 43.8**	**+0.3**
	baz=137						
PAST	**Pastocalle**	**1.85**	**145**	P	**Pb**	**16 33 50.5**	**+1.3**
	baz=148						
CAYA	**Cayambe**	**1.87**	**114**	P	**Pb**	**16 33 48.5**	**-1.2**
	baz=117						
PITA	**Cotopaxi Volc**	**1.88**	**137**	P	**Pb**	**16 33 49.4**	**-0.4**
	baz=141						
CAMI	**Rancho Maria**	**1.92**	**141**	⇓P	**Pb**	**16 33 50.0**	**-0.4**
	baz=144						
BNAS	**Cotopaxi Volca**	**1.93**	**141**	⇓P	**Pb**	**16 33 50.0**	**-0.7**
	baz=144						
VC1	**Cotopaxi 1**	**1.96**	**138**	P	**Pb**	**16 33 50.5**	**-0.7**
	baz=141						
BVC2	**Cotopaxi Volca**	**1.97**	**139**	⇓P	**Pb**	**16 33 51.7**	**+0.4**
	baz=142						
ATUL	**Tulc¡n**	**1.98**	**92**	P	**Pb**	**16 33 51.5**	**+0.2**
	baz=94						
MOV1	**Cotopaxi Vol s**	**1.99**	**141**	P	**Pb**	**16 33 52.0**	**+0.2**
	baz=143						
ANTI	**Antisana**	**2.00**	**130**	P	**Pb**	**16 33 51.2**	**-0.7**
	baz=133						
COV1	**Cotopaxi Volc**	**2.02**	**138**	⇑P	**Pb**	**16 33 51.9**	**-0.3**
	baz=143						
PISA	**Pisayambo**	**2.30**	**145**	P	**Pb**	**16 33 56.7**	**-0.2**
	baz=147						
ISPT	**Isla de la Pla**	**2.49**	**213**	P	**Pb**	**16 34 00.8**	**+0.9**
	baz=213						
IGUA	**Igualata**	**2.54**	**155**	P	**Pb**	**16 34 00.1**	**-1.1**
	baz=157						
JUI6	**Juive**	**2.56**	**151**	P	**Pb**	**16 34 02.0**	**+0.7**
	baz=153						
POND	**Pondoa**	**2.57**	**151**	P	**Pb**	**16 34 00.1**	**-1.3**
	baz=153						
BBIL	**Ulba Tungurahu**	**2.58**	**152**	P	**Pb**	**16 34 01.1**	**-0.5**
	baz=154						
BRUN	**Tungurahua Vol**	**2.59**	**150**	P	**Pb**	**16 34 01.2**	**-0.5**
	baz=152						
BULB	**Ulba Tungurahu**	**2.60**	**150**	P	**Pb**	**16 34 02.0**	**0.0**
	baz=152						
BMAS	**Trigal station**	**2.62**	**152**	⇓P	**Pb**	**16 34 02.9**	**+0.5**
	baz=154						
ARRY	**Arrayan**	**2.64**	**152**	P	**Pb**	**16 34 01.1**	**-1.6**
	baz=154						
GRGC	**Isla de Gorgon**	**2.65**	**35**	*e*P	Pn	16 33 54.0	-3.4
BPAT	**Tungurahua Vol**	**2.65**	**151**	P	**Pb**	**16 34 02.1**	**-0.7**
	baz=153						
PAT1	**Patacocha**	**2.65**	**151**	P	**Pb**	**16 34 02.4**	**-0.5**
	baz=153						
CRUC	**La Cruz**	**2

TVSB				*e*SG	**Sb**	**16 36 38.9**	**-1.5**
TVSB	**Tavsanli**	**0.46**	**43**	*e*Pg	**Pg**	**16 36 31.9**	**+0.7**
TVSB				*e*Sg	**Sb**	**16 36 38.9**	**-1.5**
DURS	**Dursunbey**	**0.66**	**318**	P	**Pg**	**16 36 34.8**	**-0.2**
DURS	**Dursunbey**	**0.66**	**318**	*i* P	**Pg**	**16 36 34.8**	**-0.2**
DURS				*i* S	**Sn**	**16 36 49.2**	**-0.4**
KULA	**Kula-Manisa**	**0.67**	**207**	*e*PG	**Pg**	**16 36 35.7**	**+0.5**
KULA	**Kula-Manisa**	**0.67**	**207**	*e*Pg	**Pg**	**16 36 35.7**	**+0.5**
CAVI	**Cavuskoy**	**1.25**	**29**	*e*PN	**Pn**	**16 36 47.1**	**+0.5**
CAVI				*e*SN	**Sn**	**16 37 04.8**	**+0.9**
CAVI	**Cavuskoy**	**1.25**	**29**	*e*Pn	**Pn**	**16 36 47.1**	**+0.5**
CAVI				*e*Sn	**Sn**	**16 37 04.8**	**+0.9**
KCTX	**Karacabey (Bur**	**1.27**	**335**	*e*PN	**Pg**	**16 36 46.9**	**+0.3**
KCTX				*e*SN	**Sn**	**16 37 05.4**	**+0.9**
KCTX	**Karacabey (Bur**	**1.27**	**335**	*e*Pn	**Pg**	**16 36 46.9**	**+0.3**
KCTX				*e*Sn	**Sn**	**16 37 05.4**	**+0.9**
BORA	**Eskisehir**	**1.33**	**54**	P	**Pg**	**16 36 48.0**	**+0.2**
BORA	**Eskisehir**	**1.33**	**54**	*i* P	**Pg**	**16 36 48.0**	**+0.2**
ARMT	**Armutlu**	**1.46**	**354**	*e*PN	**Pb**	**16 36 50.0**	**-0.1**
ARMT	**Armutlu**	**1.46**	**354**	*e*Pn	**Pb**	**16 36 50.0**	**-0.1**

*ISCJB **23** 16:40:07.7±0.8, 7°.5S±0°.1×106°.72E±0°.08, h66km, mb3.5/4, Error ellipse: s-maj=18.1km s-min=6.3km az=33.0*
*DJA **23** 16:40:07.1±0.6, 8°.S±.5°×10°.7E±°, h27km±6km, M4.2/16, MLv4.2/16*
*IDC **23** 16:40:13.0±4.0, 7°.15S×106°.69E, h115km±27km, mb3.3/4, mb1 3.4/4, mb1mx3.1/52, mbtmp3.6/4, Error ellipse: s-maj=81.7km s-min=22.6km az=51.0*
ISC 23 16:40:09.2±1.0, 7°.5S±0°.1×106°.73E±0°.07, h66km, n21, σ0s89/18, mb3.4/4, Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CNJI	**Cibinong**	**0.44**	**65**	P	**Pn**	**16 40 19.3**	**-1.7**
SKJI	**Sukabumi**	**0.52**	**340**	P	**Pn**	**16 40 20.6**	**-1.2**
SKJI				S	**Sn**	**16 40 30.0**	**-1.0**
CISI	**Cisompet, Garu**	**1.08**	**93**	P	**Pn**	**16 40 27.3**	**-1.2**
LEM	**Lembang**	**1.10**	**53**	P	Pn	16 40 34.6	+5.7
	400nm,0.3s,baz=90,slow=6.6,SNR=204						
LEM				S	Sn	16 40 51.2	+7.6
	219nm,0.3s,baz=98,slow=19,SNR=9.5						
LEM	**Lembang**	**1.10**	**53**	P	**Pn**	**16 40 29.1**	**+0.2**
CGJI	**Cibinong**	**1.35**	**310**	P	**Pn**	**16 40 31.2**	**-0.8**
SBJI	**Serang**	**1.49**	**336**	P	**Pn**	**16 40 34.2**	**+0.3**
CMJI	**Cimerak**	**1.73**	**100**	P	**Pn**	**16 40 36.2**	**-0.8**
KASI	**Kota Agung**	**2.96**	**311**	P	**Pn**	**16 40 53.4**	**-0.4**
LWLI	**Liwa**	**3.62**	**313**	P	**Pn**	**16 41 02.5**	**-0.4**
SMRI	**Semarang**	**3.71**	**83**	P	**Pn**	**16 41 04.1**	**+0.1**
UGM	**Wanagama**	**3.78**	**97**	P	**Pn**	**16 41 04.5**	**-0.5**
MNAI	**Manna**	**4.88**	**309**	P	**Pn**	**16 41 19.7**	**-0.3**
WRA	**Warramunga Arr**	**29.48**	**118**	P	**P**	**16 46 07.0**	**-0.3**
	0.5nm,0.8s,baz=288,slow=12,SNR=3.9						
WRA				PcP	**PcP**	**16 49 11.0**	**-0.5**
	0.2nm,0.8s,baz=308,slow=2.0,SNR=4.6						
ASAR	**Alice Springs**	**30.62**	**125**	P	**P**	**16 46 18.4**	**+1.1**
	0.3nm,0.8s,baz=301,slow=8.6,SNR=6.0						
H08S2	**Diego Garcia H**	**33.94**	**267**	T	T	17 22 16.1	
	baz=91,slow=76,SNR=31						
H08S3	**Diego Garcia H**	**33.95**	**267**	T	T	17 22 16.9	
	baz=91,slow=76,SNR=38						
H08S1	**Diego Carcia H**	**33.95**	**267**	T	T	17 22 17.6	
	baz=91,slow=76,SNR=38						
STKA	**Stephens Creek**	**40.51**	**132**	P	**P**	**16 47 43.0**	**+1.1**
	1.5nm,0.3s,baz=304,slow=6.7,SNR=12						
MKAR	**Makanchi Array**	**58.26**	**340**	P	P	16 49 52.3	-4.6
	0.3nm,0.5s,baz=140,slow=7.6,SNR=4.5						
TXAR	**Lajitas Array**	**144.09**	**49**	PKP	**PKPab**	**16 59 36.1**	**+0.3**
	0.1nm,0.5s,baz=356,slow=1.2,SNR=3.7						

*ISCJB **23** 16:49:05.4±0.7, 51°.38N±0°.03×16°.19E±0°.03, h0km, Error ellipse: s-maj=4.8km s-min=2.8km az=12.4*
*CSEM **23** 16:49:07.0±0.4, 51°.40N×16°.15E, h2km, ML3.2/10, Error ellipse: s-maj=5.9km s-min=3.5km az=2.0*
*WAR **23** 16:49:07.0, 51°.44N×16°.20E, h1km, Mw2.5*
*PRU **23** 16:49:08.1, 51°.37N×16°.16E, h0km*
*VIE **23** 16:49:09.2±0.9, 51°.23N×16°.24E, h0km, mb2.2/3, ML2.4/5, Error ellipse: s-maj=4.9km s-min=4.6km az=153.0, Suspected Mining induced.*
ISC 23 16:49:07.3±1.0, 51°.41N±0°.05×16°.14E±0°.02, h0km, n35, σ0s56/59, 1D, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.57**	**170**	*e*Pg	**Pg**	**16 49 18.3**	**0.0**
KSP				*e*Sg	**Sg**	**16 49 26.2**	**+0.5**
KSP	**Ksiaz**	**0.57**	**170**	*e*Pg	**Pg**	**16 49 18.3**	**0.0**
KSP				*e*Sg	**Sg**	**16 49 26.2**	**+0.5**
UPC	**Upice**	**0.91**	**185**	*e*PG	**Pg**	**16 49 24.6**	**0.0**
UPC				*e*SG	**Sg**	**16 49 37.1**	**+0.8**
	comp=Z,74nm,0.3s						
UPC	**Upice**	**0.91**	**185**	Pg	**Pg**	**16 49 24.6**	**0.0**
UPC				Sg	**Sg**	**16 49 37.1**	**+0.8**
	74nm,0.3s						
DPC	**Dobruska-Polom**	**1.06**	**174**	*e*PG	**Pg**	**16 49 27.2**	**-0.5**
DPC				*e*SG	**Sg**	**16 49 41.6**	**+0.1**
	comp=Z,20nm,0.4s						
DPC	**Dobruska-Polom**	**1.06**	**174**	Pg	**Pg**	**16 49 27.2**	**-0.5**
DPC				Sg	**Sg**	**16 49 41.6**	**+0.1**
	20nm,0.4s						
PVCC	**Panska Ves**	**1.33**	**229**	*e*PG	**Pn**	**16 49 33.1**	**0.0**
PVCC				*e*SG	**Sn**	**16 49 51.1**	**-0.3**
	comp=Z,116nm,0.3s						
PVCC	**Panska Ves**	**1.33**	**229**	Pg	**Pn**	**16 49 33.1**	**0.0**
PVCC				Sg	**Sn**	**16 49 51.1**	**-0.3**
	116nm,0.3s						
KRLC	**Kraliky**	**1.40**	**163**	*e*PG	**Pg**	**16 49 33.2**	**-0.8**
KRLC				*e*SG	**Sg**	**16 49 51.0**	**-1.1**
KRLC	**Kraliky**	**1.40**	**163**	Pg	**Pg**	**16 49 33.2**	**-0.8**
KRLC				Sg	**Sg**	**16 49 51.0**	**-1.1**
BRG	**Berggiesshubel**	**1.48**	**250**	PG	**Pb**	**16 49 36.0**	**+0.3**
BRG				SG	**Sn**	**16 49 55.8**	**+0.5**
	38nm,0.4s						
GOPC	**GO Pecny, Ondr**	**1.73**	**210**	*e*SG	**Sg**	**16 50 02.8**	**+0.1**
	comp=Z,13nm,0.4s						
GOPC	**GO Pecny, Ondr**	**1.73**	**210**	Sg	**Sg**	**16 50 02.8**	**+0.1**
	13nm,0.4s						
PRU	**Pruhonice**	**1.75**	**216**	*e*PN	**Pn**	**16 49 38.5**	**-0.3**
PRU				*e*PG	**Pb**	**16 49 39.9**	**-0.3**
PRU				*e*SG	**Sg**	**16 50 03.1**	**-0.3**
	comp=Z,18nm,0.3s						
PRU	**Pruhonice**	**1.75**	**216**	Pn	**Pn**	**16 49 38.5**	**-0.3**
MORC	**Moravsky Berou**	**1.86**	**151**	*e*Pn	**Pn**	**16 49 39.1**	**-1.4**
MORC				*e*Sg	**Sn**	**16 50 04.7**	**0.0**
CLL	**Collm**	**1.97**	**268**	*e*Pg	**Pb**	**16 49 44.0**	**0.0**
CLL				*e*Sg	**Sg**	**16 50 11.0**	**+0.5**
	comp=Z,11nm,0.5s						
OKC	**Ostrava-Krasne**	**2.03**	**140**	*e*SG	**Sb**	**16 50 10.3**	**-0.4**
OKC	**Ostrava-Krasne**	**2.03**	**140**	Sg	**Sb**	**16 50 10.3**	**-0.4**
VRAC	**Vranov**	**2.12**	**172**	*e*Pn	**Pn**	**16 49 44.9**	**+0.9**
VRAC				*e*Sg	**Sb**	**16 50 13.2**	**-0.3**
TREC	**Trest**	**2.16**	**191**	*e*SG	**Sg**	**16 50 16.3**	**-0.2**
	comp=Z,11nm,0.3s						
TREC	**Trest**	**2.16**	**191**	Sg	**Sg**	**16 50 16.3**	**-0.2**
	comp=Z,11nm,0.3s						
OJC	**Ojcow**	**2.61**	**116**	*e*Pg	**Pg**	**16 49 56.7**	**-0.6**
OJC				*e*Sg	**Sg**	**16 50 31.0**	**-0.1**
OJC	**Ojcow**	**2.61**	**116**	*e*Pg	**Pg**	**16 49 56.7**	**-0.6**
OJC				*e*Sg	**Sg**	**16 50 31.0**	**-0.1**
OJC	**Ojcow**	**2.61**	**116**	*e*Pg	**Pg**	**16 49 56.7**	**-0.6**
OJC				*e*Sg	**Sg**	**16 50 31.0**	**-0.1**
NKC	**Novy Kostel**	**2.62**	**245**	*e*PN	**Pn**	**16 49 50.6**	**-0.3**
NKC				*e*PG	**Pg**	**16 49 57.1**	**-0.4**
NKC				*e*SG	**Sg**	**16 50 31.3**	**-0.1**
	comp=Z,32nm,0.3s						
NKC	**Novy Kostel**	**2.62**	**245**	Pn	**Pn**	**16 49 50.6**	**-0.3**
KHC	**Kasperske Hory**	**2.81**	**217**	*e*PG	**Pb**	**16 49 59.0**	**+0.7**
KHC	**Kasperske Hory**	**2.81**	**217**	Pg	**Pb**	**16 49 59.0**	**+0.7**
LANS	**Liptovska Anna**	**3.11**	**135**	*e*PG	**Pb**	**16 50 04.8**	**+1.3**
LANS				*e*SG	**Sb**	**16 50 43.5**	**+1.6**
CONA	**Conrad Observa**	**3.49**	**183**	Sg	**Sg**	**16 50 58.9**	**-0.4**
	comp=Z,7.9nm,0.3s						
MOA	**Molln**	**3.76**	**200**	Sg	**Sg**	**16 51 08.7**	**+0.5**
	comp=Z,4.5nm,0.5s						
STHS	**Stebnicka Huta**	**3.83**	**119**	*e*Pg	**Pg**	**16 50 20.4**	**-0.2**
STHS				*e*Sg	**Sg**	**16 51 10.6**	**+0.4**
STHS	**Stebnicka Huta**	**3.83**	**119**	*e*PG	**Pg**	**16 50 20.4**	**-0.2**
STHS				*e*SG	**Sg**	**16 51 10.5**	**+0.4**
STHS				*e*LG	Lg	16 51 20.3	
ARSA	**Arzberg**	**4.18**	**186**	Sg	**Sg**	**16 51 21.3**	**-0.2**
	comp=Z,1.4nm,0.3s						

IDC 23 16:49:28.4±467.0, 48°.36N×42°.72E, h0km, Error ellipse: s-maj=202.9km s-min=133.8km az=168.0, Ukraine-Moldova-Southwestern Russia region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I43RU	**DUBNA INFRASON 9.02**	**340**		*i*		17 42 40.0	
	baz=154,slow=310,SNR=2.2						
I31KZ	**AKTYUBINSK INF 10.19**	**73**		*i*		17 56 50.0	
	baz=263,slow=293,SNR=2.0						
I26DE	**FREYUNG INFRAS19.14**	**282**		*i*		18 50 00.0	
	baz=82,slow=327,SNR=1.0						

*ISCJB **23** 16:54:57.9±0.5, 39°.12N±0°.04×28°.98E±0°.03, h1km±6km, Error ellipse: s-maj=6.2km s-min=3.7km az=170.9*
*ISK **23** 16:54:57.7, 39°.12N×29°.01E, h5km, MD2.8*
*DDA **23** 16:54:57.9, 39°.12N×29°.02E, h7km, Md2.5*
*CSEM **23** 16:54:58.2±0.1, 39°.11N×29°.00E, h5km, MD2.5, Error ellipse: s-maj=2.2km s-min=1.8km az=155.0*
ISC 23 16:54:58.4±1.0, 39°.13N±0°.03×28°.98E±0°.02, h6km±11km, n52, σ0s48/65, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.22**	**248**	P	**Pg**	**16 55 03.0**	**+0.2**
DEMI				S	**Sg**	**16 55 06.4**	**+0.5**
DEMI	**Demirci**	**0.22**	**248**	*i* P	**Pg**	**16 55 03.0**	**+0.2**
DEMI				*i* S	**Sg**	**16 55 06.4**	**+0.5**
GDZ	**Gediz**	**0.39**	**95**	P	**Pg**	**16 55 05.7**	**-0.3**
GDZ				S	**Sg**	**16 55 10.8**	**-0.3**
GDZ	**Gediz**	**0.39**	**95**	*i* P	**Pg**	**16 55 05.7**	**-0.3**
GDZ				*i* S	**Sg**	**16 55 10.8**	**-0.3**
TVSB	**Tavsanli**	**0.49**	**49**	*e*PG	**Pg**	**16 55 07.5**	**-0.5**
TVSB				*e*SG	**Sg**	**16 55 14.4**	**0.0**
TVSB	**Tavsanli**	**0.49**	**49**	*e*Pg	**Pg**	**16 55 07.5**	**-0.5**
TVSB				*e*Sg	**Sg**	**16 55 14.4**	**0.0**
DURS	**Dursunbey**	**0.62**	**320**	P	**Pg**	**16 55 10.1**	**-0.2**
DURS				S	**Sb**	**16 55 20.2**	**-0.4**
DURS	**Dursunbey**	**0.62**	**320**	*i* P	**Pg**	**16 55 10.1**	**-0.2**
DURS				*i* S	**Sb**	**16 55 20.2**	**-0.4**
KULA	**Kula-Manisa**	**0.66**	**203**	*e*PG	**Pg**	**16 55 10.7**	**-0.4**
KULA	**Kula-Manisa**	**0.66**	**203**	*e*Pg	**Pg**	**16 55 10.7**	**-0.4**
KHL	**Karahalli**	**0.91**	**152**	*e*PG	**Pg**	**16 55 15.5**	**-0.3**
KHL	**Karahalli**	**0.91**	**152**	*e*Pg	**Pg**	**16 55 15.5**	**-0.3**
ORLT	**Orhaneli**	**0.92**	**356**	*e*PG	**Pg**	**16 55 16.1**	**0.0**
ORLT	**Orhaneli**	**0.92**	**356**	*e*Pg	**Pg**	**16 55 16.1**	**0.0**
AKHS	**Akhisar**	**0.94**	**255**	P	**Pb**	**16 55 16.9**	**-0.3**
AKHS				S	**Sg**	**16 55 28.5**	**-0.3**
AKHS	**Akhisar**	**0.94**	**255**	*i* P	**Pb**	**16 55 16.9**	**-0.3**
AKHS				*i* S	**Sg**	**16 55 28.4**	**-0.3**
AKS	**Akhisar**	**0.94**	**255**	*e*PG	**Pg**	**16 55 16.7**	**+0.1**
AKS	**Akhisar**	**0.94**	**255**	*e*Pg	**Pg**	**16 55 16.7**	**+0.1**
BALB	**Balikesir**	**1.00**	**301**	*e*PG	**Pg**	**16 55 17.3**	**-0.3**
BALB	**Balikesir**	**1.00**	**301**	*e*Pg	**Pg**	**16 55 17.3**	**-0.3**
KCTX	**Karacabey (Bur**	**1.24**	**337**	*e*PN	**Pg**	**16 55 22.0**	**-0.1**
KCTX	**Karacabey (Bur**	**1.24**	**337**	*e*Pn	**Pg**	**16 55 22.0**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.24**	**357**	*e*PN	**Pg**	**16 55 22.0**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.24**	**357**	*e*Pn	**Pg**	**16 55 22.0**	**-0.3**
CAVI	**Cavuskoy**	**1.26**	**31**	*e*PN	**Pg**	**16 55 22.0**	**-0.7**
CAVI	**Cavuskoy**	**1.26**	**31**	*e*Pn	**Pg**	**16 55 22.0**	**-0.7**
IZI	**Iznik**	**1.27**	**17**	*e*PN	**Pg**	**16 55 22.4**	**-0.3**
IZI	**Iznik**	**1.27**	**17**	*e*Pn	**Pg**	**16 55 22.4**	**-0.3**
GONE	**Gonen-Balikesi**	**1.36**	**313**	*e*PN	**Pb**	**16 55 24.2**	**-0.1**
GONE	**Gonen-Balikesi**	**1.36**	**313**	*e*Pn	**Pb**	**16 55 24.2**	**-0.1**
BORA	**Eskisehir**	**1.36**	**56**	P	**Pn**	**16 55 23.7**	**-0.3**
BORA				S	**Sb**	**16 55 42.0**	**-0.1**
BORA	**Eskisehir**	**1.36**	**56**	*i* P	**Pn**	**16 55 23.7**	**-0.3**
BORA				*i* S	**Sb**	**16 55 42.0**	**-0.1**
ADVT	**Abdulvahap**	**1.43**	**24**	*e*PN	**Pn**	**16 55 24.8**	**-0.1**
ADVT	**Abdulvahap**	**1.43**	**24**	*e*Pn	**Pn**	**16 55 24.8**	**-0.1**
ARMT	**Armutlu**	**1.44**	**356**	*e*PN	**Pn**	**16 55 24.8**	**-0.2**
ARMT	**Armutlu**	**1.44**	**356**	*e*Pn	**Pn**	**16 55 24.8**	**-0.2**
EDC	**Edincik**	**1.49**	**325**	*e*PN	**Pn**	**16 55 25.6**	**-0.2**
EDC	**Edincik**	**1.49**	**325**	*e*Pn	**Pn**	**16 55 25.6**	**-0.2**
ESKT	**Eskisehir**	**1.50**	**74**	*i* P	**Pg**	**16 55 28.2**	**+1.0**
ESKT				*i* S	**Sg**	**16 55 48.3**	**+1.6**
SEYT	**Eskypehyr**	**1.50**	**74**	P	**Pg**	**16 55 28.2**	**+1.0**
GULT	**Gulveren**	**1.76**	**42**	*e*PN	**Pn**	**16 55 30.0**	**+0.5**
GULT	**Gulveren**	**1.76**	**42**	*e*Pn	**Pn**	**16 55 30.0**	**+0.5**
SILT	**Sile**	**2.09**	**14**	*e*PN	**Pn**	**16 55 34.7**	**+0.8**
SILT	**Sile**	**2.09**	**14**	*e*Pn	**Pn**	**16 55 34.7**	**+0.8**
RKY	**Sarkoy-Tekirda**	**2.09**	**319**	*e*PN	**Pn**	**16 55 34.7**	**+0.8**
RKY	**Sarkoy-Tekirda**	**2.09**	**319**	*e*Pn	**Pn**	**16 55 34.7**	**+0.8**
KLYT	**Kilyos**	**2.12**	**1**	*e*PN	**Pn**	**16 55 35.1**	**+0.7**
KLYT	**Kilyos**	**2.12**	**1**	*e*Pn	**Pn**	**16 55 35.1**	**+0.7**
CTKS	**Kestanelik-??a**	**2.14**	**350**	*e*PN	**Pn**	**16 55 34.9**	**+0.3**
CTKS	**Kestanelik-??a**	**2.14**	**350**	*e*Pn	**Pn**	**16 55 34.9**	**+0.3**
CTYL	**Yalikoy Yolu**	**2.41**	**347**	*e*PN	**Pn**	**16 55 38.7**	**+0.4**
CTYL	**Yalikoy Yolu**	**2.41**	**347**	*e*Pn	**Pn**	**16 55 38.7**	**+0.4**

*IDC **23** 16:56:30.8±3.2, 30°.98S×177°.62W, h0km, mb4.0/4, mb1 4.1/5, mb1mx3.8/36, mbtmp3.9/5, ML2.9/1, Error ellipse: s-maj=66.7km s-min=24.8km az=110.0*
*ISCJB **23** 16:56:35.2±1.5, 30°.99S±0°.08×177°.9W±0°.2, h35km, mb4.0/5, Error ellipse: s-maj=31.2km s-min=10.1km az=12.3*
*NEIC **23** 16:56:36.5±1.3, 30°.89S×177°.74W, h35km, mb4.5/2, Error ellipse: s-maj=28.6km s-min=14.8km az=98.0*
ISC 23 16:56:36.3±1.5, 30°.85S±0°.08×177°.8W±0°.2, h35km, n10, σ1s67/12, mb4.1/5, Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.59**	**356**	Pn	**Pn**	**16 57 02.2**	**+0.2**
	206nm,0.3s,baz=222,slow=23,SNR=7.8						
RAO				Sn	**Sn**	**16 57 18.6**	**-2.7**
	128nm,0.3s,baz=76,slow=12,SNR=5.6						
URZ	**Urewera**	**8.51**	**208**	Pn	**Pn**	**16 58 35.2**	**-1.9**
	0.2nm,0.3s,baz=16,slow=19,SNR=3.4						
URZ				Sn	**Sn**	**17 00 09.9**	**-1.9**
	0.4nm,0.3s,baz=155,slow=19,SNR=5.6						
CTA	**Charters Tower**	**34.06**	**280**	P	**P**	**17 03 19.4**	**+1.9**
	1.5nm,0.6s,baz=80,slow=6.1,SNR=3.9						
CTAO	**Charters Tower**	**34.06**	**280**	*e*P	**P**	**17 03 18.8**	**+1.3**
	15nm,0.8s						
STKA	**Stephens Creek**	**34.56**	**258**	P	**P**	**17 03 23.3**	**+1.6**
	3.6nm,0.8s,baz=99,slow=11,SNR=4.6						
ASAR	**Alice Springs**	**43.27**	**267**	P	**P**	**17 04 34.5**	**-0.2**
	0.7nm,0.8s,baz=104,slow=7.5,SNR=8.1						
WRAB	**Tennant Creek**	**44.30**	**273**	*e*P	**P**	**17 04 42.6**	**-0.4**
	3.5nm,1.1s						
WRA	**Warramunga Arr**	**44.30**	**272**	P	**P**	**17 04 42.8**	**-0.2**
	0.8nm,0.6s,baz=111,slow=8.1,SNR=9.1						
QSPA	**South Pole Qui**	**59.27**	**180**	*e*P	**P**	**17 06 35.5**	**+1.4**
FINES	**FINESS Array B**	**145.63**	**340**	PKPbc	**PKPab**	**17 16 10.3**	**-0.5**
	0.9nm,0.8s,baz=69,slow=7.6,SNR=3.9						

*ISCJB **23** 17:01:18.0±0.4, 2°.11S±0°.04×128°.14E±0°.07, h33km, mb4.1/14, MS2.8/3, Error ellipse: s-maj=9.4km s-min=6.3km az=175.1*
*IDC **23** 17:01:22.4±2.5, 2°.08S×128°.26E, h54km±25km, mb3.8/11, mb1 3.9/15, mb1mx3.7/45, mbtmp4.1/15, ML4.0/4, MS2.9/4, Ms1 2.9/4, ms1mx2.6/38, Error ellipse: s-maj=18.7km s-min=12.9km az=102.0*
*NEIC **23** 17:01:25.4±2.8, 2°.18S×128°.19E, h88km±29km, mb4.5/3, Error ellipse: s-maj=24.1km s-min=8.9km az=62.0*
ISC 23 17:01:19.8±0.6, 2°.19S±0°.06×128°.18E±0°.10, h33km, n24, σ1s33/24, mb4.3/14, MS2.8/3, Ceram Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SIJI	**Sorong**	**3.35**	**67**	P	**Pn**	**17 02 09.7**	**-0.2**
	5.8nm,0.3s,baz=355,slow=13,SNR=2.6						
SIJI				S	**Sn**	**17 02 48.6**	**+0.1**
	8.9nm,0.3s,baz=270,slow=20,SNR=3.9						
KAPI	**Kappang**	**8.87**	**251**	P	Pn	17 03 31.4	+5.7
	1.5nm,0.3s,baz=111,slow=2.9,SNR=7.8						
FITZ	**Fitzroy Crossi**	**16.01**	**189**	P	**P**	**17 05 06.1**	**+0.3**
	0.4nm,0.3s,baz=25,slow=9.2,SNR=9.3						
FITZ				LR	LR	17 11 52.1	
	comp=Z,55nm,19.6s,baz=12,slow=39						
WRAB	**Tennant Creek**	**18.64**	**162**	*e*P	**P**	**17 05 34.6**	**-0.3**
WRA	**Warramunga Arr**	**18.64**	**162**	P	**Pn**	**17 05 35.8**	**+0.4**
	1.0nm,0.3s,baz=342,slow=12,SNR=43						
WRA				S	**Sn**	**17 09 01.0**	**-2.2**
	0.2nm,0.3s,baz=339,slow=22,SNR=5.7						
MBWA	**Marble Bar**	**20.58**	**203**	*e*P	**P**	**17 05 57.2**	**+1.2**
ASAR	**Alice Springs**	**22.06**	**166**	P	**P**	**17 06 13.0**	**+1.0**
	11nm,0.8s,baz=346,slow=11,SNR=131						
ASAR				S	**S**	**17 10 10.0**	**-3.7**
	1.8nm,0.7s,baz=348,slow=21,SNR=9.2						
CTA	**Charters Tower**	**25.06**	**137**	P	**P**	**17 06 43.4**	**+2.0**
	1.8nm,0.6s,baz=293,slow=13,SNR=4.5						
CTAO	**Charters Tower**	**25.06**	**137**	P	**P**	**17 06 42.8**	**+1.4**
STKA	**Stephens Creek**	**32.12**	**158**	P	**P**	**17 07 45.6**	**+1.3**
	3.2nm,0.9s,baz=327,slow=8.4,SNR=6.8						
STKA				LR	LR	17 22 39.0	
	comp=Z,18nm,20.1s,baz=24,slow=40						
JNU	**Nakatsue**	**35.21**	**4**	LR	LR	17 21 22.0	
	comp=Z,18nm,20.1s,baz=122,slow=34						
KSAR	**Wonju Array Be**	**39.43**	**360**	P	**P**	**17 08 46.7**	**-0.1**
KSRS	**Korea Array**	**39.44**	**360**	P	**P**	**17 08 46.7**	**-0.1**
	0.8nm,0.7s,baz=179,slow=12,SNR=4.7						
KSRS				LR	LR	17 24 25.1	
	comp=Z,16nm,18.8s,baz=3.5,slow=35						
MJAR	**Matsushiro Arr**	**39.65**	**13**	P	**P**	**17 08 47.3**	**-1.4**
	1.2nm,0.7s,baz=182,slow=10,SNR=4.3						
USRK	**Ussuriysk Ar.**	**46.31**	**4**	P	**P**	**17 09 42.0**	**-0.5**
	2.8nm,0.6s,baz=189,slow=7.2,SNR=9.3						
LSA	**Lhasa**	**47.52**	**315**	*e*P	**P**	**17 09 53.2**	**+0.5**
	3.0nm,0.6s						
SONM	**Songino Array**	**53.33**	**342**	P	**P**	**17 10 35.6**	**-0.4**
	0.4nm,0.8s,baz=142,slow=7.2,SNR=3.3						
MKAR	**Makanchi Array**	**63.24**	**326**	P	**P**	**17 11 44.6**	**-0.5**
	3.0nm,0.8s,baz=124,slow=8.3,SNR=29						
YAK	**Yakutsk**	**64.05**	**1**	P	**P**	**17 11 50.4**	**+0.3**
	1.3nm,0.3s,baz=192,slow=20,SNR=2.9						
ZALV	**Zalesovo Beam**	**66.49**	**334**	P	**P**	**17 12 04.3**	**-1.8**
	0.5nm,0.4s,baz=127,slow=9.6,SNR=2.7						
SEY	**Seymchan**	**67.47**	**12**	P	**P**	**17 12 13.0**	**+0.9**
	0.5nm,0.4s,baz=246,slow=23,SNR=4.3						
KURK	**Kurchatov**	**67.49**	**328**	*e*P	**P**	**17 12 11.3**	**-1.2**
	6.8nm,0.8s						
TIXI	**Tiksi**	**73.71**	**0**	*e*P	**P**	**17 12 49.3**	**-0.6**
	2.0nm,0.3s						
QSPA	**South Pole Qui**	**87.76**	**180**	P	P	17 14 01.9	-3.5

*IDC **23** 17:05:33.1±7.8, 23°.94N×122°.84E, h0km, mb3.5/3, mb1 3.7/3, mb1mx3.2/45, mbtmp3.5/3, Error ellipse: s-maj=200.3km s-min=62.1km az=16.0*
*ISCJB **23** 17:05:34.7±0.4, 23°.62N±0°.02×122°.50E±0°.01, h19km±3km, mb3.3/3, Error ellipse: s-maj=3.2km s-min=2.0km az=158.9*
*TAP **23** 17:05:35.6, 23°.60N×122°.51E, h27km±1km, ML3.7, D*
*JMA **23** 17:05:35.1±0.1, 23°.59N×122°.44E, h34km, M3.0*
ISC 23 17:05:32.1±1.2, 23°.60N±0°.02×122°.50E±0°.02, h3km±9km, n77, σ0s81/133, mb3.5/3, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TEGC	**Jichi Village**	**0.89**	**277**	P	**Pn**	**17 05 52.4**	**+0.9**
	baz=276						
HWA	**Hwalien**	**0.90**	**295**	*e*P	**Pb**	**17 05 50.9**	**+0.5**
	baz=294						
HWA				*e*S	**Sb**	**17 06 03.5**	**+0.7**
	baz=294						
JYNG	**Yonagunijimaku**	**0.94**	**26**	P	**Pn**	**17 05 52.7**	**+0.4**
JYNG				S	**Sb**	**17 06 04.8**	**+0.8**
ESF	**Shoufeng Towns**	**0.95**	**287**	P	**Pn**	**17 05 52.8**	**+0.4**
	baz=286						
TWD	**Chiawan**

WNT			eS	Sn	17 06 25.3	+0.7
	baz=279					
TAP1	**Taipei**	**1.69 328**	eP	**Pg**	**17 06 04.8**	**+0.3**
	baz=327					
TAP1			S	Sn	17 06 24.1	-0.5
	baz=327					
TAP	**Taipei**	**1.69 328**	eS	**Sn**	**17 06 24.2**	**-0.6**
	baz=327					
NSTT	**Nanjuang**	**1.71 307**	eP	**Pg**	**17 06 05.0**	**0.0**
	baz=306					
NSTT			S	Sn	17 06 24.9	-0.4
	baz=306					
ECL	**Taimali**	**1.74 235**	eP	**Pn**	**17 06 02.8**	**-0.5**
	baz=234					
TWQ1	**Liyutan**	**1.75 296**	eP	**Pg**	**17 06 05.7**	**+0.1**
	baz=295					
TWQ1			eS	Sn	17 06 26.5	+0.4
	baz=295					
TCU	**Taichung**	**1.75 288**	eP	**Pg**	**17 06 05.9**	**+0.1**
	baz=287					
TCU			eS	Sn	17 06 27.1	+0.8
	baz=287					
CHN4	**Tsaushan**	**1.77 262**	P	**Pb**	**17 06 05.5**	**+0.3**
	baz=261					
CHN4			S	Sn	17 06 26.9	+0.3
	baz=261					
WTP	**Ta-pu**	**1.77 259**	P	**Pb**	**17 06 05.5**	**+0.2**
	baz=258					
WTP			eS	Sn	17 06 27.2	+0.5
	baz=258					
WGK	**Gukeng**	**1.78 273**	P	**Pb**	**17 06 05.5**	**+0.1**
	baz=272					
WGK			eS	Sn	17 06 27.3	+0.4
	baz=272					
LAY	**Lan-yu**	**1.78 210**	eP	**Pn**	**17 06 02.8**	**-1.1**
	baz=209					
NSY	**Sanyi**	**1.78 297**	eP	**Pg**	**17 06 06.2**	**-0.2**
	baz=296					
NSY			eS	Sb	17 06 28.4	+0.1
	baz=296					
TWS1	**Kuangyinshan**	**1.79 327**	P	**Pb**	**17 06 05.6**	**+0.1**
	baz=326					
TWS1			S	Sn	17 06 27.3	+0.1
	baz=326					
NCU	**National Centr**	**1.81 319**	eS	**Sn**	**17 06 27.9**	**+0.1**
	baz=318					
SGST	**Jiashian**	**1.83 254**	P	**Pb**	**17 06 06.6**	**+0.2**
	baz=253					
SGST			S	Sn	17 06 27.8	-0.6
	baz=253					
HSN	**Hsinchu**	**1.84 311**	eP	**Pb**	**17 06 05.8**	**-0.7**
	baz=311					
HSN			eS	Sn	17 06 28.6	+0.2
	baz=311					
CHN1	**Nanshi**	**1.86 258**	eP	**Pb**	**17 06 07.2**	**+0.4**
	baz=257					
CHN1			eS	Sn	17 06 30.0	+1.1
	baz=257					
CHN2	**Minshiung**	**1.86 268**	eP	**Pb**	**17 06 07.2**	**+0.4**
	baz=267					
CHN2			eS	Sn	17 06 30.0	+1.1
	baz=267					
TWY	**Chenhua**	**1.86 334**	eP	**Pg**	**17 06 08.0**	**+0.2**
	baz=333					
TWY			eS	Sn	17 06 27.5	-1.4
	baz=333					
TWK	**Hsinying**	**1.88 260**	eP	**Pb**	**17 06 07.6**	**+0.5**
	baz=259					
TWK			eS	Sn	17 06 29.7	+0.3
	baz=259					
CHY	**Chiayi**	**1.91 267**	eP	**Pb**	**17 06 07.8**	**+0.3**
	baz=266					
CHY			eS	Sn	17 06 31.1	+1.1
	baz=266					
SSD	**Sandimen**	**1.92 244**	eP	**Pn**	**17 06 06.7**	**+1.0**
	baz=243					
JISG	**Ishigakijimahi**	**1.93 59**	P	**Pn**	**17 06 06.5**	**+0.7**
JISG			eS	Sn	17 06 30.0	-0.5
TAW	**Tawu**	**1.93 230**	eP	**Pn**	**17 06 07.0**	**+1.2**
	baz=230					
EAST	**Anshuo**	**1.94 232**	eP	**Pn**	**17 06 06.4**	**+0.3**
	baz=231					
WTCT	**Ta-ch'eng**	**2.05 278**	P	**Pb**	**17 06 09.9**	**-0.1**
	baz=277					
WTCT			S	Sn	17 06 34.4	+0.9
	baz=277					
TWM1	**Shoushan**	**2.06 248**	eP	**Pg**	**17 06 11.2**	**-0.4**
	baz=247					
TWM1			eS	Sb	17 06 35.9	-0.3
	baz=247					
WSF	**Szhu**	**2.09 271**	P	**Pb**	**17 06 10.8**	**+0.2**
	baz=270					
WSF			eS	Sn	17 06 35.7	+1.2
	baz=270					
CHN8	**Yiju**	**2.12 264**	P	**Pb**	**17 06 10.4**	**-0.7**
	baz=263					
CHN8			eS	Sn	17 06 36.5	+1.3
	baz=263					
SCZT	**Fangliau**	**2.12 235**	eP	**Pb**	**17 06 11.3**	**+0.1**
	baz=234					
SCZT			eS	Sn	17 06 36.2	+0.9
	baz=234					
SCLT	**Jiali**	**2.16 259**	eS	**Sn**	**17 06 37.4**	**+1.1**
	baz=258					
TSEB	**Hengchuen, Pin**	**2.25 221**	eP	**Pb**	**17 06 14.3**	**+1.0**
	baz=222					
TSEB			S	Sn	17 06 38.5	0.0
	baz=222					
JTJ	**Tarama**	**2.26 62**	P	**Pn**	**17 06 11.8**	**+1.3**
JTJ			eS	Sn	17 06 37.8	-1.1
HEN	**Hengchun**	**2.27 226**	eP	**Pb**	**17 06 12.9**	**-0.9**
	baz=225					
HEN			eS	Sn	17 06 39.1	0.0
	baz=225					
WDGT	**Dungji**	**2.63 263**	P	**Pn**	**17 06 16.7**	**+1.2**
	baz=262					
WDGT			eS	Sn	17 06 45.6	-2.4
	baz=262					
PNG	**Penghu**	**2.70 270**	P	**Pn**	**17 06 17.9**	**+1.4**
	baz=269					
PNG			S	Sn	17 06 48.7	-1.0
	baz=269					
JIRB	**Irabujima**	**2.73 63**	P	**Pn**	**17 06 18.4**	**+1.5**
JIRB			S	Sn	17 06 49.3	-1.1
JMJ	**Miyako jima 2**	**2.82 64**	S	**Sn**	**17 06 52.3**	**-0.4**
JIKM	**Ikemajima**	**2.83 62**	eS	**Sn**	**17 06 51.7**	**-1.3**
JKE	**Kume jima 2**	**4.74 54**	P	**Pn**	**17 06 44.7**	**+0.1**
SONM	**Songino Array**	**27.38 336**	P	**P**	**17 11 18.8**	**0.0**
	0.9nm,0.6s,baz=152,slow=10,SNR=5.0					
MKAR	**Makanchi Array**	**39.59 316**	P	**P**	**17 13 05.7**	**+0.9**
	0.3nm,0.6s,baz=108,slow=10,SNR=2.7					
YKA	**Yellowknife Ar**	**83.03 23**	P	**P**	**17 17 57.8**	**-0.8**
	0.3nm,0.9s,baz=317,slow=5.9,SNR=4.1					

*IDC **23** 17:10:29.9±1.8, 57°.65N×26°.65W, h0km, mb3.8/2, mb1 3.9/2, mb1mx3.6/18, mbtmp3.8/2, Error ellipse: s-maj=87.7km s-min=50.5km az=11.0*
*ISCJB **23** 17:10:47.9±1.1, 57°.3S±0°.2×27°.0W±0°.6, h150km, mb3.4/2, Error ellipse: s-maj=47.8km s-min=16.5km az=156.2*
ISC 23 17:10:49.4±1.0, 57°.4S±0°.2×27°.0W±0°.3, h150km, n10, σ0°98/7, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VNA3	**Neumayer Olymp**	**15.70**	**159**	PKP	**Pn**	**17 14 21.2**	**-0.8**
VNA2	**Neumayer--Watz**	**15.92**	**156**	P	**P**	**17 14 26.0**	**+0.7**
	baz=319,slow=14						
H10S2	**ASCENSION HYDR**	**49.24**	**16**	T	T	18 12 11.7	
	baz=191,slow=75						
H10S3	**ASCENSION HYDR**	**49.24**	**16**	T	T	18 12 08.6	
	baz=191,slow=75						
H10S1	**ASCENSION HYDR**	**49.25**	**16**	T	T	18 12 12.3	
	baz=191,slow=75						
LPAZ	**La Paz**	**51.25**	**306**	P	**P**	**17 19 37.8**	**-0.6**
	0.5nm,0.3s,baz=149,slow=5.9,SNR=2.6						
TORD	**Torodi Ar. Bea**	**74.15**	**29**	P	**P**	**17 22 09.0**	**-0.1**
	0.4nm,0.7s,baz=212,slow=8.0,SNR=2.0						
YKA	**Yellowknife Ar**	**137.24**	**317**	PKP	**PKPdf**	**17 29 54.1**	**+0.9**
	0.5nm,0.4s,baz=128,slow=2.2,SNR=16						
SONM	**Songino Array**	**150.65**	**89**	PKPbc	**PKPbc**	**17 30 21.9**	**-0.8**
	1.0nm,0.5s,baz=251,slow=5.2,SNR=6.1						
ILAR	**Eielson Array**	**151.08**	**310**	PKPbc	**PKPbc**	**17 30 23.9**	**+1.0**
	2.4nm,0.9s,baz=124,slow=1.1,SNR=16						

IDC 23 17:38:06.5±4.7, 19°.91S×176°.48W, h294km±44km, mb3.6/4, mb1 3.8/5, mb1mx3.2/32, mbtmp4.3/5, Error ellipse: s-maj=35.1km s-min=17.3km az=71.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**19.11**	**196**	P	P	17 42 07.4	-0.9
	1.3nm,0.3s,baz=32,slow=4.1,SNR=10						
URZ				S	S	17 45 28.9	0.0
	0.2nm,0.3s,baz=223,slow=19,SNR=2.4						
CTA	**Charters Tower**	**34.97**	**263**	P	P	17 44 32.1	+0.4
	8.7nm,0.7s,baz=101,slow=12,SNR=15						
ASAR	**Alice Springs**	**46.04**	**256**	P	P	17 46 02.0	+0.3
	3.5nm,0.7s,baz=93,slow=8.2,SNR=54						
WRA	**Warramunga Arr**	**46.10**	**261**	P	P	17 46 01.5	-0.6
	2.3nm,0.7s,baz=96,slow=7.7,SNR=33						
VNDA	**Vanda**	**58.63**	**185**	P	P	17 47 34.1	+1.4
	1.2nm,0.8s,baz=357,slow=5.3,SNR=6.7						
BRTR	**Keskin Array B**	**147.48**	**314**	PKPbc	PKPdf	17 57 14.1	+0.8
	0.4nm,0.6s,baz=49,slow=4.4,SNR=4.3						

*ISK **23** 17:43:20.6, 39°.10N×29°.13E, h4km, MD2.8*
*DDA **23** 17:43:20.7, 39°.17N×29°.01E, h7km, Md2.6*
*CSEM **23** 17:43:21.2±0.2, 39°.15N×29°.02E, h2km, MD2.6, Error ellipse: s-maj=4.4km s-min=3.3km az=158.0*
ISC 23 17:43:21.5±1.1, 39°.16N±0°.03×29°.02E±0°.02, h2km±12km, n20, σ0°46/30, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**243**	P	**Pg**	**17 43 26.6**	**0.0**
DEMI				S	**Sg**	**17 43 30.1**	**+0.1**
DEMI	**Demirci**	**0.26**	**243**	*i* P	**Pg**	**17 43 26.6**	**0.0**
DEMI				*i* S	**Sg**	**17 43 30.1**	**+0.1**
GDZ	**Gediz**	**0.37**	**101**	P	**Pg**	**17 43 28.4**	**-0.2**
GDZ				S	**Sg**	**17 43 33.7**	**+0.3**
GDZ	**Gediz**	**0.37**	**101**	*i* P	**Pg**	**17 43 28.4**	**-0.2**
GDZ				*i* S	**Sg**	**17 43 33.7**	**+0.3**
TVSB	**Tavsanli**	**0.45**	**50**	*e*PG	**Pg**	**17 43 29.5**	**-0.6**
TVSB				*e*SG	**Sg**	**17 43 36.4**	**+0.5**
TVSB	**Tavsanli**	**0.45**	**50**	*e*Pg	**Pg**	**17 43 29.5**	**-0.6**
TVSB				*e*Sg	**Sg**	**17 43 36.4**	**+0.5**
DURS	**Dursunbey**	**0.61**	**316**	P	**Pg**	**17 43 32.8**	**-0.4**
DURS				S	**Sg**	**17 43 40.4**	**-0.7**
DURS	**Dursunbey**	**0.61**	**316**	*i* P	**Pg**	**17 43 32.8**	**-0.4**
DURS				*i* S	**Sg**	**17 43 40.4**	**-0.7**
KULA	**Kula-Manisa**	**0.70**	**203**	*e*PG	**Pg**	**17 43 34.5**	**-0.5**
KULA	**Kula-Manisa**	**0.70**	**203**	*e*Pg	**Pg**	**17 43 34.5**	**-0.5**
KCTX	**Karacabey (Bur**	**1.21**	**335**	*e*PN	**Pn**	**17 43 46.0**	**+0.4**
KCTX	**Karacabey (Bur**	**1.21**	**335**	*e*Pn	**Pn**	**17 43 46.0**	**+0.4**
CAVI	**Cavuskoy**	**1.22**	**31**	*e*PN	**Pg**	**17 43 45.1**	**+0.3**
CAVI	**Cavuskoy**	**1.22**	**31**	*e*Pn	**Pg**	**17 43 45.1**	**+0.3**
BORA	**Eskisehir**	**1.32**	**57**	P	**Pg**	**17 43 46.3**	**-0.6**
BORA				S	**Sn**	**17 44 05.1**	**-0.3**
BORA	**Eskisehir**	**1.32**	**57**	*i* P	**Pg**	**17 43 46.3**	**-0.6**
BORA				*i* S	**Sn**	**17 44 05.1**	**-0.3**
ARMT	**Armutlu**	**1.41**	**355**	*e*PN	**Pb**	**17 43 49.1**	**+0.6**
ARMT	**Armutlu**	**1.41**	**355**	*e*Pn	**Pb**	**17 43 49.1**	**+0.6**
GULT	**Gulveren**	**1.71**	**42**	*e*PN	**Pn**	**17 43 52.0**	**-0.4**
GULT	**Gulveren**	**1.71**	**42**	*e*Pn	**Pn**	**17 43 52.1**	**-0.4**

*ISK **23** 17:48:08.7, 38°.99N×29°.21E, h12km, MD2.6*
*DDA **23** 17:48:09.0, 38°.96N×29°.08E, h7km, Md2.6*
*ISCJB **23** 17:48:09.7±0.6, 39°.03N±0°.05×29°.08E±0°.04, h9km±6km, Error ellipse: s-maj=8.3km s-min=4.3km az=158.9*
*CSEM **23** 17:48:09.6±0.2, 39°.06N×29°.07E, h5km, MD2.6, Error ellipse: s-maj=4.9km s-min=2.9km az=148.0*
ISC 23 17:48:07.9±1.3, 38°.94N±0°.05×29°.09E±0°.03, h10km±10km, n24, σ0°54/35, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.31**	**290**	P	**Pb**	**17 48 15.2**	**-0.5**
DEMI				S	**Sg**	**17 48 18.8**	**+0.4**
DEMI	**Demirci**	**0.31**	**290**	*i* P	**Pb**	**17 48 15.2**	**-0.5**
DEMI				*i* S	**Sg**	**17 48 18.8**	**+0.4**
GDZ	**Gediz**	**0.34**	**63**	P	**Pb**	**17 48 16.5**	**+0.3**
GDZ				S	**Sb**	**17 48 21.5**	**-0.2**
GDZ	**Gediz**	**0.34**	**63**	*i* P	**Pb**	**17 48 16.5**	**+0.3**
GDZ				*i* S	**Sb**	**17 48 21.5**	**-0.2**
KULA	**Kula-Manisa**	**0.54**	**219**	*e*PG	**Pn**	**17 48 21.8**	**0.0**
KULA				*e*SG	**Sn**	**17 48 30.6**	**-0.3**
KULA	**Kula-Manisa**	**0.54**	**219**	*e*Pg	**Pn**	**17 48 21.8**	**0.0**
KULA				*e*Sg	**Sn**	**17 48 30.7**	**-0.3**
TVSB	**Tavsanli**	**0.59**	**29**	*e*PG	**Pg**	**17 48 19.0**	**-0.4**
TVSB	**Tavsanli**	**0.59**	**29**	*e*Pg	**Pg**	**17 48 19.0**	**-0.4**
DURS	**Dursunbey**	**0.82**	**324**	P	**Pg**	**17 48 23.6**	**-0.2**
DURS	**Dursunbey**	**0.82**	**324**	*i* P	**Pg**	**17 48 23.6**	**-0.2**
DURS				*i* S	**Sn**	**17 48 36.8**	**-1.1**
AKHS	**Akhisar**	**1.00**	**267**	P	**Pn**	**17 48 28.1**	**+0.1**
AKHS				S	**Sn**	**17 48 42.8**	**+0.5**
AKHS	**Akhisar**	**1.00**	**267**	*i* P	**Pn**	**17 48 28.1**	**+0.1**
AKHS				*i* S	**Sn**	**17 48 42.8**	**+0.5**
BALB	**Balikesir**	**1.18**	**307**	*e*PN	**Pn**	**17 48 32.0**	**+1.6**
BALB	**Balikesir**	**1.18**	**307**	*e*Pn	**Pn**	**17 48 32.0**	**+1.6**
CAVI	**Cavuskoy**	**1.39**	**24**	*e*PN	**Pn**	**17 48 33.4**	**-0.1**
CAVI	**Cavuskoy**	**1.39**	**24**	*e*Pn	**Pn**	**17 48 33.4**	**-0.1**
BORA	**Eskisehir**	**1.41**	**48**	P	**Pb**	**17 48 34.6**	**+0.1**
BORA				S	**Sb**	**17 48 52.8**	**+0.2**
BORA	**Eskisehir**	**1.41**	**48**	*i* P	**Pb**	**17 48 34.6**	**+0.1**
BORA				*i* S	**Sb**	**17 48 52.8**	**+0.2**
IZI	**Iznik**	**1.43**	**12**	*e*PN	**Pn**	**17 48 33.9**	**-0.1**
IZI	**Iznik**	**1.43**	**12**	*e*Pn	**Pn**	**17 48 33.9**	**-0.1**
KCTX	**Karacabey (Bur**	**1.45**	**337**	*e*PN	**Pg**	**17 48 35.2**	**-0.4**
KCTX	**Karacabey (Bur**	**1.45**	**337**	*e*Pn	**Pg**	**17 48 35.2**	**-0.4**
ARMT	**Armutlu**	**1.64**	**354**	*e*PN	**Pb**	**17 48 37.9**	**-0.3**
ARMT	**Armutlu**	**1.64**	**354**	*e*Pn	**Pb**	**17 48 37.9**	**-0.3**

MAN 23 17:54:21, 15°.30N×120°.19E, h99km, mb4.4, ML3.3, MS3.1, 1C, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SCZP	**Santa Cruz**	**0.54**	**330**	*e*P	Pn	17 54 39.4	+2.4
SCZP				*e*S	Sn	17 54 52.4	+3.4
PCPH	**Palayan**	**0.91**	**73**	*e*P	Pn	17 54 41.4	+1.1
PCPH				*e*S	Sn	17 54 56.1	+1.1
BOLP	**Bolinao**	**1.11**	**346**	*e*P	Pn	17 54 45.0	+2.5
BOLP				*e*S	Sn	17 55 03.4	+4.6
BALP	**Baler**	**1.41**	**72**	*e*P	Pn	17 54 48.1	+2.6
BALP				*e*S	Sn	17 55 07.6	+2.6
LUBP	**Lubang**	**1.56**	**178**	*e*P	Pn	17 54 50.4	+2.4
LUBP				*e*S	Sn	17 55 11.1	+2.7
ABRA	**Dolores**	**2.39**	**12**	*e*P	Pn	17 55 00.2	+1.6
ABRA				*e*S	Sn	17 55 28.6	+1.1
APYP	**Conner**	**2.74**	**21**	*e*P	Pn	17 55 05.1	+1.8
APYP				*e*S	Sn	17 55 37.6	+1.8
SJMP	**San Jose**	**2.96**	**162**	*e*P	Pn	17 55 08.1	+1.8
SJMP				*e*S	Sn	17 55 42.2	+1.1
BUSP	**Coron**	**3.28**	**180**	*e*P	Pn	17 55 12.0	+1.5
BUSP				*e*S	Sn	17 55 47.3	-1.4
ENPP	**El Nido**	**4.14**	**190**	*e*P	Pn	17 55 23.5	+1.4
ENPP				*e*S	Sn	17 56 07.9	-1.5

*IDC **23** 17:55:58.6±3.0, 35°.85N×141°.13E, h0km, mb3.3/3, mb1 3.5/6, mb1mx3.3/49, mbtmp3.6/6, ML3.6/3, MS2.3/1, Ms1 2.3/1, ms1mx2.0/21, Error ellipse: s-maj=74.2km s-min=24.5km az=59.0*
*ISCJB **23** 17:56:04.6±0.9, 35°.70N±0°.06×140°.9E±0°.1, h57km±5km, mb3.3/3, Error ellipse: s-maj=14.3km s-min=9.1km az=158.5*
*JMA **23** 17:56:05.6±0.2, 35°.75N×140°.69E, h49km±2km, M2.8*
ISC 23 17:56:06.0±1.2, 35°.68N±0°.07×140°.84E±0°.09, h47km±8km, n18, σ1°17/15, mb3.4/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.03**	**37**	P	**Pn**	**17 56 13.4**	**0.0**
CHOJ				S	**Sn**	**17 56 19.8**	**+1.3**
JCN	**Nagara**	**0.58**	**244**	P	**Pn**	**17 56 17.8**	**-0.3**
JCN				S	**Sn**	**17 56 26.9**	**+0.2**
JYT	**Yasato**	**0.76**	**317**	P	**Pn**	**17 56 18.5**	**-1.9**
BSO4	**Boso 4**	**0.80**	**211**	P	**Pn**	**17 56 21.0**	**+0.1**
MJAR	**Matsushiro Arr**	**2.29**	**293**	Pn	**Pn**	**17 56 40.6**	**-0.8**
	3.9nm,0.3s,baz=97,slow=14,SNR=29						
MAT	**Matsushiro**	**2.30**	**293**	P	**Pn**	**17 56 41.0**	**-0.5**
MAT				*e*S	**Sn**	**17 57 09.7**	**+1.2**
JHJ	**Hachijo jima 2**	**2.70**	**199**	Pn	**Pn**	**17 56 47.1**	**+0.2**
	22nm,0.3s,baz=61,slow=19,SNR=1.6						
JHJ				Sn	**Sn**	**17 57 19.0**	**+0.7**
	30nm,0.3s,baz=63,slow=14,SNR=1.9						
JCJ	**Chichijima**	**8.63**	**172**	Pn	**Pn**	**17 58 06.2**	**-2.1**
	1.9nm,0.3s,baz=323,slow=20,SNR=1.9						
JCJ				Sn	Sn	17 59 34.2	-10
	0.9nm,0.3s,baz=270,slow=20,SNR=1.9						
KSRS	**Korea Array**	**10.54**	**283**	LR	LR	18 01 50.6	
	comp=Z,14nm,19.3s,baz=72,slow=33						
H11N2	**WAKE ISLAND Hy**	**27.89**	**118**	T	T	18 30 54.0	
	baz=311,slow=75,SNR=9.3						
H11N1	**WAKE ISLAND Hy**	**27.90**	**118**	T	T	18 30 59.0	
	baz=311,slow=75,SNR=6.8						
H11N3	**WAKE ISLAND Hy**	**27.91**	**118**	T	T	18 30 56.2	
	baz=311,slow=75,SNR=6.4						
H11S1	**WAKE ISLAND Hy**	**28.55**	**120**	T	T	18 31 50.7	
	baz=312,slow=75,SNR=11						
H11S3	**WAKE ISLAND Hy**	**28.55**	**120**	T	T	18 31 58.2	
	baz=312,slow=75,SNR=11						
H11S2	**WAKE ISLAND Hy**	**28.57**	**120**	T	T	18 31 53.5	
	baz=312,slow=75,SNR=4.9						
MKAR	**Makanchi Array**	**44.46**	**303**	P	**P**	**18 04 11.6**	**-0.7**
	0.3nm,0.6s,baz=83,slow=9.9,SNR=4.3						
WRA	**Warramunga Arr**	**55.66**	**187**	P	**P**	**18 05 37.2**	**-0.1**
	0.2nm,0.5s,baz=1.1,slow=7.5,SNR=5.8						
ASAR	**Alice Springs**	**59.38**	**187**	P	**P**	**18 06 05.0**	**+1.4**
	0.3nm,0.9s,baz=22,slow=11,SNR=4.4						

*DDA **23** 18:03:59.7, 39°.13N×29°.13E, h7km, Md3.2*
*CSEM **23** 18:04:00.9±0.2, 39°.13N×29°.15E, h2km, MD3.2, Error ellipse: s-maj=3.8km s-min=2.9km az=154.0*
*ISK **23** 18:04:01.0, 39°.15N×29°.20E, h5km, MD2.8*
ISC 23 18:04:00.1±0.9, 39°.12N±0°.03×29°.15E±0°.02, h11km±9km, n50, σ0°64/63, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.26**	**97**	P	**Pg**	**18 04 05.9**	**+0.3**
GDZ				S	**Sg**	**18 04 09.8**	**+0.5**
GDZ	**Gediz**	**0.26**	**97**	*i* P	**Pg**	**18 04 05.9**	**+0.3**
GDZ				*i* S	**Sg**	**18 04 09.8**	**+0.5**
DEMI	**Demirci**	**0.34**	**257**	P	**Pg**	**18 04 06.9**	**-0.1**
DEMI				S	**Sg**	**18 04 11.4**	**-0.2**
DEMI	**Demirci**	**0.34**	**257**	*i* P	**Pg**	**18 04 06.9**	**-0.1**
DEMI				*i* S	**Sg**	**18 04 11.4**	**-0.2**
TVSB	**Tavsanli**	**0.41**	**37**	*e*PG	**Pg**	**18 04 08.0**	**-0.3**
TVSB				*e*SG	**Sg**	**18 04 13.6**	**-0.2**
TVSB	**Tavsanli**	**0.41**	**37**	*e*Pg	**Pg**	**18 04 08.0**	**-0.3**
TVSB				*e*Sg	**Sg**	**18 04 13.6**	**-0.2**
DURS	**Dursunbey**	**0.71**	**313**	P	**Pg**	**18 04 13.3**	**-0.6**
DURS				S	**Sg**	**18 04 23.7**	**+0.6**
DURS	**Dursunbey**	**0.71**	**313**	*i* P	**Pg**	**18 04 13.3**	**-0.6**
DURS				*i* S	**Sg**	**18 04 23.7**	**+0.6**
KHL	**Karahalli**	**0.85**	**160**	*e*PG	**Pn**	**18 04 18.0**	**-0.1**
KHL	**Karahalli**	**0.85**	**160**	*e*Pg	**Pn**	**18 04 18.0**	**-0.1**
ORLT	**Orhaneli**	**0.94**	**348**	*e*PG	**Pn**	**18 04 19.3**	**0.0**
ORLT	**Orhaneli**	**0.94**	**348**	*e*Pg	**Pn**	**18 04 19.3**	**0.0**
AKHS	**Akhisar**	**1.06**	**257**	P	**Pg**	**18 04 21.5**	**+0.8**
AKHS				S	**Sb**	**18 04 34.4**	**-0.1**
AKHS	**Akhisar**	**1.06**	**257**	*i* P	**Pg**	**18 04 21.4**	**+0.8**
AKHS				*i* S	**Sb**	**18 04 34.4**	**-0.1**
BALB	**Balikesir**	**1.11**	**298**	*e*PN	**Pg**	**18 04 22.8**	**+1.4**
BALB	**Balikesir**	**1.11**	**298**	*e*Pn	**Pg**	**18 04 22.8**	**+1.4**
CAVI	**Cavuskoy**	**1.21**	**26**	*e*PN	**Pg**	**18 04 24.1**	**+0.8**
CAVI	**Cavuskoy**	**1.21**	**26**	*e*Pn	**Pg**	**18 04 24.1**	**+0.8**
IZI	**Iznik**	**1.24**	**12**	*e*PN	**Pg**	**18 04 25.3**	**+1.3**
IZI	**Iznik**	**1.24**	**12**	*e*Pn	**Pg**	**18 04 25.3**	**+1.3**
MDNY	**Mudanya-Bursa**	**1.26**	**351**	*e*PN	**Pg**	**18 04 25.3**	**+0.9**
MDNY	**Mudanya-Bursa**	**1.26**	**351**	*e*Pn	**Pg**	**18 04 25.3**	**+0.9**
BORA	**Eskisehir**	**1.26**	**53**	P	**Pb**	**18 04 24.0**	**0.0**
BORA				S	**Sg**	**18 04 41.2**	**+0.3**
BORA	**Eskisehir**	**1.26**	**53**	*i* P	**Pb**	**18 04 24.0**	**0.0**
BORA				*i* S	**Sg**	**18 04 41.2**	**+0.3**
KCTX	**Karacabey (Bur**	**1.29**	**332**	*e*PN	**Pg**	**18 04 26.1**	**+1.1**
KCTX	**Karacabey (Bur**	**1.29**	**332**	*e*Pn	**Pg**	**18 04 26.1**	**+1.1**
ESKT	**Eskisehir**	**1.38**	**73**	*i* P	**Pn**	**18 04 24.0**	**-1.4**
ESKT				*i* S	**Sg**	**18 04 44.5**	**-0.1**
SEYT	**Eskypehyr**	**1.38**	**73**	S	**Sg**	**18 04 44.5**	**-0.1**
ADVT	**Abdulvahap**	**1.39**	**19**	*e*PN	**Pg**	**18 04 27.7**	**+0.9**
ADVT	**Abdulvahap**	**1.39**	**19**	*e*Pn	**Pg**	**18 04 27.7**	**+0.9**
GONE	**Gonen-Balikesi**	**1.46**	**310**	*e*PN	**Pg**	**18 04 28.5**	**+0.4**
GONE	**Gonen-Balikesi**	**1.46**	**310**	*e*Pn	**Pg**	**18 04 28.5**	**+0.4**
ARMT	**Armutlu**	**1.46**	**351**	*e*PN	**Pg**	**18 04 28.5**	**+0.4**
ARMT	**Armutlu**	**1.46**	**351**	*e*Pn	**Pg**	**18 04 28.5**	**+0.4**
AYDB	**Zeytinkoy-Aydi**	**1.53**	**220**	*e*PN	**Pg**	**18 04 30.2**	**+0.7**
AYDB	**Zeytinkoy-Aydi**	**1.53**	**220**	*e*Pn	**Pg**	**18 04 30.2**	**+0.7**
EDC	**Edincik**	**1.57**	**321**	*e*PN	**Pg**	**18 04 30.4**	**+0.1**
EDC	**Edincik**	**1.57**	**321**	*e*Pn	**Pg**	**18 04 30.4**	**+0.1**
GULT	**Gulveren**	**1.68**	**38**	*e*PN	**Pb**	**18 04 31.4**	**+0.3**
GULT	**Gulveren**	**1.68**	**38**	*e*Pn	**Pb**	**18 04 31.4**	**+0.3**
HRT	**Hereke**	**1.74**	**13**	*e*PN	**Pb**	**18 04 32.0**	**-0.2**
HRT	**Hereke**	**1.74**	**13**	*e*Pn	**Pb**	**18 04 32.0**	**-0.2**
**SILT

TVSB	**Tavsanli**	**0.45**	**48**	*e*PG	**Pg**	**18 26 34.9**	**0.0**
TVSB				*e*SG	**Sg**	**18 26 41.3**	**+0.6**
TVSB	**Tavsanli**	**0.45**	**48**	*e*Pg	**Pg**	**18 26 34.9**	**0.0**
TVSB				*e*Sg	**Sg**	**18 26 41.3**	**+0.6**
DURS	**Dursunbey**	**0.62**	**317**	P	**Pg**	**18 26 38.0**	**-0.2**
DURS				S	**Sg**	**18 26 46.8**	**+0.5**
DURS	**Dursunbey**	**0.62**	**317**	*i* P	**Pg**	**18 26 38.0**	**-0.2**
DURS				*i* S	**Sg**	**18 26 46.8**	**+0.5**
ORLT	**Orhaneli**	**0.90**	**353**	*e*PG	**Pg**	**18 26 43.6**	**+0.1**
ORLT	**Orhaneli**	**0.90**	**353**	*e*Pg	**Pg**	**18 26 43.6**	**+0.1**
KHL	**Karahalli**	**0.91**	**155**	*e*PG	**Pg**	**18 26 44.1**	**+0.5**
KHL	**Karahalli**	**0.91**	**155**	*e*Pg	**Pg**	**18 26 44.1**	**+0.5**
AKHS	**Akhisar**	**0.98**	**254**	P	**Pg**	**18 26 44.9**	**-0.2**
AKHS				S	**Sg**	**18 26 57.7**	**-0.2**
AKHS	**Akhisar**	**0.98**	**254**	*i* P	**Pg**	**18 26 44.9**	**-0.2**
AKHS				*i* S	**Sg**	**18 26 57.7**	**-0.2**
AKS	**Akhisar**	**0.99**	**254**	*e*PG	**Pg**	**18 26 45.5**	**+0.4**
AKS	**Akhisar**	**0.99**	**254**	*e*Pg	**Pg**	**18 26 45.5**	**+0.4**
BALB	**Balikesir**	**1.02**	**299**	*e*PG	**Pb**	**18 26 46.5**	**+0.1**
BALB	**Balikesir**	**1.02**	**299**	*e*Pg	**Pb**	**18 26 46.5**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.22**	**355**	*e*PN	**Pg**	**18 26 49.9**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.22**	**355**	*e*Pn	**Pg**	**18 26 49.9**	**+0.3**
CAVI	**Cavuskoy**	**1.22**	**31**	*e*PN	**Pn**	**18 26 49.7**	**-0.5**
CAVI	**Cavuskoy**	**1.22**	**31**	*e*Pn	**Pn**	**18 26 49.7**	**-0.5**
KCTX	**Karacabey (Bur**	**1.23**	**335**	*e*PN	**Pn**	**18 26 49.8**	**-0.4**
KCTX	**Karacabey (Bur**	**1.23**	**335**	*e*Pn	**Pn**	**18 26 49.8**	**-0.4**
IZI	**Iznik**	**1.23**	**16**	*e*PN	**Pg**	**18 26 50.2**	**+0.3**
IZI	**Iznik**	**1.23**	**16**	*e*Pn	**Pg**	**18 26 50.2**	**+0.3**
GEMT	**Gemlik**	**1.29**	**5**	*e*PN	**Pg**	**18 26 51.3**	**+0.4**
GEMT	**Gemlik**	**1.29**	**5**	*e*Pn	**Pg**	**18 26 51.3**	**+0.4**
BORA	**Eskisehir**	**1.32**	**56**	P	**Pn**	**18 26 50.7**	**-0.8**
BORA				S	**Sg**	**18 27 09.7**	**+1.0**
BORA	**Eskisehir**	**1.32**	**56**	*i* P	**Pn**	**18 26 50.7**	**-0.8**
BORA				*i* S	**Sg**	**18 27 09.7**	**+1.0**
GONE	**Gonen-Balikesi**	**1.37**	**311**	*e*PN	**Pg**	**18 26 52.9**	**+0.4**
GONE	**Gonen-Balikesi**	**1.37**	**311**	*e*Pn	**Pg**	**18 26 52.9**	**+0.4**
ADVT	**Abdulvahap**	**1.39**	**23**	*e*PN	**Pg**	**18 26 53.1**	**+0.2**
ADVT	**Abdulvahap**	**1.39**	**23**	*e*Pn	**Pg**	**18 26 53.1**	**+0.2**
ARMT	**Armutlu**	**1.42**	**355**	*e*PN	**Pb**	**18 26 53.4**	**+0.1**
ARMT	**Armutlu**	**1.42**	**355**	*e*Pn	**Pb**	**18 26 53.4**	**+0.1**
ESKT	**Eskisehir**	**1.46**	**75**	*i* P	**Pg**	**18 26 54.6**	**+0.4**
ESKT				*i* S	**Sg**	**18 27 13.6**	**+0.5**
SEYT	**Eskypehyr**	**1.46**	**75**	P	**Pg**	**18 26 54.6**	**+0.4**
SEYT				S	**Sg**	**18 27 13.6**	**+0.5**
EDC	**Edincik**	**1.50**	**323**	*e*PN	**Pb**	**18 26 54.7**	**+0.1**
EDC	**Edincik**	**1.50**	**323**	*e*Pn	**Pb**	**18 26 54.7**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**1.50**	**217**	*e*PN	**Pb**	**18 26 54.4**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**1.50**	**217**	*e*Pn	**Pb**	**18 26 54.4**	**-0.2**
BOLV	**Bolvadin**	**1.56**	**105**	P	**Pg**	**18 26 56.2**	**+0.1**
BOLV				S	**Sg**	**18 27 16.4**	**+0.1**
BOLV	**Bolvadin**	**1.56**	**105**	*i* P	**Pg**	**18 26 56.2**	**+0.1**
BOLV				*i* S	**Sg**	**18 27 16.4**	**+0.1**
GULT	**Gulveren**	**1.72**	**41**	*e*PN	**Pb**	**18 26 57.6**	**-0.8**
GULT	**Gulveren**	**1.72**	**41**	*e*Pn	**Pb**	**18 26 57.6**	**-0.8**
HRT	**Hereke**	**1.74**	**16**	*e*PN	**Pb**	**18 26 58.1**	**-0.7**
HRT	**Hereke**	**1.74**	**16**	*e*Pn	**Pb**	**18 26 58.1**	**-0.7**
ISP	**Isparta**	**1.77**	**138**	*e*PN	**Pn**	**18 26 58.2**	**+0.5**
ISP	**Isparta**	**1.77**	**138**	*e*Pn	**Pn**	**18 26 58.2**	**+0.5**
AYVA	**Ayvalik**	**1.82**	**276**	P	**Pb**	**18 27 00.9**	**+0.8**
AYVA				S	**Sg**	**18 27 24.4**	**-0.4**
AYVA	**Ayvalik**	**1.82**	**276**	*i* P	**Pb**	**18 27 00.9**	**+0.8**
AYVA				*i* S	**Sg**	**18 27 24.4**	**-0.4**
MRMT	**Marmara Adasi**	**1.82**	**323**	*e*PN	**Pb**	**18 26 59.7**	**-0.5**
MRMT	**Marmara Adasi**	**1.82**	**323**	*e*Pn	**Pb**	**18 26 59.7**	**-0.5**
ISK	**Istanbul-Kandi**	**1.91**	**1**	*e*PN	**Pb**	**18 27 00.8**	**-0.9**
ISK	**Istanbul-Kandi**	**1.91**	**1**	*e*Pn	**Pb**	**18 27 00.8**	**-0.9**
GOLH	**Golhisar**	**1.96**	**167**	*i* P	**Pn**	**18 26 55.8**	**-4.5**
GOLH				*i* S	**Sg**	**18 27 32.4**	**+3.4**
SVRH	**Sivrihisar-ESK**	**1.96**	**80**	*e*PN	**Pn**	**18 27 01.1**	**+0.8**
SVRH	**Sivrihisar-ESK**	**1.96**	**80**	*e*Pn	**Pn**	**18 27 01.1**	**+0.8**
BGKT	**Bogazkoy**	**2.04**	**355**	*e*PN	**Pb**	**18 27 02.4**	**-1.4**
BGKT	**Bogazkoy**	**2.04**	**355**	*e*Pn	**Pb**	**18 27 02.4**	**-1.4**
SILT	**Sile**	**2.06**	**13**	*e*PN	**Pb**	**18 27 02.6**	**-1.5**
SILT	**Sile**	**2.06**	**13**	*e*Pn	**Pb**	**18 27 02.6**	**-1.5**
URLA	**Izmir**	**2.06**	**248**	P	**Pb**	**18 27 04.4**	**+0.2**
URLA	**Izmir**	**2.06**	**248**	*i* P	**Pb**	**18 27 04.4**	**+0.2**
URLA				*i* S	**Sg**	**18 27 31.6**	**-0.8**
RKY	**Sarkoy-Tekirda**	**2.10**	**318**	*e*PN	**Pn**	**18 27 03.2**	**+1.0**
RKY	**Sarkoy-Tekirda**	**2.10**	**318**	*e*Pn	**Pn**	**18 27 03.2**	**+1.0**
YER	**Yerkesik**	**2.10**	**197**	*e*PN	**Pb**	**18 27 03.4**	**-1.4**
YER	**Yerkesik**	**2.10**	**197**	*e*Pn	**Pb**	**18 27 03.4**	**-1.4**
KLYT	**Kilyos**	**2.10**	**0**	*e*PN	**Pn**	**18 27 03.2**	**+1.0**
KLYT	**Kilyos**	**2.10**	**0**	*e*Pn	**Pn**	**18 27 03.2**	**+1.0**
CTKS	**Kestanelik-??a**	**2.12**	**349**	*e*PN	**Pn**	**18 27 03.4**	**+0.9**
CTKS	**Kestanelik-??a**	**2.12**	**349**	*e*Pn	**Pn**	**18 27 03.4**	**+0.9**
MDUB	**Mudurnu**	**2.13**	**51**	*e*PN	**Pb**	**18 27 03.8**	**-1.6**
MDUB	**Mudurnu**	**2.13**	**51**	*e*Pn	**Pb**	**18 27 03.8**	**-1.6**
LPK	**Lapseki**	**2.13**	**306**	*e*PN	**Pn**	**18 27 03.4**	**+0.8**
LPK	**Lapseki**	**2.13**	**306**	*e*Pn	**Pn**	**18 27 03.4**	**+0.8**
KAND	**Kocaeli-Kandir**	**2.14**	**24**	P	**Pn**	**18 27 02.2**	**-0.5**
KAND	**Kocaeli-Kandir**	**2.14**	**24**	*i* P	**Pn**	**18 27 02.2**	**-0.5**
KAND				*i* S	**Sg**	**18 27 34.0**	**-0.9**
EZN	**Ezine**	**2.20**	**289**	*e*PN	**Pn**	**18 27 04.8**	**+1.3**
EZN	**Ezine**	**2.20**	**289**	*e*Pn	**Pn**	**18 27 04.8**	**+1.3**
SAHE	**Sakarya_HENDEK**	**2.20**	**39**	P	**Pn**	**18 27 03.0**	**-0.7**
SAHE	**Sakarya_HENDEK**	**2.20**	**39**	*i* P	**Pn**	**18 27 03.0**	**-0.7**
SAHE				*i* S	**Sg**	**18 27 37.3**	**+0.3**
KIZT	**Kizilcal**	**2.24**	**96**	*e*PN	**Pn**	**18 27 05.0**	**+0.8**
KIZT	**Kizilcal**	**2.24**	**96**	*e*Pn	**Pn**	**18 27 05.0**	**+0.8**
SUTC	**Sutluce-Ispart**	**2.28**	**137**	*e*PN	**Pn**	**18 27 05.8**	**+1.1**
SUTC	**Sutluce-Ispart**	**2.28**	**137**	*e*Pn	**Pn**	**18 27 05.8**	**+1.1**
GELI	**Tayfur-Gelibol**	**2.33**	**303**	*e*PN	**Pb**	**18 27 07.1**	**-1.7**
GELI	**Tayfur-Gelibol**	**2.33**	**303**	*e*Pn	**Pb**	**18 27 07.1**	**-1.7**
KORT	**Korkueli**	**2.38**	**154**	P	**Pn**	**18 27 06.6**	**+0.4**
KORT	**Korkueli**	**2.38**	**154**	*i* P	**Pn**	**18 27 06.6**	**+0.4**
KORT				*i* S	**Sg**	**18 27 44.4**	**+1.6**
CTYL	**Yalikoy Yolu**	**2.39**	**347**	*e*PN	**Pn**	**18 27 07.4**	**+1.2**
CTYL	**Yalikoy Yolu**	**2.39**	**347**	*e*Pn	**Pn**	**18 27 07.4**	**+1.2**
CHOS	**Chios island**	**2.45**	**253**	*e*PN	**Pb**	**18 27 09.0**	**-1.8**
CHOS	**Chios island**	**2.45**	**253**	*e*Pn	**Pb**	**18 27 09.0**	**-1.8**
ERIK	**Erikli-Kesan**	**2.46**	**309**	*e*PN	**Pb**	**18 27 09.0**	**-2.0**
ERIK	**Erikli-Kesan**	**2.46**	**309**	*e*Pn	**Pb**	**18 27 09.0**	**-2.0**
SIGR	**SIGRI**	**2.47**	**272**	*e*PN	**Pb**	**18 27 09.1**	**-2.0**
SIGR	**SIGRI**	**2.47**	**272**	*e*Pn	**Pb**	**18 27 09.1**	**-2.0**
ENEZ	**Enez**	**2.72**	**307**	*e*PN	**Pn**	**18 27 12.7**	**+2.0**
ENEZ	**Enez**	**2.72**	**307**	*e*Pn	**Pn**	**18 27 12.7**	**+2.0**
ALN	**Alexandroupoli**	**2.88**	**308**	*e*PN	**Pn**	**18 27 14.8**	**+1.9**
ALN	**Alexandroupoli**	**2.88**	**308**	*e*Pn	**Pn**	**18 27 14.8**	**+1.9**

*JMA **23** 18:30:22.0±0.2, 24°.11N×121°.71E, h0km*
*TAP **23** 18:30:22.1, 24°.11N×121°.71E, h6km, ML3.2, C*
ISC 23 18:30:22.1±1.0, 24°.08N±0°.02×121°.75E±0°.02, h7km±8km, n57, σ0°91/83, 5C-1D, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWD	**Chiawan**	**0.14**	**270**	*i* P	**Pg**	**18 30 24.6**	**-0.4**
TWD	baz=264			*i* S	**Sg**	**18 30 26.4**	**-0.6**
HWA	**Hwalien**	**0.17**	**232**	*i* P	**Pg**	**18 30 26.1**	**+0.6**
EHP	**Heping Village**	**0.23**	**358**	*e*P	**Pg**	**18 30 27.5**	**+0.9**
ESF	**Shoufeng Towns**	**0.30**	**227**	*e*P	**Pb**	**18 30 29.1**	**-0.9**
ENA	**Nanau**	**0.34**	**359**	⇑P	**Pg**	**18 30 28.8**	**0.0**
ENA	baz=2.0			*i* S	**Sg**	**18 30 33.7**	**+0.2**
ESL	**Shilin**	**0.39**	**227**	*e*P	**Pg**	**18 30 29.5**	**-0.3**
WHF	**Hehuan Shan**	**0.45**	**278**	*e*P	**Pg**	**18 30 30.4**	**-0.5**
WHF	baz=276			S	**Sg**	**18 30 36.4**	**-0.4**
NNS	**Nan Shan**	**0.50**	**316**	⇑P	**Pg**	**18 30 31.4**	**-0.3**
NNS	baz=315			S	**Sg**	**18 30 38.1**	**-0.1**
TWC	**Suao**	**0.53**	**10**	*e*P	**Pg**	**18 30 33.1**	**+0.7**
TWC	baz=2.0			*e*S	**Sg**	**18 30 40.2**	**+0.8**
TWT	**Tachien**	**0.55**	**288**	*e*P	**Pg**	**18 30 32.8**	**0.0**
TWT	baz=285			*e*S	**Sg**	**18 30 40.4**	**+0.4**
ENTT	**Nioudou**	**0.58**	**343**	⇑*i*P	**Pg**	**18 30 33.3**	**0.0**
ENTT	baz=341			S	**Sg**	**18 30 41.4**	**+0.5**
TWE	**Neicheng**	**0.64**	**353**	P	**Pg**	**18 30 34.5**	**0.0**
TWE	baz=354			*e*S	**Sg**	**18 30 43.2**	**+0.3**
ILA	**Ilan**	**0.68**	**360**	*e*P	**Pg**	**18 30 35.6**	**+0.4**
ILA	baz=359			*e*S	**Sg**	**18 30 44.9**	**+0.8**
NSK	**Sanguang**	**0.69**	**329**	⇑P	**Pg**	**18 30 35.5**	**0.0**
NSK	baz=328			S	**Sg**	**18 30 44.3**	**-0.1**
EHY	**Hungye**	**0.69**	**214**	*e*P	**Pb**	**18 30 35.7**	**-0.9**
SMLT	**Sun Moon Lake**	**0.80**	**256**	*e*P	**Pg**	**18 30 37.2**	**-0.3**
SMLT	baz=256			S	**Sg**	**18 30 47.8**	**-0.1**
TYC	**Yuchr**	**0.83**	**258**	P	**Pg**	**18 30 38.0**	**-0.2**
TYC	baz=258			*e*S	**Sg**	**18 30 48.4**	**-0.6**
TWF1	**Yuli**	**0.84**	**210**	*e*P	**Pg**	**18 30 37.9**	**-0.3**
NSTT	**Nanjuang**	**0.88**	**309**	⇓*i*P	**Pg**	**18 30 39.1**	**+0.2**
TWQ1	**Liyutan**	**0.93**	**287**	*e*P	**Pn**	**18 30 40.9**	**-0.7**
YUS	**Yu-Shan**	**0.94**	**231**	*e*P	**Pb**	**18 30 40.4**	**-0.6**
YUS	baz=234			*e*S	**Sb**	**18 30 54.0**	**+0.1**
TWB1	**Santiao Chiao**	**0.95**	**13**	*e*P	**Pb**	**18 30 41.0**	**+0.1**
NSY	**Sanyi**	**0.96**	**290**	*e*P	**Pn**	**18 30 41.8**	**-0.3**
TAP1	**Taipei**	**0.98**	**348**	*e*P	**Pb**	**18 30 41.3**	**0.0**
TAP	**Taipei**	**0.98**	**347**	*e*P	**Pg**	**18 30 41.0**	**0.0**
TCU	**Taichung**	**0.98**	**274**	*e*P	**Pn**	**18 30 42.6**	**+0.2**
NWF	**Wu-fen Shan**	**0.99**	**2**	*e*P	**Pg**	**18 30 41.2**	**+0.1**
NWF	baz=348			*e*S	**Sg**	**18 30 54.4**	**+0.5**
WNT	**Mingjian**	**0.99**	**258**	*e*P	**Pn**	**18 30 42.7**	**+0.2**
WNT	baz=253			*e*S	**Sn**	**18 30 56.0**	**-0.9**
ALS	**Alishan**	**1.03**	**237**	P	**Pn**	**18 30 42.8**	**-0.5**
ALS	baz=239			*e*S	**Sn**	**18 30 57.0**	**-1.2**
CHKT	**Chengkung**	**1.04**	**200**	*e*P	**Pn**	**18 30 42.3**	**-0.8**
TWS1	**Kuangyinshan**	**1.06**	**344**	*e*P	**Pg**	**18 30 42.7**	**+0.3**
CHN5	**Tsauling**	**1.09**	**244**	*e*P	**Pn**	**18 30 44.0**	**0.0**
CHN5	baz=246			*e*S	**Sn**	**18 31 00.1**	**+0.7**
ELDTW	**Lidau**	**1.11**	**217**	*e*P	**Pg**	**18 30 42.8**	**-0.7**
JYNG	**Yonagunijimaku**	**1.15**	**71**	P	**Pb**	**18 30 43.9**	**-0.5**
YOJ	**Yonaguni jima**	**1.21**	**72**	P	**Pg**	**18 30 45.5**	**+0.1**
YOJ	**Yonaguni jima**	**1.21**	**72**	*e*P	**Pg**	**18 30 45.5**	**+0.1**
CHN4	**Tsaushan**	**1.28**	**236**	*e*P	**Pg**	**18 30 47.0**	**+0.3**
CHN4	baz=241			*e*S	**Sg**	**18 31 06.0**	**+2.5**
CHN2	**Minshiung**	**1.29**	**245**	*e*P	**Pg**	**18 30 48.7**	**+1.8**
STYT	**Tauyuan**	**1.29**	**225**	⇑P	**Pb**	**18 30 46.4**	**-0.3**
STYT	baz=230			*e*S	**Sg**	**18 31 05.7**	**+2.1**
WTP	**Ta-pu**	**1.33**	**232**	*e*P	**Pg**	**18 30 47.5**	**-0.1**
WTP	baz=237			*e*S	**Sg**	**18 31 07.6**	**+2.6**
CHY	**Chiayi**	**1.35**	**245**	*e*P	**Pg**	**18 30 48.8**	**+0.9**
WTCT	**Ta-ch'eng**	**1.36**	**261**	*e*P	**Pg**	**18 30 48.9**	**+0.7**
WTCT	baz=262			*e*S	**Sg**	**18 31 08.1**	**+2.2**
TWG	**Pinlang**	**1.40**	**207**	*e*P	**Pn**	**18 30 47.5**	**-0.6**
TWK	**Hsinying**	**1.41**	**235**	*e*P	**Pb**	**18 30 48.4**	**-0.5**
TWK	baz=240			*e*S	**Sg**	**18 31 09.6**	**+2.1**
CHN1	**Nanshi**	**1.43**	**232**	P	**Pg**	**18 30 49.8**	**+0.2**
CHN1	baz=238			*e*S	**Sg**	**18 31 10.8**	**+2.6**
SGST	**Jiashian**	**1.46**	**227**	*e*P	**Pb**	**18 30 49.6**	**-0.1**
SGST	baz=233			*e*S	**Sg**	**18 31 11.1**	**+2.0**
WSF	**Szhu**	**1.47**	**253**	*e*P	**Pg**	**18 30 50.0**	**-0.2**
WSF	baz=255			*e*S	**Sg**	**18 31 10.8**	**+1.5**
ECL	**Taimali**	**1.65**	**206**	*e*P	**Pn**	**18 30 50.5**	**-1.0**
SSD	**Sandimen**	**1.68**	**218**	*e*P	**Pn**	**18 30 52.1**	**+0.1**
TWM1	**Shoushan**	**1.75**	**224**	*e*P	**Pg**	**18 30 55.1**	**-0.5**
IRIF	**Iriomote-Funau**	**1.83**	**82**	P	**Pb**	**18 30 55.0**	**-0.9**
EAST	**Anshuo**	**1.88**	**206**	*e*P	**Pb**	**18 30 55.3**	**-1.6**
JKRS	**Kuro-shima**	**2.07**	**85**	P	**Pb**	**18 30 58.7**	**-1.3**
PNG	**Penghu**	**2.07**	**256**	*e*P	**Pn**	**18 30 57.5**	**+0.1**
WDGT	**Dungji**	**2.08**	**247**	*e*P	**Pn**	**18 30 57.4**	**-0.1**
JIJ	**Ishigaki jima**	**2.20**	**82**	P	**Pn**	**18 30 59.2**	**+0.1**
JIJ				S	**Sn**	**18 31 27.0**	**+0.3**
JISG	**Ishigakijimahi**	**2.39**	**77**	P	**Pn**	**18 31 01.9**	**+0.2**

*DDA **23** 18:32:09.6, 39°.12N×29°.09E, h7km, Md2.8*
*CSEM **23** 18:32:09.9±0.2, 39°.09N×29°.11E, h2km, MD2.8, Error ellipse: s-maj=5.0km s-min=3.1km az=134.0*
*ISK **23** 18:32:09.0, 39°.03N×29°.19E, h4km, MD2.6*
*ISCJB **23** 18:32:10.1±0.6, 39°.08N±0°.04×29°.08E±0°.04, h9km, Error ellipse: s-maj=6.1km s-min=4.0km az=150.2*
ISC 23 18:32:10.0±0.9, 39°.08N±0°.03×29°.10E±0°.03, h9km, n19, σ0°48/27, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.30**	**89**	*i* P	Pg	18 32 11.8	-4.2
GDZ				*i* S	**Sg**	**18 32 20.7**	**+0.8**
DEMI	**Demirci**	**0.30**	**262**	P	**Pg**	**18 32 16.2**	**+0.1**
DEMI				S	**Sg**	**18 32 20.2**	**+0.1**
DEMI	**Demirci**	**0.30**	**262**	*i* P	**Pg**	**18 32 16.2**	**+0.1**
DEMI				*i* S	**Sg**	**18 32 20.2**	**+0.1**
TVSB	**Tavsanli**	**0.46**	**37**	*e*PG	**Pg**	**18 32 18.7**	**-0.4**
TVSB	**Tavsanli**	**0.46**	**37**	*e*Pg	**Pg**	**18 32 18.7**	**-0.4**
KULA	**Kula-Manisa**	**0.66**	**211**	*e*PG	**Pg**	**18 32 22.4**	**-0.4**
KULA				*e*SG	**Sg**	**18 32 32.1**	**+0.6**
KULA	**Kula-Manisa**	**0.66**	**211**	*e*Pg	**Pg**	**18 32 22.4**	**-0.4**
KULA				*e*Sg	**Sg**	**18 32 32.1**	**+0.6**
DURS	**Dursunbey**	**0.71**	**317**	P	**Pg**	**18 32 23.1**	**-0.7**
DURS				S	**Sg**	**18 32 32.7**	**-0.4**
DURS	**Dursunbey**	**0.71**	**317**	*i* P	**Pg**	**18 32 23.1**	**-0.7**
DURS				*i* S	**Sg**	**18 32 32.7**	**-0.4**
CAVI	**Cavuskoy**	**1.26**	**27**	*e*PN	**Pb**	**18 32 33.8**	**-0.1**
CAVI	**Cavuskoy**	**1.26**	**27**	*e*Pn	**Pb**	**18 32 33.8**	**-0.1**
KCTX	**Karacabey (Bur**	**1.31**	**334**	*e*PN	**Pg**	**18 32 36.3**	**+1.1**
KCTX	**Karacabey (Bur**	**1.31**	**334**	*e*Pn	**Pg**	**18 32 36.3**	**+1.1**
BORA	**Eskisehir**	**1.31**	**52**	P	**Pn**	**18 32 34.5**	**-0.1**
BORA				S	**Sn**	**18 32 52.3**	**-0.1**
BORA	**Eskisehir**	**1.31**	**52**	*i* P	**Pn**	**18 32 34.5**	**-0.1**
BORA				*i* S	**Sn**	**18 32 52.3**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**1.48**	**220**	*e*PN	**Pb**	**18 32 37.8**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**1.48**	**220**	*e*Pn	**Pb**	**18 32 37.8**	**0.0**
ARMT	**Armutlu**	**1.49**	**353**	*e*PN	**Pb**	**18 32 38.0**	**+0.1**
ARMT	**Armutlu**	**1.49**	**353**	*e*Pn	**Pb**	**18 32 38.0**	**+0.1**

*ISCJB **23** 18:32:33.0±0.6, 37°.08N±0°.03×140°.77E±0°.06, h16km±5km, mb3.6/2, Error ellipse: s-maj=7.6km s-min=5.2km az=12.1*
*JMA **23** 18:32:33.6, 37°.09N×140°.67E, h8km±1km, M3.2*
Broadband fault plane solution: P waves. NP1: φs=359.00000°, δ64.00000°, λ-102.00000°. NP2: φs=204.00000°, δ28.00000°, λ-68.00000°. Principal axes: T Plg18.0000°, Azm98.0000°; N Plg10.0000°, Azm5.0000°; P Plg69.0000°, Azm246.0000°;
JMA Felt I J1.
*IDC **23** 18:32:34.1±4.0, 36°.69N×140°.73E, h0km, mb3.5/2, mb1 3.7/3, mb1mx3.2/47, mbtmp3.4/3, ML3.0/1 Error ellipse: s-maj=80.8km s-min=29.4km az=23.0*
ISC 23 18:32:33.1±0.9, 37°.10N±0°.03×140°.64E±0°.06, h10km±10km, n18, σ0°42/21, 6C-2D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.13**	**88**	⇑P	**Pg**	**18 32 36.2**	**0.0**
ONAJ				S	**Sg**	**18 32 38.0**	**-0.3**
JFK	**Kawauchi**	**0.33**	**35**	⇑P	**Pg**	**18 32 40.0**	**+0.3**
JFK				S	**Sg**	**18 32 44.4**	**+0.3**
JFT	**Otama**	**0.48**	**330**	⇑P	**Pb**	**18 32 43.6**	**-0.1**
JFT				S	**Sb**	**18 32 50.4**	**-0.5**
JHO	**Hitachi**	**0.49**	**187**	⇓P	**Pg**	**18 32 42.9**	**+0.3**
JHO				S	**Sg**	**18 32 49.3**	**+0.2**
JSB	**Shiboa**	**0.59**	**258**	⇑P	**Pb**	**18 32 46.2**	**+0.7**
JSB				S	**Sb**	**18 32 54.6**	**+0.7**
JMM	**Marumori**	**0.78**	**9**	⇑P	**Pg**	**18 32 48.2**	**+0.1**
JFY	**Yanaizu**	**0.81**	**293**	⇑P	**Pb**	**18 32 49.7**	**+0.5**
JFY				S	**Sb**	**18 33 00.4**	**+0.2**
JYT	**Yasato**	**0.94**	**203**	⇓P	**Pg**	**18 32 51.1**	**-0.1**
JYT				S	**Sg**	**18 33 03.2**	**-0.2**
MJAR	**Matsushiro Arr**	**2.03**	**255**	Pn	**Pb**	**18 33 09.5**	**-0.5**
MJAR	5.6nm,0.3s,baz=84,slow=16,SNR=45			Sn	**Sb**	**18 33 35.7**	**+0.4**
MAT	**Matsushiro**	**2.03**	**255**	P	**Pb**	**18 33 09.6**	**-0.5**
MAT	8.0nm,0.3s,baz=67,slow=27,SNR=12			S	**Sg**	**18 33 37.7**	**-0.6**
H11N2	**WAKE ISLAND Hy 28.71**	**120**		T	T	19 08 15.3	
H11N1	baz=313,slow=75,SNR=6.0 **WAKE ISLAND Hy 28.72**	**120**		T	T	19 08 18.4	
H11N3	baz=313,slow=75,SNR=6.3 **WAKE ISLAND Hy 28.73**	**120**		T	T	19 08 18.9	
H11S1	baz=313,slow=75,SNR=6.9 **WAKE ISLAND Hy 29.42**	**122**		T	T	19 09 12.8	
H11S3	baz=314,slow=76,SNR=7.9 **WAKE ISLAND Hy 29.42**	**122**		T	T	19 09 11.9	
H11S2	baz=314,slow=76,SNR=6.7 **WAKE ISLAND Hy 29.43**	**122**		T	T	19 09 13.9	
	baz=314,slow=76,SNR=7.2						
WRA	**Warramunga Arr**	**57.04**	**187**	P	**P**	**18 42 19.1**	**-0.1**
	0.5nm,0.6s,baz=3.1,slow=7.2,SNR=8.7						
ASAR	**Alice Springs**	**60.77**	**187**	P	**P**	**18 42 44.9**	**-0.2**
	0.3nm,0.7s,baz=17,slow=6.8,SNR=3.6						

*DDA **23** 18:35:16.1, 39°.13N×29°.04E, h7km, Md2.8*
*CSEM **23** 18:35:16.6±0.1, 39°.11N×29°.02E, h5km, MD2.8, Error ellipse: s-maj=3.7km s-min=2.6km az=147.0*
ISC 23 18:35:16.3±1.0, 39°.12N±0°.04×29°.03E±0°.03, h14km±10km, n12, σ0°38/24, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**252**	P	**Pg**	**18 35 21.9**	**+0.2**
DEMI				S	**Sg**	**18 35 25.6**	**+0.2**
DEMI	**Demirci**	**0.25**	**252**	*i* P	**Pg**	**18 35 21.9**	**+0.2**
DEMI				*i* S	**Sg**	**18 35 25.6**	**+0.2**
GDZ	**Gediz**	**0.36**	**95**	P	**Pg**	**18 35 23.6**	**0.0**
GDZ				S	**Sg**	**18 35 28.4**	**-0.1**
GDZ	**Gediz**	**0.36**	**95**	*i* P	**Pg**	**18 35 23.6**	**0.0**
GDZ				*i* S	**Sg**	**18 35 28.4**	**-0.1**
TVSB	**Tavsanli**	**0.47**	**46**	*e*PG	**Pb**	**18 35 26.4**	**0.0**
TVSB				*e*SG	**Sg**	**18 35 31.3**	**-0.7**
TVSB	**Tavsanli**	**0.47**	**46**	*e*Pg	**Pb**	**18 35 26.4**	**0.0**
TVSB				*e*Sg	**Sg**	**18 35 31.3**	**-0.7**
DURS	**Dursunbey**	**0.64**	**318**	P	**Pg**	**18 35 28.5**	**-0.3**
DURS				S	**Sb**	**18 35 38.5**	**+0.4**
DURS	**Dursunbey**	**0.64**	**318**	*i* P	**Pg**	**18 35 28.5**	**-0.3**
DURS				*i* S	**Sb**	**18 35 38.5**	**+0.4**
KULA	**Kula-Manisa**	**0.67**	**205**	*e*PG	**Pg**	**18 35 29.4**	**+0.1**
KULA				*e*SG	**Sg**	**18 35 37.5**	**-0.8**
KULA	**Kula-Manisa**	**0.67**	**205**	*e*Pg	**Pg**	**18 35 29.5**	**+0.1**
KULA				*e*Sg	**Sg**	**18 35 37.5**	**-0.8**
BORA	**Eskisehir**	**1.34**	**55**	P	**Pg**	**18 35 42.2**	**+0.2**
BORA				S	**Sg**	**18 35 59.7**	**+0.2**
BORA	**Eskisehir**	**1.34**	**55**	*i* P	**Pg**	**18 35 42.2**	**+0.2**
BORA				*i* S

SIJI	**Sorong**	**7.22**	**23**	P	**Pn**	**18 47 52.6**	**+1.3**
	7.0nm,0.3s,baz=179,slow=1.5,SNR=1.9						
SIJI				S	**Sn**	**18 49 09.2**	**-3.0**
	17nm,0.3s,baz=179,slow=18,SNR=2.8						
FITZ	**Fitzroy Crossi**	**10.82**	**195**	P	**Pn**	**18 48 40.8**	**+1.5**
	1.2nm,0.3s,baz=32,slow=11,SNR=17						
FITZ				S	**Sn**	**18 50 35.5**	**-3.6**
	1.8nm,0.3s,baz=140,slow=22,SNR=6.6						
WRA	**Warramunga Arr**	**13.53**	**156**	P	**Pn**	**18 49 13.8**	**-0.6**
	2.0nm,0.3s,baz=340,slow=13,SNR=59						
WRA				S	Sn	18 51 37.2	-7.2
	3.2nm,0.3s,baz=356,slow=18,SNR=6.7						
ASAR	**Alice Springs**	**16.82**	**163**	P	**Pn**	**18 49 58.0**	**+2.9**
	1.0nm,0.3s,baz=334,slow=10,SNR=160						
ASAR				S	**S**	**18 52 59.0**	**-3.2**
	0.9nm,0.3s,baz=323,slow=15,SNR=5.5						
CMAR	**Chiang Mai Arr**	**38.98**	**312**	P	**P**	**18 53 19.2**	**-0.9**
	0.5nm,0.8s,baz=140,slow=8.1,SNR=4.2						
SONM	**Songino Array**	**58.53**	**343**	P	**P**	**18 55 49.7**	**+0.7**
	0.3nm,0.3s,baz=157,slow=8.0,SNR=6.1						
PETK	**Petropavlovsk-**	**65.34**	**19**	P	**P**	**18 56 33.8**	**-0.4**
	4.7nm,0.7s,baz=174,slow=6.3,SNR=6.0						
MKAR	**Makanchi Array**	**67.90**	**328**	P	**P**	**18 56 50.4**	**-0.3**
	1.4nm,0.7s,baz=129,slow=7.9,SNR=16						
ZALV	**Zalesovo Beam**	**71.45**	**334**	P	**P**	**18 57 10.5**	**-1.7**
	1.0nm,0.5s,baz=130,slow=5.8,SNR=6.9						
VNDA	**Vanda**	**72.06**	**173**	P	**P**	**18 57 17.1**	**+1.7**
	0.5nm,0.6s,baz=324,slow=7.8,SNR=3.4						
LPAZ	**La Paz**	**151.14**	**145**	PKPbc	**PKPbc**	**19 05 46.2**	**+0.7**
	2.0nm,1.0s,baz=125,slow=1.8,SNR=4.9						
LPAZ				PKPab	**PKPab**	**19 05 55.4**	**+1.9**
	1.2nm,0.7s,baz=158,slow=4.4,SNR=6.2						

NIED ***23*** *19:50:00, 38.°30N×142.°00E, h20km, Mw3.4 Best double couple: M0:1.61000×10^14 NP1:φ0=167.00000°, δ67.00000°, λ1.00000°. NP2:φ0=76.00000°, δ89.00000°, λ157.00000°.*

JMA 23 18:50:14.0±0.1, 38.°33N×142.°04E, h26km±1km, M3.9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.56**	**283**	P	Pb	18 50 24.9	-0.3
JIO				S	Sb	18 50 32.1	-0.7
OFUJ	**Ofunato**	**0.80**	**339**	P	Pb	18 50 28.8	-0.6
JMK	**Ichinoseki**	**0.89**	**314**	P	Pb	18 50 30.6	-0.3
JMK				S	Sb	18 50 42.3	-0.1
JOU	**Okura**	**1.08**	**272**	P	Pn	18 50 33.7	+0.2
JOU				S	Sn	18 50 47.6	-0.1
JMM	**Marumori**	**1.09**	**245**	P	Pn	18 50 32.8	-0.7
JMM				*e*S	Sn	18 50 46.5	-1.2
JOM	**Ohasama**	**1.28**	**333**	P	Pn	18 50 36.3	+0.1
JOM				S	Sn	18 50 52.7	+0.1
JFK	**Kawauchi**	**1.33**	**224**	P	Pn	18 50 35.7	-1.3
JFK				S	Sn	18 50 51.7	-2.2
JYK	**Kaneyama**	**1.44**	**295**	P	Pb	18 50 39.3	-0.9

ISK ***23*** *19:08:15.5, 39.°01N×29.°24E, h9km, MD2.6*
DDA ***23*** *19:08:16.4, 39.°10N×29.°04E, h7km, Md2.8*
CSEM ***23*** *19:08:16.5±0.2, 39.°08N×29.°08E, h2km, MD2.8, Error ellipse: s-maj=5.4km s-min=3.8km az=156.0*

ISC 23 19:08:15.8±1.2, 39.°04N±0.°04×29.°11E±0.°03, h6km±13km, n24, σ0°63/34, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.30**	**80**	P	**Pb**	**19 08 23.4**	**-0.3**
GDZ				S	**Sb**	**19 08 28.5**	**-0.4**
GDZ	**Gediz**	**0.30**	**80**	*i* P	**Pb**	**19 08 23.4**	**-0.3**
GDZ				*i* S	**Sb**	**19 08 28.5**	**-0.4**
DEMI	**Demirci**	**0.30**	**272**	P	**Pg**	**19 08 22.0**	**+0.2**
DEMI				S	**Sg**	**19 08 25.8**	**-0.1**
DEMI	**Demirci**	**0.30**	**272**	*i* P	**Pg**	**19 08 22.0**	**+0.2**
DEMI				*i* S	**Sg**	**19 08 25.8**	**-0.1**
TVSB	**Tavsanli**	**0.50**	**34**	*e*PG	**Pg**	**19 08 25.5**	**0.0**
TVSB				*e*SG	**Sg**	**19 08 32.2**	**+0.2**
TVSB	**Tavsanli**	**0.50**	**34**	*e*Pg	**Pg**	**19 08 25.5**	**0.0**
TVSB				*e*Sg	**Sg**	**19 08 32.2**	**+0.2**
KULA	**Kula-Manisa**	**0.63**	**214**	*e*PG	**Pb**	**19 08 28.8**	**-0.4**
KULA	**Kula-Manisa**	**0.63**	**214**	*e*Pg	**Pb**	**19 08 28.8**	**-0.4**
DURS	**Dursunbey**	**0.75**	**319**	P	**Pg**	**19 08 30.4**	**+0.2**
DURS				S	**Sg**	**19 08 38.6**	**-1.4**
DURS	**Dursunbey**	**0.75**	**319**	*i* P	**Pg**	**19 08 30.4**	**+0.2**
DURS				*i* S	**Sg**	**19 08 38.6**	**-1.4**
BALB	**Balikesir**	**1.13**	**303**	*e*PN	**Pn**	**19 08 39.4**	**+1.3**
BALB	**Balikesir**	**1.13**	**303**	*e*Pn	**Pn**	**19 08 39.4**	**+1.3**
CAVI	**Cavuskoy**	**1.30**	**26**	*e*PN	**Pn**	**19 08 40.0**	**-0.5**
CAVI	**Cavuskoy**	**1.30**	**26**	*e*Pn	**Pn**	**19 08 40.0**	**-0.5**
IZI	**Iznik**	**1.33**	**12**	*e*PN	**Pb**	**19 08 41.1**	**-0.2**
IZI	**Iznik**	**1.33**	**12**	*e*Pn	**Pb**	**19 08 41.1**	**-0.2**
BORA	**Eskisehir**	**1.34**	**51**	P	**Pg**	**19 08 41.6**	**0.0**
BORA				S	**Sg**	**19 09 00.0**	**+1.0**
BORA	**Eskisehir**	**1.34**	**51**	*i* P	**Pg**	**19 08 41.6**	**0.0**
BORA				*i* S	**Sg**	**19 09 00.0**	**+1.0**
MDNY	**Mudanya-Bursa**	**1.34**	**353**	*e*PN	**Pg**	**19 08 41.7**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.34**	**353**	*e*Pn	**Pg**	**19 08 41.7**	**+0.1**
KCTX	**Karacabey (Bur**	**1.36**	**335**	*e*PN	**Pg**	**19 08 42.6**	**+0.7**
KCTX	**Karacabey (Bur**	**1.36**	**335**	*e*Pn	**Pg**	**19 08 42.6**	**+0.7**
ARMT	**Armutlu**	**1.54**	**353**	*e*PN	**Pb**	**19 08 44.5**	**-0.3**
ARMT	**Armutlu**	**1.54**	**353**	*e*Pn	**Pb**	**19 08 44.5**	**-0.3**

IDC 23 19:08:26.3±2.8, 5.°12N×93.°76E, h0km, mb3.5/4, mb1 3.7/5, mb1mx3.4/54, mbtmp3.5/5, ML3.8/1, Error ellipse: s-maj=106.7km s-min=23.9km az=62.0, Off west coast of northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**14.19**	**20**	Pn	Pn	19 11 50.0	+1.3
	0.1nm,0.3s,baz=213,slow=11,SNR=6.3						
H08S3	**Diego Garcia H**	**24.72**	**239**	T	T	19 39 17.6	
	baz=59,slow=76,SNR=22						
H08S2	**Diego Garcia H**	**24.72**	**239**	T	T	19 39 15.0	
	baz=59,slow=76,SNR=18						
H08S1	**Diego Carcia H**	**24.73**	**239**	T	T	19 39 16.3	
	baz=59,slow=76,SNR=18						
MKAR	**Makanchi Array**	**42.68**	**348**	P	P	19 16 24.7	-0.2
	0.2nm,0.4s,baz=164,slow=7.0,SNR=2.9						
WRA	**Warramunga Arr**	**47.03**	**123**	P	P	19 16 59.7	-0.2
	0.7nm,0.6s,baz=305,slow=9.1,SNR=15						
ASAR	**Alice Springs**	**48.49**	**128**	P	P	19 17 11.2	0.0
	0.4nm,0.6s,baz=300,slow=7.9,SNR=7.8						
ZALV	**Zalesovo Beam**	**49.22**	**353**	P	P	19 17 15.9	-0.4
	0.5nm,0.4s,baz=170,slow=8.7,SNR=3.8						

MAN 23 19:09:33, 7.°59N×124.°63E, h100km, mb3.9, ML2.7, MS2.4, 1D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BUKP	**Musuan**	**0.51**	**56**	*e*P	Pn	19 09 50.9	+1.9
CTBH	**Cotabato--PC H**	**0.53**	**226**	⇓*i*P	Pn	19 09 51.0	+2.0
CTBH				*i* S	Sn	19 09 58.0	-3.0
PAGZ	**Pagadian**	**1.27**	**282**	*e*P	Pn	19 10 00.5	+4.1
PAGZ				*e*S	Sn	19 10 15.3	+1.1
IPIL	**Ipil**	**2.05**	**276**	*e*P	Pn	19 10 07.4	+1.2
IPIL				*e*S	Sn	19 10 26.6	-5.1

ISCJB ***23*** *19:17:28.5±0.5, 39.°14N±0.°03×29.°03E±0.°03, h3km±5km, Error ellipse: s-maj=5.7km s-min=3.6km az=165.0*
DDA ***23*** *19:17:28.3, 39.°12N×29.°02E, h7km, Md2.8*
CSEM ***23*** *19:17:28.7±0.1, 39.°15N×29.°03E, h2km, MD2.8, Error ellipse: s-maj=2.3km s-min=1.7km az=155.0*
ISK ***23*** *19:17:28.4, 39.°15N×29.°04E, h5km, MD2.8*

ISC 23 19:17:28.3±0.9, 39.°14N±0.°03×29.°02E±0.°02, h12km±8km, n42, σ0°35/56, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**248**	P	**Pg**	**19 17 33.8**	**+0.1**
DEMI				S	**Sg**	**19 17 37.3**	**0.0**
DEMI	**Demirci**	**0.26**	**248**	*i* P	**Pg**	**19 17 33.8**	**+0.1**
DEMI				*i* S	**Sg**	**19 17 37.3**	**0.0**
GDZ	**Gediz**	**0.36**	**98**	P	**Pg**	**19 17 35.6**	**-0.1**
GDZ				S	**Sg**	**19 17 40.7**	**+0.1**
GDZ	**Gediz**	**0.36**	**98**	*i* P	**Pg**	**19 17 35.6**	**-0.1**
GDZ				*i* S	**Sg**	**19 17 40.7**	**+0.1**
TVSB	**Tavsanli**	**0.46**	**48**	*e*PG	**Pg**	**19 17 37.7**	**+0.2**
TVSB				*e*SG	**Sg**	**19 17 43.7**	**0.0**
TVSB	**Tavsanli**	**0.46**	**48**	*e*Pg	**Pg**	**19 17 37.7**	**+0.2**
TVSB				*e*Sg	**Sg**	**19 17 43.7**	**0.0**
DURS	**Dursunbey**	**0.62**	**318**	P	**Pb**	**19 17 41.1**	**-0.1**
DURS				S	**Sb**	**19 17 50.0**	**0.0**
DURS	**Dursunbey**	**0.62**	**318**	*i* P	**Pb**	**19 17 41.1**	**-0.1**
DURS				*i* S	**Sb**	**19 17 50.0**	**0.0**
KULA	**Kula-Manisa**	**0.68**	**204**	*e*PG	**Pg**	**19 17 41.5**	**-0.1**
KULA	**Kula-Manisa**	**0.68**	**204**	*e*Pg	**Pg**	**19 17 41.5**	**-0.1**
KHL	**Karahalli**	**0.91**	**154**	*e*PG	**Pn**	**19 17 47.0**	**+0.1**
KHL	**Karahalli**	**0.91**	**154**	*e*Pg	**Pn**	**19 17 47.0**	**+0.1**
ORLT	**Orhaneli**	**0.91**	**354**	*e*PG	**Pb**	**19 17 46.3**	**+0.2**
ORLT	**Orhaneli**	**0.91**	**354**	*e*Pg	**Pb**	**19 17 46.3**	**+0.2**
AKHS	**Akhisar**	**0.97**	**255**	P	**Pg**	**19 17 47.4**	**+0.3**
AKHS				S	**Sb**	**19 18 00.5**	**+0.5**
AKHS	**Akhisar**	**0.97**	**255**	*i* P	**Pg**	**19 17 47.4**	**+0.3**
AKHS				*i* S	**Sb**	**19 18 00.5**	**+0.5**
AKS	**Akhisar**	**0.97**	**255**	*e*PG	**Pn**	**19 17 47.8**	**0.0**
AKS	**Akhisar**	**0.97**	**255**	*e*Pg	**Pn**	**19 17 47.8**	**0.0**
BALB	**Balikesir**	**1.01**	**300**	*e*PG	**Pn**	**19 17 48.2**	**-0.1**
BALB	**Balikesir**	**1.01**	**300**	*e*Pg	**Pn**	**19 17 48.2**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.23**	**355**	*e*PN	**Pg**	**19 17 52.4**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.23**	**355**	*e*Pn	**Pg**	**19 17 52.4**	**+0.3**
KCTX	**Karacabey (Bur**	**1.24**	**336**	*e*PN	**Pg**	**19 17 52.5**	**+0.5**
KCTX	**Karacabey (Bur**	**1.24**	**336**	*e*Pn	**Pg**	**19 17 52.6**	**+0.5**
CAVI	**Cavuskoy**	**1.24**	**31**	*e*PN	**Pg**	**19 17 52.2**	**0.0**
CAVI	**Cavuskoy**	**1.24**	**31**	*e*Pn	**Pg**	**19 17 52.2**	**0.0**
IZI	**Iznik**	**1.25**	**16**	*e*PN	**Pg**	**19 17 52.8**	**+0.5**
IZI	**Iznik**	**1.25**	**16**	*e*Pn	**Pg**	**19 17 52.8**	**+0.5**
BORA	**Eskisehir**	**1.33**	**56**	P	**Pb**	**19 17 53.7**	**+0.4**
BORA				S	**Sb**	**19 18 10.1**	**-0.3**
BORA	**Eskisehir**	**1.33**	**56**	*i* P	**Pb**	**19 17 53.6**	**+0.4**
BORA				*i* S	**Sb**	**19 18 10.1**	**-0.3**
GONE	**Gonen-Balikesi**	**1.37**	**312**	*e*PN	**Pg**	**19 17 54.9**	**+0.2**
GONE	**Gonen-Balikesi**	**1.37**	**312**	*e*Pn	**Pg**	**19 17 54.9**	**+0.2**
ARMT	**Armutlu**	**1.43**	**355**	*e*PN	**Pg**	**19 17 55.7**	**-0.1**
ARMT	**Armutlu**	**1.43**	**355**	*e*Pn	**Pg**	**19 17 55.7**	**-0.1**
ESKT	**Eskisehir**	**1.47**	**74**	*i* P	**Pg**	**19 17 56.7**	**+0.1**
ESKT				*i* S	**Sb**	**19 18 14.3**	**0.0**
SEYT	**Eskypehyr**	**1.47**	**74**	P	**Pg**	**19 17 56.7**	**+0.1**
SEYT				S	**Sb**	**19 18 14.3**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**1.48**	**217**	*e*PN	**Pg**	**19 17 57.0**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**1.48**	**217**	*e*Pn	**Pg**	**19 17 57.0**	**+0.1**
GULT	**Gulveren**	**1.73**	**41**	*e*PN	**Pb**	**19 18 00.1**	**0.0**
GULT	**Gulveren**	**1.73**	**41**	*e*Pn	**Pb**	**19 18 00.1**	**0.0**
CTKS	**Kestanelik-??a**	**2.13**	**350**	*e*PN	**Pb**	**19 18 05.5**	**-1.3**
CTKS	**Kestanelik-??a**	**2.13**	**350**	*e*Pn	**Pb**	**19 18 05.5**	**-1.3**

IDC 23 19:22:18.7±2.2, 3.°49N×125.°91E, h0km, mb3.3/3, mb1 3.5/3, mb1mx3.3/34, mbtmp3.3/3, Error ellipse: s-maj=195.9km s-min=27.4km az=65.0, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**24.71**	**161**	P	P	19 27 41.6	-0.2
	0.5nm,0.7s,baz=340,slow=11,SNR=12						
ASAR	**Alice Springs**	**28.09**	**164**	P	P	19 28 12.8	+0.5
	0.1nm,0.5s,baz=345,slow=6.7,SNR=1.3						
MKAR	**Makanchi Array**	**57.29**	**326**	P	P	19 32 08.2	-0.2
	0.2nm,0.5s,baz=115,slow=7.9,SNR=5.1						

NIED ***23*** *19:33:00, 42.°00N×145.°00E, h23km, Mw3.5 Best double couple: M0:2.15000×10^14 NP1:φ0=235.00000°, δ36.00000°, λ125.00000°. NP2:φ0=14.00000°, δ61.00000°, λ67.00000°.*
JMA ***23*** *19:33:34.5, 41.°99N×144.°97E, h33km±1km, M3.5*
ISCJB ***23*** *19:33:36.6±1.4, 42.°07N±0.°10×144.°82E±0.°10, h34km, Error ellipse: s-maj=16.2km s-min=6.9km az=147.5*
SKHL ***23*** *19:33:39.3±0.7, 42.°28N×144.°50E, h40km±4km, mb4.4/5*

ISC 23 19:33:37.0±1.9, 42.°1N±0.°1×144.°65E±0.°09, h34km, n9, σ1°32/14, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAK	**Akkeshi**	**0.91**	**2**	P	**Pn**	**19 33 53.1**	**-0.3**
JAK				*e*S	**Sb**	**19 34 07.0**	**+0.7**
JOB	**Onbets**	**1.02**	**324**	P	**Pb**	**19 33 56.0**	**-0.2**
JCH	**Churui**	**1.09**	**299**	P	**Pb**	**19 33 57.1**	**-0.3**
JEM	**Erimo**	**1.11**	**267**	P	**Pb**	**19 33 57.6**	**-0.2**
NEM2	**Nemuro 2**	**1.51**	**32**	P	**Pn**	**19 34 00.0**	**-1.6**
NEM2				*e*S	**Sn**	**19 34 18.0**	**-2.1**
YUK	**Yuzh-Kuril'sk**	**2.14**	**24**	*i* P	**Pn**	**19 34 11.4**	**+1.1**
YUK				AMB	AMB	19 34 18.4	
	40nm,0.5s						
YUK				AMB	AMB	19 34 18.4	
	90nm,0.5s						
YUK				*i* S	**Sn**	**19 34 36.0**	**+0.3**
YUK				A	A	19 34 41.7	
	140nm,0.3s						
YUK				A	A	19 34 41.7	
	100nm,0.3s						
SHO	**Shikotan**	**2.40**	**41**	*e*P	**Pn**	**19 34 14.3**	**+0.5**
SHO				AMB	AMB	19 34 21.3	
	10.0nm,0.2s						
SHO				*i* S	**Sn**	**19 34 40.1**	**-1.9**
SHO				A	A	19 34 48.1	
	40nm,0.2s						
SHO				A	A	19 34 48.1	
	90nm,0.2s						
KUR	**Kuril'sk**	**3.92**	**35**	*e*P	**Pn**	**19 34 37.0**	**+2.3**
KUR				*e*S	**Sn**	**19 35 20.1**	**+0.6**
KUR				A	A	19 35 24.7	
	10.0nm,0.2s						
KUR				A	A	19 35 24.7	
	20nm,0.2s						
YSS	**Yuzh-Sakhalins**	**5.05**	**345**	*e*P	**Pn**	**19 34 50.9**	**+0.6**
YSS				AMB	AMB	19 34 51.6	
	70nm,0.5s						

DDA ***23*** *19:42:33.9, 39.°04N×29.°07E, h15km, Md2.7*
ISCJB ***23*** *19:42:34.5±0.5, 39.°07N±0.°03×29.°07E±0.°03, h6km±5km, Error ellipse: s-maj=5.5km s-min=3.9km az=174.7*
CSEM ***23*** *19:42:34.3±0.1, 39.°09N×29.°06E, h2km, MD2.7, Error ellipse: s-maj=2.1km s-min=1.8km az=145.0*
ISK ***23*** *19:42:34.0, 39.°08N×29.°10E, h8km, MD2.8*

ISC 23 19:42:34.6±1.0, 39.°08N±0.°03×29.°07E±0.°02, h7km±10km, n44, σ0°47/59, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**262**	P	**Pg**	**19 42 39.8**	**-0.3**
DEMI				S	**Sg**	**19 42 43.8**	**-0.1**
DEMI	**Demirci**	**0.28**	**262**	*i* P	**Pg**	**19 42 39.9**	**-0.3**
DEMI				*i* S	**Sg**	**19 42 43.8**	**-0.1**
GDZ	**Gediz**	**0.32**	**89**	P	**Pg**	**19 42 41.0**	**+0.1**
GDZ				S	**Sg**	**19 42 46.0**	**+0.9**
GDZ	**Gediz**	**0.32**	**89**	*i* P	**Pg**	**19 42 41.0**	**+0.1**
GDZ				*i* S	**Sg**	**19 42 46.0**	**+0.9**
TVSB	**Tavsanli**	**0.47**	**40**	PG	**Pg**	**19 42 43.5**	**-0.3**
TVSB	**Tavsanli**	**0.47**	**40**	*i* Pg	**Pg**	**19 42 43.5**	**-0.3**
KULA	**Kula-Manisa**	**0.65**	**210**	PG	**Pg**	**19 42 47.1**	**0.0**
KULA	**Kula-Manisa**	**0.65**	**210**	*i* Pg	**Pg**	**19 42 47.2**	**0.0**
DURS	**Dursunbey**	**0.69**	**318**	P	**Pg**	**19 42 47.5**	**-0.5**
DURS	**Dursunbey**	**0.69**	**318**	*i* P	**Pg**	**19 42 47.5**	**-0.5**
DURS				*i* S	**Sb**	**19 43 00.0**	**+1.0**
KHL	**Karahalli**	**0.84**	**155**	*e*PG	**Pg**	**19 42 50.4**	**-0.3**
KHL				*e*SG	**Sg**	**19 43 02.1**	**+0.6**
KHL	**Karahalli**	**0.84**	**155**	*e*Pg	**Pg**	**19 42 50.4**	**-0.3**
KHL				*e*Sg	**Sg**	**19 43 02.2**	**+0.6**
AKHS	**Akhisar**	**1.00**	**259**	P	**Pg**	**19 42 53.6**	**-0.2**
AKHS				S	**Sb**	**19 43 07.2**	**-0.5**
AKHS	**Akhisar**	**1.00**	**259**	*i* P	**Pg**	**19 42 53.6**	**-0.2**
AKHS				*i* S	**Sb**	**19 43 07.2**	**-0.5**
BALB	**Balikesir**	**1.08**	**301**	*e*PN	**Pb**	**19 42 55.6**	**0.0**
BALB	**Balikesir**	**1.08**	**301**	*e*Pn	**Pb**	**19 42 55.6**	**0.0**
CAVI	**Cavuskoy**	**1.27**	**28**	*e*PN	**Pn**	**19 42 58.6**	**-0.2**
CAVI	**Cavuskoy**	**1.27**	**28**	*e*Pn	**Pn**	**19 42 58.6**	**-0.2**
IZI	**Iznik**	**1.29**	**14**	*e*PN	**Pn**	**19 42 58.8**	**-0.4**
IZI	**Iznik**	**1.29**	**14**	*e*Pn	**Pn**	**19 42 58.8**	**-0.4**
MDNY	**Mudanya-Bursa**	**1.29**	**354**	*e*PN	**Pb**	**19 42 59.1**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.29**	**354**	*e*Pn	**Pb**	**19 42 59.1**	**-0.1**
KCTX	**Karacabey (Bur**	**1.30**	**335**	*e*PN	**Pg**	**19 42 59.4**	**-0.2**
KCTX	**Karacabey (Bur**	**1.30**	**335**	*e*Pn	**Pg**	**19 42 59.4**	**-0.2**
BORA	**Eskisehir**	**1.33**	**53**	P	**Pn**	**19 42 59.4**	**-0.4**
BORA				S	**Sb**	**19 43 17.0**	**-0.3**
BORA	**Eskisehir**	**1.33**	**53**	*i* P	**Pn**	**19 42 59.4**	**-0.4**
BORA				*i* S	**Sb**	**19 43 17.0**	**-0.3**
ESKT	**Eskisehir**	**1.45**	**72**	*i* P	**Pn**	**19 43 01.3**	**-0.1**
ESKT				*i* S	**Sg**	**19 43 21.7**	**+0.6**
SEYT	**Eskypehyr**	**1.45**	**72**	P	**Pn**	**19 43 01.3**	**-0.1**
SEYT				S	**Sg**	**19 43 21.7**	**+0.6**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**220**	*e*PN	**Pn**	**19 43 01.5**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**220**	*e*Pn	**Pn**	**19 43 01.5**	**-0.1**
ARMT	**Armutlu**	**1.49**	**354**	*e*PN	**Pn**	**19 43 01.8**	**-0.1**
ARMT	**Armutlu**	**1.49**	**354**	*e*Pn	**Pn**	**19 43 01.8**	**-0.1**
GULT	**Gulveren**	**1.75**	**39**	*e*PN	**Pn**	**19 43 05.3**	**-0.2**
GULT	**Gulveren**	**1.75**	**39**	*e*Pn	**Pn**	**19 43 05.3**	**-0.2**
KRBG	**Karabiga-Canak**	**1.89**	**314**	*e*PN	**Pn**	**19 43 07.8**	**+0.4**
KRBG	**Karabiga-Canak**	**1.89**	**314**	*e*Pn	**Pn**	**19 43 07.8**	**+0.4**
SILT	**Sile**	**2.11**	**12**	*e*PN	**Pn**	**19 43 10.8**	**+0.4**
SILT	**Sile**	**2.11**	**12**	*e*Pn	**Pn**	**19 43 10.8**	**+0.4**
KLYT	**Kilyos**	**2.17**	**359**	*e*PN	**Pn**	**19 43 11.8**	**+0.6**
KLYT	**Kilyos**	**2.17**	**359**	*e*Pn	**Pn**	**19 43 11.8**	**+0.6**
KAND	**Kocaeli-Kandir**	**2.19**	**23**	P	**Pb**	**19 43 13.3**	**-1.2**
KAND				S	**Sn**	**19 43 39.2**	**+0.5**
KAND	**Kocaeli-Kandir**	**2.19**	**23**	*i* P	**Pb**	**19 43 13.3**	**-1.2**
KAND				*i* S	**Sn**	**19 43 39.2**	**+0.5**
CTKS	**Kestanelik-??a**	**2.19**	**349**	*e*PN	**Pn**	**19 43 12.2**	**+0.7**
CTKS	**Kestanelik-??a**	**2.19**	**349**	*e*Pn	**Pn**	**19 43 12.2**	**+0.7**

ISK ***23*** *19:50:53.0, 38.°98N×29.°23E, h9km, MD2.7*
CSEM ***23*** *19:50:53.9±0.2, 39.°07N×29.°07E, h2km, MD2.9, Error ellipse: s-maj=5.2km s-min=3.0km az=152.0*
DDA ***23*** *19:50:53.4, 38.°99N×29.°07E, h7km, Md2.9*
ISCJB ***23*** *19:50:54.0±0.6, 39.°04N±0.°04×29.°08E±0.°03, h7km±5km, Error ellipse: s-maj=6.8km s-min=3.9km az=161.6*

ISC 23 19:50:53.3±1.1, 39.°02N±0.°03×29.°11E±0.°02, h6km±12km, n26, σ0°57/39, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.29**	**76**	P	**Pb**	**19 51 00.8**	**-0.3**
GDZ				S	**Sb**	**19 51 05.7**	**-0.6**
GDZ	**Gediz**	**0.29**	**76**	*i* P	**Pb**	**19 51 00.8**	**-0.3**
GDZ				*i* S	**Sb**	**19 51 05.7**	**-0.6**
DEMI	**Demirci**	**0.31**	**275**	P	**Pg**	**19 50 59.5**	**+0.1**
DEMI				S	**Sg**	**19 51 03.3**	**-0.2**
DEMI	**Demirci**	**0.31**	**275**	*i* P	**Pg**	**19 50 59.5**	**+0.1**
DEMI				*i* S	**Sg**	**19 51 03.3**	**-0.2**
TVSB	**Tavsanli**	**0.51**	**32**	*e*PG	**Pg**	**19 51 03.3**	**+0.1**
TVSB	**Tavsanli**	**0.51**	**32**	*e*Pg	**Pg**	**19 51 03.3**	**+0.1**
KULA	**Kula-Manisa**	**0.61**	**215**	*e*PG	**Pb**	**19 51 06.0**	**-0.5**
KULA				*e*SG	**Sb**	**19 51 15.2**	**-0.2**
KULA	**Kula-Manisa**	**0.61**	**215**	*e*Pg	**Pb**	**19 51 06.0**	**-0.5**
KULA				*e*Sg	**Sb**	**19 51 15.2**	**-0.2**
DURS	**Dursunbey**	**0.77**	**320**	P	**Pg**	**19 51 06.9**	**-1.1**
DURS	**Dursunbey**	**0.77**	**320**	*i* P	**Pg**	**19 51 06.9**	**-1.1**
DURS				*i* S	**Sb**	**19 51 20.2**	**+0.4**
AKHS	**Akhisar**	**1.02**	**263**	P	**Pg**	**19 51 12.7**	**-0.3**
AKHS				S	**Sg**	**19 51 26.4**	**+0.2**
AKHS	**Akhisar**	**1.02**	**263**	*i* P	**Pg**	**19 51 12.7**	**-0.3**
AKHS				*i* S	**Sg**	**19 51 26.4**	**+0.2**
BALB	**Balikesir**	**1.14**	**303**	*e*PN	**Pn**	**19 51 17.1**	**+1.3**
BALB	**Balikesir**	**1.14**	**303**	*e*Pn	**Pn**	**19 51 17.1**	**+1.3**
BORA	**Eskisehir**	**1.35**	**50**	P	**Pg**	**19 51 19.1**	**-0.1**
BORA				S	**Sb**	**19 51 35.6**	**-0.9**
BORA	**Eskisehir**	**1.35**	**50**	*i* P	**Pg**	**19 51 19.1**	**-0.1**
BORA				*i* S	**Sb**	**19 51 35.6**	**-0.9**
KCTX	**Karacabey (Bur**	**1.38**	**335**	*e*PN	**Pg**	**19 51 20.0**	**+0

TWC	**Suao**	**0.14 208**	⇓P		**Pn**	**19 52 00.7**	**+0.7**
TWC	baz=192	*i* S			**Sn**	**19 52 09.4**	**+0.3**
ILA	**Ilan**	**0.16 282**	⇓*i*P		**Pn**	**19 52 00.8**	**+0.8**
ILA	baz=295	*i* S			**Sn**	**19 52 10.5**	**+1.2**
TWE	**Neicheng**	**0.23 268**	⇓*i*P		**Pn**	**19 52 01.0**	**+0.8**
TWE	baz=267	*i* S			**Sn**	**19 52 10.9**	**+1.2**
TWB1	**Santiao Chiao**	**0.28 13**	⇑*i*P		**Pn**	**19 52 00.8**	**+0.2**
TWB1	baz=24	*i* S			**Sn**	**19 52 10.0**	**-0.2**
ENTT	**Nioudou**	**0.33 254**	⇓*i*P		**Pn**	**19 52 01.6**	**+0.7**
ENTT	baz=264	*e*S			**Sn**	**19 52 11.5**	**+0.8**
ENA	**Nanau**	**0.34 208**	⇓*i*P		**Pn**	**19 52 01.5**	**+0.6**
ENA	baz=195	S			**Sn**	**19 52 11.5**	**+0.7**
NWF	**Wu-fen Shan**	**0.36 340**	⇑P		**Pn**	**19 52 01.4**	**+0.3**
NWF	baz=351	*e*S			**Sn**	**19 52 11.1**	**-0.1**
TWA	**Mucha**	**0.39 309**	P		**Pn**	**19 52 01.6**	**+0.3**
TWA	baz=317	S			**Sn**	**19 52 11.4**	**0.0**
TAP1	**Taipei**	**0.47 310**	⇓*i*P		**Pn**	**19 52 02.0**	**+0.2**
TAP1	baz=320	*i* S			**Sn**	**19 52 12.5**	**+0.2**
TAP	**Taipei**	**0.48 309**	⇓P		**Pn**	**19 52 02.1**	**+0.2**
TAP	baz=320	*i* S			**Sn**	**19 52 12.4**	**-0.1**
NSK	**Sanguang**	**0.51 264**	⇓*i*P		**Pn**	**19 52 02.2**	**0.0**
NSK	baz=263	*i* S			**Sn**	**19 52 12.3**	**-0.8**
NNS	**Nan Shan**	**0.58 240**	⇓*i*P		**Pn**	**19 52 03.2**	**+0.5**
NNS	baz=243	*e*S			**Sn**	**19 52 14.4**	**+0.3**
TWS1	**Kuangyinshan**	**0.59 309**	⇓*i*P		**Pn**	**19 52 03.3**	**+0.6**
TWS1	baz=301	S			**Sn**	**19 52 14.7**	**+0.7**
TWY	**Chenhua**	**0.61 332**	*e*P		**Pn**	**19 52 03.5**	**+0.5**
TWY	baz=342	*e*S			**Sn**	**19 52 14.1**	**-0.4**
NCU	**National Centr**	**0.71 290**	⇓*i*P		**Pn**	**19 52 04.3**	**+0.4**
NCU	baz=282	*e*S			**Sn**	**19 52 16.2**	**+0.2**
TWD	**Chiawan**	**0.71 205**	⇓*i*P		**Pn**	**19 52 03.6**	**-0.3**
TWD	baz=210	*e*S			**Sn**	**19 52 15.3**	**-0.8**
HWA	**Hwalien**	**0.80 201**	*e*P		**Pn**	**19 52 04.9**	**+0.1**
TWT	baz=228	S			**Sn**	**19 52 19.1**	**+0.5**
WHF	**Hehuan Shan**	**0.83 226**	⇓*i*P		**Pn**	**19 52 06.1**	**+0.4**
WHF	baz=218	S			**Sn**	**19 52 18.9**	**-0.2**
NSTT	**Nanjuang**	**0.84 263**	⇓*i*P		**Pn**	**19 52 05.4**	**+0.1**
NSTT	baz=263	*e*S			**Sn**	**19 52 17.8**	**-0.8**
HSN	**Hsinchu**	**0.87 275**	*e*P		**Pn**	**19 52 05.6**	**+0.1**
HSN	baz=277	*e*S			**Sn**	**19 52 18.0**	**-0.9**
PCYT	**Pengchaiyu**	**0.91 9**	*e*P		**Pn**	**19 52 06.5**	**+0.6**
PCYT	baz=4.0	*e*S			**Sn**	**19 52 20.3**	**+0.5**
JYNG	**Yonagunijimaku**	**0.97 106**	P		**Pn**	**19 52 06.9**	**+0.2**
JYNG		S			**Sn**	**19 52 21.0**	**-0.1**
ESL	**Shilin**	**1.01 206**	⇓P		**Pn**	**19 52 06.3**	**-0.9**
YOJ	**Yonaguni jima**	**1.03 105**	P		**Pn**	**19 52 07.5**	**+0.2**
YOJ		S			**Sn**	**19 52 21.9**	**-0.3**
YOJ	**Yonaguni jima**	**1.03 105**	⇓*i*P		**Pn**	**19 52 07.5**	**+0.2**
YOJ	baz=104	*e*S			**Sn**	**19 52 21.1**	**-1.2**
TEGC	**Jichi Village**	**1.07 199**	*e*P		**Pn**	**19 52 08.0**	**+0.1**
NSY	**Sanyi**	**1.10 254**	⇓P		**Pn**	**19 52 08.9**	**+0.7**
NSY	baz=252	*e*S			**Sn**	**19 52 23.3**	**-0.4**
TWQ1	**Liyutan**	**1.11 250**	⇓*i*P		**Pn**	**19 52 08.8**	**+0.4**
TWQ1	baz=249	S			**Sn**	**19 52 23.5**	**-0.5**
SMLT	**Sun Moon Lake**	**1.26 228**	⇓*i*P		**Pn**	**19 52 11.1**	**+0.8**
SMLT	baz=233	S			**Sn**	**19 52 27.8**	**+0.6**
TYC	**Yuchr**	**1.27 230**	⇓*i*P		**Pn**	**19 52 11.1**	**+0.8**
TYC	baz=235	*e*S			**Sn**	**19 52 27.5**	**+0.1**
TCU	**Taichung**	**1.27 243**	*e*P		**Pn**	**19 52 10.9**	**+0.6**
TCU	baz=249	*e*S			**Sn**	**19 52 27.1**	**-0.4**
EHY	**Hungye**	**1.34 204**	*e*P		**Pn**	**19 52 09.9**	**-1.2**
WNT	**Mingjian**	**1.41 233**	P		**Pn**	**19 52 12.7**	**+0.7**
WNT	baz=241	S			**Sn**	**19 52 30.9**	**+0.4**
TWF1	**Yuli**	**1.49 203**	*e*P		**Pn**	**19 52 11.7**	**-1.3**
YUS	**Yu-Shan**	**1.52 216**	P		**Pn**	**19 52 14.9**	**+1.0**
YUS	baz=207	*e*S			**Sn**	**19 52 35.2**	**+1.5**
ALS	**Alishan**	**1.59 220**	P		**Pn**	**19 52 15.7**	**+1.2**
ALS	baz=227	S			**Sn**	**19 52 37.2**	**+2.3**
CHN5	**Tsauling**	**1.60 225**	P		**Pn**	**19 52 15.1**	**+0.6**
CHN5	baz=223	S			**Sn**	**19 52 35.9**	**+1.0**
WGK	**Gukeng**	**1.62 230**	⇑*e*P		**Pn**	**19 52 15.5**	**+0.8**
WGK	baz=238	S			**Sn**	**19 52 36.4**	**+1.2**
IRIF	**Iriomote-Funau**	**1.69 103**	P		**Pn**	**19 52 15.6**	**0.0**
IRIF		S			**Sn**	**19 52 36.8**	**-0.2**
CHKT	**Chengkung**	**1.70 197**	*e*P		**Pn**	**19 52 15.2**	**-0.5**
CHKT	baz=194	*e*S			**Sn**	**19 52 35.5**	**-1.7**
WTCT	**Ta-ch'eng**	**1.73 240**	*e*P		**Pn**	**19 52 16.0**	**0.0**
WTCT	baz=238	S			**Sn**	**19 52 37.8**	**+0.1**
ELDTW	**Lidau**	**1.74 208**	*e*P		**Pn**	**19 52 16.3**	**-0.1**
CHN2	**Minshiung**	**1.78 228**	*e*P		**Pn**	**19 52 17.1**	**+0.3**
CHN2	baz=235	*e*S			**Sn**	**19 52 40.3**	**+1.4**
CHN4	**Tsaushan**	**1.83 222**	*e*P		**Pn**	**19 52 18.2**	**+0.7**
CHN4	baz=219	*e*S			**Sn**	**19 52 42.6**	**+2.4**
CHY	**Chiayi**	**1.84 228**	*e*P		**Pn**	**19 52 18.2**	**+0.7**
HATJ	**Hateruma jima**	**1.84 111**	P		**Pn**	**19 52 18.2**	**+0.6**
HATJ		S			**Sn**	**19 52 41.5**	**+1.0**
STYT	**Tauyuan**	**1.89 215**	P		**Pn**	**19 52 19.3**	**+1.0**
STYT	baz=203	*e*S			**Sn**	**19 52 43.1**	**+1.5**
WSF	**Szhu**	**1.89 235**	*e*P		**Pn**	**19 52 18.1**	**-0.1**
WSF	baz=233	*e*S			**Sn**	**19 52 42.4**	**+0.7**
WTP	**Ta-pu**	**1.90 219**	⇓P		**Pn**	**19 52 18.9**	**+0.6**
WTP	baz=227	*e*S			**Sn**	**19 52 43.8**	**+1.9**
TWK	**Hsinying**	**1.96 222**	*e*P		**Pn**	**19 52 19.4**	**+0.3**
TWK	baz=219	*e*S			**Sn**	**19 52 45.7**	**+2.4**
JKRS	**Kuro-shima**	**1.97 104**	P		**Pn**	**19 52 19.7**	**+0.5**
JKRS		S			**Sn**	**19 52 43.9**	**+0.6**
CHN1	**Nanshi**	**2.00 220**	*e*P		**Pn**	**19 52 20.3**	**+0.7**
CHN1	baz=217	*e*S			**Sn**	**19 52 44.4**	**+0.3**
SGST	**Jiashian**	**2.05 217**	*e*P		**Pn**	**19 52 21.2**	**+0.9**
SGST	baz=223	*e*S			**Sn**	**19 52 46.7**	**+1.4**
TWG	**Pinlang**	**2.05 202**	*e*P		**Pn**	**19 52 19.0**	**-1.3**
TWG	baz=190	*e*S			**Sn**	**19 52 43.8**	**-1.6**
JIJ	**Ishigaki jima**	**2.06 100**	P		**Pn**	**19 52 20.4**	**0.0**
JIJ		S			**Sn**	**19 52 45.0**	**-0.5**
CHN8	**Yiju**	**2.08 229**	*e*P		**Pn**	**19 52 21.0**	**+0.3**
CHN8	baz=226	*e*S			**Sn**	**19 52 47.1**	**+1.0**
TTN	**Taitung**	**2.09 200**	*e*P		**Pn**	**19 52 20.6**	**-0.3**
JISG	**Ishigakijimahi**	**2.18 93**	P		**Pn**	**19 52 22.3**	**+0.3**
JISG		S			**Sn**	**19 52 50.3**	**+1.9**
ECL	**Taimali**	**2.30 203**	*e*P		**Pn**	**19 52 22.7**	**-0.9**
SSD	**Sandimen**	**2.30 211**	⇑*e*P		**Pn**	**19 52 25.1**	**+1.5**
SSD	baz=207	*e*S			**Sn**	**19 52 52.5**	**+1.2**
TWM1	**Shoushan**	**2.34 216**	*e*P		**Pn**	**19 52 25.4**	**+1.1**
SGLT	**Jiouru**	**2.39 214**	*e*P		**Pn**	**19 52 26.7**	**+1.9**
PNG	**Penghu**	**2.45 242**	*e*P		**Pn**	**19 52 24.8**	**-0.8**
JTJ	**Tarama**	**2.53 91**	P		**Pn**	**19 52 27.5**	**+0.8**
JTJ		S			**Sn**	**19 52 58.0**	**+1.2**
WDGT	**Dungji**	**2.53 235**	*e*P		**Pn**	**19 52 26.3**	**-0.4**
EAST	**Anshuo**	**2.54 203**	*e*P		**Pn**	**19 52 26.3**	**-0.5**
TAW	**Tawu**	**2.54 202**	*e*P		**Pn**	**19 52 28.9**	**+2.1**
SCZT	**Fangliau**	**2.63 207**	*e*P		**Pn**	**19 52 29.6**	**+1.5**
SCZT	baz=203	*e*S			**Sn**	**19 53 00.5**	**+1.2**
LAY	**Lan-yu**	**2.70 187**	*e*P		**Pn**	**19 52 27.0**	**-2.0**
JIRB	**Irabujima**	**2.96 87**	P		**Pn**	**19 52 33.5**	**+1.1**
JIRB		S			**Sn**	**19 53 07.7**	**+0.7**
TSEB	**Hengchuen, Pin**	**2.97 199**	*e*P		**Pn**	**19 52 33.3**	**+0.7**
JIKM	**Ikemajima**	**3.03 86**	P		**Pn**	**19 52 34.8**	**+1.4**
JIKM		S			**Sn**	**19 53 09.1**	**+0.4**
JMJ	**Miyako jima 2**	**3.07 88**	P		**Pn**	**19 52 34.9**	**+1.0**
JMJ		S			**Sn**	**19 53 10.6**	**+0.9**
KNM	**Kinmen**	**3.19 265**	*e*P		**Pn**	**19 52 36.0**	**+0.5**
JKE	**Kume jima 2**	**4.67 69**	P		**Pn**	**19 52 57.3**	**+1.6**
JNTH	**Nagotoyohara**	**5.79 71**	P		**Pn**	**19 53 11.1**	**+0.2**
JNTH		S			**Sn**	**19 54 15.0**	**-0.9**
JOW	**Kunigami**	**6.10 69**	*e*P		**Pn**	**19 53 15.3**	**+0.2**
KSRS	**Korea Array**	**13.68 21**	P		**P**	**19 55 04.6**	**+1.2**
CMAR	**Chiang Mai Arr**	**22.24 258**	LR		LR	20 05 37.8	
KLR	**Kul'dur**	**25.64 15**	P		**P**	**19 57 09.4**	**+0.6**
KLR		LR			LR	20 07 08.0	
SONM	**Songino Array**	**26.14 336**	P		**P**	**19 57 14.0**	**+0.5**
MKAR	**Makanchi Array**	**38.42 315**	P		**P**	**19 58 59.9**	**-0.6**
ZALV	**Zalesovo Beam**	**40.16 326**	P		**P**	**19 59 14.4**	**-0.5**
KURBB	**Kurchatov Arra**	**42.13 319**	P		**P**	**19 59 30.8**	**-0.2**
TIXI	**Tiksi**	**47.11 3**	P		**P**	**20 00 08.5**	**-1.8**
YKA	**Yellowknife Ar**	**82.21 23**	P		**P**	**20 03 57.6**	**-1.1**
NVAR	**Mina Array Bea**	**95.58 43**	P		**P**	**20 05 03.7**	**+0.2**

DDA ***23*** *19:54:45.6,39°.12N×29°.00E,h7km,Md2.7*
CSEM ***23*** *19:54:45.8±0.3,39°.15N×28°.99E,h2km,MD2.7,Error ellipse: s-maj=9.2km s-min=6.0km az=145.0*
ISC 23 19:54:46.1±1.2,39°.15N±0°.04×29°.00E±0°.03,h1km±14km, n12,σ0s76/23,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**243**	P	**Pg**	**19 54 49.5**	**-1.3**
DEMI				S	**Sg**	**19 54 54.7**	**+0.8**
DEMI	**Demirci**	**0.24**	**243**	*i* P	**Pg**	**19 54 49.5**	**-1.3**
DEMI				*i* S	**Sg**	**19 54 54.7**	**+0.8**
GDZ	**Gediz**	**0.38**	**100**	P	**Pg**	**19 54 53.4**	**-0.1**
GDZ				S	**Sg**	**19 54 59.1**	**+0.6**
GDZ	**Gediz**	**0.38**	**100**	*i* P	**Pg**	**19 54 53.4**	**-0.1**
GDZ				*i* S	**Sg**	**19 54 59.1**	**+0.6**
TVSB	**Tavsanli**	**0.47**	**51**	*e*PG	**Pg**	**19 54 53.5**	**-1.5**
TVSB				*e*SG	**Sg**	**19 55 01.6**	**+0.4**
TVSB	**Tavsanli**	**0.47**	**51**	*e*Pg	**Pg**	**19 54 53.6**	**-1.5**
TVSB				*e*Sg	**Sg**	**19 55 01.6**	**+0.4**
DURS	**Dursunbey**	**0.60**	**318**	P	**Pg**	**19 54 58.0**	**+0.3**
DURS	**Dursunbey**	**0.60**	**318**	*i* P	**Pg**	**19 54 58.0**	**+0.3**
DURS				*i* S	**Sn**	**19 55 12.2**	**-0.3**
KULA	**Kula-Manisa**	**0.69**	**202**	*e*PG	**Pg**	**19 54 59.2**	**-0.1**
KULA				*e*SG	**Sg**	**19 55 08.2**	**0.0**
KULA	**Kula-Manisa**	**0.69**	**202**	*e*Pg	**Pg**	**19 54 59.2**	**-0.1**
KULA				*e*Sg	**Sg**	**19 55 08.2**	**0.0**
BORA	**Eskisehir**	**1.34**	**57**	P	**Pb**	**19 55 12.5**	**+0.4**
BORA				S	**Sb**	**19 55 29.8**	**-0.1**
BORA	**Eskisehir**	**1.34**	**57**	*i* P	**Pb**	**19 55 12.5**	**+0.4**
BORA				*i* S	**Sb**	**19 55 29.8**	**-0.1**

ISCJB ***23*** *19:55:23.2±0.4, 15°.2S±0°.1×173°.4W±0°.1,h10km,mb4.4/23, MS3.6/23,Error ellipse: s-maj=18.9km s-min=9.1km az=42.7*
IDC ***23*** *19:55:23.4±0.6, 15°.15S×173°.49W,h0km,mb4.2/12, mb1 4.5/12,mb1mx4.1/46,mbtmp4.2/12,MS3.5/24, Ms1 3.5/24,ms1mx3.5/31,Error ellipse: s-maj=33.3km s-min=15.5km az=131.0*
NEIC ***23*** *19:55:24.7±0.3, 15°.25S×173°.33W,h10km,mb4.7/11, Error ellipse: s-maj=14.4km s-min=9.7km az=135.0*
ISC 23 19:55:24.4±0.5,15°.2S±0°.1×173°.3W±0°.1,h10km,n69, σ1s09/41,mb4.5/23,MS3.6/23,5C-6D,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**1.93**	**48**	Pn	**Pn**	**19 55 56.6**	**-0.8**
AFI	507nm,0.3s,baz=156,slow=1.2,SNR=218			Sn	Sn	19 56 15.1	-6.6
AFI	2μm,0.3s,baz=231,slow=24,SNR=34			LR	LR	19 56 52.2	
AFI	**Afiamalu**	**1.93**	**48**	*e*Pg	**Pn**	**19 55 56.3**	**-1.1**
AFI				Pn	**Pn**	**19 55 56.6**	**-0.8**
AFI				Sn	Sn	19 56 15.1	-6.6
RAR	**Rarotonga**	**14.13**	**117**	Pn	**Pn**	**19 58 42.8**	**-1.9**
RAR	3.4nm,0.3s,baz=360,slow=19,SNR=3.6			Sn	Sn	20 01 12.7	-9.0
DZM	**Mont Dzumac**	**20.40**	**247**	*e*LR	LR	20 05 43.8	
DZM	231nm,25.6s			*e*LR	LR	20 05 43.8	
PPT	**Papeete**	**22.84**	**99**	LR	LR	20 07 04.2	
PAE	**Paea**	**22.84**	**99**	*e*T	T	20 23 05.7	
PPT2	**Papeete2**	**22.84**	**99**	*e*LR	LR	20 05 31.8	
PPT2	138nm,28.2s			*e*LR	LR	20 05 31.8	
TIAR	**Tiarei**	**23.05**	**99**	*e*T	T	20 23 21.2	
TVO	**Taravao**	**23.16**	**100**	*e*T	T	20 23 29.8	
TBI	**Tubuai**	**23.85**	**114**	*e*LR	LR	20 06 07.9	
TBI	213nm,27.5s			*e*LR	LR	20 06 07.9	
TBI	**Tubuai**	**23.85**	**114**	*e*T	T	20 24 46.2	
URZ	**Urewera**	**24.49**	**199**	P	**P**	**20 00 42.7**	**-1.1**
RKT	**Rikitea**	**36.92**	**108**	*e*T	T	20 40 55.2	
H11S2	**WAKE ISLAND Hy**	**38.87**	**329**	T	T	20 43 31.5	
H11S3	**WAKE ISLAND Hy**	**38.88**	**329**	T	T	20 43 28.6	
H11S1	**WAKE ISLAND Hy**	**38.89**	**329**	T	T	20 43 40.7	
PMG	**Port Moresby**	**39.06**	**274**	LR	LR	20 16 57.8	
H11N3	**WAKE ISLAND Hy**	**39.81**	**330**	T	T	20 44 43.4	
H11N1	**WAKE ISLAND Hy**	**39.82**	**330**	T	T	20 44 43.1	
H11N2	**WAKE ISLAND Hy**	**39.83**	**330**	T	T	20 44 44.1	
STKA	**Stephens Creek**	**44.25**	**240**	P	**P**	**20 03 33.3**	**-1.0**
STKA	3.6nm,0.9s,baz=252,slow=16,SNR=4.0			LR	LR	20 19 57.0	
WRAB	**Tennant Creek**	**50.01**	**257**	*e*P	**P**	**20 04 17.8**	**-1.7**
WRA	**Warramunga Arr**	**50.02**	**257**	P	**P**	**20 04 18.5**	**-1.0**
ASAR	**Alice Springs**	**50.30**	**252**	P	**P**	**20 04 20.4**	**-1.3**
ASAR	3.5nm,0.6s,baz=87,slow=7.8,SNR=52			LR	LR	20 24 27.7	
JCJ	**Chichijima**	**60.32**	**314**	LR	LR	20 26 41.8	
SBA	**Scott Base**	**63.45**	**185**	*e*P	**P**	**20 05 56.5**	**+2.4**
VNDA	**Vanda**	**63.58**	**186**	P	**P**	**20 05 56.7**	**+1.8**
VNDA	1.2nm,0.7s,baz=1.8,slow=7.5,SNR=11			LR	LR	20 27 23.1	
MJAR	**Matsushiro Arr**	**68.88**	**320**	LR	LR	20 31 12.7	
JNU	**Nakatsue**	**71.77**	**313**	LR	LR	20 30 36.5	
PETK	**Petropavlovsk-**	**72.49**	**342**	LR	LR	20 34 03.2	
PFO	**Pinyon Flats O**	**72.69**	**47**	LR	LR	20 29 56.8	
LPIG	**La Paz**	**72.82**	**58**	LR	LR	20 30 41.8	
YBH	**Yreka Blue Hor**	**73.36**	**37**	P	**P**	**20 06 58.5**	**+1.8**
YBH	5.8nm,0.8s,baz=235,slow=1.5,SNR=13			LR	LR	20 31 06.3	
NVAR	**Mina Array Bea**	**74.09**	**42**	P	**P**	**20 07 02.4**	**+1.2**
NVAR	1.4nm,0.6s,baz=230,slow=9.3,SNR=10			LR	LR	20 31 21.6	
QSPA	**South Pole Qui**	**74.83**	**180**	*e*P	**P**	**20 07 06.2**	**+1.2**
MOD	**Modoc Plateau**	**74.89**	**38**	*e*P	**P**	**20 07 07.0**	**+1.3**
KSRS	**Korea Array**	**76.12**	**315**	LR	LR	20 39 35.4	
USRK	**Ussuriysk Ar.**	**77.31**	**323**	LR	LR	20 35 55.9	
DUG	**Dugway, Tooele**	**78.63**	**43**	*e*P	**P**	**20 07 27.8**	**+0.9**
BMRM	**Bremner River**	**79.30**	**14**	*e*P	**P**	**20 07 30.1**	**+0.1**
HLID	**Hailey**	**79.39**	**39**	*e*P	**P**	**20 07 32.1**	**+1.0**
MA2	**Magadan**	**80.02**	**342**	LR	LR	20 38 48.9	
TXAR	**Lajitas Array**	**80.39**	**56**	P	**P**	**20 07 38.1**	**+1.4**
TXAR	2.8nm,1.0s,baz=224,slow=5.0,SNR=14			LR	LR	20 34 48.3	
ANMO	**Albuquerque**	**80.57**	**50**	*e*P	**P**	**20 07 37.9**	**+0.3**
PDAR	**Pinedale Array**	**82.03**	**42**	P	**P**	**20 07 45.9**	**+0.6**
PDAR	2.0nm,0.8s,baz=225,slow=2.4,SNR=4.3			LR	LR	20 38 37.9	
ILAR	**Eielson Array**	**82.23**	**11**	P	**P**	**20 07 45.1**	**-0.4**
ILAR	1.3nm,0.9s,baz=218,slow=6.6,SNR=7.6			LR	LR	20 37 40.9	
SDCO	**Great Sand Dun**	**82.48**	**48**	*e*P	**P**	**20 07 49.0**	**+1.1**
AMTX	**Amarillo**	**84.12**	**52**	*e*P	**P**	**20 07 56.9**	**+0.8**
ABTX	**Abilene, Hawle**	**84.84**	**54**	*e*P	**P**	**20 08 00.0**	**+0.3**
MAW	**Mawson**	**88.02**	**199**	P	**P**	**20 08 15.2**	**+0.6**
PLCA	**Paso Flores**	**89.54**	**132**	LR	LR	20 40 14.4	
YKA	**Yellowknife Ar**	**89.87**	**23**	P	**P**	**20 08 23.4**	**+0.2**
CMAR	**Chiang Mai Arr**	**92.69**	**288**	LR	LR	20 44 31.4	
ULM	**Lac du Bonnet**	**93.70**	**39**	LR	LR	20 44 14.3	
SONM	**Songino Array**	**94.80**	**318**	LR	LR	20 46 19.3	
BURAR	**Bucovina Array**	**144.24**	**338**	⇓*i*P	**PKPdf**	**20 14 59.7**	**-1.2**
CFR	**Carcaliu**	**145.09**	**333**	⇑*i*P	**PKPdf**	**20 15 02.2**	**-0.1**
PLOR	**Plostina**	**145.17**	**335**	⇓*i*P	**PKPdf**	**20 15 02.6**	**+0.1**
TIRR	**Tirgusor**	**145.53**	**332**	⇓*i*P	**PKPab**	**20 15 04.2**	**+0.8**
TIRR	**Tirgusor**	**145.53**	**332**	*e*PKPdf	**PKPab**	**20 15 03.6**	**+0.2**
DOPR	**Dopca**	**145.57**	**337**	⇑*i*P	**PKPab**	**20 15 04.5**	**+0.9**
MLR	**Muntele Rosu**	**145.75**	**336**	⇑*i*P	**PKPab**	**20 15 04.9**	**+0.5**
DRGR		**145.81**	**340**	⇓*i*P	**PKPab**	**20 15 04.2**	**-0.3**
GERES	**GERESS Array B**	**145.97**	**352**	PKPbc	**PKPab**	**20 15 04.6**	**-0.4**
MSAB	0.9nm,0.6s,baz=20,slow=4.3,SNR=9.0 **Monastry St. A**	**146.08**	**332**	⇓*i*P	**PKPab**	**20 15 05.7**	**+0.2**
BRTR	**Keskin Array B**	**146.09**	**321**	PKPbc	**PKPab**	**20 15 06.0**	**+0.1**
VOIR	5.5nm,0.9s,baz=108,slow=2.5,SNR=32	**146.15**	**337**	⇑*i*P	**PKPab**	**20 15 06.4**	**+0.6**
ARR	**Arges**	**146.36**	**337**	⇑*i*P	**PKPab**	**20 15 07.4**	**+0.8**
BZS	**Buzias**	**147.20**	**341**	⇓*i*P	**PKPbc**	**20 15 06.5**	**-1.6**

ISCJB ***23*** *20:00:16.2±0.6,39°.12N±0°.04×29°.00E±0°.03,h3km±6km, Error ellipse: s-maj=6.6km s-min=3.8km az=163.8*
CSEM ***23*** *20:00:16.5±0.1,39°.11N×29°.01E,h5km,MD2.3,Error ellipse: s-maj=2.4km s-min=1.6km az=154.0*
ISK ***23*** *20:00:16.0,39°.11N×29°.02E,h7km,MD2.8*
DDA ***23*** *20:00:16.3,39°.13N×28°.98E,h7km,Md2.3*
ISC 23 20:00:16.5±1.0,39°.10N±0°.03×29°.01E±0°.02,h9km±9km, n38,σ0s38/50,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**255**	P	**Pg**	**20 00 21.8**	**+0.5**
DEMI				S	**Sg**	**20 00 24.1**	**-0.4**
DEMI	**Demirci**	**0.24**	**255**	*i* P	**Pg**	**20 00 21.8**	**+0.5**
DEMI				*i* S	**Sg**	**20 00 24.1**	**-0.4**
GDZ	**Gediz**	**0.37**	**92**	P	**Pg**	**20 00 23.7**	**-0.1**
GDZ				S	**Sg**	**20 00 28.0**	**-0.6**
GDZ	**Gediz**	**0.37**	**92**	*i* P	**Pg**	**20 00 23.7**	**-0.1**
GDZ				*i* S	**Sg**	**20 00 28.0**	**-0.6**
TVSB	**Tavsanli**	**0.49**	**45**	*e*PG	**Sg**	**20 00 26.2**	**+0.1**
TVSB				*e*SG	**Sg**	**20 00 32.6**	**0.0**
TVSB	**Tavsanli**	**0.49**	**45**	*e*Pg	**Pg**	**20 00 26.2**	**+0.1**
TVSB				*e*Sg	**Sg**	**20 00 32.6**	**0.0**

DURS	**Dursunbey**	**0.65**	**320**	P	**Pg**	**20 00 29.1**	**+0.1**
DURS				S	**Sg**	**20 00 36.6**	**-0.9**
DURS	**Dursunbey**	**0.65**	**320**	*i* P	**Pg**	**20 00 29.1**	**+0.1**
DURS				*i* S	**Sg**	**20 00 36.6**	**-0.9**
KULA	**Kula-Manisa**	**0.65**	**205**	*e*PG	**Pg**	**20 00 29.1**	**+0.1**
KULA	**Kula-Manisa**	**0.65**	**205**	*e*Pg	**Pg**	**20 00 29.1**	**+0.1**
AKHS	**Akhisar**	**0.96**	**257**	P	**Pb**	**20 00 35.4**	**+0.1**
AKHS				S	**Sg**	**20 00 47.5**	**+0.1**
AKHS	**Akhisar**	**0.96**	**257**	*i* P	**Pb**	**20 00 35.4**	**+0.1**
AKHS				*i* S	**Sg**	**20 00 47.5**	**+0.1**
AKS	**Akhisar**	**0.96**	**257**	*e*PG	**Pg**	**20 00 34.8**	**-0.2**
AKS	**Akhisar**	**0.96**	**257**	*e*Pg	**Pg**	**20 00 34.8**	**-0.2**
BALB	**Balikesir**	**1.03**	**302**	*e*PG	**Pg**	**20 00 36.4**	**+0.2**
BALB	**Balikesir**	**1.03**	**302**	*e*Pg	**Pg**	**20 00 36.4**	**+0.2**
KCTX	**Karacabey (Bur**	**1.27**	**337**	*e*PN	**Pg**	**20 00 40.9**	**+0.1**
KCTX	**Karacabey (Bur**	**1.27**	**337**	*e*Pn	**Pg**	**20 00 40.9**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.27**	**356**	*e*PN	**Pn**	**20 00 40.6**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.27**	**356**	*e*Pn	**Pn**	**20 00 40.6**	**+0.2**
CAVI	**Cavuskoy**	**1.27**	**30**	*e*PN	**Pn**	**20 00 40.5**	**-0.1**
CAVI	**Cavuskoy**	**1.27**	**30**	*e*Pn	**Pn**	**20 00 40.5**	**-0.1**
IZI	**Iznik**	**1.28**	**16**	*e*PN	**Pn**	**20 00 40.9**	**+0.2**
IZI	**Iznik**	**1.28**	**16**	*e*Pn	**Pn**	**20 00 40.9**	**+0.2**
GONE	**Gonen-Balikesi**	**1.39**	**313**	*e*PN	**Pn**	**20 00 42.0**	**-0.1**
GONE	**Gonen-Balikesi**	**1.39**	**313**	*e*Pn	**Pn**	**20 00 42.0**	**-0.1**
ADVT	**Abdulvahap**	**1.44**	**23**	*e*PN	**Pn**	**20 00 43.2**	**+0.3**
ADVT	**Abdulvahap**	**1.44**	**23**	*e*Pn	**Pn**	**20 00 43.2**	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**1.45**	**218**	*e*PN	**Pn**	**20 00 43.3**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**1.45**	**218**	*e*Pn	**Pn**	**20 00 43.3**	**+0.2**
ARMT	**Armutlu**	**1.46**	**356**	*e*PN	**Pn**	**20 00 43.6**	**+0.4**
ARMT	**Armutlu**	**1.46**	**356**	*e*Pn	**Pn**	**20 00 43.6**	**+0.4**
ESKT	**Eskisehir**	**1.49**	**73**	*i* P	**Pb**	**20 00 44.7**	**+0.3**
ESKT				*i* S	**Sn**	**20 01 02.7**	**-0.5**
SEYT	**Eskypehyr**	**1.49**	**73**	P	**Pb**	**20 00 44.7**	**+0.3**
SEYT				S	**Sn**	**20 01 02.7**	**-0.5**
GULT	**Gulveren**	**1.76**	**41**	*e*PN	**Pn**	**20 00 47.9**	**+0.5**
GULT	**Gulveren**	**1.76**	**41**	*e*Pn	**Pn**	**20 00 47.9**	**+0.5**
SILT	**Sile**	**2.10**	**13**	*e*PN	**Pn**	**20 00 52.7**	**+0.8**
SILT	**Sile**	**2.10**	**13**	*e*Pn	**Pn**	**20 00 52.7**	**+0.8**

*ISCJB **23** 20:04:29.9±0.6, 39°.10N±0°.04×29°.12E±0°.03, h0km±6km, Error ellipse: s-maj=6.7km s-min=3.9km az=159.4*
*DDA **23** 20:04:29.8, 38°.96N×29°.17E, h7km, Md2.2*
*ISK **23** 20:04:30.0, 39°.11N×29°.20E, h5km, MD2.8*
*CSEM **23** 20:04:30.2±0.1, 39°.10N×29°.13E, h2km, MD2.2, Error ellipse: s-maj=2.9km s-min=2.2km az=142.0*

ISC 23 20:04:30.3±1.1, 39°.10N±0°.03×29°.13E±0°.02, h4km±12km, n42, σ0°.40/53, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.27**	**93**	P	**Pg**	**20 04 36.0**	**+0.4**
GDZ				S	**Sg**	**20 04 39.5**	**+0.3**
GDZ	**Gediz**	**0.27**	**93**	*i* P	**Pg**	**20 04 36.0**	**+0.4**
GDZ				*i* S	**Sg**	**20 04 39.5**	**+0.3**
DEMI	**Demirci**	**0.33**	**260**	P	**Pg**	**20 04 36.8**	**+0.2**
DEMI				S	**Sg**	**20 04 40.0**	**-0.9**
DEMI	**Demirci**	**0.33**	**260**	*i* P	**Pg**	**20 04 36.8**	**+0.2**
DEMI				*i* S	**Sg**	**20 04 40.0**	**-0.9**
TVSB	**Tavsanli**	**0.43**	**37**	*e*PG	**Pg**	**20 04 38.4**	**-0.2**
TVSB				*e*SG	**Sg**	**20 04 43.8**	**-0.5**
TVSB	**Tavsanli**	**0.43**	**37**	*e*Pg	**Pg**	**20 04 38.4**	**-0.2**
TVSB				*e*Sg	**Sg**	**20 04 43.8**	**-0.5**
KULA	**Kula-Manisa**	**0.69**	**212**	*e*PG	**Pg**	**20 04 43.5**	**0.0**
KULA	**Kula-Manisa**	**0.69**	**212**	*e*Pg	**Pg**	**20 04 43.5**	**0.0**
DURS	**Dursunbey**	**0.71**	**315**	P	**Pg**	**20 04 44.7**	**+0.8**
DURS	**Dursunbey**	**0.71**	**315**	*i* P	**Pg**	**20 04 44.7**	**+0.8**
DURS				*i* S	**Sn**	**20 04 58.2**	**-0.5**
KHL	**Karahalli**	**0.84**	**158**	*e*PG	**Pg**	**20 04 46.4**	**+0.1**
KHL	**Karahalli**	**0.84**	**158**	*e*Pg	**Pg**	**20 04 46.4**	**+0.1**
ORLT	**Orhaneli**	**0.96**	**349**	*e*PG	**Pg**	**20 04 48.8**	**+0.1**
ORLT	**Orhaneli**	**0.96**	**349**	*e*Pg	**Pg**	**20 04 48.8**	**+0.1**
AKHS	**Akhisar**	**1.05**	**258**	P	**Pg**	**20 04 50.1**	**-0.3**
AKHS				S	**Sg**	**20 05 03.7**	**-0.3**
AKHS	**Akhisar**	**1.05**	**258**	*i* P	**Pg**	**20 04 50.1**	**-0.3**
AKHS				*i* S	**Sg**	**20 05 03.7**	**-0.3**
AKS	**Akhisar**	**1.05**	**258**	*e*PN	**Pb**	**20 04 51.4**	**+0.4**
AKS	**Akhisar**	**1.05**	**258**	*e*Pn	**Pb**	**20 04 51.4**	**+0.4**
BALB	**Balikesir**	**1.11**	**299**	*e*PN	**Pn**	**20 04 52.6**	**0.0**
BALB	**Balikesir**	**1.11**	**299**	*e*Pn	**Pn**	**20 04 52.6**	**0.0**
CAVI	**Cavuskoy**	**1.23**	**26**	*e*PN	**Pg**	**20 04 53.6**	**-0.2**
CAVI	**Cavuskoy**	**1.23**	**26**	*e*Pn	**Pg**	**20 04 53.6**	**-0.2**
IZI	**Iznik**	**1.26**	**12**	*e*PN	**Pg**	**20 04 54.4**	**0.0**
IZI	**Iznik**	**1.26**	**12**	*e*Pn	**Pg**	**20 04 54.4**	**0.0**
MDNY	**Mudanya-Bursa**	**1.28**	**352**	*e*PN	**Pb**	**20 04 55.0**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.28**	**352**	*e*Pn	**Pb**	**20 04 55.0**	**+0.1**
KCTX	**Karacabey (Bur**	**1.30**	**333**	*e*PN	**Pb**	**20 04 56.0**	**+0.6**
KCTX	**Karacabey (Bur**	**1.30**	**333**	*e*Pn	**Pb**	**20 04 56.0**	**+0.6**
ESKT	**Eskisehir**	**1.40**	**72**	*i* P	**Pg**	**20 04 57.0**	**-0.1**
ESKT				*i* S	**Sg**	**20 05 14.6**	**-0.6**
SEYT	**Eskypehyr**	**1.40**	**72**	P	**Pg**	**20 04 57.0**	**-0.1**
SEYT				S	**Sg**	**20 05 14.6**	**-0.6**
ADVT	**Abdulvahap**	**1.41**	**19**	*e*PN	**Pn**	**20 04 57.0**	**+0.2**
ADVT	**Abdulvahap**	**1.41**	**19**	*e*Pn	**Pn**	**20 04 57.0**	**+0.2**
GONE	**Gonen-Balikesi**	**1.46**	**311**	*e*PN	**Pb**	**20 04 58.2**	**+0.2**
GONE	**Gonen-Balikesi**	**1.46**	**311**	*e*Pn	**Pb**	**20 04 58.2**	**+0.2**
ARMT	**Armutlu**	**1.48**	**352**	*e*PN	**Pb**	**20 04 58.2**	**-0.1**
ARMT	**Armutlu**	**1.48**	**352**	*e*Pn	**Pb**	**20 04 58.2**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**1.51**	**220**	*e*PN	**Pg**	**20 04 59.2**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**1.51**	**220**	*e*Pn	**Pg**	**20 04 59.2**	**0.0**
GULT	**Gulveren**	**1.70**	**38**	*e*PN	**Pn**	**20 05 00.8**	**-0.1**
GULT	**Gulveren**	**1.70**	**38**	*e*Pn	**Pn**	**20 05 00.8**	**-0.1**
CTKS	**Kestanelik-??a**	**2.18**	**348**	*e*PN	**Pn**	**20 05 08.2**	**+0.8**
CTKS	**Kestanelik-??a**	**2.18**	**348**	*e*Pn	**Pn**	**20 05 08.2**	**+0.8**

*CSEM **23** 20:05:22.9±0.1, 39°.11N×29°.06E, h2km, MD2.3, Error ellipse: s-maj=2.3km s-min=1.7km az=142.0*
*ISK **23** 20:05:22.6, 39°.11N×29°.09E, h5km, MD2.9*
*DDA **23** 20:05:22.9, 38°.98N×29°.02E, h7km, Md2.3*

ISC 23 20:05:23.1±1.1, 39°.11N±0°.03×29°.05E±0°.02, h2km±11km, n55, σ0°.42/67, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**255**	P	**Pg**	**20 05 28.4**	**0.0**
DEMI				S	**Sg**	**20 05 32.0**	**+0.1**
DEMI	**Demirci**	**0.27**	**255**	*i* P	**Pg**	**20 05 28.4**	**0.0**
DEMI				*i* S	**Sg**	**20 05 32.0**	**+0.1**
GDZ	**Gediz**	**0.33**	**94**	P	**Pg**	**20 05 30.1**	**+0.5**
GDZ				S	**Sg**	**20 05 33.8**	**-0.1**
GDZ	**Gediz**	**0.33**	**94**	*i* P	**Pg**	**20 05 30.1**	**+0.5**
GDZ				*i* S	**Sg**	**20 05 33.8**	**-0.1**
TVSB	**Tavsanli**	**0.46**	**43**	*e*PG	**Pg**	**20 05 31.7**	**-0.3**
TVSB				*e*SG	**Sg**	**20 05 38.1**	**0.0**
TVSB	**Tavsanli**	**0.46**	**43**	*e*Pg	**Pg**	**20 05 31.7**	**-0.3**
TVSB				*e*Sg	**Sg**	**20 05 38.1**	**0.0**
DURS	**Dursunbey**	**0.66**	**318**	P	**Pg**	**20 05 36.5**	**+0.6**
DURS	**Dursunbey**	**0.66**	**318**	*i* P	**Pg**	**20 05 36.5**	**+0.6**
DURS				*i* S	**Sb**	**20 05 48.5**	**+1.3**
KULA	**Kula-Manisa**	**0.67**	**207**	*e*PG	**Pg**	**20 05 36.3**	**+0.3**
KULA	**Kula-Manisa**	**0.67**	**207**	*e*Pg	**Pg**	**20 05 36.3**	**+0.3**
KHL	**Karahalli**	**0.87**	**155**	*e*PG	**Pg**	**20 05 39.3**	**-0.5**
KHL	**Karahalli**	**0.87**	**155**	*e*Pg	**Pg**	**20 05 39.3**	**-0.5**
ORLT	**Orhaneli**	**0.94**	**353**	*e*PG	**Pg**	**20 05 40.8**	**-0.4**
ORLT	**Orhaneli**	**0.94**	**353**	*e*Pg	**Pg**	**20 05 40.8**	**-0.4**
AKHS	**Akhisar**	**0.99**	**257**	P	**Pg**	**20 05 41.8**	**-0.3**
AKHS				S	**Sg**	**20 05 54.4**	**-0.6**
AKHS	**Akhisar**	**0.99**	**257**	*i* P	**Pg**	**20 05 41.8**	**-0.3**
AKHS				*i* S	**Sg**	**20 05 54.4**	**-0.6**
AKS	**Akhisar**	**0.99**	**257**	*e*PG	**Pg**	**20 05 42.2**	**0.0**
AKS	**Akhisar**	**0.99**	**257**	*e*Pg	**Pg**	**20 05 42.2**	**0.0**
BALB	**Balikesir**	**1.05**	**301**	*e*PG	**Pb**	**20 05 44.0**	**0.0**
BALB	**Balikesir**	**1.05**	**301**	*e*Pg	**Pb**	**20 05 44.0**	**0.0**
CAVI	**Cavuskoy**	**1.25**	**29**	*e*PN	**Pg**	**20 05 47.0**	**-0.1**
CAVI	**Cavuskoy**	**1.25**	**29**	*e*Pn	**Pg**	**20 05 47.0**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.26**	**354**	*e*PN	**Pg**	**20 05 47.0**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.26**	**354**	*e*Pn	**Pg**	**20 05 47.0**	**-0.3**
IZI	**Iznik**	**1.27**	**15**	*e*PN	**Pg**	**20 05 47.4**	**0.0**
IZI	**Iznik**	**1.27**	**15**	*e*Pn	**Pg**	**20 05 47.4**	**0.0**
KCTX	**Karacabey (Bur**	**1.27**	**335**	*e*PN	**Pg**	**20 05 47.4**	**-0.1**
KCTX	**Karacabey (Bur**	**1.27**	**335**	*e*Pn	**Pg**	**20 05 47.4**	**-0.1**
BORA	**Eskisehir**	**1.33**	**54**	S	**Sn**	**20 06 06.6**	**-0.5**
BORA	**Eskisehir**	**1.33**	**54**	*i* S	**Sn**	**20 06 06.6**	**-0.5**
GONE	**Gonen-Balikesi**	**1.41**	**312**	*e*PN	**Pn**	**20 05 49.4**	**-0.4**
GONE	**Gonen-Balikesi**	**1.41**	**312**	*e*Pn	**Pn**	**20 05 49.4**	**-0.4**
ADVT	**Abdulvahap**	**1.42**	**22**	*e*PN	**Pn**	**20 05 49.7**	**-0.3**
ADVT	**Abdulvahap**	**1.42**	**22**	*e*Pn	**Pn**	**20 05 49.7**	**-0.3**
ESKT	**Eskisehir**	**1.45**	**73**	*i* P	**Pg**	**20 05 51.8**	**+0.8**
ESKT				*i* S	**Sg**	**20 06 09.1**	**-0.7**
SEYT	**Eskypehyr**	**1.45**	**73**	P	**Pg**	**20 05 51.8**	**+0.8**
SEYT				S	**Sg**	**20 06 09.1**	**-0.7**
ARMT	**Armutlu**	**1.46**	**354**	*e*PN	**Pn**	**20 05 50.3**	**-0.2**
ARMT	**Armutlu**	**1.46**	**354**	*e*Pn	**Pn**	**20 05 50.3**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**1.48**	**218**	*e*PN	**Pn**	**20 05 50.7**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**1.48**	**218**	*e*Pn	**Pn**	**20 05 50.7**	**-0.1**
EDC	**Edincik**	**1.54**	**324**	*e*PN	**Pn**	**20 05 51.5**	**-0.1**
EDC	**Edincik**	**1.54**	**324**	*e*Pn	**Pn**	**20 05 51.5**	**-0.1**
GULT	**Gulveren**	**1.73**	**40**	*e*PN	**Pn**	**20 05 54.0**	**-0.3**
GULT	**Gulveren**	**1.73**	**40**	*e*Pn	**Pn**	**20 05 54.0**	**-0.3**
MRMT	**Marmara Adasi**	**1.86**	**323**	*e*PN	**Pn**	**20 05 56.4**	**+0.3**
MRMT	**Marmara Adasi**	**1.86**	**323**	*e*Pn	**Pn**	**20 05 56.4**	**+0.3**
ISK	**Istanbul-Kandi**	**1.95**	**0**	*e*PN	**Pn**	**20 05 57.2**	**0.0**
ISK	**Istanbul-Kandi**	**1.95**	**0**	*e*Pn	**Pn**	**20 05 57.2**	**0.0**
SILT	**Sile**	**2.09**	**12**	*e*PN	**Pn**	**20 05 59.2**	**+0.1**
SILT	**Sile**	**2.09**	**12**	*e*Pn	**Pn**	**20 05 59.2**	**+0.1**
KLYT	**Kilyos**	**2.14**	**360**	*e*PN	**Pn**	**20 06 00.0**	**+0.2**
KLYT	**Kilyos**	**2.14**	**360**	*e*Pn	**Pn**	**20 06 00.0**	**+0.2**
CTKS	**Kestanelik-??a**	**2.16**	**349**	*e*PN	**Pn**	**20 06 00.4**	**+0.3**
CTKS	**Kestanelik-??a**	**2.16**	**349**	*e*Pn	**Pn**	**20 06 00.4**	**+0.3**
KAND	**Kocaeli-Kandir**	**2.17**	**23**	*i* P	**Pg**	**20 06 03.9**	**-0.7**
KAND				*i* S	**Sb**	**20 06 31.3**	**+1.0**

IDC 23 20:10:09.1±1.2, 57°.36S×26°.53W, h0km, mb3.7/2, mb1 3.8/2, mb1mx3.6/20, mbtmp3.7/2, Error ellipse: s-maj=101.4km s-min=33.4km az=101.0, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VNDA	**Vanda**	**45.28**	**183**	P	P	20 18 27.5	-0.1
	0.4nm,0.5s,baz=170,slow=6.5,SNR=4.9						
H10S2	**ASCENSION HYDR**	**49.16**	**16**	T	T	21 11 45.3	
	baz=187						
H10S3	**ASCENSION HYDR**	**49.16**	**16**	T	T	21 12 04.3	
	baz=187						
H10S1	**ASCENSION HYDR**	**49.18**	**16**	T	T	21 11 56.6	
	baz=187						
TORD	**Torodi Ar. Bea**	**74.03**	**29**	P	P	20 21 46.4	0.0
	1.0nm,0.7s,baz=203,slow=6.9,SNR=6.6						
YKA	**Yellowknife Ar**	**137.38**	**317**	PKP	PKPdf	20 29 32.3	-0.6
	0.1nm,0.3s,baz=130,slow=2.0,SNR=4.2						
ILAR	**Eielson Array**	**151.25**	**310**	PKPbc	PKPbc	20 30 02.5	-0.2
	1.1nm,0.8s,baz=140,slow=2.2,SNR=8.7						

*SOME **23** 20:10:57.2, 42°.15N×82°.45E, h10km*
*NNC **23** 20:11:01.2±2.8, 42°.00N×82°.51E, h0km, mb2.9, mpv2.5, Error ellipse: s-maj=22.0km s-min=12.0km az=156.0*

ISC 23 20:10:59.4±4.0, 41°.8N±0°.2×82°.7E±0°.1, h13km, n9, σ0°.97/17, 6C-1D, Southern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PDGK	**Podgornoye**	**2.86**	**304**	⇑Pn	**Pn**	**20 11 44.4**	**-0.3**
	2.1nm,0.7s						
PDGK				⇑Sn	**Sn**	**20 12 18.0**	**-0.9**
	20nm,0.8s						
UZB	**Uzymbulak**	**3.07**	**298**	*e*P	**Pn**	**20 11 47.3**	**-0.4**
	1.1nm,0.3s						
UZB				*e*S	**Sn**	**20 12 23.4**	**-0.9**
	6.8nm,0.4s						
DJR	**Jarkent**	**3.34**	**321**	*e*P	**Pn**	**20 11 51.5**	**0.0**
	2.4nm,0.4s						
DJR				*e*S	**Sn**	**20 12 30.8**	**-0.3**
	2.8nm,0.7s						
KPKS	**Kokpek**	**3.43**	**301**	*e*P	**Pn**	**20 11 54.0**	**+1.3**
	8.9nm,0.4s						
KPKS				*e*S	**Sn**	**20 12 34.8**	**+1.5**
	16nm,0.4s						
SATY	**Saty**	**3.45**	**293**	*e*P	**Pn**	**20 11 52.5**	**-0.5**
	3.1nm,0.2s						
SATY				*e*S	**Sn**	**20 12 32.5**	**-1.3**
	12nm,0.4s						
MNBS	**Baschi**	**3.93**	**307**	*e*P	**Pn**	**20 12 01.0**	**+1.5**
	0.5nm,0.4s						
MNBS				*e*S	**Sn**	**20 12 46.8**	**+1.3**
	9.3nm,0.7s						
KAPS	**Kapalarasan**	**4.28**	**326**	*e*P	**Pn**	**20 12 04.4**	**0.0**
	1.8nm,0.2s						
KAPS				*e*S	**Sn**	**20 12 53.1**	**-1.1**
	1.9nm,0.3s						
MK31	**Makanchi Array**	**5.03**	**357**	⇑Pn	**Pn**	**20 12 14.8**	**+0.2**
	0.1nm,0.3s,baz=189,slow=13,SNR=8.2						
MK31				⇑Lg	Lg	20 13 30.9	
	0.4nm,0.4s,baz=187,slow=30,SNR=4.4						
MAKZ	**Makanchi**	**5.07**	**354**	⇑Pn	**Pn**	**20 12 14.9**	**-0.2**
	0.8nm,0.7s						
MAKZ				⇑Sn	**Sn**	**20 13 13.5**	**+0.1**
	0.5nm,0.4s						
MAKZ				⇓Lg	Lg	20 13 31.7	
	0.7nm,0.7s						

MAN 23 20:16:04, 13°.91N×122°.44E, h20km, mb3.7, ML2.4, MS1.9, 1C, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GQP	**Guinayangan**	**0.00**	**90**	*i* P	Pb	20 16 08.4	+1.0
GQP				*i* S	Sb	20 16 13.7	+3.8
BOAC	**Boac**	**0.73**	**233**	*e*P	Pb	20 16 17.7	-0.4
BOAC				*e*S	Sn	20 16 31.4	+1.6
SJMP	**San Jose**	**1.93**	**222**	*e*P	Pn	20 16 36.4	+0.7

*ISCJB **23** 20:22:58.8±0.6, 36°.98N±0°.05×28°.27E±0°.05, h10km, Error ellipse: s-maj=8.1km s-min=5.1km az=25.4*
*ISK **23** 20:22:58.8, 37°.00N×28°.29E, h12km, MD2.5*
*CSEM **23** 20:22:59.6±0.3, 36°.97N×28°.23E, h2km, MD2.5, Error ellipse: s-maj=9.9km s-min=6.1km az=22.0*
*DDA **23** 20:23:00.3, 36°.84N×28°.13E, h7km, Md2.2*

ISC 23 20:23:00.0±0.9, 36°.98N±0°.04×28°.23E±0°.03, h10km, n17, σ2°.07/24, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.16**	**15**	PG	**Pg**	**20 23 02.4**	**-1.2**
YER				*e*SG	**Sg**	**20 23 05.3**	**-0.8**
YER	**Yerkesik**	**0.16**	**15**	*i* Pg	**Pg**	**20 23 02.4**	**-1.2**
YER				*e*Sg	**Sg**	**20 23 05.3**	**-0.8**
TURN	**Turunc**	**0.32**	**109**	*i* P	**Pg**	**20 23 03.0**	**-3.3**
TURN				*i* S	**Sg**	**20 23 05.9**	**-4.7**
DALY	**Dalyan (Mu¨la**	**0.38**	**115**	*e*PG	**Pg**	**20 23 06.0**	**-1.4**
DALY	**Dalyan (Mu¨la**	**0.38**	**115**	*e*Pg	**Pg**	**20 23 06.0**	**-1.4**
BDRM	**Kayabasi**	**0.64**	**278**	P	**Pg**	**20 23 11.7**	**-0.6**
BDRM				S	**Sb**	**20 23 21.3**	**-0.9**
BDRM	**Kayabasi**	**0.64**	**278**	*i* P	**Pg**	**20 23 11.7**	**-0.6**
BDRM				*i* S	**Sb**	**20 23 21.3**	**-0.9**
BODT	**Bodrum**	**0.74**	**277**	*e*PG	**Pb**	**20 23 14.5**	**-0.5**
BODT	**Bodrum**	**0.74**	**277**	*e*Pg	**Pb**	**20 23 14.5**	**-0.5**
FETY	**Fethiye**	**0.77**	**116**	*e*PG	**Pg**	**20 23 13.7**	**-1.1**
FETY	**Fethiye**	**0.77**	**116**	*e*Pg	**Pg**	**20 23 13.7**	**-1.1**
AYDB	**Zeytinkoy-Aydi**	**1.00**	**344**	*e*PG	**Pg**	**20 23 18.3**	**-1.0**
AYDB	**Zeytinkoy-Aydi**	**1.00**	**344**	*e*Pg	**Pg**	**20 23 18.3**	**-1.0**
GOLH	**Golhisar**	**1.09**	**76**	P	**Pn**	**20 23 22.6**	**+1.1**
GOLH	**Golhisar**	**1.09**	**76**	*i* P	**Pn**	**20 23 22.6**	**+1.1**
GOLH				*i* S	**Sn**	**20 23 41.3**	**+4.5**
AKAS	**Kas**	**1.33**	**124**	P	**Pg**	**20 23 24.7**	**-0.9**
AKAS	**Kas**	**1.33**	**124**	*i* P	**Pg**	**20 23 24.7**	**-0.9**
AKAS				*i* S	**Sg**	**20 23 47.1**	**+4.2**

JMA 23 20:23:51.1, 37°.43N×136°.65E, h10km±1km, M1.8, Near west coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHG	**Hegura jima**	**0.47**	**27**	P	Pg	20 24 00.3	0.0
JJH	**Hakui**	**0.52**	**168**	P	Pg	20 24 01.4	+0.3
JJH				S	Sg	20 24 08.5	+0.6
JSZ	**Suzu**	**0.57**	**88**	P	Pg	20 24 02.0	-0.1
JSZ				S	Sg	20 24 09.9	+0.3
JTT	**Ttatey**	**0.99**	**146**	S	Sb	20 24 23.8	+0.4
JKG	**Kaga**	**1.18**	**193**	P	Pb	20 24 13.1	-0.4
JKG				S	Sg	20 24 29.1	0.0

*NIED **23** 20:24:00, 37°.80N×142°.60E, h8km, Mw3.5 Best double couple: M₀1.79000×10^14 NP1:φs262.00000°, δ55.00000°, λ38.00000°. NP2:φs148.00000°, δ60.00000°, λ139.00000°.*

*ISCJB **23** 20:24:54.7±0.9, 37°.76N±0°.08×142°.8E±0°.1, h14km, mb3.4/4, MS3.5/2, Error ellipse: s-maj=15.0km s-min=7.8km az=138.9*
*IDC **23** 20:24:54.0±1.8, 37°.75N×142°.96E, h0km, mb3.5/4, mb1 3.6/7, mb1mx3.4/41, mbtmp3.6/7, ML3.4/3, MS3.5/2, Ms1 3.5/2, ms1mx2.5/28, Error ellipse: s-maj=51.9km s-min=22.6km az=76.0*
*JMA **23** 20:24:57.5±0.4, 37°.78N×142°.63E, h41km, M3.5*

ISC 23 20:24:55.9±1.1, 37°.84N±0°.06×142°.68E±0°.08, h14km±1km, n21, σ1°.57/17, mb3.4/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.22**	**301**	P	**Pg**	**20 25 18.9**	**-0.4**
JIO				S	**Sn**	**20 25 34.0**	**-0.7**
JMK	**Ichinoseki**	**1.60**	**314**	P	**Pb**	**20 25 24.3**	**-0.8**
JMK				*e*S	**Sb**	**20 25 45.8**	**+0.6**
JOU	**Okura**	**1.68**	**289**	P	**Pb**	**20 25 25.3**	**-1.2**
JOM	**Ohasama**	**1.96**	**327**	P	**Pb**	**20 25 30.1**	**-1.2**
JYK	**Kaneyama**	**2.12**	**301**	P	**Pn**	**20 25 31.3**	**+0.4**
JYK				*e*S	**Sb**	**20 25 59.6**	**-0.6**
JRG	**Rokugo**	**2.23**	**315**	P	**Pb**	**20 25 34.9**	**-1.1**
MJAR	**Matsushiro Arr**	**3.80**	**251**	Pn	**Pn**	**20 25 57.3**	**+3.3**
	0.7nm,0.3s,baz=83,slow=15,SNR=3.0						
ASAJ	**Asahikawa**	**6.27**	**359**	Pn	**Pn**	**20 26 30.1**	**+2.2**
	0.9nm,0.3s,baz=218,slow=11,SNR=7.2						
ASAJ				Sn	**Sn**	**20 27 38.2**	**-1.1**
	0.2nm,0.3s,baz=5.7,slow=17,SNR=1.2						
JCJ	**Chichijima**	**10.72**	**182**	Pn	**Pn**	**20 27 26.5**	**-2.5**
	1.1nm,0.3s,baz=229,slow=20,SNR=1.9						
H11N2	**WAKE ISLAND Hy 27.73**	**124**		T	T	20 59 40.1	
	baz=316,slow=75,SNR=108						
H11N1	**WAKE ISLAND Hy 27.73**	**124**		T	T	20 59 44.7	
	baz=316,slow=75,SNR=47						
H11N3	**WAKE ISLAND Hy 27.74**	**124**		T	T	20 59 49.0	
	baz=316,slow=75,SNR=88						
H11S1	**WAKE ISLAND Hy 28.48**	**126**		T	T	21 00 40.8	
	baz=318,slow=76,SNR=50						
H11S3	**WAKE ISLAND Hy 28.48**	**126**		T	T	21 00 41.1	
	baz=318,slow=76,SNR=39						
H11S2	**WAKE ISLAND Hy 28.50**	**126**		T	T	21 00 40.8	
	baz=318,slow=76,SNR=36						
ZALV	**Zalesovo Beam**	**42.12**	**312**	P	**P**	**20 32 49.0**	**+1.5**
	0.2nm,0.3s,baz=92,slow=11,SNR=1.7						
NRIK	**Noril'sk**	**42.96**	**335**	LR	LR	20 51 44.6	
	comp=Z,34nm,19.7s,baz=104,slow=37						
MKAR	**Makanchi Array**	**44.55**	**302**	P	**P**	**20 33 08.7**	**+1.5**
	0.2nm,0.7s,baz=78,slow=9.0,SNR=1.9						
WRA	**Warramunga Arr**	**58.01**	**189**	P	**P**	**20 34 48.2**	**0.0**
	0.9nm,0.7s,baz=7.1,slow=7.1,SNR=11						
ASAR	**Alice Springs**	**61.73**	**189**	P	**P**	**20 35 14.2**	**+0.3**

JYN	**Shimob**	**3.74**	**281**	P	Pn	20 55 38.0	+0.8
JYN				*e*S	Sn	20 56 19.4	-0.6
MAT	**Matsushiro**	**4.29**	**295**	P	Pn	20 55 46.6	+2.0
MAT				*e*S	Sn	20 56 31.0	-2.3
MAT	**Matsushiro**	**4.29**	**295**	P	Pn	20 55 46.3	+1.7
MAT				*e*S	Sn	20 56 33.8	+0.5

IDC 23 20:55:28.0±1.0, 55°63S×26°98W, h0km, mb3.9/3, mb1 4.1/3, mb1mx3.8/25, mbtmp3.9/3, MS3.1/1, Ms1 3.1/1, ms1mx2.8/16, Error ellipse: s-maj=46.2km s-min=31.2km az=83.0, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H09N1	**TRISTAN DA CUN**	**21.07**	**34**	T	T	21 06 07.5	
	SNR=46						
CPUP	**Villa Florida**	**36.62**	**311**	LR	LR	21 15 54.2	
	comp=Z,27nm,19.3s,baz=196,slow=34						
VNDA	**Vanda**	**47.00**	**183**	P	P	21 04 00.0	-0.1
	1.2nm,0.6s,baz=186,slow=8.0,SNR=12						
H10S2	**ASCENSION HYDR**	**47.56**	**17**	T	T	21 55 30.2	
	baz=191						
H10S3	**ASCENSION HYDR**	**47.57**	**17**	T	T	21 55 30.5	
	baz=191						
H10S1	**ASCENSION HYDR**	**47.58**	**17**	T	T	21 55 31.5	
	baz=191						
H10N1	**ASCENSION HYDR**	**48.68**	**17**	T	T	21 56 54.5	
	baz=200						
H10N3	**ASCENSION HYDR**	**48.68**	**17**	T	T	21 56 54.3	
	baz=200						
H10N2	**ASCENSION HYDR**	**48.70**	**17**	T	T	21 56 55.8	
	baz=200						
LPAZ	**La Paz**	**50.23**	**305**	P	P	21 04 26.3	-0.1
	1.4nm,0.7s,baz=141,slow=10,SNR=6.4						
TORD	**Torodi Ar. Bea**	**72.63**	**29**	P	P	21 06 57.2	+0.1
	0.9nm,0.8s,baz=198,slow=7.6,SNR=4.8						
YKA	**Yellowknife Ar**	**135.94**	**318**	PKP	PKPdf	21 14 48.1	-1.1
	0.4nm,0.8s,baz=119,slow=2.1,SNR=5.6						
ILAR	**Eielson Array**	**149.92**	**312**	PKPbc	PKPbc	21 15 18.2	-0.3
	1.6nm,0.8s,baz=124,slow=1.6,SNR=14						
SONM	**Songino Array**	**150.58**	**86**	PKPbc	PKPbc	21 15 20.6	-0.3
	0.8nm,0.7s,baz=184,slow=2.4,SNR=4.6						

*IDC **23** 21:11:09.6±1.3, 16°76S×173°14W, h0km, mb4.0/8, mb1 4.3/9, mb1mx4.0/34, mbtmp4.0/9, ML3.8/1, Error ellipse: s-maj=58.2km s-min=19.3km az=143.0*
*ISCJB **23** 21:11:13.4±0.5, 16°9S±0°1×173°2W±0°1, h41km, mb4.2/15, Error ellipse: s-maj=22.7km s-min=8.4km az=37.7*
*NEIC **23** 21:11:14.4±0.5, 16°89S×173°08W, h35km, mb4.6/6, Error ellipse: s-maj=22.6km s-min=9.8km az=136.0*
ISC 23 21:11:15.2±0.7, 16°9S±0°1×173°0W±0°2, h41km, n38, σ1°39/39, mb4.1/15, 2C-6D, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**3.21**	**22**	Pn	**Pn**	**21 12 00.1**	**-3.2**
	12nm,0.3s,baz=113,slow=5.2,SNR=7.9						
AFI				Sn	**Sn**	21 12 40.3	-0.1
	24nm,0.3s,baz=123,slow=23,SNR=6.6						
URZ	**Urewera**	**22.97**	**200**	P	**P**	**21 16 13.5**	**-2.5**
	7.2nm,0.3s,baz=237,slow=2.5,SNR=13						
URZ	**Urewera**	**22.97**	**200**	*e*P	**P**	**21 16 13.7**	**-2.4**
WR1	**Warramunga Arr**	**49.88**	**258**	*e*P	**P**	**21 20 04.0**	**-1.0**
	21nm,1.5s						
WRA	**Warramunga Arr**	**49.88**	**258**	P	**P**	**21 20 04.0**	**-1.0**
	0.4nm,0.3s,baz=96,slow=7.7,SNR=16						
AS31	**Alice Springs**	**50.02**	**253**	*e*P	**P**	**21 20 05.6**	**-0.4**
	1.4nm,0.8s						
ASAR	**Alice Springs**	**50.02**	**253**	P	**P**	**21 20 05.6**	**-0.4**
	4.3nm,0.6s,baz=88,slow=8.6,SNR=55						
PETK	**Petropavlovsk-**	**74.18**	**342**	P	**P**	**21 22 45.8**	**-1.5**
	1.6nm,0.7s,baz=128,slow=40,SNR=3.6						
PEA1	**Petropavlovsk-**	**74.19**	**342**	*e*P	**P**	**21 22 45.8**	**-1.5**
NV01	**Mina Array Sit**	**75.20**	**42**	*e*P	**P**	**21 22 54.4**	**+0.5**
NVAR	**Mina Array Bea**	**75.20**	**42**	P	**P**	**21 22 54.4**	**+0.5**
	1.5nm,0.8s,baz=229,slow=7.7,SNR=5.8						
LCMT	**Little Creek M**	**77.73**	**45**	*e*P	**P**	**21 23 07.4**	**-0.7**
	4.1nm,0.7s						
LTX	**Lajitas**	**81.14**	**56**	*e*P	**P**	**21 23 26.4**	**-0.4**
TXAR	**Lajitas Array**	**81.14**	**56**	P	**P**	**21 23 26.4**	**-0.4**
	0.6nm,1.0s,baz=242,slow=2.7,SNR=3.7						
S22A	**4UR Ranch, Cre**	**82.52**	**47**	*e*P	**P**	**21 23 35.0**	**+0.8**
	2.3nm,0.8s						
BW06	**Boulder Array**	**83.14**	**42**	*e*P	**P**	**21 23 36.7**	**-0.4**
PD31	**Pinedale Array**	**83.14**	**42**	*e*P	**P**	**21 23 37.5**	**+0.3**
PDAR	**Pinedale Array**	**83.14**	**42**	P	**P**	**21 23 37.5**	**+0.3**
	1.1nm,0.8s,baz=202,slow=3.2,SNR=7.1						
WRH	**Wood River Hil**	**83.36**	**11**	*e*P	**P**	**21 23 40.1**	**+2.6**
	5.0nm,1.0s						
COLA	**College**	**83.77**	**11**	*e*P	**P**	**21 23 40.0**	**+0.4**
	5.7nm,0.8s						
ILAR	**Eielson Array**	**83.85**	**11**	P	**P**	**21 23 40.0**	**0.0**
	0.5nm,0.7s,baz=228,slow=4.3,SNR=4.9						
ILB	**Eielson Array**	**83.85**	**11**	*e*P	**P**	**21 23 40.0**	**0.0**
YKA	**Yellowknife Ar**	**91.33**	**23**	P	**P**	**21 24 17.1**	**+1.0**
	0.2nm,0.7s,baz=260,slow=7.8,SNR=3.5						
YKB5	**Yellowknife Ar**	**91.33**	**23**	*e*P	**P**	**21 24 17.1**	**+1.0**
MK32	**Makanchi Array**	**112.15**	**314**	*e*PKiKP	**PKiKP**	**21 29 47.6**	**+1.3**
MKAR	**Makanchi Array**	**112.15**	**314**	PKiKP	**PKiKP**	**21 29 47.6**	**+1.3**
	0.3nm,0.7s,baz=64,slow=2.8,SNR=4.4						
KWP	**Kalwaria Pacla**	**144.97**	**342**	⇑*i*P	**PKPdf**	**21 30 49.9**	**+2.0**
CLL	**Collm**	**145.35**	**353**	*e*P	**PKPab**	**21 30 50.0**	**+1.5**
	comp=Z,9.0nm,1.1s						
CLL				*i*		21 31 01.9	
BRG	**Berggiesshubel**	**145.67**	**352**	*e*P	**PKPab**	**21 30 51.2**	**+1.5**
	comp=Z,9.4nm,1.6s						
BURAR	**Bucovina Array**	**145.91**	**338**	‖*i*P	**PKPab**	**21 30 51.6**	**+0.7**
MORC	**Moravsky Berou**	**146.13**	**348**	‖*i*P	**PKPab**	**21 30 54.0**	**+2.4**
TESR	**Tescani**	**146.28**	**335**	‖*i*P	**PKPab**	**21 30 54.3**	**+2.1**
CFR	**Carcaliu**	**146.71**	**332**	‖*i*P	**PKPab**	**21 30 55.4**	**+1.5**
VRAC	**Vranov**	**146.76**	**349**	‖*i*P	**PKPab**	**21 30 55.4**	**+1.4**
VRI	**Vrincioaia**	**146.77**	**334**	‖*i*P	**PKPab**	**21 30 54.9**	**+0.8**
TIRR	**Tirgusor**	**147.14**	**331**	⇑*i*P	**PKPab**	**21 30 56.4**	**+0.8**
BRTR	**Keskin Array B**	**147.56**	**320**	PKPbc	**PKPbc**	**21 30 55.2**	**-0.3**
	comp=Z,1.2nm,0.9s,baz=120,slow=1.8,SNR=7.2						
GERES	**GERESS Array B**	**147.69**	**352**	PKPbc	**PKPbc**	**21 30 56.8**	**+1.3**
	comp=Z,1.8nm,0.9s,baz=0.0,slow=3.2,SNR=12						

IDC 23 21:25:24.8±2.2, 34°64S×53°81E, h0km, mb3.8/4, mb1 4.0/4, mb1mx3.5/37, mbtmp3.8/4, MS3.8/1, Ms1 3.8/1, ms1mx2.7/35, Error ellipse: s-maj=93.2km s-min=28.2km az=40.0, Southwest Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08S1	**Diego Garcia H**	**31.89**	**37**	T	T	22 05 09.1	
	baz=209,slow=76,SNR=27						
H08S2	**Diego Garcia H**	**31.90**	**37**	T	T	22 05 12.1	
	baz=209,slow=76,SNR=5.2						
H08S3	**Diego Garcia H**	**31.91**	**37**	T	T	22 05 10.0	
	baz=209,slow=76,SNR=30						
H08N3	**Diego Garcia H**	**32.32**	**33**	T	T	22 05 52.0	
	baz=206,slow=76,SNR=5.2						
H08N1	**Diego Garcia H**	**32.34**	**33**	T	T	22 05 47.4	
	baz=206,slow=76,SNR=3.7						
H08N2	**Diego Garcia H**	**32.34**	**33**	T	T	22 05 51.3	
	baz=206,slow=76,SNR=4.7						
KMBO	**Kilima Mbogo**	**36.75**	**332**	P	P	21 32 33.8	-0.6
	1.2nm,0.4s,baz=139,slow=11,SNR=3.0						
LEM	**Lembang**	**56.62**	**74**	LR	LR	21 52 30.3	
	comp=Z,84nm,19.9s,baz=123,slow=29						
CMAR	**Chiang Mai Arr**	**68.04**	**47**	P	P	21 36 26.5	+0.3
	0.4nm,0.7s,baz=231,slow=8.0,SNR=4.3						
ASAR	**Alice Springs**	**69.15**	**105**	P	P	21 36 33.4	0.0
	0.2nm,0.3s,baz=231,slow=6.6,SNR=3.5						
WRA	**Warramunga Arr**	**71.37**	**102**	P	P	21 36 46.6	-0.4
	0.9nm,0.8s,baz=238,slow=5.4,SNR=6.9						
ILAR	**Eielson Array**	**147.33**	**16**	PKPbc	PKPbc	21 45 09.2	-0.3
	0.6nm,0.6s,baz=304,slow=3.3,SNR=6.0						
YKA	**Yellowknife Ar**	**151.19**	**349**	PKPbc	PKPbc	21 45 19.3	+0.1
	0.2nm,0.5s,baz=19,slow=2.0,SNR=6.4						

*ISCJB **23** 21:26:35.5±0.7, 21°55N±0°08×143°1E±0°2, h311km, mb3.2/12, Error ellipse: s-maj=20.4km s-min=10.5km az=176.4*
*IDC **23** 21:26:36.5±2.0, 21°60N×143°16E, h307km±18km, mb3.1/13, mb1 3.3/14, mb1mx3.1/43, mbtmp3.7/14, Error ellipse: s-maj=23.2km s-min=15.0km az=95.0*
ISC 23 21:26:36.9±0.8, 21°6N±0°1×143°1E±0°2, h311km, n14, σ0°63/15, mb3.3/12, Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCJ	**Chichijima**	**5.53**	**351**	P	**Pn**	**21 28 01.1**	**+0.1**
	3.5nm,0.3s,baz=299,slow=22,SNR=14						
JCJ				S	**S**	21 29 07.9	-0.8
	baz=308,slow=20						
KSRS	**Korea Array**	**20.56**	**324**	P	**P**	**21 30 52.8**	**+0.2**
	1.2nm,0.6s,baz=148,slow=8.0,SNR=7.9						
KLR	**Kul'dur**	**29.01**	**345**	P	**P**	**21 32 08.9**	**+0.3**
	1.0nm,0.4s,baz=184,slow=7.4,SNR=5.5						
CMAR	**Chiang Mai Arr**	**41.54**	**274**	P	**P**	**21 33 55.8**	**+0.7**
	0.3nm,0.6s,baz=82,slow=6.5,SNR=4.2						
WRA	**Warramunga Arr**	**42.19**	**192**	P	**P**	**21 33 59.6**	**-0.5**
	0.2nm,0.3s,baz=16,slow=9.3,SNR=6.7						
ASAR	**Alice Springs**	**45.89**	**192**	P	**P**	**21 34 28.9**	**-0.4**
	0.1nm,0.3s,baz=12,slow=8.0,SNR=2.8						
ZALV	**Zalesovo Beam**	**54.25**	**322**	P	**P**	**21 35 31.0**	**-0.2**
	0.4nm,0.3s,baz=111,slow=7.9,SNR=2.8						
MKAR	**Makanchi Array**	**54.73**	**313**	P	**P**	**21 35 34.7**	**-0.1**
	0.3nm,0.5s,baz=84,slow=10,SNR=4.4						
ILAR	**Eielson Array**	**62.13**	**27**	P	**P**	**21 36 25.0**	**-0.2**
	0.2nm,0.5s,baz=283,slow=5.5,SNR=3.6						
YKA	**Yellowknife Ar**	**76.55**	**28**	P	**P**	**21 37 53.1**	**+0.1**
	0.3nm,0.5s,baz=292,slow=5.8,SNR=6.1						
ARCES	**ARCESS Array B**	**78.99**	**341**	P	**P**	**21 38 06.9**	**+0.6**
	2.1nm,0.8s,baz=74,slow=8.8,SNR=7.3						
NVAR	**Mina Array Bea**	**83.23**	**51**	P	**P**	**21 38 30.1**	**+0.8**
	0.2nm,0.3s,baz=259,slow=21,SNR=2.7						
FINES	**FINESS Array B**	**83.24**	**334**	P	**P**	**21 38 27.2**	**-1.5**
	0.6nm,0.4s,baz=58,slow=4.4,SNR=7.4						
TXAR	**Lajitas Array**	**98.14**	**54**	P	**P**	**21 39 39.1**	**-0.1**
	0.2nm,0.5s,baz=66,slow=10,SNR=4.1						

*IDC **23** 21:32:59.2±1.1, 38°42N×144°94E, h0km, mb3.5/6, mb1 3.8/8, mb1mx3.5/45, mbtmp3.6/8, ML3.1/2, MS2.8/2, Ms1 2.8/2, ms1mx2.3/34, Error ellipse: s-maj=31.9km s-min=21.3km az=112.0*
*NIED **23** 21:33:00.38°50N×144°60E, h11km, Mw3.6 Best double couple: M0 2.38000×10^14 NP1:φs0.00000°, δ22.00000°, λ-98.00000°. NP2:φs189.00000°, δ68.00000°, λ-87.00000°.*
*ISCJB **23** 21:33:02.4±0.7, 38°64N±0°05×144°72E±0°06, h35km, mb3.5/6, MS3.3/1, Error ellipse: s-maj=8.5km s-min=5.7km az=141.8*
*JMA **23** 21:33:02.5±0.2, 38°55N×144°62E, h32km, M3.6*
ISC 23 21:33:04.4±1.0, 38°61N±0°07×144°72E±0°08, h35km, n28, σ1°39/29, mb3.6/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.42**	**282**	P	**Pn**	**21 33 40.7**	**-0.9**
MIYJ	**Miyakonagasawa**	**2.45**	**294**	P	**Pn**	**21 33 41.0**	**-0.9**
JMK	**Ichinoseki**	**2.75**	**278**	P	**Pn**	**21 33 45.6**	**-0.5**
JMK				*e*S	**Sn**	21 34 17.2	-0.9
JOM	**Ohasama**	**2.80**	**289**	P	**Pn**	**21 33 46.3**	**-0.4**
JOU	**Okura**	**3.19**	**267**	P	**Pn**	**21 33 51.6**	**-0.5**
JOU				S	**Sn**	21 34 28.0	-0.9
JRG	**Rokugo**	**3.27**	**285**	P	**Pn**	**21 33 53.3**	**0.0**
JYK	**Kaneyama**	**3.42**	**276**	P	**Pn**	**21 33 55.2**	**0.0**
JYK				*e*S	**Sn**	21 34 34.7	+0.2
JAH	**Hinai**	**3.53**	**298**	P	**Pn**	**21 33 56.7**	**-0.1**
JFT	**Otama**	**3.62**	**254**	P	**Pn**	**21 33 57.7**	**-0.4**
JFT				S	**Sn**	21 34 38.2	-1.4
JCH	**Churui**	**4.13**	**346**	P	**Pn**	**21 34 04.1**	**-0.9**
JCH				S	**Sn**	21 34 49.4	-2.6
JKB	**Kayabe**	**4.32**	**320**	P	**Pn**	**21 34 08.5**	**+0.9**
MJAR	**Matsushiro Arr**	**5.57**	**250**	Pn	**Pn**	**21 34 24.4**	**-0.4**
	2.1nm,0.3s,baz=54,slow=9.9,SNR=31						
MJAR				Sn	**Sn**	21 35 29.3	+1.8
	0.4nm,0.3s,baz=65,slow=23,SNR=5.1						
MJAR				LR	LR	21 36 52.2	
	comp=Z,30nm,19.6s,baz=240,slow=41						
MAT	**Matsushiro**	**5.57**	**250**	P	**Pn**	**21 34 24.9**	**+0.1**
MAT				*e*S	**Sn**	21 35 23.6	-3.9
ASAJ	**Asahikawa**	**5.72**	**345**	Pn	**Pn**	**21 34 25.8**	**-1.1**
	0.9nm,0.3s,baz=172,slow=11,SNR=8.1						
ASAJ				Sn	**Sn**	21 35 29.7	-1.7
	1.0nm,0.3s,baz=114,slow=32,SNR=6.0						
USRK	**Ussuriysk Ar.**	**11.06**	**304**	Pn	**Pn**	**21 35 41.9**	**+1.8**
	0.4nm,0.3s,baz=106,slow=13,SNR=14						
SEY	**Seymchan**	**24.79**	**8**	P	**P**	**21 38 25.0**	**+2.2**
	0.8nm,0.4s,baz=177,slow=8.7,SNR=3.3						
H11N2	**WAKE ISLAND Hy**	**26.88**	**128**	T	T	22 05 04.9	
	baz=316						
H11N1	**WAKE ISLAND Hy**	**26.89**	**128**	T	T	22 05 03.5	
	baz=316						
H11N3	**WAKE ISLAND Hy**	**26.90**	**128**	T	T	22 05 05.6	
	baz=316						
H11S1	**WAKE ISLAND Hy**	**27.69**	**130**	T	T	22 06 05.7	
	baz=318,slow=74						
H11S3	**WAKE ISLAND Hy**	**27.70**	**130**	T	T	22 06 09.5	
	baz=318,slow=74						
H11S2	**WAKE ISLAND Hy**	**27.71**	**130**	T	T	22 06 04.4	
	baz=318						
MKAR	**Makanchi Array**	**45.51**	**301**	P	**P**	**21 41 22.0**	**+1.6**
	0.2nm,0.7s,baz=93,slow=5.8,SNR=2.9						
ILAR	**Eielson Array**	**46.75**	**33**	P	**P**	**21 41 30.6**	**+0.7**
	0.5nm,0.8s,baz=324,slow=36,SNR=2.8						
WRA	**Warramunga Arr**	**59.05**	**191**	P	**P**	**21 42 59.9**	**-1.1**
	1.3nm,0.9s,baz=13,slow=7.2,SNR=5.6						
YKA	**Yellowknife Ar**	**61.12**	**31**	P	**P**	**21 43 14.0**	**-0.6**
	0.2nm,0.7s,baz=303,slow=8.0,SNR=2.6						
ASAR	**Alice Springs**	**62.77**	**191**	P	**P**	**21 43 25.8**	**-0.5**
	0.4nm,0.8s,baz=9.2,slow=7.2,SNR=2.8						
FINES	**FINESS Array B**	**68.61**	**333**	LR	LR	22 16 02.8	
	comp=Z,18nm,19.2s,baz=350,slow=38						

IDC 23 21:37:13.0±2.0, 3°95S×123°14E, h0km, mb3.4/2, mb1 3.6/4, mb1mx3.3/43, mbtmp3.3/4, ML3.0/2, Error ellipse: s-maj=44.6km s-min=24.4km az=36.0, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAPI	**Kappang**	**3.54**	**253**	Pn	Pn	21 38 09.1	-0.1
	4.0nm,0.3s,baz=56,slow=6.0,SNR=11						
KAPI				Sn	Sn	21 38 52.4	+0.6
	3.8nm,0.3s,baz=338,slow=19,SNR=5.9						
WRA	**Warramunga Arr**	**19.28**	**146**	P	P	21 41 39.4	-0.2
	0.0nm,0.3s,baz=324,slow=11,SNR=3.6						
ASAR	**Alice Springs**	**22.19**	**153**	P	P	21 42 11.1	0.0
	1.2nm,0.7s,baz=330,slow=11,SNR=9.0						
CMAR	**Chiang Mai Arr**	**32.62**	**314**	P	P	21 43 47.0	+0.1
	0.4nm,0.7s,baz=130,slow=5.8,SNR=4.1						

*DDA **23** 21:37:17.7, 38°29N×41°33E, h7km, Md2.7*
*ISK **23** 21:37:19.7, 38°15N×41°08E, h7km, MD2.7*
*CSEM **23** 21:37:19.6±0.4, 38°13N×41°19E, h10km, MD2.7, Error ellipse: s-maj=12.1km s-min=8.3km az=50.0*
ISC 23 21:37:19.5±0.9, 38°14N±0°04×41°09E±0°04, h12km±6km, n22, σ1°25/31, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SVAN	**Silvan-Diyarba**	**0.09**	**84**	PG	**Pg**	**21 37 22.3**	**0.0**
SVAN				SG	**Sg**	21 37 24.2	-0.1
SVAN	**Silvan-Diyarba**	**0.09**	**84**	*i* Pg	**Pg**	**21 37 22.3**	**0.0**
SVAN				*i* Sg	**Sg**	21 37 24.2	-0.1
BTMN	**Batman**	**0.29**	**150**	P	**Pb**	**21 37 26.8**	**+0.1**
BTMN				S	**Sb**	21 37 32.0	+0.5
BTMN	**Batman**	**0.29**	**150**	*i* P	**Pb**	**21 37 26.8**	**+0.1**
BTMN				*i* S	**Sb**	21 37 32.0	+0.5
DIY	**Diyarbakir**	**0.72**	**250**	*e*Pg	**Pn**	**21 37 34.7**	**-0.9**
DYBB	**Diyarbakir**	**0.77**	**256**	*e*PG	**Pb**	**21 37 34.7**	**-0.2**
MAZI	**Mazidag**	**0.85**	**217**	*e*PG	**Pn**	**21 37 36.5**	**-0.9**
MAZI	**Mazidag**	**0.85**	**217**	*e*Pg	**Pn**	**21 37 36.5**	**-0.9**
MARD	**Mardin**	**0.86**	**197**	*i* P	**Pn**	**21 37 37.7**	**+0.1**
MARD				*i* S	**Sg**	21 37 48.2	+0.8
BINT	**Bingol**	**0.87**	**328**	*e*Pg	**Pn**	**21 37 37.3**	**-0.4**
BNGB	**Bing¶ll**	**0.91**	**339**	*e*PG	**Pn**	**21 37 37.3**	**-0.8**
SIRN	**S¨–rnak**	**1.23**	**121**	P	**Pn**	**21 37 39.9**	**-2.7**
SIRN				S	**Sg**	21 38 02.2	+3.0
SIRN	**S¨–rnak**	**1.23**	**121**	*i* P	**Pn**	**21 37 39.9**	**-2.7**
SIRN				*i* S	**Sg**	21 38 02.2	+3.0
YEDI	**Yedisu-Bingol**	**1.36**	**342**	*e*PN	**Pg**	**21 37 45.6**	**-0.1**
YEDI	**Yedisu-Bingol**	**1.36**	**342**	*e*Pn	**Pg**	**21 37 45.6**	**-0.1**
SVRC	**Sivrice-ELAZID**	**1.42**	**280**	*e*PN	**Pb**	**21 37 46.4**	**+0.4**
SVRC	**Sivrice-ELAZID**	**1.42**	**280**	*e*Pn	**Pb**	**21 37 46.4**	**+0.4**
PTK	**Pertek**	**1.53**	**300**	*e*PN	**Pb**	**21 37 47.8**	**0.0**
PTK	**Pertek**	**1.53**	**300**	*e*Pn	**Pb**	**21 37 47.8**	**0.0**
TNCL	**Tunceli-Merkez**	**1.55**	**309**	P	**Pb**	**21 37 48.5**	**+0.3**
TNCL				S	**Sg**	21 38 10.7	+1.2
TNCL	**Tunceli-Merkez**	**1.55**	**309**	*i* P	**Pb**	**21 37 48.5**	**+0.3**
TNCL				*i* S	**Sg**	21 38 10.7	+1.2
SURC	**SANLIURFA_SURC**	**2.34**	**238**	*i* P	**Sg**	**21 38 33.3**	**-1.3**

*NIED **23** 21:43:00.37°00N×142°40E, h38km, Mw3.4 Best double couple: M0 1.34000×10^14 NP1:φs235.00000°, δ68.00000°, λ-19.00000°. NP2:φs333.00000°, δ72.00000°, λ-156.00000°.*
JMA 23 21:43:20.6±0.2, 36°97N×142°39E, h14km±4km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.27**	**289**	P	Pn	21 43 43.8	-0.2
JFK				S	Sb	21 44 00.5	-0.1
JMM	**Marumori**	**1.56**	**306**	P	Pn	21 43 48.3	+0.5
JMM				S	Sn	21 44 08.1	+0.3
JIO	**Ouri**	**1.70**	**331**	P	Pn	21 43 49.8	0.0
JIO				S	Sn	21 44 11.4	+0.1
JFT	**Otama**	**1.73**	**289**	*e*S	Sb	21 44 13.2	-0.5
JOU	**Okura**	**1.95**	**316**	P	Pb	21 43 55.0	-1.0
JOU				*e*S	Sb	21 44 19.2	-1.0
JMK	**Ichinoseki**	**2.18**	**335**	P	Pn	21 43 57.2	+0.7
JYS	**Shirataka**	**2.23**	**305**	P	Pb	21 43 59.3	-1.4
JYS				*e*S	Sb	21 44 27.4	-0.7
JAG	**Ashikaga**	**2.42**	**258**	S	Sn	21 44 29.7	+0.5
JYK	**Kaneyama**	**2.52**	**321**	P	Pn	21 44 02.1	+1.0
JYK				S	Sn	21 44 33.0	+1.3
JOM	**Ohasama**	**2.64**	**341**	S	Sn	21 44 35.8	+1.1
MAT	**Matsushiro**	**3.39**	**264**	P	Pn	21 44 15.3	+2.2
MAT				*e*S	Sn	21 44 54.5	+1.5

TRN 23 21:47:24.5, 16°35N×61°65W, h120km, MD3.7, 3C-8D, Leeward Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SEG	**Port Louis**	**0.15**	**71**	‖*e*P	Pn	21 47 42.4	+1.4
LZG	**Guadaloupe-1**	**0.24**	**209**	‖*i*P	Pn	21 47 42.3	+1.1
SSG	**Sans Toucher**	**0.26**	**185**	‖*i*P	Pn	21 47 42.4	+0.9
FNG	**Fond-Bernard**	**0.29**	**186**	‖*e*P	Pn	21 47 42.5	+1.0
CRG	**Carmichael**	**0.30**	**181**	*e*P	Pn	21 47 42.5	+0.9
ECG	**Echelle**	**0.31**	**180**	‖*i*P	Pn	21 47 42.6	+0.9
DOG	**Dongo Capester**	**0.32**	**174**	*e*P	Pn	21 47 42.9	+1.3
PHG	**Guadaloupe-2**	**0.34**	**178**	‖*i*P	Pn	21 47 42.9	+1.1
HMG	**Houelmont**	**0.37**	**187**	‖*i*P	Pn	21 47 43.0	+1.2
SFG	**Saint Francois**	**0.45**	**103**	⇑*i*P	Pn	21 47 43.6	+1.6
TBG	**Guadaloupe-3**	**0.50**	**179**	‖*i*P	Pn	21 47 43.4	+0.9
TBG				*e*S	Sn	21 47 57.1	+1.2
MGG	**Marie-Galante**	**0.54**	**143**	*e*P	Pn	21 47 43.7	+1.1
MGG				*e*S	Sn	21 47 58.0	+1.6
DEG	**La Desirade**	**0.57**	**94**	*e*P	Pn	21 47 44.3	+1.4
DEG				*e*S	Sn	21 47 58.5	+1.6
MLYT	**Lee's Yard**	**0.63**	**305**	*e*P	Pn	21 47 44.6	+1.3
MLYT				*e*S	Sn	21 47 59.2	+1.7
BPA	**Boggy Peak**	**0.72**	**344**	*e*P	Pn	21 47 46.3	+2.3
BPA				*e*S	Sn	21 48 00.5	+1.7
BBL	**Barber's Block**	**0.84**	**168**	*e*P	Pn	21 47 45.9	+0.8
DWS	**Wesley**	**0.85**	**157**	*e*P	Pn	21 47 46.0	+0.9
DWS				*e*S	Sn	21 48 01.6	+1.0
MDN	**Morne-Daniel**	**1.06**	**166**	*e*P	Pn	21 47 48.9	+1.7
MDN				*e*S	Sn	21 48 06.5	+2.3
DLPL	**La Plaine**	**1.09**	**159**	*e*P	Pn	21 47 48.0	+0.6
DLPL				*e*S	Sn	21 48 06.7	+1.9
ANWB	**Willy Bob**	**1.31**	**354**	⇑*i*P	Pn	21 47 51.1	+1.3
ANWB				*e*S	Sn	21 48 09.9	+0.8
PCM	**Pelee Case Pet**	**1.59**	**164**	*e*P	Pn	21 47 54.1	+1.1
PCM	**Pelee Case Pet**	**1.59**	**164**	*e*P	Pn	21 47 54.3	+1.3
CXM	**Morne La Croix**	**1.60**	**163**	*e*P	Pn	21 47 54.6	+1.4
CXM				*e*S	Sn	21 48 16.4	+1.2
BAMF	**Morne Balai**	**1.60**	**162**	*e*P	Pn	21

0.2nm,0.4s,baz=90,slow=5.2,SNR=3.2
KURBB Kurchatov Arra 43.57 301 P **P 21 55 05.9 -1.1**
0.5nm,0.4s,baz=70,slow=8.8,SNR=3.5
KURBB PcP **PcP 21 56 44.7 -0.2**
0.2nm,0.4s,baz=69,slow=2.4,SNR=4.3
CMAR Chiang Mai Arr 48.88 250 P **P 21 55 50.0 +2.0**
0.8nm,0.6s,baz=32,slow=7.3,SNR=8.0
ARU Arti 51.54 315 P **P 21 56 05.7 -1.3**
1.9nm,0.4s,baz=83,slow=8.1,SNR=4.5
YKA Yellowknife Ar 52.42 35 P **P 21 56 12.0 -1.4**
0.1nm,0.4s,baz=306,slow=7.8,SNR=3.6
YKA PcP **PcP 21 57 16.1 -0.7**
0.4nm,0.6s,baz=313,slow=4.5,SNR=6.5
ARCES ARCESS Array B 55.53 339 P P 21 56 33.6 -1.7
2.7nm,0.9s,baz=28,slow=5.5,SNR=3.9
FINES FINESS Array B 61.36 332 P P 21 57 13.5 -1.4
2.8nm,0.5s,baz=31,slow=8.4,SNR=32
GEYT Alibeck 62.66 297 P **P 21 57 24.4 +0.4**
1.1nm,0.6s,baz=56,slow=6.1,SNR=2.5
NVAR Mina Array Bea 65.39 59 P **P 21 57 42.9 +1.3**
0.7nm,0.6s,baz=298,slow=3.2,SNR=4.1
NB2 NORSAR Subarra 65.90 338 P **P 21 57 42.9 -1.3**
comp=Z,1.1nm,0.5s,baz=30,slow=6.5
NOA NORSAR Array B 65.90 338 P **P 21 57 43.1 -1.2**
comp=Z,1.1nm,0.5s,baz=30,slow=6.7,SNR=7.2
PDAR Pinedale Array 67.25 51 P **P 21 57 53.4 +0.2**
comp=Z,0.6nm,0.4s,baz=40,slow=2.2,SNR=3.6
WRA Warramunga Arr 68.40 193 P **P 21 58 02.6 +2.5**
comp=Z,0.6nm,0.9s,baz=9.6,slow=6.4,SNR=4.7
AKASG Malin Array Be 68.43 323 P **P 21 57 58.7 -1.3**
comp=Z,1.1nm,0.4s,baz=36,slow=6.1,SNR=7.0
ASAR Alice Springs 72.12 193 P **P 21 58 24.9 +2.7**
comp=Z,0.4nm,0.7s,baz=2.5,slow=4.2,SNR=5.0
GERES GERESS Array B 75.71 330 P **P 21 58 41.2 -1.4**
comp=Z,0.3nm,0.4s,baz=43,slow=6.0,SNR=4.4
TXAR Lajitas Array 80.34 57 P **P 21 59 09.6 +1.6**
comp=Z,0.9nm,0.5s,baz=297,slow=3.7,SNR=12
PLCA Paso Flores 152.19 89 PKPbc **PKPbc 22 06 49.5 +1.5**
comp=Z,3.4nm,1.2s,baz=328,slow=0.9,SNR=3.3

*NIED **23** 21:53:00,37.°20N×141.°20E,h26km,Mw3.3 Best double couple: M₀9.74000×10¹³ NP1:φ₀s70.00000°,δ38.00000°, λ-51.00000°. NP2:φ₀s204.00000°,δ61.00000°, λ-117.00000°.*

JMA 23 21:53:55.4±0.1,37.°16N×141.°20E,h31km±1km,M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.33**	**260**	P	Pb	21 54 03.2	-0.2
ONAJ				S	Sb	21 54 08.6	-0.2
JFK	**Kawauchi**	**0.33**	**309**	P	Pb	21 54 03.1	-0.3
JFK				S	Sb	21 54 08.4	-0.5
JHO	**Hitachi**	**0.75**	**223**	P	Pn	21 54 09.1	-0.7
JHO				S	Sb	21 54 18.3	-1.5
JFT	**Otama**	**0.78**	**298**	P	Pb	21 54 10.5	+0.1
JFT				S	Sn	21 54 21.2	+0.4
JMM	**Marumori**	**0.78**	**335**	P	Pn	21 54 09.5	-0.7
JMM				S	Sb	21 54 20.1	-0.6
JSB	**Shiboa**	**1.04**	**260**	P	Pb	21 54 15.2	+0.3
JSB				S	Sb	21 54 29.3	+1.1
MAT	**Matsushiro**	**2.48**	**257**	P	Pn	21 54 35.8	+2.1
MAT				S	Sb	21 55 10.4	+1.0

*NIED **23** 21:55:00,38.°50N×141.°70E,h56km,Mw3.7 Best double couple: M₀3.48000×10¹⁴ NP1:φ₀s193.00000°,δ25.00000°, λ86.00000°. NP2:φ₀s17.00000°,δ65.00000°,λ92.00000°.*
*IDC **23** 21:55:16.8±1.4,38.°76N×142.°66E,h0km,mb3.8/6, mb1 3.9/8,mb1mx3.6/44,mbtmp3.7/8,ML3.3/2,Error ellipse: s-maj=29.8km s-min=28.4km az=83.0*
*ISCJB **23** 21:55:26.7±0.9,38.°51N±0.°04×141.°8E±0.°1,h59km±5km, mb3.7/6,Error ellipse: s-maj=14.1km s-min=5.9km az=17.9*
*JMA **23** 21:55:28.2±0.1,38.°54N×141.°71E,h54km±1km,M3.8*
JMA Felt II J1.

ISC 23 21:55:27.5±1.4,38.°51N±0.°06×141.°8E±0.°1,h51km±10km, n26,σ0.°93/28,mb3.8/6,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.39**	**262**	P	**Pn**	**21 55 37.6**	**0.0**
JIO				S	**Sn**	**21 55 44.0**	**-0.7**
OFUJ	**Ofunato**	**0.58**	**347**	P	**Pn**	**21 55 40.2**	**+0.3**
OFUJ				*e*S	**Sn**	**21 55 48.5**	**-0.3**
JMK	**Ichinoseki**	**0.65**	**313**	P	**Pn**	**21 55 40.7**	**0.0**
JMK				S	**Sn**	**21 55 49.4**	**-0.9**
JOU	**Okura**	**0.93**	**261**	P	**Pn**	**21 55 43.9**	**-0.5**
JOU				S	**Sn**	**21 55 55.7**	**-1.0**
JMM	**Marumori**	**1.04**	**232**	P	**Pn**	**21 55 45.4**	**-0.4**
JMM				*e*S	**Sn**	**21 55 58.3**	**-1.0**
JOM	**Ohasama**	**1.05**	**336**	P	**Pn**	**21 55 46.1**	**+0.1**
JOM				S	**Sn**	**21 55 59.3**	**-0.3**
JYK	**Kaneyama**	**1.22**	**290**	P	**Pn**	**21 55 47.9**	**-0.4**
JRG	**Rokugo**	**1.29**	**314**	P	**Pn**	**21 55 49.1**	**-0.1**
JFK	**Kawauchi**	**1.37**	**214**	P	**Pn**	**21 55 50.4**	**+0.1**
JFK				S	**Sn**	**21 56 06.6**	**-0.8**
JYS	**Shiratake**	**1.42**	**259**	P	**Pn**	**21 55 50.8**	**-0.2**
JYS				S	**Sn**	**21 56 08.2**	**-0.3**
MJAR	**Matsushiro Arr**	**3.49**	**237**	Pn	**Pn**	**21 56 20.7**	**+1.4**
MJAR				Sn	Sn	21 57 17.8	+19
MAT	**Matsushiro**	**3.49**	**237**	P	**Pn**	**21 56 20.7**	**+1.4**
MAT				S	**Sn**	**21 57 00.7**	**+1.4**
USRK	**Ussuriysk Ar.**	**9.33**	**311**	Pn	**Pn**	**21 57 39.9**	**+0.6**
	0.3nm,0.3s,baz=133,slow=11,SNR=6.3						
KSRS	**Korea Array**	**11.03**	**269**	Pn	**Pn**	**21 58 05.2**	**+2.7**
	0.2nm,0.3s,baz=77,slow=14,SNR=3.5						
H11N2	**WAKE ISLAND Hy**	**28.65**	**124**	T	T	22 31 36.5	
	baz=316,slow=75,SNR=151						
H11N1	**WAKE ISLAND Hy**	**28.66**	**124**	T	T	22 31 37.3	
	baz=316,slow=75,SNR=200						
H11N3	**WAKE ISLAND Hy**	**28.67**	**124**	T	T	22 31 38.0	
	baz=316,slow=75,SNR=117						
H11S1	**WAKE ISLAND Hy**	**29.41**	**126**	T	T	22 32 35.2	
	baz=318,slow=76,SNR=28						
H11S3	**WAKE ISLAND Hy**	**29.41**	**126**	T	T	22 32 35.2	
	baz=318,slow=76,SNR=37						
H11S2	**WAKE ISLAND Hy**	**29.43**	**126**	T	T	22 32 35.3	
	baz=318,slow=76,SNR=35						
ZALV	**Zalesovo Beam**	**41.18**	**311**	P	**P**	**22 03 06.9**	**+0.2**
	0.7nm,0.4s,baz=71,slow=6.9,SNR=3.3						
CMAR	**Chiang Mai Arr**	**42.21**	**254**	P	**P**	**22 03 15.7**	**+0.1**
	0.8nm,0.4s,baz=86,slow=5.5,SNR=2.5						
MKAR	**Makanchi Array**	**43.63**	**301**	P	**P**	**22 03 25.9**	**-1.0**
	1.3nm,0.9s,baz=84,slow=8.7,SNR=10						
KURBB	**Kurchatov Arra**	**45.37**	**307**	P	**P**	**22 03 39.4**	**-1.2**
	2.2nm,0.5s,baz=80,slow=7.9,SNR=18						
WRA	**Warramunga Arr**	**58.57**	**188**	P	**P**	**22 05 18.4**	**-0.6**
	0.6nm,0.8s,baz=5.7,slow=7.1,SNR=6.1						
PDAR	**Pinedale Array**	**76.40**	**46**	P	P	22 07 03.8	-7.9
	0.1nm,0.4s,baz=311,slow=3.5,SNR=2.0						

*IDC **23** 21:55:40.4±1.3,38.°93N×142.°04E,h0km,mb3.8/5, mb1 3.9/7,mb1mx3.5/44,mbtmp3.7/7,ML2.7/2,MS2.1/1, Ms1 2.1/1,ms1mx1.9/45,Error ellipse: s-maj=27.6km s-min=19.7km az=123.0*
*ISCJB **23** 21:55:45.6±1.4,38.°8N±0.°1×141.°7E±0.°2,h51km,mb3.7/5, Error ellipse: s-maj=25.8km s-min=18.1km az=179.6*

ISC 23 21:55:46.9±1.3,38.°8N±0.°1×141.°8E±0.°2,h51km,n8, σ1.°95/7,mb3.7/5,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**3.65**	**232**	Pn	**Pn**	**21 56 38.9**	**-2.0**
	1.5nm,0.3s,baz=56,slow=16,SNR=4.9						
MJAR				Lg	Lg	21 57 42.2	
	2.8nm,0.3s,baz=112,slow=17,SNR=4.2						
USRK	**Ussuriysk Ar.**	**9.08**	**309**	Pn	**Pn**	**21 57 55.3**	**0.0**
	0.3nm,0.3s,baz=114,slow=13,SNR=4.3						
JNU	**Nakatsue**	**10.52**	**240**	LR	LR	22 03 06.3	
	comp=Z,9.0nm,18.8s,baz=296,slow=42						
ZALV	**Zalesovo Beam**	**40.93**	**311**	P	**P**	**22 03 25.5**	**+1.4**
	0.5nm,0.3s,baz=75,slow=6.1,SNR=3.1						
MKAR	**Makanchi Array**	**43.43**	**301**	P	**P**	**22 03 45.5**	**+0.9**
	1.0nm,0.8s,baz=82,slow=8.3,SNR=6.1						
KURBB	**Kurchatov Arra**	**45.14**	**307**	P	**P**	**22 03 59.2**	**+1.1**
	2.7nm,0.6s,baz=82,slow=8.3,SNR=11						
ILAR	**Eielson Array**	**47.82**	**33**	P	**P**	**22 04 17.1**	**-1.8**
	0.4nm,0.8s,baz=265,slow=5.4,SNR=3.6						
WRA	**Warramunga Arr**	**58.89**	**188**	P	**P**	**22 05 42.6**	**+2.0**
	0.7nm,0.9s,baz=5.1,slow=7.2,SNR=3.8						

IDC 23 22:06:21.3±24.0,25.°02S×179.°98W,h496km±218km, mb3.5/6,mb1 3.6/6,mb1mx3.2/33,mbtmp4.4/6,Error ellipse: s-maj=168.5km s-min=72.8km az=94.0,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**31.52**	**272**	P	P	22 12 02.8	+0.6
	5.7nm,0.4s,baz=102,slow=14,SNR=7.7						
STKA	**Stephens Creek**	**34.34**	**250**	P	P	22 12 26.6	+0.6
	3.5nm,0.7s,baz=100,slow=13,SNR=4.9						
ASAR	**Alice Springs**	**41.89**	**262**	P	P	22 13 27.2	-0.6
	1.6nm,0.3s,baz=94,slow=7.1,SNR=24						
WRA	**Warramunga Arr**	**42.37**	**267**	P	P	22 13 30.8	-0.8
	5.8nm,0.5s,baz=99,slow=7.0,SNR=73						
KSRS	**Korea Array**	**79.11**	**320**	P	P	22 17 33.9	0.0
	0.6nm,0.5s,baz=131,slow=6.7,SNR=3.3						
CMAR	**Chiang Mai Arr**	**89.93**	**290**	P	P	22 18 29.3	+1.7
	0.3nm,0.3s,baz=149,slow=3.8,SNR=4.4						
FINES	**FINESS Array B**	**139.51**	**341**	PKhKP	PKPpre	22 24 42.9	
	2.9nm,1.0s,baz=90,slow=5.7,SNR=4.7						
AKASG	**Malin Array Be**	**145.91**	**326**	PKPbc	PKPdf	22 25 03.8	+0.8
	0.6nm,0.4s,baz=44,slow=4.3,SNR=6.6						
BRTR	**Keskin Array B**	**148.26**	**306**	PKPbc	PKPbc	22 25 10.6	-0.9
	0.3nm,0.4s,baz=187,slow=1.6,SNR=5.6						
BRTR				PKPab	PKPab	22 25 15.8	-0.6
	0.7nm,0.6s,baz=99,slow=3.2,SNR=6.4						

*SOME **23** 22:09:40.4,40.°63N×77.°70E,h5km*
*KRNET **23** 22:09:43.4±0.1,40.°77N×77.°53E,h6km,mb3.1*
*NNC **23** 22:09:46.6±1.3,40.°91N×77.°73E,h0km,mb3.9,mpv3.5, Error ellipse: s-maj=11.0km s-min=5.8km az=163.0*

ISC 23 22:09:44.5±2.2,40.°79N±0.°08×77.°67E±0.°04,h4km±12km, n36,σ1.°27/66,25C-14D,Kyrgyzstan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KDJ	**Kajisay**	**1.39**	**345**	⇑*e*P	**Pn**	**22 10 10.1**	**-0.8**
	baz=349						
KDJ				⇑*e*S	**Sn**	**22 10 30.0**	**+0.1**
	baz=349						
NRN	**Naryn**	**1.42**	**298**	⇑*e*P	**Pn**	**22 10 09.2**	**-2.2**
	baz=299						
NRN				⇑*e*S	**Sb**	**22 10 28.8**	**-1.5**
	baz=299						
PRZ	**Przheval'sk**	**1.78**	**18**	⇓*e*P	**Pg**	**22 10 18.4**	**-0.3**
	baz=21						
PRZ				⇓*e*S	**Sg**	**22 10 42.6**	**+0.8**
	baz=21						
ULHL	**Ulahol**	**1.81**	**324**	⇑*i*P	**Pn**	**22 10 16.9**	**+0.2**
	baz=315						
ULHL				⇑*i*S	**Sg**	**22 10 43.9**	**+1.2**
	baz=315						
ANVS	**Anan'yevo**	**2.00**	**360**	⇑*e*P	**Pb**	**22 10 21.6**	**+0.1**
	baz=3.0						
ANVS				⇑*e*S	**Sg**	**22 10 48.3**	**-0.4**
	baz=3.0						
BOOM	**Boomskoye usch**	**2.14**	**323**	⇓*e*P	**Pn**	**22 10 22.1**	**+0.9**
	baz=326						
BOOM				⇓*e*S	**Sb**	**22 10 49.4**	**-1.5**
	baz=326						
KZA	**Kyzart**	**2.23**	**306**	⇑*i*P	**Pn**	**22 10 23.6**	**+1.0**
	baz=302						
KZA				⇑*i*S	**Sg**	**22 10 56.2**	**-0.1**
	baz=302						
TNSS	**Tian-Shan**	**2.32**	**347**	*e*P	**Pb**	**22 10 27.5**	**+0.4**
	41nm,0.7s						
TNSS				*e*S	**Sg**	**22 11 01.6**	**+2.6**
	86nm,0.6s						
SATY	**Saty**	**2.34**	**13**	*e*P	**Pb**	**22 10 27.3**	**+0.1**
	33nm,0.5s						
SATY				*e*S	**Sg**	**22 11 00.9**	**+1.3**
	54nm,0.6s						
MDOK	**Medeo**	**2.42**	**349**	*e*P	**Pb**	**22 10 27.3**	**-1.4**
	38nm,0.7s						
MDOK				*e*S	**Sg**	**22 11 00.8**	**-1.5**
	48nm,0.6s						
ZHN	**Zhinishke**	**2.45**	**13**	*e*P	**Pb**	**22 10 29.3**	**+0.2**
	20nm,0.3s						
ZHN				*e*S	**Sg**	**22 11 04.5**	**+1.3**
	81nm,0.3s						
KOTS	**Kotyrbulak**	**2.48**	**351**	*e*P	**Pb**	**22 10 30.1**	**+0.3**
KOTS				*e*S	**Sg**	**22 11 06.0**	**+1.7**
KNDC	**Almaty**	**2.49**	**348**	⇑Pn	**Pn**	**22 10 27.0**	**+1.2**
	42nm,0.7s						
KNDC				⇓Lg	Lg	22 11 02.6	
	88nm,0.5s						
MTBS	**Maitube**	**2.52**	**339**	⇑*i*P	**Pb**	**22 10 30.4**	**0.0**
	16nm,0.2s						
MTBS				⇑*i*S	**Sg**	**22 11 06.2**	**+0.7**
	28nm,0.3s						
UZB	**Uzynbulak**	**2.57**	**23**	*e*P	**Pb**	**22 10 30.9**	**-0.3**
	13nm,0.5s						
UZB				*e*S	**Sg**	**22 11 07.1**	**+0.2**
	39nm,0.7s						
KST	**Kastek**	**2.59**	**331**	⇑*i*P	**Pb**	**22 10 32.0**	**+0.4**
	8.9nm,0.6s						
KST				⇓*i*S	**Sg**	**22 11 08.5**	**+0.8**
	32nm,0.7s						
TKM2	**Tokmak 2**	**2.64**	**325**	⇓*i*P	**Pn**	**22 10 30.1**	**+2.1**
	baz=318						
TKM2				⇓*i*S	**Sb**	**22 11 05.1**	**-0.1**
	baz=318						
TKM2	**Tokmak 2**	**2.64**	**325**	⇑Pg	**Pb**	**22 10 32.8**	**+0.4**
	8.7nm,0.5s						
TKM2				⇓Lg	Lg	22 11 09.8	
	12nm,0.6s						
KURS	**Kuram**	**2.73**	**8**	*e*P	**Pb**	**22 10 34.0**	**+0.2**
	6.4nm,0.7s						
KURS				*e*S	**Sg**	**22 11 12.8**	**+0.7**
	46nm,0.9s						
ARLS	**Aral**	**2.74**	**294**	⇑*e*P	**Pn**	**22 10 29.7**	**+0.3**
	baz=296						
ARLS				⇑*e*S	**Sn**	**22 11 03.4**	**+0.3**
	baz=296						
UCH	**Uchtor**	**2.78**	**302**	⇑*i*P	**Pn**	**22 10 30.8**	**+0.7**
	baz=299						
UCH				⇑*i*S	**Sb**	**22 11 09.3**	**-0.2**
	baz=299						
KPKS	**Kokpek**	**2.78**	**15**	*e*P	**Pb**	**22 10 34.5**	**-0.3**
	40nm,0.3s						
KPKS				*e*S	**Sg**	**22 11 13.8**	**-0.1**
	168nm,0.5s						
DGS	**Degeres**	**2.83**	**331**	*e*P	**Pb**	**22 10 36.0**	**+0.3**
	27nm,0.7s						
DGS				*e*S	**Sg**	**22 11 15.9**	**+0.4**
	29nm,0.4s						
PDGK	**Podgornoye**	**2.88**	**27**	⇑Pg	**Pb**	**22 10 37.0**	**+0.6**
	10.0nm,0.8s						
PDGK				⇑Lg	Lg	22 11 12.9	
	57nm,0.9s						
SHLS	**Shalkode**	**2.89**	**34**	*e*P	**Pb**	**22 10 36.6**	**-0.1**
	14nm,0.6s						
SHLS				*e*S	**Sg**	**22 11 17.2**	**-0.1**
	74nm,0.5s						
AAK	**Ala-Archa**	**3.01**	**309**	⇑Pn	**Pn**	**22 10 35.9**	**+2.8**
	26nm,0.7s						
AAK				⇓Lg	Lg	22 11 20.9	
	38nm,0.8s						
CHKK	**Chushkaly**	**3.12**	**351**	*e*P	**Pb**	**22 10 40.8**	**+0.2**
	17nm,0.4s						
CHKK				*e*S	**Sg**	**22 11 24.3**	**-0.5**
	141nm,0.5s						
KUU	**Kurty**	**3.26**	**343**	*e*P	**Pb**	**22 10 42.4**	**-0.5**
	14nm,0.6s						
KUU				*e*S	**Sg**	**22 11 27.2**	**-2.0**
	23nm,0.5s						
MNBS	**Baschi**	**3.34**	**9**	*e*P	**Pb**	**22 10 43.0**	**-1.3**
	1.6nm,0.3s						
MNBS				*e*S	**Sg**	**22 11 28.3**	**-3.3**
	170nm,0.4s						
ARXS	**Arharly**	**3.43**	**2**	*e*P	**Pb**	**22 10 46.0**	**+0.2**
	2.9nm,0.4s						
ARXS				*e*S	**Sg**	**22 11 33.5**	**-1.1**
	87nm,0.4s						
ARSB	**Arslanbob**	**3.59**	**280**	⇓*e*P	**Pn**	**22 10 40.5**	**-0.5**
	baz=281						
ARSB				⇓*e*S	**Sn**	**22 11 22.2**	**-1.7**
	baz=281						
MRKS	**Merke**	**3.86**	**302**	⇑*i*P	**Pb**	**22 10 53.4**	**+0.2**
	10nm,0.7s						
MRKS				⇑*i*S	**Sg**	**22 11 46.0**	**-2.5**
	14nm,0.6s						
DJR	**Jarkent**	**3.88**	**23**	*e*P	**Pb**	**22 10 54.4**	**+1.0**
	6.5nm,0.7s						
DJR				*e*S	**Sg**	**22 11 47.6**	**-1.4**
	21nm,0.6s						
MNAS	**Manas**	**4.23**	**295**	⇓Pg	**Pb**	**22 11 02.9**	**+3.4**
	3.9nm,0.5s						
MNAS				⇓Lg	Lg	22 11 59.6	
	3.8nm,0.6s						
KAPS	**Kapalarasan**	**4.66**	**15**	*e*P	**Pb**	**22 11 08.5**	**+1.6**
	2.2nm,0.6s						
KAPS				*e*S	**Sg**	**22 12 11.9**	**-2.3**
	8.3nm,0.7s						
MK31	**Makanchi Array**	**6.87**	**28**	Sn	**Sn**	**22 12 45.8**	**+1.1**
	1.5nm,0.9s,baz=202,slow=20,SNR=3.8						
MK31				⇑Lg	Lg	22 13 20.6	
	1.9nm,0.7s,baz=210,slow=28,SNR=6.1						

*IDC **23** 22:13:36.8±0.8,4.°58S×153.°78E,h92km±5km,mb4.0/17, mb1 4.1/17,mb1mx3.9/38,mbtmp4.3/17,MS2.8/4, Ms1 2.8/4,ms1mx2.6/31,Error ellipse: s-maj=22.3km s-min=12.0km az=104.0*
*ISCJB **23** 22:13:37.9±1.6,4.°57S±0.°05×153.°7E±0.°1,h111km±12km, mb4.3/30,Error ellipse: s-maj=17.2km s-min=8.6km az=11.4*
*NEIC **23** 22:13:38.8±1.2,4.°57S×153.°72E,h106km±9km,mb4.5/15, Error ellipse: s-maj=13.1km s-min=6.1km az=96.0*
*DJA **23** 22:13:41.9±2.9,5.°S±13.°×15.°4E±1.°7,h121km±21km, M5.4/11,mB5.5/1,mb4.7/11,MLv5.8/1,Mw(mB)5.0/1*

ISC 23 22:13:37.6±0.7,4.°57S±0.°08×153.°72E±0.°10,h95km±4km, h95km:pP-P,n61,σ1.°08/68,mb4.3/30,1C,New Ireland region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RABL	**Rabaul**	**1.60**	**283**	*e*Pn	**Pn**	**22 14 05.5**	**+0.7**
PMG	**Port Moresby**	**8.10**	**233**	P	**Pn**	**22 15 33.9**	**+1.4**
	46nm,0.3s,baz=43,slow=4.8,SNR=108						
PMG				S	**Sn**	**22 17 03.0**	**+0.7**
	27nm,0.3s,baz=128,slow=17,SNR=8.1						
PMG				LR	LR	22 18 55.1	
	comp=Z,132nm,20.7s,baz=78,slow=39						
JAY	**Jayapura**	**13.15**	**278**	P	**P**	**22 16 46.5**	**-0.8**
	0.1nm,0.3s,baz=268,slow=23,SNR=4.6						
COEN	**Coen**	**13.97**	**227**	*e*Pn	**P**	**22 16 54.1**	**-2.3**
GUMO	**Guam**	**20.07**	**334**	LR	LR	22 25 28.2	
	comp=Z,14nm,19.9s,baz=106,slow=35						
EIDS	**Eidsvold**	**20.84**	**187**	*e*P	Pn	22 18 13.4	-1.7
	29nm,1.2s						
WRAB	**Tennant Creek**	**24.28**	**229**	*e*P	**P**	**22 18 45.9**	**-0.3**
	42nm,0.6s						
WB2	**Warramunga Arr**	**24.28**	**229**	*e*P	**P**	**22 18 46.5**	**+0.2**
	39nm,0.6s						
WR1	**Warramunga Arr**	**24.29**	**229**	*e*P	**P**	**22 18 46.0**	**-0.3**
	40nm,0.6s						
WRA	**Warramunga Arr**	**24.29**	**229**	P	**P**	**22 18 46.0**	**-0.3**
	39nm,0.7s,baz=54,slow=10,SNR=194						
ARMA	**Armidale**	**25.79**	**184**	*e*P	**P**	**22 19 01.1**	**+1.1**
	22nm,0.8s						
AS01	**Alice Springs**	**26.91**	**223**	*e*P	**P**	**22 19 09.3**	**-0.7**
AS31	**Alice Springs**	**26.94**	**223**	*e*P	**P**	**22 19 09.9**	**-0.4**
AS31				*e*pP	pP	22 19 39.2	+7.6
AS31				*e*sP	**sP**	**22 19 46.3**	**+3.6**
ASAR	**Alice Springs**	**26.95**	**223**	P	**P**	**22 19 09.9**	**-0.4**
	4.2nm,0.7s,baz=55,slow=9.0,SNR=29						
ASAR				LR	LR	22 29 59.3	
	comp=Z,42nm,18.9s,baz=46,slow=36						
STKA	**Stephens Creek**	**29.45**	**201**	P	**P**	**22 19 31.9**	**-0.6**
	9.1nm,0.8s,baz=3.1,slow=9.7,SNR=15						
STKA	**Stephens Creek**	**29.45**	**201**	*e*P	**P**	**22 19 31.9**	**-0.6**
	1.8nm,0.8s						
FITZ	**Fitzroy Crossi**	**30.58**	**242**	*e*P	**P**	**22 19 42.0**	**-0.6**
	12nm,0.8s						
PCI	**Palu**	**34.04**	**275**	P	**P**	**22 20 14.6**	**+1.6**
	38nm,1.0s						
JNU	**Nakatsue**	**43.29**	**332**	P	**P**	**22 21 30.0**	**0.0**
	15nm,1.0s,baz=119,slow=4.5,SNR=3.6						
JNU	**Nakatsue**	**43.29**	**332**	*e*P	**P**	**22 21 30.0**	**0.0**
	143nm,1.9s						
TPI	**Tanjungpandan**	**46.01**	**271**	P	P	22 21 59.4	+7.4
KSRS	**Korea Array**	**48.22**	**332**	P	**P**	**22 22 08.5**	**-0.2**
	1.7nm,0.8s,baz=149,slow=10.0,SNR=5.3						
KSRS				LR	LR	22 42 20.6	
	comp=Z,5.9nm,18.5s,baz=175,slow=36						
KS15	**Wonju Array Si**	**48.22**	**332**	*e*P	**P**	**22 22 08.5**	**-0.3**
KSAR	**Wonju Array Be**	**48.22**	**332**	P	**P**	**22 22 08.5**	**-0.3**
PPI	**Padang Panjang**	**53.42**	**273**	P	**P**	**22 22 48.3**	**+0.1**
	16nm,0.8s						
KULM	**Kulim**	**53.90**	**280**	*e*P	**P**	**22 22 51.3**	**-0.5**
	9.5nm,0.8s						
GSI	**Gunungsitoli**	**56.40**	**275**	P	**P**	**22 23 09.5**	**-0.3**
PETK	**Petropavlovsk-**	**57.56**	**3**	P	**P**	**22 23 18.0**	**+0.8**
	2.5nm,0.7s,baz=134,slow=8.5,SNR=3.5						
PEA1	**Petropavlovsk-**	**57.56**	**3**	*e*P	**P**	**22 23 18.0**	**+0.8**
CM01	**Chiang Mai Arr**	**58.59**	**295**	*e*P	**P**	**22 23 25.9**	**+0.9**
CM31	**Chiang Mai Arr**	**58.61**	**295**	*e*P	**P**	**22 23 25.9**	**+0.7**
CM31				*e*pP	**pP**	**22 23 48.4**	**-0.3**
CMAR	**Chiang Mai Arr**	**58.61**	**295**	P	**P**	**22 23 25.9**	**+0.7**
	3.1nm,1.0s,baz=113,slow=5.0,SNR=9.5						
CMAR				pP	**pP**	**22 23 48.4**	**-0.3**
	2.6nm,1.0s,baz=114,slow=4.8,SNR=1.7						
SONA0	**Songino Array**	**66.62**	**327**	*e*P	**P**	**22 24 18.4**	**+0.3**
	2.1nm,1.0s						
SONM	**Songino Array**	**66.62**	**327**	P	**P**	**22 24 18.4**	**+0.3**
	0.6nm,0.4s,baz=148,slow=5.8,SNR=4.1						
LSA	**Lhasa**	**68.87**	**304**	*e*P	**P**	**22 24 34.6**	**+1.6**
	5.2nm,1.1s						
VNDA	**Vanda**	**73.03**	**178**	P	**P**	**22 24 56.9**	**+0.2**
	1.9nm,0.9s,baz=328,slow=4.1,SNR=7.7						
VNDA				pP	**pP**	**22 25 20.8**	**-0.3**
	0.9nm,0.7s,baz=335,slow=5.0,SNR=2.6						
MK01	**Makanchi Array**	**80.75**	**319**	*e*P	**P**	**22 25 40.6**	**0.0**
MK31	**Makanchi Array**	**80.

couple: M◦9.31000×10^14 NP1:ϕ◦36.00000°, δ43.00000°, λ-96.00000°. NP2:ϕ◦225.00000°, δ47.00000°, λ-84.00000°.
ISCJB 23 22:15:01.7±0.6, 37.28N±0.06×142.44E±0.05, h10km, mb3.7/14, MS3.3/2, Error ellipse: s-maj=8.4km s-min=4.9km az=162.0
JMA 23 22:15:03.2±0.2, 37.30N×142.34E, h11km±3km, M4.4
IDC 23 22:15:06.4±6.3, 37.20N×142.47E, h33km±47km, mb3.6/14, mb1 3.8/16, mb1mx3.7/42, mbtmp3.8/16, ML3.6/2, MS3.1/4, Ms1 3.2/4, ms1mx2.7/36, Error ellipse: s-maj=22.5km s-min=17.2km az=120.0

ISC 23 22:15:03.3±0.7, 37.32N±0.06×142.35E±0.06, h10km, n39, σ1§22/34, mb3.8/14, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.18**	**273**	P	**Pb**	**22 15 25.0**	**-0.7**
JFK				eS	**Sb**	**22 15 39.9**	**-1.2**
ONAJ	**Iwakimizuishiy**	**1.26**	**261**	P	**Pn**	**22 15 26.0**	**-1.0**
ONAJ				eS	**Sb**	**22 15 42.1**	**-1.3**
JMM	**Marumori**	**1.35**	**294**	P	**Pn**	**22 15 27.7**	**-0.5**
JMM				eS	**Sb**	**22 15 44.8**	**-1.3**
JIO	**Ouri**	**1.39**	**325**	P	**Pn**	**22 15 28.3**	**-0.4**
JFT	**Otama**	**1.61**	**278**	P	**Pb**	**22 15 32.2**	**-1.0**
JFT				S	**Sb**	**22 15 53.2**	**-0.5**
JOU	**Okura**	**1.70**	**309**	P	**Pn**	**22 15 33.5**	**+0.5**
JMK	**Ichinoseki**	**1.86**	**332**	P	**Pn**	**22 15 35.7**	**+0.5**
JYS	**Shiratake**	**2.02**	**297**	P	**Pb**	**22 15 39.1**	**-1.1**
JYK	**Kaneyama**	**2.24**	**316**	P	**Pn**	**22 15 41.1**	**+0.6**
JOM	**Ohasama**	**2.31**	**339**	P	**Pn**	**22 15 42.4**	**+1.0**
MJAR	**Matsushiro Arr**	**3.41**	**258**	Pn	**Pn**	**22 15 59.1**	**+2.6**
	4.5nm,0.3s,baz=70,slow=7.8,SNR=31						
MAT	**Matsushiro**	**3.41**	**258**	P	**Pn**	**22 15 59.0**	**+2.5**
MAT				eS	**Sn**	**22 16 38.2**	**+1.2**
ASAJ	**Asahikawa**	**6.80**	**2**	Pn	**Pn**	**22 16 43.5**	**+0.4**
	1.2nm,0.3s,baz=288,slow=31,SNR=3.4						
ASAJ				Sn	**Sn**	**22 18 00.9**	**+0.5**
	0.4nm,0.3s,baz=198,slow=20,SNR=2.0						
USRK	**Ussuriysk Ar.**	**10.44**	**314**	Pn	Pn	22 17 38.2	+5.3
	0.2nm,0.3s,baz=125,slow=13,SNR=2.0						
KSRS	**Korea Array**	**11.48**	**275**	LR	LR	22 21 59.9	
	comp=Z,91nm,18.7s,baz=114,slow=36						
PETK	**Petropavlovsk-**	**19.07**	**29**	LR	LR	22 27 24.7	
	comp=Z,30nm,18.9s,baz=207,slow=39						
SEY	**Seymchan**	**26.38**	**10**	P	**P**	**22 20 41.6**	**+2.2**
	0.7nm,0.2s,baz=176,slow=22,SNR=4.8						
H11N2	**WAKE ISLAND Hy**	**27.66**	**123**	T	T	22 49 41.0	
	baz=315,slow=75,SNR=85						
H11N1	**WAKE ISLAND Hy**	**27.67**	**123**	T	T	22 49 42.5	
	baz=315,slow=75,SNR=53						
H11N3	**WAKE ISLAND Hy**	**27.68**	**123**	T	T	22 49 48.0	
	baz=315,slow=75,SNR=53						
SONM	**Songino Array**	**28.25**	**303**	P	**P**	**22 20 58.1**	**+1.5**
	2.3nm,0.9s,baz=97,slow=9.2,SNR=8.2						
H11S1	**WAKE ISLAND Hy**	**28.39**	**125**	T	T	22 50 38.1	
	baz=317,slow=76,SNR=75						
H11S3	**WAKE ISLAND Hy**	**28.40**	**125**	T	T	22 50 38.3	
	baz=317,slow=76,SNR=60						
H11S2	**WAKE ISLAND Hy**	**28.41**	**125**	T	T	22 50 40.3	
	baz=317,slow=76,SNR=68						
TLY	**Talaya**	**30.71**	**310**	LR	LR	22 34 28.9	
	comp=Z,46nm,18.5s,baz=95,slow=38						
ZALV	**Zalesovo Beam**	**42.28**	**312**	P	**P**	**22 22 57.5**	**+0.8**
	0.9nm,0.4s,baz=79,slow=9.2,SNR=5.3						
CMAR	**Chiang Mai Arr**	**42.29**	**256**	P	**P**	**22 22 58.3**	**+1.0**
	1.1nm,0.3s,baz=130,slow=8.0,SNR=6.0						
MKAR	**Makanchi Array**	**44.60**	**302**	P	**P**	**22 23 16.7**	**+1.1**
	1.3nm,0.8s,baz=91,slow=8.6,SNR=12						
ILAR	**Eielson Array**	**48.86**	**33**	P	**P**	**22 23 48.0**	**-0.6**
	0.8nm,0.9s,baz=252,slow=6.2,SNR=5.7						
BVAR	**Borovoye Array**	**50.94**	**312**	P	**P**	**22 24 04.0**	**-0.7**
	0.4nm,0.5s,baz=66,slow=8.1,SNR=3.2						
WRA	**Warramunga Arr**	**57.45**	**189**	P	**P**	**22 24 51.1**	**-1.3**
	0.8nm,0.5s,baz=7.6,slow=7.2,SNR=7.8						
ASAR	**Alice Springs**	**61.18**	**189**	P	**P**	**22 25 15.7**	**-2.4**
	0.4nm,0.7s,baz=1.6,slow=8.3,SNR=3.4						
YKA	**Yellowknife Ar**	**63.19**	**30**	P	**P**	**22 25 31.3**	**+0.2**
	0.2nm,0.7s,baz=306,slow=8.0,SNR=3.5						
FINES	**FINESS Array B**	**68.91**	**332**	P	**P**	**22 26 08.6**	**+0.6**
	1.1nm,0.8s,baz=44,slow=12,SNR=6.1						
NOA	**NORSAR Array B**	**74.21**	**338**	LR	LR	23 02 11.1	
	comp=Z,18nm,19.4s,baz=285,slow=38						
AKASG	**Malin Array Be**	**74.53**	**323**	P	**P**	**22 26 40.7**	**-1.2**
	0.4nm,0.5s,baz=46,slow=7.9,SNR=4.9						
PDAR	**Pinedale Array**	**76.94**	**46**	P	**P**	**22 26 55.9**	**-0.4**
	0.2nm,0.3s,baz=335,slow=4.0,SNR=3.1						
TXAR	**Lajitas Array**	**89.36**	**53**	P	**P**	**22 28 00.2**	**-0.2**
	0.4nm,0.8s,baz=294,slow=2.8,SNR=4.5						
LPAZ	**La Paz**	**145.91**	**60**	PKPbc	**PKPab**	**22 34 44.3**	**-0.3**
	1.2nm,0.7s,baz=9.1,slow=6.1,SNR=5.5						

ISCJB 23 22:15:47.5±0.6, 39.13N±0.04×29.07E±0.03, h0km±6km, Error ellipse: s-maj=5.9km s-min=4.1km az=176.2
CSEM 23 22:15:47.7±0.1, 39.12N×29.07E, h2km, MD2.7, Error ellipse: s-maj=2.0km s-min=1.8km az=170.0
ISK 23 22:15:47.3, 39.12N×29.08E, h5km, MD2.9
DDA 23 22:15:47.5, 39.13N×29.07E, h7km, Md2.7

ISC 23 22:15:48.0±1.0, 39.12N±0.03×29.08E±0.02, h7km±10km, n46, σ0§35/57, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.29**	**254**	P	**Pg**	**22 15 53.5**	**-0.2**
DEMI				S	**Sg**	**22 15 57.9**	**+0.3**
DEMI	**Demirci**	**0.29**	**254**	*i* P	**Pg**	**22 15 53.5**	**-0.2**
DEMI				*i* S	**Sg**	**22 15 57.9**	**+0.3**
GDZ	**Gediz**	**0.32**	**96**	P	**Pg**	**22 15 54.1**	**-0.1**
GDZ				S	**Sg**	**22 15 58.7**	**+0.2**
GDZ	**Gediz**	**0.32**	**96**	*i* P	**Pg**	**22 15 54.1**	**-0.1**
GDZ				*i* S	**Sg**	**22 15 58.7**	**+0.2**
TVSB	**Tavsanli**	**0.44**	**43**	*e*PG	**Pg**	**22 15 56.4**	**-0.2**
TVSB				*e*SG	**Sg**	**22 16 02.3**	**0.0**
TVSB	**Tavsanli**	**0.44**	**43**	*e*Pg	**Pg**	**22 15 56.4**	**-0.2**
DURS	**Dursunbey**	**0.67**	**316**	P	**Pg**	**22 16 00.7**	**-0.1**
DURS				S	**Sg**	**22 16 09.7**	**+0.2**
DURS	**Dursunbey**	**0.67**	**316**	*i* P	**Pg**	**22 16 00.7**	**-0.1**
DURS				*i* S	**Sg**	**22 16 09.7**	**+0.2**
KULA	**Kula-Manisa**	**0.69**	**208**	*e*PG	**Pg**	**22 16 00.9**	**-0.3**
KULA	**Kula-Manisa**	**0.69**	**208**	*e*Pg	**Pg**	**22 16 00.9**	**-0.3**
KHL	**Karahalli**	**0.87**	**156**	*e*PG	**Pg**	**22 16 04.4**	**-0.3**
KHL	**Karahalli**	**0.87**	**156**	*e*Pg	**Pg**	**22 16 04.4**	**-0.3**
ORLT	**Orhaneli**	**0.93**	**351**	*e*PG	**Pg**	**22 16 05.4**	**-0.5**
ORLT	**Orhaneli**	**0.93**	**351**	*e*Pg	**Pg**	**22 16 05.4**	**-0.5**
BALB	**Balikesir**	**1.06**	**299**	*e*PG	**Pg**	**22 16 08.1**	**-0.2**
BALB	**Balikesir**	**1.06**	**299**	*e*Pg	**Pg**	**22 16 08.1**	**-0.2**
CAVI	**Cavuskoy**	**1.23**	**29**	*e*PN	**Pb**	**22 16 11.6**	**0.0**
CAVI	**Cavuskoy**	**1.23**	**29**	*e*Pn	**Pb**	**22 16 11.6**	**0.0**
MDNY	**Mudanya-Bursa**	**1.25**	**353**	*e*PN	**Pg**	**22 16 11.9**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.25**	**353**	*e*Pn	**Pg**	**22 16 11.9**	**-0.1**
KCTX	**Karacabey (Bur**	**1.27**	**334**	*e*PN	**Pg**	**22 16 11.6**	**-0.7**
KCTX	**Karacabey (Bur**	**1.27**	**334**	*e*Pn	**Pg**	**22 16 11.6**	**-0.7**
BORA	**Eskisehir**	**1.31**	**54**	P	**Pg**	**22 16 12.5**	**-0.5**
BORA				S	**Sn**	**22 16 30.6**	**0.0**
BORA	**Eskisehir**	**1.31**	**54**	*i* P	**Pg**	**22 16 12.5**	**-0.5**
BORA				*i* S	**Sn**	**22 16 30.6**	**0.0**
ADVT	**Abdulvahap**	**1.40**	**21**	*e*PN	**Pn**	**22 16 14.1**	**+0.1**
ADVT	**Abdulvahap**	**1.40**	**21**	*e*Pn	**Pn**	**22 16 14.1**	**+0.1**
GONE	**Gonen-Balikesi**	**1.42**	**311**	*e*PN	**Pn**	**22 16 14.1**	**-0.1**
GONE	**Gonen-Balikesi**	**1.42**	**311**	*e*Pn	**Pn**	**22 16 14.1**	**-0.1**
ESKT	**Eskisehir**	**1.43**	**73**	*i* P	**Pb**	**22 16 15.2**	**+0.1**
ESKT				*i* S	**Sb**	**22 16 33.4**	**-0.2**
SEYT	**Eskypehyr**	**1.43**	**73**	P	**Pb**	**22 16 15.2**	**+0.1**
SEYT				S	**Sb**	**22 16 33.4**	**-0.2**
ARMT	**Armutlu**	**1.45**	**354**	*e*PN	**Pb**	**22 16 15.1**	**-0.2**
ARMT	**Armutlu**	**1.45**	**354**	*e*Pn	**Pb**	**22 16 15.1**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**1.50**	**219**	*e*PN	**Pn**	**22 16 15.6**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**1.50**	**219**	*e*Pn	**Pn**	**22 16 15.6**	**+0.1**
EDC	**Edincik**	**1.54**	**323**	*e*PN	**Pb**	**22 16 16.7**	**-0.1**
EDC	**Edincik**	**1.54**	**323**	*e*Pn	**Pb**	**22 16 16.7**	**-0.1**
GULT	**Gulveren**	**1.71**	**40**	*e*PN	**Pn**	**22 16 18.6**	**+0.2**
GULT	**Gulveren**	**1.71**	**40**	*e*Pn	**Pn**	**22 16 18.6**	**+0.2**
MRMT	**Marmara Adasi**	**1.86**	**323**	*e*PN	**Pn**	**22 16 21.0**	**+0.6**
MRMT	**Marmara Adasi**	**1.86**	**323**	*e*Pn	**Pn**	**22 16 21.0**	**+0.6**
SILT	**Sile**	**2.07**	**12**	*e*PN	**Pn**	**22 16 23.8**	**+0.6**
SILT	**Sile**	**2.07**	**12**	*e*Pn	**Pn**	**22 16 23.8**	**+0.6**
KLYT	**Kilyos**	**2.13**	**359**	*e*PN	**Pn**	**22 16 24.5**	**+0.6**
KLYT	**Kilyos**	**2.13**	**359**	*e*Pn	**Pn**	**22 16 24.5**	**+0.6**
CTKS	**Kestanelik-??a**	**2.15**	**349**	*e*PN	**Pn**	**22 16 25.0**	**+0.7**
CTKS	**Kestanelik-??a**	**2.15**	**349**	*e*Pn	**Pn**	**22 16 25.0**	**+0.7**

IDC 23 22:27:23.6±1.4, 15.03S×173.62W, h0km, mb3.9/8, mb1 4.3/8, mb1mx4.0/30, mbtmp3.9/8, MS3.6/3, Ms1 3.6/3, ms1mx3.0/32, Error ellipse: s-maj=61.2km s-min=21.2km az=154.0
NEIC 23 22:27:24.9±0.5, 15.06S×173.64W, h10km, mb4.3/3, Error ellipse: s-maj=30.5km s-min=8.0km az=152.0
ISCJB 23 22:27:26.5±0.9, 15.05±0.3×173.8W±0.2, h30km, mb4.0/11, MS3.8/2, Error ellipse: s-maj=50.1km s-min=12.4km az=151.9

ISC 23 22:27:28.5±1.4, 14.8S±0.4×173.7W±0.2, h30km, n24, σ1§05/21, mb4.0/11, Samoa Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**2.05**	**64**	Pn	Pn	22 27 54.5	-6.5
	55nm,0.3s,baz=26,slow=6.3,SNR=26						
AFI				Sn	Sn	22 28 13.7	-12
	371nm,0.3s,baz=8.4,slow=17,SNR=21						
AFI				LR	LR	22 28 37.2	
	comp=Z,399nm,20.8s,baz=246,slow=35						
URZ	**Urewera**	**24.73**	**198**	LR	LR	22 40 40.7	
	comp=Z,96nm,20.3s,baz=5.0,slow=32						
HPO	**Honuapo**	**38.12**	**28**	*e*P	**P**	**22 34 42.4**	**-2.6**
WR1	**Warramunga Arr**	**49.71**	**256**	*e*P	**P**	**22 36 17.6**	**-0.7**
	15nm,1.4s						
WRA	**Warramunga Arr**	**49.71**	**256**	P	**P**	**22 36 17.6**	**-0.7**
	1.3nm,0.8s,baz=98,slow=6.1,SNR=15						
AS01	**Alice Springs**	**49.99**	**251**	*e*P	**P**	**22 36 19.4**	**-1.0**
AS31	**Alice Springs**	**50.03**	**251**	*e*P	**P**	**22 36 19.9**	**-0.8**
	2.2nm,1.3s						
ASAR	**Alice Springs**	**50.03**	**251**	P	**P**	**22 36 19.9**	**-0.8**
	2.0nm,0.6s,baz=87,slow=8.0,SNR=23						
JHJ	**Hachijo jima 2**	**65.15**	**318**	LR	LR	23 01 42.3	
	comp=Z,200nm,21.4s,baz=289,slow=32						
MJAR	**Matsushiro Arr**	**68.32**	**320**	P	**P**	**22 38 27.1**	**+0.1**
	1.6nm,0.5s,baz=96,slow=8.7,SNR=13						
NV01	**Mina Array Sit**	**74.08**	**42**	*e*P	**P**	**22 39 02.9**	**+0.8**
NVAR	**Mina Array Bea**	**74.08**	**42**	P	**P**	**22 39 02.9**	**+0.8**
	0.3nm,0.3s,baz=224,slow=10,SNR=2.9						
HLID	**Hailey**	**79.35**	**39**	*e*P	**P**	**22 39 33.1**	**+1.4**
	2.5nm,0.8s						
LTX	**Lajitas**	**80.51**	**56**	*e*P	**P**	**22 39 37.7**	**-0.6**
TX31	**Lajitas Ar. Si**	**80.51**	**56**	*e*P	**P**	**22 39 38.2**	**0.0**
TXAR	**Lajitas Array**	**80.51**	**56**	P	**P**	**22 39 37.7**	**-0.6**
	1.4nm,1.0s,baz=225,slow=5.1,SNR=7.5						
ILAR	**Eielson Array**	**81.93**	**11**	P	**P**	**22 39 45.4**	**+0.5**
	0.6nm,0.8s,baz=219,slow=6.7,SNR=4.2						
ILB	**Eielson Array**	**81.93**	**11**	*e*P	**P**	**22 39 45.4**	**+0.5**
PD31	**Pinedale Array**	**82.01**	**42**	*e*P	**P**	**22 39 46.2**	**+0.1**
PDAR	**Pinedale Array**	**82.01**	**42**	P	**P**	**22 39 46.2**	**+0.1**
	0.8nm,0.9s,baz=174,slow=1.5,SNR=5.3						
YKA	**Yellowknife Ar**	**89.67**	**23**	P	**P**	**22 40 24.2**	**+1.1**
	0.2nm,0.6s,baz=242,slow=4.2,SNR=5.5						
MLR	**Muntele Rosu**	**145.22**	**336**	PKPbc	**PKPab**	**22 47 04.7**	**+1.5**
	baz=118,slow=4.8						
GERES	**GERESS Array B**	**145.52**	**351**	PKPbc	**PKPab**	**22 47 04.7**	**+0.5**
	0.5nm,0.7s,baz=343,slow=4.2,SNR=5.4						
BRTR	**Keskin Array B**	**145.53**	**321**	PKPbc	**PKPab**	**22 47 05.9**	**+1.3**
	1.4nm,0.9s,baz=105,slow=3.0,SNR=8.8						

IDC 23 22:29:09.0±5.7, 16.20S×172.13W, h0km, mb3.7/2, mb1 4.0/3, mb1mx3.6/30, mbtmp3.8/3, ML3.8/1, Error ellipse: s-maj=175.2km s-min=33.5km az=124.0, Samoa Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**2.30**	**9**	Pn	Pn	22 29 47.9	-0.4
	24nm,0.3s,baz=162,slow=20,SNR=2.8						
AFI				Sn	Sn	22 30 07.3	-10
	228nm,0.3s,baz=246,slow=15,SNR=7.1						
WRA	**Warramunga Arr**	**50.85**	**257**	P	P	22 38 11.4	-0.6
	0.4nm,0.8s,baz=96,slow=8.0,SNR=5.2						
ASAR	**Alice Springs**	**51.03**	**252**	P	P	22 38 13.7	+0.3
	0.8nm,0.4s,baz=90,slow=7.9,SNR=6.0						
BRTR	**Keskin Array B**	**147.54**	**321**	PKPbc	PKPbc	22 48 55.3	-0.5
	0.2nm,0.6s,baz=104,slow=4.6,SNR=2.6						

IDC 23 22:29:21.6±2.1, 41.78N×82.83E, h0km, mb3.8/4, mb1 3.6/9, mb1mx3.4/48, mbtmp3.5/9, ML3.0/5, MS2.9/1, Ms1 2.9/1, ms1mx2.1/52, Error ellipse: s-maj=38.0km s-min=24.2km az=107.0
NEIC 23 22:29:21.6±8.7, 41.57N×82.81E, h8km±51km, mb4.5/2, Error ellipse: s-maj=35.0km s-min=12.5km az=148.0
SOME 23 22:29:24.6, 41.98N×82.33E, h15km
NNC 23 22:29:30.4±1.8, 42.15N×82.16E, h2km±7km, mb3.9, mpv3.6, Error ellipse: s-maj=12.1km s-min=7.0km az=130.0

ISC 23 22:29:27.7±2.1, 42.04N±0.07×82.18E±0.05, h2km±11km, n53, σ2§02/81, mb3.8/4, 12C-12D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHLS	**Shalkode**	**2.03**	**304**	*e*P	**Pb**	**22 30 05.8**	**+0.5**
	114nm,0.3s						
SHLS				*e*S	**Sg**	**22 30 35.9**	**+3.1**
	580nm,0.5s						
PDGK	**Podgornoye**	**2.37**	**304**	⇓Pn	**Pn**	**22 30 09.5**	**+2.0**
	30nm,0.5s						
PDGK				⇓Lg	Lg	22 30 44.1	
	349nm,0.8s						
UZB	**Uzynbulak**	**2.58**	**296**	*e*P	**Pn**	**22 30 12.8**	**+2.2**
	41nm,0.4s						
UZB				*e*S	**Sb**	**22 30 48.0**	**+1.1**
	121nm,0.4s						
DJR	**Jarkent**	**2.88**	**323**	*e*P	**Pb**	**22 30 19.8**	**0.0**
	53nm,0.6s						
DJR				*e*S	**Sg**	**22 31 00.2**	**0.0**
	68nm,0.4s						
KPKS	**Kokpek**	**2.94**	**300**	*e*P	**Pn**	**22 30 17.5**	**+2.1**
	68nm,0.3s						
KPKS				*e*S	**Sb**	**22 30 56.2**	**-1.0**
	335nm,0.4s						
SATY	**Saty**	**2.97**	**291**	*e*P	**Pn**	**22 30 18.2**	**+2.3**
	55nm,0.5s						
SATY				*e*S	**Sb**	**22 30 56.8**	**-1.2**
	173nm,0.5s						
ZHN	**Zhinishke**	**2.98**	**293**	*e*P	**Pn**	**22 30 18.0**	**+1.9**
	17nm,0.4s						
ZHN				*e*S	**Sb**	**22 30 56.4**	**-2.2**
	229nm,0.4s						
KURS	**Kuram**	**3.29**	**297**	*e*P	**Pb**	**22 30 27.1**	**+0.3**
	11nm,0.6s						
KURS				*e*S	**Sg**	**22 31 12.7**	**-0.6**
	25nm,0.8s						
MNBS	**Baschi**	**3.44**	**308**	*e*P	**Pb**	**22 30 26.9**	**-2.4**
	6.7nm,0.4s						
MNBS				*e*S	**Sb**	**22 31 12.2**	**+0.7**
	183nm,0.6s						
KAPS	**Kapalarasan**	**3.83**	**329**	*e*P	**Pn**	**22 30 31.4**	**+3.7**
	28nm,0.2s						
KAPS				*e*S	**Sb**	**22 31 19.4**	**-3.5**
	37nm,0.3s						
ARXS	**Arharly**	**3.85**	**306**	*e*P	**Pb**	**22 30 36.9**	**+0.5**
	34nm,1.0s						
ARXS				*e*S	**Sg**	**22 31 29.8**	**-1.7**
	48nm,0.5s						
KOTS	**Kotyrbulak**	**3.92**	**289**	*e*P	**Pb**	**22 30 36.7**	**-0.9**
KOTS				*e*S	**Sb**	**22 31 29.7**	**+4.1**
MDOK	**Medeo**	**3.95**	**288**	*e*P	**Pb**	**22 30 38.0**	**-0.1**
	16nm,0.7s						
MDOK				*e*S	**Sg**	**22 31 31.3**	**-3.2**
	22nm,0.9s						
TNSS	**Tian-Shan**	**4.00**	**286**	*e*P	**Pb**	**22 30 38.2**	**-0.8**
	21nm,0.6s						
TNSS				*e*S	**Sb**	**22 31 31.8**	**+3.9**
	26nm,0.4s						
KNDC	**Almaty**	**4.02**	**289**	⇓Pn	**Pn**	**22 30 32.9**	**+2.6**
	20nm,0.6s						
KNDC				⇓Pg	**Pg**	**22 30 43.8**	**-1.0**
	48nm,0.7s						
KNDC				⇑Lg	Lg	22 31 36.1	
	89nm,0.9s						
CHKK	**Chushkaly**	**4.22**	**297**	*e*P	**Pb**	**22 30 44.2**	**+1.7**
	10nm,0.9s						
CHKK				*e*S	**Sg**	**22 31 41.9**	**-1.2**
	31nm,0.5s						
MTBS	**Maitube**	**4.38**	**286**	*e*P	**Pb**	**22 30 43.2**	**-2.2**
	9.3nm,0.3s						
MTBS				*e*S	**Sb**	**22 31 40.4**	**+1.7**
	27nm,0.3s						
KUU	**Kurty**	**4.67**	**295**	*e*P	**Pb**	**22 30 50.9**	**+0.7**
	15nm,0.5s						
KUU				*e*S	**Sg**	**22 31 53.5**	**-4.1**
	33nm,0.6s						
KST	**Kastek**	**4.70**	**284**	*e*P	**Pb**	**22 30 48.9**	**-2.0**
	7.3nm,0.6s						
KST				*e*S	**Sb**	**22 31 50.1**	**+2.2**
	42nm,0.7s						
MK01	**Makanchi Array**	**4.73**	**1**	*e*Pn	**Pn**	**22 30 41.2**	**+1.3**
MK01				*e*Sn	**Sn**	**22 31 34.0**	**-1.3**
MK31	**Makanchi Array**	**4.75**	**1**	Pn	**Pn**	**22 30 41.4**	**+1.1**
	1.7nm,0.5s,baz=183,slow=13,SNR=32						
MK31				⇓Pg	**Pb**	**22 30 54.7**	**+3.1**
	11nm,0.8s,baz=176,slow=13,SNR=8.6						
MK31				⇑Sn	**Sn**	**22 31 36.8**	**+0.9**
	11nm,0.8s,baz=152,slow=31,SNR=4.1						
MK31				⇓Lg	Lg	22 31 57.5	
	7.1nm,0.4s,baz=181,slow=29,SNR=4.6						
MK31	**Makanchi Array**	**4.75**	**1**	*e*Pn	**Pn**	**22 30 42.0**	**+1.7**
MK31				*e*Sn	**Sn**	**22 31 37.0**	**+1.2**
MK32	**Makanchi Array**	**4.75**	**1**	*e*Pn	**Pn**	**22 30 41.6**	**+1.3**
MK32				*e*Sn	**Sn**	**22 31 36.3**	**+0.5**
MK32				*e*Lg	Lg	22 31 56.5	
MKAR	**Makanchi Array**	**4.75**	**1**	Pn	**Pn**	**22 30 41.6**	**+1.3**
	1.8nm,0.3s,baz=184,slow=14,SNR=22						
MKAR				Sn	**Sn**	**22 31 36.3**	**+0.4**
	2.3nm,0.3s,baz=172,slow=26,SNR=4.3						
MKAR				Lg	Lg	22 31 56.5	
	4.4nm,0.3s,baz=187,slow=28,SNR=5.3						
MKAR	**Makanchi Array**	**4.75**	**1**	*e*Pn	**Pn**	**22 30 42.0**	**+1.7**
MKAR				*e*Sn	**Sn**	**22 31 37.2**	**+1.3**
MKAR				Lg	Lg	22 31 56.5	
MAKZ	**Makanchi**	**4.76**	**358**	*e*Pn	**Pn**	**22 30 42.1**	**+1.6**
MAKZ				*e*Sn	**Sn**	**22 31 35.6**	**-0.7**
DGS	**Degeres**	**4.88**	**286**	*e*P	**Pb**	**22 30 57.0**	**+3.1**
	12nm,0.6s						
DGS				*e*S	**Sg**	**22 32 04.3**	**0.0**
TKM2	**Tokmak 2**	**4.95**	**282**	⇓Pn	**Pn**	**22 30 44.9**	**+1.7**
	3.0nm,0.5s						
TKM2				⇑Lg	Lg	22 32 05.1	
	27nm,0.7s						
TKM2	**Tokmak 2**	**4.95**	**282**	*e*Pn	**Pn**	**22 30 45.2**	**+2.1**
ZSN	**Zaisan**	**5.63**	**16**	*e*P	**Pb**	**22 31 10.0**	**+3.4**
	3.8nm,0.3s						
ZSN				*e*S	**Sg**	**22 32 25.9**	**-2.6**
	35nm,0.8s						
AAK	**Ala-Archa**	**5.73**	**278**	Pn	**Pn**	**22 30 58.4**	**+4.6**
	0.6nm,0.3s,baz=131,slow=11,SNR=3.2						
AAK				Lg	Lg	22 32 32.3	
	1.6nm,0.3s,baz=348,slow=22,SNR=9.2						
AAK	**Ala-Archa**	**5.73**	**278**	⇓Pg	Pb	22 31 13.5	+5.1
	5.3nm,0.8s						
AAK				⇓Lg	Lg	22 32 29.5	
	12nm,0.6s						
AAK	**Ala-Archa**	**5.73**	**278**	*e*Pn	**Pn**	**22 30 54.1**	**+0.3**
EKS2	**Erkin-Say**	**6.26**	**278**	*e*Pn	**Pn**	**22 31 01.8**	**+0.7**
MNAS	**Manas**	**7.19**	**277**	⇑Pn	**Pn**	**22 31 16.3**	**+2.4**
	1.3nm,0.6s						
MNAS				⇑Pg	Pb	22 31 39.1	+5.8
	1.2nm,0.7s						
MNAS				⇑Lg	Lg	22 33 18.3	
	5.8nm,0.7s						
KK31	**Karatay Array**	**8.68**	**281**	⇑Pg	Pg	22 32 10.6	-3.2
	1.0nm,0.6s,baz=84,slow=16,SNR=4.1						
KK31				⇑Lg	Lg	22 34 04.8	
	1.3nm,0.5s,baz=91,slow=27,SNR=4.4						
KURBB	**Kurchatov Arra**	**8.94**	**345**	Pn	**Pn**	**22 31 37.4**	**-0.4**
	0.1nm,0.3s,baz=172,slow=12,SNR=5.3						
KURBB				Sn	**Sn**	**22 33 19.1**	**+0.2**
	0.2nm,0.3s,baz=147,slow=20,SNR=4.6						
KURBB				Lg	Lg	22 34 18.1	
	0.1nm,0.3s,baz=176,slow=25,SNR=6.2						
KURBB	**Kurchatov Arra**	**8.94**	**345**	⇑Pn	**Pn**	**22 31 37.2**	**-0.5**
	0.5nm,0.3s						
KURBB				⇑Sn	**Sn**	**22 33 22.2**	**+3.2**
	7.6nm,0.8s						
KURBB				⇑Lg	Lg	22 34 10.3	
	15nm,0.7s						

H11S3 WAKE ISLAND Hy 29.76 9 T T 23 15 31.4
baz=188,slow=76,SNR=53
H11S1 WAKE ISLAND Hy 29.77 9 T T 23 15 31.9
baz=188,slow=76,SNR=53
GUMO Guam 29.97 325 LR LR 22 55 30.2
comp=Z,72nm,21.9s,baz=164,slow=34
H11N1 WAKE ISLAND Hy 30.98 9 T T 23 17 02.8
baz=188,slow=76,SNR=58
H11N3 WAKE ISLAND Hy 30.99 9 T T 23 17 04.0
baz=188,slow=76,SNR=58
H11N2 WAKE ISLAND Hy 31.00 9 T T 23 17 04.9
baz=188,slow=76,SNR=72
PPT Papeete 47.05 104 LR LR 23 02 14.9
comp=Z,50nm,21.7s,baz=210,slow=30
PPT2 Papeete2 47.06 104 *e*LR LR 23 00 59.1
104nm,23.5s
TAOE Nuku Hiva Isla 56.75 93 *e*LR LR 23 05 00.5
95nm,25.4s
USRK Ussuriysk Ar. 61.52 336 P **P 22 48 54.9 +0.9**
1.7nm,0.8s,baz=118,slow=8.7,SNR=4.4
PETK Petropavlovsk- 64.09 357 LR LR 23 13 53.5
comp=Z,18nm,20.0s,baz=148,slow=33
VNDA Vanda 66.39 180 P **P 22 49 26.7 +1.2**
0.7nm,0.9s,baz=346,slow=5.9,SNR=3.7
VNDA LR LR 23 16 00.2
comp=Z,16nm,18.4s,baz=338,slow=34
SONM Songino Array 76.70 325 P **P 22 50 27.6 -0.7**
0.2nm,0.3s,baz=116,slow=6.6,SNR=2.1
ILAR Eielson Array 84.72 20 P **P 22 51 11.1 +0.5**
0.3nm,0.5s,baz=232,slow=4.4,SNR=4.6
NVAR Mina Array Bea 88.74 51 P **P 22 51 30.9 -0.2**
0.5nm,0.6s,baz=268,slow=7.2,SNR=2.5
MKAR Makanchi Array 91.21 317 P **P 22 51 41.2 -1.0**
0.1nm,0.5s,baz=90,slow=7.2,SNR=2.7
YKA Yellowknife Ar 96.64 28 P **P 22 52 05.9 -0.8**
0.2nm,0.6s,baz=260,slow=5.0,SNR=6.1
TXAR Lajitas Array 98.92 62 LR LR 23 31 51.4
comp=Z,23nm,18.6s,baz=0.0,slow=32

*IDC **23** 22:48:09.5±2.0, 15°.92S×71°.43W, h99km±20km, mb3.3/3, mb1 3.5/7, mb1mx3.4/35, mbtmp3.7/7, MS3.2/6, Ms1 3.2/6, ms1mx3.0/12, Error ellipse: s-maj=43.0km s-min=21.8km az=27.0*
*ISCJB **23** 22:48:10.6±0.8, 15°.78S±0°.09×71°.3W±0°.1, h133km, mb3.3/4, Error ellipse: s-maj=17.2km s-min=9.3km az=141.9*
ISC 23 22:48:12.4±0.8,**15°.8S**±0°.1×**71°.3W**±0°.1,**h133**km,**n14,**
σ1º**76**/10,**mb3.5**/4,**Southern Peru**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LPAZ	**La Paz**	**3.07**	**100**	P	**Pn**	**22 49 00.1**	**-0.6**
0.7nm,0.3s,baz=271,slow=13,SNR=3.8							
NNA	**Nana**	**6.59**	**304**	P	**Pn**	**22 49 44.8**	**-2.2**
1.4nm,0.3s,baz=125,slow=16,SNR=3.1							
LVC	**Limon Verde**	**7.14**	**162**	P	Pn	22 49 49.2	-5.5
77nm,0.3s,baz=339,slow=11,SNR=9.6							
LVC				S	**Sn**	**22 51 14.4**	**-0.3**
44nm,0.3s,baz=114,slow=23,SNR=3.8							
LVC				LR	LR	22 52 09.1	
comp=Z,136nm,18.6s,baz=324,slow=34							
SIV	**San Ignacio**	**9.83**	**93**	P	**Pn**	**22 50 28.7**	**-1.9**
0.3nm,0.3s,baz=290,slow=11,SNR=3.0							
SIV				LR	LR	22 54 51.1	
comp=Z,78nm,20.4s,baz=240,slow=40							
ATAH	**Atahualpa**	**11.07**	**320**	LR	LR	22 55 29.0	
comp=Z,189nm,21.0s,baz=166,slow=40							
CPUP	**Villa Florida**	**16.70**	**131**	LR	LR	23 00 03.9	
comp=Z,69nm,20.8s,baz=318,slow=43							
PTGA	**Pitinga**	**18.68**	**38**	LR	LR	23 00 11.4	
comp=Z,78nm,18.9s,baz=230,slow=38							
ROSC	**El Rosal**	**20.72**	**351**	LR	LR	23 00 59.3	
comp=Z,66nm,21.3s,baz=190,slow=37							
TXAR	**Lajitas Array**	**54.68**	**325**	P	**P**	**22 57 26.8**	**-1.2**
0.2nm,0.6s,baz=135,slow=10,SNR=3.3							
NVAR	**Mina Array Bea**	**69.63**	**322**	P	**P**	**22 59 10.7**	**+3.0**
0.4nm,0.6s,baz=184,slow=32,SNR=4.0							
TORD	**Torodi Ar. Bea**	**77.68**	**72**	P	**P**	**22 59 56.4**	**+1.4**
0.6nm,0.7s,baz=256,slow=4.9,SNR=6.8							
YKA	**Yellowknife Ar**	**85.09**	**341**	P	**P**	**23 00 33.3**	**+0.4**
0.7nm,0.8s,baz=135,slow=4.9,SNR=8.0							
MJAR	**Matsushiro Arr**	**146.63**	**314**	PKPbc	**PKPab**	**23 07 40.8**	**+0.5**
1.5nm,0.8s,baz=36,slow=0.4,SNR=4.7							
SONM	**Songino Array**	**147.99**	**3**	PKPbc	**PKPab**	**23 07 45.3**	**0.0**
1.2nm,0.9s,baz=349,slow=1.5,SNR=5.1							

*MOS **23** 22:52:09.7±1.5, 45°.13N×152°.16E, h93km, mb4.3/1, Error ellipse: s-maj=22.6km s-min=18.0km az=174.5*
*SKHL **23** 22:52:11.1±1.0, 46°.39N×151°.04E, h175km±4km, mb4.6/3, msh5.5/4*
*ISCJB **23** 22:52:12.7±0.7, 46°.59N±0°.08×150°.8E±0°.1, h200km, mb3.2/6, Error ellipse: s-maj=15.5km s-min=5.8km az=43.1*
*IDC **23** 22:52:14.5±3.8, 46°.84N×150°.71E, h192km±38km, mb3.2/6, mb1 3.3/7, mb1mx3.1/46, mbtmp3.7/7, Error ellipse: s-maj=29.9km s-min=25.6km az=118.0*
ISC 23 22:52:12.5±0.9,**46°.4N**±0°.1×**150°.9E**±0°.1,**h200**km,**n26,**
σ1º**96**/35,**mb3.4**/6,**2C-1D,Kuril Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUR	**Kuril'sk**	**2.45**	**242**	*d* PN	**Pn**	**22 52 56.8**	**+1.0**
KUR				*i* S	**Sn**	**22 53 32.4**	**+2.9**
KUR				pmax	pmax		
comp=Z,78nm,0.3s							
KUR				pmax	pmax		
comp=N,38nm,0.2s							
KUR				pmax	pmax		
comp=E,38nm,0.2s							
KUR				smax	smax		
comp=E,76nm,0.2s							
KUR				smax	smax		
comp=N,167nm,0.5s							
KUR	**Kuril'sk**	**2.45**	**242**	*e*P	**Pn**	**22 52 55.7**	**-0.1**
KUR				AMB	AMB	22 52 58.2	
comp=N,40nm,0.3s							
KUR				AMB	AMB	22 52 58.2	
comp=N,80nm,0.3s							
KUR				*i* S	**Sn**	**22 53 30.3**	**+0.8**
KUR				A	A	22 53 38.7	
comp=N,170nm,0.2s							
KUR				A	A	22 53 38.7	
comp=N,80nm,0.2s							
SHO	**Shikotan**	**3.87**	**230**	*c* iPN	**Pn**	**22 53 12.3**	**-0.3**
SHO				*i* S	**Sn**	**22 53 57.2**	**-2.5**
SHO				pmax	pmax		
comp=Z,33nm,0.4s							
SHO				pmax	pmax		
comp=E,16nm,0.3s							
SHO				smax	smax		
comp=N,181nm,0.4s							
SHO				smax	smax		
comp=E,287nm,0.3s							
SHO	**Shikotan**	**3.87**	**230**	⇑*i* P	**Pn**	**22 53 12.3**	**-0.3**
SHO				AMB	AMB	22 53 13.6	
comp=E,20nm,0.4s							
SHO				AMB	AMB	22 53 13.6	
comp=E,30nm,0.4s							
SHO				*i* S	**Sn**	**22 53 57.8**	**-1.9**
SHO				A	A	22 54 00.2	
comp=E,180nm,0.4s							
SHO				A	A	22 54 00.2	
comp=E,290nm,0.4s							
YUK	**Yuzh-Kuril'sk**	**4.30**	**238**	PN	**Pn**	**22 53 19.4**	**+1.3**
YUK				*e*S	**Sn**	**22 54 11.2**	**+1.6**
YUK				smax	smax		
comp=N,66nm,0.2s							
YUK				smax	smax		
comp=E,185nm,0.6s							
YUK	**Yuzh-Kuril'sk**	**4.30**	**238**	*e*P	**Pn**	**22 53 19.4**	**+1.3**
YUK				*e*S	**Sn**	**22 54 10.5**	**+0.9**
YUK				A	A	22 54 19.1	
comp=E,340nm,0.8s							
JNK	**Nakash**	**5.24**	**239**	P	**Pn**	**22 53 31.3**	**+1.3**
SKR	**Severo-Kuril's**	**5.47**	**37**	*e*PN	Pn	22 53 38.9	+6.1
SKR				*e*S	Sn	22 54 44.6	+8.2
SKR				smax	smax		
comp=N,100nm,0.6s							
SKR	**Severo-Kuril's**	**5.47**	**37**	*e*P	**Pn**	**22 53 33.1**	**+0.3**
SKR				*e*S	**Sn**	**22 54 34.0**	**-2.4**
SKR				A	A	22 54 56.1	
comp=N,100nm,0.6s							
YSS	**Yuzh-Sakhalins**	**5.64**	**278**	*e*P	**Pn**	**22 53 35.2**	**+0.1**
YSS				AMB	AMB	22 54 36.0	
comp=N,20nm,0.4s							
JAR	**Ashorobuto**	**5.97**	**241**	P	**Pn**	**22 53 40.3**	**+0.9**
JOB	**Onbets**	**6.16**	**238**	P	**Pn**	**22 53 42.2**	**+0.4**
JOB				*e*S	**Sn**	**22 54 49.7**	**-2.8**
ASAJ	**Asahikawa**	**6.32**	**251**	P	**Pn**	**22 53 45.7**	**+1.9**
comp=N,0.9nm,0.3s,baz=71,slow=16,SNR=7.1							
ASAJ	**Asahikawa**	**6.32**	**251**	P	**Pn**	**22 53 46.3**	**+2.5**
JKK2	**Kamakawa 2**	**6.32**	**249**	P	**Pn**	**22 53 45.9**	**+2.0**
JCH	**Churui**	**6.62**	**237**	P	**Pn**	**22 53 48.5**	**+0.8**
JCH				*e*S	**Sn**	**22 54 59.1**	**-4.0**
JEM	**Erimo**	**7.11**	**234**	P	**Pn**	**22 53 55.9**	**+1.7**
JEM				*e*S	**Sn**	**22 55 11.3**	**-3.5**
JNBK	**Urakawa-nobuka**	**7.18**	**238**	P	**Pn**	**22 53 55.7**	**+0.7**
JNBK				*e*S	**Sn**	**22 55 11.5**	**-4.9**
BMKR	**Bomnak**	**16.24**	**309**	*e*P	**Pn**	**22 55 49.5**	**+0.1**
BMKR				AMB	AMB	22 55 51.5	
comp=N,5.0nm,0.5s							
KROS	**Kirovskiy**	**17.17**	**307**	*e*P	**Pn**	**22 55 59.6**	**-0.9**
MKAR	**Makanchi Array**	**45.74**	**297**	P	**P**	**23 00 14.4**	**+0.7**
comp=N,0.2nm,0.5s,baz=82,slow=6.7,SNR=3.4							
YKA	**Yellowknife Ar**	**52.07**	**36**	P	**P**	**23 01 02.7**	**+1.4**
comp=N,0.5nm,0.5s,baz=298,slow=7.2,SNR=5.9							
SPITS	**Spitsbergen Ar**	**52.65**	**349**	P	**P**	**23 01 04.8**	**-0.7**
comp=N,3.1nm,0.9s,baz=23,slow=9.4,SNR=3.6							
FINES	**FINESS Array B**	**63.67**	**334**	P	**P**	**23 02 21.2**	**-0.7**
comp=N,0.2nm,0.4s,baz=56,slow=4.8,SNR=5.1							
ASAR	**Alice Springs**	**71.45**	**196**	P	P	23 03 16.1	+5.1
comp=N,0.3nm,0.6s,baz=1.9,slow=5.6,SNR=3.5							
TXAR	**Lajitas Array**	**78.96**	**59**	P	**P**	**23 03 56.2**	**+2.1**
comp=N,0.4nm,0.5s,baz=301,slow=3.9,SNR=6.6							

*ISCJB **23** 22:55:26.7±0.6, 31°.81S±0°.04×179°.7E±0°.1, h450km, mb3.9/5, Error ellipse: s-maj=16.8km s-min=5.3km az=7.2*
*IDC **23** 22:55:26.8±1.3, 31°.85S×179°.80E, h445km±14km, mb3.5/5, mb1 3.7/7, mb1mx3.3/33, mbtmp4.4/7, Error ellipse: s-maj=24.7km s-min=16.1km az=140.0*
ISC 23 22:55:27.1±0.8,**31°.86S**±0°.08×**179°.8E**±0°.2,**h450**km,**n51,**
σ1º**32**/65,**mb4.0**/5,**Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**3.27**	**38**	P	**P**	**22 56 34.4**	**-1.9**
52nm,0.3s,baz=66,slow=20,SNR=3.2							
MXZ	**Matakaoa Point**	**5.82**	**192**	*e*PN	**P**	**22 56 59.5**	**+0.1**
MXZ				SN	**S**	**22 58 15.4**	**+0.5**
WMGZ	**Waiomatatini S**	**6.05**	**190**	PN	**P**	**22 57 03.1**	**+1.3**
HAZ	**Te Kaha**	**6.11**	**195**	*e*PN	**P**	**22 57 02.9**	**+0.6**
HAZ				SN	**S**	**22 58 18.2**	**-2.1**
PUZ	**Puketiti**	**6.32**	**191**	*e*PN	**P**	**22 57 05.9**	**+1.2**
TWGZ	**Tauwhareparae**	**6.47**	**193**	*e*PN	**P**	**22 57 08.8**	**+2.6**
MWZ	**Matawai**	**6.72**	**195**	*e*PN	**P**	**22 57 09.7**	**+1.0**
CNGZ	**Carnagh Statio**	**6.74**	**190**	*e*PN	**P**	**22 57 10.7**	**+1.9**
URZ	**Urewera**	**6.75**	**198**	P	**P**	**22 57 09.9**	**+0.9**
46nm,0.3s,baz=23,slow=2.9,SNR=181							
URZ				S	**S**	**22 58 32.3**	**-0.2**
21nm,0.3s,baz=65,slow=22,SNR=17							
URZ	**Urewera**	**6.75**	**198**	*e*PN	**P**	**22 57 09.6**	**+0.6**
URZ				SN	**S**	**22 58 31.1**	**-1.4**
TKGZ	**Te Karaka**	**6.75**	**193**	PN	**P**	**22 57 10.4**	**+1.4**
RAGZ	**Rawiri**	**6.90**	**196**	PN	**P**	**22 57 11.5**	**+0.8**
RIGZ	**Rimuhau**	**7.03**	**193**	PN	**P**	**22 57 14.4**	**+2.4**
RIGZ				SN	**S**	**22 58 38.2**	**+0.2**
RTZ	**Ruatahuna**	**7.12**	**198**	*e*PN	**P**	**22 57 14.9**	**+1.9**
RTZ				SN	**S**	**22 58 37.0**	**-2.9**
SNGZ	**Shannon Statio**	**7.19**	**195**	PN	**P**	**22 57 15.5**	**+1.8**
KNZ	**Kokohu**	**7.35**	**193**	*e*PN	**P**	**22 57 17.4**	**+2.1**
RAHZ	**Arahi**	**7.38**	**197**	*e*PN	**P**	**22 57 17.5**	**+1.8**
RAHZ				SN	**S**	**22 58 44.6**	**-0.2**
MHGZ	**Mahia Peninsul**	**7.44**	**191**	*e*PN	**P**	**22 57 19.2**	**+2.9**
WHHZ	**Waihua**	**7.50**	**195**	PN	**P**	**22 57 18.8**	**+1.9**
NMHZ	**Naumai**	**7.62**	**198**	PN	**P**	**22 57 19.2**	**+0.9**
NMHZ				SN	**S**	**22 58 48.6**	**-1.0**
ARHZ	**Aropaoanui**	**7.73**	**196**	*e*PN	**P**	**22 57 21.8**	**+2.4**
ARHZ				SN	**S**	**22 58 51.9**	**+0.3**
BKZ	**Black Stump Fm**	**7.77**	**199**	PN	**P**	**22 57 21.7**	**+1.8**
MCHZ	**McNeill Hill**	**7.97**	**197**	PN	**P**	**22 57 22.1**	**+0.1**
KWHZ	**Kaweka Forest**	**8.03**	**199**	PN	**P**	**22 57 24.3**	**+1.6**
BHHZ	**Black Hill Sta**	**8.19**	**201**	PN	**P**	**22 57 24.9**	**+0.4**
WNVZ	**Wahianoa**	**8.19**	**203**	PN	**P**	**22 57 26.4**	**+1.8**
KRHZ	**Kereru**	**8.25**	**199**	*e*PN	**P**	**22 57 26.3**	**+1.3**
KAHZ	**Kahuranaki**	**8.26**	**196**	PN	**P**	**22 57 25.4**	**+0.2**
KAHZ				SN	**S**	**22 59 03.4**	**+1.1**
PXZ	**Pawanui**	**8.49**	**195**	PN	**P**	**22 57 27.0**	**-0.6**
PXZ				SN	**S**	**22 59 05.3**	**-1.3**
TSZ	**Takapari Road**	**8.75**	**200**	*e*PN	**P**	**22 57 30.5**	**0.0**
ANWZ	**Angora Road**	**8.99**	**196**	*e*PN	**P**	**22 57 32.5**	**-0.5**
ANWZ				SN	**S**	**22 59 16.0**	**-0.6**
BFZ	**Birch Farm**	**9.25**	**197**	PN	**P**	**22 57 36.9**	**+1.0**
BFZ				SN	**S**	**22 59 18.7**	**-3.2**
MRZ	**Mangatainoka R**	**9.41**	**200**	PN	**P**	**22 57 37.2**	**-0.4**
OGWZ	**Otaki Gorge**	**9.68**	**201**	PN	**P**	**22 57 41.1**	**+0.5**
THZ	**Tophouse**	**11.31**	**207**	*e*PN	**P**	**22 57 58.7**	**+0.4**
AFI	**Afiamalu**	**19.47**	**25**	P	**P**	**22 59 24.2**	**+0.3**
4.7nm,0.3s,baz=78,slow=14,SNR=3.5							
CTA	**Charters Tower**	**32.20**	**283**	P	**P**	**23 01 17.8**	**+1.2**
2.7nm,0.3s,baz=105,slow=11,SNR=5.4							
ASAR	**Alice Springs**	**41.15**	**270**	P	**P**	**23 02 31.1**	**+0.3**
1.8nm,0.6s,baz=104,slow=7.3,SNR=18							
WRA	**Warramunga Arr**	**42.27**	**275**	P	**P**	**23 02 39.6**	**-0.2**
2.0nm,0.3s,baz=112,slow=7.8,SNR=34							
JAY	**Jayapura**	**46.92**	**300**	P	**P**	**23 03 15.5**	**-0.4**
0.5nm,0.4s,baz=91,slow=23,SNR=4.6							
PETK	**Petropavlovsk-**	**86.77**	**347**	P	**P**	**23 07 22.6**	**+0.7**
3.7nm,0.7s,baz=113,slow=10,0,SNR=4.1							
MKAR	**Makanchi Array**	**117.24**	**310**	PKP	**PKPdf**	**23 13 19.5**	**-0.5**
0.3nm,0.6s,baz=64,slow=1.0,SNR=4.3							
KURBB	**Kurchatov Arra**	**120.70**	**313**	PKP	**PKPdf**	**23 13 26.3**	**-0.2**
0.8nm,0.6s,baz=104,slow=1.8,SNR=10.0							
BVAR	**Borovoye Array**	**126.09**	**315**	PKP	**PKPdf**	**23 13 37.1**	**+0.3**
0.8nm,0.5s,baz=93,slow=3.0,SNR=8.3							
ARU	**Arti**	**132.97**	**320**	PKP	**PKPdf**	**23 13 50.8**	**+1.1**
1.0nm,0.5s,baz=104,slow=19,SNR=3.4							
KBZ	**Khabaz**	**144.29**	**302**	PKP	**PKPdf**	**23 14 10.7**	**0.0**
4.0nm,0.9s,baz=105,slow=4.4,SNR=7.9							
FINES	**FINESS Array B**	**145.81**	**338**	PKPbc	**PKPbc**	**23 14 14.1**	**-0.1**
5.4nm,0.4s,baz=43,slow=4.6,SNR=66							
NB2	**NORSAR Subarra**	**149.85**	**349**	PKP	**PKPbc**	**23 14 25.0**	**+0.2**
comp=Z,0.7nm,0.5s,baz=17,slow=2.6							
NOA	**NORSAR Array B**	**149.85**	**349**	PKPbc	**PKPbc**	**23 14 24.4**	**-0.4**
comp=Z,1.3nm,0.6s,baz=17,slow=4.2,SNR=4.9							
AKASG	**Malin Array Be**	**151.23**	**319**	PKPbc	**PKPbc**	**23 14 27.4**	**-0.9**
comp=Z,6nm,0.9s,baz=64,slow=2.5,SNR=5.9							
BRTR	**Keskin Array B**	**151.55**	**296**	PKPbc	**PKPbc**	**23 14 29.6**	**0.0**
comp=Z,0.8nm,0.5s,baz=137,slow=3.9,SNR=8.4							
BRTR				PKPab	**PKPab**	**23 14 39.6**	**-0.6**
comp=Z,0.9nm,0.8s,baz=141,slow=4.2,SNR=6.8							

*ISCJB **23** 22:58:39.8±0.6, 39°.12N±0°.04×29°.03E±0°.04, h3km±7km, Error ellipse: s-maj=6.9km s-min=4.6km az=167.3*
*CSEM **23** 22:58:39.8±0.1, 39°.11N×29°.03E, h5km, MD2.6, Error ellipse: s-maj=1.5km s-min=1.2km az=151.0*
*ISK **23** 22:58:39.3, 39°.11N×29°.07E, h6km, MD2.7*
*DDA **23** 22:58:39.5, 39°.12N×29°.04E, h7km, Md2.6*
ISC 23 22:58:40.1±1.1,**39°.11N**±0°.03×**29°.04E**±0°.02,**h8**km±12km,
n26,σ0º**27**/36,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**255**	P	**Pg**	**22 58 45.2**	**-0.2**
DEMI				S	**Sg**	**22 58 49.0**	**+0.1**
DEMI	**Demirci**	**0.26**	**255**	*i* P	**Pg**	**22 58 45.1**	**-0.2**
DEMI				*i* S	**Sg**	**22 58 49.0**	**+0.1**
GDZ	**Gediz**	**0.34**	**94**	P	**Pg**	**22 58 46.9**	**0.0**
GDZ				S	**Sg**	**22 58 51.9**	**+0.3**
GDZ	**Gediz**	**0.34**	**94**	*i* P	**Pg**	**22 58 46.9**	**0.0**
GDZ				*i* S	**Sg**	**22 58 51.9**	**+0.3**
TVSB	**Tavsanli**	**0.47**	**44**	*e*PG	**Pg**	**22 58 48.8**	**-0.5**
TVSB				*e*SG	**Sg**	**22 58 55.5**	**0.0**
TVSB	**Tavsanli**	**0.47**	**44**	*e*Pg	**Pg**	**22 58 48.8**	**-0.5**
TVSB				*e*Sg	**Sg**	**22 58 55.5**	**0.0**
DURS	**Dursunbey**	**0.66**	**318**	P	**Pg**	**22 58 52.4**	**-0.4**
DURS				S	**Sg**	**22 59 01.8**	**+0.5**
DURS	**Dursunbey**	**0.66**	**318**	*i* P	**Pg**	**22 58 52.4**	**-0.4**
DURS				*i* S	**Sg**	**22 59 01.8**	**+0.5**
KULA	**Kula-Manisa**	**0.67**	**206**	*e*PG	**Pg**	**22 58 52.6**	**-0.3**
KULA	**Kula-Manisa**	**0.67**	**206**	*e*Pg	**Pg**	**22 58 52.6**	**-0.3**
ORLT	**Orhaneli**	**0.94**	**353**	*e*PG	**Pg**	**22 58 57.8**	**-0.3**
ORLT	**Orhaneli**	**0.94**	**353**	*e*Pg	**Pg**	**22 58 57.8**	**-0.3**
BALB	**Balikesir**	**1.04**	**301**	*e*PG	**Pg**	**22 59 00.0**	**-0.1**
BALB	**Balikesir**	**1.04**	**301**	*e*Pg	**Pg**	**22 59 00.0**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.26**	**355**	*e*PN	**Pn**	**22 59 04.0**	**0.0**
MDNY	**Mudanya-Bursa**	**1.26**	**355**	*e*Pn	**Pn**	**22 59 04.0**	**0.0**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*PN	**Pn**	**22 59 04.2**	**+0.1**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*Pn	**Pn**	**22 59 04.2**	**+0.1**
BORA	**Eskisehir**	**1.34**	**55**	P	**Pn**	**22 59 05.2**	**+0.1**
BORA				S	**Sg**	**22 59 23.2**	**+0.1**
BORA	**Eskisehir**	**1.34**	**55**	*i* P	**Pn**	**22 59 05.2**	**+0.1**
BORA				*i* S	**Sg**	**22 59 23.2**	**+0.1**
ARMT	**Armutlu**	**1.46**	**355**	*e*PN	**Pn**	**22 59 07.0**	**+0.3**
ARMT	**Armutlu**	**1.46**	**355**	*e*Pn	**Pn**	**22 59 07.0**	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**218**	*e*PN	**Pn**	**22 59 06.9**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**218**	*e*Pn	**Pn**	**22 59 06.9**	**-0.1**
GULT	**Gulveren**	**1.74**	**40**	*e*PN	**Pn**	**22 59 10.9**	**+0.2**
GULT	**Gulveren**	**1.74**	**40**	*e*Pn	**Pn**	**22 59 10.9**	**+0.2**

*SOME **23** 23:13:19.7, 42°.05N×82°.30E, h10km, MS3.3*
*IDC **23** 23:13:19.2±0.7, 41°.97N×82°.30E, h0km, mb4.0/13, mb1 4.0/21, mb1mx3.9/46, mbtmp3.9/21, ML3.5/8, MS2.8/2, Ms1 2.8/2, ms1mx2.5/37, Error ellipse: s-maj=14.2km s-min=12.0km az=48.0*
*BJI **23** 23:13:23.2, 41°.98N×82°.27E, h15km, mb3.8/4, ML4.0/11, Ms3.7/1*
*MOS **23** 23:13:24.6±1.3, 42°.10N×82°.30E, h51km, mb4.1/13, Error ellipse: s-maj=8.5km s-min=6.0km az=110.6*
*NNC **23** 23:13:24.2±2.8, 42°.12N×82°.21E, h0km±13km, mb4.4, mpv4.0, Error ellipse: s-maj=18.5km s-min=11.4km az=141.0*
*NEIC **23** 23:13:26.1±0.8, 42°.05N×82°.28E, h50km±6km, mb4.7/6, Error ellipse: s-maj=8.7km s-min=5.3km az=155.0*
ISC 23 23:13:20.6±0.5,**41°.94N**±0°.04×**82°.31E**±0°.03,**h13**km,**n121,**
σ1º**84**/123,**mb4.0**/20,**24C-13D,Southern Xinjiang**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHLS	**Shalkode**	**2.17**	**305**	⇑*i* P	**Pb**	**23 14 00.5**	**+0.7**
403nm,0.6s							
SHLS				⇓*i* S	**Sg**	**23 14 30.6**	**+0.3**
2μm,0.5s							
PDGK	**Podgornoye**	**2.50**	**305**	⇓Pn	**Pb**	**23 14 04.4**	**-1.0**
74nm,0.4s							
PDGK				⇑Lg	Lg	23 14 39.0	
2μm,0.8s							
PDGK	**Podgornoye**	**2.50**	**305**	*i* PN	**Pb**	**23 14 04.4**	**-1.0**
PDGK				pmax	pmax		
comp=Z,74nm,0.4s							
UZB	**Uzynbulak**	**2.71**	**298**	*e*P	**Pb**	**23 14 09.6**	**+0.6**
comp=Z,143nm,0.6s							
UZB				*e*S	**Sg**	**23 14 46.1**	**-1.6**
comp=Z,687nm,0.4s							
DJR	**Jarkent**	**3.02**	**323**	*e*P	**Pb**	**23 14 14.2**	**-0.1**
comp=Z,224nm,0.5s							
DJR				*e*S	**Sg**	**23 14 53.7**	**-3.9**
comp=Z,257nm,0.7s							
KPKS	**Kokpek**	**3.08**	**301**	*e*P	**Pb**	**23 14 14.9**	**-0.3**
comp=Z,256nm,0.3s							
KPKS				*e*S	**Sb**	**23 14 54.7**	**+2.0**
comp=Z,2μm,0.5s							
SATY	**Saty**	**3.10**	**293**	*e*P	**Pb**	**23 14 16.5**	**+0.9**
comp=Z,188nm,0.4s							
SATY				*e*S	**Sg**	**23 14 58.1**	**-1.9**
comp=Z,975nm,0.4s							
ZHN	**Zhinishke**	**3.11**	**295**	*e*P	**Pb**	**23 14 16.6**	**+0.7**
comp=Z,104nm,0.5s							
ZHN				*e*S	**Sg**	**23 14 58.2**	**-2.4**
comp=Z,969nm,0.3s							
KURS	**Kuram**	**3.42**	**298**	⇓*i* P	**Pb**	**23 14 21.9**	**+0.8**
comp=Z,88nm,0.6s							
KURS				⇑*e*S	**Sg**	**23 15 06.7**	**-3.7**
comp=Z,121nm,0.7s							
MNBS	**Baschi**	**3.58**	**308**	*e*P	**Pb**	**23 14 22.4**	**-1.4**
comp=Z,119nm,0.6s							
MNBS				*e*S	**Sb**	**23 15 08.5**	**+1.4**
comp=Z,638nm,0.5s							
KAPS	**Kapalarasan**	**3.97**	**328**	*e*P	Pb	23 14 27.1	-3.4
comp=Z,77nm,0.5s							
KAPS				*e*S	**Sb**	**23 15 16.5**	**-2.0**
comp=Z,153nm,0.5s							
ARXS	**Arharly**	**3.99**	**306**	*e*P	**Pb**	**23 14 28.5**	**-2.3**
comp=Z,92nm,0.6s							
ARXS				*e*S	**Sb**	**23 15 18.2**	**-0.8**
comp=Z,232nm,0.4s							
KOTS	**Kotyrbulak**	**4.05**	**290**	*e*P	**Pb**	**23 14 32.4**	**+0.5**
KOTS				*e*S	**Sb**	**23 15 25.7**	**+5.0**
MDOK	**Medeo**	**4.07**	**289**	*e*P	**Pb**	**23 14 32.4**	**+0.2**
comp=Z,73nm,0.5s							
MDOK				*e*S	**Sb**	**23 15 24.9**	**+3.4**
comp=Z,227nm,0.7s							
TNSS	**Tian-Shan**	**4.12**	**287**	*e*P	**Pb**	**23 14 33.2**	**+0.1**
comp=Z,84nm,0.8s							
TNSS				*e*S	**Sb**	**23 15 27.0**

ZSN	**Zaisan**	**5.71**	**14**	*e*P		Pg	23 15 04.4	-5.5
	comp=Z,23nm,0.8s							
ZSN				*e*S		**Sg**	**23 16 21.2**	**-2.7**
	comp=Z,191nm,1.1s							
FRU	**Bishkek**	**5.76**	**282**	*e*PN		Pb	23 14 56.0	-5.0
FRU				pmax		pmax		
	comp=Z,100nm,1.6s							
AAK	**Ala-Archa**	**5.84**	**279**	Pn		**Pn**	**23 14 49.1**	**+2.1**
	comp=Z,2.0nm,0.3s,baz=92,slow=9.5,SNR=9.5							
AAK				Lg		Lg	23 16 24.9	
	comp=Z,5.1nm,0.3s,baz=311,slow=19,SNR=7.3							
AAK	**Ala-Archa**	**5.84**	**279**	⇓Pn		Pn	23 14 50.5	+3.5
	comp=Z,2.2nm,0.3s							
AAK				⇓Pg		Pg	23 15 08.0	-4.3
	comp=Z,16nm,0.6s							
AAK				⇓Lg		Lg	23 16 25.6	
	comp=Z,101nm,0.8s							
AAK	**Ala-Archa**	**5.84**	**279**	*i* PN		Pn	23 14 51.2	+4.2
AAK				pmax		pmax		
	comp=Z,2.0nm,0.3s							
AAK	**Ala-Archa**	**5.84**	**279**	*e*Pn		**Pn**	**23 14 49.7**	**+2.8**
EKS2	**Erkin-Say**	**6.37**	**279**	*e*PN		Pn	23 14 58.4	+4.2
EKS2	**Erkin-Say**	**6.37**	**279**	*e*Pn		Pn	23 14 58.4	+4.2
MRKS	**Merke**	**6.78**	**280**	*e*P		Pb	23 15 22.7	+4.4
	comp=Z,12nm,0.6s							
MRKS				*e*S		**Sg**	**23 16 53.3**	**-4.7**
	comp=Z,25nm,0.5s							
MNAS	**Manas**	**7.30**	**278**	⇓Pn		Pn	23 15 10.6	+3.5
	comp=Z,3.8nm,0.5s							
MNAS				⇑Pg		Pb	23 15 33.3	+6.1
	comp=Z,7.7nm,0.7s							
MNAS				⇑Lg		Lg	23 17 12.7	
	comp=Z,31nm,1.1s							
MNAS	**Manas**	**7.30**	**278**	*i* P		Pn	23 15 10.5	+3.5
MNAS				pmax		pmax		
	comp=Z,4.0nm,0.5s							
KK31	**Karatay Array**	**8.79**	**282**	⇑Pn		Pn	23 15 33.5	+6.2
	comp=Z,1.3nm,0.7s,baz=95,slow=14,SNR=3.7							
KK31				⇑Pg		Pg	23 16 03.3	-5.5
	comp=Z,5.5nm,0.8s,baz=88,slow=15,SNR=4.5							
KK31				⇓Lg		Lg	23 18 01.9	
	comp=Z,7.1nm,0.5s,baz=93,slow=26,SNR=4.6							
KK31	**Karatay Array**	**8.79**	**282**	*i* P		Pn	23 15 33.5	+6.2
KK31				pmax		pmax		
	comp=Z,1.0nm,0.7s							
KKAR	**Karatay Array**	**8.79**	**282**	*e*P		Pn	23 15 30.5	+3.1
KKAR	**Karatay Array**	**8.79**	**282**	*e*Pn		Pn	23 15 30.5	+3.1
KURBB	**Kurchatov Arra**	**9.07**	**345**	Pn		**Pn**	**23 15 31.7**	**+0.6**
	comp=Z,0.2nm,0.3s,baz=172,slow=12,SNR=16							
KURBB				Sn		**Sn**	**23 17 12.4**	**-0.7**
	comp=Z,0.2nm,0.3s,baz=155,slow=24,SNR=3.4							
KURBB				Lg		Lg	23 18 06.2	
	comp=Z,0.4nm,0.3s,baz=178,slow=29,SNR=5.0							
KURBB	**Kurchatov Arra**	**9.07**	**345**	⇓Pn		**Pn**	**23 15 32.2**	**+1.1**
	comp=Z,19nm,0.7s							
KURBB				⇓Lg		Lg	23 18 11.8	
	comp=Z,95nm,0.8s							
KURK	**Kurchatov**	**9.14**	**345**	*ce*P		**Pn**	**23 15 32.5**	**+0.4**
KURK				pmax		pmax		
	comp=Z,4.0nm,0.8s							
KURK	**Kurchatov**	**9.14**	**345**	*e*Pn		**Pn**	**23 15 33.1**	**+1.0**
KURK				*e*Sn		**Sn**	**23 17 12.4**	**-2.4**
OTUK	**Ortayu**	**9.46**	**315**	⇑Pn		**Pn**	**23 15 38.4**	**+2.0**
	comp=Z,2.6nm,0.5s							
OTUK				⇑Sn		**Sn**	**23 17 24.3**	**+1.8**
	comp=Z,4.1nm,0.4s							
OTUK				⇑Lg		Lg	23 18 17.6	
	comp=Z,32nm,1.0s							
THN	**Thein Dam**	**10.84**	**211**	*e*P		**Pn**	**23 15 54.4**	**-1.0**
THN				*e*S		**Sn**	**23 17 54.0**	**-2.5**
CEP	**Cherat**	**11.53**	**229**	P		**Pn**	**23 16 07.1**	**+2.1**
ZAA0	**Zalesovo Array**	**12.14**	**7**	*e*Pn		**Pn**	**23 16 13.1**	**+0.1**
ZALV	**Zalesovo Beam**	**12.14**	**7**	Pn		**Pn**	**23 16 13.1**	**0.0**
	comp=Z,0.6nm,0.3s,baz=194,slow=12,SNR=9.4							
ZALV				Sn		**Sn**	**23 18 26.2**	**-1.9**
	comp=Z,0.4nm,0.3s,baz=196,slow=21,SNR=3.5							
ZALV				LR		LR	23 21 14.7	
	comp=Z,31nm,21.7s,baz=254,slow=39							
ZAA1	**Zalesovo Array**	**12.14**	**7**	*e*Pn		**Pn**	**23 16 13.1**	**0.0**
ZAA1				*e*Sn		**Sn**	**23 18 26.2**	**-2.0**
KBL	**Kabul**	**12.77**	**239**	*e*P		**Pn**	**23 16 24.5**	**+2.5**
KBL	**Kabul**	**12.77**	**239**	*e*Pn		**Pn**	**23 16 24.5**	**+2.5**
BVA0	**Borovoye Array**	**13.69**	**328**	⇑Pn		**P**	**23 16 43.2**	**+0.2**
	comp=Z,5.6nm,0.7s,baz=133,slow=20,SNR=28							
BVA0				⇑Lg		Lg	23 20 31.2	
	comp=Z,43nm,1.4s							
BVAR	**Borovoye Array**	**13.69**	**328**	Pn		**Pn**	**23 16 33.5**	**-0.7**
	comp=Z,0.1nm,0.3s,baz=129,slow=11,SNR=2.8							
BVAR				Lg		Lg	23 20 32.5	
	comp=Z,0.3nm,0.3s,baz=144,slow=26,SNR=4.1							
BRVK	**Borovoye**	**13.76**	**328**	⇑Pn		**Pn**	**23 16 37.1**	**+1.9**
	comp=Z,11nm,0.5s							
BRVK	**Borovoye**	**13.76**	**328**	⇓*i*P		**Pn**	**23 16 37.0**	**+1.9**
BRVK				pmax		pmax		
	comp=Z,11nm,0.5s							
BRVK				pmax		pmax		
	comp=Z,4.0nm,1.2s							
BRVK	**Borovoye**	**13.76**	**328**	*e*Pn		Pn	23 16 37.5	+2.3
ZRNK	**Zerenda**	**14.20**	**325**	⇓Pn		**Pn**	**23 16 42.1**	**+0.8**
	comp=Z,5.7nm,0.6s							
ZRNK	**Zerenda**	**14.20**	**325**	*i* P		**Pn**	**23 16 42.0**	**+0.8**
ZRNK				pmax		pmax		
	comp=Z,6.0nm,0.6s							
ZRNK	**Zerenda**	**14.20**	**325**	*e*Pn		**Pn**	**23 16 43.0**	**+1.7**
ZAK	**Zakamensk**	**16.76**	**53**	*e*P		**Pn**	**23 17 13.7**	**-1.4**
ZAK				pmax		pmax		
	comp=Z,3.0nm,1.6s							
AB31	**Akbulak array**	**17.24**	**303**	⇑Pn		**Pn**	**23 17 19.5**	**-1.5**
	comp=Z,1.0nm,0.5s,baz=100,slow=11,SNR=18							
AB31	**Akbulak array**	**17.24**	**303**	*i* P		**Pn**	**23 17 19.4**	**-1.5**
AB31				pmax		pmax		
	comp=Z,1.0nm,0.5s							
ABKAR	**Akbulak array**	**17.24**	**303**	*e*Pn		**Pn**	**23 17 20.6**	**-0.3**
TLY	**Talaya**	**17.50**	**49**	*e*P		**P**	**23 17 24.9**	**-0.4**
TLY				pmax		pmax		
	comp=Z,3.0nm,0.7s							
TLY	**Talaya**	**17.50**	**49**	*e*Pn		**P**	**23 17 24.9**	**-0.4**
	comp=Z,2.7nm,0.7s							
SONA0	**Songino Array**	**18.02**	**63**	*e*P		**P**	**23 17 32.4**	**+1.2**
	comp=Z,4.1nm,1.2s							
SONM	**Songino Array**	**18.02**	**63**	P		**P**	**23 17 32.4**	**+1.2**
	comp=Z,0.3nm,0.3s,baz=254,slow=11,SNR=4.9							
AKTO	**Aktyubinsk**	**18.78**	**305**	P		**Pn**	**23 17 40.0**	**+0.2**
	comp=Z,0.2nm,0.3s,baz=106,slow=14,SNR=6.3							
GEYT	**Alibeck**	**18.96**	**266**	P		**Pn**	**23 17 42.2**	**0.0**
	comp=Z,0.1nm,0.3s,baz=69,slow=8.1,SNR=3.6							
SVE	**Sverdlovsk**	**20.39**	**324**	*e*P		Pn	23 17 57.9	-1.1
SVE				pmax		pmax		
	comp=Z,8.0nm,0.9s							
ARU	**Arti**	**21.09**	**322**	P		**P**	**23 18 05.1**	**+0.6**
	comp=Z,16nm,0.5s,baz=110,slow=6.4,SNR=48							
ARU	**Arti**	**21.09**	**322**	*c i* P		**P**	**23 18 05.3**	**+0.8**
ARU							23 18 23.8	
ARU				S		**S**	**23 21 57.1**	**-1.6**
ARU				SS		**SnSn**	**23 22 20.8**	**+0.8**
ARU				pmax		pmax		
	comp=Z,17nm,0.6s							
ARU	**Arti**	**21.09**	**322**	*e*P		**P**	**23 18 05.1**	**+0.6**
	comp=Z,20nm,0.6s							
BOD	**Bodaibo**	**25.55**	**41**	*e*P		**P**	**23 18 49.2**	**+0.4**
BOD				pmax		pmax		
	comp=Z,3.0nm,1.4s							
NRIK	**Noril'sk**	**27.61**	**4**	LR		LR	23 29 40.7	
	comp=Z,34nm,18.2s,baz=110,slow=36							
KLR	**Kul'dur**	**34.83**	**61**	P		**P**	**23 20 12.0**	**+1.0**
	comp=Z,1.0nm,0.5s,baz=260,slow=11,SNR=4.2							
BR101	**Keskin Array S**	**36.50**	**283**	*e*P		**P**	**23 20 27.1**	**+1.4**
BRTR	**Keskin Array B**	**36.50**	**283**	P		**P**	**23 20 27.1**	**+1.4**
	comp=Z,0.7nm,0.5s,baz=103,slow=7.0,SNR=7.1							
BRTR	**Keskin Array B**	**36.50**	**283**	*ce*P		P	23 20 28.3	+2.6
BRTR				pmax		pmax		
	comp=Z,1.0nm,0.5s							
BR231	**Keskin MP Arra**	**37.09**	**284**	*e*P		**P**	**23 20 28.5**	**-2.1**
TIXI	**Tiksi**	**37.44**	**22**	*ce*P		**P**	**23 20 33.6**	**+0.6**
TIXI				pmax		pmax		
	comp=Z,1.0nm,0.7s							
FIA0	**FINESS Array S**	**38.45**	**320**	*e*P		**P**	**23 20 42.4**	**+0.7**
FIA0	**FINESS Array S**	**38.45**	**320**	*e*P		**P**	**23 20 42.4**	**+0.7**
FINES	**FINESS Array B**	**38.45**	**320**	P		**P**	**23 20 42.4**	**+0.8**
	comp=Z,0.7nm,0.6s,baz=69,slow=6.3,SNR=4.3							
ARA0	**ARCESS Array S**	**39.92**	**333**	*e*P		**P**	**23 20 54.1**	**+0.2**
ARCES	**ARCESS Array B**	**39.92**	**333**	P		**P**	**23 20 54.1**	**+0.2**
	comp=Z,1.7nm,0.5s,baz=90,slow=9.7,SNR=14							
NB200	**NORSAR Array S**	**45.63**	**320**	*e*P		**P**	**23 21 40.2**	**-0.2**
NOA	**NORSAR Array B**	**45.63**	**320**	P		**P**	**23 21 40.2**	**-0.2**
	comp=Z,0.7nm,0.5s,baz=82,slow=8.2,SNR=2.5							
CLL	**Collm**	**46.86**	**306**	*e*(P)		**P**	**23 21 49.0**	**-1.1**
CLL	**Collm**	**46.86**	**306**	*e*P		**P**	**23 21 49.0**	**-1.1**
CEL	**Celeste**	**49.79**	**289**	*e*P		**P**	**23 22 13.1**	**+0.1**
	comp=Z,50nm,0.4s							
ESDC	**Sonseca Array**	**62.56**	**300**	P		**P**	**23 23 44.3**	**+0.1**
	comp=Z,0.6nm,0.5s,baz=59,slow=6.3,SNR=5.8							
INK	**Inuvik**	**66.85**	**14**	P		**P**	**23 24 11.6**	**0.0**
	comp=Z,3.0nm,0.7s,baz=313,slow=4.3,SNR=3.0							
INK	**Inuvik**	**66.85**	**14**	*e*P		**P**	**23 24 11.6**	**0.0**
	comp=Z,7.6nm,1.2s							
ILAR	**Eielson Array**	**66.89**	**21**	P		**P**	**23 24 11.6**	**-0.3**
	comp=Z,0.7nm,0.6s,baz=309,slow=5.1,SNR=8.5							
ILB	**Eielson Array**	**66.89**	**21**	*e*P		**P**	**23 24 11.6**	**-0.3**
SCM	**Sheep Creek Mo**	**69.10**	**23**	*e*P		**P**	**23 24 27.5**	**+1.5**
SCM				pmax		pmax		
	comp=Z,14nm,0.6s							
SCM	**Sheep Creek Mo**	**69.10**	**23**	*e*P		**P**	**23 24 27.5**	**+1.5**
	comp=Z,14nm,0.6s							
TOA1	**Torodi Ar. Sit**	**74.39**	**274**	*e*P		**P**	**23 24 58.9**	**+0.5**
	comp=Z,15nm,1.8s							
TOA0	**Torodi Ar. Sit**	**74.39**	**274**	*e*P		**P**	**23 24 58.8**	**+0.4**
TORD	**Torodi Ar. Bea**	**74.39**	**274**	P		**P**	**23 24 58.9**	**+0.5**
	comp=Z,1.8nm,0.5s,baz=45,slow=5.0,SNR=53							
YKA	**Yellowknife Ar**	**75.03**	**8**	P		**P**	**23 25 01.5**	**+0.2**
	comp=Z,1.2nm,0.8s,baz=342,slow=5.7,SNR=16							
YKB5	**Yellowknife Ar**	**75.03**	**8**	*e*P		**P**	**23 25 01.5**	**+0.2**
WR1	**Warramunga Arr**	**78.11**	**131**	*e*P		**P**	**23 25 20.4**	**+1.1**
	comp=Z,28nm,1.5s							
WRA	**Warramunga Arr**	**78.11**	**131**	P		**P**	**23 25 20.4**	**+1.1**
	comp=Z,0.6nm,0.7s,baz=334,slow=5.6,SNR=19							
AS31	**Alice Springs**	**80.84**	**133**	*e*P		**P**	**23 25 35.4**	**+1.2**
	comp=Z,3.6nm,1.5s							
ASAR	**Alice Springs**	**80.84**	**133**	P		**P**	**23 25 35.4**	**+1.2**
	comp=Z,0.4nm,0.5s,baz=328,slow=5.7,SNR=4.1							
FFC	**Flin Flon**	**83.64**	**2**	*i* P		**P**	**23 25 49.2**	**+0.7**

IDC 23 23:16:07.2±4.5, 21°.75S×179°.17W, h609km±56km, mb3.1/9, mb1 3.4/10, mb1mx3.2/27, mbtmp4.1/10, Error ellipse: s-maj=38.7km s-min=22.9km az=177.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**16.77**	**190**	P	P	23 19 29.9	-1.0
	1.2nm,0.3s,baz=20,slow=6.1,SNR=6.4						
STKA	**Stephens Creek**	**36.27**	**245**	P	P	23 22 21.7	+0.7
	1.4nm,0.3s,baz=85,slow=11,SNR=7.2						
ASAR	**Alice Springs**	**43.18**	**258**	P	P	23 23 16.4	+0.1
	4.4nm,0.6s,baz=92,slow=7.8,SNR=46						
WRA	**Warramunga Arr**	**43.36**	**264**	P	P	23 23 16.9	-0.8
	2.2nm,0.3s,baz=97,slow=7.8,SNR=14						
JAY	**Jayapura**	**43.43**	**291**	P	P	23 23 17.7	-0.6
	0.4nm,0.5s,baz=92,slow=22,SNR=4.6						
KSRS	**Korea Array**	**77.11**	**319**	P	P	23 26 59.2	0.0
	0.4nm,0.3s,baz=129,slow=2.8,SNR=2.8						
NVAR	**Mina Array Bea**	**82.68**	**44**	P	P	23 27 29.1	+0.6
	0.4nm,0.5s,baz=249,slow=5.4,SNR=3.3						
TXAR	**Lajitas Array**	**88.64**	**58**	P	P	23 27 57.5	+0.3
	0.8nm,0.9s,baz=207,slow=5.2,SNR=7.2						
CMAR	**Chiang Mai Arr**	**89.51**	**290**	P	P	23 28 03.1	+1.9
	0.9nm,0.4s,baz=142,slow=3.1,SNR=7.8						
PDAR	**Pinedale Array**	**90.61**	**44**	P	P	23 28 05.5	-0.6
	0.1nm,0.4s,baz=221,slow=3.4,SNR=3.5						
ARCES	**ARCESS Array B**	**129.94**	**349**	PKP	PKPdf	23 34 07.3	-0.6
	2.5nm,1.0s,baz=74,slow=14,SNR=5.8						
AKASG	**Malin Array Be**	**143.55**	**329**	PKP	PKPab	23 34 31.2	-1.2
	3.3nm,0.6s,baz=41,slow=4.6,SNR=21						
BRTR	**Keskin Array B**	**146.84**	**310**	PKPbc	PKPbc	23 34 42.0	-0.6
	1.1nm,0.6s,baz=140,slow=4.7,SNR=10						
GERES	**GERESS Array B**	**151.08**	**342**	PKPbc	PKPbc	23 34 51.9	-0.6
	1.3nm,0.8s,baz=54,slow=3.4,SNR=8.6						

*ISCJB **23** 23:25:27.4±0.6, 39°.13N±0°.04×28°.97E±0°.04, h3km±6km, Error ellipse: s-maj=7.1km s-min=4.6km az=177.8*
*CSEM **23** 23:25:27.5±0.1, 39°.11N×28°.98E, h5km, MD2.7, Error ellipse: s-maj=2.6km s-min=2.0km az=175.0*
*DDA **23** 23:25:27.1, 39°.13N×28°.97E, h7km, Md2.7*
*ISK **23** 23:25:27.1, 39°.10N×29°.03E, h9km, MD2.8*
ISC 23 23:25:27.7±1.0, 39°.12N±0°.03×28°.98E±0°.02, h7km±10km, n32, σ0°.18/44, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.22**	**250**	P	**Pg**	**23 25 32.0**	**-0.1**
DEMI				S	**Sg**	**23 25 35.3**	**+0.2**
DEMI	**Demirci**	**0.22**	**250**	*i* P	**Pg**	**23 25 32.0**	**-0.1**
DEMI				*i* S	**Sg**	**23 25 35.3**	**+0.2**
GDZ	**Gediz**	**0.39**	**94**	P	**Pg**	**23 25 35.1**	**-0.2**
GDZ				S	**Sg**	**23 25 40.8**	**+0.3**
GDZ	**Gediz**	**0.39**	**94**	*i* P	**Pg**	**23 25 35.1**	**-0.2**
GDZ				*i* S	**Sg**	**23 25 40.8**	**+0.3**
TVSB	**Tavsanli**	**0.50**	**48**	*e*PG	**Pg**	**23 25 37.2**	**-0.1**
TVSB				*e*SG	**Sg**	**23 25 44.0**	**+0.1**
TVSB	**Tavsanli**	**0.50**	**48**	*e*Pg	**Pg**	**23 25 37.2**	**-0.1**
TVSB				*e*Sg	**Sg**	**23 25 44.0**	**+0.1**
DURS	**Dursunbey**	**0.62**	**321**	P	**Pg**	**23 25 39.3**	**-0.4**
DURS				S	**Sg**	**23 25 47.7**	**-0.1**
DURS	**Dursunbey**	**0.62**	**321**	*i* P	**Pg**	**23 25 39.3**	**-0.4**
DURS				*i* S	**Sg**	**23 25 47.7**	**-0.1**
KULA	**Kula-Manisa**	**0.65**	**203**	*e*PG	**Pg**	**23 25 40.0**	**-0.2**
KULA	**Kula-Manisa**	**0.65**	**203**	*e*Pg	**Pg**	**23 25 40.1**	**-0.2**
ORLT	**Orhaneli**	**0.93**	**356**	*e*PG	**Pb**	**23 25 46.1**	**+0.1**
ORLT	**Orhaneli**	**0.93**	**356**	*e*Pg	**Pb**	**23 25 46.2**	**+0.1**
BALB	**Balikesir**	**1.00**	**302**	*e*PG	**Pb**	**23 25 47.3**	**0.0**
BALB	**Balikesir**	**1.00**	**302**	*e*Pg	**Pb**	**23 25 47.3**	**0.0**
KCTX	**Karacabey (Bur**	**1.24**	**337**	*e*PN	**Pg**	**23 25 51.6**	**+0.1**
KCTX	**Karacabey (Bur**	**1.24**	**337**	*e*Pn	**Pg**	**23 25 51.6**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.25**	**357**	*e*PN	**Pn**	**23 25 51.5**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.25**	**357**	*e*Pn	**Pn**	**23 25 51.5**	**-0.1**
CAVI	**Cavuskoy**	**1.27**	**31**	*e*PN	**Pn**	**23 25 51.6**	**-0.2**
CAVI	**Cavuskoy**	**1.27**	**31**	*e*Pn	**Pn**	**23 25 51.6**	**-0.2**
BORA	**Eskisehir**	**1.37**	**56**	P	**Pn**	**23 25 53.3**	**0.0**
BORA				S	**Sn**	**23 26 11.7**	**0.0**
BORA	**Eskisehir**	**1.37**	**56**	*i* P	**Pn**	**23 25 53.3**	**0.0**
BORA				*i* S	**Sn**	**23 26 11.7**	**0.0**
ADVT	**Abdulvahap**	**1.44**	**24**	*e*PN	**Pn**	**23 25 53.8**	**-0.3**
ADVT	**Abdulvahap**	**1.44**	**24**	*e*Pn	**Pn**	**23 25 53.8**	**-0.3**
ARMT	**Armutlu**	**1.45**	**356**	*e*PN	**Pn**	**23 25 54.4**	**+0.1**
ARMT	**Armutlu**	**1.45**	**356**	*e*Pn	**Pn**	**23 25 54.4**	**+0.1**
ESKT	**Eskisehir**	**1.50**	**74**	*i* P	**Pb**	**23 25 55.9**	**-0.1**
ESKT				*i* S	**Sb**	**23 26 15.4**	**+0.1**
SEYT	**Eskypehyr**	**1.50**	**74**	P	**Pb**	**23 25 55.9**	**-0.1**
SEYT				S	**Sb**	**23 26 15.4**	**+0.1**
GULT	**Gulveren**	**1.77**	**42**	*e*PN	**Pn**	**23 25 58.6**	**-0.1**
GULT	**Gulveren**	**1.77**	**42**	*e*Pn	**Pn**	**23 25 58.6**	**-0.1**
SILT	**Sile**	**2.09**	**14**	*e*PN	**Pn**	**23 26 03.3**	**+0.2**
SILT	**Sile**	**2.09**	**14**	*e*Pn	**Pn**	**23 26 03.3**	**+0.2**

*ISCJB **23** 23:53:17.4±0.8, 25°.28N±0°.09×142°.8E±0°.2, h38km, mb3.8/13, Error ellipse: s-maj=28.4km s-min=11.6km az=169.0*
*IDC **23** 23:53:21.6±3.2, 25°.40N×142°.75E, h55km±23km, mb3.5/14, mb1 3.6/14, mb1mx3.4/62, mbtmp3.8/14, Error ellipse: s-maj=29.8km s-min=20.7km az=81.0*
ISC 23 23:53:19.6±1.0, 25°.4N±0°.1×142°.8E±0°.2, h38km, n15, σ0°.96/16, mb3.8/13, Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCJ	**Chichijima**	**1.82**	**343**	P	**Pn**	**23 53 48.3**	**-0.1**
	41nm,0.3s,baz=354,slow=5.1,SNR=98						
JCJ				S	**Sn**	**23 54 11.8**	**+1.6**
	64nm,0.3s,baz=128,slow=20,SNR=17						
USRK	**Ussuriysk Ar.**	**20.76**	**338**	P	**P**	**23 57 57.8**	**+0.7**
	1.4nm,0.8s,baz=148,slow=9.8,SNR=2.6						
KLR	**Kul'dur**	**25.35**	**343**	P	**P**	**23 58 42.9**	**0.0**
	2.5nm,0.8s,baz=141,slow=7.4,SNR=9.8						
SONM	**Songino Array**	**36.35**	**318**	P	**P**	**00 00 18.1**	**-1.9**
	0.2nm,0.5s,baz=122,slow=7.8,SNR=2.7						
WRA	**Warramunga Arr**	**45.76**	**191**	P	**P**	**00 01 38.5**	**+1.0**
	0.9nm,0.6s,baz=10,slow=9.1,SNR=2.5						
ZALV	**Zalesovo Beam**	**51.16**	**320**	P	**P**	**00 02 17.4**	**-1.3**
	0.3nm,0.3s,baz=171,slow=38,SNR=3.4						
MKAR	**Makanchi Array**	**52.01**	**311**	P	**P**	**00 02 24.7**	**-0.5**
	0.2nm,0.4s,baz=84,slow=11,SNR=5.5						
KURBB	**Kurchatov Arra**	**54.65**	**315**	P	**P**	**00 02 43.8**	**-0.7**
	1.0nm,0.5s,baz=91,slow=7.9,SNR=21						
ILAR	**Eielson Array**	**58.99**	**28**	P	**P**	**00 03 14.8**	**-0.3**
	0.4nm,0.7s,baz=254,slow=5.5,SNR=3.3						
BVAR	**Borovoye Array**	**59.69**	**318**	P	**P**	**00 03 20.6**	**+0.4**
	1.4nm,0.4s,baz=102,slow=6.6,SNR=10.0						
AKTO	**Aktyubinsk**	**67.66**	**316**	P	**P**	**00 04 13.2**	**+0.5**
	1.0nm,0.7s,baz=83,slow=8.1,SNR=4.0						
YKA	**Yellowknife Ar**	**73.42**	**28**	P	**P**	**00 04 47.3**	**-0.3**
	0.4nm,0.9s,baz=295,slow=5.9,SNR=4.2						
KBZ	**Khabaz**	**79.59**	**313**	P	**P**	**00 05 23.7**	**+0.9**
	0.8nm,0.4s,baz=216,slow=1.1,SNR=3.7						
FINES	**FINESS Array B**	**79.75**	**334**	P	**P**	**00 05 23.4**	**+0.1**
	1.8nm,0.8s,baz=158,slow=31,SNR=5.6						
AKASG	**Malin Array Be**	**84.34**	**324**	P	**P**	**00 05 47.5**	**-0.1**
	0.2nm,0.3s,baz=51,slow=3.0,SNR=3.3						

IDC 23 23:53:55.8±2.9, 7°.02S×129°.62E, h92km±40km, mb3.3/1, mb1 3.8/5, mb1mx3.3/52, mbtmp4.0/5, MS3.2/1, Ms1 3.2/1, ms1mx2.3/12, Error ellipse: s-maj=64.8km s-min=23.7km az=92.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SIJI	**Sorong**	**6.32**	**15**	P	Pn	23 55 26.0	-0.6
	15nm,0.3s,baz=90,slow=1.0,SNR=2.0						
SIJI				S	Sn	23 56 30.0	-7.4
	12nm,0.3s,baz=274,slow=14,SNR=2.6						
FITZ	**Fitzroy Crossi**	**11.68**	**199**	P	Pn	23 56 41.3	+1.8
	0.8nm,0.3s,baz=27,slow=10.0,SNR=32						
WRA	**Warramunga Arr**	**13.64**	**161**	P	Pn	23 57 03.8	-1.7
	0.8nm,0.3s,baz=337,slow=13,SNR=5.2						
ASAR	**Alice Springs**	**17.06**	**166**	P	Pn	23 57 48.3	-0.5
	0.3nm,0.3s,baz=342,slow=12,SNR=15						
USRK	**Ussuriysk Ar.**	**51.02**	**2**	LR	LR	00 24 12.5	
	comp=Z,23nm,20.8s,baz=2.9,slow=36						
MKAR	**Makanchi Array**	**68.03**	**327**	P	P	00 04 45.6	+0.1
	0.3nm,0.4s,baz=116,slow=7.7,SNR=5.0						

*ISCJB **23** 23:54:54.6±0.5, 39°.10N±0°.03×27°.14E±0°.02, h9km±4km, Error ellipse: s-maj=4.4km s-min=3.0km az=14.6*
*ISK **23** 23:54:54.0, 39°.07N×27°.17E, h8km, MD2.7*
*DDA **23** 23:54:54.4, 39°.12N×27°.16E, h14km, Ml2.8*
*ATH **23** 23:54:54.5, 39°.05N×27°.09E, h28km±1km, ML2.0/6, Error ellipse: s-maj=3.1km s-min=1.2km az=263.0*
*CSEM **23** 23:54:54.7±0.2, 39°.07N×27°.15E, h10km, MD2.7, Error ellipse: s-maj=4.7km s-min=3.2km az=10.0*
ISC 23 23:54:54.1±0.9, 39°.06N±0°.02×27°.16E±0°.02, h14km±7km, n46, σ0°.63/73, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DKL	**Dikili**	**0.20**	**273**	*e*PG	**Pb**	**23 54 59.0**	**-0.5**
DKL				*e*SG	**Sg**	**23 55 02.0**	**+0.5**
DKL	**Dikili**	**0.20**	**273**	*e*Pg	**Pb**	**23 54 59.0**	**-0.5**
DKL				*e*Sg	**Sg**	**23 55 02.1**	**+0.5**
AYVA	**Ayvalik**	**0.44**	**304**	P	**Pb**	**23 55 03.0**	**-0.6**
AYVA				S	**Sb**	**23 55 09.4**	**-0.7**
AYVA	**Ayvalik**	**0.44**	**304**	*i* P	**Pb**	**23 55 03.0**	**-0.6**
AYVA				*i* S	**Sb**	**23 55

Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.47**	**221**	P	**Pb**	**23 56 48.6**	**-0.1**
CHOJ				S	**Sg**	**23 56 54.9**	**+0.3**
JHO	**Hitachi**	**0.78**	**316**	P	**Pb**	**23 56 54.1**	**+0.1**
JHO				S	**Sn**	**23 57 05.6**	**-0.8**
JYT	**Yasato**	**0.86**	**282**	P	**Pb**	**23 56 55.0**	**-0.4**
JYT				S	**Sg**	**23 57 07.4**	**+0.4**
JFK	**Kawauchi**	**1.34**	**348**	P	**Pn**	**23 57 02.1**	**-0.9**
JAG	**Ashikaga**	**1.49**	**285**	P	**Pn**	**23 57 04.1**	**-0.8**
JAG				S	**Sn**	**23 57 22.6**	**-1.5**
MJAR	**Matsushiro Arr**	**2.50**	**282**	Pn	**Pn**	**23 57 19.0**	**+0.2**
	17nm,0.3s,baz=91,slow=9.2,SNR=74						
MJAR				Sn	**Sb**	**23 57 53.4**	**-0.4**
	22nm,0.3s,baz=95,slow=29,SNR=10						
MAT	**Matsushiro**	**2.50**	**282**	P	**Pn**	**23 57 19.3**	**+0.5**
MAT				S	**Sn**	**23 57 49.1**	**+0.2**
JCJ	**Chichijima**	**8.97**	**175**	Pn	**Pn**	**23 58 46.5**	**-1.2**
	3.0nm,0.3s,baz=162,slow=20,SNR=5.9						
JCJ				Sn	Sn	00 00 19.5	-8.9
	1.6nm,0.3s,baz=300,slow=20,SNR=2.8						
ZALV	**Zalesovo Beam**	**42.48**	**313**	P	**P**	**00 04 34.3**	**+1.4**
	0.8nm,0.7s,baz=78,slow=8.5,SNR=3.9						
KURBB	**Kurchatov Arra**	**46.50**	**309**	P	**P**	**00 05 05.6**	**+0.5**
	0.7nm,0.4s,baz=80,slow=7.6,SNR=7.7						
BVAR	**Borovoye Array**	**51.13**	**313**	P	**P**	**00 05 42.5**	**+1.8**
	0.5nm,0.6s,baz=84,slow=5.7,SNR=2.9						
WRA	**Warramunga Arr**	**56.07**	**188**	P	**P**	**00 06 16.8**	**-0.4**
	0.9nm,0.8s,baz=3.5,slow=7.4,SNR=3.6						
ASAR	**Alice Springs**	**59.80**	**188**	P	**P**	**00 06 44.5**	**+1.2**
	0.3nm,0.7s,baz=12,slow=9.5,SNR=3.3						

*ISN **24** 00:01:32.1±0.8, 31°.24N×48°.29E, h0km±5km, ML3.9*
*ISCJB **24** 00:01:35.1±0.4, 31°.70N±0°.04×48°.22E±0°.03, h10km, mb3.7/16, Error ellipse: s-maj=6.1km s-min=3.8km az=167.3*
*CSEM **24** 00:01:36.2±0.3, 31°.72N×48°.20E, h2km, ML3.7, Error ellipse: s-maj=9.9km s-min=6.3km az=175.0*
*THR **24** 00:01:37.3±0.6, 31°.72N×48°.41E, h14km±8km, ML3.7*
*TEH **24** 00:01:39.2, 31°.83N×48°.26E, h10km, ML3.9*
*IDC **24** 00:01:41.5±2.6, 31°.76N×48°.26E, h52km±24km, mb3.5/17, mb1 3.6/23, mb1mx3.5/45, mbtmp3.8/23, ML3.3/6, MS2.7/2, Ms1 2.7/2, ms1mx2.3/29, Error ellipse: s-maj=23.5km s-min=12.4km az=164.0*

ISC 24 00:01:36.1±0.5, **31°.74N**±0°.05×**48°.31E**±0°.04, **h10**km, **n80**, σ2**09**/87, **mb3.9**/16, **8C-12D, Western Iran**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHGR	**Shooshtar-Gavs**	**0.55**	**49**	*e*Pg	**Pg**	**00 01 47.1**	**+0.2**
SHGR				AML	AML	00 02 02.9	
	comp=E,13μm,0.7s						
SHGR				AML	AML	00 02 07.3	
	comp=N,11μm,0.5s						
SHGR	**Shooshtar-Gavs**	**0.55**	**49**	*e*Pg	**Pg**	**00 01 47.1**	**+0.2**
IKMR	**Kamar-syah**	**1.77**	**2**	*e*Sg	**Sn**	**00 02 31.6**	**+2.2**
IKMR				*e*Pn	**Pn**	**00 02 08.3**	**+1.5**
IKMR				*e*AMB	AMB	00 02 42.6	
	comp=Z,99nm,0.5s						
IKFM	**Kafar-mosalman**	**1.82**	**348**	*e*Sg	**Sn**	**00 02 33.3**	**+2.7**
IKFM				*e*Pn	**Pn**	**00 02 09.0**	**+1.5**
IKFM				*e*AMB	AMB	00 02 50.6	
	comp=Z,99nm,0.6s						
NSR	**Nassriya**	**2.00**	**249**	*e*Pg	**Pn**	**00 02 11.0**	**+1.1**
	SNR=9.0						
NSR				*e*Sg	**Sn**	**00 02 39.0**	**+4.0**
	SNR=9.0						
IPIR	**Pirpir**	**2.38**	**66**	*e*Pn	**Pb**	**00 02 18.7**	**-0.6**
IPIR				*e*AMB	AMB	00 02 58.9	
	comp=Z,6μm,0.3s						
IPIR	**Pirpir**	**2.38**	**66**	*e*Pn	**Pb**	**00 02 18.7**	**-0.6**
KHMZ	**Khomeyn**	**2.43**	**34**	*e*Pn	**Pn**	**00 02 18.4**	**+2.4**
KHMZ				*e*Sg	**Sg**	**00 02 52.8**	**-1.3**
KHMZ				AML	AML	00 02 59.6	
	comp=E,263nm,0.6s						
KHMZ				AML	AML	00 03 00.6	
	comp=N,281nm,0.5s						
KHMZ	**Khomeyn**	**2.43**	**34**	*e*Pn	**Pn**	**00 02 18.5**	**+2.4**
IGHG	**Ghaleghazi**	**2.97**	**331**	*e*Pn	**Pn**	**00 02 25.1**	**+1.6**
IGHG				*e*AMB	AMB	00 03 33.4	
	comp=Z,4μm,0.4s						
IGHG	**Ghaleghazi**	**2.97**	**331**	*e*Pn	**Pn**	**00 02 25.1**	**+1.6**
IVIS	**Veis**	**3.04**	**337**	*e*Pn	**Pn**	**00 02 25.7**	**+1.4**
IVIS				*e*AMB	AMB	00 03 21.1	
	comp=Z,3μm,0.3s						
IVIS	**Veis**	**3.04**	**337**	*e*Pn	**Pn**	**00 02 25.7**	**+1.4**
ASAO	**Ashtian**	**3.15**	**27**	*e*Pn	**Pn**	**00 02 28.5**	**+2.5**
ASAO				AML	AML	00 03 26.3	
	comp=E,169nm,0.7s						
ASAO				AML	AML	00 03 32.2	
	comp=N,202nm,0.6s						
ASAO	**Ashtian**	**3.15**	**27**	*e*Pn	**Pn**	**00 02 28.5**	**+2.5**
IKLH	**Kolahrood**	**3.17**	**59**	*e*Pn	**Pn**	**00 02 29.5**	**+3.1**
IKLH				*e*AMB	AMB	00 03 25.9	
	comp=Z,3μm,0.3s						
IKLH	**Kolahrood**	**3.17**	**59**	*e*Pn	**Pn**	**00 02 29.5**	**+3.1**
IGAR	**Gharneh**	**3.23**	**77**	*e*AMB	AMB	00 03 31.7	
	comp=Z,2μm,0.3s						
QAM	**Ghamsar**	**3.31**	**52**	*e*Pn	**Pn**	**00 02 31.9**	**+3.6**
QAM				*e*AMB	AMB	00 03 30.1	
	comp=Z,2μm,0.2s						
ILIN	**Lien**	**3.36**	**341**	*e*Pn	**Pn**	**00 02 31.0**	**+2.0**
ILIN				*e*AMB	AMB	00 03 30.7	
	comp=Z,1μm,0.2s						
ILIN	**Lien**	**3.36**	**341**	*e*Pn	**Pn**	**00 02 31.0**	**+2.0**
SNGE	**Sanandaj**	**3.44**	**347**	*e*Pn	**Pn**	**00 02 33.2**	**+3.2**
SNGE				AML	AML	00 03 40.0	
	comp=E,158nm,0.6s						
SNGE				AML	AML	00 03 41.3	
	comp=N,113nm,0.6s						
SNGE	**Sanandaj**	**3.44**	**347**	*e*Pn	**Pn**	**00 02 33.2**	**+3.2**
IRAM	**Ramesheh**	**3.47**	**88**	*e*Pn	**Pn**	**00 02 32.7**	**+2.3**
IRAM				*e*AMB	AMB	00 03 42.1	
	comp=Z,1μm,0.3s						
IRAM	**Ramesheh**	**3.47**	**88**	*e*Pn	**Pn**	**00 02 32.7**	**+2.3**
IZEF	**Zefreh**	**3.59**	**70**	*e*Pn	**Pn**	**00 02 34.5**	**+2.4**
IZEF				*e*AMB	AMB	00 03 31.3	
	comp=Z,1μm,0.4s						
IZEF	**Zefreh**	**3.59**	**70**	*e*Pn	**Pn**	**00 02 34.5**	**+2.4**
BHD	**Baghdad**	**3.66**	**296**	*e*Pn	**Pn**	**00 02 34.0**	**+1.3**
	SNR=3.0						
BHD				*i* Sn	**Sn**	**00 03 17.0**	**+1.1**
	SNR=3.0						
GHVR	**GHOM**	**3.70**	**42**	*e*Pn	**Pn**	**00 02 35.4**	**+1.8**
GHVR				AML	AML	00 03 40.0	
	comp=N,82nm,0.5s						
GHVR				AML	AML	00 03 52.8	
	comp=E,192nm,0.7s						
GHVR	**GHOM**	**3.70**	**42**	*e*Pn	**Pn**	**00 02 35.3**	**+1.8**
GHIR	**Ghir-Karzin**	**5.32**	**129**	*e*Pn	**Pn**	**00 02 57.5**	**+1.8**
GHIR	**Ghir-Karzin**	**5.32**	**129**	*e*Pn	**Pn**	**00 02 57.5**	**+1.8**
RTB	**Rutbah**	**6.89**	**283**	*e*Pn	**Pn**	**00 03 18.0**	**+0.7**
	SNR=3.0						
SIRN	**S¨–rnak**	**7.52**	**321**	*i* P	**Pn**	**00 03 24.2**	**-1.7**
SIRN				*i* S	**Sn**	**00 04 46.5**	**-4.8**
MARD	**Mardin**	**8.34**	**314**	*i* P	**Pn**	**00 03 38.7**	**+1.6**
MARD				*i* S	Sn	00 05 04.8	-6.6
GNI	**Garni**	**8.87**	**342**	S	**Sn**	**00 05 18.9**	**-5.8**
	comp=E,0.9nm,0.3s,baz=357,slow=14,SNR=4.9						
GNI				LR	LR	00 08 10.2	
	comp=E,40nm,21.4s,baz=156,slow=44						
ASF	**Jabal al Asfar**	**9.71**	**276**	P	**Pn**	**00 03 57.0**	**+1.0**
	comp=E,0.8nm,0.3s,baz=46,slow=11,SNR=4.8						
ASF				S	**Sn**	**00 05 39.8**	**-5.3**
	comp=E,0.4nm,0.3s,baz=94,slow=17,SNR=3.8						
GEYT	**Alibeck**	**10.15**	**50**	P	**Pn**	**00 04 04.1**	**+2.2**
	comp=E,0.4nm,0.3s,baz=248,slow=11,SNR=9.0						
MMAI	**Mount Meron Ar**	**10.99**	**280**	P	**Pn**	**00 04 15.7**	**+2.2**
	comp=E,0.2nm,0.3s,baz=106,slow=15,SNR=2.5						
EIL	**Elat**	**11.68**	**263**	P	**Pn**	**00 04 24.8**	**+1.9**
	comp=E,0.3nm,0.3s,baz=63,slow=16,SNR=3.2						
WSAR	**Wadi Sarin**	**12.47**	**130**	P	**Pn**	**00 04 32.8**	**-0.9**
	comp=E,0.7nm,0.3s,baz=318,slow=7.9,SNR=14						
WSAR				S	**Sn**	**00 06 46.8**	**-5.9**
	comp=E,0.5nm,0.3s,baz=99,slow=19,SNR=5.4						
WSAR				LR	LR	00 10 12.1	
	comp=E,54nm,21.4s,baz=292,slow=41						
BRTR	**Keskin Array B**	**14.32**	**308**	P	**Pn**	**00 05 00.9**	**+1.8**
	comp=E,0.0nm,0.3s,baz=129,slow=11,SNR=3.2						
IDI	**Anoyia**	**19.84**	**287**	P	**P**	**00 06 08.0**	**+0.8**
	comp=E,0.2nm,0.3s,baz=127,slow=5.1,SNR=3.0						
AKTO	**Aktyubinsk**	**20.02**	**18**	P	**P**	**00 06 10.9**	**+1.9**
	comp=E,1.3nm,0.6s,baz=169,slow=13,SNR=2.5						
TIRR	**Tirgusor**	**20.10**	**315** ⇓	*i* P	**P**	**00 06 09.0**	**-0.8**
TIRR	**Tirgusor**	**20.10**	**315** ⇓	*i* P	**P**	**00 06 09.0**	**-0.8**
CFR	**Carcaliu**	**20.65**	**316** ⇑	*i* P	**P**	**00 06 16.1**	**+0.2**
CFR	**Carcaliu**	**20.65**	**316** ⇑	*i* P	**P**	**00 06 16.1**	**+0.2**
MILM	**Milestii Mici**	**21.30**	**321** ⇓	*i* P	**P**	**00 06 21.8**	**-1.0**
MILM	**Milestii Mici**	**21.30**	**321** ⇓	*i* P	**P**	**00 06 21.8**	**-1.0**
VRI	**Vrincioaia**	**21.86**	**316** ⇑	*i* P	**P**	**00 06 29.1**	**+0.2**
VRI	**Vrincioaia**	**21.86**	**316** ⇑	*i* P	**P**	**00 06 29.1**	**+0.2**
PLOR	**Plostina**	**21.90**	**316** ⇓	*i* P	**P**	**00 06 30.0**	**+0.7**
PLOR	**Plostina**	**21.90**	**316** ⇓	*i* P	**P**	**00 06 30.0**	**+0.7**
MLR	**Muntele Rosu**	**22.13**	**315**	P	**P**	**00 06 33.7**	**+1.8**
	comp=E,0.5nm,0.9s,baz=3.4,slow=6.5,SNR=6.9						
MLR	**Muntele Rosu**	**22.13**	**315** ⇓	*i* P	**P**	**00 06 34.7**	**+2.8**
MLR	**Muntele Rosu**	**22.13**	**315** ⇓	*i* P	**P**	**00 06 34.7**	**+2.8**
TESR	**Tescani**	**22.26**	**318** ⇓	*i* P	**P**	**00 06 33.0**	**-0.2**
TESR	**Tescani**	**22.26**	**318** ⇓	*i* P	**P**	**00 06 33.0**	**-0.2**
SORM	**Soroca**	**22.31**	**323** ⇑	*i* P	**P**	**00 06 32.3**	**-1.3**
SORM	**Soroca**	**22.31**	**323** ⇑	*i* P	**P**	**00 06 32.3**	**-1.3**
VOIR		**22.65**	**314** ⇓	*i* P	**P**	**00 06 39.3**	**+1.9**
VOIR		**22.65**	**314** ⇓	*i* P	**P**	**00 06 39.3**	**+1.9**
AKASG	**Malin Array Be**	**23.64**	**329**	P	**P**	**00 06 47.4**	**0.0**
	comp=E,1.2nm,0.7s,baz=136,slow=9.5,SNR=5.2						
BURAR	**Bucovina Array**	**23.69**	**319** ⇑	*i* P	**P**	**00 06 50.0**	**+2.0**
BURAR	**Bucovina Array**	**23.69**	**319** ⇑	*i* P	**P**	**00 06 50.0**	**+2.0**
ARU	**Arti**	**25.70**	**13**	P	**P**	**00 07 07.0**	**+0.8**
	comp=E,2.1nm,0.6s,baz=191,slow=3.6,SNR=5.6						
BVAR	**Borovoye Array**	**26.60**	**30**	P	**P**	**00 07 14.8**	**+0.4**
	comp=E,0.6nm,0.5s,baz=224,slow=12,SNR=3.5						
KURBB	**Kurchatov Arra**	**29.24**	**41**	P	**P**	**00 07 38.7**	**+0.6**
	comp=E,0.7nm,0.8s,baz=246,slow=9.3,SNR=4.6						
MKAR	**Makanchi Array**	**30.02**	**50**	P	**P**	**00 07 46.1**	**+1.0**
	comp=E,1.1nm,0.7s,baz=245,slow=7.5,SNR=11						
FINES	**FINESS Array B**	**33.06**	**341**	P	**P**	**00 08 10.7**	**-0.8**
	comp=E,1.9nm,0.7s,baz=134,slow=11,SNR=6.2						
ZALV	**Zalesovo Beam**	**34.20**	**39**	P	**P**	**00 08 21.3**	**-0.3**
	comp=E,0.9nm,0.3s,baz=255,slow=9.1,SNR=5.9						
NOA	**NORSAR Array B**	**37.99**	**332**	P	**P**	**00 08 52.9**	**-1.2**
	comp=E,0.7nm,0.6s,baz=123,slow=8.5,SNR=2.7						
ARCES	**ARCESS Array B**	**39.98**	**348**	P	**P**	**00 09 10.2**	**-0.3**
	comp=E,4.6nm,1.1s,baz=151,slow=8.2,SNR=7.6						
ESDC	**Sonseca Array**	**42.67**	**296**	P	**P**	**00 09 33.4**	**+0.3**
	comp=E,0.1nm,0.3s,baz=76,slow=9.0,SNR=2.9						
TORD	**Torodi Ar. Bea**	**46.50**	**257**	P	**P**	**00 10 03.5**	**-0.3**
	comp=E,1.6nm,0.9s,baz=52,slow=8.7,SNR=9.7						
CMAR	**Chiang Mai Arr**	**47.33**	**94**	P	**P**	**00 10 11.0**	**+0.6**
	comp=E,0.7nm,0.3s,baz=292,slow=8.0,SNR=5.2						
DBIC	**Dimbokro**	**55.41**	**255**	P	**P**	**00 11 10.4**	**-0.6**
	comp=E,4.0nm,1.1s,baz=47,slow=8.5,SNR=4.4						
KSRS	**Korea Array**	**63.94**	**61**	P	**P**	**00 12 09.0**	**-0.4**
	comp=E,1.0nm,0.4s,baz=276,slow=7.9,SNR=7.7						
YKA	**Yellowknife Ar**	**85.09**	**352**	P	**P**	**00 14 11.0**	**-0.9**
	comp=E,0.4nm,0.7s,baz=14,slow=5.1,SNR=6.1						

*ISK **24** 00:07:21.2, 39°.10N×29°.04E, h5km, MD3.0*
*DDA **24** 00:07:21.1, 38°.98N×29°.08E, h7km, Md3.2*
*CSEM **24** 00:07:22.2±0.1, 39°.08N×29°.05E, h2km, MD3.2, Error ellipse: s-maj=3.8km s-min=2.9km az=164.0*

ISC 24 00:07:21.6±0.9, **39°.10N**±0°.02×**29°.04E**±0°.02, **h13**km±7km, **n80**, σ0**70**/101, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**257**	P	**Pg**	**00 07 27.2**	**+0.2**
DEMI				S	**Sg**	**00 07 31.1**	**+0.4**
DEMI	**Demirci**	**0.26**	**257**	*i* P	**Pg**	**00 07 27.2**	**+0.2**
DEMI				*i* S	**Sg**	**00 07 31.1**	**+0.4**
GDZ	**Gediz**	**0.34**	**92**	P	**Pg**	**00 07 28.5**	**-0.1**
GDZ				S	**Sg**	**00 07 33.4**	**+0.1**
GDZ	**Gediz**	**0.34**	**92**	*i* P	**Pg**	**00 07 28.5**	**-0.1**
GDZ				*i* S	**Sg**	**00 07 33.4**	**+0.1**
TVSB	**Tavsanli**	**0.48**	**43**	*e*PG	**Pb**	**00 07 31.8**	**-0.1**
TVSB	**Tavsanli**	**0.48**	**43**	*e*Pg	**Pb**	**00 07 31.8**	**-0.1**
KULA	**Kula-Manisa**	**0.66**	**207**	*e*PG	**Pg**	**00 07 34.5**	**+0.1**
KULA	**Kula-Manisa**	**0.66**	**207**	*e*Pg	**Pg**	**00 07 34.5**	**+0.1**
DURS	**Dursunbey**	**0.66**	**319**	P	**Pg**	**00 07 34.5**	**0.0**
DURS	**Dursunbey**	**0.66**	**319**	*i* P	**Pg**	**00 07 34.5**	**0.0**
DURS				*i* S	**Sn**	**00 07 48.8**	**+1.6**
KHL	**Karahalli**	**0.87**	**154**	*e*PG	**Pn**	**00 07 39.2**	**-0.4**
KHL	**Karahalli**	**0.87**	**154**	*e*Pg	**Pn**	**00 07 39.2**	**-0.4**
ORLT	**Orhaneli**	**0.95**	**353**	*e*PG	**Pb**	**00 07 39.8**	**-0.1**
ORLT	**Orhaneli**	**0.95**	**353**	*e*Pg	**Pb**	**00 07 39.8**	**-0.1**
AKHS	**Akhisar**	**0.98**	**257**	P	**Pn**	**00 07 41.2**	**+0.1**
AKHS				S	**Sn**	**00 07 54.5**	**-0.3**
AKHS	**Akhisar**	**0.98**	**257**	*i* P	**Pn**	**00 07 41.2**	**+0.1**
AKHS				*i* S	**Sn**	**00 07 54.5**	**-0.3**
AKS	**Akhisar**	**0.98**	**257**	*e*PG	**Pn**	**00 07 41.2**	**+0.1**
AKS	**Akhisar**	**0.98**	**257**	*e*Pg	**Pn**	**00 07 41.2**	**+0.1**
BALB	**Balikesir**	**1.05**	**301**	*e*PG	**Pg**	**00 07 42.5**	**+0.8**
BALB				*e*SG	**Sn**	**00 07 57.9**	**+1.5**
BALB	**Balikesir**	**1.05**	**301**	*e*Pg	**Pg**	**00 07 42.5**	**+0.8**
BALB				*e*Sg	**Sn**	**00 07 57.9**	**+1.5**
CAVI	**Cavuskoy**	**1.26**	**29**	*e*PN	**Pg**	**00 07 46.2**	**+0.4**
CAVI	**Cavuskoy**	**1.26**	**29**	*e*Pn	**Pg**	**00 07 46.2**	**+0.4**
MDNY	**Mudanya-Bursa**	**1.27**	**355**	*e*PN	**Pg**	**00 07 46.4**	**+0.4**
MDNY	**Mudanya-Bursa**	**1.27**	**355**	*e*Pn	**Pg**	**00 07 46.4**	**+0.4**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*PN	**Pg**	**00 07 46.8**	**+0.7**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*Pn	**Pg**	**00 07 46.8**	**+0.7**
IZI	**Iznik**	**1.28**	**15**	*e*PN	**Pg**	**00 07 46.7**	**+0.5**
IZI	**Iznik**	**1.28**	**15**	*e*Pn	**Pg**	**00 07 46.7**	**+0.5**
BORA	**Eskisehir**	**1.34**	**54**	P	**Pb**	**00 07 46.4**	**-0.3**
BORA				S	**Sn**	**00 08 03.6**	**-0.3**
BORA	**Eskisehir**	**1.34**	**54**	*i* P	**Pb**	**00 07 46.4**	**-0.3**
BORA				*i* S	**Sn**	**00 08 03.6**	**-0.3**
GONE	**Gonen-Balikesi**	**1.41**	**312**	*e*PN	**Pg**	**00 07 48.6**	**0.0**
GONE	**Gonen-Balikesi**	**1.41**	**312**	*e*Pn	**Pg**	**00 07 48.6**	**0.0**
ADVT	**Abdulvahap**	**1.43**	**22**	*e*PN	**Pg**	**00 07 49.4**	**+0.3**
ADVT	**Abdulvahap**	**1.43**	**22**	*e*Pn	**Pg**	**00 07 49.4**	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**1.46**	**218**	*e*PN	**Pg**	**00 07 49.6**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**1.46**	**218**	*e*Pn	**Pg**	**00 07 49.6**	**-0.1**
ESKT	**Eskisehir**	**1.47**	**73**	*i* P	**Pb**	**00 07 49.0**	**+0.2**
ESKT				*i* S	**Sg**	**00 08 08.8**	**0.0**
SEYT	**Eskypehyr**	**1.47**	**73**	P	**Pb**	**00 07 49.0**	**+0.2**
SEYT				S	**Sg**	**00 08 08.8**	**0.0**
ARMT	**Armutlu**	**1.47**	**355**	*e*PN	**Pg**	**00 07 50.1**	**+0.3**
ARMT	**Armutlu**	**1.47**	**355**	*e*Pn	**Pg**	**00 07 50.1**	**+0.3**
EDC	**Edincik**	**1.54**	**324**	*e*PN	**Pg**	**00 07 51.0**	**-0.1**
EDC	**Edincik**	**1.54**	**324**	*e*Pn	**Pg**	**00 07 51.0**	**-0.1**
GPA	**Golpazari**	**1.54**	**39**	*e*PN	**Pg**	**00 07 51.0**	**-0.1**
GPA	**Golpazari**	**1.54**	**39**	*e*Pn	**Pg**	**00 07 51.0**	**-0.1**
BOLV	**Bolvadin**	**1.54**	**104**	P	**Pg**	**00 07 51.6**	**+0.5**
BOLV				S	**Sg**	**00 08 10.1**	**-1.0**
BOLV	**Bolvadin**	**1.54**	**104**	*i* P	**Pg**	**00 07 51.6**	**+0.5**
BOLV				*i* S	**Sg**	**00 08 10.1**	**-1.0**
GULT	**Gulveren**	**1.75**	**40**	*e*PN	**Pb**	**00 07 54.2**	**+0.6**
GULT	**Gulveren**	**1.75**	**40**	*e*Pn	**Pb**	**00 07 54.2**	**+0.6**
HRT	**Hereke**	**1.78**	**16**	*e*PN	**Pb**	**00 07 54.7**	**+0.6**
HRT	**Hereke**	**1.78**	**16**	*e*Pn	**Pb**	**00 07 54.7**	**+0.6**
AYVA	**Ayvalik**	**1.84**	**277**	P	**Pg**	**00 07 57.2**	**+0.5**
AYVA				S	**Sg**	**00 08 19.9**	**-0.7**
AYVA	**Ayvalik**	**1.84**	**277**	*i* P	**Pg**	**00 07 57.2**	**+0.5**
AYVA				*i* S	**Sg**	**00 08 19.9**	**-0.7**
GOLH	**Golhisar**	**1.91**	**167**	P	**Pn**	**00 07 54.2**	**+0.3**
GOLH	**Golhisar**	**1.91**	**167**	*i* P	**Pn**	**00 07 54.2**	**+0.3**
GOLH				*i* S	**Sg**	**00 08 26.7**	**+3.8**
SVRH	**Sivrihisar-ESK**	**1.96**	**79**	*e*PN	**Pb**	**00 07 56.9**	**-0.3**
SVRH	**Sivrihisar-ESK**	**1.96**	**79**	*e*Pn	**Pb**	**00 07 56.9**	**-0.3**
ISK	**Istanbul-Kandi**	**1.96**	**0**	*e*PN	**Pb**	**00 07 57.4**	**+0.3**
ISK	**Istanbul-Kandi**	**1.96**	**0**	*e*Pn	**Pb**	**00 07 57.4**	**+0.3**
URLA	**Izmir**	**2.05**	**250**	P	**Pn**	**00 07 55.5**	**-0.3**
URLA				S	**Sb**	**00 08 23.9**	**-0.2**
URLA	**Izmir**	**2.05**	**250**	*i* P	**Pn**	**00 07 55.5**	**-0.3**
URLA				*i* S	**Sb**	**00 08 23.9**	**-0.2**
BGKT	**Bogazkoy**	**2.09**	**354**	*e*PN	**Pb**	**00 07 59.0**	**-0.3**
BGKT	**Bogazkoy**	**2.09**	**354**	*e*Pn	**Pb**	**00 07 59.0**	**-0.3**
SILT	**Sile**	**2.10**	**13**	*e*PN	**Pb**	**00 07 59.2**	**-0.3**
SILT	**Sile**	**2.10**	**13**	*e*Pn	**Pb**	**00 07 59.2**	**-0.3**
KLYT	**Kilyos**	**2.15**	**0**	*e*PN	**Pb**	**00 07 59.8**	**-0.5**
KLYT	**Kilyos**	**2.15**	**0**	*e*Pn	**Pb**	**00 07 59.8**	**-0.5**
MDUB	**Mudurnu**	**2.15**	**50**	*e*PN	**Pb**	**00 07 59.8**	**-0.7**
MDUB	**Mudurnu**	**2.15**	**50**	*e*Pn	**Pb**	**00 07 59.8**	**-0.7**
CTKS	**Kestanelik-??a**	**2.17**	**349**	*e*PN	**Pb**	**00 08 00.0**	**-0.7**
CTKS	**Kestanelik-??a**	**2.17**	**349**	*e*Pn	**Pb**	**00 08 00.0**	**-0.7**
KAND	**Kocaeli-Kandir**	**2.18**	**24**	P	**Pb**	**00 07 59.7**	**-1.1**
KAND	**Kocaeli-Kandir**	**2.18**	**24**	*i* P	**Pb**	**00 07 59.6**	**-1.1**
KAND				*i* S	**Sn**	**00 08 23.8**	**-0.6**
KIZT	**Kizilcal**	**2.23**	**95**	*e*PN	**Pb**	**00 08 00.8**	**-0.9**
KIZT	**Kizilcal**	**2.23**	**95**	*e*Pn	**Pb**	**00 08 00.8**	**-0.9**
SAHE	**Sakarya_HENDEK**	**2.24**	**38**	P	**Pb**	**00 08 01.9**	**0.0**
SAHE	**Sakarya_HENDEK**	**2.24**	**38**	*i* P	**Pb**	**00 08 01.9**	**0.0**
GELI	**Tayfur-Gelibol**	**2.36**	**304**	*e*PN	**Pb**	**00 08 02.7**	**-1.3**
GELI	**Tayfur-Gelibol**	**2.36**	**304**	*e*Pn	**Pb**	**00 08 02.7**	**-1.3**
ERIK	**Erikli-Kesan**	**2.50**	**310**	*e*PN	**Pb**	**00 08 04.8**	**-1.4**
ERIK	**Erikli-Kesan**	**2.50**	**310**	*e*Pn	**Pb**	**00 08 04.8**	**-1.4**

*DDA **24** 00:19:13.8, 39°.11N×27°.16E, h8km, Md3.3*
*ISK **24** 00:19:13.1, 39°.07N×27°.16E, h5km, MD2.9*
*ATH **24** 00:19:13.8, 39°.05N×27°.13E, h33km±3km, ML2.0/6, Error ellipse: s-maj=4.4km s-min=1.3km az=252.0*
*ISCJB **24** 00:19:14.1±0.4, 39°.05N±0°.02×27°.13E±0°.02, h9km±3km, Error ellipse: s-maj=4.0km s-min=2.9km az=8.7*
*CSEM **24** 00:19:14.2±0.1, 39°.02N×27°.13E, h10km, MD2.9, Error ellipse: s-maj=3.5km s-min=2.7km az=2.0*

ISC 24 00:19:13.9±0.9, **39°.05N**±0°.02×**27°.14E**±0°.02, **h15**km±6km, **n75**, σ0**71**/103, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DKL	**Dikili**	**0.18**	**276**	*e*PG	**Pg**	**00 19 18.2**	**-0.1**
DKL				*e*SG	**Sg**	**00 19 21.4**	**+0.1**
DKL	**Dikili**	**0.18**	**276**	*e*Pg	**Pg**	**00 19 18.2**	**-0.1**
DKL				*e*Sg	**Sg**	**00 19 21.4**	**+0.1**
AYVA	**Ayvalik**	**0.43**	**306**	P	**Pg**	**00 19 22.8**	**+0.2**
AYVA				S	**Sb**	**00 19 29.0**	**-0.5**
AYVA	**Ayvalik**	**0.43**	**306**	*i* P	**Pg**	**00 19 22.8**	**+0.2**
AYVA				*i* S	**Sb**	**00 19 29.0**	**-0.5**
AKS	**Akhisar**	**0.55**	**108**	*e*PG	**Pb**	**00 19 25.2**	**-0.1**
AKS	**Akhisar**	**0.55**	**108**	*e*Pg	**Pb**	**00 19 25.2**	**-0.1**
AKHS	**Akhisar**	**0.55**	**108**	P	**Pb**	**00 19 25.0**	**-0.2**
AKHS				S	**Sb**	**00 19 32.8**	**-0.2**
AKHS	**Akhisar**	**0.55**	**108**	*i* P	**Pb**	**00 19 25.

DEMI Demirci 0.20 250 P **Pb 00 36 40.5 +0.1**
DEMI S **Sg 00 36 43.7 +0.2**
DEMI Demirci 0.20 250 *i* P **Pb 00 36 40.5 +0.1**
DEMI *i* S **Sg 00 36 43.7 +0.2**
GDZ Gediz 0.40 93 P **Pb 00 36 43.8 0.0**
GDZ S **Sg 00 36 49.2 +0.1**
GDZ Gediz 0.40 93 *i* P **Pb 00 36 43.8 0.0**
GDZ *i* S **Sg 00 36 49.2 +0.1**
TVSB Tavsanli 0.51 49 *e*PG **Pg 00 36 45.0 -0.4**
TVSB Tavsanli 0.51 49 *e*Pg **Pg 00 36 45.0 -0.4**
DURS Dursunbey 0.62 322 P **Pg 00 36 47.2 -0.2**
DURS Dursunbey 0.62 322 *i* P **Pg 00 36 47.2 -0.2**
DURS *i* S **Sn 00 36 58.3 -0.4**
KULA Kula-Manisa 0.64 202 *e*PG **Pg 00 36 47.6 -0.2**
KULA *e*SG **Sb 00 36 56.6 +0.1**
KULA Kula-Manisa 0.64 202 *e*Pg **Pg 00 36 47.6 -0.2**
KULA *e*Sg **Sb 00 36 56.6 +0.1**
KCTX Karacabey (Bur 1.24 338 *e*PN **Pb 00 36 58.1 0.0**
KCTX Karacabey (Bur 1.24 338 *e*Pn **Pb 00 36 58.1 0.0**
BORA Eskisehir 1.38 56 P **Pg 00 37 02.0 +0.2**
BORA S **Sg 00 37 19.8 0.0**
BORA Eskisehir 1.38 56 *i* P **Pg 00 37 02.0 +0.2**
BORA *i* S **Sg 00 37 19.8 0.0**
ARMT Armutlu 1.45 357 *e*PN **Pb 00 37 02.0 +0.3**
ARMT Armutlu 1.45 357 *e*Pn **Pb 00 37 02.0 +0.3**

IDC 24 00:38:15.7±1.3**, 25°.52N**×**142°.26E, h0**km**, mb3.6/6, mb1 3.8/7, mb1mx3.5/33, mbtmp3.6/7, ML3.2/1, Error ellipse: s-maj=53.5km s-min=22.0km az=83.0, Volcano Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**11.53**	**343**	Pn	Pn	00 41 00.9	-0.7
	0.1nm,0.3s,baz=177,slow=8.5,SNR=2.9						
SONM	**Songino Array**	**35.91**	**318**	P	P	00 45 17.1	-0.7
	0.3nm,0.5s,baz=118,slow=7.2,SNR=2.7						
WRA	**Warramunga Arr**	**45.84**	**190**	P	P	00 46 39.1	-0.6
	0.5nm,0.4s,baz=10,slow=8.6,SNR=5.5						
ASAR	**Alice Springs**	**49.56**	**190**	P	P	00 47 08.8	+0.2
	0.8nm,0.6s,baz=80,slow=8.2,SNR=5.9						
MKAR	**Makanchi Array**	**51.54**	**311**	P	P	00 47 24.3	+0.9
	0.2nm,0.4s,baz=90,slow=8.5,SNR=4.9						
YKA	**Yellowknife Ar**	**73.49**	**28**	P	P	00 49 50.3	+0.4
	0.1nm,0.7s,baz=283,slow=8.8,SNR=3.2						
FINES	**FINESS Array B**	**79.39**	**334**	P	P	00 50 22.9	-0.4
	2.1nm,0.8s,baz=70,slow=4.6,SNR=6.4						

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*SJA **24** 00:41:27.9±0.8, 28°.27S×70°.79W, h72km±4km, ML4.2, MW3.5*
*IDC **24** 00:41:28.6±12.0, 28°.52S×70°.27W, h44km±79km, mb3.5/2, mb1 3.6/5, mb1mx3.4/33, mbtmp3.6/5, ML3.6/3, Error ellipse: s-maj=141.9km s-min=40.8km az=37.0*
*ISCJB **24** 00:41:30.2±0.6, 28°.31S±0°.03×70°.59W±0°.06, h72km±6km, mb3.6/2, Error ellipse: s-maj=8.1km s-min=4.7km az=4.1*
*GUC **24** 00:41:31.4±0.5, 28°.41S×70°.59W, h63km±6km, ML4.1*
ISC 24 00:41:30.7±0.9**, 28°.33S**±0°.04×**70°.67W**±0°.06**, h69**km±7km**, n27,** σ1°**09/40, 2C-1D, Central Chile**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VACH	**Vallenar**	**0.26**	**198**	⇓*i* P	**Pn**	**00 41 41.8**	**+0.2**
VACH				*i* S	**Sn**	**00 41 49.0**	**-0.5**
LCO	**Las Campanas**	**0.68**	**182**	*i* P	**Pn**	**00 41 45.0**	**-0.6**
LCO				*i* S	**Sn**	**00 41 56.7**	**+0.2**
LCO	**Las Campanas**	**0.68**	**182**	⇑*i* P	**Pn**	**00 41 45.6**	**0.0**
LCO				*i* S	**Sn**	**00 41 56.5**	**0.0**
LCO				IAML		00 41 58.3	
	comp=N,7μm,0.3s						
CPCH	**Copiapo**	**1.01**	**16**	⇑*iP*	**Pn**	**00 41 50.8**	**+1.5**
CPCH				*i* S	**Sn**	**00 42 05.5**	**+2.4**
TLL	**Tololo Astrono**	**1.83**	**184**	*eP*	**Pn**	**00 42 00.6**	**+0.2**
TLL				*i* S	**Sn**	**00 42 23.2**	**+0.4**
TLL				IAML		00 42 29.6	
	comp=N,5μm,0.3s						
VCA	**Vinchina**	**2.20**	**101**	*i* S	**Sn**	**00 42 34.4**	**+2.8**
AMOG	**MOGNA**	**3.21**	**144**	*i* P	**Pn**	**00 42 19.6**	**+0.8**
AMOG				*i* S	**Sn**	**00 42 58.1**	**+2.0**
RTLL	**Cerro Villicun**	**3.54**	**148**	*i* P	**Pn**	**00 42 23.6**	**+0.3**
RTLL				*i* S	**Sn**	**00 43 05.5**	**+1.5**
RTLS	**Leoncito**	**3.65**	**161**	*i* P	**Pn**	**00 42 26.4**	**+1.3**
RTLS				*i* S	**Sn**	**00 43 09.2**	**+2.1**
RTCV	**Cerro Valdivia**	**3.97**	**153**	*i* P	**Pn**	**00 42 29.6**	**+0.4**
RTCV				*i* S	**Sn**	**00 43 15.6**	**+1.0**
AUSP	**Uspallata**	**4.03**	**164**	*i* P	**Pn**	**00 42 31.5**	**+1.2**
AUSP				*i* S	**Sn**	**00 43 17.8**	**+1.3**
CYA	**Choya**	**4.29**	**93**	*i* P	**Pn**	**00 42 34.1**	**+0.6**
CYA				*i* S	**Sn**	**00 43 23.2**	**+0.9**
FSA	**Cafayete**	**4.72**	**63**	*i* P	**Pn**	**00 42 39.8**	**+0.1**
FSA				*i* S	**Sn**	**00 43 33.1**	**-0.2**
FSA				IAML		00 43 59.7	
	comp=Z,36nm,0.5s						
ACAN	**Cantantal**	**4.95**	**143**	*i* P	**Pn**	**00 42 42.7**	**+0.2**
ACAN				*i* S	**Sn**	**00 43 38.6**	**+0.1**
AHML	**Horco Molle**	**4.98**	**73**	*i* P	**Pn**	**00 42 42.6**	**-0.4**
AHML				*i* S	**Sn**	**00 43 38.5**	**-0.8**
AHML				IAML		00 44 07.4	
	comp=Z,201nm,0.8s						
LVC	**Limon Verde**	**5.92**	**16**	P	**Pn**	**00 42 55.4**	**-0.8**
	comp=Z,144nm,0.3s,baz=185,slow=11,SNR=24						
LVC				S	Sn	00 44 14.8	+12
	comp=Z,562nm,0.3s,baz=111,slow=18,SNR=3.3						
TCA	**Tanti**	**6.07**	**121**	*i* P	**Pn**	**00 42 57.0**	**-0.9**
TCA				IAML		00 43 00.6	
	comp=Z,293nm,0.2s						
TCA				*i* S	**Sn**	**00 44 04.9**	**-1.1**
AZAP	**Zapla**	**6.48**	**52**	*i* P	**Pn**	**00 43 03.8**	**0.0**
CPUP	**Villa Florida**	**12.03**	**84**	P	Pn	00 44 12.6	-6.7
	comp=Z,0.1nm,0.3s,baz=260,slow=13,SNR=2.9						
CPUP				S	Sn	00 46 40.6	+9.0
	comp=Z,0.2nm,0.3s,baz=223,slow=19,SNR=2.0						
LPAZ	**La Paz**	**12.21**	**12**	P	**Pn**	**00 44 21.9**	**-0.6**
	comp=Z,0.1nm,0.3s,baz=219,slow=13,SNR=3.2						
SIV	**San Ignacio**	**15.15**	**38**	P	**Pn**	**00 44 59.1**	**-1.8**
	comp=Z,0.3nm,0.3s,baz=229,slow=10,SNR=3.4						
TORD	**Torodi Ar. Bea**	**81.17**	**70**	P	**P**	**00 53 38.9**	**-0.5**
	comp=Z,0.5nm,0.6s,baz=242,slow=5.1,SNR=11						
YKA	**Yellowknife Ar**	**97.09**	**341**	P	Pdif	00 54 57.2	+2.5
	comp=Z,0.1nm,0.4s,baz=145,slow=0.8,SNR=4.5						
KURBB	**Kurchatov Arra**	**147.81**	**38**	PKPbc	**PKPbc**	**01 01 07.9**	**+0.5**
	comp=Z,0.3nm,0.4s,baz=303,slow=3.4,SNR=5.0						
ZALV	**Zalesovo Beam**	**148.75**	**28**	PKPbc	**PKPbc**	**01 01 10.1**	**+0.3**
	comp=Z,0.6nm,0.5s,baz=334,slow=2.3,SNR=4.1						
MKAR	**Makanchi Array**	**151.95**	**42**	PKPbc	**PKPbc**	**01 01 17.5**	**-0.2**
	comp=Z,0.2nm,0.5s,baz=339,slow=2.5,SNR=3.3						
SONM	**Songino Array**	**160.40**	**6**	PKPab	**PKPab**	**01 02 03.3**	**-0.1**
	comp=Z,0.3nm,0.4s,baz=0.0,slow=3.3,SNR=2.5						

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*MDD **24** 00:44:54.2±2.2, 35°.39N×16°.91W, h0km, mb4.1/1, Error ellipse: s-maj=30.3km s-min=6.8km az=121.0, PRXIMO*
*INMG **24** 00:44:56.6±2.1, 35°.65N×17°.36W, h10km, ML2.8, Error ellipse: s-maj=14.2km s-min=3.7km az=115.0*
*CSEM **24** 00:44:59.1±0.7, 35°.18N×16°.32W, h10km, ML3.4/6, Error ellipse: s-maj=25.8km s-min=7.7km az=134.0*
ISC 24 00:44:50.9±1.9**, 35°.60N**±0°.08×**17°.0W**±0°.1**, h10**km**, n91,** σ2°**86/118, Azores-Cape St. Vincent Ridge**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMPS	**Porto Santo**	**2.60**	**167**	*e*Sn	**Sn**	**00 46 03.1**	**-1.6**
PMPS				A	A	00 46 06.3	
	21nm,0.7s						
PMPS	**Porto Santo**	**2.60**	**167**	Sn	**Sn**	**00 46 03.1**	**-1.6**
	11nm,0.7s						
PMPS	**Porto Santo**	**2.60**	**167**	Sn	**Sn**	**00 46 03.1**	**-1.6**
	11nm,0.7s						
PMOZ	**Porto Moniz, M**	**2.78**	**183**	*e*Sn	**Sn**	**00 46 05.8**	**-3.3**
PMOZ				A	A	00 46 09.8	
	38nm,0.3s						
PMOZ	**Porto Moniz, M**	**2.78**	**183**	Sn	**Sn**	**00 46 06.2**	**-2.9**
	49nm,0.3s,SNR=7.9						
PMOZ	**Porto Moniz, M**	**2.78**	**183**	*e*Sn	**Sn**	**00 46 05.8**	**-3.3**
	38nm,0.3s						
PMAR	**Madeira**	**2.87**	**178**	*e*Pn	**Pn**	**00 45 38.0**	**+1.1**
PMAR				*e*Sn	**Sn**	**00 46 08.0**	**-3.6**
PMAR				A	A	00 46 13.1	
	25nm,0.3s						
PMAR	**Madeira**	**2.87**	**178**	Pn	**Pn**	**00 45 38.0**	**+1.1**
PMAR				Sn	**Sn**	**00 46 08.0**	**-3.6**
	13nm,0.3s						
FUL	**Funchal**	**2.95**	**178**	*e*Sn	**Sn**	**00 46 09.3**	**-3.9**
FUL				A	A	00 46 12.7	
	25nm,0.2s						
FUL	**Funchal**	**2.95**	**178**	Sn	**Sn**	**00 46 09.3**	**-3.9**
	12nm,0.2s						
PFVI	**Vila Bisbo**	**6.78**	**75**	*e*Pn	**Pn**	**00 46 33.2**	**+2.7**
PFVI				*e*Sn	**Sn**	**00 47 46.0**	**-1.8**
PFVI				A	A	00 47 50.3	
	10nm,0.9s						
PFVI	**Vila Bisbo**	**6.78**	**75**	Pn	**Pn**	**00 46 33.4**	**+2.9**
	1.4nm,0.2s,SNR=7.9						
PFVI				Sn	**Sn**	**00 47 46.1**	**-1.8**
	1.8nm,0.1s,SNR=7.9						
PFVI	**Vila Bisbo**	**6.78**	**75**	*e*Pn	**Pn**	**00 46 33.2**	**+2.7**
PFVI				*e*Sn	**Sn**	**00 47 46.0**	**-1.8**
	10nm,0.9s						
PTEO	**Sao Teotonio**	**6.95**	**71**	*e*Pn	**Pn**	**00 46 35.4**	**+2.6**
PTEO				*e*Sn	**Sn**	**00 47 49.2**	**-2.7**
PTEO	**Sao Teotonio**	**6.95**	**71**	Pn	**Pn**	**00 46 35.4**	**+2.6**
PTEO				Sn	**Sn**	**00 47 49.2**	**-2.7**
PTEO	**Sao Teotonio**	**6.95**	**71**	Pn	**Pn**	**00 46 35.4**	**+2.6**
PTEO				Sn	**Sn**	**00 47 49.2**	**-2.7**
MORF	**Marmelete**	**6.96**	**73**	*e*Pn	**Pn**	**00 46 36.0**	**+3.1**
MORF				*e*Sn	**Sn**	**00 47 50.2**	**-1.9**
MORF	**Marmelete**	**6.96**	**73**	Pn	**Pn**	**00 46 36.0**	**+3.1**
MORF				Sn	**Sn**	**00 47 50.2**	**-1.9**
MORF	**Marmelete**	**6.96**	**73**	Pn	**Pn**	**00 46 36.0**	**+3.1**
MORF				Sn	**Sn**	**00 47 50.2**	**-1.9**
PMAFR	**Mafra**	**7.02**	**59**	*e*Sn	**Sn**	**00 47 49.7**	**-3.8**
PMAFR				A	A	00 48 07.2	
	12nm,0.6s						
PMAFR	**Mafra**	**7.02**	**59**	Sn	**Sn**	**00 47 52.1**	**-1.4**
	4.1nm,0.2s,SNR=7.9						
PMAFR	**Mafra**	**7.02**	**59**	*e*Sn	**Sn**	**00 47 49.7**	**-3.8**
	12nm,0.6s						
PNCL	**Nicolau / Gran**	**7.25**	**67**	*e*Pn	**Pn**	**00 46 39.6**	**+2.7**
PNCL				*e*Sn	**Sn**	**00 47 56.7**	**-2.6**
PNCL	**Nicolau / Gran**	**7.25**	**67**	*e*Pn	**Pn**	**00 46 39.6**	**+2.7**
PNCL				*e*Sn	**Sn**	**00 47 56.7**	**-2.6**
MESJ	**Messejana**	**7.41**	**70**	*e*Pn	**Pn**	**00 46 43.0**	**+3.9**
MESJ				*e*Sn	**Sn**	**00 48 01.8**	**-1.4**
MESJ	**Messejana**	**7.41**	**70**	Pn	**Pn**	**00 46 43.0**	**+3.9**
MESJ				Sn	**Sn**	**00 48 01.8**	**-1.4**
MESJ	**Messejana**	**7.41**	**70**	Pn	**Pn**	**00 46 43.0**	**+3.9**
MESJ				Sn	**Sn**	**00 48 01.8**	**-1.4**
PBDV	**Barranco-do-Ve**	**7.51**	**75**	*e*Pn	**Pn**	**00 46 44.3**	**+3.8**
PBDV				*e*Sn	**Sn**	**00 48 05.9**	**+0.3**
PBDV	**Barranco-do-Ve**	**7.51**	**75**	Pn	**Pn**	**00 46 44.3**	**+3.8**
PBDV				Sn	**Sn**	**00 48 05.9**	**+0.3**
PBDV	**Barranco-do-Ve**	**7.51**	**75**	Pn	**Pn**	**00 46 44.3**	**+3.8**
PBDV				Sn	**Sn**	**00 48 05.9**	**+0.3**
PVAQ	**Vaqueiros**	**7.70**	**74**	*e*Pn	**Pn**	**00 46 46.0**	**+2.9**
PVAQ				*e*Sn	**Sn**	**00 48 08.9**	**-1.5**
PVAQ	**Vaqueiros**	**7.70**	**74**	*e*Pn	**Pn**	**00 46 46.0**	**+2.9**
PVAQ				Sn	**Sn**	**00 48 08.9**	**-1.5**
PVAQ	**Vaqueiros**	**7.70**	**74**	Pn	**Pn**	**00 46 46.0**	**+2.9**
PVAQ				Sn	**Sn**	**00 48 08.9**	**-1.5**
PBEJ	**Beja**	**7.73**	**69**	*e*Pn	**Pn**	**00 46 47.0**	**+3.5**
PBEJ				*e*Sn	**Sn**	**00 48 08.9**	**-2.2**
PBEJ	**Beja**	**7.73**	**69**	Pn	**Pn**	**00 46 47.0**	**+3.5**
PBEJ				Sn	**Sn**	**00 48 08.9**	**-2.2**
PBEJ	**Beja**	**7.73**	**69**	Pn	**Pn**	**00 46 47.0**	**+3.5**
PBEJ				Sn	**Sn**	**00 48 08.9**	**-2.2**
EVO	**Evora**	**7.77**	**65**	*e*Sn	**Sn**	**00 48 09.9**	**-2.2**
EVO	**Evora**	**7.77**	**65**	Sn	**Sn**	**00 48 09.9**	**-2.2**
EVO	**Evora**	**7.77**	**65**	Sn	**Sn**	**00 48 09.9**	**-2.2**
PMTG	**Montargil**	**7.81**	**61**	*e*Sn	**Sn**	**00 48 11.2**	**-1.9**
PMTG	**Montargil**	**7.81**	**61**	*e*Sn	**Sn**	**00 48 11.2**	**-1.9**
EGRO	**El Granado**	**7.91**	**73**	Pn	**Pn**	**00 46 49.2**	**+3.2**
	0.1nm,0.1s,SNR=7.9						
EGRO				Sn	**Sn**	**00 48 13.1**	**-2.4**
	1.4nm,0.2s,SNR=7.9						
EGRO	**El Granado**	**7.91**	**73**	Pn	**Pn**	**00 46 49.2**	**+3.2**
	0.1nm,0.1s,SNR=7.9						
EGRO				Sn	**Sn**	**00 48 13.1**	**-2.4**
	1.4nm,0.2s,SNR=7.9						
PTOM	**Tomar**	**7.92**	**57**	*e*Sn	**Sn**	**00 48 14.7**	**-1.0**
PTOM	**Tomar**	**7.92**	**57**	Sn	**Sn**	**00 48 14.7**	**-1.0**
PTOM	**Tomar**	**7.92**	**57**	Sn	**Sn**	**00 48 14.7**	**-1.0**
PCAS	**Casmilo, Conde**	**8.07**	**54**	*e*Pn	Pn	00 46 57.1	+8.9
PCAS				*e*Sn	**Sn**	**00 48 16.5**	**-3.0**
PCAS	**Casmilo, Conde**	**8.07**	**54**	*e*Pn	Pn	00 46 57.1	+8.9
PCAS				*e*Sn	**Sn**	**00 48 16.5**	**-3.0**
PESTR	**Estremoz**	**8.20**	**64**	*e*Sn	**Sn**	**00 48 19.2**	**-3.3**
PESTR	**Estremoz**	**8.20**	**64**	*e*Sn	**Sn**	**00 48 19.2**	**-3.3**
PBAR	**Barrancos**	**8.40**	**69**	*e*Pn	**Pn**	**00 46 57.2**	**+4.6**
PBAR				*e*Sn	**Sn**	**00 48 24.0**	**-3.5**
PBAR	**Barrancos**	**8.40**	**69**	Pn	**Pn**	**00 46 57.2**	**+4.6**
PBAR				Sn	**Sn**	**00 48 24.0**	**-3.5**
PBAR	**Barrancos**	**8.40**	**69**	Pn	**Pn**	**00 46 57.2**	**+4.6**
PBAR				Sn	**Sn**	**00 48 24.0**	**-3.5**
PMRV	**Marv??o**	**8.55**	**61**	*e*Pn	**Pn**	**00 46 58.8**	**+4.1**
PMRV				*e*Sn	**Sn**	**00 48 27.7**	**-3.5**
PMRV	**Marv??o**	**8.55**	**61**	Pn	**Pn**	**00 46 58.8**	**+4.1**
PMRV				Sn	**Sn**	**00 48 27.7**	**-3.5**
PMRV	**Marv??o**	**8.55**	**61**	Pn	**Pn**	**00 46 58.8**	**+4.1**
PMRV				Sn	**Sn**	**00 48 27.7**	**-3.5**
EBAD	**Badajoz**	**8.58**	**66**	Pn	**Pn**	**00 46 58.7**	**+3.5**
	0.5nm,0.2s,SNR=7.9						
EBAD				Sn	**Sn**	**00 48 29.1**	**-2.9**
	1.3nm,0.2s,SNR=7.9						
EBAD	**Badajoz**	**8.58**	**66**	Pn	**Pn**	**00 46 58.7**	**+3.5**
	0.5nm,0.2s,SNR=7.9						
EBAD				Sn	**Sn**	**00 48 29.1**	**-2.9**
	1.3nm,0.2s,SNR=7.9						
EMIN	**Mina Concepcio**	**8.59**	**72**	Pn	**Pn**	**00 46 58.3**	**+3.0**
	0.1nm,0.1s,SNR=7.9						
EMIN				Sn	**Sn**	**00 48 29.0**	**-3.2**
	0.6nm,0.2s,SNR=7.9						
EMIN	**Mina Concepcio**	**8.59**	**72**	Pn	**Pn**	**00 46 58.3**	**+3.0**
	0.1nm,0.1s,SNR=7.9						
EMIN				Sn	**Sn**	**00 48 29.0**	**-3.2**
	0.6nm,0.2s,SNR=7.9						
PCBR	**Castelo Branco**	**8.66**	**58**	*e*Sn	**Sn**	**00 48 30.9**	**-3.1**
PCBR	**Castelo Branco**	**8.66**	**58**	Sn	**Sn**	**00 48 30.9**	**-3.1**
PCBR	**Castelo Branco**	**8.66**	**58**	Sn	**Sn**	**00 48 30.9**	**-3.1**
MTE	**Manteigas**	**8.88**	**55**	*e*Sn	**Sn**	**00 48 37.2**	**-2.2**
MTE	**Manteigas**	**8.88**	**55**	Sn	**Sn**	**00 48 37.2**	**-2.2**
MTE	**Manteigas**	**8.88**	**55**	Sn	**Sn**	**00 48 37.2**	**-2.2**
ESPR	**Espera**	**9.11**	**79**	Sn	**Sn**	**00 48 42.9**	**-2.0**
	2.8nm,0.3s,SNR=7.9						
ESPR	**Espera**	**9.11**	**79**	Sn	**Sn**	**00 48 42.9**	**-2.0**
	2.8nm,0.3s,SNR=7.9						
POLO	**Lamas de Olo**	**9.24**	**49**	*e*Sn	Sn	00 48 41.9	-6.5
POLO	**Lamas de Olo**	**9.24**	**49**	*e*Sn	Sn	00 48 41.9	-6.5
PCAB	**Cabril**	**9.30**	**46**	*e*Pn	**Pn**	**00 47 06.7**	**+1.6**
PCAB				*e*Sn	Sn	00 48 43.5	-6.3
PCAB	**Cabril**	**9.30**	**46**	Pn	**Pn**	**00 47 06.7**	**+1.6**
PCAB				Sn	Sn	00 48 43.5	-6.3
PCAB	**Cabril**	**9.30**	**46**	Pn	**Pn**	**00 47 06.7**	**+1.6**
PCAB				Sn	Sn	00 48 43.5	-6.3
PGAV	**Gavieira, Arco**	**9.32**	**44**	*e*Sn	Sn	00 48 40.8	-10
PGAV	**Gavieira, Arco**	**9.32**	**44**	*e*Sn	Sn	00 48 40.8	-10
ELOB	**Lobios**	**9.38**	**46**	Pn	**Pn**	**00 47 08.6**	**+2.4**
	0.5nm,0.2s,SNR=7.9						
ELOB				Sn	Sn	00 48 45.1	-6.7
	1.8nm,0.2s,SNR=7.9						
ELOB	**Lobios**	**9.38**	**46**	Pn	**Pn**	**00 47 08.6**	**+2.4**
	0.5nm,0.2s,SNR=7.9						
ELOB				Sn	Sn	00 48 45.1	-6.7
	1.8nm,0.2s,SNR=7.9						
MVO	**Moncorvo**	**9.61**	**52**	*e*Sn	Sn	00 48 51.0	-6.3
MVO	**Moncorvo**	**9.61**	**52**	Sn	Sn	00 48 50.8	-6.5
	1.0nm,0.3s,SNR=7.9						
MVO	**Moncorvo**	**9.61**	**52**	*e*Sn	Sn	00 48 51.0	-6.3
ECAB	**El Cabril**	**9.62**	**72**	Pn	**Pn**	**00 47 12.1**	**+2.7**
	0.2nm,0.1s,SNR=7.9						
ECAB				Sn	**Sn**	**00 48 55.1**	**-2.5**
	0.2nm,0.2s,SNR=7.9						
ECAB	**El Cabril**	**9.62**	**72**	Pn	**Pn**	**00 47 12.1**	**+2.7**
	0.2nm,0.1s,SNR=7.9						
EPLA	**Plasencia**	**9.73**	**60**	Sn	**Sn**	**00 48 56.7**	**-3.5**
	0.5nm,0.1s,SNR=7.9						
EAGO	**Agolada(Pontev**	**9.98**	**41**	Sn	Sn	00 48 55.8	-11
	0.8nm,0.1s,SNR=7.9						
PBRG	**Braganca**	**10.14**	**49**	*e*Sn	Sn	00 49 03.4	-6.9
PBRG	**Braganca**	**10.14**	**49**	Sn	Sn	00 49 03.4	-6.9
PBRG	**Braganca**	**10.14**	**49**	*e*Sn	Sn	00 49 03.4	-6.9
ECAL	**Calabor**	**10.22**	**49**	Pn	Pn	00 47 26.3	+8.7
	0.5nm,0.2s,SNR=4.0						
ECAL				Sn	Sn	00 49 06.5	-5.8
	1.0nm,0.2s,SNR=7.9						
EADA	**Adamuz**	**10.29**	**72**	Pn	**Pn**	**00 47 20.6**	**+2.0**
	0.3nm,0.3s,SNR=7.9						
EADA				Sn	**Sn**	**00 49 13.2**	**-0.8**
	0.0nm,0.3s,SNR=7.9						
EPON	**Pontenova**	**10.84**	**42**	Sn	Sn	00 49 19.2	-8.3
	0.4nm,0.1s,SNR=7.9						

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*ISK **24** 00:48:48.2, 39°.01N×29°.18E, h16km, MD2.4*
*ISCJB **24** 00:48:49.3±0.6, 39°.07N±0°.04×29°.04E±0°.04, h5km±7km, Error ellipse: s-maj=6.7km s-min=4.5km az=162.5*
*DDA **24** 00:48:49.2, 39°.08N×29°.05E, h7km, Md2.7*
*CSEM **24** 00:48:49.3±0.2, 39°.06N×29°.04E, h8km, MD2.7, Error ellipse: s-maj=4.1km s-min=3.2km az=144.0*
ISC 24 00:48:49.2±0.9**, 39°.06N**±0°.03×**29°.05E**±0°.03**, h13**km±9km**, n16,** σ0°**40/30, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**266**	P	**Pg**	**00 48 54.8**	**0.0**
DEMI				S	**Sg**	**00 48 58.3**	**-0.3**
DEMI	**Demirci**	**0.26**	**266**	*i* P	**Pg**	**00 48 54.8**	**0.0**
DEMI				*i* S	**Sg**	**00 48 58.3**	**-0.3**
GDZ	**Gediz**	**0.34**	**85**	P	**Pg**	**00 48 56.4**	**+0.2**
GDZ				S	**Sg**	**00 49 01.4**	**+0.5**
GDZ	**Gediz**	**0.34**	**85**	*i* P	**Pg**	**00 48 56.4**	**+0.2**
GDZ				*i* S	**Sg**	**00 49 01.4**	**+0.5**
TVSB	**Tavsanli**	**0.50**	**39**	*e*PG	**Pg**	**00 48 58.4**	**-0.8**
TVSB				*e*SG	**Sg**	**00 49 05.7**	**-0.3**
TVSB	**Tavsanli**	**0.50**	**39**	*e*Pg	**Pg**	**00 48 58.4**	**-0.8**
TVSB				*e*Sg	**Sg**	**00 49 05.7**	**-0.3**
KULA	**Kula-Manisa**	**0.62**	**209**	*e*PG	**Pg**	**00 49 01.1**	**-0.3**
KULA				*e*SG	**Sb**	**00 49 10.6**	**-0.1**
KULA	**Kula-Manisa**	**0.62**	**209**	*e*Pg	**Pg**	**00 49 01.1**	**-0.3**
KULA				*e*Sg	**Sb**	**00 49 10.6**	**-0.1**
DURS	**Dursunbey**	**0.70**	**321**	P	**Pg**	**00 49 03.0**	**0.0**
DURS				S	**Sb**	**00 49 12.7**	**-0.2**
DURS	**Dursunbey**	**0.70**	**321**	*i* P	**Pg**	**00 49 03.0**	**0.0**
DURS				*i* S	**Sb**	**00 49 12.7**	**-0.2**
KCTX	**Karacabey (Bur**	**1.32**	**336**	*e*PN	**Pb**	**00 49 13.9**	**+0.1**
KCTX				*e*SN	**Sg**	**00 49 32.5**	**+0.8**
KCTX	**Karacabey (Bur**	**1.32**	**336**	*e*Pn	**Pb**	**00 49 13.9**	**+0.1**
KCTX				*e*Sn	**Sg**	**00 49 32.6**	**+0.8**
BORA	**Eskisehir**	**1.36**	**53**	P	**Pg**	**00 49 15.5**	**+0.1**
BORA				S	**Sg**	**00 49 32.9**	**-0.2**
BORA	**Eskisehir**	**1.36**	**53**	*i* P	**Pg**	**00 49 15.5**	**+0.1**
BORA				*i* S	**Sg**	**00 49 32.9**	**-0.2**
ARMT	**Armutlu**	**1.51**	**355**	*e*PN	**Pn**	**00 49 16.1**	**+0.1**
ARMT	**Armutlu**	**1.51**	**355**	*e*Pn	**Pn**	**00 49 16.1**	**+0.1**

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*IDC **24** 00:49:26.9±5.3, 1°.29S×77°.42W, h123km±54km, mb3.6/6, mb1 3.7/8, mb1mx3.4/33, mbtmp4.0/8, Error ellipse: s-maj=54.7km s-min=26.1km az=50.0*
*ISCJB **24** 00:49:31.2±0.7, 1°.74S±0°.05×77°.6W±0°.1, h150km, mb3.7/6, Error ellipse: s-maj=20.8km s-min=6.8km az=1.2*
ISC 24 00:49:29.9±0.9**, 1°.69S**±0°.07×**77°.7W**±0°.1**, h150**km**, n14,** σ2°**18/15, mb3.8/6, Ecuador**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OTAV	**Otavalo**	**2.05**	**339**	*eP*	**Pn**	**00 50 08.2**	**+2.1**
CRUC	**La Cruz**	**3.32**	**13**	*eP*	**Pn**	**00 50 25.0**	**+3.3**
FLOC	**Florencia**	**3.84**	**32**	*eP*	**Pn**	**00 50 30.0**	**+1.9**
POPC	**Popayan, Colom**	**4.32**	**14**	*eP*	**Pn**	**00 50 37.5**	**+2.9**

baz=312,slow=75,SNR=16
H11S2 WAKE ISLAND Hy 28.58 120 T T 01 31 08.0
baz=312,slow=75,SNR=15
ZALV Zalesovo Beam 42.49 313 P **P** **01 03 08.4 -0.7**
0.5nm,0.3s,baz=76,slow=6.3,SNR=5.1
MKAR Makanchi Array 44.45 303 P **P** **01 03 24.2 -0.7**
1.1nm,0.6s,baz=88,slow=9.7,SNR=11
KURBB Kurchatov Arra 46.47 309 P **P** **01 03 40.0 -0.8**
1.3nm,0.4s,baz=84,slow=8.3,SNR=21
KURBB pP **pP** **01 03 54.5 +0.5**
1.1nm,0.6s,baz=84,slow=7.7,SNR=4.6
ILAR Eielson Array 50.91 32 P **P** **01 04 15.3 +0.6**
0.9nm,0.8s,baz=268,slow=6.5,SNR=9.2
ILAR pP **pP** **01 04 27.3 -0.7**
0.4nm,0.6s,baz=271,slow=5.9,SNR=3.4
BVAR Borovoye Array 51.14 313 P **P** **01 04 15.7 -1.0**
1.0nm,0.6s,baz=74,slow=11,SNR=5.2
FITZ Fitzroy Crossi 55.38 198 P **P** **01 04 47.6 -0.4**
1.2nm,0.6s,baz=16,slow=7.4,SNR=3.3
WRA Warramunga Arr 55.64 187 P **P** **01 04 49.7 -0.2**
0.8nm,0.4s,baz=1.9,slow=7.7,SNR=10
WRA pP **pP** **01 05 04.9 +1.5**
1.3nm,0.7s,baz=4.1,slow=7.4,SNR=4.2
ARU Arti 57.07 319 P **P** **01 04 58.8 -0.9**
2.4nm,0.4s,baz=89,slow=9.0,SNR=4.9
ASAR Alice Springs 59.37 187 P **P** **01 05 16.5 +0.3**
0.3nm,0.4s,baz=18,slow=13,SNR=5.8
YKA Yellowknife Ar 65.23 30 P **P** **01 05 55.8 +0.9**
0.3nm,0.7s,baz=288,slow=11,SNR=4.3
FINES FINESS Array B 69.80 332 P **P** **01 06 23.1 -0.6**
0.8nm,0.6s,baz=54,slow=7.1,SNR=4.7
AKASG Malin Array Be 75.08 322 P **P** **01 06 54.6 -0.7**
0.5nm,0.5s,baz=48,slow=5.9,SNR=4.1
NOA NORSAR Array B 75.26 337 P **P** **01 06 56.3 0.0**
1.5nm,0.7s,baz=46,slow=5.1,SNR=3.7
PDAR Pinedale Array 78.97 45 P **P** **01 07 19.4 +1.7**
0.2nm,0.3s,baz=299,slow=1.9,SNR=2.4
BRTR Keskin Array B 79.39 311 P **P** **01 07 20.2 +0.3**
0.4nm,0.5s,baz=129,slow=1.8,SNR=3.8
URZ Urewera 80.87 152 LR LR 01 39 07.5
comp=Z,19nm,19.6s,baz=6.5,slow=32

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*DDA **24** 01:01:25.5,39°.16N×29°.05E, h7km, Md2.7*
*ISK **24** 01:01:25.9,39°.10N×29°.01E, h9km, MD2.7*
*CSEM **24** 01:01:26.2±0.1,39°.11N×29°.06E, h5km, MD2.7, Error ellipse: s-maj=2.8km s-min=2.0km az=156.0*
ISC 24 01:01:26.1±0.9, 39°.12N±0°.02×29°.05E±0°.02, h13km±8km, n38, σ0°42/54, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**254**	P	**Pg**	**01 01 31.8**	**0.0**
DEMI				S	**Sg**	**01 01 35.7**	**+0.1**
DEMI	**Demirci**	**0.27**	**254**	*i* P	**Pg**	**01 01 31.8**	**0.0**
DEMI				*i* S	**Sg**	**01 01 35.7**	**+0.1**
GDZ	**Gediz**	**0.34**	**95**	P	**Pg**	**01 01 32.9**	**-0.1**
GDZ				S	**Sg**	**01 01 37.7**	**0.0**
GDZ	**Gediz**	**0.34**	**95**	*i* P	**Pg**	**01 01 32.9**	**-0.1**
GDZ				*i* S	**Sg**	**01 01 37.7**	**0.0**
TVSB	**Tavsanli**	**0.46**	**44**	*e*PG	**Pb**	**01 01 35.8**	**-0.3**
TVSB	**Tavsanli**	**0.46**	**44**	*e*Pg	**Pb**	**01 01 35.8**	**-0.3**
DURS	**Dursunbey**	**0.66**	**317**	P	**Pb**	**01 01 39.9**	**+0.4**
DURS				S	**Sg**	**01 01 47.0**	**-0.6**
DURS	**Dursunbey**	**0.66**	**317**	*i* P	**Pb**	**01 01 39.9**	**+0.4**
DURS				*i* S	**Sg**	**01 01 47.0**	**-0.6**
KULA	**Kula-Manisa**	**0.68**	**207**	*e*PG	**Pg**	**01 01 39.1**	**-0.2**
KULA				*e*SG	**Sg**	**01 01 47.8**	**-0.4**
KULA	**Kula-Manisa**	**0.68**	**207**	*e*Pg	**Pg**	**01 01 39.1**	**-0.2**
KULA				*e*Sg	**Sg**	**01 01 47.8**	**-0.4**
KHL	**Karahalli**	**0.88**	**155**	*e*PG	**Pb**	**01 01 43.4**	**+0.2**
KHL	**Karahalli**	**0.88**	**155**	*e*Pg	**Pb**	**01 01 43.4**	**+0.2**
AKHS	**Akhisar**	**0.99**	**256**	P	**Pb**	**01 01 45.0**	**-0.1**
AKHS				S	**Sn**	**01 01 58.8**	**-0.7**
AKHS	**Akhisar**	**0.99**	**256**	*i* P	**Pb**	**01 01 45.0**	**-0.1**
AKHS				*i* S	**Sn**	**01 01 58.8**	**-0.7**
AKS	**Akhisar**	**0.99**	**256**	*e*PG	**Pg**	**01 01 45.4**	**+0.1**
AKS	**Akhisar**	**0.99**	**256**	*e*Pg	**Pg**	**01 01 45.4**	**+0.1**
BALB	**Balikesir**	**1.04**	**300**	*e*PG	**Pb**	**01 01 45.8**	**-0.2**
BALB	**Balikesir**	**1.04**	**300**	*e*Pg	**Pb**	**01 01 45.8**	**-0.2**
CAVI	**Cavuskoy**	**1.24**	**29**	*e*PN	**Pg**	**01 01 50.9**	**+0.9**
CAVI	**Cavuskoy**	**1.24**	**29**	*e*Pn	**Pg**	**01 01 50.9**	**+0.9**
MDNY	**Mudanya-Bursa**	**1.25**	**354**	*e*PN	**Pg**	**01 01 50.3**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.25**	**354**	*e*Pn	**Pg**	**01 01 50.3**	**+0.1**
IZI	**Iznik**	**1.26**	**15**	*e*PN	**Pg**	**01 01 50.6**	**+0.2**
IZI	**Iznik**	**1.26**	**15**	*e*Pn	**Pg**	**01 01 50.6**	**+0.2**
KCTX	**Karacabey (Bur**	**1.26**	**335**	*e*PN	**Pg**	**01 01 50.1**	**-0.2**
KCTX	**Karacabey (Bur**	**1.26**	**335**	*e*Pn	**Pg**	**01 01 50.2**	**-0.2**
BORA	**Eskisehir**	**1.33**	**55**	P	**Pn**	**01 01 50.3**	**-0.1**
BORA				S	**Sg**	**01 02 08.8**	**-0.1**
BORA	**Eskisehir**	**1.33**	**55**	*i* P	**Pn**	**01 01 50.3**	**-0.1**
BORA				*i* S	**Sg**	**01 02 08.8**	**-0.1**
ADVT	**Abdulvahap**	**1.42**	**22**	*e*PN	**Pb**	**01 01 52.6**	**+0.2**
ADVT	**Abdulvahap**	**1.42**	**22**	*e*Pn	**Pb**	**01 01 52.6**	**+0.2**
ARMT	**Armutlu**	**1.45**	**354**	*e*PN	**Pb**	**01 01 53.0**	**0.0**
ARMT	**Armutlu**	**1.45**	**354**	*e*Pn	**Pb**	**01 01 53.0**	**0.0**
ESKT	**Eskisehir**	**1.45**	**73**	*i* P	**Pn**	**01 01 52.4**	**+0.2**
ESKT				*i* S	**Sb**	**01 02 12.1**	**+0.6**
SEYT	**Eskypehyr**	**1.45**	**73**	P	**Pn**	**01 01 52.3**	**+0.2**
SEYT				S	**Sb**	**01 02 12.1**	**+0.6**
GULT	**Gulveren**	**1.73**	**40**	*e*PN	**Pb**	**01 01 57.5**	**-0.3**
GULT	**Gulveren**	**1.73**	**40**	*e*Pn	**Pb**	**01 01 57.5**	**-0.3**
AYVA	**Ayvalik**	**1.84**	**277**	*i* P	**Pg**	**01 02 02.0**	**+0.6**
AYVA				*i* S	**Sb**	**01 02 23.6**	**+1.1**
KAND	**Kocaeli-Kandir**	**2.16**	**24**	*i* P	**Pg**	**01 02 06.9**	**-0.6**
KAND				*i* S	**Sg**	**01 02 34.6**	**-0.9**

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*ISK **24** 01:05:37.4,39°.09N×29°.07E, h5km, MD3.0*
*DDA **24** 01:05:37.5,39°.14N×29°.04E, h4km, Md3.1*
*CSEM **24** 01:05:38.5±0.1,39°.09N×29°.07E, h2km, MD3.1, Error ellipse: s-maj=3.2km s-min=2.8km az=8.0*
ISC 24 01:05:37.8±0.9, 39°.11N±0°.02×29°.05E±0°.02, h15km±7km, n76, σ0°76/95, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**256**	P	**Pg**	**01 05 43.6**	**0.0**
DEMI				S	**Sg**	**01 05 47.4**	**-0.2**
DEMI	**Demirci**	**0.27**	**256**	*i* P	**Pg**	**01 05 43.6**	**0.0**
DEMI				*i* S	**Sg**	**01 05 47.4**	**-0.2**
GDZ	**Gediz**	**0.34**	**93**	P	**Pg**	**01 05 44.7**	**-0.1**
GDZ				S	**Sg**	**01 05 49.7**	**+0.1**
GDZ	**Gediz**	**0.34**	**93**	*i* P	**Pg**	**01 05 44.7**	**-0.1**
GDZ				*i* S	**Sg**	**01 05 49.7**	**+0.1**
TVSB	**Tavsanli**	**0.47**	**43**	*e*PG	**Pg**	**01 05 47.0**	**-0.2**
TVSB	**Tavsanli**	**0.47**	**43**	*e*Pg	**Pg**	**01 05 47.0**	**-0.2**
DURS	**Dursunbey**	**0.67**	**318**	P	**Pg**	**01 05 50.7**	**-0.2**
DURS				S	**Sg**	**01 05 59.5**	**-0.2**
DURS	**Dursunbey**	**0.67**	**318**	*i* P	**Pg**	**01 05 50.7**	**-0.2**
DURS				*i* S	**Sg**	**01 05 59.5**	**-0.2**
KULA	**Kula-Manisa**	**0.67**	**207**	*e*PG	**Pg**	**01 05 50.9**	**+0.1**
KULA	**Kula-Manisa**	**0.67**	**207**	*e*Pg	**Pg**	**01 05 50.9**	**+0.1**
KHL	**Karahalli**	**0.87**	**155**	*e*PG	**Pn**	**01 05 55.2**	**-0.2**
KHL				*e*SG	**Sg**	**01 06 06.6**	**+0.6**
KHL	**Karahalli**	**0.87**	**155**	*e*Pg	**Pn**	**01 05 55.2**	**-0.2**
KHL				*e*Sg	**Sg**	**01 06 06.6**	**+0.6**
ORLT	**Orhaneli**	**0.94**	**353**	*e*PG	**Pn**	**01 05 57.2**	**+0.7**
AKHS	**Akhisar**	**0.99**	**257**	P	**Pg**	**01 05 57.0**	**+0.1**
AKHS				S	**Sg**	**01 06 10.2**	**+0.3**
AKHS	**Akhisar**	**0.99**	**257**	*i* P	**Pg**	**01 05 57.0**	**+0.1**
AKHS				*i* S	**Sg**	**01 06 10.2**	**+0.3**
AKS	**Akhisar**	**0.99**	**257**	*e*PG	**Pn**	**01 05 57.4**	**+0.3**
BALB	**Balikesir**	**1.05**	**301**	*e*PG	**Pg**	**01 05 59.2**	**+1.1**
BALB	**Balikesir**	**1.05**	**301**	*e*Pg	**Pg**	**01 05 59.2**	**+1.1**
CAVI	**Cavuskoy**	**1.25**	**29**	*e*PN	**Pg**	**01 06 02.2**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.27**	**354**	*e*PN	**Pg**	**01 06 02.8**	**+0.6**
MDNY	**Mudanya-Bursa**	**1.27**	**354**	*e*Pn	**Pg**	**01 06 02.8**	**+0.6**
IZI	**Iznik**	**1.27**	**15**	*e*PN	**Pg**	**01 06 03.2**	**+0.9**
IZI	**Iznik**	**1.27**	**15**	*e*Pn	**Pg**	**01 06 03.2**	**+0.9**
KCTX	**Karacabey (Bur**	**1.27**	**335**	*e*PN	**Pg**	**01 06 02.4**	**+0.1**
KCTX	**Karacabey (Bur**	**1.27**	**335**	*e*Pn	**Pg**	**01 06 02.4**	**+0.1**
BORA	**Eskisehir**	**1.33**	**54**	P	**Pb**	**01 06 02.6**	**+0.1**
BORA				S	**Sg**	**01 06 21.0**	**+0.2**
BORA	**Eskisehir**	**1.33**	**54**	*i* P	**Pb**	**01 06 02.6**	**+0.1**
BORA				*i* S	**Sg**	**01 06 21.0**	**+0.2**
GONE	**Gonen-Balikesi**	**1.41**	**312**	*e*PN	**Pg**	**01 06 05.2**	**+0.2**
GONE	**Gonen-Balikesi**	**1.41**	**312**	*e*Pn	**Pg**	**01 06 05.2**	**+0.2**
ADVT	**Abdulvahap**	**1.43**	**22**	*e*PN	**Pg**	**01 06 05.4**	**+0.2**
ADVT	**Abdulvahap**	**1.43**	**22**	*e*Pn	**Pg**	**01 06 05.4**	**+0.2**
ESKT	**Eskisehir**	**1.46**	**73**	*i* P	**Pb**	**01 06 04.7**	**+0.1**
ESKT				*i* S	**Sn**	**01 06 21.6**	**-0.9**
SEYT	**Eskypehyr**	**1.46**	**73**	P	**Pb**	**01 06 04.7**	**+0.1**
ARMT	**Armutlu**	**1.46**	**354**	*e*PN	**Pg**	**01 06 06.4**	**+0.4**
ARMT	**Armutlu**	**1.46**	**354**	*e*Pn	**Pg**	**01 06 06.4**	**+0.4**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**218**	*e*PN	**Pg**	**01 06 06.2**	**0.0**
BOLV	**Bolvadin**	**1.53**	**104**	P	**Pg**	**01 06 07.3**	**0.0**
BOLV	**Bolvadin**	**1.53**	**104**	*i* P	**Pg**	**01 06 07.3**	**0.0**
BOLV				*i* S	**Sn**	**01 06 21.9**	**-2.5**
EDC	**Edincik**	**1.54**	**324**	*e*PN	**Pg**	**01 06 07.1**	**-0.3**
EDC	**Edincik**	**1.54**	**324**	*e*Pn	**Pg**	**01 06 07.1**	**-0.3**
GULT	**Gulveren**	**1.74**	**40**	*e*PN	**Pb**	**01 06 10.1**	**+0.7**
HRT	**Hereke**	**1.78**	**15**	*e*PN	**Pb**	**01 06 10.9**	**+0.8**
HRT	**Hereke**	**1.78**	**15**	*e*Pn	**Pb**	**01 06 10.9**	**+0.8**
AYVA	**Ayvalik**	**1.84**	**277**	P	**Pb**	**01 06 11.8**	**+0.7**
AYVA				S	**Sg**	**01 06 37.7**	**+0.6**
AYVA	**Ayvalik**	**1.84**	**277**	*i* P	**Pb**	**01 06 11.8**	**+0.7**
AYVA				*i* S	**Sg**	**01 06 37.7**	**+0.6**
MRMT	**Marmara Adasi**	**1.87**	**324**	*e*PN	**Pb**	**01 06 12.0**	**+0.4**
MRMT	**Marmara Adasi**	**1.87**	**324**	*e*Pn	**Pb**	**01 06 12.0**	**+0.4**
GOLH	**Golhisar**	**1.91**	**168**	P	**Pb**	**01 06 11.9**	**-0.4**
GOLH	**Golhisar**	**1.91**	**168**	*i* P	**Pb**	**01 06 11.9**	**-0.4**
GOLH				*i* S	**Sg**	**01 06 43.8**	**+4.5**
SVRH	**Sivrihisar-ESK**	**1.95**	**79**	*e*PN	**Pb**	**01 06 12.8**	**-0.1**
SVRH	**Sivrihisar-ESK**	**1.95**	**79**	*e*Pn	**Pb**	**01 06 12.9**	**-0.1**
ISK	**Istanbul-Kandi**	**1.96**	**0**	*e*PN	**Pb**	**01 06 13.6**	**+0.5**
ISK	**Istanbul-Kandi**	**1.96**	**0**	*e*Pn	**Pb**	**01 06 13.6**	**+0.5**
YER	**Yerkesik**	**2.06**	**197**	*e*PN	**Pb**	**01 06 14.8**	**0.0**
BGKT	**Bogazkoy**	**2.08**	**354**	*e*PN	**Pb**	**01 06 15.3**	**+0.1**
BGKT	**Bogazkoy**	**2.08**	**354**	*e*Pn	**Pb**	**01 06 15.3**	**+0.1**
SILT	**Sile**	**2.09**	**12**	*e*PN	**Pb**	**01 06 15.8**	**+0.4**
SILT	**Sile**	**2.09**	**12**	*e*Pn	**Pb**	**01 06 15.8**	**+0.4**
RKY	**Sarkoy-Tekirda**	**2.14**	**318**	*e*PN	**Pb**	**01 06 16.3**	**+0.1**
RKY	**Sarkoy-Tekirda**	**2.14**	**318**	*e*Pn	**Pb**	**01 06 16.3**	**+0.1**
KLYT	**Kilyos**	**2.14**	**360**	*e*PN	**Pb**	**01 06 15.8**	**-0.4**
KLYT	**Kilyos**	**2.14**	**360**	*e*Pn	**Pb**	**01 06 15.8**	**-0.4**
MDUB	**Mudurnu**	**2.14**	**50**	*e*PN	**Pb**	**01 06 16.1**	**-0.2**
CTKS	**Kestanelik-??a**	**2.17**	**349**	*e*PN	**Pb**	**01 06 16.6**	**-0.1**
CTKS	**Kestanelik-??a**	**2.17**	**349**	*e*Pn	**Pb**	**01 06 16.6**	**-0.1**
KAND	**Kocaeli-Kandir**	**2.17**	**23**	*i* P	**Pg**	**01 06 18.9**	**-0.5**
KAND				*i* S	**Sn**	**01 06 38.6**	**-1.2**
EZN	**Ezine**	**2.23**	**290**	*e*PN	**Pb**	**01 06 17.3**	**-0.4**
EZN	**Ezine**	**2.23**	**290**	*e*Pn	**Pb**	**01 06 17.3**	**-0.4**
SAHE	**Sakarya_HENDEK**	**2.23**	**38**	P	**Pb**	**01 06 19.0**	**+1.3**
SAHE	**Sakarya_HENDEK**	**2.23**	**38**	*i* P	**Pb**	**01 06 19.0**	**+1.3**
SAHE				*i* S	**Sn**	**01 06 41.5**	**+0.1**
GELI	**Tayfur-Gelibol**	**2.37**	**304**	*e*PN	**Pb**	**01 06 19.3**	**-0.8**
GELI	**Tayfur-Gelibol**	**2.37**	**304**	*e*Pn	**Pb**	**01 06 19.3**	**-0.8**
CTYL	**Yalikoy Yolu**	**2.44**	**346**	*e*PN	**Pb**	**01 06 20.3**	**-0.9**
CTYL	**Yalikoy Yolu**	**2.44**	**346**	*e*Pn	**Pb**	**01 06 20.3**	**-0.9**
ERIK	**Erikli-Kesan**	**2.50**	**309**	*e*PN	**Pb**	**01 06 21.0**	**-1.3**
ERIK	**Erikli-Kesan**	**2.50**	**309**	*e*Pn	**Pb**	**01 06 21.0**	**-1.3**

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*ISK **24** 01:09:02.6,39°.09N×29°.04E, h6km, MD2.6*
*ISCJB **24** 01:09:03.5±0.5,39°.09N±0°.04×29°.00E±0°.04, h7km±7km, Error ellipse: s-maj=6.8km s-min=4.7km az=160.1*
*CSEM **24** 01:09:03.4±0.2,39°.10N×28°.99E, h8km, MD2.6, Error ellipse: s-maj=4.1km s-min=3.3km az=140.0*
*DDA **24** 01:09:03.2,39°.15N×28°.99E, h7km, Md2.6*
ISC 24 01:09:02.7±1.1, 39°.09N±0°.04×28°.98E±0°.03, h15km±11km, n22, σ0°42/34, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.21**	**258**	P	**Pb**	**01 09 08.6**	**+0.2**
DEMI				S	**Sb**	**01 09 11.8**	**-0.3**
DEMI	**Demirci**	**0.21**	**258**	*i* P	**Pb**	**01 09 08.6**	**+0.2**
DEMI				*i* S	**Sb**	**01 09 11.8**	**-0.3**
GDZ	**Gediz**	**0.39**	**90**	P	**Pb**	**01 09 11.4**	**+0.1**
GDZ				S	**Sb**	**01 09 16.9**	**-0.3**
GDZ	**Gediz**	**0.39**	**90**	*i* P	**Pb**	**01 09 11.4**	**+0.1**
GDZ				*i* S	**Sb**	**01 09 16.9**	**-0.3**
TVSB	**Tavsanli**	**0.52**	**46**	*e*PG	**Pg**	**01 09 12.8**	**-0.2**
TVSB				*e*SG	**Sg**	**01 09 19.6**	**-0.4**
TVSB	**Tavsanli**	**0.52**	**46**	*e*Pg	**Pg**	**01 09 12.8**	**-0.2**
TVSB				*e*Sg	**Sg**	**01 09 19.6**	**-0.4**
KULA	**Kula-Manisa**	**0.63**	**204**	*e*PG	**Pb**	**01 09 15.5**	**+0.1**
KULA				*e*SG	**Sb**	**01 09 24.8**	**+0.8**
KULA	**Kula-Manisa**	**0.63**	**204**	*e*Pg	**Pb**	**01 09 15.5**	**+0.1**
KULA				*e*Sg	**Sb**	**01 09 24.8**	**+0.8**
DURS	**Dursunbey**	**0.65**	**323**	P	**Pg**	**01 09 15.1**	**-0.3**
DURS				S	**Sn**	**01 09 26.8**	**-0.7**
DURS	**Dursunbey**	**0.65**	**323**	*i* P	**Pg**	**01 09 15.1**	**-0.3**
DURS				*i* S	**Sn**	**01 09 26.8**	**-0.7**
KCTX	**Karacabey (Bur**	**1.27**	**338**	*e*PN	**Pg**	**01 09 27.3**	**+0.1**
KCTX	**Karacabey (Bur**	**1.27**	**338**	*e*Pn	**Pg**	**01 09 27.3**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.28**	**357**	*e*PN	**Pg**	**01 09 27.8**	**+0.4**
MDNY	**Mudanya-Bursa**	**1.28**	**357**	*e*Pn	**Pg**	**01 09 27.8**	**+0.4**
IZI	**Iznik**	**1.30**	**17**	*e*PN	**Pg**	**01 09 27.8**	**0.0**
IZI	**Iznik**	**1.30**	**17**	*e*Pn	**Pg**	**01 09 27.8**	**0.0**
BORA	**Eskisehir**	**1.39**	**55**	P	**Pb**	**01 09 28.9**	**+0.6**
BORA				S	**Sg**	**01 09 47.7**	**+0.3**
BORA	**Eskisehir**	**1.39**	**55**	*i* P	**Pb**	**01 09 28.9**	**+0.6**
BORA				*i* S	**Sg**	**01 09 47.7**	**+0.3**
ADVT	**Abdulvahap**	**1.46**	**23**	*e*PN	**Pb**	**01 09 30.0**	**+0.4**
ADVT	**Abdulvahap**	**1.46**	**23**	*e*Pn	**Pb**	**01 09 30.0**	**+0.4**
ARMT	**Armutlu**	**1.48**	**356**	*e*PN	**Pb**	**01 09 30.5**	**+0.6**
ARMT	**Armutlu**	**1.48**	**356**	*e*Pn	**Pb**	**01 09 30.5**	**+0.6**

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*ISCJB **24** 01:10:24.6±0.7,35°.74N±0°.06×140°.80E±0°.10, h53km±4km, mb3.7/10, Error ellipse: s-maj=14.2km s-min=8.3km az=151.0*
*JMA **24** 01:10:25.6±0.1,35°.75N×140°.67E, h45km±1km, M3.3 Broadband fault plane solution: P waves. NP1: φs18.00000°, δ78.00000°, λ89.00000°. NP2:φs203.00000°, δ12.00000°, λ94.00000°. Principal axes: T Plg57.0000°, Azm287.0000°; N Plg1.0000°, Azm18.0000°; P Plg33.0000°, Azm109.0000°;*
JMA Felt I J1.
*IDC **24** 01:10:32.8±2.4,35°.29N×139°.36E, h71km±17km, mb3.5/10, mb1 3.5/11, mb1mx3.3/54, mbtmp3.7/11, MS2.4/2, Ms1 2.4/2, ms1mx2.2/34 Error ellipse: s-maj=34.0km s-min=18.5km az=67.0*
ISC 24 01:10:26.1±0.8, 35.74N±0°.05×140°.75E±0°.08, h47km±7km, n23, σ1°01/24, mb3.7/10, 2C-3D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.09**	**113**	⇑P	**Pn**	**01 10 33.0**	**-0.5**
CHOJ				S	**Sn**	**01 10 38.8**	**+0.1**
JCN	**Nagara**	**0.55**	**235**	⇓P	**Pn**	**01 10 37.3**	**-0.5**
JYT	**Yasato**	**0.67**	**317**	⇓P	**Pn**	**01 10 38.1**	**-1.2**
JYT				S	**Sn**	**01 10 47.2**	**-1.6**
BSO4	**Boso 4**	**0.82**	**205**	⇑P	**Pn**	**01 10 40.7**	**-0.5**
JHO	**Hitachi**	**0.88**	**350**	⇓P	**Pn**	**01 10 41.7**	**-0.5**
BSO3	**Boso 3**	**0.96**	**192**	P	**Pn**	**01 10 42.3**	**-0.6**
JAG	**Ashikaga**	**1.26**	**303**	P	**Pn**	**01 10 46.1**	**-1.1**
JOD2	**Odawara 2**	**1.44**	**251**	P	**Pn**	**01 10 48.7**	**-1.1**
MJAR	**Matsushiro Arr**	**2.21**	**292**	P	**Pn**	**01 10 59.3**	**-1.1**
	13nm,0.3s,baz=96,slow=14,SNR=78						
MJAR				S	Sn	01 11 17.2	-9.2
	10nm,0.3s,baz=94,slow=20,SNR=9.7						
MAT	**Matsushiro**	**2.21**	**292**	P	**Pn**	**01 11 00.7**	**+0.4**
MAT				S	**Sn**	**01 11 28.4**	**+1.9**
KSRS	**Korea Array**	**10.46**	**283**	LR	LR	01 15 35.3	
	comp=Z,12nm,20.4s,baz=110,slow=32						
USRK	**Ussuriysk Ar.**	**10.79**	**324**	P	**Pn**	**01 12 59.7**	**+1.8**
	0.1nm,0.3s,baz=165,slow=18,SNR=3.2						
KLR	**Kul'dur**	**15.01**	**337**	LR	LR	01 18 49.0	
	comp=Z,33nm,20.9s,baz=7.5,slow=33						
SONM	**Songino Array**	**28.09**	**306**	P	**P**	**01 16 12.6**	**-0.8**
	0.8nm,0.6s,baz=98,slow=9.2,SNR=3.1						
ZALV	**Zalesovo Beam**	**42.40**	**313**	P	**P**	**01 18 15.6**	**-0.2**
	1.1nm,0.8s,baz=123,slow=7.3,SNR=3.8						
MKAR	**Makanchi Array**	**44.37**	**303**	P	**P**	**01 18 31.5**	**-0.3**
	0.9nm,0.6s,baz=92,slow=9.7,SNR=9.8						
KURBB	**Kurchatov Arra**	**46.39**	**309**	P	**P**	**01 18 46.8**	**-0.9**
	3.6nm,1.0s,baz=84,slow=8.4,SNR=19						
ILAR	**Eielson Array**	**50.87**	**32**	P	P	01 19 33.5	+12
	0.4nm,0.6s,baz=270,slow=5.7,SNR=5.4						
BVAR	**Borovoye Array**	**51.06**	**313**	P	**P**	**01 19 24.0**	**+0.5**
	0.8nm,0.6s,baz=96,slow=8.8,SNR=4.2						
WRA	**Warramunga Arr**	**55.71**	**187**	P	**P**	**01 19 56.8**	**-1.1**
	0.5nm,0.5s,baz=1.5,slow=7.4,SNR=6.5						
WRA				pP	**pP**	**01 20 11.1**	**+0.2**
	1.8nm,0.7s,baz=4.0,slow=7.4,SNR=6.0						
ARU	**Arti**	**56.98**	**319**	P	**P**	**01 20 06.2**	**-0.4**
	2.3nm,0.5s,baz=78,slow=8.1,SNR=4.4						
ASAR	**Alice Springs**	**59.44**	**187**	P	**P**	**01 20 24.7**	**+0.7**
	0.3nm,0.7s,baz=18,slow=12,SNR=4.1						
BRTR	**Keskin Array B**	**79.31**	**311**	P	**P**	**01 22 27.8**	**+0.8**
	0.4nm,1.0s,baz=56,slow=3.6,SNR=4.3						

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*ISCJB **24** 01:13:05.0±0.6,39°.08N±0°.04×29°.00E±0°.04, h7km±9km, Error ellipse: s-maj=7.4km s-min=5.5km az=170.7*
*CSEM **24** 01:13:04.8±0.2,39°.13N×28°.97E, h5km, MD2.6, Error ellipse: s-maj=4.4km s-min=3.3km az=145.0*
*DDA **24** 01:13:04.7,39°.05N×29°.02E, h7km, Md2.6*
*ISK **24** 01:13:04.2,39°.07N×29°.07E, h11km, MD2.4*
ISC 24 01:13:04.8±1.0, 39°.10N±0°.04×29°.00E±0°.03, h12km±9km, n16, σ0°75/25, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.23**	**256**	P	**Pg**	**01 13 09.7**	**0.0**
DEMI				S	**Sg**	**01 13 12.9**	**-0.1**
DEMI	**Demirci**	**0.23**	**256**	*i* P	**Pg**	**01 13 09.7**	**0.0**
DEMI				*i* S	**Sg**	**01 13 12.9**	**-0.1**
GDZ	**Gediz**	**0.37**	**91**	P	**Pg**	**01 13 12.7**	**+0.3**
GDZ				S	**Sb**	**01 13 18.1**	**-1.2**
GDZ	**Gediz**	**0.37**	**91**	*i* P	**Pg**	**01 13 12.7**	**+0.3**
GDZ				*i* S	**Sb**	**01 13 18.1**	**-1.2**
TVSB	**Tavsanli**	**0.50**	**45**	*e*PG	**Pg**	**01 13 14.2**	**-0.5**
TVSB	**Tavsanli**	**0.50**	**45**	*e*Pg	**Pg**	**01 13 14.2**	**-0.5**
KULA	**Kula-Manisa**	**0.64**	**205**	*e*PG	**Pg**	**01 13 17.2**	**0.0**
KULA				*e*SG	**Sb**	**01 13 26.2**	**-0.6**
KULA	**Kula-Manisa**	**0.64**	**205**	*e*Pg	**Pg**	**01 13 17.2**	**0.0**
KULA				*e*Sg	**Sb**	**01 13 26.3**	**-0.6**
DURS	**Dursunbey**	**0.65**	**321**	P	**Pg**	**01 13 16.3**	**-1.2**
DURS	**Dursunbey**	**0.65**	**321**	*i* P	**Pg**	**01 13 16.3**	**-1.2**
DURS				*i* S	**Sb**	**01 13 29.0**	**+1.8**
KCTX	**Karacabey (Bur**	**1.27**	**337**	*e*PN	**Pn**	**01 13 29.1**	**+0.7**
KCTX	**Karacabey (Bur**	**1.27**	**337**	*e*Pn	**Pn**	**01 13 29.1**	**+0.7**
BORA	**Eskisehir**	**1.37**	**55**	P	**Pg**	**01 13 31.2**	**0.0**
BORA				S	**Sg**	**01 13 49.4**	**+0.4**
BORA	**Eskisehir**	**1.37**	**55**	*i* P	**Pg**	**01 13 31.2**	**0.0**
BORA				*i* S	**Sg**	**01 13 49.4**	**+0.4**
GULT	**Gulveren**	**1.77**	**41**	*e*PN	**Pn**	**01 13 35.5**	**+0.1**
GULT	**Gulveren**	**1.77**	**41**	*e*Pn	**Pn**	**01 13 35.5**	**+0.1**

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*NIED **24** 01:25:00,39°.80N×143°.50E, h26km, Mw4.4 Best double couple: M0:3.86000×10^15 NP1:φs191.00000°, δ28.00000°, λ72.00000°. NP2:φs32.00000°, δ63.00000°, λ

INCN	**Inchon**	**13.22 265**	*e*Pn	**Pn**	**01 28 34.2 -0.6**
CN2	**Changchun**	**13.88 292**	*e*P	Pn	01 28 34.9 -9.0
CN2			pmax	pmax	
comp=Z,10.0nm,0.7s					
CN2			pmax	pmax	
comp=Z,200nm,3.0s					
CN2			LR	LR	
comp=N,300nm,14.0s					
CN2			LR	LR	
comp=E,400nm,14.0s					
CN2			LR	LR	
comp=Z,300nm,16.0s					
PETK	**Petropavlovsk-**	**16.56 32**	LR	LR	01 36 43.5
comp=Z,83nm,19.1s,baz=212,slow=41					
PET	**Petropavlovsk**	**16.89 33**	*e*P	P	01 29 35.7 +11
PET			pmax	pmax	
comp=Z,60nm,1.7s					
PET	**Petropavlovsk**	**16.89 33**	*e*P	P	01 29 35.7 +11
comp=Z,60nm,1.7s					
HIA	**Hailar**	**19.19 307**	*e*P	**P**	**01 29 48.5 -1.9**
HIA			pmax	pmax	
comp=Z,17nm,0.9s					
HIA	**Hailar**	**19.19 307**	*e*P	**P**	**01 29 48.5 -1.9**
comp=Z,17nm,0.9s					
MA2	**Magadan**	**20.35 11**	P	Pn	01 30 03.6 -1.5
comp=Z,15nm,0.6s,baz=205,slow=5.6,SNR=9.3					
MA2			LR	LR	01 37 57.5
comp=Z,48nm,18.3s,baz=202,slow=37					
BJI	**Beijing**	**20.76 279**	P	**P**	**01 30 03.9 -3.6**
BJI			S	S	01 33 45.0 -13
BJI			pmax	pmax	
comp=Z,11nm,1.6s					
BJI			pmax	pmax	
comp=Z,110nm,5.7s					
BJI			LR	LR	
comp=N,160nm,15.6s					
BJI			LR	LR	
comp=E,310nm,16.5s					
BJI			LR	LR	
comp=Z,180nm,17.7s					
BJT	**Baijiatuau**	**20.77 279**	*e*P	**P**	**01 30 04.5 -3.2**
BJT			pmax	pmax	
comp=Z,3.0nm,0.6s					
BJT	**Baijiatuau**	**20.77 279**	*e*P	**P**	**01 30 04.5 -3.2**
comp=Z,3.2nm,0.6s					
TIA	**Tai'an**	**20.89 268**	⇑P	**P**	**01 30 07.1 -1.9**
TIA			PP	**PnPn**	**01 30 37.3 +9.4**
TIA			S	**S**	**01 33 57.3 -2.9**
TIA			pmax	pmax	
comp=Z,30nm,0.9s					
TIA			LR	LR	
comp=N,240nm,10.7s					
TIA			LR	LR	
comp=E,550nm,13.1s					
TIA			LR	LR	
comp=Z,470nm,11.9s					
YAK	**Yakutsk**	**23.75 344**	LR	LR	01 39 42.7
comp=Z,84nm,21.3s,baz=172,slow=36					
YAK	**Yakutsk**	**23.75 344**	*e*P	**P**	**01 30 41.5 +3.0**
YAK			*e*PP	**sP**	**01 30 51.8 +0.5**
YAK			*e*		01 31 13.4
YAK			*e*PPP	PPP	01 31 24.7
YAK			*e*SS	SS	01 35 49.1
YAK			*e*		01 41 39.2
YAK			pmax	pmax	
comp=Z,16nm,1.0s					
YAK			pmax	pmax	
comp=N,12nm,1.2s					
YAK			pmax	pmax	
comp=Z,14nm,0.5s					
YAK			pmax	pmax	
comp=N,52nm,3.3s					
YAK			pmax	pmax	
comp=E,18nm,2.0s					
SEY	**Seymchan**	**23.80 10**	P	**P**	**01 30 38.6 -0.4**
comp=E,15nm,1.0s,baz=197,slow=6.9,SNR=23					
SEY	**Seymchan**	**23.80 10**	*ce*P	**P**	**01 30 37.9 -1.1**
YHNB	**Yeheng**	**23.81 237**	*e*P	**P**	**01 30 42.9 +3.4**
comp=E,121nm,1.6s					
NACB	**Ninganchiao**	**24.02 236**	*e*P	**P**	**01 30 45.8 +4.4**
comp=E,22nm,0.9s					
HHC	**Hu-ho-hao-te**	**24.14 283**	*e*P	**P**	**01 30 41.3 -1.3**
HHC			S	S	01 34 39.8 -19
HHC			pmax	pmax	
comp=Z,39nm,0.9s					
HHC			pmax	pmax	
comp=Z,130nm,4.4s					
HHC			LR	LR	
comp=N,850nm,11.3s					
HHC			LR	LR	
comp=E,760nm,12.6s					
HHC			LR	LR	
comp=Z,980nm,12.9s					
YULB	**Yu-li**	**24.76 235**	*e*P	**P**	**01 30 50.0 +1.7**
comp=Z,2.9nm,0.8s					
TPUB	**Ta-pu**	**25.25 236**	*e*P	**P**	**01 30 55.0 +2.2**
comp=Z,81nm,1.7s					
WHN	**Wuhan**	**25.30 258**	P	**P**	**01 30 52.4 -0.6**
WHN			S	S	01 35 29.6 +13
WHN			pmax	pmax	
comp=Z,80nm,1.0s					
WHN			LR	LR	
comp=Z,750nm,20.8s					
BOD	**Bodaibo**	**26.07 323**	⇑*i*P	**P**	**01 30 59.4 -0.4**
BOD			pmax	pmax	
comp=Z,14nm,0.9s					
ULN	**Ulaanbaatar**	**27.14 299**	*c i*P	**P**	**01 31 09.8 0.0**
ULN			pmax	pmax	
comp=Z,15nm,1.2s					
ULN	**Ulaanbaatar**	**27.14 299**	*e*P	**P**	**01 31 09.7 -0.1**
comp=Z,13nm,1.1s					
SONA1	**Songino Array**	**27.58 299**	*e*P	**P**	**01 31 12.9 -0.7**
SONM	**Songino Array**	**27.58 299**	P	**P**	**01 31 14.3 +0.6**
comp=Z,6.1nm,0.9s,baz=95,slow=8.3,SNR=27					
SONM			LR	LR	01 42 51.6
comp=Z,350nm,18.4s,baz=91,slow=38					
XAN	**Xi'an**	**27.95 269**	P	**P**	**01 31 15.6 -1.4**
XAN			pP	sP	01 31 29.8 -0.1
XAN			S	S	01 36 16.3 +17
XAN			pmax	pmax	
comp=Z,7.0nm,0.8s					
XAN			LR	LR	
comp=E,280nm,14.1s					
XAN			LR	LR	
comp=Z,260nm,15.1s					
ENH	**Enshi**	**29.11 261**	*e*P	**P**	**01 31 26.7 -0.7**
comp=Z,28nm,0.9s					
H11S1	**WAKE ISLAND Hy**	**29.32 130**	T	T	02 03 25.8
baz=320,slow=76,SNR=26					
H11S3	**WAKE ISLAND Hy**	**29.32 130**	T	T	02 03 24.1
baz=320,slow=76,SNR=20					
H11S2	**WAKE ISLAND Hy**	**29.33 130**	T	T	02 03 27.0
baz=320,slow=76,SNR=18					
TLY	**Talaya**	**29.73 307**	P	**P**	**01 31 32.8 +0.1**
comp=Z,1.4nm,0.4s,baz=145,slow=7.7,SNR=3.6					
TLY			LR	LR	01 44 11.2
comp=Z,96nm,19.2s,baz=90,slow=38					
TLY	**Talaya**	**29.73 307**	*e*P	**P**	**01 31 32.7 +0.1**
TLY			pmax	pmax	
comp=Z,4.0nm,1.0s					
TLY			MLR	MLR	
comp=Z,139nm,15.0s					
TLY	**Talaya**	**29.73 307**	*e*P	**P**	**01 31 32.7 +0.1**
comp=Z,5.9nm,1.2s					
ZAK	**Zakamensk**	**29.81 304**	*e*P	**P**	**01 31 32.9 -0.6**
ZAK			pmax	pmax	
comp=Z,5.0nm,1.4s					
BILL	**Bilibino**	**30.95 17**	⇑*e*P	**P**	**01 31 43.4 +0.2**
BILL			*e*		01 32 44.4
BILL			*e*PPP	PPP	01 32 58.4
BILL			pmax	pmax	
comp=Z,7.0nm,1.7s					
BILL			MLR	MLR	
comp=Z,178nm,25.0s					
BILL	**Bilibino**	**30.95 17**	*e*P	P	01 31 51.1 +7.9
comp=Z,4.0nm,0.8s					
LZH	**Lanzhou**	**31.14 276**	*e*P	**P**	**01 31 45.8 +0.4**
LZH			pP	sP	01 31 58.6 +0.2
LZH			sP	pP	01 32 03.8 +9.2
LZH			pmax	pmax	
comp=Z,32nm,1.0s					
LZH			pmax	pmax	
comp=Z,130nm,5.6s					
LZH			LR	LR	
comp=N,380nm,18.0s					
LZH			LR	LR	
comp=E,490nm,15.8s					
LZH			LR	LR	
comp=Z,320nm,13.6s					
TIXI	**Tiksi**	**32.74 352**	LR	LR	01 46 29.0
comp=Z,86nm,18.8s,baz=177,slow=38					
TIXI	**Tiksi**	**32.74 352**	⇓*i*P	**P**	**01 31 58.1 -0.7**
TIXI			pmax	pmax	
comp=Z,4.0nm,2.5s					
TIXI	**Tiksi**	**32.74 352**	*e*P	**P**	**01 32 03.2 +4.5**
comp=Z,6.8nm,1.4s					
GYA	**Guiyang**	**33.19 258**	*e*P	**P**	**01 32 04.8 +1.4**
GYA			pP	sP	01 32 18.4 +2.0
GYA			PP	**PnPn**	**01 33 14.0 +0.2**
GYA			PcP	**PcP**	**01 34 52.3 +6.6**
GYA			S	**S**	**01 37 14.5 -6.7**
GYA			sS	sS	01 37 37.8 +1.5
GYA			ScP	**ScP**	**01 38 31.0 +3.4**
GYA	**Guiyang**	**33.19 258**	ScS	ScS	01 42 27.9 -0.5
GYA			pmax	pmax	
comp=Z,10.0nm,0.8s					
GYA			pmax	pmax	
comp=Z,110nm,5.2s					
CD2	**Chengdu**	**33.21 267**	P	**P**	**01 32 02.6 -0.9**
CD2			pmax	pmax	
comp=Z,11nm,0.6s					
GTA	**Gaotai**	**33.24 284**	*e*P	**P**	**01 32 04.3 +0.5**
GTA			pP	pP	01 32 12.5 -0.4
GTA			sP	sP	01 32 16.5 -0.2
GTA			S	**S**	**01 37 15.4 -6.5**
GTA			pmax	pmax	
comp=Z,10.0nm,1.0s					
GTA			pmax	pmax	
comp=Z,55nm,4.3s					
GTA			LR	LR	
comp=N,150nm,17.8s					
GTA			LR	LR	
comp=E,370nm,17.3s					
GTA			LR	LR	
comp=Z,430nm,16.4s					
MIDW	**Midway**	**34.35 97**	*e*P	P	01 32 30.9 +18
comp=Z,61nm,0.7s					
NIKH	**Nikolski High**	**34.88 52**	*e*P	P	01 32 30.8 +13
comp=Z,40nm,1.0s					
QIZ	**Qiongzhong**	**35.43 244**	P	P	01 32 28.6 +5.9
QIZ			S	**S**	**01 37 55.8 +0.1**
QIZ			LR	LR	
comp=Z,170nm,13.6s					
AKUT	**Akutan**	**36.76 50**	*e*P	P	01 32 46.2 +12
comp=Z,66nm,1.4s					
KMI	**Kunming**	**36.88 259**	P	**P**	**01 32 36.3 +1.0**
KMI			pP	sP	01 32 50.8 +2.5
KMI			pmax	pmax	
comp=Z,10.0nm,1.3s					
KMI			pmax	pmax	
comp=Z,59nm,3.1s					
KMI			LR	LR	
comp=N,110nm,13.2s					
KMI			LR	LR	
comp=E,180nm,14.8s					
KMI			LR	LR	
comp=Z,190nm,15.4s					
TNA	**Tin City**	**37.72 31**	*e*P	P	01 32 51.1 +9.4
comp=Z,5.2nm,1.0s					
KWAJ	**Kwajalein Atol**	**37.76 138**	*e*P	P	01 32 57.8 +15
KWAJ			pmax	pmax	
comp=Z,185nm,1.1s					
KWAJ	**Kwajalein Atol**	**37.76 138**	*e*P	P	01 32 57.8 +15
comp=Z,185nm,1.1s					
FALS	**False Pass**	**38.15 49**	*e*P	P	01 32 57.4 +12
comp=Z,91nm,1.4s					
WMQ	**Urumqi**	**40.96 294**	P	**P**	**01 33 10.0 +0.8**
WMQ			pP	sP	01 33 18.5 -3.7
WMQ			sP	pP	01 33 27.0 +8.5
WMQ			PcP	**PcP**	**01 35 10.3 +1.3**
WMQ			pmax	pmax	
comp=Z,12nm,0.6s					
WMQ			pmax	pmax	
comp=Z,39nm,3.6s					
WMQ			LR	LR	
comp=N,23nm,17.4s					
WMQ			LR	LR	
comp=E,19nm,16.0s					
WMQ			LR	LR	
comp=Z,23nm,18.8s					
ZAA0	**Zalesovo Array**	**41.19 310**	*e*P	**P**	**01 33 10.3 -0.5**
ZALV	**Zalesovo Beam**	**41.19 310**	P	**P**	**01 33 10.8 0.0**
comp=Z,5.6nm,0.4s,baz=91,slow=7.7,SNR=20					
ZALV			PcP	**PcP**	**01 35 09.5 +0.1**
comp=Z,1.7nm,0.6s,baz=73,slow=3.7,SNR=3.8					
NRIK	**Noril'sk**	**41.40 334**	P	**P**	**01 33 13.1 +0.8**
comp=Z,1.3nm,0.3s,baz=121,slow=5.9,SNR=4.5					
KKM	**Kota Kinabalu**	**41.51 223**	*e*P	P	01 33 19.3 +5.4
comp=Z,23nm,1.5s					
TT01	**Tatalina**	**42.31 36**	*e*P	P	01 33 29.9 +10
SVW2	**Sparrevohn**	**42.44 39**	*e*P	P	01 33 30.9 +10
comp=Z,18nm,1.4s					
CHTO	**Chiang Mai**	**43.42 254**	*e*P	**P**	**01 33 29.3 -0.1**
CHTO			pmax	pmax	
comp=Z,4.0nm,0.7s					
CHTO	**Chiang Mai**	**43.42 254**	*e*P	**P**	**01 33 29.3 -0.1**
comp=Z,4.1nm,0.7s					
LSA	**Lhasa**	**43.47 273**	*e*P	**P**	**01 33 30.5 +0.3**
LSA			pmax	pmax	
comp=Z,5.0nm,0.6s					
LSA	**Lhasa**	**43.47 273**	*e*P	**P**	**01 33 30.5 +0.3**
comp=Z,4.6nm,0.6s					
CMAR	**Chiang Mai Arr**	**43.64 254**	P	**P**	**01 33 31.2 0.0**
comp=Z,1.5nm,0.7s,baz=51,slow=6.2,SNR=5.8					
CMAR			LR	LR	01 53 36.6
comp=Z,80nm,18.5s,baz=60,slow=39					
CM01	**Chiang Mai Arr**	**43.65 254**	*e*P	**P**	**01 33 31.9 +0.7**
MK01	**Makanchi Array**	**43.94 300**	*e*P	**P**	**01 33 32.9 -0.4**
MK31	**Makanchi Array**	**43.94 300**	*e*P	**P**	**01 33 33.6 +0.3**
MK31	**Makanchi Array**	**43.94 300**	*e*P	**P**	**01 33 33.5 +0.3**
MKAR	**Makanchi Array**	**43.94 300**	P	**P**	**01 33 33.4 +0.1**
comp=Z,6.2nm,0.8s,baz=83,slow=9.5,SNR=42					
MKAR			LR	LR	01 52 49.3
comp=Z,161nm,18.6s,baz=38,slow=37					
MKAR	**Makanchi Array**	**43.94 300**	*e*P	**P**	**01 33 33.6 +0.3**
MKAR	**Makanchi Array**	**43.94 300**	*e*P	**P**	**01 33 33.5 +0.3**
CAST	**Castle Rocks**	**44.12 36**	*e*P	P	01 33 44.9 +10
comp=Z,11nm,1.7s					
MAKZ	**Makanchi**	**44.15 300**	*e*P	**P**	**01 33 35.2 +0.2**
MAKZ			pmax	pmax	
comp=Z,8.0nm,0.9s					
MAKZ	**Makanchi**	**44.15 300**	*e*P	**P**	**01 33 35.2 +0.2**
comp=Z,8.4nm,0.9s					
SPU	**Mount Spurr**	**44.15 39**	*e*P	P	01 33 44.3 +9.5
BPAW	**Bear Paw Mtn.**	**44.61 35**	*e*P	P	01 33 48.1 +10
comp=Z,13nm,1.5s					
MLY	**Manley**	**44.73 33**	*e*P	P	01 33 49.1 +10
comp=Z,3.7nm,0.8s					
BRLK	**Bradley Lake**	**44.80 41**	*e*P	P	01 33 50.6 +11
comp=Z,136nm,2.0s					
TRF	**Thorofare Moun**	**44.92 36**	*e*P	P	01 33 50.5 +9.5
comp=Z,29nm,1.9s					
COLD	**Coldfoot**	**45.02 30**	*e*P	P	01 33 50.4 +8.8
comp=Z,16nm,2.0s					
RC01	**Rabbit Creek A**	**45.28 39**	*e*P	P	01 33 53.2 +10
comp=Z,30nm,1.6s					
KURK	**Kurchatov**	**45.42 306**	P	**P**	**01 33 45.3 +0.3**
KURK					01 35 24.2
KURK			pmax	pmax	
comp=Z,11nm,0.9s					
KURK			pmax	pmax	
comp=Z,1.0nm,0.8s					
KURK	**Kurchatov**	**45.42 306**	*e*P	**P**	**01 33 44.4 -0.6**
comp=Z,12nm,0.8s					
KURK			PcP	**PcP**	**01 35 24.2 +0.4**
KURBB	**Kurchatov Arra**	**45.50 306**	P	**P**	**01 33 45.3 -0.3**
comp=Z,11nm,0.9s,baz=81,slow=8.2,SNR=83					
KURBB			PcP	**PcP**	**01 35 24.2 +0.2**
comp=Z,0.9nm,0.8s,baz=67,slow=3.1,SNR=2.2					
PMR	**Palmer**	**45.54 38**	*e*P	P	01 33 56.5 +11
PMR			pmax	pmax	
comp=Z,45nm,2.0s					
PMR	**Palmer**	**45.54 38**	*e*P	P	01 33 56.5 +11
comp=Z,45nm,2.0s					
RND	**Reindeer**	**45.57 36**	*e*P	P	01 33 55.8 +10
RND			pmax	pmax	
comp=Z,30nm,2.0s					
RND	**Reindeer**	**45.57 36**	*e*P	P	01 33 55.8 +10
comp=Z,30nm,2.0s					
MDM	**Murphy Dome**	**45.80 34**	*e*P	P	01 33 56.9 +9.2
comp=Z,6.3nm,1.0s					
WRH	**Wood River Hil**	**45.87 34**	*e*P	P	01 33 58.3 +10
comp=Z,3.3nm,0.8s					
HDA	**Harding Lake**	**46.37 34**	*e*P	P	01 34 01.7 +9.5
comp=Z,20nm,1.0s					
ILAR	**Eielson Array**	**46.37 34**	P	**P**	**01 33 52.0 -0.3**
comp=Z,1.6nm,0.8s,baz=262,slow=6.4,SNR=19					
ILB	**Eielson Array**	**46.37 34**	*e*P	P	01 34 01.7 +9.4
IL1	**Eielson Array**	**46.38 34**	*e*P	P	01 34 00.9 +8.6
PDGK	**Podgornoye**	**46.82 296**	P	**P**	**01 33 55.6 -0.5**
PDGK			pmax	pmax	
comp=Z,10.0nm,1.2s					
JOHN	**Johnston Islan**	**46.84 105**	*e*P	P	01 34 12.4 +16
comp=Z,262nm,1.1s					
KLU	**Klutina**	**47.08 38**	*e*P	P	01 34 08.3 +10
comp=Z,25nm,1.5s					
DIV	**Divide**	**47.19 39**	*e*P	P	01 34 08.7 +10
comp=Z,10nm,0.9s					
EYAK	**Cordova Ski Ar**	**47.28 39**	*e*P	P	01 34 10.2 +11
comp=Z,60nm,1.9s					
DOT	**Dot Lake**	**47.69 35**	*e*P	P	01 34 12.7 +10
comp=Z,32nm,1.7s					
BMRM	**Bremner River**	**47.78 39**	*e*P	P	01 34 13.4 +10
comp=Z,16nm,1.4s					
MENT	**Mentasta**	**47.93 36**	*e*P	P	01 34 13.5 +9.0
comp=Z,4.4nm,0.8s					
GUN	**Gumba**	**48.38 274**	*e*P	**P**	**01 34 09.0 +0.2**
comp=Z,50nm,0.5s					
EGAK	**Eagle**	**48.82 33**	*e*P	P	01 34 20.0 +8.7
comp=Z,5.2nm,1.0s					
SAUI	**Saumlaki**	**48.83 196**	*e*P	P	01 34 20.5 +8.7
comp=Z,702nm,1.1s					
BALM	**Baldy**	**48.85 39**	*e*P	P	01 34 21.7 +10
BALM			pmax	pmax	
comp=Z,27nm,2.0s					
BALM	**Baldy**	**48.85 39**	*e*P	P	01 34 21.7 +10
comp=Z,27nm,2.0s					
KKN	**Kakani**	**48.90 274**	*e*P	**P**	**01 34 12.7 +0.1**
comp=Z,38nm,0.7s					
PKIN	**Phulchoki**	**48.91 274**	*e*P	**P**	**01 34 13.0 +0.2**
comp=Z,14nm,0.6s					
PMG	**Port Moresby**	**49.09 175**	*e*P	P	01 34 25.4 +12
PMG			pmax	pmax	
comp=Z,25nm,1.3s					
PMG	**Port Moresby**	**49.09 175**	*e*P	P	01 34 25.4 +12
comp=Z,25nm,1.3s					
DMN	**Daman**	**49.12 274**	*e*P	**P**	**01 34 14.6 +0.2**
TKM2	**Tokmak 2**	**49.64 297**	P	**P**	**01 34 17.9 -0.2**
TKM2			pmax	pmax	
comp=Z,14nm,0.8s					
TKM2	**Tokmak 2**	**49.64 297**	*e*P	**P**	**01 34 18.6 +0.5**
comp=Z,15nm,0.8s					
DAWY	**Dawson**	**49.68 34**	*e*P	P	01 34 28.2 +10
comp=Z,7.4nm,1.6s					
BVAR	**Borovoye Array**	**49.83 311**	P	**P**	**01 34 19.6 +0.4**
comp=Z,2.8nm,0.4s,baz=76,slow=8.2,SNR=21					
BRVK	**Borovoye**	**49.88 311**	*c i*P	**P**	**01 34 19.8 +0.3**
BRVK			pmax	pmax	
comp=Z,7.0nm,0.8s					
BRVK	**Borovoye**	**49.88 311**	*e*P	**P**	**01 34 19.6 +0.1**
comp=Z,6.9nm,0.9s					
OTUK	**Ortayu**	**50.03 304**	P	**P**	**01 34 19.6 -1.2**
OTUK			pmax	pmax	
comp=Z,5.0nm,0.8s					
KOLN	**Koldanda**	**50.20 275**	*e*P	**P**	**01 34 22.5 0.0**
comp=Z,14nm,0.8s					
FRU	**Bishkek**	**50.34 297**	*e*P	**P**	**01 34 22.0 -1.3**
PYUN	**Piuthan**	**50.50 276**	*e*P	**P**	**01 34 25.2 +0.4**
comp=Z,53nm,0.9s					
AAK	**Ala-Archa**	**50.50 297**	LR	LR	01 56 56.3
comp=Z,156nm,18.1s,baz=45,slow=37					
AAK	**Ala-Archa**	**50.50 297**	*e*P	**P**	**01 34 24.9 +0.3**
AAK			pmax	pmax	
comp=Z,5.0nm,1.0s					
AAK	**Ala-Archa**	**50.50 297**	*e*P	**P**	**01 34 24.9 +0.3**
comp=Z,5.2nm,1.0s					
KSH	**Kashi**	**50.65 293**	*e*P	**P**	**01 34 29.8 +4.1**
KSH			*e*pP	sP	01 34 42.3 +3.3
KSH			*e*PP	**PP**	**01 36 24.9 +3.3**
KSH			*e*ScP	**ScP**	**01 39 41.3 +4.7**
KSH			S	**S**	**01 41 34.4 -4.2**
KSH			ScS	**ScS**	**01 44 13.8 -0.5**
KSH			pmax	pmax	
comp=Z,96nm,6.6s					
KSH			LR	LR	
comp=N,130nm,5.1s					
KSH			LR	LR	
comp=E,130nm,6.3s					
KSH			LR	LR	
comp=Z,260nm,12.9s					
ZRNK	**Zerenda**	**50.65 311**	*e*P	**P**	**01 34 26.0 +0.6**
ZRNK			pmax	pmax	
comp=Z,9.0nm,0.9s					
ZRNK	**Zerenda**	**50.65 311**	*e*P	**P**	**01 34 26.0 +0.6**
comp=Z,8.8nm,0.9s					
EKS2	**Erkin-Say**	**50.98 297**	*e*P	**P**	**01 34 28.2 0.0**
EKS2			pmax	pmax	
comp=Z,5.0nm,0.8s					
EKS2	**Erkin-Say**	**50.98 297**	*e*P	**P**	**01 34 28.1 0.0**
comp=Z,5.3nm,0.8s					
INK	**Inuvik**	**51.25 28**	P	**P**	**01 34 30.0 +0.4**
comp=Z,1.4nm,0.7s,baz=284,slow=4.2,SNR=2.5					
MNAS	**Manas**	**51.92 297**	P	**P**	**01 34 34.2 -1.0**
MNAS			pmax	pmax	
comp=Z,11nm,0.8s					
SKAG	**Skagway**	**52.62 39**	*e*P	P	01 34 49.8 +10
comp=Z,3.8nm,0.9s					
ARU	**Arti**	**55.27 318**	P	**P**	**01 34 59.7 +0.3**
comp=Z,2.2nm,0.4s,baz=123,slow=3.5,SNR=8.0					
ARU	**Arti**	**55.27 318**	*c i*P	**P**	**01 34 59.0 -0.4**
ARU					01 36 58.5
ARU			S	**S**	**01 42 42.4 +1.6**
ARU			SS	**SS**	**01 46 24.9 +0.1**
ARU			pmax	pmax	
comp=Z,18nm,1.7s					
ARU			MLR	MLR	
comp=Z,311nm,16.0s					
ARU	**Arti**	**55.27 318**	*e*P	**P**	**01 34 59.5 +0.1**
comp=Z,18nm,1.4s					
AB31	**Akbulak array**	**57.29 309**	P	**P**	**01 35 13.2 -0.7**
AB31			pmax	pmax	
comp=Z,3.0nm,0.6s					
ABKAR	**Akbulak array**	**57.29 309**	*e*P	**P**	**01 35 13.8 -0.1**
comp=Z,3.2nm,0.5s					
AKTO	**Aktyubinsk**	**57.93 311**	P	**P**	**01 35 18.6 +0.2**
comp=Z,3.2nm,0.7s,baz=66,slow=12,SNR=12					
AKTO			LR	LR	02 00 42.1
comp=Z,46nm,18.6s,baz=62,slow=36					
WRA	**Warramunga Arr**	**60.02 190**	P	**P**	**01 35 30.8 -2.4**
comp=Z,1.9nm,0.7s,baz=6.3,slow=7.0,SNR=11					
YKA	**Yellowknife Ar**	**60.68 31**	P	**P**	**01 35 37.0 -0.1**
comp=Z,0.2nm,0.5s,baz=301,slow=6.5,SNR=4.6					
ARCES	**ARCESS Array B**	**61.92 339**	P	**P**	**01 35 45.9 +0.4**
comp=Z,2.9nm,0.9s,baz=60,slow=7.2,SNR=5.2					
KLMR	**Klimovskoe**	**62.20 327**	*e*P	**P**	**01 35 45.2 -2.2**
KLMR			pmax	pmax	
comp=Z,12nm,1.6s					
DAG	**Danmarks Havn**	**63.13 355**	*i*P	**P**	**01 35 52.9 -0.5**
comp=Z,4.2nm,0.9s					
DAG	**Danmarks Havn**	**63.13 355**	*i*P	**P**	**01 35 52.9 -0.5**
DAG			pmax	pmax	
comp=Z,4.0nm,0.9s					
ASAR	**Alice Springs**	**63.75 190**	P	**P**	**01 35 56.5 -1.6**
comp=Z,1.2nm,0.7s,baz=8.5,slow=6.2,SNR=14					
GEYT	**Alibeck**	**63.79 299**	P	**P**	**01 35 58.5 0.0**
comp=Z,3.9nm,0.8s,baz=72,slow=4.8,SNR=7.4					
GEYT			LR	LR	02 06 59.9
comp=Z,55nm,18.1s,baz=240,slow=39					
VRH	**Novokhopyorsk**	**66.51 318**	*e*P	**P**	**01 36 15.4 -0.4**
VRH			pmax	pmax	
comp=Z,10.0nm,1.3s					
OBN	**Obninsk**	**66.75 323**	⇑*e*P	**P**	**01 36 17.6 +0.3**
OBN			*e*		01 36 45.9
OBN			*e*		01 38 41.0
OBN			*e*S	**SKSac**	**01 46 04.0 -7.5**
OBN			pmax	pmax	
comp=Z,7.0nm,1.3s					
OBN			MLR	MLR	
comp=Z,128nm,14.0s					
FINES	**FINESS Array B**	**67.04 332**	P	**P**	**01 36 18.9 0.0**
comp=Z,3.7nm,0.7s,baz=49,slow=6.1,SNR=9.2					
FINES			LR	LR	02 08 41.5
comp=Z,170nm,18.8s,baz=48,slow=39					
FINES	**FINESS Array B**	**67.04 332**	P	**P**	**01 36 19.0 0.0**
FINES			pmax	pmax	
comp=Z,4.0nm,0.7s					
FINES			MLR	MLR	
comp=Z,170nm,18.8s					
LPSR	**Galich'ya Gora**	**67.11 320**	*e*P	**P**	**01 36 19.7 +0.1**

LPSR pmax pmax
comp=Z,7.0nm,0.9s
VSR Storozhevoye 67.81 319 *e*P **P 01 36 23.5 -0.6**
VSR pmax pmax
comp=Z,10.0nm,1.1s
SUMG Summit 67.91 1 *i* P **P 01 36 25.6 +0.8**
comp=Z,5.9nm,0.7s
SUMG Summit 67.91 1 *e*P **P 01 36 25.7 +0.9**
SUMG pmax pmax
comp=Z,7.0nm,0.9s
SUMG Summit 67.91 1 *e*P **P 01 36 25.7 +0.9**
comp=Z,6.6nm,0.9s
SWMT Swartz Lake 69.28 45 *e*P P 01 36 43.7 +10
GOF Gofitskoye 69.34 312⇑*e*P **P 01 36 34.4 +0.7**
GOF pmax pmax
comp=Z,23nm,0.8s
ZEI Tsey 70.17 309 *e*P **P 01 36 38.0 -1.2**
ZEI pmax pmax
comp=Z,10.0nm,0.8s
KIV Kislovodsk 70.19 311⇓*i*P **P 01 36 40.0 +0.9**
KIV *e* 01 37 00.7
KIV *e* 01 39 10.7
KIV pmax pmax
comp=Z,24nm,1.0s
KIV MLR MLR
comp=Z,123nm,18.0s
KIV Kislovodsk 70.19 311 *e*P **P 01 36 40.9 +1.7**
comp=Z,22nm,1.0s
KBZ Khabaz 70.21 311 P **P 01 36 40.0 +1.0**
comp=Z,7.0nm,0.9s,baz=36,slow=2.8,SNR=14
NEY Neytrino 70.59 310⇓*e*P **P 01 36 43.0 +1.3**
NEY pmax pmax
comp=Z,1.0nm,0.8s
EGMT Eagleton 71.23 43 *e*P P 01 36 57.5 +12
comp=Z,1μm,0.8s
HLID Hailey 71.43 49 *e*P P 01 36 57.1 +10
comp=Z,2.2nm,0.8s
NC204 NORSAR Array S 72.13 338 *e*P **P 01 36 51.8 +1.3**
NVAR Mina Array Bea 72.17 55 P **P 01 36 51.6 +0.3**
comp=Z,0.9nm,0.6s,baz=294,slow=7.4,SNR=5.2
NB2 NORSAR Subarra 72.19 338 P **P 01 36 50.6 -0.2**
comp=Z,2.8nm,0.7s,baz=39,slow=6.2
NOA NORSAR Array B 72.19 338 P **P 01 36 50.9 +0.1**
comp=Z,4.9nm,0.8s,baz=39,slow=6.0,SNR=12
NOA LR LR 02 11 42.6
comp=Z,43nm,22.0s,baz=40,slow=38
AKASG Malin Array Be 72.99 323 P **P 01 36 55.4 -0.3**
comp=Z,2.0nm,0.7s,baz=39,slow=7.0,SNR=6.4
KIEV Kiev 73.00 323⇓*e*P **P 01 36 55.4 -0.4**
KIEV pmax pmax
comp=Z,14nm,2.6s
FXWY Fox Creek 73.31 47 *e*P P 01 37 08.9 +11
comp=Z,2.2nm,0.9s
MOOW Moose Ponds 73.40 47 *e*P P 01 37 09.4 +11
comp=Z,7.7nm,1.7s
FRB Frobisher Bay 73.74 14 P **P 01 36 59.5 -0.3**
comp=Z,3.3nm,0.7s,baz=323,slow=6.8,SNR=4.4
HDU Hyde Park 74.05 49 *e*P P 01 37 10.1 +7.8
TPNV Topopah Spring 74.37 55 *e*P P 01 37 14.5 +10
TPNV pmax pmax
comp=Z,6.0nm,1.0s
TPNV Topopah Spring 74.37 55 *e*P P 01 37 14.5 +10
comp=Z,6.3nm,1.0s
PDAR Pinedale Array 74.69 47 P **P 01 37 04.7 -1.5**
comp=Z,0.5nm,0.6s,baz=323,slow=2.2,SNR=5.6
SHPR Sheep Range 75.33 55 *e*P P 01 37 20.3 +10
comp=Z,18nm,1.9s
MTPU Mount Pierson 76.19 52 *e*P P 01 37 25.9 +11
comp=Z,3.0nm,0.8s
LCMT Little Creek M 76.20 53 *e*P P 01 37 25.4 +11
comp=Z,4.9nm,0.8s
BUR08 Bucovina Ar. S 77.02 322 *e*P **P 01 37 19.7 +0.5**
STHS Stebnicka Huta 77.52 325 *e*P **P 01 37 23.2 +1.4**
STHS pmax pmax
comp=Z,3.0nm,1.0s
STHS Stebnicka Huta 77.52 325 *e*P **P 01 37 23.2 +1.4**
BRTR Keskin Array B 78.10 312 P **P 01 37 25.5 +0.1**
comp=Z,0.6nm,0.6s,baz=107,slow=4.1,SNR=7.9
BR231 Keskin MP Arra 78.51 313 *e*P **P 01 37 26.4 -1.2**
KECS Kecovo 78.55 325 *e*P **P 01 37 28.8 +1.3**
KECS pmax pmax
comp=Z,1.0nm,0.7s
KECS Kecovo 78.55 325 *e*P **P 01 37 28.8 +1.3**
DPC Dobruska-Polom 78.87 329 *e*P **P 01 37 30.5 +1.1**
DPC *ex* x 01 37 47.5
DPC Dobruska-Polom 78.87 329 *e*P **P 01 37 30.5 +1.1**
DPC *e* 01 37 47.5
PSZ Piszkesteto 79.24 325 *e*P **P 01 37 31.8 +0.4**
PSZ pmax pmax
comp=Z,6.0nm,0.9s
PSZ Piszkesteto 79.24 325 *e*P **P 01 37 31.8 +0.4**
comp=Z,6.3nm,0.9s
VYHS Vyhne 79.26 326 *e*P **P 01 37 31.8 +0.3**
VYHS Vyhne 79.26 326 *e*P **P 01 37 31.8 +0.3**
CLL Collm 79.41 331 *e*P **P 01 37 32.0 -0.2**
CLL Collm 79.41 331 *e*P **P 01 37 32.0 -0.2**
ECSD EROS Data Cent 80.84 39 *e*P P 01 37 49.5 +9.4
comp=Z,2.7nm,0.8s
GERES GERESS Array B 81.11 329 P **P 01 37 41.4 -0.1**
comp=Z,0.6nm,0.5s,baz=32,slow=5.3,SNR=6.0
GERES LR LR 02 16 16.3
comp=Z,58nm,19.8s,baz=354,slow=38
ANMO Albuquerque 81.70 51 *e*P P 01 37 52.4 +7.4
ANMO pmax pmax
comp=Z,3.0nm,1.0s
ANMO Albuquerque 81.70 51 *e*P P 01 37 52.4 +7.4
comp=Z,2.9nm,1.0s
BFO Black Forest 83.58 332 *i* P **P 01 37 56.5 +2.1**
FUORN Ofenpass-Fuorn 84.27 330 *e*P **P 01 37 58.8 +0.6**
comp=Z,6.3nm,0.7s
PPT Papeete 84.60 118 LR LR 02 09 58.6
comp=Z,58nm,21.4s,baz=8.5,slow=32
CCM Cathedral Cave 87.79 40 *e*P P 01 38 24.8 +9.4
CCM pmax pmax
comp=Z,5.0nm,0.8s
CCM Cathedral Cave 87.79 40 *e*P P 01 38 24.8 +9.4
comp=Z,4.9nm,0.8s
TORD Torodi Ar. Bea 116.35 318 PKP **PKPdf 01 44 09.2 -1.0**
comp=Z,0.2nm,0.7s,baz=9.2,slow=2.1,SNR=2.8
SYO Syowa Base 131.34 208⇑*e*X **Pdif 01 41 33.4 +3.7**

IDC 24 01:27:22.9±2.8, 19°.17S×174°.59E, h0km, mb3.6/2, mb1 3.9/2, mb1mx3.5/36, mbtmp3.6/2, MS3.3/1, Ms1 3.3/1, ms1mx2.6/31, Error ellipse: s-maj=120.3km s-min=50.9km az=150.0, Vanuatu Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**37.88**	**262**	P	P	01 34 43.3	+1.3
	0.2nm,0.3s,baz=96,slow=8.3,SNR=5.4						
ASAR	**Alice Springs**	**38.05**	**256**	P	P	01 34 41.8	-1.7
	0.9nm,0.6s,baz=91,slow=9.1,SNR=7.7						
VNDA	**Vanda**	**58.73**	**183**	LR	LR	01 59 46.4	
	comp=Z,23nm,18.5s,baz=5.0,slow=33						
GERES	**GERESS Array B**	**146.62**	**337**	PKPbc	PKPdf	01 47 05.3	+0.2
	0.1nm,0.3s,baz=11,slow=2.1,SNR=2.3						
TORD	**Torodi Ar. Bea**	**170.93**	**230**	PKPab	PKPab	01 48 53.4	+0.8
	0.6nm,0.9s,baz=147,slow=5.7,SNR=2.9						

*ISCJB **24** 01:38:40.5±0.3, 73°.53N±0°.05×72°.2E±0°.1, h10km, mb3.8/28, MS3.1/6, Error ellipse: s-maj=6.8km s-min=5.7km az=28.8*
*MOS **24** 01:38:40.5±1.7, 73°.48N×72°.40E, h10km, mb4.0/18, Error ellipse: s-maj=24.0km s-min=7.8km az=87.5*
*IDC **24** 01:38:40.9±0.5, 73°.30N×72°.49E, h0km, mb3.9/20, mb1 4.1/24, mb1mx3.9/54, mbtmp4.0/24, ML4.2/3, MS3.1/8, Ms1 3.1/8, ms1mx2.9/46, Error ellipse: s-maj=12.5km s-min=11.2km az=93.0*

ISC 24 01:38:42.6±0.5, 73°.59N±0°.06×71°.61E±0°.05, h10km, n75, σ3°.24/81, mb3.9/28, MS3.1/6, 1C-4D, Near coast of northwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NRIK	**Noril'sk**	**6.62**	**122**	Pn	**Pn**	**01 40 16.1**	**-3.6**
	13nm,0.3s,baz=337,slow=6.1,SNR=107						
NRIK				Sn	Sn	01 41 22.9	-12
	18nm,0.3s,baz=308,slow=19,SNR=7.7						
NRIK				Lg	Lg	01 42 07.9	
	baz=18,slow=20,SNR=3.0						
HOPEN	**Hopen**	**12.10**	**306**	*e*P	**Pn**	**01 41 37.2**	**+2.5**
HOPEN				*e*S	**Sn**	**01 43 47.4**	**-1.9**
HOPEN				IAML		01 43 54.2	
	comp=Z,8.6nm,0.4s						
LVZ	**Lovozero**	**13.24**	**263**	*i* P	**Pn**	**01 41 53.9**	**+3.5**
SPA0	**Spitsbergen Ar**	**13.70**	**314**	Pn	**Pn**	**01 41 57.0**	**+0.5**
	baz=98,slow=14						
SPA0				Sn	**Sn**	**01 44 22.8**	**-5.6**
	baz=79,slow=28						
SPA0	**Spitsbergen Ar**	**13.70**	**314**	Pn	**Pn**	**01 41 57.0**	**+0.5**
	baz=98,slow=14						
SPA0				Sn	**Sn**	**01 44 22.8**	**-5.6**
	baz=79,slow=28						
SPITS	**Spitsbergen Ar**	**13.70**	**314**	Pn	**Pn**	**01 41 57.5**	**+1.0**
	baz=101,slow=15,SNR=118						
SPITS				Sn	**Sn**	**01 44 22.9**	**-5.6**
	baz=96,slow=20,SNR=3.1						
SPITS				LR	LR	01 49 32.8	
	comp=Z,92nm,20.0s,baz=50,slow=46						
APA0	**Apatity Array**	**13.91**	**264**	Pn	**Pn**	**01 41 59.1**	**-0.4**
	baz=68,slow=12						
APA0	**Apatity Array**	**13.91**	**264**	Pn	**Pn**	**01 41 59.1**	**-0.4**
	baz=68,slow=12						
HSPB	**Hornsund (broa**	**14.12**	**310**	*e*P	**Pn**	**01 42 02.8**	**+0.5**
HSPB				*e*S	**Sn**	**01 44 33.9**	**-5.0**
KBS	**Kingsbay**	**14.44**	**318**	Pn	**Pn**	**01 42 07.1**	**+0.4**
KBS	**Kingsbay**	**14.44**	**318**	*e*P	**Pn**	**01 42 07.0**	**+0.3**
KBS				*e*S	**Sn**	**01 44 41.9**	**-4.6**
KBS				IAML		01 45 06.7	
	comp=Z,5.3nm,0.8s						
HAMF	**Hammerfest**	**14.67**	**282**	*e*P	**Pn**	**01 42 11.0**	**+1.2**
HAMF				*e*S	**Sn**	**01 44 45.4**	**-6.7**
HAMF				IAML		01 44 55.5	
	comp=Z,8.1nm,0.5s						
ARA0	**ARCESS Array S**	**14.80**	**277**	Pn	**Pn**	**01 42 11.1**	**-0.5**
	baz=64,slow=12						
ARA0				Sn	**Sn**	**01 44 47.1**	**-8.3**
	baz=60,slow=18						
ARA0	**ARCESS Array S**	**14.80**	**277**	Pn	**Pn**	**01 42 11.1**	**-0.5**
	baz=64,slow=12						
ARA0				Sn	**Sn**	**01 44 47.1**	**-8.3**
	baz=60,slow=18						
ARCES	**ARCESS Array B**	**14.80**	**277**	Pn	**Pn**	**01 42 11.4**	**-0.3**
	comp=Z,0.6nm,0.3s,baz=62,slow=12,SNR=32						
ARCES				Sn	**Sn**	**01 44 47.8**	**-7.6**
	comp=Z,1.6nm,0.3s,baz=67,slow=23,SNR=7.9						
ARCES				LR	LR	01 49 42.0	
	comp=Z,48nm,20.6s,baz=43,slow=44						
ARE0	**ARCESS Array S**	**14.80**	**277**	*e*P	**Pn**	**01 42 11.6**	**-0.1**
ARE0				*e*S	**Sn**	**01 44 48.0**	**-7.4**
ARE0				IAML		01 44 52.3	
	comp=Z,5.2nm,0.5s						
TRO	**Tromso**	**16.58**	**283**	*e*P	**Pn**	**01 42 35.3**	**+0.5**
TRO				*e*S	**Sn**	**01 45 33.0**	**-5.6**
TRO				IAML		01 45 39.3	
	comp=Z,3.9nm,0.6s						
TIXI	**Tiksi**	**16.65**	**68**	Pn	**Pn**	**01 42 32.3**	**-3.4**
	comp=Z,1.4nm,0.3s,baz=296,slow=8.0,SNR=8.5						
TIXI				Sn	Sn	01 45 29.3	-11
	comp=Z,0.4nm,0.3s,baz=305,slow=16,SNR=3.2						
TIXI	**Tiksi**	**16.65**	**68**	⇓*i*P	**Pn**	**01 42 31.9**	**-3.7**
KLMR	**Klimovskoe**	**17.46**	**240**	*e*P	**Pn**	**01 42 47.3**	**+1.4**
KLMR				*e*		01 46 03.5	
KLMR				pmax	pmax		
	comp=Z,18nm,1.4s						
ARU	**Arti**	**18.00**	**204**	*d*P	**P**	**01 42 55.1**	**+2.0**
ARU				pmax	pmax		
	comp=Z,11nm,2.5s						
KRAR	**Krasnoyarsk**	**19.60**	**143**⇓	*e*P	**P**	**01 43 10.6**	**0.0**
KRAR				pmax	pmax		
	comp=Z,5.0nm,0.8s						
ZALV	**Zalesovo Beam**	**20.46**	**157**	P	**P**	**01 43 15.6**	**-4.3**
	comp=Z,1.0nm,0.4s,baz=347,slow=12,SNR=5.0						
FIA0	**FINESS Array S**	**20.53**	**258**	P	Pn	01 43 22.5	-0.3
	baz=45,slow=9.3						
FIA0	**FINESS Array S**	**20.53**	**258**	P	Pn	01 43 22.5	-0.3
	baz=45,slow=9.3						
FINES	**FINESS Array B**	**20.53**	**258**	P	Pn	01 43 22.5	-0.3
	comp=Z,2.1nm,0.5s,baz=41,slow=11,SNR=9.6						
BRVK	**Borovoye**	**20.62**	**182**	*e*P	**P**	**01 43 23.1**	**+1.4**
BRVK				pmax	pmax		
	comp=Z,2.0nm,0.9s						
BVAR	**Borovoye Array**	**20.65**	**182**	P	**P**	**01 43 19.7**	**-2.3**
	comp=Z,2.1nm,0.6s,baz=357,slow=12,SNR=12						
DAG	**Danmarks Havn**	**21.15**	**320**	*i* P	**P**	**01 43 28.4**	**+1.2**
DAG				*i*		01 43 30.8	
DAG	**Danmarks Havn**	**21.15**	**320**	*i* P	**P**	**01 43 28.4**	**+1.2**
DAG				*i*		01 43 30.8	
BOD	**Bodaibo**	**22.74**	**111**	*e*P	**P**	**01 43 39.4**	**-5.0**
BOD				*e*		01 47 38.4	
BOD				pmax	pmax		
	comp=Z,4.0nm,1.4s						
KURK	**Kurchatov**	**23.15**	**169**	P	**P**	**01 43 46.3**	**-2.4**
KURK				pmax	pmax		
	comp=Z,3.0nm,1.0s						
KURBB	**Kurchatov Arra**	**23.24**	**169**	P	**P**	**01 43 46.3**	**-3.3**
	comp=Z,2.6nm,1.0s,baz=355,slow=10,SNR=11						
OBN	**Obninsk**	**23.30**	**237**	LR	LR	01 54 17.4	
	comp=Z,55nm,20.4s,baz=85,slow=40						
OBN	**Obninsk**	**23.30**	**237**⇑	*e*P	**P**	**01 43 51.9**	**+1.8**
OBN				*e*		01 44 19.4	
OBN				*e*PPP	PPP	01 44 25.4	
OBN				pmax	pmax		
	comp=Z,34nm,2.4s						
OBN				MLR	MLR		
	comp=Z,64nm,14.0s						
AKTO	**Aktyubinsk**	**23.96**	**202**	P	**P**	**01 43 54.4**	**-2.3**
	comp=Z,1.1nm,0.5s,baz=354,slow=11,SNR=2.6						
NB2	**NORSAR Subarra**	**25.06**	**272**	P	**P**	**01 44 09.1**	**+2.4**
NB2	**NORSAR Subarra**	**25.06**	**272**	P	**P**	**01 44 09.1**	**+2.4**
NOA	**NORSAR Array B**	**25.06**	**272**	P	**P**	**01 44 07.6**	**+1.0**
	comp=Z,1.6nm,0.7s,baz=36,slow=9.2,SNR=3.5						
NOA				LR	LR	01 55 22.6	
	comp=Z,24nm,21.4s,baz=255,slow=40						
NOA	**NORSAR Array B**	**25.06**	**272**	*e*P	**P**	**01 44 09.0**	**+2.4**
NOA				pmax	pmax		
	comp=Z,2.0nm,0.8s						
LPSR	**Galich'ya Gora**	**25.08**	**231**	*e*P	**P**	**01 44 08.7**	**+1.9**
LPSR				pmax	pmax		
	comp=Z,10.0nm,1.6s						
HFS	**Hagfors**	**25.10**	**269**	P	**P**	**01 44 08.7**	**+1.7**
	baz=39,slow=9.3						
HFS	**Hagfors**	**25.10**	**269**	P	**P**	**01 44 08.4**	**+1.5**
	comp=Z,1.7nm,0.4s,baz=57,slow=11,SNR=7.9						
HFS	**Hagfors**	**25.10**	**269**	P	**P**	**01 44 08.7**	**+1.7**
	baz=39,slow=9.3						
MOY	**Mondy**	**25.26**	**134**	*e*P	**P**	**01 44 15.5**	**+6.9**
VRH	**Novokhopyorsk**	**25.80**	**226**	*e*P	**P**	**01 44 12.3**	**-1.1**
VRH				pmax	pmax		
	comp=Z,8.0nm,0.7s						
TLY	**Talaya**	**25.80**	**131**	P	**P**	**01 44 08.5**	**-4.9**
	comp=Z,2.0nm,0.4s,baz=346,slow=19,SNR=3.2						
TLY				LR	LR	01 55 41.9	
	comp=Z,43nm,19.1s,baz=344,slow=40						
VSR	**Storozhevoye**	**26.33**	**230**	*e*P	**P**	**01 44 20.9**	**+2.8**
VSR				pmax	pmax		
	comp=Z,5.0nm,1.3s						
ZAK	**Zakamensk**	**26.95**	**132**	*e*P	P	01 44 38.9	+15
ZAK				pmax	pmax		
	comp=Z,2.0nm,2.1s						
MKAR	**Makanchi Array**	**27.31**	**164**	P	**P**	**01 44 22.4**	**-4.7**
	comp=Z,0.1nm,0.4s,baz=359,slow=8.9,SNR=2.2						
BILL	**Bilibino**	**28.40**	**52**⇓	*e*P	**P**	**01 44 36.5**	**-0.1**
BILL				*e*PPP	PPP	01 45 31.3	
BILL				*e*S	S	01 49 10.7	-12
BILL				pmax	pmax		
	comp=Z,1.0nm,1.2s						
AKASG	**Malin Array Be**	**29.14**	**242**	P	**P**	**01 44 44.0**	**+0.7**
	comp=Z,0.3nm,0.4s,baz=23,slow=9.3,SNR=2.4						
AKASG	**Malin Array Be**	**29.14**	**242**	P	**P**	**01 44 44.0**	**+0.7**
ANN	**Anapa**	**32.78**	**228**	*e*P	**P**	**01 45 14.9**	**-0.5**
ANN				*e**PP	**pP**	**01 45 18.5**	**0.0**
ANN				*e*S	**S**	**01 50 33.1**	**+1.2**
ANN				pmax	pmax		
	comp=E,20nm,1.1s						
DPC	**Dobruska-Polom**	**32.87**	**256**	*e*P	**P**	**01 45 19.0**	**+2.7**
DPC	**Dobruska-Polom**	**32.87**	**256**	*e*P	**P**	**01 45 19.0**	**+2.7**
ZEI	**Tsey**	**33.47**	**218**	*e*P	P	01 45 30.2	+8.5
ZEI				pmax	pmax		
	comp=Z,4.0nm,0.4s						
GERES	**GERESS Array B**	**34.96**	**258**	P	**P**	**01 45 37.0**	**+2.5**
	comp=Z,1.2nm,0.8s,baz=50,slow=7.1,SNR=7.5						
GERES	**GERESS Array B**	**34.96**	**258**	*e*P	**P**	**01 45 37.6**	**+3.1**
GERES				pmax	pmax		
	comp=Z,1.0nm,0.7s						
GEYT	**Alibeck**	**36.34**	**198**	P	**P**	**01 45 44.7**	**-1.6**
	comp=Z,0.6nm,0.4s,baz=303,slow=7.9,SNR=2.7						
INK	**Inuvik**	**37.41**	**15**	P	**P**	**01 45 56.5**	**+1.5**
	comp=Z,4.5nm,0.6s,baz=348,slow=8.2,SNR=12						
BRTR	**Keskin Array B**	**38.45**	**230**	P	**P**	**01 46 06.3**	**+2.0**
	comp=Z,1.9nm,0.8s,baz=13,slow=6.5,SNR=17						
BRTR	**Keskin Array B**	**38.45**	**230**	*e*P	**P**	**01 46 06.6**	**+2.3**
BRTR				pmax	pmax		
	comp=Z,2.0nm,0.8s						
ILAR	**Eielson Array**	**39.57**	**25**	P	**P**	**01 46 15.1**	**+1.8**
	comp=Z,2.4nm,0.9s,baz=341,slow=6.5,SNR=26						
YKA	**Yellowknife Ar**	**44.12**	**4**	P	**P**	**01 46 51.3**	**+0.9**
	comp=Z,1.5nm,0.8s,baz=355,slow=7.7,SNR=29						
YKA				PcP	**PcP**	**01 48 35.8**	**+0.7**
	comp=Z,0.4nm,0.6s,baz=345,slow=3.8,SNR=6.3						
YKA	**Yellowknife Ar**	**44.12**	**4**	P	**P**	**01 46 51.3**	**+0.9**
YKA						01 48 35.8	
YKA				pmax	pmax		
	comp=Z,1.0nm,0.6s						
ESDC	**Sonseca Array**	**48.37**	**270**	P	**P**	**01 47 25.2**	**+1.0**
	comp=Z,0.8nm,0.9s,baz=26,slow=9.2,SNR=4.6						
ESDC				LR	LR	02 09 49.9	
	comp=Z,21nm,20.7s,baz=355,slow=38						
CMAR	**Chiang Mai Arr**	**57.22**	**149**	LR	LR	02 15 26.8	
	comp=Z,17nm,20.6s,baz=355,slow=39						
CMAR	**Chiang Mai Arr**	**57.22**	**149**	*e*P	P	01 48 35.7	+6.0
CMAR				pmax	pmax		
	comp=Z,1.0nm,0.7s						
NEW	**Newport**	**58.30**	**7**	LR	LR	02 14 32.3	
	comp=Z,28nm,19.6s,baz=300,slow=37						
PDAR	**Pinedale Array**	**63.94**	**1**	P	**P**	**01 49 16.6**	**+1.0**
	comp=Z,0.8nm,0.7s,baz=22,slow=4.8,SNR=5.4						
NVAR	**Mina Array Bea**	**68.07**	**8**	P	**P**	**01 49 44.5**	**+2.3**
	comp=Z,0.5nm,0.6s,baz=323,slow=4.1,SNR=2.5						
TORD	**Torodi Ar. Bea**	**71.83**	**254**	P	**P**	**01 50 06.4**	**+1.2**
	comp=Z,1.7nm,0.8s,baz=2.0,slow=6.7,SNR=11						
TXAR	**Lajitas Array**	**77.30**	**356**	P	**P**	**01 50 38.5**	**+1.5**
	comp=Z,0.2nm,0.4s,baz=22,slow=3.0,SNR=9.4						
DBIC	**Dimbokro**	**79.82**	**259**	P	**P**	**01 50 51.8**	**+0.9**
	comp=Z,4.2nm,0.8s,baz=347,slow=5.5,SNR=7.1						

*NIED **24** 01:39:00, 38°.10N×144°.10E, h5km, Mw3.7 Best double couple: M0:3.70000×10^14 NP1:φ=222.00000°, δ=24.00000°, λ=-112.00000°. NP2:φ=66.00000°, δ=68.00000°, λ=-80.00000°.*
*IDC **24** 01:39:13.2±0.8, 37°.90N×144°.30E, h0km, mb3.8/11, mb1 3.9/15, mb1mx3.7/49, mbtmp3.8/15, ML3.7/3, Error ellipse: s-maj=21.0km s-min=18.6km az=114.0*
*ISCJB **24** 01:39:16.6±0.6, 38°.02N±0°.06×144°.16E±0°.05, h33km, mb3.8/11, Error ellipse: s-maj=8.2km s-min=6.1km az=5.9*
*JMA **24** 01:39:16.6±0.1, 38°.07N×144°.14E, h33km, M3.9*

ISC 24 01:39:19.1±0.8, 38°.08N±0°.07×144°.18E±0°.07, h35km, n26, σ1°.10/31, mb3.8/11, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.21**	**298**	P	**Pn**	**01 39 52.0**	**-1.2**
OFUJ				*e*S	**Sn**	**01 40 18.5**	**-0.8**
JIO	**Ouri**	**2.26**	**280**	P	**Pn**	**01 39 52.5**	**-1.4**
JIO				S	**Sn**	**01 40 18.7**	**-1.9**
JMK	**Ichinoseki**	**2.48**	**292**	P	**Pn**	**01 39 56.1**	**-0.8**
JOM	**Ohasama**	**2.65**	**303**	P	**Pn**	**01 39 58.5**	**-0.8**
JOM				*e*S	**Sn**	**01 40 30.1**	**-0.2**
JANG	**Nango**	**3.09**	**319**	P	**Pn**	**01 40 04.6**	**-0.7**
JANG				*e*S	**Sn**	**01 40 40.2**	**-0.8**
JFT	**Otama**	**3.10**	**261**	P	**Pn**	**01 40 04.2**	**-1.2**
JYK	**Kaneyama**	**3.11**	**287**	P	**Pn**	**01 40 05.1**	**-0.6**
JOT	**Ohata**	**4.09**	**325**	P	**Pn**	**01 40 19.1**	**+0.1**
MJAR	**Matsushiro Arr**	**5.00**	**254**	Pn	**Pn**	**01 40 31.3**	**-0.3**
	1.2nm,0.3s,baz=78,slow=15,SNR=5.8						
MAT	**Matsushiro**	**5.00**	**254**	P	**Pn**	**01 40 31.5**	**-0.1**
MAT				*e*S	**Sn**	**01 41 28.6**	**+0.3**
ASAJ	**Asahikawa**	**6.15**	**349**	Pn	**Pn**	**01 40 46.4**	**-0.9**
	4.3nm,0.3s,baz=197,slow=14,SNR=7.6						
ASAJ				Sn	**Sn**	**01 41 53.9**	**-2.5**
	baz=177,slow=18,SNR=2.5						
USRK	**Ussuriysk Ar.**	**11.04**	**307**	Pn	**Pn**	**01 41 55.0**	**+0.7**
	0.1nm,0.3s,baz=108,slow=14,SNR=3.0						
JCJ	**Chichijima**	**11.08**	**189**	Pn	Pn	01 41 47.0	-8.0
	2.4nm,0.3s,baz=7.4,slow=19,SNR=4.9						
JCJ				Sn	Sn	01 43 42.1	-16
	baz=0.0,slow=19						
KLR	**Kul'dur**	**14.30**	**325**	Pn	**Pn**	**01 42 40.5**	**+1.6**
	0.1nm,0.3s,baz=135,slow=14,SNR=3.7						
SEY	**Seymchan**	**25.38**	**9**	P	**P**	**01 44 43.4**	**+0.6**
	2.9nm,0.6s,baz=134,slow=2.0,SNR=10						
SEY	**Seymchan**	**25.38**	**9**	P	**P**	**01 44 43.4**	**+0.7**
SEY				pmax	pmax		
	comp=Z,3.0nm,0.6s						
SONM	**Songino Array**	**29.07**	**302**	P	**P**	**01 45 17.0**	**+0.9**
	comp=Z,0.5nm,0.6s,baz=98,slow=9.0,SNR=3.3						
MKAR	**Makanchi Array**	**45.44**	**302**	P	**P**	**01 47 35.2**	**+0.8**
	comp=Z,1.1nm,0.7s,baz=88,slow=9.0,SNR=7.6						
KURBB	**Kurchatov Arra**	**47.10**	**308**	P	**P**	**01 47 48.0**	**+0.6**
	comp=Z,2.0nm,0.6s,baz=81,slow=7.9,SNR=13						
ILAR	**Eielson Array**	**47.43**	**33**	P	**P**	**01 47 49.9**	**+0.2**
	comp=Z,0.8nm,0.8s,baz=282,slow=6.8,SNR=6.4						
WRA	**Warramunga Arr**	**58.45**	**191**	P	**P**	**01 49 09.1**	**-2.3**
	comp=Z,2.3nm,0.8s,baz=11,slow=7.1,SNR=7.9						
YKA	**Yellowknife Ar**	**61.79**	**31**	P	**P**	**01 49 33.7**	**-0.1**
	comp=Z,0.3nm,0.7s,baz=302,slow=6.7,SNR=5.1						
ASAR	**Alice Springs**	**62.17**	**191**	P	**P**	**01 49 35.3**	**-1.5**
	comp=Z,0.4nm,0.6s,baz=18,slow=9.7,SNR=3.6						
NVAR	**Mina Array Bea**	**72.60**	**55**	P	**P**	**01 50 43.9**	**+0.8**
	comp=Z,0.5nm,0.5s,baz=289,slow=6.5,SNR=3.4						
AKASG	**Malin Array Be**	**74.80**	**323**	P	**P**	**01 50 55.9**	**+0.5**
	comp=Z,0.4nm,0.5s,baz=45,slow=7.6,SNR=3.0						
PDAR	**Pinedale Array**	**75.36**	**47**	P	**P**	**01 50 59.2**	**0.0**
	comp=Z,0.3nm,0.5s,baz=299,slow=1.9,SNR=2.6						

*ISK **24** 01:42:35.5, 39°.12N×29°.16E, h5km, MD3.0*
*DDA **24** 01:42:36.2, 39°.05N×29°.13E, h7km, Md2.8*
*CSEM **24** 01:42:36.6±0.1, 39°.11N×29°.14E, h2km, MD2.8, Error ellipse: s-maj=3.2km s-min=2.4km az=162.0*

ISC 24 01:42:36.5±1.0, 39°.07N±0°.02×29°.12E±0°.02, h8km±9km, n64, σ0°.59/84, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.28**	**86**	P	**Pg**	**01 42 42.2**	**0.0**
GDZ				S	**Sg**	**01 42 46.3**	**+0.4**
GDZ	**Gediz**	**0.28**	**86**	*i* P	**Pg**	**01 42 42.1**	**0.0**
GDZ				*i* S	**Sg**	**01 42 46.3**	**+0.4

BOLV	**Bolvadin**	**1.47 103**	P	**Pg**	**01 43 04.3**	**-0.4**
BOLV			S	**Sg**	**01 43 24.2**	**+0.4**
BOLV	**Bolvadin**	**1.47 103**	*i* P	**Pg**	**01 43 04.3**	**-0.4**
BOLV			*i* S	**Sg**	**01 43 24.2**	**+0.4**
GONE	**Gonen-Balikesi**	**1.48 312**	*e*PN	**Pb**	**01 43 04.0**	**-0.2**
GONE	**Gonen-Balikesi**	**1.48 312**	*e*Pn	**Pb**	**01 43 04.0**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**1.48 221**	*e*PN	**Pg**	**01 43 05.0**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**1.48 221**	*e*Pn	**Pg**	**01 43 05.0**	**+0.1**
ARMT	**Armutlu**	**1.50 352**	*e*PN	**Pn**	**01 43 04.0**	**+0.3**
ARMT	**Armutlu**	**1.50 352**	*e*Pn	**Pn**	**01 43 04.1**	**+0.3**
EDC	**Edincik**	**1.60 323**	*e*PN	**Pb**	**01 43 05.8**	**-0.5**
EDC	**Edincik**	**1.60 323**	*e*Pn	**Pb**	**01 43 05.8**	**-0.5**
GULT	**Gulveren**	**1.73 38**	*e*PN	**Pn**	**01 43 07.1**	**+0.1**
GULT	**Gulveren**	**1.73 38**	*e*Pn	**Pn**	**01 43 07.1**	**+0.1**
SVRH	**Sivrihisar-ESK**	**1.90 78**	*e*PN	**Pn**	**01 43 09.4**	**+0.1**
SVRH	**Sivrihisar-ESK**	**1.90 78**	*e*Pn	**Pn**	**01 43 09.4**	**+0.1**
AYVA	**Ayvalik**	**1.90 278**	P	**Pb**	**01 43 11.8**	**+0.4**
AYVA			S	**Sg**	**01 43 36.9**	**-0.7**
AYVA	**Ayvalik**	**1.90 278**	*i* P	**Pb**	**01 43 11.8**	**+0.4**
AYVA			*i* S	**Sg**	**01 43 36.9**	**-0.7**
MRMT	**Marmara Adasi**	**1.93 323**	*e*PN	**Pn**	**01 43 10.3**	**+0.7**
MRMT	**Marmara Adasi**	**1.93 323**	*e*Pn	**Pn**	**01 43 10.3**	**+0.7**
ISK	**Istanbul-Kandi**	**1.99 359**	*e*PN	**Pn**	**01 43 11.1**	**+0.7**
ISK	**Istanbul-Kandi**	**1.99 359**	*e*Pn	**Pn**	**01 43 11.1**	**+0.7**
SILT	**Sile**	**2.12 11**	*e*PN	**Pn**	**01 43 12.7**	**+0.5**
SILT	**Sile**	**2.12 11**	*e*Pn	**Pn**	**01 43 12.7**	**+0.5**
MDUB	**Mudurnu**	**2.12 48**	*e*PN	**Pn**	**01 43 13.2**	**+0.8**
MDUB	**Mudurnu**	**2.12 48**	*e*Pn	**Pn**	**01 43 13.2**	**+0.8**
KLYT	**Kilyos**	**2.18 358**	*e*PN	**Pn**	**01 43 13.7**	**+0.7**
KLYT	**Kilyos**	**2.18 358**	*e*Pn	**Pn**	**01 43 13.7**	**+0.7**
KAND	**Kocaeli-Kandir**	**2.18 22**	*i* P	**Pb**	**01 43 17.1**	**+0.9**
KAND			*i* S	**Sn**	**01 43 41.6**	**+1.4**
RKY	**Sarkoy-Tekirda**	**2.20 318**	*e*PN	**Pn**	**01 43 14.5**	**+1.2**
RKY	**Sarkoy-Tekirda**	**2.20 318**	*e*Pn	**Pn**	**01 43 14.5**	**+1.2**
CTKS	**Kestanelik-??a**	**2.21 348**	*e*PN	**Pn**	**01 43 14.3**	**+0.8**
CTKS	**Kestanelik-??a**	**2.21 348**	*e*Pn	**Pn**	**01 43 14.3**	**+0.8**
SAHE	**Sakarya_HENDEK**	**2.22 36**	*i* P	**Pb**	**01 43 17.2**	**+0.3**
SAHE			*i* S	**Sb**	**01 43 45.9**	**+1.3**

*ISK **24** 01:45:43.3, 39°.08N×29°.08E, h5km, MD3.1*
*DDA **24** 01:45:43.1, 39°.07N×29°.07E, h20km, Md2.9*
*ISCJB **24** 01:45:44.3±0.5, 39°.07N±0°.02×29°.06E±0°.02, h1km±4km,*
Error ellipse: s-maj=3.9km s-min=3.0km az=171.4
*CSEM **24** 01:45:44.6±0.1, 39°.08N×29°.06E, h2km, MD2.9, Error*
ellipse: s-maj=3.1km s-min=2.6km az=125.0

ISC 24 01:45:44.4±1.1, 39°.09N±0°.02×29°.08E±0°.02, h2km±10km, n77, σ0°67/99, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**262**	P	**Pg**	**01 45 49.7**	**-0.2**
DEMI				S	**Sg**	**01 45 53.6**	**0.0**
DEMI	**Demirci**	**0.28**	**262**	*i* P	**Pg**	**01 45 49.7**	**-0.2**
DEMI				*i* S	**Sg**	**01 45 53.6**	**0.0**
GDZ	**Gediz**	**0.32**	**89**	P	**Pg**	**01 45 50.5**	**0.0**
GDZ				S	**Sg**	**01 45 55.1**	**+0.5**
GDZ	**Gediz**	**0.32**	**89**	*i* P	**Pg**	**01 45 50.5**	**0.0**
GDZ				*i* S	**Sg**	**01 45 55.1**	**+0.5**
TVSB	**Tavsanli**	**0.47**	**39**	*e*PG	**Pg**	**01 45 52.9**	**-0.6**
KULA	**Kula-Manisa**	**0.66**	**210**	*e*PG	**Pg**	**01 45 56.6**	**-0.4**
KULA	**Kula-Manisa**	**0.66**	**210**	*e*Pg	**Pg**	**01 45 56.6**	**-0.4**
DURS	**Dursunbey**	**0.70**	**318**	P	**Pg**	**01 45 57.0**	**-0.8**
DURS				S	**Sb**	**01 46 09.3**	**-0.1**
DURS	**Dursunbey**	**0.70**	**318**	*i* P	**Pg**	**01 45 57.0**	**-0.8**
DURS				*i* S	**Sb**	**01 46 09.3**	**-0.1**
KHL	**Karahalli**	**0.84**	**155**	*e*PG	**Pg**	**01 46 00.5**	**0.0**
KHL				*e*SG	**Sb**	**01 46 13.1**	**-0.4**
KHL	**Karahalli**	**0.84**	**155**	*e*Pg	**Pg**	**01 46 00.5**	**0.0**
KHL				*e*Sg	**Sb**	**01 46 13.1**	**-0.4**
ORLT	**Orhaneli**	**0.97**	**352**	*e*PG	**Pg**	**01 46 03.2**	**+0.2**
AKHS	**Akhisar**	**1.01**	**259**	P	**Pg**	**01 46 02.9**	**-0.8**
AKHS				S	**Sg**	**01 46 16.5**	**-0.2**
AKHS	**Akhisar**	**1.01**	**259**	*i* P	**Pg**	**01 46 02.9**	**-0.8**
AKHS				*i* S	**Sg**	**01 46 16.5**	**-0.2**
AKS	**Akhisar**	**1.01**	**259**	*e*PG	**Pg**	**01 46 03.7**	**0.0**
BALB	**Balikesir**	**1.08**	**301**	*e*PN	**Pb**	**01 46 05.6**	**-0.2**
CAVI	**Cavuskoy**	**1.26**	**28**	*e*PN	**Pg**	**01 46 08.7**	**+0.1**
CAVI	**Cavuskoy**	**1.26**	**28**	*e*Pn	**Pg**	**01 46 08.7**	**+0.1**
IZI	**Iznik**	**1.29**	**14**	*e*PN	**Pg**	**01 46 09.2**	**+0.2**
IZI	**Iznik**	**1.29**	**14**	*e*Pn	**Pg**	**01 46 09.3**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.29**	**353**	*e*PN	**Pg**	**01 46 08.8**	**-0.4**
KCTX	**Karacabey (Bur**	**1.30**	**335**	*e*PN	**Pg**	**01 46 09.0**	**-0.4**
BORA	**Eskisehir**	**1.33**	**53**	P	**Pg**	**01 46 08.6**	**-1.3**
BORA				S	**Sg**	**01 46 27.0**	**-0.1**
BORA	**Eskisehir**	**1.33**	**53**	*i* P	**Pg**	**01 46 08.6**	**-1.3**
BORA				*i* S	**Sg**	**01 46 27.0**	**-0.1**
ADVT	**Abdulvahap**	**1.44**	**21**	*e*PN	**Pn**	**01 46 11.7**	**+0.2**
ADVT	**Abdulvahap**	**1.44**	**21**	*e*Pn	**Pn**	**01 46 11.7**	**+0.2**
GONE	**Gonen-Balikesi**	**1.44**	**312**	*e*PN	**Pn**	**01 46 11.4**	**-0.1**
ESKT	**Eskisehir**	**1.44**	**72**	*i* P	**Pb**	**01 46 12.8**	**+0.7**
ESKT				*i* S	**Sg**	**01 46 30.4**	**-0.3**
SEYT	**Eskypehyr**	**1.44**	**72**	P	**Pb**	**01 46 12.8**	**+0.7**
SEYT				S	**Sg**	**01 46 30.5**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**220**	*e*PN	**Pn**	**01 46 11.9**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**220**	*e*Pn	**Pn**	**01 46 11.9**	**-0.1**
ARMT	**Armutlu**	**1.49**	**354**	*e*PN	**Pn**	**01 46 12.2**	**0.0**
ARMT	**Armutlu**	**1.49**	**354**	*e*Pn	**Pn**	**01 46 12.2**	**0.0**
BOLV	**Bolvadin**	**1.51**	**103**	P	**Pb**	**01 46 14.1**	**+0.9**
BOLV				S	**Sg**	**01 46 31.6**	**-1.3**
BOLV	**Bolvadin**	**1.51**	**103**	*i* P	**Pb**	**01 46 14.1**	**+0.9**
BOLV				*i* S	**Sg**	**01 46 31.6**	**-1.3**
EDC	**Edincik**	**1.57**	**324**	*e*PN	**Pn**	**01 46 13.5**	**+0.2**
GULT	**Gulveren**	**1.74**	**39**	*e*PN	**Pn**	**01 46 15.9**	**+0.2**
GULT	**Gulveren**	**1.74**	**39**	*e*Pn	**Pn**	**01 46 15.9**	**+0.2**
HRT	**Hereke**	**1.79**	**14**	*e*PN	**Pn**	**01 46 17.2**	**+0.8**
HRT	**Hereke**	**1.79**	**14**	*e*Pn	**Pn**	**01 46 17.2**	**+0.8**
AYVA	**Ayvalik**	**1.87**	**278**	*i* P	**Pg**	**01 46 20.7**	**+0.5**
AYVA				*i* S	**Sn**	**01 46 40.8**	**-0.7**
MRMT	**Marmara Adasi**	**1.90**	**324**	*e*PN	**Pn**	**01 46 18.3**	**+0.5**
SVRH	**Sivrihisar-ESK**	**1.93**	**78**	*e*PN	**Pn**	**01 46 19.1**	**+0.7**
SVRH	**Sivrihisar-ESK**	**1.93**	**78**	*e*Pn	**Pn**	**01 46 19.1**	**+0.7**
ISK	**Istanbul-Kandi**	**1.98**	**360**	*e*PN	**Pn**	**01 46 19.9**	**+1.0**
ISK	**Istanbul-Kandi**	**1.98**	**360**	*e*Pn	**Pn**	**01 46 19.9**	**+1.0**
YER	**Yerkesik**	**2.05**	**198**	*e*PN	**Pn**	**01 46 20.2**	**+0.3**
YER	**Yerkesik**	**2.05**	**198**	*e*Pn	**Pn**	**01 46 20.2**	**+0.3**
URLA	**Izmir**	**2.07**	**250**	*i* P	**Pg**	**01 46 24.2**	**+0.1**
URLA				*i* S	**Sn**	**01 46 46.6**	**0.0**
BTAS	**Taskesti**	**2.10**	**44**	*i* P	**Pg**	**01 46 24.2**	**-0.4**
BTAS				*i* S	**Sg**	**01 46 51.0**	**-0.7**
BGKT	**Bogazkoy**	**2.11**	**354**	*e*PN	**Pn**	**01 46 21.5**	**+0.8**
BGKT	**Bogazkoy**	**2.11**	**354**	*e*Pn	**Pn**	**01 46 21.5**	**+0.8**
SILT	**Sile**	**2.11**	**12**	*e*PN	**Pn**	**01 46 21.2**	**+0.5**
SILT	**Sile**	**2.11**	**12**	*e*Pn	**Pn**	**01 46 21.2**	**+0.5**
MDUB	**Mudurnu**	**2.14**	**49**	*e*PN	**Pn**	**01 46 21.5**	**+0.2**
MDUB	**Mudurnu**	**2.14**	**49**	*e*Pn	**Pn**	**01 46 21.5**	**+0.2**
KLYT	**Kilyos**	**2.17**	**359**	*e*PN	**Pn**	**01 46 22.8**	**+1.4**
KLYT	**Kilyos**	**2.17**	**359**	*e*Pn	**Pn**	**01 46 22.8**	**+1.4**
RKY	**Sarkoy-Tekirda**	**2.17**	**318**	*e*PN	**Pn**	**01 46 22.6**	**+1.0**
KAND	**Kocaeli-Kandir**	**2.18**	**23**	P	**Pb**	**01 46 24.8**	**+0.2**
KAND				S	**Sn**	**01 46 49.5**	**+0.3**
KAND	**Kocaeli-Kandir**	**2.18**	**23**	*i* P	**Pb**	**01 46 24.8**	**+0.2**
KAND				*i* S	**Sn**	**01 46 49.5**	**+0.3**
CTKS	**Kestanelik-??a**	**2.19**	**349**	*e*PN	**Pn**	**01 46 22.8**	**+1.0**
CTKS	**Kestanelik-??a**	**2.19**	**349**	*e*Pn	**Pn**	**01 46 22.8**	**+1.0**
LPK	**Lapseki**	**2.20**	**306**	*e*PN	**Pn**	**01 46 22.6**	**+0.6**
SAHE	**Sakarya_HENDEK**	**2.23**	**37**	P	**Pn**	**01 46 23.2**	**+0.8**
SAHE	**Sakarya_HENDEK**	**2.23**	**37**	*i* P	**Pn**	**01 46 23.2**	**+0.8**
SAHE				*i* S	**Sn**	**01 46 48.3**	**-2.3**
GELI	**Tayfur-Gelibol**	**2.40**	**304**	*e*PN	**Pn**	**01 46 25.7**	**+1.1**
ELL	**Elmali**	**2.42**	**164**	*e*PN	**Pn**	**01 46 25.5**	**+0.3**
ELL	**Elmali**	**2.42**	**164**	*e*Pn	**Pn**	**01 46 25.5**	**+0.3**
FETY	**Fethiye**	**2.45**	**180**	*e*PN	**Pn**	**01 46 25.7**	**+0.4**
FETY	**Fethiye**	**2.45**	**180**	*e*Pn	**Pn**	**01 46 25.7**	**+0.4**
BODT	**Bodrum**	**2.45**	**215**	*e*PN	**Pn**	**01 46 26.0**	**+0.5**
BODT	**Bodrum**	**2.45**	**215**	*e*Pn	**Pn**	**01 46 26.0**	**+0.5**
CTYL	**Yalikoy Yolu**	**2.46**	**346**	*e*PN	**Pn**	**01 46 26.5**	**+1.0**
CTYL	**Yalikoy Yolu**	**2.46**	**346**	*e*Pn	**Pn**	**01 46 26.5**	**+1.0**
ERIK	**Erikli-Kesan**	**2.53**	**310**	*e*PN	**Pn**	**01 46 27.3**	**+0.9**
ALN	**Alexandroupoli**	**2.95**	**309**	*e*PN	**Pn**	**01 46 33.3**	**+1.1**

*CSEM **24** 01:48:20.0±0.2, 39°.09N×29°.08E, h8km, MD2.7, Error*
ellipse: s-maj=6.4km s-min=4.2km az=151.0
*DDA **24** 01:48:20.1, 39°.09N×29°.07E, h7km, Md2.7*

ISC 24 01:48:20.2±1.1, 39°.10N±0°.04×29°.07E±0°.03, h14km±11km, n14, σ0°32/24, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**259**	P	**Pg**	**01 48 26.1**	**-0.1**
DEMI				S	**Sg**	**01 48 30.3**	**+0.1**
DEMI	**Demirci**	**0.28**	**259**	*i* P	**Pg**	**01 48 26.1**	**-0.1**
DEMI				*i* S	**Sg**	**01 48 30.3**	**+0.1**
GDZ	**Gediz**	**0.32**	**91**	P	**Pg**	**01 48 26.6**	**-0.2**
GDZ				S	**Sg**	**01 48 31.8**	**+0.4**
GDZ	**Gediz**	**0.32**	**91**	*i* P	**Pg**	**01 48 26.6**	**-0.2**
GDZ				*i* S	**Sg**	**01 48 31.8**	**+0.4**
TVSB	**Tavsanli**	**0.47**	**40**	*e*PG	**Pg**	**01 48 29.4**	**-0.1**
TVSB				*e*SG	**Sg**	**01 48 35.3**	**-0.5**
TVSB	**Tavsanli**	**0.47**	**40**	*e*Pg	**Pg**	**01 48 29.4**	**-0.1**
TVSB				*e*Sg	**Sg**	**01 48 35.3**	**-0.5**
KULA	**Kula-Manisa**	**0.66**	**209**	*e*PG	**Pg**	**01 48 32.7**	**-0.4**
KULA	**Kula-Manisa**	**0.66**	**209**	*e*Pg	**Pg**	**01 48 32.7**	**-0.4**
DURS	**Dursunbey**	**0.69**	**318**	P	**Pg**	**01 48 33.3**	**-0.3**
DURS				S	**Sb**	**01 48 43.7**	**+0.3**
DURS	**Dursunbey**	**0.69**	**318**	*i* P	**Pg**	**01 48 33.3**	**-0.3**
DURS				*i* S	**Sb**	**01 48 43.6**	**+0.3**
BORA	**Eskisehir**	**1.33**	**53**	P	**Pg**	**01 48 45.6**	**-0.1**
BORA				S	**Sg**	**01 49 02.7**	**-0.3**
BORA	**Eskisehir**	**1.33**	**53**	*i* P	**Pg**	**01 48 45.6**	**-0.1**
BORA				*i* S	**Sg**	**01 49 02.7**	**-0.3**
GULT	**Gulveren**	**1.74**	**39**	*e*PG	**Pb**	**01 48 52.1**	**+0.2**
GULT	**Gulveren**	**1.74**	**39**	*e*Pg	**Pb**	**01 48 52.1**	**+0.2**

*ISCJB **24** 01:52:35.3±0.5, 26°.34S±0°.03×27°.32E±0°.03, h6km±4km,*
Error ellipse: s-maj=4.6km s-min=3.8km az=162.7
*PRE **24** 01:52:35.5±1.6, 26°.36S×27°.31E, h2km, ML3.0*

ISC 24 01:52:35.6±0.9, 26°.35S±0°.03×27°.33E±0°.03, h12km±6km, n17, σ1°98/33, South Africa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WDLM	**Western Deep L**	**0.12**	**131**	*e*P	**Pg**	**01 52 39.0**	**+0.1**
WDLM				*e*S	**Sg**	**01 52 39.7**	**-1.5**
WDLM				AML	AML	01 52 40.8	
	comp=Z,9μm,0.1s						
KLOF	**Kloof**	**0.26**	**91**	*e*P	**Pg**	**01 52 40.2**	**-0.8**
KLOF				*e*S	**Sg**	**01 52 44.9**	**+0.2**
KLOF				AML	AML	01 52 45.8	
	comp=Z,2μm,0.1s						
PRYS	**Parys**	**0.58**	**177**	*e*P	**Pg**	**01 52 45.6**	**-1.4**
PRYS				*e*S	**Sg**	**01 52 53.9**	**-0.8**
KSR	**Koster**	**0.63**	**322**	*e*P	**Pg**	**01 52 48.1**	**+0.2**
KSR				*e*S	**Sg**	**01 52 56.6**	**+0.4**
KSR				AML	AML	01 53 04.7	
	comp=Z,133nm,0.4s						
BFSD	**Buffelsfontein**	**0.71**	**223**	*e*P	**Pg**	**01 52 49.2**	**-0.2**
BFSD				*e*S	**Sg**	**01 52 59.2**	**+0.5**
BFSD				AML	AML	01 53 07.5	
	comp=Z,205nm,0.3s						
ERPM	**east rand prop**	**0.82**	**90**	*e*P	**Pg**	**01 52 52.3**	**+0.8**
ERPM				*e*S	**Sg**	**01 53 03.2**	**+0.8**
ERPM				AML	AML	01 53 09.1	
	comp=Z,74nm,0.2s						
TLEK	**Tau Lekoa**	**0.85**	**224**	*e*P	**Pg**	**01 52 52.3**	**+0.3**
TLEK				*e*S	**Sb**	**01 53 03.9**	**+0.1**
TLEK				AML	AML	01 53 07.8	
	comp=Z,140nm,0.2s						
SWZ	**Schweizer**	**1.97**	**245**	*e*P	**Pn**	**01 53 10.7**	**+1.7**
SWZ				*e*S	**Sb**	**01 53 36.1**	**+0.1**
SWZ				AML	AML	01 53 45.6	
	comp=Z,66nm,0.2s						
SEK	**Senekal**	**1.99**	**172**	*e*P	**Pn**	**01 53 10.5**	**+1.3**
SEK				*e*S	**Sn**	**01 53 36.3**	**+2.2**
SEK				AML	AML	01 54 02.2	
	comp=Z,33nm,0.7s						
BOSA	**Boshof**	**2.91**	**219**	*i* P	**Pn**	**01 53 24.1**	**+2.2**
BOSA				*i*		01 53 24.3	
	baz=35,slow=16						
BOSA				*i* S	**Sn**	**01 54 00.7**	**+3.8**
POGA	**Pongola**	**3.96**	**106**	*e*P	**Pn**	**01 53 39.4**	**+3.1**
POGA				*e*S	**Sn**	**01 54 25.0**	**+2.4**
POGA				AML	AML	01 54 45.9	
	comp=Z,39nm,0.4s						
CNG	**Changalane**	**4.36**	**90**	*e*P	**Pn**	**01 53 42.0**	**+0.2**
CNG				*e*S	**Sn**	**01 54 29.4**	**-3.2**
CNG				AML	AML	01 54 52.1	
	comp=Z,56nm,0.5s						
UPI	**Upington**	**5.76**	**248**	*e*P	**Pn**	**01 54 02.1**	**+1.0**
UPI				*e*S	**Sn**	**01 55 05.2**	**-1.9**
UPI				AML	AML	01 55 39.2	
	comp=Z,18nm,0.4s						
MATP	**Matopo**	**5.99**	**11**	*i* P	Pn	01 54 08.1	+3.8
MATP				*i*		01 54 08.2	
	baz=198,slow=16						
MATP				*i* S	**Sn**	**01 55 14.6**	**+1.6**
KEIM	**Keimoes**	**6.11**	**246**	*e*P	**Pn**	**01 54 06.9**	**+1.0**
KEIM				*e*S	**Sn**	**01 55 13.5**	**-2.3**
KEIM				AML	AML	01 55 47.6	
	comp=Z,12nm,0.5s						
CVNA	**Calvinia**	**8.37**	**231**	*e*P	**Pn**	**01 54 38.2**	**+1.3**
CVNA				*e*S	**Sn**	**01 56 07.4**	**-4.0**
CVNA				AML	AML	01 56 13.5	
	comp=Z,4.0nm,0.3s						
KOMG	**Komaggas**	**9.35**	**246**	*e*P	**Pn**	**01 54 51.6**	**+1.4**
KOMG				*e*S	**Sn**	**01 56 31.0**	**-4.3**
KOMG				AML	AML	01 57 35.5	
	comp=Z,7.0nm,0.4s						

*ISK **24** 01:57:18.9, 39°.17N×29°.02E, h5km, MD2.6*
*ISCJB **24** 01:57:19.8±0.6, 39°.13N±0°.05×29°.06E±0°.04, h7km±8km,*
Error ellipse: s-maj=9.2km s-min=4.8km az=8.8
*CSEM **24** 01:57:19.9±0.2, 39°.13N×29°.07E, h8km, MD2.6, Error*
ellipse: s-maj=5.2km s-min=4.0km az=172.0
*DDA **24** 01:57:19.7, 39°.09N×29°.07E, h7km, Md2.6*

ISC 24 01:57:19.2±1.0, 39°.07N±0°.04×29°.05E±0°.03, h14km±9km, n22, σ0°31/32, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**264**	P	**Pb**	**01 57 25.9**	**+0.2**
DEMI				S	**Sb**	**01 57 29.7**	**-0.3**
DEMI	**Demirci**	**0.26**	**264**	*i* P	**Pb**	**01 57 25.9**	**+0.2**
DEMI				*i* S	**Sb**	**01 57 29.7**	**-0.3**
GDZ	**Gediz**	**0.34**	**86**	P	**Pg**	**01 57 26.3**	**+0.1**
GDZ				S	**Sg**	**01 57 30.9**	**-0.1**
GDZ	**Gediz**	**0.34**	**86**	*i* P	**Pg**	**01 57 26.3**	**+0.1**
GDZ				*i* S	**Sg**	**01 57 30.9**	**-0.1**
TVSB	**Tavsanli**	**0.50**	**40**	*e*PG	**Pg**	**01 57 28.5**	**-0.6**
TVSB	**Tavsanli**	**0.50**	**40**	*e*Pg	**Pg**	**01 57 28.5**	**-0.6**
KULA	**Kula-Manisa**	**0.63**	**209**	*e*PG	**Pn**	**01 57 33.9**	**+0.1**
KULA	**Kula-Manisa**	**0.63**	**209**	*e*Pg	**Pn**	**01 57 33.9**	**+0.1**
DURS	**Dursunbey**	**0.69**	**320**	P	**Pb**	**01 57 33.4**	**+0.3**
DURS				S	**Sb**	**01 57 43.0**	**+0.5**
DURS	**Dursunbey**	**0.69**	**320**	*i* P	**Pb**	**01 57 33.4**	**+0.3**
DURS				*i* S	**Sb**	**01 57 43.0**	**+0.5**
BALB	**Balikesir**	**1.07**	**303**	*e*PG	**Pb**	**01 57 39.0**	**-0.4**
BALB				*e*SG	**Sg**	**01 57 54.1**	**+0.4**
BALB	**Balikesir**	**1.07**	**303**	*e*Pg	**Pb**	**01 57 39.1**	**-0.4**
BALB				*e*Sg	**Sg**	**01 57 54.2**	**+0.4**
MDNY	**Mudanya-Bursa**	**1.30**	**355**	*e*PN	**Pn**	**01 57 43.1**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.30**	**355**	*e*Pn	**Pn**	**01 57 43.1**	**+0.1**
KCTX	**Karacabey (Bur**	**1.31**	**336**	*e*PN	**Pn**	**01 57 43.1**	**0.0**
KCTX	**Karacabey (Bur**	**1.31**	**336**	*e*Pn	**Pn**	**01 57 43.1**	**0.0**
BORA	**Eskisehir**	**1.36**	**53**	P	**Pg**	**01 57 45.1**	**-0.2**
BORA				S	**Sn**	**01 58 01.4**	**-0.3**
BORA	**Eskisehir**	**1.36**	**53**	*i* P	**Pg**	**01 57 45.1**	**-0.2**
BORA				*i* S	**Sn**	**01 58 01.4**	**-0.3**
ADVT	**Abdulvahap**	**1.46**	**21**	*e*PN	**Pb**	**01 57 46.5**	**+0.3**
ADVT	**Abdulvahap**	**1.46**	**21**	*e*Pn	**Pb**	**01 57 46.5**	**+0.3**
ARMT	**Armutlu**	**1.50**	**355**	*e*PN	**Pb**	**01 57 46.9**	**+0.1**
ARMT	**Armutlu**	**1.50**	**355**	*e*Pn	**Pb**	**01 57 46.9**	**+0.1**

TRN 24 02:00:06.8, 15°.92N×60°.56W, h19km, MD3.5, 1C-2D, Leeward Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEG	**La Desirade**	**0.62**	**309**	*e*P	Pn	02 00 22.1	+1.5
DEG				*e*S	Sn	02 00 31.9	+1.8
MGG	**Marie-Galante**	**0.73**	**270**	*e*P	Pn	02 00 23.3	+1.2
MGG	**Marie-Galante**	**0.73**	**270**	↑*i*P	Pn	02 00 23.3	+1.2
MGG				*e*S	Sn	02 00 35.2	+2.4
DWS	**Wesley**	**0.81**	**245**	*e*P	Pn	02 00 24.9	+1.8
DWS				*e*S	Sn	02 00 38.1	+3.6
DLPL	**La Plaine**	**0.89**	**229**	*e*P	Pn	02 00 26.7	+2.5
DLPL				*e*S	Sn	02 00 40.5	+3.9
PHG	**Guadaloupe-2**	**1.05**	**275**	‖*e*P	Pg	02 00 28.2	+1.0
TBG	**Guadaloupe-3**	**1.05**	**267**	*e*P	Pg	02 00 28.2	+1.0
TBG				*e*S	Sg	02 00 44.0	+2.9
HMG	**Houelmont**	**1.10**	**273**	‖*e*P	Pg	02 00 28.9	+0.7
HMG				*e*S	Sg	02 00 44.9	+2.2
BAMF	**Morne Balai**	**1.24**	**208**	*e*P	Pg	02 00 30.6	-0.2
CXM	**Morne La Croix**	**1.25**	**208**	*e*P	Pg	02 00 30.9	-0.1
CXM				*e*S	Sg	02 00 47.6	+0.2
GBMF	**Grand Be**	**1.26**	**208**	*e*P	Pg	02 00 30.8	-0.4
PCM	**Pelee Case Pet**	**1.27**	**210**	*e*P	Pg	02 00 31.1	-0.2
PCM	**Pelee Case Pet**	**1.27**	**210**	*e*P	Pg	02 00 31.7	+0.4
PML	**Morne Lenard**	**1.28**	**208**	*e*P	Pg	02 00 31.2	-0.5
FDF	**Fort de France**	**1.31**	**206**	*e*P	Pg	02 00 31.6	-0.5
FDF	**Fort de France**	**1.31**	**206**	*e*P	Pg	02 00 31.6	-0.5
FDF	**Fort de France**	**1.31**	**206**	*e*P	Pg	02 00 32.8	+0.6
FDF				*e*S	Sg	02 00 50.3	+1.0
LPMF	**Morne Lapointe**	**1.39**	**197**	*e*P	Pb	02 00 32.4	+0.2
MVM	**Montagne Vaucl**	**1.40**	**194**	*e*P	Pb	02 00 32.7	+0.4
ZAM	**Aeronautique**	**1.41**	**199**	*e*P	Pb	02 00 33.0	+0.4
TRMF	**Trois Ilets**	**1.46**	**199**	*e*P	Pg	02 00 34.1	-0.8
BPA	**Boggy Peak**	**1.68**	**312**	*e*P	Pb	02 00 36.7	-0.4
MLYT	**Lee's Yard**	**1.76**	**297**	*e*P	Pb	02 00 37.4	-1.1
MLYT				*e*S	Sb	02 01 00.9	+0.7
ANWB	**Willy Bob**	**2.10**	**326**	*e*P	Pb	02 00 43.3	-1.0
ANWB				*e*S	Sb	02 01 09.8	-0.2

*ISK **24** 02:03:07.6, 39°.05N×29°.13E, h5km, MD2.6*
*DDA **24** 02:03:07.9, 38°.99N×29°.05E, h7km, Md2.6*
*ISCJB **24** 02:03:08.5±0.6, 39°.06N±0°.04×29°.06E±0°.04, h3km±8km,*
Error ellipse: s-maj=7.0km s-min=4.5km az=159.3
*CSEM **24** 02:03:08.4±0.1, 39°.08N×29°.03E, h5km, MD2.6, Error*
ellipse: s-maj=3.3km s-min=2.1km az=140.0

ISC 24 02:03:08.7±1.1, 39°.09N±0°.03×29°.05E±0°.03, h4km±11km, n20, σ0°35/31, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**261**	P	**Pg**	**02 03 13.6**	**-0.2**
DEMI				S	**Sg**	**02 03 17.5**	**+0.3**
DEMI	**Demirci**	**0.26**	**261**	*i* P	**Pg**	**02 03 13.6**	**-0.2**
DEMI				*i* S	**Sg**	**02 03 17.5**	**+0.3**
GDZ	**Gediz**	**0.34**	**89**	P	**Pg**	**02 03 15.1**	**-0.2**
GDZ				S	**Sg**	**02 03 20.5**	**+0.8**
**G

SMKR	**Semkarok**	**0.98 333**	*i* P		Pn	02 31 59.1	+1.1
SMKR			*e*S		Sn	02 32 11.8	+0.9
BZMR	**Bezymyannaya**	**1.03 283**	*i* P		Pn	02 31 59.8	+1.1
BZMR			*i* S		Sn	02 32 13.0	+0.8
BDR	**Baidarnaya**	**1.04 326**	*i* P		Pn	02 32 00.2	+1.3
BDR			*i* S		Sn	02 32 14.3	+1.9
KRSR	**Krestovskiy**	**1.09 298**	*i* P		Pn	02 32 00.2	+0.8
KRSR			*i* S		Sn	02 32 13.2	-0.3
KLY	**Klyuchi**	**1.09 304**	*e*P		Pn	02 31 59.0	-0.4
KLY			*e*S		Sn	02 32 11.9	-1.5
SRKR	**Sorokina**	**1.13 327**	*i* P		Pn	02 32 01.3	+1.3
SRKR			*e*S		Sn	02 32 16.4	+2.0
KMNR	**Kamenistaya**	**1.16 273**	*e*P		Pn	02 32 02.3	+2.0
KMNR			*e*S		Sn	02 32 17.7	+2.6
KPT	**Kopyto**	**1.19 283**	*i* P		Pn	02 32 02.4	+1.6
KPT			*e*S		Sn	02 32 17.6	+1.7
MKZ	**Mys Kozlova**	**1.20 195**	*e*P		Pn	02 32 02.4	+1.5
MKZ			*e*S		Sn	02 32 18.2	+2.2
TUMR	**Tumrok**	**1.29 251**	P		Pn	02 32 03.9	+1.8
KOZ	**Kozyrevsk**	**1.40 285**	P		Pn	02 32 06.3	+2.7
KOZ			*i* S		Sn	02 32 24.6	+3.7
ESO	**Esso**	**2.03 277**	*e*P		Pn	02 32 14.4	+2.2
ESO			S		Sn	02 32 40.3	+4.0
BKI	**Bering**	**2.17 102**	*e*P		Pn	02 32 16.4	+2.4
BKI			*i* S		Sn	02 32 43.6	+4.0
NLC	**Nalytchevo**	**3.07 215**	P		Pn	02 32 28.9	+2.5
NLC			*e*S		Sn	02 33 04.0	+2.2
SDLR	**Sedlovina**	**3.14 220**	*e*P		Pn	02 32 30.3	+2.8
KRX	**Arik**	**3.17 223**	*e*P		Pn	02 32 31.7	+3.8
KRER	**Koryakskii**	**3.17 222**	*e*P		Pn	02 32 31.2	+3.2
KRER			S		Sn	02 33 08.6	+4.0
SMAR	**Somma**	**3.18 221**	*e*P		Pn	02 32 31.1	+2.9
AVH	**Avacha**	**3.21 222**	*e*P		Pn	02 32 31.7	+3.4
AVH			*e*S		Sn	02 33 09.4	+4.1
UGLR	**Uglovaya**	**3.22 220**	*e*P		Pn	02 32 31.6	+3.1
UGLR			*e*S		Sn	02 33 09.1	+3.4
GNL	**Ganaly**	**3.23 233**	*e*P		Pn	02 32 31.6	+2.9
PET	**Petropavlovsk**	**3.43 220**	S		Sn	02 33 15.1	+4.5
KRMR	**Karymshinskiy**	**3.78 222**	S		Sn	02 33 24.2	+5.0
RUS	**Russkaya**	**3.96 216**	P		Pn	02 32 40.7	+2.1
ASAK	**Asacha**	**4.22 220**	P		Pn	02 32 47.1	+4.9

NEIC ***24*** *02:34:34.3, 51°.53N×176°.33E, h28km, mb4.2/10, ML4.0(AEIC), After AEIC.*
MOS ***24*** *02:34:35.5±1.0, 51°.87N×176°.49E, h50km, mb4.5/28, Error ellipse: s-maj=15.5km s-min=8.6km az=111.0*
ISCJB ***24*** *02:34:36.5±0.6, 51°.79N±0°.08×176°.49E±0°.05, h62km±5km, mb4.3/42, Error ellipse: s-maj=13.6km s-min=5.2km az=4.3*
IDC ***24*** *02:34:36.7±3.5, 51°.81N×176°.55E, h47km±32km, mb4.0/24, mb1 4.1/25, mb1mx3.9/50, mbtmp4.2/25, ML2.9/1, MS3.1/5, Ms1 3.1/5, ms1mx2.7/51, Error ellipse: s-maj=22.4km s-min=13.9km az=167.0*

ISC 24 02:34:37.2±1.0, 51°.72N±0°.09×176°.45E±0°.04, h53km±9km, n98, σ1°09/100, mb4.3/42, MS3.1/3, 5C-2b, Rat Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LSSA	**Little Sitkin**	**1.30**	**79**	P	**Pn**	**02 34 58.1**	**-1.0**
LSSE	**Little Sitkin**	**1.34**	**80**	P	**Pn**	**02 34 58.4**	**-1.1**
LSSE				S	**Sn**	**02 35 16.8**	**+0.6**
LSPA	**Little Sitkin**	**1.34**	**79**	P	**Pn**	**02 34 58.7**	**-0.9**
LSPA				S	**Sn**	**02 35 17.0**	**+0.6**
SMY	**Shemya**	**1.77**	**306**	*e*P	**Pn**	**02 35 04.2**	**-1.1**
SMY				*e*S	**Sn**	**02 35 27.5**	**+0.9**
SMY	**Shemya**	**1.77**	**306**	*e*Pn	**Pn**	**02 35 04.2**	**-1.1**
SMY				*e*S	**Sn**	**02 35 27.5**	**+0.9**
AMKA	**Amchitka**	**1.81**	**100**	P	**Pn**	**02 35 04.5**	**-1.5**
AMKA				S	**Sn**	**02 35 27.1**	**-0.7**
CETU	**Semis' Tuman**	**1.91**	**81**	P	**Pn**	**02 35 07.1**	**-0.1**
CESW	**Semis' Southwe**	**1.94**	**83**	P	**Pn**	**02 35 07.3**	**-0.5**
CEAP	**Semis' Anvil P**	**1.96**	**80**	P	**Pn**	**02 35 07.9**	**-0.1**
CERB	**Semis' Cerberu**	**1.99**	**82**	P	**Pn**	**02 35 08.5**	**+0.1**
CERB				S	**Sn**	**02 35 34.0**	**+1.9**
CERAA	**Semis' Rag'd T**	**2.02**	**83**	P	**Pn**	**02 35 08.3**	**-0.5**
GAEA	**Gareloi East**	**2.99**	**87**	P	**Pn**	**02 35 21.8**	**-0.2**
TASE	**Tanaga Southea**	**3.43**	**86**	P	**Pn**	**02 35 28.2**	**+0.1**
TAFP	**Tanaga Falls P**	**3.46**	**85**	P	**Pn**	**02 35 28.2**	**-0.4**
TAFP				S	**Sn**	**02 36 11.9**	**+3.6**
TAPA	**Tanaga Point A**	**3.57**	**86**	P	**Pn**	**02 35 30.1**	**0.0**
KIRH	**Kanaga Island**	**4.01**	**85**	P	**Pn**	**02 35 36.1**	**0.0**
GSMY	**Great Sitkin M**	**4.66**	**83**	P	**Pn**	**02 35 45.5**	**+0.6**
KOKL	**Mount Kliuchef**	**5.81**	**80**	P	**Pn**	**02 36 01.2**	**+0.4**
UNV	**Unalaska Valle**	**10.55**	**72**	*e*Pn	**Pn**	**02 37 07.9**	**+2.4**
PET	**Petropavlovsk**	**10.96**	**284**	*i* P	Pn	02 37 16.1	+5.0
PETK	**Petropavlovsk-**	**11.53**	**284**	P	**Pn**	**02 37 19.9**	**+0.9**
	0.4nm,0.3s,baz=94,slow=19,SNR=4.9						
PETK				LR	LR	02 41 41.7	
	comp=Z,46nm,22.0s,baz=110,slow=37						
SDPT	**Sand Point**	**14.18**	**66**	*e*Pn	**Pn**	**02 37 53.9**	**-0.9**
MA2	**Magadan**	**16.41**	**309**	LR	LR	02 44 43.5	
	comp=Z,83nm,18.2s,baz=132,slow=37						
SEY	**Seymchan**	**17.05**	**320**	*i* P	**P**	**02 38 35.8**	**+3.1**
BILL	**Bilibino**	**17.11**	**347**[1]	*e*P	**P**	**02 38 36.2**	**+2.9**
BILL				*e*S	**S**	**02 41 45.2**	**-3.3**
BILL				pmax	pmax		
	comp=Z,13nm,2.5s						
BILL				MLR	MLR		
	comp=Z,131nm,20.0s						
PPLA	**Purkeypile**	**20.07**	**44**	*e*P	**P**	**02 39 06.0**	**0.0**
	comp=Z,16nm,1.5s						
RC01	**Rabbit Creek A**	**20.70**	**50**	*e*P	**P**	**02 39 11.1**	**-1.6**
	comp=Z,3.1nm,0.7s						
KTH	**Kantishna Hill**	**20.83**	**43**	*e*P	**P**	**02 39 13.7**	**-0.4**
	comp=Z,17nm,1.2s						
BPAW	**Bear Paw Mtn.**	**20.99**	**41**	*e*P	**P**	**02 39 15.5**	**-0.3**
	comp=Z,1.2nm,1.0s						
SML	**Sawmill**	**21.51**	**48**	*e*P	**P**	**02 39 19.9**	**-1.5**
SML				pmax	pmax		
	comp=Z,3.0nm,0.8s						
SML	**Sawmill**	**21.51**	**48**	*e*P	**P**	**02 39 19.9**	**-1.5**
	comp=Z,2.9nm,0.8s						
COLA	**College**	**22.53**	**41**	*d*P	**P**	**02 39 32.3**	**+0.1**
COLA				pmax	pmax		
	comp=Z,5.0nm,0.9s						
ILAR	**Eielson Array**	**22.89**	**41**	P	**P**	**02 39 33.6**	**-2.4**
	comp=Z,1.7nm,0.8s,baz=241,slow=9.5,SNR=19						
BMRM	**Bremner River**	**23.15**	**51**	*e*P	**P**	**02 39 38.1**	**-0.6**
	comp=Z,9.1nm,0.9s						
ASAJ	**Asahikawa**	**23.76**	**265**	P	**P**	**02 39 45.4**	**+0.9**
	comp=Z,11nm,0.7s,baz=90,slow=5.0,SNR=9.9						
EGAK	**Eagle**	**25.28**	**43**	*e*P	**P**	**02 39 57.1**	**-1.0**
	comp=Z,10.0nm,0.9s						
DAWY	**Dawson**	**25.92**	**44**	*e*P	**P**	**02 40 03.6**	**-0.4**
	comp=Z,5.3nm,0.7s						
KLR	**Kul'dur**	**28.22**	**283**	P	**P**	**02 40 24.7**	**0.0**
	comp=Z,2.1nm,0.5s,baz=55,slow=8.1,SNR=11						
TIXI	**Tiksi**	**28.89**	**331**	P	**P**	**02 40 30.3**	**-0.1**
	comp=Z,1.0nm,0.4s,baz=146,slow=7.6,SNR=3.7						
TIXI				PcP	**PcP**	**02 43 38.1**	**-0.1**
	comp=Z,1.3nm,0.5s,baz=2.3,slow=0.5,SNR=4.4						
USRK	**Ussuriysk Ar.**	**30.31**	**273**	P	**P**	**02 40 42.9**	**-0.4**
	comp=Z,1.9nm,0.6s,baz=65,slow=9.6,SNR=4.7						
H11N2	**WAKE ISLAND Hy**	**32.79**	**197**	T	T	03 16 04.9	
	baz=11,slow=76,SNR=194						
H11N3	**WAKE ISLAND Hy**	**32.80**	**197**	T	T	03 16 15.4	
	baz=11,slow=76,SNR=158						
H11N1	**WAKE ISLAND Hy**	**32.81**	**197**	T	T	03 16 06.3	
	baz=11,slow=76,SNR=192						
H11S1	**WAKE ISLAND Hy**	**34.02**	**197**	T	T	03 17 43.9	
	baz=10,slow=76,SNR=96						
H11S3	**WAKE ISLAND Hy**	**34.03**	**197**	T	T	03 17 49.1	
	baz=10,slow=76,SNR=94						
H11S2	**WAKE ISLAND Hy**	**34.03**	**197**	T	T	03 17 45.2	
	baz=10,slow=76,SNR=51						
BOD	**Bodaibo**	**35.37**	**305**	*e*P	**P**	**02 41 25.5**	**-1.8**
BOD				pmax	pmax		
	comp=Z,6.0nm,0.7s						
YKA	**Yellowknife Ar**	**37.14**	**46**	P	**P**	**02 41 42.1**	**-0.2**
	comp=Z,0.8nm,0.5s,baz=279,slow=9.6,SNR=19						
NRIK	**Noril'sk**	**42.59**	**328**	P	**P**	**02 42 27.5**	**+0.1**
	comp=Z,1.5nm,0.3s,baz=114,slow=8.7,SNR=3.7						
TLY	**Talaya**	**43.35**	**300**	P	**P**	**02 42 34.5**	**+0.7**
	comp=Z,1.2nm,0.4s,baz=34,slow=3.7,SNR=3.3						
ULN	**Ulaanbaatar**	**43.43**	**294**	*c*eP	**P**	**02 42 34.6**	**0.0**
ULN				pmax	pmax		
	comp=Z,2.0nm,1.0s						
SONM	**Songino Array**	**43.82**	**294**	P	**P**	**02 42 38.2**	**+0.5**
	comp=Z,2.6nm,0.5s,baz=57,slow=7.3,SNR=13						
PDAR	**Pinedale Array**	**49.01**	**70**	LR	LR	03 02 20.6	
	comp=Z,21nm,19.9s,baz=291,slow=34						
DAG	**Danmarks Havn**	**51.42**	**4**	*i* P	**P**	**02 43 35.0**	**-1.1**
	comp=Z,0.8nm,0.4s						
DAG	**Danmarks Havn**	**51.42**	**4**	*i* P	**P**	**02 43 35.0**	**-1.1**
DAG				pmax	pmax		
	comp=Z,1.0nm,0.4s						
ZALV	**Zalesovo Beam**	**51.61**	**311**	P	**P**	**02 43 36.7**	**-1.1**
	comp=Z,0.6nm,0.4s,baz=15,slow=7.4,SNR=2.9						
ZALV				PcP	**PcP**	**02 44 51.1**	**+0.2**
	comp=Z,0.7nm,0.4s,baz=357,slow=7.4,SNR=3.9						
SUMG	**Summit**	**53.64**	**12**	*i* P	**P**	**02 43 52.7**	**-0.4**
	comp=Z,0.8nm,0.4s						
SUMG	**Summit**	**53.64**	**12**	*i* P	**P**	**02 43 52.7**	**-0.4**
SUMG				pmax	pmax		
	comp=Z,1.0nm,0.4s						
KURK	**Kurchatov**	**56.60**	**311**	*e*P	**P**	**02 44 14.0**	**-0.2**
KURK				pmax	pmax		
	comp=Z,24nm,0.8s						
KURK	**Kurchatov**	**56.60**	**311**	*e*Pn	**P**	**02 44 14.0**	**-0.2**
	comp=Z,24nm,0.8s						
ARCES	**ARCESS Array B**	**57.20**	**348**	P	**P**	**02 44 17.4**	**-0.8**
	comp=Z,4.1nm,0.9s,baz=25,slow=8.6,SNR=12						
MKAR	**Makanchi Array**	**57.46**	**306**	P	**P**	**02 44 19.5**	**-0.9**
	comp=Z,2.6nm,0.7s,baz=51,slow=6.7,SNR=17						
BVAR	**Borovoye Array**	**58.67**	**317**	P	**P**	**02 44 28.7**	**0.0**
	comp=Z,7.5nm,0.6s,baz=44,slow=7.2,SNR=26						
BRVK	**Borovoye**	**58.69**	**317**	*c*eP	**P**	**02 44 28.6**	**-0.2**
BRVK				pmax	pmax		
	comp=Z,6.0nm,1.0s						
ARU	**Arti**	**60.70**	**326**	P	**P**	**02 44 43.2**	**+0.6**
	comp=Z,3.0nm,0.4s,baz=33,slow=1.4,SNR=5.6						
ARU	**Arti**	**60.70**	**326**	*d*P	**P**	**02 44 43.3**	**+0.7**
ARU						02 46 57.6	
ARU				S	**S**	**02 52 57.5**	**+2.5**
ARU				SS	**SS**	**02 56 55.7**	**+2.4**
ARU				pmax	pmax		
	comp=Z,14nm,1.7s						
TXAR	**Lajitas Array**	**61.51**	**78**	P	**P**	**02 44 48.3**	**-0.3**
	comp=Z,0.3nm,0.4s,baz=300,slow=5.0,SNR=14						
KLMR	**Klimovskoe**	**62.60**	**338**	*e*P	**P**	**02 44 54.2**	**-1.1**
KLMR				pmax	pmax		
	comp=Z,4.0nm,0.9s						
AAK	**Ala-Archa**	**64.33**	**307**	P	**P**	**02 45 07.0**	**-0.2**
	comp=Z,1.5nm,0.5s,baz=106,slow=2.2,SNR=4.5						
EKS2	**Erkin-Say**	**64.66**	**307**	*e*P	**P**	**02 45 09.6**	**+0.3**
EKS2				pmax	pmax		
	comp=Z,3.0nm,0.8s						
EKS2	**Erkin-Say**	**64.66**	**307**	*e*P	**P**	**02 45 09.6**	**+0.3**
	comp=Z,3.2nm,0.8s						
FINES	**FINESS Array B**	**64.74**	**345**	P	**P**	**02 45 08.1**	**-1.2**
	comp=Z,6.3nm,1.1s,baz=13,slow=6.6,SNR=9.3						
FINES	**FINESS Array B**	**64.74**	**345**	*e*P	**P**	**02 45 08.4**	**-0.9**
FINES				pmax	pmax		
	comp=Z,6.0nm,1.0s						
AKTO	**Aktyubinsk**	**65.64**	**322**	P	**P**	**02 45 15.8**	**+0.5**
	comp=Z,6.3nm,0.6s,baz=54,slow=6.9,SNR=21						
AKTO				LR	LR	03 13 27.4	
	comp=Z,44nm,21.8s,baz=282,slow=36						
ABKAR	**Akbulak array**	**65.82**	**320**	*e*P	**P**	**02 45 16.6**	**0.0**
	comp=Z,1.0nm,0.3s						
KKAR	**Karatay Array**	**65.92**	**310**	*e*P	**P**	**02 45 17.2**	**-0.1**
KKAR				pmax	pmax		
	comp=Z,6.0nm,0.8s						
KKAR	**Karatay Array**	**65.92**	**310**	*e*P	**P**	**02 45 17.2**	**-0.1**
	comp=Z,6.1nm,0.8s						
NB2	**NORSAR Subarra**	**66.97**	**352**	P	**P**	**02 45 23.1**	**-0.8**
	comp=Z,1.7nm,0.7s,baz=10,slow=6.5						
NOA	**NORSAR Array B**	**66.97**	**352**	P	**P**	**02 45 22.9**	**-0.8**
	comp=Z,3.4nm,0.8s,baz=12,slow=6.4,SNR=6.2						
NOA	**NORSAR Array B**	**66.97**	**352**	P	**P**	**02 45 23.0**	**-0.8**
NOA				pmax	pmax		
	comp=Z,3.0nm,0.8s						
CMAR	**Chiang Mai Arr**	**68.03**	**272**	LR	LR	03 17 55.0	
	comp=Z,6.9nm,18.8s,baz=5.0,slow=38						
OBN	**Obninsk**	**68.44**	**337**	*c*eP	**P**	**02 45 33.3**	**+0.3**
OBN				*e*		02 45 58.7	
OBN				*e*		02 48 05.4	
OBN				pmax	pmax		
	comp=Z,6.0nm,0.9s						
GUN	**Gumba**	**68.95**	**289**	*e*P	**P**	**02 45 37.6**	**+0.5**
	comp=Z,27nm,0.7s						
KKN	**Kakani**	**69.40**	**289**	*e*P	**P**	**02 45 40.2**	**+0.5**
	comp=Z,10nm,0.5s						
GKN	**Gorkha**	**69.62**	**289**	*e*P	**P**	**02 45 41.1**	**+0.1**
	comp=Z,11nm,0.8s						
DMN	**Daman**	**69.63**	**289**	*e*P	**P**	**02 45 41.9**	**+0.7**
KOLN	**Koldanda**	**70.40**	**290**	*e*P	**P**	**02 45 45.9**	**+0.1**
	comp=Z,6.5nm,0.7s						
PYUN	**Piuthan**	**70.51**	**291**	*e*P	**P**	**02 45 46.8**	**+0.3**
AKASG	**Malin Array Be**	**74.24**	**339**	P	**P**	**02 46 07.7**	**-0.4**
	comp=Z,2.6nm,0.4s,baz=23,slow=6.1,SNR=11						
GEYT	**Alibeck**	**75.77**	**314**	P	**P**	**02 46 18.0**	**+0.8**
	comp=Z,2.9nm,0.7s,baz=335,slow=6.6,SNR=5.5						
KIV	**Kislovodsk**	**76.66**	**328**[1]	*e*P	**P**	**02 46 23.4**	**+1.2**
KIV				*e*		02 46 32.0	
KIV				*e*		02 49 18.3	
KIV				pmax	pmax		
	comp=Z,3.0nm,0.8s						
KBZ	**Khabaz**	**76.79**	**327**	P	**P**	**02 46 23.7**	**+0.9**
	comp=Z,1.9nm,0.8s,baz=270,slow=3.5,SNR=4.0						
ZEI	**Tsey**	**77.28**	**326**	*e*P	**P**	**02 46 25.3**	**-0.6**
ZEI				pmax	pmax		
	comp=Z,9.0nm,0.6s						
BRTR	**Keskin Array B**	**83.33**	**332**	P	**P**	**02 46 58.4**	**0.0**
	comp=Z,0.8nm,0.5s,baz=33,slow=3.1,SNR=8.4						
ASAR	**Alice Springs**	**83.81**	**219**	P	**P**	**02 47 00.9**	**+0.2**
	comp=Z,0.7nm,0.7s,baz=18,slow=6.0,SNR=5.1						
TORD	**Torodi Ar. Bea**	**115.25**	**354**	PKP	**PKPdf**	**02 53 11.7**	**-1.1**
	comp=Z,0.3nm,0.5s,baz=350,slow=2.5,SNR=7.8						
DBIC	**Dimbokro**	**121.84**	**2**	PKP	**PKPdf**	**02 53 24.9**	**-0.6**
	comp=Z,2.6nm,0.9s,baz=22,slow=3.6,SNR=6.4						
MAW	**Mawson**	**144.93**	**218**	PKPbc	**PKPab**	**02 54 06.4**	**+0.2**
	comp=Z,5.1nm,0.8s,baz=110,slow=4.6,SNR=13						

IDC ***24*** *02:41:36.3±1.2, 36°.14S×73°.44W, h0km, mb3.8/6, mb1 4.0/8, mb1mx3.9/23, mbtmp3.8/8, ML3.9/2, MS3.7/5, Ms1 3.6/5, ms1mx3.2/23, Error ellipse: s-maj=34.5km s-min=19.7km az=66.0*
ISCJB ***24*** *02:41:39.9±0.8, 36°.13S±0°.07×73°.3W±0°.2, h33km, mb3.8/5, MS3.7/4, Error ellipse: s-maj=19.3km s-min=8.5km az=13.6*

ISC 24 02:41:41.8±1.0, 36°.1S±0°.1×73°.3W±0°.2, h35km, n23, σ0°81/17, mb3.8/5, MS3.8/4, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CANA	**Caviahue**	**2.53**	**136**	IAML		02 43 04.6	
	comp=E,379nm,0.6s						
ROC1	**El Roble**	**3.64**	**32**	*e*P	**Pn**	**02 44 34.2**	**-1.7**
AUSP	**Uspallata**	**5.04**	**41**	*e*P	**Pn**	**02 42 55.8**	**+0.6**
PLCA	**Paso Flores**	**5.10**	**156**	Pn	**Pn**	**02 42 54.6**	**-1.2**
	comp=E,1.0nm,0.3s,baz=351,slow=12,SNR=36						
PLCA				Lg	Lg	02 44 19.8	
	comp=E,2.3nm,0.3s,baz=274,slow=20,SNR=4.2						
RTLS	**Leoncito**	**5.43**	**39**	*i* P	**Pn**	**02 43 01.0**	**+0.6**
RTCV	**Cerro Valdivia**	**5.79**	**44**	*e*P	**Pn**	**02 43 05.4**	**+0.3**
RTLL	**Cerro Villicun**	**6.23**	**42**	*e*P	**Pn**	**02 43 11.1**	**-0.1**
AMOG	**MOGNA**	**6.53**	**39**	*i* P	**Pn**	**02 43 14.4**	**-0.9**
MRA	**San Martin**	**7.27**	**62**	IAML		02 44 04.5	
	comp=Z,14nm,0.6s						
VCA	**Vinchina**	**8.51**	**32**	IAML		02 43 58.3	
	comp=Z,26nm,0.5s						
CPUP	**Villa Florida**	**16.76**	**59**	Pn	**P**	**02 45 35.2**	**-0.5**
	comp=Z,0.1nm,0.3s,baz=219,slow=8.5,SNR=3.0						
CPUP				LR	LR	02 51 37.4	
	comp=Z,88nm,20.6s,baz=238,slow=36						
LPAZ	**La Paz**	**20.26**	**14**	P	**P**	**02 46 15.9**	**+1.1**
	comp=Z,2.3nm,0.8s,baz=200,slow=6.4,SNR=12						
SIV	**San Ignacio**	**22.80**	**32**	P	**P**	**02 46 41.3**	**-0.3**
	comp=Z,2.0nm,0.6s,baz=223,slow=13,SNR=9.0						
SIV				LR	LR	02 57 23.6	
	comp=Z,332nm,19.0s,baz=209,slow=41						
PMSA	**Palmer Station**	**29.24**	**172**	LR	LR	02 59 45.9	
	comp=Z,112nm,18.5s,baz=285,slow=37						
VNA3	**Neumayer Olymp**	**47.82**	**157**	P	**P**	**02 50 15.0**	**-0.4**
VNA1	**Neumayer--Stat**	**48.16**	**156**	P	**P**	**02 50 18.7**	**+0.7**
VNA2	**Neumayer--Watz**	**48.49**	**156**	P	**P**	**02 50 20.7**	**+0.1**
	baz=278,slow=9.9						
TXAR	**Lajitas Array**	**71.08**	**332**	P	**P**	**02 52 55.8**	**-0.6**
	comp=Z,0.4nm,0.5s,baz=155,slow=8.4,SNR=13						
MAW	**Mawson**	**71.46**	**164**	LR	LR	03 24 21.9	
	comp=Z,45nm,18.0s,baz=240,slow=36						
DBIC	**Dimbokro**	**76.83**	**72**	P	**P**	**02 53 30.9**	**+0.6**
	comp=Z,1.8nm,0.8s,baz=209,slow=10,SNR=3.4						
NVAR	**Mina Array Bea**	**85.03**	**326**	P	**P**	**02 54 14.5**	**+0.8**
	comp=Z,0.3nm,0.4s,baz=171,slow=7.1,SNR=2.6						
TORD	**Torodi Ar. Bea**	**85.89**	**71**	P	**P**	**02 54 18.1**	**-0.2**
	comp=Z,0.4nm,0.8s,baz=229,slow=3.8,SNR=4.1						
AFI	**Afiamalu**	**88.61**	**254**	LR	LR	03 26 38.6	
	comp=Z,42nm,18.8s,baz=125,slow=30						

CSEM ***24*** *02:42:15.8±0.2, 39°.10N×29°.10E, h0km±2km, MD2.7, Error ellipse: s-maj=4.0km s-min=2.6km az=167.0*
ISK ***24*** *02:42:15.5, 39°.08N×29°.17E, h5km, MD2.8*
DDA ***24*** *02:42:15.2, 39°.04N×29°.08E, h3km, Md2.7*

ISC 24 02:42:15.9±1.0, 39°.11N±0°.02×29°.09E±0°.02, h4km±10km, n56, σ0°56/74, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.30**	**258**	P	**Pg**	**02 42 21.5**	**-0.2**
DEMI				S	**Sg**	**02 42 25.3**	**-0.3**
DEMI	**Demirci**	**0.30**	**258**	*i* P	**Pg**	**02 42 21.5**	**-0.2**
DEMI				*i* S	**Sg**	**02 42 25.3**	**-0.3**
GDZ	**Gediz**	**0.31**	**93**	P	**Pg**	**02 42 22.2**	**+0.3**
GDZ				S	**Sg**	**02 42 26.7**	**+0.7**
GDZ	**Gediz**	**0.31**	**93**	*i* P	**Pg**	**02 42 22.2**	**+0.3**
GDZ				*i* S	**Sg**	**02 42 26.7**	**+0.7**
TVSB	**Tavsanli**	**0.45**	**40**	*e*PG	**Pg**	**02 42 24.5**	**-0.1**
TVSB				*e*SG	**Sg**	**02 42 30.6**	**+0.1**
TVSB	**Tavsanli**	**0.45**	**40**	*e*Pg	**Pg**	**02 42 24.5**	**-0.1**
TVSB				*e*Sg	**Sg**	**02 42 30.6**	**+0.1**
KULA	**Kula-Manisa**	**0.68**	**210**	*e*PG	**Pg**	**02 42 28.7**	**-0.3**
KULA	**Kula-Manisa**	**0.68**	**210**	*e*Pg	**Pg**	**02 42 28.7**	**-0.3**
DURS	**Dursunbey**	**0.69**	**316**	P	**Pg**	**02 42 28.6**	**-0.5**
DURS	**Dursunbey**	**0.69**	**316**	*i* P	**Pg**	**02 42 28.6**	**-0.5**
DURS				*i* S	**Sb**	**02 42 41.7**	**+1.3**
KHL	**Karahalli**	**0.85**	**156**	*e*PG	**Pg**	**02 42 31.7**	**-0.6**
KHL	**Karahalli**	**0.85**	**156**	*e*Pg	**Pg**	**02 42 31.7**	**-0.6**
AKHS	**Akhisar**	**1.02**	**257**	P	**Pg**	**02 42 35.4**	**-0.1**
AKHS				S	**Sg**	**02 42 48.5**	**-0.1**
AKHS	**Akhisar**	**1.02**	**257**	*i* P	**Pg**	**02 42 35.4**	**-0.1**
AKHS				*i* S	**Sg**	**02 42 48.5**	**-0.1**
AKS	**Akhisar**	**1.02**	**258**	*e*PG	**Pb**	**02 42 36.4**	**+0.3**
AKS	**Akhisar**	**1.02**	**258**	*e*Pg	**Pb**	**02 42 36.4**	**+0.3**
BALB	**Balikesir**	**1.08**	**300**	*e*PN	**Pn**	**02 42 37.7**	**-0.1**
BALB	**Balikesir**	**1.08**	**300**	*e*Pn	**Pn**	**02 42 37.7**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.27**	**353**	*e*PN	**Pn**	**02 42 40.6**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.27**	**353**	*e*Pn	**Pn**	**02 42 40.6**	**+0.1**
KCTX	**Karacabey (Bur**	**1.29**	**334**	*e*PN	**Pb**	**02 42 40.8**	**+0.1**
KCTX	**Karacabey (Bur**	**1.29**	**334**	*e*Pn	**Pb**	**02 42 40.8**	**+0.1**
BORA	**Eskisehir**	**1.31**	**53**	P	**Pg**	**02 42 40.7**	**-0.3**
BORA				S	**Sg**	**02 42 57.9**	**-0.1**
BORA	**Eskisehir**	**1.31**	**53**	*i* P	**Pg**	**02 42 40.7**	**-0.3**
BORA				*i* S	**Sg**	**02 42 57.9**	**-0.1**
ADVT	**Abdulvahap**	**1.42**	**21**	*e*PN	**Pb**	**02 42 42.8**	**-0.1**
ADVT	**Abdulvahap**	**1.42**	**21**	*e*Pn	**Pb**	**02 42 42.8**	**-0.1**
ESKT	**Eskisehir**	**1.43**	**73**	*i* P	**Pn**	**02 42 42.6**	**-0.2**
ESKT				*i* S	**Sn**	**02 43 02.3**	**+0.2**
SEYT	**Eskypehyr**	**1.43**	**73**	P	**Pn**	**02 42 42.6**	**-0.1**
SEYT				S	**Sn**	**02 43 02.3**	**+0.2**
ARMT	**Armutlu**	**1.47**	**353**	*e*PN	**Pg**	**02 42 44.1**	**0.0**
ARMT	**Armutlu**	**1.47**	**353**	*e*

ISC 24 02:55:30.3±0.9,39°12N±0°02×29°01E±0°01,h7km±6km, n466,σ1933/531,mb4.0/23,MS3.4/10,36C-27D,Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DEMI	**Demirci**	**0.24**	**251**	P		**Pg**	**02 55 34.7**	**-0.4**
DEMI				S		**Sg**	**02 55 38.4**	**+0.1**
DEMI	**Demirci**	**0.24**	**251**	⇑*i*P		**Pg**	**02 55 34.7**	**-0.4**
DEMI				*i*S		**Sg**	**02 55 38.4**	**+0.1**
GDZ	**Gediz**	**0.37**	**95**	P		**Pg**	**02 55 36.8**	**-0.8**
GDZ				S		**Sg**	**02 55 42.0**	**-0.4**
GDZ	**Gediz**	**0.37**	**95**	⇑*i*P		**Pg**	**02 55 36.8**	**-0.8**
GDZ				*i*S		**Sg**	**02 55 42.0**	**-0.4**
TVSB	**Tavsanli**	**0.48**	**47**	*e*Pg		**Pg**	**02 55 39.6**	**0.0**
TVSB				*e*Sg		**Sg**	**02 55 46.2**	**+0.2**
TVSB	**Tavsanli**	**0.48**	**47**	*e*Pg		**Pg**	**02 55 39.6**	**0.0**
TVSB				*e*Sg		**Sg**	**02 55 46.2**	**+0.2**
TVSB	**Tavsanli**	**0.48**	**47**	Pg		**Pg**	**02 55 39.6**	**0.0**
DURS	**Dursunbey**	**0.63**	**320**	P		**Pg**	**02 55 42.2**	**-0.3**
DURS				S		**Sg**	**02 55 51.0**	**+0.2**
DURS	**Dursunbey**	**0.63**	**320**	⇑*i*P		**Pg**	**02 55 42.2**	**-0.3**
DURS				*i*S		**Sg**	**02 55 51.0**	**+0.2**
KULA	**Kula-Manisa**	**0.66**	**204**	*e*PG		**Pg**	**02 55 42.2**	**-0.8**
KULA	**Kula-Manisa**	**0.66**	**204**	*e*Pg		**Pg**	**02 55 42.2**	**-0.8**
KULA	**Kula-Manisa**	**0.66**	**204**	Pg		**Pg**	**02 55 42.2**	**-0.8**
KHL	**Karahalli**	**0.89**	**153**	*e*PG		**Pg**	**02 55 46.5**	**-0.9**
KHL				*e*SG		**Sg**	**02 55 58.9**	**-0.1**
KHL	**Karahalli**	**0.89**	**153**	*e*Pg		**Pg**	**02 55 46.5**	**-0.9**
KHL				*e*Sg		**Sg**	**02 55 58.9**	**-0.1**
KHL	**Karahalli**	**0.89**	**153**	Pg		**Pg**	**02 55 47.5**	**+0.1**
ORLT	**Orhaneli**	**0.93**	**355**	*e*PG		**Pg**	**02 55 48.5**	**+0.3**
ORLT	**Orhaneli**	**0.93**	**355**	*e*Pg		**Pg**	**02 55 48.5**	**+0.3**
ORLT	**Orhaneli**	**0.93**	**355**	Pg		**Pb**	**02 55 48.9**	**+0.2**
AKHS	**Akhisar**	**0.96**	**256**	P		**Pg**	**02 55 48.2**	**-0.5**
AKHS				S		**Sb**	**02 56 01.7**	**-0.4**
AKHS	**Akhisar**	**0.96**	**256**	⇑*i*P		**Pg**	**02 55 48.2**	**-0.5**
AKHS				*i*S		**Sb**	**02 56 01.7**	**-0.4**
AKS	**Akhisar**	**0.96**	**256**	*e*PG		**Pg**	**02 55 48.7**	**0.0**
AKS	**Akhisar**	**0.96**	**256**	*e*Pg		**Pg**	**02 55 48.7**	**0.0**
AKS	**Akhisar**	**0.96**	**256**	Pg		**Pg**	**02 55 48.7**	**0.0**
BALB	**Balikesir**	**1.02**	**301**	*e*PG		**Pg**	**02 55 49.9**	**+0.1**
BALB				*e*SG		**Sn**	**02 56 04.7**	**-0.7**
BALB	**Balikesir**	**1.02**	**301**	*e*Pg		**Pg**	**02 55 49.9**	**+0.1**
BALB				*e*Sg		**Sn**	**02 56 04.7**	**-0.7**
BALB	**Balikesir**	**1.02**	**301**	Pg		**Pb**	**02 55 50.3**	**+0.2**
KCTX	**Karacabey (Bur**	**1.25**	**337**	*e*PN		**Pn**	**02 55 54.2**	**+0.1**
KCTX	**Karacabey (Bur**	**1.25**	**337**	*e*Pn		**Pn**	**02 55 54.2**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.25**	**356**	*e*PN		**Pg**	**02 55 54.8**	**+0.5**
MDNY	**Mudanya-Bursa**	**1.25**	**356**	*e*Pn		**Pg**	**02 55 54.8**	**+0.5**
IZI	**Iznik**	**1.27**	**16**	*e*PN		**Pn**	**02 55 54.5**	**+0.1**
IZI	**Iznik**	**1.27**	**16**	*e*Pn		**Pn**	**02 55 54.5**	**+0.1**
IZI	**Iznik**	**1.27**	**16**	Pn		**Pg**	**02 55 55.7**	**+1.1**
GEMT	**Gemlik**	**1.32**	**6**	*e*PN		**Pn**	**02 55 55.3**	**+0.2**
GEMT	**Gemlik**	**1.32**	**6**	*e*Pn		**Pn**	**02 55 55.3**	**+0.2**
GEMT	**Gemlik**	**1.32**	**6**	Pn		**Pg**	**02 55 56.8**	**+1.1**
BORA	**Eskisehir**	**1.35**	**55**	P		**Pn**	**02 55 54.5**	**-1.1**
BORA				S		**Sg**	**02 56 13.9**	**+0.1**
BORA	**Eskisehir**	**1.35**	**55**	⇑*i*P		**Pn**	**02 55 54.5**	**-1.1**
BORA				*i*S		**Sg**	**02 56 13.9**	**+0.1**
DENT	**Denizli**	**1.36**	**179**	*e*PN		**Pn**	**02 55 54.8**	**-0.9**
DENT	**Denizli**	**1.36**	**179**	*e*Pn		**Pn**	**02 55 54.8**	**-0.9**
DENT	**Denizli**	**1.36**	**179**	Pn		**Pg**	**02 55 56.4**	**0.0**
ADVT	**Abdulvahap**	**1.43**	**23**	*e*PN		**Pn**	**02 55 56.8**	**+0.2**
ADVT	**Abdulvahap**	**1.43**	**23**	*e*Pn		**Pn**	**02 55 56.8**	**+0.2**
ADVT	**Abdulvahap**	**1.43**	**23**	Pn		**Pg**	**02 55 57.8**	**+0.2**
ARMT	**Armutlu**	**1.45**	**356**	*e*PN		**Pn**	**02 55 56.9**	**0.0**
ARMT	**Armutlu**	**1.45**	**356**	*e*Pn		**Pn**	**02 55 56.9**	**0.0**
ARMT	**Armutlu**	**1.45**	**356**	Pn		**Pg**	**02 55 58.2**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**1.46**	**217**	*e*PN		**Pn**	**02 55 56.6**	**-0.6**
AYDB	**Zeytinkoy-Aydi**	**1.46**	**217**	*e*Pn		**Pn**	**02 55 56.6**	**-0.6**
ESKT	**Eskisehir**	**1.48**	**74**	⇓*i*P		**Pn**	**02 55 56.9**	**-0.6**
ESKT				*i*S		**Sg**	**02 56 18.5**	**+0.5**
SEYT	**Eskypehyr**	**1.48**	**74**	P		**Pn**	**02 55 56.9**	**-0.6**
SEYT				S		**Sg**	**02 56 18.5**	**+0.5**
EDC	**Edincik**	**1.51**	**325**	*e*PN		**Pn**	**02 55 57.7**	**0.0**
EDC	**Edincik**	**1.51**	**325**	P		**Pb**	**02 55 58.9**	**+0.3**
EDC	**Edincik**	**1.51**	**325**	*e*Pn		**Pn**	**02 55 57.7**	**0.0**
EDC	**Edincik**	**1.51**	**325**	P		**Pb**	**02 55 58.9**	**+0.3**
EDC	**Edincik**	**1.51**	**325**	Pn		**Pb**	**02 55 58.9**	**+0.3**
GPA	**Golpazari**	**1.54**	**40**	*e*PN		**Pn**	**02 55 58.2**	**0.0**
GPA	**Golpazari**	**1.54**	**40**	P		**Pg**	**02 56 00.0**	**+0.2**
GPA	**Golpazari**	**1.54**	**40**	*e*Pn		**Pn**	**02 55 58.2**	**0.0**
GPA	**Golpazari**	**1.54**	**40**	P		**Pg**	**02 56 00.0**	**+0.2**
GPA	**Golpazari**	**1.54**	**40**	Pn		**Pg**	**02 55 60.0**	**+0.2**
BOLV	**Bolvadin**	**1.57**	**104**	P		**Pn**	**02 55 58.2**	**-0.4**
BOLV				S		**Sn**	**02 56 18.7**	**-0.5**
BOLV	**Bolvadin**	**1.57**	**104**	⇑*i*P		**Pn**	**02 55 58.2**	**-0.4**
BOLV				*i*S		**Sn**	**02 56 18.7**	**-0.5**
DKL	**Dikili**	**1.64**	**269**	*e*PN		**Pn**	**02 56 00.0**	**+0.6**
DKL	**Dikili**	**1.64**	**269**	*e*Pn		**Pn**	**02 56 00.0**	**+0.6**
GULT	**Gulveren**	**1.75**	**41**	*e*PN		**Pn**	**02 56 01.3**	**+0.2**
GULT	**Gulveren**	**1.75**	**41**	*e*Pn		**Pn**	**02 56 01.3**	**+0.2**
GULT	**Gulveren**	**1.75**	**41**	Pn		**Pb**	**02 56 02.8**	**+0.1**
ISP	**Isparta**	**1.76**	**137**	*e*PN		**Pn**	**02 55 59.9**	**-1.4**
ISP	**Isparta**	**1.76**	**137**	P		**Pn**	**02 56 00.2**	**-1.0**
ISP	**Isparta**	**1.76**	**137**	*e*P		**Pn**	**02 56 00.0**	**-1.2**
ISP				*e*S		**Sn**	**02 56 23.0**	**-0.9**
ISP	**Isparta**	**1.76**	**137**	P		**Pn**	**02 56 00.2**	**-1.0**
ISP				*e*S		**Sn**	**02 56 23.0**	**-0.9**
ISP	**Isparta**	**1.76**	**137**	*e*Pn		**Pn**	**02 56 00.0**	**-1.2**
ISP				*e*S		**Sn**	**02 56 22.9**	**-0.9**
HRT	**Hereke**	**1.77**	**16**	*e*PN		**Pn**	**02 56 00.7**	**-0.7**
HRT	**Hereke**	**1.77**	**16**	*e*Pn		**Pn**	**02 56 00.7**	**-0.7**
BAGO	**Egridir - ISPA**	**1.79**	**128**	⇑*i*P		**Pn**	**02 56 01.0**	**-0.7**
BAGO				*i*S		**Sg**	**02 56 31.0**	**+3.0**
AYVA	**Ayvalik**	**1.81**	**277**	P		**Pn**	**02 56 01.7**	**-0.1**
AYVA				S		**Sg**	**02 56 27.7**	**-0.7**
AYVA	**Ayvalik**	**1.81**	**277**	⇓*i*P		**Pn**	**02 56 01.7**	**-0.1**
AYVA				*i*S		**Sg**	**02 56 27.7**	**-0.7**
MRMT	**Marmara Adasi**	**1.84**	**324**	*e*PN		**Pn**	**02 56 02.0**	**-0.3**
MRMT	**Marmara Adasi**	**1.84**	**324**	*e*Pn		**Pn**	**02 56 02.0**	**-0.3**
SPNC	**Sapanca-Adapaz**	**1.86**	**32**	*e*PN		**Pn**	**02 56 02.5**	**0.0**
SPNC	**Sapanca-Adapaz**	**1.86**	**32**	*e*Pn		**Pn**	**02 56 02.5**	**0.0**
GOLH	**Golhisar**	**1.93**	**167**	P		**Pn**	**02 56 03.1**	**-0.5**
GOLH	**Golhisar**	**1.93**	**167**	⇑*i*P		**Pn**	**02 56 03.1**	**-0.5**
GOLH				*i*S		**Sg**	**02 56 34.9**	**+2.6**
ISK	**Istanbul-Kandi**	**1.94**	**1**	*e*PN		**Pn**	**02 56 03.3**	**-0.4**
ISK	**Istanbul-Kandi**	**1.94**	**1**	P		**Pn**	**02 56 03.5**	**-0.2**
ISK	**Istanbul-Kandi**	**1.94**	**1**	P		**Pn**	**02 56 03.5**	**-0.2**
SVRH	**Sivrihisar-ESK**	**1.98**	**80**	*e*PN		**Pn**	**02 56 03.9**	**-0.4**
SVRH	**Sivrihisar-ESK**	**1.98**	**80**	*e*Pn		**Pn**	**02 56 03.9**	**-0.4**
GLHS	**Glhisar (BURDU**	**2.00**	**169**	*e*PN		**Pn**	**02 56 03.8**	**-0.7**
GLHS	**Glhisar (BURDU**	**2.00**	**169**	*e*Pn		**Pn**	**02 56 03.8**	**-0.7**
URLA	**Izmir**	**2.03**	**249**	P		**Pn**	**02 56 03.9**	**-1.0**
URLA	**Izmir**	**2.03**	**249**	⇓*i*P		**Pn**	**02 56 03.9**	**-1.0**
URLA				*i*S		**Sg**	**02 56 34.2**	**-1.4**
YER	**Yerkesik**	**2.06**	**196**	*e*PN		**Pn**	**02 56 04.8**	**-0.5**
YER	**Yerkesik**	**2.06**	**196**	P		**Pn**	**02 56 04.5**	**-0.9**
YER	**Yerkesik**	**2.06**	**196**	P		**Pn**	**02 56 04.5**	**-0.9**
YER	**Yerkesik**	**2.06**	**196**	*e*Pn		**Pn**	**02 56 04.8**	**-0.5**
BGKT	**Bogazkoy**	**2.07**	**355**	*e*PN		**Pn**	**02 56 04.8**	**-0.5**
BGKT	**Bogazkoy**	**2.07**	**355**	*e*Pn		**Pn**	**02 56 04.8**	**-0.5**
BCK	**Bucak**	**2.07**	**143**	*e*PN		**Pn**	**02 56 05.0**	**-0.5**
BCK	**Bucak**	**2.07**	**143**	*e*Pn		**Pn**	**02 56 05.0**	**-0.5**
SILT	**Sile**	**2.09**	**13**	*e*PN		**Pn**	**02 56 06.0**	**+0.3**
SILT	**Sile**	**2.09**	**13**	*e*Pn		**Pn**	**02 56 06.0**	**+0.3**
RKY	**Sarkoy-Tekirda**	**2.10**	**319**	*e*PN		**Pn**	**02 56 06.1**	**+0.2**
RKY	**Sarkoy-Tekirda**	**2.10**	**319**	*e*Pn		**Pn**	**02 56 06.1**	**+0.2**
SART	**Tekirdag**	**2.10**	**319**	P		**Pn**	**02 56 07.4**	**+1.5**
SART	**Tekirdag**	**2.10**	**319**	*i*P		**Pn**	**02 56 07.4**	**+1.5**
SART				*i*S		**Sg**	**02 56 38.4**	**+0.5**
BTAS	**Taskesti**	**2.11**	**46**	P		**Pn**	**02 56 05.7**	**-0.3**
BTAS	**Taskesti**	**2.11**	**46**	⇓*i*P		**Pn**	**02 56 05.7**	**-0.3**
BTAS				*i*S		**Sg**	**02 56 41.3**	**+3.2**
PRK	**Paraskevi**	**2.13**	**274**	P		**Pn**	**02 56 06.3**	**+0.1**
PRK				S		**Sb**	**02 56 34.6**	**-1.1**
PRK	**Paraskevi**	**2.13**	**274**	P		**Pn**	**02 56 06.3**	**+0.1**
PRK				S		**Sb**	**02 56 34.6**	**-1.1**
KLYT	**Kilyos**	**2.13**	**1**	*e*PN		**Pn**	**02 56 05.8**	**-0.4**
KLYT	**Kilyos**	**2.13**	**1**	*e*Pn		**Pn**	**02 56 05.8**	**-0.4**
LPK	**Lapseki**	**2.14**	**307**	*e*PN		**Pn**	**02 56 06.8**	**+0.5**
LPK	**Lapseki**	**2.14**	**307**	*e*Pn		**Pn**	**02 56 06.8**	**+0.5**
CTKS	**Kestanelik-??a**	**2.15**	**350**	*e*PN		**Pn**	**02 56 06.3**	**-0.2**
CTKS	**Kestanelik-??a**	**2.15**	**350**	*e*Pn		**Pn**	**02 56 06.3**	**-0.2**
MDUB	**Mudurnu**	**2.16**	**51**	*e*PN		**Pn**	**02 56 06.7**	**-0.1**
MDUB	**Mudurnu**	**2.16**	**51**	*e*Pn		**Pn**	**02 56 06.7**	**-0.1**
KAND	**Kocaeli-Kandir**	**2.17**	**24**	P		**Pn**	**02 56 06.5**	**-0.3**
KAND	**Kocaeli-Kandir**	**2.17**	**24**	⇓*i*P		**Pn**	**02 56 06.5**	**-0.3**
KAND				*i*S		**Sg**	**02 56 39.6**	**-0.5**
TKR	**Tekirdag**	**2.18**	**329**	*e*PN		**Pn**	**02 56 08.1**	**+1.2**
TKR	**Tekirdag**	**2.18**	**329**	*e*Pn		**Pn**	**02 56 08.1**	**+1.2**
EZN	**Ezine**	**2.19**	**290**	*e*PN		**Pn**	**02 56 07.2**	**+0.1**
EZN	**Ezine**	**2.19**	**290**	P		**Pn**	**02 56 07.3**	**+0.2**
EZN	**Ezine**	**2.19**	**290**	P		**Pn**	**02 56 07.3**	**+0.2**
SMG	**Samos**	**2.21**	**231**	P		**Pn**	**02 56 06.6**	**-0.8**
SMG				S		**Sn**	**02 56 35.7**	**+0.8**
SMG	**Samos**	**2.21**	**231**	P		**Pn**	**02 56 06.6**	**-0.8**
SMG				S		**Sn**	**02 56 35.7**	**+0.8**
CRLT	**Corlu**	**2.23**	**335**	*e*PN		**Pn**	**02 56 08.2**	**+0.6**
CRLT	**Corlu**	**2.23**	**335**	*e*Pn		**Pn**	**02 56 08.2**	**+0.6**
SAHE	**Sakarya_HENDEK**	**2.24**	**39**	P		**Pn**	**02 56 07.3**	**-0.4**
SAHE	**Sakarya_HENDEK**	**2.24**	**39**	⇓*i*P		**Pn**	**02 56 07.3**	**-0.4**
SAHE				*i*S		**Sg**	**02 56 42.3**	**+0.1**
KIZT	**Kizilcal**	**2.25**	**95**	*e*PN		**Pn**	**02 56 08.2**	**+0.2**
KIZT	**Kizilcal**	**2.25**	**95**	*e*Pn		**Pn**	**02 56 08.2**	**+0.2**
TURN	**Turunc**	**2.27**	**188**	*i*P		**Pb**	**02 56 09.7**	**-1.8**
TURN				*i*S		**Sg**	**02 56 49.2**	**+6.1**
DALY	**Dalyan (Mu¨la**	**2.32**	**187**	*e*PN		**Pn**	**02 56 08.3**	**-0.4**
DALY	**Dalyan (Mu¨la**	**2.32**	**187**	*e*Pn		**Pn**	**02 56 08.3**	**-0.4**
GELI	**Tayfur-Gelibol**	**2.33**	**304**	*e*PN		**Pn**	**02 56 08.9**	**-0.1**
GELI	**Tayfur-Gelibol**	**2.33**	**304**	*e*Pn		**Pn**	**02 56 08.9**	**-0.1**
KORT	**Korkueli**	**2.37**	**153**	P		**Pn**	**02 56 09.5**	**-0.1**
KORT	**Korkueli**	**2.37**	**153**	⇑*i*P		**Pn**	**02 56 09.5**	**-0.1**
BDRM	**Kayabasi**	**2.39**	**211**	P		**Pn**	**02 56 09.0**	**-0.8**
BDRM	**Kayabasi**	**2.39**	**211**	*i*P		**Pn**	**02 56 09.0**	**-0.8**
BDRM				*i*S		**Sg**	**02 56 49.1**	**+1.9**
BOZC	**Bozcaada**	**2.40**	**288**	⇓*i*P		**Pn**	**02 56 10.0**	**+0.1**
BOZC				*i*S		**Sg**	**02 56 46.9**	**-0.4**
CTYL	**Yalikoy Yolu**	**2.42**	**347**	*e*PN		**Pn**	**02 56 09.8**	**-0.3**
CTYL	**Yalikoy Yolu**	**2.42**	**347**	*e*Pn		**Pn**	**02 56 09.8**	**-0.3**
CHOS	**Chios island**	**2.42**	**253**	*e*PN		**Pn**	**02 56 10.6**	**+0.3**
CHOS	**Chios island**	**2.42**	**253**	P		**Pn**	**02 56 10.1**	**-0.2**
CHOS				S		**Sn**	**02 56 40.3**	**+0.7**
CHOS	**Chios island**	**2.42**	**253**	P		**Pn**	**02 56 10.1**	**-0.2**
CHOS	**Chios island**	**2.42**	**253**	*e*Pn		**Pn**	**02 56 10.6**	**+0.3**
CHOS				S		**Sn**	**02 56 40.9**	**+0.7**
SIGR	**SIGRI**	**2.45**	**273**	*e*PN		**Pn**	**02 56 11.4**	**+0.8**
SIGR	**SIGRI**	**2.45**	**273**	P		**Pn**	**02 56 10.6**	**0.0**
SIGR				S		**Sn**	**02 56 42.2**	**+1.4**
SIGR	**SIGRI**	**2.45**	**273**	P		**Pn**	**02 56 10.6**	**0.0**
SIGR	**SIGRI**	**2.45**	**273**	*e*Pn		**Pn**	**02 56 11.4**	**+0.8**
SIGR				S		**Sn**	**02 56 42.2**	**+1.4**
BODT	**Bodrum**	**2.45**	**214**	*e*PN		**Pn**	**02 56 10.0**	**-0.7**
BODT	**Bodrum**	**2.45**	**214**	P		**Pn**	**02 56 09.8**	**-0.9**
BODT	**Bodrum**	**2.45**	**214**	*e*Pn		**Pn**	**02 56 10.0**	**-0.7**
ERIK	**Erikli-Kesan**	**2.46**	**310**	*e*PN		**Pn**	**02 56 11.4**	**+0.7**
ERIK	**Erikli-Kesan**	**2.46**	**310**	*e*Pn		**Pn**	**02 56 11.5**	**+0.7**
KESN	**Edirne-Kesan**	**2.47**	**314**	P		**Pn**	**02 56 11.2**	**-0.1**
KESN	**Edirne-Kesan**	**2.47**	**314**	⇓*i*P		**Pn**	**02 56 11.2**	**-0.1**
KESN				*i*S		**Sg**	**02 56 48.6**	**-1.1**
ELL	**Elmali**	**2.47**	**163**	*e*PN		**Pn**	**02 56 10.6**	**-0.4**
ELL	**Elmali**	**2.47**	**163**	*e*Pn		**Pn**	**02 56 10.6**	**-0.4**
FETY	**Fethiye**	**2.48**	**179**	*e*PN		**Pn**	**02 56 10.7**	**-0.4**
FETY	**Fethiye**	**2.48**	**179**	*e*Pn		**Pn**	**02 56 10.7**	**-0.4**
KDHN	**Kadinhani**	**2.50**	**103**	P		**Pn**	**02 56 11.1**	**-0.3**
KDHN	**Kadinhani**	**2.50**	**103**	*i*P		**Pn**	**02 56 11.1**	**-0.3**
KDHN				*i*S		**Sg**	**02 56 51.5**	**+0.8**
ANTB	**Antalya**	**2.57**	**149**	*e*PN		**Pn**	**02 56 12.2**	**-0.1**
ANTB	**Antalya**	**2.57**	**149**	*e*Pn		**Pn**	**02 56 12.2**	**-0.1**
ENEZ	**Enez**	**2.72**	**307**	*e*PN		**Pn**	**02 56 15.3**	**+0.9**
ENEZ	**Enez**	**2.72**	**307**	P		**Pn**	**02 56 15.0**	**+0.6**
ENEZ	**Enez**	**2.72**	**307**	P		**Pn**	**02 56 15.0**	**+0.6**
ENEZ	**Enez**	**2.72**	**307**	*e*Pn		**Pn**	**02 56 15.3**	**+0.9**
PHSR	**Pinarhisar**	**2.75**	**336**	*e*PN		**Pn**	**02 56 15.2**	**+0.5**
PHSR	**Pinarhisar**	**2.75**	**336**	*e*Pn		**Pn**	**02 56 15.3**	**+0.5**
LADK	**Ladik-KONYA**	**2.79**	**108**	*e*PN		**Pn**	**02 56 15.4**	**+0.1**
LADK	**Ladik-KONYA**	**2.79**	**108**	*e*Pn		**Pn**	**02 56 15.4**	**+0.1**
KDZE	**Karadeniz Ereo**	**2.88**	**40**	*e*PN		**Pn**	**02 56 16.8**	**+0.2**
KDZE	**Karadeniz Ereo**	**2.88**	**40**	*e*Pn		**Pn**	**02 56 16.8**	**+0.3**
KONT	**Konya--Tatoy**	**2.88**	**113**	*e*PN		**Pn**	**02 56 16.7**	**+0.1**
KONT	**Konya--Tatoy**	**2.88**	**113**	*e*Pn		**Pn**	**02 56 16.7**	**+0.1**
ALN	**Alexandroupoli**	**2.88**	**309**	*e*PN		**Pn**	**02 56 17.5**	**+0.9**
ALN	**Alexandroupoli**	**2.88**	**309**	P		**Pn**	**02 56 16.8**	**+0.2**
ALN				S		**Sn**	**02 56 52.9**	**+1.4**
ALN	**Alexandroupoli**	**2.88**	**309**	P		**Pn**	**02 56 16.8**	**+0.2**
ALN	**Alexandroupoli**	**2.88**	**309**	*e*Pn		**Pn**	**02 56 17.5**	**+0.9**
ALN				S		**Sn**	**02 56 52.9**	**+1.4**
BCAM	**Yenicaga**	**2.90**	**53**	P		**Pn**	**02 56 16.4**	**-0.5**
BCAM	**Yenicaga**	**2.90**	**53**	*i*P		**Pn**	**02 56 16.4**	**-0.5**
BCAM				*i*S		**Sg**	**02 57 07.5**	**+4.2**
NIS1	**Nisyros Isl.**	**2.90**	**210**	*e*PN		**Pn**	**02 56 16.1**	**-0.7**
NIS1	**Nisyros Isl.**	**2.90**	**210**	*e*Pn		**Pn**	**02 56 16.1**	**-0.7**
AKAS	**Kas**	**2.92**	**170**	P		**Pn**	**02 56 17.2**	**0.0**
AKAS	**Kas**	**2.92**	**170**	⇑*i*P		**Pn**	**02 56 17.2**	**0.0**
AKAS				*i*S		Sg	02 57 14.0	+10
KMER	**Konya-Meram**	**2.96**	**116**	P		**Pn**	**02 56 18.3**	**+0.5**
KMER	**Konya-Meram**	**2.96**	**116**	*i*P		**Pn**	**02 56 18.3**	**+0.5**
KMER				*i*S		**Sg**	**02 57 08.7**	**+3.2**
ARG	**Arkhangelos**	**2.98**	**194**	P		**Pn**	**02 56 17.4**	**-0.5**
ARG	**Arkhangelos**	**2.98**	**194**	P		**Pn**	**02 56 17.4**	**-0.5**
SMTH	**Samothraki Isl**	**3.00**	**298**	P		**Pn**	**02 56 18.4**	**+0.2**
SMTH	**Samothraki Isl**	**3.00**	**298**	P		**Pn**	**02 56 18.4**	**+0.2**
BR231	**Keskin MP Arra**	**3.00**	**75**	*e*Pn		**Pn**	**02 56 20.1**	**+1.7**
BR231	**Keskin MP Arra**	**3.00**	**75**	*e*Pn		**Pn**	**02 56 20.1**	**+1.7**
LOD	**Lodumlu**	**3.01**	**74**	*e*PN		**Pn**	**02 56 18.7**	**+0.3**
LOD	**Lodumlu**	**3.01**	**74**	*e*Pn		**Pn**	**02 56 18.7**	**+0.3**
ANTO	**Ankara**	**3.02**	**74**	*e*P		**Pn**	**02 56 20.6**	**+2.0**
ANTO	**Ankara**	**3.02**	**74**	*e*P		**Pn**	**02 56 20.6**	**+2.0**
ANTO	**Ankara**	**3.02**	**74**	*e*Pn		**Pn**	**02 56 20.6**	**+2.0**
KKUL	**Konya-Kulu**	**3.04**	**88**	P		**Pn**	**02 56 20.6**	**+1.7**
KKUL	**Konya-Kulu**	**3.04**	**88**	*i*P		**Pn**	**02 56 20.6**	**+1.7**
KKUL				*i*S		**Sg**	**02 57 09.4**	**+1.5**
LIA	**Limnos Island**	**3.06**	**286**	P		**Pn**	**02 56 19.4**	**+0.4**
LIA				S		**Sn**	**02 56 57.5**	**+1.7**
LIA	**Limnos Island**	**3.06**	**286**	P		**Pn**	**02 56 19.4**	**+0.4**
LIA				S		**Sn**	**02 56 57.5**	**+1.7**
CHBY	**Cihanbeyli**	**3.08**	**99**	*e*PN		**Pn**	**02 56 19.9**	**+0.5**
CHBY	**Cihanbeyli**	**3.08**	**99**	*e*Pn		**Pn**	**02 56 19.9**	**+0.5**
EDRB	**Edirne**	**3.23**	**328**	*e*PN		**Pn**	**02 56 21.6**	**+0.3**
EDRB	**Edirne**	**3.23**	**328**	P		**Pn**	**02 56 21.6**	**+0.3**
EDRB	**Edirne**	**3.23**	**328**	P		**Pn**	**02 56 21.6**	**+0.3**
APE	**Apeiranthos**	**3.42**	**234**	*e*PN		**Pn**	**02 56 24.6**	**+0.6**
APE	**Apeiranthos**	**3.42**	**234**	⇑*i*P		**Pn**	**02 56 23.3**	**-0.7**
APE	**Apeiranthos**	**3.42**	**234**	⇓*e*P		**Pn**	**02 56 23.4**	**-0.6**
APE	**Apeiranthos**	**3.42**	**234**	*e*P		**Pn**	**02 56 23.4**	**-0.6**
APE	**Apeiranthos**	**3.42**	**234**	*e*Pn		**Pn**	**02 56 24.6**	**+0.6**
SAFT	**Safranbolu**	**3.53**	**52**	*e*PN		**Pn**	**02 56 26.7**	**+1.3**
SAFT	**Safranbolu**	**3.53**	**52**	*e*Pn		**Pn**	**02 56 26.7**	**+1.3**
BTIN	**Bart¨–n**	**3.53**	**44**	P		**Pn**	**02 56 25.3**	**-0.2**
BTIN	**Bart¨–n**	**3.53**	**44**	*i*P		**Pn**	**02 56 25.3**	**-0.2**
BTIN				*i*S		**Sg**	**02 57 21.4**	**-2.2**
SERE	**Sereflikochisa**	**3.55**	**91**	*e*PN		**Pn**	**02 56 26.3**	**+0.4**
SERE	**Sereflikochisa**	**3.55**	**91**	*e*Pn		**Pn**	**02 56 26.3**	**+0.4**
BR131	**Keskin Array S**	**3.64**	**79**	*e*Pn		**Pn**	**02 56 27.8**	**+0.7**
BR131	**Keskin Array S**	**3.64**	**79**	*e*Pn		**Pn**	**02 56 27.8**	**+0.7**
BRTR	**Keskin Array B**	**3.64**	**79**	Pn		**Pn**	**02 56 26.8**	**-0.3**
	1.8nm,0.3s,baz=254,slow=13,SNR=72						
BRTR				Sn		**Sn**	**02 57 08.9**	**-1.4**
	12nm,0.3s,baz=252,slow=24,SNR=13						
KAMT	**Kaman**	**3.66**	**85**	*e*PN		**Pn**	**02 56 28.1**	**+0.7**
KAMT	**Kaman**	**3.66**	**85**	*e*Pn		**Pn**	**02 56 28.1**	**+0.7**
ELDT	**Eldivan**	**3.67**	**67**	*i*P		**Pg**	**02 56 39.0**	**-1.5**
ELDT				*i*S		**Sg**	**02 57 33.4**	**+5.3**
AKSY	**AKSARAY - Alti**	**3.74**	**96**	*i*P		**Pg**	**02 56 40.4**	**-1.6**
AKSY				*i*S		**Sg**	**02 57 35.9**	**+0.5**
CANT	**Cankiri**	**3.85**	**66**	*e*PN		**Pn**	**02 56 30.8**	**+0.8**
KARP	**Karpathos**	**3.86**	**203**	*e*PN		**Pn**	**02 56 30.4**	**+0.4**
KARP	**Karpathos**	**3.86**	**203**	P		**Pn**	**02 56 29.5**	**-0.5**
KARP	**Karpathos**	**3.86**	**203**	*e*Pn		**Pn**	**02 56 29.7**	**-0.3**
KARP	**Karpathos**	**3.86**	**203**	*e*Pn		**Pn**	**02 56 29.7**	**-0.3**
GAZI	**Gazipasa**	**3.90**	**137**	P		**Pn**	**02 56 28.9**	**-1.6**
GAZI	**Gazipasa**	**3.90**	**137**	*i*P		**Pn**	**02 56 28.9**	**-1.6**
KAVA	**K

EIL	Elat	10.62	151	Pn	Pn	02 58 00.5	-2.4
	comp=E,1.3nm,0.3s,baz=340,slow=14,SNR=8.4						
EIL				LR	LR	03 02 46.5	
	comp=E,93nm,20.1s,baz=18,slow=41						
UZH	Uzhgorod	10.67	335	eP	Pn	02 58 04.7	+1.4
UZH				eS	Sn	03 00 03.7	+0.8
UZH				MLR	MLR		
	comp=N,1μm,12.0s						
UZH				MLR	MLR		
	comp=E,1μm,12.0s						
UZH				MLR	MLR		
	comp=Z,660nm,12.0s						
UZH	Uzhgorod	10.67	335	eP	Pn	02 58 04.7	+1.4
NEY	Neytrino	11.13	64	iP	Pn	02 58 11.3	+1.4
NEY	Neytrino	11.13	64	iP	Pn	02 58 11.3	+1.4
CRVS	Cervenica-Dubn	11.18	333	eP	Pn	02 58 14.5	+4.1
CRVS	Cervenica-Dubn	11.18	333	ePN	Pn	02 58 14.5	+4.1
LVV	L'vov	11.27	343	eP	Pn	02 58 11.7	+0.1
LVV				eS	Sn	03 00 19.3	+1.6
LVV				MLR	MLR		
	comp=N,300nm,12.0s						
LVV				MLR	MLR		
	comp=E,100nm,12.0s						
LVV				MLR	MLR		
	comp=Z,300nm,12.0s						
LVV	L'vov	11.27	343	eP	Pn	02 58 11.7	+0.1
KIV	Kislovodsk	11.33	60⇑	eP	Pn	02 58 14.4	+1.8
KIV				pmax	pmax		
	comp=Z,11nm,2.0s						
KIV				MLR	MLR		
	comp=Z,64nm,14.0s						
KIV	Kislovodsk	11.33	60	eP	Pn	02 58 14.4	+1.8
	comp=Z,64nm,14.0s						
KBZ	Khabaz	11.40	62	LR	LR	03 03 41.3	
	comp=Z,63nm,18.9s,baz=270,slow=43						
KWP	Kalwaria Pacla	11.43	339⇑	iP	Pn	02 58 15.0	+1.2
AK11	Malin Array Si	11.56	1	ePn	Pn	02 58 14.9	-0.6
AK11	Malin Array Si	11.56	1	ePn	Pn	02 58 14.9	-0.6
KIEV	Kiev	11.57	1	iP	Pn	02 58 15.6	-0.2
KIEV				pmax	pmax		
	comp=Z,6.0nm,1.1s						
KIEV	Kiev	11.57	1	iP	Pn	02 58 15.6	-0.2
	comp=Z,6.0nm,1.1s						
AKASG	Malin Array Be	11.58	1	Pn	Pn	02 58 13.6	-2.3
	comp=Z,0.8nm,0.3s,baz=184,slow=12,SNR=8.2						
STHS	Stebnicka Huta	11.69	334	eP	Pn	02 58 19.5	+2.1
STHS	Stebnicka Huta	11.69	334	eP	Pn	02 58 19.5	+2.1
STHS	Stebnicka Huta	11.69	334	ePN	Pn	02 58 19.5	+2.1
ZEI	Tsey	11.84	67	eP	Pn	02 58 23.3	+3.6
ZEI				pmax	pmax		
	comp=Z,9.0nm,0.9s						
VYHS	Vyhne	11.90	325	eP	Pn	02 58 21.6	+1.4
VYHS	Vyhne	11.90	325	eP	Pn	02 58 21.6	+1.4
VYHS	Vyhne	11.90	325	ePN	Pn	02 58 21.6	+1.4
VRAC	Vranov	13.51	323	LR	LR	03 03 58.2	
	comp=Z,107nm,18.5s,baz=127,slow=38						
VSR	Storozhevoye	14.04	27	eP	Pn	02 58 47.5	-1.9
VSR				pmax	pmax		
	comp=Z,9.0nm,0.4s						
GEA0	GERESS Array S	14.66	316	ePn	Pn	02 58 58.2	+0.1
GEA0	GERESS Array S	14.66	316	ePn	Pn	02 58 58.2	+0.1
GEC2	GERESS Array S	14.67	316	eP	Pn	02 58 59.3	+1.1
GEC2	GERESS Array S	14.67	316	ePn	Pn	02 58 59.3	+1.1
GEC2	GERESS Array S	14.67	316	ePn	Pn	02 58 59.3	+1.1
GERES	GERESS Array B	14.67	316	Pn	Pn	02 58 57.1	-1.1
	comp=Z,0.1nm,0.3s,baz=124,slow=11,SNR=9.0						
VRH	Novokhopyorsk	15.02	32	eP	Pn	02 59 02.0	-0.7
VRH				pmax	pmax		
	comp=Z,20nm,1.7s						
LPSR	Galich'ya Gora	15.13	24	eP	Pn	02 59 04.9	+0.7
LPSR				pmax	pmax		
	comp=Z,20nm,2.0s						
BRG	Berggiesshubel	15.82	323	eP	P	02 59 18.1	+0.8
	comp=Z,7.1nm,1.1s						
BRG	Berggiesshubel	15.82	323	eP	P	02 59 18.0	+0.8
BRG				pmax	pmax		
	comp=Z,7.0nm,1.1s						
BRG	Berggiesshubel	15.82	323	eP	P	02 59 18.0	+0.8
	comp=Z,7.0nm,1.1s						
NACGM	Naroch	15.86	355	e	Pn	02 59 11.0	-2.8
DAVOX	Davos/Dischmat	15.94	305	Pn	P	02 59 18.5	-0.2
	comp=Z,0.1nm,0.3s,baz=117,slow=11,SNR=6.8						
DAVOX				LR	LR	03 06 29.3	
	comp=Z,58nm,21.6s,baz=94,slow=41						
OBN	Obninsk	16.79	15	LR	LR	03 06 37.9	
	comp=Z,105nm,19.2s,baz=267,slow=40						
OBN	Obninsk	16.79	15⇑	eP	Pn	02 59 23.8	-1.8
OBN				eS	Sn	03 02 27.0	-5.2
OBN				pmax	pmax		
	comp=Z,27nm,1.7s						
OBN				MLR	MLR		
	comp=Z,132nm,17.0s						
BFO	Black Forest	17.51	308	ceP	P	02 59 40.3	+4.4
MOS	Moscow	17.59	16	eP	Pn	02 59 36.2	+0.5
MOS				pmax	pmax		
	comp=Z,55nm,1.0s						
MOS	Moscow	17.59	16	eP	Pn	02 59 36.2	+0.5
	comp=Z,55nm,1.0s						
VSU	Vasula	19.41	356⇑	eP	P	02 59 56.2	-0.5
VSU				pmax	pmax		
	comp=Z,191nm,1.7s						
VSU	Vasula	19.41	356	eP	P	02 59 56.2	-0.5
	comp=Z,191nm,1.7s						
FIA1	FINESS Array S	22.42	356	eP	P	03 00 29.8	+0.5
FIA1	FINESS Array S	22.42	356	eP	P	03 00 29.8	+0.5
FINES	FINESS Array B	22.42	356	P	P	03 00 28.8	-0.4
	comp=Z,5.6nm,0.8s,baz=151,slow=12,SNR=8.2						
FINES				LR	LR	03 09 42.6	
	comp=Z,226nm,18.3s,baz=194,slow=38						
KLMR	Klimovskoe	22.73	13	eP	P	03 00 29.3	-3.1
KLMR				pmax	pmax		
	comp=Z,24nm,1.2s						
GEYT	Alibeck	22.77	84	P	P	03 00 35.4	+2.2
	comp=Z,2.0nm,0.5s,baz=319,slow=8.2,SNR=5.2						
HFS	Hagfors	23.14	340	P	P	03 00 37.9	+1.1
	comp=Z,5.2nm,0.8s,baz=187,slow=10,SNR=4.7						
HFS				LR	LR	03 09 46.0	
	comp=Z,135nm,20.3s,baz=150,slow=37						
HFS	Hagfors	23.14	340	P	P	03 00 37.9	+1.1
HFS				pmax	pmax		
	comp=Z,8.0nm,0.9s						
HFS				MLR	MLR		
	comp=Z,135nm,20.3s						
AKTK	Aktyubinsk	23.34	52	P	P	03 00 37.9	-1.1
	comp=Z,3.0nm,0.9s						
AKTO	Aktyubinsk	23.34	52	P	P	03 00 37.9	-1.1
	comp=Z,3.1nm,0.9s,baz=246,slow=11,SNR=9.3						
ABKAR	Akbulak array	24.23	55	eP	P	03 00 47.3	-0.2
	comp=Z,0.6nm,0.5s						
ABKAR	Akbulak array	24.23	55	eP	P	03 00 47.3	-0.2
	comp=Z,0.6nm,0.5s						
NB2	NORSAR Subarra	24.57	339	P	P	03 00 49.9	-0.7
	comp=Z,1.8nm,0.7s,baz=142,slow=10						
NB2	NORSAR Subarra	24.57	339	P	P	03 00 49.9	-0.7
	comp=Z,1.8nm,0.7s,SNR=5.3						
NOA	NORSAR Array B	24.57	339	P	P	03 00 50.3	-0.2
	comp=Z,6.1nm,1.0s,baz=144,slow=9.2,SNR=5.8						
NOA				LR	LR	03 11 25.0	
	comp=Z,138nm,18.2s,baz=150,slow=39						
ESDC	Sonseca Array	25.41	282	P	P	03 00 58.3	0.0
	comp=Z,0.1nm,0.3s,baz=75,slow=10,SNR=3.8						
ARU	Arti	26.05	39	P	P	03 01 05.4	+1.5
	comp=Z,3.9nm,0.4s,baz=247,slow=9.5,SNR=12						
ARU	Arti	26.05	39	d iP	P	03 01 05.0	+1.1
ARU						03 01 42.0	
ARU				S	S	03 05 39.4	+4.4
ARU				SS	SnSn	03 06 37.3	+5.2
ARU				pmax	pmax		
	comp=Z,9.0nm,0.6s						
ARU	Arti	26.05	39	iP	P	03 01 05.0	+1.1
	comp=Z,9.0nm,0.6s						
ARU	Arti	26.05	39	eP	P	03 01 05.3	+1.4
	comp=Z,8.3nm,0.7s						
EKA	Eskdalemuir Ar	26.88	318	P	P	03 01 13.0	+1.6
	comp=Z,2.0nm,0.6s,baz=114,slow=12,SNR=9.5						
EKA	Eskdalemuir Ar	26.88	318	P	P	03 01 13.0	+1.6
EKA				pmax	pmax		
	comp=Z,2.0nm,0.6s						
EKA	Eskdalemuir Ar	26.88	318	P	P	03 01 13.0	+1.6
	comp=Z,2.0nm,0.6s						
WSAR	Wadi Sarin	29.71	113	LR	LR	03 16 14.9	
	comp=Z,64nm,19.1s,baz=1.5,slow=42						
ARCES	ARCESS Array B	30.54	358	LR	LR	03 15 18.5	
	comp=Z,55nm,18.1s,baz=224,slow=39						
AAK	Ala-Archa	34.26	69⇑	iP	P	03 02 17.9	+0.9
AAK				pmax	pmax		
	comp=Z,9.0nm,1.5s						
AAK	Ala-Archa	34.26	69	iP	P	03 02 17.9	+0.9
	comp=Z,9.0nm,1.5s						
TORD	Torodi Ar. Bea	35.38	231	P	P	03 02 26.7	0.0
	comp=Z,0.7nm,0.8s,baz=34,slow=8.7,SNR=9.7						
KURK	Kurchatov	36.34	55	iP	P	03 02 33.9	-0.7
KURK	Kurchatov	36.34	55	iP	P	03 02 33.9	-0.7
MK31	Makanchi Array	39.09	61	eP	P	03 02 58.2	+0.3
MK31	Makanchi Array	39.09	61	eP	P	03 02 58.2	+0.3
MK31	Makanchi Array	39.09	61	eP	P	03 02 58.2	+0.3
MKAR	Makanchi Array	39.09	61	P	P	03 02 57.5	-0.4
	comp=Z,1.6nm,0.6s,baz=283,slow=6.4,SNR=12						
MKAR	Makanchi Array	39.09	61	ceP	P	03 02 58.0	+0.1
MKAR				pmax	pmax		
	comp=Z,2.0nm,0.6s						
MKAR	Makanchi Array	39.09	61	eP	P	03 02 58.0	+0.1
	comp=Z,2.0nm,0.6s						
MK01	Makanchi Array	39.10	61	eP	P	03 02 57.8	-0.3
MK01	Makanchi Array	39.10	61	eP	P	03 02 57.8	-0.3
ZALV	Zalesovo Beam	40.07	49	P	P	03 03 05.7	-0.3
	comp=Z,2.1nm,0.6s,baz=269,slow=9.1,SNR=3.9						
ZALV				LR	LR	03 25 02.9	
	comp=Z,16nm,18.9s,baz=74,slow=44						
KMBO	Kilima Mbogo	40.76	167	eP	P	03 03 05.7	-6.6
KMBO				pmax	pmax		
	comp=Z,2.0nm,0.3s						
KMBO	Kilima Mbogo	40.76	167	eP	P	03 03 05.7	-6.6
	comp=Z,1.6nm,0.3s						
NRIK	Noril'sk	42.98	26	LR	LR	03 22 09.2	
	comp=Z,38nm,18.4s,baz=333,slow=37						
WMQ	Urumqi	43.43	64	eP	P	03 03 32.8	-0.9
WMQ				pmax	pmax		
	comp=Z,3.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,89nm,5.6s						
WMQ				LR	LR		
	comp=N,32nm,22.2s						
WMQ				LR	LR		
	comp=Z,15nm,19.0s						
BBTS	Babate	46.73	252	LR	LR	03 24 50.1	
	comp=Z,94nm,18.8s,baz=200,slow=38						
SONM	Songino Array	54.63	54	P	P	03 04 59.4	-0.1
	comp=Z,0.8nm,0.5s,baz=290,slow=7.1,SNR=5.5						
PALK	Pallekele	56.13	110	LR	LR	03 30 31.8	
	comp=Z,59nm,22.0s,baz=296,slow=38						
CD2	Chengdu	60.20	73	P	P	03 05 37.1	-1.9
CD2				pmax	pmax		
	comp=Z,1.0nm,0.6s						
HHC	Hu-ho-hao-te	60.93	59	eP	P	03 05 44.8	+0.9
HHC				pmax	pmax		
	comp=Z,34nm,1.1s						
HHC				pmax	pmax		
	comp=Z,84nm,6.9s						
SCHQ	Schefferville	62.18	319	P	P	03 05 51.2	-0.8
	comp=Z,2.8nm,0.8s,baz=353,slow=1.7,SNR=4.3						
KSAR	Wonju Array Be	73.45	55	P	P	03 07 02.7	-0.6
KSAR	Wonju Array Be	73.45	55	P	P	03 07 02.6	-0.6
KSRS	Korea Array	73.47	55	P	P	03 07 02.6	-0.7
	comp=Z,2.1nm,0.8s,baz=302,slow=5.5,SNR=7.0						
YKA	Yellowknife Ar	74.58	343	P	P	03 07 08.5	-0.9
	comp=Z,0.7nm,1.0s,baz=25,slow=6.0,SNR=6.0						

DDA ***24*** *02:57:26.8,39.°06N×29.°02E,h7km,Md2.7*
ISK ***24*** *02:57:27.6,39.°07N×29.°09E,h5km,MD2.8*
CSEM ***24*** *02:57:27.8±0.1,39.°07N×29.°05E,h2km,MD2.7,Error ellipse: s-maj=3.4km s-min=2.7km az=149.0*
ISC 24 02:57:27.5±1.1,**39.°08N**±0.°03×**29.°03E**±0.°02,**h4**km±12km,
n47,σ0°**62**/60,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.25	261	P	Pg	02 57 32.3	0.0
DEMI				S	Sg	02 57 35.5	-0.1
DEMI	Demirci	0.25	261	iP	Pg	02 57 32.3	0.0
DEMI				iS	Sg	02 57 35.5	-0.1
GDZ	Gediz	0.35	89	P	Pg	02 57 33.8	-0.6
GDZ				S	Sg	02 57 39.4	+0.4
GDZ	Gediz	0.35	89	iP	Pg	02 57 33.8	-0.6
GDZ				iS	Sg	02 57 39.4	+0.4
TVSB	Tavsanli	0.50	42	ePG	Pg	02 57 37.5	+0.3
TVSB				eSG	Sg	02 57 43.7	+0.1
TVSB	Tavsanli	0.50	42	ePg	Pg	02 57 37.5	+0.3
TVSB				eSg	Sg	02 57 43.7	+0.1
DURS	Dursunbey	0.67	321	iP	Pg	02 57 37.3	-3.2
DURS				iS	Sg	02 57 50.1	+0.8
KHL	Karahalli	0.85	153	ePG	Pg	02 57 43.9	+0.1
KHL				eSG	Sb	02 57 55.6	-1.2
KHL	Karahalli	0.85	153	ePg	Pg	02 57 43.9	+0.1
KHL				eSg	Sb	02 57 55.6	-1.2
AKHS	Akhisar	0.97	258	P	Pb	02 57 47.1	+0.2
AKHS				S	Sg	02 57 58.8	+0.1
AKHS	Akhisar	0.97	258	iP	Pb	02 57 47.1	+0.2
AKHS				iS	Sg	02 57 58.8	+0.1
AKS	Akhisar	0.97	258	ePG	Pb	02 57 47.1	+0.2
AKS	Akhisar	0.97	258	ePg	Pb	02 57 47.1	+0.2
ORLT	Orhaneli	0.97	354	ePG	Pb	02 57 46.9	-0.1
ORLT	Orhaneli	0.97	354	ePg	Pb	02 57 46.9	-0.1
BALB	Balikesir	1.05	302	ePN	Pb	02 57 48.6	+0.3
BALB	Balikesir	1.05	302	ePn	Pb	02 57 48.6	+0.3
MDNY	Mudanya-Bursa	1.29	355	ePN	Pg	02 57 52.4	+0.1
MDNY	Mudanya-Bursa	1.29	355	ePn	Pg	02 57 52.4	+0.1
KCTX	Karacabey (Bur	1.29	337	ePN	Pb	02 57 53.2	+0.7
KCTX	Karacabey (Bur	1.29	337	ePn	Pb	02 57 53.2	+0.7
IZI	Iznik	1.30	15	ePN	Pb	02 57 53.1	+0.5
IZI	Iznik	1.30	15	ePn	Pb	02 57 53.1	+0.5
GEMT	Gemlik	1.36	5	ePN	Pb	02 57 54.0	+0.4
GEMT	Gemlik	1.36	5	ePn	Pb	02 57 54.0	+0.4
BORA	Eskisehir	1.36	54	P	Pn	02 57 53.4	-0.1
BORA				S	Sg	02 58 11.4	+0.1
BORA	Eskisehir	1.36	54	iP	Pn	02 57 53.4	-0.1
BORA				iS	Sg	02 58 11.4	+0.1
AYDB	Zeytinkoy-Aydi	1.44	219	ePN	Pg	02 57 55.4	+0.2
AYDB	Zeytinkoy-Aydi	1.44	219	ePn	Pg	02 57 55.4	+0.2
ADVT	Abdulvahap	1.46	22	ePN	Pb	02 57 55.3	0.0
ADVT	Abdulvahap	1.46	22	ePn	Pb	02 57 55.3	0.0
ARMT	Armutlu	1.49	355	ePN	Pg	02 57 56.2	+0.1
ARMT	Armutlu	1.49	355	ePn	Pg	02 57 56.2	+0.1
EDC	Edincik	1.55	325	ePN	Pg	02 57 57.5	+0.2
EDC	Edincik	1.55	325	ePn	Pg	02 57 57.5	+0.2
GPA	Golpazari	1.56	39	ePN	Pn	02 57 56.6	+0.4
GPA	Golpazari	1.56	39	ePn	Pn	02 57 56.6	+0.4
GULT	Gulveren	1.77	40	ePN	Pn	02 57 59.3	+0.2
GULT	Gulveren	1.77	40	ePn	Pn	02 57 59.3	+0.2
HRT	Hereke	1.81	16	ePN	Pn	02 58 00.2	+0.6
HRT	Hereke	1.81	16	ePn	Pn	02 58 00.2	+0.6
MRMT	Marmara Adasi	1.88	324	ePN	Pb	02 58 02.2	-0.3
MRMT	Marmara Adasi	1.88	324	ePn	Pb	02 58 02.2	-0.3
ISK	Istanbul-Kandi	1.98	1	ePN	Pn	02 58 02.8	+0.9
ISK	Istanbul-Kandi	1.98	1	ePn	Pn	02 58 02.8	+0.9
KLYT	Kilyos	2.17	0	ePN	Pb	02 58 06.6	-0.8
KLYT	Kilyos	2.17	0	ePn	Pb	02 58 06.6	-0.8

ISCJB ***24*** *03:03:11.7±0.5,39.°08N±0.°03×29.°01E±0.°04,h3km±7km, Error ellipse: s-maj=5.9km s-min=4.6km az=171.8*
CSEM ***24*** *03:03:11.9±0.1,39.°09N×29.°00E,h5km,ML2.7,Error ellipse: s-maj=1.7km s-min=1.5km az=151.0*
ISK ***24*** *03:03:11.5,39.°09N×29.°00E,h6km,MD2.8*
DDA ***24*** *03:03:11.5,39.°08N×29.°02E,h7km,Ml2.7*
ISC 24 03:03:12.1±1.0,**39.°10N**±0.°03×**29.°00E**±0.°02,**h8**km±10km,
n40,σ0°**37**/49,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.23	256	P	Pg	03 03 16.9	+0.1
DEMI				S	Sg	03 03 20.3	+0.3
DEMI	Demirci	0.23	256	iP	Pg	03 03 16.9	+0.1
DEMI				iS	Sg	03 03 20.3	+0.3
GDZ	Gediz	0.37	91	P	Pg	03 03 19.2	-0.3
GDZ				S	Sg	03 03 24.0	-0.4
GDZ	Gediz	0.37	91	iP	Pg	03 03 19.2	-0.3
GDZ				iS	Sg	03 03 24.0	-0.4
TVSB	Tavsanli	0.50	45	ePG	Pg	03 03 21.6	-0.2
TVSB	Tavsanli	0.50	45	ePg	Pg	03 03 21.6	-0.2
KULA	Kula-Manisa	0.64	205	ePG	Pg	03 03 24.5	0.0
KULA				eSG	Sg	03 03 32.5	-0.4
KULA	Kula-Manisa	0.64	205	ePg	Pg	03 03 24.5	0.0
DURS	Dursunbey	0.65	321	P	Pg	03 03 24.6	-0.1
DURS				S	Sb	03 03 34.4	-0.6
DURS	Dursunbey	0.65	321	iP	Pg	03 03 24.6	-0.1
DURS				iS	Sb	03 03 34.4	-0.6
KHL	Karahalli	0.87	152	ePG	Pg	03 03 28.8	-0.2
KHL	Karahalli	0.87	152	ePg	Pg	03 03 28.8	-0.2
AKS	Akhisar	0.95	257	ePG	Pg	03 03 30.1	-0.4
AKS	Akhisar	0.95	257	ePg	Pg	03 03 30.1	-0.4
BALB	Balikesir	1.03	302	ePG	Pg	03 03 31.4	-0.4
BALB	Balikesir	1.03	302	ePg	Pg	03 03 31.4	-0.4
KCTX	Karacabey (Bur	1.27	337	ePN	Pn	03 03 36.5	+0.3
KCTX	Karacabey (Bur	1.27	337	ePn	Pn	03 03 36.5	+0.3
MDNY	Mudanya-Bursa	1.27	356	ePN	Pg	03 03 36.2	-0.4
MDNY	Mudanya-Bursa	1.27	356	ePn	Pg	03 03 36.2	-0.4
CAVI	Cavuskoy	1.28	30	ePN	Pb	03 03 36.7	+0.2
CAVI	Cavuskoy	1.28	30	ePn	Pb	03 03 36.7	+0.2
IZI	Iznik	1.29	16	ePN	Pg	03 03 36.7	-0.2
IZI	Iznik	1.29	16	ePn	Pg	03 03 36.7	-0.2
BORA	Eskisehir	1.37	55	P	Pn	03 03 37.5	-0.1
BORA				S	Sb	03 03 56.0	+0.3
BORA	Eskisehir	1.37	55	iP	Pn	03 03 37.5	-0.1
BORA				iS	Sb	03 03 56.0	+0.3
GONE	Gonen-Balikesi	1.39	313	ePN	Pn	03 03 37.8	-0.1
GONE	Gonen-Balikesi	1.39	313	ePn	Pn	03 03 37.8	-0.1
AYDB	Zeytinkoy-Aydi	1.44	218	ePN	Pn	03 03 38.8	+0.1
AYDB	Zeytinkoy-Aydi	1.44	218	ePn	Pn	03 03 38.8	+0.1
ADVT	Abdulvahap	1.45	23	ePN	Pb	03 03 39.4	0.0
ADVT	Abdulvahap	1.45	23	ePn	Pb	03 03 39.4	0.0
ARMT	Armutlu	1.47	356	ePN	Pn	03 03 39.4	+0.4
ARMT	Armutlu	1.47	356	ePn	Pn	03 03 39.4	+0.4
EDC	Edincik	1.53	325	ePN	Pn	03 03 40.2	+0.5
EDC	Edincik	1.53	325	ePn	Pn	03 03 40.2	+0.5
GULT	Gulveren	1.77	41	ePN	Pn	03 03 43.6	+0.5
GULT	Gulveren	1.77	41	ePn	Pn	03 03 43.6	+0.5
SILT	Sile	2.11	13	ePN	Pn	03 03 48.6	+0.9
SILT	Sile	2.11	13	ePn	Pn	03 03 48.6	+0.9

ISK ***24*** *03:05:59.6,39.°10N×28.°97E,h8km,MD2.8*
ISCJB ***24*** *03:06:00.0±0.5,39.°09N±0.°03×29.°00E±0.°04,h7km±6km, Error ellipse: s-maj=5.8km s-min=4.7km az=173.1*
CSEM ***24*** *03:06:00.2±0.1,39.°09N×29.°00E,h8km,ML2.6,Error ellipse: s-maj=1.8km s-min=1.7km az=111.0*
DDA ***24*** *03:06:00.1,39.°11N×29.°03E,h7km,Ml2.6*
ISC 24 03:06:00.5±0.9,**39.°09N**±0.°03×**29.°01E**±0.°02,**h14**km±9km,
n39,σ0°**51**/49,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.23	258	P	Pg	03 06 05.6	-0.1
DEMI				S	Sg	03 06 09.3	+0.2
DEMI	Demirci	0.23	258	iP	Pg	03 06 05.5	-0.1
DEMI				iS	Sg	03 06 09.3	+0.2
GDZ	Gediz	0.36	90	P	Pg	03 06 07.5	-0.4
GDZ				S	Sg	03 06 12.6	-0.4
GDZ	Gediz	0.36	90	iP	Pg	03 06 07.5	-0.4
GDZ				iS	Sg	03 06 12.6	-0.4
TVSB	Tavsanli	0.50	44	ePG	Pg	03 06 10.0	-0.4
TVSB	Tavsanli	0.50	44	ePg	Pg	03 06 10.0	-0.4
KULA	Kula-Manisa	0.64	206	ePG	Pg	03 06 12.5	-0.5
KULA				eSG	Sg	03 06 21.5	+0.1
KULA	Kula-Manisa	0.64	206	ePg	Pg	03 06 12.5	-0.5
KULA				eSg	Sg	03 06 21.5	+0.1
DURS	Dursunbey	0.66	321	P	Pg	03 06 13.0	-0.4
DURS				S	Sg	03 06 22.4	+0.3
DURS	Dursunbey	0.66	321	iP	Pg	03 06 13.0	-0.4
DURS				iS	Sg	03 06 22.4	+0.3
KHL	Karahalli	0.86	152	ePG	Pb	03 06 17.4	+0.1
KHL	Karahalli	0.86	152	ePg	Pb	03 06 17.4	+0.1
AKS	Akhisar	0.96	258	ePG	Pg	03 06 17.8	-1.2
BALB	Balikesir	1.03	302	ePG	Pg	03 06 19.2	-1.2
BALB	Balikesir	1.03	302	ePg	Pg	03 06 19.2	-1.2
KCTX	Karacabey (Bur	1.28	337	ePN	Pn	03 06 24.1	+0.1
KCTX	Karacabey (Bur	1.28	337	ePn	Pn	03 06 24.1	+0.1
MDNY	Mudanya-Bursa	1.28	356	ePN	Pn	03 06 24.1	+0.1
MDNY	Mudanya-Bursa	1.28	356	ePn	Pn	03 06 24.1	+0.1
CAVI	Cavuskoy	1.28	30	ePN	Pb	03 06 24.7	+0.3
CAVI	Cavuskoy	1.28	30	ePn	Pb	03 06 24.7	+0.3
IZI	Iznik	1.29	16	ePN	Pn	03 06 24.1	-0.1
BORA	Eskisehir	1.37	54	P	Pn	03 06 25.6	+0.4
BORA				S	Sg	03 06 44.2	-0.3
BORA	Eskisehir	1.37	54	iP	Pn	03 06 25.6	+0.4
BORA				iS	Sg	03 06 44.2	-0.3
AYDB	Zeytinkoy-Aydi	1.44	218	ePN	Pn	03 06 26.7	+0.4
AYDB	Zeytinkoy-Aydi	1.44	218	ePn	Pn	03 06 26.7	+0.4
ADVT	Abdulvahap	1.45	22	ePN	Pn	03 06 27.1	+0.7
ARMT	Armutlu	1.48	356	ePN	Pn	03 06 27.1	+0.4
ARMT	Armutlu	1.48	356	ePn	Pn	03 06 27.1	+0.4
EDC	Edincik	1.54	325	ePN	Pn	03 06 27.9	+0.4
EDC	Edincik	1.54	325	ePn	Pn	03 06 27.9	+0.4
GULT	Gulveren	1.77	40	ePN	Pn	03 06 31.4	+0.7
GULT	Gulveren	1.77	40	ePn	Pn	03

TVSB	**Tavsanli**	**0.50**	**45**	*e*Pg	**Pg**	**03 11 46.5**	**-0.1**
KULA	**Kula-Manisa**	**0.64**	**205**	*e*PG	**Pb**	**03 11 49.7**	**-0.1**
KULA				*e*SG	**Sg**	**03 11 57.8**	**0.0**
KULA	**Kula-Manisa**	**0.64**	**205**	*e*Pg	**Pb**	**03 11 49.7**	**-0.1**
KULA				*e*Sg	**Sg**	**03 11 57.8**	**0.0**
DURS	**Dursunbey**	**0.65**	**321**	P	**Pg**	**03 11 49.6**	**+0.2**
DURS				S	**Sg**	**03 11 57.0**	**-1.1**
DURS	**Dursunbey**	**0.65**	**321**	*i* P	**Pg**	**03 11 49.6**	**+0.2**
DURS				*i* S	**Sg**	**03 11 57.0**	**-1.1**
KHL	**Karahalli**	**0.87**	**152**	*e*PG	**Pn**	**03 11 54.7**	**0.0**
KHL	**Karahalli**	**0.87**	**152**	*e*Pg	**Pn**	**03 11 54.7**	**0.0**
AKS	**Akhisar**	**0.96**	**257**	*e*PG	**Pn**	**03 11 55.7**	**-0.1**
AKS	**Akhisar**	**0.96**	**257**	*e*Pg	**Pn**	**03 11 55.7**	**-0.1**
BALB	**Balikesir**	**1.03**	**302**	*e*PG	**Pn**	**03 11 57.2**	**+0.5**
BALB	**Balikesir**	**1.03**	**302**	*e*Pg	**Pn**	**03 11 57.2**	**+0.5**
KCTX	**Karacabey (Bur**	**1.27**	**337**	*e*PN	**Pg**	**03 12 01.8**	**+0.7**
KCTX	**Karacabey (Bur**	**1.27**	**337**	*e*Pn	**Pg**	**03 12 01.8**	**+0.7**
MDNY	**Mudanya-Bursa**	**1.27**	**356**	*e*PN	**Pg**	**03 12 01.8**	**+0.6**
MDNY	**Mudanya-Bursa**	**1.27**	**356**	*e*Pn	**Pg**	**03 12 01.8**	**+0.6**
IZI	**Iznik**	**1.29**	**16**	*e*PN	**Pg**	**03 12 02.0**	**+0.5**
IZI	**Iznik**	**1.29**	**16**	*e*Pn	**Pg**	**03 12 02.0**	**+0.5**
BORA	**Eskisehir**	**1.36**	**55**	P	**Pb**	**03 12 02.4**	**+0.3**
BORA				S	**Sn**	**03 12 19.4**	**-0.1**
BORA	**Eskisehir**	**1.36**	**55**	*i* P	**Pb**	**03 12 02.4**	**+0.3**
BORA				*i* S	**Sn**	**03 12 19.4**	**-0.1**
GONE	**Gonen-Balikesi**	**1.39**	**313**	*e*PN	**Pg**	**03 12 03.8**	**+0.3**
GONE	**Gonen-Balikesi**	**1.39**	**313**	*e*Pn	**Pg**	**03 12 03.8**	**+0.3**
ADVT	**Abdulvahap**	**1.45**	**23**	*e*PN	**Pg**	**03 12 04.8**	**+0.2**
ADVT	**Abdulvahap**	**1.45**	**23**	*e*Pn	**Pg**	**03 12 04.8**	**+0.2**
ARMT	**Armutlu**	**1.47**	**356**	*e*PN	**Pg**	**03 12 04.8**	**-0.2**
ARMT	**Armutlu**	**1.47**	**356**	*e*Pn	**Pg**	**03 12 04.8**	**-0.2**
EDC	**Edincik**	**1.53**	**325**	*e*PN	**Pg**	**03 12 05.9**	**-0.1**
EDC	**Edincik**	**1.53**	**325**	*e*Pn	**Pg**	**03 12 05.9**	**-0.1**
GULT	**Gulveren**	**1.77**	**41**	*e*PN	**Pb**	**03 12 09.5**	**+0.5**
GULT	**Gulveren**	**1.77**	**41**	*e*Pn	**Pb**	**03 12 09.5**	**+0.5**
ISK	**Istanbul-Kandi**	**1.96**	**1**	*e*PN	**Pb**	**03 12 12.1**	**-0.2**
ISK	**Istanbul-Kandi**	**1.96**	**1**	*e*Pn	**Pb**	**03 12 12.1**	**-0.2**
SVRH	**Sivrihisar-ESK**	**1.98**	**79**	*e*PN	**Pb**	**03 12 12.9**	**+0.2**
SVRH	**Sivrihisar-ESK**	**1.98**	**79**	*e*Pn	**Pb**	**03 12 12.9**	**+0.2**
MDUB	**Mudurnu**	**2.17**	**50**	*e*PN	**Pb**	**03 12 15.2**	**-0.7**
MDUB	**Mudurnu**	**2.17**	**50**	*e*Pn	**Pb**	**03 12 15.2**	**-0.7**

*ISCJB **24** 03:12:00.2±0.5,26°.40S±0°.03×27°.30E±0°.03,h10km±3km, Error ellipse: s-maj=4.9km s-min=3.8km az=154.3*
*PRE **24** 03:12:00.5±1.4,26°.43S×27°.30E,h2km,ML3.4*
ISC 24 03:12:00.6±0.9,26°.43S±0°.03×27°.31E±0°.03,h12km±6km, n20,σ1°99/40,South Africa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WDLM	**Western Deep L**	**0.10**	**87**	*e*P	**Pg**	**03 12 03.5**	**-0.1**
WDLM				*e*S	**Sg**	**03 12 04.2**	**-1.5**
WDLM				AML	AML	03 12 06.0	
	comp=Z,18μm,0.7s						
KLOF	**Kloof**	**0.28**	**74**	*e*P	**Pg**	**03 12 06.9**	**+0.4**
KLOF				*e*S	**Sg**	**03 12 09.4**	**-0.9**
KLOF				AML	AML	03 12 13.9	
	comp=Z,1μm,0.5s						
PRYS	**Parys**	**0.50**	**175**	*e*P	**Pg**	**03 12 11.6**	**+1.1**
PRYS				*e*S	**Sg**	**03 12 17.2**	**+0.1**
PRYS				AML	AML	03 12 23.2	
	comp=Z,1μm,0.5s						
BFSD	**Buffelsfontein**	**0.64**	**227**	*e*P	**Pg**	**03 12 12.5**	**-0.7**
BFSD				*e*S	**Sg**	**03 12 22.1**	**+0.4**
BFSD				AML	AML	03 12 23.7	
	comp=Z,496nm,0.3s						
KSR	**Koster**	**0.69**	**327**	*e*P	**Pg**	**03 12 14.2**	**+0.2**
KSR				*e*S	**Sg**	**03 12 22.9**	**-0.1**
KSR				AML	AML	03 12 29.1	
	comp=Z,184nm,0.4s						
TLEK	**Tau Lekoa**	**0.78**	**227**	*e*P	**Pg**	**03 12 14.4**	**-1.4**
TLEK				*e*S	**Sg**	**03 12 26.1**	**-0.1**
TLEK				AML	AML	03 12 33.1	
	comp=Z,294nm,0.2s						
ERPM	**east rand prop**	**0.84**	**84**	*e*P	**Pg**	**03 12 17.5**	**+0.7**
ERPM				*e*S	**Sg**	**03 12 28.5**	**+0.6**
ERPM				AML	AML	03 12 35.5	
	comp=Z,204nm,0.1s						
SEK	**Senekal**	**1.91**	**172**	*e*P	**Pn**	**03 12 35.1**	**+1.9**
SEK				*e*S	**Sn**	**03 12 59.9**	**+2.6**
SEK				AML	AML	03 13 02.6	
	comp=Z,542nm,0.3s						
SWZ	**Schweizer**	**1.93**	**247**	*e*P	**Pn**	**03 12 34.9**	**+1.4**
SWZ				*e*S	**Sn**	**03 12 59.1**	**+1.5**
SWZ				AML	AML	03 13 02.5	
	comp=Z,579nm,0.2s						
BOSA	**Boshof**	**2.84**	**220**	*i* P	**Pn**	**03 12 48.5**	**+2.5**
BOSA				*i*		03 12 48.6	
	baz=43,slow=14						
BOSA				*i* S	**Sn**	**03 13 24.9**	**+4.6**
POGA	**Pongola**	**3.95**	**105**	*e*P	**Pn**	**03 13 02.9**	**+1.7**
POGA				*e*S	**Sn**	**03 13 49.4**	**+1.9**
POGA				AML	AML	03 14 10.6	
	comp=Z,76nm,0.6s						
CNG	**Changalane**	**4.38**	**89**	*e*P	**Pn**	**03 13 06.8**	**-0.2**
CNG				*e*S	**Sn**	**03 13 54.8**	**-3.2**
CNG				AML	AML	03 14 17.4	
	comp=Z,94nm,0.4s						
UPI	**Upington**	**5.72**	**249**	*e*P	**Pn**	**03 13 27.6**	**+2.0**
UPI				*e*S	**Sn**	**03 14 30.1**	**-1.2**
UPI				AML	AML	03 15 08.7	
	comp=Z,30nm,0.4s						
KEIM	**Keimoes**	**6.07**	**247**	*e*P	**Pn**	**03 13 31.9**	**+1.5**
KEIM				*e*S	**Sn**	**03 14 38.8**	**-1.1**
KEIM				AML	AML	03 15 15.1	
	comp=Z,31nm,0.6s						
MATP	**Matopo**	**6.07**	**11**	*i* P	**Pn**	**03 13 32.2**	**+1.7**
MATP				*i*		03 13 32.4	
	baz=210,slow=28						
MATP				*i* S	**Sn**	**03 14 39.5**	**-0.6**
GRM	**Grahamstown**	**6.90**	**186**	*e*P	**Pn**	**03 13 43.1**	**+1.4**
GRM				*e*S	**Sn**	**03 14 58.6**	**-1.6**
GRM				AML	AML	03 15 20.4	
	comp=Z,6.2nm,0.6s						
BUFB	**Buffelsbos**	**8.01**	**195**	*e*P	**Pn**	**03 13 58.7**	**+1.8**
BUFB				*e*S	**Sn**	**03 15 24.3**	**-3.2**
BUFB				AML	AML	03 15 33.0	
	comp=Z,9.4nm,0.7s						
CVNA	**Calvinia**	**8.31**	**231**	*e*P	**Pn**	**03 14 02.6**	**+1.5**
CVNA				*e*S	**Sn**	**03 15 32.2**	**-2.9**
CVNA				AML	AML	03 15 49.6	
	comp=Z,9.1nm,0.5s						
KOMG	**Komaggas**	**9.30**	**247**	*e*P	**Pn**	**03 14 16.8**	**+2.1**
KOMG				*e*S	**Sn**	**03 15 55.8**	**-3.6**
KOMG				AML	AML	03 17 07.7	
	comp=Z,16nm,0.6s						
ELIM	**Elim**	**10.43**	**217**	*e*P	**Pn**	**03 14 32.1**	**+2.0**
ELIM				*e*S	**Sn**	**03 16 23.1**	**-3.9**
ELIM				AML	AML	03 16 40.7	
	comp=Z,7.4nm,0.8s						

*ISCJB **24** 03:14:20.2±0.5,24°.96N±0°.05×92°.15E±0°.04,h44km, mb3.9/16,MS3.1/1,Error ellipse: s-maj=6.8km s-min=4.8km az=24.6*
*IDC **24** 03:14:22.2±4.8,25°.12N×92°.33E,h38km±42km,mb3.7/14, mb1 3.8/15,mb1mx3.6/56,mbtmp3.9/15,ML4.3/1,MS3.1/1, Ms1 3.1/1,ms1mx2.4/45,Error ellipse: s-maj=32.8km s-min=15.3km az=55.0*
*NEIC **24** 03:14:23.0±1.1,25°.10N×92°.31E,h47km±10km,mb4.1/2, Error ellipse: s-maj=16.2km s-min=6.8km az=59.0*
ISC 24 03:14:22.3±0.6,25°.01N±0°.06×92°.18E±0°.06,h44km,n34, σ1°23/43,mb3.9/16,India-Bangladesh border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHL	**Shillong**	**0.61**	**334**	*e*P	**Pn**	**03 14 34.2**	**-0.7**
SHL				*e*S	**Sn**	**03 14 43.1**	**-0.8**
SHL				IAML		03 14 43.2	
	comp=N,30μm,0.5s						
SHL				IAML		03 14 43.4	
	comp=E,19μm,0.3s						
LSA	**Lhasa**	**4.76**	**349**	*e*Pn	**Pn**	**03 15 32.3**	**+0.3**
LSA				*e*S	**Sn**	**03 16 26.4**	**+0.4**
BOK	**Bokaro**	**5.86**	**259**	*e*P	**Pn**	**03 15 49.0**	**+2.3**
BOK				*e*S	**Sn**	**03 16 52.1**	**-0.6**
BOK				IAML		03 16 59.9	
	comp=N,106nm,0.2s						
BOK				IAML		03 17 00.4	
	comp=E,61nm,0.2s						
GUN	**Gumba**	**6.34**	**298**	*e*Pn	**Pn**	**03 15 55.6**	**+2.0**
GUN				*e*Sn	**Sn**	**03 17 06.6**	**+1.7**
	comp=E,129nm,0.3s						
KKN	**Kakani**	**6.78**	**296**	*e*Pn	**Pn**	**03 16 01.3**	**+1.9**
KKN				*e*Sn	**Sn**	**03 17 16.9**	**+1.5**
	comp=E,65nm,0.2s						
DMN	**Daman**	**6.85**	**294**	*e*Pn	**Pn**	**03 16 02.0**	**+1.5**
DMN				*e*Sn	**Sn**	**03 17 18.2**	**+0.8**
	comp=E,58nm,0.3s						
GKN	**Gorkha**	**7.38**	**295**	*e*Pn	**Pn**	**03 16 09.4**	**+1.7**
GKN				*e*Sn	**Sn**	**03 17 30.2**	**0.0**
	comp=E,129nm,0.3s						
KOLN	**Koldanda**	**8.17**	**292**	*e*Pn	**Pn**	**03 16 19.3**	**+0.8**
KOLN				*e*Sn	**Sn**	**03 17 47.8**	**-1.8**
	comp=E,78nm,0.4s						
PYUN	**Piuthan**	**8.78**	**292**	*e*Pn	**Pn**	**03 16 27.3**	**+0.4**
PYUN				*e*Sn	**Sn**	**03 18 03.3**	**-1.4**
	comp=E,134nm,0.7s						
CMAR	**Chiang Mai Arr**	**9.06**	**135**	Pn	**Pn**	**03 16 30.7**	**+0.1**
	comp=E,0.8nm,0.3s,baz=308,slow=15,SNR=4.1						
DGPR	**DIGLIPUR**	**11.79**	**176**	*e*P	**Pn**	**03 17 05.6**	**-2.4**
DGPR				*ex*	x	03 17 57.8	
DGPR				IAML		03 18 06.8	
	comp=N,58nm,0.1s						
DGPR				IAML		03 18 06.9	
	comp=E,110nm,0.1s						
NGP	**Nagpur**	**12.68**	**255**	*e*S	Sn	03 19 33.4	-6.5
NGP				IAML		03 19 38.9	
	comp=E,5.4nm,0.3s						
NGP				IAML		03 19 40.3	
	comp=N,10nm,0.5s						
BHPL	**Bhopal**	**13.59**	**266**	*e*P	**Pn**	**03 17 32.9**	**+0.4**
SMLA	**Simla**	**14.58**	**298**	*e*P	**Pn**	**03 17 43.2**	**-2.6**
SMLA				IAmb	IAmb	03 17 45.9	
	comp=Z,4.6nm,0.6s						
SMLA				*e*S	**Sn**	**03 20 23.9**	**-2.2**
MKAR	**Makanchi Array**	**23.13**	**343**	P	**P**	**03 19 23.4**	**-1.1**
	comp=Z,1.5nm,0.5s,baz=162,slow=9.1,SNR=15						
SONM	**Songino Array**	**25.41**	**23**	P	**P**	**03 19 45.3**	**-0.4**
	comp=Z,1.5nm,0.6s,baz=209,slow=9.3,SNR=5.9						
ULN	**Ulaanbaatar**	**25.66**	**24**	*e*P	**P**	**03 19 47.6**	**-0.5**
	comp=Z,2.1nm,0.6s						
KURBB	**Kurchatov Arra**	**27.66**	**341**	P	**P**	**03 20 05.7**	**-0.1**
	comp=Z,0.4nm,0.5s,baz=161,slow=8.9,SNR=4.7						
KURK	**Kurchatov**	**27.71**	**341**	P	**P**	**03 20 05.7**	**-0.6**
ZALV	**Zalesovo Beam**	**29.42**	**351**	P	**P**	**03 20 21.2**	**-0.3**
	comp=Z,2.0nm,0.4s,baz=185,slow=9.9,SNR=6.5						
BVAR	**Borovoye Array**	**32.43**	**335**	P	**P**	**03 20 48.3**	**+0.2**
	comp=Z,0.5nm,0.4s,baz=152,slow=9.4,SNR=3.5						
ABKAR	**Akbulak array**	**34.87**	**322**	*e*P	**P**	**03 21 09.8**	**+0.5**
	comp=Z,1.2nm,0.3s						
AKTO	**Aktyubinsk**	**36.55**	**323**	P	**P**	**03 21 24.8**	**+1.1**
	comp=Z,1.4nm,0.4s,baz=119,slow=8.5,SNR=6.5						
MMAI	**Mount Meron Ar**	**49.78**	**293**	LR	LR	03 49 56.3	
	comp=Z,19nm,18.7s,baz=80,slow=43						
AKASG	**Malin Array Be**	**54.06**	**316**	P	**P**	**03 23 41.4**	**-0.9**
	comp=Z,0.9nm,0.4s,baz=106,slow=5.1,SNR=4.4						
FINES	**FINESS Array B**	**56.95**	**328**	P	**P**	**03 24 02.9**	**0.0**
	comp=Z,1.5nm,0.7s,baz=142,slow=6.5,SNR=3.9						
ARCES	**ARCESS Array B**	**58.67**	**338**	P	**P**	**03 24 14.8**	**0.0**
	comp=Z,0.7nm,0.3s,baz=95,slow=7.0,SNR=12						
WRA	**Warramunga Arr**	**60.65**	**134**	P	**P**	**03 24 29.2**	**+0.1**
	comp=Z,0.7nm,0.7s,baz=322,slow=7.2,SNR=5.2						
ASAR	**Alice Springs**	**63.06**	**137**	P	**P**	**03 24 45.6**	**+0.2**
	comp=Z,0.4nm,0.6s,baz=316,slow=6.4,SNR=4.5						
GERES	**GERESS Array B**	**64.19**	**314**	P	**P**	**03 24 53.5**	**+0.9**
	comp=Z,1.2nm,0.5s,baz=77,slow=6.2,SNR=16						
ILAR	**Eielson Array**	**79.63**	**22**	P	**P**	**03 26 24.5**	**-0.2**
	comp=Z,0.5nm,0.8s,baz=284,slow=5.2,SNR=6.5						
TORD	**Torodi Ar. Bea**	**84.97**	**282**	P	**P**	**03 26 55.4**	**+1.9**
	comp=Z,0.5nm,0.6s,baz=61,slow=4.1,SNR=14						
TORD				pP	**pP**	**03 27 05.4**	**-1.4**
	comp=Z,0.3nm,0.6s,baz=70,slow=3.9,SNR=2.9						
TXAR	**Lajitas Array**	**123.86**	**17**	PKP	**PKPdf**	**03 33 16.5**	**+0.3**
	comp=Z,0.1nm,0.5s,baz=357,slow=2.3,SNR=5.6						
CPUP	**Villa Florida**	**152.51**	**261**	PKPbc	**PKPbc**	**03 34 14.8**	**+0.4**
	comp=Z,1.1nm,0.9s,baz=156,slow=4.5,SNR=3.3						

*ISK **24** 03:18:12.7,38°.28N×42°.87E,h4km,MD3.0*
*ISCJB **24** 03:18:14.3±0.7,38°.23N±0°.03×42°.90E±0°.05,h7km±6km, Error ellipse: s-maj=6.5km s-min=4.3km az=25.1*
*CSEM **24** 03:18:14.0±0.1,38°.28N×42°.92E,h12km,MD2.6,Error ellipse: s-maj=3.9km s-min=3.0km az=133.0*
*DDA **24** 03:18:14.1,38°.30N×42°.84E,h7km,Md2.6*
ISC 24 03:18:14.2±0.9,38°.27N±0°.02×42°.89E±0°.03,h13km±6km, n24,σ0°48/43,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GEVA	**Gevas**	**0.14**	**73**	P	**Pg**	**03 18 17.8**	**-0.1**
GEVA				S	**Sg**	**03 18 20.6**	**+0.2**
GEVA	**Gevas**	**0.14**	**73**	*i* P	**Pg**	**03 18 17.8**	**-0.1**
GEVA				*i* S	**Sg**	**03 18 20.6**	**+0.2**
TVAN	**Van**	**0.48**	**57**	P	**Pg**	**03 18 23.5**	**-0.2**
TVAN				S	**Sb**	**03 18 31.8**	**+0.2**
TVAN	**Van**	**0.48**	**57**	*i* P	**Pg**	**03 18 23.5**	**-0.2**
TVAN				*i* S	**Sb**	**03 18 31.8**	**+0.2**
VANB	**Van**	**0.51**	**50**	*e*PG	**Pg**	**03 18 23.3**	**-0.9**
VANB	**Van**	**0.51**	**50**	*e*Pg	**Pg**	**03 18 23.3**	**-0.9**
SIRN	**S¨–rnak**	**0.86**	**206**	P	**Pg**	**03 18 30.9**	**0.0**
SIRN				S	**Sn**	**03 18 43.9**	**-0.6**
SIRN	**S¨–rnak**	**0.86**	**206**	*i* P	**Pg**	**03 18 30.9**	**0.0**
SIRN				*i* S	**Sn**	**03 18 43.9**	**-0.6**
TUTA	**Tutak**	**1.13**	**357**	P	**Pb**	**03 18 35.7**	**0.0**
TUTA				S	**Sg**	**03 18 50.6**	**-0.2**
TUTA	**Tutak**	**1.13**	**357**	*i* P	**Pb**	**03 18 35.6**	**0.0**
TUTA				*i* S	**Sg**	**03 18 50.6**	**-0.2**
CUKT	**Cukurca**	**1.17**	**151**	*e*PN	**Pb**	**03 18 35.6**	**-0.7**
CUKT				*e*SN	**Sn**	**03 18 53.0**	**+0.9**
CUKT	**Cukurca**	**1.17**	**151**	*e*Pn	**Pb**	**03 18 35.6**	**-0.7**
CUKT				*e*Sn	**Sn**	**03 18 53.0**	**+0.9**
EKAR	**Karacoban**	**1.18**	**327**	P	**Pb**	**03 18 36.0**	**-0.5**
EKAR				S	**Sn**	**03 18 52.5**	**0.0**
EKAR	**Karacoban**	**1.18**	**327**	*i* P	**Pb**	**03 18 36.0**	**-0.5**
EKAR				*i* S	**Sn**	**03 18 52.5**	**0.0**
BTMN	**Batman**	**1.34**	**254**	P	**Pb**	**03 18 39.2**	**+0.1**
BTMN				S	**Sg**	**03 18 57.0**	**-0.3**
BTMN	**Batman**	**1.34**	**254**	*i* P	**Pb**	**03 18 39.2**	**+0.1**
BTMN				*i* S	**Sg**	**03 18 57.0**	**-0.3**
SVAN	**Silvan-Diyarba**	**1.34**	**265**	*e*PN	**Pn**	**03 18 38.7**	**+0.1**
SVAN				*e*SN	**Sg**	**03 18 57.3**	**-0.1**
SVAN	**Silvan-Diyarba**	**1.34**	**265**	*e*Pn	**Pn**	**03 18 38.7**	**+0.1**
SVAN				*e*Sn	**Sg**	**03 18 57.3**	**-0.1**
MARD	**Mardin**	**1.93**	**241**	*i* P	**Pn**	**03 18 47.7**	**+0.9**
MARD				*i* S	**Sn**	**03 19 11.3**	**+0.4**
HOMI	**Horasan**	**1.93**	**337**	*i* P	**Pb**	**03 18 50.0**	**+0.6**
HOMI				*i* S	**Sg**	**03 19 16.4**	**+0.1**
ERZM	**Erzurum**	**2.02**	**324**	*i* P	**Pg**	**03 18 52.8**	**-0.1**
ERZM				*i* S	**Sg**	**03 19 18.1**	**-1.0**
EZM	**Erzurum**	**2.02**	**324**	*e*PN	**Pn**	**03 18 49.0**	**+0.9**
MAZI	**Mazidag**	**2.10**	**248**	*e*PN	**Pn**	**03 18 49.0**	**-0.1**
MAZI	**Mazidag**	**2.10**	**248**	*e*Pn	**Pn**	**03 18 49.0**	**-0.1**

*ISK **24** 03:20:13.8,39°.13N×29°.06E,h3km,MD2.9*
*ISCJB **24** 03:20:14.5±0.5,39°.11N±0°.04×29°.03E±0°.03,h9km,Error ellipse: s-maj=5.3km s-min=3.7km az=170.6*
*DDA **24** 03:20:14.8,39°.19N×29°.07E,h7km,Md2.3*
*CSEM **24** 03:20:14.6±0.1,39°.11N×29°.04E,h8km,MD2.3,Error ellipse: s-maj=3.2km s-min=2.8km az=172.0*
ISC 24 03:20:14.7±0.9,39°.11N±0°.03×29°.03E±0°.02,h9km,n36, σ0°39/44,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**254**	P	**Pg**	**03 20 19.6**	**-0.2**
DEMI				S	**Sb**	**03 20 26.2**	**+0.3**
DEMI	**Demirci**	**0.25**	**254**	*i* P	**Pg**	**03 20 19.6**	**-0.2**
DEMI				*i* S	**Sb**	**03 20 26.2**	**+0.3**
GDZ	**Gediz**	**0.36**	**94**	P	**Pg**	**03 20 21.7**	**-0.1**
GDZ				S	**Sg**	**03 20 26.8**	**+0.3**
GDZ	**Gediz**	**0.36**	**94**	*i* P	**Pg**	**03 20 21.7**	**-0.1**
GDZ				*i* S	**Sg**	**03 20 26.8**	**+0.3**
TVSB	**Tavsanli**	**0.48**	**45**	*e*PG	**Pg**	**03 20 23.3**	**-0.7**
TVSB				*e*SG	**Sg**	**03 20 30.5**	**+0.2**
TVSB	**Tavsanli**	**0.48**	**45**	*e*Pg	**Pg**	**03 20 23.3**	**-0.7**
TVSB				*e*Sg	**Sg**	**03 20 30.5**	**+0.2**
DURS	**Dursunbey**	**0.65**	**319**	P	**Pg**	**03 20 27.7**	**+0.5**
DURS				S	**Sg**	**03 20 35.4**	**-0.4**
DURS	**Dursunbey**	**0.65**	**319**	*i* P	**Pg**	**03 20 27.7**	**+0.5**
DURS				*i* S	**Sg**	**03 20 35.4**	**-0.4**
KULA	**Kula-Manisa**	**0.66**	**206**	*e*PG	**Pg**	**03 20 27.1**	**-0.3**
KULA	**Kula-Manisa**	**0.66**	**206**	*e*Pg	**Pg**	**03 20 27.1**	**-0.3**
KHL	**Karahalli**	**0.88**	**154**	*e*PG	**Pg**	**03 20 31.6**	**+0.1**
KHL	**Karahalli**	**0.88**	**154**	*e*Pg	**Pg**	**03 20 31.7**	**+0.1**
AKHS	**Akhisar**	**0.97**	**257**	S	**Sg**	**03 20 45.0**	**-1.0**
AKHS	**Akhisar**	**0.97**	**257**	*i* S	**Sg**	**03 20 45.0**	**-1.0**
AKS	**Akhisar**	**0.97**	**257**	*e*PG	**Pg**	**03 20 33.8**	**+0.4**
AKS	**Akhisar**	**0.97**	**257**	*e*Pg	**Pg**	**03 20 33.8**	**+0.4**
BALB	**Balikesir**	**1.03**	**301**	*e*PG	**Pg**	**03 20 34.8**	**+0.3**
BALB	**Balikesir**	**1.03**	**301**	*e*Pg	**Pg**	**03 20 34.8**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.26**	**355**	*e*PN	**Pn**	**03 20 38.4**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.26**	**355**	*e*Pn	**Pn**	**03 20 38.4**	**-0.1**
KCTX	**Karacabey (Bur**	**1.26**	**336**	*e*PN	**Pb**	**03 20 38.8**	**+0.1**
KCTX	**Karacabey (Bur**	**1.26**	**336**	*e*Pn	**Pb**	**03 20 38.8**	**+0.1**
IZI	**Iznik**	**1.27**	**16**	*e*PN	**Pn**	**03 20 38.4**	**-0.3**
IZI	**Iznik**	**1.27**	**16**	*e*Pn	**Pn**	**03 20 38.4**	**-0.3**
GONE	**Gonen-Balikesi**	**1.39**	**312**	*e*PN	**Pb**	**03 20 41.1**	**+0.2**
GONE	**Gonen-Balikesi**	**1.39**	**312**	*e*Pn	**Pb**	**03 20 41.1**	**+0.2**
ADVT	**Abdulvahap**	**1.43**	**22**	*e*PN	**Pb**	**03 20 41.1**	**-0.4**
ARMT	**Armutlu**	**1.46**	**355**	*e*PN	**Pb**	**03 20 41.7**	**-0.3**
ARMT	**Armutlu**	**1.46**	**355**	*e*Pn	**Pb**	**03 20 41.7**	**-0.3**
EDC	**Edincik**	**1.52**	**324**	*e*PN	**Pb**	**03 20 42.9**	**-0.2**
EDC	**Edincik**	**1.52**	**324**	*e*Pn	**Pb**	**03 20 42.9**	**-0.2**
GULT	**Gulveren**	**1.75**	**41**	*e*PN	**Pn**	**03 20 45.5**	**+0.2**
GULT	**Gulveren**	**1.75**	**41**	*e*Pn	**Pn**	**03 20 45.5**	**+0.2**
HRT	**Hereke**	**1.78**	**16**	*e*PN	**Pn**	**03 20 46.1**	**+0.4**
SVRH	**Sivrihisar-ESK**	**1.97**	**79**	*e*PN	**Pn**	**03 20 48.6**	**+0.4**
SVRH	**Sivrihisar-ESK**	**1.97**	**79**	*e*Pn	**Pn**	**03 20 48.7**	**+0.4**

*ISCJB **24** 03:23:31.3±0.7,39°.09N±0°.05×29°.03E±0°.05,h0km±9km, Error ellipse: s-maj=7.8km s-min=5.7km az=159.6*
*ISK **24** 03:23:31.2,39°.07N×29°.03E,h6km,MD2.8*
*DDA **24** 03:23:31.4,38°.93N×29°.04E,h7km,Md2.3*
*CSEM **24** 03:23:31.7±0.1,39°.09N×29°.03E,h2km,MD2.3,Error ellipse: s-maj=1.8km s-min=1.4km az=136.0*
ISC 24 03:23:32.2±1.1,39°.09N±0°.03×29°.00E±0°.03,h5km±11km, n32,σ0°78/40,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.23**	**259**	P	**Pg**	**03 23 36.9**	**+0.3**
DEMI				S	**Sg**	**03 23 40.5**	**+0.9**
DEMI	**Demirci**	**0.23**	**259**	*i* P	**Pg**	**03 23 36.9**	**+0.3**
DEMI				*i* S	**Sg**	**03 23 40.5**	**+0.9**
GDZ	**Gediz**	**0.37**	**90**	P	**Pg**	**03 23 38.9**	**-0.6**
GDZ	**Gediz**	**0.37**	**90**	*i* P	**Pg**	**03 23 38.9**	**-0.6**
GDZ				*i* S	**Sb**	**03 23 51.3**	**+3.7**
TVSB	**Tavsanli**	**0.51**	**44**	*e*PG	**Pg**	**03 23 41.2**	**-0.8**
TVSB	**Tavsanli**	**0.51**	**44**	*e*Pg	**Pg**	**03 23 41.2**	**-0.8**
KULA	**Kula-Manisa**	**0.63**	**205**	*e*PG	**Pg**	**03 23 43.8**	**-0.5**
KULA				*e*SG	**Sg**	**03 23 52.6**	**+0.1**
KULA	**Kula-Manisa**	**0.63**	**205**	*e*Pg	**Pg**	**03 23 43.8**	**-0.5**
KULA				*e*Sg	**Sg**	**03 23 52.6**	**+0.1**
DURS	**Dursunbey**	**0.66**	**322**	P	**Pg**	**03 23 44.1**	**-0.7**
DURS	**Dursunbey**	**0.66**	**322**	*i* P	**Pg**	**03 23 44.1**	**-0.7**
DURS				*i* S	**Sn**	**03 23 59.3**	**+0.2**
KHL	**Karahalli**	**0.86**	**152**	*e*PG	**Pg**	**03 23 48.2**	**-0.6**
KHL	**Karahalli**	**0.86**	**152**	*e*Pg	**Pg**	**03 23 48.2**	**-0.6**
AKHS	**Akhisar**	**0.95**	**258**	P	**Pb**	**03 23 50.7**	**-0.4**
AKH

KULA			*e*Sg	**Sb**	**03 27 24.2**	**-0.4**
KHL	**Karahalli**	**0.88 153**	*e*PG	**Pn**	**03 27 21.0**	**+0.7**
KHL	**Karahalli**	**0.88 153**	*e*Pg	**Pn**	**03 27 21.0**	**+0.7**
BALB	**Balikesir**	**1.03 301**	*e*PG	**Pn**	**03 27 21.4**	**-0.9**
BALB	**Balikesir**	**1.03 301**	*e*Pg	**Pn**	**03 27 21.4**	**-0.9**
MDNY	**Mudanya-Bursa**	**1.26 355**	*e*PN	**Pg**	**03 27 26.1**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.26 355**	*e*Pn	**Pg**	**03 27 26.1**	**+0.2**
KCTX	**Karacabey (Bur**	**1.26 336**	*e*PN	**Pg**	**03 27 26.3**	**+0.4**
KCTX	**Karacabey (Bur**	**1.26 336**	*e*Pn	**Pg**	**03 27 26.3**	**+0.4**
ARMT	**Armutlu**	**1.46 355**	*e*PN	**Pg**	**03 27 29.1**	**-0.6**
ARMT	**Armutlu**	**1.46 355**	*e*Pn	**Pg**	**03 27 29.1**	**-0.6**
GULT	**Gulveren**	**1.75 41**	*e*PN	**Pb**	**03 27 33.6**	**-0.4**
GULT	**Gulveren**	**1.75 41**	*e*Pn	**Pb**	**03 27 33.6**	**-0.4**

JMA 24 03:34:57.7±0.2, 37°.43N×143°.66E, h49km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.09**	**300**	P	Pn	03 35 31.5	+1.2
JIO				*e*S	Sn	03 35 56.4	+1.3
JFK	**Kawauchi**	**2.22**	**269**	P	Pn	03 35 32.9	+0.8
JFK				S	Sn	03 35 59.3	+1.0
OFUJ	**Ofunato**	**2.27**	**317**	P	Pn	03 35 33.5	+0.7
OFUJ				S	Sn	03 36 00.0	+0.4
JMK	**Ichinoseki**	**2.45**	**309**	P	Pn	03 35 36.5	+1.3
JFT	**Otama**	**2.65**	**273**	P	Pn	03 35 40.0	+2.1
JFT				S	Sn	03 36 11.2	+2.5
JOM	**Ohasama**	**2.76**	**318**	P	Pn	03 35 40.8	+1.4
JOM				S	Sn	03 36 12.8	+1.3
JYK	**Kaneyama**	**3.00**	**301**	P	Pn	03 35 44.6	+1.9
JANG	**Nango**	**3.38**	**331**	P	Pn	03 35 49.4	+1.4
JAG	**Ashikaga**	**3.52**	**255**	P	Pn	03 35 51.4	+1.6
JAG				S	Sn	03 36 30.9	+0.7
JRY	**Ryogami san**	**4.07**	**251**	P	Pn	03 35 58.9	+1.4
MAT	**Matsushiro**	**4.46**	**260**	P	Pn	03 36 05.8	+3.1
MAT				*e*S	Sn	03 36 57.2	+3.9

IDC 24 03:36:32.1±1.8, 36°.20S×73°.64W, h0km, mb3.2/2, mb1 3.6/3, mb1mx3.5/21, mbtmp3.3/3, ML3.5/1, Error ellipse: s-maj=77.8km s-min=21.3km az=68.0, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLCA	**Paso Flores**	**5.14**	**153**	Pn	Pn	03 37 51.5	+1.1
	0.4nm,0.3s,baz=350,slow=12,SNR=19						
PLCA				Lg	Lg	03 39 14.0	
	0.3nm,0.3s,baz=244,slow=19,SNR=2.8						
LPAZ	**La Paz**	**20.43**	**15**	P	P	03 41 11.7	+0.1
	0.6nm,0.7s,baz=222,slow=14,SNR=3.4						
TXAR	**Lajitas Array**	**71.04**	**332**	P	P	03 47 51.9	-0.1
	0.2nm,0.6s,baz=145,slow=8.6,SNR=3.5						

*CSEM **24** 03:39:56.7±0.1, 39°.10N×29°.09E, h5km, MD2.5, Error ellipse: s-maj=2.2km s-min=1.8km az=145.0*
*ISK **24** 03:39:56.2, 39°.08N×29°.09E, h7km, MD2.8*
*DDA **24** 03:39:56.2, 39°.13N×29°.09E, h7km, Md2.5*

ISC 24 03:39:56.7±1.0, 39°.11N±0°.03×29°.07E±0°.02, h7km±11km, n49, σ0°.72/60, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**257**	P	**Pg**	**03 40 02.9**	**+0.6**
DEMI	**Demirci**	**0.28**	**257**	*i* P	**Pg**	**03 40 02.9**	**+0.6**
GDZ	**Gediz**	**0.32**	**93**	P	**Pg**	**03 40 02.9**	**0.0**
GDZ				S	**Sg**	**03 40 06.8**	**-0.3**
GDZ	**Gediz**	**0.32**	**93**	*i* P	**Pg**	**03 40 02.9**	**0.0**
GDZ				*i* S	**Sg**	**03 40 06.8**	**-0.3**
TVSB	**Tavsanli**	**0.46**	**41**	*e*PG	**Pg**	**03 40 05.2**	**-0.3**
TVSB	**Tavsanli**	**0.46**	**41**	*e*Pg	**Pg**	**03 40 05.2**	**-0.3**
KULA	**Kula-Manisa**	**0.67**	**209**	*e*PG	**Pg**	**03 40 09.7**	**+0.1**
KULA				*e*SG	**Sg**	**03 40 18.7**	**+0.3**
KULA	**Kula-Manisa**	**0.67**	**209**	*e*Pg	**Pg**	**03 40 09.7**	**+0.1**
KULA				*e*Sg	**Sg**	**03 40 18.7**	**+0.3**
DURS	**Dursunbey**	**0.68**	**317**	P	**Pg**	**03 40 09.7**	**-0.1**
DURS				S	**Sg**	**03 40 18.5**	**-0.1**
DURS	**Dursunbey**	**0.68**	**317**	*i* P	**Pg**	**03 40 09.7**	**-0.1**
DURS				*i* S	**Sg**	**03 40 18.5**	**-0.1**
KHL	**Karahalli**	**0.86**	**156**	*e*PG	**Pg**	**03 40 12.8**	**-0.3**
KHL	**Karahalli**	**0.86**	**156**	*e*Pg	**Pg**	**03 40 12.8**	**-0.3**
ORLT	**Orhaneli**	**0.95**	**352**	*e*PG	**Pb**	**03 40 15.2**	**-0.3**
ORLT	**Orhaneli**	**0.95**	**352**	*e*Pg	**Pb**	**03 40 15.2**	**-0.3**
AKHS	**Akhisar**	**1.01**	**257**	P	**Pn**	**03 40 17.3**	**+0.1**
AKHS				S	**Sg**	**03 40 29.4**	**+0.3**
AKHS	**Akhisar**	**1.01**	**257**	*i* P	**Pn**	**03 40 17.3**	**+0.1**
AKHS				*i* S	**Sg**	**03 40 29.4**	**+0.3**
AKS	**Akhisar**	**1.01**	**257**	*e*PG	**Pg**	**03 40 16.1**	**+0.1**
AKS	**Akhisar**	**1.01**	**257**	*e*Pg	**Pg**	**03 40 16.1**	**+0.1**
BALB	**Balikesir**	**1.07**	**300**	*e*PN	**Pn**	**03 40 17.7**	**-0.3**
BALB	**Balikesir**	**1.07**	**300**	*e*Pn	**Pn**	**03 40 17.7**	**-0.3**
CAVI	**Cavuskoy**	**1.25**	**28**	*e*PN	**Pg**	**03 40 20.8**	**+0.2**
CAVI	**Cavuskoy**	**1.25**	**28**	*e*Pn	**Pg**	**03 40 20.8**	**+0.2**
IZI	**Iznik**	**1.27**	**14**	*e*PN	**Pg**	**03 40 21.2**	**+0.2**
IZI	**Iznik**	**1.27**	**14**	*e*Pn	**Pg**	**03 40 21.2**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.27**	**353**	*e*PN	**Pg**	**03 40 21.4**	**+0.4**
MDNY	**Mudanya-Bursa**	**1.27**	**353**	*e*Pn	**Pg**	**03 40 21.4**	**+0.4**
KCTX	**Karacabey (Bur**	**1.28**	**335**	*e*PN	**Pg**	**03 40 21.2**	**-0.1**
KCTX	**Karacabey (Bur**	**1.28**	**335**	*e*Pn	**Pg**	**03 40 21.2**	**-0.1**
ADVT	**Abdulvahap**	**1.42**	**21**	*e*PN	**Pb**	**03 40 23.3**	**-0.2**
ADVT	**Abdulvahap**	**1.42**	**21**	*e*Pn	**Pb**	**03 40 23.3**	**-0.2**
GONE	**Gonen-Balikesi**	**1.43**	**312**	*e*PN	**Pb**	**03 40 23.5**	**0.0**
GONE	**Gonen-Balikesi**	**1.43**	**312**	*e*Pn	**Pb**	**03 40 23.5**	**0.0**
ESKT	**Eskisehir**	**1.44**	**73**	*i* P	**Pg**	**03 40 27.4**	**+3.1**
ESKT				*i* S	**Sb**	**03 40 42.0**	**-0.4**
SEYT	**Eskypehyr**	**1.44**	**73**	S	**Sb**	**03 40 42.0**	**-0.4**
ARMT	**Armutlu**	**1.47**	**354**	*e*PN	**Pb**	**03 40 24.1**	**-0.2**
ARMT	**Armutlu**	**1.47**	**354**	*e*Pn	**Pb**	**03 40 24.1**	**-0.2**
EDC	**Edincik**	**1.55**	**323**	*e*PN	**Pb**	**03 40 25.3**	**-0.4**
EDC	**Edincik**	**1.55**	**323**	*e*Pn	**Pb**	**03 40 25.3**	**-0.4**
GULT	**Gulveren**	**1.73**	**40**	*e*PN	**Pn**	**03 40 27.6**	**+0.4**
GULT	**Gulveren**	**1.73**	**40**	*e*Pn	**Pn**	**03 40 27.6**	**+0.4**
HRT	**Hereke**	**1.77**	**15**	*e*PN	**Pb**	**03 40 28.4**	**-1.1**
HRT	**Hereke**	**1.77**	**15**	*e*Pn	**Pb**	**03 40 28.4**	**-1.1**
SVRH	**Sivrihisar-ESK**	**1.93**	**79**	*e*PN	**Pn**	**03 40 30.2**	**+0.2**
SVRH	**Sivrihisar-ESK**	**1.93**	**79**	*e*Pn	**Pn**	**03 40 30.2**	**+0.2**
BTAS	**Taskesti**	**2.08**	**45**	P	**Pn**	**03 40 29.9**	**-2.1**
BTAS	**Taskesti**	**2.08**	**45**	*i* P	**Pn**	**03 40 29.9**	**-2.1**
BTAS				*i* S	**Pg**	**03 40 37.6**	**+1.0**
SILT	**Sile**	**2.09**	**12**	*e*PN	**Pn**	**03 40 33.1**	**+1.0**
SILT	**Sile**	**2.09**	**12**	*e*Pn	**Pn**	**03 40 33.1**	**+1.0**
KAND	**Kocaeli-Kandir**	**2.16**	**23**	*i* P	**Pb**	**03 40 36.6**	**+0.5**
KAND				*i* S	**Sb**	**03 41 03.6**	**+0.5**

*NIED **24** 03:40:00, 39°.80N×143°.50E, h17km, Mw5.8 Best double couple: M0=5.34000×10^17 NP1:φs=182.00000°, δ20.00000°, λ66.00000°. NP2:φs=28.00000°, δ71.00000°, λ99.00000°.*
*IDC **24** 03:40:48.8±0.5, 39°.74N×143°.37E, h0km, mb5.3/28, mb1 5.5/35, mb1mx5.4/38, mbtmp5.3/35, ML4.5/7, MS5.7/48, Ms1 5.7/48, ms1mx5.6/54, Error ellipse: s-maj=13.1km s-min=11.5km az=115.0*
*ISCJB **24** 03:40:49.6±0.5, 39°.75N±0°.02×143°.33E±0°.01, h12km±3km, mb5.7/498, MS5.7/446, Error ellipse: s-maj=2.8km s-min=1.6km az=159.2*
*JMA **24** 03:40:50.0±0.2, 39°.78N×143°.49E, h27km, M5.8*
JMA Felt III J1.
*NEIC **24** 03:40:51.3±0.1, 39°.71N×143°.25E, h16km, mb5.8/298, ME5.8, MS5.5/297, MW5.8, MW5.8, Error ellipse: s-maj=3.5km s-min=2.3km az=143.0, Moment Tensor Solution. s11 Moment tensor: Scale 10^17Nm; Mrr=3.10; Mθθ=0.85; Mφφ=-2.25; Mrθ=2.96; Mrφ=-1.12; Mθφ=5.36; Best double couple: M0=6.80000×10^17 NP1:φs=209.00000°, δ13.00000°, λ90.00000°. NP2:φs=29.00000°, δ77.00000°, λ90.00000°. Principal axes: T 6.9300, Plg58.0000°, Azm299.0000°; N -0.2300, Plg0.0000°, Azm29.0000°; P -6.7000, Plg32.0000°, Azm119.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from CMT mechanism.*
NEIC Felt at Ichinoseki and Misawa. Recorded [3 JMA] in Iwate and Miyagi.
*BJI **24** 03:40:51.6, 39°.75N×143°.15E, h30km, mb5.8/84, mB5.9/56, Ms6.1/99, Ms7 6.1/87*
*GCMT **24** 03:40:52.2±0.1, 39°.75N×143°.42E, h25km, MW5.9/134, Moment Tensor Solution. s118, c237; s134, c379; Duration: 2s1 Moment tensor: Scale 10^17Nm; Mrr=3.45±.04; Mθθ=0.04±.03; Mφφ=-3.41±.03; Mrθ=3.08±.09; Mrφ=-0.90±.03; Mθφ=6.37±.08; Best double couple: M0=7.91400×10^17 NP1:φs=25.00000°, δ77.00000°, λ95.00000°. NP2:φs=183.00000°, δ14.00000°, λ69.00000°. Principal axes: T 7.8850, Plg58.0000°, Azm301.0000°; N 0.0550, Plg5.0000°, Azm203.0000°; P -7.9440, Plg32.0000°, Azm110.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*
*NEIC **24** 03:40:52.0±0.0, 39°.72N×143°.24E, h22km, Moment Tensor Solution. s19 Moment tensor: Scale 10^17Nm; Mrr=2.58; Mθθ=0.38; Mφφ=-2.19; Mrθ=1.81; Mθφ=-0.33; Mθφ=5.71; Best double couple: M0=6.50000×10^17 NP1:φs=17.00000°, δ79.00000°, λ92.00000°. NP2:φs=186.00000°, δ11.00000°, λ79.00000°. Principal axes: T 6.6300, Plg55.0000°, Azm289.0000°; N -0.3600, Plg2.0000°, Azm196.0000°; P -6.2800, Plg34.0000°, Azm105.0000°;*
*MOS **24** 03:40:53.1±0.9, 39°.92N×143°.21E, h31km, mb6.0/144, MS5.9/75 Error ellipse: s-maj=5.5km s-min=3.5km az=102.3*

ISC 24 03:40:52.1±0.3, 39°.78N±0°.02×143°.32E±0°.03, h24km±1km, h23km; pP-P, n1927, σ1s80/2011, mb5.8/519, MS5.6/448, 132C-34D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.13**	**278**	⇑P	**Pn**	**03 41 12.1**	**-0.3**
MIYJ	**Miyakonagasawa**	**1.17**	**260**	⇑P	**Pn**	**03 41 12.9**	**-0.1**
MIYJ				*e*S	**Sb**	**03 41 29.7**	**+1.2**
OFUJ	**Ofunato**	**1.46**	**242**	⇑P	**Pn**	**03 41 16.7**	**-0.2**
JANG	**Nango**	**1.50**	**294**	⇑P	**Pn**	**03 41 17.3**	**-0.3**
JKZ	**Kuzumaki**	**1.54**	**278**	⇑P	**Pn**	**03 41 18.6**	**+0.5**
JOM	**Ohasama**	**1.59**	**259**	⇑P	**Pn**	**03 41 19.6**	**+0.8**
JMK	**Ichinoseki**	**1.82**	**244**	⇑P	**Pn**	**03 41 22.1**	**+0.1**
JTM	**Tenmabayashi**	**1.99**	**301**	⇑P	**Pn**	**03 41 25.0**	**+0.7**
JIO	**Ouri**	**2.03**	**230**	⇑P	**Pn**	**03 41 24.0**	**-0.7**
JAH	**Hinai**	**2.10**	**282**	P	**Pn**	**03 41 27.0**	**+1.2**
JRG	**Rokugo**	**2.11**	**260**	⇑P	**Pn**	**03 41 26.8**	**+0.9**
ERM	**Erimo**	**2.23**	**357**	*ce*P	**Pn**	**03 41 27.5**	**-0.1**
ERM				pmax	pmax		
	comp=Z,700nm,1.2s						
ERM	**Erimo**	**2.23**	**357**	*e*Pn	**Pn**	**03 41 27.9**	**+0.4**
ERM				*e*Sn	Sn	03 41 45.4	-9.0
JOT	**Ohata**	**2.35**	**313**	⇑P	**Pn**	**03 41 29.7**	**+0.5**
JYW	**Yuwa**	**2.41**	**265**	P	**Pn**	**03 41 31.4**	**+1.4**
JYK	**Kaneyama**	**2.45**	**250**	P	**Pn**	**03 41 31.4**	**+0.8**
JOU	**Okura**	**2.50**	**236**	P	**Pn**	**03 41 31.4**	**+0.1**
JNBK	**Urakawa-nobuka**	**2.53**	**350**	P	**Pn**	**03 41 31.7**	**0.0**
JSI2	**Shiura 2**	**2.56**	**301**	P	**Pn**	**03 41 33.1**	**+1.1**
JOG2	**Oga 2**	**2.72**	**274**	P	**Pn**	**03 41 35.3**	**+1.0**
JKB	**Kayabe**	**2.73**	**321**	P	**Pn**	**03 41 34.8**	**+0.5**
JSR	**Shiriuchi**	**2.81**	**309**	P	**Pn**	**03 41 36.5**	**+1.0**
JCH	**Churui**	**2.83**	**1**	P	**Pn**	**03 41 35.8**	**0.0**
JYS	**Shirataka**	**2.98**	**239**	P	**Pn**	**03 41 38.5**	**+0.7**
JYA	**Atsumi**	**3.04**	**248**	P	**Pn**	**03 41 39.6**	**+0.9**
JAR	**Ashorobuto**	**3.53**	**5**	P	**Pn**	**03 41 44.7**	**-0.7**
JNS	**Sasagawa**	**3.69**	**239**	P	**Pn**	**03 41 49.2**	**+1.6**
JOSM	**Okushiri--Mats**	**3.71**	**310**	P	**Pn**	**03 41 48.1**	**+0.2**
JHO	**Hitachi**	**3.84**	**215**	P	**Pn**	**03 41 48.4**	**-1.2**
JSB	**Shiboa**	**3.88**	**225**	P	**Pn**	**03 41 50.6**	**+0.4**
JKK2	**Kamakawa 2**	**4.11**	**354**	P	**Pn**	**03 41 53.8**	**+0.4**
JTKR	**Abashiri--Toko**	**4.21**	**6**	P	**Pn**	**03 41 54.5**	**-0.2**
JHK	**Hiroka**	**4.22**	**234**	P	**Pn**	**03 41 55.4**	**+0.5**
JMP	**Maruseppu**	**4.22**	**0**	P	**Pn**	**03 41 54.4**	**-0.5**
JSD	**Sado**	**4.31**	**248**	P	**Pn**	**03 41 57.0**	**+0.8**
ASAJ	**Asahikawa**	**4.36**	**353**	Pn	**Pn**	**03 41 57.9**	**+1.0**
ASAJ				Sn	**Sb**	**03 42 56.3**	**-3.9**
	comp=Z,24nm,0.3s,baz=204,slow=15,SNR=167						
ASAJ				Sn	**Sb**	**03 42 56.3**	**-3.9**
	comp=Z,86nm,0.3s,baz=176,slow=24,SNR=4.3						
ASAJ	**Asahikawa**	**4.36**	**353**	P	**Pn**	**03 41 57.8**	**+1.0**
ASAJ	**Asahikawa**	**4.36**	**353**	*e*Pn	**Pn**	**03 41 57.2**	**+0.4**
ASAJ				Sn	**Sb**	**03 42 56.3**	**-3.9**
JAG	**Ashikaga**	**4.53**	**223**	P	**Pn**	**03 41 58.9**	**-0.3**
JAG				S	**Sn**	**03 42 52.7**	**+1.6**
JJN	**Nakama**	**4.85**	**238**	P	**Pn**	**03 42 05.4**	**+1.8**
JRY	**Ryogami san**	**5.13**	**224**	P	**Pn**	**03 42 07.4**	**-0.1**
MJAR	**Matsushiro Arr**	**5.16**	**233**	Pn	**Pn**	**03 42 09.2**	**+1.3**
	comp=Z,56nm,0.3s,baz=42,slow=12,SNR=289						
MJAR				LR	LR	03 44 23.0	
	comp=Z,73μm,19.0s,baz=50,slow=42						
MAJO	**Matsushiro**	**5.17**	**233**	*c i*P	**Pn**	**03 42 09.8**	**+1.9**
MAJO	**Matsushiro**	**5.17**	**233**	*e*Pn	**Pn**	**03 42 09.3**	**+1.4**
MAT	**Matsushiro**	**5.17**	**233**	P	**Pn**	**03 42 09.1**	**+1.2**
MAT				*e*S	**Sn**	**03 43 11.7**	**+4.9**
MAT	**Matsushiro**	**5.17**	**233**	P	**Pn**	**03 42 09.2**	**+1.3**
MJB9	**Matsu-Tunnel**	**5.17**	**233**	*e*Pn	**Pn**	**03 42 09.5**	**+1.5**
JSZ	**Suzu**	**5.21**	**245**	P	**Pn**	**03 42 09.8**	**+1.3**
JNG	**Nsakai**	**5.32**	**232**	P	**Pn**	**03 42 11.3**	**+1.2**
BSO4	**Boso 4**	**5.34**	**207**	P	**Pn**	**03 42 09.7**	**-0.5**
JHG	**Hegura jima**	**5.36**	**251**	P	**Pn**	**03 42 12.4**	**+1.9**
BSO1	**Boso 1**	**5.45**	**201**	P	**Pn**	**03 42 09.6**	**-1.7**
JOD2	**Odawara 2**	**5.62**	**218**	P	**Pn**	**03 42 13.7**	**-0.6**
JTT	**Ttatey**	**5.68**	**238**	P	**Pn**	**03 42 17.0**	**+2.0**
JYN	**Shimob**	**5.71**	**223**	P	**Pn**	**03 42 16.2**	**+0.7**
JJH	**Hakui**	**5.88**	**243**	P	**Pn**	**03 42 19.2**	**+1.6**
JGN	**Niukaw**	**5.92**	**235**	P	**Pn**	**03 42 20.0**	**+1.6**
JIZS	**Izushimoda**	**6.17**	**216**	P	**Pn**	**03 42 20.4**	**-1.3**
JNY	**Yasuok**	**6.19**	**226**	P	**Pn**	**03 42 23.6**	**+1.6**
KUR	**Kuril'sk**	**6.40**	**30**	*d i*P	**Pn**	**03 42 24.4**	**-0.4**
KUR				*i* S	**Sn**	**03 43 34.1**	**-3.0**
KUR				pmax	pmax		
	comp=N,186nm,0.6s						
KUR				pmax	pmax		
	comp=E,211nm,0.6s						
KUR				pmax	pmax		
	comp=Z,464nm,0.6s						
KUR				smax	smax		
	comp=N,7μm,2.1s						
KUR				smax	smax		
	comp=E,4μm,2.1s						
KUR				smax	smax		
	comp=N,1μm,0.8s						
KUR				smax	smax		
	comp=E,762nm,0.9s						
KUR				MLR	MLR		
	comp=N,10μm,13.0s						
KUR				MLR	MLR		
	comp=E,5μm,13.0s						
KUR				MLR	MLR		
	comp=Z,16μm,13.0s						
INU	**Inuyama**	**6.68**	**230**	*e*Pn	**Pn**	**03 42 29.6**	**+0.9**
INU				*e*Sn	**Sn**	**03 43 40.9**	**-3.2**
YSS	**Yuzh-Sakhalins**	**7.18**	**357**	*α i*P	**Pn**	**03 42 36.3**	**+0.8**
YSS				*e*S	**Sn**	**03 43 54.8**	**-1.5**
YSS				pmax	pmax		
	comp=Z,260nm,1.0s						
YSS				MLR	MLR		
	comp=Z,65μm,15.0s						
YSS				MLR	MLR		
	comp=N,50μm,16.0s						
YSS				MLR	MLR		
	comp=E,26μm,11.0s						
YSS	**Yuzh-Sakhalins**	**7.18**	**357**	*e*Pn	**Pn**	**03 42 37.0**	**+1.4**
JFM	**Mihama**	**7.20**	**236**	P	**Pn**	**03 42 38.3**	**+2.4**
JHJ2	**Mitsune**	**7.23**	**204**	*e*Pn	**Pn**	**03 42 32.9**	**-3.3**
JHJ2				*e*Sn	**Sn**	**03 43 52.9**	**-4.7**
JHJ	**Hachijo jima 2**	**7.23**	**204**	Pn	**Pn**	**03 42 34.4**	**-2.0**
	comp=E,100nm,0.3s,baz=106,slow=22,SNR=6.4						
JHJ				LR	LR	03 45 33.0	
	comp=E,33μm,19.8s,baz=54,slow=40						
VLA	**Vladivostok**	**9.21**	**295**	*c i*P	**Pn**	**03 43 05.6**	**+2.3**
UGL	**Uglegorsk**	**9.34**	**355**	*i* P	**Pn**	**03 43 05.4**	**+0.3**
UGL				*e*		03 44 50.0	
UGL				pmax	pmax		
	comp=Z,340nm,1.0s						
UGL				pmax	pmax		
	comp=Z,3μm,12.0s						
UGL				smax	smax		
	comp=N,6μm,8.0s						
UGL				smax	smax		
	comp=E,6μm,12.0s						
UGL				MLR	MLR		
	comp=N,54μm,16.0s						
UGL				MLR	MLR		
	comp=Z,48μm,16.0s						
UGL				MLR	MLR		
	comp=E,34μm,18.0s						
USRK	**Ussuriysk Ar.**	**9.52**	**301**	Pn	**Pn**	**03 43 09.7**	**+2.1**
	comp=E,8.2nm,0.3s,baz=106,slow=11,SNR=153						
USRK				LR	LR	03 46 52.9	
	comp=E,68μm,18.2s,baz=95,slow=38						
HABR	**Khabarovsk**	**10.52**	**328**	*ce*P	**Pn**	**03 43 21.7**	**+0.4**
HABR				*e*S	**Sn**	**03 45 18.8**	**+0.6**
HABR				pmax	pmax		
	comp=E,97nm,1.9s						
HABR				pmax	pmax		
	comp=N,75nm,1.9s						
HABR				pmax	pmax		
	comp=Z,160nm,1.9s						
HABR				MLR	MLR		
	comp=Z,40μm,15.0s						
TYV	**Tymovskoe**	**11.09**	**358**	*e*P	**Pn**	**03 43 29.0**	**-0.1**
TYV				pmax	pmax		
	comp=E,128nm,1.0s						
TYV				pmax	pmax		
	comp=Z,103nm,0.8s						
MDJ	**Mudanjiang**	**11.27**	**300**	P	**Pn**	**03 43 33.3**	**+1.8**
MDJ				S	**Sn**	**03 45 41.1**	**+4.5**
MDJ				ScP	**ScP**	**03 52 57.4**	**+0.8**
MDJ				pmax	pmax		
	comp=Z,73nm,1.6s						
MDJ				pmax	pmax		
	comp=Z,7μm,9.1s						
MDJ				LR	LR		
	comp=Z,32μm,15.1s						
MDJ				LR	LR		
	comp=Z,54μm,18.5s						
MDJ				LR	LR		
	comp=Z,73μm,18.1s						
MDJ	**Mudanjiang**	**11.27**	**300**	*e*Pn	**Pn**	**03 43 33.4**	**+1.8**
JNU	**Nakatsue**	**12.01**	**240**	Pn	**Pn**	**03 43 41.3**	**-0.5**
	comp=Z,2.3nm,0.3s,baz=56,slow=1.3,SNR=15						
JNU				LR	LR	03 48 40.6	
	comp=Z,76μm,18.8s,baz=48,slow=39						
JNU	**Nakatsue**	**12.01**	**240**	*e*Pn	**Pn**	**03 43 40.3**	**-1.6**
KSRS	**Korea Array**	**12.27**	**264**	Pn	**Pn**	**03 43 47.1**	**+1.9**
	comp=Z,3.3nm,0.3s,baz=78,slow=14,SNR=76						
KSRS				Sn	Sn	03 46 13.2	+12
	comp=Z,1.2nm,0.3s,baz=69,slow=23,SNR=6.2						
KSRS				LR	LR	03 48 14.4	
	comp=Z,54μm,18.4s,baz=78,slow=36						
KS01	**Wonju Array Si**	**12.28**	**264**	*e*Pn	**Pn**	**03 43 46.4**	**+1.0**
KS15	**Wonju Array Si**	**12.30**	**264**	*e*Pn	**Pn**	**03 43 48.2**	**+2.5**
KSAR	**Wonju Array Be**	**12.30**	**264**	P	**Pn**	**03 43 47.1**	**+1.4**
KSAR						03 46 13.2	
KSAR	**Wonju Array Be**	**12.30**	**264**	Pn	**Pn**	**03 43 47.1**	**+1.4**
KSAR				Sn	Sn	03 46 13.2	+11
KLR	**Kul'dur**	**12.53**	**323**	Pn	**Pn**	**03 43 48.7**	**-0.1**
	comp=Z,0.9nm,0.3s,baz=134,slow=12,SNR=80						
KLR				LR	LR	03 49 02.7	
	comp=Z,63μm,18.1s,baz=136,slow=39						
CBIJ	**Chichi jima**	**12.69**	**185**	S	Sn	03 45 56.5	-15
CBIJ	**Chichi jima**	**12.69**	**185**	*e*Pn	**Pn**	**03 43 47.5**	**-3.5**
CBIJ				*e*Sn	Sn	03 45 56.9	-15
JCJ	**Chichijima**	**12.69**	**185**	Pn	**Pn**	**03 43 46.6**	**-4.5**
	comp=Z,8.6nm,0.3s,baz=81,slow=22,SNR=13						
JCJ				LR	LR	03 50 25.7	
	comp=Z,4μm,20.7s,baz=360,slow=46						
TJN	**Taejon**	**13.02**	**260**	*ce*P	**Pn**	**03 43 57.4**	**+1.9**
INCN	**Inchon**	**13.25**	**265**	Pn	**Pn**	**03 43 59.3**	**+0.6**
SNR=13							
INCN	**Inchon**	**13.25**	**265**	P	**Pn**	**03 43 59.3**	**+0.6**
SNR=13							
INCN	**Inchon**	**13.25**	**265**	*e*Pn	**Pn**	**03 43 57.2**	**-1.5**
NKL	**Nikolayevsk**	**13.49**	**353**	*i* P	**Pn**	**03 44 00.5**	**-1.4**
NKL				*e*S	**Sn**	**03 46 30.0**	**-0.9**
NKL				pmax	pmax		
	comp=Z,250nm,1.0s						
NKL				pmax	pmax		
	comp=N,3μm,14.0s						
NKL				pmax	pmax		
	comp=Z,3μm,11.0s						
NKL				smax	smax		
	comp=N,3μm,12.0s						
NKL				smax	smax		
	comp=E,6μm,12.0s						
NKL				MLR	MLR		
	comp=N,18μm,14.0s						
NKL				MLR	MLR		
	comp=E,10μm,14.0s						
NKL				MLR	MLR		
	comp=Z,36μm,14.0s						
OKH	**Okha**	**13.78**	**359**	*e*P	**Pn**	**03 44 04.0**	**-1.7**
OKH				*e*S	**Sn**	**03 46 30.0**	**-7.8**
OKH				pmax	pmax		
	comp=Z,2μm,12.0s						
OKH				smax	smax		
	comp=N,3μm,7.0s						
OKH				smax	smax		
	comp=Z,52μm,16.0s						
CN2	**Changchun**	**13.92**	**293**	*e*P	**Pn**	**03 44 07.4**	**-0.4**
CN2				*e*pP	P	03 44 15.8	+0.1
CN2				*e*S	**Sn**	**03 46 39.1**	**-2.4**
CN2				pmax	pmax		
	comp=Z,40nm,1.4s						

SSE LR LR
comp=Z,20μm,14.0s
SSE LR LR
comp=Z,22μm,13.2s
MA2 Magadan 20.37 11 P **P** **03 45 25.5 -1.2**
comp=Z,176nm,0.7s,baz=214,slow=8.5,SNR=53
MA2 LR LR 03 54 02.2
comp=Z,7μm,19.5s,baz=217,slow=39
MA2 Magadan 20.37 11 P **P** **03 45 25.5 -1.2**
MA2 pmax pmax
comp=Z,153nm,0.8s
MA2 MLR MLR
comp=Z,7μm,19.5s
BJI Beijing 20.80 279 P **P** **03 45 29.4 -2.1**
BJI S **S** **03 49 22.4 0.0**
BJI pmax pmax
comp=Z,190nm,2.3s
BJI pmax pmax
comp=Z,4μm,8.4s
BJI LR LR
comp=Z,26μm,15.9s
BJI LR LR
comp=Z,45μm,16.2s
BJI LR LR
comp=Z,27μm,16.9s
BJT Baijiatuau 20.81 279 *e*P **P** **03 45 29.4 -2.2**
BJT pmax pmax
comp=Z,181nm,0.8s
BJT MLR MLR
comp=Z,42μm,18.0s
BJT Baijiatuau 20.81 279 *e*P **P** **03 45 29.4 -2.2**
comp=Z,181nm,0.8s
BJT LR LR
comp=Z,42μm,18.0s
CLNS Chul'man 20.89 331 *e*P **P** **03 45 31.7 -0.8**
CLNS *e* 03 45 46.5
CLNS *e*S **S** **03 49 20.7 -3.4**
CLNS *e* 03 49 36.0
CLNS pmax pmax
comp=Z,253nm,1.1s
CLNS pmax pmax
comp=E,110nm,1.1s
CLNS pmax pmax
comp=N,175nm,1.2s
CLNS pmax pmax
comp=Z,234nm,0.9s
CLNS pmax pmax
comp=N,154nm,1.0s
CLNS pmax pmax
comp=E,102nm,1.0s
CLNS smax smax
comp=E,3μm,11.0s
CLNS smax smax
comp=N,4μm,13.6s
CLNS MLR MLR
comp=N,25μm,15.0s
CLNS MLR MLR
comp=Z,33μm,15.0s
CLNS MLR MLR
comp=E,21μm,15.0s
TIA Tai'an 20.92 269 ⇑P **P** **03 45 30.9 -2.0**
TIA pP **pP** **03 45 40.8 +1.3**
TIA pmax pmax
comp=E,330nm,1.1s
TIA LR LR
comp=E,26μm,11.9s
TIA LR LR
comp=E,62μm,13.7s
TIA LR LR
comp=E,84μm,12.5s
NJ2 Nanjing 21.22 256 *e*P **P** **03 45 34.3 -1.8**
NJ2 S **S** **03 49 27.8 -3.0**
NJ2 pmax pmax
comp=E,4μm,9.8s
NJ2 LR LR
comp=E,33μm,15.7s
NJ2 LR LR
comp=E,22μm,14.6s
NJ2 LR LR
comp=E,34μm,16.3s
YOJ Yonaguni jima 22.92 234 *e*P **P** **03 45 51.2 -3.2**
YOJ pmax pmax
comp=Z,163nm,0.9s
YOJ MLR MLR
comp=Z,16μm,18.0s
YOJ Yonaguni jima 22.92 234 *e*P **P** **03 45 51.2 -3.2**
comp=Z,163nm,0.9s
YOJ LR LR
comp=Z,16μm,18.0s
TATO Taipei 23.53 238 *e*P **P** **03 45 59.3 -1.1**
comp=Z,460nm,1.1s
TATO LR LR
comp=Z,38μm,18.0s
YAK Yakutsk 23.78 344 P **P** **03 46 01.1 -1.4**
comp=Z,25nm,0.8s,baz=336,slow=23,SNR=30
YAK LR LR 03 55 44.3
comp=Z,11μm,21.7s,baz=154,slow=38
YAK Yakutsk 23.78 344*c i*P **P** **03 46 01.2 -1.3**
YAK *e**PP **pP** **03 46 08.4 -1.1**
YAK *e*PPP PPP 03 46 42.2
YAK *e* 03 49 43.6
YAK *e*S **S** **03 50 14.3 -2.1**
YAK *e*SS **SnSn** **03 50 55.7 +0.2**
YAK *e* 03 57 08.9
YAK pmax pmax
comp=Z,194nm,1.0s
YAK pmax pmax
comp=N,113nm,1.2s
YAK pmax pmax
comp=E,54nm,1.4s
YAK pmax pmax
comp=Z,688nm,2.3s
YAK pmax pmax
comp=N,993nm,2.5s
YAK pmax pmax
comp=E,625nm,2.0s
YAK smax smax
comp=N,2μm,3.0s
YAK smax smax
comp=E,732nm,2.7s
YAK MLR MLR
comp=Z,11μm,13.0s
YAK MLR MLR
comp=N,11μm,14.0s
YAK MLR MLR
comp=E,8μm,13.0s
YAK Yakutsk 23.78 344 *e*P **P** **03 46 01.8 -0.7**
comp=E,339nm,0.8s
SEY Seymchan 23.82 10 P **P** **03 46 03.1 +0.3**
comp=E,357nm,1.2s,baz=200,slow=8.5,SNR=130
SEY LR LR 03 57 13.7
comp=E,16μm,18.2s,baz=180,slow=41
SEY Seymchan 23.82 10*c i*P **P** **03 46 03.3 +0.4**
YHNB Yeheng 23.82 237 *e*P **P** **03 46 01.5 -1.9**
comp=E,137nm,0.9s
YHNB *e*Sn Sn 03 50 36.8 -3.9
YHNB LR LR
comp=Z,31μm,18.0s
CIT Chita 23.87 311 *e*P **P** **03 46 02.5 -1.1**
CIT *e* 03 46 14.4
CIT *e* 03 46 41.2
CIT *e* 03 46 49.9
CIT pmax pmax
comp=Z,2μm,2.4s
NACB Ninganchiao 24.03 236 *e*P **P** **03 46 03.3 -1.9**
comp=Z,162nm,0.8s
NACB LR LR
comp=Z,13μm,22.0s
TIY Taiyuan 24.12 275 *e*P **P** **03 46 03.1 -3.0**
TIY PP **PnPn** **03 46 42.5 +7.0**
TIY S **S** **03 50 18.0 -4.5**
TIY SS **SnSn** **03 51 11.1 +6.8**
TIY pmax pmax
comp=Z,2μm,7.7s
TIY LR LR
comp=Z,24μm,14.9s
TIY LR LR
comp=Z,17μm,15.2s
TIY LR LR
comp=Z,25μm,17.3s
HHC Hu-ho-hao-te 24.17 283 *e*P **P** **03 46 04.5 -2.1**
HHC sP pP 03 46 12.8 -0.8
HHC PP **PnPn** **03 46 37.4 +1.2**
HHC S **S** **03 50 19.3 -4.1**
HHC pmax pmax
comp=Z,2μm,4.2s
HHC LR LR
comp=Z,14μm,12.9s
HHC LR LR
comp=Z,13μm,12.1s
HHC LR LR
comp=Z,12μm,12.0s
SMY Shemya 24.70 48 *e*P **P** **03 46 08.3 -2.8**
SMY pmax pmax
comp=Z,420nm,1.3s
SMY Shemya 24.70 48 *e*P **P** **03 46 08.3 -2.8**
comp=Z,420nm,1.3s
SMY LR LR
comp=Z,7μm,21.0s
SSLB Suanglung 24.71 236 *e*P **P** **03 46 09.8 -1.8**
comp=Z,196nm,0.9s
SSLB LR LR
comp=Z,12μm,18.0s
YULB Yu-li 24.77 235 *e*P **P** **03 46 09.8 -2.3**
comp=Z,114nm,0.8s
YULB LR LR
comp=Z,12μm,20.0s
TPUB Ta-pu 25.27 236 *e*P **P** **03 46 15.1 -1.4**
comp=Z,195nm,0.9s
TPUB LR LR
comp=Z,19μm,20.0s
WHN Wuhan 25.32 258 ⇑P **P** **03 46 17.3 +0.4**
WHN S **S** **03 50 34.4 -7.3**
WHN pmax pmax
comp=Z,5μm,2.3s
WHN LR LR
comp=Z,64μm,15.6s
WHN LR LR
comp=Z,43μm,15.9s
WHN LR LR
comp=Z,77μm,17.4s
TWG Pinlang 25.33 235 *e*P **P** **03 46 16.6 -0.5**
comp=Z,3μm,1.4s
TWG LR LR
comp=Z,42μm,20.0s
BTO Baotou 25.37 283 *e*P **P** **03 46 15.3 -2.1**
QZH Quanzhou 25.48 242 ⇑*i*P **P** **03 46 12.3 -6.1**
QZH S **S** **03 50 37.5 -6.9**
QZH pmax pmax
comp=Z,2μm,2.2s
QZH pmax pmax
comp=Z,4μm,4.0s
QZH LR LR
comp=N,37μm,16.7s
QZH LR LR
comp=E,25μm,15.4s
QZH LR LR
comp=Z,41μm,16.0s
BOD Bodaibo 26.11 323 ⇓*i*P **P** **03 46 24.1 +0.3**
BOD pmax pmax
comp=Z,283nm,1.2s
GUMO Guam 26.13 177 LR LR 03 55 33.3
comp=Z,9μm,21.3s,baz=9.0,slow=34
GUMO Guam 26.13 177 *e*P **P** **03 46 22.0 -2.3**
GUMO pmax pmax
comp=Z,200nm,1.1s
GUMO Guam 26.13 177 *e*P **P** **03 46 24.1 -0.2**
comp=Z,204nm,1.1s
ULN Ulaanbaatar 27.18 299*c i*P **P** **03 46 35.0 +1.2**
ULN pmax pmax
comp=Z,422nm,1.3s
ULN Ulaanbaatar 27.18 299 P **P** **03 46 35.0 +1.2**
SNR=186
ULN Ulaanbaatar 27.18 299 P **P** **03 46 35.0 +1.2**
SNR=186
ULN Ulaanbaatar 27.18 299 *e*P **P** **03 46 33.9 +0.1**
comp=Z,471nm,1.3s
ULN LR LR
comp=Z,49μm,18.0s
SONA1 Songino Array 27.62 299 *e*P **P** **03 46 37.8 +0.1**
SONM Songino Array 27.62 299 P **P** **03 46 38.8 +1.1**
comp=Z,97nm,0.9s,baz=102,slow=9.2,SNR=258
SONM LR LR 03 58 18.2
comp=Z,49μm,18.8s,baz=98,slow=38
XAN Xi'an 27.98 269 P **P** **03 46 39.9 -1.1**
XAN pP sP 03 46 52.8 +1.8
XAN SS SS 03 52 40.0 -42
XAN pmax pmax
comp=Z,160nm,1.4s
XAN pmax pmax
comp=Z,2μm,12.3s
XAN LR LR
comp=Z,34μm,15.1s
XAN LR LR
comp=Z,33μm,16.2s
H11N2 WAKE ISLAND Hy 28.46 128 T T 04 17 38.5
baz=318,slow=75,SNR=1001
H11N1 WAKE ISLAND Hy 28.47 128 T T 04 17 39.6
baz=318,slow=75,SNR=1196
H11N3 WAKE ISLAND Hy 28.47 128 T T 04 17 39.1
baz=318,slow=75,SNR=979
ENH Enshi 29.14 262 *e*P **P** **03 46 51.2 -0.1**
comp=Z,418nm,0.8s
ENH LR LR
comp=Z,17μm,19.0s
H11S1 WAKE ISLAND Hy 29.28 130 T T 04 18 46.2
baz=319,slow=76,SNR=204
H11S3 WAKE ISLAND Hy 29.28 130 T T 04 18 44.5
baz=319,slow=76,SNR=214
H11S2 WAKE ISLAND Hy 29.29 130 T T 04 18 50.0
baz=319,slow=76,SNR=182
IRK Irkutsk 29.47 308 *e*P **P** **03 46 53.3 -0.7**
IRK pmax pmax
comp=Z,379nm,2.9s
TLY Talaya 29.77 307 P **P** **03 46 57.8 +1.2**
comp=Z,68nm,1.1s,baz=112,slow=6.8,SNR=37
TLY LR LR 03 59 37.9
comp=Z,15μm,18.1s,baz=94,slow=38
TLY Talaya 29.77 307*c i*P **P** **03 46 57.4 +0.7**
TLY *e* 03 48 04.4
TLY *e*S **S** **03 51 47.2 -4.4**
TLY *e*SSS SSS 03 53 22.5
TLY pmax pmax
comp=Z,109nm,1.1s
TLY MLR MLR
comp=Z,15μm,14.0s
TLY Talaya 29.77 307 *e*P **P** **03 46 57.8 +1.2**
comp=Z,345nm,1.8s
ZAK Zakamensk 29.85 304 *e*P **P** **03 46 58.1 +0.6**
ZAK pmax pmax
comp=Z,185nm,1.3s
HKC Hong Kong Obse 30.26 244 ⇑*i*P P 03 47 12.0 +11
GZH Guangzhou 30.32 246 P **P** **03 46 58.3 -3.5**
GZH S **S** **03 51 54.0 -6.6**
GZH LR LR
comp=Z,19μm,18.4s
GZH LR LR
comp=Z,22μm,18.0s
BILL Bilibino 30.97 17*c i*P **P** **03 47 07.6 +0.6**
BILL *e* 03 48 06.9
BILL *e*PPP PPP 03 48 19.4
BILL *i* S **S** **03 52 06.3 -3.7**
BILL pmax pmax
comp=Z,106nm,1.2s
BILL MLR MLR
comp=Z,11μm,16.0s
BILL Bilibino 30.97 17 *e*P **P** **03 47 07.6 +0.6**
comp=Z,144nm,1.4s
BILL LR LR
comp=Z,6μm,19.0s
LZH Lanzhou 31.18 276 *e*P **P** **03 47 09.9 +0.5**
LZH pP sP 03 47 21.0 +1.6
LZH sP pP 03 47 25.3 +8.8
LZH PP **PnPn** **03 48 13.0 +1.6**
LZH *e*S **S** **03 52 14.5 +0.3**
LZH sS sS 03 52 29.5 +3.6
LZH SS **SnSn** **03 53 55.1 -1.7**
LZH pmax pmax
comp=Z,280nm,1.1s
LZH pmax pmax
comp=Z,1μm,6.3s
LZH LR LR
comp=Z,17μm,13.2s
LZH LR LR
comp=Z,45μm,14.2s
LZH LR LR
comp=Z,44μm,14.3s
MOY Mondy 31.41 306 *e*P **P** **03 47 12.0 +0.7**
MOY pmax pmax
comp=Z,240nm,2.4s
TIXI Tiksi 32.77 352*c i*P **P** **03 47 22.7 -0.1**
TIXI pmax pmax
comp=Z,38nm,1.2s
TIXI Tiksi 32.77 352 *e*P **P** **03 47 22.6 -0.2**
comp=Z,38nm,1.0s
TIXI LR LR
comp=Z,12μm,20.0s
GYA Guiyang 33.21 258 ⇑*i*P **P** **03 47 26.9 -0.4**
GYA pP sP 03 47 39.4 +2.0
GYA PP **PP** **03 48 41.3 -1.2**
GYA PcP **PcP** **03 50 12.0 +2.4**
GYA S **S** **03 52 44.3 -1.7**
GYA sS sS 03 53 02.8 +5.1
GYA ScP **ScP** **03 53 51.6 -0.8**
GYA SS **SnSn** **03 54 47.0 +0.6**
GYA ScS **ScS** **03 57 51.9 -1.3**
GYA pmax pmax
comp=Z,320nm,0.9s
GYA pmax pmax
comp=Z,1μm,10.3s
GYA LR LR
comp=Z,14μm,18.4s
GYA LR LR
comp=Z,10μm,18.5s
GYA LR LR
comp=Z,10μm,20.2s
CD2 Chengdu 33.24 267 P **P** **03 47 26.8 -0.6**
CD2 sP sP 03 47 41.3 +3.9
CD2 PP **PP** **03 48 42.1 -0.6**
CD2 S **S** **03 52 41.8 -4.4**
CD2 sS sS 03 53 01.6 +3.7
CD2 pmax pmax
comp=Z,270nm,0.9s
CD2 pmax pmax
comp=Z,3μm,9.4s
CD2 LR LR
comp=Z,45μm,13.2s
CD2 LR LR
comp=Z,48μm,14.4s
GTA Gaotai 33.28 284 ⇑P **P** **03 47 28.6 +0.8**
GTA pP sP 03 47 37.9 +0.1
GTA sP pP 03 47 41.9 +7.0
GTA PP **PP** **03 48 40.9 -2.2**
GTA PcP **PcP** **03 50 14.3 +4.7**
GTA S **S** **03 52 46.3 -0.5**
GTA sS sS 03 53 01.5 +3.0
GTA PcS **PcS** **03 53 55.9 +0.6**
GTA ScS **ScS** **03 57 52.9 -0.3**
GTA pmax pmax
comp=Z,100nm,1.4s
GTA pmax pmax
comp=Z,2μm,6.9s
GTA LR LR
comp=Z,13μm,18.5s
GTA LR LR
comp=Z,49μm,17.6s
GTA LR LR
comp=Z,58μm,17.6s
MIDW Midway 34.32 97 *e*P **P** **03 47 33.7 -3.1**
comp=Z,201nm,1.2s
MIDW LR LR
comp=Z,6μm,19.0s
NIKH Nikolski High 34.87 52 PFAKE 03 47 50.0 +8.7
NIKH LR LR
comp=Z,6μm,20.0s
QIZ Qiongzhong 35.45 244 P **P** **03 47 48.1 +1.5**
QIZ PP **PP** **03 49 09.1 +1.9**
QIZ S **S** **03 53 24.0 +3.7**
QIZ pmax pmax
comp=Z,56nm,2.1s
QIZ LR LR
comp=Z,16μm,14.1s
QIZ LR LR
comp=Z,10μm,16.3s
QIZ LR LR
comp=Z,17μm,17.8s
QIZ Qiongzhong 35.45 244 *e*P **P** **03 47 45.8 -0.8**
comp=Z,224nm,1.7s
QIZ LR LR
comp=Z,17μm,18.0s
PATS Pohnpei 35.46 154 *e*P **P** **03 47 44.0 -2.7**
comp=Z,422nm,1.5s
PATS LR LR
comp=Z,10μm,20.0s
GAMB Gambell 35.60 33 *e*P **P** **03 47 46.8 -0.6**
comp=Z,85nm,1.5s
GAMB LR LR
comp=Z,8μm,19.0s
DAV Davao City (W) 36.26 211 LR LR 04 03 21.6
comp=Z,4μm,19.4s,baz=47,slow=37
UNV Unalaska Valle 36.31 50 PFAKE 03 48 00.0 +6.4
UNV LR LR
comp=Z,4μm,20.0s
AKUT Akutan 36.75 50 *e*P **P** **03 47 56.0 -1.4**
comp=Z,76nm,1.4s
AKUT LR LR
comp=Z,5μm,20.0s
KMI Kunming 36.90 259 P **P** **03 47 59.8 +0.5**
KMI pP sP 03 48 09.8 +0.5
KMI sP pP 03 48 15.8 +9.4
KMI PP **PnPn** **03 49 24.3 +0.7**
KMI S **S** **03 53 36.3 -6.7**
KMI sS sS 03 53 55.0 +0.2
KMI SS **SnSn** **03 56 03.1 -13**
KMI pmax pmax
comp=Z,180nm,2.0s
KMI pmax pmax
comp=Z,2μm,8.5s
KMI LR LR
comp=Z,13μm,16.0s
KMI LR LR
comp=Z,21μm,15.8s
KMI LR LR
comp=Z,25μm,15.3s
KWAJ Kwajalein Atol 37.72 138 *e*P **P** **03 48 04.0 -1.9**
KWAJ pmax pmax
comp=Z,150nm,1.0s
TNA Tin City 37.73 31 *e*P **P** **03 48 07.0 +1.5**
comp=Z,186nm,1.4s
TNA LR LR
comp=Z,6μm,18.0s
FALS False Pass 38.14 49 PFAKE 03 48 20.0 +11
FALS LR LR
comp=Z,7μm,19.0s
SGSI Sangihe 39.38 209 P **P** **03 48 23.8 +3.9**
SDPT Sand Point 39.83 48 *e*P **P** **03 48 21.1 -2.1**
comp=Z,73nm,1.2s
SDPT LR LR
comp=Z,3μm,20.0s
NONG Nongkai 40.84 250 P **P** **03 48 33.0 +1.0**
comp=Z,112nm,1.1s,comp=Z,2μm
WMQ Urumqi 41.00 294 P **P** **03 48 36.5 +3.3**
WMQ pP sP 03 48 44.6 +1.3
WMQ S **S** **03 54 42.3 -1.7**
WMQ pmax pmax
comp=Z,190nm,1.0s
WMQ pmax pmax
comp=Z,1μm,8.0s
WMQ LR LR
comp=Z,4μm,12.6s
WMQ LR LR
comp=Z,3μm,15.6s
UBPT Khong Chiam 41.05 244 P **P** **03 48 35.7 +2.0**
comp=Z,64nm,1.4s
MYLDM Lahad Datu 41.08 220 *e*P **P** **03 48 35.5 +1.5**
comp=Z,373nm,1.3s
MYLDM *e*PP PP 03 50 00.2 -8.8
MYLDM *e*PcP **PcP** **03 50 28.1 -5.3**
ZAA0 Zalesovo Array 41.23 310 *e*P **P** **03 48 34.6 -0.2**
ZALV Zalesovo Beam 41.23 310 P **P** **03 48 35.3 +0.4**
comp=Z,65nm,0.6s,baz=84,slow=6.1,SNR=48
ZALV PcP **PcP** **03 50 35.3 +1.9**
comp=Z,41nm,0.8s,baz=72,slow=3.6,SNR=3.5
ZALV LR LR 04 06 31.4
comp=Z,12μm,20.3s,baz=76,slow=37
SDKM Sandakan 41.34 222 ⇓P **P** **03 48 37.8 +1.6**
NRIK Noril'sk 41.43 334 P **P** **03 48 36.9 +0.6**
comp=Z,38nm,1.0s,baz=108,slow=8.2,SNR=54
NRIK LR LR 04 07 29.5
comp=Z,20μm,18.2s,baz=102,slow=39
KKM Kota Kinabalu 41.51 223 ⇑P **P** **03 48 39.4 +1.8**
KKM Kota Kinabalu 41.51 223 *e*P **P** **03 48 37.7 +0.1**
comp=Z,151nm,1.3s
KKM LR LR
comp=Z,7μm,20.0s
CRAI Chiangrai 41.52 255 P **P** **03 48 38.6 +1.0**
comp=Z,846nm,1.3s,comp=Z,14μm
MANU Manus Island 41.79 174 *e*P **P** **03 48 38.8 -1.0**

comp=Z,47nm,1.2s
MANU LR LR
comp=Z,4μm,20.0s
SWI Sorong 41.93 198 P **P 03 48 43.1 +2.2**
comp=Z,65nm,1.2s,comp=Z,2μm
RKPI Ransiki, Papua 41.94 194 P **P 03 48 40.5 -0.5**
NVS Novosibirsk 42.08 312 ⇓*i*P **P 03 48 43.2 +1.4**
NVS pmax pmax
comp=Z,511nm,2.1s
NVS pmax pmax
comp=N,114nm,2.0s
NVS pmax pmax
comp=E,323nm,2.0s
TSM Tawau 42.16 220 ⇑P **P 03 48 44.6 +1.8**
JAY Jayapura 42.16 184 P **P 03 48 44.1 +1.3**
comp=E,47nm,1.5s,comp=E,556nm
KHON Khomkaen 42.20 248 P **P 03 48 44.5 +1.3**
comp=E,56nm,0.9s,comp=E,2μm
TT01 Tatalina 42.31 36 *e*P **P 03 48 45.2 +1.6**
TTA Tatalina 42.32 36 *e*P **P 03 48 43.2 -0.5**
TTA pmax pmax
comp=Z,49nm,1.3s
TTA MLR MLR
comp=Z,5μm,19.0s
TTA Tatalina 42.32 36 *e*P **P 03 48 43.2 -0.5**
comp=Z,48nm,1.3s
TTA LR LR
comp=Z,5μm,19.0s
ZSN Zaisan 42.43 301 *i*P **P 03 48 43.2 -1.6**
comp=Z,832nm,1.4s
ZSN *e*S **S 03 55 03.1 -1.9**
ZSN LR LR 04 06 26.6
comp=Z,9μm,13.1s
SVW2 Sparrevohn 42.44 39 *e*P **P 03 48 44.4 -0.3**
comp=Z,46nm,1.0s
LOEI Loei 42.56 251 P **P 03 48 44.1 -2.0**
comp=Z,97nm,1.0s,comp=Z,1μm
UTTA Uttaradit 42.93 252 P **P 03 48 50.2 +1.1**
comp=Z,35nm,0.9s,comp=Z,284nm
CHAI Chaiyaphum 43.09 248 P **P 03 48 51.1 +0.7**
comp=Z,51nm,0.9s
LAMP Lampang 43.12 254 P **P 03 48 52.1 +1.5**
comp=Z,36nm,0.9s,comp=Z,295nm
PBKT Sadao Pong 43.38 250 P **P 03 48 53.5 +0.8**
comp=Z,100nm,1.5s,comp=Z,4μm
CMMT Chiang Mai 43.44 254 P **P 03 48 54.1 +0.8**
comp=Z,84nm,1.4s,comp=Z,2μm
CHTO Chiang Mai 43.44 254 P **P 03 48 54.1 +0.8**
comp=Z,376nm,1.0s,comp=Z,8μm
CHTO Chiang Mai 43.44 254 *e*P **P 03 48 53.9 +0.6**
CHTO pmax pmax
comp=Z,77nm,1.0s
CHTO Chiang Mai 43.44 254 P **P 03 48 53.9 +0.6**
SNR=32
CHTO Chiang Mai 43.44 254 P **P 03 48 53.9 +0.6**
SNR=32
CHTO Chiang Mai 43.44 254 *e*P **P 03 48 53.9 +0.6**
comp=Z,77nm,1.0s
CHTO LR LR
comp=Z,14μm,18.0s
LSA Lhasa 43.50 273 P **P 03 48 55.4 +1.2**
LSA LR LR
comp=Z,3μm,18.8s
LSA Lhasa 43.50 273 *e*P **P 03 48 55.2 +1.0**
LSA pmax pmax
comp=Z,233nm,1.4s
LSA MLR MLR
comp=Z,28μm,18.0s
LSA Lhasa 43.50 273 *e*P **P 03 48 55.2 +1.0**
comp=Z,233nm,1.4s
LSA LR LR
comp=Z,28μm,18.0s
CM31 Chiang Mai Arr 43.67 254 *e*P **P 03 48 55.5 +0.4**
CMAR Chiang Mai Arr 43.67 254 P **P 03 48 55.5 +0.4**
comp=Z,20nm,0.8s,baz=46,slow=7.2,SNR=35
CMAR LR LR 04 08 22.5
comp=Z,6μm,18.0s,baz=57,slow=38
CM01 Chiang Mai Arr 43.68 254 *e*P **P 03 48 55.0 -0.2**
FAKI Fak Fak 43.69 196 P **P 03 48 55.6 +0.4**
comp=Z,82nm,1.4s,comp=Z,1μm
FAKI Fak Fak 43.69 196 *e*P **P 03 48 53.4 -1.8**
comp=Z,135nm,1.3s
FAKI LR LR
comp=Z,6μm,20.0s
MRSI Marisa 43.71 212 P **P 03 48 56.7 +1.3**
comp=Z,148nm,1.3s,comp=Z,3μm
OHAK Old Harbor 43.74 45 *e*P **P 03 48 54.4 -0.7**
comp=Z,125nm,1.3s
OHAK LR LR
comp=Z,6μm,19.0s
RSO Redoubt South 43.83 40 *e*P **P 03 48 58.2 +2.1**
MK01 Makanchi Array 43.98 300 *e*P **P 03 48 57.9 +0.5**
MK31 Makanchi Array 43.98 300 *e*P **P 03 48 58.0 +0.7**
MK31 Makanchi Array 43.98 300 *e*P **P 03 48 58.0 +0.7**
MKAR Makanchi Array 43.98 300 P **P 03 48 58.0 +0.6**
comp=Z,81nm,0.8s,baz=82,slow=8.9,SNR=337
MKAR LR LR 04 08 15.8
comp=Z,23μm,18.7s,baz=69,slow=37
MKAR Makanchi Array 43.98 300 *e*P **P 03 48 58.0 +0.6**
MKAR Makanchi Array 43.98 300 *e*P **P 03 48 58.0 +0.6**
PPLA Purkeypile 44.07 36 *e*P **P 03 48 58.1 +0.2**
comp=Z,156nm,1.2s
KDAK Kodiak Island 44.07 44 *e*P **P 03 48 56.9 -0.9**
KDAK pmax pmax
comp=Z,220nm,1.1s
KDAK MLR MLR
comp=Z,6μm,19.0s
KDAK Kodiak Island 44.07 44 *e*P **P 03 48 56.9 -0.9**
comp=Z,220nm,1.1s
KDAK LR LR
comp=Z,6μm,19.0s
CAST Castle Rocks 44.12 36 *e*P **P 03 48 59.8 +1.6**
comp=Z,77nm,1.1s
SPU Mount Spurr 44.15 39 *e*P **P 03 48 59.8 +1.2**
MAKZ Makanchi 44.19 300 *e*P **P 03 48 59.4 +0.4**
MAKZ pmax pmax
comp=Z,178nm,1.0s
MAKZ MLR MLR
comp=Z,29μm,18.0s
MAKZ Makanchi 44.19 300 *e*P **P 03 48 59.4 +0.4**
comp=Z,178nm,1.0s
MAKZ LR LR
comp=Z,29μm,18.0s
SRAK Srakaew 44.32 246 P **P 03 48 58.3 -2.0**
comp=Z,319nm,1.3s,comp=Z,3μm
HOM Homer 44.42 41 *e*P **P 03 49 03.2 +2.6**
comp=Z,331nm,1.0s
HOM LR LR
comp=Z,3μm,18.0s
SEM Semipalatinsk 44.51 306 *i*P **P 03 49 00.4 -1.0**
comp=Z,832nm,1.3s
SEM *e*S **S 03 55 33.9 -1.4**
SEM LR LR 04 07 33.3
comp=Z,4μm,15.3s
SANI Sanana 44.56 205 P **P 03 48 59.8 -2.4**
comp=Z,113nm,1.2s,comp=Z,2μm
BPAW Bear Paw Mtn. 44.61 35 *e*P **P 03 49 03.5 +1.3**
comp=Z,73nm,1.2s
BPAW LR LR
comp=Z,4μm,19.0s
KTH Kantishna Hill 44.64 36 *e*P **P 03 49 04.0 +1.6**
comp=Z,256nm,1.2s
MLY Manley 44.73 33 *e*P **P 03 49 05.0 +1.9**
comp=Z,122nm,1.1s
MLY LR LR
comp=Z,4μm,20.0s
LUWI Luwuk 44.77 210 P P 03 49 11.7 +7.8
LUWI Luwuk 44.77 210 *e*P **P 03 49 01.7 -2.2**
comp=Z,472nm,1.6s
BRLK Bradley Lake 44.80 41 *e*P **P 03 49 00.7 -3.0**
comp=Z,127nm,1.5s
BRLK LR LR
comp=Z,4μm,21.0s
TRF Thorofare Moun 44.93 36 *e*P **P 03 49 02.8 -2.1**
comp=Z,53nm,0.9s
TRF LR LR
comp=Z,4μm,19.0s
CHBT CHBT 44.98 245 P **P 03 49 06.9 +1.3**
comp=Z,183nm,1.8s,comp=Z,3μm
COLD Coldfoot 45.03 30 *e*P **P 03 49 06.1 +0.7**
comp=Z,50nm,1.1s
COLD LR LR
comp=Z,4μm,18.0s
RC01 Rabbit Creek A 45.28 39 *e*P **P 03 49 07.5 0.0**
comp=Z,150nm,1.1s
RC01 LR LR
comp=Z,5μm,18.0s
BWN Browne 45.28 35 *e*P **P 03 49 09.1 +1.7**
comp=Z,465nm,1.1s
BWN LR LR
comp=Z,4μm,20.0s
KURK Kurchatov 45.47 306 *e*P **P 03 49 09.7 +0.6**
KURK pmax pmax
comp=Z,290nm,0.8s
KURK Kurchatov 45.47 306 *e*P **P 03 49 09.7 +0.6**
comp=Z,288nm,0.8s
KURK LR LR
comp=Z,5μm,18.0s
SEW Seward 45.49 40 *e*P **P 03 49 07.6 -1.5**
comp=Z,65nm,1.0s
SEW LR LR
comp=Z,6μm,19.0s
MCK McKinley 45.52 35 *e*P **P 03 49 10.9 +1.5**
MCK pmax pmax
comp=Z,140nm,1.1s
MCK McKinley 45.52 35 *e*P **P 03 49 10.9 +1.5**
comp=Z,139nm,1.1s
MCK LR LR
comp=Z,4μm,18.0s
PMR Palmer 45.54 38 *e*P **P 03 49 10.4 +1.0**
PMR pmax pmax
comp=Z,110nm,1.1s
PMR Palmer 45.54 38 *e*P **P 03 49 10.4 +1.0**
comp=Z,110nm,1.1s
PMR LR LR
comp=Z,4μm,20.0s
BTM Bintulu 45.57 225 ⇑P **P 03 49 12.0 +1.7**
RND Reindeer 45.57 36 *e*P **P 03 49 10.6 +0.8**
RND pmax pmax
comp=Z,190nm,1.1s
RND Reindeer 45.57 36 *e*P **P 03 49 10.6 +0.8**
comp=Z,191nm,1.1s
RND LR LR
comp=Z,5μm,20.0s
MDM Murphy Dome 45.80 34 *e*P **P 03 49 12.9 +1.3**
comp=Z,166nm,1.0s
WRH Wood River Hil 45.87 34 *e*P **P 03 49 12.5 +0.4**
comp=Z,76nm,1.2s
WRH LR LR
comp=Z,4μm,19.0s
PATY Pattaya 45.89 246 P **P 03 49 16.8 +4.0**
comp=Z,27nm,0.9s
SML Sawmill 45.90 38 *e*P **P 03 49 13.1 +0.7**
SML pmax pmax
comp=Z,281nm,1.4s
SML MLR MLR
comp=Z,5μm,20.0s
SML Sawmill 45.90 38 *e*P **P 03 49 13.1 +0.7**
comp=Z,281nm,1.4s
SML LR LR
comp=Z,5μm,20.0s
COLA College 45.96 34 *c i*P **P 03 49 14.4 +1.6**
COLA pmax pmax
comp=Z,68nm,1.6s
COLA College 45.96 34 *e*P **P 03 49 13.8 +1.0**
comp=Z,72nm,0.8s
CCB Clear Creek Bu 45.99 34 *e*P **P 03 49 14.4 +1.4**
comp=Z,44nm,1.0s
CCB LR LR
comp=Z,3μm,20.0s
SRDT SRDT 46.18 249 P **P 03 49 17.0 +1.9**
comp=Z,182nm,1.6s
KHLT Khaolaem Dam 46.27 250 P **P 03 49 17.9 +2.1**
comp=Z,31nm,1.6s,comp=Z,662nm
HDA Harding Lake 46.37 34 PFAKE 03 49 30.0 +14
HDA LR LR
comp=Z,4μm,19.0s
SCM Sheep Creek Mo 46.38 38 *e*P **P 03 49 15.9 -0.3**
SCM pmax pmax
comp=Z,120nm,1.0s
SCM Sheep Creek Mo 46.38 38 *e*P **P 03 49 15.9 -0.3**
comp=Z,116nm,1.0s
SCM LR LR
comp=Z,3μm,21.0s
IL1 Eielson Array 46.38 34 *e*P **P 03 49 16.5 +0.4**
ILAR Eielson Array 46.38 34 P **P 03 49 16.9 +0.8**
comp=Z,33nm,0.7s,baz=259,slow=6.4,SNR=137
ILB Eielson Array 46.38 34 *e*P **P 03 49 16.7 +0.6**
SHLS Shalkode 46.64 296 *i*P **P 03 49 17.9 -0.8**
comp=Z,579nm,1.1s
SHLS *e*S **S 03 56 05.0 -1.6**
SHLS LR LR 04 09 05.1
comp=Z,9μm,15.9s
SBUM Sibu 46.66 225 ⇑P **P 03 49 20.3 +1.5**
SBUM Sibu 46.66 225 *e*P **P 03 49 18.9 0.0**
comp=Z,53nm,1.1s
SBUM LR LR
comp=Z,6μm,19.0s
PHET Kaeng Krachan 46.78 248 P **P 03 49 21.7 +1.9**
comp=Z,54nm,0.8s,comp=Z,450nm
TARA Tarawa 46.78 137 *e*P **P 03 49 21.1 +1.4**
comp=Z,659nm,1.7s
TARA LR LR
comp=Z,8μm,20.0s
JOHN Johnston Islan 46.80 105 PFAKE 03 49 30.0 +10
JOHN LR LR
comp=Z,10μm,20.0s
PDGK Podgornoye 46.86 296 P **P 03 49 20.6 +0.5**
PDGK pmax pmax
comp=Z,233nm,1.2s
FYU Fort Yukon 46.98 31 *e*P **P 03 49 22.2 +1.5**
comp=Z,445nm,1.4s
KLU Klutina 47.08 38 *e*P **P 03 49 23.3 +1.6**
comp=Z,137nm,1.1s
KLU LR LR
comp=Z,4μm,20.0s
PAX Paxson 47.13 36 *e*P **P 03 49 24.0 +1.9**
PAX pmax pmax
comp=Z,77nm,1.1s
PAX Paxson 47.13 36 *e*P **P 03 49 24.0 +1.9**
comp=Z,77nm,1.2s
PAX LR LR
comp=Z,6μm,20.0s
DIV Divide 47.19 39 *e*P **P 03 49 24.5 +1.9**
comp=Z,217nm,1.1s
DIV LR LR
comp=Z,6μm,20.0s
UZB Uzynbulak 47.24 296 *i*P **P 03 49 21.8 -1.5**
comp=Z,745nm,1.6s
UZB *i*S **S 03 56 13.5 -1.6**
UZB LR LR 04 09 50.5
comp=Z,10μm,16.8s
EYAK Cordova Ski Ar 47.28 39 *e*P **P 03 49 23.3 +0.2**
comp=Z,90nm,1.0s
EYAK LR LR
comp=Z,6μm,20.0s
KPKS Kokpek 47.37 297 *i*P **P 03 49 23.8 -0.5**
comp=Z,2μm,1.3s
KPKS *e*S **S 03 56 16.0 -0.8**
KPKS LR LR 04 10 00.2
comp=Z,6μm,15.3s
BKB Balikpapan 47.47 217 P **P 03 49 28.0 +2.9**
comp=Z,326nm,1.5s
KDI Kendari 47.51 209 P **P 03 49 26.7 +1.3**
comp=Z,63nm,1.5s,comp=Z,1μm
DOT Dot Lake 47.70 35 *e*P **P 03 49 27.0 +0.6**
comp=Z,98nm,0.9s
DOT LR LR
comp=Z,14μm,20.0s
SATY Saty 47.70 296 *i*P **P 03 49 26.5 -0.4**
comp=Z,1μm,1.8s
SATY LR LR 04 09 42.4
comp=Z,14μm,16.7s
TTSI Tana Toraja 47.77 213 P **P 03 49 29.0 +1.5**
comp=Z,34nm,1.4s,comp=Z,1μm
BMRM Bremner River 47.78 39 *e*P **P 03 49 27.4 +0.3**
comp=Z,109nm,1.0s
BMRM LR LR
comp=Z,4μm,20.0s
RAGM Ragged Mountai 47.83 40 *e*P **P 03 49 27.6 +0.1**
comp=Z,261nm,1.5s
RAGM LR LR
comp=Z,6μm,19.0s
MENT Mentasta 47.93 36 *e*P **P 03 49 29.8 +1.6**
comp=Z,60nm,1.0s
MENT LR LR
comp=Z,4μm,20.0s
GUN Gumba 48.41 274 *e*P **P 03 49 33.6 +0.8**
comp=Z,1μm,0.9s
KSM Kuching 48.53 227 ⇓P **P 03 49 34.8 +1.5**
KSM Kuching 48.53 227 *e*P **P 03 49 34.3 +1.0**
comp=Z,74nm,1.0s
KSM *e*PP **PP 03 51 23.5 -2.9**
KSM LR LR
comp=Z,4μm,18.0s
MDOK Medeo 48.60 297 *i*P **P 03 49 33.0 -0.8**
comp=Z,748nm,1.4s
MDOK *e*S **S 03 56 33.0 -1.3**
MDOK LR LR 04 10 17.4
comp=Z,14μm,17.3s
SPSI Sidrap Palu 48.63 212 P **P 03 49 35.0 +1.0**
comp=Z,66nm,1.2s
AAA Alma-Ata 48.63 297 *e*P **P 03 49 36.1 +2.1**
AAA *e*S **S 03 56 37.3 +2.7**
AAA pmax pmax
comp=Z,3μm,14.6s
AAA smax smax
comp=E,4μm,16.8s
AAA MLR MLR
comp=Z,34μm,19.0s
SAUI Saumlaki 48.81 196 P **P 03 49 38.4 +3.0**
comp=Z,618nm,1.2s
EGAK Eagle 48.82 33 *e*P **P 03 49 35.9 +0.8**
comp=Z,94nm,1.3s
EGAK *e*PcP **PcP 03 50 58.6 -0.8**
KUU Kurty 48.84 298 *i*P **P 03 49 34.5 -1.0**
comp=Z,2μm,1.0s
KUU *e*S **S 03 56 36.2 -1.2**
KUU LR LR 04 10 29.8
comp=Z,12μm,16.0s
BALM Baldy 48.85 38 *e*P **P 03 49 37.4 +1.9**
BALM pmax pmax
comp=Z,69nm,1.0s
BALM Baldy 48.85 38 *e*P **P 03 49 37.4 +1.9**
comp=Z,69nm,1.0s
KKN Kakani 48.93 274 *e*P **P 03 49 37.5 +0.9**
comp=Z,603nm,0.7s
PKIN Phulchoki 48.95 274 *e*P **P 03 49 37.4 +0.6**
comp=Z,194nm,0.8s
PMG Port Moresby 49.07 175 LR LR 04 05 56.2
comp=Z,2μm,21.4s,baz=357,slow=31
PMG Port Moresby 49.07 175 *e*P **P 03 49 37.2 -0.2**
PMG pmax pmax
comp=Z,23nm,0.9s
PMG Port Moresby 49.07 175 *e*P **P 03 49 37.2 -0.2**
comp=Z,23nm,0.8s
DMN Daman 49.15 274 *e*P **P 03 49 39.2 +0.8**
comp=Z,751nm,1.3s
GKN Gorkha 49.32 275 *e*P **P 03 49 40.2 +0.7**
comp=Z,299nm,0.7s
BMNS Besmoynak 49.56 297 *i*P **P 03 49 40.9 -0.4**
comp=Z,3μm,1.2s
BMNS *e*S **S 03 56 46.9 -1.0**
BMNS LR LR 04 10 57.4
comp=Z,5μm,14.2s
CHKZ Chkalovo 49.56 312 P **P 03 49 41.5 +0.7**
CHKZ pmax pmax
comp=Z,230nm,1.2s
KAPI Kappang 49.59 212 *e*P **P 03 49 40.8 -0.6**
comp=Z,214nm,1.3s
TKM2 Tokmak 2 49.68 297 P **P 03 49 43.8 +1.6**
TKM2 pmax pmax
comp=Z,344nm,1.1s
TKM2 Tokmak 2 49.68 297 *e*P **P 03 49 42.7 +0.5**
comp=Z,322nm,0.9s
TKM2 LR LR
comp=Z,23μm,18.0s
DAWY Dawson 49.69 34 *e*P **P 03 49 43.0 +1.3**
comp=Z,28nm,1.1s
DAWY LR LR
comp=Z,4μm,20.0s
KTGM Kuala Trenggan 49.84 237 ⇓P **P 03 49 45.5 +2.2**
BVA0 Borovoye Array 49.87 311 P **P 03 49 43.8 +0.6**
BVA0 pmax pmax
comp=Z,150nm,1.0s
BVAR Borovoye Array 49.87 311 P **P 03 49 43.9 +0.7**
comp=Z,73nm,0.8s,baz=78,slow=7.9,SNR=17
BRVK Borovoye 49.92 311 P **P 03 49 44.4 +0.8**
BRVK pmax pmax
comp=Z,283nm,0.9s
BRVK Borovoye 49.92 311 *e*P **P 03 49 44.0 +0.4**
comp=Z,178nm,0.9s
BRVK *e*PcP **PcP 03 51 06.3 +2.7**
BRVK LR LR
comp=Z,14μm,21.0s
OTUK Ortayu 50.07 304 P **P 03 49 45.0 +0.2**
OTUK pmax pmax
comp=Z,92nm,1.1s
SURT Suratani 50.10 245 P **P 03 49 47.4 +2.0**
comp=Z,46nm,1.2s,comp=Z,602nm
SKLT Songkhla 50.13 241 P **P 03 49 48.8 +3.2**
comp=Z,101nm,1.3s
KOLN Koldanda 50.23 275 *e*P **P 03 49 47.4 +0.9**
comp=Z,637nm,1.1s
TRTT Trang 50.28 243 P **P 03 49 48.3 +1.5**
comp=Z,76nm,1.5s,comp=Z,1μm
BSSI Bau Bau, Buton 50.32 210 P **P 03 49 49.6 +2.6**
comp=Z,103nm,1.0s,comp=Z,2μm
FRU Bishkek 50.38 297 ⇑*i*P **P 03 49 48.0 +0.7**
FRU *i* 03 51 46.0
FRU *e*S **S 03 57 02.0 +2.9**
FRU *e* 03 57 18.0
FRU pmax pmax
comp=Z,540nm,2.0s
PYUN Piuthan 50.53 276 *e*P **P 03 49 49.8 +1.0**
comp=Z,1μm,1.0s
AAK Ala-Archa 50.54 297 P **P 03 49 49.3 +0.6**
AAK pmax pmax
comp=Z,151nm,1.3s
AAK Ala-Archa 50.54 297 *e*P **P 03 49 49.3 +0.6**
comp=Z,156nm,1.3s
AAK LR LR
comp=Z,19μm,19.0s
KSH Kashi 50.69 293 P **P 03 49 54.5 +4.7**
KSH *e*pP sP 03 50 04.9 +4.9
KSH *e*sP pP 03 50 08.8 +12
KSH *e*PP **PP 03 51 51.5 +5.8**
KSH PcS **PcS 03 55 08.3 +3.9**
KSH S **S 03 57 07.0 +3.4**
KSH ScS **ScS 03 59 40.4 +1.2**
KSH pmax pmax
comp=Z,130nm,1.2s
KSH pmax pmax
comp=Z,740nm,3.6s
KSH LR LR
comp=Z,13μm,15.2s
KSH LR LR
comp=Z,15μm,16.3s
KSH LR LR
comp=Z,27μm,16.8s
ZRNK Zerenda 50.69 311 *e*P **P 03 49 50.0 +0.6**
ZRNK pmax pmax
comp=Z,240nm,1.1s
ZRNK Zerenda 50.69 311 *e*P **P 03 49 50.0 +0.6**
comp=Z,237nm,1.1s
ZRNK LR LR
comp=Z,13μm,21.0s
EKS2 Erkin-Say 51.02 297 *e*P **P 03 49 53.1 +0.8**
EKS2 pmax pmax
comp=Z,96nm,0.9s
EKS2 Erkin-Say 51.02 297 *e*P **P 03 49 53.1 +0.8**
comp=Z,96nm,0.9s
EKS2 LR LR
comp=Z,13μm,18.0s
INK Inuvik 51.26 28 *e*P **P 03 49 54.6 +1.2**
INK pmax pmax
comp=Z,69nm,0.8s
INK MLR MLR
comp=Z,4μm,20.0s
INK Inuvik 51.26 28 *e*P **P 03 49 54.6 +1.2**
comp=Z,69nm,0.8s
INK LR LR
comp=Z,4μm,20.0s
HNR Honiara 51.34 159 LR LR 04 09 20.3
comp=Z,6μm,21.9s,baz=327,slow=33
KULM Kulim 51.49 240 *e*P **P 03 49 57.1 +1.2**
comp=Z,83nm,1.0s
KULM LR LR
comp=Z,4μm,21.0s
IPM Ipoh 51.85 239 *e*P **P 03 49 59.5 +0.9**
comp=Z,95nm,1.1s
IPM LR LR
comp=Z,7μm,20.0s
JOSI Joshimath 51.95 281 *e*P **P 03 50 00.5 +1.0**
MNAS Manas 51.96 297 P **P 03 50 00.4 +1.1**
MNAS pmax pmax
comp=Z,227nm,1.0s
MMRI Maumere 51.98 207 P **P 03 50 00.2 +0.8**
comp=Z,232nm,1.5s,comp=Z,4μm
MMRI Maumere 51.98 207 *e*P **P 03 50 00.3 +0.8**
comp=Z,286nm,1.2s

MYKOM	**Kota Tinggi**	**52.09 234**	*e*P		**P**	**03 50 00.7**	**+0.3**
	comp=Z,54nm,1.2s						
MYKOM			LR		LR		
	comp=Z,5μm,19.0s						
SOEI	**Soe**	**52.36 204**	P		**P**	**03 50 04.8**	**+2.4**
	comp=Z,194nm,1.3s,comp=Z,4μm						
SOEI	**Soe**	**52.36 204**	*e*P		**P**	**03 50 02.0**	**-0.3**
	comp=Z,445nm,1.5s						
SKAG	**Skagway**	**52.62 39**	*e*P		**P**	**03 50 04.4**	**+0.7**
	comp=Z,84nm,1.4s						
SKAG			LR		LR		
	comp=Z,3μm,20.0s						
OPA	**Opana**	**52.64 92**	*e*P		**P**	**03 50 03.8**	**-0.6**
OPA			*e**PP		**pP**	**03 50 10.1**	**-1.7**
OPA	**Opana**	**52.64 92**	*e*P		**P**	**03 50 03.8**	**-0.6**
	comp=Z,449nm,1.1s						
KIP	**Kipapa**	**52.79 92**	*e*P		**P**	**03 50 02.0**	**-3.5**
KIP			pmax		pmax		
	comp=Z,198nm,1.0s						
KIP	**Kipapa**	**52.79 92**	*e*P		**P**	**03 50 02.0**	**-3.5**
	comp=Z,198nm,1.0s						
HON	**Honolulu**	**52.85 92**	*e*P		**P**	**03 50 04.2**	**-1.7**
HON			pmax		pmax		
	comp=Z,530nm,1.2s						
KK31	**Karatay Array**	**53.08 299**	*i* P		**P**	**03 50 07.5**	**+0.1**
KK31			pmax		pmax		
	comp=Z,103nm,1.1s						
KKAR	**Karatay Array**	**53.08 299**	*e*P		**P**	**03 50 07.8**	**+0.4**
KKAR	**Karatay Array**	**53.08 299**	*e*P		**P**	**03 50 07.8**	**+0.4**
COEN	**Coen**	**53.46 180**	*e*P		**P**	**03 50 07.7**	**-2.7**
	comp=Z,134nm,1.7s						
COEN			LR		LR		
	comp=Z,3μm,20.0s						
SMLA	**Simla**	**53.48 283**	*e*P		**P**	**03 50 11.2**	**+0.7**
MTN	**Manton Dam**	**53.57 195**	*e*P		**P**	**03 50 09.7**	**-1.4**
	comp=Z,262nm,1.6s						
MTN			LR		LR		
	comp=Z,2μm,20.0s						
PLAI	**Plampang**	**53.84 212**	P		**P**	**03 50 14.7**	**+1.5**
	comp=Z,76nm,1.8s						
THN	**Thein Dam**	**53.95 285**	*ex*		P	03 50 09.0	-4.9
THN			*e*S		**S**	**03 57 49.0**	**+0.9**
LHMI	**Lhok Sumawe**	**54.04 243**	*e*P		**P**	**03 50 12.8**	**-2.0**
	comp=Z,145nm,1.1s						
SVE	**Sverdlovsk**	**54.10 318**	*d i*P		**P**	**03 50 16.2**	**+1.6**
SVE			*e*S		**S**	**03 57 50.9**	**+1.4**
SVE			pmax		pmax		
	comp=Z,340nm,1.4s						
SVE			pmax		pmax		
	comp=Z,2μm,16.2s						
SVE			MLR		MLR		
	comp=Z,44μm,15.0s						
SVE			MLR		MLR		
	comp=N,11μm,15.0s						
SVE			MLR		MLR		
	comp=E,27μm,15.0s						
TWSI	**Taliwang, Sumb**	**54.13 213**	P		**P**	**03 50 14.7**	**-0.6**
	comp=E,85nm,1.1s						
SRBI	**Singaraja**	**54.27 215**	P		**P**	**03 50 20.8**	**+4.5**
KKR	**Kurukshetra**	**54.31 282**	*e*P		**P**	**03 50 17.4**	**+0.8**
KKR			IAmb		IAmb	03 50 20.9	
	comp=Z,176nm,0.7s						
PSI	**Prapat**	**54.48 239**	*e*P		**P**	**03 50 18.5**	**+0.4**
PSI			pmax		pmax		
	comp=Z,70nm,1.0s						
PSI	**Prapat**	**54.48 239**	*e*P		**P**	**03 50 18.5**	**+0.4**
	comp=Z,70nm,1.0s						
PSI			LR		LR		
	comp=Z,6μm,19.0s						
HLK	**Haleakala**	**54.52 92**	*e*P		**P**	**03 50 17.3**	**-1.2**
	comp=Z,375nm,1.2s						
BISR	**Bishrakh**	**54.53 280**	*e*P		**P**	**03 50 17.1**	**-1.1**
KCSI	**Kotacane, Aceh**	**54.72 241**	P		**P**	**03 50 19.3**	**-0.4**
	comp=Z,40nm,1.0s,comp=Z,699nm						
BHGR	**Bahadurgarh**	**54.85 280**	*e*P		**P**	**03 50 19.6**	**-0.9**
BHGR			IAmb		IAmb	03 50 22.1	
	comp=Z,90nm,0.5s						
CHLP	**Challavanipeta**	**54.91 265**	*e*P		**P**	**03 50 22.0**	**+1.0**
CHLP			IAmb		IAmb	03 50 25.8	
	comp=Z,70nm,1.0s						
CHLP			*e*S		**S**	**03 58 00.6**	**-0.8**
CHLP			IVMs_BB		IVMs_BB	04 16 02.2	
	comp=Z,2μm,15.0s						
BKNI	**Bangkinang**	**54.99 235**	P		**P**	**03 50 26.1**	**+4.5**
	comp=Z,338nm,1.2s,comp=Z,4μm						
BKNI	**Bangkinang**	**54.99 235**	*e*P		**P**	**03 50 22.5**	**+0.9**
	comp=Z,444nm,1.2s						
BKNI			LR		LR		
	comp=Z,4μm,19.0s						
CRAG	**Craig**	**55.03 44**	*e*P		**P**	**03 50 21.6**	**+0.2**
	comp=Z,35nm,1.0s						
CRAG			LR		LR		
	comp=Z,3μm,18.0s						
SOKR	**Solikamsk**	**55.08 322**	*c i*P		**P**	**03 50 20.4**	**-1.2**
SOKR						03 52 25.1	
SOKR			PPP		PPP	03 53 36.6	
SOKR			S		**S**	**03 58 05.2**	**+2.7**
SOKR			SS		**SS**	**04 01 39.6**	**-6.2**
SOKR			pmax		pmax		
	comp=Z,86nm,1.0s						
SOKR			MLR		MLR		
	comp=Z,7μm,13.0s						
WRAK	**Wrangell Islan**	**55.10 42**	*e*P		**P**	**03 50 22.3**	**+0.4**
	comp=Z,41nm,1.3s						
WRAK			LR		LR		
	comp=Z,2μm,19.0s						
MLSI	**Meulaboh, Aceh**	**55.11 243**	P		**P**	**03 50 22.8**	**+0.3**
	comp=Z,154nm,1.1s,comp=Z,5μm						
GMJI	**Gumukmas**	**55.23 217**	P		**P**	**03 50 22.1**	**-1.2**
	comp=Z,53nm,1.3s						
ARU	**Arti**	**55.31 318**	*c i*P		**P**	**03 50 24.2**	**+0.8**
ARU						03 51 24.5	
ARU						03 52 23.0	
ARU			PPP		PPP	03 53 42.0	
ARU			S		**S**	**03 58 06.9**	**+1.1**
ARU						04 00 13.7	
ARU			SS		**SS**	**04 01 50.2**	**+0.4**
ARU			SSS		SSS	04 03 53.6	
ARU			pmax		pmax		
	comp=Z,275nm,1.2s						
ARU			pmax		pmax		
	comp=Z,1μm,12.3s						
ARU			smax		smax		
	comp=N,1μm,18.4s						
ARU			MLR		MLR		
	comp=Z,35μm,16.0s						
ARU	**Arti**	**55.31 318**	*e*P		**P**	**03 50 24.2**	**+0.8**
	comp=Z,258nm,1.2s						
ARU			LR		LR		
	comp=Z,25μm,19.0s						
KKH	**Kailua Kona**	**55.33 93**	*e*P		**P**	**03 50 22.3**	**-1.7**
KKH	**Kailua Kona**	**55.33 93**	*e*P		**P**	**03 50 22.3**	**-1.7**
HPAH	**Hawaii Prepara**	**55.36 92**	*e*P		**P**	**03 50 23.3**	**-1.0**
	comp=Z,116nm,1.1s						
HPAH			LR		LR		
	comp=Z,3μm,18.0s						
NGJI	**Ngawi**	**55.39 219**	P		**P**	**03 50 26.5**	**+2.1**
	comp=Z,118nm,1.1s						
KUDL	**Kundal**	**55.47 280**	*e*P		**P**	**03 50 25.2**	**+0.2**
KUDL			IAmb		IAmb	03 50 29.1	
	comp=Z,51nm,0.9s						
DLBC	**Dease Lake**	**55.55 40**	*e*P		**P**	**03 50 25.9**	**+0.7**
	comp=Z,42nm,1.1s						
DLBC			*e*PP		PP	03 52 15.8	-13
DLBC			LR		LR		
	comp=Z,3μm,18.0s						
MNSI	**Mandailing Nat**	**55.56 237**	P		**P**	**03 50 28.7**	**+3.0**
	comp=Z,60nm,0.7s,comp=Z,4μm						
SMRI	**Semarang**	**55.62 221**	P		**P**	**03 50 28.2**	**+2.1**
	comp=Z,196nm,1.6s						
SMRI	**Semarang**	**55.62 221**	*e*P		**P**	**03 50 27.2**	**+1.1**
	comp=Z,214nm,1.1s						
SMRI			LR		LR		
	comp=Z,3μm,18.0s						
POHA	**Pohakuloa**	**55.64 92**	*e*P		**P**	**03 50 26.3**	**-0.3**
	comp=Z,280nm,1.0s						
SDSI	**Sungai Dareh**	**55.72 234**	P		**P**	**03 50 28.1**	**+1.3**
	comp=Z,208nm,1.3s,comp=Z,51μm						
PWJI	**Pagerwojo**	**55.79 219**	P		**P**	**03 50 26.0**	**-1.3**
	comp=Z,243nm,0.9s,comp=Z,3μm						
PPI	**Padang Panjang**	**56.00 235**	P		P	03 50 36.8	+8.0
UWE	**Uwekahuna**	**56.02 92**	*e*P		**P**	**03 50 28.4**	**-0.8**
	comp=Z,191nm,1.1s						
DZET	**Dzherino**	**56.03 295**	P		**P**	**03 50 29.4**	**+0.4**
DZET			pmax		pmax		
	comp=Z,277nm,1.3s						
JCJI	**Jatiwangi**	**56.27 223**	P		P	03 50 36.4	+5.7
	comp=Z,376nm,0.8s						
UGM	**Wanagama**	**56.32 220**	P		**P**	**03 50 33.3**	**+2.1**
	comp=Z,387nm,1.4s						
UGM	**Wanagama**	**56.32 220**	*e*P		**P**	**03 50 30.9**	**-0.3**
	comp=Z,591nm,1.3s						
GSI	**Gunungsitoli**	**56.49 239**	P		**P**	**03 50 33.4**	**+1.0**
	comp=Z,241nm,1.4s,comp=Z,4μm						
GSI	**Gunungsitoli**	**56.49 239**	*e*P		**P**	**03 50 33.1**	**+0.7**
	comp=Z,286nm,1.2s						
GSI			LR		LR		
	comp=Z,8μm,18.0s						
LHSI	**Lahat**	**56.73 230**	P		**P**	**03 50 34.9**	**+0.8**
	comp=Z,223nm,1.3s						
BLSI	**Bandar Lampung**	**56.99 227**	P		**P**	**03 50 40.2**	**+4.3**
	comp=Z,195nm,0.4s						
NGP	**Nagpur**	**57.25 271**	*e*P		**P**	**03 50 38.0**	**+0.2**
AB31	**Akbulak array**	**57.34 309**	*i* P		**P**	**03 50 38.4**	**+0.4**
AB31			pmax		pmax		
	comp=Z,98nm,1.0s						
ABKAR	**Akbulak array**	**57.34 309**	*e*P		**P**	**03 50 38.8**	**+0.8**
LWLI	**Liwa**	**57.38 228**	P		**P**	**03 50 43.4**	**+4.6**
	comp=Z,100nm,0.6s,comp=Z,16μm						
CISI	**Cisompet, Garu**	**57.41 223**	*e*P		**P**	**03 50 37.3**	**-1.6**
	comp=Z,52nm,0.8s						
CISI			LR		LR		
	comp=Z,2μm,20.0s						
MNAI	**Manna**	**57.50 230**	*e*P		**P**	**03 50 37.9**	**-1.6**
	comp=Z,352nm,1.3s						
MNAI			LR		LR		
	comp=Z,3μm,18.0s						
PVM	**Polavaram**	**57.52 266**	*e*P		**P**	**03 50 40.2**	**+0.6**
PVM			IAmb		IAmb	03 50 44.1	
	comp=Z,65nm,1.0s						
PVM			*e*S		**S**	**03 58 31.9**	**-4.0**
PVM			IVMs_BB		IVMs_BB	04 21 35.6	
	comp=Z,2μm,15.3s						
KASI	**Kota Agung**	**57.54 228**	P		**P**	**03 50 40.8**	**+1.0**
	comp=Z,76nm,1.2s						
CNJI	**Cibinong**	**57.56 224**	P		**P**	**03 50 40.7**	**+0.8**
	comp=Z,156nm,1.2s						
HOPEN	**Hopen**	**57.74 346**	⇑ *i*P		**P**	**03 50 42.1**	**+1.7**
HOPEN			IAmb		IAmb	03 50 45.7	
	comp=Z,188nm,1.2s						
CGJI	**Cibinong**	**57.77 226**	P		**P**	**03 50 42.0**	**+0.7**
	comp=Z,71nm,1.4s						
KBL	**Kabul**	**57.85 290**	*e*P		**P**	**03 50 42.3**	**+0.2**
KBL			pmax		pmax		
	comp=Z,210nm,1.0s						
KBL	**Kabul**	**57.85 290**	*e*P		**P**	**03 50 42.3**	**+0.2**
	comp=Z,213nm,1.0s						
KBL			LR		LR		
	comp=Z,13μm,20.0s						
SPA0	**Spitsbergen Ar**	**58.12 349**	⇑ *i*P		**P**	**03 50 44.2**	**+1.1**
SPA0			IAmb		IAmb	03 50 48.1	
	comp=Z,362nm,2.0s						
SPA0	**Spitsbergen Ar**	**58.12 349**	*e*P		**P**	**03 50 43.7**	**+0.6**
SPA0			*e*PP		**PP**	**03 52 50.8**	**-0.6**
KBS	**Kingsbay**	**58.21 350**	⇑ *i*P		**P**	**03 50 45.4**	**+1.7**
KBS			IAmb		IAmb	03 50 49.2	
	comp=Z,151nm,1.1s						
KBS	**Kingsbay**	**58.21 350**	*e*P		**P**	**03 50 44.4**	**+0.7**
KBS			pmax		pmax		
	comp=Z,157nm,1.1s						
KBS			MLR		MLR		
	comp=Z,3μm,20.0s						
KBS	**Kingsbay**	**58.21 350**	*e*P		**P**	**03 50 44.4**	**+0.7**
	comp=Z,157nm,1.1s						
KBS			LR		LR		
	comp=Z,3μm,20.0s						
RPR	**Rampur**	**58.37 269**	*e*P		**P**	**03 50 46.0**	**+0.3**
RPR			IAmb		IAmb	03 50 49.7	
	comp=Z,423nm,1.9s						
RPR			*e*S		**S**	**03 58 42.8**	**-4.4**
RPR			IVMs_BB		IVMs_BB	04 18 12.9	
	comp=Z,2μm,14.6s						
FUNA	**Funafuti**	**58.42 137**	*e*P		**P**	**03 50 43.5**	**-2.4**
	comp=Z,166nm,1.2s						
SRSP	**Sriramsagar**	**59.06 270**	*e*P		**P**	**03 50 50.6**	**+0.1**
SRSP			IAmb		IAmb	03 50 54.4	
	comp=Z,398nm,1.6s						
SRSP			*e*S		**S**	**03 58 53.0**	**-3.2**
SRSP			IVMs_BB		IVMs_BB	04 18 14.1	
	comp=Z,2μm,14.5s						
KNTN	**Kanton**	**59.07 125**	*e*P		**P**	**03 50 50.1**	**-0.4**
HSPB	**Hornsund (broa**	**59.08 348**	⇑ *i*P		**P**	**03 50 51.1**	**+1.4**
HSPB			IAmb		IAmb	03 50 55.0	
	comp=Z,254nm,1.2s						
HSPB	**Hornsund (broa**	**59.08 348**	*e*P		**P**	**03 50 51.1**	**+1.4**
HSPB			*e*			03 52 58.6	
HSPB			*e*S		**S**	**03 58 57.0**	**+2.2**
RES	**Resolute Bay**	**59.56 15**	*e*P		**P**	**03 50 54.3**	**+1.2**
RES			pmax		pmax		
	comp=Z,49nm,0.9s						
RES	**Resolute Bay**	**59.56 15**	*e*P		**P**	**03 50 54.3**	**+1.2**
	comp=Z,49nm,0.8s						
RES			LR		LR		
	comp=Z,3μm,20.0s						
CTAO	**Charters Tower**	**59.62 177**	PFAKE			03 51 00.0	+5.9
CTAO			LR		LR		
	comp=Z,2μm,21.0s						
ADKI	**Addanki**	**59.63 266**	*e*P		**P**	**03 50 55.2**	**+0.8**
ADKI			IAmb		IAmb	03 50 58.1	
	comp=Z,284nm,1.9s						
ADKI			*e*S		**S**	**03 59 00.9**	**-2.5**
ADKI			IVMs_BB		IVMs_BB	04 19 23.0	
	comp=Z,2μm,14.6s						
NJS	**Nagarjunasagar**	**59.71 267**	*e*P		**P**	**03 50 55.1**	**+0.1**
NJS			IAmb		IAmb	03 50 58.9	
	comp=Z,44nm,1.1s						
NJS			*e*S		**S**	**03 59 05.4**	**+0.8**
NJS			IVMs_BB		IVMs_BB	04 21 48.2	
	comp=Z,2μm,14.1s						
HYB	**Hyderabad**	**59.78 268**	*i* P		**P**	**03 50 56.0**	**+0.5**
HYB			*e*S		**S**	**03 59 06.0**	**+0.4**
HYBB	**Hyderabad (bro**	**59.78 268**	*e*P		**P**	**03 50 55.6**	**+0.1**
HYBB			IAmb		IAmb	03 50 59.3	
	comp=Z,384nm,2.1s						
HYBB			*e*S		**S**	**03 59 01.7**	**-3.9**
HYBB			IVMs_BB		IVMs_BB	04 22 19.1	
	comp=Z,2μm,14.9s						
WB0	**Warramunga Arr**	**59.82 190**	PFAKE			03 51 10.0	+14
WB0			LR		LR		
	comp=Z,3μm,19.0s						
WB9	**Warramunga Arr**	**59.85 190**	PFAKE			03 51 10.0	+14
WB9			LR		LR		
	comp=Z,6μm,19.0s						
WB8	**Warramunga Arr**	**59.87 190**	PFAKE			03 51 10.0	+14
WB8			LR		LR		
	comp=Z,3μm,18.0s						
WRAB	**Tennant Creek**	**59.99 190**	*c i*P		**P**	**03 50 55.7**	**-1.0**
WRAB			pmax		pmax		
	comp=Z,273nm,1.2s						
WRAB	**Tennant Creek**	**59.99 190**	*e*P		**P**	**03 50 54.9**	**-1.8**
	comp=Z,90nm,1.0s						
WB2	**Warramunga Arr**	**60.00 190**	*e*P		**P**	**03 50 55.3**	**-1.4**
	comp=Z,74nm,0.9s						
WRA	**Warramunga Arr**	**60.00 190**	P		**P**	**03 50 56.1**	**-0.6**
	comp=Z,70nm,1.0s,baz=8.2,slow=7.0,SNR=70						
WRA			PKP2ab			04 20 44.6	
	comp=Z,7.7nm,1.1s,baz=204,slow=2.3,SNR=7.0						
LVZ	**Lovozero**	**60.22 336**	*ce*P		**P**	**03 50 57.7**	**-0.1**
LVZ			pmax		pmax		
	comp=Z,86nm,1.7s						
LVZ	**Lovozero**	**60.22 336**	*e*P		**P**	**03 50 57.2**	**-0.6**
	comp=Z,68nm,1.1s						
LVZ			LR		LR		
	comp=Z,7μm,18.0s						
SRLM	**Srisailam**	**60.30 267**	*e*P		**P**	**03 50 58.8**	**-0.3**
SRLM			IAmb		IAmb	03 51 01.8	
	comp=Z,242nm,2.0s						
SRLM			*e*S		**S**	**03 59 09.2**	**-3.0**
SRLM			IVMs_BB		IVMs_BB	04 22 13.5	
	comp=Z,2μm,14.5s						
JASL	**Jaisalmer**	**60.34 282**	*e*P		**P**	**03 50 59.5**	**+0.4**
JASL			IAmb		IAmb	03 51 03.9	
	comp=Z,296nm,1.3s						
RCLA	**Racherla**	**60.64 266**	*e*P		**P**	**03 51 01.7**	**+0.4**
RCLA			IAmb		IAmb	03 51 05.4	
	comp=Z,68nm,1.0s						
RCLA			*e*S		**S**	**03 59 13.2**	**-3.3**
RCLA			IVMs_BB		IVMs_BB	04 19 59.6	
	comp=Z,2μm,16.8s						
YKW3	**Yellowknife Ar**	**60.65 31**	*e*P		**P**	**03 51 02.0**	**+1.3**
	comp=Z,48nm,1.2s						
YKA	**Yellowknife Ar**	**60.69 31**	P		**P**	**03 51 01.7**	**+0.7**
	comp=Z,5.5nm,0.6s,baz=301,slow=6.2,SNR=58						
YKA			PKPPKP		**P'P'df**	**04 20 23.4**	**-3.9**
	comp=Z,0.6nm,1.0s,baz=88,slow=1.3,SNR=6.1						
YKA			PKP2bc			04 20 35.6	
	comp=Z,1.7nm,1.0s,baz=124,slow=2.4,SNR=8.6						
YKA			LR		LR	04 20 39.3	
	comp=Z,210nm,18.5s,baz=0.0,slow=39						
YKB5	**Yellowknife Ar**	**60.69 31**	*e*P		**P**	**03 51 01.1**	**+0.1**
APA	**Apatity**	**60.80 336**	⇓ *i*P		**P**	**03 51 02.4**	**+0.7**
APA			*i*			03 53 17.0	
APA			*i* PPP		PPP	03 54 45.0	
APA			*i* S		**S**	**03 59 13.0**	**-4.2**
APA			*i* SS		**SS**	**04 03 14.0**	**-1.4**
APA			pmax		pmax		
	comp=Z,20nm,0.9s						
APA			MLR		MLR		
	comp=Z,9μm,22.0s						
KLRI	**Killari**	**60.91 270**	*e*P		**P**	**03 51 03.1**	**-0.1**
KLRI			IAmb		IAmb	03 51 06.8	
	comp=Z,231nm,1.3s						
KLRI			*e*S		**S**	**03 59 17.2**	**-2.8**
KLRI			IVMs_BB		IVMs_BB	04 19 28.1	
	comp=Z,2μm,16.9s						
TMCR	**Tamitsa**	**61.06 331**	*e*P		**P**	**03 51 04.5**	**+1.0**
TMCR			pmax		pmax		
	comp=Z,151nm,1.3s						
SKHT	**Srikalahasti**	**61.10 264**	*e*P		**P**	**03 51 05.4**	**+0.9**
SKHT			IAmb		IAmb	03 51 09.1	
	comp=Z,302nm,1.7s						
SKHT			*e*S		**S**	**03 59 26.3**	**+4.0**
SKHT			IVMs_BB		IVMs_BB	04 19 23.2	
	comp=Z,1μm,22.8s						
MDRS	**Chennai**	**61.10 263**	⇑ *e*P		**P**	**03 51 03.8**	**-0.7**
KEV	**Kevo**	**61.41 339**	*e*P		**P**	**03 51 05.6**	**-0.1**
KEV			pmax		pmax		
	comp=Z,84nm,1.1s						
KEV	**Kevo**	**61.41 339**	*e*P		**P**	**03 51 05.6**	**-0.1**
	comp=Z,84nm,1.1s						
KEV			LR		LR		
	comp=Z,7μm,22.0s						
ARA0	**ARCESS Array S**	**61.95 339**	*e*P		**P**	**03 51 08.7**	**-0.8**
ARA0			*e*PP		**PP**	**03 53 21.9**	**-3.5**
ARCES	**ARCESS Array B**	**61.95 339**	P		**P**	**03 51 10.5**	**+1.0**
	comp=Z,17nm,0.9s,baz=49,slow=8.0,SNR=19						
ARCES			LR		LR	04 20 48.4	
	comp=Z,9μm,21.9s,baz=38,slow=39						
ARCES	**ARCESS Array B**	**61.95 339**	P		**P**	**03 51 10.5**	**+1.0**
ARCES			pmax		pmax		
	comp=Z,17nm,0.9s						
ARCES			MLR		MLR		
	comp=Z,9μm,21.9s						
ARE0	**ARCESS Array S**	**61.95 339**	*e*P		**P**	**03 51 08.7**	**-0.8**
	comp=Z,93nm,1.4s						
ARE0			LR		LR		
	comp=Z,9μm,22.0s						
KLMR	**Klimovskoe**	**62.24 328**	*e*P		**P**	**03 51 09.2**	**-2.3**
KLMR			*e*			03 51 48.8	
KLMR			pmax		pmax		
	comp=Z,141nm,1.4s						
POO	**Poona**	**62.76 272**	*i* P		**P**	**03 51 16.0**	**+0.3**
	comp=Z,122nm,2.0s						
KTK1	**Kautokeino**	**62.91 340**	*e*P		**P**	**03 51 17.0**	**+1.2**
KTK1			*e*pP		**sP**	**03 51 28.4**	**+2.2**
DAG	**Danmarks Havn**	**63.16 355**	⇑ *i*P		**P**	**03 51 18.1**	**+0.7**
	comp=Z,78nm,1.0s						
DAG			*i* S		**S**	**03 59 48.5**	**+1.7**
	comp=Z,2μm,16.0s						
DAG	**Danmarks Havn**	**63.16 355**	⇑ *i*P		**P**	**03 51 18.1**	**+0.7**
DAG			*i* S		**S**	**03 59 48.5**	**+1.7**
DAG			pmax		pmax		
	comp=Z,78nm,1.0s						
DAG			MLR		MLR		
	comp=Z,2μm,16.0s						
BOM	**Bombay**	**63.34 273**	*ex*		P	03 51 10.9	-8.6
PGC	**Sidney**	**63.37 48**	*e*P		**P**	**03 51 19.1**	**-0.1**
	comp=Z,47nm,1.0s						
PGC			LR		LR		
	comp=Z,2μm,21.0s						
TRO	**Tromso**	**63.60 341**	*e*P		**P**	**03 51 21.3**	**+1.0**
AS01	**Alice Springs**	**63.72 190**	*e*P		**P**	**03 51 21.6**	**-0.1**
AS31	**Alice Springs**	**63.73 190**	*e*P		**P**	**03 51 21.5**	**-0.3**
	comp=Z,8.2nm,0.8s						
ASAR	**Alice Springs**	**63.73 190**	P		**P**	**03 51 22.1**	**+0.3**
	comp=Z,21nm,0.7s,baz=7.8,slow=5.3,SNR=58						
ASAR			LR		LR	04 18 31.5	
	comp=Z,2μm,20.6s,baz=14,slow=36						
ASAR			PKPPKP		**P'P'df**	**04 20 16.9**	**+7.8**
	comp=Z,1.7nm,1.0s,baz=174,slow=1.9,SNR=6.6						
ASAR			PKP2bc			04 20 23.8	
	comp=Z,4.6nm,1.1s,baz=181,slow=3.0,SNR=8.3						
A04D	**Lummi Island**	**63.76 47**	P		**P**	**03 51 22.7**	**+1.0**
	baz=301						
NLWA	**Neilton Lookou**	**63.77 49**	*e*P		**P**	**03 51 21.2**	**-0.8**
	comp=Z,80nm,0.9s						
GEYT	**Alibeck**	**63.83 299**	P		**P**	**03 51 23.1**	**+0.6**
	comp=Z,69nm,1.0s,baz=31,slow=3.5,SNR=33						
GEYT			LR		LR	04 21 07.8	
	comp=Z,8μm,18.8s,baz=60,slow=38						
B05A	**Bryant**	**64.34 48**	P		**P**	**03 51 27.2**	**+1.6**
	baz=302,SNR=11						
B05A			S		**S**	**04 00 02.4**	**+0.2**
	baz=302						
E03A	**Lebam**	**64.39 50**	*e*P		**P**	**03 51 26.5**	**+0.5**
	comp=Z,133nm,0.9s						
PALK	**Pallekele**	**64.42 258**	*e*P		**P**	**03 51 27.9**	**+1.3**
PALK			pmax		pmax		
	comp=Z,200nm,1.9s						
PALK	**Pallekele**	**64.42 258**	*e*P		**P**	**03 51 27.9**	**+1.3**
	comp=Z,198nm,1.9s						
PALK			LR		LR		
	comp=Z,4μm,21.0s						
B06A	**Marblemount**	**64.56 47**	PFAKE			03 51 40.0	+13
B06A			LR		LR		
	comp=Z,2μm,20.0s						
F03A	**Seaside**	**64.71 50**	*e*P		**P**	**03 51 28.7**	**+0.5**
	comp=Z,135nm,1.1s						
F03A			LR		LR		
	comp=Z,2μm,20.0s						
F04D	**Rainier, OR**	**64.96 50**	P		**P**	**03 51 31.0**	**+1.3**
	baz=302						
D05A	**Enumclaw**	**64.97 49**	*e*P		**P**	**03 51 30.8**	**+1.0**
	comp=Z,118nm,1.0s						
D05A			*e*PP		**PP**	**03 53 47.3**	**-5.1**
KULLO	**Kullorsuaq**	**65.10 6**	⇑ *i*P		**P**	**03 51 30.5**	**+0.4**
	comp=Z,85nm,1.2s						
KULLO			*i* S		**S**	**04 00 10.5**	**-0.3**
KULLO	**Kullorsuaq**	**65.10 6**	⇑ *i*P		**P**	**03 51 30.5**	**+0.4**
KULLO			*i* S		**S**	**04 00 10.5**	**-0.3**
KULLO			pmax		pmax		
	comp=Z,85nm,1.2s						
KULLO			MLR		MLR		
	comp=Z,8μm,17.0s						
C06D	**Leavenworth**	**65.21 47**	P		**P**	**03 51 32.5**	**+1.1**
	baz=302						
DZM	**Mont Dzumac**	**65.21 156**	*e*P		**P**	**03 51 32.6**	**+1.0**
	comp=Z,263nm,1.4s						
DZM			*e*S		**S**	**04 00 08.1**

COR	**Corvallis**	**65.58**	**52**	*e*P	**P**	**03 51 35.2**	**+1.5**
COR	comp=Z,185nm,1.0s			pmax	pmax		
COR	comp=Z,2μm,20.0s			MLR	MLR		
COR	**Corvallis**	**65.58**	**52**	*e*P	**P**	**03 51 35.2**	**+1.5**
COR	comp=Z,185nm,1.0s			LR	LR		
COR	comp=Z,2μm,20.0s						
MSVF	**Nonsavu**	**65.76**	**143**	PFAKE		03 51 50.0	+15
MSVF	comp=Z,4μm,19.0s			LR	LR		
B08A	**Colville Reser**	**65.85**	**46**	*e*P	**P**	**03 51 36.0**	**+0.5**
B08A	comp=Z,86nm,1.4s			LR	LR		
MOS	**Moscow**	**65.94**	**323**	*e*P	**P**	**03 51 36.1**	**+0.3**
MOS	comp=Z,2μm,18.0s			*e*		03 51 46.0	
MOS				*e*		03 54 01.2	
MOS				*e*S	S	04 00 39.1	+18
MOS				*e*		04 01 31.1	
MOS	comp=Z,284nm,1.8s			pmax	pmax		
MOS	comp=Z,700nm,2.0s			pmax	pmax		
MOS	comp=N,11μm,14.0s			MLR	MLR		
MOS	comp=E,15μm,14.0s			MLR	MLR		
MOS	comp=Z,18μm,14.0s			MLR	MLR		
I03D	**Drain, OR**	**66.03**	**52**	P	**P**	**03 51 38.3**	**+1.6**
H04A	**Detroit Lake**	**66.20**	**51**	*e*P	**P**	**03 51 38.9**	**+1.1**
H04A	comp=Z,150nm,1.0s			*e*PP	**PP**	**03 54 04.8**	**+1.6**
G05D	**Wamic, OR**	**66.41**	**50**	P	**P**	**03 51 40.4**	**+1.3**
I04A	**Tendick Farm,**	**66.55**	**52**	P	**P**	**03 51 41.5**	**+1.4**
VRH	**Novokhopyorsk**	**66.55**	**318**	*e*P	**P**	**03 51 39.8**	**0.0**
VRH				*e*		03 54 05.1	
VRH				*e*SS	SS	04 04 39.3	-6.3
VRH	comp=Z,180nm,1.2s			pmax	pmax		
VRH	comp=Z,260nm,2.0s			pmax	pmax		
VRH	comp=Z,36μm,20.0s			MLR	MLR		
L02D	**Cave Junction,**	**66.71**	**54**	P	**P**	**03 51 42.0**	**+1.0**
C09A	**Chrisman Ranch**	**66.75**	**47**	*e*P	**P**	**03 51 42.4**	**+1.1**
C09A	comp=Z,81nm,0.9s			LR	LR		
OBN	**Obninsk**	**66.79**	**323**	*c i*P	**P**	**03 51 41.9**	**+0.6**
OBN				*e*		03 52 09.7	
OBN				*e*		03 54 11.3	
OBN				*i* S	**S**	**04 00 23.7**	**-8.2**
OBN				*e*SS	**SS**	**04 04 45.5**	**-3.6**
OBN	comp=Z,421nm,2.5s			pmax	pmax		
OBN	comp=Z,19μm,16.0s			MLR	MLR		
OBN	**Obninsk**	**66.79**	**323**	*e*P	**P**	**03 51 42.0**	**+0.6**
OBN	comp=Z,237nm,1.3s			LR	LR		
D08A	**Wollman Farm,**	**66.80**	**47**	*e*P	**P**	**03 51 41.4**	**-0.1**
D08A	comp=Z,93nm,1.0s			LR	LR		
G06A	**Carlson Farm,**	**66.82**	**50**	*e*P	**P**	**03 51 41.9**	**+0.1**
G06A	comp=Z,84nm,1.1s			*e*PP	**PP**	**03 54 10.1**	**+1.4**
HAWA	**Hanford**	**66.82**	**48**	*e*P	**P**	**03 51 44.4**	**+2.7**
HUMO	**Hull Mountain**	**66.86**	**53**	*e*P	**P**	**03 51 42.1**	**+0.1**
I05D	**Terrebonne, OR**	**66.89**	**51**	P	**P**	**03 51 43.5**	**+1.2**
FIA1	**FINESS Array S**	**67.08**	**332**	*e*P	**P**	**03 51 43.1**	**+0.1**
FIA1	comp=Z,130nm,1.0s			*e*PP	**PP**	**03 54 04.9**	**-5.5**
FINES	**FINESS Array B**	**67.08**	**332**	P	**P**	**03 51 43.7**	**+0.6**
FINES	comp=Z,62nm,0.9s,baz=46,slow=8.2,SNR=72			LR	LR	04 23 58.3	
NEW	**Newport**	**67.13**	**46**	P	**P**	**03 51 44.5**	**+0.8**
NEW	**Newport**	**67.13**	**46**	*e*P	**P**	**03 51 45.5**	**+1.8**
NEW	comp=Z,82nm,1.0s			pmax	pmax		
NEW	**Newport**	**67.13**	**46**	*e*P	**P**	**03 51 45.5**	**+1.8**
LPSR	**Galich'ya Gora**	**67.15**	**320**	*e*P	**P**	**03 51 44.5**	**+0.8**
LPSR				*e*		03 54 13.0	
LPSR				*e*SS	SS	04 04 58.2	+3.3
LPSR	comp=Z,230nm,1.8s			pmax	pmax		
LPSR	comp=Z,380nm,2.0s			pmax	pmax		
LPSR	comp=Z,16μm,16.0s			MLR	MLR		
KHMM	**Horse Mountain**	**67.33**	**55**	*e*P	**P**	**03 51 45.1**	**-0.1**
COCO	**West Island**	**67.35**	**230**	*i* P	P	03 51 50.8	+5.5
COCO	**West Island**	**67.35**	**230**	*e*P	**P**	**03 51 44.7**	**-0.6**
YBH	**Yreka Blue Hor**	**67.50**	**54**	*e*P	**P**	**03 51 48.1**	**+1.9**
YBH	comp=Z,105nm,1.1s			pmax	pmax		
YBH	**Yreka Blue Hor**	**67.50**	**54**	*e*P	**P**	**03 51 48.1**	**+1.9**
J05D	**Fort Rock, OR**	**67.54**	**52**	P	**P**	**03 51 47.9**	**+1.4**
E09A	**Wood Farm, Sta**	**67.55**	**48**	PFAKE		03 52 00.0	+14
E09A	comp=Z,2μm,19.0s			LR	LR		
VORR	**Voronezh**	**67.56**	**319**	P	**P**	**03 51 45.0**	**-1.3**
VORR	comp=Z,300nm,1.4s			pmax	pmax		
K04D	**Chiloquin, OR**	**67.59**	**53**	P	**P**	**03 51 47.5**	**+0.7**
M02C	**Callahan**	**67.60**	**54**	P	**P**	**03 51 48.6**	**+1.7**
KMRM	**Mail Ridge**	**67.71**	**56**	*e*P	**P**	**03 51 46.9**	**-0.6**
G08A	**Pilot Rock**	**67.77**	**49**	*e*P	**P**	**03 51 47.2**	**-0.6**
G08A	comp=Z,1μm,19.0s			LR	LR		
VSR	**Storozhevoye**	**67.85**	**319**	*e*P	**P**	**03 51 48.8**	**+0.7**
VSR				*e*		03 54 17.8	
VSR				*e*S	**S**	**04 00 43.3**	**-1.5**
VSR				*e*SS	**SS**	**04 05 04.9**	**-0.8**
VSR	comp=Z,120nm,1.5s			pmax	pmax		
VSR	comp=Z,270nm,1.5s			pmax	pmax		
VSR	comp=E,930nm,9.1s			smax	smax		
VSR	comp=Z,17μm,21.0s			MLR	MLR		
N02D	**Trinity Center**	**67.92**	**55**	P	**P**	**03 51 50.0**	**+1.1**
SUMG	**Summit**	**67.93**	**1⇑**	*i*P	**P**	**03 51 50.4**	**+1.6**
SUMG	comp=Z,109nm,0.9s			*i* S	**S**	**04 00 46.2**	**+0.2**
SUMG	comp=Z,5μm,19.0s						
SUMG	**Summit**	**67.93**	**1⇑**	*i*P	**P**	**03 51 50.4**	**+1.6**
SUMG				*i* S	**S**	**04 00 46.2**	**+0.2**
SUMG	comp=Z,110nm,0.9s			pmax	pmax		
SUMG	comp=Z,5μm,19.0s			MLR	MLR		
SUMG	**Summit**	**67.93**	**1**	*e*P	**P**	**03 51 49.5**	**+0.7**
SUMG	comp=Z,130nm,1.0s			LR	LR		
M04C	**Macdoel**	**68.01**	**53**	P	**P**	**03 51 51.3**	**+1.8**
K05A	**Summer Lake**	**68.06**	**52**	*e*P	**P**	**03 51 52.3**	**+2.4**
K05A	comp=Z,245nm,1.0s			LR	LR		
WDC	**Whiskeytown Da**	**68.25**	**55**	*e*P	**P**	**03 51 52.2**	**+1.4**
WDC	comp=Z,97nm,1.0s			pmax	pmax		
WDC	**Whiskeytown Da**	**68.25**	**55**	*e*P	**P**	**03 51 52.2**	**+1.4**
F10A	**Beach Ranch, E**	**68.38**	**48**	*e*P	**P**	**03 51 52.0**	**+0.4**
F10A	comp=Z,44nm,1.0s			LR	LR		
BSMT	**Bassoo Peak**	**68.65**	**45**	*e*P	**P**	**03 51 55.0**	**+1.5**
BLMT	**Blacktail Moun**	**68.78**	**45**	*e*P	**P**	**03 51 55.5**	**+1.2**
HOPS	**Hopland Field**	**68.80**	**57**	PFAKE		03 52 10.0	+16
HOPS	comp=Z,3μm,21.0s			LR	LR		
VSU	**Vasula**	**68.84**	**330**	*c i*P	**P**	**03 51 55.2**	**+1.0**
VSU	comp=Z,483nm,1.2s			pmax	pmax		
O03D	**Paynes Creek**	**68.87**	**55**	P	**P**	**03 51 55.7**	**+0.9**
MOD	**Modoc Plateau**	**68.89**	**53**	*e*P	**P**	**03 51 56.5**	**+1.5**
MOD	comp=Z,71nm,0.9s			LR	LR		
BMO	**Blue Mountains**	**68.98**	**49**	*e*P	**P**	**03 51 57.5**	**+2.1**
BMO	comp=Z,72nm,1.0s			pmax	pmax		
BMO	**Blue Mountains**	**68.98**	**49**	*e*P	**P**	**03 51 57.5**	**+2.1**
JTMT	**Jette**	**68.98**	**45**	*e*P	**P**	**03 51 57.6**	**+2.1**
YBMT	**Yellow Bay**	**69.06**	**45**	*e*P	**P**	**03 51 57.9**	**+2.0**
SWMT	**Swartz Lake**	**69.28**	**45**	*e*P	**P**	**03 51 58.9**	**+1.6**
GOF	**Gofitskoye**	**69.38**	**312⇑**	*i*P	**P**	**03 51 59.0**	**+1.2**
GOF				*e*S	SKiKP	04 01 27.7	-18
GOF	comp=Z,402nm,1.3s			pmax	pmax		
GOF	comp=E,258nm,2.0s			smax	smax		
MCCM	**Marconi Confer**	**69.41**	**57**	PFAKE		03 52 10.0	+12
MCCM	comp=Z,3μm,21.0s			LR	LR		
ORV	**Oroville**	**69.49**	**55**	*e*P	**P**	**03 52 00.2**	**+1.6**
ORV	comp=Z,85nm,1.0s			pmax	pmax		
ORV	**Oroville**	**69.49**	**55**	*e*P	**P**	**03 52 00.2**	**+1.6**
SCO	**Scoresbysund**	**69.53**	**355**	*i* P	**P**	**03 52 00.6**	**+2.4**
SCO				*i* S	**S**	**04 01 06.3**	**+2.2**
SCO	**Scoresbysund**	**69.53**	**355**	*e*P	**P**	**03 52 00.6**	**+2.4**
SCO				*i* S	**S**	**04 01 06.3**	**+2.2**
SCO	comp=Z,3μm,17.0s			MLR	MLR		
WVOR	**Wild Horse Val**	**69.60**	**51**	*e*P	**P**	**03 52 01.5**	**+2.2**
WVOR	comp=Z,81nm,1.0s			pmax	pmax		
WVOR	**Wild Horse Val**	**69.60**	**51**	*e*P	**P**	**03 52 01.5**	**+2.2**
WVOR	comp=Z,2μm,20.0s			LR	LR		
MSO	**Missoula**	**69.72**	**46**	P	**P**	**03 52 00.7**	**+0.7**
MSO	**Missoula**	**69.72**	**46**	*e*P	**P**	**03 52 01.5**	**+1.5**
NCK	**Nalchik**	**69.97**	**310⇓**	*i*P	**P**	**03 52 03.1**	**+1.6**
NCK	comp=Z,165nm,1.2s			pmax	pmax		
CHMT	**Chamberlain Mo**	**70.04**	**45**	*e*P	**P**	**03 52 02.7**	**+0.6**
GUDG	**Gudauri**	**70.06**	**309**	P	**P**	**03 52 04.4**	**+2.1**
AFDM	**Forest Hills D**	**70.17**	**56**	*e*P	**P**	**03 52 04.7**	**+1.9**
AFDM	comp=Z,64nm,1.1s			LR	LR		
ZEI	**Tsey**	**70.21**	**309**	*e*P	**P**	**03 52 03.2**	**0.0**
ZEI				*e*		03 54 40.5	
ZEI				*e*S	**S**	**04 01 16.6**	**+3.1**
ZEI				*e*		04 02 01.0	
ZEI				*e*SS	**SS**	**04 05 47.3**	**+4.3**
ZEI	comp=Z,253nm,1.3s			pmax	pmax		
ZEI	comp=N,107nm,0.8s			pmax	pmax		
ZEI	comp=E,190nm,0.9s			pmax	pmax		
ZEI	comp=Z,1μm,15.5s			pmax	pmax		
ZEI	comp=Z,14μm,14.0s			MLR	MLR		
ZEI	comp=E,9μm,14.0s			MLR	MLR		
ZEI	comp=N,2μm,11.0s			MLR	MLR		
KVAR	**Kislovodsk Arr**	**70.23**	**311**	LR	LR	04 28 21.9	
	comp=N,7μm,18.2s,baz=280,slow=41						
KIV	**Kislovodsk**	**70.23**	**311**	*e*P	**P**	**03 52 05.5**	**+2.3**
KIV	**Kislovodsk**	**70.23**	**311**	*i* P	**P**	**03 52 04.8**	**+1.5**
KIV	**Kislovodsk**	**70.23**	**311**	*c i*P	**P**	**03 52 04.6**	**+1.4**
KIV				*e*		03 52 24.6	
KIV				*e*		03 54 36.6	
KIV				*e*PPP	PPP	03 56 23.6	
KIV				*i* S	**S**	**04 01 16.8**	**+3.3**
KIV	comp=Z,520nm,1.2s			pmax	pmax		
KIV	comp=Z,16μm,18.0s			MLR	MLR		
KIV	**Kislovodsk**	**70.23**	**311**	*e*P	**P**	**03 52 04.7**	**+1.5**
KIV	comp=Z,316nm,0.9s			LR	LR		
KIV	comp=Z,16μm,18.0s			LR	LR		
KBZ	**Khabaz**	**70.25**	**311**	P	**P**	**03 52 04.5**	**+1.4**
	comp=Z,107nm,0.9s,baz=61,slow=5.9,SNR=92						
KBZ				LR	LR	04 27 17.4	
	comp=Z,6μm,18.5s,baz=38,slow=40						
ARMA	**Armidale**	**70.27**	**172**	*e*P	**P**	**03 52 03.2**	**-0.1**
ARMA	comp=Z,75nm,1.1s			LR	LR		
ARMA	comp=Z,2μm,21.0s						
TBLG	**Delisi**	**70.33**	**308**	*e*P	**P**	**03 52 05.0**	**+1.3**
TBLG	**Delisi**	**70.33**	**308**	P	**P**	**03 52 05.0**	**+1.3**
TBLG	**Delisi**	**70.33**	**308**	*e*P	**P**	**03 52 05.0**	**+1.3**
FFC	**Flin Flon**	**70.59**	**34**	*e*P	**P**	**03 52 05.9**	**+0.9**
FFC	comp=Z,60nm,1.0s			pmax	pmax		
FFC	**Flin Flon**	**70.59**	**34**	*e*P	**P**	**03 52 05.9**	**+0.9**
FFC	comp=Z,60nm,1.0s			LR	LR		
FFC	comp=Z,3μm,20.0s						
ONI	**Oni**	**70.59**	**310**	P	**P**	**03 52 07.3**	**+1.9**
ONI	**Oni**	**70.59**	**310**	*e*P	**P**	**03 52 07.3**	**+1.9**
NEY	**Neytrino**	**70.63**	**310⇓**	*i*P	**P**	**03 52 07.7**	**+2.0**
NEY	comp=Z,19nm,1.1s			pmax	pmax		
MFID	**Camas Ranch**	**70.69**	**49**	*e*P	**P**	**03 52 08.0**	**+2.0**
MFID	comp=Z,73nm,1.0s			LR	LR		
MFID	comp=Z,2μm,19.0s						
PAHR	**Pah Rah Range**	**70.73**	**54**	*e*P	**P**	**03 52 08.4**	**+2.0**
	comp=Z,153nm,1.0s						
ILULI	**Ilulissat**	**70.80**	**5⇑**	*i*P	**P**	**03 52 06.8**	**+0.8**
	comp=Z,71nm,1.0s						
	comp=Z,6μm,17.0s						
ILULI	**Ilulissat**	**70.80**	**5⇑**	*i*P	**P**	**03 52 06.8**	**+0.8**
ILULI	comp=Z,71nm,1.0s			pmax	pmax		
ILULI	comp=Z,6μm,17.0s			MLR	MLR		
FCC	**Fort Churchill**	**70.88**	**28**	*e*P	**P**	**03 52 07.1**	**+0.4**
FCC	comp=Z,70nm,1.2s			LR	LR		
FCC	comp=Z,3μm,19.0s						
IZAR	**Zarasai**	**70.89**	**328**	*e*P	**P**	**03 52 08.0**	**+1.2**
IZAR	comp=Z,37nm,0.9s			IAmb	IAmb	03 52 12.2	
HRY	**Holter Researc**	**70.94**	**45**	*e*P	**P**	**03 52 09.4**	**+1.9**
IDID	**Didziasalis**	**70.98**	**327**	*e*P	**P**	**03 52 08.5**	**+1.1**
IDID	comp=Z,54nm,1.0s			IAmb	IAmb	03 52 12.9	
MICGM	**Minsk**	**71.05**	**326⇑**	*e*P	**P**	**03 52 09.0**	**+1.2**
MICGM	comp=Z,0.3nm,14.0s			PM		03 52 10.0	
MICGM				*e*PcP	**PcP**	**03 52 26.0**	**-2.0**
MICGM				*e*PP	**PP**	**03 54 47.0**	**+2.1**
MICGM				*e*PPP	PPP	03 56 36.0	
MICGM				*e*S	**S**	**04 01 22.0**	**-0.4**
MICGM				*e*SS	SS	04 06 09.0	+14
MICGM				*e*LQ	LQ	04 17 33.0	
MICGM				*e*LR	LR	04 21 30.0	
MICGM	comp=Z,23nm,16.0s			LRM	MLR	04 26 20.0	
MICGM	comp=N,15nm,14.0s			LRM	MLR	04 26 23.0	
MNK	**Minsk**	**71.05**	**326⇑**	*e*P	**P**	**03 52 09.0**	**+1.2**
MNK				*e*		03 52 26.0	
MNK				*e*		03 54 47.0	
MNK				*e*PPP	PPP	03 56 36.0	
MNK				*e*S	**S**	**04 01 22.0**	**-0.4**
MNK	comp=Z,330nm,1.4s			pmax	pmax		
MNK	comp=Z,23μm,16.0s			MLR	MLR		
MNK	comp=N,15μm,14.0s			MLR	MLR		
ISAL	**Salakas**	**71.06**	**328**	*e*P	**P**	**03 52 09.1**	**+1.2**
ISAL	comp=Z,97nm,1.1s			IAmb	IAmb	03 52 13.4	
CMB	**Columbia Colle**	**71.08**	**56**	*e*P	**P**	**03 52 10.5**	**+2.1**
CMB	comp=Z,130nm,1.0s			pmax	pmax		
CMB	**Columbia Colle**	**71.08**	**56**	*e*P	**P**	**03 52 10.5**	**+2.1**
CMB	comp=Z,3μm,22.0s			LR	LR		
SAO	**San Andreas Ge**	**71.13**	**58**	PFAKE		03 52 20.0	+11
SAO	comp=Z,2μm,20.0s			LR	LR		
LRM	**Limekiln Ridge**	**71.15**	**46**	*e*P	**P**	**03 52 10.3**	**+1.4**
NACGM	**Naroch**	**71.25**	**327**	*e*P	**P**	**03 52 09.0**	**0.0**
NACGM				*e*P	**P**	**03 52 09.0**	**0.0**
NACGM	comp=Z,0.3nm,1.0s			PM		03 52 11.0	
NACGM				*e*PcP	**sP**	**03 52 24.0**	**+4.6**
NACGM				*e*PP	**PP**	**03 54 48.0**	**+1.5**
NACGM				*e*PPP	PPP	03 56 34.0	
NACGM				*e*S	**S**	**04 01 24.0**	**-0.7**
NACGM				*e*PS	**PnS**	**04 02 06.0**	**+12**
NACGM				*e*SS	SS	04 06 21.0	+23
NACGM				*e*SSS	SSS	04 09 34.0	
NACGM				*e*LQ	LQ	04 17 20.0	
NACGM				*e*LR	LR	04 20 52.0	
NACGM	comp=Z,20nm,18.0s			LRM	MLR	04 26 08.0	
GNI	**Garni**	**71.26**	**307**	*i* P	**P**	**03 52 11.3**	**+1.7**
GNI	**Garni**	**71.26**	**307**	*c i*P	**P**	**03 52 11.3**	**+1.7**
GNI	comp=Z,325nm,1.2s			pmax	pmax		
GNI	**Garni**	**71.26**	**307**	P	**P**	**03 52 11.6**	**+2.0**
GNI	**Garni**	**71.26**	**307**	P	**P**	**03 52 11.6**	**+2.0**
GNI	**Garni**	**71.26**	**307**	*e*P	**P**	**03 52 11.6**	**+2.0**
GNI	comp=Z,373nm,1.4s			LR	LR		
AKH	**Akhalkalaki**	**71.27**	**309⇓**	*i*P	**P**	**03 52 11.6**	**+2.0**
AKH	**Akhalkalaki**	**71.27**	**309**	P	**P**	**03 52 11.6**	**+2.0**
AKH	**Akhalkalaki**	**71.27**	**309**	*e*P	**P**	**03 52 11.6**	**+2.0**
BGD	**Bogdanovka**	**71.30**	**308**	P	**P**	**03 52 12.5**	**+2.7**
STKA	**Stephens Creek**	**71.32**	**182**	P	**P**	**03 52 10.1**	**+0.6**
STKA	comp=Z,15nm,0.9s,baz=348,slow=8.4,SNR=12			LR	LR	04 22 55.9	
STKA	**Stephens Creek**	**71.32**	**182**	*e*P	**P**	**03 52 09.9**	**+0.4**
STKA	comp=Z,4.0nm,0.9s			pmax	pmax		
STKA	**Stephens Creek**	**71.32**	**182**	*e*P	**P**	**03 52 09.9**	**+0.4**
CHVG	**Ch'k'valeri**	**71.33**	**310⇓**	*i*P	**P**	**03 52 11.8**	**+2.0**
CHVG	**Ch'k'valeri**	**71.33**	**310**	P	**P**	**03 52 11.7**	**+2.0**
DLMT	**Dillon**	**71.35**	**46**	*e*P	**P**	**03 52 11.8**	**+1.7**
DLMT	comp=Z,143nm,1.0s			LR	LR		
WAKR	**Walker**	**71.40**	**55**	*e*P	**P**	**03 52 12.9**	**+2.3**
HLID	**Hailey**	**71.42**	**49**	P	**P**	**03 52 11.5**	**+1.0**
HLID	**Hailey**	**71.42**	**49**	*e*P	**P**	**03 52 12.7**	**+2.1**
MCMT	**McKenzie Canyo**	**71.54**	**47**	*e*P	**P**	**03 52 12.6**	**+1.3**
BMN	**Battle Mountai**	**71.64**	**52**	*e*P	**P**	**03 52 13.9**	**+2.1**
BMN	comp=Z,150nm,1.1s			pmax	pmax		
BMN	**Battle Mountai**	**71.64**	**52**	*e*P	**P**	**03 52 13.9**	**+2.1**
BMN	comp=Z,152nm,1.1s			LR	LR		
EAK	**Akyaka**	**71.64**	**308**	*i* P	**P**	**03 52 14.1**	**+2.2**
EPOS	**Posof**	**71.68**	**309**	*i* P	**P**	**03 52 14.6**	**+2.5**
BOZ	**Bozeman (W)**	**71.71**	**46**	P	**P**	**03 52 13.5**	**+1.3**
BOZ	**Bozeman (W)**	**71.71**	**46**	*e*P	**P**	**03 52 13.8**	**+1.6**
BOZ	comp=Z,140nm,1.0s			pmax	pmax		
BOZ	**Bozeman (W)**	**71.71**	**46**	*e*P	**P**	**03 52 13.8**	**+1.6**
WBK	**Wadi Bani Khal**	**71.71**	**284**	P	**P**	**03 52 13.2**	**+0.8**
WBK	**Wadi Bani Khal**	**71.71**	**284**	P	**P**	**03 52 13.2**	**+0.8**
BANOM	**Banah**	**71.75**	**289**	*i* P	**P**	**03 52 13.3**	**+0.7**
BANOM	**Banah**	**71.75**	**289**	P	**P**	**03 52 13.3**	**+0.7**
BANOM				S	**S**	**04 01 32.4**	**+1.0**
BANOM	**Banah**	**71.75**	**289**	P	**P**	**03 52 13.3**	**+0.7**
BANOM				S	**S**	**04 01 32.4**	**+1.0**
BIDO	**Bidbid**	**71.81**	**286**	P	**P**	**03 52 13.8**	**+0.9**
BIDO	**Bidbid**	**71.81**	**286**	P	**P**	**03 52 13.8**	**+0.9**
KARS	**Kars**	**71.99**	**308**	*e*P	**P**	**03 52 15.8**	**+1.8**
NC405	**NORSAR Array S**	**72.02**	**338**	*e*P	**P**	**03 52 13.7**	**+0.1**
NC303	**NORSAR Array S**	**72.03**	**338**	*e*P	**P**	**03 52 13.7**	**+0.1**
SMDO	**Samad**	**72.14**	**285**	P	**P**	**03 52 15.2**	**+0.2**
SMDO	**Samad**	**72.14**	**285**	P	**P**	**03 52 15.2**	**+0.2**
NV01	**Mina Array Sit**	**72.16**	**55**	*e*P	**P**	**03 52 16.7**	**+1.6**
NVAR	**Mina Array Bea**	**72.16**	**55**	P	**P**	**03 52 16.8**	**+1.7**
NVAR	comp=Z,24nm,0.8s,baz=291,slow=6.5,SNR=48			LR	LR	04 17 44.3	
NC204	**NORSAR Array S**	**72.17**	**338**	*e*P	**P**	**03 52 14.5**	**0.0**
SOC	**Sochi**	**72.17**	**312**	*c i*P	**P**	**03 52 15.5**	**+0.7**
SOC				*e*PP	**sP**	**03 52 24.4**	**-0.8**
SOC				*e*SP	**PcP**	**03 52 28.2**	**-4.8**
SOC				*e*PPP	PPP	03 56 36.2	
SOC				*e*S	**S**	**04 01 34.4**	**-1.3**
SOC				*e*SS	**SS**	**04 06 12.4**	**-0.1**
SOC	comp=Z,73nm,0.8s			pmax	pmax		
NB201	**NORSAR Array S**	**72.19**	**338**	*e*P	**P**	**03 52 15.8**	**+1.1**
NB2	**NORSAR Subarra**	**72.22**	**338**	P	**P**	**03 52 15.7**	**+0.9**
	comp=Z,116nm,0.8s,baz=39,slow=6.2						
NB2	**NORSAR Subarra**	**72.22**	**338**	P	**P**	**03 52 15.7**	**+0.9**
	baz=39,slow=6.2						
NOA	**NORSAR Array B**	**72.22**	**338**	P	**P**	**03 52 15.5**	**+0.7**
	comp=Z,71nm,0.8s,baz=39,slow=6.0,SNR=77						
NOA				LR	LR	04 29 38.4	
	comp=Z,7μm,18.4s,baz=30,slow=40						
NV11	**Mina Array Sit**	**72.25**	**55**	*e*P	**P**	**03 52 17.7**	**+2.1**
NV11	comp=Z,119nm,1.1s			LR	LR		
	comp=Z,2μm,19.0s						
MLAC	**Mammoth, Mammo**	**72.30**	**56**	P	**P**	**03 52 17.0**	**+1.1**
	baz=307						
NBO02	**NORSAR Array S**	**72.32**	**338**	*e*P	**P**	**03 52 16.3**	**+0.9**
QLMT	**Earthquake Lak**	**72.33**	**46**	*e*P	**P**	**03 52 18.1**	**+2.1**
ARTV	**Artvin**	**72.35**	**309**	*i* P	**P**	**03 52 17.8**	**+1.6**
NBO00	**NORSAR Array S**	**72.36**	**338**	*e*P	**P**	**03 52 16.9**	**+1.3**
NC602	**NORSAR Array S**	**72.37**	**337**	*e*P	**P**	**03 52 16.7**	**+1.0**
CLDR	**Caldiran**	**72.37**	**306**	*e*P	**P**	**03 52 18.6**	**+2.2**
UOSS	**Minazif**	**72.39**	**288**	*e*P	**P**	**03 52 15.6**	**-0.8**
UOSS	comp=Z,13nm,1.4s			LR	LR		
	comp=Z,4μm,20.0s						
DAGI	**Agillar**	**72.42**	**309**	*i* P	**P**	**03 52 18.2**	**+1.7**
SENK	**Senkaya-Erzuru**	**72.47**	**308**	*e*P	**P**	**03 52 19.1**	**+2.2**
NAO01	**NORSAR Array S**	**72.48**	**338**	*e*P	**P**	**03 52 16.4**	**+0.1**
NAO01				*e*PP	**PP**	**03 55 00.3**	**+3.4**
JMDO	**Jabal Madar**	**72.50**	**285**	P	**P**	**03 52 17.3**	**+0.2**

	SNR=15						
JMDO	Jabal Madar	72.50	285	P	P	03 52 17.3	+0.2
	SNR=15						
HATD	Hatta, Dubai	72.51	288	*i* P	P	03 52 17.9	+0.7
	SNR=17						
HATD	Hatta, Dubai	72.51	288	P	P	03 52 17.8	+0.7
	SNR=24						
HATD	Hatta, Dubai	72.51	288	P	P	03 52 17.8	+0.7
	SNR=24						
BBOO	Buckleboo	72.54	186	*e*P	P	03 52 19.3	+2.5
	comp=Z,83nm,1.1s						
DBAD	Bademkaya	72.59	309	*i* P	P	03 52 19.2	+1.7
ELK	Elko	72.65	51	*e*P	P	03 52 20.3	+2.3
ELK				pmax	pmax		
	comp=Z,46nm,1.1s						
ELK	Elko	72.65	51	*e*P	P	03 52 20.3	+2.3
	comp=Z,46nm,1.1s						
ELK				LR	LR		
	comp=Z,1μm,20.0s						
ASHO	Ashiyiah	72.65	288	*i* P	P	03 52 18.8	+0.8
	SNR=21						
ASHO	Ashiyiah	72.65	288	P	P	03 52 18.6	+0.6
	SNR=20						
ASHO				S	S	04 01 40.0	-1.9
ASHO	Ashiyiah	72.65	288	P	P	03 52 18.6	+0.6
	SNR=20						
ASHO				S	S	04 01 40.0	-1.9
VMUR	Van-Muradiye	72.68	306	*i* P	P	03 52 20.6	+2.4
GCMT	Greycliff	72.69	44	*e*P	P	03 52 20.1	+2.1
YMR	Madison River	72.69	46	*e*P	P	03 52 20.6	+2.4
	comp=Z,88nm,1.1s						
YMR				LR	LR		
	comp=Z,2μm,19.0s						
ANN	Anapa	72.70	314	*e*P	P	03 52 15.7	-2.2
ANN				*e**PP	pP	03 52 26.5	+1.0
ANN				*e*		03 52 32.9	
ANN				*e*		03 55 00.2	
ANN				*e*PPP	PPP	03 56 41.5	
ANN				*e*S	S	04 01 36.9	-4.7
ANN				*e*SS	SS	04 06 20.0	-0.4
ANN				pmax	pmax		
	comp=Z,118nm,1.5s						
ANN				MLR	MLR		
	comp=E,7μm,20.0s						
ANN				MLR	MLR		
	comp=N,14μm,20.0s						
ANN				MLR	MLR		
	comp=Z,9μm,20.0s						
NAZ	Nazwa, Dubai	72.76	288	*i* P	P	03 52 19.2	+0.6
	SNR=6.5						
NAZ	Nazwa, Dubai	72.76	288	P	P	03 52 19.0	+0.4
	SNR=7.0						
NAZ	Nazwa, Dubai	72.76	288	P	P	03 52 19.0	+0.4
	SNR=7.0						
EATA	Eleskirt	72.81	308	*i* P	P	03 52 21.9	+2.8
RCTC	Rector, Farmer	72.83	57	P	P	03 52 19.9	+1.0
	baz=307						
MCID	Moose Creek	72.87	47	*e*P	P	03 52 22.2	+3.0
TUTA	Tutak	72.90	307	*i* P	P	03 52 22.0	+2.5
YFT	Old Faithful	72.90	46	*e*P	P	03 52 23.0	+3.6
	comp=Z,79nm,1.0s						
SMMC	Simmler	72.94	58	P	P	03 52 21.1	+1.6
	baz=307						
BSY	Bisya	72.95	286	P	P	03 52 21.4	+1.6
	SNR=17						
BSY	Bisya	72.95	286	P	P	03 52 21.4	+1.6
	SNR=17						
FAQ	Al Faqa, Dubai	72.96	288	*i* P	P	03 52 20.4	+0.6
	SNR=6.9						
FAQ	Al Faqa, Dubai	72.96	288	P	P	03 52 19.9	+0.2
	SNR=9.0						
FAQ	Al Faqa, Dubai	72.96	288	P	P	03 52 19.9	+0.2
	SNR=9.0						
SFJD	Kangerlussuaq	73.02	6⇑	*i*P	P	03 52 20.4	+1.0
	comp=Z,56nm,1.0s						
	comp=Z,4μm,17.0s						
SFJD	Kangerlussuaq	73.02	6⇑	*i*P	P	03 52 20.4	+1.0
SFJD				pmax	pmax		
	comp=Z,56nm,1.0s						
SFJD				MLR	MLR		
	comp=Z,4μm,17.0s						
SFJD	Kangerlussuaq	73.02	6	*e*P	P	03 52 20.9	+1.5
	comp=Z,73nm,1.0s						
SFJD				LR	LR		
	comp=Z,4μm,20.0s						
AKASG	Malin Array Be	73.03	323	P	P	03 52 20.1	+0.4
	comp=Z,16nm,0.6s,baz=43,slow=6.4,SNR=107						
AKASG				LR	LR	04 27 15.9	
	comp=Z,5μm,18.1s,baz=45,slow=38						
AKBB	Malin Array Si	73.03	323	*e*P	P	03 52 20.9	+1.1
AKBB				pmax	pmax		
	comp=Z,100nm,1.1s						
AKBB	Malin Array Si	73.03	323	*e*P	P	03 52 20.9	+1.1
	comp=Z,102nm,1.1s						
AKBB				LR	LR		
	comp=Z,8μm,21.0s						
VANB	Van	73.03	306	*e*P	P	03 52 22.4	+2.3
TIN	Tinemaha, Big	73.03	56	P	P	03 52 21.5	+1.3
	baz=307						
KIEV	Kiev	73.04	323	*c i*P	P	03 52 20.5	+0.7
KIEV				pmax	pmax		
	comp=Z,108nm,1.5s						
KIEV	Kiev	73.04	323	*e*P	P	03 52 20.1	+0.3
	comp=Z,92nm,1.1s						
KIEV				*e*PP	PP	03 54 57.8	-4.2
KIEV				LR	LR		
	comp=Z,8μm,21.0s						
LKWY	Lake	73.07	46	*e*P	P	03 52 23.9	+3.5
LKWY				pmax	pmax		
	comp=Z,72nm,1.1s						
LKWY	Lake	73.07	46	*e*P	P	03 52 23.9	+3.5
	comp=Z,72nm,1.1s						
AK11	Malin Array Si	73.07	323	*e*P	P	03 52 20.3	+0.3
H17A	Grant Village	73.08	46	P	P	03 52 23.1	+2.6
	baz=309,SNR=50						
H17A	Grant Village	73.08	46	*e*P	P	03 52 23.8	+3.3
	comp=Z,161nm,1.0s						
IMW	Indian Meadow	73.19	47	*e*P	P	03 52 23.8	+2.6
	comp=Z,86nm,1.1s						
FLWY	Flagg Ranch	73.21	46	*e*P	P	03 52 22.8	+1.5
	comp=Z,102nm,1.4s						
VES	Vestal, Richgr	73.22	57	P	P	03 52 22.1	+1.0
	baz=307,SNR=16						
YTP	The Promontory	73.24	46	*e*P	P	03 52 24.1	+2.7
FXWY	Fox Creek	73.30	47	*e*P	P	03 52 23.7	+1.8
	comp=Z,79nm,1.0s						
PKM	Mcpherson Peak	73.31	58	P	P	03 52 23.4	+1.4
	baz=307,SNR=5.1						
RLMT	Red Lodge	73.33	45	P	P	03 52 23.6	+1.7
	baz=310,SNR=19						
RLMT	Red Lodge	73.33	45	*e*P	P	03 52 24.0	+2.1
	comp=Z,145nm,1.6s						
SUW	Suwalki	73.37	328	*e*P	P	03 52 22.2	+0.5
SUW				LMZ	LR	04 27 06.5	
	comp=Z,10μm,18.5s						
SUW	Suwalki	73.37	328	*e*P	P	03 52 22.2	+0.5
SUW				MLR	MLR		
	comp=Z,10μm,18.5s						
MOOW	Moose Ponds	73.39	47	*e*P	P	03 52 24.4	+2.1
	comp=Z,90nm,1.1s						
TPAW	Teton Pass	73.44	47	*e*P	P	03 52 25.3	+2.6
	comp=Z,169nm,1.3s						
EKAR	Karacoban	73.45	307	*i* P	P	03 52 25.8	+3.1
HVU	Hansel Valley	73.47	49	*e*P	P	03 52 24.0	+1.2
HVU				pmax	pmax		
	comp=Z,98nm,1.0s						
HVU	Hansel Valley	73.47	49	*e*P	P	03 52 24.0	+1.2
	comp=Z,98nm,1.0s						
HVU				LR	LR		
	comp=Z,1μm,20.0s						
CWC	Cottonwood Cre	73.50	56	P	P	03 52 22.9	-0.1
	baz=308						
LOHW	Long Hollow	73.56	47	*e*P	P	03 52 24.8	+1.5
	comp=Z,30nm,1.0s						
SNOW	Snow King Moun	73.57	47	*e*P	P	03 52 24.9	+1.5
	comp=Z,66nm,1.0s						
REDW	Red Top Meadow	73.58	47	*e*P	P	03 52 25.8	+2.3
	comp=Z,159nm,1.4s						
REDW				LR	LR		
	comp=Z,2μm,20.0s						
GRAC	Grapevine Rang	73.62	55	P	P	03 52 24.5	+0.9
	baz=308,SNR=14						
SBC	Santa Barbara	73.65	59	P	P	03 52 24.4	+0.7
	baz=307						
ISA	Isabella, Lake	73.72	57	P	P	03 52 24.5	+0.3
	baz=308,SNR=5.0						
ISA	Isabella, Lake	73.72	57	*e*P	P	03 52 24.5	+0.3
ISA				pmax	pmax		
	comp=Z,47nm,0.9s						
ISA				MLR	MLR		
	comp=Z,2μm,20.0s						
ISA	Isabella, Lake	73.72	57	*e*P	P	03 52 24.5	+0.3
	comp=Z,47nm,0.9s						
ISA				LR	LR		
	comp=Z,2μm,20.0s						
KTUT	Trabzon	73.76	310	*e*P	P	03 52 24.7	+0.5
DGMT	Dagmar	73.77	40	P	P	03 52 24.8	+0.6
	baz=312						
DGMT	Dagmar	73.77	40	*e*P	P	03 52 25.6	+1.4
	comp=Z,102nm,1.1s						
ARVC	Arvin	73.81	58	P	P	03 52 25.7	+1.0
	baz=307						
AHID	Auburn Hatcher	73.81	48	*e*P	P	03 52 25.7	+0.9
	comp=Z,69nm,1.1s						
AHID				LR	LR		
	comp=Z,2μm,22.0s						
KONO	Kongsberg	73.82	338	PFAKE		03 52 30.0	+5.7
KONO				LR	LR		
	comp=Z,10μm,21.0s						
BGU	Big Grassy Mou	73.85	50	*e*P	P	03 52 26.0	+1.0
	comp=Z,40nm,1.0s						
BGU				LR	LR		
	comp=Z,2μm,19.0s						
BAYT	Ayd¨–ntepe-Bay	73.90	309	*e*P	P	03 52 27.5	+2.2
R11A	Troy Canyon, C	73.91	53	P	P	03 52 26.7	+1.3
	baz=308,SNR=69						
R11A	Troy Canyon, C	73.91	53	*e*P	P	03 52 27.0	+1.6
	comp=Z,105nm,1.1s						
R11A				LR	LR		
	comp=Z,2μm,21.0s						
DAC	Darwin (Calif)	73.91	56	*e*P	P	03 52 27.1	+1.6
DAC				pmax	pmax		
	comp=Z,100nm,1.1s						
DAC	Darwin (Calif)	73.91	56	*e*P	P	03 52 27.1	+1.6
	comp=Z,100nm,1.1s						
DAC				LR	LR		
	comp=Z,2μm,20.0s						
KOPT	Kop Dagi	73.92	309	*i* P	P	03 52 28.2	+2.6
LAO	LASA Array	73.93	42	P	P	03 52 26.7	+1.5
	baz=311,SNR=27						
LAO	LASA Array	73.93	42	*e*P	P	03 52 27.1	+1.9
	comp=Z,115nm,1.1s						
SPUT	South Promonto	73.96	49	*e*P	P	03 52 26.9	+1.3
	comp=Z,77nm,1.1s						
SPUT				LR	LR		
	comp=Z,1μm,18.0s						
SCZ2	Santa Cruz Isl	73.97	59	P	P	03 52 27.0	+1.4
	baz=307						
MPMC	Manual Prospec	74.11	56	P	P	03 52 27.5	+0.9
	baz=308,SNR=37						
KLNR	Kaliningrad	74.13	330	*e*P	P	03 52 27.9	+1.8
KLNR				pmax	pmax		
	comp=Z,249nm,1.5s						
OSI	Osito Audit: C	74.19	58	P	P	03 52 28.4	+1.4
	baz=308						
YEDI	Yedisu-Bingol	74.26	308	*e*P	P	03 52 29.3	+1.9
FURC	Furnace Creek,	74.26	56	P	P	03 52 28.6	+1.4
	baz=308,SNR=20						
BLG	Laguna Peak, P	74.28	59	P	P	03 52 27.9	+0.5
	baz=308						
HWUT	Hardware Ranch	74.28	49	*e*P	P	03 52 29.8	+2.2
	comp=Z,134nm,1.2s						
HWUT				LR	LR		
	comp=Z,2μm,19.0s						
LRMC	Laurel Mtn Rad	74.34	57	P	P	03 52 29.1	+1.2
	baz=308						
RSUT	Red Spur Mount	74.35	49	*e*P	P	03 52 30.0	+1.9
TPNV	Topopah Spring	74.36	55	P	P	03 52 29.1	+1.1
	baz=308,SNR=17						
TPNV	Topopah Spring	74.36	55	*e*P	P	03 52 29.5	+1.5
TPNV				pmax	pmax		
	comp=Z,123nm,0.9s						
TPNV				MLR	MLR		
	comp=Z,3μm,21.0s						
TPNV	Topopah Spring	74.36	55	*e*P	P	03 52 29.5	+1.5
	comp=Z,123nm,0.9s						
TPNV				LR	LR		
	comp=Z,3μm,21.0s						
B25A	Knox Farm, Ray	74.41	39	P	P	03 52 28.4	+0.5
	baz=313						
SIM	Simferopol'	74.41	316	*c e*P	P	03 52 28.7	+0.7
SIM				*e*S	S	04 01 59.0	-2.0
SIM				pmax	pmax		
	comp=Z,76nm,1.0s						
ESPY	Espiye-Giresun	74.41	310	*e*P	P	03 52 28.9	+0.8
DUG	Dugway, Tooele	74.44	51	P	P	03 52 29.9	+1.5
	baz=309,SNR=42						
DUG	Dugway, Tooele	74.44	51	*e*P	P	03 52 30.7	+2.3
DUG				pmax	pmax		
	comp=Z,160nm,1.1s						
DUG	Dugway, Tooele	74.44	51	*e*P	P	03 52 30.7	+2.3
	comp=Z,164nm,1.1s						
BNGB	Bing¨¶l	74.45	308	*e*P	P	03 52 30.6	+2.2
BGOL	Bingol	74.46	308	*i* P	P	03 52 31.0	+2.5
SNCC	San Nicolas Is	74.50	60	P	P	03 52 30.0	+1.3
	baz=308						
EDW2	Edwards Air Fo	74.51	57	P	P	03 52 30.0	+1.2
	baz=308,SNR=20						
A26A	Wade Farm, Ken	74.53	38	P	P	03 52 29.6	+1.0
	baz=314						
KELT	Kelkit	74.58	310	*i* P	P	03 52 31.1	+1.7
SVAN	Silvan-Diyarba	74.66	307	*e*P	P	03 52 30.8	+1.1
DECC	Green Verdugo	74.67	58	P	P	03 52 30.9	+1.2
	baz=308						
GRSN	GIRESUNGRSN	74.68	311	*i* P	P	03 52 30.8	+1.2
TCUT	Toone Canyon	74.68	49	*e*P	P	03 52 31.4	+1.5
	comp=Z,232nm,1.3s						
TCUT				LR	LR		
	comp=Z,2μm,19.0s						
BW06	Boulder Array	74.69	47	P	P	03 52 30.7	+0.8
	baz=310,SNR=58						
BW06	Boulder Array	74.69	47	*e*P	P	03 52 30.9	+1.0
	comp=Z,58nm,1.1s						
BW06				LR	LR		
	comp=Z,1μm,20.0s						
PD31	Pinedale Array	74.69	47	*e*P	P	03 52 30.9	+0.9
PDAR	Pinedale Array	74.69	47	P	P	03 52 30.7	+0.8
	comp=Z,14nm,0.6s,baz=258,slow=2.0,SNR=55						
PDAR				LR	LR	04 21 24.3	
	comp=Z,825nm,21.8s,baz=342,slow=33						
C25A	Freed Ranch, W	74.74	40	P	P	03 52 30.9	+1.0
	baz=313						
BTMN	Batman	74.78	307	*i* P	P	03 52 32.6	+2.2
B26A	Jensen Ranch,	74.79	39	P	P	03 52 31.3	+1.1
	baz=314						
PASC	Pasadena Art C	74.82	58	*e*P	P	03 52 30.3	-0.2
	comp=Z,101nm,1.2s						
PASC				LR	LR		
	comp=Z,2μm,20.0s						
PSUT	Pine Spring	74.86	52	*e*P	P	03 52 32.4	+1.4
	comp=Z,96nm,1.1s						
PSUT				LR	LR		
	comp=Z,1μm,22.0s						
A27A	Ledoux Ranch,	74.87	38	P	P	03 52 31.7	+1.1
	baz=314						
MWC	Mount Wilson	74.87	58	*e*P	P	03 52 33.0	+2.0
MWC				pmax	pmax		
	comp=Z,200nm,1.2s						
MWC	Mount Wilson	74.87	58	*e*P	P	03 52 33.0	+2.0
	comp=Z,203nm,1.3s						
MWC				LR	LR		
	comp=Z,2μm,20.0s						
ORDU	Ordu-Boztepe	74.87	311	*i* P	P	03 52 32.4	+1.6
CAN	Canberra	74.92	175	*e*P	P	03 52 30.4	-0.4
CAN				pmax	pmax		
	comp=Z,160nm,1.9s						
CAN	Canberra	74.92	175	*e*P	P	03 52 30.4	-0.4
	comp=Z,160nm,1.9s						
JLU	Jordanelle	74.99	50	*e*P	P	03 52 33.5	+1.8
	comp=Z,94nm,1.3s						
JLU				LR	LR		
	comp=Z,1μm,20.0s						
GSC	Goldstone, Bar	75.02	57	P	P	03 52 32.8	+1.0
	baz=308,SNR=13						
GSC	Goldstone, Bar	75.02	57	*e*P	P	03 52 32.4	+0.6
GSC				pmax	pmax		
	comp=Z,102nm,1.0s						
GSC	Goldstone, Bar	75.02	57	*e*P	P	03 52 32.4	+0.6
	comp=Z,102nm,1.0s						
FMP	Fort Macarthur	75.03	59	P	P	03 52 33.0	+1.3
	baz=308						
NLU	North Lily Min	75.03	50	*e*P	P	03 52 34.0	+2.1
	comp=Z,84nm,1.1s						
TNCL	Tunceli-Merkez	75.07	309	*i* P	P	03 52 34.6	+2.5
D25A	Fairfield	75.09	40	P	P	03 52 33.3	+1.3
	baz=313						
BFSC	Mount Baldy Ra	75.12	58	P	P	03 52 33.3	+0.8
	baz=308,SNR=12						
CIS	Catalina Islan	75.14	59	P	P	03 52 33.4	+1.0
	baz=308						
RRX	Edison Barstow	75.16	57	P	P	03 52 33.6	+1.1
	baz=308						
SUSE	Susehri	75.17	310	*i* P	P	03 52 33.9	+1.2
SORM	Soroca	75.21	321	⇓*i*P	P	03 52 33.3	+0.8
C26A	Wahner Farm, P	75.23	39	P	P	03 52 33.8	+1.1
	baz=314						
B27A	Peters Farms,	75.24	38	P	P	03 52 33.5	+0.7
	baz=314						
MPU	Maple Canyon	75.25	50	*e*P	P	03 52 35.4	+2.2
	comp=Z,132nm,1.2s						
PTK	Pertek	75.30	308	*e*P	P	03 52 35.7	+2.2
SHPR	Sheep Range	75.32	55	*e*P	P	03 52 35.9	+2.3
	comp=Z,141nm,1.1s						
REFA	Refahiye_ERZ¨	75.35	309	*i* P	P	03 52 34.4	+0.7
A28A	Rude Farm, Bot	75.36	38	P	P	03 52 34.5	+1.1
	baz=315,SNR=12						
DYBB	Diyarbakir	75.44	307	*e*P	P	03 52 36.3	+2.2
MARD	Mardin	75.44	306	*i* P	P	03 52 36.2	+1.9
E25A	Miller Ranch,	75.50	41	P	P	03 52 35.6	+1.3
	baz=313,SNR=20						
TUQ	Turquoise Moun	75.50	56	P	P	03 52 35.5	+0.9
	baz=309,SNR=13						
MAZI	Mazidag	75.56	307	*e*P	P	03 52 36.6	+1.7
RSDY	Resadiye-TOKAT	75.56	311	*e*P	P	03 52 37.0	+2.3
BBRC	Big Bear Solar	75.58	57	P	P	03 52 36.0	+0.7
	baz=308						
KEMA	Kemaliye	75.60	309	*i* P	P	03 52 37.4	+2.4
SAMS	Samsun-Alacam	75.60	312	*i* P	P	03 52 31.0	-3.9
C27A	Sayler Ranch,	75.60	39	P	P	03 52 35.8	+1.0
	baz=314						
HEC	Hector,Ludlow	75.61	57	P	P	03 52 36.2	+1.0
	baz=309						
D26A	Manning	75.62	40	P	P	03 52 35.8	+0.8
	baz=314,SNR=7.3						
CUZAR	Zara_SIVAS	75.63	310	*i* P	P	03 52 40.0	+4.7
B28A	Dugan Ranch, T	75.64	38	P	P	03 52 36.1	+1.1
	baz=315						
SVRC	Sivrice-ELAZID	75.67	308	*e*P	P	03 52 38.2	+2.6
BSD	Bornholm Skovb	75.72	332	⇑*i*P	P	03 52 36.1	+0.8
	comp=Z,132nm,1.1s						
BSD				*i* S	S	04 02 24.0	+8.8
	comp=Z,12μm,18.0s						
BSD	Bornholm Skovb	75.72	332	⇑*i*P	P	03 52 36.1	+0.8
BSD				pmax	pmax		
	comp=Z,130nm,1.1s						
BSD				MLR	MLR		
	comp=Z,12μm,18.0s						
SNOP	Sinop	75.73	313	*e*P	P	03 52 36.9	+1.3
KIS	Kishinev	75.76	320	⇑*e*P	P	03 52 36.0	+0.3
	comp=Z,300nm,2.0s						
KIS	Kishinev	75.76	320	*e*PcP	PcP	03 52 52.0	+3.7
KIS	Kishinev	75.76	320	*e*PP	PP	03 55 27.0	+1.9
KIS	Kishinev	75.76	320	*e*PPP	PPP	03 57 16.0	
KIS				*e*S	S	04 02 12.0	-4.0
KIS	Kishinev	75.76	320	*e*PS	PnS	04 02 54.0	+0.4
KIS				*e*SS	SS	04 07 20.0	+13
KIS				*e*SSS	SSS	04 11 36.0	
KIS				*e*L	L	04 15 30.0	
KIS				LRM	MLR	04 29 18.0	
	comp=Z,8μm,16.0s						
KIS	Kishinev	75.76	320	*c e*P	P	03 52 36.0	+0.3
KIS				*e*		03 52 52.0	
KIS				*e*		03 55 27.0	
KIS				*e*PPP	PPP	03 57 16.0	
KIS				*e*S	S	04 02 12.0	-4.0
KIS				*e*		04 02 35.0	
KIS				*e*PS	PnS	04 02 54.0	+0.4
KIS				pmax	pmax		
	comp=Z,340nm,2.0s						
KIS				pmax	pmax		
	comp=Z,1μm,7.5s						
KIS				pmax	pmax		
	comp=Z,2μm,15.0s						
KIS				MLR	MLR		
	comp=Z,11μm,16.0s						
KIS				MLR	MLR		
	comp=Z,12μm,16.0s						
KIS				MLR	MLR		
	comp=N,6μm,15.0s						
KIS				MLR	MLR		
	comp=E,8μm,16.0s						
CCUT	Cedar City	75.78	53	PFAKE		03 52 50.0	+14
CCUT				LR	LR		
	comp=Z,2μm,21.0s						
KBSD	Kabsdagh	75.79	306	*i* P	P	03 52 37.9	+1.8
MURC	Murrieta	75.81	58	P	P	03 52 37.2	+0.9
	baz=308,SNR=5.7						
A29A	Manning Farm,	75.83	37	P	P	03 52 36.9	+0.7
	baz=315,SNR=31						
F25A	Bowman	75.86	41	P	P	03 52 37.1	+0.7
	baz=313						
KVT	Kavak	75.86	312	*e*P	P	03 52 38.6	+2.1
MSU	Marysvale	75.89	52	*e*P	P	03 52 39.1	+2.2
MSU	Marysvale	75.89	52	*e*P	P	03 52 39.1	+2.2
DIKM	Dikmen	75.94	313	*e*P	P	03 52 38.7	+1.9
BEL	Belsk	75.95	327	*e*P	P	03 52 38.2	+1.5
BEL				LMZ	LR	04 28 37.7	
	comp=Z,10μm,18.9s						
BEL	Belsk	75.95	327	*e*P	P	03 52 38.2	+1.5
BEL				MLR	MLR		
	comp=Z,10μm,18.9s						
TMUT	Trail Mountain	75.97	50	*e*P	P	03 52 39.5	+2.1
	comp=Z,94nm,1.3s						
TMUT				LR	LR		
	comp=Z,1μm,18.0s						
E26A	Carlson Angus	75.99	41	P	P	03 52 38.3	+1.2
	baz=314,SNR=9.1						
D27A	Center	76.01	40	P	P	03 52 37.9	+0.7
	baz=314						
LVV	L'vov	76.03	324	⇓*i*P	P	03 52 38.3	+1.1
LVV				*e*		03 52 54.1	
LVV				*e*S	S	04 02 20.7	+1.8
LVV				*e*		04 02 41.9	
LVV				*e*		04 07 18.5	
LVV				MLR	MLR		
	comp=N,8μm,16.0s						
LVV				MLR	MLR		
	comp=E,14μm,16.0s						
LVV				MLR	MLR		
	comp=Z,15μm,16.0s						
HAVZ	Havza	76.06	312	*i* P	P	03 52 40.2	+2.6
GMRC	Granite Mounta	76.07	56	P	P	03 52 39.0	+1.1
	baz=309,SNR=15						
B29A	Wagenman Farm,	76.10	38	P	P	03 52 38.5	+0.9
	baz=315,SNR=10						
TOKA	Tokat	76.11	311	*i* P	P	03 52 40.0	+2.1
P17A	Butcher Ranch,	76.13	50	*e*P	P	03 52 40.4	+2.2
	comp=Z,178nm,1.1s						
P17A				LR	LR		
	comp=Z,1μm,19.0s						
COP	Copenhagen	76.14	334	⇑*i*P	P	03 52 39.2	+1.6
	comp=Z,82nm,0.9s						
COP				*i* S	S	04 02 23.1	+3.4
	comp=Z,6μm,18.0s						
COP	Copenhagen	76.14	334	⇑*i*P	P	03 52 39.2	+1.6
COP				*i* S	S	04 02 23.1	+3.4
COP				pmax	pmax		
	comp=Z,82nm,0.9s						
COP				MLR	MLR		
	comp=Z,6μm,18.0s						
C28A	Hausauer Farms	76.14	39	P	P	03 52 38.8	+0.9
	baz=315						
CUKAN	kangal_SIVAS	76.18	310	*i* P	P	03 52 40.7	+2.3
MTPU	Mount Pierson	76.19	52	*e*P	P	03 52 41.1	+2.3
	comp=Z,94nm,1.0s						
MTPU				LR	LR		
	comp=Z,1μm,21.0s						
LCMT	Little Creek M	76.19	53	*e*P	P	03 52 41.0	+2.5
	comp=Z,126nm,1.0s						
LCMT				LR	LR		
	comp=Z,2μm,19.0s						
LDFC	Landfair	76.24	56	PFAKE		03 52 50.0	+11
LDFC				LR	LR		
	comp=Z,2μm,20.0s						
IAS	Iasi	76.25	321	⇓*i*P	P	03 52 38.4	0.0
A30A	Hoffart Farm,	76.25	37	P	P	03 52 39.1	+0.6
	baz=316,SNR=18						
NWAO	Narrogin (SRO)	76.27	202	*e*P	P	03 52 41.6	+3

NWAO	Narrogin (SRO)	76.27	202	eP		P		03 52 41.6 +3.0
PFO	Pinyon Flats O	76.29	58	LR		LR		04 19 17.1
	comp=Z,2μm,21.1s,baz=312,slow=30							
PFO	Pinyon Flats O	76.29	58	P		P		03 52 40.0 +0.9
	baz=309							
PFO	Pinyon Flats O	76.29	58	eP		P		03 52 41.1 +1.9
PFO				pmax		pmax		
	comp=Z,110nm,1.2s							
PFO	Pinyon Flats O	76.29	58	eP		P		03 52 41.1 +1.9
	comp=Z,106nm,1.2s							
BOYT	Boyabat	76.29	313	i P		P		03 52 41.0 +2.1
TPFO	Pinon Flats	76.30	58	P		P		03 52 39.8 +0.6
	baz=309							
F26A	Lodgepole	76.31	41	P		P		03 52 39.9 +1.0
	baz=314							
109C	Camp Elliot, M	76.32	59	P		P		03 52 40.2 +1.1
	baz=309							
P18A	Preston Nutter	76.32	50	eP		P		03 52 40.9 +1.4
	comp=Z,152nm,1.4s							
P18A				LR		LR		
	comp=Z,1μm,20.0s							
BELC	Belle Mtn. Jos	76.34	57	P		P		03 52 40.0 +0.6
	baz=309							
G25A	Newell	76.38	42	P		P		03 52 39.8 +0.5
	baz=313							
ULM	Lac du Bonnet	76.39	35	P		P		03 52 39.3 0.0
	comp=Z,18nm,0.9s,baz=320,slow=6.4,SNR=8.3							
ULM	Lac du Bonnet	76.39	35	eP		P		03 52 40.0 +0.8
ULM				pmax		pmax		
	comp=Z,38nm,1.0s							
ULM	Lac du Bonnet	76.39	35	eP		P		03 52 39.3 0.0
	comp=Z,38nm,1.0s							
ULM				LR		LR		
	comp=Z,3μm,20.0s							
D28A	Regan	76.42	39	P		P		03 52 40.1 +0.6
	baz=315							
MDND	Maddock	76.42	38	P		P		03 52 40.0 +0.5
	baz=315							
MDND	Maddock	76.42	38	eP		P		03 52 40.4 +0.9
	comp=Z,201nm,1.1s							
MDND				LR		LR		
	comp=Z,2μm,20.0s							
SFNV	Sufian	76.42	306	i P		P		03 52 40.9 +1.1
BZK	Bozkurt	76.44	314	eP		P		03 52 41.2 +1.6
K22A	Casper	76.45	45	P		P		03 52 40.7 +0.7
	baz=312,SNR=11							
K22A	Casper	76.45	45	eP		P		03 52 40.7 +0.7
	comp=Z,88nm,1.2s							
KNB	Kanab	76.45	53	eP		P		03 52 41.6 +1.5
KNB				pmax		pmax		
	comp=Z,149nm,1.0s							
KNB				MLR		MLR		
	comp=Z,2μm,21.0s							
KNB	Kanab	76.45	53	eP		P		03 52 41.5 +1.5
	comp=Z,149nm,1.0s							
KNB				LR		LR		
	comp=Z,2μm,21.0s							
E27A	Carson	76.47	40	P		P		03 52 40.9 +1.1
	baz=314,SNR=10							
PKCU	Pink Cliffs	76.49	52	eP		P		03 52 42.4 +2.0
	comp=Z,97nm,1.2s							
SRU	San Rafael Swe	76.49	50	eP		P		03 52 41.8 +1.5
SRU				MLR		MLR		
	comp=Z,2μm,18.0s							
SRU	San Rafael Swe	76.49	50	eP		P		03 52 41.8 +1.5
SRU				epP		pP		03 52 42.0 -5.9
SRU				LR		LR		
	comp=Z,2μm,18.0s							
BTU	Barney Top	76.56	52	eP		P		03 52 42.8 +1.9
URFA	Urfa	76.57	308	eP		P		03 52 42.9 +2.3
B30A	Myrvik Farm, E	76.59	37	P		P		03 52 41.2 +0.7
	baz=316,SNR=18							
EKU	East Kanab	76.61	53	eP		P		03 52 43.6 +2.6
MMU	Miners Mountai	76.62	51	eP		P		03 52 43.1 +2.0
CUALT	Altinyayla-SIV	76.62	310	i P		P		03 52 43.4 +2.4
DARE	Darende-Malaty	76.65	309	eP		P		03 52 42.9 +1.8
H25A	Fruitdale	76.68	42	P		P		03 52 41.8 +0.7
	baz=313,SNR=6.3							
BAR	Barrett	76.73	59	eP		P		03 52 41.9 +0.4
	comp=Z,45nm,1.0s							
BAR				LR		LR		
	comp=Z,2μm,18.0s							
G26A	Maurine	76.73	41	P		P		03 52 41.9 +0.6
	baz=314,SNR=27							
NEE2	Needles Airpor	76.75	56	P		P		03 52 42.2 +0.6
	baz=309							
KWP	Kalwaria Pacla	76.76	325	eP		P		03 52 43.1 +1.7
KWP				LMZ		LR		04 31 03.6
	comp=Z,18μm,16.1s							
KWP	Kalwaria Pacla	76.76	325	⇑i P		P		03 52 43.1 +1.7
KWP	Kalwaria Pacla	76.76	325	eP		P		03 52 43.1 +1.7
KWP				MLR		MLR		
	comp=Z,18μm,16.1s							
MONP2	Monument Peak	76.76	58	P		P		03 52 42.2 +0.3
	baz=309							
A31A	Linda, St. Vin	76.77	36	P		P		03 52 42.1 +0.8
	baz=316							
E28A	Huff	76.79	40	P		P		03 52 42.5 +0.9
	baz=315							
RSSD	Black Hills	76.79	43	P		P		03 52 42.3 +0.4
	baz=313							
RSSD	Black Hills	76.79	43	eP		P		03 52 41.9 0.0
RSSD				pmax		pmax		
	comp=Z,44nm,1.0s							
RSSD				MLR		MLR		
	comp=Z,2μm,19.0s							
RSSD	Black Hills	76.79	43	eP		P		03 52 41.9 0.0
	comp=Z,44nm,1.0s							
RSSD				ePP		PP		03 55 26.3 -7.9
RSSD				LR		LR		
	comp=Z,2μm,19.0s							
IRM	Iron Mountain	76.80	57	P		P		03 52 42.3 +0.5
	baz=309							
CUSAR	Sarkisla-SIVAS	76.83	310	i P		P		03 52 43.9 +1.8
ATAB	Bozova	76.87	308	i P		P		03 52 45.0 +2.8
BC3	Big Chuckawall	76.92	57	P		P		03 52 43.5 +0.9
	baz=309,SNR=8.8							
B31A	Greenbush Farm	76.92	37	P		P		03 52 42.8 +0.5
	baz=316							
D29A	Pettibone, Tap	76.98	39	P		P		03 52 42.8 +0.1
	baz=315							
W13A	Hualapai Mount	77.00	55	eP		P		03 52 44.4 +1.1
	comp=Z,49nm,1.0s							
COAL	Corum-Alaca	77.01	312	i P		P		03 52 44.8 +1.7
G27A	Dupree	77.01	41	P		P		03 52 43.5 +0.6
	baz=314,SNR=14							
I25A	Rochford	77.02	43	P		P		03 52 43.7 +0.6
	baz=313,SNR=29							
SURC	SANLIURFA_SURC	77.06	307	i P		P		03 52 45.5 +2.2
C30A	Mose, Pekin	77.06	38	P		P		03 52 43.6 +0.5
	baz=316,SNR=8.1							
BUR08	Bucovina Ar. S	77.06	322	eP		P		03 52 44.5 +1.2
BURAR	Bucovina Array	77.07	322	⇑i P		P		03 52 44.3 +1.0
A32A	Rocking H Ranc	77.09	36	P		P		03 52 43.3 +0.1
	baz=317,SNR=9.2							
H26A	Fairpoint	77.11	42	P		P		03 52 44.1 +0.6
	baz=314,SNR=14							
IKP	In-Ko-Pah, Jac	77.12	58	P		P		03 52 45.2 +1.4
	baz=309							
SWSC	Sam W. Stewart	77.14	58	P		P		03 52 44.8 +1.0
	baz=309							
U15A	North Rim	77.15	53	eP		P		03 52 45.8 +1.7
	comp=Z,150nm,1.0s							
U15A				LR		LR		
	comp=Z,2μm,21.0s							
O20A	White River Ci	77.15	48	P		P		03 52 44.6 +0.6
	baz=312,SNR=21							
O20A	White River Ci	77.15	48	eP		P		03 52 44.2 +0.2
	comp=Z,107nm,1.1s							
O20A				LR		LR		
	comp=Z,2μm,21.0s							
TESR	Tescani	77.17	321	⇑i P		P		03 52 44.7 +1.0
ILGA	Ilgaz	77.20	313	i P		P		03 52 46.3 +2.0
CORM	Corum	77.27	312	eP		P		03 52 46.6 +2.1
E29A	Napoleon	77.31	39	P		P		03 52 44.8 +0.2
	baz=315							
C31A	Landman Farms,	77.34	37	P		P		03 52 45.0 +0.4
	baz=316							
PDMCI	Parker Dam,Lak	77.35	56	P		P		03 52 45.8 +0.9
	baz=310,SNR=11							
D30A	Buchanan	77.35	38	P		P		03 52 45.3 +0.6
	baz=316,SNR=10.0							
CFR	Carcaliu	77.37	319	⇑i P		P		03 52 45.8 +1.0
GZT	Gaziantep	77.39	308	i P		P		03 52 48.2 +2.9
BNN	Bunyan	77.44	310	eP		P		03 52 47.4 +1.9
B32A	Ashes, Strandq	77.45	36	P		P		03 52 45.5 +0.2
	baz=317,SNR=25							
Y12C	Blythe	77.45	57	P		P		03 52 46.8 +1.3
	baz=310,SNR=6.6							
Y12C	Blythe	77.45	57	eP		P		03 52 47.5 +2.0
	comp=Z,146nm,1.1s							
Y12C				LR		LR		
	comp=Z,2μm,21.0s							
H27A	Howes	77.46	42	P		P		03 52 46.1 +0.7
	baz=314,SNR=21							
KSRV	Kasrt alli	77.47	306	i P		P		03 52 47.7 +2.1
CANT	Cankiri	77.56	313	eP		P		03 52 48.3 +2.2
STHS	Stebnicka Huta	77.56	325	eP		P		03 52 47.4 +1.5
STHS				pmax		pmax		
	comp=Z,52nm,1.0s							
STHS	Stebnicka Huta	77.56	325	eP		P		03 52 47.4 +1.5
A33A	Warroad	77.57	35	P		P		03 52 45.9 0.0
	baz=318,SNR=17							
RAO	Raoul Island	77.57	146	PFAKE				03 53 00.0 +14
RAO				LR		LR		
	comp=Z,4μm,20.0s							
OJC	Ojcow	77.58	327	eP		P		03 52 47.3 +1.3
OJC				LMZ		LR		04 29 58.9
	comp=Z,12μm,18.1s							
OJC	Ojcow	77.58	327	eP		P		03 52 47.3 +1.3
OJC				MLR		MLR		
	comp=Z,12μm,18.1s							
OJC	Ojcow	77.58	327	eP		P		03 52 46.6 +0.7
	comp=Z,167nm,1.1s							
VRI	Vrincioaia	77.59	320	⇓i P		P		03 52 48.3 +2.2
BTIN	Bart´–n	77.63	314	i P		P		03 52 47.7 +1.3
PLOR	Plostina	77.64	320	⇓i P		P		03 52 48.1 +1.7
UZH	Uzhgorod	77.68	324	eP		P		03 52 46.3 -0.2
UZH				e				03 52 56.9
UZH				e				03 55 40.5
UZH				ePPP		PPP		03 57 36.1
UZH				eS		S		04 02 33.1 -3.8
UZH				ePS		PnS		04 03 22.5 +4.5
UZH				eSS		SS		04 07 41.7 +6.0
UZH				MLR		MLR		
	comp=N,24μm,15.0s							
UZH				MLR		MLR		
	comp=E,22μm,15.0s							
UZH				MLR		MLR		
	comp=Z,23μm,15.0s							
GLA	Glamis	77.70	57	P		P		03 52 48.1 +1.1
	baz=310							
GLA	Glamis	77.70	57	eP		P		03 52 50.1 +3.1
GLA	Glamis	77.70	57	eP		P		03 52 48.2 +1.3
	comp=Z,85nm,0.9s							
GLA				LR		LR		
	comp=Z,2μm,21.0s							
E30A	Jud	77.71	39	P		P		03 52 47.0 +0.2
	baz=316,SNR=13							
PV09	Paradox Valley	77.71	50	eP		P		03 52 48.9 +1.6
TIRR	Tirgusor	77.73	318	⇑i P		P		03 52 47.9 +1.0
TIRR	Tirgusor	77.73	318	eP		P		03 52 47.7 +0.8
TIRR				pmax		pmax		
	comp=Z,50nm,1.2s							
TIRR	Tirgusor	77.73	318	eP		P		03 52 47.6 +0.8
	comp=Z,50nm,1.2s							
TIRR				ePP		PP		03 55 41.5 -0.2
TIRR				LR		LR		
	comp=Z,16μm,18.0s							
F29A	Eureka	77.74	40	P		P		03 52 47.7 +0.7
	baz=315,SNR=10							
ELDT	Eldivan	77.75	313	i P		P		03 52 49.0 +1.7
CDAG	Cicekdag	77.78	312	i P		P		03 52 48.7 +1.3
GRER		77.81	320	⇑i P		P		03 52 50.3 +3.0
HARR	Harsova	77.82	319	⇓i P		P		03 52 48.1 +0.8
CRVS	Cervenica-Dubn	77.85	325	eP		P		03 52 49.0 +1.5
CRVS	Cervenica-Dubn	77.85	325	eP		P		03 52 49.0 +1.5
PV10	Paradox Valley	77.85	50	eP		P		03 52 50.2 +2.2
ARCR	ARCALIA	77.86	322	⇓i P		P		03 52 50.2 +2.6
C32A	Crookston	77.88	37	P		P		03 52 48.0 +0.4
	baz=317							
D31A	Mcclaflin, Tow	77.89	38	P		P		03 52 48.1 +0.4
	baz=316							
TRPA	Tarpa	77.94	324	⇑eP		P		03 52 49.5 +1.6
PHWY	Pilot Hill	77.94	46	eP		P		03 52 49.1 +0.5
	comp=Z,75nm,1.4s							
PHWY				LR		LR		
	comp=Z,1μm,21.0s							
N23A	Red Feather La	77.95	46	P		P		03 52 49.4 +0.9
	baz=313,SNR=31							
N23A	Red Feather La	77.95	46	eP		P		03 52 50.0 +1.4
	comp=Z,99nm,1.1s							
N23A				LR		LR		
	comp=Z,2μm,19.0s							
NIE	Niedzica	77.97	326	eP		P		03 52 49.9 +1.7
NIE				LMZ		LR		04 30 22.1
	comp=Z,9μm,18.1s							
NIE	Niedzica	77.97	326	eP		P		03 52 49.9 +1.7
NIE				MLR		MLR		
	comp=Z,9μm,18.1s							
B33A	Robert and Kas	77.97	36	P		P		03 52 48.3 +0.1
	baz=318							
PV05	Paradox Valley	78.01	50	eP		P		03 52 50.8 +1.9
AVNS	Nevsehir-Avano	78.05	311	i P		P		03 52 50.9 +2.0
F30A	Leola	78.13	39	P		P		03 52 49.5 +0.3
	baz=316							
BR131	Keskin Array S	78.14	312	eP		P		03 52 50.4 +0.9
BR131				ePP		PP		03 55 42.5 -3.0
BRTR	Keskin Array B	78.14	312	P		P		03 52 50.3 +0.9
	comp=Z,10nm,0.8s,baz=68,slow=3.3,SNR=71							
BRTR				PP		PP		03 55 43.7 -1.7
	comp=Z,11nm,1.1s,baz=52,slow=7.0,SNR=3.5							
BRTR				LR		LR		04 32 52.0
	comp=Z,4μm,19.8s,baz=32,slow=40							
G29A	Hoven	78.15	40	P		P		03 52 50.0 +0.7
	baz=315							
D32A	Dogwood Acres,	78.15	37	P		P		03 52 49.7 +0.5
	baz=317							
E31A	Nome	78.16	38	P		P		03 52 49.7 +0.5
	baz=316,SNR=15							
DOPR	Dopca	78.17	321	⇓i P		P		03 52 51.4 +2.1
ISR	Istrita	78.21	320	⇑i P		P		03 52 51.5 +1.9
B34A	Aery, Baudette	78.23	35	P		P		03 52 49.5 -0.2
	baz=318,SNR=6.9							
MLR	Muntele Rosu	78.24	320	LR		LR		04 30 60.0
	comp=Z,2μm,19.4s,baz=35,slow=38							
MLR	Muntele Rosu	78.24	320	⇓i P		P		03 52 51.2 +1.3
MLR	Muntele Rosu	78.24	320	eP		P		03 52 50.8 +0.9
MLR				pmax		pmax		
	comp=Z,59nm,1.1s							
MLR	Muntele Rosu	78.24	320	eP		P		03 52 50.8 +0.9
	comp=Z,59nm,1.1s							
MLR				ePP		PP		03 55 55.1 +9.0
C33A	Trail	78.27	36	P		P		03 52 49.9 +0.1
	baz=318,SNR=14							
PV01	Paradox Valley	78.29	50	eP		P		03 52 52.0 +1.6
BCAM	Yenicaga	78.29	314	i P		P		03 52 52.2 +2.0
MSAB	Monastry St. A	78.29	318	⇓i P		P		03 52 52.2 +2.2
Y14A	Wickenburg	78.31	56	eP		P		03 52 52.3 +2.0
	comp=Z,425nm,1.0s							
Y14A				LR		LR		
	comp=Z,4μm,18.0s							
WUAZ	Wupatki	78.31	53	P		P		03 52 51.9 +1.5
	baz=311,SNR=16							
WUAZ	Wupatki	78.31	53	eP		P		03 52 52.8 +2.3
	comp=Z,200nm,1.0s							
WUAZ				LR		LR		
	comp=Z,2μm,20.0s							
RAC	Raciborz	78.35	327	eP		P		03 52 52.0 +1.8
RAC				MLR		MLR		
	comp=Z,14μm,19.5s							
I28A	Midland	78.37	42	P		P		03 52 51.2 +0.7
	baz=315,SNR=26							
H29A	Onida	78.41	41	P		P		03 52 51.0 +0.4
	baz=315,SNR=5.3							
DRWC	Darouich	78.41	308	i P		P		03 52 52.9 +2.0
CJR	Cluj-Napoca	78.49	322	⇑i P		P		03 52 52.8 +1.7
F31A	Hecla	78.49	39	P		P		03 52 51.8 +0.7
	baz=316							
SECR		78.51	320	⇑i P		P		03 52 53.6 +2.4
ANTO	Ankara	78.52	313	eP		P		03 52 52.5 +1.0
ANTO				pmax		pmax		
	comp=Z,110nm,1.0s							
ANTO				MLR		MLR		
	comp=Z,2μm,19.0s							
ANTO	Ankara	78.52	313	eP		P		03 52 52.5 +1.0
	comp=Z,110nm,1.0s							
ANTO				LR		LR		
	comp=Z,2μm,19.0s							
SMCO	Snowmass	78.52	48	eP		P		03 52 52.8 +0.9
	comp=Z,88nm,1.3s							
SMCO				LR		LR		
	comp=Z,2μm,21.0s							
E32A	Braaten, Kindr	78.52	38	P		P		03 52 51.5 +0.2
	baz=317							
LOD	Lodumlu	78.52	313	eP		P		03 52 53.2 +1.7
LANS	Liptovska Anna	78.53	326	eP		P		03 52 53.5 +2.2
LANS				e				03 55 48.1
LANS	Liptovska Anna	78.53	326	eP		P		03 52 53.5 +2.2
LANS				ePP		PP		03 55 48.1 -0.2
KSP	Ksiaz	78.54	329	eP		P		03 52 52.7 +1.4
KSP				LMZ		LR		04 30 26.3
	comp=Z,11μm,18.7s							
KSP	Ksiaz	78.54	329	eP		P		03 52 52.7 +1.4
KSP				MLR		MLR		
	comp=Z,11μm,18.7s							
BR231	Keskin MP Arra	78.55	313	eP		P		03 52 52.5 +0.9
BR231				ePP		PP		03 55 46.6 -2.2
BBAL	Bala	78.55	312	i P		P		03 52 53.6 +1.9
OKC	Ostrava-Krasne	78.56	327	eP		P		03 52 53.0 +1.6
OKC				epP		pP		03 52 56.0 -3.0
OKC				esP		sP		03 53 04.5 +2.7
OKC				eS		S		04 02 48.6 +2.2
OKC				AMS		AMS		04 30 30.0
	comp=Z,11μm,18.9s							
OKC	Ostrava-Krasne	78.56	327	eP		P		03 52 53.0 +1.6
OKC				e*PP		sP		03 53 04.5 +2.7
OKC				eS		S		04 02 48.6 +2.2
OKC				MLR		MLR		
	comp=Z,11μm,18.9s							
113A	Mohawk Valley,	78.57	57	eP		P		03 52 52.1 +0.4
	comp=Z,69nm,1.1s							
113A				LR		LR		
	comp=Z,2μm,21.0s							
G30A	Faulkton	78.58	40	P		P		03 52 52.2 +0.6
	baz=316,SNR=36							
KECS	Kecovo	78.59	325	eP		P		03 52 53.5 +1.9
KECS				pmax		pmax		
	comp=Z,15nm,1.1s							
KECS	Kecovo	78.59	325	eP		P		03 52 53.5 +1.9
KECS				ePP		PP		03 55 52.7 +3.9
AFSR	Af´ar-Bala (A	78.65	312	eP		P		03 52 53.8 +1.6
SULR		78.67	320	⇑i P		P		03 52 54.5 +2.5
D33A	AnnSam, Waubun	78.69	37	P		P		03 52 52.3 +0.1
	baz=318							
CEYT	Ceyhan	78.71	309	eP		P		03 52 54.7 +2.3
VOIR		78.72	321	⇑i P		P		03 52 53.9 +1.5
B35A	Bob, Littlefor	78.74	35	P		P		03 52 52.8 +0.5
	baz=319,SNR=14							
C34A	RKJ Ranch, Bem	78.74	36	P		P		03 52 52.5 +0.1
	baz=318							
AKSY	AKSARAY - Alti	78.79	311	i P		P		03 52 54.7 +1.8
I29A	Vivian Onida	78.79	41	P		P		03 52 53.3 +0.5
	baz=315,SNR=12							
DRGR		78.84	323	⇑i P		P		03 52 54.4 +1.3
MORC	Moravsky Berou	78.86	328	⇑i P		P		03 52 54.5 +1.4
MORC	Moravsky Berou	78.86	328	eP		P		03 52 53.0 -0.1
MORC				pmax		pmax		
	comp=Z,338nm,1.0s							
MORC				MLR		MLR		
	comp=Z,51μm,19.0s							
MORC	Moravsky Berou	78.86	328	eP		P		03 52 53.0 -0.1
	comp=Z,338nm,1.0s							
MORC				LR		LR		
	comp=Z,51μm,19.0s							
TAHT	Tahtakopru-Hat	78.86	308	eP		P		03 52 55.2 +1.9
ISCO	Idaho Springs	78.88	47	P		P		03 52 55.3 +1.6
	baz=313,SNR=19							
ISCO	Idaho Springs	78.88	47	eP		P		03 52 54.5 +0.8
ISCO				pmax		pmax		
	comp=Z,182nm,1.8s							
ISCO	Idaho Springs	78.88	47	eP		P		03 52 54.5 +0.8
	comp=Z,182nm,1.8s							
DPC	Dobruska-Polom	78.91	329	eP		P		03 52 55.0 +1.6
DPC				epP		pP		03 52 58.3 -2.7
DPC				ex		x		03 53 07.5
DPC				ePP		PP		03 55 43.9 -7.6
DPC				eS		S		04 02 53.3 +3.1
DPC				AMS		AMS		04 30 50.0
	comp=Z,7μm,17.4s							
DPC	Dobruska-Polom	78.91	329	eP		P		03 52 55.0 +1.6
DPC				e*PP		sP		03 53 07.5 +3.7
DPC				eS		S		04 02 53.3 +3.1
DPC				MLR		MLR		
	comp=Z,7μm,17.4s							
UPC	Upice	78.91	329	eP		P		03 52 54.7 +1.4
UPC				epP		pP		03 52 58.1 -2.9
UPC				ePP		PP		03 55 50.9 -0.5
UPC				eS		S		04 02 52.4 +2.3
UPC				AMS		AMS		04 30 20.0
	comp=Z,10μm,18.8s							
UPC	Upice	78.91	329	eP		P		03 52 54.7 +1.4
UPC				e				03 52 58.1
UPC				e				03 55 50.9
UPC				eS		S		04 02 52.4 +2.3
UPC				MLR		MLR		
	comp=Z,10μm,18.8s							
KKUL	Konya-Kulu	78.92	312	i P		P		03 52 55.8 +2.1
SAHE	Sakarya_HENDEK	78.93	314	i P		P		03 52 54.7 +1.1
KRLC	Kraliky	78.94	328	eP		P		03 52 55.0 +1.5
KRLC				epP		pP		03 52 58.2 -3.0
KRLC				esP		sP		03 53 06.6 +2.6
KRLC				ex		x		03 55 42.7
KRLC				ex		x		03 55 49.3
KRLC	Kraliky	78.94	328	eP		P		03 52 55.0 +1.5
KRLC				e*PP		sP		03 53 06.6 +2.6
KRLC				e				03 55 49.3
MVCO	Mesa Verde	78.94	51	P		P		03 52 55.2 +1.2
	baz=312,SNR=39							
MVCO	Mesa Verde	78.94	51	eP		P		03 52 55.2 +1.2
	comp=Z,168nm,1.3s							
KARA	Karaisali	78.96	309	eP		P		03 52 55.7 +1.9
ARR	Arges	78.97	321	⇑i P		P		03 52 56.0 +2.2
G31A	Conde	78.97	39	P		P		03 52 54.2 +0.5
	baz=316							
X16A	Lo Mia Camp, P	78.98	54	eP		P		03 52 55.7 +1.4
	comp=Z,103nm,1.0s							
X16A				LR		LR		
	comp=Z,1μm,21.0s							
MDUB	Mudurnu	79.01	314	eP		P		03 52 55.5 +1.4
F32A	Veblen	79.03	38	P		P		03 52 54.1 +0.1
	baz=317							
D34A	Park Rapids	79.03	36	P		P		03 52 54.2 +0.2
	baz=318,SNR=15							
BTAS	Taskesti	79.05	314	i P		P		03 52 55.8 +1.5
E33A	Westby DABS, E	79.09	37	P		P		03 52 55.0 +0.6
	baz=318							
C35A	Jirik Farms, M	79.12	35	P		P		03 52 54.5 0.0
	baz=319,SNR=17							
KAND	Kocaeli-Kandir	79.13	315	i P		P		03 52 55.8 +1.1
PRD	Provadia	79.14	318	P		P		03 52 55.8 +1.2
NRS	Narsarsuaq	79.16	4	i P		P		03 52 56.5 +2.1
	comp=Z,42nm,1.2s							
	comp=Z,5μm,16.0s							
NRS	Narsarsuaq	79.16	4	i P		P		03 52 56.5 +2.1
NRS				pmax		pmax		
	comp=Z,42nm,1.2s							
NRS				MLR		MLR		
	comp=Z,5μm,16.0s							
SUSD	Miller	79.17	40	P		P		03 52 54.8 0.0
	baz=316							
PSZ	Piszkesteto	79.28	325	⇑i P		P		03 52 56.5 +1.1
PSZ	Piszkesteto	79.28	325	⇑eP		P		03 52 57.1 +1.7
PSZ	Piszkesteto	79.28

H31A	Wolsey	79.38	40	P		P	03 52 55.9 -0.1
	baz=316						
YESY	Yesilyurt	79.38	311	eP		P	03 52 56.9 +0.6
SILT	Sile	79.39	315	eP		P	03 52 57.4 +1.4
KERG	Konya-Eregli	79.40	310	i P		P	03 52 57.6 +1.2
GULT	Gulveren	79.41	314	eP		P	03 52 57.6 +1.3
BRG	Berggiesshubel	79.44	330	i P		P	03 52 57.4 +1.2
	comp=Z,58nm,1.3s						
BRG				i			03 53 00.4
	comp=Z,86nm,1.3s						
BRG				PP		PP	03 55 58.0 +2.3
BRG				S		S	04 02 59.0 +3.4
BRG				SS		SS	04 08 06.0 +4.1
	comp=N,8µm,15.9s						
	comp=E,4µm,15.0s						
	comp=Z,13µm,15.5s						
BRG	Berggiesshubel	79.44	330	i P		P	03 52 57.4 +1.2
BRG				i			03 53 00.4
BRG							03 55 58.0
BRG				S		S	04 02 59.0 +3.4
BRG				SS		SS	04 08 06.0 +4.1
BRG				pmax		pmax	
	comp=Z,58nm,1.3s						
BRG				pmax		pmax	
	comp=Z,87nm,1.3s						
BRG				MLR		MLR	
	comp=N,8µm,15.9s						
BRG				MLR		MLR	
	comp=E,4µm,15.0s						
BRG				MLR		MLR	
	comp=Z,13µm,15.5s						
F33A	5 Mile Ranch,	79.44	38	P		P	03 52 56.8 +0.5
	baz=318,SNR=15						
CLL	Collm	79.44	331⇑	i P		P	03 52 56.9 +0.7
	comp=Z,80nm,1.2s						
CLL				i			03 52 59.7
	comp=Z,103nm,1.0s						
CLL				e			03 53 08.0
CLL				e			03 55 42.0
CLL				ePP		PP	03 55 56.0 +0.2
CLL				ePPP		PPP	03 57 42.0
CLL				eS		S	04 02 55.0 -0.7
CLL				ePS		PnS	04 03 43.0 +2.8
CLL				eSS		SS	04 07 54.0 -8.0
CLL				e			04 09 06.0
CLL				eSSS		SSS	04 11 30.0
CLL				e			04 13 06.0
CLL				LmH			04 26 00.0
	comp=N,5µm,19.1s						
CLL				LmH			04 26 00.0
	comp=E,11µm,21.1s						
CLL				LmV			04 31 00.0
	comp=N,6µm,19.0s						
CLL				LmV			04 31 00.0
	comp=E,5µm,19.1s						
CLL				LmV			04 31 00.0
	comp=Z,9µm,19.5s						
CLL	Collm	79.44	331⇑	i P		P	03 52 56.9 +0.7
CLL				i			03 52 59.7
CLL				eS		S	04 02 55.0 -0.7
CLL				pmax		pmax	
	comp=Z,80nm,1.2s						
CLL				MLR		MLR	
	comp=Z,9µm,19.5s						
CLL	Collm	79.44	331	eP		P	03 52 56.8 +0.6
	comp=Z,79nm,0.9s						
CLL				LR		LR	
	comp=Z,9µm,20.0s						
PVCC	Panska Ves	79.47	330	eP		P	03 52 57.9 +1.6
PVCC				ePP		pP	03 53 01.2 -2.8
PVCC				esP		sP	03 53 09.7 +2.9
PVCC				ePP		PP	03 56 00.2 +4.2
PVCC				eS		S	04 02 59.1 +3.1
PVCC				AMS		AMS	04 31 20.0
	comp=Z,9µm,17.1s						
PVCC	Panska Ves	79.47	330	eP		P	03 52 57.9 +1.6
PVCC				e*PP		sP	03 53 09.7 +2.9
PVCC				e			03 56 00.2
PVCC				eS		S	04 02 59.1 +3.1
PVCC				MLR		MLR	
	comp=Z,9µm,17.1s						
E34A	Wadena	79.47	37	P		P	03 52 56.9 +0.5
	baz=318						
RABH	Abou Rabah	79.51	306	i P		P	03 52 58.4 +1.5
SVRH	Sivrihisar-ESK	79.53	313	eP		P	03 52 58.2 +1.2
MERS	Mersin	79.53	309	eP		P	03 52 58.3 +1.2
D35A	Remer	79.55	36	P		P	03 52 56.7 -0.2
	baz=319,SNR=5.2						
S22A	4UR Ranch, Cre	79.57	49	P		P	03 52 59.0 +1.5
	baz=313,SNR=40						
S22A	4UR Ranch, Cre	79.57	49	eP		P	03 52 58.9 +1.4
	comp=Z,93nm,1.2s						
S22A				LR		LR	
	comp=Z,2µm,21.0s						
W18A	Petrified Fore	79.58	53	P		P	03 52 58.5 +1.1
	baz=312						
W18A	Petrified Fore	79.58	53	PFAKE			03 53 10.0 +13
W18A				LR		LR	
	comp=Z,2µm,21.0s						
C36A	Pine Crest Far	79.58	35	P		P	03 52 57.1 +0.1
	baz=320,SNR=21						
HRT	Hereke	79.61	315	eP		P	03 52 58.7 +1.4
VRAC	Vranov	79.61	328	LR		LR	04 31 37.6
	comp=Z,12µm,18.6s,baz=22,slow=38						
VRAC	Vranov	79.61	328⇑	i P		P	03 52 59.1 +1.9
KLYT	Kilyos	79.64	316	eP		P	03 52 58.8 +1.4
I31A	Royce, Wessing	79.68	40	P		P	03 52 58.2 +0.6
	baz=316						
OUZ	Omahuta	79.69	155	PFAKE			03 53 10.0 +13
OUZ				LR		LR	
	comp=Z,4µm,21.0s						
J30A	Dallas	79.70	41	P		P	03 52 58.3 +0.5
	baz=316,SNR=21						
214A	Organ Pipe Nat	79.71	57	P		P	03 52 58.9 +0.8
	baz=311,SNR=8.2						
Q24A	Divide	79.71	47	P		P	03 52 58.8 +0.6
	baz=313						
Q24A	Divide	79.71	47	eP		P	03 52 59.1 +0.8
	comp=Z,46nm,1.0s						
Q24A				LR		LR	
	comp=Z,2µm,21.0s						
SIRR	Siria	79.72	323⇓	i P		P	03 52 59.7 +1.9
ISK	Istanbul-Kandi	79.77	316	eP		P	03 52 58.8 +0.6
E35A	Pequot Lakes	79.79	36	P		P	03 52 58.5 +0.3
	baz=319						
KDHN	Kadinhani	79.82	312	i P		P	03 52 59.4 +0.8
BORA	Eskisehir	79.83	314	i P		P	03 52 59.9 +1.3
ADVT	Abdulvahap	79.84	315	eP		P	03 52 59.8 +1.3
X18A	Snowflake	79.84	53	eP		P	03 53 00.0 +1.1
	comp=Z,146nm,1.4s						
X18A				LR		LR	
	comp=Z,2µm,21.0s						
BGKT	Bogazkoy	79.84	316	eP		P	03 52 58.3 -0.2
SZH	Strazhica	79.84	319	P		P	03 52 58.9 +0.4
G33A	Ortonville	79.85	38	P		P	03 52 59.1 +0.6
	baz=318,SNR=15						
ESKT	Eskisehir	79.85	313	i P		P	03 53 00.3 +1.4
GOPC	GO Pecny, Ondr	79.87	329	eP		P	03 53 00.1 +1.5
GOPC				epP		PcP	03 53 03.2 -2.9
GOPC				esP		sP	03 53 11.7 +2.7
GOPC				ePP		PP	03 55 56.7 -2.7
GOPC				eS		S	04 03 03.4 +3.1
GOPC				AMS		AMS	04 32 30.0
	comp=Z,10µm,16.7s						
GOPC	GO Pecny, Ondr	79.87	329	eP		P	03 53 00.1 +1.5
GOPC				e			03 53 03.2
GOPC				e*PP		sP	03 53 11.7 +2.7
GOPC				e			03 55 56.7
GOPC				eS		S	04 03 03.4 +3.1
GOPC				MLR		MLR	
	comp=Z,10µm,16.7s						
H32A	Carlson Farm,	79.87	39	P		P	03 52 58.8 +0.1
	baz=317,SNR=7.0						
D36A	Goodland	79.88	35	P		P	03 53 00.5 +1.8
	baz=319,SNR=8.1						
SMOL	Smolenice	79.88	327	eP		P	03 53 01.4 +2.8
SMOL	Smolenice	79.88	327	eP		P	03 53 01.4 +2.8
C37A	Embarrass	79.89	34	P		P	03 52 58.8 +0.1
	baz=320,SNR=14						
CTYL	Yalikoy Yolu	79.89	316	eP		P	03 53 00.2 +1.5
LADK	Ladik-KONYA	79.90	312	eP		P	03 53 00.2 +1.1
PRU	Pruhonice	79.91	329	eP		P	03 53 00.2 +1.5
PRU				epP		PcP	03 53 03.5 -2.7
PRU				esP		sP	03 53 11.7 +2.5
PRU				ePP		PP	03 55 54.7 -4.9
PRU				eS		S	04 03 03.2 +2.6
PRU				AMS		AMS	04 32 30.0
	comp=Z,10µm,16.2s						
PRU	Pruhonice	79.91	329	eP		P	03 53 00.2 +1.5
PRU				e			03 53 03.5
PRU				e*PP		sP	03 53 11.7 +2.5
PRU				eS		S	04 03 03.2 +2.6
PRU				MLR		MLR	
	comp=Z,10µm,16.2s						
CAVI	Cavuskoy	79.94	314	eP		P	03 53 00.6 +1.4
CTKS	Kestanelik-??a	79.94	316	eP		P	03 53 00.3 +1.2
F34A	Alexandria	79.96	37	P		P	03 52 59.5 +0.3
	baz=318						
BUD	Budapest	79.99	325⇑	eP		P	03 53 00.6 +1.4
KIZK	Mersin	80.02	309	i P		P	03 53 00.9 +1.3
EYMN	Ely	80.02	34	P		P	03 52 59.3 -0.1
	baz=320,SNR=14						
EYMN	Ely	80.02	34	eP		P	03 52 59.3 -0.1
	comp=Z,97nm,1.4s						
OGNE	Ogallala	80.06	44	P		P	03 53 00.3 +0.4
	baz=315,SNR=9.2						
OGNE	Ogallala	80.06	44	eP		P	03 53 00.0 +0.2
	comp=Z,212nm,1.1s						
KONT	Konya--Tatoy	80.08	311	eP		P	03 53 01.1 +1.2
TREC	Trest	80.08	328	eP		P	03 53 01.2 +1.5
TREC				epP		PcP	03 53 04.4 -2.6
TREC				esP		sP	03 53 12.6 +2.4
TREC				ePP		PP	03 56 04.9 +3.8
TREC				eS		S	04 03 05.6 +3.1
TREC				AMS		AMS	04 33 10.0
	comp=Z,12µm,15.8s						
TREC	Trest	80.08	328	eP		P	03 53 01.2 +1.5
TREC				e			03 53 04.4
TREC				e*PP		sP	03 53 12.6 +2.4
TREC				e			03 56 04.9
TREC				eS		S	04 03 05.6 +3.1
TREC				MLR		MLR	
	comp=Z,12µm,15.8s						
H33A	Prehn Over Nor	80.08	39	P		P	03 53 00.3 +0.4
	baz=317,SNR=37						
K30A	Basset	80.11	42	P		P	03 53 00.7 +0.7
	baz=316,SNR=15						
J31A	Geddes	80.11	41	P		P	03 53 00.2 +0.2
	baz=316						
PHSR	Pinarhisar	80.19	317	eP		P	03 53 01.6 +1.2
KMER	Konya-Meram	80.19	311	i P		P	03 53 02.0 +1.3
G34A	Benson	80.19	38	P		P	03 53 00.9 +0.5
	baz=318,SNR=24						
I32A	Karley and Nic	80.21	40	P		P	03 53 01.0 +0.5
	baz=317						
D37A	Cotton	80.22	35	P		P	03 53 00.7 +0.2
	baz=320						
ARMT	Armutlu	80.22	315	eP		P	03 53 01.7 +1.0
BZS	Buzias	80.22	323⇑	i P		P	03 53 01.2 +0.7
F35A	Swanville	80.23	37	P		P	03 53 01.0 +0.5
	baz=319						
MARH	Ras Al Marh	80.23	306	i P		P	03 53 01.3 +0.1
DGAR	Diego Garcia	80.28	252	PFAKE			03 53 10.0 +8.8
DGAR				LR		LR	
	comp=Z,2µm,18.0s						
C38A	Sawbill Land.	80.29	34	P		P	03 53 00.6 -0.3
	baz=320,SNR=16						
E36A	McGregor	80.34	36	P		P	03 53 01.1 -0.1
	baz=319,SNR=19						
SDCO	Great Sand Dun	80.34	49	P		P	03 53 03.2 +1.5
	baz=313,SNR=35						
SDCO	Great Sand Dun	80.34	49	eP		P	03 53 02.1 +0.5
	comp=Z,51nm,1.3s						
MDNY	Mudanya-Bursa	80.35	315	eP		P	03 53 01.6 +0.3
BOLV	Bolvadin	80.35	313	i P		P	03 53 03.2 +1.7
CSKK	Cs¨ˇtkako	80.42	326	eP		P	03 53 02.8 +1.3
ZALF	Zalf	80.43	305	i P		P	03 53 03.0 +1.1
EDRB	Edirne	80.44	317	eP		P	03 53 03.6 +1.8
EDRB	Edirne	80.44	317	P		P	03 53 03.1 +1.3
J32A	Parkston	80.50	40	P		P	03 53 02.3 +0.2
	baz=317,SNR=9.7						
I33A	Coleman	80.52	39	P		P	03 53 02.8 +0.6
	baz=318						
NKC	Novy Kostel	80.52	331	eP		P	03 53 03.3 +1.2
NKC				epP		PcP	03 53 06.3 -2.7
NKC				esP		sP	03 53 15.0 +2.5
NKC				ePP		PP	03 56 00.7 -4.1
NKC				eS		S	04 03 10.0 +2.9
NKC				AMS		AMS	04 34 30.0
	comp=Z,8µm,14.7s						
NKC	Novy Kostel	80.52	331	eP		P	03 53 03.3 +1.2
NKC				e*PP		sP	03 53 15.0 +2.5
NKC				e			03 56 00.7
NKC				eS		S	04 03 10.0 +2.9
NKC				MLR		MLR	
	comp=Z,8µm,14.7s						
H34A	Spellman Lake,	80.56	38	P		P	03 53 02.7 +0.4
	baz=318,SNR=5.1						
K31A	O'Neill	80.58	41	P		P	03 53 03.0 +0.5
	baz=316,SNR=17						
ERMK	Ermenek	80.64	310	i P		P	03 53 04.2 +1.0
TVSB	Tavsanli	80.67	314	eP		P	03 53 04.7 +1.5
E37A	Wrenshall	80.69	35	P		P	03 53 03.1 +0.1
	baz=320						
C39A	Grand Marais	80.70	33	P		P	03 53 02.9 -0.2
	baz=321						
KCTX	Karacabey (Bur	80.71	315	eP		P	03 53 04.6 +1.3
F36A	Milaca	80.71	36	P		P	03 53 03.2 +0.1
	baz=319						
G35A	Watkins	80.75	37	P		P	03 53 04.1 +0.7
	baz=319,SNR=8.8						
TUC	Tucson	80.78	56	P		P	03 53 04.8 +0.9
	baz=311						
TUC	Tucson	80.78	56	eP		P	03 53 04.8 +0.9
TUC				pmax		pmax	
	comp=Z,73nm,1.1s						
TUC				MLR		MLR	
	comp=Z,2µm,20.0s						
TUC	Tucson	80.78	56	eP		P	03 53 04.8 +0.9
	comp=Z,73nm,1.1s						
TUC				LR		LR	
	comp=Z,2µm,20.0s						
MDVR	Moldovita	80.80	322⇓	i P		P	03 53 04.7 +1.0
ECSD	EROS Data Cent	80.84	39	P		P	03 53 04.2 +0.3
	baz=318,SNR=37						
ECSD	EROS Data Cent	80.84	39	eP		P	03 53 04.0 +0.1
	comp=Z,55nm,1.0s						
L31A	Butterfield Fa	80.86	42	P		P	03 53 04.5 +0.5
	baz=316,SNR=5.0						
SOP	Sopron	80.90	327⇑	eP		P	03 53 06.1 +2.0
PGBU	Glenifferbraes	80.91	342	eP		P	03 53 05.5 +1.5
PGBU				AMB		AMB	03 53 08.5
	comp=Z,195nm,1.9s						
EDC	Edincik	80.92	316	eP		P	03 53 05.8 +1.4
GDZ	Gediz	80.92	314	i P		P	03 53 06.3 +1.8
BAGO	Egridir - ISPA	80.94	312	i P		P	03 53 06.2 +1.5
K32A	Verdigre	80.95	41	P		P	03 53 04.4 -0.2
	baz=317						
KHC	Kasperske Hory	80.97	329	eP		P	03 53 05.5 +1.0
KHC				epP		PcP	03 53 09.0 -2.0
KHC				ex		x	03 53 17.0
KHC				ePP		PP	03 56 14.0 +5.5
KHC	Kasperske Hory	80.97	329	eP		P	03 53 05.5 +1.0
KHC				e			03 53 17.0
KHC				e			03 56 14.0
BRBR	Barbar	80.97	306	i P		P	03 53 06.1 +1.1
J33A	Davis	80.97	40	P		P	03 53 05.0 +0.3
	baz=317,SNR=6.5						
H35A	Sunnyside Ranc	80.98	38	P		P	03 53 05.3 +0.7
	baz=319,SNR=40						
CONA	Conrad Observa	81.00	327	i P		P	03 53 06.5 +1.7
	comp=Z,116nm,1.9s,SNR=44						
RKY	Sarkoy-Tekirda	81.04	316	eP		P	03 53 05.8 +0.7
G36A	St. Michael	81.08	37	P		P	03 53 05.5 +0.3
	baz=319						
KSCO	Kaye Shedlock'	81.09	46	P		P	03 53 06.1 +0.7
	baz=315,SNR=14						
KSCO	Kaye Shedlock'	81.09	46	eP		P	03 53 06.2 +0.7
	comp=Z,180nm,1.2s						
KSCO				LR		LR	
	comp=Z,2µm,19.0s						
WTSB	Winterswijk	81.10	334	eP		P	03 53 05.9 +0.9
	comp=Z,288nm,1.9s						
DURS	Dursunbey	81.11	315	i P		P	03 53 06.7 +1.2
GEC2	GERESS Array S	81.15	329	eP		P	03 53 05.4 -0.1
GEC2				pmax		pmax	
	comp=Z,35nm,1.0s						
GEC2				MLR		MLR	
	comp=Z,10µm,18.0s						
GEC2	GERESS Array S	81.15	329	eP		P	03 53 05.4 -0.1
	comp=Z,35nm,1.0s						
GEC2				LR		LR	
	comp=Z,10µm,18.0s						
GERES	GERESS Array B	81.15	329	P		P	03 53 06.0 +0.5
	comp=Z,16nm,0.8s,baz=35,slow=5.1,SNR=62						
GERES				PP		PP	03 56 02.0 -8.1
	comp=Z,4.7nm,1.0s,baz=57,slow=9.7,SNR=5.3						
GERES				LR		LR	04 33 41.0
	comp=Z,10µm,18.1s,baz=14,slow=39						
GEA0	GERESS Array S	81.16	329	eP		P	03 53 05.6 +0.1
ECK	Cauldkaine Hil	81.16	341	eP		P	03 53 05.7 +0.4
ASF	Jabal al Asfar	81.20	305	LR		LR	04 33 35.5
	comp=Z,3µm,18.1s,slow=39						
ISP	Isparta	81.21	312	eP		P	03 53 07.4 +1.3
ISP	Isparta	81.21	312⇓	i P		P	03 53 06.5 +0.4
ISP	Isparta	81.21	312	PFAKE			03 53 20.0 +14
ISP				LR		LR	
	comp=Z,4µm,19.0s						
PGB	Panagyurishte	81.25	319	P		P	03 53 06.8 +0.6
KDZ	Kurdzhali	81.27	318	P		P	03 53 07.7 +1.5
PLD	Plovdiv	81.31	319	P		P	03 53 06.3 -0.1
T25A	Trinidad	81.39	48	P		P	03 53 08.0 +0.8
	baz=314,SNR=34						
T25A	Trinidad	81.39	48	eP		P	03 53 08.9 +1.7
	comp=Z,113nm,1.0s						
T25A				LR		LR	
	comp=Z,2µm,20.0s						
M31A	Lambtecht Ranc	81.39	42	P		P	03 53 07.0 +0.1
	baz=316						
ERIK	Erikli-Kesan	81.41	317	eP		P	03 53 08.5 +1.6
BALB	Balikesir	81.41	315	eP		P	03 53 08.4 +1.4
L32A	Elgin	81.41	41	P		P	03 53 07.3 +0.3
	baz=317,SNR=12						
K33A	Hardington	81.48	40	P		P	03 53 08.0 +0.7
	baz=318						
LPK	Lapseki	81.49	316	eP		P	03 53 08.1 +0.7
ALN	Alexandroupoli	81.49	317	eP		P	03 53 08.9 +1.6
ALN	Alexandroupoli	81.49	317	P		P	03 53 08.2 +0.9
J34A	George	81.49	39	P		P	03 53 07.6 +0.2
	baz=318						
H36A	Jessenland, He	81.50	37	P		P	03 53 08.3 +1.0
	baz=319						
SPMN	Marine on St.	81.53	36	P		P	03 53 07.7 +0.2
	baz=320						
SPMN	Marine on St.	81.53	36	eP		P	03 53 07.1 -0.4
	comp=Z,46nm,1.3s						
SPMN				LR		LR	
	comp=Z,2µm,21.0s						
CSS	Mathiatis	81.53	309	eP		P	03 53 08.1 +0.4
	comp=Z,11nm,0.8s						
CSS				ePP		PP	03 56 10.4 -3.2
CSS				LR		LR	
	comp=Z,700nm,19.0s						
I35A	Creekview Farm	81.54	38	P		P	03 53 08.1 +0.4
	baz=319						
ENEZ	Enez	81.55	317	eP		P	03 53 09.4 +1.7
MMAI	Mount Meron Ar	81.58	306	LR		LR	04 33 34.4
	comp=Z,8µm,19.0s,baz=50,slow=39						
RZN	Rozhen	81.61	318	P		P	03 53 09.1 +0.9
GELI	Tayfur-Gelibol	81.62	316	eP		P	03 53 09.4 +1.4
LAZ	Ladron	81.64	52	eP		P	03 53 10.9 +2.3
L33A	Hoskins	81.67	41	P		P	03 53 08.8 +0.5
	baz=317						
ARSA	Arzberg	81.67	327	i P		P	03 53 09.6 +1.3
	comp=Z,76nm,1.4s,SNR=29						
ANMO	Albuquerque	81.69	51	P		P	03 53 09.9 +1.1
	baz=313						
ANMO	Albuquerque	81.69	51	cePP		P	03 53 10.2 +1.4
ANMO				pmax		pmax	
	comp=Z,58nm,1.2s						
ANMO	Albuquerque	81.69	51	eP		P	03 53 10.9 +2.1
	comp=Z,124nm,1.1s						
ANMO				LR		LR	
	comp=Z,1µm,21.0s						
LEF	Lefka	81.69	309	eP		P	03 53 09.3 +0.8
MOA	Molln	81.72	328	i P		P	03 53 09.8 +1.4
	comp=Z,51nm,1.4s,SNR=17						
BGNE	Belgrade	81.77	42	P		P	03 53 09.0 +0.1
	baz=317,SNR=18						
BGNE	Belgrade	81.77	42	eP		P	03 53 09.8 +0.9
	comp=Z,313nm,1.1s						
BGNE				LR		LR	
	comp=Z,2µm,20.0s						
KULA	Kula-Manisa	81.78	314	eP		P	03 53 10.4 +1.4
N31A	Bailey Ranch,	81.78	43	P		P	03 53 09.3 +0.3
	baz=316,SNR=5.5						
J35A	Milford	81.80	39	P		P	03 53 09.3 +0.3
	baz=318						
GAL1	Galloway	81.83	342	eP		P	03 53 09.8 +0.9
K34A	Le Mars	81.87	40	P		P	03 53 09.6 +0.2
	baz=318,SNR=14						
I36A	Fitzsimmons Fa	81.88	38	P		P	03 53 10.1 +0.7
	baz=319,SNR=5.1						
KORT	Korkueli	81.88	312	i P		P	03 53 10.8 +1.1
H37A	Dierke Farm, C	81.97	37	P		P	03 53 10.6 +0.8
	baz=320						
Y22D	IRIS PASSCAL I	82.00	52	P		P	03 53 11.2 +0.8
	baz=313						
Y22D	IRIS PASSCAL I	82.00	52	PFAKE			03 53 20.0 +10
Y22D				LR		LR	
	comp=Z,3µm,22.0s						
LPM	Los Pinos Moun	82.01	52	eP		P	03 53 11.3 +0.8
O31A	Woolen Ranch,	82.07	43	P		P	03 53 10.6 +0.1
	baz=316,SNR=20						
BNM	Barren Site	82.13	52	eP		P	03 53 13.3 +2.1
DIVS	Divibare	82.13	323	P		P	03 53 11.4 +0.6
M33A	Taylor Creek F	82.14	41	P		P	03 53 11.0 +0.2
	baz=318						
GOLH	Golhisar	82.17	312	i P		P	03 53 12.3 +1.2
N32A	Stulken Farm,	82.17	42	P		P	03 53 11.1 +0.1
	baz=317						
I37A	Lemond, Waseca	82.17	38	P		P	03 53 11.4 +0.4
	baz=320,SNR=35						
MMB	Musomiste	82.18	319	P		P	03 53 11.5 +0.4
J36A	Seneca 1, Swea	82.24	38	P		P	03 53 11.6 +0.3
	baz=319,SNR=11						
L34A	Svendsen Farm,	82.26	41	P		P	03 53 11.9 +0.5
	baz=318						
K35A	Storm Lake	82.27	39	P		P	03 53 11.7 +0.2
	baz=318,SNR=5.7						
SCHQ	Schefferville	82.28	17	P		P	03 53 12.4 +1.1
	comp=Z,23nm,1.1s,baz=1.0,slow=5.9,SNR=9.0						
SCHQ				LR		LR	04 35 22.9
	comp=Z,2µm,18.1s,baz=348,slow=40						
SCHQ	Schefferville	82.28	17	eP		P	03 53 11.5 +0.2
	comp=Z,36nm,1.1s						
NVR	Nevrokopi	82.29	319	P		P	03 53 12.7 +1.1
KKB	Krupnik	82.30	319	P		P	03 53 12.5 +0.8
ELL	Elmali	82.31	312	eP		P	03 53 11.8 -0.1
PERS	Pernice	82.33	327	eP		P	03 53 12.7 +1.0
SOKA	Soboth	82.33	327	i P		P	03 53 12.9 +1.1
	comp=Z,153nm,1.1s,SNR=108						
DKL	Dikili	82.34	315	eP		P	03 53 12.8 +0.9
319A	Douglas	82.35	55	eP		P	03 53 12.8 +0.5
	comp=Z,123nm,1.0s						
319A				LR		LR	
	comp=Z,2µm,20.0s						
HGN	Heimansgroeve	82.41	334	eP		P	03 53 12.8 +0.8
	comp=Z,178nm,1.6s						
HGN				ePP		PP	03 56 02.5 -18
HGN				ePPP		PPP	03 58 16.8
HGN				eS		S	04 03 26.8 +0.2
HGN				eSS		SS	04 08 37.0 -9.1
BEBN	Eben Emael	82.46	334	P		P	03 53 13.2 +1.0
M34A	Aspy Farms, Fr	82.50	41	P		P	03 53 12.8 +0.1
	baz=318						
MEM	Membach	82.51	334	P		P	03 53 13.4 +0.9
121A	Cookes Peak, D	82.51	54	P		P	03 53 14.2 +1.1
	baz=313,SNR=24						
O32A	Brockman Farm,	82.55	43	P		P	03 53 12.8 -0.2
	baz=317,SNR=5.1						
L35A	Bielow Farm, R	82.57	40	P		P	03 53 13.1 +0.1
	baz=318						
SRS	Serrai	82.60	319	P		P	03 53 13.8 +0.6
AYDB	Zeytinkoy-Aydi	82.61	314	eP		P	03 53 14.8 +1.4
N33A	J Bar K, Exete	82.62	42	P		P	03 53 13.3 0.0
	baz=317						
J37A	Redenius Farm,	82.63

K36A Gilmore City 82.71 39 P P 03 53 14.2 +0.5
baz=319,SNR=17
SIGR SIGRI 82.81 316 eP P 03 53 14.5 +0.2
CBKS Cedar Bluff 82.82 45 P P 03 53 14.5 +0.1
baz=316,SNR=7.8
CBKS Cedar Bluff 82.82 45 eP P 03 53 15.1 +0.6
CBKS pmax pmax
comp=Z,130nm,1.1s
CBKS Cedar Bluff 82.82 45 eP P 03 53 15.1 +0.6
P32A Huiting Farm, 82.84 43 P P 03 53 14.1 -0.4
baz=317,SNR=46
HSIG 82.84 58 eP P 03 53 15.3 +0.6
comp=Z,87nm,1.2s
HSIG LR LR
comp=Z,1μm,18.0s
CWF Charnwood Fore 82.88 339 eP P 03 53 15.0 +0.6
CWF AMB AMB 03 53 18.4
comp=Z,78nm,2.0s
CWF Charnwood Fore 82.88 339 eP P 03 53 14.0 -0.4
comp=Z,71nm,1.0s
CWF LR LR
comp=Z,4μm,21.0s
BCLA Clavier 82.91 334 P P 03 53 15.3 +0.7
comp=Z,42nm,1.8s
BLY Banja Luka 82.91 325 ⇓iP P 03 53 15.5 +0.7
KNT Kendrikon 82.92 319 P P 03 53 15.6 +0.7
STU Stuttgart 82.93 331 eP P 03 53 14.9 +0.1
STU pmax pmax
comp=Z,72nm,0.8s
STU MLR MLR
comp=Z,8μm,18.0s
STU Stuttgart 82.93 331 eP P 03 53 14.9 +0.1
comp=Z,72nm,0.8s
STU LR LR
comp=Z,8μm,18.0s
MYKA Terra Mystica 82.95 328 iP P 03 53 15.4 +0.4
comp=Z,65nm,1.0s,SNR=32
YER Yerkesik 82.96 313 eP P 03 53 17.0 +1.7
YER Yerkesik 82.96 313 P P 03 53 16.4 +1.2
VAY Valandovo 82.97 319 P P 03 53 16.3 +1.2
VAY Valandovo 82.97 319 ⇑iP P 03 53 16.1 +1.0
TURN Turunc 82.97 313 iP P 03 53 21.0 +5.9
OUR Ouranopolis 82.97 318 P P 03 53 16.1 +1.0
M35A Neola 82.98 40 P P 03 53 15.3 +0.1
baz=318
DALY Dalyan (Mu¨la 82.98 313 eP P 03 53 16.6 +1.4
PLE Pljevlja 83.00 322 ⇑iP P 03 53 16.3 +0.9
K37A Belmond 83.01 38 P P 03 53 15.5 +0.2
baz=320,SNR=28
L36A Harm Buss Farm 83.01 39 P P 03 53 15.7 +0.3
baz=319,SNR=14
URLA Izmir 83.02 315 iP P 03 53 16.7 +1.2
N34A Lincoln 83.04 41 P P 03 53 15.5 0.0
baz=318,SNR=11
SKO Skopje 83.04 320 ⇑iP P 03 53 16.9 +1.4
O33A Hebron 83.04 42 P P 03 53 15.1 -0.4
baz=317
VISS Visnje 83.11 327 iP P 03 53 16.1 +0.3
HIZ Hauiti 83.11 156 PFAKE 03 53 30.0 +14
HIZ LR LR
comp=Z,2μm,21.0s
IVA Berane 83.11 322 ⇑iP P 03 53 17.0 +1.1
SRIG Santa Rosalia 83.11 60 eP P 03 53 15.4 -0.7
comp=Z,46nm,1.1s
SRIG LR LR
comp=Z,2μm,19.0s
J38A Wedel Dairy, R 83.14 37 P P 03 53 16.1 +0.2
baz=320
BOJS Bojanci 83.17 326 iP P 03 53 16.5 +0.5
SNF Seneffe 83.17 335 P P 03 53 17.3 +1.4
SNF AP PcP 03 53 20.1 -0.4
WATA Walderalm 83.21 329 iP P 03 53 17.4 +0.9
comp=Z,116nm,1.5s,SNR=11
PLG Polygyros 83.22 318 P P 03 53 17.4 +0.9
WTTA Wattenberg 83.24 329 iP P 03 53 17.8 +1.2
comp=Z,64nm,1.4s,SNR=15
FOEL Foel Wylfa 83.25 340 eP P 03 53 17.7 +1.4
FOEL AMB AMB 03 53 19.3
comp=Z,161nm,2.9s
LANF Langenberg 83.26 332 ⇑eP P 03 53 17.6 +1.1
WLF Walferdange 83.27 334 P P 03 53 18.2 +1.7
comp=Z,66nm,2.1s
WLF Walferdange 83.27 334 eP P 03 53 16.0 -0.5
WLF pmax pmax
comp=Z,70nm,1.3s
WLF MLR MLR
comp=Z,10μm,18.0s
WLF Walferdange 83.27 334 eP P 03 53 16.0 -0.5
comp=Z,70nm,1.3s
WLF LR LR
comp=Z,10μm,18.0s
PVY Plav 83.29 322 eP P 03 53 17.8 +0.9
CHOS Chios island 83.30 315 P P 03 53 17.7 +0.7
ABTA Abfaltersbach 83.31 328 iP P 03 53 17.0 +0.1
comp=Z,54nm,1.1s,SNR=26
GRG Griva 83.32 319 P P 03 53 17.8 +0.8
Q32A Meitler Ranch, 83.32 44 P P 03 53 17.2 +0.2
baz=317,SNR=23
UPM Unac-Piva 83.32 323 ⇑iP P 03 53 17.7 +0.6
JAVS Javornik 83.36 327 iP P 03 53 17.0 -0.2
MOTA Moosalm 83.39 330 iP P 03 53 18.2 +0.9
comp=Z,96nm,1.0s,SNR=48
RETA Reutte 83.40 330 iP P 03 53 18.6 +1.3
comp=Z,175nm,1.4s,SNR=57
MXZ Matakaoa Point 83.41 153 PFAKE 03 53 30.0 +13
MXZ LR LR
comp=Z,3μm,20.0s
DOU Dourbes 83.42 335 P P 03 53 17.8 +0.5
comp=Z,31nm,1.8s
O34A Beatrice 83.42 42 P P 03 53 17.2 -0.3
baz=318,SNR=10.0
M36A Felix, Anita 83.43 40 P P 03 53 17.8 +0.3
baz=319
PAIG Paliouri 83.43 318 P P 03 53 18.1 +0.6
L37A Phoenix Point, 83.44 39 P P 03 53 17.9 +0.3
baz=320,SNR=15
P33A Williams Farm, 83.45 43 P P 03 53 17.7 0.0
baz=317
N35A Tabor 83.45 41 P P 03 53 18.2 +0.6
baz=318,SNR=16
BDRM Kayabasi 83.48 314 iP P 03 53 19.2 +1.4
K38A Parkersburg 83.51 38 P P 03 53 18.0 +0.1
baz=320
BODT Bodrum 83.56 314 eP P 03 53 19.3 +1.0
BODT Bodrum 83.56 314 P P 03 53 18.9 +0.6
NKY Niksic 83.58 322 ⇑iP P 03 53 18.9 +0.5
BFO Black Forest 83.62 332 iP P 03 53 19.7 +1.3
BFO Black Forest 83.62 332 eP P 03 53 18.9 +0.6
comp=Z,204nm,1.7s
BFO LR LR
comp=Z,4μm,19.0s
URZ Urewera 83.62 154 eP P 03 53 18.2 0.0
comp=Z,35nm,1.2s
URZ LR LR
comp=Z,3μm,20.0s
KZIT Kziot 83.63 305 eP P 03 53 20.4 +1.7
NKME Niksic 83.63 322 ⇑iP P 03 53 19.1 +0.5
TRI Trieste 83.64 327 eP P 03 53 18.2 -0.2
TRI pmax pmax
comp=Z,73nm,1.0s
TRI Trieste 83.64 327 eP P 03 53 18.2 -0.2
comp=Z,73nm,1.0s
TRI LR LR
comp=Z,9μm,19.0s
R32A Long Quarter, 83.65 44 P P 03 53 18.2 -0.5
baz=317
Q33A Connelly Farm, 83.70 43 P P 03 53 19.1 +0.1
baz=317,SNR=26
ARG Arkhangelos 83.70 313 P P 03 53 20.0 +1.0
DSB Dublin 83.71 342 eP P 03 53 19.2 +0.5
comp=Z,113nm,1.2s
BRY Bratogost 83.72 323 ⇑iP P 03 53 19.2 0.0
PDG Podgorica 83.75 322 ⇓iP P 03 53 20.3 +1.2
PDG Podgorica 83.75 322 P P 03 53 19.7 +0.7
TTG Podgorica 83.75 322 ⇑iP P 03 53 19.8 +0.7
O35A Humboldt 83.76 41 P P 03 53 19.1 -0.1
baz=318,SNR=9.9
FETA Feichten 83.80 330 iP P 03 53 20.6 +1.1
comp=Z,75nm,1.1s,SNR=27
L38A Oak Wood Farm, 83.81 38 P P 03 53 19.7 +0.3
baz=320,SNR=10
BIA Bitola 83.81 320 iP P 03 53 20.3 +0.7
CEME Cevo 83.82 322 ⇑iP P 03 53 20.0 +0.4
P34A Walnut Farm, R 83.83 42 P P 03 53 19.6 0.0
baz=318,SNR=16
N36A Muff Farm, Cla 83.83 40 P P 03 53 20.2 +0.6
baz=319,SNR=16
M37A Trindle Farm, 83.84 40 P P 03 53 20.0 +0.5
baz=319
SCIA State Center 83.86 39 eP P 03 53 20.1 +0.4
comp=Z,144nm,1.0s
AOS Alonnisos 83.89 317 P P 03 53 20.2 +0.3
DAVA Damuels 83.91 330 iP P 03 53 21.0 +1.0
comp=Z,128nm,1.3s,SNR=33
LIT Litokhoron 83.91 319 P P 03 53 20.2 +0.2
FNA Florina 83.97 320 P P 03 53 20.6 +0.3
DRME Dracevica, Mon 83.97 322 ⇑iP P 03 53 21.1 +0.9
STRD Stroud 83.98 339 eP P 03 53 21.0 +1.0
STRD AMB AMB 03 53 25.2
comp=Z,271nm,1.6s
MCH1 Michaelchurch 84.00 340 eP P 03 53 22.1 +1.9
MCH1 AMB AMB 03 53 24.7
comp=Z,141nm,1.4s
OHR Ohrid 84.00 320 ⇑iP P 03 53 21.0 +0.5
BUM Brajici-Budva 84.02 322 ⇑iP P 03 53 21.3 +0.7
S32A Newby Ranch, P 84.06 45 P P 03 53 21.1 +0.2
baz=317
MONM Monmouth 84.09 340 eP P 03 53 22.5 +1.8
MONM AMB AMB 03 53 25.9
comp=Z,134nm,1.4s
HCY Herceg Novi 84.10 322 ⇑iP P 03 53 21.1 +0.2
XOR Xorichti 84.10 318 P P 03 53 21.0 0.0
ULC Ulcinj 84.11 322 ⇑iP P 03 53 21.8 +0.8
EIL Elat 84.11 304 LR LR 04 35 42.5
comp=Z,4μm,18.3s,baz=59,slow=39
R33A Olander Ranch, 84.13 44 P P 03 53 21.3 +0.1
baz=317,SNR=15
ECH Echery 84.14 332 ⇑eP P 03 53 21.9 +0.9
LPW Lampeter 84.18 340 eP P 03 53 22.0 +0.9
LPW AMB AMB 03 53 23.8
comp=Z,166nm,3.9s
FYTO Fytoko, Volos 84.20 318 P P 03 53 21.4 -0.1
Q34A Chapman 84.23 43 P P 03 53 22.0 +0.4
baz=318
BKZ Black Stump Fm 84.23 155 PFAKE 03 53 30.0 +8.7
BKZ LR LR
comp=Z,3μm,21.0s
M38A Pleasantville 84.25 39 P P 03 53 22.0 +0.3
baz=320
N37A Lee Faris, Mou 84.25 40 P P 03 53 22.4 +0.7
baz=319,SNR=25
P35A Duane Minner, 84.26 42 P P 03 53 21.6 -0.2
baz=318,SNR=10
KSU1 Kansas State U 84.27 43 P P 03 53 21.4 -0.4
baz=318
KSU1 Kansas State U 84.27 43 eP P 03 53 25.7 +3.8
TIR Tirane 84.28 321 ⇑iP P 03 53 22.7 +0.9
TIR Tirane 84.28 321 eP P 03 53 22.6 +0.8
TIR Tirane 84.28 321 eP P 03 53 22.2 +0.4
comp=Z,94nm,0.9s
TIR LR LR
comp=Z,8μm,18.0s
FUORN Ofenpass-Fuorn 84.31 330 eP P 03 53 23.4 +1.1
comp=Z,163nm,0.9s
FUORN LR LR
comp=Z,8μm,18.0s
DAVOX Davos/Dischmat 84.33 330 LR LR 04 36 49.3
comp=Z,10μm,18.1s,baz=24,slow=40
O36A Bolckow 84.34 41 P P 03 53 22.5 +0.3
baz=319,SNR=16
NEST Nestorio 84.41 320 P P 03 53 23.1 +0.5
T32A Huddler Ranch, 84.44 45 P P 03 53 23.4 +0.6
baz=317,SNR=15
MOF Molkenrain 84.46 332 ⇑eP P 03 53 23.4 +0.7
JFWS Jewell Farm 84.48 36 eP P 03 53 22.0 -0.8
JFWS Jewell Farm 84.48 36 eP P 03 53 22.0 -0.8
R34A Isabella, Hill 84.52 44 P P 03 53 23.5 +0.3
baz=318
PENT Pentalofos 84.53 319 P P 03 53 23.3 0.0
AMTX Amarillo 84.54 48 P P 03 53 24.7 +1.3
baz=316
AMTX Amarillo 84.54 48 eP P 03 53 25.3 +1.9
comp=Z,187nm,1.1s
MSTX Muleshoe 84.55 50 P P 03 53 24.2 +0.7
baz=315,SNR=33
MSTX Muleshoe 84.55 50 eP P 03 53 23.8 +0.3
comp=Z,172nm,1.1s
MSTX LR LR
comp=Z,1μm,20.0s
PPT Papeete 84.56 118 LR LR 04 23 51.3
comp=Z,5μm,21.1s,baz=288,slow=31
MNTX Cornudas Mount 84.57 53 P P 03 53 24.6 +1.1
baz=314,SNR=79
MNTX Cornudas Mount 84.57 53 eP P 03 53 24.6 +1.1
comp=Z,96nm,1.1s
PPT2 Papeete2 84.58 118 eS S 04 03 51.9 +2.5
comp=Z,3μm,30.8s
PPT2 eSS SS 04 09 26.8 +5.6
comp=Z,833nm,23.8s
PPT2 Papeete2 84.58 118 eLR LR 04 20 12.5
comp=Z,9μm,22.2s,baz=318
PPT2 Papeete2 84.58 118 eT T 05 26 35.8
comp=Z,6.4nm,0.3s
P36A Good Intent, A 84.61 41 P P 03 53 23.9 +0.3
baz=319,SNR=10
S33A Kaszmaul Farm, 84.64 44 P P 03 53 24.5 +0.7
baz=317
N38A Joes South For 84.70 40 P P 03 53 24.3 +0.3
baz=320,SNR=15
TIAR Tiarei 84.71 118 eT T 05 26 45.2
comp=Z,4.1nm,0.4s
O37A Wolven Farm, M 84.73 40 P P 03 53 24.6 +0.5
baz=319,SNR=12
KARP Karpathos 84.73 313 P P 03 53 24.5 +0.2
KARP Karpathos 84.73 313 eP P 03 53 25.1 +0.8
comp=Z,120nm,1.7s
KARP LR LR
comp=Z,1μm,19.0s
LKR Lokris 84.73 317 P P 03 53 23.7 -0.5
Q35A Mercer Eighty, 84.75 42 P P 03 53 24.7 +0.5
baz=318,SNR=14
TUE Stuetta 84.79 330 eP P 03 53 25.6 +1.0
comp=Z,107nm,1.0s
TUE LR LR
comp=Z,12μm,20.0s
AGG Agios Georgios 84.80 318 P P 03 53 23.5 -1.1
AGG Agios Georgios 84.80 318 eP P 03 53 24.5 -0.1
AGG Agios Georgios 84.80 318 eP P 03 53 23.9 -0.7
comp=Z,194nm,1.4s
AGG LR LR
comp=Z,23μm,19.0s
T33A Patterson Ranc 84.88 45 P P 03 53 25.6 +0.6
baz=317
Q36A Arnold C. Orve 84.97 42 P P 03 53 25.7 +0.3
baz=319
U32A Winter Ranch, 84.98 46 P P 03 53 26.5 +1.0
baz=317
LOMF Lomont 84.99 332 ⇑eP P 03 53 26.5 +1.1
N39A Derby Farms, D 85.00 39 P P 03 53 25.9 +0.4
baz=320,SNR=15
S34A Willow Spring 85.04 44 P P 03 53 26.1 +0.4
baz=318
HEX Exmoor 85.06 340 eP P 03 53 26.7 +1.1
R35A Emporia Munici 85.06 43 P P 03 53 26.6 +0.7
baz=318
P37A Lathrop 85.06 41 P P 03 53 26.3 +0.5
baz=319,SNR=24
SANT Santorini 85.08 314 eP P 03 53 26.0 0.0
comp=Z,171nm,1.5s
SANT LR LR
comp=Z,4μm,20.0s
O38A Galt 85.10 40 P P 03 53 26.6 +0.6
baz=320,SNR=12
ANX Ano Chora 85.33 318 P P 03 53 27.4 +0.1
DSL Palaion Diasel 85.35 319 P P 03 53 27.7 +0.4
SERG Sergoula 85.40 318 P P 03 53 26.7 -0.9
TAOE Nuku Hiva Isla 85.42 105 eS S 04 03 59.6 +1.6
comp=Z,1μm,25.7s
TAOE Nuku Hiva Isla 85.42 105 eLR LR 04 20 32.0
comp=Z,8μm,21.0s,baz=315
TAOE Nuku Hiva Isla 85.42 105 PFAKE 03 53 40.0 +12
TAOE LR LR
comp=Z,9μm,19.0s
SGD Sagiada 85.42 320 P P 03 53 28.2 +0.6
R36A Gordon, Harris 85.42 42 P P 03 53 28.1 +0.5
baz=319,SNR=35
U33A Lingo Farm, Me 85.43 45 P P 03 53 28.2 +0.5
baz=317,SNR=18
V32A Arapaho 85.44 46 P P 03 53 29.2 +1.4
baz=317,SNR=15
P38A Dawn 85.45 40 P P 03 53 28.3 +0.6
baz=320,SNR=21
O39A Kirksville 85.45 39 P P 03 53 28.3 +0.6
baz=320
S35A Otter Creek Ra 85.47 43 P P 03 53 28.8 +0.9
baz=318,SNR=40
T34A McClaskey Farm 85.50 44 P P 03 53 28.9 +0.9
baz=318,SNR=20
THZ Tophouse 85.50 158 PFAKE 03 53 40.0 +12
THZ LR LR
comp=Z,4μm,22.0s
BFZ Birch Farm 85.52 156 PFAKE 03 53 40.0 +12
BFZ LR LR
comp=Z,2μm,19.0s
Q37A Longview Farm, 85.55 41 P P 03 53 28.4 +0.1
baz=319
KEK Kerkira 85.56 320 P P 03 53 28.6 +0.3
ZKR Zakros 85.57 313 P P 03 53 29.0 +0.5
SNZO South Karori 85.62 157 PFAKE 03 53 40.0 +12
SNZO LR LR
comp=Z,4μm,22.0s
KLV Kalavryta, Ach 85.63 317 P P 03 53 28.0 -0.8
SENIN Lac Senin/Sane 85.65 331 eP P 03 53 28.7 -0.2
comp=Z,60nm,0.9s
SENIN LR LR
comp=Z,7μm,18.0s
DYA Yadsworthy 85.67 340 eP P 03 53 28.8 +0.1
comp=Z,204nm,1.4s
DYA LR LR
comp=Z,4μm,18.0s
PDO Prodromos 85.71 318 P P 03 53 29.3 +0.2
U34A Anderson Ranch 85.74 45 P P 03 53 30.2 +0.9
baz=318,SNR=22
U34A Anderson Ranch 85.74 45 eP P 03 53 30.8 +1.5
comp=Z,266nm,1.2s
U34A LR LR
comp=Z,2μm,21.0s
W32A Sentinel 85.76 47 P P 03 53 30.4 +1.0
baz=317,SNR=25
R37A Teagarden Farm 85.78 42 P P 03 53 29.5 +0.1
baz=319,SNR=25
V33A Lossen Ranch, 85.78 46 P P 03 53 29.8 +0.2
baz=317,SNR=6.0
VAL Valentia 85.79 344 eP P 03 53 29.7 +0.5
VAL Valentia 85.79 344 ⇓iS S 04 04 04.9 +4.5
MEH Mehetia 85.81 117 eT T 05 28 08.2
comp=Z,44nm,0.3s
S36A Lake Cedric, C 85.83 43 P P 03 53 29.9 +0.2
baz=319,SNR=21
LKD2 Lefkada island 85.83 319 P P 03 53 29.9 +0.2
O40A La Belle 85.88 39 P P 03 53 30.5 +0.6
baz=321,SNR=16
Q38A Cooks Store, C 85.91 41 P P 03 53 30.1 +0.1
baz=320
OG01 Vacheresse 85.91 332 eP P 03 53 31.0 +1.0
P39B Salisbury 85.94 40 P P 03 53 30.4 +0.2
baz=320,SNR=11
T35A Sooner Cattle 85.94 44 P P 03 53 30.7 +0.5
baz=318,SNR=24
LAST Lasithi 85.95 313 ⇑iP P 03 53 31.8 +1.3
LAST Lasithi 85.95 313 P P 03 53 30.5 +0.1
LAST Lasithi 85.95 313 eP P 03 53 30.6 +0.1
comp=Z,325nm,1.7s
LAST LR LR
comp=Z,4μm,19.0s
RLS Riolos of Patr 85.97 318 P P 03 53 30.8 +0.4
Q39A Willow Grove F 86.17 40 P P 03 53 32.0 +0.7
baz=320
T36A Boggs Farm, Ca 86.17 44 P P 03 53 32.2 +0.9
baz=319,SNR=16
W33A Caddo, Fort Co 86.17 46 P P 03 53 32.7 +1.2
baz=317,SNR=5.2
IDI Anoyia 86.19 314 LR LR 04 36 52.2
comp=Z,3μm,18.8s,baz=30,slow=39
IDI Anoyia 86.19 314 ⇑iP P 03 53 32.1 +0.5
IDI Anoyia 86.19 314 P P 03 53 30.6 -1.0
IDI Anoyia 86.19 314 eP P 03 53 30.8 -0.8
comp=Z,58nm,1.1s
V34A Guthrie 86.20 45 P P 03 53 32.3 +0.7
baz=318
V34A Guthrie 86.20 45 eP P 03 53 32.4 +0.9
comp=Z,154nm,1.1s
V34A LR LR
comp=Z,1μm,21.0s
S37A Fort Scott 86.20 42 P P 03 53 31.9 +0.4
baz=319,SNR=27
U35A Pawnee 86.23 44 P P 03 53 32.3 +0.6
baz=318,SNR=17
X32A Elmer 86.25 47 P P 03 53 32.5 +0.6
baz=317,SNR=19
P40A Paris 86.25 40 P P 03 53 32.2 +0.4
baz=321,SNR=33
JQE Queens East 86.26 338 eP P 03 53 31.9 +0.3
LTZ Lake Taylor 86.27 159 PFAKE 03 53 40.0 +8.6
LTZ LR LR
comp=Z,3μm,20.0s
KHZ Kahutara 86.29 158 PFAKE 03 53 40.0 +8.6
KHZ LR LR
comp=Z,6μm,22.0s
VLC Villacollemand 86.29 328 PFAKE 03 53 40.0 +8.1
VLC LR LR
comp=Z,3μm,20.0s
WMOK Wichita Mounta 86.30 47 P P 03 53 33.1 +1.0
baz=317,SNR=18
WMOK Wichita Mounta 86.30 47 eP P 03 53 32.3 +0.2
WMOK pmax pmax
comp=Z,97nm,1.1s
WMOK MLR MLR
comp=Z,1μm,19.0s
WMOK Wichita Mounta 86.30 47 eP P 03 53 32.2 +0.2
comp=Z,97nm,1.1s
WMOK LR LR
comp=Z,1μm,19.0s
JSA Saint Aubin 86.31 338 eP P 03 53 32.7 +0.9
MATE Matera 86.34 322 ⇓iP P 03 53 32.7 +0.6
R38A Fenwick Farm, 86.35 42 P P 03 53 32.1 -0.2
baz=320,SNR=18
ITM Ithomi 86.39 317 P P 03 53 32.0 -0.5
SIVA Sivas 86.43 314 ⇑iP P 03 53 33.2 +0.5
RSL Roselend 86.47 331 ⇑eP P 03 53 33.5 +0.6
AQU L'Aquila 86.49 325 eP P 03 53 34.4 +1.5
AQU pmax pmax
comp=Z,120nm,1.3s
AQU L'Aquila 86.49 325 eP P 03 53 34.4 +1.5
comp=Z,122nm,1.3s
W34A Bridge Creek, 86.50 46 P P 03 53 33.7 +0.6
baz=318,SNR=7.7
W34A Bridge Creek, 86.50 46 eP P 03 53 33.9 +0.8
comp=Z,173nm,1.1s
W34A LR LR
comp=Z,1μm,21.0s
X33A Lawton 86.60 47 P P 03 53 34.4 +0.9
baz=317
V35A Meyer Ranch, C 86.62 45 P P 03 53 34.4 +0.7
baz=318
T37A Cheneyville 18 86.63 43 P P 03 53 34.1 +0.5
baz=319,SNR=13
Q40A Laux Farm, Aux 86.65 40 P P 03 53 34.3 +0.6
baz=321,SNR=29
R39A Chumby, Stover 86.69 41 P P 03 53 34.1 +0.2
baz=320
OXZ Oxford 86.71 159 eP P 03 53 35.9 +2.4
comp=Z,68nm,1.1s
U36A Oologah 86.75 44 P P 03 53 34.8 +0.6
baz=319
S38A Stockton 86.77 42 P P 03 53 34.4 +0.1
baz=320
HDIL Hopedale 86.77 37 P P 03 53 34.8 +0.5
baz=322,SNR=15
HDIL Hopedale 86.77 37 eP P 03 53 35.4 +1.1
RPZ Rata Peaks 86.81 160 PFAKE 03 53 40.0 +6.0
RPZ LR LR
comp=Z,4μm,21.0s
Y33A Hilltop Ranch, 86.92 47 P P 03 53 35.6 +0.5
baz=317,SNR=21
X34A Smith Ranch, M 86.93 46 P P 03 53 36.0 +0.9
baz=318,SNR=16
BNI Bardonecchia 86.99 331 PFAKE 03 53 50.0 +15
BNI LR LR
comp=Z,5μm,19.0s
T38A Diamond 87.02 43 P P 03 53 36.0 +0.5
baz=320
S39A Bolivar 87.03 42 P P 03 53 35.5 -0.1
baz=320,SNR=20
W35A Tecumseh 87.05 45 P P 03 53 36.2 +0.5
baz=318,SNR=6.1
U37A Salina 87.07 43 P P 03 53 36.4 +0.6
baz=319
SLBS Sierra La Lagu 87.07 62 PFAKE 03 53 50.0 +14

SLBS				LR	LR		
	comp=Z,2µm,18.0s						
TUL1	**Leonard**	**87.08**	**44**	P	**P**	**03 53 36.6**	**+0.7**
	baz=319						
TUL1	**Leonard**	**87.08**	**44**	*e*P	**P**	**03 53 37.4**	**+1.5**
	comp=Z,122nm,1.4s						
TUL1				LR	LR		
	comp=Z,2µm,19.0s						
V36A	**Jenks**	**87.09**	**44**	P	**P**	**03 53 36.8**	**+0.9**
	baz=319						
R40A	**Maddies Statio**	**87.10**	**41**	P	**P**	**03 53 36.2**	**+0.3**
	baz=321,SNR=26						
LBZ	**Lake Benmore**	**87.22**	**161**	*e*P	**P**	**03 53 37.8**	**+1.8**
	comp=Z,79nm,1.2s						
CUC	**Castrocucco**	**87.27**	**322**	*e*P	**P**	**03 53 36.0**	**-0.7**
	comp=Z,27nm,1.5s						
CUC				LR	LR		
	comp=Z,5µm,20.0s						
TX31	**Lajitas Ar. Si**	**87.27**	**54**	*e*P	**P**	**03 53 37.9**	**+0.8**
TXAR	**Lajitas Array**	**87.27**	**54**	P	**P**	**03 53 37.8**	**+0.8**
	comp=Z,5.4nm,0.6s,baz=293,slow=4.0,SNR=56						
TXAR				LR	LR	04 27 16.6	
	comp=Z,1µm,21.6s,baz=0.0,slow=32						
PLDF	**La Plantade**	**87.31**	**333⇑**	*e*P	**P**	**03 53 39.2**	**+2.3**
ABTX	**Abilene, Hawle**	**87.34**	**49**	P	**P**	**03 53 37.9**	**+0.6**
	baz=317,SNR=5.4						
ABTX	**Abilene, Hawle**	**87.34**	**49**	*e*P	**P**	**03 53 39.3**	**+2.1**
	comp=Z,157nm,1.2s						
ABTX				LR	LR		
	comp=Z,1µm,21.0s						
Z33A	**Whitaker Ranch**	**87.37**	**48**	P	**P**	**03 53 37.7**	**+0.4**
	baz=317,SNR=15						
AGO	**Saint Agoulin**	**87.41**	**333⇑**	*e*P	**P**	**03 53 39.7**	**+2.4**
W36A	**Wetumka**	**87.42**	**45**	P	**P**	**03 53 38.0**	**+0.5**
	baz=318,SNR=7.9						
U38A	**Gravette**	**87.43**	**43**	P	**P**	**03 53 37.8**	**+0.2**
	baz=319,SNR=11						
V37A	**Hulbert**	**87.45**	**44**	P	**P**	**03 53 38.2**	**+0.6**
	baz=319,SNR=14						
Y34A	**Reagan Ranch,**	**87.45**	**47**	P	**P**	**03 53 37.9**	**+0.3**
	baz=318,SNR=7.8						
TIP	**Timpagrande**	**87.46**	**321⇓**	*i*P	**P**	**03 53 38.6**	**+0.9**
TIP	**Timpagrande**	**87.46**	**321**	P	**P**	**03 53 37.1**	**-0.6**
TIP	**Timpagrande**	**87.46**	**321**	*e*P	**P**	**03 53 38.2**	**+0.5**
	comp=Z,52nm,1.4s						
TIP				LR	LR		
	comp=Z,9µm,19.0s						
Q42A	**Golden Eagle**	**87.47**	**39**	P	**P**	**03 53 38.0**	**+0.3**
	baz=322,SNR=9.9						
DAMY	**Dhamar**	**87.50**	**287**	*e*P	**P**	**03 53 40.0**	**+1.5**
	comp=Z,110nm,1.3s						
DAMY				LR	LR		
	comp=Z,6µm,19.0s						
T39A	**Clever**	**87.51**	**42**	P	**P**	**03 53 38.1**	**+0.2**
	baz=320						
S40A	**Lebanon**	**87.52**	**41**	P	**P**	**03 53 37.9**	**-0.1**
	baz=320,SNR=19						
X35A	**Drake**	**87.56**	**46**	P	**P**	**03 53 38.8**	**+0.6**
	baz=318						
SADO	**Sadowa**	**87.57**	**29**	PFAKE		03 53 50.0	+12
SADO				LR	LR		
	comp=Z,2µm,20.0s						
SSB	**Saint Sauveur**	**87.58**	**332**	*e*P	**P**	**03 53 39.6**	**+1.4**
SSB	**Saint Sauveur**	**87.58**	**332**	*e*P	**P**	**03 53 38.8**	**+0.6**
	comp=Z,25nm,1.0s						
SSB				LR	LR		
	comp=Z,5µm,21.0s						
HPIG		**87.68**	**57**	*e*P	**P**	**03 53 38.9**	**-0.3**
	comp=Z,96nm,1.2s						
HPIG				LR	LR		
	comp=Z,2µm,19.0s						
PYM	**Petit Puy Mans**	**87.72**	**333⇑**	*e*P	**P**	**03 53 41.3**	**+2.5**
X36A	**Centrahoma**	**87.77**	**45**	P	**P**	**03 53 39.6**	**+0.4**
	baz=318,SNR=15						
133A	**Hamilton Ranch**	**87.78**	**48**	P	**P**	**03 53 39.9**	**+0.6**
	baz=317,SNR=6.1						
HHAR	**Hobbs**	**87.78**	**43**	*e*P	**P**	**03 53 39.5**	**+0.2**
	comp=Z,53nm,1.2s						
HHAR				LR	LR		
	comp=Z,2µm,21.0s						
Z34A	**Collier Ranch,**	**87.79**	**47**	P	**P**	**03 53 39.8**	**+0.5**
	baz=318						
CCM	**Cathedral Cave**	**87.79**	**40**	*e*P	**P**	**03 53 39.9**	**+0.6**
CCM	**Cathedral Cave**	**87.79**	**40**	*e*P	**P**	**03 53 39.9**	**+0.6**
SLM	**Saint Louis**	**87.83**	**39**	*e*P	**P**	**03 53 39.8**	**+0.4**
SLM				pmax	pmax		
	comp=Z,181nm,1.2s						
SLM				MLR	MLR		
	comp=Z,2µm,20.0s						
SLM	**Saint Louis**	**87.83**	**39**	*e*P	**P**	**03 53 39.8**	**+0.4**
	comp=Z,181nm,1.2s						
SLM				LR	LR		
	comp=Z,2µm,20.0s						
W37B	**Quinton**	**87.85**	**45**	P	**P**	**03 53 40.7**	**+1.1**
	baz=319						
T40A	**Mansfield**	**87.85**	**41**	P	**P**	**03 53 39.6**	**+0.1**
	baz=320,SNR=24						
V38A	**Canehill**	**87.85**	**43**	P	**P**	**03 53 39.8**	**+0.2**
	baz=319,SNR=17						
Y35A	**Marietta**	**87.89**	**46**	P	**P**	**03 53 40.0**	**+0.3**
	baz=318						
OG26	**St.-Nazaire-De**	**87.91**	**331⇑**	*e*P	**P**	**03 53 41.1**	**+1.3**
SFIN	**Lafayette**	**87.93**	**36**	P	**P**	**03 53 40.0**	**+0.1**
	baz=324,SNR=12						
SFIN	**Lafayette**	**87.93**	**36**	*e*P	**P**	**03 53 40.0**	**+0.1**
	comp=Z,95nm,1.2s						
SFIN				LR	LR		
	comp=Z,3µm,19.0s						
U39A	**Green Forest**	**87.94**	**43**	P	**P**	**03 53 40.2**	**+0.2**
	baz=320,SNR=16						
LMQ	**La Malbaie**	**88.04**	**22**	*e*P	**P**	**03 53 39.6**	**-0.6**
	comp=Z,71nm,1.1s						
LMQ				LR	LR		
	comp=Z,3µm,19.0s						
LBL	**Lubilhac**	**88.08**	**333⇑**	*e*P	**P**	**03 53 43.2**	**+2.6**
Z35A	**Perchaven, San**	**88.19**	**47**	P	**P**	**03 53 41.5**	**+0.3**
	baz=318,SNR=12						
233A	**Rising Star**	**88.22**	**49**	P	**P**	**03 53 42.3**	**+0.9**
	baz=317,SNR=18						
V39A	**Pettigrew**	**88.27**	**43**	P	**P**	**03 53 41.4**	**-0.2**
	baz=320,SNR=16						
134A	**White-Moore Ra**	**88.28**	**48**	P	**P**	**03 53 42.0**	**+0.3**
	baz=318						
U40A	**Yellville**	**88.29**	**42**	P	**P**	**03 53 41.8**	**+0.2**
	baz=320,SNR=38						
X37A	**Clayton**	**88.29**	**45**	P	**P**	**03 53 41.2**	**-0.5**
	baz=319						
Y36A	**Durant**	**88.31**	**46**	P	**P**	**03 53 42.3**	**+0.5**
	baz=318,SNR=14						
T41A	**Mountain View**	**88.32**	**41**	P	**P**	**03 53 41.8**	**0.0**
	baz=321,SNR=28						
W38A	**Poteau**	**88.39**	**44**	P	**P**	**03 53 42.6**	**+0.5**
	baz=319						
X38A	**Whitesboro**	**88.53**	**44**	P	**P**	**03 53 43.5**	**+0.7**
	baz=319,SNR=13						
CEL	**Celeste**	**88.60**	**321**	PFAKE		03 53 50.0	+6.8
CEL				LR	LR		
	comp=Z,3µm,19.0s						
Y37A	**Hugo**	**88.61**	**45**	P	**P**	**03 53 43.7**	**+0.5**
	baz=319,SNR=5.4						
234A	**Clairette**	**88.67**	**48**	P	**P**	**03 53 44.5**	**+1.0**
	baz=318,SNR=24						
333A	**Richland Sprin**	**88.67**	**49**	P	**P**	**03 53 44.2**	**+0.6**
	baz=317,SNR=17						
135A	**Vickery Place,**	**88.67**	**47**	P	**P**	**03 53 44.3**	**+0.8**
	baz=318						
TBI	**Tubuai**	**88.68**	**122**	*e*S	**S**	**04 04 27.7**	**-1.1**
	comp=Z,2µm,25.2s						
TBI	**Tubuai**	**88.68**	**122**	*e*LR	LR	04 21 57.5	
	comp=Z,4µm,25.8s,baz=314						
TBI	**Tubuai**	**88.68**	**122**	*e*T	T	05 31 37.7	
	comp=Z,22nm,0.3s						
W39A	**Magazine**	**88.69**	**43**	P	**P**	**03 53 43.6**	**+0.1**
	baz=320						
Z36A	**Blue Ridge**	**88.69**	**46**	P	**P**	**03 53 44.1**	**+0.5**
	baz=318,SNR=13						
S43A	**Fulton Ridge,**	**88.75**	**40**	P	**P**	**03 53 44.0**	**+0.2**
	baz=322,SNR=9.8						
OLIL	**Olney**	**88.78**	**38**	*e*P	**P**	**03 53 44.6**	**+0.7**
	comp=Z,139nm,1.1s						
JCT	**Junction City**	**88.80**	**50**	P	**P**	**03 53 44.6**	**+0.4**
	baz=317						
JCT	**Junction City**	**88.80**	**50**	*e*P	**P**	**03 53 45.8**	**+1.6**
JCT	**Junction City**	**88.80**	**50**	*e*P	**P**	**03 53 45.8**	**+1.6**
433A	**Art**	**89.02**	**50**	P	**P**	**03 53 45.6**	**+0.4**
	baz=317,SNR=6.0						
X39A	**Fountain Ranch**	**89.03**	**44**	P	**P**	**03 53 45.8**	**+0.6**
	baz=320,SNR=11						
SIUC	**Southern Illin**	**89.05**	**39**	*e*P	**P**	**03 53 46.7**	**+1.5**
	comp=Z,172nm,1.0s						
SIUC				LR	LR		
	comp=Z,2µm,19.0s						
WHTX	**Lake Whitney,**	**89.06**	**48**	P	**P**	**03 53 46.0**	**+0.7**
	baz=318						
WHTX	**Lake Whitney,**	**89.06**	**48**	*e*P	**P**	**03 53 45.5**	**+0.2**
	comp=Z,122nm,1.3s						
WHTX				LR	LR		
	comp=Z,1µm,20.0s						
W40A	**Ferguson Farm,**	**89.07**	**43**	P	**P**	**03 53 46.2**	**+0.9**
	baz=320,SNR=5.5						
V41A	**Mountainview**	**89.09**	**42**	P	**P**	**03 53 45.5**	**0.0**
	baz=321,SNR=23						
334A	**Lometa**	**89.10**	**49**	P	**P**	**03 53 46.1**	**+0.5**
	baz=318,SNR=10						
Y38A	**Idabel**	**89.14**	**45**	P	**P**	**03 53 46.1**	**+0.4**
	baz=319						
BLO	**Bloomington**	**89.16**	**36**	*e*P	**P**	**03 53 47.0**	**+1.3**
BLO	**Bloomington**	**89.16**	**36**	*e*P	**P**	**03 53 45.5**	**-0.2**
	comp=Z,51nm,1.0s						
BLO				LR	LR		
	comp=Z,3µm,19.0s						
PBMO	**Poplar Bluff**	**89.19**	**40**	*e*P	**P**	**03 53 47.1**	**+1.2**
	comp=Z,135nm,1.1s						
PBMO				LR	LR		
	comp=Z,2µm,19.0s						
Z37A	**Pogue Cattle C**	**89.20**	**46**	P	**P**	**03 53 46.4**	**+0.4**
	baz=319						
136A	**Ennis**	**89.23**	**47**	P	**P**	**03 53 46.4**	**+0.3**
	baz=318						
MIAR	**Mount Ida**	**89.29**	**44**	P	**P**	**03 53 47.0**	**+0.6**
	baz=320,SNR=12						
MIAR	**Mount Ida**	**89.29**	**44**	*e*P	**P**	**03 53 46.3**	**-0.1**
MIAR				pmax	pmax		
	comp=Z,82nm,1.0s						
MIAR	**Mount Ida**	**89.29**	**44**	*e*P	**P**	**03 53 46.3**	**-0.1**
	comp=Z,82nm,1.0s						
X201	**Greenbrier Sit**	**89.36**	**43**	*e*P	**P**	**03 53 47.6**	**+0.9**
	comp=Z,101nm,1.1s						
X201				LR	LR		
	comp=Z,2µm,20.0s						
X301	**Greenbrier Sit**	**89.38**	**43**	*e*P	**P**	**03 53 47.6**	**+0.8**
	comp=Z,100nm,1.2s						
X301				LR	LR		
	comp=Z,2µm,20.0s						
WHAR	**Wooly Hollow**	**89.40**	**42**	*e*P	**P**	**03 53 47.8**	**+0.9**
	comp=Z,140nm,1.1s						
WHAR				LR	LR		
	comp=Z,2µm,19.0s						
DRLN	**Deer Lake**	**89.45**	**13**	PFAKE		03 54 00.0	+13
DRLN				LR	LR		
	comp=Z,3µm,20.0s						
FRNY	**Flat Rock**	**89.46**	**25**	PFAKE		03 54 00.0	+13
FRNY				LR	LR		
	comp=Z,3µm,20.0s						
434A	**Burnet**	**89.46**	**49**	P	**P**	**03 53 47.6**	**+0.3**
	baz=318,SNR=6.1						
V42A	**Cord**	**89.47**	**42**	P	**P**	**03 53 47.4**	**+0.2**
	baz=321,SNR=16						
Y39A	**Lockesburg**	**89.48**	**44**	P	**P**	**03 53 48.1**	**+0.9**
	baz=320,SNR=5.4						
ERPA	**Erie**	**89.50**	**31**	*e*P	**P**	**03 53 49.0**	**+1.8**
	comp=Z,163nm,1.3s						
W41B	**Gary Mavity, V**	**89.51**	**43**	P	**P**	**03 53 47.5**	**+0.1**
	baz=321,SNR=14						
Z38A	**Mt. Pleasant**	**89.51**	**45**	P	**P**	**03 53 48.2**	**+0.7**
	baz=319						
533A	**Kerrville**	**89.55**	**50**	P	**P**	**03 53 48.3**	**+0.5**
	baz=317						
137A	**Heron Place, G**	**89.58**	**46**	P	**P**	**03 53 48.1**	**+0.4**
	baz=319						
236A	**Katherine and**	**89.58**	**47**	P	**P**	**03 53 48.1**	**+0.3**
	baz=318						
USIN	**University of**	**89.60**	**38**	*e*P	**P**	**03 53 47.2**	**-0.6**
	comp=Z,80nm,1.4s						
USIN				LR	LR		
	comp=Z,2µm,19.0s						
335A	**Moody**	**89.61**	**48**	P	**P**	**03 53 48.3**	**+0.4**
	baz=318						
X40A	**Basin Creek Fa**	**89.73**	**43**	P	**P**	**03 53 48.9**	**+0.5**
	baz=320						
MMNY	**Mt. Morris Dam**	**89.78**	**29**	*e*P	**P**	**03 53 49.2**	**+0.7**
ALLY	**Alegheny Colle**	**89.84**	**31**	*e*P	**P**	**03 53 48.4**	**-0.5**
	comp=Z,126nm,1.2s						
PVMO	**Portageville**	**89.84**	**40**	PFAKE		03 54 00.0	+11
PVMO				LR	LR		
	comp=Z,2µm,18.0s						
Y40A	**Okolona**	**89.86**	**44**	P	**P**	**03 53 49.3**	**+0.2**
	baz=320						
ACSO	**Alum Creek Sta**	**89.86**	**34**	*e*P	**P**	**03 53 48.7**	**-0.2**
	comp=Z,76nm,1.0s						
336A	**Riesel**	**89.86**	**48**	P	**P**	**03 53 49.8**	**+0.7**
	baz=318						
435B	**Jarrell**	**89.88**	**49**	P	**P**	**03 53 49.6**	**+0.4**
	baz=318						
X41A	**Kaden, Bauxite**	**89.89**	**43**	P	**P**	**03 53 49.7**	**+0.5**
	baz=320						
138A	**Matatall Enter**	**89.90**	**46**	P	**P**	**03 53 50.1**	**+0.9**
	baz=319						
534A	**Blanco**	**89.92**	**50**	P	**P**	**03 53 49.7**	**+0.3**
	baz=317,SNR=18						
633A	**Saathoff Ranch**	**89.92**	**51**	P	**P**	**03 53 50.2**	**+0.8**
	baz=317,SNR=5.6						
VAE	**Valguarnera**	**89.94**	**322**	LR	LR	04 37 55.3	
	comp=Z,3µm,20.1s,baz=54,slow=38						
Z39A	**Irene McRaven,**	**89.96**	**45**	P	**P**	**03 53 50.5**	**+1.0**
	baz=320						
237A	**Washetta, Mont**	**89.99**	**47**	P	**P**	**03 53 49.7**	**0.0**
	baz=319						
NCB	**Newcomb**	**90.01**	**26**	*e*P	**P**	**03 53 48.9**	**-0.7**
	comp=Z,0.3nm,1.1s						
M54A	**Oil Creek Stat**	**90.15**	**31**	P	**P**	**03 53 51.1**	**+0.8**
	baz=328,SNR=12						
WLAR	**White Oak Lake**	**90.20**	**44**	*e*P	**P**	**03 53 51.8**	**+1.2**
	comp=Z,144nm,1.1s						
WLAR				LR	LR		
	comp=Z,2µm,18.0s						
V44A	**Blytheville**	**90.20**	**41**	P	**P**	**03 53 51.3**	**+0.7**
	baz=322						
139A	**Bunkhouse Ranc**	**90.27**	**45**	P	**P**	**03 53 51.5**	**+0.5**
	baz=320						
832A	**Faith Ranch, C**	**90.29**	**52**	P	**P**	**03 53 51.9**	**+0.7**
	baz=317,SNR=5.4						
Y41A	**Eaglette Beard**	**90.31**	**44**	P	**P**	**03 53 51.8**	**+0.6**
	baz=320						
436A	**Wall Ranch, Ga**	**90.35**	**48**	P	**P**	**03 53 51.9**	**+0.5**
	baz=318						
Z40A	**Long Farm, Mag**	**90.37**	**44**	P	**P**	**03 53 52.7**	**+1.2**
	baz=320,SNR=5.4						
238A	**Jacksonville**	**90.38**	**46**	P	**P**	**03 53 52.2**	**+0.8**
	baz=319						
733A	**Divot King Ran**	**90.38**	**51**	P	**P**	**03 53 52.3**	**+0.7**
	baz=317						
PKME	**Peaks-Kenny Pk**	**90.41**	**22**	*e*P	**P**	**03 53 50.5**	**-0.9**
	comp=Z,82nm,1.4s						
HALT	**Halls**	**90.42**	**40**	PFAKE		03 54 00.0	+8.4
HALT				LR	LR		
	comp=Z,2366µm,18.0s						
535A	**Dale**	**90.45**	**49**	P	**P**	**03 53 52.2**	**+0.3**
	baz=318						
337A	**Centerville**	**90.46**	**47**	P	**P**	**03 53 53.2**	**+1.3**
	baz=319						
634A	**China Grove, S**	**90.46**	**50**	P	**P**	**03 53 53.0**	**+1.1**
	baz=317						
N54A	**Moraine State**	**90.48**	**31**	P	**P**	**03 53 52.1**	**+0.3**
	baz=328						
VSL	**Villasalto**	**90.57**	**326**	*e*P	**P**	**03 53 51.3**	**-1.0**
	comp=Z,27nm,1.1s						
VSL				LR	LR		
	comp=Z,4µm,20.0s						
SJAF	**Saint Jean de**	**90.61**	**332⇑**	*e*P	**P**	**03 53 54.0**	**+1.6**
833A	**Chaparral WMA,**	**90.61**	**52**	P	**P**	**03 53 53.5**	**+0.8**
	baz=317						
437A	**Phantom Ranch,**	**90.68**	**48**	P	**P**	**03 53 53.2**	**+0.3**
	baz=319						
Z41A	**Richland Creek**	**90.69**	**44**	P	**P**	**03 53 53.2**	**+0.2**
	baz=320						
536A	**Bastrop**	**90.71**	**49**	P	**P**	**03 53 54.1**	**+1.0**
	baz=316,SNR=5.5						
ACCN	**Adirondack Com**	**90.72**	**26**	*e*P	**P**	**03 53 53.1**	**+0.2**
	comp=Z,59nm,1.1s						
ACCN				LR	LR		
	comp=Z,2µm,20.0s						
239A	**Gary**	**90.72**	**46**	P	**P**	**03 53 54.1**	**+1.0**
	baz=319						
X43A	**Marvell**	**90.73**	**42**	P	**P**	**03 53 53.9**	**+0.8**
	baz=321						
CCAR	**Cane Creek**	**90.73**	**43**	*e*P	**P**	**03 53 54.0**	**+0.9**
	comp=Z,208nm,1.2s						
CCAR				LR	LR		
	comp=Z,2µm,20.0s						
734A	**La Parita Cree**	**90.73**	**51**	P	**P**	**03 53 54.1**	**+0.9**
	baz=317,SNR=5.8						
MET	**Memphis--Engin**	**90.74**	**41**	PFAKE		03 54 00.0	+6.9
MET				LR	LR		
	comp=Z,1µm,18.0s						
V45A	**Humboldt**	**90.74**	**40**	P	**P**	**03 53 53.5**	**+0.4**
	baz=323						
140A	**Cam and Jess,**	**90.75**	**45**	P	**P**	**03 53 53.9**	**+0.7**
	baz=320						
338A	**Crockett**	**90.75**	**47**	P	**P**	**03 53 53.9**	**+0.6**
	baz=319						
Y42A	**Garnett, Star**	**90.78**	**43**	P	**P**	**03 53 54.3**	**+1.0**
	baz=321						
W44A	**Shelby Farms P**	**90.79**	**41**	P	**P**	**03 53 53.8**	**+0.4**
	baz=322						
635A	**Leesville**	**90.80**	**50**	P	**P**	**03 53 54.1**	**+0.6**
	baz=318						
NATX	**Nacogdoches**	**90.81**	**46**	P	**P**	**03 53 54.3**	**+0.7**
	baz=319						
HNH	**Hanover**	**90.89**	**25**	*e*P	**P**	**03 53 53.0**	**-0.7**
	comp=Z,62nm,1.1s						
HNH				LR	LR		
	comp=Z,5µm,21.0s						
WVL	**Waterville**	**90.94**	**23**	PFAKE		03 54 00.0	+6.2
WVL				LR	LR		
	comp=Z,4µm,19.0s						
BINY	**Binghamton**	**90.95**	**28**	*e*P	**P**	**03 53 55.4**	**+1.4**
	comp=Z,105nm,1.4s						
WVT	**Waverly**	**90.99**	**39**	*e*P	**P**	**03 53 54.7**	**+0.5**
WVT				pmax	pmax		
	comp=Z,48nm,1.1s						
WVT				MLR	MLR		
	comp=Z,2µm,19.0s						
WVT	**Waverly**	**90.99**	**39**	*e*P	**P**	**03 53 54.7**	**+0.5**
	comp=Z,48nm,1.1s						
WVT				LR	LR		
	comp=Z,2µm,19.0s						
VALF	**Valcebollere**	**90.99**	**332⇑**	*e*P	**P**	**03 53 56.6**	**+2.2**
W45A	**Hickory Valley**	**91.09**	**41**	P	**P**	**03 53 55.5**	**+0.8**
	baz=322						
LMN	**Caledonia Moun**	**91.10**	**19**	*e*P	**P**	**03 53 56.0**	**+1.4**
	comp=Z,43nm,0.9s						
LMN				LR	LR		
	comp=Z,3µm,20.0s						
X44A	**Crenshaw**	**91.12**	**42**	P	**P**	**03 53 55.7**	**+0.8**
	baz=322						
Z42A	**Norrel Spur, H**	**91.13**	**44**	P	**P**	**03 53 55.9**	**+1.0**
	baz=321,SNR=5.3						
141A	**Papa Simpson,**	**91.14**	**45**	P	**P**	**03 53 56.4**	**+1.4**
	baz=320						
537A	**Green Hill Far**	**91.14**	**48**	P	**P**	**03 53 55.8**	**+0.8**
	baz=318						
636A	**Smothers Creek**	**91.15**	**49**	P	**P**	**03 53 56.8**	**+1.7**
	baz=318,SNR=5.9						
WDD	**Wied Dalam**	**91.17**	**321**	PFAKE		03 54 10.0	+15
WDD				LR	LR		
	comp=Z,3µm,21.0s						
735A	**Kenedy**	**91.17**	**50**	P	**P**	**03 53 57.2**	**+1.9**
	baz=318,SNR=5.4						
Y43A	**Makayla and Ka**	**91.17**	**42**	P	**P**	**03 53 56.2**	**+1.1**
	baz=321						
339A	**Huntington**	**91.19**	**46**	P	**P**	**03 53 55.9**	**+0.6**
	baz=319						
933A	**Laredo**	**91.20**	**52**	P	**P**	**03 53 57.3**	**+1.9**
	baz=317,SNR=6.2						
RESF	**Ens**	**91.22**	**334⇑**	*e*P	**P**	**03 53 57.2**	**+1.8**
VIEF	**Viey**	**91.26**	**334⇑**	*e*P	**P**	**03 53 57.1**	**+1.6**
TRY	**Troy**	**91.30**	**26**	*e*P	**P**	**03 53 55.8**	**+0.3**
	comp=Z,143nm,1.3s						
TRY				LR	LR		
	comp=Z,4µm,21.0s						
FFD	**Franklin Falls**	**91.31**	**25**	PFAKE		03 54 10.0	+14
FFD				LR	LR		
	comp=Z,5µm,20.0s						
OXF	**Oxford**	**91.48**	**41**	*e*P	**P**	**03 53 57.2**	**+0.6**
OXF				pmax	pmax		
	comp=Z,151nm,1.2s						
OXF	**Oxford**	**91.48**	**41**	*e*P	**P**	**03 53 57.2**	**+0.6**
	comp=Z,151nm,1.2s						
Y44A	**Strider, Charl**	**91.51**	**42**	P	**P**	**03 53 57.4**	**+0.7**
	baz=322						
736A	**Circle Diamond**	**91.53**	**50**	P	**P**	**03 53 59.0**	**+2.1**
	baz=318,SNR=5.5						
Z43A	**Armstrong Fami**	**91.56**	**43**	P	**P**	**03 53 57.4**	**+0.5**
	baz=321						
X45A	**UM Field Stati**	**91.56**	**41**	P	**P**	**03 53 57.4**	**+0.4**
	baz=322						
241A	**Mo Tay, Goldon**	**91.57**	**45**	P	**P**	**03 53 57.9**	**+0.9**
	baz=320						
835A	**Beeville**	**91.58**	**51**	P	**P**	**03 53 57.8**	**+0.7**
	baz=318						
KSPA	**Keystone Colle**	**91.59**	**28**	PFAKE		03 54 10.0	+13
KSPA				LR	LR		
	comp=Z,3µm,20.0s						
SSPA	**Standing Stone**	**91.59**	**30**	*e*P	**P**	**03 53 58.1**	**+1.1**
	comp=Z,81nm,1.3s						
SSPA				LR	LR		
	comp=Z,2µm,20.0s						
637A	**Eagle Lake**	**91.60**	**49**	P	**P**	**03 53 58.6**	**+1.4**
	baz=318						
O56A	**Blue Knob Stat**	**91.64**	**31**	P	**P**	**03 53 57.0**	**-0.3**
	baz=329						
142A	**Monroe**	**91.69**	**44**	P	**P**	**03 53 58.3**	**+0.7**
	baz=321						
PLAL	**Pickwick Lake**	**91.78**	**40**	*e*P	**P**	**03 53 57.6**	**-0.3**
	comp=Z,34nm,1.3s						
143A	**Socs Landing,**	**91.86**	**44**	P	**P**	**03 53 58.6**	**+0.2**
	baz=321						
Y45A	**Yeager Farm, C**	**91.93**	**42**	P	**P**	**03 53 59.7**	**+1.0**
	baz=322,SNR=5.4						
Z44A	**Pea Ridge, Bel**	**91.93**	**43**	P	**P**	**03 53 59.6**	**+0.9**
	baz=322,SNR=5.4						
034A	**Hebbronville**	**91.96**	**52**	P	**P**	**03 54 00.2**	**+1.3**
	baz=317						
341A	**Kurthwood**	**91.96**	**46**	P	**P**	**03 53 58.9**	**0.0**
	baz=320						
QUA2	**Belchertown**	**92.14**	**26**	PFAKE		03 54 10.0	+11
QUA2				LR	LR		
	comp=Z,2µm,18.0s						
HRV	**Adam Dziewonsk**	**92.20**	**25**	*e*P	**P**	**03 53 58.9**	**-0.9**
HRV				pmax	pmax		
	comp=Z,62nm,1.1s						
HRV				MLR	MLR		
	comp=Z,2µm,20.0s						
HRV	**Adam Dziewonsk**	**92.20**	**25**	*e*P	**P**	**03 53 58.9**	**-0.9**
	comp=Z,62nm,1.1s						
HRV				LR	LR		
	comp=Z,2µm,20.0s						
Y46A	**Houston**	**92.26**	**41**	P	**P**	**03 54 00.9**	**+0.7**
	baz=323,SNR=5.7						
540A	**Vidor**	**92.37**	**47**	P	**P**	**03 54 01.6**	**+0.9**
	baz=320						
WES	**Weston**	**92.39**	**25**	*e*P	**P**	**03 54 00.7**	**+0.1**
WES				pmax	pmax		
	comp=Z,87nm,

244A	Avery, Jackson	92.76	43	P	P	03 54 03.0	+0.4
	baz=322						
Z46A	Louisville	92.76	42	P	P	03 54 02.7	+0.2
	baz=322						
035Z	Hargill	92.77	52	P	P	03 54 03.5	+0.8
	baz=318						
BRNJ	Basking Ridge	92.79	28	PFAKE		03 54 10.0	+7.5
BRNJ				LR	LR		
	comp=Z,5μm,20.0s						
YLE	Yale	92.80	26	PFAKE		03 54 10.0	+7.5
YLE				LR	LR		
	comp=Z,4μm,22.0s						
CPCT	Cooper Cave	93.11	37	eP	P	03 54 04.3	+0.2
	comp=Z,19nm,1.2s						
CPCT				LR	LR		
	comp=Z,2μm,18.0s						
Z47A	Carrollton	93.20	41	P	P	03 54 05.7	+1.1
	baz=323						
TKL	Tuckaleechee C	93.29	37	eP	P	03 54 03.5	-1.4
TKL				pmax	pmax		
	comp=Z,40nm,1.2s						
TKL				MLR	MLR		
	comp=Z,2μm,20.0s						
TKL	Tuckaleechee C	93.29	37	eP	P	03 54 03.5	-1.4
	comp=Z,40nm,1.2s						
TKL				LR	LR		
	comp=Z,2μm,20.0s						
BLA	Blacksburg	93.48	34	eP	P	03 54 09.9	+4.1
BLA	Blacksburg	93.48	34	eP	P	03 54 09.9	+4.1
	comp=Z,21nm,0.9s						
KEST	Kesra	93.71	324	LR	LR	04 41 25.2	
	comp=Z,7μm,18.1s,baz=336,slow=39						
444A	Pine Grove	93.76	44	P	P	03 54 07.8	+0.7
	baz=321						
PBRG	Braganca	94.36	338	eP	P	03 54 12.3	+2.5
PBRG				epP	sP	03 54 23.2	+2.9
PBRG	Braganca	94.36	338	eLR	LR	04 27 57.7	
	comp=Z,4μm,22.0s						
347A	Saraland	94.39	42	P	P	03 54 10.7	+0.6
	baz=323						
PGAV	Gavieira, Arco	94.64	339	epP	pP	03 54 24.2	+5.3
PGAV	Gavieira, Arco	94.64	339	eSKS	SKSac	04 04 47.5	+2.3
PGAV				eSS	SS	04 11 50.6	+6.3
PGAV	Gavieira, Arco	94.64	339	eLQ	LQ	04 25 10.0	
PGAV				eLR	LR	04 26 57.7	
	comp=Z,2μm,18.0s						
KMSC	Kings Mountain	94.82	35	P	P	03 54 12.6	+0.6
	baz=327						
KMSC	Kings Mountain	94.82	35	eP	P	03 54 11.2	-0.8
	comp=Z,15nm,0.9s						
KMSC				LR	LR		
	comp=Z,2μm,19.0s						
MVO	Moncorvo	95.03	338	eP	P	03 54 15.3	+2.4
	comp=Z,44nm,1.7s						
MVO				epP	sP	03 54 23.4	-0.1
MVO	Moncorvo	95.03	338	eSKS	SKSac	04 04 49.8	+2.6
MVO				eSS	SS	04 11 50.2	+0.4
MVO	Moncorvo	95.03	338	eLQ	LQ	04 25 37.8	
MVO				eLR	LR	04 27 49.0	
	comp=Z,4μm,20.0s						
POLO	Lamas de Olo	95.06	339	eP	P	03 54 14.0	+1.0
	comp=Z,17nm,1.8s						
POLO				epP	sP	03 54 26.1	+2.5
POLO	Lamas de Olo	95.06	339	eSKS	SKSac	04 04 49.8	+2.4
POLO				eSS	SS	04 11 54.9	+4.7
POLO	Lamas de Olo	95.06	339	eLR	LR	04 29 19.9	
	comp=Z,2μm,20.0s						
GOGA	Godfrey	95.28	38	eP	P	03 54 12.0	-2.1
GOGA	Godfrey	95.28	38	eP	P	03 54 12.0	-2.1
ES19	SONSECA Array	95.41	335	eP	P	03 54 15.0	+0.3
FURI	Furi	95.42	286	eP	P	03 54 15.8	+0.3
	comp=Z,69nm,1.3s						
FURI				LR	LR		
	comp=Z,3μm,20.0s						
ESDC	Sonseca Array	95.46	335	P	P	03 54 15.1	+0.2
	comp=Z,3.2nm,0.8s,baz=18,slow=4.3,SNR=16						
ESDC				LR	LR	04 43 11.1	
	comp=Z,6μm,18.1s,baz=20,slow=39						
ESLA	Sonseca Array	95.46	335	PFAKE		03 54 30.0	+15
ESLA				LR	LR		
	comp=Z,7μm,19.0s						
JSC	Jenkinsville	95.58	36	eP	P	03 54 16.3	+0.9
JSC	Jenkinsville	95.58	36	eP	P	03 54 16.3	+0.9
MOIG	Morelia	95.69	59	PFAKE		03 54 30.0	+14
MOIG				LR	LR		
	comp=Z,1μm,20.0s						
PAB	San Pablo	95.70	335	PFAKE		03 54 30.0	+14
PAB				LR	LR		
	comp=Z,7μm,19.0s						
MTE	Manteigas	95.89	338	eP	P	03 54 17.4	+0.6
MTE				epP	sP	03 54 28.6	+1.2
MTE	Manteigas	95.89	338	eSKS	SKSac	04 04 55.7	+3.9
MTE				eSS	SS	04 11 56.2	-5.8
MTE	Manteigas	95.89	338	eLQ	LQ	04 26 07.3	
MTE				eLR	LR	04 28 29.3	
	comp=Z,4μm,18.0s						
MTE	Manteigas	95.89	338	PFAKE		03 54 30.0	+13
MTE				LR	LR		
	comp=Z,4μm,20.0s						
PCAS	Casmilo, Conde	96.48	339	eSKS	SKSac	04 05 02.0	+7.2
PCAS				eSS	SS	04 12 15.2	+5.0
PCAS	Casmilo, Conde	96.48	339	eLR	LR	04 27 52.7	
	comp=Z,5μm,18.0s						
PMRV	Marv??o	96.74	338	eSKS	SKSac	04 05 00.3	+4.1
PMRV	Marv??o	96.74	338	eLQ	LQ	04 26 34.8	
PMRV				eLR	LR	04 27 18.2	
	comp=Z,4μm,20.0s						
TIGA	Tifton	96.84	39	P	P	03 54 21.9	+0.6
	baz=326						
TIGA	Tifton	96.84	39	PFAKE		03 54 30.0	+8.8
TIGA				LR	LR		
	comp=Z,2μm,19.0s						
UNM	Universidad Na	97.26	58	PFAKE		03 54 30.0	+6.3
UNM				LR	LR		
	comp=Z,2μm,22.0s						
PMTG	Montargil	97.31	338	eSKS	SKSac	04 05 03.7	+4.6
PMTG				eSS	SS	04 12 31.3	+9.3
PMTG	Montargil	97.31	338	eLR	LR	04 28 28.2	
	comp=Z,4μm,16.0s						
PESTR	Estremoz	97.32	338	eSKS	SKSac	04 05 04.4	+5.2
PESTR				eSS	SS	04 12 25.1	+3.0
PESTR	Estremoz	97.32	338	eLR	LR	04 28 46.0	
	comp=Z,5μm,20.0s						
PMAFR	Mafra	97.72	339	eSKS	SKSac	04 05 10.1	+8.9
PMAFR				eSS	SS	04 12 40.9	+13
PMAFR	Mafra	97.72	339	eLR	LR	04 28 18.5	
PBAR	Barrancos	97.79	337	eSKS	SKSac	04 05 04.2	+2.6
PBAR				eSS	SS	04 12 36.7	+7.9
PBAR	Barrancos	97.79	337	eLR	LR	04 28 09.7	
	comp=Z,17μm,18.0s						
PBEJ	Beja	98.18	337	eP	Pdif	03 54 28.5	+1.3
PBEJ				epP	sP	03 54 38.9	+1.2
PNCL	Nicolau / Gran	98.29	338	eSKS	SKSac	04 04 45.0	-19
PNCL				eSS	SS	04 12 42.7	+6.9
PNCL	Nicolau / Gran	98.29	338	eLR	LR	04 28 05.6	
	comp=Z,4μm,18.0s						
RKT	Rikitea	98.43	113	ePP	PP	03 58 29.9	+0.9
	comp=Z,171nm,25.8s						
RKT				eSKSac	SKSac	04 05 05.8	+1.0
	comp=Z,2μm,27.5s						
RKT				eSP	SP	04 07 21.8	+1.7
	comp=Z,1μm,32.0s						
RKT				eSS	SS	04 12 42.2	+1.6
	comp=Z,1μm,25.2s						
RKT	Rikitea	98.43	113	eLR	LR	04 26 31.2	
	comp=Z,5μm,22.0s,baz=307						
PVAQ	Vaqueiros	98.71	337	eSKS	SKSac	04 05 10.8	+4.6
PVAQ	Vaqueiros	98.71	337	eLQ	LQ	04 26 39.3	
PVAQ				eLR	LR	04 29 29.6	
	comp=Z,9μm,20.0s						
PBDV	Barranco-do-Ve	98.92	337	eSKS	SKSac	04 05 07.6	+0.2
PBDV	Barranco-do-Ve	98.92	337	eLR	LR	04 27 50.2	
	comp=Z,9μm,18.0s						
TLIG	Tlapa	98.93	58	PFAKE		03 54 40.0	+9.0
TLIG				LR	LR		
	comp=Z,2μm,19.0s						
MORF	Marmelete	99.08	338	eSKS	SKSac	04 05 04.1	-4.1
MORF	Marmelete	99.08	338	eLR	LR	04 28 00.2	
	comp=Z,4μm,20.0s						
PFVI	Vila Bisbo	99.29	338	eLR	LR	04 27 47.4	
	comp=Z,5μm,20.0s						
PFVI	Vila Bisbo	99.29	338	PFAKE		03 54 40.0	+7.9
PFVI				LR	LR		
	comp=Z,6μm,19.0s						
DWPF	Disney Wildern	100.64	39	PFAKE		03 54 50.0	+12
DWPF				LR	LR		
	comp=Z,2μm,19.0s						
RTC	Rabat Centre	101.58	335	PFAKE		03 54 50.0	+7.6
RTC				LR	LR		
	comp=Z,14μm,22.0s						
KMBO	Kilima Mbogo	103.04	280	Pdiff	Pdif	03 54 50.4	+0.9
	comp=Z,3.2nm,0.7s,baz=55,slow=4.2,SNR=5.7						
KMBO				PP	PP	03 59 01.8	-2.3
	comp=Z,0.9nm,0.5s,baz=33,slow=2.1,SNR=3.1						
KMBO	Kilima Mbogo	103.04	280	Pdif	Pdif	03 54 50.4	+0.9
KMBO				PP	PP	03 59 01.8	-2.3
KMBO				LR	LR		
	comp=Z,2μm,20.0s						
TEIG	Tepich	103.33	49	PFAKE		03 55 00.0	+10
TEIG				LR	LR		
	comp=Z,1μm,20.0s						
BBSR	BB Station	103.66	24	PFAKE		03 55 00.0	+8.4
BBSR				LR	LR		
	comp=Z,2μm,20.0s						
CCIG	Comitan	104.01	55	PFAKE		03 55 00.0	+6.3
CCIG				LR	LR		
	comp=Z,2μm,22.0s						
PMOZ	Porto Moniz, M	105.54	343	eLR	LR	04 28 49.2	
	comp=Z,1μm,18.0s						
TAM	Tamanrasset	106.34	320	PFAKE		03 59 30.0	
TAM				LR	LR		
	comp=Z,3μm,19.0s						
TGUH	Tegucigalpa,Un	108.72	52	PFAKE		03 59 30.0	
TGUH				LR	LR		
	comp=Z,1μm,20.0s						
GTBY	Guantanamo Bay	110.61	39	PFAKE		03 59 30.0	
GTBY				LR	LR		
	comp=Z,2μm,21.0s						
MTDJ	Mount Denham	110.85	42	PFAKE		03 59 30.0	
MTDJ				LR	LR		
	comp=Z,2μm,21.0s						
GRTK	Grand Turk	111.06	34	PFAKE		03 59 30.0	
GRTK				LR	LR		
	comp=Z,2μm,20.0s						
SDDR	Presa de Saban	113.21	36	PFAKE		03 59 40.0	
SDDR				LR	LR		
	comp=Z,3μm,20.0s						
HDC	Heredia	113.80	52	PFAKE		03 59 40.0	
HDC				LR	LR		
	comp=Z,1μm,20.0s						
AGP	Aguadilla	115.51	32	PFAKE		03 59 40.0	+7.6
AGP				LR	LR		
	comp=Z,1μm,21.0s						
MPR	Mayaguez	115.68	32	PFAKE		03 59 40.0	+7.3
MPR				LR	LR		
	comp=Z,800nm,22.0s						
SJG	San Juan	116.18	31	PFAKE		03 59 40.0	+6.3
SJG				LR	LR		
	comp=Z,1μm,22.0s						
HUMP	Col San Antoni	116.27	31	PFAKE		03 59 40.0	+6.1
HUMP				LR	LR		
	comp=Z,2μm,21.0s						
TOC1	Torodi Ar. Sit	116.36	318	PFAKE		03 59 40.0	+5.9
TOC1				LR	LR		
	comp=Z,3μm,18.0s						
TOC2	Torodi Ar. Sit	116.36	318	PFAKE		03 59 40.0	+5.9
TOC2				LR	LR		
	comp=Z,3μm,18.0s						
TOB1	Torodi Ar. Sit	116.38	318	PFAKE		03 59 40.0	+5.8
TOB1				LR	LR		
	comp=Z,3μm,18.0s						
TOB2	Torodi Ar. Sit	116.38	318	PFAKE		03 59 40.0	+5.8
TOB2				LR	LR		
	comp=Z,3μm,19.0s						
TOC3	Torodi Ar. Sit	116.38	318	PFAKE		03 59 40.0	+5.8
TOC3				LR	LR		
	comp=Z,3μm,18.0s						
TOC7	Torodi Ar. Sit	116.38	318	PFAKE		03 59 40.0	+5.8
TOC7				LR	LR		
	comp=Z,3μm,19.0s						
TOA1	Torodi Ar. Sit	116.38	318	PFAKE		03 59 40.0	+5.8
TOA1				LR	LR		
	comp=Z,3μm,18.0s						
TOA0	Torodi Ar. Sit	116.39	318	ePKPdf	PKPdf	03 59 32.6	-1.6
TOA0				ePP	PP	04 00 38.6	-1.0
TOA0				LR	LR		
	comp=Z,3μm,18.0s						
TORD	Torodi Ar. Bea	116.39	318	PKP	PKPdf	03 59 34.2	0.0
	comp=Z,1.0nm,0.6s,baz=35,slow=1.7,SNR=10						
TORD				PP	PP	04 00 38.2	-1.5
	comp=Z,20nm,1.2s,baz=24,slow=6.6,SNR=11						
TORD				PKKPbc	PKKPbc	04 10 03.6	+2.3
	comp=Z,0.8nm,0.8s,baz=221,slow=3.8,SNR=2.5						
TOB5	Torodi Ar. Sit	116.39	318	PFAKE		03 59 40.0	+5.8
TOB5				LR	LR		
	comp=Z,3μm,18.0s						
TOB3	Torodi Ar. Sit	116.39	318	PFAKE		03 59 40.0	+5.8
TOB3				LR	LR		
	comp=Z,3μm,18.0s						
BCIP	Isla Barro Col	117.01	49	PFAKE		03 59 50.0	+15
BCIP				LR	LR		
	comp=Z,1μm,19.0s						
SMRT	St. Maarten	117.42	28	PFAKE		03 59 50.0	+14
SMRT				LR	LR		
	comp=Z,2μm,22.0s						
PAYG	Puerto Ayora	117.69	65	PFAKE		03 59 50.0	+13
PAYG				LR	LR		
	comp=Z,2μm,21.0s						
SABA	Saba	117.75	29	PFAKE		03 59 50.0	+13
SABA				LR	LR		
	comp=Z,800nm,18.0s						
SEUS	St. Eustatius	117.96	29	PFAKE		03 59 50.0	+13
SEUS				LR	LR		
	comp=Z,2μm,21.0s						
ANWB	Willy Bob	118.23	27	PFAKE		03 59 50.0	+12
ANWB				LR	LR		
	comp=Z,800nm,20.0s						
LSZ	Lusaka	118.86	274	ePKIKP	PKPdf	03 59 38.5	-0.5
LSZ				MLR	MLR		
	comp=Z,2μm,19.0s						
LSZ	Lusaka	118.86	274	ePKPdf	PKPdf	03 59 38.5	-0.5
LSZ				ePP	PP	04 00 52.4	-5.6
LSZ				LR	LR		
	comp=Z,2μm,19.0s						
GDHS	Morne Mazeau,	119.53	28	PFAKE		03 59 50.0	+10
GDHS				LR	LR		
	comp=Z,900nm,21.0s						
FDF	Fort de France	121.17	28	PFAKE		03 59 50.0	+6.6
FDF				LR	LR		
	comp=Z,2μm,22.0s						
SDV	Santo Domingo	122.27	41	PFAKE		04 00 00.0	+14
SDV				LR	LR		
	comp=Z,2μm,20.0s						
SVB	Belmont	122.48	29	PFAKE		04 00 00.0	+14
SVB				LR	LR		
	comp=Z,2μm,20.0s						
MAW	Mawson	122.66	207	PKhKP	PKPpre	03 59 41.2	
	comp=Z,3.3nm,1.0s,baz=90,slow=2.0,SNR=6.9						
MAW	Mawson	122.66	207	PKPpre	PKPpre	03 59 41.2	
MAW				LR	LR		
	comp=Z,200nm,20.0s						
ROSC	El Rosal	123.69	47	ePKPdf	PKPdf	03 59 50.5	+1.8
ROSC				LR	LR		
	comp=Z,800nm,21.0s						
OTAV	Otavalo	124.90	54	PFAKE		04 00 00.0	+8.8
OTAV				LR	LR		
	comp=Z,900nm,20.0s						
DBIC	Dimbokro	125.23	320	PKP	PKPdf	03 59 50.9	-0.3
	comp=Z,4.8nm,1.0s,baz=14,slow=12,SNR=3.6						
DBIC				PP	PP	04 01 38.9	-1.2
	comp=Z,9.6nm,1.0s,baz=14,slow=7.1,SNR=6.9						
DBIC	Dimbokro	125.23	320	ePKPdf	PKPdf	03 59 50.1	-1.1
DBIC				ePP	PP	04 01 38.8	-1.2
TIC	Toumodi	125.33	320	eP	PP	04 01 34.2	-6.6
KIC	Kosan Boka	125.44	320	eP	PP	04 01 33.5	-8.0
	comp=Z,222nm,1.9s						
LIC	Lamto	125.70	320	eP	PP	04 01 35.0	-8.2
	comp=Z,66nm,1.5s						
LBTB	Lobatse	126.39	266	ePKPdf	PKPdf	03 59 52.0	-1.2
LBTB				ePP	PP	04 01 45.0	-4.0
TSUM	Tsumeb	129.32	277	PFAKE		04 00 10.0	+11
TSUM				LR	LR		
	comp=Z,2μm,19.0s						
QSPA	South Pole Qui	129.52	180	ePKPdf	PKPdf	03 59 58.8	+1.0
QSPA				LR	LR		
	comp=Z,2μm,22.0s						
SYO	Syowa Base	131.33	208	ePKPdf	PKPdf	04 00 02.0	+1.0
SYO	Syowa Base	131.33	208	epPKiKP	pPKiKP	04 00 14.0	+4.0
NNA	Nana	135.05	63	PFAKE		04 00 20.0	+10
NNA				LR	LR		
	comp=Z,3μm,20.0s						
PTGA	Pitinga	135.71	34	ePKPdf	PKPdf	04 00 12.2	+1.1
PTGA				ePP	PP	04 02 46.3	-1.7
PTGA				LR	LR		
	comp=Z,1μm,22.0s						
SAML	Samuel	141.25	45	ePKPdf	PKPdf	04 00 22.6	+1.4
SAML				LR	LR		
	comp=Z,600nm,20.0s						
SNAA	Sanae	143.81	197	PKP	PKPdf	04 00 23.1	-0.9
SNAA	Sanae	143.81	197	ePKPpre	PKPpre	04 00 21.4	
SNAA				ePP	PP	04 03 38.8	+1.0
SNAA				LR	LR		
	comp=Z,1μm,19.0s						
LPAZ	La Paz	144.00	58	PKP	PKPbc	04 00 25.1	+0.5
	comp=Z,3.8nm,0.8s,baz=10,slow=3.5,SNR=17						
LPAZ	La Paz	144.00	58	ePKPdf	PKPdf	04 00 27.7	+1.0
VNA2	Neumayer--Watz	145.37	196	PKP	PKPab	04 00 27.1	+0.3
	baz=62,slow=1.4						
VNA3	Neumayer Olymp	145.60	195	PKP	PKPbc	04 00 27.5	+0.1
VNA1	Neumayer--Stat	145.77	196	PKP	PKPab	04 00 28.5	+0.2
RCBR	Riachuelo	146.19	359	ePKPdf	PKPab	04 00 32.1	+0.6
RCBR				LR	LR		
	comp=Z,2μm,18.0s						
PB01	IPOC Station P	146.36	66	ePKPdf	PKPbc	04 00 30.8	-0.4
PB04	IPOC Station P	146.72	69	PFAKE		04 00 40.0	+6.4
PB04				LR	LR		
	comp=Z,2μm,20.0s						
PB10	IPOC Station P	147.16	71	PFAKE		04 00 40.0	+4.9
PB10				LR	LR		
	comp=Z,3μm,19.0s						
LVC	Limon Verde	147.78	68	ePKPbc	PKPab	04 00 36.9	-1.1
LVC				LR	LR		
	comp=Z,2μm,19.0s						
LCO	Las Campanas	150.11	79	ePKPbc	PKPbc	04 00 42.2	+1.0
LCO				LR	LR		
	comp=Z,3μm,18.0s						
ROC1	El Roble	151.66	87	ePKPbc	PKPbc	04 00 45.5	+0.7
CHRN	Cochrane	153.09	118	ePKPab	PKPab	04 01 01.2	+2.4
PLCA	Paso Flores	154.22	103	PKP	PKPdf	04 00 40.7	-1.0
	comp=Z,5.9nm,1.2s,baz=242,slow=21,SNR=1.9						
PLCA	Paso Flores	154.22	103	ePKPdf	PKPdf	04 00 41.0	-0.7
PLCA				ePKPbc	PKiKP	04 00 50.7	+0.7
CPUP	Villa Florida	158.17	58	PKP	PKPdf	04 00 49.7	+2.5
	comp=Z,7.1nm,1.2s,baz=42,slow=5.1,SNR=4.9						
CPUP	Villa Florida	158.17	58	ePKPdf	PKPdf	04 00 46.0	-1.1

*ISCJB **24** 03:41:15.4±0.5, 39°.11N±0°.03×29°.08E±0°.03, h3km±6km, Error ellipse: s-maj=6.0km s-min=4.0km az=162.3*
*DDA **24** 03:41:15.6, 39°.07N×29°.10E, h7km, Md2.0*
*ISK **24** 03:41:15.1, 39°.10N×29°.09E, h8km, MD2.7*
*CSEM **24** 03:41:15.5±0.1, 39°.12N×29°.09E, h5km, ML2.7, Error ellipse: s-maj=1.4km s-min=1.1km az=143.0*

ISC 24 03:41:15.8±1.0, 39°.12N±0°.03×29°.09E±0°.02, h8km±10km, n44, σ0°.926/60, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.30	256	P	Pg	03 41 21.8	+0.1
DEMI				S	Sg	03 41 26.1	+0.4
DEMI	Demirci	0.30	256	*i* P	Pg	03 41 21.5	-0.2
DEMI				*i* S	Sg	03 41 25.0	-0.6
DEMI	Demirci	0.30	256	*i* P	Pg	03 41 21.8	+0.1
DEMI				*i* S	Sg	03 41 26.1	+0.4
GDZ	Gediz	0.31	95	P	Pg	03 41 22.0	0.0
GDZ				S	Sg	03 41 26.4	+0.3
GDZ	Gediz	0.31	95	*i* P	Pg	03 41 21.9	-0.1
GDZ				*i* S	Sg	03 41 26.4	+0.3
GDZ	Gediz	0.31	95	*i* P	Pg	03 41 22.0	0.0
GDZ				*i* S	Sg	03 41 26.4	+0.3
TVSB	Tavsanli	0.44	41	ePG	Pg	03 41 24.1	-0.4
TVSB	Tavsanli	0.44	41	ePg	Pg	03 41 24.1	-0.4
DURS	Dursunbey	0.68	316	P	Pg	03 41 28.8	-0.1
DURS				S	Sg	03 41 37.7	-0.1
DURS	Dursunbey	0.68	316	*i* P	Pb	03 41 29.6	-0.3
DURS				*i* S	Sb	03 41 40.1	+0.6
DURS	Dursunbey	0.68	316	*i* P	Pg	03 41 28.8	-0.1
DURS				*i* S	Sg	03 41 37.7	-0.1
KULA	Kula-Manisa	0.69	209	ePG	Pg	03 41 28.9	-0.1
KULA				eSG	Sg	03 41 37.6	-0.4
KULA	Kula-Manisa	0.69	209	ePg	Pg	03 41 28.9	-0.1
KULA				eSg	Sg	03 41 37.6	-0.4
KHL	Karahalli	0.86	156	ePG	Pg	03 41 32.1	-0.3
KHL	Karahalli	0.86	156	ePg	Pg	03 41 32.1	-0.3
ORLT	Orhaneli	0.94	351	ePG	Pg	03 41 33.7	-0.2
ORLT	Orhaneli	0.94	351	ePg	Pg	03 41 33.7	-0.2
AKHS	Akhisar	1.02	257	P	Pg	03 41 35.3	-0.1
AKHS				S	Sb	03 41 49.5	+0.3
AKHS	Akhisar	1.02	257	*i* P	Pg	03 41 35.3	-0.1
AKHS				*i* S	Sb	03 41 49.7	+0.5
AKHS	Akhisar	1.02	257	*i* P	Pg	03 41 35.3	-0.1
AKHS				*i* S	Sb	03 41 49.5	+0.3
AKS	Akhisar	1.02	257	ePG	Pg	03 41 35.0	-0.3
AKS	Akhisar	1.02	257	ePg	Pg	03 41 35.0	-0.3
BALB	Balikesir	1.07	300	ePN	Pb	03 41 36.6	0.0
BALB	Balikesir	1.07	300	ePn	Pb	03 41 36.6	0.0
CAVI	Cavuskoy	1.23	28	ePN	Pb	03 41 39.4	0.0
CAVI	Cavuskoy	1.23	28	ePn	Pb	03 41 39.4	0.0
IZI	Iznik	1.26	14	ePN	Pn	03 41 39.8	0.0
IZI	Iznik	1.26	14	ePn	Pn	03 41 39.8	0.0
MDNY	Mudanya-Bursa	1.26	353	ePN	Pn	03 41 39.8	+0.1
MDNY	Mudanya-Bursa	1.26	353	ePn	Pn	03 41 39.8	+0.1
KCTX	Karacabey (Bur	1.28	334	ePN	Pn	03 41 40.0	0.0
KCTX	Karacabey (Bur	1.28	334	ePn	Pn	03 41 40.0	0.0
BORA	Eskisehir	1.30	54	P	Pn	03 41 40.1	-0.3
BORA				S	Sb	03 41 57.6	+0.1
BORA	Eskisehir	1.30	54	*i* P	Pn	03 41 40.1	-0.3
BORA				*i* S	Sb	03 41 57.6	+0.1
ADVT	Abdulvahap	1.41	21	ePN	Pn	03 41 41.9	+0.2
ADVT	Abdulvahap	1.41	21	ePn	Pn	03 41 41.9	+0.2
GONE	Gonen-Balikesi	1.43	311	ePN	Pn	03 41 42.1	+0.1
GONE	Gonen-Balikesi	1.43	311	ePn	Pn	03 41 42.1	+0.1
ARMT	Armutlu	1.46	353	ePN	Pb	03 41 42.9	-0.3
ARMT	Armutlu	1.46	353	ePn	Pb	03 41 42.9	-0.3
EDC	Edincik	1.55	323	ePN	Pn	03 41 43.7	0.0
EDC	Edincik	1.55	323	ePn	Pn	03 41 43.7	0.0
GULT	Gulveren	1.71	40	ePN	Pn	03 41 46.4	+0.4
GULT	Gulveren	1.71	40	ePn	Pn	03 41 46.4	+0.4

JMA 24 03:47:58.6±0.2, 36°.32N×142°.53E, h70km, M3.7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	1.49	246	P	Pn	03 48 23.7	+0.3
CHOJ				S	Sn	03 48 43.2	+1.1
ONAJ	Iwakimizuishiy	1.59	300	P	Pn	03 48 25.1	+0.2
ONAJ				eS	Sn	03 48 44.6	-0.1
JHO	Hitachi	1.61	281	P	Pn	03 48 25.2	+0.2
JHO				S	Sn	03 48 45.2	+0.3
JFK	Kawauchi	1.69	309	P	Pn	03 48 26.1	0.0
JFK				S	Sn	03 48 47.1	+0.2
BSO1

az=179.6

ISC 24 03:57:55.0±1.4, 39°.74N±0°.07×143°.4E±0°.1, h11km, n13, σ1§21/14, mb3.5/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	Tanohata	1.19	280	P	Pn	03 58 16.5	-1.1
MIYJ	Miyakonagasawa	1.22	263	P	Pn	03 58 16.4	-1.6
JANG	Nango	1.57	294	P	Pn	03 58 22.4	-0.4
JANG				eS	Sn	03 58 43.8	+0.7
JOM	Ohasama	1.64	261	P	Pn	03 58 23.1	-0.7
JMK	Ichinoseki	1.86	245	P	Pn	03 58 25.6	-1.2
JIO	Ouri	2.04	232	P	Pn	03 58 29.0	-0.3
JTM	Tenmabayashi	2.06	301	P	Pn	03 58 29.8	+0.3
JCH	Churui	2.87	360	P	Pn	03 58 40.5	-0.2
MJAR	Matsushiro Arr	5.18	234	Pn	Pn	03 59 14.3	+1.7
	1.1nm,0.3s,baz=41,slow=12,SNR=17						
MAT	Matsushiro	5.19	234	P	Pn	03 59 14.2	+1.6
SONM	Songino Array	27.69	299	P	P	04 03 44.3	+1.2
	0.6nm,0.7s,baz=92,slow=10,SNR=2.6						
MKAR	Makanchi Array	44.05	300	P	P	04 06 03.1	+0.4
	0.5nm,0.7s,baz=87,slow=6.5,SNR=4.7						
WRA	Warramunga Arr	59.97	190	P	P	04 07 59.9	-1.5
	0.7nm,0.8s,baz=13,slow=6.9,SNR=5.1						

*JMA **24** 04:00:32.5±0.1, 23°.29N×121°.48E, h13km±3km, M3.5*
*ISCJB **24** 04:00:33.5±0.3, 23°.26N±0°.02×121°.49E±0°.02, h18km±4km, Error ellipse: s-maj=3.4km s-min=3.0km az=43.2*
*TAP **24** 04:00:34.4, 23°.31N×121°.37E, h15km, ML3.8, B*

ISC 24 04:00:33.3±0.9, 23°.28N±0°.02×121°.46E±0°.02, h15km±7km, n63, σ0§78/97, 10C-2D, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWF1	Yuli	0.17	296	⇑iP	Pg	04 00 37.9	+0.3
	baz=308						
CHKT	Chengkung	0.20	207	⇑iP	Pb	04 00 39.7	+1.0
	baz=164						
CHKT				S	Sb	04 00 43.8	+1.5
	baz=164						
EHY	Hungye	0.26	330	⇑iP	Pg	04 00 39.5	+0.5
	baz=340						
EHY				iS	Sg	04 00 43.6	+0.8
	baz=340						
ELDTW	Lidau	0.42	258	P	Pg	04 00 41.3	-0.5
	baz=258						
ELDTW				S	Sg	04 00 46.1	-1.4
	baz=258						
YUS	Yu-Shan	0.52	294	⇑iP	Pg	04 00 43.6	-0.1
	baz=290						
YUS				S	Sg	04 00 49.9	-0.8
	baz=290						
ESL	Shilin	0.53	357	ePg	Pg	04 00 43.9	0.0
	baz=359						
WDT	Danda	0.56	327	iP	Pg	04 00 44.4	-0.1
	baz=336						
WDT				iS	Sg	04 00 51.7	-0.4
	baz=336						
TWG	Pinlang	0.58	218	⇓P	Pg	04 00 44.4	-0.3
	baz=205						
TWG				eS	Sg	04 00 52.1	-0.4
	baz=205						
TTN	Taitung	0.60	209	ePg	Pg	04 00 45.7	+0.6
	baz=199						
ALS	Alishan	0.65	291	⇑iP	Pg	04 00 46.0	-0.1
	baz=293						
ALS				eS	Sg	04 00 53.5	-1.2
	baz=293						
STYT	Tauyuan	0.66	260	P	Pg	04 00 46.0	-0.3
	baz=255						
STYT				S	Sg	04 00 53.9	-1.1
	baz=255						
HWA	Hwalien	0.71	10	ePg	Pg	04 00 47.2	+0.1
	baz=5.0						
WTP	Ta-pu	0.78	268	⇑iP	Pb	04 00 48.5	-0.2
	baz=265						
WTP				S	Sb	04 00 59.1	0.0
	baz=265						
CHN5	Tsauling	0.79	294	⇑iP	Pb	04 00 48.8	0.0
	baz=296						
CHN5				iS	Sb	04 00 59.2	-0.2
	baz=296						
SMLT	Sun Moon Lake	0.79	319	P	Pb	04 00 48.4	-0.5
	baz=325						
SMLT				S	Sb	04 00 58.0	-1.6
	baz=325						
CHN4	Tsaushan	0.80	275	⇑iP	Pb	04 00 49.0	0.0
	baz=275						
CHN4				eS	Sn	04 01 01.1	-0.8
	baz=275						
TWD	Chiawan	0.81	9	ePg	Pb	04 00 48.2	-0.9
	baz=18						
ECL	Taimali	0.82	215	ePg	Pb	04 00 48.5	-0.9
	baz=207						
SGST	Jiashian	0.83	257	P	Pb	04 00 49.6	+0.1
	baz=252						
SGST				iS	Sb	04 01 00.6	0.0
	baz=252						
TYC	Yuchr	0.83	318	P	Pb	04 00 49.1	-0.4
	baz=323						
TYC				S	Sb	04 00 59.9	-0.7
	baz=323						
CHN1	Nanshi	0.87	264	⇑iP	Pg	04 00 50.5	+0.4
	baz=262						
CHN1				iS	Sg	04 01 02.4	+0.8
	baz=262						
WHF	Hehuan Shan	0.88	348	ePg	Pb	04 00 49.9	-0.7
	baz=10.0						
TWK	Hsinying	0.90	269	P	Pb	04 00 50.7	+0.1
	baz=268						
TWK				eS	Sg	04 01 03.0	+0.4
	baz=268						
WGK	Gukeng	0.92	296	ePg	Pb	04 00 51.4	+0.3
	baz=299						
WGK				eS	Sn	04 01 04.7	-0.1
	baz=299						
SSD	Sandimen	0.93	236	ePg	Pb	04 00 50.2	-1.0
	baz=222						
WNT	Mingjian	0.93	310	⇓iP	Pg	04 00 51.9	+0.5
	baz=314						
WNT				S	Sg	04 01 04.3	+0.7
	baz=314						
CHN2	Minshiung	0.94	286	ePg	Pb	04 00 51.2	-0.2
	baz=285						
CHY	Chiayi	0.98	283	ePg	Pb	04 00 52.2	+0.2
	baz=285						
CHY				S	Sg	04 01 05.5	+0.4
	baz=285						
TWT	Tachien	1.01	345	ePg	Pb	04 00 51.9	-0.7
	baz=349						
CHN3	Shinhua	1.03	259	ePg	Pg	04 00 54.3	+1.1
	baz=270						
CHN3				eS	Sn	04 01 10.1	+2.6
	baz=270						
SGLT	Jiouru	1.05	239	ePg	Pg	04 00 55.6	+2.0
	baz=231						
TAW	Tawu	1.06	210	ePg	Pb	04 00 53.2	-0.1
	baz=203						
EAST	Anshuo	1.06	213	ePg	Pb	04 00 51.7	-1.7
	baz=194						
TWM1	Shoushan	1.06	245	ePg	Pg	04 00 54.3	+0.5
	baz=230						
TCU	Taichung	1.13	320	ePg	Pb	04 00 54.5	0.0
	baz=323						
TCU				eS	Sg	04 01 10.9	+1.0
	baz=323						
CHN8	Yiju	1.15	274	ePg	Pn	04 00 54.6	-0.3
	baz=276						
CHN8				eS	Sg	04 01 11.6	+1.0
	baz=276						
NNS	Nan Shan	1.16	356	ePg	Pg	04 00 56.3	+0.6
	baz=19						
ENA	Nanau	1.17	12	ePg	Pn	04 00 53.6	-1.6
	baz=9.0						
SCLT	Jiali	1.17	265	ePg	Pg	04 00 56.0	+0.1
	baz=263						
SCZT	Fangliau	1.19	221	ePg	Pn	04 00 55.0	-0.5
	baz=208						
WSF	Szhu	1.20	288	ePg	Pn	04 00 55.3	-0.2
	baz=290						
WSF				eS	Sg	04 01 12.1	+0.1
	baz=290						
LAY	Lan-yu	1.24	176	⇑ePg	Pn	04 00 54.4	-1.7
	baz=160						
TWQ1	Liyutan	1.24	329	ePg	Pb	04 00 57.0	+0.5
	baz=335						
TWQ1				S	Sg	04 01 14.4	+1.0
	baz=335						
NSY	Sanyi	1.30	331	ePg	Pb	04 00 58.3	+0.7
	baz=336						
NSY				eS	Sg	04 01 16.1	+0.7
	baz=336						
ENTT	Nioudou	1.36	4	ePg	Pn	04 00 57.3	-0.5
	baz=12						
TWC	Suao	1.37	15	ePg	Pn	04 00 58.2	+0.3
	baz=11						
NSK	Sanguang	1.40	356	ePg	Pn	04 00 58.5	+0.1
	baz=20						
NSTT	Nanjuang	1.41	343	ePg	Pn	04 00 58.9	+0.3
	baz=346						
HEN	Hengchun	1.43	208	ePg	Pg	04 01 01.4	+0.5
	baz=193						
TWE	Neicheng	1.45	7	ePg	Pb	04 01 00.7	+0.6
	baz=14						
TSEB	Hengchuen, Pin	1.47	201	ePg	Pn	04 00 59.5	+0.3
	baz=186						
WDGT	Dungji	1.66	270	ePg	Pn	04 01 01.3	-0.6
	baz=272						
WDGT				eS	Sn	04 01 22.4	-0.6
	baz=272						
PNG	Penghu	1.78	280	ePg	Pn	04 01 03.5	-0.1
	baz=283						
PNG				eS	Sn	04 01 25.8	-0.1
	baz=283						
TWB1	Santiao Chiao	1.79	15	ePg	Pb	04 01 05.2	-0.6
	baz=10.0						
NWF	Wu-fen Shan	1.81	9	ePg	Pb	04 01 05.7	-0.6
	baz=16						
YOJ	Yonaguni jima	1.84	50	P	Pb	04 01 06.3	-0.4
YOJ				eS	Sn	04 01 28.7	+1.2
YOJ	Yonaguni jima	1.84	50	ePg	Pn	04 01 04.7	+0.3
	baz=55						
HATJ	Hateruma jima	2.28	70	P	Pn	04 01 10.9	+0.4
HATJ				S	Sn	04 01 38.1	-0.3
IRIF	Iriomote-Funau	2.33	63	P	Pn	04 01 11.9	+0.8
IRIF				eS	Sn	04 01 40.5	+1.0
JKRS	Kuro-shima	2.52	67	P	Pn	04 01 14.3	+0.5
JKRS				S	Sn	04 01 44.6	+0.4
JIJ	Ishigaki jima	2.68	66	P	Pn	04 01 16.3	+0.3
JIJ				eS	Sn	04 01 46.5	-1.7
JISG	Ishigakijimahi	2.91	63	P	Pn	04 01 19.1	-0.1
JISG				eS	Sn	04 01 53.1	-0.8
JTJ	Tarama	3.26	65	P	Pn	04 01 23.8	-0.1
JTJ				eS	Sn	04 02 02.7	+0.2

*ISCJB **24** 04:04:20.5±0.5, 39°.11N±0°.04×29°.02E±0°.03, h3km±6km, Error ellipse: s-maj=6.4km s-min=3.7km az=168.3*
*CSEM **24** 04:04:20.7±0.1, 39°.11N×29°.04E, h2km, MD2.4, Error ellipse: s-maj=2.5km s-min=1.8km az=161.0*
*ISK **24** 04:04:20.3, 39°.10N×29°.08E, h5km, MD2.8*
*DDA **24** 04:04:20.5, 39°.13N×29°.02E, h7km, Md2.4*

ISC 24 04:04:20.9±1.1, 39°.12N±0°.03×29°.03E±0°.02, h4km±13km, n38, σ0§41/52, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.26	253	P	Pg	04 04 26.0	+0.1
DEMI				S	Sg	04 04 29.6	+0.2
DEMI	Demirci	0.26	253	iP	Pg	04 04 26.0	+0.1
DEMI				iS	Sg	04 04 29.6	+0.2
GDZ	Gediz	0.35	95	P	Pg	04 04 27.7	0.0
GDZ				S	Sg	04 04 32.8	+0.5
GDZ	Gediz	0.35	95	iP	Pg	04 04 27.7	0.0
GDZ				iS	Sg	04 04 32.8	+0.5
TVSB	Tavsanli	0.47	45	ePG	Pg	04 04 29.7	-0.2
TVSB				eSG	Sg	04 04 35.9	-0.2
TVSB	Tavsanli	0.47	45	ePg	Pg	04 04 29.7	-0.2
TVSB				eSg	Sg	04 04 35.9	-0.2
DURS	Dursunbey	0.65	318	P	Pg	04 04 33.1	-0.3
DURS				S	Sg	04 04 42.0	+0.2
DURS	Dursunbey	0.65	318	iP	Pg	04 04 33.1	-0.3
DURS				iS	Sg	04 04 42.0	+0.2
KULA	Kula-Manisa	0.67	206	ePG	Pg	04 04 33.4	-0.4
KULA	Kula-Manisa	0.67	206	ePg	Pg	04 04 33.4	-0.4
KHL	Karahalli	0.88	154	ePG	Pg	04 04 37.5	-0.3
KHL	Karahalli	0.88	154	ePg	Pg	04 04 37.5	-0.3
AKHS	Akhisar	0.98	256	P	Pg	04 04 39.5	-0.2
AKHS				S	Sg	04 04 51.3	-1.1
AKHS	Akhisar	0.98	256	iP	Pg	04 04 39.5	-0.2
AKHS				iS	Sg	04 04 51.3	-1.1
AKS	Akhisar	0.98	256	ePG	Pg	04 04 39.9	+0.2
AKS	Akhisar	0.98	256	ePg	Pg	04 04 39.9	+0.2
BALB	Balikesir	1.03	301	ePG	Pb	04 04 41.4	+0.1
BALB	Balikesir	1.03	301	ePg	Pb	04 04 41.4	+0.1
CAVI	Cavuskoy	1.25	30	ePN	Pg	04 04 44.5	-0.3
CAVI	Cavuskoy	1.25	30	ePn	Pg	04 04 44.5	-0.3
MDNY	Mudanya-Bursa	1.25	355	ePN	Pb	04 04 45.3	+0.2
MDNY	Mudanya-Bursa	1.25	355	ePn	Pb	04 04 45.3	+0.2
KCTX	Karacabey (Bur	1.26	336	ePN	Pn	04 04 45.5	+0.2
KCTX	Karacabey (Bur	1.26	336	ePn	Pn	04 04 45.5	+0.2
IZI	Iznik	1.26	15	ePN	Pb	04 04 45.3	0.0
IZI	Iznik	1.26	15	ePn	Pb	04 04 45.3	0.0
BORA	Eskisehir	1.33	55	P	Pg	04 04 46.2	-0.3
BORA				S	Sg	04 05 03.6	-0.2
BORA	Eskisehir	1.33	55	iP	Pg	04 04 46.2	-0.3
BORA				iS	Sg	04 05 03.6	-0.2
GONE	Gonen-Balikesi	1.39	312	ePN	Pn	04 04 47.3	+0.2
GONE	Gonen-Balikesi	1.39	312	ePn	Pn	04 04 47.3	+0.2
ARMT	Armutlu	1.45	355	ePN	Pn	04 04 48.2	+0.3
ARMT	Armutlu	1.45	355	ePn	Pn	04 04 48.2	+0.3
ESKT	Eskisehir	1.46	74	iP	Pb	04 04 49.1	+0.4
ESKT				iS	Sg	04 05 07.1	-0.9
SEYT	Eskypehyr	1.46	74	P	Pb	04 04 49.2	+0.4
SEYT				S	Sg	04 05 07.1	-0.9
GULT	Gulveren	1.74	41	ePN	Pn	04 04 51.9	0.0
GULT	Gulveren	1.74	41	ePn	Pn	04 04 51.9	0.0
SILT	Sile	2.08	13	ePN	Pn	04 04 57.2	+0.6
SILT	Sile	2.08	13	ePn	Pn	04 04 57.2	+0.6

JMA 24 04:14:14.3, 36°.95N×139°.43E, h4km±1km, M2.7, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JKT	Katashina	0.23	219	P	Pg	04 14 19.1	+0.3
JKT				S	Sg	04 14 22.4	+0.5
JSB	Shiboa	0.39	87	P	Pg	04 14 22.5	+0.6
JSB				S	Sg	04 14 28.1	+1.1
JHK	Hiroka	0.45	312	P	Pg	04 14 23.2	+0.3
JHK				S	Sg	04 14 29.4	+0.7
JFY	Yanaizu	0.51	26	P	Pg	04 14 24.3	+0.3
JAG	Ashikaga	0.52	178	P	Pg	04 14 24.5	+0.1
JAG				eS	Sg	04 14 31.4	+0.2
MAT	Matsushiro	1.06	248	P	Pg	04 14 34.3	-0.4
MAT				S	Sg	04 14 48.4	-0.1

*ISCJB **24** 04:14:15.0±0.4, 39°.72N±0°.04×143°.54E±0°.05, h6km, mb4.0/29, MS4.8/3, Error ellipse: s-maj=6.9km s-min=4.3km az=140.3*
*JMA **24** 04:14:16.0±0.3, 39°.77N×143°.56E, h13km, M4.2*
*MOS **24** 04:14:18.4±1.1, 39°.75N×143°.38E, h30km, mb4.3/17, Error ellipse: s-maj=11.8km s-min=7.5km az=96.0*
*IDC **24** 04:14:21.6±2.9, 39°.72N×143°.38E, h39km±24km, mb3.6/19, mb1 3.8/24, mb1mx3.7/65, mbtmp3.8/24, ML3.1/5, Error ellipse: s-maj=18.2km s-min=16.3km az=139.0*

ISC 24 04:14:16.8±0.6, 39°.77N±0°.06×143°.45E±0°.05, h6km, n61, σ1§32/61, mb4.1/29, MS4.9/3, 5C-2D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	Tanohata	1.23	278	P	Pg	04 14 39.8	-0.6
MIYJ	Miyakonagasawa	1.27	262	P	Pb	04 14 40.8	-0.3
MIYJ				eS	Sn	04 14 58.4	-0.1
JANG	Nango	1.60	293	P	Pn	04 14 44.9	-0.8
JANG				eS	Sg	04 15 07.2	-1.1
JOM	Ohasama	1.69	261	P	Pb	04 14 47.3	-1.0
JMK	Ichinoseki	1.91	245	eS	Sb	04 15 15.1	-1.0
JTM	Tenmabayashi	2.08	300	P	Pn	04 14 53.1	+0.8
JIO	Ouri	2.09	232	P	Pn	04 14 51.4	-1.0
JNBK	Urakawa-nobuka	2.56	348	eS	Sn	04 15 31.1	+0.7
JCH	Churui	2.84	359	P	Pn	04 15 02.8	+0.1
ASAJ	Asahikawa	4.39	352	Pn	Pn	04 15 26.2	+2.2
	1.8nm,0.3s,baz=229,slow=21,SNR=7.5						
MAJO	Matsushiro	5.24	234	iP	Pn	04 15 35.8	+0.2
MAT	Matsushiro	5.24	234	P	Pn	04 15 36.5	+0.9
MAT				eS	Sn	04 16 38.1	+1.8
MJAR	Matsushiro Arr	5.24	234	Pn	Pn	04 15 36.8	+1.1
	0.7nm,0.3s,baz=41,slow=12,SNR=8.0						
KUR	Kuril'sk	6.36	29	ePg	Pn	04 15 50.3	-0.7
KUR				eS	Sn	04 16 59.2	-4.8
KUR				pmax	pmax		
	comp=N,22nm,0.2s						
KUR				pmax	pmax		
	comp=Z,42nm,0.2s						
KUR				smax	smax		
	comp=N,87nm,0.5s						
KUR				smax	smax		
	comp=E,146nm,0.5s						
YSS	Yuzh-Sakhalins	7.20	356	ePg	Pn	04 16 04.1	+1.6
YSS				eS	Sn	04 17 22.7	-1.9
YSS				pmax	pmax		
	comp=Z,20nm,0.3s						
USRK	Ussuriysk Ar.	9.61	301	Pn	Pn	04 16 38.2	+2.6
	comp=Z,0.4nm,0.3s,baz=91,slow=15,SNR=15						
KSRS	Korea Array	12.36	264	Pn	Pn	04 17 14.3	+1.0
	comp=Z,0.2nm,0.3s,baz=75,slow=14,SNR=3.8						
KLR	Kul'dur	12.60	322	Pn	Pn	04 17 17.5	+1.0
	comp=Z,0.1nm,0.3s,baz=128,slow=13,SNR=3.6						
SEY	Seymchan	23.81	10	P	P	04 19 30.8	+0.6
	comp=Z,2.9nm,0.7s,baz=194,slow=12,SNR=7.8						
SEY	Seymchan	23.81	10	iP	P	04 19 29.5	-0.7
YAK	Yakutsk	23.82	344	ePg	P	04 19 31.5	+1.3
YAK				pmax	pmax		
	comp=Z,18nm,1.0s						
BOD	Bodaibo	26.18	323	ePg	P	04 19 50.9	-0.9
BOD				pmax	pmax		
	comp=Z,7.0nm,1.3s						
ULN	Ulaanbaatar	27.28	299	⇓ePg	P	04 20 01.7	-0.3
ULN				pmax	pmax		
	comp=Z,5.0nm,1.2s						
SONM	Songino Array	27.72	299	P	P	04 20 05.9	0.0
	comp=Z,1.9nm,0.8s,baz=95,slow=7.7,SNR=9.7						
H11N2	WAKE ISLAND Hy	28.37	128	T	T	04 51 07.3	
	baz=318,slow=75,SNR=17						
H11N1	WAKE ISLAND Hy	28.38	128	T	T	04 51 16.5	
	baz=318,slow=75,SNR=3.3						
H11N3	WAKE ISLAND Hy	28.39	128	T	T	04 51 12.1	
	baz=318,slow=75,SNR=18						
ZAK	Zakamensk	29.94	304	ePg	P	04 20 23.3	-2.4
ZAK				pmax	pmax		
	comp=Z,4.0nm,1.5s						
BILL	Bilibino	30.96	16	⇓ePg	P	04 20 36.8	+2.5
BILL				e		04 21 36.9	
BILL				pmax	pmax		
	comp=Z,2.0nm,1.1s						
BILL				MLR	MLR		
	comp=Z,1μm,16.0s						
ZALV	Zalesovo Beam	41.31	310	P	P	04 22 03.0	+0.1
	comp=Z,2.2nm,0.5s,baz=103,slow=8.2,SNR=5.6						
CMAR	Chiang Mai Arr	43.76	254	ePg	P	04 22 23.8	+0.6
CMAR				pmax	pmax		
	comp=Z,2.0nm,0.3s						
MKAR	Makanchi Array	44.08	300	P	P	04 22 25.5	0.0
	comp=Z,3.1nm,1.0s,baz=83,slow=9.7,SNR=12						
MKAR	Makanchi Array	44.08	300	ePg	P	04 22 29.8	+4.3
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.6s						
KURK	Kurchatov	45.55	306	P	P	04 22 37.5	+0.3
KURK				pmax	pmax		
	comp=Z,4.0nm,0.8s						
KURBB	Kurchatov Arra	45.63	306	P	P	04 22 37.5	-0.3
	comp=Z,3.6nm,0.8s,baz=81,slow=8.0,SNR=23						
ILAR	Eielson Array	46.34	34	P	P	04 22 43.6	+0.4
	comp=Z,0.5nm,0.6s,baz=261,slow=6.3,SNR=10						
BVAR	Borovoye Array	49.95	311	P	P	04 23 10.9	-0.4
	comp=Z,1.3nm,0.5s,baz=84,slow=7.7,SNR=5.8						
BRVK	Borovoye	50.00	311	ePg	P	04 23 12.0	+0.3
BRVK				pmax	pmax		
	comp=Z,8.0nm,2.5s						
ARU	Arti	55.39	318	P	P	04 23 52.0	+0.5
WRA	Warramunga Arr	60.01	190	P	P	04 24 22.8	-1.5
	comp=Z,1.0nm,0.7s,baz=6.7,slow=7.4,SNR=4.6						
YKA	Yellowknife Ar	60.65	31	P	P	04 24 27.7	-0.5
	comp=Z,0.1nm,0.6s,baz=304,slow=6.3,SNR=4.9						
ASAR	Alice Springs	63.73	190	P	P	04 24 49.1	-0.3
	comp=Z,0.6nm,0.7s,baz=19,slow=8.1,SNR=4.7						
OBN	Obninsk	66.86	323	⇑ePg	P	04 25 09.0	-0.3
OBN				e		04 27 31.4	
OBN				pmax	pmax		
	comp=Z,8.0nm,1.1s						
OBN				MLR	MLR		
	comp=Z,561nm,15.0s						
FINES	FINESS Array B	67.14	332	P	P	04 25 10.6	-0.3
	comp=Z,3.2nm,0.9s,baz=32,slow=7.5,SNR=4.1						
ZEI	Tsey	70.30	310	ePg	P	04 25 28.7	-2.6
ZEI				pmax	pmax		
	comp=Z,19nm,1.4s						
KIV	Kislovodsk	70.32	311	⇑ePg	P	04 25 31.1	-0.1
KIV				e		04 28 07.1	
KIV				pmax	pmax		
	comp=Z,13nm,1.4s						
KIV				MLR	MLR		
	comp=Z,498nm,16.0s						
NVAR	Mina Array Bea	72.09	55	P	P	04 25 42.8	+0.6
	comp=Z,0.9nm,0.8s,baz=316,slow=6.3,SNR=4.2						
HFS	Hagfors	72.25	336	P	P	04 25 42.7	+0.3
	comp=Z,1.3nm,0.4s,baz=60,slow=9.0,SNR=5.3						
NB2	NORSAR Subarra	72.27	338	P	P	04 25 42.6	-0.1
	comp=Z,3.1nm,0.8s,baz=42,slow=5.9						
NOA	NORSAR Array B	72.27	338	P	P	04 25 43.0	+0.3
	comp=Z,1.3nm,0.8s,baz=39,slow=5.7,SNR=3.0						
NOA	NORSAR Array B	72.27	338	P	P	04 25 43.0	+0.3
NOA				pmax	pmax		
	comp=Z,1.0nm,0.8s						
PDAR	Pinedale Array	74.62	47	P	P	04 25 57.5	+0.4
	comp=Z,0.3nm,0.4s,baz=282,slow=1.8,SNR=3.6						
BRTR	Keskin Array B	78.22	312	P	P	04 26 17.8	+0.3
	comp=Z,0.4nm,0.7s,baz=21,slow=6.2,SNR=3.2						
CLL	Collm	79.50	331	i (P)	P	04 26 33.6	+10
CLL	Collm	79.50	331	iP	P	04 26 33.6	+10
GERES	GERESS Array B	81.21	329	P	P	04 26 33.0	-0.5
	comp=Z,0.2nm,0.3s,baz=46,slow=5.6,SNR=2.7						
ANMO	Albuquerque	81.62	51	P	P	04 26 36.6	+0.5
	comp=Z,0.7nm,0.7s,baz=308,slow=5.8,SNR=3.8						
TXAR	Lajitas Array	87.20	54	P	P	04 27 05.4	+1.1
	comp=Z,0.1nm,0.5s,baz=275,slow=3.3,SNR=2.5						
VNA2	Neumayer--Watz	145.39	196	PKP	PKPdf	04 33 54.5	+0.1
	baz=102,slow=3.4						
VNA3	Neumayer Olymp	145.62	195	PKP	PKPdf	04 33 54.4	-0.5
VNA1	Neumayer--Stat	145.78	196	PKP	PKPab	04 33 56.3	+0.3

*DDA **24** 04:28:01.7, 39°.15N×29°.04E, h8km, Md2.4*
*ISK **24** 04:28:01.4, 39°.10N×29°.05E, h5km, MD2.9*
*ISCJB **24** 04:28:02.2±0.5, 39°.08N±0°.04×29°.06E±0°.03, h5km±5km, Error ellipse: s-maj=6.4km s-min=4.0km az=166.5*
*CSEM **24** 04:28:02.4±0.1, 39°.08N×29°.06E, h5km, MD2.4, Error ellipse: s-maj=2.9km s-min=2.2km az=157.0*

ISC 24 04:28:01.7±0.9, 39°.07N±0°.03×29°.09E±0°.02, h14km±8km, n44, σ0§39/56, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.29	265	P	Pg	04 28 07.8	-0.1
DEMI				S	Sg	04 28 11.6	-0.5
DEMI	Demirci	0.29	265	iP	Pg	04 28 07.8	-0.1
DEMI				iS	Sg	04 28 11.6	-0.5
GDZ	Gediz	0.31	86	P	Pb	04 28 09.1

AKS	**Akhisar**	**1.01**	**260**	*e*Pg	**Pn**	**04 28 21.5**	**+0.1**
BALB	**Balikesir**	**1.10**	**302**	*e*PG	**Pg**	**04 28 22.9**	**+0.1**
BALB	**Balikesir**	**1.10**	**302**	*e*Pg	**Pg**	**04 28 22.9**	**+0.1**
IZI	**Iznik**	**1.30**	**13**	*e*PN	**Pg**	**04 28 27.0**	**+0.3**
IZI	**Iznik**	**1.30**	**13**	*e*Pn	**Pg**	**04 28 27.0**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.31**	**353**	*e*PN	**Pg**	**04 28 27.0**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.31**	**353**	*e*Pn	**Pg**	**04 28 27.0**	**+0.2**
KCTX	**Karacabey (Bur**	**1.32**	**335**	*e*PN	**Pg**	**04 28 27.0**	**-0.1**
KCTX	**Karacabey (Bur**	**1.32**	**335**	*e*Pn	**Pg**	**04 28 27.0**	**-0.1**
BORA	**Eskisehir**	**1.33**	**52**	P	**Pg**	**04 28 27.1**	**-0.2**
BORA				S	**Sg**	**04 28 45.1**	**+0.4**
BORA	**Eskisehir**	**1.33**	**52**	*i* P	**Pg**	**04 28 27.1**	**-0.2**
BORA				*i* S	**Sg**	**04 28 45.1**	**+0.4**
ESKT	**Eskisehir**	**1.44**	**71**	*i* P	**Pb**	**04 28 28.4**	**+0.1**
ESKT				*i* S	**Sn**	**04 28 45.1**	**-1.0**
SEYT	**Eskypehyr**	**1.44**	**71**	P	**Pb**	**04 28 28.4**	**+0.1**
SEYT				S	**Sn**	**04 28 45.1**	**-1.0**
ADVT	**Abdulvahap**	**1.45**	**20**	*e*PN	**Pg**	**04 28 29.7**	**+0.1**
ADVT	**Abdulvahap**	**1.45**	**20**	*e*Pn	**Pg**	**04 28 29.7**	**+0.1**
GONE	**Gonen-Balikesi**	**1.46**	**312**	*e*PN	**Pb**	**04 28 29.1**	**+0.5**
GONE	**Gonen-Balikesi**	**1.46**	**312**	*e*Pn	**Pb**	**04 28 29.1**	**+0.5**
ARMT	**Armutlu**	**1.50**	**353**	*e*PN	**Pg**	**04 28 30.3**	**-0.3**
ARMT	**Armutlu**	**1.50**	**353**	*e*Pn	**Pg**	**04 28 30.3**	**-0.3**
EDC	**Edincik**	**1.59**	**324**	*e*PN	**Pb**	**04 28 31.3**	**+0.5**
EDC	**Edincik**	**1.59**	**324**	*e*Pn	**Pb**	**04 28 31.3**	**+0.5**
GULT	**Gulveren**	**1.75**	**38**	*e*PN	**Pb**	**04 28 34.0**	**+0.4**
GULT	**Gulveren**	**1.75**	**38**	*e*Pn	**Pb**	**04 28 34.0**	**+0.4**
SILT	**Sile**	**2.12**	**11**	*e*PN	**Pb**	**04 28 38.9**	**-1.0**
SILT	**Sile**	**2.12**	**11**	*e*Pn	**Pb**	**04 28 38.9**	**-1.0**
MDUB	**Mudurnu**	**2.14**	**49**	*e*PN	**Pb**	**04 28 40.1**	**-0.2**
MDUB	**Mudurnu**	**2.14**	**49**	*e*Pn	**Pb**	**04 28 40.1**	**-0.2**

*ISCJB **24** 04:28:35.4±1.0, 34°.30S±0°.07×70°.87W±0°.09, h38km±35km, Error ellipse: s-maj=14.0km s-min=9.6km az=31.4*
*SJA **24** 04:28:35.1±0.9, 34°.13S×70°.65W, h10km±21km, ML4.2, MW3.2*
*GUC **24** 04:28:39.0±0.7, 33°.92S×71°.35W, h25km±21km, ML3.7*
ISC 24 04:28:35.9±2.1, 34°.23S±0°.07×71°.04W±0°.05, h29km±18km, n18, σ1§85/28, 1C, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ANTU	**Antumapu**	**0.74**	**27**	IAML		04 29 03.7	
	comp=E,4μm,0.2s						
RCDM	**Rinconada Maip**	**0.77**	**15**	IAML		04 29 01.0	
	comp=E,15μm,0.2s						
CHPI	**Pichilemu**	**0.82**	**259**	*e*P	**Pn**	**04 28 52.6**	**+1.2**
CHPI				*i* S	**Sn**	**04 29 02.3**	**-0.2**
SJCH	**San Jose de Ma**	**0.82**	**44**	*i* P	**Pn**	**04 28 55.0**	**+3.4**
SJCH				*i* S	**Sn**	**04 29 06.8**	**+4.0**
SJCH				IAML		04 29 07.4	
	comp=E,3μm,0.1s						
PEL	**Peldehue**	**1.12**	**15**	*i* P	**Pb**	**04 28 56.4**	**-0.5**
PEL				*i* S	**Sn**	**04 29 09.6**	**-0.7**
ROC1	**El Roble**	**1.25**	**1**	*i* P	**Pn**	**04 28 57.2**	**-0.6**
ROCH	**El Roble**	**1.26**	**1**	*i* P	**Pn**	**04 28 57.1**	**-0.7**
ROCH				*i* S	**Sn**	**04 29 10.6**	**-3.2**
ROCH				IAML		04 29 11.7	
	comp=E,4μm,0.6s						
AUSP	**Uspallata**	**2.43**	**35**	*i* S	**Sn**	**04 29 43.6**	**+0.6**
RTLS	**Leoncito**	**2.83**	**32**	*i* P	**Pn**	**04 29 20.5**	**+1.0**
RTLS				*i* S	**Sn**	**04 29 53.7**	**+0.8**
RTCV	**Cerro Valdivia**	**3.16**	**42**	*i* P	**Pn**	**04 29 23.9**	**+0.1**
RTCV				*i* S	**Sn**	**04 29 59.3**	**-1.2**
RTLL	**Cerro Villicun**	**3.61**	**37**	*i* P	**Pn**	**04 29 30.6**	**+0.6**
RTLL				*i* S	**Sn**	**04 30 11.4**	**-0.3**
ACAN	**Cantantal**	**3.77**	**60**	*i* S	**Sn**	**04 30 13.1**	**-2.5**
AMOG	**MOGNA**	**3.92**	**34**	*i* P	**Pn**	**04 29 35.7**	**+1.4**
AMOG				*i* S	**Sn**	**04 30 19.2**	**-0.2**
MRA	**San Martin**	**4.81**	**69**	*i* P	**Pn**	**04 29 46.5**	**+0.1**
MRA				*i* S	**Sn**	**04 30 39.1**	**-2.1**
AGUA	**GUANDACOL**	**5.20**	**25**	*i* P	**Pn**	**04 29 53.7**	**+1.7**
AGUA				*i* S	**Sn**	**04 30 52.4**	**+1.4**
VCA	**Vinchina**	**5.99**	**25**	*i* P	**Pn**	**04 30 04.3**	**+1.5**
VCA				*i* S	**Sn**	**04 31 10.7**	**+0.2**
VCA				IAML		04 31 26.5	
	comp=Z,178nm,0.3s						
TCA	**Tanti**	**6.14**	**64**	*i* P	**Pn**	**04 30 05.0**	**+0.2**
TCA				IAML		04 30 12.0	
	comp=Z,41nm,0.2s						
TCA				⇑*i* S	**Sn**	**04 31 11.1**	**-3.1**
CYA	**Choya**	**7.30**	**39**	*i* S	**Sn**	**04 31 40.0**	**-2.7**

*NIED **24** 04:31:00, 39°.80N×143°.70E, h23km, Mw4.5 Best double couple: M0=7.37000×10^15 NP1:φ=202.00000°, δ=34.00000°, λ=100.00000°. NP2:φ=10.00000°, δ=57.00000°, λ=83.00000°.*
*ISCJB **24** 04:31:04.6±0.5, 39°.79N±0°.05×143°.48E±0°.06, h6km, mb4.1/28, MS4.3/1, Error ellipse: s-maj=8.7km s-min=4.7km az=140.9*
*JMA **24** 04:31:04.1±0.2, 39°.78N×143°.69E, h29km, M4.4*
*MOS **24** 04:31:06.8±1.1, 39°.69N×143°.42E, h26km, mb4.4/20, Error ellipse: s-maj=11.8km s-min=7.4km az=100.8*
*IDC **24** 04:31:10.1±4.7, 39°.63N×143°.30E, h33km±35km, mb3.7/18, mb1 3.9/22, mb1mx3.8/46, mbtmp3.9/22, ML3.6/3, MS3.4/1, Ms1 3.4/1, ms1mx3.0/51, Error ellipse: s-maj=17.2km s-min=15.6km az=109.0*
ISC 24 04:31:06.3±0.6, 39°.80N±0°.06×143°.35E±0°.06, h6km, n59, σ1§96/60, mb4.1/28, 5C-3D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.16**	**278**	P	**Pg**	**04 31 28.7**	**+0.2**
JTH				*e*S	**Sn**	**04 31 46.7**	**+1.6**
MIYJ	**Miyakonagasawa**	**1.20**	**260**	P	**Pg**	**04 31 29.0**	**-0.4**
JANG	**Nango**	**1.52**	**293**	P	**Pn**	**04 31 33.8**	**-0.3**
JOM	**Ohasama**	**1.62**	**259**	P	**Pn**	**04 31 35.7**	**+0.2**
JOM				*e*S	**Sb**	**04 31 58.0**	**+0.6**
JMK	**Ichinoseki**	**1.86**	**244**	P	**Pn**	**04 31 38.3**	**-0.3**
ERM	**Erimo**	**2.22**	**356**	*ce*P	**Pn**	**04 31 44.8**	**+1.1**
ERM				pmax	pmax		
	comp=Z,28nm,1.7s						
JYK	**Kaneyama**	**2.48**	**250**	P	**Pn**	**04 31 47.6**	**+0.3**
ASAJ	**Asahikawa**	**4.35**	**353**	Pn	**Pn**	**04 32 16.9**	**+3.9**
	comp=Z,3.3nm,0.3s,baz=251,slow=24,SNR=4.3						
MAJO	**Matsushiro**	**5.20**	**233**	*i* P	**Pn**	**04 32 25.5**	**+0.9**
MAT	**Matsushiro**	**5.20**	**233**	P	**Pn**	**04 32 25.3**	**+0.7**
MAT				*e*S	**Sn**	**04 33 28.3**	**+3.5**
MJAR	**Matsushiro Arr**	**5.20**	**233**	Pn	**Pn**	**04 32 25.5**	**+0.9**
	comp=Z,3.6nm,0.3s,baz=41,slow=12,SNR=84						
KUR	**Kuril'sk**	**6.37**	**30**	P	**Pn**	**04 32 41.6**	**+0.9**
KUR				S	**Sn**	**04 33 50.4**	**-3.4**
YSS	**Yuzh-Sakhalins**	**7.17**	**357**	*e*P	**Pn**	**04 32 55.0**	**+3.4**
YSS				*e*S	**Sn**	**04 34 12.6**	**-0.7**
YSS				pmax	pmax		
	comp=Z,20nm,0.8s						
USRK	**Ussuriysk Ar.**	**9.54**	**301**	Pn	**Pn**	**04 33 26.7**	**+2.7**
	comp=Z,0.2nm,0.3s,baz=104,slow=14,SNR=17						
KSRS	**Korea Array**	**12.29**	**264**	Pn	**Pn**	**04 34 05.7**	**+3.9**
	comp=Z,0.3nm,0.3s,baz=84,slow=13,SNR=11						
KSRS				LR	LR	04 37 18.6	
	comp=Z,188nm,21.0s,baz=38,slow=30						
KLR	**Kul'dur**	**12.54**	**323**	Pn	**Pn**	**04 34 06.4**	**+1.3**
	comp=Z,0.1nm,0.3s,baz=124,slow=9.9,SNR=4.6						
YAK	**Yakutsk**	**23.77**	**344**	⇑*e*P	**P**	**04 36 14.5**	**-4.8**
SEY	**Seymchan**	**23.80**	**10**	P	**P**	**04 36 20.6**	**+1.1**
	comp=Z,3.5nm,0.8s,baz=166,slow=7.1,SNR=7.8						
SEY	**Seymchan**	**23.80**	**10**	*ce*P	**P**	**04 36 19.8**	**+0.3**
BOD	**Bodaibo**	**26.11**	**323**	*e*P	**P**	**04 36 40.3**	**-0.4**
BOD				pmax	pmax		
	comp=Z,8.0nm,1.2s						
ULN	**Ulaanbaatar**	**27.20**	**299**	⇓*i*P	**P**	**04 36 51.5**	**+0.7**
ULN				pmax	pmax		
	comp=Z,10.0nm,1.2s						
SONM	**Songino Array**	**27.64**	**299**	P	**P**	**04 36 54.9**	**+0.2**
	comp=Z,2.8nm,0.8s,baz=97,slow=8.7,SNR=11						
H11N2	**WAKE ISLAND Hy 28.44**	**128**		T	T	05 08 12.2	
	baz=318,slow=76,SNR=133						
H11N1	**WAKE ISLAND Hy 28.45**	**128**		T	T	05 08 12.9	
	baz=318,slow=76,SNR=99						
H11N3	**WAKE ISLAND Hy 28.46**	**128**		T	T	05 07 54.7	
	baz=318,slow=76,SNR=113						
H11S1	**WAKE ISLAND Hy 29.26**	**130**		T	T	05 09 13.3	
	baz=320,slow=76,SNR=17						
H11S3	**WAKE ISLAND Hy 29.27**	**130**		T	T	05 09 03.1	
	baz=320,slow=76,SNR=15						
H11S2	**WAKE ISLAND Hy 29.28**	**130**		T	T	05 09 07.5	
	baz=320,slow=76,SNR=12						
TLY	**Talaya**	**29.79**	**307**	*e*P	**P**	**04 37 13.2**	**-0.5**
TLY				pmax	pmax		
	comp=Z,5.0nm,1.0s						
ZAK	**Zakamensk**	**29.87**	**304**	*e*P	**P**	**04 37 13.8**	**-0.7**
ZAK				pmax	pmax		
	comp=Z,7.0nm,1.3s						
BILL	**Bilibino**	**30.95**	**17**	⇓*e*P	P	04 37 28.6	+4.9
BILL				pmax	pmax		
	comp=Z,2.0nm,1.1s						
BILL				MLR	MLR		
	comp=Z,548nm,16.0s						
ZALV	**Zalesovo Beam**	**41.24**	**310**	P	**P**	**04 38 52.1**	**+0.2**
	comp=Z,1.5nm,0.4s,baz=87,slow=8.4,SNR=6.0						
ZALV				PcP	**PcP**	**04 40 50.7**	**+0.2**
	comp=Z,0.7nm,0.3s,baz=33,slow=3.4,SNR=3.6						
MKAR	**Makanchi Array**	**44.00**	**300**	P	**P**	**04 39 14.3**	**-0.1**
	comp=Z,2.8nm,0.8s,baz=82,slow=9.9,SNR=20						
KURK	**Kurchatov**	**45.48**	**306**	P	**P**	**04 39 26.3**	**+0.2**
KURK				pmax	pmax		
	comp=Z,5.0nm,0.8s						
KURBB	**Kurchatov Arra**	**45.56**	**306**	P	**P**	**04 39 26.3**	**-0.4**
	comp=Z,4.5nm,0.8s,baz=81,slow=8.0,SNR=23						
ILAR	**Eielson Array**	**46.35**	**34**	P	**P**	**04 39 32.6**	**-0.2**
	comp=Z,0.8nm,0.9s,baz=255,slow=6.2,SNR=9.6						
BVAR	**Borovoye Array**	**49.88**	**311**	P	**P**	**04 39 60.0**	**-0.3**
	comp=Z,1.1nm,0.4s,baz=72,slow=11,SNR=7.9						
BVAR	**Borovoye Array**	**49.88**	**311**	P	**P**	**04 40 00.0**	**-0.3**
BVAR				pmax	pmax		
	comp=Z,1.0nm,0.4s						
BRVK	**Borovoye**	**49.93**	**311**	⇑*e*P	**P**	**04 40 01.1**	**+0.5**
BRVK				pmax	pmax		
	comp=Z,3.0nm,1.2s						
ARU	**Arti**	**55.32**	**318**	P	**P**	**04 40 40.7**	**+0.2**
	comp=Z,10nm,0.2s,baz=96,slow=6.0,SNR=4.5						
ARU	**Arti**	**55.32**	**318**	*c i* P	**P**	**04 40 39.6**	**-0.9**
ARU						04 42 45.1	
ARU				S	**S**	**04 48 21.7**	**-3.0**
ARU				SS	**SS**	**04 52 00.2**	**-8.3**
ARU				pmax	pmax		
	comp=Z,11nm,1.7s						
AKTO	**Aktyubinsk**	**57.98**	**311**	P	**P**	**04 41 00.4**	**+0.9**
	comp=Z,1.4nm,0.8s,baz=81,slow=12,SNR=3.9						
WRA	**Warramunga Arr**	**60.02**	**190**	P	**P**	**04 41 11.3**	**-2.5**
	comp=Z,3.1nm,0.8s,baz=8.0,slow=7.1,SNR=17						
YKA	**Yellowknife Ar**	**60.66**	**31**	P	**P**	**04 41 18.0**	**+0.2**
	comp=Z,0.3nm,0.8s,baz=304,slow=8.2,SNR=5.4						
YKA	**Yellowknife Ar**	**60.66**	**31**	P	**P**	**04 41 18.0**	**+0.2**
ASAR	**Alice Springs**	**63.75**	**190**	P	**P**	**04 41 37.5**	**-1.4**
	comp=Z,1.2nm,0.8s,baz=8.3,slow=6.8,SNR=9.7						
ZEI	**Tsey**	**70.22**	**309**	*e*P	**P**	**04 42 19.4**	**-0.9**
ZEI				pmax	pmax		
	comp=Z,12nm,1.1s						
KIV	**Kislovodsk**	**70.25**	**311**	*d i*P	**P**	**04 42 21.3**	**+1.0**
KIV				*e*		04 44 52.8	
KIV				*e*PPP	PPP	04 46 34.7	
KIV				*e*SS	SS	04 56 06.3	+4.5
KIV				pmax	pmax		
	comp=Z,9.0nm,1.0s						
KBZ	**Khabaz**	**70.26**	**311**	P	**P**	**04 42 21.2**	**+1.0**
	comp=Z,2.6nm,0.8s,baz=120,slow=0.4,SNR=6.3						
NVAR	**Mina Array Bea**	**72.13**	**55**	P	**P**	**04 42 33.9**	**+1.9**
	comp=Z,0.3nm,0.5s,baz=283,slow=8.2,SNR=3.2						
NOA	**NORSAR Array B**	**72.22**	**338**	P	**P**	**04 42 32.0**	**+0.1**
	comp=Z,1.8nm,0.9s,baz=37,slow=6.1,SNR=4.0						
AKASG	**Malin Array Be**	**73.04**	**323**	P	**P**	**04 42 36.9**	**0.0**
	comp=Z,0.8nm,0.5s,baz=39,slow=5.4,SNR=5.4						
PDAR	**Pinedale Array**	**74.66**	**47**	P	**P**	**04 42 47.5**	**+0.6**
	comp=Z,0.3nm,0.7s,baz=283,slow=4.0,SNR=3.7						
BRTR	**Keskin Array B**	**78.15**	**312**	P	**P**	**04 43 07.0**	**+0.4**
	comp=Z,1.8nm,1.2s,baz=43,slow=3.0,SNR=3.2						
BRTR	**Keskin Array B**	**78.15**	**312**	P	**P**	**04 43 07.0**	**+0.4**
BRTR				pmax	pmax		
	comp=Z,2.0nm,1.2s						
TXAR	**Lajitas Array**	**87.24**	**54**	P	**P**	**04 43 54.5**	**+0.6**
	comp=Z,0.4nm,0.9s,baz=276,slow=4.4,SNR=3.2						
VNA2	**Neumayer--Watz**	**145.39**	**196**	P	**PKPbc**	**04 50 43.3**	**-0.6**
	baz=60,slow=2.8						
VNA3	**Neumayer Olymp**	**145.62**	**195**	P	**PKPab**	**04 50 48.1**	**+3.2**
VNA1	**Neumayer--Stat**	**145.79**	**196**	P	**PKPdf**	**04 50 41.9**	**-2.6**

FUNV 24 04:32:46.0, 10°.58N×73°.09W, h35km, MW1.9, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VIRV	**Villa del Rosa**	**0.68**	**97**	*e*P	Pn	04 32 58.5	-0.7
VIRV				*e*S	Sn	04 33 08.7	+0.1
VIGV	**El Vigia**	**2.43**	**135**	*e*P	Pn	04 33 23.6	+0.4
VIGV				*e*S	Sn	04 33 49.5	-2.3
CAPV	**Capacho**	**2.81**	**164**	*e*S	Sn	04 33 57.5	-3.8
CURV	**Curarigua**	**3.13**	**100**	*e*P	Pn	04 33 32.6	-0.4
SOCV	**Socops**	**3.18**	**136**	*e*P	Pn	04 33 33.0	-0.6
MONV	**Montecano**	**3.35**	**66**	*e*P	Pn	04 33 34.1	-1.9

RSNC 24 04:33:14.6±0.6, 6°.76N×73°.06W, h151km±4km, ML1.8, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BARC	**Barichara**	**0.21**	**215**	*e*P	Pn	04 33 34.7	-0.7
BARC				*e*S	Sn	04 33 50.5	-0.7
BARC				*i*		04 33 51.7	
	comp=Z,26nm,0.2s						
PAMC	**Pamplona, Colo**	**0.68**	**32**	*e*P	Pn	04 33 37.4	-0.3
PAMC				*e*S	Sn	04 33 54.9	-0.4
BRRC	**Barranca, Sant**	**0.73**	**298**	*e*P	Pn	04 33 36.8	-0.7
BRRC				*e*S	Sn	04 33 54.5	-0.4
BRRC				*i*		04 33 55.9	
	comp=Z,10nm,0.2s						
RUSC	**La Rusia**	**0.87**	**181**	*e*P	Pn	04 33 38.9	-0.2
RUSC				*e*S	Sn	04 33 57.4	-0.3
RUSC				*i*		04 33 58.8	
	comp=Z,5.1nm,0.4s						
CBRI	**Barrientos, No**	**0.98**	**15**	*e*P	Pn	04 33 39.3	-0.3
CBRI				*e*S	Sn	04 33 58.5	-0.1
GRMC	**Gramalote, San**	**0.98**	**15**	*e*P	Pn	04 33 40.0	+0.4
GRMC				*i*		04 33 58.0	
	comp=Z,8.0nm,0.4s						
HELC	**Santa Helena**	**2.52**	**257**	*e*P	Pn	04 33 56.1	-0.2

MEX 24 04:45:47.6±0.7, 14°.79N×92°.88W, h28km±16km, MD3.7, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THIG		**0.60**	**79**	*i* P	Pb	04 45 57.4	-2.2
THIG				*e*S	Sb	04 46 05.3	-2.6
PCIG		**0.96**	**340**	*i* P	Pn	04 46 03.1	-2.1
PCIG				*i* S	Sn	04 46 14.3	-3.7
CCIG	**Comitan**	**1.64**	**26**	*e*P	Pn	04 46 13.2	-1.5
CCIG				*i* S	Sn	04 46 31.8	-3.3
TGIG		**1.99**	**353**	*e*P	Pn	04 46 17.5	-1.9
TGIG				*i* S	Sn	04 46 40.7	-2.7

*IDC **24** 04:46:52.0±1.0, 38°.24N×142°.40E, h0km, mb3.7/6, mb1 3.9/9, mb1mx3.7/54, mbtmp3.7/9, ML3.8/2, Error ellipse: s-maj=28.6km s-min=20.9km az=119.0*
*ISCJB **24** 04:46:53.1±2.0, 38°.37N±0°.05×142°.3E±0°.1, h15km±14km, mb3.7/6, Error ellipse: s-maj=16.6km s-min=6.8km az=24.1*
*JMA **24** 04:46:55.0±0.1, 38°.45N×142°.23E, h28km±1km, M4.0*
JMA Felt I J1.
ISC 24 04:46:53.4±2.3, 38°.36N±0°.06×142°.20E±0°.08, h9km±14km, n25, σ1§47/26, mb3.6/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.67**	**278**	P	**Pn**	**04 47 08.2**	**-1.0**
JIO				S	**Sb**	**04 47 17.2**	**+0.4**
OFUJ	**Ofunato**	**0.83**	**330**	P	**Pb**	**04 47 09.4**	**-0.6**
OFUJ				S	**Sg**	**04 47 19.7**	**-0.5**
JMK	**Ichinoseki**	**0.97**	**308**	P	**Pg**	**04 47 12.1**	**+0.1**
JMK				S	**Sg**	**04 47 24.6**	**0.0**
JOU	**Okura**	**1.21**	**271**	P	**Pg**	**04 47 16.8**	**+0.2**
JOU				S	**Sb**	**04 47 32.7**	**+0.5**
JMM	**Marumori**	**1.21**	**246**	P	**Pn**	**04 47 16.2**	**-0.4**
JMM				S	**Sb**	**04 47 32.1**	**-0.2**
JOM	**Ohasama**	**1.31**	**328**	P	**Pn**	**04 47 17.1**	**-1.0**
JOM				S	**Sb**	**04 47 33.3**	**-2.1**
JFK	**Kawauchi**	**1.44**	**227**	P	**Pn**	**04 47 19.1**	**-0.7**
JYK	**Kaneyama**	**1.54**	**292**	P	**Pn**	**04 47 21.4**	**+0.2**
JRG	**Rokugo**	**1.60**	**311**	P	**Pn**	**04 47 22.0**	**+0.1**
MJAR	**Matsushiro Arr**	**3.66**	**241**	Pn	**Pn**	**04 47 51.3**	**+1.0**
	1.3nm,0.3s,baz=46,slow=12,SNR=8.8						
MAT	**Matsushiro**	**3.66**	**241**	P	**Pn**	**04 47 53.8**	**+3.5**
MAT				*e*S	**Sb**	**04 48 39.5**	**-3.3**
ASAJ	**Asahikawa**	**5.76**	**3**	Pn	**Pn**	**04 48 19.8**	**+0.7**
	4.2nm,0.3s,baz=291,slow=18,SNR=6.4						
USRK	**Ussuriysk Ar.**	**9.64**	**310**	Pn	**Pn**	**04 49 15.9**	**+3.5**
	0.2nm,0.3s,baz=114,slow=16,SNR=3.4						
SEY	**Seymchan**	**25.37**	**11**	P	**P**	**04 52 21.9**	**+1.2**
	3.4nm,0.7s,baz=204,slow=10,SNR=10						
H11N2	**WAKE ISLAND Hy 28.33**	**124**		T	T	05 22 30.3	
	baz=317,slow=75,SNR=603						
H11N1	**WAKE ISLAND Hy 28.34**	**124**		T	T	05 22 58.1	
	baz=317,slow=75,SNR=468						
H11N3	**WAKE ISLAND Hy 28.35**	**124**		T	T	05 22 35.6	
	baz=317,slow=75,SNR=573						
H11S1	**WAKE ISLAND Hy 29.10**	**126**		T	T	05 23 34.9	
	baz=319,slow=76,SNR=132						
H11S3	**WAKE ISLAND Hy 29.10**	**126**		T	T	05 23 45.6	
	baz=319,slow=76,SNR=137						
H11S2	**WAKE ISLAND Hy 29.11**	**126**		T	T	05 23 28.7	
	baz=319,slow=76,SNR=97						
MKAR	**Makanchi Array**	**43.95**	**301**	P	**P**	**04 55 01.4**	**+0.6**
	0.4nm,0.4s,baz=79,slow=10,SNR=2.2						
ILAR	**Eielson Array**	**48.04**	**33**	P	**P**	**04 55 32.9**	**+0.1**
	0.1nm,0.4s,baz=272,slow=7.1,SNR=3.9						
WRA	**Warramunga Arr**	**58.46**	**189**	P	**P**	**04 56 49.2**	**-0.6**
	3.8nm,0.7s,baz=7.7,slow=7.7,SNR=9.0						
PDAR	**Pinedale Array**	**76.30**	**46**	P	**P**	**04 58 42.6**	**-0.4**
	0.2nm,0.4s,baz=352,slow=3.0,SNR=3.8						
TXAR	**Lajitas Array**	**88.82**	**53**	P	**P**	**04 59 47.7**	**-0.6**
	0.3nm,0.9s,baz=289,slow=3.8,SNR=3.5						

*IDC **24** 04:51:36.7±0.6, 10°.45S×117°.33E, h0km, mb4.4/17, mb1 4.6/19, mb1mx4.4/37, mbtmp4.5/19, ML4.1/2, MS3.8/3, Ms1 3.8/3, ms1mx3.4/45, Error ellipse: s-maj=26.2km s-min=13.2km az=63.0*
*DJA **24** 04:51:38.9±0.3, 11°.5±3°×11°.7E±°, h10km, M4.8/12, mB5.2/3, mb4.8/11, MLv4.8/12, Mw(mB)4.6/3*
*ISCJB **24** 04:51:39.1±0.3, 10°.64S±0°.05×117°.24E±0°.04, h33km, mb4.6/31, MS4.1/3, Error ellipse: s-maj=7.1km s-min=4.5km az=26.3*
*NEIC **24** 04:51:39.8±2.0, 10°.58S×117°.20E, h21km±15km, mb4.8/17, Error ellipse: s-maj=10.9km s-min=5.9km az=45.0*
ISC 24 04:51:40.5±1.4, 10°.61S±0°.06×117°.24E±0°.04, h26km±9km, n103, σ1§88/110, mb4.7/31, MS4.2/3, South of Sumbawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLAI	**Plampang**	**1.84**	**17**	P	**Pn**	**04 52 10.8**	**+0.3**
TWSI	**Taliwang, Sumb**	**1.89**	**349**	P	**Pn**	**04 52 11.3**	**+0.2**
DNP	**Denpasar**	**2.77**	**314**	P	**Pb**	**04 52 28.4**	**-0.9**
DNP				S	**Sn**	**04 52 56.6**	**+0.8**
WSI	**Waingapu**	**3.15**	**73**	P	**Pn**	**04 52 27.7**	**-0.8**
SRBI	**Singaraja**	**3.20**	**321**	P	**Pn**	**04 52 32.7**	**+3.5**
JAGI	**Jajag, Banyuwa**	**3.71**	**305**	P	**Pn**	**04 52 35.2**	**-0.9**
JAGI	**Jajag, Banyuwa**	**3.71**	**305**	*e*Pn	**Pn**	**04 52 35.4**	**-0.8**
JAGI				*e*Sn	**Sn**	**04 53 11.5**	**-7.6**
ABJI	**Asem Bagus**	**4.07**	**313**	P	**Pn**	**04 52 45.6**	**+4.5**
GMJI	**Gumukmas**	**4.40**	**301**	P	**Pn**	**04 52 45.5**	**-0.1**
MMRI	**Maumere**	**5.31**	**69**	P	**Pb**	**04 53 13.0**	**+0.4**
MMRI	**Maumere**	**5.31**	**69**	*e*Pn	**Pn**	**04 52 58.9**	**+0.8**
BSSI	**Bau Bau, Buton**	**5.48**	**36**	P	**Pn**	**04 53 02.5**	**+2.0**
	637nm,1.0s,7μm2.5nm						
PWJI	**Pagerwojo**	**5.94**	**295**	P	**Pn**	**04 53 06.7**	**-0.2**
	75nm,0.8s,2μm0.6nm						
KAPI	**Kappang**	**6.09**	**24**	Pn	**Pn**	**04 53 11.3**	**+2.4**
	5.0nm,0.3s,baz=208,slow=9.4,SNR=24						
KAPI				Sn	**Sn**	**04 54 16.4**	**-1.3**
	10nm,0.3s,baz=132,slow=22,SNR=9.5						
KAPI				LR	LR	04 55 52.5	
	comp=Z,830nm,18.8s,baz=208,slow=43						
KAPI	**Kappang**	**6.09**	**24**	*e*Pn	**Pn**	**04 53 11.2**	**+2.4**
KAPI				*e*Sn	Sn	04 54 07.0	-11
KAPI				Sn	Sn	04 54 16.4	-1.3
PCJI	**Pacitan**	**6.44**	**291**	P	**Pn**	**04 53 16.1**	**+2.4

KSRS	Korea Array	48.85	11	P		P	05 00 23.0	-0.7
	comp=Z,7.8nm,0.9s,baz=189,slow=7.7,SNR=27							
KS01	Wonju Array Si	48.86	11	eP		P	05 00 23.2	-0.7
GUN	Gumba	48.87	322	eP		P	05 00 23.8	-0.8
	comp=Z,31nm,0.7s							
PKIN	Phulchoki	48.92	322	eP		P	05 00 24.1	-0.8
DMN	Daman	49.12	321	eP		P	05 00 25.3	-1.1
	comp=Z,26nm,0.8s							
KKN	Kakani	49.14	322	eP		P	05 00 25.3	-1.2
GKN	Gorkha	49.69	321	eP		P	05 00 29.5	-1.1
	comp=Z,10nm,0.4s							
KOLN	Koldanda	50.17	320	eP		P	05 00 33.2	-1.1
	comp=Z,18nm,0.8s							
BJT	Baijiatuau	50.38	359	eP		P	05 00 34.4	-1.0
	comp=Z,13nm,0.6s							
PYUN	Piuthan	50.78	320	eP		P	05 00 37.7	-1.3
	comp=Z,37nm,0.9s							
MJAR	Matsushiro Arr	50.88	22	P		P	05 00 37.3	-2.0
	comp=Z,6.6nm,0.8s,baz=197,slow=8.1,SNR=16							
HHC	Hu-ho-hao-te	51.46	354	eP		P	05 00 46.3	+2.6
HHC				pmax		pmax		
	comp=Z,23nm,1.1s							
HHC				pmax		pmax		
	comp=Z,140nm,6.9s							
MDJ	Mudanjiang	56.09	11	P		P	05 01 16.0	-1.4
MDJ				pP		pP	05 01 24.8	-0.8
MDJ				sP		sP	05 01 28.3	-0.4
MDJ				ScP		ScP	05 06 10.8	-2.1
MDJ				PcS		PcS	05 06 14.8	-0.7
MDJ				S		S	05 09 02.3	-2.3
MDJ				pmax		pmax		
	comp=Z,19nm,1.0s							
MDJ				pmax		pmax		
	comp=Z,190nm,15.6s							
MDJ				LR		LR		
	comp=N,130nm,20.1s							
MDJ				LR		LR		
	comp=E,180nm,26.6s							
MDJ				LR		LR		
	comp=Z,200nm,18.5s							
MDJ	Mudanjiang	56.09	11	eP		P	05 01 17.0	-0.4
	comp=Z,15nm,0.7s							
USRK	Ussuriysk Ar.	56.17	13	P		P	05 01 17.2	-0.7
	comp=Z,3.8nm,0.5s,baz=188,slow=6.0,SNR=14							
SONM	Songino Array	58.97	351	P		P	05 01 36.5	-1.3
	comp=Z,5.2nm,0.6s,baz=168,slow=8.1,SNR=24							
SONM				PcP		PcP	05 02 27.5	+0.8
	comp=Z,2.3nm,0.7s,baz=161,slow=3.9,SNR=4.1							
SONA1	Songino Array	58.98	352	eP		P	05 01 36.6	-1.3
SONA1				ePcP		PcP	05 02 26.4	-0.4
KSH	Kashi	62.89	325	eP		P	05 02 03.8	-0.8
KSH				ePP		PcP	05 02 48.1	+5.4
KSH				epP		sP	05 02 51.3	+35
KSH				esP		pP	05 03 11.6	+59
KSH				ePcP		PP	05 04 20.3	-3.0
KSH				S		S	05 09 56.1	-37
KSH				ScS		SKSac	05 11 30.3	-25
KSH				pmax		pmax		
	comp=Z,15nm,1.1s							
KSH				pmax		pmax		
	comp=Z,160nm,6.9s							
KSH				LR		LR		
	comp=N,150nm,7.8s							
KSH				LR		LR		
	comp=E,190nm,6.0s							
KBL	Kabul	64.04	317	eP		P	05 02 11.7	-0.7
	comp=E,28nm,0.6s							
MK01	Makanchi Array	65.09	334	eP		P	05 02 17.6	-1.3
MK31	Makanchi Array	65.11	334	eP		P	05 02 18.1	-0.9
MKAR	Makanchi Array	65.11	334	P		P	05 02 18.0	-1.0
	comp=E,4.5nm,0.6s,baz=148,slow=7.4,SNR=48							
MKAR	Makanchi Array	65.11	334	eP		P	05 02 18.1	-0.9
MAKZ	Makanchi	65.26	334	eP		P	05 02 19.0	-0.8
	comp=E,9.1nm,1.5s							
TKM2	Tokmak 2	65.44	328	eP		P	05 02 20.9	-0.5
	comp=E,12nm,1.3s							
AAK	Ala-Archa	65.83	327	P		P	05 02 23.8	-0.1
	comp=E,6.6nm,0.8s,baz=127,slow=6.6,SNR=15							
AAK	Ala-Archa	65.83	327	eP		P	05 02 23.7	-0.1
	comp=E,10nm,1.0s							
EKS2	Erkin-Say	66.24	326	eP		P	05 02 26.5	0.0
	comp=E,13nm,0.9s							
WSAR	Wadi Sarin	66.46	301	P		P	05 02 28.7	+0.6
	comp=E,5.4nm,0.7s,baz=153,slow=6.4,SNR=6.3							
KKAR	Karatay Array	68.34	325	eP		P	05 02 38.9	-0.8
ZAA0	Zalesovo Array	69.94	340	eP		P	05 02 47.9	-1.3
ZALV	Zalesovo Beam	69.94	340	P		P	05 02 47.6	-1.6
	comp=E,3.6nm,0.5s,baz=153,slow=4.4,SNR=9.0							
VNDA	Vanda	70.69	171	P		P	05 02 55.1	+1.6
	comp=E,0.8nm,0.9s,baz=304,slow=7.0,SNR=3.7							
GEYT	Alibeck	73.32	315	P		P	05 03 10.8	+0.8
	comp=E,3.1nm,0.5s,baz=120,slow=5.8,SNR=4.3							
BVAR	Borovoye Array	74.90	333	P		P	05 03 18.2	-0.7
	comp=E,1.0nm,0.6s,baz=157,slow=7.9,SNR=6.9							
ZRNK	Zerenda	75.48	332	eP		P	05 03 21.9	-0.4
	comp=E,3.9nm,0.8s							
ABKAR	Abkulak array	77.88	326	eP		P	05 03 36.0	+0.1
TIXI	Tiksi	82.44	4	eP		P	05 03 58.6	-1.3
	comp=E,4.7nm,0.7s							
KBZ	Khabaz	86.19	316	P		P	05 04 20.3	+0.7
	comp=E,4.3nm,0.8s,baz=109,slow=3.6,SNR=8.1							
BRTR	Keskin Array B	91.83	310	P		P	05 04 46.5	-0.1
	comp=E,0.8nm,0.8s,baz=122,slow=4.7,SNR=5.0							
BR231	Keskin MP Arra	92.50	310	eP		P	05 04 47.4	-2.2
YKA	Yellowknife Ar	116.36	24	PKP		PKPdf	05 10 21.6	+0.2
	comp=E,0.4nm,0.7s,baz=303,slow=1.9,SNR=9.6							
TORD	Torodi Ar. Bea	117.02	279	PKP		PKPdf	05 10 24.6	+0.6
	comp=E,0.5nm,0.8s,baz=114,slow=1.3,SNR=4.6							
NVAR	Mina Array Bea	123.37	51	PKP		PKPdf	05 10 37.9	+2.0
	comp=E,0.8nm,0.7s,baz=304,slow=0.8,SNR=3.7							
HLID	Hailey	124.68	44	ePKPdf		PKPdf	05 10 41.1	+2.8
ACSO	Alum Creek Sta	145.48	28	ePKPbc		PKPdf	05 11 16.9	+0.3
OXF	Oxford	145.97	41	ePKPdf		PKPab	05 11 19.5	+0.6
LRAL	Lakeview Retre	148.46	41	ePKPbc		PKPbc	05 11 26.2	+0.9

*DDA **24** 04:55:43.8, 39°.23N×29°.15E, h19km, Ml3.5*
*THE **24** 04:55:49.4, 38°.91N×29°.34E, h25km±5km, ML3.2/2, Error ellipse: s-maj=5.7km s-min=0.9km az=104.0*
*ISCJB **24** 04:55:50.1±0.5, 39°.06N±0°.02×29°.10E±0°.02, h5km±4km, Error ellipse: s-maj=3.6km s-min=3.0km az=161.7*
*ISK **24** 04:55:50.0, 39°.06N×29°.12E, h5km, ML3.4*
*CSEM **24** 04:55:50.5±0.1, 39°.07N×29°.10E, h2km, ML3.5, Error ellipse: s-maj=2.5km s-min=2.2km az=138.0*

ISC 24 04:55:49.9±1.0, 39°.05N±0°.02×29°.08E±0°.02, h7km±9km, n134, σ1°66/153, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.29	268	*i* P	Pg	04 55 52.4	-3.2
DEMI				*i* S	Sg	04 55 59.2	-0.2
GDZ	Gediz	0.31	83	*i* P	Pg	04 55 49.4	-6.7
GDZ				*i* S	Sg	04 55 59.9	-0.3
TVSB	Tavsanli	0.49	36	*e*PG	Pg	04 55 59.6	+0.1
TVSB				*e*SG	Sg	04 56 06.1	+0.2
TVSB	Tavsanli	0.49	36	*e*Pg	Pg	04 55 59.6	+0.1
TVSB				*e*Sg	Sg	04 56 06.1	+0.2
KULA	Kula-Manisa	0.63	212	*e*PG	Pg	04 56 03.1	+1.0
KULA				*e*SG	Sg	04 56 11.8	+1.4
KULA	Kula-Manisa	0.63	212	*e*Pg	Pg	04 56 03.1	+1.0
KULA				*e*Sg	Sg	04 56 11.8	+1.4
DURS	Dursunbey	0.72	319	*i* P	Pg	04 55 55.8	-8.1
DURS				*i* S	Sg	04 56 13.7	+0.5
KHL	Karahalli	0.81	155	*e*PG	Pb	04 56 06.2	0.0
KHL	Karahalli	0.81	155	*e*Pg	Pb	04 56 06.3	0.0
ORLT	Orhaneli	1.00	352	*e*PG	Pb	04 56 09.5	-0.2
ORLT	Orhaneli	1.00	352	*e*Pg	Pb	04 56 09.5	-0.2
AKHS	Akhisar	1.00	260	*i* P	Pg	04 56 02.1	-7.1
AKHS				*i* S	Sg	04 56 19.4	-2.8
AKS	Akhisar	1.01	260	*e*PG	Pg	04 56 09.6	+0.4
AKS	Akhisar	1.01	260	*e*Pg	Pg	04 56 09.6	+0.4
BALB	Balikesir	1.10	303	*e*PN	Pn	04 56 12.0	+0.2
BALB				*e*SN	Sn	04 56 27.6	+0.3
BALB	Balikesir	1.10	303	*e*Pn	Pn	04 56 12.0	+0.2
BALB				*e*Sn	Sn	04 56 27.6	+0.3
CAVI	Cavuskoy	1.29	27	*e*PN	Pg	04 56 14.9	+0.3
CAVI	Cavuskoy	1.29	27	*e*Pn	Pg	04 56 14.9	+0.3
DENT	Denizli	1.30	182	*e*PN	Pg	04 56 15.5	+0.7
DENT	Denizli	1.30	182	*e*Pn	Pg	04 56 15.5	+0.7
MDNY	Mudanya-Bursa	1.32	353	*e*PN	Pg	04 56 15.9	+0.7
MDNY	Mudanya-Bursa	1.32	353	*e*Pn	Pg	04 56 16.0	+0.7
KCTX	Karacabey (Bur	1.33	335	*e*PN	Pg	04 56 15.8	+0.3
KCTX	Karacabey (Bur	1.33	335	*e*Pn	Pg	04 56 15.8	+0.3
BORA	Eskisehir	1.34	52	*i* P	Pn	04 56 07.3	-8.0
BORA				*i* S	Sn	04 56 32.1	-1.2
GEMT	Gemlik	1.38	3	*e*PN	Pb	04 56 15.9	-0.1
GEMT	Gemlik	1.38	3	*e*Pn	Pb	04 56 16.0	-0.1
AYDB	Zeytinkoy-Aydi	1.45	221	*e*PN	Pg	04 56 18.0	+0.3
AYDB	Zeytinkoy-Aydi	1.45	221	*e*Pn	Pg	04 56 18.0	+0.3
ESKT	Eskisehir	1.45	71	*i* P	Pn	04 56 09.7	-6.9
ESKT				*i* S	Sn	04 56 32.0	-4.0
GONE	Gonen-Balikesi	1.47	313	*e*PN	Pb	04 56 17.9	+0.4
GONE	Gonen-Balikesi	1.47	313	*e*Pn	Pb	04 56 17.9	+0.4
ADVT	Abdulvahap	1.47	20	*e*PN	Pb	04 56 17.4	-0.2
ADVT	Abdulvahap	1.47	20	*e*Pn	Pb	04 56 17.4	-0.2
BOLV	Bolvadin	1.50	102	*i* P	Pn	04 56 11.7	-5.7
BOLV				*i* S	Sn	04 56 33.0	-4.2
ARMT	Armutlu	1.52	354	*e*PN	Pg	04 56 18.9	-0.2
ARMT	Armutlu	1.52	354	*e*Pn	Pg	04 56 18.9	-0.2
EDC	Edincik	1.60	324	*e*PN	Pb	04 56 19.8	0.0
EDC	Edincik	1.60	324	*e*Pn	Pb	04 56 19.8	0.0
ISP	Isparta	1.67	137	P	Pn	04 56 12.0	-7.7
DKL	Dikili	1.70	271	*e*PN	Pb	04 56 21.3	-0.1
DKL	Dikili	1.70	271	*e*Pn	Pb	04 56 21.3	-0.1
BAGO	Egridir - ISPA	1.71	128	*i* P	Pn	04 56 12.9	-7.3
BAGO				*i* S	Sn	04 56 40.4	-1.9
GULT	Gulveren	1.77	38	*e*PN	Pb	04 56 21.8	-0.9
GULT	Gulveren	1.77	38	*e*Pn	Pb	04 56 21.8	-0.9
HRT	Hereke	1.82	14	*e*PN	Pb	04 56 22.7	-0.9
HRT	Hereke	1.82	14	*e*Pn	Pb	04 56 22.7	-0.9
GOLH	Golhisar	1.85	168	P	Pn	04 56 21.0	-1.2
GOLH	Golhisar	1.85	168	*i* P	Pn	04 56 21.0	-1.2
GOLH				*i* S	Sg	04 56 53.6	+4.2
AYVA	Ayvalik	1.88	279	P	Pn	04 56 23.0	+0.6
AYVA				S	Sb	04 56 49.4	+1.2
AYVA	Ayvalik	1.88	279	*i* P	Pn	04 56 23.0	+0.6
AYVA				*i* S	Sb	04 56 49.4	+1.2
SPNC	Sapanca-Adapaz	1.88	30	*e*PN	Pb	04 56 23.2	-1.4
SPNC	Sapanca-Adapaz	1.88	30	*e*Pn	Pb	04 56 23.2	-1.4
SVRH	Sivrihisar-ESK	1.94	78	*e*PN	Pb	04 56 24.2	-1.4
SVRH	Sivrihisar-ESK	1.94	78	*e*Pn	Pb	04 56 24.2	-1.4
YER	Yerkesik	2.02	198	P	Pn	04 56 20.0	-4.4
URLA	Izmir	2.07	251	*i* P	Pn	04 56 21.7	-3.4
URLA				*i* S	Sg	04 56 57.4	+1.1
BTAS	Taskesti	2.12	44	*i* P	Pn	04 56 22.7	-3.1
BTAS				*i* S	Sg	04 56 58.1	+0.3
BGKT	Bogazkoy	2.14	354	*e*PN	Pn	04 56 27.1	+1.1
BGKT	Bogazkoy	2.14	354	*e*Pn	Pn	04 56 27.1	+1.1
MDUB	Mudurnu	2.16	48	*e*PN	Pn	04 56 27.1	+0.7
MDUB	Mudurnu	2.16	48	*e*Pn	Pn	04 56 27.1	+0.7
SUTC	Sutluce-Ispart	2.18	136	*e*PN	Pn	04 56 27.6	+0.9
SUTC	Sutluce-Ispart	2.18	136	*e*Pn	Pn	04 56 27.6	+0.9
KIZT	Kizilcal	2.19	94	*e*PN	Pn	04 56 27.1	+0.3
KIZT	Kizilcal	2.19	94	*e*Pn	Pn	04 56 27.1	+0.3
RKY	Sarkoy-Tekirda	2.19	319	*e*PN	Pb	04 56 28.6	-1.4
RKY	Sarkoy-Tekirda	2.19	319	*e*Pn	Pb	04 56 28.6	-1.4
SART	Tekirdag	2.19	319	P	Pn	04 56 27.2	+0.3
SART	Tekirdag	2.19	319	*i* P	Pn	04 56 27.2	+0.3
KAND	Kocaeli-Kandir	2.21	22	*i* P	Pn	04 56 20.4	-6.6
KAND				*i* S	Sn	04 56 52.4	-2.1
SMG	Samos	2.22	233	P	Pn	04 56 24.6	-2.5
SMG	Samos	2.22	233	P	Pn	04 56 24.6	-2.5
LPK	Lapseki	2.22	307	*e*PN	Pb	04 56 29.5	-0.9
LPK	Lapseki	2.22	307	*e*Pn	Pb	04 56 29.5	-0.9
CTKS	Kestanelik-??a	2.23	349	*e*PN	Pb	04 56 28.6	-1.9
CTKS	Kestanelik-??a	2.23	349	*e*Pn	Pb	04 56 28.6	-1.9
SAHE	Sakarya_HENDEK	2.25	37	*i* P	Pn	04 56 23.0	-4.7
DALY	Dalyan (Mu¨la	2.26	189	*e*PN	Pb	04 56 29.5	-1.5
DALY	Dalyan (Mu¨la	2.26	189	*e*Pn	Pb	04 56 29.5	-1.5
EZN	Ezine	2.27	291	*e*PN	Pn	04 56 29.6	+1.8
EZN	Ezine	2.27	291	*e*Pn	Pn	04 56 29.6	+1.8
KORT	Korkueli	2.28	154	*i* P	Pn	04 56 23.8	-4.3
ELL	Elmali	2.39	164	*e*PN	Pb	04 56 31.5	-1.9
ELL	Elmali	2.39	164	*e*Pn	Pb	04 56 31.5	-1.9
GELI	Tayfur-Gelibol	2.42	305	*e*PN	Pb	04 56 32.0	-1.8
GELI	Tayfur-Gelibol	2.42	305	*e*Pn	Pb	04 56 32.0	-1.8
KDHN	Kadinhani	2.43	102	*i* P	Pn	04 56 24.1	-6.0
BODT	Bodrum	2.43	216	*e*PN	Pn	04 56 32.0	+1.9
BODT	Bodrum	2.43	216	P	Pn	04 56 27.1	-3.0
BODT	Bodrum	2.43	216	P	Pn	04 56 27.1	-3.0
BODT	Bodrum	2.43	216	*e*Pn	Pn	04 56 32.0	+1.9
CHOS	Chios island	2.46	255	*e*PN	Pn	04 56 32.3	+1.8
CHOS	Chios island	2.46	255	P	Pn	04 56 28.8	-1.7
CHOS				S	Sn	04 57 00.3	-0.6
CHOS	Chios island	2.46	255	P	Pn	04 56 28.8	-1.7
CHOS	Chios island	2.46	255	*e*Pn	Pn	04 56 32.3	+1.8
CHOS				S	Sn	04 57 00.3	-0.6
BOZC	Bozcaada	2.48	290	*i* P	Pn	04 56 30.2	-0.4
BOZC				*i* S	Sn	04 56 58.2	-3.0
CTYL	Yalikoy Yolu	2.49	346	*e*PN	Pb	04 56 32.9	-2.1
CTYL	Yalikoy Yolu	2.49	346	*e*Pn	Pb	04 56 32.9	-2.1
SIGR	SIGRI	2.52	275	*e*PN	Pn	04 56 32.1	+0.9
SIGR	SIGRI	2.52	275	P	Pn	04 56 30.5	-0.7
SIGR				S	Sn	04 57 02.5	+0.4
SIGR	SIGRI	2.52	275	P	Pn	04 56 30.5	-0.7
SIGR	SIGRI	2.52	275	*e*Pn	Pn	04 56 32.1	+0.9
SIGR				S	Sn	04 57 02.5	+0.4
ERIK	Erikli-Kesan	2.55	310	*e*PN	Pb	04 56 33.9	-2.2
ERIK	Erikli-Kesan	2.55	310	*e*Pn	Pb	04 56 33.9	-2.2
KESN	Edirne-Kesan	2.56	315	P	Pn	04 56 33.3	+1.1
KESN	Edirne-Kesan	2.56	315	*i* P	Pn	04 56 33.3	+1.1
KESN				*i* S	Sn	04 56 59.0	-4.8
KONT	Konya--Tatoy	2.80	112	*e*PN	Pn	04 56 35.9	+0.7
KONT	Konya--Tatoy	2.80	112	*e*Pn	Pn	04 56 35.9	+0.7
NIS1	Nisyros Isl.	2.87	212	*e*PN	Pn	04 56 38.6	+2.4
NIS1	Nisyros Isl.	2.87	212	*e*Pn	Pn	04 56 38.6	+2.4
BCAM	Yenicaga	2.89	52	P	Pn	04 56 37.0	+0.5
BCAM	Yenicaga	2.89	52	*i* P	Pn	04 56 37.0	+0.5
KDZE	Karadeniz Ereo	2.89	38	*e*PN	Pn	04 56 37.3	+0.9
KDZE	Karadeniz Ereo	2.89	38	*e*Pn	Pn	04 56 37.3	+0.9
ALN	Alexandroupoli	2.97	309	*e*PN	Pn	04 56 39.4	+1.9
ALN	Alexandroupoli	2.97	309	P	Pn	04 56 37.5	0.0
ALN				S	Sn	04 57 14.6	+1.2
ALN	Alexandroupoli	2.97	309	P	Pn	04 56 37.5	0.0
ALN	Alexandroupoli	2.97	309	*e*Pn	Pn	04 56 39.4	+1.9
ALN				S	Sn	04 57 14.6	+1.2
KKUL	Konya-Kulu	2.98	87	*i* P	Pg	04 56 49.0	+1.9
EDRB	Edirne	3.31	328	*e*PN	Pn	04 56 44.1	+1.9
EDRB	Edirne	3.31	328	*e*Pn	Pn	04 56 44.1	+1.9
APE	Apeiranthos	3.43	236	*e*PN	Pn	04 56 45.6	+1.7
APE	Apeiranthos	3.43	236	*e*Pn	Pn	04 56 45.6	+1.7
SAFT	Safranbolu	3.52	51	*e*PN	Pn	04 56 46.0	+1.0
SAFT	Safranbolu	3.52	51	*e*Pn	Pn	04 56 46.1	+1.0
ELDT	Eldivan	3.64	65	P	Pn	04 56 48.1	+1.7
ELDT	Eldivan	3.64	65	*i* P	Pn	04 56 48.6	+1.7
ELDT				*i* S	Sb	04 57 40.1	+0.9
KDZ	Kurdzhali	3.82	314	*e*P	Pn	04 56 50.0	+0.8
KARP	Karpathos	3.82	204	*e*PN	Pn	04 56 51.8	+2.6
KARP	Karpathos	3.82	204	*e*Pn	Pn	04 56 51.8	+2.6
ILGA	Ilgaz	4.08	59	*i* P	Pb	04 57 03.4	+1.3
CORM	Corum	4.43	74	*e*PN	Pn	04 56 59.6	+2.0
CORM	Corum	4.43	74	*e*Pn	Pn	04 56 59.6	+2.0

IDC 24 04:58:48.6±1.4, 3°.90S×129°.65E, h0km, mb3.7/3, mb1 3.9/5, mb1mx3.6/32, mbtmp3.8/5, ML3.5/2, MS4.3/2, Ms1 4.3/2, ms1mx3.4/44, Error ellipse: s-maj=44.0km s-min=23.7km az=88.0, Seram

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SIJI	Sorong	3.42	28	Pn	Pn	04 59 45.2	+2.0
	17nm,0.3s,baz=175,slow=6.6,SNR=2.0						
SIJI				Sn	Sn	05 00 24.3	-0.2
	16nm,0.3s,baz=163,slow=11,SNR=2.1						
WRA	Warramunga Arr	16.59	164	Pn	Pn	05 02 43.0	+0.2
	0.1nm,0.3s,baz=348,slow=11,SNR=3.7						
PMG	Port Moresby	18.23	108	LR	LR	05 12 35.2	
	comp=Z,365nm,18.2s,baz=269,slow=45						
ASAR	Alice Springs	20.07	169	P	P	05 03 23.9	+0.1
	1.3nm,0.5s,baz=348,slow=10,SNR=7.6						
MKAR	Makanchi Array	65.47	326	P	P	05 09 33.5	0.0
	0.6nm,0.6s,baz=115,slow=8.4,SNR=6.2						
KURBB	Kurchatov Arra	69.71	328	P	P	05 09 59.9	-0.4
	0.6nm,0.4s,baz=123,slow=5.6,SNR=7.8						
EIL	Elat	95.99	299	LR	LR	06 01 40.7	
	comp=Z,264nm,20.5s,baz=238,slow=39						

*ISCJB **24** 05:09:28.8±0.4, 39°.14N±0°.03×29°.07E±0°.04, h9km±6km, Error ellipse: s-maj=5.9km s-min=4.4km az=156.3*
*ISK **24** 05:09:28.1, 39°.14N×29°.08E, h11km, ML2.6*
*CSEM **24** 05:09:29.0±0.1, 39°.14N×29°.07E, h12km, MD2.4, Error ellipse: s-maj=3.6km s-min=3.2km az=131.0*
*DDA **24** 05:09:29.4, 39°.00N×29°.12E, h7km, Md2.4*

ISC 24 05:09:29.0±1.0, 39°.14N±0°.03×29°.07E±0°.03, h11km±10km, n32, σ0°47/45, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.29	252	P	Pb	05 09 36.4	+0.2
DEMI				S	Sb	05 09 40.7	-0.4
DEMI	Demirci	0.29	252	*i* P	Pb	05 09 36.4	+0.2
DEMI				*i* S	Sb	05 09 40.7	-0.4
GDZ	Gediz	0.32	98	P	Pg	05 09 35.9	+0.3
GDZ				S	Sg	05 09 40.3	+0.3
GDZ	Gediz	0.32	98	*i* P	Pg	05 09 35.9	+0.3
GDZ				*i* S	Sg	05 09 40.3	+0.3
TVSB	Tavsanli	0.44	44	*e*PG	Pg	05 09 37.3	-0.3
TVSB				*e*SG	Sg	05 09 43.4	-0.1
TVSB	Tavsanli	0.44	44	*e*Pg	Pg	05 09 37.3	-0.3
TVSB				*e*Sg	Sg	05 09 43.4	-0.1
DURS	Dursunbey	0.66	315	P	Pb	05 09 42.8	+0.4
DURS	Dursunbey	0.66	315	*i* P	Pb	05 09 42.8	+0.4
DURS				*i* S	Sn	05 09 56.3	+1.7
KULA	Kula-Manisa	0.70	207	*e*PG	Pg	05 09 42.9	+0.4
KULA				*e*SG	Sb	05 09 52.5	-0.3
KULA	Kula-Manisa	0.70	207	*e*Pg	Pg	05 09 42.9	+0.4
KULA				*e*Sg	Sb	05 09 52.5	-0.3
KHL	Karahalli	0.89	156	*e*PG	Pg	05 09 45.7	-0.3
KHL				*e*SG	Sb	05 09 57.8	-0.4
KHL	Karahalli	0.89	156	*e*Pg	Pg	05 09 45.7	-0.3
KHL				*e*Sg	Sb	05 09 57.8	-0.4
ORLT	Orhaneli	0.92	352	*e*PG	Pg	05 09 46.5	-0.1
ORLT	Orhaneli	0.92	352	*e*Pg	Pg	05 09 46.6	-0.1
AKS	Akhisar	1.01	256	*e*PG	Pb	05 09 48.0	-0.5
AKS	Akhisar	1.01	256	*e*Pg	Pb	05 09 48.0	-0.5
BALB	Balikesir	1.05	299	*e*PG	Pb	05 09 48.5	-0.6
BALB	Balikesir	1.05	299	*e*Pg	Pb	05 09 48.5	-0.6
CAVI	Cavuskoy	1.22	29	*e*PN	Pb	05 09 52.1	0.0
CAVI	Cavuskoy	1.22	29	*e*Pn	Pb	05 09 52.1	0.0
IZI	Iznik	1.24	14	*e*PN	Pn	05 09 51.5	-0.8
IZI	Iznik	1.24	14	*e*Pn	Pn	05 09 51.5	-0.8
KCTX	Karacabey (Bur	1.25	334	*e*PN	Pn	05 09 52.0	-0.4
KCTX	Karacabey (Bur	1.25	334	*e*Pn	Pn	05 09 52.0	-0.4
BORA	Eskisehir	1.30	55	P	Pg	05 09 54.4	+0.3
BORA				S	Sg	05 10 11.4	+0.4
BORA	Eskisehir	1.30	55	*i* P	Pg	05 09 54.4	+0.3
BORA				*i* S	Sg	05 10 11.4	+0.4
GONE	Gonen-Balikesi	1.40	311	*e*PN	Pn	05 09 54.3	-0.1
GONE	Gonen-Balikesi	1.40	311	*e*Pn	Pn	05 09 54.3	-0.1
ARMT	Armutlu	1.44	354	*e*PN	Pn	05 09 54.7	-0.3
ARMT	Armutlu	1.44	354	*e*Pn	Pn	05 09 54.7	-0.3
GULT	Gulveren	1.71	40	*e*PN	Pn	05 09 58.4	-0.3
GULT	Gulveren	1.71	40	*e*Pn	Pn	05 09 58.4	-0.3

IDC 24 05:13:44.7±2.6, 54°.14N×86°.48E, h0km, mb1 3.2/2, mb1mx3.0/42, mbtmp3.2/2, ML2.9/2, Error ellipse: s-maj=21.0km s-min=12.7km az=57.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	ZALESOVO INFRA	1.00	259	*i*		05 20 40.0	
	baz=79,slow=314,SNR=1.3

OCAC *eS* **Sn** **05 21 18.6 -0.3**
OCAC *i* 05 21 21.1
comp=Z,222nm,0.3s
GRMC Gramalote, San 0.92 131 *eP* **Pn** **05 21 12.5 -0.2**
GRMC *eS* **Sn** **05 21 27.1 -0.8**
GRMC *i* 05 21 28.2
comp=Z,200nm,0.2s
CBRI Barrientos, No 0.92 131 *eP* **Pn** **05 21 13.8 +1.0**
CBRI *eS* **Sn** **05 21 28.7 +0.7**
CBRI *i* 05 21 31.4
comp=Z,67nm,0.3s
BRRC Barranca, Sant 1.23 190⇓*iP* **Pn** **05 21 15.8 -0.1**
BRRC *i* 05 21 16.2
comp=Z,224nm,0.1s
BRRC *eS* **Sn** **05 21 33.1 -0.5**
CAPV Capacho 1.26 111 *eP* **Pn** **05 21 16.3 -0.2**
CAPV *eS* **Sn** **05 21 32.7 -1.9**
PAMC Pamplona, Colo 1.26 141 *eP* **Pn** **05 21 17.4 +0.7**
PAMC *eS* **Sn** **05 21 35.8 +0.8**
PAMC *i* 05 21 37.9
comp=Z,12nm,0.3s
BARC Barichara 1.75 170 *eP* **Pn** **05 21 22.4 0.0**
BARC *eS* **Sn** **05 21 44.9 -0.2**
BARC *i* 05 21 46.1
comp=Z,79nm,0.2s
VIGV El Vigia 2.17 76 *eP* **Pn** **05 21 29.1 +1.6**
VIGV *eS* **Sn** **05 21 53.5 -0.9**
MOTC Monteria, Cord 2.19 282 *eP* **Pn** **05 21 27.6 -0.1**
MOTC *i* 05 21 27.8
comp=Z,9.7nm,0.2s
MOTC *eS* **Sn** **05 21 54.5 -0.1**
SJCC San Jacinto, C 2.28 313 *eP* **Pn** **05 21 29.5 +0.6**
VIRV Villa del Rosa 2.42 26 *eP* **Pn** **05 21 31.1 +0.4**
VIRV *eS* **Sn** **05 22 00.0 0.0**
RUSC La Rusia 2.45 170 *eP* **Pn** **05 21 32.0 +0.3**
RUSC *eS* **Sn** **05 22 01.9 +0.3**
RUSC *i* 05 22 02.3
comp=Z,8.8nm,0.4s
SOCV Socops 2.62 91 *eP* **Pn** **05 21 34.5 +1.1**
SOCV *eS* **Sn** **05 22 04.1 -0.7**
CURV Curarigua 3.88 64 *eP* **Pn** **05 21 51.0 +0.8**
CURV *eS* **Sn** **05 22 33.6 -1.3**
MONV Montecano 5.01 44 *eP* **Pn** **05 22 06.2 +0.8**
MONV *eS* **Sn** **05 23 00.8 -1.4**
MAPV Macapo 5.20 73 *eP* **Pn** **05 22 08.6 +0.5**
BAUV El Baul 5.43 83 *eP* **Pn** **05 22 11.1 -0.1**

*ISCJB **24** 05:23:20.2±1.0, 77.48N±0.06×8.2E±0.3, h10km, Error ellipse: s-maj=9.7km s-min=8.4km az=42.5*
*CSEM **24** 05:23:22.6±0.7, 77.51N×8.13E, h10km, ML2.6, Error ellipse: s-maj=20.9km s-min=15.9km az=8.0*
*NAO **24** 05:23:24.8±2.7, 77.58N×8.60E, h7km±20km, ML2.6*
*BER **24** 05:23:25.8±2.8, 77.53N×8.58E, h10km, MD2.5, ML2.1, ML2.6(NAO)*

ISC 24 05:23:22.0±1.2, 77.42N±0.07×7.94E±0.08, h10km, n16, σ1§93/21, 1C, Svalbard region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KBS	**Kingsbay**	**1.72**	**27**	Pg	**Pn**	**05 23 52.4**	**+0.5**
KBS				Lg	Lg	05 24 10.6	
KBS	**Kingsbay**	**1.72**	**27**	Pg	**Pn**	**05 23 52.4**	**+0.5**
KBS				*eS*	**Sn**	**05 24 10.7**	**-3.2**
KBS				IAML		05 24 14.6	
	comp=Z,35nm,0.2s						
KBS	**Kingsbay**	**1.72**	**27**⇑	*iP*	**Pn**	**05 23 52.4**	**+0.5**
	SNR=66						
KBS				Lg	Lg	05 24 10.6	
HSPB	**Hornsund (broa**	**1.74**	**100**	Pg	**Pb**	**05 23 54.0**	**0.0**
HSPB	**Hornsund (broa**	**1.74**	**100**	Pg	**Pb**	**05 23 54.0**	**0.0**
HSP	**Hornsund**	**1.74**	**100**	Pg	**Pb**	**05 23 54.0**	**0.0**
SPA0	**Spitsbergen Ar**	**1.94**	**63**	Pg	**Pb**	**05 23 57.8**	**+0.3**
	baz=243,slow=14						
SPA0				Lg	Lg	05 24 20.1	
	baz=242,slow=28						
SPA0	**Spitsbergen Ar**	**1.94**	**63**	Pg	**Pb**	**05 23 57.8**	**+0.3**
	baz=243,slow=14						
SPA0				Lg	Lg	05 24 20.1	
	baz=242,slow=28						
SPA0	**Spitsbergen Ar**	**1.94**	**63**	Pg	**Pb**	**05 23 57.8**	**+0.3**
	SNR=767						
SPA0				Lg	Lg	05 24 20.1	
	SNR=7.3						
HOPEN	**Hopen**	**3.97**	**95**	Pn	**Pn**	**05 24 25.3**	**+2.6**
HOPEN	**Hopen**	**3.97**	**95**	Pn	**Pn**	**05 24 25.3**	**+2.6**
HOPEN				*eS*	**Sn**	**05 25 08.3**	**-0.9**
HOPEN	**Hopen**	**3.97**	**95**	Pn	**Pn**	**05 24 25.3**	**+2.6**
HOPEN				*eS*	**Sn**	**05 25 08.3**	**-0.9**
	SNR=49						
DAG	**Danmarks Havn**	**5.96**	**277**	*iP*	**Pn**	**05 24 50.8**	**+0.7**
DAG				*iS*	Sn	05 25 51.3	-7.0
ARA0	**ARCESS Array S**	**9.31**	**139**	Pn	**Pn**	**05 25 37.9**	**+1.9**
	baz=331,slow=12						
ARA0				Sn	**Sn**	**05 27 17.1**	**-3.4**
	baz=332,slow=22						
ARA0	**ARCESS Array S**	**9.31**	**139**	Pn	**Pn**	**05 25 37.9**	**+1.9**
	baz=331,slow=12						
ARA0				Sn	**Sn**	**05 27 17.1**	**-3.4**
	baz=332,slow=22						
ARA0	**ARCESS Array S**	**9.31**	**139**	Pn	**Pn**	**05 25 37.8**	**+1.9**
	SNR=2.3						

*IDC **24** 05:24:50.9±1.5, 36.10S×73.46W, h0km, mb3.8/4, mb1 4.0/5, mb1mx3.8/20, mbtmp3.8/5, ML4.0/1, Error ellipse: s-maj=46.4km s-min=20.2km az=71.0*
*ISCJB **24** 05:24:53.9±1.2, 36.13S±0.10×73.5W±0.4, h33km, mb3.8/3, Error ellipse: s-maj=43.6km s-min=12.9km az=173.5*

ISC 24 05:24:56.2±1.4, 36.1S±0.1×73.4W±0.3, h35km, n9, σ0§26/8, mb3.9/3, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLCA	**Paso Flores**	**5.12**	**155**	Pn	**Pn**	**05 26 10.4**	**0.0**
	1.2nm,0.3s,baz=356,slow=13,SNR=47						
PLCA				Lg	Lg	05 27 34.5	
	2.7nm,0.3s,baz=294,slow=16,SNR=4.9						
LPAZ	**La Paz**	**20.28**	**15**	P	**P**	**05 29 29.7**	**+0.2**
	2.1nm,0.7s,baz=195,slow=9.5,SNR=11						
SIV	**San Ignacio**	**22.83**	**32**	P	**P**	**05 29 56.0**	**-0.3**
	3.6nm,0.9s,baz=234,slow=13,SNR=9.5						
VNA3	**Neumayer Olymp**	**47.84**	**157**	P	**P**	**05 33 30.3**	**+0.2**
VNA1	**Neumayer--Stat**	**48.19**	**156**	P	P	05 33 41.1	+8.5
VNA2	**Neumayer--Watz**	**48.51**	**156**	P	**P**	**05 33 34.9**	**-0.3**
	baz=291,slow=8.9						
SNAA	**Sanae**	**50.07**	**157**	P	**P**	**05 33 47.3**	**+0.2**
TXAR	**Lajitas Array**	**71.06**	**332**	P	**P**	**05 36 10.6**	**-0.1**
	0.6nm,0.5s,baz=156,slow=9.2,SNR=18						
TORD	**Torodi Ar. Bea**	**85.94**	**71**	P	**P**	**05 37 33.1**	**+0.1**
	0.6nm,0.8s,baz=212,slow=5.1,SNR=3.3						

*ISCJB **24** 05:27:52.5±0.5, 36.57N±0.05×71.02E±0.07, h200km, mb3.3/5, Error ellipse: s-maj=9.3km s-min=5.0km az=145.6*
*IDC **24** 05:27:52.6±3.1, 36.37N×71.00E, h201km±26km, mb3.2/5, mb1 3.3/9, mb1mx3.0/57, mbtmp3.7/9, Error ellipse: s-maj=30.6km s-min=21.8km az=167.0*
*NNC **24** 05:27:59.5±5.1, 37.07N×70.83E, h215km±44km, mb2.7, mpv3.8, Error ellipse: s-maj=53.0km s-min=31.7km az=142.0*

ISC 24 05:27:53.0±0.7, 36.61N±0.07×71.06E±0.08, h200km, n21, σ1§72/26, mb3.4/5, 4C-5D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**2.82**	**322**	⇓P	**Pn**	**05 28 42.7**	**+2.1**
	30nm,0.2s						
DZET				⇓S	**Sn**	**05 29 17.2**	**-0.8**
	359nm,0.3s						
MNAS	**Manas**	**5.98**	**10**	⇓P	**Pn**	**05 29 22.1**	**+2.0**
	2.5nm,0.3s						
MNAS				⇓S	**Sn**	**05 30 27.9**	**-1.1**
	47nm,0.7s						
KK31	**Karatay Array**	**6.50**	**356**	⇓P	**Pn**	**05 29 28.0**	**+1.3**
	2.1nm,0.3s,baz=174,slow=12,SNR=28						
KK31				⇑S	**Sn**	**05 30 37.7**	**-3.3**
	7.4nm,0.4s,baz=186,slow=24,SNR=5.7						
AAK	**Ala-Archa**	**6.58**	**23**	P	**Pn**	**05 29 30.4**	**+2.6**
	1.7nm,0.3s,baz=187,slow=9.8,SNR=10.0						
AAK				S	Sn	05 30 38.3	-4.7
	0.9nm,0.3s,baz=182,slow=14,SNR=4.9						
TKM2	**Tokmak 2**	**7.21**	**28**	⇑P	**Pn**	**05 29 37.9**	**+1.8**
	6.6nm,0.8s						
TKM2				⇑S	**Sn**	**05 30 55.1**	**-2.8**
	2.9nm,0.8s						
GEYT	**Alibeck**	**10.40**	**281**	P	**Pn**	**05 30 16.9**	**-0.5**
	0.4nm,0.3s,baz=95,slow=16,SNR=2.6						
PYUN	**Piuthan**	**13.17**	**127**	*eP*	**Pn**	**05 30 52.6**	**-0.3**
	11nm,0.2s						
MKAR	**Makanchi Array**	**13.18**	**36**	P	**Pn**	**05 30 55.1**	**+2.5**
	0.1nm,0.3s,baz=218,slow=9.1,SNR=4.4						
KOLN	**Koldanda**	**13.79**	**126**	*eP*	**P**	**05 31 00.9**	**-1.8**
	9.6nm,0.3s						
GKN	**Gorkha**	**14.32**	**123**	*eP*	**P**	**05 31 07.9**	**-0.7**
	21nm,0.3s						
DMN	**Daman**	**14.89**	**123**	*eP*	**P**	**05 31 15.1**	**+0.1**
	11nm,0.4s						
KKN	**Kakani**	**14.89**	**122**	*eP*	**P**	**05 31 14.6**	**-0.4**
AB31	**Akbulak array**	**15.01**	**331**	P	**Pn**	**05 31 15.1**	**-0.1**
	0.9nm,0.4s,baz=146,slow=12,SNR=22						
AB31				⇑S	**S**	**05 33 58.9**	**-2.9**
	0.5nm,0.5s,baz=148,slow=23,SNR=2.6						
PKIN	**Phulchoki**	**15.11**	**123**	*eP*	**P**	**05 31 17.2**	**-0.2**
	15nm,0.4s						
GUN	**Gumba**	**15.23**	**120**	*eP*	**P**	**05 31 18.4**	**-0.5**
	11nm,0.4s						
AKTO	**Aktyubinsk**	**16.71**	**330**	P	**P**	**05 31 36.7**	**+2.1**
	0.4nm,0.3s,baz=143,slow=13,SNR=5.7						
NOA	**NORSAR Array B**	**44.32**	**323**	P	**P**	**05 35 43.5**	**+0.6**
	1.1nm,0.8s,baz=100,slow=7.7,SNR=2.6						
TORD	**Torodi Ar. Bea**	**65.77**	**269**	P	**P**	**05 38 16.0**	**-0.9**
	0.2nm,0.4s,baz=53,slow=6.4,SNR=5.0						
INK	**Inuvik**	**73.79**	**9**	P	**P**	**05 39 06.0**	**+1.2**
	0.9nm,0.6s,baz=328,slow=4.9,SNR=5.0						
YKA	**Yellowknife Ar**	**81.14**	**3**	P	**P**	**05 39 46.1**	**+0.5**
	0.2nm,0.4s,baz=350,slow=5.3,SNR=8.5						
ASAR	**Alice Springs**	**84.28**	**125**	P	**P**	**05 40 01.5**	**-0.9**
	0.4nm,0.4s,baz=327,slow=6.6,SNR=4.1						

*NIED **24** 05:29:00, 37.00N×141.20E, h35km, Mw4.3 Best double couple: M0 3.25000×10^15 NP1:φ=290.00000°, δ=4.00000°, λ=-64.00000°. NP2:φ=85.00000°, δ=86.00000°, λ=-92.00000°.*
*IDC **24** 05:29:51.5±0.9, 36.83N×141.43E, h0km, mb3.7/10, mb1 3.9/14, mb1mx3.7/51, mbtmp3.8/14, ML3.7/2, Error ellipse: s-maj=20.5km s-min=19.6km az=159.0*
*ISCJB **24** 05:29:52.1±1.3, 36.98N±0.05×141.38E±0.05, h11km±6km, mb3.7/10, Error ellipse: s-maj=9.1km s-min=6.6km az=163.8*
*JMA **24** 05:29:54.7±0.1, 37.00N×141.20E, h32km±1km, M3.8*
JMA Felt I J1.

ISC 24 05:29:53.8±1.6, 36.94N±0.05×141.26E±0.06, h13km±9km, n29, σ1§40/30, mb3.8/10, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.40**	**294**	P	**Pb**	**05 30 02.7**	**-0.1**
ONAJ				*eS*	**Sg**	**05 30 08.0**	**+0.8**
JFK	**Kawauchi**	**0.52**	**324**	P	**Pg**	**05 30 04.1**	**0.0**
JFK				*eS*	**Sg**	**05 30 10.5**	**-0.5**
JHO	**Hitachi**	**0.64**	**239**	P	**Pg**	**05 30 06.8**	**+0.5**
JFT	**Otama**	**0.93**	**308**	P	**Pb**	**05 30 11.2**	**-0.6**
JMM	**Marumori**	**0.99**	**338**	P	**Pb**	**05 30 11.1**	**-1.7**
JMM				*eS*	**Sb**	**05 30 23.0**	**-2.9**
JSB	**Shiboa**	**1.07**	**272**	P	**Pb**	**05 30 14.2**	**0.0**
JSB				*eS*	**Sb**	**05 30 27.8**	**-0.3**
JFY	**Yanaizu**	**1.32**	**291**	P	**Pn**	**05 30 17.5**	**-0.5**
JFY				*eS*	**Sn**	**05 30 34.2**	**-1.3**
MJAR	**Matsushiro Arr**	**2.48**	**262**	Pn	**Pn**	**05 30 34.2**	**+0.3**
	8.4nm,0.3s,baz=89,slow=15,SNR=29						
MJAR				Sn	**Sb**	**05 31 07.7**	**-1.0**
	11nm,0.3s,baz=138,slow=16,SNR=6.5						
MAT	**Matsushiro**	**2.48**	**262**	P	**Pn**	**05 30 35.0**	**+1.1**
MAT				S	**Sb**	**05 31 07.8**	**-0.9**
ASAJ	**Asahikawa**	**7.24**	**8**	Pn	**Pn**	**05 31 41.6**	**+2.4**
	1.5nm,0.3s,baz=139,slow=20,SNR=3.3						
JCJ	**Chichijima**	**9.85**	**175**	Pn	**Pn**	**05 32 12.8**	**-2.3**
	7.0nm,0.3s,baz=100,slow=21,SNR=9.1						
JCJ				Sn	Sn	05 33 54.8	-11
	3.3nm,0.3s,baz=9.3,slow=20,SNR=7.9						
USRK	**Ussuriysk Ar.**	**10.11**	**319**	Pn	**Pn**	**05 32 21.6**	**+3.0**
	0.1nm,0.3s,baz=135,slow=14,SNR=2.9						
H11N2	**WAKE ISLAND Hy**	**28.21**	**120**	T	T	06 05 18.1	
	baz=313,slow=75,SNR=174						
H11N1	**WAKE ISLAND Hy**	**28.22**	**120**	T	T	06 05 21.0	
	baz=313,slow=75,SNR=83						
H11N3	**WAKE ISLAND Hy**	**28.23**	**120**	T	T	06 05 19.5	
	baz=313,slow=75,SNR=68						
H11S1	**WAKE ISLAND Hy**	**28.92**	**123**	T	T	06 06 14.1	
	baz=315,slow=76,SNR=76						
H11S3	**WAKE ISLAND Hy**	**28.92**	**123**	T	T	06 06 11.5	
	baz=315,slow=76,SNR=83						
H11S2	**WAKE ISLAND Hy**	**28.93**	**123**	T	T	06 06 15.6	
	baz=315,slow=76,SNR=64						
ZALV	**Zalesovo Beam**	**41.88**	**312**	P	**P**	**05 37 46.0**	**+2.5**
	1.5nm,0.5s,baz=81,slow=9.2,SNR=4.8						
MKAR	**Makanchi Array**	**44.06**	**302**	P	**P**	**05 38 01.2**	**-0.1**
	0.2nm,0.5s,baz=89,slow=10,SNR=3.4						
KURBB	**Kurchatov Arra**	**45.96**	**308**	P	**P**	**05 38 16.6**	**+0.3**
	0.4nm,0.4s,baz=82,slow=7.8,SNR=4.8						
ILAR	**Eielson Array**	**49.64**	**32**	P	**P**	**05 38 43.7**	**-0.9**
	0.9nm,0.8s,baz=268,slow=6.4,SNR=9.7						
WRA	**Warramunga Arr**	**56.95**	**188**	P	**P**	**05 39 38.3**	**-0.6**
	0.4nm,0.5s,baz=47,slow=7.4,SNR=5.3						
YKA	**Yellowknife Ar**	**63.95**	**30**	P	**P**	**05 40 25.4**	**-0.8**
	0.3nm,0.8s,baz=305,slow=6.8,SNR=3.6						
ARCES	**ARCESS Array B**	**64.04**	**339**	P	**P**	**05 40 26.4**	**-0.3**
	2.0nm,0.8s,baz=41,slow=8.5,SNR=3.1						
NOA	**NORSAR Array B**	**74.22**	**337**	P	**P**	**05 41 31.9**	**+1.8**
	0.8nm,0.9s,baz=40,slow=5.8,SNR=2.2						
AKASG	**Malin Array Be**	**74.29**	**322**	P	**P**	**05 41 31.6**	**+1.0**
	0.5nm,0.3s,baz=47,slow=6.0,SNR=4.1						
TXAR	**Lajitas Array**	**90.28**	**52**	P	**P**	**05 42 54.9**	**+0.2**
	0.2nm,0.6s,baz=333,slow=1.0,SNR=3.4						
LPAZ	**La Paz**	**146.85**	**60**	PKPbc	**PKPdf**	**05 49 35.8**	**+0.7**
	1.8nm,1.1s,baz=358,slow=3.9,SNR=5.3						

JMA 24 05:31:25.0±0.1, 38.19N×144.27E, h39km, M4.1, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.22**	**294**	P	Pn	05 32 00.8	+1.5
JIO	**Ouri**	**2.31**	**277**	P	Pn	05 32 01.7	+1.2
JIO				S	Sn	05 32 28.7	+1.0
JMK	**Ichinoseki**	**2.51**	**289**	P	Pn	05 32 04.9	+1.7
JOM	**Ohasama**	**2.66**	**300**	P	Pn	05 32 07.0	+1.8
JANG	**Nango**	**3.05**	**316**	P	Pn	05 32 12.1	+1.4
JYK	**Kaneyama**	**3.15**	**285**	P	Pn	05 32 14.2	+2.1
JFT	**Otama**	**3.19**	**259**	P	Pn	05 32 14.1	+1.6
JFT				S	Sn	05 32 50.5	+1.2
JAW	**Awa shima**	**3.96**	**275**	P	Pn	05 32 25.3	+2.2
MAT	**Matsushiro**	**5.10**	**253**	P	Pn	05 32 41.7	+2.8
MAT				S	Sn	05 33 39.6	+3.1

*CSEM **24** 05:31:59.5±0.1, 39.09N×29.04E, h2km, MD2.7, Error ellipse: s-maj=3.4km s-min=2.9km az=116.0*
*ISK **24** 05:31:59.0, 39.06N×29.11E, h5km, ML2.4*
*DDA **24** 05:31:59.1, 39.12N×29.02E, h7km, Md2.7*

ISC 24 05:31:59.8±1.1, 39.10N±0.03×29.03E±0.02, h3km±13km, n28, σ0§41/40, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**257**	P	**Pg**	**05 32 04.6**	**0.0**
DEMI				S	**Sg**	**05 32 08.0**	**+0.1**
DEMI	**Demirci**	**0.25**	**257**	*iP*	**Pg**	**05 32 04.6**	**0.0**
DEMI				*iS*	**Sg**	**05 32 08.0**	**+0.1**
GDZ	**Gediz**	**0.35**	**92**	P	**Pg**	**05 32 06.6**	**0.0**
GDZ				S	**Sg**	**05 32 11.8**	**+0.6**
GDZ	**Gediz**	**0.35**	**92**	*iP*	**Pg**	**05 32 06.6**	**0.0**
GDZ				*iS*	**Sg**	**05 32 11.8**	**+0.6**
TVSB	**Tavsanli**	**0.48**	**44**	PG	**Pg**	**05 32 08.8**	**-0.3**
TVSB				SG	**Sg**	**05 32 15.0**	**-0.3**
TVSB	**Tavsanli**	**0.48**	**44**	*iPg*	**Pg**	**05 32 08.8**	**-0.3**
TVSB				*iSg*	**Sg**	**05 32 15.0**	**-0.3**
KULA	**Kula-Manisa**	**0.65**	**206**	PG	**Pg**	**05 32 12.4**	**+0.1**
KULA				SG	**Sg**	**05 32 20.8**	**0.0**
KULA	**Kula-Manisa**	**0.65**	**206**	*iPg*	**Pg**	**05 32 12.4**	**+0.1**
KULA				*iSg*	**Sg**	**05 32 20.8**	**0.0**
DURS	**Dursunbey**	**0.66**	**319**	P	**Pg**	**05 32 11.7**	**-0.8**
DURS				S	**Sg**	**05 32 20.7**	**-0.3**
DURS	**Dursunbey**	**0.66**	**319**	*iP*	**Pg**	**05 32 11.7**	**-0.8**
DURS				*iS*	**Sg**	**05 32 20.7**	**-0.3**
KHL	**Karahalli**	**0.87**	**153**	*ePG*	**Pg**	**05 32 15.4**	**-1.0**
KHL	**Karahalli**	**0.87**	**153**	*ePg*	**Pg**	**05 32 15.4**	**-1.0**
ORLT	**Orhaneli**	**0.95**	**354**	*ePG*	**Pb**	**05 32 19.1**	**+0.2**
ORLT	**Orhaneli**	**0.95**	**354**	*ePg*	**Pb**	**05 32 19.1**	**+0.2**
CAVI	**Cavuskoy**	**1.27**	**29**	*ePN*	**Pg**	**05 32 24.1**	**+0.1**
CAVI	**Cavuskoy**	**1.27**	**29**	*ePn*	**Pg**	**05 32 24.1**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.27**	**355**	*ePN*	**Pn**	**05 32 24.5**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.27**	**355**	*ePn*	**Pn**	**05 32 24.5**	**+0.1**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*ePN*	**Pn**	**05 32 24.9**	**+0.5**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*ePn*	**Pn**	**05 32 25.0**	**+0.5**
IZI	**Iznik**	**1.28**	**15**	*ePN*	**Pg**	**05 32 24.1**	**-0.2**
IZI	**Iznik**	**1.28**	**15**	*ePn*	**Pg**	**05 32 24.1**	**-0.2**
BORA	**Eskisehir**	**1.35**	**54**	P	**Pn**	**05 32 25.0**	**-0.5**
BORA				S	**Sb**	**05 32 43.5**	**+0.1**
BORA	**Eskisehir**	**1.35**	**54**	*iP*	**Pn**	**05 32 25.0**	**-0.5**
BORA				*iS*	**Sb**	**05 32 43.5**	**+0.1**
ARMT	**Armutlu**	**1.47**	**355**	*ePN*	**Pb**	**05 32 27.9**	**+0.2**
ARMT	**Armutlu**	**1.47**	**355**	*ePn*	**Pb**	**05 32 27.9**	**+0.2**
GULT	**Gulveren**	**1.75**	**40**	*ePN*	**Pn**	**05 32 31.2**	**+0.1**
GULT	**Gulveren**	**1.75**	**40**	*ePn*	**Pn**	**05 32 31.2**	**+0.1**

DDA 24 05:37:07.9, 36.92N×27.87E, h7km, Ml1.9, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BDRM	**Kayabasi**	**0.37**	**293**	*iP*	Pg	05 37 15.9	+0.7
BDRM				*iS*	Sb	05 37 26.3	+3.5
TURN	**Turunc**	**0.59**	**94**	*iP*	Pg	05 37 13.3	-5.9
TURN				*iS*	Sg	05 37 20.4	-6.4
AKAS	**Kas**	**1.55**	**116**	*iP*	Pn	05 37 33.9	-2.2
AKAS				*iS*	Sg	05 37 59.7	+1.9

*ISK **24** 05:37:39.5, 39.07N×29.09E, h5km, ML2.2*
*DDA **24** 05:37:40.2, 39.11N×29.06E, h7km, Ml2.6*
*CSEM **24** 05:37:40.1±0.1, 39.07N×29.07E, h5km, ML2.6, Error ellipse: s-maj=3.3km s-min=2.3km az=144.0*

ISC 24 05:37:39.7±0.9, 39.06N±0.03×29.08E±0.02, h12km±10km, n34, σ0§60/47, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.29**	**267**	P	**Pg**	**05 37 45.9**	**+0.3**
DEMI				S	**Sg**	**05 37 49.8**	**+0.2**
DEMI	**Demirci**	**0.29**	**267**	*iP*	**Pg**	**05 37 45.9**	**+0.3**
DEMI				*iS*	**Sg**	**05 37 49.9**	**+0.2**
GDZ	**Gediz**	**0.31**	**84**	P	**Pb**	**05 37 47.2**	**-0.1**
GDZ				S	**Sb**	**05 37 52.1**	**-0.2**
GDZ	**Gediz**	**0.31**	**84**	*iP*	**Pb**	**05 37 47.2**	**-0.1**
GDZ				*iS*	**Sb**	**05 37 52.1**	**-0.2**
TVSB	**Tavsanli**	**0.49**	**37**	*ePG*	**Pg**	**05 37 49.7**	**+0.3**
TVSB				*eSG*	**Sg**	**05 37 55.2**	**-0.7**
TVSB	**Tavsanli**	**0.49**	**37**	*ePg*	**Pg**	**05 37 49.7**	**+0.3**
TVSB				*eSg*	**Sg**	**05 37 55.2**	**-0.7**
KULA	**Kula-Manisa**	**0.64**	**211**	*ePG*	**Pb**	**05 37 52.7**	**-0.1**
KULA	**Kula-Manisa**	**0.64**	**211**	*ePg*	**Pb**	**05 37 52.7**	**-0.1**
DURS	**Dursunbey**	**0.72**	**319**	P	**Pg**	**05 37 53.9**	**+0.2**
DURS	**Dursunbey**	**0.72**	**319**	*iP*	**Pg**	**05 37 53.9**	**+0.2**
DURS				*iS*	**Sg**	**05 38 00.0**	**-3.1**
KHL	**Karahalli**	**0.81**	**155**	*ePG*	**Pg**	**05 37 55.2**	**-0.2**
KHL	**Karahalli**	**0.81**	**155**	*ePg*	**Pg**	**05 37 55.2**	**-0.2**
ORLT	**Orhaneli**	**1.00**	**352**	*ePG*	**Pg**	**05 37 58.2**	**-0.7**
ORLT	**Orhaneli**	**1.00**	**352**	*ePg*	**Pg**	**05 37 58.2**	**-0.7**
AKHS	**Akhisar**	**1.00**	**260**	P	**Pn**	**05 37 59.7**	**+0.1**
AKHS				S	**Sg**	**05 38 12.2**	**0.0**
AKHS	**Akhisar**	**1.00**	**260**	*iP*	**Pn**	**05 37 59.7**	**+0.1**
AKHS				*iS*	**Sg**	**05 38 12.2**	**0.0**
AKS	**Akhisar**	**1.01**	**260**	*ePG*	**Pg**	**05 37 59.1**	**0.0**
AKS	**Akhisar**	**1.01**	**260**	*ePg*	**Pg**	**05 37 59.1**	**0.0**
CAVI	**Cavuskoy**	**1.28**	**27**	*ePN*	**Pb**	**05 38 04.2**	**+0.4**
CAVI	**Cavuskoy**	**1.28**	**27**	*ePn*	**Pg**	**05 38 04.2**	**-0.2**
IZI	**Iznik**	**1.31**	**13**	*ePN*	**Pg**	**05 38 05.5**	**+0.5**
IZI	**Iznik**	**1.31**	**13**	*ePn*	**Pg**	**05 38 05.5**	**+0.5**
KCTX	**Karacabey (Bur**	**1.33**	**335**	*ePN*	**Pb**	**05 38 05.0**	**+0.5**
KCTX	**Karacabey (Bur**	**1.33**	**335**	*ePn*	**Pb**	**05 38 05.0**	**+0.5**
BORA	**Eskisehir**	**1.34**	**52**	P	**Pg**	**05 38 05.3**	**-0.2**
BORA				S	**Sg**	**05 38 23.5**	**+0.5**
BORA	**Eskisehir**	**1.34**	**52**	*iP*	**Pg**	**05 38 05.3**	**-0.2**
BORA				*iS*	**Sg**	**05 38 23.5**	**+0.5**
ADVT	**Abdulvahap**	**1.46**	**20**	*ePN*	**Pb**	**05 38 07.2**	**+0.4**
ADVT	**Abdulvahap**	**1.46**	**20**	*ePn*	**Pb**	**05 38 07.2**	**+0.4**
ARMT	**Armutlu**	**1.52**	**354**	*ePN*	**Pb**	**05 38 08.0**	**+0.3**
ARMT				*eSN*	**Sg**	**05 38 28.1**	**-0.4**
ARMT	**Armutlu**	**1.52**	**354**	*ePn*	**Pb**	**05 38 08.0**	**+0.3**
ARMT				*eSn*	**Sg**	**05 38 28.1**	**-0.4**
GPA	**Golpazari**	**1.55**	**37**	*ePN*	**Pb**	**05 38 07.6**	**+0.5**
GPA	**Golpazari**	**1.55**	**37**	*ePn*	**Pb**	**05 38 07.6**	**+0.5**
GULT	**Gulveren**	**1.76**	**38**	*ePN*	**Pb**	**05 38 11.9**	**-0.1**
GULT	**Gul

KUR Kuril'sk 6.45 30 *e*P **Pn** **05 42 22.7 +0.1**
KUR *e*S **Sn** **05 43 31.1 -4.4**
KUR pmax pmax
comp=Z,33nm,0.5s
KUR smax smax
comp=E,67nm,0.7s
INU Inuyama 6.64 231 *e*Pn **Pn** **05 42 28.3 +2.9**
JHJ2 Mitsune 7.18 204 *e*Pn Pn 05 42 40.6 +8.0
YSS Yuzh-Sakhalins 7.24 357 *e*P **Pn** **05 42 34.2 +0.7**
YSS pmax pmax
comp=Z,30nm,1.0s
YSS MLR MLR
comp=Z,900nm,16.0s
YSS Yuzh-Sakhalins 7.24 357 *e*Pn **Pn** **05 42 34.6 +1.1**
VLA Vladivostok 9.24 295⇑*i*P **Pn** **05 43 03.8 +2.9**
VLA *i* S **Sn** **05 44 48.7 +4.5**
VLA pmax pmax
comp=Z,56nm,1.5s
USRK Ussuriysk Ar. 9.56 302 Pn **Pn** **05 43 06.1 +0.8**
comp=Z,1.3nm,0.3s,baz=105,slow=14,SNR=31
USRK LR LR 05 46 38.0
comp=Z,716nm,18.7s,baz=73,slow=37
MDJ Mudanjiang 11.30 300 P **Pn** **05 43 25.3 -3.8**
MDJ S Sn 05 45 20.1 -15
MDJ ScP **ScP** **05 52 55.9 +1.8**
MDJ PcS **PcS** **05 53 02.3 +5.7**
MDJ pmax pmax
comp=Z,3.0nm,0.5s
MDJ pmax pmax
comp=Z,140nm,6.5s
MDJ LR LR
comp=N,370nm,18.1s
MDJ LR LR
comp=E,500nm,21.1s
MDJ LR LR
comp=Z,960nm,17.1s
JNU Nakatsue 11.99 241 LR LR 05 48 44.1
comp=Z,738nm,18.8s,baz=56,slow=40
KSRS Korea Array 12.27 264 Pn **Pn** **05 43 43.5 +1.2**
comp=Z,0.3nm,0.3s,baz=84,slow=13,SNR=24
KSRS LR LR 05 47 60.0
comp=Z,524nm,19.6s,baz=66,slow=35
KSAR Wonju Array Be 12.30 264 P **Pn** **05 43 43.5 +0.7**
KSAR Wonju Array Be 12.30 264 Pn **Pn** **05 43 43.5 +0.7**
KLR Kul'dur 12.58 323 Pn **Pn** **05 43 46.5 -0.1**
comp=Z,0.2nm,0.3s,baz=131,slow=12,SNR=8.2
KLR LR LR 05 48 48.6
comp=Z,504nm,19.9s,baz=88,slow=38
JCJ Chichijima 12.63 185 Pn **Pn** **05 43 45.0 -2.3**
comp=Z,2.4nm,0.3s,baz=280,slow=20,SNR=7.2
TJN Taejon 13.02 260⇓*e*P **Pn** **05 43 53.8 +1.2**
CN2 Changchun 13.95 293 *e*P **Pn** **05 44 06.3 +1.0**
HIA Hailar 19.27 307 *e*P **P** **05 45 09.2 -2.9**
HIA pmax pmax
comp=Z,11nm,0.5s
HIA Hailar 19.27 307 *e*P **P** **05 45 09.2 -2.9**
comp=Z,11nm,0.5s
TIA Tai'an 20.93 269⇑P **P** **05 45 28.5 -1.7**
TIA S S 05 49 06.3 -16
TIA pmax pmax
comp=Z,40nm,0.9s
TIA LR LR
comp=N,400nm,13.1s
TIA LR LR
comp=E,740nm,13.1s
TIA LR LR
comp=Z,1μm,11.9s
YAK Yakutsk 23.84 344 *e*P **P** **05 45 58.3 -2.0**
YAK pmax pmax
comp=Z,20nm,0.9s
YAK pmax pmax
comp=N,11nm,1.1s
YAK pmax pmax
comp=E,8.0nm,1.4s
SEY Seymchan 23.88 10 P **P** **05 46 00.0 -0.6**
comp=E,16nm,0.9s,baz=195,slow=7.9,SNR=28
SEY Seymchan 23.88 10⇓*e*P **P** **05 46 00.6 0.0**
HHC Hu-ho-hao-te 24.19 283 *e*P **P** **05 46 02.0 -2.0**
HHC pmax pmax
comp=Z,31nm,0.8s
HHC pmax pmax
comp=Z,140nm,4.3s
WHN Wuhan 25.32 258 P **P** **05 46 13.8 -0.3**
WHN pmax pmax
comp=Z,90nm,0.7s
BOD Bodaibo 26.16 324⇓*i*P **P** **05 46 20.6 -0.9**
BOD pmax pmax
comp=Z,24nm,0.9s
ULN Ulaanbaatar 27.22 299*c i*P **P** **05 46 31.2 -0.2**
ULN pmax pmax
comp=Z,22nm,1.2s
ULN Ulaanbaatar 27.22 299 *e*P **P** **05 46 31.6 +0.2**
comp=Z,22nm,1.2s
SONA1 Songino Array 27.65 299 *e*P **P** **05 46 35.2 0.0**
SONM Songino Array 27.66 299 P **P** **05 46 35.4 +0.1**
comp=Z,7.5nm,0.8s,baz=89,slow=8.4,SNR=38
SONM LR LR 05 58 12.7
comp=Z,482nm,20.1s,baz=83,slow=38
XAN Xi'an 27.98 269 P **P** **05 46 36.9 -1.3**
XAN pP sP 05 46 47.1 -0.4
XAN S **S** **05 51 30.6 +9.4**
XAN pmax pmax
comp=Z,10.0nm,0.8s
XAN pmax pmax
comp=Z,57nm,4.6s
XAN LR LR
comp=E,290nm,15.1s
XAN LR LR
comp=Z,340nm,17.2s
H11N2 WAKE ISLAND Hy 28.41 128 T T 06 17 35.4
baz=318,slow=75,SNR=110
H11N1 WAKE ISLAND Hy 28.42 128 T T 06 17 35.7
baz=318,slow=75,SNR=77
H11N3 WAKE ISLAND Hy 28.43 128 T T 06 17 39.2
baz=318,slow=75,SNR=100
ENH Enshi 29.14 262 *e*P **P** **05 46 47.6 -0.9**
comp=Z,36nm,0.9s
H11S1 WAKE ISLAND Hy 29.23 130 T T 06 18 58.9
SNR=12
H11S3 WAKE ISLAND Hy 29.23 130 T T 06 18 34.7
baz=250,slow=74,SNR=16
H11S2 WAKE ISLAND Hy 29.25 130 T T 06 18 23.4
baz=318,slow=74,SNR=13
TLY Talaya 29.81 307 P **P** **05 46 54.0 -0.2**
comp=Z,2.4nm,0.6s,baz=89,slow=4.7,SNR=6.3
TLY Talaya 29.81 307 *e*P **P** **05 46 54.4 +0.1**
TLY pmax pmax
comp=Z,6.0nm,1.1s
TLY MLR MLR
comp=Z,224nm,17.0s
TLY Talaya 29.81 307 *e*P **P** **05 46 54.2 -0.1**
comp=Z,9.1nm,1.3s
BILL Bilibino 31.03 17⇓*e*P **P** **05 47 04.8 0.0**
BILL pmax pmax
comp=Z,4.0nm,1.0s
BILL MLR MLR
comp=Z,125nm,16.0s
BILL Bilibino 31.03 17 *e*P P 05 47 13.3 +8.5
comp=Z,7.5nm,1.1s
LZH Lanzhou 31.19 276 *e*P **P** **05 47 07.3 +0.5**
LZH pP sP 05 47 18.3 +2.2
LZH sP pP 05 47 23.3 +10
LZH pmax pmax
comp=Z,23nm,1.0s
MOY Mondy 31.45 307 *e*P **P** **05 47 09.4 +0.6**
TIXI Tiksi 32.83 352 P **P** **05 47 19.4 -1.0**
comp=Z,1.4nm,0.4s,baz=49,slow=2.4,SNR=5.1
TIXI Tiksi 32.83 352⇑*e*P **P** **05 47 19.5 -1.0**
TIXI pmax pmax
comp=Z,2.0nm,0.8s
GYA Guiyang 33.21 258⇑*i*P **P** **05 47 23.3 -1.2**
GYA pmax pmax
comp=Z,20nm,0.8s
CD2 Chengdu 33.24 267 P **P** **05 47 22.9 -1.8**
CD2 pmax pmax
comp=Z,12nm,0.7s
GTA Gaotai 33.30 284⇓P **P** **05 47 25.5 +0.3**
GTA pP sP 05 47 35.0 +0.5
GTA sP pP 05 47 39.3 +7.5
GTA S S 05 52 33.8 -11
GTA pmax pmax
comp=Z,12nm,1.1s
GTA pmax pmax
comp=Z,130nm,5.9s
GTA LR LR
comp=N,150nm,18.5s
GTA LR LR
comp=E,560nm,18.1s
GTA LR LR
comp=Z,750nm,16.2s
QIZ Qiongzhong 35.43 244 P P 05 47 49.4 +5.8
QIZ S S 05 53 03.4 -14
QIZ LR LR
comp=Z,360nm,15.6s
KRAR Krasnoyarsk 36.64 313⇓*i*P **P** **05 47 54.9 +1.3**
KMI Kunming 36.90 259 P **P** **05 47 56.3 -0.1**
KMI pP sP 05 48 09.9 +4.1
KMI pmax pmax
comp=Z,14nm,0.9s
KMI LR LR
comp=N,170nm,15.8s
KMI LR LR
comp=E,270nm,14.9s
KMI LR LR
comp=Z,250nm,16.3s
WMQ Urumqi 41.03 294 P **P** **05 48 31.3 +0.6**
WMQ pP sP 05 48 46.3 +6.2
WMQ sP pP 05 48 55.8 +18
WMQ PP **PP** **05 50 05.9 +0.6**
WMQ S S 05 54 27.9 -14
WMQ sS sS 05 54 59.0 +6.0
WMQ pmax pmax
comp=Z,16nm,0.8s
WMQ pmax pmax
comp=Z,72nm,5.4s
WMQ LR LR
comp=N,140nm,17.6s
WMQ LR LR
comp=E,68nm,15.0s
WMQ LR LR
comp=Z,46nm,36.4s
ZAA0 Zalesovo Array 41.27 310 *e*P **P** **05 48 31.6 -0.9**
ZAA0 *e*P **P** **05 48 32.5 0.0**
ZALV Zalesovo Beam 41.27 310 P **P** **05 48 32.4 0.0**
comp=Z,8.4nm,0.5s,baz=92,slow=8.1,SNR=29
ZALV PcP **PcP** **05 50 31.0 +0.2**
comp=Z,3.3nm,0.8s,baz=64,slow=3.4,SNR=4.0
ZALV LR LR 06 05 39.1
comp=Z,108nm,18.4s,baz=73,slow=36
NRIK Noril'sk 41.49 334 P **P** **05 48 35.8 +1.7**
comp=Z,1.5nm,0.4s,baz=115,slow=10,SNR=3.7
CHTO Chiang Mai 43.43 255 *e*P **P** **05 48 50.6 +0.2**
CHTO pmax pmax
comp=Z,6.0nm,0.9s
CHTO Chiang Mai 43.43 255 *e*P **P** **05 48 50.6 +0.2**
comp=Z,5.5nm,0.9s
CMAR Chiang Mai Arr 43.66 254 P **P** **05 48 51.2 -0.9**
comp=Z,1.9nm,0.6s,baz=48,slow=6.0,SNR=10
CMAR LR LR 06 08 16.3
comp=Z,86nm,18.1s,baz=240,slow=38
CMAR Chiang Mai Arr 43.66 254*ce*P **P** **05 48 52.2 0.0**
CMAR pmax pmax
comp=Z,2.0nm,0.4s
MK01 Makanchi Array 44.02 300 *e*P **P** **05 48 54.4 -0.5**
MK31 Makanchi Array 44.02 300 *i* P **P** **05 48 54.5 -0.4**
MK31 pmax pmax
comp=Z,10.0nm,0.8s
MK31 Makanchi Array 44.02 300 *e*P **P** **05 48 54.7 -0.2**
MKAR Makanchi Array 44.02 300 P **P** **05 48 54.6 -0.3**
comp=Z,9.9nm,0.8s,baz=83,slow=9.5,SNR=62
MKAR LR LR 06 08 09.9
comp=Z,276nm,18.1s,baz=10,slow=37
CAST Castle Rocks 44.16 36 *e*P P 05 49 07.2 +11
comp=Z,4.7nm,0.9s
MAKZ Makanchi 44.23 300 P **P** **05 48 55.7 -0.8**
MAKZ pmax pmax
comp=Z,16nm,1.1s
MAKZ Makanchi 44.23 300 *e*P **P** **05 48 56.3 -0.2**
comp=Z,13nm,0.9s
KTH Kantishna Hill 44.69 35 *e*P P 05 49 10.6 +11
comp=Z,7.8nm,0.9s
KURK Kurchatov 45.51 306 *e*P **P** **05 49 06.3 -0.3**
KURK pmax pmax
comp=Z,21nm,0.9s
KURK Kurchatov 45.51 306 *e*P **P** **05 49 06.3 -0.3**
comp=Z,21nm,0.9s
WRH Wood River Hil 45.92 34 *e*P P 05 49 19.9 +10
comp=Z,5.5nm,1.1s
COLA College 46.01 34⇑*e*P **P** **05 49 12.1 +1.8**
COLA pmax pmax
comp=Z,3.0nm,0.8s
COLA College 46.01 34 *e*P P 05 49 19.9 +10
comp=Z,9.7nm,1.3s
CCB Clear Creek Bu 46.04 34 *e*P P 05 49 21.8 +11
comp=Z,3.5nm,1.0s
ILAR Eielson Array 46.43 34 P **P** **05 49 14.0 +0.3**
comp=Z,1.4nm,0.8s,baz=265,slow=6.6,SNR=21
PDGK Podgornoye 46.90 296 P **P** **05 49 16.4 -1.2**
PDGK pmax pmax
comp=Z,13nm,1.3s
FYU Fort Yukon 47.03 31 *e*P P 05 49 28.9 +11
comp=Z,12nm,1.0s
DOT Dot Lake 47.74 35 *e*P P 05 49 33.7 +10
comp=Z,5.6nm,0.7s
MENT Mentasta 47.98 36 *e*P P 05 49 35.6 +10
comp=Z,4.9nm,0.8s
GUN Gumba 48.42 274 *e*P **P** **05 49 30.1 0.0**
comp=Z,53nm,0.6s
EGAK Eagle 48.87 33 *e*P P 05 49 43.0 +10
comp=Z,6.0nm,0.9s
KKN Kakani 48.94 275 *e*P **P** **05 49 34.0 +0.1**
comp=Z,73nm,0.7s
PKIN Phulchoki 48.96 274 *e*P **P** **05 49 34.2 +0.1**
comp=Z,15nm,0.5s
DMN Daman 49.16 274 *e*P **P** **05 49 35.7 0.0**
comp=Z,32nm,0.8s
GKN Gorkha 49.33 275 *e*P **P** **05 49 36.8 -0.1**
comp=Z,30nm,0.6s
CHKZ Chkalovo 49.61 312 P **P** **05 49 37.5 -0.9**
CHKZ pmax pmax
comp=Z,12nm,1.0s
TKM2 Tokmak 2 49.71 297 *e*P **P** **05 49 40.1 +0.4**
TKM2 pmax pmax
comp=Z,24nm,0.8s
TKM2 Tokmak 2 49.71 297 *e*P **P** **05 49 40.1 +0.4**
comp=Z,24nm,0.8s
BVAR Borovoye Array 49.91 311 P **P** **05 49 40.8 0.0**
comp=Z,7.4nm,0.8s,baz=78,slow=9.0,SNR=32
BRVK Borovoye 49.97 311*c i*P **P** **05 49 41.2 +0.1**
BRVK pmax pmax
comp=Z,11nm,0.8s
BRVK Borovoye 49.97 311 *e*P **P** **05 49 41.3 +0.1**
comp=Z,11nm,0.9s
KOLN Koldanda 50.24 275 *e*P **P** **05 49 43.9 +0.1**
comp=Z,16nm,0.6s
FRU Bishkek 50.42 297 *e*P **P** **05 49 45.0 +0.2**
FRU *e* P 05 49 52.0
PYUN Piuthan 50.55 276 *e*P **P** **05 49 46.2 0.0**
AAK Ala-Archa 50.58 297*d i*P **P** **05 49 46.1 -0.1**
AAK pmax pmax
comp=Z,23nm,1.3s
AAK Ala-Archa 50.58 297 *e*P **P** **05 49 46.1 -0.1**
comp=Z,11nm,1.3s
AAK *e*P **P** **05 49 46.3 +0.2**
KSH Kashi 50.72 293 *e*P **P** **05 49 51.3 +4.1**
KSH *ep*P sP 05 50 04.1 +7.3
KSH *e*ScP **ScP** **05 55 00.9 +1.9**
KSH S **S** **05 56 57.3 -4.1**
KSH pmax pmax
comp=Z,130nm,6.0s
KSH LR LR
comp=N,140nm,7.8s
KSH LR LR
comp=E,140nm,7.0s
KSH LR LR
comp=Z,410nm,15.7s
ZRNK Zerenda 50.74 311 P **P** **05 49 46.2 -0.8**
ZRNK pmax pmax
comp=Z,15nm,1.0s
ZRNK Zerenda 50.74 311 *e*P **P** **05 49 47.2 +0.2**
comp=Z,14nm,0.8s
EKS2 Erkin-Say 51.06 297 *e*P **P** **05 49 49.5 -0.2**
EKS2 Erkin-Say 51.06 297 *e*P **P** **05 49 49.6 -0.2**
comp=Z,7.7nm,0.8s
HNR Honiara 51.28 159 LR LR 06 08 41.5
comp=Z,116nm,21.2s,baz=334,slow=33
INK Inuvik 51.31 28 P **P** **05 49 51.4 +0.3**
comp=Z,1.9nm,0.9s,baz=279,slow=13,SNR=3.5
MNAS Manas 51.99 298 P **P** **05 49 55.6 -1.2**
MNAS pmax pmax
comp=Z,15nm,0.8s
KKAR Karatay Array 53.11 299 *e*P **P** **05 50 04.4 -0.5**
KKAR Karatay Array 53.11 299 *e*P **P** **05 50 04.4 -0.5**
ARU Arti 55.37 318*c i*P **P** **05 50 20.7 -0.3**
ARU S **S** **05 58 03.8 -0.1**
ARU SS **SS** **06 01 43.1 -4.8**
ARU pmax pmax
comp=Z,19nm,1.2s
ARU Arti 55.37 318 *e*P **P** **05 50 20.9 -0.1**
comp=Z,14nm,1.0s
LEM Lembang 56.86 224 LR LR 06 15 38.6
comp=Z,77nm,19.9s,baz=225,slow=37
AB31 Akbulak array 57.38 309 *i* P **P** **05 50 35.1 -0.4**
AB31 pmax pmax
comp=Z,6.0nm,0.6s
ABKAR Akbulak array 57.38 309 *e*P **P** **05 50 35.3 -0.2**
KBL Kabul 57.88 290 *e*P **P** **05 50 39.2 -0.3**
KBL pmax pmax
comp=Z,17nm,1.0s
KBL Kabul 57.88 290 *e*P **P** **05 50 39.2 -0.3**
comp=Z,17nm,1.0s
WRA Warramunga Arr 59.94 190 P **P** **05 50 52.3 -1.3**
comp=Z,3.6nm,0.8s,baz=8.4,slow=7.2,SNR=20
YKA Yellowknife Ar 60.73 31 P **P** **05 50 58.8 +0.3**
comp=Z,0.4nm,0.8s,baz=304,slow=6.2,SNR=8.0
YKA Yellowknife Ar 60.73 31 P **P** **05 50 58.8 +0.3**
YKA pmax pmax
comp=Z,1.0nm,0.8s
TMCR Tamitsa 61.12 331 *e*P **P** **05 51 01.5 +0.4**
DAG Danmarks Havn 63.23 355 *i* P **P** **05 51 14.8 -0.2**
comp=Z,7.1nm,1.0s
DAG *i* 05 53 29.7
DAG Danmarks Havn 63.23 355 *i* P **P** **05 51 14.8 -0.2**
DAG *i* 05 53 29.7
DAG pmax pmax
comp=Z,7.0nm,1.0s
ASAR Alice Springs 63.67 190 P **P** **05 51 17.9 -0.7**
comp=Z,1.5nm,0.7s,baz=13,slow=5.8,SNR=14
GEYT Alibeck 63.86 299 P **P** **05 51 19.9 -0.1**
comp=Z,6.0nm,0.9s,baz=29,slow=3.7,SNR=7.4
VRH Novokhopyorsk 66.60 318 *e*P **P** **05 51 36.4 -1.0**
VRH pmax pmax
comp=Z,10.0nm,0.8s
OBN Obninsk 66.85 323⇓*e*P **P** **05 51 39.0 +0.1**
OBN *e* 05 52 07.4
OBN pmax pmax
comp=Z,44nm,2.1s
OBN MLR MLR
comp=Z,205nm,15.0s
FINES FINESS Array B 67.14 332 P **P** **05 51 40.5 -0.1**
comp=Z,5.9nm,0.8s,baz=48,slow=5.7,SNR=11
LPSR Galich'ya Gora 67.21 320 *e*P **P** **05 51 39.3 -1.9**
LPSR pmax pmax
comp=Z,10.0nm,1.4s
VSR Storozhevoye 67.90 319 *e*P **P** **05 51 44.1 -1.5**
VSR pmax pmax
comp=Z,20nm,1.5s
SUMG Summit 68.00 1 *i* P **P** **05 51 47.3 +0.9**
comp=Z,4.9nm,0.8s
SUMG *e* 05 51 56.8
SUMG *i* 05 54 04.6
SUMG Summit 68.00 1 *i* P **P** **05 51 47.3 +0.9**
SUMG *e* 05 51 56.8
SUMG pmax pmax
comp=Z,5.0nm,0.8s
SUMG Summit 68.00 1 *e*P P 05 51 52.8 +6.4
comp=Z,7.2nm,0.9s
VSU Vasula 68.90 330⇓*e*P **P** **05 51 51.9 +0.2**
VSU pmax pmax
comp=Z,47nm,0.9s
GOF Gofitskoye 69.42 312⇑*e*P **P** **05 51 55.4 +0.1**
ZEI Tsey 70.25 310 *e*P **P** **05 51 59.4 -1.3**
ZEI pmax pmax
comp=Z,23nm,1.1s
KIV Kislovodsk 70.28 311*d i*P **P** **05 52 01.7 +1.0**
KIV *e* 05 52 22.7
KIV *e* 05 54 35.0
KIV *e*PPP PPP 05 56 16.1
KIV pmax pmax
comp=Z,35nm,1.0s
KIV MLR MLR
comp=Z,229nm,18.0s
KIV Kislovodsk 70.28 311 *e*P **P** **05 52 02.4 +1.7**
comp=Z,32nm,1.0s
KBZ Khabaz 70.29 311 P **P** **05 52 01.6 +1.0**
comp=Z,9.2nm,0.8s,baz=18,slow=2.9,SNR=18
FFC Flin Flon 70.64 34 *e*P P 05 52 10.0 +7.5
FFC pmax pmax
comp=Z,15nm,1.8s
FFC Flin Flon 70.64 34 *e*P P 05 52 10.0 +7.5
comp=Z,15nm,1.8s
NEY Neytrino 70.68 310⇑*e*P **P** **05 52 04.3 +1.1**
NEY pmax pmax
comp=Z,2.0nm,0.9s
PAHR Pah Rah Range 70.76 54 *e*P P 05 52 15.2 +11
comp=Z,6.3nm,1.0s
LRM Limekiln Ridge 71.19 46 *e*P P 05 52 14.8 +8.4
STKA Stephens Creek 71.25 182 P **P** **05 52 05.7 -0.6**
comp=Z,1.0nm,0.6s,baz=0.0,slow=20,SNR=4.1
GNI Garni 71.30 307⇑*e*P **P** **05 52 09.0 +1.9**
GNI pmax pmax
comp=Z,27nm,1.2s
DLMT Dillon 71.39 46 *e*P P 05 52 18.4 +11
comp=Z,7.0nm,1.1s
HLID Hailey 71.45 49 *e*P P 05 52 19.5 +12
comp=Z,3.2nm,1.0s
BMN Battle Mountai 71.67 52 *e*P P 05 52 20.7 +11
BMN pmax pmax
comp=Z,10.0nm,1.4s
BMN Battle Mountai 71.67 52 *e*P P 05 52 20.7 +11
comp=Z,10nm,1.4s
NV01 Mina Array Sit 72.19 55 *e*P P 05 52 20.8 +8.3
NVAR Mina Array Bea 72.19 55 P **P** **05 52 13.4 +0.8**
comp=Z,0.4nm,0.6s,baz=312,slow=8.1,SNR=2.5
NC204 NORSAR Array S 72.22 338 *e*P **P** **05 52 13.4 +1.3**
NB2 NORSAR Subarra 72.28 338 P **P** **05 52 12.1 -0.3**
comp=Z,3.8nm,0.8s,baz=39,slow=6.2
NOA NORSAR Array B 72.28 338 P **P** **05 52 12.4 0.0**
comp=Z,6.1nm,0.8s,baz=38,slow=5.9,SNR=12
NOA LR LR 06 27 59.9
comp=Z,56nm,18.6s,baz=275,slow=39
NV11 Mina Array Sit 72.28 55 *e*P P 05 52 24.3 +11
comp=Z,6.5nm,1.0s
ANN Anapa 72.75 314 *e*P **P** **05 52 12.2 -3.2**
ANN *e**PP **pP** **05 52 22.8 +0.3**
ANN *e*S **S** **06 01 34.4 -5.2**
ANN *e*SS **SS** **06 06 18.4 -0.1**
ANN pmax pmax
comp=Z,33nm,1.2s
AKASG Malin Array Be 73.09 323 P **P** **05 52 16.8 -0.5**
comp=Z,2.1nm,0.6s,baz=44,slow=6.6,SNR=8.6
AKASG Malin Array Be 73.09 323*ce*P **P** **05 52 16.7 -0.6**
AKASG pmax pmax
comp=Z,2.0nm,0.6s
KIEV Kiev 73.10 323⇑*e*P **P** **05 52 16.5 -0.8**
KIEV pmax pmax
comp=Z,26nm,3.5s
H17A Grant Village 73.11 46 *e*P P 05 52 28.2 +10
comp=Z,9.3nm,1.1s
IMW Indian Meadow 73.23 47 *e*P P 05 52 29.6 +11
comp=Z,2.8nm,0.9s
MOOW Moose Ponds 73.43 47 *e*P P 05 52 28.9 +9.2
comp=Z,4.1nm,1.2s
TPAW Teton Pass 73.48 47 *e*P P 05 52 29.0 +8.9
comp=Z,6.9nm,1.2s
R11A Troy Canyon, C 73.94 53 *e*P P 05 52 33.2 +10
comp=Z,3.8nm,0.9s
HWUT Hardware Ranch 74.32 49 *e*P P 05 52 35.5 +11
comp=Z,11nm,1.5s
TPNV Topopah Spring 74.39 55 *e*P P 05 52 33.9 +8.5
TPNV pmax pmax
comp=Z,9.0nm,1.0s
TPNV Topopah Spring 74.39 55 *e*P P 05 52 33.9 +8.4
comp=Z,9.2nm,1.0s
DUG Dugway, Tooele 74.47 51 *e*P P 05 52 36.3 +10
DUG pmax pmax
comp=Z,5.0nm,1.0s
DUG Dugway, Tooele 74.47 51 *e*P P 05 52 36.3 +10
comp=Z,5.2nm,1.0s
PDAR Pinedale Array 74.72 47 P **P** **05 52 27.6 +0.2**
comp=Z,0.5nm,0.6s,baz=247,slow=2.5,SNR=5.9
PSUT Pine Spring 74.89 52 *e*P P 05 52 39.4 +11
comp=Z,3.5nm,1.0s
SHPR Sheep Range 75.35 55 *e*P P 05 52 42.4 +11
comp=Z,5.4nm,0.9s
MTPU Mount Pierson 76.22 52 *e*P P 05 52 45.3 +9.1
comp=Z,3.4nm,0.8s
LCMT Little Creek M 76.22 53 *e*P P 05 52 44.8 +8.9

comp=Z,5.4nm,0.9s
SRU San Rafael Swe 76.53 50 *e*P P 05 52 45.8 +8.1
SRU pmax pmax
comp=Z,6.0nm,0.9s
SRU San Rafael Swe 76.53 50 *e*P P 05 52 45.8 +8.1
comp=Z,5.9nm,0.9s
BUR08 Bucovina Ar. S 77.11 322 *e*P **P 05 52 41.2 +0.5**
STHS Stebnicka Huta 77.61 325 *e*P **P 05 52 44.7 +1.3**
STHS pmax pmax
comp=Z,4.0nm,1.0s
STHS Stebnicka Huta 77.61 325 *e*P **P 05 52 44.7 +1.3**
CRVS Cervenica-Dubn 77.90 325 *e*P **P 05 52 45.0 0.0**
CRVS Cervenica-Dubn 77.90 325 *e*P **P 05 52 45.0 0.0**
BRTR Keskin Array B 78.18 312 P **P 05 52 46.9 -0.1**
comp=Z,0.8nm,0.6s,baz=108,slow=4.0,SNR=7.6
BRTR Keskin Array B 78.18 312 *c e*P **P 05 52 47.2 +0.3**
BRTR pmax pmax
comp=Z,1.0nm,0.5s
PV01 Paradox Valley 78.32 50 *e*P P 05 52 56.0 +8.2
Y14A Wickenburg 78.33 56 *e*P P 05 52 58.8 +11
comp=Z,20nm,0.9s
WUAZ Wupatki 78.34 53 *e*P P 05 52 56.8 +8.9
comp=Z,7.5nm,0.9s
BR231 Keskin MP Arra 78.60 313 *e*P **P 05 52 47.8 -1.4**
ISCO Idaho Springs 78.91 47 *e*P P 05 53 00.8 +10
ISCO Idaho Springs 78.91 47 *e*P P 05 53 00.8 +10
MORC Moravsky Berou 78.92 328 *e*P **P 05 52 51.5 +0.9**
MORC pmax pmax
comp=Z,39nm,1.1s
MORC Moravsky Berou 78.92 328 *e*P **P 05 52 51.5 +0.9**
comp=Z,39nm,1.1s
MVCO Mesa Verde 78.98 51 *e*P P 05 53 02.1 +11
comp=Z,4.9nm,0.8s
X16A Lo Mia Camp, P 79.01 54 *e*P P 05 53 02.9 +11
comp=Z,3.8nm,0.9s
BRG Berggiesshubel 79.49 330 *e*P **P 05 52 55.1 +1.4**
comp=Z,3.7nm,0.9s
BRG Berggiesshubel 79.49 330 *e*P **P 05 52 55.1 +1.4**
BRG pmax pmax
comp=Z,4.0nm,0.9s
CLL Collm 79.50 331 *e*P **P 05 52 52.0 -1.7**
comp=Z,8.0nm,0.8s
CLL Collm 79.50 331 *e*P **P 05 52 52.0 -1.7**
CLL pmax pmax
comp=Z,8.0nm,0.8s
S22A 4UR Ranch, Cre 79.60 49 *e*P P 05 53 03.3 +8.4
comp=Z,3.6nm,1.0s
TUC Tucson 80.81 56 *e*P P 05 53 12.6 +11
TUC pmax pmax
comp=Z,13nm,1.8s
TUC Tucson 80.81 56 *e*P P 05 53 12.6 +11
comp=Z,13nm,1.8s
KHC Kasperske Hory 81.03 329 *e*P **P 05 53 01.5 -0.5**
KHC Kasperske Hory 81.03 329 *e*P **P 05 53 01.5 -0.5**
GERES GERESS Array B 81.20 329 P **P 05 53 03.3 +0.2**
comp=Z,1.5nm,0.8s,baz=35,slow=4.9,SNR=7.4
T25A Trinidad 81.42 48 *e*P P 05 53 16.0 +11
comp=Z,33nm,2.0s
ANMO Albuquerque 81.72 51⇑ *e*P **P 05 53 08.2 +2.0**
ANMO pmax pmax
comp=Z,2.0nm,1.5s
ANMO Albuquerque 81.72 51 *e*P P 05 53 17.5 +11
comp=Z,6.7nm,1.3s
FUORN Ofenpass-Fuorn 84.37 330 *e*P **P 05 53 20.5 +0.7**
comp=Z,11nm,0.9s
MSTX Muleshoe 84.59 50 *e*P P 05 53 31.1 +10
comp=Z,6.0nm,0.9s
MNTX Cornudas Mount 84.60 53 *e*P P 05 53 31.6 +11
comp=Z,2.7nm,0.9s
TX31 Lajitas Ar. Si 87.30 54 *e*P P 05 53 44.9 +10
TXAR Lajitas Array 87.31 54 P **P 05 53 34.7 +0.3**
comp=Z,0.1nm,0.4s,baz=321,slow=1.2,SNR=3.2
CCM Cathedral Cave 87.83 40 *e*P P 05 53 45.5 +8.8
CCM pmax pmax
comp=Z,6.0nm,1.1s
CCM Cathedral Cave 87.83 40 *e*P P 05 53 45.5 +8.9
comp=Z,5.7nm,1.1s
TORD Torodi Ar. Bea 116.44 318 PP PP 06 00 34.0 -3.2
comp=Z,1.0nm,1.0s,baz=22,slow=7.3,SNR=4.9

*ISCJB **24** 05:43:28.6±0.3, 42°.29N±0°.03×143°.12E±0°.04, h69km±2km, mb4.2/25, Error ellipse: s-maj=6.0km s-min=4.1km az=141.2*
*IDC **24** 05:43:29.0±0.6, 42°.34N×143°.05E, h55km±5km, mb3.9/21, mb1 4.1/25, mb1mx4.0/46, mbtmp4.2/25, Error ellipse: s-maj=14.7km s-min=11.5km az=119.0*
*MOS **24** 05:43:28.0±1.1, 42°.32N×142°.96E, h63km, mb4.5/19, Error ellipse: s-maj=11.6km s-min=7.4km az=75.6*
*NEIC **24** 05:43:29.5±0.6, 42°.34N×143°.04E, h60km±6km, mb4.6/3, Error ellipse: s-maj=9.1km s-min=6.7km az=111.0*
NEIC Recorded [2 JMA] in southern Hokkaido.
*JMA **24** 05:43:30.5±0.1, 42°.36N×143°.12E, h50km±1km, M4.1*
JMA Felt II J1.

ISC 24 05:43:29.2±0.5, 42°.32N±0°.04×143°.13E±0°.04, h57km±5km, n71, σ1°.27/89, mb4.1/25, 8C-3D, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JNBK	**Urakawa-nobuka**	**0.28**	**261**	⇓P	**Pn**	**05 43 39.4**	**+0.6**
JNBK				*e*S	**Sn**	**05 43 46.6**	**+0.8**
JEM	**Erimo**	**0.31**	**176**	⇑P	**Pn**	**05 43 40.2**	**+1.2**
ERM	**Erimo**	**0.31**	**176**	*e*PN	**Pn**	**05 43 40.1**	**+1.1**
ERM				*e*		05 43 47.3	
ERM	**Erimo**	**0.31**	**176**	*e*Pn	**Pn**	**05 43 40.1**	**+1.1**
ERM				*e*Sn	**Sn**	**05 43 47.3**	**+1.1**
JCH	**Churui**	**0.34**	**31**	⇑P	**Pn**	**05 43 39.6**	**+0.3**
JCH				*e*S	**Sn**	**05 43 47.1**	**+0.5**
JBT2	**Biratori 2**	**0.73**	**309**	⇓P	**Pn**	**05 43 44.4**	**+0.8**
JBT2				*e*S	**Sn**	**05 43 55.5**	**+1.4**
JOB	**Onbets**	**0.78**	**42**	⇑P	**Pn**	**05 43 45.7**	**+1.5**
JOB				*e*S	**Sn**	**05 43 57.0**	**+1.7**
JFR	**Furan**	**0.93**	**335**	P	**Pn**	**05 43 46.1**	**-0.1**
JAR	**Ashorobuto**	**1.08**	**26**	⇑P	**Pn**	**05 43 48.8**	**+0.6**
JAR				*e*S	**Sn**	**05 44 02.5**	**+0.2**
JAK	**Akkeshi**	**1.34**	**59**	⇑P	**Pn**	**05 43 52.3**	**+0.7**
JAK				*e*S	**Sn**	**05 44 10.0**	**+1.6**
JEW	**Eniwo**	**1.34**	**293**	⇓P	**Pn**	**05 43 53.2**	**+1.5**
JEW				*e*S	**Sn**	**05 44 11.0**	**+2.5**
JAB	**Ashibetsu**	**1.36**	**331**	P	**Pn**	**05 43 53.2**	**+1.4**
JAB				*e*S	**Sn**	**05 44 10.5**	**+1.7**
ASAJ	**Asahikawa**	**1.83**	**348**	P	**Pn**	**05 43 59.2**	**+0.9**
	54nm,0.3s,baz=197,slow=16,SNR=33						
YUK	**Yuzh-Kuril'sk**	**2.63**	**49**	*c i*PN	**Pn**	**05 44 11.0**	**+1.9**
YUK				*i* S	**Sn**	**05 44 41.9**	**+2.0**
YUK				pmax	pmax		
	comp=N,493nm,0.3s						
YUK				pmax	pmax		
	comp=Z,865nm,0.3s						
YUK				pmax	pmax		
	comp=E,280nm,0.2s						
YUK				smax	smax		
	comp=E,2μm,0.5s						
YUK				smax	smax		
	comp=N,2μm,0.4s						
SHO	**Shikotan**	**3.12**	**59**	*c i*PN	**Pn**	**05 44 16.4**	**+0.6**
SHO				*i* S	**Sn**	**05 44 51.2**	**-0.7**
SHO				pmax	pmax		
	comp=Z,338nm,0.4s						
SHO				pmax	pmax		
	comp=E,250nm,0.3s						
SHO				pmax	pmax		
	comp=N,92nm,0.2s						
SHO				smax	smax		
	comp=E,2μm,0.4s						
SHO				smax	smax		
	comp=N,330nm,0.2s						
KUR	**Kuril'sk**	**4.50**	**48**	*c i*PN	**Pn**	**05 44 38.3**	**+3.6**
KUR				*i* S	**Sn**	**05 45 29.4**	**+3.7**
KUR				pmax	pmax		
	comp=Z,133nm,0.4s						
KUR				pmax	pmax		
	comp=E,47nm,0.5s						
KUR				pmax	pmax		
	comp=N,32nm,0.1s						
KUR				smax	smax		
	comp=N,125nm,0.4s						
KUR				smax	smax		
	comp=E,256nm,0.4s						
MAJO	**Matsushiro**	**6.91**	**215**	*e*Pn	**Pn**	**05 45 08.8**	**+0.9**
MAJO	**Matsushiro**	**6.91**	**215**	*e*Pn	**Pn**	**05 45 08.8**	**+0.9**
MAT	**Matsushiro**	**6.91**	**215**	P	**Pn**	**05 45 09.5**	**+1.6**
MAT				*e*S	**Sn**	**05 46 30.0**	**+4.9**
MJAR	**Matsushiro Arr**	**6.91**	**215**	P	**Pn**	**05 45 08.9**	**+1.0**
	comp=E,2.4nm,0.3s,baz=26,slow=14,SNR=4.1						
USRK	**Ussuriysk Ar.**	**8.34**	**287**	P	**Pn**	**05 45 28.1**	**+0.7**
	comp=E,0.5nm,0.3s,baz=92,slow=14,SNR=4.5						
TYV	**Tymovskoe**	**8.55**	**358**	*e*PN	**Pn**	**05 45 31.0**	**+0.9**
TYV				pmax	pmax		
	comp=Z,18nm,0.8s						
KSRS	**Korea Array**	**12.65**	**252**	P	**Pn**	**05 46 23.9**	**-2.3**
	comp=Z,0.3nm,0.3s,baz=64,slow=13,SNR=5.1						
KSAR	**Wonju Array Be**	**12.68**	**252**	PN	**Pn**	**05 46 23.9**	**-2.7**
KSAR	**Wonju Array Be**	**12.68**	**252**	P	**Pn**	**05 46 23.9**	**-2.7**
CBIJ	**Chichi jima**	**15.21**	**183**	P	**Pn**	**05 46 59.5**	**-0.9**
JCJ	**Chichijima**	**15.21**	**183**	P	**Pn**	**05 46 59.5**	**-0.9**
	baz=307,slow=20						
SEY	**Seymchan**	**21.35**	**12**	P	**P**	**05 48 09.5**	**-1.7**
	comp=Z,2.7nm,0.6s,baz=164,slow=9.5,SNR=4.9						
SONM	**Songino Array**	**26.34**	**295**	P	**P**	**05 48 59.1**	**-0.7**
	comp=Z,3.8nm,0.7s,baz=80,slow=9.0,SNR=10						
TLY	**Talaya**	**28.20**	**303**	P	**P**	**05 49 16.0**	**-0.2**
	comp=Z,2.6nm,0.6s,baz=139,slow=2.7,SNR=4.1						
ZALV	**Zalesovo Beam**	**39.52**	**308**	P	**P**	**05 50 53.2**	**-0.9**
	comp=Z,10nm,0.8s,baz=91,slow=7.6,SNR=10						
ZALV				PcP	**PcP**	**05 53 01.4**	**+0.9**
	comp=Z,2.6nm,0.6s,baz=89,slow=2.9,SNR=5.9						
MKAR	**Makanchi Array**	**42.63**	**298**	P	**P**	**05 51 19.5**	**-0.3**
	comp=Z,4.2nm,0.6s,baz=82,slow=10,SNR=8.5						
KURK	**Kurchatov**	**43.88**	**304**	*e*P	**P**	**05 51 29.7**	**0.0**
KURK				pmax	pmax		
	comp=Z,26nm,0.8s						
KURK	**Kurchatov**	**43.88**	**304**	*e*P	**P**	**05 51 29.7**	**0.0**
	comp=Z,26nm,0.8s						
CMAR	**Chiang Mai Arr**	**44.28**	**251**	P	**P**	**05 51 33.0**	**-0.3**
	comp=Z,1.2nm,0.4s,baz=44,slow=7.8,SNR=4.2						
CMAR	**Chiang Mai Arr**	**44.28**	**251**	P	**P**	**05 51 33.0**	**-0.3**
CMAR				pmax	pmax		
	comp=Z,1.0nm,0.4s						
ILAR	**Eielson Array**	**44.37**	**35**	P	**P**	**05 51 33.9**	**+0.4**
	comp=Z,3.0nm,1.0s,baz=254,slow=4.9,SNR=8.1						
GUN	**Gumba**	**48.13**	**272**	*e*P	**P**	**05 52 04.4**	**+0.5**
	comp=Z,30nm,0.4s						
KKN	**Kakani**	**48.64**	**272**	*e*P	**P**	**05 52 08.0**	**+0.4**
	comp=Z,16nm,0.8s						
PKIN	**Phulchoki**	**48.67**	**272**	*e*P	**P**	**05 52 08.8**	**+0.9**
	comp=Z,5.3nm,0.4s						
DMN	**Daman**	**48.87**	**272**	*e*P	**P**	**05 52 09.8**	**+0.4**
	comp=Z,13nm,0.6s						
GKN	**Gorkha**	**49.00**	**273**	*e*P	**P**	**05 52 10.5**	**+0.2**
	comp=Z,6.7nm,0.3s						
INK	**Inuvik**	**49.11**	**29**	P	**P**	**05 52 10.2**	**-0.2**
	comp=Z,0.8nm,0.4s,baz=285,slow=8.1,SNR=5.7						
KOLN	**Koldanda**	**49.90**	**273**	*e*P	**P**	**05 52 17.8**	**+0.6**
	comp=Z,11nm,0.5s						
PYUN	**Piuthan**	**50.17**	**274**	*e*P	**P**	**05 52 19.8**	**+0.5**
	comp=Z,11nm,0.4s						
KKAR	**Karatay Array**	**51.76**	**297**	*e*P	**P**	**05 52 30.5**	**-0.2**
KKAR				pmax	pmax		
	comp=Z,3.0nm,0.7s						
KKAR	**Karatay Array**	**51.76**	**297**	*e*P	**P**	**05 52 30.5**	**-0.2**
	comp=Z,3.1nm,0.7s						
ARU	**Arti**	**53.36**	**316**	*e*P	**P**	**05 52 42.2**	**-0.1**
ARU				pmax	pmax		
	comp=Z,3.0nm,0.3s						
ARU	**Arti**	**53.36**	**316**	*e*P	**P**	**05 52 42.2**	**-0.1**
	comp=Z,3.1nm,0.3s						
ABKAR	**Akbulak array**	**55.64**	**308**	*e*P	**P**	**05 52 59.2**	**+0.2**
RES	**Resolute Bay**	**57.16**	**16**	P	**P**	**05 53 09.2**	**-0.2**
	comp=Z,4.9nm,0.5s,baz=326,slow=5.1,SNR=10						
YKA	**Yellowknife Ar**	**58.60**	**32**	P	**P**	**05 53 20.2**	**+0.6**
	comp=Z,0.5nm,0.7s,baz=309,slow=6.9,SNR=7.2						
YKA				pP	**pP**	**05 53 34.5**	**-0.5**
	comp=Z,1.0nm,0.7s,baz=307,slow=7.0,SNR=7.0						
WRA	**Warramunga Arr**	**62.48**	**189**	P	**P**	**05 53 46.1**	**-0.5**
	comp=Z,0.8nm,0.6s,baz=6.8,slow=6.8,SNR=9.9						
WRA				pP	**pP**	**05 54 01.0**	**-1.1**
	comp=Z,2.5nm,0.8s,baz=6.0,slow=7.1,SNR=8.3						
GEYT	**Alibeck**	**62.51**	**297**	P	**P**	**05 53 46.3**	**-0.5**
	comp=Z,3.4nm,0.6s,baz=66,slow=3.7,SNR=5.0						
FINES	**FINESS Array B**	**64.77**	**332**	P	**P**	**05 54 00.1**	**-1.1**
	comp=Z,2.9nm,0.4s,baz=56,slow=6.9,SNR=19						
SUMG	**Summit**	**65.40**	**1**	*e*P	**P**	**05 54 05.7**	**+0.1**
SUMG				pmax	pmax		
	comp=Z,5.0nm,0.6s						
SUMG	**Summit**	**65.40**	**1**	*e*P	**P**	**05 54 05.7**	**+0.1**
	comp=Z,4.7nm,0.6s						
ASAR	**Alice Springs**	**66.21**	**189**	P	**P**	**05 54 11.3**	**+0.4**
	comp=Z,0.5nm,0.6s,baz=11,slow=6.4,SNR=3.4						
ASAR				pP	**pP**	**05 54 26.5**	**-0.1**
	comp=Z,1.1nm,0.8s,baz=13,slow=7.0,SNR=5.0						
KBZ	**Khabaz**	**68.50**	**310**	P	**P**	**05 54 26.1**	**+0.9**
	comp=Z,4.9nm,0.8s,baz=32,slow=5.4,SNR=6.8						
NOA	**NORSAR Array B**	**69.82**	**337**	P	**P**	**05 54 33.0**	**-0.3**
	comp=Z,1.8nm,0.8s,baz=36,slow=6.1,SNR=3.8						
NOA	**NORSAR Array B**	**69.82**	**337**	P	**P**	**05 54 33.0**	**-0.3**
NOA				pmax	pmax		
	comp=Z,2.0nm,0.8s						
NVAR	**Mina Array Bea**	**70.83**	**55**	P	**P**	**05 54 40.0**	**0.0**
	comp=Z,1.1nm,0.7s,baz=299,slow=7.1,SNR=3.6						
AKASG	**Malin Array Be**	**70.94**	**322**	P	**P**	**05 54 38.8**	**-1.3**
	comp=Z,0.8nm,0.4s,baz=44,slow=6.0,SNR=7.0						
BRTR	**Keskin Array B**	**76.34**	**312**	P	**P**	**05 55 12.0**	**-0.2**
	comp=Z,1.5nm,0.6s,baz=69,slow=4.2,SNR=7.2						
KHC	**Kasperske Hory**	**78.72**	**329**	*e*P	**P**	**05 55 26.0**	**+0.8**
KHC	**Kasperske Hory**	**78.72**	**329**	*e*P	**P**	**05 55 26.0**	**+0.8**
GERES	**GERESS Array B**	**78.90**	**329**	P	**P**	**05 55 26.2**	**0.0**
	comp=Z,0.6nm,0.4s,baz=56,slow=5.0,SNR=4.4						
TXAR	**Lajitas Array**	**85.88**	**54**	P	**P**	**05 56 04.4**	**+1.4**
	comp=Z,1.3nm,0.7s,baz=292,slow=4.1,SNR=16						
TXAR				pP	**pP**	**05 56 18.8**	**-0.5**
	comp=Z,0.5nm,0.6s,baz=278,slow=3.9,SNR=3.9						
SNAA	**Sanae**	**146.18**	**199**	PKP	**PKPbc**	**06 03 01.6**	**-0.2**
VNA2	**Neumayer--Watz**	**147.76**	**198**	PKP	**PKPbc**	**06 03 07.2**	**+1.0**
	baz=102,slow=1.7						
VNA3	**Neumayer Olymp**	**148.01**	**196**	PKP	**PKPbc**	**06 03 07.3**	**+0.5**

MEX 24 05:45:14.1±0.7, 17°.13N×94°.73W, h119km±14km, MD3.8, Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TGIG		**1.58**	**102**	*e*P	Pn	05 45 41.4	-1.1
TGIG				*e*S	Sn	05 46 02.4	-1.6
HUIG	**Huatulco**	**1.89**	**225**	*i* P	Pn	05 45 42.0	-4.1
HUIG				*i* S	Sn	05 46 06.5	-4.0
VHO	**Vista Hermosa**	**1.91**	**269**	*e*P	Pn	05 45 45.6	-0.9
VHO				*i* S	Sn	05 46 09.6	-1.8
PCIG		**2.03**	**134**	*i* P	Pn	05 45 46.5	-1.4
PCIG				*e*S	Sn	05 46 11.7	-1.9
TPIG	**Tehuac#an**	**2.81**	**298**	*i* P	Pn	05 45 57.5	-0.6
TPIG				*i* S	Sn	05 46 30.1	-1.9
PNIG	**Pinotepa**	**3.33**	**258**	*i* P	Pn	05 46 01.3	-3.5
PNIG				*e*S	Sn	05 46 39.5	-4.4

SJA 24 05:45:32.8±0.9, 31°.15S×68°.35W, h98km±4km, ML3.7, MW3.4, San Juan Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RTLL	**Cerro Villicun**	**0.21**	**212**	*i* P	Pn	05 45 47.8	+0.9
RTLL				*i* S	Sn	05 45 58.4	+1.0
AMOG	**MOGNA**	**0.25**	**330**	*i* P	Pn	05 45 47.8	+0.8
AMOG				*i* S	Sn	05 45 58.2	+0.6
RTCV	**Cerro Valdivia**	**0.73**	**193**	*i* P	Pn	05 45 51.4	+1.0
RTCV				*i* S	Sn	05 46 04.7	+1.2
RTLS	**Leoncito**	**1.04**	**231**	*i* P	Pn	05 45 55.2	+1.4
RTLS				*i* S	Sn	05 46 11.3	+1.7
AUSP	**Uspallata**	**1.39**	**219**	*i* P	Pn	05 45 59.4	+1.5
AUSP				*i* S	Sn	05 46 18.8	+2.0
ACAN	**Cantantal**	**1.49**	**139**	*i* P	Pn	05 46 00.5	+1.6
ACAN				*i* S	Sn	05 46 20.0	+1.4
AGUA	**GUANDACOL**	**1.67**	**356**	*i* P	Pn	05 46 02.0	+0.8
VCA	**Vinchina**	**2.41**	**3**	*i* P	Pn	05 46 12.0	+1.1
VCA				IAML		05 46 15.0	
	comp=Z,346nm,0.2s						
VCA				*i* S	Sn	05 46 42.0	+2.0
MRA	**San Martin**	**2.57**	**120**	*i* P	Pn	05 46 14.2	+1.3
MRA				*i* S	Sn	05 46 44.5	+0.9

*IDC **24** 05:57:10.4±10.0, 16°.52N×120°.44E, h0km, mb3.6/3, mb1 3.9/3, mb1mx3.3/50, mbtmp3.6/3, MS3.8/1, Ms1 3.8/1, ms1mx2.8/37, Error ellipse: s-maj=319.6km s-min=32.2km az=34.0*
*ISCJB **24** 05:57:17.3±1.6, 15°.54N±0°.10×119°.0E±0°.1, h29km, mb3.5/2, MS3.8/1, Error ellipse: s-maj=21.8km s-min=7.4km az=34.2*
*MAN **24** 05:57:18, 15°.49N×119°.16E, h23km, mb4.6, ML3.5, MS3.4*

ISC 24 05:57:18.0±2.1, 15°.6N±0°.1×119°.0E±0°.2, h29km, n9, σ0°.96/10, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SCZP	**Santa Cruz**	**0.87**	**77**	*e*P	**Pb**	**05 57 33.7**	**-0.9**
SCZP				*e*S	**Sn**	**05 57 45.2**	**-0.8**
BOLP	**Bolinao**	**1.17**	**47**	*e*P	**Pb**	**05 57 38.9**	**-0.6**
BOLP				*e*S	**Sb**	**05 57 54.4**	**+0.1**
LUBP	**Lubang**	**2.18**	**147**	*e*P	**Pn**	**05 57 53.2**	**+0.9**
BALP	**Baler**	**2.46**	**86**	*e*P	**Pn**	**05 57 57.7**	**+1.6**
BUSP	**Coron**	**3.73**	**162**	*e*P	**Pn**	**05 58 14.4**	**+0.7**
ENPP	**El Nido**	**4.36**	**175**	*e*P	**Pn**	**05 58 22.8**	**+0.4**
CMAR	**Chiang Mai Arr**	**19.42**	**281**	P	Pn	06 01 51.2	+7.9
	0.6nm,0.4s,baz=105,slow=8.3,SNR=7.1						
WRA	**Warramunga Arr**	**38.38**	**156**	P	**P**	**06 04 36.1**	**-0.7**
	1.0nm,0.6s,baz=340,slow=9.0,SNR=15						
WRA				LR	LR	06 22 33.8	
	comp=Z,146nm,20.5s,baz=220,slow=39						
ASAR	**Alice Springs**	**41.63**	**159**	P	**P**	**06 05 04.2**	**+0.4**
	0.5nm,0.5s,baz=333,slow=6.5,SNR=6.8						

*ISCJB **24** 06:10:29.8±0.5, 39°.09N±0°.03×29°.03E±0°.03, h1km±5km, Error ellipse: s-maj=5.4km s-min=3.5km az=163.0*
*ISK **24** 06:10:29.5, 39°.08N×29°.05E, h6km, ML2.8*
*DDA **24** 06:10:29.7, 39°.13N×29°.03E, h6km, Md3.1*
*CSEM **24** 06:10:30.1±0.1, 39°.08N×29°.04E, h5km, MD3.1, Error ellipse: s-maj=2.0km s-min=1.5km az=154.0*

ISC 24 06:10:30.3±1.0, 39°.09N±0°.02×29°.03E±0°.02, h7km±9km, n47, σ0°.39/66, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**260**	P	**Pg**	**06 10 35.2**	**-0.1**
DEMI				S	**Sg**	**06 10 38.6**	**0.0**
DEMI	**Demirci**	**0.25**	**260**	*i* P	**Pg**	**06 10 35.2**	**-0.1**
DEMI				*i* S	**Sg**	**06 10 38.6**	**0.0**
GDZ	**Gediz**	**0.35**	**90**	P	**Pg**	**06 10 37.2**	**0.0**
GDZ				S	**Sg**	**06 10 42.1**	**+0.3**
GDZ	**Gediz**	**0.35**	**90**	*i* P	**Pg**	**06 10 37.2**	**0.0**
GDZ				*i* S	**Sg**	**06 10 42.1**	**+0.3**
TVSB	**Tavsanli**	**0.49**	**42**	*e*PG	**Pg**	**06 10 39.4**	**-0.4**
TVSB				*e*SG	**Sg**	**06 10 46.1**	**-0.2**
TVSB	**Tavsanli**	**0.49**	**42**	*e*Pg	**Pg**	**06 10 39.4**	**-0.4**
TVSB				*e*Sg	**Sg**	**06 10 46.1**	**-0.2**
KULA	**Kula-Manisa**	**0.64**	**207**	*e*PG	**Pg**	**06 10 41.9**	**-0.7**
KULA				*e*SG	**Sg**	**06 10 51.2**	**+0.2**
KULA	**Kula-Manisa**	**0.64**	**207**	*e*Pg	**Pg**	**06 10 41.9**	**-0.7**
KULA				*e*Sg	**Sg**	**06 10 51.2**	**+0.2**
DURS	**Dursunbey**	**0.67**	**320**	P	**Pg**	**06 10 42.8**	**-0.4**
DURS				S	**Sg**	**06 10 52.0**	**0.0**
DURS	**Dursunbey**	**0.67**	**320**	*i* P	**Pg**	**06 10 42.8**	**-0.4**
DURS				*i* S	**Sg**	**06 10 52.0**	**0.0**
KHL	**Karahalli**	**0.85**	**153**	*e*PG	**Pg**	**06 10 46.6**	**-0.1**
KHL	**Karahalli**	**0.85**	**153**	*e*Pg	**Pg**	**06 10 46.6**	**-0.1**
AKHS	**Akhisar**	**0.97**	**258**	P	**Pb**	**06 10 49.3**	**-0.1**
AKHS				S	**Sb**	**06 11 02.4**	**0.0**
AKHS	**Akhisar**	**0.97**	**258**	*i* P	**Pb**	**06 10 49.3**	**-0.1**
AKHS				*i* S	**Sb**	**06 11 02.4**	**0.0**
AKS	**Akhisar**	**0.97**	**258**	*e*PG	**Pg**	**06 10 49.1**	**+0.2**
AKS	**Akhisar**	**0.97**	**258**	*e*Pg	**Pg**	**06 10 49.1**	**+0.2**
BALB	**Balikesir**	**1.05**	**302**	*e*PG	**Pb**	**06 10 50.7**	**0.0**
BALB	**Balikesir**	**1.05**	**302**	*e*Pg	**Pb**	**06 10 50.7**	**0.0**
CAVI	**Cavuskoy**	**1.28**	**29**	*e*PN	**Pb**	**06 10 54.6**	**0.0**
CAVI	**Cavuskoy**	**1.28**	**29**	*e*Pn	**Pb**	**06 10 54.6**	**0.0**
MDNY	**Mudanya-Bursa**	**1.28**	**355**	*e*PN	**Pn**	**06 10 54.6**	**0.0**
MDNY	**Mudanya-Bursa**	**1.28**	**355**	*e*Pn	**Pn**	**06 10 54.6**	**0.0**
KCTX	**Karacabey (Bur**	**1.29**	**336**	*e*PN	**Pn**	**06 10 54.2**	**-0.5**
KCTX	**Karacabey (Bur**	**1.29**	**336**	*e*Pn	**Pn**	**06 10 54.2**	**-0.5**
BORA	**Eskisehir**	**1.35**	**54**	P	**Pn**	**06 10 55.4**	**-0.3**
BORA				S	**Sb**	**06 11 13.4**	**-0.2**
BORA	**Eskisehir**	**1.35**	**54**	*i* P	**Pn**	**06 10 55.4**	**-0.3**
BORA				*i* S	**Sb**	**06 11 13.4**	**-0.2**
GONE	**Gonen-Balikesi**	**1.42**	**313**	*e*PN	**Pb**	**06 10 57.2**	**+0.2**
GONE	**Gonen-Balikesi**	**1.42**	**313**	*e*Pn	**Pb**	**06 10 57.2**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**1.45**	**219**	*e*PN	**Pn**	**06 10 57.2**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**1.45**	**219**	*e*Pn	**Pn**	**06 10 57.2**	**+0.2**
ADVT	**Abdulvahap**	**1.45**	**22**	*e*PN	**Pn**	**06 10 57.2**	**+0.3**
ADVT	**Abdulvahap**	**1.45**	**22**	*e*Pn	**Pn**	**06 10 57.2**	**+0.3**
ESKT	**Eskisehir**	**1.48**	**72**	*i* P	**Pn**	**06 10 57.5**	**+0.1**
ESKT				*i* S	**Sn**	**06 11 15.9**	**-1.0**
SEYT	**Eskypehyr**	**1.48**	**72**	P	**Pn**	**06 10 57.5**	**+0.2**
SEYT				S	**Sn**	**06 11 15.9**	**-1.0**
ARMT	**Armutlu**	**1.48**	**355**	*e*PN	**Pn**	**06 10 57.6**	**+0.3**
ARMT	**Armutlu**	**1.48**	**355**	*e*Pn	**Pn**	**06 10 57.6**	**+0.3**
EDC	**Edincik**	**1.55**	**325**	*e*PN	**Pn**	**06 10 58.3**	**+0.1**
EDC	**Edincik**	**1.55**	**325**	*e*Pn	**Pn**	**06 10 58.3**	**+0.1**
GPA	**Golpazari**	**1.55**	**39**	*e*PN	**Pn**	**06 10 58.5**	**+0.2**
GPA	**Golpazari**	**1.55**	**39**	*e*Pn	**Pn**	**06 10 58.5**	**+0.2**
MRMT	**Marmara Adasi**	**1.88**	**324**	*e*PN	**Pn**	**06 11 02.9**	**+0.1**
MRMT	**Marmara Adasi**	**1.88**	**324**	*e*Pn	**Pn**	**06 11 02.9**	**+0.1**
KAND	**Koc

	baz=317							
TAP1				eS		Sb	06 12 35.3	-0.2
	baz=317							
TAP	**Taipei**	**0.72**	**322**	P		**Pb**	**06 12 26.6**	**+0.4**
	baz=317							
TAP				S		**Sb**	**06 12 36.0**	**+0.2**
	baz=317							
WHF	**Hehuan Shan**	**0.74**	**244**	⇑P		**Pg**	**06 12 25.4**	**-1.0**
	baz=241							
TWT	**Tachien**	**0.77**	**254**	⇑P		**Pg**	**06 12 26.4**	**-0.6**
	baz=252							
TWS1	**Kuangyinshan**	**0.81**	**320**	⇓P		**Pg**	**06 12 28.3**	**+0.5**
	baz=323							
TWS1				eS		**Sn**	**06 12 40.0**	**-0.7**
	baz=323							
ESL	**Shilin**	**0.83**	**218**	eP		**Pb**	**06 12 27.4**	**-0.7**
	baz=221							
JYNG	**Yonagunijimaku**	**0.87**	**91**	P		**Pb**	**06 12 28.7**	**0.0**
JYNG				eS		**Sb**	**06 12 40.6**	**+0.4**
TWY	**Chenhua**	**0.88**	**336**	eP		**Pg**	**06 12 29.1**	**+0.2**
	baz=339							
TWY				eS		**Sg**	**06 12 40.8**	**+0.3**
	baz=339							
NCU	**National Centr**	**0.88**	**304**	eP		**Pg**	**06 12 29.3**	**+0.3**
	baz=313							
NCU				eS		**Sg**	**06 12 41.1**	**+0.5**
	baz=313							
NSTT	**Nanjuang**	**0.92**	**280**	⇑iP		**Pb**	**06 12 29.0**	**-0.5**
	baz=280							
NSTT				eS		**Sb**	**06 12 40.8**	**-0.6**
	baz=280							
YOJ	**Yonaguni jima**	**0.93**	**90**	P		**Pb**	**06 12 29.7**	**0.0**
YOJ				S		**Sb**	**06 12 42.3**	**+0.4**
YOJ	**Yonaguni jima**	**0.93**	**90**	⇓iP		**Pb**	**06 12 29.7**	**0.0**
	baz=89							
YOJ				eS		**Sg**	**06 12 42.7**	**+0.6**
	baz=89							
HSN	**Hsinchu**	**0.99**	**290**	eP		**Pb**	**06 12 31.0**	**+0.3**
	baz=288							
HSN				eS		**Sg**	**06 12 44.2**	**+0.3**
	baz=288							
WDT	**Danda**	**1.06**	**228**	eP		**Pb**	**06 12 32.0**	**-0.1**
	baz=225							
TWQ1	**Liyutan**	**1.12**	**264**	eP		**Pn**	**06 12 33.3**	**+0.3**
	baz=263							
NSY	**Sanyi**	**1.12**	**267**	eP		**Pg**	**06 12 33.8**	**+0.2**
	baz=267							
NSY				eS		**Sg**	**06 12 48.8**	**+0.6**
	baz=267							
EHY	**Hungye**	**1.14**	**213**	eP		**Pn**	**06 12 31.8**	**-1.5**
	baz=209							
SMLT	**Sun Moon Lake**	**1.16**	**240**	eP		**Pb**	**06 12 34.0**	**+0.3**
	baz=227							
TYC	**Yuchr**	**1.18**	**242**	⇓P		**Pb**	**06 12 34.3**	**+0.3**
	baz=239							
TCU	**Taichung**	**1.24**	**255**	eP		**Pg**	**06 12 36.0**	**+0.1**
	baz=253							
TWF1	**Yuli**	**1.28**	**210**	eP		**Pn**	**06 12 33.8**	**-1.5**
	baz=220							
WNT	**Mingjian**	**1.33**	**244**	eP		**Pg**	**06 12 37.6**	**+0.1**
	baz=256							
WNT				eS		**Sg**	**06 12 56.7**	**+1.8**
	baz=256							
YUS	**Yu-Shan**	**1.36**	**224**	eP		**Pn**	**06 12 36.5**	**-0.3**
	baz=225							
YUS				eS		**Sb**	**06 12 55.0**	**+0.2**
	baz=225							
ALS	**Alishan**	**1.45**	**229**	eP		**Pb**	**06 12 39.2**	**+0.5**
	baz=217							
ALS				eS		**Sg**	**06 12 59.9**	**+1.3**
	baz=217							
CHKT	**Chengkung**	**1.48**	**203**	eP		**Pn**	**06 12 38.6**	**+0.5**
	baz=186							
CHN5	**Tsauling**	**1.48**	**234**	eP		**Pb**	**06 12 39.5**	**+0.3**
	baz=236							
CHN5				eS		**Sg**	**06 13 01.7**	**+1.9**
	baz=236							
WGK	**Gukeng**	**1.52**	**239**	eP		**Pb**	**06 12 40.6**	**+0.7**
	baz=238							
ELDTW	**Lidau**	**1.56**	**215**	eP		**Pn**	**06 12 38.8**	**-0.4**
	baz=201							
IRIF	**Iriomote-Funau**	**1.59**	**95**	P		**Pn**	**06 12 38.9**	**-0.7**
IRIF				S		**Sn**	**06 12 59.6**	**-0.3**
CHN2	**Minshiung**	**1.67**	**236**	eP		**Pb**	**06 12 43.1**	**+0.7**
	baz=222							
CHN4	**Tsaushan**	**1.70**	**229**	eP		**Pb**	**06 12 42.9**	**0.0**
	baz=231							
CHN4				eS		**Sg**	**06 13 07.1**	**+0.5**
	baz=231							
HATJ	**Hateruma jima**	**1.71**	**104**	eS		**Sn**	**06 13 03.2**	**+0.5**
STYT	**Tauyuan**	**1.72**	**221**	eP		**Pb**	**06 12 42.6**	**-0.7**
	baz=220							
CHY	**Chiayi**	**1.73**	**236**	eP		**Pb**	**06 12 43.7**	**+0.3**
	baz=222							
WTP	**Ta-pu**	**1.75**	**226**	eP		**Pb**	**06 12 43.3**	**-0.6**
	baz=228							
WTP				eS		**Sb**	**06 13 06.9**	**+1.3**
	baz=228							
TWK	**Hsinying**	**1.82**	**229**	eP		**Pb**	**06 12 44.5**	**-0.5**
	baz=228							
TWG	**Pinlang**	**1.85**	**207**	eP		**Pn**	**06 12 43.9**	**+0.8**
	baz=193							
CHN1	**Nanshi**	**1.85**	**227**	eP		**Pb**	**06 12 44.7**	**-0.8**
	baz=228							
CHN1				eS		**Sg**	**06 13 10.8**	**-0.8**
	baz=228							
JKRS	**Kuro-shima**	**1.86**	**97**	P		**Pn**	**06 12 43.1**	**-0.1**
JKRS				eS		**Sn**	**06 13 06.0**	**-0.4**
SGST	**Jiashian**	**1.89**	**223**	eP		**Pn**	**06 12 44.9**	**+1.2**
	baz=225							
SGST				eS		**Sb**	**06 13 10.6**	**+1.0**
	baz=225							
JIJ	**Ishigaki jima**	**1.96**	**93**	P		**Pn**	**06 12 44.6**	**-0.1**
JIJ				S		**Sn**	**06 13 07.2**	**-1.9**
JISG	**Ishigakijimahi**	**2.12**	**86**	P		**Pn**	**06 12 46.3**	**-0.5**
JISG				S		**Sn**	**06 13 11.2**	**-1.6**
EAST	**Anshuo**	**2.33**	**207**	eP		**Pn**	**06 12 51.6**	**+1.8**
	baz=196							
PNG	**Penghu**	**2.40**	**248**	eP		**Pn**	**06 12 50.7**	**0.0**
	baz=248							
SCZT	**Fangliau**	**2.44**	**211**	eP		**Pn**	**06 12 53.0**	**+1.8**
	baz=196							
WDGT	**Dungji**	**2.45**	**241**	eP		**Pn**	**06 12 50.7**	**-0.6**
	baz=241							
LAY	**Lan-yu**	**2.45**	**190**	eP		**Pn**	**06 12 49.4**	**-2.0**
	baz=189							
JTJ	**Tarama**	**2.48**	**86**	P		**Pn**	**06 12 52.3**	**+0.6**
JTJ				S		**Sn**	**06 13 21.4**	**-0.3**
JIRB	**Irabujima**	**2.92**	**82**	P		**Pn**	**06 12 58.5**	**+0.7**
JIRB				eS		**Sn**	**06 13 32.7**	**+0.1**

*IDC **24** 06:14:37.1±1.1, 34.°00S×72.°22W, h0km, mb3.7/4, mb1 3.9/6, mb1mx3.7/31, mbtmp3.8/6, ML3.5/2, Error ellipse: s-maj=43.9km s-min=27.6km az=95.0*
*ISCJB **24** 06:14:38.7±1.5, 34.°01S±0.°05×72.°38W±0.°08, h23km±10km, mb3.8/3, Error ellipse: s-maj=11.9km s-min=7.6km az=24.4*
*GUC **24** 06:14:40.0±0.4, 34.°02S×72.°26W, h29km±7km, ML3.8*

ISC 24 06:14:39.7±1.9,**33.°99S**±0.°05×**72.°2W**±0.°1,**h17**km±10km, **n15**,σ0°**42**/21,**mb4.1**/3,**Off coast of central Chile**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHPI	**Pichilemu**	**0.43**	**160**	*i* P	**Pg**	**06 14 48.5**	**0.0**
CHPI				*i* S	**Sb**	**06 14 55.2**	**+0.2**
ANTU	**Antumapu**	**1.35**	**72**	*i* P	**Pb**	**06 15 04.9**	**+0.3**
ANTU				*i* S	**Sg**	**06 15 23.4**	**-0.1**
ANTU				IAML		06 15 29.2	
	comp=E,3μm,0.4s						
ROCH	**El Roble**	**1.41**	**44**	*i* P	**Pb**	**06 15 05.8**	**+0.2**
ROCH				*i* S	**Sg**	**06 15 25.5**	**+0.3**
ROCH				IAML		06 15 41.0	
	comp=N,2μm,0.4s						
TALC	**Talca**	**1.48**	**163**	*i* P	**Pn**	**06 15 05.2**	**-0.3**
TALC				*i* S	**Sn**	**06 15 24.5**	**+0.1**
CLCH	**Cerro Calan**	**1.49**	**67**	*i* P	**Pb**	**06 15 07.1**	**+0.1**
CLCH				*i* S	**Sg**	**06 15 27.5**	**-0.4**
CLCH				IAML		06 15 32.2	
	comp=N,2μm,0.7s						
PEL	**Peldehue**	**1.50**	**56**	*i* P	**Pb**	**06 15 07.3**	**+0.1**
PEL				*i* S	**Sg**	**06 15 27.8**	**-0.5**
CPUP	**Villa Florida**	**14.93**	**63**	Pn	**Pn**	**06 18 10.5**	**+0.5**
	comp=N,0.0nm,0.3s,baz=219,slow=13,SNR=1.6						
LPAZ	**La Paz**	**18.00**	**13**	P	**P**	**06 18 51.0**	**+0.8**
	comp=N,0.1nm,0.3s,baz=194,slow=9.3,SNR=12						
SIV	**San Ignacio**	**20.52**	**32**	P	**P**	**06 19 17.0**	**-0.2**
	comp=N,1.3nm,0.6s,baz=240,slow=12,SNR=4.9						
TXAR	**Lajitas Array**	**69.67**	**331**	P	**P**	**06 25 48.4**	**0.0**
	comp=N,0.2nm,0.5s,baz=157,slow=9.6,SNR=4.8						
MAW	**Mawson**	**73.22**	**164**	P	**P**	**06 26 09.7**	**+0.4**
	comp=N,1.0nm,0.6s,baz=204,slow=10.0,SNR=4.7						
TORD	**Torodi Ar. Bea**	**84.31**	**70**	P	**P**	**06 27 11.0**	**-0.1**
	comp=N,0.7nm,0.5s,baz=248,slow=5.1,SNR=10.0						
BVAR	**Borovoye Array**	**147.35**	**43**	PKPbc	**PKPab**	**06 34 22.9**	**-0.9**
	comp=N,1.1nm,0.4s,baz=292,slow=3.5,SNR=5.9						
KURBB	**Kurchatov Arra**	**152.94**	**43**	PKPbc	**PKPbc**	**06 34 35.0**	**-0.5**
	comp=N,0.7nm,0.5s,baz=302,slow=3.0,SNR=8.2						
MKAR	**Makanchi Array**	**156.84**	**49**	PKPab	**PKPab**	**06 35 03.3**	**-0.3**
	comp=N,0.3nm,0.5s,baz=271,slow=4.9,SNR=3.4						

JMA 24 06:18:09.2±0.1,**38.°45N**×**142.°24E**,**h27**km±1km,**M3.6**, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.70**	**271**	P	Pb	06 18 22.6	-0.2
JIO				S	Sb	06 18 31.5	-0.6
OFUJ	**Ofunato**	**0.77**	**325**	P	Pb	06 18 23.8	-0.2
OFUJ				S	Sb	06 18 34.1	-0.1
JMK	**Ichinoseki**	**0.94**	**302**	P	Pn	06 18 26.5	-0.2
JMK				S	Sb	06 18 38.9	-0.1
JOU	**Okura**	**1.24**	**267**	P	Pb	06 18 31.4	-0.6
JOU				S	Sn	06 18 47.0	+0.3
JOM	**Ohasama**	**1.26**	**324**	P	Pn	06 18 31.5	+0.5
JOM				S	Sb	06 18 47.8	-0.3
JMM	**Marumori**	**1.28**	**243**	P	Pn	06 18 30.5	-0.8
JMM				S	Sn	06 18 46.8	-0.8
JFK	**Kawauchi**	**1.53**	**225**	P	Pn	06 18 33.4	-1.4
JFK				S	Sn	06 18 50.9	-2.9
JYK	**Kaneyama**	**1.54**	**288**	P	Pn	06 18 35.9	+1.0
JYK				S	Sb	06 18 55.2	-1.1
JRG	**Rokugo**	**1.57**	**308**	P	Pb	06 18 36.5	-1.1
JRG				eS	Sb	06 18 57.1	+0.1

*IDC **24** 06:21:05.8±4.6, 17.°10N×99.°57W, h0km, mb3.9/6, mb1 4.1/9, mb1mx3.9/39, mbtmp3.8/9, ML3.4/3, MS3.3/2, Ms1 3.4/2, ms1mx2.8/35, Error ellipse: s-maj=86.3km s-min=33.9km az=8.0*
*MEX **24** 06:21:16.6±0.8, 17.°41N×99.°46W, h44km±10km, MD3.9*
*NEIC **24** 06:21:16.7, 17.°42N×99.°46W, h39km, mb4.0/29, MD3.9(MEX), After MEX.*
NEIC Felt at Chilpancingo.

ISC 24 06:21:12.7±0.7,**17.°40N**±0.°03×**99.°46W**±0.°03,**h22**km±5km, **n64**,σ1°**08**/81,**mb4.0**/22,**Guerrero**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MEIG	**Mezcala**	**0.55**	**343**	*e*P	**Pn**	**06 21 26.4**	**+1.2**
MEIG				*i* S	**Sn**	**06 21 33.6**	**-0.2**
MEIG				*e*S	**Sn**	**06 21 34.6**	**+0.8**
MEIG	**Mezcala**	**0.55**	**343**	*i* P	**Pn**	**06 21 26.5**	**+1.2**
MEIG				*i* S	**Sn**	**06 21 33.6**	**-0.2**
CAIG	**El Cayaco**	**0.85**	**246**	*i* P	**Pn**	**06 21 30.8**	**+1.5**
CAIG				*e*S	**Sn**	**06 21 41.2**	**+0.1**
CAIG	**El Cayaco**	**0.85**	**246**	*i* P	**Pn**	**06 21 30.8**	**+1.5**
CAIG				*e*S	**Sn**	**06 21 41.2**	**+0.1**
TLIG	**Tlapa**	**0.86**	**79**	*i* P	**Pn**	**06 21 30.9**	**+1.3**
TLIG				*i* S	**Sn**	**06 21 41.2**	**-0.5**
TLIG	**Tlapa**	**0.86**	**79**	*e*Pn	**Pn**	**06 21 30.9**	**+1.3**
PLIG	**Platanillo**	**0.99**	**357**	*i* P	**Pn**	**06 21 32.5**	**+1.1**
PLIG				*i* S	**Sb**	**06 21 44.1**	**+0.3**
PLIG	**Platanillo**	**0.99**	**357**	*i* P	**Pn**	**06 21 32.5**	**+1.1**
PLIG				*i* S	**Sb**	**06 21 44.1**	**+0.3**
ARIG	**Puente Sto Nin**	**1.22**	**316**	*i* P	**Pb**	**06 21 36.0**	**+0.9**
ARIG				*i* S	**Sn**	**06 21 50.0**	**-0.4**
YAIG	**Yautepec**	**1.50**	**14**	*e*P	**Pn**	**06 21 38.7**	**+0.2**
YAIG				*i* S	**Sn**	**06 21 56.9**	**-0.6**
YAIG	**Yautepec**	**1.50**	**14**	*e*P	**Pn**	**06 21 38.7**	**+0.2**
YAIG				*i* S	**Sn**	**06 21 56.9**	**-0.6**
PNIG	**Pinotepa**	**1.62**	**128**	*e*P	**Pb**	**06 21 41.5**	**-0.4**
PNIG				*i* S	**Sn**	**06 22 00.1**	**-0.1**
PNIG	**Pinotepa**	**1.62**	**128**	*e*P	**Pb**	**06 21 41.5**	**-0.4**
PNIG				*i* S	**Sn**	**06 22 00.1**	**-0.1**
MZVM		**1.79**	**7**	*e*P	**Pb**	**06 21 43.8**	**-1.1**
MZVM				*i* S	**Sn**	**06 22 04.9**	**+0.5**
ZIIG	**Zihuatanejo**	**1.93**	**276**	*e*P	**Pb**	**06 21 45.7**	**-1.4**
ZIIG				*e*S	**Sn**	**06 22 07.2**	**-0.5**
ZIIG	**Zihuatanejo**	**1.93**	**276**	*e*P	**Pb**	**06 21 45.7**	**-1.4**
ZIIG				*e*S	**Sn**	**06 22 07.2**	**-0.5**
UNM	**Universidad Na**	**1.94**	**8**	*i* P	**Pn**	**06 21 45.6**	**+1.1**
UNM				*i* S	**Sn**	**06 22 08.4**	**0.0**
UNM	**Universidad Na**	**1.94**	**8**	*e*Pn	**Pn**	**06 21 45.1**	**+0.5**
UNM				*i* S	**Sn**	**06 22 08.4**	**0.0**
VCVM	**Valle de Chalc**	**1.95**	**14**	*e*P	**Pn**	**06 21 45.8**	**+1.1**
TPIG	**Tehuac#an**	**2.24**	**63**	*e*P	**Pn**	**06 21 49.5**	**+0.9**
TPIG				*i* S	**Sn**	**06 22 16.3**	**+0.6**
TPIG	**Tehuac#an**	**2.24**	**63**	*e*P	**Pn**	**06 21 49.5**	**+0.9**
TPIG				*i* S	**Sn**	**06 22 16.3**	**+0.6**
MOIG	**Morelia**	**2.80**	**324**	*e*Pn	**Pb**	**06 22 00.4**	**-1.8**
ZAIG	**Zacatecas**	**6.09**	**332**	*e*Pn	**Pn**	**06 22 45.1**	**+3.4**
TEIG	**Tepich**	**10.95**	**73**	Pn	**Pn**	**06 23 47.6**	**-0.6**
	0.3nm,0.3s,baz=90,slow=20,SNR=3.1						
TEIG				Sn	Sn	06 25 40.1	-10
	0.6nm,0.3s,baz=270,slow=20,SNR=2.8						
HPIG		**11.09**	**330**	*e*Pn	Pn	06 23 55.9	+5.6
TXAR	**Lajitas Array**	**12.49**	**343**	Pn	**Pn**	**06 24 11.6**	**+2.3**
	0.0nm,0.3s,baz=163,slow=14,SNR=6.0						
WLAR	**White Oak Lake**	**17.19**	**18**	*e*Pn	**Pn**	**06 25 11.0**	**-0.5**
	30nm,1.1s						
WMOK	**Wichita Mounta**	**17.28**	**2**	*e*Pn	**P**	**06 25 15.1**	**+1.1**
	8.3nm,1.1s						
MIAR	**Mount Ida**	**17.87**	**16**	*e*Pn	**Pn**	**06 25 18.8**	**-1.1**
	11nm,0.9s						
V34A	**Guthrie**	**18.44**	**5**	*e*P	**Pn**	**06 25 27.9**	**+0.9**
	13nm,0.8s						
ANMO	**Albuquerque**	**18.56**	**342**	P	**P**	**06 25 28.2**	**-0.1**
	0.1nm,0.3s,baz=133,slow=12,SNR=6.7						
ANMO				LR	LR	06 33 36.6	
	comp=Z,92nm,19.7s,baz=158,slow=40						
ANMO	**Albuquerque**	**18.56**	**342**	*e*P	**Pn**	**06 25 30.5**	**+1.9**
	11nm,1.9s						
TUL1	**Leonard**	**18.72**	**9**	*e*P	**Pn**	**06 25 31.1**	**+0.7**
	14nm,1.1s						
WHAR	**Wooly Hollow**	**18.93**	**18**	*e*P	**Pn**	**06 25 32.8**	**0.0**
	9.3nm,1.0s						
X16A	**Lo Mia Camp, P**	**20.06**	**330**	*e*P	Pn	06 25 46.0	-0.5
	3.7nm,0.8s						
T25A	**Trinidad**	**20.14**	**348**	*e*P	Pn	06 25 48.5	+0.9
	5.1nm,0.7s						
PLAL	**Pickwick Lake**	**20.24**	**28**	*e*P	**P**	**06 25 46.8**	**+0.3**
	7.6nm,1.1s						
WUAZ	**Wupatki**	**20.93**	**332**	*e*P	Pn	06 25 55.7	-1.0
	5.5nm,0.9s						
SDCO	**Great Sand Dun**	**20.95**	**347**	*e*P	**P**	**06 25 54.8**	**+0.3**
	2.6nm,0.9s						
S22A	**4UR Ranch, Cre**	**21.28**	**344**	*e*P	**P**	**06 25 58.2**	**+0.2**
	4.5nm,1.1s						
WVT	**Waverly**	**21.32**	**27**	*e*P	**P**	**06 25 56.7**	**-1.4**
	16nm,1.6s						
CCM	**Cathedral Cave**	**21.80**	**18**	*e*P	**P**	**06 26 05.6**	**+2.3**
	4.4nm,0.8s						
SMCO	**Snowmass**	**22.67**	**345**	*e*P	**P**	**06 26 12.7**	**-0.3**
	4.1nm,1.1s						
TKL	**Tuckaleechee C**	**22.91**	**34**	P	**P**	**06 26 14.8**	**-0.4**
	1.9nm,0.5s,baz=194,slow=13,SNR=4.9						
ISCO	**Idaho Springs**	**22.95**	**348**	*e*P	**P**	**06 26 16.5**	**+0.6**
	2.3nm,0.9s						
MTPU	**Mount Pierson**	**23.40**	**334**	*e*P	**P**	**06 26 21.6**	**+1.1**
	35nm,1.9s						
SRU	**San Rafael Swe**	**23.69**	**338**	*e*P	**P**	**06 26 23.2**	**+0.1**
	4.1nm,0.9s						
O20A	**White River Ci**	**23.90**	**343**	*e*P	**P**	**06 26 24.9**	**-0.2**
	6.0nm,0.9s						
P18A	**Preston Nutter**	**24.05**	**339**	*e*P	**P**	**06 26 27.1**	**+0.4**
	10nm,1.3s						
JLU	**Jordanelle**	**25.34**	**338**	*e*P	**P**	**06 26 38.0**	**-0.2**
	2.3nm,0.8s						
TCUT	**Toone Canyon**	**25.78**	**339**	*e*P	**P**	**06 26 41.3**	**-1.0**
	10nm,0.9s						
HWUT	**Hardware Ranch**	**26.27**	**339**	*e*P	**P**	**06 26 46.4**	**-0.3**
	6.2nm,1.1s						
WVUT	**Wellsville**	**26.41**	**339**	*e*P	**P**	**06 26 47.4**	**-0.5**
NVAR	**Mina Array Bea**	**26.66**	**326**	P	**P**	**06 26 48.2**	**-2.0**
	1.3nm,1.0s,baz=158,slow=5.6,SNR=3.7						
NVAR				LR	LR	06 37 29.7	
	comp=Z,74nm,19.1s,baz=89,slow=37						
BW06	**Boulder Array**	**26.71**	**343**	*e*P	**P**	**06 26 51.5**	**+0.8**
	5.7nm,1.4s						
BW06				*e*P	**P**	**06 26 52.0**	**+1.4**
PD31	**Pinedale Array**	**26.71**	**343**	*e*P	**P**	**06 26 51.1**	**+0.5**
PDAR	**Pinedale Array**	**26.71**	**343**	P	**P**	**06 26 48.3**	**-2.4**
	0.6nm,0.7s,baz=134,slow=8.5,SNR=5.2						
YKA	**Yellowknife Ar**	**46.28**	**350**	P	**P**	**06 29 34.3**	**-2.0**
	0.9nm,0.8s,baz=159,slow=7.3,SNR=10						
DLBC	**Dease Lake**	**46.75**	**338**	*e*P	**P**	**06 29 41.1**	**+0.9**
	5.0nm,1.0s						
EGAK	**Eagle**	**54.97**	**340**	*e*P	**P**	**06 30 41.5**	**-0.4**
	16nm,1.9s						
INK	**Inuvik**	**55.25**	**345**	P	**P**	**06 30 42.1**	**-1.7**
	4.7nm,0.6s,baz=128,slow=5.8,SNR=17						
INK	**Inuvik**	**55.25**	**345**	*e*P	**P**	**06 30 43.0**	**-0.8**
	7.6nm,0.9s						
ILAR	**Eielson Array**	**56.95**	**338**	P	**P**	**06 30 54.8**	**-1.3**
	1.5nm,1.0s,baz=129,slow=5.7,SNR=12						
TRF	**Thorofare Moun**	**57.55**	**336**	*e*P	**P**	**06 31 00.4**	**-0.2**
	13nm,1.3s						

SJA 24 06:25:18.2±0.6,**32.°20S**×**68.°43W**,**h91**km±8km,**MD2.5**, **Mendoza Province**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RTCV	**Cerro Valdivia**	**0.35**	**344**	*i* P	Pn	06 25 32.4	+0.3
RTCV	**Cerro Valdivia**	**0.35**	**344**	*i* P	Pn	06 25 32.4	+0.3
AUSP	**Uspallata**	**0.81**	**268**	*i* P	Pn	06 25 37.5	+1.2
AUSP				*i* S	Sn	06 25 52.0	+2.3
AUSP	**Uspallata**	**0.81**	**268**	*i* P	Pn	06 25 37.5	+1.2
AUSP				*i* S	Sn	06 25 52.0	+2.3
RTLS	**Leoncito**	**0.84**	**298**	*i* P	Pn	06 25 37.7	+1.2
RTLS				*i* S	Sn	06 25 52.0	+1.8
RTLS	**Leoncito**	**0.84**	**298**	*i* P	Pn	06 25 37.7	+1.2
RTLS				*i* S	Sn	06 25 52.0	+1.8
RTLL	**Cerro Villicun**	**0.86**	**357**	*i* P	Pn	06 25 37.6	+1.1
RTLL				*i* S	Sn	06 25 51.8	+1.5
RTLL	**Cerro Villicun**	**0.86**	**357**	*i* P	Pn	06 25 37.6	+1.1
RTLL				*i* S	Sn	06 25 52.4	+2.1
AMOG	**MOGNA**	**1.25**	**357**	*i* P	Pn	06 25 42.0	+0.9
AMOG				*i* S	Sn	06 25 59.7	+1.4
AMOG	**MOGNA**	**1.25**	**357**	*i* P	Pn	06 25 41.5	+0.5
AMOG				*i* S	Sn	06 25 59.7	+1.4
MRA	**San Martin**	**2.31**	**96**	*i* P	Pn	06 25 56.1	+1.5
MRA				IAML		06 25 56.9	
	comp=Z,8.4nm,0.1s						
MRA				*i* S	Sn	06 26 23.1	+0.7

*DDA **24** 06:26:21.8, 39.°09N×29.°00E, h7km, Md2.8*
*CSEM **24** 06:26:21.9±0.2, 39.°08N×29.°01E, h5km, MD2.8, Error ellipse: s-maj=4.4km s-min=3.4km az=147.0*
*ISK **24** 06:26:21.0, 39.°05N×29.°11E, h6km, ML2.3*

ISC 24 06:26:22.0±1.0,**39.°09N**±0.°03×**29.°01E**±0.°02,**h7**km±12km, **n24**,σ0°**44**/38,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**259**	P	**Pg**	**06 26 26.8**	**+0.1**
DEMI				S	**Sg**	**06 26 30.2**	**+0.3**
DEMI	**Demirci**	**0.24**	**259**	*i* P	**Pg**	**06 26 26.8**	**+0.1**
DEMI				*i* S	**Sg**	**06 26 30.2**	**+0.3**
GDZ	**Gediz**	**0.36**	**89**	P	**Pg**	**06 26 29.1**	**-0.1**
GDZ				S	**Sg**	**06 26 34.7**	**+0.7**
GDZ	**Gediz**	**0.36**	**89**	*i* P	**Pg**	**06 26 29.1**	**-0.1**
GDZ				*i* S	**Sg**	**06 26 34.7**	**+0.7**
TVSB	**Tavsanli**	**0.50**	**44**	PG	**Pg**	**06 26 31.5**	**-0.3**
TVSB				SG	**Sg**	**06 26 37.6**	**-0.8**
TVSB	**Tavsanli**	**0.50**	**44**	*i* Pg	**Pg**	**06 26 31.5**	**-0.3**
TVSB				*i* Sg	**Sg**	**06 26 37.6**	**-0.8**
KULA	**Kula-Manisa**	**0.63**	**206**	*e*PG	**Pg**	**06 26 34.1**	**-0.2**
KULA				*e*SG	**Sg**	**06 26 42.4**	**-0.1**
KULA	**Kula-Manisa**	**0.63**	**206**	*e*Pg	**Pg**	**06 26 34.1**	**-0.2**
KULA				*e*Sg	**Sg**	**06 26 42.4**	**-0.1**
DURS	**Dursunbey**	**0.66**	**321**	P	**Pg**	**06 26 34.4**	**-0.4**
DURS				S	**Sg**	**06 26 43.6**	**+0.1**
DURS	**Dursunbey**	**0.66**	**321**	*i* P	**Pg**	**06 26 34.4**	**-0.4**
DURS				*i* S	**Sg**	**06 26 43.6**	**+0.1**
BALB	**Balikesir**	**1.04**	**303**	*e*PN	**Pn**	**06 26 43.3**	**+0.3**
BALB	**Balikesir**	**1.04**	**303**	*e*Pn	**Pn**	**06 26 43.3**	**+0.3**
KCTX	**Karacabey (Bur**	**1.28**	**337**	*e*PN	**Pg**	**06 26 46.6**	**0.0**
KCTX	**Karacabey (Bur**	**1.28**	**337**	*e*Pn	**Pg**	**06 26 46.6**	**0.0**
CAVI	**Cavuskoy**	**1.28**	**30**	*e*PN	**Pn**	**06 26 45.8**	**-0.6**
CAVI	**Cavuskoy**	**1.28**	**30**	*e*Pn	**Pn**	**06 26 45.8**	**-0.6**
BORA	**Eskisehir**	**1.37**	**54**	P	**Pg**	**06 26 49.0**	**+0.8**
BORA				S	**Sg**	**06 27 06.2**	**+0.2**
BORA	**Eskisehir**	**1.37**	**54**	*i* P	**Pg**	**06 26 49.0**	**+0.8**
BORA				*

IZI	**Iznik**	**1.33**	**14**	*e*PN	**Pg**	**06 33 21.5**	**-0.2**
IZI	**Iznik**	**1.33**	**14**	*e*Pn	**Pg**	**06 33 21.5**	**-0.2**
KCTX	**Karacabey (Bur**	**1.34**	**337**	*e*PN	**Pg**	**06 33 21.9**	**+0.2**
KCTX				*e*SN	**Sg**	**06 33 40.1**	**+1.0**
KCTX	**Karacabey (Bur**	**1.34**	**337**	*e*Pn	**Pg**	**06 33 21.9**	**+0.2**
KCTX				*e*Sn	**Sg**	**06 33 40.1**	**+1.0**
BORA	**Eskisehir**	**1.37**	**52**	P	**Pg**	**06 33 22.4**	**0.0**
BORA				S	**Sg**	**06 33 40.4**	**+0.2**
BORA	**Eskisehir**	**1.37**	**52**	*i* P	**Pg**	**06 33 22.4**	**0.0**
BORA				*i* S	**Sg**	**06 33 40.4**	**+0.2**
GONE	**Gonen-Balikesi**	**1.46**	**314**	*e*PN	**Pb**	**06 33 23.2**	**-0.1**
GONE	**Gonen-Balikesi**	**1.46**	**314**	*e*Pn	**Pb**	**06 33 23.2**	**-0.1**
ESKT	**Eskisehir**	**1.48**	**70**	*i* P	Pn	06 33 18.9	-3.9
ESKT				*i* S	**Sb**	**06 33 42.3**	**-0.3**
SEYT	**Eskypehyr**	**1.48**	**70**	S	**Sb**	**06 33 42.3**	**-0.2**
ADVT	**Abdulvahap**	**1.49**	**21**	*e*PN	**Pb**	**06 33 23.6**	**-0.2**
ADVT	**Abdulvahap**	**1.49**	**21**	*e*Pn	**Pb**	**06 33 23.6**	**-0.2**
ARMT	**Armutlu**	**1.53**	**355**	*e*PN	**Pb**	**06 33 24.0**	**-0.6**
ARMT				*e*SN	**Sg**	**06 33 46.0**	**+0.7**
ARMT	**Armutlu**	**1.53**	**355**	*e*Pn	**Pb**	**06 33 24.0**	**-0.6**
ARMT				*e*Sn	**Sg**	**06 33 46.0**	**+0.7**
EDC	**Edincik**	**1.59**	**325**	*e*PN	**Pb**	**06 33 25.3**	**-0.4**
EDC	**Edincik**	**1.59**	**325**	*e*Pn	**Pb**	**06 33 25.3**	**-0.4**
GULT	**Gulveren**	**1.79**	**39**	*e*PN	**Pn**	**06 33 27.8**	**+0.7**
GULT	**Gulveren**	**1.79**	**39**	*e*Pn	**Pn**	**06 33 27.8**	**+0.7**

*CSEM **24** 06:33:05.5, 40°.66N×34°.62E, h7km, MD2.7*

DDA 24 06:33:05.5, 40°.66N×34°.62E, h7km, Md2.7, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
COAL	**Corum-Alaca**	**0.50**	**145**	P	Pg	06 33 15.5	+0.4
COAL				S	Sg	06 33 22.7	+1.1
COAL	**Corum-Alaca**	**0.50**	**145**	*i* P	Pg	06 33 15.5	+0.4
COAL				*i* S	Sg	06 33 22.7	+1.1
BOYT	**Boyabat**	**0.79**	**16**	P	Pg	06 33 19.8	-0.9
BOYT				S	Sg	06 33 31.1	+0.2
BOYT	**Boyabat**	**0.79**	**16**	*i* P	Pg	06 33 19.8	-0.8
BOYT				*i* S	Sg	06 33 31.1	+0.2
ELDT	**Eldivan**	**0.92**	**260**	P	Pg	06 33 23.5	+0.2
ELDT				S	Sb	06 33 36.3	-0.2
ELDT	**Eldivan**	**0.92**	**260**	*i* P	Pg	06 33 23.5	+0.2
ELDT				*i* S	Sb	06 33 36.3	-0.2
HAVZ	**Havza**	**0.93**	**63**	P	Pg	06 33 23.7	+0.3
HAVZ				S	Sb	06 33 36.5	-0.1
HAVZ	**Havza**	**0.93**	**63**	*i* P	Pb	06 33 23.7	-0.3
HAVZ				*i* S	Sb	06 33 36.5	-0.1

MAN 24 06:37:17, 13°.07N×120°.64E, h33km, mb3.6, ML2.3, MS1.9, 1C, Mindoro

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PGP	**Puerto Galera**	**0.53**	**35⇑**	*e*P	Pn	06 37 29.7	+1.4
PGP				*i* S	Sn	06 37 37.8	+1.7
LUBP	**Lubang**	**0.76**	**330**	*e*P	Pb	06 37 32.0	+0.1
LUBP				*e*S	Sb	06 37 43.0	+0.9
SJMP	**San Jose**	**0.77**	**142**	*e*P	Pb	06 37 32.1	+0.2
SJMP				*e*S	Sb	06 37 43.2	+1.1

*IDC **24** 06:37:17.1±3.0, 35°.81N×141°.24E, h0km, mb3.5/3, mb1 3.7/5, mb1mx3.4/46, mbtmp3.6/5, ML3.2/1, Error ellipse: s-maj=86.8km s-min=24.5km az=60.0*
*ISCJB **24** 06:37:20.7±1.3, 35°.87N±0°.09×141°.2E±0°.1, h31km, mb3.5/3, Error ellipse: s-maj=18.1km s-min=7.7km az=142.5*
*JMA **24** 06:37:25.4±0.1, 35°.73N×140°.67E, h47km±1km, M3.0*
JMA Felt I J1.

ISC 24 06:37:22.2±1.8, 35°.8N±0°.1×141°.1E±0°.2, h31km, n15, σ0.93 s/15, mb3.7/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.18**	**238**	P	Pn	06 37 32.9	+4.1
JCN	**Nagara**	**0.78**	**242**	P	**Pn**	**06 37 37.1**	**0.0**
JYT	**Yasato**	**0.81**	**302**	P	**Pb**	**06 37 38.1**	**+0.2**
JYT				S	**Sn**	**06 37 47.1**	**-1.4**
JHO	**Hitachi**	**0.90**	**335**	P	Pb	06 37 41.9	+2.6
BSO4	**Boso 4**	**0.99**	**216**	P	**Pn**	**06 37 40.5**	**+0.6**
BSO3	**Boso 3**	**1.08**	**204**	P	**Pb**	**06 37 41.8**	**-0.4**
BSO1	**Boso 1**	**1.14**	**183**	P	**Pb**	**06 37 44.0**	**+1.0**
JAG	**Ashikaga**	**1.43**	**296**	P	**Pn**	**06 37 46.1**	**0.0**
JOD2	**Odawara 2**	**1.68**	**252**	P	**Pn**	**06 37 48.4**	**-1.1**
MJAR	**Matsushiro Arr**	**2.41**	**289**	Pn	**Pn**	**06 38 00.2**	**+0.7**
	5.1nm,0.3s,baz=101,slow=9.7,SNR=26						
MAT	**Matsushiro**	**2.41**	**289**	P	**Pn**	**06 38 00.2**	**+0.6**
MAT				S	**Sn**	**06 38 29.8**	**+1.7**
JCJ	**Chichijima**	**8.73**	**173**	Pn	**Pn**	**06 39 25.3**	**-1.0**
	baz=270,slow=17						
MKAR	**Makanchi Array**	**44.53**	**303**	P	**P**	**06 45 31.5**	**+0.5**
	0.3nm,0.6s,baz=84,slow=11,SNR=3.6						
KURBB	**Kurchatov Arra**	**46.54**	**309**	P	**P**	**06 45 46.8**	**+0.1**
	0.4nm,0.5s,baz=85,slow=8.4,SNR=6.2						
WRA	**Warramunga Arr**	**55.80**	**188**	P	**P**	**06 46 55.8**	**-0.6**
	0.3nm,0.4s,baz=1.1,slow=7.5,SNR=6.5						

*NIED **24** 06:38:00, 39°.80N×143°.50E, h26km, Mw4.0 Best double couple: M0 1.12000×10^15 NP1:φs 188.00000°, δ24.00000°, λ74.00000°. NP2:φs 26.00000°, δ67.00000°, λ97.00000°.*
*ISCJB **24** 06:38:30.0±0.7, 39°.83N±0°.05×143°.53E±0°.08, h6km, mb3.9/13, Error ellipse: s-maj=10.0km s-min=5.5km az=37.7*
*JMA **24** 06:38:31.7±0.2, 39°.84N×143°.50E, h21km, M4.1*
*IDC **24** 06:38:36.8±2.5, 39°.76N×143°.31E, h44km±22km, mb3.7/13, mb1 3.9/18, mb1mx3.7/48, mbtmp3.9/18, ML3.4/5, MS2.7/1, Ms1 2.7/1, ms1mx2.5/45, Error ellipse: s-maj=20.9km s-min=16.3km az=108.0*

ISC 24 06:38:32.0±0.8, 39°.83N±0°.07×143°.42E±0°.08, h6km, n31, σ1.26 s/30, mb4.0/13, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.20**	**276**	P	**Pg**	**06 38 54.2**	**-0.9**
MIYJ	**Miyakonagasawa**	**1.26**	**259**	P	**Pn**	**06 38 55.4**	**-0.7**
JANG	**Nango**	**1.56**	**291**	P	**Pn**	**06 38 59.3**	**-1.0**
JOM	**Ohasama**	**1.68**	**258**	P	**Pn**	**06 39 02.0**	**+1.0**
JMK	**Ichinoseki**	**1.92**	**243**	P	**Pn**	**06 39 04.6**	**-0.6**
JMK				*e*S	**Sn**	**06 39 29.7**	**+0.1**
JTM	**Tenmabayashi**	**2.04**	**299**	P	**Pn**	**06 39 06.7**	**-0.1**
JYK	**Kaneyama**	**2.54**	**250**	P	**Pn**	**06 39 14.3**	**+0.5**
ASAJ	**Asahikawa**	**4.33**	**352**	P	**Pn**	**06 39 39.8**	**+1.5**
	2.8nm,0.3s,baz=231,slow=16,SNR=9.3						
ASAJ				S	**Sn**	**06 40 29.1**	**0.0**
	3.0nm,0.3s,baz=286,slow=29,SNR=3.8						
MAT	**Matsushiro**	**5.25**	**233**	P	**Pn**	**06 39 51.9**	**+0.8**
MAT				*e*S	**Sn**	**06 40 56.1**	**+4.1**
MJAR	**Matsushiro Arr**	**5.25**	**233**	P	**Pn**	**06 39 51.3**	**+0.2**
	3.1nm,0.3s,baz=36,slow=13,SNR=6.8						
MJAR				LR	LR	06 42 29.4	
	comp=Z,82nm,19.0s,baz=45,slow=45						
USRK	**Ussuriysk Ar.**	**9.56**	**301**	P	**Pn**	**06 40 52.3**	**+2.2**
	0.7nm,0.3s,baz=98,slow=13,SNR=11						
KSRS	**Korea Array**	**12.35**	**264**	P	**Pn**	**06 41 30.6**	**+2.3**
	0.3nm,0.3s,baz=82,slow=14,SNR=5.3						
KLR	**Kul'dur**	**12.54**	**322**	P	**Pn**	**06 41 31.7**	**+0.8**
	0.1nm,0.3s,baz=127,slow=16,SNR=3.4						
SEY	**Seymchan**	**23.76**	**10**	P	**P**	**06 43 44.6**	**-0.2**
	2.8nm,0.6s,baz=208,slow=5.7,SNR=8.2						
SONM	**Songino Array**	**27.67**	**299**	P	**P**	**06 44 19.7**	**-1.0**
	2.6nm,0.8s,baz=95,slow=8.7,SNR=12						
H11N3	**WAKE ISLAND Hy**	**28.44**	**128**	T	T	07 14 34.3	
	SNR=36						
H11S1	**WAKE ISLAND Hy**	**29.25**	**130**	T	T	07 15 31.8	
	baz=322,slow=76,SNR=12						
H11S3	**WAKE ISLAND Hy**	**29.25**	**130**	T	T	07 15 24.9	
	baz=322,slow=76,SNR=8.6						
H11S2	**WAKE ISLAND Hy**	**29.26**	**130**	T	T	07 15 26.0	
	baz=322,slow=76,SNR=10						
ZALV	**Zalesovo Beam**	**41.26**	**310**	P	**P**	**06 46 17.0**	**-0.7**
	3.8nm,0.5s,baz=96,slow=6.7,SNR=6.5						
MKAR	**Makanchi Array**	**44.03**	**300**	P	**P**	**06 46 40.0**	**-0.3**
	2.3nm,0.8s,baz=83,slow=9.8,SNR=19						
KURBB	**Kurchatov Arra**	**45.58**	**306**	P	**P**	**06 46 52.2**	**-0.3**
	3.9nm,0.7s,baz=81,slow=8.3,SNR=27						
ILAR	**Eielson Array**	**46.30**	**34**	P	**P**	**06 46 58.6**	**+0.5**
	0.6nm,0.7s,baz=269,slow=6.8,SNR=6.7						
WRA	**Warramunga Arr**	**60.06**	**190**	P	**P**	**06 48 37.9**	**-2.0**
	0.8nm,0.6s,baz=7.7,slow=6.9,SNR=7.1						
YKA	**Yellowknife Ar**	**60.60**	**31**	P	**P**	**06 48 43.7**	**+0.6**
	0.1nm,0.5s,baz=298,slow=6.4,SNR=3.3						
ASAR	**Alice Springs**	**63.79**	**190**	P	**P**	**06 49 03.8**	**-1.1**
	0.4nm,0.6s,baz=1.1,slow=4.9,SNR=4.7						
FINES	**FINESS Array B**	**67.08**	**332**	P	**P**	**06 49 25.2**	**-0.5**
	1.5nm,0.7s,baz=21,slow=12,SNR=3.4						
KBZ	**Khabaz**	**70.28**	**311**	P	**P**	**06 49 45.3**	**-0.7**
	2.5nm,0.8s,baz=69,slow=3.5,SNR=5.3						
NB2	**NORSAR Subarra**	**72.21**	**338**	P	**P**	**06 49 57.6**	**+0.1**
	comp=Z,3.6nm,0.8s,baz=38,slow=6.2						
NOA	**NORSAR Array B**	**72.21**	**338**	P	**P**	**06 49 56.4**	**-1.1**
	comp=Z,2.1nm,0.8s,baz=39,slow=6.2,SNR=4.4						
TXAR	**Lajitas Array**	**87.18**	**54**	P	**P**	**06 51 20.0**	**+0.6**
	comp=Z,0.2nm,0.7s,baz=307,slow=7.5,SNR=3.0						

DJA 24 06:45:14.4±1.5, 6°.3±5°.1×10°.4E±°, h10km, M3.5/2, MLv3.5/2, Southwest of Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KASI	**Kota Agung**	**1.01**	**35**	P	Pg	06 45 32.0	-1.8
KASI				S	Sg	06 45 46.3	-0.6
LWLI	**Liwa**	**1.33**	**6**	S	Sb	06 45 56.0	-0.8
BLSI	**Bandar Lampung**	**1.65**	**54**	S	Sn	06 46 04.7	0.0
KLI	**Kotabumi**	**1.75**	**33**	S	Pb	06 46 08.5	-0.2
CGJI	**Cibinong**	**1.79**	**99**	P	Pn	06 45 45.0	-0.4
CGJI				S	Sn	06 46 08.2	0.0
MNAI	**Manna**	**2.19**	**334**	P	Pn	06 45 48.7	-2.2
CNJI	**Cibinong**	**3.34**	**107**	P	Pn	06 46 06.6	-0.1

*DDA **24** 06:46:31.2, 39°.16N×29°.09E, h7km, Md2.6*
*CSEM **24** 06:46:31.3±0.2, 39°.16N×29°.12E, h5km, MD2.6, Error ellipse: s-maj=5.8km s-min=3.8km az=153.0*

ISC 24 06:46:31.3±1.1, 39°.16N±0°.04×29°.14E±0°.03, h5km±11km, n12, σ0.54 s/22, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.28**	**104**	P	**Pg**	**06 46 36.9**	**+0.1**
GDZ				S	**Sb**	**06 46 42.8**	**-1.1**
GDZ	**Gediz**	**0.28**	**104**	*i* P	**Pg**	**06 46 36.9**	**+0.1**
GDZ				*i* S	**Sb**	**06 46 42.8**	**-1.1**
DEMI	**Demirci**	**0.35**	**251**	P	**Pg**	**06 46 38.2**	**+0.2**
DEMI				S	**Sg**	**06 46 42.4**	**-0.2**
DEMI	**Demirci**	**0.35**	**251**	*i* P	**Pg**	**06 46 38.2**	**+0.2**
DEMI				*i* S	**Sg**	**06 46 42.4**	**-0.2**
TVSB	**Tavsanli**	**0.39**	**41**	*e*PG	**Pg**	**06 46 38.3**	**-0.5**
TVSB				*e*SG	**Sg**	**06 46 44.6**	**+0.7**
TVSB	**Tavsanli**	**0.39**	**41**	*e*Pg	**Pg**	**06 46 38.3**	**-0.5**
TVSB				*e*Sg	**Sg**	**06 46 44.6**	**+0.7**
DURS	**Dursunbey**	**0.68**	**311**	P	**Pg**	**06 46 44.4**	**0.0**
DURS				S	**Sg**	**06 46 53.1**	**-0.1**
DURS	**Dursunbey**	**0.68**	**311**	*i* P	**Pg**	**06 46 44.4**	**0.0**
DURS				*i* S	**Sg**	**06 46 53.1**	**-0.1**
KULA	**Kula-Manisa**	**0.74**	**210**	*e*PG	**Pg**	**06 46 45.6**	**0.0**
KULA	**Kula-Manisa**	**0.74**	**210**	*e*Pg	**Pg**	**06 46 45.6**	**0.0**
BORA	**Eskisehir**	**1.25**	**54**	P	**Pb**	**06 46 55.6**	**+0.2**
BORA				S	**Sn**	**06 47 13.5**	**+0.7**
BORA	**Eskisehir**	**1.25**	**54**	*i* P	**Pb**	**06 46 55.6**	**+0.2**
BORA				*i* S	**Sn**	**06 47 13.5**	**+0.7**

*ISK **24** 06:51:02.6, 39°.06N×29°.10E, h5km, MD2.5*
*ISCJB **24** 06:51:03.5±0.6, 39°.08N±0°.04×29°.05E±0°.04, h5km±7km, Error ellipse: s-maj=6.8km s-min=4.4km az=151.0*
*CSEM **24** 06:51:03.6±0.2, 39°.09N×29°.05E, h8km, MD2.8, Error ellipse: s-maj=4.6km s-min=3.3km az=144.0*
*DDA **24** 06:51:03.5, 39°.07N×29°.03E, h7km, Md2.8*

ISC 24 06:51:02.9±1.0, 39°.06N±0°.03×29°.08E±0°.03, h10km±10km, n20, σ0.30 s/32, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**267**	P	**Pg**	**06 51 08.9**	**+0.2**
DEMI				S	**Sg**	**06 51 12.2**	**-0.3**
DEMI	**Demirci**	**0.28**	**267**	*i* P	**Pg**	**06 51 08.9**	**+0.2**
DEMI				*i* S	**Sg**	**06 51 12.2**	**-0.3**
GDZ	**Gediz**	**0.32**	**84**	P	**Pb**	**06 51 10.9**	**+0.2**
GDZ				S	**Sb**	**06 51 15.9**	**0.0**
GDZ	**Gediz**	**0.32**	**84**	*i* P	**Pb**	**06 51 10.9**	**+0.2**
GDZ				*i* S	**Sb**	**06 51 15.9**	**0.0**
TVSB	**Tavsanli**	**0.49**	**37**	*e*PG	**Pg**	**06 51 12.1**	**-0.4**
TVSB				*e*SG	**Sg**	**06 51 19.5**	**+0.4**
TVSB	**Tavsanli**	**0.49**	**37**	*e*Pg	**Pg**	**06 51 12.1**	**-0.4**
TVSB				*e*Sg	**Sg**	**06 51 19.5**	**+0.4**
KULA	**Kula-Manisa**	**0.63**	**211**	*e*PG	**Pb**	**06 51 16.2**	**+0.1**
KULA				*e*SG	**Sb**	**06 51 24.6**	**-0.4**
KULA	**Kula-Manisa**	**0.63**	**211**	*e*Pg	**Pb**	**06 51 16.2**	**+0.1**
KULA				*e*Sg	**Sb**	**06 51 24.6**	**-0.4**
DURS	**Dursunbey**	**0.72**	**319**	P	**Pg**	**06 51 16.4**	**-0.4**
DURS				S	**Sb**	**06 51 27.4**	**-0.1**
DURS	**Dursunbey**	**0.72**	**319**	*i* P	**Pg**	**06 51 16.4**	**-0.4**
DURS				*i* S	**Sb**	**06 51 27.4**	**-0.1**
AKHS	**Akhisar**	**1.00**	**260**	P	**Pn**	**06 51 22.8**	**-0.2**
AKHS				S	**Sb**	**06 51 36.1**	**+0.5**
AKHS	**Akhisar**	**1.00**	**260**	*i* P	**Pn**	**06 51 22.8**	**-0.2**
AKHS				*i* S	**Sb**	**06 51 36.1**	**+0.5**
BALB	**Balikesir**	**1.10**	**302**	*e*PN	**Pn**	**06 51 24.3**	**0.0**
BALB	**Balikesir**	**1.10**	**302**	*e*Pn	**Pn**	**06 51 24.3**	**0.0**
IZI	**Iznik**	**1.31**	**13**	*e*PN	**Pg**	**06 51 28.1**	**0.0**
IZI	**Iznik**	**1.31**	**13**	*e*Pn	**Pg**	**06 51 28.1**	**0.0**
KCTX	**Karacabey (Bur**	**1.33**	**335**	*e*PN	**Pg**	**06 51 28.5**	**0.0**
KCTX	**Karacabey (Bur**	**1.33**	**335**	*e*Pn	**Pg**	**06 51 28.5**	**0.0**
ARMT	**Armutlu**	**1.52**	**354**	*e*PN	**Pb**	**06 51 31.1**	**0.0**
ARMT	**Armutlu**	**1.52**	**354**	*e*Pn	**Pb**	**06 51 31.1**	**0.0**

IDC 24 06:57:36.1±1.5, 25°.06N×109°.56W, h0km, mb1 3.7/4, mb1mx3.5/39, mbtmp3.4/4, ML4.1/2, Error ellipse: s-maj=35.0km s-min=13.7km az=127.0, Gulf of California

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LPIG	**La Paz**	**1.17**	**216**	Pn	Pn	06 57 59.6	-0.1
	23nm,0.3s,baz=339,slow=7.9,SNR=33						
LPIG				Sn	Sn	06 58 18.1	+1.6
	66nm,0.3s,baz=183,slow=18,SNR=11						
TXAR	**Lajitas Array**	**6.75**	**50**	Pn	Pn	06 59 17.9	+1.2
	0.3nm,0.3s,baz=228,slow=14,SNR=21						
TXAR				Sn	Sn	07 00 34.5	+0.1
	1.9nm,0.3s,baz=226,slow=24,SNR=17						
TXAR				Lg	Lg	07 01 08.0	
	0.8nm,0.3s,baz=222,slow=30,SNR=3.5						
ANMO	**Albuquerque**	**10.21**	**15**	Pn	Pn	07 00 05.8	+1.6
	0.0nm,0.3s,baz=213,slow=12,SNR=6.3						
NVAR	**Mina Array Bea**	**15.26**	**333**	Pn	Pn	07 01 15.5	+2.5
	baz=168,slow=14,SNR=2.6						
PDAR	**Pinedale Array**	**17.66**	**360**	P	Pn	07 01 42.6	-1.2
	0.2nm,0.3s,baz=172,slow=14,SNR=7.4						

*DDA **24** 07:06:14.9, 38°.93N×29°.09E, h7km, Md2.9*
*CSEM **24** 07:06:15.8±0.1, 39°.10N×29°.08E, h2km, MD2.9, Error ellipse: s-maj=3.0km s-min=2.8km az=33.0*
*ISK **24** 07:06:16.0, 39°.09N×29°.19E, h9km, ML2.3*

ISC 24 07:06:15.1±1.0, 39°.06N±0°.05×29°.11E±0°.04, h14km±9km, n18, σ0.38 s/27, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.29**	**85**	P	**Pb**	**07 06 22.2**	**-0.1**
GDZ				S	**Sb**	**07 06 26.2**	**-0.3**
GDZ	**Gediz**	**0.29**	**85**	*i* P	**Pb**	**07 06 22.2**	**-0.1**
GDZ				*i* S	**Sb**	**07 06 26.8**	**-0.3**
DEMI	**Demirci**	**0.30**	**267**	P	**Pg**	**07 06 21.7**	**+0.3**
DEMI				S	**Sg**	**07 06 25.7**	**0.0**
DEMI	**Demirci**	**0.30**	**267**	*i* P	**Pg**	**07 06 21.7**	**+0.3**
DEMI				*i* S	**Sg**	**07 06 25.7**	**0.0**
TVSB	**Tavsanli**	**0.48**	**35**	PG	**Pg**	**07 06 24.7**	**+0.1**
TVSB				SG	**Sg**	**07 06 30.9**	**-0.1**
TVSB	**Tavsanli**	**0.48**	**35**	*i* Pg	**Pg**	**07 06 24.7**	**+0.1**
TVSB				*i* Sg	**Sg**	**07 06 30.9**	**-0.1**
DURS	**Dursunbey**	**0.73**	**318**	P	**Pg**	**07 06 28.6**	**-0.7**
DURS	**Dursunbey**	**0.73**	**318**	*i* P	**Pg**	**07 06 28.6**	**-0.7**
DURS				*i* S	**Sn**	**07 06 42.9**	**+0.8**
KHL	**Karahalli**	**0.81**	**156**	*e*PG	**Pn**	**07 06 32.1**	**-0.1**
KHL	**Karahalli**	**0.81**	**156**	*e*Pg	**Pn**	**07 06 32.1**	**-0.1**
CAVI	**Cavuskoy**	**1.27**	**26**	*e*PN	**Pg**	**07 06 40.0**	**+0.4**
CAVI	**Cavuskoy**	**1.27**	**26**	*e*Pn	**Pg**	**07 06 40.0**	**+0.4**
IZI	**Iznik**	**1.30**	**12**	*e*PN	**Pg**	**07 06 40.4**	**+0.2**
IZI	**Iznik**	**1.30**	**12**	*e*Pn	**Pg**	**07 06 40.4**	**+0.2**
KCTX	**Karacabey (Bur**	**1.33**	**335**	*e*PN	**Pg**	**07 06 41.3**	**+0.5**
KCTX	**Karacabey (Bur**	**1.33**	**335**	*e*Pn	**Pg**	**07 06 41.3**	**+0.5**
ARMT	**Armutlu**	**1.51**	**353**	*e*PN	**Pg**	**07 06 43.7**	**-0.5**
ARMT				*e*SN	**Sg**	**07 07 04.0**	**+0.2**
ARMT	**Armutlu**	**1.51**	**353**	*e*Pn	**Pg**	**07 06 43.7**	**-0.5**
ARMT				*e*Sn	**Sg**	**07 07 04.1**	**+0.2**

IDC 24 07:09:03.7±1.8, 7°.04S×123°.35E, h0km, mb3.7/1, mb1 4.1/3, mb1mx3.7/24, mbtmp3.9/3, ML3.9/2, MS4.2/1, Ms1 4.2/1, ms1mx2.7/30, Error ellipse: s-maj=206.1km s-min=28.9km az=58.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**16.68**	**141**	Pn	P	07 13 00.5	-1.0
	0.3nm,0.3s,baz=315,slow=12,SNR=10						
WRA				Sn	Sn	07 15 54.3	-11
	0.2nm,0.3s,baz=318,slow=24,SNR=4.1						
ASAR	**Alice Springs**	**19.39**	**150**	P	P	07 13 30.8	-0.6
	0.8nm,0.3s,baz=327,slow=12,SNR=40						
ASAR				S	Sn	07 16 56.7	-14
	0.1nm,0.3s,baz=333,slow=24,SNR=4.9						
RAO	**Raoul Island**	**59.37**	**120**	LR	LR	07 42 53.2	
	comp=Z,186nm,19.0s,baz=104,slow=34						
MKAR	**Makanchi Array**	**64.81**	**330**	P	P	07 19 44.4	0.0
	0.6nm,0.6s,baz=126,slow=8.2,SNR=5.3						

*ISCJB **24** 07:21:14.2±0.6, 39°.08N±0°.04×29°.03E±0°.04, h7km±7km, Error ellipse: s-maj=6.8km s-min=4.8km az=156.8*
*DDA **24** 07:21:14.2, 39°.09N×29°.02E, h7km, Md2.8*
*CSEM **24** 07:21:14.2±0.1, 39°.07N×29°.03E, h8km, MD2.8, Error ellipse: s-maj=2.1km s-min=1.7km az=134.0*
*ISK **24** 07:21:15.0, 39°.11N×29°.10E, h14km, MD2.6*

ISC 24 07:21:14.3±1.0, 39°.08N±0°.03×29°.03E±0°.03, h13km±10km, n18, σ0.31 s/30, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**262**	P	**Pg**	**07 21 19.6**	**0.0**
DEMI				S	**Sg**	**07 21 23.0**	**-0.2**
DEMI	**Demirci**	**0.24**	**262**	*i* P	**Pg**	**07 21 19.6**	**0.0**
DEMI				*i* S	**Sg**	**07 21 23.0**	**-0.2**
GDZ	**Gediz**	**0.35**	**88**	P	**Pg**	**07 21 21.5**	**0.0**
GDZ				S	**Sg**	**07 21 26.9**	**+0.5**
GDZ	**Gediz**	**0.35**	**88**	*i* P	**Pg**	**07 21 21.5**	**0.0**
GDZ				*i* S	**Sg**	**07 21 26.9**	**+0.5**
TVSB	**Tavsanli**	**0.50**	**42**	*e*PG	**Pg**	**07 21 24.2**	**0.0**
TVSB				*e*SG	**Sg**	**07 21 30.6**	**-0.4**
TVSB	**Tavsanli**	**0.50**	**42**	*e*Pg	**Pg**	**07 21 24.3**	**0.0**
TVSB				*e*Sg	**Sg**	**07 21 30.6**	**-0.4**
DURS	**Dursunbey**	**0.68**	**321**	P	**Pg**	**07 21 27.2**	**-0.3**
DURS				S	**Sg**	**07 21 36.7**	**+0.2**
DURS	**Dursunbey**	**0.68**	**321**	*i* P	**Pg**	**07 21 27.2**	**-0.3**
DURS				*i* S	**Sg**	**07 21 36.7**	**+0.2**
MANT	**Manisa**	**0.69**	**212**	P	**Pg**	**07 21 27.8**	**0.0**
MANT				S	**Sg**	**07 21 36.9**	**0.0**
MANT	**Manisa**	**0.69**	**212**	*i* P	**Pg**	**07 21 27.8**	**0.0**
MANT				*i* S	**Sg**	**07 21 36.9**	**0.0**
ORLT	**Orhaneli**	**0.97**	**354**	*e*PG	**Pn**	**07 21 33.6**	**-0.1**
ORLT	**Orhaneli**	**0.97**	**354**	*e*Pg	**Pn**	**07 21 33.6**	**-0.1**
CAVI	**Cavuskoy**	**1.29**	**29**	*e*PN	**Pb**	**07 21 38.3**	**-0.1**
CAVI	**Cavuskoy**	**1.29**	**29**	*e*Pn	**Pb**	**07 21 38.3**	**-0.1**
KCTX	**Karacabey (Bur**	**1.30**	**337**	*e*PN	**Pb**	**07 21 38.8**	**+0.3**
KCTX				*e*SN	**Sg**	**07 21 56.9**	**+0.8**
KCTX	**Karacabey (Bur**	**1.30**	**337**	*e*Pn	**Pb**	**07 21 38.8**	**+0.3**
KCTX				*e*Sn	**Sg**	**07 21 56.9**	**+0.8**
IZI	**Iznik**	**1.31**	**15**	*e*PN	**Pb**	**07 21 38.8**	**0.0**
IZI	**Iznik**	**1.31**	**15**	*e*Pn	**Pb**	**07 21 38.8**	**0.0**

*NIED **24** 07:36:00, 38°.50N×142°.40E, h32km, Mw3.4 Best double couple: M0 1.19000×10^14 NP1:φs 262.00000°, δ53.00000°, λ-10.00000°.

DMPH *i* S Sn 07 47 02.4 +3.0
MATI Mati 1.00 53 *e*P Pn 07 46 50.8 +1.2
MATI *e*S Sn 07 47 05.6 +1.3
BUKP Musuan 1.57 346 *e*P Pn 07 46 57.9 +1.1

IDC ***24*** *08:00:26.6±1.2, 34°.18N×138°.79E, h0km, mb3.5/3, mb1 3.7/5, mb1mx3.4/51, mbtmp3.6/5, ML4.0/2, Error ellipse: s-maj=40.6km s-min=15.9km az=63.0*
ISCJB ***24*** *08:00:28.7±0.6, 34°.58N±0°.04×140°.12E±0°.06, h71km±5km, mb3.5/3, Error ellipse: s-maj=9.3km s-min=6.4km az=148.2*
JMA ***24*** *08:00:29.8±0.2, 34°.64N×140°.15E, h65km±3km, M3.4*
ISC 24 08:00:29.9±1.0, 34°.57N±0°.05×140°.10E±0°.06, h65km±9km, n23, σ0§94/23, mb3.6/3, 3C-4D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO3	**Boso 3**	**0.41**	**55**	⇑P	**Pn**	**08 00 41.0**	**0.0**
BSO3				X		08 00 49.7	
BSO4	**Boso 4**	**0.46**	**25**	⇑P	**Pn**	**08 00 41.5**	**-0.2**
BSO4				X		08 00 50.4	
TATJ	**Tateyama 2**	**0.49**	**339**	⇓P	**Pn**	**08 00 42.4**	**+0.3**
TATJ				*i* S	**Sn**	**08 00 51.6**	**+0.5**
JIM2	**Oshima 3**	**0.57**	**285**	⇓P	**Pn**	**08 00 43.2**	**+0.2**
JIM2				S	**Sn**	**08 00 52.6**	**-0.1**
KTR	**Katsuura**	**0.60**	**17**	S	**Sn**	**08 00 51.8**	**-1.3**
BSO1	**Boso 1**	**0.72**	**83**	⇑P	**Pn**	**08 00 44.1**	**0.0**
KTJJ	**Kamata 2**	**0.93**	**293**	⇓P	**Pn**	**08 00 47.0**	**-0.2**
JIZS	**Izushimoda**	**1.02**	**279**	S	**Sn**	**08 01 02.9**	**+0.8**
JOD2	**Odawara 2**	**1.08**	**310**	P	**Pn**	**08 00 48.6**	**-0.6**
JOD2				S	**Sn**	**08 01 02.0**	**-1.6**
JHJ	**Hachijo jima 2**	**1.47**	**191**	Pn	**Pn**	**08 00 52.7**	**-1.6**
	24nm,0.3s,baz=204,slow=10,SNR=2.0						
JHJ				Sn	**Sn**	**08 01 12.7**	**+0.1**
	55nm,0.3s,baz=270,slow=20,SNR=4.9						
JYN	**Shimob**	**1.58**	**306**	⇓P	**Pn**	**08 00 56.0**	**+0.2**
MJAR	**Matsushiro Arr**	**2.50**	**322**	Pn	**Pn**	**08 01 08.0**	**-0.2**
	25nm,0.3s,baz=152,slow=12,SNR=229						
MJAR				Sn	**Sn**	**08 01 37.2**	**-0.5**
	11nm,0.3s,baz=166,slow=21,SNR=7.1						
MAT	**Matsushiro**	**2.50**	**322**	P	**Pn**	**08 01 08.8**	**+0.6**
MAT				S	**Sn**	**08 01 37.2**	**-0.5**
JCJ	**Chichijima**	**7.66**	**166**	Pn	**Pn**	**08 02 18.9**	**+0.1**
	3.9nm,0.3s,baz=276,slow=12,SNR=7.2						
H11N2	**WAKE ISLAND Hy**	**27.94**	**115**	T	T	08 36 01.3	
	baz=308,slow=75,SNR=35						
H11N1	**WAKE ISLAND Hy**	**27.94**	**115**	T	T	08 35 59.6	
	baz=308,slow=75,SNR=26						
H11N3	**WAKE ISLAND Hy**	**27.96**	**115**	T	T	08 36 01.9	
	baz=308,slow=75,SNR=27						
H11S3	**WAKE ISLAND Hy**	**28.55**	**117**	T	T	08 36 47.6	
	baz=310,slow=76,SNR=11						
H11S1	**WAKE ISLAND Hy**	**28.55**	**117**	T	T	08 36 47.6	
	baz=310,slow=76,SNR=8.9						
H11S2	**WAKE ISLAND Hy**	**28.56**	**117**	T	T	08 36 48.8	
	baz=310,slow=76,SNR=12						
MKAR	**Makanchi Array**	**44.57**	**304**	P	**P**	**08 08 34.0**	**-1.3**
	0.3nm,0.6s,baz=82,slow=8.7,SNR=3.9						
WRA	**Warramunga Arr**	**54.49**	**187**	P	**P**	**08 09 51.7**	**+0.8**
	0.3nm,0.4s,baz=7.0,slow=8.6,SNR=8.7						
ASAR	**Alice Springs**	**58.21**	**187**	P	**P**	**08 10 19.8**	**+2.4**
	0.4nm,0.8s,baz=19,slow=12,SNR=3.4						

NIED ***24*** *08:03:00, 37°.10N×141°.10E, h50km, Mw3.8 Best double couple: M0=6.00000×10^14 NP1:φ=191.00000°, δ=16.00000°, λ=72.00000°. NP2:φ=29.00000°, δ=75.00000°, λ=95.00000°.*
IDC ***24*** *08:03:24.1±1.3, 37°.15N×141°.38E, h0km, mb3.8/6, mb1 3.8/8, mb1mx3.6/50, mbtmp3.7/8, ML2.8/2, MS2.5/3, Ms1 2.5/3, ms1mx2.2/39, Error ellipse: s-maj=26.3km s-min=19.3km az=160.0*
JMA ***24*** *08:03:31.8±0.1, 37°.11N×141°.13E, h51km±1km, M3.9*
JMA Felt II J1.
ISC 24 08:03:26.6±2.1, 37°.08N±0°.06×141°.43E±0°.09, h17km±10km, n19, σ1§17/22, mb3.7/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.50**	**272**	P	**Pn**	**08 03 40.7**	**+1.6**
ONAJ				S	**Sn**	**08 03 46.9**	**-0.4**
JFK	**Kawauchi**	**0.53**	**303**	P	**Pn**	**08 03 41.2**	**+1.9**
JFK				S	**Sn**	**08 03 47.7**	**-0.1**
JHO	**Hitachi**	**0.83**	**236**	P	**Pn**	**08 03 44.8**	**+1.3**
JHO				S	**Sb**	**08 03 53.9**	**+0.4**
JMM	**Marumori**	**0.93**	**327**	P	**Pn**	**08 03 46.8**	**+1.9**
JMM				S	**Sn**	**08 03 57.8**	**0.0**
JFT	**Otama**	**0.97**	**297**	P	**Pn**	**08 03 47.1**	**+1.6**
JFY	**Yanaizu**	**1.41**	**284**	P	**Pb**	**08 03 52.2**	**-0.3**
JOU	**Okura**	**1.42**	**335**	P	**Pg**	**08 03 53.8**	**-0.1**
JYS	**Shiratake**	**1.57**	**317**	P	**Pb**	**08 03 55.5**	**+0.3**
MJAR	**Matsushiro Arr**	**2.64**	**259**	Pn	**Pn**	**08 04 09.2**	**+0.8**
	9.2nm,0.3s,baz=26,slow=14,SNR=17						
MJAR				Lg	Lg	08 04 46.0	
	10nm,0.3s,baz=239,slow=24,SNR=6.3						
MJAR				LR	LR	08 05 00.4	
	comp=Z,67nm,21.4s,baz=90,slow=37						
MAT	**Matsushiro**	**2.64**	**259**	P	**Pn**	**08 04 10.1**	**+1.7**
MAT				S	**Sn**	**08 04 40.9**	**+0.9**
USRK	**Ussuriysk Ar.**	**10.09**	**318**	Pn	**Pn**	**08 05 49.4**	**-1.2**
	0.1nm,0.3s,baz=121,slow=14,SNR=2.0						
KSRS	**Korea Array**	**10.77**	**276**	LR	LR	08 09 53.0	
	comp=Z,31nm,19.1s,baz=78,slow=36						
KLR	**Kul'dur**	**14.03**	**333**	LR	LR	08 11 23.4	
	comp=Z,20nm,19.3s,baz=294,slow=34						
SONM	**Songino Array**	**27.77**	**304**	P	**P**	**08 09 12.9**	**-1.6**
	0.7nm,0.5s,baz=105,slow=9.1,SNR=4.6						
ZALV	**Zalesovo Beam**	**41.89**	**312**	P	**P**	**08 11 16.0**	**+0.3**
	1.9nm,0.3s,baz=99,slow=4.5,SNR=2.5						
MKAR	**Makanchi Array**	**44.10**	**302**	P	**P**	**08 11 33.2**	**-0.5**
	0.8nm,0.7s,baz=89,slow=9.5,SNR=7.6						
KURBB	**Kurchatov Arra**	**45.98**	**308**	P	**P**	**08 11 47.5**	**-1.1**
	1.0nm,0.5s,baz=85,slow=8.2,SNR=13						
ILAR	**Eielson Array**	**49.45**	**32**	P	**P**	**08 12 15.6**	**+0.3**
	0.1nm,0.6s,baz=278,slow=6.0,SNR=4.1						
WRA	**Warramunga Arr**	**57.11**	**188**	P	**P**	**08 13 12.4**	**+0.3**
	0.4nm,0.7s,baz=4.6,slow=7.1,SNR=6.3						

BJI ***24*** *08:11:02.8, 6°.07S×102°.48E, h39km, mb4.9/41, mB5.0/25, Ms4.5/20, Ms7 4.3/20*
IDC ***24*** *08:11:06.0±0.7, 5°.07S×102°.58E, h0km, mb4.7/28, mb1 4.8/29, mb1mx4.6/48, mbtmp4.7/29, ML4.6/1, MS3.6/12, Ms1 3.6/12, ms1mx3.3/45, Error ellipse: s-maj=23.0km s-min=11.9km az=44.0*
ISCJB ***24*** *08:11:08.5±0.2, 5°.31S±0°.03×102°.44E±0°.03, h34km, mb4.8/99, MS3.8/20, Error ellipse: s-maj=5.7km s-min=3.2km az=42.7*
DJA ***24*** *08:11:09.6±1.1, 5°.5S±4°×10°2E±°, h19km±12km, M5.2/16, mb5.2/14, mB5.6/8, MLv5.1/16, Mw(mB)5.1/8*
NEIC ***24*** *08:11:11.0±0.6, 5°.27S×102°.42E, h40km±5km, mb5.0/36, Error ellipse: s-maj=7.7km s-min=4.0km az=47.0*
MOS ***24*** *08:11:10.6±0.9, 4°.97S×102°.70E, h41km, mb5.1/44, Error ellipse: s-maj=12.6km s-min=5.7km az=111.7*
KLM ***24*** *08:11:13.3, 5°.41S×102°.53E, h50km, mb4.9, MS5.5*
ISC 24 08:11:09.7±0.3, 5°.39S±0°.04×102°.39E±0°.05, h34km, n415, σ1§53/410, mb4.9/99, MS3.9/20, 21C-15D, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MNAI	**Manna**	**1.17**	**29**	P	**Pn**	**08 11 28.6**	**-1.0**
MNAI	**Manna**	**1.17**	**29**	*e*Pn	**Pn**	**08 11 28.9**	**-0.7**
MNAI				*e*Sn	**Sn**	**08 11 43.5**	**-0.8**
LWLI	**Liwa**	**1.70**	**78**	P	**Pn**	**08 11 36.6**	**-0.4**
LHSI	**Lahat**	**1.92**	**36**	P	**Pn**	**08 11 39.7**	**-0.2**
KASI	**Kota Agung**	**2.10**	**94**	P	**Pn**	**08 11 42.4**	**0.0**
MASI	**Maura Aman, Be**	**2.24**	**356**	P	**Pn**	**08 11 44.5**	**+0.1**
CGJI	**Cibinong**	**3.50**	**110**	P	**Pn**	**08 12 03.0**	**+1.3**
PPSI	**Pulau Pagai**	**3.53**	**318**	P	**Pn**	**08 12 03.7**	**+1.6**
SKJI	**Sukabumi**	**4.44**	**111**	P	**Pn**	**08 12 14.4**	**-0.3**
SDSI	**Sungai Dareh**	**4.53**	**348**	P	**Pn**	**08 12 20.4**	**+4.5**
CNJI	**Cibinong**	**5.08**	**112**	P	**Pn**	**08 12 24.1**	**+0.7**
	182nm,0.8s,4μm1.5nm						
PPI	**Padang Panjang**	**5.29**	**338**	P	**Pn**	**08 12 27.0**	**+0.7**
	122nm,0.6s,10μm1.9nm						
LEM	**Lembang**	**5.39**	**106**	Pn	Pn	08 12 35.2	+7.3
	31nm,0.3s,baz=203,slow=22,SNR=9.8						
LEM				LR	LR	08 14 53.4	
	comp=Z,551nm,20.4s,baz=188,slow=43						
LEM	**Lembang**	**5.39**	**106**	P	**Pb**	**08 12 38.7**	**-4.5**
CISI	**Cisompet, Garu**	**5.80**	**112**	P	**Pn**	**08 12 34.2**	**+0.8**
	299nm,0.6s,10μm3.3nm						
CISI	**Cisompet, Garu**	**5.80**	**112**	*e*Pn	**Pn**	**08 12 34.5**	**+1.0**
CISI				*e*Sn	**Sn**	**08 13 35.0**	**-3.9**
BKNI	**Bangkinang**	**5.84**	**347**	*e*Pn	**Pn**	**08 12 33.5**	**-0.4**
XMIS	**Christmas Isla**	**6.00**	**148**	*e*Pn	**Pn**	**08 12 33.1**	**-3.0**
XMIS				*e*Sn	**Sn**	**08 13 38.3**	**-5.4**
CMJI	**Cimerak**	**6.47**	**112**	P	**Pn**	**08 12 43.4**	**+0.8**
	188nm,0.5s,4μm1.0nm						
MNSI	**Mandailing Nat**	**6.75**	**335**	P	**Pn**	**08 12 46.0**	**-0.5**
	93nm,0.5s,4μm0.7nm						
MYKOM	**Kota Tinggi**	**7.28**	**12**	⇓P	**Pn**	**08 12 56.3**	**+2.6**
MYKOM	**Kota Tinggi**	**7.28**	**12**	*e*Pn	**Pn**	**08 12 55.1**	**+1.4**
GSI	**Gunungsitoli**	**8.21**	**324**	P	**Pn**	**08 13 06.1**	**-0.3**
	52nm,0.5s						
GSI	**Gunungsitoli**	**8.21**	**324**	*e*Pn	**Pn**	**08 13 06.2**	**-0.2**
UGM	**Wanagama**	**8.46**	**108**	P	**Pn**	**08 13 11.7**	**+1.8**
	190nm,0.7s						
UGM	**Wanagama**	**8.46**	**108**	*e*Pn	**Pn**	**08 13 11.6**	**+1.7**
FRIM	**Kepong**	**8.60**	**355**	⇑P	Pn	08 13 17.8	+5.9
COCO	**West Island**	**8.71**	**219**	*i* P	**Pn**	**08 13 16.6**	**+3.3**
COCO	**West Island**	**8.71**	**219**	*e*Pn	**Pn**	**08 13 15.1**	**+1.8**
PSI	**Prapat**	**8.84**	**337**	*e*P	**Pn**	**08 13 12.8**	**-2.5**
PSI	**Prapat**	**8.84**	**337**	*e*Pn	**Pn**	**08 13 12.8**	**-2.5**
PCJI	**Pacitan**	**9.16**	**108**	P	**Pn**	**08 13 20.4**	**+0.9**
	115nm,0.9s,3μm						
PWJI	**Pagerwojo**	**9.71**	**106**	P	Pn	08 13 34.0	+7.0
IPM	**Ipoh**	**9.90**	**352**	⇑P	Pn	08 13 38.6	+9.0
KTGM	**Kuala Trenggan**	**10.67**	**4**	⇓P	**Pn**	**08 13 43.9**	**+3.6**
KULM	**Kulim**	**10.75**	**351**	⇑P	Pn	08 13 49.9	+8.6
MLSI	**Meulaboh, Aceh**	**11.30**	**328**	P	**Pn**	**08 13 48.4**	**-0.5**
JAGI	**Jajag, Banyuwa**	**12.07**	**105**	P	**Pn**	**08 13 59.0**	**-0.4**
	71nm,1.0s,2μm						
JAGI	**Jajag, Banyuwa**	**12.07**	**105**	*e*Pn	**Pn**	**08 13 59.5**	**+0.1**
SBUM	**Sibu**	**12.53**	**52**	⇓P	**Pn**	**08 14 09.4**	**+3.7**
SRBI	**Singaraja**	**13.01**	**103**	P	**Pn**	**08 14 12.4**	**+0.2**
	84nm,0.6s						
KAPI	**Kappang**	**17.29**	**90**	P	**Pn**	**08 15 07.8**	**-0.8**
	2.2nm,0.3s,baz=295,slow=4.4,SNR=7.3						
KAPI				LR	LR	08 22 21.3	
	comp=Z,160nm,19.3s,baz=278,slow=40						
KAPI	**Kappang**	**17.29**	**90**	*e*P	**P**	**08 15 11.0**	**+1.2**
	10nm,0.8s						
CHBT	**CHBT**	**18.02**	**360**	P	**Pn**	**08 15 16.9**	**-0.7**
	103nm,0.9s,2μm						
PATY	**Pattaya**	**18.26**	**355**	P	**Pn**	**08 15 20.9**	**+0.4**
	16nm,0.7s,5μm						
PHET	**Kaeng Krachan**	**18.39**	**351**	P	**Pn**	**08 15 23.6**	**+1.5**
	5.4nm,0.7s						
SDKM	**Sandakan**	**18.40**	**54**	⇑P	**Pn**	**08 15 22.9**	**+0.6**
KDM	**Kudat**	**18.90**	**50**	⇓P	**P**	**08 15 25.8**	**-1.7**
MYLDM	**Lahad Datu**	**19.21**	**57**	*e*P	**Pn**	**08 15 32.6**	**+0.5**
	33nm,0.8s						
SRAK	**Sarakaew**	**19.28**	**359**	P	**P**	**08 15 31.1**	**-0.5**
	273nm,0.5s,3μm						
MMRI	**Maumere**	**19.96**	**100**	*e*P	**P**	**08 15 39.2**	**+0.1**
	248nm,1.8s						
LUWI	**Luwuk**	**20.80**	**79**	*e*P	**P**	**08 15 49.1**	**+0.9**
	77nm,0.8s						
CHAI	**Chaiyaphum**	**21.16**	**359**	P	**P**	**08 15 51.2**	**-0.9**
	16nm,0.7s,172nm						
KHON	**Khomkaen**	**21.59**	**1**	P	**P**	**08 15 58.1**	**+1.4**
	13nm,0.6s						
PBKT	**Sadao Pong**	**21.86**	**356**	P	**P**	**08 15 58.7**	**-0.9**
	31nm,1.0s,2μm						
SOEI	**Soe**	**22.11**	**103**	*e*P	**P**	**08 16 01.9**	**-0.6**
	174nm,1.6s						
SKNT	**Sakolnakorn**	**22.28**	**4**	P	**P**	**08 16 08.7**	**+4.6**
	15nm,1.0s						
PANO	**Nakornpanom**	**22.50**	**6**	P	**P**	**08 16 06.3**	**-0.2**
	42nm,0.8s						
UTTA	**Uttaradit**	**23.06**	**356**	P	**P**	**08 16 11.4**	**-0.9**
	11nm,0.8s,107nm						
NONG	**Nongkai**	**23.32**	**2**	P	**P**	**08 16 13.5**	**-1.4**
	20nm,0.7s						
MHMT	**Maesarieng**	**23.83**	**349**	P	**P**	**08 16 19.3**	**-0.5**
	11nm,0.8s						
CM01	**Chiang Mai Arr**	**23.90**	**352**	*e*P	**P**	**08 16 19.9**	**-0.5**
LAMP	**Lampang**	**23.92**	**354**	P	**P**	**08 16 22.2**	**+1.6**
	7.1nm,0.8s						
CM31	**Chiang Mai Arr**	**23.94**	**352**	*e*P	**P**	**08 16 20.0**	**-0.8**
CMAR	**Chiang Mai Arr**	**23.94**	**352**	P	**P**	**08 16 19.4**	**-1.5**
	10nm,0.4s,baz=182,slow=8.8,SNR=45						
CMAR				LR	LR	08 26 20.9	
	comp=Z,114nm,19.9s,baz=183,slow=39						
CMAR	**Chiang Mai Arr**	**23.94**	**352**	*ce*P	**P**	**08 16 19.3**	**-1.5**
CMAR				pmax	pmax		
	comp=Z,15nm,0.4s						
CHTO	**Chiang Mai**	**24.29**	**352**	P	**P**	**08 16 23.2**	**-0.9**
	comp=Z,72nm,1.4s						
CHTO	**Chiang Mai**	**24.29**	**352**	*e*P	**P**	**08 16 23.1**	**-1.0**
CHTO				pmax	pmax		
	comp=Z,22nm,1.4s						
CHTO	**Chiang Mai**	**24.29**	**352**	*e*P	**P**	**08 16 23.1**	**-1.0**
	comp=Z,22nm,1.4s						
PALK	**Pallekele**	**25.03**	**300**	LR	LR	08 26 03.4	
	comp=Z,94nm,18.5s,baz=116,slow=36						
QIZ	**Qiongzhong**	**25.35**	**17**	P	**P**	**08 16 35.4**	**+1.7**
QIZ				S	**S**	**08 21 03.0**	**+5.0**
QIZ				pmax	pmax		
	comp=Z,18nm,1.6s						
CRAI	**Chiangrai**	**25.54**	**356**	P	**P**	**08 16 34.4**	**-1.0**
	comp=Z,154nm,0.7s						
FITZ	**Fitzroy Crossi**	**25.99**	**121**	P	**P**	**08 16 41.2**	**+1.7**
	comp=Z,2.2nm,0.5s,baz=316,slow=6.1,SNR=11						
FITZ				LR	LR	08 28 16.1	
	comp=Z,94nm,19.5s,baz=330,slow=40						
FITZ	**Fitzroy Crossi**	**25.99**	**121**	*e*P	**P**	**08 16 40.7**	**+1.2**
	comp=Z,9.8nm,0.8s						
MTN	**Manton Dam**	**29.30**	**107**	*e*P	**P**	**08 17 10.0**	**+0.7**
	comp=Z,24nm,1.1s						
H08S2	**Diego Garcia H**	**29.79**	**264**	T	T	08 48 02.2	
	baz=87,slow=76,SNR=118						
H08S3	**Diego Garcia H**	**29.80**	**264**	T	T	08 48 12.6	
	baz=87,slow=76,SNR=106						
H08S1	**Diego Carcia H**	**29.80**	**264**	T	T	08 48 09.0	
	baz=87,slow=76,SNR=105						
KMI	**Kunming**	**30.33**	**1**	P	**P**	**08 17 19.6**	**+1.1**
KMI				pP	pP	08 17 28.8	+0.5
KMI				sP	sP	08 17 34.0	+1.6
KMI				S	**S**	**08 22 19.6**	**+2.8**
KMI				pmax	pmax		
	comp=Z,19nm,0.6s						
KMI				pmax	pmax		
	comp=Z,84nm,4.7s						
KMI				LR	LR		
	comp=Z,330nm,15.5s						
KMI				LR	LR		
	comp=Z,94nm,17.4s						
KMI				LR	LR		
	comp=Z,290nm,15.7s						
H01W3	**Cape Leeuwin H**	**31.29**	**161**	T	T	08 50 13.0	
	baz=338,slow=76,SNR=21						
H01W2	**Cape Leeuwin H**	**31.31**	**161**	T	T	08 50 13.9	
	baz=338,slow=76,SNR=30						
H01W1	**Cape Leeuwin H**	**31.31**	**161**	T	T	08 50 14.0	
	baz=338,slow=76,SNR=30						
GYA	**Guiyang**	**31.93**	**7**	P	**P**	**08 17 35.3**	**+2.9**
GYA				pP	sP	08 17 45.8	-0.6
GYA				PP	**PP**	**08 18 43.3**	**-1.7**
GYA				S	**S**	**08 22 44.6**	**+3.0**
GYA				sS	sS	08 23 01.8	+4.0
GYA				SS	**SnSn**	**08 24 37.6**	**+5.6**
GYA				pmax	pmax		
	comp=Z,20nm,0.9s						
GYA				pmax	pmax		
	comp=Z,120nm,5.6s						
GYA				LR	LR		
	comp=Z,520nm,17.8s						
GYA				LR	LR		
	comp=Z,510nm,18.2s						
GYA				LR	LR		
	comp=Z,500nm,18.0s						
SHL	**Shillong**	**32.42**	**342**	*e*P	**P**	**08 17 36.0**	**-0.8**
WRA	**Warramunga Arr**	**34.27**	**118**	P	**P**	**08 17 53.7**	**+0.8**
	comp=Z,2.5nm,0.4s,baz=312,slow=9.2,SNR=48						
WRAB	**Tennant Creek**	**34.27**	**118**	*ce*P	**P**	**08 17 53.8**	**+0.9**
WRAB	**Tennant Creek**	**34.27**	**118**	*e*P	**P**	**08 17 52.3**	**-0.6**
	comp=Z,8.4nm,0.8s						
WB2	**Warramunga Arr**	**34.28**	**118**	*e*P	**P**	**08 17 54.4**	**+1.4**
	comp=Z,9.3nm,0.8s						
AS31	**Alice Springs**	**35.36**	**124**	*e*P	**P**	**08 18 04.1**	**+1.7**
	comp=Z,7.7nm,0.3s						
ASAR	**Alice Springs**	**35.36**	**124**	P	**P**	**08 18 04.0**	**+1.6**
	comp=Z,2.6nm,0.5s,baz=293,slow=7.3,SNR=80						
ASAR				S	**S**	**08 23 42.7**	**+7.8**
	comp=Z,0.5nm,0.7s,baz=296,slow=15,SNR=3.1						
ASAR				LR	LR	08 33 07.8	
	comp=Z,93nm,20.2s,baz=297,slow=37						
AS01	**Alice Springs**	**35.40**	**124**	*e*P	**P**	**08 18 03.3**	**+0.6**
CD2	**Chengdu**	**36.12**	**2**	P	**P**	**08 18 07.4**	**-1.3**
CD2				sP	sP	08 18 22.0	-0.7
CD2				PP	**PnPn**	**08 19 30.4**	**-0.2**
CD2				S	**S**	**08 23 46.6**	**+0.5**
CD2				sS	sS	08 24 04.0	+1.5
CD2				pmax	pmax		
	comp=Z,20nm,0.7s						
CD2				pmax	pmax		
	comp=Z,80nm,7.2s						
CD2				LR	LR		
	comp=Z,340nm,15.6s						
CD2				LR	LR		
	comp=Z,380nm,19.2s						
LSA	**Lhasa**	**36.52**	**343**	*e*P	**P**	**08 18 12.8**	**+0.2**
LSA				pmax	pmax		
	comp=Z,13nm,0.5s						
LSA	**Lhasa**	**36.52**	**343**	*e*P	**P**	**08 18 12.8**	**+0.2**
	comp=Z,12nm,0.5s						
PKIN	**Phulchoki**	**36.66**	**334**	*e*P	**P**	**08 18 14.7**	**+1.1**
	comp=Z,19nm,0.5s						
GUN	**Gumba**	**36.74**	**335**	*e*P	**P**	**08 18 15.3**	**+0.9**
	comp=Z,75nm,0.5s						
DMN	**Daman**	**36.81**	**334**	*e*P	**P**	**08 18 15.6**	**+0.7**
	comp=Z,7.4nm,0.3s						
KKN	**Kakani**	**36.89**	**334**	*e*P	**P**	**08 18 16.2**	**+0.7**
	comp=Z,25nm,0.4s						
GKN	**Gorkha**	**37.36**	**334**	*e*P	**P**	**08 18 20.2**	**+0.8**
	comp=Z,32nm,0.4s						
WHN	**Wuhan**	**37.52**	**17**	P	**P**	**08 18 18.4**	**-2.1**
KOLN	**Koldanda**	**37.63**	**332**	*e*P	**P**	**08 18 22.9**	**+1.1**
	comp=Z,35nm,0.5s						
PYUN	**Piuthan**	**38.20**	**332**	*e*P	**P**	**08 18 27.5**	**+1.0**
	comp=Z,28nm,0.5s						
XAN	**Xi'an**	**39.70**	**9**	P	**P**	**08 18 37.3**	**-1.5**
XAN				sP	pP	08 18 49.3	+0.5
XAN				pmax	pmax		
	comp=Z,21nm,0.5s						
XAN				pmax	pmax		
	comp=Z,65nm,4.8s						
XAN				LR	LR		
	comp=Z,150nm,15.1s						
XAN				LR	LR		
	comp=Z,210nm,18.2s						
JOW	**Kunigami**	**40.67**	**37**	*e*P	**P**	**08 18 46.0**	**-1.0**
COEN	**Coen**	**41.04**	**105**	*e*P	**P**	**08 18 50.1**	**-0.1**
	comp=Z,23nm,1.3s						
BBOO	**Buckleboo**	**41.57**	**135**	*e*P	**P**	**08 18 56.4**	**+2.0**
	comp=Z,122nm,1.9s						
PMG	**Port Moresby**	**44.55**	**98**	P	**P**	**08 19 18.8**	**+0.1**
	comp=Z,25nm,0.6s,baz=232,slow=4.0,SNR=11						
PMG	**Port Moresby**	**44.55**	**98**	*d i*P	**P**	**08 19 18.7**	**0.0**
PMG				pmax	pmax		
	comp=Z,152nm,1.0s						
PMG	**Port Moresby**	**44.55**	**98**	*e*P	**P**	**08 19 18.6**	**0.0**
	comp=Z,28nm,0.8s						
GTA	**Gaotai**	**44.64**	**357**	⇓P	**P**	**08 19 19.6**	**+0.4**
GTA				pP	pP	08 19 27.8	-1.4
GTA				sP	sP	08 19 31.8	-1.5
GTA				S	**S**	**08 25 52.8**	**-0.5**
GTA				pmax	pmax		
	comp=Z,12nm,1.1s						
GTA				pmax	pmax		
	comp=Z,91nm,5.7s						
GTA				LR	LR		
	comp=Z,170nm,18.5s						
GTA				LR	LR		
	comp=Z,100nm,16.4s						
GTA				LR	LR		
	comp=Z,260nm,18.5s						
MANU	**Manus Island**	**44.99**	**88**	*e*P	**P**	**08 19 21.8**	**-0.5**
	comp=Z,18nm,0.6s						
CTAO	**Charters Tower**	**45.04**	**113**	*e*P	**P**	**08 19 23.9**	**+1.3**
CTAO				pmax	pmax		
	comp=Z,14nm,0.8s						
CTAO	**Charters Tower**	**45.04**	**113**	*e*P	**P**	**08 19 23.9**	**+1.3**
	comp=Z,14nm,0.8s						
STKA	**Stephens Creek**	**45.14**	**131**	P	**P**	**08 19 24.8**	**+1.6**
	comp=Z,16nm,0.6s,baz=308,slow=8.1,SNR=47						
STKA				LR	LR	08 39 48.1	
	comp=Z,84nm,19.4s,baz=219,slow=38						
STKA	**Stephens Creek**	**45.14**	**131**	*e*P	**P**	**08 19 25.9**	**+2.7**
	comp=Z,3.8nm,0.6s						
THN	**Thein Dam**	**45.37**	**328**	*e*P	**P**	**08 19 21.8**	**-3.1**
HHC	**Hu-ho-hao-te**	**46.78**	**10**	*e*P	**P**	**08 19 39.8**	**+3.8**
HHC				sP	sP	08 19 54.3	+4.1
HHC				S	**S**	**08 26 26.9**	**+2.9**
HHC				pmax	pmax		
	comp=Z,31nm,1.0s						
HHC				pmax	pmax		
	comp=Z,170nm,6.2s						
HHC				LR	LR		
	comp=Z,580nm,15.6s						
HHC				LR	LR		
	comp=Z,650nm,15.6s						
HHC				LR	LR		
	comp=Z,630nm,15.8s						
JNU	**Nakatsue**	**46.87**	**33**	P	**P**	**08 19

comp=Z,10.0nm,1.1s
MJAR Matsushiro Arr 53.50 36 P P 08 20 24.9 -2.0
comp=Z,2.7nm,0.7s,baz=220,slow=7.3,SNR=8.6
MJAR Matsushiro Arr 53.50 36 P P 08 20 25.0 -2.0
TKM2 Tokmak 2 53.88 336 P P 08 20 30.1 +0.3
TKM2 pmax pmax
comp=Z,8.0nm,0.5s
TKM2 Tokmak 2 53.88 336 eP P 08 20 30.3 +0.5
comp=Z,13nm,0.6s
AAK Ala-Archa 54.10 335 P P 08 20 31.3 -0.1
comp=Z,3.4nm,0.5s,baz=144,slow=4.3,SNR=11
AAK Ala-Archa 54.10 335⇓ iP P 08 20 32.4 +1.0
AAK pmax pmax
comp=Z,7.0nm,0.6s
AAK Ala-Archa 54.10 335 eP P 08 20 32.5 +1.0
comp=Z,3.5nm,0.7s
FRU Bishkek 54.21 335 eP P 08 20 45.0 +13
EKS2 Erkin-Say 54.43 334 eP P 08 20 35.3 +1.6
EKS2 pmax pmax
comp=Z,12nm,0.8s
EKS2 Erkin-Say 54.43 334 eP P 08 20 35.3 +1.6
comp=Z,12nm,0.8s
MNAS Manas 54.85 333 P P 08 20 37.3 +0.4
MNAS pmax pmax
comp=Z,9.0nm,0.6s
MK01 Makanchi Array 54.90 343 eP P 08 20 36.8 -0.2
MK31 Makanchi Array 54.93 343 iP P 08 20 36.9 -0.3
MK31 pmax pmax
comp=Z,4.0nm,0.4s
MK31 Makanchi Array 54.93 343 eP P 08 20 37.1 0.0
MKAR Makanchi Array 54.93 343 P P 08 20 37.1 -0.1
comp=Z,12nm,0.4s,baz=151,slow=9.0,SNR=181
MAKZ Makanchi 55.03 343 eP P 08 20 35.5 -2.4
MAKZ pmax pmax
comp=Z,11nm,1.1s
MAKZ Makanchi 55.03 343 eP P 08 20 35.5 -2.4
comp=Z,11nm,1.1s
MDJ Mudanjiang 55.45 23 P P 08 20 40.6 -0.3
MDJ pP pP 08 20 49.8 -1.4
MDJ sP sP 08 20 53.6 -1.7
MDJ pmax pmax
comp=Z,8.0nm,0.9s
ZAK Zakamensk 55.55 1 eP P 08 20 40.6 -1.1
ZAK pmax pmax
comp=Z,6.0nm,0.8s
USRK Ussuriysk Ar. 56.09 25 P P 08 20 44.6 -0.9
comp=Z,10nm,0.7s,baz=219,slow=6.0,SNR=24
KKAR Karatay Array 56.24 332 eP P 08 20 46.8 +0.1
KKAR Karatay Array 56.24 332 eP P 08 20 46.8 +0.1
MOY Mondy 56.84 359 eP P 08 20 51.4 +0.5
TLY Talaya 56.86 1 P P 08 20 51.0 +0.1
comp=Z,6.5nm,0.7s,baz=227,slow=6.9,SNR=6.1
TLY Talaya 56.86 1 eP P 08 20 51.4 +0.5
TLY pmax pmax
comp=Z,15nm,1.2s
TLY MLR MLR
comp=Z,68nm,14.0s
KURK Kurchatov 59.52 343 eP P 08 21 09.4 -0.1
KURK pmax pmax
comp=Z,14nm,0.9s
KURK Kurchatov 59.52 343 eP P 08 21 09.4 -0.1
comp=Z,14nm,0.9s
OTUK Ortayu 59.56 337 P P 08 21 09.5 -0.4
OTUK pmax pmax
comp=Z,6.0nm,0.6s
GEYT Alibeck 59.56 320 P P 08 21 11.2 +1.1
comp=Z,7.4nm,0.5s,baz=155,slow=4.9,SNR=6.8
KLR Kul'dur 60.11 22 P P 08 21 12.7 -0.9
comp=Z,7.1nm,0.6s,baz=223,slow=5.7,SNR=29
ZAA0 Zalesovo Array 60.94 348 eP P 08 21 18.6 -0.5
ZALV Zalesovo Beam 60.94 348 P P 08 21 18.5 -0.6
comp=Z,23nm,0.4s,baz=165,slow=5.1,SNR=22
ASAJ Asahikawa 61.12 32 P P 08 21 20.6 0.0
comp=Z,6.1nm,0.6s,baz=245,slow=12,SNR=4.7
KRAR Krasnoyarsk 61.69 354⇓ eP P 08 21 24.3 +0.2
KRAR pmax pmax
comp=Z,15nm,0.4s
YSS Yuzh-Sakhalins 63.15 30 eP P 08 21 34.0 -0.1
YSS e 08 21 45.4
BOD Bodaibo 63.70 7⇓ iP P 08 21 36.5 -1.0
BOD pmax pmax
comp=Z,14nm,0.8s
BVA0 Borovoye Array 64.17 339 iP P 08 21 40.1 -0.7
BVA0 pmax pmax
comp=Z,8.0nm,0.6s
BRVK Borovoye 64.24 339c iP P 08 21 40.7 -0.5
BRVK pmax pmax
comp=Z,8.0nm,0.6s
BRVK Borovoye 64.24 339 eP P 08 21 41.1 -0.1
comp=Z,11nm,0.5s
ZRNK Zerenda 64.61 338 P P 08 21 43.1 -0.6
ZRNK pmax pmax
comp=Z,10.0nm,0.8s
ZRNK Zerenda 64.61 338 eP P 08 21 43.3 -0.3
comp=Z,9.0nm,0.8s
CHKZ Chkalovo 64.62 340 P P 08 21 43.4 -0.3
CHKZ pmax pmax
comp=Z,12nm,0.6s
AB31 Akbulak array 65.74 331 iP P 08 21 50.9 -0.1
AB31 pmax pmax
comp=Z,10.0nm,0.6s
ABKAR Akbulak array 65.74 331 eP P 08 21 51.2 +0.2
MAW Mawson 67.64 195 LR LR 08 45 06.9
comp=Z,103nm,21.1s,baz=61,slow=30
YAK Yakutsk 70.44 13 eP P 08 22 18.7 -1.5
YAK pmax pmax
comp=Z,21nm,0.8s
SVE Sverdlovsk 70.71 337 eP P 08 22 22.7 +0.7
ARU Arti 71.25 336c iP P 08 22 25.5 +0.2
ARU S S 08 31 42.3 +2.1
ARU SS SS 08 36 17.2 +2.3
ARU pmax pmax
comp=Z,14nm,1.0s
ARU Arti 71.25 336 eP P 08 22 25.5 +0.2
comp=Z,11nm,0.6s
ZEI Tsey 71.34 319 eP P 08 22 27.4 +0.9
ZEI pmax pmax
comp=Z,10.0nm,0.5s
NEY Neytrino 72.32 319⇑ eP P 08 22 34.9 +2.6
NEY pmax pmax
comp=Z,1.0nm,0.7s
KBZ Khabaz 72.42 319 P P 08 22 34.2 +1.7
comp=Z,6.3nm,0.8s,baz=124,slow=3.5,SNR=11
KIV Kislovodsk 72.65 319⇑ eP P 08 22 36.0 +1.9
KIV e 08 22 51.1
KIV e 08 25 19.4
KIV ePPP PPP 08 26 59.8
KIV eS SKiKP 08 32 01.8 -4.4
KIV pmax pmax
comp=Z,6.0nm,0.9s
KIV MLR MLR
comp=Z,17nm,13.0s
SOKR Solikamsk 74.10 338 eP P 08 22 41.0 -1.1
SOKR pmax pmax
comp=Z,18nm,1.2s
BKZ Black Stump Fm 74.29 129 eP P 08 22 45.2 +1.3
comp=Z,16nm,0.8s
PETK Petropavlovsk- 74.50 31 LR LR 08 57 20.7
comp=Z,13nm,18.2s,baz=191,slow=37
NRIK Noril'sk 75.27 355 P P 08 22 47.5 -1.3
comp=Z,3.4nm,0.4s,baz=163,slow=4.8,SNR=9.8
NRIK LR LR 08 58 25.7
comp=Z,43nm,20.1s,baz=132,slow=38
BOSA Boshof 76.15 242 LR LR 08 50 59.4
comp=Z,76nm,19.1s,baz=104,slow=31
ANN Anapa 76.44 318 eP P 08 22 54.0 -1.9
ANN e*PP pP 08 23 03.2 -3.4
ANN eS S 08 32 37.1 -2.0
ANN pmax pmax
comp=Z,17nm,1.1s
VRH Novokhopyorsk 76.45 326 eP P 08 22 56.2 +0.3
VRH pmax pmax
comp=Z,20nm,0.6s
BR131 Keskin Array S 77.36 313 eP P 08 23 00.6 -0.9
BRTR Keskin Array B 77.36 313 P P 08 23 02.3 +0.8
comp=Z,3.1nm,0.8s,baz=132,slow=7.1,SNR=16
SEY Seymchan 77.89 21 P P 08 23 03.0 -0.7
comp=Z,7.6nm,0.6s,baz=244,slow=5.0,SNR=23
SEY Seymchan 77.89 21⇑ iP P 08 23 03.1 -0.6
VSR Storozhevoye 77.90 325 eP P 08 23 04.3 +0.3
VSR pmax pmax
comp=Z,20nm,0.9s
BR231 Keskin MP Arra 78.03 312 eP P 08 23 03.0 -2.1
LPSR Galich'ya Gora 78.62 326 eP P 08 23 07.7 -0.2
LPSR pmax pmax
comp=Z,7.0nm,0.5s
TIXI Tiksi 78.83 8 P P 08 23 07.5 -1.2
comp=Z,6.0nm,0.4s,baz=196,slow=2.2,SNR=33
TIXI Tiksi 78.83 8c iP P 08 23 07.0 -1.7
TIXI pmax pmax
comp=Z,8.0nm,0.6s
TIXI MLR MLR
comp=Z,123nm,18.0s
TIXI Tiksi 78.83 8 eP P 08 23 07.3 -1.4
comp=Z,9.9nm,0.7s
OBN Obninsk 80.91 328⇑ eP P 08 23 21.1 +0.8
OBN e 08 23 28.1
OBN e 08 26 30.5
OBN eS PnS 08 34 19.2 +2.9
OBN pmax pmax
comp=Z,12nm,0.5s
OBN MLR MLR
comp=Z,37nm,12.0s
TIRR Tirgusor 82.44 316⇑ iP P 08 23 30.1 +1.5
TIRR Tirgusor 82.44 316 eP P 08 23 29.9 +1.3
TIRR pmax pmax
comp=Z,5.0nm,0.8s
TIRR Tirgusor 82.44 316 eP P 08 23 29.9 +1.3
comp=Z,5.0nm,0.8s
SIVA Sivas 82.97 306⇓ iP P 08 23 34.8 +3.2
SORM Soroca 83.45 320⇑ iP P 08 23 34.5 +0.8
SORM Soroca 83.45 320 ⇑P P 08 23 34.6 +0.8
AKASG Malin Array Be 83.61 322 P P 08 23 34.6 +0.1
comp=Z,2.8nm,0.6s,baz=87,slow=4.9,SNR=5.1
KIEV Kiev 83.62 322⇑ eP P 08 23 35.0 +0.4
KIEV pmax pmax
comp=Z,5.0nm,0.8s
VRI Vrincioaia 83.94 317⇓ iP P 08 23 38.9 +2.5
VRI Vrincioaia 83.94 317 ⇓P P 08 23 38.9 +2.5
TESR Tescani 84.15 318⇓ iP P 08 23 39.5 +2.0
MLR Muntele Rosu 84.39 317⇓ iP P 08 23 41.0 +2.1
MLR Muntele Rosu 84.39 317 ⇓P P 08 23 41.0 +2.1
MLR Muntele Rosu 84.39 317 eP P 08 23 40.9 +2.0
comp=Z,7.9nm,0.9s
BURAR Bucovina Array 85.36 319⇑ iP P 08 23 46.1 +2.4
BURAR Bucovina Array 85.36 319 ⇑P P 08 23 46.1 +2.4
BUR08 Bucovina Ar. S 85.38 319 eP P 08 23 46.5 +2.7
BILL Bilibino 85.50 20⇑ eP P 08 23 42.8 -1.0
BILL e 08 26 59.3
BILL pmax pmax
comp=Z,10.0nm,2.5s
FIA1 FINESS Array S 88.20 332 eP P 08 23 58.4 +1.4
comp=Z,56nm,1.7s
FINES FINESS Array B 88.20 332 P P 08 23 58.3 +1.2
comp=Z,2.6nm,0.5s,baz=98,slow=6.7,SNR=15
STHS Stebnicka Huta 88.31 320 eP P 08 24 00.3 +2.3
STHS e 08 24 16.5
STHS pmax pmax
comp=Z,6.0nm,0.7s
STHS Stebnicka Huta 88.31 320 eP P 08 24 00.2 +2.3
STHS e 08 24 16.5
KECS Kecovo 88.65 319 eP P 08 24 01.3 +1.8
KECS pmax pmax
comp=Z,2.0nm,0.8s
KECS Kecovo 88.65 319 eP P 08 24 01.3 +1.8
KECS e 08 24 26.1
VYHS Vyhne 89.73 319 eP P 08 24 07.0 +2.4
VYHS Vyhne 89.73 319 eP P 08 24 07.0 +2.4
ARA0 ARCESS Array S 90.45 340 eP P 08 24 08.1 +0.6
ARCES ARCESS Array B 90.45 340 P P 08 24 07.8 +0.3
comp=Z,3.4nm,0.8s,baz=61,slow=5.7,SNR=6.8
GERES GERESS Array B 93.15 319 P P 08 24 21.1 +0.5
comp=Z,0.4nm,0.2s,baz=145,slow=9.8,SNR=4.2
FCC Fort Churchill 125.25 10 ePKIKP PKPdf 08 30 07.1 +0.5
FCC Fort Churchill 125.25 10 ePKPdf PKPdf 08 30 07.1 +0.5
BSMT Bassoo Peak 127.10 31 ePKPdf PKPdf 08 30 11.4 +0.6
WMUT West Mountain 133.75 37 ePKPdf PKPdf 08 30 24.0 +0.3
Q32A Meitler Ranch, 141.54 27 P PKPdf 08 30 34.0 -3.8
baz=325
R33A Olander Ranch, 142.36 27 P PKPdf 08 30 35.3 -4.0
baz=326
S32A Newby Ranch, P 142.42 28 P PKPdf 08 30 35.5 -3.9
baz=324
O38A Galt 142.59 20 P PKPdf 08 30 35.5 -4.1
baz=334
T32A Huddler Ranch, 142.84 29 P PKPdf 08 30 36.7 -3.5
baz=323
S33A Kaszmaul Farm, 142.94 27 P PKPdf 08 30 36.8 -3.6
baz=325
P38A Dawn 143.01 21 P PKPdf 08 30 37.0 -3.4
baz=333
T33A Patterson Ranc 143.24 28 P PKPbc 08 30 37.7 -0.2
baz=324
R36A Gordon, Harris 143.40 24 P PKPbc 08 30 37.9 -0.4
baz=329
S35A Otter Creek Ra 143.61 25 P PKPbc 08 30 38.8 0.0
baz=328
R37A Teagarden Farm 143.68 23 P PKPbc 08 30 38.8 -0.2
baz=330
Q39A Willow Grove F 143.72 20 P PKPbc 08 30 39.1 -0.1
baz=334
U33A Lingo Farm, Me 143.83 29 P PKPbc 08 30 39.3 -0.3
baz=324
Q40A Laux Farm, Aux 144.07 19 P PKPab 08 30 39.6 -0.1
baz=335,SNR=6.9
U34A Anderson Ranch 144.09 28 P PKPab 08 30 40.0 +0.1
baz=325
U34A Anderson Ranch 144.09 28 ePKPdf PKPbc 08 30 40.4 0.0
SFIN Lafayette 144.13 12 P PKPbc 08 30 40.1 -0.3
baz=344
SFIN Lafayette 144.13 12 ePKPdf PKPbc 08 30 40.1 -0.3
R38A Fenwick Farm, 144.14 22 P PKPab 08 30 39.9 -0.1
baz=332
S37A Fort Scott 144.16 24 P PKPab 08 30 40.1 0.0
baz=330
T35A Sooner Cattle 144.16 26 P PKPab 08 30 40.2 +0.1
baz=327,SNR=6.0
V33A Lossen Ranch, 144.23 29 P PKPab 08 30 40.5 +0.1
baz=323
W32A Sentinel 144.30 31 P PKPab 08 30 40.5 -0.2
baz=321
T36A Boggs Farm, Ca 144.32 25 P PKPab 08 30 40.7 0.0
baz=325
R39A Chumby, Stover 144.35 21 P PKPab 08 30 40.6 -0.2
baz=333
N54A Moraine State 144.52 3 P PKPab 08 30 40.9 -0.5
baz=356
U35A Pawnee 144.52 27 P PKPbc 08 30 41.6 -0.1
baz=326,SNR=8.5
N59A State Game Lan 144.59 358 P PKPbc 08 30 41.8 0.0
baz=3.1
V34A Guthrie 144.59 29 P PKPbc 08 30 41.9 -0.1
baz=324,SNR=6.9
V34A Guthrie 144.59 29 ePKPdf PKPbc 08 30 42.2 +0.2
S38A Stockton 144.63 23 P PKPab 08 30 41.4 -0.5
baz=331
Q42A Golden Eagle 144.63 18 P PKPbc 08 30 41.9 0.0
baz=338
R40A Maddies Statio 144.64 20 P PKPab 08 30 41.6 -0.3
baz=334,SNR=26
T37A Cheneyville 18 144.67 24 P PKPab 08 30 41.8 -0.2
baz=329,SNR=9.9
W33A Caddo, Fort Co 144.67 30 P PKPbc 08 30 42.8 +0.5
baz=322,SNR=5.4
S39A Bolivar 144.80 22 P PKPab 08 30 41.8 -0.7
baz=332,SNR=13
X32A Elmer 144.82 32 P PKPab 08 30 42.3 -0.3
baz=320,SNR=6.0
WMOK Wichita Mounta 144.84 31 P PKPab 08 30 42.4 -0.3
baz=322,SNR=6.5
WMOK Wichita Mounta 144.84 31 ePKIKP PKPab 08 30 42.4 -0.3
WMOK Wichita Mounta 144.84 31 ePKPdf PKPab 08 30 42.4 -0.3
U36A Oologah 144.94 26 P PKPab 08 30 42.8 -0.2
baz=328,SNR=6.1
W34A Bridge Creek, 144.95 29 P PKPbc 08 30 43.2 0.0
baz=324
W34A Bridge Creek, 144.95 29 ePKPbc PKPdf 08 30 43.5 -0.4
V35A Meyer Ranch, C 144.97 28 P PKPab 08 30 43.1 -0.1
baz=325
ACSO Alum Creek Sta 144.97 7 ePKPbc PKPbc 08 30 43.1 0.0
T38A Diamond 145.00 24 P PKPab 08 30 42.7 -0.6
baz=330,SNR=18
S40A Lebanon 145.18 21 P PKPbc 08 30 43.4 -0.4
baz=334,SNR=23
CCM Cathedral Cave 145.19 19 ePKIKP PKPbc 08 30 43.4 -0.4
CCM Cathedral Cave 145.19 19 ePKPbc PKPbc 08 30 43.4 -0.4
U37A Salina 145.20 25 P PKPbc 08 30 43.6 -0.2
baz=328,SNR=6.4
O56A Blue Knob Stat 145.26 1 P PKPbc 08 30 43.9 -0.1
baz=358
TUL1 Leonard 145.32 26 P PKPbc 08 30 44.0 -0.3
baz=327,SNR=6.2
TUL1 Leonard 145.32 26 ePKPbc PKPdf 08 30 44.6 +0.1
V36A Jenks 145.36 27 P PKPbc 08 30 44.4 0.0
baz=327
T39A Clever 145.36 22 P PKPbc 08 30 44.1 -0.3
baz=332,SNR=27
BLO Bloomington 145.41 12 ePKIKP PKPdf 08 30 44.5 -0.1
BLO Bloomington 145.41 12 ePKPbc PKPdf 08 30 44.5 -0.1
X34A Smith Ranch, M 145.43 30 P PKPab 08 30 44.8 -0.1
baz=323
W35A Tecumseh 145.45 28 P PKPbc 08 30 44.7 -0.1
baz=325,SNR=5.8
OLIL Olney 145.47 15 ePKPdf PKPab 08 30 45.1 +0.2
U38A Gravette 145.47 24 P PKPbc 08 30 44.3 -0.5
baz=330,SNR=18
T40A Mansfield 145.57 21 P PKPdf 08 30 44.6 -0.3
baz=333,SNR=14
V37A Hulbert 145.63 26 P PKPdf 08 30 45.0 -0.1
baz=328,SNR=8.0
HPIG 145.73 48 ePKPdf PKPab 08 30 46.7 +0.2
TX31 Lajitas Ar. Si 145.74 43 ePKPdf PKPab 08 30 46.7 +0.4
TX31 ePKPbc PKPbc 08 30 47.1 +1.1
TXAR Lajitas Array 145.74 43 PKPbc PKPab 08 30 46.9 +0.6
comp=Z,10nm,0.5s,baz=257,slow=1.0,SNR=262
W36A Wetumka 145.77 28 P PKPbc 08 30 45.8 0.0
baz=326
HHAR Hobbs 145.79 24 ePKPdf PKPbc 08 30 45.6 -0.2
U39A Green Forest 145.89 23 P PKPdf 08 30 45.7 +0.2
baz=331,SNR=8.3
T41A Mountain View 145.94 20 P PKPbc 08 30 46.0 -0.2
baz=334,SNR=29
V38A Canehill 145.96 25 P PKPdf 08 30 45.7 +0.1
baz=329,SNR=7.1
Z33A Whitaker Ranch 145.97 33 P PKPbc 08 30 46.2 -0.2
baz=320
Y34A Reagan Ranch, 145.97 31 P PKPbc 08 30 46.4 0.0
baz=322
ABTX Abilene, Hawle 145.98 34 P PKPab 08 30 46.9 -0.1
baz=318
ABTX Abilene, Hawle 145.98 34 ePKPdf PKPab 08 30 47.3 +0.2
ABTX ePKPbc PKPbc 08 30 47.5 +1.0
S43A Fulton Ridge, 146.01 18 P PKPdf 08 30 45.7 0.0
baz=338,SNR=5.1
X35A Drake 146.01 29 P PKPdf 08 30 46.1 +0.3
baz=324,SNR=10
SDMD Soldier's Deli 146.12 359 ePKPdf PKPdf 08 30 46.1 +0.4
SIUC Southern Illin 146.13 17 ePKPdf PKPab 08 30 47.1 -0.2
W37B Quinton 146.13 27 P PKPbc 08 30 46.6 -0.3
baz=327
U40A Yellville 146.15 22 P PKPdf 08 30 46.3 +0.4
baz=332,SNR=22
X36A Centrahoma 146.17 28 P PKPbc 08 30 46.9 -0.1
baz=325
V39A Pettigrew 146.29 24 P PKPbc 08 30 47.1 -0.3
baz=330
133A Hamilton Ranch 146.40 34 P PKPbc 08 30 48.0 +0.3
baz=319
X37A Clayton 146.61 27 P PKPbc 08 30 48.1 -0.1
baz=327
PBMO Poplar Bluff 146.62 19 ePKPdf PKPbc 08 30 47.8 -0.4
Y36A Durant 146.75 29 P PKPbc 08 30 48.8 +0.1
baz=325
W39A Magazine 146.79 25 P PKPbc 08 30 48.9 +0.1
baz=330
X38A Whitesboro 146.79 26 P PKPbc 08 30 48.6 -0.2
baz=328,SNR=8.2
233A Rising Star 146.85 34 P PKPbc 08 30 49.4 +0.3
baz=319,SNR=16
134A White-Moore Ra 146.88 33 P PKPbc 08 30 49.3 +0.1
baz=321
V41A Mountainview 146.92 22 P PKPbc 08 30 48.7 -0.5
baz=333,SNR=13
PARMO Parma 146.94 18 ePKPdf PKPbc 08 30 48.4 -0.7
Y37A Hugo 147.00 28 P PKPbc 08 30 49.0 -0.4
baz=326
W40A Ferguson Farm, 147.09 24 P PKPbc 08 30 49.3 -0.3
baz=331
V42A Cord 147.18 21 P PKPbc 08 30 49.4 -0.4
baz=334,SNR=7.9
Z36A Blue Ridge 147.19 30 P PKPbc 08 30 50.0 +0.1
baz=324
PVMO Portageville 147.19 18 ePKPdf PKPdf 08 30 48.4 +0.8
X39A Fountain Ranch 147.24 26 P PKPbc 08 30 50.2 +0.1
baz=329,SNR=7.0
X201 Greenbrier Sit 147.28 23 ePKPbc PKPbc 08 30 50.4 +0.3
234A Clairette 147.29 33 P PKPbc 08 30 50.7 +0.4
baz=320,SNR=8.6
WHAR Wooly Hollow 147.31 23 ePKPbc PKPbc 08 30 49.7 -0.5
333A Richland Sprin 147.32 35 P PKPbc 08 30 50.8 +0.3
baz=318,SNR=16
CBN Corbin Frederi 147.34 360 ePKPbc PKPbc 08 30 50.9 +0.7
W41B Gary Mavity, V 147.42 23 P PKPbc 08 30 50.6 +0.1
baz=332
MIAR Mount Ida 147.44 25 P PKPbc 08 30 50.7 +0.1
baz=330,SNR=11
MIAR Mount Ida 147.44 25 ePKP2 PKPbc 08 30 51.2 +0.6
MIAR Mount Ida 147.44 25 ePKPbc PKPbc 08 30 51.2 +0.6
JCT Junction City 147.45 37 P PKPbc 08 30 51.3 +0.4
baz=316,SNR=18
JCT Junction City 147.45 37 ePKP2 PKPbc 08 30 51.5 +0.7
JCT Junction City 147.45 37 ePKPbc PKPbc 08 30 51.5 +0.7
V44A Blytheville 147.66 19 P PKPbc 08 30 51.4 +0.3
baz=337
WHTX Lake Whitney, 147.67 33 P PKPbc 08 30 51.8 +0.5
baz=321
433A Art 147.68 36 P PKPbc 08 30 51.7 +0.2
baz=317
Y39A Lockesburg 147.73 26 P PKPbc 08 30 51.8 +0.4
baz=328
334A Lometa 147.74 34 P PKPbc 08 30 51.8 +0.2
baz=319
136A Ennis 147.77 31 P PKPbc 08 30 51.8 +0.2
baz=323
X40A Basin Creek Fa 147.79 24 P PKPbc 08 30 52.2 +0.6
baz=331
Z38A Mt. Pleasant 147.90 28 P PKPbc 08 30 52.4 +0.5
baz=326
X41A Kaden, Bauxite 147.92 24 P PKPbc 08 30 52.2 +0.3
baz=331
WVT Waverly 148.00 16 ePKP2 PKPbc 08 30 52.3 +0.2
WVT Waverly 148.00 16 ePKPbc PKPbc 08 30 52.3 +0.2
Y40A Okolona 148.02 25 P PKPbc 08 30 52.4 +0.2
baz=330
V45A Humboldt 148.04 18 P PKPbc 08 30 52.4 +0.3
baz=338
434A Burnet 148.11 35 P PKPbc 08 30 52.5 -0.1
baz=318
236A Katherine and 148.15 31 P PKPbc 08 30 52.7 +0.1
baz=322
533A Kerrville 148.20 37 P PKPbc 08 30 53.2 +0.3
baz=317
WLAR White Oak Lake 148.37 25 ePKPbc PKPbc 08 30 54.2 +1.0
Y41A Eaglette Beard 148.41 24 P PKPbc 08 30 53.4 +0.2
baz=331
336A Riesel 148.46 33 P PKPbc 08 30 53.9 +0.4
baz=321,SNR=5.9
X43A Marvell 148.52 21 P PKPbc 08 30 54.1 +0.6
baz=334
237A Washetta, Mont 148.52 31 P PKPbc 08 30 54.1 +0.5
baz=324
435B Jarrell 148.52 34 P PKPbc 08 30 53.9 +0.3
baz=320
633A Saathoff Ranch 148.56 38 P PKPbc 08 30 54.4 +0.7
baz=316
534A Blanco 148.57 36 P PKPbc 08 30 54.1 +0.3
baz=317,SNR=5.2
Z40A Long Farm, Mag 148.61 26 P PKPbc 08 30 54.3 +0.5
baz=329
X44A Crenshaw 148.79 20 P PKPbc 08 30 54.7 +0.5
baz=336
832A Faith Ranch, C 148.87 40 P PKPbc 08 30 55.4 +0.8
baz=313
Z41A Richland Creek 148.87 25 P PKPbc 08 30 55.1 +0.7
baz=330
PLAL Pickwick Lake 149.00 17 ePKPbc PKPbc 08 30 54.5 -0.2
733A Divot King Ran 149.00 39 P PKPbc 08 30 55.6 +0.7
baz=315
337A Centerville 149.03 31 P PKPbc 08 30 55.9 +1.0
baz=323
Y43A Makayla and Ka 149.04 22 P PKPbc 08 30 55.9 +1.1
baz=334
535A Dale 149.09 35 P PKPbc 08 30 55.8 +0.7
baz=319
239A Gary 149.16 29 P PKPbc 08 30 55.8 +0.6
baz=326
Z42A Norrel Spur, H 149.21 24 P PKPbc 08 30 56.0 +0.8
baz=331

833A	Chaparral WMA, baz=314	149.22	40	P	PKPbc	08 30 56.5	+1.0
Y44A	Strider, Charl baz=335	149.26	21	P	PKPbc	08 30 56.1	+0.8
NATX	Nacogdoches baz=325	149.28	29	P	PKPbc	08 30 56.4	+0.8
338A	Crockett baz=324	149.29	31	P	PKPbc	08 30 56.7	+1.1
TKL	Tuckaleechee C	149.35	10	ePKP2	PKPbc	08 30 55.5	-0.1
TKL	Tuckaleechee C	149.35	10	ePKPdf	PKPbc	08 30 55.5	-0.1
TKL				ePKPbc	PKiKP	08 30 55.8	-1.0
141A	Papa Simpson, baz=329	149.39	26	P	PKPbc	08 30 56.5	+0.7
CPCT	Cooper Cave	149.41	11	ePKPbc	PKPbc	08 30 56.1	+0.3
635A	Leesville baz=318	149.45	36	P	PKPbc	08 30 57.4	+1.4
537A	Green Hill Far baz=321	149.76	34	P	PKPbc	08 30 57.9	+1.2
933A	Laredo baz=313	149.78	41	P	PKPbc	08 30 58.1	+1.2
Y46A	Houston baz=337	149.78	19	P	PKPbc	08 30 57.1	+0.4
636A	Smothers Creek baz=319	149.80	35	P	PKPbc	08 30 58.4	+1.6
735A	Kenedy baz=317	149.82	37	P	PKPbc	08 30 59.1	+2.2
736A	Circle Diamond baz=318	150.19	36	P	PKPbc	08 30 59.7	+1.9
KMSC	Kings Mountain baz=352	150.19	6	P	PKPbc	08 30 57.6	-0.1
934A	Benavides baz=314	150.27	40	P	PKPbc	08 31 00.0	+2.0
BBSR	BB Station	150.57	337	ePKPbc	PKPbc	08 30 59.7	+1.1
Z47A	Carrollton baz=338	150.66	18	P	PKPbc	08 30 59.3	+0.4
244A	Avery, Jackson baz=333	150.79	23	P	PKPbc	08 31 00.3	+1.1
146A	Union baz=336	150.86	20	P	PKPbc	08 31 00.4	+1.1
344A	Westbrook Farm baz=332	151.30	24	P	PKPbc	08 31 01.1	+0.7
035Z	Hargill baz=314	151.35	41	P	PKPbc	08 31 01.4	+0.8
GOGA	Godfrey	151.59	10	ePKIKP	PKPbc	08 31 01.5	+0.5
GOGA	Godfrey	151.59	10	ePKPbc	PKPbc	08 31 01.4	+0.5
345A	Thompson Farm, baz=333	151.70	23	P	PKPbc	08 31 02.0	+0.7
347A	Saraland baz=336	152.16	20	P	PKPbc	08 31 02.8	+0.5
348A	Jackson baz=338	152.37	19	P	PKPbc	08 31 03.5	+0.7

NIED ***24*** *08:12:00, 36°.10N×142°.00E, h20km, Mw3.8 Best double couple: M0=5.65000×10^14 NP1:φs=229.00000°, δ37.00000°, λ128.00000°. NP2:φs=5.00000°, δ62.00000°, λ65.00000°.*
ISCJB ***24*** *08:12:57.0±0.8, 35°.99N±0°.05×142°.16E±0°.08, h23km, mb3.7/3, MS2.3/1, Error ellipse: s-maj=9.0km s-min=7.6km az=0.6*
JMA ***24*** *08:12:58.5±0.4, 36°.08N×142°.05E, h76km, M3.7*
IDC ***24*** *08:13:01.9±4.0, 35°.97N×141°.93E, h37km±37km, mb3.5/3, mb1 3.8/7, mb1mx3.5/48, mbtmp3.9/7, ML3.9/2, MS2.7/5, Ms1 2.7/5, ms1mx2.5/38, Error ellipse: s-maj=36.2km s-min=20.2km az=83.0*

ISC 24 08:12:59.1±1.1, 35°.95N±0°.06×142°.11E±0°.09, h23km, n18, σ1°83/19, mb3.8/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	1.05	257	P	Pn	08 13 18.0	-0.4
CHOJ				eS	Sn	08 13 32.7	+0.4
JHO	Hitachi	1.41	298	P	Pn	08 13 20.9	-2.5
ONAJ	Iwakimizuishiy	1.56	318	P	Pn	08 13 22.9	-2.6
JFT	Otama	2.12	318	P	Pn	08 13 31.8	-1.3
JAG	Ashikaga	2.21	283	P	Pn	08 13 32.7	-1.6
JOD2	Odawara 2	2.56	255	P	Pn	08 13 39.6	+0.4
JRY	Ryogami san	2.61	272	P	Pn	08 13 38.8	-1.0
MJAR	Matsushiro Arr 7.5nm,0.3s,baz=99,slow=7.9,SNR=37	3.21	282	Pn	Pn	08 13 47.6	-0.5
MJAR				LR	LR	08 15 04.1	
	comp=Z,82nm,19.4s,baz=125,slow=40						
MAT	Matsushiro	3.21	282	P	Pn	08 13 47.9	-0.3
MAT				S	Sn	08 14 25.4	-0.4
JHJ	Hachijo jima 2 baz=66,slow=20	3.42	215	Pn	Pn	08 13 52.0	+1.1
JHJ				Sn	Sn	08 14 30.8	0.0
	58nm,0.3s,baz=53,slow=20,SNR=3.2						
JCJ	Chichijima 3.3nm,0.3s,baz=274,slow=19,SNR=6.3	8.83	180	Pn	Pn	08 15 05.6	+0.3
JCJ				Sn	Sn	08 16 38.8	-5.2
	6.8nm,0.3s,baz=294,slow=22,SNR=7.0						
JNU	Nakatsue comp=Z,80nm,19.0s,baz=290,slow=40	9.69	256	LR	LR	08 19 25.6	
USRK	Ussuriysk Ar. 0.2nm,0.3s,baz=142,slow=12,SNR=3.6	11.31	320	Pn	Pn	08 15 40.4	+1.2
USRK				LR	LR	08 20 02.5	
	comp=Z,67nm,18.1s,baz=183,slow=38						
KSRS	Korea Array comp=Z,33nm,18.4s,baz=68,slow=37	11.49	282	LR	LR	08 20 07.8	
SONM	Songino Array 1.2nm,0.6s,baz=109,slow=8.7,SNR=8.3	28.87	305	P	P	08 18 55.2	-0.8
JAY	Jayapura comp=Z,5.0nm,20.1s,slow=34	38.29	182	LR	LR	08 34 42.5	
ILAR	Eielson Array 0.3nm,0.9s,baz=286,slow=6.5,SNR=3.2	50.11	32	P	P	08 21 53.3	+1.3
WRA	Warramunga Arr 1.8nm,0.9s,baz=4.2,slow=7.2,SNR=4.6	56.07	189	P	P	08 22 37.6	+1.2

IDC ***24*** *08:13:41.9±3.7, 8°.11N×126°.70E, h73km±33km, mb4.0/10, mb1 4.2/10, mb1mx3.8/45, mbtmp4.3/10, MS3.8/2, Ms1 3.8/2, ms1mx2.7/38, Error ellipse: s-maj=37.7km s-min=15.1km az=71.0*
ISCJB ***24*** *08:13:43.1±0.6, 8°.01N±0°.03×126°.53E±0°.06, h97km±4km, mb4.2/11, Error ellipse: s-maj=9.6km s-min=5.2km az=175.2*
NEIC ***24*** *08:13:44.2±2.2, 8°.02N×126°.59E, h94km±19km, mb4.5/2, Error ellipse: s-maj=37.1km s-min=11.2km az=71.0*
NEIC Felt [I PIVS] at Lingig.
MAN ***24*** *08:13:44, 7°.96N×126°.45E, h98km, mb4.7, ML3.6, MS3.6*
MAN INTENSITY I - LINGIG SURIGAO DEL SUR.

ISC 24 08:13:43.8±0.8, 8°.01N±0°.04×126°.55E±0°.07, h89km±6km, n39, σ1°12/45, mb4.2/11, 4C-8D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BIPH	Bislig	0.26	314	↓iP	Pn	08 13 57.0	0.0
BIPH				i S	Sn	08 14 05.8	-0.9
MATI	Mati	1.09	195	eP	Pn	08 14 05.2	+0.7
MATI				eS	Sn	08 14 20.9	+0.8
DAV	Davao City (W) 299nm,0.3s,baz=58,slow=6.7,SNR=10	1.34	226	P	Pn	08 14 05.9	-1.6
DAV				S	Sn	08 14 26.5	+1.0
	278nm,0.3s,baz=301,slow=22,SNR=17						
DAV				LR	LR	08 14 57.1	
	comp=Z,106nm,21.6s,baz=39,slow=50						
DAV	Davao City (W)	1.34	226	ePn	Pn	08 14 08.7	+1.1
DAV				S	Sn	08 14 26.5	+1.0
DMPH	Davao City--Mi	1.38	228	↓eP	Pn	08 14 09.6	+1.6
DMPH				eS	Sn	08 14 27.5	+1.1
BUKP	Musuan	1.48	265	eP	Pn	08 14 09.7	+0.4
BUKP				eS	Sn	08 14 28.8	+0.2
KCP	Kidapawan	1.75	236	↓iP	Pn	08 14 12.8	-0.1
KCP				i S	Sn	08 14 33.9	-1.1
CGP	Cagayan de Oro	1.89	284	↑eP	Pn	08 14 14.3	-0.3
CGP				eS	Sn	08 14 37.1	-0.9
CTBH	Cotabato--PC H	2.41	251	↑iP	Pn	08 14 21.4	-0.1
CTBH				i S	Sn	08 14 48.6	-1.7
GSPH	General Santos	2.48	220	↓iP	Pn	08 14 22.0	-0.6
GSPH				i S	Sn	08 14 50.9	-1.2
TBP	Tagbilaran	3.14	302	↓eP	Pn	08 14 32.2	+0.9
DCPH	Dipolog City	3.22	281	↓eP	Pn	08 14 33.4	+1.1
LLP	Lapu-Lapu	3.43	312	↑eP	Pn	08 14 36.6	+1.4
PLP	Palo	3.50	334	↓eP	Pn	08 14 37.0	+0.8
PLP				eS	Sn	08 15 18.3	+1.7
SNPH	Sibulan	3.54	292	↑iP	Pn	08 14 39.1	+2.4
SNPH				i S	Sn	08 15 15.3	-2.2
BESP	Borongan	3.74	343	eP	Pn	08 14 38.6	-0.7
BESP				eS	Sn	08 15 20.8	-1.5
RCP	Roxas	5.15	314	↓eP	Pn	08 15 00.6	+2.0
FITZ	Fitzroy Crossi 7.4nm,1.0s	25.96	182	P	P	08 19 08.6	+0.4

FITZ	Fitzroy Crossi 7.4nm,1.0s	25.96	182	eP	P	08 19 08.7	+0.6
WRA	Warramunga Arr 1.2nm,0.5s,baz=346,slow=9.7,SNR=3.2	28.81	165	P	P	08 19 32.3	-1.4
ASAR	Alice Springs 1.8nm,0.4s,baz=344,slow=6.9,SNR=8.7	32.29	167	P	P	08 20 04.3	-0.1
ASAR				PcP	PcP	08 22 51.5	+0.7
	1.2nm,0.7s,baz=348,slow=2.6,SNR=6.0						
H11S3	WAKE ISLAND Hy 40.35 baz=262,slow=75,SNR=16	71		T	T	09 04 40.0	
H11S1	WAKE ISLAND Hy 40.36 baz=262,slow=75,SNR=11	71		T	T	09 04 36.8	
H11S2	WAKE ISLAND Hy 40.36 baz=262,slow=75,SNR=10	71		T	T	09 04 38.3	
H11N1	WAKE ISLAND Hy 40.75 baz=264,slow=75,SNR=15	69		T	T	09 05 09.6	
H11N2	WAKE ISLAND Hy 40.76 baz=264,slow=75,SNR=13	69		T	T	09 05 11.0	
H11N3	WAKE ISLAND Hy 40.77 baz=264,slow=75,SNR=14	69		T	T	09 05 22.6	
STKA	Stephens Creek 5.3nm,0.4s,baz=346,slow=7.5,SNR=4.7	42.18	161	P	P	08 21 28.6	+0.7
MKAR	Makanchi Array 1.0nm,0.4s,baz=110,slow=8.7,SNR=5.7	53.99	324	P	P	08 22 58.4	-0.3
KURK	Kurchatov 8.7nm,0.9s	58.09	326	eP	P	08 23 28.5	+0.7
KURK				e		08 23 44.6	
KURBB	Kurchatov Arra 0.6nm,0.3s,baz=123,slow=6.8,SNR=7.3	58.09	326	P	P	08 23 26.8	-1.0
ILAR	Eielson Array 0.7nm,0.6s,baz=252,slow=4.6,SNR=12	81.35	26	P	P	08 25 49.6	-0.7
ARCES	ARCESS Array B comp=Z,53nm,18.8s,baz=89,slow=38	86.40	340	LR	LR	09 07 56.8	
VNDA	Vanda 3.5nm,0.8s,baz=314,slow=6.7,SNR=11	87.66	173	P	P	08 26 22.6	+0.7
FINES	FINESS Array B 1.1nm,0.5s,baz=96,slow=3.8,SNR=6.4	88.00	332	P	P	08 26 23.3	-0.5
NOA	NORSAR Array B comp=Z,31nm,19.0s,baz=275,slow=38	94.90	334	LR	LR	09 14 13.0	
YKA	Yellowknife Ar 0.7nm,0.7s,baz=300,slow=4.5,SNR=10	95.70	24	P	P	08 27 00.0	+0.6
TORD	Torodi Ar. Bea 1.4nm,0.7s,baz=50,slow=1.7,SNR=8.8	121.34	291	PKP	PKPdf	08 32 27.1	-0.6
PLCA	Paso Flores 3.9nm,0.9s,baz=263,slow=3.8,SNR=6.2	144.03	158	PKP	PKPdf	08 33 08.9	-0.6

NIED ***24*** *08:51:00, 39°.70N×143°.40E, h23km, Mw3.9 Best double couple: M0=7.13000×10^14 NP1:φs=185.00000°, δ25.00000°, λ62.00000°. NP2:φs=36.00000°, δ68.00000°, λ102.00000°.*
ISCJB ***24*** *08:51:06.8±0.9, 39°.65N±0°.06×143°.44E±0°.09, h11km, mb3.4/4, MS2.8/1, Error ellipse: s-maj=11.6km s-min=6.2km az=41.9*
JMA ***24*** *08:51:08.3±0.2, 39°.73N×143°.38E, h22km±4km, M3.9*
IDC ***24*** *08:51:11.6±4.8, 39°.62N×143°.37E, h37km±42km, mb3.3/4, mb1 3.5/7, mb1mx3.3/53, mbtmp3.5/7, ML2.7/3, MS2.8/4, Ms1 2.8/4, ms1mx2.5/30, Error ellipse: s-maj=38.4km s-min=21.2km az=111.0*

ISC 24 08:51:08.4±1.1, 39°.70N±0°.07×143°.33E±0°.09, h11km, n22, σ1°04/23, mb3.6/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	Tanohata	1.16	283	P	Pb	08 51 29.5	-0.9
MIYJ	Miyakonagasawa	1.18	265	P	Pb	08 51 30.0	-0.7
JANG	Nango	1.55	296	P	Pn	08 51 35.1	-0.9
JOM	Ohasama	1.59	263	P	Pn	08 51 36.7	+0.2
JOM				S	Sn	08 51 57.3	+0.2
JMK	Ichinoseki	1.80	246	P	Pn	08 51 39.3	0.0
JMK				eS	Sn	08 52 01.8	-0.3
JIO	Ouri	1.98	232	P	Pn	08 51 41.5	-0.3
JTM	Tenmabayashi	2.05	303	P	Pn	08 51 42.8	0.0
JRG	Rokugo	2.11	263	P	Pn	08 51 44.3	+0.7
JAH	Hinai	2.13	284	P	Pn	08 51 44.4	+0.5
JYK	Kaneyama	2.43	252	P	Pn	08 51 48.8	+0.7
JOU	Okura	2.47	238	P	Pn	08 51 49.4	+0.9
JNBK	Urakawa-nobuka	2.62	351	P	Pn	08 51 51.3	+0.7
ASAJ	Asahikawa 0.4nm,0.3s,baz=205,slow=12,SNR=5.3	4.45	353	Pn	Pn	08 52 16.3	+0.5
MAT	Matsushiro	5.12	234	P	Pn	08 52 26.1	+1.0
MAT				eS	Sn	08 53 26.3	+2.1
MJAR	Matsushiro Arr 0.7nm,0.3s,baz=44,slow=11,SNR=12	5.12	234	Pn	Pn	08 52 25.5	+0.4
MJAR				LR	LR	08 54 28.0	
	comp=Z,61nm,21.6s,baz=50,slow=39						
USRK	Ussuriysk Ar. 0.1nm,0.3s,baz=97,slow=14,SNR=6.3	9.57	302	Pn	Pn	08 53 29.1	+3.0
USRK				LR	LR	08 56 59.8	
	comp=Z,78nm,21.3s,baz=44,slow=36						
KSRS	Korea Array comp=Z,58nm,18.0s,baz=90,slow=36	12.27	264	LR	LR	08 58 37.4	
SEY	Seymchan 1.6nm,0.8s,baz=169,slow=10.0,SNR=3.9	23.90	10	P	P	08 56 21.9	+0.1
TLY	Talaya comp=Z,22nm,18.9s,baz=74,slow=37	29.83	307	LR	LR	09 09 46.4	
MKAR	Makanchi Array 1.6nm,0.9s,baz=82,slow=8.7,SNR=10	44.04	300	P	P	08 59 15.9	-0.1
ILAR	Eielson Array 0.2nm,0.9s,baz=256,slow=3.6,SNR=3.5	46.44	34	P	P	08 59 35.2	+0.3
WRA	Warramunga Arr 0.3nm,0.8s,baz=9.2,slow=10,SNR=3.3	59.92	190	P	P	09 01 13.1	-1.3

IDC ***24*** *08:53:40.4±0.7, 15°.39S×174°.52W, h0km, mb4.0/12, mb1 4.3/12, mb1mx4.1/44, mbtmp4.0/12, MS4.2/25, Ms1 4.2/25, ms1mx4.0/44, Error ellipse: s-maj=30.0km s-min=18.3km az=130.0*
NEIC ***24*** *08:53:42.4±0.5, 15°.39S×174°.00W, h10km, mb4.8/10, Error ellipse: s-maj=24.4km s-min=11.7km az=135.0*
GCMT ***24*** *08:53:42.4±0.2, 15°.12S×174°.23W, h16km±1km, MW5.0/92, Moment Tensor Solution. s41,c51; s92,c136; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr-0.43±.10; Mθθ0.58±.10; Mφφ-0.15±.08; Mrθ0.98±.27; Mrφ3.54±.08; Mθφ-0.01±.24; Best double couple: M0=3.69500×10^16 NP1:φs=273.00000°, δ88.00000°, λ-16.00000°. NP2: φs=3.00000°, δ74.00000°, λ-178.00000°. Principal axes: T 3.8960, Plg10.0000°, Azm319.0000°; N -0.4020, Plg74.0000°, Azm86.0000°; P -3.4930, Plg12.0000°, Azm227.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 24 08:53:41.8±0.6, 15°.45±0°.1×174°.0W±0°.1, h10km, n61, σ1°77/28, mb4.3/20, MS4.3/24, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	Afiamalu 48nm,0.3s,baz=54,slow=5.0,SNR=70	2.63	56	Pn	Pn	08 54 22.3	-2.2
AFI				LR	LR	08 55 24.1	
	comp=Z,4μm,20.7s,baz=279,slow=34						
AFI	Afiamalu	2.63	56	ePn	Pn	08 54 21.6	-2.9
MSVF	Nonsavu 81nm,1.4s	7.94	252	ePn	Pn	08 55 40.0	+2.6
RAO	Raoul Island comp=Z,920nm,18.3s,baz=328,slow=35	14.26	194	LR	LR	09 01 49.8	
DZM	Mont Dzumac 2μm,24.6s	19.64	247	eLQ	LQ	09 02 05.0	
DZM				eLR	LR	09 02 53.7	
	2μm,26.0s						
DZM	Mont Dzumac 71nm,1.6s	19.64	247	eP	P	08 58 10.3	-0.6
PAE	Paea 4.4nm,0.2s	23.55	99	eT	T	09 23 23.9	
PPT2	Papeete2 3μm,26.2s	23.55	99	eLQ	LQ	09 03 35.6	
PPT2	Papeete2 9.0nm,0.3s	23.55	99	eT	T	09 23 25.1	
TIAR	Tiarei 4.7nm,0.3s	23.77	99	eT	T	09 23 40.8	
TVO	Taravao 4.0nm,0.3s	23.87	99	eT	T	09 23 47.9	
URZ	Urewera 7.4nm,0.9s,baz=239,slow=19,SNR=3.0	24.09	197	P	P	08 58 55.1	-2.5
URZ				LR	LR	09 07 09.6	
	comp=Z,879nm,19.5s,baz=16,slow=34						
URZ	Urewera 26nm,1.2s	24.09	197	eP	P	08 58 57.1	-0.5
TBI	Tubuai 3μm,26.8s	24.47	113	eLQ	LQ	09 04 03.4	
TBI				eLR	LR	09 05 06.1	
	718nm,28.2s						
TBI	Tubuai 18nm,0.3s	24.47	113	eT	T	09 24 36.2	
VAH	Vaihoa	25.47	93	eT	T	09 25 46.0	
	15nm,0.2s						
HNR	Honiara comp=Z,978nm,21.6s,baz=124,slow=33	26.07	280	LR	LR	09 07 37.8	
TAOE	Nuku Hiva Isla 510nm,23.7s	33.73	83	eLR	LR	09 09 16.5	
RKT	Rikitea 13nm,0.4s	37.58	108	eT	T	09 40 57.5	
H11S2	WAKE ISLAND Hy 38.64 baz=149,slow=76,SNR=21	330		T	T	09 41 47.3	
H11S3	WAKE ISLAND Hy 38.65 baz=149,slow=76,SNR=35	330		T	T	09 41 52.7	
H11S1	WAKE ISLAND Hy 38.66 baz=149,slow=76,SNR=40	330		T	T	09 41 48.7	
H11N3	WAKE ISLAND Hy 39.60 baz=151,slow=76,SNR=23	331		T	T	09 42 55.1	
H11N1	WAKE ISLAND Hy 39.60 baz=151,slow=76,SNR=31	331		T	T	09 42 56.2	
H11N2	WAKE ISLAND Hy 39.61 baz=151,slow=76,SNR=22	331		T	T	09 42 56.5	
STKA	Stephens Creek comp=Z,425nm,18.4s,baz=45,slow=35	43.52	240	LR	LR	09 18 39.6	
WRA	Warramunga Arr 1.9nm,1.0s,baz=94,slow=7.0,SNR=7.1	49.25	257	P	P	09 02 27.1	-4.0
ASAR	Alice Springs 3.7nm,0.8s,baz=87,slow=8.3,SNR=31	49.53	252	P	P	09 02 29.6	-3.7
ASAR				LR	LR	09 21 39.5	
	comp=Z,309nm,20.9s,baz=92,slow=34						
JCJ	Chichijima comp=Z,296nm,21.3s,baz=154,slow=31	59.90	315	LR	LR	09 24 30.4	
SBA	Scott Base 15nm,1.6s	63.22	184	eP	P	09 04 10.5	+0.6
VNDA	Vanda 1.1nm,0.9s,baz=321,slow=2.0,SNR=4.7	63.33	186	P	P	09 04 11.8	+1.1
VNDA				LR	LR	09 26 05.4	
	comp=Z,105nm,21.5s,baz=28,slow=31						
DAV	Davao City (W) comp=Z,164nm,18.0s,baz=125,slow=35	63.84	286	LR	LR	09 30 35.7	
NWAO	Narrogin (SRO) comp=Z,314nm,19.1s,slow=36	64.09	241	LR	LR	09 31 26.3	
KAPI	Kappang comp=Z,56nm,21.3s,baz=107,slow=34	65.76	271	LR	LR	09 31 05.5	
MJAR	Matsushiro Arr comp=Z,165nm,21.9s,baz=130,slow=31	68.53	320	LR	LR	09 29 04.3	
PETK	Petropavlovsk- comp=Z,56nm,21.0s,baz=154,slow=30	72.43	343	LR	LR	09 29 43.5	
YBH	Yreka Blue Hor 2.4nm,0.8s,baz=228,slow=3.0,SNR=4.2	73.96	37	P	P	09 05 19.8	+2.3
QSPA	South Pole Qui 35nm,1.1s	74.66	180	eP	P	09 05 21.4	0.0
NVAR	Mina Array Bea 3.9nm,1.1s,baz=225,slow=9.4,SNR=6.1	74.73	42	P	P	09 05 24.2	+1.9
NVAR				LR	LR	09 31 13.5	
	comp=Z,172nm,19.9s,baz=262,slow=30						
KSRS	Korea Array 1.7nm,0.8s,baz=141,slow=6.5,SNR=4.8	75.72	316	P	P	09 05 25.8	-1.9
KSRS				LR	LR	09 35 54.2	
	comp=Z,120nm,19.0s,baz=134,slow=34						
KSAR	Wonju Array Be	75.74	316	P	P	09 05 25.8	-2.0
USRK	Ussuriysk Ar. 1.9nm,0.9s,baz=103,slow=6.1,SNR=6.5	77.00	323	P	P	09 05 34.4	-0.4
USRK				LR	LR	09 32 56.6	
	comp=Z,216nm,21.9s,baz=118,slow=31						
LEM	Lembang comp=Z,90nm,19.4s,baz=182,slow=36	77.02	266	LR	LR	09 39 45.2	
TXAR	Lajitas Array 1.0nm,1.1s,baz=212,slow=8.8,SNR=4.9	81.11	56	P	P	09 06 00.2	+2.4
TXAR				LR	LR	09 34 06.1	
	comp=Z,155nm,21.7s,baz=0.0,slow=30						
MCK	McKinley 15nm,1.2s	81.22	11	eP	P	09 05 57.5	-0.1
ANMO	Albuquerque 11nm,1.8s	81.26	50	eP	P	09 06 00.9	+2.2
DOT	Dot Lake 19nm,1.2s	82.13	13	eP	P	09 06 02.2	-0.1
COLA	College 3.7nm,0.7s	82.46	11	eP	P	09 06 04.1	+0.1
ILAR	Eielson Array 0.7nm,0.7s,baz=214,slow=6.7,SNR=3.3	82.55	11	P	P	09 06 05.1	+0.6
ILAR				LR	LR	09 34 05.7	
	comp=Z,43nm,21.6s,baz=204,slow=29						
PDAR	Pinedale Array 0.7nm,0.8s,baz=205,slow=3.1,SNR=3.6	82.66	42	P	P	09 06 07.0	+1.1
PDAR				LR	LR	09 35 54.9	
	comp=Z,144nm,21.3s,baz=248,slow=30						
SDCO	Great Sand Dun 2.3nm,1.3s	83.16	48	eP	P	09 06 11.4	+2.7
DAWY	Dawson 14nm,1.4s	83.56	15	eP	P	09 06 09.7	-0.1
MAW	Mawson comp=Z,226nm,18.1s,baz=70,slow=35	87.61	199	LR	LR	09 44 03.9	
PLCA	Paso Flores comp=Z,176nm,20.6s,baz=300,slow=30	89.98	132	LR	LR	09 38 24.3	
YKA	Yellowknife Ar 0.3nm,0.8s,baz=237,slow=4.5,SNR=5.3	90.33	24	P	P	09 06 43.0	+0.3
YKA				LR	LR	09 39 27.9	
	comp=Z,9.6nm,21.8s,baz=180,slow=30						
YKA	Yellowknife Ar	90.33	24	P	P	09 06 43.0	+0.3
CMAR	Chiang Mai Arr comp=Z,95nm,21.8s,baz=103,slow=32	92.03	288	LR	LR	09 42 46.7	
ULM	Lac du Bonnet comp=Z,176nm,20.3s,baz=342,slow=32	94.31	39	LR	LR	09 43 22.3	
SONM	Songino Array comp=Z,90nm,21.6s,baz=134,slow=32	94.42	318	LR	LR	09 44 09.8	
BRTR	Keskin Array B 2.4nm,0.9s,baz=108,slow=2.7,SNR=11	145.76	320	PKPbc	PKPdf	09 13 20.5	-0.7
GERES	GERESS Array B 0.3nm,0.2s,baz=14,slow=2.0,SNR=3.2	146.03	351	PKPbc	PKPdf	09 13 22.1	+0.8

DDA ***24*** *08:57:15.9, 39°.10N×29°.02E, h3km, Ml3.6*
ISK ***24*** *08:57:15.8, 39°.10N×29°.04E, h8km, MD3.1*
ISCJB ***24*** *08:57:16.0±0.5, 39°.11N±0°.02×29°.03E±0°.03, h3km±4km, Error ellipse: s-maj=3.9km s-min=3.3km az=167.5*
CSEM ***24*** *08:57:16.2±0.1, 39°.10N×29°.02E, h5km, ML3.6, Error ellipse: s-maj=1.8km s-min=1.7km az=100.0*

ISC 24 08:57:16.5±1.0, 39°.11N±0°.02×29°.01E±0°.02, h10km±9km, n100, σ0°53/112, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.24	254	P	Pg	08 57 21.1	-0.3
DEMI	Demirci	0.24	254	i P	Pg	08 57 21.1	-0.3
GDZ	Gediz	0.37	93	P	Pg	08 57 23.7	-0.1
GDZ				S	Sg	08 57 28.9	+0.2
GDZ	Gediz	0.37	93	i P	Pg	08 57 23.7	-0.1
GDZ				i S	Sg	08 57 28.9	+0.2
TVSB	Tavsanli	0.49	46	PG	Pg	08 57 25.6	-0.5
TVSB				SG	Sg	08 57 32.8	+0.2
TVSB	Tavsanli	0.49	46	i Pg	Pg	08 57 25.6	-0.5
TVSB				i Sg	Sg	08 57 32.8	+0.2
DURS	Dursunbey	0.64	320	P	Pg	08 57 28.8	-0.2
DURS	Dursunbey	0.64	320	i P	Pg	08 57 28.8	-0.2
KULA	Kula-Manisa	0.65	205	ePG	Pg	08 57 28.6	-0.5
KULA	Kula-Manisa	0.65	205	ePg	Pg	08 57 28.6	-0.5
KHAL	Karahalli	0.83	153	P	Pg	08 57 31.8	-0.6
KHAL	Karahalli	0.83	153	i P	Pg	08 57 31.8	-0.6
KHL	Karahalli	0.88	153	ePG	Pg	08 57 32.8	-0.6
KHL	Karahalli	0.88	153	ePg	Pg	08 57 32.8	-0.6
ORLT	Orhaneli	0.94	355	ePG	Pg	08 57 34.4	-0.2
ORLT	Orhaneli	0.94	355	ePg	Pg	08 57 34.4	-0.2
AKHS	Akhisar	0.96	257	P	Pg	08 57 34.8	-0.1
AKHS				S	Sb	08 57 48.0	+0.1
AKHS	Akhisar	0.96	257	i P	Pg	08 57 34.8	-0.1
AKHS				i S	Sb	08 57 48.0	+0.1
AKS	Akhisar	0.96	257	ePG	Pb	08 57 35.1	0.0
AKS	Akhisar	0.96	257	ePg	Pb	08 57 35.2	0

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BORA	**Eskisehir**	**1.36**	**55**	P	**Pn**	**08 57 41.7**	**+0.1**
BORA				S	**Sb**	**08 57 59.1**	**-0.4**
BORA	**Eskisehir**	**1.36**	**55**	*i* P	**Pn**	**08 57 41.7**	**+0.1**
BORA				*i* S	**Sb**	**08 57 59.1**	**-0.4**
GONE	**Gonen-Balikesi**	**1.39**	**313**	*e*PN	**Pn**	**08 57 42.3**	**+0.4**
GONE				*e*SN	**Sg**	**08 58 01.9**	**+0.8**
GONE	**Gonen-Balikesi**	**1.39**	**313**	*e*Pn	**Pn**	**08 57 42.3**	**+0.4**
GONE				*e*Sn	**Sg**	**08 58 01.9**	**+0.8**
DNZL	**Cakiroluk**	**1.42**	**179**	P	**Pn**	**08 57 42.1**	**-0.4**
DNZL	**Cakiroluk**	**1.42**	**179**	*i* P	**Pn**	**08 57 42.1**	**-0.4**
ADVT	**Abdulvahap**	**1.44**	**23**	*e*PN	**Pn**	**08 57 43.1**	**+0.5**
ADVT	**Abdulvahap**	**1.44**	**23**	*e*Pn	**Pn**	**08 57 43.1**	**+0.5**
ARMT	**Armutlu**	**1.46**	**356**	*e*PN	**Pn**	**08 57 43.4**	**+0.5**
ARMT	**Armutlu**	**1.46**	**356**	*e*Pn	**Pn**	**08 57 43.4**	**+0.5**
ESKT	**Eskisehir**	**1.49**	**73**	*i* P	**Pb**	**08 57 44.2**	**-0.1**
SEYT	**Eskypehyr**	**1.49**	**73**	P	**Pb**	**08 57 44.2**	**-0.1**
EDC	**Edincik**	**1.52**	**325**	*e*PN	**Pn**	**08 57 44.1**	**+0.3**
EDC	**Edincik**	**1.52**	**325**	*e*Pn	**Pn**	**08 57 44.1**	**+0.3**
GPA	**Golpazari**	**1.55**	**40**	*e*PN	**Pn**	**08 57 44.4**	**+0.2**
GPA	**Golpazari**	**1.55**	**40**	*e*Pn	**Pn**	**08 57 44.4**	**+0.2**
BOLV	**Bolvadin**	**1.56**	**104**	P	**Pb**	**08 57 45.3**	**-0.3**
BOLV	**Bolvadin**	**1.56**	**104**	*i* P	**Pb**	**08 57 45.3**	**-0.3**
KNL	**Bal¨–kesir**	**1.63**	**316**	*i* P	**Pn**	**08 57 44.6**	**-0.6**
AYDN	**Tasoluk**	**1.69**	**212**	P	**Pn**	**08 57 46.2**	**0.0**
AYDN	**Tasoluk**	**1.69**	**212**	*i* P	**Pn**	**08 57 46.2**	**0.0**
BUY	**Buyukada**	**1.75**	**3**	P	**Pn**	**08 57 46.5**	**-0.3**
BUY	**Buyukada**	**1.75**	**3**	*i* P	**Pn**	**08 57 46.5**	**-0.3**
GULT	**Gulveren**	**1.76**	**41**	*e*PN	**Pn**	**08 57 47.8**	**+0.7**
GULT	**Gulveren**	**1.76**	**41**	*e*Pn	**Pn**	**08 57 47.8**	**+0.7**
BAGO	**Egridir - ISPA**	**1.79**	**128**	*i* P	**Pn**	**08 57 47.3**	**-0.2**
HRT	**Hereke**	**1.79**	**16**	*e*PN	**Pn**	**08 57 48.1**	**+0.6**
HRT	**Hereke**	**1.79**	**16**	*e*Pn	**Pn**	**08 57 48.1**	**+0.6**
AYVA	**Ayvalik**	**1.81**	**277**	*i* P	**Pg**	**08 57 50.9**	**-0.3**
SPNC	**Sapanca-Adapaz**	**1.87**	**32**	*e*PN	**Pn**	**08 57 48.8**	**+0.3**
SPNC	**Sapanca-Adapaz**	**1.87**	**32**	*e*Pn	**Pn**	**08 57 48.8**	**+0.3**
GOLH	**Golhisar**	**1.92**	**167**	P	**Pn**	**08 57 49.4**	**+0.1**
GOLH	**Golhisar**	**1.92**	**167**	*i* P	**Pn**	**08 57 49.4**	**+0.1**
ISK	**Istanbul-Kandi**	**1.96**	**1**	*e*PN	**Pn**	**08 57 50.5**	**+0.7**
ISK	**Istanbul-Kandi**	**1.96**	**1**	*e*Pn	**Pn**	**08 57 50.5**	**+0.7**
DGB	**¨zmir**	**1.97**	**238**	*i* P	**Pg**	**08 57 53.4**	**-0.9**
GCAM	**G?zelcaml?**	**1.98**	**225**	*i* P	**Pb**	**08 57 53.2**	**+0.7**
SVRH	**Sivrihisar-ESK**	**1.98**	**79**	*e*PN	**Pn**	**08 57 50.3**	**+0.1**
SVRH	**Sivrihisar-ESK**	**1.98**	**79**	*e*Pn	**Pn**	**08 57 50.3**	**+0.1**
URLA	**Izmir**	**2.03**	**249**	*i* P	**Pg**	**08 57 54.7**	**-0.7**
SILT	**Sile**	**2.10**	**13**	*e*PN	**Pn**	**08 57 52.4**	**+0.7**
SILT	**Sile**	**2.10**	**13**	*e*Pn	**Pn**	**08 57 52.4**	**+0.7**
SART	**Tekirdag**	**2.12**	**319**	P	**Pb**	**08 57 54.7**	**-0.3**
SART	**Tekirdag**	**2.12**	**319**	*i* P	**Pb**	**08 57 54.7**	**-0.3**
BTAS	**Taskesti**	**2.12**	**46**	P	**Pn**	**08 57 52.2**	**+0.2**
BTAS	**Taskesti**	**2.12**	**46**	*i* P	**Pn**	**08 57 52.2**	**+0.2**
ZEY	**¨zmir**	**2.14**	**247**	*i* P	**Pg**	**08 57 56.9**	**-0.7**
MDUB	**Mudurnu**	**2.17**	**50**	*e*PN	**Pn**	**08 57 53.0**	**+0.3**
MDUB	**Mudurnu**	**2.17**	**50**	*e*Pn	**Pn**	**08 57 53.0**	**+0.3**
KAND	**Kocaeli-Kandir**	**2.18**	**24**	P	**Pn**	**08 57 52.9**	**+0.1**
KAND	**Kocaeli-Kandir**	**2.18**	**24**	*i* P	**Pn**	**08 57 52.9**	**+0.1**
SAHE	**Sakarya_HENDEK**	**2.25**	**39**	P	**Pn**	**08 57 53.4**	**-0.4**
SAHE	**Sakarya_HENDEK**	**2.25**	**39**	*i* P	**Pn**	**08 57 53.4**	**-0.4**
KORT	**Korkueli**	**2.35**	**153**	P	**Pn**	**08 57 56.0**	**+0.7**
KORT	**Korkueli**	**2.35**	**153**	*i* P	**Pn**	**08 57 56.0**	**+0.7**
BOZC	**Bozcaada**	**2.40**	**289**	*i* P	**Pn**	**08 57 54.2**	**-1.6**
KESN	**Edirne-Kesan**	**2.48**	**315**	P	**Pn**	**08 57 57.3**	**0.0**
KESN	**Edirne-Kesan**	**2.48**	**315**	*i* P	**Pn**	**08 57 57.3**	**0.0**
KDHN	**Kadinhani**	**2.50**	**103**	P	**Pn**	**08 57 58.7**	**+1.4**
KDHN	**Kadinhani**	**2.50**	**103**	*i* P	**Pn**	**08 57 58.7**	**+1.4**
BCAM	**Yenicaga**	**2.90**	**53**	*i* P	**Pg**	**08 58 11.6**	**-0.5**
AKAS	**Kas**	**2.91**	**170**	P	**Pn**	**08 58 04.6**	**+1.7**
AKAS	**Kas**	**2.91**	**170**	*i* P	**Pn**	**08 58 04.6**	**+1.7**

*SOME **24** 09:01:03.4, 41°.58N×74°.62E, h5km*
*KRNET **24** 09:01:03.2±0.1, 41°.54N×74°.64E, h18km, mb3.2*
*NNC **24** 09:01:04.0±0.7, 41°.61N×74°.61E, h0km, mb3.5, mpv3.4,*
Error ellipse: s-maj=4.2km s-min=2.8km az=162.0
ISC 24 09:01:02.9±1.2, 41°.56N±0°.04×74°.65E±0°.02, h5km±10km, n42, σ1§13/77, 31C-31D, Kyrgyzstan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
UCH	**Uchtor**	**0.68**	**351**	⇓*i*P	**Pg**	**09 01 16.8**	**+0.8**
	baz=353						
UCH				⇓*i*S	**Sb**	**09 01 26.6**	**-0.8**
	baz=353						
KZA	**Kyzart**	**0.69**	**41**	⇓*i*P	**Pg**	**09 01 16.8**	**+0.7**
	baz=40						
KZA				⇓*i*S	**Sb**	**09 01 26.7**	**-0.9**
	baz=40						
AML	**Almayashu**	**0.92**	**309**	⇑*i*P	**Pg**	**09 01 20.5**	**0.0**
	baz=310						
AML				⇑*i*S	**Sg**	**09 01 32.7**	**+0.3**
	baz=310						
NRN	**Naryn**	**1.02**	**96**	⇓*e*P	**Pg**	**09 01 22.3**	**-0.2**
	baz=96						
NRN				⇓*e*S	**Sg**	**09 01 36.3**	**+0.6**
	baz=96						
AAK	**Ala-Archa**	**1.08**	**354**	⇓*i*P	**Pb**	**09 01 24.0**	**-0.2**
	baz=355						
AAK				⇓*i*S	**Sn**	**09 01 39.0**	**-1.3**
	baz=355						
AAK	**Ala-Archa**	**1.08**	**354**	⇓P	**Pb**	**09 01 24.0**	**-0.2**
	28nm,0.4s						
AAK				⇑S	**Sb**	**09 01 38.3**	**-0.4**
	149nm,0.3s						
KBK	**Karagaybulak**	**1.12**	**11**	⇓*i*P	**Pg**	**09 01 24.7**	**+0.3**
	baz=12						
KBK				⇓*i*S	**Sn**	**09 01 40.4**	**-0.9**
	baz=12						
FRU1	**Bishkek**	**1.25**	**359**	⇓*e*P	**Pg**	**09 01 27.4**	**+0.5**
	baz=360						
FRU1				⇓*e*S	**Sn**	**09 01 44.7**	**+0.3**
	baz=360						
ARSB	**Arslanbob**	**1.27**	**260**	⇑*e*P	**Pn**	**09 01 27.1**	**-0.4**
	baz=261						
ARSB				⇑*e*S	**Sb**	**09 01 44.1**	**-0.1**
	baz=261						
EKS2	**Erkin-Say**	**1.28**	**330**	⇑*i*P	**Pn**	**09 01 27.3**	**-0.3**
	baz=331						
EKS2				⇑*i*S	**Sg**	**09 01 43.8**	**-0.3**
	baz=331						
BOOM	**Boomskoye usch**	**1.34**	**45**	⇑*e*P	**Pn**	**09 01 28.5**	**+0.1**
	baz=45						
BOOM				⇑*e*S	**Sg**	**09 01 46.6**	**+0.7**
	baz=45						
ULHL	**Ulahol**	**1.37**	**59**	⇑*i*P	**Pn**	**09 01 28.7**	**-0.2**
	baz=59						
ULHL				⇑*i*S	**Sn**	**09 01 47.3**	**-0.3**
	baz=59						
CHMS	**Chumysh**	**1.44**	**3**	⇑*i*P	**Pb**	**09 01 30.3**	**0.0**
	baz=3.0						
CHMS				⇑*i*S	**Sg**	**09 01 49.8**	**+0.5**
	baz=3.0						
TKM2	**Tokmak 2**	**1.53**	**27**	⇓*i*P	**Pb**	**09 01 31.8**	**-0.1**
	baz=27						
TKM2				⇓*i*S	**Sg**	**09 01 52.7**	**+0.5**
	baz=27						
TKM2	**Tokmak 2**	**1.53**	**27**	⇓P	**Pb**	**09 01 31.7**	**-0.1**
	8.3nm,0.3s						
TKM2				⇑S	**Sg**	**09 01 52.5**	**+0.4**
	65nm,0.4s						
MRKS	**Merke**	**1.59**	**319**	⇑*i*P	**Pb**	**09 01 32.7**	**-0.2**
	115nm,0.2s						
MRKS				⇑*i*S	**Sb**	**09 01 53.1**	**-0.1**
	148nm,0.3s						
USP	**Ospenovka**	**1.71**	**356**	⇓*i*P	**Pb**	**09 01 35.1**	**+0.2**
	baz=357						
USP				⇓*i*S	**Sg**	**09 01 57.5**	**-0.4**
	baz=357						
KST	**Kastek**	**1.78**	**33**	⇑*i*P	**Pb**	**09 01 36.4**	**+0.4**
	8.6nm,0.2s						
KST				⇓*i*S	**Sg**	**09 02 00.6**	**+0.7**
	175nm,0.8s						
MNAS	**Manas**	**1.85**	**301**	⇑P	**Pb**	**09 01 36.7**	**-0.6**
	8.4nm,0.3s						
MNAS				⇓S	**Sb**	**09 02 00.6**	**-0.2**
	9.9nm,0.2s						
DGS	**Degeres**	**1.88**	**26**	*e*P	**Pg**	**09 01 38.6**	**-0.3**
	77nm,0.4s						
DGS				*e*S	**Sg**	**09 02 04.4**	**+1.2**
	259nm,0.5s						
KDJ	**Kajisay**	**1.98**	**72**	⇑*e*P	**Pb**	**09 01 38.8**	**-0.6**
	baz=72						
KDJ				⇑*e*S	**Sb**	**09 02 03.9**	**-0.5**
	baz=72						
ARK	**Arkit**	**2.03**	**278**	⇓*e*P	**Pb**	**09 01 39.5**	**-0.8**
	baz=278						
ARK				⇓*e*S	**Sb**	**09 02 04.3**	**-1.5**
	baz=278						
MTBS	**Maitube**	**2.05**	**39**	⇓*i*P	**Pb**	**09 01 41.5**	**+0.8**
	110nm,0.2s						
MTBS				⇓*i*S	**Sg**	**09 02 09.2**	**+0.4**
	138nm,0.3s						
IZV	**Izvestkoviy**	**2.08**	**44**	*e*P	**Pg**	**09 01 42.2**	**-0.4**
	32nm,0.2s						
IZV				*e*S	**Sg**	**09 02 09.9**	**+0.3**
	88nm,0.3s						
TNSS	**Tian-Shan**	**2.26**	**48**	*e*P	**Pb**	**09 01 45.4**	**+1.0**
	43nm,0.3s						
TNSS				⇑*i*S	**Sg**	**09 02 16.1**	**+0.7**
	31nm,0.6s						
KNDC	**Almaty**	**2.39**	**45**	⇓Pg	**Pb**	**09 01 47.5**	**+1.1**
	32nm,0.4s						
KNDC				⇑Lg	Lg	09 02 20.0	
	126nm,0.5s						
MDOK	**Medeo**	**2.40**	**47**	*e*P	**Pb**	**09 01 47.5**	**+1.0**
	17nm,0.3s						
MDOK				⇓*i*S	**Sg**	**09 02 19.5**	**-0.3**
	46nm,0.6s						
KOTS	**Kotyrbulak**	**2.48**	**47**	*e*P	**Pg**	**09 01 49.5**	**-0.8**
KOTS				*e*S	**Sg**	**09 02 22.6**	**+0.1**
ANVS	**Anan'yevo**	**2.56**	**60**	⇑*e*P	**Pn**	**09 01 46.6**	**+1.5**
	baz=60						
ANVS				⇑*e*S	**Sn**	**09 02 17.6**	**+0.9**
	baz=60						
KUU	**Kurty**	**2.65**	**27**	*e*P	**Pb**	**09 01 51.5**	**+0.7**
	27nm,0.3s						
KUU				⇓*i*S	**Sg**	**09 02 26.4**	**-1.5**
	286nm,0.5s						
CHKK	**Chushkaly**	**2.89**	**36**	*e*P	**Pb**	**09 01 55.7**	**+0.8**
	5.8nm,0.5s						
CHKK				*e*S	**Sg**	**09 02 33.7**	**-2.0**
	131nm,0.2s						
PRZ	**Przheval'sk**	**2.94**	**70**	⇑*e*P	**Pn**	**09 01 52.2**	**+1.8**
	baz=70						
PRZ				⇑*e*S	**Sn**	**09 02 26.7**	**+0.5**
	baz=70						
SATY	**Saty**	**3.17**	**60**	⇑*i*P	**Pb**	**09 02 00.7**	**+1.0**
	6.4nm,0.4s						
SATY				⇓*i*S	**Sg**	**09 02 42.2**	**-2.3**
	32nm,0.3s						
KK31	**Karatay Array**	**3.44**	**298**	⇑Pg	**Pb**	**09 02 05.4**	**+1.2**
	1.0nm,0.2s,baz=118,slow=16,SNR=30						
KK31				⇓Lg	Lg	09 02 50.2	
	5.4nm,0.3s,baz=118,slow=22,SNR=14						
IUG	**Iuzhnay**	**3.50**	**281**	*e*P	**Pb**	**09 02 06.0**	**+0.7**
	15nm,0.6s						
IUG				*e*S	**Sb**	**09 02 51.4**	**+3.2**
	32nm,0.5s						
ARXS	**Arharly**	**3.54**	**40**	*e*P	**Pb**	**09 02 07.2**	**+1.3**
	7.3nm,0.5s						
ARXS				*e*S	**Sg**	**09 02 53.3**	**-3.1**
	62nm,0.5s						
KPKS	**Kokpek**	**3.54**	**56**	*e*P	**Pg**	**09 02 09.1**	**-1.6**
	19nm,0.6s						
KPKS				*e*S	**Sg**	**09 02 55.8**	**-0.7**
	44nm,1.1s						
UZB	**Uzynbulak**	**3.61**	**62**	*e*P	**Pb**	**09 02 09.4**	**+2.1**
	6.4nm,0.4s						
UZB				⇑*i*S	**Sg**	**09 02 56.0**	**-2.8**
	13nm,0.4s						
BRLS	**Borolday**	**3.89**	**290**	*e*P	**Pb**	**09 02 14.7**	**+2.7**
	1.6nm,0.2s						
BRLS				*e*S	**Sg**	**09 03 05.5**	**-2.3**
	12nm,0.5s						
PDGK	**Podgornoye**	**3.99**	**62**	⇓Pg	**Pg**	**09 02 17.5**	**-1.8**
	2.0nm,0.4s						
PDGK				⇑Lg	Lg	09 03 06.7	
	11nm,0.7s						
OTUK	**Ortayu**	**6.89**	**347**	⇓Lg	Lg	09 04 38.0	
	9.5nm,0.7s						
MK31	**Makanchi Array**	**7.58**	**44**	⇑Lg	Lg	09 04 59.6	
	1.6nm,0.8s,baz=224,slow=42,SNR=2.9						

*CSEM **24** 09:07:16.4±0.4, 40°.52N×21°.06E, h5km, ML2.2, Error*
ellipse: s-maj=8.5km s-min=6.7km az=130.0
*ATH **24** 09:07:16.4, 40°.50N×21°.05E, h15km±2km, ML2.2/2, Error*
ellipse: s-maj=2.2km s-min=1.2km az=303.0
*SKO **24** 09:07:18.1, 40°.65N×21°.03E, h19km*
THE 24 09:07:15.9, 40°.52N×20°.98E, h13km, ML2.3/5, 1D, Error ellipse: s-maj=0.8km s-min=0.3km az=97.0, Greece-Albania border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NEST	**Nestorio**	**0.12**	**152**	P	Pg	09 07 19.2	0.0
NEST				S	Sg	09 07 21.5	0.0
NEST	**Nestorio**	**0.12**	**152**	P	Pg	09 07 18.9	-0.3
NEST				S	Sg	09 07 21.4	-0.1
NEST	**Nestorio**	**0.12**	**152**	P	Pg	09 07 18.9	-0.4
NEST				S	Sg	09 07 21.4	-0.1
NEST				AML	AML	09 07 22.9	
	comp=N,3658μm,0.2s						
NEST				AML	AML	09 07 23.2	
	comp=E,2246μm,0.2s						
PENT	**Pentalofos**	**0.34**	**159**	P	Pg	09 07 22.8	-0.1
PENT				S	Sg	09 07 28.0	+0.3
PENT	**Pentalofos**	**0.34**	**159**	P	Pg	09 07 22.9	0.0
PENT				S	Sg	09 07 28.0	+0.3
PENT	**Pentalofos**	**0.34**	**159**	P	Pg	09 07 22.9	0.0
PENT				S	Sb	09 07 28.7	-0.6
FNA	**Florina**	**0.41**	**49**	P	Pg	09 07 23.9	-0.1
FNA				S	Sg	09 07 30.1	+0.6
FNA	**Florina**	**0.41**	**49**	P	Pg	09 07 23.7	-0.3
FNA				S	Sg	09 07 30.1	+0.6
FNA	**Florina**	**0.41**	**49**	P	Pg	09 07 23.7	-0.4
FNA				S	Sb	09 07 30.6	-0.5
FNA				AML	AML	09 07 32.2	
	comp=E,782μm,0.2s						
FNA				AML	AML	09 07 35.4	
	comp=N,850μm,0.2s						
BIA	**Bitola**	**0.57**	**28**	P	Pg	09 07 26.6	-0.5
BIA				S	Sb	09 07 35.3	-0.4
BIA	**Bitola**	**0.57**	**28**	*i* Pg	Pg	09 07 26.6	-0.5
BIA				*i* Sg	Sb	09 07 35.5	-0.3
OHR	**Ohrid**	**0.61**	**347**	⇓*i*Pg	Pg	09 07 27.3	-0.6
OHR				*i* Sg	Sb	09 07 37.0	+0.1
OHR				*e*Lg	Lg	09 07 37.6	
	comp=E,75nm,0.4s						
OHR				*e*Lg	Lg	09 07 39.8	
	comp=N,33nm,0.3s						
KPRO	**Kipourio**	**0.64**	**152**	P	Pg	09 07 28.0	-0.3
KPRO				S	Sb	09 07 37.5	-0.1
KPRO	**Kipourio**	**0.64**	**152**	P	Pg	09 07 27.9	-0.4
KPRO	**Kipourio**	**0.64**	**152**	P	Pg	09 07 27.9	-0.4
KZN	**Kozani**	**0.64**	**109**	P	Pg	09 07 28.3	-0.1
KZN				S	Sb	09 07 38.0	+0.1
KZN	**Kozani**	**0.64**	**109**	P	Pg	09 07 28.5	+0.1
KZN				S	Sb	09 07 38.0	+0.1
SGD	**Sagiada**	**1.07**	**212**	P	Pn	09 07 37.0	+0.5
SGD	**Sagiada**	**1.07**	**212**	P	Pn	09 07 37.0	+0.4
GRG	**Griva**	**1.17**	**67**	P	Pb	09 07 36.4	-1.6
GRG	**Griva**	**1.17**	**67**	P	Pb	09 07 36.4	-1.6
KEK	**Kerkira**	**1.21**	**229**	P	Pg	09 07 40.8	+1.6
LIT	**Litokhoron**	**1.23**	**109**	P	Pg	09 07 39.6	0.0
LIT	**Litokhoron**	**1.23**	**109**	P	Pg	09 07 39.6	0.0
THL	**Klokotos Trika**	**1.24**	**140**	P	Pn	09 07 38.1	-0.8
THL	**Klokotos Trika**	**1.24**	**140**	P	Pn	09 07 38.1	-0.8
THL				S	Sg	09 07 56.4	+0.5
LKD2	**Lefkada island**	**1.74**	**188**	P	Pb	09 07 48.4	+0.7
LKD2	**Lefkada island**	**1.74**	**188**	P	Pb	09 07 48.4	+0.7
AGG	**Agios Georgios**	**1.82**	**145**	P	Pn	09 07 46.0	-0.9
AGG	**Agios Georgios**	**1.82**	**145**	P	Pn	09 07 46.0	-1.0
PDO	**Prodromos**	**1.92**	**175**	P	Pg	09 07 52.0	-0.8
PDO	**Prodromos**	**1.92**	**175**	P	Pg	09 07 52.0	-0.8

*IDC **24** 09:07:11.7±1.1, 35°.80N×143°.36E, h0km, mb3.8/8,*
mb1 3.9/12, mb1mx3.7/53, mbtmp3.9/12, ML3.6/3, MS3.2/1,
Ms1 3.3/1, ms1mx2.3/40, Error ellipse: s-maj=24.9km
s-min=21.8km az=75.0
*NEIC **24** 09:07:12.8±0.7, 35°.86N×143°.37E, h10km, mb4.0/2, Error*
ellipse: s-maj=14.6km s-min=12.1km az=87.0
*ISCJB **24** 09:07:14.6±0.6, 35°.73N±0°.06×143°.25E±0°.06, h33km,*
mb3.8/10, MS3.2/1, Error ellipse: s-maj=8.6km
s-min=6.5km az=176.8
ISC 24 09:07:16.1±0.8, 35°.66N±0°.07×143°.29E±0°.09, h35km, n24, σ1§30/25, mb3.8/10, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHJ	**Hachijo jima 2**	**3.85**	**230**	Pn	**Pn**	**09 08 14.2**	**+1.3**
	19nm,0.3s,baz=73,slow=19,SNR=2.4						
JHJ				Sn	**Sn**	**09 08 58.9**	**+2.0**
	30nm,0.3s,baz=252,slow=20,SNR=4.4						
MJAR	**Matsushiro Arr**	**4.21**	**284**	Pn	**Pn**	**09 08 17.8**	**0.0**
	3.9nm,0.3s,baz=94,slow=14,SNR=33						
MJAR				Sn	**Sn**	**09 09 06.1**	**+0.5**
	0.8nm,0.3s,baz=140,slow=12,SNR=3.1						
MAJO	**Matsushiro**	**4.21**	**284**	*e*Pn	**Pn**	**09 08 16.6**	**-1.1**
MAJO				*e*Sn	**Sn**	**09 09 05.4**	**-0.3**
MAT	**Matsushiro**	**4.21**	**284**	P	**Pn**	**09 08 18.3**	**+0.5**
MAT				S	**Sn**	**09 09 05.0**	**-0.7**
ERM	**Erimo**	**6.35**	**359**	*e*Pn	Pn	09 08 40.9	-6.2
ERM				*e*Sn	Sn	09 09 47.4	-11
ASAJ	**Asahikawa**	**8.46**	**357**	Pn	Pn	09 09 10.3	-5.8
	1.3nm,0.3s,baz=236,slow=14,SNR=7.5						
ASAJ				Sn	Sn	09 10 39.4	-11
	0.4nm,0.3s,baz=198,slow=20,SNR=3.1						
CBIJ	**Chichi jima**	**8.59**	**187**	Pn	**Pn**	**09 09 17.4**	**-0.6**
CBIJ				Sn	**Sn**	**09 10 51.0**	**-2.6**
JCJ	**Chichijima**	**8.59**	**187**	Pn	**Pn**	**09 09 17.4**	**-0.6**
	baz=49,slow=20						
JCJ				Sn	**Sn**	**09 10 51.0**	**-2.6**
	baz=287,slow=19						
KLR	**Kul'dur**	**15.99**	**332**	Pn	**Pn**	**09 10 55.8**	**-2.4**
	0.1nm,0.3s,baz=294,slow=20,SNR=2.1						
H11N2	**WAKE ISLAND Hy**	**26.14**	**121**	T	T	09 40 11.0	
	baz=322,slow=75,SNR=9.1						
H11N3	**WAKE ISLAND Hy**	**26.16**	**121**	T	T	09 40 10.5	
	baz=312,slow=75,SNR=6.4						
YAK	**Yakutsk**	**27.75**	**346**	P	**P**	**09 13 00.2**	**-0.9**
	4.1nm,0.4s,baz=215,slow=19,SNR=3.7						
ZALV	**Zalesovo Beam**	**43.96**	**313**	P	**P**	**09 15 20.2**	**+0.7**
	0.4nm,0.3s,baz=116,slow=13,SNR=2.4						
MKAR	**Makanchi Array**	**46.13**	**304**	P	**P**	**09 15 37.5**	**+0.5**
	0.1nm,0.5s,baz=91,slow=7.7,SNR=2.9						
KURK	**Kurchatov**	**47.97**	**309**	P	**P**	**09 15 51.8**	**+0.6**
KURBB	**Kurchatov Arra**	**48.04**	**309**	P	**P**	**09 15 51.8**	**+0.1**
	1.2nm,0.6s,baz=78,slow=8.0,SNR=6.9						
ILAR	**Eielson Array**	**49.85**	**32**	LR	LR	09 43 01.5	
	comp=Z,22nm,18.0s,baz=199,slow=43						
WRA	**Warramunga Arr**	**55.94**	**190**	P	**P**	**09 16 53.1**	**+2.3**
	0.4nm,0.7s,baz=13,slow=7.0,SNR=3.1						
ARU	**Arti**	**58.39**	**319**	P	**P**	**09 17 07.9**	**+0.2**
	1.8nm,0.3s,baz=90,slow=20,SNR=3.2						
ABKAR	**Akbulak array**	**59.98**	**311**	*e*P	**P**	**09 17 19.1**	**+0.2**
	0.5nm,0.4s						
HLID	**Hailey**	**74.19**	**48**	P	**P**	**09 18 49.8**	**+0.3**
PDAR	**Pinedale Array**	**77.54**	**46**	P	**P**	**09 19 08.3**	**-0.3**
	0.3nm,0.7s,baz=227,slow=3.3,SNR=2.7						
WUAZ	**Wupatki**	**80.80**	**53**	*e*P	**P**	**09 19 26.8**	**+0.3**
	0.8nm,0.3s						
TXAR	**Lajitas Array**	**89.74**	**53**	P	**P**	**09 20 12.3**	**+1.2**
	0.2nm,0.8s,baz=296,slow=3.7,SNR=3.8						

*DDA **24** 09:09:21.8, 37°.26N×28°.22E, h7km, Md2.7, Suspected*
Mining explosion.
*ISK **24** 09:09:21.6, 37°.23N×28°.19E, h5km, ML2.3*
*ISCJB **24** 09:09:22.2±0.5, 37°.24N±0°.04×28°.21E±0°.03, h0km, Error*
ellipse: s-maj=6.0km s-min=3.8km az=170.7
*CSEM **24** 09:09:22.4±0.2, 37°.25N×28°.22E, h2km, ML2.3, Error*
ellipse: s-maj=5.9km s-min=4.5km az=11.0, Suspected
Mining explosion.
ISC 24 09:09:22.5±0.8, 37°.24N±0°.03×28°.19E±0°.02, h0km, n28, σ1§23/37, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.13**	**146**	*e*PG	**Pg**	**09 09 24.0**	**-1.0**
YER	**Yerkesik**	**0.13**	**146**	*e*Pg	**Pg**	**09 09 24.0**	**-1.0**
AYDN	**Tasoluk**	**0.49**	**329**	P	**Pg**	**09 09 31.1**	**-0.8**
AYDN	**Tasoluk**	**0.49**	**329**	*i* P	**Pg**	**09 09 31.1**	**-0.8**
DALY	**Dalyan (Mu¨la**	**0.56**	**139**	*e*PG	**Pg**	**09 09 33.1**	**-0.2**
DALY	**Dalyan (Mu¨la**	**0.56**	**139**	*e*Pg	**Pg**	**09 09 33.1**	**-0.2**
BDRM	**Kayabasi**	**0.62**	**254**	P	**Pg**	**09 09 33.8**	**-0.6**
BDRM				S	**Sb**	**09 09 44.1**	**-1.5**
BDRM	**Kayabasi**	**0.62**	**254**	*i* P	**Pg**	**09 09 33.8**	**-0.6**
BDRM				*i* S	**Sb**	**09 09 44.1**	**-1.5**
BODT	**Bodrum**	**0.73**	**256**	*e*PG

ARMT	Armutlu	1.48	355	*e*Pn	Pn	09 12 06.6	0.0

*ISCJB **24** 09:13:56.6±0.7,39°.10N±0°.05×29°.01E±0°.04,h9km, Error ellipse: s-maj=7.0km s-min=4.8km az=169.5*
*DDA **24** 09:13:56.6,39°.06N×29°.01E,h7km,Md2.6*
*CSEM **24** 09:13:56.8±0.1,39°.11N×29°.01E,h5km,MD2.6, Error ellipse: s-maj=3.6km s-min=3.3km az=144.0*
ISC 24 09:13:56.1±1.0,**39°.13N**±0°.04×**29°.04E**±0°.03,**h9**km,**n12**, σ0**°45**/20,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**252**	P	**Pg**	**09 14 02.0**	**+0.5**
DEMI				S	**Sg**	**09 14 05.0**	**-0.1**
DEMI	**Demirci**	**0.27**	**252**	*i* P	**Pg**	**09 14 01.9**	**+0.5**
DEMI				*i* S	**Sg**	**09 14 05.0**	**-0.1**
GDZ	**Gediz**	**0.35**	**96**	P	**Pb**	**09 14 04.3**	**-0.3**
GDZ				S	**Sb**	**09 14 09.7**	**-0.5**
GDZ	**Gediz**	**0.35**	**96**	*i* P	**Pb**	**09 14 04.3**	**-0.3**
GDZ				*i* S	**Sb**	**09 14 09.7**	**-0.5**
TVSB	**Tavsanli**	**0.46**	**45**	*e*PG	**Pg**	**09 14 05.8**	**+0.7**
TVSB	**Tavsanli**	**0.46**	**45**	*e*Pg	**Pg**	**09 14 05.8**	**+0.7**
DURS	**Dursunbey**	**0.65**	**317**	P	**Pb**	**09 14 09.5**	**-0.2**
DURS	**Dursunbey**	**0.65**	**317**	*i* P	**Pb**	**09 14 09.5**	**-0.2**
MANT	**Manisa**	**0.74**	**211**	P	**Pg**	**09 14 10.7**	**+0.3**
MANT				S	**Sg**	**09 14 19.6**	**-0.5**
MANT	**Manisa**	**0.74**	**211**	*i* P	**Pg**	**09 14 10.7**	**+0.3**
MANT				*i* S	**Sg**	**09 14 19.6**	**-0.5**
KHAL	**Karahalli**	**0.83**	**155**	P	**Pb**	**09 14 13.4**	**+0.5**
KHAL				S	**Sg**	**09 14 22.7**	**-0.4**
KHAL	**Karahalli**	**0.83**	**155**	*i* P	**Pb**	**09 14 13.4**	**+0.5**
KHAL				*i* S	**Sg**	**09 14 22.7**	**-0.4**

*ISK **24** 09:18:46.7,39°.10N×29°.01E,h13km,ML2.3*
*ISCJB **24** 09:18:47.3±0.6,39°.10N±0°.03×29°.04E±0°.04,h11km±5km, Error ellipse: s-maj=6.2km s-min=5.0km az=143.5*
*CSEM **24** 09:18:47.3±0.1,39°.10N×29°.03E,h12km,MD2.7, Error ellipse: s-maj=3.2km s-min=2.6km az=116.0*
*DDA **24** 09:18:47.6,39°.06N×29°.06E,h7km,Md2.7*
ISC 24 09:18:46.7±1.0,**39°.12N**±0°.03×**29°.04E**±0°.03,**h15**km±11km, **n22**,σ0**°23**/32,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**254**	P	**Pb**	**09 18 53.2**	**+0.1**
DEMI				S	**Sb**	**09 18 57.2**	**-0.2**
DEMI	**Demirci**	**0.26**	**254**	*i* P	**Pb**	**09 18 53.2**	**+0.1**
DEMI				*i* S	**Sb**	**09 18 57.2**	**-0.2**
GDZ	**Gediz**	**0.35**	**94**	P	**Pb**	**09 18 54.7**	**+0.1**
GDZ				S	**Sg**	**09 18 58.9**	**+0.1**
GDZ	**Gediz**	**0.35**	**94**	*i* P	**Pb**	**09 18 54.7**	**+0.1**
GDZ				*i* S	**Sg**	**09 18 58.9**	**+0.1**
TVSB	**Tavsanli**	**0.47**	**45**	*e*PG	**Pb**	**09 18 56.8**	**+0.1**
TVSB	**Tavsanli**	**0.47**	**45**	*e*Pg	**Pb**	**09 18 56.8**	**+0.1**
DURS	**Dursunbey**	**0.65**	**318**	P	**Pn**	**09 19 01.3**	**-0.1**
DURS	**Dursunbey**	**0.65**	**318**	*i* P	**Pn**	**09 19 01.3**	**-0.1**
KULA	**Kula-Manisa**	**0.67**	**206**	*e*PG	**Pb**	**09 19 00.4**	**+0.3**
KULA				*e*SG	**Sg**	**09 19 08.7**	**0.0**
KULA	**Kula-Manisa**	**0.67**	**206**	*e*Pg	**Pb**	**09 19 00.4**	**+0.3**
KULA				*e*Sg	**Sg**	**09 19 08.7**	**0.0**
MANT	**Manisa**	**0.73**	**211**	P	**Pb**	**09 19 01.5**	**+0.3**
MANT				S	**Sg**	**09 19 10.3**	**-0.3**
MANT	**Manisa**	**0.73**	**211**	*i* P	**Pb**	**09 19 01.5**	**+0.3**
MANT				*i* S	**Sg**	**09 19 10.3**	**-0.3**
KHAL	**Karahalli**	**0.83**	**154**	P	**Pn**	**09 19 04.0**	**+0.1**
KHAL				S	**Sg**	**09 19 13.2**	**-0.4**
KHAL	**Karahalli**	**0.83**	**154**	*i* P	**Pn**	**09 19 04.0**	**+0.1**
KHAL				*i* S	**Sg**	**09 19 13.2**	**-0.4**
AKS	**Akhisar**	**0.98**	**256**	*e*PG	**Pg**	**09 19 05.7**	**0.0**
AKS	**Akhisar**	**0.98**	**256**	*e*Pg	**Pg**	**09 19 05.7**	**0.0**
CAVI	**Cavuskoy**	**1.25**	**30**	*e*PN	**Pg**	**09 19 10.8**	**0.0**
CAVI	**Cavuskoy**	**1.25**	**30**	*e*Pn	**Pg**	**09 19 10.8**	**0.0**
KCTX	**Karacabey (Bur**	**1.26**	**336**	*e*PN	**Pb**	**09 19 10.6**	**+0.4**
KCTX	**Karacabey (Bur**	**1.26**	**336**	*e*Pn	**Pb**	**09 19 10.6**	**+0.4**
ARMT	**Armutlu**	**1.45**	**355**	*e*PN	**Pb**	**09 19 13.5**	**+0.1**
ARMT	**Armutlu**	**1.45**	**355**	*e*Pn	**Pb**	**09 19 13.5**	**+0.1**

*ISCJB **24** 09:23:58.7±0.3,18°.00S±0°.07×178°.33W±0°.07,h590km, mb4.3/50, Error ellipse: s-maj=10.6km s-min=6.5km az=143.9*
*IDC **24** 09:23:58.2±1.5,18°.06S×178°.22W,h574km±17km, mb3.8/24,mb1 3.9/25,mb1mx3.8/40,mbtmp4.7/25, Error ellipse: s-maj=12.7km s-min=10.4km az=130.0*
*NEIC **24** 09:23:59.1±0.7,18°.02S×178°.27W,h585km±8km,mb4.4/26, Error ellipse: s-maj=10.8km s-min=7.1km az=136.0*
ISC 24 09:23:59.1±0.4,**18°.01S**±0°.09×**178°.18W**±0°.07,**h590**km, **n130**,σ1**°44**/143,**mb4.4**/50,**11C-11D,Fiji Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSVF	**Nonsavu**	**3.60**	**274**	*e*P	**P**	**09 25 21.4**	**+0.2**
MSVF				*e*S	**S**	**09 26 23.4**	**-4.8**
AFI	**Afiamalu**	**7.39**	**57**	P	**P**	**09 25 51.3**	**-1.2**
	8.8nm,0.3s,baz=56,slow=2.8,SNR=17						
AFI				S	**S**	**09 27 18.0**	**-7.2**
	11nm,0.3s,baz=70,slow=18,SNR=4.5						
AFI	**Afiamalu**	**7.39**	**57**	*e*P	**P**	**09 25 51.3**	**-1.2**
	192nm,1.1s						
AFI				*e*S	**S**	**09 27 22.5**	**-2.7**
OUZ	**Omahuta**	**18.63**	**201**	*e*P	**P**	**09 27 43.1**	**+2.3**
	33nm,0.8s						
URZ	**Urewera**	**20.59**	**191**	P	**P**	**09 27 55.7**	**-2.7**
	12nm,0.5s,baz=51,slow=3.5,SNR=15						
URZ				S	S	09 30 57.3	-14
	2.4nm,0.7s,baz=323,slow=20,SNR=1.9						
KHZ	**Kahutara**	**25.33**	**194**	*e*P	**P**	**09 28 38.5**	**-2.0**
RPZ	**Rata Peaks**	**27.19**	**197**	P	**P**	**09 28 57.6**	**+0.8**
	5.9nm,0.6s,baz=353,slow=8.1,SNR=2.6						
CTA	**Charters Tower**	**33.64**	**261**	P	**P**	**09 29 51.9**	**-0.5**
	9.5nm,0.6s,baz=102,slow=11,SNR=13						
CTAO	**Charters Tower**	**33.64**	**261**	*e*P	**P**	**09 29 51.9**	**-0.5**
PMG	**Port Moresby**	**34.69**	**280**	P	**P**	**09 30 02.0**	**+0.7**
	45nm,0.8s,baz=83,slow=4.7,SNR=16						
PMG				S	**S**	**09 34 54.0**	**+3.4**
	4.3nm,0.6s,baz=61,slow=10,SNR=2.4						
PMG	**Port Moresby**	**34.69**	**280**	*e*P	**P**	**09 30 01.8**	**+0.5**
	46nm,0.7s						
PMG				S	**S**	**09 34 54.0**	**+3.4**
STKA	**Stephens Creek**	**38.77**	**241**	P	**P**	**09 30 34.6**	**+0.2**
	5.4nm,0.6s,baz=91,slow=9.8,SNR=17						
JAY	**Jayapura**	**43.14**	**286**	P	**P**	**09 31 09.4**	**+0.2**
	4.0nm,0.7s,baz=272,slow=23,SNR=14						
BBOO	**Buckleboo**	**43.55**	**241**	*e*P	**P**	**09 31 12.2**	**+0.1**
	11nm,0.6s						
WRAB	**Tennant Creek**	**44.82**	**260**	*e*P	**P**	**09 31 21.0**	**-1.0**
	7.3nm,0.6s						
WRA	**Warramunga Arr**	**44.83**	**260**	P	**P**	**09 31 20.9**	**-1.2**
	11nm,0.7s,baz=96,slow=7.3,SNR=200						
WRA				PcP	**PcP**	**09 32 51.3**	**+0.2**
	1.9nm,0.4s,baz=89,slow=3.9,SNR=8.6						
WRA				S	**S**	**09 37 09.8**	**-8.0**
	0.5nm,0.8s,baz=94,slow=13,SNR=2.6						
ASAR	**Alice Springs**	**44.97**	**254**	P	**P**	**09 31 22.8**	**-0.5**
	42nm,0.6s,baz=88,slow=8.5,SNR=613						
ASAR				PcP	**PcP**	**09 32 51.6**	**+0.1**
	5.0nm,0.8s,baz=101,slow=3.4,SNR=11						
ASAR				S	**S**	**09 37 16.2**	**-3.6**
	1.5nm,0.8s,baz=84,slow=16,SNR=10						
GUMO	**Guam**	**48.11**	**308**	P	**P**	**09 31 46.9**	**+0.1**
	95nm,0.9s,baz=214,slow=9.5,SNR=4.1						
FITZ	**Fitzroy Crossi**	**53.23**	**261**	*e*P	**P**	**09 32 23.6**	**-0.4**
	1.9nm,0.4s						
MBWA	**Marble Bar**	**58.26**	**256**	*e*P	**P**	**09 32 57.7**	**-1.0**
NWAO	**Narrogin (SRO)**	**59.35**	**242**	P	**P**	**09 33 05.2**	**-0.6**
	3.8nm,0.7s,baz=6.3,slow=9.2,SNR=4.5						
CASY	**Casey**	**66.13**	**205**	*e*P	**P**	**09 33 49.2**	**+0.6**
	0.5nm,0.8s						
MJAR	**Matsushiro Arr**	**68.12**	**323**	P	**P**	**09 34 00.8**	**-0.5**
	11nm,0.7s,baz=157,slow=5.7,SNR=22						
JNU	**Nakatsue**	**70.36**	**316**	P	**P**	**09 34 14.0**	**-0.8**
	3.7nm,0.7s,baz=139,slow=9.3,SNR=2.8						
QSPA	**South Pole Qui**	**72.04**	**180**	*e*P	**P**	**09 34 25.8**	**+1.6**
	1.5nm,0.5s						
PETK	**Petropavlovsk-**	**73.83**	**345**	P	**P**	**09 34 34.5**	**+0.2**
	9.2nm,0.6s,baz=125,slow=8.3,SNR=14						
KSRS	**Korea Array**	**74.92**	**318**	P	**P**	**09 34 42.0**	**+1.2**
	2.7nm,0.7s,baz=131,slow=6.5,SNR=14						
KSAR	**Wonju Array Be**	**74.94**	**318**	P	**P**	**09 34 42.0**	**+1.1**
USRK	**Ussuriysk Ar.**	**76.82**	**326**	P	**P**	**09 34 51.5**	**+0.4**
	2.5nm,0.7s,baz=115,slow=3.5,SNR=9.7						
CMB	**Columbia Colle**	**77.77**	**43**	*e*P	**P**	**09 34 57.9**	**+1.5**
	7.8nm,0.3s						
HUMO	**Hull Mountain**	**78.85**	**38**	*e*P	**P**	**09 35 03.0**	**+1.0**
	21nm,1.0s						
NVAR	**Mina Array Bea**	**79.35**	**44**	P	**P**	**09 35 06.7**	**+1.6**
	2.1nm,0.7s,baz=228,slow=8.8,SNR=12						
CN2	**Changchun**	**80.24**	**322**	*e*P	**P**	**09 35 10.3**	**+1.1**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.7s						
KLR	**Kul'dur**	**80.31**	**329**	P	**P**	**09 35 10.3**	**+0.8**
	comp=Z,2.0nm,0.7s,baz=102,slow=6.4,SNR=7.7						
IPM	**Ipoh**	**82.65**	**277**	*e*P	**P**	**09 35 22.8**	**+0.5**
	comp=Z,3.8nm,0.6s						
PMR	**Palmer**	**82.65**	**14**	*e*P	**P**	**09 35 21.0**	**-0.1**
	comp=Z,4.1nm,0.6s						
BMRM	**Bremner River**	**83.20**	**16**	*e*P	**P**	**09 35 24.3**	**+0.3**
	comp=Z,12nm,1.2s						
KULM	**Kulim**	**83.26**	**278**	*e*P	**P**	**09 35 25.8**	**+0.5**
	comp=Z,5.9nm,0.8s						
MAW	**Mawson**	**83.83**	**200**	P	**P**	**09 35 27.4**	**+0.3**
	comp=Z,2.9nm,0.3s,baz=162,slow=3.2,SNR=9.2						
KTH	**Kantishna Hill**	**84.03**	**12**	*e*P	**P**	**09 35 27.1**	**-0.9**
	comp=Z,15nm,1.1s						
TRF	**Thorofare Moun**	**84.07**	**12**	*e*P	**P**	**09 35 27.7**	**-0.7**
	comp=Z,17nm,0.8s						
ENH	**Enshi**	**84.51**	**304**	*e*P	**P**	**09 35 32.2**	**+1.1**
	comp=Z,9.4nm,0.5s						
SKAG	**Skagway**	**84.72**	**20**	*e*P	**P**	**09 35 32.6**	**+1.2**
	comp=Z,3.1nm,0.8s						
COLA	**College**	**85.83**	**12**	*e*P	**P**	**09 35 35.8**	**-0.7**
	comp=Z,12nm,1.1s						
TXAR	**Lajitas Array**	**85.87**	**58**	P	**P**	**09 35 40.2**	**+2.4**
	comp=Z,2.6nm,0.8s,baz=219,slow=6.1,SNR=34						
ILAR	**Eielson Array**	**85.94**	**13**	P	**P**	**09 35 36.5**	**-0.6**
	comp=Z,3.0nm,0.7s,baz=222,slow=4.9,SNR=34						
XAN	**Xi'an**	**86.50**	**307**	P	**P**	**09 35 42.1**	**+1.5**
XAN				pmax	pmax		
	comp=Z,22nm,1.0s						
DLMT	**Dillon**	**86.60**	**40**	*e*P	**P**	**09 35 42.5**	**+1.6**
	comp=Z,5.7nm,1.4s						
SNOW	**Snow King Moun**	**86.83**	**42**	*e*P	**P**	**09 35 43.3**	**+1.1**
	comp=Z,3.8nm,0.8s						
IMW	**Indian Meadow**	**86.92**	**42**	*e*P	**P**	**09 35 44.3**	**+1.6**
	comp=Z,5.7nm,1.0s						
PDAR	**Pinedale Array**	**87.28**	**43**	P	**P**	**09 35 45.4**	**+1.1**
	comp=Z,1.5nm,0.7s,baz=220,slow=3.0,SNR=18						
H17A	**Grant Village**	**87.39**	**42**	*e*P	**P**	**09 35 47.8**	**+3.0**
	comp=Z,2.6nm,0.9s						
COLD	**Coldfoot**	**87.48**	**11**	*e*P	**P**	**09 35 45.1**	**+0.8**
	comp=Z,6.8nm,1.0s						
LKWY	**Lake**	**87.58**	**41**	*e*P	**P**	**09 35 48.2**	**+2.5**
	comp=Z,6.0nm,1.4s						
CMAR	**Chiang Mai Arr**	**89.12**	**290**	P	**P**	**09 35 54.3**	**+1.1**
	comp=Z,4.7nm,0.8s,baz=111,slow=2.8,SNR=23						
CHTO	**Chiang Mai**	**89.24**	**290**	*e*P	**P**	**09 35 54.9**	**+1.2**
	comp=Z,4.3nm,0.5s						
SNAA	**Sanae**	**90.49**	**179**	*e*P	**P**	**09 35 59.1**	**+0.5**
	comp=Z,24nm,0.5s						
INK	**Inuvik**	**91.93**	**15**	*e*P	**P**	**09 36 04.9**	**0.0**
	comp=Z,3.8nm,0.7s						
YKA	**Yellowknife Ar**	**94.34**	**25**	P	**P**	**09 36 16.0**	**0.0**
	comp=Z,1.2nm,0.8s,baz=245,slow=4.6,SNR=14						
TIXI	**Tiksi**	**96.31**	**345**	P	**P**	**09 36 24.0**	**-0.7**
	comp=Z,0.8nm,0.3s,baz=125,slow=4.3,SNR=5.2						
MKAR	**Makanchi Array**	**109.36**	**314**	PKiKP	**PKiKP**	**09 41 22.4**	**-0.7**
	comp=Z,1.1nm,0.5s,baz=225,slow=1.0,SNR=5.6						
ABKAR	**Akbulak array**	**124.16**	**318**	*e*PKPdf	**PKPdf**	**09 41 51.3**	**0.0**
AKTO	**Aktyubinsk**	**125.09**	**320**	PKP	**PKPdf**	**09 41 53.1**	**-0.1**
	comp=Z,1.8nm,0.5s,baz=142,slow=3.3,SNR=5.0						
ARCES	**ARCESS Array B**	**126.46**	**350**	PKP	**PKPdf**	**09 41 55.1**	**-0.1**
	comp=Z,3.3nm,0.8s,baz=8.1,slow=1.7,SNR=6.1						
GEYT	**Alibeck**	**127.28**	**304**	PKP	**PKPdf**	**09 41 58.2**	**+0.4**
	comp=Z,1.6nm,0.3s,baz=5.7,slow=2.9,SNR=3.5						
FINES	**FINESS Array B**	**133.35**	**344**	PKhKP	PKPpre	09 42 03.5	
	comp=Z,4.7nm,1.0s,baz=48,slow=2.1,SNR=3.0						
FINES				PKP	**PKPdf**	**09 42 08.4**	**0.0**
	comp=Z,0.8nm,0.5s,baz=108,slow=4.2,SNR=4.0						
NOA	**NORSAR Array B**	**136.50**	**353**	PKhKP	PKPpre	09 42 02.4	
	comp=Z,1.4nm,0.8s,baz=2.2,slow=6.5,SNR=3.5						
AKASG	**Malin Array Be**	**140.75**	**332**	PKhKP	PKPpre	09 42 13.1	
	comp=Z,0.4nm,0.3s,baz=42,slow=4.4,SNR=5.2						
AKASG				PKP	**PKiKP**	**09 42 24.3**	**-1.0**
	comp=Z,1.1nm,0.5s,baz=45,slow=3.0,SNR=5.6						
KWP	**Kalwaria Pacla**	**144.25**	**337** ⇑	*i*P	**PKPab**	**09 42 29.1**	**+0.2**
TLCR		**144.78**	**326** ⇑	*i*P	PKPbc	09 42 30.2	0.0
BURAR	**Bucovina Array**	**144.81**	**332** ⇓	*i*P	**PKPab**	**09 42 31.8**	**+0.5**
STHS	**Stebnicka Huta**	**144.97**	**338**	*e*PKP	PKPbc	09 42 31.2	+0.5
BRTR	**Keskin Array B**	**145.01**	**315**	PKPbc	**PKPbc**	**09 42 31.4**	**0.0**
	comp=Z,8.8nm,0.8s,baz=132,slow=3.7,SNR=51						
CFR	**Carcaliu**	**145.14**	**327** ⇑	*i*P	**PKPab**	**09 42 32.1**	**-0.4**
CRVS	**Cervenica-Dubn**	**145.32**	**337**	*e*PKP	**PKPbc**	**09 42 32.1**	**+0.4**
VRI	**Vrincioaia**	**145.38**	**329** ⇑	*i*P	**PKPbc**	**09 42 32.6**	**+0.6**
PLOR	**Plostina**	**145.43**	**329** ⇓	*i*P	**PKPbc**	**09 42 32.5**	**+0.3**
TIRR	**Tirgusor**	**145.47**	**326** ⇓	*i*P	**PKPbc**	**09 42 32.7**	**+0.4**
TIRR	**Tirgusor**	**145.47**	**326**	*e*PKPbc	**PKPbc**	**09 42 32.1**	**-0.2**
HARR	**Harsova**	**145.58**	**326** ⇓	*i*P	**PKPbc**	**09 42 33.1**	**+0.5**
ARCR	**ARCALIA**	**145.59**	**332** ⇑	*i*P	**PKPab**	**09 42 33.7**	**-0.5**
CLL	**Collm**	**145.61**	**348** ⇓	*i*P	**PKPbc**	**09 42 33.0**	**+0.5**
	comp=Z,28nm,0.8s						
CLL				*e*		09 42 44.0	
CLL				*e*		09 43 44.0	
CLL				Lm	MLR	10 13 00.0	
	comp=Z,100nm,20.2s						
UPC	**Upice**	**145.65**	**344**	*e*PKP	**PKPbc**	**09 42 33.5**	**+0.9**
UPC				*ex*	x	09 42 35.8	
DPC	**Dobruska-Polom**	**145.71**	**343**	*e*PKP	**PKPbc**	**09 42 33.9**	**+1.0**
DPC				*ex*	x	09 42 35.9	
LANS	**Liptovska Anna**	**145.81**	**339**	*e*PKP	**PKPab**	**09 42 34.6**	**-0.5**
BRG	**Berggiesshubel**	**145.82**	**346**	*i*PKP	**PKPbc**	**09 42 33.6**	**+0.5**
	comp=Z,23nm,1.3s						
KRLC	**Kraliky**	**145.83**	**343**	*e*PKP	**PKPbc**	**09 42 34.0**	**+0.8**
MORC	**Moravsky Berou**	**145.88**	**342** ⇑	*i*P	**PKPbc**	**09 42 34.3**	**+0.9**
DOPR	**Dopca**	**145.96**	**330** ⇑	*i*P	**PKPab**	**09 42 35.1**	**-0.6**
PVCC	**Panska Ves**	**145.99**	**345**	*e*PKP	**PKPbc**	**09 42 34.7**	**+1.1**
KECS	**Kecovo**	**146.02**	**338**	*e*PKP	**PKPbc**	**09 42 34.5**	**+0.8**
MLR	**Muntele Rosu**	**146.03**	**329** ⇓	*i*P	**PKPbc**	**09 42 34.7**	**+0.7**
CJR	**Cluj-Napoca**	**146.21**	**333** ⇓	*i*P	**PKPbc**	**09 42 35.4**	**+1.0**
PRU	**Pruhonice**	**146.50**	**345**	*e*PKP	**PKPbc**	**09 42 35.7**	**+0.7**
PRU				*ex*	x	09 42 38.4	
VOIR		**146.50**	**330** ⇑	*i*P	**PKPbc**	**09 42 35.8**	**+0.5**
GOPC	**GO Pecny, Ondr**	**146.51**	**345**	*e*PKP	**PKPbc**	**09 42 35.9**	**+0.8**
GOPC				*ex*	x	09 42 38.5	
DRGR		**146.53**	**334** ⇑	*i*P	**PKPbc**	**09 42 36.0**	**+0.7**
VYHS	**Vyhne**	**146.59**	**339**	*e*PKP	**PKPbc**	**09 42 36.0**	**+0.7**
VYHS				*e*		09 42 38.9	
PSZ	**Piszkesteto**	**146.71**	**338** ⇓	*i*P	**PKPbc**	**09 42 36.5**	**+0.8**
PSZ	**Piszkesteto**	**146.71**	**338**	*e*PKPdf	**PKPdf**	**09 42 31.7**	**-1.3**
PSZ				*e*PKPbc	**PKPbc**	**09 42 36.1**	**+0.3**
PSZ				*e*PKPab	**PKPab**	**09 42 41.1**	**+2.4**
ARR	**Arges**	**146.75**	**330** ⇓	*i*P	**PKPbc**	**09 42 37.2**	**+1.3**
LOT	**Lotru**	**147.10**	**331** ⇑	*i*P	**PKPbc**	**09 42 37.0**	**+0.1**
SIRR	**Siria**	**147.39**	**334** ⇓	*i*P	**PKPbc**	**09 42 38.2**	**+0.7**
KHC	**Kasperske Hory**	**147.53**	**346**	*e*PKP	**PKPbc**	**09 42 38.0**	**+0.2**
SZH	**Strazhica**	**147.60**	**326**	P	**PKPbc**	**09 42 38.0**	**-0.1**
GERES	**GERESS Array B**	**147.77**	**345**	PKPbc	**PKPbc**	**09 42 38.9**	**+0.4**
	comp=Z,7.7nm,0.6s,baz=29,slow=3.0,SNR=44						
BZS	**Buzias**	**147.92**	**333** ⇓	*i*P	**PKPbc**	**09 42 39.3**	**+0.5**
CONA	**Conrad Observa**	**148.03**	**342**	*i*PKPbc	**PKPbc**	**09 42 40.0**	**+0.8**
	comp=Z,22nm,1.6s,SNR=8.5						
MOA	**Molin**	**148.55**	**344**	*i*PKPbc	**PKPbc**	**09 42 40.9**	**+0.5**
	comp=Z,8.0nm,1.0s						
MPEP	**Malo Peshtene**	**148.67**	**328**	P	**PKPbc**	**09 42 41.0**	**+0.2**
ARSA	**Arzberg**	**148.74**	**342**	*i*PKPbc	**PKPbc**	**09 42 40.9**	**+0.1**
	comp=Z,8.8nm,1.1s						
SOKA	**Soboth**	**149.40**	**342**	*i*PKPbc	**PKPbc**	**09 42 42.5**	**0.0**
	comp=Z,12nm,1.1s,SNR=5.5						
PERS	**Pernice**	**149.41**	**342**	*e*PKPbc	**PKPbc**	**09 42 42.3**	**-0.3**
PERS				*i*PKPab	**PKPab**	**09 42 50.0**	**+0.2**
KBA	**Koelnbreinsper**	**149.50**	**344**	*i*PKPbc	**PKPbc**	**09 42 42.6**	**-0.3**
	comp=Z,11nm,0.9s						
WATA	**Walderalm**	**149.68**	**347**	*i*PKPbc	**PKPbc**	**09 42 43.2**	**0.0**
	comp=Z,8.1nm,0.6s						
OBKA	**Obir**	**149.69**	**342**	*i*PKPbc	**PKPbc**	**09 42 42.9**	**-0.3**
	comp=Z,5.0nm,0.9s						
RETA	**Reutte**	**149.70**	**348**	*i*PKPbc	**PKPbc**	**09 42 43.4**	**+0.2**
	comp=Z,4.8nm,0.7s						
WTTA	**Wattenberg**	**149.73**	**347**	*i*PKPbc	**PKPbc**	**09 42 43.6**	**+0.2**
	comp=Z,14nm,0.6s						
MOTA	**Moosalm**	**149.77**	**347**	*i*PKPbc	**PKPbc**	**09 42 43.5**	**0.0**
	comp=Z,14nm,1.0s						
MYKA	**Terra Mystica**	**149.84**	**344**	*i*PKPbc	**PKPbc**	**09 42 43.1**	**-0.5**
	comp=Z,8.4nm,0.6s						
MMB	**Musomiste**	**149.94**	**326**	P	**PKPbc**	**09 42 43.0**	**-0.9**
ABTA	**Abfaltersbach**	**150.01**	**345**	*i*PKPbc	**PKPbc**	**09 42 43.7**	**-0.3**
	comp=Z,16nm,0.6s,SNR=7.1						
DAVA	**Damuels**	**150.06**	**349**	*i*PKPbc	**PKPbc**	**09 42 44.5**	**+0.4**
	comp=Z,17nm,0.9s						
KKB	**Krupnik**	**150.08**	**327**	P	**PKPbc**	**09 42 44.0**	**-0.2**
FETA	**Feichten**	**150.15**	**348**	*i*PKPbc	**PKPbc**	**09 42 44.9**	**+0.5**
	comp=Z,13nm,0.9s,SNR=6.0						
VISS	**Visnje**	**150.25**	**341**	*i*PKPbc	**PKPbc**	**09 42 44.7**	**+0.2**
VISS				*i*PKPab	**PKPab**	**09 42 53.1**	**-0.1**
BOJS	**Bojanci**	**150.39**	**341**	*i*PKPbc	**PKPbc**	**09 42 45.3**	**+0.6**
BOJS				*i*PKPab	**PKPab**	**09 42 53.9**	**+0.1**
JAVS	**Javornik**	**150.40**	**343**	*i*PKPbc	**PKPbc**	**09 42 44.7**	**-0.2**
JAVS				*i*PKPab	**PKPab**	**09 42 53.6**	**-0.5**
PDG	**Podgorica**	**151.49**	**332** ⇑	*i*P	**PKPbc**	**09 42 47.3**	**0.0**
TORD	**Torodi Ar. Bea**	**175.16**	**179**	PKP	**PKPdf**	**09 43 02.4**	**-0.6**
	comp=Z,1.4nm,1.0s,baz=20,slow=3.5,SNR=5.7						
TORD				PKPab	**PKPab**	**09 44 42.9**	**+0.1**
	comp=Z,0.3nm,0.8s,baz=201,slow=5.0,SNR=2.8						

*ISCJB **24** 09:24:15.0±0.6,39°.13N±0°.05×29°.05E±0°.04,h10km±7km, Error ellipse: s-maj=8.0km s-min=5.3km az=159.6*
*CSEM **24** 09:24:15.3±0.2,39°.12N×29°.06E,h5km,MD2.7,Error ellipse: s-maj=4.1km s-min=3.2km az=124.0*
*DDA **24** 09:24:15.2,39°.07N×29°.05E,h7km,Md2.7*
ISC 24 09:24:14.8±1.0,**39°.09N**±0°.04×**29°.09E**±0°.03,**h11**km±10km, **n15**,σ0**°32**/25,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.30**	**260**	P	**Pg**	**09 24 20.9**	**+0.1**
DEMI				S	**Sg**	**09 24 24.7**	**-0.1**
DEMI	**Demirci**	**0.30**	**260**	*i* P	**Pg**	**09 24 20.9**	**+0.1**
DEMI				*i* S	**Sg**	**09 24 24.7**	**-0.1**
GDZ	**Gediz**	**0.30**	**91**	P	**Pb**	**09 24 22.1**	**-0.2**
GDZ				S	**Sb**	**09 24 26.9**	**-0.5**
GDZ	**Gediz**	**0.30**	**91**	*i* P	**Pb**	**09 24 22.1**	**-0.2**
GDZ				*i* S	**Sb**	**09 24 26.9**	**-0.5**
TVSB	**Tavsanli**	**0.46**	**39**	*e*PG	**Pg**	**09 24 23.8**	**0.0**
TVSB				*e*SG	**Sg**	**09 24 30.1**	**+0.3**
TVSB	**Tavsanli**	**0.46**	**39**	*e*Pg	**Pg**	**09 24 23.8**	**0.0**
TVSB				*e*Sg	**Sg**	**09 24

NIED ***24*** *09:35:00, 23°.10N×124°.90E, h5km, Mw3.9 Best double couple: M₀7.83000×10¹⁴ NP1:φs.00000°, δ21.00000°, λ-124.00000°. NP2:φs283.00000°, δ73.00000°, λ-78.00000°.*
IDC ***24*** *09:35:38.7±1.2, 22°.93N×124°.64E, h0km, mb3.6/4, mb1 3.7/6, mb1mx3.5/38, mbtmp3.6/6, ML3.5/2, MS2.8/2, Ms1 2.8/2, ms1mx2.5/33, Error ellipse: s-maj=48.5km s-min=21.2km az=73.0*
JMA ***24*** *09:35:41.8±0.3, 23°.06N×124°.87E, h44km, M3.7*
ISC 24 09:35:38.4±2.6, 23°.05N±0°.08×124°.84E±0°.05, h0km±16km, n26, σ1°22/37, mb3.4/4, Southwestern Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HATJ	**Hateruma jima**	**1.38**	**317**	P	**Pb**	**09 36 05.2**	**+0.1**
HATJ				S	**Sg**	**09 36 21.3**	**-1.4**
JKRS	**Kuro-shima**	**1.40**	**327**	P	**Pb**	**09 36 06.2**	**+0.7**
JKRS				S	**Sg**	**09 36 24.2**	**+0.6**
JIJ	**Ishigaki jima**	**1.45**	**334**	P	**Pn**	**09 36 06.5**	**+0.6**
JIJ				S	**Sg**	**09 36 24.1**	**-1.0**
JTJ	**Tarama**	**1.59**	**356**	P	**Pn**	**09 36 08.4**	**+0.6**
JTJ				S	**Sn**	**09 36 28.1**	**-0.9**
JISG	**Ishigakijimahi**	**1.60**	**343**	P	**Pn**	**09 36 08.4**	**+0.4**
JISG				S	**Sn**	**09 36 28.4**	**-1.0**
IRIF	**Iriomote-Funau**	**1.63**	**322**	P	**Pn**	**09 36 09.2**	**+0.8**
IRIF				S	**Sn**	**09 36 29.3**	**-0.8**
JOGS	**Gusukube**	**1.78**	**17**	P	**Pn**	**09 36 10.6**	**+0.2**
JOGS				S	**Sn**	**09 36 32.7**	**-1.0**
JIRB	**Irabujima**	**1.79**	**10**	P	**Pn**	**09 36 10.8**	**+0.2**
JIRB				S	**Sn**	**09 36 32.6**	**-1.5**
JMJ	**Miyako jima 2**	**1.80**	**13**	P	**Pn**	**09 36 10.5**	**-0.3**
JMJ				eS	**Sn**	**09 36 33.4**	**-0.9**
JIKM	**Ikemajima**	**1.90**	**11**	P	**Pn**	**09 36 12.6**	**+0.5**
JIKM				S	**Sn**	**09 36 35.5**	**-1.2**
YOJ	**Yonaguni jima**	**2.18**	**310**	P	**Pb**	**09 36 17.3**	**-1.5**
YOJ				S	**Sn**	**09 36 42.1**	**-1.6**
JYNG	**Yonagunijimaku**	**2.22**	**309**	P	**Pb**	**09 36 17.9**	**-1.6**
JYNG				S	**Sn**	**09 36 43.1**	**-1.6**
JKE	**Kume jima 2**	**3.71**	**28**	P	**Pn**	**09 36 36.2**	**-0.8**
JAGN	**Aguni-jima**	**4.14**	**31**	P	**Pn**	**09 36 43.6**	**+0.7**
JNTH	**Nagotoyohara**	**4.50**	**39**	P	**Pn**	**09 36 47.6**	**-0.3**
JOW	**Kunigami**	**4.89**	**39**	P	**Pn**	**09 36 52.7**	**-0.5**
JOKE	**Okinoerabujima**	**5.46**	**37**	P	**Pn**	**09 36 59.7**	**-1.4**
JTK	**Tokunoshima**	**6.00**	**37**	P	Pn	09 37 06.8	-1.7
JTK				S	**Sn**	**09 38 16.2**	**-1.8**
JTK	**Tokunoshima**	**6.00**	**37**	S	**Sn**	**09 38 16.3**	**-1.7**
JNU	**Nakatsue**	**11.36**	**27**	LR	LR	09 42 32.7	
	comp=Z,44nm,21.0s,baz=295,slow=36						
KSRS	**Korea Array**	**14.60**	**10**	Pn	**Pn**	**09 39 08.0**	**+1.8**
	0.2nm,0.3s,baz=190,slow=12,SNR=3.7						
KSRS				LR	LR	09 45 21.7	
	comp=Z,41nm,18.4s,baz=175,slow=40						
MJAR	**Matsushiro Arr**	**17.73**	**38**	P	**P**	**09 39 50.7**	**+3.0**
	0.2nm,0.3s,baz=212,slow=6.8,SNR=4.1						
MKAR	**Makanchi Array**	**41.48**	**315**	P	**P**	**09 43 28.6**	**+1.4**
	0.3nm,0.3s,baz=99,slow=9.5,SNR=4.6						
ZALV	**Zalesovo Beam**	**43.03**	**326**	P	**P**	**09 43 38.5**	**-1.1**
	1.1nm,0.3s,baz=129,slow=4.6,SNR=3.2						
WRA	**Warramunga Arr**	**43.73**	**167**	P	**P**	**09 43 45.1**	**-0.5**
	0.6nm,0.8s,baz=346,slow=8.9,SNR=5.6						
ASAR	**Alice Springs**	**47.27**	**169**	P	**P**	**09 44 13.2**	**-0.5**
	0.2nm,0.6s,baz=353,slow=7.3,SNR=6.5						

JMA 24 09:37:49.1±0.3, 28°.06N×128°.04E, h18km±4km, M1.6, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JOKE	**Okinoerabujima**	**0.84**	**146**	P	Pb	09 38 04.9	-0.3
JTK	**Tokunoshima**	**0.85**	**109**	P	Pb	09 38 04.9	-0.4
JAMN	**Amaminishikomi**	**1.02**	**79**	P	Pb	09 38 07.7	-0.5
JAMN				S	Sb	09 38 21.4	+0.1
JIH	**Iheya**	**1.02**	**184**	eS	Sb	09 38 21.1	-0.3
JOW	**Kunigami**	**1.24**	**170**	P	Pn	09 38 11.3	-0.3
JTAJ	**Takarajima**	**1.49**	**43**	P	Pb	09 38 15.9	-0.4

ISCJB ***24*** *09:40:08.0±0.3, 38°.40N±0°.02×21°.87E±0°.03, h10km±3km, Error ellipse: s-maj=3.5km s-min=3.1km az=44.5*
CSEM ***24*** *09:40:07.8±0.1, 38°.40N×21°.87E, h8km, ML2.7, Error ellipse: s-maj=1.9km s-min=1.9km az=23.0*
ATH ***24*** *09:40:07.9, 38°.41N×21°.87E, h11km±1km, ML2.5/8, Error ellipse: s-maj=1.9km s-min=0.7km az=75.0*
THE ***24*** *09:40:08.1, 38°.41N×21°.88E, h10km, ML2.7/8, Error ellipse: s-maj=0.9km s-min=0.3km az=27.0*
ISC 24 09:40:07.9±0.8, 38°.41N±0°.02×21°.88E±0°.02, h11km±4km, n54, σ0°.49/87, Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EFP	**Efpalio**	**0.03**	**53**	P	**Pg**	**09 40 09.7**	**-0.2**
EFP				S	**Sg**	**09 40 11.3**	**0.0**
EFP	**Efpalio**	**0.03**	**53**	P	**Pg**	**09 40 09.7**	**-0.2**
EFP				S	**Sg**	**09 40 11.3**	**0.0**
EFP	**Efpalio**	**0.03**	**53**	P	**Pg**	**09 40 09.5**	**-0.4**
EFP				S	**Sg**	**09 40 11.1**	**-0.2**
EFP				AML	AML	09 40 11.5	
	comp=N,2041μm,0.2s						
EFP				AML	AML	09 40 11.8	
	comp=E,29369μm,0.1s						
SERG	**Sergoula**	**0.14**	**88**	P	**Pg**	**09 40 11.5**	**+0.2**
SERG				S	**Sg**	**09 40 14.2**	**+0.6**
UPR	**University Cam**	**0.14**	**209**	P	**Pg**	**09 40 11.2**	**0.0**
UPR	**University Cam**	**0.14**	**209**	P	**Pg**	**09 40 11.1**	**-0.1**
UPR				S	**Sg**	**09 40 13.9**	**+0.3**
UPR	**University Cam**	**0.14**	**209**	P	**Pg**	**09 40 11.3**	**+0.1**
UPR				S	**Sg**	**09 40 13.9**	**+0.3**
LAKA	**Lakka**	**0.19**	**154**	P	**Pg**	**09 40 11.9**	**-0.1**
LAKA	**Lakka**	**0.19**	**154**	P	**Pg**	**09 40 11.9**	**-0.1**
ANX	**Ano Chora**	**0.19**	**11**	P	**Pg**	**09 40 12.3**	**+0.2**
ANX				S	**Sg**	**09 40 15.5**	**+0.6**
ANX	**Ano Chora**	**0.19**	**11**	P	**Pg**	**09 40 12.3**	**+0.2**
ANX				S	**Sg**	**09 40 15.5**	**+0.6**
PVO	**Paravola**	**0.34**	**307**	P	**Pg**	**09 40 14.8**	**0.0**
PVO				S	**Sg**	**09 40 19.8**	**+0.4**
PVO	**Paravola**	**0.34**	**307**	P	**Pg**	**09 40 14.8**	**0.0**
PVO				S	**Sg**	**09 40 19.8**	**+0.4**
PVO	**Paravola**	**0.34**	**307**	P	**Pg**	**09 40 14.7**	**0.0**
PVO				S	**Sg**	**09 40 20.1**	**+0.7**
PVO				AML	AML	09 40 23.9	
	comp=N,1847μm,0.4s						
PVO				AML	AML	09 40 24.5	
	comp=E,2540μm,0.3s						
KLV	**Kalavryta, Ach**	**0.42**	**149**	P	**Pg**	**09 40 16.0**	**-0.3**
KLV				S	**Sg**	**09 40 21.7**	**-0.2**
KLV	**Kalavryta, Ach**	**0.42**	**149**	P	**Pg**	**09 40 15.9**	**-0.4**
KLV				S	**Sg**	**09 40 21.7**	**-0.2**
AXS	**Araxos**	**0.45**	**242**	P	**Pg**	**09 40 16.4**	**-0.3**
AXS	**Araxos**	**0.45**	**242**	P	**Pg**	**09 40 16.6**	**-0.1**
AXS				S	**Sg**	**09 40 23.2**	**+0.6**
DRO	**Drossia**	**0.47**	**196**	P	**Pg**	**09 40 16.9**	**-0.3**
DRO				S	**Sg**	**09 40 24.3**	**+0.8**
DRO	**Drossia**	**0.47**	**196**	P	**Pg**	**09 40 16.9**	**-0.3**
DRO				S	**Sg**	**09 40 24.2**	**+0.8**
DRO	**Drossia**	**0.47**	**196**	P	**Pg**	**09 40 16.7**	**-0.5**
DRO				S	**Sg**	**09 40 24.2**	**+0.7**
DRO				AML	AML	09 40 24.5	
	comp=E,3210μm,0.3s						
DRO				AML	AML	09 40 25.0	
	comp=N,1559μm,0.2s						
RLS	**Riolos of Patr**	**0.47**	**223**	P	**Pg**	**09 40 17.0**	**-0.3**
RLS				S	**Sg**	**09 40 24.5**	**+0.9**
RLS	**Riolos of Patr**	**0.47**	**223**	P	**Pg**	**09 40 16.9**	**-0.3**
RLS				S	**Sg**	**09 40 24.4**	**+0.9**
RLS	**Riolos of Patr**	**0.47**	**223**	S	**Sg**	**09 40 24.4**	**+0.9**
RLS				AML	AML	09 40 24.8	
	comp=E,742μm,0.2s						
RLS				AML	AML	09 40 26.4	
	comp=N,827μm,0.3s						
EVR	**Evrytania**	**0.51**	**354**	P	**Pg**	**09 40 17.8**	**-0.1**
EVR				S	**Sg**	**09 40 25.8**	**+1.1**
EVR	**Evrytania**	**0.51**	**354**	P	**Pg**	**09 40 17.9**	**-0.1**
EVR				S	**Sg**	**09 40 25.4**	**+0.7**
EVR	**Evrytania**	**0.51**	**354**	P	**Pg**	**09 40 17.9**	**-0.1**
EVR				S	**Sg**	**09 40 25.4**	**+0.7**
EVR				AML	AML	09 40 27.4	
	comp=N,1792μm,0.2s						
DSF	**Desfina**	**0.51**	**89**	P	**Pg**	**09 40 17.8**	**-0.1**
DSF				S	**Sg**	**09 40 25.7**	**+1.0**
DSF	**Desfina**	**0.51**	**89**	P	**Pg**	**09 40 17.8**	**-0.3**
DSF				S	**Sg**	**09 40 25.7**	**+1.0**
DSF	**Desfina**	**0.51**	**89**	P	**Pg**	**09 40 17.7**	**-0.3**
DSF				S	**Sb**	**09 40 26.2**	**-0.3**
DSF				AML	AML	09 40 28.1	
	comp=E,1276μm,0.2s						
DSF				AML	AML	09 40 28.2	
	comp=N,1783μm,0.2s						
PDO	**Prodromos**	**0.57**	**289**	P	**Pg**	**09 40 18.9**	**-0.2**
PDO				S	**Sb**	**09 40 27.9**	**-0.3**
PDO	**Prodromos**	**0.57**	**289**	P	**Pg**	**09 40 18.9**	**-0.2**
PDO				S	**Sb**	**09 40 27.9**	**-0.3**
PDO	**Prodromos**	**0.57**	**289**	P	**Pg**	**09 40 18.2**	**-1.0**
PDO				S	**Sg**	**09 40 26.9**	**+0.2**
PDO				AML	AML	09 40 31.6	
	comp=E,1526μm,0.2s						
PDO				AML	AML	09 40 31.6	
	comp=N,1467μm,0.3s						
AGG	**Agios Georgios**	**0.71**	**30**	P	**Pg**	**09 40 21.2**	**-0.5**
AGG				S	**Sb**	**09 40 31.9**	**-0.2**
AGG	**Agios Georgios**	**0.71**	**30**	P	**Pg**	**09 40 21.2**	**-0.5**
AGG				S	**Sb**	**09 40 31.9**	**-0.2**
AGG	**Agios Georgios**	**0.71**	**30**	P	**Pg**	**09 40 20.7**	**-1.0**
AGG				S	**Sb**	**09 40 32.0**	**-0.2**
AMT	**Artemida-Makis**	**0.88**	**189**	P	**Pg**	**09 40 25.2**	**+0.2**
AMT	**Artemida-Makis**	**0.88**	**189**	P	**Pg**	**09 40 25.2**	**+0.2**
KFL	**Anninata**	**0.91**	**251**	P	**Pg**	**09 40 25.0**	**-0.4**
KFL	**Anninata**	**0.91**	**251**	P	**Pg**	**09 40 25.0**	**-0.4**
LKR	**Lokris**	**0.92**	**74**	P	**Pg**	**09 40 25.2**	**-0.4**
LKR	**Lokris**	**0.92**	**74**	P	**Pg**	**09 40 25.2**	**-0.4**
LKR				S	**Sb**	**09 40 38.4**	**+0.4**
LKR	**Lokris**	**0.92**	**74**	P	**Pg**	**09 40 24.7**	**-0.8**
LKR				S	**Sb**	**09 40 38.4**	**+0.4**
LKR				AML	AML	09 40 42.8	
	comp=E,283μm,0.1s						
LKR				AML	AML	09 40 43.8	
	comp=N,264μm,0.2s						
LTK	**Loutraki**	**0.94**	**114**	P	**Pg**	**09 40 26.0**	**-0.1**
LTK	**Loutraki**	**0.94**	**114**	P	**Pg**	**09 40 26.0**	**-0.1**
LTK	**Loutraki**	**0.94**	**114**	P	**Pg**	**09 40 26.8**	**+0.5**
DSL	**Palaion Diasel**	**0.95**	**320**	P	**Pb**	**09 40 27.0**	**+0.6**
DSL	**Palaion Diasel**	**0.95**	**320**	P	**Pb**	**09 40 26.9**	**+0.6**
LKD2	**Lefkada island**	**1.03**	**292**	P	**Pg**	**09 40 27.2**	**-0.5**
LKD2	**Lefkada island**	**1.03**	**292**	P	**Pg**	**09 40 27.2**	**-0.5**
ITM	**Ithomi**	**1.23**	**178**	P	**Pn**	**09 40 30.2**	**-0.9**
ITM	**Ithomi**	**1.23**	**178**	P	**Pn**	**09 40 30.2**	**-0.9**
KRND	**KRANIDI**	**1.44**	**135**	P	**Pb**	**09 40 35.2**	**+0.4**
KRND	**KRANIDI**	**1.44**	**135**	P	**Pb**	**09 40 35.1**	**+0.4**

IDC ***24*** *09:44:10.6±0.6, 15°.45N×119°.38E, h0km, mb4.1/17, mb1 4.3/18, mb1mx4.1/40, mbtmp4.1/18, ML4.3/1, MS3.1/2, Ms1 3.2/2, ms1mx2.6/40, Error ellipse: s-maj=25.5km s-min=12.5km az=68.0*
ISCJB ***24*** *09:44:13.6±0.4, 15°.43N±0°.04×119°.15E±0°.04, h31km, mb4.1/19, MS2.8/1, Error ellipse: s-maj=6.1km s-min=5.7km az=151.1*
MAN ***24*** *09:44:14, 15°.55N×119°.25E, h15km, mb4.8, ML3.8, MS3.8*
NEIC ***24*** *09:44:15.8±0.3, 15°.40N×119°.34E, h35km, mb4.4/2, Error ellipse: s-maj=11.9km s-min=7.3km az=71.0*
ISC 24 09:44:14.7±0.5, 15°.31N±0°.05×119°.30E±0°.06, h31km, n33, σ1°.39/38, mb4.1/19, 1C, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SCZP	**Santa Cruz**	**0.75**	**52**	eP	**Pn**	**09 44 28.1**	**-1.1**
SCZP				eS	**Sn**	**09 44 39.6**	**+0.1**
BOLP	**Bolinao**	**1.22**	**29**	eP	**Pn**	**09 44 33.4**	**-2.2**
PCPH	**Palayan**	**1.75**	**81⇑**	eP	**Pb**	**09 44 44.4**	**-1.8**
PCPH				eS	**Sb**	**09 45 08.4**	**+0.6**
ABRA	**Dolores**	**2.70**	**30**	eP	**Pn**	**09 44 55.4**	**-0.5**
ABRA				eS	**Sn**	**09 45 27.4**	**-0.1**
CAUP	**Cauayan**	**2.92**	**56**	eP	**Pn**	**09 45 02.0**	**+3.0**
APYP	**Conner**	**3.15**	**36**	eP	**Pn**	**09 45 01.8**	**-0.4**
SJMP	**San Jose**	**3.34**	**148**	eP	**Pb**	**09 45 10.4**	**-2.8**
SJMP				eS	**Sb**	**09 45 50.0**	**-3.3**
CMAR	**Chiang Mai Arr**	**19.73**	**282**	P	**Pn**	**09 48 43.0**	**-0.5**
	0.4nm,0.3s,baz=86,slow=10,SNR=24						
CMAR				LR	LR	09 55 57.8	
	comp=Z,68nm,19.9s,baz=117,slow=36						
JNU	**Nakatsue**	**20.61**	**29**	P	**P**	**09 48 52.4**	**+0.9**
	7.6nm,0.9s,baz=186,slow=11,SNR=2.6						
KSAR	**Wonju Array Be**	**23.33**	**17**	P	**P**	**09 49 19.8**	**-0.4**
KSRS	**Korea Array**	**23.35**	**18**	P	**P**	**09 49 19.8**	**-0.6**
	2.3nm,0.9s,baz=193,slow=10,SNR=9.1						
GUMO	**Guam**	**24.82**	**91**	LR	LR	09 59 46.8	
	comp=Z,26nm,18.7s,baz=305,slow=38						
KLR	**Kul'dur**	**35.33**	**14**	P	**P**	**09 51 05.5**	**-1.5**
	1.0nm,0.6s,baz=236,slow=6.9,SNR=3.5						
WRA	**Warramunga Arr**	**38.02**	**157**	P	**P**	**09 51 30.8**	**+0.5**
	8.3nm,0.7s,baz=336,slow=9.4,SNR=35						
WRA				PcP	**PcP**	**09 53 47.0**	**+1.5**
	0.7nm,0.6s,baz=338,slow=3.0,SNR=4.6						
TLY	**Talaya**	**38.39**	**344**	P	**P**	**09 51 32.2**	**-0.8**
	1.2nm,0.5s,baz=208,slow=15,SNR=1.9						
ASAR	**Alice Springs**	**41.28**	**159**	P	**P**	**09 51 58.7**	**+1.3**
	2.3nm,0.4s,baz=336,slow=6.6,SNR=63						
ASAR				PcP	**PcP**	**09 53 57.5**	**+1.7**
	1.9nm,1.0s,baz=351,slow=3.5,SNR=5.7						
MKAR	**Makanchi Array**	**43.94**	**323**	P	**P**	**09 52 18.9**	**+0.1**
	1.2nm,0.8s,baz=131,slow=8.3,SNR=8.9						
CTA	**Charters Tower**	**44.04**	**142**	P	**P**	**09 52 20.4**	**+0.5**
	3.0nm,0.8s,baz=304,slow=15,SNR=3.7						
ZALV	**Zalesovo Beam**	**47.01**	**333**	P	**P**	**09 52 43.0**	**+0.1**
	1.0nm,0.3s,baz=134,slow=8.3,SNR=2.6						
PETK	**Petropavlovsk-**	**48.30**	**30**	P	**P**	**09 52 53.2**	**+0.2**
	4.6nm,0.7s,baz=208,slow=6.8,SNR=6.5						
BBOO	**Buckleboo**	**50.46**	**162**	eP	**P**	**09 53 10.8**	**+1.1**
	2.9nm,0.6s						
STKA	**Stephens Creek**	**51.56**	**156**	P	**P**	**09 53 18.5**	**+0.6**
	1.8nm,0.8s,baz=327,slow=7.2,SNR=4.6						
BRVK	**Borovoye**	**53.76**	**326**	eP	**P**	**09 53 33.5**	**-0.5**
	1.6nm,0.5s						
NRIK	**Noril'sk**	**57.55**	**347**	P	**P**	**09 53 58.9**	**-2.1**
	2.2nm,0.5s,baz=136,slow=7.0,SNR=3.3						
ABKAR	**Akbulak array**	**58.63**	**319**	eP	**P**	**09 54 08.8**	**-0.1**
KBZ	**Khabaz**	**69.81**	**311**	P	**P**	**09 55 24.4**	**+2.2**
	1.3nm,0.6s,baz=157,slow=4.2,SNR=3.6						
BRTR	**Keskin Array B**	**77.09**	**308**	P	**P**	**09 56 06.4**	**+1.0**
	0.3nm,0.4s,baz=134,slow=4.2,SNR=1.6						
PMR	**Palmer**	**77.42**	**29**	eP	**P**	**09 56 06.7**	**+0.1**
FINES	**FINESS Array B**	**78.23**	**331**	P	**P**	**09 56 11.3**	**+0.2**
	1.4nm,0.8s,baz=90,slow=3.3,SNR=2.6						
AKASG	**Malin Array Be**	**78.36**	**320**	P	**P**	**09 56 11.3**	**-0.8**
	0.2nm,0.2s,baz=70,slow=4.5,SNR=2.4						
YKA	**Yellowknife Ar**	**91.81**	**22**	P	**P**	**09 57 19.7**	**+0.3**
	0.9nm,0.9s,baz=313,slow=4.3,SNR=9.0						
VNDA	**Vanda**	**95.82**	**171**	P	**P**	**09 57 39.5**	**+2.2**
	0.6nm,0.7s,baz=309,slow=5.9,SNR=4.4						
TXAR	**Lajitas Array**	**119.26**	**43**	PKP	**PKPdf**	**10 03 02.4**	**+0.9**
	0.2nm,0.7s,baz=188,slow=1.3,SNR=3.9						

NIED ***24*** *09:58:00, 27°.30N×128°.90E, h29km, Mw3.8 Best double couple: M₀6.48000×10¹⁴ NP1:φs.120.00000°, δ48.00000°, λ56.00000°. NP2:φs346.00000°, δ52.00000°, λ122.00000°.*
ISCJB ***24*** *09:58:40.8±0.5, 27°.32N±0°.04×128°.96E±0°.06, h53km±4km, mb3.9/13, MS2.6/1, Error ellipse: s-maj=10.7km s-min=4.0km az=37.3*
JMA ***24*** *09:58:41.6±0.1, 27°.31N×128°.94E, h42km±2km, M3.7*
JMA Felt II J1.
IDC ***24*** *09:58:42.4±0.8, 27°.38N×128°.85E, h47km±8km, mb3.7/13, mb1 3.8/15, mb1mx3.7/39, mbtmp3.9/15, ML3.5/1, MS2.7/3, Ms1 2.8/3, ms1mx2.4/43, Error ellipse: s-maj=25.1km s-min=12.4km az=93.0*
ISC 24 09:58:41.9±0.7, 27°.31N±0°.05×128°.95E±0°.05, h46km±6km, n39, σ0°.75/44, mb4.0/13, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JOKE	**Okinoerabujima**	**0.34**	**279**	P	**Pn**	**09 58 50.3**	**-0.9**
JOKE				S	**Sn**	**09 58 56.6**	**-1.1**
JTK	**Tokunoshima**	**0.47**	**360**	P	**Pn**	**09 58 52.2**	**-0.5**
JTK				S	**Sn**	**09 58 59.7**	**-0.6**
JOW	**Kunigami**	**0.77**	**232**	P	**Pn**	**09 58 56.1**	**-0.3**
JOW				eS	**Sn**	**09 59 07.1**	**+0.1**
JIH	**Iheya**	**0.92**	**253**	P	**Pn**	**09 58 58.4**	**0.0**
JIH				S	**Sn**	**09 59 10.5**	**-0.1**
JAMN	**Amaminishikomi**	**0.95**	**12**	P	**Pn**	**09 58 58.8**	**-0.1**
JAMN				S	**Sn**	**09 59 11.7**	**+0.3**
JNTH	**Nagotoyohara**	**1.14**	**227**	P	**Pn**	**09 59 01.3**	**-0.2**
JAM	**Amami Oshima**	**1.24**	**28**	P	**Pn**	**09 59 02.7**	**-0.1**
JAM				S	**Sn**	**09 59 18.7**	**+0.3**
JZK	**Kikaishima**	**1.35**	**42**	P	**Pn**	**09 59 04.5**	**+0.2**
JJT2	**Tamagusuku 2**	**1.58**	**223**	P	**Pn**	**09 59 07.4**	**-0.2**
JAGN	**Aguni-jima**	**1.69**	**245**	P	**Pn**	**09 59 08.4**	**-0.5**
JAGN				eS	**Sn**	**09 59 28.7**	**-0.6**
JTAJ	**Takarajima**	**1.85**	**7**	P	**Pn**	**09 59 11.2**	**0.0**
JTAJ				eS	**Sn**	**09 59 33.3**	**-0.1**
JKE	**Kume jima 2**	**2.17**	**244**	P	**Pn**	**09 59 14.9**	**-0.6**
JKE				eS	**Sn**	**09 59 42.1**	**+0.9**
JMZ	**Minamidaito 2**	**2.52**	**126**	P	**Pn**	**09 59 18.4**	**-1.9**
JYAK	**Yakushimahirau**	**3.22**	**25**	S	**Sn**	**10 00 06.2**	**-0.9**
JNU	**Nakatsue**	**6.03**	**16**	P	**Pn**	**10 00 09.8**	**+1.3**
	1.3nm,0.3s,baz=260,slow=2.3,SNR=10						
JNU				S	**Sn**	**10 01 15.2**	**-1.1**
	2.1nm,0.3s,baz=212,slow=22,SNR=11						
JNU				LR	LR	10 02 13.3	
	comp=Z,41nm,18.8s,baz=270,slow=35						
KSRS	**Korea Array**	**10.15**	**355**	P	**Pn**	**10 01 03.8**	**-1.2**
	baz=175,slow=14,SNR=2.6						
KSRS				LR	LR	10 05 12.7	
	comp=Z,53nm,18.1s,baz=192,slow=39						
ASAJ	**Asahikawa**	**20.05**	**30**	P	Pn	10 03 17.1	+3.9
	3.1nm,0.7s,baz=204,slow=20,SNR=3.0						
CMAR	**Chiang Mai Arr**	**28.96**	**259**	LR	LR	10 18 04.3	
	comp=Z,15nm,18.6s,baz=100,slow=40						
H11N1	**WAKE ISLAND Hy 35.50**	**94**		T	T	10 43 12.7	
	baz=290,slow=75,SNR=9.6						
H11N2	**WAKE ISLAND Hy 35.50**	**94**		T	T	10 43 13.6	
	baz=290,slow=75,SNR=17						
H11N3	**WAKE ISLAND Hy 35.51**	**94**		T	T	10 43 14.8	
	baz=290,slow=75,SNR=12						
H11S3	**WAKE ISLAND Hy 35.74**	**96**		T	T	10 43 44.5	
	baz=288,slow=74						
H11S1	**WAKE ISLAND Hy 35.74**	**96**		T	T	10 43 45.3	
	baz=288,slow=74						
H11S2	**WAKE ISLAND Hy 35.76**	**96**		T	T	10 43 46.3	
	baz=288						
MKAR	**Makanchi Array**	**41.31**	**311**	P	**P**	**10 06 22.2**	**-0.8**
	0.6nm,0.5s,baz=91,slow=9.8,SNR=7.0						
MKAR				PcP	**PcP**	**10 08 20.8**	**+0.1**
	0.5nm,0.6s,baz=91,slow=1.9,SNR=4.2						
KURBB	**Kurchatov Arra**	**44.53**	**316**	P	**P**	**10 06 48.0**	**-0.8**
	2.2nm,0.4s,baz=102,slow=9.0,SNR=22						
WRA	**Warramunga Arr**	**47.26**	**173**	P	**P**	**10 07 10.9**	**+0.2**
	0.5nm,0.4s,baz=353,slow=8.3,SNR=6.0						
WRA				pP	**pP**	**10 07 24.7**	**+1.3**
	0.4nm,0.5s,baz=352,slow=8.4,SNR=2.2						
NRIK	**Noril'sk**	**48.43**	**342**	P	**P**	**10 07 19.1**	**-0.1**
	2.1nm,0.5s,baz=180,slow=6.1,SNR=3.6						
ASAR	**Alice Springs**	**50.90**	**174**	P	**P**	**10 07 38.9**	**+0.4**
	0.2nm,0.6s,baz=2.2,slow=15,SNR=6.5						
ASAR				pP	**pP**	**10 07 53.2**	**+1.8**
	0.7nm,0.6s,baz=5.2,slow=14,SNR=5.4						
ILAR	**Eielson Array**	**63.19**	**29**	P	**P**	**10 09 05.2**	**+0.3**
	0.5nm,0.8s,baz=268,slow=5.3,SNR=8.1						
INK	**Inuvik**	**67.65**	**23**	P	**P**	**10 09 34.1**	**+0.5**
	1.1nm,0.5s,baz=267,slow=8.3,SNR=5.0						
ARCES	**ARCESS Array B**	**69.24**	**339**	P	**P**	**10 09 43.4**	**-0.2**
	1.5nm,0.7s,baz=73,slow=8.2,SNR=10.0						
FINES	**FINESS Array B**	**72.25**	**331**	P	**P**	**10 10 01.7**	**-0.2**
	1.6nm,0.6s,baz=76,slow=8.0,SNR=6.1						
AKASG	**Malin Array Be**	**75.13**	**320**	P	**P**	**10 10 18.9**	**-0.2**
	3.0nm,0.5s,baz=58,slow=6.8,SNR=7.1						
BRTR	**Keskin Array B**	**76.88**	**308**	P	**P**	**10 10 29.6**	**+0.1**
	0.7nm,0.5s,baz=106,slow=5.0,SNR=4.6						
YKA	**Yellowknife Ar**	**77.28**	**25**	P	**P**	**10 10 32.0**	**+1.0**
	0.3nm,0.5s,baz=303,slow=5.9,SNR=6.1						
YKA				pP	**pP**	**10 10 44.3**	**-0.3**
	0.3nm,0.8s,baz=312,slow=5.3,SNR=2.6						
NB2	**NORSAR Subarra**	**78.63**	**334**	P	**P**	**10 10 37.9**	**-0.8**
	comp=Z,2.1nm,0.6s,baz=53,slow=5.9						
NOA	**NORSAR Array B**	**78.63**	**334**	P	**P**	**10 10 38.3**	**-0.4**
	comp=Z,2.8nm,0.7s,baz=52,slow=5.7,SNR=6.2						
TORD	**Torodi Ar. Bea**	**114.94**	**301**	PKP	PKPdf	10 17 18.2	-0.3

YSS	Yuzh-Sakhalins	10.21	6	eP	Pn	10 20 41.7	+2.4
YSS				eS	Sn	10 22 34.8	+1.4
YSS				pmax	pmax		
	comp=Z,10.0nm,0.4s						
YSS				MLR	MLR		
	comp=Z,500nm,14.0s						
YSS				MLR	MLR		
	comp=N,400nm,13.0s						
YSS				MLR	MLR		
	comp=E,400nm,16.0s						
KSRS	Korea Array	10.63	278	Pn	Pn	10 20 49.0	+3.9
	comp=E,0.3nm,0.3s,baz=92,slow=14,SNR=11						
KSRS				LR	LR	10 24 21.7	
	comp=E,288nm,21.7s,baz=92,slow=35						
KS15	Wonju Array Si	10.66	277	ePn	Pn	10 20 45.7	+0.2
KSAR	Wonju Array Be	10.66	277	P	Pn	10 20 49.0	+3.5
KSAR	Wonju Array Be	10.66	277	Pn	Pn	10 20 49.0	+3.5
MDJ	Mudanjiang	11.77	315	P	Pn	10 21 02.5	+1.9
MDJ				pmax	pmax		
	comp=Z,4.0nm,0.6s						
MDJ				pmax	pmax		
	comp=Z,21nm,2.6s						
CN2	Changchun	13.90	305	eP	Pn	10 21 30.6	+0.8
CN2				eS	Sn	10 24 04.1	+0.3
CN2				pmax	pmax		
	comp=Z,10.0nm,0.6s						
CN2				pmax	pmax		
	comp=Z,200nm,3.0s						
CN2				LR	LR		
	comp=N,600nm,12.0s						
CN2				LR	LR		
	comp=E,400nm,12.0s						
CN2				LR	LR		
	comp=Z,400nm,14.0s						
TYV	Tymovskoe	14.10	4	eP	Pn	10 21 31.2	-1.2
TYV				pmax	pmax		
	comp=Z,15nm,0.8s						
TYV				MLR	MLR		
	comp=N,1μm,15.0s						
TYV				MLR	MLR		
	comp=Z,1μm,15.0s						
KLR	Kul'dur	14.21	334	Pn	Pn	10 21 35.2	+1.3
	comp=Z,0.1nm,0.3s,baz=140,slow=16,SNR=3.0						
PETK	Petropavlovsk-	19.97	30	P	Pn	10 22 47.7	+1.1
	baz=263,slow=8.6,SNR=2.2						
PEA1	Petropavlovsk-	19.98	30	eP	Pn	10 22 47.7	+1.0
HHC	Hu-ho-hao-te	23.39	289	eP	P	10 23 22.8	+1.2
HHC				S	S	10 27 25.3	-8.9
HHC				pmax	pmax		
	comp=Z,29nm,0.9s						
HHC				pmax	pmax		
	comp=Z,120nm,4.3s						
HHC				LR	LR		
	comp=N,730nm,11.7s						
HHC				LR	LR		
	comp=E,830nm,12.1s						
HHC				LR	LR		
	comp=Z,840nm,11.5s						
MA2	Magadan	23.62	12	P	P	10 23 23.3	-0.2
	comp=Z,11nm,0.7s,baz=228,slow=7.9,SNR=4.7						
MA2				LR	LR	10 32 21.9	
	comp=Z,90nm,21.9s,baz=137,slow=36						
YAK	Yakutsk	26.27	348	LR	LR	10 34 26.8	
	comp=Z,192nm,18.3s,baz=152,slow=37						
YAK	Yakutsk	26.27	348	eP	P	10 23 47.2	-0.5
YAK				e*PP	sP	10 23 54.8	+0.4
YAK				ePPP	PPP	10 24 35.3	
YAK				e		10 27 10.9	
YAK				eS	S	10 28 18.0	-1.3
YAK				eSS	SnSn	10 29 17.9	-1.1
YAK				pmax	pmax		
	comp=Z,9.0nm,0.7s						
YAK				pmax	pmax		
	comp=Z,62nm,2.6s						
YAK				pmax	pmax		
	comp=E,56nm,3.8s						
YAK				pmax	pmax		
	comp=N,57nm,3.0s						
YAK				smax	smax		
	comp=N,39nm,2.0s						
YAK				smax	smax		
	comp=E,31nm,2.0s						
YAK				MLR	MLR		
	comp=Z,219nm,14.0s						
YAK				MLR	MLR		
	comp=N,135nm,14.0s						
YAK				MLR	MLR		
	comp=E,120nm,13.0s						
SEY	Seymchan	27.05	11	P	P	10 23 55.1	+0.3
	comp=E,1.5nm,0.7s,baz=231,slow=12,SNR=5.3						
SEY	Seymchan	27.05	11	eP	P	10 23 55.6	+0.8
ENH	Enshi	27.15	265	eP	P	10 23 55.7	-0.3
	comp=E,12nm,0.7s						
ULN	Ulaanbaatar	27.36	305	eP	P	10 23 59.9	+2.0
ULN				pmax	pmax		
	comp=Z,1.0nm,0.7s						
BOD	Bodaibo	27.64	328	eP	P	10 23 58.6	-1.5
BOD				pmax	pmax		
	comp=Z,5.0nm,0.8s						
SONA0	Songino Array	27.78	304	eP	P	10 24 02.3	+0.6
	comp=Z,27nm,1.6s						
SONM	Songino Array	27.78	304	P	P	10 24 02.3	+0.6
	comp=Z,4.9nm,0.6s,baz=89,slow=9.0,SNR=4.4						
H11N2	WAKE ISLAND Hy	28.17	120	T	T	10 53 31.4	
	baz=313,slow=75,SNR=1150						
H11N1	WAKE ISLAND Hy	28.18	120	T	T	10 53 29.9	
	baz=313,slow=75,SNR=1032						
H11N3	WAKE ISLAND Hy	28.18	120	T	T	10 53 28.0	
	baz=313,slow=75,SNR=944						
H11S1	WAKE ISLAND Hy	28.87	122	T	T	10 54 20.7	
	baz=317,slow=74,SNR=1319						
H11S3	WAKE ISLAND Hy	28.87	122	T	T	10 54 19.8	
	baz=317,slow=74,SNR=998						
H11S2	WAKE ISLAND Hy	28.88	122	T	T	10 54 21.9	
	baz=317,SNR=659						
TLY	Talaya	30.36	311	P	P	10 24 23.7	-0.7
	comp=Z,1.3nm,0.3s,baz=46,slow=2.6,SNR=5.1						
TLY	Talaya	30.36	311	eP	P	10 24 24.5	+0.1
TLY				eS	S	10 29 22.4	-1.8
TLY				pmax	pmax		
	comp=Z,3.0nm,0.8s						
TLY				MLR	MLR		
	comp=Z,174nm,11.0s						
TLY	Talaya	30.36	311	eP	P	10 24 24.9	+0.5
CD2	Chengdu	31.51	270	P	P	10 24 33.8	-1.0
CD2				pmax	pmax		
	comp=Z,30nm,0.7s						
GTA	Gaotai	32.48	287	eP	P	10 24 47.5	+4.2
GTA				pP	sP	10 24 54.3	+4.2
GTA				sP	pP	10 24 57.4	+9.3
GTA				pmax	pmax		
	comp=Z,5.0nm,1.0s						
QIZ	Qiongzhong	32.69	246	P	P	10 24 46.3	+1.2
QIZ				S	S	10 29 59.1	-1.8
QIZ				LR	LR		
	comp=Z,57nm,15.7s						
BILL	Bilibino	34.30	16	eP	P	10 25 00.1	+1.4
BILL				e		10 26 09.1	
BILL				eSS	SS	10 32 35.9	-17
BILL				pmax	pmax		
	comp=Z,7.0nm,1.9s						
BILL				MLR	MLR		
	comp=Z,85nm,16.0s						
KMI	Kunming	34.77	261	P	P	10 25 05.3	+1.8
KMI				pP	sP	10 25 14.6	+4.4
KMI				sP	pP	10 25 19.0	+11
KMI				pmax	pmax		
	comp=Z,13nm,0.7s						
KMI				pmax	pmax		
	comp=Z,66nm,3.9s						
KMI				LR	LR		
	comp=N,110nm,10.6s						
KMI				LR	LR		
	comp=E,220nm,10.9s						
KMI				LR	LR		
	comp=Z,160nm,13.2s						
TIXI	Tiksi	35.50	353	P	P	10 25 04.5	-4.5
	comp=Z,0.9nm,0.4s,baz=171,slow=3.0,SNR=5.1						
TIXI	Tiksi	35.50	353	i P	P	10 25 08.1	-0.9
TIXI				pmax	pmax		
	comp=Z,2.0nm,0.8s						
WMQ	Urumqi	40.80	297	P	P	10 25 56.0	+1.9
WMQ				pP	sP	10 26 02.8	+1.9
WMQ				sP	pP	10 26 08.4	+9.4
WMQ				PcP	PcP	10 28 00.8	+5.8
WMQ				pmax	pmax		
	comp=Z,13nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,63nm,5.2s						
WMQ				LR	LR		
	comp=N,130nm,22.2s						
WMQ				LR	LR		
	comp=Z,28nm,21.6s						
CMAR	Chiang Mai Arr	41.28	255	P	P	10 25 58.5	+0.3
	comp=Z,1.0nm,0.6s,baz=47,slow=6.6,SNR=2.8						
CMAR				LR	LR	10 43 23.5	
	comp=Z,30nm,18.3s,baz=30,slow=37						
ZAA0	Zalesovo Array	41.95	313	eP	P	10 26 02.9	-0.4
ZAA1	Zalesovo Array	41.95	313	eP	P	10 26 02.9	-0.5
ZALV	Zalesovo Beam	41.95	313	P	P	10 26 02.9	-0.5
	comp=Z,6.9nm,0.6s,baz=91,slow=6.7,SNR=21						
ZALV				PcP	PcP	10 27 58.1	-0.3
	comp=Z,1.5nm,0.5s,baz=110,slow=3.9,SNR=4.0						
NRIK	Noril'sk	43.41	335	LR	LR	10 44 16.2	
	comp=Z,44nm,20.6s,baz=118,slow=36						
MK01	Makanchi Array	44.10	302	eP	P	10 26 20.4	-0.5
MK31	Makanchi Array	44.11	302	eP	P	10 26 20.9	0.0
MK31	Makanchi Array	44.11	302	eP	P	10 26 20.9	0.0
MK32	Makanchi Array	44.11	302	eP	P	10 26 20.8	-0.2
MKAR	Makanchi Array	44.11	302	P	P	10 26 20.8	-0.2
	comp=Z,5.7nm,0.6s,baz=89,slow=10,SNR=57						
MKAR				LR	LR	10 44 49.4	
	comp=Z,72nm,20.0s,baz=143,slow=36						
MKAR	Makanchi Array	44.11	302	eP	P	10 26 20.9	0.0
MKAR	Makanchi Array	44.11	302	eP	P	10 26 20.9	0.0
MAKZ	Makanchi	44.32	302	eP	P	10 26 22.6	0.0
MAKZ				pmax	pmax		
	comp=Z,5.0nm,0.7s						
MAKZ	Makanchi	44.32	302	eP	P	10 26 22.6	0.0
	comp=Z,4.9nm,0.7s						
KSM	Kuching	45.27	226	eP	P	10 26 30.9	+0.5
	comp=Z,8.0nm,0.8s						
KURK	Kurchatov	45.95	308	eP	P	10 26 35.0	-0.5
KURK				pmax	pmax		
	comp=Z,9.0nm,0.8s						
KURK	Kurchatov	45.95	308	eP	P	10 26 35.0	-0.5
	comp=Z,8.9nm,0.8s						
CAST	Castle Rocks	47.51	34	eP	P	10 26 48.9	+1.4
BPAW	Bear Paw Mtn.	48.01	33	eP	P	10 26 53.6	+2.2
	comp=Z,13nm,1.8s						
MLY	Manley	48.13	32	eP	P	10 26 54.0	+1.6
	comp=Z,32nm,2.0s						
MMRI	Maumere	48.58	205	eP	P	10 26 55.6	-0.6
	comp=Z,62nm,1.1s						
MDM	Murphy Dome	49.20	32	eP	P	10 27 01.8	+1.2
	comp=Z,5.0nm,0.8s						
COLA	College	49.36	32	eP	P	10 27 02.8	+1.1
COLA				pmax	pmax		
	comp=Z,2.0nm,0.7s						
TKM2	Tokmak 2	49.60	299	eP	P	10 27 04.6	+0.4
TKM2				pmax	pmax		
	comp=Z,4.0nm,0.6s						
TKM2	Tokmak 2	49.60	299	eP	P	10 27 04.6	+0.4
	comp=Z,4.1nm,0.6s						
IL1	Eielson Array	49.78	32	eP	P	10 27 05.0	+0.1
ILAR	Eielson Array	49.78	32	P	P	10 27 05.1	+0.2
	comp=Z,2.6nm,0.8s,baz=270,slow=6.4,SNR=35						
ILB	Eielson Array	49.78	32	eP	P	10 27 05.1	+0.2
BRVK	Borovoye	50.67	312	eP	P	10 27 11.6	-0.2
BRVK				pmax	pmax		
	comp=Z,12nm,2.5s						
DOT	Dot Lake	51.09	34	eP	P	10 27 14.8	-0.1
	comp=Z,56nm,1.9s						
ZRNK	Zerenda	51.45	313	eP	P	10 27 17.4	-0.3
ZRNK				pmax	pmax		
	comp=Z,3.0nm,0.6s						
ZRNK	Zerenda	51.45	313	eP	P	10 27 17.4	-0.3
	comp=Z,3.3nm,0.6s						
GSI	Gunungsitoli	53.54	239	eP	P	10 27 33.8	+0.1
	comp=Z,26nm,0.7s						
INK	Inuvik	54.67	27	P	P	10 27 37.9	-3.3
	comp=Z,0.8nm,0.6s,baz=299,slow=12,SNR=2.2						
ARU	Arti	56.43	319	d iP	P	10 27 53.6	-0.4
ARU				S	S	10 35 44.6	+0.5
ARU				pmax	pmax		
	comp=Z,12nm,0.8s						
ARU	Arti	56.43	319	eP	P	10 27 53.8	-0.2
	comp=Z,11nm,0.7s						
FITZ	Fitzroy Crossi	56.55	198	P	P	10 27 55.2	0.0
	comp=Z,3.1nm,0.8s,baz=350,slow=11,SNR=5.4						
WRAB	Tennant Creek	56.80	188	i P	P	10 27 55.6	-1.3
WRAB				pmax	pmax		
	comp=Z,58nm,1.7s						
WRAB	Tennant Creek	56.80	188	eP	P	10 27 56.0	-1.0
	comp=Z,20nm,1.4s						
WB2	Warramunga Arr	56.80	188	eP	P	10 27 56.1	-0.9
	comp=Z,50nm,1.8s						
WR1	Warramunga Arr	56.81	188	eP	P	10 27 55.7	-1.3
	comp=Z,27nm,1.4s						
WRA	Warramunga Arr	56.81	188	P	P	10 27 55.7	-1.3
	comp=Z,7.0nm,0.7s,baz=6.5,slow=7.5,SNR=157						
ABKAR	Akbulak array	57.97	310	eP	P	10 28 04.4	-0.6
DLBC	Dease Lake	58.91	38	P	P	10 28 11.8	+0.2
	comp=Z,0.8nm,0.5s,baz=292,slow=11,SNR=2.0						
DLBC	Dease Lake	58.91	38	eP	P	10 28 11.8	+0.2
	comp=Z,11nm,1.6s						
AS01	Alice Springs	60.53	188	eP	P	10 28 22.1	-0.8
AS31	Alice Springs	60.53	188	eP	P	10 28 22.5	-0.5
	comp=Z,1.9nm,0.6s						
ASAR	Alice Springs	60.53	188	P	P	10 28 22.2	-0.7
	comp=Z,2.8nm,0.8s,baz=3.3,slow=5.8,SNR=36						
PALK	Pallekele	62.16	258	i P	P	10 28 35.3	+1.0
GEYT	Alibeck	63.81	299	P	P	10 28 45.1	+0.1
	comp=Z,2.6nm,0.6s,baz=44,slow=4.5,SNR=4.6						
YKA	Yellowknife Ar	64.09	30	P	P	10 28 46.1	-0.2
	comp=Z,0.6nm,0.7s,baz=303,slow=6.7,SNR=8.2						
YKA				PcP	PcP	10 29 21.2	-0.2
	comp=Z,0.5nm,0.6s,baz=300,slow=4.3,SNR=8.3						
YKB5	Yellowknife Ar	64.09	30	eP	P	10 28 46.1	-0.2
ARA0	ARCESS Array S	64.16	339	eP	P	10 28 45.0	-1.8
ARCES	ARCESS Array B	64.16	339	P	P	10 28 45.0	-1.7
	comp=Z,2.9nm,0.8s,baz=46,slow=8.2,SNR=3.0						
ARCES	ARCESS Array B	64.16	339	P	P	10 28 45.0	-1.7
FIA0	FINESS Array S	68.95	332	eP	P	10 29 16.9	-0.5
FIA0	FINESS Array S	68.95	332	eP	P	10 29 16.9	-0.5
FINES	FINESS Array B	68.95	332	P	P	10 29 16.9	-0.5
	comp=Z,4.4nm,0.7s,baz=63,slow=8.8,SNR=10						
YBH	Yreka Blue Hor	70.61	52	P	P	10 29 26.6	-1.6
	comp=Z,1.2nm,0.7s,baz=297,slow=2.3,SNR=3.6						
YBH	Yreka Blue Hor	70.61	52	eP	P	10 29 26.6	-1.6
YBH				pmax	pmax		
	comp=Z,31nm,1.9s						
YBH	Yreka Blue Hor	70.61	52	eP	P	10 29 26.6	-1.6
	comp=Z,31nm,1.9s						
KBZ	Khabaz	70.93	311	P	P	10 29 29.8	-0.1
	comp=Z,1.6nm,0.8s,baz=29,slow=2.1,SNR=3.7						
KVAR	Kislovodsk Arr	70.93	311	LR	LR	11 02 22.0	
	comp=Z,33nm,20.2s,baz=93,slow=37						
KIV	Kislovodsk	70.94	311	ceP	P	10 29 30.4	+0.3
KIV				e		10 32 11.1	
KIV				ePPP	PPP	10 33 44.7	
KIV				i S	S	10 38 47.9	+2.7
KIV				pmax	pmax		
	comp=Z,12nm,1.0s						
GNI	Garni	71.72	307	LR	LR	11 02 28.7	
	comp=Z,31nm,18.3s,baz=66,slow=37						
NWAO	Narrogin (SRO)	72.89	201	P	P	10 29 41.5	-0.1
	comp=Z,5.4nm,1.1s,baz=37,slow=20,SNR=3.4						
HFS	Hagfors	74.24	336	LR	LR	11 03 49.2	
	comp=Z,26nm,20.3s,baz=98,slow=37						
NB2	NORSAR Subarra	74.34	337	P	P	10 29 49.2	-0.8
	comp=Z,2.1nm,0.7s,baz=38,slow=6.2						
NB200	NORSAR Array S	74.34	337	eP	P	10 29 49.4	-0.6
NOA	NORSAR Array B	74.34	337	P	P	10 29 49.4	-0.6
	comp=Z,2.6nm,0.7s,baz=38,slow=5.9,SNR=6.6						
NOA				LR	LR	11 07 04.0	
	comp=Z,47nm,18.4s,baz=35,slow=40						
AKASG	Malin Array Be	74.39	322	P	P	10 29 49.5	-0.8
	comp=Z,1.2nm,0.4s,baz=46,slow=6.0,SNR=13						
KIEV	Kiev	74.40	322	eP	P	10 29 50.6	+0.2
KIEV				pmax	pmax		
	comp=Z,2.0nm,0.7s						
LRM	Limekiln Ridge	74.43	44	eP	P	10 29 52.0	+1.0
DLMT	Dillon	74.62	45	eP	P	10 29 53.1	+1.0
	comp=Z,3.5nm,0.9s						
BOZ	Bozeman (W)	74.99	44	eP	P	10 29 55.3	+1.1
BOZ	Bozeman (W)	74.99	44	eP	P	10 29 55.3	+1.1
NV01	Mina Array Sit	75.26	53	eP	P	10 29 57.2	+1.3
NVAR	Mina Array Bea	75.26	53	P	P	10 29 57.2	+1.3
	comp=Z,1.8nm,0.6s,baz=302,slow=5.9,SNR=11						
H17A	Grant Village	76.35	44	eP	P	10 30 04.8	+2.7
	comp=Z,9.2nm,1.4s						
IMW	Indian Meadow	76.45	45	eP	P	10 30 04.7	+2.0
	comp=Z,1.9nm,0.8s						
MOOW	Moose Ponds	76.66	45	eP	P	10 30 05.9	+2.1
	comp=Z,9.5nm,1.8s						
R11A	Troy Canyon, C	77.03	52	eP	P	10 30 07.1	+1.1
	comp=Z,15nm,1.7s						
BW06	Boulder Array	77.95	45	eP	P	10 30 11.6	+0.5
PD31	Pinedale Array	77.95	45	eP	P	10 30 11.6	+0.5
PDAR	Pinedale Array	77.95	45	P	P	10 30 11.4	+0.4
	comp=Z,1.1nm,0.6s,baz=259,slow=2.7,SNR=18						
BR101	Keskin Array S	78.89	311	eP	P	10 30 16.5	+0.3
BRTR	Keskin Array B	78.89	311	P	P	10 30 16.5	+0.3
	comp=Z,0.6nm,0.7s,baz=115,slow=1.8,SNR=3.7						
BRTR	Keskin Array B	78.89	311	ceP	P	10 30 16.7	+0.5
BRTR				pmax	pmax		
	comp=Z,1.0nm,0.5s						
LCMT	Little Creek M	79.32	52	eP	P	10 30 20.3	+1.6
	comp=Z,6.2nm,1.3s						
P17A	Butcher Ranch,	79.33	48	eP	P	10 30 20.1	+1.4
	comp=Z,7.2nm,1.1s						
MTPU	Mount Pierson	79.34	50	eP	P	10 30 20.4	+1.3
	comp=Z,6.6nm,1.4s						
KNB	Kanab	79.58	51	eP	P	10 30 21.6	+1.5
KNB				pmax	pmax		
	comp=Z,18nm,1.5s						
KNB	Kanab	79.58	51	eP	P	10 30 21.6	+1.5
	comp=Z,18nm,1.5s						
SRU	San Rafael Swe	79.69	49	eP	P	10 30 21.3	+0.7
SRU				pmax	pmax		
	comp=Z,4.0nm,0.7s						
SRU	San Rafael Swe	79.69	49	eP	P	10 30 21.3	+0.7
	comp=Z,3.8nm,0.7s						
U15A	North Rim	80.28	52	eP	P	10 30 25.5	+1.5
	comp=Z,20nm,1.9s						
VYHS	Vyhne	80.83	325	eP	P	10 30 26.8	+0.4
VYHS	Vyhne	80.83	325	eP	P	10 30 26.8	+0.4
PV09	Paradox Valley	80.92	48	eP	P	10 30 28.5	+1.1
PV10	Paradox Valley	81.05	48	eP	P	10 30 29.9	+1.8
PV04	Paradox Valley	81.12	48	eP	P	10 30 28.2	-0.1
PV05	Paradox Valley	81.21	49	eP	P	10 30 30.1	+1.2
PV01	Paradox Valley	81.49	48	eP	P	10 30 31.3	+0.9
MMAI	Mount Meron Ar	81.97	305	LR	LR	11 09 53.8	
	comp=Z,24nm,18.8s,baz=185,slow=38						
ISCO	Idaho Springs	82.13	46	eP	P	10 30 35.0	+1.1
ISCO	Idaho Springs	82.13	46	eP	P	10 30 35.0	+1.1
GERES	GERESS Array B	82.83	328	P	P	10 30 36.4	-0.6
	comp=Z,1.0nm,0.7s,baz=37,slow=6.9,SNR=8.0						
GERES				LR	LR	11 10 44.1	
	comp=Z,48nm,18.3s,baz=0.5,slow=38						
T25A	Trinidad	84.62	47	eP	P	10 30 47.5	+1.0
	comp=Z,4.7nm,1.0s						
ANMO	Albuquerque	84.86	50	eP	P	10 30 47.9	+0.1
ANMO				pmax	pmax		
	comp=Z,2.0nm,0.9s						
BFO	Black Forest	85.43	331	i P	P	10 30 52.3	+2.1
TX31	Lajitas Ar. Si	90.39	52	eP	P	10 31 14.9	+0.5
LTX	Lajitas	90.39	52	eP	P	10 31 14.9	+0.5
LTX	Lajitas	90.39	52	eP	P	10 31 14.9	+0.5
TXAR	Lajitas Array	90.39	52	P	P	10 31 14.9	+0.5
	comp=Z,0.9nm,0.6s,baz=304,slow=3.2,SNR=18						
TOA1	Torodi Ar. Sit	117.38	315	ePKPdf	PKPdf	10 36 57.5	-1.3
TORD	Torodi Ar. Bea	117.38	315	PKP	PKPdf	10 36 57.5	-1.3
	comp=Z,0.3nm,0.5s,baz=11,slow=2.2,SNR=3.8						
DBIC	Dimbokro	126.35	316	PKP	PKPdf	10 37 15.2	-0.9
	comp=Z,2.3nm,0.7s,baz=162,slow=6.5,SNR=3.1						
LPAZ	La Paz	146.95	60	PKPbc	PKPbc	10 37 56.4	-0.1
	comp=Z,3.8nm,0.6s,baz=344,slow=2.9,SNR=28						

*ISCJB **24** 10:23:31.3±0.8, 10°.3S±0°.1×161°.4E±0°.1, h67km, mb4.0/12, Error ellipse: s-maj=16.4km s-min=12.6km az=43.0*
*IDC **24** 10:23:36.8±2.8, 10°.24S×161°.09E, h91km±19km, mb3.6/11, mb1 3.8/11, mb1mx3.6/32, mbtmp3.9/11, MS3.2/2, Ms1 3.2/2, ms1mx2.7/35, Error ellipse: s-maj=31.7km s-min=16.6km az=102.0*
ISC 24 10:23:33.6±0.9, 10°.3S±0°.1×161°.3E±0°.1, h67km, n15, σ1§11/14, mb4.0/12, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
HNR	Honiara	1.57	302	P	Pn	Pn	10 24 00.5	+1.0
	209nm,0.3s,baz=180,slow=8.3,SNR=74							
HNR				S	Sn	Sn	10 24 19.5	+0.6
	645nm,0.3s,baz=359,slow=23,SNR=19							
HNR				LR	LR	LR	10 24 37.2	
	comp=Z,192nm,20.4s,baz=53,slow=44							
WRA	Warramunga Arr	27.70	247	P	P	P	10 29 15.2	-0.5
	1.0nm,0.6s,baz=74,slow=9.6,SNR=2.9							
STKA	Stephens Creek	28.18	217	LR	LR	LR	10 39 35.6	
	comp=Z,58nm,20.4s,baz=227,slow=34							
ASAR	Alice Springs	29.31	239	P	P	P	10 29 30.3	+0.2
	0.2nm,0.3s,baz=63,slow=9.9,SNR=4.6							
FITZ	Fitzroy Crossi	35.38	253	P	P	P	10 30 22.4	-0.7
	2.3nm,0.7s,baz=78,slow=9.3,SNR=4.2							
JCJ	Chichijima	41.52	334	P	P	P	10 31 12.5	-2.0
	18nm,0.6s,baz=296,slow=18							
MJAR	Matsushiro Arr	51.39	336	P	P	P	10 32 30.9	-0.8
	1.4nm,0.5s,baz=167,slow=8.3,SNR=6.3							
ASAJ	Asahikawa	56.74	344	P	P	P	10 33 11.5	+1.0
	3.5nm,0.6s,baz=209,slow=10,SNR=6.0							
KSRS	Korea Array	56.86	328	P	P	P	10 33 11.4	-0.1
	2.0nm,0.9s,baz=137,slow=6.9,SNR=7.3							
USRK	Ussuriysk Ar.	60.39	336	P	P	P	10 33 36.0	+0.1
	3.8nm,0.7s,baz=148,slow=6.4,SNR=7.7							
VNDA	Vanda	67.22	180	P	P	P	10 34 20.9	+0.5
	0.6nm,0.6s,baz=338,slow=6.0,SNR=6.8							
MA2	Magadan	70.13	354	LR	LR	LR	11 04 02.4	
	comp=Z,14nm,19.6s,baz=338,slow=35							
ILAR	Eielson Array	84.23	20	P	P	P	10 35 59.5	+2.0
	0.3nm,0.9s,baz=233,slow=5.4,SNR=4.3							
MKAR	Makanchi Array	89.99	318	P	P	P	10 36 24.8	-1.0
	0.3nm,0.6s,baz=93,slow=5.3,SNR=3.4							
YKA	Yellowknife Ar	96.32	28	P	P	P	10 36 54.1	-0.5
	0.2nm,0.5s,baz=266,slow=4.7,SNR=4.3							

*IDC **24** 10:27:19.4±3.2, 32°.58S×139°.20E, h0km, mb4.1/1, mb1 4.0/6, mb1mx3.8/26, mbtmp3.9/6, ML3.9/5, MS3.2/2, Ms1 3.2/2, ms1mx2.8/24, Error ellipse: s-maj=50.0km s-min=23.2km az=12.0*
ISC 24 10:27:20.3±2.0, 32°.6S±0°.1×139°.16E±0°.08, h10km, n7, σ3§08/11, Near coast of South Australia

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
STKA	Stephens Creek	2.19	71	Pn	Pn	Pn	10 27 57.0	+0.2

DEMI	**Demirci**	**0.21**	**250**	P		**Pb**	**10 37 39.7**	**-0.4**
DEMI				S		**Sg**	**10 37 43.0**	**+0.4**
DEMI	**Demirci**	**0.21**	**250**	*i* P		**Pb**	**10 37 39.7**	**-0.4**
DEMI				*i* S		**Sg**	**10 37 43.0**	**+0.4**
GDZ	**Gediz**	**0.40**	**93**	P		**Pg**	**10 37 42.4**	**-0.2**
GDZ				S		**Sg**	**10 37 47.7**	**-0.4**
GDZ	**Gediz**	**0.40**	**93**	*i* P		**Pg**	**10 37 42.4**	**-0.2**
GDZ				*i* S		**Sg**	**10 37 47.7**	**-0.4**
TVSB	**Tavsanli**	**0.51**	**48**	*e*PG		**Pg**	**10 37 44.5**	**-0.1**
TVSB	**Tavsanli**	**0.51**	**48**	*e*Pg		**Pg**	**10 37 44.5**	**-0.1**
DURS	**Dursunbey**	**0.62**	**322**	P		**Pb**	**10 37 47.0**	**-0.1**
DURS				S		**Sb**	**10 37 56.8**	**+1.1**
DURS	**Dursunbey**	**0.62**	**322**	*i* P		**Pb**	**10 37 47.0**	**-0.1**
DURS				*i* S		**Sb**	**10 37 56.8**	**+1.1**
KULA	**Kula-Manisa**	**0.65**	**202**	*e*PG		**Pg**	**10 37 47.0**	**-0.1**
KULA				*e*SG		**Sg**	**10 37 55.8**	**+0.1**
KULA	**Kula-Manisa**	**0.65**	**202**	*e*Pg		**Pg**	**10 37 47.0**	**-0.1**
KULA				*e*Sg		**Sg**	**10 37 55.8**	**+0.1**
MANT	**Manisa**	**0.70**	**208**	P		**Pb**	**10 37 48.6**	**+0.1**
MANT				S		**Sg**	**10 37 57.3**	**-0.2**
MANT	**Manisa**	**0.70**	**208**	*i* P		**Pb**	**10 37 48.6**	**+0.1**
MANT				*i* S		**Sg**	**10 37 57.3**	**-0.2**
KHAL	**Karahalli**	**0.85**	**151**	P		**Pg**	**10 37 50.9**	**0.0**
KHAL	**Karahalli**	**0.85**	**151**	*i* P		**Pg**	**10 37 50.9**	**0.0**
KHL	**Karahalli**	**0.90**	**151**	*e*PG		**Pb**	**10 37 51.2**	**-0.6**
KHL	**Karahalli**	**0.90**	**151**	*e*Pg		**Pb**	**10 37 51.2**	**-0.6**
AKHS	**Akhisar**	**0.93**	**256**	P		**Pb**	**10 37 52.3**	**0.0**
AKHS				S		**Sn**	**10 38 06.0**	**-0.2**
AKHS	**Akhisar**	**0.93**	**256**	*i* P		**Pb**	**10 37 52.3**	**0.0**
AKHS				*i* S		**Sn**	**10 38 06.0**	**-0.2**
AKS	**Akhisar**	**0.93**	**256**	*e*PG		**Pg**	**10 37 52.5**	**0.0**
AKS	**Akhisar**	**0.93**	**256**	*e*Pg		**Pg**	**10 37 52.5**	**0.0**
ORLT	**Orhaneli**	**0.93**	**357**	*e*PG		**Pb**	**10 37 52.0**	**-0.3**
ORLT	**Orhaneli**	**0.93**	**357**	*e*Pg		**Pb**	**10 37 52.1**	**-0.3**
BALB	**Balikesir**	**0.99**	**302**	*e*PG		**Pb**	**10 37 52.4**	**-1.0**
BALB	**Balikesir**	**0.99**	**302**	*e*Pg		**Pb**	**10 37 52.4**	**-1.0**
IGD	**Bursa**	**1.16**	**9**	*i* P		**Pn**	**10 37 55.3**	**-1.0**
IGD				*i* S		**Sb**	**10 38 11.1**	**-0.1**
KCTX	**Karacabey (Bur**	**1.24**	**338**	*e*PN		**Pg**	**10 37 58.3**	**-0.2**
KCTX	**Karacabey (Bur**	**1.24**	**338**	*e*Pn		**Pg**	**10 37 58.3**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.26**	**357**	*e*PN		**Pg**	**10 37 58.3**	**-0.4**
MDNY	**Mudanya-Bursa**	**1.26**	**357**	*e*Pn		**Pg**	**10 37 58.3**	**-0.4**
CAVI	**Cavuskoy**	**1.28**	**31**	*e*PN		**Pb**	**10 37 58.2**	**-0.1**
CAVI	**Cavuskoy**	**1.28**	**31**	*e*Pn		**Pb**	**10 37 58.2**	**-0.1**
IZI	**Iznik**	**1.28**	**17**	*e*PN		**Pg**	**10 37 59.0**	**-0.2**
IZI	**Iznik**	**1.28**	**17**	*e*Pn		**Pg**	**10 37 59.0**	**-0.2**
GONE	**Gonen-Balikesi**	**1.36**	**314**	*e*PN		**Pb**	**10 37 59.6**	**-0.1**
GONE	**Gonen-Balikesi**	**1.36**	**314**	*e*Pn		**Pb**	**10 37 59.6**	**-0.1**
BORA	**Eskisehir**	**1.38**	**56**	P		**Pb**	**10 38 00.1**	**0.0**
BORA				S		**Sg**	**10 38 19.2**	**+0.2**
BORA	**Eskisehir**	**1.38**	**56**	*i* P		**Pb**	**10 38 00.1**	**0.0**
BORA				*i* S		**Sg**	**10 38 19.2**	**+0.2**
ARMT	**Armutlu**	**1.45**	**357**	PN		**Pn**	**10 38 00.2**	**0.0**
ARMT	**Armutlu**	**1.45**	**357**	*i* Pn		**Pn**	**10 38 00.2**	**0.0**
EDC	**Edincik**	**1.50**	**326**	*e*PN		**Pb**	**10 38 01.7**	**-0.3**
EDC	**Edincik**	**1.50**	**326**	*e*Pn		**Pb**	**10 38 01.7**	**-0.3**
ESKT	**Eskisehir**	**1.51**	**74**	*i* P		**Pb**	**10 38 02.3**	**-0.1**
ESKT				*i* S		**Sg**	**10 38 24.2**	**+0.9**
SEYT	**Eskypehyr**	**1.51**	**74**	P		**Pb**	**10 38 02.3**	**-0.1**
GULT	**Gulveren**	**1.77**	**42**	*e*PN		**Pn**	**10 38 05.2**	**+0.5**
GULT	**Gulveren**	**1.77**	**42**	*e*Pn		**Pn**	**10 38 05.2**	**+0.5**

CSEM ***24*** *10:44:27.5±0.6, 33°.05N×0°.30W, h10km, ML4.2, Error ellipse: s-maj=16.0km s-min=8.0km az=133.0*
MDD ***24*** *10:44:29.6±1.7, 33°.06N×0°.51W, h0km, mb4.2/6, Error ellipse: s-maj=22.1km s-min=9.2km az=127.0, PRXIMO*
CNRM ***24*** *10:44:36.9, 33°.30N×0°.90W, h30km, MD4.2*
CRAAG ***24*** *10:44:38.1, 34°.01N×0°.22E, Ml4.2*

ISC 24 10:44:24.9±1.9, 32°.96N±0°.09×0°.15W±0°.06, h10km, n69, σ1§59/85, Northern Algeria

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ODJA	**Bouhanifia**	**2.36**	**360**	P		**Pb**	**10 45 08.0**	**+0.4**
ODJA	**Bouhanifia**	**2.36**	**360**	P		**Pb**	**10 45 08.0**	**+0.4**
ODJA	**Bouhanifia**	**2.36**	**360**	P		**Pb**	**10 45 08.0**	**+0.4**
OTSS	**Djebel Tessala**	**2.38**	**347**	P		**Pn**	**10 45 06.3**	**+2.3**
OTSS	**Djebel Tessala**	**2.38**	**347**	P		**Pn**	**10 45 06.3**	**+2.3**
OTSS	**Djebel Tessala**	**2.38**	**347**	P		**Pn**	**10 45 06.3**	**+2.3**
OLHC	**Oulhaca**	**2.52**	**336**	P		**Pb**	**10 45 10.0**	**-0.2**
OLHC	**Oulhaca**	**2.52**	**336**	P		**Pb**	**10 45 10.0**	**-0.2**
OLHC	**Oulhaca**	**2.52**	**336**	P		**Pb**	**10 45 10.0**	**-0.2**
OJGS	**Djebel Guires**	**2.64**	**16**	P		**Pb**	**10 45 12.0**	**-0.4**
OJGS	**Djebel Guires**	**2.64**	**16**	P		**Pb**	**10 45 12.0**	**-0.4**
OJGS	**Djebel Guires**	**2.64**	**16**	P		**Pb**	**10 45 12.0**	**-0.4**
ETRT	**Tiaret**	**2.71**	**26**	P		**Pn**	**10 45 08.6**	**0.0**
ETRT	**Tiaret**	**2.71**	**26**	P		**Pn**	**10 45 08.6**	**0.0**
ETRT	**Tiaret**	**2.71**	**26**	P		**Pn**	**10 45 08.6**	**0.0**
USTO	**Oran**	**2.79**	**353**	P		**Pb**	**10 45 15.0**	**+0.2**
USTO	**Oran**	**2.79**	**353**	P		**Pb**	**10 45 15.0**	**+0.2**
OKGL	**Djebel Kef Gue**	**3.14**	**12**	P		Pn	10 45 12.4	-2.1
OKGL	**Djebel Kef Gue**	**3.14**	**12**	P		**Pn**	**10 45 14.8**	**+0.3**
	13nm,0.2s,SNR=7.9							
OKGL				S		**Sg**	**10 46 04.8**	**-0.9**
	140nm,0.4s,SNR=7.9							
OKGL	**Djebel Kef Gue**	**3.14**	**12**	P		**Pn**	**10 45 14.8**	**+0.3**
	13nm,0.2s,SNR=7.9							
EANR	**´Ain N'Sour**	**3.15**	**19**	P		**Pn**	**10 45 15.2**	**+0.5**
EANR	**´Ain N'Sour**	**3.15**	**19**	P		**Pn**	**10 45 15.2**	**+0.5**
EANR	**´Ain N'Sour**	**3.15**	**19**	P		**Pn**	**10 45 15.2**	**+0.5**
ECHF	**Ech Chlef**	**3.42**	**21**	P		**Pb**	**10 45 28.2**	**+2.7**
ECHA	**Ech Chlef**	**3.42**	**21**	P		**Pb**	**10 45 28.2**	**+2.7**
EBNR	**Beni Rached**	**3.60**	**22**	P		**Pg**	**10 45 33.6**	**-0.3**
ZFT	**Errachidia**	**3.67**	**257**	P		**Pn**	**10 45 23.0**	**+1.1**
ZFT				S		Sn	10 45 58.0	-7.4
ZFT	**Errachidia**	**3.67**	**257**	*e*P		**Pn**	**10 45 23.0**	**+1.1**
ZFT				*e*S		Sn	10 45 58.0	-7.4
CZD	**Col de Zad**	**4.11**	**272**	P		**Pn**	**10 45 29.0**	**+0.9**
CZD				S		Sn	10 46 05.0	-11
CZD	**Col de Zad**	**4.11**	**272**	*i* P		**Pn**	**10 45 29.0**	**+0.9**
EMHD	**Djebel Mahouad**	**4.12**	**38**	P		Pn	10 45 15.4	-13
ENIJ	**Nijar**	**4.34**	**338**	P		**Pn**	**10 45 30.9**	**-0.1**
	2.4nm,0.2s,SNR=7.9							
ENIJ				S		**Sn**	**10 46 20.0**	**-1.7**
	5.3nm,0.2s,SNR=7.9							
ENIJ	**Nijar**	**4.34**	**338**	P		**Pn**	**10 45 30.9**	**-0.1**
	2.4nm,0.2s,SNR=7.9							
ENIJ				S		**Sn**	**10 46 20.0**	**-1.7**
	5.3nm,0.2s,SNR=7.9							
EBER	**Berja**	**4.53**	**331**	P		**Pn**	**10 45 33.8**	**+0.1**
	16nm,0.6s,SNR=6.4							
EBER				S		**Sn**	**10 46 24.1**	**-2.4**
	1.1nm,0.2s,SNR=7.9							
EBER	**Berja**	**4.53**	**331**	P		**Pn**	**10 45 33.8**	**+0.1**
	16nm,0.6s,SNR=6.4							
EBER				S		**Sn**	**10 46 24.1**	**-2.4**
	1.1nm,0.2s,SNR=7.9							
KIB	**El Ksiba**	**4.98**	**267**	P		**Pn**	**10 45 42.0**	**+2.2**
KIB				S		Sn	10 46 27.0	-10
KIB	**El Ksiba**	**4.98**	**267**	*e*P		**Pn**	**10 45 42.0**	**+2.2**
EQUE	**Quentar**	**5.02**	**328**	P		**Pn**	**10 45 41.7**	**+1.3**
	3.1nm,0.2s,SNR=14							
EQUE	**Quentar**	**5.02**	**328**	P		**Pn**	**10 45 41.7**	**+1.3**
	3.1nm,0.2s,SNR=14							
EGOR	**Sierra Gorda,**	**5.26**	**323**	P		**Pn**	**10 45 44.6**	**+0.9**
	0.2nm,0.3s,SNR=7.9							
EGOR	**Sierra Gorda,**	**5.26**	**323**	P		**Pn**	**10 45 44.6**	**+0.9**
	0.2nm,0.3s,SNR=7.9							
EQES	**Quesada**	**5.39**	**335**	P		**Pn**	**10 45 48.2**	**+2.8**
	0.5nm,0.2s,SNR=5.5							
EQES				S		**Sn**	**10 46 48.3**	**+0.7**
	0.8nm,0.1s,SNR=4.7							
EQES	**Quesada**	**5.39**	**335**	P		**Pn**	**10 45 48.2**	**+2.8**
	0.5nm,0.2s,SNR=5.5							
EQES				S		**Sn**	**10 46 48.3**	**+0.7**
	0.8nm,0.1s,SNR=4.7							
TZC	**Tazercounte**	**5.42**	**263**	P		**Pn**	**10 45 47.0**	**+1.1**
TZC				S		Sn	10 46 38.0	-10
TZC	**Tazercounte**	**5.42**	**263**	*e*P		**Pn**	**10 45 47.0**	**+1.1**
SESP	**Santiago Espad**	**5.51**	**340**	P		**Pn**	**10 45 49.4**	**+2.3**
	3.3nm,0.2s,SNR=7.9							
SESP				S		**Sn**	**10 46 48.6**	**-1.9**
	8.6nm,0.4s,SNR=7.9							
SESP	**Santiago Espad**	**5.51**	**340**	P		**Pn**	**10 45 49.4**	**+2.3**
	3.3nm,0.2s,SNR=7.9							
SESP				S		**Sn**	**10 46 48.6**	**-1.9**
	8.6nm,0.4s,SNR=7.9							
AFON	**Font Roja**	**5.70**	**357**	P		Pn	10 45 53.1	+3.4
	0.2nm,0.2s,SNR=4.0							
AFON				S		**Sn**	**10 46 56.4**	**+1.1**
	0.1nm,0.2s,SNR=7.9							
AFON	**Font Roja**	**5.70**	**357**	P		Pn	10 45 53.1	+3.4
	0.2nm,0.2s,SNR=4.0							
AFON				S		**Sn**	**10 46 56.4**	**+1.1**
	0.1nm,0.2s,SNR=7.9							
ETOB	**Tobarra**	**5.78**	**349**	P		**Pn**	**10 45 52.2**	**+1.4**
	0.9nm,0.2s,SNR=6.1							
ETOB				S		**Sn**	**10 46 55.4**	**-1.9**
	1.6nm,0.3s,SNR=5.2							
ETOB	**Tobarra**	**5.78**	**349**	P		**Pn**	**10 45 52.2**	**+1.4**
	0.9nm,0.2s,SNR=6.1							
ETOB				S		**Sn**	**10 46 55.4**	**-1.9**
	1.6nm,0.3s,SNR=5.2							
EVIA	**Vianos**	**5.98**	**342**	P		**Pn**	**10 45 55.4**	**+1.9**
	1.3nm,0.2s,SNR=7.9							
EVIA				S		**Sn**	**10 47 00.6**	**-1.5**
	4.8nm,0.4s,SNR=7.9							
EVIA	**Vianos**	**5.98**	**342**	P		**Pn**	**10 45 55.4**	**+1.9**
	1.3nm,0.2s,SNR=7.9							
EVIA				S		**Sn**	**10 47 00.6**	**-1.5**
	4.8nm,0.4s,SNR=7.9							
EIBI	**Ibiza**	**6.17**	**11**	P		**Pn**	**10 45 58.0**	**+1.9**
	0.6nm,0.1s,SNR=7.9							
EIBI				S		**Sn**	**10 47 03.6**	**-3.2**
	6.4nm,0.2s,SNR=7.9							
EIBI	**Ibiza**	**6.17**	**11**	P		**Pn**	**10 45 58.0**	**+1.9**
	0.6nm,0.1s,SNR=7.9							
EADA	**Adamuz**	**6.33**	**326**	P		**Pn**	**10 45 58.1**	**-0.2**
	5.0nm,0.6s,SNR=5.8							
EADA	**Adamuz**	**6.33**	**326**	P		**Pn**	**10 45 58.1**	**-0.2**
	5.0nm,0.6s,SNR=5.8							
OUK	**Oukaimeden**	**6.78**	**257**	P		**Pn**	**10 46 05.0**	**+0.2**
OUK				S		Sn	10 47 15.0	-7.2
OUK	**Oukaimeden**	**6.78**	**257**	*i* P		**Pn**	**10 46 05.0**	**+0.2**
EMIN	**Mina Concepcio**	**7.17**	**314**	P		**Pn**	**10 46 09.7**	**-0.1**
	0.3nm,0.1s,SNR=4.0							
EMIN	**Mina Concepcio**	**7.17**	**314**	P		**Pn**	**10 46 09.7**	**-0.1**
	0.3nm,0.1s,SNR=4.0							
ETOS	**Mallorca**	**7.20**	**19**	P		**Pn**	**10 46 11.4**	**+1.2**
	0.6nm,0.2s,SNR=7.9							
ETOS				S		**Sn**	**10 47 28.1**	**-4.0**
	6.8nm,0.5s,SNR=6.2							
ETOS	**Mallorca**	**7.20**	**19**	P		**Pn**	**10 46 11.4**	**+1.2**
	0.6nm,0.2s,SNR=7.9							
EMOS	**Mosqueruela**	**7.39**	**358**	P		**Pn**	**10 46 14.2**	**+1.2**
	0.7nm,0.2s,SNR=7.9							
EMOS				S		**Sn**	**10 47 35.1**	**-1.9**
	2.7nm,0.4s,SNR=7.9							
EMOS	**Mosqueruela**	**7.39**	**358**	P		**Pn**	**10 46 14.2**	**+1.2**
	0.7nm,0.2s,SNR=7.9							
EMOS				S		**Sn**	**10 47 35.1**	**-1.9**
	2.7nm,0.4s,SNR=7.9							
EGRO	**El Granado**	**7.54**	**309**	P		**Pn**	**10 46 14.0**	**-0.8**
	0.2nm,0.1s,SNR=4.0							
EGRO	**El Granado**	**7.54**	**309**	P		**Pn**	**10 46 14.0**	**-0.8**
	0.2nm,0.1s,SNR=4.0							
EPOB	**Poblet**	**8.43**	**6**	P		**Pn**	**10 46 29.1**	**+1.9**
	1.1nm,0.3s,SNR=7.9							
EPOB				S		**Sn**	**10 47 58.0**	**-4.5**
	4.7nm,0.4s,SNR=7.9							
EPOB	**Poblet**	**8.43**	**6**	P		**Pn**	**10 46 29.1**	**+1.9**
	1.1nm,0.3s,SNR=7.9							

NIED ***24*** *10:47:00, 36°.90N×141°.90E, h29km, Mw3.8 Best double couple: M0=5.62000×10^14 NP1:φs=272.00000°, δ36.00000°, λ-127.00000°. NP2:φs=135.00000°, δ62.00000°, λ-67.00000°.*
IDC ***24*** *10:47:11.9±0.9, 36°.85N×142°.09E, h0km, mb3.7/7, mb1 3.9/10, mb1mx3.7/55, mbtmp3.7/10, ML3.6/3, MS2.9/5, Ms1 3.0/5, ms1mx2.7/44, Error ellipse: s-maj=27.4km s-min=17.0km az=117.0*
ISCJB ***24*** *10:47:12.9±0.6, 36°.84N±0°.04×142°.07E±0°.06, h19km, mb3.7/7, MS2.9/1, Error ellipse: s-maj=6.6km s-min=6.0km az=169.0*
JMA ***24*** *10:47:15.4±0.2, 36°.94N×141°.92E, h28km±3km, M3.6*

ISC 24 10:47:14.0±0.7, 36°.89N±0°.05×141°.94E±0°.06, h19km, n33, σ1§40/29, mb3.7/7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.94**	**284**	P		**Pg**	**10 47 32.1**	**-0.2**
JFK	**Kawauchi**	**0.98**	**300**	P		**Pn**	**10 47 32.5**	**-0.3**
JFK				*e*S		**Sb**	**10 47 44.4**	**-0.5**
JHO	**Hitachi**	**1.13**	**256**	P		**Pn**	**10 47 35.2**	**+0.3**
JMM	**Marumori**	**1.34**	**317**	P		**Pn**	**10 47 37.5**	**-0.2**
JFT	**Otama**	**1.43**	**297**	P		**Pb**	**10 47 39.8**	**-0.2**
JFT				*e*S		**Sb**	**10 47 57.6**	**-0.2**
JIO	**Ouri**	**1.63**	**344**	P		**Pn**	**10 47 42.2**	**+0.5**
JOU	**Okura**	**1.79**	**326**	P		**Pb**	**10 47 45.1**	**-1.1**
JOU				*e*S		**Sb**	**10 48 06.8**	**-1.5**
JFY	**Yanaizu**	**1.86**	**287**	P		**Pb**	**10 47 47.0**	**-0.4**
JYS	**Shirataka**	**2.00**	**312**	P		**Pb**	**10 47 48.8**	**-1.0**
JAG	**Ashikaga**	**2.05**	**258**	P		**Pn**	**10 47 49.2**	**+1.7**
JMK	**Ichinoseki**	**2.14**	**345**	P		**Pn**	**10 47 49.5**	**+0.8**
MJAR	**Matsushiro Arr**	**3.02**	**265**	Pn		**Pn**	**10 48 03.4**	**+2.6**
	4.9nm,0.3s,baz=88,slow=15,SNR=36							
MJAR				Sn		**Sb**	**10 48 41.4**	**-2.2**
	5.6nm,0.3s,baz=78,slow=31,SNR=5.8							
MJAR				LR	LR		10 49 32.9	
	comp=Z,218nm,18.7s,baz=80,slow=45							
MAT	**Matsushiro**	**3.02**	**265**	P		**Pn**	**10 48 03.6**	**+2.8**
MAT				S		**Sb**	**10 48 42.5**	**-1.1**
JHJ	**Hachijo jima 2**	**4.16**	**206**	Pn		**Pn**	**10 48 15.5**	**-0.9**
	21nm,0.3s,baz=66,slow=20,SNR=2.8							
JHJ				Sn		**Sn**	**10 49 03.5**	**-1.0**
	50nm,0.3s,baz=90,slow=20,SNR=3.8							
ASAJ	**Asahikawa**	**7.24**	**4**	Pn		**Pn**	**10 48 58.0**	**-0.7**
	1.0nm,0.3s,baz=174,slow=7.3,SNR=9.6							
JCJ	**Chichijima**	**9.77**	**179**	Pn		**Pn**	**10 49 30.0**	**-3.5**
	baz=276,slow=18							
JCJ				Sn	Sn		10 51 13.7	-9.0
	7.6nm,0.3s,baz=310,slow=24,SNR=10.0							
JNU	**Nakatsue**	**9.82**	**251**	LR	LR		10 53 49.9	
	comp=Z,62nm,18.2s,baz=121,slow=40							
USRK	**Ussuriysk Ar.**	**10.51**	**317**	Pn	Pn		10 49 49.9	+6.2
	baz=134,slow=12,SNR=2.4							
USRK				LR	LR		10 53 36.9	
	comp=Z,45nm,18.2s,baz=25,slow=36							
KLR	**Kul'dur**	**14.39**	**332**	LR	LR		10 56 01.0	
	comp=Z,52nm,19.0s,baz=134,slow=36							
SEY	**Seymchan**	**26.86**	**11**	P		**P**	**10 52 54.7**	**+1.6**
	0.8nm,0.5s,baz=159,slow=4.3,SNR=3.9							
H11N2	**WAKE ISLAND Hy**	**27.71**	**121**	T	T		11 22 04.4	
	baz=314,slow=75,SNR=15							
H11N1	**WAKE ISLAND Hy**	**27.72**	**121**	T	T		11 22 07.3	
	baz=314,slow=75,SNR=14							
H11N3	**WAKE ISLAND Hy**	**27.73**	**121**	T	T		11 22 06.0	
	baz=314,slow=75,SNR=9.1							
H11S1	**WAKE ISLAND Hy**	**28.43**	**123**	T	T		11 23 01.9	
	baz=316,slow=76,SNR=9.5							
H11S3	**WAKE ISLAND Hy**	**28.43**	**123**	T	T		11 23 02.4	
	baz=316,slow=76,SNR=7.2							
H11S2	**WAKE ISLAND Hy**	**28.44**	**123**	T	T		11 23 04.1	
	baz=316,slow=76,SNR=5.3							
CMAR	**Chiang Mai Arr**	**41.87**	**256**	LR	LR		11 13 51.7	
	comp=Z,15nm,19.9s,baz=105,slow=38							
MKAR	**Makanchi Array**	**44.55**	**302**	P		**P**	**10 55 25.7**	**+1.1**
	0.2nm,0.5s,baz=83,slow=12,SNR=3.1							
ILAR	**Eielson Array**	**49.39**	**32**	P		**P**	**10 56 02.6**	**+0.6**
	1.0nm,0.7s,baz=265,slow=6.3,SNR=7.6							
WRA	**Warramunga Arr**	**56.98**	**189**	P		**P**	**10 56 58.8**	**+0.5**
	0.5nm,0.5s,baz=6.4,slow=6.9,SNR=11							
ASAR	**Alice Springs**	**60.70**	**189**	P		**P**	**10 57 25.3**	**+1.1**
	0.5nm,0.8s,baz=12,slow=5.0,SNR=6.3							
YKA	**Yellowknife Ar**	**63.72**	**30**	P		**P**	**10 57 44.8**	**+0.8**
	0.3nm,0.6s,baz=304,slow=7.0,SNR=5.2							
TXAR	**Lajitas Array**	**89.88**	**53**	P		**P**	**11 00 13.0**	**+0.9**
	0.5nm,0.8s,baz=337,slow=2.9,SNR=4.0							

MEX 24 10:56:28.6±0.9, 15°.52N×93°.38W, h80km±8km, MD3.7, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		**0.24**	**41**	*i* P		Pn	10 56 39.0	-1.7
PCIG				*e*S		Sn	10 56 47.8	-1.7
TGIG		**1.28**	**11**	*e*P		Pn	10 56 50.7	-0.5
TGIG				*i* S		Sn	10 57 06.3	-1.8
CCIG	**Comitan**	**1.42**	**58**	*e*P		Pn	10 56 51.3	-1.7
CCIG				*i* S		Sn	10 57 09.3	-2.2

TIR ***24*** *10:59:03.4, 40°.64N×20°.27E, h5km, ML2.8*
CSEM ***24*** *10:59:05.3±0.2, 41°.60N×20°.19E, h2km, ML2.8, Error ellipse: s-maj=4.4km s-min=3.6km az=34.0*
PDG ***24*** *10:59:05.0±0.2, 41°.58N×20°.23E, h11km, ML2.9/13, Error ellipse: s-maj=0.3km s-min=0.3km az=0.0*
BEO ***24*** *10:59:06.0±0.4, 41°.59N×20°.25E, h0km, M2.4/9*

ISC 24 10:59:04.9±1.1, 41°.59N±0°.02×20°.26E±0°.02, h3km±10km, n56, σ0§96/105, 16C-6D, Albania

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TIR	**Tirane**	**0.39**	**231**	*i* PG		**Pg**	**10 59 12.2**	**-0.1**
TIR				*i* SG		**Sg**	**10 59 18.4**	**+1.2**
TIR	**Tirane**	**0.39**	**231**	*e*Pg		**Pg**	**10 59 12.2**	**-0.1**
TIR				*e*Sg		**Sg**	**10 59 18.6**	**+1.3**
TIR	**Tirane**	**0.39**	**231**	P		**Pg**	**10 59 11.9**	**-0.4**
TIR	**Tirane**	**0.39**	**231**	*e*Pg		**Pg**	**10 59 12.2**	**-0.1**
TIR				*i* Sg		**Sg**	**10 59 18.4**	**+1.2**
OHR	**Ohrid**	**0.63**	**140**	*e*Pg		**Pg**	**10 59 16.8**	**-0.1**
OHR				*i* Sg		**Sb**	**10 59 27.2**	**-0.6**
OHR	**Ohrid**	**0.63**	**140**	*e*Pg		**Pg**	**10 59 16.8**	**-0.1**
OHR				*i* Sg		**Sb**	**10 59 27.2**	**-0.6**
ULC	**Ulcinj**	**0.84**	**296**	⇑*i*Pg		**Pg**	**10 59 20.3**	**-0.8**
ULC				*e*Sg		**Sb**	**10 59 33.4**	**-0.6**
ULC	**Ulcinj**	**0.84**	**296**	⇑*i*Pg		**Pg**	**10 59 20.3**	**-0.8**
ULC				*e*Sg		**Sb**	**10 59 33.4**	**-0.6**
ZATK	**Zatriq**	**0.90**	**17**	P		**Pg**	**10 59 22.0**	**-0.1**
SKO	**Skopje**	**0.96**	**66**	*e*Pg		**Pn**	**10 59 25.8**	**+0.5**
SKO				*i* Sg		**Sb**	**10 59 37.6**	**+0.3**
SKO	**Skopje**	**0.96**	**66**	*e*Pg		**Pn**	**10 59 25.7**	**+0.4**
SKO				*i* Sg		**Sb**	**10 59 37.5**	**+0.2**
BIA	**Bitola**	**0.98**	**125**	*e*Pg		**Pn**	**10 59 26.2**	**+0.5**
BIA				*e*Sg		**Sn**	**10 59 39.5**	**-0.6**
BIA	**Bitola**	**0.98**	**125**	*e*Pg		**Pn**	**10 59 26.2**	**+0.5**
BIA				*e*Sg		**Sn**	**10 59 39.5**	**-0.6**
DRME	**Dracevica, Mon**	**1.00**	**307**	⇑*i*Pg		**Pg**	**10 59 23.3**	**-0.7**
DRME				*e*Sg		**Sb**	**10 59 38.8**	**+0.4**
DRME	**Dracevica, Mon**	**1.00**	**307**	⇑*i*Pg		**Pg**	**10 59 23.3**	**-0.7**
DRME				*e*Sg		**Sb**	**10 59 38.8**	**+0.4**
PVY	**Plav**	**1.03**	**347**	⇓*i*Pg		**Pg**	**10 59 24.1**	**-0.5**
PVY				*e*Sg		**Sb**	**10 59 40.1**	**+0.8**
PVY	**Plav**	**1.03**	**347**	⇓*i*Pg		**Pg**	**10 59 24.1**	**-0.5**
PVY				*e*Sg		**Sb**	**10 59 40.1**	**+0.8**
PEJK	**Peje**	**1.05**	**1**	P		**Pg**	**10 59 25.0**	**0.0**
PDG	**Podgorica**	**1.12**	**319**	*e*Pg		**Pg**	**10 59 25.8**	**-0.6**
PDG				*e*Sg		**Sn**	**10 59 43.2**	**-0.2**
PDG	**Podgorica**	**1.12**	**319**	⇑*i*Pg		**Pg**	**10 59 25.4**	**-1.0**
PDG				*e*Sg		**Sn**	**10 59 43.2**	**-0.2**
**T

BIA				*i* Sg		**Sn**	**11 02 07.5**	**-0.5**
DRME	**Dracevica, Mon**	**0.99**	**309**	⇑ *i* Pg		**Pg**	**11 01 52.2**	**-1.1**
DRME				*e*Sg		**Sn**	**11 02 07.4**	**-0.6**
DRME	**Dracevica, Mon**	**0.99**	**309**	⇑ *i* Pn		**Pg**	**11 01 52.2**	**-1.1**
DRME				*e*Sg		**Sn**	**11 02 07.4**	**-0.6**
SKO	**Skopje**	**1.00**	**65**	P		**Pb**	**11 01 53.3**	**-0.1**
SKO				S		**Sb**	**11 02 06.8**	**+0.2**
SKO	**Skopje**	**1.00**	**65**	*e*Pg		**Pb**	**11 01 53.4**	**0.0**
SKO				*i* Sg		**Sb**	**11 02 06.8**	**+0.2**
SKO	**Skopje**	**1.00**	**65**	P		**Pb**	**11 01 53.3**	**-0.1**
SKO				S		**Sb**	**11 02 06.8**	**+0.2**
PVY	**Plav**	**1.05**	**349**	⇓ *i* Pg		**Pg**	**11 01 53.3**	**-1.1**
PVY				*e*Sg		**Sn**	**11 02 09.6**	**+0.1**
PVY	**Plav**	**1.05**	**349**	⇓ *i* Pg		**Pg**	**11 01 53.3**	**-1.1**
PVY				*e*Sg		**Sn**	**11 02 09.6**	**+0.1**
PEJK	**Peje**	**1.08**	**2**	P		**Pg**	**11 01 54.2**	**-0.8**
PEJK				S		**Sn**	**11 02 11.8**	**+1.6**
PDG	**Podgorica**	**1.13**	**321**	P		**Pb**	**11 01 55.4**	**-0.2**
PDG				S		**Sn**	**11 02 12.4**	**+1.2**
PDG	**Podgorica**	**1.13**	**321**	⇑ *i* Pg		**Pb**	**11 01 54.8**	**-0.8**
PDG				*e*Sg		**Sn**	**11 02 12.3**	**+1.1**
PDG	**Podgorica**	**1.13**	**321**	⇑ *i* Pg		**Pb**	**11 01 54.8**	**-0.8**
PDG				*e*Sg		**Sn**	**11 02 12.3**	**+1.1**
TTG	**Podgorica**	**1.13**	**321**	⇑ *i* Pg		**Pb**	**11 01 54.8**	**-0.8**
TTG				*e*Sg		**Sn**	**11 02 12.5**	**+1.2**
FNA	**Florina**	**1.17**	**131**	P		**Pb**	**11 01 55.7**	**-0.7**
FNA				S		**Sn**	**11 02 12.7**	**+0.4**
FNA	**Florina**	**1.17**	**131**	P		**Pb**	**11 01 55.7**	**-0.7**
FNA				S		**Sn**	**11 02 12.7**	**+0.4**
FNA	**Florina**	**1.17**	**131**	P		**Pb**	**11 01 55.3**	**-1.1**
FNA				S		**Sn**	**11 02 15.2**	**+2.9**
FNA				AML		AML	11 02 17.2	
	comp=E,757μm,0.4s							
FNA				AML		AML	11 02 17.2	
	comp=N,1336μm,0.3s							
BUM	**Brajici-Budva**	**1.23**	**307**	⇑ *i* Pg		**Pn**	**11 01 57.0**	**-0.4**
BUM				*e*Sg		**Sn**	**11 02 16.1**	**+2.1**
NEST	**Nestorio**	**1.31**	**151**	P		**Pg**	**11 01 59.1**	**-0.3**
NEST				S		**Sg**	**11 02 18.5**	**+2.2**
NEST	**Nestorio**	**1.31**	**151**	P		**Pg**	**11 01 59.0**	**-0.3**
NEST				S		**Sg**	**11 02 18.5**	**+2.2**
NEST	**Nestorio**	**1.31**	**151**	P		**Pg**	**11 01 59.0**	**-0.3**
NEST				S		**Sg**	**11 02 19.1**	**+2.8**
NEST				AML		AML	11 02 20.7	
	comp=E,336μm,0.5s							
NEST				AML		AML	11 02 21.6	
	comp=N,377μm,0.5s							
BEY	**Berane**	**1.33**	**350**	⇓ *i* Pg		**Pn**	**11 01 58.8**	**+0.1**
BEY	**Berane**	**1.33**	**350**	P		**Pg**	**11 02 01.3**	**+1.5**
BEY				*e*Sg		**Sg**	**11 02 19.1**	**+2.0**
IVA	**Berane**	**1.33**	**350**	⇓ *i* Pg		**Pn**	**11 01 58.8**	**+0.1**
IVA				*e*Sg		**Sg**	**11 02 19.1**	**+2.0**
CEME	**Cevo**	**1.38**	**316**	⇑ *i* Pg		**Pn**	**11 01 59.1**	**-0.3**
CEME				*e*Sg		**Sg**	**11 02 20.8**	**+2.1**
NKME	**Niksic**	**1.53**	**322**	⇓ *i* Pg		**Pb**	**11 02 01.8**	**-0.7**
NKME				*e*Sg		**Sg**	**11 02 26.2**	**+2.8**
NKY	**Niksic**	**1.55**	**324**	⇓ *i* Pg		**Pb**	**11 02 02.4**	**-0.5**
NKY				*e*Sg		**Sg**	**11 02 26.6**	**+2.6**
HCY	**Herceg Novi**	**1.56**	**305**	⇑ *i* Pg		**Pb**	**11 02 02.6**	**-0.4**
HCY				*e*Sg		**Sg**	**11 02 27.0**	**+2.6**
HCY	**Herceg Novi**	**1.56**	**305**	*e*Pn		**Pb**	**11 02 02.3**	**-0.7**
HCY				*e*Sg		**Sg**	**11 02 27.0**	**+2.6**
KZN	**Kozani**	**1.72**	**136**	P		**Pg**	**11 02 06.1**	**-1.1**
BARS	**Barje**	**1.72**	**43**	*e*Pn		**Pb**	**11 02 05.2**	**-0.6**
BARS				*e*Sg		**Sg**	**11 02 31.9**	**+2.2**
GRG	**Griva**	**1.75**	**110**	P		**Pb**	**11 02 05.1**	**-1.2**
GRG	**Griva**	**1.75**	**110**	P		**Pb**	**11 02 05.1**	**-1.2**
VAY	**Valandovo**	**1.78**	**97**	*i* Pg		**Pb**	**11 02 05.7**	**-1.1**
VAY				*i* Sg		**Sb**	**11 02 28.1**	**-0.9**
VAY				*e*Lg		Lg	11 02 30.8	
	comp=N,112nm,0.6s							
VAY				*e*Lg		Lg	11 02 31.6	
	comp=E,101nm,0.5s							
VAY	**Valandovo**	**1.78**	**97**	*e*Pn		**Pb**	**11 02 06.7**	**-0.1**
VAY				*e*Sg		**Sg**	**11 02 31.0**	**-0.5**
VAY	**Valandovo**	**1.78**	**97**	*i* Pg		**Pb**	**11 02 05.7**	**-1.1**
VAY	**Valandovo**	**1.78**	**97**	*e*Pn		**Pb**	**11 02 06.7**	**-0.1**
VAY				*e*Lg		Lg	11 02 30.7	
	comp=E,112nm,0.6s							
VAY				*e*Sg		**Sg**	**11 02 31.0**	**-0.5**
SELS	**Selova**	**1.78**	**22**	*e*Pn		**Pn**	**11 02 05.0**	**+0.1**
SELS				*e*Sg		**Sg**	**11 02 32.7**	**+1.1**
TREB	**Trebinje**	**1.81**	**310**	*e*Pn		**Pb**	**11 02 06.8**	**-0.4**
KPRO	**Kipourio**	**1.83**	**151**	P		**Pb**	**11 02 06.6**	**-1.0**
KPRO	**Kipourio**	**1.83**	**151**	P		**Pb**	**11 02 06.6**	**-1.0**
KPRO	**Kipourio**	**1.83**	**151**	P		**Pb**	**11 02 07.0**	**-0.6**
BRY	**Bratogost**	**1.83**	**318**	⇑ *i* Pn		**Pb**	**11 02 06.8**	**-0.9**
BRY				*e*Sn		**Sg**	**11 02 33.4**	**+0.3**
BRY	**Bratogost**	**1.83**	**318**	*e*Pn		**Pb**	**11 02 06.6**	**-1.1**
BRY				*e*Sn		**Sg**	**11 02 33.4**	**+0.3**
PLE	**Pljevlja**	**1.87**	**341**	*e*Pn		**Pb**	**11 02 08.3**	**-0.1**
PLE				*e*Sn		**Sg**	**11 02 34.1**	**-0.3**
PLE	**Pljevlja**	**1.87**	**341**	*e*Pn		**Pb**	**11 02 08.3**	**-0.1**
PLE				*e*Sn		**Sg**	**11 02 34.1**	**-0.3**
KEK	**Kerkira**	**1.88**	**190**	P		**Pb**	**11 02 07.7**	**-0.7**
KEK	**Kerkira**	**1.88**	**190**	P		**Pb**	**11 02 07.7**	**-0.7**
UPM	**Unac-Piva**	**1.91**	**330**	*e*Pn		**Pb**	**11 02 09.0**	**0.0**
UPM				*e*Sn		**Sg**	**11 02 35.3**	**-0.2**
UPM	**Unac-Piva**	**1.91**	**330**	*e*Pn		**Pb**	**11 02 09.0**	**0.0**
UPM	**Unac-Piva**	**1.91**	**330**	P		**Pg**	**11 02 10.1**	**-0.7**
UPM				*e*Sn		**Sg**	**11 02 35.3**	**-0.2**
SGD	**Sagiada**	**1.95**	**180**	P		**Pg**	**11 02 10.5**	**-1.1**
SGD	**Sagiada**	**1.95**	**180**	P		**Pg**	**11 02 10.5**	**-1.1**
IVAS	**Ivanjica**	**2.01**	**359**	*e*Pn		**Pn**	**11 02 09.1**	**+1.0**
IVAS				*e*Sg		**Sg**	**11 02 39.1**	**+0.2**
IVAS	**Ivanjica**	**2.01**	**359**	*e*Pn		**Pn**	**11 02 09.1**	**+1.0**
IVAS				*e*Sg		**Sg**	**11 02 39.1**	**+0.2**
IGT	**Igoumenitsa**	**2.03**	**178**	P		**Pb**	**11 02 10.6**	**-0.4**
IGT	**Igoumenitsa**	**2.03**	**178**	P		**Pb**	**11 02 10.6**	**-0.4**
KNT	**Kendrikon**	**2.06**	**100**	P		**Pn**	**11 02 09.1**	**+0.5**
KNT				S		**Sn**	**11 02 34.7**	**+0.6**
KNT	**Kendrikon**	**2.06**	**100**	P		**Pn**	**11 02 09.3**	**+0.7**
KNT				S		**Sn**	**11 02 34.7**	**+0.6**
KNT	**Kendrikon**	**2.06**	**100**	P		**Pn**	**11 02 09.3**	**+0.7**
KNT				S		**Sb**	**11 02 36.8**	**-0.2**
KNT				AML		AML	11 02 42.7	
	comp=N,100μm,0.6s							
KNT				AML		AML	11 02 42.7	
	comp=E,96μm,0.4s							
LIT	**Litokhoron**	**2.26**	**130**	P		**Pb**	**11 02 12.9**	**-2.0**
LIT	**Litokhoron**	**2.26**	**130**	P		**Pb**	**11 02 12.9**	**-2.0**
GRUS	**Gruza**	**2.35**	**9**	*e*Pn		**Pn**	**11 02 13.8**	**+1.1**
GRUS				*e*Sn		**Sb**	**11 02 45.8**	**+0.3**
GRUS	**Gruza**	**2.35**	**9**	*e*Pn		**Pn**	**11 02 13.8**	**+1.1**
GRUS				*e*Sn		**Sb**	**11 02 45.8**	**+0.3**
BBLS	**Lazići**	**2.38**	**346**	*e*Pn		**Pb**	**11 02 16.4**	**-0.6**
BBLS				*e*Sn		**Sb**	**11 02 45.8**	**-0.6**
BBLS	**Lazići**	**2.38**	**346**	*e*Pn		**Pb**	**11 02 16.4**	**-0.6**
BBLS				*e*Sn		**Sb**	**11 02 45.8**	**-0.6**
HORT	**Hortiatis**	**2.38**	**113**	P		**Pn**	**11 02 13.2**	**+0.1**
HORT	**Hortiatis**	**2.38**	**113**	P		**Pn**	**11 02 13.2**	**+0.1**
THL	**Klokotos Trika**	**2.42**	**145**	P		**Pb**	**11 02 16.7**	**-0.9**
ZAPS	**Zavoj**	**2.47**	**45**	*e*Pn		**Pn**	**11 02 15.6**	**+1.2**
ZAPS				*e*Sg		**Sg**	**11 02 54.3**	**+0.7**
ZAPS	**Zavoj**	**2.47**	**45**	*e*Pn		**Pn**	**11 02 15.6**	**+1.2**
ZAPS				*e*Sg		**Sg**	**11 02 54.3**	**+0.7**
NOCI	**Noci**	**2.50**	**253**	P		**Pn**	**11 02 14.2**	**-0.5**
NOCI	**Noci**	**2.50**	**253**	P		**Pn**	**11 02 14.2**	**-0.5**
DSL	**Palaion Diasel**	**2.52**	**164**	P		**Pb**	**11 02 17.5**	**-1.8**
DSL	**Palaion Diasel**	**2.52**	**164**	P		**Pb**	**11 02 17.5**	**-1.8**
DIVS	**Divibare**	**2.54**	**356**	*e*Pn		**Pn**	**11 02 16.1**	**+0.8**
DIVS				*e*Sn		**Sb**	**11 02 49.1**	**-1.9**
DIVS	**Divibare**	**2.54**	**356**	*e*Pn		**Pn**	**11 02 16.1**	**+0.8**
DIVS				*e*Sn		**Sb**	**11 02 49.1**	**-1.9**
TRUS	**Trudelj**	**2.66**	**3**	*e*Pn		**Pb**	**11 02 20.0**	**-1.8**
TRUS				*e*Sn		**Sb**	**11 02 52.1**	**-2.4**
TRUS	**Trudelj**	**2.66**	**3**	*e*Pn		**Pb**	**11 02 20.0**	**-1.8**
TRUS				*e*Sn		**Sb**	**11 02 52.1**	**-2.4**
LKD2	**Lefkada island**	**2.79**	**173**	P		**Pb**	**11 02 22.0**	**-2.0**
LKD2	**Lefkada island**	**2.79**	**173**	P		**Pb**	**11 02 22.0**	**-2.0**
AGG	**Agios Georgios**	**3.01**	**147**	P		**Pb**	**11 02 25.1**	**-2.6**
AGG	**Agios Georgios**	**3.01**	**147**	P		**Pb**	**11 02 25.1**	**-2.6**
PDO	**Prodromos**	**3.05**	**166**	P		**Pb**	**11 02 25.0**	**-3.4**
PDO	**Prodromos**	**3.05**	**166**	P		**Pb**	**11 02 25.0**	**-3.4**
KFL	**Anninata**	**3.48**	**173**	P		**Pn**	**11 02 30.8**	**+2.7**
KFL	**Anninata**	**3.48**	**173**	P		**Pn**	**11 02 30.8**	**+2.7**

*ISCJB **24** 11:05:18.9±1.3, 40°.16N±0°.05×35°.20E±0°.08, h0km, Error ellipse: s-maj=10.0km s-min=5.9km az=25.6*

*CSEM **24** 11:05:20.1±0.8, 40°.19N×35°.10E, h0km±6km, MD2.8, Error ellipse: s-maj=17.9km s-min=8.9km az=121.0, Suspected Mining explosion.*
*DDA **24** 11:05:21.1, 40°.21N×35°.00E, h9km, Md2.8, Suspected Mining explosion.*
ISC 24 11:05:20.0±1.3, **40°.20N**±0°.04×**35°.15E**±0°.06, **h0**km, **n12**, σ0§**93**/21, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
COAL	**Corum-Alaca**	**0.14**	**294**	P	**Pg**	**11 05 22.6**	**-0.1**
COAL				S	**Sg**	**11 05 25.1**	**+0.6**
COAL	**Corum-Alaca**	**0.14**	**294**	*i* P	**Pg**	**11 05 22.6**	**-0.1**
COAL				*i* S	**Sg**	**11 05 25.1**	**+0.6**
CORM	**Corum**	**0.40**	**268**	*e*PG	**Pg**	**11 05 25.7**	**-2.0**
CORM	**Corum**	**0.40**	**268**	*e*Pg	**Pg**	**11 05 25.7**	**-2.0**
CDAG	**Cicekdag**	**0.83**	**227**	P	**Pg**	**11 05 35.2**	**-0.7**
CDAG				S	**Sg**	**11 05 47.6**	**+1.0**
CDAG	**Cicekdag**	**0.83**	**227**	*i* P	**Pg**	**11 05 35.2**	**-0.7**
CDAG				*i* S	**Sg**	**11 05 47.6**	**+1.0**
HAVZ	**Havza**	**0.98**	**26**	P	**Pb**	**11 05 39.9**	**+0.1**
HAVZ	**Havza**	**0.98**	**26**	*i* P	**Pb**	**11 05 39.9**	**+0.1**
HAVZ				*i* S	**Sn**	**11 05 56.5**	**+1.0**
BOYT	**Boyabat**	**1.24**	**351**	P	**Pg**	**11 05 42.5**	**-1.2**
BOYT				S	**Sg**	**11 06 00.0**	**+0.3**
BOYT	**Boyabat**	**1.24**	**351**	*i* P	**Pg**	**11 05 42.5**	**-1.2**
BOYT				*i* S	**Sg**	**11 05 60.0**	**+0.3**
ILGA	**Ilgaz**	**1.39**	**308**	P	**Pg**	**11 05 46.1**	**-0.5**
ILGA				S	**Sn**	**11 06 06.2**	**+0.2**
ILGA	**Ilgaz**	**1.39**	**308**	*i* P	**Pg**	**11 05 46.1**	**-0.5**
ILGA				*i* S	**Sn**	**11 06 06.2**	**+0.2**

*DDA **24** 11:05:45.7, 39°.13N×29°.01E, h7km, Md2.9*
*ISK **24** 11:05:45.7, 39°.12N×29°.01E, h6km, ML2.5*
*CSEM **24** 11:05:46.1±0.1, 39°.14N×29°.02E, h0km±1km, MD2.9, Error ellipse: s-maj=2.0km s-min=1.9km az=17.0*
ISC 24 11:05:46.0±0.9, **39°.12N**±0°.02×**29°.02E**±0°.02, **h13**km±9km, **n45**, σ0§**41**/66, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**252**	P	**Pg**	**11 05 51.4**	**0.0**
DEMI				S	**Sg**	**11 05 54.9**	**-0.1**
DEMI	**Demirci**	**0.25**	**252**	*i* P	**Pg**	**11 05 51.4**	**0.0**
DEMI				*i* S	**Sg**	**11 05 54.9**	**-0.1**
GDZ	**Gediz**	**0.36**	**95**	P	**Pg**	**11 05 53.4**	**+0.1**
GDZ				S	**Sg**	**11 05 58.3**	**+0.1**
GDZ	**Gediz**	**0.36**	**95**	*i* P	**Pg**	**11 05 53.4**	**+0.1**
GDZ				*i* S	**Sg**	**11 05 58.4**	**+0.1**
TVSB	**Tavsanli**	**0.47**	**46**	PG	**Pg**	**11 05 55.4**	**0.0**
TVSB	**Tavsanli**	**0.47**	**46**	*i* Pg	**Pg**	**11 05 55.4**	**0.0**
DURS	**Dursunbey**	**0.64**	**319**	P	**Pg**	**11 05 58.4**	**-0.1**
DURS				S	**Sb**	**11 06 08.2**	**+0.3**
DURS	**Dursunbey**	**0.64**	**319**	*i* P	**Pg**	**11 05 58.4**	**-0.1**
DURS				*i* S	**Sb**	**11 06 08.2**	**+0.3**
KULA	**Kula-Manisa**	**0.67**	**205**	*e*PG	**Pg**	**11 05 59.1**	**0.0**
KULA				*e*SG	**Sg**	**11 06 08.0**	**+0.1**
KULA	**Kula-Manisa**	**0.67**	**205**	*e*Pg	**Pg**	**11 05 59.1**	**0.0**
KULA				*e*Sg	**Sg**	**11 06 08.0**	**+0.1**
MANT	**Manisa**	**0.73**	**210**	P	**Pg**	**11 05 59.9**	**-0.3**
MANT				S	**Sg**	**11 06 09.2**	**-0.6**
MANT	**Manisa**	**0.73**	**210**	*i* P	**Pg**	**11 05 59.9**	**-0.3**
MANT				*i* S	**Sg**	**11 06 09.2**	**-0.6**
KHAL	**Karahalli**	**0.84**	**154**	P	**Pb**	**11 06 02.5**	**+0.1**
KHAL				S	**Sb**	**11 06 13.6**	**0.0**
KHAL	**Karahalli**	**0.84**	**154**	*i* P	**Pb**	**11 06 02.5**	**+0.1**
KHAL				*i* S	**Sb**	**11 06 13.6**	**0.0**
KHL	**Karahalli**	**0.89**	**154**	*e*PG	**Pb**	**11 06 03.3**	**0.0**
KHL	**Karahalli**	**0.89**	**154**	*e*Pg	**Pb**	**11 06 03.3**	**0.0**
ORLT	**Orhaneli**	**0.93**	**354**	*e*PG	**Pg**	**11 06 03.5**	**-0.4**
ORLT	**Orhaneli**	**0.93**	**354**	*e*Pg	**Pg**	**11 06 03.5**	**-0.4**
AKHS	**Akhisar**	**0.97**	**256**	P	**Pb**	**11 06 04.9**	**+0.2**
AKHS				S	**Sb**	**11 06 17.8**	**+0.4**
AKHS	**Akhisar**	**0.97**	**256**	*i* P	**Pb**	**11 06 04.9**	**+0.2**
AKHS				*i* S	**Sb**	**11 06 17.8**	**+0.4**
AKS	**Akhisar**	**0.97**	**256**	*e*PG	**Pb**	**11 06 04.8**	**+0.1**
AKS	**Akhisar**	**0.97**	**256**	*e*Pg	**Pb**	**11 06 04.8**	**+0.1**
BALB	**Balikesir**	**1.02**	**301**	*e*PG	**Pb**	**11 06 05.9**	**+0.4**
BALB	**Balikesir**	**1.02**	**301**	*e*Pg	**Pb**	**11 06 05.9**	**+0.4**
IGD	**Bursa**	**1.15**	**7**	*i* P	**Pg**	**11 06 06.4**	**-1.7**
IGD				*i* S	**Sb**	**11 06 23.2**	**+0.7**
BALY	**Balya**	**1.25**	**300**	P	**Pb**	**11 06 09.4**	**0.0**
BALY				S	**Sb**	**11 06 25.7**	**+0.3**
BALY	**Balya**	**1.25**	**300**	*i* P	**Pb**	**11 06 09.4**	**0.0**
BALY				*i* S	**Sb**	**11 06 25.7**	**+0.3**
CAVI	**Cavuskoy**	**1.25**	**30**	*e*PN	**Pg**	**11 06 10.4**	**+0.3**
CAVI	**Cavuskoy**	**1.25**	**30**	*e*Pn	**Pg**	**11 06 10.4**	**+0.3**
KCTX	**Karacabey (Bur**	**1.25**	**336**	*e*PN	**Pg**	**11 06 09.9**	**-0.1**
KCTX	**Karacabey (Bur**	**1.25**	**336**	*e*Pn	**Pg**	**11 06 10.0**	**-0.1**
IZI	**Iznik**	**1.26**	**16**	*e*PN	**Pg**	**11 06 11.2**	**+0.9**
IZI	**Iznik**	**1.26**	**16**	*e*Pn	**Pg**	**11 06 11.2**	**+0.9**
GONE	**Gonen-Balikesi**	**1.39**	**312**	*e*PN	**Pg**	**11 06 12.1**	**-0.5**
GONE	**Gonen-Balikesi**	**1.39**	**312**	*e*Pn	**Pg**	**11 06 12.1**	**-0.5**
ARMT	**Armutlu**	**1.45**	**355**	*e*PN	**Pg**	**11 06 13.4**	**-0.4**
ARMT	**Armutlu**	**1.45**	**355**	*e*Pn	**Pg**	**11 06 13.4**	**-0.4**
ESKT	**Eskisehir**	**1.47**	**74**	*i* P	**Pg**	**11 06 14.2**	**-0.2**
ESKT				*i* S	**Sg**	**11 06 32.9**	**-0.5**
SEYT	**Eskypehyr**	**1.47**	**74**	P	**Pg**	**11 06 14.1**	**-0.2**
SEYT				S	**Sg**	**11 06 32.9**	**-0.5**
GPA	**Golpazari**	**1.53**	**40**	*e*PN	**Pb**	**11 06 14.2**	**0.0**
GPA	**Golpazari**	**1.53**	**40**	*e*Pn	**Pb**	**11 06 14.2**	**0.0**
AYDN	**Tasoluk**	**1.71**	**212**	P	**Pg**	**11 06 18.4**	**-0.5**
AYDN				S	**Sg**	**11 06 41.3**	**+0.2**
AYDN	**Tasoluk**	**1.71**	**212**	*i* P	**Pg**	**11 06 18.4**	**-0.5**
AYDN				*i* S	**Sg**	**11 06 41.3**	**+0.2**
GULT	**Gulveren**	**1.74**	**41**	*e*PN	**Pb**	**11 06 17.3**	**-0.5**
GULT	**Gulveren**	**1.74**	**41**	*e*Pn	**Pb**	**11 06 17.3**	**-0.5**

*IDC **24** 11:06:45.7±2.1, 36°.21N×142°.50E, h0km, mb3.7/3, mb1 3.7/7, mb1mx3.4/37, mbtmp3.8/7, ML3.6/4, MS2.7/4, Ms1 2.7/4, ms1mx2.3/59, Error ellipse: s-maj=46.6km s-min=22.9km az=80.0*
*JMA **24** 11:06:50.4±0.2, 36°.33N×142°.21E, h65km±4km, M3.2*
ISC 24 11:06:49.9±2.4, **36°.30N**±0°.05×**142°.4E**±0°.1, **h36**km±5km, **n31**, σ0§**99**/26, **mb3.6**/3, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.38**	**245**	P	**Pn**	**11 07 12.4**	**-0.2**
CHOJ				*e*S	**Sn**	**11 07 28.6**	**-0.9**
JHO	**Hitachi**	**1.50**	**283**	P	**Pn**	**11 07 13.3**	**-1.0**
ONAJ	**Iwakimizuishiy**	**1.51**	**303**	P	**Pn**	**11 07 13.8**	**-0.7**
JFK	**Kawauchi**	**1.62**	**312**	P	**Pn**	**11 07 15.5**	**-0.5**
BSO1	**Boso 1**	**2.00**	**216**	P	**Pn**	**11 07 21.8**	**+1.1**
BSO1				S	**Sn**	**11 07 45.8**	**+1.6**
JMM	**Marumori**	**2.02**	**321**	P	**Pn**	**11 07 21.1**	**-0.3**
JMM				*e*S	**Sn**	**11 07 44.3**	**-1.2**
JFT	**Otama**	**2.05**	**307**	P	**Pn**	**11 07 21.6**	**-0.2**
BSO3	**Boso 3**	**2.14**	**226**	P	**Pn**	**11 07 23.5**	**+0.7**
BSO3				*e*S	**Sn**	**11 07 48.6**	**+0.6**
JAG	**Ashikaga**	**2.38**	**274**	P	**Pn**	**11 07 25.8**	**-0.5**
JFY	**Yanaizu**	**2.42**	**298**	P	**Pn**	**11 07 27.0**	**0.0**
JMK	**Ichinoseki**	**2.81**	**341**	P	**Pn**	**11 07 32.6**	**+0.3**
JMK				*e*S	**Sn**	**11 08 04.6**	**-0.3**
JRY	**Ryogami san**	**2.84**	**265**	P	**Pn**	**11 07 32.4**	**-0.3**
JOD2	**Odawara 2**	**2.88**	**250**	P	**Pn**	**11 07 33.2**	**0.0**
MJAR	**Matsushiro Arr**	**3.38**	**275**	Pn	**Pn**	**11 07 39.7**	**-0.5**
	4.3nm,0.3s,baz=98,slow=13,SNR=31						
MAT	**Matsushiro**	**3.38**	**275**	P	**Pn**	**11 07 40.3**	**+0.1**
MAT				*e*S	**Sn**	**11 08 21.0**	**+1.9**
JHJ	**Hachijo jima 2**	**3.83**	**215**	Pn	**Pn**	**11 07 46.3**	**0.0**
	23nm,0.3s,baz=88,slow=21,SNR=3.2						
JHJ				Sn	**Sn**	**11 08 27.4**	**-2.6**
	40nm,0.3s,baz=296,slow=23,SNR=3.2						
ASAJ	**Asahikawa**	**7.81**	**1**	Pn	**Pn**	**11 08 41.7**	**+0.7**
	0.5nm,0.3s,baz=236,slow=7.3,SNR=5.2						
JCJ	**Chichijima**	**9.17**	**181**	Pn	**Pn**	**11 08 58.6**	**-1.1**
	1.8nm,0.3s,baz=6.8,slow=22,SNR=7.9						
JCJ				LR	LR	11 15 28.6	
	comp=Z,9.7nm,18.9s,baz=357,slow=58						
USRK	**Ussuriysk Ar.**	**11.20**	**318**	LR	LR	11 13 53.0	
	comp=Z,46nm,20.8s,baz=342,slow=38						
KSRS	**Korea Array**	**11.65**	**280**	LR	LR	11 14 01.6	
	comp=Z,28nm,18.8s,baz=130,slow=37						
H11N2	**WAKE ISLAND Hy 27.09**	**121**		T	T	11 40 56.8	
	baz=312,slow=75,SNR=12						
H11N1	**WAKE ISLAND Hy 27.10**	**121**		T	T	11 40 57.9	
	baz=312,slow=75,SNR=13						
H11N3	**WAKE ISLAND Hy 27.11**	**121**		T	T	11 40 58.5	
	baz=312,slow=75,SNR=10						
H11S1	**WAKE ISLAND Hy 27.80**	**123**		T	T	11 41 51.3	
	baz=315,slow=76,SNR=5.2						
H11S3	**WAKE ISLAND Hy 27.80**	**123**		T	T	11 41 51.3	
	baz=315,slow=76,SNR=6.4						
H11S2	**WAKE ISLAND Hy 27.82**	**123**		T	T	11 41 51.3	
	baz=315,slow=76,SNR=4.8						
SONM	**Songino Array**	**28.85**	**305**	P	P	11 12 46.6	+1.6
	1.0nm,0.7s,baz=92,slow=9.6,SNR=4.6						
MKAR	**Makanchi Array**	**45.18**	**303**	P	P	11 15 05.7	+2.6
	0.7nm,0.5s,baz=89,slow=9.7,SNR=8.2						
WRA	**Warramunga Arr**	**56.45**	**189**	P	**P**	**11 16 28.1**	**0.0**
	0.4nm,0.8s,baz=6.1,slow=7.4,SNR=2.7						
OBN	**Obninsk**	**69.16**	**324**	LR	LR	11 50 34.3	
	comp=Z,16nm,19.4s,baz=272,slow=38						
RAO	**Raoul Island**	**75.12**	**145**	LR	LR	11 46 34.1	
	comp=Z,87nm,21.5s,baz=338,slow=32						

*NSSC **24** 11:09:20.1±1.0, 37°.35N×35°.86E, h12km±35km, ML2.5*
*ISK **24** 11:09:25.8, 36°.73N×36°.27E, h4km, ML2.6*
*DDA **24** 11:10:05.5, 36°.74N×36°.24E, h14km, Md3.5*
*CSEM **24** 11:10:05.5, 36°.74N×36°.24E, h14km, MD3.5*
ISC 24 11:09:24.8±1.3, **36°.71N**±0°.02×**36°.28E**±0°.02, **h1**km±11km, **n33**, σ1§**27**/60, **Jordan-Syria region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TAHT	**Tahtakopru-Hat**	**0.34**	**193**	*e*PG	**Pb**	**11 09 33.1**	**-0.5**
TAHT				*e*SG	**Sb**	**11 09 39.3**	**-0.2**
TAHT	**Tahtakopru-Hat**	**0.34**	**193**	*e*Pg	**Pb**	**11 09 33.1**	**-0.5**
TAHT				*e*Sg	**Sb**	**11 09 39.3**	**-0.2**
CEYT	**Ceyhan**	**0.52**	**306**	*e*PG	**Pg**	**11 09 35.8**	**+1.0**
CEYT	**Ceyhan**	**0.52**	**306**	*e*Pg	**Pg**	**11 09 35.8**	**+1.0**
YAYL	**Yayladag**	**0.68**	**192**	P	**Pg**	**11 09 39.2**	**+1.2**
YAYL				S	**Sn**	**11 09 52.6**	**-0.5**
YAYL	**Yayladag**	**0.68**	**192**	*i* P	**Pg**	**11 09 39.2**	**+1.2**
YAYL				*i* S	**Sn**	**11 09 52.6**	**-0.5**
KRTS	**Karatas**	**0.74**	**260**	*e*PG	**Pb**	**11 09 40.5**	**+0.1**
KRTS				*e*SG	**Sb**	**11 09 51.6**	**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**2.45**	**29**	Pn	**Pn**	**11 21 41.1**	**+0.4**
	37nm,0.3s,baz=212,slow=13,SNR=72						
AFI				Sn	**Sn**	**11 22 07.4**	**-2.4**
	43nm,0.3s,baz=245,slow=19,SNR=6.4						
AFI				LR	LR	11 22 36.2	
	comp=Z,193nm,19.8s,baz=310,slow=37						
URZ	**Urewera**	**23.76**	**200**	P	**P**	**11 26 11.6**	**-1.1**
	4.1nm,0.6s,baz=11,slow=4.0,SNR=5.6						
H11S2	**WAKE ISLAND Hy**	**39.74**	**329**	T	T	12 10 40.2	
	baz=144,slow=74,SNR=4.6						
H11S3	**WAKE ISLAND Hy**	**39.76**	**329**	T	T	12 10 40.8	
	baz=144,slow=74,SNR=4.9						
H11S1	**WAKE ISLAND Hy**	**39.76**	**329**	T	T	12 10 39.7	
	baz=144,SNR=5.4						
H11N3	**WAKE ISLAND Hy**	**40.69**	**330**	T	T	12 11 56.8	
	baz=153						
H11N1	**WAKE ISLAND Hy**	**40.70**	**330**	T	T	12 11 56.8	
	baz=153						
H11N2	**WAKE ISLAND Hy**	**40.71**	**330**	T	T	12 11 55.9	
	baz=153						
STKA	**Stephens Creek**	**44.05**	**241**	P	**P**	**11 29 07.8**	**-0.4**
	3.1nm,0.8s,baz=96,slow=9.2,SNR=4.3						
WRA	**Warramunga Arr**	**50.08**	**257**	P	**P**	**11 29 54.9**	**-0.6**
	0.5nm,0.5s,baz=96,slow=6.7,SNR=16						
ASAR	**Alice Springs**	**50.29**	**252**	P	**P**	**11 29 56.8**	**-0.3**
	2.6nm,0.5s,baz=88,slow=8.5,SNR=72						
ILAR	**Eielson Array**	**83.03**	**11**	P	**P**	**11 33 27.5**	**+2.6**
	0.3nm,0.7s,baz=223,slow=6.1,SNR=4.1						

IDC 24 11:21:05.3±4.8, 47°.50N×46°.75E, h0km, mb1 3.8/1, mb1mx3.0/55, mbtmp3.4/1, ML3.0/1, Error ellipse: s-maj=154.3km s-min=38.3km az=128.0, Ukraine-Moldova-Southwestern Russia region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KBZ	**Khabaz**	**4.63**	**217**	Pn	Pn	11 22 16.2	-0.3
	0.7nm,0.3s,baz=338,slow=7.8,SNR=11						
KBZ				Sn	Sn	11 23 10.6	-0.5
	0.4nm,0.3s,baz=129,slow=17,SNR=1.8						
KBZ				Lg	Lg	11 23 30.9	
	0.4nm,0.3s,baz=222,slow=22,SNR=2.4						
I43RU	**DUBNA INFRASONI**	**0.93**	**331**	*i*		12 24 50.0	
	baz=141,slow=320,SNR=0.8						
I26DE	**FREYUNG INFRAS**	**21.98**	**286**	*i*		13 36 10.0	
	baz=82,slow=320,SNR=0.7						

*IDC **24** 11:21:08.1±0.8, 34°.78N×141°.96E, h0km, mb3.5/8, mb1 3.7/12, mb1mx3.6/58, mbtmp3.5/12, ML3.6/4, MS2.7/2, Ms1 2.7/2, ms1mx2.3/40, Error ellipse: s-maj=22.2km s-min=17.9km az=94.0*
*JMA **24** 11:21:08.4±0.4, 34°.64N×142°.07E, h35km, M3.3*
*ISCJB **24** 11:21:09.2±0.6, 34°.67N±0°.05×141°.89E±0°.05, h21km, mb3.5/8, Error ellipse: s-maj=7.5km s-min=5.4km az=32.4*
ISC 24 11:21:10.8±0.7, 34°.67N±0°.06×141°.90E±0°.07, h21km, n28, σ1°59/32, mb3.6/8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**0.76**	**269**	P	**Pb**	**11 21 24.7**	**-0.2**
BSO2	**Boso 2**	**0.94**	**275**	*e*S	**Sn**	**11 21 42.1**	**+0.9**
BSO3	**Boso 3**	**1.15**	**277**	P	**Pn**	**11 21 31.0**	**-0.4**
BSO4	**Boso 4**	**1.32**	**284**	P	**Pn**	**11 21 33.7**	**-0.2**
CHOJ	**Chosi**	**1.34**	**321**	*e*S	**Sn**	**11 21 51.2**	**-0.1**
JCN	**Nagara**	**1.58**	**299**	P	**Pn**	**11 21 37.6**	**+0.1**
JIM2	**Oshima 3**	**2.03**	**272**	P	**Pn**	**11 21 42.9**	**-0.9**
JHJ	**Hachijo jima 2**	**2.34**	**229**	Sn	**Sn**	**11 22 13.5**	**-2.6**
	34nm,0.3s,baz=73,slow=19,SNR=4.0						
JOD2	**Odawara 2**	**2.38**	**285**	P	**Pn**	**11 21 47.6**	**-1.0**
JOD2				*e*S	**Sn**	**11 22 15.5**	**-1.6**
JIZS	**Izushimoda**	**2.49**	**272**	P	**Pn**	**11 21 49.1**	**-0.9**
JIZS				*e*S	**Sn**	**11 22 19.3**	**-0.4**
JAG	**Ashikaga**	**2.65**	**312**	P	**Pn**	**11 21 51.8**	**-0.5**
JAG				*e*S	**Sn**	**11 22 22.5**	**-1.3**
JRY	**Ryogami san**	**2.79**	**300**	P	**Pn**	**11 21 54.2**	**0.0**
JFK	**Kawauchi**	**2.82**	**343**	S	**Sn**	**11 22 24.1**	**-3.8**
JYN	**Shimob**	**2.87**	**288**	*e*S	**Sn**	**11 22 28.2**	**-1.1**
MJAR	**Matsushiro Arr**	**3.54**	**303**	Pn	**Pn**	**11 22 04.6**	**+0.1**
	3.3nm,0.3s,baz=88,slow=29,SNR=26						
MAT	**Matsushiro**	**3.54**	**303**	P	**Pn**	**11 22 04.2**	**-0.3**
MAT				*e*S	**Sn**	**11 22 45.8**	**+0.1**
JCJ	**Chichijima**	**7.55**	**178**	Pn	**Pn**	**11 23 00.3**	**+0.6**
	2.1nm,0.3s,baz=280,slow=23,SNR=7.5						
JCJ				Sn	**Sn**	**11 24 20.2**	**-4.5**
	2.6nm,0.3s,baz=73,slow=19,SNR=4.0						
JNU	**Nakatsue**	**9.29**	**264**	LR	LR	11 26 47.0	
	comp=Z,36nm,20.3s,baz=288,slow=36						
ASAJ	**Asahikawa**	**9.45**	**3**	Pn	**Pn**	**11 23 22.7**	**-2.9**
	0.9nm,0.3s,baz=266,slow=9.0,SNR=9.5						
ASAJ				Sn	Sn	11 25 02.0	-9.2
	0.6nm,0.3s,baz=198,slow=13,SNR=3.5						
KSRS	**Korea Array**	**11.65**	**288**	Pn	**Pn**	**11 23 57.3**	**+1.7**
	0.2nm,0.3s,baz=95,slow=14,SNR=2.8						
KSRS				LR	LR	11 29 09.6	
	comp=Z,49nm,18.2s,baz=100,slow=41						
MKAR	**Makanchi Array**	**45.74**	**304**	P	**P**	**11 29 29.9**	**-0.6**
	0.3nm,0.6s,baz=90,slow=5.1,SNR=3.7						
KURBB	**Kurchatov Arra**	**47.79**	**310**	P	**P**	**11 29 46.4**	**0.0**
	0.7nm,0.5s,baz=83,slow=7.7,SNR=6.0						
ILAR	**Eielson Array**	**51.29**	**31**	P	**P**	**11 30 13.3**	**+0.4**
	0.5nm,0.8s,baz=265,slow=4.8,SNR=6.0						
WRA	**Warramunga Arr**	**54.78**	**189**	P	**P**	**11 30 39.8**	**+0.7**
	0.6nm,0.7s,baz=5.4,slow=7.5,SNR=10						
ASAR	**Alice Springs**	**58.51**	**189**	P	**P**	**11 31 07.7**	**+2.2**
	0.2nm,0.5s,baz=8.6,slow=6.8,SNR=2.4						
YKA	**Yellowknife Ar**	**65.66**	**30**	P	**P**	**11 31 53.3**	**+0.2**
	0.2nm,0.7s,baz=301,slow=5.9,SNR=2.9						
NVAR	**Mina Array Bea**	**76.09**	**53**	P	**P**	**11 32 55.9**	**-1.3**
	0.4nm,0.6s,baz=254,slow=7.2,SNR=3.3						
TXAR	**Lajitas Array**	**91.25**	**53**	P	**P**	**11 34 16.6**	**+1.7**
	0.2nm,0.6s,baz=319,slow=2.6,SNR=2.4						

*NIED **24** 11:23:00, 37°.70N×142°.00E, h5km, Mw3.9 Best double couple: M0:8.69000×10^14 NP1:φ8=69.00000°, δ12.00000°, λ-178.00000°. NP2:φ8=337.00000°, δ90.00000°, λ-78.00000°.*
*ISCJB **24** 11:23:19.8±1.4, 37°.65N±0°.05×142°.08E±0°.07, h16km±9km, mb3.6/6, Error ellipse: s-maj=10.2km s-min=7.2km az=28.1*
*JMA **24** 11:23:21.8±0.2, 37°.67N×141°.97E, h27km±3km, M3.6*
*IDC **24** 11:23:24.9±4.9, 37°.67N×141°.98E, h46km±47km, mb3.3/6, mb1 3.5/7, mb1mx3.3/57, mbtmp3.5/7, ML3.0/1, Error ellipse: s-maj=38.7km s-min=22.7km az=92.0*
ISC 24 11:23:19.0±2.1, 37°.69N±0°.05×142°.04E±0°.08, h2km±12km, n26, σ0°76/27, mb3.7/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.94**	**325**	P	**Pn**	**11 23 38.8**	**-0.4**
JIO				*e*S	**Sg**	**11 23 50.0**	**+0.8**
JFK	**Kawauchi**	**0.98**	**251**	P	**Pb**	**11 23 38.6**	**-0.1**
JFK				S	**Sg**	**11 23 50.1**	**-0.4**
JMM	**Marumori**	**1.01**	**281**	P	**Pb**	**11 23 39.3**	**+0.2**
JMM				S	**Sg**	**11 23 51.2**	**-0.1**
ONAJ	**Iwakimizuishiy**	**1.15**	**240**	P	**Pg**	**11 23 41.0**	**0.0**
JOU	**Okura**	**1.28**	**302**	P	**Pn**	**11 23 44.0**	**+0.1**
JOU				S	**Sg**	**11 23 59.8**	**-0.4**
JFT	**Otama**	**1.36**	**263**	P	**Pg**	**11 23 45.3**	**+0.2**
JFT				S	**Sg**	**11 24 01.8**	**-1.0**
JMK	**Ichinoseki**	**1.42**	**333**	P	**Pb**	**11 23 46.3**	**+0.2**
OFUJ	**Ofunato**	**1.42**	**348**	P	**Pn**	**11 23 46.0**	**+0.2**
JYS	**Shiratake**	**1.65**	**289**	P	**Pb**	**11 23 49.6**	**-0.5**
JYS				S	**Sn**	**11 24 10.5**	**-0.3**
JYK	**Kaneyama**	**1.81**	**313**	P	**Pn**	**11 23 51.8**	**+0.7**
JOM	**Ohasama**	**1.88**	**342**	P	**Pn**	**11 23 53.2**	**+1.1**
MJAR	**Matsushiro Arr**	**3.27**	**251**	P	**Pn**	**11 24 12.7**	**+1.4**
	1.8nm,0.3s,baz=79,slow=16,SNR=7.2						
MAT	**Matsushiro**	**3.27**	**251**	P	**Pn**	**11 24 12.4**	**+1.1**
MAT				*e*S	**Sn**	**11 24 52.0**	**+1.2**
H11N2	**WAKE ISLAND Hy**	**28.07**	**123**	T	T	11 58 31.3	
	baz=315,slow=75,SNR=25						
H11N1	**WAKE ISLAND Hy**	**28.07**	**123**	T	T	11 58 32.5	
	baz=315,slow=75,SNR=16						
H11N3	**WAKE ISLAND Hy**	**28.08**	**123**	T	T	11 58 30.8	
	baz=315,slow=75,SNR=22						
H11S1	**WAKE ISLAND Hy**	**28.81**	**125**	T	T	11 59 25.5	
	baz=317,slow=76,SNR=20						
H11S2	**WAKE ISLAND Hy**	**28.82**	**125**	T	T	11 59 26.1	
	baz=317,slow=76,SNR=25						
MKAR	**Makanchi Array**	**44.20**	**302**	P	**P**	**11 31 28.5**	**-0.8**
	0.2nm,0.5s,baz=69,slow=9.4,SNR=2.4						
KURBB	**Kurchatov Arra**	**46.00**	**308**	P	**P**	**11 31 43.7**	**+0.2**
	0.5nm,0.4s,baz=82,slow=8.3,SNR=3.9						
WRA	**Warramunga Arr**	**57.78**	**189**	P	**P**	**11 33 10.9**	**-0.7**
	1.0nm,0.6s,baz=6.2,slow=7.2,SNR=9.2						
ASAR	**Alice Springs**	**61.51**	**188**	P	**P**	**11 33 37.0**	**-0.2**
	0.6nm,0.7s,baz=7.9,slow=6.1,SNR=7.8						
YKA	**Yellowknife Ar**	**62.99**	**30**	P	**P**	**11 33 46.4**	**-0.4**
	0.1nm,0.7s,baz=302,slow=6.8,SNR=2.8						
TXAR	**Lajitas Array**	**89.33**	**53**	P	**P**	**11 36 18.3**	**+1.1**
	0.2nm,0.6s,baz=306,slow=3.1,SNR=3.3						
LPAZ	**La Paz**	**145.93**	**60**	PKPbc	**PKPdf**	**11 42 59.3**	**-1.3**
	0.6nm,0.5s,baz=1.0,slow=2.1,SNR=4.5						

*ISCJB **24** 11:27:00.7±0.5, 39°.08N±0°.03×29°.02E±0°.03, h5km±6km, Error ellipse: s-maj=5.5km s-min=4.4km az=169.3*
*ISK **24** 11:27:00.4, 39°.09N×29°.02E, h7km, ML2.4*
*CSEM **24** 11:27:00.8±0.1, 39°.10N×29°.02E, h2km, MD2.9, Error ellipse: s-maj=2.2km s-min=1.9km az=82.0*
*DDA **24** 11:27:00.4, 39°.09N×29°.02E, h7km, Md2.9*
ISC 24 11:27:00.8±0.9, 39°.08N±0°.02×29°.02E±0°.02, h13km±7km, n29, σ0°58/47, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**262**	P	**Pg**	**11 27 06.0**	**+0.1**
DEMI				S	**Sg**	**11 27 09.5**	**+0.1**
DEMI	**Demirci**	**0.24**	**262**	*i* P	**Pg**	**11 27 06.0**	**+0.1**
DEMI				*i* S	**Sg**	**11 27 09.5**	**+0.1**
GDZ	**Gediz**	**0.36**	**88**	P	**Pg**	**11 27 07.8**	**-0.3**
GDZ				S	**Sg**	**11 27 13.0**	**0.0**
GDZ	**Gediz**	**0.36**	**88**	*i* P	**Pg**	**11 27 07.8**	**-0.3**
GDZ				*i* S	**Sg**	**11 27 13.0**	**0.0**
TVSB	**Tavsanli**	**0.51**	**43**	PG	**Pg**	**11 27 10.3**	**-0.5**
TVSB	**Tavsanli**	**0.51**	**43**	*i* Pg	**Pg**	**11 27 10.3**	**-0.5**
KULA	**Kula-Manisa**	**0.63**	**207**	*e*PG	**Pg**	**11 27 13.3**	**+0.3**
KULA				*e*SG	**Sg**	**11 27 21.5**	**+0.2**
KULA	**Kula-Manisa**	**0.63**	**207**	*e*Pg	**Pg**	**11 27 13.3**	**+0.3**
KULA				*e*Sg	**Sg**	**11 27 21.5**	**+0.2**
DURS	**Dursunbey**	**0.67**	**321**	P	**Pg**	**11 27 13.5**	**-0.4**
DURS	**Dursunbey**	**0.67**	**321**	*i* P	**Pg**	**11 27 13.5**	**-0.4**
DURS				*i* S	**Sn**	**11 27 27.4**	**+0.8**
MANT	**Manisa**	**0.69**	**212**	P	**Pg**	**11 27 14.2**	**0.0**
MANT				S	**Sg**	**11 27 23.5**	**+0.2**
MANT	**Manisa**	**0.69**	**212**	*i* P	**Pg**	**11 27 14.2**	**0.0**
MANT				*i* S	**Sg**	**11 27 23.5**	**+0.2**
KHAL	**Karahalli**	**0.80**	**152**	P	**Pb**	**11 27 16.5**	**0.0**
KHAL				S	**Sb**	**11 27 27.3**	**0.0**
KHAL	**Karahalli**	**0.80**	**152**	*i* P	**Pb**	**11 27 16.6**	**0.0**
KHAL				*i* S	**Sb**	**11 27 27.3**	**0.0**
KHL	**Karahalli**	**0.85**	**152**	*e*PG	**Pb**	**11 27 17.8**	**+0.3**
KHL	**Karahalli**	**0.85**	**152**	*e*Pg	**Pb**	**11 27 17.8**	**+0.3**
AKS	**Akhisar**	**0.96**	**259**	*e*PG	**Pn**	**11 27 19.8**	**-0.2**
AKS	**Akhisar**	**0.96**	**259**	*e*Pg	**Pn**	**11 27 19.8**	**-0.2**
IGD	**Bursa**	**1.19**	**7**	*i* P	**Pn**	**11 27 22.6**	**-0.6**
IGD				*i* S	**Sn**	**11 27 39.5**	**+0.2**
BALY	**Balya**	**1.27**	**302**	P	**Pg**	**11 27 25.4**	**+0.1**
BALY				S	**Sb**	**11 27 39.3**	**-1.6**
BALY	**Balya**	**1.27**	**302**	*i* P	**Pg**	**11 27 25.4**	**+0.1**
BALY				*i* S	**Sb**	**11 27 39.3**	**-1.6**
CAVI	**Cavuskoy**	**1.29**	**29**	*e*PN	**Pb**	**11 27 25.1**	**+0.1**
CAVI				*e*SN	**Sg**	**11 27 44.0**	**+1.6**
CAVI	**Cavuskoy**	**1.29**	**29**	*e*Pn	**Pb**	**11 27 25.1**	**+0.1**
CAVI				*e*Sn	**Sg**	**11 27 44.0**	**+1.6**
KCTX	**Karacabey (Bur**	**1.29**	**337**	*e*PN	**Pg**	**11 27 26.1**	**+0.5**
KCTX				*e*SN	**Sg**	**11 27 43.2**	**+0.7**
KCTX	**Karacabey (Bur**	**1.29**	**337**	*e*Pn	**Pg**	**11 27 26.1**	**+0.5**
KCTX				*e*Sn	**Sg**	**11 27 43.2**	**+0.7**
GONE	**Gonen-Balikesi**	**1.41**	**314**	*e*PN	**Pb**	**11 27 27.1**	**+0.1**
GONE	**Gonen-Balikesi**	**1.41**	**314**	*e*Pn	**Pb**	**11 27 27.2**	**+0.1**
ARMT	**Armutlu**	**1.49**	**355**	*e*PN	**Pb**	**11 27 28.6**	**+0.2**
ARMT	**Armutlu**	**1.49**	**355**	*e*Pn	**Pb**	**11 27 28.6**	**+0.2**

*ISCJB **24** 11:29:21.9±1.4, 34°.4N±0°.2×123°.9E±0°.1, h10km, mb3.7/4, Error ellipse: s-maj=33.4km s-min=14.4km az=7.7*
*IDC **24** 11:29:21.2±1.6, 34°.18N×123°.91E, h0km, mb3.8/4, mb1 3.7/6, mb1mx3.5/63, mbtmp3.6/6, ML3.2/2, Error ellipse: s-maj=35.3km s-min=18.0km az=172.0*
ISC 24 11:29:23.5±1.2, 34°.3N±0°.1×123°.8E±0°.1, h10km, n6, σ1°33/8, mb3.8/4, Yellow Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSRS	**Korea Array**	**4.56**	**45**	Pn	**Pn**	**11 30 31.2**	**-1.4**
	0.8nm,0.3s,baz=226,slow=15,SNR=6.2						
KSRS				Pg	**Pb**	**11 30 45.1**	**+1.4**
	3.0nm,0.3s,baz=222,slow=18,SNR=19						
KSRS				Lg	Lg	11 31 47.6	
	1.8nm,0.3s,baz=227,slow=30,SNR=5.0						
JNU	**Nakatsue**	**5.99**	**99**	Pn	**Pn**	**11 30 52.0**	**-0.2**
	0.8nm,0.3s,baz=259,slow=9.3,SNR=8.4						
JNU				Pg	**Pb**	**11 31 08.6**	**+0.6**
	0.8nm,0.3s,baz=218,slow=1.9,SNR=4.4						
JNU				Lg	Lg	11 32 25.6	
	0.4nm,0.3s,baz=265,slow=20,SNR=3.3						
MKAR	**Makanchi Array**	**33.56**	**304**	P	**P**	**11 36 05.3**	**+1.7**
	0.6nm,0.7s,baz=94,slow=8.3,SNR=5.5						
KURBB	**Kurchatov Arra**	**36.55**	**310**	P	**P**	**11 36 29.7**	**+0.5**
	1.9nm,0.8s,baz=101,slow=9.2,SNR=6.2						
BRTR	**Keskin Array B**	**69.21**	**304**	P	**P**	**11 40 29.6**	**-1.1**
	0.7nm,0.7s,baz=95,slow=3.3,SNR=4.4						
YKA	**Yellowknife Ar**	**72.79**	**24**	P	**P**	**11 40 51.2**	**-0.6**
	0.5nm,0.7s,baz=310,slow=6.0,SNR=10						

*ISCJB **24** 11:30:59.5±0.6, 39°.14N±0°.04×29°.08E±0°.04, h10km±7km, Error ellipse: s-maj=7.8km s-min=5.2km az=156.8*
*CSEM **24** 11:30:59.3±0.2, 39°.13N×29°.10E, h15km, MD2.6, Error ellipse: s-maj=5.7km s-min=4.0km az=122.0*
*DDA **24** 11:31:00.1, 39°.09N×29°.08E, h7km, Md2.6*
ISC 24 11:30:59.2±1.0, 39°.14N±0°.04×29°.04E±0°.04, h11km±12km, n16, σ0°53/27, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**248**	P	**Pb**	**11 31 06.0**	**-0.2**
DEMI				S	**Sb**	**11 31 10.3**	**-0.6**
DEMI	**Demirci**	**0.27**	**248**	*i* P	**Pb**	**11 31 06.0**	**-0.2**
DEMI				*i* S	**Sb**	**11 31 10.3**	**-0.6**
GDZ	**Gediz**	**0.35**	**99**	P	**Pg**	**11 31 06.4**	**+0.3**
GDZ				S	**Sg**	**11 31 11.1**	**+0.3**
GDZ	**Gediz**	**0.35**	**99**	*i* P	**Pg**	**11 31 06.4**	**+0.3**
GDZ				*i* S	**Sg**	**11 31 11.1**	**+0.3**
TVSB	**Tavsanli**	**0.45**	**47**	*e*PG	**Pg**	**11 31 07.7**	**-0.3**
TVSB				*e*SG	**Sg**	**11 31 14.3**	**+0.3**
TVSB	**Tavsanli**	**0.45**	**47**	*e*Pg	**Pg**	**11 31 07.7**	**-0.3**
TVSB				*e*Sg	**Sg**	**11 31 14.3**	**+0.3**
DURS	**Dursunbey**	**0.63**	**316**	P	**Pn**	**11 31 13.9**	**-0.4**
DURS	**Dursunbey**	**0.63**	**316**	*i* P	**Pn**	**11 31 13.8**	**-0.4**
DURS				*i* S	**Sn**	**11 31 26.4**	**+1.9**
KULA	**Kula-Manisa**	**0.69**	**205**	*e*PG	**Pg**	**11 31 12.7**	**+0.1**
KULA	**Kula-Manisa**	**0.69**	**205**	*e*Pg	**Pg**	**11 31 12.7**	**+0.1**
MANT	**Manisa**	**0.75**	**210**	P	**Pb**	**11 31 14.3**	**-0.2**
MANT				S	**Sg**	**11 31 24.0**	**+0.3**
MANT	**Manisa**	**0.75**	**210**	*i* P	**Pb**	**11 31 14.3**	**-0.2**
MANT				*i* S	**Sg**	**11 31 24.0**	**+0.3**
KHAL	**Karahalli**	**0.85**	**155**	P	**Pb**	**11 31 16.0**	**0.0**
KHAL				S	**Sg**	**11 31 26.6**	**0.0**
KHAL	**Karahalli**	**0.85**	**155**	*i* P	**Pb**	**11 31 16.0**	**0.0**
KHAL				*i* S	**Sg**	**11 31 26.6**	**0.0**
CAVI	**Cavuskoy**	**1.23**	**30**	*e*PG	**Pn**	**11 31 21.7**	**-0.6**
CAVI	**Cavuskoy**	**1.23**	**30**	*e*Pg	**Pn**	**11 31 21.7**	**-0.6**

*ISK **24** 11:33:54.4, 39°.90N×26°.96E, h5km, ML2.3*
*ISCJB **24** 11:33:55.4±0.7, 40°.12N±0°.04×27°.27E±0°.05, h3km±7km, Error ellipse: s-maj=9.2km s-min=4.6km az=40.8*
*DDA **24** 11:33:55.7, 40°.13N×27°.34E, h7km, Md2.6*
*CSEM **24** 11:33:55.3±0.4, 39°.98N×27°.13E, h12km, MD2.6, Error ellipse: s-maj=20.9km s-min=3.8km az=40.0*
ISC 24 11:33:54.2±1.5, 40°.08N±0°.05×27°.28E±0°.04, h2km±12km, n15, σ0°33/24, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KNL	**Bal¨–kesir**	**0.27**	**45**	*i* P	**Pg**	**11 33 58.9**	**-0.5**
KNL				*i* S	**Sg**	**11 34 03.5**	**+0.6**
BALY	**Balya**	**0.43**	**142**	P	**Pb**	**11 34 04.6**	**0.0**
BALY				S	**Sb**	**11 34 11.5**	**0.0**
BALY	**Balya**	**0.43**	**142**	*i* P	**Pb**	**11 34 04.6**	**0.0**
BALY				*i* S	**Sb**	**11 34 11.5**	**0.0**
LPK	**Lapseki**	**0.49**	**307**	*e*PG	**Pb**	**11 34 05.0**	**-0.6**
LPK	**Lapseki**	**0.49**	**307**	*e*Pg	**Pb**	**11 34 05.0**	**-0.6**
GELI	**Tayfur-Gelibol**	**0.69**	**298**	*e*PG	**Pg**	**11 34 07.5**	**+0.1**
GELI	**Tayfur-Gelibol**	**0.69**	**298**	*e*Pg	**Pg**	**11 34 07.5**	**+0.1**
ERIK	**Erikli-Kesan**	**0.83**	**316**	*e*PG	**Pb**	**11 34 11.6**	**+0.3**
ERIK	**Erikli-Kesan**	**0.83**	**316**	*e*Pg	**Pb**	**11 34 11.6**	**+0.3**
KESN	**Edirne-Kesan**	**0.87**	**329**	P	**Pn**	**11 34 13.4**	**-0.4**
KESN				S	**Sb**	**11 34 24.9**	**+0.3**
KESN	**Edirne-Kesan**	**0.87**	**329**	*i* P	**Pn**	**11 34 13.4**	**-0.4**
KESN				*i* S	**Sb**	**11 34 24.9**	**+0.3**
DURS	**Dursunbey**	**1.04**	**117**	P	**Pb**	**11 34 15.1**	**+0.1**
DURS				S	**Sn**	**11 34 31.2**	**+0.2**
DURS	**Dursunbey**	**1.04**	**117**	*i* P	**Pb**	**11 34 15.1**	**+0.1**
DURS				*i* S	**Sn**	**11 34 31.2**	**+0.2**
ALN	**Alexandroupoli**	**1.24**	**311**	*e*PN	**Pb**	**11 34 18.4**	**0.0**
ALN				*e*SN	**Sn**	**11 34 36.1**	**+0.2**
ALN	**Alexandroupoli**	**1.24**	**311**	*e*Pn	**Pb**	**11 34 18.4**	**0.0**
ALN				*e*Sn	**Sn**	**11 34 36.1**	**+0.2**

IDC 24 11:34:16.8±2.8, 54°.15N×87°.27E, h0km, mb1 3.3/2, mb1mx3.1/60, mbtmp3.3/2, ML3.1/2, 3C-2D, Error ellipse: s-maj=24.7km s-min=16.3km az=61.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**1.46**	**263**	*i*		11 43 40.0	
	baz=82,slow=325,SNR=7.4						
ZALV	**Zalesovo Beam**	**1.46**	**263**	Pg	Pn	11 34 42.5	-1.9
	9.1nm,0.3s,baz=82,slow=16,SNR=31						
ZALV				Lg	Lg	11 35 03.2	
	4.0nm,0.3s,baz=81,slow=27,SNR=8.8						
KURK	**Kurchatov**	**6.31**	**240**	⇑Pn	Pn	11 35 41.1	-10
	5.2nm,0.8s						
KURK				⇑Sn	Sn	11 37 03.8	+0.1
	5.4nm,0.9s						
KURK				⇑Lg	Lg	11 37 35.0	
	26nm,1.0s						
KURBB	**Kurchatov Arra**	**6.41**	**240**	Pn	Pn	11 35 53.0	+0.6
	0.3nm,0.3s,baz=56,slow=14,SNR=8.2						
KURBB				Lg	Lg	11 37 40.1	
	0.1nm,0.3s,baz=55,slow=31,SNR=5.5						
MK31	**Makanchi Array**	**8.02**	**205**	Pn	Pn	11 36 08.5	-6.0
	0.1nm,0.2s,baz=25,slow=14,SNR=13						
MK31				⇓Sn	Sn	11 37 45.6	-0.3
	0.2nm,0.3s,baz=28,slow=25,SNR=3.6						
MK31				⇓Lg	Lg	11 38 32.4	
	3.8nm,0.8s,baz=27,slow=28,SNR=6.7						
MKAR	**Makanchi Array**	**8.02**	**205**	Pn	Pn	11 36 16.0	+1.5
	0.3nm,0.3s,baz=27,slow=14,SNR=9.2						
MKAR				Sn	Sn	11 37 45.0	-0.8
	0.2nm,0.3s,baz=28,slow=24,SNR=6.1						
MKAR				Lg	Lg	11 38 33.6	
	0.1nm,0.3s,baz=27,slow=28,SNR=4.7						

MAN 24 11:39:55, 13°.79N×120°.67E, h95km, mb3.5, ML2.2, MS1.6, 1D, Mindoro

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PGP	**Puerto Galera**	**0.40**	**135**	⇓*e*P	Pn	11 40 11.9	+2.3
PGP				*i* S	Sn	11 40 24.1	+3.6
LUBP	**Lubang**	**0.41**	**263**	*e*P	Pn	11 40 12.0	+2.4
LUBP				*e*S	Sn	11 40 24.2	+3.7
SJMP	**San Jose**	**1.39**	**161**	*e*P	Pn	11 40 21.0	+1.4
SJMP				*e*S	Sn	11 40 39.9	+1.6

*ISCJB **24** 11:41:45.6±0.6, 39°.09N±0°.03×29°.03E±0°.04, h9km±5km, Error ellipse: s-maj=6.3km s-min=4.6km az=139.8*
*DDA **24** 11:41:45.5, 39°.08N×29°.03E, h7km, Md2.9*
*CSEM **24** 11:41:45.4±0.2, 39°.09N×29°.04E, h8km, MD2.9, Error ellipse: s-maj=4.6km s-min=3.5km az=117.0*
*ISK **24** 11:41:45.0, 39°.07N×29°.07E, h11km, ML2.2*
**ISC 24 11:41:45.

SSFR	**Montelago di S**	**0.36 286**	Pg	Pg	11 44 57.2	+0.9
SSFR			Sg	Sb	11 45 02.7	-1.3
38nm,0.2s						
SSFR	**Montelago di S**	**0.36 286**	Pg	Pg	11 44 57.2	+0.9
SSFR			Sg	Sb	11 45 02.7	-1.3
38nm,0.2s						
PIEI	**Pieia**	**0.56 291**	Pg	Pg	11 45 00.8	+0.7
PIEI			Sg	Sb	11 45 09.7	-0.1
PIEI	**Pieia**	**0.56 291**	Pg	Pg	11 45 00.8	+0.7
PIEI			Sg	Sb	11 45 09.7	-0.1

*ISCJB **24** 11:46:50.7±0.5, 39.°08N±0.°03×29.°10E±0.°03, h5km±5km, Error ellipse: s-maj=5.2km s-min=3.9km az=164.0*
*DDA **24** 11:46:50.3, 39.°11N×29.°08E, h7km, Ml3.0*
*ISK **24** 11:46:50.3, 39.°06N×29.°12E, h7km, ML2.5*
*CSEM **24** 11:46:50.8±0.1, 39.°09N×29.°11E, h2km, ML3.0, Error ellipse: s-maj=3.1km s-min=3.0km az=110.0*

ISC 24 11:46:50.7±1.0, 39.°09N±0.°02×29.°09E±0.°02, h8km±9km, n34, σ0=67/53, Turkey

Code	Station Name	Δ° AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.30 260**	P	**Pg**	**11 46 56.9**	**+0.3**
DEMI			S	**Sg**	**11 47 00.9**	**+0.3**
DEMI	**Demirci**	**0.30 260**	*i* P	**Pg**	**11 46 56.9**	**+0.3**
DEMI			*i* S	**Sg**	**11 47 00.9**	**+0.3**
GDZ	**Gediz**	**0.30 91**	P	**Pg**	**11 46 57.0**	**+0.3**
GDZ			S	**Sg**	**11 47 01.2**	**+0.5**
GDZ	**Gediz**	**0.30 91**	*i* P	**Pg**	**11 46 57.0**	**+0.3**
GDZ			*i* S	**Sg**	**11 47 01.2**	**+0.5**
TVSB	**Tavsanli**	**0.46 39**	*e*PG	**Pg**	**11 46 59.2**	**-0.4**
TVSB	**Tavsanli**	**0.46 39**	*e*Pg	**Pg**	**11 46 59.2**	**-0.4**
KULA	**Kula-Manisa**	**0.67 210**	*e*PG	**Pg**	**11 47 03.0**	**-0.6**
KULA	**Kula-Manisa**	**0.67 210**	*e*Pg	**Pg**	**11 47 03.0**	**-0.6**
DURS	**Dursunbey**	**0.70 317**	P	**Pg**	**11 47 03.8**	**-0.3**
DURS	**Dursunbey**	**0.70 317**	*i* P	**Pg**	**11 47 03.8**	**-0.3**
DURS			*i* S	**Sn**	**11 47 16.5**	**-1.4**
MANT	**Manisa**	**0.73 215**	P	**Pg**	**11 47 05.1**	**+0.3**
MANT			S	**Sg**	**11 47 14.5**	**+0.1**
MANT	**Manisa**	**0.73 215**	*i* P	**Pg**	**11 47 05.0**	**+0.3**
MANT			*i* S	**Sg**	**11 47 14.5**	**+0.1**
KHAL	**Karahalli**	**0.79 157**	P	**Pb**	**11 47 06.4**	**-0.2**
KHAL			S	**Sb**	**11 47 16.9**	**-0.6**
KHAL	**Karahalli**	**0.79 157**	*i* P	**Pb**	**11 47 06.4**	**-0.2**
KHAL			*i* S	**Sb**	**11 47 16.9**	**-0.6**
KHL	**Karahalli**	**0.84 156**	*e*PG	**Pg**	**11 47 06.8**	**0.0**
KHL	**Karahalli**	**0.84 156**	*e*Pg	**Pg**	**11 47 06.8**	**0.0**
AKHS	**Akhisar**	**1.02 258**	P	**Pn**	**11 47 11.0**	**-0.3**
AKHS			S	**Sb**	**11 47 23.9**	**-0.2**
AKHS	**Akhisar**	**1.02 258**	*i* P	**Pn**	**11 47 11.0**	**-0.3**
AKHS			*i* S	**Sb**	**11 47 23.9**	**-0.2**
AKS	**Akhisar**	**1.02 258**	*e*PG	**Pn**	**11 47 11.0**	**-0.2**
AKS	**Akhisar**	**1.02 258**	*e*Pg	**Pn**	**11 47 11.0**	**-0.2**
BALB	**Balikesir**	**1.09 301**	*e*PN	**Pn**	**11 47 12.3**	**+0.1**
BALB			*e*SN	**Sn**	**11 47 27.9**	**+0.5**
IGD	**Bursa**	**1.17 4**	*i* P	**Pb**	**11 47 12.1**	**-1.1**
IGD			*i* S	**Sg**	**11 47 27.6**	**-0.7**
CAVI	**Cavuskoy**	**1.25 27**	PN	**Pn**	**11 47 14.0**	**-0.4**
CAVI			SN	**Sn**	**11 47 33.8**	**+2.4**
CAVI	**Cavuskoy**	**1.25 27**	*i* Pn	**Pn**	**11 47 14.0**	**-0.4**
CAVI			*i* Sn	**Sn**	**11 47 33.8**	**+2.4**
IZI	**Iznik**	**1.28 13**	*e*PN	**Pg**	**11 47 15.7**	**+0.5**
KCTX	**Karacabey (Bur**	**1.30 334**	*e*PN	**Pg**	**11 47 15.8**	**+0.1**
BALY	**Balya**	**1.31 300**	P	**Pg**	**11 47 16.9**	**+1.1**
BALY			S	**Sb**	**11 47 32.2**	**-0.3**
BALY	**Balya**	**1.31 300**	*i* P	**Pg**	**11 47 16.9**	**+1.1**
BALY			*i* S	**Sb**	**11 47 32.2**	**-0.3**
ADVT	**Abdulvahap**	**1.43 20**	*e*PN	**Pg**	**11 47 17.8**	**-0.3**
ADVT	**Abdulvahap**	**1.43 20**	*e*Pn	**Pg**	**11 47 17.8**	**-0.3**
GONE	**Gonen-Balikesi**	**1.45 312**	*e*PN	**Pg**	**11 47 18.2**	**-0.1**
GONE			*e*SN	**Sg**	**11 47 37.6**	**+0.4**
ARMT	**Armutlu**	**1.48 353**	*e*PN	**Pb**	**11 47 18.6**	**+0.2**
ARMT			*e*SN	**Sg**	**11 47 38.4**	**+0.1**
EDC	**Edincik**	**1.57 323**	*e*PN	**Pg**	**11 47 20.7**	**-0.1**
EDC	**Edincik**	**1.57 323**	*e*Pn	**Pg**	**11 47 20.7**	**-0.1**

MEX 24 11:49:05.6±0.8, 14.°84N×92.°92W, h63km±12km, MD3.8, Near coast of Chiapas

Code	Station Name	Δ° AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THIG		**0.64 84**	*e*P	Pn	11 49 18.3	-1.0
THIG			*i* S	Sn	11 49 27.3	-2.1
PCIG		**0.90 342**	*i* P	Pn	11 49 21.1	-1.5
PCIG			*i* S	Sn	11 49 33.5	-1.6
CCIG	**Comitan**	**1.62 28**	*e*P	Pn	11 49 31.7	-0.4
CCIG			*i* S	Sn	11 49 49.6	-2.5
TGIG		**1.93 354**	*i* P	Pn	11 49 34.7	-1.6
TGIG			*i* S	Sn	11 49 57.5	-2.1

*NIED **24** 11:49:00, 36.°40N×141.°20E, h29km, Mw4.9 Best double couple: M0=2.34000×10^16 NP1:φs=45.00000°, δ=18.00000°, λ=-119.00000°. NP2:φs=255.00000°, δ=74.00000°, λ=-81.00000°.*
*BJI **24** 11:49:19.4, 36.°41N×141.°21E, h36km, mb5.0/66, mB4.9/44, Ms4.6/67, MS7 4.4/63*
*JMA **24** 11:49:20.3±0.1, 36.°40N×141.°12E, h44km±1km, M5.0*
JMA Felt III J1.
*ISCJB **24** 11:49:22.5±0.3, 36.°42N±0.°02×141.°01E±0.°02, h39km±2km, mb5.1/280, MS4.5/55, Error ellipse: s-maj=3.1km s-min=2.3km az=43.3*
*IDC **24** 11:49:22.8±1.8, 36.°36N×141.°05E, h34km±13km, mb4.7/38, mb1 4.8/42, mb1mx4.7/55, mbtmp4.9/42, ML4.6/3, MS4.3/34, Ms1 4.3/34, ms1mx4.1/50, Error ellipse: s-maj=11.6km s-min=8.8km az=99.0*
*MOS **24** 11:49:23.3±1.0, 36.°75N×140.°93E, h33km, mb5.4/92, MS4.3/16, Error ellipse: s-maj=6.2km s-min=4.1km az=103.1*
*GCMT **24** 11:49:23.5±0.3, 36.°51N×140.°99E, h31km±1km, MW5.0/88, Moment Tensor Solution. s36,c44; s88,c130; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr-2.16±.13; Mθθ1.31±.08; Mφφ0.85±.08; Mrθ2.81±.15; Mrφ1.04±.05; Mθφ0.69±.09; Best double couple: M0=3.59900×10^16 NP1:φs=250.00000°, δ=72.00000°, λ=-78.00000°. NP2: φs=37.00000°, δ=21.00000°, λ=-122.00000°. Principal axes: T 3.4690, Plg26.0000°, Azm331.0000°; N 0.2670, Plg11.0000°, Azm67.0000°; P -3.7290, Plg61.0000°, Azm177.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **24** 11:49:23.5±0.1, 36.°38N×140.°94E, h35km, mb5.3/177 Error ellipse: s-maj=3.3km s-min=2.4km az=142.0*
NEIC Felt at Hitachinaka and Tokyo. Recorded [3 JMA] in Fukushima and Ibaraki.

ISC 24 11:49:22.5±0.5, 36.°43N±0.°03×141.°08E±0.°03, h32km±3km, h32km:pP-P, n716, σ1=53/755, mb5.2/283, MS4.5/55, 44C-34D, Near east coast of eastern Honshu

Code	Station Name	Δ° AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.45 294**	⇑P	**Pb**	**11 49 30.8**	**-1.4**
JHO			S	**Sb**	**11 49 38.3**	**-0.6**
ONAJ	**Iwakimizuishiy**	**0.71 341**	⇑P	**Pn**	**11 49 34.1**	**-2.3**
ONAJ			S	**Sb**	**11 49 44.5**	**-1.6**
JYT	**Yasato**	**0.74 255**	⇑P	**Pn**	**11 49 34.8**	**-1.9**
JYT			S	**Sb**	**11 49 44.6**	**-2.2**
JFK	**Kawauchi**	**0.95 350**	⇑P	**Pn**	**11 49 37.5**	**-2.2**
JFK			S	**Sn**	**11 49 49.9**	**-2.4**
JSB	**Shiboa**	**1.08 300**	⇑P	**Pn**	**11 49 40.7**	**-0.7**
JSB			S	**Sn**	**11 49 55.7**	**+0.4**
JFT	**Otama**	**1.24 332**	⇑P	**Pn**	**11 49 43.2**	**-0.5**
JFT			S	**Sn**	**11 49 59.4**	**0.0**
I30JP	**ISUMI INFRASON**	**1.28 209**	Pg	**Pn**	**11 49 44.8**	**+0.7**
baz=34,slow=17,SNR=0.9						
I30JP			Lg	Lg	11 50 05.0	
JAG	**Ashikaga**	**1.31 270**	⇑P	**Pn**	**11 49 43.1**	**-1.5**
JAG			S	**Sn**	**11 49 59.9**	**-1.2**
JMM	**Marumori**	**1.46 351**	⇑P	**Pn**	**11 49 44.9**	**-1.7**
JMM			S	**Sn**	**11 50 03.7**	**-0.9**
JFY	**Yanaizu**	**1.48 312**	⇑P	**Pn**	**11 49 46.3**	**-0.6**
JFY			S	**Sb**	**11 50 07.3**	**-0.4**
JKT	**Katashina**	**1.51 284**	⇑P	**Pn**	**11 49 47.0**	**-0.4**
JKT			S	**Sn**	**11 50 06.4**	**+0.3**
BSO4	**Boso 4**	**1.55 203**	P	**Pn**	**11 49 49.1**	**+1.3**
JRY	**Ryogami san**	**1.81 258**	⇑P	**Pn**	**11 49 50.2**	**-1.3**
JRY			S	**Sn**	**11 50 12.1**	**-1.2**
JHK	**Hiroka**	**1.85 297**	P	**Pn**	**11 49 52.0**	**0.0**
JHK			S	**Sb**	**11 50 16.7**	**-1.6**
JGK	**Kuni**	**1.97 275**	P	**Pn**	**11 49 53.8**	**+0.1**
JGK			S	**Sn**	**11 50 17.7**	**+0.3**
JNS	**Sasagawa**	**1.98 315**	P	**Pn**	**11 49 53.8**	**0.0**
JOD2	**Odawara 2**	**1.99 235**	P	**Pn**	**11 49 54.1**	**+0.1**
AJI	**Ajiro2**	**2.12 230**	P	**Pn**	**11 49 55.9**	**+0.1**
JIM2	**Oshima 3**	**2.17 219**	P	**Pn**	**11 49 56.8**	**+0.4**
JIZZ	**Izumozaki**	**2.20 301**	P	**Pn**	**11 49 58.0**	**+1.3**
JYN	**Shimob**	**2.26 247**	P	**Pn**	**11 49 57.6**	**0.0**
JYN			S	**Sn**	**11 50 24.2**	**-0.2**
MJAR	**Matsushiro Arr**	**2.32 274**	Pn	**Pn**	**11 49 59.1**	**+0.7**
76nm,0.3s,baz=97,slow=9.7,SNR=587						
MJAR			Sn	**Sn**	**11 50 28.6**	**+2.7**
195nm,0.3s,baz=61,slow=26,SNR=16						
MJAR			LR	LR	11 51 05.8	
comp=Z,3μm,18.4s,baz=90,slow=46						
MAJO	**Matsushiro**	**2.32 274**	*ce*P	**Pn**	**11 49 58.8**	**+0.4**
MAJO	**Matsushiro**	**2.32 274**	*e*Pn	**Pn**	**11 49 58.9**	**+0.4**
MAT	**Matsushiro**	**2.32 274**	P	**Pn**	**11 49 58.3**	**-0.2**
MAT			S	**Sn**	**11 50 24.1**	**-1.8**
MAT	**Matsushiro**	**2.32 274**	P	**Pn**	**11 49 58.6**	**+0.1**
MJB9	**Matsu-Tunnel**	**2.32 274**	*e*Pn	**Pn**	**11 49 58.9**	**+0.4**
MJB9			*e*Sn	Sn	11 50 15.7	-10
JNG	**Nsakai**	**2.41 270**	P	**Pn**	**11 49 59.9**	**+0.2**
JNG			S	**Sn**	**11 50 29.0**	**+0.9**
JJN	**Nakama**	**2.44 287**	P	**Pn**	**11 50 00.8**	**+0.7**
JNT	**Takato**	**2.44 258**	P	**Pn**	**11 50 01.1**	**+0.8**
JIZS	**Izushimoda**	**2.48 227**	P	**Pn**	**11 50 01.2**	**+0.6**
JAW	**Awa shima**	**2.50 325**	P	**Pn**	**11 50 00.7**	**-0.2**
SHZ3	**Shizuoka 3**	**2.70 241**	P	**Pn**	**11 50 05.0**	**+1.2**
SHZ3			S	**Sn**	**11 50 37.7**	**+2.3**
JSD	**Sado**	**2.77 306**	P	**Pn**	**11 50 04.2**	**-0.4**
JNY	**Yasuok**	**2.82 249**	P	**Pn**	**11 50 07.3**	**+1.9**
JSG	**Sagara**	**2.94 234**	P	**Pn**	**11 50 09.6**	**+2.7**
JTT	**Ttatey**	**3.02 275**	P	**Pn**	**11 50 09.8**	**+1.7**
JGN	**Niukaw**	**3.05 267**	P	**Pn**	**11 50 09.4**	**+0.9**
JYZW	**Yoshizawa**	**3.08 243**	P	**Pn**	**11 50 09.9**	**+1.1**
JGF	**Kuroka**	**3.13 256**	P	**Pn**	**11 50 11.2**	**+1.6**
JGF			S	**Sn**	**11 50 48.1**	**+2.2**
JSZ	**Suzu**	**3.15 290**	P	**Pn**	**11 50 09.7**	**-0.1**
HMMJ	**Hamamatsu 2**	**3.15 241**	P	**Pn**	**11 50 11.2**	**+1.3**
HMMJ			S	**Sn**	**11 50 47.7**	**+1.3**
JAO	**Obara**	**3.31 251**	S	**Sn**	**11 50 52.6**	**+2.1**
JHJ2	**Mitsune**	**3.47 198**	S	**Sn**	**11 50 53.9**	**-0.2**
JHJ2	**Mitsune**	**3.47 198**	*e*Pn	**Pn**	**11 50 14.9**	**+0.7**
JHJ2			*e*Sn	**Sn**	**11 50 52.1**	**-2.0**
JHJ	**Hachijo jima 2**	**3.47 198**	Pn	**Pn**	**11 50 14.8**	**+0.6**
95nm,0.3s,baz=298,slow=23,SNR=14						
JHJ			Sn	**Sn**	**11 50 52.3**	**-1.9**
488nm,0.3s,baz=105,slow=22,SNR=11						
JHJ			LR	LR	11 51 48.4	
comp=Z,5μm,20.4s,baz=346,slow=43						
INU	**Inuyama**	**3.47 253**	*e*Pn	**Pn**	**11 50 15.6**	**+1.3**
JJH	**Hakui**	**3.49 279**	P	**Pn**	**11 50 15.9**	**+1.4**
JGM	**Miyama**	**3.61 260**	S	**Sn**	**11 51 01.6**	**+3.9**
JHG	**Hegura jima**	**3.62 294**	P	**Pn**	**11 50 16.6**	**+0.4**
ERM	**Erimo**	**5.81 15**	*d i*P	**Pn**	**11 50 44.9**	**-1.5**
ERM			pmax	pmax		
comp=Z,182nm,1.0s						
ERM	**Erimo**	**5.81 15**	*e*Pn	**Pn**	**11 50 45.2**	**-1.2**
ERM			*e*Sn	**Sn**	**11 51 53.7**	**+1.8**
ASAJ	**Asahikawa**	**7.77 8**	Pn	**Pn**	**11 51 12.2**	**-1.1**
comp=Z,16nm,0.3s,baz=211,slow=9.5,SNR=157						
ASAJ			Sn	**Sn**	**11 52 37.1**	**-3.0**
comp=Z,1.0nm,0.3s,baz=216,slow=17,SNR=2.4						
ASAJ	**Asahikawa**	**7.77 8**	*e*Pn	**Pn**	**11 51 12.0**	**-1.3**
ASAJ			*e*Sn	**Sn**	**11 52 42.4**	**+2.2**
YUK	**Yuzh-Kuril'sk**	**8.43 24**	*i* P	**Pn**	**11 51 20.3**	**-2.0**
JNU	**Nakatsue**	**9.02 252**	Pn	**Pn**	**11 51 33.5**	**+3.0**
comp=Z,0.7nm,0.3s,baz=70,slow=8.2,SNR=5.7						
JNU			LR	LR	11 55 04.9	
comp=Z,954nm,19.4s,baz=80,slow=38						
CBIJ	**Chichi jima**	**9.35 174**	P	**Pn**	**11 51 31.1**	**-3.9**
CBIJ			S	Sn	11 53 07.8	-11
CBIJ	**Chichi jima**	**9.35 174**	*e*Pn	**Pn**	**11 51 31.1**	**-3.9**
CBIJ			*e*Sn	**Sn**	**11 53 16.1**	**-3.0**
JCJ	**Chichijima**	**9.35 174**	Pn	**Pn**	**11 51 30.8**	**-4.2**
baz=295,slow=17						
JCJ			Sn	Sn	11 53 07.9	-11
baz=270,slow=20						
VLA	**Vladivostok**	**9.73 316**	*c i*P	**Pn**	**11 51 43.3**	**+3.1**
KUR	**Kuril'sk**	**10.19 28**	*e*P	**Pn**	**11 51 44.7**	**-1.7**
KUR			*e*S	**Sn**	**11 53 33.3**	**-6.1**
KUR			pmax	pmax		
comp=Z,36nm,0.8s						
KUR			pmax	pmax		
comp=Z,140nm,2.1s						
KUR			smax	smax		
comp=N,31nm,0.5s						
KUR			smax	smax		
comp=E,40nm,0.5s						
KUR			smax	smax		
comp=N,225nm,3.7s						
KUR			smax	smax		
comp=E,328nm,3.7s						
KUR			MLR	MLR		
comp=N,618nm,17.0s						
KUR			MLR	MLR		
comp=E,482nm,17.0s						
KUR			MLR	MLR		
comp=Z,627nm,17.0s						
USRK	**Ussuriysk Ar.**	**10.41 321**	Pn	**Pn**	**11 51 52.2**	**+2.8**
comp=Z,2.2nm,0.3s,baz=137,slow=13,SNR=51						
USRK			LR	LR	11 55 38.5	
comp=Z,3μm,19.5s,baz=122,slow=36						
KSRS	**Korea Array**	**10.58 279**	Pn	**Pn**	**11 51 56.1**	**+4.3**
comp=Z,1.1nm,0.3s,baz=97,slow=14,SNR=61						
KSRS			LR	LR	11 55 59.6	
comp=Z,2μm,18.1s,baz=88,slow=37						
YSS	**Yuzh-Sakhalins**	**10.59 6**	⇓*i*P	**Pn**	**11 51 50.2**	**-1.8**
YSS			*e*S	**Sn**	**11 53 44.7**	**-4.7**
YSS			pmax	pmax		
comp=Z,130nm,0.8s						
YSS			MLR	MLR		
comp=Z,2μm,16.0s						
YSS			MLR	MLR		
comp=E,2μm,17.0s						
YSS	**Yuzh-Sakhalins**	**10.59 6**	*e*Pn	**Pn**	**11 51 50.1**	**-1.8**
YSS			*e*Sn	**Sn**	**11 53 50.2**	**+0.7**
KS01	**Wonju Array Si**	**10.61 280**	*e*Pn	Pn	11 51 46.2	-6.0
KS15	**Wonju Array Si**	**10.61 279**	*e*Pn	**Pn**	**11 51 51.5**	**-0.7**
TJN	**Taejon**	**11.06 274**	⇓*e*P	**Pn**	**11 52 01.9**	**+3.5**
MDJ	**Mudanjiang**	**11.96 317**	P	**Pn**	**11 52 12.6**	**+1.9**
MDJ			S	**Sn**	**11 54 28.3**	**+5.3**
MDJ			pmax	pmax		
comp=E,7.0nm,1.5s						
MDJ			pmax	pmax		
comp=E,67nm,2.8s						
MDJ			LR	LR		
comp=E,1μm,15.5s						
MDJ			LR	LR		
comp=E,1μm,19.5s						
MDJ			LR	LR		
comp=E,2μm,19.5s						
MDJ	**Mudanjiang**	**11.96 317**	*e*Pn	Pn	11 52 15.8	+5.1
MDJ			*e*Sn	**Sn**	**11 54 23.1**	**0.0**
HABR	**Khabarovsk**	**12.83 342**	*de*P	**Pn**	**11 52 20.9**	**-1.6**
HABR			*e*S	**Sn**	**11 54 44.2**	**+0.1**
HABR			pmax	pmax		
comp=Z,58nm,1.6s						
HABR			pmax	pmax		
comp=N,23nm,1.4s						
HABR			pmax	pmax		
comp=Z,81nm,1.4s						
HABR			pmax	pmax		
comp=E,32nm,1.4s						
HABR			MLR	MLR		
comp=Z,1μm,13.0s						
CN2	**Changchun**	**14.04 306**	*e*P	**Pn**	**11 52 39.4**	**+0.4**
CN2			*e*pP	P	11 52 47.1	+0.6
CN2			*e*S	**Sn**	**11 55 14.9**	**+1.3**
CN2			pmax	pmax		
comp=Z,20nm,0.9s						
CN2			pmax	pmax		
comp=Z,200nm,4.0s						
CN2			LR	LR		
comp=Z,900nm,14.0s						
CN2			LR	LR		
comp=Z,1μm,14.0s						
CN2			LR	LR		
comp=Z,600nm,16.0s						
TYV	**Tymovskoe**	**14.48 4**	*e*P	**Pn**	**11 52 41.2**	**-3.8**
TYV			pmax	pmax		
comp=Z,46nm,0.8s						
TYV			MLR	MLR		
comp=N,3μm,16.0s						
TYV			MLR	MLR		
comp=Z,4μm,16.0s						
JOW	**Kunigami**	**14.49 232**	*e*Pn	**Pn**	**11 52 43.9**	**-1.5**
comp=Z,8.8nm,0.6s						
JOW			*e*Sn	**Sn**	**11 55 24.6**	**-0.3**
KLR	**Kul'dur**	**14.50 335**	Pn	**Pn**	**11 52 43.7**	**-1.6**
comp=Z,0.5nm,0.3s,baz=136,slow=13,SNR=13						
KLR			LR	LR	11 58 26.5	
comp=Z,2μm,18.2s,baz=136,slow=37						
SNY	**Shenyang**	**14.61 297**	⇓P	**Pn**	**11 52 48.0**	**+1.2**
SNY			pmax	pmax		
comp=Z,33nm,1.3s						
SNY			pmax	pmax		
comp=Z,230nm,3.8s						
SNY			LR	LR		
comp=Z,2μm,16.1s						
SNY			LR	LR		
comp=Z,1μm,16.9s						
SNY			LR	LR		
comp=Z,2μm,18.1s						
DL2	**Dalian**	**15.61 285**	P	**Pn**	**11 53 01.4**	**+1.4**
DL2			S	**Sn**	**11 55 52.8**	**+1.0**
DL2			pmax	pmax		
comp=Z,66nm,0.7s						
DL2			pmax	pmax		
comp=Z,260nm,6.7s						
DL2			LR	LR		
comp=Z,430nm,11.5s						
DL2			LR	LR		
comp=Z,1μm,15.8s						
DL2			LR	LR		
comp=Z,2μm,15.5s						
TIA	**Tai'an**	**19.30 277**	⇓P	**P**	**11 53 43.5**	**-1.3**
TIA			pmax	pmax		
comp=Z,40nm,0.8s						
TIA			LR	LR		
comp=Z,450nm,12.5s						
TIA			LR	LR		
comp=Z,860nm,16.1s						
TIA			LR	LR		
comp=Z,1μm,16.1s						
BJI	**Beijing**	**19.88 288**	P	**P**	**11 53 49.8**	**-1.2**
BJI			S	**S**	**11 57 31.8**	**-1.2**
BJI			pmax	pmax		
comp=Z,40nm,0.9s						
BJI			pmax	pmax		
comp=Z,110nm,3.6s						
BJI			LR	LR		
comp=Z,770nm,15.6s						
BJI			LR	LR		
comp=Z,560nm,14.5s						
BJI			LR	LR		
comp=Z,330nm,22.0s						
BJT	**Baijiatuau**	**19.88 288**	*e*P	**P**	**11 53 49.9**	**-1.2**
BJT			pmax	pmax		
comp=Z,42nm,0.8s						
BJT	**Baijiatuau**	**19.88 288**	*e*P	**P**	**11 53 49.9**	**-1.2**
comp=Z,42nm,0.8s						
PEA0	**Petropavlovsk-**	**20.35 30**	*e*P	**P**	**11 53 56.5**	**+0.5**
PEA0B	**Petropavlovsk-**	**20.35 30**	*e*P	Pn	11 53 57.4	-0.8
comp=Z,62nm,1.1s						
PETK	**Petropavlovsk-**	**20.35 30**	P	**P**	**11 53 56.7**	**+0.7**
comp=Z,28nm,0.8s,baz=204,slow=7.7,SNR=22						
PETK			LR	LR	12 02 43.2	
comp=Z,425nm,18.0s,baz=214,slow=39						
PEA1	**Petropavlovsk-**	**20.35 30**	*e*P	**P**	**11 53 56.7**	**+0.7**
PET	**Petropavlovsk**	**20.67 31**	*c i*P	**P**	**11 54 00.0**	**+0.5**
PET			*e*S	**S**	**11 57 44.7**	**-3.9**
PET			pmax	pmax		
comp=Z,99nm,1.2s						
PET			pmax	pmax		
comp=Z,300nm,11.6s						
PET			MLR	MLR		
comp=Z,1μm,21.0s						
PET			MLR	MLR		
comp=Z,800nm,17.0s						
PET	**Petropavlovsk**	**20.67 31**	*e*P	**P**	**11 54 00.1**	**+0.5**
comp=Z,121nm,1.2s						
QZH	**Quanzhou**	**22.42 246**	P	**P**	**11 54 20.8**	**+2.3**
QZH			S	**S**	**11 58 18.8**	**-4.0**
QZH			pmax	pmax		
comp=Z,110nm,1.0s						
QZH			LR	LR		
comp=Z,2μm,15.6s						
QZH			LR	LR		
comp=Z,660nm,10.8s						
QZH			LR	LR		
comp=Z,1μm,11.5s						
GUMO	**Guam**	**22.99 171**	P	**P**	**11 54 27.2**	**+2.6**
comp=Z,158nm,1.0s,baz=330,slow=14,SNR=5.0						
WHN	**Wuhan**	**23.02 263**	P	**P**	**11 54 23.9**	**-0.8**
WHN			S	S	11 58 17.9	-15
WHN			pmax	pmax		
comp=Z,48nm,0.6s						
WHN			LR	LR		
comp=Z,990nm,11.3s						
WHN			LR	LR		
comp=Z,980nm,12.4s						
WHN			LR	LR		
comp=Z,1μm,17.1s						
CLNS	**Chul'man**	**23.13 337**	*e*P	**P**	**11 54 23.0**	**-2.8**
CLNS			pmax	pmax		
comp=N,32nm,1.1s						
CLNS			pmax	pmax		
comp=Z,59nm,1.1s						
CLNS			pmax	pmax		
comp=E,19nm,1.0s						
CLNS			MLR	MLR		
comp=E,252nm,15.0s						
CLNS			MLR	MLR		
comp=N,1μm,18.0s						
CLNS			MLR	MLR		
comp=Z,1μm,14.0s						
HHC	**Hu-ho-hao-te**	**23.42 290**	*e*P	**P**	**11 54 28.8**	**0.0**
HHC			S	**S**	**11 58 38.8**	**-1.2**
HHC			pmax	pmax		
comp=Z,41nm,0.9s						
HHC			pmax	pmax		
comp=Z,210nm,4.7s						
HHC			LR	LR		
comp=Z,2μm,12.6s						
HHC			LR	LR		
comp=Z,3μm,13.1s						
HHC			LR	LR		
comp=Z,3μm,11.9s						
MA2	**Magadan**	**24.00 12**	P	**P**	**11 54 34.5**	**+0.5**
comp=Z,41nm,0.7s,baz=224,slow=10,SNR=16						
XAN	**Xi'an**	**26.31 274**	P	**P**	**11 54 54.5**	**-0.9**
XAN			pP	pP	11 55 04.3	-0.2
XAN			S	**S**	**11 59 22.9**	**-3.3**
XAN			pmax	pmax		
comp=Z,13nm,0.6s						
XAN			LR	LR		
comp=Z,600nm,17.2s						
XAN			LR	LR		
comp=Z,810nm,17.2s						
YAK	**Yakutsk**	**26.61 348**	P	**P**	**11 54 57.2**	**-0.4**
comp=Z,12nm,0.6s,baz=337,slow=22,SNR=43						
YAK			LR	LR	12 05 51.6	
comp=Z,1μm,18.1s,baz=134,slow=37						
YAK	**Yakutsk**	**26.61 348**	*c i*P	**P**	**11 54 56.8**	**-0.8**
YAK			*e*PP	**pP**	**11 55 07.0**	**+0.3**
YAK			*e*		11 55 38.8	
YAK			*e*PPP	PPP	11 55 48.0	
YAK			*e*		11 58 20.7	
YAK			*e*S	**S**	**11 59 30.4**	**+0.3**
YA

comp=E,65nm,2.3s
YAK MLR MLR
comp=Z,1μm,17.0s
YAK MLR MLR
comp=N,1μm,17.0s
YAK MLR MLR
comp=E,463nm,16.0s
YAK Yakutsk 26.61 348 *eP* **P 11 54 56.5 -1.1**
comp=E,298nm,0.8s
ENH Enshi 27.02 266 *eP* **P 11 55 00.9 -0.9**
comp=E,50nm,0.8s
SEY Seymchan 27.44 11 P **P 11 55 05.9 +0.8**
comp=E,32nm,0.8s,baz=189,slow=8.0,SNR=22
SEY Seymchan 27.44 11⇓ *iP* **P 11 55 05.3 +0.2**
ULN Ulaanbaatar 27.48 305⇓ *eP* **P 11 55 05.4 -0.5**
ULN pmax pmax
comp=Z,23nm,0.8s
ULN Ulaanbaatar 27.48 305 *eP* **P 11 55 05.7 -0.2**
comp=Z,23nm,0.9s
BOD Bodaibo 27.91 329⇓ *iP* **P 11 55 08.5 -0.8**
BOD pmax pmax
comp=Z,38nm,1.1s
SONA1 Songino Array 27.91 305 *eP* **P 11 55 08.4 -1.3**
SONA0 Songino Array 27.91 305 *eP* **P 11 55 09.1 -0.6**
comp=Z,21nm,0.8s
SONM Songino Array 27.91 305 P **P 11 55 09.1 -0.6**
comp=Z,21nm,0.9s,baz=106,slow=8.5,SNR=106
SONM ScP **ScP 12 02 03.0 -0.1**
comp=Z,1.4nm,0.9s,baz=105,slow=3.5,SNR=6.6
SONM LR LR 12 06 44.9
comp=Z,548nm,19.0s,baz=105,slow=37
H11N2 WAKE ISLAND Hy 28.07 119 T T 12 24 27.6
baz=312,slow=75,SNR=587
H11N1 WAKE ISLAND Hy 28.08 119 T T 12 24 28.2
baz=312,slow=75,SNR=872
H11N3 WAKE ISLAND Hy 28.09 119 T T 12 24 27.6
baz=312,slow=75,SNR=531
H11S1 WAKE ISLAND Hy 28.76 121 T T 12 25 18.9
baz=314,slow=75,SNR=2341
H11S3 WAKE ISLAND Hy 28.76 122 T T 12 25 17.8
baz=314,slow=75,SNR=1720
H11S2 WAKE ISLAND Hy 28.78 122 T T 12 25 20.0
baz=314,slow=75,SNR=1529
LZH Lanzhou 29.91 281 *eP* **P 11 55 29.4 +1.8**
LZH pP pP 11 55 38.6 +1.8
LZH sP sP 11 55 41.5 +0.9
LZH PP **PnPn 11 56 27.1 +2.7**
LZH *e*S **S 12 00 22.0 -1.1**
LZH sS sS 12 00 34.0 -4.2
LZH *e*SS **SnSn 12 01 59.1 +3.8**
LZH pmax pmax
comp=Z,32nm,1.1s
LZH pmax pmax
comp=Z,76nm,4.3s
LZH LR LR
comp=Z,440nm,10.8s
LZH LR LR
comp=Z,1μm,15.0s
LZH LR LR
comp=Z,1μm,16.0s
IRK Irkutsk 30.31 313 *eP* **P 11 55 29.8 -1.0**
IRK pmax pmax
comp=Z,39nm,2.3s
ZAK Zakamensk 30.44 309 *eP* **P 11 55 31.8 -0.3**
ZAK pmax pmax
comp=Z,15nm,1.2s
TLY Talaya 30.53 312 P **P 11 55 32.0 -0.8**
comp=Z,9.7nm,0.8s,baz=121,slow=9.7,SNR=16
TLY Talaya 30.53 312 *c iP* **P 11 55 32.9 +0.2**
TLY *e*S **S 12 00 32.5 +0.3**
TLY pmax pmax
comp=Z,26nm,1.2s
TLY MLR MLR
comp=Z,554nm,13.0s
TLY Talaya 30.53 312 *eP* **P 11 55 33.0 +0.2**
GYA Guiyang 30.86 261⇑ *iP* **P 11 55 34.8 -1.2**
GYA pP pP 11 55 45.8 +0.6
GYA PcP **PcP 11 58 33.0 +0.5**
GYA S **S 12 00 35.4 -2.6**
GYA ScP **ScP 12 02 13.8 +1.0**
GYA SS **SnSn 12 02 20.0 +1.5**
GYA ScS **ScS 12 06 07.3 -2.5**
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,130nm,6.8s
GYA LR LR
comp=Z,560nm,17.6s
GYA LR LR
comp=Z,550nm,18.2s
GYA LR LR
comp=Z,520nm,18.0s
CD2 Chengdu 31.41 271 P **P 11 55 39.8 -1.0**
CD2 pP pP 11 55 49.4 -0.6
CD2 S **S 12 00 44.9 -1.5**
CD2 sS sS 12 01 01.5 -0.1
CD2 pmax pmax
comp=Z,20nm,0.7s
CD2 pmax pmax
comp=Z,90nm,4.7s
CD2 LR LR
comp=Z,1μm,16.8s
CD2 LR LR
comp=Z,1μm,18.0s
MOY Mondy 32.13 311 *eP* **P 11 55 47.0 0.0**
MOY pmax pmax
comp=Z,22nm,2.8s
QIZ Qiongzhong 32.44 246 P **P 11 55 49.4 -0.4**
QIZ S **S 12 01 02.3 -0.2**
QIZ LR LR
comp=Z,470nm,15.2s
QIZ LR LR
comp=Z,400nm,16.3s
QIZ LR LR
comp=Z,380nm,16.3s
DAV Davao City (W) 32.47 210 LR LR 12 09 02.7
comp=Z,326nm,18.5s,baz=22,slow=36
GTA Gaotai 32.49 288 *eP* **P 11 55 50.6 +0.3**
GTA pP pP 11 55 59.9 +0.4
GTA sP sP 11 56 03.8 +0.5
GTA PcP **PcP 11 58 37.5 +0.8**
GTA S **S 12 01 05.4 +2.1**
GTA sS sS 12 01 21.3 +2.8
GTA ScP **ScP 12 02 19.0 +0.9**
GTA pmax pmax
comp=Z,9.0nm,1.3s
GTA pmax pmax
comp=Z,130nm,5.7s
GTA LR LR
comp=Z,520nm,16.2s
GTA LR LR
comp=Z,280nm,18.5s
GTA LR LR
comp=Z,340nm,17.1s
KMI Kunming 34.61 262 P **P 11 56 08.1 -0.8**
KMI pP pP 11 56 17.1 -1.1
KMI sP sP 11 56 22.9 +0.9
KMI S **S 12 01 32.8 -3.7**
KMI sS sS 12 01 50.9 -0.8
KMI SS **SnSn 12 03 45.1 -4.7**
KMI pmax pmax
comp=Z,18nm,1.0s
KMI pmax pmax
comp=Z,78nm,4.3s
KMI LR LR
comp=Z,460nm,16.4s
KMI LR LR
comp=Z,210nm,20.2s
KMI LR LR
comp=Z,330nm,20.6s
BILL Bilibino 34.69 16⇑ *eP* **P 11 56 08.4 -0.4**
BILL *e* 11 57 20.9
BILL pmax pmax
comp=Z,18nm,1.0s
BILL MLR MLR
comp=Z,497nm,17.0s
BILL Bilibino 34.69 16 *eP* **P 11 56 08.3 -0.6**
comp=Z,16nm,1.0s
TIXI Tiksi 35.86 353 P **P 11 56 18.9 0.0**
comp=Z,23nm,0.6s,baz=146,slow=7.7,SNR=79
TIXI Tiksi 35.86 353 *c iP* **P 11 56 18.1 -0.8**
TIXI pmax pmax
comp=Z,47nm,1.0s
TIXI Tiksi 35.86 353 *eP* **P 11 56 18.9 0.0**
comp=Z,31nm,0.7s
KRAR Krasnoyarsk 37.72 317⇓ *iP* **P 11 56 35.3 +0.4**
KRAR pmax pmax
comp=Z,66nm,0.9s
NONG Nongkai 38.06 252 P **P 11 56 39.1 +0.9**
comp=Z,31nm,1.2s
SWI Sorong 38.21 196 P **P 11 56 39.1 -0.3**
comp=Z,142nm,1.0s,comp=Z,2μm
GENI Genyem 38.83 181 P **P 11 56 45.0 +0.4**
comp=Z,70nm,1.3s,comp=Z,4μm
CRAI Chiangrai 38.98 257 P **P 11 56 46.2 +0.2**
comp=Z,81nm,1.5s
MRSI Marisa 39.93 211 P **P 11 56 52.7 -1.1**
comp=Z,31nm,1.3s,comp=Z,1μm
FAKI Fak Fak 40.00 194 P **P 11 56 53.4 -1.0**
comp=Z,86nm,1.2s,comp=Z,1μm
FAKI Fak Fak 40.00 194 *eP* **P 11 56 53.8 -0.6**
comp=Z,60nm,0.9s
UTTA Uttaradit 40.24 253 P **P 11 56 57.9 +1.5**
comp=Z,32nm,0.9s
CHAI Chaiyaphum 40.25 250 P **P 11 56 56.4 -0.1**
comp=Z,12nm,1.0s,comp=Z,522nm
LAMP Lampang 40.51 255 P **P 11 57 02.7 +4.0**
comp=Z,4.8nm,0.8s
SANI Sanana 40.78 203 P **P 11 56 59.3 -1.5**
comp=Z,238nm,0.9s,comp=Z,2μm
WMQ Urumqi 40.88 297 P **P 11 57 02.8 +1.3**
WMQ pP pP 11 57 11.8 +0.9
WMQ sP sP 11 57 17.0 +2.3
WMQ S **S 12 03 11.0 +0.1**
WMQ sS sS 12 03 27.5 +1.2
WMQ pmax pmax
comp=Z,47nm,0.8s
WMQ pmax pmax
comp=Z,190nm,3.6s
WMQ LR LR
comp=Z,370nm,17.4s
WMQ LR LR
comp=Z,160nm,17.6s
WMQ LR LR
comp=Z,120nm,24.8s
CHTO Chiang Mai 40.88 256 *eP* **P 11 57 01.5 -0.3**
CHTO pmax pmax
comp=Z,5.0nm,0.9s
CHTO Chiang Mai 40.88 256 *eP* **P 11 57 01.5 -0.3**
comp=Z,4.6nm,0.9s
CMAR Chiang Mai Arr 41.09 256 P **P 11 57 03.2 -0.2**
comp=Z,1.7nm,0.5s,baz=48,slow=8.3,SNR=7.1
CMAR PcP **PcP 11 59 03.2 +0.5**
comp=Z,1.1nm,0.5s,baz=11,slow=1.8,SNR=5.7
CMAR ScP **ScP 12 02 47.0 -3.2**
comp=Z,1.0nm,0.8s,baz=116,slow=3.1,SNR=5.9
CMAR LR LR 12 16 24.4
comp=Z,314nm,18.3s,baz=54,slow=40
CM01 Chiang Mai Arr 41.09 256 *eP* **P 11 57 05.5 +2.0**
TNA Tin City 41.52 29 *eP* **P 11 57 08.7 +2.4**
comp=Z,50nm,1.6s
NLAI Namlea 41.56 201 P **P 11 57 07.9 +0.6**
comp=Z,117nm,1.0s,comp=Z,2μm
CHBT CHBT 41.98 246 P **P 11 57 11.4 +0.6**
comp=Z,35nm,0.9s
ZAA0 Zalesovo Array 42.13 313 *eP* **P 11 57 11.2 -0.3**
ZAA1 Zalesovo Array 42.13 313 *eP* **P 11 57 11.9 +0.3**
ZALV Zalesovo Beam 42.13 313 P **P 11 57 11.9 +0.3**
comp=Z,44nm,0.7s,baz=92,slow=6.5,SNR=145
ZALV PcP **PcP 11 59 05.5 -0.1**
comp=Z,3.2nm,0.3s,baz=90,slow=0.4,SNR=5.5
ZALV ScP **ScP 12 02 52.6 -1.1**
comp=Z,1.1nm,0.3s,baz=96,slow=5.8,SNR=4.2
ZALV LR LR 12 15 26.5
comp=Z,354nm,19.4s,baz=70,slow=37
SBUM Sibu 43.05 225 *eP* **P 11 57 20.3 +1.0**
NVS Novosibirsk 43.07 314⇑ *iP* **P 11 57 19.1 0.0**
NVS pmax pmax
comp=Z,68nm,1.0s
NVS pmax pmax
comp=N,13nm,1.1s
NVS pmax pmax
comp=E,43nm,0.9s
NRIK Noril'sk 43.71 336 P **P 11 57 23.7 -0.4**
comp=E,26nm,1.1s,baz=108,slow=8.3,SNR=24
NRIK LR LR 12 17 08.5
comp=E,894nm,18.1s,baz=106,slow=38
KDI Kendari 43.72 207 P **P 11 57 25.5 +0.7**
comp=E,41nm,1.1s
PHET Kaeng Krachan 43.89 249 P **P 11 57 27.3 +1.1**
comp=E,19nm,0.8s,comp=E,162nm
MK01 Makanchi Array 44.22 303 *eP* **P 11 57 28.4 -0.2**
MK31 Makanchi Array 44.22 303 *i P* **P 11 57 28.7 +0.1**
MK31 pmax pmax
comp=Z,42nm,0.9s
MK32 Makanchi Array 44.22 303 *eP* **P 11 57 28.8 +0.2**
MKAR Makanchi Array 44.22 303 P **P 11 57 28.8 +0.2**
comp=Z,35nm,0.9s,baz=87,slow=9.0,SNR=154
MKAR PcP **PcP 11 59 12.3 -0.5**
comp=Z,1.9nm,0.7s,baz=90,slow=0.6,SNR=1.6
MKAR ScP **ScP 12 03 02.7 +0.3**
comp=Z,1.7nm,0.9s,baz=77,slow=5.4,SNR=6.0
MKAR LR LR 12 16 42.3
comp=Z,387nm,19.3s,baz=80,slow=37
MAKZ Makanchi 44.43 303 *eP* **P 11 57 30.3 0.0**
MAKZ pmax pmax
comp=Z,34nm,0.9s
MAKZ Makanchi 44.43 303 *eP* **P 11 57 30.3 0.0**
comp=Z,34nm,0.9s
KSM Kuching 44.94 226 *eP* **P 11 57 35.2 +0.6**
comp=Z,9.7nm,0.7s
STKI Sintang 45.42 224 P **P 11 57 39.0 +0.6**
KAPI Kappang 45.80 210 P **P 11 57 40.7 -0.6**
comp=Z,64nm,1.1s,baz=40,slow=2.7,SNR=15
KAPI Kappang 45.80 210 *eP* **P 11 57 41.0 -0.4**
comp=Z,111nm,1.2s
PMG Port Moresby 45.94 172 *eP* **P 11 57 42.6 +0.1**
PMG pmax pmax
comp=Z,35nm,1.1s
PMG Port Moresby 45.94 172 *eP* **P 11 57 42.6 +0.1**
comp=Z,35nm,1.1s
TT01 Tatalina 46.07 34 *eP* **P 11 57 44.1 +1.2**
TTA Tatalina 46.07 34 *eP* **P 11 57 44.3 +1.2**
TTA pmax pmax
comp=Z,14nm,1.2s
TTA Tatalina 46.07 34 *eP* **P 11 57 44.3 +1.2**
comp=Z,14nm,1.2s
KURK Kurchatov 46.10 309 P **P 11 57 43.6 +0.2**
KURK pmax pmax
comp=Z,29nm,0.6s
KURK Kurchatov 46.10 309 *eP* **P 11 57 42.6 -0.8**
comp=Z,46nm,0.8s
SVW2 Sparrevohn 46.17 37 *eP* **P 11 57 46.2 +2.4**
comp=Z,18nm,1.1s
KURBB Kurchatov Arra 46.17 308 P **P 11 57 43.6 -0.3**
comp=Z,29nm,0.6s,baz=85,slow=7.9,SNR=142
PDGK Podgornoye 46.83 298 P **P 11 57 49.2 0.0**
PDGK pmax pmax
comp=Z,73nm,1.0s
GUN Gumba 46.95 276 *eP* **P 11 57 51.0 +0.2**
comp=Z,50nm,0.7s
SKLT Songkhla 46.98 242 P **P 11 57 51.8 +1.1**
comp=Z,40nm,1.0s
SURT Suratani 47.08 245 P **P 11 57 52.2 +0.7**
comp=Z,17nm,1.2s,comp=Z,194nm
TRTT Trang 47.19 243 P **P 11 57 52.9 +0.6**
comp=Z,31nm,1.0s
PKIN Phulchoki 47.48 276 *eP* **P 11 57 53.5 -1.4**
comp=Z,24nm,0.7s
KKN Kakani 47.48 276 *eP* **P 11 57 54.6 -0.2**
comp=Z,67nm,0.8s
RSO Redoubt South 47.55 38 *eP* **P 11 57 56.0 +1.2**
DMN Daman 47.70 276 *eP* **P 11 57 55.3 -1.2**
comp=Z,55nm,1.0s
PPLA Purkeypile 47.82 35 *eP* **P 11 57 58.6 +1.8**
comp=Z,39nm,1.2s
CAST Castle Rocks 47.88 34 *eP* **P 11 57 58.8 +1.6**
comp=Z,62nm,1.8s
SPU Mount Spurr 47.88 37 *eP* **P 11 57 58.9 +1.7**
GKN Gorkha 47.91 277 *eP* **P 11 57 58.3 +0.3**
comp=Z,112nm,0.8s
PKDT Phuket 48.13 245 P **P 11 58 00.4 +0.7**
comp=Z,96nm,0.9s
MMRI Maumere 48.20 205 P **P 11 58 00.3 +0.2**
MMRI Maumere 48.20 205 *eP* **P 11 57 59.8 -0.2**
comp=Z,105nm,1.1s
KULM Kulim 48.28 240 *eP* **P 11 58 01.0 +0.2**
comp=Z,35nm,1.2s
BPAW Bear Paw Mtn. 48.38 33 *eP* **P 11 58 02.4 +1.3**
comp=Z,58nm,2.0s
KTH Kantishna Hill 48.40 34 *eP* **P 11 58 02.7 +1.5**
comp=Z,43nm,1.2s
BRLK Bradley Lake 48.50 39 *eP* **P 11 58 02.9 +0.8**
comp=Z,23nm,1.0s
MLY Manley 48.51 32 *eP* **P 11 58 03.6 +1.6**
comp=Z,18nm,1.0s
SOEI Soe 48.58 202 P **P 11 58 02.6 -0.6**
SOEI Soe 48.58 202 *eP* **P 11 58 02.4 -0.8**
comp=Z,145nm,1.0s
IPM Ipoh 48.60 239 *eP* **P 11 58 02.6 -0.7**
comp=Z,44nm,0.9s
TRF Thorofare Moun 48.69 34 *eP* **P 11 58 05.2 +1.7**
comp=Z,12nm,0.9s
COLD Coldfoot 48.81 29 *eP* **P 11 58 05.8 +1.5**
comp=Z,36nm,2.0s
KOLN Koldanda 48.84 277 *eP* **P 11 58 04.1 -1.2**
comp=Z,39nm,0.8s
RC01 Rabbit Creek A 49.01 37 *eP* **P 11 58 06.8 +1.0**
comp=Z,40nm,1.1s
BWN Browne 49.05 33 *eP* **P 11 58 09.1 +3.0**
comp=Z,124nm,1.2s
PYUN Piuthan 49.19 278 *eP* **P 11 58 08.6 +0.7**
comp=Z,166nm,1.0s
SEW Seward 49.20 38 *eP* **P 11 58 08.3 +1.0**
comp=Z,64nm,1.2s
MCK McKinley 49.29 33 *eP* **P 11 58 09.1 +1.1**
MCK pmax pmax
comp=Z,17nm,1.0s
MCK McKinley 49.29 33 *eP* **P 11 58 09.1 +1.1**
comp=Z,17nm,1.0s
RND Reindeer 49.33 34 *eP* **P 11 58 09.2 +0.8**
RND pmax pmax
comp=Z,42nm,1.3s
RND Reindeer 49.33 34 *eP* **P 11 58 09.2 +0.8**
comp=Z,42nm,1.3s
MDM Murphy Dome 49.57 32 *eP* **P 11 58 11.6 +1.5**
comp=Z,80nm,1.4s
SML Sawmill 49.64 36 *eP* **P 11 58 11.6 +0.9**
SML pmax pmax
comp=Z,27nm,0.9s
SML Sawmill 49.64 36 *eP* **P 11 58 11.6 +0.9**
comp=Z,27nm,0.9s
WRH Wood River Hil 49.64 32 *eP* **P 11 58 11.1 +0.5**
comp=Z,12nm,0.8s
TKM2 Tokmak 2 49.69 299 *eP* **P 11 58 12.4 +0.8**
TKM2 pmax pmax
comp=Z,30nm,1.0s
TKM2 Tokmak 2 49.69 299 *eP* **P 11 58 12.4 +0.8**
comp=Z,30nm,1.0s
COLA College 49.73 32⇑ *iP* **P 11 58 12.5 +1.2**
COLA pmax pmax
comp=Z,27nm,1.6s
COLA College 49.73 32 *eP* **P 11 58 12.9 +1.6**
comp=Z,52nm,1.5s
CCB Clear Creek Bu 49.76 32 *eP* **P 11 58 12.5 +1.0**
comp=Z,7.4nm,1.1s
MTN Manton Dam 49.89 193 *eP* **P 11 58 12.2 -0.8**
comp=Z,60nm,0.8s
PLAI Plampang 50.06 211 P **P 11 58 12.6 -1.8**
comp=Z,94nm,0.9s
HDA Harding Lake 50.14 33 *eP* **P 11 58 15.1 +0.7**
comp=Z,44nm,1.4s
COEN Coen 50.15 177 *eP* **P 11 58 15.4 +0.4**
comp=Z,38nm,1.0s
ILAR Eielson Array 50.15 32 P **P 11 58 14.8 +0.3**
comp=Z,15nm,0.8s,baz=270,slow=6.2,SNR=112
ILAR LR LR 12 20 48.6
comp=Z,69nm,19.9s,baz=296,slow=38
ILB Eielson Array 50.15 32 *eP* **P 11 58 14.8 +0.3**
IL1 Eielson Array 50.15 32 *eP* **P 11 58 14.8 +0.3**
TWSI Taliwang, Sumb 50.36 212 P **P 11 58 15.5 -1.1**
FRU Bishkek 50.40 299 *eP* **P 11 58 16.5 -0.3**
FRU *i* 11 58 27.0
FRU *e* 12 05 29.0
FRU pmax pmax
comp=Z,60nm,2.0s
KSH Kashi 50.41 294 P **P 11 58 21.3 +4.3**
KSH *e*pP sP 11 58 31.9 +1.6
KSH *e*sP pP 11 58 35.8 +9.3
KSH *e*PP **PP 12 00 18.1 +5.5**
KSH PcS **PcS 12 03 34.5 +2.1**
KSH S **S 12 05 32.0 +3.6**
KSH ScS **ScS 12 08 06.1 +0.3**
KSH pmax pmax
comp=Z,15nm,0.8s
KSH pmax pmax
comp=Z,91nm,4.6s
KSH LR LR
comp=Z,510nm,16.5s
KSH LR LR
comp=Z,190nm,11.6s
KSH LR LR
comp=Z,580nm,17.2s
AAK Ala-Archa 50.55 299 P **P 11 58 18.3 +0.3**
comp=Z,5.0nm,0.4s,baz=107,slow=6.9,SNR=15
AAK Ala-Archa 50.55 299 *c iP* **P 11 58 18.1 +0.1**
AAK Ala-Archa 50.55 299 *eP* **P 11 58 18.4 +0.3**
comp=Z,9.5nm,0.8s
OTUK Ortayu 50.57 306 P **P 11 58 17.7 -0.2**
OTUK pmax pmax
comp=Z,21nm,0.8s
FYU Fort Yukon 50.77 30 *eP* **P 11 58 21.6 +2.5**
comp=Z,154nm,1.8s
BVA0 Borovoye Array 50.79 313 *i P* **P 11 58 19.3 -0.2**
BVA0 pmax pmax
comp=Z,18nm,0.8s
BVAR Borovoye Array 50.79 313 P **P 11 58 19.4 -0.1**
comp=Z,17nm,0.8s,baz=78,slow=7.7,SNR=53
BVAR PcP **PcP 11 59 36.7 +0.7**
comp=Z,3.0nm,0.7s,baz=72,slow=4.7,SNR=1.9
KLU Klutina 50.81 36 *eP* **P 11 58 21.2 +1.5**
comp=Z,46nm,1.3s
BRVK Borovoye 50.84 313 *c iP* **P 11 58 19.8 -0.1**
BRVK pmax pmax
comp=Z,29nm,1.0s
BRVK Borovoye 50.84 313 *eP* **P 11 58 19.6 -0.3**
comp=Z,28nm,1.0s
PAX Paxson 50.89 34 *eP* **P 11 58 21.5 +1.3**
PAX pmax pmax
comp=Z,17nm,1.2s
PAX Paxson 50.89 34 *eP* **P 11 58 21.5 +1.3**
comp=Z,17nm,1.2s
DIV Divide 50.92 37 *eP* **P 11 58 21.6 +1.2**
comp=Z,57nm,1.1s
EYAK Cordova Ski Ar 51.00 37 *eP* **P 11 58 22.7 +1.8**
comp=Z,45nm,1.2s
EKS2 Erkin-Say 51.05 299 *eP* **P 11 58 22.2 +0.4**
EKS2 pmax pmax
comp=Z,10.0nm,0.8s
EKS2 Erkin-Say 51.05 299 *eP* **P 11 58 22.2 +0.4**
comp=Z,9.7nm,0.8s
PSI Prapat 51.25 239 *eP* **P 11 58 23.2 -0.4**
PSI pmax pmax
comp=Z,28nm,0.7s
PSI Prapat 51.25 239 *eP* **P 11 58 23.2 -0.4**
comp=Z,28nm,0.7s
DOT Dot Lake 51.46 33 *eP* **P 11 58 24.9 +0.5**
comp=Z,184nm,1.9s
GMJI Gumukmas 51.49 216 P **P 11 58 24.9 -0.2**
BMRM Bremner River 51.51 37 *eP* **P 11 58 26.5 +1.7**
comp=Z,51nm,1.2s
RAGM Ragged Mountai 51.55 38 *eP* **P 11 58 27.1 +2.0**
comp=Z,41nm,1.0s
MENT Mentasta 51.69 34 *eP* **P 11 58 27.4 +1.2**
comp=Z,21nm,1.0s
MNAS Manas 51.99 299 P **P 11 58 29.1 +0.2**
MNAS pmax pmax
comp=Z,21nm,0.8s
MLSI Meulaboh, Aceh 52.00 243 P **P 11 58 28.1 -0.9**
PWJI Pagerwojo 52.07 218 P **P 11 58 27.8 -1.6**
comp=Z,246nm,0.8s
CRQM Cirque 52.24 37 *eP* **P 11 58 32.3 +1.8**
comp=Z,51nm,1.1s
MNSI Mandailing Nat 52.26 237 P **P 11 58 30.3 -0.6**
comp=Z,24nm,1.0s
BALM Baldy 52.59 37 *eP* **P 11 58 34.0 +1.1**
BALM pmax pmax
comp=Z,38nm,1.2s
BALM Baldy 52.59 37 *eP* **P 11 58 34.0 +1.1**
comp=Z,38nm,1.2s
EGAK Eagle 52.60 32 *eP* **P 11 58 32.9 +0.1**
comp=Z,10nm,0.8s
UGM Wanagama 52.62 219 P **P 11 58 32.5 -1.0**
comp=Z,258nm,1.8s
UGM Wanagama 52.62 219 *eP* **P 11 58 32.3 -1.2**
comp=Z,249nm,1.0s
PPI Padang Panjang 52.63 235 P **P 11 58 35.3 +1.6**
KK31 Karatay Array 53.20 300 *i P* **P 11 58 37.5 -0.1**
KK31 pmax pmax
comp=Z,14nm,0.8s

KKAR Karatay Array 53.20 300 *eP* **P 11 58 38.1 +0.5**
KKAR Karatay Array 53.20 300 *eP* **P 11 58 38.1 +0.5**
LEM Lembang 53.25 223 P P 11 58 43.6 +5.2
comp=Z,138nm,0.8s,baz=65,slow=5.9,SNR=14
LEM LR LR 12 22 15.8
comp=Z,172nm,19.8s,baz=23,slow=37
GSI Gunungsitoli 53.26 239 P **P 11 58 37.9 -0.4**
comp=Z,292nm,1.0s
GSI Gunungsitoli 53.26 239 *eP* **P 11 58 38.0 -0.4**
comp=Z,211nm,0.9s
DAWY Dawson 53.46 33 *eP* **P 11 58 40.6 +1.4**
comp=Z,10nm,1.0s
NDI New Delhi 53.53 281 *eP* P 11 58 35.0 -5.2
LWLI Liwa 53.83 228 P **P 11 58 42.8 +0.2**
KASI Kota Agung 53.98 227 P **P 11 58 41.2 -2.3**
comp=Z,54nm,1.0s
INK Inuvik 55.05 27 P **P 11 58 51.0 +0.4**
comp=Z,11nm,0.8s,baz=287,slow=6.0,SNR=17
INK Inuvik 55.05 27 *eP* **P 11 58 51.6 +0.9**
INK pmax pmax
comp=Z,31nm,1.1s
INK Inuvik 55.05 27 *eP* **P 11 58 51.6 +0.9**
comp=Z,31nm,1.1s
SVE Sverdlovsk 55.43 319 *deP* **P 11 58 53.9 +0.3**
SVE pmax pmax
comp=Z,63nm,1.0s
FITZ Fitzroy Crossi 56.16 198 LR LR 12 24 03.9
comp=Z,57nm,18.9s,baz=20,slow=37
FITZ Fitzroy Crossi 56.16 198 *eP* **P 11 58 59.1 0.0**
comp=Z,38nm,1.3s
SKAG Skagway 56.34 38 *eP* **P 11 59 01.9 +1.9**
comp=Z,33nm,1.0s
WRAB Tennant Creek 56.41 188 *d iP* **P 11 58 59.8 -1.1**
WRAB pmax pmax
comp=Z,160nm,1.0s
WRAB Tennant Creek 56.41 188 *eP* **P 11 58 59.7 -1.3**
comp=Z,61nm,1.0s
CTA Charters Tower 56.42 174 P **P 11 58 59.0 -2.0**
comp=Z,3.9nm,0.7s,baz=8.1,slow=12,SNR=4.2
WB2 Warramunga Arr 56.42 188 *eP* **P 11 58 59.8 -1.3**
comp=Z,59nm,0.9s
WR1 Warramunga Arr 56.42 188 *eP* **P 11 58 59.5 -1.6**
comp=Z,66nm,1.0s
WRA Warramunga Arr 56.42 188 P **P 11 58 59.5 -1.6**
comp=Z,42nm,0.8s,baz=4.5,slow=7.4,SNR=151
WRA PcP **PcP 11 59 57.9 +0.1**
comp=Z,7.2nm,0.7s,baz=358,slow=4.2,SNR=5.5
ARU Arti 56.64 319 *c iP* **P 11 59 01.8 -0.5**
ARU 12 01 03.2
ARU PPP PPP 12 02 26.9
ARU S **S 12 06 53.7 +1.6**
ARU SS **SS 12 10 30.2 -9.2**
ARU pmax pmax
comp=Z,66nm,1.0s
ARU Arti 56.64 319 *eP* **P 11 59 01.8 -0.5**
comp=Z,60nm,1.0s
SOKR Solikamsk 56.65 323 *d iP* **P 11 59 00.4 -1.8**
SOKR pmax pmax
comp=Z,31nm,0.9s
SOKR MLR MLR
comp=Z,386nm,17.0s
KBL Kabul 57.38 291 *eP* **P 11 59 08.2 0.0**
KBL pmax pmax
comp=Z,21nm,0.9s
KBL Kabul 57.38 291 *eP* **P 11 59 08.2 0.0**
comp=Z,21nm,0.9s
HYB Hyderabad 57.92 269 *i* P **P 11 59 13.0 +1.1**
AB31 Akbulak array 58.13 310 *i* P **P 11 59 12.3 -0.5**
AB31 pmax pmax
comp=Z,24nm,0.9s
ABKAR Akbulak array 58.13 310 *eP* **P 11 59 12.5 -0.3**
WRAK Wrangell Islan 58.78 40 *eP* **P 11 59 20.0 +2.8**
comp=Z,20nm,1.1s
AKTO Aktyubinsk 58.88 312 P **P 11 59 16.7 -1.4**
AKTO pmax pmax
comp=Z,14nm,1.0s
DLBC Dease Lake 59.27 38 *eP* **P 11 59 23.3 +2.6**
comp=Z,39nm,1.0s
AS01 Alice Springs 60.14 188 *eP* **P 11 59 26.1 -0.9**
AS31 Alice Springs 60.15 188 *eP* **P 11 59 26.1 -0.9**
comp=Z,7.6nm,0.8s
ASAR Alice Springs 60.15 188 P **P 11 59 26.1 -0.9**
comp=Z,23nm,0.8s,baz=11,slow=7.2,SNR=148
ASAR LR LR 12 25 35.4
comp=Z,113nm,20.0s,baz=7.5,slow=36
MBWA Marble Bar 60.73 203 *eP* **P 11 59 30.6 -0.4**
comp=Z,69nm,1.4s
SPA0 Spitsbergen Ar 61.07 349 *eP* **P 11 59 34.0 +1.3**
POO Poona 61.13 272 *ex* **P 11 59 31.0 -3.0**
KBS Kingsbay 61.21 350 *eP* **P 11 59 33.8 +0.2**
KBS pmax pmax
comp=Z,28nm,1.1s
KBS Kingsbay 61.21 350 *eP* **P 11 59 33.8 +0.2**
comp=Z,28nm,1.1s
PALK Pallekele 61.98 258 P **P 11 59 40.3 +0.5**
comp=Z,8.4nm,0.8s,baz=115,slow=4.9,SNR=3.9
PALK Pallekele 61.98 258 *eP* **P 11 59 36.2 -3.6**
comp=Z,21nm,1.1s
EIDS Eidsvold 62.18 170 *eP* **P 11 59 40.7 -0.1**
comp=Z,18nm,1.0s
DZM Mont Dzumac 62.92 153 *e*LR LR 12 18 29.9
comp=Z,609nm,21.9s
DZM Mont Dzumac 62.92 153 *eP* **P 11 59 45.8 0.0**
comp=Z,33nm,0.9s
APA Apatity 63.13 336⇑ *iP* **P 11 59 43.0 -3.6**
APA MLR MLR
comp=Z,1μm,18.0s
RES Resolute Bay 63.26 14 *eP* **P 11 59 48.0 +0.7**
RES pmax pmax
comp=Z,17nm,1.0s
RES Resolute Bay 63.26 14 *eP* **P 11 59 48.0 +0.7**
comp=Z,17nm,1.0s
GEYT Alibeck 63.90 299 P **P 11 59 52.9 +0.6**
comp=Z,4.1nm,0.6s,baz=103,slow=2.0,SNR=6.8
GEYT LR LR 12 29 41.5
comp=Z,185nm,19.9s,baz=205,slow=38
YKW3 Yellowknife Ar 64.43 30 *eP* **P 11 59 56.6 +1.3**
comp=Z,16nm,1.1s
YKA Yellowknife Ar 64.47 30 P **P 11 59 55.9 +0.4**
comp=Z,2.4nm,0.7s,baz=303,slow=6.7,SNR=28
YKB5 Yellowknife Ar 64.47 30 *eP* **P 11 59 56.5 +1.0**
ARA0 ARCESS Array S 64.47 339 *eP* **P 11 59 55.8 +0.3**
ARCES ARCESS Array B 64.47 339 P **P 11 59 55.8 +0.3**
comp=Z,4.7nm,0.7s,baz=53,slow=8.1,SNR=12
ARCES LR LR 12 33 23.1
comp=Z,306nm,18.3s,baz=84,slow=41
DAG Danmarks Havn 66.36 355 *i* P **P 12 00 07.0 -0.5**
comp=Z,13nm,0.8s
DAG Danmarks Havn 66.36 355 *i* P **P 12 00 07.0 -0.5**
DAG pmax pmax
comp=Z,10.0nm,0.8s
ARMA Armidale 67.22 170 *eP* **P 12 00 13.6 0.0**
comp=Z,36nm,1.1s
MOS Moscow 67.58 323 *eP* **P 12 00 14.2 -1.4**
MOS *e* 12 00 25.4
MOS pmax pmax
comp=Z,53nm,1.0s
MOS MLR MLR
comp=Z,1μm,20.0s
VRH Novokhopyorsk 67.85 318 *eP* P 12 00 24.3 +6.9
VRH pmax pmax
comp=Z,60nm,1.1s
STKA Stephens Creek 67.95 180 P **P 12 00 17.6 -0.4**
comp=Z,15nm,0.8s,baz=340,slow=8.5,SNR=20
STKA LR LR 12 30 57.9
comp=Z,96nm,19.2s,baz=20,slow=37
STKA Stephens Creek 67.95 180 *eP* **P 12 00 17.7 -0.4**
STKA pmax pmax
comp=Z,4.0nm,0.9s
STKA Stephens Creek 67.95 180 *eP* **P 12 00 17.6 -0.4**
comp=Z,4.1nm,0.9s
OBN Obninsk 68.42 323⇓ *eP* **P 12 00 21.2 +0.3**
OBN *e* 12 00 46.9
OBN *e* 12 02 50.4
OBN *e*PPP PPP 12 04 34.0
OBN *i* S **S 12 09 26.1 +6.0**
OBN pmax pmax
comp=Z,17nm,0.4s
OBN MLR MLR
comp=Z,296nm,17.0s
D05A Enumclaw 68.53 47 *eP* **P 12 00 22.4 +0.7**
comp=Z,81nm,1.6s
LPSR Galich'ya Gora 68.60 320 *eP* P 12 00 30.8 +8.8
LPSR pmax pmax
comp=Z,40nm,1.3s
NLW Nelson Butte 69.03 45 P pP 12 00 36.2 +1.4

BBOO Buckleboo 69.04 185 *eP* **P 12 00 24.8 -0.1**
comp=Z,149nm,1.9s
VSR Storozhevoye 69.21 319 *eP* P 12 00 34.5 +8.6
VSR pmax pmax
comp=Z,80nm,1.6s
FIA1 FINESS Array S 69.23 332 *eP* **P 12 00 25.9 +0.1**
comp=Z,62nm,0.9s
FIA0 FINESS Array S 69.23 332 *eP* **P 12 00 26.2 +0.4**
FIA0 FINESS Array S 69.23 332 *eP* **P 12 00 26.2 +0.4**
FINES FINESS Array B 69.23 332 P **P 12 00 26.2 +0.4**
comp=Z,19nm,1.0s,baz=57,slow=7.0,SNR=15
FINES LR LR 12 33 11.5
comp=Z,522nm,18.2s,baz=47,slow=38
B08A Colville Reser 69.46 45 *eP* **P 12 00 28.1 +0.6**
comp=Z,29nm,1.4s
I03D Drain, OR 69.50 50 P **P 12 00 29.6 +1.8**
baz=301
H04A Detroit Lake 69.70 49 *eP* **P 12 00 32.1 +3.0**
comp=Z,43nm,1.3s
GOF Gofitskoye 70.30 312⇑ *eP* **pP 12 00 43.2 +0.6**
GOF pmax pmax
comp=Z,83nm,0.9s
G06A Carlson Farm, 70.35 48 *eP* **P 12 00 35.9 +2.8**
comp=Z,28nm,1.2s
KTRM Thompson Ridge 70.41 52 P pP 12 00 45.8 +2.3
DGRG David-gareji 70.76 308 P P 12 00 43.2 +7.5
DGRG David-gareji 70.76 308 *eP* P 12 00 43.1 +7.4
WSAR Wadi Sarin 70.77 285 P **P 12 00 37.2 +1.2**
comp=Z,6.4nm,0.8s,baz=56,slow=4.8,SNR=3.6
GUDG Gudauri 70.79 309 P **P 12 00 38.8 +2.7**
VSU Vasula 70.84 330⇑ *eP* **P 12 00 35.9 +0.2**
VSU pmax pmax
comp=Z,69nm,1.2s
DUS Dusheti 70.85 308 P P 12 00 44.0 +7.8
DUS Dusheti 70.85 308 *eP* P 12 00 44.0 +7.8
YBH Yreka Blue Hor 70.93 52 *eP* **P 12 00 38.5 +1.8**
YBH pmax pmax
comp=Z,50nm,1.8s
YBH Yreka Blue Hor 70.93 52 *eP* **P 12 00 38.5 +1.8**
comp=Z,50nm,1.8s
ZEI Tsey 70.98 309 *eP* **P 12 00 32.8 -4.4**
ZEI *e* 12 00 43.3
ZEI pmax pmax
comp=Z,16nm,0.9s
TBLG Delisi 71.01 308 P pP 12 00 47.3 +0.3
TBLG Delisi 71.01 308 *eP* pP 12 00 47.3 +0.3
J05D Fort Rock, OR 71.03 50 P **P 12 00 38.8 +1.4**
baz=302
KBZ Khabaz 71.10 311 P **P 12 00 38.3 +0.8**
comp=Z,7.7nm,0.8s,baz=49,slow=1.0,SNR=14
KBZ LR LR 12 33 58.8
comp=Z,162nm,19.6s,baz=50,slow=38
KIV Kislovodsk 71.10 311 *d iP* **P 12 00 38.5 +0.7**
KIV *e* 12 00 56.1
KIV *e* 12 03 16.6
KIV *e*PPP PPP 12 04 57.2
KIV *i* S S 12 09 42.9 -9.3
KIV pmax pmax
comp=Z,67nm,1.7s
KIV MLR MLR
comp=Z,224nm,17.0s
KIV Kislovodsk 71.10 311 *eP* **P 12 00 38.8 +1.0**
comp=Z,96nm,1.0s
SUMG Summit 71.29 360 *i* P **P 12 00 39.4 +0.6**
comp=Z,16nm,0.9s
SUMG Summit 71.29 360 *eP* **P 12 00 39.6 +0.8**
SUMG pmax pmax
comp=Z,60nm,1.1s
SUMG Summit 71.29 360 *eP* **P 12 00 39.6 +0.8**
comp=Z,60nm,1.1s
ONI Oni 71.36 309 P **P 12 00 41.2 +1.8**
ONI Oni 71.36 309 *eP* **P 12 00 41.1 +1.8**
NEY Neytrino 71.46 310⇑ *eP* **P 12 00 41.9 +1.9**
NEY pmax pmax
comp=Z,2.0nm,0.8s
K05A Summer Lake 71.54 50 *eP* **P 12 00 42.4 +1.9**
comp=Z,61nm,1.3s
WDC Whiskeytown Da 71.65 53 *eP* **P 12 00 42.6 +1.6**
WDC pmax pmax
comp=Z,24nm,1.3s
WDC Whiskeytown Da 71.65 53 *eP* **P 12 00 42.6 +1.6**
comp=Z,24nm,1.3s
GNI Garni 71.86 307 *d iP* **P 12 00 44.9 +2.4**
GNI pmax pmax
comp=Z,85nm,1.7s
GNI Garni 71.86 307 *eP* **P 12 00 44.4 +1.9**
comp=Z,34nm,0.9s
AKH Akhalkalaki 71.97 308⇓ *iP* **P 12 00 45.5 +2.3**
BGD Bogdanovka 71.99 308 P **P 12 00 45.5 +2.2**
MOD Modoc Plateau 72.35 51 *eP* **P 12 00 46.6 +1.2**
comp=Z,21nm,1.4s
NWAO Narrogin (SRO) 72.51 201 P **P 12 00 45.4 -0.6**
comp=Z,29nm,0.8s,baz=14,slow=19,SNR=13
NWAO Narrogin (SRO) 72.51 201 *eP* **P 12 00 45.6 -0.3**
NWAO Narrogin (SRO) 72.51 201 *eP* **P 12 00 45.6 -0.3**
BMO Blue Mountains 72.54 47 *eP* **P 12 00 48.5 +2.1**
BMO pmax pmax
comp=Z,20nm,1.0s
BMO Blue Mountains 72.54 47 *eP* **P 12 00 48.5 +2.1**
comp=Z,20nm,1.0s
JTMT Jette 72.62 43 *eP* **P 12 00 49.2 +2.3**
SCO Scoresbysund 72.69 354 *i* P P 12 00 52.2 +5.5
comp=Z,34nm,1.2s
SCO Scoresbysund 72.69 354 *eP* P 12 00 52.2 +5.5
SCO pmax pmax
comp=Z,34nm,1.2s
ORV Oroville 72.87 53 *eP* **P 12 00 49.2 +0.9**
ORV pmax pmax
comp=Z,16nm,1.0s
ORV Oroville 72.87 53 *eP* **P 12 00 49.2 +0.9**
comp=Z,16nm,1.0s
SWMT Swartz Lake 72.91 43 *eP* **P 12 00 50.3 +1.7**
NACGM Naroch 73.08 327 *e* **P 12 00 48.0 -1.3**
NACGM *e*LR LR 12 33 12.0
SOC Sochi 73.10 312 *eP* P 12 00 43.7 -5.9
SOC *e* 12 03 35.4
SOC *e*PPP PPP 12 05 11.9
SOC *e*S **S 12 10 07.0 -7.9**
SOC *e*SS **SS 12 14 56.6 +1.0**
MSO Missoula 73.34 44 *eP* **P 12 00 52.2 +1.1**
comp=Z,39nm,1.5s
CHMT Chamberlain Mo 73.67 43 P pP 12 01 04.1 +1.0
ANN Anapa 73.76 314 *eP* **P 12 00 51.6 -1.8**
ANN *e*PP **pP 12 01 03.3 0.0**
ANN *e* 12 03 37.4
ANN *e*S **S 12 10 22.2 -0.1**
ANN *e*SS **SS 12 15 00.8 -4.6**
ANN pmax pmax
comp=Z,28nm,1.4s
PAHR Pah Rah Range 74.15 52 *eP* **P 12 00 57.2 +1.2**
comp=Z,22nm,1.0s
MFID Camas Ranch 74.23 48 *eP* **P 12 00 57.6 +1.2**
comp=Z,81nm,1.9s
FFC Flin Flon 74.36 32 *eP* **P 12 00 57.7 +0.9**
FFC pmax pmax
comp=Z,56nm,1.0s
FFC Flin Flon 74.36 32 *eP* **P 12 00 57.7 +0.9**
comp=Z,56nm,1.0s
NC405 NORSAR Array S 74.43 337 *eP* **P 12 00 57.7 +0.6**
CMB Columbia Colle 74.44 54 *eP* **P 12 00 58.9 +1.3**
CMB pmax pmax
comp=Z,27nm,1.1s
CMB Columbia Colle 74.44 54 *eP* **P 12 00 58.9 +1.3**
comp=Z,27nm,1.1s
NC204 NORSAR Array S 74.60 338 *eP* **P 12 00 58.7 +0.6**
NB201 NORSAR Array S 74.61 337 *eP* **P 12 00 59.8 +1.6**
AKASG Malin Array Be 74.61 322 P **P 12 00 58.0 -0.3**
comp=Z,4.9nm,0.6s,baz=48,slow=6.0,SNR=24
AKASG LR LR 12 36 48.1
comp=Z,525nm,18.0s,baz=45,slow=38
AKBB Malin Array Si 74.61 322 *eP* **P 12 00 58.0 -0.3**
AKBB pmax pmax
comp=Z,41nm,1.1s
AKBB Malin Array Si 74.61 322 *eP* **P 12 00 58.0 -0.3**
comp=Z,41nm,1.1s
KIEV Kiev 74.63 322⇑ *eP* **P 12 00 57.7 -0.7**
KIEV Kiev 74.63 322 *eP* **P 12 00 58.2 -0.1**
comp=Z,38nm,1.1s
NB2 NORSAR Subarra 74.64 337 P **P 12 00 58.3 -0.1**
comp=Z,8.9nm,0.7s,baz=41,slow=5.9
NB200 NORSAR Array S 74.64 337 *eP* **P 12 00 58.6 +0.2**
NOA NORSAR Array B 74.64 337 P **P 12 00 58.6 +0.2**
comp=Z,11nm,0.8s,baz=38,slow=5.7,SNR=23
NOA LR LR 12 37 00.4
comp=Z,606nm,19.6s,baz=40,slow=38

AK11 Malin Array Si 74.66 322 *eP* **P 12 00 58.4 -0.2**
FCC Fort Churchill 74.66 26 *eP* **P 12 00 59.1 +0.7**
FCC pmax pmax
comp=Z,49nm,1.1s
FCC Fort Churchill 74.66 26 *eP* **P 12 00 59.1 +0.7**
comp=Z,49nm,1.1s
NBO02 NORSAR Array S 74.75 337 *eP* **P 12 00 59.3 +0.4**
NBO00 NORSAR Array S 74.79 337 *eP* **P 12 01 01.4 +2.3**
WAKR Walker 74.79 53 *eP* **P 12 01 01.7 +1.9**
EGMT Eagleton 74.90 41 *eP* **P 12 00 58.9 -1.3**
comp=Z,54μm,1.9s
DLMT Dillon 74.96 44 *eP* **P 12 01 02.1 +1.5**
comp=Z,32nm,0.8s
HLID Hailey 74.98 47 *eP* **P 12 01 02.8 +1.9**
comp=Z,15nm,1.3s
BMN Battle Mountai 75.10 51 *eP* **P 12 01 03.2 +1.6**
BMN pmax pmax
comp=Z,26nm,1.2s
BMN Battle Mountai 75.10 51 *eP* **P 12 01 03.2 +1.6**
comp=Z,26nm,1.2s
MCMT McKenzie Canyo 75.14 45 *eP* **P 12 01 02.9 +1.1**
BOZ Bozeman (W) 75.33 44 P **P 12 01 04.0 +1.2**
baz=307
BOZ Bozeman (W) 75.33 44 *eP* **P 12 01 04.1 +1.3**
BOZ pmax pmax
comp=Z,23nm,0.8s
BOZ Bozeman (W) 75.33 44 *eP* **P 12 01 04.1 +1.3**
comp=Z,23nm,0.8s
NV01 Mina Array Sit 75.57 53 *eP* **P 12 01 05.7 +1.3**
NVAR Mina Array Bea 75.57 53 P **P 12 01 05.7 +1.3**
comp=Z,4.2nm,0.7s,baz=295,slow=6.3,SNR=28
NVAR LR LR 12 27 59.1
comp=Z,61nm,20.8s,baz=266,slow=31
SIM Simferopol' 75.57 315 *eP* **pP 12 01 14.1 +0.2**
SIM pmax pmax
comp=Z,32nm,0.9s
SIM MLR MLR
comp=Z,250nm,17.0s
ELK Elko 76.15 49 *eP* **P 12 01 09.3 +1.7**
ELK pmax pmax
comp=Z,11nm,1.0s
ELK Elko 76.15 49 *eP* **P 12 01 09.3 +1.7**
comp=Z,11nm,1.0s
GCMT Greycliff 76.33 43 *eP* **P 12 01 10.0 +1.5**
YFT Old Faithful 76.51 44 *eP* **P 12 01 13.5 +3.9**
comp=Z,19nm,0.8s
SFJD Kangerlussuaq 76.51 5 *i* P **P 12 01 11.4 +2.5**
comp=Z,8.3nm,1.0s
SFJD Kangerlussuaq 76.51 5 *eP* **P 12 01 11.4 +2.5**
SFJD pmax pmax
comp=Z,8.0nm,1.0s
LKWY Lake 76.68 44 *eP* **P 12 01 13.6 +3.0**
LKWY pmax pmax
comp=Z,31nm,1.1s
LKWY Lake 76.68 44 *eP* **P 12 01 13.6 +3.0**
comp=Z,31nm,1.1s
H17A Grant Village 76.69 44 P **P 12 01 13.1 +2.4**
baz=308
H17A Grant Village 76.69 44 *eP* **P 12 01 13.8 +3.1**
comp=Z,40nm,0.9s
SORM Soroca 76.69 321⇓ *iP* **P 12 01 09.9 -0.3**
SORM Soroca 76.69 321⇓ P **P 12 01 09.9 -0.3**
IMW Indian Meadow 76.79 45 *eP* **P 12 01 13.4 +2.1**
comp=Z,21nm,0.9s
FLWY Flagg Ranch 76.81 45 *eP* **P 12 01 12.9 +1.6**
comp=Z,88nm,1.7s
RLMT Red Lodge 76.97 43 *eP* **P 12 01 13.6 +1.4**
comp=Z,52nm,1.5s
MOOW Moose Ponds 76.99 45 *eP* **P 12 01 14.5 +2.1**
comp=Z,33nm,1.4s
HVU Hansel Valley 77.02 48 *eP* **P 12 01 14.0 +1.6**
HVU pmax pmax
comp=Z,17nm,0.8s
HVU Hansel Valley 77.02 48 *eP* **P 12 01 14.0 +1.6**
comp=Z,16nm,0.8s
TPAW Teton Pass 77.03 45 *eP* **P 12 01 14.4 +1.8**
comp=Z,15nm,0.9s
DAC Darwin (Calif) 77.27 54 *eP* **P 12 01 14.8 +0.8**
DAC pmax pmax
comp=Z,10.0nm,0.9s
DAC Darwin (Calif) 77.27 54 *eP* **P 12 01 14.8 +0.8**
comp=Z,9.6nm,0.9s
R11A Troy Canyon, C 77.35 52 P **P 12 01 15.1 +0.7**
baz=307
R11A Troy Canyon, C 77.35 52 *eP* **P 12 01 15.2 +0.7**
comp=Z,21nm,1.0s
BGU Big Grassy Mou 77.38 48 *eP* **P 12 01 15.8 +1.3**
comp=Z,18nm,1.3s
MPMC Manual Prospec 77.47 54 P **P 12 01 15.9 +0.8**
baz=306
LVV L'vov 77.71 324 *eP* pP 12 01 26.5 +0.6
TPNV Topopah Spring 77.75 53 P **P 12 01 17.6 +1.0**
baz=306
TPNV Topopah Spring 77.75 53 *eP* **P 12 01 17.8 +1.2**
TPNV pmax pmax
comp=Z,24nm,0.9s
TPNV Topopah Spring 77.75 53 *eP* **P 12 01 17.8 +1.2**
comp=Z,24nm,0.9s
EDW2 Edwards Air Fo 77.83 56 P **P 12 01 17.7 +0.7**
baz=306
HWUT Hardware Ranch 77.84 47 *eP* **P 12 01 18.4 +1.3**
comp=Z,34nm,1.1s
DUG Dugway, Tooele 77.95 49 P **P 12 01 18.6 +0.9**
baz=308
DUG Dugway, Tooele 77.95 49 *eP* **P 12 01 19.2 +1.5**
DUG pmax pmax
comp=Z,24nm,0.9s
DUG Dugway, Tooele 77.95 49 *eP* **P 12 01 19.2 +1.5**
comp=Z,24nm,0.9s
BW06 Boulder Array 78.28 45 P **P 12 01 20.1 +0.6**
baz=309
BW06 Boulder Array 78.28 45 *eP* **P 12 01 20.2 +0.6**
PD31 Pinedale Array 78.28 45 *eP* **P 12 01 20.2 +0.7**
PDAR Pinedale Array 78.28 45 P **P 12 01 20.2 +0.7**
comp=Z,1.5nm,0.5s,baz=254,slow=1.1,SNR=13
PSUT Pine Spring 78.32 51 *eP* **P 12 01 21.1 +1.2**
comp=Z,19nm,1.1s
GSC Goldstone, Bar 78.36 55 P **P 12 01 21.8 +1.8**
baz=306
GSC Goldstone, Bar 78.36 55 *eP* **P 12 01 20.8 +0.8**
GSC pmax pmax
comp=Z,9.0nm,0.9s
GSC Goldstone, Bar 78.36 55 *eP* **P 12 01 20.8 +0.8**
comp=Z,8.7nm,0.9s
BUR08 Bucovina Ar. S 78.61 322 *eP* **P 12 01 21.8 +0.6**
BURAR Bucovina Array 78.62 322⇑ *iP* **P 12 01 21.6 +0.4**
BURAR Bucovina Array 78.62 322⇑ P **P 12 01 21.6 +0.4**
TESR Tescani 78.63 320⇓ *iP* **P 12 01 19.3 -1.8**
SHPR Sheep Range 78.72 53 *eP* **P 12 01 23.4 +1.4**
comp=Z,19nm,1.0s
D25A Fairfield 78.80 39 P **P 12 01 22.2 +0.1**
baz=312
VRI Vrincioaia 79.02 320⇑ *iP* **P 12 01 24.8 +1.5**
VRI Vrincioaia 79.02 320⇑ P **P 12 01 24.8 +1.5**
TIRR Tirgusor 79.05 318⇑ *iP* **P 12 01 23.5 +0.1**
TIRR Tirgusor 79.05 318⇑ P **P 12 01 23.5 +0.1**
BR101 Keskin Array S 79.05 311 *eP* **P 12 01 24.4 +0.6**
BR131 Keskin Array S 79.05 311 *eP* **P 12 01 24.2 +0.5**
BRTR Keskin Array B 79.05 311 P **P 12 01 24.4 +0.6**
comp=Z,3.3nm,1.0s,baz=84,slow=3.8,SNR=14
BRTR PP **PP 12 04 20.9 -1.7**
comp=Z,2.7nm,1.1s,baz=77,slow=5.5,SNR=4.6
BRTR LR LR 12 41 04.3
comp=Z,104nm,18.8s,baz=27,slow=39
PLOR Plostina 79.07 320⇓ *iP* **P 12 01 25.2 +1.6**
PLOR Plostina 79.07 320⇓ P **P 12 01 25.2 +1.6**
KOLS Kolonicke sedl 79.16 324 *eP* **P 12 01 24.1 +0.1**
KOLS *e* 12 01 34.2
KOLS pmax pmax
comp=Z,17nm,1.2s
KOLS Kolonicke sedl 79.16 324 *eP* **P 12 01 24.1 +0.1**
KOLS *e* 12 01 34.2
STHS Stebnicka Huta 79.30 325 *eP* **P 12 01 26.0 +1.2**
STHS *e* 12 01 36.4
STHS pmax pmax
comp=Z,20nm,1.3s
STHS Stebnicka Huta 79.30 325 *eP* **P 12 01 26.0 +1.2**
STHS *e* 12 01 36.4
UZH Uzhgorod 79.36 324 *eP* **P 12 01 25.9 +0.9**
UZH *i* 12 01 35.3
MSU Marysvale 79.38 50 *eP* **P 12 01 27.5 +1.8**
MSU Marysvale 79.38 50 *eP* **P 12 01 27.5 +1.8**
OJC Ojcow 79.39 326 *eP* **P 12 01 26.1 +0.9**
OJC pmax pmax
comp=Z,91nm,1.3s
OJC Ojcow 79.39 326 *eP* **P 12 01 26.1 +0.9**

comp=Z,91nm,1.3s
ANTO Ankara 79.47 312 *e*P **P 12 01 25.9 0.0**
ANTO pmax pmax
comp=Z,31nm,0.9s
ANTO Ankara 79.47 312 *e*P **P 12 01 25.9 0.0**
comp=Z,31nm,0.9s
BR231 Keskin MP Arra 79.50 312 *e*P **P 12 01 24.5 -1.7**
CRVS Cervenica-Dubn 79.56 324 *e*P **P 12 01 26.7 +0.5**
CRVS *e* 12 01 36.8
CRVS Cervenica-Dubn 79.56 324 *e*P **P 12 01 26.7 +0.5**
CRVS *e* 12 01 36.8
A29A Manning Farm, 79.58 36 P **P 12 01 26.9 +0.6**
baz=315
PFO Pinyon Flats O 79.60 56 *e*P **P 12 01 27.5 +0.7**
PFO pmax pmax
comp=Z,23nm,1.1s
PFO Pinyon Flats O 79.60 56 *e*P **P 12 01 27.5 +0.7**
comp=Z,23nm,1.1s
LCMT Little Creek M 79.63 52 *e*P **P 12 01 28.5 +1.6**
comp=Z,23nm,1.0s
DOPR Dopca 79.64 320 ⇓*i*P sP 12 01 40.2 -0.2
P17A Butcher Ranch, 79.66 48 *e*P **P 12 01 28.6 +1.5**
comp=Z,31nm,0.8s
MTPU Mount Pierson 79.66 50 *e*P **P 12 01 29.3 +1.9**
comp=Z,17nm,1.0s
BELC Belle Mtn. Jos 79.67 55 P **P 12 01 28.4 +1.1**
baz=307
MLR Muntele Rosu 79.68 320 ⇓*i*P **P 12 01 27.7 +0.7**
MLR Muntele Rosu 79.68 320 *e*P **P 12 01 27.7 +0.7**
MLR pmax pmax
comp=Z,18nm,1.2s
MLR Muntele Rosu 79.68 320 *e*P **P 12 01 27.7 +0.7**
comp=Z,18nm,1.2s
P18A Preston Nutter 79.86 48 *e*P **P 12 01 30.3 +2.0**
comp=Z,46nm,1.3s
KNB Kanab 79.90 51 *e*P **P 12 01 30.2 +1.8**
KNB pmax pmax
comp=Z,40nm,1.2s
KNB Kanab 79.90 51 *e*P **P 12 01 30.2 +1.8**
comp=Z,40nm,1.2s
SRU San Rafael Swe 80.01 49 *e*P **P 12 01 30.2 +1.2**
SRU pmax pmax
comp=Z,33nm,0.8s
SRU San Rafael Swe 80.01 49 *e*P **P 12 01 30.2 +1.2**
comp=Z,33nm,0.8s
RAR Rarotonga 80.02 126 LR LR 12 33 38.8
comp=Z,205nm,18.5s,baz=280,slow=33
MONP2 Monument Peak 80.06 57 P **P 12 01 29.9 +0.5**
baz=307
ULM Lac du Bonnet 80.16 33 P **P 12 01 29.7 +0.3**
comp=Z,2.3nm,0.6s,baz=34,slow=3.6,SNR=2.6
ULM Lac du Bonnet 80.16 33 *e*P **P 12 01 31.5 +2.2**
comp=Z,22nm,1.0s
VOIR 80.18 320 ⇑*i*P **P 12 01 32.0 +2.4**
VOIR 80.18 320 ⇑P **P 12 01 32.1 +2.4**
BC3 Big Chuckawall 80.24 55 P **P 12 01 31.1 +0.8**
baz=307
LANS Liptovska Anna 80.31 325 *e*P **P 12 01 31.3 +1.0**
LANS *e* 12 01 41.3
LANS Liptovska Anna 80.31 325 *e*P **P 12 01 31.3 +1.0**
LANS *e* 12 01 41.3
KECS Kecovo 80.32 324 *e*P pP 12 01 41.4 +1.2
KECS Kecovo 80.32 324 *e* pP 12 01 41.4 +1.2
B30A Myrvik Farm, E 80.34 36 P **P 12 01 31.3 +1.0**
baz=315
W13A Hualapai Mount 80.39 53 *e*P **P 12 01 32.0 +0.8**
comp=Z,7.7nm,0.9s
OKC Ostrava-Krasne 80.41 327 *e*P **P 12 01 32.1 +1.4**
OKC *e*PCP **PcP 12 01 36.3 -1.4**
OKC *e*pP **pP 12 01 41.3 +0.6**
OKC Ostrava-Krasne 80.41 327 *e*P **P 12 01 32.1 +1.4**
OKC *e* 12 01 41.3
IKP In-Ko-Pah, Jac 80.41 57 P **P 12 01 32.4 +1.2**
baz=307
DRGR 80.43 322 ⇓*i*P **P 12 01 31.5 +0.5**
DRGR 80.43 322 ⇓P **P 12 01 31.5 +0.5**
ARR Arges 80.44 320 ⇑*i*P **P 12 01 34.0 +2.9**
RSSD Black Hills 80.46 41 P **P 12 01 31.8 +0.4**
baz=312
RSSD Black Hills 80.46 41 *e*P **P 12 01 31.8 +0.4**
RSSD pmax pmax
comp=Z,12nm,0.7s
RSSD Black Hills 80.46 41 *e*P **P 12 01 31.8 +0.4**
comp=Z,12nm,0.7s
U15A North Rim 80.60 52 *e*P **P 12 01 33.9 +1.6**
comp=Z,17nm,0.9s
I25A Rochford 80.69 41 P **P 12 01 32.7 +0.1**
baz=312
PDMCI Parker Dam,Lak 80.71 54 P **P 12 01 33.8 +1.2**
baz=308
MORC Moravsky Berou 80.72 327 ⇑*i*P **P 12 01 33.2 +0.8**
MORC Moravsky Berou 80.72 327 ⇑P **P 12 01 33.2 +0.8**
MORC Moravsky Berou 80.72 327 *e*P **P 12 01 33.3 +0.8**
comp=Z,135nm,1.2s
O20A White River Ci 80.72 47 P **P 12 01 32.8 -0.1**
baz=310
O20A White River Ci 80.72 47 *e*P **P 12 01 33.8 +0.9**
comp=Z,23nm,0.9s
Y12C Blythe 80.80 55 *e*P **P 12 01 34.3 +1.1**
comp=Z,22nm,1.0s
DPC Dobruska-Polom 80.83 328 *e*P **P 12 01 34.2 +1.2**
DPC *e*PCP **PcP 12 01 38.0 -1.6**
DPC *e*pP **pP 12 01 43.8 +0.8**
DPC AMS AMS 12 42 10.0
comp=Z,400nm,16.2s
DPC Dobruska-Polom 80.83 328 *e*P **P 12 01 34.2 +1.2**
DPC *e* 12 01 43.8
DPC MLR MLR
comp=Z,400nm,16.2s
UPC Upice 80.85 328 *e*pP **pP 12 01 43.8 +0.7**
UPC AMS AMS 12 40 20.0
comp=Z,500nm,16.8s
UPC Upice 80.85 328 *e*P **pP 12 01 43.8 +0.7**
UPC MLR MLR
comp=Z,500nm,16.8s
PSZ Piszkesteto 81.00 324 ⇓*i*P **P 12 01 35.0 +1.0**
PSZ Piszkesteto 81.00 324 ⇓P **P 12 01 35.0 +1.0**
PSZ Piszkesteto 81.00 324 *e*P **P 12 01 35.1 +1.0**
comp=Z,62nm,1.3s
VYHS Vyhne 81.07 325 *e*P **P 12 01 35.4 +1.1**
VYHS *e* 12 01 45.1
VYHS pmax pmax
comp=Z,18nm,1.4s
VYHS Vyhne 81.07 325 *e*P **P 12 01 35.4 +1.1**
VYHS *e* 12 01 45.1
H27A Howes 81.14 40 P **P 12 01 35.5 +0.7**
baz=313
PV09 Paradox Valley 81.24 48 *e*P **P 12 01 37.2 +1.4**
A33A Warroad 81.33 34 P **P 12 01 36.1 +0.4**
baz=317
GZR Gura Zlata 81.37 321 ⇓*i*P **P 12 01 35.2 -0.8**
GZR Gura Zlata 81.37 321 ⇓P **P 12 01 35.2 -0.8**
PV10 Paradox Valley 81.38 48 *e*P **P 12 01 38.4 +2.0**
BRG Berggiesshubel 81.44 329 *e*P **P 12 01 37.2 +1.0**
comp=Z,10nm,1.2s
BRG *e* 12 01 46.5
comp=Z,32nm,1.1s
comp=N,409nm,16.0s
comp=E,272nm,18.6s
comp=Z,614nm,16.2s
BRG Berggiesshubel 81.44 329 *e*P **P 12 01 37.2 +1.0**
BRG *e* 12 01 46.5
BRG pmax pmax
comp=Z,10.0nm,1.2s
BRG pmax pmax
comp=Z,32nm,1.1s
BRG MLR MLR
comp=N,409nm,16.0s
BRG MLR MLR
comp=E,272nm,18.6s
BRG MLR MLR
comp=Z,614nm,16.2s
PVCC Panska Ves 81.44 329 *e*pP pP 12 01 46.0 -0.2
PVCC Panska Ves 81.44 329 *e*P pP 12 01 46.0 -0.2
VRAC Vranov 81.48 327 ⇑*i*P P 12 01 43.3 +6.8
VRAC Vranov 81.48 327 ⇑P P 12 01 43.3 +6.8
CLL Collm 81.49 330 *e*P **P 12 01 36.0 -0.4**
comp=Z,13nm,1.1s
CLL *i* 12 01 40.6
CLL *e* 12 01 45.0
comp=Z,57nm,1.0s
CLL *e*S **S 12 11 48.0 +2.3**
CLL *e* 12 18 06.0
CLL Collm 81.49 330 *e*P **P 12 01 36.0 -0.4**
CLL *e* 12 01 45.0
CLL pmax pmax
comp=Z,13nm,1.1s
CLL Collm 81.49 330 *e*P **P 12 01 37.6 +1.2**
comp=Z,46nm,0.9s
PV05 Paradox Valley 81.53 49 *e*P **P 12 01 38.6 +1.4**
N23A Red Feather La 81.55 45 P **P 12 01 37.9 +0.6**
baz=312
N23A Red Feather La 81.55 45 *e*P **P 12 01 38.7 +1.3**
comp=Z,44nm,1.1s
Y14A Wickenburg 81.68 54 *e*P **P 12 01 38.9 +1.0**
comp=Z,46nm,0.9s
WUAZ Wupatki 81.75 52 P **P 12 01 39.1 +0.8**
baz=309
WUAZ Wupatki 81.75 52 *e*P **P 12 01 40.1 +1.8**
comp=Z,26nm,1.0s
PV01 Paradox Valley 81.81 48 *e*P **P 12 01 39.9 +1.1**
PRU Pruhonice 81.86 328 *e*P **P 12 01 39.0 +0.6**
PRU AMS AMS 12 41 10.0
comp=Z,400nm,10.5s
PRU Pruhonice 81.86 328 *e*P **P 12 01 39.0 +0.6**
PRU MLR MLR
comp=Z,400nm,10.5s
TREC Trest 81.98 327 *e*P **P 12 01 40.3 +1.2**
TREC AMS AMS 12 42 10.0
comp=Z,400nm,13.5s
TREC Trest 81.98 327 *e*P **P 12 01 40.3 +1.2**
TREC MLR MLR
comp=Z,400nm,13.5s
I28A Midland 82.05 40 P **P 12 01 40.4 +0.8**
baz=314
SMCO Snowmass 82.09 47 *e*P **P 12 01 41.5 +1.1**
comp=Z,17nm,1.1s
CSS Mathiatis 82.22 308 *e*P **P 12 01 41.0 +0.3**
comp=Z,6.0nm,0.8s
MDVR Moldovita 82.34 321 ⇓*i*P **P 12 01 43.5 +2.4**
X16A Lo Mia Camp, P 82.39 53 *e*P **P 12 01 43.1 +1.3**
comp=Z,17nm,1.1s
MVCO Mesa Verde 82.45 49 P **P 12 01 42.9 +0.8**
baz=310
MVCO Mesa Verde 82.45 49 *e*P **P 12 01 43.2 +1.1**
comp=Z,92nm,2.0s
ISCO Idaho Springs 82.47 46 P **P 12 01 42.6 +0.4**
baz=312
ISCO Idaho Springs 82.47 46 *e*P **P 12 01 43.5 +1.3**
ISCO pmax pmax
comp=Z,9.0nm,0.9s
ISCO Idaho Springs 82.47 46 *e*P **P 12 01 43.5 +1.3**
comp=Z,9.3nm,0.9s
NKC Novy Kostel 82.54 330 *e*pP pP 12 01 51.8 -0.3
NKC Novy Kostel 82.54 330 *e*P pP 12 01 51.8 -0.3
CONA Conrad Observa 82.84 326 *i* P **P 12 01 43.8 +0.1**
comp=Z,12nm,1.6s
CONA *e*pP **pP 12 01 53.8 +0.1**
comp=Z,35nm,1.5s
GERES GERESS Array B 83.09 328 P **P 12 01 45.0 0.0**
comp=Z,0.5nm,0.3s,baz=35,slow=4.9,SNR=4.8
GERES LR LR 12 42 35.4
comp=Z,214nm,18.3s,baz=8.5,slow=38
GERES GERESS Array B 83.09 328 P **P 12 01 45.0 0.0**
GEA0 GERESS Array S 83.09 328 *e*P **P 12 01 45.2 +0.2**
S22A 4UR Ranch, Cre 83.11 48 P **P 12 01 45.2 -0.4**
baz=311
S22A 4UR Ranch, Cre 83.11 48 *e*P **P 12 01 47.2 +1.6**
comp=Z,47nm,1.6s
ARSA Arzberg 83.50 326 *i* pP pP 12 01 58.5 +1.4
comp=Z,15nm,1.2s
MOA Molln 83.60 327 *i* PcP **P 12 01 48.9 +1.3**
comp=Z,8.4nm,1.4s
MOA *e*pP **pP 12 01 58.7 +1.1**
comp=Z,28nm,1.4s,SNR=5.4
NVR Nevrokopi 83.61 318 P **P 12 01 48.4 +0.7**
NVR Nevrokopi 83.61 318 P **P 12 01 48.4 +0.7**
SDCO Great Sand Dun 83.90 47 P **P 12 01 50.5 +0.9**
baz=312
SDCO Great Sand Dun 83.90 47 *e*P **P 12 01 50.9 +1.2**
comp=Z,29nm,1.4s
YER Yerkesik 83.94 312 P **P 12 01 51.4 +1.9**
YER Yerkesik 83.94 312 *e*P **P 12 01 51.4 +1.9**
YER Yerkesik 83.94 312 *e*P **P 12 01 51.4 +1.9**
PERS Pernice 84.14 326 *i* P **P 12 01 53.1 +2.7**
PERS *i* 12 02 00.2
SOKA Soboth 84.15 326 *i* P **P 12 01 51.2 +0.7**
comp=Z,14nm,1.7s
SOKA *i* pP **pP 12 01 60.0 -0.6**
comp=Z,50nm,1.2s
TUC Tucson 84.15 54 P **P 12 01 51.3 +0.6**
baz=310
OUR Ouranopolis 84.24 317 P **P 12 01 51.6 +0.7**
OUR Ouranopolis 84.24 317 *e*P **P 12 01 51.6 +0.7**
OUR Ouranopolis 84.24 317 *e*P **P 12 01 51.6 +0.7**
KNT Kendrikon 84.26 318 P **P 12 01 51.4 +0.4**
KNT Kendrikon 84.26 318 P **P 12 01 51.4 +0.4**
KNT Kendrikon 84.26 318 P **P 12 01 51.4 +0.4**
VAY Valandovo 84.33 318 P **P 12 01 50.7 -0.6**
VAY Valandovo 84.33 318 *e*P pP 12 02 00.8 -0.5
VAY Valandovo 84.33 318 *e*P **P 12 01 50.7 -0.6**
VAY Valandovo 84.33 318 *e*P **P 12 01 50.7 -0.6**
SKO Skopje 84.47 319 *e*P pP 12 02 03.0 +0.9
OBKA Obir 84.50 326 *e*pP pP 12 02 00.8 -1.5
comp=Z,5.6nm,0.8s
PLG Polygyros 84.51 317 P **P 12 01 52.6 +0.2**
PLG Polygyros 84.51 317 P **P 12 01 52.6 +0.2**
PLG Polygyros 84.51 317 P **P 12 01 52.6 +0.2**
ECSD EROS Data Cent 84.56 38 P **P 12 01 52.9 +0.4**
baz=317
ECSD EROS Data Cent 84.56 38 *e*P **P 12 01 53.0 +0.5**
comp=Z,20nm,0.9s
KBA Koelnbreinsper 84.59 327 *i* P **P 12 01 52.9 +0.1**
comp=Z,4.3nm,1.2s
KBA *i* pP **pP 12 02 02.8 -0.1**
comp=Z,16nm,0.9s
PPT Papeete 84.60 116 LR LR 12 30 59.5
comp=Z,122nm,21.8s,baz=307,slow=30
PPT2 Papeete2 84.62 116 *e*LR LR 12 28 26.3
comp=Z,247nm,21.5s
PPT2 Papeete2 84.62 116 *e*T T 13 34 54.1
comp=Z,2.5nm,0.4s
GRG Griva 84.67 318 P **P 12 01 54.3 +1.2**
GRG Griva 84.67 318 *e*P **P 12 01 54.3 +1.2**
GRG Griva 84.67 318 *e*P **P 12 01 54.3 +1.2**
H35A Sunnyside Ranc 84.72 36 P **P 12 01 53.9 +0.6**
baz=318
MEM Membach 84.73 333 AP pP 12 02 03.3 +0.1
MYKA Terra Mystica 84.81 327 *i* PcP **P 12 01 55.0 +1.2**
comp=Z,3.8nm,0.5s
MYKA *e*pP **pP 12 02 03.1 -0.7**
comp=Z,20nm,1.7s
VISS Visnje 84.90 325 *i* P **P 12 01 54.6 +0.5**
VISS *i* 12 02 02.6
BOJS Bojanci 84.94 325 *i* P **P 12 01 57.3 +2.9**
BOJS *i* 12 02 03.7
T25A Trinidad 84.95 47 P **P 12 01 55.7 +0.8**
baz=313
T25A Trinidad 84.95 47 *e*P **P 12 01 55.9 +1.0**
comp=Z,26nm,0.9s
LAZ Ladron 85.12 50 *e*P **P 12 01 56.8 +1.0**
BCLA Clavier 85.14 333 P **P 12 01 55.9 +0.6**
BCLA AP **pP 12 02 06.2 +0.9**
JAVS Javornik 85.18 326 *i* P **P 12 01 56.9 +1.2**
JAVS *i* 12 02 04.9
ANMO Albuquerque 85.18 50 P **P 12 01 56.9 +0.9**
baz=312
ANMO Albuquerque 85.18 50 *c*e**P P 12 01 57.3 +1.3**
ANMO pmax pmax
comp=Z,5.0nm,1.2s
ANMO Albuquerque 85.18 50 *e*P **P 12 01 57.5 +1.4**
comp=Z,19nm,1.1s
ABTA Abfaltersbach 85.21 327 *i* P **P 12 01 55.6 -0.2**
comp=Z,1.9nm,0.6s
ABTA *e*pP **pP 12 02 05.0 -0.9**
comp=Z,8.6nm,0.9s
LIT Litokhoron 85.22 317 P **P 12 01 55.7 -0.2**
LIT Litokhoron 85.22 317 *e*P **P 12 01 55.7 -0.2**
LIT Litokhoron 85.22 317 *e*P **P 12 01 55.7 -0.2**
RETA Reutte 85.38 329 *i* PcP **P 12 01 57.5 +0.8**
comp=Z,8.2nm,1.1s
RETA *e*pP **pP 12 02 06.0 -0.7**
comp=Z,34nm,1.4s
OHR Ohrid 85.42 319 *e*P pP 12 02 06.3 -0.6
BGNE Belgrade 85.46 40 *e*P **P 12 01 58.3 +1.2**
comp=Z,79nm,1.0s
BNM Barren Site 85.60 50 *e*P **P 12 01 59.1 +0.9**
DOU Dourbes 85.67 334 AP pP 12 02 08.7 +0.7
KARP Karpathos 85.67 312 *e*P **P 12 01 58.4 +0.2**
comp=Z,22nm,1.1s
BFO Black Forest 85.70 331 *e*P **P 12 01 58.1 -0.1**
BFO pmax pmax
comp=Z,49nm,1.3s
BFO Black Forest 85.70 331 *e*P **P 12 01 58.0 -0.1**
comp=Z,49nm,1.3s
319A Douglas 85.73 54 *e*P **P 12 02 00.7 +2.0**
comp=Z,58nm,1.8s
DAVA Damuels 85.91 329 *i* P **P 12 01 59.3 0.0**
comp=Z,5.8nm,0.9s
DAVA *e*pP **pP 12 02 08.7 -0.7**
comp=Z,35nm,1.2s,SNR=6.4
SCHQ Schefferville 85.99 16 P **P 12 01 59.3 -0.1**
comp=Z,3.3nm,0.5s,baz=286,slow=18,SNR=2.3
SCHQ LR LR 12 42 06.5
comp=Z,182nm,20.8s,baz=332,slow=37
AGG Agios Georgios 86.07 317 *e*P **P 12 02 00.9 +0.7**
AGG pmax pmax
comp=Z,29nm,0.8s
AGG Agios Georgios 86.07 317 *e*P **P 12 02 00.9 +0.7**
comp=Z,29nm,0.8s
TAOE Nuku Hiva Isla 86.28 104 *e*LR LR 12 29 18.8
comp=Z,264nm,21.9s
ANX Ano Chora 86.60 317 P **P 12 02 02.9 0.0**
TUE Stuetta 86.78 329 *e*P **P 12 02 04.3 +0.6**
comp=Z,20nm,1.3s
LAST Lasithi 86.94 312 ⇓*i*P **P 12 02 06.6 +2.0**
LAST Lasithi 86.94 312 *e*P **P 12 02 06.3 +1.8**
comp=Z,49nm,1.2s
IDI Anoyia 87.20 313 ⇓*i*P **P 12 02 05.1 -0.7**
IDI Anoyia 87.20 313 *e*P **P 12 02 07.9 +2.0**
comp=Z,42nm,1.3s
SENIN Lac Senin/Sane 87.71 330 *e*P **P 12 02 11.8 +3.5**
comp=Z,13nm,1.2s
TBI Tubuai 88.44 121 *e*LR LR 12 30 04.2
comp=Z,342nm,26.2s,baz=309
TBI Tubuai 88.44 121 *e*T T 13 39 38.1
comp=Z,12nm,0.3s
TIP Timpagrande 88.94 320 *e*P **P 12 02 14.9 +0.9**
comp=Z,32nm,1.5s
T36A Boggs Farm, Ca 89.83 42 P **P 12 02 18.6 +0.5**
baz=318
S37A Fort Scott 89.87 41 P **P 12 02 18.5 +0.2**
baz=318
T38A Diamond 90.70 41 P **P 12 02 22.1 -0.1**
baz=319
TX31 Lajitas Ar. Si 90.70 52 *e*P **P 12 02 23.2 +0.7**
LTX Lajitas 90.70 52 *e*P **P 12 02 23.2 +0.7**
LTX Lajitas 90.70 52 *e*P **P 12 02 23.2 +0.7**
TXAR Lajitas Array 90.70 52 P **P 12 02 23.2 +0.7**
comp=Z,2.7nm,0.8s,baz=298,slow=3.9,SNR=22
TXAR LR LR 12 37 03.7
comp=Z,69nm,22.0s,baz=0.0,slow=32
S39A Bolivar 90.72 40 P **P 12 02 22.1 -0.2**
baz=319
TUL1 Leonard 90.72 43 *e*P **P 12 02 24.6 +2.3**
comp=Z,17nm,0.8s
ABTX Abilene, Hawle 90.89 47 *e*P **P 12 02 24.0 +0.8**
comp=Z,27nm,1.2s
Z33A Whitaker Ranch 90.94 46 P **P 12 02 24.2 +0.8**
baz=316
HPIG 91.03 55 *e*P **P 12 02 25.8 +1.7**
comp=Z,8.2nm,0.9s
V37A Hulbert 91.10 42 P **P 12 02 24.5 +0.4**
baz=318
X36A Centrahoma 91.39 44 P **P 12 02 26.1 +0.6**
baz=317
U39A Green Forest 91.62 41 P **P 12 02 26.3 -0.2**
baz=319
LMQ La Malbaie 91.80 21 *e*P **P 12 02 29.6 +2.5**
comp=Z,27nm,1.0s
Y36A Durant 91.92 44 P **P 12 02 28.3 +0.4**
baz=317
U40A Yellville 91.97 41 P **P 12 02 28.1 0.0**
baz=320
X38A Whitesboro 92.17 43 P pP 12 02 39.6 +0.4
baz=318
JCT Junction City 92.32 49 P **P 12 02 30.0 +0.1**
baz=315
WHTX Lake Whitney, 92.64 47 *e*P **P 12 02 32.2 +1.0**
comp=Z,28nm,0.9s
H06E1 SOCORRO T-PHAS 92.69 64 T T 13 45 52.5
SNR=4.3
KEST Kesra 95.34 322 LR LR 12 51 39.2
comp=Z,222nm,18.4s,baz=311,slow=39
MCWV Mont Chateau 95.43 31 *e*P **P 12 02 45.0 +1.0**
comp=Z,29nm,1.7s
ESDC Sonseca Array 97.72 333 LR LR 12 50 52.8
comp=Z,210nm,21.2s,baz=45,slow=38
VNDA Vanda 114.39 175 PKP PKPdf 12 07 57.1 -0.6
comp=Z,0.6nm,0.8s,baz=323,slow=5.0,SNR=4.5
TOA1 Torodi Ar. Sit 117.56 314 *e*PKPdf **PKPdf 12 08 04.7 -1.0**
TORD Torodi Ar. Bea 117.57 314 PKP **PKPdf 12 08 04.7 -1.0**
comp=Z,0.5nm,0.7s,baz=5.7,slow=1.4,SNR=3.9
TORD PP **PP 12 09 13.2 -4.0**
comp=Z,6.8nm,1.3s,baz=39,slow=6.1,SNR=7.8
MAW Mawson 118.88 205 PKP **PKPdf 12 08 06.7 +0.2**
comp=Z,2.9nm,0.8s,baz=16,slow=7.4,SNR=4.4
QSPA South Pole Qui 126.17 180 *e*PKPdf **PKPdf 12 08 20.4 -0.3**
SYO Syowa Base 127.54 206 ⇓*e*X **Pdif 12 05 12.0 +6.0**
SNAA Sanae 140.09 197 PKP PKPpre 12 08 39.6
VNA2 Neumayer--Watz 141.66 196 PKP **PKPdf 12 08 46.5 -2.9**
baz=117,slow=2.2
VNA3 Neumayer Olymp 141.91 195 PKP PKPpre 12 08 43.9
VNA1 Neumayer--Stat 142.06 196 PKP **PKPdf 12 08 47.6 -2.5**
SAML Samuel 144.87 45 *e*PKPbc PKPbc 12 08 55.9 0.0
LPAZ La Paz 147.23 60 PKPbc **PKPbc 12 09 03.8 0.0**
comp=Z,8.7nm,0.7s,baz=341,slow=4.9,SNR=38
PB11 IPOC Station P 148.39 67 *e*PKPbc **PKPbc 12 09 06.6 +0.3**
PB01 IPOC Station P 149.29 68 *e*PKPbc **PKPbc 12 09 08.9 +0.5**
PB01 *e*PKPab **PKPab 12 09 15.3 +2.3**
LVC Limon Verde 150.63 70 PKPbc **PKPbc 12 09 12.5 +0.5**
comp=Z,64nm,0.8s,baz=277,slow=4.1,SNR=26
LVC Limon Verde 150.63 70 *e*PKPbc **PKPbc 12 09 12.8 +0.8**
LVC *e*PKPab **PKPab 12 09 20.0 +1.1**
LCO Las Campanas 152.34 84 *e*PKPbc **PKPbc 12 09 15.9 +0.2**
LCO *e*PKPab **PKPab 12 09 26.5 +0.6**

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*ISCJB **24** 11:50:20.8±0.7, 37°.30N±0°.04×28°.08E±0°.07, h15km±6km,*
Error ellipse: s-maj=10.5km s-min=4.8km az=149.7
*DDA **24** 11:50:20.4, 37°.35N×28°.11E, h7km, Md2.9*
*ISK **24** 11:50:21.3, 37°.29N×28°.11E, h4km, MD2.6*
*CSEM **24** 11:50:21.3±0.3, 37°.35N×28°.14E, h2km, MD2.6, Error*
ellipse: s-maj=7.4km s-min=5.0km az=53.0

ISC 24 11:50:19.6±1.3, 37°.35N±0°.03×28°.03E±0°.05, h8km±13km,
n15, σ0°.34/23, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.30**	**137**	*e*PG	**Pg**	**11 50 25.7**	**+0.2**
YER				*e*SG	**Sg**	**11 50 29.8**	**+0.3**
YER	**Yerkesik**	**0.30**	**137**	*e*Pg	**Pg**	**11 50 25.7**	**+0.2**
YER				*e*Sg	**Sg**	**11 50 29.8**	**+0.3**
AYDN	**Tasoluk**	**0.33**	**339**	P	**Pb**	**11 50 27.9**	**0.0**
AYDN				S	**Sb**	**11 50 33.1**	**-0.2**
AYDN	**Tasoluk**	**0.33**	**339**	*i* P	**Pb**	**11 50 27.9**	**0.0**
AYDN				*i* S	**Sb**	**11 50 33.1**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**0.60**	**350**	*e*PG	**Pn**	**11 50 34.8**	**+0.1**
AYDB				*e*SG	**Sn**	**11 50 45.1**	**+0.4**
AYDB	**Zeytinkoy-Aydi**	**0.60**	**350**	*e*Pg	**Pn**	**11 50 34.8**	**+0.1**
BODT	**Bodrum**	**0.64**	**243**	*e*PG	**Pn**	**11 50 35.1**	**0.0**
BODT	**Bodrum**	**0.64**	**243**	*e*Pg	**Pn**	**11 50 35.1**	**0.0**
TURN	**Turunc**	**0.66**	**136**	*i* P	**Pg**	**11 50 32.0**	**-0.5**
TURN				*i* S	**Sg**	**11 50 40.6**	**-0.5**
DALY	**Dalyan (Mu¨la**	**0.73**	**137**	*e*PG	**Pb**	**11 50 34.4**	**-0.2**
DALY	**Dalyan (Mu¨la**	**0.73**	**137**	*e*Pg	**Pb**	**11 50 34.4**	**-0.2**
DNZL	**Cakiroluk**	**0.88**	**67**	P	**Pg**	**11 50 36.0**	**-0.5**
DNZL				S	**Sg**	**11 50 48.4**	**+0.4**
DNZL	**Cakiroluk**	**0.88**	**67**	*i* P	**Pg**	**11 50 36.0**	**-0.5**
DNZL				*i* S	**Sg**	**11 50 48.4**	**+0.4**
FETY	**Fethiye**	**1.11**	**130**	*e*PG	**Pn**	**11 50 41.8**	**+0.3**
FETY	**Fethiye**	**1.11**	**130**	*e*Pg	**Pn**	**11 50 41.8**	**+0.3**

JMA 24 11:50:31.3±0.2, 35°.68N×140°.04E, h69km±2km, M3.8,
Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TOK	**Tokyo**	**0.23**	**272**	P	Pn	11 50 43.0	+1.1
JCN	**Nagara**	**0.29**	**153**	P	Pn	11 50 43.0	+0.7
JCN				S	Sn	11 50 52.3	+2.0
JOD2	**Odawara 2**	**0.88**	**242**	P	Pn	11 50 48.0	-0.3
JOD2				S	Sn	11 50 59.8	-1.1
JAG	**Ashikaga**	**0.88**	**328**	P	Pn	11 50 48.8	+0.5

JAG			S	Sn	11 51 01.9	+1.0
BSO3	**Boso 3**	**0.96 156**	P	Pn	11 50 48.5	-0.4
JRY	**Ryogami san**	**0.98 290**	P	Pn	11 50 50.5	+0.9
JIM2	**Oshima 3**	**1.08 208**	P	Pn	11 50 49.8	-1.0
JIM2			S	Sn	11 51 03.6	-1.7
JYN	**Shimob**	**1.23 262**	S	Sn	11 51 08.9	0.0
JKT	**Katashina**	**1.26 330**	P	Pn	11 50 53.7	+0.5
JKT			S	Sn	11 51 10.5	+1.0
JIZS	**Izushimoda**	**1.35 225**	S	Sn	11 51 10.2	-1.3
MAT	**Matsushiro**	**1.72 301**	P	Pn	11 51 00.2	+1.1
MAT			*e*S	Sn	11 51 20.0	-0.2

*IDC **24** 11:50:44.3±1.1,20°.27S×168°.33E,h0km,mb4.0/9, mb1 4.2/9,mb1mx4.0/32,mbtmp4.1/9,MS3.3/1,Ms1 3.3/1, ms1mx2.7/43,Error ellipse: s-maj=32.0km s-min=22.9km az=152.0*
*NEIC **24** 11:50:45.6±0.8,20°.27S×168°.31E,h10km,mb4.3/3,Error ellipse: s-maj=18.8km s-min=13.9km az=195.0*
*ISCJB **24** 11:50:46.6±0.6,20°.35S±0°.09×168°.31E±0°.08,h26km, mb4.1/11,MS3.1/1,Error ellipse: s-maj=13.3km s-min=10.0km az=146.0*

ISC 24 11:50:48.2±0.8,20°.4S±0°.1×168°.3E±0°.1,h26km,n16, σ1§46/16,mb4.2/11,Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.43**	**225**	*e*Pn	**Pn**	**11 51 24.0**	**-2.4**
DZM				*e*Sn	**Sn**	**11 51 55.8**	**+0.5**
RAO	**Raoul Island**	**15.33**	**128**	*e*Pn	**Pn**	**11 54 22.0**	**-1.0**
AFI	**Afiamalu**	**20.09**	**75**	LR	LR	12 02 54.2	
	comp=Z,81nm,18.4s,baz=116,slow=36						
CTA	**Charters Tower**	**20.68**	**267**	P	**P**	**11 55 27.6**	**+1.2**
	1.3nm,0.3s,baz=82,slow=12,SNR=4.0						
PMG	**Port Moresby**	**23.11**	**295**	P	**P**	**11 55 52.8**	**+0.4**
	3.7nm,0.4s,baz=208,slow=19,SNR=4.5						
STKA	**Stephens Creek**	**26.50**	**239**	P	**P**	**11 56 25.3**	**+1.6**
	4.9nm,0.7s,baz=69,slow=9.5,SNR=13						
WRA	**Warramunga Arr**	**31.84**	**265**	P	**P**	**11 57 10.0**	**-1.3**
	0.7nm,0.5s,baz=91,slow=8.5,SNR=14						
ASAR	**Alice Springs**	**32.01**	**258**	P	**P**	**11 57 12.2**	**-0.5**
	4.7nm,0.7s,baz=87,slow=9.1,SNR=55						
FITZ	**Fitzroy Crossi**	**40.26**	**266**	*e*P	**P**	**11 58 23.6**	**+0.3**
	3.9nm,0.7s						
VNDA	**Vanda**	**57.30**	**182**	P	**P**	**12 00 34.2**	**+0.9**
	0.4nm,0.7s,baz=7.1,slow=8.1,SNR=3.7						
SBA	**Scott Base**	**57.55**	**180**	*e*P	**P**	**12 00 37.5**	**+2.4**
	1.3nm,0.7s						
QSPA	**South Pole Qui**	**69.71**	**180**	*e*P	**P**	**12 01 56.4**	**+0.7**
	20nm,1.2s						
USRK	**Ussuriysk Ar.**	**72.31**	**333**	P	**P**	**12 02 12.6**	**+1.1**
	1.5nm,0.6s,baz=166,slow=3.9,SNR=4.2						
NVAR	**Mina Array Bea**	**90.20**	**49**	P	**P**	**12 03 47.3**	**+0.5**
	0.7nm,0.7s,baz=234,slow=7.6,SNR=3.8						
ILAR	**Eielson Array**	**91.55**	**18**	P	**P**	**12 03 50.8**	**-1.4**
	0.3nm,0.7s,baz=234,slow=5.5,SNR=3.7						
GERES	**GERESS Array B**	**145.03**	**330**	PKP	**PKPbc**	**12 10 20.6**	**-2.0**
	0.3nm,0.2s,baz=33,slow=2.3,SNR=2.9						

*ISCJB **24** 11:51:08.1±1.1,44°.2N±0°.1×147°.1E±0°.2,h125km±8km, Error ellipse: s-maj=30.5km s-min=8.1km az=135.5*
*SKHL **24** 11:51:09.9±0.5,44°.27N×147°.05E,h118km,mb4.4/2, msh5.1/3*
*JMA **24** 11:51:10.1±0.5,43°.93N×147°.07E,h124km,M3.3*

ISC 24 11:51:08.4±1.9,44°.2N±0°.2×147°.1E±0°.1,h127km±14km,n9, σ0§77/13,1C,Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHO	**Shikotan**	**0.37**	**208**	*e*P	**Pn**	**11 51 27.1**	**+0.6**
SHO				AMB	AMB	11 51 28.0	
	70nm,0.5s						
SHO				*e*S	**Sn**	**11 51 40.2**	**+0.1**
SHO				A	A	11 51 41.2	
	1μm,0.5s						
SHO				A	A	11 51 41.2	
	1μm,0.5s						
YUK	**Yuzh-Kuril'sk**	**0.89**	**260⇑**	*i*P	**Pn**	**11 51 30.6**	**+0.6**
YUK				AMB	AMB	11 51 31.6	
	80nm,0.1s						
YUK				AMB	AMB	11 51 31.6	
	70nm,0.1s						
YUK				AMB	AMB	11 51 31.6	
	170nm,0.1s						
YUK				*i*S	**Sn**	**11 51 46.4**	**+0.1**
YUK				A	A	11 51 47.0	
	260nm,0.4s						
YUK				A	A	11 51 47.0	
	610nm,0.4s						
KUR	**Kuril'sk**	**1.18**	**28**	*e*P	**Pn**	**11 51 33.0**	**+0.2**
KUR				*i*S	**Sn**	**11 51 49.9**	**-1.4**
KUR				A	A	11 51 55.3	
	120nm,0.3s						
NEM2	**Nemuro 2**	**1.27**	**230**	P	**Pn**	**11 51 33.9**	**+0.1**
NEM2				*e*S	**Sn**	**11 51 51.7**	**-1.4**
JNK	**Nakash**	**1.81**	**251**	P	**Pn**	**11 51 40.2**	**+0.3**
JAK	**Akkeshi**	**2.10**	**236**	P	**Pn**	**11 51 43.5**	**0.0**
JOB	**Onbets**	**2.69**	**242**	P	**Pn**	**11 51 51.2**	**+0.4**
JCH	**Churui**	**3.13**	**241**	P	**Pn**	**11 51 57.0**	**+0.4**
SKR	**Severo-Kuril's**	**8.92**	**40**	*e*P	**Pn**	**11 53 14.5**	**+0.5**
SKR				*e*		11 56 45.0	
SKR				pmax	pmax		
	comp=Z,220nm,1.0s						
SKR				MLR	MLR		
	comp=N,1μm,20.0s						
SKR				MLR	MLR		
	comp=Z,1μm,20.0s						
SKR				MLR	MLR		
	comp=E,1μm,16.0s						

*ISCJB **24** 11:54:53.0±0.5,42°.38N±0°.02×21°.60E±0°.04,h3km±4km, Error ellipse: s-maj=5.6km s-min=2.8km az=166.2*
*CSEM **24** 11:54:53.8±0.2,42°.37N×21°.63E,h5km,ML2.3,Error ellipse: s-maj=6.0km s-min=3.1km az=82.0*
*BEO **24** 11:54:54.1±0.4,42°.35N×21°.64E,h8km±2km,M2.2/1*
*SKO **24** 11:54:56.2,42°.20N×21°.57E,h20km,ML2.3*
*THE **24** 11:54:57.9,42°.12N×21°.78E,h0km±2km,Error ellipse: s-maj=3.9km s-min=1.0km az=4.0*

ISC 24 11:54:54.2±1.0,42°.37N±0°.02×21°.62E±0°.03,h9km±9km, n38,σ0§87/63,Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKO	**Skopje**	**0.42**	**199**	P	**Pg**	**11 55 02.1**	**-0.3**
SKO	**Skopje**	**0.42**	**199**	*i*Pg	**Pg**	**11 55 02.1**	**-0.3**
SKO	**Skopje**	**0.42**	**199**	*e*Pg	**Pg**	**11 55 02.0**	**-0.3**
SKO				*e*Sg	**Sg**	**11 55 07.8**	**-0.2**
SKO	**Skopje**	**0.42**	**199**	P	**Pg**	**11 55 02.1**	**-0.3**
SKO				*e*Sg	**Sg**	**11 55 07.8**	**-0.2**
BARS	**Barje**	**0.47**	**18**	*e*Pg	**Pg**	**11 55 02.8**	**-0.5**
BARS				*e*Sg	**Sg**	**11 55 09.4**	**0.0**
BARS	**Barje**	**0.47**	**18**	*e*Pg	**Pg**	**11 55 02.8**	**-0.5**
BARS				*e*Sg	**Sg**	**11 55 09.4**	**0.0**
SELS	**Selova**	**0.93**	**337**	*e*Sg	**Sg**	**11 55 23.8**	**-0.2**
ZAPS	**Zavoj**	**1.17**	**39**	*e*Pg	**Pg**	**11 55 16.6**	**0.0**
ZAPS				*e*Sg	**Sn**	**11 55 32.5**	**-0.3**
BOVS	**Bovan**	**1.26**	**3**	*e*Pg	**Pn**	**11 55 16.3**	**-1.7**
BOVS				*e*Sg	**Sb**	**11 55 34.7**	**+0.2**
BOVS	**Bovan**	**1.26**	**3**	*e*Pg	**Pn**	**11 55 16.3**	**-1.7**
BOVS				*e*Sg	**Sb**	**11 55 34.7**	**+0.2**
VAY	**Valandovo**	**1.27**	**146**	*e*Pg	**Pg**	**11 55 18.8**	**+0.3**
VAY				*e*Sg	**Sn**	**11 55 36.3**	**+1.2**
VAY				*e*Lg	Lg	11 55 37.5	
	comp=N,67nm,0.8s						
VAY	**Valandovo**	**1.27**	**146**	*e*Pg	**Pg**	**11 55 18.7**	**+0.3**
VAY				*e*Sg	**Sn**	**11 55 36.3**	**+1.2**
VAY				*e*Lg	Lg	11 55 37.4	
	comp=N,67nm,0.8s						
BIA	**Bitola**	**1.37**	**189**	*e*Pg	**Pn**	**11 55 18.7**	**-0.8**
BIA	**Bitola**	**1.37**	**189**	*e*Pg	**Pn**	**11 55 18.7**	**-0.8**
OHR	**Ohrid**	**1.40**	**206**	*e*Pg	**Pn**	**11 55 20.0**	**+0.1**
OHR	**Ohrid**	**1.40**	**206**	*e*Pg	**Pn**	**11 55 20.0**	**+0.1**
BOLS	**Boljevac**	**1.48**	**9**	*e*Pg	**Pn**	**11 55 20.6**	**-0.3**
BOLS				*e*Sg	**Sn**	**11 55 39.4**	**-0.9**
BOLS	**Boljevac**	**1.48**	**9**	*e*Pg	**Pn**	**11 55 20.6**	**-0.3**
BOLS				*e*Sg	**Sn**	**11 55 39.4**	**-0.9**
KNT	**Kendrikon**	**1.54**	**141**	P	**Pn**	**11 55 22.2**	**+0.4**
KNT				S	**Sn**	**11 55 40.3**	**-1.6**
KNT	**Kendrikon**	**1.54**	**141**	P	**Pn**	**11 55 22.2**	**+0.4**
KNT				S	**Sn**	**11 55 40.3**	**-1.6**
FNA	**Florina**	**1.60**	**187**	P	**Pb**	**11 55 23.3**	**-0.6**
FNA				S	**Sn**	**11 55 43.5**	**+0.1**
FNA	**Florina**	**1.60**	**187**	P	**Pb**	**11 55 23.3**	**-0.6**
FNA				S	**Sn**	**11 55 43.5**	**+0.1**
IVAS	**Ivanjica**	**1.62**	**319**	*e*Pn	**Pn**	**11 55 22.1**	**-0.8**
IVAS				*e*Sg	**Sg**	**11 55 47.1**	**+1.0**
IVAS	**Ivanjica**	**1.62**	**319**	*e*Pn	**Pn**	**11 55 22.1**	**-0.8**
IVAS				*e*Sg	**Sg**	**11 55 47.1**	**+1.0**
GRUS	**Gruza**	**1.66**	**337**	*e*Pn	**Pb**	**11 55 24.7**	**-0.1**
GRUS	**Gruza**	**1.66**	**337**	*e*Pn	**Pb**	**11 55 24.7**	**-0.1**
NVR	**Nevrokopi**	**1.96**	**121**	P	**Pn**	**11 55 28.6**	**+1.0**
NVR	**Nevrokopi**	**1.96**	**121**	P	**Pn**	**11 55 28.6**	**+1.0**
TRUS	**Trudelj**	**2.05**	**335**	*e*Pn	**Pn**	**11 55 29.2**	**+0.4**
TRUS				*e*Sg	**Sg**	**11 56 01.7**	**+1.6**
TRUS	**Trudelj**	**2.05**	**335**	*e*Pn	**Pn**	**11 55 29.2**	**+0.4**
TRUS				*e*Sg	**Sg**	**11 56 01.7**	**+1.6**
DIVS	**Divibare**	**2.10**	**326**	*e*Pn	**Pn**	**11 55 30.3**	**+0.8**
DIVS				*e*Sn	**Sn**	**11 55 55.5**	**-0.3**
DIVS	**Divibare**	**2.10**	**326**	*e*Pn	**Pn**	**11 55 30.3**	**+0.8**
DIVS				*e*Sn	**Sn**	**11 55 55.5**	**-0.3**
BBLS	**Lazići**	**2.21**	**313**	*e*Pn	**Pn**	**11 55 32.1**	**+1.1**
BBLS				*e*Sn	**Sn**	**11 55 57.4**	**-1.0**
BBLS	**Lazići**	**2.21**	**313**	*e*Pn	**Pn**	**11 55 32.1**	**+1.1**
BBLS				*e*Sn	**Sn**	**11 55 57.4**	**-1.0**
TEKS	**Tekeris**	**2.66**	**326**	*e*Pn	**Pn**	**11 55 38.7**	**+1.5**
TEKS				*e*Sn	**Sn**	**11 56 08.6**	**-0.9**
TEKS	**Tekeris**	**2.66**	**326**	*e*Pn	**Pn**	**11 55 38.7**	**+1.5**
TEKS				*e*Sn	**Sn**	**11 56 08.6**	**-0.9**
FGSL	**Fruska Gora**	**3.08**	**335**	*e*Sg	**Sg**	**11 56 34.3**	**+1.3**
FRGS	**Fruska Gora**	**3.08**	**335**	*e*Sg	**Sg**	**11 56 34.3**	**+1.3**

MEX 24 11:56:17.3±0.7,15°.01N×92°.04W,h88km±5km,MD3.6, Mexico-Guatemala border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THIG		**0.24**	**245**	*i*P	Pn	11 56 25.5	-4.7
THIG				*e*S	Sn	11 56 34.2	-5.6
CCIG	**Comitan**	**1.27**	**356**	*i*P	Pn	11 56 38.7	-1.6
CCIG				*i*S	Sn	11 56 55.8	-1.8
PCIG		**1.33**	**301**	*e*P	Pn	11 56 39.9	-1.0
PCIG				*i*S	Sn	11 56 56.8	-1.9

*VIE **24** 11:59:02.1±0.1,46°.69N×10°.45E,h4km,ML1.3/2*

CSEM 24 11:59:07.5±3.1,47°.21N×10°.70E,h2km,ML1.3,4C,Error ellipse: s-maj=66.1km s-min=25.3km az=128.0,Austria

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FETA	**Feichten**	**0.19**	**175**	Pg	Pg	11 59 09.9	-1.4
	0.5nm,0.1s						
FETA				Sg	Sg	11 59 14.8	+1.0
	1.0nm,0.1s						
VINO	**Villanova**	**2.02**	**117⇑**	*e*Pg	Pg	11 59 51.4	+5.3
VINO				*e*Sg	Sn	11 59 56.9	-11
COLI	**Coloredo**	**2.13**	**119**	*e*P	Pg	11 59 48.8	+0.4
COLI	**Coloredo**	**2.13**	**119**	*e*Pg	Pg	11 59 53.4	+5.0
COLI	**Coloredo**	**2.13**	**119⇑**	*e*Pg	Pg	11 59 48.8	+0.4
COLI				*e*Sg	Pg	11 59 53.4	+5.0
DRE	**Drenchia**	**2.27**	**116**	*e*P	Pn	11 59 47.1	+1.0
DRE	**Drenchia**	**2.27**	**116**	*e*Pg	Pb	11 59 49.6	+0.3
DRE	**Drenchia**	**2.27**	**116⇑**	*e*Pg	Pn	11 59 47.1	+0.9
DRE				*e*Pg	Pb	11 59 49.6	+0.3
SABO	**M.te Sabotino**	**2.35**	**121**	*e*P	Pn	11 59 46.3	-0.8
SABO	**M.te Sabotino**	**2.35**	**121⇑**	*e*Pg	Pn	11 59 46.4	-0.8
SABO				*e*Sg	Pn	11 59 47.7	+0.6
TRI	**Trieste**	**2.60**	**124**	*e*P	Pn	11 59 51.6	+1.1
TRI	**Trieste**	**2.60**	**124**	*e*Pg	Pg	11 59 57.7	+0.5
TRI	**Trieste**	**2.60**	**124**	*e*Pg	Pn	11 59 51.6	+1.1
TRI				*e*Sg	Pg	11 59 57.7	+0.5

*ISCJB **24** 12:06:16.4±0.5,39°.93N±0°.03×38°.82E±0°.04,h5km±7km, Error ellipse: s-maj=5.0km s-min=4.2km az=15.4*
*DDA **24** 12:06:16.3,39°.92N×38°.82E,h15km,Ml2.6*
*CSEM **24** 12:06:16.5±0.2,39°.91N×38°.83E,h10km,MD2.8,Error ellipse: s-maj=5.9km s-min=3.7km az=123.0*
*ISK **24** 12:06:17.1,39°.95N×38°.91E,h21km,MD2.8*

ISC 24 12:06:15.7±1.5,39°.93N±0°.03×38°.85E±0°.03,h3km±13km, n19,σ0§47/34,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KELT	**Kelkit**	**0.38**	**55**	P	**Pb**	**12 06 25.2**	**-0.1**
KELT				S	**Sb**	**12 06 30.8**	**-0.9**
KELT	**Kelkit**	**0.38**	**55**	*i*P	**Pb**	**12 06 25.2**	**-0.1**
KELT				*i*S	**Sb**	**12 06 30.8**	**-0.9**
KEMA	**Kemaliye**	**0.71**	**203**	P	**Pg**	**12 06 29.6**	**+0.3**
KEMA				S	**Sb**	**12 06 40.4**	**-0.7**
KEMA	**Kemaliye**	**0.71**	**203**	*i*P	**Pg**	**12 06 29.6**	**+0.3**
KEMA				*i*S	**Sb**	**12 06 40.4**	**-0.7**
GUMT	**Gumushane**	**0.72**	**42**	*e*PG	**Pb**	**12 06 31.1**	**+0.1**
GUMT				*e*SG	**Sb**	**12 06 41.0**	**-0.3**
GUMT	**Gumushane**	**0.72**	**42**	*e*Pg	**Pb**	**12 06 31.1**	**+0.1**
GUMT				*e*Sg	**Sb**	**12 06 41.0**	**-0.3**
ERZN	**Erzincan**	**0.75**	**117**	*e*PG	**Pb**	**12 06 31.5**	**0.0**
ERZN				*e*SG	**Sb**	**12 06 42.9**	**+0.6**
CUZAR	**Zara_SIVAS**	**0.83**	**268**	P	**Pg**	**12 06 31.8**	**+0.2**
CUZAR				S	**Sb**	**12 06 43.7**	**-0.8**
CUZAR	**Zara_SIVAS**	**0.83**	**268**	*i*P	**Pg**	**12 06 31.8**	**+0.2**
CUZAR				*i*S	**Sb**	**12 06 43.7**	**-0.8**
ESPY	**Espiye-Giresun**	**0.99**	**355**	*e*PG	**Pn**	**12 06 36.2**	**-0.4**
ESPY				*e*SG	**Sb**	**12 06 49.8**	**+0.8**
ESPY	**Espiye-Giresun**	**0.99**	**355**	*e*Pg	**Pn**	**12 06 36.2**	**-0.4**
ESPY				*e*Sg	**Sb**	**12 06 49.8**	**+0.8**
GRSN	**GIRESUNGRSN**	**1.09**	**336**	*i*P	**Pg**	**12 06 36.6**	**0.0**
GRSN				*i*S	**Sb**	**12 06 51.6**	**-0.2**
BAYT	**Ayd¨–ntepe-Bay**	**1.09**	**64**	*e*PG	**Pg**	**12 06 36.7**	**0.0**
BAYT	**Ayd¨–ntepe-Bay**	**1.09**	**64**	*e*Pg	**Pg**	**12 06 36.7**	**0.0**
PTK	**Pertek**	**1.12**	**158**	*e*PN	**Pn**	**12 06 38.2**	**-0.2**
PTK	**Pertek**	**1.12**	**158**	*e*Pn	**Pn**	**12 06 38.2**	**-0.2**
CUKAN	**kangal_SIVAS**	**1.23**	**241**	*i*P	**Pg**	**12 06 39.2**	**0.0**
CUKAN				*i*S	**Sn**	**12 06 57.9**	**+0.7**
ELZG	**Elazig**	**1.43**	**176**	P	**Pn**	**12 06 42.7**	**0.0**
ELZG				S	**Sn**	**12 07 02.5**	**+0.4**
ELZG	**Elazig**	**1.43**	**176**	*i*P	**Pn**	**12 06 42.7**	**0.0**
ELZG				*i*S	**Sn**	**12 07 02.5**	**+0.4**

*ISCJB **24** 12:12:27.5±0.9,38°.72N±0°.04×39°.4E±0°.1,h7km±11km, Error ellipse: s-maj=14.0km s-min=5.5km az=21.6*
*DDA **24** 12:12:27.0,38°.70N×39°.31E,h10km,Ml2.6*
*CSEM **24** 12:12:27.2±0.3,38°.73N×39°.31E,h10km,ML2.6,Error ellipse: s-maj=8.9km s-min=5.4km az=100.0*

ISC 24 12:12:26.9±1.2,38°.72N±0°.03×39°.35E±0°.06,h17km±9km, n13,σ0§69/22,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PTK	**Pertek**	**0.18**	**11**	*e*PG	**Pg**	**12 12 31.2**	**-0.4**
PTK	**Pertek**	**0.18**	**11**	*e*Pg	**Pg**	**12 12 31.2**	**-0.4**
SVRC	**Sivrice-ELAZID**	**0.34**	**186**	*e*PG	**Pg**	**12 12 34.1**	**0.0**
SVRC				*e*SG	**Sb**	**12 12 39.9**	**+0.1**
SVRC	**Sivrice-ELAZID**	**0.34**	**186**	*e*Pg	**Pg**	**12 12 34.1**	**0.0**
SVRC				*e*Sg	**Sb**	**12 12 39.9**	**+0.1**
ELZG	**Elazig**	**0.36**	**233**	P	**Pg**	**12 12 34.3**	**-0.1**
ELZG				S	**Sb**	**12 12 40.9**	**+0.5**
ELZG	**Elazig**	**0.36**	**233**	*i*P	**Pg**	**12 12 34.3**	**-0.1**
ELZG				*i*S	**Sb**	**12 12 40.9**	**+0.5**
TNCL	**Tunceli-Merkez**	**0.43**	**21**	P	**Pg**	**12 12 35.4**	**-0.2**
TNCL				S	**Sb**	**12 12 43.6**	**+1.3**
TNCL	**Tunceli-Merkez**	**0.43**	**21**	*i*P	**Pg**	**12 12 35.4**	**-0.2**
TNCL				*i*S	**Sb**	**12 12 43.6**	**+1.3**
KEMA	**Kemaliye**	**0.87**	**310**	P	**Pb**	**12 12 43.0**	**-0.6**
KEMA				S	**Sn**	**12 12 56.0**	**-0.8**
KEMA	**Kemaliye**	**0.87**	**310**	*i*P	**Pb**	**12 12 43.0**	**-0.6**
KEMA				*i*S	**Sn**	**12 12 56.0**	**-0.8**
ILIC	**ilic-Erzincan**	**0.95**	**321**	*e*PG	**Pb**	**12 12 44.4**	**-0.7**
ILIC	**ilic-Erzincan**	**0.95**	**321**	*e*Pg	**Pb**	**12 12 44.4**	**-0.7**
CUKAN	**kangal_SIVAS**	**1.58**	**293**	*i*P	**Pb**	**12 12 56.3**	**+0.5**
CUKAN				*i*S	**Sg**	**12 13 19.1**	**+1.1**

JMA 24 12:12:56.6±0.2,37°.83N×142°.60E,h26km±3km,M3.8,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.17**	**303**	P	Pn	12 13 17.5	+0.3
JIO				*e*S	Sn	12 13 32.1	-0.2
JMM	**Marumori**	**1.43**	**272**	P	Pn	12 13 21.3	+0.4
JMM				S	Sn	12 13 38.8	0.0
JFK	**Kawauchi**	**1.45**	**252**	P	Pn	12 13 21.4	+0.3
JFK				*e*S	Sn	12 13 39.6	+0.3
JMK	**Ichinoseki**	**1.56**	**316**	P	Pn	12 13 23.3	+0.7
JOU	**Okura**	**1.62**	**290**	P	Pb	12 13 24.7	-1.1
JFT	**Otama**	**1.82**	**261**	P	Pb	12 13 27.9	-1.4
JFT				*e*S	Sb	12 13 50.5	-1.2
JOM	**Ohasama**	**1.93**	**328**	P	Pn	12 13 29.0	+1.2
JOM				S	Sb	12 13 53.6	-1.3
JYK	**Kaneyama**	**2.07**	**302**	P	Pn	12 13 31.1	+1.4
JRG	**Rokugo**	**2.19**	**316**	P	Pb	12 13 33.5	-2.1

*IDC **24** 12:28:09.5±1.0,7°.30S×147°.15E,h0km,mb4.1/12, mb1 4.3/15,mb1mx4.1/44,mbtmp4.2/15,ML3.8/2,MS3.2/5, Ms1 3.2/5,ms1mx2.8/37,Error ellipse: s-maj=35.8km s-min=14.5km az=99.0*
*ISCJB **24** 12:28:12.9±0.4,7°.39S±0°.05×146°.98E±0°.09,h32km, mb4.5/22,MS3.2/4,Error ellipse: s-maj=13.5km s-min=5.6km az=16.6*
*NEIC **24** 12:28:16.7±1.3,7°.52S×147°.07E,h49km±14km,mb4.5/10, Error ellipse: s-maj=18.8km s-min=10.8km az=111.0*

ISC 24 12:28:14.3±0.6,7°.33S±0°.04×147°.1E±0°.1,h32km,n49, σ1§54/49,mb4.5/22,MS3.2/4,Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.06**	**178**	Pn	**Pn**	**12 28 46.3**	**-0.5**
	44nm,0.3s,baz=350,slow=7.5,SNR=84						
PMG				Sn	**Sb**	**12 29 15.0**	**-1.4**
	62nm,0.3s,baz=358,slow=21,SNR=8.8						
PMG				LR	LR	12 29 54.3	
	comp=Z,549nm,21.4s,baz=346,slow=50						
PMG	**Port Moresby**	**2.06**	**178**	*e*Pn	**Pn**	**12 28 46.0**	**-0.8**
PMG				*e*Sn	**Sb**	**12 29 14.8**	**-1.6**
MANU	**Manus Island**	**5.26**	**3**	*e*Pn	Pn	12 29 36.9	+6.2
MANU				*e*Sn	**Sb**	**12 30 43.5**	**-4.8**
COEN	**Coen**	**7.63**	**210**	*e*Pn	**Pn**	**12 30 00.8**	**-2.5**
COEN				*e*Sn	**Sn**	**12 31 27.7**	**-1.1**
CTA	**Charters Tower**	**12.71**	**184**	Pn	**Pn**	**12 31 13.8**	**+0.9**
	0.2nm,0.3s,baz=359,slow=15,SNR=4.0						
WRAB	**Tennant Creek**	**17.61**	**223**	*e*Pn	**Pn**	**12 32 16.1**	**-1.2**
	14nm,0.9s						
WB2	**Warramunga Arr**	**17.61**	**223**	*e*Pn	**Pn**	**12 32 16.2**	**-1.1**
	38nm,1.4s						
WR1	**Warramunga Arr**	**17.62**	**223**	*e*Pn	**Pn**	**12 32 16.2**	**-1.2**
	73nm,1.8s						
WRA	**Warramunga Arr**	**17.62**	**223**	P	**Pn**	**12 32 16.2**	**-1.2**
	0.5nm,0.3s,baz=42,slow=12,SNR=25						
AS01	**Alice Springs**	**20.57**	**216**	*e*P	**P**	**12 32 51.0**	**+0.4**
AS31	**Alice Springs**	**20.60**	**217**	*e*P	**P**	**12 32 51.1**	**+0.2**
	3.4nm,0.6s						
ASAR	**Alice Springs**	**20.60**	**217**	P	**P**	**12 32 50.4**	**-0.5**
	4.3nm,0.6s,baz=53,slow=9.1,SNR=42						
GUMO	**Guam**	**20.90**	**354**	LR	LR	12 41 21.0	
	comp=Z,41nm,18.0s,baz=163,slow=38						
FITZ	**Fitzroy Crossi**	**23.49**	**241**	P	**P**	**12 33 20.6**	**-0.8**
	5.5nm,0.9s,baz=84,slow=10,SNR=4.6						
FITZ				LR	LR	12 42 47.7	
	comp=Z,69nm,18.3s,baz=49,slow=37						
FITZ	**Fitzroy Crossi**	**23.49**	**241**	*e*P	**P**	**12 33 20.6**	**-0.8**
	48nm,1.9s						
AFI	**Afiamalu**	**40.90**	**103**	*e*P	**P**	**12 35 53.0**	**-1.0**
	126nm,1.0s						
JNU	**Nakatsue**	**43.09**	**340**	LR	LR	12 54 22.6	
	comp=Z,27nm,18.1s,baz=137,slow=36						
MJAR	**Matsushiro Arr**	**44.43**	**350**	P	**P**	**12 36 20.9**	**-1.4**
	3.1nm,1.0s,baz=173,slow=8.3,SNR=5.4						
KSRS	**Korea Array**	**48.02**	**339**	P	**P**	**12 36 50.5**	**+0.1**
	1.6nm,0.8s,baz=150,slow=8.7,SNR=5.8						
ASAJ	**Asahikawa**	**51.37**	**356**	P	**P**	**12 37 15.9**	**+0.1**
	2.6nm,0.6s,baz=259,slow=10,SNR=3.9						
USRK	**Ussuriysk Ar.**	**53.08**	**346**	P	**P**	**12 37 28.3**	**-0.2**
	1.7nm,0.6s,baz=158,slow=4.6,SNR=4.2						
CMAR	**Chiang Mai Arr**	**53.97**	**299**	P	**P**	**12 37 37.2**	**+1.6**
	0.5nm,0.4s,baz=120,slow=5.6,SNR=5.2						
CD2	**Chengdu**	**56.27**	**315**	P	**P**	**12 37 52.3**	**+0.3**
CD2				pmax	pmax		
	comp=Z,10.0nm,1.1s						
HHC	**Hu-ho-hao-te**	**58.01**	**329**	*e*P	**P**	**12 38 07.4**	**+3.2**
HHC				pmax	pmax		
	comp=Z,21nm,1.1s						
HHC				pmax	pmax		
	comp=Z,110nm,6.9s						
LZH	**Lanzhou**	**59.28**	**320**	*e*P	**P**	**12 38 12.1**	**-1.1**
LZH

*CSEM **24** 12:28:55.2±0.1, 39.°09N×29.°04E, h5km, ML2.8, Error ellipse: s-maj=2.4km s-min=2.3km az=115.0*
*ISK **24** 12:28:55.1, 39.°10N×29.°04E, h9km, ML2.4*
ISC 24 12:28:55.2±1.0, 39.°07N±0.°03×29.°02E±0.°02, h6km±10km, n28, σ0.°29/42, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**263**	P	**Pg**	**12 29 00.0**	**+0.1**
DEMI				S	**Sg**	**12 29 02.9**	**-0.2**
DEMI	**Demirci**	**0.24**	**263**	*i* P	**Pg**	**12 29 00.0**	**+0.1**
DEMI				*i* S	**Sg**	**12 29 02.9**	**-0.2**
GDZ	**Gediz**	**0.36**	**87**	P	**Pg**	**12 29 02.3**	**0.0**
GDZ				S	**Sg**	**12 29 07.3**	**+0.3**
GDZ	**Gediz**	**0.36**	**87**	*i* P	**Pg**	**12 29 02.3**	**0.0**
GDZ				*i* S	**Sg**	**12 29 07.3**	**+0.3**
KULA	**Kula-Manisa**	**0.62**	**207**	*e*PG	**Pb**	**12 29 08.3**	**-0.2**
KULA	**Kula-Manisa**	**0.62**	**207**	*e*Pg	**Pb**	**12 29 08.3**	**-0.2**
MANT	**Manisa**	**0.68**	**212**	P	**Pg**	**12 29 08.5**	**+0.1**
MANT				S	**Sg**	**12 29 17.7**	**+0.4**
MANT	**Manisa**	**0.68**	**212**	*i* P	**Pg**	**12 29 08.5**	**+0.1**
MANT				*i* S	**Sg**	**12 29 17.7**	**+0.4**
KHAL	**Karahalli**	**0.79**	**152**	P	**Pg**	**12 29 10.8**	**+0.4**
KHAL				S	**Sg**	**12 29 20.6**	**-0.1**
KHAL	**Karahalli**	**0.79**	**152**	*i* P	**Pg**	**12 29 10.8**	**+0.4**
KHAL				*i* S	**Sg**	**12 29 20.6**	**-0.1**
KHL	**Karahalli**	**0.84**	**152**	*e*PG	**Pb**	**12 29 12.1**	**-0.2**
KHL	**Karahalli**	**0.84**	**152**	*e*Pg	**Pb**	**12 29 12.1**	**-0.2**
AKHS	**Akhisar**	**0.96**	**259**	P	**Pb**	**12 29 14.4**	**+0.2**
AKHS				S	**Sb**	**12 29 27.1**	**-0.1**
AKHS	**Akhisar**	**0.96**	**259**	*i* P	**Pb**	**12 29 14.4**	**+0.2**
AKHS				*i* S	**Sb**	**12 29 27.1**	**-0.1**
AKS	**Akhisar**	**0.96**	**259**	*e*PG	**Pb**	**12 29 14.2**	**0.0**
AKS	**Akhisar**	**0.96**	**259**	*e*Pg	**Pb**	**12 29 14.3**	**0.0**
BALB	**Balikesir**	**1.05**	**303**	*e*PG	**Pb**	**12 29 15.9**	**+0.1**
BALB	**Balikesir**	**1.05**	**303**	*e*Pg	**Pb**	**12 29 15.9**	**+0.1**
CAVI	**Cavuskoy**	**1.30**	**29**	*e*PN	**Pn**	**12 29 19.3**	**-0.6**
CAVI				*e*SN	**Sn**	**12 29 38.0**	**+0.5**
CAVI	**Cavuskoy**	**1.30**	**29**	*e*Pn	**Pn**	**12 29 19.3**	**-0.6**
CAVI				*e*Sn	**Sn**	**12 29 38.0**	**+0.5**
KCTX	**Karacabey (Bur**	**1.30**	**337**	*e*PN	**Pn**	**12 29 19.3**	**-0.6**
KCTX	**Karacabey (Bur**	**1.30**	**337**	*e*Pn	**Pn**	**12 29 19.3**	**-0.6**
GONE	**Gonen-Balikesi**	**1.42**	**314**	*e*PN	**Pn**	**12 29 21.4**	**0.0**
GONE	**Gonen-Balikesi**	**1.42**	**314**	*e*Pn	**Pn**	**12 29 21.5**	**0.0**
ARMT	**Armutlu**	**1.50**	**355**	*e*PN	**Pn**	**12 29 22.3**	**-0.3**
ARMT				*e*SN	**Sb**	**12 29 42.6**	**-0.1**
ARMT	**Armutlu**	**1.50**	**355**	*e*Pn	**Pn**	**12 29 22.3**	**-0.3**
ARMT				*e*Sn	**Sb**	**12 29 42.6**	**-0.1**
GULT	**Gulveren**	**1.78**	**40**	*e*PN	**Pn**	**12 29 26.5**	**-0.1**
GULT	**Gulveren**	**1.78**	**40**	*e*Pn	**Pn**	**12 29 26.5**	**-0.1**

IDC 24 12:34:34.8±2.6, 54.°01N×86.°45E, h0km, mb1 2.9/2, mb1mx2.8/53, mbtmp2.9/2, ML2.5/2, Error ellipse: s-maj=21.8km s-min=13.1km az=61.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**0.97**	**267**	*i*		12 41 20.0	
	baz=85, slow=325, SNR=1.8						
ZALV	**Zalesovo Beam**	**0.97**	**267**	Pg	Pg	12 34 52.0	-1.4
	0.6nm, 0.3s, baz=86, slow=19, SNR=3.8						
ZALV				Lg	Lg	12 35 07.1	
	0.8nm, 0.3s, baz=88, slow=31, SNR=5.3						
KURBB	**Kurchatov Arra**	**5.92**	**238**	Pn	Pn	12 36 04.7	+0.9
	0.1nm, 0.3s, baz=57, slow=14, SNR=6.1						
MKAR	**Makanchi Array**	**7.70**	**202**	Pn	Pn	12 36 29.2	+1.1
	0.1nm, 0.3s, baz=25, slow=15, SNR=5.1						
MKAR				Lg	Lg	12 38 38.5	
	0.0nm, 0.3s, baz=18, slow=28, SNR=3.5						

*GEN **24** 12:40:54.6, 43.°89N×12.°08E, h1km, ML2.8*
*ISCJB **24** 12:40:55.9±0.2, 43.°85N±0.°02×11.°96E±0.°02, h22km±3km, Error ellipse: s-maj=3.6km s-min=2.7km az=19.4*
*ROM **24** 12:40:55.3±0.1, 43.°87N×12.°04E, h4km±1km, Ml3.0/26, Error ellipse: s-maj=1.3km s-min=0.9km az=17.0*
*CSEM **24** 12:40:55.6±0.1, 43.°88N×12.°00E, h5km, ML3.5/12, Error ellipse: s-maj=2.4km s-min=2.1km az=46.0*
*LDG **24** 12:40:56.2±0.1, 43.°86N×12.°01E, h2km, Ml3.1/8, Error ellipse: s-maj=2.4km s-min=1.5km az=29.0*
ISC 24 12:40:55.5±0.8, 43.°86N±0.°02×11.°99E±0.°02, h15km±5km, n125, σ1.°20/165, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFI	**Santa Sofia**	**0.11**	**292**	Pg	**Pg**	**12 40 58.7**	**-0.2**
SFI				Sg	**Sg**	**12 41 01.0**	**-0.2**
	6μm, 0.4s						
SFI	**Santa Sofia**	**0.11**	**292**	Pg	**Pg**	**12 40 58.7**	**-0.2**
SFI				Sg	**Sg**	**12 41 01.0**	**-0.2**
	6μm, 0.4s						
ASQU	**Asqua**	**0.16**	**246**	Pg	**Pg**	**12 40 59.9**	**+0.3**
ASQU				Sg	**Sg**	**12 41 03.0**	**+0.7**
	9μm, 0.5s						
ASQU	**Asqua**	**0.16**	**246**	Pg	**Pg**	**12 40 59.9**	**+0.3**
ASQU				Sg	**Sg**	**12 41 03.0**	**+0.7**
	9μm, 0.5s						
VMG	**Vicchio**	**0.34**	**287**	Pg	**Pg**	**12 41 02.9**	**+0.4**
	138nm, 0.1s						
VMG	**Vicchio**	**0.34**	**287**	Pg	**Pg**	**12 41 02.9**	**+0.4**
	138nm, 0.1s						
BADI	**Badiali**	**0.40**	**153**	Pg	**Pg**	**12 41 03.8**	**+0.3**
BADI				Sg	**Sb**	**12 41 10.3**	**+0.1**
	3μm, 0.4s						
BADI	**Badiali**	**0.40**	**153**	Pg	**Pg**	**12 41 03.8**	**+0.3**
BADI				Sg	**Sb**	**12 41 10.3**	**+0.1**
	3μm, 0.4s						
BLLA	**Bellaria**	**0.44**	**51**	Pg	**Pb**	**12 41 05.0**	**-0.1**
	4μm, 1.0s						
BLLA	**Bellaria**	**0.44**	**51**	Pg	**Pb**	**12 41 05.0**	**-0.1**
	4μm, 1.0s						
SEI	**Scarperia**	**0.50**	**293**	Pg	**Pb**	**12 41 05.9**	**-0.1**
SEI				Sg	**Sb**	**12 41 14.4**	**+1.3**
SEI	**Scarperia**	**0.50**	**293**	Pg	**Pb**	**12 41 05.9**	**-0.1**
SEI				Sg	**Sb**	**12 41 14.4**	**+1.3**
ATPC	**Poggio Castell**	**0.51**	**138**	Pg	**Pg**	**12 41 05.7**	**+0.1**
ATPC				Sg	**Sb**	**12 41 14.1**	**+0.6**
	2μm, 0.6s						
ATPC	**Poggio Castell**	**0.51**	**138**	Pg	**Pg**	**12 41 05.7**	**+0.1**
ATPC				Sg	**Sb**	**12 41 14.1**	**+0.6**
	2μm, 0.6s						
PIEI	**Pieia**	**0.51**	**130**	Pg	**Pg**	**12 41 05.3**	**-0.4**
PIEI				Sg	**Sb**	**12 41 13.4**	**-0.2**
	630nm, 0.3s						
PIEI	**Pieia**	**0.51**	**130**	Pg	**Pg**	**12 41 05.3**	**-0.4**
PIEI				Sg	**Sb**	**12 41 13.4**	**-0.2**
	630nm, 0.3s						
IMOL	**Imola, Italy**	**0.53**	**340**	Pg	**Pb**	**12 41 07.3**	**+0.8**
	168nm, 0.7s						
IMOL	**Imola, Italy**	**0.53**	**340**	Pg	**Pb**	**12 41 07.3**	**+0.8**
	168nm, 0.7s						
ATVO	**AVT- Monte Val**	**0.57**	**148**	Pg	**Pg**	**12 41 07.0**	**+0.3**
ATVO				Sg	**Sb**	**12 41 16.1**	**+1.0**
	1μm, 0.5s						
ATVO	**AVT- Monte Val**	**0.57**	**148**	Pg	**Pg**	**12 41 07.0**	**+0.3**
ATVO				Sg	**Sb**	**12 41 16.1**	**+1.0**
	1μm, 0.5s						
FSSB	**Fossombrone**	**0.59**	**106**	Pg	**Pg**	**12 41 06.8**	**-0.4**
FSSB				Sg	**Sb**	**12 41 15.9**	**0.0**
	1μm, 0.3s						
FSSB	**Fossombrone**	**0.59**	**106**	Pg	**Pg**	**12 41 06.8**	**-0.4**
FSSB				Sg	**Sb**	**12 41 15.9**	**0.0**
	1μm, 0.3s						
PESA	**Pesaro**	**0.62**	**83**	Pg	**Pg**	**12 41 07.5**	**-0.1**
	1μm, 0.4s						
PESA	**Pesaro**	**0.62**	**83**	Pg	**Pg**	**12 41 07.5**	**-0.1**
	1μm, 0.4s						
FRON	**Frontone**	**0.64**	**123**	Pg	**Pg**	**12 41 07.6**	**-0.3**
	669nm, 0.5s						
FRON	**Frontone**	**0.64**	**123**	Pg	**Pg**	**12 41 07.6**	**-0.3**
	669nm, 0.5s						
MTRZ	**Monterenzio**	**0.64**	**324**	Pg	**Pb**	**12 41 09.0**	**+0.6**
	2μm, 0.9s						
MTRZ	**Monterenzio**	**0.64**	**324**	Pg	**Pb**	**12 41 09.0**	**+0.6**
	2μm, 0.9s						
FNVD	**Fontana Vidola**	**0.70**	**296**	Pg	**Pb**	**12 41 09.6**	**+0.2**
	1μm, 0.9s						
FNVD	**Fontana Vidola**	**0.70**	**296**	Pg	**Pb**	**12 41 09.6**	**+0.2**
	1μm, 0.9s						
MURB	**Monte Urbino**	**0.71**	**147**	Pg	**Pb**	**12 41 09.9**	**+0.2**
	2μm, 0.9s						
MURB	**Monte Urbino**	**0.71**	**147**	Pg	**Pb**	**12 41 09.9**	**+0.2**
	2μm, 0.9s						
SSFR	**Montelago di S**	**0.71**	**126**	Pg	**Pg**	**12 41 09.1**	**-0.4**
	718nm, 0.2s						
SSFR	**Montelago di S**	**0.71**	**126**	Pg	**Pg**	**12 41 09.1**	**-0.4**
	718nm, 0.2s						
ATTE	**AVT- Monte Tez**	**0.72**	**158**	Pg	**Pb**	**12 41 10.0**	**+0.2**
	768nm, 0.6s						
ATTE	**AVT- Monte Tez**	**0.72**	**158**	Pg	**Pb**	**12 41 10.0**	**+0.2**
	768nm, 0.6s						
ARVD	**Arcevia**	**0.78**	**118**	Pg	**Pg**	**12 41 10.2**	**-0.5**
	335nm, 0.6s						
ARVD	**Arcevia**	**0.78**	**118**	Pg	**Pg**	**12 41 10.2**	**-0.5**
	335nm, 0.6s						
FROS	**Frosini**	**0.89**	**223**	Pg	**Pn**	**12 41 13.6**	**0.0**
	1μm, 1.0s						
FROS	**Frosini**	**0.89**	**223**	Pg	**Pn**	**12 41 13.6**	**0.0**
	1μm, 1.0s						
SNTG	**Esanatoglia**	**0.92**	**131**	Pg	**Pb**	**12 41 13.0**	**-0.2**
SNTG	**Esanatoglia**	**0.92**	**131**	Pg	**Pb**	**12 41 13.0**	**-0.2**
MGAB	**Montegabbione**	**0.95**	**175**	Pg	**Pg**	**12 41 14.3**	**+0.3**
	828nm, 0.6s						
MGAB	**Montegabbione**	**0.95**	**175**	Pg	**Pg**	**12 41 14.3**	**+0.3**
	828nm, 0.6s						
SACS	**San Casciano d**	**1.02**	**183**	Pg	**Pg**	**12 41 15.4**	**+0.3**
	544nm, 0.8s						
BDI	**Bagni Di Lucca**	**1.03**	**282**	Pg	**Pn**	**12 41 15.8**	**+0.3**
	330nm, 0.8s						
BDI	**Bagni Di Lucca**	**1.03**	**282**	Pg	**Pn**	**12 41 15.8**	**+0.3**
	330nm, 0.8s						
ARCI	**Arcidosso**	**1.08**	**201**	Pg	**Pn**	**12 41 16.3**	**+0.1**
	467nm, 0.9s						
ARCI	**Arcidosso**	**1.08**	**201**	Pg	**Pn**	**12 41 16.3**	**+0.1**
	467nm, 0.9s						
MAIM	**Mastiano**	**1.09**	**273**	P	**Pb**	**12 41 15.9**	**-0.1**
MAIM				S	**Sg**	**12 41 30.5**	**-0.1**
TRIF	**Trifonti**	**1.09**	**227**	Pg	**Pg**	**12 41 16.7**	**+0.2**
	151nm, 0.6s						
TRIF	**Trifonti**	**1.09**	**227**	Pg	**Pg**	**12 41 16.7**	**+0.2**
	151nm, 0.6s						
MCIV	**Monte Civitell**	**1.11**	**192**	Pg	**Pg**	**12 41 17.2**	**+0.3**
	148nm, 0.7s						
MCIV	**Monte Civitell**	**1.11**	**192**	Pg	**Pg**	**12 41 17.2**	**+0.3**
	148nm, 0.7s						
SASS	**Sassa´´´´´**	**1.12**	**238**	Pg	**Pb**	**12 41 16.8**	**+0.1**
	131nm, 0.7s						
SASS	**Sassa´´´´´**	**1.12**	**238**	Pg	**Pb**	**12 41 16.8**	**+0.1**
	131nm, 0.7s						
FDMO	**Fiordimonte**	**1.15**	**136**	Pg	**Pn**	**12 41 17.4**	**+0.3**
	538nm, 0.7s						
FDMO	**Fiordimonte**	**1.15**	**136**	Pg	**Pn**	**12 41 17.4**	**+0.3**
	538nm, 0.7s						
MARN	**Marana (Italy)**	**1.86**	**343**	*e*Pn	**Pb**	**12 41 28.3**	**-0.9**
MARN	**Marana (Italy)**	**1.86**	**343**	*e*Pn	**Pb**	**12 41 28.3**	**-0.9**
CGRP	**Cima Grappa**	**2.02**	**356**	*e*Pn	**Pn**	**12 41 30.0**	**+0.7**
CGRP				*e*Sn	**Sn**	**12 41 55.3**	**+0.9**
CGRP	**Cima Grappa**	**2.02**	**356**	*e*Pn	**Pn**	**12 41 30.0**	**+0.7**
CGRP				*e*Sn	**Sn**	**12 41 55.3**	**+0.9**
DDS	**Dosso del Somm**	**2.10**	**344**	*e*Pn	**Pn**	**12 41 31.5**	**+1.2**
DDS	**Dosso del Somm**	**2.10**	**344**	*e*Pn	**Pn**	**12 41 31.5**	**+1.2**
VARN	**Col Varnada, M**	**2.13**	**2**	*e*Pn	**Pn**	**12 41 31.8**	**+1.1**
VARN	**Col Varnada, M**	**2.13**	**2**	*e*Pn	**Pn**	**12 41 31.8**	**+1.1**
NVLJ	**Novalja**	**2.19**	**70**	*e*Pn	**Pn**	**12 41 30.7**	**-0.7**
NVLJ				Sn	**Sn**	**12 41 59.7**	**+1.6**
NVLJ	**Novalja**	**2.19**	**70**	*e*Pn	**Pn**	**12 41 30.6**	**-0.7**
NVLJ				Sn	**Sn**	**12 41 59.7**	**+1.6**
SABO	**M.te Sabotino**	**2.41**	**28**	*e*Pn	**Pn**	**12 41 34.8**	**+0.4**
SABO	**M.te Sabotino**	**2.41**	**28**	*e*Pn	**Pn**	**12 41 34.8**	**+0.4**
CIMO	**Cimolais**	**2.47**	**7**	*e*Pn	**Pn**	**12 41 36.6**	**+1.3**
CIMO	**Cimolais**	**2.47**	**7**	*e*Pn	**Pn**	**12 41 36.6**	**+1.3**
PGF	**Pioggiola**	**2.55**	**240**	*e*Pn	**Pn**	**12 41 36.7**	**+0.2**
PGF				*e*Sn	**Sn**	**12 42 07.0**	**-0.4**
	9.7nm, 0.5s						
PGF	**Pioggiola**	**2.55**	**240**	*e*Pn	**Pn**	**12 41 36.7**	**+0.2**
PGF				*e*Sn	**Sn**	**12 42 07.0**	**-0.4**
	4.8nm, 0.5s						
VINO	**Villanova**	**2.56**	**20**	*e*Pn	**Pn**	**12 41 36.9**	**+0.3**
VINO	**Villanova**	**2.56**	**20**	*e*Pn	**Pn**	**12 41 36.9**	**+0.3**
DRE	**Drenchia**	**2.59**	**26**	*e*Pn	**Pn**	**12 41 37.2**	**+0.2**
DRE	**Drenchia**	**2.59**	**26**	*e*Pn	**Pn**	**12 41 37.1**	**+0.2**
FUSE	**Fusea**	**2.65**	**15**	*e*Pn	**Pn**	**12 41 38.5**	**+0.7**
FUSE	**Fusea**	**2.65**	**15**	*e*Pn	**Pn**	**12 41 38.5**	**+0.7**
CARE	**Lago del Cares**	**2.72**	**341**	*e*Pn	**Pn**	**12 41 40.5**	**+1.5**
CARE	**Lago del Cares**	**2.72**	**341**	*e*Pn	**Pn**	**12 41 40.5**	**+1.5**
ACOM	**Acomizza, Ital**	**2.89**	**21**	*e*Pn	**Pn**	**12 41 41.8**	**+0.6**
ACOM	**Acomizza, Ital**	**2.89**	**21**	*e*Pn	**Pn**	**12 41 41.9**	**+0.6**
ABTA	**Abfaltersbach**	**2.91**	**7**	Pn	**Pn**	**12 41 43.0**	**+1.6**
	2.8nm, 0.2s						
ABTA	**Abfaltersbach**	**2.91**	**7**	Pn	**Pn**	**12 41 43.0**	**+1.6**
	2.8nm, 0.2s						
OBKA	**Obir**	**3.20**	**33**	*e*Pn	**Pn**	**12 41 47.7**	**+2.2**
	15nm, 0.6s						
OBKA				Sg	**Sg**	**12 42 39.1**	**+0.7**
	82nm, 0.7s						
OBKA	**Obir**	**3.20**	**33**	Pn	**Pn**	**12 41 47.7**	**+2.2**
	15nm, 0.6s						
OBKA				Sg	**Sg**	**12 42 39.1**	**+0.7**
	82nm, 0.7s						
FETA	**Feichten**	**3.28**	**345**	*e*Pn	**Pb**	**12 41 52.1**	**-1.4**
	13nm, 0.6s, SNR=9.8						
SBF	**Sospel**	**3.29**	**272**	*e*Pn	**Pn**	**12 41 46.9**	**+0.2**
SBF				*e*Sn	**Sn**	**12 42 24.0**	**-1.6**
	22nm, 0.4s						
SBF	**Sospel**	**3.29**	**272**	*e*Pn	**Pn**	**12 41 46.9**	**+0.2**
SBF				*e*Sn	**Sn**	**12 42 24.0**	**-1.6**
	11nm, 0.4s						
KBA	**Koelnbreinsper**	**3.35**	**16**	*i* Pn	**Pn**	**12 41 48.4**	**+0.8**
	6.2nm, 0.3s, SNR=8.8						
KBA				*e*Sn	**Sn**	**12 42 29.3**	**+2.0**
	15nm, 0.4s						
KBA	**Koelnbreinsper**	**3.35**	**16**	Pn	**Pn**	**12 41 48.4**	**+0.8**
	6.2nm, 0.3s, SNR=8.8						
KBA				Sn	**Sn**	**12 42 29.3**	**+2.0**
	15nm, 0.4s						
WATA	**Walderalm**	**3.48**	**355**	*e*Pn	**Pn**	**12 41 51.8**	**+2.4**
	16nm, 0.5s						
WATA	**Walderalm**	**3.48**	**355**	Pn	**Pn**	**12 41 51.8**	**+2.4**
	16nm, 0.5s						
MOTA	**Moosalm**	**3.54**	**350**	*i* Pn	**Pb**	**12 41 54.8**	**-3.1**
	7.3nm, 0.3s						
MOTA	**Moosalm**	**3.54**	**350**	Pn	**Pb**	**12 41 54.8**	**-3.1**
	7.3nm, 0.3s						
SOKA	**Soboth**	**3.54**	**36**	*e*Pn	**Pb**	**12 41 54.3**	**-3.6**
	0.6nm, 0.2s						
SOKA				Sg	**Sg**	**12 42 50.0**	**+0.9**
	12nm, 0.5s						
RETA	**Reutte**	**3.73**	**347**	*e*Pn	**Pb**	**12 41 59.2**	**-1.8**
	4.1nm, 0.3s						
DAVA	**Damuels**	**3.73**	**337**	*i* Pn	**Pb**	**12 41 58.6**	**-2.6**
	SNR=10						
MBDF	**Montbardon**	**3.85**	**285**	*e*Pn	**Pn**	**12 41 54.4**	**+0.1**
MBDF				*e*Sn	**Sn**	**12 42 38.7**	**-0.6**
	23nm, 0.7s						
MBDF	**Montbardon**	**3.85**	**285**	*e*Pn	**Pn**	**12 41 54.4**	**+0.1**
MBDF				*e*Sn	**Sn**	**12 42 38.7**	**-0.6**
	12nm, 0.7s						
FRF	**La Foret Royal**	**3.89**	**267**	*e*Pn	**Pn**	**12 41 56.0**	**+1.3**
FRF				*e*Sn	**Sn**	**12 42 38.5**	**-1.6**
	12nm, 0.6s						
FRF	**La Foret Royal**	**3.89**	**267**	*e*Pn	**Pn**	**12 41 56.0**	**+1.3**
FRF				*e*Sn	**Sn**	**12 42 38.5**	**-1.6**
	6.0nm, 0.6s						
LPG	**La Plagne**	**4.08**	**295**	*e*Pn	**Pn**	**12 41 57.9**	**+0.3**
LPG	**La Plagne**	**4.08**	**295**	*e*P	**Pn**	**12 42 02.4**	**+4.8**
LPG				*e*Sn	**Sn**	**12 42 43.6**	**-1.7**
	11nm, 0.7s						
LPG	**La Plagne**	**4.08**	**295**	*e*Pn	**Pn**	**12 41 57.9**	**+0.3**
LPG	**La Plagne**	**4.08**	**295**	*e*P	**Pn**	**12 42 02.4**	**+4.8**
LPG				*e*Sn	**Sn**	**12 42 43.6**	**-1.7**
	5.6nm, 0.7s						
MOA	**Molln**	**4.29**	**21**	*i* Pn	**Pn**	**12 42 02.6**	**+2.3**
	2.9nm, 0.3s						
MOA				*e*Sn	**Sn**	**12 42 51.2**	**+1.1**
	13nm, 0.6s						
MOA	**Molln**	**4.29**	**21**	Pn	**Pn**	**12 42 02.6**	**+2.3**
	2.9nm, 0.3s						
MOA				Sn	**Sn**	**12 42 51.2**	**+1.1**
	13nm, 0.6s						
CONA	**Conrad Observa**	**4.88**	**32**	*i* Pn	**Pn**	**12 42 09.4**	**+0.9**
	0.8nm, 0.2s						
CONA	**Conrad Observa**	**4.88**	**32**	Pn	**Pn**	**12 42 09.4**	**+0.9**
	0.8nm, 0.2s						
CABF	**La Chapelle**	**4.99**	**305**	*e*P	Pn	12 42 15.0	+5.0
CABF	**La Chapelle**	**4.99**	**305**	*e*P	Pn	12 42 15.0	+5.0
HINF	**Hinteralfeld**	**5.34**	**320**	*e*Pn	**Pn**	**12 42 14.6**	**-0.1**
HINF				*e*Sn	**Sn**	**12 43 13.6**	**-2.4**
	5.9nm, 0.3s						
HINF	**Hinteralfeld**	**5.34**	**320**	*e*Pn	**Pn**	**12 42 14.6**	**-0.1**
HINF				*e*Sn	**Sn**	**12 43 13.6**	**-2.4**
	3.0nm, 0.3s						
CDF	**Champ du Feu**	**5.61**	**326**	*e*Pn	**Pn**	**12 42 18.9**	**+0.5**
CDF				*e*Sn	**Sn**	**12 43 20.3**	**-2.3**
	5.9nm, 0.4s						
CDF	**Champ du Feu**	**5.61**	**326**	*e*Pn	**Pn**	**12 42 18.9**	**+0.5**
HAU	**Haudompre**	**5.71**	**318**	*e*Pn	**Pn**	**12 42 19.9**	**+0.1**
HAU				*e*Sn	**Sn**	**12 43 22.4**	**-2.8**
	27nm, 0.6s						
HAU	**Haudompre**	**5.71**	**318**	*e*Pn	**Pn**	**12 42 19.9**	**+0.1**
LOR	**Lormes**	**6.65**	**304**	*e*Pn	**Pn**	**12 42 33.9**	**+1.3**
LOR	**Lormes**	**6.65**	**304**	*e*Pn	**Pn**	**12 42 33.9**	**+1.3**
MTLF	**Montolieu**	**7.12**	**269**	*e*Pn	**Pn**	**12 42 39.2**	**+0.1**
MTLF	**Montolieu**	**7.12**	**269**	*e*Pn	**Pn**	**12 42 39.2**	**+0.1**
BRG	**Berggiesshubel**	**7.14**	**10**	(SN)	**Sn**	**12 43 59.2**	**-0.9**
BRG				(SG)	Sg	12 44 56.0	+12
	5.2nm, 0.8s						

*CSEM **24** 12:41:51.6, 43.°88N×12.°03E, h8km, MD2.0/2*
ROM 24 12:41:51.6±0.2, 43.°88N×12.°03E, h8km±1km, Md2.0/2, Error ellipse: s-maj=2.0km s-min=1.0km az=50.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFI	**Santa Sofia**	**0.13**	**281**	Pg	Pg	12 41 55.1	+0.6
SFI				Sg	Sg	12 41 57.4	+0.9
SFI	**Santa Sofia**	**0.13**	**281**	Pg	Pg	12 41 55.1	+0.6
SFI				Sg	Sg	12 41 57.4	+0.9
ASQU	**Asqua**	**0.19**	**244**	Pg	Pg	12 41 56.2	+0.7
ASQU				Sg	Sg	12 41 59.5	+1.3
ASQU	**Asqua**	**0.19**	**244**	Pg	Pg	12 41 56.2	+0.7
ASQU				Sg	Sg	12 41 59.5	+1.3
BADI	**Badiali**	**0.40**	**157**	Pg	Pg	12 42 00.2	+0.8
BADI				Sg	Sb	12 42 06.8	-0.5
BADI	**Badiali**	**0.40**	**157**	Pg	Pg	12 42 00.2	+0.8
BADI				Sg	Sb	12 42 06.8	-0.5
SEI	**Scarperia**	**0.52**	**290**	Pg	Pg	12 42 01.9	+0.3
SEI				Sg	Sb	12 42 10.1	-0.5
SEI	**Scarperia**	**0.52**	**290**	Pg	Pg	12 42 01.9	+0.3
SEI				Sg	Sb	12 42 10.1	-0.5

*ISK **24** 12:42:24.4, 39.°04N×29.°11E, h6km, ML2.6*
*ISCJB **24** 12:42:25.1±0.4, 39.°07N±0.°03×29.°05E±0.°03, h6km±6km, Error ellipse: s-maj=4.7km s-min=4.1km az=44.1*
*CSEM **24** 12:42:25.2±0.1, 39.°08N×29.°04E, h5km, ML2.7, Error ellipse: s-maj=2.9km s-min=2.4km az=110.0*
*DDA **24** 12:42:25.1, 39.°07N×29.°03E, h7km, Ml2.7*
ISC 24 12:42:25.0±0.9, 39.°08N±0.°02×29.°04E±0.°02, h12km±8km, n33, σ0.°49/47, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**262**	P	**Pg**	**12 42 30.5**	**0.0**
DEMI				S	**Sg**	**12 42 33.9**	**-0.2**
DEMI	**Demirci**	**0.26**	**262**	*i* P	**Pg**	**12 42 30.4**	**0.0**
DEMI				*i* S	**Sg**	**12 42 33.9**	**-0.2**
GDZ	**Gediz**	**0.34**	**88**	P	**Pg**	**12 42 32.4**	**+0.4**
GDZ				S	**Sb**	**12 42 37.8**	**-0.7**
GDZ	**Gediz**	**0.34**	**88**	*i* P	**Pg**	**12 42 32.4**	**+0.4**
GDZ				*i* S	**Sb**	**12 42 37.9**	**-0.7**
TVSB	**Tavsanli**	**0.49**	**41**	PG	**Pg**	**12 42 34.7**	**0.0**
TVSB				SG	**Sg**	**12 42 41.1**	**-0.2**
TVSB	**Tavsanli**	**0.49**	**41**	*i* Pg	**Pg**	**12 42 34.7**	**0.0**
TVSB				*i* Sg	**Sg**	**12 42 41.1**	**-0.2**
KULA	**Kula-Manisa**	**0.64**	**208**	PG	**Pg**	**12 42 37.3**	**-0.2**
KULA				SG	**Sg**	**12 42 45.8**	**-0.1**
KULA	**Kula-Manisa**	**0.64**	**208**	*i* Pg	**Pg**	**12 42 37.3**	**-0.2**
KULA				*i* Sg	**Sg**	**12 42 45.8**	**-0.

KULA				SG	**Sg**	**12 44 13.0**	**-0.3**
KULA	**Kula-Manisa**	**0.63**	**206**	*i* Pg	**Pg**	**12 44 04.9**	**-0.2**
KULA				*i* Sg	**Sg**	**12 44 13.0**	**-0.3**
DURS	**Dursunbey**	**0.67**	**322**	P	**Pg**	**12 44 05.2**	**-0.6**
DURS				S	**Sg**	**12 44 14.8**	**+0.3**
DURS	**Dursunbey**	**0.67**	**322**	*i* P	**Pg**	**12 44 05.2**	**-0.6**
DURS				*i* S	**Sg**	**12 44 14.8**	**+0.3**
MANT	**Manisa**	**0.69**	**211**	P	**Pg**	**12 44 06.2**	**-0.1**
MANT				S	**Sg**	**12 44 15.5**	**+0.3**
MANT	**Manisa**	**0.69**	**211**	*i* P	**Pg**	**12 44 06.2**	**-0.1**
MANT				*i* S	**Sg**	**12 44 15.5**	**+0.3**
KHAL	**Karahalli**	**0.80**	**152**	P	**Pg**	**12 44 08.6**	**+0.2**
KHAL				S	**Sg**	**12 44 19.0**	**+0.1**
KHAL	**Karahalli**	**0.80**	**152**	*i* P	**Pg**	**12 44 08.6**	**+0.2**
KHAL				*i* S	**Sg**	**12 44 19.0**	**+0.1**
KHL	**Karahalli**	**0.86**	**152**	*e*PG	**Pg**	**12 44 09.5**	**+0.1**
KHL	**Karahalli**	**0.86**	**152**	*e*Pg	**Pg**	**12 44 09.5**	**+0.1**
AKHS	**Akhisar**	**0.95**	**258**	P	**Pb**	**12 44 11.8**	**0.0**
AKHS				S	**Sb**	**12 44 24.4**	**-0.2**
AKHS	**Akhisar**	**0.95**	**258**	*i* P	**Pb**	**12 44 11.8**	**0.0**
AKHS				*i* S	**Sb**	**12 44 24.4**	**-0.2**
AKS	**Akhisar**	**0.95**	**258**	*e*PG	**Pb**	**12 44 11.6**	**-0.2**
AKS	**Akhisar**	**0.95**	**258**	*e*Pg	**Pb**	**12 44 11.6**	**-0.2**
ORLT	**Orhaneli**	**0.97**	**355**	*e*PG	**Pg**	**12 44 11.7**	**+0.2**
ORLT	**Orhaneli**	**0.97**	**355**	*e*Pg	**Pg**	**12 44 11.7**	**+0.2**
BALB	**Balikesir**	**1.04**	**303**	*e*PG	**Pg**	**12 44 13.0**	**+0.1**
BALB				*e*SG	**Sn**	**12 44 28.3**	**-0.3**
IGD	**Bursa**	**1.19**	**7**	*i* P	**Pb**	**12 44 14.3**	**-1.5**
IGD				*i* S	**Sg**	**12 44 31.6**	**+0.3**
BALY	**Balya**	**1.26**	**302**	P	**Pn**	**12 44 16.8**	**-0.2**
BALY	**Balya**	**1.26**	**302**	*i* P	**Pn**	**12 44 16.8**	**-0.2**
KCTX	**Karacabey (Bur**	**1.29**	**337**	*e*PN	**Pb**	**12 44 17.5**	**0.0**
MDNY	**Mudanya-Bursa**	**1.29**	**356**	*e*PN	**Pb**	**12 44 17.1**	**-0.3**
CAVI	**Cavuskoy**	**1.29**	**30**	*e*PN	**Pb**	**12 44 17.5**	**-0.1**
CAVI	**Cavuskoy**	**1.29**	**30**	*e*Pn	**Pb**	**12 44 17.5**	**-0.1**
IZI	**Iznik**	**1.30**	**16**	*e*PN	**Pg**	**12 44 18.4**	**+0.4**
IZI	**Iznik**	**1.30**	**16**	*e*Pn	**Pg**	**12 44 18.4**	**+0.4**
GONE	**Gonen-Balikesi**	**1.41**	**314**	*e*PN	**Pb**	**12 44 19.6**	**+0.1**
GONE	**Gonen-Balikesi**	**1.41**	**314**	*e*Pn	**Pb**	**12 44 19.6**	**+0.1**
ARMT	**Armutlu**	**1.49**	**356**	*e*PN	**Pn**	**12 44 20.0**	**-0.1**
EDC	**Edincik**	**1.54**	**325**	*e*PN	**Pb**	**12 44 21.7**	**-0.1**
EDC	**Edincik**	**1.54**	**325**	*e*Pn	**Pb**	**12 44 21.7**	**-0.1**
GULT	**Gulveren**	**1.78**	**40**	*e*PN	**Pn**	**12 44 24.6**	**+0.4**
GULT	**Gulveren**	**1.78**	**40**	*e*Pn	**Pn**	**12 44 24.6**	**+0.4**
SILT	**Sile**	**2.13**	**13**	*e*PN	**Pn**	**12 44 30.0**	**+1.2**
SILT	**Sile**	**2.13**	**13**	*e*Pn	**Pn**	**12 44 30.0**	**+1.2**

*IDC **24** 12:45:54.0±3.0, 32°.65S×139°.14E, h0km, mb3.7/1, mb1 4.0/6, mb1mx3.8/36, mbtmp3.9/6, ML4.0/5, MS2.5/1, Ms1 2.5/1, ms1mx2.3/22, Error ellipse: s-maj=52.9km s-min=27.8km az=19.0*

ISC 24 12:45:56.2±1.9, 32°.6S±0°.1×139°.22E±0°.09, h10km, n6, σ1ŝ42/10, Near coast of South Australia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**2.12**	**72**	Pn	**Pn**	**12 46 32.0**	**+0.2**
	38nm,0.3s,baz=233,slow=15,SNR=172						
STKA				Sn	**Sn**	**12 46 59.2**	**+0.9**
	23nm,0.3s,baz=266,slow=13,SNR=4.4						
STKA				LR	LR	12 47 33.0	
	comp=Z,119nm,20.6s,baz=147,slow=44						
ASAR	**Alice Springs**	**10.03**	**331**	Pn	**Pn**	**12 48 22.0**	**+1.5**
	0.9nm,0.3s,baz=149,slow=12,SNR=74						
ASAR				Sn	**Sn**	**12 50 15.3**	**+2.2**
	2.1nm,0.3s,baz=155,slow=22,SNR=13						
WRA	**Warramunga Arr**	**13.31**	**340**	Pn	**Pn**	**12 49 04.3**	**-1.0**
	0.9nm,0.3s,baz=162,slow=12,SNR=47						
WRA				Sn	**Sn**	**12 51 32.9**	**-0.6**
	0.5nm,0.3s,baz=164,slow=24,SNR=4.7						
CTA	**Charters Tower**	**13.93**	**29**	Pn	**Pn**	**12 49 14.1**	**+0.3**
	0.3nm,0.3s,baz=206,slow=16,SNR=5.0						
CTA				Sn	**Sn**	**12 51 47.2**	**-1.3**
	0.2nm,0.3s,baz=251,slow=17,SNR=3.2						
FITZ	**Fitzroy Crossi**	**18.90**	**316**	P	**P**	**12 50 15.4**	**-1.6**
	0.2nm,0.3s,baz=148,slow=8.4,SNR=4.4						
SONM	**Songino Array**	**85.28**	**338**	P	**P**	**12 58 32.8**	**-0.3**
	0.2nm,0.4s,baz=142,slow=7.3,SNR=3.0						

JMA 24 12:51:05.7±0.1, 35°.86N×140°.47E, h34km±1km, M2.7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.35**	**116**	P	Pb	12 51 14.0	-0.2
CHOJ				S	Sn	12 51 19.8	-0.1
JYT	**Yasato**	**0.43**	**329**	P	Pb	12 51 15.2	-0.1
JYT				S	Sb	12 51 21.8	-0.1
JHO	**Hitachi**	**0.75**	**6**	P	Pn	12 51 19.4	-0.6
JHO				S	Sn	12 51 29.1	-1.1
MAT	**Matsushiro**	**1.95**	**291**	P	Pn	12 51 36.9	+0.4
MAT				*e*S	Sn	12 52 01.1	+1.3

*BJI **24** 12:51:54.6, 30°.17N×85°.30E, h10km, mb4.3/22, mB4.6/12, Ms4.0/13, Ms7 3.9/13*
*ISCJB **24** 12:51:57.6±0.3, 30°.03N±0°.05×85°.44E±0°.04, h33km, mb4.2/32, MS3.3/9, Error ellipse: s-maj=7.6km s-min=3.8km az=31.0*
*NEIC **24** 12:52:00.1±0.9, 30°.04N×85°.39E, h41km±8km, mb4.5/14, Error ellipse: s-maj=9.1km s-min=5.1km az=220.0*
*IDC **24** 12:52:01.0±4.5, 30°.06N×85°.51E, h51km±39km, mb3.8/20, mb1 4.0/22, mb1mx3.8/60, mbtmp4. 1/22, ML4.1/2, MS3.3/10, Ms1 3.3/10, ms1mx3.1/34, Error ellipse: s-maj=20.5km s-min=13.2km az=34.0*

ISC 24 12:51:59.3±0.5, 30°.05N±0°.08×85°.45E±0°.05, h35km, n75, σ1ŝ39/80, mb4.2/32, MS3.5/9, Xizang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LSA	**Lhasa**	**4.96**	**93**	Pn	Pn	12 53 13.9	+2.2
LSA	**Lhasa**	**4.96**	**93**	*e*Pn	Pn	12 53 14.3	+2.6
LSA				*e*Sn	Sn	12 54 15.6	+7.6
SHL	**Shillong**	**7.24**	**127**	*e*P	**Pn**	**12 53 41.0**	**-1.7**
SHL				*ex*	x	12 55 44.0	
KSH	**Kashi**	**12.24**	**323**	*e*P	**Pn**	**12 54 49.8**	**-1.3**
KSH				*ep*P	P	12 54 55.4	-7.7
KSH				*e*PP	**PnPn**	**12 54 59.8**	**+0.8**
KSH				S	**Sn**	**12 57 01.8**	**-4.5**
KSH				SS	**SnSn**	**12 57 14.5**	**-4.1**
KSH				pmax	pmax		
	comp=Z,110nm,5.9s						
KSH				LR	LR		
	comp=N,210nm,11.4s						
KSH				LR	LR		
	comp=E,300nm,8.1s						
KSH				LR	LR		
	comp=Z,340nm,11.4s						
WMQ	**Urumqi**	**13.86**	**7**	*e*P	**Pn**	**12 55 14.4**	**+1.2**
WMQ				pmax	pmax		
	comp=Z,6.0nm,1.2s						
WMQ				pmax	pmax		
	comp=Z,77nm,4.8s						
KBL	**Kabul**	**14.58**	**292**	*e*Pn	**Pn**	**12 55 22.1**	**-1.1**
KBL				*e*Sn	**Sn**	**12 58 06.5**	**+2.7**
GTA	**Gaotai**	**15.04**	**48**	P	**P**	**12 55 33.6**	**-0.6**
GTA				pP	pP	12 55 36.9	-6.4
GTA				sP	sP	12 55 40.6	-7.2
GTA				pmax	pmax		
	comp=Z,5.0nm,0.9s						
TKM2	**Tokmak 2**	**15.08**	**331**	*e*Pn	**Pn**	**12 55 29.4**	**-0.5**
	19nm,1.6s						
TKM2				*e*Sn	**Sn**	**12 58 17.1**	**+1.4**
AAK	**Ala-Archa**	**15.33**	**328**	P	**P**	**12 55 38.6**	**+1.1**
	0.5nm,0.3s,baz=138,slow=13,SNR=25						
AAK				LR	LR	13 01 32.8	
	comp=Z,62nm,21.1s,baz=105,slow=37						
EKS2	**Erkin-Say**	**15.69**	**326**	*e*Pn	**P**	**12 55 38.8**	**-2.6**
	110nm,1.8s						
CD2	**Chengdu**	**15.81**	**82**	P	**Pn**	**12 55 38.0**	**-1.2**
CD2				PP	**pP**	**12 55 52.1**	**+0.2**
CD2				S	**Sn**	**12 58 31.9**	**-1.5**
CD2				SS	**S**	**12 58 51.0**	**+4.0**
CD2				pmax	pmax		
	comp=Z,70nm,3.5s						
CD2				LR	LR		
	comp=E,860nm,10.8s						
CD2				LR	LR		
	comp=Z,900nm,9.6s						
KMI	**Kunming**	**16.09**	**104**	P	**P**	**12 55 45.0**	**-1.1**
KMI				pP	pP	12 55 50.4	-4.8
KMI				sP	sP	12 55 52.9	-6.7
KMI				S	**Sn**	**12 58 39.8**	**-0.7**
KMI				pmax	pmax		
	comp=Z,27nm,0.8s						
KMI				pmax	pmax		
	comp=Z,50nm,3.1s						
KMI				LR	LR		
	comp=N,430nm,17.4s						
KMI				LR	LR		
	comp=E,260nm,18.6s						
KMI				LR	LR		
	comp=Z,360nm,17.8s						
LZH	**Lanzhou**	**16.54**	**64**	*e*P	**P**	**12 55 50.6**	**-0.3**
LZH				pP	pP	12 55 55.8	-4.3
LZH				sP	sP	12 55 58.8	-5.7
LZH				pmax	pmax		
	comp=Z,10.0nm,1.0s						
CHTO	**Chiang Mai**	**16.60**	**129**	*e*Pn	**P**	**12 55 50.6**	**-0.9**
	37nm,1.6s						
CMAR	**Chiang Mai Arr**	**16.85**	**130**	P	**P**	**12 55 54.0**	**-0.3**
	0.5nm,0.3s,baz=310,slow=11,SNR=35						
CMAR				LR	LR	13 03 39.6	
	comp=Z,151nm,19.4s,baz=334,slow=42						
MK01	**Makanchi Array**	**16.87**	**353**	*e*Pn	**P**	**12 55 52.9**	**-1.5**
CM01	**Chiang Mai Arr**	**16.89**	**130**	*e*Pn	**P**	**12 55 53.9**	**-0.8**
MK31	**Makanchi Array**	**16.90**	**353**	*e*Pn	**P**	**12 55 53.9**	**-0.8**
MK32	**Makanchi Array**	**16.90**	**353**	*e*Pn	**P**	**12 55 52.4**	**-2.3**
MKAR	**Makanchi Array**	**16.90**	**353**	P	**P**	**12 55 52.4**	**-2.3**
	0.2nm,0.3s,baz=168,slow=12,SNR=43						
MKAR	**Makanchi Array**	**16.90**	**353**	*e*Pn	**P**	**12 55 53.9**	**-0.8**
MAKZ	**Makanchi**	**16.95**	**352**	*e*Pn	**P**	**12 55 53.8**	**-1.4**
	4.6nm,1.0s						
GYA	**Guiyang**	**19.02**	**96**	*e*P	**Pn**	**12 56 20.8**	**+1.5**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
XAN	**Xi'an**	**20.27**	**73**	P	**P**	**12 56 31.1**	**-0.8**
XAN				pmax	pmax		
	comp=Z,12nm,1.2s						
ENH	**Enshi**	**20.78**	**83**	*e*P	Pn	12 56 38.1	-1.8
	19nm,1.0s						
KURBB	**Kurchatov Arra**	**21.20**	**348**	P	**P**	**12 56 41.5**	**-0.1**
	7.7nm,0.8s,baz=164,slow=10,SNR=36						
KURBB				PcP	**PcP**	**13 00 46.3**	**+0.3**
	0.4nm,0.7s,baz=167,slow=1.6,SNR=4.4						
KURK	**Kurchatov**	**21.27**	**348**	*e*P	**P**	**12 56 42.5**	**+0.1**
KURK				*e*S	Sn	13 00 46.3	+1.4
PALK	**Pallekele**	**23.09**	**192**	LR	LR	13 05 28.2	
	comp=Z,56nm,21.1s,baz=296,slow=35						
HHC	**Hu-ho-hao-te**	**23.76**	**56**	*e*P	**P**	**12 57 08.3**	**-0.2**
HHC				pmax	pmax		
	comp=Z,24nm,0.7s						
HHC				pmax	pmax		
	comp=Z,73nm,4.4s						
ZAA0	**Zalesovo Array**	**23.89**	**359**	*e*P	**P**	**12 57 09.8**	**+0.4**
ZALV	**Zalesovo Beam**	**23.89**	**359**	P	**P**	**12 57 08.9**	**-0.5**
	1.3nm,0.3s,baz=181,slow=8.9,SNR=9.9						
ZALV				PcP	**PcP**	**13 00 50.0**	**-1.4**
	0.4nm,0.3s,baz=187,slow=3.8,SNR=3.7						
ZALV				LR	LR	13 06 59.9	
	comp=Z,21nm,21.4s,baz=70,slow=38						
ZAA1	**Zalesovo Array**	**23.89**	**359**	*e*P	**P**	**12 57 08.9**	**-0.5**
GEYT	**Alibeck**	**23.93**	**296**	P	**P**	**12 57 11.8**	**+1.7**
	2.1nm,0.4s,baz=132,slow=11,SNR=4.9						
SONA0	**Songino Array**	**23.97**	**36**	*e*P	**P**	**12 57 10.8**	**+0.4**
	11nm,1.6s						
SONM	**Songino Array**	**23.97**	**36**	P	**P**	**12 57 10.8**	**+0.4**
	2.0nm,0.6s,baz=222,slow=10,SNR=18						
SONA1	**Songino Array**	**23.98**	**36**	*e*P	**P**	**12 57 11.3**	**+0.7**
ULN	**Ulaanbaatar**	**24.33**	**37**	*e*P	**P**	**12 57 14.3**	**+0.5**
	8.0nm,1.1s						
QIZ	**Qiongzhong**	**24.70**	**111**	P	**P**	**12 57 17.1**	**-0.1**
QIZ				S	**S**	**13 01 39.8**	**+3.0**
QIZ				LR	LR		
	comp=Z,180nm,17.4s						
BVAR	**Borovoye Array**	**25.47**	**339**	P	**P**	**12 57 24.9**	**+1.0**
	0.7nm,0.6s,baz=148,slow=8.7,SNR=6.8						
ABKAR	**Akbulak array**	**27.24**	**322**	*e*P	**P**	**12 57 42.5**	**+2.6**
AKTO	**Aktyubinsk**	**28.94**	**322**	P	P	12 58 00.6	+5.5
	1.2nm,0.6s,baz=136,slow=11,SNR=3.9						
AKTO				LR	LR	13 09 32.1	
	comp=Z,36nm,21.2s,baz=128,slow=36						
ARU	**Arti**	**32.45**	**332**	LR	LR	13 12 47.4	
	comp=Z,52nm,18.1s,baz=148,slow=38						
CN2	**Changchun**	**34.45**	**55**	*e*P	**P**	**12 58 44.5**	**+1.0**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.6s						
KSRS	**Korea Array**	**35.84**	**67**	P	**P**	**12 58 54.1**	**-1.4**
	1.8nm,0.8s,baz=263,slow=6.9,SNR=6.9						
KBZ	**Khabaz**	**36.27**	**304**	LR	LR	13 16 05.9	
	comp=Z,82nm,19.6s,baz=108,slow=40						
NRIK	**Noril'sk**	**39.35**	**1**	P	**P**	**12 59 25.4**	**+0.6**
	11nm,0.9s,baz=164,slow=6.7,SNR=9.1						
KLR	**Kul'dur**	**39.74**	**48**	P	**P**	**12 59 28.2**	**-0.2**
	2.5nm,0.7s,baz=279,slow=9.9,SNR=10						
AKASG	**Malin Array Be**	**46.29**	**313**	P	**P**	**13 00 21.1**	**-0.1**
	3.4nm,0.6s,baz=80,slow=7.3,SNR=16						
AKASG				LR	LR	13 22 40.8	
	comp=Z,45nm,18.0s,baz=95,slow=40						
AKBB	**Malin Array Si**	**46.29**	**313**	*e*P	**P**	**13 00 21.2**	**-0.1**
	21nm,1.4s						
KIEV	**Kiev**	**46.30**	**313**	*e*P	**P**	**13 00 21.5**	**+0.1**
	4.9nm,0.7s						
MLR	**Muntele Rosu**	**48.42**	**306**	*e*P	**P**	**13 00 38.8**	**+0.7**
	42nm,2.0s						
FIA0	**FINESS Array S**	**49.52**	**327**	*e*P	**P**	**13 00 45.6**	**-0.5**
FINES	**FINESS Array B**	**49.52**	**327**	P	**P**	**13 00 45.6**	**-0.5**
	2.4nm,0.6s,baz=103,slow=8.2,SNR=5.5						
ARA0	**ARCESS Array S**	**51.75**	**337**	*e*P	**P**	**13 01 04.0**	**+1.1**
ARCES	**ARCESS Array B**	**51.75**	**337**	P	**P**	**13 01 04.0**	**+1.1**
	4.1nm,0.8s,baz=92,slow=7.3,SNR=10						
SEY	**Seymchan**	**53.24**	**32**	P	**P**	**13 01 14.1**	**+0.1**
	1.4nm,0.8s,baz=330,slow=11,SNR=4.8						
GERES	**GERESS Array B**	**56.40**	**311**	P	**P**	**13 01 38.1**	**+0.9**
	0.5nm,0.5s,baz=64,slow=9.3,SNR=3.6						
GERES				LR	LR	13 29 25.9	
	comp=Z,42nm,19.4s,baz=17,slow=40						
NB200	**NORSAR Array S**	**56.64**	**326**	*e*P	**P**	**13 01 37.8**	**-0.9**
NOA	**NORSAR Array B**	**56.64**	**326**	P	**P**	**13 01 37.8**	**-0.9**
	1.5nm,0.7s,baz=76,slow=7.8,SNR=2.7						
NOA				LR	LR	13 28 28.2	
	comp=Z,51nm,18.4s,baz=100,slow=39						
BILL	**Bilibino**	**59.09**	**26**	*e*P	**P**	**13 01 56.8**	**+1.2**
	3.8nm,1.0s						
WRA	**Warramunga Arr**	**68.44**	**130**	P	**P**	**13 02 58.0**	**+0.1**
	4.1nm,0.8s,baz=324,slow=6.4,SNR=25						
WR1	**Warramunga Arr**	**68.44**	**130**	*e*P	**P**	**13 02 58.0**	**+0.1**
	20nm,1.4s						
SUMG	**Summit**	**70.77**	**345**	*e*P	**P**	**13 03 13.0**	**+1.0**
	15nm,1.2s						
ASAR	**Alice Springs**	**70.83**	**133**	P	**P**	**13 03 12.2**	**-0.3**
	2.2nm,0.8s,baz=322,slow=6.1,SNR=11						
AS01	**Alice Springs**	**70.86**	**133**	*e*P	**P**	**13 03 11.8**	**-1.0**
ESDC	**Sonseca Array**	**71.12**	**305**	P	**P**	**13 03 14.2**	**-0.1**
	0.4nm,0.5s,baz=51,slow=7.6,SNR=5.6						
ILAR	**Eielson Array**	**77.11**	**20**	P	**P**	**13 03 48.5**	**-0.2**
	0.7nm,0.9s,baz=296,slow=5.2,SNR=5.7						
TOA0	**Torodi Ar. Sit**	**78.20**	**278**	*e*P	**P**	**13 03 55.6**	**-0.1**
TOA1	**Torodi Ar. Sit**	**78.20**	**278**	*e*P	**P**	**13 03 55.5**	**-0.1**
	9.6nm,1.5s						
TORD	**Torodi Ar. Bea**	**78.20**	**278**	P	**P**	**13 03 55.5**	**-0.1**
	0.9nm,0.7s,baz=54,slow=5.2,SNR=10						
YKA	**Yellowknife Ar**	**86.38**	**9**	P	**P**	**13 04 37.2**	**-0.3**
	1.9nm,0.9s,baz=339,slow=4.6,SNR=21						
YKB5	**Yellowknife Ar**	**86.38**	**9**	*e*P	**P**	**13 04 37.2**	**-0.3**
TXAR	**Lajitas Array**	**120.31**	**9**	PKP	**PKPdf**	**13 10 47.0**	**-0.2**
	0.5nm,0.6s,baz=343,slow=0.9,SNR=6.4						
CPUP	**Villa Florida**	**147.08**	**267**	PKPbc	**PKPab**	**13 11 37.5**	**-3.0**
	0.6nm,0.3s,baz=71,slow=5.0,SNR=3.5						
LPAZ	**La Paz**	**152.20**	**294**	PKPbc	**PKPbc**	**13 11 52.8**	**+0.2**
	1.2nm,0.9s,baz=338,slow=4.7,SNR=4.4						

*ISCJB **24** 12:59:00.4±0.5, 39°.09N±0°.03×29°.01E±0°.04, h6km±8km, Error ellipse: s-maj=5.7km s-min=4.7km az=141.5*
*CSEM **24** 12:59:00.5±0.1, 39°.10N×29°.00E, h7km±1km, ML2.6, Error ellipse: s-maj=3.3km s-min=2.6km az=122.0*
*ISK **24** 12:59:00.1, 39°.08N×29°.08E, h9km, MD2.4*
*DDA **24** 12:59:00.5, 39°.10N×29°.01E, h7km, Ml2.6*

ISC 24 12:59:00.1±0.9, 39°.09N±0°.03×29°.03E±0°.03, h15km±8km, n23, σ0ŝ21/35, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**259**	P	**Pg**	**12 59 05.6**	**0.0**
DEMI				S	**Sg**	**12 59 09.0**	**-0.2**
DEMI	**Demirci**	**0.24**	**259**	*i* P	**Pg**	**12 59 05.5**	**0.0**
DEMI				*i* S	**Sg**	**12 59 09.0**	**-0.2**
GDZ	**Gediz**	**0.35**	**90**	P	**Pb**	**12 59 08.1**	**0.0**
GDZ				S	**Sb**	**12 59 13.5**	**-0.1**
GDZ	**Gediz**	**0.35**	**90**	*i* P	**Pb**	**12 59 08.1**	**0.0**
GDZ				*i* S	**Sb**	**12 59 13.5**	**-0.1**
TVSB	**Tavsanli**	**0.49**	**43**	PG	**Pb**	**12 59 10.3**	**-0.2**
TVSB				SG	**Sg**	**12 59 16.6**	**0.0**
TVSB	**Tavsanli**	**0.49**	**43**	*i* Pg	**Pb**	**12 59 10.3**	**-0.2**
TVSB				*i* Sg	**Sg**	**12 59 16.6**	**0.0**
KULA	**Kula-Manisa**	**0.64**	**207**	*e*PG	**Pb**	**12 59 13.0**	**0.0**
KULA	**Kula-Manisa**	**0.64**	**207**	*e*Pg	**Pb**	**12 59 13.0**	**0.0**
MANT	**Manisa**	**0.70**	**212**	P	**Pb**	**12 59 14.4**	**+0.4**
MANT				S	**Sb**	**12 59 23.3**	**-0.3**
MANT	**Manisa**	**0.70**	**212**	*i* P	**Pb**	**12 59 14.4**	**+0.4**
MANT				*i* S	**Sb**	**12 59 23.3**	**-0.3**
KHAL	**Karahalli**	**0.81**	**153**	P	**Pn**	**12 59 17.1**	**+0.2**
KHAL				S	**Sn**	**12 59 28.3**	**-0.4**
KHAL	**Karahalli**	**0.81**	**153**	*i* P	**Pn**	**12 59 17.1**	**+0.2**
KHAL				*i* S	**Sn**	**12 59 28.3**	**-0.4**
KHL	**Karahalli**	**0.86**	**153**	*e*PG	**Pb**	**12 59 16.5**	**-0.2**
KHL				*e*SG	**Sg**	**12 59 28.3**	**+0.2**
KHL	**Karahalli**	**0.86**	**153**	*e*Pg	**Pb**	**12 59 16.5**	**-0.2**
KHL				*e*Sg	**Sg**	**12 59 28.3**	**+0.2**
IGD	**Bursa**	**1.18**	**7**	*i* P	**Pb**	**12 59 22.2**	**+0.1**
CAVI	**Cavuskoy**	**1.28**	**29**	*e*PN	**Pg**	**12 59 24.8**	**+0.1**
CAVI	**Cavuskoy**	**1.28**	**29**	*e*Pn	**Pg**	**12 59 24.8**	**+0.1**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*PN	**Pg**	**12 59 24.9**	**+0.1**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*Pn	**Pg**	**12 59 24.9**	**+0.1**
IZI	**Iznik**	**1.29**	**15**	*e*PN	**Pg**	**12 59 25.3**	**+0.3**
IZI	**Iznik**	**1.29**	**15**	*e*Pn	**Pg**	**12 59 25.3**	**+0.3**
ARMT	**Armutlu**	**1.48**	**355**	*e*PN	**Pb**	**12 59 27.3**	**+0.1**
ARMT	**Armutlu**	**1.48**	**355**	*e*Pn	**Pb**	**12 59 27.3**	**+0.1**

IDC 24 13:02:21.8±22.0, 17°.98S×178°.16W, h613km±199km, mb3.2/4, mb1 3.3/4, mb1mx2.8/27, mbtmp4.3/4, Error ellipse: s-maj=194.5km s-min=82.4km az=94.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	**Charters Tower**	**33.67**	**261**	P	P	13 08 14.1	0.0
	1.5nm,0.4s,baz=76,slow=11,SNR=4.5						
STKA	**Stephens Creek**	**38.80**	**241**	P	P	13 08 55.9	-0.1
	1.7nm,0.6s,baz=88,slow=10,SNR=4.4						
WRA	**Warramunga Arr**	**44.85**	**260**	P	P	13 09 43.4	-0.1
	1.5nm,0.4s,baz=94,slow=7.2,SNR=54						
WRA				PcP	PcP	13 11 11.3	-0.5
	0.2nm,0.3s,baz=91,slow=3.5,SNR=5.0						
ASAR	**Alice Springs**	**45.00**	**254**	P	P	13 09 44.7	0.0
	3.6nm,0.4s,baz=89,slow=8.1,SNR=81						
ASAR				PcP	PcP	13 11 12.0	-0.3
	0.7nm,0.6s,baz=106,slow=3.9,SNR=8.3						
BRTR	**Keskin Array B**	**145.01**	**315**	PKPbc	PKPdf	13 20 51.3	+0.4
	0.7nm,0.7s,baz=48,slow=2.1,SNR=3.7						

*NIED **24** 13:03:00, 39°.70N×142°.40E, h50km, Mw3.6 Best double couple: M0 2.61000×10^14 NP1:φ0=179.00000°, δ22.00000°, λ62.00000°. NP2:φ0=29.00000°, δ71.00000°, λ101.00000°.*
*ISCJB **24** 13:03:17.6±1.0, 39°.72N±0°.04×142°.4E±0°.1, h50km±7km, mb3.5/5, Error ellipse: s-maj=13.5km s-min=6.6km az=3.3*
*JMA **24** 13:03:18.2, 39°.75N×142°.37E, h41km±1km, M3.5*
*IDC **24** 13:03:20.2±3.1, 39°.75N×142°.50E, h67km±28km, mb3.3/5, mb1 3.3/7, mb1mx3.1/40, mbtmp3.5/7, ML2.9/2, Error ellipse: s-maj=43.8km s-min=19.5km az=75.0*

ISC 24 13:03:18.4±1.6, 39°.73N±0°.04×142°.28E±0°.08, h32km±11km, n24, σ1ŝ53/27, mb3.6/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**0.38**	**303**	P	**Pn**	**13 03 28.1**	**+0.4**
JTH				S	**Sn**	**13 03 35.1**	**+1.2**
MIYJ	**Miyakonagasawa**	**0.39**	**247**	P	**Pn**	**13 03 28.3**	**+0.5**
MIYJ				S	**Sn**	**13 03 35.5**	**+1.5**
JKZ	**Kuzumaki**	**0.77**	**289**	P	**Pb**	**13 03 33.7**	**+0.2**
JKZ				S	**Sn**	**13 03 44.8**	**+1.1**
OFUJ	**Ofunato**	**0.80**	**216**	P	**Pb**	**13 03 33.8**	**-0.1**
OFUJ				S	**Sn**	**13 03 45.0**	**+0.7**
JOM	**Ohasama**	**0.80**

SIGR	SIGRI	1.33	21	P	Pn	13 04 40.7	+0.1
DID	Didima	1.66	255	P	Pb	13 04 47.1	+0.4
DID	Didima	1.66	255	P	Pb	13 04 47.1	+0.4

*ISK **24** 13:04:45.8, 39.′10N×29.′02E, h2km, ML2.9*
*DDA **24** 13:04:46.0, 39.′11N×29.′06E, h7km, Ml3.1*
*CSEM **24** 13:04:46.9±0.1, 39.′11N×29.′04E, h2km, ML3.1, Error ellipse: s-maj=2.7km s-min=2.4km az=140.0*
ISC 24 13:04:46.7±1.0, 39.′11N±0.′02×29.′05E±0.′02, h6km±9km, n65, σ0:63/88, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.27	256	P	Pg	13 04 52.1	+0.2
DEMI				S	Sg	13 04 56.1	+0.7
DEMI	Demirci	0.27	256	*i* P	Pg	13 04 52.1	+0.2
DEMI				*i* S	Sg	13 04 56.1	+0.7
GDZ	Gediz	0.34	93	P	Pg	13 04 53.2	-0.1
GDZ				S	Sg	13 04 58.2	+0.3
GDZ	Gediz	0.34	93	*i* P	Pg	13 04 53.2	-0.1
GDZ				*i* S	Sg	13 04 58.1	+0.3
TVSB	Tavsanli	0.47	43	PG	Pg	13 04 55.5	-0.3
TVSB	Tavsanli	0.47	43	*i* Pg	Pg	13 04 55.5	-0.3
DST	Dursunbey	0.59	326	PG	Pg	13 04 58.1	-0.1
DST	Dursunbey	0.59	326	*i* Pg	Pg	13 04 58.1	-0.1
DURS	Dursunbey	0.66	318	P	Pb	13 04 59.5	-1.2
DURS	Dursunbey	0.66	318	*i* P	Pb	13 04 59.5	-1.2
KULA	Kula-Manisa	0.67	207	PG	Pg	13 04 58.9	-0.6
KULA	Kula-Manisa	0.67	207	*i* Pg	Pg	13 04 58.9	-0.6
MANT	Manisa	0.73	212	P	Pg	13 05 00.5	-0.1
MANT				S	Sg	13 05 10.5	+0.4
MANT	Manisa	0.73	212	*i* P	Pg	13 05 00.5	-0.1
MANT				*i* S	Sg	13 05 10.5	+0.4
KHAL	Karahalli	0.82	155	P	Pb	13 05 02.7	-0.7
KHAL				S	Sg	13 05 13.3	+0.3
KHAL	Karahalli	0.82	155	*i* P	Pb	13 05 02.7	-0.7
KHAL				*i* S	Sg	13 05 13.3	+0.3
ORLT	Orhaneli	0.94	353	*e*PG	Pb	13 05 04.7	-0.8
ORLT	Orhaneli	0.94	353	*e*Pg	Pb	13 05 04.7	-0.8
AKHS	Akhisar	0.99	257	P	Pb	13 05 05.8	-0.4
AKHS				S	Sb	13 05 18.8	-0.7
AKHS	Akhisar	0.99	257	*i* P	Pb	13 05 05.8	-0.4
AKHS				*i* S	Sb	13 05 18.8	-0.7
AKS	Akhisar	0.99	257	*e*PG	Pg	13 05 04.9	-0.7
AKS	Akhisar	0.99	257	*e*Pg	Pg	13 05 04.9	-0.7
BALB	Balikesir	1.05	301	*e*PG	Pn	13 05 07.5	-0.4
BALB	Balikesir	1.05	301	*e*Pg	Pn	13 05 07.5	-0.4
IGD	Bursa	1.16	6	*i* P	Pg	13 05 07.4	-1.6
IGD				*i* S	Sb	13 05 24.4	0.0
CAVI	Cavuskoy	1.25	29	*e*PN	Pn	13 05 10.9	+0.1
CAVI	Cavuskoy	1.25	29	*e*Pn	Pn	13 05 10.9	+0.1
MDNY	Mudanya-Bursa	1.27	354	*e*PN	Pn	13 05 11.3	+0.4
MDNY	Mudanya-Bursa	1.27	354	*e*Pn	Pn	13 05 11.3	+0.4
IZI	Iznik	1.27	15	*e*PN	Pn	13 05 11.3	+0.3
IZI	Iznik	1.27	15	*e*Pn	Pn	13 05 11.3	+0.3
BALY	Balya	1.27	300	P	Pb	13 05 10.7	-0.4
BALY				S	Sn	13 05 29.1	+0.7
BALY	Balya	1.27	300	*i* P	Pb	13 05 10.7	-0.4
BALY				*i* S	Sn	13 05 29.1	+0.7
KCTX	Karacabey (Bur	1.27	335	*e*PN	Pn	13 05 11.3	+0.3
KCTX				*e*SN	Sn	13 05 28.9	+0.5
KCTX	Karacabey (Bur	1.27	335	*e*Pn	Pn	13 05 11.3	+0.3
KCTX				*e*Sn	Sn	13 05 28.9	+0.5
GEMT	Gemlik	1.33	5	*e*PN	Pb	13 05 12.6	+0.6
GEMT	Gemlik	1.33	5	*e*Pn	Pb	13 05 12.6	+0.6
BORA	Eskisehir	1.33	54	P	Pg	13 05 11.1	-1.2
BORA				S	Sb	13 05 29.3	-0.2
BORA	Eskisehir	1.33	54	*i* P	Pg	13 05 11.1	-1.2
BORA				*i* S	Sb	13 05 29.3	-0.2
GONE	Gonen-Balikesi	1.41	312	*e*PN	Pb	13 05 13.8	+0.4
GONE	Gonen-Balikesi	1.41	312	*e*Pn	Pb	13 05 13.8	+0.4
ADVT	Abdulvahap	1.43	22	*e*PN	Pg	13 05 13.9	-0.1
ADVT	Abdulvahap	1.43	22	*e*Pn	Pg	13 05 13.9	-0.1
ARMT	Armutlu	1.46	354	*e*PN	Pg	13 05 14.3	-0.4
ARMT				*e*SN	Sn	13 05 34.4	+1.3
ARMT	Armutlu	1.46	354	*e*Pn	Pg	13 05 14.3	-0.4
ARMT				*e*Sn	Sn	13 05 34.4	+1.3
GPA	Golpazari	1.53	39	*e*PN	Pg	13 05 16.0	0.0
GPA	Golpazari	1.53	39	*e*Pn	Pg	13 05 16.0	0.0
BOLV	Bolvadin	1.54	104	P	Pg	13 05 16.2	+0.1
BOLV				S	Sb	13 05 35.4	0.0
BOLV	Bolvadin	1.54	104	*i* P	Pg	13 05 16.2	+0.1
BOLV				*i* S	Sb	13 05 35.4	0.0
EDC	Edincik	1.54	324	*e*PN	Pg	13 05 15.3	-0.8
EDC	Edincik	1.54	324	*e*Pn	Pg	13 05 15.3	-0.8
AYDN	Tasoluk	1.71	213	P	Pg	13 05 18.8	-0.7
AYDN				S	Sg	13 05 42.9	+1.2
AYDN	Tasoluk	1.71	213	*i* P	Pg	13 05 18.8	-0.7
AYDN				*i* S	Sg	13 05 42.9	+1.2
GULT	Gulveren	1.74	40	*e*PN	Pb	13 05 19.0	-0.1
GULT	Gulveren	1.74	40	*e*Pn	Pb	13 05 19.0	-0.1
HRT	Hereke	1.78	15	*e*PN	Pb	13 05 19.0	-0.7
HRT	Hereke	1.78	15	*e*Pn	Pb	13 05 19.0	-0.7
SVRH	Sivrihisar-ESK	1.95	79	*e*PN	Pb	13 05 22.1	-0.6
SVRH	Sivrihisar-ESK	1.95	79	*e*Pn	Pb	13 05 22.1	-0.6
ISK	Istanbul-Kandi	1.95	0	*e*PN	Pn	13 05 20.4	0.0
ISK	Istanbul-Kandi	1.95	0	*e*Pn	Pn	13 05 20.4	0.0
SILT	Sile	2.09	12	*e*PN	Pb	13 05 24.2	-0.9
SILT	Sile	2.09	12	*e*Pn	Pb	13 05 24.2	-0.8
MDUB	Mudurnu	2.15	50	*e*PN	Pb	13 05 25.0	-1.0
MDUB	Mudurnu	2.15	50	*e*Pn	Pb	13 05 25.0	-1.0

*ISCJB **24** 13:08:26.6±0.4, 39.′08N±0.′03×29.′02E±0.′04, h5km±6km, Error ellipse: s-maj=5.2km s-min=4.1km az=136.5*
*DDA **24** 13:08:26.9, 39.′08N×29.′02E, h11km, Ml2.8*
*ISK **24** 13:08:26.2, 39.′09N×29.′02E, h7km, ML2.5*
*CSEM **24** 13:08:26.9±0.1, 39.′09N×29.′02E, h8km, ML2.8, Error ellipse: s-maj=1.9km s-min=1.5km az=110.0*
ISC 24 13:08:26.9±0.9, 39.′09N±0.′02×29.′01E±0.′02, h13km±8km, n33, σ0:29/46, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.24	258	P	Pg	13 08 32.3	+0.2
DEMI				S	Sg	13 08 35.6	+0.1
DEMI	Demirci	0.24	258	*i* P	Pg	13 08 32.3	+0.2
DEMI				*i* S	Sg	13 08 35.6	+0.1
GDZ	Gediz	0.36	90	P	Pg	13 08 34.2	-0.2
GDZ				S	Sg	13 08 39.4	0.0
GDZ	Gediz	0.36	90	*i* P	Pg	13 08 34.1	-0.2
GDZ				*i* S	Sg	13 08 39.4	0.0
TVSB	Tavsanli	0.50	44	PG	Pg	13 08 36.3	-0.5
TVSB				*e*SG	Sg	13 08 43.5	0.0
TVSB	Tavsanli	0.50	44	*i* Pg	Pg	13 08 36.3	-0.5
TVSB				*e*Sg	Sg	13 08 43.5	0.0
KULA	Kula-Manisa	0.64	206	*e*PG	Pg	13 08 39.5	+0.1
KULA				*e*SG	Sg	13 08 47.7	-0.2
KULA	Kula-Manisa	0.64	206	*e*Pg	Pg	13 08 39.5	+0.1
KULA				*e*Sg	Sg	13 08 47.7	-0.2
MANT	Manisa	0.70	211	P	Pg	13 08 40.4	-0.1
MANT				S	Sg	13 08 49.7	-0.1
MANT	Manisa	0.70	211	*i* P	Pg	13 08 40.4	-0.1
MANT				*i* S	Sg	13 08 49.7	-0.1
KHAL	Karahalli	0.81	152	P	Pb	13 08 43.0	0.0
KHAL				S	Sg	13 08 53.2	-0.1
KHAL	Karahalli	0.81	152	*i* P	Pb	13 08 43.0	0.0
KHAL				*i* S	Sg	13 08 53.2	-0.1
KHL	Karahalli	0.86	152	*e*PG	Pg	13 08 43.5	-0.2
KHL	Karahalli	0.86	152	*e*Pg	Pg	13 08 43.5	-0.2
ORLT	Orhaneli	0.96	355	*e*PG	Pg	13 08 45.0	-0.4
ORLT	Orhaneli	0.96	355	*e*Pg	Pg	13 08 45.0	-0.4
AKS	Akhisar	0.96	258	*e*PG	Pb	13 08 44.7	-0.7
AKS	Akhisar	0.96	258	*e*Pg	Pb	13 08 44.7	-0.7
BALB	Balikesir	1.03	302	*e*PG	Pn	13 08 47.3	+0.2
BALB	Balikesir	1.03	302	*e*Pg	Pn	13 08 47.3	+0.2
IGD	Bursa	1.18	7	*i* P	Pn	13 08 48.8	-0.4
IGD				*i* S	Sn	13 09 05.8	+0.7
MDNY	Mudanya-Bursa	1.28	356	*e*PN	Pg	13 08 51.5	-0.1
MDNY	Mudanya-Bursa	1.28	356	*e*Pn	Pg	13 08 51.5	-0.1
CAVI	Cavuskoy	1.28	30	*e*PN	Pb	13 08 51.1	+0.2
CAVI	Cavuskoy	1.28	30	*e*Pn	Pb	13 08 51.1	+0.2
IZI	Iznik	1.29	16	*e*PN	Pb	13 08 51.5	+0.3
IZI	Iznik	1.29	16	*e*Pn	Pb	13 08 51.5	+0.3
GONE	Gonen-Balikesi	1.40	313	*e*PN	Pb	13 08 53.0	0.0
GONE	Gonen-Balikesi	1.40	313	*e*Pn	Pb	13 08 53.0	0.0
ARMT	Armutlu	1.48	356	*e*PN	Pb	13 08 54.0	-0.3
ARMT	Armutlu	1.48	356	*e*Pn	Pb	13 08 54.0	-0.3
GULT	Gulveren	1.77	40	*e*PN	Pn	13 08 57.6	+0.2
GULT	Gulveren	1.77	40	*e*Pn	Pn	13 08 57.6	+0.2

*ISCJB **24** 13:09:45.0±1.0, 37.′67N±0.′07×144.′58E±0.′08, h35km, mb3.5/2, Error ellipse: s-maj=10.6km s-min=8.3km az=39.2*
*JMA **24** 13:09:46.3±0.1, 37.′84N×144.′47E, h20km, M3.5*
*IDC **24** 13:09:51.8±8.0, 36.′27N×144.′06E, h0km, mb3.4/2, mb1 3.6/3, mb1mx3.2/28, mbtmp3.3/3, ML2.8/1, Error ellipse: s-maj=171.0km s-min=36.4km az=28.0*
ISC 24 13:09:45.9±1.5, 37.′75N±0.′07×144.′67E±0.′09, h35km, n11, σ1:40/18, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	2.71	300	P	Pn	13 10 27.6	+0.6
OFUJ				*e*S	Sn	13 10 58.2	-0.3
JIO	Ouri	2.72	286	P	Pn	13 10 27.6	+0.6
JIO				*e*S	Sn	13 10 58.1	-0.6
JMK	Ichinoseki	2.97	295	P	Pn	13 10 31.3	+0.8
JMK				*e*S	Sn	13 11 04.4	-0.5
JOM	Ohasama	3.16	304	P	Pn	13 10 34.1	+0.9
JOM				*e*S	Sn	13 11 09.7	+0.1
JFT	Otama	3.45	268	S	Sn	13 11 16.7	-0.1
JANG	Nango	3.60	318	P	Pn	13 10 40.3	+1.2
JRY	Ryogami san	4.94	251	P	Pn	13 10 57.7	+0.1
JRY				*e*S	Sn	13 11 50.5	-3.0
JCH	Churui	4.97	349	P	Pn	13 10 57.9	0.0
JCH				*e*S	Sn	13 11 51.5	-2.6
MJAR	Matsushiro Arr	5.30	259	Pn	Pn	13 11 04.0	+1.3
	0.4nm,0.3s,baz=90,slow=15,SNR=4.5						
MJAR				Sn	Sn	13 12 00.1	-2.4
	1.2nm,0.3s,baz=123,slow=11,SNR=8.9						
WRA	Warramunga Arr	58.20	191	P	P	13 19 36.3	-0.2
	0.6nm,0.8s,baz=9.9,slow=7.4,SNR=3.4						
ASAR	Alice Springs	61.92	191	P	P	13 20 03.3	+1.3
	0.2nm,0.7s,baz=9.3,slow=13,SNR=3.0						

SJA 24 13:19:08.3±0.5, 30.′35S×69.′43W, h9km±2km, ML3.5, MW3.1, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AMOG	MOGNA	1.00	126	*i* P	Pb	13 19 27.8	0.0
AMOG				*i* S	Sb	13 19 41.9	+0.8
AGUA	GUANDACOL	1.19	44	*i* P	Pb	13 19 30.9	-0.2
AGUA				*i* S	Sn	13 19 47.9	+0.4
AUSP	Uspallata	1.86	179	*i* P	Pb	13 19 43.0	+0.3
AUSP				*i* S	Sg	13 20 09.1	+0.8
VCA	Vinchina	1.93	34	*i* P	Pb	13 19 44.1	+0.3
VCA				*i* S	Sg	13 20 09.7	-0.8
VCA				IAML		13 20 14.4	
	comp=Z,417nm,0.3s						
ACAN	Cantantal	2.71	136	*i* P	Pn	13 19 54.4	+2.3
ACAN				*i* S	Sb	13 20 28.9	-1.4

*SJA **24** 13:21:18.4±0.6, 32.′15S×71.′88W, h30km±8km, ML4.4, MW3.7*
*GUC **24** 13:21:23.3±0.4, 32.′08S×71.′39W, h38km±2km, ML3.6*
ISC 24 13:21:19.4±2.5, 32.′19S±0.′05×71.′8W±0.′1, h4km±13km, n14, σ0:38/26, 1C, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ROC1	El Roble	1.01	141	*i* P	Pn	13 21 40.5	-0.2
ROC1				*i* S	Sn	13 21 55.6	+0.1
ROCH	El Roble	1.01	140	*e*P	Pn	13 21 40.9	+0.4
ROCH				*e*S	Sn	13 21 54.8	-0.6
ROCH				IAML		13 21 57.4	
	comp=N,7μm,0.5s						
PEL	Peldehue	1.33	136	*e*P	Pb	13 21 44.9	+0.1
PEL				*e*S	Sg	13 22 01.0	-1.0
PEL				IAML		13 22 04.1	
	comp=E,2μm,0.3s						
RCDM	Rinconada Maip	1.53	148	*e*P	Pg	13 21 49.0	+0.3
RCDM				*e*S	Sg	13 22 08.7	+0.1
CLCH	Cerro Calan	1.59	139	*e*P	Pb	13 21 49.4	0.0
CLCH				*e*S	Sn	13 22 09.1	-0.3
CLCH				IAML		13 22 11.5	
	comp=E,2μm,0.3s						
ANTU	Antumapu	1.68	145	*e*P	Pb	13 21 51.2	+0.3
ANTU				*e*S	Sb	13 22 12.1	-0.3
ANTU				IAML		13 22 17.5	
	comp=E,942nm,0.2s						
AUSP	Uspallata	2.03	92	*i* P	Pn	13 21 54.6	0.0
RTLS	Leoncito	2.15	80	*i* P	Pn	13 21 56.4	+0.2
RTCV	Cerro Valdivia	2.77	84	*i* P	Pn	13 22 04.9	+0.3
RTCV				*i* S	Sn	13 22 39.1	+0.6
RTLL	Cerro Villicun	2.95	74	*i* P	Pn	13 22 07.1	+0.1
RTLL				*i* S	Sn	13 22 43.0	+0.2
AMOG	MOGNA	3.07	67	*i* P	Pn	13 22 08.3	-0.4
AMOG				*i* S	Sn	13 22 46.0	0.0
ACAN	Cantantal	3.90	92	*i* P	Pn	13 22 20.3	+0.3
ACAN				*i* S	Sn	13 23 06.6	+0.4
AGUA	GUANDACOL	3.91	47	*i* P	Pn	13 22 20.2	0.0
AGUA				*i* S	Sn	13 23 06.1	-0.6
VCA	Vinchina	4.63	43	*i* P	Pn	13 22 30.4	+0.2
VCA				*i* S	Sn	13 23 24.1	-0.3
VCA				IAML		13 23 41.1	
	comp=Z,320nm,0.8s						

*DDA **24** 13:25:18.2, 39.′08N×29.′02E, h7km, Ml2.6*
*CSEM **24** 13:25:18.2±0.2, 39.′11N×29.′01E, h8km, ML2.6, Error ellipse: s-maj=4.0km s-min=3.4km az=140.0*
ISC 24 13:25:17.0±1.1, 39.′10N±0.′04×28.′99E±0.′03, h28km±9km, n12, σ1:28/22, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.22	255	P	Pb	13 25 23.4	+0.1
DEMI				S	Sb	13 25 26.8	-0.7
DEMI	Demirci	0.22	255	*i* P	Pb	13 25 23.4	+0.1
DEMI				*i* S	Sb	13 25 26.8	-0.7
GDZ	Gediz	0.38	92	P	Pb	13 25 25.7	+0.2
GDZ				S	Sb	13 25 30.9	-0.4
GDZ	Gediz	0.38	92	*i* P	Pb	13 25 25.7	+0.2
GDZ				*i* S	Sb	13 25 30.9	-0.4
TVSB	Tavsanli	0.51	46	*e*PG	Pb	13 25 22.8	-4.7
TVSB				*e*SG	Sb	13 25 33.5	-1.1
TVSB	Tavsanli	0.51	46	*e*Pg	Pb	13 25 22.8	-4.7
TVSB				*e*Sg	Sb	13 25 33.5	-1.1
KULA	Kula-Manisa	0.64	204	*e*PG	Pb	13 25 26.9	-2.8
KULA				*e*SG	Sb	13 25 39.3	+1.0
KULA	Kula-Manisa	0.64	204	*e*Pg	Pb	13 25 26.9	-2.8
KULA				*e*Sg	Sb	13 25 39.3	+1.0
DURS	Dursunbey	0.64	321	P	Pn	13 25 31.4	+1.1
DURS				S	Sb	13 25 37.8	-0.6
DURS	Dursunbey	0.64	321	*i* P	Pn	13 25 31.4	+1.1
DURS				*i* S	Sb	13 25 37.9	-0.6
MANT	Manisa	0.70	209	P	Pn	13 25 32.0	+0.8
MANT				S	Sb	13 25 41.5	+1.4
MANT	Manisa	0.70	209	*i* P	Pn	13 25 32.0	+0.8
MANT				*i* S	Sb	13 25 41.5	+1.4

SKO 24 13:33:29.2, 40.′41N×20.′92E, h0km, Greece-Albania border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BIA	Bitola	0.68	27	*e*Pg	Pg	13 33 41.5	-0.7
BIA				*i* Sg	Sg	13 33 51.0	-0.1
OHR	Ohrid	0.71	353	*i* Pg	Pg	13 33 41.7	-1.0
OHR				*i* Sg	Sg	13 33 51.4	-0.5

JMA 24 13:40:30.0±0.6, 36.′87N×144.′10E, h0km, M3.7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	2.62	282	P	Pn	13 41 14.2	+0.5
JIO	Ouri	2.70	307	P	Pn	13 41 15.7	+1.1
JFT	Otama	3.07	283	*e*S	Sn	13 41 59.5	+2.2
JMK	Ichinoseki	3.08	313	P	Pn	13 41 21.8	+1.9
JMK				*e*S	Sn	13 41 59.3	+1.8
JOM	Ohasama	3.41	320	P	Pn	13 41 26.1	+1.6
JOM				*e*S	Sn	13 42 06.7	+1.1
JYK	Kaneyama	3.60	306	P	Pn	13 41 29.0	+2.0
JKB	Kayabe	5.54	336	P	Pn	13 41 55.5	+1.8
JCH	Churui	5.76	355	P	Pn	13 41 55.6	-1.2
JCH				*e*S	Sn	13 42 59.5	-4.1
JTKR	Abashiri--Toko	7.09	359	P	Pn	13 42 13.4	-1.6
JTKR				*e*S	Sn	13 43 32.4	-3.9

*ISK **24** 13:57:44.7, 39.′05N×29.′15E, h9km, MD2.6*
*ISCJB **24** 13:57:45.4±0.5, 39.′09N±0.′03×29.′03E±0.′04, h11km±5km, Error ellipse: s-maj=5.5km s-min=4.2km az=32.6*
*DDA **24** 13:57:45.2, 39.′12N×29.′03E, h7km, Ml2.6*
*CSEM **24** 13:57:45.8±0.2, 39.′12N×29.′05E, h8km, ML2.6, Error ellipse: s-maj=3.7km s-min=3.4km az=69.0*
ISC 24 13:57:44.4±1.1, 39.′08N±0.′03×29.′02E±0.′03, h14km±10km, n17, σ0:53/30, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.24	262	P	Pb	13 57 51.2	+0.7
DEMI				S	Sb	13 57 54.7	+0.1
DEMI	Demirci	0.24	262	*i* P	Pb	13 57 51.2	+0.7
DEMI				*i* S	Sb	13 57 54.7	+0.1
GDZ	Gediz	0.36	88	P	Pb	13 57 52.9	+0.3
GDZ				S	Sb	13 57 58.1	-0.1
GDZ	Gediz	0.36	88	*i* P	Pb	13 57 52.9	+0.3
GDZ				*i* S	Sb	13 57 58.1	-0.1
TVSB	Tavsanli	0.51	43	*e*PG	Pg	13 57 54.2	-0.2
TVSB				*e*SG	Sg	13 58 01.2	0.0
TVSB	Tavsanli	0.51	43	*e*Pg	Pg	13 57 54.2	-0.2
TVSB				*e*Sg	Sg	13 58 01.2	0.0
KULA	Kula-Manisa	0.63	207	*e*PG	Pb	13 57 58.0	+0.8
KULA				*e*SG	Sn	13 58 07.5	-1.3
DURS	Dursunbey	0.67	321	P	Pn	13 57 59.3	-0.3
DURS				S	Sb	13 58 07.7	+0.6
DURS	Dursunbey	0.67	321	*i* P	Pn	13 57 59.3	-0.3
DURS				*i* S	Sb	13 58 07.7	+0.6
MANT	Manisa	0.69	212	*i* P	Pg	13 57 57.3	-0.6
MANT				*i* S	Sg	13 58 06.5	-0.5
KHAL	Karahalli	0.80	152	P	Pn	13 58 02.1	+0.8
KHAL				S	Sn	13 58 12.4	-0.6
KHAL	Karahalli	0.80	152	*i* P	Pn	13 58 02.1	+0.8
KHAL				*i* S	Sn	13 58 12.4	-0.6
IGD	Bursa	1.19	7	*i* P	Pb	13 58 06.8	+0.1
IGD				*i* S	Sb	13 58 22.4	+0.4
CAVI	Cavuskoy	1.29	29	*e*PN	Pg	13 58 09.1	-0.1
CAVI	Cavuskoy	1.29	29	*e*Pn	Pg	13 58 09.1	-0.1
ARMT	Armutlu	1.49	355	*e*PN	Pg	13 58 12.9	-0.1
ARMT	Armutlu	1.49	355	*e*Pn	Pg	13 58 12.9	-0.1

*ISCJB **24** 14:03:43.9±0.5, 34.′85N±0.′04×86.′6E±0.′1, h10km, mb3.6/9, MS3.3/14, Error ellipse: s-maj=15.6km s-min=5.8km az=3.5*
*IDC **24** 14:03:43.6±0.9, 34.′67N×86.′55E, h0km, mb3.7/9, mb1 3.8/13, mb1mx3.7/36, mbtmp3.7/13, ML3.0/4, MS3.3/16, Ms1 3.3/16, ms1mx3.2/46, Error ellipse: s-maj=26.4km s-min=18.9km az=48.0*
*BJI **24** 14:03:43.7, 34.′91N×86.′95E, h7km, Ms3.9/3, Ms7 3.6/2*
ISC 24 14:03:46.6±0.8, 34.′88N±0.′08×86.′4E±0.′1, h10km, n33, σ0:66/19, mb3.7/9, MS3.3/14, Xizang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUN	Gumba	6.96	184	*e*P	Pn	14 05 28.6	-0.4
	28nm,0.5s						
GKN	Gorkha	7.02	193	*e*P	Pn	14 05 29.4	-0.2
	20nm,0.5s						
KKN	Kakani	7.13	188	*e*P	Pn	14 05 31.5	+0.3
	22nm,0.5s						
PKIN	Phulchoki	7.33	187	*e*P	Pn	14 05 33.8	-0.2
	19nm,0.5s						
DMN	Daman	7.33	189	*e*P	Pn	14 05 33.8	-0.2
	28nm,0.5s						
PYUN	Piuthan	7.35	204	*e*P	Pn	14 05 33.7	-0.6
	26nm,0.6s						
KOLN	Koldanda	7.48	199	*e*P	Pn	14 05 35.7	-0.3
	16nm,0.4s						
WMQ	Urumqi	8.99	6	*e*P	Pn	14 05 56.6	+0.1
WMQ				LR	LR		
	comp=N,160nm,5.6s						
WMQ				LR	LR		
	comp=E,330nm,5.6s						
MKAR	Makanchi Array	12.29	347	Pn	Pn	14 06 41.7	0.0
	0.1nm,0.3s,baz=152,slow=14,SNR=14						
KURBB	Kurchatov Arra	16.74	342	Pn	Pn	14 07 39.5	-1.6
	0.0nm,0.3s,baz=163,slow=11,SNR=9.3						
ZALV	Zalesovo Beam	19.09	357	P	P	14 08 09.0	-0.3
	0.2nm,0.3s,baz=177,slow=11,SNR=8.1						
ZALV				LR	LR	14 15 42.8	
	comp=Z,77nm,20.8s,baz=252,slow=37						
SONM	Songino Array	19.76	43	P	P	14 08 17.5	+0.7
	0.1nm,0.3s,baz=234,slow=12,SNR=6.1						
SONM				LR	LR	14 16 18.9	
	comp=Z,124nm,18.1s,baz=261,slow=38						
BVAR	Borovoye Array	21.39	333	P	P	14 08 35.2	+0.9
	2.7nm,0.7s,baz=139,slow=9.8,SNR=18						
GEYT	Alibeck	22.91	286	P	P	14 08 51.8	+1.0
	1.4nm,0.5s,baz=70,slow=9.3,SNR=3.3						
GEYT				LR	LR	14 19 42.1	
	comp=Z,120nm,20.1s,baz=65,slow=42						
GNI	Garni	33.22	292	LR	LR	14 26 04.5	
	comp=Z,45nm,19.7s,baz=100,slow=40						
KSRS	Korea Array	33.45	73	LR	LR	14 24 03.6	
	comp=Z,39nm,18.0s,baz=277,slow=37						
NRIK	Noril'sk	34.52	1	LR	LR	14 26 32.2	

Ms1 2.5/1, ms1mx2.1/40, Error ellipse: s-maj=22.5km s-min=15.9km az=107.0
*NEIC **24** 14:16:13.2±4.4, 37°.58N×143°.67E, h7km±27km, mb4.8/2, Error ellipse: s-maj=15.3km s-min=7.9km az=123.0*
*ISCJB **24** 14:16:14.6±1.5, 37°.59N±0°.04×143°.55E±0°.04, h31km±12km, mb4.0/13, Error ellipse: s-maj=6.7km s-min=5.5km az=145.9*
*JMA **24** 14:16:15.7±0.2, 37°.61N×143°.49E, h46km, M4.2*
ISC 24 14:16:16.0±3.0, 37°.62N±0°.05×143°.56E±0°.06, h27km±25km, n40, σ0°89/44, mb3.9/13, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.93**	**296**	P	**Pn**	**14 16 46.8**	**-0.3**
JIO				S	**Sn**	**14 17 09.1**	**-1.5**
OFUJ	**Ofunato**	**2.08**	**315**	P	**Pn**	**14 16 48.5**	**-0.7**
OFUJ				S	**Sn**	**14 17 12.5**	**-1.7**
JMK	**Ichinoseki**	**2.27**	**307**	P	**Pn**	**14 16 51.4**	**-0.4**
JMK				S	**Sn**	**14 17 18.4**	**-0.5**
JFT	**Otama**	**2.56**	**269**	P	**Pn**	**14 16 56.0**	**+0.2**
JFT				S	**Sn**	**14 17 25.1**	**-1.0**
JOM	**Ohasama**	**2.56**	**317**	P	**Pn**	**14 16 55.7**	**-0.1**
JOM				S	**Sn**	**14 17 25.6**	**-0.6**
JYK	**Kaneyama**	**2.83**	**298**	P	**Pn**	**14 16 59.9**	**+0.4**
JYK				S	**Sn**	**14 17 33.2**	**+0.4**
JANG	**Nango**	**3.18**	**331**	P	**Pn**	**14 17 04.6**	**+0.4**
JAG	**Ashikaga**	**3.50**	**251**	P	**Pn**	**14 17 08.4**	**-0.2**
JAG				S	**Sn**	**14 17 47.8**	**-1.4**
JAW	**Awa shima**	**3.50**	**285**	P	**Pn**	**14 17 09.4**	**+0.7**
JAW				*e*S	**Sn**	**14 17 49.2**	**-0.1**
JRY	**Ryogami san**	**4.07**	**248**	P	**Pn**	**14 17 15.9**	**-0.6**
JRY				*e*S	Sn	14 18 00.1	-3.2
JOT	**Ohata**	**4.23**	**333**	P	**Pn**	**14 17 18.9**	**+0.2**
JOT				*e*S	Sn	14 18 03.9	-3.2
JOD2	**Odawara 2**	**4.30**	**238**	P	**Pn**	**14 17 19.1**	**-0.7**
JOD2				S	Sn	14 18 04.8	-4.3
ERM	**Erimo**	**4.40**	**356**	*e*Pn	**Pn**	**14 17 20.3**	**-0.7**
MJAR	**Matsushiro Arr**	**4.41**	**257**	Pn	**Pn**	**14 17 22.2**	**+1.0**
	3.4nm,0.3s,baz=86,slow=14,SNR=25						
MJAR				Sn	**Sn**	**14 18 13.4**	**+1.6**
	1.6nm,0.3s,baz=75,slow=30,SNR=5.0						
MJAR				LR	LR	14 19 17.4	
	comp=Z,52nm,20.1s,baz=95,slow=42						
MAJO	**Matsushiro**	**4.41**	**257**	*e*Pn	**Pn**	**14 17 22.4**	**+1.2**
MAT	**Matsushiro**	**4.41**	**257**	P	**Pn**	**14 17 22.2**	**+0.9**
MAT				S	**Sn**	**14 18 10.7**	**-1.1**
JKB	**Kayabe**	**4.69**	**336**	P	**Pn**	**14 17 25.6**	**+0.7**
JKB				*e*S	Sn	14 18 15.0	-3.4
JCH	**Churui**	**4.99**	**358**	P	**Pn**	**14 17 28.0**	**-1.1**
JCH				S	Sn	14 18 21.1	-4.8
JHJ	**Hachijo jima 2**	**5.45**	**216**	Pn	**Pn**	**14 17 33.9**	**-1.6**
	12nm,0.3s,baz=55,slow=19,SNR=2.3						
JHJ				Sn	Sn	14 18 29.5	-7.8
	16nm,0.3s,baz=90,slow=20,SNR=6.7						
ASAJ	**Asahikawa**	**6.53**	**354**	Pn	**Pn**	**14 17 50.2**	**-0.1**
	5.2nm,0.3s,baz=211,slow=12,SNR=54						
ASAJ				Sn	Sn	14 18 59.5	-4.4
	0.7nm,0.3s,baz=214,slow=18,SNR=4.2						
ASAJ	**Asahikawa**	**6.53**	**354**	*e*Pn	**Pn**	**14 17 49.8**	**-0.5**
	5.5nm,0.4s						
ASAJ				Sn	Sn	14 18 59.5	-4.4
CBIJ	**Chichi jima**	**10.56**	**187**	*e*Pn	Pn	14 18 40.9	-4.7
CBIJ				Sn	Sn	14 20 28.4	-15
JCJ	**Chichijima**	**10.56**	**187**	Pn	Pn	14 18 40.9	-4.7
	1.3nm,0.3s,baz=315,slow=20,SNR=5.3						
JCJ				Sn	Sn	14 20 28.4	-15
	baz=315,slow=20						
KLR	**Kul'dur**	**14.41**	**327**	Pn	Pn	14 19 35.9	-2.2
	0.1nm,0.3s,baz=129,slow=12,SNR=7.1						
YAK	**Yakutsk**	**25.91**	**345**	P	**P**	**14 21 45.5**	**0.0**
	1.7nm,0.3s,baz=212,slow=19,SNR=6.6						
H11N2	**WAKE ISLAND Hy 27.03**	**125**		T	T	14 50 10.7	
	baz=317,slow=75,SNR=6.8						
H11N1	**WAKE ISLAND Hy 27.04**	**125**		T	T	14 50 11.4	
	baz=317,slow=75,SNR=4.8						
H11N3	**WAKE ISLAND Hy 27.05**	**125**		T	T	14 50 10.1	
	baz=317,slow=75,SNR=6.3						
ZALV	**Zalesovo Beam**	**42.79**	**312**	P	**P**	**14 24 12.1**	**+0.9**
	0.8nm,0.5s,baz=101,slow=7.8,SNR=3.1						
MKAR	**Makanchi Array**	**45.26**	**302**	P	**P**	**14 24 32.2**	**+1.1**
	0.7nm,0.9s,baz=75,slow=6.1,SNR=5.5						
KTH	**Kantishna Hill**	**46.30**	**34**	*e*P	**P**	**14 24 39.8**	**+0.7**
	4.7nm,0.6s						
KURK	**Kurchatov**	**46.92**	**308**	*e*P	**P**	**14 24 44.6**	**+0.6**
	8.9nm,0.8s						
KURBB	**Kurchatov Arra**	**46.99**	**308**	P	**P**	**14 24 45.6**	**+1.0**
	3.1nm,0.7s,baz=82,slow=8.0,SNR=28						
ILAR	**Eielson Array**	**48.08**	**33**	P	**P**	**14 24 53.9**	**+1.0**
	0.9nm,0.7s,baz=263,slow=6.2,SNR=12						
BVAR	**Borovoye Array**	**51.44**	**312**	P	**P**	**14 25 19.6**	**+1.0**
	0.9nm,0.7s,baz=77,slow=7.8,SNR=4.3						
INK	**Inuvik**	**53.08**	**27**	P	**P**	**14 25 31.7**	**+1.1**
	0.5nm,0.5s,baz=268,slow=5.3,SNR=3.6						
WRA	**Warramunga Arr**	**57.91**	**190**	P	**P**	**14 26 05.1**	**-0.7**
	0.9nm,0.8s,baz=7.7,slow=6.9,SNR=8.4						
ASAR	**Alice Springs**	**61.63**	**190**	P	**P**	**14 26 30.7**	**-0.7**
	0.3nm,0.8s,baz=7.5,slow=7.8,SNR=2.9						
YKA	**Yellowknife Ar**	**62.43**	**31**	P	**P**	**14 26 36.5**	**+0.2**
	0.3nm,0.6s,baz=304,slow=6.9,SNR=5.2						
HFS	**Hagfors**	**74.25**	**336**	P	**P**	**14 27 50.7**	**+0.4**
	3.5nm,0.9s,baz=94,slow=8.7,SNR=3.7						

IDC 24 14:19:56.4±342.0, 53°.06N×32°.99E, h0km, Error ellipse: s-maj=132.0km s-min=95.0km az=28.0, Baltic States-Belarus-Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I43RU	**DUBNA INFRASON**	**4.41**	**32**	*i*		14 47 30.0	
	baz=216,slow=313,SNR=0.5						
I26DE	**FREYUNG INFRAS**	**12.85**	**259**	*i*		15 39 30.0	
	baz=64,slow=325,SNR=0.3						
I48TN	**KESRA INFRASON**	**23.97**	**233**	*i*		16 47 00.0	
	baz=37,slow=314,SNR=0.3						

*IDC **24** 14:44:46.8±2.0, 0°.91S×133°.62E, h0km, mb3.4/2, mb1 3.8/5, mb1mx3.5/32, mbtmp3.7/5, ML3.9/3, Error ellipse: s-maj=39.0km s-min=23.8km az=60.0*
*ISCJB **24** 14:44:50.3±1.1, 0°.88S±0°.09×133°.57E±0°.07, h29km, mb3.4/2, Error ellipse: s-maj=13.1km s-min=8.6km az=26.3*
*DJA **24** 14:44:51.9±0.8, 1°.S±7°×13°.3E±°, h10km, M3.9/3, MLv3.9/3*
ISC 24 14:44:51.6±1.3, 0°.9S±0°.1×133°.54E±0°.08, h29km, n11, σ1°21/11, Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RKPI	**Ransiki, Papua**	**0.88**	**133**	P	**Pb**	**14 45 08.2**	**-0.2**
RKPI				S	**Sn**	**14 45 22.0**	**+2.0**
SIJI	**Sorong**	**2.27**	**271**	Pn	**Pn**	**14 45 27.7**	**+0.5**
	22nm,0.3s,baz=177,slow=16,SNR=6.5						
SIJI				Sn	**Sn**	**14 45 55.7**	**+1.5**
	16nm,0.3s,baz=90,slow=20,SNR=5.1						
SWI	**Sorong**	**2.28**	**271**	P	**Pn**	**14 45 27.7**	**+0.4**
FAKI	**Fak Fak**	**2.38**	**213**	P	**Pn**	**14 45 29.6**	**+0.8**
FAKI				S	**Sn**	**14 45 57.5**	**+0.5**
FITZ	**Fitzroy Crossi**	**18.77**	**204**	P	**Pn**	**14 49 08.4**	**-0.9**
	0.6nm,0.3s,baz=29,slow=9.6,SNR=16						
WRA	**Warramunga Arr**	**18.94**	**178**	P	**P**	**14 49 09.0**	**-1.5**
	0.3nm,0.3s,baz=356,slow=12,SNR=17						
ASAR	**Alice Springs**	**22.63**	**179**	P	**P**	**14 49 49.5**	**-1.0**
	1.3nm,0.8s,baz=357,slow=11,SNR=16						
H11N1	**WAKE ISLAND Hy 38.59**	**56**		T	T	15 33 18.4	
	baz=243,slow=75,SNR=6.7						
H11N2	**WAKE ISLAND Hy 38.61**	**56**		T	T	15 33 20.1	
	baz=243,slow=75,SNR=7.2						
H11N3	**WAKE ISLAND Hy 38.61**	**56**		T	T	15 33 20.7	
	baz=243,slow=75,SNR=4.8						
MKAR	**Makanchi Array**	**65.25**	**324**	P	**P**	**14 55 30.5**	**-0.1**
	0.2nm,0.4s,baz=112,slow=8.4,SNR=4.1						

DHMR 24 14:45:37.8±1.6, 12°.08N×43°.94E, h10km±15km, ML3.7, 2C, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TRBA	**At Turbah**	**1.16**	**9**	⇑*i*P	Pg	14 46 00.0	-0.1
TRBA				*i*S	Sb	14 46 15.6	+0.3
TRBA				AML	AML	14 46 16.1	
	comp=E,2μm,0.6s						
ADEN	**Aden**	**1.23**	**56**	⇑*i*P	Pn	14 46 01.1	-0.1
ADEN				*i*S	Sn	14 46 17.8	-0.1
ADEN				AML	AML	14 46 25.0	
	comp=N,2μm,0.3s						
UDYN	**Al 'Udayn**	**1.88**	**1**	*i*P	Pn	14 46 10.3	+0.1
UDYN				*i*S	Sg	14 46 37.6	-0.6
BDHA	**Al Bayda'**	**2.46**	**40**	*i*P	Pn	14 46 19.8	+1.5
BDHA				*i*S	Sb	14 46 54.4	+1.4
BDHA				AML	AML	14 47 00.2	
	comp=N,333nm,0.5s						
DHBB	**Dhamar BB**	**2.52**	**10**	*i*P	Pb	14 46 21.8	-1.6
DHBB				*i*S	Sb	14 46 55.5	+1.0

*ISCJB **24** 14:55:11.3±1.3, 19°.00N±0°.06×67°.60W±0°.06, h6km±7km, Error ellipse: s-maj=12.3km s-min=6.7km az=34.0*
*NEIC **24** 14:55:14.4, 18°.87N×67°.69W, h8km, MD3.4(RSPR), After RSPR.*
*RSPR **24** 14:55:14.4, 18°.87N×67°.69W, h8km±31km, MD3.4/9*
ISC 24 14:55:11.4±1.9, 18°.92N±0°.09×67°.65W±0°.05, h5km±12km, n33, σ0°37/48, 26C-6D, Mona Passage

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IDE	**Isla Desecheo**	**0.56**	**162**	⇑*e*P	**Pb**	**14 55 23.7**	**+0.1**
IDE	**Isla Desecheo**	**0.56**	**162**	⇓*e*P	**Pb**	**14 55 23.7**	**+0.1**
IDE				*e*S	**Sb**	**14 55 31.8**	**-0.1**
IDE	**Isla Desecheo**	**0.56**	**162**	⇑*e*P	**Pb**	**14 55 23.7**	**+0.1**
IDE				*e*S	**Sb**	**14 55 31.8**	**-0.1**
AGPR	**Aguadilla, PR**	**0.68**	**131**	⇓*e*P	**Pb**	**14 55 25.8**	**0.0**
AGPR	**Aguadilla, PR**	**0.68**	**131**	⇓*e*P	**Pb**	**14 55 25.8**	**0.0**
AGPR				*e*S	**Sb**	**14 55 35.5**	**-0.1**
AGPR	**Aguadilla, PR**	**0.68**	**131**	⇓*e*P	**Pb**	**14 55 25.8**	**0.0**
AGPR				*e*S	**Sb**	**14 55 35.5**	**-0.1**
LSP	**Las Mesas**	**0.91**	**144**	⇑*e*P	**Pb**	**14 55 29.9**	**+0.1**
LSP	**Las Mesas**	**0.91**	**144**	⇑*e*P	**Pb**	**14 55 29.9**	**+0.1**
LSP				*e*S	**Sb**	**14 55 43.4**	**+1.1**
LSP	**Las Mesas**	**0.91**	**144**	⇑*e*P	**Pb**	**14 55 29.9**	**+0.1**
LSP				*e*S	**Sb**	**14 55 43.4**	**+1.1**
AOPR	**Arecibo Observ**	**1.02**	**124**	⇑*e*P	**Pg**	**14 55 30.9**	**-0.2**
AOPR	**Arecibo Observ**	**1.02**	**124**	⇑*e*P	**Pg**	**14 55 30.9**	**-0.2**
AOPR				*e*S	**Sg**	**14 55 44.7**	**+0.3**
AOPR	**Arecibo Observ**	**1.02**	**124**	⇑*e*P	**Pg**	**14 55 30.9**	**-0.2**
AOPR				*e*S	**Sg**	**14 55 44.7**	**+0.3**
CRPR	**Cabo Rojo, PR**	**1.04**	**150**	⇑*e*P	**Pb**	**14 55 32.0**	**+0.1**
CRPR	**Cabo Rojo, PR**	**1.04**	**150**	⇑*e*P	**Pb**	**14 55 32.0**	**+0.1**
CRPR				*e*S	**Sb**	**14 55 45.8**	**-0.1**
CRPR	**Cabo Rojo, PR**	**1.04**	**150**	⇑*e*P	**Pb**	**14 55 32.0**	**+0.1**
CRPR				*e*S	**Sb**	**14 55 45.8**	**-0.1**
OBIP	**Obispado Ponce**	**1.32**	**131**	⇑*e*P	**Pn**	**14 55 36.0**	**-0.5**
OBIP	**Obispado Ponce**	**1.32**	**131**	⇑*e*P	**Pn**	**14 55 36.0**	**-0.5**
OBIP				*e*S	**Sn**	**14 55 54.4**	**-0.1**
OBIP	**Obispado Ponce**	**1.32**	**131**	⇑*e*P	**Pn**	**14 55 36.0**	**-0.5**
OBIP				*e*S	**Sn**	**14 55 54.4**	**-0.1**
SJG	**San Juan**	**1.64**	**119**	⇓*e*P	**Pn**	**14 55 40.2**	**-0.7**
SJG	**San Juan**	**1.64**	**119**	⇓*e*P	**Pn**	**14 55 40.2**	**-0.7**
SJG	**San Juan**	**1.64**	**119**	⇓*e*P	**Pn**	**14 55 40.2**	**-0.7**
DR12	**Loma Pena Alta**	**1.64**	**266**	⇑*e*P	**Pn**	**14 55 40.8**	**-0.2**
DR12	**Loma Pena Alta**	**1.64**	**266**	⇑*e*P	**Pn**	**14 55 40.8**	**-0.2**
CBYP	**Canovanas**	**1.82**	**110**	⇑*e*P	**Pn**	**14 55 43.4**	**0.0**
CBYP	**Canovanas**	**1.82**	**110**	⇑*e*P	**Pn**	**14 55 43.4**	**0.0**
CBYP				*e*S	**Sn**	**14 56 07.1**	**+0.1**
CBYP	**Canovanas**	**1.82**	**110**	⇑*e*P	**Pn**	**14 55 43.4**	**0.0**
CBYP				*e*S	**Sn**	**14 56 07.1**	**+0.1**
HUMP	**Col San Antoni**	**1.88**	**114**	⇑*e*P	**Pn**	**14 55 44.0**	**-0.2**
HUMP	**Col San Antoni**	**1.88**	**114**	⇑*e*P	**Pn**	**14 55 44.0**	**-0.2**
HUMP	**Col San Antoni**	**1.88**	**114**	⇑*e*P	**Pn**	**14 55 44.0**	**-0.2**
MTP	**Monte Pirata**	**2.15**	**112**	⇑*e*P	**Pn**	**14 55 47.6**	**-0.4**
MTP	**Monte Pirata**	**2.15**	**112**	⇑*e*P	**Pn**	**14 55 47.6**	**-0.4**
MTP				*e*S	**Sn**	**14 56 15.5**	**+0.4**
MTP	**Monte Pirata**	**2.15**	**112**	⇑*e*P	**Pn**	**14 55 47.6**	**-0.4**
MTP				*e*S	**Sn**	**14 56 15.5**	**+0.4**
SDDR	**Presa de Saban**	**3.44**	**272**	*e*Pn	Pn	14 56 09.1	+3.4

*ISCJB **24** 14:56:23.1±0.7, 54°.97N±0°.08×160°.29W±0°.08, h66km±5km, mb3.7/14, Error ellipse: s-maj=14.4km s-min=3.7km az=153.4*
*NEIC **24** 14:56:24.3±0.7, 54°.96N×160°.38W, h60km±4km, mb4.4/1, ML3.7(AEIC), Error ellipse: s-maj=13.5km s-min=2.9km az=152.0*
*IDC **24** 14:56:25.9±4.0, 55°.53N×160°.87W, h47km±36km, mb3.6/12, mb1 3.8/14, mb1mx3.6/47, mbtmp3.8/14, ML3.8/2, MS2.8/2, Ms1 2.8/2, ms1mx2.4/43, Error ellipse: s-maj=31.0km s-min=18.5km az=171.0*
ISC 24 14:56:23.2±1.5, 55°.0N±0°.1×160°.29W±0°.07, h51km±10km, n65, σ1°61/67, mb3.9/14, Alaska Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SDPT	**Sand Point**	**0.40**	**345**	*e*Pg	**Pn**	**14 56 32.9**	**-0.4**
SDPT				*e*Sg	**Sn**	**14 56 39.7**	**-0.9**
DOL	**Dolgoi Island**	**0.92**	**282**	P	**Pn**	**14 56 39.4**	**-0.5**
PVV	**Pavlof Volcano**	**0.95**	**296**	P	**Pn**	**14 56 40.3**	**0.0**
PVV				S	**Sn**	**14 56 53.5**	**+0.7**
PS4A	**Pavlof South-4**	**0.97**	**293**	P	**Pn**	**14 56 40.7**	**+0.1**
HAG	**Hague Volcano**	**0.99**	**291**	P	**Pn**	**14 56 41.1**	**+0.3**
PN6	**Pavlof North-6**	**1.05**	**298**	P	**Pn**	**14 56 42.6**	**+0.9**
PN6				S	**Sn**	**14 56 58.1**	**+2.7**
DTNA	**Dutton South F**	**1.14**	**280**	P	**Pn**	**14 56 42.8**	**-0.1**
DTNA				S	**Sn**	**14 56 58.3**	**+0.8**
DT1	**Dutton Round H**	**1.15**	**278**	P	**Pn**	**14 56 42.7**	**-0.3**
VNSW	**Veniaminof 7**	**1.18**	**20**	P	**Pn**	**14 56 45.0**	**+1.5**
VNWF	**Veniaminof 8**	**1.26**	**19**	P	**Pn**	**14 56 46.4**	**+1.9**
VNHG	**Veniaminof 1**	**1.41**	**27**	P	**Pn**	**14 56 48.6**	**+2.1**
VNNF	**Veniaminof 3**	**1.43**	**22**	P	**Pn**	**14 56 49.1**	**+2.3**
BALA	**Baldy Mountain**	**1.45**	**280**	P	**Pn**	**14 56 48.5**	**+1.4**
CHGN	**Chignik**	**1.71**	**38**	P	**Pn**	**14 56 52.2**	**+1.7**
FALS	**False Pass**	**1.81**	**268**	P	**Pn**	**14 56 52.5**	**+0.6**
FALS				S	**Sn**	**14 57 16.1**	**+2.5**
ISLZ	**Isanotski Laza**	**1.99**	**264**	P	**Pn**	**14 56 55.1**	**+0.7**
SSLN	**Shishaldin Nor**	**2.15**	**267**	P	**Pn**	**14 56 58.0**	**+1.5**
ANPB	**Aniakchak Plen**	**2.16**	**31**	P	**Pn**	**14 56 58.3**	**+1.6**
SSLS	**Shishaldin Sou**	**2.16**	**265**	P	**Pn**	**14 56 58.1**	**+1.3**
SSLS				S	**Sn**	**14 57 25.4**	**+3.1**
SSLW	**Shishaldin Wes**	**2.22**	**266**	P	**Pn**	**14 56 59.0**	**+1.4**
ANPK	**Aniakchak Peak**	**2.24**	**32**	P	**Pn**	**14 56 59.7**	**+1.8**
WESN	**West Dahl Nort**	**2.52**	**263**	P	**Pn**	**14 57 03.0**	**+1.4**
WESE	**West Dahl East**	**2.54**	**260**	P	**Pn**	**14 57 03.2**	**+1.2**
WEBT	**Westdahl Beart**	**2.61**	**263**	P	**Pn**	**14 57 04.4**	**+1.4**
AHB	**Akutan Harbor**	**3.33**	**257**	P	**Pn**	**14 57 13.8**	**+1.0**
PLK4	**Peulik 4**	**3.45**	**38**	P	**Pn**	**14 57 17.2**	**+2.7**
UNV	**Unalaska Valle**	**3.80**	**255**	P	**Pn**	**14 57 19.5**	**+0.4**
KELA	**Mount Kelaz**	**4.29**	**34**	P	**Pn**	**14 57 27.6**	**+1.7**
KABR	**Katmai Barrier**	**4.33**	**41**	P	**Pn**	**14 57 28.4**	**+1.9**
KVTA	**Katmai Vly 10**	**4.39**	**37**	P	**Pn**	**14 57 29.1**	**+1.8**
OHAK	**Old Harbor**	**4.53**	**57**	P	**Pn**	**14 57 29.4**	**+0.3**
KAHC	**Katmai Hardscr**	**4.69**	**36**	P	**Pn**	**14 57 33.5**	**+1.9**
KDAK	**Kodiak Island**	**5.13**	**54**	P	**Pn**	**14 57 37.4**	**0.0**
CKL	**Chakachamna La**	**7.53**	**31**	P	**Pn**	**14 58 12.2**	**+1.8**
TT01	**Tatalina**	**8.26**	**14**	P	**Pn**	**14 58 21.2**	**+1.0**
TTA	**Tatalina**	**8.28**	**14**	P	**Pn**	**14 58 21.8**	**+1.1**
RC01	**Rabbit Creek A**	**8.30**	**38**	*e*Pn	**Pn**	**14 58 23.3**	**+2.5**
RC01				*e*Sn	**Sn**	**14 59 55.6**	**+2.6**
PPLA	**Purkeypile**	**8.98**	**24**	P	**Pn**	**14 58 32.4**	**+2.2**
KTH	**Kantishna Hill**	**9.84**	**25**	P	**Pn**	**14 58 45.8**	**+3.9**
	12nm,1.1s						
TRF	**Thorofare Moun**	**9.92**	**27**	*e*Pn	**Pn**	**14 58 44.7**	**+1.7**
	5.6nm,0.7s						
BPAW	**Bear Paw Mtn.**	**10.29**	**23**	*e*Pn	**Pn**	**14 58 49.9**	**+1.9**
	1.2nm,0.9s						
TNA	**Tin City**	**11.27**	**344**	*e*Pn	**Pn**	**14 59 03.0**	**+1.7**
	7.0nm,0.7s						
ILAR	**Eielson Array**	**11.88**	**29**	P	**Pn**	**14 59 07.6**	**-2.1**
	0.2nm,0.3s,baz=224,slow=12,SNR=7.3						
ILAR				S	**Sn**	**15 01 16.9**	**-3.7**
	0.1nm,0.3s,baz=219,slow=21,SNR=3.1						
ILAR				LR	LR	15 03 04.3	
	comp=Z,21nm,18.2s,baz=254,slow=34						
DOT	**Dot Lake**	**11.98**	**37**	P	**Pn**	**14 59 12.2**	**+1.1**
	5.0nm,0.7s						
EGAK	**Eagle**	**13.68**	**36**	*e*Pn	**Pn**	**14 59 33.8**	**-0.4**
	4.8nm,1.0s						
DAWY	**Dawson**	**13.91**	**41**	*e*Pn	**Pn**	**14 59 38.0**	**+0.6**
	4.1nm,0.6s						
INK	**Inuvik**	**18.22**	**32**	P	**P**	**15 00 31.3**	**-0.5**
	0.4nm,0.3s,baz=239,slow=16,SNR=5.8						
YKA	**Yellowknife Ar**	**24.41**	**54**	P	**P**	**15 01 37.8**	**+1.4**
	0.3nm,0.4s,baz=273,slow=9.3,SNR=5.1						
PETK	**Petropavlovsk-**	**24.48**	**283**	P	**P**	**15 01 37.0**	**-0.2**
	5.4nm,0.5s,baz=80,slow=14,SNR=37						
NVAR	**Mina Array Bea**	**32.61**	**103**	P	P	15 02 57.4	+7.4
	0.1nm,0.3s,baz=308,slow=10,SNR=2.6						
H11N2	**WAKE ISLAND Hy 43.05**	**228**		T	T	15 50 19.2	
	baz=28,slow=76,SNR=6.7						
H11N3	**WAKE ISLAND Hy 43.06**	**228**		T	T	15 50 18.6	
	baz=28,slow=76,SNR=4.7						
H11N1	**WAKE ISLAND Hy 43.07**	**228**		T	T	15 50 19.2	
	baz=28,slow=76,SNR=3.7						
MJAR	**Matsushiro Arr**	**45.09**	**272**	P	**P**	**15 04 33.0**	**-1.1**
	0.9nm,0.6s,baz=29,slow=7.2,SNR=4.2						
NRIK	**Noril'sk**	**46.63**	**333**	LR	LR	15 25 40.5	
	comp=Z,19nm,18.8s,baz=107,slow=38						
TXAR	**Lajitas Array**	**47.53**	**99**	P	P	15 05 05.3	+12
	0.2nm,0.7s,baz=308,slow=4.6,SNR=3.6						
SONM	**Songino Array**	**54.46**	**304**	P	**P**	**15 05 44.2**	**-1.1**
	1.0nm,0.6s,baz=52,slow=7.7,SNR=5.6						
FINES	**FINESS Array B**	**63.82**	**357**	P	**P**	**15 06 49.1**	**-0.4**
	1.9nm,0.6s,baz=14,slow=7.6,SNR=14						
MKAR	**Makanchi Array**	**65.72**	**318**	P	**P**	**15 07 00.7**	**-1.6**
	0.2nm,0.5s,baz=51,slow=6.4,SNR=3.6						
ABKAR	**Akbulak array**	**70.80**	**333**	*e*P	**P**	**15 07 33.9**	**-0.1**
	3.1nm,0.7s						
AKASG	**Malin Array Be**	**74.40**	**354**	P	**P**	**15 07 54.1**	**-1.1**
	1.4nm,0.5s,baz=8.5,slow=6.3,SNR=6.9						
KBZ	**Khabaz**	**79.71**	**343**	P	**P**	**15 08 25.9**	**+0.7**
	2.0nm,0.8s,baz=12,slow=6.7,SNR=3.9						
CMAR	**Chiang Mai Arr**	**81.09**	**289**	P	**P**	**15 08 33.2**	**+0.2**
	2.2nm,0.8s,baz=15,slow=5.5,SNR=17						
ESDC	**Sonseca Array**	**83.57**	**18**	P	**P**	**15 08 46.6**	**+0.9**
	0.3nm,0.4s,baz=346,slow=4.3,SNR=4.2						
BRTR	**Keskin Array B**	**84.92**	**349**	P	**P**	**15 08 52.7**	**0.0**
	0.6nm,0.7s,baz=48,slow=2.1,SNR=3.8						

IDC 24 15:00:59.7±50.0, 17°.74S×175°.65E, h0km, mb4.0/3, mb1 4.2/3, mb1mx3.7/24, mbtmp4.0/3, Error ellipse: s-maj=881.6km s-min=135.0km az=76.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**33.81**	**239**	P	P	15 07 43.5	-0.3
	2.3nm,0.7s,baz=76,slow=8.7,SNR=5.1						
WRA	**Warramunga Arr**	**39.09**	**260**	P	P	15 08 29.0	0.0
	0.6nm,0.6s,baz=90,slow=8.5,SNR=11						
ASAR	**Alice Springs**	**39.39**	**254**	P	P	15 08 31.4	-0.1
	2.5nm,0.6s,baz=88,slow=9.1,SNR=50						

*AZER **24** 15:01:19.7±0.1, 38°.11N×47°.91E, h2km, Error ellipse: s-maj=1.8km s-min=1.1km az=6.0*
*CSEM **24** 15:01:21.5±0.6, 37°.94N×47°.95E, h5km, ML3.4, Error ellipse: s-maj=13.4km s-min=5.6km az=148.0*
*TEH **24** 15:01:23.0, 38°.15N×47°.78E, h5km, ML3.4*
ISC 24 15:01:22.8±1.0, 38°.17N±0°.02×47°.74E±0°.02, h6km±10km, n55, σ1°66/89, 18C-22D, Northwestern Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ISRB	**Sarab**	**0.35**	**189**	*e*Pg	**Pg**	**15 01 28.9**	**-0.8**
ISRB				*e*Sg	**Sg**	**15 01 34.2**	**-0.1**
ISRB				*e*AMB	AMB	15 01 35.4	
	comp=Z,5μm,0.1s						
ISRB	**Sarab**	**0.35**	**189**	*e*Pg	**Pg**	**15 01 28.9**	**-0.8**
ISRB				*e*Sg	**Sg**	**15 01 34.2**	**-0.1**
IHRS	**Heris**	**0.57**	**285**	*e*Pg	**Pg**	**15 01 33.3**	**-0.5**
IHRS				*e*Sg	**Sg**	**15 01 42.1**	**+0.8**
IHRS				*e*AMB	AMB

GDB					Sn	Sb	15 02 54.9	+2.0
XNQ	Khinaliq	3.01	6	⇑Pn	Pn	Pn	15 02 12.5	+1.2
XNQ				⇑Sn	Sb	Sb	15 02 53.7	-0.4
XNQ	Khinaliq	3.01	6	Pn	Pn	Pn	15 02 12.5	+1.2
XNQ				Sn	Sb	Sb	15 02 53.7	-0.4
SIZA	Siyzn SNR=2.8	3.04	17	⇓Pn	Pn	Pn	15 02 13.9	+2.4
SIZA	Siyzn SNR=2.8	3.04	17	Pn	Pn	Pn	15 02 13.9	+2.4
GNI	Garni	3.06	311	⇑*i*P	Pb	Pb	15 02 19.0	+1.3
GNI				⇑*i*S	Sg	Sg	15 03 00.9	-0.1
GNI	Garni	3.06	311	⇑P	Pb	Pb	15 02 19.0	+1.3
GNI				S	Sg	Sg	15 03 00.9	-0.1
SEKA	Sheki SNR=3.0	3.06	352	⇓Pn	Pn	Pn	15 02 14.1	+2.3
SEKA	Sheki SNR=3.0	3.06	352	Pn	Pn	Pn	15 02 14.1	+2.3
SNGE	Sanandaj	3.09	186	*e*Pn	Pn	Pn	15 02 12.8	+0.5
QZX	Qazax, Azerbai SNR=4.1	3.41	328	⇓Pn	Pn	Pn	15 02 19.8	+3.2
QZX	Qazax, Azerbai SNR=4.1	3.41	328	Pn	Pn	Pn	15 02 19.8	+3.2
ZKTA	Zakatala	3.57	346	⇑Pn	Pn	Pn	15 02 20.6	+1.9
ZKTA				⇑Sn	Sb	Sb	15 03 07.2	-2.6

*DDA **24** 15:05:06.9, 39°.10N×29°.03E, h7km, Md2.8*
*CSEM **24** 15:05:06.7±0.1, 38°.95N×29°.05E, h8km, MD2.8, Error ellipse: s-maj=3.1km s-min=2.2km az=150.0*
*ISCJB **24** 15:05:07.5±0.5, 39°.05N±0°.04×29°.02E±0°.04, h6km±7km, Error ellipse: s-maj=6.7km s-min=5.0km az=10.8*
*ISK **24** 15:05:08.4, 39°.06N×28°.99E, h16km, MD2.7*
ISC 24 15:05:07.1±1.0, 39°.04N±0°.03×29°.01E±0°.02, h9km±8km, n38, σ0°.90/48, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.23	270	P	Pg	15 05 12.4	+0.5
DEMI				S	Sg	15 05 15.9	+0.8
DEMI	Demirci	0.23	270	*i* P	Pg	15 05 12.4	+0.5
DEMI				*i* S	Sg	15 05 15.9	+0.8
GDZ	Gediz	0.37	83	P	Pg	15 05 14.1	-0.3
GDZ				S	Sg	15 05 19.5	+0.2
GDZ	Gediz	0.37	83	*i* P	Pg	15 05 14.2	-0.3
GDZ				*i* S	Sg	15 05 19.5	+0.2
DST	Dursunbey	0.64	331	*e*PG	Pn	15 05 21.5	-0.9
DST	Dursunbey	0.64	331	*e*Pg	Pn	15 05 21.5	-0.9
MANT	Manisa	0.66	213	P	Pg	15 05 18.3	-1.6
MANT				S	Sg	15 05 27.5	-1.0
MANT	Manisa	0.66	213	*i* P	Pg	15 05 18.3	-1.6
MANT				*i* S	Sg	15 05 27.5	-1.0
KHAL	Karahalli	0.77	151	*i* P	Pn	15 05 25.9	+1.6
KHAL				*i* S	Sn	15 05 39.1	+3.1
KHL	Karahalli	0.82	151	*e*PG	Pn	15 05 25.2	+0.3
KHL	Karahalli	0.82	151	*e*Pg	Pn	15 05 25.2	+0.3
ORLT	Orhaneli	1.00	355	*e*PG	Pn	15 05 28.0	+0.6
ORLT	Orhaneli	1.00	355	*e*Pg	Pn	15 05 28.0	+0.6
BALB	Balikesir	1.06	304	*e*PG	Pn	15 05 29.0	+0.9
BALB				*e*SG	Sn	15 05 43.2	+0.2
BALB	Balikesir	1.06	304	*e*Pg	Pn	15 05 29.0	+0.9
BALB				*e*Sg	Sn	15 05 43.2	+0.2
IGD	Bursa	1.23	7	*i* P	Pn	15 05 28.2	-2.2
IGD				*i* S	Sb	15 05 45.8	-0.6
KCTX	Karacabey (Bur	1.32	338	*e*PN	Pg	15 05 32.7	+0.2
KCTX	Karacabey (Bur	1.32	338	*e*Pn	Pg	15 05 32.7	+0.2
CAVI	Cavuskoy	1.32	29	*e*PN	Pg	15 05 32.7	+0.2
CAVI	Cavuskoy	1.32	29	*e*Pn	Pg	15 05 32.7	+0.2
MDNY	Mudanya-Bursa	1.33	356	*e*PN	Pg	15 05 32.3	-0.3
MDNY	Mudanya-Bursa	1.33	356	*e*Pn	Pg	15 05 32.3	-0.3
IZI	Iznik	1.34	15	*e*PN	Pg	15 05 32.8	0.0
IZI	Iznik	1.34	15	*e*Pn	Pg	15 05 32.8	0.0
GEMT	Gemlik	1.40	6	*e*PN	Pb	15 05 33.5	+0.1
GEMT	Gemlik	1.40	6	*e*Pn	Pb	15 05 33.5	+0.1
GONE	Gonen-Balikesi	1.43	315	*e*PN	Pg	15 05 34.5	-0.2
GONE	Gonen-Balikesi	1.43	315	*e*Pn	Pg	15 05 34.5	-0.2
ADVT	Abdulvahap	1.50	22	*e*PN	Pb	15 05 35.2	+0.2
ADVT	Abdulvahap	1.50	22	*e*Pn	Pb	15 05 35.2	+0.2
ARMT	Armutlu	1.52	356	*e*PN	Pb	15 05 35.4	-0.2
ARMT	Armutlu	1.52	356	*e*Pn	Pb	15 05 35.4	-0.2
EDC	Edincik	1.57	326	*e*PN	Pb	15 05 36.2	-0.2
EDC	Edincik	1.57	326	*e*Pn	Pb	15 05 36.2	-0.2
GULT	Gulveren	1.81	39	*e*PN	Pb	15 05 39.4	-1.0
GULT	Gulveren	1.81	39	*e*Pn	Pb	15 05 39.4	-1.0
HRT	Hereke	1.84	16	*e*PN	Pb	15 05 39.9	-1.1
HRT	Hereke	1.84	16	*e*Pn	Pb	15 05 39.9	-1.1

JMA 24 15:28:38.5±0.4, 37°.90N×144°.44E, h23km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	2.47	299	P	Pn	15 29 19.1	+1.7
OFUJ				S	Sn	15 29 48.3	+1.4
JIO	Ouri	2.50	284	P	Pn	15 29 17.6	-0.1
JIO				S	Sn	15 29 49.6	+2.2
JMK	Ichinoseki	2.74	294	P	Pn	15 29 23.3	+2.3
JMK				S	Sn	15 29 55.1	+1.7
JOM	Ohasama	2.92	303	P	Pn	15 29 25.4	+1.9
JOM				S	Sn	15 30 00.1	+2.2
JFT	Otama	3.28	265	P	Pn	15 29 29.8	+1.4
JFT				S	Sn	15 30 09.8	+3.1
JANG	Nango	3.36	318	P	Pn	15 29 30.6	+1.1
JANG				S	Sn	15 30 08.6	-0.1
JYK	Kaneyama	3.36	289	P	Pn	15 29 32.6	+3.0
JYK				*e*S	Sn	15 30 11.5	+2.7
BSO1	Boso 1	4.28	222	*e*S	Sn	15 30 32.7	+2.0
JOT	Ohata	4.35	324	P	Pn	15 29 44.8	+1.6
JOT				*e*S	Sn	15 30 31.3	-1.9
JKB	Kayabe	4.77	328	P	Pn	15 29 50.4	+1.5
JKB				S	Sn	15 30 40.6	-2.8
JCH	Churui	4.78	350	P	Pn	15 29 48.1	-1.0
JCH				*e*S	Sn	15 30 40.2	-3.5
JRY	Ryogami san	4.82	249	P	Pn	15 29 52.1	+2.5
JRY				S	Sn	15 30 46.1	+1.4
JOD2	Odawara 2	5.05	240	P	Pn	15 29 55.0	+2.2
NEM2	Nemuro 2	5.55	10	P	Pn	15 29 56.1	-3.5
NEM2				*e*S	Sn	15 30 53.4	-9.2
JTKR	Abashiri--Toko	6.08	356	P	Pn	15 30 06.0	-0.9
JTKR				S	Sn	15 31 09.4	-6.3

*IDC **24** 15:38:09.1±1.3, 22°.89S×112°.24W, h0km, mb3.7/4, mb1 4.1/4, mb1mx3.8/27, mbtmp3.7/4, MS3.3/8, Ms1 3.3/8, ms1mx3.1/22, Error ellipse: s-maj=50.8km s-min=39.1km az=35.0*
ISC 24 15:38:10.4±1.6, 23°.0S±0°.4×112°.3W±0°.3, h10km, n21, σ0°.92/9, mb3.8/4, MS3.5/9, Easter Island region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LPAZ	La Paz	41.98	89	P	P	15 46 03.2	+0.4
	0.7nm,0.5s,baz=271,slow=7.3,SNR=3.6						
LPAZ				LR	LR	15 59 46.4	
	comp=Z,18nm,21.7s,baz=282,slow=31						
RAR	Rarotonga	43.90	263	LR	LR	16 00 17.1	
	comp=Z,488nm,19.1s,baz=170,slow=30						
ROSC	El Rosal	46.24	58	LR	LR	16 01 30.0	
	comp=Z,16nm,19.4s,baz=82,slow=30						
TXAR	Lajitas Array	52.66	9	LR	LR	16 05 05.6	
	comp=Z,46nm,20.7s,baz=0.0,slow=31						
ANMO	Albuquerque	57.87	6	LR	LR	16 07 53.1	
	comp=Z,45nm,20.6s,baz=210,slow=31						
NVAR	Mina Array Bea	61.34	355	P	P	15 48 27.8	+1.1
	1.4nm,0.8s,baz=188,slow=7.8,SNR=4.1						
NVAR				LR	LR	16 07 45.0	
	comp=Z,18nm,21.0s,baz=234,slow=29						
TKL	Tuckaleechee C	64.25	26	LR	LR	16 13 12.2	
	comp=Z,15nm,21.7s,slow=33						
YBH	Yreka Blue Hor	65.10	351	LR	LR	16 10 31.4	
	comp=Z,46nm,21.6s,slow=30						
PDAR	Pinedale Array	65.46	2	P	P	15 48 53.2	-0.6
	0.4nm,0.8s,baz=174,slow=4.5,SNR=3.7						
VNDA	Vanda	66.84	194	LR	LR	16 10 44.9	
	comp=Z,46nm,20.9s,baz=126,slow=29						
H02S1	DAWSON INLET T	77.86	348	T	T	17 15 50.9	
	SNR=9.6						
H02N1	VAN INLET T-PH	77.92	348	T	T	17 15 49.8	
YKA	Yellowknife Ar	85.19	359	P	P	15 50 46.5	0.0
	0.7nm,0.9s,baz=172,slow=4.7,SNR=8.2						
H11S2	WAKE ISLAND Hy	89.19	290	T	T	17 30 09.4	
	baz=115,slow=75,SNR=30						
H11S1	WAKE ISLAND Hy	89.21	290	T	T	17 30 09.4	
	baz=115,slow=75,SNR=25						
H11S3	WAKE ISLAND Hy	89.21	290	T	T	17 30 10.5	
	baz=115,slow=75,SNR=20						
ZALV	Zalesovo Beam	146.49	342	PKPbc	PKPdf	15 57 49.2	-1.1
	0.7nm,0.6s,baz=53,slow=5.6,SNR=4.9						
BRTR	Keskin Array B	146.69	52	PKPbc	PKPbc	15 57 52.4	-0.5
	1.3nm,0.9s,baz=266,slow=2.6,SNR=6.4						
CMAR	Chiang Mai Arr	150.50	267	PKPbc	PKPbc	15 58 04.3	+1.1
	1.7nm,0.9s,baz=99,slow=0.8,SNR=11						
KBZ	Khabaz	150.89	39	PKPbc	PKPbc	15 58 02.8	-0.5
	2.5nm,1.0s,baz=225,slow=2.9,SNR=3.6						
MKAR	Makanchi Array	153.49	337	PKPbc	PKPbc	15 58 08.8	-0.4
	0.2nm,0.6s,baz=37,slow=5.2,SNR=3.8						

IDC 24 15:39:05.6±5.6, 19°.48S×169°.24E, h0km, mb3.9/4, mb1 4.1/4, mb1mx3.7/28, mbtmp4.0/4, Error ellipse: s-maj=104.3km s-min=93.0km az=10.0, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	Charters Tower	21.64	264	P	P	15 43 58.6	+1.0
	2.9nm,0.8s,baz=96,slow=19,SNR=3.5						
STKA	Stephens Creek	27.72	238	P	P	15 44 55.7	-0.1
	2.9nm,0.7s,baz=56,slow=8.6,SNR=6.3						
WRA	Warramunga Arr	32.83	263	P	P	15 45 40.6	-0.5
	0.3nm,0.4s,baz=92,slow=8.5,SNR=8.9						
WRA				ScP	ScP	15 52 12.2	+0.4
	0.4nm,0.8s,baz=86,slow=2.6,SNR=2.8						
ASAR	Alice Springs	33.07	256	P	P	15 45 43.0	-0.3
	2.2nm,0.6s,baz=88,slow=9.0,SNR=26						

*ISCJB **24** 15:44:56.2±0.5, 39°.05N±0°.03×29°.05E±0°.04, h5km±6km, Error ellipse: s-maj=5.4km s-min=4.5km az=147.8*
*CSEM **24** 15:44:56.6±0.2, 39°.06N×29°.09E, h8km, MD2.7, Error ellipse: s-maj=6.1km s-min=5.1km az=78.0*
*ISK **24** 15:44:56.0, 39°.03N×29°.21E, h13km, MD2.7*
*DDA **24** 15:44:56.1, 39°.08N×29°.02E, h7km, Md2.7*
ISC 24 15:44:55.1±1.2, 39°.01N±0°.03×29°.14E±0°.03, h1km±12km, n37, σ0°.60/46, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	Gediz	0.28	74	P	Pb	15 45 03.5	+0.5
GDZ				S	Sb	15 45 08.8	+0.6
GDZ	Gediz	0.28	74	*i* P	Pb	15 45 03.5	+0.5
GDZ				*i* S	Sb	15 45 08.8	+0.6
DEMI	Demirci	0.33	275	P	Pg	15 45 01.4	0.0
DEMI				S	Sg	15 45 05.0	-0.6
DEMI	Demirci	0.33	275	*i* P	Pg	15 45 01.4	0.0
DEMI				*i* S	Sg	15 45 05.0	-0.6
TVSB	Tavsanli	0.50	30	*e*PG	Pb	15 45 05.9	-0.9
TVSB				*e*SG	Sg	15 45 12.5	+1.2
TVSB	Tavsanli	0.50	30	*e*Pg	Pb	15 45 05.9	-0.9
TVSB				*e*Sg	Sg	15 45 12.5	+1.2
KULA	Kula-Manisa	0.62	217	*e*PG	Pb	15 45 09.5	+0.7
KULA	Kula-Manisa	0.62	217	*e*Pg	Pb	15 45 09.5	+0.7
MANT	Manisa	0.69	221	*i* P	Pg	15 45 07.5	-0.8
MANT				*i* S	Sg	15 45 16.6	-0.7
KHAL	Karahalli	0.70	156	P	Pn	15 45 12.6	+0.5
KHAL				S	Sn	15 45 22.8	-0.9
KHAL	Karahalli	0.70	156	*i* P	Pn	15 45 12.7	+0.5
KHAL				*i* S	Sn	15 45 22.8	-0.9
DST	Dursunbey	0.71	326	*e*PG	Pb	15 45 10.7	+0.4
DST	Dursunbey	0.71	326	*e*Pg	Pb	15 45 10.7	+0.4
KHL	Karahalli	0.75	156	*e*PG	Pb	15 45 10.9	-0.1
KHL	Karahalli	0.75	156	*e*Pg	Pb	15 45 10.9	-0.1
DURS	Dursunbey	0.78	319	P	Pg	15 45 09.2	-0.8
DURS	Dursunbey	0.78	319	*i* P	Pg	15 45 09.2	-0.8
AKS	Akhisar	1.04	263	*e*PN	Pn	15 45 17.4	+0.6
AKS	Akhisar	1.04	263	*e*Pn	Pn	15 45 17.4	+0.6
ORLT	Orhaneli	1.05	350	*e*PG	Pn	15 45 16.8	-0.1
ORLT	Orhaneli	1.05	350	*e*Pg	Pn	15 45 16.8	-0.1
BALB	Balikesir	1.16	303	*e*PN	Pn	15 45 19.1	+0.7
BALB	Balikesir	1.16	303	*e*Pn	Pn	15 45 19.1	+0.7
CAVI	Cavuskoy	1.31	24	*e*PN	Pg	15 45 20.0	-0.1
CAVI	Cavuskoy	1.31	24	*e*Pn	Pg	15 45 20.0	-0.1
IZI	Iznik	1.35	11	*e*PN	Pg	15 45 20.5	-0.4
IZI	Iznik	1.35	11	*e*Pn	Pg	15 45 20.5	-0.4
MDNY	Mudanya-Bursa	1.37	352	*e*PN	Pn	15 45 21.3	+0.1
MDNY	Mudanya-Bursa	1.37	352	*e*Pn	Pn	15 45 21.3	+0.1
KCTX	Karacabey (Bur	1.39	335	*e*PN	Pn	15 45 21.6	+0.1
KCTX	Karacabey (Bur	1.39	335	*e*Pn	Pn	15 45 21.6	+0.1
GONE	Gonen-Balikesi	1.52	313	*e*PN	Pg	15 45 24.1	-0.2
GONE	Gonen-Balikesi	1.52	313	*e*Pn	Pg	15 45 24.1	-0.2
ARMT	Armutlu	1.56	352	*e*PN	Pn	15 45 24.3	+0.4
ARMT	Armutlu	1.56	352	*e*Pn	Pn	15 45 24.3	+0.4
GULT	Gulveren	1.77	36	*e*PN	Pn	15 45 26.5	-0.4
GULT	Gulveren	1.77	36	*e*Pn	Pn	15 45 26.5	-0.4

*ISCJB **24** 15:46:07.4±0.5, 39°.06N±0°.03×28°.99E±0°.04, h6km±7km, Error ellipse: s-maj=5.4km s-min=4.7km az=173.8*
*CSEM **24** 15:46:07.6±0.1, 39°.06N×28°.98E, h8km, MD2.8, Error ellipse: s-maj=3.1km s-min=2.7km az=114.0*
*ISK **24** 15:46:07.2, 39°.09N×28°.97E, h6km, MD2.7*
*DDA **24** 15:46:07.4, 39°.10N×29°.02E, h7km, Md2.8*
ISC 24 15:46:07.3±0.9, 39°.06N±0°.02×28°.98E±0°.02, h15km±8km, n34, σ0°.60/46, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.20	265	P	Pb	15 46 12.9	0.0
DEMI				S	Sg	15 46 16.4	+1.1
DEMI	Demirci	0.20	265	*i* P	Pb	15 46 12.9	0.0
DEMI				*i* S	Sg	15 46 16.4	+1.1
GDZ	Gediz	0.39	86	P	Pg	15 46 15.1	-0.2
GDZ				S	Sg	15 46 20.2	-0.6
GDZ	Gediz	0.39	86	*i* P	Pg	15 46 15.1	-0.2
GDZ				*i* S	Sg	15 46 20.2	-0.6
TVSB	Tavsanli	0.54	44	*e*PG	Pg	15 46 17.4	-0.7
TVSB	Tavsanli	0.54	44	*e*Pg	Pg	15 46 17.4	-0.7
KULA	Kula-Manisa	0.60	205	*e*PG	Pb	15 46 19.8	+0.2
KULA				*e*SG	Sb	15 46 28.5	+0.6
KULA	Kula-Manisa	0.60	205	*e*Pg	Pb	15 46 19.8	+0.2
KULA				*e*Sg	Sb	15 46 28.5	+0.6
MANT	Manisa	0.66	210	P	Pg	15 46 19.0	-1.2
MANT				S	Sg	15 46 28.0	-1.0
MANT	Manisa	0.66	210	*i* P	Pg	15 46 19.0	-1.2
MANT				*i* S	Sg	15 46 28.0	-1.0
DURS	Dursunbey	0.67	324	P	Pb	15 46 20.7	-0.1
DURS	Dursunbey	0.67	324	*i* P	Pb	15 46 20.7	-0.1
KHAL	Karahalli	0.80	150	P	Pb	15 46 23.6	+0.6
KHAL				S	Sb	15 46 34.1	+0.5
KHAL	Karahalli	0.80	150	*i* P	Pb	15 46 23.6	+0.6
KHAL				*i* S	Sb	15 46 34.1	+0.5
KHL	Karahalli	0.85	150	*e*PG	Pb	15 46 24.7	+0.8
KHL	Karahalli	0.85	150	*e*Pg	Pb	15 46 24.7	+0.8
AKS	Akhisar	0.93	259	*e*PG	Pb	15 46 25.4	+0.3
AKS	Akhisar	0.93	259	*e*Pg	Pb	15 46 25.4	+0.3
BALB	Balikesir	1.03	305	*e*PG	Pn	15 46 27.4	+0.2
BALB	Balikesir	1.03	305	*e*Pg	Pn	15 46 27.4	+0.2
KCTX	Karacabey (Bur	1.30	338	*e*PN	Pg	15 46 32.1	-0.2
KCTX	Karacabey (Bur	1.30	338	*e*Pn	Pg	15 46 32.1	-0.2
MDNY	Mudanya-Bursa	1.31	357	*e*PN	Pg	15 46 32.3	-0.2
MDNY	Mudanya-Bursa	1.31	357	*e*Pn	Pg	15 46 32.3	-0.2
CAVI	Cavuskoy	1.32	30	*e*PN	Pg	15 46 32.3	-0.5
CAVI	Cavuskoy	1.32	30	*e*Pn	Pg	15 46 32.3	-0.5
IZI	Iznik	1.33	17	*e*PN	Pg	15 46 32.6	-0.4
IZI	Iznik	1.33	17	*e*Pn	Pg	15 46 32.6	-0.4
GONE	Gonen-Balikesi	1.40	315	*e*PN	Pb	15 46 33.3	+0.1
GONE	Gonen-Balikesi	1.40	315	*e*Pn	Pb	15 46 33.3	+0.1
BORA	Eskisehir	1.41	54	P	Pb	15 46 33.6	+0.2
BORA				S	Sb	15 46 51.6	+0.5
BORA	Eskisehir	1.41	54	*i* P	Pb	15 46 33.6	+0.2
BORA				*i* S	Sb	15 46 51.6	+0.5
GULT	Gulveren	1.81	40	*e*PN	Pb	15 46 39.7	-0.6
GULT	Gulveren	1.81	40	*e*Pn	Pb	15 46 39.7	-0.6

SJA 24 16:02:47.7±0.9, 30°.97S×69°.94W, h113km±8km, ML4.0, MW3.5, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RTLS	Leoncito	0.99	146	*i* P	Pn	16 03 09.7	+0.3
RTLS				*i* S	Sn	16 03 28.0	+2.3
AMOG	MOGNA	1.24	89	*i* S	Sn	16 03 31.0	+1.0
RTLL	Cerro Villicun	1.30	106	*i* P	Pn	16 03 13.5	+1.1
RTLL				*i* S	Sn	16 03 32.3	+1.0
AUSP	Uspallata	1.33	159	*i* S	Sn	16 03 34.2	+1.9
RTCV	Cerro Valdivia	1.49	127	*i* S	Sn	16 03 36.2	+1.2
AGUA	GUANDACOL	1.94	41	*i* S	Sn	16 03 46.2	+1.2
ACAN	Cantantal	2.68	120	*i* P	Pn	16 03 31.0	+1.4
ACAN				*i* S	Sn	16 04 02.6	+0.7
VCA	Vinchina	2.69	34	*i* P	Pn	16 03 31.5	+1.6
VCA				*i* S	Sn	16 04 03.0	+0.7
VCA				AMP		16 04 18.9	
	comp=Z,490nm,0.2s						

*ISCJB **24** 16:13:15.7±0.5, 39°.11N±0°.03×29°.10E±0°.03, h3km±6km, Error ellipse: s-maj=5.8km s-min=3.8km az=158.0*
*CSEM **24** 16:13:15.9±0.1, 39°.11N×29°.11E, h5km, MD2.6, Error ellipse: s-maj=2.3km s-min=2.0km az=147.0*
*ISK **24** 16:13:15.4, 39°.12N×29°.13E, h5km, MD2.9*
*DDA **24** 16:13:15.8, 39°.11N×29°.11E, h9km, Md2.6*
ISC 24 16:13:15.8±0.9, 39°.12N±0°.02×29°.10E±0°.02, h14km±7km, n45, σ0°.39/58, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	Gediz	0.29	96	P	Pg	16 13 22.0	0.0
GDZ				S	Sg	16 13 26.6	+0.4
GDZ	Gediz	0.29	96	*i* P	Pg	16 13 22.0	0.0
GDZ				*i* S	Sg	16 13 26.6	+0.4
DEMI	Demirci	0.31	256	P	Pg	16 13 22.3	0.0
DEMI				S	Sg	16 13 26.7	0.0
DEMI	Demirci	0.31	256	*i* P	Pg	16 13 22.3	0.0
DEMI				*i* S	Sg	16 13 26.7	0.0
TVSB	Tavsanli	0.43	40	*e*PG	Pg	16 13 24.3	-0.1
TVSB				*e*SG	Sg	16 13 30.0	-0.3
TVSB	Tavsanli	0.43	40	*e*Pg	Pg	16 13 24.3	-0.1
TVSB				*e*Sg	Sg	16 13 30.0	-0.3
DURS	Dursunbey	0.69	315	P	Pb	16 13 29.9	+0.3
DURS	Dursunbey	0.69	315	*i* P	Pb	16 13 29.9	+0.3
KULA	Kula-Manisa	0.69	210	*e*PG	Pg	16 13 28.9	-0.4
KULA	Kula-Manisa	0.69	210	*e*Pg	Pg	16 13 28.9	-0.4
KHAL	Karahalli	0.81	158	P	Pb	16 13 31.6	-0.1
KHAL				S	Sb	16 13 42.3	-0.1
KHAL	Karahalli	0.81	158	*i* P	Pb	16 13 31.6	-0.1
KHAL				*i* S	Sb	16 13 42.3	-0.1
KHL	Karahalli	0.86	157	*e*PG	Pg	16 13 32.3	-0.2
KHL	Karahalli	0.86	157	*e*Pg	Pg	16 13 32.3	-0.2
AKHS	Akhisar	1.03	257	P	Pb	16 13 35.6	+0.1
AKHS				S	Sn	16 13 50.3	+0.1
AKHS	Akhisar	1.03	257	*i* P	Pb	16 13 35.6	+0.1
AKHS				*i* S	Sn	16 13 50.3	+0.1
AKS	Akhisar	1.03	257	*e*PG	Pn	16 13 36.0	+0.1
AKS	Akhisar	1.03	257	*e*Pg	Pn	16 13 36.0	+0.1
BALB	Balikesir	1.08	299	*e*PN	Pg	16 13 36.8	+0.1
BALB	Balikesir	1.08	299	*e*Pn	Pg	16 13 36.8	+0.1
IGD	Bursa	1.15	4	*i* P	Pb	16 13 36.5	-1.0
IGD				*i* S	Sn	16 13 53.8	+0.8
CAVI	Cavuskoy	1.22	28	*e*PN	Pg	16 13 39.3	-0.1
CAVI	Cavuskoy	1.22	28	*e*Pn	Pg	16 13 39.3	-0.1
MDNY	Mudanya-Bursa	1.26	352	*e*PN	Pg	16 13 39.9	-0.2
MDNY	Mudanya-Bursa	1.26	352	*e*Pn	Pg	16 13 39.9	-0.2
KCTX	Karacabey (Bur	1.28	334	*e*PN	Pb	16 13 40.1	+0.3
KCTX	Karacabey (Bur	1.28	334	*e*Pn	Pb	16 13 40.1	+0.3
BORA	Eskisehir	1.29	53	P	Pg	16 13 40.5	-0.2
BORA				S	Sg	16 13 58.0	+0.5
BORA	Eskisehir	1.29	53	*i* P	Pg	16 13 40.5	-0.2
BORA				*i* S	Sg	16 13 58.0	+0.5
BALY	Balya	1.31	299	P	Pb	16 13 40.4	+0.2
BALY	Balya	1.31	299	*i* P	Pb	16 13 40.4	+0.2
ADVT	Abdulvahap	1.40	20	*e*PN	Pb	16 13 42.2	+0.4
ADVT	Abdulvahap	1.40	20	*e*Pn	Pb	16 13 42.2	+0.4
GONE	Gonen-Balikesi	1.44	311	*e*PN	Pg	16 13 43.1	-0.3
GONE	Gonen-Balikesi	1.44	311	*e*Pn	Pg	16 13 43.1	-0.3
ARMT	Armutlu	1.46	353	*e*PN	Pg	16 13 43.7	-0.1
ARMT	Armutlu	1.46	353	*e*Pn	Pg	16 13 43.7	-0.1
EDC	Edincik	1.56	322	*e*PN	Pb	16 13 44.6	+0.2
EDC	Edincik	1.56	322	*e*Pn	Pb	16 13 44.6	+0.2
GULT	Gulveren	1.70	39	*e*PN	Pb	16 13 46.7	-0.3
GULT	Gulveren	1.70	39	*e*Pn	Pb	16 13 46.7	-0.3
HRT	Hereke	1.76	14	*e*PN	Pb	16 13 47.2	-0.6
HRT	Hereke	1.76	14	*e*Pn	Pb	16 13 47.

RKT	Rikitea	37.90	108	eT	T	17 17 43.0	
	8.5nm,0.3s						
H11S2	WAKE ISLAND Hy	38.61	331	T	T	17 18 28.8	
	baz=149,slow=76,SNR=84						
H11S3	WAKE ISLAND Hy	38.62	331	T	T	17 18 28.8	
	baz=149,slow=76,SNR=46						
H11S1	WAKE ISLAND Hy	38.63	331	T	T	17 18 30.5	
	baz=149,slow=76,SNR=47						
H11N3	WAKE ISLAND Hy	39.58	332	T	T	17 19 45.0	
	baz=151,slow=76,SNR=65						
H11N1	WAKE ISLAND Hy	39.58	332	T	T	17 19 45.3	
	baz=151,slow=76,SNR=87						
H11N2	WAKE ISLAND Hy	39.59	332	T	T	17 19 46.4	
	baz=151,slow=76,SNR=74						
STKA	Stephens Creek	43.07	240	LR	LR	16 55 19.9	
	comp=Z,322nm,18.5s,baz=41,slow=35						
WRA	Warramunga Arr	48.82	257	P	P	16 39 08.0	-0.3
	0.6nm,0.9s,baz=93,slow=7.6,SNR=3.5						
ASAR	Alice Springs	49.09	252	P	P	16 39 10.2	-0.3
	2.4nm,0.8s,baz=82,slow=8.8,SNR=19						
ASAR				LR	LR	16 58 20.0	
	comp=Z,289nm,21.6s,baz=94,slow=34						
FITZ	Fitzroy Crossi	57.18	258	LR	LR	17 02 55.5	
	comp=Z,171nm,20.1s,baz=102,slow=34						
JCJ	Chichijima	59.76	315	LR	LR	17 02 02.9	
	comp=Z,336nm,19.9s,baz=124,slow=32						
VNDA	Vanda	63.10	186	LR	LR	17 03 46.3	
	comp=Z,85nm,20.4s,baz=25,slow=32						
MJAR	Matsushiro Arr	68.43	320	LR	LR	17 05 46.8	
	comp=Z,157nm,22.0s,baz=145,slow=31						
PFO	Pinyon Flats O	73.78	47	LR	LR	17 07 53.6	
	comp=Z,312nm,18.3s,baz=285,slow=30						
YBH	Yreka Blue Hor	74.35	38	LR	LR	17 06 47.5	
	comp=Z,224nm,20.8s,baz=240,slow=29						
NVAR	Mina Array Bea	75.14	42	P	P	16 42 05.5	+0.4
	0.6nm,0.7s,baz=243,slow=5.8,SNR=2.9						
NVAR				LR	LR	17 07 34.6	
	comp=Z,190nm,20.2s,baz=263,slow=30						
KSRS	Korea Array	75.58	316	LR	LR	17 12 36.5	
	comp=Z,121nm,18.8s,baz=132,slow=34						
USRK	Ussuriysk Ar.	76.92	324	LR	LR	17 09 38.9	
	comp=Z,182nm,20.7s,baz=132,slow=31						
KLR	Kul'dur	80.12	328	LR	LR	17 12 38.7	
	comp=Z,96nm,21.9s,baz=176,slow=32						
TXAR	Lajitas Array	81.55	56	LR	LR	17 10 48.7	
	comp=Z,157nm,21.6s,baz=0.0,slow=30						
ILAR	Eielson Array	82.82	12	P	P	16 42 45.7	-0.6
	0.8nm,0.9s,baz=214,slow=5.4,SNR=6.2						
ILAR				LR	LR	17 12 46.0	
	comp=Z,52nm,20.7s,baz=208,slow=31						
PDAR	Pinedale Array	83.07	42	P	P	16 42 47.8	-0.7
	0.1nm,0.3s,baz=238,slow=8.5,SNR=4.3						
PDAR				LR	LR	17 12 37.2	
	comp=Z,158nm,20.9s,baz=249,slow=30						
YAK	Yakutsk	88.88	337	LR	LR	17 16 01.1	
	comp=Z,43nm,21.8s,baz=89,slow=31						
PLCA	Paso Flores	90.14	132	LR	LR	17 14 43.3	
	comp=Z,184nm,20.7s,baz=304,slow=30						
YKA	Yellowknife Ar	90.66	24	P	P	16 43 25.0	+0.4
	0.1nm,0.4s,baz=241,slow=3.9,SNR=3.2						
YKA				LR	LR	17 16 20.8	
	comp=Z,11nm,20.7s,baz=180,slow=30						
CMAR	Chiang Mai Arr	91.71	289	P	P	16 43 31.1	+0.5
	0.5nm,0.9s,baz=95,slow=2.9,SNR=2.4						
CMAR				LR	LR	17 19 28.8	
	comp=Z,89nm,21.7s,baz=114,slow=32						
ULM	Lac du Bonnet	94.71	39	LR	LR	17 19 43.8	
	comp=Z,209nm,20.6s,baz=250,slow=31						
TKL	Tuckaleechee C	99.45	56	LR	LR	17 22 12.7	
	comp=Z,135nm,21.3s,baz=270,slow=31						
KMBO	Kilima Mbogo	144.54	245	PKP	PKPdf	16 49 59.6	-0.6
	0.5nm,0.2s,baz=143,slow=18,SNR=2.3						
BRTR	Keskin Array B	145.65	320	PKPbc	PKPab	16 50 01.8	-0.1
	1.0nm,0.8s,baz=110,slow=1.7,SNR=3.9						
KHC	Kasperske Hory	145.90	351	eP	PKPab	16 50 03.2	+0.9

MAN 24 16:33:15,14°.87N×119°.57E,h23km,mb4.9,ML3.9,MS3.9, 1C,Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SCZP	Santa Cruz	0.96	20	eP	Pb	16 33 32.9	-0.2
SCZP				eS	Sn	16 33 46.6	+0.5
LUBP	Lubang	1.30	150	eP	Pb	16 33 38.5	-0.3
BOLP	Bolinao	1.54	12	eP	Pn	16 33 41.6	+0.5
PCPH	Palayan	1.63	65⇑	eP	Pn	16 33 41.6	-0.7
PCPH				eS	Sn	16 33 59.5	-3.0
BALP	Baler	2.12	66	eP	Pn	16 33 49.6	+0.5
BALP				eS	Sn	16 34 15.0	+0.2
POLP	Polilio Island	2.30	93	eP	Pn	16 33 53.2	+1.8
POLP				eS	Sb	16 34 25.6	+1.9
SJMP	San Jose	2.83	148	eP	Pn	16 34 00.5	+1.7
BUSP	Coron	2.91	168	eP	Pn	16 34 01.9	+2.0
BUSP				eS	Sn	16 34 36.2	+2.0
ABRA	Dolores	2.98	21	eP	Pb	16 34 05.0	-2.3
ABRA				eS	Sb	16 34 42.8	-0.6
CAUP	Cauayan	3.00	46	eP	Pn	16 34 03.7	+2.6
CAUP				eS	Sb	16 34 43.6	-0.2
APYP	Conner	3.38	28	eP	Pn	16 34 10.0	+3.6
APYP				eS	Sb	16 34 53.7	-1.3
ENPP	El Nido	3.64	182	eP	Pn	16 34 11.3	+1.3
CUYO	Cuyo Island	4.23	160	eP	Pn	16 34 18.9	+0.7
CUYO				eS	Sn	16 35 02.8	-4.2

IDC 24 16:37:14.1±999.0,31°.87N×12°.00E,h0km,Error ellipse: s-maj=419.6km s-min=93.3km az=150.0,Near coast of Libya

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I48TN	KESRA INFRASON	4.51	331	i		17 08 25.0	
	baz=148,slow=322,SNR=18						
I26DE	FREYUNG INFRAS	17.01	4	i		18 26 24.7	
	baz=187,slow=325,SNR=0.6						
I42PT	GRACIOSA ISLAN	33.16	294	i		19 56 50.0	
	baz=90,slow=313,SNR=1.0						

*IDC **24** 16:37:52.8±1.4,35°.38N×26°.79E,h0km,mb3.4/3, mb1 3.2/5,mb1mx3.1/50,mbtmp3.2/5,ML3.0/2,Error ellipse: s-maj=48.0km s-min=16.9km az=163.0*
*ATH **24** 16:37:54.6,35°.57N×26°.75E,h28km±1km,ML3.1/8,Error ellipse: s-maj=2.8km s-min=0.8km az=150.0*
*ISCJB **24** 16:37:55.5±0.5,35°.54N±0°.04×26°.78E±0°.03,h26km±5km, mb3.2/3,Error ellipse: s-maj=6.6km s-min=3.3km az=152.9*
*CSEM **24** 16:37:55.2±0.2,35°.57N×26°.76E,h15km,ML3.2,Error ellipse: s-maj=5.6km s-min=3.2km az=147.0*
*THE **24** 16:37:55.6,35°.52N×26°.76E,h9km±2km,ML3.2/11,Error ellipse: s-maj=2.6km s-min=0.6km az=152.0*

ISC 24 16:37:55.1±1.0,35°.56N±0°.03×26°.76E±0°.02,h15km±7km, n88,σ0°80/124,mb3.1/3,Crete

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KARP	Karpathos	0.33	92	P	Pb	16 38 02.6	-0.1
KARP				S	Sb	16 38 07.4	-0.5
KARP	Karpathos	0.33	92	P	Pb	16 38 02.7	0.0
KARP				S	Sb	16 38 07.4	-0.5
KARP	Karpathos	0.33	92	P	Pb	16 38 02.7	0.0
KARP				S	Sg	16 38 06.5	-0.1
KARP				AML	AML	16 38 07.7	
	comp=E,7216μm,0.2s						
KARP				AML	AML	16 38 07.9	
	comp=N,5767μm,0.1s						
ZKR	Zakros	0.63	225	P	Pg	16 38 07.0	-0.3
ZKR				S	Sb	16 38 16.5	+0.1
ZKR	Zakros	0.63	225	P	Pg	16 38 07.2	-0.1
ZKR				S	Sb	16 38 16.4	+0.1
ZKR	Zakros	0.63	225	P	Pg	16 38 07.2	-0.1
ZKR				S	Sb	16 38 16.4	+0.1
ZKR				AML	AML	16 38 17.6	
	comp=E,6246μm,0.3s						
ZKR				AML	AML	16 38 17.9	
	comp=N,7794μm,0.6s						
NPS	Neapolis	0.98	253	P	Pb	16 38 13.7	-0.1
NPS				S	Sn	16 38 27.9	-0.1
NPS	Neapolis	0.98	253	P	Pb	16 38 13.7	-0.1
NPS				S	Sg	16 38 27.3	+0.5
NPS	Neapolis	0.98	253	P	Pg	16 38 14.1	+0.1
NPS				S	Sg	16 38 27.3	+0.5
NPS				AML	AML	16 38 29.4	
	comp=N,1945μm,0.3s						
NPS				AML	AML	16 38 29.9	
	comp=E,1893μm,0.2s						
NISR	Nisiros	1.09	16	P	Pg	16 38 16.2	0.0
NISR				S	Sn	16 38 32.6	+1.9
NISR	Nisiros	1.09	16	P	Pg	16 38 16.1	0.0
NISR				S	Sn	16 38 30.8	+0.1
NISR	Nisiros	1.09	16	P	Pg	16 38 16.1	0.0
NISR				S	Sn	16 38 30.8	+0.1
NISR				AML	AML	16 38 33.9	
	comp=N,1569μm,0.4s						
NISR				AML	AML	16 38 33.9	
	comp=E,2529μm,0.2s						
NIS1	Nisyros Isl.	1.09	18	P	Pb	16 38 15.8	0.0
NIS1	Nisyros Isl.	1.09	18	P	Pb	16 38 15.8	0.0
NIS1	Nisyros Isl.	1.09	18	P	Pg	16 38 16.2	0.0
LAST	Lasithi	1.12	250	P	Pb	16 38 16.0	-0.2
LAST				S	Sn	16 38 31.4	-0.1
LAST	Lasithi	1.12	250	P	Pb	16 38 16.0	-0.2
LAST				S	Sn	16 38 31.4	-0.1
LAST	Lasithi	1.12	250	P	Pn	16 38 16.3	0.0
ARG	Arkhangelos	1.29	59	P	Pb	16 38 19.1	0.0
ARG				S	Sn	16 38 36.0	+0.3
ARG	Arkhangelos	1.29	59	P	Pb	16 38 19.1	0.0
ARG				S	Sn	16 38 36.0	+0.3
SANT	Santorini	1.33	308	P	Pn	16 38 18.9	-0.3
SANT				S	Sg	16 38 38.0	+0.1
SANT	Santorini	1.33	308	P	Pn	16 38 18.9	-0.3
SANT				S	Sg	16 38 38.0	+0.1
SANT	Santorini	1.33	308	P	Pn	16 38 18.7	-0.4
SANT				S	Sg	16 38 38.2	+0.3
SANT				AML	AML	16 38 40.9	
	comp=E,2237μm,0.3s						
SANT				AML	AML	16 38 41.4	
	comp=N,1105μm,0.2s						
THT1	Athinios (Pele	1.35	308	P	Pn	16 38 19.1	-0.4
THT1				S	Sb	16 38 38.0	+0.7
THT1	Athinios (Pele	1.35	308	P	Pn	16 38 19.1	-0.4
THT1				S	Sb	16 38 38.0	+0.7
THR6	Thira Island,	1.36	306	P	Pn	16 38 19.0	-0.5
THR6	Thira Island,	1.36	306	P	Pn	16 38 19.0	-0.5
THR7	Fira-Santorini	1.38	309	P	Pn	16 38 19.3	-0.5
THR7	Fira-Santorini	1.38	309	P	Pn	16 38 19.3	-0.5
THR3	Thira Island,	1.39	308	P	Pn	16 38 19.9	0.0
THR3	Thira Island,	1.39	308	P	Pn	16 38 19.9	0.0
THR2	Thira island,	1.39	310	P	Pn	16 38 19.8	-0.2
THR2	Thira island,	1.39	310	P	Pn	16 38 19.8	-0.2
IACM	Heraklion	1.40	260	P	Pb	16 38 21.3	+0.4
IACM	Heraklion	1.40	260	P	Pb	16 38 21.3	+0.4
CMBO	Columbo, Santo	1.42	310	P	Pn	16 38 20.0	-0.4
CMBO				S	Sg	16 38 40.4	-0.6
CMBO	Columbo, Santo	1.42	310	P	Pn	16 38 20.1	-0.4
CMBO				S	Sg	16 38 40.4	-0.6
CMBO	Columbo, Santo	1.42	310	P	Pn	16 38 20.1	-0.4
THR5	Thira Island,	1.43	307	P	Pn	16 38 20.1	-0.4
THR5	Thira Island,	1.43	307	P	Pn	16 38 20.1	-0.4
IDI	Anoyia	1.55	260	Pn	Pn	16 38 21.5	-0.8
	comp=N,9.3nm,0.3s,baz=88,slow=8.3,SNR=107						
IDI				Sn	Sb	16 38 43.9	+0.9
	comp=N,27nm,0.3s,baz=109,slow=19,SNR=7.7						
IDI	Anoyia	1.55	260	P	Pn	16 38 21.4	-0.8
IDI				S	Sn	16 38 41.5	-0.6
IDI	Anoyia	1.55	260	P	Pn	16 38 21.4	-0.8
IDI				S	Sn	16 38 41.5	-0.6
IDI	Anoyia	1.55	260	P	Pn	16 38 20.7	-1.5
BODT	Bodrum	1.56	16	P	Pn	16 38 21.8	-0.6
BODT				S	Sb	16 38 43.5	+0.1
BODT	Bodrum	1.56	16	P	Pn	16 38 21.8	-0.6
BODT				S	Sb	16 38 43.5	+0.1
SIVA	Sivas	1.68	252	P	Pn	16 38 24.3	+0.3
SIVA				S	Sb	16 38 46.0	-0.7
SIVA	Sivas	1.68	252	P	Pn	16 38 24.3	+0.3
SIVA				S	Sb	16 38 46.0	-0.7
SIVA				AML	AML	16 38 55.1	
	comp=E,1217μm,0.5s						
SIVA				AML	AML	16 38 55.4	
	comp=N,824μm,0.3s						
APE	Apeiranthos	1.80	327	P	Pn	16 38 25.2	-0.5
APE	Apeiranthos	1.80	327	P	Pn	16 38 25.2	-0.5
APE	Apeiranthos	1.80	327	P	Pn	16 38 24.7	-1.0
APE				S	Sn	16 38 47.0	-1.4
APE				AML	AML	16 38 48.1	
	comp=N,761μm,0.2s						
APE				AML	AML	16 38 48.1	
	comp=E,655μm,0.2s						
YER	Yerkesik	2.00	38	P	Pn	16 38 28.6	+0.2
YER				S	Sn	16 38 53.2	0.0
YER	Yerkesik	2.00	38	P	Pn	16 38 28.6	+0.2
YER				S	Sn	16 38 53.2	0.0
VAM	Vamos	2.09	267	P	Pn	16 38 30.4	+0.8
SMG	Samos	2.15	2	P	Pn	16 38 28.6	-1.8
SMG	Samos	2.15	2	P	Pn	16 38 28.6	-1.8
MHLO	Agia Marina, M	2.21	301	P	Pn	16 38 32.3	+1.0
MHLO	Agia Marina, M	2.21	301	P	Pn	16 38 32.3	+1.0
MHLO	Agia Marina, M	2.21	301	P	Pn	16 38 32.8	+1.4
IMMV	Iera Moni Meta	2.27	268	P	Pn	16 38 32.5	+0.5
IMMV	Iera Moni Meta	2.27	268	P	Pn	16 38 32.5	+0.5
IMMV	Iera Moni Meta	2.27	268	P	Pn	16 38 33.2	+1.2
GVD	Gavdhos	2.30	253	P	Pn	16 38 33.2	+0.7
GVD	Gavdhos	2.30	253	P	Pn	16 38 33.2	+0.7
ANKY	Antikythira Is	2.83	277	P	Pn	16 38 37.8	-1.9
ANKY	Antikythira Is	2.83	277	P	Pn	16 38 37.8	-1.9
CHOS	Chios island	2.88	349	P	Pn	16 38 39.5	-1.0
CHOS	Chios island	2.88	349	P	Pn	16 38 39.5	-1.0
KYTH	Kithira	3.10	284	P	Pn	16 38 44.3	+0.7
KYTH	Kithira	3.10	284	P	Pn	16 38 44.3	+0.7
VLI	Veliai	3.30	292	P	Pn	16 38 46.4	+0.2
VLI				S	Sn	16 39 24.0	-1.2
VLI	Veliai	3.30	292	P	Pn	16 38 46.5	+0.2
VLI				S	Sn	16 39 24.0	-1.2
VLI	Veliai	3.30	292	P	Pn	16 38 46.5	+0.2
VLI				S	Sn	16 39 23.3	-1.9
VLI				AML	AML	16 39 27.8	
	comp=E,97μm,0.4s						
VLI				AML	AML	16 39 28.1	
	comp=N,112μm,0.3s						
VLY	Voula,Athens	3.30	315	P	Pn	16 38 46.8	+0.6
VLY	Voula,Athens	3.30	315	P	Pn	16 38 46.8	+0.6
DID	Didima	3.44	305	P	Pn	16 38 49.7	+1.5
DID	Didima	3.44	305	P	Pn	16 38 49.6	+1.5
SIGR	SIGRI	3.71	349	P	Pn	16 38 51.0	-0.9
SIGR	SIGRI	3.71	349	P	Pn	16 38 51.0	-0.9
PYL	PYLOS	4.27	290	P	Pn	16 39 00.6	+1.1
PYL	PYLOS	4.27	290	P	Pn	16 39 00.6	+1.1
KLV	Kalavryta, Ach	4.45	305	P	Pn	16 39 03.8	+1.7
KLV	Kalavryta, Ach	4.45	305	P	Pn	16 39 03.8	+1.7
BRTR	Keskin Array B	6.86	51	Pn	Pn	16 39 37.2	+1.9
	comp=N,0.1nm,0.3s,baz=227,slow=15,SNR=3.3						
MMAI	Mount Meron Ar	7.59	107	Pn	Pn	16 39 43.5	-1.8
	comp=N,0.4nm,0.3s,baz=289,slow=14,SNR=2.3						
TORD	Torodi Ar. Bea	31.75	232	P	P	16 44 18.1	-0.7
	comp=N,0.1nm,0.4s,baz=39,slow=8.2,SNR=3.0						
MKAR	Makanchi Array	42.46	57	P	P	16 45 50.0	+0.5
	comp=N,0.2nm,0.5s,baz=278,slow=8.4,SNR=4.5						
ZALV	Zalesovo Beam	43.78	46	P	P	16 46 01.2	+1.2
	comp=N,0.4nm,0.4s,baz=299,slow=6.5,SNR=3.0						

*ISK **24** 16:40:15.4,39°.10N×29°.15E,h5km,ML3.5*
*ISCJB **24** 16:40:16.5±0.4,39°.10N±0°.01×29°.08E±0°.02,h6km±3km, Error ellipse: s-maj=2.7km s-min=2.4km az=5.9*
*DDA **24** 16:40:16.3,39°.12N×29°.09E,h7km,Ml3.6*
*CSEM **24** 16:40:16.8±0.1,39°.09N×29°.10E,h5km,ML3.6,Error ellipse: s-maj=2.2km s-min=1.9km az=80.0*
*THE **24** 16:40:17.5,39°.05N×29°.00E,h2km±1km,ML2.9/5,Error ellipse: s-maj=1.7km s-min=0.8km az=96.0*

ISC 24 16:40:16.9±1.0,39°.11N±0°.01×29°.09E±0°.02,h7km±8km, n187,σ0°86/231,9C-8D,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.29	257	P	Pg	16 40 22.5	-0.2
DEMI				S	Sg	16 40 26.6	-0.1
DEMI	Demirci	0.29	257	i P	Pg	16 40 22.5	-0.2
DEMI				i S	Sg	16 40 26.6	-0.1
GDZ	Gediz	0.31	94	P	Pg	16 40 22.9	-0.1
GDZ				S	Sg	16 40 27.6	+0.5
GDZ	Gediz	0.31	94	i P	Pg	16 40 22.9	-0.1
GDZ				i S	Sg	16 40 27.6	+0.5
TVSB	Tavsanli	0.45	41	ePG	Pg	16 40 24.9	-0.7
TVSB				eSG	Sg	16 40 31.4	-0.1
TVSB	Tavsanli	0.45	41	ePg	Pg	16 40 24.9	-0.7
TVSB				eSg	Sg	16 40 31.4	-0.1
DURS	Dursunbey	0.68	316	P	Pg	16 40 29.5	-0.6
DURS	Dursunbey	0.68	316	i P	Pg	16 40 29.4	-0.6
KULA	Kula-Manisa	0.68	209	ePG	Pg	16 40 29.5	-0.6
KULA	Kula-Manisa	0.68	209	P	Pg	16 40 29.4	-0.6
KULA				S	Sg	16 40 38.1	-0.8
KULA	Kula-Manisa	0.68	209	ePg	Pg	16 40 29.5	-0.6
KULA				S	Sg	16 40 38.1	-0.8
KHAL	Karahalli	0.81	157	P	Pg	16 40 32.2	-0.2
KHAL				S	Sg	16 40 43.4	+0.6
KHAL	Karahalli	0.81	157	i P	Pg	16 40 32.2	-0.2
KHAL				i S	Sg	16 40 43.4	+0.6
KHL	Karahalli	0.86	156	ePG	Pg	16 40 32.6	-0.8
KHL	Karahalli	0.86	156	ePg	Pg	16 40 32.6	-0.8
ORLT	Orhaneli	0.95	351	ePG	Pg	16 40 34.9	-0.2
ORLT				eSG	Sb	16 40 49.5	+1.1
ORLT	Orhaneli	0.95	351	ePg	Pg	16 40 34.9	-0.2
ORLT				eSg	Sb	16 40 49.5	+1.1
AKHS	Akhisar	1.02	257	P	Pg	16 40 36.1	-0.3
AKHS				S	Sb	16 40 50.8	+0.4
AKHS	Akhisar	1.02	257	i P	Pg	16 40 36.1	-0.3
AKHS				i S	Sb	16 40 50.8	+0.4
AKS	Akhisar	1.02	257	ePG	Pb	16 40 36.7	-0.2
AKS	Akhisar	1.02	257	ePg	Pb	16 40 36.7	-0.2
BALB	Balikesir	1.07	300	ePN	Pb	16 40 38.1	+0.3
BALB				eSN	Sn	16 40 54.2	+0.7
BALB	Balikesir	1.07	300	ePn	Pb	16 40 38.1	+0.3
BALB				eSn	Sn	16 40 54.2	+0.7
IGD	Bursa	1.16	4	i P	Pg	16 40 37.2	-1.9
IGD				i S	Sb	16 40 54.4	+0.1
CAVI	Cavuskoy	1.24	28	ePN	Pb	16 40 39.8	-0.8
CAVI	Cavuskoy	1.24	28	ePn	Pb	16 40 39.8	-0.8
IZI	Iznik	1.26	14	ePN	Pn	16 40 40.6	-0.4
IZI	Iznik	1.26	14	ePn	Pn	16 40 40.6	-0.4
MDNY	Mudanya-Bursa	1.27	353	ePN	Pn	16 40 40.8	-0.2
MDNY	Mudanya-Bursa	1.27	353	ePn	Pn	16 40 40.8	-0.2
KCTX	Karacabey (Bur	1.28	334	ePN	Pb	16 40 41.5	+0.1
KCTX	Karacabey (Bur	1.28	334	ePn	Pb	16 40 41.5	+0.1
BALY	Balya	1.30	299	P	Pn	16 40 40.7	-0.8
BALY	Balya	1.30	299	i P	Pn	16 40 40.7	-0.8
BORA	Eskisehir	1.31	54	P	Pn	16 40 40.8	-0.9
BORA				S	Sn	16 40 59.5	+0.1
BORA	Eskisehir	1.31	54	i P	Pn	16 40 40.8	-0.9
BORA				i S	Sn	16 40 59.5	+0.1
GEMT	Gemlik	1.32	3	ePN	Pb	16 40 42.2	+0.1
GEMT	Gemlik	1.32	3	ePn	Pb	16 40 42.2	+0.1
DENT	Denizli	1.35	182	ePN	Pb	16 40 42.5	-0.1
DENT	Denizli	1.35	182	ePn	Pb	16 40 42.5	-0.1
ADVT	Abdulvahap	1.41	21	ePN	Pn	16 40 43.2	+0.2
ADVT	Abdulvahap	1.41	21	ePn	Pn	16 40 43.2	+0.2
DNZL	Cakiroluk	1.42	181	P	Pn	16 40 42.8	-0.4
DNZL	Cakiroluk	1.42	181	i P	Pn	16 40 42.9	-0.4
DNZL				i S	Sg	16 41 06.0	+3.5
ESKT	Eskisehir	1.43	73	i P	Pn	16 40 43.1	-0.2
GONE	Gonen-Balikesi	1.43	311	ePN	Pg	16 40 44.2	-0.1
GONE	Gonen-Balikesi	1.43	311	ePn	Pg	16 40 44.2	-0.1
SEYT	Eskypehyr	1.43	73	P	Pn	16 40 43.1	-0.2
ARMT	Armutlu	1.46	353	ePN	Pn	16 40 44.0	+0.3
ARMT	Armutlu	1.46	353	ePn	Pn	16 40 44.0	+0.3
AYDB	Zeytinkoy-Aydi	1.49	219	ePN	Pb	16 40 44.9	-0.1
AYDB	Zeytinkoy-Aydi	1.49	219	ePn	Pb	16 40 44.9	-0.1
BOLV	Bolvadin	1.51	104	P	Pb	16 40 45.0	-0.2
BOLV	Bolvadin	1.51	104	i P	Pb	16 40 45.0	-0.2
GPA	Golpazari	1.51	38	ePN	Pn	16 40 44.2	-0.2
GPA	Golpazari	1.51	38	ePn	Pn	16 40 44.2	-0.2
EDC	Edincik	1.55	323	ePN	Pb	16 40 45.9	-0.1
EDC	Edincik	1.55	323	ePn	Pb	16 40 45.9	-0.1
KNL	Bal¨-kesir	1.67	314	i P	Pb	16 40 48.2	+0.3
KNL				i S	Sg	16 41 10.0	-0.6
DKL	Dikili	1.70	269	ePN	Pb	16 40 48.3	-0.1
DKL	Dikili	1.70	269	ePn	Pb	16 40 48.3	-0.1
ISP	Isparta	1.71	138	ePN	Pn	16 40 46.8	-0.4
ISP	Isparta	1.71	138⇑	i P	Pb	16 40 48.3	-0.4
ISP	Isparta	1.71	138	P	Pn	16 40 46.0	-1.2
ISP				S	Sn	16 41 09.5	+0.1
ISP	Isparta	1.71	138	P	Pn	16 40 46.0	-1.2
ISP	Isparta	1.71	138	ePn	Pn	16 40 46.8	-0.4
ISP				S	Sn	16 41 09.5	+0.1
GULT	Gulveren	1.72	39	ePN	Pn	16 40 47.1	-0.2
GULT	Gulveren	1.72	39	ePn	Pn	16 40 47.1	-0.2
AYDN	Tasoluk	1.73	214	P	Pb	16 40 48.8	-0.2
AYDN	Tasoluk	1.73	214	i P	Pb	16 40 48.8	-0.2
AYDN				i S	Sg	16 41 14.0	+1.5
BUY	Buyukada	1.74	1	P	Pn	16 40 46.6	-0.9
BUY				S	Sg	16 41 12.6	-0.2
BUY	Buyukada	1.74	1	i P	Pn	16 40 46.6	-0.9
BUY				i S	Sg	16 41 12.6	-0.2
BAGO	Egridir - ISPA	1.74	129	i P	Pn	16 40 47.3	-0.3
BAGO				i S	Sg	16 41 16.1	+3.2
HRT	Hereke	1.77	14	ePN	Pn	16 40 48.3	+0.4
HRT	Hereke	1.77	14	ePn	Pn	16 40 48.3	+0.4
SPNC	Sapanca-Adapaz	1.83	30	ePN	Pn	16 40 49.0	+0.2
SPNC	Sapanca-Adapaz	1.83	30	ePn	Pn	16 40

CHOS	Chios island	2.48	254	ePn	Pn	16 40 59.0 +1.3
CHOS				S	Sn	16 41 26.9 -1.3
BODT	Bodrum	2.48	215	ePN	Pn	16 40 58.8 +1.1
BODT	Bodrum	2.48	215	P	Pn	16 40 56.9 -0.8
BODT				S	Sn	16 41 26.4 -1.8
BODT	Bodrum	2.48	215	P	Pn	16 40 56.9 -0.8
BODT	Bodrum	2.48	215	ePn	Pn	16 40 58.8 +1.1
BODT				S	Sn	16 41 26.4 -1.8
SIGR	SIGRI	2.51	273	ePN	Pn	16 40 59.5 +1.4
SIGR	SIGRI	2.51	273	P	Pn	16 40 56.8 -1.3
SIGR				S	Sn	16 41 26.9 -2.1
SIGR	SIGRI	2.51	273	P	Pn	16 40 56.8 -1.3
SIGR	SIGRI	2.51	273	ePn	Pn	16 40 59.5 +1.4
SIGR				S	Sn	16 41 26.9 -2.1
ERIK	Erikli-Kesan	2.52	309	ePN	Pn	16 40 59.6 +1.4
ERIK	Erikli-Kesan	2.52	309	ePn	Pn	16 40 59.6 +1.4
LADK	Ladik-KONYA	2.72	108	ePN	Pn	16 41 01.3 +0.2
LADK	Ladik-KONYA	2.72	108	ePn	Pn	16 41 01.3 +0.2
ENEZ	Enez	2.78	307	ePN	Pn	16 41 03.1 +1.4
ENEZ	Enez	2.78	307	ePn	Pn	16 41 03.1 +1.4
PHSR	Pinarhisar	2.79	335	ePN	Pn	16 41 03.3 +1.4
PHSR	Pinarhisar	2.79	335	ePn	Pn	16 41 03.3 +1.4
KONT	Konya--Tatoy	2.82	113	ePN	Pn	16 41 02.5 +0.1
KONT	Konya--Tatoy	2.82	113	ePn	Pn	16 41 02.5 +0.1
KDZE	Karadeniz Ereo	2.85	39	ePN	Pn	16 41 03.3 +0.6
KDZE	Karadeniz Ereo	2.85	39	ePn	Pn	16 41 03.3 +0.6
ALN	Alexandroupoli	2.94	308	ePN	Pn	16 41 05.3 +1.4
ALN	Alexandroupoli	2.94	308	P	Pn	16 41 03.2 -0.8
ALN				S	Sn	16 41 39.7 +0.2
ALN	Alexandroupoli	2.94	308	P	Pn	16 41 03.2 -0.8
ALN	Alexandroupoli	2.94	308	ePn	Pn	16 41 05.3 +1.4
ALN				S	Sn	16 41 39.7 +0.2
SMTH	Samothraki Isl	3.06	298	P	Pn	16 41 05.3 -0.3
SMTH				S	Sn	16 41 42.1 -0.4
SMTH	Samothraki Isl	3.06	298	P	Pn	16 41 05.3 -0.3
SMTH				S	Sn	16 41 42.1 -0.4
AFSR	Af¨ar-Bala (A	3.11	83	ePN	Pn	16 41 06.9 +0.4
AFSR	Af¨ar-Bala (A	3.11	83	ePn	Pn	16 41 06.9 +0.4
EDRB	Edirne	3.27	328	ePN	Pn	16 41 10.3 +1.8
EDRB	Edirne	3.27	328	P	Pn	16 41 08.1 -0.4
EDRB	Edirne	3.27	328	P	Pn	16 41 08.1 -0.4
EDRB	Edirne	3.27	328	ePn	Pn	16 41 10.3 +1.8
JMB	Yambol	3.85	331	P	Pn	16 41 17.3 +0.8
DIM	Dimitrovgrad	3.99	318	P	Pn	16 41 18.2 -0.2
PRD	Provadia	4.28	343	P	Pn	16 41 23.9 +1.5
MSAB	Monastry St. A	5.07	350	⇓iP	Pn	16 41 33.6 +0.4
MSAB	Monastry St. A	5.07	350	⇓iP	Pn	16 41 33.6 +0.4
TIRR	Tirgusor	5.37	355	⇑iP	Pn	16 41 37.6 +0.3
TIRR	Tirgusor	5.37	355	⇑iP	Pn	16 41 37.6 +0.3
MPEP	Malo Peshtene	5.85	318	P	Pn	16 41 43.2 -0.8
CFR	Carcaliu	6.10	354	⇓iP	Pn	16 41 49.1 +1.7
CFR	Carcaliu	6.10	354	⇓iP	Pn	16 41 49.1 +1.7
MLR	Muntele Rosu	6.79	341	⇑iP	Pn	16 41 58.2 +1.2
MLR	Muntele Rosu	6.79	341	⇑iP	Pn	16 41 58.2 +1.2
PLOR	Plostina	6.97	346	⇑iP	Pn	16 42 01.0 +1.6
PLOR	Plostina	6.97	346	⇑iP	Pn	16 42 01.0 +1.6
VRI	Vrincioaia	6.97	346	⇓iP	Pn	16 41 59.8 +0.4
VRI	Vrincioaia	6.97	346	⇓iP	Pn	16 41 59.8 +0.4
VOIR		6.99	336	⇑iP	Pn	16 42 00.1 +0.3
VOIR		6.99	336	⇑iP	Pn	16 42 00.1 +0.3
TESR	Tescani	7.61	347	⇓iP	Pn	16 42 08.9 +0.8
TESR	Tescani	7.61	347	⇓iP	Pn	16 42 08.9 +0.8

*IDC **24** 16:43:53.6±3.4, 7.°92S×104.°11E, h0km, mb3.5/7, mb1 3.6/7, mb1mx3.5/46, mbtmp3.5/7, Error ellipse: s-maj=146.2km s-min=19.9km az=51.0*
*ISCJB **24** 16:43:56.1±1.0, 8.°0S±0.°1×104.°08E±0.°09, h33km, mb3.5/7, Error ellipse: s-maj=20.9km s-min=11.7km az=10.1*

ISC 24 16:43:58.6±1.4, 8.°0S±0.°2×104.°1E±0.°1, h35km, n12, σ0°28/9, mb3.5/7, Southwest of Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LEM	Lembang	3.67	73	Pn	Pn	16 44 57.5	+4.5
	5.9nm,0.3s,baz=230,slow=5.5,SNR=6.7						
LEM				Sn	Sn	16 45 35.1	0.0
	3.9nm,0.3s,baz=212,slow=17,SNR=3.7						
CMAR	Chiang Mai Arr	26.73	349	P	P	16 49 34.9	-0.1
	0.9nm,0.7s,baz=185,slow=8.9,SNR=9.7						
H08S2	Diego Garcia H	31.31	268	T	T	17 23 49.5	
	baz=94						
H08S3	Diego Garcia H	31.32	268	T	T	17 23 52.4	
	baz=94						
H08S1	Diego Garcia H	31.33	268	T	T	17 23 49.5	
	baz=94						
WRA	Warramunga Arr	31.61	115	P	P	16 50 18.7	+0.2
	0.7nm,0.6s,baz=286,slow=12,SNR=7.2						
ASAR	Alice Springs	32.56	122	P	P	16 50 26.7	-0.1
	0.1nm,0.6s,baz=299,slow=8.3,SNR=3.1						
SONM	Songino Array	55.58	2	P	P	16 53 30.5	-0.2
	0.2nm,0.4s,baz=188,slow=7.3,SNR=2.8						
MKAR	Makanchi Array	57.85	342	P	P	16 53 47.2	+0.4
	0.2nm,0.4s,baz=145,slow=5.3,SNR=2.4						
KURBB	Kurchatov Arra	62.40	342	P	P	16 54 17.6	-0.2
	0.2nm,0.6s,baz=151,slow=5.9,SNR=3.2						
ZALV	Zalesovo Beam	63.78	347	P	P	16 54 27.2	+0.4
	0.8nm,0.3s,baz=166,slow=4.9,SNR=6.2						
TXAR	Lajitas Array	146.33	47	PKPbc	PKPbc	17 03 36.3	-0.2
	0.2nm,0.5s,baz=294,slow=0.9,SNR=3.4						

MAN 24 16:46:42, 11.°37N×121.°93E, h1km, mb4.1, ML3.0, MS2.7, 1C-1D, Panay

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAP	San Jose, Anti	0.62	178	⇓iP	Pb	16 46 55.7	+0.1
JAP				iS	Sg	16 47 02.5	+0.7
RCP	Roxas	0.82	76	⇑eP	Pb	16 46 59.7	+0.5
RCP				eS	Sb	16 47 09.9	-0.9
GUIM	Jordan	0.98	138	eP	Pg	16 47 00.7	-0.1
GUIM				eS	Sn	16 47 17.3	-0.2
OTRP	Odiongan	0.99	5	eP	Pg	16 47 00.1	-0.9
OTRP				eS	Sg	16 47 14.4	+0.5
CUYO	Cuyo Island	1.03	240	eP	Pb	16 47 02.5	-0.1
CUYO				eS	Sn	16 47 18.5	-0.2
SJMP	San Jose	1.34	324	eP	Pb	16 47 08.3	+0.3
SJMP				eS	Sn	16 47 26.7	+0.2

*ISK **24** 16:54:06.7, 39.°14N×29.°14E, h5km, ML3.1*
*DDA **24** 16:54:07.2, 39.°14N×29.°15E, h12km, Ml3.6*
*CSEM **24** 16:54:07.9±0.1, 39.°15N×29.°15E, h2km, ML3.6, Error ellipse: s-maj=2.6km s-min=2.5km az=73.0*

ISC 24 16:54:07.7±1.0, 39.°16N±0.°01×29.°14E±0.°02, h7km±9km, n117, σ0°82/147, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	Gediz	0.28	104	P	Pg	16 54 13.1	-0.2
GDZ				S	Sg	16 54 17.3	+0.4
GDZ	Gediz	0.28	104	iP	Pg	16 54 13.1	-0.2
GDZ				iS	Sg	16 54 17.3	+0.4
DEMI	Demirci	0.35	251	P	Pg	16 54 14.3	-0.3
DEMI				S	Sg	16 54 19.1	-0.1
DEMI	Demirci	0.35	251	iP	Pg	16 54 14.3	-0.3
DEMI				iS	Sg	16 54 19.1	-0.1
TVSB	Tavsanli	0.39	40	ePG	Pg	16 54 15.2	-0.1
TVSB	Tavsanli	0.39	40	ePg	Pg	16 54 15.2	-0.1
DST	Dursunbey	0.60	318	ePG	Pg	16 54 19.1	-0.3
DST				eSG	Sb	16 54 29.4	+0.2
DST	Dursunbey	0.60	318	ePg	Pg	16 54 19.1	-0.3
DST				eSg	Sb	16 54 29.5	+0.2
DURS	Dursunbey	0.68	311	P	Pg	16 54 20.5	-0.4
DURS	Dursunbey	0.68	311	iP	Pg	16 54 20.5	-0.4
DURS				iS	Sn	16 54 34.0	-0.7
KULA	Kula-Manisa	0.74	210	ePG	Pg	16 54 21.3	-0.7
KULA	Kula-Manisa	0.74	210	ePg	Pg	16 54 21.3	-0.7
KHAL	Karahalli	0.83	160	P	Pg	16 54 23.2	-0.5
KHAL				S	Sg	16 54 34.0	-0.6
KHAL	Karahalli	0.83	160	iP	Pg	16 54 23.2	-0.5
KHAL				iS	Sg	16 54 34.0	-0.6
KHAL				iS	Sn	16 54 37.8	-0.7
KHL	Karahalli	0.89	160	ePG	Pg	16 54 24.8	0.0
KHL	Karahalli	0.89	160	ePg	Pg	16 54 24.8	0.0
ORLT	Orhaneli	0.91	348	ePG	Pg	16 54 24.6	-0.6
ORLT	Orhaneli	0.91	348	ePg	Pg	16 54 24.6	-0.6
AKHS	Akhisar	1.07	255	S	Sb	16 54 42.3	-0.3
AKHS	Akhisar	1.07	255	iS	Sb	16 54 42.3	-0.3
AKS	Akhisar	1.07	255	ePG	Pg	16 54 28.1	-0.2
AKS	Akhisar	1.07	255	ePg	Pg	16 54 28.1	-0.2
BALB	Balikesir	1.09	297	ePN	Pg	16 54 28.9	+0.3
BALB	Balikesir	1.09	297	ePn	Pg	16 54 28.9	+0.3
IGD	Bursa	1.11	3	iP	Pb	16 54 27.4	-1.7
IGD				iS	Sn	16 54 44.5	-0.6
CAVI	Cavuskoy	1.18	27	ePN	Pn	16 54 30.4	-0.2
CAVI	Cavuskoy	1.18	27	ePn	Pn	16 54 30.4	-0.2
IZI	Iznik	1.21	12	ePN	Pg	16 54 31.4	+0.6
IZI	Iznik	1.21	12	ePn	Pg	16 54 31.5	+0.6
MDNY	Mudanya-Bursa	1.23	351	ePN	Pb	16 54 31.3	+0.1
MDNY	Mudanya-Bursa	1.23	351	ePn	Pb	16 54 31.3	+0.1
BORA	Eskisehir	1.25	54	P	Pn	16 54 30.9	-0.7
BORA				S	Sn	16 54 48.5	-0.3
BORA	Eskisehir	1.25	54	iP	Pn	16 54 30.9	-0.7
BORA				iS	Sn	16 54 48.5	-0.3
KCTX	Karacabey (Bur	1.26	332	ePN	Pn	16 54 31.7	-0.1
KCTX	Karacabey (Bur	1.26	332	ePn	Pn	16 54 31.7	-0.1
GEMT	Gemlik	1.28	2	ePN	Pg	16 54 32.6	+0.3
GEMT	Gemlik	1.28	2	ePn	Pg	16 54 32.6	+0.3
BALY	Balya	1.31	297	P	Pn	16 54 32.4	-0.1
BALY				S	Sg	16 54 50.5	+0.6
BALY	Balya	1.31	297	iP	Pn	16 54 32.4	-0.1
BALY				iS	Sg	16 54 50.5	+0.6
ADVT	Abdulvahap	1.36	20	ePN	Pg	16 54 34.1	+0.3
ADVT	Abdulvahap	1.36	20	ePn	Pg	16 54 34.1	+0.3
ESKT	Eskisehir	1.38	74	iP	Pn	16 54 32.9	-0.6
ESKT				iS	Sg	16 54 54.0	+2.0
SEYT	Eskypehyr	1.38	74	P	Pn	16 54 32.9	-0.5
SEYT				S	Sg	16 54 54.0	+2.0
DENT	Denizli	1.40	183	ePN	Pb	16 54 34.3	+0.1
DENT	Denizli	1.40	183	ePn	Pb	16 54 34.3	+0.1
ARMT	Armutlu	1.42	351	ePN	Pg	16 54 35.4	+0.3
ARMT	Armutlu	1.42	351	ePn	Pg	16 54 35.4	+0.3
GONE	Gonen-Balikesi	1.43	309	ePN	Pb	16 54 34.9	+0.2
GONE	Gonen-Balikesi	1.43	309	ePn	Pb	16 54 34.9	+0.2
GPA	Golpazari	1.45	38	ePN	Pb	16 54 35.1	+0.1
GPA	Golpazari	1.45	38	ePn	Pb	16 54 35.1	+0.1
DNZL	Cakiroluk	1.47	183	P	Pn	16 54 34.8	+0.1
DNZL	Cakiroluk	1.47	183	iP	Pn	16 54 34.8	+0.1
DNZL				iS	Sg	16 54 58.7	+3.9
BOLV	Bolvadin	1.48	107	P	Pb	16 54 35.7	+0.1
BOLV				S	Sg	16 54 55.7	+0.4
BOLV	Bolvadin	1.48	107	iP	Pb	16 54 35.7	+0.1
BOLV				iS	Sg	16 54 55.7	+0.4
EDC	Edincik	1.54	321	ePN	Pb	16 54 36.6	0.0
EDC	Edincik	1.54	321	ePn	Pb	16 54 36.6	0.0
AYDB	Zeytinkoy-Aydi	1.55	219	ePN	Pb	16 54 36.6	-0.2
AYDB	Zeytinkoy-Aydi	1.55	219	ePn	Pb	16 54 36.6	-0.2
GULT	Gulveren	1.66	39	ePN	Pb	16 54 38.8	+0.2
GULT	Gulveren	1.66	39	ePn	Pb	16 54 38.8	+0.2
KNL	Bal¨–kesir	1.67	312	iP	Pn	16 54 37.4	+0.1
KNL				iS	Sg	16 55 01.0	-0.4
BUY	Buyukada	1.69	359	P	Pb	16 54 39.7	+0.5
BUY				S	Sg	16 55 02.4	+0.2
BUY	Buyukada	1.69	359	iP	Pb	16 54 39.7	+0.5
BUY				iS	Sg	16 55 02.4	+0.2
HRT	Hereke	1.71	14	ePN	Pb	16 54 39.0	-0.5
HRT	Hereke	1.71	14	ePn	Pb	16 54 39.0	-0.5
ISP	Isparta	1.72	140	ePN	Pb	16 54 38.9	-0.7
ISP	Isparta	1.72	140	ePn	Pb	16 54 38.9	-0.7
DKL	Dikili	1.74	268	ePN	Pb	16 54 39.9	0.0
DKL	Dikili	1.74	268	ePn	Pb	16 54 39.9	0.0
BAGO	Egridir - ISPA	1.74	131	iP	Pn	16 54 37.9	-0.5
SPNC	Sapanca-Adapaz	1.77	30	ePN	Pb	16 54 40.1	-0.5
SPNC	Sapanca-Adapaz	1.77	30	ePn	Pb	16 54 40.1	-0.5
AYDN	Tasoluk	1.79	214	P	Pb	16 54 40.9	0.0
AYDN				S	Sg	16 55 05.0	-0.3
AYDN	Tasoluk	1.79	214	iP	Pb	16 54 40.9	0.0
AYDN				iS	Sg	16 55 05.0	-0.3
MRMT	Marmara Adasi	1.87	321	ePN	Pb	16 54 41.6	-0.6
MRMT	Marmara Adasi	1.87	321	ePn	Pb	16 54 41.6	-0.6
SVRH	Sivrihisar-ESK	1.87	80	ePN	Pb	16 54 41.1	-1.2
SVRH	Sivrihisar-ESK	1.87	80	ePn	Pb	16 54 41.1	-1.2
KRBG	Karabiga-Canak	1.88	312	ePN	Pb	16 54 41.8	-0.6
KRBG	Karabiga-Canak	1.88	312	ePn	Pb	16 54 41.8	-0.6
ISK	Istanbul-Kandi	1.91	358	ePN	Pb	16 54 42.0	-0.8
ISK	Istanbul-Kandi	1.91	358	ePn	Pb	16 54 42.0	-0.8
SILT	Sile	2.03	11	ePN	Pb	16 54 43.9	-1.0
SILT	Sile	2.03	11	ePn	Pb	16 54 43.9	-1.0
BGKT	Bogazkoy	2.04	352	ePN	Pb	16 54 43.9	-1.2
BGKT	Bogazkoy	2.04	352	ePn	Pb	16 54 43.9	-1.2
MDUB	Mudurnu	2.06	50	ePN	Pb	16 54 44.4	-1.1
MDUB	Mudurnu	2.06	50	ePn	Pb	16 54 44.4	-1.1
KLYT	Kilyos	2.10	358	ePN	Pn	16 54 44.4	+1.2
KLYT	Kilyos	2.10	358	ePn	Pn	16 54 44.4	+1.2
KAND	Kocaeli-Kandir	2.10	22	P	Pn	16 54 42.4	-0.8
KAND	Kocaeli-Kandir	2.10	22	iP	Pn	16 54 42.4	-0.8
KAND				iS	Sg	16 55 15.9	+0.7
YER	Yerkesik	2.13	199	ePN	Pn	16 54 44.8	+1.1
YER	Yerkesik	2.13	199	ePn	Pn	16 54 44.8	+1.1
CTKS	Kestanelik-??a	2.13	347	ePN	Pb	16 54 45.2	-1.5
CTKS	Kestanelik-??a	2.13	347	ePn	Pb	16 54 45.2	-1.5
SAHE	Sakarya_HENDEK	2.15	37	P	Pn	16 54 43.4	-0.5
SAHE	Sakarya_HENDEK	2.15	37	iP	Pn	16 54 43.4	-0.5
SAHE				iS	Sg	16 55 17.8	+1.1
RKY	Sarkoy-Tekirda	2.15	316	ePN	Pn	16 54 45.1	+1.1
RKY	Sarkoy-Tekirda	2.15	316	ePn	Pn	16 54 45.1	+1.1
SART	Tekirdag	2.15	316	P	Pb	16 54 47.2	+0.2
SART	Tekirdag	2.15	316	iP	Pb	16 54 47.2	+0.2
SART				iS	Sg	16 55 16.4	-0.3
KIZT	Kizilcal	2.15	96	ePN	Pn	16 54 45.1	+1.0
KIZT	Kizilcal	2.15	96	ePn	Pn	16 54 45.1	+1.0
LPK	Lapseki	2.20	304	ePN	Pn	16 54 46.0	+1.4
LPK	Lapseki	2.20	304	ePn	Pn	16 54 46.0	+1.4
SUTC	Sutluce-Ispart	2.23	138	ePN	Pn	16 54 45.6	+0.5
SUTC	Sutluce-Ispart	2.23	138	ePn	Pn	16 54 45.6	+0.5
GELI	Tayfur-Gelibol	2.40	302	ePN	Pn	16 54 49.1	+1.7
GELI	Tayfur-Gelibol	2.40	302	ePn	Pn	16 54 49.1	+1.7
CTYL	Yalikoy Yolu	2.41	345	ePN	Pn	16 54 49.0	+1.5
CTYL	Yalikoy Yolu	2.41	345	ePn	Pn	16 54 49.0	+1.5
BOZC	Bozcaada	2.48	287	iP	Pb	16 54 50.9	-1.7
BOZC				iS	Sg	16 55 26.1	-1.4
KESN	Edirne-Kesan	2.52	312	iP	Pb	16 54 54.5	+1.0
KESN				iS	Sg	16 55 28.5	-0.2
ERIK	Erikli-Kesan	2.52	308	ePN	Pn	16 54 50.6	+1.6
ERIK	Erikli-Kesan	2.52	308	ePn	Pn	16 54 50.7	+1.6

IDC 24 16:54:14.3±5.7, 17.°61S×178.°31W, h619km±72km, mb3.2/12, mb1 3.5/12, mb1mx3.1/43, mbtmp4.2/12, Error ellipse: s-maj=53.1km s-min=25.0km az=157.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTA	Charters Tower	33.59	260	P	P	17 00 05.7	+0.1
	2.2nm,0.6s,baz=57,slow=5.7,SNR=5.4						
JAY	Jayapura	42.92	286	P	P	17 01 21.2	+0.4
	0.6nm,0.5s,baz=94,slow=23,SNR=5.5						
WRA	Warramunga Arr	44.78	259	P	P	17 01 34.8	-0.2
	1.2nm,0.4s,baz=95,slow=7.3,SNR=34						
ASAR	Alice Springs	44.97	254	P	P	17 01 36.3	-0.2
	2.8nm,0.6s,baz=89,slow=8.5,SNR=49						
YBH	Yreka Blue Hor	78.23	39	P	P	17 05 12.0	+0.4
	1.6nm,0.5s,baz=252,slow=3.2,SNR=6.1						
NVAR	Mina Array Bea	79.14	44	P	P	17 05 17.0	+0.3
	1.9nm,0.7s,baz=229,slow=7.7,SNR=8.7						
SEY	Seymchan	83.51	347	P	P	17 05 38.5	+0.5
	1.5nm,0.5s,baz=197,slow=19,SNR=6.7						
ILAR	Eielson Array	85.58	13	P	P	17 05 47.4	-0.7
	0.6nm,0.4s,baz=222,slow=4.9,SNR=11						
TXAR	Lajitas Array	85.75	58	P	P	17 05 50.4	+0.5
	2.1nm,0.7s,baz=220,slow=6.4,SNR=16						
PDAR	Pinedale Array	87.07	43	P	P	17 05 55.6	-0.4
	1.0nm,0.6s,baz=220,slow=3.1,SNR=9.8						
INK	Inuvik	91.57	15	P	P	17 06 15.1	-0.8
	1.2nm,0.7s,baz=225,slow=5.7,SNR=2.4						
YKA	Yellowknife Ar	94.02	25	P	P	17 06 26.4	-0.7
	0.3nm,0.5s,baz=246,slow=4.5,SNR=4.0						
BRTR	Keskin Array B	144.64	315	PKP	PKPdf	17 12 41.5	-0.6
	0.6nm,0.6s,baz=118,slow=5.0,SNR=4.8						
BRG	Berggiesshubel	145.40	346	eP	PKPbc	17 12 44.4	+0.2
	4.1nm,0.7s						
GERES	GERESS Array B	147.35	345	PKPbc	PKPbc	17 12 49.7	-0.1
	0.9nm,0.5s,baz=25,slow=3.5,SNR=8.1						

*ISK **24** 16:58:32.8, 39.°13N×29.°08E, h4km, MD2.9*
*CSEM **24** 16:58:33.5±0.1, 39.°13N×29.°10E, h5km, ML3.1, Error ellipse: s-maj=2.1km s-min=1.9km az=171.0*

*DDA **24** 16:58:33.3, 39.°12N×29.°10E, h5km, Ml3.1*

ISC 24 16:58:33.8±1.0, 39.°14N±0.°02×29.°10E±0.°02, h6km±11km, n60, σ0°48/74, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	Gediz	0.30	99	P	Pg	16 58 39.6	-0.1
GDZ				S	Sg	16 58 43.9	+0.3
GDZ	Gediz	0.30	99	iP	Pg	16 58 39.6	-0.1
GDZ				iS	Sg	16 58 43.9	+0.3
DEMI	Demirci	0.31	253	P	Pg	16 58 39.9	0.0
DEMI				S	Sg	16 58 44.2	+0.1
DEMI	Demirci	0.31	253	iP	Pg	16 58 39.9	0.0
DEMI				iS	Sg	16 58 44.2	+0.1
TVSB	Tavsanli	0.42	42	ePG	Pg	16 58 41.7	-0.2
TVSB	Tavsanli	0.42	42	ePg	Pg	16 58 41.7	-0.2
DST	Dursunbey	0.60	321	ePG	Pg	16 58 45.1	-0.2
DST				eSG	Sg	16 58 53.2	+0.2
DST	Dursunbey	0.60	321	ePg	Pg	16 58 45.1	-0.2
DST				eSg	Sg	16 58 53.2	+0.2
DURS	Dursunbey	0.67	314	P	Pg	16 58 46.6	-0.1
DURS	Dursunbey	0.67	314	iP	Pg	16 58 46.6	-0.1
KULA	Kula-Manisa	0.71	209	ePG	Pg	16 58 46.8	-0.6
KULA	Kula-Manisa	0.71	209	ePg	Pg	16 58 46.8	-0.6
KHAL	Karahalli	0.82	158	P	Pg	16 58 49.2	-0.4
KHAL				S	Sg	16 59 00.1	-0.2
KHAL	Karahalli	0.82	158	iP	Pg	16 58 49.2	-0.4
KHAL				iS	Sg	16 59 00.1	-0.2
KHL	Karahalli	0.88	158	ePG	Pg	16 58 50.0	-0.6
KHL	Karahalli	0.88	158	ePg	Pg	16 58 50.0	-0.6
ORLT	Orhaneli	0.92	350	ePG	Pg	16 58 50.8	-0.6
ORLT	Orhaneli	0.92	350	ePg	Pg	16 58 50.8	-0.6
AKHS	Akhisar	1.03	256	P	Pb	16 58 54.2	+0.1
AKHS				S	Sb	16 59 08.2	+0.2
AKHS	Akhisar	1.03	256	iP	Pb	16 58 54.2	+0.1
AKHS				iS	Sb	16 59 08.2	+0.2
AKS	Akhisar	1.04	256	ePG	Pg	16 58 53.0	-0.6
AKS	Akhisar	1.04	256	ePg	Pg	16 58 53.0	-0.6
BALB	Balikesir	1.07	298	ePG	Pg	16 58 53.8	-0.5
BALB	Balikesir	1.07	298	ePg	Pg	16 58 53.8	-0.5
IGD	Bursa	1.13	4	iP	Pg	16 58 53.6	-1.8
IGD				iS	Sb	16 59 10.6	0.0
CAVI	Cavuskoy	1.21	28	ePN	Pg	16 58 56.8	-0.1
CAVI	Cavuskoy	1.21	28	ePn	Pg	16 58 56.8	-0.1
IZI	Iznik	1.23	13	ePN	Pb	16 58 57.7	+0.2
IZI	Iznik	1.23	13	ePn	Pb	16 58 57.7	+0.2
MDNY	Mudanya-Bursa	1.24	352	ePN	Pg	16 58 57.0	-0.6
MDNY	Mudanya-Bursa	1.24	352	ePn	Pg	16 58 57.0	-0.6
KCTX	Karacabey (Bur	1.27	333	ePN	Pg	16 58 57.0	-1.0
KCTX	Karacabey (Bur	1.27	333	ePn	Pg	16 58 57.0	-1.0
BORA	Eskisehir	1.28	54	P	Pg	16 58 58.0	-0.4
BORA				S	Sb	16 59 15.4	+0.2
BORA	Eskisehir	1.28	54	iP	Pg	16 58 58.0	-0.4
BORA				iS	Sb	16 59 15.4	+0.2
BALY	Balya	1.29	298	P	Pg	16 58 58.3	-0.3
BALY	Balya	1.29	298	iP	Pg	16 58 58.3	-0.3
GEMT	Gemlik	1.30	3	ePN	Pg	16 58 58.3	-0.4
GEMT	Gemlik	1.30	3	ePn	Pg	16 58 58.3	-0.4
ADVT	Abdulvahap	1.39	21	ePN	Pn	16 58 59.6	-0.1
ADVT	Abdulvahap	1.39	21	ePn	Pn	16 58 59.6	-0.1
ESKT	Eskisehir	1.41	74	iP	Pn	16 58 59.6	-0.5
SEYT	Eskypehyr	1.41	74	P	Pn	16 58 59.6	-0.5
GONE	Gonen-Balikesi	1.42	310	ePN	Pn	16 59 00.2	+0.1
GONE	Gonen-Balikesi	1.42	310	ePn	Pn	16 59 00.2	+0.1
ARMT	Armutlu	1.44	353	ePN	Pn	16 59 00.9	+0.

KHAL					S		Sg	17 02 07.2	+0.7
KHAL	Karahalli	0.80	159	*i*	P		Pg	17 01 56.6	+0.5
KHAL				*i*	S		Sg	17 02 07.2	+0.7
CAVI	Cavuskoy	1.22	27	*e*	PN		Pb	17 02 04.5	+0.4
CAVI	Cavuskoy	1.22	27	*e*	Pn		Pb	17 02 04.5	+0.4
BORA	Eskisehir	1.28	53		S		Sb	17 02 23.0	+1.2
BORA	Eskisehir	1.28	53	*i*	P		Pn	17 01 59.5	-5.4
BORA				*i*	S		Sb	17 02 22.9	+1.2
KCTX	Karacabey (Bur	1.29	333	*e*	PN		Pn	17 02 04.5	-0.6
KCTX	Karacabey (Bur	1.29	333	*e*	Pn		Pn	17 02 04.5	-0.6
ARMT	Armutlu	1.46	352	*e*	PN		Pn	17 02 07.7	+0.3
ARMT	Armutlu	1.46	352	*e*	Pn		Pn	17 02 07.7	+0.3
GULT	Gulveren	1.70	39	*e*	PN		Pb	17 02 12.5	+0.3
GULT	Gulveren	1.70	39	*e*	Pn		Pb	17 02 12.5	+0.3

IDC 24 17:11:06.4±33.0, 16°48S×174°50E, h0km, mb4.0/4, mb1 4.2/4, mb1mx3.6/44, mbtmp4.0/4, Error ellipse: s-maj=598.7km s-min=118.6km az=77.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	Stephens Creek	33.55	237	P	P	17 17 47.5	-0.6
	1.8nm,0.8s,baz=63,slow=11,SNR=2.9						
WRA	Warramunga Arr	38.25	259	P	P	17 18 28.1	-0.5
	0.6nm,0.5s,baz=87,slow=8.3,SNR=13						
ASAR	Alice Springs	38.70	253	P	P	17 18 31.7	-0.7
	1.0nm,0.4s,baz=83,slow=8.4,SNR=26						
FITZ	Fitzroy Crossi	46.58	260	P	P	17 19 38.3	+1.8
	2.9nm,0.7s,baz=91,slow=8.1,SNR=4.8						

*CSEM **24** 17:17:06.4±0.1, 39°08N×29°01E, h2km, MD2.6, Error ellipse: s-maj=2.3km s-min=2.0km az=61.0*
*ISK **24** 17:17:06.2, 39°04N×29°04E, h9km, MD2.7*
*DDA **24** 17:17:06.1, 39°08N×29°02E, h7km, Md2.6*
ISC 24 17:17:06.4±0.9, 39°07N±0°02×29°02E±0°02, h12km±9km, n37, σ0°55/48, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.24	263	P	Pg	17 17 11.4	0.0
DEMI				S	Sg	17 17 15.0	+0.1
DEMI	Demirci	0.24	263	*i* P	Pg	17 17 11.4	0.0
DEMI				*i* S	Sg	17 17 15.0	+0.1
GDZ	Gediz	0.36	87	P	Pg	17 17 13.5	-0.2
GDZ				S	Sg	17 17 19.1	+0.5
GDZ	Gediz	0.36	87	*i* P	Pg	17 17 13.5	-0.2
GDZ				*i* S	Sg	17 17 19.1	+0.5
TVSB	Tavsanli	0.51	42	*e*PG	Pg	17 17 16.7	+0.3
TVSB	Tavsanli	0.51	42	*e*Pg	Pg	17 17 16.7	+0.3
KULA	Kula-Manisa	0.62	207	*e*PG	Pg	17 17 18.4	-0.1
KULA				*e*SG	Sg	17 17 26.9	+0.2
KULA	Kula-Manisa	0.62	207	*e*Pg	Pg	17 17 18.4	-0.1
KULA				*e*Sg	Sg	17 17 26.9	+0.2
DURS	Dursunbey	0.68	322	P	Pg	17 17 19.4	-0.2
DURS				S	Sg	17 17 26.5	-1.9
DURS	Dursunbey	0.68	322	*i* P	Pg	17 17 19.4	-0.2
DURS				*i* S	Sg	17 17 26.5	-1.9
KHAL	Karahalli	0.79	152	P	Pb	17 17 22.5	+0.3
KHAL				S	Sb	17 17 32.7	-0.2
KHAL	Karahalli	0.79	152	*i* P	Pb	17 17 22.5	+0.3
KHAL				*i* S	Sb	17 17 32.7	-0.2
KHL	Karahalli	0.85	152	*e*PG	Pg	17 17 22.1	-0.6
KHL	Karahalli	0.85	152	*e*Pg	Pg	17 17 22.2	-0.6
AKS	Akhisar	0.96	259	*e*PG	Pb	17 17 25.1	+0.2
AKS	Akhisar	0.96	259	*e*Pg	Pb	17 17 25.1	+0.2
BALB	Balikesir	1.05	303	*e*PN	Pn	17 17 27.4	+0.6
BALB	Balikesir	1.05	303	*e*Pn	Pn	17 17 27.4	+0.6
IGD	Bursa	1.20	7	*i* P	Pn	17 17 28.2	-0.8
IGD				*i* S	Sb	17 17 44.8	+0.4
BALY	Balya	1.27	302	P	Pb	17 17 30.6	+0.3
BALY	Balya	1.27	302	*i* P	Pb	17 17 30.6	+0.3
CAVI	Cavuskoy	1.30	29	*e*PN	Pg	17 17 31.9	+0.6
CAVI	Cavuskoy	1.30	29	*e*Pn	Pg	17 17 31.9	+0.6
KCTX	Karacabey (Bur	1.30	337	*e*PN	Pg	17 17 31.8	+0.5
KCTX	Karacabey (Bur	1.30	337	*e*Pn	Pg	17 17 31.8	+0.5
MDNY	Mudanya-Bursa	1.30	356	*e*PN	Pg	17 17 31.6	+0.2
MDNY	Mudanya-Bursa	1.30	356	*e*Pn	Pg	17 17 31.6	+0.2
IZI	Iznik	1.31	15	*e*PN	Pb	17 17 31.3	+0.3
IZI	Iznik	1.31	15	*e*Pn	Pb	17 17 31.3	+0.3
GONE	Gonen-Balikesi	1.42	314	*e*PN	Pb	17 17 33.1	+0.4
GONE	Gonen-Balikesi	1.42	314	*e*Pn	Pb	17 17 33.1	+0.4
ARMT	Armutlu	1.50	355	*e*PN	Pb	17 17 34.3	+0.2
ARMT	Armutlu	1.50	355	*e*Pn	Pb	17 17 34.3	+0.2
EDC	Edincik	1.55	325	*e*PN	Pb	17 17 35.0	0.0
EDC	Edincik	1.55	325	*e*Pn	Pb	17 17 35.0	0.0
GULT	Gulveren	1.78	40	*e*PN	Pb	17 17 38.5	-0.5
GULT	Gulveren	1.78	40	*e*Pn	Pb	17 17 38.5	-0.5

*ISCJB **24** 17:20:06.8±0.3, 7°52S±0°03×128°46E±0°05, h151km, mb4.1/20, Error ellipse: s-maj=6.9km s-min=4.0km az=157.9*
*IDC **24** 17:20:06.2±2.5, 7°43S×128°30E, h125km±23km, mb3.8/10, mb1 4.0/14, mb1mx3.7/44, mbtmp4.4/14, Error ellipse: s-maj=25.5km s-min=11.3km az=84.0*
*NEIC **24** 17:20:07.5±0.7, 7°49S×128°47E, h143km±7km, mb4.1/11, Error ellipse: s-maj=9.2km s-min=6.5km az=53.0*
*DJA **24** 17:20:08.8±0.3, 8°S±4°×12°9E±°, h206km±8km, M4.9/6, mB5.2/1, mb4.3/6, MLv5.2/1, Mw(mB)4.6/1*
ISC 24 17:20:08.1±0.5, 7°57S±0°05×128°47E±0°05, h151km, n64, σ2°07/70, mb4.1/20, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SAUI	Saumlaki	2.83	98	P	Pn	17 20 55.1	+1.7
SAUI	Saumlaki	2.83	98	*e*Pn	Pn	17 20 55.0	+1.7
SAUI				*e*Sn	Sn	17 21 21.9	-6.5
SOEI	Soe	4.69	242	P	Pn	17 21 19.8	+2.3
SOEI	Soe	4.69	242	*e*Pn	Pn	17 21 19.8	+2.3
SOEI				*e*Sn	Sn	17 22 07.0	-4.6
MTN	Manton Dam	5.86	154	*e*Pn	Pn	17 21 33.7	+0.8
MTN				*e*Sn	Sn	17 22 26.6	-13
FAKI	Fak Fak	5.96	39	P	Pn	17 21 34.4	+0.1
FAKI	Fak Fak	5.96	39	*e*Pn	Pn	17 21 32.1	-2.2
FAKI				*e*Sn	Sn	17 22 31.6	-10
MMRI	Maumere	6.26	260	*e*Pn	Pn	17 21 38.3	0.0
MMRI				*e*Sn	Sn	17 22 44.0	-4.9
LBMI	Labuha	6.95	352	P	Pn	17 21 47.8	+0.2
SIJI	Sorong	7.22	23	P	Pn	17 21 50.1	-1.0
	29nm,0.3s,baz=360,slow=9.3,SNR=2.7						
SIJI				S	Sn	17 23 06.8	-5.2
	17nm,0.3s,baz=358,slow=5.2,SNR=1.7						
SWI	Sorong	7.22	23	P	Pn	17 21 50.0	-1.1
WSI	Waingapu	8.34	255	P	Pn	17 22 06.9	+0.8
	127nm,0.8s						
KAPI	Kappang	9.03	286	*e*Pn	Pn	17 22 12.3	-3.0
FITZ	Fitzroy Crossi	10.82	194	P	Pn	17 22 37.6	-1.4
	1.9nm,0.3s,baz=28,slow=11,SNR=40						
FITZ				S	Sn	17 24 29.6	-9.2
	1.9nm,0.3s,baz=55,slow=8.5,SNR=4.0						
FITZ	Fitzroy Crossi	10.82	194	*e*Pn	Pn	17 22 37.5	-1.4
FITZ				*e*Sn	Sn	17 24 29.2	-10
WRAB	Tennant Creek	13.55	156	*e*Pn	Pn	17 23 13.9	-0.4
WRAB				*e*Sn	Sn	17 25 30.0	-14
WR1	Warramunga Arr	13.55	156	*e*Pn	Pn	17 23 13.2	-1.2
WR1				*e*Sn	Sn	17 25 34.9	-10
WRA	Warramunga Arr	13.55	156	P	Pn	17 23 13.2	-1.2
	0.9nm,0.3s,baz=322,slow=13,SNR=41						
WRA				S	Sn	17 25 34.9	-10
	1.6nm,0.3s,baz=332,slow=23,SNR=8.1						
WB2	Warramunga Arr	13.56	156	*e*Pn	Pn	17 23 13.1	-1.3
WB2				*e*Sn	Sn	17 25 33.6	-11
COEN	Coen	15.77	115	*e*Pn	Pn	17 23 43.1	+1.0
	78nm,1.9s						
AS31	Alice Springs	16.83	163	*e*P	Pn	17 23 57.0	+2.0
	3.9nm,0.6s						
AS31				*e*S	S	17 26 55.5	-6.7
ASAR	Alice Springs	16.83	163	P	Pn	17 23 56.9	+2.0
	1.5nm,0.3s,baz=340,slow=9.8,SNR=237						
ASAR				S	S	17 26 57.1	-5.0
	0.7nm,0.3s,baz=317,slow=19,SNR=6.4						
AS01	Alice Springs	16.84	162	*e*P	Pn	17 23 56.9	+1.8
PMG	Port Moresby	18.57	97	P	Pn	17 24 17.5	+1.7
	0.5nm,0.3s,baz=265,slow=3.8,SNR=5.0						
PMG	Port Moresby	18.57	97	*e*P	Pn	17 24 17.4	+1.7
	12nm,0.8s						
SBUM	Sibu	19.02	301	*e*P	Pn	17 24 21.5	+0.5
	12nm,1.2s						
KSM	Kuching	20.22	296	*e*P	P	17 24 32.2	+0.7
	17nm,0.7s						
RABL	Rabaul	23.80	83	*e*P	P	17 25 06.6	-0.8
	63nm,0.3s						
STKA	Stephens Creek	27.10	155	P	P	17 25 38.9	+2.0
	3.3nm,0.5s,baz=326,slow=10,SNR=16						
STKA	Stephens Creek	27.10	155	*e*P	P	17 25 37.9	+1.1
	3.3nm,1.3s						
NWAO	Narrogin (SRO)	27.30	201	P	P	17 25 40.6	+2.0
	4.8nm,0.6s,baz=277,slow=8.3,SNR=6.9						
NWAO	Narrogin (SRO)	27.30	201	*e*P	P	17 25 40.5	+2.0
	58nm,1.8s						
CM01	Chiang Mai Arr	38.92	312	*e*P	P	17 27 19.2	-0.2
KMI	Kunming	41.03	323	P	P	17 27 38.8	+1.8
KMI				pmax	pmax		
	comp=Z,7.0nm,1.0s						
CD2	Chengdu	44.99	329	P	P	17 28 08.6	0.0
CD2				pmax	pmax		
	comp=Z,2.0nm,0.6s						
HHC	Hu-ho-hao-te	50.63	343	*e*P	P	17 28 54.9	+3.0
HHC				pmax	pmax		
	comp=Z,18nm,1.0s						
HHC				pmax	pmax		
	comp=Z,99nm,6.1s						
MDJ	Mudanjiang	51.95	1	P	P	17 29 01.3	-0.2
MDJ				pmax	pmax		
	comp=Z,3.0nm,0.7s						
MDJ				pmax	pmax		
	comp=Z,55nm,5.9s						
GTA	Gaotai	53.76	333	*e*P	P	17 29 15.4	+0.4
GTA				pP	pP	17 29 51.9	+2.0
GTA				sP	sP	17 30 10.1	+3.6
GTA				pmax	pmax		
	comp=Z,5.0nm,1.1s						
GUN	Gumba	54.20	312	*e*P	P	17 29 18.5	-0.2
	comp=Z,9.8nm,0.5s						
PKIN	Phulchoki	54.37	312	*e*P	P	17 29 19.7	-0.1
GKN	Gorkha	55.16	312	*e*P	P	17 29 25.1	-0.3
	comp=Z,6.1nm,0.3s						
KOLN	Koldanda	55.81	311	*e*P	P	17 29 30.2	+0.1
	comp=Z,8.5nm,0.6s						
PYUN	Piuthan	56.44	311	*e*P	P	17 29 34.3	-0.3
ULN	Ulaanbaatar	58.35	343	*e*P	P	17 29 47.9	+0.4
	comp=Z,1.6nm,1.0s						
SONA0	Songino Array	58.52	343	*e*P	P	17 29 48.8	+0.2
	comp=Z,2.1nm,1.1s						
SONM	Songino Array	58.52	343	P	P	17 29 48.7	+0.1
	comp=Z,0.7nm,0.5s,baz=162,slow=7.0,SNR=4.9						
SONA1	Songino Array	58.52	343	*e*P	P	17 29 48.4	-0.3
WMQ	Urumqi	63.06	328	*e*P	P	17 30 21.3	+2.0
WMQ				pmax	pmax		
	comp=Z,5.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,97nm,5.2s						
WMQ				LR	LR		
	comp=N,34nm,38.2s						
WMQ				LR	LR		
	comp=E,15nm,22.2s						
WMQ				LR	LR		
	comp=Z,48nm,14.8s						
MK01	Makanchi Array	67.86	328	*e*P	P	17 30 49.6	-0.5
MK32	Makanchi Array	67.88	328	*e*P	P	17 30 50.3	+0.1
MKAR	Makanchi Array	67.88	328	P	P	17 30 50.3	+0.1
	comp=Z,2.0nm,0.7s,baz=125,slow=7.7,SNR=18						
AAK	Ala-Archa	70.00	321	P	P	17 31 04.5	+0.9
	comp=Z,0.8nm,0.3s,baz=192,slow=9.4,SNR=3.3						
AAK	Ala-Archa	70.00	321	*e*P	P	17 31 03.9	+0.3
	comp=Z,1.2nm,0.6s						
ZAA0	Zalesovo Array	71.43	335	*e*P	P	17 31 10.2	-1.5
ZALV	Zalesovo Beam	71.43	335	P	P	17 31 11.0	-0.7
	comp=Z,1.9nm,0.6s,baz=134,slow=5.8,SNR=10						
ZAA1	Zalesovo Array	71.43	335	*e*P	P	17 31 11.0	-0.7
VNDA	Vanda	72.07	173	P	P	17 31 16.6	+1.4
	comp=Z,0.4nm,0.5s,baz=331,slow=6.5,SNR=6.3						
KURBB	Kurchatov Arra	72.21	329	P	P	17 31 16.4	-0.1
	comp=Z,3.5nm,0.7s,baz=129,slow=5.0,SNR=40						
KURK	Kurchatov	72.22	329	*e*P	P	17 31 16.2	-0.3
	comp=Z,6.4nm,1.1s						
SEY	Seymchan	72.65	11	P	P	17 31 19.0	+0.2
	baz=240,slow=17						
BVAR	Borovoye Array	77.74	328	P	P	17 31 48.0	-0.1
	comp=Z,0.6nm,0.5s,baz=114,slow=7.1,SNR=5.6						
AKTO	Aktyubinsk	83.60	323	P	P	17 32 19.5	+0.1
	comp=Z,1.6nm,0.6s,baz=131,slow=5.2,SNR=5.7						
TORD	Torodi Ar. Bea	127.43	281	PKP	PKPdf	17 38 56.8	+0.8
	comp=Z,0.7nm,0.8s,baz=61,slow=2.4,SNR=3.6						
LPAZ	La Paz	151.16	145	PKPbc	PKPbc	17 39 47.0	+1.8
	comp=Z,0.7nm,0.4s,baz=207,slow=2.3,SNR=3.8						

MAN 24 17:23:54, 16°20N×120°40E, h58km, mb4.3, ML3.2, MS3.0, 1C, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BOLP	Bolinao	0.50	291	*e*P	Pn	17 24 07.3	+1.5
BOLP				*e*S	Sn	17 24 17.6	+3.1
SCZP	Santa Cruz	0.64	228	*e*P	Pn	17 24 10.5	+3.1
SCZP				*e*S	Sn	17 24 22.8	+5.7
PCPH	Palayan	0.92	134	*e*P	Pn	17 24 12.1	+1.2
PCPH				*e*S	Sn	17 24 25.5	+2.1
BALP	Baler	1.22	112	*e*P	Pn	17 24 16.1	+1.2
BALP				*e*S	Sn	17 24 32.2	+1.8
ABRA	Dolores	1.47	12	*e*P	Pn	17 24 16.7	-1.5
ABRA				*e*S	Sn	17 24 39.1	+2.7
CAUP	Cauayan	1.55	61	*e*P	Pn	17 24 20.7	+1.4
APYP	Conner	1.83	26	*e*P	Pn	17 24 24.5	+1.3
APYP				*e*S	Sn	17 24 47.0	+1.6

*ISK **24** 17:25:10.9, 40°83N×31°01E, h8km, MD2.8*
*ISCJB **24** 17:25:11.1±0.5, 40°85N±0°03×31°03E±0°04, h7km±4km, Error ellipse: s-maj=5.5km s-min=4.2km az=27.0*
*CSEM **24** 17:25:11.5±0.1, 40°82N×31°02E, h8km, MD2.7, Error ellipse: s-maj=1.8km s-min=1.4km az=2.0*
*DDA **24** 17:25:11.0, 40°81N×31°03E, h12km, Md2.7*
ISC 24 17:25:11.7±0.9, 40°83N±0°02×31°02E±0°02, h11km±7km, n49, σ0°44/60, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SAHE	Sakarya_HENDEK	0.13	279	P	Pg	17 25 14.9	0.0
SAHE				S	Sg	17 25 17.4	+0.3
SAHE	Sakarya_HENDEK	0.13	279	*i* P	Pg	17 25 14.9	0.0
SAHE				*i* S	Sg	17 25 17.4	+0.3
BTAS	Taskesti	0.26	184	P	Pg	17 25 16.8	-0.3
BTAS				S	Sg	17 25 20.2	-0.5
BTAS	Taskesti	0.26	184	*i* P	Pg	17 25 16.8	-0.3
BTAS				*i* S	Sg	17 25 20.2	-0.5
MDUB	Mudurnu	0.38	160	*e*PG	Pg	17 25 19.1	-0.2
MDUB				*e*SG	Sg	17 25 24.8	+0.3
MDUB	Mudurnu	0.38	160	*e*Pg	Pg	17 25 19.1	-0.2
MDUB				*e*Sg	Sg	17 25 24.8	+0.3
GULT	Gulveren	0.56	224	*e*PG	Pg	17 25 22.2	-0.3
GULT	Gulveren	0.56	224	*e*Pg	Pg	17 25 22.3	-0.3
SPNC	Sapanca-Adapaz	0.56	255	*e*PG	Pg	17 25 22.2	-0.4
SPNC	Sapanca-Adapaz	0.56	255	*e*Pg	Pg	17 25 22.2	-0.4
KDZE	Karadeniz Ereo	0.57	33	*e*PG	Pg	17 25 22.6	-0.3
KDZE	Karadeniz Ereo	0.57	33	*e*Pg	Pg	17 25 22.6	-0.3
KAND	Kocaeli-Kandir	0.68	293	P	Pg	17 25 25.0	+0.1
KAND				S	Sg	17 25 34.0	+0.2
KAND	Kocaeli-Kandir	0.68	293	*i* P	Pg	17 25 25.0	+0.1
KAND				*i* S	Sg	17 25 34.0	+0.2
GPA	Golpazari	0.77	225	*e*PG	Pg	17 25 26.0	-0.5
GPA	Golpazari	0.77	225	*e*Pg	Pg	17 25 26.0	-0.5
BCAM	Yenicaga	0.79	91	P	Pg	17 25 26.9	-0.1
BCAM				S	Sg	17 25 36.7	-0.6
BCAM	Yenicaga	0.79	91	*i* P	Pg	17 25 26.9	-0.1
BCAM				*i* S	Sg	17 25 36.7	-0.6
HRT	Hereke	1.03	270	*e*PG	Pg	17 25 30.9	-0.6
BORA	Eskisehir	1.05	205	S	Sb	17 25 45.8	+0.2
BORA	Eskisehir	1.05	205	*i* S	Sb	17 25 45.8	+0.2
ADVT	Abdulvahap	1.06	248	*e*PG	Pg	17 25 31.1	-0.9
ADVT	Abdulvahap	1.06	248	*e*Pg	Pg	17 25 31.1	-0.9
SILT	Sile	1.09	287	*e*PN	Pg	17 25 32.0	-0.7
CAVI	Cavuskoy	1.10	235	*e*PN	Pg	17 25 32.6	-0.2
CAVI	Cavuskoy	1.10	235	*e*Pn	Pg	17 25 32.6	-0.2
ESKT	Eskisehir	1.32	186	*i* P	Pg	17 25 38.0	+1.0
SEYT	Eskypehyr	1.32	186	P	Pg	17 25 38.0	+1.0
SAFT	Safranbolu	1.32	72	*e*PN	Pb	17 25 36.5	0.0
SAFT	Safranbolu	1.32	72	*e*Pn	Pb	17 25 36.5	0.0
SVRH	Sivrihisar-ESK	1.44	164	*e*PN	Pb	17 25 38.2	-0.3
SVRH	Sivrihisar-ESK	1.44	164	*e*Pn	Pb	17 25 38.2	-0.3
IGD	Bursa	1.50	248	*i* P	Pn	17 25 37.5	-1.0
IGD				*i* S	Sb	17 25 59.3	+0.8
ISK	Istanbul-Kandi	1.51	280	*e*PN	Pn	17 25 39.0	+0.5
ISK	Istanbul-Kandi	1.51	280	*e*Pn	Pn	17 25 39.1	+0.5
KLYT	Kilyos	1.56	286	*e*PN	Pn	17 25 39.6	+0.3
KLYT	Kilyos	1.56	286	*e*Pn	Pn	17 25 39.6	+0.3
ARMT	Armutlu	1.67	262	*e*PN	Pn	17 25 40.7	-0.1
ARMT	Armutlu	1.67	262	*e*Pn	Pn	17 25 40.7	-0.1
MDNY	Mudanya-Bursa	1.69	255	*e*PN	Pn	17 25 41.3	+0.1
MDNY	Mudanya-Bursa	1.69	255	*e*Pn	Pn	17 25 41.3	+0.1
BGKT	Bogazkoy	1.74	282	*e*PN	Pn	17 25 42.1	+0.3
BGKT	Bogazkoy	1.74	282	*e*Pn	Pn	17 25 42.1	+0.3
TVSB	Tavsanli	1.83	221	*e*PN	Pn	17 25 43.3	+0.2
TVSB	Tavsanli	1.83	221	*e*Pn	Pn	17 25 43.3	+0.2
CTKS	Kestanelik-??a	1.95	283	*e*PN	Pn	17 25 44.9	+0.3
CTKS	Kestanelik-??a	1.95	283	*e*Pn	Pn	17 25 44.9	+0.3
CTYL	Yalikoy Yolu	2.16	288	*e*PN	Pn	17 25 47.9	+0.3
CTYL	Yalikoy Yolu	2.16	288	*e*Pn	Pn	17 25 47.9	+0.3

*ISK **24** 17:29:50.6, 39°09N×29°14E, h5km, MD3.0*
*CSEM **24** 17:29:51.7±0.2, 39°11N×29°11E, h0km±2km, MD3.0, Error ellipse: s-maj=3.9km s-min=3.3km az=28.0*
*DDA **24** 17:29:51.4, 39°12N×29°09E, h8km, Md2.9*
*ISCJB **24** 17:29:52.1±0.4, 39°08N±0°03×29°09E±0°05, h9km, Error ellipse: s-maj=5.2km s-min=3.6km az=170.8*
ISC 24 17:29:52.0±0.8, 39°11N±0°03×29°11E±0°03, h9km, n50, σ0°72/55, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TVSB	Tavsanli	0.43	39	*e*PG	Pg	17 30 00.2	-0.3
TVSB	Tavsanli	0.43	39	*e*Pg	Pg	17 30 00.2	-0.3
KULA	Kula-Manisa	0.69	211	*e*PG	Pg	17 30 04.9	-0.5
KULA	Kula-Manisa	0.69	211	*e*Pg	Pg	17 30 04.9	-0.5
DURS	Dursunbey	0.69	315	P	Pg	17 30 04.8	-0.6
DURS	Dursunbey	0.69	315	*i* P	Pg	17 30 04.8	-0.6
KHAL	Karahalli	0.80	158	P	Pg	17 30 06.9	-0.4
KHAL				S	Sb	17 30 18.9	-0.1
KHAL	Karahalli	0.80	158	*i* P	Pg	17 30 06.9	-0.4
KHAL				*i* S	Sb	17 30 18.9	-0.1
KHL	Karahalli	0.85	158	*e*PG	Pg	17 30 07.7	-0.7
KHL				*e*SG	Sg	17 30 19.8	+0.4
KHL	Karahalli	0.85	158	*e*Pg	Pg	17 30 07.7	-0.7
KHL				*e*Sg	Sg	17 30 19.8	+0.4
AKHS	Akhisar	1.04	257	*i* S	Sg	17 30 24.6	-0.8
AKS	Akhisar	1.04	257	*e*PG	Pg	17 30 11.7	-0.2
AKS	Akhisar	1.04	257	*e*Pg	Pg	17 30 11.7	-0.2
BALB	Balikesir	1.09	299	*e*PN	Pn	17 30 13.4	0.0
BALB	Balikesir	1.09	299	*e*Pn	Pn	17 30 13.4	0.0
IGD	Bursa	1.15	3	*i* P	Pb	17 30 13.2	-0.9
IGD				*i* S	Sg	17 30 29.0	-0.1
CAVI	Cavuskoy	1.23	27	*e*PN	Pn	17 30 15.4	0.0
CAVI	Cavuskoy	1.23	27	*e*Pn	Pn	17 30 15.4	0.0
IZI	Iznik	1.25	13	*e*PN	Pb	17 30 15.9	+0.1
IZI	Iznik	1.25	13	*e*Pn	Pb	17 30 15.9	+0.1
MDNY	Mudanya-Bursa	1.27	352	*e*PN	Pn	17 30 15.9	+0.1
MDNY	Mudanya-Bursa	1.27	352	*e*Pn	Pn	17 30 15.9	+0.1
BALY	Balya	1.31	299	P	Pb	17 30 16.9	0.0
BALY	Balya	1.31	299	*i* P	Pb	17 30 16.9	0.0
ADVT	Abdulvahap	1.41	20	*e*PN	Pb	17 30 18.4	0.0
ADVT	Abdulvahap	1.41	20	*e*Pn	Pb	17 30 18.4	0.0
GONE	Gonen-Balikesi	1.44	311	*e*PN	Pb	17 30 19.4	+0.3
GONE	Gonen-Balikesi	1.44	311	*e*Pn	Pb	17 30 19.4	+0.3
ARMT	Armutlu	1.46	353	*e*PN	Pb	17 30 19.6	+0.3
ARMT	Armutlu	1.46	353	*e*Pn	Pb	17 30 19.7	+0.3
EDC	Edincik	1.56	322	*e*PN	Pb	17 30 21.1	0.0
EDC	Edincik	1.56	322	*e*Pn	Pb	17 30 21.1	0.0
GULT	Gulveren	1.71	39	*e*PN	Pb	17 30 23.1	-0.5
GULT	Gulveren	1.71	39	*e*Pn	Pb	17 30 23.1	-0.5
HRT	Hereke	1.76	14	*e*PN	Pb	17 30 23.9	-0.6
HRT	Hereke	1.76	14	*e*Pn	Pb	17 30 23.9	-0.6
MRMT	Marmara Adasi	1.89	322	*e*PN	Pn	17 30 25.6	+1.1
MRMT	Marmara Adasi	1.89	322	*e*Pn	Pn	17 30 25.6	+1.1
ISK	Istanbul-Kandi	1.95	359	*e*PN	Pb	17 30 26.9	-0.8
ISK	Istanbul-Kandi	1.95	359	*e*Pn	Pb	17 30 26.9	-0.8
SILT	Sile	2.08	11	*e*PN	Pn	17 30 28.5	+1.5

10nm,0.8s
MBWA Marble Bar 25.64 201 *e*P P 17 35 50.2 0.0
17nm,1.2s
AS31 Alice Springs 26.84 170 *e*P P 17 36 02.0 +0.8
1.0nm,0.9s
ASAR Alice Springs 26.84 170 P P 17 36 02.7 +1.5
0.9nm,0.5s,baz=358,slow=8.2,SNR=32
ASAR PcP PcP 17 39 24.0 +0.9
0.3nm,0.6s,baz=348,slow=2.0,SNR=5.6
AS01 Alice Springs 26.85 170 *e*P P 17 36 02.2 +1.0
MAJO Matsushiro 34.49 13 *e*P P 17 37 08.0 -0.5
31nm,1.8s
MJAR Matsushiro Arr 34.49 13 P P 17 37 08.0 -0.5
3.0nm,0.7s,baz=183,slow=9.6,SNR=12
MJB9 Matsu-Tunnel 34.49 13 *e*P P 17 37 08.0 -0.5
7.4nm,1.8s
BBOO Buckleboo 36.15 170 *e*P P 17 37 23.7 +1.0
118nm,1.9s
STKA Stephens Creek 36.59 162 P P 17 37 27.9 +1.4
4.3nm,0.8s,baz=342,slow=9.5,SNR=5.1
STKA Stephens Creek 36.59 162 *e*P P 17 37 27.7 +1.2
10.0nm,1.8s
USRK Ussuriysk Ar. 41.18 3 P P 17 38 05.7 +0.9
4.6nm,1.1s,baz=205,slow=8.4,SNR=5.9
MDJ Mudanjiang 41.52 1 *e*P P 17 38 07.6 0.0
5.3nm,0.6s
LSA Lhasa 44.76 311 *e*P P 17 38 33.7 -0.9
6.8nm,1.4s
YSS Yuzh-Sakhalins 45.43 13 *e*P P 17 38 41.3 +2.3
25nm,1.5s
KLR Kul'dur 46.19 2 P P 17 38 45.5 +0.6
1.7nm,0.7s,baz=208,slow=1.9,SNR=7.5
PALK Pallekele 48.39 277 *e*P P 17 39 00.9 -1.9
83nm,1.7s
ULN Ulaanbaatar 48.65 340 *e*P P 17 39 04.6 +0.3
2.3nm,1.0s
SONA0 Songino Array 48.84 340 *e*PcP PcP 17 40 30.8 +0.9
SONM Songino Array 48.84 340 PcP PcP 17 40 30.8 +0.9
0.5nm,0.6s,baz=132,slow=2.1,SNR=3.0
YAK Yakutsk 58.97 0 *e*P P 17 40 19.1 -0.2
7.6nm,0.7s
MK01 Makanchi Array 59.56 324 *e*P P 17 40 22.4 -1.4
MK31 Makanchi Array 59.58 324 *e*P P 17 40 23.4 -0.6
MK32 Makanchi Array 59.58 324 *e*P P 17 40 23.2 -0.7
MKAR Makanchi Array 59.58 324 P P 17 40 23.2 -0.7
1.0nm,0.5s,baz=109,slow=8.4,SNR=13
MKAR Makanchi Array 59.58 324 *e*P P 17 40 23.4 -0.6
MQZ McQueen's Vall 60.65 145 *e*P P 17 40 30.1 -1.1
79nm,1.3s
TIXI Tiksi 68.63 360 *e*P P 17 41 22.4 -0.4
6.7nm,1.7s
ILAR Eielson Array 84.80 25 P P 17 42 54.7 +0.6
0.3nm,0.6s,baz=243,slow=6.3,SNR=4.4

*CSEM **24** 17:34:43.9±0.1,39.°54N×20.°51E,h5km,ML2.3,Error ellipse: s-maj=3.0km s-min=2.2km az=92.0*
*ATH **24** 17:34:43.8,39.°54N×20.°51E,h13km±3km,ML2.2/7,Error ellipse: s-maj=3.9km s-min=0.9km az=289.0*
THE 24 17:34:44.1,39.°52N×20.°50E,h0km±1km,ML2.3/10,Error ellipse: s-maj=1.9km s-min=0.5km az=310.0, Greece-Albania border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IGT	**Igoumenitsa**	**0.13**	**276**	P	Pg	17 34 47.2	+0.5
IGT				S	Sg	17 34 49.3	+0.9
IGT	**Igoumenitsa**	**0.13**	**276**	P	Pg	17 34 47.2	+0.5
IGT				S	Sg	17 34 49.3	+0.9
IGT	**Igoumenitsa**	**0.13**	**276**	P	Pg	17 34 47.3	+0.6
IGT				S	Sg	17 34 49.6	+1.2
IGT				AML	AML	17 34 50.9	
	comp=N,1527µm,0.2s						
IGT				AML	AML	17 34 52.5	
	comp=E,2962µm,0.2s						
SGD	**Sagiada**	**0.23**	**294**	P	Pg	17 34 48.8	+0.3
SGD	**Sagiada**	**0.23**	**294**	P	Pg	17 34 48.8	+0.3
SGD	**Sagiada**	**0.23**	**294**	P	Pg	17 34 49.2	+0.7
JAN	**Janina**	**0.30**	**63**	P	Pg	17 34 50.0	+0.1
JAN				S	Sg	17 34 54.9	+1.1
JAN	**Janina**	**0.30**	**63**	P	Pg	17 34 50.1	+0.2
JAN				S	Sg	17 34 54.2	+0.4
JAN	**Janina**	**0.30**	**63**	AML	AML	17 34 56.0	
	comp=E,4683µm,0.2s						
KEK	**Kerkira**	**0.58**	**290**	P	Pg	17 34 54.8	-0.4
KEK	**Kerkira**	**0.58**	**290**	P	Pg	17 34 54.7	-0.5
DSL	**Palaion Diasel**	**0.60**	**130**	P	Pg	17 34 55.4	-0.2
DSL				S	Sb	17 35 05.1	-1.4
DSL	**Palaion Diasel**	**0.60**	**130**	P	Pg	17 34 55.5	-0.1
DSL				S	Sg	17 35 04.1	+0.8
DSL	**Palaion Diasel**	**0.60**	**130**	P	Pg	17 34 55.5	-0.1
DSL				S	Sg	17 35 04.1	+0.7
DSL				AML	AML	17 35 07.9	
	comp=E,710µm,0.4s						
DSL				AML	AML	17 35 08.5	
	comp=N,817µm,0.3s						
LKD2	**Lefkada island**	**0.74**	**171**	P	Pg	17 34 57.9	-0.4
LKD2				S	Sg	17 35 09.0	+1.2
LKD2	**Lefkada island**	**0.74**	**171**	P	Pg	17 34 57.9	-0.4
LKD2				S	Sg	17 35 09.0	+1.2
LKD2	**Lefkada island**	**0.74**	**171**	P	Pg	17 34 57.9	-0.4
LKD2				S	Sb	17 35 09.5	-1.0
LKD2				AML	AML	17 35 15.0	
	comp=E,367µm,0.3s						
LKD2				AML	AML	17 35 16.8	
	comp=N,210µm,0.4s						
KPRO	**Kipourio**	**0.79**	**56**	P	Pg	17 34 58.4	-0.9
KPRO				S	Sb	17 35 11.4	-0.7
KPRO	**Kipourio**	**0.79**	**56**	P	Pg	17 34 58.4	-0.9
KPRO				S	Sg	17 35 09.2	-0.4
KPRO	**Kipourio**	**0.79**	**56**	P	Pg	17 34 58.1	-1.2
KPRO				S	Sg	17 35 09.2	-0.3
KPRO				AML	AML	17 35 14.6	
	comp=N,456µm,0.7s						
KPRO				AML	AML	17 35 15.4	
	comp=E,339µm,0.5s						
PENT	**Pentalofos**	**0.83**	**36**	P	Pg	17 34 59.7	-0.4
PENT				S	Sb	17 35 12.3	-1.1
PENT	**Pentalofos**	**0.83**	**36**	P	Pg	17 34 59.7	-0.4
PENT				S	Sb	17 35 12.3	-1.1
PENT	**Pentalofos**	**0.83**	**36**	P	Pg	17 34 59.8	-0.3
PENT				AML	AML	17 35 13.8	
	comp=E,201µm,0.4s						
PENT				AML	AML	17 35 15.1	
	comp=N,124µm,0.3s						
NEST	**Nestorio**	**0.99**	**25**	P	Pg	17 35 02.2	-0.8
NEST				S	Sb	17 35 17.8	0.0
NEST	**Nestorio**	**0.99**	**25**	P	Pg	17 35 02.7	-0.3
NEST	**Nestorio**	**0.99**	**25**	P	Pg	17 35 02.6	-0.4
PDO	**Prodromos**	**1.06**	**150**	P	Pg	17 35 04.5	+0.1
PDO				S	Sb	17 35 19.4	-0.3
PDO	**Prodromos**	**1.06**	**150**	P	Pg	17 35 04.5	+0.1
PDO				S	Sb	17 35 19.4	-0.3
PDO	**Prodromos**	**1.06**	**150**	P	Pg	17 35 04.5	+0.1
PDO				S	Sb	17 35 19.8	+0.1
PDO				AML	AML	17 35 25.0	
	comp=E,452µm,0.4s						
PDO				AML	AML	17 35 25.0	
	comp=N,513µm,0.5s						
THL	**Klokotos Trika**	**1.17**	**87**	P	Pg	17 35 05.7	-0.8
THL				S	Sb	17 35 22.7	-0.2
THL	**Klokotos Trika**	**1.17**	**87**	P	Pg	17 35 05.7	-0.8
THL				S	Sb	17 35 22.7	-0.2
EVR	**Evrytania**	**1.18**	**120**	P	Pg	17 35 05.7	-1.0
EVR	**Evrytania**	**1.18**	**120**	P	Pg	17 35 05.7	-1.0
EVR	**Evrytania**	**1.18**	**120**	P	Pg	17 35 05.5	-1.2
PVO	**Paravola**	**1.20**	**138**	P	Pb	17 35 07.6	-0.2
KZN	**Kozani**	**1.25**	**51**	P	Pg	17 35 07.2	-0.9
KZN	**Kozani**	**1.25**	**51**	P	Pg	17 35 07.2	-0.9
VLS	**Valsamata**	**1.34**	**177**	P	Pg	17 35 08.9	-0.9
VLS				S	Sn	17 35 29.0	+0.4
VLS	**Valsamata**	**1.34**	**177**	P	Pg	17 35 09.0	-0.8
VLS				S	Sn	17 35 28.4	-0.2
KFL	**Anninata**	**1.43**	**171**	P	Pn	17 35 11.1	-0.1
KFL	**Anninata**	**1.43**	**171**	P	Pn	17 35 11.1	-0.2
FNA	**Florina**	**1.43**	**28**	P	Pn	17 35 10.1	-1.3
FNA	**Florina**	**1.43**	**28**	P	Pn	17 35 10.1	-1.3
ANX	**Ano Chora**	**1.44**	**130**	P	Pn	17 35 11.0	-0.5
ANX	**Ano Chora**	**1.44**	**130**	P	Pn	17 35 11.0	-0.5
AGG	**Agios Georgios**	**1.50**	**109**	P	Pn	17 35 11.6	-0.7
AGG	**Agios Georgios**	**1.50**	**109**	P	Pn	17 35 11.6	-0.7
OHR	**Ohrid**	**1.61**	**8**	*e*Pg	Pg	17 35 15.0	+0.1
OHR				*i* Sg	Sg	17 35 39.6	+3.8
OHR	**Ohrid**	**1.61**	**8**	*e*Pg	Pg	17 35 15.0	+0.1
OHR				*i* Sg	Sg	17 35 39.5	+3.8
AOS	**Alonnisos**	**2.64**	**97**	P	Pn	17 35 28.0	+0.1
AOS	**Alonnisos**	**2.64**	**97**	P	Pn	17 35 28.0	+0.1

*BJI **24** 17:43:23.1,52.°66N×173.°49W,h143km,mb5.9/61, mB5.4/44*
*ISCJB **24** 17:43:23.6±0.2,52.°57N±0.°02×173.°19W±0.°01, h149km±1km,mb5.5/434,Error ellipse: s-maj=3.0km s-min=1.4km az=176.3*
*MOS **24** 17:43:23.4±0.9,52.°60N×173.°23W,h145km,mb5.6/98, MS4.0/8,Error ellipse: s-maj=5.8km s-min=4.0km az=88.1*
*GCMT **24** 17:43:24.1±0.1,52.°49N×173.°18W,h142km,MW5.5/124, Moment Tensor Solution. s115,c194; s124,c277; Duration: 1s4 Moment tensor: Scale 10^{17}Nm; M_{rr}-0.04±.02; $M_{\theta\theta}$-0.64±.03; $M_{\phi\phi}$0.68±.03; $M_{r\theta}$1.70±.02; $M_{\theta\phi}$0.13±.03; $M_{\phi r}$1.21±.02; Best double couple: M_o2.19200×10^{17} NP1:ϕ_s233.00000°,δ90.00000°, λ-72.00000°. NP2:ϕ_s324.00000°,δ18.00000°, λ-180.00000°. Principal axes: T 2.1400, Plg42.0000°, Azm306.0000°; N 0.1030, Plg18.0000°, Azm53.0000°; P -2.2430, Plg42.0000°, Azm160.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*
*IDC **24** 17:43:24.2±0.3,52.°59N×173.°25W,h140km±2km,mb5.0/38, mb1 5.1/40,mb1mx5.1/45,mbtmp5.4/40,MS4.0/29, Ms1 4.0/29,ms1mx3.8/64 Error ellipse: s-maj=8.6km s-min=5.8km az=170.0*
*NEIC **24** 17:43:24.1±0.1,52.°60N×173.°26W,mb5.6/292,MW5.5, MW5.5,Error ellipse: s-maj=2.7km s-min=1.4km az=169.0, Moment Tensor Solution. s46 Moment tensor: Scale 10^{17}Nm; M_{rr}-0.11; $M_{\theta\theta}$-0.88; $M_{\phi\phi}$1.00; $M_{r\theta}$1.84; $M_{\theta\phi}$0.33; $M_{\phi r}$1.36; Best double couple: M_o2.50000×10^{17} NP1: ϕ_s326.00000°,δ24.00000°,λ-176.00000°. NP2: ϕ_s233.00000°,δ89.00000°,λ-67.00000°. Principal axes: T 2.5000, Plg39.0000°, Azm302.0000°; N 0.0000, Plg23.0000°, Azm52.0000°; P -2.5000, Plg42.0000°, Azm165.0000°;*
NEIC Felt at Atka.
*NEIC **24** 17:43:25.0±0.0,52.°61N×173.°22W,h150km,Moment Tensor Solution. s15 Moment tensor: Scale 10^{17}Nm; M_{rr}0.20; $M_{\theta\theta}$-0.50; $M_{\phi\phi}$0.30; $M_{r\theta}$1.80; $M_{\theta\phi}$0.20; $M_{\phi r}$1.10; Best double couple: M_o2.00000×10^{17} NP1:ϕ_s58.00000°, δ88.00000°,λ78.00000°. NP2:ϕ_s319.00000°,δ12.00000°, λ171.00000°. Principal axes: T 2.2000, Plg45.0000°, Azm316.0000°; N 0.0000, Plg11.0000°, Azm58.0000°; P -2.1000, Plg41.0000°, Azm159.0000°;*
ISC 24 17:43:23.9±0.2,52.°54N±0.°03×173.°24W±0.°02, h142km±1km,h141km;pP-P,n1723,σ1s25/2468,mb5.6/449, 112C-21B,Andreanof Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KOSE	**Korovin Southe**	**0.53**	**248**	P	Pn	17 43 45.5	+1.0
KOFP	**Korovin Flat P**	**0.59**	**243**	P	Pn	17 43 45.9	+1.1
KOKL	**Mount Kliuchef**	**0.63**	**250**	*e*Pn	Pn	17 43 46.2	+1.1
KOWE	**Korovin West**	**0.64**	**254**	*e*Pn	Pn	17 43 46.4	+1.2
GSTR	**Great Sitkin T**	**1.79**	**257**	*e*Pn	Pn	17 43 56.7	+0.7
GSTR				*e*Sn	Sn	17 44 21.8	+1.2
GSMY	**Great Sitkin M**	**1.80**	**255**	*e*Pn	Pn	17 43 56.3	+0.2
GSTD	**Great Sitkin T**	**1.85**	**256**	*e*Pn	Pn	17 43 57.0	+0.2
GSCK	**Great Sitkin C**	**1.87**	**255**	*e*Pn	Pn	17 43 57.3	+0.3
ETKA	**Kagalaska Isla**	**2.06**	**252**	*e*Pn	Pn	17 44 00.1	+0.8
ADAG	**Mount Adagdak**	**2.14**	**256**	*e*Pn	Pn	17 44 01.1	+1.0
KIRH	**Kanaga Island**	**2.46**	**256**	*e*Pn	Pn	17 44 04.8	+0.8
NIKH	**Nikolski High**	**2.70**	**79**	*e*Pn	Pn	17 44 06.1	-0.9
NIKH				*e*Sn	Sn	17 44 37.5	-2.9
TAPA	**Tanaga Point A**	**2.91**	**257**	*e*Pn	Pn	17 44 10.5	+0.8
TAFL	**Tanaga Flats**	**2.98**	**256**	*e*Pn	Pn	17 44 11.8	+1.3
TANO	**Tanaga North**	**3.07**	**260**	*e*Pn	Pn	17 44 13.0	+1.3
OKAK	**Okmok**	**3.12**	**69**	*e*Pn	Pn	17 44 12.1	-0.3
OKAK				*e*Sn	Sn	17 44 48.9	-1.1
OKTU	**Okmok Mt. Tuli**	**3.26**	**73**	P	Pn	17 44 14.6	+0.5
OKER	**Okmok East Rim**	**3.27**	**72**	P	Pn	17 44 15.2	+0.9
GAEA	**Gareloi East**	**3.48**	**260**	*e*Pn	Pn	17 44 18.2	+1.2
GALAA	**Gareloi Lava P**	**3.50**	**259**	*e*Pn	Pn	17 44 18.4	+1.2
MSOM	**Makushin Julie**	**4.00**	**69**	*e*P	Pn	17 44 23.9	+0.2
MSOM	**Makushin Julie**	**4.00**	**69**	*e*Pn	Pn	17 44 23.9	+0.2
MGOD	**Makushin Gods**	**4.03**	**69**	*e*Pn	Pn	17 44 24.4	+0.1
MGOD				*e*Sn	Sn	17 45 10.1	-1.1
MSW	**Makushin Switc**	**4.12**	**68**	P	Pn	17 44 25.7	+0.3
MTBL	**Makushin Table**	**4.19**	**67**	*e*Pn	Pn	17 44 26.8	+0.4
UNV	**Unalaska Valle**	**4.26**	**69**	*e*Pn	Pn	17 44 26.9	-0.2
UNV				*e*Sn	Sn	17 45 10.8	-5.6
CERAA	**Semis' Rag'd T**	**4.40**	**264**	P	Pn	17 44 30.5	+1.5
CERB	**Semis' Cerberu**	**4.42**	**265**	P	Pn	17 44 31.1	+1.7
CEAP	**Semis' Anvil P**	**4.44**	**266**	P	Pn	17 44 31.9	+2.2
CESW	**Semis' Southwe**	**4.47**	**265**	P	Pn	17 44 31.5	+1.5
CETU	**Semis' Tuman**	**4.50**	**266**	P	Pn	17 44 32.8	+2.4
AKRB	**Akutan Reef Bi**	**4.58**	**67**	P	Pn	17 44 32.0	+0.5
AKRB				S	Sn	17 45 25.5	+1.3
LVA	**Lava Point**	**4.61**	**67**	P	Pn	17 44 32.6	+0.7
ZRO	**Akutan Zero**	**4.62**	**68**	P	Pn	17 44 32.7	+0.7
ZRO				S	Sn	17 45 26.2	+1.0
AKGG	**Akutan Green G**	**4.65**	**66**	P	Pn	17 44 32.9	+0.5
AKUT	**Akutan**	**4.75**	**67**	*e*Pn	Pn	17 44 34.2	+0.5
AKUT				*e*Sn	Sn	17 45 28.1	0.0
LSPA	**Little Sitkin**	**5.06**	**267**	P	Pn	17 44 40.5	+2.6
LSPA				S	Sn	17 45 38.8	+3.2
WESP	**Westdahl Peak**	**5.45**	**66**	P	Pn	17 44 43.7	+0.6
WESP				S	Sn	17 45 44.5	-0.3
WEBT	**Westdahl Beart**	**5.46**	**65**	P	Pn	17 44 44.0	+0.8
SSLW	**Shishaldin Wes**	**5.86**	**64**	P	Pn	17 44 48.6	0.0
SSLS	**Shishaldin Sou**	**5.91**	**65**	P	Pn	17 44 50.1	+0.8
SSLS				S	Sn	17 45 55.6	-0.3
SSLN	**Shishaldin Nor**	**5.95**	**64**	P	Pn	17 44 50.6	+0.9
FALS	**False Pass**	**6.28**	**64**	*e*Pn	Pn	17 44 53.8	-0.3
FALS				*e*Sn	Sn	17 46 02.4	-2.2
BALA	**Baldy Mountain**	**6.73**	**63**	*e*Pn	Pn	17 45 00.9	+0.8
DT1	**Dutton Round H**	**6.98**	**64**	*e*Pn	Pn	17 45 03.1	-0.3
DOL	**Dolgoi Island**	**7.22**	**64**	P	Pn	17 45 06.1	-0.6
PS4A	**Pavlof South-4**	**7.28**	**63**	P	Pn	17 45 08.0	+0.5
PVV	**Pavlof Volcano**	**7.33**	**63**	P	Pn	17 45 08.3	+0.2
SMY	**Shemya**	**7.71**	**276**	*e*P	Pn	17 45 14.5	+1.3
SMY	**Shemya**	**7.71**	**276**	*e*Pn	Pn	17 45 14.6	+1.4
SDPT	**Sand Point**	**8.04**	**64**	*e*Pn	Pn	17 45 16.3	-1.3
SDPT				*e*Sn	Sn	17 46 43.0	-3.9
VNWF	**Veniaminof 8**	**8.77**	**60**	P	Pn	17 45 28.1	+0.6
VNNF	**Veniaminof 3**	**8.94**	**60**	P	Pn	17 45 29.8	0.0
CHGN	**Chignik**	**9.42**	**61**	*e*Pn	Pn	17 45 34.5	-1.6
CHGN				*e*Sn	Sn	17 47 10.9	-9.4
ANPK	**Aniakchak Peak**	**9.75**	**58**	P	Pn	17 45 40.7	+0.1
GAMB	**Gambell**	**11.30**	**3**	*e*Pn	Pn	17 46 02.7	+1.8
KELA	**Mount Kelaz**	**11.53**	**52**	P	Pn	17 46 04.6	+0.5
OHAK	**Old Harbor**	**12.39**	**60**	*e*Pn	Pn	17 46 11.8	-3.4
OHAK				*e*Sn	Sn	17 48 36.1	+4.4
SVW2	**Sparrevohn**	**12.88**	**41**	*e*Pn	Pn	17 46 22.8	+1.3
KDAK	**Kodiak Island**	**12.90**	**58**	*e*P	Pn	17 46 19.1	-2.6
KDAK				*e*		17 48 38.0	
KDAK	**Kodiak Island**	**12.90**	**58**	*e*Pn	Pn	17 46 19.1	-2.6
KDAK				*e*Sn	Sn	17 48 38.0	-6.1
TNA	**Tin City**	**13.33**	**10**	*e*Pn	Pn	17 46 27.3	0.0
RSO	**Redoubt South**	**13.77**	**47**	*e*Pn	Pn	17 46 34.4	+1.3
TT01	**Tatalina**	**13.82**	**35**	*e*Pn	Pn	17 46 34.6	+1.1
TTA	**Tatalina**	**13.84**	**35**	*e*P	Pn	17 46 35.1	+1.3
TTA	**Tatalina**	**13.84**	**35**	*e*Pn	Pn	17 46 35.1	+1.3
HOM	**Homer**	**13.95**	**51**	*e*Pn	P	17 46 37.1	-1.6
BRLK	**Bradley Lake**	**14.35**	**51**	*e*Pn	Pn	17 46 39.0	-1.3
BRLK				*e*Sn	Sn	17 49 16.2	-2.8
BRLK				*e*ScP	ScP	17 55 05.9	0.0
SPU	**Mount Spurr**	**14.40**	**45**	*e*Pn	P	17 46 43.0	-0.7
SPU				*e*ScP	ScP	17 55 04.0	-2.0
SEW	**Seward**	**15.15**	**51**	*e*Pn	Pn	17 46 48.5	-1.6
	81nm,0.8s						
SEW				*e*Sn	Sn	17 49 24.6	-13
SEW				*e*ScP	ScP	17 55 06.6	-0.6
PPLA	**Purkeypile**	**15.21**	**39**	*e*Pn	P	17 46 53.1	+0.2
	316nm,1.1s						
PPLA				*e*ScP	ScP	17 55 06.1	-1.5
RC01	**Rabbit Creek A**	**15.38**	**47**	*e*Pn	Pn	17 46 53.2	+0.2
	112nm,1.0s						
RC01				*e*ScP	ScP	17 55 07.2	-0.5
CAST	**Castle Rocks**	**15.55**	**37**	*e*Pn	P	17 46 56.9	+0.6
	526nm,1.8s						
CAST				*e*ScP	ScP	17 55 06.6	-1.4
PMR	**Palmer**	**15.85**	**46**	*e*P	P	17 46 59.3	-0.3
PMR				pmax	pmax		
	comp=Z,60nm,1.2s						
PMR	**Palmer**	**15.85**	**46**	*e*Pn	P	17 46 59.3	-0.3
	comp=Z,60nm,1.2s						
PMR				*e*ScP	ScP	17 55 08.5	0.0
KTH	**Kantishna Hill**	**16.05**	**38**	*e*Pn	P	17 47 03.4	+1.3
	comp=Z,308nm,0.8s						
TRF	**Thorofare Moun**	**16.24**	**39**	*e*Pn	P	17 47 04.6	+0.4
	comp=Z,252nm,1.0s						
TRF				*e*ScP	ScP	17 55 08.9	-0.7
SML	**Sawmill**	**16.28**	**46**	*e*P	Pn	17 47 04.0	-0.1
SML				pmax	pmax		
	comp=Z,99nm,1.0s						
SML	**Sawmill**	**16.28**	**46**	*e*Pn	Pn	17 47 04.0	-0.1
	comp=Z,99nm,1.0s						
SML				*e*ScP	ScP	17 55 08.5	-1.0
BPAW	**Bear Paw Mtn.**	**16.34**	**36**	*e*Pn	P	17 47 07.0	+1.9
	comp=Z,456nm,1.4s						
BPAW				*e*S	Sn	17 50 06.5	-0.1
BPAW				*e*ScP	ScP	17 55 09.6	+0.1
MID	**Middleton Isla**	**16.47**	**55**	*e*P	Pn	17 47 06.4	0.0
MID				pmax	pmax		
	comp=Z,174nm,0.8s						
MID	**Middleton Isla**	**16.47**	**55**	*e*Pn	Pn	17 47 06.4	0.0
	comp=Z,174nm,0.8s						
SCM	**Sheep Creek Mo**	**16.73**	**46**	*e*P	P	17 47 08.7	-0.8
SCM				*e*S	S	17 50 06.7	-9.3
SCM				pmax	pmax		
	comp=Z,204nm,0.8s						
SCM	**Sheep Creek Mo**	**16.73**	**46**	*e*P	P	17 47 08.7	-0.8
	comp=Z,204nm,0.8s						
SCM				*e*S	S	17 50 06.7	-9.3
RND	**Reindeer**	**16.77**	**40**	*e*P	P	17 47 09.7	-0.3
RND				*e*S	S	17 50 14.7	-2.3
RND				pmax	pmax		
	comp=Z,221nm,1.2s						
RND	**Reindeer**	**16.77**	**40**	*e*P	P	17 47 09.7	-0.3
	comp=Z,221nm,1.2s						
RND				*e*S	S	17 50 14.7	-2.3
RND				*e*PcP	PcP	17 51 49.7	+0.4
RND				*e*ScP	ScP	17 55 09.8	-0.7
MCK	**McKinley**	**16.91**	**39**	*e*P	Pn	17 47 11.6	-0.1
MCK				*e*S	S	17 50 15.7	-4.2
MCK				pmax	pmax		
	comp=Z,280nm,1.1s						
MCK	**McKinley**	**16.91**	**39**	*e*P	Pn	17 47 11.6	-0.1
	comp=Z,280nm,1.1s						
MCK				*e*S	S	17 50 15.7	-4.2
MCK				*e*ScP	ScP	17 55 09.9	-0.7
BWN	**Browne**	**16.93**	**37**	*e*P	Pn	17 47 12.0	0.0
	comp=Z,862nm,1.4s						
BWN				*e*ScP	ScP	17 55 10.5	-0.2
PET	**Petropavlovsk**	**16.97**	**283**	α *i*P	Pn	17 47 13.3	+0.8
PET				*e*S	S	17 50 16.0	-5.4
PET				pmax	pmax		
	comp=Z,3µm,3.4s						
PET				pmax	pmax		
	comp=Z,2µm,12.2s						
PET				pmax	pmax		
	comp=Z,307nm,1.0s						
PET				MLR	MLR		
	comp=Z,700nm,17.0s						
PET				MLR	MLR		
	comp=Z,600nm,15.0s						
PET	**Petropavlovsk**	**16.97**	**283**	*e*P	Pn	17 47 13.6	+1.1
	comp=Z,296nm,0.9s						
MLY	**Manley**	**16.97**	**34**	*e*P	Pn	17 47 14.1	+1.6
	comp=Z,268nm,1.1s						
MLY				*e*ScP	ScP	17 55 11.1	+0.3
EYAK	**Cordova Ski Ar**	**17.04**	**51**	*e*P	P	17 47 12.3	-0.4
	comp=Z,58nm,0.8s						
EYAK				*e*S	S	17 50 11.9	-11
EYAK				*e*ScP	ScP	17 55 11.0	+0.1
DIV	**Divide**	**17.19**	**49**	*e*P	P	17 47 14.0	-0.6
	comp=Z,107nm,1.0s						
DIV				*e*S	S	17 50 14.5	-12
DIV				*e*ScP	ScP	17 55 11.3	0.0
KLU	**Klutina**	**17.24**	**48**	*e*P	P	17 47 14.5	-0.6
	comp=Z,80nm,0.8s						
KLU				*e*ScP	ScP	17 55 11.4	-0.1
RAGM	**Ragged Mountai**	**17.51**	**52**	*e*P	P	17 47 17.9	-0.1
	comp=Z,145nm,0.8s						
RAGM				*e*ScP	ScP	17 55 12.1	+0.2
PEA0	**Petropavlovsk-**	**17.52**	**283**	*e*P	Pn	17 47 20.3	+1.1
PEA0				*e*PcP	PcP	17 51 51.0	+0.5
PEA0				*e*ScP	ScP	17 55 12.7	+0.6
PEA0B	**Petropavlovsk-**	**17.52**	**283**	*e*P	Pn	17 47 20.3	+1.1
	comp=Z,897nm,1.1s						
PEA0B				*e*PcP	PcP	17 51 51.6	+1.1
PEA0B				*e*ScP	ScP	17 55 13.2	+1.1
PEA1	**Petropavlovsk-**	**17.52**	**283**	*e*P	Pn	17 47 19.9	+0.7
PEA1				*e*S	S	17 50 29.8	-3.3
PEA1				*e*PcP	PcP	17 51 51.0	+0.4
PEA1				*e*ScP	ScP	17 55 12.1	0.0
PETK	**Petropavlovsk-**	**17.52**	**283**	P	Pn	17 47 19.9	+0.7
	comp=Z,16nm,0.3s,baz=83,slow=15,SNR=133						
PETK				S	S	17 50 29.8	-3.3
	comp=Z,0.1nm,0.3s,baz=93,slow=15,SNR=2.6						
PETK				PcP	PcP	17 51 51.0	+0.4
	comp=Z,0.7nm,0.3s,baz=86,slow=5.6,SNR=8.5						
PETK				ScP	ScP	17 55 12.1	0.0
	comp=Z,0.4nm,0.3s,baz=98,slow=2.9,SNR=12						
WRH	**Wood River Hil**	**17.60**	**38**

SKR Severo-Kuril's 19.05 277 *e*P P 17 47 26.0 -8.8
SKR *e*S **S** **17 50 54.0 -9.3**
SKR pmax pmax
comp=N,800nm,2.0s
SKR pmax pmax
comp=E,800nm,2.0s
SKR pmax pmax
comp=Z,1μm,2.0s
SKR pmax pmax
comp=Z,700nm,0.8s
SKR pmax pmax
comp=N,170nm,0.7s
SKR pmax pmax
comp=E,130nm,0.7s
SKR MLR MLR
comp=N,900nm,18.0s
SKR MLR MLR
comp=Z,1μm,18.0s
FYU Fort Yukon 19.71 34 *e*P **P** **17 47 42.2 +0.4**
comp=Z,667nm,1.6s
FYU *e*ScP **ScP** **17 55 17.7 +1.1**
EGAK Eagle 20.42 41 *e*P **P** **17 47 50.1 +0.6**
comp=Z,522nm,0.6s
EGAK *e*ScP **ScP** **17 55 19.0 +0.7**
SEY Seymchan 20.82 313 P **P** **17 47 55.5 +1.7**
comp=Z,436nm,0.8s,baz=111,slow=8.9,SNR=421
SEY PcP **PcP** **17 51 57.0 +0.8**
comp=Z,48nm,0.8s,baz=115,slow=2.9,SNR=8.2
SEY ScP **ScP** **17 55 19.1 -0.2**
comp=Z,104nm,0.8s,baz=131,slow=3.4,SNR=61
SEY Seymchan 20.82 313‖ *e*P **P** **17 47 54.5 +0.8**
DAWY Dawson 20.90 43 *e*P **P** **17 47 55.1 +0.4**
comp=Z,156nm,1.0s
DAWY *e*S **S** **17 51 40.3 +0.8**
DAWY *e*ScP **ScP** **17 55 19.7 +0.1**
MA2 Magadan 21.08 304 P **P** **17 47 58.4 +1.9**
comp=Z,370nm,1.0s,baz=111,slow=9.6,SNR=43
MA2 PcP **PcP** **17 51 57.0 +0.2**
comp=Z,37nm,0.9s,baz=129,slow=6.5,SNR=4.2
MA2 ScP **ScP** **17 55 19.9 -0.2**
comp=Z,45nm,0.8s,baz=123,slow=5.3,SNR=14
MA2 LR LR 17 56 21.6
comp=Z,378nm,20.0s,baz=120,slow=37
SKAG Skagway 22.05 57 *e*P **P** **17 48 06.1 -0.7**
comp=Z,81nm,0.8s
SKAG *e*ScP **ScP** **17 55 21.6 -0.8**
CRAG Craig 23.53 67 *e*P **P** **17 48 22.3 +1.6**
CRAG *e*PcP **PcP** **17 52 01.7 -0.1**
CRAG *e*ScP **ScP** **17 55 26.8 +0.3**
WRAK Wrangell Islan 23.81 64 *e*P **P** **17 48 25.4 +2.1**
comp=Z,79nm,0.8s
MIDW Midway 24.50 189 *e*P **P** **17 48 29.9 +0.2**
comp=Z,155nm,0.9s
INK Inuvik 24.53 35 P **P** **17 48 30.1 +0.4**
comp=Z,99nm,0.6s,baz=244,slow=8.8,SNR=286
INK PcP **PcP** **17 52 04.2 +0.5**
comp=Z,33nm,0.8s,baz=267,slow=1.2,SNR=7.9
INK S **S** **17 52 35.2 -4.4**
comp=Z,3.7nm,0.9s,baz=236,slow=7.3,SNR=2.1
INK ScP **ScP** **17 55 28.6 -0.4**
baz=268,slow=2.3
INK Inuvik 24.53 35 *e*P **P** **17 48 30.1 +0.4**
INK *e* 17 52 03.1
INK *e*S **S** **17 52 39.7 +0.1**
INK pmax pmax
comp=Z,134nm,0.7s
INK Inuvik 24.53 35 *e*P **P** **17 48 30.1 +0.4**
comp=Z,134nm,0.7s
INK *e*PcP **PcP** **17 52 03.0 -0.7**
INK *e*S **S** **17 52 39.7 +0.1**
INK *e*ScP **ScP** **17 55 28.6 -0.4**
DLBC Dease Lake 24.83 59 P **P** **17 48 34.2 +1.6**
comp=Z,23nm,0.8s,baz=283,slow=8.7,SNR=40
DLBC pP **pP** **17 49 05.8 +3.5**
comp=Z,95nm,0.7s,baz=272,slow=8.3,SNR=16
DLBC Dease Lake 24.83 59 *e*P **P** **17 48 34.2 +1.6**
DLBC *e*pP **pP** **17 49 05.8 +3.5**
DLBC *e*ScP **ScP** **17 55 30.9 +0.8**
KUR Kuril'sk 26.34 270*c i*P **P** **17 48 46.7 +0.4**
KUR S **S** **17 53 10.2 +1.7**
KUR pmax pmax
comp=Z,480nm,1.3s
KUR pmax pmax
comp=Z,546nm,2.5s
TYV Tymovskoe 27.07 284 *e*P **P** **17 48 53.8 +1.0**
TYV pmax pmax
comp=E,24nm,0.8s
TYV pmax pmax
comp=Z,42nm,0.8s
BBB Bella Bella 27.22 73 P **P** **17 48 55.8 +1.7**
comp=Z,7.5nm,0.6s,baz=295,slow=10,SNR=9.0
BBB pP **pP** **17 49 25.9 +1.9**
comp=Z,30nm,0.8s,baz=301,slow=8.3,SNR=10.0
NKL Nikolayevsk 27.47 290 *i*P **P** **17 48 57.0 +0.7**
NKL pmax pmax
comp=Z,600nm,3.0s
NKL MLR MLR
comp=N,500nm,14.0s
NKL MLR MLR
comp=E,450nm,14.0s
NKL MLR MLR
comp=Z,500nm,14.0s
YUK Yuzh-Kuril'sk 28.18 269 *i*P **P** **17 49 03.2 +0.5**
YSS Yuzh-Sakhalins 28.62 277*α i*P **P** **17 49 07.7 +1.1**
YSS *e* 17 50 06.9
YSS *e* 17 52 14.2
YSS *i*S **S** **17 53 44.0 -0.4**
YSS pmax pmax
comp=Z,110nm,0.8s
YSS pmax pmax
comp=Z,600nm,3.4s
YSS pmax pmax
comp=E,300nm,2.5s
YSS MLR MLR
comp=Z,400nm,16.0s
YSS Yuzh-Sakhalins 28.62 277 *e*P **P** **17 49 07.2 +0.6**
comp=Z,100nm,0.7s
YSS *e*PcP **PcP** **17 52 14.1 +0.4**
YSS *e*ScP **ScP** **17 55 41.4 -0.1**
ASAJ Asahikawa 30.13 272 ScP **ScP** **17 55 46.0 -0.4**
comp=Z,14nm,0.8s,baz=277,slow=6.0,SNR=8.1
ASAJ Asahikawa 30.13 272 *e*P **P** **17 49 20.5 +0.5**
comp=Z,279nm,1.0s
ASAJ *e*PcP **PcP** **17 52 18.6 +0.9**
ASAJ *e*ScP **ScP** **17 55 46.4 0.0**
ERM Erimo 30.95 268*d i*P **P** **17 49 28.4 +1.2**
ERM Erimo 30.95 268 *e*P **P** **17 49 28.5 +1.3**
comp=Z,368nm,1.0s
ERM *e*PcP **PcP** **17 52 21.4 +1.5**
ERM *e*ScP **ScP** **17 55 50.2 +1.1**
YAK Yakutsk 31.26 310 P **P** **17 49 29.8 +0.1**
comp=Z,10nm,0.7s,baz=253,slow=20,SNR=39
YAK PcP **PcP** **17 52 20.4 +0.1**
comp=Z,12nm,0.7s,baz=305,slow=12,SNR=10
YAK ScP **ScP** **17 55 49.0 -0.8**
comp=Z,2.9nm,0.6s,baz=261,slow=15,SNR=5.3
YAK LR LR 18 02 10.3
comp=Z,344nm,21.0s,baz=90,slow=36
YAK Yakutsk 31.26 310*c i*P **P** **17 49 29.5 -0.2**
YAK *e**PP **pP** **17 50 00.0 0.0**
YAK *e* 17 50 39.2
YAK *i* 17 52 19.9
YAK *e*S **S** **17 54 21.8 -3.6**
YAK *e**SS **sS** **17 55 16.5 -2.0**
YAK *e*SS **SS** **17 56 48.1 +3.3**
YAK *e* 17 59 44.8
YAK pmax pmax
comp=Z,99nm,0.9s
YAK pmax pmax
comp=E,76nm,1.0s
YAK pmax pmax
comp=Z,189nm,3.1s
YAK pmax pmax
comp=N,66nm,2.4s
YAK pmax pmax
comp=E,310nm,3.2s
YAK smax smax
comp=N,167nm,2.0s
YAK smax smax
comp=E,45nm,1.7s
YAK Yakutsk 31.26 310 *e*P **P** **17 49 29.4 -0.3**
comp=E,177nm,0.8s
YAK *e*pP **pP** **17 49 59.3 -0.6**
YAK *e*PcP **PcP** **17 52 20.1 -0.2**
YAK *e*ScP **ScP** **17 55 47.9 -1.9**
PGC Sidney 31.34 77 *e*P **P** **17 49 31.9 +1.5**
comp=E,108nm,1.6s
PGC *e*ScP **ScP** **17 55 49.9 -0.4**
TIXI Tiksi 31.36 329 P **P** **17 49 31.1 +0.6**
comp=E,5.8nm,0.7s,baz=116,slow=12,SNR=21
TIXI PcP **PcP** **17 52 20.6 +0.2**
comp=E,33nm,0.5s,baz=106,slow=3.5,SNR=36
TIXI ScP **ScP** **17 55 49.4 -0.6**
comp=E,47nm,1.0s,baz=103,slow=4.2,SNR=20
TIXI LR LR 18 02 49.5
comp=E,308nm,19.9s,baz=97,slow=37
TIXI Tiksi 31.36 329 *e*P **P** **17 49 30.9 +0.4**
TIXI *e* 17 52 19.6
TIXI pmax pmax
comp=Z,37nm,1.0s
TIXI Tiksi 31.36 329 *e*P **P** **17 49 30.9 +0.4**
comp=Z,37nm,1.0s
TIXI *e*PcP **PcP** **17 52 19.6 -0.9**
TIXI *e*ScP **ScP** **17 55 49.6 -0.4**
NLWA Neilton Lookou 31.66 79 *e*P **P** **17 49 35.3 +1.9**
comp=Z,137nm,1.0s
NLWA *e*pP **pP** **17 50 05.6 +1.8**
NLWA *e*ScP **ScP** **17 55 51.8 +0.3**
A04D Lummi Island 31.75 76 P **P** **17 49 36.3 +2.2**
baz=296
A04D S **S** **17 54 35.6 +2.4**
baz=296
YKW3 Yellowknife Ar 31.89 48 *e*P **P** **17 49 35.0 -0.3**
comp=Z,33nm,0.9s
YKW3 *e*PcP **PcP** **17 52 21.1 -1.0**
YKW3 *e*ScP **ScP** **17 55 52.4 +0.4**
YKA Yellowknife Ar 31.91 49 P **P** **17 49 35.2 -0.1**
comp=Z,14nm,0.8s,baz=284,slow=8.5,SNR=125
YKA PcP **PcP** **17 52 22.5 +0.4**
comp=Z,11nm,0.7s,baz=286,slow=2.9,SNR=12
YKA ScP **ScP** **17 55 52.0 +0.1**
comp=Z,6.3nm,0.5s,baz=283,slow=3.4,SNR=35
YKA LR LR 18 04 14.9
comp=Z,35nm,18.6s,baz=180,slow=39
YKB5 Yellowknife Ar 31.91 49 *e*P **P** **17 49 34.1 -1.2**
YKB5 *e*PcP **PcP** **17 52 22.5 +0.4**
YKB5 *e*ScP **ScP** **17 55 52.0 0.0**
GNW Green Mountain 32.20 78 *e*P **P** **17 49 40.1 +2.0**
E03A Lebam 32.25 80 *e*P **P** **17 49 40.2 +1.7**
comp=Z,258nm,0.9s
E03A *e*pP **pP** **17 50 10.3 +1.5**
E03A *e*ScP **ScP** **17 55 54.5 +1.0**
B05A Bryant 32.31 77 P **P** **17 49 41.0 +2.0**
baz=297,SNR=36
HABR Khabarovsk 32.55 284*d e*P **P** **17 49 38.5 -2.6**
HABR *e**PP **pP** **17 50 08.9 -2.6**
HABR *e**SP **sP** **17 50 25.1 -2.7**
HABR *e* 17 50 51.3
HABR *e* 17 52 22.5
HABR *e*S **S** **17 54 43.7 -2.1**
HABR *e**SS **sS** **17 55 36.6 -2.4**
HABR *e*SS **SnSn** **17 56 53.8 -2.7**
HABR *e* 17 59 52.6
HABR pmax pmax
comp=Z,463nm,1.2s
HABR pmax pmax
comp=E,279nm,1.2s
HABR pmax pmax
comp=N,101nm,1.2s
HABR pmax pmax
comp=Z,599nm,1.3s
HABR MLR MLR
comp=Z,129nm,14.0s
F03A Seaside 32.55 81 *e*P **P** **17 49 42.8 +1.6**
comp=Z,214nm,1.0s
B06A Marblemount 32.56 76 *e*P **P** **17 49 42.8 +1.6**
B06A *e*pP **pP** **17 50 13.6 +2.0**
B06A *e*ScP **ScP** **17 55 54.7 +0.2**
F04D Rainier, OR 32.81 81 P **P** **17 49 45.6 +2.2**
baz=300,SNR=9.9
D05A Enumclaw 32.88 78 *e*P **P** **17 49 46.1 +2.1**
comp=Z,576nm,1.4s
D05A *e*pP **pP** **17 50 16.6 +2.2**
D05A *e*ScP **ScP** **17 55 56.6 +0.9**
OPA Opana 32.97 153 *e*P **P** **17 49 46.7 +1.7**
OPA pmax pmax
comp=Z,165nm,1.0s
OPA Opana 32.97 153 *e*P **P** **17 49 46.7 +1.7**
comp=Z,165nm,1.0s
G03D McMinnville, O 33.10 82 P **P** **17 49 48.0 +2.1**
baz=301,SNR=15
TDL Tradedollar La 33.16 80 P **P** **17 49 48.2 +1.6**
LVP Lakeview Peak 33.18 81 *e*P **P** **17 49 48.5 +1.7**
C06D Leavenworth 33.19 77 P **P** **17 49 48.5 +1.8**
baz=298
RCS Mount Rainier- 33.19 79 P **P** **17 49 49.2 +2.0**
LON Longmire 33.20 79 *e*P **P** **17 49 48.4 +1.5**
LON pmax pmax
comp=Z,50nm,0.9s
LON Longmire 33.20 79 *e*P **P** **17 49 48.4 +1.5**
comp=Z,50nm,0.9s
LON *e*ScP **ScP** **17 55 57.1 +0.2**
KIP Kipapa 33.22 153 *e*P **P** **17 49 48.5 +1.4**
KIP pmax pmax
comp=Z,594nm,1.4s
KIP Kipapa 33.22 153 *e*P **P** **17 49 48.5 +1.4**
comp=Z,594nm,1.4s
F04A Amboy 33.24 81 *e*P **P** **17 49 48.9 +1.7**
comp=Z,155nm,0.8s
F04A *e*ScP **ScP** **17 55 57.2 +0.3**
HON Honolulu 33.31 153 *e*P **P** **17 49 49.9 +1.9**
HON pmax pmax
comp=Z,514nm,1.0s
HON Honolulu 33.31 153 *e*P **P** **17 49 49.9 +1.9**
comp=Z,514nm,1.0s
MTMW Mount Mitchell 33.32 80 P **P** **17 49 50.0 +2.0**
COR Corvallis 33.40 83 *e*P **P** **17 49 50.8 +2.2**
COR *e**PP **pP** **17 50 19.7 +0.7**
COR pmax pmax
comp=Z,308nm,0.9s
COR Corvallis 33.40 83 *e*P **P** **17 49 50.8 +2.2**
comp=Z,308nm,0.9s
COR *e*pP **pP** **17 50 19.6 +0.7**
RNO Roman Nose 33.50 85 *e*P **P** **17 49 51.8 +2.3**
G04A Mulino 33.58 82 *e*P **P** **17 49 52.1 +2.0**
VLMM Larch Mountain 33.67 81 P **P** **17 49 53.0 +2.0**
I03D Drain, OR 33.85 85 P **P** **17 49 54.7 +2.2**
baz=303,SNR=18
B08A Colville Reser 33.91 75 *e*P **P** **17 49 54.2 +1.2**
comp=Z,47nm,0.8s
B08A *e*ScP **ScP** **17 55 59.0 -0.2**
H04A Detroit Lake 34.03 83 *e*P **P** **17 49 55.6 +1.5**
comp=Z,312nm,0.9s
H04A *e*pP **pP** **17 50 24.1 -0.5**
H04A *e*S **S** **17 55 12.8 +4.1**
H04A *e*ScP **ScP** **17 55 59.2 -0.6**
BROR Big Rock Looko 34.09 83 *e*P **P** **17 49 56.6 +2.1**
VFP Flag Point 34.13 81 P **P** **17 49 56.8 +1.7**
KLR Kul'dur 34.15 287 P **P** **17 49 55.0 0.0**
comp=Z,131nm,0.7s,baz=62,slow=8.5,SNR=523
KLR PcP **PcP** **17 52 29.3 +0.7**
comp=Z,15nm,0.8s,baz=76,slow=7.3,SNR=3.8
KLR ScP **ScP** **17 55 59.5 -0.6**
comp=Z,24nm,1.0s,baz=36,slow=3.7,SNR=15
G05D Wamic, OR 34.26 81 P **P** **17 49 58.0 +1.9**
baz=302,SNR=17
I04A Tendick Farm, 34.37 84 P **P** **17 49 58.9 +1.9**
baz=303,SNR=90
E07A Sunnyside 34.47 78 *e*P **P** **17 49 60.0 +2.2**
comp=Z,53nm,0.8s
L02D Cave Junction, 34.55 87 P **P** **17 50 00.9 +2.3**
baz=305,SNR=36
G06A Carlson Farm, 34.67 81 *e*P **P** **17 50 01.0 +1.3**
comp=Z,117nm,1.3s
G06A *e*ScP **ScP** **17 56 01.7 -0.4**
HUMO Hull Mountain 34.69 86 *e*P **P** **17 50 01.6 +1.8**
comp=Z,66nm,0.9s
HUMO *e*ScP **ScP** **17 56 02.6 +0.4**
I05D Terrebonne, OR 34.72 82 P **P** **17 50 02.1 +2.0**
baz=303,SNR=38
HAWA Hanford 34.74 78 *e*P **P** **17 50 01.8 +1.6**
comp=Z,102nm,0.8s
HAWA *e*ScP **ScP** **17 56 03.3 +1.1**
VTHM Trough 34.75 81 P **P** **17 50 01.9 +1.6**
D08A Wollman Farm, 34.78 77 *e*P **P** **17 50 01.7 +1.3**
D08A *e*pP **pP** **17 50 33.0 +2.0**
C09A Chrisman Ranch 34.80 75 *e*P **P** **17 50 01.9 +1.3**
C09A *e*pP **pP** **17 50 32.8 +1.5**
C09A *e*ScP **ScP** **17 56 02.3 -0.1**
JCC Jacoby Creek, 35.08 89 *e*P **P** **17 50 04.5 +1.5**
comp=Z,286nm,1.3s
JCC *e*pP **pP** **17 50 34.8 +1.1**
HPAH Hawaii Prepara 35.20 151 *e*P **P** **17 50 05.0 +0.7**
comp=Z,340nm,0.9s
KHMM Horse Mountain 35.22 89 *e*P **P** **17 50 06.7 +2.2**
comp=Z,149nm,0.9s
KHMM *e*pP **pP** **17 50 35.6 +0.5**
KHMM *e*ScP **ScP** **17 56 04.9 +0.6**
NEW Newport 35.25 74 P **P** **17 50 05.2 +0.6**
comp=Z,50nm,0.9s,baz=299,slow=5.1,SNR=19
NEW pP **pP** **17 50 36.1 +0.9**
comp=Z,82nm,0.8s,baz=302,slow=6.9,SNR=12
NEW PcP **PcP** **17 52 32.7 +0.8**
comp=Z,8.6nm,0.7s,baz=309,slow=3.4,SNR=3.0
NEW Newport 35.25 74 P **P** **17 50 05.7 +1.1**
baz=299,SNR=27
NEW Newport 35.25 74 *e*P **P** **17 50 05.5 +0.9**
NEW pmax pmax
comp=Z,75nm,0.8s
NEW Newport 35.25 74 *e*P **P** **17 50 05.2 +0.6**
NEW *e*pP **pP** **17 50 36.4 +1.2**
NEW PcP **PcP** **17 52 32.7 +0.8**
NEW *e*ScP **ScP** **17 56 04.3 +0.2**
YBH Yreka Blue Hor 35.34 87 LR LR 18 02 05.9
comp=Z,266nm,19.9s,baz=296,slow=32
YBH Yreka Blue Hor 35.34 87 *e*P **P** **17 50 07.7 +2.2**
YBH *e**PP **pP** **17 50 36.2 +0.1**
YBH pmax pmax
comp=Z,114nm,0.9s
YBH Yreka Blue Hor 35.34 87 *e*P **P** **17 50 07.7 +2.2**
comp=Z,114nm,0.9s
YBH *e*pP **pP** **17 50 36.2 +0.1**
YBH *e*ScP **ScP** **17 56 04.8 +0.2**
J05D Fort Rock, OR 35.36 84 P **P** **17 50 08.1 +2.5**
baz=304,SNR=87
K04D Chiloquin, OR 35.42 85 P **P** **17 50 08.3 +2.2**
baz=305,SNR=6.8
M02C Callahan 35.45 88 P **P** **17 50 08.9 +2.5**
baz=306,SNR=44
KKH Kailua Kona 35.46 151 *e*P **P** **17 50 08.0 +1.6**
KKH Kailua Kona 35.46 151 *e*P **P** **17 50 06.4 0.0**
POHA Pohakuloa 35.51 150 *e*P **P** **17 50 08.2 +1.0**
comp=Z,424nm,1.1s
POHA *e*pP **pP** **17 50 35.8 -2.1**
KMRM Mail Ridge 35.63 90 *e*P **P** **17 50 10.3 +2.5**
comp=Z,168nm,0.9s
G08A Pilot Rock 35.65 79 *e*P **P** **17 50 08.8 +0.7**
comp=Z,62nm,1.0s
G08A *e*pP **pP** **17 50 38.1 -0.7**
G08A *e*PcP **PcP** **17 52 33.8 +0.5**
G08A *e*ScP **ScP** **17 56 04.9 -0.8**
N02D Trinity Center 35.79 88 P **P** **17 50 11.6 +2.4**
baz=306,SNR=45
M04C Macdoel 35.85 86 P **P** **17 50 11.9 +2.1**
baz=306,SNR=93
K05A Summer Lake 35.88 84 *e*P **P** **17 50 12.0 +1.8**
comp=Z,332nm,0.9s
K05A *e*ScP **ScP** **17 56 06.9 +0.2**
UWE Uwekahuna 35.90 150 *e*P **P** **17 50 11.1 +0.7**
comp=Z,577nm,1.3s
WDC Whiskeytown Da 36.13 89 *e*P **P** **17 50 14.0 +2.0**
WDC pmax pmax
comp=Z,120nm,1.0s
WDC Whiskeytown Da 36.13 89 *e*P **P** **17 50 13.6 +1.6**
comp=Z,116nm,0.9s
WDC *e*ScP **ScP** **17 56 07.0 -0.4**
H11N2 WAKE ISLAND Hy 36.21 213 T T 18 28 42.2
baz=21,slow=76,SNR=294
H11N3 WAKE ISLAND Hy 36.22 213 T T 18 28 36.4
baz=21,slow=76,SNR=476
H11N1 WAKE ISLAND Hy 36.23 213 T T 18 28 44.3
baz=21,slow=76,SNR=301
F10A Beach Ranch, E 36.33 77 *e*P **P** **17 50 14.6 +0.7**
F10A *e*pP **pP** **17 50 45.0 +0.4**
F10A *e*PcP **PcP** **17 52 36.2 +1.0**
F10A *e*ScP **ScP** **17 56 08.8 +0.6**
USRK Ussuriysk Ar. 36.53 279 P **P** **17 50 14.5 -0.9**
comp=Z,42nm,0.8s,baz=56,slow=7.6,SNR=71
USRK sP **sP** **17 51 00.5 -1.9**
comp=Z,6.4nm,0.6s,baz=59,slow=9.1,SNR=1.5
USRK PcP **PcP** **17 52 36.8 +1.1**
comp=Z,91nm,0.8s,baz=66,slow=2.4,SNR=35
USRK ScP **ScP** **17 56 08.9 +0.1**
comp=Z,4.6nm,0.6s,baz=47,slow=4.7,SNR=6.6
MOD Modoc Plateau 36.71 85 *e*P **P** **17 50 18.6 +1.5**
comp=Z,135nm,0.8s
MOD *e*ScP **ScP** **17 56 10.0 +0.3**
O03D Paynes Creek 36.75 88 P **P** **17 50 18.7 +1.3**
baz=307,SNR=102
HOPS Hopland Field 36.77 91 *e*P **P** **17 50 18.6 +1.1**
comp=Z,201nm,1.1s
HOPS *e*ScP **ScP** **17 56 04.2 -5.6**
BSMT Bassoo Peak 36.82 73 *e*P **P** **17 50 18.8 +0.8**
BSMT *e*pP **pP** **17 50 49.3 +0.4**
BSMT *e*PcP **PcP** **17 52 37.5 +0.6**
BSMT *e*ScP **ScP** **17 56 10.6 +0.5**
BMO Blue Mountains 36.88 79 *e*P **P** **17 50 19.9 +1.4**
BMO pmax pmax
comp=Z,66nm,1.1s
BMO Blue Mountains 36.88 79 *e*P **P** **17 50 19.5 +1.0**
comp=Z,66nm,1.1s
BMO *e*ScP **ScP** **17 56 10.1 -0.2**
BLMT Blacktail Moun 36.99 73 *e*P **P** **17 50 20.5 +1.0**
BLMT *e*pP **pP** **17 50 51.0 +0.6**
BLMT *e*ScP **ScP** **17 56 11.2 +0.4**
JTMT Jette 37.17 73 *e*P **P** **17 50 21.1 +0.2**
JTMT *e*pP **pP** **17 50 50.2 -1.6**
JTMT *e*PcP **PcP** **17 52 38.3 +0.5**
JTMT *e*ScP **ScP** **17 56 11.5 +0.2**
VLA Vladivostok 37.19 278*c i*P **P** **17 50 20.8 -0.2**
VLA pmax pmax
comp=Z,287nm,1.1s
RES Resolute Bay 37.23 25 *e*P **P** **17 50 22.2 +1.2**
RES *e* 17 52 37.8
RES pmax pmax
comp=Z,27nm,1.1s
RES Resolute Bay 37.23 25 *e*P **P** **17 50 22.2 +1.2**
comp=Z,27nm,1.1s
RES *e*PcP **PcP** **17 52 37.8 +0.5**
RES *e*ScP **ScP** **17 56 10.8 -0.1**
YBMT Yellow Bay 37.27 73 *e*P **P** **17 50 22.5 +0.7**
YBMT *e*pP **pP** **17 50 54.2 +1.5**
YBMT *e*ScP **ScP** **17 56 11.6 0.0**
MJAR Matsushiro Arr 37.34 264 P **P** **17 50 23.5 +1.1**
comp=Z,238nm,0.8s,baz=48,slow=7.4,SNR=262
MJAR PcP **PcP** **17 52 38.9 +0.5**
comp=Z,34nm,0.8s,baz=65,slow=1.2,SNR=11
MJAR ScP **ScP** **17 56 11.8 -0.2**
comp=Z,3.6nm,0.8s,baz=62,slow=2.3,SNR=4.8
MAJO Matsushiro 37.34 264*c i*P **P** **17 50 23.9 +1.5**
MAJO pmax pmax
comp=Z,6μm,1.0s
MAJO Matsushiro 37.34 264 *e*P **P** **17 50 23.5 +1.1**
comp=Z,924nm,1.0s
MAJO *e*PcP **PcP** **17 52 38.3 0.0**
MAT Matsushiro 37.34 264 P **P** **17 50 23.3 +0.9**
MAT *e*S **S** **17 55 59.4 -0.1**
MJB9 Matsu-Tunnel 37.34 264 *e*P **P** **17 50 23.5 +1.1**
comp=Z,237nm,1.0s
MJB9 *e*PcP **PcP** **17 52 38.4 0.0**
ORV Oroville 37.38 89 *e*P **P** **17 50 23.1 +0.4**
ORV pmax pmax
comp=Z,94nm,1.3s
ORV Oroville 37.38 89 *e*P **P** **17 50 23.1 +0.4**
comp=Z,94nm,1.3s
ORV *e*ScP **ScP** **17 56 11.6 -0.5**
MCCM Marconi Confer 37.42 92 *e*P **P** **17 50 23.2 +0.2**
comp=Z,281nm,1.4s
H11S1 WAKE ISLAND Hy 37.42 212 T T 18 29 47.6
baz=20,slow=76,SNR=840
WVOR Wild Horse Val 37.42 83 *e*P **P** **17 50 24.5 +1.4**
WVOR *e**PP **pP** **17 50 54.3 +0.3**
WVOR pmax pmax
comp=Z,221nm,0.9s
WVOR Wild Horse Val 37.42 83 *e*P **P** **17 50 24.5 +1.4**
comp=Z,221nm,0.9s
WVOR *e*pP **pP** **17 50 54.3 +0.3**
H11S2 WAKE ISLAND Hy 37.43 212 T T 18 29 48.8
baz=20,slow=76,SNR=653
H11S3 WAKE ISLAND Hy 37.43 212 T T 18 29 48.9
baz=20,slow=76,SNR=318
SWMT Swartz Lake 37.45 73 *e*P **P** **17 50 23.5 +0.2**
SWMT *e*ScP **ScP** **17 56 11.9 -0.4**
MDJ Mudanjiang 37.74 281 P **P** **17 50 24.6 -1.0**
MDJ sP sP 17 51 11.3 -1.4
MDJ S **S** **17 56 03.1 -2.2**

MDJ ScP ScP 17 56 13.0 -0.4
MDJ pmax pmax
comp=Z,66nm,0.9s
MDJ pmax pmax
comp=Z,170nm,5.9s
MDJ Mudanjiang 37.74 281 eP P 17 50 24.6 -1.0
comp=Z,57nm,0.8s
MDJ eScP ScP 17 56 12.9 -0.4
MSO Missoula 37.84 74 P P 17 50 27.2 +0.6
baz=301,SNR=16
MSO Missoula 37.84 74 eP P 17 50 26.9 +0.4
comp=Z,112nm,1.3s
MSO eS S 17 56 13.9 +7.0
AFDM Forest Hills D 38.08 90 eP P 17 50 29.3 +0.7
comp=Z,96nm,1.2s
AFDM epP pP 17 50 59.6 0.0
AFDM esP sP 17 51 13.8 -1.8
AFDM eS S 17 56 14.4 +3.9
CHMT Chamberlain Mo 38.20 74 eP P 17 50 29.7 +0.1
CHMT epP pP 17 51 00.6 -0.1
CHMT ePcP PcP 17 52 41.1 0.0
CHMT eS S 17 56 15.1 +2.6
MFID Camas Ranch 38.56 80 eP P 17 50 33.7 +1.1
comp=Z,76nm,1.0s
MFID epP pP 17 51 04.0 +0.4
MFID eScP ScP 17 56 17.1 +0.4
PAHR Pah Rah Range 38.58 87 eP P 17 50 34.5 +1.6
PAHR eS S 17 56 17.3 -1.0
INU Inuyama 38.86 264 eP P 17 50 35.6 +0.5
comp=Z,239nm,0.9s
CMB Columbia Colle 39.01 90 eP P 17 50 37.9 +1.6
CMB pmax pmax
comp=Z,110nm,1.1s
CMB Columbia Colle 39.01 90 eP P 17 50 37.7 +1.3
comp=Z,113nm,1.1s
HRY Holter Researc 39.13 73 eP P 17 50 38.1 +0.7
HRY epP pP 17 51 09.6 +1.1
HRY eScP ScP 17 56 19.2 +0.4
SAO San Andreas Ge 39.17 93 eP P 17 50 38.4 +0.7
SAO pmax pmax
comp=Z,81nm,1.0s
SAO San Andreas Ge 39.17 93 eP P 17 50 38.4 +0.7
comp=Z,81nm,1.0s
LRM Limekiln Ridge 39.24 75 eP P 17 50 38.1 -0.4
LRM epP pP 17 51 09.7 +0.1
LRM ePcP PcP 17 52 45.4 +0.9
LRM eScP ScP 17 56 19.3 -0.1
WAKR Walker 39.29 89 eP P 17 50 40.6 +1.7
WAKR epP pP 17 51 10.8 +0.8
WAKR eScP ScP 17 56 19.9 +0.3
HLID Hailey 39.33 79 P P 17 50 40.2 +1.1
baz=305,SNR=65
HLID Hailey 39.33 79 eP P 17 50 39.8 +0.8
comp=Z,79nm,1.1s
HLID epP pP 17 51 10.1 -0.1
HLID ePcP PcP 17 52 45.6 +1.0
HLID eScP ScP 17 56 20.3 +0.6
DLMT Dillon 39.41 75 eP P 17 50 39.3 -0.4
DLMT epP pP 17 51 10.7 -0.1
DLMT ePcP PcP 17 52 46.8 +1.9
DLMT eScP ScP 17 56 20.6 +0.6
BMN Battle Mountai 39.46 85 eP P 17 50 41.1 +0.9
BMN e*PP pP 17 51 11.3 0.0
BMN pmax pmax
comp=Z,121nm,0.8s
BMN Battle Mountai 39.46 85 eP P 17 50 41.1 +0.9
comp=Z,121nm,0.8s
BMN epP pP 17 51 11.3 0.0
BMN eScP ScP 17 56 20.7 +0.5
MCMT McKenzie Canyo 39.55 76 eP P 17 50 41.7 +0.7
MCMT epP pP 17 51 13.1 +0.9
MCMT esP sP 17 51 28.9 +0.7
MCMT eScP ScP 17 56 21.0 +0.4
LRV Little Rabbit 39.66 93 eScP ScP 17 56 23.1 +2.2
BOZ Bozeman (W) 39.82 74 P P 17 50 44.0 +0.9
baz=303,SNR=32
BOZ Bozeman (W) 39.82 74 eP P 17 50 44.0 +0.9
BOZ pmax pmax
comp=Z,71nm,1.1s
BOZ Bozeman (W) 39.82 74 eP P 17 50 43.7 +0.5
BOZ epP pP 17 51 14.5 +0.2
BOZ eScP ScP 17 56 22.0 +0.4
NV01 Mina Array Sit 40.03 88 eP P 17 50 46.0 +1.0
NV01 epP pP 17 51 16.1 -0.2
NV01 eScP ScP 17 56 23.0 +0.4
NVAR Mina Array Bea 40.03 88 P P 17 50 46.5 +1.5
comp=Z,113nm,0.7s,baz=299,slow=8.8,SNR=360
NVAR pP pP 17 51 15.9 -0.3
comp=Z,56nm,0.8s,baz=300,slow=9.4,SNR=7.2
NVAR ScP ScP 17 56 23.0 +0.4
comp=Z,13nm,0.9s,baz=285,slow=4.3,SNR=16
NV11 Mina Array Sit 40.12 88 eP P 17 50 46.6 +0.9
comp=Z,86nm,0.9s
NV11 epP pP 17 51 17.1 +0.2
NV11 esP sP 17 51 33.3 +0.3
MLAC Mammoth, Mammo 40.21 90 P P 17 50 48.7 +2.2
baz=310,SNR=17
QLMT Earthquake Lak 40.39 75 eP P 17 50 48.6 +0.7
QLMT epP pP 17 51 19.5 +0.4
QLMT eScP ScP 17 56 24.8 +0.9
ELK Elko 40.47 83 eP P 17 50 50.1 +1.5
ELK pmax pmax
comp=Z,130nm,0.9s
ELK Elko 40.47 83 eP P 17 50 49.8 +1.1
comp=Z,126nm,0.8s
ELK epP pP 17 51 19.8 -0.1
ELK eScP ScP 17 56 25.1 +0.8
FFC Flin Flon 40.64 58 eP P 17 50 49.1 -0.5
FFC e*PP pP 17 51 21.0 +0.2
FFC e 17 52 48.1
FFC Flin Flon 40.64 58 eP P 17 50 49.0 -0.5
FFC epP pP 17 51 21.0 +0.2
FFC ePcP PcP 17 52 48.1 -0.4
FFC eScP ScP 17 56 23.7 -0.7
CN2 Changchun 40.67 283 eP P 17 50 49.5 -0.4
CN2 epP pP 17 51 24.8 +3.6
CN2 PcP PcP 17 52 48.5 -0.2
CN2 eS S 17 56 45.8 -3.3
CN2 pmax pmax
comp=Z,200nm,4.0s
YMC Maple Creek 40.68 75 eP P 17 50 51.3 +1.1
YHH Holmes Hill 40.76 75 eP P 17 50 51.8 +0.8
YMR Madison River 40.76 75 eP P 17 50 52.0 +1.1
YMR epP pP 17 51 22.3 +0.1
YMR ePcP PcP 17 52 51.2 +1.9
YMR eScP ScP 17 56 27.1 +1.8
RCTC Rector, Farmer 40.82 91 P P 17 50 52.2 +1.0
baz=311
GCMT Greycliff 40.90 73 eP P 17 50 52.6 +0.6
GCMT epP pP 17 51 23.2 -0.1
GCMT ePcP PcP 17 52 50.5 +0.9
GCMT eScP ScP 17 56 26.5 +0.8
TIN Tinemaha, Big 40.95 90 P P 17 50 54.4 +2.0
baz=310,SNR=25
YFT Old Faithful 40.95 76 eP P 17 50 54.3 +1.7
YFT epP pP 17 51 25.7 +1.8
YFT ePcP PcP 17 52 52.9 +2.9
YFT eScP ScP 17 56 28.8 +2.7
SMMC Simmler 41.01 93 P P 17 50 54.6 +1.7
baz=312,SNR=10
HIA Hailar 41.02 293 eP P 17 50 53.0 +0.3
HIA e 17 52 50.5
HIA pmax pmax
comp=Z,494nm,0.8s
HIA Hailar 41.02 293 eP P 17 50 53.0 +0.3
comp=Z,494nm,0.8s
HIA ePcP PcP 17 52 50.5 +0.7
HIA eScP ScP 17 56 25.1 -0.9
H17A Grant Village 41.14 75 P P 17 50 56.1 +2.1
baz=305,SNR=33
H17A Grant Village 41.14 75 eP P 17 50 56.0 +2.0
H17A epP pP 17 51 27.3 +1.9
H17A eScP ScP 17 56 27.9 +1.0
LKWY Lake 41.15 75 eP P 17 50 56.2 +2.1
LKWY e*PP pP 17 51 27.3 +1.8
LKWY Lake 41.15 75 eP P 17 50 56.2 +2.1
LKWY epP pP 17 51 27.3 +1.8
LKWY eScP ScP 17 56 28.7 +1.8
IMW Indian Meadow 41.21 76 eP P 17 50 55.2 +0.6
IMW epP pP 17 51 27.1 +1.0
IMW eScP ScP 17 56 28.2 +1.0
VES Vestal, Richgr 41.22 92 P P 17 50 55.7 +1.2
baz=312

FLWY Flagg Ranch 41.24 76 eP P 17 50 56.1 +1.2
FLWY epP pP 17 51 27.1 +0.8
FLWY eScP ScP 17 56 28.8 +1.6
FXWY Fox Creek 41.30 77 eP P 17 50 56.5 +1.0
comp=Z,38nm,1.4s
FXWY ePcP PcP 17 52 52.0 +0.8
FXWY eScP ScP 17 56 27.9 +0.4
YTP The Promontory 41.31 75 eP P 17 50 57.1 +1.6
HVU Hansel Valley 41.34 80 eP P 17 50 56.6 +1.0
comp=Z,68nm,0.9s
HVU epP pP 17 51 27.0 0.0
HVU eScP ScP 17 56 28.4 +0.9
MOOW Moose Ponds 41.41 76 eP P 17 50 56.8 +0.5
MOOW epP pP 17 51 28.3 +0.7
MOOW eScP ScP 17 56 28.7 +0.8
PKM Mcpherson Peak 41.41 93 P P 17 50 57.9 +1.6
baz=312,SNR=16
TPAW Teton Pass 41.43 77 eP P 17 50 57.9 +1.4
TPAW epP pP 17 51 28.0 +0.1
TPAW eScP ScP 17 56 28.9 +0.9
RLMT Red Lodge 41.50 74 P P 17 50 58.1 +1.2
baz=304,SNR=44
RLMT Red Lodge 41.50 74 eP P 17 50 58.2 +1.2
RLMT epP pP 17 51 29.6 +1.2
RLMT eScP ScP 17 56 29.1 +0.8
RLMT eS S 17 57 01.3 -0.5
GRAC Grapevine Rang 41.52 89 P P 17 50 58.8 +1.8
baz=310,SNR=33
SNOW Snow King Moun 41.57 77 eP P 17 50 59.2 +1.7
SNOW epP pP 17 51 29.6 +0.6
REDW Red Top Meadow 41.57 77 eP P 17 50 58.6 +1.0
REDW epP pP 17 51 29.1 +0.1
REDW eScP ScP 17 56 27.7 -0.8
LOHW Long Hollow 41.57 76 eP P 17 50 58.6 +1.0
LOHW epP pP 17 51 29.4 +0.4
LOHW ePcP PcP 17 52 52.9 +0.9
LOHW eScP ScP 17 56 28.7 +0.2
BGU Big Grassy Mou 41.70 81 eP P 17 50 59.5 +0.9
comp=Z,73nm,1.0s
BGU eScP ScP 17 56 29.8 +0.8
CBIJ Chichi jima 41.70 250 eP P 17 50 59.1 +0.6
comp=Z,579nm,1.1s
CBIJ ePP PP 17 52 37.5 -0.2
JCJ Chichijima 41.70 250 LR LR 18 04 15.0
comp=Z,67nm,21.8s,baz=306,slow=30
ISA Isabella, Lake 41.71 92 P P 17 50 59.4 +0.8
baz=312,SNR=28
ISA Isabella, Lake 41.71 92 eP P 17 50 59.1 +0.5
ISA e*PP pP 17 51 29.5 -0.5
ISA e 17 52 37.1
ISA pmax pmax
comp=Z,129nm,1.0s
ISA Isabella, Lake 41.71 92 eP P 17 50 59.0 +0.5
comp=Z,129nm,1.0s
ISA epP pP 17 51 29.5 -0.5
ISA ePP PP 17 52 37.1 -0.6
BEI Bear River Ran 41.74 79 eP P 17 51 00.4 +1.5
R11A Troy Canyon, C 41.74 86 P P 17 51 00.1 +1.2
baz=309,SNR=242
R11A Troy Canyon, C 41.74 86 eP P 17 50 59.2 +0.3
comp=Z,190nm,0.9s
R11A epP pP 17 51 30.5 +0.1
R11A ePP PP 17 52 38.1 0.0
R11A eScP ScP 17 56 29.1 -0.1
AHID Auburn Hatcher 41.77 78 eP P 17 50 59.5 +0.4
AHID epP pP 17 51 31.5 +0.9
AHID eScP ScP 17 56 29.0 -0.4
SBC Santa Barbara 41.77 94 P P 17 51 00.5 +1.5
baz=313
SPUT South Promonto 41.82 80 eP P 17 51 00.5 +0.9
comp=Z,67nm,1.0s
SPUT epP pP 17 51 30.7 -0.3
DAC Darwin (Calif) 41.84 90 eP P 17 51 00.9 +1.0
DAC e*PP pP 17 51 31.2 -0.1
DAC pmax pmax
comp=Z,122nm,0.9s
DAC Darwin (Calif) 41.84 90 eP P 17 51 00.9 +1.0
comp=Z,122nm,0.9s
DAC epP pP 17 51 31.2 -0.1
DAC eScP ScP 17 56 29.7 0.0
ARVC Arvin 41.85 92 P P 17 51 00.5 +0.8
baz=312,SNR=5.8
MPMC Manual Prospec 42.05 90 P P 17 51 03.0 +1.4
baz=311,SNR=20
SCZ2 Santa Cruz Isl 42.12 94 P P 17 51 03.0 +1.1
baz=313
FURC Furnace Creek, 42.17 89 P P 17 51 03.8 +1.7
baz=311,SNR=29
HWUT Hardware Ranch 42.17 80 eP P 17 51 03.0 +0.6
comp=Z,50nm,1.1s
HWUT epP pP 17 51 34.2 +0.3
HWUT eScP ScP 17 56 31.3 +0.4
FSU Fish Springs 42.22 83 eP P 17 51 04.0 +1.2
TPNV Topopah Spring 42.23 88 P P 17 51 04.4 +1.5
baz=311,SNR=144
TPNV Topopah Spring 42.23 88 eP P 17 51 04.0 +1.1
TPNV e*PP pP 17 51 34.5 +0.1
TPNV pmax pmax
comp=Z,309nm,0.8s
TPNV Topopah Spring 42.23 88 eP P 17 51 04.0 +1.1
comp=Z,309nm,0.8s
TPNV epP pP 17 51 34.5 +0.1
TPNV eScP ScP 17 56 30.6 -0.7
RSUT Red Spur Mount 42.24 79 eP P 17 51 04.4 +1.2
OSI Osito Audit: C 42.26 93 P P 17 51 04.2 +1.1
baz=312
DUG Dugway, Tooele 42.28 82 P P 17 51 04.7 +1.4
baz=308,SNR=164
DUG Dugway, Tooele 42.28 82 eP P 17 51 04.2 +0.9
DUG e*PP pP 17 51 34.8 +0.1
DUG e 17 52 54.6
DUG pmax pmax
comp=Z,260nm,1.1s
DUG Dugway, Tooele 42.28 82 eP P 17 51 04.2 +0.9
comp=Z,260nm,1.1s
DUG epP pP 17 51 34.8 +0.1
DUG ePcP PcP 17 52 54.6 +0.3
DUG eScP ScP 17 56 32.0 +0.7
LRMC Laurel Mtn Rad 42.32 91 P P 17 51 04.4 +0.8
baz=312,SNR=26
BLG Laguna Peak, P 42.39 94 P P 17 51 05.0 +0.9
baz=313,SNR=10
LAO LASA Array 42.40 70 P P 17 51 05.0 +0.9
baz=304
LAO LASA Array 42.40 70 epP pP 17 51 34.5 -1.1
LAO ePcP PcP 17 52 56.6 +2.1
LAO eScP ScP 17 56 29.7 -1.9
EDW2 Edwards Air Fo 42.52 92 P P 17 51 06.2 +1.0
baz=312,SNR=33
TCUT Toone Canyon 42.56 80 eP P 17 51 06.6 +0.9
comp=Z,114nm,0.9s
TCUT epP pP 17 51 37.1 -0.1
TCUT ePP PP 17 52 48.7 +1.7
TCUT eScP ScP 17 56 32.3 -0.3
DGMT Dagmar 42.58 67 P P 17 51 06.3 +0.8
baz=303
DGMT Dagmar 42.58 67 eP P 17 51 06.5 +1.1
comp=Z,40nm,0.8s
DGMT eScP ScP 17 56 33.0 +0.8
FCC Fort Churchill 42.63 49 eP P 17 51 05.5 -0.2
FCC pmax pmax
comp=Z,32nm,0.7s
FCC Fort Churchill 42.63 49 eP P 17 51 05.2 -0.5
FCC epP pP 17 51 38.3 +1.1
FCC eScP ScP 17 56 31.9 -0.2
PSUT Pine Spring 42.68 85 eP P 17 51 07.6 +1.0
comp=Z,190nm,0.8s
PSUT epP pP 17 51 37.8 -0.3
PSUT eScP ScP 17 56 33.4 +0.3
BW06 Boulder Array 42.68 77 P P 17 51 07.4 +0.8
baz=306,SNR=92
BW06 Boulder Array 42.68 77 eP P 17 51 06.9 +0.3
BW06 epP pP 17 51 38.0 -0.1
BW06 epP pP 17 51 38.4 +0.3
BW06 eScP ScP 17 56 32.4 -0.7
BW06 eScP ScP 17 56 32.8 -0.2
PD31 Pinedale Array 42.68 77 eP P 17 51 06.9 +0.3
PD31 epP pP 17 51 37.9 -0.2
PD31 ePP PcP 17 52 56.4 +0.7
PD31 eScP ScP 17 56 32.6 -0.4
PDAR Pinedale Array 42.68 77 P P 17 51 07.2 +0.6
comp=Z,74nm,1.0s,baz=297,slow=4.8,SNR=123
PDAR pP pP 17 51 37.7 -0.4
comp=Z,48nm,0.9s,baz=305,slow=5.2,SNR=7.9

PDAR PcP PcP 17 52 56.4 +0.7
comp=Z,4.8nm,0.6s,baz=281,slow=1.4,SNR=2.1
PDAR ScP ScP 17 56 33.0 -0.1
comp=Z,19nm,0.9s,baz=270,slow=1.5,SNR=18
SNCC San Nicolas Is 42.70 95 P P 17 51 07.5 +1.0
baz=314
DECC Green Verdugo 42.74 93 P P 17 51 07.9 +1.0
baz=313,SNR=5.5
JLU Jordanelle 42.85 81 eP P 17 51 08.9 +0.9
comp=Z,93nm,1.1s
JLU ePP PP 17 52 51.3 +1.2
JLU eScP ScP 17 56 34.3 +0.5
NLU North Lily Min 42.87 82 eP P 17 51 08.8 +0.7
comp=Z,106nm,0.9s
NLU epP pP 17 51 39.7 0.0
NLU eScP ScP 17 56 34.3 +0.5
PASC Pasadena Art C 42.88 93 eP P 17 51 09.0 +0.9
comp=Z,120nm,1.1s
PASC ePP PP 17 52 47.8 -2.4
SHOC Shoshone, Teco 42.90 89 P P 17 51 09.5 +1.3
baz=311,SNR=28
MWC Mount Wilson 42.93 93 eP P 17 51 09.7 +1.1
MWC e*PP pP 17 51 40.0 -0.2
MWC pmax pmax
comp=Z,287nm,1.1s
MWC Mount Wilson 42.93 93 eP P 17 51 09.7 +1.1
comp=Z,287nm,1.1s
MWC epP pP 17 51 40.0 -0.2
SNY Shenyang 42.94 282 ⇑P P 17 51 09.0 +0.6
SNY sP sP 17 51 56.1 +0.2
SNY PP PP 17 52 50.9 +0.2
SNY ScS ScS 18 00 54.3 +0.7
SNY pmax pmax
comp=Z,270nm,1.1s
SNY pmax pmax
comp=Z,240nm,5.5s
SNY LR LR
comp=Z,320nm,17.5s
SNY LR LR
comp=Z,320nm,15.5s
SNY LR LR
comp=Z,690nm,38.7s
GSC Goldstone, Bar 42.97 91 P P 17 51 10.2 +1.4
baz=312,SNR=92
GSC Goldstone, Bar 42.97 91 eP P 17 51 09.8 +1.0
GSC e*PP pP 17 51 40.4 0.0
GSC pmax pmax
comp=Z,352nm,1.0s
GSC Goldstone, Bar 42.97 91 eP P 17 51 09.8 +1.0
comp=Z,352nm,1.0s
GSC epP pP 17 51 40.4 0.0
GSC eScP ScP 17 56 34.2 +0.1
CIT Chita 42.98 300 eP P 17 51 09.4 +0.8
CIT e 17 51 41.4
CIT e 17 52 54.1
CIT pmax pmax
comp=Z,230nm,1.8s
KSRS Korea Array 43.03 274 P P 17 51 10.3 +1.3
comp=Z,81nm,0.9s,baz=56,slow=7.6,SNR=216
KSRS PcP PcP 17 52 57.8 +1.1
comp=Z,35nm,0.9s,baz=59,slow=3.5,SNR=17
KSRS ScP ScP 17 56 34.5 +0.4
comp=Z,5.4nm,0.8s,baz=58,slow=4.7,SNR=8.6
KSRS Korea Array 43.03 274 P P 17 51 10.4 +1.3
KSRS 17 52 57.8
KSRS pmax pmax
comp=Z,80nm,0.9s
KSRS pmax pmax
comp=Z,35nm,0.9s
KSRS pmax pmax
comp=N,5.0nm,0.8s
KS01 Wonju Array Si 43.03 274 eP P 17 51 09.5 +0.3
KS01 epP pP 17 51 42.8 +2.1
KS01 ePP PP 17 52 45.8 -5.9
KS01 ePcP PcP 17 52 57.4 +0.7
KS01 eScP ScP 17 56 33.9 -0.3
KS15 Wonju Array Si 43.06 274 eP P 17 51 10.4 +1.1
KS15 ePP PcP 17 52 57.6 +0.9
KS15 eScP ScP 17 56 34.5 +0.2
KSAR Wonju Array Be 43.06 274 P P 17 51 10.4 +1.0
KSAR 17 52 57.8
KSAR Wonju Array Be 43.06 274 P P 17 51 10.3 +1.0
KSAR PcP PcP 17 52 57.8 +1.0
KSAR ScP ScP 17 56 34.5 +0.2
DAU Daniels Canyon 43.08 81 eP P 17 51 11.5 +1.6
DAU Daniels Canyon 43.08 81 eP P 17 51 11.5 +1.6
FMP Fort Macarthur 43.13 93 P P 17 51 10.9 +0.9
baz=313
RRX Edison Barstow 43.14 91 P P 17 51 11.4 +1.3
baz=312,SNR=6.6
BFSC Mount Baldy Ra 43.16 92 P P 17 51 11.5 +1.1
baz=313,SNR=48
SHPR Sheep Range 43.18 88 eP P 17 51 11.8 +1.2
comp=N,63nm,1.0s
SHPR eScP ScP 17 56 36.0 +1.0
B25A Knox Farm, Ray 43.26 66 P P 17 51 11.8 +0.8
baz=303,SNR=6.8
CIS Catalina Islan 43.27 94 P P 17 51 11.9 +0.8
baz=314,SNR=6.8
TUQ Turquoise Moun 43.42 90 P P 17 51 13.6 +1.1
baz=312,SNR=34
SCI2 San Clemente I 43.48 94 P P 17 51 13.9 +1.2
baz=314
WCU Willow Creek 43.48 83 eP P 17 51 14.6 +1.5
C25A Freed Ranch, W 43.52 67 P P 17 51 13.6 +0.6
baz=304
A26A Wade Farm, Ken 43.55 65 P P 17 51 13.7 +0.5
baz=303,SNR=17
HEC Hector,Ludlow 43.57 91 P P 17 51 14.7 +1.1
baz=312,SNR=55
SNO Snow College 43.59 82 eP P 17 51 15.9 +1.9
BBRC Big Bear Solar 43.59 92 P P 17 51 15.2 +1.2
baz=313
SGU Sterling 43.61 82 eP P 17 51 16.0 +1.9
MSU Marysvale 43.71 84 eP P 17 51 16.5 +1.6
MSU e*PP pP 17 51 46.9 +0.3
MSU Marysvale 43.71 84 eP P 17 51 16.5 +1.6
MSU epP pP 17 51 46.9 +0.3
MSU eScP ScP 17 56 38.2 +0.9
B26A Jensen Ranch, 43.72 66 P P 17 51 15.5 +0.9
baz=304
D25A Fairfield 43.79 68 P P 17 51 16.7 +1.4
baz=304
INCN Inchon 43.80 275 P P 17 51 16.2 +0.8
SNR=15
INCN Inchon 43.80 275 P P 17 51 16.2 +0.8
SNR=15
INCN Inchon 43.80 275 eP P 17 51 16.1 +0.8
comp=N,264nm,1.0s
INCN ePcP PcP 17 52 59.2 0.0
TMUT Trail Mountain 43.80 82 eP P 17 51 16.8 +1.1
comp=N,185nm,0.9s
TMUT epP pP 17 51 47.6 +0.2
TMUT eScP ScP 17 56 37.8 +0.1
MURC Murrieta 43.88 93 P P 17 51 17.0 +0.9
baz=313,SNR=17
ARGU Argyle Ridge 43.88 81 eP P 17 51 17.7 +1.4
A27A Ledoux Ranch, 43.96 65 P P 17 51 17.1 +0.6
baz=303,SNR=8.8
P17A Butcher Ranch, 43.98 81 eP P 17 51 17.9 +1.0
comp=N,107nm,1.0s
P17A epP pP 17 51 48.7 0.0
P17A eScP ScP 17 56 39.2 +0.9
MTPU Mount Pierson 44.01 84 eP P 17 51 18.7 +1.3
comp=N,136nm,0.9s
MTPU eScP ScP 17 56 39.7 +1.0
MTPU eS S 17 57 43.4 +4.5
GMRC Granite Mounta 44.01 90 P P 17 51 18.3 +1.1
baz=312,SNR=92
LCMT Little Creek M 44.02 86 eP P 17 51 13.0 -4.3
LCMT epP pP 17 51 49.5 +0.5
LCMT eScP ScP 17 56 38.9 +0.4
TJN Taejon 44.07 273 *c P* P 17 51 18.2 +0.8
JNU Nakatsue 44.10 267 LR LR 18 08 30.4
comp=N,82nm,21.9s,baz=103,slow=34
JNU Nakatsue 44.10 267 eP P 17 51 19.0 +1.2
comp=N,823nm,1.0s
C26A Wahner Farm, P 44.11 66 P P 17 51 18.6 +0.9
baz=304
E25A Miller Ranch, 44.12 69 P P 17 51 18.8 +1.0
baz=305,SNR=7.0
LDFC Landfair 44.15 89 eP P 17 51 19.1 +0.8
comp=N,362nm,0.8s
P18A Preston Nutter 44.18 81 eP P 17 51 19.5 +0.8
comp=N,135nm,1.2s

P18A *e*pP **pP** **17 51 50.0 -0.4**
P18A *e*ScP **ScP** **17 56 39.9 +0.6**
B27A Peters Farms, 44.25 65 P **P** **17 51 19.6 +0.8**
baz=304,SNR=6.4
KNB Kanab 44.28 86 *e*P **P** **17 51 20.6 +1.3**
KNB *e**PP **pP** **17 51 49.6 -1.5**
KNB pmax pmax
comp=Z,153nm,1.1s
KNB Kanab 44.28 86 *e*P **P** **17 51 20.6 +1.3**
comp=Z,153nm,1.1s
KNB *e*pP **pP** **17 51 49.6 -1.5**
KNB *e*ScP **ScP** **17 56 40.4 +0.9**
PKCU Pink Cliffs 44.31 85 *e*P **P** **17 51 21.4 +1.6**
comp=Z,78nm,0.8s
PFO Pinyon Flats O 44.32 92 P **P** **17 51 20.3 +0.6**
comp=Z,61nm,1.0s,baz=326,slow=7.6,SNR=16
PFO pP **pP** **17 51 51.5 +0.1**
comp=Z,22nm,1.0s,baz=22,slow=5.7,SNR=2.0
PFO Pinyon Flats O 44.32 92 *e*P **P** **17 51 20.2 +0.6**
PFO *e**PP **pP** **17 51 51.5 +0.1**
PFO pmax pmax
comp=Z,110nm,1.2s
PFO Pinyon Flats O 44.32 92 *e*P **P** **17 51 20.2 +0.6**
comp=Z,110nm,1.2s
PFO *e*pP **pP** **17 51 51.5 +0.1**
PFO *e*ScP **ScP** **17 56 39.9 +0.2**
TPFO Pinon Flats 44.32 92 P **P** **17 51 20.4 +0.7**
baz=313,SNR=26
BELC Belle Mtn. Jos 44.33 91 P **P** **17 51 20.5 +0.7**
baz=313,SNR=30
SRU San Rafael Swe 44.33 82 *e*P **P** **17 51 20.4 +0.6**
SRU *e*S **S** **17 57 44.9 +1.7**
SRU pmax pmax
comp=Z,104nm,0.9s
SRU San Rafael Swe 44.33 82 *e*P **P** **17 51 20.4 +0.6**
comp=Z,104nm,0.9s
SRU *e*ScP **ScP** **17 56 40.1 +0.4**
SRU *e*S **S** **17 57 44.9 +1.7**
D26A Manning 44.36 68 P **P** **17 51 20.5 +0.7**
baz=305
F25A Bowman 44.41 69 P **P** **17 51 21.3 +1.1**
baz=305
109C Camp Elliot, M 44.42 93 P **P** **17 51 21.3 +1.0**
baz=314,SNR=7.1
EKU East Kanab 44.44 85 *e*P **P** **17 51 22.4 +1.8**
MMU Miners Mountai 44.45 83 *e*P **P** **17 51 22.1 +1.3**
C27A Sayler Ranch, 44.50 66 P **P** **17 51 21.5 +0.7**
baz=304
A28A Rude Farm, Bot 44.52 64 P **P** **17 51 21.6 +0.6**
baz=304,SNR=37
K22A Casper 44.55 75 P **P** **17 51 21.8 +0.3**
baz=307
K22A Casper 44.55 75 *e*P **P** **17 51 21.4 -0.1**
K22A *e*pP **pP** **17 51 52.8 -0.4**
K22A *e*ScP **ScP** **17 56 40.7 +0.1**
NEE2 Needles Airpor 44.66 89 P **P** **17 51 23.2 +1.0**
baz=312,SNR=8.5
E26A Carlson Angus 44.66 68 P **P** **17 51 22.7 +0.5**
baz=305,SNR=14
B28A Dugan Ranch, T 44.72 65 P **P** **17 51 23.2 +0.7**
baz=304,SNR=39
IRM Iron Mountain 44.75 90 P **P** **17 51 23.9 +0.9**
baz=313,SNR=48
BAR Barrett 44.82 93 *e*P **P** **17 51 23.9 +0.4**
comp=Z,103nm,0.9s
BAR *e*pP **pP** **17 51 55.1 -0.3**
D27A Center 44.83 67 P **P** **17 51 24.2 +0.8**
baz=305,SNR=6.6
MONP2 Monument Peak 44.83 93 P **P** **17 51 24.8 +1.0**
baz=314,SNR=29
G25A Newell 44.86 70 P **P** **17 51 24.0 +0.3**
baz=306
W13A Hualapai Mount 44.89 88 *e*P **P** **17 51 25.1 +0.8**
comp=Z,104nm,0.8s
W13A *e*pP **pP** **17 51 55.6 -0.5**
W13A *e*ScP **ScP** **17 56 42.0 -0.1**
BC3 Big Chuckawall 44.90 91 P **P** **17 51 24.6 +0.3**
baz=313,SNR=23
F26A Lodgepole 44.90 69 P **P** **17 51 24.7 +0.6**
baz=306
U15A North Rim 44.98 86 *e*P **P** **17 51 26.2 +1.1**
comp=Z,290nm,1.0s
U15A *e*pP **pP** **17 51 57.4 +0.5**
U15A *e*ScP **ScP** **17 56 43.1 +0.5**
U15A *e*S **S** **17 57 49.8 -3.1**
O20A White River Ci 45.07 79 P **P** **17 51 26.2 +0.6**
baz=309,SNR=49
O20A White River Ci 45.07 79 *e*P **P** **17 51 25.9 +0.3**
comp=Z,112nm,0.9s
O20A *e*ScP **ScP** **17 56 42.8 0.0**
O20A *e*S **S** **17 57 53.0 -0.8**
A29A Manning Farm, 45.08 64 P **P** **17 51 25.6 +0.2**
baz=304,SNR=36
H25A Fruitdale 45.09 71 P **P** **17 51 25.9 +0.4**
baz=306
C28A Hausauer Farms 45.12 66 P **P** **17 51 26.1 +0.4**
baz=305
NRIK Noril'sk 45.12 330 P **P** **17 51 26.1 +0.7**
comp=Z,26nm,0.7s,baz=67,slow=6.5,SNR=27
NRIK PcP **PcP** **17 53 03.4 +0.2**
comp=Z,52nm,0.9s,baz=71,slow=4.7,SNR=8.5
NRIK ScP **ScP** **17 56 42.1 -0.1**
comp=Z,12nm,0.8s,baz=45,slow=2.2,SNR=7.0
NRIK LR LR 18 12 41.7
comp=Z,139nm,19.4s,baz=92,slow=39
RSSD Black Hills 45.13 72 P **P** **17 51 26.4 +0.3**
baz=306
RSSD Black Hills 45.13 72 *e*P **P** **17 51 26.0 -0.1**
RSSD pmax pmax
comp=Z,34nm,1.0s
RSSD Black Hills 45.13 72 *e*P **P** **17 51 25.7 -0.4**
RSSD *e*pP **pP** **17 51 57.9 0.0**
RSSD *e*PcP **PcP** **17 53 03.6 -0.4**
RSSD *e*ScP **ScP** **17 56 42.8 -0.2**
SWSC Sam W. Stewart 45.17 92 P **P** **17 51 26.9 +0.6**
baz=314,SNR=7.1
IKP In-Ko-Pah, Jac 45.19 93 P **P** **17 51 27.5 +1.0**
baz=314,SNR=20
E27A Carson 45.20 68 P **P** **17 51 26.9 +0.6**
baz=305,SNR=6.7
PDMCI Parker Dam,Lak 45.26 90 P **P** **17 51 27.9 +1.0**
baz=313,SNR=56
G26A Maurine 45.27 70 P **P** **17 51 27.2 +0.3**
baz=306,SNR=14
B29A Wagenman Farm, 45.27 64 P **P** **17 51 27.3 +0.4**
baz=304
D28A Regan 45.32 66 P **P** **17 51 28.3 +1.0**
baz=305,SNR=10
I25A Rochford 45.37 72 P **P** **17 51 27.9 0.0**
baz=307,SNR=5.7
Y12C Blythe 45.40 90 P **P** **17 51 29.1 +1.0**
baz=313,SNR=48
Y12C Blythe 45.40 90 *e*P **P** **17 51 28.8 +0.7**
comp=Z,179nm,0.8s
Y12C *e*pP **pP** **17 51 59.8 -0.2**
Y12C *e*ScP **ScP** **17 56 44.3 +0.3**
MDND Maddock 45.48 65 P **P** **17 51 29.4 +0.8**
baz=305,SNR=7.7
MDND Maddock 45.48 65 *e*P **P** **17 51 29.2 +0.7**
comp=Z,225nm,0.9s
MDND *e*pP **pP** **17 52 00.8 +0.3**
MDND *e*ScP **ScP** **17 56 44.7 +0.6**
PV09 Paradox Valley 45.56 81 *e*P **P** **17 51 30.3 +0.7**
PV09 *e*pP **pP** **17 52 01.4 -0.2**
PV09 *e*ScP **ScP** **17 56 45.9 +0.9**
H26A Fairpoint 45.57 70 P **P** **17 51 29.1 -0.2**
baz=306
A30A Hoffart Farm, 45.58 63 P **P** **17 51 29.4 +0.1**
baz=304,SNR=30
G27A Dupree 45.60 69 P **P** **17 51 29.8 +0.2**
baz=306,SNR=12
E28A Huff 45.60 67 P **P** **17 51 30.3 +0.7**
baz=306
GLA Glamis 45.70 91 P **P** **17 51 31.3 +0.9**
baz=314,SNR=50
GLA Glamis 45.70 91 *e*P **P** **17 51 31.1 +0.6**
GLA *e**PP **pP** **17 52 01.3 -1.1**
GLA pmax pmax
comp=Z,138nm,0.8s
GLA Glamis 45.70 91 *e*P **P** **17 51 31.1 +0.6**
comp=Z,138nm,0.8s
GLA *e*pP **pP** **17 52 01.3 -1.1**
GLA *e*ScP **ScP** **17 56 45.7 +0.4**
PV10 Paradox Valley 45.70 81 *e*P **P** **17 51 31.5 +0.9**
PV10 *e*ScP **ScP** **17 56 46.5 +1.0**
B30A Myrvik Farm, E 45.84 64 P **P** **17 51 31.7 +0.3**
baz=305,SNR=64
PV05 Paradox Valley 45.85 82 *e*P **P** **17 51 32.5 +0.6**
PV05 *e*pP **pP** **17 52 01.8 -2.0**
PV05 *e*ScP **ScP** **17 56 46.5 +0.4**
DL2 Dalian 45.92 280 P **P** **17 51 32.8 +0.8**
DL2 pP **pP** **17 52 07.4 +3.4**
DL2 sP **sP** **17 52 25.4 +5.5**
DL2 S **S** **17 58 08.6 +3.0**
DL2 ScS **ScS** **18 01 06.0 -6.6**
DL2 pmax pmax
comp=Z,330nm,0.9s
D29A Pettibone, Tap 45.94 66 P **P** **17 51 32.5 +0.4**
baz=306
H27A Howes 45.96 70 P **P** **17 51 32.9 +0.6**
baz=307
N23A Red Feather La 45.97 77 P **P** **17 51 33.5 +0.7**
baz=309,SNR=39
N23A Red Feather La 45.97 77 *e*P **P** **17 51 33.2 +0.5**
comp=Z,45nm,0.8s
N23A *e*pP **pP** **17 52 02.6 -2.1**
N23A *e*ScP **ScP** **17 56 47.2 +0.6**
PHWY Pilot Hill 46.00 76 *e*P **P** **17 51 33.0 -0.1**
PHWY *e*pP **pP** **17 52 01.3 -3.7**
PHWY *e*ScP **ScP** **17 56 46.4 -0.4**
PV01 Paradox Valley 46.13 81 *e*P **P** **17 51 34.3 +0.2**
PV01 *e*ScP **ScP** **17 56 47.3 0.0**
WUAZ Wupatki 46.14 86 P **P** **17 51 35.5 +1.4**
baz=312,SNR=52
WUAZ Wupatki 46.14 86 *e*P **P** **17 51 35.3 +1.3**
comp=Z,226nm,0.9s
WUAZ *e*pP **pP** **17 52 05.4 -0.6**
WUAZ *e*ScP **ScP** **17 56 47.6 +0.4**
ULM Lac du Bonnet 46.14 60 P **P** **17 51 33.6 -0.1**
comp=Z,31nm,0.6s,baz=305,slow=8.3,SNR=25
ULM PcP **PcP** **17 53 07.5 +0.3**
comp=Z,23nm,0.8s,baz=260,slow=2.6,SNR=3.6
ULM ScP **ScP** **17 56 46.7 -0.1**
comp=Z,15nm,0.9s,baz=309,slow=6.8,SNR=6.5
ULM Lac du Bonnet 46.14 60 *e*P **P** **17 51 33.7 +0.1**
ULM 17 53 07.5
ULM pmax pmax
comp=Z,33nm,0.6s
ULM Lac du Bonnet 46.14 60 *e*P **P** **17 51 33.7 +0.1**
comp=Z,33nm,0.6s
ULM *e*pP **pP** **17 52 01.4 -4.2**
ULM PcP **PcP** **17 53 07.5 +0.3**
ULM *e*ScP **ScP** **17 56 46.8 -0.1**
J26A Sides Ranch, S 46.17 72 P **P** **17 51 34.7 +0.6**
baz=307
A31A Linda, St. Vin 46.19 62 P **P** **17 51 34.3 +0.3**
baz=305
C30A Mose, Pekin 46.19 65 P **P** **17 51 34.3 +0.2**
baz=305,SNR=7.0
E29A Napoleon 46.20 66 P **P** **17 51 34.4 +0.2**
baz=306
Y14A Wickenburg 46.20 89 *e*P **P** **17 51 35.0 +0.6**
comp=Z,455nm,1.0s
Y14A *e*pP **pP** **17 52 06.0 -0.4**
Y14A *e*ScP **ScP** **17 56 47.2 -0.2**
B31A Greenbush Farm 46.23 63 P **P** **17 51 34.8 +0.4**
baz=305,SNR=52
KULLO Kullorsuaq 46.27 19⇑ *i*P **P** **17 51 34.9 +0.6**
comp=Z,38nm,0.9s
KULLO Kullorsuaq 46.27 19⇑ *i*P **P** **17 51 34.9 +0.6**
KULLO pmax pmax
comp=Z,38nm,0.9s
D30A Buchanan 46.38 65 P **P** **17 51 35.6 +0.1**
baz=306,SNR=19
SMCO Snowmass 46.43 79 *e*P **P** **17 51 37.0 +0.4**
comp=Z,31nm,1.2s
SMCO *e*ScP **ScP** **17 56 49.1 +0.4**
F29A Eureka 46.53 67 P **P** **17 51 36.4 -0.3**
baz=306
113A Mohawk Valley, 46.54 91 *e*P **P** **17 51 37.4 +0.4**
comp=Z,80nm,1.1s
113A *e*pP **pP** **17 52 08.5 -0.4**
113A *e*ScP **ScP** **17 56 48.3 -0.4**
C31A Landman Farms, 46.54 64 P **P** **17 51 36.4 -0.5**
baz=306
A32A Rocking H Ranc 46.57 62 P **P** **17 51 37.0 0.0**
baz=305,SNR=26
E30A Jud 46.65 66 P **P** **17 51 37.5 -0.1**
baz=306,SNR=5.9
MVCO Mesa Verde 46.77 82 P **P** **17 51 39.6 +0.5**
baz=311,SNR=12
MVCO Mesa Verde 46.77 82 *e*P **P** **17 51 39.3 +0.2**
comp=Z,209nm,1.6s
MVCO *e*ScP **ScP** **17 56 50.1 +0.1**
X16A Lo Mia Camp, P 46.84 87 *e*P **P** **17 51 40.6 +1.1**
comp=Z,99nm,0.9s
X16A *e*ScP **ScP** **17 56 50.8 +0.6**
B32A Ashes, Strandq 46.85 63 P **P** **17 51 39.0 -0.2**
baz=306,SNR=39
ISCO Idaho Springs 46.85 78 P **P** **17 51 40.3 +0.6**
baz=310,SNR=22
ISCO Idaho Springs 46.85 78 *e*P **P** **17 51 40.5 +0.8**
ISCO pmax pmax
comp=Z,46nm,1.4s
ISCO Idaho Springs 46.85 78 *e*P **P** **17 51 40.5 +0.8**
comp=Z,46nm,1.4s
ISCO *e*ScP **ScP** **17 56 50.8 +0.5**
G29A Hoven 46.85 68 P **P** **17 51 39.3 0.0**
baz=307
I28A Midland 46.86 70 P **P** **17 51 39.7 +0.4**
baz=307,SNR=20
F30A Leola 46.98 67 P **P** **17 51 40.1 -0.2**
baz=307
D31A Mcclaflin, Tow 46.98 65 P **P** **17 51 40.2 -0.1**
baz=306,SNR=24
H29A Onida 47.03 69 P **P** **17 51 40.6 -0.1**
baz=307,SNR=5.8
A33A Warroad 47.15 62 P **P** **17 51 41.4 -0.2**
baz=306,SNR=45
E31A Nome 47.18 66 P **P** **17 51 41.6 -0.3**
baz=306,SNR=19
C32A Crookston 47.19 63 P **P** **17 51 41.8 0.0**
baz=306,SNR=9.5
D32A Dogwood Acres, 47.32 64 P **P** **17 51 42.5 -0.3**
baz=306,SNR=6.8
G30A Faulkton 47.33 68 P **P** **17 51 42.8 -0.2**
baz=307,SNR=9.7
I29A Vivian Onida 47.34 70 P **P** **17 51 43.2 0.0**
baz=308
F31A Hecla 47.40 66 P **P** **17 51 43.2 -0.2**
baz=307,SNR=7.0
W18A Petrified Fore 47.40 85 P **P** **17 51 45.2 +1.3**
baz=312,SNR=46
W18A Petrified Fore 47.40 85 *e*P **P** **17 51 44.7 +0.8**
comp=Z,213nm,0.9s
B33A Robert and Kas 47.43 62 P **P** **17 51 43.7 0.0**
baz=306
S22A 4UR Ranch, Cre 47.44 81 P **P** **17 51 45.5 +1.3**
baz=311,SNR=54
S22A 4UR Ranch, Cre 47.44 81 *e*P **P** **17 51 44.9 +0.7**
comp=Z,130nm,1.5s
S22A *e*ScP **ScP** **17 56 53.6 +0.7**
E32A Braaten, Kindr 47.62 65 P **P** **17 51 44.8 -0.3**
baz=307,SNR=11
C33A Trail 47.64 63 P **P** **17 51 45.0 -0.3**
baz=306,SNR=12
IRK Irkutsk 47.66 304 *e*P **P** **17 51 44.4 -1.0**
IRK *e* 17 53 12.1
IRK pmax pmax
comp=Z,294nm,2.0s
Q24A Divide 47.66 78 P **P** **17 51 46.6 +0.7**
baz=310
X18A Snowflake 47.67 86 *e*P **P** **17 51 47.1 +1.1**
comp=Z,163nm,1.2s
X18A *e*pP **pP** **17 52 15.8 -2.3**
X18A *e*ScP **ScP** **17 56 53.4 -0.3**
214A Organ Pipe Nat 47.68 91 P **P** **17 51 46.6 +0.7**
baz=314,SNR=22
G31A Conde 47.80 67 P **P** **17 51 45.4 -1.2**
baz=307
B34A Aery, Baudette 47.81 62 P **P** **17 51 46.4 -0.2**
baz=306,SNR=104
SUSD Miller 47.85 68 P **P** **17 51 47.0 -0.1**
baz=308,SNR=7.9
I30A Oacoma 47.91 69 P **P** **17 51 47.6 +0.1**
baz=308
D33A AnnSam, Waubun 47.96 64 P **P** **17 51 47.6 -0.2**
baz=307,SNR=25
F32A Veblen 48.02 66 P **P** **17 51 47.8 -0.4**
baz=307
H31A Wolsey 48.10 68 P **P** **17 51 48.8 -0.2**
baz=308,SNR=6.8
C34A RKJ Ranch, Bem 48.17 63 P **P** **17 51 48.9 -0.5**
baz=307,SNR=7.0
G32A Webster 48.18 67 P **P** **17 51 48.8 -0.7**
baz=308
J30A Dallas 48.23 70 P **P** **17 51 50.0 0.0**
baz=308,SNR=8.4
SDCO Great Sand Dun 48.23 80 P **P** **17 51 51.5 +1.1**
baz=311,SNR=67
SDCO Great Sand Dun 48.23 80 *e*P **P** **17 51 51.1 +0.8**
comp=Z,72nm,1.1s
SDCO *e*ScP **ScP** **17 56 56.2 0.0**
OGNE Ogallala 48.24 74 P **P** **17 51 50.9 +0.8**
baz=309,SNR=7.7
OGNE Ogallala 48.24 74 *e*P **P** **17 51 51.0 +0.9**
OGNE *e*pP **pP** **17 52 22.5 +0.1**
OGNE *e*PcP **PcP** **17 53 15.7 +0.7**
OGNE *e*ScP **ScP** **17 56 56.1 +0.2**
E33A Westby DABS, E 48.26 65 P **P** **17 51 49.7 -0.4**
baz=307,SNR=13
TLY Talaya 48.30 304 LR LR 18 12 18.6
comp=Z,212nm,18.7s,baz=42,slow=36
TLY Talaya 48.30 304 *c i*P **P** **17 51 51.3 +0.9**
TLY *i* 17 53 16.0
TLY *e* 17 53 46.5
TLY *e*PPP PPP 17 54 35.1
TLY *e*S **S** **17 58 43.3 +4.2**
TLY pmax pmax
comp=Z,166nm,0.9s
TLY MLR MLR
comp=Z,209nm,19.0s
TLY Talaya 48.30 304 *e*P **P** **17 51 51.3 +0.9**
comp=Z,167nm,0.9s
TLY *e*PcP **PcP** **17 53 15.2 +0.3**
I31A Royce, Wessing 48.35 69 P **P** **17 51 50.7 -0.1**
baz=308
D34A Park Rapids 48.35 63 P **P** **17 51 50.6 -0.2**
baz=307,SNR=82
B35A Bob, Littlefor 48.38 61 P **P** **17 51 50.7 -0.3**
baz=307,SNR=52
BJI Beijing 48.45 285 P **P** **17 51 51.8 +0.2**
BJI S **S** **17 58 41.5 +0.1**
BJI pmax pmax
comp=Z,230nm,0.9s
BJI pmax pmax
comp=Z,680nm,3.8s
BJI LR LR
comp=Z,330nm,14.0s
BJI LR LR
comp=Z,460nm,18.0s
BJI LR LR
comp=Z,590nm,20.6s
BJT Baijiatuau 48.47 285 *e*P **P** **17 51 52.4 +0.6**
BJT *e* 17 53 15.3
BJT pmax pmax
comp=Z,190nm,0.8s
BJT Baijiatuau 48.47 285 *e*P **P** **17 51 52.4 +0.6**
comp=Z,190nm,0.8s
BJT *e*PcP **PcP** **17 53 15.3 -0.3**
F33A 5 Mile Ranch, 48.50 65 P **P** **17 51 51.6 -0.3**
baz=308,SNR=15
K30A Basset 48.57 71 P **P** **17 51 53.3 +0.8**
baz=309
C35A Jirik Farms, M 48.65 62 P **P** **17 51 52.5 -0.5**
baz=307,SNR=49
TUC Tucson 48.67 89 P **P** **17 51 54.6 +1.1**
baz=314
TUC Tucson 48.67 89 *e*P **P** **17 51 53.8 +0.2**
TUC *e**PP **pP** **17 52 26.2 +0.4**
TUC pmax pmax
comp=Z,130nm,1.0s
TUC Tucson 48.67 89 *e*P **P** **17 51 54.0 +0.5**
comp=Z,134nm,0.9s
TUC *e*pP **pP** **17 52 26.0 +0.1**
TUC *e*ScP **ScP** **17 56 58.2 +0.4**
H32A Carlson Farm, 48.68 67 P **P** **17 51 53.0 -0.3**
baz=308,SNR=7.4
J31A Geddes 48.69 70 P **P** **17 51 54.0 +0.6**
baz=309
E34A Wadena 48.71 64 P **P** **17 51 53.0 -0.6**
baz=308
KBS Kingsbay 48.75 359 *e*P **P** **17 51 54.9 +1.4**
KBS *e**PP **pP** **17 52 26.4 +0.7**
KBS *e* 17 53 15.2
KBS Kingsbay 48.75 359 *e*P **P** **17 51 54.9 +1.4**
KBS *e*pP **pP** **17 52 26.4 +0.7**
KBS *e*PcP **PcP** **17 53 15.2 -0.8**
ULN Ulaanbaatar 48.78 298 *e*P **P** **17 51 54.9 +0.7**
ULN pmax pmax
comp=Z,130nm,0.8s
ULN Ulaanbaatar 48.78 298 P **P** **17 51 55.2 +0.9**
SNR=62
ULN Ulaanbaatar 48.78 298 P **P** **17 51 55.2 +0.9**
SNR=62
ULN Ulaanbaatar 48.78 298 *e*P **P** **17 51 55.0 +0.7**
comp=Z,131nm,0.8s
ULN *e*PcP **PcP** **17 53 14.8 -2.1**
ULN *e*ScP **ScP** **17 56 57.3 -0.9**
G33A Ortonville 48.81 66 P **P** **17 51 54.0 -0.4**
baz=308,SNR=15
I32A Karley and Nic 48.95 68 P **P** **17 51 55.0 -0.4**
baz=308
H33A Prehn Over Nor 48.96 67 P **P** **17 51 55.2 -0.3**
baz=308,SNR=21
D35A Remer 48.98 63 P **P** **17 51 55.4 -0.2**
baz=308,SNR=66
K31A O'Neill 49.09 70 P **P** **17 51 57.1 +0.5**
baz=309
F34A Alexandria 49.10 65 P **P** **17 51 56.0 -0.6**
baz=308
E35A Pequot Lakes 49.10 64 P **P** **17 51 56.5 -0.1**
baz=308,SNR=16
KSCO Kaye Shedlock' 49.13 76 P **P** **17 51 58.0 +0.9**
baz=311
KSCO Kaye Shedlock' 49.13 76 *e*P **P** **17 51 58.0 +0.9**
KSCO *e*pP **pP** **17 52 26.6 -2.8**
SONA1 Songino Array 49.14 299 *e*P **P** **17 51 57.7 +0.7**
SONA1 *e*pP **pP** **17 52 29.2 -0.2**
SONA1 *e*PcP **PcP** **17 53 18.5 +0.3**
SONA1 *e*ScP **ScP** **17 56 58.9 -0.8**
J32A Parkston 49.15 69 P **P** **17 51 56.8 -0.1**
baz=309
SONA0 Songino Array 49.16 299 *e*P **P** **17 51 58.1 +1.0**
comp=Z,486nm,1.8s
SONA0 *e*pP **pP** **17 52 29.2 -0.2**
SONA0 *e*PcP **PcP** **17 53 18.6 +0.5**
SONA0 *e*ScP **ScP** **17 56 59.2 -0.5**
SONM Songino Array 49.16 299 P **P** **17 51 58.1 +1.0**
comp=Z,69nm,0.7s,baz=50,slow=7.5,SNR=479
SONM pP **pP** **17 52 29.2 -0.2**
comp=Z,13nm,0.9s,baz=2.4,slow=1.4,SNR=2.2
SONM PcP **PcP** **17 53 18.6 +0.5**
comp=Z,41nm,0.8s,baz=92,slow=1.5,SNR=12
SONM ScP **ScP** **17 56 59.2 -0.5**
comp=Z,19nm,1.0s,baz=48,slow=3.5,SNR=12
SONM LR LR 18 14 02.6
comp=Z,332nm,18.8s,baz=50,slow=37
C36A Pine Crest Far 49.22 61 P **P** **17 51 57.1 -0.3**
baz=308,SNR=35
G34A Benson 49.23 66 P **P** **17 51 57.0 -0.5**
baz=308,SNR=6.3
ZAK Zakamensk 49.26 303 *e*P **P** **17 51 58.3 +0.5**
ZAK *e* 17 53 19.0
ZAK pmax pmax
comp=Z,106nm,1.4s
ZAK pmax pmax
comp=Z,82nm,1.1s
ZAK pmax pmax
comp=Z,11nm,1.2s
T25A Trinidad 49.29 79 P **P** **17 51 59.3 +1.0**
baz=312,SNR=105
T25A Trinidad 49.29 79 *e*P **P** **17 51 59.2 +0.8**
comp=Z,182nm,1.1s
T25A *e*pP **pP** **17 52 30.1 -0.6**
T25A *e*PP **PP** **17 53 55.1 +1.8**
T25A *e*ScP **ScP** **17 57 00.9 +0.3**
I33A Coleman 49.32 68 P **P** **17 51 57.5 -0.8**
baz=309,SNR=5.7
L31A Butterfield Fa 49.33 71 P **P** **17 51 58.6 +0.2**
baz=309
D36A Goodland 49.40 62 P **P** **17 51 58.4 -0.4**
baz=308,SNR=23
SPA0 Spitsbergen Ar 49.41 357 *e*P **P** **17 51 58.4 0.0**
SPA0 *e*pP **pP** **17 52 31.1 +0.3**
SPA0 *e*PcP **PcP** **17 53 17.9 -0.5**
F35A Swanville 49.44 64 P **P** **17 51 58.9 -0.2**
baz=308,SNR=32

LAZ	Ladron	49.47	84	eP	P	17 52 00.9	+1.2
LAZ				epP	pP	17 52 32.3	+0.2
H34A	Spellman Lake, baz=308	49.51	66	P	P	17 51 59.4	-0.3
ANMO	Albuquerque baz=313	49.51	83	P	P	17 52 00.8	+0.8
ANMO	Albuquerque	49.51	83	d iP	P	17 52 00.7	+0.7
ANMO	comp=Z,73nm,1.3s			pmax	pmax		
ANMO	Albuquerque comp=Z,77nm,1.3s	49.51	83	eP	P	17 52 00.9	+0.8
ANMO				epP	pP	17 52 31.4	-1.0
ANMO				ePP	PP	17 53 57.0	+1.6
ANMO				eScP	ScP	17 57 02.0	+0.4
K32A	Verdigre baz=309	49.52	70	P	P	17 52 00.7	+0.9
C37A	Embarrass baz=308,SNR=30	49.59	61	P	P	17 51 59.9	-0.3
ECSD	EROS Data Cent baz=309,SNR=22	49.62	68	P	P	17 51 59.8	-0.7
ECSD	EROS Data Cent	49.62	68	eP	P	17 51 59.8	-0.7
ECSD				epP	pP	17 52 31.4	-1.5
ECSD				ePcP	PcP	17 53 19.9	+0.1
ECSD				ePP	PP	17 53 56.2	+0.3
ECSD				eScP	ScP	17 57 00.8	-0.8
MOY	Mondy	49.64	305	eP	P	17 52 01.8	+1.1
MOY	comp=Z,204nm,2.5s			pmax	pmax		
J33A	Davis baz=309	49.68	68	P	P	17 52 00.8	-0.1
E36A	McGregor baz=308,SNR=42	49.76	63	P	P	17 52 01.3	-0.2
D37A	Cotton baz=308,SNR=26	49.81	62	P	P	17 52 01.5	-0.4
Y22D	IRIS PASSCAL I baz=313	49.82	84	P	P	17 52 04.1	+1.8
Y22D	IRIS PASSCAL I comp=Z,224nm,0.9s	49.82	84	eP	P	17 52 03.1	+0.8
EYMN	Ely baz=308,SNR=33	49.83	61	P	P	17 52 01.6	-0.4
EYMN	Ely comp=Z,70nm,1.1s	49.83	61	eP	P	17 52 01.4	-0.6
EYMN				epP	pP	17 52 34.2	-0.2
EYMN				ePcP	PcP	17 53 20.0	-0.5
EYMN				eScP	ScP	17 57 01.8	-0.7
LPM	Los Pinos Moun	49.83	84	eP	P	17 52 03.5	+1.0
LPM				epP	pP	17 52 35.2	+0.3
LPM				eScP	ScP	17 57 02.3	-0.7
G35A	Watkins baz=309	49.88	65	P	P	17 52 02.5	+0.1
L32A	Elgin baz=310	49.91	70	P	P	17 52 03.1	+0.3
BNM	Barren Site	49.95	84	eP	P	17 52 04.5	+1.1
BNM				epP	pP	17 52 36.0	+0.2
BNM				eScP	ScP	17 57 02.8	-0.7
DAG	Danmarks Havn comp=Z,94nm,1.2s	49.95	7⇑	iP	P	17 52 02.7	+0.2
DAG	Danmarks Havn	49.95	7⇑	iP	P	17 52 02.7	+0.2
DAG	comp=Z,150nm,1.2s			pmax	pmax		
F36A	Milaca baz=308,SNR=27	50.01	64	P	P	17 52 03.0	-0.4
H35A	Sunnyside Ranc baz=309,SNR=8.4	50.02	66	P	P	17 52 03.1	-0.4
C38A	Sawbill Land. baz=308,SNR=17	50.08	61	P	P	17 52 03.2	-0.7
K33A	Hardington baz=310	50.11	69	P	P	17 52 04.9	+0.7
N31A	Bailey Ranch, baz=310	50.12	72	P	P	17 52 04.8	+0.4
JOW	Kunigami comp=Z,398nm,1.0s	50.15	263	eP	P	17 52 05.5	+0.9
E37A	Wrenshall baz=308	50.19	62	P	P	17 52 04.7	0.0
BGNE	Belgrade baz=310	50.21	71	P	P	17 52 05.4	+0.3
BGNE	Belgrade	50.21	71	eP	P	17 52 06.1	+1.1
BGNE				epP	pP	17 52 37.1	-0.4
BGNE				eScP	ScP	17 57 04.3	+0.1
L33A	Hoskins baz=310	50.23	70	P	P	17 52 05.8	+0.7
J34A	George baz=309	50.27	68	P	P	17 52 05.2	-0.2
G36A	St. Michael baz=309,SNR=9.0	50.28	65	P	P	17 52 05.2	-0.3
O31A	Woolen Ranch, baz=310	50.34	73	P	P	17 52 06.0	0.0
121A	Cookes Peak, D baz=314,SNR=42	50.35	86	P	P	17 52 07.6	+1.2
TIA	Tai'an	50.38	280	⇑P	P	17 52 06.9	+0.5
TIA	comp=Z,410nm,0.8s			pmax	pmax		
I35A	Creekview Farm baz=309,SNR=5.7	50.46	67	P	P	17 52 06.4	-0.4
N32A	Stulken Farm, baz=310	50.54	72	P	P	17 52 07.5	0.0
K34A	Le Mars baz=310,SNR=16	50.57	69	P	P	17 52 07.5	-0.2
H36A	Jessenland, He baz=309,SNR=16	50.59	65	P	P	17 52 08.1	+0.3
C39A	Grand Marais baz=308,SNR=24	50.63	60	P	P	17 52 07.4	-0.6
HHC	Hu-ho-hao-te	50.63	288	eP	P	17 52 09.6	+1.3
HHC				pP	pP	17 52 42.4	+1.6
HHC				sP	sP	17 52 57.3	+0.8
HHC				S	S	17 59 10.8	-1.2
HHC				SS	SS	18 02 44.8	-2.7
HHC	comp=Z,270nm,1.0s			pmax	pmax		
HHC	comp=Z,2μm,6.2s			pmax	pmax		
J35A	Milford baz=310	50.65	67	P	P	17 52 08.0	-0.3
M33A	Taylor Creek F baz=310	50.66	70	P	P	17 52 08.7	+0.3
KRAR	Krasnoyarsk	50.81	314	c iP	P	17 52 09.7	+0.5
KRAR	comp=Z,101nm,1.1s			pmax	pmax		
SPMN	Marine on St. baz=309,SNR=7.5	50.81	64	P	P	17 52 09.2	-0.2
SPMN	Marine on St. comp=Z,82nm,1.3s	50.81	64	eP	P	17 52 08.9	-0.5
SPMN				epP	pP	17 52 41.6	-0.4
SPMN				eScP	ScP	17 57 06.8	+0.1
L34A	Svendsen Farm, baz=310	50.87	69	P	P	17 52 10.1	+0.1
O32A	Brockman Farm, baz=311	50.88	72	P	P	17 52 10.6	+0.5
HSIG		50.89	92	eP	P	17 52 10.4	+0.2
HSIG	comp=Z,163nm,1.5s			epP	pP	17 52 40.3	-2.4
I36A	Fitzsimmons Fa baz=310,SNR=7.0	50.90	66	P	P	17 52 09.8	-0.3
CBKS	Cedar Bluff baz=311,SNR=6.8	50.97	75	P	P	17 52 11.3	+0.6
CBKS	Cedar Bluff	50.97	75	eP	P	17 52 11.7	+0.9
CBKS				e*PP	pP	17 52 43.9	+0.6
CBKS	Cedar Bluff	50.97	75	eP	P	17 52 11.7	+0.9
CBKS				epP	pP	17 52 43.9	+0.6
CBKS				eScP	ScP	17 57 07.8	+0.2
K35A	Storm Lake baz=310	51.04	68	P	P	17 52 11.2	0.0
N33A	J Bar K, Exete baz=311	51.05	71	P	P	17 52 12.0	+0.7
M34A	Aspy Farms, Fr baz=310	51.05	70	P	P	17 52 11.2	-0.1
P32A	Huiting Farm, baz=311,SNR=12	51.10	73	P	P	17 52 12.1	+0.4
H37A	Dierke Farm, C baz=310,SNR=6.9	51.15	65	P	P	17 52 11.7	-0.2
J36A	Seneca 1, Swea baz=310,SNR=15	51.16	67	P	P	17 52 11.7	-0.3
I37A	Lemond, Waseca baz=310,SNR=32	51.24	66	P	P	17 52 12.6	-0.1
L35A	Bielow Farm, R baz=310	51.26	69	P	P	17 52 13.4	+0.6
SUMG	Summit comp=Z,70nm,0.7s	51.29	16⇑	iP	P	17 52 14.1	+1.0
SUMG	Summit	51.29	16	eP	P	17 52 13.6	+0.5
SUMG				e		17 53 26.0	
SUMG	comp=Z,243nm,1.5s			pmax	pmax		
SUMG	Summit comp=Z,243nm,1.5s	51.29	16	eP	P	17 52 13.6	+0.5
SUMG				ePcP	PcP	17 53 26.0	0.0
SRIG	Santa Rosalia	51.32	95	eP	P	17 52 13.4	-0.1
SRIG	comp=Z,100nm,1.1s			epP	pP	17 52 45.2	-0.8
O33A	Hebron baz=311,SNR=8.4	51.40	72	P	P	17 52 13.6	-0.3
N34A	Lincoln baz=311	51.53	71	P	P	17 52 14.7	-0.1
K36A	Gilmore City baz=310,SNR=9.0	51.54	68	P	P	17 52 14.6	-0.3
Q32A	Meitler Ranch, baz=311,SNR=17	51.54	74	P	P	17 52 15.0	0.0
M35A	Neola baz=311	51.59	69	P	P	17 52 15.2	0.0
J37A	Redenius Farm, baz=310,SNR=23	51.61	66	P	P	17 52 15.2	-0.2
BTO	Baotou	51.68	289	eP	P	17 52 17.0	+0.9
BTO	comp=Z,240nm,0.9s			pmax	pmax		
P33A	Williams Farm, baz=311	51.76	73	P	P	17 52 17.1	+0.6
L36A	Harm Buss Farm baz=310	51.76	68	P	P	17 52 16.3	-0.2
I38A	Scanlan Farm, baz=310,SNR=7.9	51.82	65	P	P	17 52 16.9	-0.1
R32A	Long Quarter, baz=312	51.83	74	P	P	17 52 17.0	-0.1
O34A	Beatrice baz=311,SNR=8.5	51.85	71	P	P	17 52 17.1	-0.1
K37A	Belmond baz=310,SNR=21	51.91	67	P	P	17 52 17.3	-0.4
Q33A	Connelly Farm, baz=312,SNR=20	51.96	73	P	P	17 52 18.0	-0.1
N35A	Tabor baz=311	52.01	70	P	P	17 52 18.8	+0.3
XMAS	Kiritimati comp=Z,259nm,1.2s	52.02	160	eP	P	17 52 19.0	+0.3
M36A	Felix, Anita baz=311	52.10	69	P	P	17 52 19.1	0.0
NJ2	Nanjing	52.17	275	eP	P	17 52 19.8	+0.1
NJ2	comp=Z,160nm,1.0s			pmax	pmax		
S32A	Newby Ranch, P baz=312	52.18	75	P	P	17 52 19.7	0.0
TIY	Taiyuan	52.18	285	eP	P	17 52 21.3	+1.5
TIY	comp=Z,360nm,0.8s			pmax	pmax		
P34A	Walnut Farm, R baz=312	52.19	72	P	P	17 52 19.7	-0.1
J38A	Wedel Dairy, R baz=310	52.20	66	P	P	17 52 19.8	0.0
COWI	Conover comp=Z,39nm,0.6s	52.24	61	eP	P	17 52 19.6	-0.5
O35A	Humboldt baz=311	52.24	71	P	P	17 52 20.2	0.0
L37A	Phoenix Point, baz=311,SNR=16	52.26	68	P	P	17 52 20.0	-0.3
R33A	Olander Ranch, baz=312	52.33	74	P	P	17 52 21.4	+0.5
MNTX	Cornudas Mount baz=315,SNR=81	52.39	85	P	P	17 52 22.6	+1.2
MNTX	Cornudas Mount comp=Z,150nm,0.9s	52.39	85	eP	P	17 52 22.3	+0.9
MNTX				epP	pP	17 52 54.0	-0.1
MNTX				eScP	ScP	17 57 13.8	0.0
MSTX	Muleshoe baz=314,SNR=44	52.40	81	P	P	17 52 22.1	+0.6
MSTX	Muleshoe comp=Z,189nm,1.1s	52.40	81	eP	P	17 52 22.4	+0.8
MSTX				epP	pP	17 52 54.6	+0.3
N36A	Muff Farm, Cla baz=311	52.43	70	P	P	17 52 22.4	+0.9
AMTX	Amarillo baz=313	52.44	80	P	P	17 52 22.2	+0.5
AMTX	Amarillo	52.44	80	eP	P	17 52 22.2	+0.5
AMTX				epP	pP	17 52 54.0	-0.4
K38A	Parkersburg baz=311	52.48	67	P	P	17 52 20.9	-0.9
T32A	Hudder Ranch, baz=312	52.53	76	P	P	17 52 22.3	0.0
Q34A	Chapman baz=312	52.53	73	P	P	17 52 22.4	0.0
M37A	Trindle Farm, baz=311,SNR=5.6	52.56	69	P	P	17 52 22.6	+0.1
KSU1	Kansas State U baz=312	52.61	72	P	P	17 52 23.2	+0.3
KSU1	Kansas State U	52.61	72	epP	pP	17 52 55.7	+0.1
P35A	Duane Minner, baz=312,SNR=7.5	52.67	72	P	P	17 52 22.8	-0.5
L38A	Oak Wood Farm, baz=311,SNR=24	52.70	67	P	P	17 52 23.1	-0.3
SCIA	State Center	52.71	68	eP	P	17 52 23.3	-0.2
SCIA				epP	pP	17 52 56.5	+0.2
R34A	Isabella, Hill baz=312,SNR=8.1	52.77	73	P	P	17 52 24.0	-0.1
S33A	Kaszmaul Farm, baz=312	52.80	75	P	P	17 52 24.5	+0.2
O36A	Bolckow baz=312	52.88	70	P	P	17 52 24.7	-0.1
N37A	Lee Faris, Mou baz=311,SNR=12	52.90	69	P	P	17 52 24.9	0.0
T33A	Patterson Ranc baz=313	53.00	75	P	P	17 52 25.7	-0.1
U32A	Winter Ranch, baz=313	53.02	76	P	P	17 52 26.1	+0.1
M38A	Pleasantville baz=311,SNR=9.6	53.04	68	P	P	17 52 25.7	-0.3
P36A	Good Intent, A baz=312,SNR=8.9	53.08	71	P	P	17 52 25.9	-0.4
Q35A	Mercer Eighty, baz=312	53.10	72	P	P	17 52 27.1	+0.6
SFJD	Kangerlussuaq	53.22	24	i P	P	17 52 27.9	+1.0
SFJD	Kangerlussuaq	53.22	24	eP	P	17 52 27.3	+0.4
SFJD	comp=Z,56nm,0.9s			pmax	pmax		
SFJD	Kangerlussuaq	53.22	24	eP	P	17 52 27.4	+0.4
SFJD				ePcP	PcP	17 53 32.4	-0.4
S34A	Willow Spring baz=312	53.25	74	P	P	17 52 27.8	+0.3
O37A	Wolven Farm, M baz=312	53.33	70	P	P	17 52 28.4	+0.4
R35A	Emporia Munici baz=312	53.37	73	P	P	17 52 28.5	0.0
Q36A	Arnold C. Orve baz=312	53.37	72	P	P	17 52 28.2	-0.2
N38A	Joes South For baz=312,SNR=9.7	53.43	69	P	P	17 52 28.6	-0.3
V32A	Arapaho baz=313	53.45	77	P	P	17 52 29.8	+0.8
U33A	Lingo Farm, Me baz=313	53.51	76	P	P	17 52 29.5	-0.1
P37A	Lathrop baz=312,SNR=5.4	53.59	70	P	P	17 52 29.3	-0.7
T34A	McClaskey Farm baz=313,SNR=12	53.66	75	P	P	17 52 30.2	-0.4
JFWS	Jewell Farm	53.70	65	eP	P	17 52 30.0	-0.8
JFWS				e*PP	pP	17 53 02.5	-1.2
JFWS	comp=Z,72nm,0.8s			pmax	pmax		
JFWS	Jewell Farm comp=Z,72nm,0.8s	53.70	65	eP	P	17 52 29.6	-1.2
JFWS				epP	pP	17 53 02.1	-1.5
S35A	Otter Creek Ra baz=313,SNR=11	53.73	73	P	P	17 52 30.6	-0.4
W32A	Sentinel baz=314,SNR=6.7	53.73	78	P	P	17 52 32.0	+0.8
O38A	Galt baz=312,SNR=5.8	53.74	69	P	P	17 52 30.5	-0.6
R36A	Gordon, Harris baz=312,SNR=15	53.77	72	P	P	17 52 31.0	-0.4
N39A	Derby Farms, D baz=312,SNR=16	53.79	68	P	P	17 52 30.9	-0.6
V33A	Lossen Ranch, baz=313	53.83	76	P	P	17 52 32.0	+0.1
U34A	Anderson Ranch baz=313,SNR=9.0	53.85	75	P	P	17 52 31.8	-0.2
U34A	Anderson Ranch	53.85	75	eP	P	17 52 31.9	-0.2
U34A				epP	pP	17 53 04.0	-0.9
Q37A	Longview Farm, baz=312	54.01	71	P	P	17 52 32.4	-0.7
P38A	Dawn baz=312,SNR=7.1	54.04	70	P	P	17 52 32.5	-0.8
S36A	Lake Cedric, C baz=313,SNR=6.9	54.12	73	P	P	17 52 33.3	-0.6
T35A	Sooner Cattle baz=313,SNR=6.0	54.13	74	P	P	17 52 33.4	-0.6
R37A	Teagarden Farm baz=313	54.17	72	P	P	17 52 34.5	+0.2
W33A	Caddo, Fort Co baz=314	54.18	77	P	P	17 52 34.6	+0.2
O39A	Kirksville baz=312	54.18	69	P	P	17 52 34.5	+0.2
X32A	Elmer baz=314,SNR=5.8	54.19	78	P	P	17 52 34.7	+0.3
V34A	Guthrie baz=313	54.27	76	P	P	17 52 35.1	0.0
V34A	Guthrie	54.27	76	eP	P	17 52 35.6	+0.5
V34A				epP	pP	17 53 06.9	-1.1
WMOK	Wichita Mounta baz=314,SNR=17	54.27	78	P	P	17 52 35.3	+0.3
WMOK	Wichita Mounta	54.27	78	eP	P	17 52 35.6	+0.5
WMOK				e*PP	pP	17 53 07.3	-0.7
WMOK	Wichita Mounta	54.27	78	eP	P	17 52 35.6	+0.5
WMOK				epP	pP	17 53 07.3	-0.7
WMOK				eScP	ScP	17 57 20.6	-1.4
U35A	Pawnee baz=313	54.37	75	P	P	17 52 36.2	+0.5
T36A	Boggs Farm, Ca baz=313,SNR=6.0	54.41	74	P	P	17 52 35.5	-0.5
Q38A	Cooks Store, C baz=313,SNR=6.2	54.43	71	P	P	17 52 35.0	-1.1
W34A	Bridge Creek, baz=314	54.53	77	P	P	17 52 37.3	+0.4
W34A	Bridge Creek,	54.53	77	eP	P	17 52 37.2	+0.2
W34A				epP	pP	17 53 09.7	-0.2
S37A	Fort Scott baz=313,SNR=15	54.55	72	P	P	17 52 36.2	-0.7
P39B	Salisbury baz=312,SNR=7.3	54.58	69	P	P	17 52 37.0	-0.1
X33A	Lawton baz=314	54.58	78	P	P	17 52 37.4	+0.2
O40A	La Belle baz=312,SNR=20	54.65	68	P	P	17 52 36.9	-0.8
V35A	Meyer Ranch, C baz=314	54.73	76	P	P	17 52 37.8	-0.5
Q39A	Willow Grove F baz=313,SNR=19	54.75	70	P	P	17 52 37.4	-1.0
R38A	Fenwick Farm, baz=313,SNR=8.7	54.79	71	P	P	17 52 38.1	-0.7
Y33A	Hilltop Ranch, baz=314	54.87	78	P	P	17 52 39.8	+0.4
T37A	Cheneyville 18 baz=313,SNR=18	54.92	73	P	P	17 52 38.9	-0.8
X34A	Smith Ranch, M baz=314,SNR=5.3	54.93	77	P	P	17 52 40.1	+0.3
U36A	Oologah baz=313	54.95	74	P	P	17 52 39.4	-0.5
P40A	Paris baz=313,SNR=15	54.95	69	P	P	17 52 39.1	-0.8
YOJ	Yonaguni jima	55.09	265	eP	P	17 52 40.4	-0.6
YOJ	comp=Z,510nm,0.9s			pmax	pmax		
YOJ	Yonaguni jima comp=Z,511nm,0.9s	55.09	265	eP	P	17 52 40.5	-0.6
TX31	Lajitas Ar. Si	55.11	86	eP	P	17 52 41.4	+0.1
TX31				esP	sP	17 53 28.4	-1.5
TX31				eScP	ScP	17 57 25.4	-0.4
TX31				eS	S	18 00 14.2	+1.3
LTX	Lajitas	55.11	86	eP	P	17 52 41.8	+0.6
LTX				e*PP	pP	17 53 14.4	+0.1
LTX				e*SP	sP	17 53 28.2	-1.6
LTX	Lajitas	55.11	86	eP	P	17 52 41.8	+0.6
LTX				epP	pP	17 53 14.4	+0.1
LTX				esP	sP	17 53 28.2	-1.6
LTX				eScP	ScP	17 57 26.1	+0.3
TXAR	Lajitas Array comp=Z,114nm,0.8s,baz=297,slow=5.1,SNR=727	55.11	86	P	P	17 52 41.8	+0.6
TXAR				pP	pP	17 53 14.4	+0.1
TXAR	comp=Z,38nm,0.8s,baz=308,slow=4.6,SNR=6.1			sP	sP	17 53 28.2	-1.6
TXAR	comp=Z,50nm,0.8s,baz=296,slow=5.4,SNR=5.6			SCP	ScP	17 57 26.1	+0.3
W35A	Tecumseh baz=314,SNR=8.5	55.12	76	P	P	17 52 41.5	+0.3
S38A	Stockton baz=313,SNR=13	55.17	72	P	P	17 52 40.9	-0.6
R39A	Chumby, Stover baz=313	55.21	71	P	P	17 52 41.5	-0.2
ABTX	Abilene, Hawle baz=315,SNR=30	55.22	80	P	P	17 52 42.5	+0.6
ABTX	Abilene, Hawle comp=Z,152nm,1.0s	55.22	80	eP	P	17 52 42.1	+0.2
ABTX				epP	pP	17 53 14.2	-0.7
ABTX				esP	sP	17 53 28.2	-2.4
ABTX				ePcP	PcP	17 53 37.9	-3.2
V36A	Jenks baz=314,SNR=7.0	55.24	75	P	P	17 52 41.7	-0.2
TUL1	Leonard baz=314	55.24	75	P	P	17 52 41.7	-0.3
TUL1	Leonard	55.24	75	eP	P	17 52 42.2	+0.2
TUL1				epP	pP	17 53 14.1	-0.9
Z33A	Whitaker Ranch baz=314,SNR=10	55.29	79	P	P	17 52 42.2	-0.1
Q40A	Laux Farm, Aux baz=313,SNR=13	55.30	69	P	P	17 52 42.4	+0.1
U37A	Salina baz=314,SNR=6.8	55.30	74	P	P	17 52 42.1	-0.3
T38A	Diamond baz=313,SNR=7.4	55.35	73	P	P	17 52 42.1	-0.7
SLBS	Sierra La Lagu comp=Z,79nm,1.0s	55.40	96	eP	P	17 52 43.5	+0.1
SLBS				epP	pP	17 53 15.8	-0.6
Y34A	Reagan Ranch, baz=314,SNR=19	55.42	78	P	P	17 52 44.2	+0.8
S39A	Bolivar baz=313,SNR=6.1	55.47	71	P	P	17 52 43.0	-0.6
W36A	Wetumka baz=314,SNR=8.7	55.52	76	P	P	17 52 44.1	+0.2
SCO	Scoresbysund comp=Z,41nm,0.7s	55.55	11⇑	iP	P	17 52 44.3	+0.7
SCO	Scoresbysund comp=Z,41nm,0.7s	55.55	11⇑	iP	P	17 52 44.3	+0.7
SCO				pmax	pmax		
X35A	Drake baz=314,SNR=8.2	55.59	77	P	P	17 52 44.6	+0.1
HPIG	comp=Z,96nm,1.1s	55.61	90	eP	P	17 52 45.0	0.0
HPIG				epP	pP	17 53 16.0	-2.1
HPIG				esP	sP	17 53 30.9	-2.7
HPIG				eScP	ScP	17 57 23.4	-4.8
V37A	Hulbert baz=314,SNR=9.5	55.64	74	P	P	17 52 44.6	-0.3
ZAA1	Zalesovo Array	55.66	316	eP	P	17 52 44.7	0.0
ZAA1				ePcP	PcP	17 53 42.9	+0.5
R40A	Maddies Statio baz=313,SNR=14	55.66	70	P	P	17 52 44.4	-0.6
ZAA0	Zalesovo Array	55.67	316	eP	P	17 52 44.7	0.0
ZAA0				epP	pP	17 53 12.4	-5.4
ZAA0				esP	sP	17 53 32.3	-1.2
ZAA0				ePcP	PcP	17 53 42.6	+0.2
ZALV	Zalesovo Beam comp=Z,22nm,0.8s,baz=43,slow=6.7,SNR=34	55.67	316	P	P	17 52 44.7	0.0
ZALV				PcP	PcP	17 53 42.9	+0.5
ZALV	comp=Z,38nm,0.7s,baz=38,slow=3.5,SNR=17			LR	LR	18 16 55.1	
ZALV	comp=Z,213nm,22.0s,baz=68,slow=36			LR	LR	18 16 55.1	
133A	Hamilton Ranch baz=315,SNR=50	55.67	80	P	P	17 52 45.6	+0.5
U38A	Gravette baz=314,SNR=7.3	55.70	73	P	P	17 52 44.9	-0.4
NVS	Novosibirsk	55.72	317⇑	iP	P	17 52 45.0	-0.1
NVS				i *PP	pP	17 53 17.5	-0.6
NVS				i		17 53 42.9	
NVS				e		17 54 51.5	
NVS				eS	S	18 00 19.9	-0.2
NVS				e		18 02 17.8	
NVS	comp=Z,108nm,1.3s			pmax	pmax		
NVS	comp=N,51nm,1.6s			pmax	pmax		
NVS	comp=E,51nm,1.2s			pmax	pmax		
NVS	comp=Z,83nm,2.5s			pmax	pmax		
NVS	comp=N,32nm,2.0s			smax	smax		
NVS	comp=E,29nm,2.0s			smax	smax		
Z34A	Collier Ranch, baz=315,SNR=9.9	55.74	78	P	P	17 52 45.7	+0.1
HDIL	Hopedale baz=313	55.81	66	P	P	17 52 45.8	-0.3
HDIL	Hopedale	55.81	66	eP	P	17 52 45.7	-0.3
HDIL				epP	pP	17 53 19.2	+0.2

X36A	Centrahoma	55.84	76	P		P	17 52 46.6	+0.4
	baz=314							
Y35A	Marietta	55.89	77	P		P	17 52 47.0	+0.4
	baz=314,SNR=14							
T39A	Clever	55.89	72	P		P	17 52 45.7	-0.9
	baz=314,SNR=13							
YHNB	Yeheng	55.94	267	*e*P		P	17 52 46.8	-0.4
	comp=E,74nm,0.7s							
YHNB				*e*PP		PP	17 54 48.5	-4.7
W37B	Quinton	55.99	75	P		P	17 52 47.4	0.0
	baz=314,SNR=12							
S40A	Lebanon	56.00	71	P		P	17 52 48.1	+0.7
	baz=314							
V38A	Canehill	56.09	74	P		P	17 52 47.8	-0.3
	baz=314,SNR=8.2							
233A	Rising Star	56.09	80	P		P	17 52 48.5	+0.3
	baz=315,SNR=36							
Z35A	Perchaven, San	56.16	78	P		P	17 52 48.7	+0.1
	baz=315							
NACB	Ninganchiao	56.17	266	*e*P		P	17 52 48.3	-0.4
	comp=E,260nm,1.0s							
134A	White-Moore Ra	56.20	79	P		P	17 52 49.5	+0.6
	baz=315,SNR=26							
Q42A	Golden Eagle	56.23	69	P		P	17 52 48.6	-0.4
	baz=313,SNR=7.4							
U39A	Green Forest	56.27	73	P		P	17 52 48.8	-0.6
	baz=314							
T40A	Mansfield	56.30	71	P		P	17 52 49.5	-0.1
	baz=314,SNR=9.6							
Y36A	Durant	56.34	77	P		P	17 52 50.0	+0.1
	baz=315,SNR=14							
X37A	Clayton	56.40	76	P		P	17 52 50.5	+0.3
	baz=314,SNR=11							
CCM	Cathedral Cave	56.41	70	*e*P		P	17 52 50.0	-0.3
CCM				*e**PP		pP	17 53 22.0	-1.4
CCM	Cathedral Cave	56.41	70	*e*P		P	17 52 50.0	-0.3
CCM				*e*pP		pP	17 53 22.0	-1.4
333A	Richland Sprin	56.53	81	P		P	17 52 51.7	+0.5
	baz=315,SNR=64							
V39A	Pettigrew	56.55	73	P		P	17 52 51.8	+0.4
	baz=314,SNR=8.1							
234A	Clairette	56.56	80	P		P	17 52 52.1	+0.6
	baz=315,SNR=12							
W38A	Poteau	56.57	75	P		P	17 52 51.6	+0.1
	baz=314,SNR=22							
135A	Vickery Place,	56.61	79	P		P	17 52 51.9	+0.1
	baz=315,SNR=7.6							
JCT	Junction City	56.64	82	P		P	17 52 51.9	-0.2
	baz=316,SNR=21							
JCT	Junction City	56.64	82	*e*P		P	17 52 51.9	-0.2
JCT				pmax		pmax		
	comp=Z,99nm,0.9s							
JCT	Junction City	56.64	82	*e*P		P	17 52 51.9	-0.2
	comp=Z,99nm,0.9s							
JCT				*e*ScP		ScP	17 57 32.7	+0.2
U40A	Yellville	56.66	72	P		P	17 52 51.2	-0.8
	baz=314,SNR=11							
X38A	Whitesboro	56.67	75	P		P	17 52 52.0	-0.1
	baz=314,SNR=12							
Z36A	Blue Ridge	56.69	77	P		P	17 52 52.2	-0.1
	baz=315							
XAN	Xi'an	56.77	284	P		P	17 52 53.5	+0.6
XAN				sP		PcP	17 53 45.6	-1.5
XAN				S		S	18 00 33.4	-1.3
XAN				pmax		pmax		
	comp=Z,450nm,1.1s							
XAN				pmax		pmax		
	comp=Z,250nm,3.4s							
XAN				LR		LR		
	comp=Z,200nm,17.2s							
XAN				LR		LR		
	comp=Z,240nm,18.2s							
T41A	Mountain View	56.81	71	P		P	17 52 52.6	-0.5
	baz=314,SNR=7.5							
SSLB	Suanglung	56.85	266	*e*P		P	17 52 53.8	+0.2
	comp=Z,848nm,1.3s							
433A	Art	56.87	81	P		P	17 52 53.5	-0.2
	baz=316,SNR=58							
SCHQ	Schefferville	56.91	41	P		P	17 52 53.1	-0.4
	comp=Z,11nm,0.7s,baz=308,slow=10,SNR=6.5							
SCHQ				LR		LR	18 19 44.3	
	comp=Z,140nm,18.6s,baz=16,slow=38							
SCHQ	Schefferville	56.91	41	*e*P		P	17 52 52.8	-0.7
SCHQ				*e*pP		pP	17 53 27.5	+0.8
W39A	Magazine	56.92	74	P		P	17 52 53.7	-0.1
	baz=314,SNR=16							
YULB	Yu-li	56.93	266	*e*P		P	17 52 54.1	-0.1
	comp=Z,676nm,1.7s							
334A	Lometa	56.98	80	P		P	17 52 54.7	+0.3
	baz=316,SNR=92							
WHTX	Lake Whitney,	56.98	79	P		P	17 52 54.8	+0.5
	baz=315,SNR=12							
WHTX	Lake Whitney,	56.98	79	*e*P		P	17 52 55.3	+0.9
	comp=Z,143nm,1.1s							
WHTX				*e*pP		pP	17 53 27.8	+0.2
WHTX				*e*ScP		ScP	17 57 34.2	+0.3
V40A	Witts Springs	57.05	73	P		P	17 52 54.2	-0.7
	baz=314,SNR=20							
KEV	Kevo	57.12	352	*e*P		P	17 52 55.1	+0.3
KEV	Kevo	57.12	352	*e*P		P	17 52 54.8	0.0
KEV				*e**PP		pP	17 53 28.5	+0.5
KEV				*e**SP		sP	17 53 43.4	-0.2
KEV				*e*			17 53 48.0	
KEV	Kevo	57.12	352	*e*P		P	17 52 54.8	0.0
KEV				*e*pP		pP	17 53 28.5	+0.5
KEV				*e*sP		sP	17 53 43.4	-0.2
KEV				*e*PcP		PcP	17 53 48.0	+0.1
SFIN	Lafayette	57.16	65	P		P	17 52 55.2	-0.2
	baz=314,SNR=14							
SFIN	Lafayette	57.16	65	*e*P		P	17 52 55.1	-0.4
	comp=Z,98nm,0.9s							
SFIN				*e*pP		pP	17 53 28.1	-0.6
136A	Ennis	57.20	78	P		P	17 52 55.9	0.0
	baz=315							
X39A	Fountain Ranch	57.20	75	P		P	17 52 55.8	-0.1
	baz=315,SNR=26							
Z37A	Pogue Cattle C	57.23	77	P		P	17 52 56.2	+0.1
	baz=315							
Y38A	Idabel	57.24	76	P		P	17 52 55.9	-0.3
	baz=315							
434A	Burnet	57.33	81	P		P	17 52 57.2	+0.3
	baz=316,SNR=71							
W40A	Ferguson Farm,	57.34	73	P		P	17 52 57.4	+0.6
	baz=315,SNR=6.7							
533A	Kerrville	57.39	82	P		P	17 52 57.3	-0.1
	baz=316,SNR=25							
TPUB	Ta-pu	57.41	266	*e*P		P	17 52 57.8	+0.3
	comp=Z,360nm,1.1s							
S43A	Fulton Ridge,	57.42	69	P		P	17 52 57.1	-0.3
	baz=314,SNR=12							
QZH	Quanzhou	57.43	269	⇑*i*P		P	17 52 53.1	-4.5
QZH				sP		PcP	17 53 48.5	-1.3
QZH				S		S	18 00 39.9	-3.6
QZH				sS		sS	18 01 39.6	-1.3
QZH				pmax		pmax		
	comp=Z,1μm,1.1s							
QZH				pmax		pmax		
	comp=Z,2μm,3.5s							
V41A	Mountainview	57.46	72	P		P	17 52 57.4	-0.3
	baz=314,SNR=16							
ARA0	ARCESS Array S	57.46	352	*e*P		P	17 52 56.8	-0.5
ARA0				*e*pP		pP	17 53 31.3	+0.8
ARA0				*e*PcP		PcP	17 53 49.4	+0.1
ARCES	ARCESS Array B	57.46	352	P		P	17 52 57.2	0.0
	comp=Z,14nm,0.7s,baz=23,slow=5.9,SNR=45							
ARCES				PcP		PcP	17 53 49.4	+0.1
	comp=Z,62nm,0.8s,baz=15,slow=5.0,SNR=22							
ARCES				LR		LR	18 22 28.4	
	comp=Z,66nm,18.1s,baz=14,slow=41							
ARE0	ARCESS Array S	57.46	352	*e*P		P	17 52 57.3	0.0
ARE0	ARCESS Array S	57.46	352	*e*P		P	17 52 56.9	-0.3
ARE0				*e*PcP		PcP	17 53 49.4	+0.2
MIAR	Mount Ida	57.49	74	P		P	17 52 57.9	0.0
	baz=315,SNR=25							
MIAR	Mount Ida	57.49	74	*e*P		P	17 52 58.0	0.0
MIAR				pmax		pmax		
	comp=Z,130nm,1.0s							
MIAR	Mount Ida	57.49	74	*e*P		P	17 52 58.3	+0.4
MIAR				*e*pP		pP	17 53 30.8	-0.4
MIAR				*e*ScP		ScP	17 57 35.8	-0.4
TWG	Pinlang	57.49	266	*e*P		P	17 52 57.5	-0.6
	comp=Z,421nm,1.0s							
335A	Moody	57.50	80	P		P	17 52 58.0	-0.1
	baz=316							
236A	Katherine and	57.53	79	P		P	17 52 58.5	+0.3
	baz=315							
Z38A	Mt. Pleasant	57.57	76	P		P	17 52 58.6	+0.2
	baz=315							
137A	Heron Place, G	57.57	78	P		P	17 52 58.7	+0.2
	baz=315							
Y39A	Lockesburg	57.61	75	P		P	17 52 58.6	-0.2
	baz=315							
X201	Greenbrier Sit	57.68	73	*e*P		P	17 52 59.5	+0.2
X201				*e*pP		pP	17 53 31.1	-1.5
X301	Greenbrier Sit	57.70	73	*e*P		P	17 52 58.9	-0.4
X301				*e*pP		pP	17 53 31.6	-1.1
AAM	Ann Arbor	57.71	61	*e*P		P	17 52 59.1	-0.2
AAM				pmax		pmax		
	comp=Z,82nm,0.6s							
AAM	Ann Arbor	57.71	61	*e*P		P	17 52 59.1	-0.2
	comp=Z,82nm,0.6s							
WHAR	Wooly Hollow	57.73	73	*e*P		P	17 52 59.0	-0.6
WHAR				*e*pP		pP	17 53 29.9	-3.0
OLIL	Olney	57.73	67	*e*P		P	17 52 59.0	-0.5
OLIL				*e*pP		pP	17 53 32.3	-0.5
633A	Saathoff Ranch	57.75	83	P		P	17 52 59.6	-0.2
	baz=316,SNR=12							
435B	Jarrell	57.76	80	P		P	17 53 00.5	+0.7
	baz=316,SNR=8.4							
534A	Blanco	57.76	82	P		P	17 52 59.9	0.0
	baz=316,SNR=31							
PBMO	Poplar Bluff	57.76	70	*e*P		P	17 52 59.0	-0.8
PBMO				*e*pP		pP	17 53 29.8	-3.3
336A	Riesel	57.78	79	P		P	17 53 00.6	+0.7
	baz=316							
SIUC	Southern Illin	57.81	69	*e*P		P	17 52 58.7	-1.3
SIUC				*e*pP		pP	17 53 31.6	-1.7
TRO	Tromso	57.81	355	*e*P		P	17 53 00.1	+0.5
W41B	Gary Mavity, V	57.83	73	P		P	17 53 00.3	0.0
	baz=315,SNR=15							
V42A	Cord	57.89	72	P		P	17 53 01.2	+0.5
	baz=315							
138A	Matatall Enter	57.92	77	P		P	17 53 01.7	+0.8
	baz=315							
237A	Washetta, Mont	57.96	78	P		P	17 53 01.8	+0.5
	baz=316							
X40A	Basin Creek Fa	57.97	74	P		P	17 53 01.9	+0.6
	baz=315,SNR=11							
Y40A	Okolona	58.04	75	P		P	17 53 01.7	-0.1
	baz=315							
Z39A	Irene McRaven,	58.05	76	P		P	17 53 02.3	+0.5
	baz=315							
LVZ	Lovozero	58.08	348	*ce*P		P	17 53 01.4	-0.2
LVZ				*i* *PP		pP	17 53 34.1	-0.8
LVZ				pmax		pmax		
	comp=Z,71nm,1.1s							
LVZ	Lovozero	58.08	348	*e*P		P	17 53 01.2	-0.4
LVZ				*e*pP		pP	17 53 33.9	-1.1
832A	Faith Ranch, C	58.11	84	P		P	17 53 02.7	+0.4
	baz=317,SNR=32							
X41A	Kaden, Bauxite	58.15	74	P		P	17 53 02.9	+0.3
	baz=315							
KTK1	Kautokeino	58.15	353	*e*P		P	17 53 02.6	+0.5
733A	Divot King Ran	58.21	83	P		P	17 53 03.5	+0.5
	baz=316,SNR=12							
PARMO	Parma	58.23	70	*e*P		P	17 53 03.1	0.0
PARMO				*e*pP		pP	17 53 34.8	-1.6
436A	Wall Ranch, Ga	58.24	80	P		P	17 53 04.3	+1.0
	baz=316,SNR=18							
GTA	Gaotai	58.27	295	⇑P		P	17 53 03.9	+0.4
GTA				pP		pP	17 53 37.1	+0.3
GTA				sP		PcP	17 53 53.5	+0.4
GTA				ScP		ScP	17 57 39.0	-0.7
GTA				S		S	18 00 54.0	-0.4
GTA				sS		sS	18 01 51.5	-0.5
GTA				ScS		ScS	18 02 33.8	-5.2
GTA				SS		SS	18 04 50.1	+2.3
GTA				pmax		pmax		
	comp=Z,150nm,1.1s							
GTA				pmax		pmax		
	comp=Z,580nm,5.5s							
GTA				LR		LR		
	comp=Z,340nm,20.4s							
GTA				LR		LR		
	comp=Z,380nm,19.0s							
GTA				LR		LR		
	comp=Z,470nm,20.0s							
634A	China Grove, S	58.30	82	P		P	17 53 04.0	+0.4
	baz=316							
LZH	Lanzhou	58.31	289	⇑P		P	17 53 05.3	+1.5
LZH				pP		pP	17 53 38.8	+1.6
LZH				sP		PcP	17 53 54.3	+1.0
LZH				PP		PP	17 55 17.5	+3.4
LZH				*e*S		S	18 00 51.4	-3.6
LZH				*e*SS		SS	18 04 46.0	-2.6
LZH				pmax		pmax		
	comp=Z,45nm,1.0s							
LZH				pmax		pmax		
	comp=Z,200nm,4.2s							
LZH				LR		LR		
	comp=Z,430nm,16.1s							
LZH				LR		LR		
	comp=Z,430nm,18.3s							
LZH				LR		LR		
	comp=Z,460nm,17.3s							
535A	Dale	58.31	81	P		P	17 53 04.4	+0.7
	baz=316,SNR=8.0							
BLO	Bloomington	58.31	66	*e*P		P	17 53 03.7	+0.1
BLO				pmax		pmax		
	comp=Z,170nm,1.6s							
BLO	Bloomington	58.31	66	*e*P		P	17 53 02.9	-0.7
BLO				*e*pP		pP	17 53 35.5	-1.4
KIF	Kilpisjarvi	58.33	354	*e*P		P	17 53 02.9	-0.2
SADO	Sadowa	58.35	57	*e*P		P	17 53 03.3	-0.5
SADO				*e*pP		pP	17 53 36.5	-0.7
WLAR	White Oak Lake	58.37	75	*e*P		P	17 53 05.1	+1.1
WLAR				*e*pP		pP	17 53 37.1	-0.3
238A	Jacksonville	58.37	78	P		P	17 53 04.7	+0.6
	baz=316							
337A	Centerville	58.40	79	P		P	17 53 05.2	+0.9
	baz=316							
833A	Chaparral WMA,	58.43	84	P		P	17 53 05.3	+0.7
	baz=317,SNR=22							
Z40A	Long Farm, Mag	58.50	75	P		P	17 53 05.4	+0.5
	baz=315							
USIN	University of	58.51	68	*e*P		P	17 53 04.8	-0.1
USIN				*e*pP		pP	17 53 38.0	-0.3
H06E1	SOCORRO T-PHAS	58.52	100	T		T	18 56 13.3	
	SNR=16							
Y41A	Eaglette Beard	58.53	74	P		P	17 53 05.5	+0.3
	baz=315							
APA	Apatity	58.55	348	⇑*i*P		P	17 53 04.2	-0.6
APA				*i* *PP		pP	17 53 38.4	+0.2
APA				MLR		MLR		
	comp=Z,1μm,24.0s							
734A	La Parita Cree	58.56	83	P		P	17 53 06.3	+0.9
	baz=317,SNR=17							
536A	Bastrop	58.58	81	P		P	17 53 06.4	+0.9
	baz=316							
437A	Phantom Ranch,	58.60	79	P		P	17 53 06.7	+1.0
	baz=316							
635A	Leesville	58.65	82	P		P	17 53 06.9	+0.9
	baz=316,SNR=25							
HEF	Hetta	58.72	353	*e*P		P	17 53 05.8	-0.2
338A	Crockett	58.72	78	P		P	17 53 07.2	+0.7
	baz=316							
V44A	Blytheville	58.74	71	P		P	17 53 06.6	+0.1
	baz=315							
239A	Gary	58.75	77	P		P	17 53 07.1	+0.4
	baz=316							
NATX	Nacogdoches	58.82	77	P		P	17 53 07.8	+0.6
	baz=316							
NATX	Nacogdoches	58.82	77	*e*P		P	17 53 06.9	-0.3
NATX				*e*pP		pP	17 53 40.8	+0.3
140A	Cam and Jess,	58.84	76	P		P	17 53 07.9	+0.6
	baz=316							
Z41A	Richland Creek	58.85	75	P		P	17 53 08.1	+0.7
	baz=316							
735A	Kenedy	59.01	82	P		P	17 53 09.3	+0.8
	baz=317							
636A	Smothers Creek	59.01	81	P		P	17 53 09.6	+1.1
	baz=316,SNR=6.6							
933A	Laredo	59.02	84	P		P	17 53 09.5	+0.9
	baz=317,SNR=30							
537A	Green Hill Far	59.03	80	P		P	17 53 09.8	+1.1
	baz=316,SNR=7.8							
Y42A	Garnett, Star	59.04	74	P		P	17 53 09.2	+0.5
	baz=315							
438A	Sam Houston St	59.05	79	P		P	17 53 09.6	+0.8
	baz=316							
834A	Tilden	59.09	83	P		P	17 53 10.0	+1.0
	baz=317							
X43A	Marvell	59.09	73	P		P	17 53 09.4	+0.4
	baz=315							
ENH	Enshi	59.10	280	*e*P		P	17 53 09.2	0.0
	comp=Z,195nm,0.8s							
240A	Hunter Patters	59.15	77	P		P	17 53 10.2	+0.7
	baz=316							
339A	Huntington	59.18	78	P		P	17 53 10.4	+0.7
	baz=316							
141A	Papa Simpson,	59.26	75	P		P	17 53 11.0	+0.8
	baz=316							
W44A	Shelby Farms P	59.27	71	P		P	17 53 11.0	+0.7
	baz=315							
Z42A	Norrel Spur, H	59.35	74	P		P	17 53 11.7	+0.9
	baz=316							
736A	Circle Diamond	59.38	81	P		P	17 53 12.1	+1.0
	baz=317							
835A	Beeville	59.41	83	P		P	17 53 12.4	+1.2
	baz=317,SNR=11							
439A	Center Grove,	59.45	78	P		P	17 53 12.6	+1.1
	baz=316							
637A	Eagle Lake	59.48	80	P		P	17 53 12.6	+0.9
	baz=316							
934A	Benavides	59.48	84	P		P	17 53 13.2	+1.3
	baz=317,SNR=18							
Y43A	Makayla and Ka	59.49	73	P		P	17 53 12.3	+0.5
	baz=316							
ACSO	Alum Creek Sta	59.52	63	*e*P		P	17 53 11.6	-0.3
	comp=Z,46nm,0.8s							
ACSO				*e*pP		pP	17 53 45.0	-0.3
340A	Bronson	59.52	77	P		P	17 53 12.4	+0.4
	baz=316							
X44A	Crenshaw	59.53	72	P		P	17 53 12.0	0.0
	baz=316							
LOF	Lofoten	59.54	357	*e*P		P	17 53 11.9	+0.3
W45A	Hickory Valley	59.62	71	P		P	17 53 13.5	+0.8
	baz=315							
241A	Mo Tay, Goldon	59.66	76	P		P	17 53 13.9	+1.0
	baz=316							
WVT	Waverly	59.71	69	*e*P		P	17 53 06.5	-6.8
WVT	Waverly	59.71	69	*e*P		P	17 53 13.1	-0.2
WVT				*e*pP		pP	17 53 46.3	-0.5
034A	Hebbronville	59.78	84	P		P	17 53 14.8	+1.0
	baz=317,SNR=11							
ERPA	Erie	59.78	59	*e*P		P	17 53 14.2	+0.6
	comp=Z,121nm,1.0s							
BUF	Buffalo	59.80	58	*e*P		P	17 53 13.1	-0.6
BUF				*e*pP		pP	17 53 48.3	+1.1
Z43A	Armstrong Fami	59.80	74	P		P	17 53 14.7	+0.8
	baz=316							
142A	Monroe	59.86	75	P		P	17 53 14.5	+0.1
	baz=316							
Y44A	Strider, Charl	59.87	73	P		P	17 53 14.2	-0.2
	baz=316							
737A	Port Lavaca	59.90	81	P		P	17 53 15.2	+0.6
	baz=317							
OXF	Oxford	59.95	72	*e*P		P	17 53 15.1	+0.2
OXF				*e**PP		pP	17 53 48.2	-0.2
OXF	Oxford	59.95	72	*e*P		P	17 53 15.1	+0.2
OXF				*e*pP		pP	17 53 48.2	-0.2
440A	Kirbyville	59.96	78	P		P	17 53 15.4	+0.4
	baz=316							
539A	Cross D Ranch,	59.96	79	P		P	17 53 15.5	+0.4
	baz=316							
341A	Kurthwood	60.01	77	P		P	17 53 16.3	+1.0
	baz=316							
ALLY	Alegheny Colle	60.03	60	*e*P		P	17 53 15.7	+0.3
	comp=Z,226nm,0.8s							
ALLY				*e*pP		pP	17 53 48.6	-0.4
143A	Socs Landing,	60.07	74	P		P	17 53 16.2	+0.5
	baz=316							
242A	Grayson	60.09	75	P		P	17 53 16.4	+0.5
	baz=316							
035A	Encino	60.22	84	P		P	17 53 18.2	+1.4
	baz=317,SNR=7.4							
Z44A	Pea Ridge, Bel	60.23	73	P		P	17 53 18.0	+1.2
	baz=316							
Y45A	Yeager Farm, C	60.33	72	P		P	17 53 18.6	+1.1
	baz=316							
540A	Vidor	60.34	78	P		P	17 53 18.4	+0.9
	baz=316							
PLAL	Pickwick Lake	60.38	70	*e*P		P	17 53 17.3	-0.6
PLAL				*e*pP		pP	17 53 50.2	-1.2
M54A	Oil Creek Stat	60.38	60	P		P	17 53 18.0	+0.2
	baz=316,SNR=22							
441A	DeRidder	60.42	77	P		P	17 53 19.5	+1.4
	baz=316							
MMNY	Mt. Morris Dam	60.43	58	*e*P		P	17 53 17.8	-0.2
342A	Flagon Creek P	60.48	76	P		P	17 53 19.4	+0.8
	baz=316							
ZAIG	Zacatecas	60.58	90	*e*P		P	17 53 19.6	0.0
	comp=Z,78nm,1.1s							
ZAIG				*e*pP		pP	17 53 53.6	+0.4
035Z	Hargill	60.59	84	P		P	17 53 19.9	+0.5
	baz=318,SNR=5.5							
Z45A	Winona	60.60	73	P		P	17 53 20.2	+0.9
	baz=316							
N54A	Moraine State	60.60	60	P		P	17 53 19.3	0.0
	baz=316,SNR=23							
243A	Waterproof	60.62	75	P		P	17 53 19.9	+0.4
	baz=316							
KURK	Kurchatov	60.64	316	*e*P		P	17 53 20.1	+0.8
KURK				*e**PP		pP	17 53 53.3	+0.4
KURK				pmax		pmax		
	comp=Z,202nm,0.8s							
KURK	Kurchatov	60.64	316	*e*P		P	17 53 20.1	+0.8
	comp=Z,202nm,0.8s							
KURK				*e*pP		pP	17 53 53.2	+0.4
144A	Alexander Plac	60.70	74	P		P	17 53 20.5	+0.4
	baz=316							
Y46A	Houston	60.72	72	P		P	17 53 20.9	+0.8
	baz=316							
LONY	Lake Ozonia	60.75	54	*e*P		P	17 53 19.3	-0.9
LONY				*e*pP		pP	17 53 52.9	-0.9
442A	Mamou	60.90	77	P		P	17 53 22.5	+1.1
	baz=317							
541A	Lake Charles	60.92	78	P		P	17 53 23.3	+1.8
	baz=317							
VBMS	Vicksburg	60.94	74	P		P	17 53 22.9	+1.3
	baz=316							
343A	Vidalia	60.97	76	P		P	17 53 23.7	+1.9
	baz=316							
244A	Avery, Jackson	60.97	74	P		P	17 53 22.2	+0.3
	baz=316							
145A	Houston Renfro	61.01	73	P		P	17 53 22.8	+0.6
	baz=316							
BORG	Borgarnes	61.04	13	*i* P		P	17 53 24.3	+2.5
FRNY	Flat Rock	61.08	53	*e*P		P	17 53 21.2	-1.3
FRNY				*e*pP		pP	17 53 54.8	-1.3
TMCR	Tamitsa	61.12	345	*e*P		P	17 53 22.0	-0.3
TMCR				pmax		pmax		
	comp=Z,24nm,0.7s							
Z46A	Louisville	61.16	72	P		P	17 53 24.3	+1.1
	baz=316							
SOKR	Solikamsk	61.17	334	*c*i P		P	17 53 21.3	-1.4
SOKR				pmax		pmax		
	comp=Z,110nm,1.3s							
443A	Delano Plantat	61.24	76	P		P	17 53 24.3	+0.5
	baz=317							
542A	Morse	61.25	77	P		P	17 53 25.9	+2.2
	baz=317							
Y47A	UCPARC, Winfie	61.29	71	P		P	17 53 24.5	+0.6
	baz=316							
344A	Westbrook Farm	61.37	75	P		P	17 53 25.1	+0.6
	baz=317							
NCB	Newcomb	61.40	54	*e*P		P	17 53 23.9	-0.7
NCB				*e*pP		pP	17 53 57.9	-0.3
245A	Little AP, Sta	61.44	74	P		P	17 53 25.9	+0.8
	baz=316							
SW

WMQ LR LR
comp=Z,81nm,23.0s
Z47A Carrollton 61.66 72 P **P 17 53 26.0 -0.5**
baz=316,SNR=8.2
543A St. Martinvill 61.69 77 P **P 17 53 28.3 +1.5**
baz=317
BINY Binghamton 61.80 57 *e*P **P 17 53 27.9 +0.6**
comp=Z,222nm,0.8s
Z48A Northport 61.83 71 P **P 17 53 27.3 -0.4**
baz=316,SNR=11
O56A Blue Knob Stat 61.85 60 P **P 17 53 27.6 -0.2**
baz=316,SNR=26
345A Thompson Farm, 61.88 75 P **P 17 53 28.6 +0.6**
baz=317
444A Pine Grove 61.89 75 P **P 17 53 29.1 +1.0**
baz=317
246A Jackson Lee, B 61.90 73 P **P 17 53 28.3 +0.2**
baz=317
147A Livingston 61.93 72 P **P 17 53 28.4 +0.1**
baz=317
MK31 Makanchi Array 61.93 311 *e*P **P 17 53 28.2 0.0**
MK31 Makanchi Array 61.93 311 *e*P **P 17 53 28.3 +0.1**
MK32 Makanchi Array 61.93 311 *e*P **P 17 53 28.1 0.0**
MKAR Makanchi Array 61.93 311 P **P 17 53 28.1 -0.1**
comp=Z,58nm,0.8s,baz=52,slow=6.5,SNR=486
MKAR LR LR 18 21 14.9
comp=Z,154nm,20.3s,baz=24,slow=37
MKAR PKP2bc 18 22 37.3
comp=Z,1.0nm,0.9s,baz=242,slow=2.6,SNR=5.8
SSPA Standing Stone 61.95 59 *e*P **P 17 53 28.2 -0.1**
comp=Z,158nm,0.6s
MK01 Makanchi Array 61.95 311 *e*P **P 17 53 28.0 -0.3**
GZH Guangzhou 62.01 272 P **P 17 53 26.3 -2.7**
CD2 Chengdu 62.05 285 P **P 17 53 28.3 -0.9**
CD2 pP pP 17 54 03.8 +0.9
CD2 sP sP 17 54 20.4 +2.0
CD2 PP **PP 17 55 46.3 -0.8**
CD2 S **S 18 01 40.6 -2.0**
CD2 sS sS 18 02 42.6 +1.7
CD2 SS **SS 18 05 46.5 -0.6**
CD2 pmax pmax
comp=Z,610nm,4.9s
CPCT Cooper Cave 62.07 67 *e*P **P 17 53 28.5 -0.7**
CPCT *e*pP **pP 17 54 01.6 -1.4**
ACCN Adirondack Com 62.10 54 *e*P **P 17 53 29.1 -0.2**
comp=Z,54nm,0.9s
ACCN *e*pP **pP 17 54 03.1 0.0**
445A Amite 62.12 75 P **P 17 53 28.7 -0.9**
baz=317
346A Big Creek Wild 62.16 74 P **P 17 53 29.2 -0.6**
baz=317
BRVK Borovoye 62.16 322 *e*P **P 17 53 30.5 +0.9**
BRVK *e**PP **pP 17 54 03.5 +0.2**
BRVK pmax pmax
comp=Z,197nm,1.0s
BRVK Borovoye 62.16 322 *e*P **P 17 53 30.4 +0.9**
comp=Z,197nm,1.0s
BRVK *e*pP **pP 17 54 03.5 +0.2**
LBNH Lisbon 62.33 53 *e*P **P 17 53 30.8 0.0**
LBNH *e**PP **pP 17 54 05.8 +1.2**
LBNH Lisbon 62.33 53 *e*P **P 17 53 30.4 -0.4**
LBNH *e*pP **pP 17 54 05.0 +0.4**
TKL Tuckaleechee C 62.34 67 *e*P **P 17 53 30.7 -0.3**
TKL *e**PP **pP 17 54 03.7 -1.1**
TKL Tuckaleechee C 62.34 67 *e*P **P 17 53 30.7 -0.3**
TKL *e*pP **pP 17 54 03.6 -1.1**
KSPA Keystone Colle 62.38 57 *e*P **P 17 53 31.1 -0.1**
comp=Z,124nm,0.7s
SVE Sverdlovsk 62.39 330 *d i*P **P 17 53 31.9 +0.9**
SVE pmax pmax
comp=Z,138nm,1.5s
LRAL Lakeview Retre 62.40 71 *e*P **P 17 53 31.3 -0.2**
LRAL *e*pP **pP 17 54 04.3 -0.9**
HNH Hanover 62.55 53 *e*P **P 17 53 31.8 -0.5**
comp=Z,141nm,1.5s
TRY Troy 62.58 55 *e*P **P 17 53 32.3 -0.2**
TRY *e*pP **pP 17 54 05.8 -0.4**
446A Poplarville 62.65 74 P **P 17 53 33.4 +0.2**
baz=317
248A Dixon Mills 62.66 72 P **P 17 53 33.8 +0.6**
baz=317
347A Saraland 62.69 73 P **P 17 53 34.0 +0.7**
baz=317,SNR=6.1
PKME Peaks-Kenny Pk 62.83 50 *e*P **P 17 53 33.6 -0.5**
comp=Z,37nm,0.9s
PKME *e*pP **pP 17 54 08.0 +0.1**
N59A State Game Lan 62.84 58 P **P 17 53 34.2 -0.1**
baz=317,SNR=47
546A Slidell 62.85 75 P **P 17 53 34.6 +0.2**
baz=317
645A Chauvin 62.90 76 P **P 17 53 35.6 +0.8**
baz=317
348A Jackson 63.06 73 P **P 17 53 37.0 +1.2**
baz=317
447A Lucedale 63.07 74 P **P 17 53 36.6 +0.7**
baz=317
BLA Blacksburg 63.08 63 *e*P **P 17 53 36.5 +0.6**
BLA pmax pmax
comp=Z,103nm,0.8s
BLA Blacksburg 63.08 63 *e*P **P 17 53 36.5 +0.6**
comp=Z,103nm,0.8s
MVL Millersville 63.21 59 *e*P **P 17 53 37.1 +0.4**
comp=Z,74nm,0.7s
646A Port Sulphur 63.26 76 P **P 17 53 38.2 +1.0**
baz=317
LUPA Lehigh Univers 63.28 58 *e*P **P 17 53 37.7 +0.6**
comp=Z,292nm,0.6s
VWCC Virginia Weste 63.29 63 *e*P **P 17 53 36.9 -0.4**
VWCC *e*pP **pP 17 54 10.3 -0.8**
ODNJ Ogdensburg 63.32 57 *e*P **P 17 53 37.1 -0.2**
comp=Z,114nm,0.8s
ODNJ *e*pP **pP 17 54 11.3 0.0**
ARU Arti 63.35 331 *c i*P **P 17 53 37.6 +0.3**
ARU *PP **pP 17 54 11.5 +0.3**
ARU 17 55 56.1
ARU S **S 18 02 00.3 +2.4**
ARU 18 03 13.5
ARU SS **SS 18 06 08.3 +2.3**
ARU pmax pmax
comp=Z,192nm,1.7s
ARU Arti 63.35 331 *e*P **P 17 53 37.9 +0.5**
comp=Z,101nm,1.0s
ARU *e*pP **pP 17 54 11.4 +0.3**
SDMD Soldier's Deli 63.39 59 *e*P **P 17 53 37.9 0.0**
comp=Z,75nm,0.9s
SDMD *e*pP **pP 17 54 11.5 -0.3**
448A Bay Minette 63.43 73 P **P 17 53 38.4 +0.1**
baz=317
GYA Guiyang 63.57 280 ⇑ *i*P **P 17 53 39.9 +0.5**
GYA pP PcP 17 54 17.0 +2.4
GYA PP **PP 17 56 04.8 +4.2**
GYA ScP 17 58 02.6
GYA S **S 18 02 00.3 -1.5**
GYA sS sS 18 03 02.8 +2.5
GYA SKS **SKSac 18 03 15.0 -4.1**
GYA SS **SS 18 06 11.8 +0.6**
GYA pmax pmax
comp=Z,470nm,1.1s
GYA pmax pmax
comp=Z,610nm,6.8s
GYA LR LR
comp=Z,860nm,19.6s
GYA LR LR
comp=Z,750nm,20.0s
GYA LR LR
comp=Z,820nm,19.8s
BRNJ Basking Ridge 63.63 57 *e*P **P 17 53 39.6 +0.2**
comp=Z,239nm,0.7s
RABL Rabaul 63.64 219 *e*P **P 17 53 39.3 -0.5**
comp=Z,20nm,0.6s
MANU Manus Island 63.66 225 *e*P **P 17 53 40.0 +0.1**
comp=Z,49nm,1.1s
PAL Palisades 63.73 56 *e*P **P 17 53 40.3 +0.2**
PAL *e**PP **pP 17 54 14.4 +0.4**
PAL pmax pmax
comp=Z,163nm,0.9s
PAL Palisades 63.73 56 *e*P **P 17 53 40.3 +0.2**
comp=Z,162nm,0.9s
PAL *e*pP **pP 17 54 14.4 +0.4**
PSUB Penn St. - Bra 63.73 58 *e*P **P 17 53 40.1 0.0**
comp=Z,96nm,1.3s
PSUB *e*pP **pP 17 54 14.3 +0.3**
CPNY Central Park 63.86 57 *e*P **P 17 53 41.1 +0.2**
comp=Z,152nm,0.8s
CPNY *e*pP **pP 17 54 15.1 +0.3**

CBN Corbin Frederi 63.99 61 *e*P **P 17 53 42.5 +0.6**
comp=Z,123nm,0.6s
WES Weston 64.00 54 *e*P **P 17 53 41.8 0.0**
WES *e**PP **pP 17 54 15.3 -0.4**
WES Weston 64.00 54 *e*P **P 17 53 41.8 0.0**
WES *e*pP **pP 17 54 15.3 -0.4**
KMSC Kings Mountain 64.08 66 P **P 17 53 42.5 0.0**
baz=317,SNR=10
KMSC Kings Mountain 64.08 66 *e*P **P 17 53 42.5 0.0**
KMSC *e*pP **pP 17 54 15.5 -0.9**
GOGA Godfrey 64.15 68 *e*P **P 17 53 43.0 0.0**
GOGA *e* 17 54 16.6
GOGA Godfrey 64.15 68 *e*P **P 17 53 42.6 -0.3**
GOGA *e*pP **PcP 17 54 15.8 -0.9**
BRYW Bryant College 64.24 54 *e*P **P 17 53 43.1 -0.4**
BRYW *e*pP **pP 17 54 17.6 +0.2**
URVA University of 64.37 61 *e*P **P 17 53 44.3 0.0**
URVA *e*pP **PcP 17 54 17.9 +0.3**
LMN Caledonia Moun 64.45 47 *e*P **P 17 53 44.6 -0.1**
comp=Z,62nm,0.8s
LMN *e*PcP **pP 17 54 20.9 +2.2**
JSC Jenkinsville 64.75 66 *e*P **P 17 53 47.5 +0.7**
JSC pmax pmax
comp=Z,108nm,1.3s
JSC Jenkinsville 64.75 66 *e*P **P 17 53 47.5 +0.7**
comp=Z,108nm,1.3s
DRLN Deer Lake 64.89 41 *e*P **P 17 53 47.6 +0.1**
comp=Z,41nm,0.8s
FIA1 FINESS Array S 65.32 350 *e*pP pP 17 54 20.9 -3.2
comp=Z,48nm,0.9s
FIA0 FINESS Array S 65.32 350 *e*P **P 17 53 50.1 0.0**
FIA0 FINESS Array S 65.32 350 *e*P **P 17 53 50.1 0.0**
FINES FINESS Array B 65.32 350 P **P 17 53 50.1 0.0**
comp=Z,16nm,0.8s,baz=31,slow=7.8,SNR=32
FINES LR LR 18 26 04.0
comp=Z,143nm,19.7s,baz=8.0,slow=39
FINES FINESS Array B 65.32 350 *i* P **P 17 53 49.9 -0.2**
FINES pmax pmax
comp=Z,16nm,0.8s
HNR Honiara 65.86 209 P **P 17 53 54.5 +0.4**
comp=Z,39nm,0.9s,baz=42,slow=17,SNR=2.4
AFI Afiamalu 66.19 178 P **P 17 53 56.9 +0.7**
comp=Z,37nm,0.8s,baz=213,slow=6.6,SNR=4.6
AFI Afiamalu 66.19 178 *e*P **P 17 53 56.9 +0.7**
AFI pmax pmax
comp=Z,58nm,1.0s
AFI Afiamalu 66.19 178 *e*P **P 17 53 56.9 +0.7**
comp=Z,58nm,1.0s
NHSC New Hope 66.23 66 *e*P **P 17 53 57.5 +1.2**
NHSC *e*pP **pP 17 54 29.8 -0.7**
CSU Charleston Sou 66.38 66 *e*P **P 17 53 58.7 +1.4**
CSU *e*pP **pP 17 54 31.8 +0.4**
NC204 NORSAR Array S 66.48 358 *e*P **P 17 53 58.1 +0.5**
NC204 *e*pP **pP 17 54 32.2 +0.5**
NC303 NORSAR Array S 66.52 358 *e*P **P 17 53 57.9 +0.2**
NC303 *e*PcP **PcP 17 54 25.6 -0.5**
NC405 NORSAR Array S 66.62 357 *e*P **P 17 53 58.6 +0.1**
NC405 *e*PcP **PcP 17 54 26.0 -0.6**
NC405 *e*pP **pP 17 54 33.8 +1.2**
NB201 NORSAR Array S 66.70 358 *e*P **P 17 53 58.9 0.0**
NB201 *e*pP **pP 17 54 33.3 +0.2**
NB2 NORSAR Subarra 66.71 358 P **P 17 53 59.1 +0.1**
comp=Z,18nm,0.8s,baz=3.3,slow=6.5
NB2 NORSAR Subarra 66.71 358 P **P 17 53 59.1 +0.1**
baz=3.3,slow=6.5
NB200 NORSAR Array S 66.71 358 *e*P **P 17 53 59.2 +0.2**
NB200 *e*pP **pP 17 54 33.4 +0.2**
NOA NORSAR Array B 66.71 358 P **P 17 53 59.3 +0.2**
comp=Z,14nm,0.7s,baz=2.3,slow=6.3,SNR=33
NOA pP **pP 17 54 33.4 +0.2**
comp=Z,12nm,0.8s,baz=2.7,slow=6.3,SNR=6.3
NOA LR LR 18 24 52.4
comp=Z,59nm,19.2s,baz=5.0,slow=37
KMI Kunming 66.92 281 P **P 17 54 02.1 +1.0**
KMI pP pP 17 54 38.4 +3.1
KMI sP sP 17 54 53.0 +2.4
KMI S **S 18 02 43.5 +0.6**
KMI sS sS 18 03 38.6 -3.3
KMI pmax pmax
comp=Z,370nm,1.0s
KMI pmax pmax
comp=Z,810nm,3.3s
KMI LR LR
comp=Z,130nm,16.2s
KMI LR LR
comp=Z,180nm,16.9s
TLIG Tlapa 66.95 91 *e*P **P 17 54 02.0 +0.7**
comp=Z,60nm,1.1s
DAV Davao City (W) 67.11 251 LR LR 18 18 15.9
comp=Z,62nm,20.6s,baz=288,slow=31
JAY Jayapura 67.11 231 P **P 17 54 04.3 +2.1**
comp=Z,25nm,1.5s
QIZ Qiongzhong 67.20 272 P **P 17 54 04.3 +1.6**
QIZ pP **pP 17 54 37.1 +0.2**
QIZ S **S 18 02 47.1 +1.1**
QIZ sS **SKKSac 18 03 46.6 0.0**
QIZ pmax pmax
comp=Z,180nm,1.3s
QIZ pmax pmax
comp=Z,260nm,6.7s
QIZ Qiongzhong 67.20 272 *e*P **P 17 54 04.0 +1.2**
comp=Z,250nm,1.2s
TAOE Nuku Hiva Isla 67.38 144 *e*P **P 17 54 03.7 -0.2**
comp=Z,220nm,0.8s
TAOE Nuku Hiva Isla 67.38 144 *e*T T 19 06 58.6
comp=Z,193nm,0.3s
TAOE Nuku Hiva Isla 67.38 144 *e*P **P 17 54 03.0 -0.8**
comp=Z,136nm,1.0s
GENI Genyem 67.44 232 P **P 17 54 05.4 +1.3**
comp=Z,103nm,0.9s
HFS Hagfors 67.54 356 LR LR 18 24 46.1
comp=Z,73nm,18.9s,baz=358,slow=37
TKM2 Tokmak 2 67.96 312 *e*P **P 17 54 08.2 +0.8**
TKM2 Tokmak 2 67.96 312 *e*P **P 17 54 08.5 +1.1**
comp=Z,165nm,1.0s
VSU Vasula 68.17 349 *c i*P **P 17 54 08.3 +0.2**
VSU pmax pmax
comp=Z,164nm,0.8s
FRU Bishkek 68.47 313 ⇑ *i*P **P 17 54 10.5 +0.2**
FRU *e* 17 54 35.0
FRU *e* 18 03 00.0
FRU pmax pmax
comp=Z,550nm,1.8s
AAK Ala-Archa 68.68 313 *c i*P **P 17 54 12.8 +1.0**
AAK pmax pmax
comp=Z,585nm,0.9s
AAK Ala-Archa 68.68 313 *e*P **P 17 54 12.5 +0.7**
comp=Z,200nm,0.8s
EKS2 Erkin-Say 68.98 313 *e*P **P 17 54 14.7 +1.1**
EKS2 pmax pmax
comp=Z,181nm,0.8s
EKS2 Erkin-Say 68.98 313 *e*P **P 17 54 14.7 +1.1**
comp=Z,181nm,0.8s
BIGH Upper Bighouse 68.98 6 *e*P **P 17 54 13.6 +0.4**
BIGH AMB AMB 17 54 13.6
comp=Z,430nm,1.4s
ABKAR Akbulak array 69.00 326 *e*P **P 17 54 14.2 +0.7**
ABKAR *e*PcP **PcP 17 54 36.9 +0.2**
ABKAR *e*pP **pP 17 54 47.6 -0.2**
MOS Moscow 69.11 342 *e*P **P 17 54 12.6 -1.4**
MOS *e* 17 54 48.3
MOS pmax pmax
comp=Z,131nm,1.7s
MOS pmax pmax
comp=Z,300nm,1.9s
OBN Obninsk 69.90 342 *c i*P **P 17 54 18.7 -0.2**
OBN *e* 17 54 40.6
OBN *e**PP **pP 17 54 54.0 +0.7**
OBN *e* 17 56 58.8
OBN *i* S **SKiKP 18 03 42.2 -8.2**
OBN pmax pmax
comp=Z,115nm,1.4s
KKAR Karatay Array 70.04 316 *e*P **P 17 54 20.4 +0.4**
KKAR *e**PP **pP 17 54 55.0 +0.5**
KKAR Karatay Array 70.04 316 *e*P **P 17 54 20.4 +0.4**
KKAR *e*pP **pP 17 54 55.0 +0.5**
LSA Lhasa 70.22 293 P **P 17 54 23.9 +2.0**
LSA Lhasa 70.22 293 *e*P **P 17 54 23.3 +1.4**
LSA pmax pmax
comp=Z,339nm,0.8s
LSA Lhasa 70.22 293 *e*P **P 17 54 23.2 +1.4**
comp=Z,339nm,0.8s
PMG Port Moresby 70.38 222 P **P 17 54 22.6 +0.3**
comp=Z,26nm,0.9s,baz=355,slow=6.2

PMG LR LR 18 18 22.2
comp=Z,62nm,21.1s,baz=318,slow=30
PMG Port Moresby 70.38 222 *c i*P **P 17 54 22.7 +0.5**
PMG pmax pmax
comp=Z,185nm,1.1s
PMG Port Moresby 70.38 222 *e*P **P 17 54 22.8 +0.5**
comp=Z,42nm,1.0s
MSVF Nonsavu 70.39 189 *e*P **P 17 54 22.9 +0.6**
MSVF pmax pmax
comp=Z,53nm,1.1s
MSVF Nonsavu 70.39 189 *e*P **P 17 54 22.9 +0.6**
comp=Z,53nm,1.1s
KSH Kashi 70.48 310 P **P 17 54 27.3 +4.4**
KSH *e*pP pP 17 55 01.3 +3.9
KSH *e*sP sP 17 55 16.6 +4.0
KSH *e*PP **PP 17 57 07.3 +7.1**
KSH S **S 18 03 27.9 +3.6**
KSH SKS **SKKSac 18 04 11.3 +0.1**
KSH pmax pmax
comp=Z,280nm,1.0s
KSH LR LR
comp=Z,110nm,5.1s
KSH LR LR
comp=Z,200nm,7.1s
KSH LR LR
comp=Z,330nm,9.8s
SWI Sorong 70.48 241 P **P 17 54 23.3 +0.3**
comp=Z,169nm,1.2s,comp=Z,1μm
DRUM Mains of Drumt 70.64 5 *e*P **P 17 54 23.3 0.0**
PMOR Pomariorio Ree 70.75 154 *e*T T 19 11 09.7
comp=Z,19nm,0.2s
VAH Vaihoa 71.05 154 *e*P **P 17 54 26.6 +0.4**
comp=Z,314nm,1.0s
EAB Aberfoyle 71.25 7 *e*P **P 17 54 27.0 0.0**
PGBU Glenifferbraes 71.61 7 *e*P **P 17 54 28.6 -0.6**
LPSR Galich'ya Gora 71.81 340 *e*P **P 17 54 30.6 +0.2**
LPSR pmax pmax
comp=Z,40nm,1.0s
PANO Nakornpanom 71.83 275 P **P 17 54 31.9 +0.8**
comp=Z,362nm,1.0s,comp=Z,12μm
MICGM Minsk 71.89 347 *e*P **P 17 54 30.0 -0.9**
MNK Minsk 71.89 347 *e*P **P 17 54 30.0 -0.9**
NONG Nongkai 72.02 276 P **P 17 54 32.8 +0.6**
comp=Z,421nm,1.1s,comp=Z,4μm
CRAI Chiangrai 72.04 280 P **P 17 54 33.2 +0.8**
comp=Z,3μm,0.9s,comp=Z,26μm
ESK Eskdalemuir 72.19 6 *e*P **P 17 54 33.0 +0.3**
SKNT Sakolnakorn 72.35 275 P **P 17 54 34.6 +0.4**
comp=Z,798nm,0.9s,comp=Z,7μm
VRH Novokhopyorsk 72.51 338 *e*P **P 17 54 34.4 -0.2**
VRH *e**PP **pP 17 55 10.4 +1.1**
VRH pmax pmax
comp=Z,140nm,1.1s
GAL1 Galloway 72.53 7 *e*P **P 17 54 34.8 +0.1**
UBPT Khong Chiam 72.74 273 P **P 17 54 37.2 +0.7**
comp=Z,407nm,1.2s,comp=Z,4μm
MYLDM Lahad Datu 72.76 256 *e*P **P 17 54 38.6 +2.0**
comp=Z,184nm,1.0s
PPT Papeete 72.78 156 LR LR 18 20 56.5
comp=Z,130nm,20.1s,baz=316,slow=31
PPT2 Papeete2 72.80 156 *e*P **P 17 54 37.3 +0.6**
comp=Z,52nm,1.1s
PPT2 *e*S **S 18 03 52.2 +1.2**
comp=Z,213nm,30.0s
TIAR Tiarei 72.83 156 *e*P **P 17 54 37.3 +0.5**
comp=Z,68nm,1.0s
TIAR Tiarei 72.83 156 *e*T T 19 13 44.9
comp=Z,2.9nm,0.3s
PAE Paea 72.87 156 *e*P **P 17 54 37.2 +0.2**
comp=Z,24nm,1.4s
SUW Suwalki 72.93 350 *e*P **P 17 54 36.7 -0.4**
SUW Suwalki 72.93 350 *e*P **P 17 54 36.7 -0.4**
SHL Shillong 72.96 290 *i* PCS **P 17 54 39.0 +1.0**
GMM Mts of Mourne 73.06 8 *e*P **P 17 54 37.5 -0.3**
VSR Storozhevoye 73.06 339 *e*P **P 17 54 38.1 +0.2**
VSR *e**PP **pP 17 55 13.8 +1.2**
VSR pmax pmax
comp=Z,130nm,1.2s
KKM Kota Kinabalu 73.43 258 *e*P **P 17 54 41.7 +1.0**
comp=Z,191nm,1.2s
KHON Khomkaen 73.54 275 P **P 17 54 42.0 +0.8**
comp=Z,460nm,0.9s,comp=Z,3μm
LOEI Loei 73.59 277 P **P 17 54 40.1 -1.4**
comp=Z,257nm,1.1s
LAMP Lampang 73.80 279 P **P 17 54 43.5 +0.8**
comp=Z,81nm,1.0s,comp=Z,635nm
UTTA Uttaradit 73.84 278 P **P 17 54 43.5 +0.6**
comp=Z,236nm,0.8s,comp=Z,2μm
CHTO Chiang Mai 73.98 280 P **P 17 54 44.1 +0.3**
comp=Z,1μm,1.2s,comp=Z,11μm
CHTO Chiang Mai 73.98 280 *e*P **P 17 54 44.2 +0.4**
CHTO pmax pmax
comp=Z,270nm,1.2s
CHTO Chiang Mai 73.98 280 P **P 17 54 44.7 +0.9**
SNR=72
CHTO Chiang Mai 73.98 280 P **P 17 54 44.7 +0.9**
SNR=72
CHTO Chiang Mai 73.98 280 *e*P **P 17 54 44.2 +0.4**
comp=Z,270nm,1.2s
CM31 Chiang Mai Arr 74.26 280 *e*P **P 17 54 46.4 +1.0**
CMAR Chiang Mai Arr 74.26 280 P **P 17 54 46.5 +1.1**
comp=Z,232nm,0.8s,baz=26,slow=6.9,SNR=1172
CMAR LR LR 18 31 14.7
comp=Z,45nm,18.1s,baz=53,slow=39
CM01 Chiang Mai Arr 74.28 280 *e*P **P 17 54 46.5 +1.0**
PBKT Sadao Pong 74.49 277 P **P 17 54 47.2 +0.5**
comp=Z,312nm,0.8s,comp=Z,3μm
GUN Gumba 74.53 296 *e*P **P 17 54 48.0 +0.7**
comp=Z,993nm,1.1s
SUKH Sukhothai 74.60 279 P **P 17 54 48.2 +0.9**
comp=Z,77nm,1.0s,comp=Z,644nm
FOEL Foel Wylfa 74.61 6 AMB AMB 17 54 47.2
comp=Z,90nm,1.9s
FOEL *e*P **P 17 54 47.4 +0.5**
CWF Charnwood Fore 74.87 5 *e*P **P 17 54 49.1 +0.8**
comp=Z,30nm,1.0s
KKN Kakani 74.96 296 *e*P **P 17 54 50.0 +0.4**
comp=Z,229nm,0.8s
PKIN Phulchoki 75.06 296 *e*P **P 17 54 50.6 +0.4**
comp=Z,133nm,0.9s
BBSR BB Station 75.08 56 *e*P **P 17 54 50.1 +0.2**
comp=Z,83nm,1.0s
GKN Gorkha 75.14 297 *e*P **P 17 54 51.0 +0.4**
comp=Z,580nm,0.9s
DMN Daman 75.19 296 *e*P **P 17 54 51.7 +0.7**
comp=Z,663nm,1.3s
LUWI Luwuk 75.31 248 *e*P **P 17 54 50.6 -0.8**
comp=Z,250nm,1.0s
AKASG Malin Array Be 75.39 345 P **P 17 54 50.8 -0.6**
comp=Z,9.1nm,0.6s,baz=17,slow=6.0,SNR=60
AKASG LR LR 18 31 02.2
comp=Z,171nm,21.8s,baz=25,slow=38
AKBB Malin Array Si 75.39 345 *e*P **P 17 54 50.7 -0.7**
AKBB pmax pmax
comp=Z,117nm,1.8s
AKBB Malin Array Si 75.39 345 *e*P **P 17 54 50.7 -0.7**
comp=Z,117nm,1.8s
KIEV Kiev 75.40 345 *c i*P **P 17 54 50.7 -0.7**
KIEV pmax pmax
comp=Z,63nm,1.7s
KIEV Kiev 75.40 345 *e*P **P 17 54 50.5 -0.9**
comp=Z,60nm,1.4s
AK11 Malin Array Si 75.42 345 *e*P **P 17 54 50.4 -1.1**
MCH1 Michaelchurch 75.51 6 *e*P **P 17 54 51.9 -0.1**
MCH1 AMB AMB 17 54 54.1
comp=Z,47nm,1.3s
STRD Stroud 75.78 6 *e*P **P 17 54 53.9 +0.3**
STRD AMB AMB 17 54 56.3
comp=Z,145nm,2.0s
SRAK Srakaew 75.81 275 P **P 17 54 53.2 -1.1**
comp=Z,3μm,0.9s,comp=Z,19μm
JOSI Joshimath 75.83 302 *e*P **P 17 54 55.3 +0.8**
KOLN Koldanda 75.89 297 *e*P **P 17 54 55.4 +0.5**
comp=Z,331nm,0.9s
PYUN Piuthan 75.96 298 *e*P **P 17 54 55.9 +0.6**
comp=Z,897nm,1.0s
THN Thein Dam 76.28 306 *e*P **P 17 54 55.8 -0.9**
DZM Mont Dzumac 76.38 199 *e*P **P 17 54 57.3 0.0**
comp=Z,123nm,1.1s
DZM *e*pP **pP 17 55 31.0 -1.4**
comp=Z,113nm,1.2s
DZM *e*S **S 18 04 32.2 +1.5**
comp=Z,265nm,27.4s
DZM Mont Dzumac 76.38 199 *e*LR LR 18 18 33.3
comp=Z,400nm,34.0s
DZM Mont Dzumac 76.38 199 *e*P **P 17 54 57.3 0.0**

comp=Z,64nm,1.1s
CLL Collm 76.39 356⇑ *i*P **P 17 54 57.3 +0.3**
comp=Z,168nm,2.0s
CLL *i* PcP **PcP 17 55 08.2 0.0**
CLL *e*pP **pP 17 55 31.0 -1.0**
CLL *i* 17 55 49.2
CLL *e*S **S 18 04 24.0 -6.1**
CLL *e*PS **PnS 18 05 18.0 -8.8**
CLL *e*(SS) 18 10 12.0
CLL *e*SSS SSS 18 13 24.0
CLL *e*SSSS 18 15 24.0
CLL Collm 76.39 356⇑ *i*P **P 17 54 57.3 +0.3**
CLL *i* 17 55 08.2
CLL *e**PP **pP 17 55 31.0 -1.0**
CLL pmax pmax
comp=Z,168nm,2.0s
CLL Collm 76.39 356 *e*P **P 17 54 57.1 +0.1**
comp=Z,21nm,0.7s
SMLA Simla 76.60 304 *e*P **P 17 54 59.0 +0.4**
CHBT CHBT 76.61 273 P **P 17 55 00.0 +1.2**
comp=Z,413nm,1.2s,comp=Z,4µm
KSP Ksiaz 76.67 354 *e*P **P 17 54 59.1 +0.4**
KSP Ksiaz 76.67 354 *e*P **P 17 54 59.1 +0.4**
BRG Berggiesshubel 76.78 355 *i* P **P 17 54 59.8 +0.5**
comp=Z,74nm,1.4s
BRG *e*pP **pP 17 55 34.7 +0.4**
comp=Z,24nm,1.2s
BRG *e*sP **sP 17 55 51.5 +2.1**
comp=Z,18nm,1.0s
BRG *e*PP **PP 17 57 51.3 -1.7**
comp=Z,27nm,2.0s
BRG Berggiesshubel 76.78 355 *i* P **P 17 54 59.8 +0.5**
BRG *e**PP **pP 17 55 34.7 +0.4**
BRG *e**SP **sP 17 55 51.5 +2.1**
BRG *e* 17 57 51.3
BRG pmax pmax
comp=Z,74nm,1.5s
BRG pmax pmax
comp=Z,24nm,1.2s
BRG pmax pmax
comp=N,18nm,1.0s
BRG pmax pmax
comp=Z,27nm,2.0s
LVV L'vov 76.97 349 *e*P **P 17 54 59.7 -0.6**
DYA Yadsworthy 77.00 7 *e*P **P 17 55 00.8 +0.3**
comp=Z,52nm,1.0s
OJC Ojcow 77.02 351 *e*P **P 17 55 00.8 +0.2**
OJC Ojcow 77.02 351 *e*P **P 17 55 00.6 0.0**
OJC Ojcow 77.02 351 *e*P **P 17 55 00.8 +0.2**
comp=Z,76nm,1.5s
UPC Upice 77.03 354⇑ *e*P **P 17 55 01.2 +0.5**
UPC Upice 77.03 354 *e*P **P 17 55 01.2 +0.5**
PVCC Panska Ves 77.09 355⇑ *e*P **P 17 55 01.8 +0.8**
PVCC *e*pP **pP 17 55 38.9 +2.8**
PVCC Panska Ves 77.09 355 *e*P **P 17 55 01.8 +0.8**
PVCC *e**PP **pP 17 55 38.9 +2.8**
DPC Dobruska-Polom 77.16 354 *e*P **P 17 55 02.5 +1.0**
DPC *e*pP **pP 17 55 37.4 +0.9**
DPC *e*sP **sP 17 55 52.5 +0.8**
DPC Dobruska-Polom 77.16 354 *e*P **P 17 55 02.5 +1.0**
DPC *e**PP **pP 17 55 37.4 +0.9**
DPC *e* 17 55 52.5
MEM Membach 77.22 0 P **P 17 55 02.2 +0.5**
comp=Z,20nm,1.6s
MEM AP **pP 17 55 39.4 +2.6**
KHLT Khaolaem Dam 77.30 278 P **P 17 55 03.9 +1.2**
comp=Z,122nm,1.2s,comp=Z,1µm
SNF Seneffe 77.30 2 P **P 17 55 02.8 +0.6**
KWP Kalwaria Pacla 77.31 349 *e*P **P 17 55 02.7 +0.5**
KWP Kalwaria Pacla 77.31 349⇑ *i*P **P 17 55 01.6 -0.6**
KWP Kalwaria Pacla 77.31 349 *e*P **P 17 55 02.7 +0.5**
SRDT SRDT 77.33 277 P **P 17 55 03.5 +0.7**
comp=Z,1µm,1.1s,comp=Z,10µm
PATY Pattaya 77.37 275 P **P 17 55 04.4 +1.3**
comp=Z,150nm,0.9s,comp=Z,1µm
BCLA Clavier 77.41 1 P **P 17 55 03.3 +0.5**
comp=Z,34nm,1.8s
KRLC Kraliky 77.41 353⇑ *e*P **P 17 55 03.6 +0.8**
KRLC *e*PCP **PcP 17 55 09.5 -3.2**
KRLC *e*pP **pP 17 55 38.7 +0.8**
KRLC Kraliky 77.41 353 *e*P **P 17 55 03.6 +0.8**
KRLC *e* 17 55 09.5
KRLC *e**PP **pP 17 55 38.7 +0.8**
NKC Novy Kostel 77.49 356⇑ *e*P **P 17 55 04.2 +0.9**
NKC *e*pP **pP 17 55 40.3 +2.0**
NKC *e*sP **sP 17 55 56.2 +2.7**
NKC Novy Kostel 77.49 356 *e*P **P 17 55 04.2 +0.9**
NKC *e**PP **pP 17 55 40.3 +2.0**
NKC *e* 17 55 56.2
OKC Ostrava-Krasne 77.54 352⇑ *e*P **P 17 55 04.3 +0.8**
OKC *e*pP **pP 17 55 41.8 +3.2**
OKC Ostrava-Krasne 77.54 352 *e*P **P 17 55 04.3 +0.8**
OKC *e**PP **pP 17 55 41.8 +3.2**
PRU Pruhonice 77.63 355⇑ *e*P **P 17 55 04.5 +0.5**
PRU *e*pP **pP 17 55 41.7 +2.6**
PRU *e*sP **sP 17 55 56.9 +2.6**
PRU Pruhonice 77.63 355 *e*P **P 17 55 04.5 +0.5**
PRU *e**PP **pP 17 55 41.7 +2.6**
PRU *e* 17 55 56.9
MORC Moravsky Berou 77.65 353⇑ *i*P **P 17 55 04.6 +0.4**
MORC Moravsky Berou 77.65 353 *e*P **P 17 55 04.3 +0.1**
MORC *e**PP **pP 17 55 40.0 +0.7**
MORC pmax pmax
comp=Z,414nm,1.7s
MORC Moravsky Berou 77.65 353 *e*P **P 17 55 04.3 +0.1**
comp=Z,414nm,1.7s
MORC *e*pP **pP 17 55 40.0 +0.7**
STHS Stebnicka Huta 77.67 350 *e*P **P 17 55 05.2 +0.9**
STHS pmax pmax
comp=Z,55nm,1.8s
STHS Stebnicka Huta 77.67 350 *e*P **P 17 55 05.2 +0.9**
GOPC GO Pecny, Ondr 77.69 355 *e*P **P 17 55 05.0 +0.6**
GOPC *e*pP **pP 17 55 42.2 +2.7**
GOPC GO Pecny, Ondr 77.69 355 *e*P **P 17 55 05.0 +0.6**
GOPC *e**PP **pP 17 55 42.2 +2.7**
KKR Kurukshetra 77.72 303 *e*P **P 17 55 05.3 +0.5**
DOU Dourbes 77.72 1 P **P 17 55 05.2 +0.7**
comp=Z,25nm,1.9s
DOU AP **pP 17 55 41.5 +1.9**
KBL Kabul 77.73 312 *e*P **P 17 55 04.4 -0.8**
KBL pmax pmax
comp=Z,194nm,1.0s
KBL Kabul 77.73 312 *e*P **P 17 55 04.4 -0.8**
comp=Z,194nm,1.0s
NIE Niedzica 77.77 351 *e*P **P 17 55 05.3 +0.5**
NIE Niedzica 77.77 351 *e*P **P 17 55 05.3 +0.5**
GOF Gofitskoye 77.90 335⇑ *i*P **P 17 55 06.5 +0.9**
GOF *e*S **S 18 04 49.0 +2.3**
GOF pmax pmax
comp=Z,500nm,1.1s
GOF smax smax
comp=E,57nm,1.7s
SORM Soroca 78.02 345⇑ *i*P **P 17 55 05.9 -0.3**
LANS Liptovska Anna 78.11 352 *e*P **P 17 55 07.8 +1.1**
LANS Liptovska Anna 78.11 352 *e*P **P 17 55 07.8 +1.1**
PHET Kaeng Krachan 78.13 276 P **P 17 55 08.6 +1.3**
comp=E,137nm,0.9s,comp=E,1µm
CRVS Cervenica-Dubn 78.16 350 *e*P **P 17 55 07.4 +0.4**
CRVS Cervenica-Dubn 78.16 350 *e*P **P 17 55 07.3 +0.3**
WLF Walferdange 78.17 0 P **P 17 55 08.0 +1.0**
comp=Z,35nm,2.1s
WLF Walferdange 78.17 0 *e*P **P 17 55 07.3 +0.3**
WLF pmax pmax
comp=Z,159nm,2.0s
WLF Walferdange 78.17 0 *e*P **P 17 55 07.3 +0.3**
comp=Z,158nm,2.0s
VRAC Vranov 78.18 353⇓ *i*P **P 17 55 07.8 +0.7**
TREC Trest 78.27 354⇑ *e*P **P 17 55 08.1 +0.5**
TREC Trest 78.27 354 *e*P **P 17 55 08.1 +0.5**
UZH Uzhgorod 78.34 350 *e*P **P 17 55 06.3 -1.6**
UZH *e* 17 55 16.9
UZH *e**PP **pP 17 55 41.9 -1.2**
TBI Tubuai 78.37 158 *e*S **S 18 04 52.5 +0.7**
comp=Z,430nm,27.4s
TBI Tubuai 78.37 158 *e*T T 19 20 40.2
comp=Z,19nm,0.3s
BISR Bishrakh 78.52 302 *e*P **P 17 55 07.4 -1.9**
BISR IAmb IAmb 17 55 08.5
comp=Z,228nm,0.8s
KHC Kasperske Hory 78.54 355⇑ *i*P **P 17 55 10.0 +0.9**
KHC *e*PCP **PcP 17 55 19.4 +1.7**
KHC *e*pP **pP 17 55 47.3 +3.0**
KHC *e*sP **sP 17 56 00.2 +0.8**

KHC Kasperske Hory 78.54 355⇑ *i*P **P 17 55 10.0 +0.9**
KHC *e* 17 55 19.4
KHC *e**PP **pP 17 55 47.3 +3.0**
KHC *e* 17 56 00.2
KHC Kasperske Hory 78.54 355 *e*P **P 17 55 09.7 +0.6**
comp=Z,88nm,1.8s
KHC *e*pP **pP 17 55 47.5 +3.2**
KECS Kecovo 78.67 351 *e*P **P 17 55 10.5 +0.7**
KECS *e* 17 55 19.1
KECS pmax pmax
comp=Z,13nm,1.2s
KECS Kecovo 78.67 351 *e*P **P 17 55 10.5 +0.7**
KECS *e* 17 55 19.1
SBUM Sibu 78.68 259 *e*P **P 17 55 11.4 +1.1**
comp=Z,54nm,0.9s
BHGR Bahadurgarh 78.69 303 *e*P **P 17 55 10.5 +0.3**
TRPA Tarpa 78.81 349⇑ *e*P **P 17 55 11.0 +0.5**
VYHS Vyhne 78.81 352 *e*P **P 17 55 11.0 +0.4**
VYHS pmax pmax
comp=Z,52nm,1.9s
VYHS Vyhne 78.81 352 *e*P **P 17 55 11.0 +0.4**
GEC2 GERESS Array S 78.82 355 *e*P **P 17 55 11.0 +0.3**
GEC2 *e**PP **pP 17 55 48.5 +2.6**
GEC2 pmax pmax
comp=Z,126nm,1.8s
GEC2 GERESS Array S 78.82 355 *e*P **P 17 55 11.0 +0.3**
comp=Z,126nm,1.8s
GEC2 *e*pP **pP 17 55 48.5 +2.6**
GERES GERESS Array B 78.82 355 P **P 17 55 11.0 +0.3**
comp=Z,8.6nm,0.7s,baz=18,slow=4.8,SNR=70
GERES pP **pP 17 55 47.4 +1.6**
comp=Z,5.4nm,0.9s,baz=9.5,slow=4.1,SNR=2.7
GEA0 GERESS Array S 78.82 355 *e*P **P 17 55 10.9 +0.2**
GEA0 *e*pP **pP 17 55 47.3 +1.4**
LANF Langenberg 78.85 359⇑ *e*P **P 17 55 11.5 +0.7**
SMOL Smolenice 78.91 353 *e*P **P 17 55 12.5 +1.4**
SMOL Smolenice 78.91 353 *e*P **P 17 55 12.5 +1.4**
BUR08 Bucovina Ar. S 78.95 347 *e*P **P 17 55 11.6 +0.1**
BUR08 *e*pP **pP 17 55 47.6 +0.9**
BURAR Bucovina Array 78.98 347⇑ *i*P **P 17 55 11.9 +0.3**
KIV Kislovodsk 79.02 334 *i* P **P 17 55 12.7 +0.8**
SNR=27
KIV Kislovodsk 79.02 334 *e*P **P 17 55 12.6 +0.8**
KIV *e**PP **pP 17 55 47.9 +0.8**
KIV *e*S **S 18 05 00.7 +1.9**
KIV *e*SS **SS 18 10 10.4 +4.4**
KIV pmax pmax
comp=Z,127nm,1.1s
KIV pmax pmax
comp=Z,24nm,3.0s
KIV Kislovodsk 79.02 334 *e*P **P 17 55 12.4 +0.5**
comp=Z,100nm,0.9s
STU Stuttgart 79.04 358 *e*P **P 17 55 12.2 +0.4**
STU *e**PP **pP 17 55 49.0 +2.0**
STU pmax pmax
comp=Z,92nm,1.4s
STU Stuttgart 79.04 358 *e*P **P 17 55 12.2 +0.4**
comp=Z,92nm,1.4s
STU *e*pP **pP 17 55 49.0 +2.0**
KIS Kishinev 79.06 345⇑ *i*P **P 17 55 13.0 +1.1**
comp=Z,300nm,1.8s
KIS *e*pP **pP 17 55 49.0 +1.9**
KIS Kishinev 79.06 345 *c i*P **P 17 55 13.0 +1.1**
KIS *e**PP **pP 17 55 49.0 +1.9**
KIS *e* 17 56 02.0
KIS *e* 18 05 18.0
KIS pmax pmax
comp=E,300µm,1.8s
KIS pmax pmax
comp=Z,300nm,2.0s
IAS Iasi 79.06 346⇓ *i*P **P 17 55 12.3 +0.4**
KBZ Khabaz 79.17 334 P **P 17 55 13.6 +1.0**
comp=Z,48nm,0.8s,baz=29,slow=2.0,SNR=87
KBZ LR LR 18 34 44.6
comp=Z,144nm,21.9s,baz=16,slow=39
NCK Nalchik 79.20 334⇑ *i*P **P 17 55 14.0 +1.2**
NCK pmax pmax
comp=Z,217nm,0.8s
PSZ Piszkesteto 79.29 351⇑ *i*P **P 17 55 14.0 +0.7**
PSZ Piszkesteto 79.29 351⇑ *e*SKSac **P 17 55 14.2 +0.9**
PSZ Piszkesteto 79.29 351 *e*P **P 17 55 14.0 +0.7**
PSZ pmax pmax
comp=Z,90nm,1.5s
PSZ Piszkesteto 79.29 351 *e*P **P 17 55 14.0 +0.7**
comp=Z,90nm,1.5s
KUDL Kundal 79.36 303 *e*P **P 17 55 14.3 +0.5**
KUDL IAmb IAmb 17 55 15.4
comp=Z,338nm,0.8s
SPSI Sidrap Palu 79.41 249 P **P 17 55 14.7 +0.5**
comp=Z,38nm,1.0s,comp=Z,424nm
GEYT Alibeck 79.45 321 P **P 17 55 15.0 +0.7**
comp=Z,97nm,1.1s,baz=345,slow=4.9,SNR=114
GEYT PP **PP 17 58 13.0 -2.6**
comp=Z,10nm,0.9s,baz=352,slow=5.8,SNR=4.9
GEYT LR LR 18 33 59.9
comp=Z,137nm,18.9s,baz=60,slow=38
BFO Black Forest 79.50 359 *i* P **P 17 55 15.1 +0.8**
BFO Black Forest 79.50 359 *e*P **P 17 55 14.7 +0.4**
comp=Z,126nm,1.7s
ANN Anapa 79.51 338 *e*P **P 17 55 12.9 -1.5**
ANN *e**PP **pP 17 55 47.8 -1.8**
ANN *e* 17 58 14.3
ANN *e*S **S 18 05 02.7 -1.0**
ANN *e**SS sS 18 05 51.0 -14
ANN pmax pmax
comp=Z,107nm,1.4s
CONA Conrad Observa 79.61 354 *i* P **P 17 55 16.0 +1.0**
comp=Z,52nm,1.4s,SNR=26
ARCR ARCALIA 79.61 348⇓ *i*P **P 17 55 16.2 +1.3**
ECH Echery 79.62 360⇑ *e*P **P 17 55 15.4 +0.4**
NEY Neytrino 79.67 334 *c e*P **P 17 55 16.1 +0.6**
NEY pmax pmax
comp=Z,24nm,1.8s
ZEI Tsey 79.77 333 *e*P **P 17 55 16.5 +0.4**
ZEI *e**PP **pP 17 55 51.8 +0.4**
ZEI *e*S **S 18 05 05.7 -1.4**
ZEI *e* 18 05 44.4
ZEI pmax pmax
comp=Z,157nm,0.8s
MOA Molln 79.78 355 *i* P **P 17 55 16.2 +0.4**
comp=Z,34nm,1.6s,SNR=12
SOP Sopron 79.80 353⇑ *e*SKSac **P 17 55 16.9 +1.0**
TESR Tescani 79.86 346⇓ *i*P **P 17 55 16.4 +0.1**
GUDG Gudauri 79.91 333 P **P 17 55 18.4 +1.5**
MOF Molkenrain 79.98 360⇑ *e*P **P 17 55 17.6 +0.6**
CJR Cluj-Napoca 80.08 348⇓ *i*P **P 17 55 18.3 +0.8**
ONI Oni 80.08 333 P **P 17 55 18.3 +0.6**
ONI Oni 80.08 333 *e*P **P 17 55 18.2 +0.6**
DRGR 80.11 349⇑ *i*P **P 17 55 17.9 +0.2**
SOC Sochi 80.12 336 *c i*P **P 17 55 17.1 -0.6**
SOC *e*PPP PPP 18 00 09.8
SOC *e*S **S 18 05 07.8 -2.4**
SOC pmax pmax
comp=Z,73nm,1.0s
KAPI Kappang 80.28 249 *e*P **P 17 55 19.8 +0.9**
comp=Z,32nm,0.9s
RETA Reutte 80.29 357 *i* P **P 17 55 19.4 +0.8**
comp=Z,35nm,1.2s,SNR=9.9
ARSA Arzberg 80.30 354 *i* P **P 17 55 19.7 +1.0**
comp=Z,49nm,1.5s,SNR=23
CHVG Ch'k'valeri 80.33 334⇑ *i*P **P 17 55 20.2 +1.3**
CHVG Ch'k'valeri 80.33 334 P **P 17 55 19.8 +0.9**
WATA Walderalm 80.41 357 *i* P **P 17 55 20.0 +0.6**
comp=Z,94nm,1.4s,SNR=13
MOTA Moosalm 80.42 357 *i* P **P 17 55 20.0 +0.6**
comp=Z,66nm,1.2s,SNR=21
CTAO Charters Tower 80.44 218 *e*P **P 17 55 20.1 +0.6**
CTAO pmax pmax
comp=Z,36nm,0.9s
CTAO Charters Tower 80.44 218 *e*P **P 17 55 20.1 +0.6**
comp=Z,36nm,0.9s
VRI Vrincioaia 80.48 346⇑ *i*P **P 17 55 20.2 +0.6**
LOMF Lomont 80.48 360⇑ *e*P **P 17 55 20.6 +0.9**
WTTA Wattenberg 80.48 357 *i* P **P 17 55 20.6 +0.8**
comp=Z,68nm,1.4s,SNR=19
PLOR Plostina 80.51 346⇑ *i*P **P 17 55 20.6 +0.8**
DAVA Damuels 80.51 358 *i* P **P 17 55 20.7 +0.7**
comp=Z,38nm,1.5s,SNR=11
TBLG Delisi 80.52 332 P **P 17 55 20.5 +0.6**
TBLG Delisi 80.52 332 *e*P **P 17 55 20.5 +0.6**
DOPR Dopca 80.57 347⇑ *i*P **P 17 55 21.3 +1.2**
KBA Koelnbreinsper 80.60 355 *i* P **P 17 55 21.6 +1.2**
comp=Z,143nm,1.3s,SNR=54
KSM Kuching 80.60 260 *e*P **P 17 55 21.6 +1.0**

comp=Z,172nm,1.0s
MTN Manton Dam 80.71 235 *e*P **P 17 55 21.2 +0.1**
comp=Z,79nm,0.8s
SIRR Siria 80.74 350⇓ *i*P **P 17 55 21.5 +0.5**
FETA Feichten 80.76 357 *i* P **P 17 55 22.2 +1.0**
comp=Z,65nm,1.3s,SNR=19
TLCR 80.82 344⇓ *i*P **P 17 55 22.4 +1.0**
SOKA Soboth 80.90 354 *i* P **P 17 55 22.5 +0.6**
comp=Z,86nm,1.3s,SNR=61
GRER 80.92 346⇑ *i*P **P 17 55 23.4 +1.5**
CFR Carcaliu 80.94 345⇑ *i*P **P 17 55 22.7 +0.7**
PERS Pernice 80.94 354 *i* P **P 17 55 22.8 +0.6**
PERS *i* pP **pP 17 56 01.5 +4.0**
MLR Muntele Rosu 80.96 346⇑ *i*P **P 17 55 23.1 +0.8**
MLR Muntele Rosu 80.96 346 *e*P **P 17 55 23.1 +0.8**
MLR pmax pmax
comp=Z,71nm,1.5s
MLR Muntele Rosu 80.96 346 *e*P **P 17 55 23.1 +0.8**
comp=Z,70nm,1.5s
ABTA Abfaltersbach 80.97 356 *i* P **P 17 55 22.7 +0.4**
comp=Z,59nm,1.4s,SNR=28
DAVOX Davos/Dischmat 81.02 358 LR LR 18 33 15.4
comp=Z,76nm,18.2s,baz=23,slow=37
STKI Sintang 81.02 258 P **P 17 55 23.5 +0.6**
comp=Z,149nm,1.2s,comp=Z,8µm
MYKA Terra Mystica 81.03 355 *i* P **P 17 55 22.9 +0.3**
comp=Z,34nm,1.4s,SNR=13
OBKA Obir 81.10 355 *i* P **P 17 55 23.4 +0.4**
comp=Z,36nm,1.2s,SNR=17
VOIR 81.14 347⇑ *i*P **P 17 55 24.2 +1.0**
AKH Akhalkalaki 81.16 333⇑ *i*P **P 17 55 24.7 +1.1**
AKH Akhalkalaki 81.16 333 P **P 17 55 24.6 +1.0**
AKH Akhalkalaki 81.16 333 *e*P **P 17 55 24.5 +1.0**
FUORN Ofenpass-Fuorn 81.17 358 *e*P **P 17 55 24.4 +0.9**
comp=Z,106nm,1.4s
FUORN *e*pP **pP 17 55 58.4 -0.5**
ISR Istrita 81.24 346⇑ *i*P **P 17 55 24.0 +0.3**
ARR Arges 81.27 347⇓ *i*P **P 17 55 25.1 +1.2**
BGD Bogdanovka 81.27 333 P **P 17 55 25.4 +1.3**
TUE Stuetta 81.34 358 *e*P **P 17 55 24.8 +0.4**
comp=Z,201nm,1.7s
TUE *e*pP **pP 17 55 59.6 -0.2**
BZS Buzias 81.39 350⇑ *i*P **P 17 55 24.5 +0.1**
HARR Harsova 81.44 345⇑ *i*P **P 17 55 25.5 +0.8**
SENIN Lac Senin/Sane 81.47 360 *e*P **P 17 55 25.6 +0.5**
comp=Z,63nm,1.8s
GZR Gura Zlata 81.47 349⇑ *i*P **P 17 55 25.4 +0.4**
RAO Raoul Island 81.55 184 LR LR 18 27 19.9
comp=Z,250nm,20.1s,baz=67,slow=32
TIRR Tirgusor 81.59 345⇑ *i*P **P 17 55 26.3 +0.8**
TIRR Tirgusor 81.59 345 *e*P **P 17 55 26.0 +0.5**
TIRR pmax pmax
comp=Z,60nm,0.8s
TIRR Tirgusor 81.59 345 *e*P **P 17 55 26.0 +0.5**
comp=Z,60nm,0.8s
SOEI Soe 81.68 242 P **P 17 55 26.1 -0.3**
comp=Z,54nm,1.3s
SOEI Soe 81.68 242 *e*P **P 17 55 26.2 -0.3**
comp=Z,77nm,1.2s
SULR 81.71 346⇑ *i*P **P 17 55 27.5 +1.4**
CRES Cresnjev 81.72 354⇑ *i*P **P 17 55 25.8 -0.4**
SURT Suratani 81.72 274 P **P 17 55 27.8 +1.2**
comp=Z,213nm,1.0s,comp=Z,2µm
JAVS Javornik 81.74 355 *i* P **P 17 55 25.8 -0.6**
JAVS *i* pP **pP 17 56 08.1 +6.2**
CVDA Cernavoda 81.78 345⇓ *i*P **P 17 55 27.9 +1.5**
VISS Visnje 81.79 354 *i* P **P 17 55 26.3 -0.2**
VISS *i* pP **pP 17 56 05.7 +3.8**
PLDF La Plantade 81.83 2⇑ *e*P **P 17 55 29.0 +2.2**
BBKI Banjar Baru 81.85 253 P **P 17 55 29.5 +2.3**
comp=Z,45nm,1.6s
GNI Garni 81.98 332 *i* P **P 17 55 29.1 +1.3**
SNR=9.7
GNI Garni 81.98 332 *c i*P **P 17 55 29.3 +1.5**
GNI pmax pmax
comp=Z,369nm,2.0s
GNI Garni 81.98 332 PcP **P 17 55 29.3 +1.5**
SNR=19
GNI Garni 81.98 332 P **P 17 55 29.3 +1.5**
SNR=19
GNI Garni 81.98 332 *e*P **P 17 55 29.1 +1.3**
comp=Z,85nm,1.3s
SKLT Songkhla 82.01 271 P **P 17 55 29.4 +1.3**
comp=Z,287nm,1.2s
MSAB Monastry St. A 82.05 345⇓ *i*P **P 17 55 28.9 +1.0**
TRTT Trang 82.06 272 P **P 17 55 29.3 +0.9**
comp=Z,440nm,1.2s,comp=Z,5µm
BOJS Bojanci 82.06 354 *i* P **P 17 55 28.1 +0.2**
BOJS *i* pP **pP 17 56 06.9 +3.5**
SDDR Presa de Saban 82.17 69 *e*P **P 17 55 28.7 -0.3**
comp=Z,29nm,1.3s
MDVR Moldovita 82.20 349⇑ *i*P **P 17 55 28.8 0.0**
PSN Preselentsi 82.39 344 *i* P **P 17 55 31.0 +1.4**
RKT Rikitea 82.40 145 *e*T T 19 26 02.2
comp=Z,3.6nm,0.3s
SSB Saint Sauveur 82.54 2 *e*P **P 17 55 30.8 +0.3**
SSB pmax pmax
comp=Z,32nm,1.1s
SSB Saint Sauveur 82.54 2 *e*P **P 17 55 30.8 +0.3**
comp=Z,32nm,1.1s
LBL Lubilhac 82.56 3⇑ *e*P **P 17 55 32.7 +2.1**
BLY Banja Luka 82.67 353⇑ *i*P **P 17 55 31.3 +0.2**
BLY Banja Luka 82.67 353 *e*P **P 17 55 30.8 -0.3**
PKDT Phuket 82.84 274 P **P 17 55 33.7 +1.3**
comp=Z,368nm,1.0s,comp=Z,3µm
ZIMR 82.84 347⇓ *i*P **P 17 55 31.8 -0.2**
CHLP Challavanipeta 82.97 291 *e*P **P 17 55 32.6 -0.5**
CHLP IAmb IAmb 17 55 34.4
comp=Z,182nm,1.1s
PRD Provadia 82.98 345 *i* P **P 17 55 34.0 +1.3**
DIVS Divibare 83.06 350 P **P 17 55 33.2 -0.1**
PBKI Pangkalan Bun 83.12 256 P **P 17 55 36.1 +2.3**
comp=Z,354nm,1.1s
SZH Strazhica 83.14 346 *i* P **P 17 55 34.0 +0.4**
JASL Jaisalmer 83.17 306 *e*P **P 17 55 33.8 -0.2**
JASL IAmb IAmb 17 55 35.3
comp=Z,104nm,0.8s
MPEP Malo Peshtene 83.36 348 *i* P **P 17 55 34.4 -0.3**
KULM Kulim 83.47 270 *e*P **P 17 55 36.2 +0.6**
comp=Z,338nm,1.2s
EIDS Eidsvold 83.60 212 *e*P **P 17 55 36.2 +0.2**
EIDS *e*pP **pP 17 56 10.2 -1.4**
VLC Villacollemand 83.62 357 *e*P **P 17 55 36.5 +0.4**
comp=Z,22nm,1.2s
NGP Nagpur 83.65 297 *e*P **P 17 55 36.2 -0.3**
IPM Ipoh 83.87 269 *e*P **P 17 55 38.0 +0.3**
comp=Z,367nm,1.3s
PLE Pljevlja 83.88 351⇑ *i*P **P 17 55 38.0 +0.5**
UPM Unac-Piva 84.06 351⇑ *i*P **P 17 55 38.7 +0.2**
MYKOM Kota Tinggi 84.27 265 *e*P **P 17 55 40.9 +1.2**
comp=Z,198nm,1.5s
IVA Berane 84.29 350⇑ *i*P **P 17 55 39.6 +0.1**
BRY Bratogost 84.39 351 *e*P **P 17 55 39.5 -0.6**
DIM Dimitrovgrad 84.39 346 *i* P **P 17 55 41.3 +1.4**
EDRB Edirne 84.41 345 P **P 17 55 41.0 +1.0**
PLD Plovdiv 84.46 347 *i* P **P 17 55 40.8 +0.5**
NKME Niksic 84.48 351⇑ *i*P **P 17 55 40.1 -0.4**
PLAI Plampang 84.50 248 P **P 17 55 40.1 -0.7**
comp=Z,99nm,1.4s
TPRI Tanjung Pinang 84.54 264 P **P 17 55 43.1 +2.0**
comp=Z,125nm,1.2s
PVY Plav 84.56 350⇑ *i*P **P 17 55 41.1 +0.2**
LARF Larrau 84.56 6⇑ *e*P **P 17 55 42.1 +1.2**
CEME Cevo 84.71 351⇑ *i*P **P 17 55 41.1 -0.5**
VIEF Viey 84.77 5⇑ *e*P **P 17 55 42.7 +0.7**
PDG Podgorica 84.79 351⇑ *i*P **P 17 55 42.0 +0.1**
TTG Podgorica 84.79 351⇑ *i*P **P 17 55 41.8 -0.1**
LRDF Laroque-de-Fa 84.83 3⇑ *e*P **P 17 55 43.3 +1.2**
HCY Herceg Novi 84.84 351⇑ *i*P **P 17 55 42.7 +0.5**
BCIP Isla Barro Col 84.86 82 *e*P **P 17 55 42.4 -0.3**
BCIP *e*pP **pP 17 56 17.4 -1.0**
RESF Ens 84.86 5⇑ *e*P **P 17 55 43.5 +1.0**
RZN Rozhen 84.86 347 *i* P **P 17 55 43.4 +0.8**
KKB Krupnik 84.91 348 *i* P **P 17 55 43.4 +0.8**
TWSI Taliwang, Sumb 84.94 249 P **P 17 55 41.8 -1.2**
comp=Z,40nm,1.1s,comp=Z,2µm
BUM Brajici-Budva 84.95 351⇑ *i*P **P 17 55 42.5 -0.3**
PGAV Gavieira, Arco 84.97 11 *e*P **P 17 55 43.5 +0.5**
comp=Z,72nm,2.0s
SKO Skopje 85.01 349 P **P 17 55 43.7 +0.7**
SKO Skopje 85.01 349 *e*P **P 17 55 43.7 +0.7**
SKO Skopje 85.01 349 *e*P **P 17 55 43.7 +0.7**
CARF Carcanieres 85.03 3⇑ *e*P **P 17 55 43.8 +0.5**
DRME Dracevica, Mon 85.04 351⇑ *i*P **P 17 55 43.3 +0.1**

MMB	**Musomiste**	85.10 347	*i* P		**P**	17 55 44.7 +1.1
BR101	**Keskin Array S**	85.19 340	*e*P		**P**	17 55 44.6 +0.5
BR101			*e*PKKPbc		**PKKPbc**	18 13 47.1 +0.5
BR131	**Keskin Array S**	85.19 340	*e*P		**P**	17 55 44.1 0.0
BR131			*ep*P		**pP**	17 56 19.9 0.0
BRTR	**Keskin Array B**	85.19 340	P		**P**	17 55 44.6 +0.5
	comp=Z,53nm,0.9s,baz=49,slow=2.5,SNR=229					
BRTR			PKKPbc		**PKKPbc**	18 13 47.1 +0.5
	comp=Z,0.7nm,0.7s,baz=174,slow=4.7,SNR=5.0					
BRTR			LR	LR		18 40 11.7
	comp=Z,65nm,19.7s,baz=15,slow=40					
ANTO	**Ankara**	85.22 340	*e*P		**P**	17 55 45.4 +1.1
ANTO			pmax	pmax		
	comp=Z,102nm,1.1s					
ANTO	**Ankara**	85.22 340	*e*P		**P**	17 55 45.4 +1.1
	comp=Z,102nm,1.1s					
LRS	**Lares**	85.23 66	*e*P		**P**	17 55 44.9 +0.4
LRS			*ep*P		**pP**	17 56 19.8 -0.4
ULC	**Ulcinj**	85.25 351	⇑*i*P		**P**	17 55 44.0 -0.3
BR231	**Keskin MP Arra**	85.25 340	*e*P		**P**	17 55 44.7 +0.3
BR231			*ep*P		**pP**	17 56 21.1 +1.0
WRAB	**Tennant Creek**	85.29 228	*de*P		**P**	17 55 43.9 -0.7
WRAB			pmax	pmax		
	comp=Z,104nm,1.2s					
WRAB	**Tennant Creek**	85.29 228	*e*P		**P**	17 55 44.0 -0.5
	comp=Z,45nm,1.2s					
WB2	**Warramunga Arr**	85.30 228	*e*P		**P**	17 55 44.4 -0.2
	comp=Z,44nm,1.1s					
WR1	**Warramunga Arr**	85.30 228	*e*P		**P**	17 55 44.4 -0.3
	comp=Z,48nm,1.1s					
WR1			*ep*P		**pP**	17 56 18.9 -1.5
WR1			*e*PKKPbc		**PKKPbc**	18 13 48.6 +1.2
WRA	**Warramunga Arr**	85.30 228	P		**P**	17 55 44.4 -0.3
	comp=Z,18nm,0.9s,baz=38,slow=6.1,SNR=61					
WRA			pP		**pP**	17 56 18.9 -1.5
	comp=Z,5.6nm,0.7s,baz=35,slow=5.7,SNR=3.1					
WRA			PKKPbc		**PKKPbc**	18 13 48.6 +1.2
	comp=Z,0.6nm,0.6s,baz=223,slow=2.2,SNR=5.0					
PBRG	**Braganca**	85.30 10	*e*P		**P**	17 55 45.0 +0.4
	comp=Z,63nm,1.4s					
AQU	**L'Aquila**	85.31 355	*e*P		**P**	17 55 45.6 +1.0
AQU	**L'Aquila**	85.31 355	*e*P		**P**	17 55 45.5 +1.0
NVR	**Nevrokopi**	85.32 347	P		**P**	17 55 45.5 +0.9
PVM	**Polavaram**	85.36 292	*e*P		**P**	17 55 44.0 -1.1
PVM			IAmb	IAmb		17 55 46.0
	comp=Z,168nm,0.7s					
RPR	**Rampur**	85.36 295	*e*P		**P**	17 55 44.0 -1.1
RPR			IAmb	IAmb		17 55 45.9
	comp=Z,129nm,0.9s					
ALN	**Alexandroupoli**	85.44 345	P		**P**	17 55 45.7 +0.5
VAY	**Valandovo**	85.51 348	P		**P**	17 55 46.5 +1.0
KAVA	**Kavala**	85.57 347	P		**P**	17 55 46.5 +0.7
SRS	**Serrai**	85.58 347	P		**P**	17 55 46.5 +0.6
ENEZ	**Enez**	85.58 345	P		**P**	17 55 46.5 +0.6
POLO	**Lamas de Olo**	85.61 11	*e*P		**P**	17 55 46.5 +0.3
	comp=Z,21nm,1.3s					
KNT	**Kendrikon**	85.63 348	P		**P**	17 55 47.1 +0.9
PVRL	**Vila Real**	85.72 11	*e*P		**P**	17 55 47.2 +0.6
	comp=Z,60nm,1.6s					
SJG	**San Juan**	85.76 66	*e*P		**P**	17 55 46.9 -0.2
SJG			pmax	pmax		
	comp=Z,19nm,0.6s					
SJG	**San Juan**	85.76 66	*e*P		**P**	17 55 46.9 -0.2
	comp=Z,19nm,0.6s					
LHMI	**Lhok Sumawe**	85.77 273	P		**P**	17 55 49.1 +1.9
	comp=Z,791nm,1.2s,comp=Z,8μm					
LHMI	**Lhok Sumawe**	85.77 273	*e*P		**P**	17 55 48.8 +1.5
	comp=Z,914nm,1.1s					
CBYP	**Canovanas**	85.79 65	*e*P		**P**	17 55 47.3 0.0
	comp=Z,21nm,0.7s					
TIR	**Tirane**	85.80 350	⇑*i*P		**P**	17 55 46.9 0.0
TIR	**Tirane**	85.80 350	*e*P		**P**	17 55 47.0 0.0
TIR			pmax	pmax		
	comp=Z,166nm,1.4s					
TIR	**Tirane**	85.80 350	*e*P		**P**	17 55 47.0 0.0
	comp=Z,166nm,1.4s					
SRSP	**Sriramsagar**	85.83 296	*e*P		**P**	17 55 45.7 -1.8
SRSP			IAmb	IAmb		17 55 47.6
	comp=Z,102nm,0.9s					
GRG	**Griva**	85.89 348	P		**P**	17 55 48.3 +0.8
GRG	**Griva**	85.89 348	*e*P		**P**	17 55 48.3 +0.8
GRG	**Griva**	85.89 348	*e*P		**P**	17 55 48.3 +0.8
HUMP	**Col San Antoni**	85.90 65	*e*P		**P**	17 55 47.9 +0.1
	comp=Z,14nm,0.8s					
HUMP			*ep*P		**pP**	17 56 23.4 -0.1
SOH	**Sokhos**	85.90 347	P		**P**	17 55 47.9 +0.3
MVO	**Moncorvo**	85.91 10	*e*P		**P**	17 55 47.9 +0.3
	comp=Z,69nm,1.1s					
SMTH	**Samothraki Isl**	85.94 346	P		**P**	17 55 47.5 -0.2
PPBI	**Pangkal Pinang**	86.00 261	P		**P**	17 55 48.9 +0.6
	comp=Z,74nm,1.4s,comp=Z,1μmcomp=Z,48μm					
MTP	**Monte Pirata**	86.10 65	*e*P		**P**	17 55 49.3 +0.5
	comp=Z,54nm,0.8s					
TSI	**Tuntungan**	86.14 271	P		**P**	17 55 49.5 +0.5
	comp=Z,665nm,1.1s,comp=Z,6μm					
FNA	**Florina**	86.19 349	P		**P**	17 55 49.0 0.0
STVI	**Saint Thomas**	86.23 65	*e*P		**P**	17 55 49.6 +0.2
	comp=Z,30nm,0.7s					
OUR	**Ouranopolis**	86.30 347	P		**P**	17 55 49.7 +0.3
PLG	**Polygyros**	86.33 347	P		**P**	17 55 49.6 -0.1
PSI	**Prapat**	86.47 270	*e*P		**P**	17 55 51.8 +1.0
PSI			pmax	pmax		
	comp=Z,852nm,1.1s					
PSI	**Prapat**	86.47 270	*e*P		**P**	17 55 51.8 +1.0
	comp=Z,852nm,1.1s					
LIA	**Limnos Island**	86.55 346	P		**P**	17 55 51.1 +0.4
NEST	**Nestorio**	86.59 349	P		**P**	17 55 51.2 +0.2
MTE	**Manteigas**	86.60 11	*e*P		**P**	17 55 51.2 +0.2
	comp=Z,57nm,1.2s					
MTE	**Manteigas**	86.60 11	*e*P		**P**	17 55 50.8 -0.2
	comp=Z,37nm,1.0s					
KCSI	**Kotacane, Aceh**	86.61 271	P		**P**	17 55 51.2 -0.1
	comp=Z,100nm,1.1s,comp=Z,5μm					
KZN	**Kozani**	86.61 349	P		**P**	17 55 51.1 0.0
GDZ	**Gediz**	86.63 342	*i* S		**SKSac**	18 05 56.2 -8.4
LIT	**Litokhoron**	86.72 348	P		**P**	17 55 51.4 -0.2
PAIG	**Paliouri**	86.74 347	P		**P**	17 55 51.2 -0.4
MATE	**Matera**	86.78 352	⇑*i*P		**P**	17 55 51.9 +0.1
PENT	**Pentalofos**	86.80 349	P		**P**	17 55 52.2 +0.2
TAR1	**Taranto**	86.86 352	*e*P		**P**	17 55 52.3 +0.2
MLSI	**Meulaboh, Aceh**	86.86 273	P		**P**	17 55 51.6 -0.9
	comp=Z,178nm,1.1s					
HYBB	**Hyderabad (bro**	86.94 295	*e*P		**P**	17 55 51.8 -1.2
HYBB			IAmb	IAmb		17 55 53.5
	comp=Z,272nm,1.0s					
HYB	**Hyderabad**	86.94 295	⇑*i*P		**P**	17 55 53.0 +0.1
NGJI	**Ngawi**	86.97 254	P		**P**	17 55 54.0 +1.0
	comp=Z,82nm,1.0s					
KPRO	**Kipourio**	87.01 349	P		**P**	17 55 53.2 +0.2
BKNI	**Bangkinang**	87.13 267	P		**P**	17 55 55.0 +1.2
	comp=Z,722nm,1.2s,comp=Z,7μm					
BKNI	**Bangkinang**	87.13 267	*e*P		**P**	17 55 54.8 +1.0
	comp=Z,919nm,1.2s					
PCBR	**Castelo Branco**	87.16 11	*e*P		**P**	17 55 53.5 -0.1
	comp=Z,51nm,1.3s					
NJS	**Nagarjunasagar**	87.22 294	*e*P		**P**	17 55 52.4 -1.8
NJS			IAmb	IAmb		17 55 54.7
	comp=Z,237nm,1.4s					
PTOM	**Tomar**	87.27 12	*e*P		**P**	17 55 54.6 +0.4
	comp=Z,90nm,0.9s					
PWJI	**Pagerwojo**	87.29 253	P		**P**	17 55 52.6 -1.9
	comp=Z,85nm,1.0s					
THL	**Klokotos Trika**	87.31 348	P		**P**	17 55 53.7 -0.6
FYTO	**Fytoko, Volos**	87.35 348	P		**P**	17 55 54.2 -0.3
XOR	**Xorichti**	87.36 347	P		**P**	17 55 54.2 -0.4
JAN	**Janina**	87.36 349	P		**P**	17 55 55.4 +0.8
NEO	**Neokhori**	87.41 347	P		**P**	17 55 54.3 -0.6
ADKI	**Addanki**	87.42 293	*e*P		**P**	17 55 54.7 -0.5
ADKI			IAmb	IAmb		17 55 56.1
	comp=Z,140nm,1.0s					
KEK	**Kerkira**	87.42 350	P		**P**	17 55 54.9 0.0
AOS	**Alonnisos**	87.45 347	P		**P**	17 55 54.6 -0.4
AOS	**Alonnisos**	87.45 347	*e*P		**P**	17 55 54.6 -0.4
SGD	**Sagiada**	87.47 350	P		**P**	17 55 55.3 +0.2
KLRI	**Killari**	87.49 297	*e*P		**P**	17 55 54.1 -1.5
KLRI			IAmb	IAmb		17 55 56.0
	comp=Z,335nm,0.9s					
CUC	**Castrocucco**	87.50 353	*e*P		**P**	17 55 54.1 -1.3
	comp=Z,30nm,1.3s					
SMRT	**St. Maarten**	87.50 63	*e*P		**P**	17 55 55.8 +0.2
	comp=Z,52nm,0.6s					
IGT	**Igoumenitsa**	87.54 350	P		**P**	17 55 55.5 0.0
IGT	**Igoumenitsa**	87.54 350	*e*P		**P**	17 55 55.5 0.0
IGT	**Igoumenitsa**	87.54 350	*e*P		**P**	17 55 55.5 0.0
KSRV	**Kasrt alli**	87.58 334	*e*P		**P**	17 55 58.5 +2.8
PMRV	**Marv??o**	87.58 11	*e*P		**P**	17 55 56.0 +0.3
	comp=Z,60nm,1.4s					
MNSI	**Mandailing Nat**	87.65 268	P		**P**	17 55 55.6 -0.7
	comp=Z,146nm,1.0s,comp=Z,2μm					
ISP	**Isparta**	87.66 341	⇑*i*P		**P**	17 55 56.5 +0.3
ES19	**SONSECA Array**	87.67 8	*e*P		**P**	17 55 55.6 -0.5
ESDC	**Sonseca Array**	87.69 8	P		**P**	17 55 55.9 -0.4
	comp=Z,18nm,0.9s,baz=351,slow=4.5,SNR=65					
ESDC			pP		**pP**	17 56 32.8 +0.7
	comp=Z,1.8nm,0.6s,baz=350,slow=4.2,SNR=2.2					
ESLA	**Sonseca Array**	87.69 8	*e*P		**P**	17 55 55.9 -0.4
	comp=Z,33nm,1.1s					
PAB	**San Pablo**	87.78 9	*e*P		**P**	17 55 55.8 -0.9
PAB			pmax	pmax		
	comp=Z,20nm,1.1s					
PAB	**San Pablo**	87.78 9	*e*P		**P**	17 55 55.8 -0.9
	comp=Z,20nm,1.1s					
AGG	**Agios Georgios**	87.81 348	P		**P**	17 55 55.9 -0.9
AGG	**Agios Georgios**	87.81 348	P		**P**	17 55 55.9 -0.9
AGG	**Agios Georgios**	87.81 348	P		**P**	17 55 55.9 -0.9
PMAFR	**Mafra**	87.81 12	*e*P		**P**	17 55 56.8 0.0
	comp=Z,164nm,1.0s					
SRLM	**Srisailam**	87.82 294	*e*P		**P**	17 55 55.4 -1.8
SRLM			IAmb	IAmb		17 55 57.4
	comp=Z,265nm,1.5s					
SMIA	**Simia**	87.83 347	P		**P**	17 55 56.5 -0.4
PMTG	**Montargil**	87.84 12	*e*P		**P**	17 55 56.1 -0.8
	comp=Z,36nm,1.1s					
DSL	**Palaion Diasel**	87.85 349	P		**P**	17 55 57.3 +0.3
DSL	**Palaion Diasel**	87.85 349	*e*P		**P**	17 55 57.3 +0.3
SDSI	**Sungai Dareh**	87.89 266	P		**P**	17 55 58.3 +0.9
	comp=Z,223nm,1.2s,comp=Z,24μm					
FITZ	**Fitzroy Crossi**	87.94 236	*e*P		**P**	17 55 57.6 +0.2
	comp=Z,39nm,0.9s					
FITZ			*ep*P		**pP**	17 56 32.8 -0.6
FITZ			*es*P		**sP**	17 56 46.5 -1.8
EVR	**Evrytania**	87.98 348	P		**P**	17 55 57.9 +0.2
PMST	**Lisbon--Monsan**	88.04 12	*e*P		**P**	17 55 59.0 +1.2
	comp=Z,108nm,1.3s					
LKR	**Lokris**	88.09 347	P		**P**	17 55 57.0 -1.0
PESTR	**Estremoz**	88.11 11	*e*P		**P**	17 55 57.5 -0.7
	comp=Z,69nm,1.5s					
ARMA	**Armidale**	88.13 210	*e*P		**P**	17 55 59.4 +1.1
ARMA			*ep*P		**pP**	17 56 33.9 -0.3
PPI	**Padang Panjang**	88.14 267	P		**P**	17 55 58.4 -0.2
	comp=Z,190nm,1.2s,comp=Z,2μm					
TIP	**Timpagrande**	88.24 352	⇓*i*P		**P**	17 55 58.7 -0.1
TIP	**Timpagrande**	88.24 352	P		**P**	17 55 58.9 0.0
TIP	**Timpagrande**	88.24 352	*e*P		**P**	17 55 58.8 -0.1
	comp=Z,61nm,1.3s					
LKD2	**Lefkada island**	88.24 349	P		**P**	17 55 58.8 0.0
ANX	**Ano Chora**	88.28 348	P		**P**	17 55 59.2 +0.1
RCLA	**Racherla**	88.30 293	*e*P		**P**	17 55 57.9 -1.5
RCLA			IAmb	IAmb		17 55 60.0
	comp=Z,194nm,1.2s					
PVO	**Paravola**	88.31 348	P		**P**	17 55 59.5 +0.4
VSL	**Villasalto**	88.31 358	*e*P		**P**	17 55 59.0 -0.2
	comp=Z,32nm,1.2s					
ARNB	**Al Arnab**	88.35 337	*e*P		**P**	17 56 00.6 +1.2
PDO	**Prodromos**	88.37 349	P		**P**	17 55 59.5 +0.1
DSF	**Desfina**	88.38 348	P		**P**	17 55 58.4 -1.1
EVO	**Evora**	88.39 12	*e*P		**P**	17 55 59.1 -0.4
	comp=Z,36nm,1.4s					
SERG	**Sergoula**	88.44 348	P		**P**	17 55 59.5 -0.3
EFP	**Efpalio**	88.45 348	P		**P**	17 56 00.0 +0.3
PDSI	**Padang**	88.46 267	P		**P**	17 55 59.6 -0.5
	comp=Z,72nm,1.4s,comp=Z,11μm					
GSI	**Gunungsitoli**	88.48 270	P		**P**	17 56 01.3 +1.1
	comp=Z,440nm,1.2s,comp=Z,5μm					
GSI	**Gunungsitoli**	88.48 270	*e*P		**P**	17 56 01.3 +1.1
	comp=Z,477nm,1.1s					
ANWB	**Willy Bob**	88.52 63	*e*P		**P**	17 56 00.5 +0.2
	comp=Z,137nm,1.6s					
PTL	**Penteli**	88.56 347	P		**P**	17 55 59.4 -0.9
POO	**Poona**	88.59 299	⇑*i*P		**P**	17 56 01.0 +0.2
LAKA	**Lakka**	88.62 348	P		**P**	17 56 00.8 +0.2
LAKA	**Lakka**	88.62 348	*e*P		**P**	17 56 00.8 +0.2
LTK	**Loutraki**	88.71 347	P		**P**	17 55 59.9 -1.1
AS01	**Alice Springs**	88.71 227	*e*P		**P**	17 56 01.4 +0.3
AS01			*ep*P		**pP**	17 56 36.2 -0.9
AS31	**Alice Springs**	88.73 227	*e*P		**P**	17 56 01.5 +0.3
	comp=Z,14nm,0.8s					
AS31			*ep*P		**pP**	17 56 36.1 -1.0
ASAR	**Alice Springs**	88.73 227	P		**P**	17 56 01.6 +0.4
	comp=Z,44nm,0.8s,baz=30,slow=4.8,SNR=372					
ASAR			pP		**pP**	17 56 35.5 -1.6
	comp=Z,11nm,0.8s,baz=22,slow=5.2,SNR=3.0					
ASAR			PKKPbc		**PKKPbc**	18 13 39.5 +0.2
	comp=Z,0.6nm,0.8s,baz=199,slow=2.3,SNR=6.4					
ASAR			LR	LR		18 29 20.6
	comp=Z,55nm,21.9s,baz=32,slow=31					
PNCL	**Nicolau / Gran**	88.74 12	*e*P		**P**	17 56 00.9 -0.2
	comp=Z,56nm,1.3s					
YER	**Yerkesik**	88.74 343	P		**P**	17 56 01.3 0.0
VLY	**Voula,Athens**	88.76 347	P		**P**	17 56 00.1 -1.1
VLY	**Voula,Athens**	88.76 347	*e*P		**P**	17 56 00.1 -1.1
KLV	**Kalavryta, Ach**	88.80 348	P		**P**	17 56 01.4 -0.1
PBAR	**Barrancos**	88.86 11	*e*P		**P**	17 56 01.6 -0.1
	comp=Z,166nm,1.4s					
RLS	**Riolos of Patr**	88.87 348	P		**P**	17 56 02.2 +0.5
LHSI	**Lahat**	88.89 262	P		**P**	17 56 01.8 -0.3
	comp=Z,85nm,1.5s,comp=Z,2μm					
PBEJ	**Beja**	88.91 12	*e*P		**P**	17 56 02.0 +0.1
	comp=Z,37nm,1.3s					
DRO	**Drossia**	88.94 348	P		**P**	17 56 02.6 +0.5
MASI	**Maura Aman, Be**	89.13 264	P		**P**	17 56 03.8 +0.5
	comp=Z,213nm,0.8s,comp=Z,8μm					
CEL	**Celeste**	89.22 353	*e*P		**P**	17 56 01.5 -2.0
	comp=Z,27nm,0.9s					
SKHT	**Srikalahasti**	89.26 292	*e*P		**P**	17 56 03.3 -0.6
SKHT			IAmb	IAmb		17 56 04.9
	comp=Z,81nm,0.7s					
PTEO	**Sao Teotonio**	89.27 12	*e*P		**P**	17 56 04.2 +0.6
	comp=Z,119nm,1.7s					
KRND	**KRANIDI**	89.31 347	P		**P**	17 56 02.4 -1.4
AMT	**Artemida-Makis**	89.36 348	P		**P**	17 56 04.1 0.0
RABH	**Abou Rabah**	89.40 335	*e*P		**P**	17 56 04.9 +0.5
VLX	**Vlachokerasia**	89.43 348	P		**P**	17 56 04.2 -0.3
LWLI	**Liwa**	89.51 261	P		**P**	17 56 07.3 +2.1
	comp=Z,52nm,1.0s,comp=Z,6μm					
HAWK	**Haweek**	89.52 336	*e*P		**P**	17 56 05.5 +0.5
MORF	**Marmelete**	89.52 12	*e*P		**P**	17 56 04.8 -0.1
MORF	**Marmelete**	89.52 12	*e*P		**P**	17 56 04.5 -0.4
	comp=Z,102nm,1.8s					
PVAQ	**Vaqueiros**	89.54 11	*e*P		**P**	17 56 04.7 -0.2
	comp=Z,39nm,1.5s					
PHNC	**Paralimni**	89.62 338	P		**P**	17 56 05.2 -0.1
ROOS	**tl_alroos**	89.63 335	*e*P		**P**	17 56 05.8 +0.3
MAMC	**Mammari**	89.65 339	P		**P**	17 56 05.5 0.0
PFVI	**Vila Bisbo**	89.67 12	*e*P		**P**	17 56 05.4 -0.1
	comp=Z,177nm,1.4s					
PFVI	**Vila Bisbo**	89.67 12	*e*P		**P**	17 56 04.8 -0.7
	comp=Z,234nm,1.6s					
GDHS	**Morne Mazeau,**	89.67 63	*e*P		**P**	17 56 03.4 -2.5
	comp=Z,56nm,0.8s					
PBDV	**Barranco-do-Ve**	89.67 12	*e*P		**P**	17 56 05.9 +0.3
ITM	**Ithomi**	89.67 348	P		**P**	17 56 05.2 -0.4
ALFC	**Alefka**	89.80 339	P		**P**	17 56 05.6 -0.6
CSS	**Mathiatis**	89.82 338	P		**P**	17 56 06.3 0.0
CSS	**Mathiatis**	89.82 338	P		**P**	17 56 05.9 -0.4
CSS	**Mathiatis**	89.82 338	*e*P		**P**	17 56 05.5 -0.7
	comp=Z,27nm,1.2s					
MARH	**Ras Al Marh**	89.97 336	*e*P		**P**	17 56 08.5 +1.1
AKMC	**Akamas**	89.98 339	P		**P**	17 56 05.6 -1.4
VLI	**Veliai**	90.00 347	P		**P**	17 56 05.7 -1.3
CLTB	**Caltabellotta**	90.07 355	*e*P		**P**	17 56 06.5 -1.0
	comp=Z,46nm,1.2s					
PPCY	**Paphos**	90.12 339	P		**P**	17 56 06.2 -1.4
SZAC	**Souni**	90.12 339	P		**P**	17 56 07.3 -0.4
PPSI	**Pulau Pagai**	90.19 266	P		**P**	17 56 10.4 +2.2
	comp=Z,234nm,1.4s,comp=Z,4μm					
KARP	**Karpathos**	90.49 343	P		**P**	17 56 07.7 -1.7
KARP	**Karpathos**	90.49 343	*e*P		**P**	17 56 07.5 -1.8
	comp=Z,28nm,0.7s					
SDV	**Santo Domingo**	90.58 75	*e*P		**P**	17 56 08.5 -1.8
SDV			*ep*P		**pP**	17 56 45.7 -0.6
URZ	**Urewera**	90.82 188	P		**P**	17 56 09.2 -1.2
	comp=Z,11nm,1.0s,baz=129,slow=5.2,SNR=3.6					
ZKR	**Zakros**	91.07 344	P		**P**	17 56 11.2 -0.9
ZKR	**Zakros**	91.07 344	*e*P		**P**	17 56 11.2 -0.9
IMMV	**Iera Moni Meta**	91.08 346	P		**P**	17 56 12.0 -0.1
IDI	**Anoyia**	91.11 345	⇓*i*P		**P**	17 56 10.8 -1.5
IDI	**Anoyia**	91.11 345	*e*P		**P**	17 56 10.3 -2.0
	comp=Z,21nm,1.0s					
LAST	**Lasithi**	91.14 345	⇓*i*P		**P**	17 56 11.5 -1.0
LAST	**Lasithi**	91.14 345	*e*P		**P**	17 56 10.9 -1.6
	comp=Z,95nm,0.8s					
SALA	**Sala**	91.15 335	*e*P		**P**	17 56 13.6 +0.8
RUSC	**La Rusia**	91.51 78	*e*P		**P**	17 56 15.9 +0.9
RUSC			*ep*P		**pP**	17 56 50.0 -1.0
UOSS	**Minazif**	91.62 316	*e*P		**P**	17 56 13.6 -1.2
	comp=Z,4.1nm,1.0s					
HATD	**Hatta, Dubai**	91.76 316	*i*P		**P**	17 56 14.7 -0.7
	SNR=7.4					
NAZ	**Nazwa, Dubai**	91.81 317	*i*P		**P**	17 56 15.0 -0.6
	SNR=9.7					
ASHO	**Ashiyiah**	91.92 316	*i*P		**P**	17 56 15.3 -0.9
	SNR=12					
ASHO	**Ashiyiah**	91.92 316	P		**P**	17 56 15.1 -1.1
	SNR=5.6					
ASHO	**Ashiyiah**	91.92 316	P		**P**	17 56 15.1 -1.1
	SNR=5.6					
KEST	**Kesra**	92.06 358	P		**P**	17 56 16.8 +0.1
	comp=Z,13nm,1.1s,baz=66,slow=2.4,SNR=7.3					
KEST	**Kesra**	92.06 358	*e*P		**P**	17 56 16.6 -0.2
	comp=Z,47nm,1.4s					
SVB	**Belmont**	92.41 65	*e*P		**P**	17 56 18.2 -0.3
	comp=Z,52nm,0.6s					
SMDO	**Samad**	92.49 314	PcP		**P**	17 56 18.3 -0.7
	SNR=12					
SMDO	**Samad**	92.49 314	P		**P**	17 56 18.3 -0.7
	SNR=12					
OTAV	**Otavalo**	92.74 86	*e*P		**P**	17 56 21.3 +0.7
OTAV			*ep*P		**pP**	17 56 56.6 0.0
STKA	**Stephens Creek**	92.85 217	P		**P**	17 56 20.6 +0.6
	comp=Z,10nm,1.0s,baz=10,slow=7.2,SNR=8.8					
STKA			pP		**pP**	17 56 55.0 -1.1
	comp=Z,20nm,0.8s,baz=348,slow=5.8,SNR=10.0					
STKA			LR	LR		18 35 27.2
	comp=Z,130nm,21.4s,baz=22,slow=34					
STKA	**Stephens Creek**	92.85 217	*e*P		**P**	17 56 20.4 +0.3
STKA			*ep*P		**pP**	17 56 54.8 -1.4
MBWA	**Marble Bar**	93.53 239	*e*P		**P**	17 56 22.5 -0.9
	comp=Z,22nm,0.8s					
PALK	**Pallekele**	93.90 287	*i*P		**P**	17 56 25.9 +0.5
	SNR=18					
PALK	**Pallekele**	93.90 287	*e*P		**P**	17 56 25.3 -0.1
PALK	**Pallekele**	93.90 287	*e*P		**P**	17 56 25.5 +0.1
	comp=Z,119nm,0.9s					
PALK			*e*PP		**PP**	18 00 08.0 -4.7
LPAZ	**La Paz**	111.94 88	PKKPbc	PKKPbc		18 12 34.4 +1.3
	comp=Z,1.2nm,0.7s,baz=108,slow=3.2,SNR=4.4					
TOA1	**Torodi Ar. Sit**	114.43 5	*e*PKIKP		**PKiKP**	18 01 46.4 -0.5
TOA1			*e*PKKPbc		**PKKPbc**	18 12 23.9 -0.1
TORD	**Torodi Ar. Bea**	114.43 5	PKP	PKPdf		18 01 46.4 -0.6
	comp=Z,7.9nm,0.7s,baz=343,slow=2.4,SNR=42					
TORD			PKKPbc		**PKKPbc**	18 12 23.9 -0.1
	comp=Z,1.7nm,0.7s,baz=169,slow=2.2,SNR=8.9					
SIV	**San Ignacio**	116.00 82	PKKPbc	PKKPbc		18 12 20.0 +1.4
	comp=Z,1.2nm,0.6s,baz=175,slow=3.4,SNR=1.9					
LVC	**Limon Verde**	116.26 93	PKKPbc	PKKPbc		18 12 21.1 +2.9
	comp=Z,48nm,0.9s,baz=180,slow=1.0,SNR=4.2					
DBIC	**Dimbokro**	120.19 13	PKP		**PKPdf**	18 01 57.7 -0.4
	comp=Z,13nm,0.8s,baz=358,slow=4.2,SNR=13					
DBIC			PKKPbc		**PKKPbc**	18 12 04.3 +0.5
	comp=Z,5.2nm,1.0s,baz=152,slow=6.5,SNR=3.5					
DBIC	**Dimbokro**	120.19 13	*e*PKIKP		**PKPdf**	18 01 57.4 -0.7
DBIC			*e*			18 03 27.5
DBIC	**Dimbokro**	120.19 13	*e*PKPdf		**PKPdf**	18 01 57.4 -0.7
DBIC			*e*PP		**PP**	18 03 27.5 +3.4
DBIC			*e*SKPdf		**SKPdf**	18 05 19.1 -0.9
DBIC			*e*PKKPbc		**PKKPbc**	18 12 04.3 +0.5
TIC	**Toumodi**	120.19 14	*e*PKP1		**PKPdf**	18 01 57.5 -0.6
KIC	**Kosan Boka**	120.51 13	*e*PKP1		**PKPdf**	18 01 58.0 -0.7
	comp=Z,44nm,0.9s					
LIC	**Lamto**	120.60 14	*e*PKP1		**PKPdf**	18 01 58.4 -0.5
	comp=Z,20nm,0.8s					
KMBO	**Kilima Mbogo**	122.80 323	PKP		**PKPdf**	18 02 03.8 +

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**257**	P	**Pg**	**17 47 13.7**	**+0.1**
DEMI				S	**Sg**	**17 47 17.0**	**+0.1**
DEMI	**Demirci**	**0.26**	**257**	*i* P	**Pg**	**17 47 13.7**	**+0.1**
DEMI				*i* S	**Sg**	**17 47 17.0**	**+0.1**
GDZ	**Gediz**	**0.35**	**92**	P	**Pg**	**17 47 15.6**	**+0.2**
GDZ				S	**Sg**	**17 47 21.0**	**+1.1**
GDZ	**Gediz**	**0.35**	**92**	*i* P	**Pg**	**17 47 15.6**	**+0.2**
GDZ				*i* S	**Sg**	**17 47 21.0**	**+1.1**
TVSB	**Tavsanli**	**0.48**	**44**	*e*PG	**Pg**	**17 47 17.9**	**0.0**
TVSB				*e*SG	**Sg**	**17 47 24.4**	**+0.2**
TVSB	**Tavsanli**	**0.48**	**44**	*e*Pg	**Pg**	**17 47 17.9**	**0.0**
TVSB				*e*Sg	**Sg**	**17 47 24.4**	**+0.2**
DST	**Dursunbey**	**0.60**	**327**	*e*PG	**Pg**	**17 47 19.8**	**-0.3**
DST	**Dursunbey**	**0.60**	**327**	*e*Pg	**Pg**	**17 47 19.8**	**-0.3**
KULA	**Kula-Manisa**	**0.66**	**207**	*e*PG	**Pg**	**17 47 21.5**	**+0.3**
KULA	**Kula-Manisa**	**0.66**	**207**	P	**Pg**	**17 47 20.7**	**-0.5**
KULA				S	**Sg**	**17 47 29.2**	**-0.5**
KULA	**Kula-Manisa**	**0.66**	**207**	P	**Pg**	**17 47 20.7**	**-0.5**
KULA	**Kula-Manisa**	**0.66**	**207**	*e*Pg	**Pg**	**17 47 21.5**	**+0.3**
KULA				S	**Sg**	**17 47 29.2**	**-0.5**
DURS	**Dursunbey**	**0.66**	**319**	P	**Pg**	**17 47 21.0**	**-0.4**
DURS	**Dursunbey**	**0.66**	**319**	*i* P	**Pg**	**17 47 21.0**	**-0.4**
KHAL	**Karahalli**	**0.81**	**154**	P	**Pg**	**17 47 24.2**	**-0.1**
KHAL				S	**Sg**	**17 47 35.3**	**+0.5**
KHAL	**Karahalli**	**0.81**	**154**	*i* P	**Pg**	**17 47 24.2**	**-0.1**
KHAL				*i* S	**Sg**	**17 47 35.3**	**+0.5**
KHL	**Karahalli**	**0.87**	**154**	*e*PG	**Pg**	**17 47 25.4**	**+0.1**
KHL				*e*SG	**Sb**	**17 47 37.8**	**-0.8**
KHL	**Karahalli**	**0.87**	**154**	*e*Pg	**Pg**	**17 47 25.4**	**+0.1**
KHL				*e*Sg	**Sb**	**17 47 37.8**	**-0.8**
ORLT	**Orhaneli**	**0.95**	**354**	*e*PG	**Pg**	**17 47 26.7**	**-0.2**
ORLT	**Orhaneli**	**0.95**	**354**	*e*Pg	**Pg**	**17 47 26.7**	**-0.2**
AKHS	**Akhisar**	**0.98**	**257**	P	**Pg**	**17 47 27.5**	**+0.1**
AKHS	**Akhisar**	**0.98**	**257**	*i* P	**Pg**	**17 47 27.6**	**+0.1**
AKS	**Akhisar**	**0.98**	**257**	*e*PG	**Pg**	**17 47 27.9**	**+0.5**
AKS	**Akhisar**	**0.98**	**257**	*e*Pg	**Pg**	**17 47 27.9**	**+0.5**
BALB	**Balikesir**	**1.04**	**301**	*e*PG	**Pg**	**17 47 29.1**	**+0.4**
BALB	**Balikesir**	**1.04**	**301**	*e*Pg	**Pg**	**17 47 29.1**	**+0.4**
IGD	**Bursa**	**1.17**	**6**	*i* P	**Pg**	**17 47 29.9**	**-1.2**
IGD				*i* S	**Sb**	**17 47 47.5**	**+0.3**
CAVI	**Cavuskoy**	**1.26**	**29**	*e*PN	**Pg**	**17 47 32.9**	**0.0**
CAVI	**Cavuskoy**	**1.26**	**29**	*e*Pn	**Pg**	**17 47 32.9**	**0.0**
BALY	**Balya**	**1.27**	**301**	P	**Pg**	**17 47 32.6**	**-0.4**
BALY	**Balya**	**1.27**	**301**	*i* P	**Pg**	**17 47 32.6**	**-0.4**
MDNY	**Mudanya-Bursa**	**1.27**	**355**	*e*PN	**Pg**	**17 47 32.9**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.27**	**355**	*e*Pn	**Pg**	**17 47 32.9**	**-0.2**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*PN	**Pg**	**17 47 33.0**	**-0.1**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*Pn	**Pg**	**17 47 33.0**	**-0.1**
IZI	**Iznik**	**1.28**	**15**	*e*PN	**Pg**	**17 47 33.3**	**+0.1**
IZI	**Iznik**	**1.28**	**15**	*e*Pn	**Pg**	**17 47 33.3**	**+0.1**
GEMT	**Gemlik**	**1.34**	**5**	*e*PN	**Pg**	**17 47 34.3**	**0.0**
GEMT	**Gemlik**	**1.34**	**5**	*e*Pn	**Pg**	**17 47 34.3**	**0.0**
BORA	**Eskisehir**	**1.34**	**54**	P	**Pg**	**17 47 33.0**	**-1.5**
BORA				S	**Sb**	**17 47 52.3**	**-0.1**
BORA	**Eskisehir**	**1.34**	**54**	*i* P	**Pg**	**17 47 33.0**	**-1.5**
BORA				*i* S	**Sb**	**17 47 52.3**	**-0.1**
DENT	**Denizli**	**1.35**	**180**	*e*PN	**Pn**	**17 47 34.6**	**+0.1**
DENT	**Denizli**	**1.35**	**180**	*e*Pn	**Pn**	**17 47 34.6**	**+0.1**
GONE	**Gonen-Balikesi**	**1.41**	**313**	*e*PN	**Pn**	**17 47 35.5**	**+0.2**
GONE	**Gonen-Balikesi**	**1.41**	**313**	*e*Pn	**Pn**	**17 47 35.5**	**+0.2**
DNZL	**Cakiroluk**	**1.41**	**180**	P	**Pg**	**17 47 35.4**	**-0.3**
DNZL				S	**Sn**	**17 47 56.0**	**+1.2**
DNZL	**Cakiroluk**	**1.41**	**180**	*i* P	**Pg**	**17 47 35.4**	**-0.3**
DNZL				*i* S	**Sn**	**17 47 56.0**	**+1.2**
ADVT	**Abdulvahap**	**1.44**	**22**	*e*PN	**Pn**	**17 47 35.9**	**+0.2**
ADVT	**Abdulvahap**	**1.44**	**22**	*e*Pn	**Pn**	**17 47 35.9**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**1.46**	**218**	*e*PN	**Pn**	**17 47 36.3**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**1.46**	**218**	*e*Pn	**Pn**	**17 47 36.3**	**+0.1**
ARMT	**Armutlu**	**1.47**	**355**	*e*PN	**Pn**	**17 47 36.4**	**+0.2**
ARMT	**Armutlu**	**1.47**	**355**	*e*Pn	**Pn**	**17 47 36.4**	**+0.2**
ESKT	**Eskisehir**	**1.47**	**73**	*i* P	**Pn**	**17 47 35.9**	**-0.4**
SEYT	**Eskypehyr**	**1.47**	**73**	P	**Pn**	**17 47 35.9**	**-0.4**
EDC	**Edincik**	**1.54**	**324**	*e*PN	**Pn**	**17 47 37.0**	**-0.1**
EDC	**Edincik**	**1.54**	**324**	*e*Pn	**Pn**	**17 47 37.0**	**-0.1**
GPA	**Golpazari**	**1.54**	**39**	*e*PN	**Pn**	**17 47 37.3**	**+0.1**
GPA	**Golpazari**	**1.54**	**39**	*e*Pn	**Pn**	**17 47 37.3**	**+0.1**
BOLV	**Bolvadin**	**1.54**	**104**	P	**Pn**	**17 47 37.3**	**0.0**
BOLV				S	**Sg**	**17 47 57.7**	**-0.6**
BOLV	**Bolvadin**	**1.54**	**104**	*i* P	**Pn**	**17 47 37.3**	**0.0**
BOLV				*i* S	**Sg**	**17 47 57.7**	**-0.6**
KNL	**Bal¨–kesir**	**1.65**	**316**	*i* P	**Pn**	**17 47 38.4**	**-0.3**
KNL				*i* S	**Sn**	**17 48 00.1**	**-0.3**
DKL	**Dikili**	**1.66**	**270**	*e*PN	**Pn**	**17 47 39.5**	**+0.8**
DKL	**Dikili**	**1.66**	**270**	*e*Pn	**Pn**	**17 47 39.5**	**+0.8**
AYDN	**Tasoluk**	**1.70**	**213**	P	**Pn**	**17 47 38.0**	**-1.4**
AYDN	**Tasoluk**	**1.70**	**213**	*i* P	**Pn**	**17 47 38.0**	**-1.4**
AYDN				*i* S	**Sg**	**17 48 04.5**	**+1.1**
ISP	**Isparta**	**1.73**	**137**	*e*PN	**Pn**	**17 47 40.2**	**+0.3**
ISP	**Isparta**	**1.73**	**137**	P	**Pn**	**17 47 38.5**	**-1.4**
ISP				S	**Sn**	**17 48 02.7**	**+0.1**
ISP	**Isparta**	**1.73**	**137**	P	**Pn**	**17 47 38.5**	**-1.4**
ISP	**Isparta**	**1.73**	**137**	*e*Pn	**Pn**	**17 47 40.2**	**+0.3**
ISP				S	**Sn**	**17 48 02.7**	**+0.1**
GULT	**Gulveren**	**1.75**	**40**	*e*PN	**Pn**	**17 47 40.1**	**0.0**
GULT	**Gulveren**	**1.75**	**40**	*e*Pn	**Pn**	**17 47 40.1**	**0.0**
HRT	**Hereke**	**1.79**	**16**	*e*PN	**Pn**	**17 47 40.5**	**-0.1**
HRT	**Hereke**	**1.79**	**16**	*e*Pn	**Pn**	**17 47 40.5**	**-0.1**
SPNC	**Sapanca-Adapaz**	**1.86**	**31**	*e*PN	**Pn**	**17 47 42.0**	**+0.5**
SPNC	**Sapanca-Adapaz**	**1.86**	**31**	*e*Pn	**Pn**	**17 47 42.0**	**+0.5**
MRMT	**Marmara Adasi**	**1.86**	**324**	*e*PN	**Pn**	**17 47 41.0**	**-0.7**
MRMT	**Marmara Adasi**	**1.86**	**324**	*e*Pn	**Pn**	**17 47 41.0**	**-0.7**
ISK	**Istanbul-Kandi**	**1.96**	**1**	*e*PN	**Pn**	**17 47 43.2**	**+0.2**
ISK	**Istanbul-Kandi**	**1.96**	**1**	P	**Pn**	**17 47 43.5**	**+0.6**
ISK				S	**Sg**	**17 48 11.3**	**-0.4**
ISK	**Istanbul-Kandi**	**1.96**	**1**	*e*Pn	**Pn**	**17 47 43.2**	**+0.2**
ISK	**Istanbul-Kandi**	**1.96**	**1**	P	**Pn**	**17 47 43.5**	**+0.6**
ISK				S	**Sg**	**17 48 11.3**	**-0.4**
SVRH	**Sivrihisar-ESK**	**1.96**	**79**	*e*PN	**Pn**	**17 47 43.0**	**0.0**
SVRH	**Sivrihisar-ESK**	**1.96**	**79**	*e*Pn	**Pn**	**17 47 43.0**	**0.0**
GLHS	**Glhisar (BURDU**	**1.98**	**169**	*e*PN	**Pn**	**17 47 43.5**	**+0.2**
GLHS	**Glhisar (BURDU**	**1.98**	**169**	*e*Pn	**Pn**	**17 47 43.5**	**+0.2**
DGB	**¨zmir**	**1.99**	**239**	*i* P	**Pb**	**17 47 45.3**	**-0.2**
BCK	**Bucak**	**2.04**	**143**	*e*PN	**Pn**	**17 47 44.3**	**+0.1**
BCK	**Bucak**	**2.04**	**143**	*e*Pn	**Pn**	**17 47 44.3**	**+0.1**
YER	**Yerkesik**	**2.05**	**197**	*e*PN	**Pn**	**17 47 44.6**	**+0.4**
YER	**Yerkesik**	**2.05**	**197**	*e*Pn	**Pn**	**17 47 44.6**	**+0.4**
BGKT	**Bogazkoy**	**2.09**	**355**	*e*PN	**Pn**	**17 47 45.2**	**+0.5**
BGKT	**Bogazkoy**	**2.09**	**355**	*e*Pn	**Pn**	**17 47 45.2**	**+0.5**
SILT	**Sile**	**2.10**	**13**	*e*PN	**Pn**	**17 47 45.3**	**-0.4**
SILT	**Sile**	**2.10**	**13**	*e*Pn	**Pn**	**17 47 45.3**	**-0.4**
RKY	**Sarkoy-Tekirda**	**2.13**	**319**	*e*PN	**Pn**	**17 47 46.0**	**+0.7**
RKY	**Sarkoy-Tekirda**	**2.13**	**319**	*e*Pn	**Pn**	**17 47 46.0**	**+0.7**
KLYT	**Kilyos**	**2.15**	**0**	*e*PN	**Pn**	**17 47 45.5**	**0.0**
KLYT	**Kilyos**	**2.15**	**0**	*e*Pn	**Pn**	**17 47 45.5**	**0.0**
MDUB	**Mudurnu**	**2.16**	**50**	*e*PN	**Pn**	**17 47 46.5**	**+0.9**
MDUB	**Mudurnu**	**2.16**	**50**	*e*Pn	**Pn**	**17 47 46.6**	**+0.9**
LPK	**Lapseki**	**2.17**	**307**	*e*PN	**Pn**	**17 47 46.5**	**+0.8**
LPK	**Lapseki**	**2.17**	**307**	*e*Pn	**Pn**	**17 47 46.6**	**+0.8**
CTKS	**Kestanelik-??a**	**2.17**	**349**	*e*PN	**Pn**	**17 47 47.1**	**+1.3**
CTKS	**Kestanelik-??a**	**2.17**	**349**	*e*Pn	**Pn**	**17 47 47.1**	**+1.3**
TKR	**Tekirdag**	**2.21**	**329**	*e*PN	**Pn**	**17 47 47.2**	**+0.8**
TKR	**Tekirdag**	**2.21**	**329**	*e*Pn	**Pn**	**17 47 47.2**	**+0.8**
EZN	**Ezine**	**2.22**	**290**	*e*PN	**Pn**	**17 47 47.2**	**+0.7**
EZN	**Ezine**	**2.22**	**290**	P	**Pn**	**17 47 46.4**	**0.0**
EZN	**Ezine**	**2.22**	**290**	P	**Pn**	**17 47 46.4**	**0.0**
EZN	**Ezine**	**2.22**	**290**	*e*Pn	**Pn**	**17 47 47.2**	**+0.7**
KIZT	**Kizilcal**	**2.23**	**95**	*e*PN	**Pn**	**17 47 46.7**	**0.0**
KIZT	**Kizilcal**	**2.23**	**95**	*e*Pn	**Pn**	**17 47 46.7**	**0.0**
SUTC	**Sutluce-Ispart**	**2.24**	**136**	*e*PN	**Pn**	**17 47 47.1**	**+0.2**
SUTC	**Sutluce-Ispart**	**2.24**	**136**	*e*Pn	**Pn**	**17 47 47.1**	**+0.2**
DALY	**Dalyan (Mu¨la**	**2.30**	**188**	*e*PN	**Pn**	**17 47 48.1**	**+0.5**
DALY	**Dalyan (Mu¨la**	**2.30**	**188**	*e*Pn	**Pn**	**17 47 48.1**	**+0.5**
GELI	**Tayfur-Gelibol**	**2.36**	**304**	*e*PN	**Pn**	**17 47 49.1**	**+0.8**
GELI	**Tayfur-Gelibol**	**2.36**	**304**	*e*Pn	**Pn**	**17 47 49.2**	**+0.8**
CHOS	**Chios island**	**2.44**	**254**	P	**Pn**	**17 47 48.7**	**-0.8**
CHOS	**Chios island**	**2.44**	**254**	P	**Pn**	**17 47 48.7**	**-0.8**
CTYL	**Yalikoy Yolu**	**2.44**	**347**	*e*PN	**Pn**	**17 47 50.3**	**+0.8**
CTYL	**Yalikoy Yolu**	**2.44**	**347**	*e*Pn	**Pn**	**17 47 50.3**	**+0.8**
BODT	**Bodrum**	**2.45**	**214**	*e*PN	**Pn**	**17 47 50.9**	**+1.2**
BODT	**Bodrum**	**2.45**	**214**	P	**Pn**	**17 47 47.1**	**-2.6**
BODT	**Bodrum**	**2.45**	**214**	P	**Pn**	**17 47 47.1**	**-2.6**
BODT	**Bodrum**	**2.45**	**214**	*e*Pn	**Pn**	**17 47 50.9**	**+1.2**
ELL	**Elmali**	**2.45**	**163**	*e*PN	**Pn**	**17 47 50.3**	**+0.5**
ELL	**Elmali**	**2.45**	**163**	*e*Pn	**Pn**	**17 47 50.3**	**+0.5**
FETY	**Fethiye**	**2.46**	**179**	*e*PN	**Pn**	**17 47 50.3**	**+0.4**
FETY	**Fethiye**	**2.46**	**179**	*e*Pn	**Pn**	**17 47 50.3**	**+0.4**
SIGR	**SIGRI**	**2.47**	**274**	*e*PN	**Pn**	**17 47 50.8**	**+0.8**
SIGR	**SIGRI**	**2.47**	**274**	P	**Pn**	**17 47 49.2**	**-0.8**
SIGR	**SIGRI**	**2.47**	**274**	P	**Pn**	**17 47 49.2**	**-0.8**
SIGR	**SIGRI**	**2.47**	**274**	*e*Pn	**Pn**	**17 47 50.8**	**+0.8**
ERIK	**Erikli-Kesan**	**2.49**	**310**	*e*PN	**Pn**	**17 47 51.1**	**+0.9**
ENEZ	**Enez**	**2.75**	**307**	*e*PN	**Pn**	**17 47 54.3**	**+0.5**
ENEZ	**Enez**	**2.75**	**307**	*e*Pn	**Pn**	**17 47 54.3**	**+0.5**
LADK	**Ladik-KONYA**	**2.76**	**108**	*e*PN	**Pn**	**17 47 54.6**	**+0.6**
LADK	**Ladik-KONYA**	**2.76**	**108**	*e*Pn	**Pn**	**17 47 54.6**	**+0.6**
PHSR	**Pinarhisar**	**2.78**	**336**	*e*PN	**Pn**	**17 47 55.1**	**+1.0**
PHSR	**Pinarhisar**	**2.78**	**336**	*e*Pn	**Pn**	**17 47 55.1**	**+1.0**
KONT	**Konya--Tatoy**	**2.85**	**113**	*e*PN	**Pn**	**17 47 55.4**	**+0.2**
KONT	**Konya--Tatoy**	**2.85**	**113**	*e*Pn	**Pn**	**17 47 55.4**	**+0.2**
ALN	**Alexandroupoli**	**2.91**	**309**	*e*PN	**Pn**	**17 47 55.6**	**-0.4**
ALN	**Alexandroupoli**	**2.91**	**309**	P	**Pn**	**17 47 55.6**	**-0.4**
ALN	**Alexandroupoli**	**2.91**	**309**	P	**Pn**	**17 47 55.6**	**-0.4**
LOD	**Lodumlu**	**2.99**	**74**	*e*PN	**Pn**	**17 47 57.5**	**+0.3**
LOD	**Lodumlu**	**2.99**	**74**	*e*Pn	**Pn**	**17 47 57.5**	**+0.3**
SMTH	**Samothraki Isl**	**3.03**	**298**	P	**Pn**	**17 47 57.3**	**-0.3**
SMTH	**Samothraki Isl**	**3.03**	**298**	P	**Pn**	**17 47 57.3**	**-0.3**
LIA	**Limnos Island**	**3.08**	**286**	P	**Pn**	**17 47 58.2**	**-0.1**
LIA	**Limnos Island**	**3.08**	**286**	P	**Pn**	**17 47 58.2**	**-0.1**
EDRB	**Edirne**	**3.25**	**328**	*e*PN	**Pn**	**17 48 01.2**	**+0.6**
EDRB	**Edirne**	**3.25**	**328**	P	**Pn**	**17 48 00.2**	**-0.5**
EDRB	**Edirne**	**3.25**	**328**	P	**Pn**	**17 48 00.2**	**-0.5**
EDRB	**Edirne**	**3.25**	**328**	*e*Pn	**Pn**	**17 48 01.2**	**+0.6**
KARP	**Karpathos**	**3.85**	**203**	P	**Pn**	**17 48 08.1**	**-0.8**
KARP	**Karpathos**	**3.85**	**203**	P	**Pn**	**17 48 08.1**	**-0.8**
KAVA	**Kavala**	**3.95**	**300**	P	**Pn**	**17 48 09.3**	**-1.0**
KAVA	**Kavala**	**3.95**	**300**	P	**Pn**	**17 48 09.3**	**-1.0**

*ISCJB **24** 17:47:36.6±0.6, 43°.91N±0°.06×12°.05E±0°.05, h3km±13km, Error ellipse: s-maj=11.3km s-min=3.5km az=29.5*
*ROM **24** 17:47:36.3±0.2, 43°.88N×12°.02E, h7km±1km, Md2.3/12, Ml1.9/8, Error ellipse: s-maj=2.8km s-min=1.0km az=33.0*
*CSEM **24** 17:47:36.9±0.1, 43°.90N×12°.04E, h2km, ML2.8/4, Error ellipse: s-maj=3.4km s-min=1.5km az=22.0*

ISC 24 17:47:35.8±0.9, 43°.94N±0°.04×12°.04E±0°.02, h13km±7km, n32, σ0°.38/48, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFI	**Santa Sofia**	**0.14**	**255**	Pg	**Pg**	**17 47 39.6**	**+0.3**
SFI				Sg	**Sg**	**17 47 41.9**	**+0.1**
SFI	**Santa Sofia**	**0.14**	**255**	Pg	**Pg**	**17 47 39.6**	**+0.3**
SFI				Sg	**Sg**	**17 47 41.9**	**+0.1**
ASQU	**Asqua**	**0.23**	**231**	Pg	**Pg**	**17 47 40.8**	**0.0**
ASQU				Sg	**Sg**	**17 47 43.4**	**-0.8**
ASQU	**Asqua**	**0.23**	**231**	Pg	**Pg**	**17 47 40.8**	**0.0**
ASQU				Sg	**Sg**	**17 47 43.4**	**-0.8**
VMG	**Vicchio**	**0.36**	**273**	Pg	**Pb**	**17 47 43.9**	**-0.1**
VMG				Sg	**Sb**	**17 47 49.8**	**+0.2**
VMG	**Vicchio**	**0.36**	**273**	Pg	**Pb**	**17 47 43.9**	**-0.1**
VMG				Sg	**Sb**	**17 47 49.8**	**+0.2**
BADI	**Badiali**	**0.46**	**161**	Pg	**Pg**	**17 47 45.1**	**+0.3**
BADI				Sg	**Sg**	**17 47 51.6**	**+0.7**
	158nm,0.2s						
BADI	**Badiali**	**0.46**	**161**	Pg	**Pg**	**17 47 45.1**	**+0.3**
BADI				Sg	**Sg**	**17 47 51.6**	**+0.7**
	158nm,0.2s						
SEI	**Scarperia**	**0.50**	**283**	Pg	**Pb**	**17 47 46.5**	**0.0**
SEI				Sg	**Sb**	**17 47 54.8**	**+1.0**
	367nm,0.2s						
SEI	**Scarperia**	**0.50**	**283**	Pg	**Pb**	**17 47 46.5**	**0.0**
SEI				Sg	**Sb**	**17 47 54.8**	**+1.0**
	367nm,0.2s						
PIEI	**Pieia**	**0.54**	**138**	Pg	**Pg**	**17 47 46.6**	**+0.2**
PIEI				Sg	**Sb**	**17 47 54.7**	**-0.2**
	32nm,0.1s						
PIEI	**Pieia**	**0.54**	**138**	Pg	**Pg**	**17 47 46.6**	**+0.2**
PIEI				Sg	**Sb**	**17 47 54.7**	**-0.2**
	32nm,0.1s						
ATPC	**Poggio Castell**	**0.55**	**146**	Pg	**Pg**	**17 47 46.7**	**+0.1**
ATPC				Sg	**Sb**	**17 47 54.7**	**-0.5**
	88nm,0.3s						
ATPC	**Poggio Castell**	**0.55**	**146**	Pg	**Pg**	**17 47 46.7**	**+0.1**
ATPC				Sg	**Sb**	**17 47 54.7**	**-0.5**
	88nm,0.3s						
FSSB	**Fossombrone**	**0.59**	**115**	Pg	**Pb**	**17 47 48.1**	**+0.1**
FSSB	**Fossombrone**	**0.59**	**115**	Pg	**Pb**	**17 47 48.1**	**+0.1**
ATVO	**AVT- Monte Val**	**0.62**	**154**	Pg	**Pg**	**17 47 47.9**	**0.0**
	78nm,0.6s						
ATVO	**AVT- Monte Val**	**0.62**	**154**	Pg	**Pg**	**17 47 47.9**	**0.0**
	78nm,0.6s						
FRON	**Frontone**	**0.66**	**130**	Pg	**Pb**	**17 47 49.0**	**-0.1**
FRON	**Frontone**	**0.66**	**130**	Pg	**Pb**	**17 47 49.0**	**-0.1**
FNVD	**Fontana Vidola**	**0.70**	**289**	Pg	**Pn**	**17 47 51.0**	**-0.4**
FNVD	**Fontana Vidola**	**0.70**	**289**	Pg	**Pn**	**17 47 51.0**	**-0.4**
SSFR	**Montelago di S**	**0.74**	**133**	Pg	**Pg**	**17 47 50.3**	**+0.2**
	56nm,0.2s						
SSFR	**Montelago di S**	**0.74**	**133**	Pg	**Pg**	**17 47 50.3**	**+0.2**
	56nm,0.2s						
ATTE	**AVT- Monte Tez**	**0.78**	**163**	Pg	**Pb**	**17 47 51.7**	**+0.5**
	45nm,0.6s						
ATTE	**AVT- Monte Tez**	**0.78**	**163**	Pg	**Pb**	**17 47 51.7**	**+0.5**
	45nm,0.6s						
ARVD	**Arcevia**	**0.79**	**124**	Pg	**Pb**	**17 47 51.5**	**+0.1**
	17nm,0.4s						
ARVD	**Arcevia**	**0.79**	**124**	Pg	**Pb**	**17 47 51.5**	**+0.1**
	17nm,0.4s						
FROS	**Frosini**	**0.97**	**221**	Pg	**Pg**	**17 47 54.6**	**+0.1**
	45nm,0.8s						
FROS	**Frosini**	**0.97**	**221**	Pg	**Pg**	**17 47 54.6**	**+0.1**
	45nm,0.8s						
NVLJ	**Novalja**	**2.13**	**72**	*e*Pn	**Pb**	**17 48 14.1**	**-0.1**
NVLJ				Sn	**Sb**	**17 48 40.8**	**+0.3**
NVLJ	**Novalja**	**2.13**	**72**	*e*Pn	**Pb**	**17 48 14.0**	**-0.1**
NVLJ				Sn	**Sb**	**17 48 40.7**	**+0.3**

*ECX **24** 17:47:50.8±0.6, 31°.31N×115°.61W, h5km, MD3.3, ML3.5*
*MEX **24** 17:47:52.2±0.6, 31°.18N×115°.62W, h15km±31km, MD3.5*

ISC 24 17:47:49.4±1.0, 31°.26N±0°.03×115°.64W±0°.03, h16km±9km, n19, σ0°.63/34, 1C-2D, Baja California

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SPIG	**San Pedro Mart**	**0.26**	**146**	*e*P	**Pb**	**17 47 56.4**	**+0.4**
SPIG				*e*S	**Sg**	**17 47 59.4**	**+0.1**
SPIG	**San Pedro Mart**	**0.26**	**146**	*e*P	**Pb**	**17 47 56.2**	**+0.3**
SPIG				*e*S	**Sb**	**17 48 00.1**	**-0.2**
SPX	**San Pedro Mart**	**0.26**	**146**	*e*P	**Pb**	**17 47 56.3**	**+0.4**
SPX				*e*S	**Sb**	**17 48 00.5**	**+0.1**
SPX				⇓*e*		17 48 01.2	
SPX				AML	AML	17 48 01.2	
	comp=N,5μm,0.3s						
ECBX	**El Chinero**	**0.54**	**67**	⇓*e*P	**Pb**	**17 48 01.2**	**+0.6**
ECBX				*e*S	**Sb**	**17 48 08.1**	**-0.1**
ZAX	**El Zacaton**	**0.60**	**295**	*e*P	**Pg**	**17 48 01.2**	**0.0**
ZAX				*e*S	**Sb**	**17 48 10.2**	**+0.3**
ECNX	**Esteban Cantu**	**0.91**	**296**	*e*P	**Pg**	**17 48 07.2**	**+0.1**
ECNX				*e*S	**Sb**	**17 48 19.1**	**+0.2**
PBX	**Punta Banda**	**1.05**	**298**	*e*P	**Pb**	**17 48 09.2**	**0.0**
PBX				*e*S	**Sg**	**17 48 23.4**	**0.0**
CPBX	**Cerro Prieto**	**1.19**	**14**	*e*P	**Pn**	**17 48 11.1**	**-0.3**
CBX	**Cerro Bola**	**1.37**	**320**	*e*P	**Pb**	**17 48 14.9**	**+0.2**
CBX				*i* S	**Sn**	**17 48 31.1**	**-0.8**
CBX	**Cerro Bola**	**1.37**	**320**	*e*P	**Pb**	**17 48 14.5**	**-0.2**
CBX				*e*S	**Sb**	**17 48 32.2**	**+0.2**
CBX				AML	AML	17 48 39.4	
	comp=E,536nm,0.4s						
CBX				⇓*e*		17 48 39.4	
RMX	**La Rumorosa**	**1.39**	**344**	*e*P	**Pg**	**17 48 15.8**	**-0.4**
RMX				*e*S	**Sg**	**17 48 33.7**	**-0.7**
IKP	**In-Ko-Pah, Jac**	**1.44**	**344**	P	**Pg**	**17 48 17.1**	**-0.1**
	baz=165						
IKP				S	**Sg**	**17 48 35.2**	**-0.8**
	baz=165						
TJIG	**Tijuana**	**1.47**	**323**	*e*P	**Pn**	**17 48 15.1**	**-0.1**
TJIG				*e*S	**Sn**	**17 48 33.7**	**-0.4**
TJIG	**Tijuana**	**1.47**	**323**	*e*P	**Pn**	**17 48 15.6**	**+0.4**
SWSC	**Sam W. Stewart**	**1.69**	**355**	P	**Pg**	**17 48 21.7**	**-0.1**
	baz=178						
SWSC				S	**Sg**	**17 48 44.6**	**+0.9**
	baz=178						
MONP2	**Monument Peak**	**1.76**	**338**	P	**Pb**	**17 48 22.0**	**+0.5**
	baz=158						
MONP2				S	**Sb**	**17 48 44.6**	**+1.2**
	baz=158						
109C	**Camp Elliot, M**	**2.05**	**323**	P	**Pb**	**17 48 26.6**	**+0.4**
	baz=141						
109C				S	**Sb**	**17 48 52.2**	**+0.7**
	baz=141						
TPFO	**Pinon Flats**	**2.44**	**344**	Sb	**Sg**	**17 49 06.2**	**-1.7**
	baz=164						
MURC	**Murrieta**	**2.68**	**331**	Sb	**Sb**	**17 49 11.3**	**+1.5**
	baz=150						

*NIED **24** 17:49:00, 39°.60N×143°.30E, h20km, Mw3.9 Best double couple: M₀8.09000×10¹⁴ NP1:φ₀±216.00000°, δ23.00000°, λ104.00000°. NP2:φ₀±20.00000°, δ67.00000°, λ84.00000°.*

JMA 24 17:49:15.9±0.3, 39°.64N×143°.29E, h26km, M3.7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**1.14**	**267**	P	Pn	17 49 36.3	+0.2
JTH	**Tanohata**	**1.14**	**286**	P	Pn	17 49 36.3	+0.1
JANG	**Nango**	**1.55**	**299**	P	Pn	17 49 42.0	+0.2
JOM	**Ohasama**	**1.55**	**264**	P	Pn	17 49 42.7	+0.8
JRG	**Rokugo**	**2.07**	**264**	P	Pn	17 49 50.8	+1.9
JAH	**Hinai**	**2.11**	**286**	P	Pn	17 49 50.9	+1.4

IDC 24 17:52:42.3±8.9, 17°.50S×174°.67W, h0km, mb3.6/3, mb1 4.0/3, mb1mx3.5/43, mbtmp3.6/3, Error ellipse: s-maj=392.1km s-min=37.4km az=141.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**48.21**	**259**	P	P	18 01 24.3

CRLZ				AML	AML	18 00 24.0	
CRLZ	**Canterbury Las**	**0.06 271**	*e*Pg	Pg	Pg	18 00 22.3	-0.1
MQZ	**McQueen's Vall**	**0.14 195**	⇑PG	Pg	Pg	18 00 24.0	+0.2
MQZ			SG	Sg	Sg	18 00 25.9	+0.3
MQZ			AML	AML	AML	18 00 26.7	
MQZ	**McQueen's Vall**	**0.14 195**	*e*Pg	Pg	Pg	18 00 23.9	+0.2
MQZ			*e*Sg	Sg	Sg	18 00 26.3	+0.6
OXZ	**Oxford**	**0.54 297**	⇓PG	Pg	Pg	18 00 31.5	+0.1
OXZ	**Oxford**	**0.54 297**	*e*Pg	Pg	Pg	18 00 31.5	+0.1
OXZ			*e*Sg	Sg	Sg	18 00 38.1	-0.4
LTZ	**Lake Taylor**	**0.85 338**	⇑P*	Pg	Pg	18 00 37.8	+0.4
LTZ			AML	AML	AML	18 00 50.8	
LTZ			AML	AML	AML	18 00 51.1	
LTZ	**Lake Taylor**	**0.85 338**	*e*Pn	Pg	Pg	18 00 37.7	+0.4
LTZ			*e*Sn	Sg	Sg	18 00 47.9	-0.6
RPZ	**Rata Peaks**	**1.20 263**	P*	Pg	Pg	18 00 42.9	-1.1
RPZ			AML	AML	AML	18 01 08.5	
RPZ			AML	AML	AML	18 01 10.4	
RPZ	**Rata Peaks**	**1.20 263**	*e*Pn	Pg	Pg	18 00 42.6	-1.5
RPZ			*e*Sn	Sn	Sn	18 01 01.1	+0.1
INZ	**Inchbonnie**	**1.25 312**	P*	Pg	Pg	18 00 43.9	-1.1
KHZ	**Kahutara**	**1.31 28**	P*	Pn	Pn	18 00 44.2	-1.6
KHZ	**Kahutara**	**1.31 28**	*e*Pn	Pn	Pn	18 00 44.1	-1.7
WVZ	**Waitaha Valley**	**1.52 289**	PN	Pn	Pn	18 00 48.6	-0.1
WVZ			AML	AML	AML	18 01 14.2	
WVZ			AML	AML	AML	18 01 14.8	
THZ	**Tophouse**	**1.82 5**	PN	Pn	Pn	18 00 51.4	-1.5
THZ			AML	AML	AML	18 01 20.9	
THZ			AML	AML	AML	18 01 29.0	
THZ	**Tophouse**	**1.82 5**	*e*Pn	Pn	Pn	18 00 51.3	-1.5
THZ			*e*Sn	Sn	Sn	18 01 12.6	-3.7
DSZ	**Denniston Nort**	**1.94 340**	PN	Pn	Pn	18 00 53.8	-0.8
DSZ			AML	AML	AML	18 01 22.4	
DSZ			AML	AML	AML	18 01 28.2	
DSZ			AML	AML	AML	18 01 28.4	
DSZ			AML	AML	AML	18 01 30.9	
DSZ	**Denniston Nort**	**1.94 340**	*e*Pn	Pn	Pn	18 00 53.8	-0.8
DSZ			*e*Sn	Sg	Sg	18 01 22.4	-1.0
LBZ	**Lake Benmore**	**1.99 245**	PN	Pn	Pn	18 00 54.2	-1.0
LBZ			AML	AML	AML	18 01 30.4	
LBZ			AML	AML	AML	18 01 30.4	
LBZ			AML	AML	AML	18 01 32.2	
LBZ			AML	AML	AML	18 01 32.2	
LBZ	**Lake Benmore**	**1.99 245**	*e*Pn	Pn	Pn	18 00 54.2	-1.0
LBZ			*e*Pg	Pg	Pg	18 00 58.8	-0.3
LBZ			*e*Sn	Sg	Sg	18 01 27.4	+2.5
ODZ	**Otahua Downs**	**2.08 224**	⇑PN	Pn	Pn	18 00 55.0	-1.4
ODZ			AML	AML	AML	18 01 30.5	
ODZ			AML	AML	AML	18 01 30.5	
ODZ			AML	AML	AML	18 01 37.8	
ODZ			AML	AML	AML	18 01 37.8	
ODZ	**Otahua Downs**	**2.08 224**	*e*Pn	Pn	Pn	18 00 55.0	-1.5
ODZ			*e*Pg	Pg	Pg	18 01 00.3	-0.5
ODZ			*e*Sn	Sg	Sg	18 01 28.3	+0.5
FOZ	**Fox Glacier**	**2.10 270**	PN	Pn	Pn	18 00 57.0	+0.3
FOZ			AML	AML	AML	18 01 39.3	
FOZ			AML	AML	AML	18 01 39.3	
FOZ			AML	AML	AML	18 01 40.1	
FOZ			AML	AML	AML	18 01 40.1	
FOZ	**Fox Glacier**	**2.10 270**	*e*Pn	Pn	Pn	18 00 57.0	+0.3
FOZ			*e*Lg	Lg	Lg	18 01 40.1	
TUWZ	**Tuamarina**	**2.33 24**	AML	AML	AML	18 01 56.1	
TUWZ			AML	AML	AML	18 01 59.7	
NNZ	**Nelson**	**2.41 12**	PN	Pn	Pn	18 01 00.2	-0.7
NNZ			AML	AML	AML	18 01 48.8	
NNZ			AML	AML	AML	18 01 52.9	
SNZO	**South Karori**	**2.71 34**	*e*Pn	Pn	Pn	18 01 03.9	-1.1
HHSZ	**Highcliff Hill**	**2.75 212**	⇓PN	Pn	Pn	18 01 04.1	-1.6
WKZ	**Wanaka**	**2.93 243**	PN	Pn	Pn	18 01 07.4	-0.8
WKZ			AML	AML	AML	18 02 01.2	
WKZ			AML	AML	AML	18 02 03.2	
WKZ	**Wanaka**	**2.93 243**	*e*Pn	Pn	Pn	18 01 07.2	-0.9
WKZ			*e*Pg	Pg	Pg	18 01 17.5	+0.4
WKZ			*e*Sn	Sg	Sg	18 01 53.9	-1.2
EAZ	**Earnscleugh**	**2.94 235**	PN	Pn	Pn	18 01 06.9	-1.3
EAZ			AML	AML	AML	18 01 58.9	
EAZ			AML	AML	AML	18 02 03.6	
EAZ	**Earnscleugh**	**2.94 235**	*e*Pn	Pn	Pn	18 01 06.9	-1.3
EAZ			*e*Lg	Lg	Lg	18 02 03.6	
CAW	**Cannon Point**	**3.03 36**	*e*Pn	Pn	Pn	18 01 07.2	-2.2
TUZ	**Tuapeka**	**3.23 222**	PN	Pn	Pn	18 01 10.8	-1.4
TUZ			AML	AML	AML	18 02 08.7	
TUZ			AML	AML	AML	18 02 12.0	
MLZ	**Mavora Lakes**	**3.74 240**	*e*Pn	Pn	Pn	18 01 17.2	-2.0
MLZ			*e*Pg	Pg	Pg	18 01 31.1	-1.5
MLZ			*e*Sg	Sg	Sg	18 02 18.7	-2.2
BFZ	**Birch Farm**	**3.91 44**	*e*Pn	Pn	Pn	18 01 18.8	-2.9
BFZ			*e*Sn	Sn	Sn	18 02 02.6	-5.2
WHZ	**Wether Hill Ro**	**4.10 234**	*e*Pn	Pn	Pn	18 01 22.1	-2.2
WHZ			*e*Pg	Pg	Pg	18 01 38.0	-1.6
WHZ			*e*Sg	Sg	Sg	18 02 33.9	+1.2
DCZ	**Deep Cove**	**4.39 243**	*e*Pn	Pn	Pn	18 01 25.9	-2.3
DCZ			*e*Pg	Pg	Pg	18 01 43.3	-1.8
BKZ	**Black Stump Fm**	**5.25 34**	*e*Pn	Pn	Pn	18 01 36.1	-3.9
BKZ			*e*Pg	Pg	Pg	18 02 02.7	+1.2
HIZ	**Hauiti**	**5.31 19**	*e*Pn	Pn	Pn	18 01 39.0	-1.9
HIZ			*e*Pg	Pg	Pg	18 02 00.7	-2.1
URZ	**Urewera**	**6.27 34**	*e*Pn	Pn	Pn	18 01 50.8	-3.2
MXZ	**Matakaoa Point**	**7.37 37**	*e*Pn	Pn	Pn	18 02 08.5	-0.5

*CSEM **24** 18:03:00.0, 43°.88N×12°.02E, h7km, MD2.0/4*
ROM 24 18:03:00.0±0.1, 43°.88N×12°.02E, h7km±1km, Md2.0/4, Ml1.9/7, Error ellipse: s-maj=2.0km s-min=0.8km az=34.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFI	**Santa Sofia**	**0.12 281**		Pg	Pg	18 03 03.2	+0.5
SFI				Sg	Sg	18 03 05.6	+1.0
	593nm,0.5s						
SFI	**Santa Sofia**	**0.12 281**		Pg	Pg	18 03 03.2	+0.5
SFI				Sg	Sg	18 03 05.6	+1.0
	593nm,0.5s						
ASQU	**Asqua**	**0.18 243**		Pg	Pg	18 03 04.4	+0.6
ASQU				Sg	Sg	18 03 07.6	+1.3
	805nm,0.4s						
ASQU	**Asqua**	**0.18 243**		Pg	Pg	18 03 04.4	+0.6
ASQU				Sg	Sg	18 03 07.6	+1.3
	805nm,0.4s						
VMG	**Vicchio**	**0.35 284**		Pg	Pg	18 03 07.7	+0.8
VMG				Sg	Sb	18 03 13.7	-0.6
	122nm,0.1s						
VMG	**Vicchio**	**0.35 284**		Pg	Pg	18 03 07.7	+0.8
VMG				Sg	Sb	18 03 13.7	-0.6
	122nm,0.1s						
BADI	**Badiali**	**0.41 156**		Pg	Pg	18 03 08.5	+0.6
BADI				Sg	Sb	18 03 15.2	-0.7
BADI	**Badiali**	**0.41 156**		Pg	Pg	18 03 08.5	+0.6
BADI				Sg	Sb	18 03 15.2	-0.7
SEI	**Scarperia**	**0.51 290**		Pg	Pg	18 03 10.3	+0.5
SEI				Sg	Sb	18 03 18.5	-0.4
	539nm,0.3s						
SEI	**Scarperia**	**0.51 290**		Pg	Pg	18 03 10.3	+0.5
SEI				Sg	Sb	18 03 18.5	-0.4
	539nm,0.3s						
PIEI	**Pieia**	**0.51 132**		Pg	Pg	18 03 10.2	+0.4
PIEI				Sg	Sb	18 03 18.6	-0.3
	30nm,0.3s						
PIEI	**Pieia**	**0.51 132**		Pg	Pg	18 03 10.2	+0.4
PIEI				Sg	Sb	18 03 18.6	-0.3
	30nm,0.3s						
ATVO	**AVT- Monte Val**	**0.57 150**		Pg	Pg	18 03 11.5	+0.5
ATVO				Sg	Sb	18 03 20.7	0.0
	72nm,0.5s						
ATVO	**AVT- Monte Val**	**0.57 150**		Pg	Pg	18 03 11.5	+0.5
ATVO				Sg	Sb	18 03 20.7	0.0
	72nm,0.5s						
FSSB	**Fossombrone**	**0.58 109**		Pg	Pg	18 03 11.8	+0.6
FSSB				Sg	Sb	18 03 21.1	+0.1
FSSB	**Fossombrone**	**0.58 109**		Pg	Pg	18 03 11.8	+0.6
FSSB				Sg	Sb	18 03 21.1	+0.1
FRON	**Frontone**	**0.63 125**		Pg	Pb	18 03 12.8	-0.5
	32nm,0.6s						
FRON	**Frontone**	**0.63 125**		Pg	Pb	18 03 12.8	-0.5
	32nm,0.6s						
SSFR	**Montelago di S**	**0.71 128**		Pg	Pg	18 03 13.8	+0.1
SSFR				Sg	Sb	18 03 25.1	+0.4
	46nm,0.2s						
SSFR	**Montelago di S**	**0.71 128**		Pg	Pg	18 03 13.8	+0.1
SSFR				Sg	Sb	18 03 25.1	+0.4
	46nm,0.2s						
ATTE	**AVT- Monte Tez**	**0.72 160**		Pg	Pg	18 03 14.4	+0.5
	49nm,0.5s						
ATTE	**AVT- Monte Tez**	**0.72 160**		Pg	Pg	18 03 14.4	+0.5
	49nm,0.5s						

*NIED **24** 18:08:00, 46°.60N×147°.70E, h380km, Mw4.2 Best double couple: M0 2.30000×10^15 NP1:φs10.00000°, δ35.00000°, λ135.00000°. NP2:φs139.00000°, δ66.00000°, λ63.00000°.*
*MOS **24** 18:08:28.9±0.9, 47°.36N×147°.29E, h366km, mb4.3/42, Error ellipse: s-maj=7.6km s-min=5.0km az=81.6*
*ISCJB **24** 18:08:28.6±0.2, 47°.30N±0°.03×147°.32E±0°.03, h363km±2km, mb4.2/165, Error ellipse: s-maj=4.7km s-min=3.0km az=161.1*
*SKHL **24** 18:08:28.6±1.3, 47°.15N×147°.42E, h367km±12km, mb5.0/13, msh4.7/3*
*JMA **24** 18:08:29.1±0.4, 46°.64N×147°.68E, h402km, M4.1*
*IDC **24** 18:08:30.4±1.1, 47°.37N×147°.29E, h369km±11km, mb3.8/27, mb1 3.9/37, mb1mx3.7/63, mbtmp4.5/37, Error ellipse: s-maj=9.7km s-min=7.9km az=136.0*
*NEIC **24** 18:08:30.3±0.3, 47°.42N×147°.22E, h366km±3km, mb4.3/123, Error ellipse: s-maj=4.3km s-min=2.2km az=154.0*
ISC 24 18:08:29.0±0.5, 47°.16N±0°.04×147°.43E±0°.04, h365km±4km, n627, σ1°34/686, mb4.3/165, 31C-31D, Northwest of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUR	**Kuril'sk**	**1.95 171**		*c iPN*	**Pn**	**18 09 22.1**	**+0.6**
KUR				*i* S	**S**	**18 10 03.2**	**-0.5**
KUR				pmax	pmax		
	comp=Z,763nm,0.4s						
KUR				pmax	pmax		
	comp=E,92nm,0.5s						
KUR				pmax	pmax		
	comp=N,192nm,0.3s						
KUR				smax	smax		
	comp=N,1μm,2.4s						
KUR				smax	smax		
	comp=E,491nm,2.4s						
KUR				smax	smax		
	comp=E,122nm,0.5s						
KUR				smax	smax		
	comp=N,156nm,0.4s						
KUR	**Kuril'sk**	**1.95 171**		⇑*iP*	**Pn**	**18 09 22.1**	**+0.6**
KUR				AMB	AMB	18 09 22.6	
KUR				AMB	AMB	18 09 22.6	
	comp=N,190nm,0.4s						
KUR				AMB	AMB	18 09 22.6	
	comp=N,90nm,0.4s						
KUR				AMB	AMB	18 09 22.6	
	comp=N,760nm,0.4s						
KUR				*i* S	**S**	**18 10 03.2**	**-0.5**
KUR				A	A	18 10 10.0	
	comp=N,1μm,2.5s						
KUR				A	A	18 10 10.0	
	comp=N,500nm,2.5s						
KUR				A	A	18 10 15.1	
	comp=N,160nm,0.5s						
KUR				A	A	18 10 15.1	
	comp=N,120nm,0.5s						
YSS	**Yuzh-Sakhalins**	**3.20 268**		⇑*iPN*	**Pn**	**18 09 32.4**	**+1.1**
YSS				*i* S	**S**	**18 10 21.3**	**-0.2**
YSS				pmax	pmax		
	comp=Z,50nm,0.4s						
YSS				smax	smax		
	comp=N,130nm,1.6s						
YSS				smax	smax		
	comp=E,150nm,1.0s						
YSS				MLR	MLR		
	comp=Z,200nm,12.0s						
YSS	**Yuzh-Sakhalins**	**3.20 268**		*e*Pn	**Pn**	**18 09 32.5**	**+1.2**
YSS	**Yuzh-Sakhalins**	**3.20 268**		⇑*iP*	**Pn**	**18 09 32.4**	**+1.1**
YSS				AMB	AMB	18 09 34.8	
	comp=Z,50nm,0.4s						
YSS				*e*S	**S**	**18 10 21.3**	**-0.2**
YSS				A	A	18 10 22.1	
	comp=Z,900nm,3.0s						
YSS				A	A	18 10 22.1	
	comp=Z,580nm,3.0s						
YSS				A	A	18 10 22.1	
	comp=Z,150nm,1.0s						
YSS				AMS	AMS	18 12 00.0	
	comp=Z,200nm,12.0s						
YUK	**Yuzh-Kuril'sk**	**3.32 200**		*c iPN*	**Pn**	**18 09 32.2**	**-0.2**
YUK				*i* S	**S**	**18 10 23.1**	**-0.5**
YUK				pmax	pmax		
	comp=Z,507nm,0.3s						
YUK				pmax	pmax		
	comp=N,147nm,0.4s						
YUK				pmax	pmax		
	comp=E,97nm,0.4s						
YUK				smax	smax		
	comp=E,783nm,0.5s						
YUK				smax	smax		
	comp=N,456nm,0.6s						
YUK	**Yuzh-Kuril'sk**	**3.32 200**		⇑*iP*	**Pn**	**18 09 32.2**	**-0.2**
YUK				AMB	AMB	18 09 34.3	
YUK				AMB	AMB	18 09 34.3	
	comp=N,150nm,0.4s						
YUK				AMB	AMB	18 09 34.3	
	comp=N,100nm,0.4s						
YUK				AMB	AMB	18 09 34.3	
	comp=N,510nm,0.4s						
YUK				*i* S	**S**	**18 10 23.1**	**-0.5**
YUK				A	A	18 10 30.4	
	comp=N,460nm,0.6s						
YUK				A	A	18 10 30.4	
	comp=N,780nm,0.6s						
SHO	**Shikotan**	**3.32 188**		*c iPN*	**Pn**	**18 09 30.3**	**-2.2**
SHO				pmax	pmax		
	comp=Z,709nm,0.5s						
SHO				pmax	pmax		
	comp=E,158nm,0.2s						
SHO				pmax	pmax		
	comp=N,238nm,0.6s						
SHO	**Shikotan**	**3.32 188**		⇓*iP*	**Pn**	**18 09 30.5**	**-2.0**
SHO				AMB	AMB	18 09 31.8	
	comp=N,160nm,0.2s						
SHO				AMB	AMB	18 09 31.8	
	comp=N,240nm,0.5s						
SHO				AMB	AMB	18 09 31.8	
	comp=N,710nm,0.5s						
SHO				*e*S	**S**	**18 10 19.0**	**-4.6**
SHO				A	A	18 10 26.3	
	comp=N,2μm,0.4s						
SHO				A	A	18 10 26.3	
	comp=N,2μm,0.4s						
JRA	**Rausu**	**3.61 208**		P	**Pn**	**18 09 35.0**	**-0.2**
NEM2	**Nemuro 2**	**3.98 198**		P	**Pn**	**18 09 36.5**	**-2.3**
NEM2				*e*S	**S**	**18 10 30.5**	**-4.6**
JSE	**Soyaes**	**4.03 239**		P	**Pn**	**18 09 40.6**	**+1.4**
JSE				*e*S	**S**	**18 10 36.3**	**+0.3**
JTKR	**Abashiri--Toko**	**4.04 219**		P	**Pn**	**18 09 39.8**	**+0.4**
JTKR				*e*S	**S**	**18 10 35.4**	**-0.8**
UGL	**Uglegorsk**	**4.07 300**		⇑*iPN*	**Pn**	**18 09 39.5**	**0.0**
UGL				S	**S**	**18 10 35.0**	**-1.6**
UGL				pmax	pmax		
	comp=Z,77nm,0.5s						
UGL				smax	smax		
	comp=N,51nm,0.7s						
UGL				smax	smax		
	comp=E,130nm,0.7s						
UGL	**Uglegorsk**	**4.07 300**		*i* P	**Pn**	**18 09 39.5**	**0.0**
UGL				AMB	AMB	18 09 40.0	
	comp=E,80nm,0.5s						
UGL				*e*S	**S**	**18 10 35.7**	**-0.9**
UGL				A	A	18 10 38.5	
	comp=E,50nm,0.7s						
UGL				A	A	18 10 38.5	
	comp=E,130nm,0.7s						
JWK2	**Keihoku**	**4.26 246**		P	**Pn**	**18 09 43.8**	**+2.2**
JWK2				*e*S	**S**	**18 10 42.3**	**+2.1**
JKA	**Kamikawa-asahi**	**4.56 230**		*e*P	**Pn**	**18 09 45.9**	**+1.2**
ASAJ	**Asahikawa**	**4.56 230**		P	**Pn**	**18 09 45.9**	**+1.2**
	comp=E,8.3nm,0.3s,baz=60,slow=9.1,SNR=107						
ASAJ				S	**S**	**18 10 45.8**	**-0.1**
	comp=E,1.8nm,0.3s,baz=41,slow=20,SNR=4.4						
JAK	**Akkeshi**	**4.59 206**		P	**Pn**	**18 09 43.1**	**-2.0**
JAK				*e*S	**S**	**18 10 42.2**	**-4.4**
JAR	**Ashorobuto**	**4.65 215**		P	**Pn**	**18 09 45.6**	**-0.1**
JAR				*e*S	**S**	**18 10 46.5**	**-1.2**
JKK2	**Kamakawa 2**	**4.65 227**		P	**Pn**	**18 09 46.4**	**+0.7**
JKK2				*e*S	**S**	**18 10 50.4**	**+2.6**
TYV	**Tymovskoe**	**4.86 321**		*e*PN	**Pn**	**18 09 47.5**	**-0.1**
TYV				pmax	pmax		
	comp=E,66nm,0.8s						
TYV				pmax	pmax		
	comp=Z,99nm,0.8s						
TYV	**Tymovskoe**	**4.86 321**		*e*P	**Pn**	**18 09 47.5**	**-0.1**
TYV				AMB	AMB	18 09 49.5	
	comp=Z,70nm,0.8s						
TYV				AMB	AMB	18 09 49.5	
	comp=Z,100nm,0.8s						
TYV				*e*S	**S**	**18 10 50.4**	**-1.0**
TYV				A	A	18 10 52.2	
	comp=Z,70nm,1.0s						
TYV				A	A	18 10 52.6	
	comp=Z,500nm,1.5s						
JCH	**Churui**	**5.39 214**		P	**Pn**	**18 09 51.9**	**-1.7**
JCH				*e*S	**S**	**18 10 56.6**	**-5.6**
MYR	**Moyori**	**5.70 213**		*e*P	**Pn**	**18 09 54.8**	**-2.2**
JNBK	**Urakawa-nobuka**	**5.91 216**		P	**Pn**	**18 09 57.2**	**-2.2**
JNBK				*e*S	**S**	**18 11 07.0**	**-5.8**
ERM	**Erimo**	**5.98 212**		*d iPN*	**Pn**	**18 09 59.1**	**-1.1**
ERM	**Erimo**	**5.98 212**		*e*Pn	**Pn**	**18 09 59.4**	**-0.8**
ERM				*e*		18 11 02.1	
ERM	**Erimo**	**5.98 212**		⇓*iP*	**Pn**	**18 09 59.1**	**-1.1**
JEW	**Eniwo**	**6.05 227**		P	**Pn**	**18 10 01.5**	**+0.5**
JEW				*e*S	**S**	**18 11 11.7**	**-4.0**
SKR	**Severo-Kuril's**	**6.72 55**		*e*PN	Pn	18 09 58.5	-10
SKR				pmax	pmax		
	comp=Z,90nm,0.5s						
SKR	**Severo-Kuril's**	**6.72 55**		*e*P	**Pn**	**18 10 08.1**	**-0.3**
SKR				AMB	AMB	18 10 09.4	
	comp=Z,130nm,0.6s						
JKB	**Kayabe**	**6.98 223**		P	**Pn**	**18 10 09.7**	**-1.8**
JKB				*e*S	**S**	**18 11 26.5**	**-8.5**
OKH	**Okha**	**7.01 337**		⇓*eP*	**P**	**18 10 14.3**	**+1.5**
OKH				AMB	AMB	18 10 16.0	
	comp=Z,100nm,0.7s						
JOT	**Ohata**	**7.37 221**		P	**Pn**	**18 10 13.8**	**-2.3**
JOT				*e*S	**S**	**18 11 35.3**	**-8.1**
JOSM	**Okushiri--Mats**	**7.61 231**		P	**Pn**	**18 10 19.0**	**+0.1**
TEY	**Ternei**	**7.82 258**		⇓*iP*	**P**	**18 10 23.5**	**+1.2**
TEY				AMB	AMB	18 10 24.3	
	comp=Z,40nm,0.6s						
JANG	**Nango**	**8.02 214**		P	**Pn**	**18 10 21.2**	**-2.5**
JANG				*e*S	S	18 11 48.3	-9.1
GRNR	**Gornyy**	**8.09 301**		*i* P	**Pn**	**18 10 24.9**	**+0.5**
GRNR				AMB	AMB	18 10 25.2	
	comp=Z,60nm,0.6s						
HABR	**Khabarovsk**	**8.44 283**		*d iPN*	**Pn**	**18 10 27.6**	**-0.8**
HABR				*e*S	**S**	**18 12 05.4**	**-0.7**
HABR				pmax	pmax		
	comp=N,17nm,0.9s						
HABR				pmax	pmax		
	comp=E,124nm,0.9s						
HABR				pmax	pmax		
	comp=Z,192nm,0.9s						
HABR				MLR	MLR		
	comp=Z,35nm,14.0s						
HABR	**Khabarovsk**	**8.44 283**		⇓*iP*	**Pn**	**18 10 27.6**	**-0.8**
HABR				AMB	AMB	18 10 30.6	
	comp=Z,20nm,0.9s						
HABR				AMB	AMB	18 10 30.6	
	comp=Z,120nm,0.9s						
HABR				AMB	AMB	18 10 30.6	
	comp=Z,190nm,0.9s						
HABR				AMS	AMS	18 14 20.0	
	comp=Z,40nm,14.0s						
PEA0	**Petropavlovsk-**	**8.88 44**		*e*Pn	**Pn**	**18 10 33.0**	**-0.5**
PEA0B	**Petropavlovsk-**	**8.88 44**		*e*Pn	**Pn**	**18 10 31.4**	**-2.1**
PETK	**Petropavlovsk-**	**8.88 44**		P	**Pn**	**18 10 33.5**	**0.0**
	comp=Z,0.4nm,0.3s,baz=226,slow=9.0,SNR=8.6						
PEA1	**Petropavlovsk-**	**8.88 44**		*e*Pn	**Pn**	**18 10 33.5**	**-0.1**
JOM	**Ohasama**	**8.89 212**		P	**Pn**	**18 10 32.2**	**-1.7**
JOM				*e*S	**S**	**18 12 09.1**	**-7.1**
PET	**Petropavlovsk**	**9.29 47**		*e*PN	**Pn**	**18 10 37.6**	**-0.8**
PET	**Petropavlovsk**	**9.29 47**		*e*P	**Pn**	**18 10 37.6**	**-0.8**
PET	**Petropavlovsk**	**9.29 47**		*e*P	**Pn**	**18 10 37.6**	**-0.8**
JYK	**Kaneyama**	**9.73 215**		P	**Pn**	**18 10 42.7**	**-1.1**
KLR	**Kul'dur**	**10.67 287**		P	**P**	**18 10 55.9**	**+0.8**
	comp=Z,2.2nm,0.3s,baz=94,slow=12,SNR=170						
EKMR	**Ekimchan**	**11.01 308**		⇓*iP*	**P**	**18 10 59.5**	**+0.7**
EKMR				AMB	AMB	18 11 05.5	
	comp=Z,20nm,0.6s						
USRK	**Ussuriysk Ar.**	**11.20 260**		P	**Pn**	**18 11 01.5**	**+0.4**
	comp=Z,4.8nm,0.3s,baz=72,slow=12,SNR=56						
VLA	**Vladivostok**	**11.70 255**		*c iPN*	**P**	**18 11 06.5**	**0.0**
VLA	**Vladivostok**	**11.70 255**		⇑*iP*	**P**	**18 11 06.5**	**0.0**
MA2	**Magadan**	**12.59 8**		P	**P**	**18 11 15.5**	**-0.7**
	comp=Z,0.7nm,0.3s,baz=184,slow=11,SNR=5.5						
MJB9	**Matsu-Tunnel**	**12.63 216**		*e*P	**Pn**	**18 11 19.8**	**+1.8**
MAJO	**Matsushiro**	**12.63 216**		*e*PN	**Pn**	**18 11 20.0**	**+1.9**
MAJO	**Matsushiro**	**12.63 216**		*e*P	**Pn**	**18 11 20.2**	**+2.2**
MAJO	**Matsushiro**	**12.63 216**		*e*P	**Pn**	**18 11 20.0**	**+1.9**
MAT	**Matsushiro**	**12.63 216**		P	**Pn**	**18 11 19.2**	**+1.1**
MAT				*e*S	**S**	**18 13 37.7**	**+1.5**
MJAR	**Matsushiro Arr**	**12.63 216**		P	**Pn**	**18 11 19.5**	**+1.4**
	comp=Z,3.4nm,0.3s,baz=19,slow=11,SNR=40						
MDJ	**Mudanjiang**	**12.69 265**		P	**P**	**18 11 17.3**	**-0.2**
MDJ				S	**S**	**18 13 34.5**	**-2.6**
MDJ				ScP	**ScP**	**18 19 19.3**	**-1.1**
MDJ				pmax	pmax		
	comp=Z,6.0nm,0.6s						
MDJ				pmax	pmax		
	comp=Z,100nm,4.3s						
MDJ	**Mudanjiang**	**12.69 265**		*e*P	**P**	**18 11 16.9**	**-0.6**
MDJ	**Mudanjiang**	**12.69 265**		*e*P	**P**	**18 11 16.9**	**-0.6**
BMKR	**Bomnak**	**13.91 310**		⇑*iP*	**P**	**18 11 31.4**	**+0.6**
BMKR				AMB	AMB	18 11 31.9	
	comp=Z,10.0nm,0.5s						
INU	**Inuyama**	**14.15 217**		*e*P	**Pn**	**18 11 37.1**	**+1.5**
ZEA	**Zeya**	**14.41 305**		*e*P	**P**	**18 11 37.0**	**+0.7**
ZEA				AMB	AMB	18 11 47.2	
	comp=Z,30nm,0.8s						
KROS	**Kirovskiy**	**14.81 307**		⇓*iP*	**P**	**18 11 40.8**	**+0.2**
KROS				AMB	AMB	18 11 42.0	
	comp=Z,10.0nm,0.5s						
KROS				AMB	AMB	18 11 42.0	
	comp=Z,20nm,0.5s						
SEY	**Seymchan**	**16.05 8**		P	**P**	**18 11 53.7**	**-0.2**
	comp=Z,3.1nm,0.3s,baz=186,slow=11,SNR=63						
SEY	**Seymchan**	**16.05 8**		⇓*iP*	**P**	**18 11 54.0**	**

comp=Z,9.5nm,1.2s
BILL Bilibino 23.04 18 *e*P **P 18 13 02.0 -1.1**
BJT Baijiatuau 23.63 264 *e*P **P 18 13 09.9 +1.2**
BJT pmax pmax
comp=Z,42nm,1.2s
BJT Baijiatuau 23.63 264 *e*P **P 18 13 09.9 +1.2**
comp=Z,42nm,1.2s
BJT Baijiatuau 23.63 264 *e*P **P 18 13 09.9 +1.2**
TIXI Tiksi 26.07 347 P **P 18 13 28.3 -1.8**
comp=Z,3.0nm,0.4s,baz=156,slow=8.5,SNR=20
TIXI Tiksi 26.07 347⇓ *i*P **P 18 13 28.4 -1.8**
TIXI pmax pmax
comp=Z,4.0nm,0.6s
HHC Hu-ho-hao-te 26.39 269 *e*P **P 18 13 35.1 +1.6**
HHC pmax pmax
comp=Z,27nm,0.9s
HHC pmax pmax
comp=Z,90nm,4.0s
ULN Ulaanbaatar 27.07 287⇑ *e*P **P 18 13 39.3 -0.2**
ULN pmax pmax
comp=Z,5.0nm,1.3s
ULN Ulaanbaatar 27.07 287 *e*P **P 18 13 37.8 -1.7**
comp=Z,5.4nm,1.3s
ULN Ulaanbaatar 27.07 287 *e*P **P 18 13 39.3 -0.2**
SONA1 Songino Array 27.50 287 *e*P **P 18 13 43.0 -0.2**
SONA1 *e*PcP **PcP 18 16 50.6 +0.1**
SONA0 Songino Array 27.50 287 *e*P **P 18 13 43.1 -0.2**
comp=Z,2.8nm,1.0s
SONA0 *e*PcP **PcP 18 16 50.8 +0.2**
SONM Songino Array 27.50 287 P **P 18 13 43.1 -0.2**
comp=Z,1.7nm,0.9s,baz=76,slow=7.6,SNR=5.8
SONM PcP **PcP 18 16 50.8 +0.2**
comp=Z,0.2nm,0.4s,baz=76,slow=1.4,SNR=5.2
TNA Tin City 29.92 36 *e*P **P 18 14 03.5 -0.6**
comp=Z,6.0nm,0.8s
TNA Tin City 29.92 36 *e*P **P 18 14 03.5 -0.6**
LZH Lanzhou 34.00 267 *e*P **P 18 14 42.0 +2.0**
LZH pP pP 18 15 57.3 +8.5
LZH pmax pmax
comp=Z,17nm,1.0s
TT01 Tatalina 34.70 42 *e*P **P 18 14 46.0 +0.6**
TTA Tatalina 34.71 42 *e*P **P 18 14 45.8 +0.3**
TTA pmax pmax
comp=Z,6.0nm,0.7s
TTA Tatalina 34.71 42 *e*P **P 18 14 45.8 +0.3**
comp=Z,5.7nm,0.7s
GTA Gaotai 35.06 275 P **P 18 14 49.8 +1.0**
GTA pP pP 18 16 02.0 +4.0
GTA sP sP 18 16 45.3 +5.2
GTA PcP **PcP 18 17 13.3 +2.1**
GTA pmax pmax
comp=Z,5.0nm,1.2s
RSO Redoubt South 36.39 46 *e*P **P 18 14 59.7 -0.1**
PPLA Purkeypile 36.46 42 *e*P **P 18 15 02.0 +1.7**
comp=Z,13nm,0.9s
CAST Castle Rocks 36.48 41 *e*P **P 18 15 01.0 +0.7**
comp=Z,12nm,0.8s
OHAK Old Harbor 36.58 52 *e*P **P 18 15 01.1 -0.1**
comp=Z,111nm,1.7s
SPU Mount Spurr 36.66 45 *e*P **P 18 15 03.5 +1.6**
KDAK Kodiak Island 36.86 51 *e*P **P 18 15 03.8 +0.3**
KDAK pmax pmax
comp=Z,173nm,1.8s
KDAK Kodiak Island 36.86 51 *e*P **P 18 15 03.8 +0.3**
comp=Z,173nm,1.8s
KDAK Kodiak Island 36.86 51 *e*P **P 18 15 04.3 +0.8**
BPAW Bear Paw Mtn. 36.93 40 *e*P **P 18 15 04.6 +0.5**
comp=Z,5.4nm,0.8s
KTH Kantishna Hill 36.99 41 *e*P **P 18 15 05.8 +1.2**
comp=Z,15nm,0.9s
MLY Manley 37.00 38 *e*P **P 18 15 05.9 +1.2**
comp=Z,8.8nm,1.4s
CD2 Chengdu 37.07 260 P **P 18 15 05.8 +0.1**
CD2 pmax pmax
comp=Z,11nm,0.8s
TRF Thorofare Moun 37.28 41 *e*P **P 18 15 08.0 +0.8**
comp=Z,19nm,1.6s
BRLK Bradley Lake 37.41 47 *e*P **P 18 15 08.4 +0.3**
comp=Z,15nm,0.8s
BWN Browne 37.59 40 *e*P **P 18 15 11.2 +1.7**
comp=Z,26nm,0.6s
RC01 Rabbit Creek A 37.79 45 *e*P **P 18 15 11.0 -0.2**
comp=Z,14nm,1.1s
MCK McKinley 37.86 41 *e*P **P 18 15 12.5 +0.7**
MCK pmax pmax
comp=Z,10.0nm,0.8s
MCK McKinley 37.86 41 *e*P **P 18 15 12.5 +0.7**
comp=Z,9.6nm,0.8s
MCK McKinley 37.86 41 *e*P **P 18 15 12.5 +0.7**
RND Reindeer 37.93 41 *e*P **P 18 15 12.6 +0.2**
RND pmax pmax
comp=Z,7.0nm,0.8s
RND Reindeer 37.93 41 *e*P **P 18 15 12.6 +0.2**
comp=Z,7.4nm,0.8s
PMR Palmer 38.01 44 *e*P **P 18 15 14.5 +1.5**
PMR pmax pmax
comp=Z,34nm,1.9s
PMR Palmer 38.01 44 *e*P **P 18 15 14.5 +1.5**
comp=Z,34nm,1.9s
MDM Murphy Dome 38.07 38 *e*P **P 18 15 13.8 +0.3**
comp=Z,6.3nm,0.8s
SEW Seward 38.07 46 *e*P **P 18 15 14.5 +0.9**
comp=Z,25nm,1.0s
WRH Wood River Hil 38.17 39 *e*P **P 18 15 14.8 +0.5**
comp=Z,8.7nm,0.6s
COLA College 38.24 39 *c i*P **P 18 15 15.3 +0.5**
COLA pmax pmax
comp=Z,21nm,0.8s
COLA College 38.24 39 *e*P **P 18 15 15.2 +0.4**
comp=Z,24nm,0.8s
COLA College 38.24 39⇑ *i*P **P 18 15 15.3 +0.5**
CCB Clear Creek Bu 38.28 39 *e*P **P 18 15 15.0 -0.1**
comp=Z,3.6nm,0.6s
SML Sawmill 38.36 44 *e*P **P 18 15 16.3 +0.4**
SML pmax pmax
comp=Z,24nm,0.8s
SML Sawmill 38.36 44 *e*P **P 18 15 16.3 +0.4**
comp=Z,24nm,0.8s
IL1 Eielson Array 38.66 39 *e*P **P 18 15 18.0 -0.3**
ILAR Eielson Array 38.66 39 P **P 18 15 18.3 0.0**
comp=Z,8.6nm,0.7s,baz=270,slow=7.8,SNR=91
ILB Eielson Array 38.66 39 *e*P **P 18 15 18.1 -0.2**
HDA Harding Lake 38.67 39 *e*P **P 18 15 18.0 -0.4**
comp=Z,6.9nm,0.4s
SCM Sheep Creek Mo 38.82 43 *e*P **P 18 15 20.7 +0.9**
SCM pmax pmax
comp=Z,15nm,0.8s
SCM Sheep Creek Mo 38.82 43 *e*P **P 18 15 20.7 +0.9**
comp=Z,15nm,0.8s
ZAA1 Zalesovo Array 39.18 304 *e*PcP **PcP 18 17 23.9 +0.4**
ZAA0 Zalesovo Array 39.18 304 *e*P **P 18 15 23.0 +0.3**
ZAA0 *e*PcP **PcP 18 17 23.9 +0.5**
ZALV Zalesovo Beam 39.18 304 PcP **PcP 18 17 23.9 +0.4**
comp=Z,2.8nm,0.6s,baz=78,slow=2.2,SNR=15
FYU Fort Yukon 39.18 36 *e*P **P 18 15 23.0 +0.5**
comp=Z,12nm,0.7s
PAX Paxson 39.51 41 *e*P **P 18 15 26.4 +1.0**
PAX pmax pmax
comp=Z,3.0nm,0.7s
PAX Paxson 39.51 41 *e*P **P 18 15 26.4 +1.0**
comp=Z,3.4nm,0.7s
KLU Klutina 39.54 44 *e*P **P 18 15 26.3 +0.6**
comp=Z,16nm,1.0s
DIV Divide 39.68 44 *e*P **P 18 15 27.5 +0.7**
comp=Z,13nm,0.8s
EYAK Cordova Ski Ar 39.80 45 *e*P **P 18 15 28.9 +1.2**
comp=Z,17nm,1.1s
DOT Dot Lake 40.03 40 *e*P **P 18 15 29.0 -0.6**
comp=Z,17nm,0.7s
BMRM Bremner River 40.27 44 *e*P **P 18 15 32.5 +0.9**
comp=Z,11nm,0.8s
MENT Mentasta 40.30 41 *e*P **P 18 15 32.5 +0.7**
comp=Z,13nm,0.4s
RAGM Ragged Mountai 40.36 45 *e*P **P 18 15 33.5 +1.2**
comp=Z,87nm,1.9s
CRQM Cirque 41.02 44 *e*P **P 18 15 38.7 +0.9**
EGAK Eagle 41.09 38 *e*P **P 18 15 38.2 +0.2**
comp=Z,15nm,0.8s
WMQ Urumqi 41.12 288 *e*P **P 18 15 40.8 +2.1**
WMQ pmax pmax
comp=Z,6.0nm,0.6s
WMQ pmax pmax
comp=Z,97nm,6.8s
BALM Baldy 41.33 44 *e*P **P 18 15 41.5 +1.3**
BALM pmax pmax
comp=Z,16nm,0.9s
BALM Baldy 41.33 44 *e*P **P 18 15 41.5 +1.3**
comp=Z,16nm,0.9s
MK31 Makanchi Array 43.26 295 *e*P **P 18 15 55.5 -0.2**
MK31 *e* 18 17 37.0
MK31 Makanchi Array 43.26 295 *e*P **P 18 15 55.5 -0.2**
MK31 *e*PcP **PcP 18 17 37.0 -0.1**
MK32 Makanchi Array 43.26 295 *e*P **P 18 15 55.3 -0.4**
MK32 *e*PcP **PcP 18 17 37.5 +0.4**
MK32 *e*ScP **ScP 18 20 52.8 +0.1**
MKAR Makanchi Array 43.26 295 P **P 18 15 55.3 -0.4**
comp=Z,1.2nm,0.6s,baz=70,slow=8.2,SNR=14
MKAR PcP **PcP 18 17 37.5 +0.4**
comp=Z,1.5nm,0.7s,baz=72,slow=4.6,SNR=12
MKAR ScP **ScP 18 20 52.8 +0.1**
comp=Z,0.2nm,0.6s,baz=66,slow=3.9,SNR=3.0
MK01 Makanchi Array 43.27 295 *e*P **P 18 15 55.4 -0.4**
MK01 *e*PcP **PcP 18 17 37.6 +0.4**
MK01 *e*ScP **ScP 18 20 52.8 +0.1**
INK Inuvik 43.38 32 P **P 18 15 56.1 -0.1**
comp=Z,8.0nm,0.4s,baz=284,slow=6.2,SNR=76
INK PcP **PcP 18 17 37.7 +0.6**
comp=Z,1.3nm,0.6s,baz=299,slow=2.7,SNR=3.5
KURK Kurchatov 43.86 301 P **P 18 16 00.5 +0.2**
KURK 18 17 39.8
KURK pmax pmax
comp=Z,2.0nm,0.5s
KURK pmax pmax
comp=Z,1.0nm,0.3s
KURK Kurchatov 43.86 301 *e*P **P 18 15 59.8 -0.5**
KURK *e*PcP **PcP 18 17 39.1 0.0**
KURK *e*PcP **PcP 18 17 39.8 +0.7**
KURK Kurchatov 43.86 301 *e*P **P 18 16 00.5 +0.2**
KURBB Kurchatov Arra 43.95 301 P **P 18 16 00.5 -0.5**
comp=Z,2.2nm,0.5s,baz=69,slow=8.6,SNR=16
KURBB PcP **PcP 18 17 39.8 +0.4**
comp=Z,0.5nm,0.3s,baz=74,slow=3.4,SNR=4.1
SKAG Skagway 45.13 45 *e*P **P 18 16 11.2 +1.2**
comp=Z,4.7nm,0.6s
LSA Lhasa 46.38 269 *e*P **P 18 16 22.3 +1.6**
LSA pmax pmax
comp=Z,3.0nm,0.6s
LSA Lhasa 46.38 269 *e*P **P 18 16 22.3 +1.6**
comp=Z,3.2nm,0.6s
LSA Lhasa 46.38 269 *e*P **P 18 16 22.3 +1.6**
BVAR Borovoye Array 47.55 307 P **P 18 16 28.1 -0.7**
comp=Z,1.0nm,0.7s,baz=48,slow=6.4,SNR=5.8
BVAR PcP **PcP 18 17 51.9 -0.2**
comp=Z,1.8nm,0.4s,baz=75,slow=1.7,SNR=10
BRVK Borovoye 47.59 307 *e*P **P 18 16 27.9 -1.2**
BRVK *e**PP **PcP 18 17 52.2 0.0**
BRVK Borovoye 47.59 307 *e*P **P 18 16 27.9 -1.2**
BRVK *e*pP **PcP 18 17 52.2 0.0**
DLBC Dease Lake 48.06 45 *e*P **P 18 16 34.7 +2.0**
comp=Z,5.3nm,0.6s
CMAR Chiang Mai Arr 48.75 251 PcP **PcP 18 17 58.3 +1.3**
comp=Z,1.0nm,0.7s,baz=18,slow=3.0,SNR=10
EKS2 Erkin-Say 50.56 294 *e*P **P 18 16 51.9 +0.2**
EKS2 pmax pmax
comp=Z,2.0nm,0.6s
EKS2 Erkin-Say 50.56 294 *e*P **P 18 16 51.9 +0.2**
comp=Z,1.6nm,0.6s
SPA0 Spitsbergen Ar 51.47 349 *e*P **P 18 16 57.4 -0.4**
RES Resolute Bay 51.65 17 *e*P **P 18 16 57.0 -2.0**
RES Resolute Bay 51.65 17 *e*P **P 18 16 57.0 -2.0**
RES Resolute Bay 51.65 17 *e*P **P 18 16 57.0 -2.0**
ARU Arti 52.03 315 *c i*P **P 18 17 00.9 -1.2**
ARU 18 18 06.0
ARU *PP **pP 18 18 17.6 +0.3**
ARU 18 18 58.3
ARU SS **SS 18 27 38.1 -0.4**
ARU pmax pmax
comp=Z,13nm,1.2s
ARU Arti 52.03 315 *e*P **P 18 17 00.8 -1.2**
comp=Z,7.7nm,0.7s
ARU Arti 52.03 315⇑ *i*P **P 18 17 00.9 -1.2**
YKW3 Yellowknife Ar 52.84 35 *e*P **P 18 17 07.3 -0.5**
comp=Z,4.1nm,0.7s
YKA Yellowknife Ar 52.88 35 P **P 18 17 08.1 0.0**
comp=Z,4.4nm,0.6s,baz=303,slow=7.0,SNR=51
YKA PcP **PcP 18 18 12.2 +0.6**
comp=Z,1.3nm,0.6s,baz=309,slow=3.6,SNR=10
YKB5 Yellowknife Ar 52.88 35 *e*P **P 18 17 07.4 -0.7**
YKB5 *e*PcP **PcP 18 18 11.3 -0.3**
ABKAR Akbulak array 55.12 307 *e*P **P 18 17 23.9 -0.5**
ARA0 ARCESS Array S 56.12 339 *e*P **P 18 17 30.2 -0.9**
ARA0 *e*PcP **PcP 18 18 24.1 0.0**
ARCES ARCESS Array B 56.12 339 P **P 18 17 30.2 -0.9**
comp=Z,0.8nm,0.4s,baz=49,slow=8.1,SNR=12
ARCES PcP **PcP 18 18 24.1 0.0**
comp=Z,1.5nm,0.6s,baz=59,slow=5.6,SNR=7.3
A04D Lummi Island 56.71 52 P **P 18 17 37.5 +2.0**
baz=306
B05A Bryant 57.31 53 P **P 18 17 41.5 +1.9**
baz=306
JCW Jim Creek 57.44 53 *e*P **P 18 17 42.1 +1.5**
B06A Marblemount 57.49 52 *e*P **P 18 17 41.2 +0.3**
comp=Z,14nm,0.4s
RPW Rockport 57.52 52 *e*P **P 18 17 42.3 +1.1**
KBL Kabul 58.27 288 *e*P **P 18 17 45.7 -1.1**
KBL pmax pmax
comp=Z,5.0nm,0.4s
KBL Kabul 58.27 288 *e*P **P 18 17 45.7 -1.1**
comp=Z,5.4nm,0.4s
LTY Liberty 58.68 53 *e*P **P 18 17 50.2 +1.0**
comp=Z,24nm,1.5s
B08A Colville Reser 58.74 51 *e*P **P 18 17 50.0 +0.4**
comp=Z,22nm,1.5s
I03D Drain, OR 59.34 57 P **P 18 17 56.6 +3.0**
baz=308
H04A Detroit Lake 59.40 56 *e*P **P 18 17 56.0 +1.9**
comp=Z,11nm,1.0s
C09A Chrisman Ranch 59.64 51 *e*P **P 18 17 56.6 +1.0**
comp=Z,8.9nm,0.8s
I04A Tendick Farm, 59.82 57 P **P 18 17 59.0 +2.1**
baz=308
NEW Newport 59.96 50 P **P 18 17 59.2 +1.4**
baz=309
NEW Newport 59.96 50 *e*P **P 18 17 59.0 +1.1**
NEW pmax pmax
comp=Z,11nm,1.0s
NEW Newport 59.96 50 *e*P **P 18 17 59.0 +1.1**
comp=Z,11nm,1.0s
NEW Newport 59.96 50 *e*P **P 18 17 59.0 +1.1**
I05D Terrebonne, OR 60.09 56 P **P 18 18 00.9 +2.1**
baz=308
L02D Cave Junction, 60.13 59 P **P 18 18 01.7 +2.6**
baz=309
SUMG Summit 60.49 2 *e*P **P 18 18 00.7 -0.7**
SUMG pmax pmax
comp=Z,14nm,1.0s
SUMG Summit 60.49 2 *e*P **P 18 18 00.7 -0.7**
comp=Z,14nm,1.0s
J05D Fort Rock, OR 60.80 57 P **P 18 18 06.0 +2.3**
baz=309
M02C Callahan 61.05 59 P **P 18 18 07.8 +2.5**
baz=309
K05A Summer Lake 61.35 57 *e*P **P 18 18 09.1 +1.7**
comp=Z,13nm,0.9s
M04C Macdoel 61.40 58 P **P 18 18 09.7 +2.1**
baz=309
N02D Trinity Center 61.40 60 P **P 18 18 09.9 +2.3**
baz=309
BSMT Bassoo Peak 61.44 49 *e*P **P 18 18 09.7 +1.8**
BLMT Blacktail Moun 61.56 49 *e*P **P 18 18 10.3 +1.6**
FIA1 FINESS Array S 61.93 332 *e*P **P 18 18 09.1 -1.6**
comp=Z,17nm,0.7s
FIA0 FINESS Array S 61.94 332 *e*P **P 18 18 09.5 -1.1**
FIA0 FINESS Array S 61.94 332 *e*P **P 18 18 09.5 -1.1**
FINES FINESS Array B 61.94 332 P **P 18 18 09.5 -1.1**
comp=Z,12nm,0.6s,baz=36,slow=8.5,SNR=70
SWMT Swartz Lake 62.07 49 *e*P **P 18 18 13.2 +1.2**
MOD Modoc Plateau 62.21 57 *e*P **P 18 18 13.2 +0.2**
comp=Z,3.7nm,0.8s
O03D Paynes Creek 62.36 60 P **P 18 18 15.3 +1.4**
baz=310
MSO Missoula 62.54 50 P **P 18 18 16.3 +1.3**
baz=311
MSO Missoula 62.54 50 *e*P **P 18 18 16.4 +1.4**
comp=Z,12nm,1.0s
OBN Obninsk 62.70 323⇑ *e*P **P 18 18 15.3 -0.4**
OBN *e* 18 18 48.6
OBN *e**PP **pP 18 19 34.8 +0.5**
OBN *e* 18 20 40.0
OBN pmax pmax
comp=Z,8.0nm,0.5s
OBN Obninsk 62.70 323⇑ *e*P **P 18 18 15.3 -0.4**
CHMT Chamberlain Mo 62.84 49 *e*P **P 18 18 18.2 +1.1**
FFC Flin Flon 62.86 38 *e*P **P 18 18 17.1 +0.3**
FFC pmax pmax
comp=Z,11nm,0.8s
FFC Flin Flon 62.86 38 *e*P **P 18 18 17.1 +0.3**
comp=Z,12nm,0.8s
FFC *e*ScP **ScP 18 22 08.7 -8.7**
FFC Flin Flon 62.86 38 *e*P **P 18 18 17.1 +0.3**
FCC Fort Churchill 62.98 31 *e*P **P 18 18 17.1 -0.4**
FCC pmax pmax
comp=Z,6.0nm,0.6s
FCC Fort Churchill 62.98 31 *e*P **P 18 18 17.1 -0.4**
comp=Z,6.4nm,0.6s
FCC Fort Churchill 62.98 31 *e*P **P 18 18 17.1 -0.4**
GEYT Alibeck 63.00 297 P **P 18 18 18.4 +0.3**
comp=Z,4.1nm,0.6s,baz=46,slow=4.2,SNR=7.2
HRY Holter Researc 63.71 49 *e*P **P 18 18 24.4 +1.7**
MFID Camas Ranch 63.75 54 *e*P **P 18 18 24.3 +1.3**
comp=Z,12nm,1.6s
LRM Limekiln Ridge 63.98 50 *e*P **P 18 18 25.6 +1.1**
PAHR Pah Rah Range 64.16 59 *e*P **P 18 18 27.5 +1.8**
comp=Z,5.6nm,1.0s
DLMT Dillon 64.21 50 *e*P **P 18 18 27.7 +1.7**
comp=Z,8.2nm,0.9s
HLID Hailey 64.43 53 P **P 18 18 28.6 +1.2**
baz=312
HLID Hailey 64.43 53 *e*P **P 18 18 29.0 +1.6**
comp=Z,2.5nm,0.8s
MCMT McKenzie Canyo 64.43 51 *e*P **P 18 18 28.7 +1.2**
BOZ Bozeman (W) 64.52 50 P **P 18 18 29.3 +1.3**
baz=312
BOZ Bozeman (W) 64.52 50 *e*P **P 18 18 29.2 +1.3**
BOZ pmax pmax
comp=Z,9.0nm,0.9s
BOZ Bozeman (W) 64.52 50 *e*P **P 18 18 29.2 +1.2**
comp=Z,9.4nm,0.9s
BOZ Bozeman (W) 64.52 50 *e*P **P 18 18 29.2 +1.2**
CMB Columbia Colle 64.66 61 *e*P **P 18 18 29.9 +1.1**
CMB pmax pmax
comp=Z,5.0nm,0.9s
CMB Columbia Colle 64.66 61 *e*P **P 18 18 29.9 +1.1**
comp=Z,4.7nm,0.9s
WAKR Walker 64.91 60 *e*P **P 18 18 32.3 +1.6**
BMN Battle Mountai 64.93 57 *e*P **P 18 18 32.7 +2.0**
BMN pmax pmax
comp=Z,11nm,1.3s
BMN Battle Mountai 64.93 57 *e*P **P 18 18 32.7 +2.0**
comp=Z,11nm,1.3s
LRV Little Rabbit 65.34 63 *e*P **P 18 18 35.1 +1.9**
GCMT Greycliff 65.44 49 *e*P **P 18 18 35.3 +1.6**
YMR Madison River 65.53 50 *e*P **P 18 18 36.1 +1.6**
comp=Z,8.9nm,1.1s
NV01 Mina Array Sit 65.63 59 *e*P **P 18 18 36.5 +1.3**
NVAR Mina Array Bea 65.63 59 P **P 18 18 36.8 +1.6**
comp=Z,3.4nm,0.7s,baz=298,slow=6.8,SNR=20
NV11 Mina Array Sit 65.72 59 *e*P **P 18 18 36.1 +0.5**
comp=Z,5.4nm,0.9s
YFT Old Faithful 65.75 50 *e*P **P 18 18 39.0 +3.1**
comp=Z,8.1nm,1.0s
H17A Grant Village 65.92 50 P **P 18 18 40.0 +3.0**
baz=313
H17A Grant Village 65.92 50 *e*P **P 18 18 40.0 +3.0**
comp=Z,9.8nm,1.0s
IMW Indian Meadow 66.07 51 *e*P **P 18 18 39.7 +1.7**
comp=Z,5.8nm,1.0s
RLMT Red Lodge 66.10 49 P **P 18 18 39.0 +0.9**
baz=314
RLMT Red Lodge 66.10 49 *e*P **P 18 18 39.5 +1.4**
comp=Z,21nm,1.6s
FXWY Fox Creek 66.20 51 *e*P **P 18 18 40.4 +1.6**
comp=Z,4.9nm,1.1s
DGMT Dagmar 66.27 44 P **P 18 18 39.8 +1.0**
baz=315
MOOW Moose Ponds 66.27 51 *e*P **P 18 18 40.1 +1.0**
comp=Z,8.9nm,1.3s
TPAW Teton Pass 66.34 51 *e*P **P 18 18 41.8 +2.1**
comp=Z,12nm,1.1s
NPI North Pocatell 66.41 53 *e*P **P 18 18 40.4 +0.4**
LOHW Long Hollow 66.44 51 *e*P **P 18 18 42.0 +1.8**
comp=Z,5.8nm,1.1s
NB201 NORSAR Array S 66.47 338 *e*P **P 18 18 38.9 -0.9**
REDW Red Top Meadow 66.48 51 *e*P **P 18 18 42.4 +1.9**
comp=Z,8.2nm,1.2s
NB2 NORSAR Subarra 66.50 338 P **P 18 18 38.9 -1.1**
comp=Z,5.4nm,0.5s,baz=30,slow=6.5
NB200 NORSAR Array S 66.50 338 *e*P **P 18 18 39.2 -0.9**
NOA NORSAR Array B 66.50 338 P **P 18 18 39.2 -0.9**
comp=Z,12nm,0.7s,baz=32,slow=6.6,SNR=37
HFS Hagfors 66.62 337 P **P 18 18 39.7 -1.1**
comp=Z,12nm,0.5s,baz=46,slow=4.8,SNR=55
A26A Wade Farm, Ken 66.96 42 P **P 18 18 44.4 +1.2**
baz=316
GRAC Grapevine Rang 67.14 60 P **P 18 18 46.3 +1.8**
baz=313
R11A Troy Canyon, C 67.27 58 P **P 18 18 47.1 +1.7**
baz=313
R11A Troy Canyon, C 67.27 58 *e*P **P 18 18 46.3 +0.9**
comp=Z,3.4nm,1.3s
HWUT Hardware Ranch 67.30 53 *e*P **P 18 18 47.3 +1.7**
comp=Z,4.9nm,0.9s
NCK Nalchik 67.50 310⇑ *i*P **P 18 18 47.5 +0.9**
NCK pmax pmax
comp=Z,4.0nm,0.4s
BW06 Boulder Array 67.58 51 P **P 18 18 48.7 +1.3**
baz=314
BW06 Boulder Array 67.58 51 *e*P **P 18 18 48.0 +0.7**
comp=Z,9.5nm,1.1s
PD31 Pinedale Array 67.58 51 *e*P **P 18 18 47.9 +0.5**
PDAR Pinedale Array 67.58 51 P **P 18 18 48.4 +1.0**
comp=Z,5.0nm,0.6s,baz=335,slow=0.5,SNR=42
DUG Dugway, Tooele 67.58 55 P **P 18 18 49.0 +1.7**
baz=314
DUG Dugway, Tooele 67.58 55 *e*P **P 18 18 48.8 +1.5**
DUG pmax pmax
comp=Z,6.0nm,0.9s
DUG Dugway, Tooele 67.58 55 *e*P **P 18 18 48.8 +1.5**
comp=Z,5.9nm,0.9s
DUG Dugway, Tooele 67.58 55 *e*P **P 18 18 49.1 +1.8**
KIV Kislovodsk 67.66 311 *e*P **P 18 18 48.7 +1.1**
KIV pmax pmax
comp=Z,14nm,0.9s
KIV Kislovodsk 67.66 311 *e*P **P 18 18 47.6 0.0**
comp=Z,12nm,0.8s
KIV Kislovodsk 67.66 311 *e*P **P 18 18 48.7 +1.1**
MPMC Manual Prospec 67.70 61 P **P 18 18 49.6 +1.5**
baz=313
KBZ Khabaz 67.70 311 P **P 18 18 48.4 +0.6**
comp=Z,6.5nm,0.8s,baz=41,slow=3.1,SNR=12
TCUT Toone Canyon 67.72 53 *e*P **P 18 18 49.4 +1.1**
comp=Z,38nm,0.7s
FURC Furnace Creek, 67.80 60 P **P 18 18 50.6 +2.2**
baz=313
WR1 Warramunga Arr 67.83 193 *e*P **P 18 18 49.9 +1.1**
comp=Z,43nm,1.8s
WRA Warramunga Arr 67.83 193 P **P 18 18 49.9 +1.1**
comp=Z,3.4nm,0.6s,baz=8.8,slow=6.6,SNR=29
TPNV Topopah Spring 67.83 59 P **P 18 18 50.3 +1.4**
baz=313
TPNV Topopah Spring 67.83 59 *e*P **P 18 18 49.5 +0.6**
TPNV pmax pmax
comp=Z,5.0nm,0.8s
TPNV Topopah Spring 67.83 59 *e*P **P 18 18 49.5 +0.6**
comp=Z,5.2nm,0.8s
ZEI Tsey 67.84 309 *e*P **P 18 18 47.9 -1.0**
ZEI pmax pmax
comp=Z,10.0nm,0.6s
FITZ Fitzroy Crossi 67.86 202 P **P 18 18 50.3 +1.3**
comp=Z,4.4nm,1.0s,baz=22,slow=5.4,SNR=3.2
FITZ Fitzroy Crossi 67.86 202 *e*P **P 18 18 50.3 +1.3**
comp=Z,20nm,1.4s
LRMC Laurel Mtn Rad 67.98 61 P **P 18 18 51.4 +1.6**
baz=313
B28A Dugan Ranch, T 68.05 42 P **P 18 18 50.5 +0.6**
baz=318
BLG Laguna Peak, P 68.07 63 P **P 18 18 53.3 +3.0**
baz=313
D26A Manning 68.13 44 P **P 18 18 50.3 -0.1**
baz=317
NEY Neytrino 68.13 310⇑ *e*P **P 18 18 51.8 +1.1**
NEY pmax pmax
comp=Z,1.0nm,0.6s
PSUT Pine Spring 68.13 57 *e*P **P 18 18 51.9 +1.1**
comp=Z,4.2nm,1.0s
NLU North Lily Min 68.16 55 *e*P **P 18 18 52.3 +1.3**
comp=Z,3.7nm,0.9s
EDW2 Edwards Air Fo 68.20 62 P **P 18 18 52.8 +1.7**

baz=313
A29A Manning Farm, 68.21 41 P P 18 18 51.8 +0.9
baz=318
B29A Wagenman Farm, 68.50 41 P P 18 18 53.4 +0.8
baz=318
A30A Hoffart Farm, 68.61 40 P P 18 18 54.0 +0.7
baz=318
GSC Goldstone, Bar 68.62 61 P P 18 18 55.1 +1.3
baz=314
ULM Lac du Bonnet 68.67 38 P P 18 18 53.2 -0.5
comp=Z,4.6nm,0.5s,baz=316,slow=4.7,SNR=5.3
ULM Lac du Bonnet 68.67 38 eP P 18 18 53.7 +0.1
ULM pmax pmax
comp=Z,6.0nm,0.6s
ULM Lac du Bonnet 68.67 38 eP P 18 18 53.7 +0.1
comp=Z,6.3nm,0.6s
ULM Lac du Bonnet 68.67 38 eP P 18 18 53.7 +0.1
SHPR Sheep Range 68.77 59 eP P 18 18 56.9 +2.2
comp=Z,2.9nm,0.9s
BFSC Mount Baldy Ra 68.84 62 P P 18 18 56.8 +1.7
baz=314
MDND Maddock 68.84 42 P P 18 18 55.3 +0.6
baz=318
AKASG Malin Array Be 68.96 323 P P 18 18 54.2 -1.1
comp=Z,6.6nm,0.5s,baz=36,slow=6.3,SNR=29
B30A Myrvik Farm, E 68.97 41 P P 18 18 56.2 +0.7
baz=319
KIEV Kiev 68.97 323d iP P 18 18 54.5 -0.9
KIEV pmax pmax
comp=Z,7.0nm,0.7s
KIEV Kiev 68.97 323 eP P 18 18 53.8 -1.6
comp=Z,7.4nm,0.7s
AK11 Malin Array Si 69.00 323 eP P 18 18 54.2 -1.4
TUQ Turquoise Moun 69.06 60 P P 18 18 58.2 +1.8
baz=314
TMUT Trail Mountain 69.10 55 eP P 18 18 57.9 +1.1
comp=Z,7.1nm,1.0s
MSU Marysvale 69.10 56 eP P 18 18 58.6 +1.8
MSU Marysvale 69.10 56 eP P 18 18 58.6 +1.8
HEC Hector,Ludlow 69.23 61 P P 18 18 59.2 +1.8
baz=314
P17A Butcher Ranch, 69.23 54 eP P 18 18 58.8 +1.4
comp=Z,6.0nm,0.8s
K22A Casper 69.25 49 P P 18 18 58.3 +0.8
baz=316
B31A Greenbush Farm 69.29 40 P P 18 18 57.5 +0.1
baz=319
G26A Maurine 69.31 45 P P 18 18 58.4 +0.7
baz=317
A32A Rocking H Ranc 69.42 39 P P 18 18 58.1 -0.1
baz=320
MTPU Mount Pierson 69.42 56 eP P 18 19 00.6 +1.7
comp=Z,3.5nm,0.8s
RSSD Black Hills 69.45 47 P P 18 18 59.4 +0.5
baz=317
RSSD Black Hills 69.45 47 eP P 18 18 59.3 +0.5
RSSD pmax pmax
comp=Z,7.0nm,0.7s
RSSD Black Hills 69.45 47 eP P 18 18 59.3 +0.5
comp=Z,6.6nm,0.7s
LCMT Little Creek M 69.53 57 eP P 18 19 00.6 +1.3
comp=Z,3.7nm,0.9s
G27A Dupree 69.57 45 P P 18 18 59.3 +0.1
baz=317
SRU San Rafael Swe 69.61 54 eP P 18 19 01.0 +1.2
SRU pmax pmax
comp=Z,8.0nm,0.7s
SRU San Rafael Swe 69.61 54 eP P 18 19 01.0 +1.2
comp=Z,8.3nm,0.7s
GMRC Granite Mounta 69.66 61 P P 18 19 01.5 +1.4
baz=314
I25A Rochford 69.68 47 P P 18 19 00.6 +0.5
baz=317
D30A Buchanan 69.77 42 P P 18 19 00.7 +0.3
baz=319
B32A Ashes, Strandq 69.80 40 P P 18 19 00.8 +0.3
baz=320
H27A Howes 70.05 45 P P 18 19 02.9 +0.7
baz=318
O20A White River Ci 70.13 52 P P 18 19 04.2 +1.3
baz=316
E30A Jud 70.16 42 P P 18 19 03.3 +0.6
baz=319
D31A Mcclaflin, Tow 70.29 41 P P 18 19 03.9 +0.4
baz=319
IRM Iron Mountain 70.40 61 P P 18 19 06.1 +1.7
baz=314
B34A Aery, Baudette 70.54 39 P P 18 19 04.5 -0.4
baz=321
D32A Dogwood Acres, 70.54 41 P P 18 19 05.1 +0.1
baz=320
BC3 Big Chuckawall 70.56 61 P P 18 19 07.0 +1.5
baz=315
E31A Nome 70.58 42 P P 18 19 05.4 +0.2
baz=319
C33A Trail 70.61 40 P P 18 19 05.4 0.0
baz=320
PV09 Paradox Valley 70.81 54 eP P 18 19 08.6 +1.4
N23A Red Feather La 70.81 50 P P 18 19 08.1 +1.1
baz=317
IKP In-Ko-Pah, Jac 70.87 63 P P 18 19 09.1 +1.8
baz=315
PDMCI Parker Dam,Lak 70.89 60 P P 18 19 08.8 +1.5
baz=315
PV10 Paradox Valley 70.94 54 eP P 18 19 09.5 +1.6
H29A Onida 70.95 44 P P 18 19 07.9 +0.4
baz=318
I28A Midland 70.95 45 P P 18 19 08.0 +0.5
baz=318
B35A Bob, Littlefor 71.03 38 P P 18 19 07.2 -0.6
baz=321,SNR=10.0
D33A AnnSam, Waubun 71.05 40 P P 18 19 08.2 +0.1
baz=320
Y12C Blythe 71.05 61 P P 18 19 10.0 +1.7
baz=315
G30A Faulkton 71.08 43 P P 18 19 08.8 +0.6
baz=319
PV05 Paradox Valley 71.12 54 eP P 18 19 10.3 +1.4
SORM Soroca 71.30 322 ⇓iP P 18 19 08.8 -0.7
SORM Soroca 71.30 322 ⇓P P 18 19 08.8 -0.7
PV01 Paradox Valley 71.38 54 eP P 18 19 11.4 +1.0
D34A Park Rapids 71.38 40 P P 18 19 09.6 -0.4
baz=321
C35A Jirik Farms, M 71.43 39 P P 18 19 09.8 -0.5
baz=321
SMCO Snowmass 71.50 52 eP P 18 19 12.2 +0.9
comp=Z,2.6nm,0.7s
AS31 Alice Springs 71.55 193 eP P 18 19 13.2 +2.1
comp=Z,1.4nm,1.1s
ASAR Alice Springs 71.55 193 P P 18 19 13.2 +2.1
comp=Z,1.1nm,0.4s,baz=8.2,slow=5.6,SNR=72
WUAZ Wupatki 71.66 57 P P 18 19 14.3 +2.2
baz=316
SUSD Miller 71.68 44 P P 18 19 12.0 +0.2
baz=319
G32A Webster 71.75 42 P P 18 19 11.8 -0.4
baz=320
ISCO Idaho Springs 71.77 51 P P 18 19 14.2 +1.3
baz=317
ISCO Idaho Springs 71.77 51 eP P 18 19 14.0 +1.1
ISCO pmax pmax
comp=Z,4.0nm,1.0s
ISCO Idaho Springs 71.77 51 eP P 18 19 14.0 +1.1
comp=Z,3.6nm,1.0s
E34A Wadena 71.83 40 P P 18 19 13.3 +0.6
baz=321
F33A 5 Mile Ranch, 71.85 41 P P 18 19 13.0 +0.2
baz=320
I30A Oacoma 71.86 44 P P 18 19 13.4 +0.5
baz=319
C36A Pine Crest Far 71.87 38 P P 18 19 12.8 -0.1
baz=322,SNR=6.1
D35A Remer 71.88 39 P P 18 19 12.8 -0.2
baz=321
MVCO Mesa Verde 72.08 54 P P 18 19 15.7 +1.1
baz=316
MVCO Mesa Verde 72.08 54 eP P 18 19 15.9 +1.3
comp=Z,6.9nm,0.8s
C37A Embarrass 72.17 38 P P 18 19 14.8 +0.2
baz=322
D36A Goodland 72.19 39 P P 18 19 14.5 -0.2
baz=322
J30A Dallas 72.27 45 P P 18 19 15.8 +0.5
baz=319
G33A Ortonville 72.28 42 P P 18 19 15.7 +0.4
baz=320
EYMN Ely 72.28 37 P P 18 19 14.9 -0.4
baz=322,SNR=9.8

EYMN Ely 72.28 37 eP P 18 19 15.5 +0.2
comp=Z,16nm,0.7s
H32A Carlson Farm, 72.34 43 P P 18 19 15.2 -0.5
baz=320
F34A Alexandria 72.35 41 P P 18 19 15.5 -0.2
baz=321
KWP Kalwaria Pacla 72.38 326 ⇑iP P 18 19 16.2 +0.3
KWP Kalwaria Pacla 72.38 326 ⇑P P 18 19 16.2 +0.3
X16A Lo Mia Camp, P 72.40 58 eP P 18 19 18.0 +1.5
comp=Z,3.8nm,0.8s
D37A Cotton 72.51 38 P P 18 19 16.1 -0.5
baz=322
H33A Prehn Over Nor 72.53 42 P P 18 19 16.9 0.0
baz=320
C38A Sawbill Land. 72.55 37 P P 18 19 16.3 -0.6
baz=323,SNR=17
G34A Benson 72.60 41 P P 18 19 17.6 +0.4
baz=321
S22A 4UR Ranch, Cre 72.61 53 P P 18 19 19.5 +1.7
baz=317
S22A 4UR Ranch, Cre 72.61 53 eP P 18 19 19.2 +1.4
comp=Z,3.0nm,0.8s
Q24A Divide 72.63 51 P P 18 19 18.7 +0.8
baz=317
E36A McGregor 72.66 39 P P 18 19 17.5 0.0
baz=322,SNR=5.5
K30A Basset 72.70 45 P P 18 19 18.4 +0.5
baz=319
C39A Grand Marais 72.94 37 P P 18 19 18.2 -0.9
baz=323
I33A Coleman 72.99 43 P P 18 19 20.0 +0.4
baz=320
BUR08 Bucovina Ar. S 73.00 323 eP P 18 19 19.1 -0.5
BURAR Bucovina Array 73.01 323 ⇑iP P 18 19 19.3 -0.4
BURAR Bucovina Array 73.01 323 ⇑P P 18 19 19.3 -0.4
F36A Milaca 73.06 40 P P 18 19 19.4 -0.4
baz=322
STHS Stebnicka Huta 73.11 327 eP P 18 19 20.6 +0.5
STHS pmax pmax
comp=Z,3.0nm,0.7s
STHS Stebnicka Huta 73.11 327 eP P 18 19 20.6 +0.5
TESR Tescani 73.29 322 ⇓iP P 18 19 21.1 -0.1
ECSD EROS Data Cent 73.32 43 P P 18 19 21.9 +0.5
baz=321
ECSD EROS Data Cent 73.32 43 eP P 18 19 21.6 +0.2
comp=Z,8.8nm,1.0s
SDCO Great Sand Dun 73.33 52 P P 18 19 22.7 +0.7
baz=318
214A Organ Pipe Nat 73.34 61 P P 18 19 23.3 +1.6
baz=316
H35A Sunnyside Ranc 73.39 41 P P 18 19 22.3 +0.6
baz=321
L31A Butterfield Fa 73.45 45 P P 18 19 22.8 +0.5
baz=320
CFR Carcaliu 73.70 320 ⇓iP P 18 19 23.4 -0.1
CFR Carcaliu 73.70 320 ⇓P P 18 19 23.4 -0.1
LANS Liptovska Anna 73.99 327 eP P 18 19 25.7 +0.5
LANS Liptovska Anna 73.99 327 eP P 18 19 25.7 +0.5
DPC Dobruska-Polom 74.11 330 eP P 18 19 26.2 +0.3
DPC Dobruska-Polom 74.11 330 eP P 18 19 26.2 +0.3
MORC Moravsky Berou 74.16 329 ⇓iP P 18 19 26.4 +0.2
MORC Moravsky Berou 74.16 329 ⇓P P 18 19 26.4 +0.2
KECS Kecovo 74.17 326 eP P 18 19 25.4 -0.8
KECS pmax pmax
comp=Z,2.0nm,0.8s
KECS Kecovo 74.17 326 eP P 18 19 25.4 -0.8
KRLC Kraliky 74.18 329 eP P 18 19 26.1 -0.2
KRLC Kraliky 74.18 329 eP P 18 19 26.1 -0.2
T25A Trinidad 74.36 52 P P 18 19 28.7 +0.9
baz=318
T25A Trinidad 74.36 52 eP P 18 19 28.1 +0.3
comp=Z,4.8nm,0.9s
CLL Collm 74.38 332 ⇑iP P 18 19 26.6 -0.7
comp=Z,15nm,0.8s
CLL Collm 74.38 332 ⇑iP P 18 19 26.6 -0.7
CLL pmax pmax
comp=Z,15nm,0.8s
CLL Collm 74.38 332 eP P 18 19 26.4 -1.0
comp=Z,13nm,0.7s
CLL Collm 74.38 332 ⇑iP P 18 19 26.6 -0.7
MLR Muntele Rosu 74.40 321 P P 18 19 27.8 +0.1
comp=Z,0.9nm,0.7s,baz=297,slow=2.3,SNR=9.4
MLR Muntele Rosu 74.40 321 ⇓iP P 18 19 28.7 +1.0
MLR Muntele Rosu 74.40 321 ⇓P P 18 19 28.7 +1.0
MLR Muntele Rosu 74.40 321 eP P 18 19 27.0 -0.7
comp=Z,3.9nm,0.8s
N31A Bailey Ranch, 74.42 46 P P 18 19 28.4 +0.6
baz=320
BRG Berggiesshubel 74.45 332 eP P 18 19 27.0 -0.8
comp=Z,5.4nm,1.1s
BRG Berggiesshubel 74.45 332 eP P 18 19 27.0 -0.8
BRG pmax pmax
comp=Z,5.0nm,1.1s
BRG pmax pmax
comp=Z,3.0nm,0.8s
BRG Berggiesshubel 74.45 332 eP P 18 19 27.0 -0.8
PVCC Panska Ves 74.54 331 eP P 18 19 28.1 -0.2
PVCC Panska Ves 74.54 331 eP P 18 19 28.1 -0.2
I37A Lemond, Waseca 74.56 41 P P 18 19 28.9 +0.4
baz=322
MSAB Monastry St. A 74.69 319 ⇓iP P 18 19 29.9 +0.7
COWI Conover 74.73 37 eP P 18 19 29.6 +0.2
comp=Z,7.2nm,0.8s
VYHS Vyhne 74.77 327 eP P 18 19 29.6 0.0
VYHS pmax pmax
comp=Z,2.0nm,0.9s
VYHS Vyhne 74.77 327 eP P 18 19 29.6 0.0
L34A Svendsen Farm, 74.79 44 P P 18 19 30.0 +0.2
baz=321
VOIR 74.82 322 ⇑iP P 18 19 30.5 +0.4
VOIR 74.82 322 ⇑P P 18 19 30.5 +0.4
ANMO Albuquerque 74.85 55 P P 18 19 31.8 +1.2
baz=318
ANMO Albuquerque 74.85 55 deP P 18 19 32.3 +1.7
ANMO pmax pmax
comp=Z,2.0nm,0.8s
VRAC Vranov 74.89 329 P P 18 19 29.9 -0.4
comp=Z,3.6nm,0.6s,baz=14,slow=4.9,SNR=5.0
VRAC Vranov 74.89 329 ⇓iP P 18 19 31.0 +0.7
VRAC Vranov 74.89 329 ⇓P P 18 19 31.0 +0.7
EKA Eskdalemuir Ar 74.91 343 P P 18 19 29.6 -0.7
comp=Z,2.9nm,0.6s,baz=27,slow=4.9,SNR=7.6
I38A Scanlan Farm, 75.01 40 P P 18 19 31.3 +0.2
baz=323
PRU Pruhonice 75.02 331 eP P 18 19 30.5 -0.5
PRU Pruhonice 75.02 331 eP P 18 19 30.5 -0.5
PRU Pruhonice 75.02 331 eP P 18 19 30.5 -0.5
J37A Redenius Farm, 75.05 41 P P 18 19 31.2 -0.1
baz=322
ARR Arges 75.05 322 ⇓iP P 18 19 32.8 +1.4
BR101 Keskin Array S 75.34 313 eP P 18 19 33.1 -0.1
BR131 Keskin Array S 75.34 313 eP P 18 19 32.5 -0.7
BRTR Keskin Array B 75.34 313 P P 18 19 33.1 -0.1
comp=Z,2.1nm,0.8s,baz=67,slow=3.7,SNR=16
K37A Belmond 75.43 42 P P 18 19 33.2 -0.3
baz=322
P32A Huiting Farm, 75.51 47 P P 18 19 33.8 -0.2
baz=320
SIRR Siria 75.53 324 ⇓iP P 18 19 34.6 +0.6
BR231 Keskin MP Arra 75.68 314 eP P 18 19 33.7 -1.4
319A Douglas 75.84 59 eP P 18 19 37.5 +1.3
comp=Z,8.6nm,0.8s
121A Cookes Peak, D 75.87 57 P P 18 19 38.2 +1.9
baz=318
L37A Phoenix Point, 75.89 42 P P 18 19 36.2 +0.1
baz=322
N35A Tabor 75.99 44 P P 18 19 37.2 +0.5
baz=322
Q32A Meitler Ranch, 76.01 47 P P 18 19 36.9 +0.1
baz=320
KHC Kasperske Hory 76.07 331 eP P 18 19 37.0 0.0
KHC Kasperske Hory 76.07 331 eP P 18 19 37.0 0.0
KHC Kasperske Hory 76.07 331 eP P 18 19 36.8 -0.2
comp=Z,2.3nm,0.7s
KHC Kasperske Hory 76.07 331 eP P 18 19 37.0 0.0
L38A Oak Wood Farm, 76.24 42 P P 18 19 38.1 +0.1
baz=323
GERES GERESS Array B 76.28 331 P P 18 19 37.8 -0.5
comp=Z,2.1nm,0.6s,baz=40,slow=6.2,SNR=16
GEA0 GERESS Array S 76.29 331 eP P 18 19 37.3 -1.0
CONA Conrad Observa 76.32 329 iP P 18 19 38.6 +0.2
comp=Z,4.4nm,0.7s
Q33A Connelly Farm, 76.37 47 P P 18 19 38.6 -0.2
baz=321
P34A Walnut Farm, R 76.44 46 P P 18 19 38.7 -0.4
baz=321

M38A Pleasantville 76.70 42 P P 18 19 41.1 +0.5
baz=323
P35A Duane Minner, 76.85 45 P P 18 19 41.5 0.0
baz=322
MOA Molln 76.94 330 iP P 18 19 42.0 +0.2
comp=Z,3.0nm,0.8s
P36A Good Intent, A 77.17 45 P P 18 19 43.3 +0.1
baz=322
N38A Joes South For 77.18 43 P P 18 19 43.1 -0.1
baz=323
T32A Huddler Ranch, 77.22 49 P P 18 19 43.7 +0.2
baz=321
Q35A Mercer Eighty, 77.36 46 P P 18 19 44.1 -0.2
baz=322
N39A Derby Farms, D 77.45 42 P P 18 19 45.2 +0.5
baz=323
O38A Galt 77.60 43 P P 18 19 46.0 +0.5
baz=323
SOKA Soboth 77.68 329 iP P 18 19 46.1 +0.1
comp=Z,5.3nm,1.2s
R35A Emporia Munici 77.70 46 P P 18 19 46.2 +0.1
baz=322
MNTX Cornudas Mount 77.86 56 P P 18 19 48.7 +1.6
baz=319
O39A Kirksville 77.92 43 P P 18 19 47.7 +0.4
baz=323
KBA Koelnbreinsper 77.93 330 iP P 18 19 48.0 +0.6
comp=Z,5.7nm,0.7s
P38A Dawn 77.96 44 P P 18 19 47.5 0.0
baz=323,SNR=5.2
OBKA Obir 78.00 329 iP P 18 19 47.0 -0.8
comp=Z,3.1nm,0.7s
R36A Gordon, Harris 78.04 46 P P 18 19 48.0 0.0
baz=322
T34A McClaskey Farm 78.22 48 P P 18 19 49.6 +0.6
baz=321
O40A La Belle 78.34 42 P P 18 19 49.9 +0.4
baz=324,SNR=5.5
WTTA Wattenberg 78.34 331 iP P 18 19 49.7 0.0
comp=Z,4.9nm,0.7s
MOTA Moosalm 78.44 331 iP P 18 19 50.3 +0.1
comp=Z,5.2nm,0.6s
Q38A Cooks Store, C 78.45 44 P P 18 19 50.3 +0.1
baz=323,SNR=5.4
BFO Black Forest 78.45 334 iP P 18 19 50.1 0.0
S36A Lake Cedric, C 78.47 46 P P 18 19 50.5 +0.2
baz=322
U34A Anderson Ranch 78.50 48 P P 18 19 51.4 +0.9
baz=321
W32A Sentinel 78.62 50 P P 18 19 52.7 +1.4
baz=321
T35A Sooner Cattle 78.64 47 P P 18 19 52.1 +0.8
baz=322
Q39A Willow Grove F 78.68 44 P P 18 19 51.9 +0.5
baz=323
P40A Paris 78.73 43 P P 18 19 51.8 +0.1
baz=324
S37A Fort Scott 78.81 46 P P 18 19 52.2 0.0
baz=322
T36A Boggs Farm, Ca 78.84 47 P P 18 19 53.0 +0.6
baz=322
DAVA Damuels 78.89 332 iP P 18 19 52.4 -0.2
comp=Z,5.7nm,0.8s
R38A Fenwick Farm, 78.92 45 P P 18 19 52.5 -0.3
baz=323
U35A Pawnee 78.95 48 P P 18 19 53.9 +1.0
baz=322
V34A Guthrie 78.97 49 P P 18 19 53.3 +0.2
baz=321
WMOK Wichita Mounta 79.17 50 P P 18 19 54.8 +0.7
baz=321
R39A Chumby, Stover 79.24 44 P P 18 19 54.2 -0.2
baz=323
T37A Cheneyville 18 79.27 46 P P 18 19 54.8 +0.2
baz=322
S39A Bolivar 79.60 45 P P 18 19 56.2 -0.2
baz=323
R40A Maddies Statio 79.62 44 P P 18 19 56.4 0.0
baz=324
T38A Diamond 79.64 46 P P 18 19 56.8 +0.1
baz=323,SNR=6.5
U37A Salina 79.74 47 P P 18 19 57.6 +0.5
baz=322
V36A Jenks 79.81 48 P P 18 19 57.9 +0.3
baz=322
Y33A Hilltop Ranch, 79.81 50 P P 18 19 57.9 +0.4
baz=321
S40A Lebanon 80.06 44 P P 18 19 58.7 -0.1
baz=324
U38A Gravette 80.07 46 P P 18 19 59.5 +0.5
baz=323
T39A Clever 80.10 45 P P 18 19 59.5 +0.4
baz=323
V37A Hulbert 80.14 47 P P 18 19 59.7 +0.4
baz=322
SFIN Lafayette 80.26 39 P P 18 19 59.7 -0.2
baz=326
CCM Cathedral Cave 80.29 43 eP P 18 20 00.5 +0.4
CCM pmax pmax
comp=Z,22nm,1.7s
CCM Cathedral Cave 80.29 43 eP P 18 20 00.5 +0.4
comp=Z,22nm,1.7s
Y34A Reagan Ranch, 80.30 50 P P 18 20 00.9 +0.7
baz=322
X35A Drake 80.37 49 P P 18 20 01.1 +0.6
baz=322
U39A Green Forest 80.56 46 P P 18 20 01.6 +0.1
baz=323
W37B Quinton 80.58 48 P P 18 20 02.2 +0.6
baz=322
TX31 Lajitas Ar. Si 80.60 57 eP P 18 20 03.0 +1.1
LTX Lajitas 80.60 57 eP P 18 20 03.2 +1.2
LTX Lajitas 80.60 57 eP P 18 20 03.2 +1.2
TXAR Lajitas Array 80.60 57 P P 18 20 03.2 +1.2
comp=Z,4.9nm,0.6s,baz=287,slow=3.7,SNR=74
Z34A Collier Ranch, 80.67 50 P P 18 20 03.1 +1.0
baz=322
Y35A Marietta 80.72 50 P P 18 20 02.8 +0.4
baz=322
133A Hamilton Ranch 80.73 52 P P 18 20 03.1 +0.6
baz=321
T41A Mountain View 80.86 44 P P 18 20 02.9 -0.2
baz=324,SNR=5.7
U40A Yellville 80.89 45 P P 18 20 03.3 +0.1
baz=324,SNR=7.0
V39A Pettigrew 80.91 46 P P 18 20 03.8 +0.3
baz=323
X37A Clayton 81.04 48 P P 18 20 04.4 +0.4
baz=322
W38A Poteau 81.09 47 P P 18 20 04.9 +0.6
baz=323
Y36A Durant 81.11 49 P P 18 20 04.9 +0.5
baz=322
S43A Fulton Ridge, 81.22 43 P P 18 20 05.1 +0.1
baz=325
X38A Whitesboro 81.25 48 P P 18 20 05.6 +0.5
baz=323,SNR=6.1
V40A Witts Springs 81.34 46 P P 18 20 06.2 +0.6
baz=324
W39A Magazine 81.35 47 P P 18 20 06.1 +0.5
baz=323
135A Vickery Place, 81.57 51 P P 18 20 07.8 +1.0
baz=322
234A Clairette 81.62 51 P P 18 20 07.9 +0.8
baz=322
V41A Mountainview 81.68 45 P P 18 20 07.3 -0.1
baz=324
333A Richland Sprin 81.69 52 P P 18 20 08.3 +0.8
baz=321
PBMO Poplar Bluff 81.70 43 eP P 18 20 07.8 +0.4
comp=Z,12nm,1.1s
X39A Fountain Ranch 81.73 47 P P 18 20 08.7 +1.0
baz=323
JCT Junction City 81.90 54 P P 18 20 09.7 +1.1
baz=321
JCT Junction City 81.90 54 eP P 18 20 10.2 +1.6
JCT pmax pmax
comp=Z,10.0nm,1.3s
JCT Junction City 81.90 54 eP P 18 20 10.2 +1.6
comp=Z,10nm,1.3s
MIAR Mount Ida 81.97 47 P P 18 20 09.5 +0.6
baz=323
MIAR Mount Ida 81.97 47 eP P 18 20 09.8 +0.9
MIAR pmax pmax
comp=Z,6.0nm,0.8s
MIAR Mount Ida 81.97 47 eP P 18 20 09.8 +0.9
comp=Z,5.5nm,0.8s
Z37A Pogue Cattle C 82.00 49 P P 18 20 09.6 +0.6

	baz=322						
WHAR	Wooly Hollow	82.01	46	eP	P	18 20 09.5	+0.4
	comp=Z,14nm,1.0s						
V42A	Cord	82.03	45	P	P	18 20 09.7	+0.5
	baz=324						
334A	Lometa	82.09	52	P	P	18 20 09.9	+0.3
	baz=322						
136A	Ennis	82.10	50	P	P	18 20 10.5	+0.9
	baz=322						
W41B	Gary Mavity, V	82.13	46	P	P	18 20 09.9	+0.3
	baz=324						
Y39A	Lockesburg	82.20	48	P	P	18 20 11.0	+0.9
	baz=323						
M54A	Oil Creek Stat	82.31	34	P	P	18 20 10.1	-0.5
	baz=330						
X40A	Basin Creek Fa	82.39	46	P	P	18 20 11.8	+0.8
	baz=324						
LAST	Lasithi	82.92	316	⇓iP	P	18 20 13.9	+0.1
LAST	Lasithi	82.92	316	eP	P	18 20 13.4	-0.5
	comp=Z,15nm,0.8s						
SIVA	Sivas	83.36	316	⇓iP	P	18 20 16.2	+0.3
TIP	Timpagrande	83.44	324	eP	P	18 20 15.7	-0.6
	comp=Z,8.0nm,1.2s						
O56A	Blue Knob Stat	83.80	34	P	P	18 20 18.2	0.0
	baz=331						
N59A	State Game Lan	84.26	31	P	P	18 20 20.3	-0.1
	baz=332						
933A	Laredo	84.40	55	P	P	18 20 23.2	+1.9
	baz=321						
Y46A	Houston	84.80	44	P	P	18 20 23.9	+0.7
	baz=326						
SWET	Sewanee	85.05	41	eP	P	18 20 24.4	0.0
	comp=Z,8.3nm,0.8s						
034A	Hebbronville	85.16	55	P	P	18 20 26.9	+1.9
	baz=322						
Y47A	UCPARC, Winfie	85.26	43	P	P	18 20 25.6	+0.2
	baz=326						
147A	Livingston	86.07	44	P	P	18 20 30.1	+0.8
	baz=326						
TOA1	Torodi Ar. Sit	112.59	324	ePKiKP	PKiKP	18 26 22.0	-0.7
TORD	Torodi Ar. Bea	112.59	324	PKiKP	PKiKP	18 26 22.0	-0.7
	comp=Z,0.3nm,0.4s,baz=31,slow=1.9,SNR=8.2						
VNDA	Vanda	124.73	176	PKP	PKPdf	18 26 45.0	+1.0
	comp=Z,0.7nm,0.9s,baz=356,slow=2.7,SNR=5.7						
LPAZ	La Paz	137.46	56	PKP	PKPdf	18 27 11.3	+0.7
	comp=Z,1.0nm,0.6s,baz=357,slow=3.1,SNR=5.9						
LCO	Las Campanas	145.37	72	ePKPdf	PKPbc	18 27 24.6	-0.1
CPUP	Villa Florida	151.47	52	PKPbc	PKPbc	18 27 40.4	+0.3
	comp=Z,2.6nm,0.6s,baz=335,slow=2.6,SNR=8.5						
CPUP	Villa Florida	151.47	52	ePKIKP	PKPbc	18 27 40.1	0.0
CPUP	Villa Florida	151.47	52	ePKPbc	PKPbc	18 27 40.1	0.0
SNAA	Sanae	151.75	199	PKP	PKPbc	18 27 40.1	+0.7
PLCA	Paso Flores	152.12	91	PKPbc	PKPbc	18 27 41.9	+0.7
	comp=Z,3.3nm,0.5s,baz=304,slow=0.7,SNR=12						
PLCA	Paso Flores	152.12	91	ePKPbc	PKPbc	18 27 42.1	+0.9
VNA2	Neumayer--Watz	153.30	198	PKP	PKPbc	18 27 43.3	+0.5
	baz=116,slow=1.2						
VNA3	Neumayer Olymp	153.51	196	PKP	PKPbc	18 27 43.8	+0.5

*IDC **24** 18:11:17.8±1.3, 0°.60S×124°.61E, h0km, mb3.3/4, mb1 3.5/4, mb1mx3.3/44, mbtmp3.4/4, MS3.9/1, Ms1 3.9/1, ms1mx2.6/30, Error ellipse: s-maj=179.2km s-min=22.3km az=67.0*
*DJA **24** 18:11:19.3±1.4, 1°.S±4°×12°.4E±°, h11km±9km, M4.0/5, mb4.4/1, MLv3.8/5*
*ISCJB **24** 18:11:20.6±0.9, 1°.06S±0°.06×123°.94E±0°.07, h33km, mb3.3/4, MS3.9/1, Error ellipse: s-maj=11.1km s-min=7.7km az=150.9*
ISC 24 18:11:22.6±1.2, 1°.08S±0°.07×123°.9E±0°.1, h35km, n10, σ1§26/11, mb3.3/4, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LUWI	Luwuk	1.15	272	P	Pn	18 11 38.1	-4.1
LUWI				S	Sn	18 11 56.2	-0.5
MRSI	Marisa	2.51	308	P	Pn	18 12 00.3	-0.6
MRSI				S	Sn	18 12 31.8	+1.4
KDI	Kendari	3.14	204	P	Pn	18 12 08.3	-1.3
KDI				S	Sn	18 12 46.7	+0.8
PCI	Palu	4.09	272	P	Pn	18 12 22.9	+0.3
SPSI	Sidrap Palu	5.04	235	P	Pn	18 12 35.3	-0.5
WRA	Warramunga Arr	21.34	152	P	P	18 16 08.0	+1.2
	1.0nm,0.8s,baz=334,slow=9.9,SNR=3.9						
ASAR	Alice Springs	24.45	157	P	P	18 16 40.2	+1.8
	0.7nm,0.9s,baz=336,slow=9.0,SNR=6.1						
HNR	Honiara	36.78	104	LR	LR	18 36 58.0	
	comp=Z,169nm,18.3s,baz=25,slow=42						
SONM	Songino Array	51.06	345	P	P	18 20 19.9	-1.6
	0.2nm,0.4s,baz=165,slow=7.4,SNR=2.4						
MKAR	Makanchi Array	60.01	328	P	P	18 21 26.1	+0.4
	0.2nm,0.4s,baz=123,slow=7.6,SNR=4.6						

*ISCJB **24** 18:14:19.6±0.5, 39°.08N±0°.03×29°.01E±0°.04, h9km, Error ellipse: s-maj=4.9km s-min=4.3km az=147.9*
*DDA **24** 18:14:19.5, 39°.09N×29°.03E, h7km, Md2.6*
*CSEM **24** 18:14:19.6±0.2, 39°.08N×29°.02E, h5km, MD2.6, Error ellipse: s-maj=4.2km s-min=3.7km az=88.0*
*ISK **24** 18:14:19.1, 39°.09N×29°.00E, h5km, MD2.7*
ISC 24 18:14:19.1±0.9, 39°.06N±0°.03×29°.03E±0°.02, h9km, n26, σ0§63/34, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.25	267	P	Pg	18 14 24.9	+0.8
DEMI				S	Sg	18 14 28.5	+1.0
DEMI	Demirci	0.25	267	*i* P	Pg	18 14 24.9	+0.8
DEMI				*i* S	Sg	18 14 28.5	+1.0
GDZ	Gediz	0.35	85	P	Pg	18 14 27.0	+0.9
GDZ				S	Sg	18 14 31.9	+1.1
GDZ	Gediz	0.35	85	*i* P	Pg	18 14 27.0	+0.9
GDZ				*i* S	Sg	18 14 31.9	+1.1
TVSB	Tavsanli	0.52	40	ePG	Pg	18 14 29.2	+0.1
TVSB	Tavsanli	0.52	40	ePg	Pg	18 14 29.2	+0.1
KULA	Kula-Manisa	0.61	208	ePG	Pb	18 14 32.5	+0.4
KULA				eSG	Sb	18 14 40.4	-0.4
KULA	Kula-Manisa	0.61	208	ePg	Pb	18 14 32.5	+0.4
KULA				eSg	Sb	18 14 40.4	-0.4
DURS	Dursunbey	0.69	322	P	Pg	18 14 32.6	0.0
DURS	Dursunbey	0.69	322	*i* P	Pg	18 14 32.6	0.0
KHAL	Karahalli	0.77	152	P	Pg	18 14 33.5	-0.5
KHAL				S	Sn	18 14 47.0	-1.1
KHAL	Karahalli	0.77	152	*i* P	Pg	18 14 33.5	-0.5
KHAL				*i* S	Sn	18 14 47.0	-1.1
BALB	Balikesir	1.07	303	ePG	Pg	18 14 39.0	-0.6
BALB	Balikesir	1.07	303	ePg	Pg	18 14 39.0	-0.6
CAVI	Cavuskoy	1.30	28	ePN	Pb	18 14 44.0	+0.2
CAVI	Cavuskoy	1.30	28	ePn	Pb	18 14 44.0	+0.2
KCTX	Karacabey (Bur	1.31	337	ePN	Pb	18 14 44.0	0.0
KCTX	Karacabey (Bur	1.31	337	ePn	Pb	18 14 44.0	0.0
MDNY	Mudanya-Bursa	1.32	355	ePN	Pg	18 14 44.5	+0.1
MDNY	Mudanya-Bursa	1.32	355	ePn	Pg	18 14 44.5	+0.1
ADVT	Abdulvahap	1.48	21	ePN	Pb	18 14 46.8	0.0
ADVT	Abdulvahap	1.48	21	ePn	Pb	18 14 46.8	0.0
ARMT	Armutlu	1.51	355	ePN	Pb	18 14 47.1	-0.3
ARMT	Armutlu	1.51	355	ePn	Pb	18 14 47.1	-0.3
GULT	Gulveren	1.79	39	ePN	Pb	18 14 51.6	-0.5
GULT	Gulveren	1.79	39	ePn	Pb	18 14 51.6	-0.5

*CSEM **24** 18:15:06.9±0.2, 42°.86N×18°.56E, h10km, ML1.8, Error ellipse: s-maj=4.1km s-min=2.8km az=98.0*
PDG 24 18:15:07.6±0.2, 42°.84N×18°.59E, h13km±1km, MD1.9/1, ML1.8/10, 12C-12D, Error ellipse: s-maj=0.4km s-min=0.7km az=0.0, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BRY	Bratogost	0.07	329	⇑iPg	Pg	18 15 10.2	-0.2
BRY				eSg	Sg	18 15 13.1	+0.6
BRY	Bratogost	0.07	329	⇑iPg	Pg	18 15 10.2	-0.2
BRY				eSg	Sg	18 15 12.4	-0.1
TREB	Trebinje	0.21	235	⇓iPg	Pg	18 15 11.5	-0.8
TREB				eSg	Sg	18 15 15.7	+0.2
NKME	Niksic	0.28	105	⇑iPg	Pg	18 15 13.1	-0.3
NKME				eSg	Sg	18 15 18.0	+0.6
NKME	Niksic	0.28	105	⇑iPg	Pg	18 15 13.1	-0.3
NKME				eSg	Sg	18 15 18.0	+0.6
NKY	Niksic	0.30	95	⇓iPg	Pg	18 15 13.7	-0.1
NKY				eSg	Sg	18 15 18.5	+0.5
NKY	Niksic	0.30	95	⇓iPg	Pg	18 15 13.7	-0.1
NKY				eSg	Sg	18 15 18.5	+0.5
CEME	Cevo	0.38	140	⇓iPg	Pg	18 15 14.4	-0.9
CEME				eSg	Sb	18 15 21.5	-0.6
CEME	Cevo	0.38	140	⇓iPg	Pg	18 15 14.4	-0.9
CEME				eSg	Sb	18 15 21.5	-0.6
HCY	Herceg Novi	0.40	190	⇑iPg	Pg	18 15 15.0	-0.6
HCY				eSg	Sg	18 15 21.7	+0.7
HCY	Herceg Novi	0.40	190	⇑iPg	Pg	18 15 15.0	-0.6
HCY				eSg	Sg	18 15 21.6	+0.6
UPM	Unac-Piva	0.43	33	⇓iPg	Pg	18 15 15.5	-0.7
UPM				eSg	Sg	18 15 22.5	+0.5
UPM	Unac-Piva	0.43	33	⇓iPg	Pg	18 15 15.5	-0.7
UPM				eSg	Sg	18 15 22.1	+0.1
BUM	Brajici-Budva	0.59	157	⇓iPg	Pg	18 15 18.8	-0.3
BUM				eSg	Sb	18 15 28.1	+0.1
BUM	Brajici-Budva	0.59	157	⇓iPg	Pg	18 15 18.8	-0.3
BUM				eSg	Sb	18 15 28.1	+0.1
PDG	Podgorica	0.64	130	⇑iPg	Pg	18 15 19.7	-0.4
PDG				eSg	Sg	18 15 27.9	-0.7
TTG	Podgorica	0.64	130	⇑iPg	Pg	18 15 19.7	-0.4
TTG				eSg	Sb	18 15 29.9	+0.4
PLE	Pljevlja	0.76	50	⇑iPg	Pg	18 15 22.2	-0.2
PLE				eSg	Sn	18 15 34.5	-1.1
PLE	Pljevlja	0.76	50	⇑iPg	Pg	18 15 22.2	-0.2
PLE				eSg	Sn	18 15 34.5	-1.1
DRME	Dracevica, Mon	0.79	146	⇓iPg	Pg	18 15 22.9	0.0
DRME				eSg	Sn	18 15 35.3	-0.8
DRME	Dracevica, Mon	0.79	146	⇓iPg	Pg	18 15 22.0	-0.9
DRME				eSg	Sn	18 15 35.3	-0.8
BEY	Berane	0.96	88	⇑iPg	Pg	18 15 25.2	-1.0
BEY				eSg	Sn	18 15 40.7	+0.2
IVA	Berane	0.96	88	⇑iPg	Pg	18 15 25.2	-1.0
IVA				eSg	Sn	18 15 40.7	+0.2
ULC	Ulcinj	1.00	151	⇓iPg	Pb	18 15 26.6	-0.2
ULC				eSg	Sn	18 15 41.6	+0.2
ULC	Ulcinj	1.00	151	⇓iPg	Pb	18 15 26.6	-0.2
ULC				eSg	Sn	18 15 41.6	+0.2
PVY	Plav	1.04	103	ePg	Pb	18 15 26.8	-0.7
PVY				eSg	Sn	18 15 43.3	+0.8
PVY	Plav	1.04	103	ePg	Pb	18 15 26.8	-0.7
PVY				eSg	Sn	18 15 43.3	+0.8
BBLS	Lazići	1.18	30	ePg	Pn	18 15 28.7	-1.2
BBLS				eSg	Sb	18 15 45.5	+0.3
BBLS	Lazići	1.18	30	ePg	Pn	18 15 29.2	-0.8
BBLS	Lazići	1.18	30	ePg	Pn	18 15 29.2	-0.8
HAPS	Han Pijesak,Bl	1.27	12	ePg	Pn	18 15 30.7	-0.5
HAPS				eSg	Sn	18 15 48.2	0.0

*CSEM **24** 18:15:08.3, 44°.92N×20°.25E, h11km, ML1.5*
BEO 24 18:15:08.3±0.6, 44°.92N×20°.25E, h11km±5km, M1.5/6, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FGSL	Fruska Gora	0.39	307	ePg	Pg	18 15 16.5	+0.4
FGSL				eSg	Sb	18 15 22.8	-0.5
FRGS	Fruska Gora	0.39	307	ePg	Pg	18 15 16.5	+0.4
FRGS				eSg	Sb	18 15 22.8	-0.5
DIVS	Divibare	0.84	193	eSg	Sg	18 15 35.1	-0.5
DIVS	Divibare	0.84	193	eSg	Sg	18 15 35.1	-0.5
BBLS	Lazići	1.22	210	eSg	Sb	18 15 47.1	+0.1
BBLS	Lazići	1.22	210	eSg	Sb	18 15 47.1	+0.1
IVAS	Ivanjica	1.34	183	ePg	Pn	18 15 32.4	-0.6
IVAS				eSg	Sg	18 15 52.3	+0.7
IVAS	Ivanjica	1.34	183	ePg	Pn	18 15 32.4	-0.6
IVAS				eSg	Sg	18 15 52.3	+0.7
SELS	Selova	1.81	159	ePn	Pn	18 15 39.3	-0.1
SELS				eSg	Sg	18 16 06.1	-0.4
BARS	Barje	2.39	151	eSn	Sn	18 16 17.6	+1.0
BARS	Barje	2.39	151	eSn	Sn	18 16 17.6	+1.0

DJA 24 18:19:12.1±0.5, 9°S±8°.11°8E±°, h10km, M3.7/6, mb3.5/1, MLv3.8/6, Sumbawa region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLAI	Plampang	0.36	280	P	Pg	18 19 18.8	-0.5
TWSI	Taliwang, Sumb	1.25	277	P	Pn	18 19 33.9	-1.8
WSI	Waingapu	2.27	110	P	Pn	18 19 49.5	-0.1
BSSI	Bau Bau, Buton	3.59	41	P	Pn	18 20 07.5	-0.4
JAGI	Jajag, Banyuwa	3.96	276	P	Pn	18 20 13.7	+0.7
MMRI	Maumere	4.06	87	P	Pn	18 20 17.0	+2.7
SPSI	Sidrap Palu	5.15	18	P	Pn	18 20 29.4	0.0

*DDA **24** 18:20:05.0, 39°.10N×29°.05E, h7km, Md2.6*
*ISCJB **24** 18:20:05.2±0.6, 39°.10N±0°.04×29°.05E±0°.03, h2km±7km, Error ellipse: s-maj=6.3km s-min=3.8km az=159.0*
*ISK **24** 18:20:05.0, 39°.09N×29°.09E, h7km, MD2.7*
*CSEM **24** 18:20:05.5±0.1, 39°.10N×29°.06E, h5km, MD2.6, Error ellipse: s-maj=2.0km s-min=1.7km az=152.0*
ISC 24 18:20:05.6±1.0, 39°.11N±0°.03×29°.05E±0°.02, h8km±9km, n35, σ0§33/50, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.27	256	P	Pg	18 20 11.1	+0.2
DEMI				S	Sg	18 20 14.4	-0.1
DEMI	Demirci	0.27	256	*i* P	Pg	18 20 11.1	+0.2
DEMI				*i* S	Sg	18 20 14.4	-0.1
GDZ	Gediz	0.34	93	P	Pg	18 20 12.2	-0.1
GDZ				S	Sg	18 20 17.0	+0.2
GDZ	Gediz	0.34	93	*i* P	Pg	18 20 12.2	-0.1
GDZ				*i* S	Sg	18 20 17.0	+0.2
TVSB	Tavsanli	0.47	43	ePG	Pg	18 20 14.5	-0.2
TVSB				eSG	Sg	18 20 20.9	0.0
TVSB	Tavsanli	0.47	43	ePg	Pg	18 20 14.5	-0.2
TVSB				eSg	Sg	18 20 20.9	0.0
KULA	Kula-Manisa	0.67	207	ePG	Pg	18 20 18.0	-0.4
KULA	Kula-Manisa	0.67	207	ePg	Pg	18 20 18.0	-0.4
KHAL	Karahalli	0.81	155	P	Pg	18 20 21.5	+0.2
KHAL				S	Sg	18 20 31.8	-0.1
KHAL	Karahalli	0.81	155	*i* P	Pg	18 20 21.5	+0.2
KHAL				*i* S	Sg	18 20 31.8	-0.1
KHL	Karahalli	0.87	154	ePG	Pg	18 20 21.9	-0.4
KHL	Karahalli	0.87	154	ePg	Pg	18 20 21.9	-0.4
AKHS	Akhisar	0.99	257	P	Pb	18 20 25.2	+0.3
AKHS				S	Sg	18 20 37.8	+0.4
AKHS	Akhisar	0.99	257	*i* P	Pb	18 20 25.2	+0.3
AKHS				*i* S	Sg	18 20 37.8	+0.4
AKS	Akhisar	0.99	257	ePG	Pb	18 20 24.8	-0.1
AKS	Akhisar	0.99	257	ePg	Pb	18 20 24.8	-0.1
BALB	Balikesir	1.05	301	ePN	Pn	18 20 26.5	-0.1
BALB	Balikesir	1.05	301	ePn	Pn	18 20 26.5	-0.1
IGD	Bursa	1.16	6	*i* P	Pg	18 20 26.4	-1.4
IGD				*i* S	Sn	18 20 43.9	-0.2
CAVI	Cavuskoy	1.25	29	ePN	Pb	18 20 29.5	0.0
CAVI	Cavuskoy	1.25	29	ePn	Pb	18 20 29.5	0.0
MDNY	Mudanya-Bursa	1.27	354	ePN	Pg	18 20 30.0	+0.1
MDNY	Mudanya-Bursa	1.27	354	ePn	Pg	18 20 30.0	+0.1
IZI	Iznik	1.27	15	ePN	Pg	18 20 29.9	-0.1
IZI	Iznik	1.27	15	ePn	Pg	18 20 29.9	-0.1
KCTX	Karacabey (Bur	1.27	335	ePN	Pg	18 20 30.1	+0.1
KCTX	Karacabey (Bur	1.27	335	ePn	Pg	18 20 30.1	+0.1
BALY	Balya	1.27	300	P	Pn	18 20 29.1	-0.6
BALY				S	Sn	18 20 47.2	+0.2
BALY	Balya	1.27	300	*i* P	Pn	18 20 29.1	-0.6
BALY				*i* S	Sn	18 20 47.1	+0.2
BORA	Eskisehir	1.33	54	P	Pn	18 20 30.5	0.0
BORA				S	Sn	18 20 49.0	+0.5
BORA	Eskisehir	1.33	54	*i* P	Pn	18 20 30.5	0.0
BORA				*i* S	Sn	18 20 49.0	+0.5
ARMT	Armutlu	1.46	354	ePN	Pb	18 20 33.0	0.0
ARMT	Armutlu	1.46	354	ePn	Pb	18 20 33.1	0.0
GULT	Gulveren	1.74	40	ePN	Pn	18 20 36.2	+0.1
GULT	Gulveren	1.74	40	ePn	Pn	18 20 36.2	+0.1

*NIED **24** 18:21:00, 37°.10N×144°.30E, h5km, Mw3.7 Best double couple: M=4.69000×10^14 NP1:φs=18.00000°, δ=41.00000°, λ=-74.00000°. NP2:φs=178.00000°, δ=51.00000°, λ=-103.00000°.*
*IDC **24** 18:21:05.5±0.7, 36°.92N×144°.64E, h0km, mb3.8/13, mb1 4.0/20, mb1mx3.8/63, mbtmp3.9/20, ML3.8/6, MS2.8/3, Ms1 2.8/3, ms1mx2.5/56, Error ellipse: s-maj=20.2km s-min=15.2km az=104.0*
*ISCJB **24** 18:21:07.4±0.3, 36°.99N±0°.03×144°.47E±0°.04, h26km, mb4.3/33, Error ellipse: s-maj=4.7km s-min=4.3km az=153.2*
*NEIC **24** 18:21:10.4±0.2, 36°.90N×144°.59E, h35km, mb4.6/19, Error ellipse: s-maj=5.6km s-min=4.8km az=145.0*
*JMA **24** 18:21:10.7±0.5, 37°.13N×144°.27E, h39km, M4.7*
ISC 24 18:21:09.2±0.5, 36°.93N±0°.05×144°.49E±0°.06, h26km, n84, σ1§64/89, mb4.3/33, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	2.92	280	P	Pn	18 21 53.4	-0.5
JFK				eS	Sn	18 22 24.4	-3.8
JIO	Ouri	2.92	302	P	Pn	18 21 53.2	-0.7
JIO				S	Sn	18 22 24.1	-4.0
ONAJ	Iwakimizuishiy	2.96	274	P	Pn	18 21 54.1	-0.4
ONAJ				eS	Sn	18 22 25.9	-3.2
JMK	Ichinoseki	3.28	309	P	Pn	18 21 58.2	-0.6
JMK				S	Sn	18 22 34.0	-3.0
BSO1	Boso 1	3.64	233	P	Pn	18 22 03.3	-0.1
JRY	Ryogami san	4.59	260	P	Pn	18 22 16.9	0.0
JRY				eS	Sn	18 23 05.0	-4.4
JOD2	Odawara 2	4.68	251	P	Pn	18 22 18.6	+0.5
JOD2				eS	Sn	18 23 07.5	-4.0
MJAR	Matsushiro Arr	5.06	268	Pn	Pn	18 22 24.4	+1.1
	5.1nm,0.3s,baz=88,slow=14,SNR=31						
MJAR				Sn	Sn	18 23 20.4	-0.5
	3.7nm,0.3s,baz=177,slow=25,SNR=6.0						
MJAR				LR	LR	18 25 08.1	
	comp=Z,54nm,18.0s,baz=100,slow=47						
MAJO	Matsushiro	5.06	268	ePn	Pn	18 22 24.8	+1.4
MAT	Matsushiro	5.06	268	P	Pn	18 22 24.2	+0.9
MAT				eS	Sn	18 23 15.4	-5.5
MJB9	Matsu-Tunnel	5.06	268	ePn	Pn	18 22 25.0	+1.6
ERM	Erimo	5.18	349	ePn	Pn	18 22 22.6	-2.4
ERM				eSn	Sn	18 23 14.7	-9.3
JOT	Ohata	5.19	330	P	Pn	18 22 25.2	+0.1
JOT				eS	Sn	18 23 17.6	-6.5
JHJ2	Mitsune	5.40	227	ePn	Pn	18 22 27.6	-0.3
JHJ2				eSn	Sn	18 23 22.1	-7.2
JHJ	Hachijo jima 2	5.41	227	Pn	Pn	18 22 28.2	+0.1
	9.7nm,0.3s,baz=312,slow=24,SNR=5.1						
JHJ				Sn	Sn	18 23 27.5	-2.2
	64nm,0.3s,baz=276,slow=22,SNR=7.4						
JKB	Kayabe	5.63	333	P	Pn	18 22 30.2	-0.9
JKB				S	Sn	18 23 27.5	-7.4
JCH	Churui	5.75	352	P	Pn	18 22 30.1	-2.6
JCH				eS	Sn	18 23 28.9	-8.9
INU	Inuyama	6.25	258	ePn	Pn	18 22 41.3	+1.7
JOSM	Okushiri--Mats	6.44	325	P	Pn	18 22 42.1	-0.2
NEM2	Nemuro 2	6.50	8	P	Pn	18 22 38.5	-4.6
NEM2				eS	Sn	18 23 45.1	-11
JTKR	Abashiri--Toko	7.05	357	P	Pn	18 22 47.8	-2.8
JTKR				eS	Sn	18 23 59.3	-11
ASAJ	Asahikawa	7.33	349	Pn	Pn	18 22 52.7	-1.7
	3.6nm,0.3s,baz=192,slow=10.0,SNR=40						
ASAJ				Sn	Sn	18 24 15.1	-1.6
	1.3nm,0.3s,baz=24,slow=20,SNR=4.8						
ASAJ	Asahikawa	7.33	349	ePn	Pn	18 22 52.8	-1.7
ASAJ				eSn	Sn	18 24 16.1	-0.6
CBIJ	Chichi jima	9.99	192	ePn	Pn	18 23 29.3	-1.7
CBIJ				eSn	Sn	18 25 10.3	-12
JCJ	Chichijima	9.99	192	Pn	Pn	18 23 31.2	+0.1
	2.6nm,0.3s,baz=128,slow=19,SNR=7.0						
JCJ				Sn	Sn	18 25 12.3	-10
	baz=107,slow=19						
JNU	Nakatsue	11.78	255	LR	LR	18 30 01.6	
	comp=Z,64nm,18.5s,baz=118,slow=45						
JNU	Nakatsue	11.78	255	ePn	Pn	18 23 57.4	+1.8
USRK	Ussuriysk Ar.	11.96	311	Pn	Pn	18 23 58.7	+0.9
	0.4nm,0.3s,baz=116,slow=13,SNR=6.1						
KSRS	Korea Array	13.22	277	Pn	Pn	18 24 17.2	+2.1
	0.2nm,0.3s,baz=90,slow=14,SNR=7.4						
KSRS				LR	LR	18 28 27.1	
	comp=Z,56nm,21.2s,baz=40,slow=33						
KSAR	Wonju Array Be	13.25	277	Pn	Pn	18 24 17.2	+1.7
MDJ	Mudanjiang	13.64	309	ePn	Pn	18 24 20.7	-0.1
KLR	Kul'dur	15.39	327	Pn	Pn	18 24 44.8	+0.4
	0.1nm,0.3s,baz=142,slow=12,SNR=2.4						
H11N2	WAKE ISLAND Hy	26.02	125	T	T	18 53 34.2	
	baz=317,slow=75,SNR=149						
H11N1	WAKE ISLAND Hy	26.03	125	T	T	18 53 35.1	
	baz=317,slow=75,SNR=91						
H11N3	WAKE ISLAND Hy	26.04	125	T	T	18 53 37.2	
	baz=317,slow=75,SNR=145						
SEY	Seymchan	26.48	8	P	P	18 26 44.1	+0.1
	2.7nm,0.8s,baz=244,slow=12,SNR=5.1						
H11S1	WAKE ISLAND Hy	26.78	127	T	T	18 54 29.9	
	baz=318,slow=76,SNR=32						
H11S3	WAKE ISLAND Hy	26.78	127	T	T	18 54 28.1	
	baz=318,slow=76,SNR=33						
H11S2	WAKE ISLAND Hy	26.80	127	T	T	18 54 29.2	
	baz=318,slow=76,SNR=30						
SONA1	Songino Array	29.89	304	eP	P	18 27 13.6	-1.1
SONA0	Songino Array	29.89	303	eP	P	18 27 16.3	+1.5
	7.1nm,1.7s						
SONM	Songino Array	29.89	303	P	P	18 27 16.3	+1.6
	0.3nm,0.5s,baz=92,slow=10,SNR=2.8						
MIDW	Midway	33.12	94	eP	P	18 27 41.4	-1.7
	68nm,0.8s						
BILL	Bilibino	33.47	15

	8.1nm,1.2s						
AKASG	**Malin Array Be**	**75.86**	**324**	P	**P**	**18 32 53.9**	**+0.8**
	1.6nm,0.6s,baz=44,slow=6.2,SNR=8.6						
LTX	**Lajitas**	**88.21**	**54**	*e*P	**P**	**18 33 59.1**	**+0.8**
TXAR	**Lajitas Array**	**88.21**	**54**	P	**P**	**18 33 59.1**	**+0.8**
	0.2nm,0.6s,baz=330,slow=3.4,SNR=2.4						
TORD	**Torodi Ar. Bea**	**119.11**	**318**	PKP	**PKPdf**	**18 39 56.4**	**+0.2**
	0.2nm,0.5s,baz=93,slow=2.4,SNR=2.4						

ROM ***24*** *18:25:44.5±0.1, 43.°87N×12.°02E, h6km±1km, Md3.1/25, Ml2.9/32, Error ellipse: s-maj=1.6km s-min=1.2km az=17.0*
GEN ***24*** *18:25:45.5, 43.°99N×11.°96E, h15km, ML2.8*
CSEM ***24*** *18:25:45.0±0.1, 43.°82N×11.°96E, h15km, ML3.1/20, Error ellipse: s-maj=3.0km s-min=2.2km az=32.0*
ISCJB ***24*** *18:25:45.0±0.2, 43.°85N±0.°02×11.°94E±0.°02, h24km±2km, Error ellipse: s-maj=3.0km s-min=2.3km az=21.4*
LDG ***24*** *18:25:45.1±0.1, 43.°90N×12.°03E, h2km, Ml3.1/11, Error ellipse: s-maj=3.6km s-min=1.6km az=33.0*
PRU ***24*** *18:25:47.3, 43.°94N×12.°26E, h1km*
ISC 24 18:25:45.0±0.8, 43.°84N±0.°02×11.°97E±0.°01, h16km±4km, n159, σ1§67/222, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFI	**Santa Sofia**	**0.11**	**304**	Pg	**Pg**	**18 25 47.7**	**-0.8**
SFI				Sg	**Sg**	**18 25 50.0**	**-0.8**
	5μm,0.4s						
SFI	**Santa Sofia**	**0.11**	**304**	Pg	**Pg**	**18 25 47.7**	**-0.8**
SFI				Sg	**Sg**	**18 25 50.0**	**-0.8**
	5μm,0.4s						
ASQU	**Asqua**	**0.14**	**250**	Pg	**Pg**	**18 25 48.9**	**0.0**
ASQU				Sg	**Sg**	**18 25 52.3**	**+0.8**
	9μm,0.3s						
ASQU	**Asqua**	**0.14**	**250**	Pg	**Pg**	**18 25 48.9**	**0.0**
ASQU				Sg	**Sg**	**18 25 52.3**	**+0.8**
	9μm,0.3s						
VMG	**Vicchio**	**0.33**	**291**	Pg	**Pg**	**18 25 51.9**	**0.0**
VMG				Sg	**Sb**	**18 25 58.3**	**+0.7**
	130nm,0.1s						
VMG	**Vicchio**	**0.33**	**291**	Pg	**Pg**	**18 25 51.9**	**0.0**
VMG				Sg	**Sb**	**18 25 58.3**	**+0.7**
	130nm,0.1s						
BADI	**Badiali**	**0.39**	**149**	Pg	**Pg**	**18 25 52.9**	**0.0**
BADI				Sg	**Sb**	**18 25 59.6**	**+0.3**
	2μm,0.2s						
BADI	**Badiali**	**0.39**	**149**	Pg	**Pg**	**18 25 52.9**	**0.0**
BADI				Sg	**Sb**	**18 25 59.6**	**+0.3**
	2μm,0.2s						
BLLA	**Bellaria**	**0.47**	**50**	Pg	**Pb**	**18 25 54.0**	**-0.9**
	1μm,0.3s						
BLLA	**Bellaria**	**0.47**	**50**	Pg	**Pb**	**18 25 54.0**	**-0.9**
	1μm,0.3s						
SEI	**Scarperia**	**0.49**	**296**	Pg	**Pg**	**18 25 54.7**	**-0.1**
SEI				Sg	**Sb**	**18 26 03.1**	**+0.8**
SEI	**Scarperia**	**0.49**	**296**	Pg	**Pg**	**18 25 54.7**	**-0.1**
SEI				Sg	**Sb**	**18 26 03.1**	**+0.8**
ATPC	**Poggio Castell**	**0.51**	**136**	Pg	**Pg**	**18 25 54.7**	**-0.4**
ATPC				Sg	**Sb**	**18 26 03.5**	**+0.8**
	2μm,0.2s						
ATPC	**Poggio Castell**	**0.51**	**136**	Pg	**Pg**	**18 25 54.7**	**-0.4**
ATPC				Sg	**Sb**	**18 26 03.5**	**+0.8**
	2μm,0.2s						
PIEI	**Pieia**	**0.51**	**127**	Pg	**Pg**	**18 25 54.7**	**-0.5**
PIEI				Sg	**Sb**	**18 26 02.6**	**-0.3**
	494nm,0.2s						
PIEI	**Pieia**	**0.51**	**127**	Pg	**Pg**	**18 25 54.7**	**-0.5**
PIEI				Sg	**Sb**	**18 26 02.6**	**-0.3**
	494nm,0.2s						
IMOL	**Imola, Italy**	**0.54**	**342**	Pg	**Pb**	**18 25 56.4**	**+0.3**
IMOL				Sg	**Sb**	**18 26 04.4**	**+0.7**
	151nm,0.5s						
IMOL	**Imola, Italy**	**0.54**	**342**	Pg	**Pb**	**18 25 56.4**	**+0.3**
IMOL				Sg	**Sb**	**18 26 04.4**	**+0.7**
	151nm,0.5s						
ATVO	**AVT- Monte Val**	**0.56**	**145**	Pg	**Pg**	**18 25 55.9**	**-0.2**
ATVO				Sg	**Sb**	**18 26 05.4**	**+1.2**
	998nm,0.5s						
ATVO	**AVT- Monte Val**	**0.56**	**145**	Pg	**Pg**	**18 25 55.9**	**-0.2**
ATVO				Sg	**Sb**	**18 26 05.4**	**+1.2**
	998nm,0.5s						
FSSB	**Fossombrone**	**0.60**	**104**	Pg	**Pg**	**18 25 56.3**	**-0.6**
FSSB				Sg	**Sb**	**18 26 05.5**	**0.0**
FSSB	**Fossombrone**	**0.60**	**104**	Pg	**Pg**	**18 25 56.3**	**-0.6**
FSSB				Sg	**Sb**	**18 26 05.5**	**0.0**
PESA	**Pesaro**	**0.64**	**81**	Pg	**Pb**	**18 25 56.8**	**-0.9**
	817nm,0.3s						
PESA	**Pesaro**	**0.64**	**81**	Pg	**Pb**	**18 25 56.8**	**-0.9**
	817nm,0.3s						
FRON	**Frontone**	**0.64**	**120**	Pg	**Pg**	**18 25 57.1**	**-0.4**
FRON				Sg	**Sb**	**18 26 07.2**	**+0.7**
	528nm,0.5s						
FRON	**Frontone**	**0.64**	**120**	Pg	**Pg**	**18 25 57.1**	**-0.4**
FRON				Sg	**Sb**	**18 26 07.2**	**+0.7**
	528nm,0.5s						
MTRZ	**Monterenzio**	**0.64**	**326**	Pg	**Pb**	**18 25 57.6**	**-0.3**
	1μm,0.4s						
MTRZ	**Monterenzio**	**0.64**	**326**	Pg	**Pb**	**18 25 57.6**	**-0.3**
	1μm,0.4s						
FNVD	**Fontana Vidola**	**0.69**	**298**	Pg	**Pg**	**18 25 58.4**	**-0.1**
	835nm,0.5s						
FNVD	**Fontana Vidola**	**0.69**	**298**	Pg	**Pg**	**18 25 58.4**	**-0.1**
	835nm,0.5s						
ATTE	**AVT- Monte Tez**	**0.70**	**157**	Pg	**Pg**	**18 25 58.5**	**-0.2**
	685nm,0.5s						
ATTE	**AVT- Monte Tez**	**0.70**	**157**	Pg	**Pg**	**18 25 58.5**	**-0.2**
	685nm,0.5s						
MURB	**Monte Urbino**	**0.71**	**145**	Pg	**Pg**	**18 25 58.6**	**-0.2**
	1μm,0.4s						
MURB	**Monte Urbino**	**0.71**	**145**	Pg	**Pg**	**18 25 58.6**	**-0.2**
	1μm,0.4s						
SSFR	**Montelago di S**	**0.72**	**124**	Pg	**Pg**	**18 25 58.2**	**-0.8**
	706nm,0.3s						
SSFR	**Montelago di S**	**0.72**	**124**	Pg	**Pg**	**18 25 58.2**	**-0.8**
	706nm,0.3s						
ARVD	**Arcevia**	**0.79**	**116**	Pg	**Pg**	**18 25 59.2**	**-1.1**
	260nm,0.4s						
ARVD	**Arcevia**	**0.79**	**116**	Pg	**Pg**	**18 25 59.2**	**-1.1**
	260nm,0.4s						
FROS	**Frosini**	**0.87**	**223**	Pg	**Pb**	**18 26 02.4**	**+0.7**
	779nm,1.0s						
FROS	**Frosini**	**0.87**	**223**	Pg	**Pb**	**18 26 02.4**	**+0.7**
	779nm,1.0s						
ZCCA	**Zocca**	**0.88**	**306**	Pg	**Pn**	**18 26 03.2**	**+0.4**
ZCCA	**Zocca**	**0.88**	**306**	Pg	**Pn**	**18 26 03.2**	**+0.4**
SNTG	**Esanatoglia**	**0.92**	**130**	Pg	**Pb**	**18 26 02.5**	**-0.1**
	495nm,0.8s						
SNTG	**Esanatoglia**	**0.92**	**130**	Pg	**Pb**	**18 26 02.5**	**-0.1**
	495nm,0.8s						
SENI	**Senigallia**	**0.93**	**98**	Pg	**Pn**	**18 26 03.1**	**-0.2**
	685nm,0.8s						
SENI	**Senigallia**	**0.93**	**98**	Pg	**Pn**	**18 26 03.1**	**-0.2**
	685nm,0.8s						
MGAB	**Montegabbione**	**0.94**	**174**	Pg	**Pb**	**18 26 03.4**	**+0.5**
	813nm,0.6s						
MGAB	**Montegabbione**	**0.94**	**174**	Pg	**Pb**	**18 26 03.4**	**+0.5**
	813nm,0.6s						
SACS	**San Casciano d**	**0.99**	**183**	Pg	**Pb**	**18 26 04.6**	**+0.7**
	416nm,0.7s						
CING	**Cingoli**	**1.00**	**117**	Pg	**Pb**	**18 26 03.8**	**-0.3**
	457nm,0.6s						
CING	**Cingoli**	**1.00**	**117**	Pg	**Pb**	**18 26 03.8**	**-0.3**
	457nm,0.6s						
BDI	**Bagni Di Lucca**	**1.02**	**283**	Pg	**Pg**	**18 26 04.1**	**-0.5**
	225nm,0.6s						
BDI	**Bagni Di Lucca**	**1.02**	**283**	Pg	**Pg**	**18 26 04.1**	**-0.5**
	225nm,0.6s						
ARCI	**Arcidosso**	**1.05**	**200**	Pg	**Pg**	**18 26 05.4**	**0.0**
	253nm,0.7s						
ARCI	**Arcidosso**	**1.05**	**200**	Pg	**Pg**	**18 26 05.4**	**0.0**
	253nm,0.7s						
TRIF	**Trifonti**	**1.06**	**227**	Pg	**Pb**	**18 26 05.9**	**+0.8**
	167nm,0.7s						
TRIF	**Trifonti**	**1.06**	**227**	Pg	**Pb**	**18 26 05.9**	**+0.8**
	167nm,0.7s						
MAIM	**Mastiano**	**1.07**	**274**	Pg	**Pg**	**18 26 05.0**	**-0.7**
	242nm,0.7s						
MAIM	**Mastiano**	**1.07**	**274**	P	**Pg**	**18 26 04.5**	**-1.2**
MAIM	**Mastiano**	**1.07**	**274**	Pg	**Pg**	**18 26 05.0**	**-0.7**
	242nm,0.7s						
MAIM				S	**Sg**	**18 26 17.5**	**-2.2**
CESI	**CESI - Serrava**	**1.08**	**141**	Pg	**Pg**	**18 26 05.1**	**-0.8**
	90nm,0.7s						
CESI	**CESI - Serrava**	**1.08**	**141**	Pg	**Pg**	**18 26 05.1**	**-0.8**
	90nm,0.7s						
MCIV	**Monte Civitell**	**1.09**	**191**	Pg	**Pg**	**18 26 05.9**	**-0.1**
	130nm,0.9s						
MCIV	**Monte Civitell**	**1.09**	**191**	Pg	**Pg**	**18 26 05.9**	**-0.1**
	130nm,0.9s						
SASS	**Sassa**	**1.10**	**238**	Pg	**Pg**	**18 26 05.9**	**-0.3**
	118nm,0.8s						
SASS	**Sassa**	**1.10**	**238**	Pg	**Pg**	**18 26 05.9**	**-0.3**
	118nm,0.8s						
FDMO	**Fiordimonte**	**1.15**	**134**	Pg	**Pg**	**18 26 05.8**	**-1.3**
	462nm,0.8s						
FDMO	**Fiordimonte**	**1.15**	**134**	Pg	**Pg**	**18 26 05.8**	**-1.3**
	462nm,0.8s						
SARO	**Sassorosso**	**1.18**	**287**	P	**Pg**	**18 26 05.9**	**-1.9**
SARO				S	**Sg**	**18 26 19.6**	**-3.6**
AOI	**Ancona**	**1.22**	**103**	Pg	**Pn**	**18 26 08.0**	**+0.6**
	193nm,0.6s						
AOI	**Ancona**	**1.22**	**103**	Pg	**Pn**	**18 26 08.0**	**+0.6**
	193nm,0.6s						
CASP	**Castiglione de**	**1.33**	**218**	Pg	**Pn**	**18 26 08.8**	**-0.1**
	74nm,0.8s						
CASP	**Castiglione de**	**1.33**	**218**	Pg	**Pn**	**18 26 08.8**	**-0.1**
	74nm,0.8s						
TEOL	**Teolo**	**1.53**	**352**	*e*Pg	**Pn**	**18 26 11.8**	**+0.1**
MARN	**Marana (Italy)**	**1.87**	**343**	*e*Pn	**Pn**	**18 26 16.6**	**+0.2**
CGRP	**Cima Grappa**	**2.04**	**357**	*e*Pn	**Pn**	**18 26 18.4**	**-0.5**
DDS	**Dosso del Somm**	**2.11**	**345**	*e*Pn	**Pn**	**18 26 20.0**	**+0.2**
VARN	**Col Varnada, M**	**2.15**	**2**	*e*Pn	**Pn**	**18 26 20.0**	**-0.3**
VARN	**Col Varnada, M**	**2.15**	**2**	*e*Pn	**Pn**	**18 26 20.0**	**-0.3**
NVLJ	**Novalja**	**2.21**	**70**	*i* Pn	**Pn**	**18 26 21.1**	**+0.1**
NVLJ				Sn	**Sn**	**18 26 49.0**	**+1.1**
NVLJ	**Novalja**	**2.21**	**70**	*i* Pn	**Pn**	**18 26 21.0**	**+0.1**
NVLJ				Sn	**Sn**	**18 26 49.0**	**+1.1**
PANI	**Panarotta**	**2.25**	**349**	*e*Pn	**Pn**	**18 26 22.2**	**+0.4**
SABO	**M.te Sabotino**	**2.43**	**28**	*e*Pn	**Pn**	**18 26 23.6**	**-0.5**
SABO	**M.te Sabotino**	**2.43**	**28**	*e*Pn	**Pn**	**18 26 23.6**	**-0.5**
CIMO	**Cimolais**	**2.49**	**8**	*e*Pn	**Pn**	**18 26 24.2**	**-0.7**
CIMO	**Cimolais**	**2.49**	**8**	*e*Pn	**Pn**	**18 26 24.2**	**-0.7**
MPRI	**Monte Prat**	**2.50**	**16**	*e*Pn	**Pn**	**18 26 25.3**	**+0.2**
MPRI	**Monte Prat**	**2.50**	**16**	*e*Pn	**Pn**	**18 26 25.3**	**+0.2**
PGF	**Pioggiola**	**2.53**	**240**	*e*Pn	**Pn**	**18 26 26.3**	**+0.8**
PGF				*e*Sn	**Sn**	**18 26 56.0**	**-0.1**
	15nm,0.4s						
PGF	**Pioggiola**	**2.53**	**240**	*e*Pn	**Pn**	**18 26 26.3**	**+0.8**
PGF				*e*Sn	**Sn**	**18 26 56.0**	**-0.1**
	7.3nm,0.4s						
VINO	**Villanova**	**2.58**	**21**	*e*Pn	**Pn**	**18 26 25.9**	**-0.3**
VINO	**Villanova**	**2.58**	**21**	*e*Pn	**Pn**	**18 26 25.9**	**-0.3**
OZOL	**Ozolo**	**2.64**	**346**	*e*Pn	**Pn**	**18 26 27.9**	**+0.8**
FUSE	**Fusea**	**2.67**	**15**	*e*Pn	**Pn**	**18 26 27.6**	**+0.2**
FUSE	**Fusea**	**2.67**	**15**	*e*Pn	**Pn**	**18 26 27.6**	**+0.2**
ACOM	**Acomizza, Ital**	**2.92**	**21**	*e*Pn	**Pn**	**18 26 30.6**	**-0.3**
ACOM	**Acomizza, Ital**	**2.92**	**21**	*e*Pn	**Pn**	**18 26 30.6**	**-0.3**
ABTA	**Abfaltersbach**	**2.93**	**7**	*e*Pn	**Pn**	**18 26 32.0**	**+1.0**
	3.2nm,0.3s						
ABTA	**Abfaltersbach**	**2.93**	**7**	Pn	**Pn**	**18 26 32.0**	**+1.0**
	3.2nm,0.3s						
SBF	**Sospel**	**3.28**	**272**	*e*Pn	**Pn**	**18 26 36.2**	**+0.4**
SBF				*e*Sn	**Sn**	**18 27 14.0**	**-0.5**
	30nm,0.5s						
SBF	**Sospel**	**3.28**	**272**	*e*Pn	**Pn**	**18 26 36.2**	**+0.4**
SBF				*e*Sn	**Sn**	**18 27 14.0**	**-0.5**
	15nm,0.5s						
FETA	**Feichten**	**3.29**	**345**	*i* Pn	**Pb**	**18 26 40.5**	**-2.7**
	6.6nm,0.4s						
FETA				*i* Sn	**Sn**	**18 27 17.8**	**+2.8**
	2.3nm,0.3s						
FETA	**Feichten**	**3.29**	**345**	Pn	**Pb**	**18 26 40.5**	**-2.7**
	6.6nm,0.4s						
FETA				Sn	**Sn**	**18 27 17.8**	**+2.8**
	2.3nm,0.3s						
KBA	**Koelnbreinsper**	**3.38**	**16**	*i* Pn	**Pn**	**18 26 38.1**	**+0.9**
	4.0nm,0.3s						
KBA				*i* Sn	**Sn**	**18 27 18.4**	**+1.3**
	8.7nm,0.3s						
KBA	**Koelnbreinsper**	**3.38**	**16**	Pn	**Pn**	**18 26 38.1**	**+0.9**
	4.0nm,0.3s						
KBA				Sn	**Sn**	**18 27 18.4**	**+1.3**
	8.7nm,0.3s						
WATA	**Walderalm**	**3.50**	**356**	*i* Pn	**Pn**	**18 26 42.1**	**+3.2**
	4.1nm,0.2s						
WATA	**Walderalm**	**3.50**	**356**	Pn	**Pn**	**18 26 42.1**	**+3.2**
	4.1nm,0.2s						
MOTA	**Moosalm**	**3.55**	**350**	*i* Pn	**Pn**	**18 26 42.6**	**+2.9**
	5.0nm,0.4s						
MOTA	**Moosalm**	**3.55**	**350**	Pn	**Pn**	**18 26 42.6**	**+2.9**
	5.0nm,0.4s						
DAVA	**Damuels**	**3.74**	**338**	*i* Pn	**Pn**	**18 26 46.3**	**+4.1**
	8.9nm,0.6s						
DAVA				*i* Sn	**Sn**	**18 27 30.5**	**+4.4**
	9.8nm,0.4s						
DAVA	**Damuels**	**3.74**	**338**	Pn	**Pn**	**18 26 46.3**	**+4.1**
	8.9nm,0.6s						
DAVA				Sn	**Sn**	**18 27 30.5**	**+4.4**
	9.8nm,0.4s						
MBDF	**Montbardon**	**3.84**	**285**	*e*Pn	**Pn**	**18 26 43.2**	**-0.3**
MBDF	**Montbardon**	**3.84**	**285**	*e*P	**Pn**	**18 26 46.9**	**+3.4**
MBDF				*e*Sn	**Sn**	**18 27 27.0**	**-1.4**
	11nm,0.5s						
MBDF	**Montbardon**	**3.84**	**285**	*e*Pn	**Pn**	**18 26 43.2**	**-0.3**
MBDF	**Montbardon**	**3.84**	**285**	*e*P	**Pn**	**18 26 46.9**	**+3.4**
MBDF				*e*Sn	**Sn**	**18 27 27.0**	**-1.4**
	5.5nm,0.5s						
FRF	**La Foret Royal**	**3.87**	**268**	*e*Pn	**Pn**	**18 26 44.4**	**+0.5**
FRF				*e*Sn	**Sn**	**18 27 28.2**	**-0.8**
	5.6nm,0.4s						
FRF	**La Foret Royal**	**3.87**	**268**	*e*Pn	**Pn**	**18 26 44.4**	**+0.5**
FRF				*e*Sn	**Sn**	**18 27 28.2**	**-0.8**
	2.8nm,0.4s						
LMR	**La Mourre**	**4.00**	**265**	*e*Pn	**Pn**	**18 26 45.6**	**0.0**
LMR				*e*Sn	**Sn**	**18 27 31.1**	**-1.1**
	2.4nm,0.3s						
LMR	**La Mourre**	**4.00**	**265**	*e*Pn	**Pn**	**18 26 45.6**	**0.0**
LMR				*e*Sn	**Sn**	**18 27 31.1**	**-1.1**
	1.2nm,0.3s						
LPG	**La Plagne**	**4.07**	**296**	*e*P	**Pn**	**18 26 50.7**	**+3.8**
LPG				*e*Sn	**Sn**	**18 27 32.6**	**-1.8**
	7.2nm,0.4s						
LPG	**La Plagne**	**4.07**	**296**	*e*P	**Pn**	**18 26 50.7**	**+3.8**
LPG				*e*Sn	**Sn**	**18 27 32.6**	**-1.8**
	3.6nm,0.4s						
LPL	**La Plagne**	**4.09**	**296**	*e*P	**Pn**	**18 26 51.3**	**+4.2**
LPL				*e*Sn	**Sn**	**18 27 33.2**	**-1.6**
	5.2nm,0.4s						
LPL	**La Plagne**	**4.09**	**296**	*e*P	**Pn**	**18 26 51.3**	**+4.2**
LPL				*e*Sn	**Sn**	**18 27 33.2**	**-1.6**
	2.6nm,0.4s						
ARSA	**Arzberg**	**4.22**	**35**	*i* Pn	**Pn**	**18 26 51.5**	**+2.8**
	1.4nm,0.3s						
ARSA	**Arzberg**	**4.22**	**35**	Pn	**Pn**	**18 26 51.5**	**+2.8**
	1.4nm,0.3s						
MOA	**Molln**	**4.32**	**21**	*i* Pn	**Pn**	**18 26 51.3**	**+1.3**
	1.2nm,0.2s						
MOA				*e*Sn	**Sn**	**18 27 40.2**	**+0.2**
	16nm,0.6s						
MOA	**Molln**	**4.32**	**21**	Pn	**Pn**	**18 26 51.3**	**+1.3**
	1.2nm,0.2s						
MOA				Sn	**Sn**	**18 27 40.2**	**+0.2**
	16nm,0.6s						
ORIF	**Oris-en-Rattie**	**4.50**	**286**	*e*Pn	**Pn**	**18 26 52.6**	**+0.1**
ORIF				*e*Sn	**Sn**	**18 27 42.7**	**-1.9**
	10nm,0.6s						
ORIF	**Oris-en-Rattie**	**4.50**	**286**	*e*Pn	**Pn**	**18 26 52.6**	**+0.1**
ORIF				*e*Sn	**Sn**	**18 27 42.7**	**-1.9**
	5.2nm,0.6s						
SMRF	**Simiane la Rot**	**4.62**	**274**	*e*Pn	**Pn**	**18 26 55.4**	**+1.2**
SMRF	**Simiane la Rot**	**4.62**	**274**	*e*Pn	**Pn**	**18 26 55.4**	**+1.2**
CONA	**Conrad Observa**	**4.91**	**32**	*e*Pn	**Pn**	**18 26 60.0**	**+1.8**
	0.5nm,0.2s						
CONA				*i* Sn	**Sn**	**18 27 55.2**	**+0.6**
	3.3nm,0.3s						
CONA	**Conrad Observa**	**4.91**	**32**	Pn	**Pn**	**18 27 00.0**	**+1.8**
	0.5nm,0.2s						
CONA				Sn	**Sn**	**18 27 55.2**	**+0.6**
	3.3nm,0.3s						
CABF	**La Chapelle**	**4.99**	**306**	*e*P	**Pn**	**18 27 02.6**	**+3.3**
CABF	**La Chapelle**	**4.99**	**306**	*e*P	**Pn**	**18 27 02.6**	**+3.3**
VIVF	**Saint-Julien-l**	**5.33**	**283**	*e*Pn	**Pn**	**18 27 03.5**	**-0.4**
VIVF	**Saint-Julien-l**	**5.33**	**283**	*e*Pn	**Pn**	**18 27 03.5**	**-0.4**
HINF	**Hinteralfeld**	**5.34**	**320**	*e*Pn	**Pn**	**18 27 02.8**	**-1.3**
HINF	**Hinteralfeld**	**5.34**	**320**	*e*P	**Pn**	**18 27 06.3**	**+2.2**
HINF				*e*Sn	**Sn**	**18 28 02.4**	**-3.0**
	15nm,0.5s						
HINF	**Hinteralfeld**	**5.34**	**320**	*e*Pn	**Pn**	**18 27 02.8**	**-1.3**
HINF	**Hinteralfeld**	**5.34**	**320**	*e*P	**Pn**	**18 27 06.3**	**+2.2**
HINF				*e*Sn	**Sn**	**18 28 02.4**	**-3.0**
	7.6nm,0.5s						
KHC	**Kasperske Hory**	**5.40**	**11**	*e*PN	**Pn**	**18 27 05.2**	**+0.3**
KHC				*e*SN	**Sn**	**18 28 05.8**	**-1.0**
KHC				*e*SB	**Sb**	**18 28 25.3**	**+1.7**
KHC				*e*SG	**Sg**	**18 28 42.4**	**+4.1**
KHC	**Kasperske Hory**	**5.40**	**11**	Pn	**Pn**	**18 27 05.2**	**+0.3**
KHC				Sn	**Sn**	**18 28 05.8**	**-1.0**
CDF	**Champ du Feu**	**5.61**	**326**	*e*Pn	**Pn**	**18 27 08.5**	**+0.6**
CDF				*e*Sn	**Sn**	**18 28 08.5**	**-3.6**
	11nm,0.6s						
CDF	**Champ du Feu**	**5.61**	**326**	*e*Pn	**Pn**	**18 27 08.5**	**+0.6**
CDF				*e*Sn	**Sn**	**18 28 08.5**	**-3.6**
	5.7nm,0.6s						
HAU	**Haudompre**	**5.72**	**319**	*e*Pn	**Pn**	**18 27 07.4**	**-1.8**
HAU	**Haudompre**	**5.72**	**319**	*e*P	**Pn**	**18 27 11.6**	**+2.4**
HAU				*e*Sn	**Sn**	**18 28 11.5**	**-3.0**
	22nm,0.4s						
HAU	**Haudompre**	**5.72**	**319**	*e*Pn	**Pn**	**18 27 07.4**	**-1.8**
HAU	**Haudompre**	**5.72**	**319**	*e*P	**Pn**	**18 27 11.6**	**+2.4**
HAU				*e*Sn	**Sn**	**18 28 11.5**	**-3.0**
	11nm,0.4s						
TREC	**Trest**	**5.97**	**23**	*e*SN	**Sn**	**18 28 17.9**	**-2.8**
TREC	**Trest**	**5.97**	**23**	Sn	**Sn**	**18 28 17.9**	**-2.8**
GOPC	**GO Pecny, Ondr**	**6.37**	**17**	*e*SN	**Sn**	**18 28 27.5**	**-3.1**
PRU	**Pruhonice**	**6.39**	**15**	*e*SN	**Sn**	**18 28 28.3**	**-2.8**
PRU	**Pruhonice**	**6.39**	**15**	*e*	**Sn**	**18 28 28.3**	**-2.8**
LOR	**Lormes**	**6.64**	**304**	*e*Pn	**Pn**	**18 27 21.1**	**-0.9**
LOR	**Lormes**	**6.64**	**304**	*e*Pn	**Pn**	**18 27 21.1**	**-0.9**
MTLF	**Montolieu**	**7.10**	**269**	*e*Pn	**Pn**	**18 27 29.0**	**+0.8**
MTLF	**Montolieu**	**7.10**	**269**	*e*Pn	**Pn**	**18 27 29.0**	**+0.8**
BRG	**Berggiesshubel**	**7.16**	**10**	SN	**Sn**	**18 28 46.4**	**-3.5**
BRG				SG	**Sb**	**18 29 22.0**	**+8.0**
	2.6nm,0.8s						

NIED ***24*** *18:32:00, 23.°40N×121.°70E, h38km, Mw4.1 Best double couple: M0 1.74000×10^15 NP1:φ0=231.00000°, δ33.00000°, λ130.00000°. NP2:φ0=6.00000°, δ65.00000°, λ67.00000°.*
BJI ***24*** *18:32:03.1, 23.°54N×121.°47E, h10km, mb4.3/15, mB4.5/9, ML4.0/6, Ms3.9/5, Ms7 3.8/6*
JMA ***24*** *18:32:03.3±0.2, 23.°41N×121.°65E, h32km±4km, M4.4*
ISCJB ***24*** *18:32:04.4±0.2, 23.°42N±0.°02×121.°63E±0.°01, h48km±2km, mb4.2/32, MS3.5/2, Error ellipse: s-maj=3.0km s-min=1.9km az=152.2*
NEIC ***24*** *18:32:04.5±0.7, 23.°44N×121.°62E, h39km±7km, mb4.4/14, Error ellipse: s-maj=10.3km s-min=7.5km az=127.0*
NEIC Recorded [3 TAP] in Taitung, [2 TAP] in Hualien and [1 TAP] in Changhua, Chiayi, Miaoli, Nantou and Yunlin.
TAP ***24*** *18:32:05.1, 23.°45N×121.°53E, h37km, ML4.7, B*
IDC ***24*** *18:32:07.8±6.0, 23.°35N×121.°52E, h65km±56km, mb3.7/17, mb1 3.8/18, mb1mx3.6/70, mbtmp4.0/18, ML3.7/1, MS3.4/3, Ms1 3.5/3, ms1mx2.9/40, Error ellipse: s-maj=32.3km s-min=12.4km az=67.0*
ISC 24 18:32:04.8±0.5, 23.°44N±0.°02×121.°62E±0.°02, h35km±1km, n162, σ1§54/212, mb4.0/32, 31C-7D, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TEGC	**Jichi Village**	**0.28**	**345**	⇑*i*P	**Pn**	**18 32 13.3**	**+0.8**
	baz=7.0						
TEGC				S	**Sn**	**18 32 19.3**	**+1.3**
	baz=7.0						
EHY	**Hungye**	**0.28**	**284**	⇑*i*P	**Pn**	**18 32 11.9**	**-0.6**
	baz=287						
EHY				*e*S	**Sn**	**18 32 18.1**	**0.0**
	baz=287						
YULB	**Yu-li**	**0.30**	**261**	*e*Pg	**Pn**	**18 32 11.9**	**-0.9**
TWF1	**Yuli**	**0.31**	**254**	⇑*i*P	**Pn**	**18 32 12.5**	**-0.4**
	baz=258						
TWF1				S	**Sn**	**18 32 17.6**	**-1.0**
	baz=258						
ESL	**Shilin**	**0.41**	**335**	⇑*i*P	**Pn**	**18 32 13.5**	**-0.7**
	baz=340						
ESL				S	**Sn**	**18 32 20.0**	**-0.7**
	baz=340						
CHKT	**Chengkung**	**0.41**	**215**	⇑*i*P	**Pn**	**18 32 14.1**	**-0.1**
	baz=197						
CHKT				S	**Sn**	**18 32 21.2**	**+0.5**
	baz=197

CHN2	**Minshiung**	**1.06 275**	P	**Pn**	**18 32 24.3**	**+1.2**
	baz=275					
CHN2			S	**Sn**	**18 32 38.5**	**+1.9**
	baz=275					
CHY	**Chiayi**	**1.10 273**	P	**Pn**	**18 32 24.9**	**+1.2**
	baz=273					
CHY			*i* S	**Sn**	**18 32 39.0**	**+1.3**
	baz=273					
TCU	**Taichung**	**1.12 309**	⇑*i*P	**Pn**	**18 32 25.2**	**+1.3**
	baz=312					
TCU			*e*S	**Sn**	**18 32 39.3**	**+1.3**
	baz=312					
SSD	**Sandimen**	**1.14 233**	*e*P	**Pn**	**18 32 24.3**	**0.0**
	baz=227					
TWC	**Suao**	**1.18 10**	*e*P	**Pn**	**18 32 25.6**	**+0.7**
	baz=22					
TWQ1	**Liyutan**	**1.19 320**	⇑*i*P	**Pn**	**18 32 26.8**	**+1.8**
	baz=322					
TWQ1			*e*S	**Sn**	**18 32 42.3**	**+2.3**
	baz=322					
ENTT	**Nioudou**	**1.20 358**	⇑P	**Pn**	**18 32 25.2**	**+0.2**
	baz=2.0					
CHN3	**Shinhua**	**1.21 253**	*e*P	**Pn**	**18 32 27.3**	**+2.1**
	baz=263					
CHN3			S	**Sn**	**18 32 44.0**	**+3.7**
	baz=263					
YHNB	**Yeheng**	**1.25 350**	*e*Pn	**Pn**	**18 32 26.1**	**+0.3**
YHNB			*e*Sn	**Sn**	**18 32 41.0**	**-0.4**
NSY	**Sanyi**	**1.25 321**	⇑*i*P	**Pn**	**18 32 27.6**	**+1.8**
	baz=323					
NSY			S	**Sn**	**18 32 44.3**	**+2.9**
	baz=323					
NSK	**Sanguang**	**1.25 349**	⇑*i*P	**Pn**	**18 32 26.6**	**+0.6**
	baz=352					
NSK			*e*S	**Sn**	**18 32 40.6**	**-0.9**
	baz=352					
SGLT	**Jiouru**	**1.26 236**	*e*P	**Pn**	**18 32 28.0**	**+2.1**
	baz=233					
TWM1	**Shoushan**	**1.26 241**	*e*P	**Pn**	**18 32 28.9**	**+2.9**
	baz=240					
TWM1			*e*S	**Sn**	**18 32 47.2**	**+5.5**
	baz=240					
TAW	**Tawu**	**1.27 212**	*e*P	**Pn**	**18 32 24.9**	**-1.1**
	baz=209					
EAST	**Anshuo**	**1.27 214**	⇓P	**Pn**	**18 32 25.3**	**-0.8**
	baz=205					
TWE	**Neicheng**	**1.28 2**	*e*P	**Pn**	**18 32 26.4**	**+0.3**
	baz=7.0					
CHN8	**Yiju**	**1.30 266**	*e*P	**Pn**	**18 32 27.2**	**+0.8**
	baz=266					
CHN8			*e*S	**Sn**	**18 32 44.3**	**+1.7**
	baz=266					
WSF	**Szhu**	**1.30 279**	*e*P	**Pn**	**18 32 27.0**	**+0.6**
	baz=279					
WSF			*e*S	**Sn**	**18 32 43.4**	**+0.8**
	baz=279					
WTCT	**Ta-ch'eng**	**1.30 289**	*e*P	**Pn**	**18 32 25.6**	**-0.9**
	baz=279					
WTCT			*e*S	**Sn**	**18 32 44.1**	**+1.6**
	baz=279					
NSTT	**Nanjuang**	**1.31 335**	⇑*i*P	**Pn**	**18 32 28.1**	**+1.5**
	baz=337					
NSTT			S	**Sn**	**18 32 43.7**	**+0.7**
	baz=337					
ILA	**Ilan**	**1.32 5**	*e*P	**Pn**	**18 32 29.3**	**+2.5**
	baz=359					
SCLT	**Jiali**	**1.34 259**	*e*P	**Pn**	**18 32 28.1**	**+1.1**
	baz=258					
SCLT			*e*S	**Sn**	**18 32 45.7**	**+2.2**
	baz=258					
TAI1	**Yung-k'ang**	**1.34 253**	*e*P	**Pn**	**18 32 28.9**	**+1.9**
	baz=252					
LAY	**Lan-yu**	**1.40 183**	*e*P	**Pn**	**18 32 26.8**	**-1.1**
	baz=170					
EGS		**1.43 11**	*e*P	**Pn**	**18 32 30.7**	**+2.5**
	baz=4.0					
HSN	**Hsinchu**	**1.48 336**	*e*P	**Pn**	**18 32 30.9**	**+2.0**
	baz=326					
TATO	**Taipei**	**1.53 355**	*e*Pn	**Pn**	**18 32 30.7**	**+1.0**
TWA	**Mucha**	**1.53 359**	*e*P	**Pn**	**18 32 30.8**	**+1.1**
	baz=2.0					
TWA			*e*S	**Sn**	**18 32 49.4**	**+0.9**
	baz=2.0					
NCU	**National Centr**	**1.57 346**	*e*P	**Pn**	**18 32 30.8**	**+0.5**
	baz=348					
JYNG	**Yonagunijimaku**	**1.57 50**	P	**Pn**	**18 32 31.5**	**+1.3**
JYNG			S	**Sn**	**18 32 50.6**	**+1.2**
TWP	**Hsiaoliuchiu**	**1.59 227**	*e*P	**Pn**	**18 32 32.7**	**+2.3**
	baz=226					
TAP1	**Taipei**	**1.59 357**	*e*P	**Pn**	**18 32 31.5**	**+1.0**
	baz=359					
TAP	**Taipei**	**1.60 356**	*e*P	**Pn**	**18 32 31.8**	**+1.3**
	baz=359					
TWB1	**Santiao Chiao**	**1.60 12**	*e*P	**Pn**	**18 32 32.1**	**+1.6**
	baz=3.0					
TWB1			*e*S	**Sn**	**18 32 52.0**	**+2.0**
	baz=3.0					
YOJ	**Yonaguni jima**	**1.63 51**	P	**Pn**	**18 32 32.3**	**+1.4**
YOJ			S	**Sn**	**18 32 52.2**	**+1.5**
YOJ	**Yonaguni jima**	**1.63 51**	⇑*i*P	**Pn**	**18 32 32.4**	**+1.4**
	baz=52					
YOJ			*e*S	**Sn**	**18 32 51.3**	**+0.6**
	baz=52					
YOJ	**Yonaguni jima**	**1.63 51**	*e*Pn	**Pn**	**18 32 32.3**	**+1.4**
YOJ			*e*Sn	**Sn**	**18 32 50.0**	**-0.7**
NWF	**Wu-fen Shan**	**1.63 5**	⇑P	**Pn**	**18 32 32.3**	**+1.2**
	baz=8.0					
HEN	**Hengchun**	**1.64 210**	*e*P	**Pn**	**18 32 33.2**	**+2.0**
	baz=198					
TWS1	**Kuangyinshan**	**1.66 354**	*e*P	**Pn**	**18 32 32.9**	**+1.4**
	baz=8.0					
TWS1			*e*S	**Sn**	**18 32 53.7**	**+2.1**
	baz=8.0					
TWK1	**Hengchun**	**1.67 207**	*e*P	**Pn**	**18 32 31.6**	**+0.1**
	baz=197					
TSEB	**Hengchuen, Pin**	**1.67 204**	*e*P	**Pn**	**18 32 31.1**	**-0.5**
	baz=196					
WDGT	**Dungji**	**1.81 265**	⇓*i*P	**Pn**	**18 32 33.6**	**+0.1**
	baz=264					
WDGT			*i* S	**Sn**	**18 32 54.0**	**-1.3**
	baz=264					
TWY	**Chenhua**	**1.83 359**	*e*P	**Pn**	**18 32 36.5**	**+2.8**
	baz=2.0					
PNG	**Penghu**	**1.90 274**	⇓*i*P	**Pn**	**18 32 35.1**	**+0.4**
	baz=274					
PNG			*e*S	**Sn**	**18 32 56.9**	**-0.6**
	baz=274					
HATJ	**Hateruma jima**	**2.09 73**	P	**Pn**	**18 32 38.6**	**+1.2**
HATJ			S	**Sn**	**18 33 03.1**	**+0.9**
IRIF	**Iriomote-Funau**	**2.13 65**	P	**Pn**	**18 32 39.2**	**+1.4**
IRIF			S	**Sn**	**18 33 05.6**	**+2.6**
PCYT	**Pengchaiyu**	**2.22 11**	*e*P	**Pn**	**18 32 40.2**	**+1.1**
	baz=2.0					
JKRS	**Kuro-shima**	**2.33 70**	P	**Pn**	**18 32 42.1**	**+1.5**
JKRS			S	**Sn**	**18 33 09.6**	**+1.7**
JIJ	**Ishigaki jima**	**2.48 68**	P	**Pn**	**18 32 43.9**	**+1.1**
JIJ			S	**Sn**	**18 33 12.2**	**+0.3**
JISG	**Ishigakijimahi**	**2.71 65**	P	**Pn**	**18 32 46.7**	**+0.8**
JISG			S	**Sn**	**18 33 17.7**	**+0.2**
JTJ	**Tarama**	**3.06 66**	P	**Pn**	**18 32 51.8**	**+1.1**
JTJ			S	**Sn**	**18 33 28.5**	**+2.4**
KNM	**Kinmen**	**3.08 289**	*e*P	**Pn**	**18 32 51.5**	**+0.7**
	baz=287					
QZH	**Quanzhou**	**3.15 299**	⇓*i*Pn	Pn	18 32 45.9	-5.9
QZH			Sn	**Sn**	**18 33 20.3**	**-7.8**
QZH			smax	smax		
	comp=N,1μm,0.3s					
QZH			smax	smax		
	comp=E,1μm,0.3s					
JIRB	**Irabujima**	**3.53 66**	P	**Pn**	**18 32 58.1**	**+1.0**
JIRB			S	**Sn**	**18 33 38.0**	**+0.4**
JMJ	**Miyako jima 2**	**3.62 67**	P	**Pn**	**18 33 00.0**	**+1.6**
JMJ			S	**Sn**	**18 33 40.9**	**+0.9**
JIKM	**Ikemajima**	**3.63 65**	P	**Pn**	**18 32 59.5**	**+1.0**
JIKM			S	**Sn**	**18 33 41.1**	**+1.1**
JOGS	**Gusukube**	**3.70 68**	P	**Pn**	**18 33 00.9**	**+1.4**
JOGS			S	**Sn**	**18 33 42.7**	**+0.8**
JKE	**Kume jima 2**	**5.50 57**	P	**Pn**	**18 33 24.4**	**+0.2**
JKE			S	**Sn**	**18 34 26.2**	**-0.1**
JNTH	**Nagotoyohara**	**6.57 61**	P	**Pn**	**18 33 38.3**	**-0.6**
JIH	**Iheya**	**6.77 57**	P	**Pn**	**18 33 42.1**	**+0.5**
JOW	**Kunigami**	**6.91 59**	P	**Pn**	**18 33 42.8**	**-0.8**
JOW	**Kunigami**	**6.91 59**	*e*P	**Pn**	**18 33 42.6**	**-1.0**
	baz=62					
JOW	**Kunigami**	**6.91 59**	*e*Pn	**Pn**	**18 33 42.1**	**-1.5**
JOW			*e*Sn	**Sn**	**18 34 55.0**	**-6.0**
QIZ	**Qiongzhong**	**11.83 250**	P	**Pn**	**18 34 50.5**	**-0.5**
QIZ			S	**Sn**	**18 37 02.6**	**+0.8**
QIZ			LR	LR		
	comp=E,210nm,18.9s					
QIZ			LR	LR		
	comp=Z,200nm,16.9s					
ENH	**Enshi**	**12.79 305**	*e*Pn	Pn	18 34 58.6	-5.6
KSRS	**Korea Array**	**14.98 20**	P	**P**	**18 35 37.2**	**-1.8**
	0.3nm,0.3s,baz=200,slow=12,SNR=9.8					
KSRS			LR	LR	18 42 46.1	
	comp=Z,77nm,19.2s,baz=78,slow=42					
KMI	**Kunming**	**17.30 279**	P	**P**	**18 36 06.6**	**+1.6**
KMI			pP	pP	18 36 10.3	-3.9
KMI			pmax	pmax		
	comp=Z,13nm,0.7s					
KMI			pmax	pmax		
	comp=Z,64nm,3.3s					
KMI			LR	LR		
	comp=N,230nm,13.5s					
KMI			LR	LR		
	comp=E,88nm,13.1s					
KMI			LR	LR		
	comp=Z,120nm,15.2s					
CD2	**Chengdu**	**17.54 299**	P	**Pn**	**18 36 05.1**	**-1.5**
CD2			pmax	pmax		
	comp=Z,10.0nm,0.5s					
HHC	**Hu-ho-hao-te**	**19.31 336**	*e*P	**P**	**18 36 26.8**	**-0.1**
HHC			pmax	pmax		
	comp=Z,31nm,0.6s					
HHC			pmax	pmax		
	comp=Z,87nm,3.7s					
LZH	**Lanzhou**	**19.89 313**	*e*P	**Pn**	**18 36 39.6**	**+4.5**
LZH			pmax	pmax		
	comp=Z,13nm,1.0s					
SGSI	**Sangihe**	**20.00 169**	P	Pn	18 36 46.2	+10
CHTO	**Chiang Mai**	**21.64 262**	*e*P	**P**	**18 36 54.3**	**+2.1**
	3.8nm,1.0s					
CM01	**Chiang Mai Arr**	**21.74 261**	*e*P	**P**	**18 36 54.2**	**+0.9**
CMAR	**Chiang Mai Arr**	**21.74 261**	LR	LR	18 46 29.9	
	comp=Z,49nm,20.3s,baz=300,slow=40					
MDJ	**Mudanjiang**	**22.11 15**	P	**P**	**18 36 57.6**	**+0.6**
MDJ			pmax	pmax		
	comp=Z,6.0nm,1.3s					
MDJ	**Mudanjiang**	**22.11 15**	*e*P	**P**	**18 36 57.6**	**+0.6**
	5.9nm,0.9s					
SBUM	**Sibu**	**22.77 205**	*e*P	**P**	**18 37 03.2**	**-1.0**
	8.3nm,0.6s					
GTA	**Gaotai**	**24.39 316**	*e*P	**P**	**18 37 22.4**	**+2.4**
KSM	**Kuching**	**24.44 208**	*e*P	**P**	**18 37 20.2**	**-0.2**
	10.0nm,0.8s					
ULN	**Ulaanbaatar**	**27.00 338**	*e*P	**P**	**18 37 42.2**	**-1.3**
	7.1nm,1.7s					
SONM	**Songino Array**	**27.21 337**	P	**P**	**18 37 45.2**	**-0.1**
	0.4nm,0.5s,baz=154,slow=11,SNR=4.0					
SONA1	**Songino Array**	**27.21 337**	*e*P	**P**	**18 37 42.8**	**-2.6**
LSA	**Lhasa**	**27.91 289**	*e*P	**P**	**18 37 49.5**	**-2.7**
	1.8nm,0.8s					
WMQ	**Urumqi**	**34.46 314**	*e*P	**P**	**18 38 48.8**	**-0.5**
WMQ			pmax	pmax		
	comp=Z,4.0nm,0.6s					
WMQ			pmax	pmax		
	comp=Z,110nm,5.6s					
YAK	**Yakutsk**	**38.96 6**	P	**P**	**18 39 29.8**	**+2.6**
	2.5nm,0.6s,baz=163,slow=19,SNR=3.1					
MK01	**Makanchi Array**	**39.13 316**	*e*P	**P**	**18 39 28.6**	**-0.4**
MK31	**Makanchi Array**	**39.15 316**	*e*P	**P**	**18 39 29.2**	**+0.2**
MKAR	**Makanchi Array**	**39.15 316**	P	**P**	**18 39 29.1**	**0.0**
	1.8nm,0.8s,baz=111,slow=9.7,SNR=18					
MKAR	**Makanchi Array**	**39.15 316**	*e*P	**P**	**18 39 28.9**	**-0.2**
ZAA0	**Zalesovo Array**	**41.08 327**	*e*P	**P**	**18 39 43.1**	**-1.9**
ZALV	**Zalesovo Beam**	**41.08 327**	P	**P**	**18 39 44.9**	**0.0**
	0.9nm,0.4s,baz=119,slow=8.4,SNR=5.8					
FITZ	**Fitzroy Crossi**	**41.47 174**	P	**P**	**18 39 47.9**	**-0.6**
	1.5nm,0.7s,baz=344,slow=7.4,SNR=2.7					
H11N1	**WAKE ISLAND Hy**	**42.13 86**	T	T	19 24 58.9	
	baz=283,slow=75,SNR=108					
H11N2	**WAKE ISLAND Hy**	**42.13 86**	T	T	19 25 00.3	
	baz=283,slow=75,SNR=155					
H11N3	**WAKE ISLAND Hy**	**42.15 86**	T	T	19 25 01.6	
	baz=283,slow=75,SNR=118					
H11S3	**WAKE ISLAND Hy**	**42.24 88**	T	T	19 25 08.4	
	baz=284,slow=75,SNR=136					
H11S1	**WAKE ISLAND Hy**	**42.25 88**	T	T	19 25 10.4	
	baz=284,slow=75,SNR=81					
H11S2	**WAKE ISLAND Hy**	**42.26 88**	T	T	19 25 11.5	
	baz=284,slow=75,SNR=58					
TKM2	**Tokmak 2**	**42.54 309**	*e*P	**P**	**18 39 56.5**	**-0.8**
	5.8nm,1.3s					
KURBB	**Kurchatov Arra**	**42.93 320**	P	**P**	**18 39 59.6**	**-0.5**
	0.5nm,0.5s,baz=108,slow=9.8,SNR=9.8					
EKS2	**Erkin-Say**	**43.80 308**	*e*P	**P**	**18 40 09.0**	**+1.6**
	8.2nm,1.8s					
WRAB	**Tennant Creek**	**44.86 163**	*e*P	**P**	**18 40 15.6**	**-0.3**
	39nm,1.9s					
WRA	**Warramunga Arr**	**44.87 163**	P	**P**	**18 40 14.6**	**-1.3**
	1.0nm,0.5s,baz=345,slow=8.7,SNR=13					
ASAR	**Alice Springs**	**48.32 165**	P	**P**	**18 40 42.7**	**-0.3**
	0.5nm,0.3s,baz=336,slow=6.9,SNR=34					
AS01	**Alice Springs**	**48.33 165**	*e*P	**P**	**18 40 42.7**	**-0.4**
TIXI	**Tiksi**	**48.41 3**	*e*P	**P**	**18 40 43.7**	**+0.6**
	18nm,2.0s					
BVAR	**Borovoye Array**	**48.50 321**	P	**P**	**18 40 43.3**	**-0.8**
	0.3nm,0.3s,baz=108,slow=9.4,SNR=4.6					
NRIK	**Noril'sk**	**50.22 345**	LR	LR	19 02 28.8	
	comp=Z,159nm,19.2s,baz=123,slow=36					
ABKAR	**Akbulak array**	**54.25 315**	*e*P	**P**	**18 41 26.6**	**-0.6**
ARU	**Arti**	**55.94 323**	*e*P	**P**	**18 41 38.3**	**-1.0**
	17nm,1.6s					
STKA	**Stephens Creek**	**58.23 160**	P	**P**	**18 41 55.6**	**0.0**
	1.2nm,0.6s,baz=8.1,slow=7.1,SNR=4.1					
FALS	**False Pass**	**62.58 39**	*e*P	**P**	**18 42 22.1**	**-3.0**
	143nm,1.3s					
SML	**Sawmill**	**69.65 30**	*e*P	**P**	**18 43 11.0**	**+0.5**
	7.0nm,1.1s					
FINES	**FINESS Array B**	**72.29 330**	P	**P**	**18 43 26.2**	**-0.2**
	0.8nm,0.5s,baz=68,slow=9.1,SNR=7.0					
INK	**Inuvik**	**73.76 22**	P	**P**	**18 43 35.5**	**+0.5**
	1.0nm,0.6s,baz=296,slow=7.1,SNR=3.9					
BR131	**Keskin Array S**	**73.94 307**	*e*P	**P**	**18 43 36.3**	**-0.5**
BRTR	**Keskin Array B**	**73.94 307**	P	**P**	**18 43 36.5**	**-0.3**
	0.9nm,0.7s,baz=117,slow=7.6,SNR=7.7					
BR231	**Keskin MP Arra**	**74.53 307**	*e*P	**P**	**18 43 37.2**	**-3.0**
MLR	**Muntele Rosu**	**77.45 314**	P	**P**	**18 43 57.0**	**+0.2**
	0.5nm,0.6s,baz=252,slow=4.2,SNR=5.5					
HFS	**Hagfors**	**78.41 331**	P	**P**	**18 44 02.0**	**+0.4**
	6.7nm,1.0s,baz=90,slow=7.2,SNR=4.0					
GERES	**GERESS Array B**	**83.67 321**	P	**P**	**18 44 29.6**	**-0.4**
	1.0nm,0.7s,baz=42,slow=6.1,SNR=6.8					
GEA0	**GERESS Array S**	**83.67 321**	*e*P	**P**	**18 44 28.4**	**-1.7**
HSO	**Harness Mounta**	**90.80 41**	*e*P	**P**	**18 45 03.9**	**-0.8**
DLMT	**Dillon**	**95.63 35**	*e*P	**P**	**18 45 26.8**	**-0.1**
	5.8nm,0.8s					
NVAR	**Mina Array Bea**	**96.70 43**	P	**P**	**18 45 30.2**	**-1.9**
	1.2nm,0.6s,baz=290,slow=6.1,SNR=6.9					
VNA2	**Neumayer--Watz**	**124.31 198**	PKP	**PKPdf**	**18 50 58.0**	**-1.2**
	baz=38,slow=1.9					
VNA3	**Neumayer Olymp**	**124.77 197**	PKP	**PKPdf**	**18 50 58.6**	**-1.4**

NIED ***24*** *18:33:00, 36.40N×142.50E, h8km, Mw4.1 Best double couple: M0=1.83000×10^15 NP1:φ=206.00000°, δ38.00000°, λ106.00000°. NP2:φ=6.00000°, δ54.00000°, λ78.00000°.*
ISCJB ***24*** *18:33:36.8±0.3, 36.35N±0.03×142.66E±0.04, h15km, mb4.3/48, MS3.9/5, Error ellipse: s-maj=4.8km s-min=3.7km az=143.8*
IDC ***24*** *18:33:36.4±0.6, 36.32N×142.67E, h0km, mb4.0/27, mb1 4.1/34, mb1mx4.0/86, mbtmp4.0/34, ML3.9/5, MS3.3/2, Ms1 3.3/2, ms1mx2.7/41, Error ellipse: s-maj=15.3km s-min=12.8km az=117.0*
JMA ***24*** *18:33:39.8±0.3, 36.38N×142.53E, h72km, M3.7*
NEIC ***24*** *18:33:41.5±0.3, 36.40N×142.64E, h35km, mb4.6/15, Error ellipse: s-maj=6.7km s-min=5.1km az=146.0*
ISC 24 18:33:38.4±0.4, 36.34N±0.04×142.69E±0.05, h15km, n114, σ1.9 66/128, mb4.4/48, MS3.7/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	ISC	Res
CHOJ	**Chosi**	**1.62**	**247**	P	**Pn**	**18 34 05.7**		**-0.7**
CHOJ				*e*S	**Sn**	**18 34 23.6**		**-3.3**
ONAJ	**Iwakimizuishiy**	**1.70**	**297**	P	**Pn**	**18 34 06.1**		**-1.5**
JHO	**Hitachi**	**1.73**	**280**	P	**Pn**	**18 34 06.3**		**-1.7**
JHO				*e*S	**Sn**	**18 34 26.7**		**-3.1**
JFK	**Kawauchi**	**1.78**	**306**	P	**Pn**	**18 34 06.7**		**-2.0**
BSO1	**Boso 1**	**2.19**	**220**	P	**Pn**	**18 34 13.5**		**-0.2**
BSO1				S	**Sn**	**18 34 39.9**		**-0.4**
JFT	**Otama**	**2.23**	**303**	P	**Pn**	**18 34 14.1**		**-0.7**
JAG	**Ashikaga**	**2.62**	**273**	P	**Pn**	**18 34 18.8**		**-1.3**
JMK	**Ichinoseki**	**2.86**	**336**	P	**Pn**	**18 34 22.5**		**-1.0**
JMK				*e*S	**Sn**	**18 34 55.7**		**-1.9**
JRY	**Ryogami san**	**3.08**	**265**	P	**Pn**	**18 34 25.0**		**-1.6**
JOD2	**Odawara 2**	**3.12**	**251**	P	**Pn**	**18 34 26.3**		**-0.8**
JYK	**Kaneyama**	**3.17**	**325**	P	**Pn**	**18 34 26.7**		**-1.1**
JYN	**Shimob**	**3.47**	**257**	P	**Pn**	**18 34 31.8**		**-0.1**
JYN				*e*S	**Sn**	**18 35 10.7**		**-2.1**
MJAR	**Matsushiro Arr**	**3.62**	**275**	Pn	**Pn**	**18 34 33.3**		**-0.7**
	11nm,0.3s,baz=89,slow=9.6,SNR=119							
MJAR				LR	LR	18 36 13.9		
	comp=Z,243nm,19.6s,baz=100,slow=44							
MAJO	**Matsushiro**	**3.62**	**275**	*e*Pn	**Pn**	**18 34 34.2**		**+0.2**
MAT	**Matsushiro**	**3.62**	**275**	P	**Pn**	**18 34 33.8**		**-0.2**
MAT				*e*S	**Sn**	**18 35 15.6**		**-0.9**
MAT	**Matsushiro**	**3.62**	**275**	P	**Pn**	**18 34 34.2**		**+0.2**
MJB9	**Matsu-Tunnel**	**3.62**	**275**	*e*Pn	**Pn**	**18 34 34.2**		**+0.1**
JSD	**Sado**	**3.92**	**297**	P	**Pn**	**18 34 36.2**		**-1.9**
JHJ2	**Mitsune**	**4.00**	**217**	S	**Sn**	**18 35 20.9**		**-4.8**
JHJ2	**Mitsune**	**4.00**	**217**	*e*Pn	**Pn**	**18 34 40.9**		**+1.8**
JHJ	**Hachijo jima 2**	**4.01**	**218**	Pn	**Pn**	**18 34 39.4**		**+0.1**
	16nm,0.3s,baz=229,slow=20,SNR=3.0							
JHJ				Sn	**Sn**	**18 35 20.8**		**-5.2**
	47nm,0.3s,baz=48,slow=23,SNR=6.4							
JANG	**Nango**	**4.13**	**347**	P	**Pn**	**18 34 40.4**		**-0.6**
INU	**Inuyama**	**4.71**	**260**	*e*Pn	**Pn**	**18 34 49.3**		**+0.3**
INU				*e*Sn	**Sn**	**18 35 38.7**		**-4.7**
ERM	**Erimo**	**5.68**	**4**	*e*Pn	**Pn**	**18 35 00.0**		**-2.2**
ERM				*e*Sn	Sn	18 35 53.0		-14
ASAJ	**Asahikawa**	**7.77**	**359**	Pn	**Pn**	**18 35 29.6**		**-1.3**
	8.3nm,0.3s,baz=229,slow=11,SNR=40							
ASAJ				Sn	**Sn**	**18 36 54.1**		**-4.5**
	1.6nm,0.3s,baz=93,slow=12,SNR=4.4							
ASAJ	**Asahikawa**	**7.77**	**359**	*e*Pn	**Pn**	**18 35 28.9**		**-2.0**
ASAJ				*e*Sn	**Sn**	**18 36 53.0**		**-5.6**
CBIJ	**Chichi jima**	**9.22**	**183**	*e*Pn	**Pn**	**18 35 47.4**		**-3.6**
CBIJ				*e*Sn	Sn	18 37 24.3		-10
JCJ	**Chichijima**	**9.22**	**183**	Pn	**Pn**	**18 35 49.1**		**-1.8**
	baz=270,slow=20							
JCJ				Sn	Sn	18 37 25.1		-9.4
	6.2nm,0.3s,baz=288,slow=19,SNR=4.1							
JNU	**Nakatsue**	**10.24**	**255**	Pn	**Pn**	**18 36 05.5**		**+0.7**
	0.5nm,0.3s,baz=200,slow=7.5,SNR=5.1							
YSS	**Yuzh-Sakhalins**	**10.61**	**0**	*e*Pn	**Pn**	**18 36 08.0**		**-1.8**
USRK	**Ussuriysk Ar.**	**11.33**	**317**	Pn	**Pn**	**18 36 19.5**		**-0.1**
	0.5nm,0.3s,baz=117,slow=14,SNR=8.3							
KSRS	**Korea Array**	**11.88**	**280**	Pn	**Pn**	**18 36 29.1**		**+1.9**
	0.2nm,0.3s,baz=92,slow=13,SNR=10							
KS15	**Wonju Array Si**	**11.91**	**280**	*e*Pn	**Pn**	**18 36 26.9**		**-0.8**
KSAR	**Wonju Array Be**	**11.91**	**280**	Pn	**Pn**	**18 36 29.1**		**+1.4**
MDJ	**Mudanjiang**	**12.94**	**314**	P	**Pn**	**18 36 41.8**		**+0.1**
MDJ				pmax	pmax			
	comp=Z,4.0nm,0.7s							
MDJ				pmax	pmax			
	comp=Z,47nm,5.1s							
CN2	**Changchun**	**15.14**	**305**	*e*P	**Pn**	**18 37 12.1**		**+0.4**
CN2				pmax	pmax			
	comp=Z,10.0nm,0.6s							
CN2				pmax	pmax			
	comp=Z,200nm,3.0s							
CN2				LR	LR			
	comp=N,300nm,13.0s							
CN2				LR	LR			
	comp=E,400nm,13.0s							
CN2				LR	LR			
	comp=Z,500nm,16.0s							
KLR	**Kul'dur**	**15.16**	**332**	Pn	**P**	**18 37 15.7**		**-1.2**
	comp=Z,0.2nm,0.3s,baz=144,slow=10,SNR=5.3							
MA2	**Magadan**	**23.84**	**10**	P	**P**	**18 38 51.1**		**+0.3**
	comp=Z,5.2nm,0.7s,baz=225,slow=8.6,SNR=2.7							
MA2				LR	LR	18 48 52.4		
	comp=Z,114nm,19.9s,baz=64,slow=38							
HHC	**Hu-ho-hao-te**	**24.67**	**290**	*e*P	**P**	**18 38 59.4**		**+0.6**
HHC				PP	**PnPn**	**18 39 33.0**		**+2.6**
HHC				S	**S**	**18 43 18.1**		**-1.8**
HHC				sS	sS	18 43 31.0		+3.6
HHC				pmax	pmax			
	comp=Z,38nm,0.9s							
HHC				pmax	pmax			
	comp=Z,220nm,4.4s							
HHC				LR	LR			
	comp=N,780nm,12.8s							
HHC				LR	LR			
	comp=E,1μm,12.8s							
HHC				LR	LR			
	comp=Z,1μm,11.9s							
H11N2	**WAKE ISLAND Hy**	**26.91**	**121**	T	T	19 07 40.9		
	baz=313,slow=75,SNR=6.7							
H11N1	**WAKE ISLAND Hy**	**26.92**	**121**	T	T	19 07 45.1		
	baz=313,slow=75,SNR=5.4							
H11N3	**WAKE ISLAND Hy**	**26.93**	**121**	T	T	19 07 49.5		
	baz=313,slow=75,SNR=6.2							
YAK	**Yakutsk**	**26.98**	**346**	P	**P**	**18 39 19.6**		**+0.4**
	comp=Z,1.3nm,0.6s,baz=163,slow=19,SNR=2.6							
YAK	**Yakutsk**	**26.98**	**346**	*e*P	**P**	**18 39 19.2**		**0.0**
	comp=Z,21nm,0.8s							
YAK	**Yakutsk**	**26.98**	**346**	*e*P	**P**	**18 39 16.9**		**-2.3**
	comp=Z,21nm,0.8s							
SEY	**Seymchan**	**27.29**	**10**	P	**P**	**18 39 22.9**		**+0.9**
	comp=Z,2.3nm,0.8s,baz=191,slow=10,SNR=3.7					

ZAA0	Zalesovo Array	43.14	313	eP	P	18 41 37.3	-0.7
ZAA1	Zalesovo Array	43.14	313	eP	P	18 41 38.1	0.0
ZALV	Zalesovo Beam	43.14	313	P	P	18 41 38.1	0.0
	comp=N,2.0nm,0.6s,baz=90,slow=6.6,SNR=6.1						
LSA	Lhasa	43.30	277	eP	P	18 41 41.2	+1.0
	comp=N,4.7nm,1.3s						
MK01	Makanchi Array	45.36	303	eP	P	18 41 55.2	-0.8
MK31	Makanchi Array	45.36	303	eP	P	18 41 56.2	+0.2
MK32	Makanchi Array	45.36	303	eP	P	18 41 56.0	0.0
MKAR	Makanchi Array	45.36	303	P	P	18 41 56.0	0.0
	comp=N,2.3nm,0.6s,baz=85,slow=10,SNR=15						
KSM	Kuching	45.84	228	eP	P	18 42 00.8	+0.8
	comp=N,3.0nm,0.6s						
SPU	Mount Spurr	47.17	37	eP	P	18 42 08.4	-1.7
KURK	Kurchatov	47.17	309	eP	P	18 42 09.5	-0.6
	comp=N,4.3nm,0.8s						
KURBB	Kurchatov Arra	47.24	309	P	P	18 42 10.3	-0.3
	comp=N,1.8nm,0.6s,baz=83,slow=8.1,SNR=20						
HOM	Homer	47.38	39	eP	P	18 42 09.0	-2.5
	comp=N,107nm,0.5s						
IL1	Eielson Array	49.53	32	eP	P	18 42 29.1	+0.9
ILAR	Eielson Array	49.53	32	P	P	18 42 28.8	+0.6
	comp=N,0.8nm,0.9s,baz=272,slow=7.2,SNR=7.7						
ILB	Eielson Array	49.53	32	eP	P	18 42 28.9	+0.7
TKM2	Tokmak 2	50.87	299	eP	P	18 42 39.2	+0.3
	comp=N,16nm,1.6s						
KSH	Kashi	51.63	295	eP	P	18 42 49.1	+4.6
KSH				epP	sP	18 42 55.4	+4.3
KSH				eScP	ScP	18 47 55.4	+1.1
KSH				PcS	PcS	18 47 57.4	+1.2
KSH				S	S	18 50 10.8	+5.6
KSH				ScS	ScS	18 52 34.5	0.0
KSH				pmax	pmax		
	comp=Z,120nm,6.5s						
KSH				LR	LR		
	comp=N,89nm,8.9s						
KSH				LR	LR		
	comp=E,110nm,6.0s						
KSH				LR	LR		
	comp=Z,180nm,8.0s						
AAK	Ala-Archa	51.73	299	P	P	18 42 46.7	+1.5
	comp=Z,1.4nm,0.5s,baz=72,slow=3.2,SNR=4.5						
AAK	Ala-Archa	51.73	299	eP	P	18 42 44.0	-1.2
	comp=Z,6.3nm,1.3s						
BVAR	Borovoye Array	51.80	313	P	P	18 42 45.4	0.0
	comp=Z,0.7nm,0.8s,baz=86,slow=7.3,SNR=2.9						
KKAR	Karatay Array	54.36	301	eP	P	18 43 05.2	+0.6
INK	Inuvik	54.54	27	P	P	18 43 06.3	+1.0
	comp=Z,1.2nm,0.7s,baz=298,slow=6.7,SNR=3.8						
INK	Inuvik	54.54	27	eP	P	18 43 06.5	+1.2
MNAI	Manna	54.93	231	eP	P	18 43 08.9	0.0
	comp=Z,136nm,1.0s						
FITZ	Fitzroy Crossi	56.50	200	P	P	18 43 20.2	+0.3
	comp=Z,2.5nm,0.8s,baz=342,slow=9.6,SNR=3.3						
FITZ	Fitzroy Crossi	56.50	200	eP	P	18 43 19.9	0.0
	comp=Z,53nm,2.0s						
WR1	Warramunga Arr	56.53	189	eP	P	18 43 19.9	-0.3
	comp=Z,22nm,1.5s						
WRA	Warramunga Arr	56.53	189	P	P	18 43 19.9	-0.3
	comp=Z,0.7nm,0.5s,baz=7.4,slow=7.4,SNR=7.3						
ARU	Arti	57.56	319	P	P	18 43 27.1	0.0
	comp=Z,0.8nm,0.4s,baz=60,slow=8.1,SNR=2.9						
ARU	Arti	57.56	319	eP	P	18 43 26.4	-0.7
	comp=Z,17nm,1.6s						
ABKAR	Akbulak array	59.17	311	eP	P	18 43 38.2	-0.3
AKTO	Aktyubinsk	59.90	313	P	P	18 43 43.3	-0.2
	comp=Z,0.8nm,0.5s,baz=79,slow=10,SNR=2.1						
AS31	Alice Springs	60.25	189	eP	P	18 43 46.1	-0.1
	comp=Z,0.8nm,0.7s						
ASAR	Alice Springs	60.26	189	P	P	18 43 46.0	-0.2
	comp=Z,0.6nm,0.8s,baz=3.4,slow=7.7,SNR=5.1						
YKA	Yellowknife Ar	63.89	30	eP	P	18 44 10.7	+0.5
	comp=Z,0.6nm,0.8s,baz=302,slow=6.4,SNR=6.4						
YKB5	Yellowknife Ar	63.89	30	eP	P	18 44 10.9	+0.7
FIA0	FINESS Array S	69.91	333	eP	P	18 44 48.2	-0.2
FINES	FINESS Array B	69.91	333	P	P	18 44 48.2	-0.2
	comp=Z,2.6nm,0.7s,baz=46,slow=5.5,SNR=3.7						
NSHM	Saint Helena R	71.70	55	eP	P	18 45 02.0	+2.2
KVAR	Kislovodsk Arr	72.13	312	P	P	18 45 02.3	-0.1
	comp=Z,2.5nm,0.6s,baz=82,slow=7.1,SNR=3.1						
KIV	Kislovodsk	72.14	312	eP	P	18 45 03.0	+0.6
	comp=Z,5.5nm,0.9s						
NWAO	Narrogin (SRO)	72.91	202	eP	P	18 45 06.2	-0.6
	comp=Z,67nm,1.7s						
NV01	Mina Array Sit	74.58	54	eP	P	18 45 16.2	-0.9
NVAR	Mina Array Bea	74.58	54	P	P	18 45 18.2	+1.1
	comp=Z,0.4nm,0.6s,baz=302,slow=5.2,SNR=2.5						
AKASG	Malin Array Be	75.47	323	P	P	18 45 21.6	-0.2
	comp=Z,0.5nm,0.3s,baz=46,slow=5.8,SNR=4.2						
FRB	Frobisher Bay	77.21	14	P	P	18 45 31.3	0.0
	comp=Z,9.5nm,1.0s,baz=284,slow=4.2,SNR=2.7						
PDAR	Pinedale Array	77.42	46	P	P	18 45 33.6	+0.4
	comp=Z,0.2nm,0.5s,baz=293,slow=4.7,SNR=2.8						
BR101	Keskin Array S	80.08	312	eP	P	18 45 48.5	+0.7
BRTR	Keskin Array B	80.08	312	P	P	18 45 48.5	+0.7
	comp=Z,0.4nm,0.8s,baz=36,slow=6.2,SNR=3.4						
LTX	Lajitas	89.72	53	eP	P	18 46 37.6	+1.1
TXAR	Lajitas Array	89.72	53	P	P	18 46 37.6	+1.1
	comp=Z,0.5nm,0.9s,baz=318,slow=1.2,SNR=3.3						
LPAZ	La Paz	146.13	62	PKPbc	PKPab	18 53 20.2	+0.4
	comp=Z,0.7nm,0.4s,baz=333,slow=2.3,SNR=3.9						

*CSEM **24** 18:35:35.6±0.2, 43.°91N×12.°05E, h10km, ML2.7/8, Error ellipse: s-maj=6.1km s-min=2.3km az=25.0*
ROM 24 18:35:35.0±0.2, 43.°90N×12.°04E, h6km±1km, Md2.6/12, Ml2.0/11, Error ellipse: s-maj=2.3km s-min=1.1km az=43.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFI	Santa Sofia	0.14	273	Pg	Pg	18 35 38.7	+0.8
SFI				Sg	Sg	18 35 41.0	+1.1
	482nm,0.4s						
SFI	Santa Sofia	0.14	273	Pg	Pg	18 35 38.7	+0.8
SFI				Sg	Sg	18 35 41.0	+1.1
	482nm,0.4s						
ASQU	Asqua	0.21	241	Pg	Pg	18 35 39.9	+0.7
ASQU				Sg	Sg	18 35 43.2	+1.3
	703nm,0.3s						
ASQU	Asqua	0.21	241	Pg	Pg	18 35 39.9	+0.7
ASQU				Sg	Sg	18 35 43.2	+1.3
	703nm,0.3s						
VMG	Vicchio	0.37	280	Pg	Pb	18 35 43.1	-0.9
VMG				Sg	Sb	18 35 49.2	-0.8
	200nm,0.2s						
VMG	Vicchio	0.37	280	Pg	Pb	18 35 43.1	-0.9
VMG				Sg	Sb	18 35 49.2	-0.8
	200nm,0.2s						
BADI	Badiali	0.41	159	Pg	Pg	18 35 43.7	+0.7
BADI				Sg	Sb	18 35 50.7	-0.6
	159nm,0.2s						
BADI	Badiali	0.41	159	Pg	Pg	18 35 43.7	+0.7
BADI				Sg	Sb	18 35 50.7	-0.6
	159nm,0.2s						
PIEI	Pieia	0.51	135	Pg	Pb	18 35 45.6	-0.8
PIEI				Sg	Sb	18 35 54.0	-0.1
	44nm,0.5s						
PIEI	Pieia	0.51	135	Pg	Pb	18 35 45.6	-0.8
PIEI				Sg	Sb	18 35 54.0	-0.1
	44nm,0.5s						
ATPC	Poggio Castell	0.51	144	Pg	Pb	18 35 45.7	-0.8
ATPC				Sg	Sb	18 35 54.3	+0.1
	106nm,0.3s						
ATPC	Poggio Castell	0.51	144	Pg	Pb	18 35 45.7	-0.8
ATPC				Sg	Sb	18 35 54.3	+0.1
	106nm,0.3s						
SEI	Scarperia	0.52	288	Pg	Pg	18 35 45.8	+0.8
SEI				Sg	Sb	18 35 54.1	-0.4
	762nm,0.3s						
SEI	Scarperia	0.52	288	Pg	Pg	18 35 45.8	+0.8
SEI				Sg	Sb	18 35 54.1	-0.4
	762nm,0.3s						
FSSB	Fossombrone	0.57	111	Pg	Pb	18 35 46.9	-0.5
	62nm,0.3s						
FSSB	Fossombrone	0.57	111	Pg	Pb	18 35 46.9	-0.5
	62nm,0.3s						
ATVO	AVT- Monte Val	0.58	153	Pg	Pg	18 35 46.8	+0.7
ATVO				Sg	Sb	18 35 56.6	+0.5
	65nm,0.4s						
ATVO	AVT- Monte Val	0.58	153	Pg	Pg	18 35 46.8	+0.7
ATVO				Sg	Sb	18 35 56.6	+0.5
	65nm,0.4s						
FRON	Frontone	0.62	127	Pg	Pb	18 35 48.1	-0.3
	34nm,0.5s						
FRON	Frontone	0.62	127	Pg	Pb	18 35 48.1	-0.3
	34nm,0.5s						
SSFR	Montelago di S	0.71	130	Pg	Pb	18 35 49.6	-0.2
	55nm,0.2s						
SSFR	Montelago di S	0.71	130	Pg	Pb	18 35 49.6	-0.2
	55nm,0.2s						
ATTE	AVT- Monte Tez	0.73	162	Pg	Pg	18 35 49.5	+0.4
	47nm,0.5s						
ATTE	AVT- Monte Tez	0.73	162	Pg	Pg	18 35 49.5	+0.4
	47nm,0.5s						
SNTG	Esanatoglia	0.92	134	Pg	Pg	18 35 52.6	+0.1
	34nm,0.6s						
SNTG	Esanatoglia	0.92	134	Pg	Pg	18 35 52.6	+0.1
	34nm,0.6s						
NVLJ	Novalja	2.14	71	Sn	Sn	18 36 37.9	-0.2
NVLJ	Novalja	2.14	71	Sn	Sn	18 36 37.9	-0.2

*ISCJB **24** 18:37:17.6±0.6, 39.°10N±0.°04×29.°04E±0.°03, h1km±9km, Error ellipse: s-maj=6.9km s-min=4.3km az=176.9*
*CSEM **24** 18:37:17.8±0.1, 39.°10N×29.°05E, h5km, MD2.6, Error ellipse: s-maj=1.6km s-min=1.5km az=132.0*
*ISK **24** 18:37:17.3, 39.°08N×29.°05E, h8km, MD2.7*
*DDA **24** 18:37:17.6, 39.°10N×29.°04E, h7km, Md2.6*
ISC 24 18:37:17.9±0.9, 39.°09N±0.°02×29.°04E±0.°02, h11km±8km, n33, σ0.°27/46, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.26	259	P	Pg	18 37 23.2	0.0
DEMI				S	Sg	18 37 26.9	0.0
DEMI	Demirci	0.26	259	i P	Pg	18 37 23.2	0.0
DEMI				i S	Sg	18 37 26.9	0.0
GDZ	Gediz	0.34	90	P	Pg	18 37 24.8	0.0
GDZ				S	Sg	18 37 29.5	0.0
GDZ	Gediz	0.34	90	i P	Pg	18 37 24.8	0.0
GDZ				i S	Sg	18 37 29.5	0.0
TVSB	Tavsanli	0.48	42	ePG	Pg	18 37 27.0	-0.4
TVSB	Tavsanli	0.48	42	ePg	Pg	18 37 27.0	-0.4
KULA	Kula-Manisa	0.65	207	ePG	Pg	18 37 30.5	0.0
KULA				eSG	Sg	18 37 39.1	+0.1
KULA	Kula-Manisa	0.65	207	ePg	Pg	18 37 30.5	0.0
KULA				eSg	Sg	18 37 39.1	+0.1
KHAL	Karahalli	0.80	154	P	Pb	18 37 33.8	-0.1
KHAL				S	Sb	18 37 44.7	-0.1
KHAL	Karahalli	0.80	154	i P	Pb	18 37 33.8	-0.1
KHAL				i S	Sb	18 37 44.7	-0.1
KHL	Karahalli	0.86	154	ePG	Pg	18 37 34.1	-0.3
KHL	Karahalli	0.86	154	ePg	Pg	18 37 34.1	-0.3
AKS	Akhisar	0.98	258	ePG	Pg	18 37 36.4	-0.4
AKS	Akhisar	0.98	258	ePg	Pg	18 37 36.4	-0.4
BALB	Balikesir	1.05	302	ePG	Pn	18 37 38.4	-0.1
BALB	Balikesir	1.05	302	ePg	Pn	18 37 38.4	-0.1
IGD	Bursa	1.18	6	i P	Pb	18 37 39.9	-0.3
IGD				i S	Sn	18 37 56.1	-0.1
CAVI	Cavuskoy	1.27	29	ePN	Pb	18 37 41.8	0.0
CAVI	Cavuskoy	1.27	29	ePn	Pb	18 37 41.8	0.0
BALY	Balya	1.28	301	P	Pg	18 37 42.4	0.0
BALY				S	Sg	18 37 59.6	+0.6
BALY	Balya	1.28	301	i P	Pg	18 37 42.4	0.0
BALY				i S	Sg	18 37 59.6	+0.6
MDNY	Mudanya-Bursa	1.28	355	ePN	Pg	18 37 42.3	-0.2
MDNY	Mudanya-Bursa	1.28	355	ePn	Pg	18 37 42.3	-0.2
KCTX	Karacabey (Bur	1.28	336	ePN	Pg	18 37 42.3	-0.3
KCTX	Karacabey (Bur	1.28	336	ePn	Pg	18 37 42.3	-0.3
IZI	Iznik	1.29	15	ePN	Pg	18 37 42.3	-0.3
IZI	Iznik	1.29	15	ePn	Pg	18 37 42.3	-0.3
BORA	Eskisehir	1.35	54	P	Pb	18 37 43.1	0.0
BORA				S	Sg	18 38 01.4	+0.1
BORA	Eskisehir	1.35	54	i P	Pb	18 37 43.1	0.0
BORA				i S	Sg	18 38 01.4	+0.1
ARMT	Armutlu	1.48	355	ePN	Pb	18 37 45.2	-0.1
ARMT	Armutlu	1.48	355	ePn	Pb	18 37 45.3	-0.1
GULT	Gulveren	1.75	40	ePN	Pn	18 37 48.9	+0.6
GULT	Gulveren	1.75	40	ePn	Pn	18 37 48.9	+0.6

MAN 24 18:38:47, 14.°85N×119.°48E, h5km, mb4.5, ML3.4, MS3.3, 1C, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SCZP	Santa Cruz	1.01	24	eP	Pg	18 39 05.8	-0.5
SCZP				eS	Sg	18 39 19.2	-0.2
LUBP	Lubang	1.34	146	eP	Pn	18 39 11.7	-0.7
BOLP	Bolinao	1.57	15	eP	Pn	18 39 14.6	-1.0
PCPH	Palayan	1.71	65	eP	Pn	18 39 14.4	-3.1
BALP	Baler	2.20	66	eP	Pn	18 39 22.6	-1.7
POLP	Polilio Island	2.38	93	eP	Pn	18 39 26.6	-0.1
SJMP	San Jose	2.86	146	eP	Pn	18 39 34.6	+1.3
BUSP	Coron	2.92	166	eP	Pn	18 39 35.0	+0.9
ABRA	Dolores	3.02	23	eP	Pb	18 39 39.1	-2.2
ABRA				eS	Sn	18 40 13.9	+1.8
CAUP	Cauayan	3.06	47	eP	Pn	18 39 36.9	+0.8
APYP	Conner	3.44	29	eP	Pn	18 39 43.3	+2.1
APYP				eS	Sn	18 40 24.0	+1.6
ENPP	El Nido	3.63	181	eP	Pn	18 39 44.5	+0.7
ENPP				eS	Sn	18 40 23.2	-3.8

*CSEM **24** 18:40:41.5±0.1, 43.°90N×12.°04E, h15km, ML2.8/5, Error ellipse: s-maj=3.6km s-min=1.8km az=26.0*
*ROM **24** 18:40:41.7±0.2, 43.°86N×12.°00E, h11km±1km, Md2.3/5, Ml1.9/4, Error ellipse: s-maj=3.9km s-min=1.5km az=42.0*
ISC 24 18:40:41.3±0.9, 43.°89N±0.°06×12.°04E±0.°05, h15km±7km, n16, σ0.°22/30, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFI	Santa Sofia	0.14	275	Pg	Pg	18 40 45.1	0.0
SFI				Sg	Sg	18 40 47.4	-0.2
SFI	Santa Sofia	0.14	275	Pg	Pg	18 40 45.1	0.0
SFI				Sg	Sg	18 40 47.4	-0.2
ASQU	Asqua	0.20	242	Pg	Pg	18 40 46.1	+0.1
ASQU				Sg	Sg	18 40 49.2	0.0
	509nm,0.4s						
ASQU	Asqua	0.20	242	Pg	Pg	18 40 46.1	+0.1
ASQU				Sg	Sg	18 40 49.2	0.0
	509nm,0.4s						
VMG	Vicchio	0.36	281	Pg	Pb	18 40 49.3	-0.1
VMG				Sg	Sb	18 40 55.1	+0.2
	260nm,0.3s						
VMG	Vicchio	0.36	281	Pg	Pb	18 40 49.3	-0.1
VMG				Sg	Sb	18 40 55.1	+0.2
	260nm,0.3s						
BADI	Badiali	0.41	158	Pg	Pb	18 40 50.0	-0.2
BADI				Sg	Sg	18 40 55.2	0.0
	123nm,0.3s						
BADI	Badiali	0.41	158	Pg	Pb	18 40 50.0	-0.2
BADI				Sg	Sg	18 40 55.2	0.0
	123nm,0.3s						
PIEI	Pieia	0.51	134	Pg	Pb	18 40 52.2	+0.3
	25nm,0.4s						
PIEI	Pieia	0.51	134	Pg	Pb	18 40 52.2	+0.3
	25nm,0.4s						
SEI	Scarperia	0.52	289	Pg	Pb	18 40 52.0	-0.1
SEI				Sg	Sg	18 40 58.7	+0.2
	330nm,0.2s						
SEI	Scarperia	0.52	289	Pg	Pb	18 40 52.0	-0.1
SEI				Sg	Sg	18 40 58.7	+0.2
	330nm,0.2s						
ATVO	AVT- Monte Val	0.58	152	Pg	Pb	18 40 53.1	0.0
ATVO				Sg	Sb	18 41 01.1	0.0
	58nm,0.3s						
ATVO	AVT- Monte Val	0.58	152	Pg	Pb	18 40 53.1	0.0
ATVO				Sg	Sb	18 41 01.1	0.0
	58nm,0.3s						
NVLJ	Novalja	2.15	71	i Pn	Pn	18 41 16.7	+0.2
NVLJ				Sn	Sn	18 41 42.3	-0.5
NVLJ	Novalja	2.15	71	i Pn	Pn	18 41 16.6	+0.2
NVLJ				Sn	Sn	18 41 42.2	-0.5

IDC 24 18:46:40.7±1.2, 2.°08N×126.°90E, h0km, mb3.7/8, mb1 3.9/8, mb1mx3.6/49, mbtmp3.8/8, Error ellipse: s-maj=101.9km s-min=15.7km az=68.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	Fitzroy Crossi	20.09	183	P	P	18 51 16.0	+0.1
	1.0nm,0.5s,baz=10,slow=9.6,SNR=3.9						
WRA	Warramunga Arr	23.07	162	P	P	18 51 47.9	-0.1
	3.0nm,0.6s,baz=341,slow=11,SNR=21						
ASAR	Alice Springs	26.48	165	P	P	18 52 19.7	-0.1
	0.5nm,0.3s,baz=344,slow=11,SNR=14						
ASAR				PcP	PcP	18 55 45.1	-0.1
	0.2nm,0.4s,baz=347,slow=2.2,SNR=6.5						
STKA	Stephens Creek	36.53	159	P	P	18 53 48.1	0.0
	1.7nm,0.8s,baz=344,slow=7.8,SNR=3.6						
MKAR	Makanchi Array	59.01	326	P	P	18 56 42.2	-0.1
	0.6nm,0.4s,baz=119,slow=8.0,SNR=20						
KURBB	Kurchatov Arra	63.22	328	P	P	18 57 10.5	-0.3
	0.5nm,0.4s,baz=131,slow=6.7,SNR=19						
BVAR	Borovoye Array	68.79	327	P	P	18 57 47.1	+0.5
	0.3nm,0.5s,baz=152,slow=6.5,SNR=4.6						
VNDA	Vanda	81.78	173	P	P	18 59 00.8	-0.1
	0.4nm,0.5s,baz=310,slow=7.7,SNR=5.3						

*ISCJB **24** 18:50:00.7±0.5, 43.°89N±0.°05×12.°01E±0.°05, h12km±8km, Error ellipse: s-maj=10.6km s-min=3.6km az=32.7*
*CSEM **24** 18:50:00.8±0.1, 43.°89N×12.°01E, h10km, ML2.5/6, Error ellipse: s-maj=4.2km s-min=2.0km az=22.0*
*ROM **24** 18:50:00.3±0.1, 43.°89N×12.°01E, h8km±1km, Md2.0/9, Ml1.7/7, Error ellipse: s-maj=2.2km s-min=0.9km az=35.0*
ISC 24 18:50:00.8±0.9, 43.°89N±0.°04×12.°01E±0.°03, h10km±7km, n24, σ0.°44/44, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFI	Santa Sofia	0.12	280	Pg	Pg	18 50 03.5	-0.2
SFI				Sg	Sg	18 50 05.8	0.0
SFI	Santa Sofia	0.12	280	Pg	Pg	18 50 03.5	-0.2
SFI				Sg	Sg	18 50 05.8	0.0
ASQU	Asqua	0.18	241	Pg	Pg	18 50 04.7	0.0
ASQU				Sg	Sg	18 50 07.9	+0.5
ASQU	Asqua	0.18	241	Pg	Pg	18 50 04.7	0.0
ASQU				Sg	Sg	18 50 07.9	+0.5
VMG	Vicchio	0.34	283	Pg	Pg	18 50 07.9	+0.2
VMG				Sg	Sb	18 50 13.8	-0.7
VMG	Vicchio	0.34	283	Pg	Pg	18 50 07.9	+0.2
VMG				Sg	Sb	18 50 13.8	-0.7
BADI	Badiali	0.41	155	Pg	Pg	18 50 08.9	-0.1
BADI				Sg	Sg	18 50 15.3	+0.9
	114nm,0.2s						
BADI	Badiali	0.41	155	Pg	Pg	18 50 08.9	-0.1
BADI				Sg	Sg	18 50 15.3	+0.9
	114nm,0.2s						
SEI	Scarperia	0.50	290	Pg	Pg	18 50 10.4	-0.2
SEI				Sg	Sb	18 50 18.8	-0.3
	241nm,0.3s						
SEI	Scarperia	0.50	290	Pg	Pg	18 50 10.4	-0.2
SEI				Sg	Sb	18 50 18.8	-0.3
	241nm,0.3s						
PIEI	Pieia	0.52	132	Pg	Pg	18 50 10.9	0.0
PIEI				Sg	Sb	18 50 18.7	-0.9
	22nm,0.3s						
PIEI	Pieia	0.52	132	Pg	Pg	18 50 10.9	0.0
PIEI				Sg	Sb	18 50 18.7	-0.9
	22nm,0.3s						
ATPC	Poggio Castell	0.52	141	Pg	Pg	18 50 11.0	0.0
ATPC				Sg	Sb	18 50 19.3	-0.4
	47nm,0.2s						
ATPC	Poggio Castell	0.52	141	Pg	Pg	18 50 11.0	0.0
ATPC				Sg	Sb	18 50 19.3	-0.4
	47nm,0.2s						
ATVO	AVT- Monte Val	0.58	150	Pg	Pg	18 50 11.5	-0.6
ATVO				Sg	Sb	18 50 21.1	-0.3
	34nm,0.4s						
ATVO	AVT- Monte Val	0.58	150	Pg	Pg	18 50 11.5	-0.6
ATVO				Sg	Sb	18 50 21.1	-0.3
	34nm,0.4s						
FSSB	Fossombrone	0.59	109	Pg	Pg	18 50 12.1	-0.2
FSSB				Sg	Sb	18 50 21.3	-0.4
	47nm,0.3s						
FSSB	Fossombrone	0.59	109	Pg	Pg	18 50 12.1	-0.2
FSSB				Sg	Sb	18 50 21.3	-0.4
	47nm,0.3s						
FRON	Frontone	0.64	125	Pg	Pg	18 50 12.9	-0.3
	19nm,0.6s						
FRON	Frontone	0.64	125	Pg	Pg	18 50 12.9	-0.3
	19nm,0.6s						
FROS	Frosini	0.92	223	Pg	Pb	18 50 18.6	-0.2
	38nm,1.2s						
FROS	Frosini	0.92	223	Pg	Pb	18 50 18.6	-0.2
	38nm,1.2s						
NVLJ	Novalja	2.17	71	ePn	Pn	18 50 37.1	+0.1
NVLJ				Sn	Sn	18 51 04.4	+0.5
NVLJ	Novalja	2.17	71	ePn	Pn	18 50 37.1	+0.1
NVLJ				Sn	Sn	18 51 04.4	+0.5

IDC 24 18:52:54.5±2.4, 7.°36N×93.°06E, h0km, mb3.4/4, mb1 3.5/5, mb1mx3.3/43, mbtmp3.4/5, ML3.5/1, Error ellipse: s-maj=87.0km s-min=24.6km az=64.0, Nicobar Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	Chiang Mai Arr	12.43	27	Pn	Pn	18 55 53.5	+0.6
	0.1nm,0.3s,baz=208,slow=15,SNR=2.8						
H08S3	Diego Garcia H	25.35	234	T	T	19 25 22.9	
	baz=54,slow=76,SNR=34						
H08S2	Diego Garcia H	25.36	234	T	T	19 25 21.0	
	baz=54,slow=76,SNR=50						
H08S1	Diego Garcia H	25.37	234	T	T	19 25 21.0	
	baz=54,slow=76,SNR=43						
MKAR	Makanchi Array	40.37	349	P	P	19 00 33.9	-0.2
	0.2nm,0.6s,baz=173,slow=8.1,SNR=3.2						
ZALV	Zalesovo Beam	46.93	353	P	P	19 01 26.5	-0.3
	0.5nm,0.3s,baz=162,slow=8.1,SNR=3.7						
WRA	Warramunga Arr	48.84	124	P	P	19 01 42.0	-0.2
	0.5nm,0.6s,baz=304,slow=8.7,SNR=7.9						
ASAR	Alice Springs	50.41	129	P	P	19 01 54.3	+0.1
	0.3nm,0.7s,baz=297,slow=6.1,SNR=4.6						

*ISCJB **24** 19:01:40.3±0.3, 27.°52N±0.°03×111.°47W±0.°02, h10km, mb4.6/43, MS4.5/29, Error ellipse: s-maj=4.0km s-min=1.7km az=21.5*
*ECX **24** 19:01:41.9±0.3, 27.°82N×111.°70W, h10km, MD5.4*
*GCMT

LPIG LR LR 19 03 59.4
comp=Z,8µm,19.2s,baz=280,slow=34
319A Douglas 4.16 28 *e*Pn **Pn 19 02 44.9 -2.2**
SLBS Sierra La Lagu 4.23 160 *e*P **Pn 19 02 45.7 -2.4**
SLBS Sierra La Lagu 4.23 160 *e*Pn **Pn 19 02 47.5 -0.6**
214A Organ Pipe Nat 4.40 346 P **Pn 19 02 47.4 -2.9**
baz=166
TUC Tucson 4.65 8 P **Pn 19 02 52.2 -1.6**
baz=188
TUC Tucson 4.65 8 *e*Pn **Pn 19 02 51.5 -2.3**
SPX San Pedro Mart 4.79 315 *e*Pn **Pn 19 02 52.1 -3.9**
SPX *e*Sn **Sn 19 03 46.3 -5.5**
SPX San Pedro Mart 4.79 315 *e*PG **Pn 19 02 59.8 +3.7**
SPIG San Pedro Mart 4.80 315 *e*P **Pn 19 02 52.8 -3.3**
SPIG *i* S **Sn 19 03 45.0 -6.9**
SPIG San Pedro Mart 4.80 315 *e*Pn **Pn 19 02 52.8 -3.3**
SPIG San Pedro Mart 4.80 315 *e*PG **Pn 19 02 59.9 +3.8**
HPIG 5.27 97 *i* P **Pn 19 03 01.6 -0.8**
HPIG *i* S **Sn 19 04 02.5 -0.8**
HPIG 5.27 97 *e*Pn **Pn 19 03 01.6 -0.8**
HPIG *e*Sn **Sn 19 04 02.5 -0.8**
113A Mohawk Valley, 5.42 340 *e*Pn **Pn 19 03 02.7 -1.6**
GLA Glamis 6.06 333 P **Pn 19 03 11.2 -1.9**
baz=152
GLA Glamis 6.06 333 *e*Pn **Pn 19 03 10.3 -2.8**
IKP In-Ko-Pah, Jac 6.34 322 P **Pn 19 03 15.4 -1.6**
baz=141
IKP S **Sn 19 04 37.1 +7.6**
baz=141
Y14A Wickenburg 6.36 349 *e*Pn **Pn 19 03 16.3 -1.0**
SWSC Sam W. Stewart 6.41 326 P **Pn 19 03 17.2 -0.6**
baz=145
SWSC S **Sn 19 04 36.5 +5.4**
baz=145
MAIG Mazatlaan 6.43 133 *e*P Pn 19 03 12.2 -5.9
MAIG Mazatlaan 6.43 133 *e*Pn Pn 19 03 12.2 -5.9
Y12C Blythe 6.57 338 P **Pn 19 03 18.4 -1.7**
baz=157
Y12C Blythe 6.57 338 *e*Pn **Pn 19 03 19.2 -0.9**
MNTX Cornudas Mount 6.67 52 *e*Pn **Pn 19 03 21.8 +0.3**
BAR Barrett 6.68 319 *e*Pn **Pn 19 03 22.0 +0.4**
MONP2 Monument Peak 6.69 322 P **Pn 19 03 20.9 -1.1**
baz=140
MONP2 S **Sn 19 04 44.6 +6.2**
baz=140
X16A Lo Mia Camp, P 6.71 1 *e*Pn **Pn 19 03 22.3 +0.2**
BC3 Big Chuckawall 6.84 331 P **Pn 19 03 23.2 -0.8**
baz=150
BC3 S **Sn 19 04 47.3 +5.3**
baz=150
X18A Snowflake 6.95 11 *e*Pn **Pn 19 03 25.5 0.0**
PDMCI Parker Dam,Lak 6.96 342 P **Pn 19 03 25.7 +0.2**
baz=161
109C Camp Elliot, M 7.08 318 P **Pn 19 03 27.1 0.0**
baz=137
109C S **Sn 19 04 51.2 +3.6**
baz=137
TX31 Lajitas Ar. Si 7.11 75 *e*Pn **Pn 19 03 26.8 -0.8**
LTX Lajitas 7.11 75 *e*Pn **Pn 19 03 26.8 -0.8**
LTX *e*Sg **Sb 19 05 18.8 +6.9**
TXAR Lajitas Array 7.11 75 Pn **Pn 19 03 26.8 -0.8**
1.0nm,0.3s,baz=252,slow=13,SNR=28
TXAR Lg Lg 19 05 18.8
2.3nm,0.3s,baz=317,slow=44,SNR=3.4
IRM Iron Mountain 7.16 335 P **Pn 19 03 26.7 -1.5**
baz=154
IRM S **Sn 19 04 53.6 +4.0**
baz=154
TPFO Pinon Flats 7.26 325 P **Pn 19 03 29.7 -0.1**
baz=144
TPFO S **Sn 19 04 60.0 +7.6**
baz=144
PFO Pinyon Flats O 7.27 325 Pn **Pn 19 03 30.3 +0.4**
0.3nm,0.3s,baz=151,slow=13,SNR=5.0
PFO Lg Lg 19 05 38.5
0.3nm,0.3s,baz=117,slow=16,SNR=2.8
PFO LR LR 19 06 07.6
comp=Z,6µm,19.8s,baz=148,slow=37
BELC Belle Mtn. Jos 7.37 330 P **Pn 19 03 30.7 -0.5**
baz=148
BELC S **Sn 19 05 01.7 +6.6**
baz=148
Y22D IRIS PASSCAL I 7.49 31 *e*Pn **Pn 19 03 28.7 -4.2**
Y22D *e*Sg **Sg 19 05 39.8 -4.2**
NEE2 Needles Airpor 7.54 340 P **Pn 19 03 32.1 -1.2**
baz=159
W18A Petrified Fore 7.56 11 *e*Pn **Pn 19 03 35.6 +1.7**
MURC Murrieta 7.65 322 P **Pn 19 03 34.6 -0.4**
baz=140
MURC S **Sn 19 05 07.7 +5.9**
baz=140
W13A Hualapai Mount 7.66 345 *e*Pn **Pn 19 03 34.6 -0.6**
LAZ Ladron 7.68 28 *e*Pn **Pn 19 03 35.8 +0.4**
BNM Barren Site 7.69 32 *e*Pn **Pn 19 03 33.9 -1.8**
WUAZ Wupatki 7.80 1 *e*Pn **Pn 19 03 38.2 +1.0**
LPM Los Pinos Moun 7.82 31 *e*Pn **Pn 19 03 36.3 -1.2**
GMRC Granite Mounta 7.91 334 P **Pn 19 03 36.9 -1.6**
baz=153
GMRC S **Sn 19 05 13.6 +5.4**
baz=153
LDFC Landfair 7.98 338 *e*Pn **Pn 19 03 40.2 +0.7**
LDFC *e*Lg Lg 19 06 06.3
HEC Hector,Ludlow 8.22 331 P **Pn 19 03 41.1 -1.7**
baz=149
BFSC Mount Baldy Ra 8.38 323 P **Pn 19 03 44.9 -0.3**
baz=140
ANMO Albuquerque 8.43 30 Pn **Pn 19 03 47.7 +1.9**
0.1nm,0.3s,baz=208,slow=12,SNR=11
ANMO Lg Lg 19 06 05.9
3.4nm,0.3s,baz=307,slow=20,SNR=7.5
ANMO Albuquerque 8.43 30 P **Pn 19 03 46.2 +0.3**
baz=212
ANMO Albuquerque 8.43 30 *e*Pn **Pn 19 03 49.0 +3.1**
ANMO *e*Lg Lg 19 06 05.9
CPRX Cap Rock 8.49 49 *e*Pn Pn 19 03 38.8 -7.8
TUQ Turquoise Moun 8.58 335 P **Pn 19 03 47.0 -0.9**
baz=154
MWC Mount Wilson 8.59 321 *e*Pn **Pn 19 03 50.4 +2.3**
PASC Pasadena Art C 8.63 320 *e*Pn **Pn 19 03 47.4 -0.9**
U15A North Rim 8.74 356 *e*Pn **Pn 19 03 50.7 +0.6**
GSC Goldstone, Bar 8.82 331 P **Pn 19 03 51.1 -0.1**
baz=148
GSC Goldstone, Bar 8.82 331 *e*Pn **Pn 19 03 53.5 +2.4**
EDW2 Edwards Air Fo 9.05 324 P **Pn 19 03 54.6 +0.3**
baz=141
SHOC Shoshone, Teco 9.13 335 P **Pn 19 03 55.8 +0.6**
baz=153
SHPR Sheep Range 9.31 342 *e*Pn **Pn 19 03 58.9 +1.0**
KNB Kanab 9.37 354 *e*Pn **Pn 19 04 00.1 +1.5**
LRMC Laurel Mtn Rad 9.37 327 P **Pn 19 04 00.1 +1.4**
baz=145
LCMT Little Creek M 9.41 352 *e*Pn **Pn 19 03 56.0 -3.2**
ARVC Arvin 9.69 322 P **Pn 19 04 05.8 +2.9**
baz=139
MPMC Manual Prospec 9.76 330 P **Pn 19 04 07.4 +3.3**
baz=148
MSTX Muleshoe 9.79 48 P **Pn 19 04 06.4 +2.1**
baz=232
MSTX Muleshoe 9.79 48 *e*Pn **Pn 19 04 04.5 +0.2**
MVCO Mesa Verde 9.83 14 P **Pn 19 04 07.6 +2.5**
baz=196
MVCO Mesa Verde 9.83 14 *e*Pn **Pn 19 04 06.6 +1.5**
ISA Isabella, Lake 9.91 325 P **Pn 19 04 06.9 +1.0**
baz=142
ISA Isabella, Lake 9.91 325 *e*Pn **Pn 19 04 05.4 -0.5**
DAC Darwin (Calif) 9.99 331 *e*Pn **Pn 19 04 09.8 +2.6**
TPNV Topopah Spring 10.06 338 P **Pn 19 04 10.8 +2.7**
baz=156
TPNV Topopah Spring 10.06 338 *e*Pn **Pn 19 04 09.2 +1.0**
PKM Mcpherson Peak 10.08 317 P **Pn 19 04 10.8 +2.3**
baz=134
832A Faith Ranch, C 10.23 84 P **Pn 19 04 09.5 -0.9**
baz=269
MTPU Mount Pierson 10.34 357 *e*Pn **Pn 19 04 16.0 +3.9**
CWC Cottonwood Cre 10.34 329 P **Pn 19 04 15.3 +3.3**
baz=146
VES Vestal, Richgr 10.36 324 P **Pn 19 04 14.8 +2.7**
baz=140
SMMC Simmler 10.48 319 P **Pn 19 04 16.5 +2.6**
baz=135
GRAC Grapevine Rang 10.51 333 P **Pn 19 04 16.4 +2.3**
baz=151
PV05 Paradox Valley 10.56 11 *e*Pn **Pn 19 04 18.6 +3.6**
JCT Junction City 10.63 72 P **Pn 19 04 16.2 +0.4**
baz=257
JCT Junction City 10.63 72 *e*Pn **Pn 19 04 17.6 +1.8**
PV01 Paradox Valley 10.71 13 *e*Pn **Pn 19 04 19.2 +2.2**
S22A 4UR Ranch, Cre 10.78 20 *e*Pn **Pn 19 04 19.3 +1.2**
RCTC Rector, Farmer 10.80 325 P **Pn 19 04 21.2 +3.1**
baz=141
733A Divot King Ran 10.84 82 P **Pn 19 04 18.7 0.0**
baz=267
PV10 Paradox Valley 10.86 10 *e*Pn **Pn 19 04 22.5 +3.3**
TIN Tinemaha, Big 10.92 330 P **Pn 19 04 21.8 +2.0**
baz=147
PV09 Paradox Valley 10.96 10 *e*Pn **Pn 19 04 21.4 +0.7**
PSUT Pine Spring 10.99 350 *e*Pn **Pn 19 04 23.8 +2.9**
633A Saathoff Ranch 11.00 78 P **Pn 19 04 19.1 -1.8**
baz=263
R11A Troy Canyon, C 11.16 343 P **Pn 19 04 26.5 +3.3**
baz=161
R11A Troy Canyon, C 11.16 343 *e*Pn **Pn 19 04 23.8 +0.5**
T25A Trinidad 11.17 31 P **Pn 19 04 25.8 +2.4**
baz=214
T25A Trinidad 11.17 31 *e*Pn **Pn 19 04 25.3 +1.9**
533A Kerrville 11.20 75 P **Pn 19 04 23.9 +0.2**
baz=260
Q16A Castle Valley 11.20 1 *e*Pn **Pn 19 04 27.1 +3.2**
SDCO Great Sand Dun 11.23 25 *e*Pn Pn 19 04 30.0 +5.7
433A Art 11.28 71 P **Pn 19 04 22.3 -2.5**
baz=257
ABTX Abilene, Hawle 11.40 62 P **Pn 19 04 26.7 +0.4**
baz=247
ABTX Abilene, Hawle 11.40 62 *e*Pn **Pn 19 04 27.4 +1.1**
SRU San Rafael Swe 11.42 4 *e*Pn **Pn 19 04 29.2 +2.4**
333A Richland Sprin 11.51 69 P **Pn 19 04 26.4 -1.5**
baz=254
TMUT Trail Mountain 11.58 1 *e*Pn **Pn 19 04 32.1 +3.1**
MLAC Mammoth, Mammo 11.66 330 P **Pn 19 04 31.0 +0.8**
baz=147
P17A Butcher Ranch, 11.77 3 *e*Pn **Pn 19 04 34.5 +3.0**
233A Rising Star 11.78 65 P **Pn 19 04 32.1 +0.5**
baz=251
P18A Preston Nutter 11.96 5 *e*Pn **Pn 19 04 35.5 +1.3**
133A Hamilton Ranch 11.96 63 P **Pn 19 04 33.6 -0.4**
baz=248
434A Burnet 11.99 72 P **Pn 19 04 33.9 -0.6**
baz=258
NV11 Mina Array Sit 12.06 334 *e*Pn **Pn 19 04 32.5 -3.1**
SMCO Snowmass 12.07 17 *e*Pn **Pn 19 04 37.5 +1.7**
NV01 Mina Array Sit 12.12 334 *e*Pn **Pn 19 04 37.9 +1.5**
NVAR Mina Array Bea 12.12 334 Pn **Pn 19 04 39.9 +3.5**
0.1nm,0.3s,baz=157,slow=14,SNR=15
NVAR Lg Lg 19 08 05.5
0.1nm,0.3s,baz=141,slow=29,SNR=3.1
334A Lometa 12.13 69 P **Pn 19 04 35.3 -1.0**
baz=255
635A Leesville 12.21 79 P **Pn 19 04 36.8 -0.6**
baz=265
NLU North Lily Min 12.24 358 *e*Pn **Pn 19 04 41.1 +3.1**
MPU Maple Canyon 12.30 360 *e*Pn **Pn 19 04 37.8 -0.9**
Z33A Whitaker Ranch 12.34 60 P **Pn 19 04 39.8 +0.6**
baz=246
234A Clairette 12.39 66 P **Pn 19 04 38.4 -1.5**
baz=252
X32A Elmer 12.45 54 P **Pn 19 04 42.4 +1.7**
baz=240
DUG Dugway, Tooele 12.52 355 P **Pn 19 04 42.4 +0.6**
baz=7
DUG Dugway, Tooele 12.52 355 *e*Pn **Pn 19 04 44.8 +3.1**
435B Jarrell 12.56 72 P **Pn 19 04 42.3 +0.1**
baz=259
134A White-Moore Ra 12.61 64 P **Pn 19 04 41.1 -1.9**
baz=250
WAKR Walker 12.65 330 *e*Pn **Pn 19 04 47.5 +3.8**
O20A White River Ci 12.71 12 *e*Pn **Pn 19 04 47.1 +2.7**
CMB Columbia Colle 12.71 326 *e*Pn **Pn 19 04 46.8 +2.5**
Y33A Hilltop Ranch, 12.74 57 P **Pn 19 04 43.9 -0.8**
baz=243
335A Moody 12.79 70 P **Pn 19 04 44.4 -1.0**
baz=257
W32A Sentinel 12.84 52 P **Pn 19 04 46.7 +0.8**
baz=238
JLU Jordanelle 12.88 0 *e*Pn **Pn 19 04 49.6 +2.8**
WHTX Lake Whitney, 12.94 67 P **Pn 19 04 45.5 -1.9**
baz=254
WHTX Lake Whitney, 12.94 67 *e*Pn **Pn 19 04 46.5 -1.0**
WMOK Wichita Mounta 12.97 54 P **Pn 19 04 47.0 -0.8**
baz=240
WMOK Wichita Mounta 12.97 54 *e*Pn **Pn 19 04 47.5 -0.3**
ISCO Idaho Springs 13.04 21 *e*Pn **Pn 19 04 52.7 +3.7**
X33A Lawton 13.08 55 P **Pn 19 04 50.5 +1.2**
baz=241
135A Vickery Place, 13.14 65 P **Pn 19 04 48.3 -1.9**
baz=251
BGU Big Grassy Mou 13.26 355 *e*Pn **Pn 19 04 55.0 +3.1**
V32A Arapaho 13.30 50 P **Pn 19 04 51.8 -0.5**
baz=236
336A Riesel 13.30 70 P **Pn 19 04 51.2 -1.1**
baz=257
Y34A Reagan Ranch, 13.38 59 P **Pn 19 04 53.9 +0.6**
baz=245
ELK Elko 13.38 348 *e*Pn **Pn 19 04 55.8 +2.2**
W33A Caddo, Fort Co 13.40 53 P **Pn 19 04 54.4 +0.7**
baz=239
TCUT Toone Canyon 13.40 0 *e*Pn **Pn 19 04 56.8 +3.0**
BMN Battle Mountai 13.55 341 *e*Pn **Pn 19 04 59.2 +3.3**
X34A Smith Ranch, M 13.59 56 P **Pn 19 04 56.8 +0.4**
baz=243
SPUT South Promonto 13.61 357 *e*Pn **Pn 19 04 59.9 +3.2**
PAHR Pah Rah Range 13.65 333 *e*Pn **Pn 19 04 59.5 +2.3**
236A Katherine and 13.70 68 P **Pn 19 04 56.6 -1.2**
baz=255
AFDM Forest Hills D 13.72 327 *e*Pn **Pn 19 04 59.4 +1.5**
136A Ennis 13.83 66 P **Pn 19 04 58.3 -1.2**
baz=253
V33A Lossen Ranch, 13.87 51 P **Pn 19 05 00.4 +0.3**
baz=237
HWUT Hardware Ranch 13.88 360 *e*Pn **Pn 19 05 03.5 +3.0**
Y35A Marietta 13.90 60 P **Pn 19 05 01.2 +0.6**
baz=247
W34A Bridge Creek, 13.93 54 P **Pn 19 04 58.9 -2.1**
baz=240
W34A Bridge Creek, 13.93 54 *e*Pn **Pn 19 05 01.2 +0.2**
N23A Red Feather La 13.95 18 *e*Pn **Pn 19 05 05.6 +4.1**
UNM Universidad Na 14.05 124 *e*Pn **Pn 19 05 02.9 +0.1**
HVU Hansel Valley 14.10 356 *e*Pn **Pn 19 05 04.1 +0.8**
Z36A Blue Ridge 14.15 63 P **Pn 19 05 04.9 +1.0**
baz=250
X35A Drake 14.15 58 P **Pn 19 05 04.1 +0.2**
baz=245
T32A Huddler Ranch, 14.23 45 P **Pn 19 05 06.6 +1.6**
baz=231
U33A Lingo Farm, Me 14.32 49 P **Pn 19 05 07.2 +0.9**
baz=236
V34A Guthrie 14.41 52 P **Pn 19 05 06.8 -0.7**
baz=239
V34A Guthrie 14.41 52 *e*Pn **Pn 19 05 06.2 -1.3**
ORV Oroville 14.45 328 *e*Pn **Pn 19 05 07.1 -0.9**
PHWY Pilot Hill 14.46 19 *e*Pn **Pn 19 05 10.1 +1.6**
Y36A Durant 14.48 61 P **Pn 19 05 09.2 +0.7**
baz=248
137A Heron Place, G 14.49 66 P **Pn 19 05 08.1 -0.5**
baz=254
S32A Newby Ranch, P 14.55 44 P **Pn 19 05 10.0 +0.6**
baz=230
W35A Tecumseh 14.55 56 P **Pn 19 05 09.1 -0.3**
baz=243
T33A Patterson Ranc 14.60 47 P **Pn 19 05 10.9 +0.8**
baz=233
U34A Anderson Ranch 14.71 50 P **Pn 19 05 11.8 +0.2**
baz=237
U34A Anderson Ranch 14.71 50 *e*Pn **Pn 19 05 12.9 +1.3**
Z37A Pogue Cattle C 14.77 64 P **Pn 19 05 11.4 -1.0**
baz=252
HOPS Hopland Field 14.82 322 *e*Pn **Pn 19 05 13.4 +0.3**
CBKS Cedar Bluff 14.83 39 P **Pn 19 05 14.6 +1.4**
baz=225
CBKS Cedar Bluff 14.83 39 *e*Pn **Pn 19 05 12.5 -0.8**
V35A Meyer Ranch, C 14.86 54 P **Pn 19 05 13.3 -0.2**
baz=241
W36A Wetumka 15.02 57 P **Pn 19 05 13.9 -1.8**
baz=244
AHID Auburn Hatcher 15.05 1 *e*Pn **Pn 19 05 18.1 +1.9**
37nm,1.1s
138A Matatall Enter 15.05 67 P **Pn 19 05 15.7 -0.5**
baz=254
S33A Kaszmaul Farm, 15.06 46 P **Pn 19 05 17.2 +0.8**
baz=232
BW06 Boulder Array 15.13 6 *e*Pn **Pn 19 05 17.4 0.0**
30nm,1.3s
PD31 Pinedale Array 15.13 6 *e*Pn **Pn 19 05 17.6 +0.2**
PDAR Pinedale Array 15.13 6 Pn **P 19 05 20.0 -2.6**
0.1nm,0.3s,baz=169,slow=8.8,SNR=9.6
PDAR Lg Lg 19 09 31.1
0.2nm,0.3s,baz=188,slow=26,SNR=3.5
PDAR LR LR 19 10 11.8
comp=Z,658nm,20.6s,baz=194,slow=34
R32A Long Quarter, 15.15 42 P **Pn 19 05 16.9 -0.6**
baz=228
O03D Paynes Creek 15.17 329 P **P 19 05 21.2 -1.8**
baz=143,SNR=16
U35A Pawnee 15.23 52 P **Pn 19 05 18.3 -0.3**
baz=239
Z38A Mt. Pleasant 15.30 65 P **Pn 19 05 17.5 -2.0**
baz=252
OGNE Ogallala 15.36 28 P **Pn 19 05 20.8 +0.5**
baz=213
OGNE Ogallala 15.36 28 *e*Pn **Pn 19 05 22.3 +1.9**
74nm,1.3s
X37A Clayton 15.44 60 P **Pn 19 05 19.9 -1.4**
baz=247
K22A Casper 15.47 14 *e*Pn **Pn 19 05 22.2 +0.3**
143nm,1.4s
V36A Jenks 15.51 55 P **Pn 19 05 21.0 -1.2**
baz=242
R33A Olander Ranch, 15.51 44 P **Pn 19 05 24.5 +2.3**
baz=230
W37B Quinton 15.61 58 P **Pn 19 05 22.6 -0.9**
baz=246
Q32A Meitler Ranch, 15.62 41 P **Pn 19 05 24.4 +0.8**
baz=227
TLIG Tlapa 15.63 127 *e*Pn **Pn 19 05 22.6 -1.4**
38nm,1.3s
REDW Red Top Meadow 15.65 2 *e*Pn **Pn 19 05 24.6 +0.4**
38nm,1.3s
T35A Sooner Cattle 15.66 50 P **Pn 19 05 23.9 -0.3**
baz=238
TUL1 Leonard 15.68 55 P **Pn 19 05 24.0 -0.4**
baz=242
TUL1 Leonard 15.68 55 *e*Pn **Pn 19 05 24.7 +0.3**
30nm,1.0s
S34A Willow Spring 15.70 47 P **Pn 19 05 25.4 +0.7**
baz=234
Y38A Idabel 15.71 63 P **Pn 19 05 23.8 -1.0**
baz=251
WDC Whiskeytown Da 15.74 328 *e*Pn **P 19 05 27.7 -1.5**
47nm,1.4s
SNOW Snow King Moun 15.75 2 *e*Pn **Pn 19 05 27.4 +1.9**
32nm,1.1s
TPAW Teton Pass 15.77 2 *e*Pn **P 19 05 28.3 -1.6**
28nm,1.0s
340A Bronson 15.79 72 P **Pn 19 05 24.2 -1.6**
baz=260
WVOR Wild Horse Val 15.81 340 *e*Pn **Pn 19 05 27.8 +1.5**
121nm,1.4s
X38A Whitesboro 15.88 60 P **Pn 19 05 25.4 -1.7**
baz=248
MOD Modoc Plateau 15.89 335 *e*Pn **P 19 05 30.1 -0.9**
136nm,1.3s
LOHW Long Hollow 15.91 2 *e*Pn **P 19 05 29.4 -1.8**
107nm,2.0s
FXWY Fox Creek 15.92 1 *e*Pn **P 19 05 30.3 -1.1**
33nm,1.1s
Z39A Irene McRaven, 15.94 65 P **Pn 19 05 26.8 -1.1**
baz=254
U36A Oologah 15.94 53 P **Pn 19 05 28.8 +1.0**
baz=241
R34A Isabella, Hill 15.96 45 P **Pn 19 05 28.9 +0.8**
baz=232
HLID Hailey 16.01 352 P **P 19 05 31.7 -0.6**
baz=171
HLID Hailey 16.01 352 *e*Pn **P 19 05 31.1 -1.3**
42nm,1.5s
O31A Woolen Ranch, 16.01 36 P **Pn 19 05 29.2 +0.4**
baz=222
P32A Huiting Farm, 16.02 39 P **Pn 19 05 29.8 +0.9**
baz=226
MOOW Moose Ponds 16.04 2 *e*Pn **P 19 05 31.7 -1.0**
130nm,1.9s
Q33A Connelly Farm, 16.05 42 P **P 19 05 31.9 -0.7**
baz=229
KMRM Mail Ridge 16.05 324 *e*Pn **Pn 19 05 30.1 +0.7**
168nm,1.3s
MFID Camas Ranch 16.07 349 *e*Pn **P 19 05 31.5 -1.5**
N02D Trinity Center 16.13 328 P **P 19 05 31.9 -1.7**
baz=142,SNR=6.8
V37A Hulbert 16.14 56 P **Pn 19 05 29.9 -0.4**
baz=244
T36A Boggs Farm, Ca 16.17 51 P **Pn 19 05 30.1 -0.7**
baz=239
IMW Indian Meadow 16.18 2 *e*Pn **Pn 19 05 31.6 +0.4**
92nm,1.3s
S35A Otter Creek Ra 16.20 48 P **Pn 19 05 31.4 +0.2**
baz=236
Y39A Lockesburg 16.21 63 P **Pn 19 05 30.0 -1.3**
baz=252
541A Lake Charles 16.24 77 P **Pn 19 05 28.5 -3.2**
baz=266
W38A Poteau 16.27 59 P **Pn 19 05 31.1 -1.0**
baz=247
140A Cam and Jess, 16.29 68 P **Pn 19 05 31.2 -1.1**
baz=256
441A DeRidder 16.30 75 P **Pn 19 05 30.2 -2.2**
baz=263
FLWY Flagg Ranch 16.37 2 *e*Pn **Pn 19 05 34.6 +1.0**
122nm,1.5s
X39A Fountain Ranch 16.38 61 P **Pn 19 05 32.5 -1.0**
baz=250
U37A Salina 16.39 54 P **Pn 19 05 32.2 -1.4**
baz=242
M04C Macdoel 16.40 332 P **Pn 19 05 34.2 +0.4**
baz=146,SNR=15
P33A Williams Farm, 16.41 41 P **Pn 19 05 34.2 +0.3**
baz=228
M02C Callahan 16.53 329 P **P 19 05 37.1 -0.9**
baz=143,SNR=7.6
Q34A Chapman 16.53 44 P **P 19 05 38.1 +0.1**
baz=231
KHMM Horse Mountain 16.55 326 *e*Pn **Pn 19 05 34.2 -1.5**
77nm,1.3s
Z40A Long Farm, Mag 16.58 66 P **Pn 19 05 35.8 -0.1**
baz=255
R35A Emporia Munici 16.64 47 P **Pn 19 05 37.7 +1.0**
baz=234
O32A Brockman Farm, 16.65 38 P **Pn 19 05 36.8 -0.1**
baz=225
V38A Canehill 16.67 56 P **Pn 19 05 37.3 +0.2**
baz=245
H17A Grant Village 16.69 2 *e*Pn **Pn 19 05 38.7 +1.1**
70nm,1.7s
N31A Bailey Ranch, 16.70 35 P **P 19 05 40.3 +0.5**
baz=222
241A Mo Tay, Goldon 16.71 71 P **Pn 19 05 37.4 -0.2**
baz=259
S36A Lake Cedric, C 16.71 49 P **Pn 19 05 37.7 +0.1**
baz=237
YBH Yreka Blue Hor 16.73 330 Pn **P 19 05 39.8 -0.5**
0.1nm,0.3s,baz=95,slow=9.8,SNR=3.8
YBH LR LR 19 11 52.8
comp=Z,2µm,19.4s,baz=174,slow=37
YBH Yreka Blue Hor 16.73 330 *e*Pn **Pn 19 05 38.5 +0.5**
41nm,1.6s
YFT Old Faithful 16.74 2 *e*Pn **P 19 05 41.3 +0.8**
51nm,1.4s
MIAR Mount Ida 16.81 62 P **Pn 19 05 38.0 -0.9**
baz=250
MIAR Mount Ida 16.81 62 *e*Pn **P 19 05 41.2 +0.1**
18nm,1.1s
K05A Summer Lake 16.82 336 *e*Pn **Pn 19 05 40.0 +0.7**
217nm,1.3s
141A Papa Simpson, 16.83 69 P **Pn 19 05 37.5 -1.7**
baz=257
LKWY Lake 16.87 3 *e*Pn **Pn 19 05 40.5 +0.7**
61nm,1.5s
T37A Cheneyville 18 16.87 52 P **Pn 19 05 38.4 -1.2**
baz=240
Y40A Okolona 16.88 64 P **Pn 19 05 39.1 -0.7**
baz=252
O33A Hebron 16.90 39 P **Pn 19 05 39.4 -0.7**
baz=227
U38A Gravette 16.93 55 P **Pn 19 05 38.6 -1.8**
baz=243
YMR Madison River 16.95 1 *e*Pn **P 19 05 43.6 +0.8**
43nm,1.1s
P34A Walnut Farm, R 17.00 42 P **Pn 19 05 40.7 -0.6**
baz=230
N32A Stulken Farm, 17.00 36 P **Pn 19 05 41.7 +0.5**
baz=224

J26A	Sides Ranch, S baz=206	17.02	21	P	Pn	19 05 42.4	+0.8
Q35A	Mercer Eighty, baz=233	17.06	45	P	Pn	19 05 41.2	-0.8
Z41A	Richland Creek baz=256	17.06	66	P	Pn	19 05 39.5	-2.6
K04D	Chiloquin, OR baz=148	17.07	333	P	Pn	19 05 42.7	+0.4
R36A	Gordon, Harris baz=236	17.09	48	P	Pn	19 05 41.2	-1.3
342A	Flagon Creek P baz=262	17.11	73	P	Pn	19 05 40.1	-2.6
QLMT	Earthquake Lak	17.11	0	ePn	Pn	19 05 41.6	-1.2
MCMT	McKenzie Canyo	17.14	357	ePn	Pn	19 05 42.9	-0.4
V39A	Pettigrew baz=246	17.22	57	P	Pn	19 05 42.1	-2.0
S37A	Fort Scott baz=239	17.25	50	P	Pn	19 05 42.5	-1.8
T38A	Diamond baz=242	17.27	53	P	Pn	19 05 43.6	-1.0
242A	Grayson baz=260	17.36	71	P	Pn	19 05 42.6	-3.2
X40A	Basin Creek Fa baz=252	17.37	62	P	Pn	19 05 45.4	-0.6
Y41A	Eaglette Beard baz=254	17.38	65	P	Pn	19 05 43.7	-2.3
W40A	Ferguson Farm, baz=249	17.42	60	P	Pn	19 05 45.5	-1.0
J05D	Fort Rock, OR baz=150,SNR=17	17.43	336	P	P	19 05 49.3	+1.2
N33A	J Bar K, Exete baz=226	17.43	38	P	P	19 05 48.0	+0.1
RSSD	Black Hills baz=202	17.47	18	P	P	19 05 48.2	-0.3
RSSD	Black Hills 20nm,1.1s	17.47	18	ePn	Pn	19 05 46.3	-1.0
P35A	Duane Minner, baz=232	17.47	44	P	P	19 05 48.9	+0.5
Q36A	Arnold C. Orve baz=234	17.48	46	P	P	19 05 48.5	0.0
O34A	Beatrice baz=229	17.48	41	P	Pn	19 05 47.5	+0.2
RLMT	Red Lodge baz=187	17.49	5	P	P	19 05 50.0	+1.2
RLMT	Red Lodge 93nm,1.8s	17.49	5	ePn	P	19 05 48.6	-0.2
R37A	Teagarden Farm baz=237	17.53	49	P	Pn	19 05 47.1	-0.8
BGNE	Belgrade baz=222	17.54	35	P	Pn	19 05 46.9	-1.1
BGNE	Belgrade 49nm,0.8s	17.54	35	ePn	P	19 05 48.9	-0.3
HUMO	Hull Mountain 32nm,1.5s	17.55	331	ePn	P	19 05 49.3	+0.1
U39A	Green Forest baz=245	17.57	56	P	Pn	19 05 47.4	-1.0
DLMT	Dillon 42nm,1.4s	17.66	358	ePn	Pn	19 05 48.7	-0.9
DLMT				eS	S	19 09 12.8	-1.1
BMO	Blue Mountains 81nm,1.9s	17.74	346	ePn	Pn	19 05 48.6	-2.0
Z42A	Norrel Spur, H baz=256	17.76	67	P	Pn	19 05 50.6	-0.2
L31A	Butterfield Fa baz=219	17.78	32	P	P	19 05 52.4	+0.6
K30A	Basset baz=216	17.81	30	P	Pn	19 05 51.8	+0.3
S38A	Stockton baz=241	17.82	52	P	Pn	19 05 50.6	-0.9
V40A	Witts Springs baz=248	17.83	58	P	Pn	19 05 50.1	-1.6
BOZ	Bozeman (W) baz=180	17.92	360	P	Pn	19 05 51.4	-1.5
BOZ	Bozeman (W) 41nm,1.4s	17.92	360	ePn	Pn	19 05 53.0	+0.1
X301	Greenbrier Sit 69nm,1.2s	17.95	60	ePn	Pn	19 05 51.7	-1.4
O35A	Humboldt baz=230	18.00	42	P	Pn	19 05 52.2	-1.5
X201	Greenbrier Sit 78nm,1.2s	18.00	60	ePn	Pn	19 05 52.1	-1.6
U40A	Yellville baz=246	18.02	57	P	Pn	19 05 51.5	-2.5
Y42A	Garnett, Star baz=255	18.03	65	P	Pn	19 05 52.7	-1.4
N34A	Lincoln baz=228	18.03	39	P	Pn	19 05 52.4	-1.7
P36A	Good Intent, A baz=233	18.03	45	P	Pn	19 05 52.3	-1.8
W41B	Gary Mavity, V baz=250	18.05	61	P	Pn	19 05 52.6	-1.8
H25A	Fruitdale baz=203	18.05	19	P	Pn	19 05 52.5	-1.9
WHAR	Wooly Hollow 87nm,1.2s	18.06	60	ePn	Pn	19 05 52.7	-1.8
CCAR	Cane Creek 257nm,1.9s	18.06	65	ePn	Pn	19 05 54.1	-0.3
Q37A	Longview Farm, baz=237	18.09	48	P	Pn	19 05 53.0	-1.8
R38A	Fenwick Farm, baz=239	18.09	50	P	Pn	19 05 53.0	-1.9
143A	Socs Landing, baz=259	18.09	69	P	Pn	19 05 52.2	-2.7
LRM	Limekiln Ridge	18.11	358	ePn	Pn	19 05 55.4	0.0
LCCM	Lewis and Clar	18.12	359	eSn	Sn	19 09 08.9	-8.5
GCMT	Greyclift	18.13	4	eP	P	19 05 56.0	+0.3
M33A	Taylor Creek F baz=224	18.16	37	P	Pn	19 05 52.5	-3.1
K31A	O'Neill baz=219	18.16	32	P	Pn	19 05 55.9	+0.2
S39A	Bolivar baz=242	18.25	52	P	Pn	19 05 56.4	-0.5
I28A	Midland baz=210	18.29	24	P	Pn	19 05 56.7	-0.5
H26A	Fairpoint baz=205	18.29	20	P	Pn	19 05 56.8	-0.5
I04A	Tendick Farm, baz=148	18.31	334	P	Pn	19 05 56.9	-0.6
V41A	Mountainview baz=249	18.33	59	P	Pn	19 05 56.2	-1.6
HSO	Harness Mounta	18.36	332	ePn	P	19 06 00.5	+2.3
I05D	Terrebonne, OR baz=152	18.39	337	P	P	19 05 58.4	-0.1
J30A	Dallas baz=216	18.39	29	P	Pn	19 05 59.2	+0.7
344A	Westbrook Farm baz=263	18.47	73	P	P	19 05 56.0	-3.5
G08A	Pilot Rock 38nm,1.5s	18.54	343	eP	P	19 05 59.7	-0.5
P37A	Lathrop baz=235	18.55	46	P	P	19 05 59.0	-1.2
244A	Avery, Jackson baz=261	18.58	71	P	P	19 05 57.7	-3.0
T40A	Mansfield baz=244	18.59	55	P	P	19 05 58.1	-2.6
G25A	Newell baz=203	18.63	18	P	P	19 06 00.1	-1.1
I29A	Vivian Onida baz=212	18.63	26	P	Pn	19 06 02.0	+0.5
Q38A	Cooks Store, C baz=238	18.68	48	P	P	19 05 59.3	-2.4
445A	Amite baz=266	18.74	76	P	P	19 05 59.5	-3.0
R39A	Chumby, Stover baz=241	18.75	51	P	P	19 06 00.4	-2.0
VBMS	Vicksburg 34nm,0.6s	18.75	71	eP	P	19 06 02.6	+0.1
S40A	Lebanon baz=243	18.79	53	P	P	19 06 01.9	-1.1
F10A	Beach Ranch, E 71nm,1.7s	18.80	348	eP	P	19 06 03.0	-0.1
CROR	Criterion Ridg	18.84	339	P	Pn	19 06 07.1	+3.0
VTHM	Trough	18.89	340	P	Pn	19 06 07.1	+2.5
I30A	Oacoma baz=215	18.90	28	P	P	19 06 03.1	-1.0
V42A	Cord baz=250	18.92	60	P	P	19 06 00.2	-4.1
X43A	Marvell baz=254	18.93	64	P	P	19 05 59.8	-4.7
G26A	Maurine baz=205	18.96	20	P	P	19 06 05.1	+0.3
G06A	Carlson Farm, 113nm,1.6s	18.96	340	eP	Pn	19 06 05.6	+0.2
H04A	Detroit Lake 62nm,1.6s	18.99	336	eP	Pn	19 06 05.7	-0.1
345A	Thompson Farm, baz=264	19.05	74	P	P	19 06 01.9	-3.9
P38A	Dawn	19.09	47	P	P	19 06 05.2	-1.0
	baz=236						
T41A	Mountain View baz=246	19.09	56	P	P	19 06 04.1	-2.1
Q39A	Willow Grove F baz=239	19.15	49	P	P	19 06 05.5	-1.4
MSO	Missoula baz=174	19.20	355	P	Pn	19 06 08.9	+0.5
MSO	Missoula 97nm,1.8s	19.20	355	eP	Pn	19 06 09.4	+1.0
CHMT	Chamberlain Mo	19.24	356	eP	P	19 06 08.0	0.0
G27A	Dupree baz=206	19.24	21	P	P	19 06 08.1	+0.3
245A	Little AP, Sta baz=262	19.25	72	P	P	19 06 06.1	-1.9
R40A	Maddies Statio baz=242	19.27	52	P	P	19 06 07.6	-0.6
F25A	Bowman baz=202	19.30	17	P	P	19 06 08.8	+0.3
145A	Houston Renfro baz=260	19.30	70	P	P	19 06 05.2	-3.3
O38A	Galt baz=235	19.41	46	P	P	19 06 09.7	0.0
L35A	Bielow Farm, R baz=227	19.42	38	P	Pn	19 06 10.9	0.0
LAO	LASA Array baz=194	19.42	11	P	Pn	19 06 11.2	+0.2
F26A	Lodgepole baz=204	19.44	19	P	Pn	19 06 12.4	+1.1
X44A	Crenshaw baz=255	19.51	64	P	P	19 06 10.5	-0.3
K34A	Le Mars baz=225	19.52	36	P	P	19 06 10.9	0.0
SUSD	Miller baz=215	19.52	28	P	Pn	19 06 11.7	-0.5
P39B	Salisbury baz=238	19.53	48	P	Pn	19 06 11.9	-0.3
346A	Big Creek Wild baz=264	19.54	74	P	P	19 06 08.3	-2.9
446A	Poplarville baz=266	19.58	76	P	P	19 06 08.6	-3.0
Q40A	Laux Farm, Aux baz=241	19.74	50	P	P	19 06 12.2	-1.1
H31A	Wolsey baz=216	19.75	29	P	Pn	19 06 16.2	+1.2
M37A	Trindle Farm, baz=231	19.80	42	P	Pn	19 06 17.0	+1.5
E25A	Miller Ranch, baz=202	19.84	17	P	Pn	19 06 15.3	-0.7
Y45A	Yeager Farm, C baz=257	19.85	67	P	P	19 06 14.7	+0.1
SWMT	Swartz Lake	19.88	355	eP	P	19 06 15.1	+0.2
CCM	Cathedral Cave 21nm,1.1s	19.89	54	eP	Pn	19 06 16.8	+0.2
246A	Jackson Lee, B baz=263	19.89	72	P	P	19 06 14.6	-0.5
L36A	Harm Buss Farm baz=229	19.90	39	P	Pn	19 06 17.1	+0.4
PBMO	Poplar Bluff 27nm,1.1s	19.98	58	eP	P	19 06 15.3	-0.7
P40A	Paris baz=239	20.02	49	P	P	19 06 15.3	-1.0
ECSD	EROS Data Cent 33nm,1.3s	20.02	33	eP	P	19 06 16.2	-0.1
146A	Union baz=261	20.03	70	P	P	19 06 15.1	-1.4
O39A	Kirksville baz=237	20.07	46	P	Pn	19 06 18.9	+0.1
V44A	Blytheville baz=252	20.08	61	P	P	19 06 17.7	+0.7
JTMT	Jette	20.14	355	eP	P	19 06 18.2	+0.4
I33A	Coleman baz=220	20.17	32	P	Pn	19 06 20.6	+0.8
H32A	Carlson Farm, baz=218	20.23	30	P	Pn	19 06 21.8	+1.2
YBMT	Yellow Bay	20.23	355	eP	P	19 06 18.3	-0.5
BSMT	Bassoo Peak	20.29	354	eP	P	19 06 19.4	-0.1
E27A	Carson baz=206	20.29	20	P	Pn	19 06 21.3	0.0
F29A	Eureka baz=211	20.35	24	P	P	19 06 20.7	+0.8
Y46A	Houston baz=258	20.41	67	P	P	19 06 21.7	+1.1
L37A	Phoenix Point, baz=230	20.43	41	P	P	19 06 21.9	+1.1
O40A	La Belle baz=238	20.44	48	P	Pn	19 06 22.3	-0.7
W45A	Hickory Valley baz=254	20.44	63	P	P	19 06 21.1	+0.2
N39A	Derby Farms, D baz=236	20.44	45	P	P	19 06 20.9	0.0
S43A	Fulton Ridge, baz=247	20.54	56	P	P	19 06 19.9	-2.2
SCIA	State Center 130nm,1.6s	20.61	42	eP	Pn	19 06 24.3	-0.8
H33A	Prehn Over Nor baz=220	20.68	31	P	P	19 06 24.7	+1.2
LON	Longmire 45nm,1.4s	20.68	340	eP	P	19 06 24.2	+0.7
147A	Livingston baz=262	20.70	70	P	P	19 06 21.8	-1.9
V45A	Humboldt baz=253	20.78	62	P	P	19 06 24.3	-0.3
348A	Jackson baz=265	20.87	74	P	P	19 06 25.7	0.0
L38A	Oak Wood Farm, baz=232	20.91	42	P	P	19 06 25.0	-0.9
I35A	Creekview Farm baz=225	20.92	35	P	P	19 06 26.8	+0.6
Z47A	Carrollton baz=261	20.94	69	P	P	19 06 25.5	-0.8
NEW	Newport 17nm,0.8s,baz=167,slow=12,SNR=9.5	21.00	350	P	P	19 06 27.2	+0.2
NEW				LR	LR	19 14 25.6	
	comp=Z,1µm,20.8s,baz=172,slow=37						
NEW	Newport baz=166	21.00	350	P	P	19 06 27.7	+0.8
NEW	Newport 45nm,1.1s	21.00	350	eP	P	19 06 27.1	+0.1
E03A	Lebam 62nm,1.0s	21.08	336	eP	P	19 06 25.4	-2.4
D05A	Enumclaw 221nm,1.7s	21.13	340	eP	P	19 06 29.0	+0.8
SIUC	Southern Illin 60nm,1.0s	21.22	56	eP	P	19 06 28.3	-1.1
PLAL	Pickwick Lake 37nm,1.1s	21.28	64	eP	P	19 06 27.8	-2.3
K38A	Parkersburg baz=231	21.33	41	P	P	19 06 28.4	-2.1
Z48A	Northport baz=261	21.39	69	P	P	19 06 30.3	-0.9
D29A	Pettibone, Tap baz=210	21.49	23	P	P	19 06 31.3	-0.9
DGMT	Dagmar baz=198	21.52	13	P	P	19 06 32.1	-0.4
WVT	Waverly 50nm,1.0s	21.77	61	eP	P	19 06 35.2	-0.1
LRAL	Lakeview Retre 21nm,1.1s	21.80	70	eP	P	19 06 35.0	-0.7
NLWA	Neilton Lookou 112nm,1.7s	21.92	337	eP	P	19 06 39.5	+2.6
HDIL	Hopedale baz=242	22.36	49	P	P	19 06 41.0	-0.6
E33A	Westby DABS, E baz=218	22.42	29	P	P	19 06 43.4	+1.2
OLIL	Olney 82nm,1.3s	22.42	55	eP	P	19 06 44.1	+1.8
C30A	Mose, Pekin baz=211	22.43	24	P	P	19 06 42.1	-0.2
I38A	Scanlan Farm, baz=229	22.46	38	P	P	19 06 43.6	+1.0
USIN	University of 55nm,1.1s	22.46	57	eP	P	19 06 44.1	+1.4
TEIG	Tepich comp=Z,820nm,20.9s,baz=62,slow=41	22.48	104	LR	LR	19 17 10.8	
A04D	Lummi Island baz=154	22.71	341	P	P	19 06 45.9	+0.7
C31A	Landman Farms, baz=213	22.77	25	P	P	19 06 46.7	+0.7
JFWS	Jewell Farm 35nm,1.0s	22.98	43	eP	P	19 06 49.5	+1.3
D33A	AnnSam, Waubun baz=218	22.99	28	P	P	19 06 48.9	+0.7
SPMN	Marine on St. 17nm,0.6s	22.99	36	eP	P	19 06 47.2	-1.1
SWET	Sewanee 6.2nm,0.9s	23.05	65	eP	P	19 06 49.4	+0.5
F36A	Milaca baz=224	23.08	33	P	P	19 06 49.3	+0.2
B30A	Myrvik Farm, E baz=211	23.12	23	P	P	19 06 49.4	-0.2
E35A	Pequot Lakes baz=221	23.17	31	P	P	19 06 50.8	+0.7
D34A	Park Rapids baz=219	23.22	29	P	P	19 06 50.4	-0.2
A29A	Manning Farm, baz=208	23.23	21	P	P	19 06 51.6	+0.9
C32A	Crookston baz=215	23.26	26	P	P	19 06 51.8	+0.8
C33A	Trail baz=217	23.51	27	P	P	19 06 53.9	+0.4
A30A	Hoffart Farm, baz=210	23.55	22	P	P	19 06 55.8	+2.0
WCI	Wyandotte Cave 16nm,0.8s	23.57	57	eP	P	19 06 53.5	-0.7
E36A	McGregor baz=224	23.68	33	P	P	19 06 55.6	+0.5
B32A	Ashes, Strandq baz=215	23.72	25	P	P	19 06 56.7	+1.2
D35A	Remer baz=221	23.72	31	P	P	19 06 56.7	+1.1
SFIN	Lafayette baz=245	23.79	52	P	P	19 06 55.7	-0.6
A32A	Rocking H Ranc baz=214	24.17	25	P	P	19 07 01.3	+1.6
CPCT	Cooper Cave 11nm,1.1s	24.22	65	eP	P	19 06 59.6	-0.8
C36A	Pine Crest Far baz=222	24.78	31	P	P	19 07 08.2	+2.9
B35A	Bob, Littlefor baz=220	24.84	29	P	P	19 07 07.3	+1.5
TKL	Tuckaleechee C 12nm,0.9s,baz=252,slow=6.4,SNR=8.1	24.86	64	P	P	19 07 06.5	+0.3
TKL				LR	LR	19 17 59.2	
	comp=Z,3µm,18.0s,baz=260,slow=40						
TKL	Tuckaleechee C 32nm,1.2s	24.86	64	eP	P	19 07 07.5	+1.3
TZTN	Tazewell 63nm,0.8s	25.22	62	eP	P	19 07 08.4	-1.0
C38A	Sawbill Land. baz=225	25.48	33	P	P	19 07 13.2	+1.4
ULM	Lac du Bonnet 7.0nm,0.8s,baz=227,slow=9.1,SNR=6.4	25.50	24	P	P	19 07 13.0	+1.2
ULM	Lac du Bonnet 27nm,1.3s	25.50	24	eP	P	19 07 11.3	-0.5
COWI	Conover 24nm,1.3s	25.51	38	eP	P	19 07 12.0	0.0
EYMN	Ely baz=224	25.54	32	P	P	19 07 12.2	0.0
EYMN	Ely 16nm,1.0s	25.54	32	eP	P	19 07 12.0	-0.2
C39A	Grand Marais baz=227	26.11	34	P	P	19 07 18.3	+0.9
ACSO	Alum Creek Sta 37nm,1.1s	26.65	55	eP	P	19 07 22.7	+0.4
BBB	Bella Bella	27.44	338	LR	LR	19 18 16.7	
	comp=Z,979nm,19.7s,baz=159,slow=36						
BLA	Blacksburg 14nm,0.9s	27.81	62	eP	P	19 07 32.7	-0.2
SSPA	Standing Stone 35nm,1.4s	30.49	56	eP	P	19 07 58.9	+2.3
DLBC	Dease Lake 18nm,1.4s	33.34	342	eP	P	19 08 20.8	-0.7
FCC	Fort Churchill 48nm,1.8s	33.34	17	eP	P	19 08 21.1	-0.2
NCB	Newcomb 0.3nm,1.4s	33.99	52	eP	P	19 08 29.6	+2.3
YKA	Yellowknife Ar 1.6nm,1.1s,baz=178,slow=8.6,SNR=7.9	34.86	358	P	P	19 08 34.0	-0.5
YKA				PcP	PcP	19 11 09.0	+1.7
	1.0nm,1.0s,baz=178,slow=2.7,SNR=4.9						
YKA				LR	LR	19 22 54.2	
	comp=Z,119nm,18.1s,baz=180,slow=37						
YKB5	Yellowknife Ar	34.86	358	eP	P	19 08 33.7	-0.8
YKB5				ePcP	PcP	19 11 08.4	+1.1
ROSC	El Rosal comp=Z,234nm,19.4s,baz=336,slow=38	42.05	116	LR	LR	19 28 10.3	
SCHQ	Schefferville 9.7nm,0.9s,baz=250,slow=9.4,SNR=5.5	42.12	37	P	P	19 09 36.2	+0.6
SCHQ				LR	LR	19 27 49.1	
	comp=Z,1µm,20.7s,baz=264,slow=38						
SCHQ	Schefferville 25nm,1.3s	42.12	37	eP	P	19 09 37.4	+1.7
RUSC	La Rusia 9.2nm,1.2s	42.43	114	eP	P	19 09 38.3	-0.9
INK	Inuvik comp=Z,971nm,18.3s,baz=160,slow=37	42.71	348	LR	LR	19 27 47.9	
INK	Inuvik	42.71	348	eP	P	19 09 40.4	+0.2
SDV	Santo Domingo 5.4nm,0.4s,baz=300,slow=6.3,SNR=6.4	42.83	108	P	P	19 09 44.4	+2.3
SDV	Santo Domingo 17nm,1.0s	42.83	108	eP	P	19 09 41.2	-1.0
SPU	Mount Spurr	43.04	333	eP	P	19 09 41.7	-1.4
ILAR	Eielson Array 1.3nm,0.8s,baz=155,slow=6.9,SNR=12	43.32	339	P	P	19 09 46.8	+1.6
ILB	Eielson Array	43.32	339	eP	P	19 09 46.8	+1.6
TRF	Thorofare Moun 26nm,1.3s	43.64	336	eP	P	19 09 49.1	+1.0
KTH	Kantishna Hill 10nm,1.0s	43.93	336	eP	P	19 09 51.8	+1.5
PPLA	Purkeypile 45nm,1.4s	44.03	335	eP	P	19 09 51.9	+0.7
BPAW	Bear Paw Mtn. 23nm,1.5s	44.28	336	eP	P	19 09 53.2	+0.2
CAST	Castle Rocks 35nm,1.9s	44.28	335	eP	P	19 09 53.1	+0.1
TAOE	Nuku Hiva Isla 1µm,25.4s	45.69	221	eLR	LR	19 22 49.1	
RES	Resolute Bay comp=Z,1µm,19.8s,baz=234,slow=37	47.82	6	LR	LR	19 30 57.5	
PTGA	Pitinga 13nm,1.3s	56.95	111	eP	P	19 11 28.9	-0.4
PPT	Papeete comp=Z,251nm,21.8s,baz=5.5,slow=30	58.16	224	LR	LR	19 30 53.6	
PPT2	Papeete2 850nm,24.2s,baz=23	58.18	224	eLR	LR	19 28 37.7	
SAML	Samuel 5.4nm,1.0s	59.28	121	eP	P	19 11 44.1	-1.5
LPAZ	La Paz comp=Z,197nm,21.1s,baz=328,slow=34	60.66	131	LR	LR	19 36 40.7	
TBI	Tubuai	62.57	220	eLQ	LQ	19 28 01.4	
TBI				eLR	LR	19 30 41.2	
	458nm,26.5s						
SIV	San Ignacio 3.3nm,0.9s,baz=318,slow=7.0,SNR=5.9	65.39	125	P	P	19 12 29.9	+3.4
TIXI	Tiksi 7.1nm,1.2s	72.56	343	eP	P	19 13 11.4	+1.2
CPUP	Villa Florida 7.0nm,1.2s,baz=322,slow=5.5,SNR=3.8	74.83	131	P	P	19 13 24.8	+0.5
CPUP				LR	LR	19 47 12.9	
	comp=Z,151nm,18.4s,baz=350,slow=36						
CPUP	Villa Florida	74.83	131	eP	P	19 13 24.2	0.0
YAK	Yakutsk comp=Z,190nm,18.9s,baz=94,slow=37	78.10	335	LR	LR	19 49 13.0	
ARCES	ARCESS Array B comp=Z,298nm,18.2s,baz=324,slow=37	78.20	14	LR	LR	19 49 55.0	
NOA	NORSAR Array B comp=Z,146nm,20.7s,baz=315,slow=35	80.19	25	LR	LR	19 48 35.4	
NRIK	Noril'sk comp=Z,483nm,20.0s,baz=352,slow=37	82.26	353	LR	LR	19 52 04.6	
FINES	FINESS Array B comp=Z,696nm,20.7s,baz=342,slow=35	84.80	19	LR	LR	19 51 15.1	
ESDC	Sonseca Array comp=Z,198nm,19.7s,baz=280,slow=34	84.99	48	LR	LR	19 49 58.2	
MJAR	Matsushiro Arr comp=Z,90nm,21.3s,baz=90,slow=31	88.47	311	LR	LR	19 48 04.3	
DAVOX	Davos/Dischmat comp=Z,528nm,18.6s,baz=266,slow=36	88.96	36	LR	LR	19 54 42.5	
GERES	GERESS Array B comp=Z,451nm,19.6s,baz=292,slow=36	89.48	33	LR	LR	19 54 46.6	
VRAC	Vranov comp=Z,324nm,19.9s,baz=300,slow=36	90.50	31	LR	LR	19 55 45.7	
DZM	Mont Dzumac 349nm,21.1s	93.36	247	eLR	LR	19 44 47.1	
AKASG	Malin Array Be comp=Z,316nm,19.2s,baz=345,slow=36	94.59	24	LR	LR	19 58 32.0	
GUMO	Guam comp=Z,223nm,21.6s,baz=54,slow=29	95.45	288	LR	LR	19 48 21.0	
KEST	Kesra comp=Z,300nm,19.5s,baz=249,slow=35	95.82	45	LR	LR	19 56 53.8	
SONA0	Songino Array 6.1nm,1.6s	97.45	335	eP	Pdif	19 15 22.0	+4.3
SONM	Songino Array 0.2nm,0.4s,baz=29,slow=3.3,SNR=2.2	97.45	335	P	Pdif	19 15 22.0	+4.3
SONM				LR	LR	20 02 14.5	
	comp=Z,164nm,18.0s,baz=34,slow=37						
ZALV	Zalesovo Beam	97.48	350	LR	LR	20 02 16.3	

comp=Z,202nm,21.3s,baz=70,slow=37
HHC Hu-ho-hao-te 100.96 328 *e*P **Pdif** **19 15 37.4 +4.0**
HHC PP PP 19 19 48.3 +7.7
HHC Hu-ho-hao-te 100.96 328 SS SS 19 34 04.5 -4.2
HHC pmax pmax
comp=Z,11nm,1.4s
HHC pmax pmax
comp=Z,100nm,8.0s
HHC LR LR
comp=N,150nm,17.8s
HHC LR LR
comp=E,140nm,17.8s
HHC LR LR
comp=Z,120nm,17.8s
CD2 Chengdu 112.70 327 PKP **PKiKP** **19 20 21.8 +1.0**
QIZ Qiongzhong 118.67 315 PKPbc **PKPdf** **19 20 29.4 -3.0**
QIZ PP **PP** **19 21 52.9 +3.6**
QIZ Qiongzhong 118.67 315 SS SS 19 38 08.3 +1.0
QIZ LR LR
comp=Z,65nm,24.2s
CM31 Chiang Mai Arr 125.45 324 *e*PKPdf **PKPdf** **19 20 48.5 +3.1**
CMAR Chiang Mai Arr 125.45 324 PKP **PKPdf** **19 20 48.6 +3.1**
comp=Z,1.2nm,0.9s,baz=348,slow=1.8,SNR=4.2
CM01 Chiang Mai Arr 125.47 324 *e*PKPdf **PKPdf** **19 20 44.0 -1.6**

IDC 24 19:02:22.0±358.0, 57°.18N×29°.85E, h0km, Error ellipse: s-maj=152.0km s-min=96.7km az=102.0, Baltic States-Belarus-Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I43RU	**DUBNA INFRASON**	**4.06**	**93**	*i*		19 27 20.0	
baz=279,slow=318,SNR=1.0							
I26DE	**FREYUNG INFRAS**	**12.78**	**236**	*i*		20 15 40.0	
baz=43,slow=320,SNR=0.5							
I48TN	**KESRA INFRASON**	**25.44**	**222**	*i*		21 40 40.0	
baz=25,slow=316,SNR=0.2							

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*IDC **24** 19:06:12.9±1.8, 63°.17S×56°.44W, h0km, mb4.0/2, mb1 4.0/3, mb1mx3.7/28, mbtmp3.8/3, ML3.8/1, MS3.8/5, Ms1 3.8/5, ms1mx3.4/20, Error ellipse: s-maj=140.5km s-min=37.0km az=148.0*
*ISCJB **24** 19:06:14.1±0.9, 62°.7S±0°.1×57°.4W±0°.2, h10km, mb4.3/7, MS3.9/3, Error ellipse: s-maj=20.0km s-min=12.9km az=139.6*
*NEIC **24** 19:06:14.8±0.8, 62°.69S×57°.50W, h10km, mb4.1/4, Error ellipse: s-maj=25.3km s-min=21.3km az=113.0*
ISC 24 19:06:14.9±0.8, 62°.7S±0°.1×57°.3W±0°.1, h10km, n17, σ1§45/14, mb4.2/7, MS4.1/3, South Shetland Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMSA	**Palmer Station**	**3.66**	**232**	Pn	**Pn**	**19 07 11.7**	**+0.2**
0.7nm,0.3s,baz=345,slow=8.3,SNR=2.2							
PMSA				Sn	**Sb**	**19 08 03.9**	**+0.1**
14nm,0.3s,baz=143,slow=20,SNR=14							
PMSA				LR	LR	19 08 37.0	
comp=Z,237nm,18.6s,baz=149,slow=39							
PMSA	**Palmer Station**	**3.66**	**232**	*e*Pn	**Pn**	**19 07 10.6**	**-0.9**
PMSA				*e*Sn	**Sn**	**19 07 55.4**	**+0.8**
USHA	**Ushuaia**	**9.76**	**319**	LR	LR	19 11 18.3	
comp=Z,1μm,21.7s,baz=176,slow=29							
SNAA	**Sanae**	**22.10**	**137**	*e*P	**P**	**19 11 12.2**	**+2.2**
508nm,1.2s							
PLCA	**Paso Flores**	**23.38**	**334**	LR	LR	19 20 22.4	
comp=Z,74nm,18.7s,baz=178,slow=35							
TRQA	**Tornquist**	**24.83**	**351**	P	P	19 11 32.3	-4.8
3.0nm,0.9s							
QSPA	**South Pole Qui**	**27.53**	**180**	*e*P	**P**	**19 12 02.8**	**+1.3**
20nm,1.0s							
LCO	**Las Campanas**	**34.81**	**339**	*e*P	**P**	**19 13 07.6**	**+1.7**
3.4nm,0.8s							
CASY	**Casey**	**51.02**	**174**	P	P	19 15 22.1	+5.8
0.6nm,0.9s							
TORD	**Torodi Ar. Bea**	**88.23**	**57**	P	**P**	**19 19 05.9**	**-0.2**
0.4nm,0.8s,baz=193,slow=5.6,SNR=2.4							
WRA	**Warramunga Arr**	**97.13**	**191**	P	**P**	**19 19 45.6**	**-1.7**
0.7nm,1.1s,baz=172,slow=4.1,SNR=3.1							
WRA				LR	LR	20 04 08.2	
comp=Z,160nm,19.7s,baz=75,slow=36							
TXAR	**Lajitas Array**	**98.89**	**320**	LR	LR	19 59 05.6	
comp=Z,53nm,18.2s,baz=0.0,slow=32							
EKS2	**Erkin-Say**	**145.35**	**102**	*e*PKPdf	**PKPbc**	**19 25 50.7**	**-1.3**
AAK	**Ala-Archa**	**145.65**	**103**	*e*PKPdf	**PKPdf**	**19 25 52.9**	**+0.2**
TKM2	**Tokmak 2**	**146.37**	**104**	*e*PKPdf	**PKPbc**	**19 25 55.1**	**-0.1**
MJAR	**Matsushiro Arr**	**152.12**	**207**	PKPbc	**PKPbc**	**19 26 07.9**	**-1.8**
1.6nm,0.8s,baz=166,slow=3.9,SNR=2.9							
MKAR	**Makanchi Array**	**152.37**	**106**	PKPbc	**PKPbc**	**19 26 07.9**	**-2.0**
1.0nm,0.7s,baz=223,slow=1.7,SNR=11							

IDC 24 19:08:44.1±2.0, 2°.66N×125°.08E, h0km, mb3.4/3, mb1 3.6/3, mb1mx3.3/41, mbtmp3.4/3, Error ellipse: s-maj=200.1km s-min=25.8km az=64.0, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**24.23**	**158**	P	P	19 14 02.8	-0.2
1.8nm,0.7s,baz=337,slow=11,SNR=9.7							
ASAR	**Alice Springs**	**27.54**	**162**	P	P	19 14 33.6	+0.8
0.2nm,0.8s,baz=341,slow=8.1,SNR=3.1							
MKAR	**Makanchi Array**	**57.51**	**326**	P	P	19 18 34.9	-0.4
0.3nm,0.5s,baz=116,slow=7.8,SNR=7.7							

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*ISCJB **24** 19:11:27.3±0.6, 64°.70S±0°.07×178°.6E±0°.4, h10km, mb4.6/10, MS4.0/4, Error ellipse: s-maj=25.4km s-min=9.3km az=167.9*
*IDC **24** 19:11:27.2±2.7, 64°.81S×178°.66E, h0km, mb3.7/2, mb1 4.4/3, mb1mx3.9/25, mbtmp4.1/3, ML4.9/1, MS4.0/5, Ms1 4.0/5, ms1mx3.6/20, Error ellipse: s-maj=102.7km s-min=38.6km az=66.0*
*NEIC **24** 19:11:28.6±0.7, 64°.78S×178°.71E, h10km, mb4.8/6, Error ellipse: s-maj=27.6km s-min=10.4km az=82.0*
*GCMT **24** 19:11:28.6±0.4, 64°.73S×178°.46E, h29km±2km, MW5.0/64, Moment Tensor Solution. s22,c25; s64,c82; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}0.28±.25; $M_{\theta\theta}$3.24±.22; $M_{\phi\phi}$-3.52±.20; $M_{r\theta}$-1.57±.39; $M_{\theta\phi}$0.06±.15; $M_{\phi r}$0.94±.39; Best double couple: $M_0$3.85000×10^{16} NP1:ϕ_s316.00000°,δ84.00000°,λ28.00000°. NP2: ϕ_s223.00000°,δ62.00000°,λ173.00000°. Principal axes: T 3.9310, Plg24.0000°, Azm183.0000°; N -0.1650, Plg62.0000°, Azm328.0000°; P -3.7680, Plg14.0000°, Azm86.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
ISC 24 19:11:28.7±0.9, 64°.8S±0°.1×178°.7E±0°.2, h10km, n36, σ1§63/21, mb4.8/10, MS3.9/4, 1D, Balleny Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SBA	**Scott Base**	**13.64**	**191**	*e*Pn	**Pn**	**19 14 40.2**	**-1.6**
VNDA	**Vanda**	**13.82**	**195**	Pn	**Pn**	**19 14 42.6**	**-1.7**
5.0nm,0.3s,baz=36,slow=17,SNR=116							
VNDA				LR	LR	19 18 47.4	
comp=Z,420nm,19.1s,baz=20,slow=32							
VNDA	**Vanda**	**13.82**	**195**	*e*Pn	**Pn**	**19 14 42.0**	**-2.3**
RPZ	**Rata Peaks**	**21.52**	**345**	LR	LR	19 23 07.8	
comp=Z,243nm,18.4s,baz=174,slow=32							
BFZ	**Birch Farm**	**24.16**	**355**	*e*P	**P**	**19 16 41.9**	**-2.8**
43nm,1.2s							
QSPA	**South Pole Qui**	**25.33**	**180**	*e*P	**P**	**19 16 56.1**	**+0.8**
BKZ	**Black Stump Fm**	**25.66**	**356**	*e*P	**P**	**19 16 58.8**	**+0.4**
80nm,2.0s							
HIZ	**Hauiti**	**26.38**	**353**	*e*P	**P**	**19 17 04.6**	**-0.3**
136nm,1.3s							
URZ	**Urewera**	**26.55**	**357**	LR	LR	19 25 04.4	
comp=Z,258nm,21.9s,baz=178,slow=31							
MAW	**Mawson**	**40.28**	**212**	LR	LR	19 35 30.6	
comp=Z,518nm,18.1s,baz=119,slow=36							
PMSA	**Palmer Station**	**42.94**	**146**	*e*P	**P**	**19 19 27.0**	**0.0**
199nm,1.9s							
SYO	**Syowa Base**	**43.45**	**200**	*e*P	**P**	**19 19 33.0**	**+1.9**
SNAA	**Sanae**	**43.83**	**179**	P	**P**	**19 19 35.4**	**+1.1**
SNAA	**Sanae**	**43.83**	**179**	*e*P	**P**	**19 19 35.5**	**+1.3**
11nm,1.1s							
VNA3	**Neumayer Olymp**	**44.14**	**176**	P	**P**	**19 19 38.3**	**+1.7**
VNA2	**Neumayer--Watz**	**44.52**	**177**	P	**P**	**19 19 36.3**	**-3.3**
baz=182,slow=9.8							
VNA1	**Neumayer--Stat**	**44.77**	**177**	P	**P**	**19 19 43.4**	**+1.7**
TBI	**Tubuai**	**46.31**	**42**	*e*T	T	20 09 37.2	
16nm,0.3s							

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H01W1	**Cape Leeuwin H**	**48.24**	**276**	T	T	20 12 05.3	
baz=148,slow=76,SNR=95							
H01W2	**Cape Leeuwin H**	**48.24**	**276**	T	T	20 12 02.9	
baz=148,slow=76,SNR=85							
H01W3	**Cape Leeuwin H**	**48.25**	**276**	T	T	20 11 55.5	
baz=148,slow=76,SNR=81							
AS31	**Alice Springs**	**50.23**	**303**	*e*P	**P**	**19 20 26.8**	**+2.1**
1.5nm,1.3s							
ASAR	**Alice Springs**	**50.23**	**303**	P	**P**	**19 20 24.8**	**+0.1**
0.9nm,1.0s,baz=155,slow=7.0,SNR=5.0							
RKT	**Rikitea**	**51.30**	**59**	*e*T	T	20 16 06.5	
7.5nm,0.2s							
TVO	**Taravao**	**51.65**	**40**	*e*T	T	20 16 15.9	
4.0nm,0.3s							
PPT2	**Papeete2**	**51.74**	**40**	*e*LR	LR	19 35 30.4	
216nm,25.0s							
WR1	**Warramunga Arr**	**53.50**	**305**	*e*P	**P**	**19 20 49.1**	**0.0**
12nm,1.3s							
WRA	**Warramunga Arr**	**53.50**	**305**	P	**P**	**19 20 49.1**	**0.0**
1.3nm,1.0s,baz=156,slow=6.4,SNR=4.5							
WRAB	**Tennant Creek**	**53.51**	**305**	*e*P	**P**	**19 20 48.4**	**-0.7**
17nm,1.4s							
VAH	**Vaihoa**	**54.53**	**41**	*e*T	T	20 19 52.2	
76nm,0.2s							
BOSA	**Boshof**	**84.65**	**203**	LR	LR	19 58 18.0	
comp=Z,90nm,21.8s,baz=224,slow=33							
H08S2	**Diego Garcia H**	**89.95**	**252**	T	T	21 04 15.9	
baz=155,slow=76,SNR=56							
H08S1	**Diego Carcia H**	**89.96**	**252**	T	T	21 04 07.5	
baz=155,slow=76,SNR=52							
H08S3	**Diego Garcia H**	**89.97**	**252**	T	T	21 04 17.6	
baz=155,slow=76,SNR=63							
TORD	**Torodi Ar. Bea**	**128.41**	**184**	PKP	**PKPdf**	**19 30 35.0**	**-0.2**
0.5nm,0.9s,baz=159,slow=1.2,SNR=2.5							
BRTR	**Keskin Array B**	**147.79**	**236**	PKPbc	**PKPbc**	**19 31 12.8**	**-0.2**
0.6nm,0.7s,baz=134,slow=4.2,SNR=4.5							

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*ISK **24** 19:17:09.6, 39°.10N×28°.96E, h6km, MD2.6*
*ISCJB **24** 19:17:10.0±0.6, 39°.11N±0°.04×29°.00E±0°.04, h9km, Error ellipse: s-maj=5.7km s-min=4.6km az=172.5*
*CSEM **24** 19:17:10.2±0.1, 39°.12N×28°.99E, h8km, MD2.1, Error ellipse: s-maj=2.6km s-min=2.4km az=46.0*
*DDA **24** 19:17:10.2, 39°.08N×29°.03E, h7km, Md2.1*
ISC 24 19:17:10.2±0.9, 39°.11N±0°.03×29°.00E±0°.03, h9km, n18, σ0§43/26, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.23**	**253**	P	**Pg**	**19 17 15.6**	**+0.7**
DEMI				S	**Sg**	**19 17 19.0**	**+0.9**
DEMI	**Demirci**	**0.23**	**253**	*i* P	**Pg**	**19 17 15.6**	**+0.7**
DEMI				*i* S	**Sg**	**19 17 19.0**	**+0.9**
GDZ	**Gediz**	**0.37**	**93**	P	**Pg**	**19 17 17.5**	**-0.1**
GDZ				S	**Sg**	**19 17 22.7**	**+0.1**
GDZ	**Gediz**	**0.37**	**93**	*i* P	**Pg**	**19 17 17.5**	**-0.1**
GDZ				*i* S	**Sg**	**19 17 22.7**	**+0.1**
TVSB	**Tavsanli**	**0.49**	**46**	*e*PG	**Pg**	**19 17 20.1**	**+0.3**
TVSB	**Tavsanli**	**0.49**	**46**	*e*Pg	**Pg**	**19 17 20.1**	**+0.3**
KULA	**Kula-Manisa**	**0.65**	**204**	*e*PG	**Pg**	**19 17 22.6**	**-0.2**
KULA				*e*SG	**Sg**	**19 17 30.9**	**-0.4**
KULA	**Kula-Manisa**	**0.65**	**204**	*e*Pg	**Pg**	**19 17 22.6**	**-0.2**
KULA				*e*Sg	**Sg**	**19 17 31.0**	**-0.4**
KHAL	**Karahalli**	**0.83**	**152**	P	**Pb**	**19 17 27.1**	**+0.2**
KHAL				S	**Sg**	**19 17 37.2**	**+0.1**
KHAL	**Karahalli**	**0.83**	**152**	*i* P	**Pb**	**19 17 27.1**	**+0.2**
KHAL				*i* S	**Sg**	**19 17 37.2**	**+0.1**
BALB	**Balikesir**	**1.02**	**302**	*e*PG	**Pg**	**19 17 29.1**	**-0.7**
BALB	**Balikesir**	**1.02**	**302**	*e*Pg	**Pg**	**19 17 29.1**	**-0.7**
KCTX	**Karacabey (Bur**	**1.26**	**337**	*e*PN	**Pb**	**19 17 33.9**	**-0.2**
KCTX	**Karacabey (Bur**	**1.26**	**337**	*e*Pn	**Pb**	**19 17 33.9**	**-0.2**
GONE	**Gonen-Balikesi**	**1.38**	**313**	*e*PN	**Pn**	**19 17 35.7**	**0.0**
GONE	**Gonen-Balikesi**	**1.38**	**313**	*e*Pn	**Pn**	**19 17 35.7**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**1.45**	**217**	*e*PN	**Pb**	**19 17 37.1**	**-0.4**
AYDB	**Zeytinkoy-Aydi**	**1.45**	**217**	*e*Pn	**Pb**	**19 17 37.1**	**-0.4**

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*DDA **24** 19:18:16.8, 39°.10N×29°.00E, h9km, Md2.7*
*ISCJB **24** 19:18:17.2±0.5, 39°.12N±0°.03×29°.02E±0°.03, h4km±6km, Error ellipse: s-maj=5.6km s-min=4.4km az=179.8*
*CSEM **24** 19:18:17.3±0.1, 39°.12N×29°.02E, h5km, MD2.7, Error ellipse: s-maj=3.0km s-min=2.4km az=35.0*
*ISK **24** 19:18:17.2, 39°.14N×29°.03E, h8km, MD2.8*
ISC 24 19:18:17.3±1.0, 39°.12N±0°.02×29°.00E±0°.02, h5km±10km, n37, σ0§33/49, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**250**	P	**Pg**	**19 18 21.9**	**-0.1**
DEMI				S	**Sg**	**19 18 25.1**	**0.0**
DEMI	**Demirci**	**0.24**	**250**	*i* P	**Pg**	**19 18 21.9**	**-0.1**
DEMI				*i* S	**Sg**	**19 18 25.1**	**0.0**
GDZ	**Gediz**	**0.37**	**95**	P	**Pg**	**19 18 24.6**	**0.0**
GDZ				S	**Sg**	**19 18 30.1**	**+0.6**
GDZ	**Gediz**	**0.37**	**95**	*i* P	**Pg**	**19 18 24.6**	**0.0**
GDZ				*i* S	**Sg**	**19 18 30.1**	**+0.6**
TVSB	**Tavsanli**	**0.48**	**47**	*e*PG	**Pg**	**19 18 26.6**	**-0.1**
TVSB				*e*SG	**Sg**	**19 18 33.4**	**+0.4**
TVSB	**Tavsanli**	**0.48**	**47**	*e*Pg	**Pg**	**19 18 26.6**	**-0.1**
TVSB				*e*Sg	**Sg**	**19 18 33.4**	**+0.4**
DURS	**Dursunbey**	**0.63**	**320**	P	**Pg**	**19 18 29.0**	**-0.4**
DURS				S	**Sb**	**19 18 39.9**	**-0.1**
DURS	**Dursunbey**	**0.63**	**320**	*i* P	**Pg**	**19 18 29.0**	**-0.4**
DURS				*i* S	**Sb**	**19 18 39.9**	**-0.1**
KHAL	**Karahalli**	**0.84**	**153**	P	**Pg**	**19 18 33.2**	**-0.3**
KHAL	**Karahalli**	**0.84**	**153**	*i* P	**Pg**	**19 18 33.2**	**-0.3**
KHAL				*i* S	**Sn**	**19 18 48.6**	**-0.1**
KHL	**Karahalli**	**0.90**	**153**	*e*PG	**Pb**	**19 18 34.8**	**-0.5**
KHL	**Karahalli**	**0.90**	**153**	*e*Pg	**Pb**	**19 18 34.8**	**-0.5**
BALB	**Balikesir**	**1.01**	**301**	*e*PG	**Pb**	**19 18 37.2**	**-0.1**
BALB	**Balikesir**	**1.01**	**301**	*e*Pg	**Pb**	**19 18 37.2**	**-0.1**
IGD	**Bursa**	**1.15**	**8**	*i* P	**Pg**	**19 18 38.3**	**-1.0**
IGD				*i* S	**Sg**	**19 18 54.3**	**0.0**
BALY	**Balya**	**1.24**	**300**	P	**Pg**	**19 18 41.0**	**0.0**
BALY				S	**Sn**	**19 18 58.7**	**+0.4**
BALY	**Balya**	**1.24**	**300**	*i* P	**Pg**	**19 18 41.0**	**0.0**
BALY				*i* S	**Sn**	**19 18 58.7**	**+0.4**
KCTX	**Karacabey (Bur**	**1.25**	**337**	*e*PN	**Pn**	**19 18 41.4**	**0.0**
KCTX	**Karacabey (Bur**	**1.25**	**337**	*e*Pn	**Pn**	**19 18 41.4**	**0.0**
MDNY	**Mudanya-Bursa**	**1.25**	**356**	*e*PN	**Pg**	**19 18 41.0**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.25**	**356**	*e*Pn	**Pg**	**19 18 41.0**	**-0.3**
CAVI	**Cavuskoy**	**1.26**	**31**	*e*PN	**Pn**	**19 18 41.4**	**-0.2**
CAVI	**Cavuskoy**	**1.26**	**31**	*e*Pn	**Pn**	**19 18 41.4**	**-0.2**
IZI	**Iznik**	**1.27**	**16**	*e*PN	**Pg**	**19 18 41.2**	**-0.4**
IZI	**Iznik**	**1.27**	**16**	*e*Pn	**Pg**	**19 18 41.2**	**-0.4**
GONE	**Gonen-Balikesi**	**1.37**	**313**	*e*PN	**Pb**	**19 18 43.5**	**+0.1**
GONE	**Gonen-Balikesi**	**1.37**	**313**	*e*Pn	**Pb**	**19 18 43.5**	**+0.1**
ARMT	**Armutlu**	**1.45**	**356**	*e*PN	**Pn**	**19 18 44.1**	**+0.1**
ARMT	**Armutlu**	**1.45**	**356**	*e*Pn	**Pn**	**19 18 44.2**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**1.46**	**217**	*e*PN	**Pb**	**19 18 44.9**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**1.46**	**217**	*e*Pn	**Pb**	**19 18 44.9**	**-0.1**
EDC	**Edincik**	**1.51**	**325**	*e*PN	**Pb**	**19 18 45.4**	**-0.3**
EDC	**Edincik**	**1.51**	**325**	*e*Pn	**Pb**	**19 18 45.4**	**-0.3**
GULT	**Gulveren**	**1.75**	**41**	*e*PN	**Pn**	**19 18 48.6**	**+0.2**
GULT	**Gulveren**	**1.75**	**41**	*e*Pn	**Pn**	**19 18 48.6**	**+0.2**
MRMT	**Marmara Adasi**	**1.83**	**324**	*e*PN	**Pn**	**19 18 50.0**	**+0.5**
MRMT	**Marmara Adasi**	**1.83**	**324**	*e*Pn	**Pn**	**19 18 50.0**	**+0.5**

MEX 24 19:19:16.9±0.3, 27°.79N×111°.88W, h16km±999km, MD3.5, Gulf of California

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SRIG	**Santa Rosalia**	**0.57**	**214**	*i* P	Pg	19 19 26.3	-1.9
SRIG				*i* S	Sg	19 19 33.2	-2.6
HSIG		**1.47**	**34**	*e*P	Pn	19 19 39.3	-3.5
HSIG				*i* S	Sn	19 19 56.4	-5.4

SKO 24 19:22:29.0, 41°.35N×22°.49E, h15km, ML1.2, 1C, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VAY	**Valandovo**	**0.07**	**116**	*i* Pg	Pg	19 22 31.9	-0.1
VAY				*i* Sg	Sg	19 22 33.8	-0.1
VAY				*e*Lg	Lg	19 22 33.8	
comp=E,152nm,0.2s							

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*LDG **24** 19:25:03.7±0.2, 43°.97N×12°.10E, h2km, Ml2.5/9, Error ellipse: s-maj=4.7km s-min=3.0km az=66.0*
*ISCJB **24** 19:25:04.6±0.2, 43°.87N±0°.02×11°.94E±0°.02, h23km±3km, Error ellipse: s-maj=4.1km s-min=2.6km az=19.9*
*CSEM **24** 19:25:04.0±0.1, 43°.90N×11°.97E, h5km, ML2.7/10, Error ellipse: s-maj=3.8km s-min=2.6km az=30.0*
*ROM **24** 19:25:04.0±0.1, 43°.87N×12°.02E, h5km±1km, Md2.7/21, Ml2.2/23, Error ellipse: s-maj=2.2km s-min=1.0km az=41.0*
*GEN **24** 19:25:05.0, 43°.80N×11°.89E, h2km, ML2.1*
ISC 24 19:25:04.3±0.8, 43°.88N±0°.02×11°.94E±0°.02, h17km±4km, n90, σ1§24/136, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFI	**Santa Sofia**	**0.07**	**288**	Pg	**Pg**	**19 25 07.4**	**-0.2**
SFI				Sg	**Sg**	**19 25 09.6**	**-0.3**
SFI	**Santa Sofia**	**0.07**	**288**	Pg	**Pg**	**19 25 07.4**	**-0.2**
SFI				Sg	**Sg**	**19 25 09.6**	**-0.3**
ASQU	**Asqua**	**0.14**	**232**	Pg	**Pb**	**19 25 08.5**	**0.0**
ASQU				Sg	**Sg**	**19 25 11.2**	**+0.1**
89nm,0.2s							
ASQU	**Asqua**	**0.14**	**232**	Pg	**Pb**	**19 25 08.5**	**0.0**
ASQU				Sg	**Sg**	**19 25 11.2**	**+0.1**
89nm,0.2s							
VMG	**Vicchio**	**0.30**	**285**	Pg	**Pb**	**19 25 11.9**	**+0.7**
VMG				Sg	**Sb**	**19 25 17.7**	**+1.9**
VMG	**Vicchio**	**0.30**	**285**	Pg	**Pb**	**19 25 11.9**	**+0.7**
VMG				Sg	**Sb**	**19 25 17.7**	**+1.9**
BADI	**Badiali**	**0.43**	**149**	Pg	**Pg**	**19 25 12.5**	**-0.6**
BADI				Sg	**Sb**	**19 25 19.7**	**+0.1**
369nm,0.3s							
BADI	**Badiali**	**0.43**	**149**	Pg	**Pg**	**19 25 12.5**	**-0.6**
BADI				Sg	**Sb**	**19 25 19.7**	**+0.1**
369nm,0.3s							
SEI	**Scarperia**	**0.46**	**292**	Pg	**Pb**	**19 25 14.5**	**+0.6**
SEI				Sg	**Sb**	**19 25 22.7**	**+2.3**
SEI	**Scarperia**	**0.46**	**292**	Pg	**Pb**	**19 25 14.5**	**+0.6**
SEI				Sg	**Sb**	**19 25 22.7**	**+2.3**
IMOL	**Imola, Italy**	**0.50**	**343**	Pg	**Pb**	**19 25 15.9**	**+1.4**
54nm,0.3s							
IMOL	**Imola, Italy**	**0.50**	**343**	Pg	**Pb**	**19 25 15.9**	**+1.4**
54nm,0.3s							
ATPC	**Poggio Castell**	**0.55**	**137**	Pg	**Pg**	**19 25 14.4**	**-0.8**
ATPC				Sg	**Sb**	**19 25 23.2**	**+0.2**
203nm,0.3s							
ATPC	**Poggio Castell**	**0.55**	**137**	Pg	**Pg**	**19 25 14.4**	**-0.8**
ATPC				Sg	**Sb**	**19 25 23.2**	**+0.2**
203nm,0.3s							
PIEI	**Pieia**	**0.55**	**129**	Pg	**Pg**	**19 25 14.3**	**-1.0**
PIEI				Sg	**Sb**	**19 25 22.6**	**-0.5**
88nm,0.2s							
PIEI	**Pieia**	**0.55**	**129**	Pg	**Pg**	**19 25 14.3**	**-1.0**
PIEI				Sg	**Sb**	**19 25 22.6**	**-0.5**
88nm,0.2s							
ATVO	**AVT- Monte Val**	**0.60**	**146**	Pg	**Pg**	**19 25 15.5**	**-0.7**
ATVO				Sg	**Sb**	**19 25 25.2**	**+0.6**
140nm,0.4s							
ATVO	**AVT- Monte Val**	**0.60**	**146**	Pg	**Pg**	**19 25 15.5**	**-0.7**
ATVO				Sg	**Sb**	**19 25 25.2**	**+0.6**
140nm,0.4s							
FSSB	**Fossombrone**	**0.63**	**107**	Pg	**Pg**	**19 25 15.8**	**-1.0**
FSSB				Sg	**Sb**	**19 25 25.6**	**+0.1**
254nm,0.2s							
FSSB	**Fossombrone**	**0.63**	**107**	Pg	**Pg**	**19 25 15.8**	**-1.0**
FSSB				Sg	**Sb**	**19 25 25.6**	**+0.1**
254nm,0.2s							
PESA	**Pesaro**	**0.65**	**85**	Pg	**Pb**	**19 25 17.7**	**+0.5**
172nm,0.4s							
PESA	**Pesaro**	**0.65**	**85**	Pg	**Pb**	**19 25 17.7**	**+0.5**
172nm,0.4s							
FNVD	**Fontana Vidola**	**0.66**	**296**	Pg	**Pb**	**19 25 18.2**	**+0.9**
121nm,0.4s							
FNVD	**Fontana Vidola**	**0.66**	**296**	Pg	**Pb**	**19 25 18.2**	**+0.9**
121nm,0.4s							
FRON	**Frontone**	**0.68**	**122**	Pg	**Pg**	**19 25 16.8**	**-0.7**
74nm,0.3s							
FRON	**Frontone**	**0.68**	**122**	Pg	**Pg**	**19 25 16.8**	**-0.7**
74nm,0.3s							
ATTE	**AVT- Monte Tez**	**0.75**	**156**	Pg	**Pg**	**19 25 18.2**	**-0.7**
95nm,0.3s							
ATTE	**AVT- Monte Tez**	**0.75**	**156**	Pg	**Pg**	**19 25 18.2**	**-0.7**
95nm,0.3s							
MURB	**Monte Urbino**	**0.75**	**145**	Pg	**Pg**	**19 25 18.2**	**-0.8**
207nm,0.3s							
MURB	**Monte Urbino**	**0.75**	**145**	Pg	**Pg**	**19 25 18.2**	**-0.8**
207nm,0.3s							
SSFR	**Montelago di S**	**0.76**	**126**	Pg	**Pg**	**19 25 18.1**	**-0.9**
184nm,0.2s							
SSFR	**Montelago di S**	**0.76**	**126**	Pg	**Pg**	**19 25 18.1**	**-0.9**
184nm,0.2s							
ARVD	**Arcevia**	**0.82**	**118**	Pg	**Pg**	**19 25 18.8**	**-1.5**
43nm,0.4s							
ARVD	**Arcevia**	**0.82**	**118**	Pg	**Pg**	**19 25 18.8**	**-1.5**
43nm,0.4s							
FROS	**Frosini**	**0.88**	**221**	Pg	**Pn**	**19 25 22.4**	**+0.5**
161nm,1.1s							
FROS	**Frosini**	**0.88**	**221**	Pg	**Pn**	**19 25 22.4**	**+0.5**
161nm,1.1s							
SNTG	**Esanatoglia**	**0.96**	**131**	Pg	**Pg**	**19 25 21.8**	**-1.1**
72n

SBF	**Sospel**	**3.26**	**271**	*e*Pn	**Pn**	**19 25 55.4 +0.8**
SBF				*e*Sn	**Sn**	**19 26 33.4 +0.4**
3.2nm,0.4s						
FRF	**La Foret Royal**	**3.85**	**267**	*e*Pn	**Pn**	**19 26 03.9 +1.2**
FRF				*e*Sn	**Sn**	**19 26 47.5 0.0**
1.4nm,0.3s						
FRF	**La Foret Royal**	**3.85**	**267**	*e*Pn	**Pn**	**19 26 03.9 +1.2**
FRF				*e*Sn	**Sn**	**19 26 47.5 0.0**
0.7nm,0.3s						
LMR	**La Mourre**	**3.98**	**264**	*e*Pn	**Pn**	**19 26 05.2 +0.7**
LMR				*e*Sn	**Sn**	**19 26 50.7 -0.1**
0.7nm,0.2s						
LMR	**La Mourre**	**3.98**	**264**	*e*Pn	**Pn**	**19 26 05.2 +0.7**
LMR				*e*Sn	**Sn**	**19 26 50.7 -0.1**
0.3nm,0.2s						
LPG	**La Plagne**	**4.04**	**295**	*e*Pn	**Pn**	**19 26 05.6 +0.1**
LPG				*e*Sn	**Sn**	**19 26 51.1 -1.4**
0.8nm,0.2s						
LPG	**La Plagne**	**4.04**	**295**	*e*Pn	**Pn**	**19 26 05.6 +0.1**
LPG				*e*Sn	**Sn**	**19 26 51.1 -1.4**
0.4nm,0.2s						
ORIF	**Oris-en-Rattie**	**4.47**	**286**	*e*Pn	**Pn**	**19 26 11.9 +0.7**
ORIF				*e*Sn	**Sn**	**19 27 01.4 -1.4**
1.8nm,0.4s						
ORIF	**Oris-en-Rattie**	**4.47**	**286**	*e*Pn	**Pn**	**19 26 11.9 +0.7**
ORIF				*e*Sn	**Sn**	**19 27 01.4 -1.4**
0.9nm,0.4s						
SMRF	**Simiane la Rot**	**4.60**	**273**	*e*Pn	**Pn**	**19 26 13.1 +0.1**
SMRF	**Simiane la Rot**	**4.60**	**273**	*e*Pn	**Pn**	**19 26 13.1 +0.1**
HINF	**Hinteralfeld**	**5.30**	**320**	*e*Pn	**Pn**	**19 26 21.8 -0.8**
HINF				*e*Sn	**Sn**	**19 27 19.7 -3.6**
1.5nm,0.3s						
HINF	**Hinteralfeld**	**5.30**	**320**	*e*Pn	**Pn**	**19 26 21.8 -0.8**
HINF				*e*Sn	**Sn**	**19 27 19.7 -3.6**
0.8nm,0.3s						
KHC	**Kasperske Hory**	**5.37**	**12**	*e*SN	**Sn**	**19 27 25.8 +0.8**
CDF	**Champ du Feu**	**5.57**	**326**	*e*Pn	**Pn**	**19 26 25.6 -0.8**
CDF				*e*Sn	**Sn**	**19 27 26.4 -3.6**
0.6nm,0.3s						
CDF	**Champ du Feu**	**5.57**	**326**	*e*Pn	**Pn**	**19 26 25.6 -0.8**
CDF				*e*Sn	**Sn**	**19 27 26.4 -3.6**
0.3nm,0.3s						
HAU	**Haudompre**	**5.67**	**319**	*e*Pn	**Pn**	**19 26 26.9 -0.9**
HAU				*e*Sn	**Sn**	**19 27 28.7 -3.8**
2.2nm,0.3s						
HAU	**Haudompre**	**5.67**	**319**	*e*Pn	**Pn**	**19 26 26.9 -0.9**
HAU				*e*Sn	**Sn**	**19 27 28.7 -3.8**
1.1nm,0.3s						

*ISCJB **24** 19:27:39.0±0.6,6°.75N±0°.05×73°.05W±0°.06,h158km±5km, Error ellipse: s-maj=11.8km s-min=4.9km az=40.9*
*FUNV **24** 19:27:40.1,6°.78N×73°.13W,h169km,MW3.0*
*RSNC **24** 19:27:42.1±0.7,6°.76N×73°.13W,h139km±4km,ML2.8*
ISC 24 19:27:38.5±1.5,**6°.77N**±0°.05×**73°.08W**±0°.06,**h164**km±9km,
n21,σ1°**38**/34,**3C-1D, Northern Colombia**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BARC	**Barichara**	**0.20**	**211**	*i* P	**Pn**	**19 28 01.2**	**+0.3**
BARC				*i*		19 28 01.5	
comp=Z,150nm,0.1s							
BARC				*e*S	**Sn**	**19 28 15.3**	**-2.5**
PAMC	**Pamplona, Colo**	**0.68**	**33**	⇓*i*P	**Pn**	**19 28 04.0**	**+1.0**
PAMC				*e*S	**Sn**	**19 28 20.6**	**-1.1**
BRRC	**Barranca, Sant**	**0.71**	**298**	⇑*i*P	**Pn**	**19 28 03.1**	**+0.4**
BRRC				*i*		19 28 03.6	
comp=Z,244nm,0.1s							
BRRC				*e*S	**Sn**	**19 28 19.7**	**-1.4**
RUSC	**La Rusia**	**0.87**	**180**	*e*P	**Pn**	**19 28 05.1**	**+0.9**
RUSC				*e*S	**Sn**	**19 28 22.5**	**-1.5**
RUSC				*i*		19 28 24.8	
comp=Z,63nm,0.3s							
GRMC	**Gramalote, San**	**0.98**	**16**	*i* P	**Pn**	**19 28 07.2**	**+2.5**
GRMC				*e*S	**Sn**	**19 28 26.3**	**+1.5**
GRMC				*i*		19 28 27.8	
comp=Z,107nm,0.4s							
CBRI	**Barrientos, No**	**0.98**	**16**	*e*P	**Pn**	**19 28 05.8**	**+1.1**
CBRI				*e*S	**Sn**	**19 28 23.9**	**-1.0**
CAPV	**Capacho**	**1.33**	**35**	⇑*i*P	**Pn**	**19 28 09.4**	**+1.6**
CAPV				*e*S	**Sn**	**19 28 30.6**	**+0.3**
OCAC	**Ocana**	**1.48**	**351**	*e*P	**Pn**	**19 28 10.3**	**+1.1**
OCAC				*e*S	**Sn**	**19 28 32.2**	**-0.6**
OCAC				*i*		19 28 33.9	
comp=Z,83nm,0.4s							
NORC	**Norcasia**	**2.15**	**236**	*e*P	**Pn**	**19 28 17.1**	**+0.8**
NORC				*e*S	**Sn**	**19 28 44.5**	**-0.9**
SOCV	**Socops**	**2.67**	**55**	*e*P	**Pn**	**19 28 23.8**	**+1.3**
SOCV				*e*S	**Sn**	**19 28 55.4**	**-1.0**
VIGV	**El Vigia**	**2.67**	**39**	⇑*i*P	**Pn**	**19 28 23.9**	**+1.5**
VIGV				*e*S	**Sn**	**19 28 56.4**	**-0.1**
TOLC	**Tolima**	**3.11**	**226**	*e*P	**Pn**	**19 28 30.1**	**+1.9**
DBBC	**Dabeiba**	**3.12**	**275**	*e*P	**Pn**	**19 28 29.4**	**+1.3**
PRAC	**Prado**	**3.53**	**211**	*e*P	**Pn**	**19 28 35.3**	**+2.1**
PRAC				*e*S	**Sn**	**19 29 15.5**	**-0.2**
VIRV	**Villa del Rosa**	**3.77**	**10**	*e*P	**Pn**	**19 28 36.3**	**0.0**
VIRV				*e*S	**Sn**	**19 29 18.1**	**-3.1**
CURV	**Curarigua**	**4.46**	**43**	*e*P	**Pn**	**19 28 46.1**	**+0.9**
TEPV	**Terepaima**	**4.99**	**50**	*e*P	**Pn**	**19 28 53.1**	**+1.0**
BAUV	**El Baul**	**5.44**	**66**	*e*P	**Pn**	**19 28 57.8**	**-0.2**
MAPV	**Macapo**	**5.49**	**56**	*e*P	**Pn**	**19 28 59.3**	**+0.5**
MONV	**Montecano**	**6.00**	**30**	*e*P	**Pn**	**19 29 05.4**	**+0.1**
CUPV	**Cœpira**	**7.92**	**65**	*e*P	**Pn**	**19 29 30.1**	**-0.8**

*ISCJB **24** 19:38:21.1±2.1,31°.35S±0°.04×72°.12W±0°.10,h17km±17km, mb4.3/5,Error ellipse: s-maj=14.1km s-min=5.9km az=2.9*
*IDC **24** 19:38:21.0±1.6,31°.31S×71°.86W,h0km,mb4.3/1, mb1 4.0/4,mb1mx3.7/23,mbtmp3.9/4,ML3.8/3,Error ellipse: s-maj=62.4km s-min=38.3km az=100.0*
*NEIC **24** 19:38:23.5±2.3,31°.29S×71°.95W,h18km±14km,mb4.4/4, Error ellipse: s-maj=13.9km s-min=5.2km az=83.0*
*GUC **24** 19:38:24.4±0.5,31°.52S×71°.53W,h76km±16km,ML4.3*
ISC 24 19:38:22.9±2.5,**31°.33S**±0°.05×**71°.9W**±0°.1,**h11**km±15km,
n34,σ1°**26**/39,**mb4.4**/5,**1C, Near coast of central Chile**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TLL	**Tololo Astrono**	**1.48**	**39**	*e*P	**Pb**	**19 38 50.5**	**-0.1**
TLL				*e*S	**Sn**	**19 39 09.7**	**+0.6**
TLL				IAML		19 39 15.2	
comp=N,6μm,0.6s							
LSCH	**La Serena**	**1.52**	**21**	*i* P	**Pb**	**19 38 51.2**	**+0.2**
LSCH				*i* S	**Sg**	**19 39 12.0**	**+0.3**
LSCH				IAML		19 39 13.3	
comp=N,4μm,0.5s							
ROC1	**El Roble**	**1.80**	**156**	*e*Pn	**Pn**	**19 38 54.2**	**+0.1**
ROC1				*e*Sn	**Sn**	**19 39 16.7**	**-0.4**
LCO	**Las Campanas**	**2.52**	**24**	⇑*i*P	**Pn**	**19 39 04.3**	**+0.3**
LCO				*i* S	**Sn**	**19 39 35.7**	**+0.8**
LCO				IAML		19 39 44.7	
comp=E,2μm,0.7s							
LCO	**Las Campanas**	**2.52**	**24**	*e*Pn	**Pn**	**19 39 04.5**	**+0.4**
LCO				*e*Sn	**Sn**	**19 39 34.5**	**-0.4**
VACH	**Vallenar**	**2.91**	**20**	*i* P	**Pn**	**19 39 10.4**	**+1.2**
VACH				*i* S	**Sn**	**19 39 45.0**	**+0.9**
PB10	**IPOC Station P**	**7.87**	**9**	*e*Pn	**Pn**	**19 40 16.6**	**-0.7**
LVC	**Limon Verde**	**9.07**	**18**	*e*Pn	**Pn**	**19 40 33.6**	**-0.6**
PLCA	**Paso Flores**	**9.45**	**174**	Pn	**Pn**	**19 40 39.3**	**+0.3**
comp=E,0.2nm,0.3s,baz=354,slow=9.7,SNR=3.5							
PB01	**IPOC Station P**	**10.46**	**12**	*e*Pn	**Pn**	**19 40 51.4**	**-1.5**
TRQA	**Tornquist**	**10.55**	**132**	*e*Pn	**Pn**	**19 40 55.9**	**+1.8**
PB11	**IPOC Station P**	**11.69**	**10**	*e*Pn	**Pn**	**19 41 08.6**	**-1.3**
CPUP	**Villa Florida**	**13.69**	**72**	Pn	**Pn**	**19 41 36.9**	**-0.1**
comp=E,0.2nm,0.3s,baz=274,slow=13,SNR=2.2							
LPAZ	**La Paz**	**15.36**	**14**	Pn	**Pn**	**19 42 00.4**	**+0.2**
comp=E,0.1nm,0.3s,baz=194,slow=7.6,SNR=12							
LPAZ	**La Paz**	**15.36**	**14**	*e*Pn	**Pn**	**19 42 00.4**	**+0.2**
LPAZ				*e*sP	**P**	**19 42 01.4**	**-3.5**
SAML	**Samuel**	**23.69**	**22**	*e*P	**P**	**19 43 34.7**	**-0.1**
comp=E,4.2nm,0.8s							
OTAV	**Otavalo**	**32.01**	**348**	*e*P	**P**	**19 44 49.8**	**-0.1**
comp=E,10.0nm,1.5s							
PTGA	**Pitinga**	**32.45**	**23**	*e*P	**P**	**19 44 52.5**	**-0.8**
comp=E,4.1nm,1.0s							
RUSC	**La Rusia**	**37.03**	**358**	*e*P	**P**	**19 45 33.8**	**+0.5**
CCM	**Cathedral Cave**	**71.35**	**344**	*e*P	**P**	**19 49 45.9**	**+3.4**
LAZ	**Ladron**	**73.33**	**330**	*e*P	**P**	**19 49 52.8**	**-2.0**
LCMT	**Little Creek M**	**78.23**	**327**	*e*P	**P**	**19 50 25.9**	**+3.3**
comp=E,9.4nm,1.0s							
TOA0	**Torodi Ar. Sit**	**83.17**	**70**	*e*P	**P**	**19 50 48.7**	**-0.8**
TORD	**Torodi Ar. Bea**	**83.17**	**70**	P	**P**	**19 50 48.8**	**-0.7**
comp=E,1.9nm,0.7s,baz=252,slow=4.6,SNR=13							
TOA1	**Torodi Ar. Sit**	**83.18**	**70**	*e*P	**P**	**19 50 48.8**	**-0.7**
H11S2	**WAKE ISLAND Hy**	**25.91**	**271**	T	T	22 16 15.3	
baz=114							
H11S1	**WAKE ISLAND Hy**	**25.92**	**271**	T	T	22 16 14.7	
baz=114							
H11S3	**WAKE ISLAND Hy**	**25.92**	**271**	T	T	22 16 15.7	
baz=114							
BVAR	**Borovoye Array**	**145.20**	**40**	PKPbc	**PKPdf**	**19 57 59.5**	**-0.6**
comp=E,1.0nm,0.7s,baz=319,slow=4.2,SNR=6.5							
KURBB	**Kurchatov Arra**	**150.79**	**40**	PKPbc	**PKPbc**	**19 58 14.6**	**-0.3**
comp=E,0.9nm,0.7s,baz=297,slow=3.2,SNR=12							
KURK	**Kurchatov**	**150.79**	**40**	*e*PKPbc	**PKPbc**	**19 58 14.6**	**-0.3**
ZAA1	**Zalesovo Array**	**151.87**	**30**	*e*PKPbc	**PKPbc**	**19 58 16.8**	**-0.5**
ZAA0	**Zalesovo Array**	**151.87**	**30**	*e*PKPbc	**PKPbc**	**19 58 16.8**	**-0.5**
ZAA0				*e*PKPab	**PKPab**	**19 58 25.1**	**-1.3**
ZALV	**Zalesovo Beam**	**151.87**	**30**	PKPbc	**PKPbc**	**19 58 16.8**	**-0.5**
comp=E,3.5nm,0.7s,baz=318,slow=1.9,SNR=18							

*NIED **24** 19:41:00,36°.50N×141°.80E,h11km,Mw4.1 Best double couple: M0=1.59000×10^15 NP1:φs342.00000°,δ45.00000°, λ76.00000°. NP2:φs182.00000°,δ47.00000°,λ104.00000°.*
*ISCJB **24** 19:41:32.1±1.5,36°.45N±0°.03×142°.16E±0°.05,h5km±9km, mb4.3/44,MS3.6/1,Error ellipse: s-maj=6.3km s-min=4.5km az=10.1*
*IDC **24** 19:41:33.5±0.5,36°.45N×142°.09E,h0km,mb3.9/23, mb1 4.1/29,mb1mx4.0/64,mbtmp4.0/29,ML3.3/4,MS3.2/4, Ms1 3.2/4,ms1mx2.8/51,Error ellipse: s-maj=14.5km s-min=12.7km az=96.0*
*JMA **24** 19:41:38.1±0.2,36°.52N×141°.80E,h45km,M3.9*
*NEIC **24** 19:41:38.4±0.2,36°.42N×142°.06E,h35km,mb4.7/22,Error ellipse: s-maj=5.9km s-min=5.2km az=116.0*
ISC 24 19:41:34.5±2.0,**36°.50N**±0°.04×**141°.99E**±0°.06,**h4**km±12km,
n109,σ1°**14**/108,**mb4.3**/44,**Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**1.12**	**302**	P	**Pg**	**19 41 55.8**	**-0.3**
JHO	**Hitachi**	**1.15**	**276**	P	**Pg**	**19 41 55.6**	**-0.8**
CHOJ	**Chosi**	**1.21**	**229**	P	**Pb**	**19 41 57.7**	**-0.3**
JFK	**Kawauchi**	**1.24**	**314**	P	**Pb**	**19 41 57.7**	**-0.8**
JMM	**Marumori**	**1.66**	**325**	P	**Pn**	**19 42 03.6**	**-0.8**
JMM				*e*S	**Sn**	**19 42 22.9**	**-3.2**
JFT	**Otama**	**1.66**	**308**	P	**Pn**	**19 42 04.7**	**+0.3**
JIO	**Ouri**	**2.01**	**346**	P	**Pn**	**19 42 09.0**	**-0.2**
JIO				*e*S	**Sn**	**19 42 35.0**	**+0.2**
BSO1	**Boso 1**	**2.02**	**204**	P	**Pn**	**19 42 09.3**	**+0.5**
BSO1				*e*S	**Sn**	**19 42 35.5**	**+1.3**
JFY	**Yanaizu**	**2.04**	**297**	P	**Pn**	**19 42 10.3**	**+0.7**
JAG	**Ashikaga**	**2.04**	**269**	P	**Pn**	**19 42 08.8**	**-0.8**
BSO3	**Boso 3**	**2.08**	**216**	P	**Pn**	**19 42 10.6**	**+0.7**
JKT	**Katashina**	**2.22**	**278**	P	**Pn**	**19 42 12.6**	**+0.5**
MJAR	**Matsushiro Arr**	**3.04**	**272**	Pn	**Pn**	**19 42 23.7**	**+0.3**
14nm,0.3s,baz=96,slow=8.1,SNR=148							
MJAR				Sn	**Sb**	**19 43 03.3**	**-3.4**
13nm,0.3s,baz=90,slow=14,SNR=6.1							
MAJO	**Matsushiro**	**3.04**	**272**	*e*Pn	**Pn**	**19 42 24.0**	**+0.6**
MAT	**Matsushiro**	**3.04**	**272**	P	**Pn**	**19 42 24.0**	**+0.6**
MAT				*e*S	**Sn**	**19 42 59.1**	**-1.2**
MJB9	**Matsu-Tunnel**	**3.05**	**272**	*e*Pn	**Pn**	**19 42 24.1**	**+0.7**
JHJ2	**Mitsune**	**3.82**	**208**	*e*Pn	**Pn**	**19 42 32.7**	**-1.4**
JHJ	**Hachijo jima 2**	**3.83**	**209**	Pn	**Pn**	**19 42 33.7**	**-0.5**
101nm,0.3s,baz=306,slow=22,SNR=10							
JHJ				Sn	**Sn**	**19 43 17.9**	**-1.7**
86nm,0.3s,baz=62,slow=23,SNR=8.9							
JHJ				LR	LR	19 43 49.1	
comp=Z,184nm,20.5s,baz=302,slow=36							
INU	**Inuyama**	**4.19**	**256**	*e*Pn	**Pn**	**19 42 40.3**	**+1.1**
ERM	**Erimo**	**5.58**	**9**	*e*Pn	Pn	19 42 55.7	-2.5
ASAJ	**Asahikawa**	**7.62**	**3**	Pn	**Pn**	**19 43 26.5**	**+0.3**
0.6nm,0.3s,baz=209,slow=7.7,SNR=7.7							
ASAJ				Sn	**Sn**	**19 44 51.9**	**-1.1**
0.2nm,0.3s,baz=42,slow=31,SNR=1.9							
ASAJ	**Asahikawa**	**7.62**	**3**	*e*Pn	**Pn**	**19 43 25.8**	**-0.5**
ASAJ				Sn	**Sn**	**19 44 51.9**	**-1.1**
CBIJ	**Chichi jima**	**9.38**	**179**	*e*Pn	Pn	19 43 47.2	-3.3
CBIJ				*e*Sn	Sn	19 45 26.4	-10
JCJ	**Chichijima**	**9.38**	**179**	Pn	Pn	19 43 47.5	-2.9
10nm,0.3s,baz=80,slow=21,SNR=7.6							
JCJ				Sn	Sn	19 45 28.0	-8.4
12nm,0.3s,baz=276,slow=23,SNR=5.7							
JNU	**Nakatsue**	**9.73**	**253**	Pn	**Pn**	**19 43 55.2**	**-0.1**
0.1nm,0.3s,baz=352,slow=7.1,SNR=3.2							
JNU				LR	LR	19 47 26.1	
comp=Z,117nm,18.7s,baz=120,slow=36							
JNU	**Nakatsue**	**9.73**	**253**	*e*Pn	**Pn**	**19 43 55.8**	**+0.4**
USRK	**Ussuriysk Ar.**	**10.82**	**318**	Pn	**Pn**	**19 44 12.8**	**+2.7**
0.9nm,0.3s,baz=112,slow=16,SNR=6.5							
KSRS	**Korea Array**	**11.29**	**279**	Pn	**Pn**	**19 44 20.7**	**+4.1**
0.0nm,0.3s,baz=92,slow=14,SNR=6.3							
KSRS				LR	LR	19 48 37.0	
comp=Z,88nm,18.6s,baz=90,slow=37							
KSAR	**Wonju Array Be**	**11.32**	**279**	Pn	**Pn**	**19 44 20.7**	**+3.7**
CN2	**Changchun**	**14.58**	**305**	*e*P	**P**	**19 45 11.8**	**+3.6**
CN2				pmax	pmax		
comp=Z,10.0nm,0.6s							
KLR	**Kul'dur**	**14.75**	**333**	Pn	**P**	**19 45 10.0**	**0.0**
comp=Z,0.1nm,0.3s,baz=132,slow=12,SNR=3.2							
YAK	**Yakutsk**	**26.69**	**347**	*e*P	**P**	**19 47 13.5**	**-0.8**
comp=Z,12nm,0.8s							
SEY	**Seymchan**	**27.23**	**10**	P	**P**	**19 47 20.0**	**+0.9**
comp=Z,2.9nm,1.0s,baz=206,slow=5.2,SNR=5.6							
H11N2	**WAKE ISLAND Hy**	**27.48**	**121**	T	T	20 16 02.2	
baz=313,slow=75,SNR=59							
H11N1	**WAKE ISLAND Hy**	**27.49**	**121**	T	T	20 16 12.8	
baz=313,slow=75,SNR=53							
H11N3	**WAKE ISLAND Hy**	**27.50**	**121**	T	T	20 16 06.9	
baz=313,slow=75,SNR=45							
ENH	**Enshi**	**27.75**	**267**	*e*P	**P**	**19 47 23.9**	**-0.4**
comp=Z,10nm,0.6s							
ULN	**Ulaanbaatar**	**28.03**	**305**	*e*P	**P**	**19 47 28.0**	**+1.3**
comp=Z,2.9nm,0.8s							
H11S1	**WAKE ISLAND Hy**	**28.19**	**123**	T	T	20 17 05.7	
baz=314,slow=75,SNR=29							
H11S3	**WAKE ISLAND Hy**	**28.19**	**123**	T	T	20 17 05.7	
baz=314,slow=75,SNR=27							
H11S2	**WAKE ISLAND Hy**	**28.20**	**123**	T	T	20 17 02.5	
baz=314,slow=75,SNR=24							
SONA1	**Songino Array**	**28.46**	**305**	*e*P	**P**	**19 47 31.7**	**+1.1**
SONA0	**Songino Array**	**28.46**	**305**	*e*P	**P**	**19 47 31.2**	**+0.7**
comp=Z,3.6nm,0.7s							
SONM	**Songino Array**	**28.46**	**305**	P	**P**	**19 47 31.2**	**+0.7**
comp=Z,3.1nm,0.8s,baz=105,slow=8.7,SNR=13							
GTA	**Gaotai**	**33.16**	**288**	*e*P	**P**	**19 48 13.4**	**+1.3**
GTA				pP	sP	19 48 19.1	+5.2
GTA				sP	pP	19 48 21.8	+8.4
GTA				pmax	pmax		
comp=Z,4.0nm,1.0s							
TIXI	**Tiksi**	**35.87**	**353**	P	**P**	**19 48 34.9**	**-0.1**
comp=Z,0.8nm,0.8s,baz=122,slow=5.6,SNR=4.0							
CM31	**Chiang Mai Arr**	**41.81**	**256**	*e*P	**P**	**19 49 24.8**	**-0.6**
CM31				*e*PcP	**PcP**	**19 51 22.1**	**+0.6**
CMAR	**Chiang Mai Arr**	**41.81**	**256**	P	**P**	**19 49 25.6**	**+0.1**
comp=Z,0.9nm,0.8s,baz=47,slow=8.0,SNR=8.8							
CMAR				PcP	**PcP**	**19 51 22.1**	**+0.6**
comp=Z,0.2nm,0.3s,baz=58,slow=1.3,SNR=4.2							
CM01	**Chiang Mai Arr**	**41.82**	**256**	*e*P	**P**	**19 49 26.2**	**+0.7**
CM01				*e*PcP	**PcP**	**19 51 22.0**	**+0.4**
ZAA0	**Zalesovo Array**	**42.61**	**313**	*e*P	**P**	**19 49 31.5**	**-0.1**
ZAA1	**Zalesovo Array**	**42.61**	**313**	*e*P	**P**	**19 49 31.9**	**+0.4**
ZAA1				*e*PcP	**PcP**	**19 51 23.4**	**-0.2**
ZALV	**Zalesovo Beam**	**42.61**	**313**	P	**P**	**19 49 31.9**	**+0.4**
comp=Z,1.1nm,0.6s,baz=103,slow=6.7,SNR=6.2							
ZALV				PcP	**PcP**	**19 51 23.5**	**-0.2**
comp=Z,0.4nm,0.4s,baz=38,slow=2.6,SNR=2.7							
LSA	**Lhasa**	**42.72**	**276**	*e*P	**P**	**19 49 34.5**	**+1.2**
comp=Z,5.1nm,1.4s							
SBUM	**Sibu**	**43.62**	**226**	*e*P	**P**	**19 49 40.0**	**0.0**
comp=Z,7.2nm,1.3s							
MK01	**Makanchi Array**	**44.79**	**303**	*e*P	**P**	**19 49 49.1**	**-0.2**
MK31	**Makanchi Array**	**44.79**	**303**	*e*P	**P**	**19 49 49.1**	**-0.2**
MK32	**Makanchi Array**	**44.79**	**303**	*e*P	**P**	**19 49 49.5**	**+0.3**
MKAR	**Makanchi Array**	**44.79**	**303**	P	**P**	**19 49 49.5**	**+0.3**
comp=Z,0.7nm,0.6s,baz=90,slow=9.4,SNR=8.9							
MKAR	**Makanchi Array**	**44.79**	**303**	*e*P	**P**	**19 49 49.2**	**0.0**
KSM	**Kuching**	**45.52**	**227**	*e*P	**P**	**19 49 55.6**	**+0.3**
comp=Z,4.4nm,0.8s							
KURK	**Kurchatov**	**46.62**	**309**	*e*P	**P**	**19 50 03.2**	**-0.4**
comp=Z,7.1nm,0.7s							
KURBB	**Kurchatov Arra**	**46.69**	**308**	P	**P**	**19 50 04.0**	**-0.1**
comp=Z,1.4nm,0.7s,baz=82,slow=7.8,SNR=15							
RC01	**Rabbit Creek A**	**48.51**	**37**	*e*P	P	19 50 16.4	-1.7
comp=Z,29nm,1.6s							
HNR	**Honiara**	**48.71**	**156**	P	**P**	**19 50 19.2**	**-1.0**
comp=Z,15nm,0.4s,baz=142,slow=7.3,SNR=3.6							
HNR	**Honiara**	**48.71**	**156**	*e*P	P	19 50 18.2	-1.9
comp=Z,79nm,1.3s							
IL1	**Eielson Array**	**49.70**	**32**	*e*P	P	19 50 23.5	-3.7
ILAR	**Eielson Array**	**49.70**	**32**	P	**P**	**19 50 26.5**	**-0.7**
comp=Z,0.4nm,0.9s,baz=260,slow=6.6,SNR=5.3							
ILB	**Eielson Array**	**49.70**	**32**	*e*P	P	19 50 25.1	-2.1
MTN	**Manton Dam**	**50.14**	**194**	*e*P	**P**	**19 50 30.2**	**-0.7**
comp=Z,47nm,1.4s							
TKM2	**Tokmak 2**	**50.29**	**299**	*e*P	**P**	**19 50 33.6**	**+1.4**
comp=Z,4.9nm,1.0s							
BVAR	**Borovoye Array**	**51.27**	**313**	P	**P**	**19 50 39.3**	**0.0**
comp=Z,0.5nm,0.8s,baz=46,slow=11,SNR=4.1							
BVAR				PcP	**PcP**	**19 51 54.3**	**0.0**
comp=Z,0.7nm,0.6s,baz=54,slow=2.5,SNR=2.8							
KKAR	**Karatay Array**	**53.79**	**301**	*e*P	**P**	**19 50 56.1**	**-2.0**
INK	**Inuvik**	**54.65**	**27**	P	**P**	**19 51 02.7**	**-1.2**
comp=Z,1.1nm,0.7s,baz=321,slow=6.7,SNR=3.8							
INK	**Inuvik**	**54.65**	**27**	*e*P	**P**	**19 51 02.5**	**-1.4**
comp=Z,9.4nm,1.5s							
FITZ	**Fitzroy Crossi**	**56.46**	**199**	*e*P	**P**	**19 51 17.4**	**-0.1**
comp=Z,54nm,1.9s							
WRAB	**Tennant Creek**	**56.59**	**189**	*e*P	**P**	**19 51 17.3**	**-1.1**
comp=Z,12nm,0.6s							
WB2	**Warramunga Arr**	**56.60**	**189**	*e*P	P	19 51 16.0	-2.4
comp=Z,42nm,1.8s							
WR1	**Warramunga Arr**	**56.60**	**189**	*e*P	**P**	**19 51 17.7**	**-0.8**
comp=Z,57nm,2.0s							
WRA	**Warramunga Arr**	**56.60**	**189**	P	**P**	**19 51 17.7**	**-0.8**
comp=Z,2.7nm,0.5s,baz=6.3,slow=6.8,SNR=57							
WC3	**Warramunga Arr**	**56.61**	**189**	*e*P	**P**	**19 51 17.2**	**-1.4**
comp=Z,10.0nm,1.0s							
ARU	**Arti**	**57.06**	**319**	P	**P**	**19 51 21.7**	**+0.3**
comp=Z,1.0nm,0.3s,baz=72,slow=3.7,SNR=4.6							
ARU	**Arti**	**57.06**	**319**	*e*P	**P**	**19 51 20.9**	**-0.5**
comp=Z,4.9nm,1.1s							
ABKAR	**Akbulak array**	**58.63**	**311**	*e*P	**P**	**19 51 31.0**	**-1.6**
DLBC	**Dease Lake**	**58.76**	**38**	LR	LR	20 16 28.7	
comp=Z,48nm,21.3s,baz=148,slow=36							
AKTO	**Aktyubinsk**	**59.37**	**312**	P	**P**	**19 51 38.6**	**+0.9**
comp=Z,1.5nm,0.8s,baz=69,slow=9.4,SNR=3.6							
AS01	**Alice Springs**	**60.32**	**188**	*e*P	**P**	**19 51 43.6**	**-0.9**
AS31	**Alice Springs**	**60.33**	**189**	*e*P	**P**	**19 51 43.8**	**-0.7**
comp=Z,2.1nm,0.4s							
ASAR	**Alice Springs**	**60.33**	**189**	P	**P**	**19 51 44.0**	**-0.5**
comp=Z,2.6nm,0.7s,baz=16,slow=7.4,SNR=32							
YKA	**Yellowknife Ar**	**64.04**	**30**	P	**P**	**19 52 08.8**	**-0.1**
comp=Z,0.5nm,0.6s,baz=301,slow=6.5,SNR=6.7							
YKB5	**Yellowknife Ar**	**64.04**	**30**	*e*P	**P**	**19 52 10.0**	**+1.1**
FIA0	**FINESS Array S**	**69.50**	**333**	*e*P	**P**	**19 52 42.4**	**-1.3**
FINES	**FINESS Array B**	**69.50**	**333**	P	**P**	**19 52 42.4**	**-1.3**
comp=Z,1.7nm,0.8s,baz=60,slow=8.2,

BOLV					*i* S		Sg	19 48 24.5	-0.3
EDC	**Edincik**	**1.55**	**323**	*e*PN			**Pg**	**19 48 06.3**	**+0.4**
EDC	**Edincik**	**1.55**	**323**	*e*Pn			**Pg**	**19 48 06.3**	**+0.4**
KNL	**Bal¨–kesir**	**1.66**	**314**	*i* P			**Pn**	**19 48 04.9**	**-0.3**
KNL				*i* S			**Sg**	**19 48 29.3**	**-0.4**
DKL	**Dikili**	**1.70**	**269**	*e*PN			**Pg**	**19 48 08.7**	**-0.1**
DKL	**Dikili**	**1.70**	**269**	*e*Pn			**Pg**	**19 48 08.7**	**-0.1**
GULT	**Gulveren**	**1.71**	**40**	*e*PN			**Pb**	**19 48 07.8**	**+0.1**
GULT	**Gulveren**	**1.71**	**40**	*e*Pn			**Pb**	**19 48 07.8**	**+0.1**
ISP	**Isparta**	**1.72**	**139**	*e*PN			**Pb**	**19 48 07.0**	**-0.8**
ISP	**Isparta**	**1.72**	**139**	P			**Pg**	**19 48 08.5**	**-0.7**
ISP				S			**Sg**	**19 48 32.6**	**+1.2**
ISP	**Isparta**	**1.72**	**139**	*e*Pn			**Pb**	**19 48 07.0**	**-0.8**
ISP	**Isparta**	**1.72**	**139**	P			**Pg**	**19 48 08.5**	**-0.7**
ISP				S			**Sg**	**19 48 32.6**	**+1.2**
AYDN	**Tasoluk**	**1.74**	**213**	P			**Pg**	**19 48 09.1**	**-0.5**
AYDN	**Tasoluk**	**1.74**	**213**	*i* P			**Pg**	**19 48 09.1**	**-0.5**
BAGO	**Egridir - ISPA**	**1.75**	**130**	*i* P			**Pg**	**19 48 06.5**	**0.0**
BAGO				*i* S			**Sb**	**19 48 30.1**	**-0.1**
HRT	**Hereke**	**1.76**	**15**	*e*PN			**Pb**	**19 48 08.9**	**+0.5**
HRT	**Hereke**	**1.76**	**15**	*e*Pn			**Pb**	**19 48 08.9**	**+0.5**
SPNC	**Sapanca-Adapaz**	**1.82**	**31**	*e*PN			**Pb**	**19 48 09.5**	**0.0**
SPNC	**Sapanca-Adapaz**	**1.82**	**31**	*e*Pn			**Pb**	**19 48 09.5**	**0.0**
MRMT	**Marmara Adasi**	**1.87**	**323**	*e*PN			**Pb**	**19 48 10.9**	**+0.5**
MRMT	**Marmara Adasi**	**1.87**	**323**	*e*Pn			**Pb**	**19 48 10.9**	**+0.5**
GOLH	**Golhisar**	**1.92**	**169**	P			**Pb**	**19 48 11.8**	**+0.6**
GOLH	**Golhisar**	**1.92**	**169**	*i* P			**Pb**	**19 48 11.8**	**+0.6**
GOLH				*i* S			**Sg**	**19 48 40.5**	**+2.6**
SVRH	**Sivrihisar-ESK**	**1.92**	**79**	*e*PN			**Pb**	**19 48 10.4**	**-0.8**
SVRH	**Sivrihisar-ESK**	**1.92**	**79**	*e*Pn			**Pb**	**19 48 10.4**	**-0.8**
ISK	**Istanbul-Kandi**	**1.94**	**359**	*e*PN			**Pb**	**19 48 11.5**	**0.0**
ISK	**Istanbul-Kandi**	**1.94**	**359**	P			**Pb**	**19 48 12.5**	**+1.0**
ISK				S			**Sg**	**19 48 38.1**	**-0.6**
ISK	**Istanbul-Kandi**	**1.94**	**359**	*e*Pn			**Pb**	**19 48 11.5**	**0.0**
ISK	**Istanbul-Kandi**	**1.94**	**359**	P			**Pb**	**19 48 12.5**	**+1.0**
ISK				S			**Sg**	**19 48 38.1**	**-0.6**
DGB	**¨zmir**	**2.03**	**239**	*i* P			**Pg**	**19 48 14.7**	**-0.5**
BTAS	**Taskesti**	**2.07**	**45**	P			**Pg**	**19 48 14.6**	**-1.2**
BTAS	**Taskesti**	**2.07**	**45**	*i* P			**Pg**	**19 48 14.6**	**-1.2**
BGKT	**Bogazkoy**	**2.07**	**353**	*e*PN			**Pb**	**19 48 13.5**	**-0.2**
BGKT	**Bogazkoy**	**2.07**	**353**	*e*Pn			**Pb**	**19 48 13.5**	**-0.2**
SILT	**Sile**	**2.08**	**12**	*e*PN			**Pb**	**19 48 13.2**	**-0.6**
SILT	**Sile**	**2.08**	**12**	*e*Pn			**Pb**	**19 48 13.2**	**-0.6**
YER	**Yerkesik**	**2.08**	**198**	*e*PN			**Pb**	**19 48 12.9**	**-1.0**
YER	**Yerkesik**	**2.08**	**198**	*e*Pn			**Pb**	**19 48 13.0**	**-1.0**
URLA	**Izmir**	**2.09**	**249**	*i* P			**Pg**	**19 48 15.9**	**-0.3**
MDUB	**Mudurnu**	**2.11**	**50**	*e*PN			**Pb**	**19 48 13.5**	**-1.0**
MDUB	**Mudurnu**	**2.11**	**50**	*e*Pn			**Pb**	**19 48 13.5**	**-1.0**
KLYT	**Kilyos**	**2.13**	**359**	*e*PN			**Pb**	**19 48 14.4**	**-0.3**
KLYT	**Kilyos**	**2.13**	**359**	*e*Pn			**Pb**	**19 48 14.4**	**-0.3**
RKY	**Sarkoy-Tekirda**	**2.15**	**317**	*e*PN			**Pb**	**19 48 15.2**	**+0.2**
RKY	**Sarkoy-Tekirda**	**2.15**	**317**	*e*Pn			**Pb**	**19 48 15.3**	**+0.2**
KAND	**Kocaeli-Kandir**	**2.15**	**23**	P			**Pn**	**19 48 12.2**	**+0.4**
KAND	**Kocaeli-Kandir**	**2.15**	**23**	*i* P			**Pn**	**19 48 12.2**	**+0.4**
CTKS	**Kestanelik-??a**	**2.16**	**348**	*e*PN			**Pb**	**19 48 15.0**	**-0.3**
CTKS	**Kestanelik-??a**	**2.16**	**348**	*e*Pn			**Pb**	**19 48 15.0**	**-0.3**
LPK	**Lapseki**	**2.19**	**306**	*e*PN			**Pb**	**19 48 15.8**	**+0.1**
LPK	**Lapseki**	**2.19**	**306**	*e*Pn			**Pb**	**19 48 15.8**	**+0.1**
KIZT	**Kizilcal**	**2.19**	**95**	*e*PN			**Pn**	**19 48 13.8**	**+1.3**
KIZT	**Kizilcal**	**2.19**	**95**	*e*Pn			**Pn**	**19 48 13.8**	**+1.3**
PRK	**Paraskevi**	**2.19**	**274**	P			**Pn**	**19 48 12.6**	**+0.2**
PRK				S			**Sn**	**19 48 38.2**	**-1.3**
PRK	**Paraskevi**	**2.19**	**274**	P			**Pn**	**19 48 12.6**	**+0.2**
PRK				S			**Sn**	**19 48 38.2**	**-1.3**
ZEY	**¨zmir**	**2.20**	**247**	*i* P			**Pg**	**19 48 18.9**	**+0.4**
SUTC	**Sutluce-Ispart**	**2.23**	**137**	*e*PN			**Pn**	**19 48 14.4**	**+1.3**
SUTC	**Sutluce-Ispart**	**2.23**	**137**	*e*Pn			**Pn**	**19 48 14.4**	**+1.3**
EZN	**Ezine**	**2.25**	**289**	*e*PN			**Pb**	**19 48 16.4**	**-0.4**
EZN	**Ezine**	**2.25**	**289**	*e*Pn			**Pb**	**19 48 16.4**	**-0.4**
GELI	**Tayfur-Gelibol**	**2.38**	**303**	*e*PN			**Pb**	**19 48 18.4**	**-0.6**
GELI	**Tayfur-Gelibol**	**2.38**	**303**	*e*Pn			**Pb**	**19 48 18.4**	**-0.6**
CTYL	**Yalikoy Yolu**	**2.43**	**346**	*e*PN			**Pb**	**19 48 18.7**	**-1.1**
CTYL	**Yalikoy Yolu**	**2.43**	**346**	*e*Pn			**Pb**	**19 48 18.7**	**-1.1**
BOZC	**Bozcaada**	**2.46**	**288**	*i* P			**Pn**	**19 48 16.7**	**+0.6**
ERIK	**Erikli-Kesan**	**2.51**	**309**	*e*PN			**Pb**	**19 48 19.9**	**-1.4**
ERIK	**Erikli-Kesan**	**2.51**	**309**	*e*Pn			**Pb**	**19 48 19.9**	**-1.4**
SIGR	**SIGRI**	**2.51**	**273**	P			**Pn**	**19 48 17.2**	**+0.3**
SIGR				S			**Sn**	**19 48 45.0**	**-2.4**
SIGR	**SIGRI**	**2.51**	**273**	P			**Pn**	**19 48 17.2**	**+0.3**
KESN	**Edirne-Kesan**	**2.51**	**313**	*i* S			**Sg**	**19 48 56.3**	**-0.7**
ALN	**Alexandroupoli**	**2.93**	**308**	P			**Pn**	**19 48 23.3**	**+0.7**
ALN				S			**Sn**	**19 48 58.5**	**+0.7**
ALN	**Alexandroupoli**	**2.93**	**308**	P			**Pn**	**19 48 23.3**	**+0.7**
ALN				S			**Sn**	**19 48 58.5**	**+0.7**
LOD	**Lodumlu**	**2.95**	**74**	*e*PN			**Pn**	**19 48 24.7**	**+1.8**
LOD	**Lodumlu**	**2.95**	**74**	*e*Pn			**Pn**	**19 48 24.7**	**+1.8**
SMTH	**Samothraki Isl**	**3.05**	**297**	P			**Pn**	**19 48 25.0**	**+0.7**
SMTH				S			**Sn**	**19 48 59.2**	**-1.6**
SMTH	**Samothraki Isl**	**3.05**	**297**	P			**Pn**	**19 48 25.0**	**+0.7**
SMTH				S			**Sn**	**19 48 59.2**	**-1.6**

*ISK **24** 20:07:37.6, 39.°15N×28.°97E, h5km, MD2.7*
*DDA **24** 20:07:37.6, 39.°11N×29.°00E, h11km, Md2.7*
*CSEM **24** 20:07:38.0±0.1, 39.°14N×28.°98E, h5km, MD2.7, Error ellipse: s-maj=2.3km s-min=2.1km az=13.0*

ISC 24 20:07:37.7±0.9, 39.°12N±0.°02×28.°99E±0.°02, h16km±7km, n37, σ0.°31/50, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.22**	**251**	P		**20 07 42.9**	**+0.1**
DEMI				S		**20 07 46.1**	**-0.2**
DEMI	**Demirci**	**0.22**	**251**	*i* P		**20 07 42.9**	**+0.1**
DEMI				*i* S		**20 07 46.1**	**-0.2**
GDZ	**Gediz**	**0.39**	**94**	P		**20 07 45.6**	**0.0**
GDZ				S		**20 07 51.0**	**-0.1**
GDZ	**Gediz**	**0.39**	**94**	*i* P		**20 07 45.6**	**0.0**
GDZ				*i* S		**20 07 51.0**	**-0.1**
TVSB	**Tavsanli**	**0.50**	**48**	*e*PG		**20 07 47.6**	**-0.1**
TVSB				*e*SG		**20 07 54.3**	**-0.1**
TVSB	**Tavsanli**	**0.50**	**48**	*e*Pg		**20 07 47.6**	**-0.1**
TVSB				*e*Sg		**20 07 54.3**	**-0.1**
DURS	**Dursunbey**	**0.63**	**321**	P		**20 07 50.0**	**-0.1**
DURS	**Dursunbey**	**0.63**	**321**	*i* P		**20 07 50.0**	**-0.1**
KULA	**Kula-Manisa**	**0.65**	**203**	*e*PG		**20 07 50.8**	**+0.1**
KULA	**Kula-Manisa**	**0.65**	**203**	*e*Pg		**20 07 50.8**	**+0.1**
KHAL	**Karahalli**	**0.84**	**152**	P		**20 07 54.4**	**+0.4**
KHAL				S		**20 08 06.9**	**-0.2**
KHAL	**Karahalli**	**0.84**	**152**	*i* P		**20 07 54.4**	**+0.4**
KHAL				*i* S		**20 08 06.9**	**-0.2**
BALB	**Balikesir**	**1.00**	**302**	*e*PG		**20 07 56.8**	**+0.1**
BALB	**Balikesir**	**1.00**	**302**	*e*Pg		**20 07 56.8**	**+0.1**
IGD	**Bursa**	**1.16**	**8**	*i* P		**20 07 59.0**	**-0.3**
IGD				*i* S		**20 08 16.3**	**+1.1**
BALY	**Balya**	**1.23**	**301**	P		**20 08 01.6**	**+0.2**
BALY				S		**20 08 18.2**	**+0.7**
BALY	**Balya**	**1.23**	**301**	*i* P		**20 08 01.6**	**+0.2**
BALY				*i* S		**20 08 18.2**	**+0.7**
KCTX	**Karacabey (Bur**	**1.25**	**337**	*e*PN		**20 08 01.0**	**+0.1**
KCTX	**Karacabey (Bur**	**1.25**	**337**	*e*Pn		**20 08 01.0**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.25**	**356**	*e*PN		**20 08 01.1**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.25**	**356**	*e*Pn		**20 08 01.1**	**+0.1**
CAVI	**Cavuskoy**	**1.27**	**31**	*e*PN		**20 08 02.1**	**-0.1**
CAVI	**Cavuskoy**	**1.27**	**31**	*e*Pn		**20 08 02.1**	**-0.1**
IZI	**Iznik**	**1.28**	**17**	*e*PN		**20 08 02.1**	**-0.2**
IZI	**Iznik**	**1.28**	**17**	*e*Pn		**20 08 02.1**	**-0.2**
BORA	**Eskisehir**	**1.37**	**56**	P		**20 08 03.4**	**+0.4**
BORA				S		**20 08 22.0**	**+0.1**
BORA	**Eskisehir**	**1.37**	**56**	*i* P		**20 08 03.4**	**+0.4**
BORA				*i* S		**20 08 22.0**	**+0.1**
GONE	**Gonen-Balikesi**	**1.37**	**313**	*e*PN		**20 08 03.6**	**-0.5**
GONE	**Gonen-Balikesi**	**1.37**	**313**	*e*Pn		**20 08 03.6**	**-0.5**
AYDB	**Zeytinkoy-Aydi**	**1.45**	**217**	*e*PN		**20 08 05.6**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**1.45**	**217**	*e*Pn		**20 08 05.6**	**0.0**
ARMT	**Armutlu**	**1.45**	**356**	*e*PN		**20 08 04.8**	**+0.4**
ARMT	**Armutlu**	**1.45**	**356**	*e*Pn		**20 08 04.8**	**+0.4**
EDC	**Edincik**	**1.50**	**325**	*e*PN		**20 08 05.0**	**-0.3**
EDC	**Edincik**	**1.50**	**325**	*e*Pn		**20 08 05.0**	**-0.3**
GULT	**Gulveren**	**1.77**	**41**	*e*PN		**20 08 09.9**	**+0.1**
GULT	**Gulveren**	**1.77**	**41**	*e*Pn		**20 08 09.9**	**+0.1**

*NIED **24** 20:11:00, 38.°30N×141.°90E, h59km, Mw3.8 Best double couple: M0=4.91000×10^14 NP1:φs=356.00000°, δ45.00000°, λ64.00000°. NP2:φs=211.00000°, δ50.00000°, λ113.00000°.*
*ISCJB **24** 20:11:55.0±0.9, 38.°27N±0.°04×142.°00E±0.°09, h68km±6km, mb3.9/6, Error ellipse: s-maj=12.5km s-min=5.4km az=18.9*
*JMA **24** 20:11:56.8±0.1, 38.°28N×141.°88E, h62km±1km, M3.8*
JMA Felt I J1.
*IDC **24** 20:11:56.3±2.4, 38.°35N×142.°22E, h69km±20km, mb3.7/6, mb1 3.7/10, mb1mx3.4/44, mbtmp3.9/10, Error ellipse: s-maj=23.3km s-min=11.9km az=108.0*

ISC 24 20:11:55.8±1.5, 38.°26N±0.°05×142.°03E±0.°10, h56km±11km, n31, σ1.°51/38, mb4.1/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.57**	**290**	P		**20 12 08.7**	**+0.5**
JIO				S		**20 12 16.9**	**-0.3**
OFUJ	**Ofunato**	**0.86**	**341**	P		**20 12 12.7**	**+0.8**
OFUJ				S		**20 12 24.3**	**+0.5**
JMK	**Ichinoseki**	**0.94**	**318**	P		**20 12 13.4**	**+0.6**
JMK				S		**20 12 25.2**	**-0.2**
JMM	**Marumori**	**1.05**	**248**	P		**20 12 14.0**	**-0.3**
JMM				S		**20 12 26.7**	**-1.4**
JOU	**Okura**	**1.08**	**276**	P		**20 12 14.7**	**0.0**
JOU				S		**20 12 27.7**	**-1.1**
JFK	**Kawauchi**	**1.28**	**226**	P		**20 12 17.5**	**+0.1**
JFK				S		**20 12 33.0**	**-0.5**
JOM	**Ohasama**	**1.34**	**335**	P		**20 12 18.9**	**+0.7**
JOM				S		**20 12 35.3**	**+0.3**
JYK	**Kaneyama**	**1.46**	**297**	P		**20 12 19.9**	**0.0**
JYK				S		**20 12 37.5**	**-0.5**
JFT	**Otama**	**1.53**	**241**	P		**20 12 21.2**	**+0.4**
JFT				S		**20 12 38.8**	**-0.8**
JYS	**Shirataka**	**1.54**	**269**	P		**20 12 21.1**	**+0.1**
JYS				S		**20 12 39.1**	**-0.9**
JRG	**Rokugo**	**1.57**	**317**	P		**20 12 21.7**	**+0.3**
JRG				S		**20 12 40.9**	**+0.3**
MJAR	**Matsushiro Arr**	**3.49**	**242**	P		**20 12 48.5**	**+0.9**
	3.5nm,0.3s,baz=358,slow=10,SNR=33						
MJAR				S		**20 13 34.2**	**+6.5**
	2.4nm,0.3s,baz=336,slow=30,SNR=5.5						
MAT	**Matsushiro**	**3.49**	**242**	P		**20 12 49.0**	**+1.4**
MAT				S		**20 13 30.0**	**+2.3**
JHJ	**Hachijo jima 2**	**5.45**	**200**	S		**20 14 12.2**	**-3.5**
	27nm,0.3s,baz=40,slow=22,SNR=6.5						
ASAJ	**Asahikawa**	**5.87**	**4**	P		**20 13 20.0**	**-0.1**
	0.8nm,0.3s,baz=235,slow=10,SNR=7.5						
ASAJ				S		**20 14 24.6**	**-1.3**
	1.3nm,0.3s,baz=72,slow=20,SNR=4.3						
USRK	**Ussuriysk Ar.**	**9.61**	**311**	P		**20 14 12.1**	**+0.8**
	1.2nm,0.3s,baz=127,slow=14,SNR=17						
KSRS	**Korea Array**	**11.18**	**270**	P		**20 14 34.7**	**+1.9**
	0.2nm,0.3s,baz=75,slow=14,SNR=3.6						
SONM	**Songino Array**	**27.53**	**302**	P		**20 17 36.8**	**-0.4**
	0.7nm,0.5s,baz=108,slow=8.7,SNR=6.2						
H11N2	**WAKE ISLAND Hy 28.39**	**124**		T		20 48 08.8	
	baz=316,slow=76,SNR=32						
H11N1	**WAKE ISLAND Hy 28.40**	**124**		T		20 48 09.4	
	baz=316,slow=76,SNR=40						
H11N3	**WAKE ISLAND Hy 28.41**	**124**		T		20 48 07.0	
	baz=316,slow=76,SNR=27						
H11S1	**WAKE ISLAND Hy 29.15**	**126**		T		20 49 03.2	
	baz=318,slow=76,SNR=49						
H11S3	**WAKE ISLAND Hy 29.15**	**126**		T		20 49 04.6	
	baz=318,slow=76,SNR=47						
H11S2	**WAKE ISLAND Hy 29.16**	**126**		T		20 49 05.1	
	baz=318,slow=76,SNR=42						
ZALV	**Zalesovo Beam**	**41.46**	**311**	P		**20 19 36.6**	**-0.2**
	1.7nm,0.5s,baz=85,slow=7.4,SNR=11						
MKAR	**Makanchi Array**	**43.89**	**301**	P		**20 19 56.2**	**-0.5**
	2.3nm,0.7s,baz=85,slow=9.9,SNR=26						
ILAR	**Eielson Array**	**48.20**	**33**	pP		20 20 46.9	+1.8
	0.7nm,0.7s,baz=261,slow=6.3,SNR=7.9						
BVAR	**Borovoye Array**	**50.11**	**312**	P		**20 20 44.3**	**-0.7**
	0.3nm,0.4s,baz=69,slow=7.9,SNR=2.5						
WRA	**Warramunga Arr**	**58.34**	**189**	P		**20 21 44.6**	**-0.5**
	2.0nm,0.4s,baz=5.8,slow=7.2,SNR=50						
ASAR	**Alice Springs**	**62.07**	**188**	P		**20 22 10.1**	**-0.4**
	0.7nm,0.5s,baz=8.9,slow=5.1,SNR=16						
LPAZ	**La Paz**	**145.65**	**59**	PKPbc		**PKPdf**	**20 31 28.7**	**-0.2**
	0.8nm,0.6s,baz=54,slow=3.0,SNR=4.3						

*ISK **24** 20:13:16.4, 39.°11N×29.°05E, h5km, MD2.8*
*DDA **24** 20:13:16.6, 39.°08N×29.°03E, h7km, Md2.6*
*CSEM **24** 20:13:17.0±0.1, 39.°10N×29.°03E, h5km, MD2.6, Error ellipse: s-maj=2.2km s-min=2.0km az=173.0*

ISC 24 20:13:17.1±1.1, 39.°11N±0.°02×29.°03E±0.°02, h2km±10km, n47, σ0.°35/64, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**256**	P		**20 13 21.7**	**-0.2**
DEMI				S		**20 13 25.1**	**-0.1**
DEMI	**Demirci**	**0.25**	**256**	*i* P		**20 13 21.7**	**-0.2**
DEMI				*i* S		**20 13 25.1**	**-0.1**
GDZ	**Gediz**	**0.35**	**93**	P		**20 13 23.9**	**+0.1**
GDZ				S		**20 13 29.2**	**+0.8**
GDZ	**Gediz**	**0.35**	**93**	*i* P		**20 13 23.9**	**+0.1**
GDZ				*i* S		**20 13 29.2**	**+0.8**
TVSB	**Tavsanli**	**0.48**	**44**	*e*PG		**20 13 26.3**	**0.0**
TVSB				*e*SG		**20 13 32.9**	**+0.4**
TVSB	**Tavsanli**	**0.48**	**44**	*e*Pg		**20 13 26.3**	**0.0**
TVSB				*e*Sg		**20 13 32.9**	**+0.4**
DST	**Dursunbey**	**0.59**	**327**	*e*PG		**20 13 28.4**	**0.0**
DST	**Dursunbey**	**0.59**	**327**	*e*Pg		**20 13 28.4**	**0.0**
DURS	**Dursunbey**	**0.66**	**319**	P		**20 13 29.4**	**-0.2**
DURS	**Dursunbey**	**0.66**	**319**	*i* P		**20 13 29.4**	**-0.2**
KULA	**Kula-Manisa**	**0.66**	**206**	*e*PG		**20 13 29.1**	**-0.5**
KULA	**Kula-Manisa**	**0.66**	**206**	*e*Pg		**20 13 29.1**	**-0.5**
KHAL	**Karahalli**	**0.82**	**154**	P		**20 13 32.5**	**-0.3**
KHAL				S		**20 13 43.4**	**+0.1**
KHAL	**Karahalli**	**0.82**	**154**	*i* P		**20 13 32.5**	**-0.3**
KHAL				*i* S		**20 13 43.4**	**+0.1**
KHL	**Karahalli**	**0.87**	**154**	*e*PG		**20 13 33.8**	**0.0**
KHL	**Karahalli**	**0.87**	**154**	*e*Pg		**20 13 33.8**	**0.0**
AKHS	**Akhisar**	**0.97**	**257**	P		**20 13 36.5**	**-0.1**
AKHS				S		**20 13 49.0**	**+0.6**
AKHS	**Akhisar**	**0.97**	**257**	*i* P		**20 13 36.5**	**-0.1**
AKHS				*i* S		**20 13 49.0**	**+0.6**
AKS	**Akhisar**	**0.97**	**257**	*e*PG		**20 13 35.8**	**+0.1**
AKS	**Akhisar**	**0.97**	**257**	*e*Pg		**20 13 35.8**	**+0.1**
BALB	**Balikesir**	**1.04**	**301**	*e*PG		**20 13 37.1**	**+0.1**
BALB	**Balikesir**	**1.04**	**301**	*e*Pg		**20 13 37.1**	**+0.1**
IGD	**Bursa**	**1.16**	**6**	*i* P		**20 13 38.7**	**-0.7**
IGD				*i* S		**20 13 55.9**	**+0.5**
CAVI	**Cavuskoy**	**1.26**	**30**	*e*PN		**20 13 40.8**	**-0.5**
CAVI	**Cavuskoy**	**1.26**	**30**	*e*Pn		**20 13 40.8**	**-0.5**
BALY	**Balya**	**1.26**	**301**	P		**20 13 40.5**	**-0.8**
BALY				S		**20 13 59.6**	**+0.3**
BALY	**Balya**	**1.26**	**301**	*i* P		**20 13 40.5**	**-0.8**
BALY				*i* S		**20 13 59.6**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.27**	**355**	*e*PN		**20 13 41.3**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.27**	**355**	*e*Pn		**20 13 41.3**	**-0.1**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*PN		**20 13 41.0**	**-0.4**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*Pn		**20 13 41.0**	**-0.4**
IZI	**Iznik**	**1.28**	**15**	*e*PN		**20 13 41.3**	**-0.2**
IZI	**Iznik**	**1.28**	**15**	*e*Pn		**20 13 41.3**	**-0.2**
BORA	**Eskisehir**	**1.35**	**54**	P		**20 13 42.3**	**-0.6**
BORA				S		**20 14 01.4**	**0.0**
BORA	**Eskisehir**	**1.35**	**54**	*i* P		**20 13 42.3**	**-0.6**
BORA				*i* S		**20 14 01.4**	**0.0**
GONE	**Gonen-Balikesi**	**1.40**	**313**	*e*PN		**20 13 43.5**	**-0.1**
GONE	**Gonen-Balikesi**	**1.40**	**313**	*e*Pn		**20 13 43.5**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**1.46**	**218**	*e*PN		**20 13 44.5**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**1.46**	**218**	*e*Pn		**20 13 44.5**	**0.0**
ARMT	**Armutlu**	**1.46**	**355**	*e*PN		**20 13 44.5**	**0.0**
ARMT	**Armutlu**	**1.46**	**355**	*e*Pn		**20 13 44.5**	**0.0**
ESKT	**Eskisehir**	**1.47**	**73**	*i* P		**20 13 44.9**	**-0.3**
ESKT				*i* S		**20 14 03.8**	**-0.5**
SEYT	**Eskypehyr**	**1.47**	**73**	P		**20 13 44.9**	**-0.3**
SEYT				S		**20 14 03.8**	**-0.5**
GULT	**Gulveren**	**1.75**	**40**	*e*PN		**20 13 48.5**	**0.0**
GULT	**Gulveren**	**1.75**	**40**	*e*Pn		**20 13 48.5**	**0.0**
MRMT	**Marmara Adasi**	**1.86**	**324**	*e*PN		**20 13 49.9**	**-0.1**
MRMT	**Marmara Adasi**	**1.86**	**324**	*e*Pn		**20 13 49.9**	**-0.1**

MEX 24 20:13:18.2±0.4, 27.°97N×112.°13W, h17km±844km, MD3.5, Baja California

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SRIG	**Santa Rosalia**	**0.66**	**188**	*i* P		20 13 28.8	-2.3
SRIG				*e*S		20 13 37.0	-2.8
HSIG		**1.48**	**45**	*e*P		20 13 41.0	-3.1
HSIG				*e*S		20 13 57.8	-5.2

MAN 24 20:15:12, 9.°87N×122.°04E, h28km, mb4.5, ML3.4, MS3.2, 1C-1D, Negros

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAP	**San Jose, Anti**	**0.87**	**354**	*e*P	Pb	20 15 28.5	-0.1
RCP	**Roxas**	**1.81**	**23**	*e*P	Pn	20 15 41.7	+0.3
SJMP	**San Jose**	**2.72**	**341**	*e*P	Pn	20 15 55.5	+1.6
BUSP	**Coron**	**2.78**	**320**	*e*P	Pn	20 15 55.7	+1.1
BUSP				*e*S	Sn	20 16 29.0	+1.7
ENPP	**El Nido**	**2.89**	**298**	*e*P	Pn	20 15 57.5	+1.3
ENPP				*e*S	Sn	20 16 31.4	+1.4

*ROM **24** 20:17:40.8±0.2, 43.°89N×12.°04E, h7km±1km, Md2.7/19, Ml2.1/18, Error ellipse: s-maj=2.3km s-min=0.9km az=34.0*
*ISCJB **24** 20:17:41.2±0.4, 43.°87N±0.°04×12.°02E±0.°04, h12km±6km, Error ellipse: s-maj=7.4km s-min=3.2km az=39.2*
*CSEM **24** 20:17:41.5±0.1, 43.°87N×12.°02E, h10km, ML2.8/9, Error ellipse: s-maj=2.6km s-min=1.7km az=32.0*

ISC 24 20:17:41.6±0.9, 43.°86N±0.°03×12.°01E±0.°02, h10km±6km, n45, σ0.°47/65, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFI	**Santa Sofia**	**0.13**	**291**	Pg	**Pg**	**20 17 44.4**	**-0.3**
SFI				Sg	**Sg**	**20 17 46.8**	**0.0**
	965nm,0.3s						
SFI	**Santa Sofia**	**0.13**	**291**	Pg	**Pg**	**20 17 44.4**	**-0.3**
SFI				Sg	**Sg**	**20 17 46.8**	**0.0**
	965nm,0.3s						
ASQU	**Asqua**	**0.17**	**249**	Pg	**Pg**	**20 17 45.5**	**+0.1**
ASQU				Sg	**Sg**	**20 17 48.8**	**+0.8**
	1μm,0.3s						
ASQU	**Asqua**	**0.17**	**249**	Pg	**Pg**	**20 17 45.5**	**+0.1**
ASQU				Sg	**Sg**	**20 17 48.8**	**+0.8**
	1μm,0.3s						
VMG	**Vicchio**	**0.35**	**287**	Pg	**Pg**	**20 17 48.7**	**0.0**
VMG				Sg	**Sb**	**20 17 54.8**	**-0.9**
	131nm,0.1s						
VMG	**Vicchio**	**0.35**	**287**	Pg	**Pg**	**20 17 48.7**	**0.0**
VMG				Sg	**Sb**	**20 17 54.8**	**-0.9**
	131nm,0.1s						
BADI	**Badiali**	**0.39**	**154**	Pg	**Pg**	**20 17 49.2**	**-0.1**
BADI				Sg	**Sb**	**20 17 55.8**	**-0.8**
	219nm,0.2s						
BADI	**Badiali**	**0.39**	**154**	Pg	**Pg**	**20 17 49.2**	**-0.1**
BADI				Sg	**Sb**	**20 17 55.8**	**-0.8**
	219nm,0.2s						
ATPC	**Poggio Castell**	**

ASQU	**Asqua**	**0.26 255**	Pg	Pb	20 22 24.1	-0.3
ASQU			Sg	Sb	20 22 27.5	-1.7
BADI	**Badiali**	**0.36 167**	Pg	Pb	20 22 25.8	-0.4
BADI			Sg	Sb	20 22 30.9	-1.2
BADI	**Badiali**	**0.36 167**	Pg	Pb	20 22 25.8	-0.4
BADI			Sg	Sb	20 22 30.9	-1.2
VMG	**Vicchio**	**0.44 283**	Pg	Pb	20 22 27.6	+0.1
VMG			Sg	Sb	20 22 33.4	-0.9
VMG	**Vicchio**	**0.44 283**	Pg	Pb	20 22 27.6	+0.1
VMG			Sg	Sb	20 22 33.4	-0.9
PIEI	**Pieia**	**0.44 138**	Pg	Pg	20 22 26.3	+0.5
PIEI			Sg	Sb	20 22 33.9	-0.5
	81nm,0.2s					
PIEI	**Pieia**	**0.44 138**	Pg	Pg	20 22 26.3	+0.5
PIEI			Sg	Sb	20 22 33.9	-0.5
	81nm,0.2s					
ATPC	**Poggio Castell**	**0.45 148**	Pg	Pb	20 22 27.2	-0.5
ATPC			Sg	Sb	20 22 34.7	0.0
	436nm,0.2s					
ATPC	**Poggio Castell**	**0.45 148**	Pg	Pb	20 22 27.2	-0.5
ATPC			Sg	Sb	20 22 34.7	0.0
	436nm,0.2s					
ATVO	**AVT- Monte Val**	**0.52 157**	Pg	Pb	20 22 28.8	-0.1
ATVO	**AVT- Monte Val**	**0.52 157**	Pg	Pb	20 22 28.8	-0.1
SEI	**Scarperia**	**0.59 289**	Pg	Pb	20 22 30.1	0.0
SEI			Sg	Sb	20 22 38.2	-0.6
SEI	**Scarperia**	**0.59 289**	Pg	Pb	20 22 30.1	0.0
SEI			Sg	Sb	20 22 38.2	-0.6
NVLJ	**Novalja**	**2.09 69**	*e*Pn	Pn	20 22 53.5	+0.7
NVLJ			Sn	Sg	20 23 25.1	+0.7
NVLJ	**Novalja**	**2.09 69**	Sn	Sg	20 23 25.1	+0.7
NVLJ	**Novalja**	**2.09 69**	*e*Pn	Pn	20 22 53.5	+0.6
ABTA	**Abfaltersbach**	**2.90 5**	Pg	Pg	20 23 11.9	-0.8
	0.6nm,0.4s					
ABTA			*e*Sg	Sg	20 23 48.4	-1.9
	9.8nm,0.7s					
ABTA	**Abfaltersbach**	**2.90 5**	Pg	Pg	20 23 11.9	-0.9
	0.6nm,0.4s					
ABTA			Sg	Sg	20 23 48.4	-1.9
	9.8nm,0.7s					
KHC	**Kasperske Hory**	**5.36 10**	*e*SN	Sn	20 24 46.2	+6.2

CSEM ***24*** *20:22:25.2±0.3, 43°.94N×12°.04E, h12km, ML2.3, Error ellipse: s-maj=8.1km s-min=2.8km az=27.0*
ROM 24 20:22:25.2±0.2, 43°.88N×12°.00E, h8km±1km, Ml2.3/4, Error ellipse: s-maj=3.3km s-min=1.3km az=34.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFI	**Santa Sofia**	**0.12**	**285**	Pg	Pg	20 22 28.3	+0.5
SFI				Sg	Sg	20 22 30.6	+0.9
SFI	**Santa Sofia**	**0.12**	**285**	Pg	Pg	20 22 28.3	+0.5
SFI				Sg	Sg	20 22 30.6	+0.9
ASQU	**Asqua**	**0.17**	**243**	Pg	Pg	20 22 29.2	+0.4
ASQU				Sg	Sg	20 22 32.6	+1.3
ASQU	**Asqua**	**0.17**	**243**	Pg	Pg	20 22 29.2	+0.4
ASQU				Sg	Sg	20 22 32.6	+1.3
VMG	**Vicchio**	**0.34**	**285**	Pg	Pg	20 22 32.6	+0.7
VMG				Sg	Sb	20 22 38.5	-0.7
VMG	**Vicchio**	**0.34**	**285**	Pg	Pg	20 22 32.6	+0.7
VMG				Sg	Sb	20 22 38.5	-0.7
BADI	**Badiali**	**0.41**	**154**	Pg	Pb	20 22 34.9	+0.3
BADI				Sg	Sb	20 22 40.0	-1.0
BADI	**Badiali**	**0.41**	**154**	Pg	Pb	20 22 34.9	+0.3
BADI				Sg	Sb	20 22 40.0	-1.0
SEI	**Scarperia**	**0.50**	**291**	Pg	Pg	20 22 35.2	+0.3
SEI				Sg	Sb	20 22 43.6	-0.1
SEI	**Scarperia**	**0.50**	**291**	Pg	Pg	20 22 35.2	+0.3
SEI				Sg	Sb	20 22 43.6	-0.1
ATPC	**Poggio Castell**	**0.52**	**140**	Pg	Pg	20 22 35.4	+0.2
ATPC				Sg	Sb	20 22 43.9	-0.2
	436nm,0.2s						
ATPC	**Poggio Castell**	**0.52**	**140**	Pg	Pg	20 22 35.4	+0.2
ATPC				Sg	Sb	20 22 43.9	-0.2
	436nm,0.2s						
PIEI	**Pieia**	**0.52**	**131**	Pg	Pg	20 22 36.6	+0.1
PIEI				Sg	Sb	20 22 43.2	-0.9
	81nm,0.2s						
PIEI	**Pieia**	**0.52**	**131**	Pg	Pb	20 22 36.6	+0.1
PIEI				Sg	Sb	20 22 43.2	-0.9
	81nm,0.2s						
ATVO	**AVT- Monte Val**	**0.57**	**149**	Pg	Pg	20 22 36.8	+0.5
ATVO				Sg	Sb	20 22 45.7	-0.1
ATVO	**AVT- Monte Val**	**0.57**	**149**	Pg	Pg	20 22 36.8	+0.5
ATVO				Sg	Sb	20 22 45.7	-0.1
FRON	**Frontone**	**0.64**	**124**	Pg	Pg	20 22 37.6	+0.1
FRON				Sg	Sb	20 22 47.9	+0.3
	63nm,0.4s						
FRON	**Frontone**	**0.64**	**124**	Pg	Pg	20 22 37.6	+0.1
FRON				Sg	Sb	20 22 47.9	+0.3
	63nm,0.4s						
SSFR	**Montelago di S**	**0.72**	**127**	Pg	Pg	20 22 39.1	+0.1
	150nm,0.2s						
SSFR	**Montelago di S**	**0.72**	**127**	Pg	Pg	20 22 39.1	+0.1
	150nm,0.2s						
MAIM	**Mastiano**	**1.09**	**273**	P	Pg	20 22 45.6	-0.6
SARO	**Sassorosso**	**1.20**	**286**	P	Pn	20 22 48.9	+0.6

IDC ***24*** *20:26:05.5±1.0, 27°.83N×54°.22E, h0km, mb3.7/14, mb1 3.8/15, mb1mx3.6/54, mbtmp3.7/15, ML3.2/1, Error ellipse: s-maj=24.3km s-min=19.1km az=28.0*
ISCJB ***24*** *20:26:07.2±0.4, 27°.75N±0°.04×54°.20E±0°.07, h17km, mb3.7/13, Error ellipse: s-maj=9.5km s-min=4.0km az=148.8*
OMAN ***24*** *20:26:10.4, 27°.70N×54°.27E, h28km*
CSEM ***24*** *20:26:10.9±0.2, 27°.78N×54°.28E, h30km, ML3.3, Error ellipse: s-maj=8.6km s-min=3.9km az=57.0*
TEH ***24*** *20:26:10.4, 27°.70N×54°.27E, h28km, ML3.4*
ISC 24 20:26:08.2±0.6, 27°.75N±0°.05×54°.27E±0°.04, h17km, n49, σ1§48/62, mb3.7/13, Southern Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GHIR	**Ghir-Karzin**	**1.25**	**295**	*e*Pg	**Pg**	**20 26 32.7**	**+0.2**
BNDS	**Bandar-Abbas**	**1.72**	**101**	*e*Pg	**Pn**	**20 26 38.2**	**+0.6**
ISRV	**Sarvestan**	**1.92**	**328**	*e*Pn	**Pb**	**20 26 41.9**	**-1.0**
ISRV				*e*Sg	**Sg**	**20 27 11.9**	**+1.9**
ISRV	**Sarvestan**	**1.92**	**328**	*e*Pn	**Pb**	**20 26 41.9**	**-1.0**
ISRV				*e*Sg	**Sg**	**20 27 11.9**	**+1.9**
IBND	**Bandar-abas**	**2.04**	**98**	*e*Pn	**Pn**	**20 26 43.1**	**+1.4**
IBND				*e*Sg	**Sg**	**20 27 14.0**	**+0.2**
IBND				*e*AMB	AMB	20 27 34.3	
	comp=Z,5μm,0.2s						
IBND	**Bandar-abas**	**2.04**	**98**	*e*Pn	**Pn**	**20 26 43.1**	**+1.4**
IBND				*e*Sg	**Sg**	**20 27 14.0**	**+0.2**
BANOM	**Banah**	**2.57**	**135**	Pn	**Pn**	**20 26 50.0**	**+0.9**
	SNR=24						
BANOM				Sn	**Sn**	**20 27 21.1**	**+1.1**
BANOM	**Banah**	**2.57**	**135**	Pn	**Pn**	**20 26 50.0**	**+0.9**
	SNR=24						
BANOM	**Banah**	**2.57**	**135**	P	**Pn**	**20 26 50.0**	**+0.9**
	SNR=24						
BANOM				Sn	**Sn**	**20 27 21.1**	**+1.1**
IKAZ	**Kazeroun**	**2.94**	**314**	*e*Pn	**Pn**	**20 26 55.1**	**+0.6**
IKAZ				*e*Sg	**Sg**	**20 27 44.2**	**+1.5**
IKAZ				*e*AMB	AMB	20 27 52.6	
	comp=Z,1μm,0.3s						
IKAZ	**Kazeroun**	**2.94**	**314**	*e*Pn	**Pn**	**20 26 55.1**	**+0.6**
IKAZ				*e*Sg	**Sg**	**20 27 44.2**	**+1.5**
KRBR	**Kerman**	**3.11**	**44**	*e*Pn	**Pn**	**20 26 58.3**	**+1.4**
FAQ	**Al Faqa, Dubai**	**3.22**	**158**	Pn	**Pn**	**20 27 00.6**	**+2.5**
	SNR=5.5						
FAQ				Sn	**Sn**	**20 27 35.1**	**-1.0**
FAQ	**Al Faqa, Dubai**	**3.22**	**158**	Pn	**Pn**	**20 27 00.6**	**+2.5**
	SNR=5.5						
FAQ	**Al Faqa, Dubai**	**3.22**	**158**	P	**Pn**	**20 27 00.6**	**+2.5**
	SNR=5.5						
FAQ				Sn	**Sn**	**20 27 35.1**	**-1.0**
ASHO	**Ashiyiah**	**3.45**	**152**	Pn	**Pn**	**20 27 03.3**	**+2.1**
	SNR=15						
ASHO				Sn	**Sn**	**20 27 45.6**	**+3.8**
ASHO	**Ashiyiah**	**3.45**	**152**	Pn	**Pn**	**20 27 03.3**	**+2.1**
	SNR=15						
ASHO	**Ashiyiah**	**3.45**	**152**	P	**Pn**	**20 27 03.3**	**+2.1**
	SNR=15						
ASHO				Sn	**Sn**	**20 27 45.6**	**+3.8**
IMEH	**Mehriz**	**3.64**	**5**	*e*AMB	AMB	20 27 24.8	
	comp=Z,348nm,0.3s						
IMEH				*e*Pn	**Pn**	**20 27 05.7**	**+1.7**
IBAF	**Bafgh**	**3.99**	**16**	*e*Pn	**Pn**	**20 27 10.1**	**+1.4**
IBAF				*e*AMB	AMB	20 27 25.9	
	comp=Z,538nm,0.3s						
IBAF	**Bafgh**	**3.99**	**16**	*e*Pn	**Pn**	**20 27 10.1**	**+1.4**
ISAD	**Sadrabad**	**4.18**	**353**	*e*Pn	**Pn**	**20 27 13.3**	**+1.8**
ISAD				*e*AMB	AMB	20 27 18.7	
	comp=Z,629nm,0.3s						
ISAD	**Sadrabad**	**4.18**	**353**	*e*Pn	**Pn**	**20 27 13.3**	**+1.8**
IRAM	**Ramesheh**	**4.36**	**338**	*e*Pn	**Pn**	**20 27 15.1**	**+1.1**
IRAM				*e*AMB	AMB	20 27 20.4	
	comp=Z,399nm,0.3s						
IRAM	**Ramesheh**	**4.36**	**338**	*e*Pn	**Pn**	**20 27 15.1**	**+1.1**
ICHK	**Chekchek**	**4.48**	**1**	*e*Pn	**Pn**	**20 27 16.7**	**+1.2**
ICHK				*e*AMB	AMB	20 27 21.7	
	comp=Z,340nm,0.2s						
ICHK	**Chekchek**	**4.48**	**1**	*e*Pn	**Pn**	**20 27 16.7**	**+1.2**
IGAR	**Gharneh**	**5.02**	**338**	*e*Pn	**Pn**	**20 27 24.5**	**+1.5**
IGAR				*e*AMB	AMB	20 27 35.3	
	comp=Z,218nm,0.1s						
IZEF	**Zefreh**	**5.39**	**342**	*e*Pn	**Pn**	**20 27 28.2**	**0.0**
IZEF				*e*AMB	AMB	20 27 57.0	
	comp=Z,93nm,0.2s						
IZEF	**Zefreh**	**5.39**	**342**	*e*Pn	**Pn**	**20 27 28.2**	**0.0**
IPIR	**Pirpir**	**5.72**	**330**	*e*Pn	**Pn**	**20 27 33.5**	**+0.8**
IPIR				*e*AMB	AMB	20 27 34.2	
	comp=Z,322nm,0.2s						
IPIR	**Pirpir**	**5.72**	**330**	*e*Pn	**Pn**	**20 27 33.5**	**+0.8**
WSAR	**Wadi Sarin**	**5.98**	**138**	Pn	**Pn**	**20 27 37.0**	**+1.1**
	comp=Z,0.5nm,0.3s,baz=327,slow=8.1,SNR=29						
WSAR				Sn	**Sn**	**20 28 41.6**	**-2.5**
	comp=Z,2.0nm,0.3s,baz=123,slow=19,SNR=6.3						
IKLH	**Kolahrood**	**6.01**	**338**	*e*Pn	**Pn**	**20 27 37.6**	**+0.9**
IKLH				*e*AMB	AMB	20 27 41.3	
	comp=Z,85nm,0.2s						
IKLH	**Kolahrood**	**6.01**	**338**	*e*Pn	**Pn**	**20 27 37.6**	**+0.9**
BRTR	**Keskin Array B**	**20.85**	**310**	P	**P**	**20 30 49.7**	**+0.3**
	comp=Z,0.8nm,0.6s,baz=129,slow=13,SNR=7.1						
BVAR	**Borovoye Array**	**27.94**	**21**	P	**P**	**20 31 57.0**	**-0.5**
	comp=Z,0.4nm,0.4s,baz=201,slow=7.9,SNR=4.3						
MKAR	**Makanchi Array**	**29.06**	**42**	P	**P**	**20 32 07.3**	**-0.3**
	comp=Z,0.1nm,0.4s,baz=233,slow=8.3,SNR=4.1						
ZALV	**Zalesovo Beam**	**34.43**	**32**	P	**P**	**20 32 54.0**	**-0.7**
	comp=Z,1.4nm,0.5s,baz=246,slow=10,SNR=9.0						
FINES	**FINESS Array B**	**38.60**	**339**	P	**P**	**20 33 29.3**	**-0.8**
	comp=Z,5.4nm,1.1s,baz=142,slow=8.7,SNR=8.2						
NOA	**NORSAR Array B**	**43.96**	**331**	P	**P**	**20 34 12.5**	**-1.7**
	comp=Z,0.5nm,0.6s,baz=127,slow=4.3,SNR=3.2						
SONM	**Songino Array**	**44.85**	**49**	P	**P**	**20 34 21.7**	**0.0**
	comp=Z,0.5nm,0.6s,baz=266,slow=8.4,SNR=3.4						
ARCES	**ARCESS Array B**	**45.02**	**346**	P	**P**	**20 34 22.3**	**-0.3**
	comp=Z,2.0nm,1.0s,baz=148,slow=8.6,SNR=4.5						
ESDC	**Sonseca Array**	**49.11**	**300**	P	**P**	**20 34 54.4**	**-0.5**
	comp=Z,0.1nm,0.4s,baz=89,slow=8.4,SNR=3.0						
TORD	**Torodi Ar. Bea**	**51.00**	**265**	P	**P**	**20 35 08.6**	**-1.0**
	comp=Z,0.7nm,0.7s,baz=66,slow=6.7,SNR=5.0						
TIXI	**Tiksi**	**59.07**	**21**	P	**P**	**20 36 06.6**	**-0.5**
	comp=Z,0.2nm,0.3s,baz=284,slow=4.2,SNR=3.8						
YKA	**Yellowknife Ar**	**89.63**	**355**	P	**P**	**20 39 04.2**	**-0.6**
	comp=Z,0.3nm,0.8s,baz=360,slow=4.7,SNR=3.9						
WRA	**Warramunga Arr**	**90.76**	**112**	P	**P**	**20 39 10.0**	**-0.8**
	comp=Z,0.9nm,1.0s,baz=307,slow=4.2,SNR=3.1						
ASAR	**Alice Springs**	**92.22**	**116**	P	**P**	**20 39 19.5**	**+2.0**
	comp=Z,0.4nm,0.9s,baz=308,slow=4.6,SNR=3.4						

ISN ***24*** *20:29:56.7±1.1, 34°.97N×59°.60E, h0km±16km, ML4.7*
THR ***24*** *20:30:07.8±0.5, 35°.68N×58°.63E, h14km±8km, ML4.5*
ISCJB ***24*** *20:30:08.2±0.2, 35°.71N±0°.02×58°.70E±0°.02, h10km, mb4.5/72, MS3.9/13, Error ellipse: s-maj=3.3km s-min=2.4km az=179.6*
IDC ***24*** *20:30:08.1±0.6, 35°.60N×58°.61E, h0km, mb4.2/24, mb1 4.4/28, mb1mx4.3/52, mbtmp4.3/28, ML4.3/3, MS3.5/11, Ms1 3.5/11, ms1mx3.3/44, Error ellipse: s-maj=12.9km s-min=11.1km az=179.0*
CSEM ***24*** *20:30:09.7±0.1, 35°.75N×58°.70E, h10km, mb4.7/40, Error ellipse: s-maj=4.1km s-min=3.2km az=166.0*
MOS ***24*** *20:30:10.3±1.1, 35°.80N×58°.71E, h22km, mb4.7/30, Error ellipse: s-maj=6.6km s-min=5.1km az=124.4*
NEIC ***24*** *20:30:11.1, 35°.65N×58°.77E, h13km, mb4.6/42, MN4.5(TEH), After TEH.*
TEH ***24*** *20:30:11.1, 35°.65N×58°.77E, h13km, ML4.5*
ISC 24 20:30:09.5±0.3, 35°.72N±0°.03×58°.70E±0°.03, h10km, n397, σ1§73/403, mb4.5/74, MS3.9/13, 25C-19D, Northern and central Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IMOG	**Moghan**	**0.65**	**53**	*e*Pg	**Pb**	**20 30 22.8**	**-0.3**
IMOG				*e*Sg	**Sb**	**20 30 31.7**	**-0.6**
IMOG				*e*AMB	AMB	20 30 41.0	
	comp=Z,13μm,0.3s						
IMOG	**Moghan**	**0.65**	**53**	Pg	**Pb**	**20 30 22.7**	**-0.3**
IMOG				*e*Sg	**Sb**	**20 30 31.7**	**-0.6**
IMOG	**Moghan**	**0.65**	**53**	Pg	**Pb**	**20 30 22.7**	**-0.3**
IPAY	**Payeh**	**0.77**	**18**	*e*Pg	**Pb**	**20 30 25.0**	**-0.1**
IPAY				*e*Sg	**Sn**	**20 30 38.0**	**-0.4**
IPAY				*e*AMB	AMB	20 30 46.8	
	comp=Z,56μm,0.3s						
IPAY	**Payeh**	**0.77**	**18**	*e*Pg	**Pb**	**20 30 25.0**	**-0.1**
IPAY				*e*Sg	**Sn**	**20 30 38.0**	**-0.4**
IPAY	**Payeh**	**0.77**	**18**	Pg	**Pb**	**20 30 25.0**	**-0.1**
ISRO	**Mashad**	**0.86**	**46**	*e*Pg	**Pb**	**20 30 26.3**	**-0.2**
ISRO	**Mashad**	**0.86**	**46**	*e*Pg	**Pb**	**20 30 26.3**	**-0.2**
IAKL	**Akhelmad**	**0.88**	**3**	*e*Pg	**Pg**	**20 30 26.4**	**-0.1**
IAKL				*e*AMB	AMB	20 30 42.4	
	comp=Z,100μm,0.2s						
IAKL	**Akhelmad**	**0.88**	**3**	Pg	**Pg**	**20 30 26.3**	**-0.2**
IKRD	**Kardeh**	**1.06**	**352**	*e*Pg	**Pn**	**20 30 34.5**	**+3.7**
IKRD				*e*AMB	AMB	20 30 56.2	
	comp=Z,52μm,0.2s						
IKRD	**Kardeh**	**1.06**	**352**	*e*Pg	**Pn**	**20 30 34.5**	**+3.7**
IKRD	**Kardeh**	**1.06**	**352**	Pg	**Pn**	**20 30 34.4**	**+3.7**
IMYA	**Miami**	**1.29**	**61**	*e*Pg	**Pg**	**20 30 34.9**	**+0.6**
IMYA				*e*AMB	AMB	20 31 08.6	
	comp=Z,40μm,0.3s						
IMYA	**Miami**	**1.29**	**61**	*e*Pg	**Pg**	**20 30 34.9**	**+0.6**
IQHU	**Qucahn**	**1.36**	**354**	*e*Pn	**Pb**	**20 30 35.2**	**+0.1**
IQHU				*e*AMB	AMB	20 31 18.6	
	comp=Z,37μm,0.5s						
ISFR	**Sfrayin**	**1.45**	**337**	*e*Pn	**Pn**	**20 30 36.3**	**+0.2**
ISFR				*e*AMB	AMB	20 31 08.7	
	comp=Z,66μm,0.3s						
ISFR	**Sfrayin**	**1.45**	**337**	Pn	**Pn**	**20 30 36.2**	**+0.2**
IEMG	**Emamgholi**	**1.69**	**359**	*e*Pn	**Pb**	**20 30 41.2**	**+0.3**
IEMG				*e*AMB	AMB	20 31 14.3	
	comp=Z,42μm,0.4s						
IEMG	**Emamgholi**	**1.69**	**359**	*e*Pn	**Pb**	**20 30 41.2**	**+0.3**
IEMG	**Emamgholi**	**1.69**	**359**	Pn	**Pb**	**20 30 41.2**	**+0.3**
SHRO	**Shahrood**	**2.20**	**278**	*e*Pg	**Pn**	**20 30 46.8**	**+0.5**
SHRO				AML	AML	20 31 28.2	
	comp=N,2μm,0.9s						
SHRO				AML	AML	20 31 30.1	
	comp=E,1μm,1.7s						
BJRD	**Bojnurd**	**2.23**	**333**	*e*Pg	**Pb**	**20 30 48.5**	**-1.5**
BJRD	**Bojnurd**	**2.23**	**333**	*e*Pg	**Pb**	**20 30 48.5**	**-1.5**
GEYT	**Alibeck**	**2.25**	**348**	Pn	**Pb**	**20 30 48.6**	**-1.7**
	comp=E,25nm,0.3s,baz=170,slow=12,SNR=116						
GEYT				Lg	Lg	20 31 23.9	
	comp=E,54nm,0.3s,baz=182,slow=39,SNR=10						
GEYT				LR	LR	20 31 59.0	
	comp=E,1μm,18.1s,baz=145,slow=47						
TABS	**Tabas**	**2.44**	**213**	*e*Pn	**Pn**	**20 30 48.6**	**-0.9**
TABS				*e*Sg	**Sb**	**20 31 22.5**	**-1.2**
TABS				AML	AML	20 31 33.5	
	comp=E,3μm,0.8s						
TABS				AML	AML	20 31 34.5	
	comp=N,6μm,0.7s						
TABS	**Tabas**	**2.44**	**213**	*e*Pn	**Pn**	**20 30 48.6**	**-0.9**
SHRT	**Shahrakht**	**2.45**	**147**	*e*Pn	**Pn**	**20 30 49.2**	**-0.4**
SHRT				AML	AML	20 31 29.1	
	comp=N,3μm,0.3s						
SHRT				AML	AML	20 31 34.1	
	comp=E,3μm,0.8s						
SHRT	**Shahrakht**	**2.45**	**147**	*e*Pn	**Pn**	**20 30 49.2**	**-0.4**
IMON	**Monand**	**2.64**	**162**	*e*Pn	**Pn**	**20 30 52.5**	**0.0**
IMON				*e*AMB	AMB	20 31 37.2	
	comp=Z,22μm,0.3s						
IMON	**Monand**	**2.64**	**162**	Pn	**Pn**	**20 30 52.4**	**0.0**
IMON	**Monand**	**2.64**	**162**	Pn	**Pn**	**20 30 52.4**	**0.0**
ITEG	**Tejag**	**2.82**	**179**	*e*Pn	**Pn**	**20 30 54.8**	**+0.1**
ITEG				*e*AMB	AMB	20 31 47.3	
	comp=Z,19μm,0.3s						
ITEG	**Tejag**	**2.82**	**179**	*e*Pn	**Pn**	**20 30 54.8**	**+0.1**
ITEG	**Tejag**	**2.82**	**179**	Pn	**Pn**	**20 30 54.8**	**+0.1**
IDAH	**Dahanechah**	**3.13**	**162**	*e*Pn	**Pn**	**20 30 58.9**	**-0.2**
IDAH				*e*AMB	AMB	20 32 00.1	
	comp=Z,16μm,0.6s						
IDAH	**Dahanechah**	**3.13**	**162**	*e*Pn	**Pn**	**20 30 58.9**	**-0.2**
IDAH	**Dahanechah**	**3.13**	**162**	Pn	**Pn**	**20 30 58.9**	**-0.2**
IKOO	**Kooshah**	**3.30**	**176**	*e*Pn	**Pn**	**20 31 01.2**	**-0.2**
IKOO				*e*AMB	AMB	20 32 12.3	
	comp=Z,15μm,0.6s						
IKOO	**Kooshah**	**3.30**	**176**	*e*Pn	**Pn**	**20 31 01.2**	**-0.2**
IKOO	**Kooshah**	**3.30**	**176**	Pn	**Pn**	**20 31 01.2**	**-0.2**
IANJ	**Anjilo**	**3.91**	**268**	*e*Pn	**Pn**	**20 31 10.9**	**+1.1**
IANJ				*e*AMB	AMB	20 32 37.2	
	comp=Z,6μm,0.4s						
IANJ	**Anjilo**	**3.91**	**268**	*e*Pn	**Pn**	**20 31 10.9**	**+1.1**
IGLO	**Ghaloghah**	**4.02**	**283**	*e*Pn	**Pn**	**20 31 13.8**	**+2.5**
IGLO				*e*AMB	AMB	20 31 31.0	
	comp=Z,8μm,0.3s						
ISHM	**Shahmirzad**	**4.40**	**273**	*e*Pn	**Pn**	**20 31 18.4**	**+1.8**
ISHM				*e*AMB	AMB	20 32 49.7	
	comp=Z,7μm,0.6s						
IALA	**Alasht**	**4.80**	**276**	*e*Pn	**Pn**	**20 31 23.8**	**+1.7**
IALA				*e*AMB	AMB	20 33 15.5	
	comp=Z,4μm,0.4s						
IALA	**Alasht**	**4.80**	**276**	*e*Pn	**Pn**	**20 31 23.8**	**+1.7**
IALA	**Alasht**	**4.80**	**276**	Pn	**Pn**	**20 31 23.7**	**+1.7**
IFIR	**Firoozkooh**	**4.84**	**271**	*e*Pn	**Pn**	**20 31 24.4**	**+1.7**
IFIR				*e*AMB	AMB	20 31 52.3	
	comp=Z,1μm,0.2s						
IFIR	**Firoozkooh**	**4.84**	**271**	*e*Pn	**Pn**	**20 31 24.4**	**+1.7**
IBAF	**Bafgh**	**4.88**	**213**	*e*Pn	**Pn**	**20 31 23.9**	**+0.9**
IBAF				*e*AMB	AMB	20 32 56.7	
	comp=Z,11μm,0.5s						
IBAF	**Bafgh**	**4.88**	**213**	*e*Pn	**Pn**	**20 31 23.9**	**+0.9**
IBAF	**Bafgh**	**4.88**	**213**	Pn	**Pn**	**20 31 23.8**	**+0.8**
ICHK	**Chekchek**	**4.97**	**227**	*e*Pn	**Pn**	**20 31 25.2**	**+0.8**
ICHK				*e*AMB	AMB	20 32 58.1	
	comp=Z,7μm,0.4s						
ICHK	**Chekchek**	**4.97**	**227**	*e*Pn	**Pn**	**20 31 25.2**	**+0.8**
IDMV	**Damavand**	**5.43**	**270**	*e*Pn	**Pn**	**20 31 31.7**	**+0.9**
IDMV				*e*AMB	AMB	20 33 20.8	
	comp=Z,8μm,0.9s						
IDMV	**Damavand**	**5.43**	**270**	*e*Pn	**Pn**	**20 31 31.7**	**+0.9**
IDMV	**Damavand**	**5.43**	**270**	Pn	**Pn**	**20 31 31.7**	**+0.9**
IGAR	**Gharneh**	**6.44**	**241**	*e*Pn	**Pn**	**20 31 45.0**	**+0.4**
IGAR				*e*AMB	AMB	20 34 12.1	
	comp=Z,2μm,0.5s						
KBL	**Kabul**	**8.55**	**95**	*e*P	**Pn**	**20 32 16.9**	**+3.3**
KBL	**Kabul**	**8.55**	**95**	*e*Pn	**Pn**	**20 32 16.9**	**+3.3**
KBL	**Kabul**	**8.55**	**95**	*e*Pn	**Pn**	**20 32 16.9**	**+3.3**
UOSS	**Minazif**	**10.95**	**192**	*e*Pn	**Pn**	**20 32 48.5**	**+2.2**
UOSS	**Minazif**	**10.95**	**192**	*e*Pn	**Pn**	**20 32 48.5**	**+2.2**
CEP	**Cherat**	**11.03**	**96**	P	**Pn**	**20 32 50.4**	**+3.0**
THW	**Thamme Wali**	**11.18**	**101**	P	**Pn**	**20 32 50.9**	**+1.5**
THW				S	Sn	20 35 10.0	+16
KKAR	**Karatay Array**	**11.73**	**47**	*e*P	**Pn**	**20 32 53.0**	**-3.9**
KKAR	**Karatay Array**	**11.73**	**47**	*e*Pn	**Pn**	**20 32 53.0**	**-3.9**
KKAR	**Karatay Array**	**11.73**	**47**	*e*Pn	**Pn**	**20 32 53.0**	**-3.9**
GNI	**Garni**	**11.88**	**296**	Pn	**Pn**	**20 33 01.1**	**+2.1**
	comp=Z,0.4nm,0.3s,baz=139,slow=10.0,SNR=6.0						
GNI				LR	LR	20 39 12.4	
	comp=Z,166nm,18.0s,baz=114,slow=46						
GNI	**Garni**	**11.88**	**296**	*e*P	**Pn**	**20 32 59.0**	**0.0**
GNI	**Garni**	**11.88**	**296**	*e*P	**Pn**	**20 32 59.0**	**0.0**
GNI	**Garni**	**11.88**	**296**	*e*Pn	**Pn**	**20 32 59.0**	**0.0**
BHD	**Baghdad**	**12.07**	**262**	*e*Pn	**Pn**	**20 33 02.0**	**+0.5**
	SNR=39						
CHCP	**Chirah Chowk**	**12.16**	**96**	P	**Pn**	**20 33 03.7**	**+0.9**
WSAR	**Wadi Sarin**	**12.44**	**180**	LR	LR	20 38 53.3	
	comp=Z,129nm,20.7s,baz=338,slow=43						
ZEI	**Tsey**	**13.46**	**306**

BR101 Keskin Array S 20.20 289 *eP* **P 20 34 44.8 +0.3**
BR101 Keskin Array S 20.20 289 *eP* **P 20 34 44.8 +0.3**
BR131 Keskin Array S 20.20 289 *eP* **P 20 34 44.7 +0.2**
BR131 Keskin Array S 20.20 289 *eP* **P 20 34 44.7 +0.2**
BRTR Keskin Array B 20.20 289 P **P 20 34 44.8 +0.3**
comp=Z,7.8nm,1.1s,baz=101,slow=9.4,SNR=24
BRTR LR LR 20 43 44.1
comp=Z,84nm,19.1s,baz=86,slow=40
KURBB Kurchatov Arra 20.66 38 P Pn 20 34 51.0 -0.6
comp=Z,12nm,0.9s,baz=234,slow=11,SNR=27
CSS Mathiatis 20.70 275 *eP* **P 20 34 50.1 +0.3**
comp=Z,7.9nm,1.3s
CSS Mathiatis 20.70 275 *eP* **P 20 34 50.1 +0.3**
comp=Z,7.9nm,1.3s
ARU Arti 20.71 360 P **P 20 34 50.9 +1.1**
comp=Z,8.5nm,0.6s,baz=166,slow=5.6,SNR=20
ARU Arti 20.71 360*d iP* Pn 20 34 51.0 -1.1
ARU 20 35 10.1
ARU S Sn 20 38 45.2 -0.5
ARU SS **SnSn 20 39 03.6 +3.1**
ARU pmax pmax
comp=Z,19nm,1.0s
ARU Arti 20.71 360 *eP* **P 20 34 50.5 +0.7**
comp=Z,25nm,1.0s
ARU Arti 20.71 360 *eP* **P 20 34 50.5 +0.7**
comp=Z,25nm,1.0s
KURK Kurchatov 20.77 38 *eP* **P 20 34 51.0 +0.6**
KURK Kurchatov 20.77 38 *eP* **P 20 34 51.0 +0.6**
KURK Kurchatov 20.77 38 *eP* **P 20 34 51.0 +0.6**
MK01 Makanchi Array 20.82 51 *eP* **P 20 34 51.2 +0.2**
MK01 Makanchi Array 20.82 51 *eP* **P 20 34 51.2 +0.2**
MK31 Makanchi Array 20.82 51 *eP* **P 20 34 51.5 +0.4**
MK31 Makanchi Array 20.82 51 *eP* **P 20 34 51.5 +0.4**
MK31 Makanchi Array 20.82 51 *eP* **P 20 34 51.5 +0.4**
MK32 Makanchi Array 20.82 51 *eP* Pn 20 34 52.4 -1.1
MK32 Makanchi Array 20.82 51 *eP* Pn 20 34 52.4 -1.1
MKAR Makanchi Array 20.82 51 P Pn 20 34 52.4 -1.1
comp=Z,3.4nm,0.7s,baz=241,slow=9.3,SNR=21
MKAR Makanchi Array 20.82 51 *eP* **P 20 34 50.8 -0.3**
MKAR Makanchi Array 20.82 51 *eP* **P 20 34 50.8 -0.3**
MKAR Makanchi Array 20.82 51 *eP* **P 20 34 50.8 -0.3**
SIM Simferopol' 20.82 304 *eP* **P 20 34 51.7 +0.7**
SIM pmax pmax
comp=Z,46nm,1.1s
SIM Simferopol' 20.82 304 *eP* **P 20 34 51.7 +0.7**
comp=Z,46nm,1.1s
EIL Elat 20.86 260 P **P 20 34 51.3 -0.2**
comp=Z,11nm,0.8s,baz=94,slow=11,SNR=6.0
EIL LR LR 20 44 31.0
comp=Z,299nm,19.4s,baz=56,slow=42
ANTO Ankara 20.86 289 *eP* **P 20 34 49.4 -2.2**
ANTO pmax pmax
comp=Z,30nm,1.4s
ANTO Ankara 20.86 289 *eP* **P 20 34 49.4 -2.2**
comp=Z,30nm,1.4s
ANTO Ankara 20.86 289 *eP* **P 20 34 49.4 -2.2**
comp=Z,30nm,1.4s
BR231 Keskin MP Arra 20.87 289 *eP* **P 20 34 45.5 -6.3**
BR231 Keskin MP Arra 20.87 289 *eP* **P 20 34 45.5 -6.3**
VSR Storozhevoye 20.90 324 *eP* **P 20 34 52.1 +0.3**
VSR pmax pmax
comp=Z,60nm,1.2s
VSR Storozhevoye 20.90 324 *eP* **P 20 34 52.1 +0.3**
comp=Z,60nm,1.2s
SVE Sverdlovsk 21.15 3 *eP* **P 20 34 55.6 +1.1**
SVE *eS* Sn 20 38 55.6 -0.7
SVE pmax pmax
comp=Z,23nm,1.3s
LPSR Galich'ya Gora 21.93 326 *eP* **P 20 35 03.5 +0.7**
LPSR pmax pmax
comp=Z,40nm,0.9s
LPSR Galich'ya Gora 21.93 326 *eP* **P 20 35 03.5 +0.7**
comp=Z,40nm,0.9s
PYUN Piuthan 21.94 103 *eP* **P 20 35 02.7 -0.7**
KOLN Koldanda 22.57 104 *eP* **P 20 35 09.2 -1.0**
comp=Z,16nm,0.8s
NGP Nagpur 22.98 124 *eP* **P 20 35 15.0 +0.7**
NGP IAmb IAmb 20 35 16.7
comp=Z,103nm,2.7s
GKN Gorkha 23.29 102 *eP* **P 20 35 16.6 -1.0**
comp=Z,35nm,0.9s
WMQ Urumqi 23.62 61 *eP* **P 20 35 22.6 +1.9**
WMQ pmax pmax
comp=Z,7.0nm,1.4s
WMQ pmax pmax
comp=Z,43nm,7.2s
WMQ LR LR
comp=N,56nm,21.0s
WMQ LR LR
comp=E,79nm,21.0s
WMQ LR LR
comp=Z,75nm,19.0s
DMN Daman 23.83 102 *eP* **P 20 35 22.7 -0.4**
comp=Z,52nm,1.0s
KKN Kakani 23.89 102 *eP* **P 20 35 22.9 -0.7**
comp=Z,35nm,0.9s
SOKR Solikamsk 23.92 358 *eP* P 20 35 31.1 +7.8
SOKR pmax pmax
comp=Z,9.0nm,0.6s
PKIN Phulchoki 24.08 102 *eP* **P 20 35 25.0 -0.4**
comp=Z,24nm,0.9s
GUN Gumba 24.32 101 *eP* **P 20 35 28.0 +0.3**
comp=Z,50nm,1.1s
TIRR Tirgusor 24.65 300 ⇓*iP* **P 20 35 31.4 +1.2**
TIRR Tirgusor 24.65 300 ⇓P **P 20 35 31.4 +1.2**
TIRR Tirgusor 24.65 300 *eP* **P 20 35 30.6 +0.4**
comp=Z,17nm,1.6s
TIRR Tirgusor 24.65 300 *eP* **P 20 35 30.6 +0.4**
comp=Z,17nm,1.6s
OBN Obninsk 24.66 329 P **P 20 35 30.6 +0.6**
comp=Z,29nm,0.7s,baz=120,slow=20,SNR=17
OBN Obninsk 24.66 329*ceP* **P 20 35 32.3 +2.2**
OBN *e* 20 36 00.2
OBN *eS* S 20 39 40.5 -11
OBN pmax pmax
comp=Z,92nm,1.2s
OBN Obninsk 24.66 329 *eP* **P 20 35 30.7 +0.6**
comp=Z,59nm,1.0s
OBN Obninsk 24.66 329 *eP* **P 20 35 30.7 +0.6**
comp=Z,59nm,1.0s
DAMY Dhamar 24.66 215 *eP* **P 20 35 32.0 +1.1**
comp=Z,28nm,1.1s
DAMY Dhamar 24.66 215 *eP* **P 20 35 32.0 +1.1**
comp=Z,28nm,1.1s
MOS Moscow 24.66 331 *eP* **P 20 35 26.2 -4.0**
MOS *eS* **S 20 39 42.2 -9.3**
MOS pmax pmax
comp=Z,41nm,1.2s
KIS Kishinev 24.95 306 *eP* **P 20 35 33.0 +0.1**
KIS Kishinev 24.95 306 *eP* **P 20 35 33.0 +0.1**
KIS *e* 20 35 43.0
KIS Kishinev 24.95 306 *eP* **P 20 35 33.0 +0.1**
CFR Carcaliu 24.98 302 ⇑*iP* **P 20 35 34.3 +1.2**
CFR Carcaliu 24.98 302 ⇑P **P 20 35 34.3 +1.2**
CFR Carcaliu 24.98 302 P **P 20 35 34.3 +1.2**
KARP Karpathos 25.58 279 *eP* **P 20 35 41.0 +2.2**
comp=Z,11nm,0.9s
KARP Karpathos 25.58 279 *eP* **P 20 35 41.0 +2.2**
comp=Z,11nm,0.9s
SORM Soroca 25.59 308 ⇓*iP* **P 20 35 38.7 +0.1**
SORM Soroca 25.59 308 ⇓P **P 20 35 38.7 +0.1**
SORM Soroca 25.59 308 P **P 20 35 38.7 +0.1**
ZAA0 Zalesovo Array 25.75 37 *eP* **P 20 35 40.0 0.0**
ZAA0 Zalesovo Array 25.75 37 *eP* **P 20 35 40.0 0.0**
ZALV Zalesovo Beam 25.75 37 P **P 20 35 41.1 +1.1**
comp=Z,2.3nm,0.7s,baz=250,slow=8.7,SNR=11
ZAA1 Zalesovo Array 25.75 37 *eP* **P 20 35 41.1 +1.1**
ZAA1 Zalesovo Array 25.75 37 *eP* **P 20 35 41.1 +1.1**
AKASG Malin Array Be 25.97 314 P **P 20 35 41.5 -0.5**
comp=Z,4.1nm,0.7s,baz=118,slow=7.9,SNR=4.2
AKBB Malin Array Si 25.97 314 *eP* **P 20 35 42.6 +0.6**
AKBB pmax pmax
comp=Z,16nm,0.9s
AKBB Malin Array Si 25.97 314 *eP* **P 20 35 42.6 +0.6**
comp=Z,16nm,0.9s
AKBB Malin Array Si 25.97 314 *eP* **P 20 35 42.6 +0.6**
comp=Z,16nm,0.9s
KIEV Kiev 25.97 314*deP* **P 20 35 42.6 +0.5**
KIEV pmax pmax
comp=Z,19nm,1.6s
KIEV Kiev 25.97 314 *eP* **P 20 35 42.6 +0.5**
comp=Z,19nm,1.6s
KIEV Kiev 25.97 314 *eP* **P 20 35 41.5 -0.6**
comp=Z,34nm,1.4s
AK11 Malin Array Si 25.99 314 *eP* **P 20 35 41.1 -1.1**
AK11 Malin Array Si 25.99 314 *eP* **P 20 35 41.1 -1.1**
ISR Istrita 26.08 301 ⇓*iP* **P 20 35 47.0 +3.8**
ISR Istrita 26.08 301 ⇓P **P 20 35 47.0 +3.8**
VRI Vrincioaia 26.09 303 ⇓*iP* **P 20 35 44.9 +1.7**
VRI Vrincioaia 26.09 303 ⇓P **P 20 35 44.9 +1.7**
PLOR Plostina 26.14 303 ⇑*iP* **P 20 35 45.3 +1.6**
PLOR Plostina 26.14 303 ⇑P **P 20 35 45.3 +1.6**
TESR Tescani 26.28 304 ⇓*iP* **P 20 35 46.9 +2.0**
BOK Bokaro 26.33 109 *eP* **P 20 35 46.4 +0.8**
BOK IAmb IAmb 20 35 48.0
comp=Z,16nm,0.8s
MLR Muntele Rosu 26.56 302 P **P 20 35 49.5 +1.9**
comp=Z,0.9nm,0.8s,baz=150,slow=16,SNR=8.6
MLR Muntele Rosu 26.56 302 ⇑*iP* **P 20 35 50.2 +2.6**
MLR Muntele Rosu 26.56 302 ⇑P **P 20 35 50.2 +2.6**
MLR Muntele Rosu 26.56 302 *eP* **P 20 35 48.9 +1.3**
comp=Z,28nm,1.2s
MLR Muntele Rosu 26.56 302 *eP* **P 20 35 48.9 +1.3**
comp=Z,28nm,1.2s
APE Apeiranthos 26.66 283 ⇓*iP* P 20 35 59.6 +11
APE Apeiranthos 26.66 283 ⇓P P 20 35 59.6 +11
LAST Lasithi 27.00 279 ⇑*iP* **P 20 35 55.7 +4.0**
LAST Lasithi 27.00 279 *eP* **P 20 35 54.5 +2.8**
comp=Z,13nm,0.9s
LAST Lasithi 27.00 279 *eP* **P 20 35 54.5 +2.8**
comp=Z,13nm,0.9s
DOPR Dopca 27.02 303 ⇑*iP* **P 20 35 53.4 +1.7**
VOIR 27.17 301 ⇑*iP* **P 20 35 58.2 +5.1**
VOIR 27.17 301 ⇑P **P 20 35 58.2 +5.1**
ARR Arges 27.45 301 ⇑*iP* P 20 36 08.5 +13
BUR08 Bucovina Array 27.48 306 ⇑*iP* **P 20 36 00.1 +4.2**
BUR08 Bucovina Array 27.48 306 ⇑P **P 20 36 00.1 +4.2**
BUR08 Bucovina Ar. S 27.50 306 *eP* **P 20 35 56.2 +0.1**
BUR08 Bucovina Ar. S 27.50 306 *eP* **P 20 35 56.1 +0.1**
LSA Lhasa 27.87 93 *eP* **P 20 36 01.4 +1.4**
LSA pmax pmax
comp=Z,4.0nm,0.9s
LSA Lhasa 27.87 93 *eP* **P 20 36 01.4 +1.4**
comp=Z,4.2nm,0.9s
LSA Lhasa 27.87 93 *eP* **P 20 36 01.4 +1.4**
comp=Z,4.2nm,0.9s
ATD Arta Tunnel 28.04 215 P **P 20 36 01.1 0.0**
comp=Z,3.4nm,0.3s,baz=171,slow=13,SNR=2.4
ATD LR LR 20 48 44.4
comp=Z,287nm,20.1s,baz=22,slow=40
DRGR 28.99 304 ⇑*iP* P 20 36 22.3 +13
DRGR 28.99 304 ⇑P P 20 36 22.3 +13
KWP Kalwaria Pacla 29.58 309 ⇑*iP* **P 20 36 16.8 +2.4**
KWP Kalwaria Pacla 29.58 309 ⇑P **P 20 36 16.8 +2.4**
UZH Uzhgorod 29.61 307 *eP* **P 20 36 15.5 +0.8**
UZH *e* 20 36 23.7
KRAR Krasnoyarsk 30.79 38 ⇓*eP* **P 20 36 25.7 +0.7**
KRAR pmax pmax
comp=Z,20nm,0.4s
VSU Vasula 30.98 327 ⇓*eP* **P 20 36 27.5 +0.8**
VSU pmax pmax
comp=Z,42nm,1.0s
PSZ Piszkesteto 31.06 305 *eP* **P 20 36 26.2 -1.4**
PSZ pmax pmax
comp=Z,34nm,2.0s
PSZ Piszkesteto 31.06 305 *eP* **P 20 36 26.2 -1.4**
comp=Z,34nm,2.0s
PSZ Piszkesteto 31.06 305 *eP* **P 20 36 26.2 -1.4**
comp=Z,34nm,2.0s
OJC Ojcow 31.54 310 *eP* **P 20 36 31.8 0.0**
OJC pmax pmax
comp=Z,6.0nm,1.0s
OJC Ojcow 31.54 310 *eP* **P 20 36 31.8 0.0**
comp=Z,6.2nm,1.0s
OJC Ojcow 31.54 310 *eP* **P 20 36 31.8 0.0**
comp=Z,6.2nm,1.0s
VYHS Vyhne 31.85 306 *eP* **P 20 36 35.1 +0.6**
VYHS Vyhne 31.85 306 *eP* **P 20 36 35.1 +0.6**
VYHS Vyhne 31.85 306 *eP* **P 20 36 35.1 +0.6**
GTA Gaotai 32.60 71 P **P 20 36 43.6 +2.3**
GTA pP sP 20 36 52.0 +6.4
GTA sP pP 20 36 55.8 +11
GTA S **S 20 42 00.3 +3.3**
GTA sS sS 20 42 15.6 +14
GTA SS **SS 20 44 05.1 -12**
GTA pmax pmax
comp=Z,8.0nm,1.3s
GTA pmax pmax
comp=Z,96nm,4.0s
GTA LR LR
comp=N,290nm,16.6s
GTA LR LR
comp=E,270nm,14.7s
GTA LR LR
comp=Z,260nm,15.7s
MORC Moravsky Berou 32.89 308 *eP* **P 20 36 44.5 +0.9**
MORC pmax pmax
comp=Z,36nm,1.5s
MORC Moravsky Berou 32.89 308 *eP* **P 20 36 44.5 +0.9**
comp=Z,36nm,1.5s
MORC Moravsky Berou 32.89 308 *eP* **P 20 36 44.5 +0.9**
comp=Z,36nm,1.5s
FIA1 FINESS Array S 32.96 332 *eP* **P 20 36 45.1 +1.1**
FIA1 FINESS Array S 32.96 332 *eP* **P 20 36 45.1 +1.1**
FIA0 FINESS Array S 32.96 332 *eP* **P 20 36 45.0 +1.0**
FIA0 FINESS Array S 32.96 332 *eP* **P 20 36 45.0 +1.0**
FIA0 FINESS Array S 32.96 332 *eP* **P 20 36 45.0 +1.0**
FINES FINESS Array B 32.96 332 P **P 20 36 45.0 +1.0**
comp=Z,2.7nm,0.6s,baz=128,slow=9.0,SNR=9.9
FINES FINESS Array B 32.96 332 P **P 20 36 45.0 +1.0**
FINES FINESS Array B 32.96 332 P **P 20 36 45.0 +1.0**
DPC Dobruska-Polom 33.76 309 *eP* **P 20 36 52.3 +1.1**
DPC *ex* x 20 37 04.9
DPC Dobruska-Polom 33.76 309 *eP* **P 20 36 52.3 +1.1**
DPC *e* 20 37 04.9
DPC Dobruska-Polom 33.76 309 *eP* **P 20 36 52.3 +1.1**
CUC Castrocucco 33.89 290 *eP* **P 20 36 52.1 -0.3**
comp=Z,1.7nm,0.8s
CUC Castrocucco 33.89 290 *eP* **P 20 36 52.1 -0.3**
comp=Z,1.7nm,0.8s
ZAK Zakamensk 35.16 51 *eP* **P 20 37 05.5 +2.1**
ZAK pmax pmax
comp=Z,2.0nm,1.3s
GEA0 GERESS Array S 35.27 306 *eP* **P 20 37 03.9 -0.4**
GEA0 GERESS Array S 35.27 306 *eP* **P 20 37 03.9 -0.4**
GEC2 GERESS Array S 35.27 306 *eP* **P 20 37 04.1 -0.3**
GEC2 pmax pmax
comp=Z,14nm,1.6s
GEC2 GERESS Array S 35.27 306 *eP* **P 20 37 04.1 -0.3**
comp=Z,14nm,1.6s
GEC2 GERESS Array S 35.27 306 *eP* **P 20 37 04.1 -0.3**
comp=Z,14nm,1.6s
GERES GERESS Array B 35.27 306 P **P 20 37 04.5 +0.1**
comp=Z,0.4nm,0.5s,baz=101,slow=10,SNR=4.6
BRG Berggiesshubel 35.34 310 *eP* **P 20 37 07.0 +2.2**
comp=Z,4.5nm,1.1s
BRG Berggiesshubel 35.34 310 *eP* **P 20 37 06.9 +2.2**
BRG pmax pmax
comp=Z,5.0nm,1.1s
KHC Kasperske Hory 35.37 306 *eP* **P 20 37 05.4 +0.2**
KHC Kasperske Hory 35.37 306 *eP* **P 20 37 05.0 -0.2**
KHC pmax pmax
comp=Z,4.0nm,1.5s
KHC Kasperske Hory 35.37 306 P **P 20 37 05.4 +0.2**
KHC Kasperske Hory 35.37 306 *eP* **P 20 37 05.0 -0.2**
comp=Z,3.5nm,1.5s
TLY Talaya 35.57 49 *eP* **P 20 37 09.1 +2.3**
TLY pmax pmax
comp=Z,4.0nm,1.2s
TLY Talaya 35.57 49 *eP* **P 20 37 09.1 +2.3**
comp=Z,3.7nm,1.2s
TLY Talaya 35.57 49 *eP* **P 20 37 09.1 +2.3**
comp=Z,3.7nm,1.2s
LZH Lanzhou 36.32 76 *eP* **P 20 37 16.9 +3.3**
LZH pP sP 20 37 24.1 +6.2
LZH sP pP 20 37 28.3 +12
LZH pmax pmax
comp=Z,18nm,1.0s
SONA0 Songino Array 37.01 56 *eP* **P 20 37 20.9 +1.6**
comp=Z,8.1nm,1.2s
SONA0 Songino Array 37.01 56 *eP* **P 20 37 20.9 +1.6**
comp=Z,8.1nm,1.2s
SONM Songino Array 37.01 56 P **P 20 37 20.9 +1.6**
comp=Z,2.9nm,1.0s,baz=278,slow=10.0,SNR=16
SONA1 Songino Array 37.02 56 *eP* **P 20 37 20.4 +1.0**
SONA1 Songino Array 37.02 56 *eP* **P 20 37 20.4 +1.0**
ULN Ulaanbaatar 37.45 56*ceP* **P 20 37 24.9 +1.8**
ULN pmax pmax
comp=Z,21nm,1.7s
ULN Ulaanbaatar 37.45 56 *eP* **P 20 37 24.4 +1.3**
comp=Z,13nm,1.1s
ULN Ulaanbaatar 37.45 56 *eP* **P 20 37 24.4 +1.3**
comp=Z,13nm,1.1s
VLC Villacollemand 37.53 298 *eP* **P 20 37 23.2 -0.5**
comp=Z,7.2nm,1.0s
VLC Villacollemand 37.53 298 *eP* **P 20 37 23.2 -0.5**
comp=Z,7.2nm,1.0s
CD2 Chengdu 37.70 84 P **P 20 37 23.9 -1.4**
CD2 pmax pmax
comp=Z,40nm,0.6s
CD2 LR LR
comp=N,640nm,16.2s
CD2 LR LR
comp=Z,440nm,15.0s
ARA0 ARCESS Array S 38.41 342 *eP* **P 20 37 31.5 +0.8**
ARA0 ARCESS Array S 38.41 342 *eP* **P 20 37 31.5 +0.8**
ARCES ARCESS Array B 38.41 342 P **P 20 37 31.5 +0.8**
comp=Z,6.6nm,1.0s,baz=129,slow=8.3,SNR=4.9
ARCES LR LR 20 55 44.9
comp=Z,115nm,18.1s,baz=128,slow=40
NC405 NORSAR Array S 38.95 326 *eP* **P 20 37 35.0 -0.4**
NC405 NORSAR Array S 38.95 326 *eP* **P 20 37 35.0 -0.4**
NB201 NORSAR Array S 39.13 325 *eP* **P 20 37 36.9 0.0**
NB201 NORSAR Array S 39.13 325 *eP* **P 20 37 36.9 0.0**
KMI Kunming 39.13 93 P **P 20 37 38.1 +0.5**
KMI pP sP 20 37 46.5 +4.6
KMI sP pP 20 37 49.6 +8.9
KMI pmax pmax
comp=Z,13nm,1.0s
KMI pmax pmax
comp=Z,110nm,3.9s
NC303 NORSAR Array S 39.15 326 *eP* **P 20 37 37.6 +0.6**
NC303 NORSAR Array S 39.15 326 *eP* **P 20 37 37.6 +0.6**
NB2 NORSAR Subarra 39.16 325 P **P 20 37 37.1 -0.1**
comp=Z,2.4nm,0.7s,baz=109,slow=8.6
NB2 NORSAR Subarra 39.16 325 P **P 20 37 37.1 -0.1**
comp=Z,2.4nm,0.7s,SNR=8.1
NB200 NORSAR Array S 39.16 325 *eP* **P 20 37 37.5 +0.4**
NB200 NORSAR Array S 39.16 325 *eP* **P 20 37 37.5 +0.4**
NOA NORSAR Array B 39.16 325 P **P 20 37 37.5 +0.4**
comp=Z,12nm,1.1s,baz=110,slow=8.1,SNR=7.7
CHTO Chiang Mai 39.22 105 *eP* **P 20 37 38.0 -0.1**
CHTO pmax pmax
comp=Z,13nm,1.4s
CHTO Chiang Mai 39.22 105 *eP* **P 20 37 38.0 -0.1**
comp=Z,13nm,1.4s
CHTO Chiang Mai 39.22 105 *eP* **P 20 37 38.0 -0.1**
comp=Z,13nm,1.4s
NBO02 NORSAR Array S 39.33 325 *eP* **P 20 37 39.0 +0.5**
NBO02 NORSAR Array S 39.33 325 *eP* **P 20 37 39.0 +0.5**
NBO00 NORSAR Array S 39.36 325 *eP* **P 20 37 38.7 -0.1**
NBO00 NORSAR Array S 39.36 325 *eP* **P 20 37 38.7 -0.1**
CM31 Chiang Mai Arr 39.42 105 *eP* **P 20 37 39.9 +0.1**
CM31 Chiang Mai Arr 39.42 105 *eP* **P 20 37 39.9 +0.1**
CMAR Chiang Mai Arr 39.42 105 P **P 20 37 40.4 +0.6**
comp=Z,3.5nm,0.8s,baz=300,slow=8.3,SNR=28
NC204 NORSAR Array S 39.44 326 *eP* **P 20 37 39.8 +0.3**
NC204 NORSAR Array S 39.44 326 *eP* **P 20 37 39.8 +0.3**
CM01 Chiang Mai Arr 39.45 105 *eP* **P 20 37 39.5 -0.5**
CM01 Chiang Mai Arr 39.45 105 *eP* **P 20 37 39.5 -0.5**
KONO Kongsberg 39.53 323 *eP* **P 20 37 42.0 +1.8**
KONO pmax pmax
comp=Z,184nm,1.9s
KONO Kongsberg 39.53 323 *eP* **P 20 37 42.0 +1.8**
comp=Z,184nm,1.9s
KONO Kongsberg 39.53 323 *eP* **P 20 37 42.0 +1.8**
comp=Z,184nm,1.9s
SENIN Lac Senin/Sane 39.57 302 *eP* **P 20 37 41.6 +0.6**
comp=Z,26nm,1.8s
SENIN Lac Senin/Sane 39.57 302 *eP* **P 20 37 41.6 +0.6**
comp=Z,26nm,1.8s
XAN Xi'an 40.87 77 P **P 20 37 53.4 +1.7**
XAN pP sP 20 38 02.8 +6.8
XAN pmax pmax
comp=Z,12nm,1.4s
XAN LR LR
comp=N,500nm,15.1s
XAN LR LR
comp=Z,330nm,16.2s
HHC Hu-ho-hao-te 41.29 66 *eP* **P 20 37 54.3 -0.8**
HHC sP sP 20 38 07.9 +8.4
HHC S **S 20 44 04.6 -4.7**
HHC SS **SS 20 47 04.6 -7.9**
HHC pmax pmax
comp=Z,24nm,1.0s
HHC pmax pmax
comp=Z,140nm,6.3s
HHC LR LR
comp=N,340nm,15.3s
HHC LR LR
comp=E,320nm,15.4s
HHC LR LR
comp=Z,340nm,15.2s
BOD Bodaibo 42.36 41 *eP* **P 20 38 03.4 -0.1**
BOD pmax pmax
comp=Z,3.0nm,1.3s
ENH Enshi 42.56 82 *eP* **P 20 38 06.4 +0.9**
comp=Z,7.5nm,0.9s
ENH Enshi 42.56 82 *eP* **P 20 38 06.4 +0.9**
comp=Z,7.5nm,0.9s
WHN Wuhan 46.37 80 ⇓P P 20 38 30.8 -5.1
TAM Tamanrasset 47.63 269 *eP* **P 20 38 46.6 +0.5**
TAM pmax pmax
comp=Z,6.0nm,1.2s
TAM Tamanrasset 47.63 269 *eP* **P 20 38 46.6 +0.5**
comp=Z,5.8nm,1.2s
TAM Tamanrasset 47.63 269 *eP* **P 20 38 46.6 +0.5**
comp=Z,5.8nm,1.2s
ES19 SONSECA Array 48.80 294 *eP* **P 20 38 54.7 -0.1**
ES19 SONSECA Array 48.80 294 *eP* **P 20 38 54.7 -0.1**
ESDC Sonseca Array 48.85 294 P **P 20 38 54.6 -0.7**
comp=Z,1.1nm,0.9s,baz=56,slow=6.5,SNR=6.4
PSI Prapat 49.55 122 *eP* **P 20 38 59.1 -1.8**
PSI pmax pmax
comp=Z,9.0nm,0.8s
PSI Prapat 49.55 122 *eP* **P 20 38 59.1 -1.8**
comp=Z,9.1nm,0.8s
IPM Ipoh 49.84 119 *eP* **P 20 39 02.6 -0.4**
comp=Z,22nm,1.5s
IPM Ipoh 49.84 119 *eP* **P 20 39 02.6 -0.4**
comp=Z,22nm,1.5s
TIXI Tiksi 50.30 23 P **P 20 39 06.4 +0.7**
comp=Z,2.3nm,0.9s,baz=311,slow=2.8,SNR=9.3
TIXI Tiksi 50.30 23 ⇓*iP* **P 20 39 05.9 +0.2**
TIXI pmax pmax
comp=Z,9.0nm,1.7s
TIXI MLR MLR
comp=Z,168nm,16.0s
YAK Yakutsk 50.39 35 *eP* **P 20 39 06.7 +0.2**
YAK pmax pmax
comp=Z,11nm,0.9s
YAK Yakutsk 50.39 35 *eP* **P 20 39 06.7 +0.2**
comp=Z,11nm,0.9s
YAK Yakutsk 50.39 35 *eP* **P 20 39 06.7 +0.2**
comp=Z,11nm,0.9s
CN2 Changchun 50.69 59 *eP* **P 20 39 06.4 -2.7**
KS15 Wonju Array Si 54.41 66 *eP* **P 20 39 37.5 +0.8**
KS15 Wonju Array Si 54.41 66 *eP* **P 20 39 37.5 +0.8**
KSAR Wonju Array Be 54.41 66 P **P 20 39 37.5 +0.8**
KSAR Wonju Array Be 54.41 66 P **P 20 39 37.5 +0.8**
KSAR Wonju Array Be 54.41 66 P **P 20 39 37.5 +0.8**
KSRS Korea Array 54.43 66 P **P 20 39 37.5 +0.6**
comp=Z,2.7nm,0.9s,baz=290,slow=6.0,SNR=2.8
TOA1 Torodi Ar. Sit 55.73 261 *eP* **P 20 39 45.1 -1.5**
comp=Z,14nm,1.4s
TOA1 Torodi Ar. Sit 55.73 261 *eP* **P 20 39 45.1 -1.5**
comp=Z,14nm,1.4s
TOA0 Torodi Ar. Sit 55.74 261 *eP* **P 20 39 45.0 -1.6**
TOA0 Torodi Ar. Sit 55.74 261 *eP* **P 20 39 45.0 -1.6**
TORD Torodi Ar. Bea 55.74 261 P **P 20 39 45.1 -1.5**
comp=Z,10.0nm,1.2s,baz=52,slow=6.2,SNR=18
TORD LR LR 21 06 41.9
comp=Z,61nm,18.7s,baz=155,slow=39
JNU Nakatsue 58.32 70 *eP* **P 20 40 04.3 -0.5**
comp=Z,103nm,1.5s
JNU Nakatsue 58.32 70 *eP* **P 20 40 04.3 -0.5**
comp=Z,103nm,1.5s
LSZ Lusaka 58.37 215 *eP* **P 20 40 05.6 +0.3**
LSZ pmax pmax
comp=Z,6.0nm,1.1s
LSZ Lusaka 58.37 215 *eP* **P 20 40 05.6 +0.3**
comp=Z,5.7nm,1.1s
LSZ Lusaka 58.37 215 *eP* **P 20 40 05.6 +0.3**
comp=Z,5.7nm,1.1s
SUMG Summit 58.42 339 *eP* **P 20 40 05.0 -0.3**

SUMG					pmax	pmax		
	comp=Z,22nm,1.6s							
SUMG	**Summit**	**58.42**	**339**	*e*P	**P**		**20 40 05.0**	**-0.3**
	comp=Z,22nm,1.6s							
SUMG	**Summit**	**58.42**	**339**	*e*P	**P**		**20 40 05.0**	**-0.3**
	comp=Z,22nm,1.6s							
SEY	**Seymchan**	**60.47**	**32**	*ce*P	**P**		**20 40 20.1**	**+1.1**
BILL	**Bilibino**	**63.50**	**24**	⇑*e*P	**P**		**20 40 41.5**	**+2.1**
BILL				*e*			20 41 17.3	
BILL				*e*S	S		20 49 42.9	+31
BILL				pmax	pmax			
	comp=Z,8.0nm,1.7s							
BILL				MLR	MLR			
	comp=Z,94nm,17.0s							
BILL	**Bilibino**	**63.50**	**24**	*e*P	**P**		**20 40 40.8**	**+1.4**
	comp=Z,8.4nm,1.2s							
BILL	**Bilibino**	**63.50**	**24**	*e*P	**P**		**20 40 40.8**	**+1.4**
	comp=Z,8.4nm,1.2s							
DBIC	**Dimbokro**	**64.72**	**260**	LR	LR		21 10 53.0	
	comp=Z,57nm,18.5s,baz=70,slow=38							
COLD	**Coldfoot**	**75.05**	**11**	*e*P	**P**		**20 41 51.3**	**+0.4**
	comp=Z,16nm,1.9s							
COLD	**Coldfoot**	**75.05**	**11**	*e*P	**P**		**20 41 51.3**	**+0.4**
	comp=Z,16nm,1.9s							
MDM	**Murphy Dome**	**77.46**	**11**	*e*P	**P**		**20 42 05.2**	**+0.6**
	comp=Z,12nm,1.4s							
MDM	**Murphy Dome**	**77.46**	**11**	*e*P	**P**		**20 42 05.2**	**+0.6**
	comp=Z,12nm,1.4s							
COLA	**College**	**77.60**	**11**	⇑*i*P	**P**		**20 42 07.1**	**+1.7**
COLA				pmax	pmax			
	comp=Z,9.0nm,1.3s							
IL1	**Eielson Array**	**77.84**	**11**	*e*P	**P**		**20 42 05.1**	**-1.7**
IL1	**Eielson Array**	**77.84**	**11**	*e*P	**P**		**20 42 05.1**	**-1.7**
ILAR	**Eielson Array**	**77.84**	**11**	P	**P**		**20 42 07.5**	**+0.8**
	comp=Z,1.5nm,1.1s,baz=348,slow=4.0,SNR=7.8							
CAST	**Castle Rocks**	**78.19**	**14**	*e*P	**P**		**20 42 09.6**	**+0.8**
	comp=Z,10nm,1.1s							
CAST	**Castle Rocks**	**78.19**	**14**	*e*P	**P**		**20 42 09.6**	**+0.8**
	comp=Z,10nm,1.1s							
EGAK	**Eagle**	**78.62**	**9**	*e*P	**P**		**20 42 12.1**	**+1.0**
	comp=Z,5.8nm,1.1s							
EGAK	**Eagle**	**78.62**	**9**	*e*P	**P**		**20 42 12.1**	**+1.0**
	comp=Z,5.8nm,1.1s							
RND	**Reindeer**	**78.79**	**12**	*e*P	**P**		**20 42 11.7**	**-0.5**
RND				pmax	pmax			
	comp=Z,6.0nm,1.0s							
RND	**Reindeer**	**78.79**	**12**	*e*P	**P**		**20 42 11.7**	**-0.5**
	comp=Z,6.4nm,1.0s							
RND	**Reindeer**	**78.79**	**12**	*e*P	**P**		**20 42 11.7**	**-0.5**
	comp=Z,6.4nm,1.0s							
DAWY	**Dawson**	**79.52**	**8**	*e*P	**P**		**20 42 16.6**	**+0.5**
	comp=Z,5.5nm,1.2s							
DAWY	**Dawson**	**79.52**	**8**	*e*P	**P**		**20 42 16.6**	**+0.5**
	comp=Z,5.5nm,1.2s							
YKA	**Yellowknife Ar**	**81.98**	**357**	P	**P**		**20 42 29.2**	**+0.1**
	comp=Z,1.6nm,1.1s,baz=2.5,slow=5.8,SNR=13							
YKB5	**Yellowknife Ar**	**81.98**	**357**	*e*P	**P**		**20 42 28.2**	**-1.0**
YKB5	**Yellowknife Ar**	**81.98**	**357**	*e*P	**P**		**20 42 28.2**	**-1.0**
WR1	**Warramunga Arr**	**90.41**	**114**	*e*P	**P**		**20 43 11.3**	**-0.1**
	comp=Z,11nm,0.8s							
WR1	**Warramunga Arr**	**90.41**	**114**	*e*P	**P**		**20 43 11.3**	**-0.1**
	comp=Z,11nm,0.8s							
WRA	**Warramunga Arr**	**90.41**	**114**	P	**P**		**20 43 11.3**	**-0.1**
	comp=Z,2.3nm,0.7s,baz=318,slow=4.3,SNR=12							
WRA	**Warramunga Arr**	**90.41**	**114**	*i* P	**P**		**20 43 12.1**	**+0.7**
WRA				pmax	pmax			
	comp=Z,2.0nm,0.7s							
ASAR	**Alice Springs**	**92.38**	**117**	P	**P**		**20 43 21.0**	**+0.5**
	comp=Z,1.4nm,0.9s,baz=311,slow=5.2,SNR=8.8							
ASAR	**Alice Springs**	**92.38**	**117**	P	**P**		**20 43 21.0**	**+0.5**
ASAR	**Alice Springs**	**92.38**	**117**	P	**P**		**20 43 21.0**	**+0.5**

CSEM ***24*** *20:34:26.1±0.3, 47.°72N×12.°96E, h15km, ML1.6/6, Error ellipse: s-maj=9.0km s-min=5.0km az=148.0*
PRU ***24*** *20:34:33.7, 48.°44N×15.°16E, h0km*
VIE 24 20:34:24.4±0.4, 47.°70N×12.°83E, h3km, ML0.9/2, Error ellipse: s-maj=3.5km s-min=1.4km az=74.0, Austria

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KBA	**Koelnbreinsper**	**0.71**	**150**	Sg	Sg	20 34 48.1	+0.9
	0.8nm,0.3s						
WTTA	**Wattenberg**	**0.92**	**242**	Pg	Pn	20 34 45.2	+0.8
	0.6nm,0.1s						
WTTA				Sg	Sn	20 34 59.7	+1.5
	2.5nm,0.5s						
WATA	**Walderalm**	**0.92**	**247**	Pg	Pn	20 34 46.5	+2.1
	0.5nm,0.1s						
WATA				Sg	Sn	20 35 01.7	+3.5
	1.9nm,0.3s						
ABTA	**Abfaltersbach**	**0.97**	**193**	Sg	Sn	20 35 00.1	+0.7
	0.4nm,0.3s						
MOA	**Molln**	**0.98**	**80**	Pg	Pg	20 34 43.2	0.0
	0.2nm,0.1s						
MOA				Sg	Sb	20 34 56.9	-0.5
	0.6nm,0.1s						
MOTA	**Moosalm**	**1.22**	**254**	Pg	Pn	20 34 50.4	+1.9
	1.4nm,0.2s						
MOTA				Sg	Sn	20 35 09.7	+4.1
	0.6nm,0.1s						
KHC	**Kasperske Hory**	**1.52**	**19**	*e*PG	Pg	20 34 54.2	+0.7
KHC				*e*SG	Sg	20 35 14.8	+1.6
KHC	**Kasperske Hory**	**1.52**	**19**	Pg	Pg	20 34 54.2	+0.7
KHC				Sg	Sg	20 35 14.8	+1.6

JMA 24 20:35:13.4, 37.°11N×140.°83E, h7km±1km, M3.0, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.03**	**252**	P	Pg	20 35 14.6	-0.2
ONAJ				S	Sg	20 35 15.6	-0.2
JFK	**Kawauchi**	**0.26**	**8**	P	Pg	20 35 18.7	+0.2
JHO	**Hitachi**	**0.54**	**203**	P	Pg	20 35 23.8	0.0
JHO				S	Sg	20 35 31.4	+0.5
JFT	**Otama**	**0.57**	**316**	P	Pg	20 35 24.8	+0.5
JFT				S	Sg	20 35 32.3	+0.6
JSB	**Shiboa**	**0.74**	**259**	P	Pb	20 35 28.6	-0.1
JSB				S	Sb	20 35 39.1	+0.1
JMM	**Marumori**	**0.76**	**358**	P	Pg	20 35 27.7	-0.2
JMM				S	Sg	20 35 38.4	+0.6
JFY	**Yanaizu**	**0.94**	**289**	P	Pg	20 35 31.7	+0.1
JFY				S	Sg	20 35 44.2	+0.4
MAT	**Matsushiro**	**2.18**	**256**	P	Pb	20 35 52.0	-1.2
MAT				S	Sb	20 36 21.1	+0.7

NIED ***24*** *20:36:00, 37.°10N×140.°90E, h5km, Mw4.7 Best double couple: M0 1.31000×10^16 NP1:ϕs72.00000°, δ28.00000°, λ-85.00000°. NP2:ϕs246.00000°, δ62.00000°, λ-92.00000°.*
ISCJB ***24*** *20:36:12.7±0.5, 37.°10N±0.°02×140.°92E±0.°02, h9km±3km, mb4.8/160, MS4.2/40, Error ellipse: s-maj=3.3km s-min=2.3km az=141.2*
IDC ***24*** *20:36:12.7±0.5, 37.°06N×140.°83E, h0km, mb4.5/32, mb1 4.6/35, mb1mx4.5/46, mbtmp4.5/35, ML4.2/2, MS4.0/29, Ms1 4.0/29, ms1mx3.9/44, Error ellipse: s-maj=13.5km s-min=12.2km az=113.0*
JMA ***24*** *20:36:13.4, 37.°11N×140.°83E, h7km±1km, M5.0 Broadband fault plane solution: P waves. NP1: ϕs219.00000°, δ52.00000°, λ-129.00000°. NP2: ϕs93.00000°, δ52.00000°, λ-51.00000°. Principal axes: T Plg0.0000°, Azm336.0000°; N Plg30.0000°, Azm246.0000°; P Plg60.0000°, Azm66.0000°;*
NEIC ***24*** *20:36:16.7±1.2, 37.°04N×140.°84E, h27km±9km, mb4.9/94 Error ellipse: s-maj=4.2km s-min=3.1km az=130.0*
NEIC Recorded [5L JMA] in Fukushima.
MOS ***24*** *20:36:17.0±1.2, 37.°07N×140.°80E, h41km, mb5.0/60, Error ellipse: s-maj=6.9km s-min=4.5km az=110.7*
ISC 24 20:36:13.3±0.8, 37.°07N±0.°02×140.°92E±0.°03, h6km±4km, n438, σ1§56/488, mb4.8/171, MS4.2/40, 28C-25D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.10**	**286**	⇓P	**Pg**	**20 36 14.6**	**-1.0**
JFK	**Kawauchi**	**0.29**	**353**	⇑P	**Pg**	**20 36 18.5**	**-0.6**
JHO	**Hitachi**	**0.54**	**211**	⇑P	**Pg**	**20 36 23.7**	**0.0**
JHO				S	**Sb**	**20 36 31.3**	**-1.9**
JFT	**Otama**	**0.64**	**314**	⇑P	**Pg**	**20 36 24.6**	**-1.1**
JMM	**Marumori**	**0.80**	**353**	⇑P	**Pg**	**20 36 27.6**	**-1.0**
JSB	**Shiboa**	**0.81**	**263**	P	**Pg**	**20 36 28.3**	**-0.5**
JSB				S	**Sg**	**20 36 38.9**	**-0.4**
JFY	**Yanaizu**	**1.02**	**289**	⇑P	**Pg**	**20 36 31.5**	**-1.5**
JFY				S	**Sg**	**20 36 44.6**	**-1.7**
JOU	**Okura**	**1.30**	**351**	⇑P	**Pg**	**20 36 36.8**	**-1.6**
JYS	**Shiratake**	**1.33**	**330**	⇑P	**Pg**	**20 36 37.0**	**-1.9**
JAG	**Ashikaga**	**1.34**	**242**	P	**Pg**	**20 36 37.2**	**-1.9**
JAG				S	**Sg**	**20 36 54.3**	**-2.2**
JKT	**Katashina**	**1.37**	**258**	P	**Pn**	**20 36 38.5**	**-0.6**
JKT				S	**Sg**	**20 36 54.3**	**-3.2**
JNS	**Sasagawa**	**1.48**	**301**	P	**Pn**	**20 36 38.9**	**-1.5**
JNS				S	**Sb**	**20 36 57.9**	**-2.2**
JHK	**Hiroka**	**1.53**	**277**	⇑P	**Pn**	**20 36 39.9**	**-1.2**
JHK				S	**Sn**	**20 36 59.9**	**-1.4**
JIZZ	**Izumozaki**	**1.82**	**285**	P	**Pb**	**20 36 46.2**	**-0.8**
I30JP	**ISUMI INFRASON**	**1.83**	**196**	Pn	**Pg**	**20 36 47.5**	**-0.9**
	baz=3.0,slow=13						
I30JP				Sn	**Sb**	**20 37 10.3**	**+0.1**
	baz=193,slow=39						
I30JP				*i*		20 45 20.0	
	baz=16,slow=326,SNR=2.4						
JGK	**Kuni**	**1.90**	**255**	⇓P	**Pb**	**20 36 47.3**	**-1.1**
JGK				S	**Sb**	**20 37 11.4**	**-1.0**
JRY	**Ryogami san**	**1.94**	**238**	⇓P	**Pn**	**20 36 46.8**	**0.0**
JJN	**Nakama**	**2.21**	**272**	P	**Pb**	**20 36 51.6**	**-1.9**
MJAR	**Matsushiro Arr**	**2.24**	**257**	Pn	**Pn**	**20 36 51.0**	**+0.1**
	105nm,0.3s,baz=81,slow=16,SNR=135						
MJAR				Sn	**Sn**	**20 37 19.4**	**+0.5**
	206nm,0.3s,baz=89,slow=31,SNR=23						
MAJO	**Matsushiro**	**2.24**	**257**	*ce*P	**Pn**	**20 36 51.9**	**+1.0**
MAJO	**Matsushiro**	**2.24**	**257**	*e*Pn	**Pb**	**20 36 52.1**	**-2.0**
MAJO				*e*Sn	**Sn**	**20 37 19.1**	**+0.3**
MAT	**Matsushiro**	**2.24**	**257**	P	**Pn**	**20 36 51.7**	**+0.8**
MAT				S	**Sn**	**20 37 19.8**	**+0.9**
MAT	**Matsushiro**	**2.24**	**257**	P	**Pn**	**20 36 51.9**	**+1.0**
MJB9	**Matsu-Tunnel**	**2.24**	**257**	*e*Pn	**Pb**	**20 36 52.3**	**-1.9**
MJB9				*e*Sn	**Sn**	**20 37 19.0**	**+0.1**
JSD	**Sado**	**2.32**	**295**	P	**Pn**	**20 36 50.3**	**-1.7**
JOD2	**Odawara 2**	**2.34**	**220**	S	**Sn**	**20 37 21.7**	**+0.5**
JNG	**Nsakai**	**2.36**	**254**	P	**Pn**	**20 36 53.6**	**+1.0**
JNG				S	**Sb**	**20 37 25.0**	**-0.7**
JYN	**Shimob**	**2.48**	**231**	S	**Sb**	**20 37 26.9**	**-2.2**
JNT	**Takato**	**2.54**	**243**	P	**Pb**	**20 36 56.9**	**-2.5**
JIM2	**Oshima 3**	**2.64**	**208**	S	**Sn**	**20 37 28.5**	**-0.3**
JSZ	**Suzu**	**2.86**	**279**	P	**Pn**	**20 36 59.8**	**+0.4**
JSZ				S	**Sb**	**20 37 39.5**	**-0.5**
JIZS	**Izushimoda**	**2.88**	**216**	P	**Pn**	**20 37 00.2**	**+0.6**
SHZ3	**Shizuoka 3**	**2.97**	**228**	P	**Pn**	**20 37 02.5**	**+1.5**
JNY	**Yasuok**	**3.01**	**236**	P	**Pn**	**20 37 03.9**	**+2.4**
JGF	**Kuroka**	**3.23**	**244**	P	**Pn**	**20 37 06.2**	**+1.6**
JHG	**Hegura jima**	**3.27**	**285**	⇑P	**Pn**	**20 37 05.6**	**+0.5**
JYZW	**Yoshizawa**	**3.31**	**232**	P	**Pn**	**20 37 07.2**	**+1.6**
HMMJ	**Hamamatsu 2**	**3.41**	**230**	P	**Pn**	**20 37 08.4**	**+1.4**
JAO	**Obara**	**3.47**	**240**	P	**Pn**	**20 37 10.1**	**+2.3**
INU	**Inuyama**	**3.59**	**243**	*e*Pn	**Pn**	**20 37 11.7**	**+2.2**
INU				*e*Sg	**Sb**	**20 38 02.0**	**+0.9**
JGM	**Miyama**	**3.66**	**249**	P	**Pn**	**20 37 12.8**	**+2.4**
JHJ	**Hachijo jima 2**	**4.05**	**194**	Pn	**Pn**	**20 37 18.7**	**+2.8**
	32nm,0.3s,baz=54,slow=19,SNR=5.2						
JHJ				Sn	**Sn**	**20 38 05.8**	**+2.3**
	84nm,0.3s,baz=210,slow=20,SNR=4.7						
JHJ				LR	LR	20 38 54.6	
	comp=Z,2μm,19.8s,baz=48,slow=40						
JHJ2	**Mitsune**	**4.05**	**193**	*e*Pn	**Pn**	**20 37 16.9**	**+1.0**
JFM	**Mihama**	**4.28**	**250**	P	**Pn**	**20 37 21.4**	**+2.5**
ERM	**Erimo**	**5.23**	**19**	⇑*e*P	**Pn**	**20 37 32.1**	**+0.2**
ERM	**Erimo**	**5.23**	**19**	*e*Pn	**Pn**	**20 37 31.7**	**-0.2**
ERM				*e*Sn	**Sn**	**20 38 26.5**	**-6.0**
ASAJ	**Asahikawa**	**7.15**	**10**	Pn	**Pn**	**20 37 57.8**	**-0.6**
	3.6nm,0.3s,baz=224,slow=7.9,SNR=29						
ASAJ				Sn	**Sn**	**20 39 19.5**	**-0.3**
	0.8nm,0.3s,baz=269,slow=5.0,SNR=4.9						
ASAJ				LR	LR	20 40 52.7	
	comp=Z,1μm,20.5s,baz=232,slow=39						
ASAJ	**Asahikawa**	**7.15**	**10**	*e*Pn	**Pn**	**20 37 58.3**	**-0.1**
ASAJ				*e*Sn	**Sn**	**20 39 13.1**	**-6.7**
ASAJ				Sn	**Sn**	**20 39 19.5**	**-0.3**
ASAJ				*e*Lg	Lg	20 39 49.5	
JNU	**Nakatsue**	**9.12**	**247**	Pn	**Pn**	**20 38 27.1**	**+1.6**
	0.4nm,0.3s,baz=66,slow=8.5,SNR=9.0						
JNU				LR	LR	20 42 30.0	
	comp=Z,549nm,19.4s,baz=106,slow=42						
VLA	**Vladivostok**	**9.18**	**314**	⇑*i*P	Pn	20 38 30.9	+4.7
VLA				*e*S	**Sn**	**20 40 16.1**	**+6.3**
VLA				pmax	pmax		
	comp=Z,107nm,1.6s						
KUR	**Kuril'sk**	**9.69**	**31**	*e*P	**Pn**	**20 38 32.7**	**-0.4**
USRK	**Ussuriysk Ar.**	**9.83**	**319**	Pn	**Pn**	**20 38 39.3**	**+4.2**
	comp=Z,1.1nm,0.3s,baz=132,slow=11,SNR=45						
USRK				LR	LR	20 42 04.5	
	comp=Z,1μm,20.1s,baz=126,slow=36						
YSS	**Yuzh-Sakhalins**	**9.97**	**7**	⇑*e*P	**Pn**	**20 38 38.3**	**+1.3**
YSS				pmax	pmax		
	comp=Z,30nm,0.8s						
YSS				MLR	MLR		
	comp=N,900nm,14.0s						
YSS				MLR	MLR		
	comp=Z,900nm,14.0s						
YSS				MLR	MLR		
	comp=E,1μm,16.0s						
YSS	**Yuzh-Sakhalins**	**9.97**	**7**	*e*Pn	**Pn**	**20 38 38.2**	**+1.3**
YSS				*e*Sn	Sn	20 40 19.5	-10
CBIJ	**Chichi jima**	**10.01**	**173**	P	**Pn**	**20 38 35.0**	**-2.6**
CBIJ	**Chichi jima**	**10.01**	**173**	*e*Pn	**Pn**	**20 38 35.6**	**-1.9**
CBIJ				*e*Sn	Sn	20 40 19.7	-10
JCJ	**Chichijima**	**10.01**	**173**	Pn	**Pn**	**20 38 35.2**	**-2.4**
	comp=E,8.2nm,0.3s,baz=330,slow=11,SNR=9.0						
JCJ				Sn	**Sn**	**20 40 23.6**	**-6.5**
	comp=E,11nm,0.3s,baz=89,slow=23,SNR=4.1						
KSRS	**Korea Array**	**10.37**	**276**	Pn	**Pn**	**20 38 45.9**	**+3.5**
	comp=E,0.6nm,0.3s,baz=92,slow=13,SNR=58						
KSRS				LR	LR	20 42 21.4	
	comp=E,416nm,19.7s,baz=82,slow=36						
KS01	**Wonju Array Si**	**10.39**	**276**	*e*Pn	**Pn**	**20 38 45.2**	**+2.4**
KS15	**Wonju Array Si**	**10.40**	**276**	*e*Pn	Pn	20 38 47.4	+4.5
KSAR	**Wonju Array Be**	**10.40**	**276**	P	**Pn**	**20 38 46.0**	**+3.1**
KSAR	**Wonju Array Be**	**10.40**	**276**	Pn	**Pn**	**20 38 46.0**	**+3.1**
INCN	**Inchon**	**11.39**	**276**	*e*Pn	Pn	20 39 01.2	+4.7
MDJ	**Mudanjiang**	**11.41**	**315**	P	**Pn**	**20 38 59.5**	**+2.8**
MDJ	**Mudanjiang**	**11.41**	**315**	*e*Pn	Pn	20 39 02.5	+5.8
HABR	**Khabarovsk**	**12.18**	**341**	*e*P	Pn	20 39 14.3	+7.2
HABR				*e*S	**Sn**	**20 41 21.8**	**-1.3**
HABR				pmax	pmax		
	comp=Z,13nm,1.0s						
HABR				MLR	MLR		
	comp=Z,332nm,16.0s						
CN2	**Changchun**	**13.55**	**305**	*e*P	**Pn**	**20 39 25.4**	**-0.6**
CN2				*e*S	**Sn**	**20 41 56.1**	**-0.8**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.7s						
CN2				pmax	pmax		
	comp=Z,10.0nm,0.7s						
CN2				pmax	pmax		
	comp=Z,200nm,4.0s						
CN2				LR	LR		
	comp=N,1μm,12.0s						
CN2				LR	LR		
	comp=E,1μm,12.0s						
CN2				LR	LR		
	comp=Z,400nm,13.0s						
TYV	**Tymovskoe**	**13.84**	**5**	*e*P	**Pn**	**20 39 30.0**	**+0.1**
TYV				pmax	pmax		
	comp=E,26nm,0.8s						
TYV				pmax	pmax		
	comp=Z,20nm,0.8s						
TYV				MLR	MLR		
	comp=Z,1μm,22.0s						
KLR	**Kul'dur**	**13.86**	**334**	Pn	**Pn**	**20 39 30.5**	**+0.4**
	comp=Z,0.0nm,0.3s,baz=139,slow=13,SNR=3.6						
KLR				LR	LR	20 44 41.8	
	comp=Z,889nm,18.7s,baz=140,slow=37						
SNY	**Shenyang**	**14.21**	**295**	⇑P	**P**	**20 39 44.1**	**+1.6**
SNY				S	**Sn**	**20 42 17.0**	**+4.1**
SNY				pmax	pmax		
	comp=Z,17nm,0.7s						
SNY				pmax	pmax		
	comp=Z,160nm,5.6s						
SNY				LR	LR		
	comp=N,1μm,12.9s						
SNY				LR	LR		
	comp=E,1μm,13.2s						
SNY				LR	LR		
	comp=Z,2μm,13.5s						
DL2	**Dalian**	**15.32**	**283**	P	**P**	**20 39 53.9**	**-1.0**
DL2				S	**Sn**	**20 42 43.4**	**+3.4**
DL2				pmax	pmax		
	comp=Z,22nm,1.0s						
DL2				LR	LR		
	comp=N,740nm,12.2s						
DL2				LR	LR		
	comp=E,700nm,18.7s						
DL2				LR	LR		
	comp=Z,680nm,19.4s						
TIA	**Tai'an**	**19.11**	**275**	⇑P	**Pn**	**20 40 37.3**	**-0.3**
TIA				S	Sn	20 43 34.1	-38
TIA				pmax	pmax		
	comp=Z,10.0nm,0.9s						
TIA				LR	LR		
	comp=N,740nm,12.5s						
TIA				LR	LR		
	comp=E,270nm,10.1s						
TIA				LR	LR		
	comp=Z,620nm,12.5s						
BJI	**Beijing**	**19.56**	**286**	P	**P**	**20 40 41.4**	**-0.3**
BJI				S	**Sn**	**20 44 19.8**	**-2.9**
BJI				pmax	pmax		
	comp=Z,9.0nm,1.0s						
BJI				pmax	pmax		
	comp=Z,120nm,3.6s						
BJI				LR	LR		
	comp=N,350nm,15.6s						
BJI				LR	LR		
	comp=E,350nm,12.0s						
BJI				LR	LR		
	comp=Z,180nm,24.0s						
BJT	**Baijiatuau**	**19.57**	**286**	*e*P	**P**	**20 40 41.4**	**-0.3**
BJT				pmax	pmax		
	comp=Z,20nm,1.0s						
BJT	**Baijiatuau**	**19.57**	**286**	*e*P	**P**	**20 40 41.4**	**-0.3**
	comp=Z,20nm,1.0s						
HIA	**Hailar**	**19.60**	**315**	*e*P	**P**	**20 40 42.3**	**+0.3**
HIA	**Hailar**	**19.60**	**315**	*e*P	**P**	**20 40 42.3**	**+0.3**
YOJ	**Yonaguni jima**	**19.83**	**236**	*e*P	**P**	**20 40 43.9**	**-0.8**
YOJ				pmax	pmax		
	comp=Z,101nm,0.9s						
YOJ	**Yonaguni jima**	**19.83**	**236**	*e*P	**P**	**20 40 43.9**	**-0.8**
	comp=Z,100nm,0.9s						
PETK	**Petropavlovsk-**	**19.85**	**31**	LR	LR	20 49 29.1	
	comp=Z,246nm,18.5s,baz=222,slow=40						
TWG	**Pinlang**	**22.24**	**236**	*e*P	**P**	**20 41 11.4**	**+0.6**
	comp=Z,97nm,1.0s						
QZH	**Quanzhou**	**22.58**	**244**	P	**P**	**20 41 11.5**	**-2.8**
QZH				S	**S**	**20 45 12.3**	**-10**
QZH				LR	LR		
	comp=N,1μm,11.0s						
QZH				LR	LR		
	comp=E,700nm,12.8s						
QZH				LR	LR		
	comp=Z,750nm,13.0s						
WHN	**Wuhan**	**22.98**	**261**	P	P	20 41 10.8	-7.7
HHC	**Hu-ho-hao-te**	**23.09**	**288**	*e*P	**P**	**20 41 20.5**	**+0.8**
HHC				PP	PnPn	20 41 55.3	+11
HHC				S	**S**	**20 45 30.4**	**-0.9**
HHC				SS	**SnSn**	**20 46 08.0**	**+4.6**
HHC				pmax	pmax		
	comp=Z,75nm,0.9s						
HHC				pmax	pmax		
	comp=Z,620nm,4.2s						
HHC				LR	LR		
	comp=N,2μm,11.3s						
HHC				LR	LR		
	comp=E,2μm,11.3s						
HHC				LR	LR		
	comp=Z,2μm,12.3s						
MA2	**Magadan**	**23.40**	**13**	P	**P**	**20 41 23.2**	**+0.6**
	comp=Z,17nm,0.8s,baz=237,slow=8.3,SNR=4.3						
MA2				LR	LR	20 50 39.9	
	comp=Z,360nm,21.2s,baz=156,slow=37						
GUMO	**Guam**	**23.65**	**170**	LR	LR	20 50 47.9	
	comp=Z,207nm,20.3s,baz=24,slow=37						
GUMO	**Guam**	**23.65**	**170**	*e*P	**P**	**20 41 25.7**	**+0.3**
GUMO				pmax	pmax		
	comp=Z,223nm,1.2s						
GUMO	**Guam**	**23.65**	**170**	*e*P	**P**	**20 41 25.7**	**+0.3**
	comp=Z,223nm,1.2s						
YAK	**Yakutsk**	**25.95**	**348**	P	**P**	**20 41 46.4**	**+0.3**
	comp=Z,2.2nm,0.5s,baz=157,slow=18,SNR=6.4						
YAK				LR	LR	20 51 59.6	
	comp=Z,477nm,20.3s,baz=96,slow=36						
YAK	**Yakutsk**	**25.95**	**348**	*e*P	**P**	**20 41 45.1**	**-1.0**
YAK				*e**PP	sP	20 41 56.5	+7.6
YAK				*e*		20 42 23.5	
YAK				*e*PPP	PPP	20 42 37.1	
YAK				*e*		20 45 12.7	
YAK				*e*S	**S**	**20 46 13.5**	**-3.0**
YAK				*e**SS	sS	20 46 36.8	+17
YAK				*e*SS	**SnSn**	**20 47 13.9**	**+1.1**
YAK				*e*SSS	SSS	20 47 37.6	
YAK				*e*		20 52 39.2	
YAK				pmax	pmax		
	comp=Z,23nm,1.0s						
YAK				pmax	pmax		
	comp=E,5.0nm,1.1s						
YAK				pmax	pmax		
	comp=N,10.0nm,1.1s						
YAK				pmax	pmax		
	comp=Z,63nm,2.8s						
YAK				pmax	pmax		
	comp=N,38nm,2.7s						
YAK				pmax	pmax		
	comp=E,33nm,2.8s						
YAK				smax	smax		
	comp=N,102nm,3.2s						
YAK				smax	smax		
	comp=E,97nm,2.7s						
YAK	**Yakutsk**	**25.95**	**348**	*e*P	**P**	**20 41 44.9**	**-1.2**
	comp=E,33nm,0.8s						
XAN	**Xi'an**	**26.14**	**273**	P	**P**	**20 41 50.0**	**+1.7**
XAN				pP	sP	20 41 57.8	+6.8
XAN				S	S	20 46 06.3	-14
XAN				pmax	pmax		
	comp=Z,6.0nm,0.9s						
XAN				pmax	pmax		
	comp=Z,100nm,6.6s						
XAN				LR	LR		
	comp=N,500nm,15.1s						
XAN				LR	LR		
	comp=Z,330nm,16.2s						
SEY	**Seymchan**	**26.83**	**12**	P	**P**	**20 41 55.6**

comp=Z,26nm,1.1s
LZH pmax pmax
comp=Z,84nm,4.3s
LZH LR LR
comp=N,930nm,16.4s
LZH LR LR
comp=E,1µm,19.4s
LZH LR LR
comp=Z,760nm,14.9s
ZAK Zakamensk 29.93 308 *e*P **P 20 42 21.2 -0.9**
ZAK pmax pmax
comp=Z,3.0nm,1.1s
TLY Talaya 30.01 311 *e*P **P 20 42 22.7 +0.1**
TLY *e*S **S 20 47 23.8 +3.0**
TLY pmax pmax
comp=Z,5.0nm,1.5s
TLY MLR MLR
comp=Z,436nm,16.0s
TLY Talaya 30.01 311 *e*P **P 20 42 22.4 -0.2**
comp=Z,10nm,1.6s
GYA Guiyang 30.84 260 P **P 20 42 32.0 +1.7**
GYA PP **PnPn 20 43 32.3 +2.0**
GYA PcP **PcP 20 45 29.4 +2.1**
GYA S **S 20 47 32.0 -2.4**
GYA ScP **ScP 20 49 09.8 -0.7**
GYA SS **SnSn 20 49 15.6 +2.6**
GYA Guiyang 30.84 260 ScS ScS 20 53 04.5 -2.9
GYA pmax pmax
comp=Z,20nm,0.8s
GYA pmax pmax
comp=Z,120nm,5.0s
GYA LR LR
comp=N,560nm,17.6s
GYA LR LR
comp=E,550nm,18.0s
GYA LR LR
comp=Z,520nm,17.8s
CD2 Chengdu 31.28 270 P **P 20 42 33.4 -0.7**
CD2 sP sP 20 42 42.8 +6.0
CD2 PP **PP 20 43 43.9 -0.6**
CD2 S **S 20 47 39.1 -2.0**
CD2 sS sS 20 47 50.3 +5.9
CD2 SS **SS 20 49 53.3 -1.3**
CD2 pmax pmax
comp=Z,10.0nm,0.6s
CD2 pmax pmax
comp=Z,120nm,5.1s
CD2 LR LR
comp=E,380nm,12.6s
CD2 LR LR
comp=Z,490nm,13.0s
GTA Gaotai 32.17 287 *e*P **P 20 42 42.6 +0.6**
GTA pP sP 20 42 48.3 +3.6
GTA sP pP 20 42 51.3 +7.4
GTA PcP **PcP 20 45 32.5 +1.8**
GTA S **S 20 47 54.3 -0.8**
GTA PcS **PcS 20 49 16.9 +1.2**
GTA pmax pmax
comp=Z,4.0nm,1.1s
GTA pmax pmax
comp=Z,130nm,5.5s
GTA LR LR
comp=N,290nm,16.2s
GTA LR LR
comp=E,270nm,14.3s
GTA LR LR
comp=Z,260nm,15.7s
QIZ Qiongzhong 32.59 245 P **P 20 42 45.8 +0.2**
QIZ S **S 20 48 04.5 +2.9**
QIZ pmax pmax
comp=Z,16nm,1.2s
QIZ LR LR
comp=E,380nm,14.7s
QIZ LR LR
comp=Z,380nm,10.2s
BILL Bilibino 34.10 17⇑ *e*P **P 20 42 59.4 +1.1**
BILL *e* 20 44 09.4
BILL pmax pmax
comp=Z,7.0nm,1.6s
BILL MLR MLR
comp=Z,116nm,17.0s
KMI Kunming 34.58 261 P **P 20 43 02.4 -0.7**
KMI pP sP 20 43 10.4 +4.5
KMI sP pP 20 43 13.3 +8.2
KMI S **S 20 48 30.9 -1.9**
KMI pmax pmax
comp=Z,15nm,1.0s
KMI pmax pmax
comp=Z,60nm,4.0s
KMI LR LR
comp=N,410nm,15.0s
KMI LR LR
comp=E,330nm,16.0s
KMI LR LR
comp=Z,250nm,16.0s
TIXI Tiksi 35.20 353 P **P 20 43 06.7 -1.0**
comp=Z,6.2nm,0.6s,baz=146,slow=7.1,SNR=36
TIXI Tiksi 35.20 353⇓ *e*P **P 20 43 07.3 -0.4**
TIXI pmax pmax
comp=Z,7.0nm,0.7s
TIXI MLR MLR
comp=Z,253nm,17.0s
MIDW Midway 35.98 92 *e*P **P 20 43 14.4 -0.5**
comp=Z,133nm,1.3s
KWAJ Kwajalein Atol 37.11 133 *e*P **P 20 43 24.7 +0.1**
KWAJ pmax pmax
comp=Z,385nm,1.4s
KWAJ Kwajalein Atol 37.11 133 *e*P **P 20 43 24.7 +0.1**
comp=Z,385nm,1.4s
MYLDM Lahad Datu 37.80 218 *e*P **P 20 43 32.3 +1.8**
comp=Z,26nm,1.1s
NONG Nongkai 38.15 251 P **P 20 43 34.4 +1.0**
comp=Z,107nm,1.2s
SKNT Sakolnakorn 38.19 248 P **P 20 43 35.3 +1.5**
comp=Z,17nm,1.2s
CRAI Chiangrai 39.01 256 P **P 20 43 41.1 +0.4**
comp=Z,59nm,1.1s,comp=Z,37µm
LOEI Loei 39.91 252 P **P 20 43 45.5 -2.7**
comp=Z,112nm,1.2s,comp=Z,8µm
WMQ Urumqi 40.47 297 P **P 20 43 54.4 +1.7**
WMQ pP sP 20 43 58.5 +3.0
WMQ sP pP 20 44 02.1 +7.4
WMQ S **S 20 50 02.8 +1.1**
WMQ SS **SnSn 20 53 05.6 -0.1**
WMQ pmax pmax
comp=Z,8.0nm,1.2s
WMQ pmax pmax
comp=Z,110nm,3.6s
WMQ LR LR
comp=N,330nm,19.2s
WMQ LR LR
comp=E,87nm,21.2s
WMQ LR LR
comp=Z,91nm,26.6s
PBKT Sadao Pong 40.70 251 P **P 20 43 55.2 +0.5**
comp=Z,9.2nm,1.5s
CHTO Chiang Mai 40.92 255 *e*P **P 20 43 54.8 -1.8**
CHTO pmax pmax
comp=Z,12nm,1.7s
CHTO Chiang Mai 40.92 255 *e*P **P 20 43 54.8 -1.8**
comp=Z,12nm,1.7s
TNA Tin City 41.01 30 *e*P **P 20 43 59.0 +2.3**
comp=Z,8.2nm,1.0s
CM31 Chiang Mai Arr 41.12 255 *e*P **P 20 43 56.6 -1.7**
CM31 *e*PcP **PcP 20 45 58.0 +0.2**
CMAR Chiang Mai Arr 41.12 255 P **P 20 43 58.2 0.0**
comp=Z,1.0nm,0.8s,baz=55,slow=4.9,SNR=8.6
CMAR PcP **PcP 20 45 58.0 +0.2**
comp=Z,0.7nm,0.6s,baz=22,slow=2.1,SNR=5.5
CMAR LR LR 21 01 43.9
comp=Z,84nm,19.1s,baz=100,slow=37
CM01 Chiang Mai Arr 41.13 255 *e*P **P 20 43 57.4 -0.9**
CM01 *e*PcP **PcP 20 45 58.2 +0.4**
LUWI Luwuk 41.49 208 *e*P **P 20 43 59.1 -2.2**
comp=Z,42nm,0.8s
SRAK Srakaew 41.52 247 P **P 20 43 59.3 -2.2**
comp=Z,30nm,1.1s,comp=Z,560nm
ZAA0 Zalesovo Array 41.60 312 *e*P **P 20 44 01.5 -0.2**
ZAA0 *e*PcP **PcP 20 45 57.9 -0.8**
ZAA0 *e*ScP **ScP 20 49 48.1 -1.2**
ZAA1 Zalesovo Array 41.60 312 *e*P **P 20 44 01.7 0.0**
ZAA1 *e*PcP **PcP 20 45 58.5 -0.2**
ZALV Zalesovo Beam 41.60 312 P **P 20 44 01.7 0.0**
comp=Z,5.2nm,0.5s,baz=90,slow=6.7,SNR=26
ZALV PcP **PcP 20 45 58.5 -0.2**
comp=Z,4.1nm,0.6s,baz=98,slow=2.9,SNR=7.7
ZALV LR LR 21 01 53.9
comp=Z,249nm,18.3s,baz=70,slow=37
ZALV Zalesovo Beam 41.60 312 *i* P **P 20 44 02.0 +0.3**
ZALV pmax pmax
comp=Z,5.0nm,0.5s
LSA Lhasa 41.81 275 *e*P **P 20 44 04.8 +0.5**
LSA pmax pmax
comp=Z,13nm,1.4s
LSA Lhasa 41.81 275 *e*P **P 20 44 04.8 +0.5**
comp=Z,13nm,1.4s
RABL Rabaul 42.37 163 *e*P **P 20 44 10.2 +1.7**
comp=Z,17nm,0.7s
NVS Novosibirsk 42.53 314 *e*P **P 20 44 08.5 -0.8**
NVS pmax pmax
comp=Z,55nm,2.1s
NRIK Noril'sk 43.07 335 LR LR 21 03 08.0
comp=Z,276nm,18.5s,baz=138,slow=38
SBUM Sibu 43.41 224 *e*P **P 20 44 16.9 0.0**
comp=Z,19nm,1.6s
MK01 Makanchi Array 43.76 302 *e*P **P 20 44 19.1 -0.3**
MK01 *e*ScP **ScP 20 49 57.8 -0.4**
MK31 Makanchi Array 43.76 302 *e*P **P 20 44 19.8 +0.3**
MK31 Makanchi Array 43.76 302 *e*P **P 20 44 19.8 +0.3**
MK31 *e*ScP **ScP 20 49 55.6 -2.6**
MK32 Makanchi Array 43.76 302 *e*P **P 20 44 19.6 +0.2**
MK32 *e*ScP **ScP 20 49 58.8 +0.6**
MKAR Makanchi Array 43.76 302 P **P 20 44 19.6 +0.2**
comp=Z,4.1nm,0.5s,baz=84,slow=8.9,SNR=51
MKAR ScP **ScP 20 49 58.8 +0.6**
comp=Z,0.7nm,0.8s,baz=96,slow=4.9,SNR=5.5
MKAR LR LR 21 02 38.4
comp=Z,196nm,19.7s,baz=90,slow=36
MKAR Makanchi Array 43.76 302 *e*P **P 20 44 19.2 -0.2**
MKAR ScP **ScP 20 49 58.8 +0.6**
KSM Kuching 45.30 226 *e*P **P 20 44 33.1 +1.1**
comp=Z,25nm,0.9s
KURK Kurchatov 45.60 308 *e*P **P 20 44 33.7 -0.3**
KURK pmax pmax
comp=Z,84nm,1.6s
KURK Kurchatov 45.60 308 *e*P **P 20 44 33.7 -0.3**
comp=Z,84nm,1.6s
TT01 Tatalina 45.61 35 *e*P **P 20 44 35.5 +1.6**
TTA Tatalina 45.61 35 *e*P **P 20 44 35.8 +1.7**
TTA pmax pmax
comp=Z,8.0nm,1.3s
TTA Tatalina 45.61 35 *e*P **P 20 44 35.8 +1.7**
comp=Z,7.9nm,1.3s
KURBB Kurchatov Arra 45.66 308 P **P 20 44 34.2 -0.3**
comp=Z,13nm,0.7s,baz=83,slow=7.9,SNR=36
SVW2 Sparrevohn 45.73 37 *e*P **P 20 44 35.9 +0.9**
comp=Z,7.7nm,0.8s
KAPI Kappang 46.30 210 *e*P **P 20 44 40.4 +0.6**
comp=Z,80nm,1.3s
PMG Port Moresby 46.60 172 *e*P **P 20 44 41.3 -0.9**
PMG pmax pmax
comp=Z,12nm,0.9s
PMG Port Moresby 46.60 172 *e*P **P 20 44 41.3 -0.9**
comp=Z,12nm,0.9s
GUN Gumba 46.76 275 *e*P **P 20 44 43.9 0.0**
comp=Z,27nm,0.6s
RSO Redoubt South 47.12 38 *e*P **P 20 44 46.9 +0.8**
RSO *e*ScP **ScP 20 50 10.5 -1.5**
KKN Kakani 47.29 276 *e*P **P 20 44 47.7 -0.2**
comp=Z,10nm,0.6s
PKIN Phulchoki 47.29 275 *e*P **P 20 44 47.3 -0.6**
comp=Z,11nm,0.6s
KDAK Kodiak Island 47.33 42 *i* P **P 20 44 49.9 +2.4**
CAST Castle Rocks 47.41 34 *e*P **P 20 44 49.7 +1.5**
comp=Z,4.9nm,0.9s
SPU Mount Spurr 47.44 37 *e*P **P 20 44 49.9 +1.5**
KRAB Krabi 47.45 243 P **P 20 44 49.7 +0.7**
comp=Z,31nm,0.7s,comp=Z,406nm
DMN Daman 47.51 275 *e*P **P 20 44 49.2 -0.4**
GKN Gorkha 47.71 276 *e*P **P 20 44 51.0 -0.1**
comp=Z,72nm,0.8s
KTH Kantishna Hill 47.94 34 *e*P **P 20 44 54.4 +2.1**
comp=Z,8.2nm,1.0s
MLY Manley 48.02 32 *e*P **P 20 44 53.7 +0.8**
comp=Z,8.5nm,1.1s
TRF Thorofare Moun 48.22 34 *e*P **P 20 44 57.5 +3.0**
comp=Z,5.8nm,0.7s
COLD Coldfoot 48.31 29 *e*P **P 20 44 56.1 +1.1**
comp=Z,18nm,1.9s
KULM Kulim 48.50 239 *e*P **P 20 44 56.8 -0.2**
comp=Z,8.4nm,1.0s
RC01 Rabbit Creek A 48.57 37 *e*P **P 20 44 57.7 +0.6**
comp=Z,14nm,1.1s
BWN Browne 48.58 33 *e*P **P 20 45 00.4 +3.3**
comp=Z,21nm,0.7s
KOLN Koldanda 48.63 276 *e*P **P 20 44 58.2 -0.1**
comp=Z,46nm,1.2s
MMRI Maumere 48.73 205 *e*P **P 20 44 57.0 -1.7**
comp=Z,169nm,1.7s
MCK McKinley 48.82 34 *e*P **P 20 44 59.9 +0.9**
MCK pmax pmax
comp=Z,8.0nm,1.0s
MCK McKinley 48.82 34 *e*P **P 20 44 59.9 +0.9**
comp=Z,8.2nm,1.0s
IPM Ipoh 48.83 238 *e*P **P 20 44 58.8 -0.8**
comp=Z,31nm,1.3s
PMR Palmer 48.83 37 *e*P **P 20 44 59.0 0.0**
PMR pmax pmax
comp=Z,7.0nm,0.9s
PMR Palmer 48.83 37 *e*P **P 20 44 59.0 0.0**
comp=Z,6.9nm,0.9s
RND Reindeer 48.87 34 *e*P **P 20 45 00.3 +0.9**
RND pmax pmax
comp=Z,6.0nm,1.0s
RND Reindeer 48.87 34 *e*P **P 20 45 00.3 +0.9**
comp=Z,6.4nm,1.0s
PYUN Piuthan 48.97 277 *e*P **P 20 45 00.9 0.0**
comp=Z,173nm,1.1s
MDM Murphy Dome 49.09 32 *e*P **P 20 45 02.6 +1.5**
comp=Z,8.8nm,1.0s
SOEI Soe 49.13 202 *e*P **P 20 45 02.0 +0.1**
comp=Z,60nm,1.1s
WRH Wood River Hil 49.17 33 *e*P **P 20 45 02.6 +1.0**
comp=Z,5.0nm,1.0s
SML Sawmill 49.19 36 *e*P **P 20 45 03.3 +1.4**
SML pmax pmax
comp=Z,13nm,0.9s
SML Sawmill 49.19 36 *e*P **P 20 45 03.3 +1.4**
comp=Z,13nm,0.9s
COLA College 49.26 32 *e*P **P 20 45 03.6 +1.4**
COLA pmax pmax
comp=Z,9.0nm,0.3s
COLA College 49.26 32 *e*P **P 20 45 03.6 +1.4**
comp=Z,9.3nm,0.3s
TKM2 Tokmak 2 49.26 298 *e*P **P 20 45 03.4 +0.5**
TKM2 pmax pmax
comp=Z,58nm,1.5s
TKM2 Tokmak 2 49.26 298 *e*P **P 20 45 03.4 +0.5**
comp=Z,58nm,1.5s
CCB Clear Creek Bu 49.28 33 *e*P **P 20 45 02.9 +0.4**
comp=Z,21nm,2.0s
HNR Honiara 49.59 155 LR LR 21 02 37.3
comp=Z,146nm,22.0s,baz=339,slow=32
HDA Harding Lake 49.66 33 *e*P **P 20 45 01.1 -4.3**
comp=Z,38nm,0.8s
SCM Sheep Creek Mo 49.67 36 *e*P **P 20 45 06.4 +0.8**
SCM pmax pmax
comp=Z,8.0nm,0.9s
SCM Sheep Creek Mo 49.67 36 *e*P **P 20 45 06.4 +0.8**
comp=Z,8.2nm,0.9s
IL1 Eielson Array 49.67 32 *e*P **P 20 45 04.4 -1.1**
ILAR Eielson Array 49.67 32 P **P 20 45 06.3 +0.8**
comp=Z,5.0nm,0.8s,baz=272,slow=6.4,SNR=35
ILB Eielson Array 49.67 32 *e*P **P 20 45 06.1 +0.6**
FRU Bishkek 49.98 298 *e*P **P 20 45 07.0 -1.2**
FRU pmax pmax
comp=Z,40nm,1.8s
KSH Kashi 50.03 294 P **P 20 45 12.9 +4.2**
KSH *e*sP sP 20 45 21.8 +10
KSH *e*PP **PP 20 47 09.4 +5.9**
KSH S **S 20 52 22.1 +2.0**
KSH pmax pmax
comp=Z,190nm,4.9s
KSH LR LR
comp=N,240nm,11.7s
KSH LR LR
comp=E,230nm,12.8s
KSH LR LR
comp=Z,460nm,8.8s
AAK Ala-Archa 50.12 298 *d* iP **P 20 45 10.4 +1.0**
AAK pmax pmax
comp=Z,37nm,1.7s
AAK Ala-Archa 50.12 298 *e*P **P 20 45 09.3 -0.1**
comp=Z,26nm,1.7s
BVAR Borovoye Array 50.25 312 P **P 20 45 09.9 -0.1**
comp=Z,5.1nm,0.5s,baz=84,slow=7.3,SNR=27
BVAR PcP **PcP 20 46 29.0 0.0**
comp=Z,3.5nm,0.6s,baz=91,slow=2.3,SNR=8.4
FYU Fort Yukon 50.27 30 *e*P **P 20 45 11.4 +1.5**
comp=Z,51nm,1.9s
BRVK Borovoye 50.31 312⇑ *e*P **P 20 45 10.7 +0.2**
BRVK pmax pmax
comp=Z,11nm,1.0s
BRVK Borovoye 50.31 312 *e*P **P 20 45 10.5 0.0**
comp=Z,7.8nm,0.7s
KLU Klutina 50.37 37 *e*P **P 20 45 12.3 +1.4**
comp=Z,11nm,1.3s
DIV Divide 50.48 37 *e*P **P 20 45 11.4 -0.3**
comp=Z,14nm,1.2s
MTN Manton Dam 50.50 192 *e*P **P 20 45 12.9 +0.7**
comp=Z,54nm,1.4s
EYAK Cordova Ski Ar 50.56 38 *e*P **P 20 45 10.6 -1.6**
comp=Z,28nm,1.5s
EKS2 Erkin-Say 50.62 298 *e*P **P 20 45 13.2 +0.1**
EKS2 pmax pmax
comp=Z,26nm,1.8s
EKS2 Erkin-Say 50.62 298 *e*P **P 20 45 13.2 +0.1**
comp=Z,26nm,1.8s
DOT Dot Lake 50.99 34 *e*P **P 20 45 16.2 +0.7**
comp=Z,20nm,0.9s
BMRM Bremner River 51.07 37 *e*P **P 20 45 16.4 +0.3**
comp=Z,7.6nm,1.0s
LHMI Lhok Sumawe 51.13 243 *e*P **P 20 45 17.3 +0.2**
comp=Z,97nm,1.0s
MENT Mentasta 51.23 35 *e*P **P 20 45 18.2 +0.9**
comp=Z,38nm,0.2s
PSI Prapat 51.48 239 *e*P **P 20 45 18.4 -1.4**
PSI pmax pmax
comp=Z,10.0nm,0.8s
PSI Prapat 51.48 239 *e*P **P 20 45 18.4 -1.4**
comp=Z,10nm,0.8s
CRQM Cirque 51.81 37 *e*P **P 20 45 23.5 +1.6**
comp=Z,6.9nm,0.9s
BKNI Bangkinang 51.89 235 *e*P **P 20 45 22.3 -0.5**
comp=Z,166nm,1.3s
EGAK Eagle 52.12 32 *e*P **P 20 45 25.2 +1.3**
comp=Z,4.4nm,0.9s
KKAR Karatay Array 52.76 300 *e*P **P 20 45 28.9 -0.1**
KKAR Karatay Array 52.76 300 *e*P **P 20 45 28.9 -0.1**
GSI Gunungsitoli 53.48 239 *e*P **P 20 45 34.2 -0.4**
comp=Z,188nm,1.4s
INK Inuvik 54.53 27 *e*P **P 20 45 43.3 +1.8**
INK pmax pmax
comp=Z,5.0nm,1.1s
INK Inuvik 54.53 27 *e*P **P 20 45 43.3 +1.8**
comp=Z,5.5nm,1.1s
SVE Sverdlovsk 54.86 318 *e*P **P 20 45 44.4 +0.3**
SVE pmax pmax
comp=Z,30nm,1.5s
ARU Arti 56.07 318 P **P 20 45 52.4 -0.4**
comp=Z,4.4nm,0.4s,baz=76,slow=6.5,SNR=12
ARU Arti 56.07 318 *d* iP **P 20 45 52.4 -0.4**
ARU 20 46 48.0
ARU 20 47 54.9
ARU S **S 20 53 40.3 -1.3**
ARU SS **SS 20 57 26.6 -0.6**
ARU pmax pmax
comp=Z,32nm,1.7s
ARU Arti 56.07 318 *e*P **P 20 45 52.8 0.0**
comp=Z,38nm,1.4s
KBL Kabul 57.03 291 *e*P **P 20 45 59.7 -0.6**
KBL pmax pmax
comp=Z,19nm,1.2s
KBL Kabul 57.03 291 *e*P **P 20 45 59.7 -0.6**
comp=Z,19nm,1.2s
WRAB Tennant Creek 57.04 187⇓ *e*P **P 20 45 59.9 -0.1**
WRAB pmax pmax
comp=Z,19nm,0.8s
WB2 Warramunga Arr 57.05 187 *e*P **P 20 45 59.2 -0.9**
comp=Z,13nm,0.8s
WR1 Warramunga Arr 57.05 187 *e*P **P 20 45 59.3 -0.8**
comp=Z,11nm,0.8s
WRA Warramunga Arr 57.05 187 P **P 20 45 59.3 -0.8**
comp=Z,6.7nm,0.6s,baz=4.4,slow=7.3,SNR=68
WRA Warramunga Arr 57.05 187 *i* P **P 20 45 59.7 -0.4**
WRA pmax pmax
comp=Z,8.0nm,0.6s
ABKAR Akbulak array 57.61 310 *e*P **P 20 46 03.5 -0.3**
HYB Hyderabad 57.81 268 *i* P **P 20 46 06.0 +0.3**
AKTO Aktyubinsk 58.35 312 P **P 20 46 08.7 -0.4**
comp=Z,2.3nm,0.7s,baz=52,slow=12,SNR=5.8
AS01 Alice Springs 60.77 187 *e*P **P 20 46 25.9 0.0**
AS31 Alice Springs 60.77 187 *e*P **P 20 46 25.9 0.0**
comp=Z,1.5nm,0.7s
ASAR Alice Springs 60.77 187 P **P 20 46 26.1 +0.1**
comp=Z,3.1nm,0.8s,baz=5.5,slow=7.8,SNR=24
ASAR LR LR 21 10 07.4
comp=Z,99nm,21.4s,baz=312,slow=34
TMCR Tamitsa 62.52 331 *e*P **P 20 46 38.2 +0.9**
TMCR pmax pmax
comp=Z,13nm,0.8s
GEYT Alibeck 63.47 299 P **P 20 46 44.7 +0.6**
comp=Z,8.0nm,0.9s,baz=35,slow=5.3,SNR=15
GEYT LR LR 21 15 38.2
comp=Z,117nm,19.5s,baz=245,slow=37
DZM Mont Dzumac 63.56 153 *e*LR LR 21 05 44.9
comp=Z,170nm,23.9s
ARA0 ARCESS Array S 63.82 339 *e*P **P 20 46 46.4 +0.5**
ARCES ARCESS Array B 63.82 339 P **P 20 46 46.4 +0.5**
comp=Z,8.2nm,0.9s,baz=49,slow=7.4,SNR=13
ARCES LR LR 21 17 45.0
comp=Z,132nm,20.0s,baz=68,slow=39
YKA Yellowknife Ar 63.97 30 P **P 20 46 47.8 +0.8**
comp=Z,1.4nm,0.7s,baz=303,slow=6.8,SNR=18
YKB5 Yellowknife Ar 63.97 30 *e*P **P 20 46 47.6 +0.6**
DAG Danmarks Havn 65.70 355 *i* P **P 20 46 57.9 -0.1**
comp=Z,15nm,0.7s
DAG Danmarks Havn 65.70 355 *i* P **P 20 46 57.9 -0.1**
DAG pmax pmax
comp=Z,10.0nm,0.7s
MOS Moscow 66.98 323 *e*P **P 20 47 05.7 -0.8**
MOS pmax pmax
comp=Z,46nm,1.3s
VRH Novokhopyorsk 67.28 318 *e*P **P 20 47 08.0 -0.5**
VRH pmax pmax
comp=Z,10.0nm,0.6s
OBN Obninsk 67.83 323 P **P 20 47 12.8 +0.9**
comp=Z,9.4nm,0.4s,baz=115,slow=15,SNR=5.0
OBN Obninsk 67.83 323⇓ *e*P **P 20 47 12.6 +0.7**
OBN *e* 20 47 40.4
OBN *e* 20 49 43.4
OBN *e*S **PnS 20 56 32.1 +0.4**
OBN pmax pmax
comp=Z,28nm,1.7s
OBN MLR MLR
comp=Z,260nm,16.0s
OBN Obninsk 67.83 323 *e*P **P 20 47 12.4 +0.5**
comp=Z,57nm,0.4s
LPSR Galich'ya Gora 68.02 320 *e*P **P 20 47 12.7 -0.4**
LPSR pmax pmax
comp=Z,10.0nm,0.7s
FIA0 FINESS Array S 68.59 332 *e*P **P 20 47 17.1 +0.5**
FIA0 FINESS Array S 68.59 332 *e*P **P 20 47 17.1 +0.5**
FINES FINESS Array B 68.59 332 P **P 20 47 17.1 +0.5**
comp=Z,17nm,0.8s,baz=60,slow=8.2,SNR=31
FINES LR LR 21 19 25.6
comp=Z,235nm,18.3s,baz=34,slow=38
STKA Stephens Creek 68.60 179 P **P 20 47 17.4 +0.5**
comp=Z,3.7nm,1.1s,baz=356,slow=10,SNR=3.2
STKA LR LR 21 16 39.1
comp=Z,91nm,21.2s,baz=16,slow=35
STKA Stephens Creek 68.60 179 *e*P **P 20 47 17.5 +0.7**
comp=Z,11nm,1.9s
VSR Storozhevoye 68.64 319 *e*P **P 20 47 17.0 -0.1**
VSR pmax pmax
comp=Z,30nm,1.4s
GOF Gofitskoye 69.77 312⇑ *e*P **P 20 47 25.1 +0.9**
GOF pmax pmax
comp=Z,25nm,0.8s
ZEI Tsey 70.47 309 *e*P **P 20 47 24.8 -4.0**
ZEI pmax pmax
comp=Z,14nm,1.0s
KBZ Khabaz 70.58 310 P **P 20 47 29.5 +0.4**
comp=Z,9.1nm,1.1s,baz=40,slow=5.8,SNR=9.5
KBZ LR LR 21 19 24.3
comp=Z,135nm,19.7s,baz=47,slow=37
KIV Kislovodsk 70.58 311 *d* iP **P 20 47 30.2 +0.9**
KIV *e* 20 47 50.2

KIV e 20 50 03.2
KIV ePPP PPP 20 51 53.6
KIV pmax pmax
comp=Z,33nm,1.2s
KIV MLR MLR
comp=Z,109nm,17.0s
KIV Kislovodsk 70.58 311 eP **P 20 47 29.8 +0.5**
comp=Z,40nm,1.3s
SUMG Summit 70.64 360 i P **P 20 47 30.6 +1.0**
comp=Z,13nm,0.8s
SUMG Summit 70.64 360 i P **P 20 47 30.6 +1.0**
SUMG pmax pmax
comp=Z,13nm,0.8s
SUMG Summit 70.64 360 eP **P 20 47 30.1 +0.5**
comp=Z,14nm,0.8s
NEY Neytrino 70.94 310⇓eP **P 20 47 32.2 +0.5**
NEY pmax pmax
comp=Z,1.0nm,1.2s
K05A Summer Lake 71.22 50 eP **P 20 47 34.1 +0.7**
comp=Z,8.9nm,1.1s
GNI Garni 71.36 306⇓iP **P 20 47 35.6 +1.4**
GNI pmax pmax
comp=Z,30nm,1.2s
GNI Garni 71.36 306 eP **P 20 47 35.3 +1.1**
comp=Z,9.6nm,1.0s
SCO Scoresbysund 72.03 354 i P **P 20 47 39.0 +1.5**
comp=Z,21nm,1.3s
SCO Scoresbysund 72.03 354 i P **P 20 47 39.0 +1.5**
SCO pmax pmax
comp=Z,21nm,1.3s
SOC Sochi 72.58 312 eP **P 20 47 39.5 -1.7**
SOC ePPP PPP 20 52 01.9
SOC eS **S 20 57 04.9 -1.3**
SOC eSSS SSS 21 04 49.5
SOC pmax pmax
comp=Z,4.0nm,0.6s
FFC Flin Flon 73.88 33 eP **P 20 47 48.0 -0.8**
FFC pmax pmax
comp=Z,4.0nm,0.8s
FFC Flin Flon 73.88 33 eP **P 20 47 48.0 -0.8**
comp=Z,3.9nm,0.8s
MFID Camas Ranch 73.89 48 eP **P 20 47 48.5 -0.7**
comp=Z,18nm,1.9s
NC204 NORSAR Array S 73.95 337 eP **P 20 47 49.0 -0.2**
NB2 NORSAR Subarra 74.00 337 P **P 20 47 49.2 -0.2**
comp=Z,2.6nm,0.7s,baz=40,slow=5.9
NB200 NORSAR Array S 74.00 337 eP **P 20 47 49.6 +0.2**
NOA NORSAR Array B 74.00 337 P **P 20 47 49.6 +0.2**
comp=Z,9.5nm,1.0s,baz=39,slow=5.8,SNR=11
NOA LR LR 21 23 32.5
comp=Z,142nm,18.1s,baz=35,slow=38
AKASG Malin Array Be 74.02 322 P **P 20 47 49.7 +0.1**
comp=Z,1.4nm,0.4s,baz=46,slow=6.4,SNR=16
AKASG LR LR 21 23 05.7
comp=Z,191nm,19.2s,baz=55,slow=38
AKASG Malin Array Be 74.02 322 i P **P 20 47 50.2 +0.6**
AKASG pmax pmax
comp=Z,1.0nm,0.4s
AKBB Malin Array Si 74.02 322 eP **P 20 47 49.2 -0.4**
AKBB pmax pmax
comp=Z,19nm,1.1s
AKBB Malin Array Si 74.02 322 eP **P 20 47 49.1 -0.4**
comp=Z,18nm,1.1s
KIEV Kiev 74.04 322⇓eP **P 20 47 50.2 +0.5**
KIEV pmax pmax
comp=Z,19nm,1.1s
KIEV Kiev 74.04 322 eP **P 20 47 49.1 -0.5**
comp=Z,15nm,1.0s
AK11 Malin Array Si 74.07 322 eP **P 20 47 49.4 -0.5**
NBO02 NORSAR Array S 74.10 337 eP **P 20 47 50.2 +0.3**
NBO00 NORSAR Array S 74.14 337 eP **P 20 47 50.2 0.0**
CMB Columbia Colle 74.17 54 eP **P 20 47 51.5 +0.7**
CMB pmax pmax
comp=Z,8.0nm,1.4s
CMB Columbia Colle 74.17 54 eP **P 20 47 51.5 +0.7**
comp=Z,8.2nm,1.4s
LRM Limekiln Ridge 74.39 44 eP **P 20 47 53.6 +1.3**
DLMT Dillon 74.59 45 eP **P 20 47 52.3 -1.0**
comp=Z,7.7nm,0.9s
HLID Hailey 74.63 47 eP **P 20 47 53.2 -0.4**
comp=Z,2.4nm,0.9s
SIM Simferopol' 75.02 315 eP **P 20 47 56.1 +0.6**
SIM pmax pmax
comp=Z,8.0nm,0.8s
SIM MLR MLR
comp=Z,120nm,17.0s
NV01 Mina Array Sit 75.28 53 eP **P 20 47 59.3 +1.9**
NVAR Mina Array Bea 75.28 53 P **P 20 47 59.1 +1.6**
comp=Z,2.0nm,0.8s,baz=298,slow=5.6,SNR=7.6
SORM Soroca 76.11 320⇑iP **P 20 48 02.5 +0.8**
KIS Kishinev 76.61 319 eP **P 20 48 05.0 +0.4**
KIS LRM MLR 21 24 28.0
comp=Z,600nm,16.0s
KIS Kishinev 76.61 319 eP **P 20 48 05.0 +0.4**
KIS e 20 57 50.0
KIS e 20 58 30.0
KIS MLR MLR
comp=Z,500nm,17.0s
KIS MLR MLR
comp=Z,600nm,16.0s
R11A Troy Canyon, C 77.05 52 eP **P 20 48 08.8 +1.3**
comp=Z,6.8nm,1.5s
TPNV Topopah Spring 77.47 53 eP **P 20 48 10.9 +1.1**
TPNV pmax pmax
comp=Z,5.0nm,0.9s
TPNV Topopah Spring 77.47 53 eP **P 20 48 10.9 +1.1**
comp=Z,5.2nm,0.9s
PRAR RASCA 77.70 321⇓iP **P 20 48 11.8 +1.1**
KWP Kalwaria Pacla 77.87 324 eP **P 20 48 13.4 +1.8**
KWP Kalwaria Pacla 77.87 324⇓iP **P 20 48 13.5 +1.9**
KWP Kalwaria Pacla 77.87 324 eP **P 20 48 13.4 +1.8**
BUR08 Bucovina Ar. S 78.02 321 eP **P 20 48 12.9 +0.3**
BURAR Bucovina Array 78.03 321⇑iP **P 20 48 13.6 +0.9**
TESR Tescani 78.05 320⇑iP **P 20 48 13.4 +0.7**
CFR Carcaliu 78.15 318⇓iP **P 20 48 14.4 +1.2**
VRI Vrincioaia 78.44 319⇑iP **P 20 48 16.1 +1.2**
TIRR Tirgusor 78.48 318⇓iP **P 20 48 16.2 +1.1**
TIRR Tirgusor 78.48 318 eP **P 20 48 15.0 -0.1**
TIRR pmax pmax
comp=Z,7.0nm,1.1s
TIRR Tirgusor 78.48 318 eP **P 20 48 15.0 -0.1**
comp=Z,6.6nm,1.1s
PLOR Plostina 78.49 319⇓iP **P 20 48 17.2 +2.0**
BR101 Keskin Array S 78.53 311 eP **P 20 48 16.2 +0.6**
BR131 Keskin Array S 78.53 311 eP **P 20 48 16.0 +0.4**
BRTR Keskin Array B 78.53 311 P **P 20 48 16.2 +0.6**
comp=Z,3.9nm,1.1s,baz=98,slow=4.2,SNR=20
BRTR LR LR 21 26 19.9
comp=Z,44nm,18.4s,baz=53,slow=38
BRTR Keskin Array B 78.53 311 iP **P 20 48 16.5 +0.9**
BRTR pmax pmax
comp=Z,4.0nm,1.0s
KOLS Kolonicke sedl 78.56 324 eP **P 20 48 16.4 +0.9**
KOLS pmax pmax
comp=Z,6.0nm,1.1s
KOLS Kolonicke sedl 78.56 324 eP **P 20 48 16.4 +0.9**
STHS Stebnicka Huta 78.70 325 eP **P 20 48 18.3 +2.1**
STHS pmax pmax
comp=Z,8.0nm,1.1s
STHS Stebnicka Huta 78.70 325 eP **P 20 48 18.3 +2.1**
UZH Uzhgorod 78.76 324 eP **P 20 48 16.7 +0.2**
UZH e 20 48 21.9
OJC Ojcow 78.78 326 eP **P 20 48 18.0 +1.3**
OJC Ojcow 78.78 326 eP **P 20 48 17.3 +0.6**
OJC pmax pmax
comp=Z,28nm,1.1s
OJC Ojcow 78.78 326 eP **P 20 48 17.3 +0.6**
comp=Z,28nm,1.1s
AMRR Amara 78.96 318⇓iP **P 20 48 18.6 +0.9**
CRVS Cervenica-Dubn 78.96 324 eP **P 20 48 19.1 +1.4**
CRVS Cervenica-Dubn 78.96 324 eP **P 20 48 19.1 +1.4**
BR231 Keskin MP Arra 78.97 312 eP **P 20 48 17.0 -1.0**
ISR Istrita 79.04 319⇑iP **P 20 48 19.7 +1.5**
MLR Muntele Rosu 79.10 320 P **P 20 48 19.2 +0.6**
comp=Z,0.8nm,1.1s,baz=59,slow=6.4,SNR=5.4
MLR Muntele Rosu 79.10 320 eP **P 20 48 19.0 +0.3**
MLR pmax pmax
comp=Z,13nm,1.4s
MLR Muntele Rosu 79.10 320 eP **P 20 48 19.0 +0.3**
comp=Z,13nm,1.4s
NIE Niedzica 79.13 325 eP **P 20 48 19.9 +1.3**
NIE Niedzica 79.13 325 eP **P 20 48 19.9 +1.3**
KNB Kanab 79.59 51 eP **P 20 48 24.2 +2.6**
KNB pmax pmax
comp=Z,28nm,1.7s
KNB Kanab 79.59 51 eP **P 20 48 24.2 +2.6**
comp=Z,28nm,1.7s
LANS Liptovska Anna 79.70 325 eP **P 20 48 24.2 +2.4**
LANS Liptovska Anna 79.70 325 eP **P 20 48 24.2 +2.4**
MORC Moravsky Berou 80.11 327⇑iP **P 20 48 25.1 +1.1**
MORC Moravsky Berou 80.11 327 eP **P 20 48 24.9 +1.0**
MORC pmax pmax
comp=Z,49nm,1.0s
MORC Moravsky Berou 80.11 327 eP **P 20 48 24.9 +1.0**
comp=Z,49nm,1.0s
DPC Dobruska-Polom 80.21 328 eP **P 20 48 25.9 +1.4**
DPC ex x 20 48 43.9
DPC Dobruska-Polom 80.21 328 eP **P 20 48 25.9 +1.4**
DPC e 20 48 43.9
KRLC Kraliky 80.22 327 eP **P 20 48 25.6 +1.0**
KRLC Kraliky 80.22 327 eP **P 20 48 25.6 +1.0**
PSZ Piszkesteto 80.39 324⇓iP **P 20 48 27.2 +1.6**
PSZ Piszkesteto 80.39 324 eP **P 20 48 25.5 -0.1**
PSZ pmax pmax
comp=Z,26nm,1.3s
PSZ Piszkesteto 80.39 324 eP **P 20 48 25.5 -0.1**
comp=Z,26nm,1.3s
VYHS Vyhne 80.47 325 eP **P 20 48 27.1 +1.2**
VYHS pmax pmax
comp=Z,6.0nm,1.2s
VYHS Vyhne 80.47 325 eP **P 20 48 27.1 +1.2**
GZR Gura Zlata 80.79 321⇓iP **P 20 48 28.3 +0.6**
BRG Berggiesshubel 80.82 329 eP **P 20 48 28.6 +0.9**
comp=Z,9.6nm,1.1s
BRG Berggiesshubel 80.82 329 eP **P 20 48 28.6 +0.9**
BRG pmax pmax
comp=Z,10.0nm,1.2s
PVCC Panska Ves 80.82 329 eP **P 20 48 29.0 +1.3**
PVCC Panska Ves 80.82 329 eP **P 20 48 29.0 +1.3**
CLL Collm 80.86 330 i P **P 20 48 28.5 +0.6**
comp=Z,19nm,1.0s
CLL ePP **PP 20 51 30.0 -1.5**
CLL Collm 80.86 330 i P **P 20 48 28.5 +0.6**
CLL pmax pmax
comp=Z,19nm,1.0s
CLL Collm 80.86 330 eP **P 20 48 28.2 +0.3**
comp=Z,17nm,1.0s
VRAC Vranov 80.87 327⇓iP **P 20 48 29.6 +1.6**
ASF Jabal al Asfar 81.16 304 P **P 20 48 30.4 +0.5**
comp=Z,1.0nm,0.4s,baz=40,slow=7.9,SNR=4.6
GOPC GO Pecny, Ondr 81.19 328 eP **P 20 48 30.7 +1.0**
GOPC GO Pecny, Ondr 81.19 328 eP **P 20 48 30.7 +1.0**
BZS Buzias 81.21 322⇓iP **P 20 48 31.1 +1.2**
PRU Pruhonice 81.24 328 eP **P 20 48 31.1 +1.2**
PRU Pruhonice 81.24 328 eP **P 20 48 31.1 +1.2**
MMAI Mount Meron Ar 81.62 305 P **P 20 48 32.6 +0.2**
comp=Z,4.6nm,1.0s,baz=48,slow=6.4,SNR=6.1
MDVR Moldovita 81.75 321⇓iP **P 20 48 34.0 +1.2**
NKC Novy Kostel 81.92 329 eP **P 20 48 35.1 +1.5**
NKC Novy Kostel 81.92 329 eP **P 20 48 35.1 +1.5**
CONA Conrad Observa 82.23 326 i PcP **P 20 48 37.0 +1.7**
comp=Z,9.7nm,1.1s,SNR=6.4
KHC Kasperske Hory 82.30 328 eP **P 20 48 36.5 +0.9**
KHC Kasperske Hory 82.30 328 eP **P 20 48 36.2 +0.6**
KHC pmax pmax
comp=Z,7.0nm,1.3s
KHC Kasperske Hory 82.30 328 eP **P 20 48 36.2 +0.6**
comp=Z,7.3nm,1.3s
GEC2 GERESS Array S 82.47 328 eP **P 20 48 37.0 +0.4**
GEC2 pmax pmax
comp=Z,4.0nm,0.9s
GEC2 GERESS Array S 82.47 328 eP **P 20 48 37.0 +0.4**
comp=Z,4.3nm,0.9s
GERES GERESS Array B 82.47 328 P **P 20 48 36.1 -0.5**
comp=Z,2.3nm,0.8s,baz=35,slow=4.9,SNR=18
GERES LR LR 21 28 50.9
comp=Z,181nm,18.1s,baz=32,slow=38
GEA0 GERESS Array S 82.47 328 eP **P 20 48 36.3 -0.3**
ARSA Arzberg 82.89 326 i PcP **P 20 48 40.0 +1.3**
comp=Z,9.0nm,1.5s
MOA Molln 82.99 327 i PcP **P 20 48 41.1 +1.9**
comp=Z,6.8nm,1.4s
SOKA Soboth 83.54 326 i PcP **P 20 48 43.2 +1.1**
comp=Z,15nm,1.2s,SNR=12
OBKA Obir 83.89 326 i PcP **P 20 48 44.9 +0.9**
comp=Z,3.5nm,0.9s
KBA Koelnbreinsper 83.98 327 i PcP **P 20 48 45.4 +0.9**
comp=Z,7.6nm,1.0s
ECSD EROS Data Cent 84.13 38 eP **P 20 48 44.9 -0.3**
MYKA Terra Mystica 84.20 327 i PcP **P 20 48 46.2 +0.8**
comp=Z,4.8nm,0.9s
ABTA Abfaltersbach 84.60 327 i P **P 20 48 47.6 0.0**
comp=Z,8.3nm,1.3s
PDG Podgorica 84.68 321⇑iP **P 20 48 49.2 +1.3**
MOTA Moosalm 84.73 328 i PcP **P 20 48 49.1 +0.8**
comp=Z,8.2nm,1.2s
RETA Reutte 84.76 329 ePcP **P 20 48 49.5 +1.2**
comp=Z,12nm,0.8s,SNR=5.3
ANMO Albuquerque 84.86 50⇓eP **P 20 48 52.1 +2.9**
ANMO pmax pmax
comp=Z,6.0nm,1.4s
PPT Papeete 85.00 116 LR LR 21 25 25.9
comp=Z,70nm,18.5s,baz=357,slow=35
PPT2 Papeete2 85.02 116 eLR LR 21 15 25.7
comp=Z,175nm,24.8s
BFO Black Forest 85.08 330 eP **P 20 48 50.3 +0.5**
BFO pmax pmax
comp=Z,16nm,1.0s
BFO Black Forest 85.08 330 eP **P 20 48 50.3 +0.5**
comp=Z,16nm,1.0s
FETA Feichten 85.14 328 i PcP **P 20 48 51.2 +0.8**
comp=Z,6.4nm,0.9s
DAVA Damuels 85.29 329 i PcP **P 20 48 52.1 +1.1**
comp=Z,17nm,1.0s,SNR=5.3
SCHQ Schefferville 85.41 16 LR LR 21 29 28.2
comp=Z,41nm,18.2s,baz=10.0,slow=37
FUORN Ofenpass-Fuorn 85.66 328 eP **P 20 48 53.4 +0.3**
comp=Z,19nm,1.2s
LAST Lasithi 86.41 312⇑iP **P 20 48 58.5 +1.7**
LAST Lasithi 86.41 312 eP **P 20 48 57.8 +1.0**
comp=Z,25nm,1.2s
IDI Anoyia 86.67 313 P **P 20 48 57.8 -0.2**
comp=Z,7.8nm,0.9s,baz=29,slow=5.2,SNR=3.5
IDI Anoyia 86.67 313⇑iP **P 20 48 58.4 +0.4**
IDI Anoyia 86.67 313 eP **P 20 48 58.1 0.0**
comp=Z,14nm,1.1s
TBI Tubuai 88.89 120 eLR LR 21 17 13.6
comp=Z,163nm,31.2s
TBI Tubuai 88.89 120 eT T 22 27 10.9
comp=Z,50nm,0.3s
TX31 Lajitas Ar. Si 90.41 52 eP **P 20 49 16.7 +0.8**
LTX Lajitas 90.41 52 eP **P 20 49 17.4 +1.4**
LTX Lajitas 90.41 52 eP **P 20 49 17.4 +1.4**
TXAR Lajitas Array 90.41 52 P **P 20 49 17.4 +1.4**
comp=Z,0.9nm,0.7s,baz=302,slow=2.8,SNR=11
KEST Kesra 94.75 322 LR LR 21 35 60.0
comp=Z,97nm,19.2s,baz=278,slow=38
ESDC Sonseca Array 97.08 333 LR LR 21 37 03.6
comp=Z,116nm,19.6s,baz=195,slow=38
TOA1 Torodi Ar. Sit 117.02 314 ePKPdf **PKPdf 20 54 59.0 -0.6**
TOA1 ePP PP 20 55 57.9 -10
TORD Torodi Ar. Bea 117.02 314 PKP **PKPdf 20 54 59.0 -0.6**
comp=Z,0.4nm,0.6s,baz=28,slow=2.4,SNR=5.5
TORD PP PP 20 55 57.9 -10
comp=Z,0.7nm,1.0s,baz=23,slow=8.4,SNR=3.7
DBIC Dimbokro 125.99 316 PKP **PKPdf 20 55 16.5 -0.3**
comp=Z,1.9nm,0.6s,baz=0.0,slow=4.0,SNR=5.9
VNA2 Neumayer--Watz 142.25 196 PKP **PKPdf 20 55 42.6 -2.8**
baz=87,slow=2.8
VNA3 Neumayer Olymp 142.50 195 PKP **PKPdf 20 55 41.6 -4.3**
VNA1 Neumayer--Stat 142.64 196 PKP **PKPdf 20 55 50.1 +4.0**
LPAZ La Paz 147.01 59 PKPbc **PKPbc 20 55 58.3 +0.2**
comp=Z,3.7nm,0.6s,baz=331,slow=2.6,SNR=15

JMA 24 20:36:39.3,36°.19N×137°.68E, h4km±1km, M0.6, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JGN	**Niukaw**	**0.30**	**277**	P	Pg	20 36 45.3	+0.2
JGN				S	Sg	20 36 49.4	+0.4

JMA 24 20:51:26.7±0.1, 38°.05N×143°.08E, h16km±3km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.42**	**287**	P	Pn	20 51 52.0	+0.1
JIO				S	Sn	20 52 10.1	-0.1
OFUJ	**Ofunato**	**1.51**	**313**	P	Pn	20 51 53.5	+0.4
OFUJ				S	Sb	20 52 12.9	-0.4
JMK	**Ichinoseki**	**1.71**	**302**	P	Pn	20 51 56.5	+0.6
JMK				eS	Sb	20 52 19.0	-0.1
JMM	**Marumori**	**1.82**	**265**	P	Pn	20 51 57.5	+0.2
JMM				eS	Sn	20 52 20.2	+0.2
JFK	**Kawauchi**	**1.88**	**249**	P	Pn	20 51 58.9	+0.7
JFK				eS	Sn	20 52 22.0	+0.4
JOU	**Okura**	**1.93**	**280**	P	Pn	20 51 59.8	+0.9
JOU				S	Sn	20 52 24.0	+1.2
JOM	**Ohasama**	**1.99**	**316**	P	Pn	20 52 00.6	+0.9
JOM				eS	Sb	20 52 25.9	-1.3
JFT	**Otama**	**2.24**	**257**	P	Pn	20 52 04.2	+1.1
JFT				eS	Sn	20 52 31.1	+0.7
JYK	**Kaneyama**	**2.30**	**293**	P	Pn	20 52 05.4	+1.4
JRG	**Rokugo**	**2.34**	**306**	P	Pn	20 52 05.9	+1.4
JYS	**Shirataka**	**2.38**	**275**	P	Pn	20 52 06.7	+1.6
JANG	**Nango**	**2.62**	**333**	P	Pn	20 52 09.5	+1.1

*ISK **24** 20:57:14.8, 39°.11N×29°.03E, h5km, ML3.2*
*DDA **24** 20:57:15.6, 39°.11N×29°.04E, h7km, Ml3.6*
*CSEM **24** 20:57:16.1±0.1, 39°.10N×29°.03E, h2km, ML3.6, Error ellipse: s-maj=1.9km s-min=1.8km az=65.0*
ISC 24 20:57:16.0±1.0, 39°.12N±0°.02×29°.03E±0°.02, h9km±9km, n117, σ0=92/135, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.36**	**95**	P	**Pg**	**20 57 22.9**	**-0.2**
GDZ				S	**Sg**	**20 57 28.2**	**+0.4**
GDZ	**Gediz**	**0.36**	**95**	i P	**Pg**	**20 57 22.9**	**-0.2**
GDZ				i S	**Sg**	**20 57 28.2**	**+0.4**
TVSB	**Tavsanli**	**0.47**	**45**	ePG	**Pg**	**20 57 25.0**	**-0.3**
TVSB	**Tavsanli**	**0.47**	**45**	ePg	**Pg**	**20 57 25.0**	**-0.3**
DST	**Dursunbey**	**0.58**	**327**	ePG	**Pg**	**20 57 27.1**	**-0.2**
DST	**Dursunbey**	**0.58**	**327**	ePg	**Pg**	**20 57 27.1**	**-0.2**
DURS	**Dursunbey**	**0.65**	**319**	P	**Pg**	**20 57 28.2**	**-0.4**
DURS	**Dursunbey**	**0.65**	**319**	i P	**Pg**	**20 57 28.2**	**-0.4**
KULA	**Kula-Manisa**	**0.67**	**205**	ePG	**Pg**	**20 57 28.6**	**-0.4**
KULA	**Kula-Manisa**	**0.67**	**205**	ePg	**Pg**	**20 57 28.6**	**-0.4**
KHAL	**Karahalli**	**0.83**	**154**	P	**Pb**	**20 57 32.0**	**-0.7**
KHAL				S	**Sb**	**20 57 42.9**	**-1.1**
KHAL	**Karahalli**	**0.83**	**154**	i P	**Pb**	**20 57 32.0**	**-0.7**
KHAL				i S	**Sb**	**20 57 42.9**	**-1.1**
KHL	**Karahalli**	**0.88**	**154**	ePG	**Pb**	**20 57 32.9**	**-0.7**
KHL	**Karahalli**	**0.88**	**154**	ePg	**Pb**	**20 57 32.9**	**-0.7**
ORLT	**Orhaneli**	**0.93**	**354**	ePG	**Pb**	**20 57 34.4**	**0.0**
ORLT				eSG	**Sn**	**20 57 48.4**	**-0.4**
ORLT	**Orhaneli**	**0.93**	**354**	ePg	**Pb**	**20 57 34.4**	**0.0**
ORLT				eSg	**Sn**	**20 57 48.4**	**-0.4**
AKHS	**Akhisar**	**0.97**	**256**	P	**Pn**	**20 57 35.5**	**-0.4**
AKHS				S	**Sb**	**20 57 47.9**	**-0.1**
AKHS	**Akhisar**	**0.97**	**256**	i P	**Pn**	**20 57 35.5**	**-0.4**
AKHS				i S	**Sb**	**20 57 47.9**	**-0.1**
AKS	**Akhisar**	**0.97**	**256**	ePG	**Pb**	**20 57 34.8**	**-0.3**
AKS	**Akhisar**	**0.97**	**256**	ePg	**Pb**	**20 57 34.8**	**-0.3**
BALB	**Balikesir**	**1.03**	**301**	ePG	**Pb**	**20 57 36.1**	**+0.1**
BALB				eSG	**Sn**	**20 57 51.1**	**0.0**
BALB	**Balikesir**	**1.03**	**301**	ePg	**Pb**	**20 57 36.1**	**+0.1**
BALB				eSg	**Sn**	**20 57 51.1**	**0.0**
IGD	**Bursa**	**1.15**	**7**	i P	**Pg**	**20 57 36.4**	**-1.8**
IGD				i S	**Sb**	**20 57 53.5**	**+0.3**
CAVI	**Cavuskoy**	**1.25**	**30**	ePN	**Pg**	**20 57 40.3**	**+0.2**
CAVI	**Cavuskoy**	**1.25**	**30**	ePn	**Pg**	**20 57 40.3**	**+0.2**
BALY	**Balya**	**1.25**	**300**	P	**Pg**	**20 57 40.0**	**-0.1**
BALY	**Balya**	**1.25**	**300**	i P	**Pg**	**20 57 40.0**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.25**	**355**	ePN	**Pn**	**20 57 39.6**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.25**	**355**	ePn	**Pn**	**20 57 39.6**	**-0.1**
KCTX	**Karacabey (Bur**	**1.26**	**336**	ePN	**Pg**	**20 57 40.6**	**+0.4**
KCTX	**Karacabey (Bur**	**1.26**	**336**	ePn	**Pg**	**20 57 40.6**	**+0.4**
IZI	**Iznik**	**1.27**	**16**	ePN	**Pg**	**20 57 40.2**	**-0.1**
IZI	**Iznik**	**1.27**	**16**	ePn	**Pg**	**20 57 40.2**	**-0.1**
GEMT	**Gemlik**	**1.32**	**5**	ePN	**Pb**	**20 57 40.7**	**-0.3**
GEMT	**Gemlik**	**1.32**	**5**	ePn	**Pb**	**20 57 40.7**	**-0.3**
BORA	**Eskisehir**	**1.34**	**55**	P	**Pn**	**20 57 40.9**	**-0.1**
BORA				S	**Sn**	**20 57 59.5**	**+0.5**
BORA	**Eskisehir**	**1.34**	**55**	i P	**Pn**	**20 57 40.9**	**-0.1**
BORA				i S	**Sn**	**20 57 59.5**	**+0.5**
DENT	**Denizli**	**1.36**	**180**	ePN	**Pg**	**20 57 41.5**	**-0.6**
DENT	**Denizli**	**1.36**	**180**	ePn	**Pg**	**20 57 41.6**	**-0.6**
GONE	**Gonen-Balikesi**	**1.39**	**312**	ePN	**Pg**	**20 57 42.5**	**-0.2**
GONE	**Gonen-Balikesi**	**1.39**	**312**	ePn	**Pg**	**20 57 42.5**	**-0.2**
ADVT	**Abdulvahap**	**1.42**	**22**	ePN	**Pg**	**20 57 43.0**	**-0.4**
ADVT	**Abdulvahap**	**1.42**	**22**	ePn	**Pg**	**20 57 43.0**	**-0.4**
DNZL	**Cakiroluk**	**1.43**	**179**	P	**Pn**	**20 57 41.9**	**-0.4**
DNZL	**Cakiroluk**	**1.43**	**179**	i P	**Pn**	**20 57 41.9**	**-0.4**
DNZL				i S	**Sg**	**20 58 04.5**	**+2.6**
ARMT	**Armutlu**	**1.45**	**355**	ePN	**Pb**	**20 57 42.7**	**-0.5**
ARMT	**Armutlu**	**1.45**	**355**	ePn	**Pb**	**20 57 42.7**	**-0.5**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**218**	ePN	**Pb**	**20 57 43.3**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**218**	ePn	**Pb**	**20 57 43.3**	**-0.3**
ESKT	**Eskisehir**	**1.47**	**74**	i P	**Pb**	**20 57 43.1**	**-0.5**
SEYT	**Eskypehyr**	**1.47**	**74**	P	**Pb**	**20 57 43.1**	**-0.5**
EDC	**Edincik**	**1.52**	**324**	ePN	**Pb**	**20 57 44.5**	**+0.1**
EDC	**Edincik**	**1.52**	**324**	ePn	**Pb**	**20 57 44.5**	**+0.1**
GPA	**Golpazari**	**1.53**	**40**	ePN	**Pb**	**20 57 44.6**	**0.0**
GPA	**Golpazari**	**1.53**	**40**	ePn	**Pb**	**20 57 44.6**	**0.0**
BOLV	**Bolvadin**	**1.55**	**104**	P	**Pb**	**20 57 44.5**	**-0.6**
BOLV	**Bolvadin**	**1.55**	**104**	i P	**Pb**	**20 57 44.5**	**-0.6**
BOLV				i S	**Sg**	**20 58 08.8**	**+2.8**
KNL	**Bal¨–kesir**	**1.63**	**315**	i P	**Pn**	**20 57 44.5**	**-0.4**
KNL				i S	**Sg**	**20 58 07.7**	**-0.8**
DKL	**Dikili**	**1.65**	**269**	ePN	**Pb**	**20 57 46.1**	**-0.5**
DKL	**Dikili**	**1.65**	**269**	ePn	**Pb**	**20 57 46.1**	**-0.5**
AYDN	**Tasoluk**	**1.71**	**212**	P	**Pn**	**20 57 46.4**	**+0.3**
AYDN	**Tasoluk**	**1.71**	**212**	i P	**Pn**	**20 57 46.4**	**+0.3**
BUY	**Buyukada**	**1.73**	**2**	P	**Pg**	**20 57 48.9**	**-0.4**
BUY				S	**Sg**	**20 58 11.6**	**-0.2**
BUY	**Buyukada**	**1.73**	**2**	i P	**Pg**	**20 57 48.9**	**-0.4**
BUY				i S	**Sg**	**20 58 11.6**	**-0.2**
GULT	**Gulveren**	**1.74**	**41**	ePN	**Pb**	**20 57 47.7**	**-0.6**
GULT	**Gulveren**	**1.74**	**41**	ePn	**Pb**	**20 57 47.7**	**-0.6**
ISP	**Isparta**	**1.75**	**137**	ePN	**Pb**	**20 57 47.2**	**-1.0**
ISP	**Isparta**	**1.75**	**137**	ePn	**Pb**	**20 57 47.3**	**-1.0**
HRT	**Hereke**	**1.77**	**16**	ePN	**Pb**	**20 57 48.2**	**-0.5**
HRT	**Hereke**	**1.77**	**16**	ePn	**Pb**	**20 57 48.2**	**-0.5**
AYVA	**Ayvalik**	**1.82**	**277**	i P	**Pg**	**20 57 51.1**	**+0.1**
KRBG	**Karabiga-Canak**	**1.84**	**314**	ePN	**Pb**	**20 57 49.3**	**-0.6**
KRBG	**Karabiga-Canak**	**1.84**	**314**	ePn	**Pb**	**20 57 49.3**	**-0.6**
MRMT	**Marmara Adasi**	**1.85**	**324**	ePN	**Pb**	**20 57 49.3**	**-0.7**
MRMT	**Marmara Adasi**	**1.85**	**324**	ePn	**Pb**	**20 57 49.3**	**-0.7**
SPNC	**Sapanca-Adapaz**	**1.85**	**32**	ePN	**Pb**	**20 57 49.3**	**-0.7**
SPNC	**Sapanca-Adapaz**	**1.85**	**32**	ePn	**Pb**	**20 57 49.3**	**-0.7**
ISK	**Istanbul-Kandi**	**1.95**	**1**	ePN	**Pb**	**20 57 50.4**	**-1.2**
ISK	**Istanbul-Kandi**	**1.95**	**1**	ePn	**Pb**	**20 57 50.4**	**-1.2**
SVRH	**Sivrihisar-ESK**	**1.97**	**80**	ePN	**Pb**	**20 57 50.7**	**-1.4**
SVRH	**Sivrihisar-ESK**	**1.97**	**80**	ePn	**Pb**	**20 57 50.7**	**-1.4**
DGB	**¨zmir**	**1.99**	**238**	i P	**Pb**	**20 57 52.8**	**+0.4**
GLHS	**Glhisar (BURDU**	**1.99**	**169**	ePN	**Pn**	**20 57 50.6**	**+0.7**
GLHS	**Glhisar (BURDU**	**1.99**	**169**	ePn	**Pn**	**20 57 50.7**	**+0.7**
URLA	**Izmir**	**2.04**	**249**	P	**Pn**	**20 57 51.4**	**+0.8**
URLA	**Izmir**	**2.04**	**249**	i P	**Pn**	**20 57 51.4**	**+0.8**
YER	**Yerkesik**	**2.06**	**197**	ePN	**Pb**	**20 57 52.1**	**-1.6**
YER	**Yerkesik**	**2.06**	**197**	ePn	**Pb**	**20 57 52.1**	**-1.6**
BGKT	**Bogazkoy**	**2.07**	**355**	ePN	**Pb**	**20 57 52.2**	**-1.5**
BGKT	**Bogazkoy**	**2.07**	**355**	ePn	**Pb**	**20 57 52.2**	**-1.5**
SILT	**Sile**	**2.09**	**13**	ePN	**Pb**	**20 57 52.8**	**-1.3**
SILT	**Sile**	**2.09**	**13**	ePn	**Pb**	**20 57 52.8**	**-1.3**
RKY	**Sarkoy-Tekirda**	**2.12**	**318**	ePN	**Pn**	**20 57 52.8**	**+1.1**
RKY	**Sarkoy-Tekirda**	**2.12**	**318**	ePn	**Pn**	**20 57 52.8**	**+1.1**
KLYT	**Kilyos**	**2.13**	**0**	ePN	**Pb**	**20 57 53.4**	**-1.4**
KLYT	**Kilyos**	**2.13**	**0**	ePn	**Pb**	**20 57 53.4**	**-1.4**
LPK

CTYL	Yalikoy Yolu	2.42	347	ePn	Pb	20 57 57.8	-1.9
ERIK	Erikli-Kesan	2.48	310	ePN	Pn	20 57 58.3	+1.8
ERIK	Erikli-Kesan	2.48	310	ePn	Pn	20 57 58.3	+1.8
LOD	Lodumlu	2.99	74	ePN	Pn	20 58 05.7	+2.0
LOD	Lodumlu	2.99	74	ePn	Pn	20 58 05.7	+2.0

*IDC **24** 20:58:58.4±2.1,37.°07N×141.°09E,h0km,mb3.5/3, mb1 3.6/4,mb1mx3.3/42,mbtmp3.4/4,ML3.2/1,Error ellipse: s-maj=39.9km s-min=30.2km az=63.0*
*ISCJB **24** 20:58:59.5±1.0,37.°10N±0.°03×140.°94E±0.°07,h7km±4km, mb3.4/3,Error ellipse: s-maj=9.2km s-min=5.2km az=16.8*
*JMA **24** 20:59:00.7,37.°12N×140.°83E,h8km±1km,M3.2 Broadband fault plane solution: P waves. NP1: φ=231.00000°,δ49.00000°,λ-100.00000°. NP2: φ=66.00000°,δ42.00000°,λ-79.00000°. Principal axes: T Plg3.0000°, Azm328.0000°; N Plg7.0000°, Azm238.0000°; P Plg82.0000°, Azm81.0000°;*
JMA Felt II J1.

ISC 24 20:59:00.2±0.9,**37.°09N**±0.°04×**140.°75E**±0.°06,**h8**km±7km, **n12**,σ0°**49**/21,**mb3.5**/3,**5C-1D**,**Eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.04	75	⇓P	Pg	20 59 02.1	+0.1
ONAJ				S	Sg	20 59 03.1	-0.1
JFK	Kawauchi	0.29	20	⇑P	Pg	20 59 05.9	-0.2
JFK				S	Sg	20 59 09.7	-0.3
JHO	Hitachi	0.50	197	⇑P	Pb	20 59 11.1	-0.1
JHO				S	Sb	20 59 18.6	0.0
JFT	Otama	0.54	323	⇑P	Pb	20 59 12.0	+0.1
JFT				S	Sb	20 59 19.8	0.0
JSB	Shiboa	0.67	260	P	Pn	20 59 15.7	-0.3
JSB				S	Sn	20 59 26.1	-0.6
JMM	Marumori	0.78	3	⇑P	Pg	20 59 14.9	-0.3
JMM				S	Sg	20 59 25.4	+0.1
JFY	Yanaizu	0.89	291	⇑P	Pn	20 59 18.8	-0.2
JFY				S	Sn	20 59 31.3	-0.8
MJAR	Matsushiro Arr	2.11	256	Pn	Pb	20 59 39.0	+0.3
MJAR	6.0nm,0.3s,baz=80,slow=16,SNR=23			Sn	Sg	21 00 08.2	+0.2
	8.6nm,0.3s,baz=84,slow=28,SNR=9.5						
MAT	Matsushiro	2.11	256	P	Pb	20 59 38.5	-0.2
MAT				S	Sg	21 00 08.0	0.0
ZALV	Zalesovo Beam	41.48	312	P	P	21 06 48.4	+1.0
	0.5nm,0.5s,baz=98,slow=6.0,SNR=3.1						
MKAR	Makanchi Array	43.64	302	P	P	21 07 06.2	+1.1
	0.2nm,0.6s,baz=89,slow=9.2,SNR=3.9						
WRA	Warramunga Arr	57.05	187	P	P	21 08 46.4	-0.3
	0.6nm,0.7s,baz=4.3,slow=7.4,SNR=5.2						

*GEN **24** 21:01:45.6,43.°94N×12.°08E,h2km,ML2.3*
*ISCJB **24** 21:01:46.8±0.3,43.°86N±0.°03×11.°96E±0.°02,h23km±3km, Error ellipse: s-maj=4.9km s-min=2.5km az=21.2*
*CSEM **24** 21:01:46.5±0.1,43.°87N×11.°97E,h5km,ML2.6/14,Error ellipse: s-maj=3.9km s-min=2.1km az=29.0*
*ROM **24** 21:01:46.2±0.2,43.°89N×12.°03E,h7km±1km,Ml2.3/16, Error ellipse: s-maj=2.4km s-min=1.1km az=37.0*
*LDG **24** 21:01:47.4±0.2,43.°86N×12.°03E,h2km,Ml2.5/9,Error ellipse: s-maj=5.3km s-min=3.1km az=54.0*

ISC 24 21:01:46.5±0.8,**43.°89N**±0.°02×**12.°00E**±0.°02,**h15**km±5km, **n68**,σ0°**97**/115,**Central Italy**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFI	Santa Sofia	0.11	278	Pg	Pg	21 01 49.7	-0.2
SFI				Sg	Sg	21 01 52.1	0.0
SFI	Santa Sofia	0.11	278	Pg	Pg	21 01 49.7	-0.2
SFI				Sg	Sg	21 01 52.1	0.0
ASQU	Asqua	0.18	239	Pg	Pg	21 01 50.8	0.0
ASQU				Sg	Sg	21 01 54.1	+0.4
	2μm,0.3s						
ASQU	Asqua	0.18	239	Pg	Pg	21 01 50.8	0.0
ASQU				Sg	Sg	21 01 54.1	+0.4
	2μm,0.3s						
VMG	Vicchio	0.34	283	Pg	Pb	21 01 54.1	-0.1
VMG				Sg	Sb	21 02 00.1	+0.6
	143nm,0.1s						
VMG	Vicchio	0.34	283	Pg	Pb	21 01 54.1	-0.1
VMG				Sg	Sb	21 02 00.1	+0.6
	143nm,0.1s						
BADI	Badiali	0.42	155	Pg	Pg	21 01 54.5	-0.4
BADI				Sg	Sb	21 02 01.2	-0.6
	361nm,0.5s						
BADI	Badiali	0.42	155	Pg	Pg	21 01 54.5	-0.4
BADI				Sg	Sb	21 02 01.2	-0.6
	361nm,0.5s						
SEI	Scarperia	0.49	290	Pg	Pg	21 01 56.5	+0.2
SEI				Sg	Sb	21 02 05.0	+1.0
	1μm,0.3s						
SEI	Scarperia	0.49	290	Pg	Pg	21 01 56.5	+0.2
SEI				Sg	Sb	21 02 05.0	+1.0
	1μm,0.3s						
PIEI	Pieia	0.53	132	Pg	Pg	21 01 56.2	-0.7
PIEI				Sg	Sb	21 02 05.2	+0.3
	73nm,0.3s						
PIEI	Pieia	0.53	132	Pg	Pg	21 01 56.2	-0.7
PIEI				Sg	Sb	21 02 05.2	+0.3
	73nm,0.3s						
ATPC	Poggio Castell	0.53	141	Pg	Pg	21 01 56.3	-0.6
ATPC				Sg	Sb	21 02 05.3	+0.4
	177nm,0.5s						
ATPC	Poggio Castell	0.53	141	Pg	Pg	21 01 56.3	-0.6
ATPC				Sg	Sb	21 02 05.3	+0.4
	177nm,0.5s						
ATVO	AVT- Monte Val	0.59	149	Pg	Pg	21 01 57.5	-0.5
ATVO				Sg	Sb	21 02 06.4	-0.3
	169nm,0.6s						
ATVO	AVT- Monte Val	0.59	149	Pg	Pg	21 01 57.5	-0.5
ATVO				Sg	Sb	21 02 06.4	-0.3
	169nm,0.6s						
FSSB	Fossombrone	0.60	109	Pg	Pg	21 01 57.8	-0.4
FSSB				Sg	Sb	21 02 07.0	0.0
	134nm,0.4s						
FSSB	Fossombrone	0.60	109	Pg	Pg	21 01 57.8	-0.4
FSSB				Sg	Sb	21 02 07.0	0.0
	134nm,0.4s						
FRON	Frontone	0.65	125	Pg	Pg	21 01 58.7	-0.4
FRON				Sg	Sb	21 02 08.7	+0.4
	133nm,1.0s						
FRON	Frontone	0.65	125	Pg	Pg	21 01 58.7	-0.4
FRON				Sg	Sb	21 02 08.7	+0.4
	133nm,1.0s						
FNVD	Fontana Vidola	0.69	294	Pg	Pb	21 02 00.4	+0.1
	223nm,0.6s						
FNVD	Fontana Vidola	0.69	294	Pg	Pb	21 02 00.4	+0.1
	223nm,0.6s						
SSFR	Montelago di S	0.73	128	Pg	Pg	21 02 00.1	-0.6
	107nm,0.3s						
SSFR	Montelago di S	0.73	128	Pg	Pg	21 02 00.1	-0.6
	107nm,0.3s						
MURB	Monte Urbino	0.73	148	Pg	Pb	21 02 01.0	0.0
	212nm,0.4s						
MURB	Monte Urbino	0.73	148	Pg	Pb	21 02 01.0	0.0
	212nm,0.4s						
ATTE	AVT- Monte Tez	0.74	159	Pg	Pg	21 02 00.3	-0.6
	106nm,0.5s						
ATTE	AVT- Monte Tez	0.74	159	Pg	Pg	21 02 00.3	-0.6
	106nm,0.5s						
MGAB	Montegabbione	0.98	175	Pg	Pg	21 02 05.3	-0.1
	147nm,0.7s						
MGAB	Montegabbione	0.98	175	Pg	Pg	21 02 05.3	-0.1
	147nm,0.7s						
BDI	Bagni Di Lucca	1.03	280	Pg	Pg	21 02 06.5	+0.2
BDI	Bagni Di Lucca	1.03	280	Pg	Pg	21 02 06.5	+0.2
SACS	San Casciano d	1.04	184	Pg	Pg	21 02 06.5	-0.1
	64nm,0.8s						
MAIM	Mastiano	1.09	272	Pg	Pb	21 02 07.3	+0.2
	49nm,0.6s						
MAIM	Mastiano	1.09	272	P	Pb	21 02 07.1	0.0
MAIM	Mastiano	1.09	272	Pg	Pb	21 02 07.3	+0.2
	49nm,0.6s						
MAIM				S	Sb	21 02 21.5	+0.4
ARCI	Arcidosso	1.10	200	Pg	Pb	21 02 07.2	-0.2
	63nm,0.8s						
ARCI	Arcidosso	1.10	200	Pg	Pb	21 02 07.2	-0.2
	63nm,0.8s						
FDMO	Fiordimonte	1.16	137	Pg	Pg	21 02 08.5	-0.4
	42nm,0.6s						
FDMO	Fiordimonte	1.16	137	Pg	Pg	21 02 08.5	-0.4
	42nm,0.6s						

SARO	Sassorosso	1.19	285	P	Pn	21 02 09.0	+0.3
SARO				S	Sb	21 02 24.8	+0.7
SC2M	Scurtabo	1.85	287	P	Pn	21 02 18.4	+0.7
SC2M				S	Sn	21 02 40.3	-0.6
NVLJ	Novalja	2.17	71	ePn	Pn	21 02 23.2	+1.0
NVLJ				Sn	Sn	21 02 50.6	+1.8
NVLJ	Novalja	2.17	71	ePn	Pn	21 02 23.1	+1.0
NVLJ				Sn	Sn	21 02 50.6	+1.8
PGF	Pioggiola	2.57	240	ePn	Pn	21 02 28.3	+0.6
PGF				eSn	Sn	21 02 58.1	-0.7
	3.9nm,0.4s						
PGF	Pioggiola	2.57	240	ePn	Pn	21 02 28.3	+0.6
PGF				eSn	Sn	21 02 58.1	-0.7
	2.0nm,0.4s						
UDBI	Udbina	2.78	75	ePn	Pb	21 02 34.0	-2.1
UDBI				Sn	Sn	21 03 05.6	+1.6
UDBI	Udbina	2.78	75	ePn	Pb	21 02 33.9	-2.1
UDBI				Sn	Sn	21 03 05.5	+1.6
ABTA	Abfaltersbach	2.88	7	ePn	Pn	21 02 34.0	+2.0
	1.3nm,0.4s						
ABTA				i Sn	Sb	21 03 10.2	-2.6
	8.5nm,0.5s						
ABTA	Abfaltersbach	2.88	7	Pn	Pn	21 02 34.0	+2.0
	1.3nm,0.4s						
ABTA				Sn	Sb	21 03 10.2	-2.6
	8.5nm,0.5s						
OBKA	Obir	3.18	34	ePn	Pg	21 02 46.1	-1.3
OBKA				i Sg	Sg	21 03 31.6	+3.0
	12nm,0.6s						
SBF	Sospel	3.30	271	ePn	Pn	21 02 37.8	+0.1
SBF				eSn	Sn	21 03 16.1	-0.6
	5.0nm,0.3s						
SBF	Sospel	3.30	271	ePn	Pn	21 02 37.8	+0.1
SBF				eSn	Sn	21 03 16.1	-0.6
	2.5nm,0.3s						
MBDF	Montbardon	3.84	284	ePn	Pn	21 02 45.6	+0.3
MBDF				eSn	Sn	21 03 29.1	-1.2
	1.0nm,0.2s						
MBDF	Montbardon	3.84	284	ePn	Pn	21 02 45.6	+0.3
MBDF				eSn	Sn	21 03 29.1	-1.2
	0.5nm,0.2s						
FRF	La Foret Royal	3.89	267	ePn	Pn	21 02 46.5	+0.7
FRF				eSn	Sn	21 03 29.5	-1.8
	1.7nm,0.3s						
FRF	La Foret Royal	3.89	267	ePn	Pn	21 02 46.5	+0.7
FRF				eSn	Sn	21 03 29.5	-1.8
	0.9nm,0.3s						
LMR	La Mourre	4.02	264	ePn	Pn	21 02 48.3	+0.7
LMR				eSn	Sn	21 03 33.4	-1.1
	0.9nm,0.3s						
LMR	La Mourre	4.02	264	ePn	Pn	21 02 48.3	+0.7
LMR				eSn	Sn	21 03 33.4	-1.1
	0.4nm,0.3s						
LPL	La Plagne	4.09	295	ePn	Pn	21 02 49.7	+1.0
LPL				eSn	Sn	21 03 35.3	-1.2
	1.0nm,0.3s						
LPL	La Plagne	4.09	295	ePn	Pn	21 02 49.7	+1.0
LPL				eSn	Sn	21 03 35.3	-1.2
	0.5nm,0.3s						
HINF	Hinteralfeld	5.32	319	ePn	Pn	21 03 05.9	+0.4
HINF				eSn	Sn	21 04 05.1	-1.5
	0.8nm,0.2s						
HINF	Hinteralfeld	5.32	319	ePn	Pn	21 03 05.9	+0.4
HINF				eSn	Sn	21 04 05.1	-1.5
	0.4nm,0.2s						
KHC	Kasperske Hory	5.36	11	eSN	Sn	21 04 07.6	+0.2
CDF	Champ du Feu	5.59	326	ePn	Pn	21 03 10.4	+1.2
CDF				eSn	Sn	21 04 11.2	-1.9
	0.9nm,0.2s						
CDF	Champ du Feu	5.59	326	ePn	Pn	21 03 10.4	+1.2
HAU	Haudompre	5.70	318	ePn	Pn	21 03 11.6	+1.0
HAU				eSn	Sn	21 04 14.4	-1.4
	3.2nm,0.3s						
HAU	Haudompre	5.70	318	ePn	Pn	21 03 11.6	+1.0
HAU				eSn	Sn	21 04 14.4	-1.4
	1.6nm,0.3s						

*ISCJB **24** 21:02:02.9±0.5,39.°12N±0.°04×29.°03E±0.°04,h9km,Error ellipse: s-maj=5.5km s-min=3.7km az=160.9*
*ISK **24** 21:02:02.5,39.°13N×29.°05E,h8km,MD2.7*
*CSEM **24** 21:02:03.0±0.1,39.°12N×29.°03E,h8km,MD2.6,Error ellipse: s-maj=3.0km s-min=2.1km az=154.0*
*DDA **24** 21:02:03.0,39.°10N×29.°03E,h7km,Md2.6*

ISC 24 21:02:03.1±0.9,**39.°12N**±0.°03×**29.°02E**±0.°02,**h9**km,**n26**, σ0°**31**/34,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.25	253	P	Pg	21 02 08.1	-0.1
DEMI				S	Sg	21 02 11.9	+0.3
DEMI	Demirci	0.25	253	i P	Pg	21 02 08.1	-0.1
DEMI				i S	Sg	21 02 11.9	+0.3
GDZ	Gediz	0.36	95	P	Pg	21 02 10.3	+0.1
GDZ				S	Sg	21 02 15.4	+0.5
GDZ	Gediz	0.36	95	i P	Pg	21 02 10.3	+0.1
GDZ				i S	Sg	21 02 15.4	+0.5
TVSB	Tavsanli	0.47	46	ePG	Pg	21 02 12.1	-0.3
TVSB				eSG	Sg	21 02 18.4	-0.2
TVSB	Tavsanli	0.47	46	ePg	Pg	21 02 12.1	-0.3
TVSB				eSg	Sg	21 02 18.4	-0.2
DURS	Dursunbey	0.64	319	P	Pg	21 02 16.0	+0.4
DURS	Dursunbey	0.64	319	i P	Pg	21 02 16.0	+0.4
KULA	Kula-Manisa	0.67	205	ePG	Pg	21 02 16.1	+0.1
KULA	Kula-Manisa	0.67	205	ePg	Pg	21 02 16.1	+0.1
KHAL	Karahalli	0.83	154	S	Sg	21 02 30.1	+0.2
KHAL	Karahalli	0.83	154	i S	Sg	21 02 30.1	+0.2
AKHS	Akhisar	0.97	256	P	Pg	21 02 21.8	0.0
AKHS				S	Sg	21 02 34.6	+0.2
AKHS	Akhisar	0.97	256	i P	Pg	21 02 21.8	0.0
AKHS				i S	Sg	21 02 34.6	+0.2
AKS	Akhisar	0.97	256	ePG	Pg	21 02 21.5	-0.3
AKS	Akhisar	0.97	256	ePg	Pg	21 02 21.5	-0.3
BALB	Balikesir	1.03	301	ePG	Pb	21 02 23.2	+0.1
BALB	Balikesir	1.03	301	ePg	Pb	21 02 23.2	+0.1
CAVI	Cavuskoy	1.25	30	ePN	Pg	21 02 27.4	+0.3
CAVI	Cavuskoy	1.25	30	ePn	Pg	21 02 27.5	+0.3
MDNY	Mudanya-Bursa	1.25	355	ePN	Pn	21 02 26.3	-0.5
MDNY	Mudanya-Bursa	1.25	355	ePn	Pn	21 02 26.3	-0.5
KCTX	Karacabey (Bur	1.26	336	ePN	Pn	21 02 26.6	-0.3
IZI	Iznik	1.27	16	ePN	Pn	21 02 26.6	-0.4
IZI	Iznik	1.27	16	ePn	Pn	21 02 26.6	-0.4
ARMT	Armutlu	1.45	355	ePN	Pb	21 02 30.6	+0.3

JMA 24 21:05:49.7,37.°08N×140.°80E,h7km±1km,M2.5,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.02	356	P	Pg	21 05 50.9	-0.2
JFK	Kawauchi	0.29	12	P	Pg	21 05 55.5	0.0
JFT	Otama	0.57	320	P	Pg	21 06 01.0	+0.2
JFT				S	Sg	21 06 08.8	+0.6
JMM	Marumori	0.79	360	P	Pg	21 06 04.4	-0.4
JMM				S	Sg	21 06 15.1	+0.1
JFY	Yanaizu	0.93	291	P	Pg	21 06 07.5	-0.1
JFY				S	Sg	21 06 19.6	-0.1
MAT	Matsushiro	2.15	256	P	Pn	21 06 26.9	+0.9
MAT				S	Sb	21 06 56.0	+0.2

*ISCJB **24** 21:17:58.1±0.5,39.°12N±0.°03×29.°05E±0.°03,h6km±5km, Error ellipse: s-maj=5.8km s-min=4.3km az=166.5*
*CSEM **24** 21:17:58.2±0.1,39.°12N×29.°05E,h5km,MD2.4,Error ellipse: s-maj=3.2km s-min=2.6km az=168.0*
*DDA **24** 21:17:58.0,39.°08N×29.°05E,h7km,Md2.4*
*ISK **24** 21:17:59.1,39.°23N×29.°01E,h5km,MD2.7*

ISC 24 21:17:58.2±0.9,**39.°12N**±0.°03×**29.°04E**±0.°02,**h9**km±10km, **n36**,σ0°**27**/46,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.27	253	P	Pg	21 18 03.5	-0.1
DEMI				S	Sg	21 18 07.3	+0.1
DEMI	Demirci	0.27	253	i P	Pg	21 18 03.5	-0.1
DEMI				i S	Sg	21 18 07.3	+0.1
GDZ	Gediz	0.34	96	S	Sg	21 18 09.5	0.0
GDZ	Gediz	0.34	96	P	Pg	21 18 05.0	0.0
GDZ				S	Sg	21 18 09.6	0.0
GDZ	Gediz	0.34	96	i P	Pg	21 18 05.0	0.0
GDZ				i S	Sg	21 18 09.6	0.0
GDZ	Gediz	0.34	96	i S	Sg	21 18 09.5	0.0
TVSB	Tavsanli	0.46	45	ePG	Pg	21 18 07.3	+0.1
TVSB				eSG	Sg	21 18 13.7	+0.4
TVSB	Tavsanli	0.46	45	ePg	Pg	21 18 07.3	+0.1
TVSB				eSg	Sg	21 18 13.7	+0.4
DST	Dursunbey	0.58	326	ePG	Pg	21 18 08.7	-0.8
DURS	Dursunbey	0.65	317	P	Pg	21 18 11.1	+0.3
DURS	Dursunbey	0.65	317	i P	Pg	21 18 11.1	+0.3
KULA	Kula-Manisa	0.68	206	ePG	Pn	21 18 14.8	+0.7
KHAL	Karahalli	0.83	155	P	Pg	21 18 13.9	-0.3
KHAL				S	Sg	21 18 24.9	-0.1
KHAL	Karahalli	0.83	155	i P	Pg	21 18 13.9	-0.3
KHAL				i S	Sg	21 18 24.9	-0.1
AKHS	Akhisar	0.99	256	P	Pg	21 18 17.3	+0.1
AKHS				S	Sb	21 18 30.8	+0.1
AKHS	Akhisar	0.99	256	i P	Pg	21 18 17.3	+0.1
AKHS				i S	Sb	21 18 30.8	+0.1
AKS	Akhisar	0.99	256	ePG	Pn	21 18 18.1	-0.2
AKS	Akhisar	0.99	256	ePg	Pn	21 18 18.1	-0.2
BALB	Balikesir	1.04	300	ePG	Pg	21 18 17.9	-0.3
BALB	Balikesir	1.04	300	ePg	Pg	21 18 17.9	-0.3
CAVI	Cavuskoy	1.24	30	ePN	Pg	21 18 22.3	+0.2
CAVI	Cavuskoy	1.24	30	ePn	Pg	21 18 22.3	+0.2
MDNY	Mudanya-Bursa	1.25	354	ePN	Pn	21 18 21.6	-0.3
MDNY	Mudanya-Bursa	1.25	354	ePn	Pn	21 18 21.6	-0.3
IZI	Iznik	1.26	15	ePN	Pn	21 18 22.1	0.0
IZI	Iznik	1.26	15	ePn	Pn	21 18 22.1	0.0
KCTX	Karacabey (Bur	1.26	335	ePN	Pn	21 18 21.6	-0.4
KCTX	Karacabey (Bur	1.26	335	ePn	Pn	21 18 21.6	-0.4
GONE	Gonen-Balikesi	1.40	312	ePN	Pb	21 18 24.5	0.0
GONE	Gonen-Balikesi	1.40	312	ePn	Pb	21 18 24.5	0.0
ARMT	Armutlu	1.45	355	ePN	Pb	21 18 25.2	-0.2
ARMT	Armutlu	1.45	355	ePn	Pb	21 18 25.2	-0.2
EDC	Edincik	1.52	324	ePN	Pn	21 18 25.9	+0.3
EDC	Edincik	1.52	324	ePn	Pn	21 18 25.9	+0.3
GULT	Gulveren	1.73	40	ePN	Pb	21 18 30.1	-0.2
GULT	Gulveren	1.73	40	ePn	Pb	21 18 30.1	-0.2

*IDC **24** 21:20:54.5±2.3,38.°30N×142.°15E,h0km,mb3.5/2, mb1 3.8/4,mb1mx3.4/50,mbtmp3.7/4,ML3.6/2,Error ellipse: s-maj=44.4km s-min=32.0km az=73.0*
*NIED **24** 21:21:00,37.°90N×141.°50E,h35km,Mw3.5 Best double couple: M0=2.05000×10^14 NP1:φ=339.00000°,δ44.00000°, λ70.00000°. NP2:φ=186.00000°,δ50.00000°,λ108.00000°.*
*ISCJB **24** 21:21:04.8±0.9,37.°89N±0.°05×141.°61E±0.°09,h69km±8km, mb3.5/2,Error ellipse: s-maj=12.9km s-min=6.1km az=24.2*
*JMA **24** 21:21:06.3,37.°92N×141.°53E,h61km±1km,M3.6*
JMA Felt I J1.

ISC 24 21:21:04.7±1.3,**37.°88N**±0.°04×**141.°71E**±0.°08,**h58**km±12km, **n17**,σ1°**82**/29,**Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.64	334	P	Pn	21 21 19.0	+0.9
JIO				S	Sn	21 21 28.1	+0.3
JMM	Marumori	0.73	269	P	Pn	21 21 19.3	+0.2
JMM				S	Sn	21 21 28.6	-1.1
JFK	Kawauchi	0.84	232	P	Pn	21 21 21.3	+0.7
JOU	Okura	0.96	301	P	Pn	21 21 22.1	0.0
JOU				S	Sn	21 21 33.9	-1.1
JMK	Ichinoseki	1.14	340	P	Pn	21 21 25.3	+0.8
JMK				S	Sn	21 21 39.5	+0.4
JFT	Otama	1.15	252	P	Pn	21 21 25.1	+0.4
JFT				S	Sn	21 21 39.0	-0.5
JYS	Shiratake	1.34	285	P	Pn	21 21 27.5	+0.3
JYS				S	Sn	21 21 43.2	-0.9
JYK	Kaneyama	1.48	315	P	Pn	21 21 29.6	+0.5
JYK				S	Sn	21 21 46.9	-0.6
JOM	Ohasama	1.62	348	P	Pn	21 21 32.3	+1.3
JOM				S	Sn	21 21 51.8	+1.0
JFY	Yanaizu	1.66	254	P	Pn	21 21 32.0	+0.4
JFY				S	Sn	21 21 51.4	-0.4
JYA	Atsumi	1.73	295	P	Pn	21 21 32.3	-0.1
JRG	Rokugo	1.73	331	P	Pn	21 21 33.7	+1.2
MJAR	Matsushiro Arr	3.10	245	Pn	Pn	21 21 52.2	+1.0
	1.7nm,0.3s,baz=66,slow=11,SNR=14						
MJAR				Sn	Sn	21 22 34.7	+7.6
	2.4nm,0.3s,baz=67,slow=30,SNR=5.5						
MAT	Matsushiro	3.10	246	P	Pn	21 21 52.4	+1.2
MAT				eS	Sn	21 22 28.2	+1.2
JHJ	Hachijo jima 2	5.01	199	Pn	Pn	21 22 17.2	0.0
	17nm,0.3s,baz=13,slow=16,SNR=3.2						
JHJ				Sn	Sn	21 23 11.9	-1.9
	17nm,0.3s,baz=73,slow=19,SNR=4.3						
MKAR	Makanchi Array	43.87	301	P	P	21 29 03.0	-2.4
	0.2nm,0.7s,baz=86,slow=10,SNR=2.7						
WRA	Warramunga Arr	57.93	188	P	P	21 30 51.9	+0.8
	1.1nm,0.7s,baz=5.8,slow=7.2,SNR=12						

*CSEM **24** 21:21:12.9,39.°09N×29.°09E,h7km,MD2.3*

DDA 24 21:21:12.9,39.°09N×29.°09E,h7km,Md2.3,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.30	261	P	Pg	21 21 19.1	+0.3
DEMI				S	Sg	21 21 23.6	+0.9
DEMI	Demirci	0.30	261	i P	Pg	21 21 19.1	+0.3
DEMI				i S	Sg	21 21 23.6	+0.9
GDZ	Gediz	0.30	90	i P	Pg	21 21 19.1	+0.1
DURS	Dursunbey	0.70	317	P	Pg	21 21 26.6	+0.2
DURS	Dursunbey	0.70	317	i P	Pg	21 21 26.6	+0.2
KHAL	Karahalli	0.79	156	P	Pg	21 21 28.4	+0.4
KHAL				S	Sb	21 21 39.5	-0.4
KHAL	Karahalli	0.79	156	i P	Pg	21 21 28.4	+0.3
KHAL				i S	Sb	21 21 39.5	-0.4

*ISCJB **24** 21:23:16.0±0.4,43.°84N±0.°03×12.°01E±0.°04,h11km±5km, Error ellipse: s-maj=6.3km s-min=3.5km az=41.4*
*ROM **24** 21:23:15.2±0.1,43.°89N×12.°05E,h7km±1km,Ml2.2/14, Error ellipse: s-maj=2.1km s-min=0.7km az=33.0*
*CSEM **24** 21:23:16.5±0.2,43.°81N×11.°98E,h10km,ML2.8/8,Error ellipse: s-maj=4.3km s-min=2.7km az=39.0*

ISC 24 21:23:16.2±0.8,**43.°80N**±0.°02×**11.°95E**±0.°02,**h11**km±6km, **n44**,σ0°**91**/62,**Central Italy**

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

ATVO	AVT- Monte Val	0.53 142	Pg	Pg	21 23 26.8	+0.2
	108nm,0.5s					
ATVO	AVT- Monte Val	0.53 142	Pg	Pg	21 23 26.8	+0.2
	108nm,0.5s					
FRON	Frontone	0.63 116	Pg	Pg	21 23 27.7	-0.7
	57nm,0.6s					
FRON	Frontone	0.63 116	Pg	Pg	21 23 27.7	-0.7
	57nm,0.6s					
ATTE	AVT- Monte Tez	0.67 154	Pg	Pg	21 23 29.4	+0.2
	72nm,0.5s					
ATTE	AVT- Monte Tez	0.67 154	Pg	Pg	21 23 29.4	+0.2
	72nm,0.5s					
MURB	Monte Urbino	0.68 142	Pg	Pb	21 23 29.8	-0.3
	154nm,0.3s					
MURB	Monte Urbino	0.68 142	Pg	Pb	21 23 29.8	-0.3
	154nm,0.3s					
SSFR	Montelago di S	0.70 121	Pg	Pg	21 23 29.3	-0.5
	74nm,0.2s					
SSFR	Montelago di S	0.70 121	Pg	Pg	21 23 29.3	-0.5
	74nm,0.2s					
FNVD	Fontana Vidola	0.70 302	Pg	Pg	21 23 29.6	-0.3
	123nm,0.7s					
FNVD	Fontana Vidola	0.70 302	Pg	Pg	21 23 29.6	-0.3
	123nm,0.7s					
FROS	Frosini	0.83 225	Pg	Pn	21 23 33.8	0.0
	80nm,0.5s					
FROS	Frosini	0.83 225	Pg	Pn	21 23 33.8	0.0
	80nm,0.5s					
MGAB	Montegabbione	0.89 173	Pg	Pn	21 23 34.5	-0.2
	92nm,0.7s					
MGAB	Montegabbione	0.89 173	Pg	Pn	21 23 34.5	-0.2
	92nm,0.7s					
ARCI	Arcidosso	1.01 200	Pg	Pn	21 23 36.7	+0.3
	40nm,0.8s					
ARCI	Arcidosso	1.01 200	Pg	Pn	21 23 36.7	+0.3
	40nm,0.8s					
BDI	Bagni Di Lucca	1.01 285	Pg	Pg	21 23 35.5	-0.3
BDI	Bagni Di Lucca	1.01 285	Pg	Pg	21 23 35.5	-0.3
NVLJ	Novalja	2.23 69	ePn	Pn	21 23 53.0	0.0
NVLJ			Sn	Sn	21 24 18.9	-1.7
NVLJ	Novalja	2.23 69	ePn	Pn	21 23 53.0	0.0
NVLJ			Sn	Sn	21 24 18.9	-1.7
ABTA	Abfaltersbach	2.97 7	Pn	Pb	21 24 08.3	-0.9
	1.4nm,0.4s					
ABTA			i Sn	Sn	21 24 39.4	+0.4
	4.7nm,0.7s					
ABTA	Abfaltersbach	2.97 7	Pn	Pb	21 24 08.3	-0.9
	1.4nm,0.4s					
ABTA			Sn	Sn	21 24 39.4	+0.4
	4.7nm,0.7s					
OBKA	Obir	3.27 33	i Pg	Pg	21 24 19.9	+1.0
OBKA			i Sg	Sg	21 25 03.1	+1.8
	8.8nm,0.6s					
OBKA	Obir	3.27 33	Pg	Pg	21 24 19.9	+1.0
OBKA			Sg	Sg	21 25 03.1	+1.8
	8.8nm,0.6s					
WATA	Walderalm	3.55 356	i Pn	Pn	21 24 13.4	+2.1
	1.1nm,0.3s					
WATA	Walderalm	3.55 356	Pn	Pn	21 24 13.4	+2.1
	1.1nm,0.3s					
RETA	Reutte	3.78 348	ePn	Pb	21 24 20.6	-2.3
	0.8nm,0.3s					
RETA	Reutte	3.78 348	Pn	Pb	21 24 20.6	-2.3
	0.8nm,0.3s					

*ROM **24** 21:25:46.7±0.2, 43°.89N×12°.04E, h6km±1km, Md2.7/24, Ml2.5/24, Error ellipse: s-maj=1.8km s-min=1.1km az=54.0*
*LDG **24** 21:25:46.1±0.3, 43°.99N×12°.08E, h2km, Ml2.6/7, Error ellipse: s-maj=6.1km s-min=3.7km az=82.0*
*ISCJB **24** 21:25:47.6±0.3, 43°.85N±0°.02×11°.96E±0°.03, h23km±3km, Error ellipse: s-maj=4.4km s-min=2.9km az=28.2*
*CSEM **24** 21:25:47.5±0.1, 43°.85N×11°.98E, h5km, ML3.0/9, Error ellipse: s-maj=4.0km s-min=2.6km az=38.0*
*GEN **24** 21:25:47.6, 43°.93N×12°.00E, h6km, ML2.4*
ISC 24 21:25:46.0±0.8, **43°.96N**±0°.02×**12°.03E**±0°.02, **h17**km±5km, **n88**, σ1§**09**/114, **Central Italy**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFI	Santa Sofia	0.14	247	Pg	Pb	21 25 50.4	+0.2
SFI				Sg	Sg	21 25 52.9	+0.1
	1μm,0.2s						
SFI	Santa Sofia	0.14	247	Pg	Pb	21 25 50.4	+0.2
SFI				Sg	Sg	21 25 52.9	+0.1
	1μm,0.2s						
ASQU	Asqua	0.24	227	Pg	Pg	21 25 51.6	+0.1
ASQU				Sg	Sg	21 25 55.0	-0.2
	2μm,0.4s						
ASQU	Asqua	0.24	227	Pg	Pg	21 25 51.6	+0.1
ASQU				Sg	Sg	21 25 55.0	-0.2
	2μm,0.4s						
VMG	Vicchio	0.35	270	Pg	Pb	21 25 54.8	+1.1
VMG				Sg	Sb	21 26 00.8	+1.8
	121nm,0.1s						
VMG	Vicchio	0.35	270	Pg	Pb	21 25 54.8	+1.1
VMG				Sg	Sb	21 26 00.8	+1.8
	121nm,0.1s						
BLLA	Bellaria	0.37	60	Pg	Pn	21 25 56.5	0.0
	2μm,1.7s						
BLLA	Bellaria	0.37	60	Pg	Pn	21 25 56.5	0.0
	2μm,1.7s						
BADI	Badiali	0.48	161	Pg	Pg	21 25 55.3	-0.3
BADI				Sg	Sg	21 26 02.4	+0.4
	749nm,0.2s						
BADI	Badiali	0.48	161	Pg	Pg	21 25 55.3	-0.3
BADI				Sg	Sg	21 26 02.4	+0.4
	749nm,0.2s						
SEI	Scarperia	0.49	281	Pg	Pb	21 25 57.3	+1.1
SEI				Sg	Sn	21 26 05.7	-0.8
SEI	Scarperia	0.49	281	Pg	Pb	21 25 57.3	+1.1
SEI				Sg	Sn	21 26 05.7	-0.8
PIEI	Pieia	0.56	139	Pg	Pg	21 25 56.8	-0.3
PIEI				Sg	Sb	21 26 05.5	+0.4
	144nm,0.4s						
PIEI	Pieia	0.56	139	Pg	Pg	21 25 56.8	-0.3
PIEI				Sg	Sb	21 26 05.5	+0.4
	144nm,0.4s						
ATPC	Poggio Castell	0.57	147	Pg	Pg	21 25 57.2	-0.1
ATPC				Sg	Sb	21 26 05.9	+0.6
	476nm,0.2s						
ATPC	Poggio Castell	0.57	147	Pg	Pg	21 25 57.2	-0.1
ATPC				Sg	Sb	21 26 05.9	+0.6
	476nm,0.2s						
MTRZ	Monterenzio	0.58	316	Pg	Pn	21 26 00.1	+0.6
	444nm,0.3s						
MTRZ	Monterenzio	0.58	316	Pg	Pn	21 26 00.1	+0.6
	444nm,0.3s						
ATVO	AVT- Monte Val	0.64	154	Pg	Pg	21 25 58.3	-0.3
ATVO				Sg	Sb	21 26 07.8	+0.5
	275nm,0.4s						
ATVO	AVT- Monte Val	0.64	154	Pg	Pg	21 25 58.3	-0.3
ATVO				Sg	Sb	21 26 07.8	+0.5
	275nm,0.4s						
FRON	Frontone	0.67	131	Pg	Pb	21 25 59.4	+0.2
	124nm,0.5s						
FRON	Frontone	0.67	131	Pg	Pb	21 25 59.4	+0.2
	124nm,0.5s						
FNVD	Fontana Vidola	0.69	288	Pg	Pn	21 26 01.0	+0.1
	385nm,0.8s						
FNVD	Fontana Vidola	0.69	288	Pg	Pn	21 26 01.0	+0.1
	385nm,0.8s						
SSFR	Montelago di S	0.76	134	Pg	Pg	21 26 00.6	-0.2
	202nm,0.2s						
SSFR	Montelago di S	0.76	134	Pg	Pg	21 26 00.6	-0.2
	202nm,0.2s						
MURB	Monte Urbino	0.79	152	Pg	Pg	21 26 01.2	-0.1
	362nm,0.3s						
MURB	Monte Urbino	0.79	152	Pg	Pg	21 26 01.2	-0.1
	362nm,0.3s						
ATTE	AVT- Monte Tez	0.80	163	Pg	Pg	21 26 01.0	-0.6
	143nm,0.4s						
ATTE	AVT- Monte Tez	0.80	163	Pg	Pg	21 26 01.0	-0.6
	143nm,0.4s						
SNTG	Esanatoglia	0.97	136	Pg	Pg	21 26 04.5	-0.2
	144nm,0.7s						
SNTG	Esanatoglia	0.97	136	Pg	Pg	21 26 04.5	-0.2
	144nm,0.7s						
FROS	Frosini	0.98	220	Pg	Pn	21 26 05.3	+0.3
	198nm,0.5s						
FROS	Frosini	0.98	220	Pg	Pn	21 26 05.3	+0.3
	198nm,0.5s						
BDI	Bagni Di Lucca	1.04	276	Pg	Pg	21 26 06.8	+0.7
	117nm,0.9s						
BDI	Bagni Di Lucca	1.04	276	Pg	Pg	21 26 06.8	+0.7
	117nm,0.9s						
MGAB	Montegabbione	1.05	177	Pg	Pb	21 26 05.9	+0.2
	237nm,0.5s						
MGAB	Montegabbione	1.05	177	Pg	Pb	21 26 05.9	+0.2
	237nm,0.5s						
MAIM	Mastiano	1.11	268	Pg	Pg	21 26 08.4	+0.9
	77nm,0.8s						
MAIM	Mastiano	1.11	268	P	Pg	21 26 07.8	+0.3
MAIM	Mastiano	1.11	268	Pg	Pg	21 26 08.4	+0.9
	77nm,0.8s						
MAIM				S	Sb	21 26 21.2	+0.3
SACS	San Casciano d	1.11	185	Pg	Pn	21 26 07.3	+0.5
	101nm,0.5s						
TRIF	Trifonti	1.18	224	Pg	Pg	21 26 08.6	-0.1
	81nm,1.0s						
TRIF	Trifonti	1.18	224	Pg	Pg	21 26 08.6	-0.1
	81nm,1.0s						
ARCI	Arcidosso	1.18	200	Pg	Pn	21 26 08.0	+0.3
	105nm,0.9s						
ARCI	Arcidosso	1.18	200	Pg	Pn	21 26 08.0	+0.3
	105nm,0.9s						
SARO	Sassorosso	1.19	281	P	Pg	21 26 09.5	+0.4
SARO				S	Sn	21 26 24.2	+0.4
SASS	Sassa´´´´´	1.20	235	Pg	Pb	21 26 08.7	+0.5
	72nm,1.1s						
SASS	Sassa´´´´´	1.20	235	Pg	Pb	21 26 08.7	+0.5
	72nm,1.1s						
FDMO	Fiordimonte	1.20	140	Pg	Pb	21 26 08.5	+0.2
	58nm,0.5s						
FDMO	Fiordimonte	1.20	140	Pg	Pb	21 26 08.5	+0.2
	58nm,0.5s						
MCIV	Monte Civitell	1.21	192	Pg	Pn	21 26 08.5	+0.4
	31nm,0.7s						
MCIV	Monte Civitell	1.21	192	Pg	Pn	21 26 08.5	+0.4
	31nm,0.7s						
NVLJ	Novalja	2.13 73	ePn	Pb	21 26 23.6	-0.4
NVLJ			Sn	Sb	21 26 51.6	+1.5
NVLJ	Novalja	2.13 73	ePn	Pb	21 26 23.6	-0.4
NVLJ			Sn	Sb	21 26 51.6	+1.5
PGF	Pioggiola	2.62 239	ePn	Pn	21 26 27.5	-0.1
PGF			eSn	Sn	21 26 57.0	-2.1
	4.3nm,0.4s					
PGF	Pioggiola	2.62 239	ePn	Pn	21 26 27.5	-0.1
PGF			eSn	Sn	21 26 57.0	-2.1
	2.2nm,0.4s					
UDBI	Udbina	2.74 77	ePn	Pn	21 26 30.4	+1.2
ABTA	Abfaltersbach	2.81 7	ePn	Pb	21 26 34.7	-1.0
	2.9nm,0.5s					
ABTA			Sn	Sb	21 27 09.4	-0.4
	18nm,0.7s					
ABTA	Abfaltersbach	2.81 7	Pn	Pb	21 26 34.7	-1.0
	2.9nm,0.5s					
ABTA			Sn	Sb	21 27 09.4	-0.4
	18nm,0.7s					
OBKA	Obir	3.11 34	i Pn	Pb	21 26 41.0	+0.2
	0.9nm,0.4s					
OBKA			i Sg	Sg	21 27 36.7	+11
	15nm,0.6s					
OBKA	Obir	3.11 34	Pn	Pb	21 26 41.0	+0.2
	0.9nm,0.4s					
SBF	Sospel	3.32 270	ePn	Pn	21 26 37.3	+0.1
SBF			eSn	Sn	21 27 14.8	-1.4
	7.3nm,0.4s					
SBF	Sospel	3.32 270	ePn	Pn	21 26 37.3	+0.1
SBF			eSn	Sn	21 27 14.8	-1.4
	3.7nm,0.4s					
RETA	Reutte	3.64 346	i Pn	Pb	21 26 47.9	-1.9
	1.7nm,0.3s					
RETA			i Sn	Sb	21 27 32.8	-0.8
	3.3nm,0.6s					
RETA	Reutte	3.64 346	Pn	Pb	21 26 47.9	-1.9
	1.7nm,0.3s					
RETA			Sn	Sb	21 27 32.8	-0.8
	3.3nm,0.6s					
FRF	La Foret Royal	3.92 266	ePn	Pn	21 26 47.2	+1.9
FRF			eSn	Sn	21 27 29.1	-1.8
	1.4nm,0.3s					
FRF	La Foret Royal	3.92 266	ePn	Pn	21 26 47.2	+1.9
FRF			eSn	Sn	21 27 29.1	-1.8
	0.7nm,0.3s					
LMR	La Mourre	4.05 263	ePn	Pn	21 26 47.7	+0.5
LMR			eSn	Sn	21 27 32.8	-1.4
	1.3nm,0.3s					
LMR	La Mourre	4.05 263	ePn	Pn	21 26 47.7	+0.5
LMR			eSn	Sn	21 27 32.8	-1.4
	0.6nm,0.3s					
LPL	La Plagne	4.08 294	eP	Pn	21 26 51.5	+3.7
LPL			eSn	Sn	21 27 33.3	-1.9
	1.2nm,0.3s					
LPL	La Plagne	4.08 294	eP	Pn	21 26 51.5	+3.7
LPL			eSn	Sn	21 27 33.3	-1.9
	0.6nm,0.3s					
CABF	La Chapelle	4.96 304	eP	Pn	21 27 03.8	+4.1
CABF	La Chapelle	4.96 304	eP	Pn	21 27 03.8	+4.1
KHC	Kasperske Hory	5.28 11	ePN	Pn	21 27 08.9	+4.8
KHC			eSN	Sn	21 28 08.9	+4.4
KHC	Kasperske Hory	5.28 11	Pn	Pn	21 27 08.9	+4.8
KHC			Sn	Sn	21 28 08.9	+4.4
CDF	Champ du Feu	5.54 325	ePn	Pn	21 27 07.8	+0.1
CDF	Champ du Feu	5.54 325	eP	Pn	21 27 11.3	+3.6
CDF			eSn	Sn	21 28 08.2	-2.8
	3.3nm,0.5s					
CDF	Champ du Feu	5.54 325	ePn	Pn	21 27 07.8	+0.1
CDF	Champ du Feu	5.54 325	eP	Pn	21 27 11.3	+3.6
HAU	Haudompre	5.66 318	ePn	Pn	21 27 09.2	0.0
HAU	Haudompre	5.66 318	eP	Pn	21 27 13.1	+3.9
HAU			eSn	Sn	21 28 11.2	-2.6
	4.7nm,0.4s					
HAU	Haudompre	5.66 318	ePn	Pn	21 27 09.2	0.0
HAU	Haudompre	5.66 318	eP	Pn	21 27 13.1	+3.9
LOR	Lormes	6.62 303	ePn	Pn	21 27 22.2	-0.2
LOR	Lormes	6.62 303	eP	Pn	21 27 26.8	+4.4
LOR	Lormes	6.62 303	ePn	Pn	21 27 22.2	-0.2
LOR	Lormes	6.62 303	eP	Pn	21 27 26.8	+4.4

*NIED **24** 21:27:00, 36°.40N×141°.60E, h32km, Mw3.6 Best double couple: M0:3.29000×10^14 NP1:φs357.00000°, δ45.00000°, λ-73.00000°. NP2:φs153.00000°, δ47.00000°, λ-107.00000°.*
*IDC **24** 21:27:43.8±1.3, 36°.37N×141°.72E, h0km, mb3.6/6, mb1 3.7/9, mb1mx3.5/57, mbtmp3.7/9, ML3.7/3, MS3.2/2, Ms1 3.2/2, ms1mx2.5/52, Error ellipse: s-maj=26.2km s-min=22.2km az=97.0*
*JMA **24** 21:27:48.6±0.1, 36°.41N×141°.60E, h56km±3km, M3.6*
ISC 24 21:27:45.9±1.7, **36°.39N**±0°.03×**141°.73E**±0°.06, **h16**km±10km, **n24**, σ0§**96**/36, **mb3.6/6**, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	Hitachi	0.96	284	P	Pg	21 28 04.5	-0.1
JHO				eS	Sg	21 28 16.8	-0.5
CHOJ	Chosi	0.98	226	P	Pg	21 28 05.8	+0.8
CHOJ				eS	Sn	21 28 18.4	-0.2
ONAJ	Iwakimizuishiy	1.03	314	P	Pn	21 28 06.1	+0.3
ONAJ				S	Sb	21 28 18.6	-0.3
JFK	Kawauchi	1.20	325	P	Pn	21 28 08.4	+0.4
JFK				S	Sb	21 28 23.0	-0.5
JFT	Otama	1.59	316	P	Pb	21 28 14.8	-0.1
JFT				S	Sn	21 28 34.0	+0.4
JMM	Marumori	1.66	333	P	Pn	21 28 15.2	+0.9
BSO1	Boso 1	1.83	200	P	Pn	21 28 17.5	+1.2
BSO1				S	Sb	21 28 41.1	-0.2
JAG	Ashikaga	1.84	272	P	Pn	21 28 17.1	+0.3
JAG				S	Sn	21 28 38.7	-1.0
BSO3	Boso 3	1.87	213	P	Pb	21 28 18.6	-0.9
JFY	Yanaizu	1.92	303	P	Pb	21 28 19.5	-1.0
JFY				S	Sb	21 28 43.0	-1.2
JKT	Katashina	2.03	281	P	Pn	21 28 20.7	+1.1
JKT				S	Sn	21 28 44.8	+0.1
JRY	Ryogami san	2.32	262	P	Pn	21 28 23.9	+0.5
JRY				S	Sn	21 28 50.1	-1.5
MJAR	Matsushiro Arr	2.84	274	P	Pn	21 28 31.9	+1.3
	16nm,0.3s,baz=113,slow=8.9,SNR=99						
MJAR				Sn	Sn	21 29 06.4	+1.8
	10nm,0.3s,baz=84,slow=30,SNR=10						
MJAR				LR	LR	21 29 48.8	
	comp=Z,66nm,20.1s,baz=150,slow=45						
MAT	Matsushiro	2.85	274	P	Pn	21 28 32.1	+1.4
MAT				S	Sn	21 29 06.1	+1.5
JHJ	Hachijo jima 2	3.63	207	Pn	Pn	21 28 42.2	+0.8
	20nm,0.3s,baz=233,slow=20,SNR=6.6						
JHJ				Sn	Sn	21 29 22.1	-2.0
	67nm,0.3s,baz=107,slow=22,SNR=8.4						
ASAJ	Asahikawa	7.75 5		Pn	Pn	21 29 38.1	+0.1
	0.9nm,0.3s,baz=201,slow=14,SNR=9.4						
ASAJ				Sn	Sn	21 31 04.4	-1.0
	0.5nm,0.3s,baz=288,slow=20,SNR=3.8						
USRK	Ussuriysk Ar.	10.78 319		Pn	Pn	21 30 23.3	+3.8
	0.1nm,0.3s,baz=129,slow=11,SNR=2.4						
SONM	Songino Array	28.36 305		P	P	21 33 39.1	-0.2
	1.0nm,0.7s,baz=103,slow=10,SNR=6.6						
ZALV	Zalesovo Beam	42.54 313		P	P	21 35 40.6	+0.1
	0.6nm,0.4s,baz=102,slow=6.2,SNR=3.7						
MKAR	Makanchi Array	44.68 303		P	P	21 35 57.6	-0.3
	0.4nm,0.8s,baz=79,slow=7.9,SNR=3.9						
KURBB	Kurchatov Arra	46.60 309		P	P	21 36 12.9	-0.1
	0.7nm,0.5s,baz=83,slow=7.8,SNR=14						
ILAR	Eielson Array	49.90 32		P	P	21 36 39.9	+1.6
	0.2nm,0.5s,baz=277,slow=23,SNR=4.8						
WRA	Warramunga Arr	56.46 188		P	P	21 37 26.6	-0.4
	0.2nm,0.4s,baz=6.6,slow=7.3,SNR=6.1						
AKASG	Malin Array Be	74.97 323		LR	LR	22 12 55.4	
	comp=Z,82nm,19.9s,baz=255,slow=36						

*ROM **24** 21:27:55.9±0.3, 43°.90N×12°.06E, h3km±2km, Md2.5/8, Ml2.1/6, Error ellipse: s-maj=3.6km s-min=1.2km az=42.0*
*ISCJB **24** 21:27:56.6±0.6, 43°.91N±0°.07×12°.03E±0°.08, h14km±11km, Error ellipse: s-maj=14.8km s-min=3.9km az=37.8*
*CSEM **24** 21:27:56.7±0.2, 43°.92N×12°.06E, h10km, ML2.8/5, Error ellipse: s-maj=5.4km s-min=2.7km az=28.0*
ISC 24 21:27:54.5±1.1, **44°.02N**±0°.04×**12°.13E**±0°.02, **h10**km±10km, **n24**, σ0§**47**/42, **Northern Italy**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFI	Santa Sofia	0.24	241	Pg	Pg	21 27 59.8	+0.5
SFI				Sg	Sg	21 28 02.3	-0.3
SFI	Santa Sofia	0.24	241	Pg	Pg	21 27 59.8	+0.5
SFI				Sg	Sg	21 28 02.3	-0.3
ASQU	Asqua	0.33	228	Pg	Pg	21 28 01.1	0.0
ASQU				Sg	Sg	21 28 04.3	-1.3
ASQU	Asqua	0.33	228	Pg	Pg	21 28 01.1	0.0
ASQU				Sg	Sg	21 28 04.3	-1.3
VMG	Vicchio	0.43	262	Pg	Pb	21 28 04.4	+0.2
VMG				Sg	Sb	21 28 10.4	-0.3
	220nm,0.2s						
VMG	Vicchio	0.43	262	Pg	Pb	21 28 04.4	+0.2
VMG				Sg	Sb	21 28 10.4	-0.3
	220nm,0.2s						
BADI	Badiali	0.52	171	Pg	Pg	21 28 04.9	+0.4
BADI				Sg	Sg	21 28 11.8	+0.5
	294nm,0.2s						
BADI	Badiali	0.52	171	Pg	Pg	21 28 04.9	+0.4
BADI				Sg	Sg	21 28 11.8	+0.5
	294nm,0.2s						
SEI	Scarperia	0.56	274	Pg	Pb	21 28 06.8	+0.4
SEI				Sg	Sb	21 28 15.2	+0.7
SEI	Scarperia	0.56	274	Pg	Pb	21 28 06.8	+0.4
SEI				Sg	Sb	21 28 15.2	+0.7
PIEI	Pieia	0.56	149	Pg	Pb	21 28 06.8	+0.3
PIEI				Sg	Sb	21 28 14.9	+0.3
	45nm,0.3s						
PIEI	Pieia	0.56	149	Pg	Pb	21 28 06.8	+0.3
PIEI				Sg	Sb	21 28 14.9	+0.3
	45nm,0.3s						
ATPC	Poggio Castell	0.59	156	Pg	Pb	21 28 06.8	-0.1
ATPC				Sg	Sb	21 28 15.5	+0.2
	112nm,0.2s						
ATPC	Poggio Castell	0.59	156	Pg	Pb	21 28 06.8	-0.1
ATPC				Sg	Sb	21 28 15.5	+0.2
	112nm,0.2s						
ATVO	AVT- Monte Val	0.67	163	Pg	Pg	21 28 07.8	+0.4
ATVO				Sg	Sb	21 28 17.6	0.0
	103nm,0.3s						
ATVO	AVT- Monte Val	0.67	163	Pg	Pg	21 28 07.8	+0.4
ATVO				Sg	Sb	21 28 17.6	0.0
	103nm,0.3s						
FNVD	Fontana Vidola	0.74	282	Pg	Pn	21 28 11.4	+0.3
	152nm,1.0s						
FNVD	Fontana Vidola	0.74	282	Pg	Pn	21 28 11.4	+0.3
	152nm,1.0s						
FROS	Frosini	1.08	222	Pg	Pg	21 28 14.7	-0.5
	56nm,0.5s						
FROS	Frosini	1.08	222	Pg	Pg	21 28 14.7	-0.5
	56nm,0.5s						
NVLJ	Novalja	2.04 74	i Pn	Pb	21 28 31.5	-0.1
NVLJ			Sn	Sg	21 28 59.9	-0.1
NVLJ	Novalja	2.04 74	i Pn	Pb	21 28 31.5	-0.1
NVLJ			Sn	Sg	21 28 59.9	-0.1
UDBI	Udbina	2.66 78	ePn	Pn	21 28 36.9	-0.6
UDBI	Udbina	2.66 78	ePn	Pn	21 28 36.8	-0.6

IDC 24 21:28:06.9±1.9, **2°.40N**×**125°.69E**, **h0**km, **mb3.6**/4, **mb1 3.8**/4, **mb1mx3.4**/47, **mbtmp3.6**/4, **MS3.1**/1, **Ms1 3.1**/1, **ms1mx2.3**/34, **Error ellipse: s-maj=121.2km s-min=23.9km az=68.0**, **Talaud Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	Fitzroy Crossi	20.37	180	P	Pn	21 32 47.0	-0.3
	2.6nm,0.9s,baz=3.4,slow=11,SNR=3.5						
WRA	Warramunga Arr	23.77	159	P	P	21 33 20.8	-0.6
	0.7nm,0.4s,baz=335,slow=11,SNR=12						
WRA				LR	LR	21 44 07.3	
	comp=Z,40nm,18.5s,baz=135,slow=40						
ASAR	Alice Springs	27.11	163	P	P	21 33 51.5	-0.3
	0.6nm,0.9s,baz=344,slow=6.8,SNR=5.0						
MKAR	Makanchi Array	58.07	326	P	P	21 38 01.8	-0.2
	0.5nm,0.6s,baz=128,slow=8.5,SNR=6.6						

*ISK **24** 21:31:01.4, 39°.14N×29°.08E, h5km, MD2.6*
*ISCJB **24** 21:31:02.0±0.6, 39°.13N±0°.04×29°.09E±0°.04, h9km, Error ellipse: s-maj=6.5km s-min=4.3km az=170.9*
*CSEM **24** 21:31:02.0±0.1, 39°.11N×29°.09E, h8km, MD2.4, Error ellipse: s-maj=3.4km s-min=3.0km az=149.0*
*DDA **24** 21:31:02.0, 39°.11N×29°.10E, h7km, Md2.4*
ISC 24 21:31:02.3±1.1, **39°.12N**±0°.04×**29°.09E**±0°.03, **h9**km, **n17**, σ0§**41**/24, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.30	256	P	Pg	21 31 08.6	+0.3
DEMI				S	Sg	21 31 12.9	+0.5
DEMI	Demirci	0.30	256	i P	Pg	21 31 08.7	+0.3
DEMI				i S	Sg	21 31 12.9	+0.5
GDZ	Gediz	0.30	95	P	Pg	21 31 08.3	-0.1
GDZ				S	Sg	21 31 12.7	+0.3
GDZ	Gediz	0.30	95	i P	Pg	21 31 08.3	-0.1
GDZ				i S	Sg	21 31 12.7	+0.3
TVSB	Tavsanli	0.44	41	ePG	Pg	21 31 10.7	-0.1
TVSB				eSG	Sg	21 31 16.3	-0.3
DURS	Dursunbey	0.68	315	P	Pg	21 31 15.6	+0.2
DURS				S	Sg	21 31 24.3	-0.1
DURS	Dursunbey	0.68	315	i P	Pg	21 31 15.6	+0.2
DURS				i S	Sg	21 31 24.3	-0.1

ASQU	**Asqua**	**0.17 247**	Pg	**Pg**	**21 31 42.6**	**0.0**
ASQU			Sg	**Sg**	**21 31 46.0**	**+0.7**
295nm,0.3s						
ASQU	**Asqua**	**0.17 247**	Pg	**Pg**	**21 31 42.6**	**0.0**
ASQU			Sg	**Sg**	**21 31 46.0**	**+0.7**
295nm,0.3s						
VMG	**Vicchio**	**0.35 286**	Pg	**Pg**	**21 31 45.9**	**+0.2**
VMG			Sg	**Sb**	**21 31 52.0**	**-0.5**
139nm,0.2s						
VMG	**Vicchio**	**0.35 286**	Pg	**Pg**	**21 31 45.9**	**+0.2**
VMG			Sg	**Sb**	**21 31 52.0**	**-0.5**
139nm,0.2s						
BADI	**Badiali**	**0.39 154**	Pg	**Pg**	**21 31 46.5**	**0.0**
BADI			Sg	**Sb**	**21 31 53.0**	**-0.8**
133nm,0.2s						
BADI	**Badiali**	**0.39 154**	Pg	**Pg**	**21 31 46.5**	**0.0**
BADI			Sg	**Sb**	**21 31 53.0**	**-0.8**
133nm,0.2s						
ATPC	**Poggio Castell**	**0.50 140**	Pg	**Pg**	**21 31 48.9**	**+0.3**
ATPC			Sg	**Sb**	**21 31 57.2**	**+0.2**
78nm,0.2s						
ATPC	**Poggio Castell**	**0.50 140**	Pg	**Pg**	**21 31 48.9**	**+0.3**
ATPC			Sg	**Sb**	**21 31 57.2**	**+0.2**
78nm,0.2s						
PIEI	**Pieia**	**0.50 131**	Pg	**Pg**	**21 31 48.4**	**-0.2**
PIEI			Sg	**Sb**	**21 31 56.3**	**-0.7**
27nm,0.2s						
PIEI	**Pieia**	**0.50 131**	Pg	**Pg**	**21 31 48.4**	**-0.2**
PIEI			Sg	**Sb**	**21 31 56.3**	**-0.7**
27nm,0.2s						
SEI	**Scarperia**	**0.51 292**	Pg	**Pg**	**21 31 48.6**	**-0.1**
SEI			Sg	**Sb**	**21 31 57.0**	**-0.1**
312nm,0.2s						
SEI	**Scarperia**	**0.51 292**	Pg	**Pg**	**21 31 48.6**	**-0.1**
SEI			Sg	**Sb**	**21 31 57.0**	**-0.1**
312nm,0.2s						
ATVO	**AVT- Monte Val**	**0.56 149**	Pg	**Pg**	**21 31 49.6**	**-0.1**
ATVO			Sg	**Sb**	**21 31 58.4**	**-0.3**
39nm,0.4s						
ATVO	**AVT- Monte Val**	**0.56 149**	Pg	**Pg**	**21 31 49.6**	**-0.1**
ATVO			Sg	**Sb**	**21 31 58.4**	**-0.3**
39nm,0.4s						
FRON	**Frontone**	**0.62 123**	Pg	**Pg**	**21 31 50.9**	**0.0**
FRON			Sg	**Sb**	**21 32 00.7**	**+0.2**
20nm,0.5s						
FRON	**Frontone**	**0.62 123**	Pg	**Pg**	**21 31 50.9**	**0.0**
FRON			Sg	**Sb**	**21 32 00.7**	**+0.2**
20nm,0.5s						
SSFR	**Montelago di S**	**0.71 127**	Pg	**Pg**	**21 31 51.9**	**-0.5**
SSFR			Sg	**Sb**	**21 32 03.2**	**+0.4**
38nm,0.2s						
SSFR	**Montelago di S**	**0.71 127**	Pg	**Pg**	**21 31 51.9**	**-0.5**
SSFR			Sg	**Sb**	**21 32 03.2**	**+0.4**
38nm,0.2s						
ATTE	**AVT- Monte Tez**	**0.71 159**	Pg	**Pg**	**21 31 52.1**	**-0.4**
30nm,0.5s						
ATTE	**AVT- Monte Tez**	**0.71 159**	Pg	**Pg**	**21 31 52.1**	**-0.4**
30nm,0.5s						
FROS	**Frosini**	**0.90 224**	Pg	**Pb**	**21 31 56.5**	**+0.1**
25nm,0.6s						
FROS	**Frosini**	**0.90 224**	Pg	**Pb**	**21 31 56.5**	**+0.1**
25nm,0.6s						
MGAB	**Montegabbione**	**0.95 175**	Pg	**Pb**	**21 31 57.3**	**0.0**
31nm,0.4s						
MGAB	**Montegabbione**	**0.95 175**	Pg	**Pb**	**21 31 57.3**	**0.0**
31nm,0.4s						
NVLJ	**Novalja**	**2.17 70**	Sn	**Sn**	**21 32 41.9**	**+0.2**
NVLJ	**Novalja**	**2.17 70**	Sn	**Sn**	**21 32 41.9**	**+0.2**

BJI 24 21:32:34.7, 25.0′N×98.6′E, h10km, ML3.7/8, Myanmar-China border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KMI	**Kunming**	**3.68**	**88**	Pg	Pg	21 33 43.5	-1.8
KMI				Sg	Sg	21 34 29.0	-4.1
KMI				smax	smax		
comp=N,180nm,1.0s							
KMI				smax	smax		
comp=E,180nm,1.0s							
WMQ	**Urumqi**	**20.77**	**337**	*e*P	P	21 37 12.9	-3.0

*NEIC **24** 21:33:06.6, 35.87S×178.11E, h188km, MG4.1(WEL), After WEL.*
WEL 24 21:33:07.6±0.6, 35.87S×178.04E, h172km±8km, ML4.0/4, 1C-2D, Error ellipse: s-maj=9.0km s-min=7.4km az=90.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MXZ	**Matakaoa Point**	**1.70**	**173**	PN	Pn	21 33 40.7	-0.2
MXZ				AML	AML	21 34 08.1	
MXZ				AML	AML	21 34 10.0	
MXZ				AML	AML	21 34 10.0	
MXZ	**Matakaoa Point**	**1.70**	**173**	Pn	Pn	21 33 40.7	-0.2
HAZ	**Te Kaha**	**1.90**	**186**	PN	Pn	21 33 43.1	+0.1
HAZ				SN	Sn	21 34 10.5	0.0
WMGZ	**Waiomatatini S**	**1.97**	**171**	⇓PN	Pn	21 33 44.0	+0.2
WMGZ	**Waiomatatini S**	**1.97**	**171**	Pn	Pn	21 33 44.0	+0.2
PUZ	**Puketiti**	**2.21**	**176**	PN	Pn	21 33 46.4	-0.1
PUZ				SN	Sn	21 34 15.6	-1.1
PUZ				AML	AML	21 34 15.8	
PUZ	**Puketiti**	**2.21**	**176**	Pn	Pn	21 33 46.4	-0.1
TWGZ	**Tauwhareparae**	**2.30**	**181**	PN	Pn	21 33 48.2	+0.6
TWGZ				SN	Sn	21 34 19.1	+0.3
TWGZ	**Tauwhareparae**	**2.30**	**181**	Pn	Pn	21 33 48.2	+0.6
TWGZ				Sn	Sn	21 34 19.1	+0.3
MWZ	**Matawai**	**2.50**	**189**	PN	Pn	21 33 50.5	+0.7
MWZ				AML	AML	21 34 24.9	
MWZ				AML	AML	21 34 25.5	
MWZ	**Matawai**	**2.50**	**189**	Pn	Pn	21 33 50.5	+0.7
MWZ				Sn	Sn	21 34 22.8	+0.1
URZ	**Urewera**	**2.50**	**197**	⇓PN	Pn	21 33 50.1	+0.3
URZ				AML	AML	21 34 32.1	
URZ				AML	AML	21 34 33.7	
URZ	**Urewera**	**2.50**	**197**	Pn	Pn	21 33 50.1	+0.3
TKGZ	**Te Karaka**	**2.57**	**183**	PN	Pn	21 33 50.6	0.0
TKGZ	**Te Karaka**	**2.57**	**183**	Pn	Pn	21 33 50.6	0.0
CNGZ	**Carnagh Statio**	**2.61**	**177**	PN	Pn	21 33 51.1	0.0
CNGZ	**Carnagh Statio**	**2.61**	**177**	Pn	Pn	21 33 51.1	0.0
RIGZ	**Rimuhau**	**2.84**	**184**	⇑PN	Pn	21 33 53.5	-0.4
KNZ	**Kokohu**	**3.16**	**185**	PN	Pn	21 33 56.7	-1.1
KNZ	**Kokohu**	**3.16**	**185**	Pn	Pn	21 33 56.8	-1.1
MHGZ	**Mahia Peninsul**	**3.28**	**182**	PN	Pn	21 33 58.5	-0.8
MHGZ	**Mahia Peninsul**	**3.28**	**182**	Pn	Pn	21 33 58.5	-0.8
ARHZ	**Aropaoanui**	**3.49**	**193**	PN	Pn	21 34 01.7	-0.2
ARHZ	**Aropaoanui**	**3.49**	**193**	Pn	Pn	21 34 01.7	-0.2
BHHZ	**Black Hill Sta**	**3.94**	**203**	PN	Pn	21 34 07.5	-0.2
BHHZ	**Black Hill Sta**	**3.94**	**203**	Pn	Pn	21 34 07.5	-0.2
KRHZ	**Kereru**	**3.99**	**199**	PN	Pn	21 34 07.3	-1.1
ANWZ	**Angora Road**	**4.75**	**195**	PN	Pn	21 34 16.3	-1.8
MRZ	**Mangatainoka R**	**5.16**	**201**	PN	Pn	21 34 21.1	-2.4
MRZ	**Mangatainoka R**	**5.16**	**201**	Pn	Pn	21 34 21.1	-2.4
HOWZ	**Holdsworth Sta**	**5.40**	**201**	PN	Pn	21 34 23.5	-3.0
HOWZ	**Holdsworth Sta**	**5.40**	**201**	Pn	Pn	21 34 23.6	-3.0
OGWZ	**Otaki Gorge**	**5.43**	**204**	PN	Pn	21 34 24.4	-2.6
OGWZ	**Otaki Gorge**	**5.43**	**204**	Pn	Pn	21 34 24.4	-2.5

IDC 24 21:34:55.7±1.7, 3.10N×129.03E, h0km, mb3.6/5, mb1 3.8/5, mb1mx3.4/58, mbtmp3.6/5, Error ellipse: s-maj=97.2km s-min=19.8km az=72.0, North of Halmahera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**21.34**	**189**	P	P	21 39 43.9	-0.6
2.5nm,1.0s,baz=16,slow=15,SNR=2.1							
WRA	**Warramunga Arr**	**23.49**	**167**	P	P	21 40 07.7	+0.4
1.3nm,0.5s,baz=348,slow=10,SNR=16							
ASAR	**Alice Springs**	**27.03**	**170**	P	P	21 40 39.6	-0.3
0.3nm,0.4s,baz=354,slow=7.9,SNR=7.6							
MKAR	**Makanchi Array**	**59.39**	**324**	P	P	21 45 00.1	+0.1
0.2nm,0.4s,baz=110,slow=7.7,SNR=7.7							
KURBB	**Kurchatov Arra**	**63.51**	**327**	P	P	21 45 27.9	+0.1
0.2nm,0.4s,baz=125,slow=6.3,SNR=4.6							

*ISCJB **24** 21:39:18.8±0.5, 39.13N±0.03×29.12E±0.03, h3km±5km, Error ellipse: s-maj=4.9km s-min=3.9km az=157.6*
*ISK **24** 21:39:18.5, 39.12N×29.12E, h5km, MD3.2*
*DDA **24** 21:39:18.8, 39.14N×29.12E, h10km, Md2.8*
*CSEM **24** 21:39:19.0±0.1, 39.13N×29.13E, h2km, MD2.8, Error ellipse: s-maj=2.4km s-min=2.2km az=118.0*
ISC 24 21:39:19.4±1.0, 39.13N±0.02×29.12E±0.02, h6km±11km, n76, σ0.52/87, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.28**	**99**	P	**Pg**	**21 39 25.2**	**+0.2**
GDZ				S	**Sg**	**21 39 28.9**	**+0.1**
GDZ	**Gediz**	**0.28**	**99**	*i* P	**Pg**	**21 39 25.2**	**+0.2**
GDZ				*i* S	**Sg**	**21 39 28.9**	**+0.1**
DEMI	**Demirci**	**0.33**	**254**	P	**Pg**	**21 39 25.7**	**-0.1**
DEMI				S	**Sg**	**21 39 30.1**	**0.0**
DEMI	**Demirci**	**0.33**	**254**	*i* P	**Pg**	**21 39 25.7**	**-0.1**
DEMI				*i* S	**Sg**	**21 39 30.1**	**0.0**
TVSB	**Tavsanli**	**0.41**	**40**	*e*PG	**Pg**	**21 39 26.4**	**-1.0**
TVSB	**Tavsanli**	**0.41**	**40**	*e*Pg	**Pg**	**21 39 26.4**	**-1.0**
DST	**Dursunbey**	**0.61**	**320**	*e*PG	**Pg**	**21 39 31.4**	**+0.3**
DST	**Dursunbey**	**0.61**	**320**	*e*Pg	**Pg**	**21 39 31.4**	**+0.3**
DURS	**Dursunbey**	**0.69**	**313**	P	**Pg**	**21 39 32.5**	**-0.1**
DURS	**Dursunbey**	**0.69**	**313**	*i* P	**Pg**	**21 39 32.5**	**-0.1**
DURS				*i* S	**Sn**	**21 39 46.4**	**-0.4**
KULA	**Kula-Manisa**	**0.72**	**210**	*e*PG	**Pg**	**21 39 32.7**	**-0.4**
KULA				*e*SG	**Sg**	**21 39 42.1**	**-0.3**
KULA	**Kula-Manisa**	**0.72**	**210**	*e*Pg	**Pg**	**21 39 32.7**	**-0.4**
KULA				*e*Sg	**Sg**	**21 39 42.1**	**-0.3**
KHAL	**Karahalli**	**0.82**	**159**	P	**Pg**	**21 39 34.6**	**-0.4**
KHAL				S	**Sg**	**21 39 46.1**	**+0.5**
KHAL	**Karahalli**	**0.82**	**159**	*i* P	**Pg**	**21 39 34.6**	**-0.4**
KHAL				*i* S	**Sg**	**21 39 46.1**	**+0.5**
KHL	**Karahalli**	**0.87**	**159**	*e*PG	**Pg**	**21 39 35.7**	**-0.4**
KHL	**Karahalli**	**0.87**	**159**	*e*Pg	**Pg**	**21 39 35.7**	**-0.4**
ORLT	**Orhaneli**	**0.93**	**349**	*e*PG	**Pg**	**21 39 36.9**	**-0.3**
ORLT	**Orhaneli**	**0.93**	**349**	*e*Pg	**Pg**	**21 39 36.9**	**-0.3**
AKHS	**Akhisar**	**1.05**	**256**	P	**Pg**	**21 39 39.3**	**-0.2**
AKHS				S	**Sg**	**21 39 53.2**	**+0.1**
AKHS	**Akhisar**	**1.05**	**256**	*i* P	**Pg**	**21 39 39.3**	**-0.2**
AKHS				*i* S	**Sg**	**21 39 53.2**	**+0.1**
AKS	**Akhisar**	**1.05**	**256**	*e*PG	**Pg**	**21 39 39.4**	**-0.1**
AKS	**Akhisar**	**1.05**	**256**	*e*Pg	**Pg**	**21 39 39.4**	**-0.1**
BALB	**Balikesir**	**1.09**	**298**	*e*PN	**Pg**	**21 39 39.9**	**-0.3**
BALB	**Balikesir**	**1.09**	**298**	*e*Pn	**Pg**	**21 39 39.9**	**-0.3**
CAVI	**Cavuskoy**	**1.20**	**27**	*e*PN	**Pg**	**21 39 42.1**	**-0.4**
CAVI	**Cavuskoy**	**1.20**	**27**	*e*Pn	**Pg**	**21 39 42.1**	**-0.4**
IZI	**Iznik**	**1.23**	**13**	*e*PN	**Pb**	**21 39 43.2**	**+0.1**
IZI	**Iznik**	**1.23**	**13**	*e*Pn	**Pb**	**21 39 43.2**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.25**	**352**	*e*PN	**Pg**	**21 39 42.6**	**-0.7**
MDNY	**Mudanya-Bursa**	**1.25**	**352**	*e*Pn	**Pg**	**21 39 42.6**	**-0.7**
KCTX	**Karacabey (Bur**	**1.27**	**333**	*e*PN	**Pg**	**21 39 43.1**	**-0.7**
KCTX	**Karacabey (Bur**	**1.27**	**333**	*e*Pn	**Pg**	**21 39 43.1**	**-0.7**
BALY	**Balya**	**1.31**	**298**	P	**Pg**	**21 39 44.0**	**-0.5**
BALY	**Balya**	**1.31**	**298**	*i* P	**Pg**	**21 39 44.0**	**-0.5**
ADVT	**Abdulvahap**	**1.38**	**20**	*e*PN	**Pg**	**21 39 45.1**	**-0.8**
ADVT	**Abdulvahap**	**1.38**	**20**	*e*Pn	**Pg**	**21 39 45.1**	**-0.8**
GONE	**Gonen-Balikesi**	**1.44**	**310**	*e*PN	**Pn**	**21 39 45.8**	**-0.1**
GONE	**Gonen-Balikesi**	**1.44**	**310**	*e*Pn	**Pn**	**21 39 45.8**	**-0.1**
ARMT	**Armutlu**	**1.44**	**352**	*e*PN	**Pn**	**21 39 46.3**	**+0.2**
ARMT	**Armutlu**	**1.44**	**352**	*e*Pn	**Pn**	**21 39 46.3**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**1.53**	**220**	*e*PN	**Pn**	**21 39 46.5**	**-0.7**
AYDB	**Zeytinkoy-Aydi**	**1.53**	**220**	*e*Pn	**Pn**	**21 39 46.6**	**-0.7**
EDC	**Edincik**	**1.55**	**322**	*e*PN	**Pn**	**21 39 46.8**	**-0.7**
EDC	**Edincik**	**1.55**	**322**	*e*Pn	**Pn**	**21 39 46.8**	**-0.7**
GULT	**Gulveren**	**1.68**	**39**	*e*PN	**Pn**	**21 39 49.7**	**+0.3**
GULT	**Gulveren**	**1.68**	**39**	*e*Pn	**Pn**	**21 39 49.7**	**+0.3**
MRMT	**Marmara Adasi**	**1.88**	**322**	*e*PN	**Pn**	**21 39 52.4**	**+0.3**
MRMT	**Marmara Adasi**	**1.88**	**322**	*e*Pn	**Pn**	**21 39 52.4**	**+0.3**
SVRH	**Sivrihisar-ESK**	**1.89**	**80**	*e*PN	**Pn**	**21 39 52.6**	**+0.4**
SVRH	**Sivrihisar-ESK**	**1.89**	**80**	*e*Pn	**Pn**	**21 39 52.6**	**+0.4**
ISK	**Istanbul-Kandi**	**1.93**	**359**	*e*PN	**Pn**	**21 39 53.1**	**+0.4**
ISK	**Istanbul-Kandi**	**1.93**	**359**	*e*Pn	**Pn**	**21 39 53.1**	**+0.4**
SILT	**Sile**	**2.06**	**11**	*e*PN	**Pn**	**21 39 55.0**	**+0.6**
SILT	**Sile**	**2.06**	**11**	*e*Pn	**Pn**	**21 39 55.1**	**+0.6**
MDUB	**Mudurnu**	**2.08**	**49**	*e*PN	**Pn**	**21 39 55.3**	**+0.4**
MDUB	**Mudurnu**	**2.08**	**49**	*e*Pn	**Pn**	**21 39 55.3**	**+0.4**
KLYT	**Kilyos**	**2.12**	**358**	*e*PN	**Pn**	**21 39 56.0**	**+0.7**
KLYT	**Kilyos**	**2.12**	**358**	*e*Pn	**Pn**	**21 39 56.0**	**+0.7**
CTKS	**Kestanelik-??a**	**2.15**	**348**	*e*PN	**Pn**	**21 39 56.3**	**+0.5**
CTKS	**Kestanelik-??a**	**2.15**	**348**	*e*Pn	**Pn**	**21 39 56.3**	**+0.5**
RKY	**Sarkoy-Tekirda**	**2.15**	**317**	*e*PN	**Pn**	**21 39 56.8**	**+0.9**
RKY	**Sarkoy-Tekirda**	**2.15**	**317**	*e*Pn	**Pn**	**21 39 56.8**	**+0.9**
GELI	**Tayfur-Gelibol**	**2.40**	**303**	*e*PN	**Pn**	**21 39 59.7**	**+0.5**
GELI	**Tayfur-Gelibol**	**2.40**	**303**	*e*Pn	**Pn**	**21 39 59.7**	**+0.5**
CTYL	**Yalikoy Yolu**	**2.42**	**345**	*e*PN	**Pn**	**21 40 00.2**	**+0.7**
CTYL	**Yalikoy Yolu**	**2.42**	**345**	*e*Pn	**Pn**	**21 40 00.2**	**+0.7**
CHOS	**Chios island**	**2.51**	**254**	*e*PN	**Pn**	**21 40 01.2**	**+0.4**
CHOS	**Chios island**	**2.51**	**254**	*e*Pn	**Pn**	**21 40 01.2**	**+0.4**
ERIK	**Erikli-Kesan**	**2.53**	**308**	*e*PN	**Pn**	**21 40 01.9**	**+1.0**
ERIK	**Erikli-Kesan**	**2.53**	**308**	*e*Pn	**Pn**	**21 40 01.9**	**+1.0**
SIGR	**SIGRI**	**2.54**	**273**	*e*PN	**Pn**	**21 40 02.0**	**+0.9**
SIGR	**SIGRI**	**2.54**	**273**	*e*Pn	**Pn**	**21 40 02.0**	**+0.9**
ALN	**Alexandroupoli**	**2.95**	**308**	*e*PN	**Pn**	**21 40 07.2**	**+0.5**
ALN	**Alexandroupoli**	**2.95**	**308**	*e*Pn	**Pn**	**21 40 07.2**	**+0.5**
EDRB	**Edirne**	**3.26**	**327**	*e*PN	**Pn**	**21 40 11.2**	**+0.2**
EDRB	**Edirne**	**3.26**	**327**	*e*Pn	**Pn**	**21 40 11.2**	**+0.2**

*NIED **24** 21:41:00, 37.80N×142.60E, h14km, Mw3.8 Best double couple: M0=6.29000×10^14 NP1:φs=34.00000°, δ=40.00000°, λ=71.00000°. NP2:φs=190.00000°, δ=53.00000°, λ=105.00000°.*
*ISCJB **24** 21:41:54.2±0.4, 37.89N±0.04×142.70E±0.05, h14km, mb4.0/27, MS2.7/2, Error ellipse: s-maj=6.6km s-min=4.9km az=159.7*
*JMA **24** 21:41:56.0±0.2, 37.84N×142.60E, h31km±4km, M4.1*
*IDC **24** 21:41:58.6±4.4, 37.84N×142.68E, h33km±33km, mb3.7/19, mb1 3.9/23, mb1mx3.7/71, mbtmp3.9/23, ML3.9/3, MS2.9/5, Ms1 2.9/5, ms1mx2.6/35, Error ellipse: s-maj=18.4km s-min=15.3km az=97.0*
*NEIC **24** 21:41:59.9±0.8, 37.89N×142.69E, h44km±7km, mb4.4/9, Error ellipse: s-maj=7.8km s-min=6.2km az=126.0*
ISC 24 21:41:55.8±0.6, 37.88N±0.06×142.66E±0.06, h14km, n61, σ1.20/57, mb4.1/27, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.18**	**300**	P	**Pn**	**21 42 16.6**	**-1.3**
JIO				*e*S	**Sb**	**21 42 31.1**	**-2.0**
JMM	**Marumori**	**1.48**	**270**	P	**Pn**	**21 42 20.4**	**-1.5**
JMM				*e*S	**Sn**	**21 42 38.0**	**-3.0**
JFK	**Kawauchi**	**1.50**	**251**	P	**Pn**	**21 42 20.6**	**-1.8**
JOU	**Okura**	**1.65**	**288**	P	**Pn**	**21 42 23.6**	**-0.7**
JYK	**Kaneyama**	**2.08**	**301**	P	**Pn**	**21 42 30.1**	**-0.2**
JRG	**Rokugo**	**2.19**	**314**	P	**Pn**	**21 42 32.6**	**+0.8**
MJAR	**Matsushiro Arr**	**3.79**	**251**	Pn	**Pn**	**21 42 55.6**	**+1.8**
6.2nm,0.3s,baz=65,slow=9.7,SNR=27							
MJAR				Sn	**Sn**	**21 43 41.5**	**+3.3**
3.8nm,0.3s,baz=60,slow=9.8,SNR=5.2							
MJAR				LR	LR	21 44 28.2	
comp=Z,75nm,21.2s,baz=70,slow=40							
MAJO	**Matsushiro**	**3.79**	**251**	*e*Pn	Pn	21 42 56.8	+3.0
MAT	**Matsushiro**	**3.79**	**251**	P	**Pn**	**21 42 54.7**	**+0.9**
MAT				S	**Sn**	**21 43 38.4**	**+0.1**
INU	**Inuyama**	**5.19**	**243**	*e*Pn	Pn	21 43 16.9	+3.9
JHJ	**Hachijo jima 2**	**5.29**	**207**	Pn	**Pn**	**21 43 15.4**	**+1.0**
23nm,0.3s,baz=252,slow=20,SNR=4.4							
JHJ				Sn	**Sn**	**21 44 10.2**	**-5.0**
13nm,0.3s,baz=233,slow=20,SNR=3.0							
ASAJ	**Asahikawa**	**6.23**	**360**	Pn	**Pn**	**21 43 27.5**	**+0.2**
2.8nm,0.3s,baz=227,slow=9.0,SNR=16							
ASAJ				Sn	**Sn**	**21 44 36.9**	**-1.4**
1.3nm,0.3s,baz=221,slow=20,SNR=3.2							
USRK	**Ussuriysk Ar.**	**10.23**	**311**	Pn	**Pn**	**21 44 23.6**	**+1.5**
0.3nm,0.3s,baz=114,slow=14,SNR=10							
JNU	**Nakatsue**	**10.71**	**247**	LR	LR	21 48 56.3	
comp=Z,103nm,18.5s,baz=115,slow=39							
KLR	**Kul'dur**	**13.81**	**329**	LR	LR	21 50 26.0	
comp=Z,76nm,18.0s,baz=154,slow=37							
SEY	**Seymchan**	**25.78**	**10**	P	**P**	**21 47 26.4**	**+0.5**
2.2nm,0.5s,baz=119,slow=2.9,SNR=5.5							
H11N2	**WAKE ISLAND Hy**	**27.76**	**124**	T	T	22 16 46.2	
baz=316,slow=75,SNR=133							
H11N1	**WAKE ISLAND Hy**	**27.77**	**124**	T	T	22 16 44.2	
baz=316,slow=75,SNR=132							
H11N3	**WAKE ISLAND Hy**	**27.78**	**124**	T	T	22 16 47.5	
baz=316,slow=75,SNR=100							
SONA0	**Songino Array**	**28.15**	**302**	*e*P	**P**	**21 47 48.1**	**+0.5**
2.6nm,1.1s							
SONM	**Songino Array**	**28.15**	**302**	P	**P**	**21 47 48.1**	**+0.5**
0.6nm,0.5s,baz=111,slow=8.3,SNR=4.0							
ENH	**Enshi**	**28.39**	**264**	P	**P**	**21 47 50.8**	**+1.0**
4.2nm,0.5s							
H11S1	**WAKE ISLAND Hy**	**28.52**	**126**	T	T	22 17 50.6	
baz=318,slow=76,SNR=23							
H11S3	**WAKE ISLAND Hy**	**28.52**	**126**	T	T	22 17 52.0	
baz=318,slow=76,SNR=22							
H11S2	**WAKE ISLAND Hy**	**28.54**	**126**	T	T	22 17 51.7	
baz=318,slow=76,SNR=21							
DAV	**Davao City (W)**	**34.36**	**211**	LR	LR	22 02 13.5	
comp=Z,18nm,19.1s,baz=220,slow=35							
ZAA1	**Zalesovo Array**	**42.09**	**312**	*e*P	**P**	**21 49 48.4**	**+1.4**
ZAA1				*e*PcP	**PcP**	**21 51 41.6**	**+0.1**
ZALV	**Zalesovo Beam**	**42.09**	**312**	P	**P**	**21 49 48.4**	**+1.4**
1.3nm,0.4s,baz=83,slow=6.1,SNR=8.3							
ZALV				PcP	**PcP**	**21 51 41.6**	**+0.1**
0.7nm,0.6s,baz=79,slow=2.2,SNR=3.7							
CMAR	**Chiang Mai Arr**	**42.67**	**255**	LR	LR	22 09 24.2	
comp=Z,8.4nm,20.7s,baz=175,slow=39							
MK32	**Makanchi Array**	**44.52**	**302**	*e*P	**P**	**21 50 06.7**	**0.0**
MKAR	**Makanchi Array**	**44.52**	**302**	P	**P**	**21 50 06.7**	**0.0**
0.4nm,0.5s,baz=86,slow=10,SNR=9.3							
KURK	**Kurchatov**	**46.20**	**308**	*e*P	**P**	**21 50 20.3**	**+0.3**
4.4nm,0.7s							
KURBB	**Kurchatov Arra**	**46.27**	**308**	P	**P**	**21 50 20.8**	**+0.3**
1.6nm,0.5s,baz=82,slow=8.1,SNR=19							
ILAR	**Eielson Array**	**48.25**	**33**	P	**P**	**21 50 35.6**	**-0.2**
1.1nm,0.7s,baz=256,slow=6.1,SNR=10							
ILB	**Eielson Array**	**48.25**	**33**	*e*P	**P**	**21 50 35.6**	**-0.2**
TKM2	**Tokmak 2**	**50.10**	**298**	*e*P	**P**	**21 50 50.5**	**-0.1**
2.4nm,0.5s							
BVAR	**Borovoye Array**	**50.74**	**312**	P	**P**	**21 50 54.6**	**-0.4**
0.4nm,0.4s,baz=69,slow=7.9,SNR=3.9							
KKAR	**Karatay Array**	**53.56**	**300**	*e*P	**P**	**21 51 15.7**	**-0.5**
0.4nm,0.4s							
ARU	**Arti**	**56.39**	**318**	P	**P**	**21 51 36.7**	**+0.4**
1.2nm,0.5s,baz=86,slow=6.9,SNR=3.8							
ARU	**Arti**	**56.39**	**318**	*e*P	**P**	**21 51 36.7**	**+0.4**
19nm,1.8s							
WR1	**Warramunga Arr**	**58.04**	**189**	*e*P	**P**	**21 51 47.1**	**-1.2**
27nm,1.5s							
WRA	**Warramunga Arr**	**58.04**	**189**	P	**P**	**21 51 47.1**	**-1.2**
2.4nm,0.7s,baz=8.3,slow=7.2,SNR=19							
AS31	**Alice Springs**	**61.77**	**189**	*e*P	**P**	**21 52 13.7**	**-0.3**
1.9nm,1.1s							
ASAR	**Alice Springs**	**61.77**	**189**	P	**P**	**21 52 13.7**	**-0.3**
1.1nm,0.8s,baz=69,slow=9.1,SNR=5.0							
YKA	**Yellowknife Ar**	**62.58**	**31**	P	**P**	**21 52 18.8**	**-0.1**
0.3nm,0.6s,baz=302,slow=6.5,SNR=5.1							
YKB5	**Yellowknife Ar**	**62.58**	**31**	*e*P	**P**	**21 52 18.8**	**-0.1**
FIA0	**FINESS Array S**	**68.53**	**332**	*e*P	**P**	**21 52 57.3**	**-0.1**
FINES	**FINESS Array B**	**68.53**	**332**	P	**P**	**21 52 57.3**	**-0.1**
1.7nm,0.8s,baz=1.1,slow=10,SNR=5.0							
NV01	**Mina Array Sit**	**73.69**	**54**	*e*P	**P**	**21 53 30.3**	**+0.9**
NVAR	**Mina Array Bea**	**73.69**	**54**	P	**P**	**21 53 30.3**	**+0.9**
0.5nm,0.7s,baz=263,slow=5.4,SNR=2.9							
HFS	**Hagfors**	**73.72**	**336**	P	**P**	**21 53 28.7**	**-0.2**
0.7nm,0.3s,baz=36,slow=6.2,SNR=7.1							
NB200	**NORSAR Array S**	**73.79**	**338**	*e*P	**P**	**21 53 29.2**	**-0.2**
NOA	**N

SSFR	Montelago di S	0.71 123	Pg	Pg	21 44 40.4	-0.7
FROS	Frosini	0.85 224	Pg	Pn	21 44 45.1	0.0
	460nm,0.6s					
FROS	Frosini	0.85 224	Pg	Pn	21 44 45.1	0.0
	460nm,0.6s					
SNTG	Esanatoglia	0.91 129	Pg	Pg	21 44 44.4	-0.5
SNTG	Esanatoglia	0.91 129	Pg	Pg	21 44 44.4	-0.5
MGAB	Montegabbione	0.92 174	Pg	Pb	21 44 45.4	+0.2
	564nm,0.6s					
MGAB	Montegabbione	0.92 174	Pg	Pb	21 44 45.4	+0.2
	564nm,0.6s					
SACS	San Casciano d	0.98 183	Pg	Pn	21 44 47.0	+0.1
	343nm,0.9s					
CING	Cingoli	1.00 116	Pg	Pg	21 44 45.9	-0.7
	133nm,0.7s					
CING	Cingoli	1.00 116	Pg	Pg	21 44 45.9	-0.7
	133nm,0.7s					
BDI	Bagni Di Lucca	1.02 284	Pg	Pg	21 44 46.7	-0.3
	155nm,0.6s					
BDI	Bagni Di Lucca	1.02 284	Pg	Pg	21 44 46.7	-0.3
	155nm,0.6s					
ARCI	Arcidosso	1.04 201	Pg	Pn	21 44 47.8	+0.1
	289nm,0.8s					
ARCI	Arcidosso	1.04 201	Pg	Pn	21 44 47.8	+0.1
	289nm,0.8s					
MCIV	Monte Civitell	1.07 192	Pg	Pn	21 44 48.4	+0.3
	95nm,0.7s					
MCIV	Monte Civitell	1.07 192	Pg	Pn	21 44 48.4	+0.3
	95nm,0.7s					
MAIM	Mastiano	1.07 275	Pg	Pb	21 44 47.9	+0.1
	179nm,0.7s					
MAIM	Mastiano	1.07 275	P	Pb	21 44 47.2	-0.6
MAIM	Mastiano	1.07 275	Pg	Pb	21 44 47.9	+0.1
	179nm,0.7s					
FDMO	Fiordimonte	1.13 134	Pg	Pb	21 44 48.6	-0.2
	228nm,0.8s					
FDMO	Fiordimonte	1.13 134	Pg	Pb	21 44 48.6	-0.2
	228nm,0.8s					
SARO	Sassorosso	1.19 288	P	Pb	21 44 48.9	-0.9
ADRI	Adria, Italy	1.21 2	ePn	Pg	21 44 51.0	+0.3
ADRI			eSn	Sn	21 45 09.9	+3.6
ADRI	Adria, Italy	1.21 2	ePn	Pg	21 44 51.0	+0.3
ADRI			eSn	Sn	21 45 09.9	+3.6
CGRP	Cima Grappa	2.06 357	ePn	Pn	21 45 01.4	-0.4
CGRP	Cima Grappa	2.06 357	ePn	Pn	21 45 01.4	-0.4
NVLJ	Novalja	2.21 70	ePn	Pn	21 45 02.3	-1.5
NVLJ			Sn	Sn	21 45 30.7	-0.2
NVLJ	Novalja	2.21 70	ePn	Pn	21 45 02.2	-1.5
NVLJ			Sn	Sn	21 45 30.7	-0.2
TRI	Trieste	2.27 34	ePn	Pn	21 45 03.7	-0.9
TRI	Trieste	2.27 34	ePn	Pn	21 45 03.7	-0.9
PGF	Pioggiola	2.52 241	ePn	Pn	21 45 08.7	+0.6
PGF			eSn	Sn	21 45 38.1	-0.6
	17nm,0.5s					
PGF	Pioggiola	2.52 241	ePn	Pn	21 45 08.7	+0.6
PGF			eSn	Sn	21 45 38.1	-0.6
	8.6nm,0.5s					
UDBI	Udbina	2.82 74	i Pn	Pn	21 45 13.7	+1.5
UDBI			Sn	Sn	21 45 46.1	+0.1
UDBI	Udbina	2.82 74	i Pn	Pn	21 45 13.6	+1.5
UDBI			Sn	Sn	21 45 46.1	+0.1
ABTA	Abfaltersbach	2.95 7	Pn	Pn	21 45 14.4	+0.4
	2.4nm,0.3s					
ABTA			i Sn	Sn	21 45 50.8	+1.5
	39nm,0.6s					
ABTA	Abfaltersbach	2.95 7	Pn	Pn	21 45 14.4	+0.4
	2.4nm,0.3s					
ABTA			Sn	Sn	21 45 50.8	+1.5
	39nm,0.6s					
MYKA	Terra Mystica	3.04 22	i Sn	Sn	21 45 53.0	+1.4
	12nm,0.5s					
MYKA	Terra Mystica	3.04 22	Sn	Sn	21 45 53.0	+1.4
	12nm,0.5s					
OBKA	Obir	3.24 33	i Pn	Pn	21 45 21.1	+3.0
	2.0nm,0.4s					
OBKA			i Pg	Pg	21 45 30.4	+0.9
	5.0nm,0.3s					
OBKA			i Sg	Sg	21 46 16.6	+5.0
	62nm,1.0s					
OBKA	Obir	3.24 33	Pn	Pn	21 45 21.1	+3.0
	2.0nm,0.4s					
SBF	Sospel	3.28 272	ePn	Pn	21 45 19.2	+0.7
SBF			eSn	Sn	21 45 56.8	-0.7
	22nm,0.4s					
SBF	Sospel	3.28 272	ePn	Pn	21 45 19.2	+0.7
SBF			eSn	Sn	21 45 56.8	-0.7
	11nm,0.4s					
DAVOX	Davos/Dischmat	3.30 334	Pn	Pn	21 45 20.0	+1.0
	0.4nm,0.3s,baz=135,slow=2.9,SNR=3.0					
DAVOX			Sn	Sn	21 45 58.7	+0.6
	0.7nm,0.3s,baz=103,slow=14,SNR=3.0					
FETA	Feichten	3.31 345	ePn	Pb	21 45 23.2	-2.9
	9.9nm,0.7s					
FETA			eSn	Sn	21 46 01.3	+2.9
	9.2nm,0.8s					
FETA	Feichten	3.31 345	Pn	Pb	21 45 23.2	-2.9
	9.9nm,0.7s					
FETA			Sn	Sn	21 46 01.3	+2.9
	9.2nm,0.8s					
KBA	Koelnbreinsper	3.39 16	i Pn	Pn	21 45 21.0	+0.8
	1.6nm,0.3s					
KBA			i Sn	Sn	21 46 01.5	+1.1
	19nm,0.6s					
KBA	Koelnbreinsper	3.39 16	Pn	Pn	21 45 21.0	+0.8
	1.6nm,0.3s					
KBA			Sn	Sn	21 46 01.5	+1.1
	19nm,0.6s					
SQTA	Sankt Quirin	3.44 351	i Pn	Pn	21 45 23.7	+3.0
SQTA	Sankt Quirin	3.44 351	Pn	Pn	21 45 23.7	+3.0
WTTA	Wattenberg	3.45 356	i Sn	Sn	21 46 00.5	-1.2
	4.5nm,0.4s					
WTTA	Wattenberg	3.45 356	Sn	Sn	21 46 00.5	-1.2
	4.5nm,0.4s					
WATA	Walderalm	3.52 356	i Pn	Pn	21 45 24.0	+2.1
	1.9nm,0.2s					
WATA			i Sn	Sb	21 46 08.8	-3.5
	6.7nm,0.4s					
WATA	Walderalm	3.52 356	Pn	Pn	21 45 24.0	+2.1
	1.9nm,0.2s					
MOTA	Moosalm	3.57 350	i Pn	Pn	21 45 25.3	+2.7
	5.5nm,0.5s					
MOTA			i Sn	Sn	21 46 09.5	+4.7
	12nm,0.6s					
MOTA	Moosalm	3.57 350	Pn	Pn	21 45 25.3	+2.7
	5.5nm,0.5s					
MOTA			Sn	Sn	21 46 09.5	+4.7
	12nm,0.6s					
SOKA	Soboth	3.58 36	i Sn	Sn	21 46 04.7	-0.1
	5.2nm,0.6s					
SOKA	Soboth	3.58 36	Sn	Sn	21 46 04.7	-0.1
	5.2nm,0.6s					
RETA	Reutte	3.76 347	ePn	Pn	21 45 27.8	+2.7
	1.2nm,0.2s					
RETA			i Sn	Sn	21 46 11.7	+2.4
	4.3nm,0.4s					
RETA	Reutte	3.76 347	Pn	Pn	21 45 27.8	+2.7
	1.2nm,0.2s					
RETA			Sn	Sn	21 46 11.7	+2.4
	4.3nm,0.4s					
DAVA	Damuels	3.76 338	ePn	Pn	21 45 28.6	+3.4
	8.2nm,0.5s					
DAVA			i Sn	Sn	21 46 13.6	+4.2
	16nm,0.6s					
DAVA	Damuels	3.76 338	Pn	Pn	21 45 28.6	+3.4
	8.2nm,0.5s					
DAVA			Sn	Sn	21 46 13.6	+4.2
	16nm,0.6s					
MBDF	Montbardon	3.84 285	eP	Pn	21 45 30.7	+4.4
MBDF			eSn	Sn	21 46 09.9	-1.5
	4.8nm,0.4s					
MBDF	Montbardon	3.84 285	eP	Pn	21 45 30.7	+4.4
MBDF			eSn	Sn	21 46 09.9	-1.5
	2.4nm,0.4s					
FRF	La Foret Royal	3.87 268	ePn	Pn	21 45 27.7	+1.1
FRF			eSn	Sn	21 46 10.8	-1.1
	8.2nm,0.4s					
FRF	La Foret Royal	3.87 268	ePn	Pn	21 45 27.7	+1.1
FRF			eSn	Sn	21 46 10.8	-1.1
	4.1nm,0.4s					
LMR	La Mourre	4.00 265	ePn	Pn	21 45 28.1	-0.2
LMR			eSn	Sn	21 46 13.9	-1.1
	2.4nm,0.3s					
LMR	La Mourre	4.00 265	ePn	Pn	21 45 28.1	-0.2
LMR			eSn	Sn	21 46 13.9	-1.1
	1.2nm,0.3s					
LPG	La Plagne	4.08 296	eP	Pn	21 45 33.7	+4.0
LPG	La Plagne	4.08 296	eP	Pn	21 45 33.7	+4.0
LPL	La Plagne	4.10 296	ePn	Pn	21 45 30.5	+0.6
LPL	La Plagne	4.10 296	ePn	Pn	21 45 30.5	+0.6
LPL	La Plagne	4.10 296	eP	Pn	21 45 34.1	+4.2
LPL	La Plagne	4.10 296	eP	Pn	21 45 34.1	+4.2
LPL			eSn	Sn	21 46 16.8	-1.1
	2.2nm,0.4s					
LPL			eSn	Sn	21 46 16.8	-1.1
	2.2nm,0.4s					
ARSA	Arzberg	4.24 35	i Pn	Pn	21 45 34.9	+3.3
	1.0nm,0.3s					
ARSA			i Sn	Sg	21 46 38.9	-4.4
	2.2nm,0.4s					
ARSA	Arzberg	4.24 35	Pn	Pn	21 45 34.9	+3.3
	1.0nm,0.3s					
MOA	Molln	4.33 21	ePn	Pn	21 45 33.6	+0.7
	2.0nm,0.4s					
MOA			i Sn	Sn	21 46 22.7	-0.6
	18nm,0.6s					
MOA	Molln	4.33 21	Pn	Pn	21 45 33.6	+0.7
	2.0nm,0.4s					
MOA			Sn	Sn	21 46 22.7	-0.6
	18nm,0.6s					
ORIF	Oris-en-Rattie	4.50 286	ePn	Pn	21 45 36.5	+1.2
ORIF	Oris-en-Rattie	4.50 286	ePn	Pn	21 45 36.5	+1.2
SMRF	Simiane la Rot	4.62 274	ePn	Pn	21 45 38.2	+1.2
SMRF	Simiane la Rot	4.62 274	ePn	Pn	21 45 38.2	+1.2
CONA	Conrad Observa	4.92 32	i Pn	Pn	21 45 41.6	+0.5
CONA			i Sn	Sn	21 46 38.3	+0.4
CONA	Conrad Observa	4.92 32	Pn	Pn	21 45 41.6	+0.5
CONA			Sn	Sn	21 46 38.3	+0.4
CABF	La Chapelle	5.00 306	ePn	Pn	21 45 43.8	+1.6
CABF	La Chapelle	5.00 306	ePn	Pn	21 45 43.8	+1.6
GERES	GERESS Array B	5.16 13	Pn	Pn	21 45 43.8	-0.6
	0.2nm,0.3s,baz=195,slow=13,SNR=5.7					
GERES			Sn	Sn	21 46 41.9	-2.0
	1.0nm,0.3s,baz=196,slow=24,SNR=8.2					
GERES			LR	LR	21 48 19.1	
	comp=Z,56nm,18.6s,baz=262,slow=46					
HINF	Hinteralfeld	5.36 320	ePn	Pn	21 45 48.0	+0.9
HINF			eSn	Sn	21 46 46.5	-2.1
	3.7nm,0.4s					
HINF	Hinteralfeld	5.36 320	ePn	Pn	21 45 48.0	+0.9
HINF			eSn	Sn	21 46 46.5	-2.1
	1.9nm,0.4s					
KHC	Kasperske Hory	5.42 11	ePN	Pn	21 45 47.7	-0.2
KHC			eSN	Sn	21 46 47.8	-2.4
KHC	Kasperske Hory	5.42 11	Pn	Pn	21 45 47.7	-0.2
KHC			Sn	Sn	21 46 47.8	-2.4
CDF	Champ du Feu	5.63 326	ePn	Pn	21 45 51.0	+0.2
CDF			eSn	Sn	21 46 52.9	-2.4
	3.2nm,0.3s					
CDF	Champ du Feu	5.63 326	ePn	Pn	21 45 51.0	+0.2
HAU	Haudompre	5.73 319	ePn	Pn	21 45 52.3	+0.1
HAU			eSn	Sn	21 46 55.7	-2.1
	10nm,0.4s					
HAU	Haudompre	5.73 319	ePn	Pn	21 45 52.3	+0.1
HAU			eSn	Sn	21 46 55.7	-2.1
	5.2nm,0.4s					
GOPC	GO Pecny, Ondr	6.39 17	eSN	Sn	21 47 10.3	-3.6
SMF	Signal de Mont	6.39 299	ePn	Pn	21 46 01.4	+0.2
SMF			eSn	Sn	21 47 11.2	-2.9
	1.9nm,0.3s					
SMF	Signal de Mont	6.39 299	ePn	Pn	21 46 01.4	+0.2
PRU	Prúhonice	6.41 15	eSN	Sn	21 47 10.3	-4.2
LOR	Lormes	6.65 304	ePn	Pn	21 46 05.7	+0.9
LOR			eSn	Sn	21 47 17.6	-2.9
	4.5nm,0.4s					
LOR	Lormes	6.65 304	ePn	Pn	21 46 05.7	+0.9
BGF	Bois d'Agland	7.00 296	ePn	Pn	21 46 10.5	+0.9
BGF	Bois d'Agland	7.00 296	ePn	Pn	21 46 10.5	+0.9
MTLF	Montolieu	7.10 269	ePn	Pn	21 46 11.7	+0.8
MTLF	Montolieu	7.10 269	ePn	Pn	21 46 11.7	+0.8
BRG	Berggiesshubel	7.18 10	SN	Sn	21 47 29.2	-4.1
BRG			SG	Sg	21 48 20.1	+2.6
	8.5nm,1.4s					
IDI	Anoyia	13.10 126	Pn	Pn	21 47 33.3	+0.1
	0.7nm,0.3s,baz=281,slow=17,SNR=5.7					
TORD	Torodi Ar. Bea	31.82 199	P	P	21 50 51.8	0.0
	0.5nm,0.9s,baz=4.4,slow=7.0,SNR=3.4					
MKAR	Makanchi Array	48.02 60	P	P	21 53 06.5	+0.5
	0.3nm,0.6s,baz=287,slow=6.2,SNR=4.2					

CSEM ***24*** *21:45:18.1, 43.°89N×12.°03E, h7km, ML1.8/7*
ROM 24 21:45:18.1±0.2, 43.°89N×12.°03E, h7km±1km, Ml1.8/7,
Error ellipse: s-maj=2.7km s-min=1.0km az=36.0,
Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFI	Santa Sofia	0.13	278	Pg	Pg	21 45 21.6	+0.6
SFI				Sg	Sg	21 45 24.1	+1.1
	382nm,0.2s						
SFI	Santa Sofia	0.13	278	Pg	Pg	21 45 21.6	+0.6
SFI				Sg	Sg	21 45 24.1	+1.1
	382nm,0.2s						
ASQU	Asqua	0.20	243	Pg	Pg	21 45 22.7	+0.6
ASQU				Sg	Sg	21 45 26.0	+1.2
	460nm,0.4s						
ASQU	Asqua	0.20	243	Pg	Pg	21 45 22.7	+0.6
ASQU				Sg	Sg	21 45 26.0	+1.2
	460nm,0.4s						
VMG	Vicchio	0.36	282	Pg	Pg	21 45 25.9	+0.8
VMG				Sg	Sb	21 45 32.0	-0.7
	220nm,0.2s						
VMG	Vicchio	0.36	282	Pg	Pg	21 45 25.9	+0.8
VMG				Sg	Sb	21 45 32.0	-0.7
	220nm,0.2s						
BADI	Badiali	0.41	158	Pg	Pg	21 45 26.5	+0.5
BADI				Sg	Sb	21 45 33.4	-0.6
	105nm,0.5s						
BADI	Badiali	0.41	158	Pg	Pg	21 45 26.5	+0.5
BADI				Sg	Sb	21 45 33.4	-0.6
	105nm,0.5s						
PIEI	Pieia	0.51	134	Pg	Pg	21 45 28.4	+0.5
PIEI				Sg	Sb	21 45 36.4	-0.5
	23nm,0.4s						
PIEI	Pieia	0.51	134	Pg	Pg	21 45 28.4	+0.5
PIEI				Sg	Sb	21 45 36.4	-0.5
	23nm,0.4s						
ATPC	Poggio Castell	0.51	143	Pg	Pb	21 45 28.7	-0.7
ATPC				Sg	Sb	21 45 37.2	+0.2
	72nm,0.2s						
ATPC	Poggio Castell	0.51	143	Pg	Pb	21 45 28.7	-0.7
ATPC				Sg	Sb	21 45 37.2	+0.2
	72nm,0.2s						
SEI	Scarperia	0.52	289	Pg	Pg	21 45 28.7	+0.6
SEI				Sg	Sb	21 45 36.9	-0.3
	422nm,0.2s						
SEI	Scarperia	0.52	289	Pg	Pg	21 45 28.7	+0.6
SEI				Sg	Sb	21 45 36.9	-0.3
	422nm,0.2s						
ATVO	AVT- Monte Val	0.57	151	Pg	Pb	21 45 30.3	-0.2
ATVO				Sg	Sb	21 45 38.8	0.0
	51nm,0.7s						
ATVO	AVT- Monte Val	0.57	151	Pg	Pb	21 45 30.3	-0.2
ATVO				Sg	Sb	21 45 38.8	0.0
	51nm,0.7s						
FRON	Frontone	0.62	126	Pg	Pb	21 45 30.8	-0.5
	29nm,0.7s						
FRON	Frontone	0.62	126	Pg	Pb	21 45 30.8	-0.5
	29nm,0.7s						

IDC 24 21:45:28.2±11.0, 17.°12S×168.°07E, h105km±107km,
mb3.8/5, mb1 3.9/5, mb1mx3.5/39, mbtmp4.2/5, MS3.2/3,
Ms1 3.2/3, ms1mx2.8/22, Error ellipse: s-maj=49.1km
s-min=26.6km az=18.0, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	Honiara	10.99	313	LR	LR	21 51 15.4	
	comp=Z,86nm,21.9s,baz=124,slow=32						
CTA	Charters Tower	20.89	258	P	P	21 50 02.5	+0.2
	8.9nm,0.7s,baz=79,slow=11,SNR=7.4						
PMG	Port Moresby	21.74	288	LR	LR	21 57 36.3	
	comp=Z,38nm,18.8s,baz=78,slow=34						
URZ	Urewera	22.51	161	P	P	21 50 19.5	+0.3
	4.2nm,0.6s,baz=357,slow=17,SNR=3.0						
URZ				LR	LR	21 57 03.8	
	comp=Z,117nm,18.5s,baz=62,slow=31						
STKA	Stephens Creek	28.12	234	P	P	21 51 09.4	-1.1
	1.9nm,0.8s,baz=76,slow=12,SNR=4.0						
ASAR	Alice Springs	32.63	253	P	P	21 51 50.1	-0.3
	6.2nm,0.7s,baz=80,slow=8.6,SNR=46						
FITZ	Fitzroy Crossi	40.40	262	P	P	21 52 56.9	+0.5
	baz=95,slow=11						
ILAR	Eielson Array	88.55	18	P	P	21 58 08.5	-0.3
	0.2nm,0.6s,baz=208,slow=7.2,SNR=2.9						
TORD	Torodi Ar. Bea	166.27	255	PKPab	PKPab	22 06 23.7	0.0
	0.5nm,0.7s,baz=103,slow=3.8,SNR=4.0						

IDC ***24*** *21:46:20.9±1.4, 26.°71N×143.°83E, h0km, mb3.6/5,*
mb1 3.7/6, mb1mx3.4/57, mbtmp3.6/6, ML3.4/1, Error
ellipse: s-maj=36.0km s-min=19.6km az=67.0
ISCJB ***24*** *21:46:23.6±1.0, 26.°6N±0.°1×143.°9E±0.°1, h31km, mb3.6/5,*
Error ellipse: s-maj=19.6km s-min=12.7km az=36.7
ISC 24 21:46:25.5±1.3, 26.°7N±0.°1×143.°8E±0.°1, h31km, n8,
σ1°10/9, mb3.7/5, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCJ	Chichijima	1.49	284	Pn	Pn	21 46 49.7	-0.4
	10.0nm,0.3s,baz=100,slow=14,SNR=7.5						
JCJ				Sn	Sn	21 47 08.8	+0.2
	73nm,0.3s,baz=94,slow=22,SNR=22						
MJAR	Matsushiro Arr	10.88	335	Pn	Pn	21 48 57.5	-1.6
	0.3nm,0.3s,baz=155,slow=10,SNR=5.3						
USRK	Ussuriysk Ar.	19.87	334	P	Pn	21 50 57.5	+1.7
	0.1nm,0.3s,baz=146,slow=10,SNR=2.8						
KLR	Kul'dur	24.33	341	P	P	21 51 39.9	-0.4
	0.8nm,0.6s,baz=336,slow=20,SNR=2.8						
WRA	Warramunga Arr	47.30	192	P	P	21 54 56.2	-0.1
	1.5nm,0.8s,baz=14,slow=8.5,SNR=6.6						
ASAR	Alice Springs	51.01	192	P	P	21 55 24.0	-0.6
	0.1nm,0.3s,baz=20,slow=14,SNR=2.7						
MKAR	Makanchi Array	51.82	310	P	P	21 55 31.3	+0.7
	0.7nm,0.8s,baz=88,slow=7.5,SNR=5.0						
BVAR	Borovoye Array	59.29	318	P	P	21 56 24.8	+0.8
	0.3nm,0.4s,baz=103,slow=6.5,SNR=3.7						

ISCJB ***24*** *21:48:16.6±0.5, 6.°84N±0.°05×73.°09W±0.°05, h156km±4km,*
Error ellipse: s-maj=9.7km s-min=4.5km az=43.8
FUNV ***24*** *21:48:18.5, 6.°90N×73.°12W, h167km, MW3.1*
RSNC ***24*** *21:48:19.4±0.9, 6.°80N×73.°17W, h140km±5km, ML3.2*
IDC ***24*** *21:48:23.2±6.1, 6.°65N×74.°26W, h190km±139km, Error*
ellipse: s-maj=1054.0km s-min=97.9km az=100.0
ISC 24 21:48:16.3±1.1, 6.°86N±0.°04×73.°11W±0.°05, h160km±6km,
n33, σ1°31/49, 4C, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BTLC	Betulia, Santa	0.17	292	i P	Pn	21 48 38.6	+0.5
BTLC				eS	Sn	21 48 52.9	-1.7
GIRC	Giron, Santand	0.24	340	i P	Pn	21 48 38.4	+0.3
GIRC				eS	Sn	21 48 53.0	-1.8
BARC	Barichara	0.27	195	i P	Pn	21 48 38.3	0.0
BARC				eS	Sn	21 48 52.9	-2.3
BARC				i		21 48 54.2	
	comp=Z,447nm,0.2s						
PAMC	Pamplona, Colo	0.63	40	i P	Pn	21 48 41.2	+1.1
PAMC				eS	Sn	21 48 57.8	-0.6
BRRC	Barranca, Sant	0.65	293⇑	i P	Pn	21 48 40.2	+0.6
BRRC				i		21 48 40.6	
	comp=Z,631nm,0.1s						
BRRC				eS	Sn	21 48 56.6	-0.8
GRMC	Gramalote, San	0.91	20	i P	Pn	21 48 44.2	+2.6
GRMC				eS	Sn	21 49 03.5	+2.5
GRMC				i		21 49 04.9	
	comp=Z,160nm,0.4s						
CBRI	Barrientos, No	0.91	20	i P	Pn	21 48 42.9	+1.3
CBRI				eS	Sn	21 49 01.6	+0.5
CBRI				i		21 49 03.3	
	comp=Z,201nm,0.3s						
RUSC	La Rusia	0.96	178⇑	i P	Pn	21 48 42.3	0.0
RUSC				eS	Sn	21 49 00.2	-2.1
RUSC				i		21 49 01.6	
	comp=Z,129nm,0.2s						
CAPV	Capacho	1.28	38⇑	i P	Pn	21 48 46.5	+1.7
CAPV				eS	Sn	21 49 07.3	+0.7
OCAC	Ocana	1.39	352	eP	Pn	21 48 46.8	+1.0
OCAC				eS	Sn	21 49 08.6	+0.1
OCAC				i		21 49 14.9	
	comp=Z,209nm,0.2s						
NORC	Norcasia	2.17	234	eP	Pn	21 48 54.2	+0.2
NORC				eS	Sn	21 49 22.2	-1.0
ROSC	El Rosal	2.33	211	P	Pn	21 48 59.2	+2.9
	comp=Z,5.2nm,0.3s,baz=291,slow=17,SNR=14						
ROSC				S	Sn	21 49 27.6	+0.2
	comp=Z,4.5nm,0.3s,baz=74,slow=21,SNR=6.2						
ROSC	El Rosal	2.33	211	eP	Pn	21 48 58.5	+2.1
ROSC				eS	Sn	21 49 26.6	-0.7
HELC	Santa Helena	2.49	255	eP	Pn	21 48 58.6	+0.5
HELC				i		21 49 37.4	
	comp=Z,70nm,0.5s						
VIGV	El Vigia	2.62	41⇑	i P	Pn	21 49 00.9	+1.4
VIGV				eS	Sn	21 49 31.1	-1.8
SOCV	Socops	2.65	57	eP	Pn	21 49 00.6	+0.8
SOCV				eS	Sn	21 49 33.0	-0.5
GUYC	Guyana, Colomb	2.79	235	eP	Pn	21 49 03.1	+1.1
GUYC				i		21 49 44.7	
	comp=Z,75nm,0.3s						
DBBC	Dabeiba	3.08	273	eP	Pn	21 49 05.9	+0.7
TOLC	Tolima	3.15	224	eP	Pn	21 49 07.8	+1.5
PRAC	Prado	3.59	210	eP	Pn	21 49 11.9	+0.3
PRAC				i		21 49 58.3	
	comp=Z,105nm,0.2s						
ELOV	Elorza	3.61	87	eP	Pn	21 49 12.7	+0.9
SJCC	San Jacinto, C	3.65	326	eP	Pn	21 49 12.7	+0.3
VIRV	Villa del Rosa	3.69	11	eP	Pn	21 49 13.1	+0.2
VIRV				eS	Sn	21 49 53.8	-3.2
SANV	Sanarito	4.41	53	eP	Pn	21 49 23.2	+0.9
CURV	Curarigua	4.42	45	eP	Pn	21 49 23.5	+1.1
TEPV	Terepaima	4.96	51	eP	Pn	21 49 30.2	+0.7
SIQV	Siquisique	4.99	41	eP	Pn	21 49 29.8	0.0
BAUV	El Baul	5.43	67	eP	Pn	21 49 35.1	-0.5
MAPV	Macapo	5.47	57	eP	Pn	21 49 36.4	+0.2
MONV	Montecano	5.94	31	eP	Pn	21 49 42.5	+0.2
TURV	Turiamo	6.32	55	eP	Pn	21 49 47.4	0.0
ASAR	Alice Springs	149.14	234	PKPbc	PKPbc	22 07 46.7	+0.1
	comp=Z,0.3nm,0.5s,baz=146,slow=3.3,SNR=3.7						
WRA	Warramunga Arr	150.36	241	PKPbc	PKPbc	22 07 49.8	+0.1
	comp=Z,0.3nm,0.5s,baz=108,slow=2.7,SNR=8.6						

DDA ***24*** *21:59:13.7, 38.°93N×29.°07E, h7km, Md2.3*
ISCJB ***24*** *21:59:14.4±0.6, 39.°12N±0.°05×29.°06E±0.°04, h9km, Error*
ellipse: s-maj=7.5km s-min=4.1km az=157.9
ISK ***24*** *21:59:14.0, 39.°12N×29.°10E, h7km, MD2.7*
CSEM ***24*** *21:59:14.5±0.1, 39.°12N×29.°07E, h7km±1km, MD2.3, Error*
ellipse: s-maj=3.2km s-min=1.7km az=158.0
ISC 24 21:59:14.0±0.9, 39.°08N±0.°06×29.°11E±0.°04, h9km, n26,
σ0°26/32, Turkey

| Code | Station Name | Δ° | AZ° | Phase

ARMT	**Armutlu**	**1.50**	**353**	*e*PN	**Pn**	**21 59 41.4 +0.3**
ARMT	**Armutlu**	**1.50**	**353**	*e*Pn	**Pn**	**21 59 41.4 +0.3**
GULT	**Gulveren**	**1.73**	**38**	*e*PN	**Pn**	**21 59 45.1 +0.7**
GULT	**Gulveren**	**1.73**	**38**	*e*Pn	**Pn**	**21 59 45.1 +0.7**

ISCJB ***24*** *22:02:59.7±0.3, 43°.87N±0°.03×11°.97E±0°.03, h17km±3km, mb3.6/3, MS2.8/1, Error ellipse: s-maj=4.9km s-min=3.0km az=26.2*
CSEM ***24*** *22:02:59.6±0.1, 43°.84N×11°.99E, h10km, ML3.2/6, Error ellipse: s-maj=2.9km s-min=1.7km az=28.0*
ROM ***24*** *22:02:59.2±0.1, 43°.88N×12°.02E, h8km±1km, Ml3.1/26, Error ellipse: s-maj=1.6km s-min=1.1km az=5.0*
LDG ***24*** *22:03:00.8±0.2, 43°.83N×11°.98E, h2km, Ml3.2/2, Error ellipse: s-maj=5.4km s-min=3.6km az=52.0*
IDC ***24*** *22:03:00.1±1.3, 43°.95N×12°.06E, h0km, mb3.5/3, mb1 3.4/6, mb1mx3.2/46, mbtmp3.4/6, ML2.9/3, MS2.9/2, Ms1 2.9/2, ms1mx2.4/24, Error ellipse: s-maj=34.6km s-min=17.6km az=97.0*
PRU ***24*** *22:03:02.1, 43°.87N×12°.28E, h8km*
ISC 24 22:03:00.1±0.8, 43°.84N±0°.03×11°.98E±0°.02, h10km±5km, n106, σ1§17/119, mb3.7/3, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFI	**Santa Sofia**	**0.12**	**303**	Pg	**Pg**	**22 03 02.5**	**-0.6**
SFI				Sg	**Sg**	**22 03 04.7**	**-0.5**
	9μm,0.8s						
SFI	**Santa Sofia**	**0.12**	**303**	Pg	**Pg**	**22 03 02.5**	**-0.6**
SFI				Sg	**Sg**	**22 03 04.7**	**-0.5**
	9μm,0.8s						
ASQU	**Asqua**	**0.15**	**253**	Pg	**Pg**	**22 03 03.7**	**+0.2**
ASQU				Sg	**Sg**	**22 03 07.1**	**+1.2**
	10μm,0.6s						
ASQU	**Asqua**	**0.15**	**253**	Pg	**Pg**	**22 03 03.7**	**+0.2**
ASQU				Sg	**Sg**	**22 03 07.1**	**+1.2**
	10μm,0.6s						
VMG	**Vicchio**	**0.34**	**291**	Pg	**Pg**	**22 03 06.7**	**-0.2**
	149nm,0.1s						
VMG	**Vicchio**	**0.34**	**291**	Pg	**Pg**	**22 03 06.7**	**-0.2**
	149nm,0.1s						
BADI	**Badiali**	**0.38**	**150**	Pg	**Pg**	**22 03 07.6**	**-0.1**
BADI				Sg	**Sb**	**22 03 14.2**	**-0.7**
	3μm,0.5s						
BADI	**Badiali**	**0.38**	**150**	Pg	**Pg**	**22 03 07.6**	**-0.1**
BADI				Sg	**Sb**	**22 03 14.2**	**-0.7**
	3μm,0.5s						
BLLA	**Bellaria**	**0.46**	**49**	Pg	**Pg**	**22 03 09.0**	**-0.2**
	13μm,1.8s						
BLLA	**Bellaria**	**0.46**	**49**	Pg	**Pg**	**22 03 09.0**	**-0.2**
	13μm,1.8s						
ATPC	**Poggio Castell**	**0.50**	**136**	Pg	**Pg**	**22 03 09.4**	**-0.4**
	2μm,0.6s						
ATPC	**Poggio Castell**	**0.50**	**136**	Pg	**Pg**	**22 03 09.4**	**-0.4**
	2μm,0.6s						
SEI	**Scarperia**	**0.50**	**296**	Pg	**Pg**	**22 03 09.3**	**-0.6**
SEI				Sg	**Sb**	**22 03 17.7**	**-0.7**
SEI	**Scarperia**	**0.50**	**296**	Pg	**Pg**	**22 03 09.3**	**-0.6**
SEI				Sg	**Sb**	**22 03 17.7**	**-0.7**
PIEI	**Pieia**	**0.50**	**127**	Pg	**Pg**	**22 03 09.1**	**-0.8**
PIEI				Sg	**Sb**	**22 03 17.8**	**-0.6**
	641nm,0.6s						
PIEI	**Pieia**	**0.50**	**127**	Pg	**Pg**	**22 03 09.1**	**-0.8**
PIEI				Sg	**Sb**	**22 03 17.8**	**-0.6**
	641nm,0.6s						
ATVO	**AVT- Monte Val**	**0.55**	**146**	Pg	**Pg**	**22 03 10.6**	**-0.3**
	1μm,0.5s						
ATVO	**AVT- Monte Val**	**0.55**	**146**	Pg	**Pg**	**22 03 10.6**	**-0.3**
	1μm,0.5s						
FRON	**Frontone**	**0.63**	**121**	Pg	**Pg**	**22 03 11.9**	**-0.4**
	655nm,0.6s						
FRON	**Frontone**	**0.63**	**121**	Pg	**Pg**	**22 03 11.9**	**-0.4**
	655nm,0.6s						
PESA	**Pesaro**	**0.63**	**80**	Pg	**Pg**	**22 03 11.6**	**-0.7**
	1μm,0.5s						
PESA	**Pesaro**	**0.63**	**80**	Pg	**Pg**	**22 03 11.6**	**-0.7**
	1μm,0.5s						
ATTE	**AVT- Monte Tez**	**0.70**	**157**	Pg	**Pg**	**22 03 13.2**	**-0.4**
	1μm,0.5s						
ATTE	**AVT- Monte Tez**	**0.70**	**157**	Pg	**Pg**	**22 03 13.2**	**-0.4**
	1μm,0.5s						
MURB	**Monte Urbino**	**0.70**	**146**	Pg	**Pg**	**22 03 13.2**	**-0.5**
	1μm,0.3s						
MURB	**Monte Urbino**	**0.70**	**146**	Pg	**Pg**	**22 03 13.2**	**-0.5**
	1μm,0.3s						
FNVD	**Fontana Vidola**	**0.70**	**298**	Pg	**Pg**	**22 03 12.9**	**-0.8**
	2μm,0.9s						
FNVD	**Fontana Vidola**	**0.70**	**298**	Pg	**Pg**	**22 03 12.9**	**-0.8**
	2μm,0.9s						
SSFR	**Montelago di S**	**0.71**	**125**	Pg	**Pg**	**22 03 13.0**	**-0.8**
	772nm,0.4s						
SSFR	**Montelago di S**	**0.71**	**125**	Pg	**Pg**	**22 03 13.0**	**-0.8**
	772nm,0.4s						
FROS	**Frosini**	**0.87**	**224**	Pg	**Pn**	**22 03 17.4**	**-1.0**
	1μm,1.0s						
FROS	**Frosini**	**0.87**	**224**	Pg	**Pn**	**22 03 17.4**	**-1.0**
	1μm,1.0s						
SNTG	**Esanatoglia**	**0.91**	**130**	Pg	**Pg**	**22 03 16.6**	**-1.1**
	376nm,0.6s						
SNTG	**Esanatoglia**	**0.91**	**130**	Pg	**Pg**	**22 03 16.6**	**-1.1**
	376nm,0.6s						
SENI	**Senigallia**	**0.92**	**98**	Pg	**Pg**	**22 03 17.3**	**-0.5**
	1μm,0.8s						
SENI	**Senigallia**	**0.92**	**98**	Pg	**Pg**	**22 03 17.3**	**-0.5**
	1μm,0.8s						
MGAB	**Montegabbione**	**0.93**	**174**	Pg	**Pb**	**22 03 17.8**	**-0.6**
	2μm,1.1s						
MGAB	**Montegabbione**	**0.93**	**174**	Pg	**Pb**	**22 03 17.8**	**-0.6**
	2μm,1.1s						
SACS	**San Casciano d**	**0.99**	**183**	Pg	**Pb**	**22 03 19.1**	**-0.3**
	610nm,0.7s						
CING	**Cingoli**	**1.00**	**117**	Pg	**Pg**	**22 03 18.2**	**-1.1**
	412nm,0.5s						
CING	**Cingoli**	**1.00**	**117**	Pg	**Pg**	**22 03 18.2**	**-1.1**
	412nm,0.5s						
BDI	**Bagni Di Lucca**	**1.03**	**283**	Pg	**Pg**	**22 03 19.1**	**-0.8**
	1μm,1.5s						
BDI	**Bagni Di Lucca**	**1.03**	**283**	Pg	**Pg**	**22 03 19.1**	**-0.8**
	1μm,1.5s						
ARCI	**Arcidosso**	**1.05**	**201**	Pg	**Pb**	**22 03 20.2**	**-0.3**
	903nm,1.0s						
ARCI	**Arcidosso**	**1.05**	**201**	Pg	**Pb**	**22 03 20.2**	**-0.3**
	903nm,1.0s						
TRIF	**Trifonti**	**1.07**	**228**	Pg	**Pn**	**22 03 20.6**	**-0.6**
	242nm,0.7s						
TRIF	**Trifonti**	**1.07**	**228**	Pg	**Pn**	**22 03 20.6**	**-0.6**
	242nm,0.7s						
CESI	**CESI - Serrava**	**1.07**	**141**	Pg	**Pg**	**22 03 20.0**	**-0.7**
	151nm,0.7s						
CESI	**CESI - Serrava**	**1.07**	**141**	Pg	**Pg**	**22 03 20.0**	**-0.7**
	151nm,0.7s						
MAIM	**Mastiano**	**1.08**	**274**	Pg	**Pb**	**22 03 19.9**	**-1.0**
	325nm,0.6s						
MAIM	**Mastiano**	**1.08**	**274**	Pg	**Pb**	**22 03 19.9**	**-1.0**
	325nm,0.6s						
MCIV	**Monte Civitell**	**1.08**	**192**	Pg	**Pn**	**22 03 20.8**	**-0.6**
MCIV	**Monte Civitell**	**1.08**	**192**	Pg	**Pn**	**22 03 20.8**	**-0.6**
SASS	**Sassa´´´´´**	**1.11**	**239**	Pg	**Pb**	**22 03 20.7**	**-0.6**
	352nm,1.2s						
SASS	**Sassa´´´´´**	**1.11**	**239**	Pg	**Pb**	**22 03 20.7**	**-0.6**
	352nm,1.2s						
FDMO	**Fiordimonte**	**1.14**	**135**	Pg	**Pb**	**22 03 20.8**	**-1.1**
	743nm,0.8s						
FDMO	**Fiordimonte**	**1.14**	**135**	Pg	**Pb**	**22 03 20.8**	**-1.1**
	743nm,0.8s						
NVLJ	**Novalja**	**2.20**	**70**	*e*Pn	**Pn**	**22 03 35.7**	**-0.9**
NVLJ	**Novalja**	**2.20**	**70**	*e*Pn	**Pn**	**22 03 35.7**	**-0.9**
PGF	**Pioggiola**	**2.54**	**240**	*e*Pn	**Pn**	**22 03 40.9**	**-0.5**
PGF				*e*Sn	**Sn**	**22 04 10.6**	**-1.7**
	18nm,0.4s						
PGF	**Pioggiola**	**2.54**	**240**	*e*Pn	**Pn**	**22 03 40.9**	**-0.5**
PGF				*e*Sn	**Sn**	**22 04 10.6**	**-1.7**
	8.9nm,0.4s						
UDBI	**Udbina**	**2.81**	**75**	*e*Pn	**Pn**	**22 03 46.1**	**+1.1**
UDBI	**Udbina**	**2.81**	**75**	*e*Pn	**Pn**	**22 03 46.1**	**+1.1**
SBF	**Sospel**	**3.29**	**272**	*e*Pn	**Pn**	**22 03 49.9**	**-1.8**
SBF				*e*Sn	**Sn**	**22 04 29.0**	**-1.9**
	15nm,0.4s						
SBF	**Sospel**	**3.29**	**272**	*e*Pn	**Pn**	**22 03 49.9**	**-1.8**
SBF				*e*Sn	**Sn**	**22 04 29.0**	**-1.9**
	7.5nm,0.4s						
DAVOX	**Davos/Dischmat**	**3.29**	**334**	Pn	**Pn**	**22 03 53.8**	**+1.9**
	1.0nm,0.3s,baz=140,slow=16,SNR=9.6						
DAVOX				Sn	**Sn**	**22 04 33.4**	**+2.3**
	1.8nm,0.3s,baz=300,slow=23,SNR=3.4						
MBDF	**Montbardon**	**3.85**	**285**	*e*Pn	**Pn**	**22 03 58.9**	**-0.6**
MBDF	**Montbardon**	**3.85**	**285**	*e*P	**Pn**	**22 04 01.9**	**+2.5**
MBDF	**Montbardon**	**3.85**	**285**	*e*Pn	**Pn**	**22 03 58.9**	**-0.6**
MBDF	**Montbardon**	**3.85**	**285**	*e*P	**Pn**	**22 04 01.9**	**+2.5**
FRF	**La Foret Royal**	**3.88**	**268**	*e*Pn	**Pn**	**22 03 59.2**	**-0.6**
FRF	**La Foret Royal**	**3.88**	**268**	*e*Pn	**Pn**	**22 03 59.2**	**-0.6**
LMR	**La Mourre**	**4.01**	**265**	*e*Pn	**Pn**	**22 04 00.4**	**-1.1**
LMR	**La Mourre**	**4.01**	**265**	*e*Pn	**Pn**	**22 04 00.4**	**-1.1**
LPG	**La Plagne**	**4.08**	**296**	*e*Pn	**Pn**	**22 04 02.5**	**-0.3**
LPG	**La Plagne**	**4.08**	**296**	*e*Pn	**Pn**	**22 04 02.5**	**-0.3**
LPL	**La Plagne**	**4.10**	**296**	*e*Pn	**Pn**	**22 04 02.5**	**-0.5**
LPL	**La Plagne**	**4.10**	**296**	*e*P	**Pn**	**22 04 06.3**	**+3.3**
LPL	**La Plagne**	**4.10**	**296**	*e*Pn	**Pn**	**22 04 02.5**	**-0.5**
LPL	**La Plagne**	**4.10**	**296**	*e*P	**Pn**	**22 04 06.3**	**+3.3**
ORIF	**Oris-en-Rattie**	**4.51**	**286**	*e*Pn	**Pn**	**22 04 08.9**	**+0.4**
ORIF	**Oris-en-Rattie**	**4.51**	**286**	*e*Pn	**Pn**	**22 04 08.9**	**+0.4**
SMRF	**Simiane la Rot**	**4.63**	**274**	*e*Pn	**Pn**	**22 04 10.0**	**-0.2**
SMRF	**Simiane la Rot**	**4.63**	**274**	*e*Pn	**Pn**	**22 04 10.0**	**-0.2**
CABF	**La Chapelle**	**5.00**	**306**	*e*Pn	**Pn**	**22 04 16.2**	**+0.9**
CABF	**La Chapelle**	**5.00**	**306**	*e*Pn	**Pn**	**22 04 16.2**	**+0.9**
GERES	**GERESS Array B**	**5.14**	**13**	Pn	**Pn**	**22 04 16.5**	**-0.8**
	0.5nm,0.3s,baz=195,slow=14,SNR=13						
VIVF	**Saint-Julien-l**	**5.34**	**283**	*e*P	**Pn**	**22 04 23.5**	**+3.6**
VIVF	**Saint-Julien-l**	**5.34**	**283**	*e*P	**Pn**	**22 04 23.5**	**+3.6**
HINF	**Hinteralfeld**	**5.35**	**320**	*e*Pn	**Pn**	**22 04 20.3**	**+0.3**
HINF	**Hinteralfeld**	**5.35**	**320**	*e*Pn	**Pn**	**22 04 20.3**	**+0.3**
KHC	**Kasperske Hory**	**5.41**	**11**	*e*PN	**Pn**	**22 04 21.9**	**+1.1**
CDF	**Champ du Feu**	**5.62**	**326**	*e*Pn	**Pn**	**22 04 23.6**	**-0.2**
CDF	**Champ du Feu**	**5.62**	**326**	*e*Pn	**Pn**	**22 04 23.6**	**-0.2**
HAU	**Haudompre**	**5.73**	**319**	*e*Pn	**Pn**	**22 04 24.8**	**-0.4**
HAU	**Haudompre**	**5.73**	**319**	*e*Pn	**Pn**	**22 04 24.8**	**-0.4**
LOR	**Lormes**	**6.65**	**304**	*e*Pn	**Pn**	**22 04 36.9**	**-1.0**
LOR	**Lormes**	**6.65**	**304**	*e*Pn	**Pn**	**22 04 36.9**	**-1.0**
MTLF	**Montolieu**	**7.11**	**269**	*e*Pn	**Pn**	**22 04 43.8**	**-0.3**
MTLF	**Montolieu**	**7.11**	**269**	*e*Pn	**Pn**	**22 04 43.8**	**-0.3**
KEST	**Kesra**	**8.35**	**195**	Pn	**Pn**	**22 05 05.5**	**+4.3**
	0.1nm,0.3s,baz=18,slow=17,SNR=2.1						
IDI	**Anoyia**	**13.11**	**126**	LR	LR	22 12 20.2	
	comp=Z,40nm,19.1s,baz=263,slow=43						
EIL	**Elat**	**23.11**	**120**	LR	LR	22 20 44.0	
	comp=Z,29nm,18.4s,baz=348,slow=46						
TORD	**Torodi Ar. Bea**	**31.84**	**199**	P	**P**	**22 09 26.3**	**+1.2**
	0.3nm,0.5s,baz=18,slow=9.7,SNR=3.4						
MKAR	**Makanchi Array**	**48.01**	**61**	P	**P**	**22 11 40.1**	**+1.1**
	0.6nm,0.7s,baz=297,slow=5.9,SNR=7.2						
SONM	**Songino Array**	**61.80**	**50**	P	**P**	**22 13 20.5**	**+1.5**
	0.2nm,0.4s,baz=308,slow=7.1,SNR=3.5						

ROM ***24*** *22:03:51.9±0.1, 43°.87N×12°.03E, h4km±1km, Ml3.9/7, Error ellipse: s-maj=1.6km s-min=1.0km az=15.0*
GEN ***24*** *22:03:51.3, 43°.88N×12°.10E, h3km, ML3.8*
NEIC ***24*** *22:03:52.0, 43°.84N×12°.03E, h1km, mb4.3/5, After ROM.*
NEIC Felt [III] at Cesena, Faenza and Forli.
LDG ***24*** *22:03:52.7±0.1, 43°.88N×12°.19E, h5km, Ml4.1/16, Error ellipse: s-maj=4.4km s-min=3.0km az=11.0*
IDC ***24*** *22:03:52.5±0.9, 43°.87N×12°.16E, h0km, mb3.8/9, mb1 3.9/20, mb1mx3.8/51, mbtmp3.7/20, ML3.7/8, MS3.2/6, Ms1 3.2/6, ms1mx2.9/39, Error ellipse: s-maj=15.4km s-min=13.8km az=63.0*
PRU ***24*** *22:03:52.6, 43°.88N×12°.19E, h0km, M4.3*
ISCJB ***24*** *22:03:52.8±0.2, 43°.84N±0°.01×11°.93E±0°.02, h20km±2km, mb4.1/22, MS3.0/1, Error ellipse: s-maj=2.5km s-min=1.8km az=14.3*
MOS ***24*** *22:03:53.6±1.2, 43°.97N×11°.98E, h17km, mb4.4/10, Error ellipse: s-maj=6.3km s-min=4.2km az=81.1*
CSEM ***24*** *22:03:53.2±0.1, 43°.82N×11°.95E, h10km, mb4.4/12, ML4.0/14, Error ellipse: s-maj=2.5km s-min=2.0km az=28.0*
STR ***24*** *22:04:17.3±0.2, 44°.83N×9°.83E, h10km, Ml3.7, Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*
ISC 24 22:03:53.3±0.7, 43°.84N±0°.02×11°.96E±0°.01, h9km±4km, n438, σ1§87/543, mb4.2/22, 10C-19D, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFI	**Santa Sofia**	**0.11**	**310**	Pg	**Pg**	**22 03 55.5**	**-0.4**
SFI				Sg	**Sg**	**22 03 57.8**	**+0.1**
SFI	**Santa Sofia**	**0.11**	**310**	Pg	**Pg**	**22 03 55.5**	**-0.4**
SFI				Sg	**Sg**	**22 03 57.8**	**+0.1**
ASQU	**Asqua**	**0.13**	**252**	Pg	**Pg**	**22 03 56.4**	**+0.1**
ASQU				Sg	**Sg**	**22 03 59.4**	**+1.1**
ASQU	**Asqua**	**0.13**	**252**	Pg	**Pg**	**22 03 56.4**	**+0.1**
ASQU				Sg	**Sg**	**22 03 59.4**	**+1.1**
VMG	**Vicchio**	**0.33**	**293**	Pg	**Pg**	**22 03 59.8**	**+0.1**
VMG	**Vicchio**	**0.33**	**293**	Pg	**Pg**	**22 03 59.8**	**+0.1**
BADI	**Badiali**	**0.39**	**148**	Pg	**Pg**	**22 04 00.3**	**-0.6**
BADI				Sg	**Sg**	**22 04 07.0**	**+1.1**
BADI	**Badiali**	**0.39**	**148**	Pg	**Pg**	**22 04 00.3**	**-0.6**
BADI				Sg	**Sg**	**22 04 07.0**	**+1.1**
BLLA	**Bellaria**	**0.48**	**50**	Pg	**Pg**	**22 04 01.6**	**-1.0**
BLLA	**Bellaria**	**0.48**	**50**	Pg	**Pg**	**22 04 01.6**	**-1.0**
SEI	**Scarperia**	**0.49**	**297**	Pg	**Pg**	**22 04 02.3**	**-0.5**
SEI	**Scarperia**	**0.49**	**297**	Pg	**Pg**	**22 04 02.3**	**-0.5**
ATPC	**Poggio Castell**	**0.51**	**134**	Pg	**Pg**	**22 04 02.5**	**-0.6**
ATPC				Sg	**Sb**	**22 04 11.1**	**-0.8**
ATPC	**Poggio Castell**	**0.51**	**134**	Pg	**Pg**	**22 04 02.5**	**-0.6**
ATPC				Sg	**Sb**	**22 04 11.1**	**-0.8**
PIEI	**Pieia**	**0.51**	**126**	Pg	**Pg**	**22 04 02.3**	**-0.9**
PIEI				Sg	**Sg**	**22 04 10.4**	**+0.4**
PIEI	**Pieia**	**0.51**	**126**	Pg	**Pg**	**22 04 02.3**	**-0.9**
PIEI				Sg	**Sg**	**22 04 10.4**	**+0.4**
ATVO	**AVT- Monte Val**	**0.56**	**144**	Pg	**Pg**	**22 04 03.6**	**-0.5**
ATVO				Sg	**Sg**	**22 04 12.3**	**+0.9**
ATVO	**AVT- Monte Val**	**0.56**	**144**	Pg	**Pg**	**22 04 03.6**	**-0.5**
ATVO				Sg	**Sg**	**22 04 12.3**	**+0.9**
FRON	**Frontone**	**0.64**	**120**	Pg	**Pg**	**22 04 04.5**	**-1.1**
FRON	**Frontone**	**0.64**	**120**	Pg	**Pg**	**22 04 04.5**	**-1.1**
PESA	**Pesaro**	**0.64**	**80**	Pg	**Pg**	**22 04 04.2**	**-1.5**
PESA	**Pesaro**	**0.64**	**80**	Pg	**Pg**	**22 04 04.2**	**-1.5**
FNVD	**Fontana Vidola**	**0.69**	**299**	Pg	**Pg**	**22 04 06.3**	**-0.3**
FNVD				Sg	**Sb**	**22 04 17.4**	**+0.2**
FNVD	**Fontana Vidola**	**0.69**	**299**	Pg	**Pg**	**22 04 06.3**	**-0.3**
FNVD				Sg	**Sb**	**22 04 17.4**	**+0.2**
ATTE	**AVT- Monte Tez**	**0.70**	**156**	Pg	**Pg**	**22 04 06.0**	**-0.8**
ATTE	**AVT- Monte Tez**	**0.70**	**156**	Pg	**Pg**	**22 04 06.0**	**-0.8**
MURB	**Monte Urbino**	**0.70**	**144**	Pg	**Pg**	**22 04 06.5**	**-0.4**
MURB	**Monte Urbino**	**0.70**	**144**	Pg	**Pg**	**22 04 06.5**	**-0.4**
SSFR	**Montelago di S**	**0.72**	**124**	Pg	**Pg**	**22 04 05.8**	**-1.3**
SSFR				Sg	**Sb**	**22 04 17.6**	**-0.4**
SSFR	**Montelago di S**	**0.72**	**124**	Pg	**Pg**	**22 04 05.8**	**-1.3**
SSFR				Sg	**Sb**	**22 04 17.6**	**-0.4**
FROS	**Frosini**	**0.86**	**223**	Pg	**Pb**	**22 04 10.1**	**-0.2**
FROS	**Frosini**	**0.86**	**223**	Pg	**Pb**	**22 04 10.1**	**-0.2**
SNTG	**Esanatoglia**	**0.92**	**129**	Pg	**Pg**	**22 04 09.6**	**-1.4**
SNTG	**Esanatoglia**	**0.92**	**129**	Pg	**Pg**	**22 04 09.6**	**-1.4**
MGAB	**Montegabbione**	**0.93**	**173**	Pg	**Pg**	**22 04 11.2**	**0.0**
MGAB	**Montegabbione**	**0.93**	**173**	Pg	**Pg**	**22 04 11.2**	**0.0**
SACS	**San Casciano d**	**0.99**	**182**	Pg	**Pg**	**22 04 11.9**	**-0.4**
CING	**Cingoli**	**1.01**	**117**	Pg	**Pg**	**22 04 11.5**	**-1.1**
CING	**Cingoli**	**1.01**	**117**	Pg	**Pg**	**22 04 11.5**	**-1.1**
BDI	**Bagni Di Lucca**	**1.01**	**283**	Pg	**Pg**	**22 04 12.4**	**-0.3**
BDI	**Bagni Di Lucca**	**1.01**	**283**	Pg	**Pg**	**22 04 12.4**	**-0.3**
ARCI	**Arcidosso**	**1.05**	**200**	Pg	**Pg**	**22 04 13.0**	**-0.4**
ARCI	**Arcidosso**	**1.05**	**200**	Pg	**Pg**	**22 04 13.0**	**-0.4**
TRIF	**Trifonti**	**1.06**	**227**	Pg	**Pg**	**22 04 13.0**	**-0.5**
TRIF	**Trifonti**	**1.06**	**227**	Pg	**Pg**	**22 04 13.0**	**-0.5**
MAIM	**Mastiano**	**1.06**	**275**	Pg	**Pg**	**22 04 12.8**	**-0.9**
MAIM	**Mastiano**	**1.06**	**275**	P	**Pg**	**22 04 12.9**	**-0.8**
MAIM				S	**Sg**	**22 04 27.4**	**-0.2**
MCIV	**Monte Civitell**	**1.08**	**191**	Pg	**Pg**	**22 04 13.9**	**-0.1**
MCIV	**Monte Civitell**	**1.08**	**191**	Pg	**Pg**	**22 04 13.9**	**-0.1**
CESI	**CESI - Serrava**	**1.08**	**140**	Pg	**Pg**	**22 04 12.9**	**-1.1**
CESI	**CESI - Serrava**	**1.08**	**140**	Pg	**Pg**	**22 04 12.9**	**-1.1**
SASS	**Sassa´´´´´**	**1.09**	**238**	Pg	**Pg**	**22 04 13.3**	**-0.9**
SASS	**Sassa´´´´´**	**1.09**	**238**	Pg	**Pg**	**22 04 13.3**	**-0.9**
RAVA	**Ravarino**	**1.10**	**327**	Pg	**Pb**	**22 04 14.6**	**+0.1**
	17μm,1.1s						
RAVA	**Ravarino**	**1.10**	**327**	Pg	**Pb**	**22 04 14.6**	**+0.1**
	17μm,1.1s						
FDMO	**Fiordimonte**	**1.15**	**134**	Pg	**Pg**	**22 04 14.0**	**-1.3**
FDMO	**Fiordimonte**	**1.15**	**134**	Pg	**Pg**	**22 04 14.0**	**-1.3**
SARO	**Sassorosso**	**1.18**	**288**	P	**Pb**	**22 04 14.8**	**-1.1**
SARO				S	**Sg**	**22 04 30.5**	**-0.7**
VLC	**Villacollemand**	**1.18**	**286**	*e*Pn	**Pn**	**22 04 16.1**	**0.0**
VLC	**Villacollemand**	**1.18**	**286**	*e*Pn	**Pn**	**22 04 16.1**	**0.0**
ADRI	**Adria, Italy**	**1.20**	**2**	*e*Pg	**Pg**	**22 04 16.8**	**+0.5**
ADRI				*e*Sg	**Sn**	**22 04 35.6**	**+2.9**
ADRI	**Adria, Italy**	**1.20**	**2**	*e*Pg	**Pg**	**22 04 16.8**	**+0.5**
ADRI				*e*Sg	**Sn**	**22 04 35.6**	**+2.9**
SBPO	**S.Benedetto Po**	**1.43**	**329**	Pg	**Pg**	**22 04 20.8**	**+0.2**
	11μm,1.2s						
SBPO	**S.Benedetto Po**	**1.43**	**329**	Pg	**Pg**	**22 04 20.8**	**+0.2**
	11μm,1.2s						
TEOL	**Teolo**	**1.54**	**352**	Pg	**Pn**	**22 04 19.9**	**-1.0**
IESO	**Jesolo**	**1.73**	**14**	*e*Pn	**Pn**	**22 04 24.0**	**+0.4**
IESO	**Jesolo**	**1.73**	**14**	*e*Pn	**Pn**	**22 04 24.0**	**+0.4**
AQU	**L'Aquila**	**1.82**	**144**	*e*P	**Pn**	**22 04 25.5**	**+0.7**
AQU	**L'Aquila**	**1.82**	**144**	*e*P	**Pn**	**22 04 25.5**	**+0.7**
AQU	**L'Aquila**	**1.82**	**144**	*e*Pn	**Pn**	**22 04 25.5**	**+0.7**
MTLO	**Montello**	**1.98**	**3**	*e*Pn	**Pn**	**22 04 26.8**	**-0.2**
MTLO	**Montello**	**1.98**	**3**	*e*Pn	**Pn**	**22 04 26.8**	**-0.2**
BALD	**Monte Baldo**	**2.02**	**337**	*e*Pn	**Pn**	**22 04 28.2**	**+0.5**
BALD	**Monte Baldo**	**2.02**	**337**	*e*Pn	**Pn**	**22 04 28.2**	**+0.5**
CGRP	**Cima Grappa**	**2.05**	**357**	*e*Pn	**Pb**	**22 04 30.4**	**-0.3**
CGRP	**Cima Grappa**	**2.05**	**357**	*e*Pn	**Pb**	**22 04 30.4**	**-0.3**
NVLJ	**Novalja**	**2.22**	**70**	*e*Pn	**Pn**	**22 04 28.4**	**-1.8**
NVLJ				Sn	**Sn**	**22 04 56.7**	**-1.0**
NVLJ	**Novalja**	**2.22**	**70**	*e*Pn	**Pn**	**22 04 28.4**	**-1.8**
NVLJ				Sn	**Sn**	**22 04 56.7**	**-1.0**
TLI	**Talmassons**	**2.24**	**21**	*e*Pn	**Pn**	**22 04 29.1**	**-1.4**
TLI	**Talmassons**	**2.24**	**21**	*e*Pn	**Pn**	**22 04 29.1**	**-1.4**
BUA	**Buia**	**2.52**	**19**	*e*Pn	**Pn**	**22 04 33.3**	**-1.1**
BUA				*e*Sn	**Sn**	**22 05 04.2**	**-1.1**
BUA	**Buia**	**2.52**	**19⇑**	*e*Pn	**Pn**	**22 04 33.3**	**-1.1**
BUA				*e*Sn	**Sn**	**22 05 04.2**	**-1.1**
PGF	**Pioggiola**	**2.52**	**240**	*e*Pn	**Pn**	**22 04 33.8**	**-0.7**
	SNR=1.0						
PGF				*e*Sn	**Sn**	**22 05 04.0**	**-1.4**
PGF	**Pioggiola**	**2.52**	**240**	*e*P	**Pn**	**22 04 33.8**	**-0.7**
PGF	**Pioggiola**	**2.52**	**240**	*e*Pn	**Pn**	**22 04 33.8**	**-0.7**
	SNR=1.0						
PGF				*e*Sn	**Sn**	**22 05 04.0**	**-1.4**
PGF	**Pioggiola**	**2.52**	**240**	*e*Pn	**Pn**	**22 04 33.8**	**-0.7**
BAD	**Bernadia**	**2.57**	**20**	*e*Pn	**Pn**	**22 04 33.6**	**-1.5**
BAD				*e*Sn	**Sn**	**22 05 04.9**	**-1.6**
BAD	**Bernadia**	**2.57**	**20**	*e*Pn	**Pn**	**22 04 33.6**	**-1.5**
BAD				*e*Sn	**Sn**	**22 05 04.9**	**-1.6**
OZOL	**Ozolo**	**2.65**	**346**	*e*Pn	**Pn**	**22 04 37.8**	**+1.5**
OZOL	**Ozolo**	**2.65**	**346**	*e*Pn	**Pn**	**22 04 37.8**	**+1.5**
FUSE	**Fusea**	**2.68**	**16**	*e*Pn	**Pn**	**22 04 35.5**	**-1.1**
FUSE	**Fusea**	**2.

FRF	**La Foret Royal**	**3.86 268**	*e*Pn	**Pn**	**22 04 52.3**	**-0.6**
FRF			*e*Sn	**Sn**	**22 05 36.7**	**-1.7**
	172nm,0.8s					
FRF	**La Foret Royal**	**3.86 268**	*e*P	**Pn**	**22 04 52.3**	**-0.6**
FRF			*e*		22 05 36.7	
FRF	**La Foret Royal**	**3.86 268**	*e*Pn	**Pn**	**22 04 52.3**	**-0.6**
FRF			*e*Sn	**Sn**	**22 05 36.7**	**-1.7**
	86nm,0.8s					
FRF	**La Foret Royal**	**3.86 268**	*e*Pn	**Pn**	**22 04 52.3**	**-0.6**
FRF			*e*Sn	**Sn**	**22 05 36.7**	**-1.7**
LMR	**La Mourre**	**3.99 265**	*e*Pn	**Pn**	**22 04 53.5**	**-1.1**
LMR			*e*Sn	**Sn**	**22 05 38.7**	**-2.8**
	22nm,0.3s,SNR=1.0					
LMR	**La Mourre**	**3.99 265**	*e*Pn	**Pn**	**22 04 53.5**	**-1.1**
LMR			*e*Sn	**Sn**	**22 05 38.7**	**-2.8**
	11nm,0.3s,SNR=1.0					
LPG	**La Plagne**	**4.07 296**	*e*Pn	**Pn**	**22 04 56.2**	**+0.2**
LPG	**La Plagne**	**4.07 296**	*e*P	**Pn**	**22 04 59.1**	**+3.1**
LPG			*e*Sn	**Sn**	**22 05 41.3**	**-2.6**
	170nm,0.8s					
LPG	**La Plagne**	**4.07 296**	*e*P	**Pn**	**22 04 59.1**	**+3.1**
LPG			*e*		22 05 41.3	
LPG	**La Plagne**	**4.07 296**	*e*Pn	**Pn**	**22 04 56.2**	**+0.2**
LPG	**La Plagne**	**4.07 296**	*e*P	**Pn**	**22 04 59.1**	**+3.1**
LPG			*e*Sn	**Sn**	**22 05 41.3**	**-2.6**
	85nm,0.8s					
LPG	**La Plagne**	**4.07 296**	*e*Pg	**Pn**	**22 04 59.1**	**+3.1**
LPG			*e*Sn	**Sn**	**22 05 41.3**	**-2.6**
LPL	**La Plagne**	**4.09 296**	*e*P	**Pn**	**22 04 59.0**	**+2.8**
	SNR=1.0					
LPL			*e*Sn	**Sn**	**22 05 42.8**	**-1.5**
	72nm,0.5s					
LPL	**La Plagne**	**4.09 296**	*e*P	**Pn**	**22 04 59.0**	**+2.8**
	SNR=1.0					
LPL			*e*Sn	**Sn**	**22 05 42.8**	**-1.5**
	36nm,0.5s					
CDT	**Castel del Mon**	**4.21 129**	*e*Pn	**Pn**	**22 04 58.4**	**+0.7**
ARSA	**Arzberg**	**4.23 35**	*e*Pn	**Pn**	**22 04 58.9**	**+0.9**
	14nm,0.4s					
ARSA			*i* Sn	**Sn**	**22 05 42.4**	**-5.1**
	19nm,0.5s					
ARSA	**Arzberg**	**4.23 35**	Pn	**Pn**	**22 04 58.9**	**+0.9**
	14nm,0.4s					
MOA	**Molln**	**4.32 21**	*i* Pn	**Pn**	**22 04 59.0**	**-0.2**
	56nm,0.6s					
MOA			*i* Sn	**Sn**	**22 05 48.2**	**-1.6**
	87nm,0.6s					
MOA	**Molln**	**4.32 21**	Pn	**Pn**	**22 04 59.0**	**-0.2**
	56nm,0.6s					
MOA			Sn	**Sn**	**22 05 48.2**	**-1.6**
	87nm,0.6s					
GDM	**Grand'Maison**	**4.40 290**	Pn	**Pn**	**22 04 59.3**	**-1.1**
GDM	**Grand'Maison**	**4.40 290**	Pg	**Pb**	**22 05 08.3**	**-2.5**
GDM	**Grand'Maison**	**4.40 290**	Pn	**Pn**	**22 04 59.3**	**-1.1**
ORIF	**Oris-en-Rattie**	**4.49 286**	*e*Pn	**Pn**	**22 05 01.6**	**0.0**
	SNR=1.0					
ORIF	**Oris-en-Rattie**	**4.49 286**	*e*P	**Pn**	**22 05 01.6**	**0.0**
ORIF	**Oris-en-Rattie**	**4.49 286**	*e*Pn	**Pn**	**22 05 01.6**	**0.0**
	SNR=1.0					
ORIF	**Oris-en-Rattie**	**4.49 286**	*e*Pn	**Pn**	**22 05 01.6**	**0.0**
OG01	**Vacheresse**	**4.49 306**	Pn	**Pn**	**22 04 59.3**	**-2.3**
OG01	**Vacheresse**	**4.49 306**	Pg	Pn	22 05 06.8	+5.2
OG01	**Vacheresse**	**4.49 306**	Pn	**Pn**	**22 04 59.3**	**-2.3**
BAI	**Bari**	**4.55 125**	*e*Pn	**Pn**	**22 05 01.9**	**-0.3**
SG1	**Sgolgore (BA)**	**4.60 129**	*e*Pn	**Pn**	**22 05 03.2**	**+0.1**
SMRF	**Simiane la Rot**	**4.62 274**	*e*Pn	**Pn**	**22 05 03.6**	**+0.3**
	SNR=1.0					
SMRF	**Simiane la Rot**	**4.62 274**	*e*Pn	**Pn**	**22 05 03.6**	**+0.3**
	SNR=1.0					
SMRF	**Simiane la Rot**	**4.62 274**	*e*Pn	**Pn**	**22 05 03.6**	**+0.3**
GRN	**Grenoble**	**4.66 290**	Pn	**Pn**	**22 05 02.4**	**-1.5**
GRN	**Grenoble**	**4.66 290**	Pn	**Pn**	**22 05 02.4**	**-1.5**
VSL	**Villasalto**	**4.75 205**	*e*Pn	**Pn**	**22 05 05.5**	**+0.5**
VSL	**Villasalto**	**4.75 205**	*e*Pn	**Pn**	**22 05 05.5**	**+0.5**
CUC	**Castrocucco**	**4.80 142**	*e*Pn	**Pn**	**22 05 09.2**	**+3.5**
CUC	**Castrocucco**	**4.80 142**	*e*Pn	**Pn**	**22 05 09.2**	**+3.5**
FELD	**Feldberg im Sc**	**4.89 327**	Pn	**Pn**	**22 05 07.4**	**+0.2**
CONA	**Conrad Observa**	**4.92 32**	*i* Pn	**Pn**	**22 05 06.5**	**-0.9**
	8.3nm,0.5s					
CONA			*i* Sn	**Sn**	**22 06 04.4**	**0.0**
	34nm,0.4s					
CONA	**Conrad Observa**	**4.92 32**	Pn	**Pn**	**22 05 06.5**	**-0.9**
	8.3nm,0.5s					
CONA			Sn	**Sn**	**22 06 04.4**	**0.0**
	34nm,0.4s					
CABF	**La Chapelle**	**4.99 306**	*e*Pn	**Pn**	**22 05 09.1**	**+0.7**
	SNR=1.0					
CABF	**La Chapelle**	**4.99 306**	*e*P	**Pn**	**22 05 09.1**	**+0.7**
CABF	**La Chapelle**	**4.99 306**	*e*Pn	**Pn**	**22 05 09.1**	**+0.7**
	SNR=1.0					
CABF	**La Chapelle**	**4.99 306**	*e*Pn	**Pn**	**22 05 09.1**	**+0.7**
LOMF	**Lomont**	**5.03 316**	Pn	**Pn**	**22 05 07.8**	**-1.2**
LOMF			Sg	**Sn**	**22 06 04.6**	**-2.7**
LOMF	**Lomont**	**5.03 316**	Pn	**Pn**	**22 05 07.8**	**-1.2**
GERES	**GERESS Array B**	**5.15 13**	Pn	**Pn**	**22 05 09.0**	**-1.7**
	3.4nm,0.3s,baz=194,slow=14,SNR=15					
GERES			Sn	**Sn**	**22 06 06.8**	**-3.5**
	12nm,0.3s,baz=192,slow=24,SNR=10					
GERES			LR	LR	22 07 22.9	
	comp=Z,190nm,21.7s,baz=182,slow=41					
BFO	**Black Forest**	**5.16 332**	*e*P	**Pn**	**22 05 11.2**	**+0.6**
BFO	**Black Forest**	**5.16 332**	*e*P	**Pn**	**22 05 11.2**	**+0.6**
BFO	**Black Forest**	**5.16 332**	*e*Pn	**Pn**	**22 05 11.2**	**+0.6**
TAR1	**Taranto**	**5.16 128**	*e*Pn	**Pn**	**22 05 10.9**	**+0.3**
MOF	**Molkenrain**	**5.24 322**	Pn	**Pn**	**22 05 10.6**	**-1.3**
MOF			Sg	**Sn**	**22 06 13.2**	**+0.7**
MOF	**Molkenrain**	**5.24 322**	Pn	**Pn**	**22 05 10.6**	**-1.3**
LIBD	**Limburg**	**5.28 326**	Pn	**Pn**	**22 05 12.6**	**+0.4**
STU	**Stuttgart**	**5.29 340**	*e*P	**Pn**	**22 05 13.3**	**+0.8**
STU	**Stuttgart**	**5.29 340**	*e*P	**Pn**	**22 05 13.3**	**+0.8**
STU	**Stuttgart**	**5.29 340**	*e*Pn	**Pn**	**22 05 13.3**	**+0.8**
VIVF	**Saint-Julien-l**	**5.33 284**	*e*Pn	**Pn**	**22 05 12.7**	**-0.3**
	SNR=1.0					
VIVF	**Saint-Julien-l**	**5.33 284**	*e*Pn	**Pn**	**22 05 12.7**	**-0.3**
	SNR=1.0					
HINF	**Hinteralfeld**	**5.35 320**	*e*Pn	**Pn**	**22 05 13.1**	**-0.2**
	SNR=1.0					
HINF			*e*Sn	**Sn**	**22 06 11.6**	**-3.4**
	126nm,0.6s,SNR=1.0					
HINF	**Hinteralfeld**	**5.35 320**	*e*P	**Pn**	**22 05 13.1**	**-0.2**
HINF			*e*		22 06 11.6	
HINF	**Hinteralfeld**	**5.35 320**	*e*Pn	**Pn**	**22 05 13.1**	**-0.2**
	SNR=1.0					
HINF			*e*Sn	**Sn**	**22 06 11.6**	**-3.4**
	63nm,0.6s,SNR=1.0					
HINF	**Hinteralfeld**	**5.35 320**	*e*Pn	**Pn**	**22 05 13.1**	**-0.2**
HINF			*e*Sn	**Sn**	**22 06 11.6**	**-3.4**
KHC	**Kasperske Hory**	**5.41 11**	*e*PN	**Pn**	**22 05 12.9**	**-1.3**
KHC			*e*PG	**Pg**	**22 05 36.3**	**-0.6**
KHC			*e*SN	**Sn**	**22 06 13.6**	**-3.0**
KHC			*e*SG	**Sg**	**22 06 49.6**	**+2.6**
KHC			AMS	AMS	22 07 50.0	
	comp=Z,1µm,13.9s					
KHC	**Kasperske Hory**	**5.41 11**	*e*P	**Pn**	**22 05 12.9**	**-1.3**
KHC			*e*		22 06 13.6	
KHC			MLR	MLR		
	comp=Z,1µm,13.9s					
KHC	**Kasperske Hory**	**5.41 11**	*e*Pn	**Pn**	**22 05 13.1**	**-1.1**
KHC	**Kasperske Hory**	**5.41 11**	*e*Pn	**Pn**	**22 05 13.1**	**-1.1**
SSB	**Saint Sauveur**	**5.49 288**	*e*P	**Pn**	**22 05 15.9**	**+0.6**
SSB	**Saint Sauveur**	**5.49 288**	*e*P	**Pn**	**22 05 15.9**	**+0.6**
SSB	**Saint Sauveur**	**5.49 288**	*e*Pn	**Pn**	**22 05 15.9**	**+0.6**
ECH	**Echery**	**5.51 324**	Pn	**Pn**	**22 05 15.1**	**-0.4**
CDF	**Champ du Feu**	**5.62 326**	*e*Pn	**Pn**	**22 05 16.4**	**-0.6**
	SNR=1.0					
CDF			*e*Sn	**Sn**	**22 06 18.0**	**-3.7**
	comp=Z,206nm,0.8s					
CDF	**Champ du Feu**	**5.62 326**	*e*Pn	**Pn**	**22 05 16.4**	**-0.6**
	SNR=1.0					
HAU	**Haudompre**	**5.72 319**	*e*Pn	**Pn**	**22 05 18.0**	**-0.4**
	SNR=1.0					
HAU			*e*Sn	**Sn**	**22 06 20.6**	**-3.5**
	comp=Z,245nm,0.6s,SNR=1.0					
HAU	**Haudompre**	**5.72 319**	*e*Pn	**Pn**	**22 05 18.0**	**-0.4**
	SNR=1.0					
LASF	**Ste Croix**	**5.86 275**	*e*Pn	**Pn**	**22 05 19.8**	**-0.5**
	SNR=1.0					
LASF	**Ste Croix**	**5.86 275**	*e*Pn	**Pn**	**22 05 19.8**	**-0.5**
	SNR=1.0					
TIP	**Timpagrande**	**5.88 141**	*e*Pn	**Pn**	**22 05 18.8**	**-1.9**
TIP	**Timpagrande**	**5.88 141**	*e*Pn	**Pn**	**22 05 18.8**	**-1.9**
LANF	**Langenberg**	**5.89 332**	Pn	**Pn**	**22 05 21.9**	**+1.2**
TREC	**Trest**	**5.98 23**	*e*PN	**Pn**	**22 05 20.3**	**-1.6**
TREC			*e*SN	**Sn**	**22 06 26.0**	**-4.4**
TREC			AMS	AMS	22 08 00.0	
	comp=Z,600nm,13.6s					
TREC	**Trest**	**5.98 23**	*e*P	**Pn**	**22 05 20.3**	**-1.6**
TREC			*e*		22 06 26.0	
TREC			MLR	MLR		
	comp=Z,600nm,13.6s					
TREC	**Trest**	**5.98 23**	Pn	**Pn**	**22 05 20.3**	**-1.6**
PLDF	**La Plantade**	**6.29 293**	Pn	**Pn**	**22 05 24.0**	**-2.3**
CLTB	**Caltabellotta**	**6.32 171**	*e*Pn	**Pn**	**22 05 27.2**	**+0.4**
CLTB	**Caltabellotta**	**6.32 171**	*e*Pn	**Pn**	**22 05 27.2**	**+0.4**
VRAC	**Vranov**	**6.33 29**	Pn	**Pn**	**22 05 26.7**	**-0.1**
	comp=Z,0.6nm,0.3s,baz=213,slow=14,SNR=10					
VRAC			Sn	**Sn**	**22 06 34.4**	**-4.9**
	comp=Z,1.2nm,0.3s,baz=200,slow=11,SNR=5.7					
VRAC			LR	LR	22 08 21.6	
	comp=Z,376nm,19.9s,baz=204,slow=43					
VRAC	**Vranov**	**6.33 29**	⇓*i*P	**Sn**	**22 06 37.3**	**-2.0**
GOPC	**GO Pecny, Ondr**	**6.38 17**	*e*PN	**Pn**	**22 05 25.9**	**-1.5**
GOPC			*e*SN	**Sn**	**22 06 35.5**	**-4.9**
GOPC			*e*SG	**Sg**	**22 07 26.8**	**+8.8**
GOPC			AMS	AMS	22 08 20.0	
	comp=Z,900nm,12.1s					
GOPC	**GO Pecny, Ondr**	**6.38 17**	*e*P	**Pn**	**22 05 25.9**	**-1.5**
GOPC			*e*		22 06 35.5	
GOPC			MLR	MLR		
	comp=Z,900nm,12.1s					
GOPC	**GO Pecny, Ondr**	**6.38 17**	Pn	**Pn**	**22 05 25.9**	**-1.5**
LBL	**Lubilhac**	**6.38 286**	Pn	**Pn**	**22 05 26.6**	**-0.9**
SMF	**Signal de Mont**	**6.38 299**	*e*Pn	**Pn**	**22 05 27.6**	**+0.1**
	SNR=1.0					
SMF			*e*Sn	**Sn**	**22 06 38.0**	**-2.5**
	comp=Z,30nm,0.4s					
SMF	**Signal de Mont**	**6.38 299**	*e*P	**Pn**	**22 05 27.6**	**+0.1**
SMF	**Signal de Mont**	**6.38 299**	*e*Pn	**Pn**	**22 05 27.6**	**+0.1**
	SNR=1.0					
SMF			*e*Sn	**Sn**	**22 06 38.0**	**-2.5**
	comp=Z,15nm,0.4s					
SMF	**Signal de Mont**	**6.38 299**	*e*Pn	**Pn**	**22 05 27.6**	**+0.1**
PAGF	**Fort de Pagny**	**6.40 320**	*e*Pn	**Pn**	**22 05 27.8**	**+0.1**
	baz=141					
PAGF	**Fort de Pagny**	**6.40 320**	*e*Pn	**Pn**	**22 05 27.8**	**+0.1**
PRU	**Pruhonice**	**6.40 15**	*e*PN	**Pn**	**22 05 26.7**	**-1.0**
PRU			*e*PG	**Pg**	**22 05 54.3**	**-1.5**
PRU			*e*SN	**Sn**	**22 06 35.7**	**-5.2**
PRU			*ex*	x	22 06 47.6	
PRU			AMS	AMS	22 08 20.0	
	comp=Z,900nm,13.7s					
PRU	**Pruhonice**	**6.40 15**	*e*P	**Pn**	**22 05 26.7**	**-1.0**
PRU			*e*		22 06 35.7	
PRU			MLR	MLR		
	comp=Z,900nm,13.7s					
PRU	**Pruhonice**	**6.40 15**	Pn	**Pn**	**22 05 26.7**	**-1.0**
NKC	**Novy Kostel**	**6.41 3**	*e*PN	**Pn**	**22 05 27.6**	**-0.2**
NKC			*e*SN	**Sn**	**22 06 36.7**	**-4.4**
NKC			AMS	AMS	22 08 20.0	
	comp=Z,700nm,11.1s					
NKC	**Novy Kostel**	**6.41 3**	*e*P	**Pn**	**22 05 27.6**	**-0.2**
NKC			*e*		22 06 36.7	
NKC			MLR	MLR		
	comp=Z,700nm,11.1s					
NKC	**Novy Kostel**	**6.41 3**	Pn	**Pn**	**22 05 27.6**	**-0.2**
SFTF	**Sexfontaines**	**6.50 315**	*e*Pn	**Pn**	**22 05 28.4**	**-0.7**
	baz=119					
SFTF	**Sexfontaines**	**6.50 315**	*e*Pn	**Pn**	**22 05 28.4**	**-0.7**
LOR	**Lormes**	**6.64 304**	*e*Pn	**Pn**	**22 05 31.1**	**+0.1**
	baz=129,SNR=1.0					
LOR			*e*Sn	**Sn**	**22 06 43.6**	**-3.3**
	comp=Z,59nm,0.5s					
LOR	**Lormes**	**6.64 304**	*e*P	**Pn**	**22 05 31.1**	**+0.1**
LOR			*e*		22 06 43.6	
LOR	**Lormes**	**6.64 304**	*e*Pn	**Pn**	**22 05 31.1**	**+0.1**
	SNR=1.0					
LOR	**Lormes**	**6.64 304**	*e*Pn	**Pn**	**22 05 31.1**	**+0.1**
LOR			*e*Sn	**Sn**	**22 06 43.6**	**-3.3**
AGO	**Saint Agoulin**	**6.65 293**	Pn	**Pn**	**22 05 28.3**	**-2.8**
PYM	**Petit Puy Mans**	**6.65 290**	Pn	**Pn**	**22 05 29.1**	**-2.1**
MEZF	**Maizieres J'vi**	**6.69 317**	*e*Pn	**Pn**	**22 05 31.6**	**-0.1**
	baz=141,SNR=1.0					
MEZF			*e*Sn	**Sn**	**22 06 44.0**	**-4.0**
	comp=Z,28nm,0.5s,SNR=1.0					
MEZF	**Maizieres J'vi**	**6.69 317**	*e*Pn	**Pn**	**22 05 31.6**	**-0.1**
	SNR=1.0					
MEZF	**Maizieres J'vi**	**6.69 317**	*e*Pn	**Pn**	**22 05 31.6**	**-0.1**
MEZF			*e*Sn	**Sn**	**22 06 44.0**	**-4.0**
AVF	**Avril sur Loir**	**6.75 299**	*e*Pn	**Pn**	**22 05 31.7**	**-0.8**
	SNR=1.0					
AVF			*e*Sn	**Sn**	**22 06 45.6**	**-3.8**
	comp=Z,15nm,0.6s,SNR=1.0					
AVF	**Avril sur Loir**	**6.75 299**	*e*Pn	**Pn**	**22 05 31.7**	**-0.8**
	SNR=1.0					
SSF	**Saint Saulge**	**6.76 301**	*e*Pn	**Pn**	**22 05 33.0**	**+0.3**
	SNR=1.0					
SSF			*e*Sn	**Sn**	**22 06 46.1**	**-3.7**
	comp=Z,21nm,0.4s,SNR=1.0					
SSF	**Saint Saulge**	**6.76 301**	*e*Pn	**Pn**	**22 05 33.0**	**+0.3**
	SNR=1.0					
PVCC	**Panska Ves**	**6.93 14**	*e*PN	**Pn**	**22 05 34.8**	**-0.1**
PVCC			*e*PG	**Pg**	**22 06 02.2**	**-3.6**
PVCC			*e*SN	**Sn**	**22 06 50.1**	**-3.7**
PVCC			AMS	AMS	22 08 50.0	
	comp=Z,900nm,7.7s					
PVCC	**Panska Ves**	**6.93 14**	*e*P	**Pn**	**22 05 34.8**	**-0.1**
PVCC			*e*		22 06 50.1	
PVCC			MLR	MLR		
	comp=Z,900nm,7.7s					
PVCC	**Panska Ves**	**6.93 14**	Pn	**Pn**	**22 05 34.8**	**-0.1**
BGF	**Bois d'Agland**	**6.99 296**	*e*Pn	**Pn**	**22 05 34.7**	**-1.1**
	SNR=1.0					
BGF			*e*Sn	**Sn**	**22 06 52.9**	**-2.5**
	comp=Z,32nm,0.4s					
BGF	**Bois d'Agland**	**6.99 296**	*e*Pn	**Pn**	**22 05 34.7**	**-1.1**
	SNR=1.0					
BGF			*e*Sn	**Sn**	**22 06 52.9**	**-2.5**
	comp=Z,16nm,0.4s					
WLF	**Walferdange**	**7.06 328**	PN	**Pn**	**22 05 39.4**	**+2.6**
WLF	**Walferdange**	**7.06 328**	SN	**Sn**	**22 06 56.6**	**-0.6**
	comp=E,20nm,0.0s					
WLF	**Walferdange**	**7.06 328**	*e*P	**Pn**	**22 05 37.6**	**+0.8**
WLF	**Walferdange**	**7.06 328**	*e*Pn	**Pn**	**22 05 37.5**	**+0.8**
WLF			Sn	**Sn**	**22 06 56.5**	**-0.6**
WLF	**Walferdange**	**7.06 328**	*e*Pn	**Pn**	**22 05 37.5**	**+0.8**
MORC	**Moravsky Berou**	**7.07 31**	⇓*i*P	**Sn**	**22 06 56.0**	**-1.3**
MORC	**Moravsky Berou**	**7.07 31**	*e*P	**Pn**	**22 05 37.2**	**+0.3**
MORC	**Moravsky Berou**	**7.07 31**	*e*P	**Pn**	**22 05 37.2**	**+0.3**
MORC	**Moravsky Berou**	**7.07 31**	*e*Pn	**Pn**	**22 05 37.2**	**+0.3**
MTLF	**Montolieu**	**7.09 269**	*e*Pn	**Pn**	**22 05 36.7**	**-0.5**
	SNR=1.0					
MTLF	**Montolieu**	**7.09 269**	*e*Pn	**Pn**	**22 05 36.7**	**-0.5**
	SNR=1.0					
BZS	**Buzias**	**7.10 72**	⇑*i*P	Pg	22 06 14.1	+4.8
DPC	**Dobruska-Polom**	**7.16 23**	*e*PN	**Pn**	**22 05 36.0**	**-2.2**
DPC			*e*SN	**Sn**	**22 06 51.8**	**-7.9**
DPC			*ex*	x	22 07 05.1	
DPC			AMS	AMS	22 08 50.0	
	comp=E,700nm,10.9s					
DPC	**Dobruska-Polom**	**7.16 23**	*e*P	**Pn**	**22 05 36.0**	**-2.2**
DPC			*e*		22 07 05.1	
DPC			MLR	MLR		
	comp=Z,700nm,10.9s					
DPC	**Dobruska-Polom**	**7.16 23**	Pn	**Pn**	**22 05 36.0**	**-2.2**
BRG	**Berggiesshubel**	**7.17 10**	PN	**Pn**	**22 05 36.9**	**-1.3**
BRG			SN	**Sn**	**22 06 52.2**	**-7.5**
BRG			SG	**Sg**	**22 07 41.5**	**-1.7**
	comp=Z,59nm,1.2s					
	comp=N,688nm,12.2s					
	comp=E,527nm,7.6s					
	comp=Z,901nm,12.0s					
BRG	**Berggiesshubel**	**7.17 10**	P	**Pn**	**22 05 36.9**	**-1.3**
BRG					22 06 52.2	
BRG			smax	smax		
	comp=N,59nm,1.2s					
BRG			MLR	MLR		
	comp=N,688nm,12.2s					
BRG			MLR	MLR		
	comp=E,527nm,7.6s					
BRG			MLR	MLR		
	comp=Z,901nm,12.0s					
BRG	**Berggiesshubel**	**7.17 10**	P	**Pn**	**22 05 36.9**	**-1.3**
CAF	**Calviac**	**7.17 282**	*e*Pn	**Pn**	**22 05 37.9**	**-0.5**
CAF	**Calviac**	**7.17 282**	*e*Pn	**Pn**	**22 05 37.9**	**-0.5**
UPC	**Upice**	**7.22 21**	*e*PN	**Pn**	**22 05 37.6**	**-1.4**
UPC			*e*SN	**Sn**	**22 06 55.2**	**-5.9**
UPC			*ex*	x	22 07 12.4	
UPC			AMS	AMS	22 09 00.0	
	comp=Z,800nm,11.0s					
UPC	**Upice**	**7.22 21**	*e*P	**Pn**	**22 05 37.6**	**-1.4**
UPC			*e*		22 06 55.2	
UPC			MLR	MLR		
	comp=Z,800nm,11.0s					
UPC	**Upice**	**7.22 21**	Pn	**Pn**	**22 05 37.6**	**-1.4**
TCF	**Toulx Ste Croi**	**7.33 293**	*e*Pn	**Pn**	**22 05 40.7**	**+0.2**
TCF			*e*Sn	**Sn**	**22 07 00.0**	**-3.7**
	comp=Z,20nm,0.6s					
TCF	**Toulx Ste Croi**	**7.33 293**	*e*Pn	**Pn**	**22 05 40.7**	**+0.2**
OKC	**Ostrava-Krasne**	**7.35 33**	*e*PN	**Pn**	**22 05 40.8**	**+0.1**
OKC			AMS	AMS	22 08 50.0	
	comp=Z,600nm,12.6s					
OKC	**Ostrava-Krasne**	**7.35 33**	*e*P	**Pn**	**22 05 40.8**	**+0.1**
OKC	**Ostrava-Krasne**	**7.35 33**	Pn	**Pn**	**22 05 40.8**	**+0.1**
HYF	**Humbligny**	**7.39 301**	*e*Pn	**Pn**	**22 05 41.4**	**+0.1**
HYF	**Humbligny**	**7.39 301**	*e*Pn	**Pn**	**22 05 41.4**	**+0.1**
CLL	**Collm**	**7.51 5**	*e*Pn	**Pn**	**22 05 42.0**	**-0.9**
CLL			*e*		22 07 11.0	
CLL			*e*Sb	Sb	22 07 22.0	-11
CLL			*e*Sg	**Sg**	**22 07 54.0**	**-0.1**
CLL			*e*Lmax		22 08 18.0	
CLL	**Collm**	**7.51 5**	*e*P	**Pn**	**22 05 42.0**	**-0.9**
CLL	**Collm**	**7.51 5**	*e*Pn	**Pn**	**22 05 41.0**	**-1.9**
CLL	**Collm**	**7.51 5**	*e*P	**Pn**	**22 05 42.0**	**-0.9**
CLL	**Collm**	**7.51 5**	*e*Pn	**Pn**	**22 05 41.0**	**-1.9**
RJF	**Les Rejaudoux**	**7.60 285**	*e*Pn	**Pn**	**22 05 44.5**	**+0.3**
	SNR=1.0					
RJF	**Les Rejaudoux**	**7.60 285**	*e*Pn	**Pn**	**22 05 44.5**	**+0.3**
	SNR=1.0					
MEM	**Membach**	**7.89 331**	PN	**Pn**	**22 05 49.2**	**+1.1**
GIVF	**Givet**	**7.94 325**	*e*P	**Pn**	**22 05 53.0**	**+4.2**
BCLA	**Clavier**	**8.00 328**	PN	**Pn**	**22 05 52.0**	**+2.4**
BCLA			SN	**Sn**	**22 07 14.2**	**-5.8**
	comp=E,12nm,0.0s					
DOU	**Dourbes**	**8.03 324**	PN	Pn	22 05 55.3	+5.2
HGN	**Heimansgroeve**	**8.05 332**	*e*Pg	**Pn**	**22 05 52.5**	**+2.2**
HGN			*e*Sg	**Sn**	**22 07 16.7**	**-4.7**
HGN	**Heimansgroeve**	**8.05 332**	*e*Pg	**Pn**	**22 05 52.5**	**+2.2**
BAIF	**Baives**	**8.17 322**	*e*P	**Pn**	**22 05 55.1**	**+3.1**
	SNR=1.0					
BAIF	**Baives**	**8.17 322**	*e*P	**Pn**	**22 05 55.1**	**+3.1**
BAIF	**Baives**	**8.17 322**	*e*Pn	**Pn**	**22 05 55.1**	**+3.1**
KEST	**Kesra**	**8.34 195**	Pn	Pn	22 06 00.2	+5.8
	comp=E,0.5nm,0.3s,baz=321,slow=5.6,SNR=6.3					
KEST			Sn	**Sn**	**22 07 37.4**	**+8.6**
	baz=156,slow=20,SNR=1.9					
KEST			LR	LR	22 09 08.1	
	comp=E,247nm,20.3s,baz=312,slow=38					
EPF	**Esparros**	**8.50 269**	*e*Pn	**Pn**	**22 05 55.7**	**-0.8**
	SNR=1.0					
EPF	**Esparros**	**8.50 269**	*e*Pn	**Pn**	**22 05 55.7**	**-0.8**
	SNR=1.0					
MFF	**Saint Martin d**	**8.98 292**	*e*Pn	**Pn**	**22 06 03.3**	**+0.2**
	SNR=1.0					
MFF	**Saint Martin d**	**8.98 292**	*e*Pn	**Pn**	**22 06 03.3**	**+0.2**
	SNR=1.0					
ETSF	**Etsaut**	**9.17 268**	*e*Pn	**Pn**	**22 06 05.4**	**-0.4**
	SNR=1.0					
ETSF	**Etsaut**	**9.17 268**	*e*Pn	**Pn**	**22 06 05.4**	**-0.4**
	SNR=1.0					
ARR	**Arges**	**9.17 76**	⇓*i*P	**Pn**	**22 06 09.5**	**+3.7**
KWP	**Kalwaria Pacla**	**9.38 48**	⇓*i*P	Pn	22 06 14.0	+5.5
KWP	**Kalwaria Pacla**	**9.38 48**	⇓P	Pn	22 06 14.0	+5.5
HUMR	**Humele**	**9.38 81**	⇓*i*P	**Pn**	**22 06 10.3**	**+1.7**
VOIR		**9.47 76**	⇓*i*P	**Pn**	**22 06 13.8**	**+3.9**
VOIR		**9.47 76**	⇓P	**Pn**	**22 06 13.8**	**+3.9**
SJPF	**Ste Jean**	**9.62 270**	*e*Pn	**Pn**	**22 06 10.8**	**-1.0**
	SNR=1.0					
SJPF	**Ste Jean**	**9.62 270**	*e*P	**Pn**	**22 06 10.8**	**-1.0**
SJPF	**Ste Jean**	**9.62 270**	*e*Pn	**Pn**	**22 06 10.8**	**-1.0**
	SNR=1.0					
SJPF	**Ste Jean**	**9.62 270**	*e*Pn	**Pn**	**22 06 10.8**	**-1.0**
LDF	**La Druitiere**	**9.63 304**	*e*Pn	**Pn**	**22 06 11.7**	**-0.3**
	SNR=1.0					
LDF	**La Druitiere**	**9.63 304**	*e*Pn	**Pn**	**22 06 11.7**	**-0.3**
	SNR=1.0

	comp=Z,43nm,14.0s						
KIV	**Kislovodsk**	**22.08**	**79**	*e*P	**P**	**22 08 49.1**	**+0.5**
	comp=Z,18nm,1.4s						
KIV	**Kislovodsk**	**22.08**	**79**	*e*P	**P**	**22 08 49.1**	**+0.5**
	comp=Z,18nm,1.4s						
KVAR	**Kislovodsk Arr**	**22.09**	**79**	P	**P**	**22 08 49.1**	**+0.4**
	comp=Z,4.9nm,1.0s,baz=122,slow=12,SNR=5.1						
ASF	**Jabal al Asfar**	**22.75 112**		P	**P**	**22 08 58.4**	**+2.6**
	comp=Z,3.2nm,0.8s,baz=66,slow=0.8,SNR=6.4						
ZEI	**Tsey**	**23.19**	**81**	*e*P	**P**	**22 08 59.0**	**-1.5**
ZEI				pmax	pmax		
	comp=Z,12nm,0.9s						
ZEI	**Tsey**	**23.19**	**81**	*e*P	**P**	**22 08 59.0**	**-1.5**
	comp=Z,12nm,0.9s						
GNI	**Garni**	**24.55**	**87**	P	**P**	**22 09 15.3**	**+1.9**
	comp=Z,5.3nm,1.0s,baz=266,slow=22,SNR=6.6						
GNI	**Garni**	**24.55**	**87**	*e*P	**P**	**22 09 15.8**	**+2.4**
ARU	**Arti**	**31.78**	**50***c*	*i*P	**P**	**22 10 19.0**	**+1.4**
ARU						22 11 22.7	
ARU				S	**S**	**22 15 29.8**	**+2.2**
ARU				SS	**SnSn**	**22 17 16.4**	**+2.1**
ARU				pmax	pmax		
	comp=Z,6.0nm,1.7s						
ARU	**Arti**	**31.78**	**50**	*i*P	**P**	**22 10 19.0**	**+1.4**
	comp=Z,6.0nm,1.7s						
ARU				S	**S**	**22 15 29.8**	**+2.2**
TOA1	**Torodi Ar. Sit**	**31.82**	**199**	*e*P	**P**	**22 10 18.5**	**+0.1**
	comp=Z,7.8nm,1.4s						
TOA1	**Torodi Ar. Sit**	**31.82**	**199**	*e*P	**P**	**22 10 18.5**	**+0.1**
	comp=Z,7.8nm,1.4s						
TOA0	**Torodi Ar. Sit**	**31.83**	**199**	*e*P	**P**	**22 10 18.7**	**+0.3**
TOA0	**Torodi Ar. Sit**	**31.83**	**199**	*e*P	**P**	**22 10 18.7**	**+0.3**
TORD	**Torodi Ar. Bea**	**31.83**	**199**	P	**P**	**22 10 18.5**	**0.0**
	comp=Z,1.6nm,0.7s,baz=9.2,slow=5.2,SNR=8.7						
GEYT	**Alibeck**	**35.03**	**84**	P	**P**	**22 10 46.3**	**+0.1**
	comp=Z,1.2nm,0.6s,baz=271,slow=13,SNR=4.6						
BRVK	**Borovoye**	**38.77**	**55**⇑	*i*P	**P**	**22 11 18.5**	**+0.7**
BRVK				pmax	pmax		
	comp=Z,7.0nm,1.7s						
BRVK	**Borovoye**	**38.77**	**55**	*i*P	**P**	**22 11 18.5**	**+0.7**
	comp=Z,7.0nm,1.7s						
BRVK	**Borovoye**	**38.77**	**55**	*e*P	**P**	**22 11 18.6**	**+0.7**
	comp=Z,5.5nm,1.3s						
EKS2	**Erkin-Say**	**44.10**	**69**	*e*P	**P**	**22 12 03.4**	**+1.5**
EKS2				pmax	pmax		
	comp=Z,3.0nm,1.0s						
EKS2	**Erkin-Say**	**44.10**	**69**	*e*P	**P**	**22 12 03.4**	**+1.5**
	comp=Z,3.4nm,1.0s						
EKS2	**Erkin-Say**	**44.10**	**69**	*e*P	**P**	**22 12 03.4**	**+1.5**
	comp=Z,3.4nm,1.0s						
AAK	**Ala-Archa**	**44.60**	**69**⇑	*e*P	**P**	**22 12 06.8**	**+0.9**
AAK				pmax	pmax		
	comp=Z,7.0nm,1.3s						
AAK	**Ala-Archa**	**44.60**	**69**	*e*P	**P**	**22 12 06.8**	**+0.9**
	comp=Z,7.0nm,1.3s						
ZAA1	**Zalesovo Array**	**46.94**	**51**	*e*P	**P**	**22 12 23.0**	**-1.0**
ZAA1	**Zalesovo Array**	**46.94**	**51**	*e*P	**P**	**22 12 23.1**	**-1.0**
ZALV	**Zalesovo Beam**	**46.94**	**51**	P	**P**	**22 12 23.0**	**-1.0**
	comp=Z,0.4nm,0.4s,baz=287,slow=10,SNR=3.0						
MK31	**Makanchi Array**	**48.02**	**60**	*e*P	**P**	**22 12 33.1**	**+0.5**
MK31	**Makanchi Array**	**48.02**	**60**	*e*P	**P**	**22 12 33.1**	**+0.5**
MK31	**Makanchi Array**	**48.02**	**60**	*e*P	**P**	**22 12 33.1**	**+0.5**
MK32	**Makanchi Array**	**48.02**	**60**	*e*P	**P**	**22 12 32.7**	**+0.1**
MK32	**Makanchi Array**	**48.02**	**60**	*e*P	**P**	**22 12 32.7**	**+0.1**
MKAR	**Makanchi Array**	**48.02**	**60**	P	**P**	**22 12 32.7**	**+0.1**
	comp=Z,1.8nm,0.7s,baz=292,slow=6.2,SNR=16						
MKAR	**Makanchi Array**	**48.02**	**60**	*e*P	**P**	**22 12 33.1**	**+0.5**
MKAR	**Makanchi Array**	**48.02**	**60**	*e*P	**P**	**22 12 33.1**	**+0.5**
MKAR	**Makanchi Array**	**48.02**	**60**	*e*P	**P**	**22 12 33.1**	**+0.5**
MK01	**Makanchi Array**	**48.04**	**61**	*e*P	**P**	**22 12 32.5**	**-0.2**
MK01	**Makanchi Array**	**48.04**	**61**	*e*P	**P**	**22 12 32.5**	**-0.2**
TLY	**Talaya**	**58.21**	**47**⇑	*e*P	**P**	**22 13 48.8**	**+1.3**
TLY				pmax	pmax		
	comp=Z,3.0nm,1.0s						
TLY	**Talaya**	**58.21**	**47**	*e*P	**P**	**22 13 48.8**	**+1.3**
	comp=Z,3.0nm,1.0s						
SONA0	**Songino Array**	**61.81**	**50**	*e*P	**P**	**22 14 12.5**	**0.0**
	comp=Z,7.1nm,1.3s						
SONA0	**Songino Array**	**61.81**	**50**	*e*P	**P**	**22 14 12.5**	**0.0**
	comp=Z,7.1nm,1.3s						
SONM	**Songino Array**	**61.81**	**50**	P	**P**	**22 14 12.5**	**0.0**
	comp=Z,2.2nm,1.1s,baz=294,slow=7.4,SNR=12						
ULN	**Ulaanbaatar**	**62.16**	**49**⇓	*e*P	**P**	**22 14 14.0**	**-0.8**
ULN				pmax	pmax		
	comp=Z,7.0nm,2.5s						
ULN	**Ulaanbaatar**	**62.16**	**49**	*e*P	**P**	**22 14 14.0**	**-0.8**
	comp=Z,7.0nm,2.5s						
YKA	**Yellowknife Ar**	**65.72**	**336**	P	**P**	**22 14 38.8**	**+1.0**
	comp=Z,1.8nm,0.9s,baz=44,slow=6.8,SNR=9.7						
YKB5	**Yellowknife Ar**	**65.72**	**336**	*e*P	**P**	**22 14 38.8**	**+1.0**
YKB5	**Yellowknife Ar**	**65.72**	**336**	*e*P	**P**	**22 14 38.9**	**+1.0**
ILAR	**Eielson Array**	**70.47**	**351**	P	**P**	**22 15 10.2**	**+2.6**
	comp=Z,0.6nm,0.9s,baz=7.4,slow=6.8,SNR=4.7						
ILB	**Eielson Array**	**70.47**	**351**	*e*P	**P**	**22 15 10.2**	**+2.6**
ILB	**Eielson Array**	**70.47**	**351**	*e*P	**P**	**22 15 10.2**	**+2.6**
YSS	**Yuzh-Sakhalins**	**79.69**	**32**⇓	*i*P	**P**	**22 16 02.2**	**+1.1**
YSS				pmax	pmax		
	comp=Z,25nm,1.7s						
YSS	**Yuzh-Sakhalins**	**79.69**	**32**	*i*P	**P**	**22 16 02.2**	**+1.1**
	comp=Z,25nm,1.7s						

NIED ***24*** *22:05:00,39.°20N×142.°40E,h32km,Mw3.5 Best double couple: M0:2.35000×10^14 NP1:φs=312.00000°,δ32.00000°, λ-144.00000°. NP2:φs=190.00000°,δ72.00000°, λ-64.00000°.*
ISCJB ***24*** *22:05:14.3±1.2,39.°16N±0.°04×142.°49E±0.°07,h25km±7km, mb3.6/4,MS2.8/1,Error ellipse: s-maj=9.9km s-min=6.2km az=13.0*
JMA ***24*** *22:05:16.2±0.1,39.°18N×142.°39E,h30km±1km,M3.9*
JMA Felt I J1.
IDC ***24*** *22:05:18.3±3.0,39.°18N×142.°50E,h50km±27km,mb3.4/4, mb1 3.5/7,mb1mx3.2/45,mbtmp3.5/7,ML2.8/3,MS2.8/4, Ms1 2.8/4,ms1mx2.5/19,Error ellipse: s-maj=32.4km s-min=16.4km az=108.0*

ISC 24 22:05:16.2±2.0,39.°18N±0.°05×142.°39E±0.°09,h26km±13km, n26,σ1.958/27,mb3.6/4,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.57**	**260**	P	**Pb**	**22 05 27.4**	**-0.1**
OFUJ				S	**Sb**	**22 05 35.2**	**0.0**
MIYJ	**Miyakonagasawa**	**0.59**	**312**	P	**Pb**	**22 05 27.8**	**-0.1**
MIYJ				S	**Sb**	**22 05 35.7**	**-0.2**
JTH	**Tanohata**	**0.86**	**332**	P	**Pn**	**22 05 31.7**	**-0.9**
JOM	**Ohasama**	**0.90**	**289**	P	**Pn**	**22 05 32.8**	**-0.3**
JOM				S	**Sb**	**22 05 44.7**	**+0.1**
JMK	**Ichinoseki**	**0.94**	**256**	P	**Pn**	**22 05 33.1**	**-0.5**
JMK				S	**Sb**	**22 05 45.3**	**-0.4**
JIO	**Ouri**	**1.09**	**228**	P	**Pn**	**22 05 34.6**	**-1.1**
JIO				S	**Sn**	**22 05 47.6**	**-2.3**
JKZ	**Kuzumaki**	**1.14**	**315**	P	**Pn**	**22 05 36.7**	**+0.1**
JKZ				S	**Sn**	**22 05 51.2**	**-0.2**
JANG	**Nango**	**1.37**	**331**	P	**Pn**	**22 05 39.7**	**+0.1**
JANG				S	**Sn**	**22 05 56.8**	**0.0**
JRG	**Rokugo**	**1.38**	**280**	P	**Pb**	**22 05 40.5**	**-0.7**
JRG				S	**Sb**	**22 05 58.6**	**+0.2**
MJAR	**Matsushiro Arr**	**4.23**	**233**	P	**Pn**	**22 06 21.1**	**+2.1**
	2.1nm,0.3s,baz=40,slow=11,SNR=27						
MAT	**Matsushiro**	**4.23**	**233**	P	**Pn**	**22 06 21.0**	**+2.1**
MAT				S	**Sn**	**22 07 12.8**	**+5.3**
ASAJ	**Asahikawa**	**4.93**	**2**	P	**Pn**	**22 06 30.6**	**+2.0**
	0.4nm,0.3s,baz=163,slow=19,SNR=1.6						
ASAJ				S	**Sn**	**22 07 26.1**	**+1.3**
	0.8nm,0.3s,baz=117,slow=18,SNR=2.5						
USRK	**Ussuriysk Ar.**	**9.25**	**306**	P	**Pn**	**22 07 29.6**	**+1.8**
	0.1nm,0.3s,baz=96,slow=15,SNR=2.2						
USRK				LR	LR	22 10 56.9	
	comp=Z,50nm,18.2s,baz=124,slow=36						
JNU	**Nakatsue**	**11.09**	**240**	LR	LR	22 12 36.5	
	comp=Z,40nm,18.1s,baz=116,slow=39						
KLR	**Kul'dur**	**12.60**	**326**	LR	LR	22 13 06.5	
	comp=Z,32nm,19.1s,baz=190,slow=37						
MA2	**Magadan**	**21.10**	**12**	LR	LR	22 18 47.5	
	comp=Z,33nm,18.2s,baz=136,slow=38						
H11N2	**WAKE ISLAND Hy 28.68**	**125**		T	T	22 41 33.3	
	baz=318,slow=76,SNR=188						
H11N1	**WAKE ISLAND Hy 28.69**	**126**		T	T	22 41 34.0	
	baz=318,slow=76,SNR=170						
H11N3	**WAKE ISLAND Hy 28.70**	**125**		T	T	22 41 35.5	
	baz=318,slow=76,SNR=172						
H11S1	**WAKE ISLAND Hy 29.47**	**127**		T	T	22 42 37.9	
	baz=319,slow=76,SNR=15						
H11S3	**WAKE ISLAND Hy 29.47**	**127**		T	T	22 42 34.9	
	baz=319,slow=76,SNR=15						
H11S2	**WAKE ISLAND Hy 29.48**	**127**		T	T	22 42 34.3	
	baz=319,slow=76,SNR=13						
ZALV	**Zalesovo Beam**	**41.07**	**311**	P	**P**	**22 12 56.8**	**-0.5**
	0.8nm,0.4s,baz=77,slow=11,SNR=4.0						
MKAR	**Makanchi Array**	**43.66**	**300**	P	**P**	**22 13 18.8**	**+0.3**
	0.7nm,0.9s,baz=82,slow=12,SNR=3.8						
ILAR	**Eielson Array**	**47.28**	**33**	P	**P**	**22 13 45.8**	**-1.2**
	0.3nm,0.6s,baz=268,slow=6.0,SNR=4.2						
WRA	**Warramunga Arr**	**59.29**	**189**	P	**P**	**22 15 14.7**	**-0.9**
	0.5nm,0.5s,baz=6.5,slow=7.0,SNR=9.8						

KRNET ***24*** *22:16:46.3±0.1,40.°03N×71.°52E,h11km,mb2.5*
SOME ***24*** *22:16:48.3,40.°07N×71.°40E,h10km*

ISC 24 22:16:45.9±2.1,40.°06N±0.°09×71.°47E±0.°04,h10km±15km, n10,σ0.°90/19,11C-3D,Tajikistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BTK	**Batken**	**0.50**	**270**⇑	*e*P	**Pb**	**22 16 57.1**	**+0.3**
	baz=274						
BTK				⇑*e*S	**Sb**	**22 17 04.7**	**+0.5**
	baz=274						
OHH	**Osh**	**1.11**	**65**⇑	*e*P	**Pn**	**22 17 07.5**	**0.0**
	baz=62						
OHH				⇑*e*S	**Sn**	**22 17 22.9**	**0.0**
	baz=62						
ARSB	**Arslanbob**	**1.71**	**42**⇑	*e*P	**Pg**	**22 17 18.8**	**+0.1**
	baz=40						
ARSB				⇑*e*S	**Sg**	**22 17 42.5**	**+1.7**
	baz=40						
ARK	**Arkit**	**1.78**	**12**⇑	*e*P	**Pg**	**22 17 20.0**	**0.0**
	baz=11						
ARK				⇑*e*S	**Sg**	**22 17 44.2**	**+1.2**
	baz=11						
IUG	**Iuzhnay**	**2.35**	**333**	*e*P	**Pg**	**22 17 30.9**	**0.0**
	9.5nm,0.3s						
IUG				*e*S	**Sg**	**22 18 01.9**	**+0.5**
	38nm,0.6s						
MNAS	**Manas**	**2.55**	**17**⇓	*e*P	**Pb**	**22 17 31.7**	**-0.1**
	baz=16						
MNAS				⇓*e*S	**Sb**	**22 18 04.7**	**+1.5**
	baz=16						
ARLS	**Aral**	**2.81**	**49**⇑	*e*P	**Pb**	**22 17 34.8**	**-1.5**
	baz=48						
ARLS				⇑*e*S	**Sb**	**22 18 10.6**	**-0.2**
	baz=48						
MRKS	**Merke**	**2.99**	**26**	*e*P	**Pg**	**22 17 42.9**	**-0.3**
	3.7nm,1.1s						
MRKS				*e*S	**Sg**	**22 18 21.9**	**0.0**
	4.0nm,0.4s						
BRLS	**Borolday**	**3.04**	**334**	*e*P	**Pg**	**22 17 43.1**	**-0.9**
	0.8nm,0.5s						
BRLS				*e*S	**Sg**	**22 18 22.6**	**-0.8**
	5.4nm,0.3s						
KK31	**Karatay Array**	**3.12**	**347**	⇑Pn	**Pg**	**22 17 44.6**	**-1.1**
	0.3nm,0.3s,baz=165,slow=15,SNR=4.4						
KK31				⇓Lg	Lg	22 18 25.3	
	0.9nm,0.3s,baz=160,slow=26,SNR=8.7						

ISK ***24*** *22:17:04.3,38.°99N×29.°21E,h15km,MD2.7*
ISCJB ***24*** *22:17:05.5±0.5,39.°09N±0.°04×29.°03E±0.°04,h6km±7km, Error ellipse: s-maj=6.0km s-min=4.9km az=176.5*
DDA ***24*** *22:17:05.2,39.°10N×29.°03E,h7km,Md2.4*
CSEM ***24*** *22:17:05.6±0.2,39.°09N×29.°05E,h8km,MD2.4,Error ellipse: s-maj=5.5km s-min=5.1km az=95.0*

ISC 24 22:17:04.9±1.0,39.°07N±0.°03×29.°06E±0.°03,h13km±9km, n28,σ0.°53/38,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**265**	P	**Pg**	**22 17 10.5**	**-0.1**
DEMI				S	**Sg**	**22 17 14.1**	**-0.3**
DEMI	**Demirci**	**0.27**	**265**	*i*P	**Pg**	**22 17 10.5**	**-0.1**
DEMI				*i*S	**Sg**	**22 17 14.1**	**-0.3**
GDZ	**Gediz**	**0.33**	**86**	P	**Pb**	**22 17 12.5**	**-0.1**
GDZ				S	**Sb**	**22 17 17.7**	**-0.2**
GDZ	**Gediz**	**0.33**	**86**	*i*P	**Pb**	**22 17 12.5**	**-0.1**
GDZ				*i*S	**Sb**	**22 17 17.7**	**-0.2**
TVSB	**Tavsanli**	**0.49**	**39**	*e*PG	**Pg**	**22 17 14.6**	**0.0**
TVSB	**Tavsanli**	**0.49**	**39**	*e*Pg	**Pg**	**22 17 14.6**	**0.0**
DST	**Dursunbey**	**0.64**	**327**	*e*PG	**Pn**	**22 17 19.6**	**-0.1**
DST	**Dursunbey**	**0.64**	**327**	*e*Pg	**Pn**	**22 17 19.6**	**-0.1**
KULA	**Kula-Manisa**	**0.64**	**210**	*e*PG	**Pg**	**22 17 17.4**	**+0.1**
KULA				*e*SG	**Sb**	**22 17 26.6**	**-0.2**
KULA	**Kula-Manisa**	**0.64**	**210**	*e*Pg	**Pg**	**22 17 17.4**	**+0.1**
KULA				*e*Sg	**Sb**	**22 17 26.6**	**-0.2**
DURS	**Dursunbey**	**0.70**	**319**	P	**Pb**	**22 17 18.7**	**-0.3**
DURS	**Dursunbey**	**0.70**	**319**	*i*P	**Pb**	**22 17 18.7**	**-0.3**
KHAL	**Karahalli**	**0.77**	**154**	P	**Pn**	**22 17 22.2**	**+0.6**
KHAL				S	**Sn**	**22 17 32.6**	**-0.6**
KHAL	**Karahalli**	**0.77**	**154**	*i*P	**Pn**	**22 17 22.2**	**+0.6**
KHAL				*i*S	**Sn**	**22 17 32.6**	**-0.6**
BALB	**Balikesir**	**1.08**	**302**	*e*PN	**Pg**	**22 17 27.3**	**+1.6**
BALB	**Balikesir**	**1.08**	**302**	*e*Pn	**Pg**	**22 17 27.3**	**+1.6**
IZI	**Iznik**	**1.30**	**14**	*e*PN	**Pg**	**22 17 29.6**	**-0.3**
IZI	**Iznik**	**1.30**	**14**	*e*Pn	**Pg**	**22 17 29.7**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.30**	**354**	*e*PN	**Pg**	**22 17 30.0**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.30**	**354**	*e*Pn	**Pg**	**22 17 30.0**	**+0.1**
KCTX	**Karacabey (Bur**	**1.31**	**336**	*e*PN	**Pg**	**22 17 30.2**	**+0.1**
KCTX	**Karacabey (Bur**	**1.31**	**336**	*e*Pn	**Pg**	**22 17 30.2**	**+0.1**
BORA	**Eskisehir**	**1.35**	**53**	P	**Pg**	**22 17 31.0**	**+0.2**
BORA				S	**Sg**	**22 17 49.3**	**+1.0**
BORA	**Eskisehir**	**1.35**	**53**	*i*P	**Pg**	**22 17 31.0**	**+0.2**
BORA				*i*S	**Sg**	**22 17 49.3**	**+1.0**
ARMT	**Armutlu**	**1.50**	**354**	*e*PN	**Pb**	**22 17 32.4**	**-0.2**
ARMT	**Armutlu**	**1.50**	**354**	*e*Pn	**Pb**	**22 17 32.4**	**-0.2**
GULT	**Gulveren**	**1.76**	**39**	*e*PN	**Pn**	**22 17 35.0**	**-0.2**
GULT	**Gulveren**	**1.76**	**39**	*e*Pn	**Pn**	**22 17 35.0**	**-0.2**

CSEM ***24*** *22:17:36.8,37.°98N×23.°36E,h13km,ML0.7/2*

ATH 24 22:17:36.8,37.°98N×23.°36E,h13km±6km,ML0.7/2,Error ellipse: s-maj=6.3km s-min=0.7km az=188.0,Southern Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ATH	**Athens Observa**	**0.28**	**91**	P	Pg	22 17 42.4	-0.2
ATH				S	Sg	22 17 47.0	+0.5
LTK	**Loutraki**	**0.32**	**278**	P	Pg	22 17 43.0	-0.3
LTK				S	Sg	22 17 48.0	+0.4
LTK	**Loutraki**	**0.32**	**278**	P	Pg	22 17 43.0	-0.3
LTK				S	Sg	22 17 48.0	+0.4
LTK				AML	AML	22 17 53.7	
	comp=Z,16μm,0.4s						
LTK				AML	AML	22 17 53.7	
	comp=N,32μm,0.3s						
VLY	**Voula,Athens**	**0.36**	**110**	P	Pg	22 17 44.0	-0.1
VLY				S	Sg	22 17 49.3	+0.3
VLY	**Voula,Athens**	**0.36**	**110**	P	Pg	22 17 44.0	-0.1
VLY				S	Sg	22 17 49.3	+0.3
VLY				AML	AML	22 17 50.7	
	comp=N,49μm,0.2s						
VLY				AML	AML	22 17 50.8	
	comp=E,35μm,0.2s						
PTL	**Penteli**	**0.40**	**80**	P	Pg	22 17 44.8	0.0
PTL	**Penteli**	**0.40**	**80**	P	Pg	22 17 44.8	0.0
KRND	**KRANIDI**	**0.62**	**196**	P	Pg	22 17 49.1	+0.3
KRND	**KRANIDI**	**0.62**	**196**	P	Pg	22 17 49.1	+0.3
LKR	**Lokris**	**0.73**	**337**	P	Pg	22 17 50.8	-0.2
LKR	**Lokris**	**0.73**	**337**	P	Pg	22 17 50.8	-0.2
KLV	**Kalavryta, Ach**	**0.96**	**274**	P	Pg	22 17 54.9	-0.5
KLV	**Kalavryta, Ach**	**0.96**	**274**	P	Pg	22 17 54.9	-0.4
TRIP	**Tripoli**	**0.98**	**243**	P	Pg	22 17 55.5	-0.1
TRIP	**Tripoli**	**0.98**	**243**	P	Pg	22 17 55.5	-0.2

ROM 24 22:24:30.2±0.1,42.°52N×13.°22E,h6km,Md1.6/3,Ml0.7/1, Error ellipse: s-maj=0.9km s-min=0.4km az=167.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RM33	**Pellescritta (**	**0.01**	**214**	Pg	Pg	22 24 31.6	+0.2
RM33				Sg	Sg	22 24 32.3	0.0
	88nm,0.2s						
RM32	**Poggio Cancell**	**0.08**	**44**	Pg	Pg	22 24 32.2	0.0
RM32				Sg	Sg	22 24 33.8	+0.3
	18nm,0.2s						
LNSS	**Leonessa**	**0.16**	**304**	Pg	Pg	22 24 34.0	+0.5
LNSS				Sg	Sg	22 24 36.7	+1.0
	17nm,0.3s						

CSEM ***24*** *22:25:14.8,43.°89N×12.°02E,h7km,MD2.5/12*

ROM 24 22:25:14.8±0.2,43.°89N×12.°02E,h7km±1km,Md2.5/12, Ml1.8/8,Error ellipse: s-maj=2.4km s-min=0.9km az=30.0,Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFI	**Santa Sofia**	**0.13**	**277**	Pg	Pg	22 25 18.2	+0.6
SFI				Sg	Sg	22 25 20.5	+1.0
SFI	**Santa Sofia**	**0.13**	**277**	Pg	Pg	22 25 18.2	+0.6
SFI				Sg	Sg	22 25 20.5	+1.0
ASQU	**Asqua**	**0.19**	**241**	Pg	Pg	22 25 19.3	+0.6
ASQU				Sg	Sg	22 25 22.6	+1.3
ASQU	**Asqua**	**0.19**	**241**	Pg	Pg	22 25 19.3	+0.6
ASQU				Sg	Sg	22 25 22.6	+1.3
VMG	**Vicchio**	**0.35**	**282**	Pg	Pb	22 25 22.6	-0.8
VMG				Sg	Sb	22 25 28.4	-0.7
	320nm,0.3s						
VMG	**Vicchio**	**0.35**	**282**	Pg	Pb	22 25 22.6	-0.8
VMG				Sg	Sb	22 25 28.4	-0.7
	320nm,0.3s						
BADI	**Badiali**	**0.41**	**157**	Pg	Pg	22 25 23.5	+0.7
BADI				Sg	Sb	22 25 30.1	-0.8
	120nm,0.4s						
BADI	**Badiali**	**0.41**	**157**	Pg	Pg	22 25 23.5	+0.7
BADI				Sg	Sb	22 25 30.1	-0.8
	120nm,0.4s						
SEI	**Scarperia**	**0.51**	**289**	Pg	Pg	22 25 25.1	+0.5
SEI				Sg	Sb	22 25 33.3	-0.3
	385nm,0.2s						
SEI	**Scarperia**	**0.51**	**289**	Pg	Pg	22 25 25.1	+0.5
SEI				Sg	Sb	22 25 33.3	-0.3
	385nm,0.2s						
PIEI	**Pieia**	**0.51**	**133**	Pg	Pg	22 25 25.1	+0.4
PIEI				Sg	Sb	22 25 33.5	-0.3
	26nm,0.3s						
PIEI	**Pieia**	**0.51**	**133**	Pg	Pg	22 25 25.1	+0.4
PIEI				Sg	Sb	22 25 33.5	-0.3
	26nm,0.3s						
ATPC	**Poggio Castell**	**0.52**	**142**	Pg	Pg	22 25 25.2	+0.4
ATPC				Sg	Sb	22 25 33.8	-0.1
	75nm,0.4s						
ATPC	**Poggio Castell**	**0.52**	**142**	Pg	Pg	22 25 25.2	+0.4
ATPC				Sg	Sb	22 25 33.8	-0.1
	75nm,0.4s						
ATVO	**AVT- Monte Val**	**0.58**	**151**	Pg	Pg	22 25 26.5	+0.5
	62nm,0.6s						
ATVO	**AVT- Monte Val**	**0.58**	**151**	Pg	Pg	22 25 26.5	+0.5
	62nm,0.6s						
FSSB	**Fossombrone**	**0.58**	**110**	Pg	Pg	22 25 26.5	+0.5
FSSB				Sg	Sb	22 25 36.1	+0.3
FSSB	**Fossombrone**	**0.58**	**110**	Pg	Pg	22 25 26.5	+0.5
FSSB				Sg	Sb	22 25 36.1	+0.3
FRON	**Frontone**	**0.63**	**126**	Pg	Pb	22 25 27.6	-0.6
FRON				Sg	Sb	22 25 37.4	+0.2
	27nm,0.5s						
FRON	**Frontone**	**0.63**	**126**	Pg	Pb	22 25 27.6	-0.6
FRON				Sg	Sb	22 25 37.4	+0.2
	27nm,0.5s						
SSFR	**Montelago di S**	**0.71**	**129**	Pg	Pg	22 25 28.6	0.0
	46nm,0.3s						
SSFR	**Montelago di S**	**0.71**	**129**	Pg	Pg	22 25 28.6	0.0
	46nm,0.3s						
ATTE	**AVT- Monte Tez**	**0.73**	**161**	Pg	Pg	22 25 29.1	+0.2
	42nm,0.5s						
ATTE	**AVT- Monte Tez**	**0.73**	**161**	Pg	Pg	22 25 29.1	+0.2
	42nm,0.5s						
FROS	**Frosini**	**0.93**	**223**	Pg	Pb	22 25 33.2	+0.1
	68nm,1.4s						
FROS	**Frosini**	**0.93**	**223**	Pg	Pb	22 25 33.2	+0.1
	68nm,1.4s						

CSEM ***24*** *22:36:58.4±0.1,43.°90N×11.°95E,h5km,ML2.8/11,Error ellipse: s-maj=2.7km s-min=2.0km az=28.0*
ISCJB ***24*** *22:36:58.8±0.2,43.°88N±0.°02×11.°93E±0.°02,h23km±3km, Error ellipse: s-maj=3.8km s-min=2.5km az=18.0*
ROM ***24*** *22:36:58.3±0.1,43.°87N×12.°01E,h4km±1km,Md2.9/19, Ml2.5/10,Error ellipse: s-maj=1.3km s-min=0.7km az=25.0*
GEN ***24*** *22:36:58.2,43.°89N×11.°99E,h4km,ML2.4*
IASPEI ***24*** *22:36:58.7±0.8,43.°85N±0.°03×11.°94E±0.°02,h13km±5km, Error ellipse: s-maj=4.2km s-min=2.3km az=29.7,GT5 selection from ISC bulletin GT5 identified by Bond˙jr and McLaughlin (2009) selection criteria Bond˙jr and McLaughlin, A new ground truth data set for seismic studies, Seism. Res. Let., 80, 465-472, 2009*
LDG ***24*** *22:36:59.7±0.1,43.°87N×11.°95E,h2km,Ml2.7/9,Error ellipse: s-maj=3.9km s-min=2.4km az=47.0*

ISC 24 22:36:58.7±0.7,43.°85N±0.°02×11.°93E±0.°02,h14km±5km, n94,σ1.905/146,Central Italy

| Code | Station Name | Δ° | AZ° | Phase ID Op | ISC | Time

SSFR			Sg	Sb	22 37 23.5	0.0
	176nm,0.1s					
SSFR	**Montelago di S**	**0.74 124**	Pg	Pg	22 37 12.3	-0.9
SSFR			Sg	Sb	22 37 23.5	0.0
	176nm,0.1s					
FROS	**Frosini**	**0.85 222**	Pg	Pn	22 37 16.3	0.0
FROS			Sg	Sn	22 37 28.5	-0.1
	312nm,0.9s					
FROS	**Frosini**	**0.85 222**	Pg	Pn	22 37 16.3	0.0
FROS			Sg	Sn	22 37 28.5	-0.1
	312nm,0.9s					
SNTG	**Esanatoglia**	**0.94 129**	Pg	Pg	22 37 16.5	-0.5
SNTG	**Esanatoglia**	**0.94 129**	Pg	Pg	22 37 16.5	-0.5
SACS	**San Casciano d**	**1.00 181**	Pg	Pn	22 37 18.7	+0.3
	141nm,0.7s					
MAIM	**Mastiano**	**1.04 274**	Pg	Pn	22 37 19.2	+0.3
	96nm,0.7s					
MAIM	**Mastiano**	**1.04 274**	P	Pb	22 37 18.2	-0.3
MAIM	**Mastiano**	**1.04 274**	Pg	Pn	22 37 19.2	+0.3
	96nm,0.7s					
MAIM			S	Sb	22 37 31.6	-0.5
TRIF	**Trifonti**	**1.05 226**	Pg	Pn	22 37 19.4	+0.4
	64nm,0.6s					
TRIF	**Trifonti**	**1.05 226**	Pg	Pn	22 37 19.4	+0.4
	64nm,0.6s					
ARCI	**Arcidosso**	**1.05 199**	Pg	Pg	22 37 19.2	+0.2
ARCI	**Arcidosso**	**1.05 199**	Pg	Pg	22 37 19.2	+0.2
SASS	**Sassa**	**1.08 237**	Pg	Pn	22 37 19.8	+0.4
	82nm,1.3s					
SASS	**Sassa**	**1.08 237**	Pg	Pn	22 37 19.8	+0.4
	82nm,1.3s					
SARO	**Sassorosso**	**1.15 287**	P	Pb	22 37 19.9	-0.6
SARO			S	Sb	22 37 34.6	-0.7
ADRI	**Adria, Italy**	**1.19 3**	*e*Pg	Pg	22 37 22.4	+0.8
ADRI			*e*Sg	Sn	22 37 40.8	+4.1
MARN	**Marana (Italy)**	**1.86 344**	*e*Pn	Pn	22 37 30.5	+0.4
MARN	**Marana (Italy)**	**1.86 344**	*e*Pn	Pn	22 37 30.5	+0.4
CGRP	**Cima Grappa**	**2.03 357**	*e*Pn	Pn	22 37 32.5	-0.1
CGRP			*e*Sn	Sn	22 37 58.5	+0.6
CGRP	**Cima Grappa**	**2.03 357**	*e*Pn	Pn	22 37 32.5	-0.1
CGRP			*e*Sn	Sn	22 37 58.5	+0.6
DDS	**Dosso del Somm**	**2.10 346**	*e*Pn	Pn	22 37 33.6	+0.1
DDS	**Dosso del Somm**	**2.10 346**	*e*Pn	Pn	22 37 33.6	+0.1
NVLJ	**Novalja**	**2.23 70**	*i* Pn	Pn	22 37 34.6	-0.6
NVLJ			Sn	Sn	22 38 03.0	+0.5
NVLJ	**Novalja**	**2.23 70**	*i* Pn	Pn	22 37 34.5	-0.6
NVLJ			Sn	Sn	22 38 02.9	+0.5
PGF	**Pioggiola**	**2.51 240**	*e*Pn	Pn	22 37 40.0	+0.9
PGF			*e*Sn	Sn	22 38 10.1	+0.5
	5.0nm,0.4s					
PGF	**Pioggiola**	**2.51 240**	*e*Pn	Pn	22 37 40.0	+0.9
PGF			*e*Sn	Sn	22 38 10.1	+0.5
	2.5nm,0.4s					
BAD	**Bernadia**	**2.56 21**	*e*Pn	Pn	22 37 39.5	-0.3
BAD	**Bernadia**	**2.56 21**	*e*Pn	Pn	22 37 39.5	-0.3
OZOL	**Ozolo**	**2.63 347**	*e*Pn	Pn	22 37 41.0	+0.2
OZOL	**Ozolo**	**2.63 347**	*e*Pn	Pn	22 37 41.0	+0.2
UDBI	**Udbina**	**2.84 75**	*e*Pn	Pn	22 37 44.4	+0.8
UDBI	**Udbina**	**2.84 75**	*e*Pn	Pn	22 37 44.4	+0.8
ABTA	**Abfaltersbach**	**2.92 8**	*i* Pn	Pn	22 37 45.3	+0.4
ABTA	**Abfaltersbach**	**2.92 8**	Pn	Pn	22 37 45.3	+0.4
OBKA	**Obir**	**3.24 34**	*e*Pn	Pb	22 37 57.6	+1.7
	3.3nm,0.4s					
OBKA			*i* Sg	Sg	22 38 44.4	+1.7
	19nm,0.5s					
SBF	**Sospel**	**3.25 272**	*e*Pn	Pn	22 37 50.0	+0.7
SBF			*e*Sn	Sn	22 38 27.4	-0.5
	20nm,0.7s					
SBF	**Sospel**	**3.25 272**	*e*Pn	Pn	22 37 50.0	+0.7
SBF			*e*Sn	Sn	22 38 27.4	-0.5
	9.8nm,0.7s					
DAVA	**Damuels**	**3.73 338**	*i* Pn	Pb	22 38 02.4	-1.9
	3.4nm,0.4s					
DAVA			*i* Sn	Sn	22 38 44.8	+5.1
	4.6nm,0.3s					
FRF	**La Foret Royal**	**3.84 267**	*e*Pn	Pn	22 37 58.0	+0.6
FRF			*e*Sn	Sn	22 38 41.6	-0.7
	1.9nm,0.3s					
FRF	**La Foret Royal**	**3.84 267**	*e*Pn	Pn	22 37 58.0	+0.6
FRF			*e*Sn	Sn	22 38 41.6	-0.7
	0.9nm,0.3s					
LMR	**La Mourre**	**3.97 264**	*e*Pn	Pn	22 37 59.8	+0.6
LMR			*e*Sn	Sn	22 38 44.8	-0.7
	1.3nm,0.3s					
LMR	**La Mourre**	**3.97 264**	*e*Pn	Pn	22 37 59.8	+0.6
LMR			*e*Sn	Sn	22 38 44.8	-0.7
	0.6nm,0.3s					
LPG	**La Plagne**	**4.05 296**	*e*Pn	Pn	22 38 00.5	+0.1
LPG			*e*Sn	Sn	22 38 45.9	-1.8
	9.0nm,0.8s					
LPG	**La Plagne**	**4.05 296**	*e*Pn	Pn	22 38 00.5	+0.1
LPG			*e*Sn	Sn	22 38 45.9	-1.8
	4.5nm,0.8s					
LPL	**La Plagne**	**4.07 296**	*e*Pn	Pn	22 38 00.6	0.0
LPL			*e*Sn	Sn	22 38 46.2	-1.9
	1.8nm,0.3s					
LPL	**La Plagne**	**4.07 296**	*e*Pn	Pn	22 38 00.6	0.0
LPL			*e*Sn	Sn	22 38 46.2	-1.9
	0.9nm,0.3s					
ORIF	**Oris-en-Rattie**	**4.47 286**	*e*P	Pn	22 38 10.6	+4.5
ORIF	**Oris-en-Rattie**	**4.47 286**	*e*P	Pn	22 38 10.6	+4.5
SMRF	**Simiane la Rot**	**4.59 274**	*e*Pn	Pn	22 38 08.1	+0.3
SMRF	**Simiane la Rot**	**4.59 274**	*e*Pn	Pn	22 38 08.1	+0.3
CABF	**La Chapelle**	**4.97 306**	*e*P	Pn	22 38 16.4	+3.5
CABF	**La Chapelle**	**4.97 306**	*e*P	Pn	22 38 16.4	+3.5
VIVF	**Saint-Julien-l**	**5.30 283**	*e*P	Pn	22 38 21.8	+4.3
VIVF	**Saint-Julien-l**	**5.30 283**	*e*P	Pn	22 38 21.8	+4.3
HINF	**Hinteralfeld**	**5.32 320**	*e*Pn	Pn	22 38 18.2	+0.5
HINF			*e*Sn	Sn	22 39 16.2	-2.6
	4.0nm,0.4s					
HINF	**Hinteralfeld**	**5.32 320**	*e*Pn	Pn	22 38 18.2	+0.5
HINF			*e*Sn	Sn	22 39 16.2	-2.6
	2.0nm,0.4s					
KHC	**Kasperske Hory**	**5.40 12**	*e*PN	Pn	22 38 20.0	+1.2
KHC			*e*SN	Sn	22 39 19.5	-1.3
KHC	**Kasperske Hory**	**5.40 12**	Pn	Pn	22 38 20.0	+1.2
KHC			Sn	Sn	22 39 19.5	-1.3
CDF	**Champ du Feu**	**5.59 326**	*e*Pn	Pn	22 38 22.5	+1.0
CDF			*e*Sn	Sn	22 39 22.8	-2.7
	2.2nm,0.4s					
CDF	**Champ du Feu**	**5.59 326**	*e*Pn	Pn	22 38 22.5	+1.0
CDF			*e*Sn	Sn	22 39 22.8	-2.7
	1.1nm,0.4s					
HAU	**Haudompre**	**5.69 319**	*e*Pn	Pn	22 38 23.0	+0.2
HAU			*e*Sn	Sn	22 39 24.5	-3.5
	6.4nm,0.4s					
HAU	**Haudompre**	**5.69 319**	*e*Pn	Pn	22 38 23.0	+0.2
HAU			*e*Sn	Sn	22 39 24.5	-3.5
	3.2nm,0.4s					
LOR	**Lormes**	**6.62 304**	*e*Pn	Pn	22 38 36.1	+0.6
LOR	**Lormes**	**6.62 304**	*e*Pn	Pn	22 38 36.1	+0.6
MTLF	**Montolieu**	**7.07 269**	*e*Pn	Pn	22 38 42.5	+0.8
MTLF	**Montolieu**	**7.07 269**	*e*Pn	Pn	22 38 42.5	+0.8

NIED ***24*** *22:37:00,37°40N×141°50E,h44km,Mw4.2 Best double couple: M0 2.58000×10^15 NP1:φs 179.00000°,δ54.00000°, λ-42.00000°. NP2:φs 297.00000°,δ58.00000°, λ-135.00000°.*
ISCJB ***24*** *22:37:51.3±0.6,37°36N±0°03×141°64E±0°06,h41km±5km, mb4.2/24,MS3.3/9,Error ellipse: s-maj=7.6km s-min=4.0km az=12.2*
JMA ***24*** *22:37:53.2±0.1,37°44N×141°51E,h42km±2km,M4.3*
JMA Felt III J1.
IDC ***24*** *22:37:54.0±0.5,37°38N×141°38E,h42km±3km,mb3.8/18, mb1 4.0/22,mb1mx3.9/41,mbtmp4.1/22,ML3.6/4,MS3.2/16, Ms1 3.3/16,ms1mx3.0/53,Error ellipse: s-maj=13.6km s-min=9.2km az=105.0*
NEIC ***24*** *22:37:53.3±0.8,37°40N×141°59E,h38km±7km,mb4.5/4, Error ellipse: s-maj=9.5km s-min=6.9km az=111.0*
NEIC Recorded [3 JMA] in Fukushima.
ISC 24 22:37:53.1±0.5,37°36N±0°04×141°64E±0°06,h41km±4km, h40km:pP-P,n68,σ1§71/82,mb4.1/24,MS3.4/9,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.61**	**271**	P	**Pn**	**22 38 04.1**	**-1.3**
JFK				*e*S	**Sn**	**22 38 11.6**	**-2.6**
ONAJ	**Iwakimizuishiy**	**0.72**	**249**	P	**Pn**	**22 38 06.0**	**-0.9**
ONAJ				S	**Sn**	**22 38 15.0**	**-1.8**
JMM	**Marumori**	**0.84**	**307**	P	**Pn**	**22 38 06.8**	**-1.7**
JMM				S	**Sn**	**22 38 16.4**	**-3.3**
JFT	**Otama**	**1.05**	**279**	P	**Pn**	**22 38 10.7**	**-0.7**
JFT				S	**Sn**	**22 38 22.9**	**-1.9**
JIO	**Ouri**	**1.12**	**348**	P	**Pn**	**22 38 11.0**	**-1.3**
JIO				S	**Sn**	**22 38 23.2**	**-3.3**
JHO	**Hitachi**	**1.14**	**229**	P	**Pn**	**22 38 11.8**	**-0.8**
JHO				S	**Sn**	**22 38 25.8**	**-1.1**
JOU	**Okura**	**1.27**	**323**	P	**Pn**	**22 38 13.2**	**-1.2**
JOU				S	**Sn**	**22 38 28.4**	**-1.8**
JYS	**Shiratake**	**1.52**	**305**	P	**Pn**	**22 38 16.8**	**-1.0**
JFY	**Yanaizu**	**1.54**	**272**	P	**Pn**	**22 38 17.6**	**-0.6**
JMK	**Ichinoseki**	**1.63**	**348**	P	**Pn**	**22 38 18.4**	**-0.9**
MJAR	**Matsushiro Arr**	**2.87**	**255**	P	**Pn**	**22 38 35.2**	**-1.1**
	33nm,0.3s,baz=61,slow=12,SNR=123						
MJAR				LR	LR	22 39 55.1	
	comp=Z,514nm,18.2s,baz=70,slow=46						
MAJO	**Matsushiro**	**2.87**	**255**	*e*Pn	**Pn**	**22 38 36.9**	**+0.6**
MAT	**Matsushiro**	**2.87**	**255**	P	**Pn**	**22 38 37.1**	**+0.7**
MAT				S	**Sn**	**22 39 12.9**	**+3.2**
INU	**Inuyama**	**4.24**	**243**	*e*Pn	**Pn**	**22 38 56.8**	**+1.7**
JHJ2	**Mitsune**	**4.49**	**200**	*e*Pn	**Pn**	**22 39 00.1**	**+1.4**
JHJ2				*e*Sn	**Sn**	**22 39 49.5**	**-0.1**
JHJ	**Hachijo jima 2**	**4.49**	**200**	P	**Pn**	**22 38 58.1**	**-0.6**
	78nm,0.3s,baz=75,slow=18,SNR=7.6						
JHJ				S	**Sn**	**22 39 49.3**	**-0.4**
	157nm,0.3s,baz=109,slow=23,SNR=8.0						
JHJ				LR	LR	22 41 01.0	
	comp=Z,309nm,18.5s,baz=110,slow=42						
ERM	**Erimo**	**4.80**	**14**	*e*Pn	**Pn**	**22 39 01.9**	**-0.9**
ERM				*e*Sn	**Sn**	**22 39 59.8**	**+2.7**
ASAJ	**Asahikawa**	**6.79**	**6**	P	**Pn**	**22 39 28.1**	**-2.1**
	1.8nm,0.3s,baz=195,slow=11,SNR=7.9						
ASAJ				S	**Sn**	**22 40 46.0**	**-0.2**
	1.0nm,0.3s,baz=189,slow=19,SNR=2.3						
ASAJ	**Asahikawa**	**6.79**	**6**	*e*Pn	**Pn**	**22 39 27.8**	**-2.4**
ASAJ				S	**Sn**	**22 40 46.0**	**-0.2**
JNU	**Nakatsue**	**9.76**	**248**	P	**Pn**	**22 40 09.9**	**-1.1**
	0.2nm,0.3s,baz=82,slow=19,SNR=1.9						
JNU				LR	LR	22 44 27.5	
	comp=Z,160nm,19.3s,baz=115,slow=41						
USRK	**Ussuriysk Ar.**	**10.01**	**316**	P	**Pn**	**22 40 15.8**	**+1.6**
	0.2nm,0.3s,baz=136,slow=15,SNR=5.1						
USRK				LR	LR	22 43 50.8	
	comp=Z,122nm,18.0s,baz=125,slow=36						
CBIJ	**Chichi jima**	**10.24**	**177**	*e*Pn	**Pn**	**22 40 16.6**	**-0.9**
CBIJ				*e*Sn	**Sn**	**22 42 04.8**	**-6.2**
JCJ	**Chichijima**	**10.24**	**177**	P	**Pn**	**22 40 16.2**	**-1.4**
	9.4nm,0.3s,baz=266,slow=22,SNR=5.9						
JCJ				S	**Sn**	**22 42 04.8**	**-6.2**
	17nm,0.3s,baz=275,slow=22,SNR=6.4						
KSRS	**Korea Array**	**10.91**	**275**	P	**Pn**	**22 40 29.3**	**+2.6**
	0.3nm,0.3s,baz=90,slow=14,SNR=16						
KSRS				LR	LR	22 44 24.7	
	comp=Z,82nm,21.9s,baz=90,slow=36						
KSAR	**Wonju Array Be**	**10.95**	**275**	P	**Pn**	**22 40 29.3**	**+2.2**
KLR	**Kul'dur**	**13.87**	**332**	P	**P**	**22 41 12.5**	**-1.9**
	0.1nm,0.3s,baz=120,slow=13,SNR=4.1						
KLR				LR	LR	22 46 15.3	
	comp=Z,112nm,18.7s,baz=183,slow=36						
PETK	**Petropavlovsk-**	**19.32**	**30**	P	**Pn**	**22 42 15.9**	**0.0**
	0.3nm,0.3s,baz=201,slow=7.9,SNR=4.2						
PETK				LR	LR	22 49 22.2	
	comp=Z,31nm,19.8s,baz=203,slow=36						
SEY	**Seymchan**	**26.44**	**11**	P	**P**	**22 43 28.1**	**+2.3**
	3.3nm,0.6s,baz=209,slow=7.9,SNR=6.2						
ENH	**Enshi**	**27.54**	**265**	*e*P	**P**	**22 43 35.7**	**-0.4**
	14nm,0.9s						
SONM	**Songino Array**	**27.76**	**303**	P	**P**	**22 43 36.8**	**-1.1**
	0.8nm,0.6s,baz=106,slow=9.3,SNR=3.5						
SONM				LR	LR	22 55 11.7	
	comp=Z,22nm,20.4s,baz=86,slow=38						
H11N2	**WAKE ISLAND Hy**	**28.16**	**122**	T	T	23 13 55.5	
	baz=316,slow=75,SNR=634						
H11N1	**WAKE ISLAND Hy**	**28.17**	**122**	T	T	23 14 07.9	
	baz=316,slow=75,SNR=768						
H11N3	**WAKE ISLAND Hy**	**28.18**	**122**	T	T	23 14 10.2	
	baz=316,slow=75,SNR=556						
H11S1	**WAKE ISLAND Hy**	**28.89**	**124**	T	T	23 14 16.9	
	baz=316,slow=76,SNR=354						
H11S3	**WAKE ISLAND Hy**	**28.89**	**124**	T	T	23 14 24.2	
	baz=316,slow=76,SNR=299						
H11S2	**WAKE ISLAND Hy**	**28.90**	**124**	T	T	23 14 16.9	
	baz=316,slow=76,SNR=237						
KMI	**Kunming**	**35.19**	**261**	P	**P**	**22 44 42.3**	**-1.3**
KMI				pP	pP	22 44 50.3	-4.6
KMI				pmax	pmax		
	comp=Z,12nm,1.0s						
CMAR	**Chiang Mai Arr**	**41.75**	**255**	LR	LR	23 03 11.2	
	comp=Z,16nm,18.7s,baz=70,slow=36						
ZAA0	**Zalesovo Array**	**41.83**	**312**	*e*P	**P**	**22 45 39.5**	**+0.7**
ZALV	**Zalesovo Beam**	**41.83**	**312**	P	**P**	**22 45 38.7**	**0.0**
	comp=Z,0.7nm,0.4s,baz=97,slow=7.6,SNR=4.1						
ZALV				pP	**pP**	**22 45 49.3**	**-0.8**
	comp=Z,2.0nm,0.5s,baz=97,slow=7.1,SNR=6.3						
NRIK	**Noril'sk**	**43.05**	**335**	LR	LR	23 03 28.1	
	comp=Z,23nm,19.4s,baz=100,slow=36						
MK01	**Makanchi Array**	**44.10**	**302**	*e*P	**P**	**22 45 57.0**	**-0.3**
MK31	**Makanchi Array**	**44.10**	**302**	*e*P	**P**	**22 45 57.4**	**+0.1**
MKAR	**Makanchi Array**	**44.10**	**302**	P	**P**	**22 45 56.1**	**-1.2**
	comp=Z,1.0nm,0.7s,baz=86,slow=10,SNR=12						
MKAR				pP	**pP**	**22 46 08.6**	**-0.2**
	comp=Z,1.5nm,0.7s,baz=88,slow=11,SNR=8.9						
MKAR				LR	LR	23 03 57.8	
	comp=Z,21nm,18.8s,baz=22,slow=36						
KURK	**Kurchatov**	**45.88**	**308**	*e*P	**P**	**22 46 10.3**	**-0.9**
	comp=Z,8.6nm,0.6s						
KURK				pP	**pP**	**22 46 22.0**	**-0.8**
KURBB	**Kurchatov Arra**	**45.95**	**308**	P	**P**	**22 46 10.9**	**-0.9**
	comp=Z,3.4nm,0.7s,baz=83,slow=8.3,SNR=27						
KURBB				pP	**pP**	**22 46 22.0**	**-1.3**
	comp=Z,7.0nm,0.5s,baz=82,slow=7.8,SNR=20						
ILAR	**Eielson Array**	**49.12**	**33**	P	**P**	**22 46 36.9**	**+0.6**
	comp=Z,1.2nm,0.8s,baz=269,slow=6.4,SNR=11						
ILAR				pP	**pP**	**22 46 49.3**	**+1.4**
	comp=Z,1.4nm,0.7s,baz=268,slow=5.9,SNR=7.4						
TKM2	**Tokmak 2**	**49.64**	**298**	*e*P	**P**	**22 46 40.6**	**-0.2**
	comp=Z,4.8nm,1.2s						
BVAR	**Borovoye Array**	**50.49**	**312**	P	**P**	**22 46 47.3**	**+0.5**
	comp=Z,0.8nm,0.6s,baz=74,slow=8.0,SNR=3.6						
INK	**Inuvik**	**54.02**	**27**	P	**P**	**22 47 14.0**	**+1.3**
	comp=Z,0.8nm,0.5s,baz=243,slow=4.5,SNR=3.3						
INK				pP	**pP**	**22 47 26.3**	**+1.8**
	comp=Z,4.2nm,0.9s,baz=264,slow=8.5,SNR=7.5						
WRAB	**Tennant Creek**	**57.40**	**188**	*e*P	**P**	**22 47 37.9**	**+0.4**
	comp=Z,58nm,0.9s						
WRA	**Warramunga Arr**	**57.41**	**188**	P	**P**	**22 47 37.7**	**+0.1**
	comp=Z,3.2nm,0.5s,baz=6.7,slow=7.4,SNR=35						
ABKAR	**Akbulak array**	**57.87**	**310**	*e*P	**P**	**22 47 40.1**	**-0.5**
	comp=Z,1.7nm,0.4s						
ASAR	**Alice Springs**	**61.13**	**188**	P	**P**	**22 48 03.9**	**+0.6**
	comp=Z,2.1nm,0.8s,baz=11,slow=6.8,SNR=14						
ASAR				pP	**pP**	**22 48 16.7**	**+1.5**
	comp=Z,1.2nm,0.8s,baz=9.6,slow=7.3,SNR=4.9						
YKA	**Yellowknife Ar**	**63.44**	**30**	P	**P**	**22 48 19.6**	**+1.4**
	comp=Z,0.5nm,0.7s,baz=304,slow=6.6,SNR=8.6						
YKA				pP	**pP**	**22 48 31.4**	**+1.2**
	comp=Z,1.5nm,0.7s,baz=302,slow=6.8,SNR=17						
ARCES	**ARCESS Array B**	**63.76**	**339**	P	**P**	**22 48 20.2**	**-0.1**
	comp=Z,5.3nm,1.1s,baz=7.1,slow=11,SNR=2.8						
ARCES				LR	LR	23 18 21.9	
	comp=Z,29nm,19.9s,baz=316,slow=38						
GEYT	**Alibeck**	**63.84**	**299**	P	**P**	**22 48 22.5**	**+1.1**
	comp=Z,0.5nm,0.3s,baz=270,slow=0.3,SNR=3.2						
GEYT				pP	**pP**	**22 48 33.3**	**-0.1**
	comp=Z,1.6nm,0.6s,baz=320,slow=3.9,SNR=2.9						
FINES	**FINESS Array B**	**68.61**	**332**	P	**P**	**22 48 50.7**	**-0.8**
	comp=Z,1.3nm,0.6s,baz=59,slow=5.6,SNR=5.6						
FINES				pP	**pP**	**22 49 03.5**	**-0.2**
	comp=Z,1.2nm,0.6s,baz=48,slow=8.5,SNR=1.7						
FINES				LR	LR	23 20 08.8	
	comp=Z,58nm,18.2s,baz=356,slow=37						
STKA	**Stephens Creek**	**68.88**	**180**	P	**P**	**22 48 54.2**	**+0.8**
	comp=Z,2.6nm,0.7s,baz=329,slow=4.0,SNR=4.4						
KBZ	**Khabaz**	**70.83**	**311**	pP	pP	22 49 17.5	-0.1
	comp=Z,3.0nm,0.8s,baz=64,slow=5.8,SNR=5.4						
NOA	**NORSAR Array B**	**73.96**	**337**	P	**P**	**22 49 23.8**	**-0.1**
	comp=Z,0.7nm,0.7s,baz=28,slow=8.2,SNR=2.9						
NOA				LR	LR	23 25 15.8	
	comp=Z,29nm,19.2s,baz=15,slow=38						
AKASG	**Malin Array Be**	**74.15**	**322**	P	**P**	**22 49 24.4**	**-0.7**
	comp=Z,0.7nm,0.5s,baz=48,slow=5.9,SNR=5.3						
AKASG				pP	**pP**	**22 49 36.8**	**-0.6**
	comp=Z,2.6nm,0.6s,baz=46,slow=6.1,SNR=5.6						
AKASG				LR	LR	23 23 04.4	
	comp=Z,20nm,18.4s,baz=315,slow=37						
PDAR	**Pinedale Array**	**77.31**	**46**	pP	pP	22 49 58.0	+2.1
	comp=Z,0.7nm,0.5s,baz=271,slow=1.1,SNR=5.9						
BRTR	**Keskin Array B**	**78.77**	**312**	pP	pP	22 50 03.6	-0.4
	comp=Z,0.6nm,0.7s,baz=102,slow=4.3,SNR=5.1						
VRAC	**Vranov**	**80.95**	**327**	LR	LR	23 27 31.1	
	comp=Z,30nm,18.3s,baz=352,slow=37						
GERES	**GERESS Array B**	**82.53**	**328**	pP	pP	22 50 23.2	-0.7
	comp=Z,0.6nm,0.5s,baz=29,slow=6.1,SNR=4.7						
TXAR	**Lajitas Array**	**89.78**	**52**	P	**P**	**22 50 49.1**	**+1.5**
	comp=Z,0.5nm,0.5s,baz=285,slow=2.7,SNR=4.2						
TXAR				pP	**pP**	**22 51 02.5**	**+2.3**
	comp=Z,0.6nm,0.5s,baz=298,slow=2.9,SNR=3.6						
LPAZ	**La Paz**	**146.37**	**59**	PKPbc	**PKPab**	**22 57 31.8**	**+0.2**
	comp=Z,1.1nm,0.5s,baz=359,slow=2.0,SNR=7.9						
LPAZ				pPKPbc	pPKPbc	22 57 44.8	+1.3
	comp=Z,2.6nm,0.7s,baz=21,slow=9.6,SNR=7.1						

ISCJB ***24*** *22:41:45.4±0.4,43°77N±0°02×43°45E±0°03,h6km±4km, Error ellipse: s-maj=4.5km s-min=3.1km az=145.5*
TIF ***24*** *22:41:45.7,43°76N×43°42E,h19km±1km*
MOS ***24*** *22:41:45.4±0.5,43°75N×43°41E,h12km,mb4.1/2,Error ellipse: s-maj=11.3km s-min=5.8km az=113.3*
CSEM ***24*** *22:41:45.9±0.2,43°75N×43°44E,h10km,mb4.1,Error ellipse: s-maj=5.2km s-min=3.7km az=51.0*
ISC 24 22:41:46.0±1.1,43.75N±0°02×43.47E±0°02,h6km±8km, n51,σ1§08/82,9C-7D,Western Caucasus

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NCK	**Nalchik**	**0.27**	**159**	*e*PG	**Pb**	**22 41 52.4**	**-0.9**
NCK				*i* S	**Sg**	**22 41 56.2**	**+1.4**
NCK				pmax	pmax		
	comp=Z,32nm,0.3s						
NCK				smax	smax		
	comp=Z,58nm,0.3s						
NCK	**Nalchik**	**0.27**	**159**	*i* Pg	**Pb**	**22 41 52.4**	**-0.9**
	comp=Z,32nm,0.3s						
NCK				*i* Sg	**Sg**	**22 41 56.2**	**+1.4**
	comp=Z,58nm,0.3s						
LSNR	**Lesken**	**0.54**	**151**	⇑*i*PG	**Pb**	**22 41 57.2**	**-0.7**
LSNR				*i* S	**Sb**	**22 42 05.8**	**-0.1**
LSNR	**Lesken**	**0.54**	**151**	*i* Pg	**Pb**	**22 41 57.2**	**-0.7**
LSNR				*i* Sg	**Sb**	**22 42 05.8**	**-0.1**
STDR	**Stavd-Durt**	**0.58**	**131**	⇑*i*PG	**Pb**	**22 41 58.2**	**-0.3**
STDR				*e*S	**Sb**	**22 42 07.6**	**+0.6**
STDR	**Stavd-Durt**	**0.58**	**131**	*i* Pg	**Pb**	**22 41 58.2**	**-0.3**
STDR				*e*Sg	**Sb**	**22 42 07.6**	**+0.6**
PRTR	**Priterechnaya**	**0.59**	**89**	*i* PG	**Pg**	**22 41 57.8**	**+0.4**
PRTR				pmax	pmax		
	comp=Z,65nm,0.1s						
PRTR	**Priterechnaya**	**0.59**	**89**	*i* Pg	**Pg**	**22 41 57.8**	**+0.4**
	comp=Z,65nm,0.1s						
KIV	**Kislovodsk**	**0.60**	**291**	⇓*e*PG	**Pg**	**22 41 57.5**	**-0.1**
KIV				*e*S	**Sb**	**22 42 06.1**	**-1.7**
KIV				pmax	pmax		
	comp=Z,7.0nm,0.5s						
KIV				smax	smax		
	comp=Z,66μm,0.8s						
KIV	**Kislovodsk**	**0.60**	**291**	*e*Pg	**Pg**	**22 41 57.5**	**-0.1**
	comp=Z,7.0nm,0.5s						
KIV				*e*Sg	**Sb**	**22 42 06.1**	**-1.7**
	comp=Z,66μm,0.8s						
NEY	**Neytrino**	**0.74**	**228**	*d*iPG	**Pg**	**22 42 00.2**	**+0.1**
NEY				*e*S	**Sg**	**22 42 10.0**	**+0.3**
NEY				pmax	pmax		
	comp=Z,17nm,0.5s						
NEY				smax	smax		
	comp=Z,11nm,0.3s						
NEY	**Neytrino**	**0.74**	**228**	*i* Pg	**Pg**	**22 42 00.2**	**+0.1**
	comp=Z,17nm,0.5s						
NEY				*e*Sg	**Sg**	**22 42 10.0**	**+0.3**
	comp=Z,11nm,0.3s						
KORR	**Kora**	**0.79**	**146**	*i* PG	**Pg**	**22 42 01.3**	**+0.1**
KORR				pmax	pmax		
	comp=Z,29nm,0.1s						
KORR	**Kora**	**0.79**	**146**	*i* Pg	**Pg**	**22 42 01.3**	**+0.1**
	comp=Z,29nm,0.1s						
ARNR	**Ardon**

*ROM **24** 22:43:01.3±0.1, 43°.89N×12°.02E, h6km±1km, Ml2.4/22, Error ellipse: s-maj=1.3km s-min=1.0km az=7.0*
*LDG **24** 22:43:02.5±0.2, 43°.85N×12°.00E, h2km, Ml2.5/8, Error ellipse: s-maj=4.7km s-min=3.1km az=55.0*
*GEN **24** 22:43:02.7, 43°.86N×11°.91E, h13km, ML2.2*
ISC 24 22:43:01.5±0.8, **43°.89N**±0°.02×**11°.97E**±0°.01, **h16**km±5km, **n79**, σ0s**77**/126, **Central Italy**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFI	**Santa Sofia**	**0.09**	**282**	Pg	**Pg**	**22 43 04.6**	**-0.3**
SFI				Sg	**Sg**	**22 43 06.9**	**-0.1**
	2μm,0.4s						
SFI	**Santa Sofia**	**0.09**	**282**	Pg	**Pg**	**22 43 04.6**	**-0.3**
SFI				Sg	**Sg**	**22 43 06.9**	**-0.1**
	2μm,0.4s						
ASQU	**Asqua**	**0.16**	**235**	Pg	**Pg**	**22 43 05.9**	**+0.2**
ASQU				Sg	**Sb**	**22 43 09.1**	**-0.1**
	3μm,0.3s						
ASQU	**Asqua**	**0.16**	**235**	Pg	**Pg**	**22 43 05.9**	**+0.2**
ASQU				Sg	**Sb**	**22 43 09.1**	**-0.1**
	3μm,0.3s						
VMG	**Vicchio**	**0.32**	**284**	Pg	**Pb**	**22 43 09.0**	**+0.2**
VMG				Sg	**Sb**	**22 43 14.9**	**+1.2**
	637nm,0.5s						
VMG	**Vicchio**	**0.32**	**284**	Pg	**Pb**	**22 43 09.0**	**+0.2**
VMG				Sg	**Sb**	**22 43 14.9**	**+1.2**
	637nm,0.5s						
BADI	**Badiali**	**0.43**	**152**	Pg	**Pg**	**22 43 09.9**	**-0.3**
BADI				Sg	**Sb**	**22 43 16.8**	**-0.1**
	539nm,0.1s						
BADI	**Badiali**	**0.43**	**152**	Pg	**Pg**	**22 43 09.9**	**-0.3**
BADI				Sg	**Sb**	**22 43 16.8**	**-0.1**
	539nm,0.1s						
BLLA	**Bellaria**	**0.44**	**55**	Pg	**Pb**	**22 43 11.0**	**0.0**
BLLA				Sg	**Sb**	**22 43 17.0**	**-0.4**
	337nm,0.5s						
BLLA	**Bellaria**	**0.44**	**55**	Pg	**Pb**	**22 43 11.0**	**0.0**
BLLA				Sg	**Sb**	**22 43 17.0**	**-0.4**
	337nm,0.5s						
SEI	**Scarperia**	**0.47**	**291**	Pg	**Pb**	**22 43 11.5**	**0.0**
SEI				Sg	**Sb**	**22 43 19.8**	**+1.5**
SEI	**Scarperia**	**0.47**	**291**	Pg	**Pb**	**22 43 11.5**	**0.0**
SEI				Sg	**Sb**	**22 43 19.8**	**+1.5**
ATPC	**Poggio Castell**	**0.54**	**139**	Pg	**Pg**	**22 43 11.9**	**-0.3**
ATPC				Sg	**Sb**	**22 43 20.3**	**+0.1**
	229nm,0.3s						
ATPC	**Poggio Castell**	**0.54**	**139**	Pg	**Pg**	**22 43 11.9**	**-0.3**
ATPC				Sg	**Sb**	**22 43 20.3**	**+0.1**
	229nm,0.3s						
PIEI	**Pieia**	**0.54**	**130**	Pg	**Pg**	**22 43 11.5**	**-0.8**
PIEI				Sg	**Sb**	**22 43 19.8**	**-0.4**
	140nm,0.1s						
PIEI	**Pieia**	**0.54**	**130**	Pg	**Pg**	**22 43 11.5**	**-0.8**
PIEI				Sg	**Sb**	**22 43 19.8**	**-0.4**
	140nm,0.1s						
ATVO	**AVT- Monte Val**	**0.60**	**148**	Pg	**Pg**	**22 43 13.1**	**-0.2**
ATVO				Sg	**Sb**	**22 43 22.4**	**+0.6**
	198nm,0.6s						
ATVO	**AVT- Monte Val**	**0.60**	**148**	Pg	**Pg**	**22 43 13.1**	**-0.2**
ATVO				Sg	**Sb**	**22 43 22.4**	**+0.6**
	198nm,0.6s						
FSSB	**Fossombrone**	**0.62**	**108**	Pg	**Pg**	**22 43 13.1**	**-0.6**
FSSB				Sg	**Sb**	**22 43 22.9**	**+0.5**
	227nm,0.3s						
FSSB	**Fossombrone**	**0.62**	**108**	Pg	**Pg**	**22 43 13.1**	**-0.6**
FSSB				Sg	**Sb**	**22 43 22.9**	**+0.5**
	227nm,0.3s						
PESA	**Pesaro**	**0.63**	**85**	Pg	**Pg**	**22 43 13.7**	**-0.3**
	122nm,0.3s						
PESA	**Pesaro**	**0.63**	**85**	Pg	**Pg**	**22 43 13.7**	**-0.3**
	122nm,0.3s						
FRON	**Frontone**	**0.66**	**124**	Pg	**Pg**	**22 43 13.9**	**-0.6**
FRON				Sg	**Sb**	**22 43 24.2**	**+0.5**
	86nm,0.3s						
FRON	**Frontone**	**0.66**	**124**	Pg	**Pg**	**22 43 13.9**	**-0.6**
FRON				Sg	**Sb**	**22 43 24.2**	**+0.5**
	86nm,0.3s						
FNVD	**Fontana Vidola**	**0.67**	**295**	Pg	**Pb**	**22 43 15.5**	**+0.6**
FNVD				Sg	**Sn**	**22 43 26.4**	**-0.3**
	200nm,0.7s						
FNVD	**Fontana Vidola**	**0.67**	**295**	Pg	**Pb**	**22 43 15.5**	**+0.6**
FNVD				Sg	**Sn**	**22 43 26.4**	**-0.3**
	200nm,0.7s						
MURB	**Monte Urbino**	**0.74**	**147**	Pg	**Pb**	**22 43 16.1**	**0.0**
	233nm,0.4s						
MURB	**Monte Urbino**	**0.74**	**147**	Pg	**Pb**	**22 43 16.1**	**0.0**
	233nm,0.4s						
SSFR	**Montelago di S**	**0.74**	**127**	Pg	**Pg**	**22 43 15.2**	**-0.8**
SSFR				Sg	**Sb**	**22 43 26.2**	**+0.1**
	129nm,0.2s						
SSFR	**Montelago di S**	**0.74**	**127**	Pg	**Pg**	**22 43 15.2**	**-0.8**
SSFR				Sg	**Sb**	**22 43 26.2**	**+0.1**
	129nm,0.2s						
ATTE	**AVT- Monte Tez**	**0.74**	**158**	Pg	**Pb**	**22 43 16.1**	**-0.1**
ATTE				Sg	**Sn**	**22 43 27.5**	**-1.0**
	114nm,0.4s						
ATTE	**AVT- Monte Tez**	**0.74**	**158**	Pg	**Pb**	**22 43 16.1**	**-0.1**
ATTE				Sg	**Sn**	**22 43 27.5**	**-1.0**
	114nm,0.4s						
FROS	**Frosini**	**0.90**	**221**	Pg	**Pn**	**22 43 19.6**	**+0.1**
	190nm,0.9s						
FROS	**Frosini**	**0.90**	**221**	Pg	**Pn**	**22 43 19.6**	**+0.1**
	190nm,0.9s						
SNTG	**Esanatoglia**	**0.95**	**131**	Pg	**Pg**	**22 43 19.8**	**-0.1**
	82nm,0.6s						
SNTG	**Esanatoglia**	**0.95**	**131**	Pg	**Pg**	**22 43 19.8**	**-0.1**
	82nm,0.6s						
MGAB	**Montegabbione**	**0.98**	**174**	Pg	**Pg**	**22 43 20.4**	**-0.1**
	130nm,0.6s						
MGAB	**Montegabbione**	**0.98**	**174**	Pg	**Pg**	**22 43 20.4**	**-0.1**
	130nm,0.6s						
CING	**Cingoli**	**1.03**	**119**	Pg	**Pb**	**22 43 20.8**	**-0.2**
	103nm,0.8s						
CING	**Cingoli**	**1.03**	**119**	Pg	**Pb**	**22 43 20.8**	**-0.2**
	103nm,0.8s						
SACS	**San Casciano d**	**1.04**	**182**	Pg	**Pn**	**22 43 21.6**	**+0.1**
	73nm,0.5s						
MAIM	**Mastiano**	**1.07**	**272**	Pg	**Pg**	**22 43 22.2**	**0.0**
MAIM	**Mastiano**	**1.07**	**272**	P	**Pb**	**22 43 21.4**	**-0.2**
MAIM	**Mastiano**	**1.07**	**272**	Pg	**Pg**	**22 43 22.2**	**0.0**
MAIM				S	**Sb**	**22 43 34.0**	**-1.3**
TRIF	**Trifonti**	**1.09**	**225**	Pg	**Pg**	**22 43 22.7**	**0.0**
	72nm,1.1s						
TRIF	**Trifonti**	**1.09**	**225**	Pg	**Pg**	**22 43 22.7**	**0.0**
	72nm,1.1s						
ARCI	**Arcidosso**	**1.09**	**199**	Pg	**Pb**	**22 43 22.4**	**+0.2**
	36nm,0.7s						
ARCI	**Arcidosso**	**1.09**	**199**	Pg	**Pb**	**22 43 22.4**	**+0.2**
	36nm,0.7s						
MCIV	**Monte Civitell**	**1.13**	**191**	Pg	**Pn**	**22 43 23.0**	**+0.3**
	21nm,0.7s						
MCIV	**Monte Civitell**	**1.13**	**191**	Pg	**Pn**	**22 43 23.0**	**+0.3**
	21nm,0.7s						
SARO	**Sassorosso**	**1.17**	**285**	P	**Pn**	**22 43 23.3**	**0.0**
SARO				S	**Sb**	**22 43 36.9**	**-1.4**
NVLJ	**Novalja**	**2.19**	**71**	*e*Pn	**Pn**	**22 43 37.7**	**+0.4**
NVLJ				Sn	**Sb**	**22 44 06.7**	**-1.0**
NVLJ	**Novalja**	**2.19**	**71**	*e*Pn	**Pn**	**22 43 37.7**	**+0.4**
NVLJ				Sn	**Sb**	**22 44 06.7**	**-1.0**
PGF	**Pioggiola**	**2.55**	**239**	*e*Pn	**Pn**	**22 43 41.5**	**-0.8**
PGF				*e*Sn	**Sn**	**22 44 12.4**	**-0.7**
	1.7nm,0.3s						
PGF	**Pioggiola**	**2.55**	**239**	*e*Pn	**Pn**	**22 43 41.5**	**-0.8**
PGF				*e*Sn	**Sn**	**22 44 12.4**	**-0.7**
	0.9nm,0.3s						
UDBI	**Udbina**	**2.80**	**75**	*e*Pn	**Pn**	**22 43 46.9**	**+1.1**
UDBI				Sn	**Sn**	**22 44 21.6**	**+2.3**
UDBI	**Udbina**	**2.80**	**75**	*e*Pn	**Pn**	**22 43 46.8**	**+1.1**
UDBI				Sn	**Sn**	**22 44 21.6**	**+2.3**
OBKA	**Obir**	**3.19**	**34**	*e*Pn	**Pg**	**22 44 01.2**	**-1.5**
	3.4nm,0.5s						
OBKA				*i* Sg	**Sg**	**22 44 45.8**	**+1.7**
	8.5nm,0.6s						
SBF	**Sospel**	**3.28**	**271**	*e*Pn	**Pn**	**22 43 53.0**	**+0.7**
SBF				*e*Sn	**Sn**	**22 44 30.4**	**-0.6**
	10nm,0.4s						
SBF	**Sospel**	**3.28**	**271**	*e*Pn	**Pn**	**22 43 53.0**	**+0.7**
SBF				*e*Sn	**Sn**	**22 44 30.4**	**-0.6**
	5.1nm,0.4s						
DAVA	**Damuels**	**3.70**	**337**	*i* Pn	**Pb**	**22 44 04.9**	**-1.7**
	1.3nm,0.3s						
DAVA				*i* Sn	**Sb**	**22 44 50.6**	**-0.7**
	5.7nm,0.5s						
FRF	**La Foret Royal**	**3.87**	**267**	*e*Pn	**Pn**	**22 44 01.2**	**+0.8**
FRF				*e*Sn	**Sn**	**22 44 45.1**	**-0.4**
	2.1nm,0.4s						
FRF	**La Foret Royal**	**3.87**	**267**	*e*Pn	**Pn**	**22 44 01.2**	**+0.8**
FRF				*e*Sn	**Sn**	**22 44 45.1**	**-0.4**
	1.0nm,0.4s						
LMR	**La Mourre**	**4.00**	**264**	*e*Pn	**Pn**	**22 44 02.7**	**+0.5**
LMR	**La Mourre**	**4.00**	**264**	*e*Pn	**Pn**	**22 44 02.7**	**+0.5**
LPG	**La Plagne**	**4.05**	**295**	*e*P	Pb	22 44 08.4	-4.3
LPG				*e*Sn	**Sn**	**22 44 49.6**	**-0.8**
	1.3nm,0.4s						
LPL	**La Plagne**	**4.07**	**295**	*e*Pn	**Pn**	**22 44 04.2**	**+0.8**
LPL				*e*Sn	**Sn**	**22 44 50.4**	**-0.4**
	1.5nm,0.4s						
LPL	**La Plagne**	**4.07**	**295**	*e*Pn	**Pn**	**22 44 04.2**	**+0.8**
LPL				*e*Sn	**Sn**	**22 44 50.4**	**-0.4**
	0.8nm,0.4s						
ORIF	**Oris-en-Rattie**	**4.48**	**285**	*e*Pn	**Pn**	**22 44 09.2**	**+0.3**
ORIF	**Oris-en-Rattie**	**4.48**	**285**	*e*Pn	**Pn**	**22 44 09.2**	**+0.3**
SMRF	**Simiane la Rot**	**4.62**	**273**	*e*Pn	**Pn**	**22 44 12.2**	**+1.5**
SMRF	**Simiane la Rot**	**4.62**	**273**	*e*Pn	**Pn**	**22 44 12.2**	**+1.5**
HINF	**Hinteralfeld**	**5.31**	**320**	*e*Sn	**Sn**	**22 45 20.5**	**-0.6**
	2.5nm,0.5s						
HINF	**Hinteralfeld**	**5.31**	**320**	*e*Sn	**Sn**	**22 45 20.5**	**-0.6**
	1.2nm,0.5s						
KHC	**Kasperske Hory**	**5.36**	**11**	*e*SN	**Sn**	**22 45 22.9**	**+0.6**
CDF	**Champ du Feu**	**5.58**	**326**	*e*Pn	**Pn**	**22 44 25.3**	**+1.4**
CDF				*e*Sn	**Sn**	**22 45 26.2**	**-1.5**
	1.2nm,0.4s						
CDF	**Champ du Feu**	**5.58**	**326**	*e*Pn	**Pn**	**22 44 25.3**	**+1.4**
CDF				*e*Sn	**Sn**	**22 45 26.2**	**-1.5**
	0.6nm,0.4s						
HAU	**Haudompre**	**5.68**	**318**	*e*Pn	**Pn**	**22 44 26.2**	**+0.9**
HAU				*e*Sn	**Sn**	**22 45 28.4**	**-1.8**
	3.6nm,0.4s						
HAU	**Haudompre**	**5.68**	**318**	*e*Pn	**Pn**	**22 44 26.2**	**+0.9**

*ROM **24** 22:59:55.0±0.1, 43°.89N×12°.02E, h6km±1km, Md2.5/18, Ml2.1/20, Error ellipse: s-maj=1.7km s-min=1.2km az=52.0*
*CSEM **24** 22:59:55.5±0.1, 43°.88N×12°.00E, h5km, ML2.9/13, Error ellipse: s-maj=3.5km s-min=2.2km az=19.0*
*GEN **24** 22:59:57.1, 43°.97N×11°.89E, h4km, ML1.9*
ISC 24 22:59:55.2±0.8, **43°.91N**±0°.02×**11°.99E**±0°.02, **h14**km±5km, **n56**, σ0s**76**/88, **Central Italy**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFI	**Santa Sofia**	**0.11**	**268**	Pg	**Pg**	**22 59 58.3**	**-0.2**
SFI				Sg	**Sg**	**23 00 00.6**	**-0.1**
	1μm,0.1s						
SFI	**Santa Sofia**	**0.11**	**268**	Pg	**Pg**	**22 59 58.3**	**-0.2**
SFI				Sg	**Sg**	**23 00 00.6**	**-0.1**
	1μm,0.1s						
ASQU	**Asqua**	**0.18**	**233**	Pg	**Pg**	**22 59 59.6**	**0.0**
ASQU				Sg	**Sg**	**23 00 02.7**	**+0.2**
ASQU	**Asqua**	**0.18**	**233**	Pg	**Pg**	**22 59 59.6**	**0.0**
ASQU				Sg	**Sg**	**23 00 02.7**	**+0.2**
VMG	**Vicchio**	**0.33**	**280**	Pg	**Pb**	**23 00 02.6**	**-0.2**
VMG				Sg	**Sb**	**23 00 08.6**	**+0.6**
	138nm,0.1s						
VMG	**Vicchio**	**0.33**	**280**	Pg	**Pb**	**23 00 02.6**	**-0.2**
VMG				Sg	**Sb**	**23 00 08.6**	**+0.6**
	138nm,0.1s						
BLLA	**Bellaria**	**0.42**	**56**	Pg	**Pb**	**23 00 04.7**	**+0.4**
BLLA	**Bellaria**	**0.42**	**56**	Pg	**Pb**	**23 00 04.7**	**+0.4**
BADI	**Badiali**	**0.44**	**155**	Pg	**Pg**	**23 00 03.9**	**0.0**
BADI				Sg	**Sg**	**23 00 10.3**	**+0.5**
	328nm,0.2s						
BADI	**Badiali**	**0.44**	**155**	Pg	**Pg**	**23 00 03.9**	**0.0**
BADI				Sg	**Sg**	**23 00 10.3**	**+0.5**
	328nm,0.2s						
SEI	**Scarperia**	**0.48**	**288**	Pg	**Pg**	**23 00 05.1**	**+0.3**
SEI				Sg	**Sb**	**23 00 13.5**	**+1.1**
	514nm,0.2s						
SEI	**Scarperia**	**0.48**	**288**	Pg	**Pg**	**23 00 05.1**	**+0.3**
SEI				Sg	**Sb**	**23 00 13.5**	**+1.1**
	514nm,0.2s						
PIEI	**Pieia**	**0.54**	**133**	Pg	**Pg**	**23 00 05.2**	**-0.6**
PIEI				Sg	**Sg**	**23 00 13.4**	**+0.3**
	69nm,0.2s						
PIEI	**Pieia**	**0.54**	**133**	Pg	**Pg**	**23 00 05.2**	**-0.6**
PIEI				Sg	**Sg**	**23 00 13.4**	**+0.3**
	69nm,0.2s						
ATPC	**Poggio Castell**	**0.54**	**142**	Pg	**Pg**	**23 00 05.5**	**-0.4**
ATPC				Sg	**Sb**	**23 00 14.2**	**+0.1**
	168nm,0.4s						
ATPC	**Poggio Castell**	**0.54**	**142**	Pg	**Pg**	**23 00 05.5**	**-0.4**
ATPC				Sg	**Sb**	**23 00 14.2**	**+0.1**
	168nm,0.4s						
ATVO	**AVT- Monte Val**	**0.60**	**150**	Pg	**Pg**	**23 00 06.7**	**-0.4**
ATVO				Sg	**Sb**	**23 00 15.9**	**0.0**
	96nm,0.4s						
ATVO	**AVT- Monte Val**	**0.60**	**150**	Pg	**Pg**	**23 00 06.7**	**-0.4**
ATVO				Sg	**Sb**	**23 00 15.9**	**0.0**
	96nm,0.4s						
FSSB	**Fossombrone**	**0.61**	**111**	Pg	**Pg**	**23 00 06.7**	**-0.4**
FSSB				Sg	**Sb**	**23 00 16.6**	**+0.6**
	119nm,0.2s						
FSSB	**Fossombrone**	**0.61**	**111**	Pg	**Pg**	**23 00 06.7**	**-0.4**
FSSB				Sg	**Sb**	**23 00 16.6**	**+0.6**
	119nm,0.2s						
PESA	**Pesaro**	**0.61**	**87**	Pg	**Pb**	**23 00 07.7**	**+0.1**
	97nm,0.3s						
PESA	**Pesaro**	**0.61**	**87**	Pg	**Pb**	**23 00 07.7**	**+0.1**
	97nm,0.3s						
FRON	**Frontone**	**0.66**	**126**	Pg	**Pg**	**23 00 07.4**	**-0.7**
FRON				Sg	**Sb**	**23 00 17.8**	**+0.3**
	54nm,0.6s						
FRON	**Frontone**	**0.66**	**126**	Pg	**Pg**	**23 00 07.4**	**-0.7**
FRON				Sg	**Sb**	**23 00 17.8**	**+0.3**
	54nm,0.6s						
FNVD	**Fontana Vidola**	**0.68**	**293**	Pg	**Pb**	**23 00 09.1**	**+0.3**
FNVD				Sg	**Sn**	**23 00 19.9**	**-0.9**
	102nm,0.6s						
FNVD	**Fontana Vidola**	**0.68**	**293**	Pg	**Pb**	**23 00 09.1**	**+0.3**
FNVD				Sg	**Sn**	**23 00 19.9**	**-0.9**
	102nm,0.6s						
SSFR	**Montelago di S**	**0.74**	**129**	Pg	**Pg**	**23 00 09.0**	**-0.6**
SSFR				Sg	**Sb**	**23 00 20.4**	**+0.5**
	92nm,0.2s						
SSFR	**Montelago di S**	**0.74**	**129**	Pg	**Pg**	**23 00 09.0**	**-0.6**
SSFR				Sg	**Sb**	**23 00 20.4**	**+0.5**
	92nm,0.2s						
MURB	**Monte Urbino**	**0.75**	**149**	Pg	**Pb**	**23 00 09.9**	**-0.1**
	156nm,0.4s						
MURB	**Monte Urbino**	**0.75**	**149**	Pg	**Pb**	**23 00 09.9**	**-0.1**
	156nm,0.4s						
ATTE	**AVT- Monte Tez**	**0.76**	**160**	Pg	**Pg**	**23 00 09.3**	**-0.6**
ATTE				Sg	**Sb**	**23 00 20.7**	**+0.4**
	56nm,0.5s						
ATTE	**AVT- Monte Tez**	**0.76**	**160**	Pg	**Pg**	**23 00 09.3**	**-0.6**
ATTE				Sg	**Sb**	**23 00 20.7**	**+0.4**
	56nm,0.5s						
FROS	**Frosini**	**0.93**	**221**	Pg	**Pg**	**23 00 13.3**	**+0.2**
	142nm,1.3s						
FROS	**Frosini**	**0.93**	**221**	Pg	**Pg**	**23 00 13.3**	**+0.2**
	142nm,1.3s						
SNTG	**Esanatoglia**	**0.95**	**133**	Pg	**Pb**	**23 00 12.8**	**-0.6**
	46nm,0.7s						
SNTG	**Esanatoglia**	**0.95**	**133**	Pg	**Pb**	**23 00 12.8**	**-0.6**
	46nm,0.7s						
MGAB	**Montegabbione**	**1.00**	**175**	Pg	**Pb**	**23 00 14.2**	**0.0**
	74nm,0.6s						
MGAB	**Montegabbione**	**1.00**	**175**	Pg	**Pb**	**23 00 14.2**	**0.0**
	74nm,0.6s						
CING	**Cingoli**	**1.02**	**121**	Pg	**Pb**	**23 00 14.1**	**-0.5**
	37nm,0.6s						
CING	**Cingoli**	**1.02**	**121**	Pg	**Pb**	**23 00 14.1**	**-0.5**
	37nm,0.6s						
MAIM	**Mastiano**	**1.08**	**271**	P	**Pb**	**23 00 15.5**	**-0.2**
MAIM				S	**Sb**	**23 00 28.4**	**-1.3**
ARCI	**Arcidosso**	**1.12**	**200**	Pg	**Pb**	**23 00 16.1**	**-0.3**
	22nm,0.8s						
ARCI	**Arcidosso**	**1.12**	**200**	Pg	**Pb**	**23 00 16.1**	**-0.3**
	22nm,0.8s						
TRIF	**Trifonti**	**1.12**	**225**	Pg	**Pg**	**23 00 16.7**	**-0.1**
	20nm,0.7s						
TRIF	**Trifonti**	**1.12**	**225**	Pg	**Pg**	**23 00 16.7**	**-0.1**
	20nm,0.7s						
SASS	**Sassa**	**1.15**	**236**	Pg	**Pg**	**23 00 17.0**	**-0.3**
	9.0nm,0.4s						
SASS	**Sassa**	**1.15**	**236**	Pg	**Pg**	**23 00 17.0**	**-0.3**
	9.0nm,0.4s						
FDMO	**Fiordimonte**	**1.18**	**137**	Pg	**Pb**	**23 00 17.2**	**-0.1**
	35nm,0.7s						
FDMO	**Fiordimonte**	**1.18**	**137**	Pg	**Pb**	**23 00 17.2**	**-0.1**
	35nm,0.7s						
SARO	**Sassorosso**	**1.18**	**284**	P	**Pn**	**23 00 17.1**	**-0.2**
SARO				S	**Sb**	**23 00 30.5**	**-2.0**
NVLJ	**Novalja**	**2.17**	**71**	*i* Pn	**Pn**	**23 00 30.9**	**0.0**
NVLJ				Sn	**Sb**	**23 00 59.7**	**-1.2**
NVLJ	**Novalja**	**2.17**	**71**	*i* Pn	**Pn**	**23 00 30.8**	**0.0**
NVLJ				Sn	**Sb**	**23 00 59.7**	**-1.2**
UDBI	**Udbina**	**2.78**	**76**	*i* Pn	**Pn**	**23 00 41.6**	**+2.3**
UDBI	**Udbina**	**2.78**	**76**	*i* Pn	**Pn**	**23 00 41.6**	**+2.3**
OBKA	**Obir**	**3.17**	**34**	*i* Pg	**Pg**	**23 00 56.7**	**+0.9**
	1.6nm,0.5s						
OBKA				*i* Sn	**Sb**	**23 01 27.1**	**-2.6**
	1.1nm,0.3s						
OBKA	**Obir**	**3.17**	**34**	Pg	**Pg**	**23 00 56.7**	**+0.9**
	1.6nm,0.5s						
OBKA				Sn	**Sb**	**23 01 27.1**	**-2.6**
	1.1nm,0.3s						

*NIED **24** 23:03:00, 36°.90N×140°.70E, h8km, Mw3.7 Best double couple: M0=4.15000×10^14 NP1:φs=326.00000°, δ33.00000°, λ-100.00000°. NP2:φs=158.00000°, δ57.00000°, λ-84.00000°.*
*IDC **24** 23:03:05.6±1.0, 36°.86N×140°.81E, h0km, mb3.7/11, mb1 3.8/14, mb1mx3.7/49, mbtmp3.8/14, ML3.6/3, Error ellipse: s-maj=24.5km s-min=18.9km az=80.0*
*ISCJB **24** 23:03:07.0±0.7, 36°.82N±0°.03×140°.87E±0°.06, h21km±4km, mb3.6/11, Error ellipse: s-maj=7.9km s-min=4.5km az=23.6*
*JMA **24** 23:03:08.6, 36°.85N×140°.70E, h9km±1km, M3.8*
JMA Felt II J1.
ISC 24 23:03:08.1±0.9, **36°.84N**±0°.03×**140°.71E**±0°.06, **h15**km±6km, **n31**, σ0s**52**/33, **mb3.6**/11, **5C, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.26**	**206**	⇑P	**Pg**	**23 03 13.9**	**+0.2**
JHO				S	**Sg**	**23 03 17.6**	**+0.1**
ONAJ	**Iwakimizuishiy**	**0.27**	**15**	⇑P	**Pg**	**23 03 13.9**	**-0.1**
ONAJ				S	**Sg**	**23 03 18.0**	**0.0**
JFK	**Kawauchi**	**0.54**	**14**	⇑P	**Pg**	**23 03 18.6**	**-0.2**
JFK				S	**Sg**	**23 03 26.1**	**0.0**
JSB	**Shiboa**	**0.65**	**282**	⇑P	**Pb**	**23 03 21.3**	**+0.3**
JSB				S	**Sb**	**23 03 30.3**	**+0.5**
JFT	**Otama**	**0.74**	**336**	P	**Pb**	**23 03 22.5**	**-0.1**
JFT				S	**Sg**	**23 03 32.0**	**-0.3**
JYT	**Yasato**	**0.74**	**214**	⇑P	**Pg**	**23 03 22.5**	**0.0**
JYT				S	**Sn**	**23 03 33.9**	**-1.0**
JFY	**Yanaizu**	**0.98**	**305**	P	**Pb**	**23 03 26.8**	**0.0**
JFY				S	**Sb**	**23 03 39.3**	**-0.2**
JMM	**Marumori**	**1.02**	**4**	P	**Pb**	**23 03 27.0**	**-0.5**
JMM				S	**Sb**	**23 03 40.6**	**-0.2**
MJAR	**Matsushiro Arr**	**2.03**	**262**	Pn	**Pb**	**23 03 43.4**	**-1.3**
	39nm,0.3s,baz=88,slow=15,SNR=160						
MJAR				Sn	**Sb**	**23 04 10.2**	**+0.4**
	21nm,0.3s,baz=92,slow=27,SNR=7.2						
MAT	**Matsushiro**	**2.03**	**262**	P	**Pb**	**23 03 43.5**	**-1.2**
MAT				S	**Sb**	**23 04 10.3**	**+0.5**
ASAJ	**Asahikawa**	**7.41**	**11**	Pn	**Pn**	**23 04 56.0**	**+0.4**
	0.4nm,0.3s,baz=171,slow=18,SNR=1.9						
JCJ	**Chichijima**	**9.80**	**172**	Pn	**Pn**	**23 05 28.5**	**+0.1**
	2.5nm,0.3s,baz=287,slow=19,SNR=2.7						
USRK	**Ussuriysk Ar.**	**9.90**	**321**	Pn	Pn	23 05 35.0	+5.3
	0.2nm,0.3s,baz=127,slow=13,SNR=6.3						
KSRS	**Korea Array**	**10.23**	**277**	Pn	Pn	23 05 42.4	+8.2
	0.4nm,0.3s,baz=91,slow=13,SNR=6.7						
SONM	**Songino Array**	**27.43**	**304**	P	**P**	**23 08 53.7**	**+0.5**
	0.7nm,0.6s,baz=103,slow=8.4,SNR=5.3						
H11N2	**WAKE ISLAND Hy**	**28.54**	**120**	T	T	23 38 49.9	
	baz=313,slow=75,SNR=724						
H11N1	**WAKE ISLAND Hy**	**28.55**	**120**	T	T	23 38 50.5	
	baz=313,slow=75,SNR=653						
H11N3	**WAKE ISLAND Hy**	**28.56**	**120**	T	T	23 38 51.3	
	baz=313,slow=75,SNR=688						
H11S1	**WAKE ISLAND Hy**	**29.23**	**122**	T	T	23 39 43.3	
	baz=314,slow=75,SNR=736						
H11S3	**WAKE ISLAND Hy**	**29.23**	**122**	T	T	23 39 43.4	
	baz=314,slow=75,SNR=419						
H11S2	**WAKE ISLAND Hy**	**29.25**	**122**	T	T	23 39 46.0	
	baz=314,slow=75,SNR=557						
ZALV	**Zalesovo Beam**	**41.63**	**313**	P	**P**	**23 10 54.9**	**-0.4**
	0.5nm,0.4s,baz=123,slow=6.6,SNR=2.4						
MKAR	**Makanchi Array**	**43.74**	**302**	P	**P**	**23 11 12.7**	**0.0**
	0.4nm,0.6s,baz=103,slow=6.9,SNR=5.7						
KURBB	**Kurchatov Arra**	**45.67**	**308**	P	**P**	**23 11 28.3**	**+0.4**
	0.7nm,0.4s,baz=83,slow=7.9,SNR=18						
WRA	**Warramunga Arr**	**56.80**	**187**	P	**P**	**23 12 51.9**	**+0

294nm,0.4s
DAVOX eSg Sg 23 05 21.3 +0.5
294nm,0.4s
FETA Feichten 0.41 28 Pg Pg 23 05 15.4 0.0
5.9nm,0.1s,SNR=24
FETA Sg Sg 23 05 20.5 -0.5
14nm,0.1s
SCEL Celerina 0.43 250 ‖ iPg Pg 23 05 16.0 +0.3
SCEL Celerina 0.43 250 ‖ iPg Pg 23 05 16.0 +0.3
OZOL Ozolo 0.49 121 ePg Pg 23 05 16.9 +0.1
OZOL Ozolo 0.49 121 ‖ ePg Pg 23 05 16.9 +0.1
APPI Appiano 0.57 108 Pg Pg 23 05 18.3 0.0
APPI Sg Sg 23 05 25.7 -0.2
67nm,0.2s
APPI Appiano 0.57 108 Pg Pg 23 05 18.3 0.0
APPI Sg Sg 23 05 25.7 -0.2
67nm,0.2s
MABI Malga Bissina 0.60 175 Pg Pg 23 05 19.1 +0.1
MABI Sg Sg 23 05 26.8 -0.2
52nm,0.1s
MABI Malga Bissina 0.60 175 ⇑ iPg Pg 23 05 18.6 -0.4
226nm,0.1s
MABI Malga Bissina 0.60 175 Pg Pg 23 05 19.1 +0.1
MABI Sg Sg 23 05 26.8 -0.2
52nm,0.1s
RNI Roncone 0.69 170 ePg Pg 23 05 20.7 +0.1
RNI Roncone 0.69 170 ‖ ePg Pg 23 05 20.7 +0.1
RNI eSg Sg 23 05 29.8 +0.1
VDL Val di Lei 0.71 256 ePg Pg 23 05 19.1 -1.8
45nm,0.4s
DAVA Damuels 0.74 329 Sg Sb 23 05 31.9 -0.2
10.0nm,0.3s,SNR=4.3
TUE Stuetta 0.78 257 Pg Pg 23 05 21.8 -0.4
583nm,4.8s
TUE Stuetta 0.78 257 Pg Pg 23 05 21.8 -0.4
583nm,4.8s
RETA Reutte 0.86 15 Sg Sb 23 05 35.5 0.0
1.4nm,0.2s,SNR=4.5
PANI Panarotta 0.87 134 ePg Pb 23 05 24.4 +0.2
MAGA Magasa 0.89 172 Pg Pb 23 05 24.7 +0.1
MAGA Sg Sg 23 05 36.2 +0.2
MAGA Magasa 0.89 172 Pg Pb 23 05 24.7 +0.1
MAGA Sg Sg 23 05 36.2 +0.2
DDS Dosso del Somm 0.93 146 ePg Pb 23 05 25.3 0.0
DDS Dosso del Somm 0.93 146 ePg Pb 23 05 25.3 0.0
WATA Walderalm 1.03 48 Pg Pb 23 05 26.3 -0.7
2.1nm,0.2s,SNR=5.8
CGRP Cima Grappa 1.22 129 ePg Pg 23 05 30.9 +0.3
CGRP eSg Sn 23 05 46.9 +0.2
CGRP Cima Grappa 1.22 129 ‖ ePg Pg 23 05 30.9 +0.3
CGRP eSg Sn 23 05 46.9 +0.2
VARN Col Varnada, M 1.33 119 ePg Pb 23 05 31.8 -0.2
VARN Col Varnada, M 1.33 119 ePg Pb 23 05 31.8 -0.2
CIMO Cimolais 1.42 103 ePg Pb 23 05 33.3 -0.3
CIMO Cimolais 1.42 103 ePg Pb 23 05 33.3 -0.3
ABTA Abfaltersbach 1.43 86 Pn Pb 23 05 33.4 -0.3
0.8nm,0.1s
KHC Kasperske Hory 3.25 39 ePG Pg 23 06 10.0 +0.6
KHC eSG Sg 23 06 52.3 +0.8
ADVT Abdulvahap 15.30 107 ePN Pn 23 08 42.5 -0.2

*ISK **24** 23:08:14.7, 39.°11N×29.°03E, h3km, ML3.3*
*ISCJB **24** 23:08:15.4±0.4, 39.°10N±0.°01×29.°02E±0.°02, h5km±3km,*
Error ellipse: s-maj=2.8km s-min=2.5km az=169.8
*DDA **24** 23:08:15.3, 39.°11N×29.°05E, h7km, Ml3.6*
*CSEM **24** 23:08:15.5±0.1, 39.°09N×29.°02E, h2km, ML3.6, Error*
ellipse: s-maj=2.2km s-min=1.8km az=68.0
*THE **24** 23:08:17.0, 39.°05N×28.°90E, h1km±1km, ML2.8/5, Error*
ellipse: s-maj=1.5km s-min=0.9km az=77.0
ISC 24 23:08:15.8±1.0, 39.°11N±0.°02×29.°04E±0.°02, h6km±8km,
n174, σ1°03/202, 16C-6D, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**255**	P	**Pg**	**23 08 21.0**	**+0.1**
DEMI				S	**Sg**	**23 08 24.9**	**+0.5**
DEMI	**Demirci**	**0.26**	**255**	*i* P	**Pg**	**23 08 21.0**	**+0.1**
DEMI				*i* S	**Sg**	**23 08 24.9**	**+0.5**
GDZ	**Gediz**	**0.35**	**93**	P	**Pg**	**23 08 22.3**	**-0.3**
GDZ				S	**Sg**	**23 08 27.2**	**0.0**
GDZ	**Gediz**	**0.35**	**93**	*i* P	**Pg**	**23 08 22.3**	**-0.3**
GDZ				*i* S	**Sg**	**23 08 27.2**	**0.0**
TVSB	**Tavsanli**	**0.47**	**44**	*e*PG	**Pg**	**23 08 24.4**	**-0.6**
TVSB	**Tavsanli**	**0.47**	**44**	*e*Pg	**Pg**	**23 08 24.4**	**-0.6**
DST	**Dursunbey**	**0.59**	**327**	*e*PG	**Pg**	**23 08 26.4**	**-0.8**
DST	**Dursunbey**	**0.59**	**327**	*e*Pg	**Pg**	**23 08 26.4**	**-0.8**
DURS	**Dursunbey**	**0.66**	**318**	P	**Pg**	**23 08 28.3**	**-0.2**
DURS	**Dursunbey**	**0.66**	**318**	*i* P	**Pg**	**23 08 28.3**	**-0.2**
KULA	**Kula-Manisa**	**0.66**	**206**	*e*PG	**Pg**	**23 08 28.0**	**-0.6**
KULA	**Kula-Manisa**	**0.66**	**206**	P	**Pg**	**23 08 28.2**	**-0.4**
KULA				S	**Sg**	**23 08 36.5**	**-0.7**
KULA	**Kula-Manisa**	**0.66**	**206**	P	**Pg**	**23 08 28.2**	**-0.4**
KULA				S	**Sg**	**23 08 36.5**	**-0.7**
KHAL	**Karahalli**	**0.82**	**154**	P	**Pg**	**23 08 31.2**	**-0.3**
KHAL				S	**Sg**	**23 08 42.6**	**+0.4**
KHAL	**Karahalli**	**0.82**	**154**	*i* P	**Pg**	**23 08 31.2**	**-0.3**
KHAL				*i* S	**Sg**	**23 08 42.6**	**+0.4**
KHL	**Karahalli**	**0.87**	**154**	*e*PG	**Pg**	**23 08 32.4**	**-0.2**
KHL	**Karahalli**	**0.87**	**154**	*e*Pg	**Pg**	**23 08 32.4**	**-0.2**
ORLT	**Orhaneli**	**0.94**	**353**	*e*PG	**Pg**	**23 08 33.7**	**-0.2**
ORLT				*e*SG	**Sb**	**23 08 47.5**	**+0.2**
ORLT	**Orhaneli**	**0.94**	**353**	*e*Pg	**Pg**	**23 08 33.7**	**-0.2**
ORLT				*e*Sg	**Sb**	**23 08 47.5**	**+0.2**
AKHS	**Akhisar**	**0.98**	**257**	P	**Pg**	**23 08 34.5**	**-0.1**
AKHS				S	**Sb**	**23 08 48.3**	**-0.1**
AKHS	**Akhisar**	**0.98**	**257**	*i* P	**Pg**	**23 08 34.5**	**-0.1**
AKHS				*i* S	**Sb**	**23 08 48.3**	**-0.1**
AKS	**Akhisar**	**0.98**	**257**	*e*PG	**Pg**	**23 08 34.8**	**+0.2**
BALB	**Balikesir**	**1.04**	**301**	*e*PG	**Pg**	**23 08 35.6**	**-0.2**
BALB	**Balikesir**	**1.04**	**301**	*e*Pg	**Pg**	**23 08 35.6**	**-0.2**
IGD	**Bursa**	**1.16**	**6**	*i* P	**Pg**	**23 08 36.2**	**-1.8**
IGD				*i* S	**Sb**	**23 08 53.6**	**+0.1**
CAVI	**Cavuskoy**	**1.25**	**29**	*e*PN	**Pn**	**23 08 39.3**	**-0.6**
CAVI	**Cavuskoy**	**1.25**	**29**	*e*Pn	**Pn**	**23 08 39.3**	**-0.6**
MDNY	**Mudanya-Bursa**	**1.26**	**355**	*e*PN	**Pn**	**23 08 39.6**	**-0.4**
MDNY	**Mudanya-Bursa**	**1.26**	**355**	*e*Pn	**Pn**	**23 08 39.6**	**-0.4**
BALY	**Balya**	**1.27**	**300**	P	**Pn**	**23 08 39.8**	**-0.2**
BALY	**Balya**	**1.27**	**300**	*i* P	**Pn**	**23 08 39.8**	**-0.2**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*PN	**Pn**	**23 08 39.6**	**-0.4**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*Pn	**Pn**	**23 08 39.6**	**-0.4**
IZI	**Iznik**	**1.27**	**15**	*e*PN	**Pn**	**23 08 39.9**	**-0.2**
GEMT	**Gemlik**	**1.33**	**5**	*e*PN	**Pb**	**23 08 41.0**	**0.0**
GEMT	**Gemlik**	**1.33**	**5**	*e*Pn	**Pb**	**23 08 41.1**	**0.0**
BORA	**Eskisehir**	**1.34**	**55**	P	**Pn**	**23 08 40.2**	**-0.9**
BORA				S	**Sb**	**23 08 58.1**	**-0.6**
BORA	**Eskisehir**	**1.34**	**55**	*i* P	**Pn**	**23 08 40.2**	**-0.9**
BORA				*i* S	**Sb**	**23 08 58.1**	**-0.6**
DENT	**Denizli**	**1.35**	**180**	*e*PN	**Pb**	**23 08 41.5**	**0.0**
DENT	**Denizli**	**1.35**	**180**	*e*Pn	**Pb**	**23 08 41.5**	**0.0**
GONE	**Gonen-Balikesi**	**1.40**	**312**	*e*PN	**Pb**	**23 08 42.0**	**-0.3**
GONE	**Gonen-Balikesi**	**1.40**	**312**	*e*Pn	**Pb**	**23 08 42.1**	**-0.3**
DNZL	**Cakiroluk**	**1.42**	**180**	P	**Pn**	**23 08 42.4**	**+0.1**
DNZL	**Cakiroluk**	**1.42**	**180**	*i* P	**Pn**	**23 08 42.4**	**+0.1**
ARMT	**Armutlu**	**1.46**	**355**	*e*PN	**Pn**	**23 08 42.7**	**0.0**
ARMT	**Armutlu**	**1.46**	**355**	*e*Pn	**Pn**	**23 08 42.7**	**0.0**
ESKT	**Eskisehir**	**1.47**	**73**	*i* P	**Pn**	**23 08 42.7**	**-0.2**
SEYT	**Eskypehyr**	**1.47**	**73**	P	**Pn**	**23 08 42.7**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**218**	*e*PN	**Pn**	**23 08 42.5**	**-0.4**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**218**	*e*Pn	**Pn**	**23 08 42.5**	**-0.4**
EDC	**Edincik**	**1.53**	**324**	*e*PN	**Pn**	**23 08 43.8**	**+0.1**
EDC	**Edincik**	**1.53**	**324**	*e*Pn	**Pn**	**23 08 43.8**	**+0.1**
GPA	**Golpazari**	**1.53**	**39**	*e*PN	**Pn**	**23 08 43.8**	**+0.1**
GPA	**Golpazari**	**1.53**	**39**	*e*Pn	**Pn**	**23 08 43.8**	**+0.1**
BOLV	**Bolvadin**	**1.54**	**104**	P	**Pb**	**23 08 44.8**	**0.0**
BOLV	**Bolvadin**	**1.54**	**104**	*i* P	**Pb**	**23 08 44.8**	**0.0**
DKL	**Dikili**	**1.66**	**269**	*e*PN	**Pn**	**23 08 45.5**	**+0.1**
DKL	**Dikili**	**1.66**	**269**	*e*Pn	**Pn**	**23 08 45.5**	**+0.1**
ISP	**Isparta**	**1.74**	**137**	*e*PN	**Pn**	**23 08 46.6**	**+0.1**
ISP	**Isparta**	**1.74**	**137**	P	**Pn**	**23 08 46.2**	**-0.3**
ISP				S	**Sb**	**23 09 10.3**	**+0.1**
ISP	**Isparta**	**1.74**	**137**	P	**Pn**	**23 08 46.2**	**-0.3**
ISP	**Isparta**	**1.74**	**137**	*e*Pn	**Pn**	**23 08 46.6**	**+0.1**
ISP				S	**Sb**	**23 09 10.3**	**+0.1**
GULT	**Gulveren**	**1.74**	**40**	*e*PN	**Pn**	**23 08 47.0**	**+0.3**
HRT	**Hereke**	**1.78**	**16**	*e*PN	**Pn**	**23 08 47.2**	**+0.1**
HRT	**Hereke**	**1.78**	**16**	*e*Pn	**Pn**	**23 08 47.2**	**+0.1**
SPNC	**Sapanca-Adapaz**	**1.85**	**31**	*e*PN	**Pn**	**23 08 48.4**	**+0.4**
SPNC	**Sapanca-Adapaz**	**1.85**	**31**	*e*Pn	**Pn**	**23 08 48.4**	**+0.4**
MRMT	**Marmara Adasi**	**1.86**	**324**	*e*PN	**Pn**	**23 08 48.4**	**+0.2**
MRMT	**Marmara Adasi**	**1.86**	**324**	*e*Pn	**Pn**	**23 08 48.4**	**+0.2**
ISK	**Istanbul-Kandi**	**1.95**	**0**	*e*PN	**Pn**	**23 08 49.7**	**+0.3**
ISK	**Istanbul-Kandi**	**1.95**	**0**	P	**Pb**	**23 08 51.5**	**-0.2**
ISK				S	**Sb**	**23 09 17.4**	**+1.1**
ISK	**Istanbul-Kandi**	**1.95**	**0**	*e*Pn	**Pn**	**23 08 49.7**	**+0.3**
ISK	**Istanbul-Kandi**	**1.95**	**0**	P	**Pb**	**23 08 51.5**	**-0.2**
ISK				S	**Sb**	**23 09 17.4**	**+1.1**
SVRH	**Sivrihisar-ESK**	**1.96**	**79**	*e*PN	**Pn**	**23 08 49.7**	**+0.1**
SVRH	**Sivrihisar-ESK**	**1.96**	**79**	*e*Pn	**Pn**	**23 08 49.7**	**+0.1**
GLHS	**Gihisar (BURDU**	**1.98**	**169**	*e*PN	**Pn**	**23 08 50.4**	**+0.4**
GLHS	**Gihisar (BURDU**	**1.98**	**169**	*e*Pn	**Pn**	**23 08 50.4**	**+0.4**
BCK	**Bucak**	**2.05**	**143**	*e*PN	**Pn**	**23 08 51.4**	**+0.6**
BCK	**Bucak**	**2.05**	**143**	*e*Pn	**Pn**	**23 08 51.4**	**+0.6**
YER	**Yerkesik**	**2.06**	**197**	*e*PN	**Pn**	**23 08 51.1**	**+0.2**
YER	**Yerkesik**	**2.06**	**197**	P	**Pn**	**23 08 50.7**	**-0.3**
YER	**Yerkesik**	**2.06**	**197**	P	**Pn**	**23 08 50.7**	**-0.3**
YER	**Yerkesik**	**2.06**	**197**	*e*Pn	**Pn**	**23 08 51.2**	**+0.2**
BGKT	**Bogazkoy**	**2.08**	**354**	*e*PN	**Pn**	**23 08 51.9**	**+0.8**
BGKT	**Bogazkoy**	**2.08**	**354**	*e*Pn	**Pn**	**23 08 51.9**	**+0.8**
SILT	**Sile**	**2.09**	**13**	*e*PN	**Pn**	**23 08 51.9**	**+0.6**
SILT	**Sile**	**2.09**	**13**	*e*Pn	**Pn**	**23 08 51.9**	**+0.6**
RKY	**Sarkoy-Tekirda**	**2.13**	**318**	*e*PN	**Pn**	**23 08 52.6**	**+0.7**
RKY	**Sarkoy-Tekirda**	**2.13**	**318**	*e*Pn	**Pn**	**23 08 52.6**	**+0.7**
KLYT	**Kilyos**	**2.14**	**0**	*e*PN	**Pn**	**23 08 52.6**	**+0.6**
KLYT	**Kilyos**	**2.14**	**0**	*e*Pn	**Pn**	**23 08 52.6**	**+0.6**
MDUB	**Mudurnu**	**2.15**	**50**	*e*PN	**Pn**	**23 08 52.6**	**+0.4**
PRK	**Paraskevi**	**2.15**	**274**	P	**Pn**	**23 08 51.0**	**-1.2**
PRK				S	**Sn**	**23 09 17.3**	**-1.9**
PRK	**Paraskevi**	**2.15**	**274**	P	**Pn**	**23 08 51.0**	**-1.2**
PRK				S	**Sn**	**23 09 17.3**	**-1.9**
LPK	**Lapseki**	**2.16**	**306**	*e*PN	**Pn**	**23 08 52.1**	**-0.2**
LPK	**Lapseki**	**2.16**	**306**	*e*Pn	**Pn**	**23 08 52.1**	**-0.2**
CTKS	**Kestanelik-??a**	**2.16**	**349**	*e*PN	**Pn**	**23 08 52.4**	**+0.1**
CTKS	**Kestanelik-??a**	**2.16**	**349**	*e*Pn	**Pn**	**23 08 52.4**	**+0.1**
TKR	**Tekirdag**	**2.20**	**329**	*e*PN	**Pn**	**23 08 52.9**	**0.0**
TKR	**Tekirdag**	**2.20**	**329**	*e*Pn	**Pn**	**23 08 52.9**	**0.0**
EZN	**Ezine**	**2.22**	**290**	*e*PN	**Pn**	**23 08 53.0**	**0.0**
EZN	**Ezine**	**2.22**	**290**	P	**Pn**	**23 08 52.8**	**-0.2**
EZN	**Ezine**	**2.22**	**290**	*e*Pn	**Pn**	**23 08 53.0**	**0.0**
SMG	**Samos**	**2.22**	**232**	P	**Pn**	**23 08 51.7**	**-1.5**
SMG	**Samos**	**2.22**	**232**	P	**Pn**	**23 08 51.7**	**-1.5**
SUTC	**Sutluce-Ispart**	**2.25**	**136**	*e*PN	**Pn**	**23 08 54.1**	**+0.5**
SUTC	**Sutluce-Ispart**	**2.25**	**136**	*e*Pn	**Pn**	**23 08 54.1**	**+0.5**
DALY	**Dalyan (Mu¨la**	**2.31**	**188**	*e*PN	**Pn**	**23 08 54.5**	**+0.2**
DALY	**Dalyan (Mu¨la**	**2.31**	**188**	*e*Pn	**Pn**	**23 08 54.5**	**+0.2**
GELI	**Tayfur-Gelibol**	**2.36**	**304**	*e*PN	**Pn**	**23 08 55.6**	**+0.6**
GELI	**Tayfur-Gelibol**	**2.36**	**304**	*e*Pn	**Pn**	**23 08 55.6**	**+0.6**
CTYL	**Yalikoy Yolu**	**2.43**	**347**	*e*PN	**Pn**	**23 08 56.6**	**+0.6**
CTYL	**Yalikoy Yolu**	**2.43**	**347**	*e*Pn	**Pn**	**23 08 56.6**	**+0.6**
CHOS	**Chios island**	**2.44**	**254**	*e*PN	**Pn**	**23 08 56.5**	**+0.3**
CHOS	**Chios island**	**2.44**	**254**	P	**Pn**	**23 08 55.7**	**-0.5**
CHOS	**Chios island**	**2.44**	**254**	P	**Pn**	**23 08 55.7**	**-0.5**
CHOS	**Chios island**	**2.44**	**254**	*e*Pn	**Pn**	**23 08 56.5**	**+0.3**
BODT	**Bodrum**	**2.46**	**214**	*e*PN	**Pn**	**23 08 56.6**	**+0.2**
BODT	**Bodrum**	**2.46**	**214**	P	**Pn**	**23 08 55.2**	**-1.2**
BODT	**Bodrum**	**2.46**	**214**	P	**Pn**	**23 08 55.2**	**-1.2**
BODT	**Bodrum**	**2.46**	**214**	*e*Pn	**Pn**	**23 08 56.6**	**+0.2**
ELL	**Elmali**	**2.46**	**163**	*e*PN	**Pn**	**23 08 56.7**	**+0.2**
ELL	**Elmali**	**2.46**	**163**	*e*Pn	**Pn**	**23 08 56.7**	**+0.2**
FETY	**Fethiye**	**2.47**	**179**	*e*PN	**Pn**	**23 08 57.1**	**+0.5**
FETY	**Fethiye**	**2.47**	**179**	P	**Pn**	**23 08 56.9**	**+0.3**
FETY				S	**Sn**	**23 09 26.6**	**-0.5**
FETY	**Fethiye**	**2.47**	**179**	P	**Pn**	**23 08 56.9**	**+0.3**
FETY				S	**Sn**	**23 09 26.6**	**-0.5**
SIGR	**SIGRI**	**2.48**	**273**	*e*PN	**Pn**	**23 08 57.3**	**+0.7**
SIGR	**SIGRI**	**2.48**	**273**	P	**Pn**	**23 08 55.8**	**-0.8**
SIGR				S	**Sn**	**23 09 26.8**	**-0.3**
SIGR	**SIGRI**	**2.48**	**273**	P	**Pn**	**23 08 55.8**	**-0.8**
SIGR	**SIGRI**	**2.48**	**273**	*e*Pn	**Pn**	**23 08 57.3**	**+0.7**
SIGR				S	**Sn**	**23 09 26.8**	**-0.3**
ERIK	**Erikli-Kesan**	**2.49**	**310**	*e*PN	**Pn**	**23 08 57.5**	**+0.8**
ERIK	**Erikli-Kesan**	**2.49**	**310**	*e*Pn	**Pn**	**23 08 57.6**	**+0.8**
ENEZ	**Enez**	**2.75**	**307**	*e*PN	**Pn**	**23 09 00.8**	**+0.4**
ENEZ	**Enez**	**2.75**	**307**	*e*Pn	**Pn**	**23 09 00.8**	**+0.4**
LADK	**Ladik-KONYA**	**2.76**	**108**	*e*PN	**Pn**	**23 09 01.5**	**+0.9**
LADK	**Ladik-KONYA**	**2.76**	**108**	*e*Pn	**Pn**	**23 09 01.5**	**+0.9**
KONT	**Konya--Tatoy**	**2.85**	**113**	*e*PN	**Pn**	**23 09 03.0**	**+1.1**
KONT	**Konya--Tatoy**	**2.85**	**113**	*e*Pn	**Pn**	**23 09 03.0**	**+1.1**
ALN	**Alexandroupoli**	**2.91**	**309**	*e*PN	**Pn**	**23 09 03.4**	**+0.8**
ALN	**Alexandroupoli**	**2.91**	**309**	P	**Pn**	**23 09 02.3**	**-0.3**
ALN				S	**Sn**	**23 09 37.8**	**0.0**
ALN	**Alexandroupoli**	**2.91**	**309**	P	**Pn**	**23 09 02.3**	**-0.3**
ALN	**Alexandroupoli**	**2.91**	**309**	*e*Pn	**Pn**	**23 09 03.4**	**+0.8**
ALN				S	**Sn**	**23 09 37.8**	**0.0**
ARG	**Arkhangelos**	**2.98**	**194**	P	**Pn**	**23 09 04.0**	**+0.5**
ARG				S	**Sn**	**23 09 39.9**	**+0.4**
LOD	**Lodumlu**	**2.99**	**74**	*e*PN	**Pn**	**23 09 04.7**	**+1.0**
LOD	**Lodumlu**	**2.99**	**74**	*e*Pn	**Pn**	**23 09 04.7**	**+1.0**
KSL	**Kastellorizon**	**2.99**	**171**	P	**Pn**	**23 09 04.0**	**+0.4**
SMTH	**Samothraki Isl**	**3.02**	**298**	P	**Pn**	**23 09 03.9**	**-0.3**
SMTH				S	**Sn**	**23 09 40.8**	**+0.1**
SMTH	**Samothraki Isl**	**3.02**	**298**	P	**Pn**	**23 09 03.9**	**-0.3**
SMTH				S	**Sn**	**23 09 40.8**	**+0.1**
AFSR	**Af¨ar-Bala (A**	**3.15**	**83**	*e*PN	**Pn**	**23 09 06.7**	**+0.7**
AFSR	**Af¨ar-Bala (A**	**3.15**	**83**	*e*Pn	**Pn**	**23 09 06.7**	**+0.7**
EDRB	**Edirne**	**3.25**	**328**	P	**Pn**	**23 09 07.0**	**-0.2**
EDRB	**Edirne**	**3.25**	**328**	P	**Pn**	**23 09 07.0**	**-0.2**
LAST	**Lasithi**	**4.86**	**217**	⇑ iP	**Pn**	**23 09 33.3**	**+3.8**
LAST	**Lasithi**	**4.86**	**217**	⇑ iP	**Pn**	**23 09 33.3**	**+3.8**
IDI	**Anoyia**	**5.05**	**222**	‖ iP	**Pn**	**23 09 36.1**	**+4.0**
IDI	**Anoyia**	**5.05**	**222**	‖ iP	**Pn**	**23 09 36.1**	**+4.0**
TIRR	**Tirgusor**	**5.36**	**355**	⇑ iP	**Pn**	**23 09 36.2**	**-0.1**
TIRR	**Tirgusor**	**5.36**	**355**	⇑ iP	**Pn**	**23 09 36.2**	**-0.1**
CFR	**Carcaliu**	**6.10**	**354**	⇑ iP	**Pn**	**23 09 48.0**	**+1.6**
CFR	**Carcaliu**	**6.10**	**354**	⇑ iP	**Pn**	**23 09 48.0**	**+1.6**
MLR	**Muntele Rosu**	**6.78**	**341**	⇑ iP	**Pn**	**23 09 59.4**	**+3.6**
MLR	**Muntele Rosu**	**6.78**	**341**	⇑ iP	**Pn**	**23 09 59.4**	**+3.6**
PLOR	**Plostina**	**6.96**	**346**	⇑ iP	Pn	23 10 03.3	+5.0
PLOR	**Plostina**	**6.96**	**346**	⇑ iP	Pn	23 10 03.3	+5.0
VRI	**Vrincioaia**	**6.96**	**347**	⇑ iP	**Pn**	**23 10 01.1**	**+2.8**
VRI	**Vrincioaia**	**6.96**	**347**	⇑ iP	**Pn**	**23 10 01.1**	**+2.8**
VOIR		**6.98**	**336**	⇑ iP	**Pn**	**23 10 01.3**	**+2.8**
VOIR		**6.98**	**336**	⇑ iP	**Pn**	**23 10 01.3**	**+2.8**
ARR	**Arges**	**7.05**	**334**	‖ iP	**Pn**	**23 10 01.0**	**+1.4**
ARR	**Arges**	**7.05**	**334**	‖ iP	**Pn**	**23 10 01.0**	**+1.4**
DOPR	**Dopca**	**7.36**	**340**	‖ iP	**Pn**	**23 10 06.7**	**+2.9**
DOPR	**Dopca**	**7.36**	**340**	‖ iP	**Pn**	**23 10 06.7**	**+2.9**
LEOM	**Leova**	**7.38**	**356**	⇑ iP	**Pn**	**23 10 06.1**	**+2.1**
LEOM	**Leova**	**7.38**	**356**	⇑ iP	**Pn**	**23 10 06.1**	**+2.1**

*ROM **24** 23:16:46.8±0.2, 43.°87N×12.°05E, h5km±1km, Md2.5/13,*
Ml1.8/10, Error ellipse: s-maj=2.5km s-min=1.1km az=39.0
*ISCJB **24** 23:16:47.5±0.4, 43.°85N±0.°03×12.°00E±0.°03, h13km±5km,*
Error ellipse: s-maj=5.5km s-min=3.4km az=33.5
*CSEM **24** 23:16:47.7±0.2, 43.°84N×12.°01E, h10km, ML2.5/9, Error*
ellipse: s-maj=3.9km s-min=2.6km az=25.0
ISC 24 23:16:45.6±1.1, 43.°97N±0.°04×12.°03E±0.°02, h15km±8km,
n30, σ0°52/56, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFI	**Santa Sofia**	**0.14**	**245**	Pg	**Pb**	**23 16 50.3**	**+0.2**
SFI				Sg	**Sb**	**23 16 53.0**	**-0.1**
229nm,0.3s							
SFI	**Santa Sofia**	**0.14**	**245**	Pg	**Pb**	**23 16 50.3**	**+0.2**
SFI				Sg	**Sb**	**23 16 53.0**	**-0.1**
229nm,0.3s							
ASQU	**Asqua**	**0.24**	**225**	Pg	**Pb**	**23 16 51.5**	**-0.3**
ASQU				Sg	**Sg**	**23 16 54.9**	**+0.4**
294nm,0.2s							
ASQU	**Asqua**	**0.24**	**225**	Pg	**Pb**	**23 16 51.5**	**-0.3**
ASQU				Sg	**Sg**	**23 16 54.9**	**+0.4**
294nm,0.2s							
BLLA	**Bellaria**	**0.36**	**61**	Pg	**Pn**	**23 16 56.3**	**-0.1**
BLLA				Sg	**Sn**	**23 17 03.6**	**+0.3**
BLLA	**Bellaria**	**0.36**	**61**	Pg	**Pn**	**23 16 56.3**	**-0.1**
BLLA				Sg	**Sn**	**23 17 03.6**	**+0.3**
BADI	**Badiali**	**0.48**	**161**	Pg	**Pg**	**23 16 55.1**	**-0.1**
BADI				Sg	**Sg**	**23 17 01.8**	**+0.1**
134nm,0.2s							
BADI	**Badiali**	**0.48**	**161**	Pg	**Pg**	**23 16 55.1**	**-0.1**
BADI				Sg	**Sg**	**23 17 01.8**	**+0.1**
134nm,0.2s							
SEI	**Scarperia**	**0.49**	**281**	Pg	**Pn**	**23 16 57.4**	**-0.8**
SEI				Sg	**Sn**	**23 17 05.8**	**-0.8**
385nm,0.2s							
SEI	**Scarperia**	**0.49**	**281**	Pg	**Pn**	**23 16 57.4**	**-0.8**
SEI				Sg	**Sn**	**23 17 05.8**	**-0.8**
385nm,0.2s							
PIEI	**Pieia**	**0.57**	**139**	Pg	**Pg**	**23 16 56.7**	**-0.1**
PIEI				Sg	**Sb**	**23 17 04.9**	**-0.3**
24nm,0.3s							
PIEI	**Pieia**	**0.57**	**139**	Pg	**Pg**	**23 16 56.7**	**-0.1**
PIEI				Sg	**Sb**	**23 17 04.9**	**-0.3**
24nm,0.3s							
ATPC	**Poggio Castell**	**0.58**	**147**	Pg	**Pg**	**23 16 56.9**	**-0.1**
ATPC				Sg	**Sb**	**23 17 05.7**	**+0.2**
65nm,0.2s							
ATPC	**Poggio Castell**	**0.58**	**147**	Pg	**Pg**	**23 16 56.9**	**-0.1**
ATPC				Sg	**Sb**	**23 17 05.7**	**+0.2**
65nm,0.2s							
ATVO	**AVT- Monte Val**	**0.65**	**155**	Pg	**Pg**	**23 16 58.0**	**-0.3**
ATVO				Sg	**Sb**	**23 17 07.4**	**-0.1**
54nm,0.4s							
ATVO	**AVT- Monte Val**	**0.65**	**155**	Pg	**Pg**	**23 16 58.0**	**-0.3**
ATVO				Sg	**Sb**	**23 17 07.4**	**-0.1**
54nm,0.4s							
FRON	**Frontone**	**0.68**	**131**	Pg	**Pb**	**23 16 59.0**	**-0.2**
FRON				Sg	**Sb**	**23 17 09.3**	**+0.9**
31nm,0.6s							
FRON	**Frontone**	**0.68**	**131**	Pg	**Pb**	**23 16 59.0**	**-0.2**
FRON				Sg	**Sb**	**23 17 09.3**	**+0.9**
31nm,0.6s							
FNVD	**Fontana Vidola**	**0.68**	**287**	Pg	**Pn**	**23 17 01.2**	**+0.3**
FNVD				Sg	**Sn**	**23 17 12.8**	**+1.5**
FNVD	**Fontana Vidola**	**0.68**	**287**	Pg	**Pn**	**23 17 01.2**	**+0.3**
FNVD				Sg	**Sn**	**23 17 12.8**	**+1.5**
SSFR	**Montelago di S**	**0.76**	**134**	Pg	**Pb**	**23 17 00.6**	**-0.1**
38nm,0.2s							
SSFR	**Montelago di S**	**0.76**	**134**	Pg	**Pb**	**23 17 00.6**	**-0.1**
38nm,0.2s							
ATTE	**AVT- Monte Tez**	**0.80**	**163**	Pg	**Pg**	**23 17 00.7**	**-0.6**
32nm,0.8s							
ATTE	**AVT- Monte Tez**	**0.80**	**163**	Pg	**Pg**	**23 17 00.7**	**-0.6**
32nm,0.8s							
FROS	**Frosini**	**0.99**	**220**	Pg	**Pn**	**23 17 05.4**	**+0.4**
FROS				Sg	**Sb**	**23 17 17.1**	**-0.2**
38nm,0.8s							
FROS	**Frosini**	**0.99**	**220**	Pg	**Pn**	**23 17 05.4**

NVLJ	**Novalja**	**2.25**	**70**	*e*Pn	**Pn**	**23 19 20.2**	**-0.3**
PANI	**Panarotta**	**2.25**	**350**	*e*Pn	**Pn**	**23 19 21.4**	**+0.5**
PANI	**Panarotta**	**2.25**	**350**	*e*Pn	**Pn**	**23 19 21.4**	**+0.5**
AGOR	**Agordo**	**2.45**	**2**	*e*Pn	**Pn**	**23 19 23.7**	**+0.2**
SABO	**M.te Sabotino**	**2.46**	**29**	*e*Pn	**Pn**	**23 19 23.0**	**-0.5**
SABO	**M.te Sabotino**	**2.46**	**29**	*e*Pn	**Pn**	**23 19 23.0**	**-0.5**
PGF	**Pioggiola**	**2.49**	**240**	*e*P	**Pn**	**23 19 25.8**	**+1.8**
PGF				*e*Sn	**Sn**	**23 19 53.4**	**-0.6**
	8.0nm,0.4s						
PGF	**Pioggiola**	**2.49**	**240**	*e*P	**Pn**	**23 19 25.8**	**+1.8**
PGF				*e*Sn	**Sn**	**23 19 53.4**	**-0.6**
	4.0nm,0.4s						
CIMO	**Cimolais**	**2.50**	**8**	*e*Pn	**Pn**	**23 19 23.6**	**-0.6**
CIMO	**Cimolais**	**2.50**	**8**	*e*Pn	**Pn**	**23 19 23.6**	**-0.6**
BAD	**Bernadia**	**2.58**	**21**	*e*Pn	**Pn**	**23 19 24.8**	**-0.4**
BAD	**Bernadia**	**2.58**	**21**	*e*Pn	**Pn**	**23 19 24.8**	**-0.4**
OZOL	**Ozolo**	**2.64**	**347**	*e*Pn	**Pn**	**23 19 27.4**	**+1.2**
OZOL	**Ozolo**	**2.64**	**347**	*e*Pn	**Pn**	**23 19 27.4**	**+1.3**
UDBI	**Udbina**	**2.86**	**75**	*i* Pn	**Pn**	**23 19 28.6**	**-0.4**
UDBI	**Udbina**	**2.86**	**75**	*i* Pn	**Pn**	**23 19 28.6**	**-0.4**
ACOM	**Acomizza, Ital**	**2.94**	**22**	*e*Pn	**Pn**	**23 19 30.9**	**+0.6**
ACOM	**Acomizza, Ital**	**2.94**	**22**	*e*Pn	**Pn**	**23 19 30.9**	**+0.5**
ABTA	**Abfaltersbach**	**2.94**	**8**	*i* Pn	**Pn**	**23 19 31.3**	**+1.0**
	1.6nm,0.4s						
ABTA	**Abfaltersbach**	**2.94**	**8**	Pn	**Pn**	**23 19 31.3**	**+1.0**
	1.6nm,0.4s						
SBF	**Sospel**	**3.24**	**272**	*e*P	**Pn**	**23 19 35.2**	**+0.9**
SBF				*e*Sn	**Sn**	**23 20 10.6**	**-1.9**
	17nm,0.3s						
SBF	**Sospel**	**3.24**	**272**	*e*P	**Pn**	**23 19 35.2**	**+0.9**
SBF				*e*Sn	**Sn**	**23 20 10.6**	**-1.9**
	8.3nm,0.3s						
SQTA	**Sankt Quirin**	**3.42**	**352**	*i* Pn	**Pb**	**23 19 40.8**	**-3.7**
SQTA	**Sankt Quirin**	**3.42**	**352**	Pn	**Pb**	**23 19 40.8**	**-3.7**
DAVA	**Damuels**	**3.74**	**338**	*e*Pn	**Pn**	**23 19 45.5**	**+4.3**
	1.2nm,0.3s						
DAVA				*i* Sn	**Sb**	**23 20 38.5**	**+3.6**
	35nm,0.6s						
DAVA	**Damuels**	**3.74**	**338**	Pn	**Pn**	**23 19 45.5**	**+4.3**
	1.2nm,0.3s						
RETA	**Reutte**	**3.74**	**348**	*i* Pn	**Pn**	**23 19 44.6**	**+3.4**
	1.0nm,0.3s						
RETA				*i* Sn	**Sg**	**23 20 41.0**	**-3.3**
	7.3nm,0.3s						
RETA	**Reutte**	**3.74**	**348**	Pn	**Pn**	**23 19 44.6**	**+3.4**
	1.0nm,0.3s						
MBDF	**Montbardon**	**3.80**	**285**	*e*Pn	**Pn**	**23 19 39.9**	**-2.2**
MBDF				*e*Sn	**Sn**	**23 20 23.0**	**-3.4**
	8.5nm,0.3s						
MBDF	**Montbardon**	**3.80**	**285**	*e*Pn	**Pn**	**23 19 39.9**	**-2.2**
FRF	**La Foret Royal**	**3.83**	**268**	*e*P	**Pn**	**23 19 43.8**	**+1.5**
FRF				*e*Sn	**Sn**	**23 20 23.4**	**-3.5**
	8.1nm,0.3s						
FRF	**La Foret Royal**	**3.83**	**268**	*e*P	**Pn**	**23 19 43.8**	**+1.5**
LMR	**La Mourre**	**3.96**	**265**	*e*Pn	**Pn**	**23 19 43.5**	**-0.6**
LMR	**La Mourre**	**3.96**	**265**	*e*Pn	**Pn**	**23 19 43.5**	**-0.6**
LPG	**La Plagne**	**4.04**	**296**	*e*P	**Pn**	**23 19 46.6**	**+1.1**
LPG	**La Plagne**	**4.04**	**296**	*e*P	**Pn**	**23 19 46.6**	**+1.1**
LPL	**La Plagne**	**4.06**	**296**	*e*P	**Pn**	**23 19 47.5**	**+1.8**
LPL	**La Plagne**	**4.06**	**296**	*e*P	**Pn**	**23 19 47.5**	**+1.8**
MOA	**Molln**	**4.34**	**21**	*i* Pn	**Pn**	**23 19 50.5**	**+1.1**
MOA	**Molln**	**4.34**	**21**	Pn	**Pn**	**23 19 50.5**	**+1.1**
SMRF	**Simiane la Rot**	**4.58**	**274**	*e*Pn	**Pn**	**23 19 51.4**	**-1.3**
SMRF	**Simiane la Rot**	**4.58**	**274**	*e*Pn	**Pn**	**23 19 51.4**	**-1.3**
CABF	**La Chapelle**	**4.96**	**306**	*e*P	**Pn**	**23 19 59.6**	**+1.6**
CABF	**La Chapelle**	**4.96**	**306**	*e*P	**Pn**	**23 19 59.6**	**+1.6**
VIVF	**Saint-Julien-l**	**5.29**	**284**	*e*Pn	**Pn**	**23 20 00.3**	**-2.2**
VIVF	**Saint-Julien-l**	**5.29**	**284**	*e*Pn	**Pn**	**23 20 00.3**	**-2.2**
HINF	**Hinteralfeld**	**5.33**	**320**	*e*P	**Pn**	**23 20 04.1**	**+1.2**
HINF				*e*Sn	**Sn**	**23 20 56.7**	**-7.2**
	21nm,0.6s						
HINF	**Hinteralfeld**	**5.33**	**320**	*e*P	**Pn**	**23 20 04.1**	**+1.2**
KHC	**Kasperske Hory**	**5.42**	**12**	*e*PN	**Pn**	**23 20 06.7**	**+2.4**
KHC				*e*x	x	23 20 13.2	
KHC				*e*x	x	23 20 16.3	
KHC				*e*SN	**Sn**	**23 21 05.9**	**-0.4**
KHC				*e*x	x	23 21 14.0	
KHC				*e*x	x	23 21 23.9	
KHC	**Kasperske Hory**	**5.42**	**12**	Pn	**Pn**	**23 20 06.7**	**+2.4**
KHC				Sn	**Sn**	**23 21 14.0**	**+7.7**
CDF	**Champ du Feu**	**5.60**	**326**	*e*P	**Pn**	**23 20 07.7**	**+1.0**
CDF				*e*Sn	**Sn**	**23 21 04.2**	**-6.5**
	6.3nm,0.5s						
CDF	**Champ du Feu**	**5.60**	**326**	*e*P	**Pn**	**23 20 07.7**	**+1.0**
HAU	**Haudompre**	**5.70**	**319**	*e*P	**Pn**	**23 20 09.5**	**+1.5**
HAU				*e*Sn	**Sn**	**23 21 05.5**	**-7.6**
	24nm,0.5s						
HAU	**Haudompre**	**5.70**	**319**	*e*P	**Pn**	**23 20 09.5**	**+1.5**
GOPC	**GO Pecny, Ondr**	**6.39**	**17**	*e*SN	**Sn**	**23 21 36.1**	**+6.0**
GOPC	**GO Pecny, Ondr**	**6.39**	**17**	Sn	**Sn**	**23 21 36.1**	**+6.0**
NKC	**Novy Kostel**	**6.41**	**3**	*e*SN	**Sn**	**23 21 38.4**	**+7.8**
NKC	**Novy Kostel**	**6.41**	**3**	Sn	**Sn**	**23 21 38.4**	**+7.8**
PRU	**Pruhonice**	**6.42**	**15**	*e*SN	**Sn**	**23 21 36.5**	**+5.9**
PRU	**Pruhonice**	**6.42**	**15**	Sn	**Sn**	**23 21 36.5**	**+5.9**
LOR	**Lormes**	**6.62**	**304**	*e*P	**Pn**	**23 20 22.5**	**+1.9**
LOR				*e*Sn	**Sn**	**23 21 29.3**	**-6.3**
	3.6nm,0.4s						
LOR	**Lormes**	**6.62**	**304**	*e*P	**Pn**	**23 20 22.5**	**+1.9**
MTLF	**Montolieu**	**7.06**	**269**	*e*P	**Pn**	**23 20 29.2**	**+2.5**
MTLF	**Montolieu**	**7.06**	**269**	*e*P	**Pn**	**23 20 29.2**	**+2.5**

*IDC **24** 23:18:49.4±1.4, 44°.37N×11°.80E, h0km, mb3.5/2, mb1 3.3/5, mb1mx3.1/59, mbtmp3.3/5, ML2.6/3, MS2.8/2, Ms1 2.8/2, ms1mx2.3/36, Error ellipse: s-maj=42.6km s-min=19.0km az=103.0*
*ISCJB **24** 23:18:52.0±0.6, 44°.01N±0°.04×12°.03E±0°.05, h18km±7km, mb3.5/2, MS2.7/1, Error ellipse: s-maj=7.1km s-min=4.7km az=31.2*
*ROM **24** 23:18:52.8±0.2, 43°.90N×12°.03E, h7km, Ml3.0/14, Error ellipse: s-maj=2.5km s-min=1.1km az=18.0*
*CSEM **24** 23:18:52.8, 43°.90N×12°.03E, h7km, ML3.0/14*
ISC 24 23:18:52.9±0.9, **43°.94N**±0°.03×**12°.03E**±0°.03, **h12**km±6km, **n45**, σ0§95/61, **Central Italy**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFI	**Santa Sofia**	**0.13**	**257**	Pg	**Pg**	**23 18 56.2**	**0.0**
SFI				Sg	**Sg**	**23 18 58.3**	**-0.3**
SFI	**Santa Sofia**	**0.13**	**257**	Pg	**Pg**	**23 18 56.2**	**0.0**
SFI				Sg	**Sg**	**23 18 58.3**	**-0.3**
ASQU	**Asqua**	**0.22**	**231**	Pg	**Pg**	**23 18 57.3**	**-0.3**
ASQU				Sg	**Sg**	**23 19 00.4**	**-0.5**
ASQU	**Asqua**	**0.22**	**231**	Pg	**Pg**	**23 18 57.3**	**-0.3**
ASQU				Sg	**Sg**	**23 19 00.4**	**-0.5**
BLLA	**Bellaria**	**0.38**	**57**	Pg	**Pg**	**23 19 00.7**	**+0.2**
BLLA	**Bellaria**	**0.38**	**57**	Pg	**Pg**	**23 19 00.7**	**+0.2**
BADI	**Badiali**	**0.45**	**159**	Pg	**Pg**	**23 19 01.8**	**0.0**
BADI				Sg	**Sg**	**23 19 08.3**	**+0.4**
BADI	**Badiali**	**0.45**	**159**	Pg	**Pg**	**23 19 01.8**	**0.0**
BADI				Sg	**Sg**	**23 19 08.3**	**+0.4**
PIEI	**Pieia**	**0.54**	**137**	Pg	**Pg**	**23 19 03.1**	**-0.4**
PIEI				Sg	**Sg**	**23 19 11.2**	**+0.5**
	483nm,0.3s						
PIEI	**Pieia**	**0.54**	**137**	Pg	**Pg**	**23 19 03.1**	**-0.4**
PIEI				Sg	**Sg**	**23 19 11.2**	**+0.5**
	483nm,0.3s						
ATPC	**Poggio Castell**	**0.55**	**145**	Pg	**Pg**	**23 19 03.4**	**-0.3**
ATPC				Sg	**Sb**	**23 19 11.8**	**-0.6**
	1μm,0.4s						
ATPC	**Poggio Castell**	**0.55**	**145**	Pg	**Pg**	**23 19 03.4**	**-0.3**
ATPC				Sg	**Sb**	**23 19 11.8**	**-0.6**
	1μm,0.4s						
ATVO	**AVT- Monte Val**	**0.62**	**153**	Pg	**Pg**	**23 19 04.7**	**-0.2**
ATVO				Sg	**Sg**	**23 19 13.7**	**+0.6**
	1μm,0.7s						
ATVO	**AVT- Monte Val**	**0.62**	**153**	Pg	**Pg**	**23 19 04.7**	**-0.2**
ATVO				Sg	**Sg**	**23 19 13.7**	**+0.6**
	1μm,0.7s						
FRON	**Frontone**	**0.66**	**129**	Pg	**Pg**	**23 19 05.7**	**0.0**
FRON				Sg	**Sb**	**23 19 15.6**	**+0.1**
	514nm,0.6s						
FRON	**Frontone**	**0.66**	**129**	Pg	**Pg**	**23 19 05.7**	**0.0**
FRON				Sg	**Sb**	**23 19 15.6**	**+0.1**
	514nm,0.6s						
FNVD	**Fontana Vidola**	**0.69**	**290**	Pg	**Pb**	**23 19 07.2**	**+0.2**
	1μm,0.8s						
FNVD	**Fontana Vidola**	**0.69**	**290**	Pg	**Pb**	**23 19 07.2**	**+0.2**
	1μm,0.8s						
SSFR	**Montelago di S**	**0.74**	**132**	Pg	**Pg**	**23 19 07.0**	**-0.3**
SSFR				Sg	**Sb**	**23 19 18.2**	**+0.3**
SSFR	**Montelago di S**	**0.74**	**132**	Pg	**Pg**	**23 19 07.0**	**-0.3**
SSFR				Sg	**Sb**	**23 19 18.2**	**+0.3**
ATTE	**AVT- Monte Tez**	**0.77**	**162**	Pg	**Pg**	**23 19 07.6**	**-0.3**
ATTE				Sg	**Sb**	**23 19 18.6**	**-0.3**
	691nm,0.5s						
ATTE	**AVT- Monte Tez**	**0.77**	**162**	Pg	**Pg**	**23 19 07.6**	**-0.3**
ATTE				Sg	**Sb**	**23 19 18.6**	**-0.3**
	691nm,0.5s						
SNTG	**Esanatoglia**	**0.95**	**135**	Pg	**Pb**	**23 19 11.2**	**-0.2**
	484nm,0.5s						
SNTG	**Esanatoglia**	**0.95**	**135**	Pg	**Pb**	**23 19 11.2**	**-0.2**
	484nm,0.5s						
FROS	**Frosini**	**0.96**	**221**	Pg	**Pb**	**23 19 11.0**	**-0.5**
	974nm,0.9s						
FROS	**Frosini**	**0.96**	**221**	Pg	**Pb**	**23 19 11.0**	**-0.5**
	974nm,0.9s						
MGAB	**Montegabbione**	**1.02**	**176**	Pg	**Pg**	**23 19 12.7**	**+0.1**
	768nm,0.6s						
MGAB	**Montegabbione**	**1.02**	**176**	Pg	**Pg**	**23 19 12.7**	**+0.1**
	768nm,0.6s						
SACS	**San Casciano d**	**1.09**	**185**	Pg	**Pg**	**23 19 14.0**	**+0.1**
	334nm,0.5s						
MAIM	**Mastiano**	**1.11**	**269**	Pg	**Pg**	**23 19 14.6**	**+0.3**
	265nm,0.7s						
MAIM	**Mastiano**	**1.11**	**269**	Pg	**Pg**	**23 19 14.6**	**+0.3**
	265nm,0.7s						
ARCI	**Arcidosso**	**1.15**	**201**	Pg	**Pb**	**23 19 14.4**	**-0.5**
	357nm,0.9s						
ARCI	**Arcidosso**	**1.15**	**201**	Pg	**Pb**	**23 19 14.4**	**-0.5**
	357nm,0.9s						
TRIF	**Trifonti**	**1.16**	**225**	Pg	**Pb**	**23 19 14.6**	**-0.3**
	299nm,0.9s						
TRIF	**Trifonti**	**1.16**	**225**	Pg	**Pb**	**23 19 14.6**	**-0.3**
	299nm,0.9s						
SASS	**Sassa**	**1.18**	**236**	Pg	**Pb**	**23 19 15.3**	**0.0**
	155nm,0.8s						
SASS	**Sassa**	**1.18**	**236**	Pg	**Pb**	**23 19 15.3**	**0.0**
	155nm,0.8s						
DAVOX	**Davos/Dischmat**	**3.22**	**333**	Pn	Pn	23 19 36.8	-6.8
	0.8nm,0.3s,baz=334,slow=17,SNR=7.1						
GERES	**GERESS Array B**	**5.05**	**13**	Pn	Pn	23 20 00.3	-8.2
	0.2nm,0.3s,baz=194,slow=14,SNR=4.5						
GERES				Sn	**Sn**	**23 21 03.8**	**-2.9**
	0.7nm,0.3s,baz=185,slow=25,SNR=4.6						
BRG	**Berggiesshubel**	**7.06**	**10**	SN	**Sn**	**23 21 52.1**	**-4.1**
BRG				(SG)	**Sg**	**23 22 42.0**	**+2.5**
	4.2nm,0.7s						
BRG				*e*		23 42 52.4	
	5.4nm,1.0s						
KEST	**Kesra**	**8.45**	**195**	Pn	**Pn**	**23 20 58.5**	**+3.3**
	0.1nm,0.3s,baz=23,slow=14,SNR=2.9						
FINES	**FINESS Array B**	**19.42**	**21**	LR	LR	23 30 52.6	
	comp=Z,31nm,19.5s,baz=314,slow=38						
TORD	**Torodi Ar. Bea**	**31.94**	**199**	P	**P**	**23 25 19.1**	**+0.6**
	0.3nm,0.6s,baz=19,slow=8.5,SNR=4.3						
BBTS	**Babate**	**38.00**	**229**	LR	LR	23 41 15.5	
	comp=Z,12nm,21.7s,baz=242,slow=35						
MKAR	**Makanchi Array**	**47.93**	**61**	P	**P**	**23 27 29.9**	**-1.2**
	0.6nm,0.7s,baz=284,slow=5.8,SNR=6.6						

*CSEM **24** 23:23:52.4±0.1, 40°.54N×22°.82E, h12km, ML1.7, Error ellipse: s-maj=2.1km s-min=2.0km az=151.0*
*ATH **24** 23:23:52.8, 40°.55N×22°.82E, h12km±2km, ML1.7/6, Error ellipse: s-maj=2.7km s-min=0.8km az=68.0*
THE 24 23:23:52.8, 40°.55N×22°.82E, h13km, ML1.9/13, **Error ellipse: s-maj=0.8km s-min=0.5km az=321.0, Greece**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THE	**Thessaloniki**	**0.14**	**54**	P	Pg	23 23 56.2	-0.1
THE				S	Sg	23 23 58.6	-0.2
THE	**Thessaloniki**	**0.14**	**54**	P	Pg	23 23 56.5	+0.2
THE				S	Sg	23 23 58.6	-0.2
THE	**Thessaloniki**	**0.14**	**54**	P	Pg	23 23 56.5	+0.2
THE				S	Sg	23 23 58.1	-0.6
THE				AML	AML	23 23 59.0	
	comp=N,986μm,0.3s						
THE				AML	AML	23 23 59.2	
	comp=E,1016μm,0.3s						
HORT	**Hortiatis**	**0.22**	**78**	P	Pg	23 23 57.6	-0.1
HORT				S	Sg	23 24 01.0	0.0
HORT	**Hortiatis**	**0.22**	**78**	P	Pg	23 23 57.8	+0.1
HORT				S	Sg	23 24 01.0	0.0
HORT	**Hortiatis**	**0.22**	**78**	P	Pg	23 23 57.8	+0.1
HORT				S	Sg	23 24 00.6	-0.4
SOH	**Sokhos**	**0.49**	**56**	P	Pg	23 24 02.5	0.0
SOH				S	Sb	23 24 10.3	-0.1
SOH	**Sokhos**	**0.49**	**56**	P	Pg	23 24 02.5	0.0
SOH				S	Sb	23 24 10.3	-0.1
SOH	**Sokhos**	**0.49**	**56**	P	Pg	23 24 02.8	+0.3
PLG	**Polygyros**	**0.51**	**110**	P	Pg	23 24 02.7	-0.2
PLG				S	Sg	23 24 09.9	+0.2
PLG	**Polygyros**	**0.51**	**110**	P	Pg	23 24 02.7	-0.2
PLG				S	Sg	23 24 09.9	+0.2
PLG	**Polygyros**	**0.51**	**110**	P	Pg	23 24 02.8	0.0
PLG				S	Sg	23 24 10.1	+0.4
PLG				AML	AML	23 24 10.3	
	comp=N,281μm,0.3s						
PLG				AML	AML	23 24 10.4	
	comp=E,255μm,0.3s						
GRG	**Griva**	**0.51**	**322**	P	Pg	23 24 02.5	-0.4
GRG				S	Sg	23 24 10.3	+0.5
GRG	**Griva**	**0.51**	**322**	P	Pg	23 24 02.5	-0.4
GRG				S	Sg	23 24 09.6	-0.2
GRG	**Griva**	**0.51**	**322**	P	Pg	23 24 02.5	-0.5
GRG				S	Sg	23 24 09.6	-0.2
GRG				AML	AML	23 24 11.2	
	comp=E,216μm,0.2s						
GRG				AML	AML	23 24 13.8	
	comp=N,245μm,0.3s						
LIT	**Litokhoron**	**0.51**	**209**	P	Pg	23 24 02.9	0.0
LIT				S	Sg	23 24 09.7	-0.1
LIT	**Litokhoron**	**0.51**	**209**	P	Pg	23 24 02.9	0.0
LIT				S	Sg	23 24 09.6	-0.2
LIT	**Litokhoron**	**0.51**	**209**	P	Pb	23 24 03.4	-0.3
LIT				S	Sg	23 24 09.6	-0.2
LIT				AML	AML	23 24 12.1	
	comp=N,123μm,0.2s						
LIT				AML	AML	23 24 12.3	
	comp=E,155μm,0.2s						
KNT	**Kendrikon**	**0.61**	**6**	P	Pg	23 24 04.5	-0.3
KNT				S	Sg	23 24 13.2	+0.3
KNT	**Kendrikon**	**0.61**	**6**	P	Pg	23 24 04.5	-0.3
KNT				S	Sg	23 24 13.2	+0.3
KNT	**Kendrikon**	**0.61**	**6**	P	Pg	23 24 04.7	-0.1
KNT				S	Sg	23 24 13.3	+0.3
KNT				AML	AML	23 24 18.5	
	comp=E,127μm,0.1s						
KNT				AML	AML	23 24 18.7	
	comp=N,134μm,0.2s						
VAY	**Valandovo**	**0.79**	**346**	P	Pg	23 24 07.8	-0.4
VAY				S	Sg	23 24 18.7	+0.1
VAY	**Valandovo**	**0.79**	**346**	*i* Pg	Pg	23 24 07.9	-0.2
VAY				*e*Sg	Sg	23 24 18.7	+0.1
VAY	**Valandovo**	**0.79**	**346**	*i* Pg	Pg	23 24 07.9	-0.3
VAY				*e*Sg	Sg	23 24 18.6	0.0
SRS	**Serrai**	**0.82**	**46**	P	Pg	23 24 08.1	-0.5
SRS				S	Sb	23 24 20.5	+0.7
SRS	**Serrai**	**0.82**	**46**	P	Pg	23 24 08.0	-0.6
SRS				S	Sb	23 24 20.5	+0.7
SRS	**Serrai**	**0.82**	**46**	P	Pg	23 24 08.0	-0.6
KZN	**Kozani**	**0.83**	**253**	P	Pg	23 24 08.4	-0.6
KZN				S	Sb	23 24 21.0	+0.6
KZN	**Kozani**	**0.83**	**253**	P	Pg	23 24 08.2	-0.8
KZN				S	Sb	23 24 21.0	+0.6
PAIG	**Paliouri**	**0.91**	**133**	P	Pg	23 24 09.8	-0.5
PAIG				S	Sb	23 24 23.1	+0.7
PAIG	**Paliouri**	**0.91**	**133**	P	Pg	23 24 09.8	-0.5
PAIG				S	Sb	23 24 22.6	+0.2
PAIG	**Paliouri**	**0.91**	**133**	P	Pg	23 24 09.0	-1.3
PAIG				S	Sb	23 24 22.6	+0.2
PAIG				AML	AML	23 24 25.4	
	comp=N,187μm,0.4s						
PAIG				AML	AML	23 24 25.6	
	comp=E,99μm,0.3s						
OUR	**Ouranopolis**	**0.92**	**103**	P	Pg	23 24 10.2	-0.3
OUR				S	Sg	23 24 22.4	0.0
OUR	**Ouranopolis**	**0.92**	**103**	P	Pg	23 24 09.8	-0.7
OUR				S	Sg	23 24 22.4	0.0
OUR	**Ouranopolis**	**0.92**	**103**	P	Pg	23 24 09.8	-0.7
FNA	**Florina**	**1.12**	**282**	P	Pg	23 24 14.6	+0.2
FNA	**Florina**	**1.12**	**282**	P	Pg	23 24 14.6	+0.2
NVR	**Nevrokopi**	**1.12**	**44**	P	Pb	23 24 13.6	-0.5
NVR				S	Sg	23 24 29.2	+0.1
NVR	**Nevrokopi**	**1.12**	**44**	P	Pb	23 24 13.6	-0.5
NVR				S	Sg	23 24 29.2	+0.1
THL	**Klokotos Trika**	**1.16**	**212**	P	Pb	23 24 13.9	-0.8
XOR	**Xorichti**	**1.22**	**166**	P	Pn	23 24 14.5	-1.0
XOR	**Xorichti**	**1.22**	**166**	P	Pn	23 24 14.5	-1.0
XOR	**Xorichti**	**1.22**	**166**	P	Pn	23 24 13.5	-2.1
KAVA	**Kavala**	**1.36**	**70**	P	Pn	23 24 16.8	-0.7
KAVA				S	Sn	23 24 35.3	-0.1
KAVA	**Kavala**	**1.36**	**70**	P	Pn	23 24 16.8	-0.7
KAVA				S	Sn	23 24 35.3	-0.1
KAVA	**Kavala**	**1.36**	**70**	P	Pb	23 24 18.2	+0.1

*IDC **24** 23:24:22.1±1.1, 43°.79N×39°.42E, h0km, mb3.3/1, mb1 3.5/5, mb1mx3.2/56, mbtmp3.4/5, ML2.9/4, Error ellipse: s-maj=27.4km s-min=8.2km az=161.0*
*ISCJB **24** 23:24:25.0±1.0, 43°.85N±0°.05×39°.16E±0°.03, h17km±9km, mb3.3/2, Error ellipse: s-maj=9.3km s-min=3.9km az=7.9*
*MOS **24** 23:24:24.4±2.1, 43°.90N×39°.15E, h13km, mb4.2/2, Error ellipse: s-maj=11.8km s-min=7.1km az=20.3*
*CSEM **24** 23:24:24.4, 43°.90N×39°.15E, h13km, mb4.2*
ISC 24 23:24:24.5±1.2, **43°.90N**±0°.05×**39°.26E**±0°.03, **h7**km±9km, **n45**, σ1§47/66, **5C-7D, Western Caucasus**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SOC	**Sochi**	**0.46**	**134**	*d* iPG	**Pg**	**23 24 32.8**	**-0.6**
SOC				*e*		23 24 40.6	
SOC				pmax	pmax		
	comp=Z,61nm,0.6s						
SOC				smax	smax		
	comp=N,212nm,0.4s						
SOC				smax	smax		
	comp=E,208nm,0.4s						
SOC	**Sochi**	**0.46**	**134**	*i* Pg	**Pg**	**23 24 32.8**	**-0.6**
	comp=E,61nm,0.6s						
SOC				*e*Sg	**Sg**	**23 24 40.6**	**+1.2**
	comp=E,212nm,0.4s						
VOZR	**Vozrozhdenie**	**0.99**	**312**	⇑*e*PG	**Pn**	**23 24 44.9**	**+0.1**
VOZR				*e*S	**Sn**	**23 25 01.4**	**+2.3**
VOZR	**Vozrozhdenie**	**0.99**	**312**	*e*Pg	**Pn**	**23 24 44.9**	**+0.1**
VOZR				*e*Sg	**Sn**	**23 25 01.4**	**+2.3**
ANN	**Anapa**	**1.59**	**305**	*e*PN	**Pb**	**23 24 54.3**	**+0.1**
ANN				*e*		23 25 18.4	
ANN				pmax	pmax		
	comp=N,3.0nm,0.9s						
ANN				pmax	pmax		
	comp=E,3.0nm,0.9s						
ANN				pmax	pmax		
	comp=Z,7.0nm,0.9s						
ANN				smax	smax		
	comp=N,53nm,0.6s						
ANN				smax	smax		
	comp=E,31nm,0.6s						
ANN	**Anapa**	**1.59**	**305**	*e*Pn	**Pb**	**23 24 54.3**	**+0.1**
	comp=E,7.0nm,0.9s						
ANN				*e*Sg	**Sg**	**23 25 18.4**	**+2.7**
DOMR	**Dombai**	**1.82**	**109**	‖*e*PN	**Pn**	**23 24 56.8**	**+0.4**
DOMR	**Dombai**	**1.82**	**109**	*e*Pn	**Pn**	**23 24 56.8**	**+0.4**
CHVG	**Ch'k'valeri**	**2.38**	**119**	P	**Pb**	**23 25 07.1**	**-0.5**
CHVG				S	**Sb**	**23 25 39.0**	**+1.9**
KIV	**Kislovodsk**	**2.48**	**88**	*d* iPN	**Pn**	**23 25 06.0**	**+0.7**
KIV				pmax	pmax		
	comp=Z,30μm,1.0s						
KIV	**Kislovodsk**	**2.48**	**88**	*i* Pn	**Pn**	**23 25 06.0**	**+0.7**
	comp=Z,30μm,1.0s						
KVAR	**Kislovodsk Arr**	**2.48**	**88**	Pn	**Pn**	**23 25 04.0**	**-1.5**
	baz=275,slow=1.5,SNR=20						
KVAR				Lg	Lg	23 25 38.5	
	baz=120,slow=20,SNR=8.9						
BEYR	**Belyy Ugol+**	**2.57**	**86**	*de*PN	**Pn**	**23 25 07.5**	**+0.9**
BEYR	**Belyy Ugol+**	**2.57**	**86**	*e*Pn	**Pn**	**23 25 07.5**	**+0.9**
NEY	**Neytrino**	**2.60**	**103**	*e*PN	**Pn**	**23 25 08.7**	**+1.6**
NEY				*e*S	**Sn**	**23 25 39.5**	**+0.5**
NEY	**Neytrino**	**2.60**	**103**	*e*Pn	**Pn**	**23 25 08.7**	**+1.6**
NEY				*e*Sn	**Sn**	**23 25 39.5**	**+0.5**
KBZ	**Khabaz**	**2.64**	**92**	Pn	**Pn**	**23 25 07.2**	**-0.3**
	comp=Z,1.4nm,0.3s,baz=266,slow=11,SNR=21						
KBZ				Lg	Lg	23 25 42.5	
	comp=Z,1.7nm,0.3s,baz=88,slow=11,SNR=6.9						
PYA1	**Pyatigorsk**	**2.77**	**85**	‖*e*PN	**Pn**	**23 25 10.6**	**+1.2**
PYA1				*e*

SEI	**Scarperia**	**0.51 289**	Pg	Pg	23 26 17.2	+0.6
SEI			Sg	Sb	23 26 25.3	-0.4
319nm,0.6s						
PIEI	**Pieia**	**0.52 134**	Pg	Pg	23 26 17.4	+0.7
PIEI			Sg	Sb	23 26 25.6	-0.3
9.0nm,0.3s						
PIEI	**Pieia**	**0.52 134**	Pg	Pg	23 26 17.4	+0.7
PIEI			Sg	Sb	23 26 25.6	-0.3
9.0nm,0.3s						
ATPC	**Poggio Castell**	**0.52 142**	Pg	Pg	23 26 17.5	+0.7
ATPC			Sg	Sb	23 26 26.5	+0.5
36nm,0.2s						
ATPC	**Poggio Castell**	**0.52 142**	Pg	Pg	23 26 17.5	+0.7
ATPC			Sg	Sb	23 26 26.5	+0.5
36nm,0.2s						
ATVO	**AVT- Monte Val**	**0.58 151**	Pg	Pb	23 26 18.7	-0.7
ATVO	**AVT- Monte Val**	**0.58 151**	Pg	Pb	23 26 18.7	-0.7
FRON	**Frontone**	**0.63 126**	Pg	Pb	23 26 19.8	-0.4
FRON	**Frontone**	**0.63 126**	Pg	Pb	23 26 19.8	-0.4
SSFR	**Montelago di S**	**0.72 129**	Pg	Pg	23 26 21.1	+0.5
16nm,0.2s						
SSFR	**Montelago di S**	**0.72 129**	Pg	Pg	23 26 21.1	+0.5
16nm,0.2s						

*MOS **24** 23:29:32.6±1.1, 4°.06S×102°.37E, h43km, mb5.2/33, Error ellipse: s-maj=10.6km s-min=5.2km az=116.8*
*DJA **24** 23:29:34.7±0.4, 4°.S±2°×10°.2E±°, h32km±4km, M5.1/34, mb5.2/34, mB5.5/10, MLv5.3/8, Mw(mB)5.0/10*
*IDC **24** 23:29:34.2±0.4, 4°.11S×102°.35E, h44km±3km, mb4.5/43, mb1 4.6/44, mb1mx4.5/57, mbtmp4.8/44, MS3.7/31, Ms1 3.7/31, ms1mx3.6/49, Error ellipse: s-maj=10.4km s-min=8.2km az=61.0*
*ISCJB **24** 23:29:35.4±0.4, 4°.21S±0°.03×102°.27E±0°.03, h70km±3km, mb4.8/96, Error ellipse: s-maj=6.3km s-min=2.8km az=44.4*
*NEIC **24** 23:29:35.2±0.4, 4°.18S×102°.27E, h54km±3km, mb5.0/38, Error ellipse: s-maj=6.0km s-min=3.8km az=46.0*
NEIC Felt [III] at Kapahiang. Also felt at Bengkulu.
*KLM **24** 23:29:35.2, 4°.51S×101°.88E, h75km, mb5.0, ML5.2, MS6.2*
ISC 24 23:29:34.5±0.3, 4°.31S±0°.04×102°.13E±0°.04, h49km±2km, h49km:pP-P, n655, σ1°45/688, mb4.9/98, MS3.6/31, 25C-42D, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MASI	**Maura Aman, Be**	**1.16**	**5**	P	**Pn**	**23 29 55.9**	**+1.4**
MASI				S	**Sn**	**23 30 12.8**	**+3.5**
LWLI	**Liwa**	**2.04**	**110**	P	**Pn**	**23 30 07.2**	**+0.7**
LWLI				S	**Sn**	**23 30 32.4**	**+1.5**
PPSI	**Pulau Pagai**	**2.62**	**306**	P	**Pn**	**23 30 15.5**	**+1.2**
PPSI				S	**Sn**	**23 30 46.9**	**+2.0**
KASI	**Kota Agung**	**2.65**	**117**	P	**Pn**	**23 30 14.3**	**-0.4**
KASI				S	**Sn**	**23 30 47.7**	**+2.2**
PMBI	**Palembang**	**2.97**	**63**	P	**Pn**	**23 30 19.6**	**+0.5**
PMBI				S	**Sn**	**23 30 56.1**	**+2.6**
BLSI	**Bandar Lampung**	**3.27**	**109**	P	**Pn**	**23 30 23.7**	**+0.4**
BLSI				S	**Sn**	**23 31 03.0**	**+2.0**
SDSI	**Sungai Dareh**	**3.43**	**348**	P	**Pn**	**23 30 28.0**	**+2.6**
PDSI	**Padang**	**3.77**	**334**	P	**Pn**	**23 30 31.8**	**+1.7**
PDSI				S	**Sn**	**23 31 15.7**	**+2.5**
PPI	**Padang Panjang**	**4.20**	**336**	P	**Pn**	**23 30 37.9**	**+1.9**
PPI				S	**Sn**	**23 31 26.2**	**+2.3**
CGJI	**Cibinong**	**4.22**	**123**	P	**Pn**	**23 30 35.3**	**-1.0**
SBJI	**Serang**	**4.37**	**115**	P	**Pn**	**23 30 39.7**	**+1.4**
DSRI	**Dabo**	**4.52**	**33**	P	**Pn**	**23 30 42.2**	**+1.8**
PPBI	**Pangkal Pinang**	**4.53**	**62**	P	**Pn**	**23 30 42.5**	**+2.0**
BKNI	**Bangkinang**	**4.73**	**347**	P	**Pn**	**23 30 46.0**	**+2.7**
BKNI	**Bangkinang**	**4.73**	**347**	*e*Pn	**Pn**	**23 30 45.9**	**+2.5**
CBJI	**Citeko**	**5.14**	**114**	P	**Pn**	**23 30 52.5**	**+3.5**
SKJI	**Sukabumi**	**5.15**	**122**	P	**Pn**	**23 30 50.2**	**+1.1**
2μm,0.8s,14μm5.7nm							
MNSI	**Mandailing Nat**	**5.68**	**333**	P	**Pn**	**23 30 57.8**	**+1.5**
373nm,0.8s,4μm1.5nm							
TPRI	**Tanjung Pinang**	**5.72**	**25**	P	**Pn**	**23 30 59.7**	**+2.9**
CNJI	**Cibinong**	**5.79**	**121**	P	**Pn**	**23 30 57.0**	**-0.9**
LEM	**Lembang**	**6.00**	**115**	P	Pn	23 31 07.9	+7.0
27nm,0.3s,baz=243,slow=5.9,SNR=21							
LEM				LR	LR	23 33 52.1	
comp=Z,1μm,18.0s,baz=288,slow=44							
LEM	**Lembang**	**6.00**	**115**	P	**Pn**	**23 31 02.1**	**+1.2**
MYKOM	**Kota Tinggi**	**6.30**	**16**	||P	**Pn**	**23 31 07.5**	**+2.7**
MYKOM	**Kota Tinggi**	**6.30**	**16**	*e*Pn	**Pn**	**23 31 07.4**	**+2.6**
JCJI	**Jatiwangi**	**6.48**	**110**	P	**Pn**	**23 31 10.2**	**+2.9**
CISI	**Cisompet, Garu**	**6.51**	**120**	P	**Pn**	**23 31 07.8**	**+0.1**
CISI	**Cisompet, Garu**	**6.51**	**120**	*e*Pn	**Pn**	**23 31 07.1**	**-0.6**
XMIS	**Christmas Isla**	**7.05**	**151**	*e*Pn	Pn	23 31 09.5	-5.8
XMIS				*e*Sn	Sn	23 32 23.2	-11
CMJI	**Cimerak**	**7.17**	**119**	P	**Pn**	**23 31 16.3**	**-0.4**
346nm,0.8s,1.0nm							
GSI	**Gunungsitoli**	**7.20**	**321**	P	**Pn**	**23 31 17.7**	**+0.5**
307nm,0.5s,5μm1.6nm							
GSI	**Gunungsitoli**	**7.20**	**321**	*e*Pn	**Pn**	**23 31 17.6**	**+0.5**
GSI				*e*Sn	**Sn**	**23 32 36.2**	**-1.5**
FRIM	**Kepong**	**7.51**	**356**	||P	**Pn**	**23 31 24.4**	**+2.9**
PSI	**Prapat**	**7.76**	**336**	*e*P	**Pn**	**23 31 24.2**	**-0.8**
PSI	**Prapat**	**7.76**	**336**	*e*Pn	**Pn**	**23 31 24.2**	**-0.8**
IPM	**Ipoh**	**8.80**	**353**	||P	Pn	23 31 45.1	+6.0
IPM	**Ipoh**	**8.80**	**353**	*e*Pn	**Pn**	**23 31 43.5**	**+4.3**
KCSI	**Kotacane, Aceh**	**8.92**	**331**	P	**Pn**	**23 31 40.9**	**+0.1**
75nm,1.2s							
UGM	**Wanagama**	**9.08**	**114**	P	**Pn**	**23 31 43.4**	**+0.4**
433nm,1.4s							
UGM	**Wanagama**	**9.08**	**114**	*e*Pn	**Pn**	**23 31 43.8**	**+0.8**
UGM				*e*Sn	**Sn**	**23 33 22.9**	**-1.0**
WOJI	**Wonogiri, Jawa**	**9.42**	**112**	P	**Pn**	**23 31 48.7**	**+1.1**
COCO	**West Island**	**9.42**	**213**	*e*P	**Pn**	**23 31 48.2**	**+0.5**
COCO	**West Island**	**9.42**	**213**	*e*Pn	**Pn**	**23 31 48.2**	**+0.5**
COCO				*e*Sn	Sn	23 33 22.5	-10
KTGM	**Kuala Trenggan**	**9.62**	**6**	||P	**Pn**	**23 31 54.9**	**+4.5**
KULM	**Kulim**	**9.65**	**351**	*e*Pn	**Pn**	**23 31 51.9**	**+1.1**
NGJI	**Ngawi**	**9.76**	**109**	P	**Pn**	**23 31 56.8**	**+4.5**
PCJI	**Pacitan**	**9.78**	**114**	P	**Pn**	**23 31 52.0**	**-0.6**
KSM	**Kuching**	**9.98**	**55**	||P	**Pn**	**23 31 59.5**	**+4.1**
KSM	**Kuching**	**9.98**	**55**	*e*Pn	**Pn**	**23 31 58.6**	**+3.3**
MLSI	**Meulaboh, Aceh**	**10.26**	**326**	P	**Pn**	**23 31 59.3**	**+0.1**
482nm,0.6s,5μm							
PWJI	**Pagerwojo**	**10.30**	**111**	P	**Pn**	**23 32 00.1**	**+0.5**
STKI	**Sintang**	**10.30**	**65**	P	Pn	23 32 08.2	+8.5
GMJI	**Gumukmas**	**11.91**	**110**	P	**Pn**	**23 32 22.0**	**+0.3**
SBUM	**Sibu**	**12.11**	**57**	||P	**P**	**23 32 31.2**	**-4.7**
TRTT	**Trang**	**12.31**	**349**	P	P	23 32 32.8	-5.3
41nm,0.7s,513nm							
ABJI	**Asem Bagus**	**12.52**	**107**	P	**Pn**	**23 32 31.8**	**+1.8**
554nm,0.5s,6μm							
JAGI	**Jajag, Banyuwa**	**12.64**	**110**	P	**Pn**	**23 32 30.1**	**-1.6**
JAGI	**Jajag, Banyuwa**	**12.64**	**110**	*e*Pn	**Pn**	**23 32 29.8**	**-1.9**
BBKI	**Banjar Baru**	**12.71**	**87**	P	**P**	**23 32 43.3**	**+0.8**
TWSI	**Taliwang, Sumb**	**15.30**	**107**	P	**Pn**	**23 33 02.5**	**-4.8**
59nm,0.5s							
PLAI	**Plampang**	**16.17**	**107**	P	**Pn**	**23 33 14.7**	**-3.9**
CHBT	**CHBT**	**16.95**	**1**	P	**P**	**23 33 33.0**	**+3.4**
26nm,0.9s,3μm							
PATY	**Pattaya**	**17.17**	**356**	P	**P**	**23 33 34.0**	**+2.0**
7.1nm,0.7s,619nm							
KAPI	**Kappang**	**17.57**	**93**	P	**Pn**	**23 33 34.0**	**-2.1**
3.0nm,0.3s,baz=315,slow=5.1,SNR=17							
KAPI				LR	LR	23 40 57.9	
comp=Z,385nm,19.0s,baz=278,slow=39							
KAPI	**Kappang**	**17.57**	**93**	*e*Pn	**Pn**	**23 33 34.0**	**-2.1**
35nm,0.8s							
SPSI	**Sidrap Palu**	**17.59**	**90**	P	**P**	**23 33 36.8**	**0.0**
TTSI	**Tana Toraja**	**17.69**	**87**	P	**P**	**23 33 38.9**	**+1.0**
TSM	**Tawau**	**17.90**	**62**	||P	**P**	**23 33 42.7**	**+2.6**
SDKM	**Sandakan**	**18.00**	**57**	||P	**Pn**	**23 33 43.6**	**+2.3**
MYLDM	**Lahad Datu**	**18.87**	**60**	*e*P	**Pn**	**23 33 55.4**	**+3.6**
30nm,1.0s							
UBPT	**Khong Chiam**	**19.74**	**10**	P	**P**	**23 33 59.9**	**-0.4**
114nm,0.9s,1μm							
CHAI	**Chaiyaphum**	**20.08**	**360**	P	Pn	23 34 06.8	+0.6
8.9nm,0.8s							
MRSI	**Marisa**	**20.35**	**77**	P	**P**	**23 34 07.0**	**0.0**
MMRI	**Maumere**	**20.43**	**103**	*e*P	**P**	**23 34 08.3**	**+0.5**
69nm,0.5s							
KDI	**Kendari**	**20.43**	**90**	P	Pn	23 34 09.4	-1.0
96nm,1.0s							
KHON	**Khomkaen**	**20.52**	**2**	P	**P**	**23 34 09.8**	**+1.0**
18nm,0.8s							
PBKT	**Sadao Pong**	**20.78**	**357**	P	**P**	**23 34 12.3**	**+0.8**
14nm,0.8s,882nm							
PANO	**Nakornpanom**	**21.46**	**6**	P	**P**	**23 34 20.3**	**+1.4**
40nm,0.8s,10μm							
LOEI	**Loei**	**21.70**	**358**	P	**P**	**23 34 20.4**	**-1.0**
112nm,2.1s							
SUKH	**Sukhothai**	**21.79**	**354**	P	**P**	**23 34 24.2**	**+1.8**
6.3nm,0.9s,61nm							
UTTA	**Uttaradit**	**21.97**	**356**	P	**P**	**23 34 25.0**	**+0.7**
4.9nm,0.8s,46nm							
NONG	**Nongkai**	**22.25**	**3**	P	**P**	**23 34 25.7**	**-1.7**
199nm,1.2s							
SOEI	**Soe**	**22.61**	**105**	P	**P**	**23 34 33.0**	**+1.5**
SOEI	**Soe**	**22.61**	**105**	*e*P	**P**	**23 34 32.3**	**+0.8**
84nm,0.7s							
SOEI				*e*PcP	**PcP**	**23 38 25.2**	**+1.8**
CM01	**Chiang Mai Arr**	**22.80**	**352**	*e*P	**P**	**23 34 31.6**	**-1.6**
CM01				*e*PcP	**PcP**	**23 38 24.1**	**+0.7**
LAMP	**Lampang**	**22.82**	**354**	P	**P**	**23 34 37.1**	**+3.7**
5.7nm,0.9s							
CM31	**Chiang Mai Arr**	**22.84**	**352**	*e*P	**P**	**23 34 30.8**	**-2.8**
CM31				*e*PcP	**PcP**	**23 38 23.6**	**0.0**
CMAR	**Chiang Mai Arr**	**22.84**	**352**	P	**P**	**23 34 32.6**	**-1.0**
11nm,0.7s,baz=184,slow=8.4,SNR=16							
CMAR				PcP	**PcP**	**23 38 23.6**	**0.0**
3.5nm,0.7s,baz=207,slow=3.0,SNR=13							
CMAR				LR	LR	23 43 27.0	
comp=Z,164nm,20.8s,baz=175,slow=37							
CHTO	**Chiang Mai**	**23.19**	**352**	P	**P**	**23 34 36.5**	**-0.7**
67nm,0.8s							
CHTO	**Chiang Mai**	**23.19**	**352**	*e*P	**P**	**23 34 36.0**	**-1.1**
CHTO				pmax	pmax		
comp=Z,8.0nm,0.7s							
CHTO	**Chiang Mai**	**23.19**	**352**	*e*P	**P**	**23 34 36.0**	**-1.1**
comp=Z,8.3nm,0.7s							
PALK	**Pallekele**	**24.29**	**298**	P	**P**	**23 34 49.4**	**+1.9**
comp=Z,8.6nm,0.7s,baz=113,slow=8.8,SNR=4.4							
PALK				LR	LR	23 43 02.9	
comp=Z,184nm,21.8s,baz=116,slow=33							
PALK	**Pallekele**	**24.29**	**298**	*e*P	**P**	**23 34 47.9**	**+0.4**
comp=Z,78nm,1.8s							
QIZ	**Qiongzhong**	**24.40**	**18**	P	**P**	**23 34 50.4**	**+2.0**
QIZ				S	**S**	**23 39 09.6**	**+4.6**
QIZ				sS	**sS**	**23 39 29.9**	**+3.7**
CRAI	**Chiangrai**	**24.45**	**356**	P	**P**	**23 34 48.0**	**-0.8**
comp=Z,89nm,0.7s							
LBMI	**Labuha**	**25.60**	**82**	P	**P**	**23 35 01.2**	**+1.8**
DAV	**Davao City (W)**	**25.99**	**64**	LR	LR	23 45 48.4	
comp=Z,68nm,20.7s,baz=234,slow=38							
TGY	**Tagaytay City**	**26.12**	**45**	LR	LR	23 45 52.1	
comp=Z,184nm,20.0s,baz=209,slow=38							
FITZ	**Fitzroy Crossi**	**26.77**	**123**	P	**P**	**23 35 09.1**	**-0.8**
comp=Z,18nm,0.8s,baz=322,slow=7.3,SNR=30							
FITZ				LR	LR	23 46 42.3	
comp=Z,106nm,19.4s,baz=324,slow=38							
KMI	**Kunming**	**29.26**	**1**	P	**P**	**23 35 33.1**	**+0.8**
KMI				pP	sP	23 35 48.9	-2.0
KMI				S	**S**	**23 40 26.9**	**+4.7**
H08S2	**Diego Garcia H**	**29.66**	**262**	T	T	00 05 31.9	
baz=84,slow=75,SNR=157							
H08S3	**Diego Garcia H**	**29.67**	**262**	T	T	00 05 29.2	
baz=84,slow=75,SNR=15							
H08S1	**Diego Carcia H**	**29.68**	**262**	T	T	00 05 28.6	
baz=84,slow=75,SNR=107							
MTN	**Manton Dam**	**29.87**	**108**	*e*P	**P**	**23 35 38.9**	**+1.3**
comp=Z,61nm,1.4s							
FAKI	**Fak Fak**	**30.09**	**88**	*e*P	**P**	**23 35 40.1**	**+0.6**
comp=Z,102nm,1.5s							
GYA	**Guiyang**	**30.90**	**8**	P	**P**	**23 35 50.0**	**+3.3**
GYA				pP	sP	23 36 05.6	+0.3
GYA				sP	pP	23 36 14.0	+15
GYA				PP	**PP**	**23 36 54.3**	**-2.9**
GYA				PcP	**PcP**	**23 38 44.8**	**+2.2**
GYA				S	**S**	**23 40 50.6**	**+3.0**
GYA				sS	sS	23 41 18.0	+8.9
GYA				ScP	**ScP**	**23 42 20.5**	**-1.0**
GYA				SS	**SnSn**	**23 42 39.4**	**+8.3**
GYA	**Guiyang**	**30.90**	**8**	ScS	ScS	23 46 16.0	-2.6
SHL	**Shillong**	**31.32**	**342**	*e*P	**P**	**23 35 51.0**	**+0.5**
NWAO	**Narrogin (SRO)**	**31.78**	**155**	P	**P**	**23 35 54.9**	**+0.7**
comp=Z,2.9nm,0.5s,baz=154,slow=18,SNR=4.3							
NWAO				LR	LR	23 47 30.6	
comp=Z,300nm,21.5s,baz=186,slow=34							
H01W3	**Cape Leeuwin H**	**32.39**	**161**	T	T	00 09 55.7	
baz=338,slow=76,SNR=34							
H01W2	**Cape Leeuwin H**	**32.41**	**161**	T	T	00 09 54.9	
baz=338,slow=76,SNR=40							
H01W1	**Cape Leeuwin H**	**32.41**	**161**	T	T	00 09 54.1	
baz=338,slow=76,SNR=36							
YULB	**Yu-li**	**33.28**	**33**	*e*P	**P**	**23 36 07.4**	**-0.1**
comp=Z,52nm,1.7s							
WRA	**Warramunga Arr**	**35.00**	**119**	P	**P**	**23 36 21.7**	**-0.9**
comp=Z,5.1nm,0.5s,baz=305,slow=9.1,SNR=20							
WRA				PcP	**PcP**	**23 38 53.9**	**-0.2**
comp=Z,4.8nm,0.6s,baz=312,slow=2.1,SNR=5.7							
WRA				LR	LR	23 52 35.7	
comp=Z,114nm,20.6s,baz=310,slow=40							
WR1	**Warramunga Arr**	**35.01**	**119**	*e*P	**P**	**23 36 21.7**	**-0.9**
comp=Z,15nm,0.6s							
WR1				*e*PcP	**PcP**	**23 38 53.9**	**-0.2**
WRAB	**Tennant Creek**	**35.01**	**119**	||*e*P	**P**	**23 36 21.7**	**-0.9**
WRAB				pmax	pmax		
comp=Z,30nm,0.6s							
WB2	**Warramunga Arr**	**35.02**	**119**	*e*P	**P**	**23 36 21.8**	**-0.9**
comp=Z,17nm,0.8s							
CD2	**Chengdu**	**35.05**	**2**	P	**P**	**23 36 23.4**	**+0.6**
CD2				pP	sP	23 36 39.4	-2.1
CD2				sP	pP	23 36 47.3	+12
CD2				PP	**PP**	**23 37 44.6**	**+1.4**
CD2				S	**S**	**23 41 53.4**	**+1.5**
CD2				sS	sS	23 42 21.3	+7.7
CD2				SS	**SS**	**23 44 29.9**	**+4.0**
LSA	**Lhasa**	**35.42**	**343**	P	**P**	**23 36 26.8**	**+0.3**
PKIN	**Phulchoki**	**35.58**	**334**	*e*P	**P**	**23 36 27.8**	**+0.1**
comp=Z,5.9nm,0.4s							
GUN	**Gumba**	**35.66**	**335**	*e*P	**P**	**23 36 28.9**	**+0.5**
comp=Z,110nm,0.5s							
DMN	**Daman**	**35.73**	**334**	*e*P	**P**	**23 36 29.3**	**+0.3**
comp=Z,14nm,0.5s							
KKN	**Kakani**	**35.81**	**334**	*e*P	**P**	**23 36 29.9**	**+0.3**
comp=Z,48nm,0.7s							
ASAR	**Alice Springs**	**36.18**	**125**	P	**P**	**23 36 32.4**	**-0.3**
comp=Z,11nm,0.8s,baz=300,slow=7.9,SNR=42							
ASAR				PcP	**PcP**	**23 38 57.6**	**+0.1**
comp=Z,3.3nm,0.7s,baz=306,slow=2.3,SNR=7.3							
ASAR				LR	LR	23 52 25.1	
comp=Z,137nm,20.1s,baz=308,slow=38							
AS31	**Alice Springs**	**36.19**	**125**	*e*P	**P**	**23 36 32.4**	**-0.3**
comp=Z,5.5nm,0.6s							
AS31				*e*PcP	**PcP**	**23 38 57.6**	**+0.1**
AS31				*e*S	**S**	**23 42 06.3**	**-3.2**
AS01	**Alice Springs**	**36.22**	**125**	*e*P	**P**	**23 36 31.7**	**-1.3**
GKN	**Gorkha**	**36.28**	**333**	*e*P	**P**	**23 36 33.9**	**+0.4**
comp=Z,24nm,0.4s							
KOLN	**Koldanda**	**36.56**	**332**	*e*P	**P**	**23 36 36.5**	**+0.5**
comp=Z,59nm,0.7s							
PYUN	**Piuthan**	**37.13**	**331**	*e*P	**P**	**23 36 41.3**	**+0.5**
comp=Z,28nm,0.5s							
XAN	**Xi'an**	**38.68**	**9**	P	**P**	**23 36 52.3**	**-1.3**
XAN				pP	pP	23 37 01.3	-5.3
LZH	**Lanzhou**	**40.22**	**2**	*e*P	**P**	**23 37 06.3**	**-0.2**
LZH				pP	pP	23 37 12.8	-6.8
THN	**Thein Dam**	**44.33**	**327**	*e*P	P	23 37 32.0	-7.8
PMG	**Port Moresby**	**44.96**	**99**	P	**P**	**23 37 44.0**	**-1.2**
comp=Z,9.0nm,0.8s,baz=232,slow=12,SNR=3.6							
PMG				LR	LR	23 58 52.0	
comp=Z,68nm,18.2s,baz=241,slow=39							
PMG	**Port Moresby**	**44.96**	**99**	||*e*P	**P**	**23 37 44.4**	**-0.8**
PMG				pmax	pmax		
comp=Z,48nm,1.0s							
CTA	**Charters Tower**	**45.71**	**114**	PcP	**PcP**	**23 39 27.9**	**-0.6**
comp=Z,3.4nm,0.5s,baz=280,slow=6.1,SNR=3.1							
CTAO	**Charters Tower**	**45.71**	**114**	*e*P	**P**	**23 37 51.6**	**+0.5**
CTAO	**Charters Tower**	**45.71**	**114**	*e*P	**P**	**23 37 51.6**	**+0.5**
HHC	**Hu-ho-hao-te**	**45.76**	**10**	*e*P	**P**	**23 37 54.3**	**+3.1**
HHC				sP	sP	23 38 16.3	+6.1
HHC				S	**S**	**23 44 33.8**	**+2.4**
BJI	**Beijing**	**45.98**	**15**	P	**P**	**23 37 52.3**	**-0.5**
STKA	**Stephens Creek**	**46.03**	**131**	P	**P**	**23 37 53.8**	**+0.3**
comp=Z,9.0nm,0.6s,baz=316,slow=9.3,SNR=14							
STKA				LR	LR	23 58 56.2	
comp=Z,76nm,19.6s,baz=275,slow=38							
STKA	**Stephens Creek**	**46.03**	**131**	*e*P	**P**	**23 37 53.8**	**+0.3**
STKA				pmax	pmax		
comp=Z,3.0nm,0.7s							
STKA	**Stephens Creek**	**46.03**	**131**	*e*P	**P**	**23 37 53.8**	**+0.3**
comp=Z,3.3nm,0.7s							
KS01	**Wonju Array Si**	**47.99**	**28**	*e*P	**P**	**23 38 07.5**	**-1.0**
WMQ	**Urumqi**	**49.65**	**346**	⇑*i*P	**P**	**23 38 21.8**	**+0.5**
WMQ				pP	pP	23 38 37.0	+2.3
WMQ				sP	sP	23 38 41.8	+1.5
KSH	**Kashi**	**49.83**	**333**	P	**P**	**23 38 21.4**	**-1.4**
KSH				*e*pP	pP	23 38 37.8	+1.6
KSH				*e*sP	sP	23 38 44.8	+2.9
KSH				*e*PP	**PP**	**23 40 16.9**	**-1.1**
KSH				*e*ScP	**ScP**	**23 43 32.3**	**-2.4**
KSH				PcS	**PcS**	**23 43 38.6**	**-1.3**
KSH				S	**S**	**23 45 22.0**	**-7.2**
KSH				ScS	**ScS**	**23 48 05.3**	**-5.0**
WSAR	**Wadi Sarin**	**50.50**	**305**	P	**P**	**23 38 30.4**	**+2.3**
comp=Z,4.7nm,0.5s,baz=155,slow=6.4,SNR=11							
SONA0	**Songino Array**	**52.06**	**4**	*e*P	**P**	**23 38 39.5**	**+0.1**
comp=Z,17nm,0.8s							
SONA0				*e*PcP	**PcP**	**23 39 50.4**	**-0.6**
SONM	**Songino Array**	**52.06**	**4**	P	**P**	**23 38 39.5**	**+0.1**
comp=Z,14nm,0.7s,baz=183,slow=9.0,SNR=114							
SONM				PcP	**PcP**	**23 39 50.4**	**-0.6**
comp=Z,2.3nm,0.6s,baz=183,slow=3.8,SNR=3.2							
SONA1	**Songino Array**	**52.07**	**4**	*e*P	**P**	**23 38 39.5**	**-0.1**
ULN	**Ulaanbaatar**	**52.13**	**4**	||*e*P	**P**	**23 38 38.9**	**-1.1**
ULN				pmax	pmax		
comp=Z,17nm,1.7s							
ULN	**Ulaanbaatar**	**52.13**	**4**	*e*P	**P**	**23 38 39.6**	**-0.4**
comp=Z,7.7nm,0.8s							
CN2	**Changchun**	**52.29**	**21**	*e*P	**P**	**23 38 39.4**	**-1.7**
MAT	**Matsushiro**	**52.78**	**37**	P	**P**	**23 38 42.2**	**-2.6**
MJAR	**Matsushiro Arr**	**52.78**	**37**	P	**P**	**23 38 42.6**	**-2.2**
comp=Z,4.9nm,0.6s,baz=212,slow=7.2,SNR=15							
TKM2	**Tokmak 2**	**52.79**	**336**	*e*P	**P**	**23 38 44.9**	**-0.1**
TKM2				pmax	pmax		
comp=Z,30nm,1.1s							
TKM2	**Tokmak 2**	**52.79**	**336**	*e*P	**P**	**23 38 44.9**	**-0.1**
comp=Z,30nm,1.1s							
AAK	**Ala-Archa**	**53.02**	**335**	P	**P**	**23 38 46.2**	**-0.5**
comp=Z,2.7nm,0.6s,baz=138,slow=4.8,SNR=7.0							
AAK				PcP	**PcP**	**23 39 55.5**	**+0.7**
comp=Z,4.7nm,0.7s,baz=175,slow=22,SNR=3.8							
AAK	**Ala-Archa**	**53.02**	**335**	||*i*P	**P**	**23 38 46.6**	**-0.1**
AAK				pmax	pmax		
comp=Z,9.0nm,0.8s							
AAK	**Ala-Archa**	**53.02**	**335**	*e*P	**P**	**23 38 47.2**	**+0.5**
AAK				*e*PcP	**PcP**	**23 39 55.5**	**+0.7**
FRU	**Bishkek**	**53.13**	**335**	*e*P	**P**	**23 38 46.0**	**-1.3**
FRU				*e*		23 39 05.0	
EKS2	**Erkin-Say**	**53.35**	**334**	*e*P	**P**	**23 38 49.0**	**-0.1**
EKS2				pmax	pmax		
comp=Z,16nm,0.7s							
EKS2	**Erkin-Say**	**53.35**	**334**	*e*P	**P**	**23 38 49.0**	**-0.1**
comp=Z,16nm,0.7s							
MK01	**Makanchi Array**	**53.80**	**343**	*e*P	**P**	**23 38 51.4**	**-0.7**
MK31	**Makanchi Array**	**53.83**	**343**	*e*P	**P**	**23 38 51.7**	**-0.7**
MK31	**Makanchi Array**	**53.83**	**343**	*e*P	**P**	**23 38 51.6**	**-0.7**
MK32	**Makanchi Array**	**53.83**	**343**	*e*P	**P**	**23 38 51.7**	**-0.6**
MKAR	**Makanchi Array**	**53.83**	**343**	P	**P**	**23 38 51.7**	**-0.6**
comp=Z,17nm,0.6s,baz=148,slow=8.3,SNR=214							
MKAR				LR	LR	00 04 50.0	
comp=Z,70nm,20.9s,baz=145,slow=39							
ZAK	**Zakamensk**	**54.48**	**1**	*e*P	**P**	**23 38 56.8**	**-0.3**
ZAK				pmax	pmax		
comp=Z,3.0nm,0.9s							
ZAK				pmax	pmax		
comp=Z,2.0nm,0.9s							
KKAR	**Karatay Array**	**55.17**	**332**	*e*P	**P**	**23 39 01.3**	**-0.9**
KKAR	**Karatay Array**	**55.17**	**332**	*e*P	**P**	**23 39 01.3**	**-0.9**
USRK	**Ussuriysk Ar.**	**55.23**	**26**	P	**P**	**23 39 01.6**	**-1.0**
comp=Z,12nm,0.5s,baz=210,slow=5.6,SNR=

ARU Arti 70.17 336 P **P** **23 40 41.1 -0.8**
comp=Z,7.2nm,0.5s,baz=105,slow=4.3,SNR=22
ARU pP **pP** **23 40 55.2 -0.6**
comp=Z,6.0nm,0.5s,baz=79,slow=0.4,SNR=7.3
ARU Arti 70.17 336*d iP* **P** **23 40 41.0 -0.8**
ARU *PP **pP** **23 40 54.4 -1.4**
ARU 23 43 16.0
ARU PPP PPP 23 44 56.3
ARU S **S** **23 49 52.1 +2.7**
ARU SS **SS** **23 54 22.0 +1.7**
ARU pmax pmax
comp=Z,22nm,1.2s
ZEI Tsey 70.37 318 *e*P **P** **23 40 43.4 -0.2**
ZEI pmax pmax
comp=Z,19nm,0.8s
KBSD Kabsdagh 70.42 312 *e*P **P** **23 40 43.6 -0.2**
SFNV Sufian 70.53 311 *e*P **P** **23 40 45.9 +1.3**
NCK Nalchik 70.88 319⇑*e*P **P** **23 40 47.3 +0.8**
NCK pmax pmax
comp=Z,18nm,1.2s
NEY Neytrino 71.35 318⇑*e*P **P** **23 40 50.8 +1.3**
NEY pmax pmax
comp=Z,2.0nm,1.0s
KBZ Khabaz 71.44 319 P **P** **23 40 50.2 +0.5**
comp=Z,7.4nm,0.8s,baz=127,slow=4.3,SNR=18
KVAR Kislovodsk Arr 71.67 319 LR LR 00 15 43.2
comp=Z,19nm,20.9s,slow=39
KIV Kislovodsk 71.67 319 *e*P **P** **23 40 51.1 -0.2**
KIV pmax pmax
comp=Z,11nm,1.0s
KIV MLR MLR
comp=Z,24nm,18.0s
KIV Kislovodsk 71.67 319 *e*P **P** **23 40 51.8 +0.5**
comp=Z,21nm,1.2s
RPZ Rata Peaks 71.85 135 P **P** **23 40 52.9 +0.5**
comp=Z,8.5nm,0.8s,baz=331,slow=10,SNR=3.8
RPZ pP **pP** **23 41 06.3 -0.1**
comp=Z,16nm,0.6s,baz=256,slow=4.0,SNR=3.3
SALA Sala 71.95 306 *e*P P 23 40 59.3 +5.9
TOTH TOTAH 72.39 307 *e*P **P** **23 40 54.8 -1.1**
EIL Elat 72.55 303 P **P** **23 40 58.2 +1.4**
comp=Z,21nm,0.9s,baz=360,slow=2.4,SNR=16
EIL LR LR 00 10 55.5
comp=Z,46nm,21.2s,baz=71,slow=34
TCHB Talchebab 72.56 306 *e*P **P** **23 40 58.2 +1.4**
SOKR Solikamsk 73.01 338 *e*P **P** **23 40 56.8 -2.0**
SOKR pmax pmax
comp=Z,17nm,0.6s
MMAI Mount Meron Ar 73.11 306 LR LR 00 12 45.4
comp=Z,60nm,21.1s,baz=145,slow=35
MATP Matopo 73.18 250 P **P** **23 41 02.8 +1.9**
comp=Z,15nm,0.5s,baz=95,slow=5.3,SNR=62
LSZ Lusaka 73.40 255 P **P** **23 41 04.0 +1.8**
comp=Z,10nm,0.8s,baz=84,slow=3.7,SNR=18
LSZ Lusaka 73.40 255 *e*P **P** **23 41 04.0 +1.8**
LSZ pmax pmax
comp=Z,12nm,0.9s
LSZ Lusaka 73.40 255 *e*P **P** **23 41 04.0 +1.8**
comp=Z,12nm,0.9s
SOC Sochi 73.48 318 *e*P **P** **23 41 00.8 -1.2**
SOC *e* 23 41 14.6
SOC pmax pmax
comp=Z,10.0nm,0.7s
SOC pmax pmax
comp=Z,13nm,0.8s
PETK Petropavlovsk- 73.72 31 P **P** **23 41 01.1 -2.1**
comp=Z,6.3nm,0.7s,baz=334,slow=1.3,SNR=4.9
PEA1 Petropavlovsk- 73.72 31 *e*P **P** **23 41 01.1 -2.1**
NRIK Noril'sk 74.17 355 P **P** **23 41 03.9 -1.6**
comp=Z,4.5nm,0.4s,baz=153,slow=4.9,SNR=14
NRIK LR LR 00 17 33.2
comp=Z,50nm,20.3s,baz=114,slow=39
CSS Mathiatis 75.31 308 *e*P **P** **23 41 13.3 +0.4**
comp=Z,5.2nm,0.8s
VRH Novokhopyorsk 75.42 326 *e*P **P** **23 41 12.4 -0.6**
VRH *e**PP **PcP** **23 41 24.6 -1.4**
VRH pmax pmax
comp=Z,30nm,0.7s
ANN Anapa 75.46 318 *e*P **P** **23 41 09.9 -3.5**
ANN *e**PP **PcP** **23 41 24.4 -1.9**
ANN *e*S **S** **23 50 45.9 -4.2**
ANN pmax pmax
comp=Z,14nm,1.1s
URZ Urewera 75.55 128 LR LR 00 15 47.7
comp=Z,59nm,19.7s,baz=1.0,slow=37
LBTB Lobatse 75.99 245 P **P** **23 41 19.0 +1.9**
comp=Z,14nm,0.8s,baz=111,slow=5.9,SNR=23
LBTB Lobatse 75.99 245 *e*P **P** **23 41 19.0 +1.9**
LBTB pmax pmax
comp=Z,16nm,0.9s
LBTB Lobatse 75.99 245 *e*P **P** **23 41 19.0 +1.9**
comp=Z,16nm,0.9s
SYO Syowa Base 76.39 199⇓*iP* **P** **23 41 19.0 +0.7**
BOSA Boshof 76.43 242 P **P** **23 41 21.1 +1.5**
comp=Z,15nm,0.8s,baz=95,slow=4.5,SNR=28
BOSA LR LR 00 08 37.9
comp=Z,86nm,19.7s,baz=62,slow=30
BOSA Boshof 76.43 242 *e*P **P** **23 41 21.2 +1.7**
BR101 Keskin Array S 76.44 312 *e*P **P** **23 41 18.9 -0.5**
BR101 *e*pP **pP** **23 41 33.2 -0.3**
BR131 Keskin Array S 76.44 312 *e*P **P** **23 41 18.8 -0.5**
BRTR Keskin Array B 76.44 312 P **P** **23 41 18.9 -0.5**
comp=Z,6.7nm,0.7s,baz=135,slow=7.1,SNR=54
BRTR pP **pP** **23 41 33.2 -0.3**
comp=Z,3.2nm,0.6s,baz=139,slow=7.1,SNR=8.0
BRTR LR LR 00 17 11.4
comp=Z,32nm,20.1s,baz=110,slow=37
BRTR Keskin Array B 76.44 312 *iP* **P** **23 41 18.8 -0.5**
BRTR pmax pmax
comp=Z,7.0nm,0.7s
VSR Storozhevoye 76.88 325 *e*P **P** **23 41 20.2 -1.1**
VSR *e**PP **pP** **23 41 34.1 -1.4**
VSR pmax pmax
comp=Z,10.0nm,0.6s
SEY Seymchan 76.98 21 P **P** **23 41 20.4 -1.3**
comp=Z,4.8nm,0.7s,baz=206,slow=5.3,SNR=11
SEY Seymchan 76.98 21⇑*iP* **P** **23 41 21.0 -0.7**
LPSR Galich'ya Gora 77.58 326 *e*P **P** **23 41 23.6 -1.7**
LPSR *e**PP **pP** **23 41 37.9 -1.5**
LPSR pmax pmax
comp=Z,5.0nm,0.5s
SIM Simferopol' 77.73 318*ce*P **P** **23 41 26.3 0.0**
SIM *e**PP **pP** **23 41 41.0 +0.5**
SIM pmax pmax
comp=Z,9.0nm,0.7s
TIXI Tiksi 77.80 8*d iP* **P** **23 41 23.7 -2.4**
TIXI pmax pmax
comp=Z,14nm,1.3s
TIXI Tiksi 77.80 8 *e*P **P** **23 41 23.2 -2.8**
comp=Z,16nm,1.3s
VNDA Vanda 79.50 169 P **P** **23 41 35.9 +0.4**
comp=Z,5.2nm,1.0s,baz=312,slow=6.3,SNR=25
VNDA Vanda 79.50 169 *e*P **P** **23 41 35.9 +0.4**
VNDA pmax pmax
comp=Z,8.0nm,0.9s
VNDA Vanda 79.50 169 *e*P **P** **23 41 35.9 +0.4**
comp=Z,7.6nm,0.9s
OBN Obninsk 79.87 328 LR LR 00 19 33.3
comp=Z,35nm,21.6s,baz=89,slow=38
OBN Obninsk 79.87 328⇓*e*P **P** **23 41 37.4 -0.3**
OBN *e* 23 41 44.7
OBN *e* 23 44 42.7
OBN *e*S **S** **23 51 30.8 -6.5**
OBN pmax pmax
comp=Z,35nm,1.7s
OBN MLR MLR
comp=Z,71nm,17.0s
OBN Obninsk 79.87 328 *e*P **P** **23 41 37.6 -0.1**
OBN *e*pP **pP** **23 41 51.6 -0.4**
KARP Karpathos 80.35 307 *e*P **P** **23 41 41.9 +1.0**
comp=Z,24nm,0.8s
SUR Sutherland 80.38 238 P **P** **23 41 43.6 +2.3**
comp=Z,1.2nm,1.0s,baz=99,slow=6.1,SNR=8.0
SUR Sutherland 80.38 238 *e*P **P** **23 41 43.6 +2.3**
comp=Z,194nm,1.9s
SBA Scott Base 80.59 169 *e*P **P** **23 41 43.6 +2.3**
SBA pmax pmax
comp=Z,7.0nm,0.9s
SBA Scott Base 80.59 169 *e*P **P** **23 41 43.6 +2.3**
comp=Z,6.9nm,0.9s
TLCR 81.39 317⇓*iP* **P** **23 41 47.6 +1.4**
TLCR 81.39 317 ⇓P **P** **23 41 47.6 +1.4**
TIRR Tirgusor 81.48 316⇑*iP* **P** **23 41 46.6 0.0**
TIRR Tirgusor 81.48 316 ⇑P **P** **23 41 46.6 0.0**
TIRR Tirgusor 81.48 316 *e*P **P** **23 41 46.6 0.0**

TIRR *e*pP **pP** **23 42 00.9 0.0**
LAST Lasithi 81.62 306⇓*iP* **P** **23 41 49.1 +1.4**
LAST Lasithi 81.62 306 *e*P **P** **23 41 48.9 +1.2**
comp=Z,22nm,0.8s
MSAB Monastry St. A 81.80 316⇓*iP* **P** **23 41 49.0 +0.7**
LEOM Leova 82.11 318⇓*iP* **P** **23 41 50.4 +0.5**
LEOM Leova 82.11 318 ⇓P **P** **23 41 50.4 +0.5**
IDI Anoyia 82.11 306 LR LR 00 19 18.1
comp=Z,36nm,21.8s,baz=88,slow=36
IDI Anoyia 82.11 306⇓*iP* **P** **23 41 51.6 +1.3**
IDI Anoyia 82.11 306 *e*P **P** **23 41 51.4 +1.1**
comp=Z,25nm,0.7s
SIVA Sivas 82.13 306⇑*iP* **P** **23 41 51.8 +1.5**
SORM Soroca 82.46 320⇑*iP* **P** **23 41 51.3 -0.4**
SORM Soroca 82.46 320 ⇑P **P** **23 41 51.3 -0.4**
AKASG Malin Array Be 82.60 322 P **P** **23 41 51.4 -1.0**
comp=Z,0.9nm,0.4s,baz=88,slow=4.9,SNR=13
AKASG pP **pP** **23 42 04.3 -2.4**
comp=Z,4.1nm,0.7s,baz=84,slow=5.1,SNR=5.5
AKASG LR LR 00 22 30.7
comp=Z,30nm,21.5s,baz=155,slow=38
AKBB Malin Array Si 82.60 322 *e*P **P** **23 41 51.4 -1.0**
AKBB *e**PP **pP** **23 42 04.3 -2.4**
AKBB Malin Array Si 82.60 322 *e*P **P** **23 41 51.4 -1.0**
AKBB *e*pP **pP** **23 42 04.3 -2.4**
KIEV Kiev 82.61 322⇓*e*P **P** **23 41 51.7 -0.7**
KIEV pmax pmax
comp=Z,26nm,3.4s
AK11 Malin Array Si 82.63 322 *e*P **P** **23 41 51.8 -0.8**
VRI Vrincioaia 82.98 317⇓*iP* **P** **23 41 55.8 +1.3**
VRI Vrincioaia 82.98 317 ⇓P **P** **23 41 55.8 +1.3**
PLOR Plostina 83.03 317⇓*iP* **P** **23 41 55.8 +1.0**
PLOR Plostina 83.03 317 ⇓P **P** **23 41 55.8 +1.0**
TESR Tescani 83.19 318⇑*iP* **P** **23 41 56.5 +1.0**
MLR Muntele Rosu 83.43 317⇓*iP* **P** **23 41 57.9 +0.9**
MLR Muntele Rosu 83.43 317 ⇓P **P** **23 41 57.9 +0.9**
MLR Muntele Rosu 83.43 317 *e*P **P** **23 41 57.6 +0.6**
comp=Z,21nm,1.0s
TSUM Tsumeb 83.46 251 P **P** **23 41 59.9 +2.2**
comp=Z,11nm,0.9s,baz=82,slow=4.0,SNR=15
PRAR RASCA 83.67 318⇑*iP* **P** **23 41 58.8 +0.8**
DOPR Dopca 83.92 317⇑*iP* **P** **23 42 00.2 +0.9**
BURAR Bucovina Array 84.39 319⇑*iP* **P** **23 42 03.4 +1.6**
BURAR Bucovina Array 84.39 319 ⇑P **P** **23 42 03.4 +1.6**
BUR08 Bucovina Ar. S 84.41 319 *e*P **P** **23 42 03.1 +1.2**
BILL Bilibino 84.58 20⇓*e*P **P** **23 42 00.7 -1.5**
BILL *e* 23 45 14.5
BILL *e*PPP PPP 23 47 12.4
BILL *e*SS SS 23 57 57.1 0.0
BILL pmax pmax
comp=Z,12nm,3.7s
ARCR ARCALIA 84.85 318⇓*iP* **P** **23 42 05.4 +1.4**
CJR Cluj-Napoca 85.28 317⇓*iP* **P** **23 42 07.9 +1.6**
CJR Cluj-Napoca 85.28 317 ⇓P **P** **23 42 07.9 +1.6**
BMR Baia Mare 85.54 318⇑*iP* pP 23 42 22.6 +0.8
BMR Baia Mare 85.54 318 ⇑P pP 23 42 22.6 +0.8
GZR Gura Zlata 85.59 316⇑*iP* pP 23 42 19.1 -3.1
GZR Gura Zlata 85.59 316 ⇑P pP 23 42 19.1 -3.1
QSPA South Pole Qui 85.67 180 *e*P **P** **23 42 09.2 +1.4**
DRGR 85.90 317⇓*iP* **P** **23 42 10.2 +0.9**
DRGR 85.90 317 ⇓P **P** **23 42 10.2 +0.9**
MDVR Moldovita 86.23 315⇑*iP* **P** **23 42 11.8 +0.8**
KWP Kalwaria Pacla 86.43 320⇓*iP* **P** **23 42 12.7 +0.9**
KWP Kalwaria Pacla 86.43 320 ⇓P **P** **23 42 12.7 +0.9**
BZS Buzias 86.44 316⇓*iP* **P** **23 42 11.4 -0.5**
BZS Buzias 86.44 316 ⇓P **P** **23 42 11.4 -0.5**
UZH Uzhgorod 86.51 319 *e*P P 23 42 17.4 +5.2
FIA0 FINESS Array S 87.13 332 *e*P **P** **23 42 14.2 -0.7**
FIA0 *e**PP **pP** **23 42 27.5 -1.8**
FIA0 FINESS Array S 87.13 332 *e*P **P** **23 42 14.2 -0.7**
FIA0 *e*pP **pP** **23 42 27.5 -1.8**
FINES FINESS Array B 87.13 332 P **P** **23 42 14.2 -0.7**
comp=Z,7.4nm,0.9s,baz=97,slow=4.7,SNR=12
FINES pP **pP** **23 42 27.5 -1.8**
comp=Z,3.8nm,0.5s,baz=106,slow=4.1,SNR=5.1
FINES FINESS Array B 87.13 332 *iP* **P** **23 42 14.8 -0.1**
FINES pmax pmax
comp=Z,7.0nm,0.9s
KECS Kecovo 87.67 319 *e*P **P** **23 42 18.6 +0.8**
KECS *e* 23 42 31.1
KECS pmax pmax
comp=Z,4.0nm,0.8s
KECS Kecovo 87.67 319 *e*P **P** **23 42 18.6 +0.8**
KECS *e* 23 42 31.1
PSZ Piszkesteto 87.97 318⇑*iP* **P** **23 42 20.2 +0.8**
PSZ Piszkesteto 87.97 318 ⇑P **P** **23 42 20.2 +0.8**
PSZ Piszkesteto 87.97 318 *e*pP pP 23 42 34.4 +0.6
VYHS Vyhne 88.76 319 *e*P **P** **23 42 23.5 +0.5**
VYHS *e* 23 42 38.3
VYHS Vyhne 88.76 319 *e*P **P** **23 42 23.5 +0.5**
VYHS *e* 23 42 38.3
TIP Timpagrande 89.11 309⇓*iP* **P** **23 42 26.7 +1.7**
TIP Timpagrande 89.11 309 *e*P **P** **23 42 26.4 +1.5**
comp=Z,4.6nm,0.8s
ARA0 ARCESS Array S 89.36 340 *e*P **P** **23 42 24.8 -0.5**
ARCES ARCESS Array B 89.36 340 P **P** **23 42 24.8 -0.5**
comp=Z,9.2nm,0.8s,baz=99,slow=6.8,SNR=17
ARCES LR LR 00 25 47.8
comp=Z,59nm,20.7s,baz=172,slow=38
OKC Ostrava-Krasne 89.38 320 *e*P **P** **23 42 26.7 +0.8**
OKC *e*pP **pP** **23 42 39.1 -1.2**
OKC Ostrava-Krasne 89.38 320 *e*P **P** **23 42 26.7 +0.8**
OKC *e* 23 42 39.1
BLY Banja Luka 89.42 315⇓*iP* **P** **23 42 27.1 +0.9**
MORC Moravsky Berou 89.76 320 *e*P **P** **23 42 28.9 +1.1**
MORC *e**PP **pP** **23 42 41.4 -0.8**
MORC Moravsky Berou 89.76 320 *e*P **P** **23 42 28.9 +1.1**
MORC *e*pP **pP** **23 42 41.4 -0.8**
CUC Castrocucco 89.92 310 *e*P **P** **23 42 28.8 +0.1**
comp=Z,5.1nm,1.0s
KRLC Kraliky 90.29 320 *e*P **P** **23 42 31.5 +1.3**
KRLC *e*pP **pP** **23 42 44.3 -0.3**
KRLC Kraliky 90.29 320 *e*P **P** **23 42 31.5 +1.3**
KRLC *e* 23 42 44.3
DPC Dobruska-Polom 90.61 320 *e*P **P** **23 42 33.2 +1.5**
DPC *e*pP **pP** **23 42 46.1 0.0**
DPC Dobruska-Polom 90.61 320 *e*P **P** **23 42 33.2 +1.5**
DPC *e* 23 42 46.1
SNAA Sanae 90.61 198 P **P** **23 42 34.0 +2.6**
SNAA Sanae 90.61 198 *e*P **P** **23 42 33.9 +2.6**
SNAA pmax pmax
comp=Z,16nm,1.1s
SNAA Sanae 90.61 198 *e*P **P** **23 42 33.9 +2.6**
comp=Z,16nm,1.1s
ARSA Arzberg 90.83 317 *i* PcP **P** **23 42 33.5 +0.8**
comp=Z,4.4nm,0.8s
SOKA Soboth 91.11 317 *i* PcP **P** **23 42 34.9 +0.8**
comp=Z,7.5nm,1.1s
GEA0 GERESS Array S 92.18 319 *e*P **P** **23 42 39.4 +0.3**
GEA0 *e*pP **pP** **23 42 53.6 +0.1**
GEC2 GERESS Array S 92.18 319 *e*P pP 23 42 54.1 +0.6
GEC2 GERESS Array S 92.18 319 *e*pP pP 23 42 54.1 +0.6
GERES GERESS Array B 92.18 319 P **P** **23 42 39.3 +0.3**
comp=Z,0.7nm,0.6s,baz=98,slow=5.9,SNR=8.0
GERES pP **pP** **23 42 53.4 -0.1**
comp=Z,2.2nm,0.9s,baz=86,slow=4.1,SNR=8.4
GERES LR LR 00 30 07.2
comp=Z,25nm,18.2s,baz=88,slow=39
VNA2 Neumayer--Watz 92.24 198 P **P** **23 42 41.5 +2.7**
baz=84,slow=4.2
VNA1 Neumayer--Stat 92.61 198 P **P** **23 42 43.8 +3.4**
CLL Collm 92.79 321 *e*(P) P 23 42 35.0 -6.6
CLL *e* 23 42 40.0
CLL Collm 92.79 321 *e*P **P** 23 42 35.0 -6.6
VNA3 Neumayer Olymp 92.82 198 P **P** **23 42 44.1 +2.6**
NB200 NORSAR Array S 94.19 331 *e*P **P** **23 42 47.0 -1.0**
NOA NORSAR Array B 94.19 331 P **P** **23 42 47.0 -1.0**
comp=Z,3.4nm,1.1s,baz=94,slow=5.8,SNR=2.5
NOA LR LR 00 28 59.1
comp=Z,18nm,19.5s,baz=15,slow=38
NOA NORSAR Array B 94.19 331 P **P** **23 42 47.0 -1.0**
KEST Kesra 94.75 305 P **P** **23 42 52.2 +1.0**
comp=Z,3.0nm,0.7s,baz=299,slow=6.7,SNR=4.1
KEST Kesra 94.75 305 *e*P **P** **23 42 52.2 +1.0**
comp=Z,34nm,1.9s
TORD Torodi Ar. Bea 101.12 282 P **Pdif** **23 43 21.1 +1.0**
comp=Z,0.7nm,1.0s,baz=248,slow=2.7,SNR=3.6
TORD PKiKP **PKiKP** **23 47 44.8 -0.4**
comp=Z,0.4nm,0.8s,baz=81,slow=1.4,SNR=4.1
TORD PKKPbc **PKKPbc** **23 59 30.9 +0.1**
comp=Z,0.3nm,0.5s,baz=303,slow=4.5,SNR=7.3
TOA1 Torodi Ar. Sit 101.12 282 *e*Pdif **Pdif** **23 43 21.1 +1.0**
TOA1 *e*PKiKP **PKiKP** **23 47 44.8 -0.4**

TOA1 *e*PKKPbc **PKKPbc** **23 59 30.9 +0.1**
ILAR Eielson Array 102.73 24 PKKPbc PKKPbc 23 59 24.9 -2.8
comp=Z,0.6nm,0.8s,baz=132,slow=2.1,SNR=5.1
ILB Eielson Array 102.73 24 *e*PKKPbc PKKPbc 23 59 24.9 -2.8
YKA Yellowknife Ar 115.92 18 PKP **PKPdf** **23 48 09.5 -2.0**
comp=Z,0.4nm,0.5s,baz=324,slow=2.0,SNR=9.8
YKA PKKPab **PKKPab** **23 58 48.5 +0.5**
comp=Z,0.5nm,0.7s,baz=128,slow=4.2,SNR=11
YKB5 Yellowknife Ar 115.92 18 *e*PKPdf **PKPdf** **23 48 09.6 -2.0**
YKB5 *e*PKKPbc **PKKPab** **23 58 48.5 +0.5**
I03D Drain, OR 123.95 39 P **PKPdf** **23 48 27.5 0.0**
baz=301
I04A Tendick Farm, 124.48 38 P **PKPdf** **23 48 28.4 -0.3**
baz=302
L02D Cave Junction, 124.57 40 P **PKPdf** **23 48 29.3 +0.5**
baz=300
HUMO Hull Mountain 124.76 40 *e*PKPdf **PKPdf** **23 48 29.3 +0.2**
NEW Newport 124.85 31 P **PKPdf** **23 48 29.0 -0.2**
baz=310
M02C Callahan 125.44 41 P **PKPdf** **23 48 30.6 0.0**
baz=300
J05D Fort Rock, OR 125.48 38 P **PKPdf** **23 48 30.6 -0.1**
baz=303
N02D Trinity Center 125.74 41 P **PKPdf** **23 48 31.1 0.0**
baz=300
M04C Macdoel 125.89 40 P **PKPdf** **23 48 30.9 -0.6**
baz=301
K05A Summer Lake 125.99 38 *e*PKPdf **PKPdf** **23 48 32.4 +0.6**
BSMT Bassoo Peak 126.31 30 *e*PKPdf **PKPdf** **23 48 31.6 -0.6**
O03D Paynes Creek 126.68 41 P **PKPdf** **23 48 32.7 -0.3**
baz=300
MOD Modoc Plateau 126.80 39 *e*PKPdf **PKPdf** **23 48 33.8 +0.5**
MSO Missoula 127.42 31 P **PKPdf** **23 48 33.7 -0.5**
baz=312
MSO Missoula 127.42 31 *e*PKPdf **PKPdf** **23 48 33.7 -0.5**
AFDM Forest Hills D 127.91 42 *e*PKPdf **PKPdf** **23 48 36.1 +0.8**
LRM Limekiln Ridge 128.86 31 *e*PKPdf **PKPdf** **23 48 37.2 0.0**
DLMT Dillon 129.10 31 *e*PKPdf **PKPdf** **23 48 37.9 +0.3**
LRV Little Rabbit 129.12 45 *e*PKPdf **PKPdf** **23 48 37.8 +0.1**
MCMT McKenzie Canyo 129.33 32 *e*PKPdf **PKPdf** **23 48 38.9 +0.7**
BOZ Bozeman (W) 129.40 30 P **PKPdf** **23 48 38.0 -0.1**
baz=314
BOZ Bozeman (W) 129.40 30 *e*PKIKP **PKPdf** **23 48 37.7 -0.4**
BOZ Bozeman (W) 129.40 30 *e*PKPdf **PKPdf** **23 48 37.7 -0.4**
NV01 Mina Array Sit 129.96 42 *e*PKPdf **PKPdf** **23 48 39.4 -0.1**
NVAR Mina Array Bea 129.96 42 PKP **PKPdf** **23 48 39.4 -0.1**
comp=Z,1.9nm,0.6s,baz=321,slow=2.5,SNR=9.3
GCMT Greycliff 130.26 29 *e*PKPdf **PKPdf** **23 48 39.8 0.0**
RLMT Red Lodge 130.94 29 P **PKPdf** **23 48 40.7 -0.4**
baz=317
RLMT Red Lodge 130.94 29 *e*SKPbc **SKPbc** **23 52 00.3 -1.2**
HVU Hansel Valley 131.39 35 *e*PKIKP **PKPdf** **23 48 43.0 +1.0**
HVU Hansel Valley 131.39 35 *e*PKPdf **PKPdf** **23 48 43.0 +1.0**
HVU *e*SKPbc **SKPbc** **23 52 02.6 -0.6**
ULM Lac du Bonnet 131.76 15 PKP **PKPdf** **23 48 41.0 -1.2**
comp=Z,3.1nm,0.6s,baz=333,slow=8.3,SNR=3.7
ULM Lac du Bonnet 131.76 15 PKIKP **PKPdf** **23 48 41.0 -1.2**
MPMC Manual Prospec 131.77 44 P **PKPdf** **23 48 42.3 -0.6**
baz=302
R11A Troy Canyon, C 131.78 40 P **PKPdf** **23 48 43.3 +0.4**
baz=305
R11A Troy Canyon, C 131.78 40 *e*PKPdf **PKPdf** **23 48 45.0 +2.1**
R11A *e*SKPbc **SKPbc** **23 52 03.8 -1.0**
D25A Fairfield 132.00 23 P **PKPdf** **23 48 43.0 +0.1**
baz=325
HWUT Hardware Ranch 132.19 34 *e*PKPdf **PKPdf** **23 48 43.5 -0.1**
HWUT *e*SKPbc **SKPab** **23 52 06.9 -0.3**
DUG Dugway, Tooele 132.38 36 P **PKPdf** **23 48 44.0 +0.1**
baz=309
DUG Dugway, Tooele 132.38 36 *e*PKIKP **PKPdf** **23 48 44.7 +0.8**
DUG Dugway, Tooele 132.38 36 *e*PKPdf **PKPdf** **23 48 44.7 +0.8**
DUG *e*SKPbc **SKPbc** **23 52 06.8 0.0**
BW06 Boulder Array 132.48 32 *e*PKPdf **PKPdf** **23 48 43.0 -1.1**
PD31 Pinedale Array 132.48 32 *e*PKPdf **PKPdf** **23 48 43.5 -0.6**
PD31 *e*pPKPdf **pPKPdf** **23 48 58.5 -0.6**
PD31 *e*SKPbc **SKPbc** **23 52 06.9 -0.3**
PDAR Pinedale Array 132.48 32 PKP **PKPdf** **23 48 43.5 -0.6**
comp=Z,1.0nm,0.6s,baz=23,slow=0.8,SNR=14
PDAR pPKP **pPKPdf** **23 48 58.5 -0.6**
comp=Z,0.7nm,0.6s,baz=249,slow=0.9,SNR=5.0
PDAR SKPbc **SKPbc** **23 52 06.9 -0.3**
comp=Z,2.4nm,0.9s,baz=294,slow=0.8,SNR=12
GSC Goldstone, Bar 132.64 44 P **PKPdf** **23 48 44.3 -0.1**
baz=302
C30A Mose, Pekin 133.27 19 P **PKPdf** **23 48 44.8 -0.4**
baz=331
F26A Lodgepole 133.32 24 P **PKPdf** **23 48 45.7 +0.3**
baz=325
D29A Pettibone, Tap 133.46 20 P **PKPdf** **23 48 45.4 -0.2**
baz=329
B34A Aery, Baudette 133.70 15 P **PKPdf** **23 48 45.3 -0.7**
baz=336
G26A Maurine 133.80 24 P **PKPdf** **23 48 46.2 -0.1**
baz=325
G27A Dupree 134.00 24 P **PKPdf** **23 48 46.4 -0.3**
baz=326
B35A Bob, Littlefor 134.06 15 P **PKPdf** **23 48 46.3 -0.4**
baz=338
K22A Casper 134.10 30 P **PKPdf** **23 48 46.8 -0.3**
baz=318
MTPU Mount Pierson 134.12 38 *e*PKPdf **PKPdf** **23 48 51.5 +4.0**
RSSD Black Hills 134.13 26 P **PKPdf** **23 48 46.8 -0.4**
baz=322
RSSD Black Hills 134.13 26 *e*PKIKP **PKPdf** **23 48 46.8 -0.4**
RSSD Black Hills 134.13 26 *e*PKPdf **PKPdf** **23 48 46.8 -0.4**
RSSD *e*SKPbc **SKPbc** **23 52 11.0 -1.7**
I25A Rochford 134.35 26 P **PKPdf** **23 48 47.0 -0.5**
baz=322
SRU San Rafael Swe 134.43 36 *e*PKIKP **PKPdf** **23 48 49.5 +1.6**
SRU San Rafael Swe 134.43 36 *e*PKPdf **PKPdf** **23 48 49.5 +1.6**
C35A Jirik Farms, M 134.60 15 P **PKPdf** **23 48 47.5 -0.2**
baz=337
PLCA Paso Flores 134.68 188 PKP **PKPdf** **23 48 48.1 0.0**
comp=Z,1.9nm,0.7s,baz=187,slow=3.6,SNR=4.4
C36A Pine Crest Far 134.84 14 P **PKPdf** **23 48 48.1 0.0**
baz=339
EYMN Ely 134.97 13 P **PKPdf** **23 48 48.5 +0.1**
baz=340
O20A White River Ci 135.03 33 P **PKPdf** **23 48 49.4 +0.5**
baz=314
GLA Glamis 135.21 46 P **PKPdf** **23 48 51.5 +2.2**
baz=302
C39A Grand Marais 135.39 12 P **PKPdf** **23 48 49.1 0.0**
baz=342
I28A Midland 135.45 24 P **PKPdf** **23 48 49.1 -0.3**
baz=326
D37A Cotton 135.50 14 P **PKPdf** **23 48 49.5 +0.1**
baz=339
I29A Vivian Onida 135.78 23 P **PKPdf** **23 48 50.6 +0.6**
baz=327
E36A McGregor 135.88 15 P **PKPdf** **23 48 50.7 +0.6**
baz=338
113A Mohawk Valley, 136.12 45 *e*PKPdf **PKPdf** **23 48 56.9 +6.0**
WUAZ Wupatki 136.18 41 *e*PKPpre PKPpre 23 48 45.2
F36A Milaca 136.42 16 P **PKPdf** **23 48 51.4 +0.3**
baz=337
ISCO Idaho Springs 136.68 32 P **PKPdf** **23 48 52.5 +0.3**
baz=318
J30A Dallas 136.68 23 P **PKPdf** **23 48 51.9 +0.2**
baz=328
H35A Sunnyside Ranc 137.10 18 P **PKPdf** **23 48 52.6 +0.2**
baz=335
ECSD EROS Data Cent 137.38 20 P **PKPdf** **23 48 53.5 +0.5**
baz=332
ECSD EROS Data Cent 137.38 20 *e*PKPdf **PKPdf** **23 48 54.3 +1.3**
ECSD *e*SKPbc **SKIKP** **23 52 27.2 +0.1**
SDCO Great Sand Dun 138.23 34 P **PKPdf** **23 48 54.9 -0.2**
baz=316
J36A Seneca 1, Swea 138.49 18 P **PKPdf** **23 48 55.7 +0.7**
baz=335
J38A Wedel Dairy, R 139.05 16 P **PKPdf** **23 48 56.0 -0.1**
baz=337
L35A Bielow Farm, R 139.18 20 P **PKPdf** **23 48 56.8 +0.4**
baz=332
T25A Trinidad 139.27 33 P **PKPdf** **23 48 57.4 +0.4**
baz=317
P38A Dawn 142.09 20 P PKPpre 23 48 56.2
baz=334
O40A La Belle 142.17 18 P PKPpre 23 48 56.7
baz=337
S34A Willow Spring 142.39 25 P PKPpre 23 48 57.8
baz=327
T33A Patterson Ranc 142.41 27 P PKPpre 23 48 57.9
baz=325
P39B Salisbury 142.47 19 P PKPpre 23 48 57.6
baz=335

Q38A	Cooks Store, C	142.66	20	P	PKPpre	23 48 57.5	
	baz=334						
S35A	Otter Creek Ra	142.74	25	P	PKPpre	23 48 57.5	
	baz=329						
R37A	Teagarden Farm	142.79	22	P	PKPpre	23 48 58.9	
	baz=331						
Q39A	Willow Grove F	142.80	20	P	PKPpre	23 48 58.7	
	baz=334						
U33A	Lingo Farm, Me	143.00	28	P	PKPbc	23 48 59.8	-0.4
	baz=325						
Q40A	Laux Farm, Aux	143.14	19	P	PKPab	23 48 58.7	-0.3
	baz=336						
U34A	Anderson Ranch	143.26	27	P	PKPbc	23 49 01.0	+0.1
	baz=326						
S37A	Fort Scott	143.27	23	P	PKPbc	23 49 01.2	+0.3
	baz=331						
R39A	Chumby, Stover	143.44	20	P	PKPab	23 48 59.8	-0.4
	baz=334,SNR=7.0						
T36A	Boggs Farm, Ca	143.46	25	P	PKPab	23 49 00.2	-0.1
	baz=329						
W32A	Sentinel	143.51	30	P	PKPab	23 49 00.9	+0.2
	baz=322						
CPUP	Villa Florida	143.62	212	PKP	PKPbc	23 49 03.0	+0.8
	comp=Z,10nm,0.9s,baz=137,slow=1.7,SNR=24						
U35A	Pawnee	143.68	26	P	PKPab	23 49 01.4	+0.1
	baz=327						
Q42A	Golden Eagle	143.68	17	P	PKPab	23 49 01.4	+0.2
	baz=338						
V34A	Guthrie	143.77	28	P	PKPab	23 49 01.6	0.0
	baz=326						
T37A	Cheneyville 18	143.79	23	P	PKPab	23 49 01.6	0.0
	baz=330						
W33A	Caddo, Fort Co	143.87	29	P	PKPab	23 49 02.3	+0.2
	baz=324						
S39A	Bolivar	143.89	21	P	PKPab	23 49 01.2	-0.9
	baz=333,SNR=5.9						
ACSO	Alum Creek Sta	143.94	7	ePKPpre	PKPpre	23 49 01.8	
X32A	Elmer	144.04	31	P	PKPab	23 49 02.0	-0.7
	baz=322						
WMOK	Wichita Mounta	144.04	30	P	PKPab	23 49 01.9	-0.8
	baz=323,SNR=6.5						
U36A	Oologah	144.09	25	P	PKPab	23 49 02.0	-0.8
	baz=329						
T38A	Diamond	144.11	23	P	PKPab	23 49 02.3	-0.6
	baz=331,SNR=8.7						
V35A	Meyer Ranch, C	144.13	27	P	PKPab	23 49 02.0	-1.0
	baz=326						
W34A	Bridge Creek,	144.14	28	P	PKPab	23 49 03.0	0.0
	baz=325						
O56A	Blue Knob Stat	144.20	1	P	PKPab	23 49 02.2	-1.0
	baz=359						
CCM	Cathedral Cave	144.26	18	ePKIKP	PKPab	23 49 02.4	-1.0
CCM	Cathedral Cave	144.26	18	ePKPdf	PKPab	23 49 02.4	-1.0
S40A	Lebanon	144.26	20	P	PKPab	23 49 02.3	-1.1
	baz=334,SNR=10						
U37A	Salina	144.33	24	P	PKPab	23 49 02.7	-1.0
	baz=330						
X33A	Lawton	144.34	30	P	PKPab	23 49 02.9	-1.0
	baz=323						
T39A	Clever	144.47	22	P	PKPab	23 49 03.1	-1.1
	baz=333,SNR=6.4						
TUL1	Leonard	144.47	25	P	PKPab	23 49 03.3	-0.9
	baz=328,SNR=7.6						
TUL1	Leonard	144.47	25	ePKPdf	PKPab	23 49 03.5	-0.8
OLIL	Olney	144.49	14	ePKPdf	PKPab	23 49 03.8	-0.4
V36A	Jenks	144.51	26	P	PKPab	23 49 03.5	-0.9
	baz=328,SNR=6.4						
U38A	Gravette	144.59	23	P	PKPab	23 49 03.3	-1.4
	baz=331,SNR=9.4						
X34A	Smith Ranch, M	144.62	29	P	PKPab	23 49 04.0	-0.9
	baz=324,SNR=5.6						
W35A	Tecumseh	144.62	27	P	PKPab	23 49 03.5	-1.4
	baz=326						
T40A	Mansfield	144.66	20	P	PKPab	23 49 03.5	-1.4
	baz=334,SNR=14						
Y33A	Hilltop Ranch,	144.70	31	P	PKPab	23 49 04.0	-1.2
	baz=322						
V37A	Hulbert	144.77	25	P	PKPab	23 49 04.3	-1.1
	baz=329,SNR=28						
W36A	Wetumka	144.93	27	P	PKPab	23 49 04.9	-1.1
	baz=327,SNR=6.5						
U39A	Green Forest	145.00	22	P	PKPab	23 49 04.7	-1.5
	baz=332,SNR=11						
T41A	Mountain View	145.01	20	P	PKPbc	23 49 05.0	-1.2
	baz=335,SNR=28						
SDMD	Soldier's Deli	145.05	359	ePKPbc	PKPbc	23 49 05.2	-1.1
S43A	Fulton Ridge,	145.06	17	P	PKPbc	23 49 04.8	-1.5
	baz=338						
V38A	Canehill	145.09	24	P	PKPbc	23 49 05.1	-1.4
	baz=330,SNR=19						
LTX	Lajitas	145.12	42	ePKIKP	PKPbc	23 49 06.8	-0.1
LTX				e		23 49 19.3	
LTX	Lajitas	145.12	42	ePKPbc	PKPbc	23 49 06.8	-0.1
LTX				ePKPdf	pPKPdf	23 49 19.3	-3.0
TX31	Lajitas Ar. Si	145.12	42	ePKPbc	PKPbc	23 49 06.5	-0.4
TXAR	Lajitas Array	145.12	42	PKP	PKPbc	23 49 06.8	-0.2
	comp=Z,13nm,0.5s,baz=265,slow=0.8,SNR=212						
TXAR				pPKP	pPKPdf	23 49 19.3	-3.0
	comp=Z,8.1nm,0.6s,baz=289,slow=1.0,SNR=10.0						
Y34A	Reagan Ranch,	145.18	30	P	PKPbc	23 49 05.8	-1.1
	baz=324,SNR=14						
Z33A	Whitaker Ranch	145.19	32	P	PKPbc	23 49 05.7	-1.2
	baz=322						
X35A	Drake	145.20	28	P	PKPbc	23 49 05.6	-1.3
	baz=325,SNR=22						
ABTX	Abilene, Hawle	145.24	33	P	PKPbc	23 49 06.5	-0.6
	baz=320,SNR=5.7						
ABTX	Abilene, Hawle	145.24	33	ePKPbc	PKPbc	23 49 06.8	-0.4
U40A	Yellville	145.25	21	P	PKPbc	23 49 05.7	-1.3
	baz=333,SNR=45						
W37B	Quinton	145.28	26	P	PKPbc	23 49 06.1	-1.0
	baz=328,SNR=14						
X36A	Centrahoma	145.34	27	P	PKPbc	23 49 06.4	-1.0
	baz=326,SNR=9.0						
WCI	Wyandotte Cave	145.37	12	ePKIKP	PKPbc	23 49 06.3	-1.1
WCI	Wyandotte Cave	145.37	12	ePKPbc	PKPbc	23 49 06.3	-1.1
V39A	Pettigrew	145.41	23	P	PKPbc	23 49 06.1	-1.5
	baz=331,SNR=44						
Z34A	Collier Ranch,	145.56	30	P	PKPdf	23 49 06.9	-1.1
	baz=323						
Y35A	Marietta	145.57	29	P	PKPdf	23 49 06.8	-1.1
	baz=325						
133A	Hamilton Ranch	145.64	32	P	PKPdf	23 49 07.7	-0.4
	baz=321,SNR=17						
PBMO	Poplar Bluff	145.69	18	ePKPdf	PKPdf	23 49 07.1	-0.9
W38A	Poteau	145.73	25	P	PKPdf	23 49 07.4	-0.7
	baz=330,SNR=6.3						
V40A	Witts Springs	145.75	22	P	PKPdf	23 49 07.3	-0.9
	baz=333,SNR=51						
X37A	Clayton	145.77	26	P	PKPdf	23 49 07.5	-0.7
	baz=328						
W39A	Magazine	145.92	24	P	PKPdf	23 49 07.7	-0.7
	baz=331						
Z35A	Perchaven, San	145.93	30	P	PKPdf	23 49 07.9	-0.6
	baz=324						
Y36A	Durant	145.93	28	P	PKPdf	23 49 08.0	-0.5
	baz=326,SNR=8.3						
X38A	Whitesboro	145.94	25	P	PKPdf	23 49 08.3	-0.2
	baz=329,SNR=12						
V41A	Mountainview	146.01	21	P	PKPdf	23 49 08.1	-0.6
	baz=334,SNR=42						
233A	Rising Star	146.10	33	P	PKPdf	23 49 09.3	+0.4
	baz=320,SNR=16						
134A	White-Moore Ra	146.11	32	P	PKPdf	23 49 08.9	+0.1
	baz=322,SNR=7.4						
LCO	Las Campanas	146.16	191	ePKPdf	PKPab	23 49 11.7	+0.6
Y37A	Hugo	146.17	27	P	PKPdf	23 49 08.7	-0.2
	baz=327						
W40A	Ferguson Farm,	146.20	23	P	PKPdf	23 49 08.8	-0.1
	baz=332,SNR=8.9						
V42A	Cord	146.26	20	P	PKPdf	23 49 08.7	-0.3
	baz=335						
X39A	Fountain Ranch	146.38	25	P	PKPdf	23 49 09.7	+0.4
	baz=330,SNR=17						
Z36A	Blue Ridge	146.38	29	P	PKPdf	23 49 09.4	+0.1
	baz=325						
X201	Greenbrier Sit	146.38	22	ePKPdf	PKPdf	23 49 09.4	+0.1
WHAR	Wooly Hollow	146.41	22	ePKPdf	PKPdf	23 49 09.4	+0.1
X301	Greenbrier Sit	146.41	22	ePKPdf	PKPdf	23 49 08.9	-0.4
135A	Vickery Place,	146.47	31	P	PKPdf	23 49 09.8	+0.3
	baz=323						
234A	Clairette	146.53	32	P	PKPbc	23 49 10.4	-0.7
	baz=321,SNR=9.0						
W41B	Gary Mavity, V	146.53	22	P	PKPdf	23 49 09.5	0.0
	baz=333						
MIAR	Mount Ida	146.57	24	P	PKPdf	23 49 10.2	+0.6
	baz=331,SNR=28						
MIAR	Mount Ida	146.57	24	ePKP2	PKPdf	23 49 10.0	+0.4
MIAR	Mount Ida	146.57	24	ePKPdf	PKPdf	23 49 10.0	+0.4
333A	Richland Sprin	146.58	34	P	PKPbc	23 49 10.6	-0.7
	baz=319,SNR=23						
Y38A	Idabel	146.61	26	P	PKPdf	23 49 09.8	+0.1
	baz=328						
V44A	Blytheville	146.73	18	P	PKPdf	23 49 10.4	+0.7
	baz=338						
JCT	Junction City	146.74	36	P	PKPbc	23 49 11.2	-0.6
	baz=317,SNR=30						
JCT	Junction City	146.74	36	ePKP2	PKPdf	23 49 10.3	+0.2
JCT	Junction City	146.74	36	ePKPdf	PKPdf	23 49 10.3	+0.2
Z37A	Pogue Cattle C	146.82	28	P	PKPbc	23 49 11.0	-0.9
	baz=326						
Y39A	Lockesburg	146.88	25	P	PKPdf	23 49 11.0	+0.9
	baz=329,SNR=9.9						
URVA	University of	146.89	360	ePKPdf	PKPbc	23 49 11.3	-0.5
WHTX	Lake Whitney,	146.89	31	P	PKPbc	23 49 11.2	-0.9
	baz=322						
X40A	Basin Creek Fa	146.91	23	P	PKPdf	23 49 11.1	+0.9
	baz=332						
433A	Art	146.95	35	P	PKPdf	23 49 11.3	+0.9
	baz=319,SNR=8.8						
334A	Lometa	146.99	33	P	PKPbc	23 49 11.6	-0.8
	baz=320,SNR=9.4						
WVT	Waverly	147.03	15	ePKP2	PKPbc	23 49 11.4	-0.9
WVT	Waverly	147.03	15	ePKPdf	PKPbc	23 49 11.4	-0.9
X41A	Kaden, Bauxite	147.03	23	P	PKPdf	23 49 11.1	+0.8
	baz=332						
Z38A	Mt. Pleasant	147.07	27	P	PKPdf	23 49 11.4	+0.9
	baz=327						
Y40A	Okolona	147.15	24	P	PKPdf	23 49 11.5	+1.0
	baz=331						
137A	Heron Place, G	147.25	29	P	PKPbc	23 49 12.8	-0.2
	baz=326						
236A	Katherine and	147.36	30	P	PKPbc	23 49 12.8	-0.5
	baz=324						
434A	Burnet	147.37	34	P	PKPbc	23 49 12.3	-1.2
	baz=320						
Z39A	Irene McRaven,	147.43	26	P	PKPbc	23 49 12.9	-0.7
	baz=329						
335A	Moody	147.47	32	P	PKPbc	23 49 13.1	-0.6
	baz=322,SNR=7.4						
533A	Kerrville	147.49	36	P	PKPbc	23 49 13.2	-0.7
	baz=318						
WLAR	White Oak Lake	147.50	24	ePKPbc	PKPbc	23 49 13.6	-0.1
138A	Matatall Enter	147.52	28	P	PKPbc	23 49 13.7	-0.1
	baz=327						
Y41A	Eaglette Beard	147.53	23	P	PKPbc	23 49 13.2	-0.7
	baz=332						
336A	Riesel	147.69	31	P	PKPbc	23 49 13.6	-0.7
	baz=323						
Z40A	Long Farm, Mag	147.75	25	P	PKPbc	23 49 14.0	-0.5
	baz=330						
435B	Jarrell	147.77	33	P	PKPbc	23 49 14.0	-0.6
	baz=321						
534A	Blanco	147.85	35	P	PKPbc	23 49 14.0	-0.9
	baz=319,SNR=5.6						
633A	Saathoff Ranch	147.86	37	P	PKPbc	23 49 14.4	-0.5
	baz=317						
X44A	Crenshaw	147.87	19	P	PKPbc	23 49 13.8	-0.9
	baz=336						
Y42A	Garnett, Star	147.89	22	P	PKPbc	23 49 14.1	-0.7
	baz=333						
Z41A	Richland Creek	148.00	24	P	PKPbc	23 49 14.5	-0.6
	baz=331,SNR=5.3						
PLAL	Pickwick Lake	148.05	16	ePKPdf	PKPbc	23 49 13.7	-1.5
Y43A	Makayla and Ka	148.13	21	P	PKPbc	23 49 14.9	-0.5
	baz=335						
X45A	UM Field Stati	148.18	18	P	PKPbc	23 49 14.2	-1.3
	baz=338						
436A	Wall Ranch, Ga	148.20	32	P	PKPbc	23 49 15.7	0.0
	baz=322						
832A	Faith Ranch, C	148.21	39	P	PKPbc	23 49 15.8	0.0
	baz=315						
140A	Cam and Jess,	148.21	26	P	PKPbc	23 49 15.1	-0.5
	baz=329						
337A	Centerville	148.23	30	P	PKPbc	23 49 15.8	0.0
	baz=324						
733A	Divot King Ran	148.32	38	P	PKPbc	23 49 15.8	-0.3
	baz=316						
Z42A	Norrel Spur, H	148.33	23	P	PKPbc	23 49 15.4	-0.6
	baz=332						
TKL	Tuckaleechee C	148.33	9	ePKP2	PKPbc	23 49 15.0	-0.9
TKL	Tuckaleechee C	148.33	9	ePKPdf	PKPbc	23 49 14.9	-0.9
239A	Gary	148.34	28	P	PKPbc	23 49 15.7	-0.3
	baz=327						
Y44A	Strider, Charl	148.34	20	P	PKPbc	23 49 15.4	-0.6
	baz=336						
SWET	Sewanee	148.35	13	ePKPdf	PKPbc	23 49 14.5	-1.5
535A	Dale	148.36	34	P	PKPbc	23 49 15.8	-0.3
	baz=320						
CPCT	Cooper Cave	148.41	10	ePKPbc	PKPbc	23 49 15.2	-0.9
NATX	Nacogdoches	148.47	28	P	PKPbc	23 49 16.0	-0.4
	baz=327						
NATX	Nacogdoches	148.47	28	ePKPbc	PKPbc	23 49 16.4	0.0
338A	Crockett	148.49	29	P	PKPbc	23 49 16.1	-0.3
	baz=325						
437A	Phantom Ranch,	148.50	31	P	PKPbc	23 49 16.3	-0.1
	baz=323						
141A	Papa Simpson,	148.53	25	P	PKPbc	23 49 16.0	-0.5
	baz=330						
833A	Chaparral WMA,	148.54	38	P	PKPbc	23 49 16.6	0.0
	baz=316						
240A	Hunter Patters	148.64	27	P	PKPbc	23 49 16.5	-0.3
	baz=328						
Y45A	Yeager Farm, C	148.65	19	P	PKPbc	23 49 16.0	-0.8
	baz=337						
Z43A	Armstrong Fami	148.65	22	P	PKPbc	23 49 16.1	-0.7
	baz=334						
734A	La Parita Cree	148.67	37	P	PKPbc	23 49 16.8	-0.2
	baz=317						
635A	Leesville	148.73	35	P	PKPbc	23 49 17.1	0.0
	baz=319						
Y46A	Houston	148.85	18	P	PKPbc	23 49 15.9	-1.3
	baz=338,SNR=7.5						
Z44A	Pea Ridge, Bel	148.88	21	P	PKPbc	23 49 16.8	-0.6
	baz=335						
537A	Green Hill Far	149.00	32	P	PKPbc	23 49 17.1	-0.6
	baz=322						
636A	Smothers Creek	149.06	34	P	PKPbc	23 49 18.8	+0.8
	baz=320						
735A	Kenedy	149.11	36	P	PKPbc	23 49 18.6	+0.6
	baz=319						
340A	Bronson	149.11	27	P	PKPbc	23 49 17.6	-0.5
	baz=328						
933A	Laredo	149.12	39	P	PKPbc	23 49 18.4	+0.2
	baz=315						
Y47A	UCPARC, Winfie	149.12	16	P	PKPbc	23 49 16.3	-1.6
	baz=340,SNR=8.4						
KMSC	Kings Mountain	149.15	6	P	PKPbc	23 49 17.0	-1.0
	baz=353						
834A	Tilden	149.20	38	P	PKPbc	23 49 18.8	+0.5
	baz=317						
439A	Center Grove,	149.21	29	P	PKPbc	23 49 18.5	+0.2
	baz=326						
736A	Circle Diamond	149.46	35	P	PKPbc	23 49 20.1	+1.1
	baz=320						
Z46A	Louisville	149.46	18	P	PKPbc	23 49 18.3	-0.5
	baz=338,SNR=5.0						
637A	Eagle Lake	149.49	33	P	PKPbc	23 49 19.9	+0.9
	baz=322						
341A	Kurthwood	149.51	26	P	PKPbc	23 49 19.5	+0.5
	baz=329						
835A	Beeville	149.52	36	P	PKPbc	23 49 20.1	+1.0
	baz=318						
934A	Benavides	149.60	38	P	PKPbc	23 49 20.3	+0.9
	baz=316						
440A	Kirbyville	149.64	28	P	PKPbc	23 49 19.7	+0.3
	baz=327						
145A	Houston Renfro	149.67	20	P	PKPbc	23 49 18.9	-0.5
	baz=336						
Z48A	Northport	149.70	16	P	PKPbc	23 49 17.8	-1.6
	baz=340,SNR=7.7						
Z47A	Carrollton	149.72	17	P	PKPbc	23 49 18.2	-1.2
	baz=339,SNR=8.5						
VBMS	Vicksburg	149.81	22	P	PKPbc	23 49 19.4	-0.3
	baz=334						
034A	Hebbronville	149.88	39	P	PKPbc	23 49 20.8	+0.7
	baz=315						
244A	Avery, Jackson	149.90	22	P	PKPbc	23 49 19.6	-0.4
	baz=334,SNR=10						
146A	Union	149.93	19	P	PKPbc	23 49 19.6	-0.4
	baz=337						
JSC	Jenkinsville	150.01	6	ePKP2	PKPbc	23 49 19.6	-0.6
JSC	Jenkinsville	150.01	6	ePKPbc	PKPbc	23 49 19.6	-0.6
147A	Livingston	150.15	18	P	PKPbc	23 49 19.7	-0.8
	baz=339						
LRAL	Lakeview Retre	150.17	16	ePKPbc	PKPbc	23 49 19.4	-1.2
245A	Little AP, Sta	150.20	21	P	PKPbc	23 49 20.1	-0.6
	baz=335						
035A	Encino	150.33	39	P	PKPbc	23 49 21.3	+0.1
	baz=316						
344A	Westbrook Farm	150.41	23	P	PKPbc	23 49 21.2	0.0
	baz=333						
GOGA	Godfrey	150.58	10	ePKIKP	PKPbc	23 49 21.0	-0.6
GOGA	Godfrey	150.58	10	ePKPbc	PKPbc	23 49 21.0	-0.6
035Z	Hargill	150.69	39	P	PKPbc	23 49 22.6	+0.6
	baz=315						
345A	Thompson Farm,	150.81	22	P	PKPbc	23 49 21.8	-0.3
	baz=334						
248A	Dixon Mills	150.85	17	P	PKPbc	23 49 21.9	-0.3
	baz=339						
346A	Big Creek Wild	150.94	21	P	PKPbc	23 49 22.1	-0.3
	baz=336						
347A	Saraland	151.24	19	P	PKPbc	23 49 23.2	0.0
	baz=337,SNR=5.5						
348A	Jackson	151.43	18	P	PKPbc	23 49 23.5	-0.1
	baz=339						
446A	Poplarville	151.51	21	P	PKPbc	23 49 23.7	-0.1
	baz=335						
447A	Lucedale	151.76	20	P	PKPbc	23 49 24.2	-0.1
	baz=337						
LVC	Limon Verde	151.85	198	PKPbc	PKPbc	23 49 27.1	+1.8
	comp=Z,58nm,0.7s,baz=230,slow=1.0,SNR=16						
SIV	San Ignacio	153.87	219	PKPbc	PKPbc	23 49 29.2	-0.2
	comp=Z,1.1nm,0.4s,baz=127,slow=5.3,SNR=5.4						
LPAZ	La Paz	157.38	205	PKP	PKPdf	23 49 27.0	0.0
	comp=Z,1.0nm,0.7s,baz=246,slow=2.5,SNR=3.5						
LPAZ				PKPab	PKPab	23 49 59.3	+1.1
	comp=Z,2.4nm,0.8s,baz=182,slow=5.5,SNR=6.0						
PTGA	Pitinga	161.43	255	PKPab	PKPab	23 50 16.8	+1.4
	comp=Z,4.1nm,0.8s,baz=128,slow=15,SNR=6.8						

IDC 24 23:32:04.4±27.0, 15°.57S×176°.73W, h231km±210km, mb3.4/4, mb1 3.7/4, mb1mx3.3/44, mbtmp3.9/4, Error ellipse: s-maj=262.1km s-min=37.7km az=134.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	46.67	257	P	P	23 40 10.1	-0.3
	0.4nm,0.4s,baz=90,slow=7.1,SNR=3.0						
ASAR	Alice Springs	47.00	252	P	P	23 40 12.9	-0.1
	3.8nm,0.5s,baz=85,slow=8.6,SNR=15						
ASAR				PcP	PcP	23 41 41.4	0.0
	0.3nm,0.4s,baz=93,slow=3.7,SNR=2.5						
ILAR	Eielson Array	83.27	12	P	P	23 44 04.8	+0.1
	1.0nm,0.6s,baz=220,slow=5.9,SNR=8.7						
YKA	Yellowknife Ar	91.55	24	P	P	23 44 44.3	-0.2
	0.1nm,0.5s,baz=238,slow=4.7,SNR=3.2						
ARCES	ARCESS Array B	124.30	351	PKP	PKPdf	23 50 35.4	+0.3
	4.0nm,1.1s,baz=352,slow=2.5,SNR=5.9						
FINES	FINESS Array B	131.36	346	PKP	PKPdf	23 50 47.5	-1.3
	2.6nm,1.0s,baz=347,slow=2.3,SNR=2.5						
BRTR	Keskin Array B	144.20	318	PKP	PKPab	23 51 11.6	0.0
	1.0nm,0.9s,baz=165,slow=5.1,SNR=5.7						
GERES	GERESS Array B	145.73	348	PKPbc	PKPdf	23 51 15.6	+0.2
	0.8nm,0.6s,baz=15,slow=5.5,SNR=6.2						

*LDG **24** 23:32:56.7±0.1, 43°.91N×12°.03E, h10km, Ml2.4/6, Error ellipse: s-maj=2.2km s-min=1.3km az=60.0*
*ROM **24** 23:32:56.5±0.2, 43°.88N×12°.03E, h6km±1km, Md2.8/23, Ml2.3/22, Error ellipse: s-maj=1.8km s-min=1.2km az=9.0*
*CSEM **24** 23:32:56.8±0.1, 43°.85N×11°.96E, h15km, ML3.1/10, Error ellipse: s-maj=3.1km s-min=2.2km az=34.0*
*ISCJB **24** 23:32:57.0±0.3, 43°.87N±0°.02×11°.95E±0°.02, h21km±3km, Error ellipse: s-maj=4.3km s-min=2.7km az=22.9*
*GEN **24** 23:32:57.1, 43°.89N×11°.98E, h4km, ML2.1*

ISC 24 23:32:55.4±0.8, 43°.96N±0°.02×12°.04E±0°.02, h17km±5km, n82, σ1°.08/122, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFI	Santa Sofia	0.15	250	Pg	Pb	23 32 59.9	+0.1
SFI				Sg	Sg	23 33 02.1	-0.4
SFI	Santa Sofia	0.15	250	Pg	Pb	23 32 59.9	+0.1
SFI				Sg	Sg	23 33 02.1	-0.4
ASQU	Asqua	0.24	229	Pg	Pg	23 33 01.1	+0.1
ASQU				Sg	Sg	23 33 04.3	-0.5
	973nm,0.3s						
ASQU	Asqua	0.24	229	Pg	Pg	23 33 01.1	+0.1
ASQU				Sg	Sg	23 33 04.3	-0.5
	973nm,0.3s						
BLLA	Bellaria	0.36	59	Pg	Pn	23 33 06.1	+0.3
	1μm,1.6s						
BLLA	Bellaria	0.36	59	Pg	Pn	23 33 06.1	+0.3
	1μm,1.6s						
BADI	Badiali	0.47	162	Pg	Pg	23 33 04.8	-0.1
BADI				Sg	Sg	23 33 11.8	+0.5
	385nm,0.2s						
BADI	Badiali	0.47	162	Pg	Pg	23 33 04.8	-0.1
BADI				Sg	Sg	23 33 11.8	+0.5
	385nm,0.2s						
SEI	Scarperia	0.50	281	Pg	Pb	23 33 06.7	+0.9
SEI				Sg	Sn	23 33 15.3	-0.8
	614nm,0.2s						
SEI	Scarperia	0.50	281	Pg	Pb	23 33 06.7	+0.9
SEI				Sg	Sn	23 33 15.3	-0.8
	614nm,0.2s						
PIEI	Pieia	0.55	139	Pg	Pg	23 33 06.6	+0.1
PIEI				Sg	Sb	23 33 15.1	+0.8
	76nm,0.4s						
PIEI	Pieia	0.55	139	Pg	Pg	23 33 06.6	+0.1
PIEI				Sg	Sb	23 33 15.1	+0.8
	76nm,0.4s						
ATPC	Poggio Castell	0.56	147	Pg	Pg	23 33 06.8	+0.1
ATPC				Sg	Sb	23 33 15.7	+1.1
	273nm,0.2s						
ATPC	Poggio Castell	0.56	147	Pg	Pg	23 33 06.8	+0.1
ATPC				Sg	Sb	23 33 15.7	+1.1
	273nm,0.2s						
PESA	Pesaro	0.58	91	Pg	Pn	23 33 08.7	-0.1
	159nm,0.3s						
PESA	Pesaro	0.58	91	Pg	Pn	23 33 08.7	-0.1
	159nm,0.3s						
FSSB	Fossombrone	0.60	116	Pg	Pb	23 33 08.1	+0.7
FSSB				Sg	Sn	23 33 17.6	-0.8
	205nm,0.3s						
FSSB	Fossombrone	0.60	116	Pg	Pb	23 33 08.1	+0.7

144nm,0.6s
MGAB Montegabbione 1.04 177 Pg **Pn 23 33 15.5 +0.2**
144nm,0.6s
SACS San Casciano d 1.11 185 Pg **Pg 23 33 16.8 -0.1**
56nm,0.5s
MAIM Mastiano 1.12 268 P **Pg 23 33 17.0 -0.1**
MAIM S **Sb 23 33 30.4 -0.1**
ARCI Arcidosso 1.18 201 Pg **Pb 23 33 17.7 +0.3**
50nm,0.8s
ARCI Arcidosso 1.18 201 Pg **Pb 23 33 17.7 +0.3**
50nm,0.8s
TRIF Trifonti 1.18 225 Pg **Pg 23 33 18.4 +0.2**
30nm,0.8s
TRIF Trifonti 1.18 225 Pg **Pg 23 33 18.4 +0.2**
30nm,0.8s
FDMO Fiordimonte 1.20 140 Pg **Pg 23 33 18.4 -0.1**
46nm,0.7s
FDMO Fiordimonte 1.20 140 Pg **Pg 23 33 18.4 -0.1**
46nm,0.7s
SARO Sassorosso 1.20 281 P **Pg 23 33 19.0 +0.3**
SARO S **Sn 23 33 33.7 +0.3**
SASS Sassa´´´´´´ 1.20 235 Pg **Pb 23 33 18.1 +0.4**
16nm,0.6s
SASS Sassa´´´´´´ 1.20 235 Pg **Pb 23 33 18.1 +0.4**
16nm,0.6s
MCIV Monte Civitell 1.21 193 Pg **Pg 23 33 18.5 -0.3**
21nm,0.8s
MCIV Monte Civitell 1.21 193 Pg **Pg 23 33 18.5 -0.3**
21nm,0.8s
MARN Marana (Italy) 1.78 341 *e*Pn **Pg 23 33 28.8 -0.9**
MARN Marana (Italy) 1.78 341 *e*Pn **Pg 23 33 28.8 -0.9**
CGRP Cima Grappa 1.93 355 *e*Pn **Pb 23 33 30.9 +0.6**
CGRP *e*Sn **Sg 23 33 57.3 -0.3**
CGRP Cima Grappa 1.93 355 *e*Pn **Pb 23 33 30.9 +0.6**
CGRP *e*Sn **Sg 23 33 57.3 -0.3**
DDS Dosso del Somm 2.02 343 *e*Pn **Pb 23 33 32.4 +0.7**
DDS Dosso del Somm 2.02 343 *e*Pn **Pb 23 33 32.4 +0.7**
VARN Col Varnada, M 2.04 1 *e*Pn **Pb 23 33 31.9 -0.1**
VARN Col Varnada, M 2.04 1 *e*Pn **Pb 23 33 31.9 -0.1**
NVLJ Novalja 2.12 72 *i* Pn **Pb 23 33 33.0 -0.4**
NVLJ Sn **Sb 23 33 59.8 +0.4**
NVLJ Novalja 2.12 72 *i* Pn **Pb 23 33 33.0 -0.4**
NVLJ Sn **Sb 23 33 59.8 +0.4**
PANI Panarotta 2.15 347 *e*Pn **Pb 23 33 34.5 +0.5**
PANI Panarotta 2.15 347 *e*Pn **Pb 23 33 34.5 +0.5**
PGF Pioggiola 2.63 239 *e*Pn **Pn 23 33 37.0 -0.1**
PGF *e*Sn **Sn 23 34 06.9 -1.8**
2.4nm,0.3s
PGF Pioggiola 2.63 239 *e*Pn **Pn 23 33 37.0 -0.1**
PGF *e*Sn **Sn 23 34 06.9 -1.8**
1.2nm,0.3s
UDBI Udbina 2.74 77 *i* Pn **Pb 23 33 42.0 -1.9**
UDBI Sn **Sb 23 34 17.7 +0.5**
UDBI Udbina 2.74 77 *i* Pn **Pb 23 33 42.0 -1.9**
UDBI Sn **Sb 23 34 17.6 +0.5**
ACOM Acomizza, Ital 2.79 21 *e*Pn **Pb 23 33 43.1 -1.8**
ACOM Acomizza, Ital 2.79 21 *e*Pn **Pb 23 33 43.1 -1.8**
ABTA Abfaltersbach 2.81 7 *i* Pn **Pb 23 33 44.4 -0.8**
1.9nm,0.3s
ABTA *i* Sn **Sb 23 34 20.8 +1.5**
7.9nm,0.7s
ABTA Abfaltersbach 2.81 7 Pn **Pb 23 33 44.4 -0.8**
1.9nm,0.3s
ABTA Sn **Sb 23 34 20.8 +1.5**
7.9nm,0.7s
SBF Sospel 3.33 270 *e*Pn **Pn 23 33 46.7 0.0**
SBF *e*Sn **Sn 23 34 23.7 -2.2**
3.6nm,0.3s
SBF Sospel 3.33 270 *e*Pn **Pn 23 33 46.7 0.0**
SBF *e*Sn **Sn 23 34 23.7 -2.2**
1.8nm,0.3s
LMR La Mourre 4.06 263 *e*Pn **Pn 23 33 57.9 +1.2**
LMR *e*Sn **Sn 23 34 41.7 -2.1**
0.5nm,0.2s
LMR La Mourre 4.06 263 *e*Pn **Pn 23 33 57.9 +1.2**
LMR *e*Sn **Sn 23 34 41.7 -2.1**
0.2nm,0.2s
LPL La Plagne 4.09 294 *e*Pn **Pn 23 33 57.9 +0.6**
LPL *e*Sn **Sn 23 34 43.1 -1.8**
0.6nm,0.2s
LPL La Plagne 4.09 294 *e*Pn **Pn 23 33 57.9 +0.6**
LPL *e*Sn **Sn 23 34 43.1 -1.8**
0.3nm,0.2s
KHC Kasperske Hory 5.28 11 *e*SN **Sn 23 35 18.4 +4.4**
HINF Hinteralfeld 5.29 319 *e*Pn **Pn 23 34 14.1 +0.5**
HINF Hinteralfeld 5.29 319 *e*Pn **Pn 23 34 14.1 +0.5**
CDF Champ du Feu 5.55 325 *e*P **Pn 23 34 20.9 +3.7**
CDF *e*Sn **Sn 23 35 18.1 -2.5**
0.8nm,0.3s
CDF Champ du Feu 5.55 325 *e*P **Pn 23 34 20.9 +3.7**
HAU Haudompre 5.67 318 *e*Pn **Pn 23 34 19.4 +0.6**
HAU *e*Sn **Sn 23 35 20.9 -2.5**
2.8nm,0.3s
HAU Haudompre 5.67 318 *e*Pn **Pn 23 34 19.4 +0.6**

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*ISK **24** 23:39:55.4, 39.°07N×29.°17E, h4km, MD2.8*
*ISCJB **24** 23:39:56.3±0.5, 39.°09N±0.°03×29.°11E±0.°05, h9km, Error ellipse: s-maj=5.4km s-min=4.5km az=154.5*
*DDA **24** 23:39:56.4, 39.°11N×29.°13E, h7km, Md2.7*
*CSEM **24** 23:39:56.4±0.2, 39.°09N×29.°13E, h5km, MD2.7, Error ellipse: s-maj=6.4km s-min=4.2km az=72.0*
ISC 24 23:39:56.3±0.9,**39.°06N**±0.°03×**29.°12E**±0.°03,**h9**km,**n32**, σ0**.80**/38,**1D, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.28**	**83**	P	**Pg**	**23 40 01.5**	**-0.6**
GDZ				S	**Sg**	**23 40 06.4**	**+0.5**
GDZ	**Gediz**	**0.28**	**83**	*i* P	**Pg**	**23 40 01.5**	**-0.6**
GDZ				*i* S	**Sg**	**23 40 06.4**	**+0.5**
DEMI	**Demirci**	**0.31**	**268**	*i* P	**Pg**	**23 40 00.2**	**-2.4**
TVSB	**Tavsanli**	**0.48**	**34**	*e*PG	**Pg**	**23 40 03.8**	**-1.8**
TVSB				*e*SG	**Sg**	**23 40 11.4**	**-0.5**
TVSB	**Tavsanli**	**0.48**	**34**	*e*Pg	**Pg**	**23 40 03.8**	**-1.8**
TVSB				*e*Sg	**Sg**	**23 40 11.4**	**-0.5**
DST	**Dursunbey**	**0.67**	**325**	*e*PG	**Pg**	**23 40 08.9**	**-0.3**
DST	**Dursunbey**	**0.67**	**325**	*e*Pg	**Pg**	**23 40 09.0**	**-0.3**
DURS	**Dursunbey**	**0.74**	**318**	P	**Pg**	**23 40 10.4**	**-0.2**
DURS	**Dursunbey**	**0.74**	**318**	*i* P	**Pg**	**23 40 10.4**	**-0.2**
KHAL	**Karahalli**	**0.74**	**157**	P	**Pn**	**23 40 12.6**	**-0.5**
KHAL				S	**Sb**	**23 40 23.1**	**+1.3**
KHAL	**Karahalli**	**0.74**	**157**	*i* P	**Pn**	**23 40 12.6**	**-0.5**
KHAL				*i* S	**Sb**	**23 40 23.1**	**+1.3**
KHL	**Karahalli**	**0.80**	**156**	*e*PG	**Pg**	**23 40 11.4**	**-0.3**
KHL	**Karahalli**	**0.80**	**156**	*e*Pg	**Pg**	**23 40 11.4**	**-0.3**
ORLT	**Orhaneli**	**1.00**	**350**	*e*PG	**Pg**	**23 40 15.3**	**-0.3**
ORLT	**Orhaneli**	**1.00**	**350**	*e*Pg	**Pg**	**23 40 15.4**	**-0.3**
BALB	**Balikesir**	**1.12**	**302**	*e*PN	**Pb**	**23 40 17.8**	**-0.1**
BALB	**Balikesir**	**1.12**	**302**	*e*Pn	**Pb**	**23 40 17.8**	**-0.1**
IZI	**Iznik**	**1.31**	**12**	*e*PN	**Pb**	**23 40 20.8**	**-0.4**
IZI	**Iznik**	**1.31**	**12**	*e*Pn	**Pb**	**23 40 20.8**	**-0.4**
MDNY	**Mudanya-Bursa**	**1.32**	**352**	*e*PN	**Pb**	**23 40 21.2**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.32**	**352**	*e*Pn	**Pb**	**23 40 21.3**	**-0.1**
KCTX	**Karacabey (Bur**	**1.34**	**334**	*e*PN	**Pg**	**23 40 21.8**	**-0.4**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**221**	*e*PN	**Pb**	**23 40 23.7**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**221**	*e*Pn	**Pb**	**23 40 23.7**	**-0.1**
ARMT	**Armutlu**	**1.52**	**353**	*e*PN	**Pn**	**23 40 23.5**	**-0.3**
GULT	**Gulveren**	**1.75**	**38**	*e*PN	**Pn**	**23 40 26.9**	**0.0**
GULT	**Gulveren**	**1.75**	**38**	*e*Pn	**Pn**	**23 40 26.9**	**0.0**
ISK	**Istanbul-Kandi**	**2.01**	**359**	*e*PN	**Pn**	**23 40 31.1**	**+0.7**
ISK	**Istanbul-Kandi**	**2.01**	**359**	*e*Pn	**Pn**	**23 40 31.1**	**+0.7**
CTKS	**Kestanelik-??a**	**2.23**	**348**	*e*PN	**Pn**	**23 40 34.3**	**+0.9**
CTKS	**Kestanelik-??a**	**2.23**	**348**	*e*Pn	**Pn**	**23 40 34.3**	**+0.9**
HUMR	**Humele**	**6.28**	**332**	⇓*i* P	**Pg**	**23 41 56.9**	**+0.3**

IDC 24 23:45:18.5±4.9,**18.°68S**×**177.°07E**,**h0**km,**mb4.2**/3, **mb1 4.4**/3,**mb1mx3.8**/31,**mbtmp4.2**/3,**MS3.6**/7,**Ms1 3.6**/7, **ms1mx3.3**/34,**Error ellipse: s-maj=223.7km s-min=41.0km az=148.0,Fiji Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**11.71**	**68**	LR	LR	23 51 39.2	
	comp=Z,189nm,20.0s,baz=86,slow=32						
URZ	**Urewera**	**19.51**	**180**	LR	LR	23 55 34.3	
	comp=Z,120nm,20.8s,baz=30,slow=32						
RAR	**Rarotonga**	**21.91**	**100**	LR	LR	23 56 33.8	
	comp=Z,113nm,21.9s,baz=277,slow=31						
TBI	**Tubuai**	**31.55**	**104**	*e*LR	LR	00 00 06.8	
	153nm,26.5s						
PPT2	**Papeete2**	**31.69**	**93**	*e*LR	LR	00 00 10.0	
	188nm,26.0s						
WRA	**Warramunga Arr**	**40.27**	**261**	P	P	23 52 56.7	-0.9
	2.1nm,0.9s,baz=94,slow=9.0,SNR=6.0						
ASAR	**Alice Springs**	**40.45**	**255**	P	P	23 52 59.3	+0.3
	5.1nm,0.8s,baz=86,slow=8.8,SNR=40						
ASAR				LR	LR	00 09 49.8	
	comp=Z,80nm,18.8s,baz=100,slow=36						
FITZ	**Fitzroy Crossi**	**48.67**	**262**	LR	LR	00 13 34.1	
	comp=Z,88nm,18.4s,baz=76,slow=35						
MAW	**Mawson**	**81.66**	**201**	LR	LR	00 30 59.7	
	comp=Z,37nm,18.1s,baz=40,slow=34						
CMAR	**Chiang Mai Arr**	**85.12**	**291**	P	P	23 57 57.4	+0.4
	0.7nm,0.6s,baz=116,slow=4.1,SNR=5.8						
ILAR	**Eielson Array**	**87.65**	**15**	LR	LR	00 29 53.6	
	comp=Z,41nm,21.4s,baz=257,slow=30						
DPC	**Dobruska-Polom**	**144.86**	**338**	*e*P	PKPab	00 04 56.5	0.0
DPC				*ex*	x	00 05 05.9	
BRG	**Berggiesshubel**	**145.19**	**341**	*e*P	PKPbc	00 04 57.2	-0.3
	10nm,1.4s						
PVCC	**Panska Ves**	**145.29**	**340**	*e*P	PKPdf	00 04 58.4	+0.2
KHC	**Kasperske Hory**	**146.82**	**340**	*e*P	PKPbc	00 05 03.1	+0.4
GERES	**GERESS Array B**	**147.03**	**340**	PKPbc	PKPbc	00 05 02.8	-0.6
	1.0nm,0.8s,baz=12,slow=1.9,SNR=6.8						
DAVOX	**Davos/Dischmat**	**150.05**	**342**	PKPbc	PKPbc	00 05 10.4	-1.0
	2.2nm,0.8s,baz=255,slow=1.8,SNR=3.9						

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*ISCJB **24** 23:56:35.2±1.2, 5.°8S±0.°1×149.°4E±0.°3, h150km, mb3.9/6, Error ellipse: s-maj=41.9km s-min=10.0km az=21.1*
*IDC **24** 23:56:36.6±1.6, 5.°78S×149.°27E, h145km±12km, mb3.7/7, mb1 3.9/8, mb1mx3.6/30, mbtmp4.2/8, Error ellipse: s-maj=38.0km s-min=10.3km az=117.0*
ISC 24 23:56:37.3±1.1,**5.°7S**±0.°1×**149.°2E**±0.°2,**h150**km,**n11**, σ1**9**/**15**/16,**mb3.9**/6,**New Britain region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**4.18**	**209**	P	**Pn**	**23 57 39.6**	**-0.3**
	12nm,0.3s,baz=39,slow=6.0,SNR=14						
PMG				S	**Sn**	**23 58 28.2**	**-0.5**
	25nm,0.3s,baz=124,slow=19,SNR=21						
CTA	**Charters Tower**	**14.56**	**191**	P	**P**	**23 59 59.5**	**+0.7**
	0.2nm,0.3s,baz=12,slow=13,SNR=5.0						
WRA	**Warramunga Arr**	**20.21**	**224**	P	**P**	**00 01 01.2**	**+0.6**
	6.9nm,0.5s,baz=51,slow=11,SNR=34						
WRA				S	**S**	**00 04 39.4**	**+0.1**
	2.0nm,1.0s,baz=48,slow=17,SNR=3.1						
WRA				ScP	**ScP**	**00 08 33.0**	**+1.5**
	2.0nm,0.9s,baz=41,slow=3.5,SNR=5.4						
ASAR	**Alice Springs**	**23.13**	**218**	P	**P**	**00 01 31.2**	**+0.8**
	4.7nm,0.8s,baz=55,slow=8.5,SNR=52						
ASAR				S	**S**	**00 05 30.7**	**+0.2**
	0.8nm,0.9s,baz=31,slow=16,SNR=5.0						
ASAR				ScP	**ScP**	**00 08 41.4**	**+2.6**
	0.5nm,0.6s,baz=54,slow=1.9,SNR=4.2						
FITZ	**Fitzroy Crossi**	**26.07**	**240**	P	**P**	**00 01 58.0**	**+0.8**
	5.7nm,0.6s,baz=62,slow=12,SNR=14						
FITZ				pP	**pP**	**00 02 26.9**	**-1.6**
	9.2nm,0.8s,baz=93,slow=7.6,SNR=7.3						
STKA	**Stephens Creek**	**26.98**	**194**	P	**P**	**00 02 04.1**	**-1.0**
	4.4nm,1.0s,baz=332,slow=18,SNR=3.6						
MJAR	**Matsushiro Arr**	**43.28**	**347**	P	**P**	**00 04 24.3**	**+0.1**
	0.6nm,0.3s,baz=168,slow=6.9,SNR=4.9						
SONM	**Songino Array**	**65.24**	**330**	P	**P**	**00 07 03.4**	**+0.5**
	0.2nm,0.3s,baz=122,slow=7.0,SNR=7.3						
MKAR	**Makanchi Array**	**78.67**	**320**	pP	pP	00 09 00.7	+0.6
	0.5nm,0.9s,baz=116,slow=5.5,SNR=3.6						
ILAR	**Eielson Array**	**84.38**	**23**	P	**P**	**00 08 51.4**	**-1.1**
	1.4nm,0.8s,baz=252,slow=5.1,SNR=13						
TORD	**Torodi Ar. Bea**	**147.12**	**285**	PKPbc	**PKPbc**	**00 16 02.9**	**-0.9**
	baz=58,slow=2.8						

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*GEN **25** 00:05:40.6, 43.°94N×12.°13E, h9km, ML3.3*
*IDC **25** 00:05:41.7±1.3, 43.°92N×12.°03E, h0km, mb3.4/4, mb1 3.6/8, mb1mx3.4/40, mbtmp3.5/8, ML3.1/4, Error ellipse: s-maj=31.9km s-min=19.7km az=100.0*
*CSEM **25** 00:05:41.7±0.1, 43.°86N×12.°01E, h5km, ML3.6/27, Error ellipse: s-maj=2.5km s-min=1.9km az=45.0*
*ROM **25** 00:05:41.6±0.2, 43.°87N×12.°02E, h6km±2km, Ml3.1/37, Error ellipse: s-maj=2.1km s-min=1.4km az=23.0*
*ISCJB **25** 00:05:42.3±0.2, 43.°88N±0.°02×11.°96E±0.°02, h20km±2km, mb3.5/4, Error ellipse: s-maj=2.7km s-min=2.0km az=20.2*
*LDG **25** 00:05:43.8±0.2, 43.°74N×12.°09E, h10km, Ml3.4/24, Error ellipse: s-maj=4.4km s-min=3.3km az=19.0*
*PRU **25** 00:05:44.0, 43.°90N×12.°28E, h6km*
ISC 25 00:05:42.4±0.8,**43.°86N**±0.°02×**12.°00E**±0.°01,**h11**km±5km, **n210**, σ1**9**/**24**/299,**mb3.6**/4,**2C, Central Italy**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFI	**Santa Sofia**	**0.12**	**293**	Pg	**Pg**	**00 05 44.9**	**-0.6**
SFI				Sg	**Sg**	**00 05 47.4**	**-0.3**
8μm,0.4s							
SFI	**Santa Sofia**	**0.12**	**293**	Pg	**Pg**	**00 05 44.9**	**-0.6**
ASQU	**Asqua**	**0.17**	**249**	Pg	**Pg**	**00 05 46.0**	**-0.2**
ASQU				Sg	**Sg**	**00 05 49.4**	**+0.6**
9μm,0.4s							
ASQU	**Asqua**	**0.17**	**249**	Pg	**Pg**	**00 05 46.0**	**-0.2**
ASQU				Sg	**Sg**	**00 05 49.4**	**+0.6**
9μm,0.4s							
BADI	**Badiali**	**0.39**	**153**	Pg	**Pg**	**00 05 49.8**	**-0.3**
BADI				Sg	**Sb**	**00 05 56.7**	**-0.6**
3μm,0.6s							
BADI	**Badiali**	**0.39**	**153**	Pg	**Pg**	**00 05 49.8**	**-0.3**
BADI				Sg	**Sb**	**00 05 56.7**	**-0.6**
3μm,0.6s							
BLLA	**Bellaria**	**0.44**	**50**	Pg	**Pg**	**00 05 50.8**	**-0.3**
BLLA	**Bellaria**	**0.44**	**50**	Pg	**Pg**	**00 05 50.8**	**-0.3**
ATPC	**Poggio Castell**	**0.50**	**139**	Pg	**Pg**	**00 05 51.6**	**-0.6**
ATPC				Sg	**Sb**	**00 06 00.3**	**-0.2**
1μm,0.4s							
ATPC	**Poggio Castell**	**0.50**	**139**	Pg	**Pg**	**00 05 51.6**	**-0.6**
ATPC				Sg	**Sb**	**00 06 00.3**	**-0.2**
1μm,0.4s							
PIEI	**Pieia**	**0.50**	**130**	Pg	**Pg**	**00 05 51.3**	**-0.9**
PIEI				Sg	**Sb**	**00 05 59.8**	**-0.8**
568nm,0.5s							
PIEI	**Pieia**	**0.50**	**130**	Pg	**Pg**	**00 05 51.3**	**-0.9**
PIEI				Sg	**Sb**	**00 05 59.8**	**-0.8**
568nm,0.5s							
SEI	**Scarperia**	**0.51**	**293**	Pg	**Pg**	**00 05 51.9**	**-0.4**
SEI				Sg	**Sb**	**00 06 00.1**	**-0.7**
SEI	**Scarperia**	**0.51**	**293**	Pg	**Pg**	**00 05 51.9**	**-0.4**
SEI				Sg	**Sb**	**00 06 00.1**	**-0.7**
ATVO	**AVT- Monte Val**	**0.56**	**148**	Pg	**Pg**	**00 05 52.8**	**-0.5**
ATVO				Sg	**Sb**	**00 06 02.3**	**+0.1**
1μm,0.4s							
ATVO	**AVT- Monte Val**	**0.56**	**148**	Pg	**Pg**	**00 05 52.8**	**-0.5**
ATVO				Sg	**Sb**	**00 06 02.3**	**+0.1**
1μm,0.4s							
FSSB	**Fossombrone**	**0.58**	**106**	Pg	**Pg**	**00 05 52.9**	**-0.9**
FSSB				Sg	**Sb**	**00 06 02.5**	**-0.5**
1μm,0.5s							
FSSB	**Fossombrone**	**0.58**	**106**	Pg	**Pg**	**00 05 52.9**	**-0.9**
FSSB				Sg	**Sb**	**00 06 02.5**	**-0.5**
1μm,0.5s							
PESA	**Pesaro**	**0.61**	**82**	Pg	**Pg**	**00 05 53.5**	**-0.8**
38nm,0.2s							
PESA	**Pesaro**	**0.61**	**82**	Pg	**Pg**	**00 05 53.5**	**-0.8**
38nm,0.2s							
MTRZ	**Monterenzio**	**0.65**	**323**	Pg	**Pg**	**00 05 54.5**	**-0.5**
2μm,0.4s							
MTRZ	**Monterenzio**	**0.65**	**323**	Pg	**Pg**	**00 05 54.5**	**-0.5**
2μm,0.4s							
MURB	**Monte Urbino**	**0.70**	**147**	Pg	**Pg**	**00 05 55.5**	**-0.6**
2μm,0.6s							
MURB	**Monte Urbino**	**0.70**	**147**	Pg	**Pg**	**00 05 55.5**	**-0.6**
2μm,0.6s							
SSFR	**Montelago di S**	**0.70**	**126**	Pg	**Pg**	**00 05 55.3**	**-0.8**
SSFR				Sg	**Sb**	**00 06 06.6**	**+0.1**
572nm,0.3s							
SSFR	**Montelago di S**	**0.70**	**126**	Pg	**Pg**	**00 05 55.3**	**-0.8**
SSFR				Sg	**Sb**	**00 06 06.6**	**+0.1**
572nm,0.3s							
ATTE	**AVT- Monte Tez**	**0.71**	**159**	Pg	**Pg**	**00 05 55.3**	**-0.8**
ATTE				Sg	**Sb**	**00 06 07.3**	**+0.8**
1μm,0.9s							
ATTE	**AVT- Monte Tez**	**0.71**	**159**	Pg	**Pg**	**00 05 55.3**	**-0.8**
ATTE				Sg	**Sb**	**00 06 07.3**	**+0.8**
1μm,0.9s							
FNVD	**Fontana Vidola**	**0.71**	**296**	Pg	**Pg**	**00 05 55.5**	**-0.6**
FNVD				Sg	**Sb**	**00 06 07.1**	**+0.5**
2μm,0.6s							
FNVD	**Fontana Vidola**	**0.71**	**296**	Pg	**Pg**	**00 05 55.5**	**-0.6**
FNVD				Sg	**Sb**	**00 06 07.1**	**+0.5**
2μm,0.6s							
FIU	**Minerbio Fiu**	**0.86**	**335**	Pg	**Pb**	**00 05 59.2**	**-0.2**
2μm,0.6s							
FIU	**Minerbio Fiu**	**0.86**	**335**	Pg	**Pb**	**00 05 59.2**	**-0.2**
2μm,0.6s							
ZCCA	**Zocca**	**0.89**	**304**	Pg	**Pb**	**00 06 00.1**	**+0.2**
503nm,0.7s							
ZCCA	**Zocca**	**0.89**	**304**	Pg	**Pb**	**00 06 00.1**	**+0.2**
503nm,0.7s							
FROS	**Frosini**	**0.89**	**224**	Pg	**Pb**	**00 05 59.5**	**-0.4**
FROS				Sg	**Sb**	**00 06 12.5**	**+0.6**
1μm,0.8s							
FROS	**Frosini**	**0.89**	**224**	Pg	**Pb**	**00 05 59.5**	**-0.4**
FROS				Sg	**Sb**	**00 06 12.5**	**+0.6**
1μm,0.8s							
SNTG	**Esanatoglia**	**0.91**	**131**	Pg	**Pg**	**00 05 59.3**	**-0.6**
700nm,0.7s							
SNTG	**Esanatoglia**	**0.91**	**131**	Pg	**Pg**	**00 05 59.3**	**-0.6**
700nm,0.7s							
MGAB	**Montegabbione**	**0.95**	**175**	Pg	**Pb**	**00 06 00.3**	**-0.6**
1μm,0.6s							
MGAB	**Montegabbione**	**0.95**	**175**	Pg	**Pb**	**00 06 00.3**	**-0.6**
1μm,0.6s							
CING	**Cingoli**	**0.99**	**119**	Pg	**Pn**	**00 06 01.8**	**-0.5**
556nm,0.8s							
CING	**Cingoli**	**0.99**	**119**	Pg	**Pn**	**00 06 01.8**	**-0.5**
556nm,0.8s							
SACS	**San Casciano d**	**1.01**	**184**	Pg	**Pb**	**00 06 01.7**	**-0.3**
599nm,0.5s							
BDI	**Bagni Di Lucca**	**1.04**	**282**	Pg	**Pg**	**00 06 01.4**	**-1.0**
749nm,0.9s							
BDI	**Bagni Di Lucca**	**1.04**	**282**	Pg	**Pg**	**00 06 01.4**	**-1.0**
749nm,0.9s							
CESI	**CESI - Serrava**	**1.08**	**142**	Pg	**Pg**	**00 06 02.4**	**-0.7**
155nm,0.8s							
CESI	**CESI - Serrava**	**1.08**	**142**	Pg	**Pg**	**00 06 02.4**	**-0.7**
155nm,0.8s							
ARCI	**Arcidosso**	**1.08**	**201**	⇑*i*Pg	**Pg**	**00 06 02.5**	**-0.6**
571nm,0.8s							
ARCI	**Arcidosso**	**1.08**	**201**	⇑*i*Pg	**Pg**	**00 06 02.5**	**-0.6**
571nm,0.8s							
TRIF	**Trifonti**	**1.09**	**228**	Pg	**Pg**	**00 06 02.8**	**-0.6**
362nm,0.8s							
TRIF	**Trifonti**	**1.09**	**228**	Pg	**Pg**	**00 06 02.8**	**-0.6**
362nm,0.8s							
MAIM	**Mastiano**	**1.09**	**273**	Pg	**Pg**	**00 06 02.1**	**-1.4**
571nm,0.8s							
MAIM	**Mastiano**	**1.09**	**273**	P	**Pg**	**00 06 02.0**	**-1.4**
MAIM				S	**Sg**	**00 06 16.7**	**-1.0**
MCIV	**Monte Civitell**	**1.10**	**193**	Pg	**Pg**	**00 06 02.8**	**-0.9**
204nm,0.8s							
MCIV	**Monte Civitell**	**1.10**	**193**	Pg	**Pg**	**00 06 02.8**	**-0.9**
204nm,0.8s							
SASS	**Sassa´´´´´´**	**1.13**	**238**	Pg	**Pg**	**00 06 03.1**	**-1.0**
283nm,0.8s							
SASS	**Sassa´´´´´´**	**1.13**	**238**	Pg	**Pg**	**00 06 03.1**	**-1.0**
283nm,0.8s							
FDMO	**Fiordimonte**	**1.14**	**136**	Pg	**Pg**	**00 06 03.2**	**-1.1**
419nm,0.7s							
FDMO	**Fiordimonte**	**1.14**	**136**	Pg	**Pg**	**00 06 03.2**	**-1.1**
419nm,0.7s							
ADRI	**Adria, Italy**	**1.18**	**0**	*e*Pg	**Pg**	**00 06 04.9**	**-0.2**
ADRI	**Adria, Italy**	**1.18**	**0**	*e*Pg	**Pg**	**00 06 04.9**	**-0.2**
AOI	**Ancona**	**1.20**	**104**	Pg	**Pg**	**00 06 05.5**	**+0.1**
AOI	**Ancona**	**1.20**	**104**	Pg	**Pg**	**00 06 05.5**	**+0.1**
SARO	**Sassorosso**	**1.20**	**286**	P	**Pb**	**00 06 03.6**	**-1.6**
SARO				S	**Sb**	**00 06 19.0**	**-1.8**
LATE	**Laterza**	**1.25**	**187**	Pg	**Pg**	**00 06 05.9**	**-0.6**
350nm,0.7s							
LATE	**Laterza**	**1.25**	**187**	Pg	**Pg**	**00 06 05.9**	**-0.6**
350nm,0.7s							
CASP	**Castiglione de**	**1.35**	**218**	Pg	**Pn**	**00 06 06.0**	**-1.2**
123nm,0.7s							
CASP	**Castiglione de**	**1.35**	**218**	Pg	**Pn**	**00 06 06.0**	**-1.2**
123nm,0.7s							
LNSS	**Leonessa**	**1.47**	**149**	Pg	**Pn**	**00 06 08.5**	**-0.4**
463nm,1.0s							
LNSS	**Leonessa**	**1.47**	**149**	Pg	**Pn**	**00 06 08.5**	**-0.4**
463nm,1.0s							
MAON	**Monte Argentar**	**1.56**	**204**	Pg	**Pb**	**00 06 10.8**	**-0.6**
89nm,1.0s							
MAON	**Monte Argentar**	**1.56**	**204**	Pg	**Pb**	**00 06 10.8**	**-0.6**
89nm,1.0s							
GROG	**Isola di Gorgo**	**1.59**	**255**	Pg	**Pn**	**00 06 09.9**	**-0.6**
117nm,0.5s							
GROG	**Isola di Gorgo**	**1.59**	**255**	Pg	**Pn**	**00 06 09.9**	**-0.6**
117nm,0.5s							
CAMP	**Campotosto**	**1.67**	**142**	Pg	**Pn**	**00 06 11.7**	**-0.1**
430nm,1.2s							
CAMP	**Campotosto**	**1.67**	**142**	Pg	**Pn**	**00 06 11.7**	**-0.1**
430nm,1.2s							
TERO	**Teramo**	**1.70**	**136**	Pg	**Pb**	**00 06 13.7**	**0.0**
275nm,0.8s							
TERO	**Teramo**	**1.70**	**136**	Pg	**Pb**	**00 06 13.7**	**0.0**
275nm,0.8s							
FIAM	**Fiamignano**	**1.79**	**152**	Pg	**Pn**	**00 06 13.2**	**-0.1**
222nm,0.9s							
FIAM	**Fiamignano**	**1.79**	**152**	Pg	**Pn**	**00 06 13.2**	**-0.1**
222nm,0.9s							
TOLF	**

DAVOX Davos/Dischmat 3.28 334 Pn **Pn 00 06 35.6 +1.7**
2.6nm,0.3s,baz=158,slow=15,SNR=19
DAVOX Sn **Sn 00 07 15.1 +2.0**
0.4nm,0.3s,baz=143,slow=20,SNR=2.5
FETA Feichten 3.29 345 *i* Pn **Pn 00 06 35.6 +1.6**
SNR=14
FETA Feichten 3.29 345 Pn **Pn 00 06 35.6 +1.6**
SNR=14
SBF Sospel 3.30 272 *e*Pn **Pn 00 06 33.5 -0.6**
SBF *e*Sn **Sn 00 07 11.3 -2.1**
80nm,0.5s
SBF Sospel 3.30 272 *e*Pn **Pn 00 06 33.5 -0.6**
SBF *e*Sn **Sn 00 07 11.3 -2.1**
40nm,0.5s
WATA Walderalm 3.49 355 *i* Pn **Pn 00 06 38.6 +1.9**
3.3nm,0.2s,SNR=10
WATA Walderalm 3.49 355 Pn **Pn 00 06 38.6 +1.9**
3.3nm,0.2s,SNR=10
MOTA Moosalm 3.54 350 *e*Pn **Pn 00 06 39.5 +2.0**
17nm,0.5s,SNR=18
MOTA *i* Sn **Sn 00 07 18.9 -0.5**
MOTA Moosalm 3.54 350 Pn **Pn 00 06 39.5 +2.0**
17nm,0.5s,SNR=18
MOTA Sn **Sn 00 07 18.9 -0.5**
RETA Reutte 3.73 347 *i* Pn **Pn 00 06 41.5 +1.5**
3.8nm,0.2s,SNR=7.7
RETA Reutte 3.73 347 Pn **Pn 00 06 41.5 +1.5**
3.8nm,0.2s,SNR=7.7
DAVA Damuels 3.74 337 *i* Pn **Pn 00 06 42.8 +2.6**
18nm,0.6s,SNR=20
DAVA Damuels 3.74 337 Pn **Pn 00 06 42.8 +2.6**
18nm,0.6s,SNR=20
MBDF Montbardon 3.86 285 *e*Pn **Pn 00 06 43.7 +1.9**
MBDF Montbardon 3.86 285 *e*Pn **Pn 00 06 43.7 +1.9**
FRF La Foret Royal 3.90 267 *e*Pn **Pn 00 06 42.1 -0.1**
FRF *e*Sn **Sn 00 07 25.0 -2.9**
16nm,0.3s
FRF La Foret Royal 3.90 267 *e*Pn **Pn 00 06 42.1 -0.1**
FRF *e*Sn **Sn 00 07 25.0 -2.9**
7.8nm,0.3s
LMR La Mourre 4.03 264 *e*Pn **Pn 00 06 43.4 -0.6**
LMR *e*Sn **Sn 00 07 27.8 -3.3**
8.1nm,0.3s
LMR La Mourre 4.03 264 *e*Pn **Pn 00 06 43.4 -0.6**
LMR *e*Sn **Sn 00 07 27.8 -3.3**
4.1nm,0.3s
LPG La Plagne 4.09 295 *e*Pn **Pn 00 06 45.7 +0.6**
LPG *e*Sn **Sn 00 07 34.5 +1.4**
24nm,0.6s
LPG La Plagne 4.09 295 *e*Pn **Pn 00 06 45.7 +0.6**
LPG *e*Sn **Sn 00 07 34.5 +1.4**
12nm,0.6s
LPL La Plagne 4.11 296 *e*Pn **Pn 00 06 46.4 +1.1**
LPL *e*Sn **Sn 00 07 35.7 +2.2**
16nm,0.5s
LPL La Plagne 4.11 296 *e*Pn **Pn 00 06 46.4 +1.1**
LPL *e*Sn **Sn 00 07 35.7 +2.2**
7.8nm,0.5s
ORIF Oris-en-Rattie 4.52 286 *e*Pn **Pn 00 06 52.0 +1.2**
ORIF *e*Sn **Sn 00 07 45.2 +1.9**
20nm,0.5s
ORIF Oris-en-Rattie 4.52 286 *e*Pn **Pn 00 06 52.0 +1.2**
ORIF *e*Sn **Sn 00 07 45.2 +1.9**
9.8nm,0.5s
SMRF Simiane la Rot 4.65 274 *e*Pn **Pn 00 06 53.4 +0.9**
SMRF *e*Sn **Sn 00 07 45.5 -1.0**
10nm,0.5s
SMRF Simiane la Rot 4.65 274 *e*Pn **Pn 00 06 53.4 +0.9**
SMRF *e*Sn **Sn 00 07 45.5 -1.0**
5.1nm,0.5s
CABF La Chapelle 5.00 305 *e*Pn **Pn 00 06 58.8 +1.3**
CABF *e*Sn **Sn 00 07 57.0 +1.7**
24nm,0.8s
CABF La Chapelle 5.00 305 *e*Pn **Pn 00 06 58.8 +1.3**
CABF *e*Sn **Sn 00 07 57.0 +1.7**
12nm,0.8s
GERES GERESS Array B 5.12 13 Pn **Pn 00 06 58.2 -1.0**
0.7nm,0.3s,baz=193,slow=14,SNR=17
GERES Sn **Sn 00 07 56.8 -1.5**
1.5nm,0.3s,baz=182,slow=22,SNR=6.8
HINF Hinteralfeld 5.35 320 *e*Pn **Pn 00 07 02.3 +0.1**
HINF *e*Sn **Sn 00 08 05.0 +1.2**
21nm,0.4s
HINF Hinteralfeld 5.35 320 *e*Pn **Pn 00 07 02.3 +0.1**
HINF *e*Sn **Sn 00 08 05.0 +1.2**
10nm,0.4s
VIVF Saint-Julien-l 5.35 283 *e*Pn **Pn 00 07 02.4 +0.2**
VIVF *e*Sn **Sn 00 08 03.2 -0.6**
2.9nm,0.4s
VIVF Saint-Julien-l 5.35 283 *e*Pn **Pn 00 07 02.4 +0.2**
VIVF *e*Sn **Sn 00 08 03.2 -0.6**
1.5nm,0.4s
KHC Kasperske Hory 5.38 11 *e*PN **Pn 00 07 02.4 -0.3**
KHC *ex* x 00 07 10.8
KHC *e*PG **Pg 00 07 23.2 -2.3**
KHC *e*SN **Sn 00 08 01.9 -2.8**
KHC *ex* x 00 08 09.1
KHC Kasperske Hory 5.38 11 Pn **Pn 00 07 02.4 -0.3**
KHC Sn **Sn 00 08 01.9 -2.8**
CDF Champ du Feu 5.62 326 *e*Pn **Pn 00 07 05.8 -0.1**
CDF *e*Sn **Sn 00 08 09.1 -1.3**
24nm,0.6s
CDF Champ du Feu 5.62 326 *e*Pn **Pn 00 07 05.8 -0.1**
CDF *e*Sn **Sn 00 08 09.1 -1.3**
12nm,0.6s
HAU Haudompre 5.72 318 *e*Pn **Pn 00 07 07.5 +0.2**
HAU *e*Sn **Sn 00 08 12.4 -0.6**
49nm,0.4s
HAU Haudompre 5.72 318 *e*Pn **Pn 00 07 07.5 +0.2**
HAU *e*Sn **Sn 00 08 12.4 -0.6**
24nm,0.4s
LASF Ste Croix 5.88 275 *e*Pn **Pn 00 07 09.3 -0.2**
LASF *e*Sn **Sn 00 08 13.7 -3.2**
4.3nm,0.6s
LASF Ste Croix 5.88 275 *e*Pn **Pn 00 07 09.3 -0.2**
LASF *e*Sn **Sn 00 08 13.7 -3.2**
2.2nm,0.6s
TREC Trest 5.94 23 *e*PN **Pn 00 07 09.4 -0.9**
TREC *e*SN **Sn 00 08 14.7 -3.7**
TREC Trest 5.94 23 Pn **Pn 00 07 09.4 -0.9**
GOPC GO Pecny, Ondr 6.35 16 *e*SN **Sn 00 08 24.5 -3.9**
PRU Pruhonice 6.37 15 *e*SN **Sn 00 08 24.5 -4.4**
NKC Novy Kostel 6.38 3 *e*SN **Sn 00 08 27.1 -2.1**
NKC Novy Kostel 6.38 3 Sn **Sn 00 08 27.1 -2.1**
SMF Signal de Mont 6.40 299 *e*Pn **Pn 00 07 17.0 +0.4**
SMF *e*Sn **Sn 00 08 29.3 -0.3**
28nm,0.7s
SMF Signal de Mont 6.40 299 *e*Pn **Pn 00 07 17.0 +0.4**
SMF *e*Sn **Sn 00 08 29.3 -0.3**
14nm,0.7s
PAGF Fort de Pagny 6.41 319 *e*Pn **Pn 00 07 17.4 +0.8**
PAGF *e*Sn **Sn 00 08 28.4 -1.3**
5.1nm,0.7s
PAGF Fort de Pagny 6.41 319 *e*Pn **Pn 00 07 17.4 +0.8**
PAGF *e*Sn **Sn 00 08 28.4 -1.3**
2.5nm,0.7s
SFTF Sexfontaines 6.51 314 *e*Pn **Pn 00 07 19.8 +1.7**
baz=129
SFTF *e*Sn **Sn 00 08 30.1 -2.2**
13nm,0.6s
SFTF Sexfontaines 6.51 314 *e*Pn **Pn 00 07 19.8 +1.7**
SFTF *e*Sn **Sn 00 08 30.1 -2.2**
6.6nm,0.6s
LOR Lormes 6.66 304 *e*Pn **Pn 00 07 20.7 +0.6**
baz=120
LOR *e*Sn **Sn 00 08 34.7 -1.2**
24nm,0.6s
LOR Lormes 6.66 304 *e*Pn **Pn 00 07 20.7 +0.6**
LOR *e*Sn **Sn 00 08 34.7 -1.2**
12nm,0.6s
MEZF Maizieres J'vi 6.70 316 *e*Pn **Pn 00 07 21.5 +0.9**
MEZF *e*Sn **Sn 00 08 35.4 -1.4**
6.6nm,0.3s
MEZF Maizieres J'vi 6.70 316 *e*Pn **Pn 00 07 21.5 +0.9**
MEZF *e*Sn **Sn 00 08 35.4 -1.4**
3.3nm,0.3s
AVF Avril sur Loir 6.77 299 *e*Pn **Pn 00 07 21.8 +0.2**
AVF *e*Sn **Sn 00 08 35.7 -2.9**
10nm,0.8s
AVF Avril sur Loir 6.77 299 *e*Pn **Pn 00 07 21.8 +0.2**
AVF *e*Sn **Sn 00 08 35.7 -2.9**
5.2nm,0.8s
SSF Saint Saulge 6.78 301 *e*Pn **Pn 00 07 22.1 +0.3**
SSF *e*Sn **Sn 00 08 36.0 -2.9**
1.9nm,0.5s
BGF Bois d'Agland 7.01 296 *e*Pn **Pn 00 07 25.7 +0.8**
BGF *e*Sn **Sn 00 08 43.1 -1.5**
14nm,0.6s
BGF Bois d'Agland 7.01 296 *e*Pn **Pn 00 07 25.7 +0.8**
BGF *e*Sn **Sn 00 08 43.1 -1.5**
6.9nm,0.6s
MTLF Montolieu 7.12 269 *e*Pn **Pn 00 07 26.6 +0.1**
MTLF Montolieu 7.12 269 *e*Pn **Pn 00 07 26.6 +0.1**
DPC Dobruska-Polom 7.13 23 *e*SN **Sn 00 08 42.6 -5.0**
BRG Berggiesshubel 7.14 10 PN **Pn 00 07 26.8 +0.1**
BRG *e* 00 08 59.3
BRG *e* 00 09 38.1
7.0nm,1.1s
CAF Calviac 7.20 282 *e*Pn **Pn 00 07 28.4 +0.8**
CAF Calviac 7.20 282 *e*Pn **Pn 00 07 28.4 +0.8**
TCF Toulx Ste Croi 7.35 293 *e*Pn **Pn 00 07 28.3 -1.3**
TCF *e*Sn **Sn 00 08 52.7 -0.2**
3.7nm,0.5s
TCF Toulx Ste Croi 7.35 293 *e*Pn **Pn 00 07 28.3 -1.3**
TCF *e*Sn **Sn 00 08 52.7 -0.2**
1.9nm,0.5s
HYF Humbligny 7.40 301 *e*Pn **Pn 00 07 31.3 +1.0**
HYF *e*Sn **Sn 00 08 53.3 -1.0**
HYF Humbligny 7.40 301 *e*Pn **Pn 00 07 31.3 +1.0**
HYF *e*Sn **Sn 00 08 53.3 -1.0**
KEST Kesra 8.37 195 Pn Pn 00 07 48.8 +5.1
0.1nm,0.3s,baz=15,slow=6.7,SNR=2.7
EKA Eskdalemuir Ar 15.08 325 Pn **Pn 00 09 15.7 +0.5**
baz=130,slow=13,SNR=3.3
FINES FINESS Array B 19.50 20 P **Pn 00 10 10.8 +0.4**
0.1nm,0.3s,baz=208,slow=14,SNR=2.7
TORD Torodi Ar. Bea 31.86 199 P **P 00 12 08.0 +0.5**
0.6nm,0.8s,baz=14,slow=8.1,SNR=4.5
MKAR Makanchi Array 47.98 61 P **P 00 14 21.9 +0.8**
0.4nm,0.6s,baz=284,slow=5.4,SNR=5.3
SONM Songino Array 61.78 50 P **P 00 16 02.4 +1.4**
0.4nm,0.7s,baz=296,slow=7.3,SNR=3.0
YKA Yellowknife Ar 65.72 336 P **P 00 16 27.6 +1.1**
0.2nm,0.6s,baz=43,slow=6.1,SNR=4.6

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*IDC **25** 00:07:57.8±1.4, 43°.87N×12°.13E, h0km, mb3.3/3, mb1 3.5/6, mb1mx3.3/40, mbtmp3.3/6, ML3.3/3, Error ellipse: s-maj=36.6km s-min=20.8km az=101.0*
*ROM **25** 00:07:58.1±0.1, 43°.87N×12°.03E, h7km±1km, Ml3.1/22, Error ellipse: s-maj=1.9km s-min=1.3km az=15.0*
*CSEM **25** 00:07:58.8±0.1, 43°.84N×12°.00E, h10km, ML3.4/26, Error ellipse: s-maj=2.5km s-min=1.8km az=28.0*
*ISCJB **25** 00:07:58.7±0.2, 43°.87N±0°.02×11°.96E±0°.02, h21km±2km, mb3.4/3, Error ellipse: s-maj=3.4km s-min=2.2km az=8.7*
*LDG **25** 00:07:59.2±0.4, 43°.71N×12°.19E, h10km, Ml3.3/26, Error ellipse: s-maj=7.5km s-min=5.6km az=98.0*
*GEN **25** 00:07:59.0, 43°.90N×11°.99E, h14km, ML3.1*
*PRU **25** 00:08:02.0, 43°.95N×12°.32E, h7km*
ISC 25 00:07:58.9±0.8, **43°.84N**±0°.02×**11°.99E**±0°.02, **h12**km±5km, **n148**, σ1**29**/221, **mb3.5**/3, **2C, Central Italy**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFI	**Santa Sofia**	**0.12**	**301**	Pg	**Pg**	**00 08 01.5**	**-0.5**
SFI				Sg	**Sg**	**00 08 03.8**	**-0.5**
8µm,0.3s							
SFI	**Santa Sofia**	**0.12**	**301**	Pg	**Pg**	**00 08 01.5**	**-0.5**
SFI				Sg	**Sg**	**00 08 03.8**	**-0.5**
8µm,0.3s							
ASQU	**Asqua**	**0.15**	**252⇑**	*i*Pg	**Pg**	**00 08 02.7**	**+0.2**
ASQU				Sg	**Sg**	**00 08 05.9**	**+0.8**
9µm,0.3s							
ASQU	**Asqua**	**0.15**	**252⇑**	*i*Pg	**Pg**	**00 08 02.7**	**+0.2**
ASQU				Sg	**Sg**	**00 08 05.9**	**+0.8**
9µm,0.3s							
BADI	**Badiali**	**0.38**	**151**	Pg	**Pg**	**00 08 06.5**	**0.0**
BADI				Sg	**Sb**	**00 08 13.3**	**-0.2**
3µm,0.6s							
BADI	**Badiali**	**0.38**	**151**	Pg	**Pg**	**00 08 06.5**	**0.0**
BADI				Sg	**Sb**	**00 08 13.3**	**-0.2**
3µm,0.6s							
BLLA	**Bellaria**	**0.46**	**49**	Pg	**Pg**	**00 08 07.7**	**-0.3**
8µm,1.6s							
BLLA	**Bellaria**	**0.46**	**49**	Pg	**Pg**	**00 08 07.7**	**-0.3**
8µm,1.6s							
ATPC	**Poggio Castell**	**0.50**	**137**	Pg	**Pg**	**00 08 08.3**	**-0.4**
ATPC				Sg	**Sb**	**00 08 17.3**	**+0.4**
2µm,0.5s							
ATPC	**Poggio Castell**	**0.50**	**137**	Pg	**Pg**	**00 08 08.3**	**-0.4**
PIEI	**Pieia**	**0.50**	**127**	Pg	**Pg**	**00 08 08.2**	**-0.6**
PIEI				Sg	**Sb**	**00 08 16.6**	**-0.4**
682nm,0.7s							
PIEI	**Pieia**	**0.50**	**127**	Pg	**Pg**	**00 08 08.2**	**-0.6**
PIEI				Sg	**Sb**	**00 08 16.6**	**-0.4**
682nm,0.7s							
SEI	**Scarperia**	**0.50**	**295**	Pg	**Pg**	**00 08 08.2**	**-0.6**
SEI				Sg	**Sg**	**00 08 16.2**	**+0.7**
SEI	**Scarperia**	**0.50**	**295**	Pg	**Pg**	**00 08 08.2**	**-0.6**
SEI				Sg	**Sg**	**00 08 16.2**	**+0.7**
FIR	**Firenze**	**0.54**	**263**	Pg	**Pg**	**00 08 09.8**	**+0.4**
5µm,0.5s							
FIR	**Firenze**	**0.54**	**263**	Pg	**Pg**	**00 08 09.8**	**+0.4**
5µm,0.5s							
ATVO	**AVT- Monte Val**	**0.55**	**146**	Pg	**Pg**	**00 08 09.4**	**-0.3**
ATVO	**AVT- Monte Val**	**0.55**	**146**	Pg	**Pg**	**00 08 09.4**	**-0.3**
FSSB	**Fossombrone**	**0.59**	**104**	Pg	**Pg**	**00 08 09.6**	**-0.9**
FSSB				Sg	**Sb**	**00 08 19.3**	**-0.3**
979nm,0.4s							
FSSB	**Fossombrone**	**0.59**	**104**	Pg	**Pg**	**00 08 09.6**	**-0.9**
FSSB				Sg	**Sb**	**00 08 19.3**	**-0.3**
979nm,0.4s							
PESA	**Pesaro**	**0.62**	**81**	Pg	**Pg**	**00 08 10.4**	**-0.7**
52nm,0.3s							
PESA	**Pesaro**	**0.62**	**81**	Pg	**Pg**	**00 08 10.4**	**-0.7**
52nm,0.3s							
FRON	**Frontone**	**0.63**	**121**	Pg	**Pg**	**00 08 10.4**	**-0.7**
413nm,0.6s							
FRON	**Frontone**	**0.63**	**121**	Pg	**Pg**	**00 08 10.4**	**-0.7**
413nm,0.6s							
MTRZ	**Monterenzio**	**0.65**	**325**	Pg	**Pg**	**00 08 10.7**	**-0.9**
MTRZ	**Monterenzio**	**0.65**	**325**	Pg	**Pg**	**00 08 10.7**	**-0.9**
ATTE	**AVT- Monte Tez**	**0.70**	**157**	Pg	**Pg**	**00 08 12.0**	**-0.5**
798nm,0.6s							
ATTE	**AVT- Monte Tez**	**0.70**	**157**	Pg	**Pg**	**00 08 12.0**	**-0.5**
798nm,0.6s							
MURB	**Monte Urbino**	**0.70**	**146**	Pg	**Pg**	**00 08 12.0**	**-0.5**
2µm,0.9s							
MURB	**Monte Urbino**	**0.70**	**146**	Pg	**Pg**	**00 08 12.0**	**-0.5**
2µm,0.9s							
FNVD	**Fontana Vidola**	**0.70**	**298**	Pg	**Pg**	**00 08 11.9**	**-0.7**
2µm,0.6s							
FNVD	**Fontana Vidola**	**0.70**	**298**	Pg	**Pg**	**00 08 11.9**	**-0.7**
2µm,0.6s							
SSFR	**Montelago di S**	**0.71**	**125**	Pg	**Pg**	**00 08 11.8**	**-0.8**
523nm,0.4s							
SSFR	**Montelago di S**	**0.71**	**125**	Pg	**Pg**	**00 08 11.8**	**-0.8**
523nm,0.4s							
FROS	**Frosini**	**0.88**	**224**	Pg	**Pb**	**00 08 16.2**	**+0.1**
1µm,0.7s							
FROS	**Frosini**	**0.88**	**224**	Pg	**Pb**	**00 08 16.2**	**+0.1**
1µm,0.7s							
ZCCA	**Zocca**	**0.89**	**305**	Pg	**Pb**	**00 08 16.5**	**+0.2**
ZCCA	**Zocca**	**0.89**	**305**	Pg	**Pb**	**00 08 16.5**	**+0.2**
SNTG	**Esanatoglia**	**0.91**	**130**	Pg	**Pg**	**00 08 16.3**	**-0.2**
688nm,0.8s							
SNTG	**Esanatoglia**	**0.91**	**130**	Pg	**Pg**	**00 08 16.3**	**-0.2**
688nm,0.8s							
MGAB	**Montegabbione**	**0.93**	**174**	Pg	**Pg**	**00 08 16.6**	**-0.3**
1µm,0.7s							
MGAB	**Montegabbione**	**0.93**	**174**	Pg	**Pg**	**00 08 16.6**	**-0.3**
1µm,0.7s							
SACS	**San Casciano d**	**0.99**	**183**	Pg	**Pb**	**00 08 18.0**	**-0.2**
557nm,0.7s							
BDI	**Bagni Di Lucca**	**1.03**	**283**	Pg	**Pg**	**00 08 18.9**	**+0.2**
631nm,0.8s							
BDI	**Bagni Di Lucca**	**1.03**	**283**	Pg	**Pg**	**00 08 18.9**	**+0.2**
631nm,0.8s							
ARCI	**Arcidosso**	**1.06**	**201**	Pg	**Pb**	**00 08 18.9**	**-0.4**
592nm,0.9s							
ARCI	**Arcidosso**	**1.06**	**201**	Pg	**Pb**	**00 08 18.9**	**-0.4**
592nm,0.9s							
TRIF	**Trifonti**	**1.07**	**228**	Pg	**Pb**	**00 08 19.5**	**0.0**
TRIF	**Trifonti**	**1.07**	**228**	Pg	**Pb**	**00 08 19.5**	**0.0**
MAIM	**Mastiano**	**1.08**	**274**	Pg	**Pb**	**00 08 18.9**	**-0.7**
MAIM	**Mastiano**	**1.08**	**274**	P	**Pb**	**00 08 18.6**	**-1.0**
MAIM	**Mastiano**	**1.08**	**274**	Pg	**Pb**	**00 08 18.9**	**-0.7**
MAIM				S	**Sb**	**00 08 31.7**	**-2.1**
MCIV	**Monte Civitell**	**1.09**	**192**	Pg	**Pb**	**00 08 19.5**	**-0.2**
MCIV	**Monte Civitell**	**1.09**	**192**	Pg	**Pb**	**00 08 19.5**	**-0.2**
SASS	**Sassa´´´´´**	**1.11**	**239**	Pg	**Pb**	**00 08 19.5**	**-0.6**
174nm,0.8s							
SASS	**Sassa´´´´´**	**1.11**	**239**	Pg	**Pb**	**00 08 19.5**	**-0.6**
174nm,0.8s							
FDMO	**Fiordimonte**	**1.14**	**135**	Pg	**Pb**	**00 08 19.9**	**-0.7**
334nm,0.8s							
FDMO	**Fiordimonte**	**1.14**	**135**	Pg	**Pb**	**00 08 19.9**	**-0.7**
334nm,0.8s							
SARO	**Sassorosso**	**1.19**	**287**	P	**Pn**	**00 08 20.2**	**-1.4**
SARO				S	**Sb**	**00 08 34.5**	**-2.5**
NVLJ	**Novalja**	**2.19**	**70**	*e*Pn	**Pn**	**00 08 34.2**	**-1.1**
NVLJ				Sn	**Sn**	**00 09 02.4**	**0.0**
NVLJ	**Novalja**	**2.19**	**70**	*e*Pn	**Pn**	**00 08 34.1**	**-1.1**
NVLJ				Sn	**Sn**	**00 09 02.3**	**0.0**
JAVS	**Javornik**	**2.53**	**35**	*i* Pn	**Pn**	**00 08 39.1**	**-0.8**
JAVS				*i* Sn	**Sn**	**00 09 10.8**	**+0.1**
JAVS	**Javornik**	**2.53**	**35**	*i* Pn	**Pn**	**00 08 39.1**	**-0.8**
JAVS				*i* Sn	**Sn**	**00 09 10.8**	**+0.1**
PGF	**Pioggiola**	**2.54**	**240**	*e*Pn	**Pn**	**00 08 40.2**	**+0.1**
PGF				*e*Sn	**Sn**	**00 09 10.2**	**-0.8**
24nm,0.5s							
PGF	**Pioggiola**	**2.54**	**240**	*e*Pn	**Pn**	**00 08 40.2**	**+0.1**
PGF				*e*Sn	**Sn**	**00 09 10.2**	**-0.8**
12nm,0.5s							
UDBI	**Udbina**	**2.80**	**75**	*e*Pn	**Pn**	**00 08 42.6**	**-1.0**
UDBI	**Udbina**	**2.80**	**75**	*e*Pn	**Pn**	**00 08 42.6**	**-1.0**
VISS	**Visnje**	**2.82**	**45**	*i* Pn	**Pn**	**00 08 43.3**	**-0.6**
VISS				*i* Sn	**Sn**	**00 09 18.7**	**+0.9**
VISS	**Visnje**	**2.82**	**45**	*i* Pn	**Pn**	**00 08 43.3**	**-0.6**
VISS				*i* Sn	**Sn**	**00 09 18.7**	**+0.9**
BOJS	**Bojanci**	**2.86**	**53**	*i* Pn	**Pn**	**00 08 45.5**	**+1.1**
BOJS				*i* Sn	**Sn**	**00 09 19.2**	**+0.4**
ABTA	**Abfaltersbach**	**2.93**	**7**	*i* Pn	**Pn**	**00 08 45.5**	**+0.1**
10nm,0.4s							
ABTA				*i* Sn	**Sn**	**00 09 20.2**	**-0.4**
78nm,0.7s							
ABTA	**Abfaltersbach**	**2.93**	**7**	Pn	**Pn**	**00 08 45.5**	**+0.1**
10nm,0.4s							
ABTA				Sn	**Sn**	**00 09 20.2**	**-0.4**
78nm,0.7s							
DAVOX	**Davos/Dischmat**	**3.29**	**334**	Pn	**Pn**	**00 08 52.6**	**+2.0**
2.8nm,0.3s,baz=156,slow=17,SNR=5.1							
DAVOX				Sn	**Sn**	**00 09 31.3**	**+1.6**
2.1nm,0.3s,baz=180,slow=20,SNR=2.1							
SBF	**Sospel**	**3.29**	**272**	*e*Pn	**Pn**	**00 08 50.3**	**-0.1**
SBF				*e*Sn	**Sn**	**00 09 28.0**	**-1.5**
64nm,0.5s							
SBF	**Sospel**	**3.29**	**272**	*e*Pn	**Pn**	**00 08 50.3**	**-0.1**
SBF				*e*Sn	**Sn**	**00 09 28.0**	**-1.5**
32nm,0.5s							
FETA	**Feichten**	**3.30**	**345**	Pn	**Pn**	**00 08 52.4**	**+1.8**
9.1nm,0.4s							
FETA	**Feichten**	**3.30**	**345**	Pn	**Pn**	**00 08 52.4**	**+1.8**
9.1nm,0.4s							
WATA	**Walderalm**	**3.50**	**355**	*i* Pn	**Pn**	**00 08 55.3**	**+1.9**
11nm,0.4s							
WATA	**Walderalm**	**3.50**	**355**	Pn	**Pn**	**00 08 55.3**	**+1.9**
11nm,0.4s							
RETA	**Reutte**	**3.75**	**347**	*i* Pn	**Pn**	**00 08 58.3**	**+1.6**
5.3nm,0.3s							
RETA	**Reutte**	**3.75**	**347**	Pn	**Pn**	**00 08 58.3**	**+1.6**
5.3nm,0.3s							
DAVA	**Damuels**	**3.75**	**337**	*i* Pn	**Pn**	**00 09 00.1**	**+3.4**
11nm,0.5s							
DAVA	**Damuels**	**3.75**	**337**	Pn	**Pn**	**00 09 00.1**	**+3.4**
11nm,0.5s							
MBDF	**Montbardon**	**3.85**	**285**	*e*Pn	**Pn**	**00 08 59.5**	**+1.4**
MBDF				*e*Sn	**Sn**	**00 09 44.6**	**+1.2**
45nm,0.7s							
MBDF	**Montbardon**	**3.85**	**285**	*e*Pn	**Pn**	**00 08 59.5**	**+1.4**
MBDF				*e*Sn	**Sn**	**00 09 44.6**	**+1.2**
22nm,0.7s							
FRF	**La Foret Royal**	**3.88**	**268**	*e*Pn	**Pn**	**00 08 58.5**	**0.0**
FRF				*e*Sn	**Sn**	**00 09 42.2**	**-1.8**
17nm,0.4s							
FRF	**La Foret Royal**	**3.88**	**268**	*e*Pn	**Pn**	**00 08 58.5**	**0.0**
FRF				*e*Sn	**Sn**	**00 09 42.2**	**-1.8**
8.6nm,0.4s							
LMR	**La Mourre**	**4.01**	**265**	*e*Pn	**Pn**	**00 08 59.8**	**-0.4**
LMR				*e*Sn	**Sn**	**00 09 43.8**	**-3.4**
10nm,0.5s							
LMR	**La Mourre**	**4.01**	**265**	*e*Pn	**Pn**	**00 08 59.8**	**-0.4**
LMR				*e*Sn	**Sn**	**00 09 43.8**	**-3.4**
5.2nm,0.5s							
LPG	**La Plagne**	**4.08**	**296**	*e*Pn	**Pn**	**00 09 02.4**	**+0.9**
LPG				*e*Sn	**Sn**	**00 09 51.5**	**+2.1**
18nm,0.5s							
LPG	**La Plagne**	**4.08**	**296**	*e*Pn	**Pn**	**00 09 02.4**	**+0.9**
LPG				*e*Sn	**Sn**	**00 09 51.5**	**+2.1**
9.0nm,0.5s							
LPL	**La Plagne**	**4.11**	**296**	*e*Pn	**Pn**	**00 09 03.0**	**+1.3**
LPL				*e*Sn	**Sn**	**00 09 51.8**	**+2.0**
14nm,0.5s							
LPL	**La Plagne**	**4.11**	**296**	*e*Pn	**Pn**	**00 09 03.0**	**+1.3**
LPL				*e*Sn	**Sn**	**00 09 51.8**	**+2.0**
7.2nm,0.5s							
MOA	**Molln**	**4.31**	**21**	*i* Pn	**Pn**	**00 09 04.3**	**-0.1**
5.2nm,0.3s							
MOA				*i* Sn	**Sn**	**00 09 54.4**	**-0.2**
38nm,0.7s							
MOA	**Molln**	**4.31**	**21**	Pn	**Pn**	**00 09 04.3**	**-0.1**
5.2nm,0.3s							
MOA				Sn	**Sn**	**00 09 54.4**	**-0.2**
38nm,0.7s							
ORIF	**Oris-en-Rattie**	**4.51**	**286**	*e*Pn	**Pn**	**00 09 09.3**	**+2.2**
ORIF				*e*Sn	**Sn**	**00 10 01.9**	**+2.4**
18nm,0.5s							
ORIF	**Oris-en-Rattie**	**4.51**	**286**	*e*Pn	**Pn**	**00 09 09.3**	**+2.2**
ORIF				*e*Sn	**Sn**	**00 10 01.9**	**+2.4**
8.8nm,0.5s							
SMRF	**Simiane la Rot**	**4.64**	**274**	*e*Pn	**Pn**	**00 09 10.0**	**+1.2**
SMRF				*e*Sn	**Sn**	**00 10 02.0**	**-0.6**
7.6nm,0.5s							
SMRF	**Simiane la Rot**	**4.64**	**274**	*e*Pn	**Pn**	**00 09 10.0**	**+1.2**
SMRF				*e*Sn	**Sn**	**00 10 02.0**	**-0.6**
3.8nm,0.5s							
CABF	**La Chapelle**	**5.00**	**306**	*e*Pn	**Pn**	**00 09 15.0**	**+1.1**
CABF				*e*Sn	**Sn**	**00 10 13.8**	**+2.1**
18nm,0.7s							
CABF	**La Chapelle**	**5.00**	**306**	*e*Pn	**Pn**	**00 09 15.0**	**+1.1**
CABF				*e*Sn	**Sn**	**00 10 13.8**	**+2.1**
9.1nm,0.7s							
GERES	**GERESS Array B**	**5.14**	**13**	Pn	**Pn**	**00 09 15.0**	**-0.8**
0.5nm,0.3s,baz=192,slow=14,SNR=5.6							
GERES				Sn	**Sn**	**00 10 13.5**	**-1.7**
1.8nm,0.3s,baz=198,slow=24,SNR=5.8							
VIVF	**Saint-Julien-l**	**5.34**	**283**	*e*Pn	**Pn**	**00 09 19.3**	**+0.8**
VIVF				*e*Sn	**Sn**	**00 10 18.3**	**-1.7**
5.4nm,0.6s							
VIVF	**Saint-Julien-l**	**5.34**	**283**	*e*Pn	**Pn**	**00 09 19.3**	**+0.8**
VIVF				*e*Sn	**Sn**	**00 10 18.3**	**-1.7**
2.7nm,0.6s							
HINF	**Hinteralfeld**	**5.35**	**320**	*e*Pn	**Pn**	**00 09 19.2**	**+0.5**
HINF				*e*Sn	**Sn**	**00 10 20.

SMF *e*Sn **Sn** **00 10 44.7 -1.2**
16nm,0.7s
SMF Signal de Mont 6.40 299 *e*Pn **Pn** **00 09 33.8 +0.8**
SMF *e*Sn **Sn** **00 10 44.7 -1.2**
7.8nm,0.7s
NKC Novy Kostel 6.40 3 *e*SN **Sn** **00 10 43.4 -2.6**
PAGF Fort de Pagny 6.41 320 *e*Pn **Pn** **00 09 34.2 +1.1**
PAGF *e*Sn **Sn** **00 10 45.3 -0.9**
3.4nm,0.5s
PAGF Fort de Pagny 6.41 320 *e*Pn **Pn** **00 09 34.2 +1.1**
PAGF *e*Sn **Sn** **00 10 45.3 -0.9**
1.7nm,0.5s
SFTF Sexfontaines 6.51 314 *e*Pn **Pn** **00 09 36.0 +1.4**
baz=120
SFTF *e*Sn **Sn** **00 10 46.5 -2.3**
8.7nm,0.5s
SFTF Sexfontaines 6.51 314 *e*Pn **Pn** **00 09 36.0 +1.4**
LOR Lormes 6.66 304 *e*Pn **Pn** **00 09 37.1 +0.6**
LOR *e*Sn **Sn** **00 10 50.7 -1.6**
12nm,0.4s
LOR Lormes 6.66 304 *e*Pn **Pn** **00 09 37.1 +0.6**
LOR *e*Sn **Sn** **00 10 50.7 -1.6**
5.9nm,0.4s
MEZF Maizieres J'vi 6.70 316 *e*Pn **Pn** **00 09 39.3 +2.2**
MEZF *e*Sn **Sn** **00 10 51.9 -1.4**
3.6nm,0.3s
MEZF Maizieres J'vi 6.70 316 *e*Pn **Pn** **00 09 39.3 +2.2**
MEZF *e*Sn **Sn** **00 10 51.9 -1.4**
1.8nm,0.3s
AVF Avril sur Loir 6.76 299 *e*Pn **Pn** **00 09 39.1 +1.1**
AVF *e*Sn **Sn** **00 10 52.7 -2.2**
4.5nm,0.6s
AVF Avril sur Loir 6.76 299 *e*Pn **Pn** **00 09 39.1 +1.1**
SSF Saint Saulge 6.78 301 *e*Pn **Pn** **00 09 38.4 +0.2**
SSF *e*Sn **Sn** **00 10 53.5 -1.8**
3.3nm,0.5s
SSF Saint Saulge 6.78 301 *e*Pn **Pn** **00 09 38.4 +0.2**
BGF Bois d'Agland 7.00 296 *e*Pn **Pn** **00 09 42.3 +1.0**
BGF *e*Sn **Sn** **00 11 00.6 -0.3**
9.7nm,0.5s
BGF Bois d'Agland 7.00 296 *e*Pn **Pn** **00 09 42.3 +1.0**
BGF *e*Sn **Sn** **00 11 00.6 -0.3**
4.8nm,0.5s
MTLF Montolieu 7.11 269 *e*Pn **Pn** **00 09 43.2 +0.4**
MTLF *e*Sn **Sn** **00 10 59.7 -3.9**
2.1nm,0.5s
MTLF Montolieu 7.11 269 *e*Pn **Pn** **00 09 43.2 +0.4**
BRG Berggiesshubel 7.16 10 SN **Sn** **00 10 59.6 -5.0**
3.5nm,0.7s
BRG *e* 00 11 55.0
4.4nm,0.9s
CAF Calviac 7.19 282 *e*Pn **Pn** **00 09 44.3 +0.4**
CAF Calviac 7.19 282 *e*Pn **Pn** **00 09 44.3 +0.4**
TCF Toulx Ste Croi 7.34 293 *e*Sn **Sn** **00 11 09.5 +0.3**
3.3nm,0.4s
TCF Toulx Ste Croi 7.34 293 *e*Sn **Sn** **00 11 09.5 +0.3**
1.6nm,0.4s
HYF Humbligny 7.40 301 *e*Pn **Pn** **00 09 47.3 +0.5**
HYF Humbligny 7.40 301 *e*Pn **Pn** **00 09 47.3 +0.5**
ETSF Etsaut 9.19 268 *e*Pn **Pn** **00 10 12.2 +0.8**
ETSF Etsaut 9.19 268 *e*Pn **Pn** **00 10 12.2 +0.8**
EKA Eskdalemuir Ar 15.08 325 **Pn** **00 11 31.5 -0.2**
baz=137,slow=14,SNR=3.3
TORD Torodi Ar. Bea 31.84 199 P **P** **00 14 24.4 +0.7**
0.5nm,0.7s,baz=25,slow=9.8,SNR=5.8
MKAR Makanchi Array 48.00 61 P **P** **00 16 38.3 +0.7**
0.3nm,0.6s,baz=287,slow=6.2,SNR=3.9
YKA Yellowknife Ar 65.73 336 P **P** **00 18 44.1 +1.1**
0.2nm,0.7s,baz=45,slow=6.4,SNR=3.5

IDC 25 00:08:39.7±11.0, 21°.13S×169°.18E, h0km, mb3.7/3, mb1 3.9/3, mb1mx3.7/26, mbtmp3.7/3, MS3.4/1, Ms1 3.4/1, ms1mx2.8/22, Error ellipse: s-maj=333.7km s-min=53.4km az=139.0, Southeast of Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**32.61**	**266**	P	P	00 15 13.5	+0.1
0.3nm,0.6s,baz=96,slow=8.0,SNR=2.6							
ASAR	**Alice Springs**	**32.67**	**259**	P	P	00 15 13.6	-0.3
1.1nm,0.6s,baz=86,slow=9.0,SNR=20							
ASAR				LR	LR	00 27 30.1	
comp=Z,62nm,19.6s,baz=114,slow=35							
SONM	**Songino Array**	**88.69**	**323**	P	P	00 21 35.1	0.0
0.2nm,0.4s,baz=138,slow=5.7,SNR=4.8							

CSEM ***25*** *00:10:53.4, 43°.88N×12°.03E, h7km, MD2.1/11*
ROM 25 00:10:53.4±0.2, 43°.88N×12°.03E, h7km±2km, Md2.1/11, Ml1.8/7, Error ellipse: s-maj=2.3km s-min=1.6km az=59.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFI	**Santa Sofia**	**0.13**	**282**	Pg	Pg	00 10 56.8	+0.6
SFI				Sg	Sg	00 10 59.2	+1.0
SFI	**Santa Sofia**	**0.13**	**282**	Pg	Pg	00 10 56.8	+0.6
SFI				Sg	Sg	00 10 59.2	+1.0
ASQU	**Asqua**	**0.19**	**245**	Pg	Pg	00 10 57.9	+0.7
ASQU				Sg	Sg	00 11 01.2	+1.4
240nm,0.3s							
ASQU	**Asqua**	**0.19**	**245**	Pg	Pg	00 10 57.9	+0.7
ASQU				Sg	Sg	00 11 01.2	+1.4
240nm,0.3s							
BADI	**Badiali**	**0.40**	**157**	Pg	Pg	00 11 01.8	+0.6
BADI				Sg	Sb	00 11 08.6	-0.6
92nm,0.2s							
BADI	**Badiali**	**0.40**	**157**	Pg	Pg	00 11 01.8	+0.6
BADI				Sg	Sb	00 11 08.6	-0.6
92nm,0.2s							
BLLA	**Bellaria**	**0.42**	**50**	Pg	Pb	00 11 03.1	0.0
592nm,2.2s							
BLLA	**Bellaria**	**0.42**	**50**	Pg	Pb	00 11 03.1	0.0
592nm,2.2s							
PIEI	**Pieia**	**0.50**	**133**	Pg	Pg	00 11 03.6	+0.5
PIEI				Sg	Sb	00 11 12.0	-0.1
21nm,0.2s							
PIEI	**Pieia**	**0.50**	**133**	Pg	Pg	00 11 03.6	+0.5
PIEI				Sg	Sb	00 11 12.0	-0.1
21nm,0.2s							
ATPC	**Poggio Castell**	**0.51**	**142**	Pg	Pg	00 11 03.8	+0.6
ATPC				Sg	Sb	00 11 12.5	+0.3
71nm,0.2s							
ATPC	**Poggio Castell**	**0.51**	**142**	Pg	Pg	00 11 03.8	+0.6
ATPC				Sg	Sb	00 11 12.5	+0.3
71nm,0.2s							
SEI	**Scarperia**	**0.52**	**290**	Pg	Pg	00 11 03.7	+0.4
SEI				Sg	Sb	00 11 12.2	-0.3
220nm,0.2s							
SEI	**Scarperia**	**0.52**	**290**	Pg	Pg	00 11 03.7	+0.4
SEI				Sg	Sb	00 11 12.2	-0.3
220nm,0.2s							
ATVO	**AVT- Monte Val**	**0.57**	**151**	Pg	Pg	00 11 04.9	+0.6
ATVO				Sg	Sb	00 11 14.4	+0.4
33nm,0.2s							
ATVO	**AVT- Monte Val**	**0.57**	**151**	Pg	Pg	00 11 04.9	+0.6
ATVO				Sg	Sb	00 11 14.4	+0.4
33nm,0.2s							
FSSB	**Fossombrone**	**0.57**	**109**	Pg	Pb	00 11 05.2	-0.6
FSSB	**Fossombrone**	**0.57**	**109**	Pg	Pb	00 11 05.2	-0.6
FRON	**Frontone**	**0.62**	**125**	Pg	Pb	00 11 06.0	-0.6
FRON	**Frontone**	**0.62**	**125**	Pg	Pb	00 11 06.0	-0.6
SSFR	**Montelago di S**	**0.70**	**129**	Pg	Pg	00 11 07.2	+0.3
22nm,0.2s							
SSFR	**Montelago di S**	**0.70**	**129**	Pg	Pg	00 11 07.2	+0.3
22nm,0.2s							

ISCJB ***25*** *00:12:58.6±0.4, 39°.15N±0°.03×29°.12E±0°.03, h4km±5km, Error ellipse: s-maj=4.5km s-min=3.6km az=159.4*
DDA ***25*** *00:12:58.6, 39°.13N×29°.11E, h7km, Ml3.2*
ISK ***25*** *00:12:58.5, 39°.15N×29°.12E, h6km, MD3.0*
CSEM ***25*** *00:12:59.0±0.1, 39°.15N×29°.13E, h5km, ML3.2, Error ellipse: s-maj=2.0km s-min=1.8km az=126.0*
ISC 25 00:12:59.2±1.1, 39°.16N±0°.02×29°.12E±0°.02, h8km±10km, n65, σ0°.55/79, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.29**	**103**	S	**Sg**	**00 13 09.5**	**+0.6**
GDZ	**Gediz**	**0.29**	**103**	*i* S	**Sg**	**00 13 09.5**	**+0.6**
GDZ				*i* P	**Pn**	**00 13 10.5**	**+0.6**
DEMI	**Demirci**	**0.33**	**250**	P	**Pg**	**00 13 05.6**	**-0.1**
DEMI				S	**Sg**	**00 13 10.0**	**-0.1**
DEMI	**Demirci**	**0.33**	**250**	*i* P	**Pg**	**00 13 05.6**	**-0.1**
DEMI				*i* S	**Sg**	**00 13 10.0**	**-0.1**
TVSB	**Tavsanli**	**0.40**	**42**	*e*PG	**Pg**	**00 13 06.8**	**-0.1**
TVSB				*e*SG	**Sg**	**00 13 12.7**	**+0.5**
TVSB	**Tavsanli**	**0.40**	**42**	*e*Pg	**Pg**	**00 13 06.8**	**-0.1**
TVSB				*e*Sg	**Sg**	**00 13 12.7**	**+0.5**
DST	**Dursunbey**	**0.59**	**319**	*e*PG	**Pg**	**00 13 10.6**	**0.0**
DST	**Dursunbey**	**0.59**	**319**	*e*Pg	**Pg**	**00 13 10.6**	**0.0**
DURS	**Dursunbey**	**0.67**	**312**	P	**Pg**	**00 13 12.1**	**0.0**
DURS	**Dursunbey**	**0.67**	**312**	*i* P	**Pg**	**00 13 12.1**	**0.0**
DURS				*i* S	**Sn**	**00 13 25.6**	**-0.2**
KULA	**Kula-Manisa**	**0.73**	**209**	*e*PG	**Pg**	**00 13 12.2**	**-1.1**
KULA	**Kula-Manisa**	**0.73**	**209**	*e*Pg	**Pg**	**00 13 12.2**	**-1.1**
KHAL	**Karahalli**	**0.84**	**159**	P	**Pg**	**00 13 14.8**	**-0.5**
KHAL				S	**Sg**	**00 13 25.3**	**-0.9**
KHAL	**Karahalli**	**0.84**	**159**	*i* P	**Pg**	**00 13 14.8**	**-0.5**
KHAL				*i* S	**Sg**	**00 13 25.3**	**-0.9**
KHL	**Karahalli**	**0.89**	**159**	*e*PG	**Pg**	**00 13 16.3**	**0.0**
KHL	**Karahalli**	**0.89**	**159**	*e*Pg	**Pg**	**00 13 16.3**	**0.0**
ORLT	**Orhaneli**	**0.90**	**349**	*e*PG	**Pg**	**00 13 16.4**	**-0.2**
ORLT	**Orhaneli**	**0.90**	**349**	*e*Pg	**Pg**	**00 13 16.4**	**-0.2**
AKHS	**Akhisar**	**1.05**	**255**	P	**Pg**	**00 13 19.1**	**-0.3**
AKHS				S	**Sg**	**00 13 33.1**	**+0.1**
AKHS	**Akhisar**	**1.05**	**255**	*i* P	**Pg**	**00 13 19.1**	**-0.3**
AKHS				*i* S	**Sg**	**00 13 33.1**	**+0.1**
AKS	**Akhisar**	**1.05**	**255**	*e*PG	**Pg**	**00 13 19.1**	**-0.3**
AKS				*e*SG	**Sg**	**00 13 33.4**	**+0.4**
AKS	**Akhisar**	**1.05**	**255**	*e*Pg	**Pg**	**00 13 19.1**	**-0.3**
AKS				*e*Sg	**Sg**	**00 13 33.4**	**+0.4**
BALB	**Balikesir**	**1.07**	**297**	*e*PG	**Pg**	**00 13 19.6**	**-0.1**
BALB				*e*SG	**Sn**	**00 13 35.2**	**-0.4**
IGD	**Bursa**	**1.11**	**3**	*i* P	**Pg**	**00 13 19.1**	**-1.3**
IGD				*i* S	**Sg**	**00 13 33.1**	**-1.7**
CAVI	**Cavuskoy**	**1.19**	**28**	*e*PN	**Pg**	**00 13 21.6**	**-0.3**
CAVI	**Cavuskoy**	**1.19**	**28**	*e*Pn	**Pg**	**00 13 21.6**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.22**	**352**	*e*PN	**Pg**	**00 13 22.4**	**-0.2**
KCTX	**Karacabey (Bur**	**1.25**	**332**	*e*PN	**Pg**	**00 13 22.8**	**-0.4**
KCTX	**Karacabey (Bur**	**1.25**	**332**	*e*Pn	**Pg**	**00 13 22.8**	**-0.4**
GEMT	**Gemlik**	**1.28**	**2**	*e*PN	**Pn**	**00 13 23.4**	**0.0**
BALY	**Balya**	**1.30**	**297**	P	**Pn**	**00 13 23.7**	**0.0**
BALY	**Balya**	**1.30**	**297**	*i* P	**Pn**	**00 13 23.7**	**0.0**
ADVT	**Abdulvahap**	**1.36**	**20**	*e*PN	**Pn**	**00 13 24.6**	**+0.1**
ADVT	**Abdulvahap**	**1.36**	**20**	*e*Pn	**Pn**	**00 13 24.6**	**+0.1**
GONE	**Gonen-Balikesi**	**1.42**	**309**	*e*PN	**Pn**	**00 13 25.4**	**+0.1**
GONE	**Gonen-Balikesi**	**1.42**	**309**	*e*Pn	**Pn**	**00 13 25.4**	**+0.1**
ARMT	**Armutlu**	**1.42**	**352**	*e*PN	**Pn**	**00 13 25.4**	**0.0**
ARMT	**Armutlu**	**1.42**	**352**	*e*Pn	**Pn**	**00 13 25.4**	**0.0**
EDC	**Edincik**	**1.53**	**321**	*e*PN	**Pn**	**00 13 27.3**	**+0.4**
EDC	**Edincik**	**1.53**	**321**	*e*Pn	**Pn**	**00 13 27.3**	**+0.4**
AYDB	**Zeytinkoy-Aydi**	**1.54**	**219**	*e*PN	**Pn**	**00 13 27.6**	**+0.4**
AYDB	**Zeytinkoy-Aydi**	**1.54**	**219**	*e*Pn	**Pn**	**00 13 27.6**	**+0.4**
GULT	**Gulveren**	**1.67**	**40**	*e*PN	**Pn**	**00 13 29.5**	**+0.7**
GULT	**Gulveren**	**1.67**	**40**	*e*Pn	**Pn**	**00 13 29.5**	**+0.7**
HRT	**Hereke**	**1.72**	**14**	*e*PN	**Pn**	**00 13 29.7**	**+0.3**
HRT	**Hereke**	**1.72**	**14**	*e*Pn	**Pn**	**00 13 29.7**	**+0.3**
DKL	**Dikili**	**1.72**	**268**	*e*PN	**Pn**	**00 13 30.2**	**+0.7**
DKL	**Dikili**	**1.72**	**268**	*e*Pn	**Pn**	**00 13 30.2**	**+0.7**
SPNC	**Sapanca-Adapaz**	**1.78**	**31**	*e*PN	**Pn**	**00 13 30.8**	**+0.6**
MRMT	**Marmara Adasi**	**1.86**	**321**	*e*PN	**Pn**	**00 13 31.9**	**+0.5**
MRMT	**Marmara Adasi**	**1.86**	**321**	*e*Pn	**Pn**	**00 13 31.9**	**+0.5**
SVRH	**Sivrihisar-ESK**	**1.89**	**80**	*e*PN	**Pn**	**00 13 32.3**	**+0.5**
SVRH	**Sivrihisar-ESK**	**1.89**	**80**	*e*Pn	**Pn**	**00 13 32.3**	**+0.5**
ISK	**Istanbul-Kandi**	**1.91**	**359**	*e*PN	**Pn**	**00 13 32.4**	**+0.4**
ISK	**Istanbul-Kandi**	**1.91**	**359**	*e*Pn	**Pn**	**00 13 32.4**	**+0.4**
BGKT	**Bogazkoy**	**2.04**	**353**	*e*PN	**Pn**	**00 13 33.9**	**+0.1**
BGKT	**Bogazkoy**	**2.04**	**353**	*e*Pn	**Pn**	**00 13 33.9**	**+0.1**
RKY	**Sarkoy-Tekirda**	**2.14**	**316**	*e*PN	**Pn**	**00 13 35.6**	**+0.4**
RKY	**Sarkoy-Tekirda**	**2.14**	**316**	*e*Pn	**Pn**	**00 13 35.6**	**+0.4**
LPK	**Lapseki**	**2.19**	**305**	*e*PN	**Pn**	**00 13 36.6**	**+0.7**
EZN	**Ezine**	**2.26**	**288**	*e*PN	**Pn**	**00 13 37.6**	**+0.7**
GELI	**Tayfur-Gelibol**	**2.38**	**302**	*e*PN	**Pn**	**00 13 39.3**	**+0.7**
GELI	**Tayfur-Gelibol**	**2.38**	**302**	*e*Pn	**Pn**	**00 13 39.3**	**+0.7**
SIGR	**SIGRI**	**2.54**	**272**	*e*PN	**Pn**	**00 13 41.9**	**+1.3**
SIGR	**SIGRI**	**2.54**	**272**	*e*Pn	**Pn**	**00 13 41.9**	**+1.3**

NIED ***25*** *00:19:00, 35°.90N×140°.20E, h65km, Mw4.6 Best double couple: M0:9.60000×10^15 NP1:φ0=200.00000°, δ24.00000°, λ105.00000°. NP2:φ0=4.00000°, δ67.00000°, λ84.00000°.*
MOS ***25*** *00:19:10.1±0.9, 35°.84N×140°.02E, h33km, mb5.0/45, Error ellipse: s-maj=10.4km s-min=5.3km az=108.2*
JMA ***25*** *00:19:15.8±0.1, 35°.92N×140°.14E, h62km±1km, M4.5 Broadband fault plane solution: P waves. NP1: φ0=7.00000°, δ73.00000°, λ89.00000°. NP2:φ0=190.00000°, δ17.00000°, λ93.00000°. Principal axes: T Plg62.0000°, Azm276.0000°; N Plg1.0000°, Azm8.0000°; P Plg28.0000°, Azm98.0000°;*
JMA Felt III J1.
ISCJB ***25*** *00:19:15.1±0.3, 35°.83N±0°.02×140°.06E±0°.03, h74km±2km, mb4.6/118 Error ellipse: s-maj=4.6km s-min=3.8km az=179.3*
IDC ***25*** *00:19:16.7±1.6, 35°.84N×140°.03E, h79km±14km, mb4.2/26, mb1 4.3/29, mb1mx4.2/39, mbtmp4.5/29, MS3.3/22, Ms1 3.3/22, ms1mx3.2/41, Error ellipse: s-maj=14.2km s-min=11.0km az=81.0*
NEIC ***25*** *00:19:17.1±0.6, 35°.87N×139°.93E, h77km±5km, mb4.6/51, Error ellipse: s-maj=5.4km s-min=4.8km az=120.0*
NEIC Felt [III] at Tokyo. Recorded [3 JMA] in Ibaraki and Tochigi.
ISC 25 00:19:14.4±0.6, 35°.86N±0°.04×140°.20E±0°.04, h59km±4km, n319, σ1§64/339, mb4.7/121, MS3.5/27, 35C-28D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JYT	**Yasato**	**0.37**	**359**	⇑P	**Pn**	**00 19 26.4**	**+1.4**
JYT				S	**Sn**	**00 19 34.2**	**+1.6**
TOK	**Tokyo**	**0.40**	**245**	⇓P	**Pn**	**00 19 28.1**	**+2.9**
TOK				*e*S	**Sn**	**00 19 38.1**	**+5.1**
JAG	**Ashikaga**	**0.83**	**313**	⇓P	**Pn**	**00 19 31.0**	**+0.8**
JAG				S	**Sn**	**00 19 42.1**	**+0.3**
JRY	**Ryogami san**	**1.07**	**279**	⇓P	**Pn**	**00 19 34.4**	**+1.1**
JRY				S	**Sn**	**00 19 48.3**	**+1.0**
BSO3	**Boso 3**	**1.08**	**166**	⇑P	**Pn**	**00 19 35.0**	**+1.7**
BSO3				S	**Sn**	**00 19 52.3**	**+5.0**
JOD2	**Odawara 2**	**1.08**	**237**	⇓P	**Pn**	**00 19 34.5**	**+1.0**
JOD2				S	**Sn**	**00 19 47.9**	**+0.2**
JKT	**Katashina**	**1.19**	**320**	⇓P	**Pn**	**00 19 35.5**	**+0.5**
JKT				S	**Sn**	**00 19 50.7**	**+0.4**
JIM2	**Oshima 3**	**1.30**	**209**	P	**Pn**	**00 19 37.0**	**+0.6**
JIM2				S	**Sn**	**00 19 53.2**	**+0.3**
MJAR	**Matsushiro Arr**	**1.75**	**294**	P	**Pn**	**00 19 43.2**	**+0.7**
344nm,0.3s,baz=98,slow=7.8,SNR=2875							
MJAR				S	**Sn**	**00 20 04.2**	**+0.5**
100nm,0.3s,baz=121,slow=22,SNR=7.8							
MJAR				LR	LR	00 20 34.5	
comp=Z,1μm,21.1s,baz=125,slow=49							
MAJO	**Matsushiro**	**1.75**	**294**	*d i* P	**Pn**	**00 19 43.8**	**+1.3**
MAJO	**Matsushiro**	**1.75**	**294**	*e*Pn	**Pn**	**00 19 43.4**	**+0.9**
MAJO				*e*Sn	**Sn**	**00 20 04.6**	**+0.8**
MAT	**Matsushiro**	**1.75**	**294**	P	**Pn**	**00 19 43.7**	**+1.2**
MAT				*e*S	**Sn**	**00 20 04.3**	**+0.5**
INU	**Inuyama**	**2.64**	**260**	*e*Pn	**Pn**	**00 19 56.1**	**+1.5**
JHJ	**Hachijo jima 2**	**2.75**	**187**	P	**Pn**	**00 19 58.2**	**+2.0**
178nm,0.3s,baz=146,slow=22,SNR=21							
JHJ				S	**Sn**	**00 20 27.5**	**-0.7**
193nm,0.3s,baz=342,slow=20,SNR=8.1							
JHJ				LR	LR	00 20 36.5	
comp=Z,179nm,20.1s,baz=331,slow=29							
JHJ2	**Mitsune**	**2.76**	**187**	*e*Pn	**Pn**	**00 19 58.4**	**+2.2**
JHJ2				*e*Sn	**Sn**	**00 20 26.1**	**-2.2**
ERM	**Erimo**	**6.56**	**20**	*c i* P	**Pn**	**00 20 47.8**	**-0.5**
ERM	**Erimo**	**6.56**	**20**	*e*Pn	**Pn**	**00 20 47.8**	**-0.5**
ERM				*e*Sn	**Sn**	**00 21 57.8**	**-3.9**
JNU	**Nakatsue**	**8.17**	**253**	P	**Pn**	**00 21 12.0**	**+1.7**
1.6nm,0.3s,baz=63,slow=6.0,SNR=11							
JNU				LR	LR	00 24 41.3	
comp=Z,623nm,19.0s,baz=115,slow=40							
JNU	**Nakatsue**	**8.17**	**253**	*e*Pn	**Pn**	**00 21 11.2**	**+0.9**
ASAJ	**Asahikawa**	**8.45**	**12**	P	**Pn**	**00 21 11.8**	**-2.3**
5.2nm,0.3s,baz=246,slow=12,SNR=8.3							
ASAJ				S	**Sn**	**00 22 42.7**	**-5.2**
2.7nm,0.3s,baz=194,slow=17,SNR=3.1							
ASAJ	**Asahikawa**	**8.45**	**12**	*e*Pn	**Pn**	**00 21 12.0**	**-2.0**
ASAJ				*e*Sn	**Sn**	**00 22 44.1**	**-3.9**
CBIJ	**Chichi jima**	**8.90**	**168**	*e*Pn	**Pn**	**00 21 17.9**	**-2.4**
CBIJ				*e*Sn	**Sn**	**00 22 52.4**	**-6.7**
JCJ	**Chichijima**	**8.90**	**168**	P	**Pn**	**00 21 17.9**	**-2.4**
19nm,0.3s,baz=309,slow=15,SNR=14							
JCJ				S	Sn	00 22 49.6	-9.4
10nm,0.3s,baz=300,slow=20,SNR=3.8							
VLA	**Vladivostok**	**9.69**	**321**	*κ i* P	**Pn**	**00 21 33.7**	**+2.7**
VLA				pmax	pmax		
comp=Z,77nm,1.3s							
KS01	**Wonju Array Si**	**10.02**	**283**	*e*Pn	**Pn**	**00 21 38.6**	**+3.1**
KS15	**Wonju Array Si**	**10.02**	**283**	*e*Pn	**Pn**	**00 21 38.4**	**+2.7**
USRK	**Ussuriysk Ar.**	**10.44**	**325**	P	**Pn**	**00 21 43.6**	**+2.3**
comp=Z,0.7nm,0.3s,baz=137,slow=12,SNR=38							
KUR	**Kuril'sk**	**11.03**	**30**	P	**Pn**	**00 21 52.9**	**+3.7**
KUR				S	**Sn**	**00 23 45.6**	**-5.3**
KUR				smax	smax		
comp=N,37nm,0.5s							
KUR				smax	smax		
comp=E,37nm,0.5s							
YSS	**Yuzh-Sakhalins**	**11.25**	**9**	*e*P	**Pn**	**00 21 52.1**	**-0.2**
YSS				pmax	pmax		
comp=Z,20nm,0.4s							
YSS				MLR	MLR		
comp=Z,200nm,15.0s							
MDJ	**Mudanjiang**	**11.92**	**320**	P	**Pn**	**00 21 59.6**	**-1.8**
MDJ				S	**Sn**	**00 24 11.1**	**-1.6**
MDJ				pmax	pmax		
comp=Z,5.0nm,0.3s							
MDJ				pmax	pmax		
comp=Z,66nm,6.6s							
MDJ				LR	LR		
comp=N,220nm,18.6s							
MDJ				LR	LR		
comp=E,98nm,13.6s							
MDJ				LR	LR		
comp=Z,230nm,19.4s							
CN2	**Changchun**	**13.82**	**309**	*e*P	**Pn**	**00 22 27.5**	**+0.1**
CN2				pmax	pmax		
comp=Z,10.0nm,1.0s							
KLR	**Kul'dur**	**14.73**	**338**	P	**Pn**	**00 22 37.5**	**-1.7**
comp=Z,0.7nm,0.3s,baz=134,slow=13,SNR=13							
KLR				LR	LR	00 28 34.9	
comp=Z,98nm,18.2s,baz=150,slow=38							
DL2	**Dalian**	**15.08**	**287**	P	**P**	**00 22 46.9**	**-1.0**
DL2				S	**S**	**00 25 41.4**	**-2.6**
DL2				pmax	pmax		
comp=Z,100nm,0.9s							
DL2				pmax	pmax		
comp=Z,200nm,8.0s							
DL2				LR	LR		
comp=E,200nm,9.8s							
DL2				LR	LR		
comp=Z,300nm,17.2s							
TYV	**Tymovskoe**	**15.10**	**6**	*e*P	**P**	**00 22 50.0**	**+1.9**
TYV				pmax	pmax		
comp=Z,20nm,0.8s							
BJI	**Beijing**	**19.38**	**290**	P	**P**	**00 23 34.5**	**-0.9**
BJI				S	**S**	**00 27 10.8**	**-0.7**
BJI				pmax	pmax		
comp=Z,22nm,1.4s							
BJI				pmax	pmax		
comp=Z,130nm,4.1s							
BJI				LR	LR		
comp=N,57nm,25.7s							
BJI				LR	LR		
comp=E,150nm,30.2s							
BJI				LR	LR		
comp=Z,210nm,35.5s							
BJT	**Baijiatuau**	**19.39**	**290**	*e*P	**P**	**00 23 28.8**	**-6.7**
BJT				pmax	pmax		
comp=Z,18nm,0.8s							
BJT	**Baijiatuau**	**19.39**	**290**	*e*P	**P**	**00 23 28.8**	**-6.7**
comp=Z,18nm,0.8s							
YHNB	**Yeheng**	**19.68**	**241**	*e*P	**P**	**00 23 34.1**	**-4.8**
comp=Z,71nm,1.5s							
NACB	**Ninganchiao**	**19.84**	**239**	*e*P	**P**	**00 23 39.9**	**-0.5**
comp=Z,20nm,1.0s							
SSLB	**Suanglung**	**20.54**	**239**	*e*P	**P**	**00 23 45.9**	**-2.1**
comp=Z,34nm,1.4s							
YULB	**Yu-li**	**20.56**	**238**	*e*P	**P**	**00 23 44.4**	**-3.9**
comp=Z,37nm,1.4s							
TPUB	**Ta-pu**	**21.08**	**239**	*e*P	**P**	**00 23 51.4**	**-2.5**
comp=Z,92nm,1.5s							
PETK	**Petropavlovsk-**	**21.19**	**30**	LR	LR	00 31 40.8	
comp=Z,51nm,21.3s,baz=222,slow=35							
WHN	**Wuhan**	**22.24**	**264**	⇑P	**P**	**00 24 06.1**	**-0.2**
WHN				S	**S**	**00 28 03.3**	**-4.2**
WHN				LR	LR		
comp=Z,560nm,12.6s							
GUMO	**Guam**	**22.57**	**168**	LR	LR	00 32 42.5	
comp=Z,37nm,18.7s,baz=42,slow=36							
HHC	**Hu-ho-hao-te**	**22.95**	**291**	*e*P	**P**	**00 24 13.4**	**-0.4**
HHC				S	**S**	**00 28 18.3**	**-1.3**
HHC				pmax	pmax		
comp=Z,42nm,0.8s							
HHC				pmax	pmax		
comp=Z,330nm,4.7s							
HHC				LR	LR		
comp=N,1μm,12.6s							
HHC				LR	LR		
comp=E,1μm,11.2s							
HHC				LR	LR		
comp=Z,1μm,12.7s							
MA2	**Magadan**	**24.71**	**13**	P	**P**	**00 24 30.1**	**+0.3**
comp=Z,18nm,0.6s,baz=212,slow=9.5,SNR=7.5							
MA2				LR	LR	00 35 14.5	
comp=Z,64nm,18.7s,baz=205,slow=39							
XAN	**Xi'an**	**25.65**	**275**	P	**P**	**00 24 37.3**	**-1.4**
XAN				pP	pP	00 24 47.1	-6.0
XAN				S	**S**	**00 28 58.5**	**-4

CD2	**Chengdu**	30.71	271	P	P	00 25 23.0	-0.9
CD2				pmax	pmax		
	comp=Z,20nm,0.5s						
QIZ	**Qiongzhong**	31.56	246	P	P	00 25 30.3	-1.0
QIZ				S	S	00 30 39.8	+3.9
QIZ				LR	LR		
	comp=Z,51nm,22.2s						
GTA	**Gaotai**	31.99	289	*e*P	P	00 25 35.3	+0.1
GTA				pP	pP	00 25 43.0	-6.8
GTA				sP	sP	00 25 47.0	-10
GTA				S	S	00 30 43.8	+1.1
GTA				sS	sS	00 30 55.3	-12
GTA				pmax	pmax		
	comp=Z,9.0nm,0.9s						
GTA				pmax	pmax		
	comp=Z,35nm,4.5s						
GTA				LR	LR		
	comp=N,110nm,16.2s						
GTA				LR	LR		
	comp=E,120nm,17.3s						
GTA				LR	LR		
	comp=Z,89nm,16.4s						
PATS	**Pohnpei**	33.32	146	*e*P	P	00 25 43.5	-3.2
	comp=Z,534nm,1.8s						
KMI	**Kunming**	33.82	262	P	P	00 25 49.4	-2.0
KMI				pP	pP	00 25 57.4	-8.7
KMI				sP	sP	00 26 01.4	-12
KMI				pmax	pmax		
	comp=Z,18nm,1.1s						
KMI				pmax	pmax		
	comp=Z,130nm,5.4s						
KMI				LR	LR		
	comp=N,110nm,14.0s						
KMI				LR	LR		
	comp=E,110nm,15.7s						
KMI				LR	LR		
	comp=Z,130nm,31.0s						
BILL	**Bilibino**	35.43	17	*i* P	P	00 26 05.0	+0.5
BILL				*i*		00 27 24.7	
BILL				*i*		00 28 33.4	
BILL				pmax	pmax		
	comp=Z,5.0nm,1.0s						
TIXI	**Tiksi**	36.35	354	P	P	00 26 10.9	-1.3
	comp=Z,2.4nm,0.6s,baz=143,slow=4.2,SNR=7.0						
TIXI	**Tiksi**	36.35	354	*ce*P	P	00 26 11.6	-0.6
TIXI				pmax	pmax		
	comp=Z,2.0nm,0.6s						
TIXI	**Tiksi**	36.35	354	*e*P	P	00 26 11.8	-0.4
	comp=Z,2.7nm,0.9s						
PANO	**Nakornpanom**	36.63	249	P	P	00 26 15.2	-0.1
	comp=Z,109nm,0.9s,comp=Z,8μm						
UBPT	**Khong Chiam**	37.15	246	P	P	00 26 19.0	-0.7
	comp=Z,40nm,0.8s,comp=Z,1μm						
SKNT	**Sakolnakorn**	37.22	249	P	P	00 26 19.6	-0.7
	comp=Z,34nm,1.0s						
KHON	**Khomkaen**	38.48	250	P	P	00 26 30.4	-0.5
	comp=Z,18nm,0.8s,comp=Z,813nm						
LOEI	**Loei**	38.98	252	P	P	00 26 31.7	-3.4
	comp=Z,23nm,1.4s						
FAKI	**Fak Fak**	39.29	193	*e*P	P	00 26 38.0	+0.3
	comp=Z,64nm,1.3s						
CHAI	**Chaiyaphum**	39.38	250	P	P	00 26 37.4	-1.1
	comp=Z,22nm,0.8s,comp=Z,167nm						
UTTA	**Uttaradit**	39.40	253	P	P	00 26 39.4	+0.8
	comp=Z,3.4nm,0.8s						
PBKT	**Sadao Pong**	39.76	251	P	P	00 26 41.1	-0.5
	comp=Z,18nm,1.1s						
CHTO	**Chiang Mai**	40.06	256	P	P	00 26 47.3	+3.2
	comp=Z,31nm,0.9s						
CHTO	**Chiang Mai**	40.06	256	*e*P	P	00 26 44.4	+0.3
CHTO				pmax	pmax		
	comp=Z,20nm,1.5s						
CHTO	**Chiang Mai**	40.06	256	*e*P	P	00 26 44.4	+0.3
	comp=Z,20nm,1.5s						
CMAR	**Chiang Mai Arr**	40.26	256	LR	LR	00 46 09.1	
	comp=Z,55nm,18.1s,baz=98,slow=40						
SUKH	**Sukhothai**	40.27	254	P	P	00 26 46.8	+1.0
	comp=Z,2.6nm,0.8s						
WMQ	**Urumqi**	40.51	298	P	P	00 26 48.4	+0.7
WMQ				pP	pP	00 26 57.0	-5.6
WMQ				sP	sP	00 27 02.5	-6.9
WMQ				pmax	pmax		
	comp=Z,7.0nm,1.0s						
WMQ				pmax	pmax		
	comp=Z,76nm,6.0s						
WMQ				LR	LR		
	comp=N,18nm,30.4s						
WMQ				LR	LR		
	comp=E,11nm,37.2s						
WMQ				LR	LR		
	comp=Z,21nm,27.2s						
CHBT	**CHBT**	41.10	246	P	P	00 26 52.7	0.0
	comp=Z,49nm,0.7s,comp=Z,4μm						
LSA	**Lhasa**	41.35	276	*e*P	P	00 26 54.2	-1.0
LSA				pmax	pmax		
	comp=Z,7.0nm,0.6s						
LSA	**Lhasa**	41.35	276	*e*P	P	00 26 54.1	-1.0
	comp=Z,7.0nm,0.6s						
ZAA0	**Zalesovo Array**	42.00	313	*e*P	P	00 26 59.4	-0.2
ZAA0				*e*PcP	PcP	00 28 53.7	-0.1
ZALV	**Zalesovo Beam**	42.00	313	P	P	00 26 58.8	-0.8
	comp=Z,4.9nm,0.4s,baz=95,slow=6.7,SNR=27						
ZALV				PcP	PcP	00 28 53.5	-0.2
	comp=Z,4.0nm,0.7s,baz=109,slow=2.7,SNR=6.7						
ZALV				LR	LR	00 45 14.8	
	comp=Z,20nm,19.1s,baz=72,slow=37						
ZALV	**Zalesovo Beam**	42.00	313	*i* P	P	00 26 59.4	-0.2
ZALV				pmax	pmax		
	comp=Z,5.0nm,0.4s						
PATY	**Pattaya**	42.08	247	P	P	00 27 00.5	-0.2
	comp=Z,7.0nm,0.8s						
SRDT	**SRDT**	42.52	250	P	P	00 27 04.5	+0.3
	comp=Z,55nm,1.1s,comp=Z,6μm						
NVS	**Novosibirsk**	42.96	315	*e*P	P	00 27 04.4	-3.0
PHET	**Kaeng Krachan**	43.02	248	P	P	00 27 08.7	+0.4
	comp=Z,14nm,0.9s						
MK01	**Makanchi Array**	43.92	303	*e*P	P	00 27 14.9	-0.4
MK31	**Makanchi Array**	43.92	303	*e*P	P	00 27 15.3	-0.1
MK31	**Makanchi Array**	43.92	303	*e*P	P	00 27 15.3	-0.1
MKAR	**Makanchi Array**	43.92	303	P	P	00 27 15.1	-0.3
	comp=Z,9.7nm,0.8s,baz=91,slow=10,SNR=91						
MKAR				LR	LR	00 46 29.0	
	comp=Z,28nm,18.8s,baz=60,slow=37						
NRIK	**Noril'sk**	43.93	336	P	P	00 27 15.0	0.0
	comp=Z,1.8nm,0.4s,baz=136,slow=2.1,SNR=4.9						
NRIK				PcP	PcP	00 28 59.5	-0.5
	comp=Z,4.3nm,0.7s,baz=104,slow=3.1,SNR=5.5						
NRIK				LR	LR	00 48 26.8	
	comp=Z,46nm,18.4s,baz=69,slow=40						
MAKZ	**Makanchi**	44.14	303	P	P	00 27 16.6	-0.4
MAKZ				pmax	pmax		
	comp=Z,16nm,0.9s						
CHGN	**Chignik**	45.49	43	*e*P	P	00 27 23.0	-4.6
KURK	**Kurchatov**	45.90	309	*e*P	P	00 27 30.5	-0.4
KURK						00 29 06.5	
KURK				pmax	pmax		
	comp=Z,43nm,1.2s						
KURK	**Kurchatov**	45.90	309	*e*P	P	00 27 30.4	-0.4
	comp=Z,42nm,1.2s						
KURK				PcP	PcP	00 29 06.5	-0.6
KURBB	**Kurchatov Arra**	45.96	309	P	P	00 27 30.5	-0.9
	comp=Z,7.4nm,0.4s,baz=83,slow=7.5,SNR=157						
KURBB				PcP	PcP	00 29 06.5	-0.9
	comp=Z,2.1nm,0.8s,baz=80,slow=3.9,SNR=5.3						
GUN	**Gumba**	46.30	276	*e*P	P	00 27 34.4	-0.4
	comp=Z,28nm,0.7s						
PKIN	**Phulchoki**	46.83	276	*e*P	P	00 27 38.6	-0.3
	comp=Z,10nm,0.5s						
KKN	**Kakani**	46.84	276	*e*P	P	00 27 38.6	-0.3
	comp=Z,23nm,0.8s						
GKN	**Gorkha**	47.27	277	*e*P	P	00 27 41.8	-0.3
	comp=Z,63nm,0.8s						
IPM	**Ipoh**	47.70	238	*e*P	P	00 27 45.1	-0.3
	comp=Z,12nm,0.9s						
KOLN	**Koldanda**	48.20	277	*e*P	P	00 27 49.4	0.0
	comp=Z,13nm,0.6s						
PYUN	**Piuthan**	48.56	278	*e*P	P	00 27 52.1	-0.1
	comp=Z,102nm,1.0s						
TKM2	**Tokmak 2**	49.34	299	*e*P	P	00 27 58.5	+0.6
TKM2				pmax	pmax		
	comp=Z,44nm,1.6s						
TKM2	**Tokmak 2**	49.34	299	*e*P	P	00 27 58.5	+0.6
	comp=Z,44nm,1.6s						
KSH	**Kashi**	50.00	295	P	P	00 28 06.5	+3.6
KSH				*es*P	pP	00 28 20.8	+2.5
KSH				*e*PP	PP	00 30 02.8	+4.7
KSH				PcS	PcS	00 33 20.1	+0.8
KSH				S	S	00 35 12.9	+3.4
KSH				ScS	ScS	00 37 51.9	+2.9
KSH				pmax	pmax		
	comp=Z,120nm,5.7s						
KSH				LR	LR		
	comp=N,120nm,4.7s						
KSH				LR	LR		
	comp=E,140nm,7.1s						
FRU	**Bishkek**	50.05	299	*e*P	P	00 28 02.5	-0.7
AAK	**Ala-Archa**	50.19	299	*c i*P	P	00 28 04.2	-0.2
AAK				pmax	pmax		
	comp=Z,15nm,1.0s						
AAK	**Ala-Archa**	50.19	299	*e*P	P	00 28 04.8	+0.4
	comp=Z,4.7nm,0.9s						
MDM	**Murphy Dome**	50.43	32	*e*P	P	00 28 07.7	+2.1
	comp=Z,13nm,0.8s						
COLA	**College**	50.59	32⇑	*e*P	P	00 28 08.3	+1.5
COLA				pmax	pmax		
	comp=Z,7.0nm,0.9s						
COLA	**College**	50.59	32	*e*P	P	00 28 07.7	+0.9
	comp=Z,5.5nm,0.8s						
EKS2	**Erkin-Say**	50.70	299	*e*P	P	00 28 08.4	+0.3
EKS2				pmax	pmax		
	comp=Z,5.0nm,1.0s						
EKS2	**Erkin-Say**	50.70	299	*e*P	P	00 28 08.4	+0.3
	comp=Z,4.7nm,1.0s						
BRVK	**Borovoye**	50.70	313⇑	*e*P	P	00 28 10.2	+2.3
BRVK				pmax	pmax		
	comp=Z,7.0nm,1.0s						
ILAR	**Eielson Array**	51.01	32	P	P	00 28 10.7	+0.7
	comp=Z,5.4nm,0.9s,baz=271,slow=6.4,SNR=48						
ILB	**Eielson Array**	51.01	32	*e*P	P	00 28 11.2	+1.2
IL1	**Eielson Array**	51.01	32	*e*P	P	00 28 10.4	+0.4
GSI	**Gunungsitoli**	52.36	239	*e*P	P	00 28 19.7	-1.0
	comp=Z,47nm,0.9s						
KK31	**Karatay Array**	52.87	301	P	P	00 28 23.7	-0.5
KK31				pmax	pmax		
	comp=Z,9.0nm,1.0s						
KKAR	**Karatay Array**	52.87	301	*e*P	P	00 28 22.7	-1.5
KKAR				pmax	pmax		
	comp=Z,8.0nm,0.8s						
KKAR	**Karatay Array**	52.87	301	*e*P	P	00 28 22.7	-1.5
	comp=Z,7.8nm,0.8s						
SVE	**Sverdlovsk**	55.38	319	*e*P	P	00 28 42.2	0.0
SVE				pmax	pmax		
	comp=Z,10.0nm,0.6s						
FITZ	**Fitzroy Crossi**	55.41	197	*e*P	P	00 28 42.8	0.0
	comp=Z,45nm,1.7s						
WRAB	**Tennant Creek**	55.76	187⇑	*e*P	P	00 28 45.3	0.0
WRAB				pmax	pmax		
	comp=Z,22nm,0.7s						
WRA	**Warramunga Arr**	55.77	187	P	P	00 28 44.6	-0.8
	comp=Z,6.8nm,0.6s,baz=1.5,slow=7.6,SNR=45						
INK	**Inuvik**	55.88	27	P	P	00 28 46.5	+0.9
	comp=Z,3.9nm,0.7s,baz=299,slow=7.0,SNR=12						
INK	**Inuvik**	55.88	27	*e*P	P	00 28 47.2	+1.6
INK				pmax	pmax		
	comp=Z,4.0nm,0.8s						
INK	**Inuvik**	55.88	27	*e*P	P	00 28 47.2	+1.6
	comp=Z,4.3nm,0.8s						
ARU	**Arti**	56.60	319	*c i*P	P	00 28 50.6	-0.3
ARU						00 30 52.7	
ARU				S	S	00 36 42.5	+4.3
ARU				SS	SS	00 40 27.3	+1.4
ARU				pmax	pmax		
	comp=Z,12nm,0.6s						
ARU	**Arti**	56.60	319	*e*P	P	00 28 49.9	-1.0
	comp=Z,11nm,0.6s						
HYB	**Hyderabad**	57.19	268	*i* P	P	00 28 55.0	-0.7
AB31	**Akbulak array**	57.95	310	*i* P	P	00 29 00.1	-0.5
AB31				pmax	pmax		
	comp=Z,5.0nm,0.7s						
ABKAR	**Akbulak array**	57.95	310	*e*P	P	00 29 00.2	-0.4
	comp=Z,4.2nm,0.6s						
AS01	**Alice Springs**	59.49	187	*e*P	P	00 29 10.8	-0.7
AS31	**Alice Springs**	59.50	187	*e*P	P	00 29 13.8	+2.3
	comp=Z,1.6nm,0.5s						
ASAR	**Alice Springs**	59.50	187	P	P	00 29 10.8	-0.7
	comp=Z,2.9nm,0.8s,baz=13,slow=7.2,SNR=19						
DZM	**Mont Dzumac**	62.74	153	*e*LR	LR	00 48 17.5	
	comp=Z,92nm,24.5s						
GEYT	**Alibeck**	63.55	299	P	P	00 29 38.6	-0.3
	comp=Z,5.9nm,0.8s,baz=50,slow=4.6,SNR=14						
ARCES	**ARCESS Array B**	64.75	339	P	P	00 29 46.0	-0.1
	comp=Z,4.2nm,0.8s,baz=39,slow=7.8,SNR=9.1						
ARCES				LR	LR	01 04 00.9	
	comp=Z,31nm,18.3s,baz=196,slow=42						
YKA	**Yellowknife Ar**	65.31	30	P	P	00 29 50.1	+0.2
	comp=Z,1.5nm,0.8s,baz=299,slow=6.6,SNR=17						
YKB5	**Yellowknife Ar**	65.31	30	*e*P	P	00 29 50.1	+0.3
DAG	**Danmarks Havn**	66.86	355	*i* P	P	00 29 59.8	+0.2
	comp=Z,8.2nm,0.9s						
DAG	**Danmarks Havn**	66.86	355	*i* P	P	00 29 59.8	+0.2
DAG				pmax	pmax		
	comp=Z,7.0nm,0.9s						
STKA	**Stephens Creek**	67.39	179	P	P	00 30 03.3	-0.1
	comp=Z,3.4nm,0.7s,baz=338,slow=6.9,SNR=6.4						
STKA				LR	LR	00 59 33.8	
	comp=Z,31nm,18.0s,baz=26,slow=36						
VRH	**Novokhopyorsk**	67.79	318	*e*P	P	00 30 03.5	-2.4
VRH				pmax	pmax		
	comp=Z,10.0nm,0.8s						
OBN	**Obninsk**	68.45	323	*i* P	P	00 30 08.8	-1.1
OBN				pmax	pmax		
	comp=Z,9.0nm,0.9s						
LPSR	**Galich'ya Gora**	68.57	320	*e*P	P	00 30 10.0	-0.8
LPSR				pmax	pmax		
	comp=Z,20nm,0.8s						
VSR	**Storozhevoye**	69.17	319	*e*P	P	00 30 13.9	-0.6
VSR				pmax	pmax		
	comp=Z,10.0nm,0.8s						
FIA1	**FINESS Array S**	69.39	332	*e*P	P	00 30 15.4	-0.3
FINES	**FINESS Array B**	69.39	332	P	P	00 30 15.2	-0.5
	comp=Z,7.9nm,0.7s,baz=67,slow=5.8,SNR=25						
FINES				LR	LR	01 01 31.1	
	comp=Z,54nm,18.3s,baz=20,slow=36						
GOF	**Gofitskoye**	70.14	312⇑	*e*P	P	00 30 20.3	-0.3
NCK	**Nalchik**	70.61	310⇓	*e*P	P	00 30 23.5	0.0
NCK				pmax	pmax		
	comp=Z,9.0nm,0.7s						
ZEI	**Tsey**	70.78	309	*e*P	P	00 30 23.3	-1.5
ZEI				pmax	pmax		
	comp=Z,14nm,0.9s						
KBZ	**Khabaz**	70.92	310	P	P	00 30 25.2	-0.1
	comp=Z,11nm,0.9s,baz=65,slow=3.3,SNR=21						
KIV	**Kislovodsk**	70.93	311	*e*P	P	00 30 25.4	-0.2
KIV				pmax	pmax		
	comp=Z,26nm,0.9s						
KIV	**Kislovodsk**	70.93	311	*e*P	P	00 30 25.4	-0.2
	comp=Z,26nm,0.9s						
VSU	**Vasula**	70.97	329⇓	*e*P	P	00 30 24.9	-0.4
VSU				pmax	pmax		
	comp=Z,33nm,0.8s						
NEY	**Neytrino**	71.28	310⇓	*e*P	P	00 30 28.6	+0.8
NEY				pmax	pmax		
	comp=Z,1.0nm,0.7s						
SUMG	**Summit**	71.85	360	*i* P	P	00 30 32.1	+1.1
	comp=Z,11nm,0.9s						
SUMG	**Summit**	71.85	360	*i* P	P	00 30 32.1	+1.1
SUMG				pmax	pmax		
	comp=Z,11nm,0.9s						
SUMG	**Summit**	71.85	360	*e*P	P	00 30 31.4	+0.4
	comp=Z,9.2nm,0.8s						
ANN	**Anapa**	73.64	314	*e*P	P	00 30 40.7	-0.8
ANN				*e*S	S	00 40 11.8	+4.5
ANN				pmax	pmax		
	comp=Z,18nm,0.9s						
AKASG	**Malin Array Be**	74.62	322	P	P	00 30 46.6	-0.6
	comp=Z,8.2nm,0.6s,baz=46,slow=6.4,SNR=35						
AKASG				LR	LR	01 05 16.0	
	comp=Z,44nm,20.2s,baz=330,slow=37						
KIEV	**Kiev**	74.64	322	*c i*P	P	00 30 46.6	-0.6
KIEV				pmax	pmax		
	comp=Z,14nm,0.8s						
KIEV	**Kiev**	74.64	322	*e*P	P	00 30 46.7	-0.5
	comp=Z,14nm,0.8s						
NB2	**NORSAR Subarra**	74.89	337	P	P	00 30 48.4	-0.2
	comp=Z,3.2nm,0.7s,baz=41,slow=5.9						
NOA	**NORSAR Array B**	74.89	337	P	P	00 30 48.4	-0.2
	comp=Z,6.9nm,0.8s,baz=40,slow=5.8,SNR=12						
NOA				LR	LR	01 06 48.0	
	comp=Z,22nm,20.1s,baz=305,slow=38						
FFC	**Flin Flon**	75.22	32	*e*P	P	00 30 51.5	+1.0
FFC				pmax	pmax		
	comp=Z,7.0nm,1.0s						
FFC	**Flin Flon**	75.22	32	*e*P	P	00 30 51.5	+1.0
	comp=Z,7.2nm,1.0s						
SIM	**Simferopol'**	75.47	315	*d i*P	P	00 30 51.9	-0.3
SIM				pmax	pmax		
	comp=Z,15nm,0.8s						
SIM				MLR	MLR		
	comp=E,50nm,17.6s						
LRM	**Limekiln Ridge**	75.67	44	*e*P	P	00 30 55.4	+1.8
DLMT	**Dillon**	75.86	44	*e*P	P	00 30 56.9	+2.3
	comp=E,5.4nm,1.0s						
BOZ	**Bozeman (W)**	76.23	43	*e*P	P	00 30 58.6	+1.9
BOZ				pmax	pmax		
	comp=Z,3.0nm,0.8s						
BOZ	**Bozeman (W)**	76.23	43	*e*P	P	00 30 58.6	+1.9
	comp=Z,2.6nm,0.8s						
SORM	**Soroca**	76.67	320⇓	*i*P	P	00 30 58.5	-0.4
H17A	**Grant Village**	77.59	44	*e*P	P	00 31 07.9	+3.4
	comp=Z,4.1nm,0.9s						
IAS	**Iasi**	77.69	320⇑	*i*P	P	00 31 04.9	+0.3
IMW	**Indian Meadow**	77.69	44	*e*P	P	00 31 07.8	+2.6
	comp=Z,2.7nm,0.9s						
LVV	**L'vov**	77.75	323	*e*P	P	00 31 05.1	+0.2
LEOM	**Leova**	77.78	319⇑	*i*P	P	00 31 05.2	0.0
KWP	**Kalwaria Pacla**	78.51	324	*e*P	P	00 31 09.7	+0.5
KWP	**Kalwaria Pacla**	78.51	324	⇓*i*P	P	00 31 09.7	+0.5
KWP	**Kalwaria Pacla**	78.51	324	*e*P	P	00 31 09.7	+0.5
TESR	**Tescani**	78.60	320⇑	*i*P	P	00 31 09.8	+0.1
BUR08	**Bucovina Ar. S**	78.61	321	*e*P	P	00 31 10.1	+0.2
BURAR	**Bucovina Array**	78.62	321⇑	*i*P	P	00 31 10.2	+0.3
CFR	**Carcaliu**	78.67	318⇑	*i*P	P	00 31 09.9	-0.2
HWUT	**Hardware Ranch**	78.74	47	*e*P	P	00 31 13.0	+2.2
	comp=Z,3.7nm,1.0s						
DUG	**Dugway, Tooele**	78.86	48	*e*P	P	00 31 13.7	+2.2
DUG				pmax	pmax		
	comp=Z,4.0nm,1.0s						
DUG	**Dugway, Tooele**	78.86	48	*e*P	P	00 31 13.7	+2.2
	comp=Z,3.8nm,1.0s						
BR131	**Keskin Array S**	78.89	311	*e*P	P	00 31 11.9	+0.2
BRTR	**Keskin Array B**	78.89	311	P	P	00 31 11.3	-0.3
	comp=Z,4.2nm,0.7s,baz=119,slow=3.6,SNR=30						
BRTR				LR	LR	01 08 15.0	
	comp=Z,8.1nm,18.7s,baz=40,slow=37						
TIRR	**Tirgusor**	78.98	317⇑	*i*P	P	00 31 11.9	+0.1
VRI	**Vrincioaia**	78.98	319⇑	*i*P	P	00 31 12.7	+0.8
PLOR	**Plostina**	79.03	319⇓	*i*P	P	00 31 12.6	+0.4
HARR	**Harsova**	79.10	318⇓	*i*P	P	00 31 12.9	+0.5
TCUT	**Toone Canyon**	79.14	47	*e*P	P	00 31 15.6	+2.5
	comp=Z,15nm,0.9s						
BW06	**Boulder Array**	79.19	45	*e*P	P	00 31 13.7	+0.4
PD31	**Pinedale Array**	79.19	45	*e*P	P	00 31 14.6	+1.2
PDAR	**Pinedale Array**	79.19	45	P	P	00 31 14.1	+0.7
	comp=Z,1.1nm,0.6s,baz=275,slow=2.4,SNR=14						
KOLS	**Kolonicke sedl**	79.19	324	*e*P	P	00 31 12.8	-0.1
KOLS				pmax	pmax		
	comp=Z,4.0nm,0.9s						
KOLS	**Kolonicke sedl**	79.19	324	*e*P	P	00 31 12.8	-0.1
BR231	**Keskin MP Arra**	79.35	312	*e*P	P	00 31 12.2	-1.8
STHS	**Stebnicka Huta**	79.35	324	*e*P	P	00 31 14.8	+1.0
STHS				pmax	pmax		
	comp=Z,6.0nm,0.9s						
STHS	**Stebnicka Huta**	79.35	324	*e*P	P	00 31 14.8	+1.0
ARCR	**ARCALIA**	79.41	321⇑	*i*P	P	00 31 15.6	+1.4
NLU	**North Lily Min**	79.46	48	*e*P	P	00 31 16.9	+2.0
	comp=Z,2.6nm,1.0s						
OJC	**Ojcow**	79.46	326	*e*P	P	00 31 14.6	+0.2
OJC	**Ojcow**	79.46	326	*e*P	P	00 31 15.0	+0.6
OJC				pmax	pmax		
	comp=Z,14nm,0.9s						
OJC	**Ojcow**	79.46	326	*e*P	P	00 31 15.0	+0.6
	comp=Z,14nm,0.9s						
PGOR	**Pogoanele**	79.47	318⇓	*i*P	P	00 31 15.3	+0.8
MSAB	**Monastry St. A**	79.54	317⇑	*i*P	P	00 31 15.5	+0.6
ISR	**Istrita**	79.57	319⇑	*i*P	P	00 31 16.4	+1.3
CRVS	**Cervenica-Dubn**	79.60	324	*e*P	P	00 31 15.5	+0.3
CRVS	**Cervenica-Dubn**	79.60	324	*e*P	P	00 31 15.5	+0.3
DOPR	**Dopca**	79.62	320⇓	*i*P	P	00 31 16.3	+1.0
MLR	**Muntele Rosu**	79.64	319⇑	*i*P	P	00 31 16.7	+1.1
NIE	**Niedzica**	79.79	325	*e*P	P	00 31 16.9	+0.7
NIE	**Niedzica**	79.79	325	*e*P	P	00 31 16.9	+0.7
SULR		80.01	319⇑	*i*P	P	00 31 17.9	+0.5
CJR	**Cluj-Napoca**	80.05	321⇑	*i*P	P	00 31 18.6	+0.9
VOIR		80.15	320⇑	*i*P	P	00 31 19.0	+0.7
KECS	**Kecovo**	80.36	324	*e*P	P	00 31 19.4	+0.2
KECS				pmax	pmax		
	comp=Z,2.0nm,0.9s						
KECS	**Kecovo**	80.36	324	*e*P	P	00 31 19.4	+0.2
ARR	**Arges**	80.42	320⇑	*i*P	P	00 31 20.6	+0.9
DRGR		80.44	322⇓	*i*P	P	00 31 20.1	+0.3
HUMR	**Humele**	80.79	319⇓	*i*P	P	00 31 21.6	0.0
MORC	**Moravsky Berou**	80.80	326⇓	*i*P	P	00 31 22.0	+0.3
MORC	**Moravsky Berou**	80.80	326	*e*P	P	00 31 22.3	+0.6
MORC				pmax	pmax		
	comp=Z,34nm,1.0s						
MORC	**Moravsky Berou**	80.80	326	*e*P	P	00 31 22.3	+0.6
	comp=Z,34nm,1.0s						
SRU	**San Rafael Swe**	80.92	48	*e*P	P	00 31 24.6	+1.9
SRU				pmax	pmax		
	comp=Z,4.0nm,0.7s						
SRU	**San Rafael Swe**	80.92	48	*e*P	P	00 31 24.6	+1.9
	comp=Z,4.3nm,0.7s						
KRLC	**Kraliky**	80.92	327	*e*P	P	00 31 22.6	+0.3
KRLC	**Kraliky**	80.92	327	*e*P	P	00 31 22.6	+0.3
DPC	**Dobruska-Polom**	80.93	327	*e*P	P	00 31 22.7	+0.4
DPC				*ep*P	pP	00 31 41.5	+2.8
DPC	**Dobruska-Polom**	80.93	327	*e*P	P	00 31 22.7	+0.4
DPC				*e*		00 31 41.5	
UPC	**Upice**	80.95	328	*e*P	P	00 31 22.8	+0.4
UPC	**Upice**	80.95	328	*e*P	P	00 31 22.8	+0.4
ULM	**Lac du Bonnet**	81.02	33	P	P	00 31 22.9	+0.2
	comp=Z,2.6nm,0.7s,baz=318,slow=3.8,SNR=3.0						
PSZ	**Piszkesteto**	81.04	324⇑	*i*P	P	00 31

comp=Z,5.2nm,1.1s
SOKA Soboth 84.22 326 *i* P **P 00 31 39.6 0.0**
comp=Z,10.0nm,0.9s
VAY Valandovo 84.27 318 *i* P **P 00 31 40.2 +0.4**
SKO Skopje 84.43 319 *i* P **P 00 31 41.6 +1.0**
BLY Banja Luka 84.62 323 ⇑ *i* P **P 00 31 41.8 +0.3**
PPT Papeete 85.00 116 LR LR 01 05 28.2
comp=Z,54nm,20.4s,baz=3.0,slow=33
PPT2 Papeete2 85.01 116 *e*LR LR 00 58 37.5
comp=Z,122nm,26.8s
PDG Podgorica 85.25 320 ⇑ *i* P **P 00 31 44.8 +0.1**
OHR Ohrid 85.37 319 *i* P **P 00 31 44.2 -1.2**
BFO Black Forest 85.84 330 *i* P **P 00 31 47.5 -0.1**
BFO Black Forest 85.84 330 *e*P **P 00 31 46.5 -1.0**
comp=Z,6.6nm,1.0s
T25A Trinidad 85.86 46 *e*P **P 00 31 49.8 +1.6**
comp=Z,3.1nm,0.8s
ANMO Albuquerque 86.09 49 ⇓ *e*P **P 00 31 50.9 +1.6**
ANMO pmax pmax
comp=Z,2.0nm,1.2s
FUORN Ofenpass-Fuorn 86.38 328 *e*P **P 00 31 50.8 +0.3**
comp=Z,5.4nm,0.7s
SCHQ Schefferville 86.73 15 P **P 00 31 52.3 +0.5**
comp=Z,4.8nm,0.7s,baz=314,slow=4.5,SNR=6.8
LAST Lasithi 86.79 312 ⇑ *i* P **P 00 31 52.5 -0.1**
TAOE Nuku Hiva Isla 86.84 103 *e*LR LR 00 59 26.8
comp=Z,185nm,31.5s
AQU L'Aquila 88.24 324 *e*P **P 00 31 59.5 +0.2**
AQU pmax pmax
comp=Z,11nm,0.9s
AQU L'Aquila 88.24 324 *e*P **P 00 31 59.5 +0.2**
comp=Z,11nm,0.9s
TBI Tubuai 88.78 120 *e*LR LR 01 00 21.3
comp=Z,105nm,32.5s
TX31 Lajitas Ar. Si 91.61 52 *e*P **P 00 32 16.5 +1.1**
TXAR Lajitas Array 91.61 52 P **P 00 32 16.4 +1.1**
comp=Z,0.9nm,0.6s,baz=310,slow=2.9,SNR=11
TXAR LR LR 01 09 36.5
comp=Z,18nm,20.2s,baz=0.0,slow=33
ESDC Sonseca Array 97.90 333 LR LR 01 24 59.6
comp=Z,4.7nm,19.3s,baz=310,slow=40
DBIC Dimbokro 126.45 315 PKP **PKPdf 00 38 10.6 -0.7**
comp=Z,3.5nm,0.7s,baz=44,slow=1.4,SNR=5.8
SNAA Sanae 139.34 197 PKP PKPpre 00 38 29.8
VNA2 Neumayer--Watz 140.92 196 PKP PKPpre 00 38 32.6
baz=98,slow=2.2
VNA3 Neumayer Olymp 141.18 195 PKP PKPpre 00 38 30.7
VNA1 Neumayer--Stat 141.32 196 PKP PKPpre 00 38 35.6
SAML Samuel 145.77 44 *e*PKPdf **PKPbc 00 38 47.9 +0.5**
PMSA Palmer Station 147.60 161 *e*PKPab **PKPab 00 38 55.6 +2.2**
LPAZ La Paz 148.13 60 PKPbc **PKPbc 00 38 55.4 +0.6**
comp=Z,3.3nm,0.8s,baz=0.0,slow=7.5,SNR=16
LPAZ La Paz 148.13 60 *e*PKP2 **PKPbc 00 38 55.9 +1.1**
LPAZ La Paz 148.13 60 *e*PKPbc **PKPbc 00 38 55.9 +1.1**
LVC Limon Verde 151.49 70 PKPbc **PKPbc 00 39 03.6 +1.0**
comp=Z,14nm,0.8s,baz=30,slow=2.9,SNR=5.4

*ISCJB **25** 00:25:35.2±0.5, 39°.10N±0°.03×29°.03E±0°.03, h2km±8km, Error ellipse: s-maj=5.8km s-min=4.3km az=9.9*
*CSEM **25** 00:25:35.4±0.1, 39°.10N×29°.03E, h5km, MD2.6, Error ellipse: s-maj=2.2km s-min=2.0km az=37.0*
*ISK **25** 00:25:35.0, 39°.11N×29°.05E, h5km, MD2.7*
*DDA **25** 00:25:35.2, 39°.13N×29°.03E, h7km, Md2.6*
ISC 25 00:25:35.6±1.0, 39°.11N±0°.03×29°.02E±0°.02, h6km±10km, n30, σ0s33/42, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**254**	P	**Pg**	**00 25 40.7**	**+0.2**
DEMI				S	**Sg**	**00 25 44.0**	**+0.2**
DEMI	**Demirci**	**0.25**	**254**	*i* P	**Pg**	**00 25 40.6**	**+0.2**
DEMI				*i* S	**Sg**	**00 25 44.0**	**+0.2**
GDZ	**Gediz**	**0.36**	**93**	P	**Pg**	**00 25 42.6**	**0.0**
GDZ				S	**Sg**	**00 25 47.8**	**+0.5**
GDZ	**Gediz**	**0.36**	**93**	*i* P	**Pg**	**00 25 42.6**	**0.0**
GDZ				*i* S	**Sg**	**00 25 47.9**	**+0.5**
TVSB	**Tavsanli**	**0.48**	**45**	*e*PG	**Pg**	**00 25 44.8**	**-0.1**
TVSB				*e*SG	**Sg**	**00 25 51.0**	**-0.2**
TVSB	**Tavsanli**	**0.48**	**45**	*e*Pg	**Pg**	**00 25 44.8**	**-0.1**
TVSB				*e*Sg	**Sg**	**00 25 51.0**	**-0.2**
DST	**Dursunbey**	**0.58**	**328**	*e*PG	**Pg**	**00 25 46.7**	**-0.2**
DST	**Dursunbey**	**0.58**	**328**	*e*Pg	**Pg**	**00 25 46.7**	**-0.2**
DURS	**Dursunbey**	**0.65**	**319**	P	**Pg**	**00 25 47.5**	**-0.6**
DURS	**Dursunbey**	**0.65**	**319**	*i* P	**Pg**	**00 25 47.5**	**-0.6**
KULA	**Kula-Manisa**	**0.66**	**206**	*e*PG	**Pg**	**00 25 48.0**	**-0.2**
KULA	**Kula-Manisa**	**0.66**	**206**	*e*Pg	**Pg**	**00 25 48.0**	**-0.2**
KHAL	**Karahalli**	**0.82**	**153**	P	**Pg**	**00 25 51.5**	**+0.1**
KHAL				S	**Sg**	**00 26 01.4**	**-0.7**
KHAL	**Karahalli**	**0.82**	**153**	*i* P	**Pg**	**00 25 51.5**	**+0.1**
KHAL				*i* S	**Sg**	**00 26 01.4**	**-0.7**
ORLT	**Orhaneli**	**0.94**	**354**	*e*PG	**Pb**	**00 25 54.2**	**-0.1**
ORLT	**Orhaneli**	**0.94**	**354**	*e*Pg	**Pb**	**00 25 54.2**	**-0.1**
BALB	**Balikesir**	**1.03**	**301**	*e*PG	**Pb**	**00 25 55.8**	**-0.1**
BALB				*e*SG	**Sb**	**00 26 10.3**	**+0.7**
BALB	**Balikesir**	**1.03**	**301**	*e*Pg	**Pb**	**00 25 55.8**	**-0.1**
BALB				*e*Sg	**Sb**	**00 26 10.3**	**+0.7**
CAVI	**Cavuskoy**	**1.26**	**30**	*e*PN	**Pg**	**00 25 59.8**	**0.0**
CAVI	**Cavuskoy**	**1.26**	**30**	*e*Pn	**Pg**	**00 25 59.8**	**0.0**
MDNY	**Mudanya-Bursa**	**1.26**	**355**	*e*PN	**Pn**	**00 25 59.8**	**0.0**
MDNY	**Mudanya-Bursa**	**1.26**	**355**	*e*Pn	**Pg**	**00 25 59.8**	**0.0**
KCTX	**Karacabey (Bur**	**1.26**	**336**	*e*PN	**Pn**	**00 25 59.7**	**-0.1**
KCTX	**Karacabey (Bur**	**1.26**	**336**	*e*Pn	**Pn**	**00 25 59.7**	**-0.1**
BORA	**Eskisehir**	**1.35**	**55**	P	**Pn**	**00 26 00.7**	**-0.3**
BORA				S	**Sn**	**00 26 19.3**	**0.0**
BORA	**Eskisehir**	**1.35**	**55**	*i* P	**Pn**	**00 26 00.7**	**-0.3**
BORA				*i* S	**Sn**	**00 26 19.3**	**0.0**
ARMT	**Armutlu**	**1.46**	**355**	*e*PN	**Pb**	**00 26 03.1**	**-0.1**
ARMT	**Armutlu**	**1.46**	**355**	*e*Pn	**Pb**	**00 26 03.1**	**-0.1**
GULT	**Gulveren**	**1.75**	**41**	*e*PN	**Pn**	**00 26 06.7**	**+0.1**
GULT	**Gulveren**	**1.75**	**41**	*e*Pn	**Pn**	**00 26 06.7**	**+0.1**

*NIED **25** 00:27:00, 38°.70N×143°.30E, h26km, Mw3.7 Best double couple: M=3.89000×10^14 NP1:φs193.00000°, δ46.00000°, λ3.00000° NP2:φs101.00000°, δ88.00000°, λ136.00000°.*
*IDC **25** 00:27:43.1±1.3, 38°.39N×143°.80E, h0km, mb3.7/6, mb1 3.8/7, mb1mx3.6/34, mbtmp3.7/7, ML3.5/1, MS2.8/1, Ms1 2.8/1, ms1mx2.4/41, Error ellipse: s-maj=30.5km s-min=24.1km az=117.0*
*ISCJB **25** 00:27:45.7±2.0, 38°.69N±0°.05×143°.29E±0°.07, h22km±18km, mb3.6/6, Error ellipse: s-maj=10.9km s-min=7.3km az=41.8*
*JMA **25** 00:27:46.0±0.2, 38°.70N×143°.30E, h29km, M3.5*
ISC 25 00:27:46.2±3.5, 38°.80N±0°.07×143°.20E±0°.09, h6km±19km, n22, σ1s22/17, mb3.7/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**1.23**	**284**	P	Pn	00 28 09.3	-0.6
OFUJ				*e*S	**Sg**	**00 28 25.5**	**-0.2**
MIYJ	**Miyakonagasawa**	**1.33**	**306**	P	Pn	00 28 10.6	-0.6
MIYJ				*e*S	**Sn**	**00 28 28.8**	**-0.4**
JIO	**Ouri**	**1.49**	**257**	P	Pn	00 28 12.4	-1.0
JIO				S	**Sn**	**00 28 31.3**	**-1.9**
JMK	**Ichinoseki**	**1.56**	**276**	P	**Pn**	**00 28 14.1**	**-0.2**
JMK				*e*S	**Sn**	**00 28 34.2**	**-0.6**
JOM	**Ohasama**	**1.63**	**295**	P	**Pn**	**00 28 15.7**	**+0.3**
JOU	**Okura**	**2.04**	**259**	P	**Pn**	**00 28 20.6**	**-0.4**
JANG	**Nango**	**2.05**	**321**	P	**Pn**	**00 28 20.8**	**-0.3**
JMM	**Marumori**	**2.11**	**245**	P	Pn	00 28 20.3	-1.7
JFK	**Kawauchi**	**2.33**	**233**	P	Pn	00 28 22.5	-2.5
JFK				*e*S	Sn	00 28 49.5	-4.4
JFT	**Otama**	**2.59**	**241**	P	**Pn**	**00 28 28.2**	**-0.4**
JFT				*e*S	**Sn**	**00 28 58.5**	**-2.0**
MJAR	**Matsushiro Arr**	**4.55**	**242**	Pn	**Pn**	**00 28 55.6**	**0.0**
1.9nm,0.3s,baz=69,slow=12,SNR=12							
MJAR				LR	LR	00 31 10.1	
comp=Z,100nm,18.6s,baz=15,slow=43							
MAT	**Matsushiro**	**4.56**	**242**	P	**Pn**	**00 28 56.1**	**+0.5**
MAT				*e*S	**Sn**	**00 29 50.7**	**+1.8**
ASAJ	**Asahikawa**	**5.34**	**355**	Pn	**Pn**	**00 29 06.2**	**-0.1**
2.6nm,0.3s,baz=187,slow=16,SNR=4.2							
ASAJ				Sn	Sn	00 30 05.2	-2.9
0.8nm,0.3s,baz=233,slow=20,SNR=2.9							
SEY	**Seymchan**	**24.80**	**10**	P	**P**	**00 33 08.9**	**+0.3**
2.5nm,0.5s,baz=206,slow=8.8,SNR=5.1							
H11N2	**WAKE ISLAND Hy 27.94**	**126**		T	T	01 02 36.5	
baz=318,slow=74,SNR=12							
H11N1	**WAKE ISLAND Hy 27.95**	**126**		T	T	01 02 37.4	
baz=318,slow=74,SNR=7.9							
H11N3	**WAKE ISLAND Hy 27.95**	**126**		T	T	01 02 37.4	
baz=318,slow=74,SNR=12							
SONM	**Songino Array**	**28.04**	**301**	P	P	00 33 42.6	+4.4
0.2nm,0.4s,baz=93,slow=6.1,SNR=2.2							
ZALV	**Zalesovo Beam**	**41.80**	**311**	P	P	00 35 38.8	+2.5
0.4nm,0.3s,baz=82,slow=7.8,SNR=3.4							
MKAR	**Makanchi Array**	**44.41**	**301**	P	**P**	**00 35 59.8**	**+2.3**
0.3nm,0.5s,baz=86,slow=9.5,SNR=4.2							
ILAR	**Eielson Array**	**47.25**	**33**	P	**P**	**00 36 18.2**	**-1.5**
0.6nm,0.6s,baz=268,slow=6.2,SNR=7.1							
WRA	**Warramunga Arr**	**59.02**	**190**	P	P	00 37 42.5	-4.2
0.9nm,0.5s,baz=8.8,slow=7.1,SNR=7.7							

*CSEM **25** 00:29:30.6, 43°.88N×12°.02E, h7km, MD2.2/8*
ROM 25 00:29:30.6±0.2, 43°.88N×12°.02E, h7km±2km, Md2.2/8, Ml1.3/4, Error ellipse: s-maj=3.3km s-min=1.6km az=40.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFI	**Santa Sofia**	**0.13**	**282**	Pg	Pg	00 29 34.0	+0.6
SFI				Sg	Sg	00 29 36.4	+1.1
SFI	**Santa Sofia**	**0.13**	**282**	Pg	Pg	00 29 34.0	+0.6
SFI				Sg	Sg	00 29 36.4	+1.1
ASQU	**Asqua**	**0.19**	**244**	Pg	Pg	00 29 35.2	+0.8
ASQU				Sg	Sg	00 29 38.3	+1.3
ASQU	**Asqua**	**0.19**	**244**	Pg	Pg	00 29 35.2	+0.8
ASQU				Sg	Sg	00 29 38.3	+1.3
BADI	**Badiali**	**0.40**	**156**	Pg	Pg	00 29 39.0	+0.6
BADI				Sg	Sb	00 29 45.9	-0.5
48nm,0.3s							
BADI	**Badiali**	**0.40**	**156**	Pg	Pg	00 29 39.0	+0.6
BADI				Sg	Sb	00 29 45.9	-0.5
48nm,0.3s							
PIEI	**Pieia**	**0.51**	**132**	Pg	Pg	00 29 40.7	+0.3
PIEI				Sg	Sb	00 29 49.3	-0.1
9.0nm,0.2s							
PIEI	**Pieia**	**0.51**	**132**	Pg	Pg	00 29 40.7	+0.3
PIEI				Sg	Sb	00 29 49.3	-0.1
9.0nm,0.2s							
ATPC	**Poggio Castell**	**0.51**	**141**	Pg	Pg	00 29 40.9	+0.5
ATPC	**Poggio Castell**	**0.51**	**141**	Pg	Pg	00 29 40.9	+0.5
SEI	**Scarperia**	**0.51**	**290**	Pg	Pg	00 29 41.1	+0.6
SEI				Sg	Sb	00 29 49.2	-0.4
SEI	**Scarperia**	**0.51**	**290**	Pg	Pg	00 29 41.1	+0.6
SEI				Sg	Sb	00 29 49.2	-0.4
ATVO	**AVT- Monte Val**	**0.57**	**151**	Pg	Pg	00 29 42.1	+0.5
ATVO				Sg	Sb	00 29 51.9	+0.6
8.0nm,0.5s							
ATVO	**AVT- Monte Val**	**0.57**	**151**	Pg	Pg	00 29 42.1	+0.5
ATVO				Sg	Sb	00 29 51.9	+0.6
8.0nm,0.5s							
FSSB	**Fossombrone**	**0.58**	**109**	Pg	Pg	00 29 42.2	+0.5
FSSB				Sg	Sb	00 29 52.1	+0.6
23nm,0.2s							
FSSB	**Fossombrone**	**0.58**	**109**	Pg	Pg	00 29 42.2	+0.5
FSSB				Sg	Sb	00 29 52.1	+0.6
23nm,0.2s							
SSFR	**Montelago di S**	**0.71**	**128**	Pg	Pg	00 29 44.6	+0.4
SSFR				Sg	Sb	00 29 55.7	+0.4
SSFR	**Montelago di S**	**0.71**	**128**	Pg	Pg	00 29 44.6	+0.4
SSFR				Sg	Sb	00 29 55.7	+0.4
ATTE	**AVT- Monte Tez**	**0.72**	**160**	Pg	Pg	00 29 44.6	+0.1
ATTE	**AVT- Monte Tez**	**0.72**	**160**	Pg	Pg	00 29 44.6	+0.1

*CSEM **25** 00:29:30.6±0.1, 40°.55N×22°.83E, h10km, ML1.2, Error ellipse: s-maj=2.8km s-min=2.3km az=71.0*
*ATH **25** 00:29:30.7, 40°.55N×22°.82E, h11km±3km, ML1.2/5, Error ellipse: s-maj=3.9km s-min=1.0km az=56.0*
*SKO **25** 00:29:31.5, 40°.54N×22°.80E, h2km*
THE 25 00:29:31.0, 40°.55N×22°.81E, h10km±2km, ML1.3/9, Error ellipse: s-maj=2.5km s-min=0.5km az=62.0, Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THE	**Thessaloniki**	**0.14**	**56**	P	Pg	00 29 34.2	0.0
THE				S	Sg	00 29 36.2	-0.2
THE	**Thessaloniki**	**0.14**	**56**	P	Pg	00 29 34.2	0.0
THE				S	Sg	00 29 35.7	-0.7
THE	**Thessaloniki**	**0.14**	**56**	P	Pg	00 29 34.2	+0.1
THE				S	Sg	00 29 35.7	-0.7
THE				AML	AML	00 29 36.9	
comp=N,357μm,0.3s							
THE				AML	AML	00 29 37.0	
comp=E,259μm,0.2s							
HORT	**Hortiatis**	**0.22**	**78**	P	Pg	00 29 35.5	-0.1
HORT				S	Sg	00 29 39.3	+0.5
HORT	**Hortiatis**	**0.22**	**78**	P	Pg	00 29 35.7	+0.1
HORT				S	Sg	00 29 38.7	-0.1
HORT	**Hortiatis**	**0.22**	**78**	P	Pg	00 29 35.7	+0.1
HORT				S	Sg	00 29 38.7	0.0
SOH	**Sokhos**	**0.49**	**57**	P	Pg	00 29 40.4	-0.2
SOH				S	Sb	00 29 48.4	-0.7
SOH	**Sokhos**	**0.49**	**57**	P	Pg	00 29 40.4	-0.2
SOH				S	Sb	00 29 48.2	-0.9
SOH	**Sokhos**	**0.49**	**57**	P	Pg	00 29 40.6	+0.1
SOH				S	Sb	00 29 48.1	-0.9
SOH				AML	AML	00 29 50.2	
comp=E,80μm,0.2s							
SOH				AML	AML	00 29 50.3	
comp=N,85μm,0.3s							
GRG	**Griva**	**0.51**	**322**	P	Pg	00 29 40.7	-0.2
GRG				S	Sg	00 29 48.4	+0.7
GRG	**Griva**	**0.51**	**322**	P	Pg	00 29 40.8	-0.1
GRG				S	Sg	00 29 47.7	0.0
GRG	**Griva**	**0.51**	**322**	P	Pg	00 29 40.8	-0.2
GRG				S	Sg	00 29 47.7	0.0
GRG				AML	AML	00 29 52.8	
comp=E,55μm,0.2s							
GRG				AML	AML	00 29 53.5	
comp=N,56μm,0.5s							
LIT	**Litokhoron**	**0.52**	**209**	P	Pg	00 29 41.1	+0.1
LIT				S	Sg	00 29 48.5	+0.7
LIT	**Litokhoron**	**0.52**	**209**	P	Pg	00 29 41.1	+0.1
LIT				S	Sg	00 29 48.5	+0.7
LIT	**Litokhoron**	**0.52**	**209**	P	Pg	00 29 41.0	-0.1
PLG	**Polygyros**	**0.52**	**110**	P	Pg	00 29 40.7	-0.3
PLG				S	Sg	00 29 48.1	+0.3
PLG	**Polygyros**	**0.52**	**110**	P	Pg	00 29 40.7	-0.3
PLG				S	Sg	00 29 47.4	-0.4
PLG	**Polygyros**	**0.52**	**110**	P	Pg	00 29 40.7	-0.3
PLG				S	Sg	00 29 47.4	-0.4
PLG				AML	AML	00 29 48.4	
comp=E,56μm,0.2s							
PLG				AML	AML	00 29 49.9	
comp=N,64μm,0.3s							
KNT	**Kendrikon**	**0.61**	**6**	P	Pg	00 29 42.6	-0.3
KNT				S	Sg	00 29 51.1	+0.2
KNT	**Kendrikon**	**0.61**	**6**	P	Pg	00 29 42.6	-0.3
KNT				S	Sg	00 29 50.8	-0.1
KNT	**Kendrikon**	**0.61**	**6**	P	Pg	00 29 42.6	-0.3
KNT				S	Sg	00 29 50.8	-0.1
KNT				AML	AML	00 29 56.6	
comp=N,43μm,0.2s							
KNT				AML	AML	00 29 57.2	
comp=E,37μm,0.3s							
VAY	**Valandovo**	**0.79**	**347**	*i* Pg	Pg	00 29 45.9	-0.3
VAY				*i* Sg	Sg	00 29 56.7	+0.2
VAY				*e*Lg	Lg	00 29 58.8	
comp=N,5.5nm,0.3s							
VAY				*e*Lg	Lg	00 29 59.2	
comp=E,4.7nm,0.3s							
VAY	**Valandovo**	**0.79**	**347**	*i* Pg	Pg	00 29 45.8	-0.4
VAY				*i* Sg	Sg	00 29 56.6	+0.1
VAY				*e*Lg	Lg	00 29 58.7	
comp=E,5.5nm,0.3s							
SRS	**Serrai**	**0.82**	**46**	P	Pg	00 29 45.8	-1.0
SRS				S	Sb	00 29 58.6	+0.2
SRS	**Serrai**	**0.82**	**46**	P	Pg	00 29 45.8	-1.0
SRS				S	Sb	00 29 58.6	+0.2
SRS	**Serrai**	**0.82**	**46**	P	Pg	00 29 45.6	-1.1
PAIG	**Paliouri**	**0.91**	**133**	P	Pg	00 29 47.6	-0.9
PAIG				S	Sb	00 30 01.3	+0.2
PAIG	**Paliouri**	**0.91**	**133**	P	Pg	00 29 47.6	-0.9
PAIG				S	Sg	00 30 00.2	-0.2
PAIG	**Paliouri**	**0.91**	**133**	P	Pg	00 29 47.3	-1.2
PAIG				S	Sg	00 30 00.2	-0.2
NVR	**Nevrokopi**	**1.12**	**45**	P	Pb	00 29 51.5	-1.1

*ISK **25** 00:32:43.8, 39°.10N×29°.09E, h9km, MD2.7*
*ISCJB **25** 00:32:44.1±0.5, 39°.11N±0°.03×29°.03E±0°.04, h6km±6km, Error ellipse: s-maj=5.1km s-min=4.8km az=29.8*
*DDA **25** 00:32:44.2, 39°.10N×29°.02E, h7km, Md2.4*
*CSEM **25** 00:32:44.4±0.1, 39°.12N×29°.04E, h8km, MD2.4, Error ellipse: s-maj=2.1km s-min=1.8km az=60.0*
ISC 25 00:32:44.4±0.9, 39°.11N±0°.02×29°.02E±0°.03, h12km±10km, n32, σ0s31/42, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**254**	P	**Pg**	**00 32 49.7**	**+0.2**
DEMI				S	**Sg**	**00 32 53.0**	**-0.1**
DEMI	**Demirci**	**0.25**	**254**	*i* P	**Pg**	**00 32 49.7**	**+0.2**
DEMI				*i* S	**Sg**	**00 32 53.0**	**-0.1**
GDZ	**Gediz**	**0.36**	**94**	P	**Pg**	**00 32 51.8**	**+0.2**
GDZ				S	**Sg**	**00 32 56.6**	**+0.1**
GDZ	**Gediz**	**0.36**	**94**	*i* P	**Pg**	**00 32 51.8**	**+0.2**
GDZ				*i* S	**Sg**	**00 32 56.6**	**+0.1**
TVSB	**Tavsanli**	**0.48**	**45**	*e*PG	**Pg**	**00 32 53.3**	**-0.5**
TVSB				*e*SG	**Sg**	**00 32 59.7**	**-0.5**
TVSB	**Tavsanli**	**0.48**	**45**	*e*Pg	**Pg**	**00 32 53.3**	**-0.5**
TVSB				*e*Sg	**Sg**	**00 32 59.7**	**-0.5**
DURS	**Dursunbey**	**0.65**	**319**	P	**Pg**	**00 32 56.6**	**-0.3**
DURS	**Dursunbey**	**0.65**	**319**	*i* P	**Pg**	**00 32 56.6**	**-0.3**
KHAL	**Karahalli**	**0.83**	**153**	P	**Pb**	**00 33 00.8**	**0.0**
KHAL				S	**Sg**	**00 33 11.3**	**+0.1**
KHAL	**Karahalli**	**0.83**	**153**	*i* P	**Pb**	**00 33 00.8**	**0.0**
KHAL				*i* S	**Sg**	**00 33 11.3**	**+0.1**
KHL	**Karahalli**	**0.88**	**153**	*e*PG	**Pg**	**00 33 00.9**	**-0.4**
KHL				*e*SG	**Sg**	**00 33 12.8**	**-0.1**
KHL	**Karahalli**	**0.88**	**153**	*e*Pg	**Pg**	**00 33 01.0**	**-0.4**
KHL				*e*Sg	**Sg**	**00 33 12.8**	**-0.1**
AKS	**Akhisar**	**0.97**	**256**	*e*PG	**Pn**	**00 33 03.5**	**-0.3**
AKS	**Akhisar**	**0.97**	**256**	*e*Pg	**Pn**	**00 33 03.5**	**-0.3**
BALB	**Balikesir**	**1.03**	**301**	*e*PG	**Pn**	**00 33 04.8**	**+0.2**
BALB	**Balikesir**	**1.03**	**301**	*e*Pg	**Pn**	**00 33 04.8**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.26**	**355**	*e*PN	**Pb**	**00 33 08.2**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.26**	**355**	*e*Pn	**Pb**	**00 33 08.2**	**+0.2**
CAVI	**Cavuskoy**	**1.26**	**30**	*e*PN	**Pb**	**00 33 08.0**	**-0.1**
CAVI	**Cavuskoy**	**1.26**	**30**	*e*Pn	**Pb**	**00 33 08.0**	**-0.1**
KCTX	**Karacabey (Bur**	**1.26**	**336**	*e*PN	**Pg**	**00 33 08.8**	**+0.2**
KCTX	**Karacabey (Bur**	**1.26**	**336**	*e*Pn	**Pg**	**00 33 08.8**	**+0.2**
IZI	**Iznik**	**1.27**	**16**	*e*PN	**Pb**	**00 33 08.2**	**-0.1**
IZI	**Iznik**	**1.27**	**16**	*e*Pn	**Pb**	**00 33 08.2**	**-0.1**
GEMT	**Gemlik**	**1.33**	**6**	*e*PN	**Pb**	**00 33 09.1**	**-0.1**
GEMT	**Gemlik**	**1.33**	**6**	*e*Pn	**Pb**	**00 33 09.1**	**-0.1**
ADVT	**Abdulvahap**	**1.43**	**23**	*e*PN	**Pn**	**00 33 10.3**	**+0.1**
ADVT	**Abdulvahap**	**1.43**	**23**	*e*Pn	**Pn**	**00 33 10.3**	**+0.1**
ARMT	**Armutlu**	**1.46**	**355**	*e*PN	**Pn**	**00 33 10.9**	**+0.4**
ARMT	**Armutlu**	**1.46**	**355**	*e*Pn	**Pn**	**00 33 11.0**	**+0.4**
GULT	**Gulveren**	**1.75**	**41**	*e*PN	**Pn**	**00 33 15.3**	**+0.7**
GULT	**Gulveren**	**1.75**	**41**	*e*Pn	**Pn**	**00 33 15.4**	**+0.7**

*ISK **25** 00:34:43.7, 39°.12N×29°.09E, h8km, MD2.6*
*ISCJB **25** 00:34:44.6±0.5, 39°.14N±0°.03×29°.08E±0°.04, h8km±6km, Error ellipse: s-maj=5.5km s-min=5.0km az=138.1*
*CSEM **25** 00:34:44.7±0.1, 39°.13N×29°.09E, h10km, MD2.2, Error ellipse: s-maj=3.2km s-min=2.3km az=60.0*
*DDA **25** 00:34:45.1, 39°.12N×29°.09E, h7km, Md2.2*
ISC 25 00:34:44.4±1.1, 39°.12N±0°.03×29°.04E±0°.03, h9km±12km, n22, σ0s34/32, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**253**	P	**Pb**	**00 34 51.5**	**+0.1**
DEMI				S	**Sb**	**00 34 55.5**	**-0.6**
DEMI	**Demirci**	**0.27**	**253**	*i* P	**Pb**	**00 34 51.5**	**+0.1**
DEMI				*i* S	**Sb**	**00 34 55.5**	**-0.6**
GDZ	**Gediz**	**0.34**	**96**	P	**Pg**	**00 34 51.5**	**+0.2**
GDZ				S	**Sg**	**00 34 56.0**	**+0.2**
GDZ	**Gediz**	**0.34**	**96**	*i* P	**Pg**	**00 34 51.5**	**+0.2**
GDZ				*i* S	**Sg**	**00 34 56.0**	**+0.2**
TVSB	**Tavsanli**	**0.46**	**45**	*e*PG	**Pg**	**00 34 53.1**	**-0.3**
TVSB				*e*SG	**Sg**	**00 34 59.0**	**-0.6**
TVSB	**Tavsanli**	**0.46**	**45**	*e*Pg	**Pg**	**00 34 53.1**	**-0.3**
TVSB				*e*Sg	**Sg**	**00 34 59.0**	**-0.6**
DURS	**Dursunbey**	**0.65**	**317**	P	**Pb**	**00 34 58.4**	**+0.4**
DURS	**Dursunbey**	**0.65**	**317**	*i* P	**Pb**	**00 34 58.4**	**+0.4**
KHAL	**Karahalli**	**0.83**	**155**	P	**Pb**	**00 35 01.2**	**+0.2**
KHAL				S	**Sb**	**00 35 12.3**	**0.0**
KHAL	**Karahalli**	**0.83**	**155**	*i* P	**Pb**	**00 35 01.2**	**+0.2**
KHAL				*i* S	**Sb**	**00 35 12.3**	**0.0**
KHL	**Karahalli**	**0.88**	**155**	*e*PG	**Pg**	**00 35 00.9**	**-0.5**
KHL				*e*SG	**Sg**	**00 35 13.2**	**+0.3**
KHL	**Karahalli**	**0.88**	**155**	*e*Pg	**Pg**	**00 35 00.9**	**-0.5**
KHL				*e*Sg	**Sg**	**00 35 13.2**	**+0.3**
BALB	**Balikesir**	**1.04**	**300**	*e*PG	**Pg**	**00 35 04.6**	**+0.2**
BALB	**Balikesir**	**1.04**	**300**	*e*Pg	**Pg**	**

ILAR				pP	PcP	00 46 53.9	-0.7
	0.6nm,0.7s,baz=116,slow=4.1,SNR=4.9						
NOA	NORSAR Array B	81.70	29	P	P	00 47 29.8	+0.6
	0.6nm,0.6s,baz=276,slow=6.0,SNR=2.7						
GERES	GERESS Array B	84.43	42	P	P	00 47 43.7	+0.1
	0.7nm,0.7s,baz=270,slow=4.0,SNR=6.1						
ARCES	ARCESS Array B	86.10	20	P	P	00 47 51.0	-0.4
	2.3nm,0.5s,baz=275,slow=4.3,SNR=22						
FINES	FINESS Array B	88.67	28	P	P	00 48 03.7	-0.2
	2.4nm,1.0s,baz=321,slow=4.9,SNR=4.5						
SONM	Songino Array	122.86	356	PKP	PKPdf	00 54 04.7	-2.4
	0.3nm,0.5s,baz=72,slow=2.6,SNR=2.3						
ASAR	Alice Springs	145.98	241	PKPbc	PKPdf	00 54 48.9	-1.5
	1.8nm,0.5s,baz=118,slow=3.8,SNR=22						
WRA	Warramunga Arr	146.64	248	PKPbc	PKPdf	00 54 51.0	-0.6
	1.0nm,0.7s,baz=98,slow=2.9,SNR=7.6						

*ISCJB **25** 00:44:11.3±0.6, 39°.17N±0°.05×29°.04E±0°.04, h9km, Error ellipse: s-maj=7.6km s-min=3.8km az=159.7*
*CSEM **25** 00:44:11.4±0.2, 39°.19N×29°.04E, h5km, MD2.5, Error ellipse: s-maj=6.6km s-min=4.0km az=160.0*
*ISK **25** 00:44:11.2, 39°.22N×29°.03E, h5km, MD2.5*
*DDA **25** 00:44:11.3, 39°.11N×29°.06E, h7km, Md2.4*
ISC 25 00:44:11.6±0.9, 39°.18N±0°.05×29°.04E±0°.03, h9km, n22, σ0°51/30, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.29	242	P	Pg	00 44 17.2	-0.1
DEMI				S	Sg	00 44 21.2	0.0
DEMI	Demirci	0.29	242	*i* P	Pg	00 44 17.2	-0.1
DEMI				*i* S	Sg	00 44 21.2	0.0
GDZ	Gediz	0.35	104	P	Pg	00 44 18.3	-0.3
GDZ				S	Sg	00 44 23.1	-0.2
GDZ	Gediz	0.35	104	*i* P	Pg	00 44 18.3	-0.3
GDZ				*i* S	Sg	00 44 23.1	-0.2
TVSB	Tavsanli	0.42	50	PG	Pg	00 44 19.8	-0.1
TVSB				SG	Sg	00 44 26.1	+0.6
TVSB	Tavsanli	0.42	50	*i* Pg	Pg	00 44 19.8	-0.1
TVSB				*i* Sg	Sg	00 44 26.1	+0.6
AKS	Akhisar	1.00	253	*e*PG	Pg	00 44 30.7	-0.1
AKS				*e*SG	Sb	00 44 45.4	+0.9
AKS	Akhisar	1.00	253	*e*Pg	Pg	00 44 30.7	-0.1
AKS				*e*Sg	Sb	00 44 45.4	+0.9
BALB	Balikesir	1.01	298	*e*PG	Pg	00 44 30.8	-0.2
BALB	Balikesir	1.01	298	*e*Pg	Pg	00 44 30.8	-0.2
MDNY	Mudanya-Bursa	1.20	354	*e*PN	Pb	00 44 33.5	-0.9
MDNY	Mudanya-Bursa	1.20	354	*e*Pn	Pb	00 44 33.5	-0.9
KCTX	Karacabey (Bur	1.21	334	*e*PN	Pn	00 44 34.6	-0.1
KCTX	Karacabey (Bur	1.21	334	*e*Pn	Pn	00 44 34.6	-0.1
GEMT	Gemlik	1.26	5	*e*PN	Pn	00 44 34.7	-0.7
GEMT	Gemlik	1.26	5	*e*Pn	Pn	00 44 34.7	-0.7
ADVT	Abdulvahap	1.36	23	*e*PN	Pn	00 44 37.3	+0.5
ADVT	Abdulvahap	1.36	23	*e*Pn	Pn	00 44 37.3	+0.5
ARMT	Armutlu	1.39	354	*e*PN	Pn	00 44 37.9	+0.6
ARMT	Armutlu	1.39	354	*e*Pn	Pn	00 44 37.9	+0.6
GULT	Gulveren	1.69	42	*e*PN	Pb	00 44 42.7	-0.2
GULT	Gulveren	1.69	42	*e*Pn	Pb	00 44 42.7	-0.2

IDC 25 00:50:18.1±2.0, 36°.67N×141°.99E, h0km, mb3.6/4, mb1 3.7/5, mb1mx3.5/36, mbtmp3.5/5, ML3.3/1, MS3.5/2, Ms1 3.5/2, ms1mx2.5/38, Error ellipse: s-maj=46.5km s-min=27.0km az=59.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	3.04	269	Pn	Pn	00 51 07.2	-0.3
	4.2nm,0.3s,baz=90,slow=16,SNR=27						
MJAR				Sn	Sn	00 51 46.2	+1.5
	2.2nm,0.3s,baz=99,slow=23,SNR=7.8						
MAT	Matsushiro	3.05	269	P	Pn	00 51 09.6	+2.0
MAT				*e*S	Sb	00 51 49.0	-1.9
H11N2	WAKE ISLAND Hy	27.56	121	T	T	01 25 26.6	
	baz=314,slow=75,SNR=8.2						
H11N1	WAKE ISLAND Hy	27.57	121	T	T	01 25 27.9	
	baz=314,slow=75,SNR=6.5						
H11N3	WAKE ISLAND Hy	27.58	121	T	T	01 25 29.0	
	baz=314,slow=75,SNR=7.3						
SONM	Songino Array	28.37	304	P	P	00 56 13.5	-0.6
	0.6nm,0.5s,baz=103,slow=8.1,SNR=2.7						
ZALV	Zalesovo Beam	42.50	313	P	P	00 58 15.7	+0.8
	0.3nm,0.3s,baz=94,slow=9.1,SNR=2.7						
MKAR	Makanchi Array	44.70	303	P	P	00 58 32.0	-0.8
	0.3nm,0.6s,baz=92,slow=7.5,SNR=2.3						
MKAR				LR	LR	01 16 21.0	
	comp=Z,18nm,20.8s,baz=172,slow=35						
WRA	Warramunga Arr	56.77	189	P	P	01 00 04.0	0.0
	1.4nm,1.2s,baz=5.7,slow=7.0,SNR=3.8						
JMIC	Jan Mayen	70.58	350	LR	LR	01 34 47.3	
	comp=Z,116nm,18.2s,baz=292,slow=38						

IDC 25 00:51:14.4±6.8, 15°.92S×172°.89W, h0km, mb3.6/2, mb1 3.8/3, mb1mx3.6/35, mbtmp3.6/3, ML3.6/1, MS3.2/1, Ms1 3.2/1, ms1mx2.6/22, Error ellipse: s-maj=275.7km s-min=28.9km az=135.0, Samoa Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	Afiamalu	2.27	28	Pn	Pn	00 51 51.8	-1.5
	15nm,0.3s,baz=211,slow=12,SNR=11						
AFI				Sn	Sn	00 52 12.5	-10
	22nm,0.3s,baz=242,slow=8.3,SNR=6.6						
AFI				T	T	00 53 53.8	
	16nm,0.3s,baz=110,slow=21,SNR=4.1						
URZ	Urewera	23.93	200	LR	LR	01 04 23.6	
	comp=Z,62nm,21.4s,baz=19,slow=33						
WRA	Warramunga Arr	50.20	257	P	P	01 00 12.2	-0.3
	0.3nm,0.3s,baz=98,slow=6.8,SNR=4.6						
ASAR	Alice Springs	50.42	252	P	P	01 00 13.1	-1.0
	0.6nm,0.6s,baz=94,slow=7.8,SNR=5.4						
BRTR	Keskin Array B	146.87	321	PKPbc	PKPab	01 11 00.1	-0.4
	0.1nm,0.4s,baz=48,slow=2.1,SNR=2.2						

*ISK **25** 01:03:58.6, 39°.10N×29°.20E, h8km, MD2.7*
*ISCJB **25** 01:03:59.1±0.5, 39°.12N±0°.04×29°.14E±0°.04, h5km±8km, Error ellipse: s-maj=6.5km s-min=5.1km az=154.8*
*DDA **25** 01:03:59.1, 39°.13N×29°.13E, h7km, Md2.4*
*CSEM **25** 01:03:59.2±0.1, 39°.13N×29°.14E, h5km, MD2.4, Error ellipse: s-maj=2.1km s-min=1.8km az=103.0*
ISC 25 01:03:59.4±1.0, 39°.13N±0°.03×29°.14E±0°.03, h10km±10km, n25, σ0°31/34, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	Gediz	0.27	99	P	Pg	01 04 04.9	-0.1
GDZ				S	Sg	01 04 09.2	+0.5
GDZ	Gediz	0.27	99	*i* P	Pg	01 04 04.9	-0.1
GDZ				*i* S	Sg	01 04 09.2	+0.5
DEMI	Demirci	0.34	255	P	Pg	01 04 06.2	0.0
DEMI				S	Sg	01 04 11.0	+0.3
DEMI	Demirci	0.34	255	*i* P	Pg	01 04 06.2	0.0
DEMI				*i* S	Sg	01 04 11.0	+0.3
TVSB	Tavsanli	0.41	39	*e*PG	Pg	01 04 07.5	0.0
TVSB				*e*SG	Sg	01 04 12.4	-0.4
TVSB	Tavsanli	0.41	39	*e*Pg	Pg	01 04 07.5	0.0
TVSB				*e*Sg	Sg	01 04 12.4	-0.4
DURS	Dursunbey	0.69	313	P	Pg	01 04 12.4	-0.5
DURS	Dursunbey	0.69	313	*i* P	Pg	01 04 12.4	-0.5
KULA	Kula-Manisa	0.72	211	*e*PG	Pg	01 04 12.9	-0.5
KULA	Kula-Manisa	0.72	211	*e*Pg	Pg	01 04 12.9	-0.5
KHAL	Karahalli	0.81	160	P	Pg	01 04 25.2	-0.4
KHAL				S	Sg	01 04 25.2	-0.4
KHAL	Karahalli	0.81	160	*i* P	Pg	01 04 15.2	+0.1
KHAL				*i* S	Sg	01 04 25.2	-0.4
BALB	Balikesir	1.10	298	*e*PN	Pn	01 04 21.3	+0.4
BALB	Balikesir	1.10	298	*e*Pn	Pn	01 04 21.3	+0.4
IGD	Bursa	1.13	3	*i* P	Pb	01 04 20.6	-0.5
IGD				*i* S	Sn	01 04 37.1	+0.2
IZI	Iznik	1.23	12	*e*PN	Pn	01 04 22.8	0.0
IZI	Iznik	1.23	12	*e*Pn	Pn	01 04 22.8	0.0
MDNY	Mudanya-Bursa	1.25	351	*e*PN	Pg	01 04 23.5	+0.1
MDNY	Mudanya-Bursa	1.25	351	*e*Pn	Pg	01 04 23.5	+0.1
KCTX	Karacabey (Bur	1.28	332	*e*PN	Pb	01 04 23.8	+0.1
KCTX	Karacabey (Bur	1.28	332	*e*Pn	Pb	01 04 23.8	+0.1
ARMT	Armutlu	1.45	352	*e*PN	Pb	01 04 26.5	0.0
ARMT	Armutlu	1.45	352	*e*Pn	Pb	01 04 26.5	0.0
GULT	Gulveren	1.68	39	*e*PN	Pn	01 04 29.0	0.0
GULT	Gulveren	1.68	39	*e*Pn	Pn	01 04 29.0	0.0

*NIED **25** 01:04:00, 38°.30N×142°.20E, h41km, Mw3.9 Best double couple: M0:6.79000×10^14 NP1:φs=170.00000°, δ35.00000°, λ-72.00000°. NP2:φs=328.00000°, δ57.00000°, λ-102.00000°.*
*ISCJB **25** 01:04:03.6±0.5, 38°.34N±0°.04×142°.35E±0°.06, h35km, mb3.8/16, Error ellipse: s-maj=6.6km s-min=5.4km az=32.2*
*JMA **25** 01:04:05.2±0.1, 38°.35N×142°.20E, h38km±1km, M4.1*
JMA Felt I J1.
*IDC **25** 01:04:09.8±2.5, 38°.29N×142°.12E, h75km±21km, mb3.5/16, mb1 3.7/19, mb1mx3.5/46, mbtmp3.8/19, MS3.1/3, Ms1 3.1/3, ms1mx2.6/28, Error ellipse: s-maj=17.8km s-min=15.8km az=89.0*
ISC 25 01:04:05.4±0.6, 38°.28N±0°.05×142°.23E±0°.07, h35km, n40, σ1°71/40, mb3.9/16, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.71	284	P	Pn	01 04 18.4	-0.5
JIO				*e*S	Sn	01 04 27.5	-1.1
OFUJ	Ofunato	0.91	331	P	Pn	01 04 20.6	-1.1
OFUJ				*e*S	Sn	01 04 31.5	-2.0
JMK	Ichinoseki	1.03	311	P	Pn	01 04 22.8	-0.6
JMM	Marumori	1.21	250	P	Pn	01 04 25.5	-0.2
JOU	Okura	1.23	274	P	Pn	01 04 26.4	+0.3
JOU				*e*S	Sn	01 04 41.9	+0.3
JOM	Ohasama	1.39	329	P	Pn	01 04 28.4	+0.1
JOM				*e*S	Sn	01 04 44.5	-1.0
JFK	Kawauchi	1.41	230	P	Pn	01 04 28.2	-0.4
JYK	Kaneyama	1.59	294	P	Pn	01 04 31.3	+0.2
JRG	Rokugo	1.67	312	P	Pn	01 04 32.8	+0.7
JFT	Otama	1.68	244	P	Pn	01 04 33.2	+0.9
JYS	Shirataka	1.70	269	P	Pn	01 04 33.0	+0.4
MJAR	Matsushiro Arr	3.64	243	P	Pn	01 05 02.1	+2.8
	2.3nm,0.3s,baz=65,slow=11,SNR=20						
MJAR				LR	LR	01 06 36.5	
	comp=Z,203nm,18.9s,baz=70,slow=41						
MAT	Matsushiro	3.64	243	P	Pn	01 05 01.4	+2.1
MAT				*e*S	Sn	01 05 46.0	+5.0
JHJ	Hachijo jima 2	5.52	202	S	Sn	01 06 23.2	-4.1
	14nm,0.3s,baz=63,slow=17,SNR=2.3						
JHJ				LR	LR	01 07 55.3	
	comp=Z,121nm,18.3s,baz=274,slow=41						
ASAJ	Asahikawa	5.83	3	P	Pn	01 05 34.1	+4.7
	1.8nm,0.3s,baz=197,slow=11,SNR=4.0						
ASAJ				S	Sn	01 06 34.9	-0.1
	1.3nm,0.3s,baz=235,slow=16,SNR=2.6						
USRK	Ussuriysk Ar.	9.71	311	P	Pn	01 06 26.9	+4.4
	0.3nm,0.3s,baz=126,slow=15,SNR=7.5						
JNU	Nakatsue	10.56	244	LR	LR	01 10 56.6	
	comp=Z,134nm,18.8s,baz=116,slow=39						
SONM	Songino Array	27.65	302	P	P	01 09 49.4	-0.4
	0.2nm,0.3s,baz=114,slow=9.6,SNR=3.0						
H11N2	WAKE ISLAND Hy	28.27	124	T	T	01 40 32.6	
	baz=317,slow=75,SNR=101						
H11N1	WAKE ISLAND Hy	28.28	124	T	T	01 40 33.3	
	baz=317,slow=75,SNR=25						
H11N3	WAKE ISLAND Hy	28.29	124	T	T	01 40 33.9	
	baz=317,slow=75,SNR=21						
H11S1	WAKE ISLAND Hy	29.03	126	T	T	01 41 13.3	
	baz=318						
H11S3	WAKE ISLAND Hy	29.03	126	T	T	01 41 11.7	
	baz=318						
H11S2	WAKE ISLAND Hy	29.05	126	T	T	01 41 20.6	
	baz=318						
ZALV	Zalesovo Beam	41.56	311	P	P	01 11 48.8	-0.5
	0.9nm,0.5s,baz=95,slow=9.1,SNR=5.0						
MKAR	Makanchi Array	44.01	301	P	P	01 12 09.3	-0.1
	0.7nm,0.7s,baz=81,slow=10,SNR=6.1						
KURBB	Kurchatov Arra	45.75	307	P	P	01 12 22.9	-0.2
	1.6nm,0.4s,baz=82,slow=8.1,SNR=23						
ILAR	Eielson Array	48.09	33	P	P	01 12 41.2	0.0
	0.3nm,0.7s,baz=284,slow=7.3,SNR=3.4						
BVAR	Borovoye Array	50.22	312	P	P	01 12 57.2	-0.5
	0.5nm,0.6s,baz=63,slow=13,SNR=3.0						
BVAR				PcP	PcP	01 14 15.9	-0.5
	0.7nm,0.4s,baz=62,slow=3.4,SNR=3.6						
ARU	Arti	55.86	318	P	P	01 13 38.6	-0.5
	1.0nm,0.3s,baz=64,slow=3.0,SNR=4.0						
AKTO	Aktyubinsk	58.33	312	P	P	01 13 56.9	+0.2
	0.7nm,0.4s,baz=66,slow=12,SNR=4.1						
WRA	Warramunga Arr	58.39	189	P	P	01 13 57.0	-0.4
	1.7nm,0.7s,baz=4.6,slow=7.2,SNR=7.5						
ASAR	Alice Springs	62.12	189	P	P	01 14 23.1	+0.3
	1.1nm,0.7s,baz=16,slow=7.6,SNR=9.5						
YKA	Yellowknife Ar	62.41	31	P	P	01 14 24.4	+0.1
	0.2nm,0.7s,baz=300,slow=6.6,SNR=3.1						
FINES	FINESS Array B	68.01	332	P	P	01 15 00.2	-0.4
	2.2nm,0.7s,baz=24,slow=11,SNR=4.9						
KBZ	Khabaz	70.58	311	P	P	01 15 16.7	-0.1
	0.6nm,0.4s,baz=18,slow=1.9,SNR=3.7						
AKASG	Malin Array Be	73.70	322	P	P	01 15 34.6	-0.8
	0.4nm,0.3s,baz=44,slow=6.2,SNR=5.2						
PDAR	Pinedale Array	76.33	46	P	P	01 15 51.0	-0.1
	0.1nm,0.3s,baz=248,slow=1.0,SNR=4.2						
TXAR	Lajitas Array	88.85	53	P	P	01 16 56.4	+0.2
	0.1nm,0.5s,baz=331,slow=3.5,SNR=3.0						
LPAZ	La Paz	145.50	59	PKPbc	PKPdf	01 23 41.1	+0.2
	0.7nm,0.5s,baz=39,slow=2.7,SNR=3.4						

*ISCJB **25** 01:05:29.6±0.5, 32°.15N±0°.02×115°.13W±0°.02, h12km±4km, Error ellipse: s-maj=3.3km s-min=2.9km az=40.7*
*NEIC **25** 01:05:31.9, 32°.15N×115°.22W, h8km, ML3.5(PAS), ML3.6(ECX), After ECX.*
*ECX **25** 01:05:31.8±0.6, 32°.14N×115°.21W, h8km, MD3.6, ML3.8*
*MEX **25** 01:05:33.1±0.7, 32°.19N×115°.17W, h15km±9km, MD3.8*
ISC 25 01:05:29.4±1.1, 32°.16N±0°.02×115°.22W±0°.02, h12km±10km, n49, σ1°02/80, 3C-9D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MBIG	Mexicali	0.25	4	*e*P	Pb	01 05 37.2	+1.3
MBIG				*e*S	Sb	01 05 40.5	+0.2
MBIG	Mexicali	0.25	4	⇓*e*P	Pb	01 05 37.1	+1.1
CPBX	Cerro Prieto	0.27	345	*i* P	Pn	01 05 37.8	-1.5
CPBX				*i* S	Sb	01 05 40.3	-0.5
CPBX	Cerro Prieto	0.27	345	⇓*e*P	Pb	01 05 36.7	+0.4
CPBX				⇓*e*P	Pn	01 05 37.7	-1.6
CPBX				*e*S	Sb	01 05 41.6	+0.7
CPBX				AML	AML	01 05 42.5	
	comp=E,32μm,0.1s						
CPBX				*e*		01 05 42.5	
EMSC	East Mesa	0.61	19	⇑*i*P	Pn	01 05 43.2	-0.8
SGL	Mount Signal	0.65	319	*i* P	Pn	01 05 43.8	-0.8
SGL	Mount Signal	0.65	319	⇓*i*P	Pn	01 05 43.8	-0.8
YMD	Yuma Desert	0.70	55	⇑*i*P	Pb	01 05 43.9	+0.4
ECBX	El Chinero	0.70	168	⇓*e*P	Pb	01 05 43.5	-0.1
ECBX				*e*S	Sb	01 05 53.2	+0.1
COA	Coachella	0.71	7	⇓*i*P	Pn	01 05 44.6	-0.7
WESC	Westside Schoo	0.74	324	*e*P	Pn	01 05 45.1	-0.6
RMX	La Rumorosa	0.85	302	*e*P	Pn	01 05 46.9	-0.5
RMX				*e*S	Sn	01 05 58.6	-1.4
RMX	La Rumorosa	0.85	302	*e*P	Pn	01 05 46.9	-0.5
RMX				*e*S	Sn	01 05 58.6	-1.4
IKP	In-Ko-Pah, Jac	0.90	303	P	Pn	01 05 47.9	-0.2
	baz=124,SNR=60						
IKP				S	Sn	01 06 00.3	-0.7
	baz=124						
IKP	In-Ko-Pah, Jac	0.90	303	*e*P	Pn	01 05 48.0	0.0
SWSC	Sam W. Stewart	0.93	328	P	Pg	01 05 47.4	0.0
	baz=148,SNR=31						
SWSC				S	Sn	01 06 01.8	+0.2
	baz=148						
GLA	Glamis	0.95	20	P	Pg	01 05 47.8	0.0
	baz=200,SNR=99						
GLA				S	Sb	01 05 59.9	-0.6
	baz=200						
ZAX	El Zacaton	1.10	235	*e*P	Pg	01 05 50.8	+0.2
ZAX				*e*S	Sn	01 06 06.0	0.0
SPIG	San Pedro Mart	1.13	191	*i* P	Pn	01 05 51.3	-0.1
SPIG				*i* S	Sb	01 06 05.5	-0.3
SPIG	San Pedro Mart	1.13	191	*i* P	Pn	01 05 51.3	-0.1
SPIG				*i* S	Sb	01 06 05.5	-0.3
SPIG	San Pedro Mart	1.13	191	⇓*e*P	Pn	01 05 51.3	-0.1
SPX	San Pedro Mart	1.13	191	*i* P	Pn	01 05 51.2	-0.1
SPX				*i* S	Sb	01 06 05.6	-0.3
SPX	San Pedro Mart	1.13	191	⇓*e*P	Pn	01 05 51.3	-0.1
SPX				⇓*e*		01 06 08.2	
SPX				AML	AML	01 06 08.2	
	comp=E,990nm,0.5s						
CBX	Cerro Bola	1.23	278	*e*P	Pg	01 05 53.3	+0.1
CBX				*e*S	Sb	01 06 06.9	-1.8
CBX	Cerro Bola	1.23	278	*e*P	Pg	01 05 53.2	+0.1
CBX				*e*S	Sb	01 06 06.9	-1.8
CBX	Cerro Bola	1.23	278	⇓*e*P	Pg	01 05 53.2	+0.1
CBX				AML	AML	01 06 11.9	
	comp=N,3μm,0.4s						
MONP2	Monument Peak	1.25	306	P	Pb	01 05 53.1	-0.1
	baz=126,SNR=62						
MONP2				S	Sg	01 06 10.6	+0.7
	baz=126						
TJIG	Tijuana	1.26	283	*e*P	Pg	01 05 53.4	-0.3
TJIG				*i* S	Sb	01 06 08.4	-1.0
PBX	Punta Banda	1.34	252	*e*P	Pb	01 05 54.8	+0.2
PBX	Punta Banda	1.34	252	*e*P	Pb	01 05 54.8	+0.2
BC3	Big Chuckawall	1.51	353	P	Pn	01 05 56.1	-0.4
	baz=172,SNR=22						
BC3				S	Sn	01 06 14.9	-1.2
	baz=172						
Y12C	Blythe	1.69	20	P	Pn	01 05 58.4	-0.4
	baz=200						
Y12C				S	Sb	01 06 20.7	-1.2
	baz=200						
109C	Camp Elliot, M	1.75	295	P	Pn	01 06 00.3	+0.6
	baz=114						
109C				Sb	Sg	01 06 25.6	-0.2
	baz=114						
TPFO	Pinon Flats	1.78	325	P	Pn	01 05 60.0	-0.2
	baz=144,SNR=24						
PFO	Pinyon Flats O	1.79	325	P	Pn	01 06 00.1	-0.2
	baz=144						
PFO	Pinyon Flats O	1.79	325	*e*Pn	Pn	01 06 00.1	-0.2
PFO				*e*Sn	Sn	01 06 22.9	-0.1
IRM	Iron Mountain	2.00	2	Pb	Pb	01 06 05.1	-0.6
	baz=182,SNR=49						
214A	Organ Pipe Nat	2.06	95	P	Pn	01 06 02.9	-1.0
	baz=276,SNR=22						
214A				Sb	Sb	01 06 32.3	-0.1
	baz=276						
214A	Organ Pipe Nat	2.06	95	*e*Pn	Pn	01 06 02.6	-1.3
214A				*e*Pg	Pg	01 06 08.6	-0.3
214A				*e*Sg	Sb	01 06 33.7	+1.4
MURC	Murrieta	2.20	311	Sb	Sg	01 06 39.6	-0.5
	baz=131						
PDMCI	Parker Dam,Lak	2.32	23	S	Sn	01 06 35.8	-0.3
	baz=203						
CIS	Catalina Islan	2.96	296	Sb	Sb	01 07 01.2	+2.8
	baz=114						
TUC	Tucson	3.76	87	*e*Pn	Pn	01 06 28.4	+1.0
TUC				*e*Pg	Pg	01 06 41.5	-0.1
TUC				*e*Sg	Sg	01 07 30.6	+0.3
DAC	Darwin (Calif)	4.55	335	*e*Pn	Pn	01 06 41.0	+2.6
DAC				*e*Pg	Pg	01 06 57.2	+0.4
DAC				*e*Sg	Sg	01 07 55.6	-0.1
WUAZ	Wupatki	4.63	43	*e*Pn	Pn	01 06 41.2	+1.7
WUAZ				*e*Pg	Pg	01 06 58.4	+0.1
WUAZ				*e*Sg	Sg	01 07 55.3	-3.0
R11A	Troy Canyon, C	6.18	357	*e*Pn	Pn	01 07 03.9	+3.1
	comp=N,1.2nm,0.5s						
R11A				*e*Pg	Pg	01 07 29.8	+1.9
R11A				*e*Sg	Sg	01 08 45.6	-2.4
121A	Cookes Peak, D	6.30	85	*e*Pn	Pn	01 07 02.5	0.0
	comp=N,7.4nm,0.3s						
PV04	Paradox Valley	8.08	38	*e*Pn	Pn	01 07 31.1	+4.2
MSTX	Muleshoe	10.60	77	*e*Pn	Pn	01 08 03.9	+2.6
	comp=N,8.3nm,0.8s						

*ISK **25** 01:07:44.9, 39°.07N×29°.08E, h9km, MD2.6*
*ISCJB **25** 01:07:45.7±0.6, 39°.11N±0°.05×29°.02E±0°.04, h4km±7km, Error ellipse: s-maj=8.3km s-min=4.4km az=166.5*
*CSEM **25** 01:07:45.7±0.1, 39°.09N×29°.02E, h8km, MD2.5, Error ellipse: s-maj=3.4km s-min=3.0km az=6.0*
*DDA **25** 01:07:45.8, 39°.12N×29°.03E, h7km, Md2.5*
ISC 25 01:07:45.5±1.0, 39°.08N±0°.03×29°.05E±0°.02, h9km±9km, n29, σ0°69/41, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.26	263	P	Pg	01 07 51.3	+0.4
DEMI				S	Sg	01 07 54.8	+0.3
DEMI	Demirci	0.26	263	*i* P	Pg	01 07 51.3	+0.4
DEMI				*i* S	Sg	01 07 54.8	+0.3
GDZ	Gediz	0.34	88	P	Pb	01 07 53.3	-0.4
GDZ				S	Sb	01 07 58.5	-0.8
GDZ	Gediz	0.34	88	*i* P	Pb	01 07 53.3	-0.4
GDZ				*i* S	Sb	01 07 58.5	-0.8
TVSB	Tavsanli	0.49	40	*e*PG	Pg	01 07 55.4	+0.2
TVSB				*e*SG	Sg	01 08 01.6	-0.1
TVSB	Tavsanli	0.49	40	*e*Pg	Pg	01 07 55.4	+0.2
TVSB				*e*Sg	Sg	01 08 01.6	-0.1
DURS	Dursunbey	0.69	320	P	Pg	01 07 58.5	-0.4
DURS	Dursunbey	0.69	320	*i* P	Pg	01 07 58.5	-0.4
KHAL	Karahalli	0.78	154	P	Pn	01 08 02.3	-0.5
KHAL	Karahalli	0.78	154	*i* P	Pn	01 08 02.3	-0.5
KHAL				*i* S	Sn	01 08 17.7	+2.9
KHL	Karahalli	0.84	154	*e*PG	Pg	01 08 01.1	-0.6
KHL	Karahalli	0.84	154	*e*Pg	Pg	01 08 01.1	-0.6
AKS	Akhisar	0.98	259	*e*PG	Pg

	153nm,0.1s							
ZHN				eS	Sb	01 14 51.2	-0.4	
	2μm,0.2s							
CHKK	**Chushkaly**	**1.10**	**250**	eP	Pb	01 14 37.4	-0.4	
	142nm,0.3s							
CHKK				eS	Sb	01 14 51.2	-0.7	
	2μm,0.3s							
UZB	**Uzynbulak**	**1.19**	**158**	eP	Pb	01 14 39.1	-0.3	
	330nm,0.2s							
UZB				eS	Sb	01 14 54.6	+0.1	
	1μm,0.2s							
SATY	**Saty**	**1.19**	**181**	eP	Pb	01 14 39.0	-0.5	
	332nm,0.1s							
SATY				eS	Sb	01 14 54.4	-0.3	
	4μm,0.2s							
KAPS	**Kapalarasan**	**1.23**	**32**	eP	Pb	01 14 40.4	+0.3	
	272nm,0.2s							
KAPS				eS	Sn	01 14 56.5	+0.4	
	569nm,0.3s							
KOTS	**Kotyrbulak**	**1.39**	**224**	eP	Pb	01 14 42.9	-0.1	
KOTS				eS	Sn	01 15 00.0	-0.3	
MDOK	**Medeo**	**1.48**	**223**	eP	Pn	01 14 44.0	+0.7	
	148nm,0.2s							
MDOK				eS	Sn	01 15 02.9	+0.6	
	935nm,0.2s							
KNDC	**Almaty**	**1.48**	**226**	⇓P	Pb	01 14 44.4	0.0	
	212nm,0.6s							
KNDC				⇓S	Sb	01 15 03.7	+0.8	
	1μm,0.7s							
SHLS	**Shalkode**	**1.52**	**135**	eP	Pn	01 14 44.7	+0.8	
	176nm,0.3s							
SHLS				eS	Sb	01 15 04.5	+0.2	
	485nm,0.8s							
TNSS	**Tian-Shan**	**1.62**	**222**	eP	Pb	01 14 47.2	+0.3	
	114nm,0.2s							
TNSS				eS	Sb	01 15 07.5	+0.3	
	2μm,0.3s							
DGS	**Degeres**	**2.17**	**243**	eP	Pb	01 14 56.4	+0.2	
	193nm,0.4s							
DGS				eS	Sb	01 15 23.3	+0.4	
	776nm,0.4s							
TKM2	**Tokmak 2**	**2.45**	**238**	⇓Pn	Pn	01 14 57.4	+0.7	
	7.4nm,0.5s							
TKM2				⇑Pg	Pg	01 15 05.5	+1.3	
	56nm,0.5s							
TKM2				⇓Lg	Lg	01 15 33.1		
	57nm,0.4s							
AAK	**Ala-Archa**	**3.29**	**242**	Pn	Pn	01 15 09.5	+1.3	
	3.8nm,0.3s,baz=100,slow=7.3,SNR=22							
AAK				Pg	Pb	01 15 16.3	+1.0	
	7.8nm,0.3s,baz=84,slow=10,SNR=19							
AAK				Lg	Lg	01 15 56.1		
	14nm,0.3s,baz=310,slow=21,SNR=9.5							
AAK	**Ala-Archa**	**3.29**	**242**	⇑Pn	Pn	01 15 09.6	+1.3	
	5.0nm,0.3s							
AAK				⇑Pg	Pb	01 15 16.0	+0.8	
	12nm,0.7s							
AAK				⇑Lg	Lg	01 15 58.7		
	240nm,1.1s							
MAKZ	**Makanchi**	**3.57**	**43**	⇑Pn	Pn	01 15 13.4	+1.5	
	1.8nm,0.3s							
MAKZ				⇓Pg	Pg	01 15 23.0	-2.7	
	13nm,0.4s							
MAKZ				⇑Lg	Lg	01 16 09.4		
	43nm,0.6s							
MK31	**Makanchi Array**	**3.72**	**46**	⇓Pn	Pn	01 15 16.0	+2.0	
	3.2nm,0.3s,baz=220,slow=15,SNR=260							
MK31				⇓Pg	Pb	01 15 25.2	+2.7	
	6.0nm,0.3s,baz=223,slow=15,SNR=8.7							
MK31				⇑Sn	Sn	01 15 58.1	+0.6	
	7.3nm,0.3s,baz=236,slow=15,SNR=6.0							
MK31				⇑Lg	Lg	01 16 13.8		
	30nm,0.5s,baz=215,slow=28,SNR=4.6							
MKAR	**Makanchi Array**	**3.72**	**46**	Pn	Pn	01 15 15.9	+1.9	
	4.0nm,0.3s,baz=230,slow=14,SNR=148							
MKAR				Sn	Sn	01 15 59.6	+2.1	
	12nm,0.3s,baz=223,slow=25,SNR=16							
MKAR				Lg	Lg	01 16 08.9		
	8.3nm,0.3s,baz=230,slow=30,SNR=5.8							
KK31	**Karatay Array**	**5.85**	**261**	⇑Pg	Pg	01 16 04.3	-4.9	
	3.8nm,0.5s,baz=73,slow=16,SNR=15							
KK31				⇑Lg	Lg	01 17 20.3		
	9.6nm,0.4s,baz=79,slow=27,SNR=9.5							
KURBB	**Kurchatov Arra**	**6.38**	**1**	Pn	Pn	01 15 49.4	-1.0	
	0.2nm,0.3s,baz=186,slow=12,SNR=6.7							
KURBB				Lg	Lg	01 17 35.7		
	1.0nm,0.3s,baz=171,slow=30,SNR=9.0							
KURK	**Kurchatov**	**6.47**	**1**	⇑Pg	Pg	01 16 16.3	-4.6	
	12nm,0.5s							
KURK				⇓Lg	Lg	01 17 38.9		
	204nm,1.3s							
BVA0	**Borovoye Array**	**10.26**	**332**	Pn	Pn	01 16 41.6	-2.1	
	1.2nm,0.7s,baz=149,slow=13,SNR=11							
BVA0				⇓Lg	Lg	01 19 36.3		
	8.5nm,1.1s,baz=144,slow=27,SNR=3.6							
BVAR	**Borovoye Array**	**10.26**	**332**	Pn	Pn	01 16 43.2	-0.4	
	0.7nm,0.3s,baz=150,slow=14,SNR=11							
BVAR				Sn	Sn	01 18 35.6	-2.6	
	0.4nm,0.3s,baz=152,slow=24,SNR=3.4							
BVAR				Lg	Lg	01 19 38.5		
	0.9nm,0.3s,baz=132,slow=24,SNR=5.5							
BRVK	**Borovoye**	**10.32**	**332**	⇑Pn	Pn	01 16 42.7	-1.8	
	2.6nm,0.7s							
BRVK				⇑Lg	Lg	01 19 41.0		
	30nm,1.1s							
ZALV	**Zalesovo Beam**	**10.57**	**21**	Pn	Pn	01 16 48.3	+0.4	
	0.3nm,0.3s,baz=211,slow=15,SNR=3.6							
ZALV				Sn	Sn	01 18 52.7	+7.0	
	0.6nm,0.3s,baz=211,slow=22,SNR=5.4							
ZALV				Lg	Lg	01 19 50.1		
	0.3nm,0.3s,baz=190,slow=23,SNR=2.9							
AKTO	**Aktyubinsk**	**15.13**	**301**	Sn	Sn	01 20 27.7	-10	
	0.1nm,0.3s,baz=18,slow=20,SNR=3.1							
AKTO				Lg	Lg	01 22 14.6		
	0.1nm,0.3s,baz=174,slow=17,SNR=2.8							
YKA	**Yellowknife Ar**	**73.09**	**6**	P	P	01 25 46.2	+0.1	
	0.1nm,0.5s,baz=349,slow=6.0,SNR=2.7							

*ISK **25** 01:18:18.6, 39˚.11N×29˚.15E, h6km, MD2.7*
*ISCJB **25** 01:18:19.2±0.5, 39˚.12N±0˚.03×29˚.13E±0˚.03, h3km±6km,*
Error ellipse: s-maj=5.6km s-min=3.9km az=153.6
*DDA **25** 01:18:19.2, 39˚.12N×29˚.13E, h7km, Md2.9*
*CSEM **25** 01:18:19.4±0.1, 39˚.12N×29˚.13E, h5km, MD2.9, Error*
ellipse: s-maj=2.7km s-min=2.4km az=128.0
ISC 25 01:18:19.4±0.9, 39˚.11N±0˚.02×29˚.15E±0˚.02, h13km±8km, n37, σ0°37/52, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.26**	**95**	P	**Pg**	**01 18 25.0**	**+0.1**
GDZ				S	**Sg**	**01 18 29.1**	**+0.4**
GDZ	**Gediz**	**0.26**	**95**	*i* P	**Pg**	**01 18 25.0**	**+0.1**
GDZ				*i* S	**Sg**	**01 18 29.1**	**+0.4**
DEMI	**Demirci**	**0.34**	**258**	P	**Pg**	**01 18 26.3**	**-0.1**
DEMI				S	**Sg**	**01 18 31.1**	**0.0**
DEMI	**Demirci**	**0.34**	**258**	*i* P	**Pg**	**01 18 26.3**	**-0.1**
DEMI				*i* S	**Sg**	**01 18 31.1**	**0.0**
TVSB	**Tavsanli**	**0.41**	**36**	*e*PG	**Pg**	**01 18 27.2**	**-0.4**
TVSB				*e*SG	**Sg**	**01 18 32.6**	**-0.6**
KULA	**Kula-Manisa**	**0.71**	**213**	*e*PG	**Pg**	**01 18 32.9**	**-0.3**
KULA				*e*SG	**Sg**	**01 18 42.4**	**-0.1**
KULA	**Kula-Manisa**	**0.71**	**213**	*e*Pg	**Pg**	**01 18 32.9**	**-0.3**
DURS	**Dursunbey**	**0.71**	**313**	P	**Pg**	**01 18 32.8**	**-0.5**
DURS	**Dursunbey**	**0.71**	**313**	*i* P	**Pg**	**01 18 32.8**	**-0.5**
DURS				*i* S	**Sn**	**01 18 46.8**	**+0.7**
KHAL	**Karahalli**	**0.79**	**160**	P	**Pb**	**01 18 34.9**	**-0.1**
KHAL				S	**Sb**	**01 18 45.8**	**+0.1**
KHAL	**Karahalli**	**0.79**	**160**	*i* P	**Pb**	**01 18 34.9**	**-0.1**
KHAL				*i* S	**Sb**	**01 18 45.8**	**+0.1**
BALB	**Balikesir**	**1.11**	**299**	*e*PN	**Pb**	**01 18 40.5**	**0.0**
BALB	**Balikesir**	**1.11**	**299**	*e*Pn	**Pb**	**01 18 40.5**	**0.0**
IGD	**Bursa**	**1.15**	**2**	*i* P	**Pb**	**01 18 39.6**	**-1.5**
IGD				*i* S	**Sn**	**01 18 57.0**	**+0.2**
CAVI	**Cavuskoy**	**1.21**	**26**	*e*PN	**Pg**	**01 18 42.5**	**-0.2**
CAVI	**Cavuskoy**	**1.21**	**26**	*e*Pn	**Pg**	**01 18 42.5**	**-0.2**
BORA	**Eskisehir**	**1.27**	**52**	P	**Pg**	**01 18 43.7**	**-0.1**
BORA				S	**Sg**	**01 19 00.5**	**+0.2**
BORA	**Eskisehir**	**1.27**	**52**	*i* P	**Pg**	**01 18 43.7**	**-0.1**
BORA				*i* S	**Sg**	**01 19 00.5**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.27**	**351**	*e*PN	**Pb**	**01 18 43.2**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.27**	**351**	*e*Pn	**Pb**	**01 18 43.2**	**+0.1**
KCTX	**Karacabey (Bur**	**1.30**	**332**	*e*PN	**Pb**	**01 18 43.9**	**+0.2**
KCTX	**Karacabey (Bur**	**1.30**	**332**	*e*Pn	**Pb**	**01 18 43.9**	**+0.2**
GEMT	**Gemlik**	**1.32**	**1**	*e*PN	**Pg**	**01 18 44.9**	**+0.2**
GEMT	**Gemlik**	**1.32**	**1**	*e*Pn	**Pg**	**01 18 44.9**	**+0.2**
BALY	**Balya**	**1.34**	**298**	P	**Pg**	**01 18 44.9**	**-0.2**
BALY				S	**Sg**	**01 19 03.3**	**+0.8**
BALY	**Balya**	**1.34**	**298**	*i* P	**Pg**	**01 18 44.9**	**-0.2**
BALY				*i* S	**Sg**	**01 19 03.3**	**+0.8**
ADVT	**Abdulvahap**	**1.39**	**19**	*e*PN	**Pg**	**01 18 45.9**	**-0.2**
ADVT	**Abdulvahap**	**1.39**	**19**	*e*Pn	**Pg**	**01 18 45.9**	**-0.2**
ARMT	**Armutlu**	**1.47**	**351**	*e*PN	**Pb**	**01 18 46.4**	**-0.1**
ARMT	**Armutlu**	**1.47**	**351**	*e*Pn	**Pb**	**01 18 46.4**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**1.53**	**221**	*e*PN	**Pb**	**01 18 47.2**	**-0.4**
AYDB	**Zeytinkoy-Aydi**	**1.53**	**221**	*e*Pn	**Pb**	**01 18 47.2**	**-0.4**
EDC	**Edincik**	**1.58**	**322**	*e*PN	**Pb**	**01 18 48.1**	**-0.3**
EDC	**Edincik**	**1.58**	**322**	*e*Pn	**Pb**	**01 18 48.2**	**-0.3**
GULT	**Gulveren**	**1.69**	**38**	*e*PN	**Pb**	**01 18 50.1**	**-0.2**
GULT	**Gulveren**	**1.69**	**38**	*e*Pn	**Pb**	**01 18 50.1**	**-0.2**
KNL	**Bal¨–kesir**	**1.70**	**313**	*i* P	**Pn**	**01 18 48.6**	**-0.2**
KNL				*i* S	**Sb**	**01 19 12.1**	**+0.2**

SGS 25 01:21:24.6, 25˚.26N×37˚.78E, h6km, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LNY12	**LNY12**	**0.01**	**329**	S	Sg	01 21 26.7	+0.1
LNY12				P	Pg	01 21 26.0	+0.2
LNY06	**LNY06**	**0.05**	**182**	P	Pg	01 21 27.3	+1.2
LNY06	**LNY06**	**0.05**	**182**	S	Sg	01 21 27.5	+0.4
LNY06				P	Pg	01 21 26.3	+0.3
LNY11	**LNY11**	**0.06**	**354**	P	Pg	01 21 26.5	+0.3
LNY11	**LNY11**	**0.06**	**354**	P	Pg	01 21 26.5	+0.3
LNY10	**LNY10**	**0.07**	**82**	P	Pg	01 21 26.6	+0.2
LNY10	**LNY10**	**0.07**	**82**	P	Pg	01 21 26.6	+0.2
LNY04	**LNY04**	**0.12**	**276**	P	Pg	01 21 27.4	+0.3
LNY04	**LNY04**	**0.12**	**276**	P	Pg	01 21 27.5	+0.3

*IDC **25** 01:33:55.1±0.7, 6˚.48S×75˚.67W, h0km, mb4.0/6,*
mb1 4.3/11, mb1mx4.1/24, mbtmp4.1/11, ML3.9/5, MS3.0/7,
Ms1 3.0/7, ms1mx2.8/26, Error ellipse: s-maj=24.9km
s-min=18.7km az=49.0
*ISCJB **25** 01:33:57.4±0.3, 6˚.64S±0˚.04×75˚.63W±0˚.04, h29km,*
mb4.3/20, MS3.4/1, Error ellipse: s-maj=6.4km
s-min=5.1km az=148.7
*NEIC **25** 01:33:59.2±1.5, 6˚.64S×75˚.67W, h28km±11km, mb4.2/12,*
Error ellipse: s-maj=7.9km s-min=5.1km az=64.0
ISC 25 01:33:59.3±0.4, 6˚.61S±0˚.06×75˚.63W±0˚.06, h29km, n46, σ1°06/49, mb4.2/20, Northern Peru

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ATAH	**Atahualpa**	**2.79**	**259**	Pn	**Pn**	**01 34 41.2**	**-1.3**
	9.4nm,0.3s,baz=14,slow=6.1,SNR=36						
ATAH				Sn	**Sn**	**01 35 14.6**	**-0.8**
	58nm,0.3s,baz=105,slow=16,SNR=6.6						
ATAH				LR	LR	01 35 50.7	
	comp=Z,186nm,19.6s,baz=155,slow=42						
NNA	**Nana**	**5.47**	**193**	Pn	**Pn**	**01 35 18.9**	**-0.1**
	17nm,0.3s,baz=26,slow=7.8,SNR=24						
NNA				Sn	**Sn**	**01 36 20.1**	**-1.0**
	24nm,0.3s,baz=294,slow=21,SNR=4.8						
OTAV	**Otavalo**	**7.37**	**337**	*e*Pn	**Pn**	**01 35 45.2**	**-0.2**
	21nm,0.9s						
ROSC	**El Rosal**	**11.45**	**7**	Pn	**Pn**	**01 36 42.2**	**+0.8**
	0.7nm,0.3s,baz=135,slow=19,SNR=2.9						
ROSC				Lg	Lg	01 39 58.1	
	1.0nm,0.3s,baz=117,slow=18,SNR=2.1						
ROSC				LR	LR	01 41 39.8	
	comp=Z,17nm,19.7s,baz=227,slow=41						
LPAZ	**La Paz**	**12.10**	**143**	Pn	**Pn**	**01 36 51.0**	**+0.5**
	0.2nm,0.3s,baz=318,slow=16,SNR=6.5						
LPAZ				Sn	Sn	01 39 12.3	+7.6
	0.7nm,0.3s,baz=269,slow=19,SNR=3.7						
LPAZ				LR	LR	01 42 23.3	
	comp=Z,119nm,19.3s,baz=304,slow=42						
SAML	**Samuel**	**12.55**	**101**	*e*Pn	**Pn**	**01 36 55.0**	**-1.0**
	9.7nm,0.7s						
SAML				*e*Sn	**Sn**	**01 39 12.6**	**-2.3**
SDV	**Santo Domingo**	**16.18**	**18**	Lg	Lg	01 42 21.2	
	2.8nm,0.3s,baz=217,slow=20,SNR=2.2						
SDV				LR	LR	01 44 40.9	
	comp=Z,76nm,19.8s,baz=270,slow=40						
BCIP	**Isla Barro Col**	**16.23**	**345**	*e*Pn	**Pn**	**01 37 46.3**	**+0.9**
PTGA	**Pitinga**	**16.68**	**70**	Pn	**Pn**	**01 37 50.9**	**-0.2**
	1.1nm,0.3s,baz=254,slow=11,SNR=18						
PTGA				Sn	Sn	01 40 49.7	-6.1
	0.8nm,0.3s,baz=336,slow=20,SNR=4.2						
PTGA				Lg	Lg	01 42 44.4	
	0.7nm,0.3s,baz=319,slow=19,SNR=2.5						
PTGA				LR	LR	01 44 49.6	
	comp=Z,60nm,19.8s,baz=254,slow=39						
SIV	**San Ignacio**	**17.04**	**124**	P	**Pn**	**01 37 55.0**	**-0.7**
	0.2nm,0.3s,baz=313,slow=12,SNR=4.8						
SIV				Sn	**Sn**	**01 41 01.3**	**-3.0**
	0.1nm,0.3s,baz=233,slow=20,SNR=2.5						
SIV				Lg	Lg	01 42 50.9	
	0.5nm,0.3s,baz=242,slow=5.4,SNR=3.7						
SIV				LR	LR	01 44 38.4	
	comp=Z,45nm,18.1s,baz=2.0,slow=38						
LVC	**Limon Verde**	**17.17**	**159**	P	**P**	**01 38 02.0**	**+2.9**
	8.0nm,0.3s,baz=0.0,slow=5.1,SNR=2.1						
LVC	**Limon Verde**	**17.17**	**159**	*e*Pn	**Pn**	**01 37 56.9**	**-0.8**
PCRV	**Puerto La Cruz**	**19.95**	**33**	P	**Pn**	**01 38 32.2**	**+1.1**
	0.5nm,0.3s,baz=291,slow=6.9,SNR=2.4						
CPUP	**Villa Florida**	**26.25**	**140**	P	**P**	**01 39 34.5**	**+2.5**
	1.4nm,0.8s,baz=331,slow=9.9,SNR=2.9						
TRQA	**Tornquist**	**33.66**	**160**	*e*P	**P**	**01 40 37.4**	**-0.3**
	5.2nm,1.0s						
TXAR	**Lajitas Array**	**44.77**	**324**	P	**P**	**01 42 10.2**	**-0.5**
	0.4nm,0.6s,baz=150,slow=8.0,SNR=5.8						
TXAR				PcP	**PcP**	**01 43 52.9**	**+0.3**
	0.2nm,0.5s,baz=162,slow=3.6,SNR=2.7						
MNTX	**Cornudas Mount**	**47.52**	**325**	*e*P	**P**	**01 42 32.0**	**-0.2**
	0.8nm,0.6s						
ANMO	**Albuquerque**	**50.54**	**327**	*e*P	**P**	**01 42 56.1**	**+0.6**
	1.2nm,0.9s						
TUC	**Tucson**	**51.18**	**321**	*e*P	**P**	**01 42 59.9**	**-0.3**
	1.7nm,0.8s						
SDCO	**Great Sand Dun**	**52.18**	**330**	*e*P	**P**	**01 43 08.6**	**+0.7**
	6.5nm,1.4s						
RSSD	**Black Hills**	**56.64**	**336**	*e*P	**P**	**01 43 40.2**	**+0.1**
	1.1nm,0.4s						
PDAR	**Pinedale Array**	**58.02**	**331**	PcP	**PcP**	**01 44 40.8**	**-0.9**
	0.8nm,0.9s,baz=134,slow=3.9,SNR=4.4						
HWUT	**Hardware Ranch**	**58.16**	**329**	*e*P	**P**	**01 43 50.6**	**-0.2**
	1.3nm,0.6s						
PMSA	**Palmer Station**	**58.64**	**174**	*e*P	**P**	**01 43 53.7**	**+0.2**
	20nm,0.4s						
MOOW	**Moose Ponds**	**59.33**	**331**	*e*P	**P**	**01 43 57.7**	**-1.3**
HLID	**Hailey**	**61.03**	**329**	*e*P	**P**	**01 44 11.0**	**+0.4**
	1.1nm,0.6s						
BOZ	**Bozeman (W)**	**61.17**	**332**	*e*P	**P**	**01 44 10.8**	**-0.6**
	1.5nm,0.9s						
DBIC	**Dimbokro**	**71.83**	**81**	P	**P**	**01 45 20.3**	**+0.2**
	7.7nm,0.7s,baz=235,slow=4.5,SNR=11						
YKA	**Yellowknife Ar**	**75.09**	**342**	P	**P**	**01 45 37.5**	**-0.7**
	0.4nm,0.5s,baz=141,slow=6.0,SNR=13						
VNA3	**Neumayer Olymp**	**76.16**	**162**	P	**P**	**01 45 45.0**	**+0.7**
VNA2	**Neumayer--Watz**	**76.75**	**162**	P	**P**	**01 45 48.4**	**+0.7**
	baz=312,slow=5.2						
SNAA	**Sanae**	**78.37**	**162**	P	**P**	**01 45 57.4**	**+0.6**
SNAA	**Sanae**	**78.37**	**162**	*e*P	**P**	**01 45 56.9**	**0.0**
	123nm,0.8s						
RES	**Resolute Bay**	**82.02**	**355**	*e*P	**P**	**01 46 16.2**	**0.0**
	10nm,0.9s						
TAM	**Tamanrasset**	**84.44**	**66**	*e*P	**P**	**01 46 30.9**	**+0.9**
	1.7nm,0.7s						
ILAR	**Eielson Array**	**88.08**	**336**	P	**P**	**01 46 46.2**	**-0.6**
	1.1nm,0.9s,baz=117,slow=3.6,SNR=11						
WLF	**Walferdange**	**89.70**	**40**	*e*P	**P**	**01 46 54.3**	**-0.4**
	7.3nm,0.9s						
VNDA	**Vanda**	**90.26**	**191**	P	**P**	**01 46 57.8**	**+0.9**
	0.9nm,0.7s,baz=154,slow=4.1,SNR=8.3						
BOSA	**Boshof**	**96.34**	**120**	LR	LR	02 29 43.9	
	comp=Z,13nm,18.8s,baz=186,slow=35						
ZALV	**Zalesovo Beam**	**130.21**	**15**	PKP	**PKPdf**	**01 53 06.7**	**+0.1**
	0.5nm,0.3s,baz=321,slow=2.0,SNR=4.2						
KURK	**Kurchatov**	**131.08**	**21**	*e*PKPdf	**PKPdf**	**01 53 08.3**	**-0.1**
COEN	**Coen**	**136.40**	**242**	*e*PKPdf	**PKPdf**	**01 53 19.6**	**+0.2**
ASAR	**Alice Springs**	**138.32**	**223**	PKhKP	PKPpre	01 53 10.2	
	0.3nm,0.6s,baz=131,slow=2.8,SNR=2.6						
ASAR				PKP	**PKPdf**	**01 53 21.9**	**-1.0**
	0.8nm,0.5s,baz=133,slow=2.0,SNR=8.5						
WRAB	**Tennant Creek**	**140.43**	**228**	*e*PKPdf	**PKPdf**	**01 53 25.5**	**-1.3**
WRA	**Warramunga Arr**	**140.43**	**228**	PKhKP	PKPpre	01 53 19.9	
	0.7nm,0.9s,baz=109,slow=3.9,SNR=4.8						
WRA				PKP	**PKPdf**	**01 53 28.4**	**+1.6**
	1.5nm,0.4s,baz=122,slow=2.0,SNR=18						
MBWA	**Marble Bar**	**148.55**	**208**	*e*PKPbc	**PKPbc**	**01 53 44.0**	**-0.4**

*DDA **25** 01:39:37.4, 39˚.08N×29˚.02E, h8km, Ml2.7*
*CSEM **25** 01:39:37.8±0.1, 39˚.11N×29˚.02E, h5km, ML2.7, Error*
ellipse: s-maj=2.2km s-min=1.9km az=27.0
*ISK **25** 01:39:37.5, 39˚.13N×29˚.04E, h6km, MD2.9*
ISC 25 01:39:37.6±1.1, 39˚.11N±0˚.02×29˚.02E±0˚.02, h5km±10km, n45, σ0°36/57, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**255**	P	**Pg**	**01 39 42.5**	**+0.1**
DEMI	**Demirci**	**0.24**	**255**	*i* P	**Pg**	**01 39 42.5**	**+0.1**
GDZ	**Gediz**	**0.36**	**93**	P	**Pg**	**01 39 44.6**	**-0.1**
GDZ				S	**Sg**	**01 39 50.0**	**+0.5**
GDZ	**Gediz**	**0.36**	**93**	*i* P	**Pg**	**01 39 44.6**	**-0.1**
GDZ				*i* S	**Sg**	**01 39 50.0**	**+0.5**
TVSB	**Tavsanli**	**0.49**	**45**	*e*PG	**Pg**	**01 39 47.1**	**+0.1**
TVSB				*e*SG	**Sg**	**01 39 53.3**	**0.0**
TVSB	**Tavsanli**	**0.49**	**45**	*e*Pg	**Pg**	**01 39 47.1**	**+0.1**
TVSB				*e*Sg	**Sg**	**01 39 53.3**	**0.0**
DST	**Dursunbey**	**0.58**	**328**	*e*PG	**Pg**	**01 39 49.0**	**+0.1**
DST	**Dursunbey**	**0.58**	**328**	*e*Pg	**Pg**	**01 39 49.0**	**+0.1**
DURS	**Dursunbey**	**0.65**	**320**	P	**Pg**	**01 39 50.0**	**-0.1**
DURS	**Dursunbey**	**0.65**	**320**	*i* P	**Pg**	**01 39 50.0**	**-0.1**
DURS				*i* S	**Sn**	**01 40 05.0**	**+0.8**
KHAL	**Karahalli**	**0.82**	**153**	P	**Pg**	**01 39 53.4**	**0.0**
KHAL				S	**Sg**	**01 40 03.8**	**-0.3**
KHAL	**Karahalli**	**0.82**	**153**	*i* P	**Pg**	**01 39 53.4**	**0.0**
KHAL				*i* S	**Sg**	**01 40 03.9**	**-0.3**
KHL	**Karahalli**	**0.88**	**153**	*e*PG	**Pb**	**01 39 55.1**	**-0.3**
KHL	**Karahalli**	**0.88**	**153**	*e*Pg	**Pb**	**01 39 55.1**	**-0.3**
AKS	**Akhisar**	**0.96**	**257**	*e*PG	**Pb**	**01 39 56.5**	**-0.3**
AKS	**Akhisar**	**0.96**	**257**	*e*Pg	**Pb**	**01 39 56.5**	**-0.3**
BALB	**Balikesir**	**1.03**	**301**	*e*PG	**Pb**	**01 39 57.8**	**-0.1**
BALB	**Balikesir**	**1.03**	**301**	*e*Pg	**Pb**	**01 39 57.8**	**-0.1**
IGD	**Bursa**	**1.16**	**7**	*i* P	**Pg**	**01 39 58.6**	**-1.4**
IGD				*i* S	**Sn**	**01 40 16.6**	**-0.2**
BALY	**Balya**	**1.25**	**301**	P	**Pn**	**01 40 02.0**	**+0.2**
BALY				S	**Sn**	**01 40 19.3**	**+0.2**
BALY	**Balya**	**1.25**	**301**	*i* P	**Pn**	**01 40 02.0**	**+0.2**
BALY				*i* S	**Sn**	**01 40 19.3**	**+0.2**
KCTX	**Karacabey (Bur**	**1.26**	**336**	*e*PN	**Pb**	**01 40 02.0**	**+0.1**
KCTX	**Karacabey (Bur**	**1.26**	**336**	*e*Pn	**Pb**	**01 40 02.0**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.26**	**355**	*e*PN	**Pn**	**01 40 01.3**	**-0.7**
MDNY	**Mudanya-Bursa**	**1.26**	**355**	*e*Pn	**Pn**	**01 40 01.3**	**-0.7**
CAVI	**Cavuskoy**	**1.27**	**30**	*e*PN	**Pb**	**01 40 01.9**	**-0.1**
CAVI	**Cavuskoy**	**1.27**	**30**	*e*Pn	**Pb**	**01 40 01.9**	**-0.1**
BORA	**Eskisehir**	**1.35**	**55**	P	**Pg**	**01 40 03.8**	**+0.2**
BORA				S	**Sn**	**01 40 21.7**	**+0.1**
BORA	**Eskisehir**	**1.35**	**55**	*i* P	**Pg**	**01 40 03.8**	**+0.2**
BORA				*i* S	**Sn**	**01 40 21.7**	**+0.1**
GONE	**Gonen-Balikesi**	**1.39**	**313**	*e*PN	**Pb**	**01 40 03.9**	**-0.2**
GONE	**Gonen-Balikesi**	**1.39**	**313**	*e*Pn	**Pb**	**01 40 03.9**	**-0.2**
ADVT	**Abdulvahap**	**1.44**	**23**	*e*PN	**Pb**	**01 40 04.7**	**-0.2**
ADVT	**Abdulvahap**	**1.44**	**23**	*e*Pn	**Pb**	**01 40 04.7**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**1.46**	**218**	*e*PN	**Pg**	**01 40 05.5**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**1.46**	**218**	*e*Pn	**Pg**	**01 40 05.5**	**-0.1**
ARMT	**Armutlu**	**1.46**	**355**	*e*PN	**Pb**	**01 40 05.0**	**-0.3**
**

FROS	Frosini	0.90	224	Pg	Pg	01 42 18.8 +0.1
	258nm,0.6s					
SNTG	Esanatoglia	0.90	131	Pg	Pg	01 42 18.1 -0.7
	191nm,0.6s					
SNTG	Esanatoglia	0.90	131	Pg	Pg	01 42 18.1 -0.7
	191nm,0.6s					
MGAB	Montegabbione	0.94	176	Pg	Pg	01 42 19.6 0.0
	395nm,0.6s					
MGAB	Montegabbione	0.94	176	Pg	Pg	01 42 19.6 0.0
	395nm,0.6s					
CING	Cingoli	0.98	119	Pg	Pg	01 42 19.9 -0.4
	176nm,0.6s					
CING	Cingoli	0.98	119	Pg	Pg	01 42 19.9 -0.4
	176nm,0.6s					
SACS	San Casciano d	1.00	184	Pg	Pg	01 42 20.7 -0.1
	175nm,0.5s					
BDI	Bagni Di Lucca	1.04	282	Pg	Pb	01 42 21.1 -0.5
BDI	Bagni Di Lucca	1.04	282	Pg	Pb	01 42 21.1 -0.5
ARCI	Arcidosso	1.07	202	Pg	Pb	01 42 21.8 -0.3
	191nm,0.9s					
ARCI	Arcidosso	1.07	202	Pg	Pb	01 42 21.8 -0.3
	191nm,0.9s					
TRIF	Trifonti	1.09	228	Pg	Pb	01 42 22.1 -0.3
	135nm,1.1s					
TRIF	Trifonti	1.09	228	Pg	Pb	01 42 22.1 -0.3
	135nm,1.1s					
MCIV	Monte Civitell	1.10	193	Pg	Pb	01 42 22.5 0.0
	61nm,0.9s					
MCIV	Monte Civitell	1.10	193	Pg	Pb	01 42 22.5 0.0
	61nm,0.9s					
MAIM	Mastiano	1.10	274	Pg	Pb	01 42 22.1 -0.4
	98nm,0.7s					
MAIM	Mastiano	1.10	274	P	Pb	01 42 21.5 -1.0
MAIM	Mastiano	1.10	274	Pg	Pb	01 42 22.1 -0.4
	98nm,0.7s					
MAIM				S	Sb	01 42 36.1 -0.8
FDMO	Fiordimonte	1.13	136	Pg	Pb	01 42 22.3 -0.7
	138nm,0.7s					
FDMO	Fiordimonte	1.13	136	Pg	Pb	01 42 22.3 -0.7
	138nm,0.7s					
SASS	Sassa	1.13	239	Pg	Pb	01 42 22.4 -0.6
	67nm,1.1s					
SASS	Sassa	1.13	239	Pg	Pb	01 42 22.4 -0.6
	67nm,1.1s					
SARO	Sassorosso	1.21	287	P	Pn	01 42 23.2 -1.2
SARO				S	Sb	01 42 38.8 -1.3
NVLJ	Novalja	2.17	70	ePn	Pn	01 42 37.1 -0.4
NVLJ				Sn	Sn	01 43 03.9 -0.6
NVLJ	Novalja	2.17	70	ePn	Pn	01 42 37.1 -0.4
NVLJ				Sn	Sn	01 43 03.8 -0.6
JAVS	Javornik	2.51	35	iPn	Pn	01 42 41.4 -0.8
JAVS				iSn	Sn	01 43 13.0 +0.1
JAVS	Javornik	2.51	35	iSn	Sn	01 43 13.0 +0.1
PGF	Pioggiola	2.56	240	ePn	Pn	01 42 43.5 +0.5
PGF				eSn	Sn	01 43 14.1 -0.1
	5.2nm,0.4s					
PGF	Pioggiola	2.56	240	ePn	Pn	01 42 43.5 +0.5
PGF				eSn	Sn	01 43 14.1 -0.1
	2.6nm,0.4s					
VISS	Visnje	2.80	45	iPn	Pn	01 42 45.8 -0.4
VISS				iSn	Sn	01 43 21.1 +1.1
VISS	Visnje	2.80	45	iPn	Pn	01 42 45.8 -0.4
VISS				iSn	Sn	01 43 21.1 +1.1
BOJS	Bojanci	2.84	53	iPn	Pn	01 42 46.5 -0.2
BOJS	Bojanci	2.84	53	iPn	Pn	01 42 46.5 -0.2
ABTA	Abfaltersbach	2.92	7	iPn	Pn	01 42 48.4 +0.5
ABTA				iSn	Sn	01 43 24.8 +1.8
	35nm,0.7s					
ABTA	Abfaltersbach	2.92	7	Pn	Pn	01 42 48.4 +0.5
ABTA				Sn	Sn	01 43 24.8 +1.8
	35nm,0.7s					
MYKA	Terra Mystica	3.01	22	iPn	Pn	01 42 50.7 +1.6
	2um,0.0s					
MYKA	Terra Mystica	3.01	22	Pn	Pn	01 42 50.7 +1.6
	2um,0.0s					
OBKA	Obir	3.21	33	iPn	Pn	01 42 54.8 +3.0
	1.1nm,0.3s					
OBKA	Obir	3.21	33	Pn	Pn	01 42 54.8 +3.0
	1.1nm,0.3s					
SBF	Sospel	3.31	272	ePn	Pn	01 42 53.2 -0.1
SBF				eSn	Sn	01 43 30.8 -1.8
	19nm,0.6s					
SBF	Sospel	3.31	272	ePn	Pn	01 42 53.2 -0.1
SBF				eSn	Sn	01 43 30.8 -1.8
	9.6nm,0.6s					
DAVA	Damuels	3.75	337	iPn	Pn	01 43 02.9 +3.6
	5.2nm,0.5s					
DAVA	Damuels	3.75	337	Pn	Pn	01 43 02.9 +3.6
	5.2nm,0.5s					
FRF	La Foret Royal	3.90	268	ePn	Pn	01 43 02.2 +0.9
FRF	La Foret Royal	3.90	268	ePn	Pn	01 43 02.2 +0.9
LMR	La Mourre	4.03	265	ePn	Pn	01 43 02.3 -0.8
LMR				eSn	Sn	01 43 48.1 -2.2
	1.3nm,0.3s					
LMR	La Mourre	4.03	265	ePn	Pn	01 43 02.3 -0.8
LMR				eSn	Sn	01 43 48.1 -2.2
	0.6nm,0.3s					
LPG	La Plagne	4.10	295	ePn	Pn	01 43 05.1 +0.8
LPG	La Plagne	4.10	295	ePn	Pn	01 43 05.1 +0.8
LPL	La Plagne	4.12	296	ePn	Pn	01 43 06.3 +1.8
LPL	La Plagne	4.12	296	ePn	Pn	01 43 06.3 +1.8
ORIF	Oris-en-Rattie	4.52	286	ePn	Pn	01 43 12.3 +2.4
ORIF				eSn	Sn	01 44 05.1 +2.5
	5.0nm,0.6s					
ORIF	Oris-en-Rattie	4.52	286	ePn	Pn	01 43 12.3 +2.4
ORIF				eSn	Sn	01 44 05.1 +2.5
	2.5nm,0.6s					
CABF	La Chapelle	5.01	305	ePn	Pn	01 43 18.6 +1.9
CABF	La Chapelle	5.01	305	ePn	Pn	01 43 18.6 +1.9
HINF	Hinteralfeld	5.36	320	ePn	Pn	01 43 22.2 +0.8
HINF				eSn	Sn	01 44 26.3 +3.2
	5.0nm,0.5s					
HINF	Hinteralfeld	5.36	320	ePn	Pn	01 43 22.2 +0.8
HINF				eSn	Sn	01 44 26.3 +3.2
	2.5nm,0.5s					
KHC	Kasperske Hory	5.39	11	ePn	Pn	01 43 21.2 -0.6
KHC				eSN	Sn	01 44 21.0 -2.8
KHC				ex	x	01 44 38.7
KHC	Kasperske Hory	5.39	11	Pn	Pn	01 43 21.2 -0.6
KHC				Sn	Sn	01 44 21.0 -2.8
CDF	Champ du Feu	5.62	326	ePn	Pn	01 43 25.4 +0.3
CDF				eSn	Sn	01 44 28.9 -0.8
	4.7nm,0.5s					
CDF	Champ du Feu	5.62	326	ePn	Pn	01 43 25.4 +0.3
CDF				eSn	Sn	01 44 28.9 -0.8
	2.3nm,0.5s					
HAU	Haudompre	5.73	318	ePn	Pn	01 43 26.9 +0.4
HAU				eSn	Sn	01 44 31.8 -0.4
	7.5nm,0.4s					
HAU	Haudompre	5.73	318	ePn	Pn	01 43 26.9 +0.4
HAU				eSn	Sn	01 44 31.8 -0.4
	3.8nm,0.4s					
SMF	Signal de Mont	6.41	299	ePn	Pn	01 43 36.4 +0.6
SMF				eSn	Sn	01 44 48.7 -0.2
	5.7nm,0.5s					
SMF	Signal de Mont	6.41	299	ePn	Pn	01 43 36.4 +0.6
SMF				eSn	Sn	01 44 48.7 -0.2
	2.8nm,0.5s					
LOR	Lormes	6.67	304	ePn	Pn	01 43 40.7 +1.4
	baz=119					
LOR				eSn	Sn	01 44 54.8 -0.4
	1.9nm,0.3s					
LOR	Lormes	6.67	304	ePn	Pn	01 43 40.7 +1.4
LOR				eSn	Sn	01 44 54.8 -0.4
	0.9nm,0.3s					
MTLF	Montolieu	7.13	269	ePn	Pn	01 43 46.4 +0.7
MTLF	Montolieu	7.13	269	ePn	Pn	01 43 46.4 +0.7

*ISCJB **25** 01:43:52.9±0.6,39.°10N±0.°03×29.°10E±0.°03,h1km±7km,*
Error ellipse: s-maj=5.6km s-min=4.2km az=177.8
*ISK **25** 01:43:52.6,39.°09N×29.°15E,h5km,MD2.9*
*CSEM **25** 01:43:53.3±0.1,39.°09N×29.°10E,h5km,ML2.8,Error*
ellipse: s-maj=2.5km s-min=2.1km az=7.0
*DDA **25** 01:43:53.1,39.°11N×29.°10E,h7km,Ml2.8*
ISC 25 01:43:53.3±1.0,39.°09N±0.°03×29.°11E±0.°02,h8km±9km,
n51,σ0°43/62,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	Gediz	0.29	90	P	Pg	01 43 59.4	+0.3
GDZ				S	Sg	01 44 03.7	+0.6
GDZ	Gediz	0.29	90	iP	Pg	01 43 59.4	+0.3
GDZ				iS	Sg	01 44 03.7	+0.6
DEMI	Demirci	0.31	261	P	Pg	01 43 59.6	+0.2
DEMI	Demirci	0.31	261	iP	Pg	01 43 59.6	+0.2
TVSB	Tavsanli	0.45	37	ePG	Pg	01 44 01.9	-0.3
TVSB				eSG	Sg	01 44 07.5	-0.7
TVSB	Tavsanli	0.45	37	ePg	Pg	01 44 01.9	-0.3
TVSB				eSg	Sg	01 44 07.5	-0.7
DST	Dursunbey	0.64	324	ePG	Pg	01 44 05.3	-0.3
DST	Dursunbey	0.64	324	ePg	Pg	01 44 05.3	-0.3
DURS	Dursunbey	0.71	316	P	Pg	01 44 06.6	-0.4
DURS	Dursunbey	0.71	316	iP	Pg	01 44 06.6	-0.4
KHAL	Karahalli	0.78	157	P	Pb	01 44 08.9	-0.3
KHAL				S	Sb	01 44 19.6	-0.3
KHAL	Karahalli	0.78	157	iP	Pb	01 44 08.8	-0.3
KHAL				iS	Sb	01 44 19.6	-0.3
KHL	Karahalli	0.83	157	ePG	Pg	01 44 08.5	-0.8
KHL	Karahalli	0.83	157	ePg	Pg	01 44 08.5	-0.8
AKHS	Akhisar	1.03	259	P	Pb	01 44 13.4	+0.1
AKHS	Akhisar	1.03	259	iP	Pb	01 44 13.4	+0.1
AKS	Akhisar	1.03	259	ePG	Pb	01 44 13.4	+0.1
AKS	Akhisar	1.03	259	ePg	Pb	01 44 13.4	+0.1
BALB	Balikesir	1.10	300	ePN	Pb	01 44 14.4	0.0
BALB	Balikesir	1.10	300	ePn	Pb	01 44 14.5	0.0
IGD	Bursa	1.18	4	iP	Pg	01 44 14.8	-1.1
IGD				iS	Sg	01 44 31.0	-0.1
MDNY	Mudanya-Bursa	1.29	352	ePN	Pg	01 44 17.9	-0.2
MDNY	Mudanya-Bursa	1.29	352	ePn	Pg	01 44 17.9	-0.2
BORA	Eskisehir	1.31	52	P	Pn	01 44 17.8	-0.1
BORA				S	Sn	01 44 36.0	+0.4
BORA	Eskisehir	1.31	52	iP	Pn	01 44 17.8	-0.1
BORA				iS	Sn	01 44 36.0	+0.4
KCTX	Karacabey (Bur	1.31	334	ePN	Pg	01 44 18.4	0.0
KCTX	Karacabey (Bur	1.31	334	ePn	Pg	01 44 18.4	0.0
BALY	Balya	1.32	300	P	Pb	01 44 18.3	-0.1
BALY				S	Sn	01 44 36.0	+0.1
BALY	Balya	1.32	300	iP	Pb	01 44 18.3	-0.1
BALY				iS	Sn	01 44 36.0	+0.1
GEMT	Gemlik	1.34	3	ePN	Pn	01 44 18.4	+0.1
GEMT	Gemlik	1.34	3	ePn	Pn	01 44 18.4	+0.1
ESKT	Eskisehir	1.42	72	iP	Pg	01 44 20.8	+0.3
SEYT	Eskypehyr	1.42	72	P	Pg	01 44 20.8	+0.3
ADVT	Abdulvahap	1.43	20	ePN	Pb	01 44 19.9	-0.3
ADVT	Abdulvahap	1.43	20	ePn	Pb	01 44 19.9	-0.3
GONE	Gonen-Balikesi	1.46	311	ePN	Pn	01 44 20.1	+0.3
GONE	Gonen-Balikesi	1.46	311	ePn	Pn	01 44 20.1	+0.3
ARMT	Armutlu	1.49	353	ePN	Pb	01 44 20.9	-0.3
ARMT	Armutlu	1.49	353	ePn	Pb	01 44 20.9	-0.3
EDC	Edincik	1.58	323	ePN	Pn	01 44 21.8	+0.2
EDC	Edincik	1.58	323	ePn	Pn	01 44 21.8	+0.2
GULT	Gulveren	1.73	39	ePN	Pn	01 44 24.3	+0.6
GULT	Gulveren	1.73	39	ePn	Pn	01 44 24.3	+0.6
SVRH	Sivrihisar-ESK	1.91	78	ePN	Pn	01 44 26.3	+0.1
SVRH	Sivrihisar-ESK	1.91	78	ePn	Pn	01 44 26.3	+0.1
ISK	Istanbul-Kandi	1.97	359	ePN	Pn	01 44 27.8	+0.8
ISK	Istanbul-Kandi	1.97	359	ePn	Pn	01 44 27.8	+0.8
SILT	Sile	2.10	11	ePN	Pn	01 44 29.7	+1.0
SILT	Sile	2.10	11	ePn	Pn	01 44 29.7	+1.0
MDUB	Mudurnu	2.12	49	ePN	Pn	01 44 29.2	+0.1
MDUB	Mudurnu	2.12	49	ePn	Pn	01 44 29.2	+0.1

*ISCJB **25** 01:45:22.8±0.5,39.°09N±0.°03×29.°05E±0.°04,h6km±6km,*
Error ellipse: s-maj=5.5km s-min=5.1km az=135.4
*DDA **25** 01:45:22.5,39.°09N×29.°02E,h7km,Ml2.4*
*ISK **25** 01:45:22.4,39.°05N×29.°18E,h14km,MD2.6*
*CSEM **25** 01:45:23.0±0.2,39.°08N×29.°07E,h10km,ML2.4,Error*
ellipse: s-maj=7.1km s-min=5.5km az=80.0
ISC 25 01:45:22.2±1.0,39.°07N±0.°03×29.°08E±0.°03,h12km±9km,
n27,σ0°56/36,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.28	265	P	Pg	01 45 28.1	0.0
DEMI				S	Sg	01 45 31.5	-0.6
DEMI	Demirci	0.28	265	iP	Pg	01 45 28.1	0.0
DEMI				iS	Sg	01 45 31.5	-0.6
GDZ	Gediz	0.31	86	P	Pb	01 45 30.0	+0.1
GDZ				S	Sb	01 45 35.2	+0.2
GDZ	Gediz	0.31	86	iP	Pb	01 45 30.0	+0.1
GDZ				iS	Sb	01 45 35.2	+0.2
TVSB	Tavsanli	0.48	38	ePG	Pg	01 45 32.1	+0.4
TVSB				eSG	Sg	01 45 38.5	+0.3
TVSB	Tavsanli	0.48	38	ePg	Pg	01 45 32.2	+0.4
TVSB				eSg	Sg	01 45 38.5	+0.3
DST	Dursunbey	0.64	326	ePG	Pn	01 45 36.8	-0.4
DST	Dursunbey	0.64	326	ePg	Pn	01 45 36.8	-0.4
KULA	Kula-Manisa	0.64	211	ePG	Pb	01 45 35.7	+0.2
KULA	Kula-Manisa	0.64	211	ePg	Pb	01 45 35.7	+0.2
KHAL	Karahalli	0.77	155	P	Pn	01 45 39.8	+0.8
KHAL				S	Sn	01 45 49.8	-0.8
KHAL	Karahalli	0.77	155	iP	Pn	01 45 39.8	+0.8
KHAL				iS	Sn	01 45 49.8	-0.8
KHL	Karahalli	0.82	155	ePG	Pg	01 45 37.8	-0.3
KHL	Karahalli	0.82	155	ePg	Pg	01 45 37.8	-0.3
BALB	Balikesir	1.09	302	ePN	Pn	01 45 44.7	+1.4
BALB	Balikesir	1.09	302	ePn	Pn	01 45 44.7	+1.4
IGD	Bursa	1.20	4	iP	Pn	01 45 43.8	-1.1
IGD				iS	Sb	01 46 00.4	+0.1
IZI	Iznik	1.30	13	ePN	Pg	01 45 47.2	-0.1
IZI	Iznik	1.30	13	ePn	Pg	01 45 47.2	-0.1
MDNY	Mudanya-Bursa	1.31	353	ePN	Pg	01 45 47.4	+0.1
MDNY	Mudanya-Bursa	1.31	353	ePn	Pg	01 45 47.4	+0.1
KCTX	Karacabey (Bur	1.32	335	ePN	Pg	01 45 47.7	+0.1
KCTX	Karacabey (Bur	1.32	335	ePn	Pg	01 45 47.7	+0.1
ADVT	Abdulvahap	1.45	20	ePN	Pn	01 45 47.9	-0.4
ADVT	Abdulvahap	1.45	20	ePn	Pn	01 45 47.9	-0.4
ARMT	Armutlu	1.50	354	ePN	Pb	01 45 50.3	+0.2
ARMT	Armutlu	1.50	354	ePn	Pb	01 45 50.3	+0.2

*CSEM **25** 01:46:06.9±0.1,39.°08N×29.°12E,h2km,MD2.8,Error*
ellipse: s-maj=3.5km s-min=2.4km az=93.0
*ISK **25** 01:46:06.4,39.°05N×29.°16E,h6km,MD2.8*
*DDA **25** 01:46:06.7,39.°09N×29.°11E,h7km,Ml2.4*
*ISCJB **25** 01:46:07.2±0.5,39.°06N±0.°03×29.°12E±0.°05,h9km,Error*
ellipse: s-maj=5.7km s-min=4.0km az=4.1
ISC 25 01:46:06.9±0.9,39.°06N±0.°03×29.°09E±0.°04,h9km,n28,
σ0°54/34,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	Gediz	0.30	84	P	Pg	01 46 12.9	-0.1
GDZ				S	Sg	01 46 17.6	+0.6
GDZ	Gediz	0.30	84	iP	Pg	01 46 12.9	-0.1
GDZ				iS	Sg	01 46 17.6	+0.6
TVSB	Tavsanli	0.48	36	ePG	Pg	01 46 15.6	-0.8
TVSB	Tavsanli	0.48	36	ePg	Pg	01 46 15.6	-0.8
KULA	Kula-Manisa	0.64	212	ePG	Pb	01 46 19.9	-0.3
KULA				eSG	Sb	01 46 28.9	-0.4
KULA	Kula-Manisa	0.64	212	ePg	Pb	01 46 20.0	-0.3
KULA				eSg	Sb	01 46 28.9	-0.4
KHAL	Karahalli	0.75	155	iP	Pb	01 46 22.4	+0.2
KHAL				iS	Sb	01 46 32.7	+0.1
KHL	Karahalli	0.81	155	ePG	Pg	01 46 21.9	-0.5
KHL	Karahalli	0.81	155	ePg	Pg	01 46 21.9	-0.5
BALB	Balikesir	1.11	302	ePN	Pn	01 46 29.3	+0.8
BALB	Balikesir	1.11	302	ePn	Pn	01 46 29.3	+0.8
IGD	Bursa	1.21	4	iP	Pn	01 46 28.2	-1.7
IGD				iS	Sb	01 46 45.6	0.0
IZI	Iznik	1.31	13	ePN	Pb	01 46 31.8	+0.1
IZI	Iznik	1.31	13	ePn	Pb	01 46 31.8	+0.1
MDNY	Mudanya-Bursa	1.32	353	ePN	Pg	01 46 32.0	-0.2
MDNY	Mudanya-Bursa	1.32	353	ePn	Pg	01 46 32.0	-0.2
KCTX	Karacabey (Bur	1.33	335	ePN	Pg	01 46 32.4	-0.1
KCTX	Karacabey (Bur	1.33	335	ePn	Pg	01 46 32.4	-0.1
ADVT	Abdulvahap	1.46	20	ePN	Pb	01 46 34.0	-0.2
ADVT	Abdulvahap	1.46	20	ePn	Pb	01 46 34.0	-0.2
ARMT	Armutlu	1.52	353	ePN	Pb	01 46 35.0	-0.2
ARMT	Armutlu	1.52	353	ePn	Pb	01 46 35.0	-0.2
EDC	Edincik	1.60	324	ePN	Pb	01 46 36.5	-0.1
EDC	Edincik	1.60	324	ePn	Pb	01 46 36.5	-0.1
GULT	Gulveren	1.76	38	ePN	Pn	01 46 38.0	+0.4
GULT	Gulveren	1.76	38	ePn	Pn	01 46 38.0	+0.4
ISK	Istanbul-Kandi	2.01	359	ePN	Pn	01 46 41.7	+0.8
ISK	Istanbul-Kandi	2.01	359	ePn	Pn	01 46 41.7	+0.8

*ISCJB **25** 01:48:29.7±0.6,39.°11N±0.°03×29.°05E±0.°04,h2km±7km,*
Error ellipse: s-maj=5.8km s-min=4.6km az=37.1
*ISK **25** 01:48:29.8,39.°11N×29.°10E,h7km,MD2.8*
*DDA **25** 01:48:29.8,39.°11N×29.°07E,h7km,Ml2.7*
*CSEM **25** 01:48:30.1±0.1,39.°12N×29.°07E,h5km,ML2.7,Error*
ellipse: s-maj=2.4km s-min=2.1km az=118.0
ISC 25 01:48:30.2±1.0,39.°12N±0.°02×29.°06E±0.°03,h10km±10km,
n39,σ0°33/50,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	Gediz	0.33	95	P	Pg	01 48 36.7	0.0
GDZ				S	Sg	01 48 41.6	+0.5
GDZ	Gediz	0.33	95	iP	Pg	01 48 36.7	0.0
GDZ				iS	Sg	01 48 41.6	+0.5
TVSB	Tavsanli	0.45	43	ePG	Pg	01 48 39.1	0.0
TVSB				eSG	Sg	01 48 45.2	+0.1
TVSB	Tavsanli	0.45	43	ePg	Pg	01 48 39.1	0.0
TVSB				eSg	Sg	01 48 45.2	+0.1
DST	Dursunbey	0.60	325	ePG	Pg	01 48 41.3	-0.5
DST	Dursunbey	0.60	325	ePg	Pg	01 48 41.3	-0.5
DURS	Dursunbey	0.67	317	P	Pg	01 48 42.9	-0.2
DURS				S	Sn	01 48 56.4	0.0
DURS	Dursunbey	0.67	317	iP	Pg	01 48 42.9	-0.2
DURS				iS	Sn	01 48 56.4	0.0
KULA	Kula-Manisa	0.68	208	ePG	Pg	01 48 43.1	-0.2
KULA	Kula-Manisa	0.68	208	ePg	Pg	01 48 43.1	-0.2
KHAL	Karahalli	0.82	156	P	Pg	01 48 46.0	+0.1
KHAL				S	Sg	01 48 56.4	-0.2
KHAL	Karahalli	0.82	156	iP	Pg	01 48 46.0	+0.1
KHAL				iS	Sg	01 48 56.4	-0.2
ORLT	Orhaneli	0.94	352	ePG	Pb	01 48 48.7	+0.1
ORLT	Orhaneli	0.94	352	ePg	Pb	01 48 48.7	+0.1
AKHS	Akhisar	1.00	257	P	Pb	01 48 49.6	0.0
AKHS				S	Sg	01 49 02.4	-0.1
AKHS	Akhisar	1.00	257	iP	Pb	01 48 49.6	0.0
AKHS				iS	Sg	01 49 02.4	-0.1
AKS	Akhisar	1.00	257	ePG	Pb	01 48 49.7	+0.1
AKS	Akhisar	1.00	257	ePg	Pb	01 48 49.7	+0.1
BALB	Balikesir	1.06	300	ePN	Pn	01 48 51.2	+0.2
BALB	Balikesir	1.06	300	ePn	Pn	01 48 51.2	+0.2
IGD	Bursa	1.15	5	iP	Pb	01 48 51.0	-1.2
IGD				iS	Sn	01 49 08.8	+0.6
IZI	Iznik	1.26	14	ePN	Pg	01 48 54.4	0.0
IZI	Iznik	1.26	14	ePn	Pg	01 48 54.4	0.0
MDNY	Mudanya-Bursa	1.26	354	ePN	Pg	01 48 55.0	+0.7
MDNY	Mudanya-Bursa	1.26	354	ePn	Pg	01 48 55.0	+0.7
KCTX	Karacabey (Bur	1.27	335	ePN	Pb	01 48 54.2	-0.1
KCTX	Karacabey (Bur	1.27	335	ePn	Pb	01 48 54.2	-0.1
GONE	Gonen-Balikesi	1.41	312	ePN	Pb	01 48 56.9	+0.3
GONE	Gonen-Balikesi	1.41	312	ePn	Pb	01 48 56.9	+0.3
ADVT	Abdulvahap	1.42	21	ePN	Pb	01 48 56.4	-0.3
ADVT	Abdulvahap	1.42	21	ePn	Pb	01 48 56.4	-0.3
ARMT	Armutlu	1.46	354	ePN	Pb	01 48 57.4	0.0
ARMT	Armutlu	1.46	354	ePn	Pb	01 48 57.4	0.0
AYDB	Zeytinkoy-Aydi	1.49	219	ePN	Pb	01 48 58.1	+0.2
AYDB	Zeytinkoy-Aydi	1.49	219	ePn	Pb	01 48 58.1	+0.2
EDC	Edincik	1.54	323	ePN	Pb	01 48 58.6	-0.2
EDC	Edincik	1.54	323	ePn	Pb	01 48 58.6	-0.2
GULT	Gulveren	1.73	40	ePN	Pn	01 48 59.8	-0.5
GULT	Gulveren	1.73	40	ePn	Pn	01 48 59.8	-0.5

*ISCJB **25** 01:56:44.8±0.6,39.°09N±0.°03×29.°03E±0.°04,h7km±6km,*
Error ellipse: s-maj=5.5km s-min=5.3km az=34.0
*CSEM **25** 01:56:44.9±0.1,39.°10N×29.°02E,h7km±1km,ML2.0,Error*
ellipse: s-maj=3.0km s-min=2.8km az=62.0
*ISK **25** 01:56:44.6,39.°09N×29.°09E,h10km,MD2.7*
*DDA **25** 01:56:44.9,39.°06N×29.°02E,h7km,Ml2.0*
ISC 25 01:56:45.1±0.9,39.°09N±0.°03×29.°02E±0.°03,h12km±9km,
n22,σ0°35/32,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.24	259	P	Pg	01 56 50.1	-0.1
DEMI				S	Sg	01 56 53.5	-0.1
DEMI	Demirci	0.24	259	iP	Pg	01 56 50.1	-0.1
DEMI				iS	Sg	01 56 53.5	-0.1
GDZ	Gediz	0.36	90	P	Pg	01 56 52.4	+0.1
GDZ				S	Sg	01 56 57.5	+0.4
GDZ	Gediz	0.36	90	iP	Pg	01 56 52.4	+0.1
GDZ				iS	Sg	01 56 57.5	+0.4
TVSB	Tavsanli	0.50	43	PG	Pg	01 56 54.5	-0.3
TVSB				SG	Sg	01 57 00.9	-0.6
TVSB	Tavsanli	0.50	43	iPg	Pg	01 56 54.5	-0.3
TVSB				iSg	Sg	01 57 00.9	-0.6
KHAL	Karahalli	0.81	153	P	Pb	01 57 01.3	+0.2
KHAL				S	Sg	01 57 11.5	+0.3
KHAL	Karahalli	0.81	153	iP	Pb	01 57 01.3	+0.2
KHAL				iS	Sg	01 57 11.5	+0.3
KHL	Karahalli	0.86	153	ePG	Pg	01 57 00.9	-0.7
KHL				eSG	Sb	01 57 13.3	-0.2
KHL	Karahalli	0.86	153	ePg	Pg	01 57 00.9	-0.7
KHL				eSg	Sb	01 57 13.3	-0.2
BALB	Balikesir	1.04	302	ePN	Pn	01 57 05.8	+0.3
BALB	Balikesir	1.04	302	ePn	Pn	01 57 05.8	+0.3
KCTX	Karacabey (Bur	1.28	337	ePN	Pb	01 57 09.5	+0.3
KCTX	Karacabey (Bur

MDNY	Mudanya-Bursa	1.26 352	*e*PN	Pb	02 02 10.1	+0.1
MDNY	Mudanya-Bursa	1.26 352	*e*Pn	Pb	02 02 10.1	+0.1
KCTX	Karacabey (Bur	1.28 333	*e*PN	Pb	02 02 10.6	+0.1
KCTX	Karacabey (Bur	1.28 333	*e*Pn	Pb	02 02 10.6	+0.1
ADVT	Abdulvahap	1.40 20	*e*PN	Pn	02 02 11.6	-0.2
ADVT	Abdulvahap	1.40 20	*e*Pn	Pn	02 02 11.6	-0.2
ARMT	Armutlu	1.46 352	*e*PN	Pn	02 02 12.7	0.0
ARMT	Armutlu	1.46 352	*e*Pn	Pn	02 02 12.7	0.0
GULT	Gulveren	1.70 39	*e*PN	Pb	02 02 15.5	-0.5
GULT	Gulveren	1.70 39	*e*Pn	Pn	02 02 15.5	-0.5

DDA ***25*** *02:02:16.0, 39°.07N×29°.03E, h7km, Md2.5*
ISCJB ***25*** *02:02:16.4±0.4, 39°.07N±0°.03×29°.02E±0°.04, h9km, Error ellipse: s-maj=4.7km s-min=4.4km az=9.5*
CSEM ***25*** *02:02:16.4±0.1, 39°.08N×29°.03E, h5km, MD2.8, Error ellipse: s-maj=2.8km s-min=2.4km az=99.0*
ISK ***25*** *02:02:16.0, 39°.06N×29°.02E, h8km, MD2.8*
ISC 25 02:02:16.5±0.9, 39°.07N±0°.03×29°.03E±0°.03, h9km, n34, σ0°31/39, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.24	265	P	Pg	02 02 21.1	-0.3
DEMI	Demirci	0.24	265	*i* P	Pg	02 02 21.1	-0.3
GDZ	Gediz	0.35	86	P	Pg	02 02 23.2	-0.3
GDZ				S	Sg	02 02 28.6	+0.4
GDZ	Gediz	0.35	86	*i* P	Pg	02 02 23.2	-0.3
GDZ				*i* S	Sg	02 02 28.6	+0.4
TVSB	Tavsanli	0.51	41	*e*PG	Pg	02 02 26.1	-0.3
TVSB	Tavsanli	0.51	41	*e*Pg	Pg	02 02 26.1	-0.3
KULA	Kula-Manisa	0.62	208	*e*PG	Pg	02 02 28.3	-0.2
KULA				*e*SG	Sg	02 02 36.6	+0.1
KULA	Kula-Manisa	0.62	208	*e*Pg	Pg	02 02 28.3	-0.2
KULA				*e*Sg	Sg	02 02 36.7	+0.1
KHAL	Karahalli	0.78	152	P	Pb	02 02 32.5	+0.2
KHAL	Karahalli	0.78	152	*i* P	Pb	02 02 32.5	+0.2
KHAL				*i* S	Sb	02 02 42.7	-0.3
KHL	Karahalli	0.84	152	*e*PG	Pb	02 02 33.1	-0.1
KHL	Karahalli	0.84	152	*e*Pg	Pb	02 02 33.1	-0.1
AKS	Akhisar	0.96	259	*e*PG	Pb	02 02 35.6	+0.3
AKS	Akhisar	0.96	259	*e*Pg	Pb	02 02 35.6	+0.3
BALB	Balikesir	1.06	303	*e*PG	Pg	02 02 36.6	-0.2
BALB	Balikesir	1.06	303	*e*Pg	Pg	02 02 36.6	-0.2
CAVI	Cavuskoy	1.30	29	*e*PN	Pb	02 02 41.1	0.0
CAVI	Cavuskoy	1.30	29	*e*Pn	Pb	02 02 41.1	0.0
KCTX	Karacabey (Bur	1.31	337	*e*PN	Pn	02 02 40.6	-0.3
KCTX	Karacabey (Bur	1.31	337	*e*Pn	Pn	02 02 40.6	-0.3
MDNY	Mudanya-Bursa	1.31	355	*e*PN	Pg	02 02 41.5	0.0
MDNY	Mudanya-Bursa	1.31	355	*e*Pn	Pg	02 02 41.5	0.0
GONE	Gonen-Balikesi	1.43	314	*e*PN	Pn	02 02 42.8	+0.3
GONE	Gonen-Balikesi	1.43	314	*e*Pn	Pn	02 02 42.8	+0.3
AYDB	Zeytinkoy-Aydi	1.43	219	*e*PN	Pb	02 02 43.3	-0.1
AYDB	Zeytinkoy-Aydi	1.43	219	*e*Pn	Pb	02 02 43.3	-0.1
ARMT	Armutlu	1.50	355	*e*PN	Pn	02 02 43.6	-0.1
ARMT	Armutlu	1.50	355	*e*Pn	Pn	02 02 43.6	-0.1
EDC	Edincik	1.56	325	*e*PN	Pb	02 02 45.2	-0.3
EDC	Edincik	1.56	325	*e*Pn	Pb	02 02 45.3	-0.3
GULT	Gulveren	1.78	40	*e*PN	Pn	02 02 47.5	0.0
GULT	Gulveren	1.78	40	*e*Pn	Pn	02 02 47.5	0.0
CTKS	Kestanelik-??a	2.21	350	*e*PN	Pn	02 02 54.1	+0.9
CTKS	Kestanelik-??a	2.21	350	*e*Pn	Pn	02 02 54.1	+0.9

ISCJB ***25*** *02:04:33.8±0.6, 43°.88N±0°.05×12°.02E±0°.06, h15km±8km, Error ellipse: s-maj=10.6km s-min=3.9km az=37.5*
ROM ***25*** *02:04:33.4±0.2, 43°.88N×12°.04E, h6km±2km, Md2.4/9, Ml1.8/7, Error ellipse: s-maj=2.5km s-min=1.7km az=54.0*
CSEM ***25*** *02:04:34.1±0.2, 43°.88N×12°.02E, h10km, ML2.5/8, Error ellipse: s-maj=5.1km s-min=2.6km az=26.0*
ISC 25 02:04:32.4±1.0, 43°.95N±0°.04×12°.03E±0°.03, h18km±2km, n22, σ0°48/44, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFI	Santa Sofia	0.14	250	Pg	Pg	02 04 37.0	+0.3
SFI				Sg	Sg	02 04 39.7	+0.2
SFI	Santa Sofia	0.14	250	Pg	Pg	02 04 37.0	+0.3
SFI				Sg	Sg	02 04 39.7	+0.2
ASQU	Asqua	0.23	228	Pg	Pb	02 04 38.2	+0.3
ASQU				Sg	Sg	02 04 41.6	-0.2
	345nm,0.2s						
ASQU	Asqua	0.23	228	Pg	Pb	02 04 38.2	+0.3
ASQU				Sg	Sg	02 04 41.6	-0.2
	345nm,0.2s						
BADI	Badiali	0.47	161	Pg	Pg	02 04 41.9	0.0
BADI				Sg	Sg	02 04 48.5	+0.1
	113nm,0.3s						
BADI	Badiali	0.47	161	Pg	Pg	02 04 41.9	0.0
BADI				Sg	Sg	02 04 48.5	+0.1
	113nm,0.3s						
SEI	Scarperia	0.50	282	Pg	Pn	02 04 44.0	-0.6
SEI				Sg	Sn	02 04 52.7	-0.1
	195nm,0.4s						
SEI	Scarperia	0.50	282	Pg	Pn	02 04 44.0	-0.6
SEI				Sg	Sn	02 04 52.7	-0.1
	195nm,0.4s						
PIEI	Pieia	0.55	139	Pg	Pg	02 04 43.5	0.0
PIEI				Sg	Sb	02 04 51.7	+0.6
	22nm,0.3s						
PIEI	Pieia	0.55	139	Pg	Pg	02 04 43.5	0.0
PIEI				Sg	Sb	02 04 51.7	+0.6
	22nm,0.3s						
ATPC	Poggio Castell	0.56	147	Pg	Pg	02 04 43.8	+0.1
ATPC				Sg	Sb	02 04 52.3	+1.0
	38nm,0.2s						
ATPC	Poggio Castell	0.56	147	Pg	Pg	02 04 43.8	+0.1
ATPC				Sg	Sb	02 04 52.3	+1.0
	38nm,0.2s						
FSSB	Fossombrone	0.60	115	Pg	Pb	02 04 45.0	+0.7
FSSB				Sg	Sn	02 04 54.4	-0.9
FSSB	Fossombrone	0.60	115	Pg	Pb	02 04 45.0	+0.7
FSSB				Sg	Sn	02 04 54.4	-0.9
ATVO	AVT- Monte Val	0.63	154	Pg	Pb	02 04 45.0	+0.2
ATVO				Sg	Sb	02 04 54.1	+0.8
	34nm,0.5s						
ATVO	AVT- Monte Val	0.63	154	Pg	Pb	02 04 45.0	+0.2
ATVO				Sg	Sb	02 04 54.1	+0.8
	34nm,0.5s						
SSFR	Montelago di S	0.75	133	Pg	Pb	02 04 47.3	+0.4
SSFR				Sg	Sn	02 04 58.5	-0.5
	34nm,0.2s						
SSFR	Montelago di S	0.75	133	Pg	Pb	02 04 47.3	+0.4
SSFR				Sg	Sn	02 04 58.5	-0.5
	34nm,0.2s						
ATTE	AVT- Monte Tez	0.79	163	Pg	Pb	02 04 47.6	0.0
ATTE				Sg	Sb	02 04 58.2	+0.2
	25nm,0.4s						
ATTE	AVT- Monte Tez	0.79	163	Pg	Pb	02 04 47.6	0.0
ATTE				Sg	Sb	02 04 58.2	+0.2
	25nm,0.4s						
NVLJ	Novalja	2.13	72	*e*Pn	Pb	02 05 10.8	+0.3
NVLJ				Sn	Sb	02 05 36.6	+0.1
NVLJ	Novalja	2.13	72	*e*Pn	Pb	02 05 10.7	+0.3
NVLJ				Sn	Sb	02 05 36.5	+0.1

ISCJB ***25*** *02:08:39.9±0.5, 39°.13N±0°.04×29°.00E±0°.04, h9km, Error ellipse: s-maj=6.5km s-min=4.2km az=158.2*
DDA ***25*** *02:08:39.9, 39°.13N×29°.00E, h7km, Md2.2*
ISK ***25*** *02:08:39.2, 39°.12N×29°.02E, h5km, MD2.7*
CSEM ***25*** *02:08:39.9±0.1, 39°.13N×29°.00E, h6km±1km, MD2.7, Error ellipse: s-maj=3.1km s-min=2.6km az=156.0*
ISC 25 02:08:39.5±1.0, 39°.11N±0°.03×29°.04E±0°.03, h9km, n28, σ0°39/34, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.26	255	P	Pg	02 08 45.4	+0.6
DEMI				S	Sg	02 08 48.5	+0.1
DEMI	Demirci	0.26	255	*i* P	Pg	02 08 45.4	+0.6
DEMI				*i* S	Sg	02 08 48.5	+0.1
GDZ	Gediz	0.34	94	P	Pb	02 08 47.8	-0.1
GDZ				S	Sb	02 08 52.9	-0.6
GDZ	Gediz	0.34	94	*i* P	Pb	02 08 47.8	-0.1
GDZ				*i* S	Sb	02 08 52.9	-0.6
TVSB	Tavsanli	0.47	44	*e*PG	Pg	02 08 49.0	+0.3
TVSB				*e*SG	Sg	02 08 55.8	+0.9
TVSB	Tavsanli	0.47	44	*e*Pg	Pg	02 08 49.0	+0.3
TVSB				*e*Sg	Sg	02 08 55.8	+0.9
DST	Dursunbey	0.59	327	*e*PG	Pg	02 08 50.3	-0.7
DST	Dursunbey	0.59	327	*e*Pg	Pg	02 08 50.3	-0.7
DURS	Dursunbey	0.66	318	P	Pg	02 08 52.1	-0.1
DURS	Dursunbey	0.66	318	*i* P	Pg	02 08 52.1	-0.1
KULA	Kula-Manisa	0.67	206	*e*PG	Pg	02 08 52.4	0.0
KULA	Kula-Manisa	0.67	206	*e*Pg	Pg	02 08 52.4	0.0
BALB	Balikesir	1.04	301	*e*PG	Pb	02 08 59.8	+0.1
BALB	Balikesir	1.04	301	*e*Pg	Pb	02 08 59.8	+0.1
MDNY	Mudanya-Bursa	1.26	355	*e*PN	Pb	02 09 03.5	+0.1
MDNY	Mudanya-Bursa	1.26	355	*e*Pn	Pb	02 09 03.5	+0.1
KCTX	Karacabey (Bur	1.27	336	*e*PN	Pg	02 09 03.8	0.0
KCTX	Karacabey (Bur	1.27	336	*e*Pn	Pg	02 09 03.8	0.0
IZI	Iznik	1.27	15	*e*PN	Pb	02 09 03.8	+0.2
IZI	Iznik	1.27	15	*e*Pn	Pb	02 09 03.8	+0.2
ADVT	Abdulvahap	1.43	22	*e*PN	Pg	02 09 06.7	-0.2
ADVT	Abdulvahap	1.43	22	*e*Pn	Pg	02 09 06.7	-0.2
ARMT	Armutlu	1.46	355	*e*PN	Pb	02 09 06.9	+0.1
ARMT	Armutlu	1.46	355	*e*Pn	Pb	02 09 06.9	+0.1
AYDB	Zeytinkoy-Aydi	1.47	218	*e*PN	Pb	02 09 06.9	-0.2
AYDB	Zeytinkoy-Aydi	1.47	218	*e*Pn	Pb	02 09 06.9	-0.2
GULT	Gulveren	1.74	40	*e*PN	Pb	02 09 11.4	-0.3
GULT	Gulveren	1.74	40	*e*Pn	Pb	02 09 11.4	-0.3

IDC ***25*** *02:08:59.7±0.8, 12°.21N×144°.25E, h0km, mb3.9/8, mb1 4.1/8, mb1mx3.9/31, mbtmp3.9/8, MS3.2/5, Ms1 3.3/5, ms1mx2.9/40, Error ellipse: s-maj=35.4km s-min=18.6km az=102.0*
ISCJB ***25*** *02:09:02.7±0.8, 12°.16N±0°.10×144°.1E±0°.1, h29km, mb4.0/13, MS3.2/5, Error ellipse: s-maj=23.2km s-min=9.3km az=29.7*
NEIC ***25*** *02:09:05.6±1.5, 12°.22N×144°.32E, h42km±14km, mb4.3/5, Error ellipse: s-maj=19.3km s-min=11.0km az=92.0*
ISC 25 02:09:04.1±0.9, 12°.2N±0°.1×144°.3E±0°.2, h29km, n22, σ0°65/17, mb4.2/13, MS3.2/5, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	Guam	1.51	23	Pn	Pn	02 09 29.6	+0.4
	216nm,0.3s,baz=179,slow=5.1,SNR=101						
GUMO				Sn	Sb	02 09 50.4	+0.2
	248nm,0.3s,baz=294,slow=20,SNR=12						
H11N1	WAKE ISLAND Hy 22.99	68		T	T	02 38 23.9	
	baz=255,slow=75,SNR=10						
H11N2	WAKE ISLAND Hy 23.00	68		T	T	02 38 29.4	
	baz=255,slow=75,SNR=10						
H11N3	WAKE ISLAND Hy 23.01	68		T	T	02 38 35.7	
	baz=255,slow=75,SNR=10						
MJAR	Matsushiro Arr	24.85	348	LR	LR	02 21 57.7	
	comp=Z,40nm,19.9s,baz=295,slow=31						
WRA	Warramunga Arr	33.39	197	P	P	02 15 40.4	+0.2
	1.2nm,0.7s,baz=21,slow=9.6,SNR=4.8						
WRA				LR	LR	02 29 20.7	
	comp=Z,44nm,21.7s,baz=145,slow=36						
ASAR	Alice Springs	37.05	196	P	P	02 16 12.2	+0.5
	0.6nm,0.6s,baz=19,slow=10,SNR=7.3						
PETK	Petropavlovsk-	42.20	12	LR	LR	02 33 08.1	
	comp=Z,30nm,19.5s,baz=161,slow=34						
CMAR	Chiang Mai Arr	44.05	284	LR	LR	02 34 40.3	
	comp=Z,28nm,18.5s,baz=138,slow=35						
SONM	Songino Array	47.53	326	P	P	02 17 37.1	+0.1
	0.4nm,0.5s,baz=123,slow=5.3,SNR=2.3						
MKAR	Makanchi Array	62.08	317	P	P	02 19 22.7	+0.4
	1.1nm,0.4s,baz=92,slow=8.1,SNR=13						
KURK	Kurchatov	65.27	320	*e*P	P	02 19 43.1	0.0
	3.6nm,0.6s						
TKM2	Tokmak 2	66.19	312	*e*P	P	02 19 49.9	+0.4
	0.9nm,0.4s						
KKAR	Karatay Array	69.92	312	*e*P	P	02 20 12.8	+0.1
	0.9nm,0.6s						
ILAR	Eielson Array	70.08	25	P	P	02 20 11.9	-1.3
	0.5nm,0.7s,baz=260,slow=5.0,SNR=5.4						
BRVK	Borovoye	70.72	322	*e*P	P	02 20 17.8	+0.5
	1.9nm,0.6s						
ABKAR	Akbulak array	77.17	318	*e*P	P	02 20 54.9	-0.3
	2.4nm,0.6s						
YKA	Yellowknife Ar	84.37	27	P	P	02 21 34.0	+0.6
	0.3nm,0.4s,baz=285,slow=5.1,SNR=8.9						
YKA	Yellowknife Ar	84.37	27	P	P	02 21 34.0	+0.6
ARCES	ARCESS Array B	88.22	342	P	P	02 21 52.4	+0.2
	0.8nm,0.6s,baz=54,slow=4.9,SNR=4.4						
FINES	FINESS Array B	92.17	335	P	P	02 22 09.3	-1.5
	0.9nm,0.5s,baz=69,slow=6.3,SNR=7.2						
FINES				LR	LR	03 07 04.2	
	comp=Z,19nm,18.1s,baz=161,slow=38						
LPAZ	La Paz	148.37	101	PKPbc	PKPbc	02 28 49.3	-0.2
	0.6nm,0.6s,baz=270,slow=1.0,SNR=3.4						

MEX 25 02:11:11.6±0.4, 27°.75N×111°.79W, h16km±5km, MD3.9, Gulf of California

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SRIG	Santa Rosalia	0.58	223	*i* P	Pg	02 11 21.4	-1.8
SRIG				*e*S	Sg	02 11 28.8	-2.1
HSIG		1.47	30	*e*P	Pn	02 11 33.9	-3.6
HSIG				*e*S	Sn	02 11 51.3	-5.1

ISCJB ***25*** *02:14:55.5±0.7, 39°.12N±0°.04×29°.11E±0°.05, h9km, Error ellipse: s-maj=6.1km s-min=5.4km az=21.4*
ISK ***25*** *02:14:55.8, 39°.18N×29°.08E, h8km, MD2.2*
CSEM ***25*** *02:14:55.7±0.1, 39°.11N×29°.11E, h10km, MD2.5, Error ellipse: s-maj=3.0km s-min=2.5km az=78.0*
DDA ***25*** *02:14:56.2, 39°.08N×29°.06E, h7km, Md2.5*
ISC 25 02:14:54.6±0.9, 39°.08N±0°.05×29°.06E±0°.04, h9km, n10, σ0°43/17, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.27	262	P	Pb	02 15 02.0	+0.3
DEMI				S	Sb	02 15 06.3	-0.2
DEMI	Demirci	0.27	262	*i* P	Pb	02 15 02.0	+0.3
DEMI				*i* S	Sb	02 15 06.3	-0.2
TVSB	Tavsanli	0.48	40	*e*PG	Pg	02 15 04.2	+0.1
TVSB				*e*SG	Sg	02 15 10.2	-0.2
TVSB	Tavsanli	0.48	40	*e*Pg	Pg	02 15 04.2	+0.1
TVSB				*e*Sg	Sg	02 15 10.2	-0.2
DURS	Dursunbey	0.69	319	P	Pb	02 15 09.6	+0.7
DURS	Dursunbey	0.69	319	*i* P	Pb	02 15 09.6	+0.7
KHAL	Karahalli	0.79	154	P	Pn	02 15 11.4	-0.6
KHAL				S	Sb	02 15 21.8	+0.5
KHAL	Karahalli	0.79	154	*i* P	Pn	02 15 11.4	-0.6
KHAL				*i* S	Sb	02 15 21.8	+0.5
KCTX	Karacabey (Bur	1.30	336	*e*PN	Pg	02 15 19.6	0.0
KCTX				*e*SN	Sn	02 15 37.0	+0.5
ARMT	Armutlu	1.49	354	PN	Pb	02 15 22.3	-0.2

IDC ***25*** *02:24:25.7±7.8, 24°.68N×125°.77E, h0km, mb3.5/3, mb1 3.6/3, mb1mx3.3/44, mbtmp3.5/3, Error ellipse: s-maj=206.8km s-min=51.5km az=12.0*
JMA ***25*** *02:24:34.0±0.2, 26°.08N×125°.76E, h23km, M3.0*
ISCJB ***25*** *02:24:35.1±1.3, 25°.99N±0°.07×125°.86E±0°.08, h25km±11km, mb3.3/3, Error ellipse: s-maj=15.3km s-min=4.8km az=42.4*
ISC 25 02:24:35.1±2.3, 25°.94N±0°.09×125°.91E±0°.08, h16km±16km, n16, σ0°87/23, mb3.4/3, Southwestern Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JKE	Kume jima 2	0.88	64	P	Pb	02 24 51.4	-0.6
JKE				S	Sg	02 25 04.2	+0.3
JIKM	Ikemajima	1.17	211	P	Pn	02 24 56.2	-0.6
JIKM				*e*S	Sb	02 25 12.2	+0.4
JMJ	Miyako jima 2	1.25	207	P	Pn	02 24 57.6	-0.2
JMJ				*e*S	Sn	02 25 14.8	+0.6
JOGS	Gusukube	1.25	201	P	Pn	02 24 57.9	0.0
JOGS				S	Sn	02 25 15.6	+1.1
JIRB	Irabujima	1.29	211	P	Pn	02 24 57.2	-1.2
JIRB				*e*S	Sn	02 25 14.7	-0.5
JAGN	Aguni-jima	1.36	61	P	Pn	02 24 59.5	0.0
JAGN				*e*S	Sn	02 25 15.6	-1.6
JJT2	Tamagusuku 2	1.67	82	P	Pn	02 25 03.6	-0.1
JTJ	Tarama	1.69	221	P	Pn	02 25 03.3	-0.6
JTJ				*e*S	Sn	02 25 24.3	-0.9
JISG	Ishigakijimahi	1.97	227	P	Pn	02 25 07.1	-0.7
JNTH	Nagotoyohara	1.99	73	P	Pn	02 25 08.0	0.0
JIH	Iheya	2.15	59	P	Pn	02 25 10.1	-0.1
JIJ	Ishigaki jima	2.24	226	P	Pn	02 25 11.7	+0.2
JOW	Kunigami	2.31	67	P	Pn	02 25 12.9	+0.5
SONM	Songino Array	26.71	330	P	P	02 30 16.0	+2.3
	0.8nm,0.8s,baz=138,slow=9.7,SNR=4.9						
MKAR	Makanchi Array	40.19	313	P	P	02 32 10.0	-0.6
	0.5nm,0.8s,baz=111,slow=8.0,SNR=2.9						
YKA	Yellowknife Ar	79.66	24	P	P	02 36 41.4	-0.1
	0.3nm,0.8s,baz=296,slow=5.6,SNR=4.2						

ISCJB ***25*** *02:25:56.2±0.6, 6°.87N±0°.06×73°.27W±0°.04, h139km±5km, Error ellipse: s-maj=10.5km s-min=4.5km az=147.7*
FUNV ***25*** *02:25:57.2, 6°.82N×73°.37W, h140km, MW3.1*
RSNC ***25*** *02:25:58.8±0.7, 6°.85N×73°.31W, h124km±4km, ML2.8*
ISC 25 02:25:56.4±1.5, 6°.84N±0°.06×73°.27W±0°.05, h139km±8km, n26, σ1°01/40, 1C, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BTLC	Betulia, Santa	0.07	5	*i* P	Pn	02 26 15.6	+0.1
BTLC				*e*S	Sn	02 26 28.1	-1.9
BARC	Barichara	0.27	160	*i* P	Pn	02 26 16.0	+0.1
BARC				*e*S	Sn	02 26 29.2	-1.4
BARC				*i*		02 26 30.4	
	comp=Z,476nm,0.2s						
BRRC	Barranca, Sant	0.51	301	*e*P	Pn	02 26 16.4	-0.2
BRRC				*e*S	Sn	02 26 30.6	-1.2
BRRC				*i*		02 26 31.2	
	comp=Z,330nm,0.1s						
PAMC	Pamplona, Colo	0.75	49	*e*P	Pn	02 26 18.9	+0.3
PAMC				*e*S	Sn	02 26 35.6	0.0
PAMC				*i*		02 26 38.4	
	comp=Z,46nm,0.3s						
GRMC	Gramalote, San	0.98	28	*e*P	Pn	02 26 22.2	+2.1
GRMC				*e*S	Sn	02 26 40.5	+2.2
GRMC				*i*		02 26 43.2	
	comp=Z,103nm,0.3s						
CBRI	Barrientos, No	0.99	29	*e*P	Pn	02 26 20.9	+0.6
CBRI				*e*S	Sn	02 26 38.5	+0.1
CBRI				*i*		02 26 42.0	
	comp=Z,89nm,0.4s						
GUEC	Guerrero, Nort	1.04	19	*e*P	Pn	02 26 21.1	+0.2
OCAC	Ocana	1.39	358	*e*P	Pn	02 26 24.6	+0.5
OCAC				*e*S	Sn	02 26 44.7	-0.6
OCAC				*i*		02 26 47.6	
	comp=Z,145nm,0.4s						
CAPV	Capacho	1.39	43↑	*i* P	Pn	02 26 25.4	+1.2
CAPV				*e*S	Sn	02 26 46.2	+0.7
NORC	Norcasia	2.03	231	*e*P	Pn	02 26 31.6	+0.3
NORC				*e*S	Sn	02 26 58.3	+0.2
HELC	Santa Helena	2.33	254	*e*P	Pn	02 26 36.6	+1.3
HELC				*e*S	Sn	02 27 05.7	+0.6
HELC				*i*		02 27 10.4	
	comp=Z,30nm,0.5s						
GUYC	Guyana, Colomb	2.65	233	*e*P	Pn	02 26 40.8	+1.4
VIGV	El Vigia	2.74	44	*e*P	Pn	02 26 41.2	+1.1
VIGV				*e*S	Sn	02 27 13.7	-0.1
SOCV	Socops	2.79	59	*e*P	Pn	02 26 41.7	+1.0
SOCV				*e*S	Sn	02 27 14.1	-0.8
DBBC	Dabeiba	2.92	274	*e*P	Pn	02 26 43.8	+1.4
DBBC				*e*S	Sn	02 27 17.2	-0.6
VIRV	Villa del Rosa	3.73	13	*e*P	Pn	02 26 52.6	-0.3
VIRV				*e*S	Sn	02 27 34.1	-2.6
ELOV	Elorza	3.77	87	*e*P	Pn	02 26 53.8	+0.5
CURV	Curarigua	4.54	46	*e*P	Pn	02 27 03.7	0.0
SANV	Sanarito	4.54	54	*e*P	Pn	02 27 04.1	+0.4
TEPV	Terepaima	5.09	52	*e*P	Pn	02 27 10.7	-0.2
SIQV	Siquisique	5.10	42	*e*P	Pn	02 27 11.0	0.0
BAUV	El Baul	5.59	68	*e*P	Pn	02 27 17.4	-0.1
MAPV	Macapo	5.61	58	*e*P	Pn	02 27 17.8	-0.1
MONV	Montecano	6.03	32	*e*P	Pn	02 27 23.7	+0.2
TURV	Turiamo	6.46	56	*e*P	Pn	02 27 29.6	+0.5
CUPV	Cœpira	8.06	66	*e*P	Pn	02 27 50.4	-0.4

ROM ***25*** *02:26:07.7±0.2, 43°.90N×12°.03E, h6km±2km, Md2.5/14, Ml1.8/9, Error ellipse: s-maj=2.1km s-min=1.6km az=7.0*
ISCJB ***25*** *02:26:08.2±0.5, 43°.89N±0°.04×12°.00E±0°.05, h13km±7km, Error ellipse: s-maj=8.3km s-min=3.8km az=39.8*
CSEM ***25*** *02:26:08.5±0.1, 43°.88N×12°.00E, h10km, ML2.5/6, Error ellipse: s-maj=3.7km s-min=2.3km az=29.0*
ISC 25 02:26:06.6±1.1, 43°.98N±0°.04×11°.99E±0°.02, h15km±8km, n32, σ0°39/52, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFI	Santa Sofia	0.13	232	Pg	Pb	02 26 11.1	+0.4
SFI				Sg	Sb	02 26 13.4	-0.1
SFI	Santa Sofia	0.13	232	Pg	Pb	02 26 11.1	+0.4
SFI				Sg	Sb	02 26 13.4	-0.1
ASQU	Asqua	0.23	217	Pg	Pb	02 26 12.4	-0.2
ASQU				Sg	Sg	02 26 15.7	+0.4
ASQU	Asqua	0.23	217	Pg	Pb	02 26 12.4	-0.2
ASQU				Sg	Sg	02 26 15.7	+0.4
BLLA	Bellaria	0.39	65	Pg	Pn	02 26 17.4	-0.2
BLLA	Bellaria	0.39	65	Pg	Pn	02 26 17.4	-0.2
SEI	Scarperia	0.46	279	Pg	Pn	02 26 17.9	-0.8
SEI				Sg	Sn	02 26 26.5	-0.2
SEI	Scarperia	0.46	279	Pg	Pn	02 26 17.9	-0.8
SEI				Sg	Sn	02 26 26.5	-0.2
BADI	Badiali	0.51	158	Pg	Pg	02 26 16.3	-0.4
BADI				Sg	Sg	02 26 23.5	0.0
	99nm,0.2s				

SJA IAML 02 33 19.4
comp=Z,169nm,0.1s
RTCV Cerro Valdivia 0.63 162 *e*P Pn 02 33 07.6 +0.8
RTCV *e*S Sn 02 33 20.5 +1.1
RTLS Leoncito 0.70 220 *e*P Pn 02 33 08.6 +0.9
RTLS *e*S Sn 02 33 23.1 +2.1
AUSP Uspallata 1.10 209 *e*P Pn 02 33 12.8 +1.1
AGUA GUANDACOL 1.78 8 *e*P Pn 02 33 21.0 +1.1

ISK ***25*** *02:34:30.9, 39.′11N×29.′06E, h5km, MD2.7*
CSEM ***25*** *02:34:31.5±0.1, 39.′11N×29.′04E, h2km, ML2.8, Error ellipse: s-maj=2.5km s-min=2.1km az=32.0*
DDA ***25*** *02:34:31.4, 39.′08N×29.′03E, h7km, Ml2.8*
ISC 25 02:34:31.4±0.9, 39.′10N±0.′03×29.′03E±0.′02, h12km±8km, n32, σ0°25/42, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**257**	P	**Pg**	**02 34 36.8**	**+0.1**
DEMI				S	**Sg**	**02 34 40.0**	**-0.2**
DEMI	**Demirci**	**0.25**	**257**	*i* P	**Pg**	**02 34 36.8**	**+0.1**
DEMI				*i* S	**Sg**	**02 34 40.0**	**-0.2**
GDZ	**Gediz**	**0.35**	**92**	P	**Pg**	**02 34 38.8**	**+0.2**
GDZ				S	**Sg**	**02 34 43.7**	**+0.3**
GDZ	**Gediz**	**0.35**	**92**	*i* P	**Pg**	**02 34 38.8**	**+0.2**
GDZ				*i* S	**Sg**	**02 34 43.7**	**+0.3**
TVSB	**Tavsanli**	**0.48**	**44**	*e*PG	**Pg**	**02 34 40.7**	**-0.3**
TVSB				*e*SG	**Sg**	**02 34 47.2**	**-0.3**
TVSB	**Tavsanli**	**0.48**	**44**	*e*Pg	**Pg**	**02 34 40.7**	**-0.3**
TVSB				*e*Sg	**Sg**	**02 34 47.2**	**-0.3**
DST	**Dursunbey**	**0.59**	**328**	*e*PG	**Pg**	**02 34 42.7**	**-0.3**
DST	**Dursunbey**	**0.59**	**328**	*e*Pg	**Pg**	**02 34 42.7**	**-0.3**
DURS	**Dursunbey**	**0.66**	**319**	P	**Pg**	**02 34 44.3**	**0.0**
DURS	**Dursunbey**	**0.66**	**319**	*i* P	**Pg**	**02 34 44.3**	**0.0**
KHAL	**Karahalli**	**0.81**	**153**	P	**Pb**	**02 34 47.5**	**-0.1**
KHAL				S	**Sg**	**02 34 57.7**	**-0.2**
KHAL	**Karahalli**	**0.81**	**153**	*i* P	**Pb**	**02 34 47.5**	**-0.1**
KHAL				*i* S	**Sg**	**02 34 57.6**	**-0.2**
KHL	**Karahalli**	**0.87**	**153**	*e*PG	**Pg**	**02 34 48.0**	**-0.2**
KHL	**Karahalli**	**0.87**	**153**	*e*Pg	**Pg**	**02 34 48.0**	**-0.2**
ORLT	**Orhaneli**	**0.95**	**354**	*e*PG	**Pg**	**02 34 49.5**	**-0.3**
ORLT	**Orhaneli**	**0.95**	**354**	*e*Pg	**Pg**	**02 34 49.5**	**-0.3**
AKHS	**Akhisar**	**0.97**	**257**	P	**Pn**	**02 34 50.8**	**-0.1**
AKHS				S	**Sn**	**02 35 04.8**	**+0.1**
AKHS	**Akhisar**	**0.97**	**257**	*i* P	**Pn**	**02 34 50.8**	**-0.1**
AKHS				*i* S	**Sn**	**02 35 04.8**	**+0.1**
AKS	**Akhisar**	**0.97**	**257**	*e*PG	**Pg**	**02 34 49.7**	**-0.5**
AKS	**Akhisar**	**0.97**	**257**	*e*Pg	**Pg**	**02 34 49.7**	**-0.5**
BALB	**Balikesir**	**1.04**	**302**	*e*PG	**Pn**	**02 34 51.9**	**+0.1**
BALB	**Balikesir**	**1.04**	**302**	*e*Pg	**Pn**	**02 34 51.9**	**+0.1**
BALY	**Balya**	**1.26**	**301**	P	**Pg**	**02 34 56.1**	**+0.3**
BALY	**Balya**	**1.26**	**301**	*i* P	**Pg**	**02 34 56.1**	**+0.3**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*PN	**Pg**	**02 34 55.8**	**-0.1**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*Pn	**Pg**	**02 34 55.8**	**-0.1**
GONE	**Gonen-Balikesi**	**1.40**	**313**	*e*PN	**Pg**	**02 34 58.4**	**0.0**
GONE	**Gonen-Balikesi**	**1.40**	**313**	*e*Pn	**Pg**	**02 34 58.4**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**1.46**	**218**	*e*PN	**Pb**	**02 34 58.9**	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**1.46**	**218**	*e*Pn	**Pb**	**02 34 58.9**	**+0.3**
DKL	**Dikili**	**1.65**	**270**	*e*PN	**Pb**	**02 35 02.0**	**+0.2**
DKL	**Dikili**	**1.65**	**270**	*e*Pn	**Pb**	**02 35 02.0**	**+0.2**

IDC ***25*** *02:37:52.3±1.2, 6.′26S×147.′64E, h0km, mb3.9/7, mb1 4.0/9, mb1mx3.9/29, mbtmp3.9/9, ML3.4/2, Error ellipse: s-maj=44.5km s-min=19.2km az=93.0*
ISCJB ***25*** *02:37:59.4±1.0, 6.′43S±0.′06×147.′5E±0.′2, h63km, mb3.8/7, Error ellipse: s-maj=27.7km s-min=9.1km az=179.7*
NEIC ***25*** *02:37:59.0±1.8, 6.′36S×147.′51E, h44km±15km, mb4.1/1, Error ellipse: s-maj=19.6km s-min=14.9km az=96.0*
ISC 25 02:38:01.0±1.2, 6.′44S±0.′09×147.′5E±0.′2, h63km, n15, σ0°63/17, mb3.7/7, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.97**	**187**	Pn	**Pn**	**02 38 45.4**	**-0.3**
	50nm,0.3s,baz=68,slow=9.0,SNR=29						
PMG				Sn	**Sn**	**02 39 20.9**	**+0.6**
	26nm,0.3s,baz=231,slow=22,SNR=9.3						
COEN	**Coen**	**8.61**	**209**	*e*Pn	**Pn**	**02 40 01.9**	**-1.1**
CTAO	**Charters Tower**	**13.62**	**185**	*e*P	**Pn**	**02 41 10.5**	**-0.9**
	30nm,0.8s						
WRAB	**Tennant Creek**	**18.54**	**222**	*e*P	**P**	**02 42 12.3**	**-0.3**
	16nm,1.2s						
WRA	**Warramunga Arr**	**18.55**	**222**	P	**P**	**02 42 12.5**	**-0.3**
	0.4nm,0.3s,baz=48,slow=11,SNR=13						
ASAR	**Alice Springs**	**21.56**	**216**	P	**P**	**02 42 45.8**	**+0.4**
	1.9nm,0.5s,baz=53,slow=9.0,SNR=25						
ASAR				S	**S**	**02 46 41.9**	**+0.7**
	3.0nm,1.2s,baz=42,slow=17,SNR=4.1						
FITZ	**Fitzroy Crossi**	**24.29**	**240**	P	**P**	**02 43 13.4**	**+0.7**
	4.9nm,0.5s,baz=55,slow=8.2,SNR=18						
STKA	**Stephens Creek**	**25.91**	**192**	P	**P**	**02 43 27.6**	**+0.3**
	1.0nm,0.6s,baz=7.3,slow=9.9,SNR=2.9						
VNDA	**Vanda**	**71.45**	**177**	P	**P**	**02 49 14.9**	**+0.6**
	0.8nm,0.6s,baz=336,slow=6.6,SNR=12						
MKAR	**Makanchi Array**	**78.16**	**320**	P	**P**	**02 49 53.5**	**-0.1**
	0.3nm,0.4s,baz=106,slow=5.1,SNR=4.3						
ZALV	**Zalesovo Beam**	**79.66**	**328**	P	**P**	**02 50 00.5**	**-1.0**
	1.3nm,0.4s,baz=100,slow=5.8,SNR=3.4						
KURK	**Kurchatov**	**81.87**	**323**	P	**P**	**02 50 13.5**	**0.0**
KURBB	**Kurchatov Arra**	**81.89**	**323**	P	**P**	**02 50 13.5**	**-0.1**
	0.2nm,0.6s,baz=99,slow=5.7,SNR=3.6						
GERES	**GERESS Array B**	**122.56**	**326**	PKP	**PKPdf**	**02 56 49.9**	**+0.2**
	0.1nm,0.2s,baz=27,slow=1.5,SNR=4.1						
TORD	**Torodi Ar. Bea**	**145.70**	**284**	PKPbc	**PKPab**	**02 57 34.6**	**+0.4**
	2.4nm,0.5s,baz=72,slow=4.0,SNR=69						

IDC ***25*** *02:42:50.4±1.0, 25.′40N×142.′73E, h0km, mb3.7/5, mb1 4.0/5, mb1mx3.6/27, mbtmp3.7/5, Error ellipse: s-maj=34.9km s-min=23.7km az=86.0*
ISCJB ***25*** *02:42:53.9±0.9, 25.′29N±0.′10×142.′8E±0.′2, h38km, mb3.6/5, Error ellipse: s-maj=32.5km s-min=12.0km az=165.4*
ISC 25 02:42:55.9±1.0, 25.′4N±0.′1×142.′7E±0.′2, h38km, n8, σ1°05/9, mb3.6/5, Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCJ	**Chichijima**	**1.80**	**345**	Pn	**Pn**	**02 43 23.2**	**-1.2**
	40nm,0.3s,baz=100,slow=19,SNR=25						
JCJ				Sn	**Sn**	**02 43 47.9**	**+1.9**
	111nm,0.3s,baz=281,slow=23,SNR=21						
WRA	**Warramunga Arr**	**45.75**	**191**	P	**P**	**02 51 14.3**	**+0.6**
	0.4nm,0.4s,baz=9.1,slow=8.6,SNR=3.1						
KURBB	**Kurchatov Arra**	**54.60**	**315**	P	**P**	**02 52 19.5**	**-0.9**
	baz=92,slow=8.0						
ILAR	**Eielson Array**	**59.01**	**28**	P	**P**	**02 52 51.1**	**-0.4**
	0.4nm,0.9s,baz=260,slow=5.3,SNR=3.8						
YKA	**Yellowknife Ar**	**73.44**	**28**	P	**P**	**02 54 24.3**	**+0.3**
	0.2nm,0.7s,baz=294,slow=5.6,SNR=4.2						
FINES	**FINESS Array B**	**79.72**	**334**	P	**P**	**02 54 59.9**	**+0.5**
	4.7nm,1.1s,baz=51,slow=4.8,SNR=5.0						
NVAR	**Mina Array Bea**	**81.22**	**52**	P	**P**	**02 55 08.2**	**-0.1**
	0.2nm,0.3s,baz=328,slow=7.6,SNR=3.3						
LPAZ	**La Paz**	**149.85**	**79**	PKPbc	**PKPbc**	**03 02 43.8**	**+0.4**
	0.5nm,0.8s,baz=234,slow=8.7,SNR=2.2						

IGIL ***25*** *02:58:51.4, 37.′20N×13.′14W, h0km, ML2.4*
MDD ***25*** *02:58:51.4±1.8, 37.′20N×13.′08W, h0km, mb4.2/4, Error ellipse: s-maj=16.3km s-min=13.5km az=34.0, PRXIMO*
INMG ***25*** *02:58:53.5±0.8, 37.′06N×13.′42W, h10km, ML2.6, Error ellipse: s-maj=4.3km s-min=3.6km az=92.0*
CSEM ***25*** *02:58:54.5±0.4, 37.′37N×12.′83W, h10km, ML3.4/29, Error ellipse: s-maj=6.6km s-min=5.5km az=41.0*
ISC 25 02:58:50.5±3.3, 37.′25N±0.′09×13.′1W±0.′2, h10km, n91, σ1°45/163, 2D, Azores-Cape St. Vincent Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PFVI	**Vila Bisbo**	**3.38**	**91**	||P*i*Pn	**Pn**	**02 59 43.9**	**+0.6**
PFVI				*e*Sn	**Sn**	**03 00 22.5**	**-1.0**
PFVI				A	A	03 00 24.2	
	15nm,0.5s						
PFVI	**Vila Bisbo**	**3.38**	**91**	||Pn	**Pn**	**02 59 43.9**	**+0.6**
	6.2nm,0.1s,SNR=18						
PFVI				Sn	**Sn**	**03 00 22.8**	**-0.7**
	9.4nm,0.1s,SNR=9.4						
PFVI	**Vila Bisbo**	**3.38**	**91**	Pn	**Pn**	**02 59 43.9**	**+0.6**
	6.2nm,0.1s,SNR=18						
PFVI				Sn	**Sn**	**03 00 22.8**	**-0.7**
	9.4nm,0.1s,SNR=9.4						
PMST	**Lisbon--Monsan**	**3.40**	**63**	*e*Sn	**Sn**	**03 00 24.1**	**+0.2**
PMST	**Lisbon--Monsan**	**3.40**	**63**	*e*Sn	**Sn**	**03 00 24.1**	**+0.2**
PMAFR	**Mafra**	**3.43**	**59**	*e*Pn	**Pn**	**02 59 46.0**	**+2.0**
PMAFR				*e*Sn	**Sn**	**03 00 25.4**	**+0.7**
PMAFR				A	A	03 00 30.0	
	21nm,0.3s						
PMAFR	**Mafra**	**3.43**	**59**	Pn	**Pn**	**02 59 45.4**	**+1.4**
	1.8nm,0.1s,SNR=7.2						
PMAFR				Sn	**Sn**	**03 00 25.6**	**+0.9**
	17nm,0.2s						
PMAFR	**Mafra**	**3.43**	**59**	*e*Pn	**Pn**	**02 59 46.0**	**+2.0**
PMAFR				*e*Sn	**Sn**	**03 00 25.4**	**+0.7**
	21nm,0.3s						
PTEO	**Sao Teotonio**	**3.46**	**84**	*e*Pn	**Pn**	**02 59 45.5**	**+1.1**
PTEO				*e*Sn	**Sn**	**03 00 24.9**	**-0.6**
PTEO				A	A	03 00 28.1	
	8.9nm,0.7s						
PTEO	**Sao Teotonio**	**3.46**	**84**	Pn	**Pn**	**02 59 45.5**	**+1.1**
PTEO				Sn	**Sn**	**03 00 24.9**	**-0.6**
	4.4nm,0.7s						
PTEO	**Sao Teotonio**	**3.46**	**84**	Pn	**Pn**	**02 59 45.5**	**+1.1**
PTEO				*e*Sn	**Sn**	**03 00 24.9**	**-0.6**
	8.9nm,0.7s						
MORF	**Marmelete**	**3.52**	**88**	*e*S	**Sn**	**03 00 26.0**	**-0.8**
MORF				AML	AML	03 00 27.5	
	comp=N,16nm,0.6s						
MORF	**Marmelete**	**3.52**	**88**	Sn	**Sn**	**03 00 26.0**	**-0.8**
	comp=N,16nm,0.6s						
MORF	**Marmelete**	**3.52**	**88**	Sn	**Sn**	**03 00 26.0**	**-0.8**
	comp=N,16nm,0.6s						
PNCL	**Nicolau / Gran**	**3.69**	**75**	*e*Pn	**Pn**	**02 59 49.0**	**+1.4**
PNCL				*e*Sn	**Sn**	**03 00 31.0**	**-0.2**
PNCL				A	A	03 00 38.4	
	comp=N,5.8nm,0.2s						
PNCL	**Nicolau / Gran**	**3.69**	**75**	*e*Pn	**Pn**	**02 59 49.0**	**+1.4**
PNCL				*e*Sn	**Sn**	**03 00 31.0**	**-0.2**
	comp=N,5.8nm,0.2s						
MESJ	**Messejana**	**3.89**	**80**	*e*P	**Pn**	**02 59 51.2**	**+0.8**
MESJ				*e*S	**Sn**	**03 00 35.5**	**-0.5**
MESJ				AML	AML	03 00 37.8	
	comp=N,5.3nm,0.3s						
MESJ	**Messejana**	**3.89**	**80**	*e*Pn	**Pn**	**02 59 51.1**	**+0.8**
MESJ				*e*Sn	**Sn**	**03 00 35.0**	**-1.0**
MESJ				A	A	03 00 40.0	
	comp=N,5.9nm,0.2s						
MESJ	**Messejana**	**3.89**	**80**	Pn	**Pn**	**02 59 51.1**	**+0.8**
MESJ				Sn	**Sn**	**03 00 35.0**	**-1.0**
	comp=N,5.9nm,0.2s						
MESJ	**Messejana**	**3.89**	**80**	Pn	**Pn**	**02 59 51.1**	**+0.8**
MESJ				*e*Sn	**Sn**	**03 00 35.0**	**-1.0**
	comp=N,5.9nm,0.2s						
ALMR	**Almeirim**	**4.01**	**60**	*e*P	**Pn**	**02 59 53.7**	**+1.8**
ALMR				*e*S	**Sn**	**03 00 39.1**	**+0.2**
ALMR	**Almeirim**	**4.01**	**60**	*e*P	**Pn**	**02 59 53.7**	**+1.8**
ALMR				*e*S	**Sn**	**03 00 39.1**	**+0.2**
ALMR	**Almeirim**	**4.01**	**60**	Pn	**Pn**	**02 59 53.7**	**+1.8**
ALMR				Sn	**Sn**	**03 00 39.1**	**+0.2**
ALMR	**Almeirim**	**4.01**	**60**	*e*P	**Pn**	**02 59 53.7**	**+1.8**
ALMR				*e*S	**Sn**	**03 00 39.1**	**+0.2**
PBDV	**Barranco-do-Ve**	**4.09**	**89**	*e*Pn	**Pn**	**02 59 54.5**	**+1.4**
PBDV				*e*Sn	**Sn**	**03 00 40.8**	**-0.2**
PBDV				A	A	03 00 46.5	
	comp=N,5.0nm,0.1s						
PBDV	**Barranco-do-Ve**	**4.09**	**89**	Pn	**Pn**	**02 59 54.5**	**+1.4**
PBDV				Sn	**Sn**	**03 00 40.8**	**-0.2**
	comp=N,5.0nm,0.1s						
PBDV	**Barranco-do-Ve**	**4.09**	**89**	Pn	**Pn**	**02 59 54.5**	**+1.4**
PBDV				*e*Sn	**Sn**	**03 00 40.8**	**-0.2**
	comp=N,5.0nm,0.1s						
EVO	**Evora**	**4.19**	**71**	*e*Sn	**Sn**	**03 00 43.0**	**-0.4**
EVO				A	A	03 00 48.2	
	comp=N,13nm,0.1s						
EVO	**Evora**	**4.19**	**71**	Sn	**Sn**	**03 00 43.0**	**-0.4**
	comp=N,13nm,0.1s						
EVO	**Evora**	**4.19**	**71**	*e*Sn	**Sn**	**03 00 43.0**	**-0.4**
	comp=N,13nm,0.1s						
PBEJ	**Beja**	**4.19**	**78**	*e*Pn	**Pn**	**02 59 56.9**	**+2.4**
PBEJ				*e*Sn	**Sn**	**03 00 44.3**	**+0.8**
PBEJ				A	A	03 00 48.9	
	comp=N,4.2nm,0.1s						
PBEJ	**Beja**	**4.19**	**78**	Pn	**Pn**	**02 59 56.9**	**+2.4**
PBEJ				Sn	**Sn**	**03 00 44.3**	**+0.8**
	comp=N,2.1nm,0.1s						
PBEJ	**Beja**	**4.19**	**78**	Pn	**Pn**	**02 59 56.9**	**+2.4**
PBEJ				*e*Sn	**Sn**	**03 00 44.3**	**+0.8**
	comp=N,4.2nm,0.1s						
PMTG	**Montargil**	**4.22**	**63**	*e*Pn	**Pn**	**02 59 56.6**	**+1.8**
PMTG				*e*Sn	**Sn**	**03 00 43.8**	**-0.3**
PMTG				A	A	03 00 49.1	
	comp=N,3.6nm,0.1s						
PMTG	**Montargil**	**4.22**	**63**	*e*Pn	**Pn**	**02 59 56.6**	**+1.8**
PMTG				*e*Sn	**Sn**	**03 00 43.8**	**-0.3**
	comp=N,3.6nm,0.1s						
PVAQ	**Vaqueiros**	**4.26**	**86**	*e*Pn	**Pn**	**02 59 56.8**	**+1.4**
PVAQ				*e*Sn	**Sn**	**03 00 43.7**	**-1.4**
PVAQ				A	A	03 00 49.6	
	comp=N,12nm,0.1s						
PVAQ	**Vaqueiros**	**4.26**	**86**	Pn	**Pn**	**02 59 56.8**	**+1.4**
PVAQ				Sn	**Sn**	**03 00 43.7**	**-1.4**
	comp=N,12nm,0.1s						
PVAQ	**Vaqueiros**	**4.26**	**86**	Pn	**Pn**	**02 59 56.8**	**+1.4**
PVAQ				*e*Sn	**Sn**	**03 00 43.7**	**-1.4**
	comp=N,12nm,0.1s						
PTOM	**Tomar**	**4.34**	**56**	*e*Pn	**Pn**	**02 59 58.7**	**+2.1**
PTOM				*e*Sn	**Sn**	**03 00 47.3**	**0.0**
PTOM				A	A	03 00 54.4	
	comp=N,9.2nm,0.5s						
PTOM	**Tomar**	**4.34**	**56**	Pn	**Pn**	**02 59 58.7**	**+2.1**
PTOM				Sn	**Sn**	**03 00 47.3**	**0.0**
	comp=N,4.6nm,0.5s						
PTOM	**Tomar**	**4.34**	**56**	Pn	**Pn**	**02 59 58.7**	**+2.1**
PTOM				*e*Sn	**Sn**	**03 00 47.3**	**0.0**
	comp=N,9.2nm,0.5s						
EGRO	**El Granado**	**4.45**	**85**	Pn	**Pn**	**02 59 59.1**	**+1.1**
	comp=N,0.4nm,0.1s,SNR=7.0						
EGRO				Sn	**Sn**	**03 00 48.3**	**-1.5**
	comp=N,8.1nm,0.2s,SNR=5.5						
EGRO	**El Granado**	**4.45**	**85**	Pn	**Pn**	**02 59 59.1**	**+1.1**
	comp=N,0.4nm,0.1s,SNR=7.0						
EGRO				Sn	**Sn**	**03 00 48.3**	**-1.5**
	comp=N,8.1nm,0.2s,SNR=5.5						
PCAS	**Casmilo, Conde**	**4.53**	**51**	*e*Pn	**Pn**	**03 00 00.7**	**+1.6**
PCAS				*e*Sn	**Sn**	**03 00 51.5**	**-0.4**
PCAS				A	A	03 00 55.4	
	comp=N,3.6nm,0.4s						
PCAS	**Casmilo, Conde**	**4.53**	**51**	*e*Pn	**Pn**	**03 00 00.7**	**+1.6**
PCAS				*e*Sn	**Sn**	**03 00 51.5**	**-0.4**
	comp=N,3.6nm,0.4s						
PESTR	**Estremoz**	**4.61**	**68**	*e*Pn	**Pn**	**03 00 02.1**	**+1.9**
PESTR				*e*Sn	**Sn**	**03 00 52.8**	**-0.9**
PESTR				A	A	03 00 58.7	
	comp=N,2.8nm,0.3s						
PESTR	**Estremoz**	**4.61**	**68**	*e*Pn	**Pn**	**03 00 02.1**	**+1.9**
PESTR				*e*Sn	**Sn**	**03 00 52.8**	**-0.9**
	comp=N,2.8nm,0.3s						
PBAR	**Barrancos**	**4.86**	**77**	*e*Sn	**Sn**	**03 00 57.9**	**-2.1**
PBAR				A	A	03 01 06.4	
	comp=N,5.8nm,0.1s						
PBAR	**Barrancos**	**4.86**	**77**	Sn	**Sn**	**03 00 57.9**	**-2.1**
	comp=N,5.8nm,0.1s						
PBAR	**Barrancos**	**4.86**	**77**	*e*Sn	**Sn**	**03 00 57.9**	**-2.1**
	comp=N,5.8nm,0.1s						
PMRV	**Marv??o**	**4.96**	**62**	*e*Pn	**Pn**	**03 00 06.6**	**+1.6**
PMRV				*e*Sn	**Sn**	**03 01 01.4**	**-0.9**
PMRV				A	A	03 01 08.2	
	comp=N,3.2nm,0.2s						
PMRV	**Marv??o**	**4.96**	**62**	Pn	**Pn**	**03 00 06.6**	**+1.6**
PMRV				Sn	**Sn**	**03 01 01.4**	**-0.9**
	comp=N,3.2nm,0.2s						
PMRV	**Marv??o**	**4.96**	**62**	Pn	**Pn**	**03 00 06.6**	**+1.6**
PMRV				*e*Sn	**Sn**	**03 01 01.4**	**-0.9**
	comp=N,3.2nm,0.2s						
EBAD	**Badajoz**	**5.00**	**71**	Pn	**Pn**	**03 00 08.0**	**+2.4**
	comp=N,0.5nm,0.1s,SNR=6.3						
EBAD				Sn	**Sn**	**03 01 02.8**	**-0.7**
	comp=N,7.2nm,0.2s,SNR=14						
EBAD	**Badajoz**	**5.00**	**71**	Pn	**Pn**	**03 00 08.0**	**+2.4**
	comp=N,0.5nm,0.1s,SNR=6.3						
EBAD				Sn	**Sn**	**03 01 02.8**	**-0.7**
	comp=N,7.2nm,0.2s,SNR=14						
EMIN	**Mina Concepcio**	**5.10**	**82**	Pn	**Pn**	**03 00 08.9**	**+1.9**
	comp=N,0.6nm,0.1s,SNR=8.5						
EMIN				Sn	**Sn**	**03 01 04.6**	**-1.3**
	comp=N,2.7nm,0.1s						
EMIN	**Mina Concepcio**	**5.10**	**82**	Pn	**Pn**	**03 00 08.9**	**+1.9**
	comp=N,0.6nm,0.1s,SNR=8.5						
EMIN				Sn	**Sn**	**03 01 04.6**	**-1.3**
	comp=N,2.7nm,0.1s						
MTE	**Manteigas**	**5.33**	**52**	*e*Pn	**Pn**	**03 00 12.2**	**+2.1**
MTE				*e*Sn	**Sn**	**03 01 10.6**	**-1.0**
MTE				A	A	03 01 14.9	
	comp=N,5.2nm,0.5s						
MTE	**Manteigas**	**5.33**	**52**	Pn	**Pn**	**03 00 12.2**	**+2.1**
MTE				Sn	**Sn**	**03 01 10.6**	**-1.0**
	comp=N,2.6nm,0.5s						
MTE	**Manteigas**	**5.33**	**52**	Pn	**Pn**	**03 00 12.2**	**+2.1**
MTE				*e*Sn	**Sn**	**03 01 10.6**	**-1.0**
	comp=N,5.2nm,0.5s						
PMAR	**Madeira**	**5.52**	**216**	*e*Pn	Pn	03 00 03.4	-9.5
PMAR				A	A	03 01 01.0	
	comp=N,8.9nm,0.2s						
POLO	**Lamas de Olo**	**5.79**	**43**	*e*Pn	**Pn**	**03 00 17.4**	**+0.8**
POLO				*e*Sn	**Sn**	**03 01 21.1**	**-2.0**
POLO				A	A	03 01 25.7	
	comp=N,1.1nm,0.6s						
POLO	**Lamas de Olo**	**5.79**	**43**	*e*Pn	**Pn**	**03 00 17.4**	**+0.8**
POLO				*e*Sn	**Sn**	**03 01 21.1**	**-2.0**
	comp=N,1.1nm,0.6s						
PGAV	**Gavieira, Arco**	**5.98**	**37**	*e*Pn	**Pn**	**03 00 20.4**	**+1.2**
PGAV				*e*Sn	**Sn**	**03 01 25.4**	**-2.4**
PGAV				A	A	03 01 28.5	
	comp=N,4.2nm,0.6s						
PGAV	**Gavieira, Arco**	**5.98**	**37**	*e*Pn	**Pn**	**03 00 20.4**	**+1.2**
PGAV				*e*Sn	**Sn**	**03 01 25.4**	**-2.4**
	comp=N,4.2nm,0.6s						
ELOB	**Lobios**	**6.01**	**38**	Pn	**Pn**	**03 00 20.5**	**+1.0**
	comp=N,0.7nm,0.1s,SNR=7.5						
ELOB				Sn	**Sn**	**03 01 26.7**	**-1.7**
	comp=N,1.4nm,0.1s,SNR=7.9						
ELOB	**Lobios**	**6.01**	**38**	Pn	**Pn**	**03 00 20.5**	**+1.0**
	comp=N,0.7nm,0.1s,SNR=7.5						
ELOB				Sn	**Sn**	**03 01 26.7**	**-1.7**
	comp=N,1.4nm,0.1s,SNR=7.9						
MVO	**Moncorvo**	**6.09**	**48**	*e*Pn	**Pn**	**03 00 21.9**	**+1.3**
MVO				*e*Sn	**Sn**	**03 01 28.4**	**-2.1**
MVO				A	A	03 01 32.0	
	comp=N,4.9nm,0.2s						
MVO	**Moncorvo**	**6.09**	**48**	Pn	**Pn**	**03 00 22.0**	**+1.3**
	comp=N,0.8nm,0.2s,SNR=6.3						
MVO				Sn	**Sn**	**03 01 28.8**	**-1.7**
	comp=N,1.0nm,0.2s						
MVO	**Moncorvo**	**6.09**	**48**	Pn	**Pn**	**03 00 22.0**	**+1.3**
	comp=N,0.8nm,0.2s,SNR=6.3						
MVO				Sn	**Sn**	**03 01 28.8**	**-1.7**
	comp=N,1.0nm,0.2s						
ECAB	**El Cabril**	**6.12**	**80**	Pn	**Pn**	**03 00 22.3**	**+1.4**
	comp=N,0.8nm,0.2s,SNR=8.7						
ECAB				Sn	**Sn**	**03 01 29.2**	**-1.7**
	comp=N,2.4nm,0.3s						
ECAB	**El Cabril**	**6.12**	**80**	Pn	**Pn**	**03 00 22.3**	**+1.4**
	comp=N,0.8nm,0.2s,SNR=8.7						
ECAB				Sn	**Sn**	**03 01 29.2**	**-1.7**
	comp=N,2.4nm,0.3s						
EPLA	**Plasencia**	**6.14**	**61**	Pn	**Pn**	**03 00 23.5**	**+2.3**
	comp=N,0.3nm,0.1s,SNR=7.9						
EPLA				Sn	**Sn**	**03 01 30.7**	**-0.8**
	comp=N,0.9nm,0.1s,SNR=6.0						
EPLA	**Plasencia**	**6.14**	**61**	Pn	**Pn**	**03 00 23.5**	**+2.3**
	comp=N,0.3nm,0.1s,SNR=7.9						
EPLA				Sn	**Sn**	**03 01 30.7**	**-0.8**
	comp=N,0.9nm,0.1s,SNR=6.0						
EMAZ	**Mazaricos**	**6.49**	**28**	Pn	**Pn**	**03 00 26.7**	**+0.7**
	comp=N,1.0nm,0.1s,SNR=7.9						
EMAZ				Sn	Sn	03 01 35.0	-5.2
	comp=N,2.7nm,0.1s,SNR=7.9						
EMAZ	**Mazaricos**	**6.49**	**28**	Pn	**Pn**	**03 00 26.7**	**+0.7**
	comp=N,1.0nm,0.1s,SNR=7.9						
PBRG	**Braganca**	**6.67**	**45**	*e*Pn	**Pn**	**03 00 29.8**	**+1.3**
PBRG				*e*Sn	**Sn**	**03 01 43.0**	**-1.6**
PBRG				A	A	03 01 56.2	
	comp=N,1.7nm,0.4s						
PBRG	**Braganca**	**6.67**	**45**	Pn	**Pn**	**03 00 29.8

0.2nm,0.3s,baz=7.1,slow=8.1,SNR=2.4
WRAB Tennant Creek 22.80 161 *e*P **P 03 06 17.9 -0.1**
11nm,0.9s
WRA Warramunga Arr 22.80 161 P **P 03 06 17.2 -0.8**
8.1nm,0.8s,baz=339,slow=11,SNR=23
ASAR Alice Springs 26.20 165 P **P 03 06 50.6 +1.1**
2.0nm,0.8s,baz=348,slow=12,SNR=17
JCJ Chichijima 29.25 29 LR LR 03 17 37.6
comp=Z,33nm,20.6s,baz=50,slow=34
MJAR Matsushiro Arr 36.22 16 P **P 03 08 18.1 +0.6**
1.5nm,0.7s,baz=178,slow=8.9,SNR=4.4
MJAR LR LR 03 22 21.2
comp=Z,10nm,21.7s,baz=210,slow=35
USRK Ussuriysk Ar. 42.54 6 P **P 03 09 11.2 +1.1**
2.5nm,0.8s,baz=213,slow=8.0,SNR=5.3
SONM Songino Array 49.18 342 P **P 03 10 02.8 +0.2**
0.5nm,0.4s,baz=146,slow=11,SNR=4.9
MKAR Makanchi Array 59.19 326 P **P 03 11 14.3 -1.1**
1.0nm,0.4s,baz=120,slow=7.9,SNR=17
MKAR PcP **PcP 03 12 03.4 -0.1**
1.2nm,0.8s,baz=130,slow=3.8,SNR=3.9
KURBB Kurchatov Arra 63.41 328 P **P 03 11 43.0 -0.7**
2.1nm,0.6s,baz=129,slow=6.2,SNR=18
KURK Kurchatov 63.41 328 *e*P **P 03 11 43.1 -0.7**
6.5nm,0.6s
BVAR Borovoye Array 68.98 327 P **P 03 12 19.6 +0.1**
1.1nm,0.6s,baz=131,slow=6.8,SNR=6.4
ABKAR Akbulak array 73.69 321 *e*P **P 03 12 47.2 -0.7**
0.9nm,0.6s
AKTO Aktyubinsk 75.21 322 P **P 03 12 56.7 -0.1**
2.3nm,0.7s,baz=113,slow=5.5,SNR=8.9
ARU Arti 76.61 328 P **P 03 13 03.6 -1.1**
2.0nm,0.3s,baz=168,slow=5.1,SNR=4.2
VNDA Vanda 81.46 173 P **P 03 13 30.9 +0.1**
0.7nm,0.7s,baz=334,slow=4.8,SNR=4.2
ILAR Eielson Array 86.89 25 P **P 03 13 58.5 -0.1**
0.2nm,0.7s,baz=268,slow=4.5,SNR=3.2
TORD Torodi Ar. Bea 123.52 287 PKP **PKPdf 03 20 12.6 +0.2**
0.4nm,0.8s,baz=83,slow=1.9,SNR=2.7

DJA 25 03:10:30.9±0.9, 8°S±7°×10°7E±°, h30km±6km, M3.8/9, MLv3.8/9, Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CNJI	**Cibinong**	**0.56**	**55**	P	Pn	03 10 42.8	0.0
CNJI				S	Sn	03 10 51.8	+0.8
SKJI	**Sukabumi**	**0.63**	**350**	P	Pn	03 10 44.7	+0.9
SKJI				S	Sn	03 10 53.0	+0.1
CISI	**Cisompet, Garu**	**1.14**	**86**	P	Pn	03 10 50.9	0.0
CISI				S	Sn	03 11 05.4	-0.1
CGJI	**Cibinong**	**1.40**	**316**	P	Pn	03 10 54.7	+0.3
CGJI				S	Sn	03 11 12.1	+0.2
SBJI	**Serang**	**1.59**	**340**	P	Pn	03 10 57.1	0.0
CMJI	**Cimerak**	**1.77**	**95**	P	Pn	03 10 59.5	0.0
CMJI				S	Sn	03 11 20.7	-0.3
JCJI	**Jatiwangi**	**1.95**	**55**	P	Pn	03 10 59.8	-2.2
KASI	**Kota Agung**	**3.01**	**314**	P	Pn	03 11 16.7	+0.2

*ISCJB **25** 03:18:21.8±0.7, 6°.82N±0°.05×73°.03W±0°.06, h161km±6km, Error ellipse: s-maj=12.2km s-min=4.7km az=41.1*
*FUNV **25** 03:18:22.2, 6°.70N×73°.10W, h166km, MW2.5*
*RSNC **25** 03:18:24.6±0.9, 6°.78N×73°.09W, h143km±6km, ML2.3*
ISC 25 03:18:21.7±1.4, 6°.80N±0°.06×73°.01W±0°.06, h162km±9km, n20, σ1§32/34, 2C, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BARC	**Barichara**	**0.26**	**220**	*e*P	**Pn**	**03 18 43.7**	**-0.2**
BARC				*e*S	**Sn**	**03 18 58.9**	**-2.0**
BARC				*i*		03 19 01.4	
	comp=Z,78nm,0.3s						
BTLC	**Betulia, Santa**	**0.28**	**296**	*e*P	**Pn**	**03 18 43.9**	**0.0**
PAMC	**Pamplona, Colo**	**0.62**	**30**	*e*P	**Pn**	**03 18 46.5**	**+0.9**
PAMC				*e*S	**Sn**	**03 19 03.6**	**-0.4**
PAMC				*i*		03 19 05.8	
	comp=Z,16nm,0.2s						
BRRC	**Barranca, Sant**	**0.76**	**294**	⇑*i*P	**Pn**	**03 18 45.6**	**-0.3**
BRRC				*e*S	**Sn**	**03 19 02.6**	**-1.8**
BRRC				*i*		03 19 06.8	
	comp=Z,56nm,0.2s						
CBRI	**Barrientos, No**	**0.94**	**13**	*e*P	**Pn**	**03 18 48.3**	**+0.9**
CBRI				*i*		03 18 48.7	
	comp=Z,25nm,0.1s						
CBRI				*e*S	**Sn**	**03 19 06.6**	**-0.6**
GRMC	**Gramalote, San**	**0.94**	**13**	*e*P	**Pn**	**03 18 49.6**	**+2.2**
GRMC				*i*		03 18 50.7	
	comp=Z,55nm,0.3s						
GRMC				*e*S	**Sn**	**03 19 09.1**	**+2.0**
CAPV	**Capacho**	**1.27**	**33**	⇑*i*P	**Pn**	**03 18 51.6**	**+1.4**
CAPV				*e*S	**Sn**	**03 19 12.9**	**+0.7**
OCAC	**Ocana**	**1.47**	**348**	*e*P	**Pn**	**03 18 52.2**	**+0.1**
OCAC				*e*S	**Sn**	**03 19 15.8**	**+0.3**
OCAC				*i*		03 19 18.4	
	comp=Z,48nm,0.2s						
NORC	**Norcasia**	**2.22**	**237**	*e*P	**Pn**	**03 18 59.7**	**-0.4**
NORC				*e*S	**Sn**	**03 19 28.3**	**-1.6**
NORC				*i*		03 19 33.9	
	comp=Z,4.4nm,0.3s						
ROSC	**El Rosal**	**2.34**	**214**	*e*P	**Pn**	**03 19 03.4**	**+1.4**
HELC	**Santa Helena**	**2.57**	**257**	*e*P	**Pn**	**03 19 06.0**	**+1.3**
HELC				*i*		03 19 42.8	
	comp=Z,13nm,0.3s						
SOCV	**Socops**	**2.60**	**55**	*e*P	**Pn**	**03 19 06.1**	**+1.4**
SOCV				*e*S	**Sn**	**03 19 37.4**	**-0.5**
VIGV	**El Vigia**	**2.60**	**39**	*e*P	**Pn**	**03 19 05.9**	**+1.1**
VIGV				*e*S	**Sn**	**03 19 38.9**	**+0.7**
GUYC	**Guyana, Colomb**	**2.83**	**237**	*e*P	**Pn**	**03 19 09.3**	**+1.3**
ELOV	**Elorza**	**3.51**	**86**	*e*P	**Pn**	**03 19 17.1**	**+1.0**
PRAC	**Prado**	**3.59**	**211**	*e*P	**Pn**	**03 19 18.1**	**+1.0**
PRAC				*e*S	**Sn**	**03 20 00.8**	**+0.6**
VIRV	**Villa del Rosa**	**3.73**	**9**	*e*P	**Pn**	**03 19 18.9**	**0.0**
VIRV				*e*S	**Sn**	**03 20 02.2**	**-1.2**
CURV	**Curarigua**	**4.40**	**43**	*e*P	**Pn**	**03 19 28.4**	**+0.9**
CURV				*e*S	**Sn**	**03 20 17.2**	**-1.7**
BAUV	**El Baul**	**5.37**	**66**	*e*P	**Pn**	**03 19 39.9**	**-0.3**
BAUV				*e*S	**Sn**	**03 20 38.2**	**-3.4**
MONV	**Montecano**	**5.94**	**30**	*e*P	**Pn**	**03 19 47.8**	**+0.1**

JMA 25 03:22:07.2±0.1, 39°.09N×142°.40E, h30km±1km, M2.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.57**	**269**	P	Pb	03 22 18.6	-0.1
OFUJ				S	Sb	03 22 26.5	-0.1
MIYJ	**Miyakonagasawa**	**0.66**	**317**	P	Pb	03 22 19.8	-0.5
MIYJ				S	Sb	03 22 28.6	-0.6
JMK	**Ichinoseki**	**0.93**	**262**	P	Pn	03 22 24.0	-0.2
JMK				*e*S	Sn	03 22 36.2	-0.3
JOM	**Ohasama**	**0.94**	**294**	P	Pn	03 22 24.5	+0.1
JOM				S	Sn	03 22 36.8	0.0
JTH	**Tanohata**	**0.94**	**334**	P	Pb	03 22 25.2	+0.2
JIO	**Ouri**	**1.04**	**233**	P	Pn	03 22 25.1	-0.6
JIO				S	Sn	03 22 37.4	-1.8
JKZ	**Kuzumaki**	**1.22**	**318**	P	Pb	03 22 29.0	-0.7
JKZ				S	Sn	03 22 44.3	+0.6
JRG	**Rokugo**	**1.41**	**283**	P	Pb	03 22 32.1	-0.7
JRG				*e*S	Sb	03 22 50.5	+0.2
JANG	**Nango**	**1.45**	**332**	P	Pn	03 22 32.4	+1.0
OFUJ				*e*S	**Sb**	**03 24 07.8**	**+0.8**
MIYJ	**Miyakonagasawa**	**0.64**	**322**	P	**Pb**	**03 24 02.0**	**+0.3**
MIYJ				*e*S	**Sg**	**03 24 10.4**	**+1.0**
JMK	**Ichinoseki**	**0.87**	**263**	P	**Pb**	**03 24 05.9**	**+0.3**
JMK				*e*S	**Sg**	**03 24 17.4**	**+0.7**
JOM	**Ohasama**	**0.90**	**297**	P	**Pb**	**03 24 06.4**	**+0.3**
JOM				*e*S	**Sg**	**03 24 18.3**	**+0.7**
JTH	**Tanohata**	**0.94**	**338**	P	**Pg**	**03 24 06.2**	**-0.4**
JTH				*e*S	**Sg**	**03 24 18.4**	**-0.4**
JIO	**Ouri**	**0.98**	**232**	P	**Pb**	**03 24 07.1**	**-0.4**
JIO				*e*S	**Sg**	**03 24 18.9**	**-1.2**
JKZ	**Kuzumaki**	**1.20**	**320**	P	**Pn**	**03 24 10.9**	**-0.3**
JKZ				S	**Sb**	**03 24 25.8**	**-0.9**
JRG	**Rokugo**	**1.36**	**284**	P	**Pb**	**03 24 13.6**	**-0.3**
JANG	**Nango**	**1.45**	**335**	P	**Pn**	**03 24 14.0**	**-0.6**
MJAR	**Matsushiro Arr**	**4.12**	**234**	P	**Pn**	**03 24 54.1**	**+2.7**
	0.9nm,0.3s,baz=42,slow=11,SNR=16						
MAT	**Matsushiro**	**4.13**	**234**	P	**Pn**	**03 24 54.9**	**+3.5**
MAT				*e*S	**Sn**	**03 25 43.1**	**+3.4**
ASAJ	**Asahikawa**	**5.05**	**2**	P	**Pn**	**03 25 07.5**	**+3.4**
	2.2nm,0.3s,baz=221,slow=6.9,SNR=6.7						
ASAJ				S	**Sn**	**03 26 06.2**	**+3.9**
	0.8nm,0.3s,baz=246,slow=20,SNR=2.4						
H11N2	**WAKE ISLAND Hy**	**28.65**	**125**	T	T	04 00 06.9	
	baz=318,slow=75,SNR=130						
H11N1	**WAKE ISLAND Hy**	**28.66**	**125**	T	T	04 00 07.3	
	baz=318,slow=75,SNR=154						
H11N3	**WAKE ISLAND Hy**	**28.67**	**125**	T	T	04 00 07.4	
	baz=318,slow=75,SNR=132						
H11S1	**WAKE ISLAND Hy**	**29.43**	**127**	T	T	04 01 04.6	
	baz=321						
H11S3	**WAKE ISLAND Hy**	**29.44**	**127**	T	T	04 01 03.6	
	baz=321						
H11S2	**WAKE ISLAND Hy**	**29.45**	**127**	T	T	04 01 04.7	
	baz=321						
ZALV	**Zalesovo Beam**	**41.11**	**311**	P	**Pn**	**03 31 31.1**	**-1.0**
	0.6nm,0.3s,baz=76,slow=6.1,SNR=2.3						
MKAR	**Makanchi Array**	**43.68**	**300**	P	**Pn**	**03 31 52.0**	**-1.2**
	0.8nm,0.8s,baz=82,slow=9.6,SNR=5.1						
KURBB	**Kurchatov Arra**	**45.35**	**307**	P	**Pn**	**03 32 05.0**	**-1.4**
	1.7nm,0.6s,baz=82,slow=8.2,SNR=14						
ILAR	**Eielson Array**	**47.40**	**33**	P	**Pn**	**03 32 22.1**	**-0.2**
	0.5nm,0.9s,baz=255,slow=6.5,SNR=6.9						
BVAR	**Borovoye Array**	**49.76**	**311**	P	**Pn**	**03 32 39.6**	**-1.1**
	0.7nm,0.5s,baz=56,slow=7.6,SNR=4.1						
WRA	**Warramunga Arr**	**59.18**	**189**	P	**Pn**	**03 33 47.9**	**-1.5**
	0.3nm,0.4s,baz=5.9,slow=7.2,SNR=3.2						
AKASG	**Malin Array Be**	**73.13**	**322**	P	**Pn**	**03 35 17.2**	**-1.6**
	0.4nm,0.4s,baz=41,slow=5.6,SNR=3.0						

*ISCJB **25** 03:44:05.6±0.6, 50°.25N±0°.04×18°.74E±0°.04, h0km, Error ellipse: s-maj=5.7km s-min=3.3km az=3.7*
*IPEC **25** 03:44:06.0±0.2, 50°.31N×18°.78E, h0km±2km, ML1.6/3, Error ellipse: s-maj=2.5km s-min=1.1km az=168.0*
*CSEM **25** 03:44:06.3±0.2, 50°.27N×18°.76E, h2km, ML2.5/4, Error ellipse: s-maj=5.3km s-min=2.9km az=1.0*
*PRU **25** 03:44:06.7, 50°.27N×18°.76E, h0km*
ISC 25 03:44:06.2±0.9, 50°.21N±0°.04×18°.78E±0°.03, h0km, n21, σ0§53/35, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHZP	**Chorzow**	**0.16**	**59**	*e*Pg	**Pg**	**03 44 09.1**	**-0.1**
CHZP	**Chorzow**	**0.16**	**59**	*e*Pg	**Pg**	**03 44 09.1**	**-0.1**
OKC	**Ostrava-Krasne**	**0.55**	**228**	*e*PG	**Pb**	**03 44 18.6**	**-0.1**
OKC				*e*SG	**Sb**	**03 44 27.9**	**+0.7**
	comp=Z,11nm,0.6s						
OKC	**Ostrava-Krasne**	**0.55**	**228**	Pg	**Pb**	**03 44 18.6**	**-0.1**
OJC	**Ojcow**	**0.66**	**89**	*e*Pg	**Pg**	**03 44 18.7**	**0.0**
OJC				*e*Sg	**Sg**	**03 44 27.5**	**+0.3**
OJC	**Ojcow**	**0.66**	**89**	*e*Pg	**Pg**	**03 44 18.7**	**0.0**
OJC				*e*Sg	**Sg**	**03 44 27.5**	**+0.3**
MORC	**Moravsky Berou**	**0.91**	**242**	*e*Pg	**Pb**	**03 44 24.3**	**-0.5**
MORC				*e*Sg	**Sg**	**03 44 36.2**	**+0.9**
	5.9nm,0.3s,baz=56						
LANS	**Liptovska Anna**	**1.15**	**157**	*e*Pg	**Pn**	**03 44 29.5**	**-0.1**
LANS				*e*Sg	**Sb**	**03 44 44.7**	**+0.2**
LANS	**Liptovska Anna**	**1.15**	**157**	*e*PG	**Pn**	**03 44 29.4**	**-0.1**
LANS				*e*SG	**Sb**	**03 44 44.7**	**+0.2**
DPC	**Dobruska-Polom**	**1.58**	**276**	*e*PG	**Pn**	**03 44 35.1**	**-0.4**
DPC				*e*SG	**Sg**	**03 44 57.3**	**+0.3**
	comp=Z,3.5nm,0.3s						
DPC	**Dobruska-Polom**	**1.58**	**276**	Pg	**Pn**	**03 44 35.1**	**-0.4**
DPC				Sg	**Sg**	**03 44 57.3**	**+0.3**
	3.5nm,0.3s						
VRAC	**Vranov**	**1.68**	**238**	*e*Pn	**Pb**	**03 44 37.5**	**-0.5**
	baz=54						
VRAC				*e*Sg	**Sg**	**03 45 00.6**	**+0.5**
	7.2nm,0.3s,baz=54						
KSP	**Ksiaz**	**1.71**	**293**	*e*Pg	**Pb**	**03 44 38.3**	**-0.1**
KSP				*e*Sg	**Sg**	**03 45 01.4**	**+0.4**
KSP	**Ksiaz**	**1.71**	**293**	*e*Pg	**Pb**	**03 44 38.3**	**-0.1**
KSP				*e*Sg	**Sg**	**03 45 01.4**	**+0.4**
VYHS	**Vyhne**	**1.72**	**179**	*e*Pn	**Pn**	**03 44 37.5**	**+0.1**
VYHS				*e*Sn	**Sb**	**03 45 00.8**	**+0.1**
VYHS	**Vyhne**	**1.72**	**179**	*e*PN	**Pn**	**03 44 37.5**	**+0.1**
VYHS				*e*SN	**Sb**	**03 45 00.8**	**+0.1**
STHS	**Stebnicka Huta**	**1.78**	**115**	*e*Pn	**Pg**	**03 44 40.2**	**-0.1**
STHS	**Stebnicka Huta**	**1.78**	**115**	*e*PN	**Pg**	**03 44 40.2**	**-0.1**
STHS				*e*LG	Lg	03 45 15.6	
KRUC	**Moravsky**	**1.93**	**234**	*e*Pn	**Pn**	**03 44 41.0**	**+0.8**
	baz=50						
KRUC				*e*Sg	**Sg**	**03 45 08.0**	**-0.1**
	2.7nm,0.3s,baz=50						
GOPC	**GO Pecny, Ondr**	**2.59**	**265**	*e*SG	**Sb**	**03 45 26.5**	**+0.7**
KHC	**Kasperske Hory**	**3.55**	**254**	*e*SG	**Sg**	**03 45 57.9**	**-2.1**

*ISCJB **25** 03:55:15.8±0.5, 30°.59N±0°.06×140°.5E±0°.2, h98km, mb3.8/12, Error ellipse: s-maj=23.2km s-min=6.2km az=162.6*
*IDC **25** 03:55:18.7±0.8, 30°.60N×140°.47E, h105km±6km, mb3.6/12, mb1 3.7/16, mb1mx3.5/51, mbtmp3.9/16, Error ellipse: s-maj=24.8km s-min=13.0km az=82.0*
ISC 25 03:55:17.9±0.6, 30°.59N±0°.07×140°.4E±0°.2, h98km, n25, σ1§32/24, mb3.9/12, Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHJ	**Hachijo jima 2**	**2.58**	**348**	P	**Pn**	**03 55 57.2**	**-0.8**
	46nm,0.3s,baz=234,slow=19,SNR=6.5						
JHJ				S	**Sn**	**03 56 25.8**	**-3.1**
	30nm,0.3s,baz=78,slow=18,SNR=5.0						
JCJ	**Chichijima**	**3.80**	**156**	P	**Pn**	**03 56 14.0**	**-0.5**
	baz=0.0,slow=3.0						
JCJ				S	**Sn**	**03 56 55.5**	**-2.6**
	baz=288,slow=19						
MJAR	**Matsushiro Arr**	**6.22**	**343**	P	**Pn**	**03 56 48.1**	**+0.9**
	1.5nm,0.3s,baz=157,slow=13,SNR=7.0						
KLR	**Kul'dur**	**19.75**	**343**	P	**Pn**	**03 59 41.4**	**-0.8**
	0.3nm,0.3s,baz=184,slow=7.7,SNR=8.8						
H11N2	**WAKE ISLAND Hy**	**26.21**	**108**	T	T	04 28 33.8	
	baz=300,slow=75,SNR=17						
H11N1	**WAKE ISLAND Hy**	**26.21**	**108**	T	T	04 28 33.7	
	baz=300,slow=75,SNR=10						
H11N3	**WAKE ISLAND Hy**	**26.23**	**108**	T	T	04 28 35.1	
	baz=300,slow=75,SNR=12						
H11S3	**WAKE ISLAND Hy**	**26.66**	**111**	T	T	04 29 47.5	
	baz=304,slow=75,SNR=6.6						
H11S1	**WAKE ISLAND Hy**	**26.67**	**111**	T	T	04 29 45.2	
	baz=304,slow=75,SNR=7.1						
H11S2	**WAKE ISLAND Hy**	**26.68**	**111**	T	T	04 29 50.9	
	baz=304,slow=75,SNR=3.4						
MKAR	**Makanchi Array**	**47.12**	**307**	P	**P**	**04 03 39.0**	**-1.1**
	0.4nm,0.7s,baz=89,slow=7.5,SNR=5.0						
MKAR				PcP	**PcP**	**04 05 11.2**	**+0.8**
	0.3nm,0.3s,baz=73,slow=4.2,SNR=4.8						
WRA	**Warramunga Arr**	**50.58**	**187**	P	**P**	**04 04 06.3**	**-0.4**
	0.9nm,0.3s,baz=6.2,slow=7.7,SNR=33						
WRA				PcP	**PcP**	**04 05 24.3**	**+1.1**
	0.7nm,0.5s,baz=0.2,slow=4.2,SNR=5.7						
ASAR	**Alice Springs**	**54.31**	**187**	P	**P**	**04 04 34.2**	**-0.1**
	0.4nm,0.3s,baz=0.7,slow=4.7,SNR=7.1						
ILAR	**Eielson Array**	**55.42**	**30**	P	**P**	**04 04 41.5**	**-0.3**
	0.6nm,0.8s,baz=274,slow=7.4,SNR=5.1						
ILAR				pP	**pP**	**04 05 07.0**	**+1.4**
	0.3nm,0.6s,baz=274,slow=7.4,SNR=1.8						
INK	**Inuvik**	**60.51**	**25**	P	**P**	**04 05 17.2**	**-0.1**
	0.6nm,0.6s,baz=338,slow=3.1,SNR=4.1						
ARCES	**ARCESS Array B**	**69.75**	**340**	P	**P**	**04 06 17.0**	**0.0**
	3.7nm,1.0s,baz=82,slow=8.7,SNR=5.7						
YKA	**Yellowknife Ar**	**69.81**	**29**	P	**P**	**04 06 17.1**	**-0.3**
	0.2nm,0.7s,baz=299,slow=6.3,SNR=4.8						
YKA				pP	**pP**	**04 06 43.8**	**+1.6**
	0.2nm,0.7s,baz=295,slow=6.3,SNR=4.3						
FINES	**FINESS Array B**	**74.15**	**333**	P	**P**	**04 06 43.0**	**-0.4**
	2.7nm,1.0s,baz=70,slow=2.2,SNR=5.5						
FINES				pP	**pP**	**04 07 10.4**	**+2.0**
	1.4nm,0.6s,baz=64,slow=6.5,SNR=1.9						
KBZ	**Khabaz**	**74.53**	**312**	P	**P**	**04 06 46.0**	**+0.1**
	1.4nm,0.5s,baz=64,slow=1.8,SNR=4.3						
AKASG	**Malin Array Be**	**78.91**	**323**	P	**P**	**04 07 09.8**	**-0.6**
	0.3nm,0.3s,baz=56,slow=5.4,SNR=4.3						
AKASG				pP	**pP**	**04 07 37.9**	**+2.2**
	0.2nm,0.4s,baz=52,slow=5.5,SNR=1.7						
NVAR	**Mina Array Bea**	**79.56**	**52**	pP	pP	04 07 41.9	+2.0
	baz=297,slow=6.0						
HFS	**Hagfors**	**79.62**	**336**	P	**P**	**04 07 13.8**	**-0.3**
	0.7nm,0.4s,baz=59,slow=8.6,SNR=3.1						
BRTR	**Keskin Array B**	**82.53**	**312**	P	**P**	**04 07 30.6**	**+0.5**
	2.8nm,0.9s,baz=96,slow=3.7,SNR=14						
PDAR	**Pinedale Array**	**82.80**	**44**	pP	pP	04 07 58.9	+1.7
	0.2nm,0.4s,baz=274,slow=2.4,SNR=1.8						
TXAR	**Lajitas Array**	**94.70**	**52**	pP	pP	04 08 56.3	+1.8
	0.6nm,0.6s,baz=319,slow=3.6,SNR=7.3						

*CSEM **25** 04:06:53.3±0.1, 42°.91N×1°.44W, h5km, ML3.0/18, Error ellipse: s-maj=2.9km s-min=2.5km az=168.0*
*MDD **25** 04:06:54.2±0.2, 42°.86N×1°.44W, h1km±3km, mbLg2.6/17, Error ellipse: s-maj=2.5km s-min=1.6km az=136.0, PRXIMO*
MDD EMS: II INTENSIDAD MAXIMA.
*STR **25** 04:06:54.6±0.2, 42°.92N×1°.44W, h6km, Ml2.9, Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*
*LDG **25** 04:06:54.6±0.1, 42°.89N×1°.44W, h2km, Md2.9/2, Ml3.1/16, Error ellipse: s-maj=2.2km s-min=2.0km az=6.0*
ISC 25 04:06:53.9±0.9, 42°.91N±0°.02×1°.44W±0°.02, h12km±7km, n128, σ1§10/208, 2C-1D, Pyrenees

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EARA	**Aranguren**	**0.17**	**216**	⇑Pg	**Pg**	**04 06 56.5**	**-1.3**
	1μm,0.4s,SNR=18						
EARA				Lg	Lg	04 06 59.5	
	1μm,0.1s,SNR=51						
EARA	**Aranguren**	**0.17**	**216**	Pg	**Pg**	**04 06 56.5**	**-1.3**
	1μm,0.4s,SNR=18						
EARA				Lg	Lg	04 06 59.5	
	1μm,0.1s,SNR=51						
SJPF	**Ste Jean**	**0.26**	**38**	*e*Pg	**Pg**	**04 06 59.4**	**+0.1**
SJPF				*e*Sg	**Sb**	**04 07 04.0**	**-0.9**
	346nm,0.3s						
SJPF	**Ste Jean**	**0.26**	**38**	Pg	**Pg**	**04 06 59.4**	**+0.1**
SJPF				Lg	Lg	04 07 04.0	
	173nm,0.3s						
SJPF	**Ste Jean**	**0.26**	**38**	Pg	**Pg**	**04 06 59.4**	**+0.1**
SJPF				Lg	Lg	04 07 04.0	
	173nm,0.3s						
EALK	**Alkurruntz**	**0.31**	**351**	Pg	**Pb**	**04 07 00.9**	**-0.6**
	27nm,0.3s,SNR=52						
EALK				Lg	Lg	04 07 07.2	
	614nm,0.5s,SNR=18						
EALK	**Alkurruntz**	**0.31**	**351**	Pg	**Pb**	**04 07 00.9**	**-0.6**
	27nm,0.3s,SNR=52						
EALK				Lg	Lg	04 07 07.2	
	614nm,0.5s,SNR=18						
LARF	**Larrau**	**0.35**	**69**	Pg	**Pb**	**04 07 01.7**	**-0.5**
LARF				Sg	**Sg**	**04 07 06.5**	**+0.6**
LARF	**Larrau**	**0.35**	**69**	Pg	**Pb**	**04 07 01.7**	**-0.5**
LARF				Sg	**Sg**	**04 07 06.5**	**+0.6**
ORDF	**Ordiarp**	**0.48**	**51**	Pg	**Pg**	**04 07 03.4**	**+0.1**
ORDF				Sg	**Sb**	**04 07 10.6**	**-0.6**
ORDF	**Ordiarp**	**0.48**	**51**	Pg	**Pg**	**04 07 03.4**	**+0.1**
ORDF				Sg	**Sb**	**04 07 10.6**	**-0.6**
ATE	**Arette**	**0.57**	**72**	Pg	**Pb**	**04 07 05.6**	**-0.2**
ATE				Sg	**Sb**	**04 07 13.7**	**-0.2**
ATE	**Arette**	**0.57**	**72**	⇑Pg	**Pg**	**04 07 04.5**	**-0.5**
	SNR=18						
ATE				Lg	Lg	04 07 13.3	
	244nm,0.5s,SNR=7.9						
ATE	**Arette**	**0.57**	**72**	Pg	**Pg**	**04 07 04.5**	**-0.5**
	SNR=18						
ATE				Lg	Lg	04 07 13.3	
	244nm,0.5s,SNR=7.9						
ATE				Sg	**Sb**	**04 07 13.7**	**-0.2**
ETSF	**Etsaut**	**0.65**	**91**	*e*Pg	**Pg**	**04 07 05.3**	**-1.2**
ETSF				*e*Sg	**Sg**	**04 07 14.3**	**-0.8**
	112nm,0.4s						
ETSF	**Etsaut**	**0.65**	**91**	Pg	**Pg**	**04 07 05.3**	**-1.2**
ETSF				Lg	Lg	04 07 14.3	
	56nm,0.4s						
ETSF	**Etsaut**	**0.65**	**91**	Pg	**Pg**	**04 07 05.3**	**-1.2**
ETSF				*e*Sg	**Sg**	**04 07 14.3**	**-0.8**
	56nm,0.4s						
REYF	**Montagne du Re**	**0.79**	**78**	Pg	**Pb**	**04 07 09.2**	**-0.3**
REYF				Sg	**Sb**	**04 07 20.5**	**+0.4**
REYF	**Montagne du Re**	**0.79**	**78**	Pg	**Pb**	**04 07 09.2**	**-0.3**
REYF				Sg	**Sb**	**04 07 20.5**	**+0.4**
VIEF	**Viey**	**1.08**	**91**	Pg	**Pn**	**04 07 15.0**	**+0.1**
VIEF				Sg	**Sb**	**04 07 29.7**	**+1.2**
VIEF	**Viey**	**1.08**	**91**	Pg	**Pn**	**04 07 15.0**	**+0.1**
VIEF				Sg	**Sb**	**04 07 29.7**	**+1.2**
LABF	**Labassere**	**1.12**	**83**	Pn	**Pn**	**04 07 15.7**	**+0.3**
LABF	**Labassere**	**1.12**	**83**	Pg	**Pn**	**04 07 16.0**	**+0.6**
LABF				Sg	**Sn**	**04 07 31.3**	**+0.5**
LABF				Sn	**Sb**	**04 07 31.8**	**+2.1**
LABF	**Labassere**	**1.12**	**83**	Pn	**Pn**	**04 07 15.7**	**+0.3**
LABF	**Labassere**	**1.12**	**83**	Pg	**Pn**	**04 07 16.0**	**+0.6**
LABF				Sg	**Sn**	**04 07 31.3**	**+0.5**
ECHI	**Chisagues Biel**	**1.23**	**101**	Pg	**Pg**	**04 07 16.6**	**-0.9**
	28nm,0.3s,SNR=92						
ECHI				Lg	Lg	04 07 34.8	
	54nm,0.2s,SNR=13						
ECHI	**Chisagues Biel**	**1.23**	**101**	Pg	**Pg**	**04 07 16.6**	**-0.9**
	28nm,0.3s,SNR=92						

5.5nm,0.2s,SNR=7.9
ERTA Lg Lg 04 08 09.5
10nm,0.2s,SNR=7.9
ERTA Horta de San J 2.36 145 Pn Pn 04 07 31.8 -0.7
4.9nm,0.4s,SNR=5.9
EPOB Poblet 2.44 129 Pn Pn 04 07 33.1 -0.4
4.0nm,0.4s,SNR=5.7
EPOB Pg **Pg 04 07 38.8 -1.8**
8.2nm,0.7s,SNR=12
EPOB Sn **Sn 04 08 03.8 +0.5**
1.2nm,0.2s,SNR=7.9
EPOB Lg Lg 04 08 10.2
11nm,0.3s,SNR=6.1
EPOB Poblet 2.44 129 Pn Pn 04 07 33.1 -0.4
4.0nm,0.4s,SNR=5.7
CLLI Llivia 2.55 99 Pn Pn 04 07 37.3 +2.1
0.2nm,0.1s,SNR=7.9
CLLI Pg **Pg 04 07 42.2 -0.7**
3.9nm,0.4s,SNR=15
CLLI Lg Lg 04 08 16.4
5.8nm,0.3s,SNR=15
CLLI Llivia 2.55 99 Pn Pn 04 07 37.3 +2.1
0.2nm,0.1s,SNR=7.9
LFF La Frestale 2.57 37 *e*Pn Pn 04 07 34.8 -0.4
LFF La Frestale 2.57 37 Pn Pn 04 07 34.8 -0.4
LFF La Frestale 2.57 37 Pn Pn 04 07 34.8 -0.4
VALF Valcebollere 2.60 100 Pn Pn 04 07 35.8 -0.1
VALF Valcebollere 2.60 100 Pg **Pg 04 07 43.3 -0.4**
VALF Sg **Sg 04 08 19.5 +2.0**
VALF Valcebollere 2.60 100 Pn Pn 04 07 35.8 -0.1
VALF Valcebollere 2.60 100 Pg **Pg 04 07 43.3 -0.4**
VALF Sg **Sg 04 08 19.5 +2.0**
EMOS Mosqueruela 2.65 164 Pn Pn 04 07 37.0 +0.4
3.0nm,0.4s,SNR=9.8
EMOS Pg **Pg 04 07 44.3 -0.4**
3.1nm,0.4s,SNR=7.6
EMOS Lg Lg 04 08 21.4
4.1nm,0.2s,SNR=5.0
EMOS Mosqueruela 2.65 164 Pn Pn 04 07 37.0 +0.4
3.0nm,0.4s,SNR=9.8
MTLF Montolieu 2.71 80 *e*Pn Pn 04 07 39.5 +2.2
MTLF *e*Sn **Sn 04 08 09.3 -0.7**
11nm,0.4s
MTLF Montolieu 2.71 80 Pn Pn 04 07 39.5 +2.2
MTLF Sn **Sn 04 08 09.3 -0.7**
5.5nm,0.4s
MTLF Montolieu 2.71 80 Pn Pn 04 07 39.5 +2.2
MTLF *e*Sn **Sn 04 08 09.3 -0.7**
5.5nm,0.4s
EARI Arriondas 2.79 279 Pn Pn 04 07 40.5 +2.1
0.2nm,0.1s,SNR=7.9
EARI Arriondas 2.79 279 Pn Pn 04 07 40.5 +2.1
0.2nm,0.1s,SNR=7.9
CFON Fontmartina 3.10 110 Pn Pn 04 07 43.6 +1.0
2.9nm,0.2s,SNR=14
CFON Pg **Pg 04 07 50.8 -2.4**
6.7nm,0.2s,SNR=7.9
CFON Lg Lg 04 08 32.0
31nm,0.3s,SNR=7.9
CFON Fontmartina 3.10 110 Pn Pn 04 07 43.6 +1.0
2.9nm,0.2s,SNR=14
RJF Les Rejaudoux 3.20 41 *e*Pn Pn 04 07 43.3 -0.7
RJF *e*Sn **Sn 04 08 21.3 -0.8**
11nm,0.3s
RJF Les Rejaudoux 3.20 41 Pn Pn 04 07 43.3 -0.7
RJF Sn **Sn 04 08 21.3 -0.8**
5.3nm,0.3s
RJF Les Rejaudoux 3.20 41 Pn Pn 04 07 43.3 -0.7
RJF *e*Sn **Sn 04 08 21.3 -0.8**
5.3nm,0.3s
SJAF Saint Jean de 3.21 96 Pn Pn 04 07 45.1 +0.9
SNR=7.9
SJAF Pg **Pb 04 07 52.0 +1.1**
SNR=7.9
SJAF Lg Lg 04 08 35.5
7.2nm,0.5s,SNR=7.9
SJAF Saint Jean de 3.21 96 Pn Pn 04 07 45.1 +0.9
SNR=7.9
SJAF Lg Lg 04 08 35.5
7.2nm,0.5s,SNR=7.9
EJON La Jonquera 3.23 97 Pn Pn 04 07 45.3 +0.9
0.6nm,0.1s,SNR=7.9
EJON Pg **Pg 04 07 53.6 -2.1**
3.5nm,0.3s,SNR=7.9
EJON Lg Lg 04 08 35.5
30nm,0.5s,SNR=7.9
EJON La Jonquera 3.23 97 Pn Pn 04 07 45.3 +0.9
0.6nm,0.1s,SNR=7.9
CAF Calviac 3.23 50 *e*Pn Pn 04 07 43.4 -1.1
CAF *e*Sn **Sn 04 08 22.8 -0.1**
10nm,0.4s
CAF Calviac 3.23 50 Pn Pn 04 07 43.4 -1.1
CAF Sn **Sn 04 08 22.8 -0.1**
5.2nm,0.4s
CAF Calviac 3.23 50 Pn Pn 04 07 43.4 -1.1
CAF *e*Sn **Sn 04 08 22.8 -0.1**
5.2nm,0.4s
ESDC Sonseca Array 3.75 211 Pn Pn 04 07 51.6 0.0
0.2nm,0.2s,baz=36,slow=14,SNR=4.9
ESDC Pg **Pg 04 08 04.2 -1.6**
0.3nm,0.3s,baz=31,slow=18,SNR=3.9
ESDC Sn **Sn 04 08 34.4 -1.3**
baz=34,slow=28,SNR=7.9
ESDC Lg Lg 04 08 52.8
baz=32,slow=30,SNR=7.9
ESDC Sonseca Array 3.75 211 Pn Pn 04 07 51.6 0.0
0.2nm,0.2s,SNR=4.9
ESDC Sonseca Array 3.75 211 Pg **Pg 04 08 04.2 -1.6**
0.3nm,0.3s,SNR=3.9
ESDC Sn **Sn 04 08 34.4 -1.3**
SNR=7.9
ESDC Lg Lg 04 08 52.8
SNR=7.9
MFF Saint Martin d 3.80 14 *e*Pn Pn 04 07 52.7 +0.5
MFF *e*Sn **Sn 04 08 36.0 -0.9**
10nm,0.5s
MFF Saint Martin d 3.80 14 Pn Pn 04 07 52.7 +0.5
MFF Sn **Sn 04 08 36.0 -0.9**
5.1nm,0.5s
MFF Saint Martin d 3.80 14 Pn Pn 04 07 52.7 +0.5
MFF *e*Sn **Sn 04 08 36.0 -0.9**
5.1nm,0.5s
LASF Ste Croix 4.03 71 *e*Pn Pn 04 07 55.6 +0.3
LASF Ste Croix 4.03 71 Pn Pn 04 07 55.6 +0.3
LASF Ste Croix 4.03 71 Pn Pn 04 07 55.6 +0.3
ECAL Calabor 4.04 258 Pn Pn 04 07 56.5 +0.9
5.5nm,0.8s,SNR=5.4
ECAL Sn **Sn 04 08 43.2 +0.4**
SNR=7.9
ECAL Lg Lg 04 09 01.3
7.6nm,0.4s,SNR=5.0
ECAL Calabor 4.04 258 Pn Pn 04 07 56.5 +0.9
5.5nm,0.8s,SNR=5.4
ECAL Sn **Sn 04 08 43.2 +0.4**
SNR=7.9
ECAL Lg Lg 04 09 01.3
7.6nm,0.4s,SNR=5.0
TCF Toulx Ste Croi 4.26 36 *e*Pn Pn 04 07 59.1 +0.5
TCF *e*Sn **Sn 04 08 48.1 -0.2**
6.0nm,0.3s
TCF Toulx Ste Croi 4.26 36 Pn Pn 04 07 59.1 +0.5
TCF Sn **Sn 04 08 48.1 -0.2**
3.0nm,0.3s
TCF Toulx Ste Croi 4.26 36 Pn Pn 04 07 59.1 +0.5
TCF *e*Sn **Sn 04 08 48.1 -0.2**
3.0nm,0.3s
MVO Moncorvo 4.51 249 Pn Pn 04 08 02.8 +0.7
0.9nm,0.1s,SNR=7.9
MVO Sn **Sn 04 08 54.4 -0.1**
3.5nm,0.5s,SNR=7.9
MVO Lg Lg 04 09 13.9
16nm,0.6s,SNR=7.9
MVO Moncorvo 4.51 249 Pn Pn 04 08 02.8 +0.7
0.9nm,0.1s,SNR=7.9
MVO Sn **Sn 04 08 54.4 -0.1**
3.5nm,0.5s,SNR=7.9
MVO Lg Lg 04 09 13.9
16nm,0.6s,SNR=7.9
BGF Bois d'Agland 4.75 38 *e*Pn Pn 04 08 05.9 +0.6
BGF *e*Sn **Sn 04 08 56.7 -3.6**
28nm,0.6s
BGF Bois d'Agland 4.75 38 Pn Pn 04 08 05.9 +0.6
BGF Sn **Sn 04 08 56.7 -3.6**
14nm,0.6s
BGF Bois d'Agland 4.75 38 Pn Pn 04 08 05.9 +0.6
VIVF Saint-Julien-l 4.83 64 *e*Pn Pn 04 08 05.3 -1.1
VIVF *e*Sn **Sn 04 08 59.5 -2.7**
10nm,0.4s
VIVF Saint-Julien-l 4.83 64 Pn Pn 04 08 05.3 -1.1
VIVF Sn **Sn 04 08 59.5 -2.7**
5.2nm,0.4s
VIVF Saint-Julien-l 4.83 64 Pn Pn 04 08 05.3 -1.1
VIVF *e*Sn **Sn 04 08 59.5 -2.7**
5.2nm,0.4s
SESP Santiago Espad 4.86 190 Pn Pn 04 08 07.8 +0.9
0.6nm,0.2s,SNR=7.9
SESP Lg Lg 04 09 26.3
6.1nm,0.6s,SNR=7.9
SESP Santiago Espad 4.86 190 Pn Pn 04 08 07.8 +0.9
0.6nm,0.2s,SNR=7.9
SESP Lg Lg 04 09 26.3
6.1nm,0.6s,SNR=7.9
EAGO Agolada(Pontev 4.89 271 Pn Pn 04 08 09.3 +2.1
1.4nm,0.3s,SNR=7.9
EAGO Agolada(Pontev 4.89 271 Pn Pn 04 08 09.3 +2.1
1.4nm,0.3s,SNR=7.9
ELOB Lobios 5.01 260 Lg Lg 04 09 33.6
3.0nm,0.4s,SNR=7.9
ELOB Lobios 5.01 260 Lg Lg 04 09 33.6
3.0nm,0.4s,SNR=7.9
QUIF Quistinic 5.15 347 *e*Pn Pn 04 08 10.3 -0.4
QUIF *e*Sn **Sn 04 09 11.0 +1.0**
4.8nm,0.4s
QUIF Quistinic 5.15 347 Pn Pn 04 08 10.3 -0.4
QUIF Sn **Sn 04 09 11.0 +1.0**
2.4nm,0.4s
QUIF Quistinic 5.15 347 Pn Pn 04 08 10.3 -0.4
QUIF *e*Sn **Sn 04 09 11.0 +1.0**
2.4nm,0.4s
AVF Avril sur Loir 5.16 40 *e*Pn Pn 04 08 11.2 +0.3
AVF *e*Sn **Sn 04 09 09.6 -0.7**
7.1nm,0.6s
AVF Avril sur Loir 5.16 40 Pn Pn 04 08 11.2 +0.3
AVF Sn **Sn 04 09 09.6 -0.7**
3.6nm,0.6s
AVF Avril sur Loir 5.16 40 Pn Pn 04 08 11.2 +0.3
AVF *e*Sn **Sn 04 09 09.6 -0.7**
3.5nm,0.6s
SMF Signal de Mont 5.30 43 *e*Pn Pn 04 08 12.5 -0.3
SMF *e*Sn **Sn 04 09 11.9 -1.8**
15nm,0.6s
SMF Signal de Mont 5.30 43 Pn Pn 04 08 12.5 -0.3
SMF Sn **Sn 04 09 11.9 -1.8**
7.4nm,0.6s
SMF Signal de Mont 5.30 43 Pn Pn 04 08 12.5 -0.3
SMF *e*Sn **Sn 04 09 11.9 -1.8**
7.4nm,0.6s
SGMF Saint Gilles 5.40 352 *e*Pn Pn 04 08 14.8 +0.6
SGMF Saint Gilles 5.40 352 Pn Pn 04 08 14.8 +0.6
SGMF Saint Gilles 5.40 352 Pn Pn 04 08 14.8 +0.6
SSF Saint Saulge 5.43 39 *e*Pn Pn 04 08 14.5 -0.1
SSF *e*Sn **Sn 04 09 15.0 -2.0**
6.9nm,0.5s
SSF Saint Saulge 5.43 39 Pn Pn 04 08 14.5 -0.1
SSF Sn **Sn 04 09 15.0 -2.0**
3.5nm,0.5s
SSF Saint Saulge 5.43 39 Pn Pn 04 08 14.5 -0.1
SSF *e*Sn **Sn 04 09 15.0 -2.0**
3.5nm,0.5s
GRR Gorron 5.49 4 *e*Pn Pn 04 08 15.9 +0.5
GRR *e*Sn **Sn 04 09 17.3 -1.2**
3.3nm,0.3s
GRR Gorron 5.49 4 Pn Pn 04 08 15.9 +0.5
GRR Sn **Sn 04 09 17.3 -1.2**
1.7nm,0.3s
GRR Gorron 5.49 4 Pn Pn 04 08 15.9 +0.5
GRR *e*Sn **Sn 04 09 17.3 -1.2**
1.6nm,0.3s
ROSF Rostrenen 5.57 347 *e*Pn Pn 04 08 17.0 +0.4
ROSF *e*Sn **Sn 04 09 19.3 -1.2**
5.3nm,0.5s
ROSF Rostrenen 5.57 347 Pn Pn 04 08 17.0 +0.4
ROSF Sn **Sn 04 09 19.3 -1.2**
2.7nm,0.5s
ROSF Rostrenen 5.57 347 Pn Pn 04 08 17.0 +0.4
ROSF *e*Sn **Sn 04 09 19.3 -1.2**
2.7nm,0.5s
LOR Lormes 5.75 39 *e*Pn Pn 04 08 18.9 -0.1
LOR *e*Sn **Sn 04 09 23.7 -1.1**
14nm,0.5s
LOR Lormes 5.75 39 Pn Pn 04 08 18.9 -0.1
LOR Sn **Sn 04 09 23.7 -1.1**
6.8nm,0.5s
LOR Lormes 5.75 39 Pn Pn 04 08 18.9 -0.1
LOR *e*Sn **Sn 04 09 23.7 -1.1**
6.8nm,0.5s
LDF La Druitiere 5.76 9 *e*Pn Pn 04 08 18.5 -0.6
LDF La Druitiere 5.76 9 *e*Pn Pn 04 08 18.5 -0.6

*ROM **25** 04:06:54.6±0.1, 43°.88N×12°.03E, h5km±1km, Ml2.5/18, Error ellipse: s-maj=1.9km s-min=1.0km az=45.0*
*ISCJB **25** 04:06:55.0±0.4, 43°.90N±0°.03×12°.01E±0°.03, h18km±4km, Error ellipse: s-maj=6.1km s-min=3.1km az=24.7*
*CSEM **25** 04:06:55.1±0.1, 43°.88N×12°.03E, h10km, ML2.9/9, Error ellipse: s-maj=3.9km s-min=2.1km az=30.0*
*LDG **25** 04:06:56.9±0.6, 43°.83N×12°.01E, h5km, Ml2.6/2, Error ellipse: s-maj=15.1km s-min=7.9km az=47.0*
ISC 25 04:06:54.9±0.8, 43°.88N±0°.03×12°.03E±0°.02, h12km±6km, n58, σ0^{s}62/81, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFI	**Santa Sofia**	**0.14**	**279**	Pg	**Pg**	**04 06 57.9**	**-0.3**
SFI				Sg	**Sg**	**04 07 00.2**	**-0.4**
2μm,0.8s							
SFI	**Santa Sofia**	**0.14**	**279**	Pg	**Pg**	**04 06 57.9**	**-0.3**
SFI				Sg	**Sg**	**04 07 00.2**	**-0.4**
2μm,0.8s							
ASQU	**Asqua**	**0.20**	**244**	Pg	**Pg**	**04 06 59.1**	**-0.1**
ASQU				Sg	**Sg**	**04 07 02.6**	**+0.5**
1μm,0.3s							
ASQU	**Asqua**	**0.20**	**244**	Pg	**Pg**	**04 06 59.1**	**-0.1**
ASQU				Sg	**Sg**	**04 07 02.6**	**+0.5**
1μm,0.3s							
BADI	**Badiali**	**0.40**	**157**	Pg	**Pg**	**04 07 03.2**	**+0.3**
BADI				Sg	**Sb**	**04 07 10.1**	**-0.1**
506nm,0.2s							
BADI	**Badiali**	**0.40**	**157**	Pg	**Pg**	**04 07 03.2**	**+0.3**
BADI				Sg	**Sb**	**04 07 10.1**	**-0.1**
506nm,0.2s							
PIEI	**Pieia**	**0.50**	**133**	Pg	**Pg**	**04 07 04.8**	**0.0**
PIEI				Sg	**Sb**	**04 07 13.1**	**0.0**
121nm,0.2s							
PIEI	**Pieia**	**0.50**	**133**	Pg	**Pg**	**04 07 04.8**	**0.0**
PIEI				Sg	**Sb**	**04 07 13.1**	**0.0**
121nm,0.2s							
ATPC	**Poggio Castell**	**0.51**	**142**	Pg	**Pg**	**04 07 05.1**	**+0.2**
ATPC				Sg	**Sb**	**04 07 13.6**	**+0.4**
ATPC	**Poggio Castell**	**0.51**	**142**	Pg	**Pg**	**04 07 05.1**	**+0.2**
ATPC				Sg	**Sb**	**04 07 13.6**	**+0.4**
SEI	**Scarperia**	**0.52**	**290**	Pg	**Pg**	**04 07 04.8**	**-0.2**
SEI				Sg	**Sb**	**04 07 13.3**	**-0.2**
SEI	**Scarperia**	**0.52**	**290**	Pg	**Pg**	**04 07 04.8**	**-0.2**
SEI				Sg	**Sb**	**04 07 13.3**	**-0.2**
CAFI	**Castiglion Fio**	**0.56**	**185**	Pg	**Pg**	**04 07 06.1**	**+0.3**
CAFI				Sg	**Sb**	**04 07 14.4**	**-0.2**
198nm,0.4s							
CAFI	**Castiglion Fio**	**0.56**	**185**	Pg	**Pg**	**04 07 06.1**	**+0.3**
CAFI				Sg	**Sb**	**04 07 14.4**	**-0.2**
198nm,0.4s							
ATVO	**AVT- Monte Val**	**0.57**	**151**	Pg	**Pg**	**04 07 06.2**	**+0.2**
ATVO				Sg	**Sb**	**04 07 15.6**	**+0.6**
273nm,0.6s							
ATVO	**AVT- Monte Val**	**0.57**	**151**	Pg	**Pg**	**04 07 06.2**	**+0.2**
ATVO				Sg	**Sb**	**04 07 15.6**	**+0.6**
273nm,0.6s							
FSSB	**Fossombrone**	**0.57**	**109**	Pg	**Pg**	**04 07 06.3**	**+0.2**
FSSB				Sg	**Sb**	**04 07 15.8**	**+0.7**
355nm,0.3s							
FSSB	**Fossombrone**	**0.57**	**109**	Pg	**Pg**	**04 07 06.3**	**+0.2**
FSSB				Sg	**Sb**	**04 07 15.8**	**+0.7**
355nm,0.3s							
PESA	**Pesaro**	**0.59**	**84**	Pg	**Pb**	**04 07 07.3**	**+0.1**
PESA							
275nm,0.4s							
PESA	**Pesaro**	**0.59**	**84**	Pg	**Pb**	**04 07 07.3**	**+0.1**
PESA							
275nm,0.4s							
MTRZ	**Monterenzio**	**0.64**	**321**	Pg	**Pg**	**04 07 08.0**	**+0.6**
MTRZ							
589nm,0.7s							
MTRZ	**Monterenzio**	**0.64**	**321**	Pg	**Pg**	**04 07 08.0**	**+0.6**
MTRZ							
589nm,0.7s							
SSFR	**Montelago di S**	**0.70**	**129**	Pg	**Pg**	**04 07 08.7**	**+0.1**
SSFR							
175nm,0.2s							
SSFR	**Montelago di S**	**0.70**	**129**	Pg	**Pg**	**04 07 08.7**	**+0.1**
SSFR							
175nm,0.2s							
FNVD	**Fontana Vidola**	**0.71**	**294**	Pg	**Pb**	**04 07 09.6**	**+0.2**
FNVD							
250nm,0.5s							
FNVD	**Fontana Vidola**	**0.71**	**294**	Pg	**Pb**	**04 07 09.6**	**+0.2**
FNVD							
250nm,0.5s							
MURB	**Monte Urbino**	**0.72**	**150**	Pg	**Pg**	**04 07 08.9**	**+0.1**
MURB							
305nm,0.3s							
MURB	**Monte Urbino**	**0.72**	**150**	Pg	**Pg**	**04 07 08.9**	**+0.1**
MURB							
305nm,0.3s							
ATTE	**AVT- Monte Tez**	**0.72**	**161**	Pg	**Pg**	**04 07 09.0**	**0.0**
ATTE							
209nm,0.6s							
ATTE	**AVT- Monte Tez**	**0.72**	**161**	Pg	**Pg**	**04 07 09.0**	**0.0**
ATTE							
209nm,0.6s							
SNTG	**Esanatoglia**	**0.91**	**133**	Pg	**Pg**	**04 07 12.1**	**-0.4**
SNTG							
126nm,0.8s							
SNTG	**Esanatoglia**	**0.91**	**133**	Pg	**Pg**	**04 07 12.1**	**-0.4**
SNTG							
126nm,0.8s							
FROS	**Frosini**	**0.93**	**224**	Pg	**Pg**	**04 07 12.9**	**+0.1**
FROS							
101nm,0.4s							
FROS	**Frosini**	**0.93**	**224**	Pg	**Pg**	**04 07 12.9**	**+0.1**
FROS							
101nm,0.4s							
MGAB	**Montegabbione**	**0.97**	**176**	Pg	**Pg**	**04 07 13.3**	**-0.3**
MGAB							
196nm,0.4s							
MGAB	**Montegabbione**	**0.97**	**176**	Pg	**Pg**	**04 07 13.3**	**-0.3**
MGAB							
196nm,0.4s							
BDI	**Bagni Di Lucca**	**1.05**	**280**	Pg	**Pg**	**04 07 14.7**	**-0.5**
BDI							
84nm,0.8s							
BDI	**Bagni Di Lucca**	**1.05**	**280**	Pg	**Pg**	**04 07 14.7**	**-0.5**
BDI							
84nm,0.8s							
MAIM	**Mastiano**	**1.11**	**272**	Pg	**Pg**	**04 07 15.5**	**-0.8**
MAIM							
55nm,0.7s							
MAIM	**Mastiano**	**1.11**	**272**	Pg	**Pg**	**04 07 15.5**	**-0.8**
MAIM							
55nm,0.7s							
NVLJ	**Novalja**	**2.15**	**71**	*e*Pn	**Pn**	**04 07 29.9**	**-0.8**
NVLJ	**Novalja**	**2.15**	**71**	*e*Pn	**Pn**	**04 07 29.8**	**-0.8**
PGF	**Pioggiola**	**2.59**	**240**	*e*Pn	**Pn**	**04 07 37.3**	**+0.6**
PGF	**Pioggiola**	**2.59**	**240**	*e*Pn	**Pn**	**04 07 37.3**	**+0.6**
UDBI	**Udbina**	**2.76**	**75**	*e*Pn	**Pn**	**04 07 38.7**	**-0.5**
UDBI				Sn	**Sn**	**04 08 11.6**	**-0.8**
UDBI	**Udbina**	**2.76**	**75**	*e*Pn	**Pn**	**04 07 38.6**	**-0.5**
SBF	**Sospel**	**3.32**	**271**	*e*Pn	**Pn**	**04 07 47.2**	**+0.4**
SBF				*e*Sn	**Sn**	**04 08 25.1**	**-1.2**
7.5nm,0.4s							
SBF	**Sospel**	**3.32**	**271**	*e*Pn	**Pn**	**04 07 47.2**	**+0.4**
SBF				*e*Sn	**Sn**	**04 08 25.1**	**-1.2**
3.8nm,0.4s							
FRF	**La Foret Royal**	**3.92**	**267**	*e*Pn	**Pn**	**04 07 55.2**	**+0.3**
FRF				*e*Sn	**Sn**	**04 08 39.9**	**-0.9**
1.4nm,0.2s							
FRF	**La Foret Royal**	**3.92**	**267**	*e*Pn	**Pn**	**04 07 55.2**	**+0.3**
FRF				*e*Sn	**Sn**	**04 08 39.9**	**-0.9**
0.7nm,0.2s							
LPG	**La Plagne**	**4.10**	**295**	*e*Pn	**Pn**	**04 07 58.8**	**+1.1**
LPG	**La Plagne**	**4.10**	**295**	*e*Pn	**Pn**	**04 07 58.8**	**+1.1**
LPL	**La Plagne**	**4.12**	**295**	*e*Pn	**Pn**	**04 07 59.7**	**+1.8**
LPL	**La Plagne**	**4.12**	**295**	*e*Pn	**Pn**	**04 07 59.7**	**+1.8**
SMRF	**Simiane la Rot**	**4.66**	**273**	*e*Pn	**Pn**	**04 08 06.4**	**+1.2**
SMRF	**Simiane la Rot**	**4.66**	**273**	*e*Pn	**Pn**	**04 08 06.4**	**+1.2**
CDF	**Champ du Feu**	**5.61**	**326**	*e*Pn	**Pn**	**04 08 19.4**	**+1.2**
CDF	**Champ du Feu**	**5.61**	**326**	*e*Pn	**Pn**	**04 08 19.4**	**+1.2**

*IDC **25** 04:07:18.4±1.6, 35°.85N×141°.23E, h0km, mb3.7/6, mb1 3.9/8, mb1mx3.6/53, mbtmp3.8/8, ML3.7/2, MS2.7/3, Ms1 2.8/3, ms1mx2.4/39, Error ellipse: s-maj=48.0km s-min=19.2km az=72.0*
*ISCJB **25** 04:07:25.1±0.8, 35°.73N±0°.05×140°.8E±0°.1, h57km±6km, mb3.7/6, MS2.6/2, Error ellipse: s-maj=15.1km s-min=7.2km az=160.8*
*JMA **25** 04:07:26.5±0.1, 35°.75N×140°.67E, h48km±1km, M3.3 Broadband fault plane solution: P waves. NP1: ϕ_s8.00000°, δ77.00000°, λ82.00000°. NP2:ϕ_s222.00000°, δ15.00000°, λ123.00000°. Principal axes: T Plg57.0000°, Azm267.0000°; N Plg8.0000°, Azm10.0000°; P Plg32.0000°, Azm105.0000°;*
JMA Felt I J1.
ISC 25 04:07:26.2±1.1, 35°.74N±0°.05×140°.81E±0°.09, h50km±8km, n24, σ1^{s}01/20, mb3.7/6, 3D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.05**	**133**	P	**Pn**	**04 07 34.2**	**+0.4**
JCN	**Nagara**	**0.59**	**237**	⇓P	**Pn**	**04 07 38.4**	**-0.1**
JCN				*e*S	**Sn**	**04 07 47.5**	**+0.1**
JYT	**Yasato**	**0.70**	**314**	⇓P	**Pn**	**04 07 39.1**	**-0.8**
JYT				S	**Sn**	**04 07 48.2**	**-1.6**
BSO4	**Boso 4**	**0.84**	**207**	⇓P	**Pn**	**04 07 41.5**	**-0.2**
BSO3	**Boso 3**	**0.97**	**195**	P	**Pn**	**04 07 43.1**	**-0.1**
BSO1	**Boso 1**	**1.09**	**173**	P	**Pn**	**04 07 45.3**	**+0.7**
JAG	**Ashikaga**	**1.30**	**302**	P	**Pn**	**04 07 46.9**	**-1.0**
MJAR	**Matsushiro Arr**	**2.25**	**292**	Pn	**Pn**	**04 08 01.3**	**+0.3**
14nm,0.3s,baz=94,slow=14,SNR=49							
MJAR				LR	LR	04 09 00.5	
comp=Z,132nm,20.9s,baz=5.0,slow=41							
MAT	**Matsushiro**	**2.25**	**292**	P	**Pn**	**04 08 01.6**	**+0.6**
MAT				*e*S	**Sn**	**04 08 30.4**	**+2.7**
JHJ	**Hachijo jima 2**	**2.75**	**198**	Pn	**Pn**	**04 08 06.7**	**-1.0**
28nm,0.3s,baz=90,slow=19,SNR=4.8							
JHJ				Sn	**Sn**	**04 08 38.5**	**-1.2**
64nm,0.3s,baz=107,slow=19,SNR=6.3							
PETK	**Petropavlovsk-**	**21.05**	**29**	LR	LR	04 19 40.4	
comp=Z,21nm,21.3s,baz=102,slow=36							
H11N2	**WAKE ISLAND Hy**	**27.94**	**118**	T	T	04 42 27.6	
baz=310,slow=75,SNR=12							
H11N1	**WAKE ISLAND Hy**	**27.95**	**118**	T	T	04 42 19.4	
baz=310,slow=75,SNR=14							
H11N3	**WAKE ISLAND Hy**	**27.96**	**118**	T	T	04 42 28.9	
baz=310,slow=75,SNR=11							
H11S1	**WAKE ISLAND Hy**	**28.60**	**120**	T	T	04 43 14.5	
baz=312,slow=75,SNR=15							
H11S3	**WAKE ISLAND Hy**	**28.60**	**120**	T	T	04 43 13.0	
baz=312,slow=75,SNR=15							
H11S2	**WAKE ISLAND Hy**	**28.61**	**120**	T	T	04 43 15.7	
baz=312,slow=75,SNR=11							
CMAR	**Chiang Mai Arr**	**40.71**	**256**	LR	LR	04 34 32.0	
comp=Z,10nm,20.5s,baz=190,slow=40							
ZALV	**Zalesovo Beam**	**42.44**	**313**	P	**P**	**04 15 15.8**	**-0.1**
0.5nm,0.3s,baz=80,slow=8.9,SNR=3.1							
MKAR	**Makanchi Array**	**44.41**	**303**	P	**P**	**04 15 31.9**	**+0.1**
0.6nm,0.5s,baz=92,slow=8.8,SNR=7.0							
KURBB	**Kurchatov Arra**	**46.42**	**309**	P	**P**	**04 15 48.0**	**+0.3**
0.7nm,0.3s,baz=84,slow=8.1,SNR=4.2							
WRA	**Warrumunga Arr**	**55.72**	**187**	P	**P**	**04 16 57.1**	**-0.5**
0.5nm,0.5s,baz=1.1,slow=7.5,SNR=9.2							
ASAR	**Alice Springs**	**59.44**	**187**	P	**P**	**04 17 24.8**	**+0.9**
0.6nm,0.8s,baz=17,slow=11,SNR=7.1							
NOA	**NORSAR Array B**	**75.19**	**337**	P	**P**	**04 19 03.0**	**-0.1**
0.5nm,0.8s,baz=57,slow=6.4,SNR=2.6							

*ROM **25** 04:07:45.5±0.1, 43°.86N×12°.02E, h5km±1km, Ml3.4/8, Error ellipse: s-maj=1.6km s-min=1.3km az=13.0*
*ISCJB **25** 04:07:46.1±0.2, 43°.87N±0°.02×11°.95E±0°.02, h21km±2km, mb3.5/4, MS3.0/1, Error ellipse: s-maj=3.0km s-min=2.1km az=179.1*
*CSEM **25** 04:07:46.3±0.1, 43°.84N×11°.98E, h10km, ML3.7/13, Error ellipse: s-maj=2.3km s-min=1.9km az=23.0*
*GEN **25** 04:07:46.5, 43°.93N×11°.95E, h2km, ML3.2*
*IDC **25** 04:07:47.2±1.4, 44°.12N×12°.20E, h0km, mb3.6/4, mb1 3.7/9, mb1mx3.5/49, mbtmp3.6/9, ML3.6/5, MS2.9/3, Ms1 2.9/3, ms1mx2.4/51, Error ellipse: s-maj=28.6km s-min=21.1km az=110.0*
*LDG **25** 04:07:47.1±0.2, 43°.79N×12°.07E, h5km, Ml3.5/14, Error ellipse: s-maj=4.1km s-min=3.5km az=121.0*
*PRU **25** 04:07:47.9, 43°.95N×12°.23E, h0km*
*STR **25** 04:08:01.9±0.5, 44°.34N×10°.48E, h5km, Ml3.4, Error ellipse: s-maj=0.0km s-min=0.0km az=0.0*
ISC 25 04:07:46.4±0.8, 43°.85N±0°.02×11°.98E±0°.02, h12km±5km, n192, σ1^{s}44/263, mb3.7/4, 10C-4D, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFI	**Santa Sofia**	**0.11**	**299**	Pg	**Pg**	**04 07 48.8**	**-0.6**
SFI				Sg	**Sg**	**04 07 51.1**	**-0.5**
ASQU	**Asqua**	**0.15**	**248**	⇑*i*Pg	**Pg**	**04 07 50.0**	**0.0**
ASQU				Sg	**Sg**	**04 07 53.3**	**+0.8**
ASQU	**Asqua**	**0.15**	**248**	⇑*i*Pg	**Pg**	**04 07 50.0**	**0.0**

ASQU				Sg	Sg	04 07 53.3	+0.8
BADI	**Badiali**	0.39	151⇑	*i* Pg	Pg	04 07 53.8	-0.4
BADI				Sg	Sb	04 08 00.8	-0.5
BADI	**Badiali**	0.39	151⇑	*i* Pg	Pg	04 07 53.8	-0.4
BADI				Sg	Sb	04 08 00.8	-0.5
BLLA	**Bellaria**	0.46	50	Pg	Pg	04 07 55.0	-0.4
BLLA				Sg	Sb	04 08 02.9	-0.2
	23μm,2.1s						
BLLA	**Bellaria**	0.46	50	Pg	Pg	04 07 55.0	-0.4
BLLA				Sg	Sb	04 08 02.9	-0.2
	23μm,2.1s						
SEI	**Scarperia**	0.49	294⇑	*i* Pg	Pg	04 07 55.5	-0.6
SEI	**Scarperia**	0.49	294⇑	*i* Pg	Pg	04 07 55.5	-0.6
ATPC	**Poggio Castell**	0.51	137	Pg	Pg	04 07 55.7	-0.6
ATPC				Sg	Sb	04 08 04.3	-0.3
ATPC	**Poggio Castell**	0.51	137	Pg	Pg	04 07 55.7	-0.6
ATPC				Sg	Sb	04 08 04.3	-0.3
PIEI	**Pieia**	0.51	128	Pg	Pg	04 07 55.6	-0.8
PIEI				Sg	Sb	04 08 04.1	-0.6
PIEI	**Pieia**	0.51	128	Pg	Pg	04 07 55.6	-0.8
PIEI				Sg	Sb	04 08 04.1	-0.6
CAFI	**Castiglion Fio**	0.52	181⇑	*i* Pg	Pg	04 07 56.6	0.0
CAFI				Sg	Sb	04 08 05.3	+0.3
CAFI	**Castiglion Fio**	0.52	181⇑	*i* Pg	Pg	04 07 56.6	0.0
CAFI				Sg	Sb	04 08 05.3	+0.3
ATVO	**AVT- Monte Val**	0.56	146⇑	*e*Pg	Pg	04 07 56.7	-0.7
ATVO				Sg	Sb	04 08 06.8	+0.6
ATVO	**AVT- Monte Val**	0.56	146⇑	*e*Pg	Pg	04 07 56.7	-0.7
FSSB	**Fossombrone**	0.60	105	Pg	Pg	04 07 57.1	-1.0
FSSB				Sg	Sg	04 08 06.7	+0.7
FSSB	**Fossombrone**	0.60	105	Pg	Pg	04 07 57.1	-1.0
FSSB				Sg	Sg	04 08 06.7	+0.7
PESA	**Pesaro**	0.63	82	Pg	Pg	04 07 57.9	-0.7
PESA				Sg	Sg	04 08 07.8	+0.9
PESA	**Pesaro**	0.63	82	Pg	Pg	04 07 57.9	-0.7
PESA				Sg	Sg	04 08 07.8	+0.9
MTRZ	**Monterenzio**	0.64	325	Pg	Pg	04 07 58.4	-0.5
	3μm,0.7s						
MTRZ	**Monterenzio**	0.64	325	Pg	Pg	04 07 58.4	-0.5
	3μm,0.7s						
FNVD	**Fontana Vidola**	0.69	297	Pg	Pg	04 07 59.2	-0.7
FNVD	**Fontana Vidola**	0.69	297	Pg	Pg	04 07 59.2	-0.7
ATTE	**AVT- Monte Tez**	0.71	157	Pg	Pg	04 07 59.5	-0.6
ATTE	**AVT- Monte Tez**	0.71	157	Pg	Pg	04 07 59.5	-0.6
MURB	**Monte Urbino**	0.71	146	Pg	Pg	04 07 59.8	-0.4
MURB	**Monte Urbino**	0.71	146	Pg	Pg	04 07 59.8	-0.4
SSFR	**Montelago di S**	0.72	125	Pg	Pg	04 07 59.3	-1.0
SSFR	**Montelago di S**	0.72	125	Pg	Pg	04 07 59.3	-1.0
FIU	**Minerbio Fiu**	0.86	336	Pg	Pn	04 08 04.0	-0.3
	3μm,0.8s						
FIU	**Minerbio Fiu**	0.86	336	Pg	Pn	04 08 04.0	-0.3
	3μm,0.8s						
FROS	**Frosini**	0.88	223	Pg	Pb	04 08 03.6	0.0
	2μm,0.8s						
FROS	**Frosini**	0.88	223	Pg	Pb	04 08 03.6	0.0
	2μm,0.8s						
ZCCA	**Zocca**	0.88	305	Pg	Pb	04 08 03.9	+0.3
ZCCA	**Zocca**	0.88	305	Pg	Pb	04 08 03.9	+0.3
SNTG	**Esanatoglia**	0.92	130	Pg	Pb	04 08 03.0	-1.3
SNTG	**Esanatoglia**	0.92	130	Pg	Pb	04 08 03.0	-1.3
SENI	**Senigallia**	0.92	99	Pg	Pb	04 08 03.3	-0.9
	1μm,0.7s						
SENI	**Senigallia**	0.92	99	Pg	Pb	04 08 03.3	-0.9
	1μm,0.7s						
MGAB	**Montegabbione**	0.94	174	Pg	Pb	04 08 04.3	-0.4
MGAB	**Montegabbione**	0.94	174	Pg	Pb	04 08 04.3	-0.4
BDI	**Bagni Di Lucca**	1.02	282	Pg	Pb	04 08 05.5	-0.5
BDI	**Bagni Di Lucca**	1.02	282	Pg	Pb	04 08 05.5	-0.5
ARCI	**Arcidosso**	1.06	200	Pg	Pb	04 08 06.3	-0.5
ARCI	**Arcidosso**	1.06	200	Pg	Pb	04 08 06.3	-0.5
TRIF	**Trifonti**	1.08	227	Pg	Pb	04 08 06.7	-0.2
TRIF	**Trifonti**	1.08	227	Pg	Pb	04 08 06.7	-0.2
MAIM	**Mastiano**	1.08	274	Pg	Pb	04 08 06.2	-0.7
	798nm,0.8s						
MAIM	**Mastiano**	1.08	274	P	Pb	04 08 06.3	-0.6
MAIM				S	Sb	04 08 19.5	-1.5
MCIV	**Monte Civitell**	1.10	192	Pg	Pb	04 08 06.9	-0.4
	266nm,0.7s						
MCIV	**Monte Civitell**	1.10	192	Pg	Pb	04 08 06.9	-0.4
	266nm,0.7s						
SASS	**Sassa**	1.11	238	Pg	Pb	04 08 06.9	-0.6
	807nm,1.4s						
SASS	**Sassa**	1.11	238	Pg	Pb	04 08 06.9	-0.6
	807nm,1.4s						
SARO	**Sassorosso**	1.19	287	P	Pn	04 08 07.6	-1.3
SARO				S	Sb	04 08 21.8	-2.4
NVLJ	**Novalja**	2.20	70	*e*Pn	Pn	04 08 22.5	-0.1
NVLJ				Sn	Sn	04 08 47.9	-1.9
NVLJ	**Novalja**	2.20	70	*e*Pn	Pn	04 08 22.5	-0.1
TLI	**Talmassons**	2.22	21	*e*Pn	Pn	04 08 22.1	-0.8
TLI	**Talmassons**	2.22	21⇓	*e*Pn	Pn	04 08 22.1	-0.8
MLNI	**MaInisio**	2.34	11	*e*Pn	Pn	04 08 24.3	-0.4
MLNI	**MaInisio**	2.34	11	*e*Pn	Pn	04 08 24.3	-0.4
COLI	**Coloredo**	2.49	23	*e*Pn	Pn	04 08 26.0	-0.7
COLI				*e*Sn	Sn	04 08 57.0	+0.1
COLI	**Coloredo**	2.49	23	*e*Pn	Pn	04 08 26.0	-0.7
COLI				*e*Sn	Sn	04 08 57.0	+0.1
MPRI	**Monte Prat**	2.49	16	*e*Pn	Pn	04 08 26.4	-0.4
MPRI				*e*Sn	Sn	04 08 57.8	+0.6
MPRI	**Monte Prat**	2.49	16⇓	*e*Pn	Pn	04 08 26.4	-0.4
MPRI				*e*Sn	Sn	04 08 57.8	+0.6
BUA	**Buia**	2.50	19	*e*Pn	Pn	04 08 26.4	-0.5
BUA				*e*Sn	Sn	04 08 57.6	+0.3
BUA	**Buia**	2.50	19⇓	*e*Pn	Pn	04 08 26.4	-0.5
BUA				*e*Sn	Sn	04 08 57.6	+0.3
PGF	**Pioggiola**	2.54	240	*e*Pn	Pn	04 08 27.8	+0.3
PGF	**Pioggiola**	2.54	240	*e*Pn	Pn	04 08 27.8	+0.3
BAD	**Bernadia**	2.55	20	*e*Pn	Pn	04 08 26.7	-0.8
BAD				*e*Sn	Sn	04 08 58.2	-0.3
BAD	**Bernadia**	2.55	20⇓	*e*Pn	Pn	04 08 26.7	-0.8
BAD				*e*Sn	Sn	04 08 58.2	-0.3
UDBI	**Udbina**	2.81	75	*e*Pn	Pn	04 08 32.0	+0.8
UDBI				Sn	Sn	04 09 02.9	-2.0
UDBI	**Udbina**	2.81	75	*e*Pn	Pn	04 08 31.9	+0.8
UDBI				Sn	Sn	04 09 02.8	-2.0
ABTA	**Abfaltersbach**	2.92	7	*e*Pn	Pn	04 08 33.2	+0.5
	21nm,0.4s,SNR=7.5						
ABTA				*i* Sn	Sn	04 09 07.8	+0.1
	142nm,0.7s						
ABTA	**Abfaltersbach**	2.92	7	Pn	Pn	04 08 33.2	+0.5
	21nm,0.4s,SNR=7.5						
ABTA				Sn	Sn	04 09 07.8	+0.1
	142nm,0.7s						
MYKA	**Terra Mystica**	3.02	22	Pn	Pn	04 08 34.2	+0.2
	13nm,0.3s						
MYKA	**Terra Mystica**	3.02	22	Pn	Pn	04 08 34.2	+0.2
	13nm,0.3s						
OBKA	**Obir**	3.22	33	*i* Pn	Pn	04 08 39.5	+2.7
	35nm,0.5s						
OBKA	**Obir**	3.22	33	Pn	Pn	04 08 39.5	+2.7
	35nm,0.5s						
DAVOX	**Davos/Dischmat**	3.28	334	Pn	Pn	04 08 39.4	+1.6
	1.9nm,0.3s,baz=62,slow=21,SNR=3.7						
DAVOX				Sn	Sn	04 09 14.0	-2.8
	4.2nm,0.3s,baz=90,slow=19,SNR=4.0						
SBF	**Sospel**	3.29	272	*e*Pn	Pn	04 08 37.9	+0.2
SBF				*e*Sn	Sn	04 09 15.6	-1.2
	100nm,0.5s						
SBF	**Sospel**	3.29	272	*e*Pn	Pn	04 08 37.9	+0.2
SBF				*e*Sn	Sn	04 09 15.6	-1.2
	50nm,0.5s						
FETA	**Feichten**	3.29	345	*i* Pn	Pn	04 08 39.7	+1.8
	19nm,0.5s,SNR=11						
FETA	**Feichten**	3.29	345	Pn	Pn	04 08 39.7	+1.8
	19nm,0.5s,SNR=11						
REVF	**Revere**	3.34	270	Pn	Pn	04 08 39.5	+1.0
REVF				Sg	Sn	04 09 17.4	-0.7
REVF	**Revere**	3.34	270	Pn	Pn	04 08 39.5	+1.0
REVF				Sg	Sn	04 09 17.4	-0.7
LUCF	**Luceram**	3.35	272	Pn	Pn	04 08 38.6	0.0
LUCF				Sg	Sn	04 09 16.6	-1.8
LUCF	**Luceram**	3.35	272	Pn	Pn	04 08 38.6	0.0
LUCF				Sg	Sn	04 09 16.6	-1.8
KBA	**Koelnbreinsper**	3.37	16	*i* Pn	Pn	04 08 39.3	+0.4
	22nm,0.5s,SNR=9.7						
KBA	**Koelnbreinsper**	3.37	16	Pn	Pn	04 08 39.3	+0.4
	22nm,0.5s,SNR=9.7						
WTTA	**Wattenberg**	3.42	356	*i* Pn	Pn	04 08 41.2	+1.5
	5.4nm,0.3s						
WTTA	**Wattenberg**	3.42	356	Pn	Pn	04 08 41.2	+1.5
	5.4nm,0.3s						
MVIF	**Mont Vial**	3.49	272	Pn	Pn	04 08 40.8	+0.2
MVIF	**Mont Vial**	3.49	272	Pg	Pb	04 08 48.5	+0.3
MVIF				Sg	Sn	04 09 22.3	+0.4
MVIF	**Mont Vial**	3.49	272	Pn	Pn	04 08 40.8	+0.2
MVIF				Sg	Sn	04 09 22.3	+0.4
WATA	**Walderalm**	3.50	355	*i* Pn	Pn	04 08 42.6	+1.9
	23nm,0.5s,SNR=9.0						
WATA	**Walderalm**	3.50	355	Pn	Pn	04 08 42.6	+1.9
	23nm,0.5s,SNR=9.0						
MOTA	**Moosalm**	3.55	350	*i* Pn	Pn	04 08 43.5	+2.1
	32nm,0.5s,SNR=16						
MOTA	**Moosalm**	3.55	350	Pn	Pn	04 08 43.5	+2.1
	32nm,0.5s,SNR=16						
RETA	**Reutte**	3.73	347	*i* Pn	Pn	04 08 45.2	+1.3
	9.5nm,0.4s						
RETA	**Reutte**	3.73	347	Pn	Pn	04 08 45.2	+1.3
	9.5nm,0.4s						
DAVA	**Damuels**	3.74	338	*i* Pn	Pn	04 08 46.0	+2.0
	18nm,0.4s,SNR=11						
DAVA	**Damuels**	3.74	338	Pn	Pn	04 08 46.0	+2.0
	18nm,0.4s,SNR=11						
MBDF	**Montbardon**	3.84	285	*e*Pn	Pn	04 08 46.6	+1.2
MBDF				*e*Sn	Sn	04 09 30.4	-0.1
	68nm,0.7s						
MBDF	**Montbardon**	3.84	285	*e*Pn	Pn	04 08 46.6	+1.2
MBDF				*e*Sn	Sn	04 09 30.4	-0.1
	34nm,0.7s						
FRF	**La Foret Royal**	3.88	268	*e*Pn	Pn	04 08 46.0	+0.2
FRF				*e*Sn	Sn	04 09 30.1	-1.1
	21nm,0.4s						
FRF	**La Foret Royal**	3.88	268	*e*Pn	Pn	04 08 46.0	+0.2
LMR	**La Mourre**	4.01	264	*e*Pn	Pn	04 08 47.1	-0.5
LMR				*e*Sn	Sn	04 09 31.9	-2.5
	11nm,0.4s						
LMR	**La Mourre**	4.01	264	*e*Pn	Pn	04 08 47.1	-0.5
LMR				*e*Sn	Sn	04 09 31.9	-2.5
	5.4nm,0.4s						
LPG	**La Plagne**	4.08	296	*e*Pn	Pn	04 08 49.7	+0.9
LPG				*e*Sn	Sn	04 09 36.3	-0.2
	32nm,0.6s						
LPG	**La Plagne**	4.08	296	*e*Pn	Pn	04 08 49.7	+0.9
LPG				*e*Sn	Sn	04 09 36.3	-0.2
	16nm,0.6s						
LPL	**La Plagne**	4.09	296	*e*Pn	Pn	04 08 49.9	+0.9
LPL	**La Plagne**	4.09	296	*e*Pn	Pn	04 08 49.9	+0.9
ARSA	**Arzberg**	4.21	35	*i* Pn	Pn	04 08 51.7	+1.3
	3.0nm,0.2s						
ARSA	**Arzberg**	4.21	35	Pn	Pn	04 08 51.7	+1.3
	3.0nm,0.2s						
MOA	**Molln**	4.30	21	*i* Pn	Pn	04 08 52.4	+0.7
	12nm,0.5s,SNR=9.2						
MOA				*i* Sn	Sn	04 09 42.8	+1.0
	24nm,0.6s						
MOA	**Molln**	4.30	21	Pn	Pn	04 08 52.4	+0.7
	12nm,0.5s,SNR=9.2						
MOA				Sn	Sn	04 09 42.8	+1.0
	24nm,0.6s						
ORIF	**Oris-en-Rattie**	4.50	286	*e*Pn	Pn	04 08 55.9	+1.5
ORIF	**Oris-en-Rattie**	4.50	286	*e*Pn	Pn	04 08 55.9	+1.5
SMRF	**Simiane la Rot**	4.63	274	*e*Pn	Pn	04 08 57.2	+1.1
SMRF				*e*Sn	Sn	04 09 48.0	-1.8
	9.6nm,0.5s						
SMRF	**Simiane la Rot**	4.63	274	*e*Pn	Pn	04 08 57.2	+1.1
SMRF				*e*Sn	Sn	04 09 48.0	-1.8
	4.8nm,0.5s						
BBS	**Basel-Blauen**	4.78	321	Pn	Pn	04 08 59.3	+1.1
FELD	**Feldberg im Sc**	4.89	327	Pn	Pn	04 09 00.3	+0.5
CONA	**Conrad Observa**	4.89	32	*e*Pn	Pn	04 09 00.7	+0.9
	2.5nm,0.3s						
CONA	**Conrad Observa**	4.89	32	Pn	Pn	04 09 00.7	+0.9
	2.5nm,0.3s						
CABF	**La Chapelle**	4.99	306	*e*Pn	Pn	04 09 02.9	+1.7
CABF	**La Chapelle**	4.99	306	*e*Pn	Pn	04 09 02.9	+1.7
LOMF	**Lomont**	5.03	316	Pn	Pn	04 09 01.7	0.0
LOMF	**Lomont**	5.03	316	Pn	Pn	04 09 01.7	0.0
GERES	**GERESS Array B**	5.13	13	Pn	Pn	04 09 02.2	-0.9
	1.6nm,0.3s,baz=192,slow=14,SNR=23						
GERES				Sn	Sn	04 09 56.5	-5.8
	1.3nm,0.3s,baz=193,slow=22,SNR=3.3						
GERES				LR	LR	04 11 29.8	
	comp=Z,70nm,18.1s,baz=150,slow=46						
MOF	**Molkenrain**	5.24	321	Pn	Pn	04 09 05.1	+0.5
MOF	**Molkenrain**	5.24	321	Pn	Pn	04 09 05.1	+0.5
VIVF	**Saint-Julien-l**	5.33	283	*e*Pn	Pn	04 09 05.9	+0.1
VIVF	**Saint-Julien-l**	5.33	283	*e*Pn	Pn	04 09 05.9	+0.1
HINF	**Hinteralfeld**	5.34	320	*e*Pn	Pn	04 09 06.4	+0.5
HINF				*e*Sn	Sn	04 10 06.9	-0.5
	32nm,0.5s						
HINF	**Hinteralfeld**	5.34	320	*e*Pn	Pn	04 09 06.4	+0.5
HINF				*e*Sn	Sn	04 10 06.9	-0.5
	16nm,0.5s						
KHC	**Kasperske Hory**	5.39	11	*e*PN	Pn	04 09 06.0	-0.7
KHC				*ex*	x	04 09 16.7	
KHC				*e*SN	Sn	04 10 06.7	-2.0
KHC	**Kasperske Hory**	5.39	11	Pn	Pn	04 09 06.0	-0.7
TEKS	**Tekeris**	5.47	80	*e*Pn	Pn	04 09 08.1	+0.4
ECH	**Echery**	5.50	324	Pn	Pn	04 09 08.9	+0.7
ECH	**Echery**	5.50	324	Pn	Pn	04 09 08.9	+0.7
CDF	**Champ du Feu**	5.61	326	*e*Pn	Pn	04 09 09.9	+0.2
CDF				*e*Sn	Sn	04 10 10.7	-3.3
	30nm,0.5s						
CDF	**Champ du Feu**	5.61	326	*e*Pn	Pn	04 09 09.9	+0.2
HAU	**Haudompre**	5.72	319	*e*Pn	Pn	04 09 11.4	+0.3
HAU				*e*Sn	Sn	04 10 15.4	-1.2
	70nm,0.5s						
HAU	**Haudompre**	5.72	319	*e*Pn	Pn	04 09 11.4	+0.3
HAU				*e*Sn	Sn	04 10 15.4	-1.2
	35nm,0.5s						
LANF	**Langenberg**	5.88	332	Pn	Pn	04 09 15.6	+2.2
LANF	**Langenberg**	5.88	332	Pn	Pn	04 09 15.6	+2.2
TREC	**Trest**	5.96	23	*e*PN	Pn	04 09 13.4	-0.9
TREC				*e*SN	Sn	04 10 18.3	-4.2
TREC	**Trest**	5.96	23	Pn	Pn	04 09 13.4	-0.9
GRUS	**Gruza**	6.32	87	*e*Pn	Pn	04 09 20.5	+1.2
VRAC	**Vranov**	6.32	29	Pn	Pn	04 09 17.5	-1.8
	0.5nm,0.3s,baz=221,slow=18,SNR=2.6						
VRAC				Sn	Sn	04 10 25.7	-5.6
	0.7nm,0.3s,baz=279,slow=19,SNR=2.3						
GOPC	**GO Pecny, Ondr**	6.36	17	*e*PN	Pn	04 09 19.0	-0.9
GOPC				*e*SN	Sn	04 10 28.4	-4.0
GOPC	**GO Pecny, Ondr**	6.36	17	Pn	Pn	04 09 19.0	-0.9
PRU	**Pruhonice**	6.38	15	*e*SN	Sn	04 10 25.4	-7.5
SMF	**Signal de Mont**	6.39	299	*e*Pn	Pn	04 09 21.2	+0.9
SMF				*e*Sn	Sn	04 10 31.8	-1.3
	25nm,0.7s						
SMF	**Signal de Mont**	6.39	299	*e*Pn	Pn	04 09 21.2	+0.9
SMF				*e*Sn	Sn	04 10 31.8	-1.3
	12nm,0.7s						
NKC	**Novy Kostel**	6.39	3	*e*PN	Pn	04 09 21.5	+1.2
NKC				*e*SN	Sn	04 10 29.8	-3.4
NKC	**Novy Kostel**	6.39	3	Pn	Pn	04 09 21.5	+1.2
PAGF	**Fort de Pagny**	6.40	319	*e*Pn	Pn	04 09 20.7	+0.3
PAGF				*e*Sn	Sn	04 10 30.0	-3.3
	6.6nm,0.6s						
PAGF	**Fort de Pagny**	6.40	319	*e*Pn	Pn	04 09 20.7	+0.3
SFTF	**Sexfontaines**	6.50	314	*e*Pn	Pn	04 09 22.7	+0.9
	baz=128						
SFTF	**Sexfontaines**	6.50	314	*e*Pn	Pn	04 09 22.7	+0.9
LOR	**Lormes**	6.64	304	*e*Pn	Pn	04 09 24.6	+0.8
	baz=130						
LOR				*e*Sn	Sn	04 10 38.1	-1.3
	16nm,0.4s						
LOR	**Lormes**	6.64	304	*e*Pn	Pn	04 09 24.6	+0.8
LOR				*e*Sn	Sn	04 10 38.1	-1.3
	7.8nm,0.4s						
SELS	**Selova**	6.67	92	*e*Pn	Pn	04 09 25.5	+1.3
AVF	**Avril sur Loir**	6.75	299	*e*Pn	Pn	04 09 25.8	+0.5
AVF	**Avril sur Loir**	6.75	299	*e*Pn	Pn	04 09 25.8	+0.5
SSF	**Saint Saulge**	6.77	301	*e*Pn	Pn	04 09 26.2	+0.7
SSF				*e*Sn	Sn	04 10 41.7	-0.7
	5.2nm,0.5s						
SSF	**Saint Saulge**	6.77	301	*e*Pn	Pn	04 09 26.2	+0.7
SSF				*e*Sn	Sn	04 10 41.7	-0.7
	2.6nm,0.5s						
BGF	**Bois d'Agland**	7.00	296	*e*Pn	Pn	04 09 29.1	+0.5
BGF	**Bois d'Agland**	7.00	296	*e*Pn	Pn	04 09 29.1	+0.5
MTLF	**Montolieu**	7.11	269	*e*Pn	Pn	04 09 30.5	+0.4
MTLF				*e*Sn	Sn	04 10 47.1	-3.7
	4.4nm,0.7s						
MTLF	**Montolieu**	7.11	269	*e*Pn	Pn	04 09 30.5	+0.4
DPC	**Dobruska-Polom**	7.14	23	*e*PN	Pn	04 09 30.3	-0.4
DPC				*e*SN	Sn	04 10 46.6	-5.1
DPC				*ex*	x	04 10 58.9	
DPC	**Dobruska-Polom**	7.14	23	Pn	Pn	04 09 30.3	-0.4
BRG	**Berggiesshubel**	7.15	10	PN	Pn	04 09 30.7	0.0
BRG				*e*		04 10 09.7	
BRG				*e*		04 10 24.5	
BRG	**Berggiesshubel**	7.15	10	SN	Sn	04 10 46.5	-5.3
BRG				SG	Sg	04 11 39.9	+4.2
	7.0nm,0.9s						
CAF	**Calviac**	7.18	282	*e*Pn	Pn	04 09 30.9	-0.3
CAF	**Calviac**	7.18	282	*e*Pn	Pn	04 09 30.9	-0.3
UPC	**Upice**	7.20	21	*e*SN	Sn	04 10 48.3	-4.8
BOLS	**Boljevac**	7.21	87	*e*Pn	Pn	04 09 33.2	+1.6
KEST	**Kesra**	8.36	195	Pn	Pn	04 09 53.6	+6.2
	0.3nm,0.3s,baz=352,slow=14,SNR=5.3						
SGMF	**Saint Gilles**	11.02	299	*e*Pn	Pn	04 10 22.9	-0.8
SGMF	**Saint Gilles**	11.02	299	*e*Pn	Pn	04 10 22.9	-0.8
EKA	**Eskdalemuir Ar**	15.07	325	Pn	Pn	04 11 18.1	-0.9
	baz=135,slow=13,SNR=3.3						
OBN	**Obninsk**	19.44	46	LR	LR	04 19 29.8	
	comp=Z,56nm,18.2s,baz=270,slow=37						
AKTO	**Aktyubinsk**	31.58	62	LR	LR	04 28 22.0	
	comp=Z,28nm,18.6s,baz=314,slow=39						
MKAR	**Makanchi Array**	48.00	61	P	P	04 16 26.1	+1.1
	0.8nm,0.7s,baz=279,slow=7.4,SNR=7.3						
SONM	**Songino Array**	61.80	50	P	P	04 18 06.2	+1.2
	0.5nm,0.7s,baz=298,slow=7.3,SNR=3.2						
YKA	**Yellowknife Ar**	65.72	336	P	P	04 18 31.4	+1.0
	0.3nm,0.7s,baz=39,slow=6.0,SNR=7.4						
ILAR	**Eielson Array**	70.45	351	P	P	04 19 01.4	+1.4
	0.1nm,0.7s,baz=6.5,slow=6.3,SNR=5.1						

NIED ***25*** *04:11:00,38.′10N×142.′00E,h68km,Mw3.8 Best double couple: M0:6.31000×10^14 NP1:φs:200.00000°,δ72.00000°, λ1.00000°. NP2:φs:109.00000°,δ89.00000°,λ162.00000°.*

JMA 25 04:11:41.6±0.2,38.′13N×142.′02E,h21km±1km,M3.9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	0.62	302	P	Pb	04 11 53.6	-0.2
JIO				S	Sb	04 12 01.7	-0.4
JMM	**Marumori**	1.00	255	P	Pb	04 11 59.6	-0.7
JMK	**Ichinoseki**	1.03	323	P	Pb	04 12 00.4	-0.4
JOU	**Okura**	1.09	283	P	Pb	04 12 01.9	+0.1
JOM	**Ohasama**	1.46	337	P	Pn	04 12 06.8	+0.1
JFT	**Otama**	1.47	246	P	Pn	04 12 07.2	+0.4
JYK	**Kaneyama**	1.52	302	P	Pn	04 12 08.1	+0.5

MAN 25 04:27:40,13.′50N×122.′10E,h17km,mb3.7,ML2.4,MS2.0, 1D,Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BOAC	**Boac**	0.25	260	*e*P	Pg	04 27 45.1	-0.6
BOAC				*e*S	Sb	04 27 50.3	+0.1
GQP	**Guinayangan**	0.52	40⇓	*e*P	Pg	04 27 49.2	-1.3
GQP				*e*S	Sg	04 27 56.9	-0.6
AUQP	**San Andres**	0.59	108	*e*P	Pb	04 27 52.3	+0.5
AUQP				*e*S	Sn	04 28 04.0	+1.2
LQP	**Lukban**	0.81	318	*e*P	Pg	04 27 56.4	+0.4
OTRP	**Odiongan**	1.14	184	*e*P	Pn	04 28 00.1	-1.1
OTRP				*e*S	Sn	04 28 16.3	0.0
POLP	**Polilio Island**	1.23	353	*e*P	Pn	04 28 01.4	-1.1
POL

CMAR S Sn 04 39 11.1 -0.1
1.0nm,0.3s,baz=321,slow=24,SNR=4.9
MKAR Makanchi Array 25.80 341 P P 04 41 57.5 0.0
2.9nm,0.7s,baz=146,slow=9.9,SNR=18
KURBB Kurchatov Arra 30.35 340 P P 04 42 37.5 -0.4
0.8nm,0.5s,baz=151,slow=8.6,SNR=6.0
ZALV Zalesovo Beam 31.88 349 P P 04 42 51.3 0.0
1.1nm,0.4s,baz=173,slow=11,SNR=2.8
WRA Warramunga Arr 57.72 134 P P 04 46 16.2 -0.3
0.8nm,0.6s,baz=322,slow=7.5,SNR=8.4
FINES FINESS Array B 59.83 329 P P 04 46 30.2 -0.3
1.5nm,0.7s,baz=114,slow=12,SNR=3.7
ASAR Alice Springs 60.13 138 P P 04 46 33.4 +0.1
0.8nm,0.5s,baz=319,slow=7.0,SNR=12
ARCES ARCESS Array B 61.42 338 P P 04 46 41.8 +0.5
1.8nm,0.9s,baz=104,slow=7.9,SNR=2.8

*IDC **25** 04:39:48.6±8.9, 16°.99N×99°.74W, h0km, mb3.2/2, mb1 3.6/4, mb1mx3.4/34, mbtmp3.3/4, ML3.3/2, MS3.0/3, Ms1 3.0/3, ms1mx2.7/11, Error ellipse: s-maj=165.8km s-min=45.2km az=20.0*
*NEIC **25** 04:39:57.9, 17°.22N×99°.79W, h40km, MD4.1(MEX), After MEX.*
*MEX **25** 04:39:57.9±0.6, 17°.22N×99°.79W, h40km±8km, MD4.1*
ISC 25 04:39:55.8±1.0, 17°.27N±0°.02×99°.73W±0°.03, h27km±10km, n38, σ0§82/65, Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ACX	**Acapulco**	**0.41**	**197**	*eP*	**Pn**	**04 40 06.9**	**+0.9**
ACX				*i S*	**Sn**	**04 40 13.3**	**+0.5**
ACX	**Acapulco**	**0.41**	**197**	*eP*	**Pn**	**04 40 06.9**	**+0.9**
ACX				*i S*	**Sn**	**04 40 13.3**	**+0.5**
ACP2	**Acapulco**	**0.42**	**200**	*eP*	**Pb**	**04 40 04.9**	**+0.1**
ACP2				*i S*	**Sb**	**04 40 11.2**	**+0.3**
CAIG	**El Cayaco**	**0.56**	**247**	*i P*	**Pb**	**04 40 06.5**	**-0.5**
CAIG				*eS*	**Sb**	**04 40 14.4**	**-0.2**
CAIG	**El Cayaco**	**0.56**	**247**	*i P*	**Pb**	**04 40 06.5**	**-0.5**
CAIG				*eS*	**Sb**	**04 40 14.4**	**-0.2**
MEIG	**Mezcala**	**0.66**	**9**	*i P*	**Pn**	**04 40 10.0**	**+0.4**
MEIG				*eS*	**Sn**	**04 40 18.7**	**-0.4**
MEIG	**Mezcala**	**0.66**	**9**	*i P*	**Pn**	**04 40 10.0**	**+0.4**
MEIG				*eS*	**Sn**	**04 40 18.7**	**-0.4**
PLIG	**Platanillo**	**1.14**	**11**	*i P*	**Pb**	**04 40 17.1**	**+0.1**
PLIG				*i S*	**Sb**	**04 40 30.9**	**-0.5**
PLIG	**Platanillo**	**1.14**	**11**	*i P*	**Pb**	**04 40 17.1**	**+0.1**
PLIG				*i S*	**Sb**	**04 40 30.9**	**-0.5**
TLIG	**Tlapa**	**1.15**	**75**	*eP*	**Pb**	**04 40 17.1**	**0.0**
TLIG				*i S*	**Sn**	**04 40 31.6**	**+0.4**
ARIG	**Puente Sto Nin**	**1.16**	**330**	*eP*	**Pb**	**04 40 16.7**	**-0.6**
ARIG				*i S*	**Sb**	**04 40 30.2**	**-1.8**
HMTT	**Tlapaneco**	**1.24**	**65**	*eP*	**Pb**	**04 40 18.5**	**-0.1**
HMTT				*i S*	**Sn**	**04 40 34.4**	**+1.1**
MAVM	**Malinalco, Edo**	**1.69**	**8**	*eP*	**Pn**	**04 40 24.1**	**+0.3**
MAVM				*i S*	**Sn**	**04 40 45.1**	**+0.3**
YAIG	**Yautepec**	**1.71**	**22**	*eP*	**Pn**	**04 40 24.1**	**+0.1**
YAIG				*i S*	**Sn**	**04 40 45.5**	**+0.6**
YAIG	**Yautepec**	**1.71**	**22**	*eP*	**Pn**	**04 40 24.1**	**+0.1**
YAIG				*i S*	**Sn**	**04 40 45.5**	**+0.6**
PNIG	**Pinotepa**	**1.77**	**119**	*eP*	**Pn**	**04 40 24.3**	**-0.4**
PNIG				*i S*	**Sn**	**04 40 45.7**	**-0.6**
PNIG	**Pinotepa**	**1.77**	**119**	*eP*	**Pn**	**04 40 24.3**	**-0.4**
PNIG				*i S*	**Sn**	**04 40 45.7**	**-0.6**
MZVM		**1.97**	**14**	*eP*	**Pn**	**04 40 28.5**	**+1.1**
MZVM				*eS*	**Sn**	**04 40 50.8**	**-0.4**
TOVM	**TOLUCA**	**2.00**	**2**	*eP*	**Pn**	**04 40 29.0**	**+0.8**
TOVM				*i S*	**Sn**	**04 40 52.7**	**+0.1**
PPM	**Popocatepetl**	**2.08**	**30**	*eP*	**Pn**	**04 40 29.7**	**+0.4**
PPM				*i S*	**Sn**	**04 40 55.2**	**+0.6**
PPM	**Popocatepetl**	**2.08**	**30**	*eP*	**Pn**	**04 40 29.7**	**+0.4**
PPM				*i S*	**Sn**	**04 40 55.2**	**+0.6**
UNM	**Universidad Na**	**2.12**	**14**	*eP*	**Pn**	**04 40 30.2**	**+0.5**
UNM				*i S*	**Sn**	**04 40 56.4**	**+1.1**
UNM	**Universidad Na**	**2.12**	**14**	*eP*	**Pn**	**04 40 30.2**	**+0.5**
UNM				*i S*	**Sn**	**04 40 56.4**	**+1.1**
AZVM	**Cuida Lopez Ma**	**2.34**	**10**	*eP*	**Pn**	**04 40 33.9**	**+1.0**
AZVM				*i S*	**Sn**	**04 41 01.9**	**+1.0**
PTVM	**Pico Tres Padr**	**2.39**	**14**	*eP*	**Pn**	**04 40 34.2**	**+0.8**
PTVM	**Pico Tres Padr**	**2.39**	**14**	*eP*	**Pn**	**04 40 34.2**	**+0.8**
TPIG	**Tehuac#an**	**2.53**	**63**	*eP*	**Pn**	**04 40 35.9**	**+0.6**
TPIG				*i S*	**Sn**	**04 41 06.8**	**+1.4**
TPIG	**Tehuac#an**	**2.53**	**63**	*eP*	**Pn**	**04 40 35.9**	**+0.6**
TPIG				*i S*	**Sn**	**04 41 06.8**	**+1.4**
VTVM	**Tizayuca**	**2.65**	**20**	*eP*	**Pn**	**04 40 37.1**	**0.0**
VTVM				*i S*	**Sn**	**04 41 09.3**	**+0.9**
VHO	**Vista Hermosa**	**2.88**	**93**	*eP*	**Pn**	**04 40 41.3**	**+1.3**
VHO				*i S*	**Sn**	**04 41 13.7**	**-0.2**
VHO	**Vista Hermosa**	**2.88**	**93**	*eP*	**Pn**	**04 40 41.3**	**+1.3**
VHO				*i S*	**Sn**	**04 41 13.7**	**-0.2**
TEIG	**Tepich**	**11.25**	**73**	Pn	**Pn**	**04 42 32.4**	**-2.5**
	0.3nm,0.3s,baz=253,slow=20,SNR=4.2						
TEIG				Sn	Sn	04 44 30.5	-9.2
	0.2nm,0.3s,baz=270,slow=20,SNR=2.5						
TEIG	**Tepich**	**11.25**	**73**	*e*Pn	**Pn**	**04 42 34.6**	**-0.2**
LPIG	**La Paz**	**12.00**	**306**	LR	LR	04 46 39.3	
	comp=Z,27nm,21.9s,baz=26,slow=34						
TXAR	**Lajitas Array**	**12.54**	**344**	Pn	**Pn**	**04 42 54.2**	**+1.6**
	0.0nm,0.3s,baz=160,slow=17,SNR=2.3						
ANMO	**Albuquerque**	**18.60**	**342**	LR	LR	04 52 44.0	
	comp=Z,53nm,18.5s,baz=182,slow=41						
PDAR	**Pinedale Array**	**26.76**	**344**	P	**P**	**04 45 33.0**	**-0.5**
	0.2nm,0.3s,baz=134,slow=10,SNR=4.1						
PDAR				LR	LR	04 57 29.8	
	comp=Z,60nm,18.6s,baz=144,slow=39						
YKA	**Yellowknife Ar**	**46.36**	**351**	P	**P**	**04 48 17.8**	**-1.6**
	0.1nm,0.6s,baz=158,slow=7.9,SNR=3.0						

*NIED **25** 04:47:00, 37°.70N×141°.90E, h8km, Mw3.8 Best double couple: M0=5.80000×10^14 NP1:φs=287.00000°, δ36.00000°, λ-118.00000°. NP2:φs=140.00000°, δ59.00000°, λ-71.00000°.*
*ISCJB **25** 04:47:09.7±1.2, 37°.72N±0°.04×142°.00E±0°.07, h15km±8km, mb3.6/11, Error ellipse: s-maj=9.6km s-min=6.0km az=13.5*
*IDC **25** 04:47:09.3±0.7, 37°.72N×141°.96E, h0km, mb3.6/11, mb1 3.9/14, mb1mx3.8/41, mbtmp3.7/14, ML3.9/3, MS2.6/1, Ms1 2.6/1, ms1mx2.2/36, Error ellipse: s-maj=20.2km s-min=17.0km az=111.0*
*JMA **25** 04:47:11.0±0.2, 37°.73N×141°.92E, h22km±2km, M4.2*
ISC 25 04:47:09.0±2.0, 37°.70N±0°.04×141°.96E±0°.06, h1km±12km, n31, σ1§20/34, mb3.7/11, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.90**	**327**	P	**Pb**	**04 47 26.9**	**-0.4**
JIO				S	**Sb**	**04 47 37.9**	**-1.8**
JFK	**Kawauchi**	**0.93**	**249**	P	**Pb**	**04 47 27.7**	**-0.1**
JFK				S	**Sb**	**04 47 39.3**	**-1.3**
JMM	**Marumori**	**0.94**	**281**	P	**Pb**	**04 47 27.5**	**-0.5**
JMM				S	**Sg**	**04 47 38.8**	**-0.4**
ONAJ	**Iwakimizuishiy**	**1.10**	**238**	P	**Pg**	**04 47 30.4**	**+0.3**
ONAJ				S	**Sb**	**04 47 45.2**	**-0.5**
JOU	**Okura**	**1.22**	**303**	P	**Pn**	**04 47 32.6**	**-0.6**
JOU				S	**Sb**	**04 47 47.8**	**-1.3**
JFT	**Otama**	**1.30**	**263**	P	**Pb**	**04 47 34.0**	**-0.2**
JFT				S	**Sn**	**04 47 50.9**	**-1.4**
JMK	**Ichinoseki**	**1.38**	**335**	P	**Pn**	**04 47 34.6**	**-0.7**
OFUJ	**Ofunato**	**1.40**	**351**	P	**Pn**	**04 47 34.2**	**-1.4**
JYS	**Shirataka**	**1.59**	**290**	P	**Pb**	**04 47 38.5**	**-0.6**
JYS				S	**Sb**	**04 47 58.5**	**-1.1**
MJAR	**Matsushiro Arr**	**3.21**	**250**	Pn	**Pn**	**04 48 02.1**	**+1.5**
	14nm,0.3s,baz=83,slow=16,SNR=47						
JHJ	**Hachijo jima 2**	**4.90**	**202**	Pn	**Pn**	**04 48 23.9**	**+0.1**
	62nm,0.3s,baz=55,slow=3.8,SNR=7.7						
JHJ				Sn	**Sn**	**04 49 18.7**	**-2.5**
	16nm,0.3s,baz=72,slow=20,SNR=3.6						
JHJ				LR	LR	04 50 31.6	
	comp=Z,66nm,20.6s,baz=299,slow=41						
ASAJ	**Asahikawa**	**6.43**	**4**	Pn	**Pn**	**04 48 45.6**	**+0.9**
	1.2nm,0.3s,baz=216,slow=17,SNR=2.6						
ASAJ				Sn	**Sn**	**04 49 57.2**	**-1.4**
	0.4nm,0.3s,baz=180,slow=19,SNR=2.1						
USRK	**Ussuriysk Ar.**	**9.95**	**314**	Pn	**Pn**	**04 49 36.7**	**+3.8**
	0.2nm,0.3s,baz=119,slow=13,SNR=2.8						
SONM	**Songino Array**	**27.78**	**303**	P	**P**	**04 53 00.1**	**+0.7**
	0.2nm,0.3s,baz=87,slow=9.8,SNR=3.2						
H11N2	**WAKE ISLAND Hy 28.12 123**			T	T	05 22 37.5	
	baz=315,slow=75,SNR=451						
H11N1	**WAKE ISLAND Hy 28.13 123**			T	T	05 22 29.7	
	baz=315,slow=75,SNR=358						
H11N3	**WAKE ISLAND Hy 28.14 123**			T	T	05 22 38.9	
	baz=315,slow=75,SNR=419						
H11S1	**WAKE ISLAND Hy 28.87 125**			T	T	05 23 30.1	
	baz=317,slow=76,SNR=477						
H11S3	**WAKE ISLAND Hy 28.87 125**			T	T	05 23 30.8	
	baz=317,slow=76,SNR=514						
H11S2	**WAKE ISLAND Hy 28.88 125**			T	T	05 23 32.4	
	baz=317,slow=76,SNR=499						
ZALV	**Zalesovo Beam 41.79 312**			P	**P**	**04 55 00.3**	**+0.5**
	1.4nm,0.4s,baz=75,slow=6.6,SNR=2.6						
MKAR	**Makanchi Array 44.14 302**			P	**P**	**04 55 19.5**	**+0.5**
	0.4nm,0.9s,baz=88,slow=10,SNR=2.7						
KURBB	**Kurchatov Arra 45.94 308**			P	**P**	**04 55 33.3**	**+0.2**
	1.8nm,0.6s,baz=83,slow=8.4,SNR=7.4						
ILAR	**Eielson Array 48.70 33**			P	**P**	**04 55 55.0**	**+0.5**
	0.3nm,0.7s,baz=277,slow=7.1,SNR=3.5						
WRA	**Warramunga Arr 57.78 188**			P	**P**	**04 57 01.9**	**+0.1**
	0.6nm,0.5s,baz=6.2,slow=7.1,SNR=12						
ASAR	**Alice Springs 61.51 188**			P	**P**	**04 57 28.6**	**+1.1**
	0.5nm,0.7s,baz=356,slow=6.5,SNR=4.8						
YKA	**Yellowknife Ar 63.01 30**			P	**P**	**04 57 37.2**	**+0.1**
	0.2nm,0.8s,baz=305,slow=6.4,SNR=4.5						
AKASG	**Malin Array Be 74.04 322**			P	**P**	**04 58 45.7**	**-0.4**
	0.1nm,0.3s,baz=46,slow=5.6,SNR=1.9						
PDAR	**Pinedale Array 76.89 46**			P	**P**	**04 59 04.0**	**+1.0**
	0.4nm,0.7s,baz=271,slow=4.1,SNR=2.6						
TXAR	**Lajitas Array 89.37 53**			P	**P**	**05 00 08.1**	**+0.5**
	0.3nm,0.5s,baz=321,slow=3.7,SNR=3.8						
LPAZ	**La Paz 145.98 59**			PKPbc	**PKPbc**	**05 06 51.8**	**+0.3**
	0.9nm,0.8s,baz=359,slow=5.8,SNR=4.8						

MEX 25 04:49:05.0±0.6, 17°.63N×98°.68W, h57km±4km, MD3.8, Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TLIG	**Tlapa**	**0.12**	**121**	*i P*	Pn	04 49 12.5	-1.5
TLIG				*i S*	Sn	04 49 18.7	-1.6
MEIG	**Mezcala**	**0.94**	**288**	*eP*	Pn	04 49 21.1	-1.1
MEIG				*eS*	Sn	04 49 33.1	-2.0
PLIG	**Platanillo**	**1.09**	**314**	*eP*	Pn	04 49 23.4	-0.9
PLIG				*i S*	Sn	04 49 36.3	-2.2
YAIG	**Yautepec**	**1.28**	**343**	*eP*	Pn	04 49 24.9	-1.9
YAIG				*eS*	Sn	04 49 41.1	-2.1
PNIG	**Pinotepa**	**1.34**	**157**	*eP*	Pn	04 49 26.3	-1.2
PNIG				*i S*	Sn	04 49 41.7	-2.6
PPM	**Popocatepetl**	**1.43**	**2**	*eP*	Pn	04 49 27.5	-1.7
PPM				*i S*	Sn	04 49 44.8	-2.5
TPIG	**Tehuac#an**	**1.48**	**58**	*i P*	Pn	04 49 27.9	-1.6
TPIG				*i S*	Sn	04 49 46.7	-1.3
CAIG	**El Cayaco**	**1.62**	**249**	*i P*	Pn	04 49 29.6	-1.7
CAIG				*eS*	Sn	04 49 48.6	-2.5
MZVM		**1.64**	**341**	*eP*	Pn	04 49 30.4	-1.1
MZVM				*eS*	Sn	04 49 48.9	-2.7
ARIG	**Puente Sto Nin**	**1.72**	**292**	*eP*	Pn	04 49 31.3	-1.3
ARIG				*i S*	Sn	04 49 51.5	-1.9
VHO	**Vista Hermosa**	**1.94**	**106**	*i P*	Pn	04 49 35.0	-0.8
VHO				*i S*	Sn	04 49 57.4	-1.7

*ISCJB **25** 04:52:01.8±0.5, 39°.10N±0°.03×29°.03E±0°.03, h0km±5km, Error ellipse: s-maj=4.7km s-min=3.7km az=170.8*
*ISK **25** 04:52:01.8, 39°.09N×29°.02E, h5km, MD2.9*
*DDA **25** 04:52:01.9, 39°.07N×29°.00E, h5km, Ml3.0*
*CSEM **25** 04:52:02.1±0.1, 39°.09N×29°.03E, h2km, ML3.0, Error ellipse: s-maj=1.4km s-min=1.3km az=168.0*
ISC 25 04:52:02.4±1.1, 39°.10N±0°.02×29°.02E±0°.02, h5km±12km, n66, σ0§32/78, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**257**	P	**Pg**	**04 52 07.2**	**0.0**
DEMI				S	**Sg**	**04 52 10.4**	**0.0**
DEMI	**Demirci**	**0.24**	**257**	*i P*	**Pg**	**04 52 07.2**	**0.0**
DEMI				*i S*	**Sg**	**04 52 10.3**	**0.0**
GDZ	**Gediz**	**0.36**	**91**	P	**Pg**	**04 52 09.5**	**+0.1**
GDZ	**Gediz**	**0.36**	**91**	*i P*	**Pg**	**04 52 09.5**	**+0.1**
TVSB	**Tavsanli**	**0.49**	**44**	*e*PG	**Pg**	**04 52 11.7**	**-0.2**
TVSB				*e*SG	**Sg**	**04 52 18.4**	**+0.1**
TVSB	**Tavsanli**	**0.49**	**44**	*e*Pg	**Pg**	**04 52 11.7**	**-0.2**
TVSB				*e*Sg	**Sg**	**04 52 18.4**	**+0.1**
DST	**Dursunbey**	**0.59**	**329**	*e*PG	**Pg**	**04 52 13.6**	**-0.3**
DST	**Dursunbey**	**0.59**	**329**	*e*Pg	**Pg**	**04 52 13.6**	**-0.3**
KULA	**Kula-Manisa**	**0.65**	**206**	*e*PG	**Pg**	**04 52 14.5**	**-0.3**
KULA	**Kula-Manisa**	**0.65**	**206**	*e*Pg	**Pg**	**04 52 14.5**	**-0.3**
DURS	**Dursunbey**	**0.66**	**320**	P	**Pg**	**04 52 14.8**	**-0.2**
DURS	**Dursunbey**	**0.66**	**320**	*i P*	**Pg**	**04 52 14.8**	**-0.2**
KHAL	**Karahalli**	**0.81**	**153**	P	**Pg**	**04 52 17.9**	**-0.1**
KHAL				S	**Sg**	**04 52 28.4**	**-0.2**
KHAL	**Karahalli**	**0.81**	**153**	*i P*	**Pg**	**04 52 17.9**	**-0.1**
KHAL				*i S*	**Sg**	**04 52 28.4**	**-0.2**
KHL	**Karahalli**	**0.87**	**153**	*e*PG	**Pg**	**04 52 19.0**	**0.0**
KHL	**Karahalli**	**0.87**	**153**	*e*Pg	**Pg**	**04 52 19.0**	**0.0**
ORLT	**Orhaneli**	**0.95**	**354**	*e*PG	**Pg**	**04 52 20.5**	**-0.2**
ORLT	**Orhaneli**	**0.95**	**354**	*e*Pg	**Pg**	**04 52 20.5**	**-0.2**
AKHS	**Akhisar**	**0.96**	**257**	P	**Pg**	**04 52 20.2**	**-0.7**
AKHS				S	**Sg**	**04 52 33.7**	**+0.3**
AKHS	**Akhisar**	**0.96**	**257**	*i P*	**Pg**	**04 52 20.2**	**-0.7**
AKHS				*i S*	**Sg**	**04 52 33.7**	**+0.3**
AKS	**Akhisar**	**0.97**	**257**	*e*PG	**Pg**	**04 52 20.7**	**-0.2**
AKS				*e*SG	**Sb**	**04 52 34.3**	**-0.4**
AKS	**Akhisar**	**0.97**	**257**	*e*Pg	**Pg**	**04 52 20.7**	**-0.2**
AKS				*e*Sg	**Sb**	**04 52 34.3**	**-0.4**
BALB	**Balikesir**	**1.04**	**302**	*e*PG	**Pg**	**04 52 22.3**	**0.0**
BALB				*e*SG	**Sb**	**04 52 37.0**	**+0.3**
BALB	**Balikesir**	**1.04**	**302**	*e*Pg	**Pg**	**04 52 22.3**	**0.0**
BALB				*e*Sg	**Sb**	**04 52 37.0**	**+0.3**
IGD	**Bursa**	**1.17**	**7**	*i P*	**Pg**	**04 52 23.6**	**-1.3**
BALY	**Balya**	**1.26**	**301**	P	**Pg**	**04 52 26.4**	**-0.2**
BALY	**Balya**	**1.26**	**301**	*i P*	**Pg**	**04 52 26.4**	**-0.2**
CAVI	**Cavuskoy**	**1.27**	**30**	*e*PN	**Pg**	**04 52 26.6**	**-0.2**
CAVI	**Cavuskoy**	**1.27**	**30**	*e*Pn	**Pg**	**04 52 26.6**	**-0.2**
KCTX	**Karacabey (Bur**	**1.27**	**337**	*e*PN	**Pb**	**04 52 26.9**	**0.0**
KCTX	**Karacabey (Bur**	**1.27**	**337**	*e*Pn	**Pb**	**04 52 26.9**	**0.0**
MDNY	**Mudanya-Bursa**	**1.27**	**355**	*e*PN	**Pg**	**04 52 26.5**	**-0.4**
MDNY	**Mudanya-Bursa**	**1.27**	**355**	*e*Pn	**Pg**	**04 52 26.5**	**-0.4**
IZI	**Iznik**	**1.29**	**16**	*e*PN	**Pg**	**04 52 26.8**	**-0.3**
IZI	**Iznik**	**1.29**	**16**	*e*Pn	**Pg**	**04 52 26.8**	**-0.3**
BORA	**Eskisehir**	**1.36**	**54**	P	**Pn**	**04 52 28.2**	**+0.1**
BORA	**Eskisehir**	**1.36**	**54**	*i P*	**Pn**	**04 52 28.2**	**+0.1**
GONE	**Gonen-Balikesi**	**1.40**	**313**	*e*PN	**Pn**	**04 52 28.6**	**0.0**
GONE	**Gonen-Balikesi**	**1.40**	**313**	*e*Pn	**Pn**	**04 52 28.6**	**0.0**
ADVT	**Abdulvahap**	**1.45**	**22**	*e*PN	**Pn**	**04 52 29.2**	**0.0**
ADVT	**Abdulvahap**	**1.45**	**22**	*e*Pn	**Pn**	**04 52 29.2**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**1.45**	**218**	*e*PN	**Pn**	**04 52 29.2**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**1.45**	**218**	*e*Pn	**Pn**	**04 52 29.2**	**-0.2**
ARMT	**Armutlu**	**1.47**	**355**	*e*PN	**Pn**	**04 52 29.5**	**-0.1**
ARMT	**Armutlu**	**1.47**	**355**	*e*Pn	**Pn**	**04 52 29.5**	**-0.1**
EDC	**Edincik**	**1.54**	**325**	*e*PN	**Pn**	**04 52 30.7**	**+0.2**
EDC	**Edincik**	**1.54**	**325**	*e*Pn	**Pn**	**04 52 30.7**	**+0.2**
KNL	**Bal¨–kesir**	**1.64**	**316**	*i P*	**Pn**	**04 52 31.9**	**-0.1**
GULT	**Gulveren**	**1.76**	**40**	*e*PN	**Pn**	**04 52 33.8**	**+0.1**
GULT	**Gulveren**	**1.76**	**40**	*e*Pn	**Pn**	**04 52 33.8**	**+0.1**
DGB	**Izmir**	**1.97**	**239**	*i P*	**Pb**	**04 52 38.4**	**+0.3**
SILT	**Sile**	**2.11**	**13**	*e*PN	**Pn**	**04 52 38.8**	**+0.5**
SILT	**Sile**	**2.11**	**13**	*e*Pn	**Pn**	**04 52 38.8**	**+0.5**
RKY	**Sarkoy-Tekirda**	**2.13**	**319**	*e*PN	**Pn**	**04 52 39.1**	**+0.4**
RKY	**Sarkoy-Tekirda**	**2.13**	**319**	*e*Pn	**Pn**	**04 52 39.1**	**+0.4**
KLYT	**Kilyos**	**2.15**	**0**	*e*PN	**Pn**	**04 52 39.1**	**+0.2**
KLYT	**Kilyos**	**2.15**	**0**	*e*Pn	**Pn**	**04 52 39.1**	**+0.2**
MDUB	**Mudurnu**	**2.17**	**50**	*e*PN	**Pn**	**04 52 39.7**	**+0.5**
MDUB	**Mudurnu**	**2.17**	**50**	*e*Pn	**Pn**	**04 52 39.7**	**+0.5**
KAND	**Kocaeli-Kandir**	**2.19**	**24**	*i P*	**Pg**	**04 52 43.8**	**-0.6**
KIZT	**Kizilcal**	**2.24**	**95**	*e*PN	**Pn**	**04 52 40.2**	**-0.1**
KIZT	**Kizilcal**	**2.24**	**95**	*e*Pn	**Pn**	**04 52 40.2**	**-0.1**
GELI	**Tayfur-Gelibol**	**2.35**	**304**	*e*PN	**Pn**	**04 52 42.1**	**+0.4**
GELI	**Tayfur-Gelibol**	**2.35**	**304**	*e*Pn	**Pn**	**04 52 42.1**	**+0.4**
ERIK	**Erikli-Kesan**	**2.49**	**310**	*e*PN	**Pn**	**04 52 44.1**	**+0.6**
ERIK	**Erikli-Kesan**	**2.49**	**310**	*e*Pn	**Pn**	**04 52 44.1**	**+0.6**

*IDC **25** 05:07:47.7±0.6, 19°.97N×121°.69E, h0km, mb4.1/18, mb1 4.3/18, mb1mx4.1/46, mbtmp4.1/18, MS3.3/13, Ms1 3.3/13, ms1mx3.0/38, Error ellipse: s-maj=28.9km s-min=14.3km az=69.0*
*ISCJB **25** 05:07:53.7±0.3, 20°.14N±0°.03×121°.60E±0°.06, h40km, mb4.0/20, MS3.3/12, Error ellipse: s-maj=8.3km s-min=3.0km az=18.7*
*NEIC **25** 05:07:53.9±1.3, 19°.91N×121°.59E, h43km±11km, mb4.2/1, Error ellipse: s-maj=17.5km s-min=10.2km az=62.0*
*JMA **25** 05:07:54.2±0.6, 20°.33N×121°.78E, h0km, M4.6*
*MAN **25** 05:07:57, 19°.81N×121°.46E, h10km, mb4.6, ML3.5, MS4.8*
ISC 25 05:07:54.5±0.6, 20°.10N±0°.04×121°.61E±0°.08, h40km, n58, σ1§95/54, mb4.0/20, MS3.2/12, 1D, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SGCP	**Mt. Cagua**	**1.89**	**167**	*eP*	**Pn**	**05 08 25.6**	**+1.2**
SGCP				*eS*	**Sn**	**05 08 48.2**	**+1.2**
PIP	**Pasuquin**	**2.00**	**208**	⇓*iP*	**Pn**	**05 08 25.5**	**-0.3**
PIP				*eS*	**Sn**	**05 08 48.6**	**-1.0**
APYP	**Conner**	**2.25**	**189**	*eP*	**Pn**	**05 08 30.0**	**+0.7**
APYP				*eS*	**Sn**	**05 08 58.8**	**+3.0**
TWG	**Pinlang**	**2.75**	**350**	*e*Pn	**Pn**	**05 08 36.5**	**+0.3**
CAUP	**Cauayan**	**3.15**	**176**	*eP*	**Pn**	**05 08 44.7**	**+3.1**
YULB	**Yu-li**	**3.29**	**355**	*e*Pn	**Pn**	**05 08 46.4**	**+2.8**
TPUB	**Ta-pu**	**3.31**	**344**	*e*Pn	**Pn**	**05 08 47.0**	**+3.0**
SSLB	**Suanglung**	**3.72**	**351**	*e*Pn	**Pn**	**05 08 50.9**	**+1.4**
BOLP	**Bolinao**	**4.03**	**204**	*eP*	**Pn**	**05 08 56.1**	**+2.3**
BOLP				*eS*	**Sn**	**05 09 46.8**	**+6.9**
NACB	**Ninganchiao**	**4.05**	**360**	*e*Pn	**Pn**	**05 08 55.0**	**+0.9**
HATJ	**Hateruma jima**	**4.43**	**27**	*eS*	**Sn**	**05 09 48.6**	**-1.0**
JYNG	**Yonagunijimaku**	**4.50**	**16**	P	**Pn**	**05 09 01.6**	**+1.3**
JYNG				S	**Sn**	**05 09 52.3**	**+0.9**
YOJ	**Yonaguni jima**	**4.53**	**16**	P	**Pn**	**05 09 03.0**	**+2.4**
YOJ				*eS*	**Sn**	**05 09 54.4**	**+2.3**
YOJ	**Yonaguni jima**	**4.53**	**16**	*e*Pn	**Pn**	**05 09 01.6**	**+1.0**
YHNB	**Yeheng**	**4.55**	**357**	*e*Pn	**Pn**	**05 09 04.3**	**+3.2**
IRIF	**Iriomote-Funau**	**4.65**	**25**	S	**Sn**	**05 09 56.2**	**+1.2**
JKRS	**Kuro-shima**	**4.68**	**28**	P	**Pn**	**05 09 04.9**	**+2.2**
JKRS				*eS*	**Sn**	**05 09 57.2**	**+1.5**
JIJ	**Ishigaki jima**	**4.85**	**28**	P	**Pn**	**05 09 06.6**	**+1.6**
JIJ				*eS*	**Sn**	**05 09 59.2**	**-0.7**
JISG	**Ishigakijimahi**	**5.12**	**29**	S	**Sn**	**05 10 06.3**	**-0.2**
JTJ	**Tarama**	**5.35**	**32**	P	**Pn**	**05 09 13.7**	**+1.8**
JTJ				*eS*	**Sn**	**05 10 12.2**	**0.0**
JIRB	**Irabujima**	**5.75**	**34**	P	**Pn**	**05 09 18.6**	**+1.3**
JIRB				*eS*	**Sn**	**05 10 23.1**	**+1.1**
JOW	**Kunigami**	**9.07**	**41**	*e*Pn	**Pn**	**05 10 04.6**	**+1.7**
	17nm,0.5s						
JNU	**Nakatsue**	**15.38**	**31**	LR	LR	05 17 21.7	
	comp=Z,62nm,20.9s,baz=113,slow=37						
CMAR	**Chiang Mai Arr**	**21.46**	**269**	LR	LR	05 20 47.9	
	comp=Z,38nm,19.4s,baz=139,slow=36						
MJAR	**Matsushiro Arr**	**21.90**	**38**	P	**P**	**05 12 47.4**	**+3.2**
	0.9nm,0.3s,baz=238,slow=11,SNR=4.2						
GUMO	**Guam**	**23.17**	**103**	LR	LR	05 23 01.8	
	comp=Z,11nm,18.1s,

AKHS	**Akhisar**	**0.98 256**	P	**Pg**	**05 13 02.5**	**-0.2**
AKHS	**Akhisar**	**0.98 256**	*i* P	**Pg**	**05 13 02.5**	**-0.2**
AKS	**Akhisar**	**0.98 256**	*e*PG	**Pg**	**05 13 02.3**	**-0.4**
AKS	**Akhisar**	**0.98 256**	*e*Pg	**Pg**	**05 13 02.3**	**-0.4**
BALB	**Balikesir**	**1.04 301**	*e*PG	**Pb**	**05 13 03.4**	**-0.1**
BALB	**Balikesir**	**1.04 301**	*e*Pg	**Pb**	**05 13 03.4**	**-0.1**
IGD	**Bursa**	**1.16 6**	*i* P	**Pb**	**05 13 04.7**	**-0.9**
IGD			*i* S	**Sg**	**05 13 21.1**	**0.0**
CAVI	**Cavuskoy**	**1.25 30**	*e*PN	**Pn**	**05 13 07.0**	**+0.1**
CAVI	**Cavuskoy**	**1.25 30**	*e*Pn	**Pn**	**05 13 07.0**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.26 355**	*e*PN	**Pn**	**05 13 07.2**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.26 355**	*e*Pn	**Pn**	**05 13 07.2**	**+0.3**
KCTX	**Karacabey (Bur**	**1.26 336**	*e*PN	**Pn**	**05 13 07.1**	**0.0**
KCTX	**Karacabey (Bur**	**1.26 336**	*e*Pn	**Pn**	**05 13 07.1**	**0.0**
IZI	**Iznik**	**1.27 15**	*e*PN	**Pb**	**05 13 07.6**	**+0.1**
IZI	**Iznik**	**1.27 15**	*e*Pn	**Pb**	**05 13 07.6**	**+0.1**
BORA	**Eskisehir**	**1.34 55**	P	**Pn**	**05 13 08.2**	**+0.1**
BORA			S	**Sg**	**05 13 27.1**	**+0.2**
BORA	**Eskisehir**	**1.34 55**	*i* P	**Pn**	**05 13 08.2**	**+0.1**
BORA			*i* S	**Sg**	**05 13 27.1**	**+0.2**
GONE	**Gonen-Balikesi**	**1.40 312**	*e*PN	**Pn**	**05 13 09.1**	**+0.2**
GONE	**Gonen-Balikesi**	**1.40 312**	*e*Pn	**Pn**	**05 13 09.1**	**+0.2**
ADVT	**Abdulvahap**	**1.42 22**	*e*PN	**Pn**	**05 13 09.6**	**+0.4**
ADVT	**Abdulvahap**	**1.42 22**	*e*Pn	**Pn**	**05 13 09.6**	**+0.4**
ARMT	**Armutlu**	**1.46 355**	*e*PN	**Pn**	**05 13 10.0**	**+0.3**
ARMT	**Armutlu**	**1.46 355**	*e*Pn	**Pn**	**05 13 10.0**	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**1.47 218**	*e*PN	**Pn**	**05 13 10.5**	**+0.5**
AYDB	**Zeytinkoy-Aydi**	**1.47 218**	*e*Pn	**Pn**	**05 13 10.5**	**+0.5**
EDC	**Edincik**	**1.53 324**	*e*PN	**Pb**	**05 13 11.6**	**-0.3**
EDC	**Edincik**	**1.53 324**	*e*Pn	**Pb**	**05 13 11.6**	**-0.3**
GPA	**Golpazari**	**1.53 40**	*e*PN	**Pn**	**05 13 10.8**	**0.0**
GPA	**Golpazari**	**1.53 40**	*e*Pn	**Pn**	**05 13 10.8**	**0.0**
GULT	**Gulveren**	**1.74 40**	*e*PN	**Pn**	**05 13 14.5**	**+0.8**
GULT	**Gulveren**	**1.74 40**	*e*Pn	**Pn**	**05 13 14.5**	**+0.8**
MRMT	**Marmara Adasi**	**1.85 324**	*e*PN	**Pn**	**05 13 15.6**	**+0.4**
MRMT	**Marmara Adasi**	**1.85 324**	*e*Pn	**Pn**	**05 13 15.6**	**+0.4**
MDUB	**Mudurnu**	**2.15 50**	*e*PN	**Pn**	**05 13 19.8**	**+0.5**
MDUB	**Mudurnu**	**2.15 50**	*e*Pn	**Pn**	**05 13 19.8**	**+0.5**
ALN	**Alexandroupoli**	**2.90 309**	*e*PN	**Pn**	**05 13 30.9**	**+1.3**
ALN	**Alexandroupoli**	**2.90 309**	*e*Pn	**Pn**	**05 13 30.9**	**+1.3**

*IDC **25** 05:24:42.2±1.3, 24°.84N×122°.89E, h0km, mb3.6/4, mb1 3.8/4, mb1mx3.4/35, mbtmp3.6/4, MS2.3/1, Ms1 2.3/1, ms1mx2.1/35, Error ellipse: s-maj=89.3km s-min=24.4km az=77.0*
*ISCJB **25** 05:24:44.8±0.3, 24°.78N±0°.03×122°.53E±0°.02, h21km±3km, mb3.5/4, Error ellipse: s-maj=4.6km s-min=2.5km az=5.9*
*JMA **25** 05:24:44.6±0.2, 24°.73N×122°.48E, h18km±4km, M3.2*
*TAP **25** 05:24:45.4, 24°.76N×122°.43E, h12km±1km, ML3.6, D*
ISC 25 05:24:44.2±1.0, 24°.78N±0°.03×122°.52E±0°.02, h15km±7km, n51, σ0°76/94, mb3.6/4, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JYNG	**Yonagunijimaku**	**0.50**	**130**	P	**Pg**	**05 24 54.5**	**+0.4**
JYNG				S	**Sg**	**05 25 01.4**	**+0.6**
TWB1	**Santiao Chiao** baz=302	**0.54**	**296**	*i* P	**Pb**	**05 24 55.1**	**-0.2**
TWB1	baz=302			*i* S	**Sb**	**05 25 02.6**	**-0.3**
EGS	baz=280	**0.54**	**278**	P	**Pb**	**05 24 55.2**	**-0.2**
EGS	baz=280			*e*S	**Sg**	**05 25 02.2**	**+0.1**
YOJ	**Yonaguni jima**	**0.54**	**125**	P	**Pg**	**05 24 55.3**	**+0.4**
YOJ				S	**Sg**	**05 25 02.4**	**+0.3**
TWC	**Suao** baz=254	**0.64**	**255**	*i* P	**Pg**	**05 24 56.4**	**-0.3**
TWC	baz=254			*e*S	**Sb**	**05 25 05.6**	**-0.1**
ILA	**Ilan** baz=270	**0.70**	**269**	*e*P	**Pb**	**05 24 58.1**	**-0.1**
ILA	baz=270			*e*S	**Sb**	**05 25 08.3**	**+0.6**
NWF	**Wu-fen Shan** baz=297	**0.74**	**294**	P	**Pb**	**05 24 58.9**	**+0.2**
NWF	baz=297			*i* S	**Sb**	**05 25 09.0**	**+0.4**
TWE	**Neicheng** baz=266	**0.78**	**266**	*e*P	**Pg**	**05 24 59.0**	**-0.3**
TWE	baz=266			*e*S	**Sg**	**05 25 09.4**	**-0.2**
ENA	**Nanau** baz=242	**0.79**	**244**	P	**Pb**	**05 24 59.5**	**-0.2**
ENA	baz=242			*e*S	**Sb**	**05 25 09.8**	**-0.3**
TWA	**Mucha** baz=286	**0.88**	**284**	P	**Pg**	**05 25 01.2**	**-0.1**
TWA	baz=286			S	**Sb**	**05 25 12.4**	**-0.3**
ENTT	**Nioudou** baz=261	**0.88**	**261**	P	**Pb**	**05 25 01.1**	**-0.1**
ENTT	baz=261			*e*S	**Sb**	**05 25 12.6**	**-0.2**
TAP1	**Taipei** baz=288	**0.95**	**286**	*e*P	**Pg**	**05 25 02.4**	**-0.1**
TAP1	baz=288			S	**Sg**	**05 25 15.1**	**+0.2**
TAP	**Taipei** baz=288	**0.96**	**286**	*e*P	**Pb**	**05 25 02.6**	**+0.1**
TAP	baz=288			*e*S	**Sb**	**05 25 14.8**	**-0.2**
TWY	**Chenhua** baz=304	**0.98**	**301**	*e*P	**Pb**	**05 25 02.8**	**0.0**
TWY	baz=304			S	**Sg**	**05 25 15.7**	**-0.2**
TWS1	**Kuangyinshan** baz=290	**1.05**	**288**	*e*P	**Pb**	**05 25 03.7**	**-0.4**
TWS1	baz=290			*e*S	**Sb**	**05 25 17.9**	**+0.1**
NSK	**Sanguang** baz=265	**1.06**	**265**	*i* P	**Pb**	**05 25 04.2**	**-0.2**
NSK	baz=265			*i* S	**Sb**	**05 25 17.2**	**-0.9**
TWD	**Chiawan** baz=228	**1.09**	**231**	P	**Pb**	**05 25 04.7**	**-0.1**
TWD	baz=228			S	**Sb**	**05 25 18.4**	**-0.4**
NNS	**Nan Shan** baz=251	**1.10**	**253**	*i* P	**Pb**	**05 25 04.9**	**0.0**
NNS	baz=251			S	**Sg**	**05 25 19.2**	**-0.6**
HWA	**Hwalien** baz=223	**1.15**	**227**	*e*P	**Pg**	**05 25 06.3**	**-0.2**
HWA	baz=223			*e*S	**Sg**	**05 25 21.5**	**0.0**
IRIF	**Iriomote-Funau**	**1.18**	**111**	P	**Pg**	**05 25 07.3**	**+0.3**
IRIF				S	**Sn**	**05 25 22.5**	**+0.5**
WHF	**Hehuan Shan** baz=239	**1.31**	**242**	P	**Pb**	**05 25 08.8**	**+0.1**
WHF	baz=239			*e*S	**Sn**	**05 25 25.4**	**-0.3**
TWT	**Tachien** baz=246	**1.33**	**247**	P	**Pg**	**05 25 09.6**	**-0.3**
TWT	baz=246			*e*S	**Sg**	**05 25 26.9**	**-0.4**
HATJ	**Hateruma jima**	**1.37**	**121**	P	**Pg**	**05 25 10.6**	**0.0**
HATJ				S	**Sn**	**05 25 26.9**	**+0.3**
ESL	**Shilin** baz=223	**1.38**	**226**	*e*P	**Pn**	**05 25 08.8**	**-0.1**
ESL	baz=223			*e*S	**Sn**	**05 25 26.7**	**-0.2**
NSTT	**Nanjuang** baz=264	**1.39**	**264**	*e*P	**Pg**	**05 25 11.0**	**0.0**
NSTT	baz=264			*e*S	**Sn**	**05 25 26.7**	**-0.5**
JKRS	**Kuro-shima**	**1.46**	**111**	P	**Pn**	**05 25 09.3**	**-0.6**
JIJ	**Ishigaki jima**	**1.53**	**105**	P	**Pn**	**05 25 10.4**	**-0.6**
JIJ				*e*S	**Sn**	**05 25 28.2**	**-2.4**
WDT	**Danda** baz=229	**1.62**	**232**	*e*P	**Pn**	**05 25 13.1**	**+0.5**
WDT	baz=229			*e*S	**Sn**	**05 25 32.7**	**-0.7**
JISG	**Ishigakijimahi**	**1.64**	**96**	*e*S	**Sn**	**05 25 32.5**	**-0.7**
NSY	**Sanyi** baz=257	**1.64**	**258**	*e*P	**Pb**	**05 25 13.3**	**-0.9**
NSY	baz=257			*e*S	**Sn**	**05 25 32.6**	**-0.9**
TWQ1	**Liyutan** baz=254	**1.65**	**255**	*e*P	**Pg**	**05 25 15.4**	**-0.5**
TWQ1	baz=254			*e*S	**Sn**	**05 25 33.9**	**+0.3**
EHY	**Hungye** baz=218	**1.67**	**221**	*e*P	**Pn**	**05 25 13.1**	**+0.1**
EHY	baz=218			S	**Sn**	**05 25 34.4**	**+0.2**
SMLT	**Sun Moon Lake** baz=237	**1.73**	**239**	*e*P	**Pg**	**05 25 16.8**	**-0.6**
SMLT	baz=237			*e*S	**Sb**	**05 25 36.2**	**-1.1**
TYC	**Yuchr** baz=239	**1.75**	**241**	*e*P	**Pb**	**05 25 15.6**	**-0.4**
TYC	baz=239			*e*S	**Sn**	**05 25 36.2**	**+0.2**
TCU	**Taichung** baz=249	**1.80**	**250**	*e*P	**Pb**	**05 25 15.8**	**-1.0**
TCU	baz=249			*e*S	**Sn**	**05 25 36.2**	**-1.0**
TWF1	**Yuli** baz=216	**1.81**	**219**	*e*P	**Pn**	**05 25 15.0**	**+0.2**
TWF1	baz=216			*e*S	**Sn**	**05 25 37.5**	**0.0**
YUS	**Yu-Shan** baz=226	**1.92**	**229**	*e*P	**Pn**	**05 25 17.1**	**+0.3**
YUS	baz=226			*e*S	**Sb**	**05 25 41.9**	**-1.4**
ALS	**Alishan** baz=229	**2.01**	**232**	*e*P	**Pb**	**05 25 19.7**	**-1.0**
ALS	baz=229			*e*S	**Sn**	**05 25 43.0**	**+0.1**
CHN5	**Tsauling** baz=234	**2.05**	**236**	*e*P	**Pb**	**05 25 20.8**	**-0.4**
CHN5	baz=234			*e*S	**Sn**	**05 25 44.7**	**+1.0**
CHN4	**Tsaushan** baz=230	**2.26**	**232**	*e*P	**Pb**	**05 25 22.8**	**-1.9**
CHN4	baz=230			*e*S	**Sn**	**05 25 48.6**	**-0.2**
STYT	**Tauyuan** baz=223	**2.28**	**226**	*e*P	**Pn**	**05 25 22.7**	**+1.4**
STYT	baz=223			*e*S	**Sn**	**05 25 49.0**	**-0.1**
WTP	**Ta-pu** baz=227	**2.32**	**229**	*e*P	**Pn**	**05 25 23.3**	**+1.5**
WTP	baz=227			*e*S	**Sn**	**05 25 50.1**	**0.0**
TWK	**Hsinying** baz=229	**2.39**	**232**	*e*P	**Pn**	**05 25 24.4**	**+1.5**
TWK	baz=229			*e*S	**Sn**	**05 25 51.2**	**-0.7**
CHN1	**Nanshi** baz=228	**2.42**	**229**	*e*P	**Pn**	**05 25 24.8**	**+1.6**
CHN1	baz=228			*e*S	**Sn**	**05 25 52.4**	**-0.1**
EAST	**Anshuo** baz=211	**2.83**	**213**	*e*P	**Pn**	**05 25 31.2**	**+2.3**
EAST	baz=211			*e*S	**Sn**	**05 26 04.0**	**+1.1**
SCZT	**Fangliau** baz=214	**2.96**	**217**	*e*P	**Pn**	**05 25 32.6**	**+1.9**
SCZT	baz=214			*e*S	**Sn**	**05 26 07.6**	**+1.6**
DAV	**Davao City (W)** comp=Z,10nm,20.0s,baz=34,slow=34	**17.85**	**170**	LR	LR	05 34 58.7	
SONM	**Songino Array** 1.2nm,0.8s,baz=147,slow=9.1,SNR=7.1	**26.32**	**335**	P	**P**	**05 30 20.5**	**+1.0**
WRA	**Warrannunga Arr** 1.0nm,0.7s,baz=344,slow=8.5,SNR=5.1	**45.91**	**164**	P	**P**	**05 33 05.7**	**-0.7**
ASAR	**Alice Springs** 0.5nm,0.8s,baz=347,slow=7.6,SNR=4.4	**49.40**	**166**	P	**P**	**05 33 34.5**	**+1.0**
YKA	**Yellowknife Ar** 0.2nm,0.7s,baz=303,slow=6.6,SNR=3.5	**81.95**	**23**	P	**P**	**05 37 02.7**	**-0.4**

*CSEM **25** 05:36:10.2, 43°.46N×12°.44E, h6km, MD1.7/8*
ROM 25 05:36:10.2±0.2, 43°.46N×12°.44E, h6km±2km, Md1.7/8, Error ellipse: s-maj=1.5km s-min=1.2km az=149.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ATPC	**Poggio Castell**	**0.02**	**32**	Pg	Pg	05 36 11.6	+0.1
ATPC				Sg	Sg	05 36 12.5	+0.1
ATPC	**Poggio Castell**	**0.02**	**32**	Pg	Pg	05 36 11.6	+0.1
ATPC				Sg	Sg	05 36 12.5	+0.1
ATVO	**AVT- Monte Val**	**0.08**	**197**	Pg	Pg	05 36 12.5	+0.3
ATVO				Sg	Sg	05 36 14.1	+0.5
ATVO	**AVT- Monte Val**	**0.08**	**197**	Pg	Pg	05 36 12.5	+0.3
ATVO				Sg	Sg	05 36 14.1	+0.5
PIEI	**Pieia**	**0.10**	**43**	Pg	Pg	05 36 13.0	+0.5
PIEI				Sg	Sg	05 36 15.2	+1.1
PIEI	**Pieia**	**0.10**	**43**	Pg	Pg	05 36 13.0	+0.5
PIEI				Sg	Sg	05 36 15.2	+1.1
BADI	**Badiali**	**0.15**	**288**	Pg	Pg	05 36 13.8	+0.5
BADI				Sg	Sg	05 36 16.6	+1.2
BADI	**Badiali**	**0.15**	**288**	Pg	Pg	05 36 13.8	+0.5
BADI				Sg	Sg	05 36 16.6	+1.2
MURB	**Monte Urbino**	**0.21**	**163**	Pg	Pg	05 36 15.9	+1.6
MURB				Sg	Sg	05 36 19.1	+2.0
MURB	**Monte Urbino**	**0.21**	**163**	Pg	Pg	05 36 15.9	+1.6
MURB				Sg	Sg	05 36 19.1	+2.0
FRON	**Frontone**	**0.21**	**75**	Pg	Pg	05 36 14.8	+0.3
FRON				Sg	Sg	05 36 18.8	+1.4
FRON	**Frontone**	**0.21**	**75**	Pg	Pg	05 36 14.8	+0.3
FRON				Sg	Sg	05 36 18.8	+1.4
SSFR	**Montelago di S**	**0.25**	**96**	Pg	Pg	05 36 15.6	+0.5
SSFR				Sg	Sg	05 36 20.0	+1.5
SSFR	**Montelago di S**	**0.25**	**96**	Pg	Pg	05 36 15.6	+0.5
SSFR				Sg	Sg	05 36 20.0	+1.5
ATTE	**AVT- Monte Tez**	**0.27**	**194**	Pg	Pg	05 36 16.0	+0.5
ATTE	**AVT- Monte Tez**	**0.27**	**194**	Pg	Pg	05 36 16.0	+0.5

*CSEM **25** 05:36:51.2±0.1, 43°.88N×12°.01E, h10km, ML3.1/6, Error ellipse: s-maj=3.3km s-min=2.1km az=19.0*
ROM 25 05:36:50.7±0.2, 43°.88N×12°.03E, h6km±1km, Ml2.3/16, Error ellipse: s-maj=2.0km s-min=1.4km az=13.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFI	**Santa Sofia**	**0.14**	**281**	Pg	Pg	05 36 54.2	+0.7
SFI				Sg	Sg	05 36 56.6	+1.1
SFI	2μm,0.5s **Santa Sofia**	**0.14**	**281**	Pg	Pg	05 36 54.2	+0.7
SFI				Sg	Sg	05 36 56.6	+1.1
ASQU	2μm,0.5s **Asqua**	**0.20**	**245**	Pg	Pg	05 36 55.3	+0.7
ASQU				Sg	Sg	05 36 58.5	+1.3
ASQU	1μm,0.2s **Asqua**	**0.20**	**245**	Pg	Pg	05 36 55.3	+0.7
ASQU				Sg	Sg	05 36 58.5	+1.3
BADI	1μm,0.2s **Badiali**	**0.40**	**157**	Pg	Pg	05 36 59.2	+0.8
BADI				Sg	Sb	05 37 05.9	-0.7
BADI	382nm,0.2s **Badiali**	**0.40**	**157**	Pg	Pg	05 36 59.2	+0.8
BADI				Sg	Sb	05 37 05.9	-0.7
BLLA	382nm,0.2s **Bellaria**	**0.41**	**50**	Pg	Pg	05 36 59.1	+0.4
BLLA	**Bellaria**	**0.41**	**50**	Pg	Pg	05 36 59.1	+0.4
PIEI	**Pieia**	**0.50**	**133**	Pg	Pg	05 37 00.9	+0.6
PIEI				Sg	Sb	05 37 09.3	-0.2
PIEI	**Pieia**	**0.50**	**133**	Pg	Pg	05 37 00.9	+0.6
PIEI				Sg	Sb	05 37 09.3	-0.2
ATPC	**Poggio Castell**	**0.50**	**142**	Pg	Pg	05 37 01.1	+0.7
ATPC	**Poggio Castell**	**0.50**	**142**	Pg	Pg	05 37 01.1	+0.7
SEI	**Scarperia**	**0.52**	**290**	Pg	Pg	05 37 01.0	+0.3
SEI				Sg	Sb	05 37 09.3	-0.7
SEI	1μm,0.3s **Scarperia**	**0.52**	**290**	Pg	Pg	05 37 01.0	+0.3
SEI				Sg	Sb	05 37 09.3	-0.7
CAFI	1μm,0.3s **Castiglion Fio**	**0.55**	**185**	Pg	Pg	05 37 01.9	+0.6
CAFI				Sg	Sb	05 37 11.1	+0.2
CAFI	166nm,0.4s **Castiglion Fio**	**0.55**	**185**	Pg	Pg	05 37 01.9	+0.6
CAFI				Sg	Sb	05 37 11.1	+0.2
ATVO	166nm,0.4s **AVT- Monte Val**	**0.57**	**151**	Pg	Pg	05 37 02.2	+0.6
ATVO				Sg	Sb	05 37 11.2	-0.2
ATVO	185nm,0.4s **AVT- Monte Val**	**0.57**	**151**	Pg	Pg	05 37 02.2	+0.6
ATVO				Sg	Sb	05 37 11.2	-0.2
FSSB	185nm,0.4s **Fossombrone**	**0.57**	**109**	Pg	Pb	05 37 02.5	-0.6
FSSB				Sg	Sb	05 37 11.6	+0.1
FSSB	**Fossombrone**	**0.57**	**109**	Pg	Pb	05 37 02.5	-0.6
FSSB				Sg	Sb	05 37 11.6	+0.1
PESA	**Pesaro** 268nm,0.4s	**0.59**	**84**	Pg	Pb	05 37 03.1	-0.3
PESA	**Pesaro** 268nm,0.4s	**0.59**	**84**	Pg	Pb	05 37 03.1	-0.3
FRON	**Frontone**	**0.62**	**125**	Pg	Pb	05 37 03.4	-0.5
FRON	**Frontone**	**0.62**	**125**	Pg	Pb	05 37 03.4	-0.5
SSFR	**Montelago di S**	**0.70**	**129**	Pg	Pg	05 37 04.6	+0.4
SSFR				Sg	Sb	05 37 15.9	+0.6
SSFR	**Montelago di S**	**0.70**	**129**	Pg	Pg	05 37 04.6	+0.4
SSFR				Sg	Sb	05 37 15.9	+0.6
FNVD	**Fontana Vidola** 179nm,0.8s	**0.72**	**294**	Pg	Pb	05 37 06.3	+0.6
FNVD	**Fontana Vidola** 179nm,0.8s	**0.72**	**294**	Pg	Pb	05 37 06.3	+0.6
ATTE	**AVT- Monte Tez** 132nm,0.5s	**0.72**	**161**	Pg	Pb	05 37 05.2	-0.5
ATTE	**AVT- Monte Tez** 132nm,0.5s	**0.72**	**161**	Pg	Pb	05 37 05.2	-0.5
SNTG	**Esanatoglia** 81nm,0.7s	**0.91**	**133**	Pg	Pg	05 37 08.4	+0.3
SNTG	**Esanatoglia** 81nm,0.7s	**0.91**	**133**	Pg	Pg	05 37 08.4	+0.3
FROS	**Frosini** 73nm,0.4s	**0.92**	**224**	Pg	Pb	05 37 09.0	-0.1
FROS	**Frosini** 73nm,0.4s	**0.92**	**224**	Pg	Pb	05 37 09.0	-0.1
MGAB	**Montegabbione** 129nm,0.5s	**0.97**	**177**	Pg	Pb	05 37 09.8	-0.1
MGAB	**Montegabbione** 129nm,0.5s	**0.97**	**177**	Pg	Pb	05 37 09.8	-0.1
SACS	**San Casciano d** 81nm,0.7s	**1.03**	**185**	Pg	Pb	05 37 11.3	+0.3
BDI	**Bagni Di Lucca** 42nm,0.6s	**1.05**	**281**	Pg	Pb	05 37 11.6	+0.2
BDI	**Bagni Di Lucca** 42nm,0.6s	**1.05**	**281**	Pg	Pb	05 37 11.6	+0.2
ARCI	**Arcidosso** 102nm,1.0s	**1.10**	**202**	Pg	Pg	05 37 11.7	-0.2
ARCI	**Arcidosso** 102nm,1.0s	**1.10**	**202**	Pg	Pg	05 37 11.7	-0.2
MAIM	**Mastiano** 36nm,0.7s	**1.11**	**272**	Pg	Pg	05 37 11.5	-0.6
MAIM	**Mastiano** 36nm,0.7s	**1.11**	**272**	Pg	Pg	05 37 11.5	-0.6
SASS	**Sassa** 247nm,3.3s	**1.16**	**238**	Pg	Pg	05 37 12.1	-0.8
SASS	**Sassa** 247nm,3.3s	**1.16**	**238**	Pg	Pg	05 37 12.1	-0.8
NVLJ	**Novalja**	**2.15**	**70**	*e*Pn	Pn	05 37 27.8	+0.7
NVLJ				Sn	Sn	05 37 54.9	+0.8
NVLJ	**Novalja**	**2.15**	**70**	*e*Pn	Pn	05 37 27.7	+0.6
NVLJ				Sn	Sn	05 37 54.8	+0.7

TAP 25 05:42:25.9, 24°.51N×121°.85E, h15km, ML1.6, D, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWC	**Suao** baz=3.0	**0.10**	**358**	*i* P	Pb	05 42 29.8	+0.2
TWC	baz=3.0			*i* S	Sb	05 42 32.4	+0.3
ENA	**Nanau** baz=229	**0.13**	**232**	P	Pb	05 42 30.0	-0.1
ENA	baz=229			S	Sb	05 42 33.1	+0.2
TWE	**Neicheng** baz=323	**0.27**	**321**	*e*P	Pb	05 42 32.2	-0.3
TWE	baz=323			*e*S	Sb	05 42 36.8	-0.2
ENTT	**Nioudou** baz=296	**0.29**	**297**	*e*P	Pb	05 42 33.0	+0.1
ENTT	baz=296			*e*S	Sb	05 42 38.1	+0.5
EGS	baz=13	**0.34**	**12**	*e*P	Pb	05 42 33.7	0.0
NNS	**Nan Shan** baz=260	**0.44**	**261**	*e*P	Pb	05 42 35.5	-0.1
NNS	baz=260			*e*S	Sb	05 42 42.1	+0.1
NSK	**Sanguang** baz=290	**0.48**	**290**	*e*P	Pg	05 42 35.8	+0.3
NSK	baz=290			*e*S	Sb	05 42 43.5	+0.5
WHF	**Hehuan Shan** baz=235	**0.65**	**236**	*e*P	Pb	05 42 39.0	-0.2
WHF	baz=235			*e*S	Sb	05 42 48.3	+0.2
WDT	**Danda** baz=220	**1.00**	**221**	*e*P	Pg	05 42 45.4	+0.1

TAP 25 05:42:30.2, 24°.78N×122°.46E, h15km±1km, ML2.8, C, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EGS	baz=276	**0.48**	**278**	*e*P	Pg	05 42 39.5	-0.3
EGS	baz=276			*e*S	Sg	05 42 45.9	-0.4
EGS	baz=13	**0.48**	**278**	*e*S	Pg	05 42 39.4	-0.4
TWB1	**Santiao Chiao** baz=297	**0.48**	**298**	P	Pb	05 42 40.4	-0.1
TWB1	baz=297			S	Sb	05 42 47.3	0.0
TWC	**Suao** baz=262	**0.58**	**253**	P	Pg	05 42 41.7	+0.1
TWC	baz=262			S	Sg	05 42 49.4	+0.1
NWF	**Wu-fen Shan** baz=294	**0.68**	**295**	P	Pb	05 42 44.2	+0.3
NWF	baz=294			*i* S	Sb	05 42 54.1	+1.0
TWE	**Neicheng** baz=264	**0.72**	**265**	*e*P	Pg	05 42 44.1	-0.1
TWE	baz=264			*e*S	Sb	05 42 54.2	0.0
ENA	**Nanau** baz=249	**0.74**	**242**	*e*P	Pg	05 42 44.4	-0.2
ENA	baz=249			S	Sb	05 42 55.0	+0.2
ENTT	**Nioudou** baz=247	**0.83**	**260**	*e*P	Pb	05 42 46.3	0.0
ENTT	baz=247			*e*S	Sb	05 42 57.5	+0.3
NSK	**Sanguang** baz=263	**1.01**	**264**	*e*P	Pb	05 42 49.3	-0.1
NSK	baz=263			*e*S	Sb	05 43 02.5	-0.1
NNS	**Nan Shan** baz=250	**1.05**	**251**	*e*P	Pb	05 42 50.2	+0.1
NNS	baz=250			*e*S	Sn	05 43 04.6	-0.3
WHF	**Hehuan Shan** baz=249	**1.26**	**240**	*e*P	Pb	05 42 54.0	+0.1
WHF	baz=249			*e*S	Sn	05 43 10.8	+0.2
WDT	**Danda** baz=212	**1.58**	**230**	*e*P	Pb	05 42 59.0	-0.4
WDT	baz=212			*e*S	Sg	05 43 21.8	+0.5
WDT	**Danda** baz=220	**1.58**	**230**	*e*S	Pb	05 42 59.1	-0.3
YUS	**Yu-Shan** baz=226	**1.89**	**227**	*e*P	Pn	05 43 03.4	+1.1

*ISCJB **25** 05:43:33.1±0.7, 6°.78N±0°.07×73°.07W±0°.06, h157km±6km, Error ellipse: s-maj=15.1km s-min=5.4km az=140.5*
*RSNC **25** 05:43:34.8±1.0, 6°.75N×73°.08W, h148km±6km, ML2.1*
*FUNV **25** 05:43:35.6, 6°.91N×73°.12W, h158km, MW2.5*
ISC 25 05:43:32.8±1.5, 6°.82N±0°.07×73°.09W±0°.06, h162km±8km, n19, σ1°29/32, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BTLC	**Betulia, Santa**	**0.20**	**299**	*e*P	**Pn**	**05 43 54.9**	**+0.1**
BTLC				*e*S	**Sn**	**05 44 10.8**	**-0.7**
BARC	**Barichara**	**0.24**	**202**	*e*P	**Pn**	**05 43 54.7**	**-0.2**
BARC				*e*S	**Sn**	**05 44 10.0**	**-1.8**
BARC	comp=Z,46nm,0.2s			*i*		05 44 11.5	
GIRC	**Giron, Santand**	**0.28**	**338**	*e*P	**Pn**	**05 43 54.8**	**-0.1**
PAMC	**Pamplona, Colo**	**0.65**	**37**	*e*P	**Pn**	**05 43 57.5**	**+0.6**

PAMC					*e*S		**Sn**	**05 44 14.8 -0.5**
PAMC					*i*			05 44 16.9
comp=Z,11nm,0.2s								
BRRC	**Barranca, Sant**	**0.68**	**295**	*e*P			**Pn**	**05 43 56.7 +0.2**
BRRC					*e*S		**Sn**	**05 44 14.4 -0.1**
BRRC					*i*			05 44 17.9
comp=Z,44nm,0.1s								
GRMC	**Gramalote, San**	**0.94**	**18**	*e*P			**Pn**	**05 44 00.1 +1.7**
GRMC					*e*S		**Sn**	**05 44 19.8 +1.7**
GRMC					*i*			05 44 21.3
comp=Z,22nm,0.4s								
CBRI	**Barrientos, No**	**0.94**	**18**	*e*P			**Pn**	**05 43 59.2 +0.8**
CBRI					*e*S		**Sn**	**05 44 18.3 +0.2**
CBRI					*i*			05 44 20.9
comp=Z,13nm,0.3s								
CAPV	**Capacho**	**1.29**	**37**	*e*P			**Pn**	**05 44 02.7 +1.1**
CAPV					*e*S		**Sn**	**05 44 23.2 -0.4**
OCAC	**Ocana**	**1.43**	**351**	*e*P			**Pn**	**05 44 03.8 +1.0**
OCAC					*e*S		**Sn**	**05 44 27.0 +1.2**
OCAC					*i*			05 44 30.0
comp=Z,20nm,0.4s								
NORC	**Norcasia**	**2.16**	**235**	*e*P			**Pn**	**05 44 10.7 +0.1**
NORC					*e*S		**Sn**	**05 44 38.4 -1.4**
NORC					*i*			05 44 42.9
comp=Z,3.7nm,0.2s								
HELC	**Santa Helena**	**2.50**	**256**	*e*P			**Pn**	**05 44 16.4 +1.6**
HELC					*e*S		**Sn**	**05 44 46.6 -0.7**
HELC					*i*			05 44 52.9
comp=Z,14nm,0.3s								
VIGV	**El Vigia**	**2.64**	**40**	*e*P			**Pn**	**05 44 17.6 +1.4**
VIGV					*e*S		**Sn**	**05 44 47.5 -2.4**
SOCV	**Socops**	**2.65**	**57**	*e*P			**Pn**	**05 44 17.2 +0.9**
SOCV					*e*S		**Sn**	**05 44 48.7 -1.4**
GUYC	**Guyana, Colomb**	**2.78**	**235**	*e*P			**Pn**	**05 44 19.2 +0.8**
TOLC	**Tolima**	**3.14**	**225**	*e*P			**Pn**	**05 44 24.3 +1.6**
VIRV	**Villa del Rosa**	**3.72**	**10**	*e*P			**Pn**	**05 44 29.4 -0.4**
VIRV					*e*S		**Sn**	**05 45 11.1 -3.1**
CURV	**Curarigua**	**4.43**	**44**	*e*P			**Pn**	**05 44 39.5 +0.4**
BAUV	**El Baul**	**5.43**	**67**	*e*P			**Pn**	**05 44 53.8 +1.7**
MONV	**Montecano**	**5.96**	**31**	*e*P			**Pn**	**05 44 58.9 -0.2**

NIED ***25*** *05:49:00, 36°.90N×140°.70E, h5km, Mw3.5 Best double couple: M₀1.72000×10¹⁴ NP1:φs321.00000°, δ28.00000°, λ-98.00000°. NP2:φs150.00000°, δ62.00000°, λ-86.00000°.*

IDC ***25*** *05:49:28.5±1.8, 36°.92N×140°.83E, h0km, mb3.6/4, mb1 3.7/5, mb1mx3.5/53, mbtmp3.6/5, ML3.5/1, Error ellipse: s-maj=38.0km s-min=22.8km az=66.0*

ISCJB ***25*** *05:49:30.1±0.9, 36°.89N±0°.05×140°.84E±0°.07, h20km±6km, mb3.4/4, Error ellipse: s-maj=10.5km s-min=7.5km az=30.7*

JMA ***25*** *05:49:31.3, 36°.91N×140°.68E, h7km±1km, M3.5 Broadband fault plane solution: P waves. NP1: φs321.00000°, δ56.00000°, λ-102.00000°. NP2: φs161.00000°, δ36.00000°, λ-73.00000°. Principal axes: T Plg10.0000°, Azm59.0000°; N Plg10.0000°, Azm327.0000°; P Plg76.0000°, Azm194.0000°;*

JMA Felt I J1.

ISC 25 05:49:30.9±1.1, 36°.90N±0°.04×140°.74E±0°.06, h13km±7km, n20, σ0°.63/19, mb3.5/4, 7C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
ONAJ	**Iwakimizuishiy**	**0.20**	**12**	⇑P		**Pg**	**05 49 35.6 +0.1**
ONAJ				S		**Sg**	**05 49 39.1 +0.4**
JHO	**Hitachi**	**0.32**	**206**	⇑P		**Pg**	**05 49 37.4 -0.1**
JFK	**Kawauchi**	**0.47**	**13**	⇑P		**Pg**	**05 49 40.4 +0.1**
JSB	**Shiboa**	**0.66**	**276**	⇑P		**Pg**	**05 49 43.9 0.0**
JSB				S		**Sg**	**05 49 52.7 +0.1**
JFT	**Otama**	**0.69**	**332**	⇑P		**Pg**	**05 49 44.2 -0.3**
JFT				S		**Sg**	**05 49 53.3 -0.4**
JYT	**Yasato**	**0.81**	**213**	⇑P		**Pb**	**05 49 46.0 -0.8**
JMM	**Marumori**	**0.96**	**2**	⇑P		**Pb**	**05 49 48.9 -0.6**
JFY	**Yanaizu**	**0.97**	**302**	P		**Pb**	**05 49 48.9 -0.7**
MJAR	**Matsushiro Arr**	**2.07**	**261**	Pn		**Pn**	**05 50 06.4 +1.0**
17nm,0.3s,baz=83,slow=14,SNR=52							
MJAR				Sn		**Sn**	**05 50 31.8 +0.7**
23nm,0.3s,baz=80,slow=28,SNR=7.1							
MAT	**Matsushiro**	**2.07**	**261**	P		**Pn**	**05 50 06.7 +1.3**
MAT				S		**Sb**	**05 50 33.7 -0.3**
SONM	**Songino Array**	**27.41**	**304**	P		**P**	**05 55 16.4 +0.1**
0.3nm,0.5s,baz=108,slow=9.3,SNR=3.0							
H11N2	**WAKE ISLAND Hy**	**28.55**	**120**	T		T	06 25 14.0
baz=313,slow=75,SNR=80							
H11N1	**WAKE ISLAND Hy**	**28.55**	**120**	T		T	06 25 14.5
baz=313,slow=75,SNR=80							
H11N3	**WAKE ISLAND Hy**	**28.56**	**120**	T		T	06 25 15.2
baz=313,slow=75,SNR=66							
H11S1	**WAKE ISLAND Hy**	**29.24**	**122**	T		T	06 26 05.7
baz=314,slow=75,SNR=107							
H11S3	**WAKE ISLAND Hy**	**29.24**	**122**	T		T	06 26 05.9
baz=314,slow=75,SNR=80							
H11S2	**WAKE ISLAND Hy**	**29.26**	**122**	T		T	06 26 09.0
baz=314,slow=75,SNR=80							
ZALV	**Zalesovo Beam**	**41.61**	**312**	P		**P**	**05 57 17.6 -0.8**
0.5nm,0.3s,baz=96,slow=8.8,SNR=2.9							
MKAR	**Makanchi Array**	**43.73**	**302**	P		**P**	**05 57 35.8 0.0**
0.2nm,0.5s,baz=86,slow=8.1,SNR=3.8							
WRA	**Warramunga Arr**	**56.86**	**187**	P		**P**	**05 59 15.2 -0.1**
0.9nm,0.6s,baz=3.2,slow=7.3,SNR=15							

ISCJB ***25*** *05:53:51.8±0.4, 52°.57N±0°.05×158°.3E±0°.1, h131km±3km, mb3.2/6, Error ellipse: s-maj=12.9km s-min=6.0km az=36.4*

KRSC ***25*** *05:53:51.2±0.9, 52°.49N×158°.53E, h126km±7km, ML3.7*

MOS ***25*** *05:53:51.2±0.5, 52°.53N×158°.29E, h130km, mb4.0/1, Error ellipse: s-maj=26.3km s-min=9.9km az=71.6*

IDC ***25*** *05:53:52.4±1.2, 52°.60N×158°.00E, h123km±14km, mb3.0/6, mb1 3.4/7, mb1mx3.1/58, mbtmp3.4/7, Error ellipse: s-maj=59.2km s-min=20.0km az=138.0*

ISC 25 05:53:52.8±0.7, 52°.55N±0°.05×158°.37E±0°.06, h127km±5km, n46, σ1°.11/75, mb3.4/6, Near east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MTVR	**Mutnovka**	**0.13**	**242**	*i* P		**Pn**	**05 54 09.7 -0.6**
MTVR				*e*S		**Sn**	**05 54 22.7 -0.8**
MTVR	**Mutnovka**	**0.13**	**242**	PN		**Pn**	**05 54 09.7 -0.6**
MTVR				S		**Sn**	**05 54 22.7 -0.8**
RUS	**Russkaya**	**0.14**	**143**	*i* P		**Pn**	**05 54 09.6 -0.5**
RUS				*i* S		**Sn**	**05 54 23.0 -0.1**
RUS	**Russkaya**	**0.14**	**143**	PN		**Pn**	**05 54 09.6 -0.5**
RUS				S		**Sn**	**05 54 23.0 -0.1**
ASAK	**Asacha**	**0.33**	**241**	*i* P		**Pn**	**05 54 10.4 -0.4**
ASAK				*i* S		**Sn**	**05 54 24.3 0.0**
ASAK	**Asacha**	**0.33**	**241**	PN		**Pn**	**05 54 10.4 -0.4**
ASAK				S		**Sn**	**05 54 24.3 0.0**
PET	**Petropavlovsk**	**0.51**	**19**	*i* P		**Pn**	**05 54 11.3 -0.2**
PET				*e*S		**Sn**	**05 54 23.2 -2.5**
PET	**Petropavlovsk**	**0.51**	**19**	*e*PN		**Pn**	**05 54 10.9 -0.6**
PET				*e*S		**Sn**	**05 54 22.9 -2.8**
PET				pmax	pmax		
comp=Z,503nm,0.4s							
PET				smax	smax		
comp=N,551nm,0.6s							
DALK	**Dalny**	**0.54**	**25**	*e*P		**Pn**	**05 54 11.6 -0.1**
DALK				*e*S		**Sn**	**05 54 26.6 +0.6**
PETK	**Petropavlovsk-**	**0.70**	**324**	P		**Pn**	**05 54 11.7 -1.2**
comp=N,48nm,0.3s,baz=120,slow=9.6,SNR=288							
PETK				S		**Sn**	**05 54 26.4 -1.6**
comp=N,9.9nm,0.3s,baz=143,slow=19,SNR=7.9							
UGLR	**Uglovaya**	**0.72**	**22**	*i* P		**Pn**	**05 54 13.5 +0.4**
UGLR				*e*S		**Sn**	**05 54 29.7 +1.2**
UGLR	**Uglovaya**	**0.72**	**22**	PN		**Pn**	**05 54 13.5 +0.4**
UGLR				S		**Sn**	**05 54 29.7 +1.2**
AVH	**Avacha**	**0.75**	**17**	*i* P		**Pn**	**05 54 13.6 +0.3**
AVH				*e*S		**Sn**	**05 54 30.4 +1.5**
AVH	**Avacha**	**0.75**	**17**	PN		**Pn**	**05 54 13.6 +0.3**
AVH				S		**Sn**	**05 54 30.4 +1.5**
KOK	**Koryaka**	**0.76**	**12**	*e*P		**Pn**	**05 54 13.9 +0.5**
KOK				*e*S		**Sn**	**05 54 29.5 +0.4**
KOK	**Koryaka**	**0.76**	**12**	PN		**Pn**	**05 54 13.9 +0.5**
KOK				S		**Sn**	**05 54 29.5 +0.4**
SMAR	**Somma**	**0.76**	**20**	*i* P		**Pn**	**05 54 13.7 +0.1**
SMAR	**Somma**	**0.76**	**20**	PN		**Pn**	**05 54 13.7 +0.1**
KRER	**Koryakskii**	**0.79**	**17**	*i* P		**Pn**	**05 54 13.9 +0.1**
KRER				*e*S		**Sn**	**05 54 29.9 +0.2**
KRER	**Koryakskii**	**0.79**	**17**	PN		**Pn**	**05 54 13.9 +0.1**
KRER				S		**Sn**	**05 54 29.9 +0.2**
SDLR	**Sedlovina**	**0.80**	**23**	*i* P		**Pn**	**05 54 13.8 +0.1**
SDLR				*e*S		**Sn**	**05 54 29.3 -0.3**
SDLR	**Sedlovina**	**0.80**	**23**	PN		**Pn**	**05 54 13.8 +0.1**
SDLR				S		**Sn**	**05 54 29.3 -0.3**
KRX	**Arik**	**0.83**	**11**	*i* P		**Pn**	**05 54 14.0 -0.1**
KRX				*e*S		**Sn**	**05 54 30.2 0.0**
KRX	**Arik**	**0.83**	**11**	PN		**Pn**	**05 54 14.0 -0.1**
KRX				S		**Sn**	**05 54 30.2 0.0**
NLC	**Nalytchevo**	**0.86**	**43**	*e*P		**Pn**	**05 54 13.7 -0.4**
NLC				*e*S		**Sn**	**05 54 30.2 0.0**
NLC	**Nalytchevo**	**0.86**	**43**	PN		**Pn**	**05 54 13.7 -0.4**
NLC				S		**Sn**	**05 54 30.2 0.0**
GNL	**Ganaly**	**1.18**	**347**	*i* P		**Pn**	**05 54 16.4 -0.9**
GNL				*i* S		**Sn**	**05 54 34.4 -1.5**
GNL	**Ganaly**	**1.18**	**347**	PN		**Pn**	**05 54 16.4 -0.9**
GNL				S		**Sn**	**05 54 34.4 -1.5**
SKR	**Severo-Kuril's**	**2.34**	**218**	*e*P		**Pn**	**05 54 30.6 -0.1**
SKR				*e*S		**Sn**	**05 54 59.4 -0.4**
SKR	**Severo-Kuril's**	**2.34**	**218**	PN		**Pn**	**05 54 30.6 -0.1**
SKR				S		**Sn**	**05 54 59.4 -0.4**
MKZ	**Mys Kozlova**	**2.84**	**44**	*i* P		**Pn**	**05 54 37.4 +0.3**
MKZ				*e*S		**Sn**	**05 55 10.7 -0.6**
MKZ	**Mys Kozlova**	**2.84**	**44**	PN		**Pn**	**05 54 37.4 +0.3**
MKZ				S		**Sn**	**05 55 10.7 -0.6**
ESO	**Esso**	**3.39**	**3**	*i* P		**Pn**	**05 54 44.8 +0.4**
ESO	**Esso**	**3.39**	**3**	PN		**Pn**	**05 54 44.8 +0.4**
BKI	**Bering**	**5.22**	**56**	*e*P		**Pn**	**05 55 08.4 -0.3**
BKI				*e*S		**Sn**	**05 56 03.5 -4.3**
BKI	**Bering**	**5.22**	**56**	PN		**Pn**	**05 55 08.4 -0.3**
BKI				S		**Sn**	**05 56 03.5 -4.3**
KLR	**Kul'dur**	**17.08**	**269**	P		**P**	**05 57 41.9 -1.5**
comp=N,0.1nm,0.3s,baz=80,slow=12,SNR=3.1							
ILAR	**Eielson Array**	**29.94**	**45**	P		**P**	**05 59 48.5 0.0**
comp=N,0.4nm,0.8s,baz=263,slow=8.0,SNR=4.7							
H11N2	**WAKE ISLAND Hy**	**33.42**	**165**	T		T	06 34 46.9
baz=349							
H11N3	**WAKE ISLAND Hy**	**33.43**	**165**	T		T	06 34 45.5
baz=349							
H11N1	**WAKE ISLAND Hy**	**33.43**	**165**	T		T	06 34 51.8
baz=349							
YKA	**Yellowknife Ar**	**44.27**	**42**	P		**P**	**06 01 49.5 +0.4**
comp=N,0.1nm,0.4s,baz=294,slow=6.2,SNR=3.2							
NVAR	**Mina Array Bea**	**56.91**	**69**	P		**P**	**06 03 26.7 +2.0**
comp=N,0.2nm,0.5s,baz=308,slow=7.9,SNR=2.8							
PDAR	**Pinedale Array**	**58.70**	**59**	P		**P**	**06 03 38.9 +1.8**
comp=N,0.4nm,0.7s,baz=318,slow=2.6,SNR=4.2							
TXAR	**Lajitas Array**	**71.81**	**66**	P		**P**	**06 05 02.1 +0.5**
comp=N,0.3nm,0.4s,baz=305,slow=5.0,SNR=6.7							
WRA	**Warramunga Arr**	**75.15**	**203**	P		**P**	**06 05 20.3 -0.6**
comp=N,0.4nm,0.7s,baz=13,slow=8.6,SNR=2.6							

NIED ***25*** *06:08:00, 36°.10N×143°.90E, h5km, Mw3.7 Best double couple: M₀3.49000×10¹⁴ NP1:φs343.00000°, δ33.00000°, λ-151.00000°. NP2:φs228.00000°, δ75.00000°, λ-61.00000°.*

JMA 25 06:08:41.1±0.3, 36°.10N×143°.88E, h44km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**2.48**	**262**	*e*S		**Sn**	06 09 49.8 +1.7
BSO1	**Boso 1**	**2.78**	**240**	P		**Pn**	06 09 23.7 +1.2
BSO1				*e*S		**Sn**	06 09 56.7 +2.2
BSO3	**Boso 3**	**3.04**	**246**	P		**Pn**	06 09 28.5 +2.1
BSO4	**Boso 4**	**3.09**	**250**	P		**Pn**	06 09 29.6 +2.3
JFT	**Otama**	**3.18**	**298**	P		**Pn**	06 09 30.8 +2.2
JFT				*e*S		**Sn**	06 10 07.5 +2.3
JMK	**Ichinoseki**	**3.55**	**324**	P		**Pn**	06 09 34.7 +1.1
JMK				*e*S		**Sn**	06 10 14.7 +0.4
JAG	**Ashikaga**	**3.59**	**276**	P		**Pn**	06 09 36.1 +1.8
JAG				*e*S		**Sn**	06 10 16.0 +0.6
JOM	**Ohasama**	**3.94**	**329**	P		**Pn**	06 09 41.7 +2.6
JYK	**Kaneyama**	**3.97**	**316**	P		**Pn**	06 09 41.3 +1.9
JYK				*e*S		**Sn**	06 10 27.3 +2.6
JOD2	**Odawara 2**	**3.99**	**259**	P		**Pn**	06 09 41.1 +1.4
JOD2				*e*S		**Sn**	06 10 25.1 -0.1
JRY	**Ryogami san**	**4.03**	**270**	P		**Pn**	06 09 42.5 +2.1
JRY				*e*S		**Sn**	06 10 27.3 +0.9
JHJ2	**Mitsune**	**4.49**	**230**	P		**Pn**	06 09 48.1 +1.6

IDC 25 06:10:23.4±2.1, 4°.43S×146°.55E, h0km, mb3.5/2, mb1 3.8/3, mb1mx3.5/31, mbtmp3.5/3, ML3.7/1, Error ellipse: s-maj=246.8km s-min=30.3km az=120.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
WRA	**Warramunga Arr**	**19.47**	**217**	P		P	06 14 52.4 +0.4
0.2nm,0.3s,baz=40,slow=11,SNR=6.1							
ASAR	**Alice Springs**	**22.69**	**211**	P		P	06 15 26.4 -0.3
1.3nm,0.4s,baz=43,slow=7.5,SNR=23							
ILAR	**Eielson Array**	**84.22**	**23**	P		P	06 22 56.6 +0.1
0.2nm,0.5s,baz=244,slow=5.3,SNR=4.2							

IDC 25 06:14:58.4±2.7, 30°.35S×138°.36E, h0km, mb1 3.7/4, mb1mx3.5/31, mbtmp3.5/4, ML3.2/4, Error ellipse: s-maj=66.2km s-min=14.3km az=42.0, South Australia

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
STKA	**Stephens Creek**	**3.17**	**120**	Pn		Pn	06 15 50.0 +0.4
0.8nm,0.3s,baz=301,slow=13,SNR=23							
STKA				Pg		Pg	06 15 57.9 -1.2
4.4nm,0.3s,baz=296,slow=16,SNR=22							
STKA				Sn		Sn	06 16 28.2 +0.2
6.7nm,0.3s,baz=291,slow=20,SNR=6.7							
STKA				Lg		Lg	06 16 37.1
6.6nm,0.3s,baz=290,slow=12,SNR=6.5							
ASAR	**Alice Springs**	**7.75**	**328**	Pn		Pn	06 16 53.8 +1.2
0.2nm,0.3s,baz=150,slow=12,SNR=11							
ASAR				Sn		Sn	06 18 22.8 +1.6
0.4nm,0.3s,baz=151,slow=22,SNR=6.5							
WRA	**Warramunga Arr**	**10.98**	**340**	Pn		Pn	06 17 36.5 -0.4
0.3nm,0.3s,baz=160,slow=12,SNR=8.8							
WRA				Sn		Sn	06 19 40.2 -0.3
0.2nm,0.3s,baz=157,slow=24,SNR=4.4							
FITZ	**Fitzroy Crossi**	**16.81**	**314**	Pn		Pn	06 18 53.7 -1.6
0.1nm,0.3s,baz=138,slow=12,SNR=2.8							

ISCJB ***25*** *06:15:17.0±0.5, 39°.10N±0°.03×29°.04E±0°.05, h4km±7km, Error ellipse: s-maj=6.7km s-min=4.7km az=26.2*

ISK ***25*** *06:15:16.5, 39°.11N×29°.03E, h6km, MD2.7*

CSEM ***25*** *06:15:17.2±0.1, 39°.10N×29°.04E, h8km, ML2.9, Error ellipse: s-maj=3.0km s-min=2.3km az=106.0*

DDA ***25*** *06:15:17.1, 39°.12N×29°.04E, h7km, Ml2.9*

ISC 25 06:15:17.3±1.0, 39°.11N±0°.02×29°.04E±0°.03, h9km±9km, n29, σ0°.31/38, Turkey

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
DEMI	**Demirci**	**0.26**	**255**	P		**Pg**	**06 15 22.7 +0.1**
DEMI	**Demirci**	**0.26**	**255**	*i* P		**Pg**	**06 15 22.7 +0.1**
GDZ	**Gediz**	**0.34**	**94**	P		**Pg**	**06 15 23.9 -0.3**
GDZ	**Gediz**	**0.34**	**94**	*i* P		**Pg**	**06 15 23.9 -0.3**
TVSB	**Tavsanli**	**0.47**	**44**	*e*PG		**Pg**	**06 15 26.3 -0.2**
TVSB				*e*SG		**Sg**	**06 15 33.3 +0.6**
TVSB	**Tavsanli**	**0.47**	**44**	*e*Pg		**Pg**	**06 15 26.3 -0.2**
TVSB				*e*Sg		**Sg**	**06 15 33.3 +0.6**
DURS	**Dursunbey**	**0.66**	**318**	P		**Pb**	**06 15 31.1 +0.1**
DURS	**Dursunbey**	**0.66**	**318**	*i* P		**Pb**	**06 15 31.1 +0.1**
KULA	**Kula-Manisa**	**0.67**	**206**	*e*PG		**Pg**	**06 15 30.0 -0.2**
KULA				*e*SG		**Sg**	**06 15 38.8 -0.1**
KULA	**Kula-Manisa**	**0.67**	**206**	*e*Pg		**Pg**	**06 15 30.0 -0.2**
KULA				*e*Sg		**Sg**	**06 15 38.8 -0.1**
KHAL	**Karahalli**	**0.82**	**154**	P		**Pb**	**06 15 33.7 -0.1**
KHAL	**Karahalli**	**0.82**	**154**	*i* P		**Pb**	**06 15 33.7 -0.1**
KHL	**Karahalli**	**0.87**	**154**	*e*PG		**Pg**	**06 15 33.9 -0.3**
KHL	**Karahalli**	**0.87**	**154**	*e*Pg		**Pg**	**06 15 33.9 -0.3**
ORLT	**Orhaneli**	**0.94**	**353**	*e*PG		**Pg**	**06 15 34.9 -0.5**
ORLT				*e*SG		**Sb**	**06 15 48.5 +0.1**
ORLT	**Orhaneli**	**0.94**	**353**	*e*Pg		**Pg**	**06 15 34.9 -0.5**
ORLT				*e*Sg		**Sb**	**06 15 48.5 +0.1**
AKHS	**Akhisar**	**0.98**	**257**	P		**Pg**	**06 15 35.8 -0.4**
AKHS	**Akhisar**	**0.98**	**257**	*i* P		**Pg**	**06 15 35.9 -0.4**
IGD	**Bursa**	**1.16**	**6**	*i* P		**Pg**	**06 15 39.0 -0.5**
IGD				*i* S		**Sn**	**06 15 55.7 +0.1**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*PN		**Pn**	**06 15 41.2 +0.1**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*Pn		**Pn**	**06 15 41.3 +0.1**
IZI	**Iznik**	**1.27**	**15**	*e*PN		**Pn**	**06 15 41.3 0.0**
IZI	**Iznik**	**1.27**	**15**	*e*Pn		**Pn**	**06 15 41.3 0.0**
BORA	**Eskisehir**	**1.34**	**55**	P		**Pn**	**06 15 42.1 -0.2**
BORA				S		**Sn**	**06 16 00.5 +0.3**
BORA	**Eskisehir**	**1.34**	**55**	*i* P		**Pn**	**06 15 42.1 -0.2**
BORA				*i* S		**Sn**	**06 16 00.5 +0.3**
ARMT	**Armutlu**	**1.46**	**355**	*e*PN		**Pb**	**06 15 44.3 -0.4**
ARMT	**Armutlu**	**1.46**	**355**	*e*Pn		**Pb**	**06 15 44.3 -0.4**
GULT	**Gulveren**	**1.74**	**40**	*e*PN		**Pn**	**06 15 48.1 +0.4**
GULT	**Gulveren**	**1.74**	**40**	*e*Pn		**Pn**	**06 15 48.2 +0.4**

JMA 25 06:31:58.6±0.1, 35°.86N×140°.89E, h35km±1km, M2.2, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
CHOJ	**Chosi**	**0.16**	**189**	P		Pn	06 32 04.8 -0.3
CHOJ				S		Sn	06 32 09.6 +0.2
JYT	**Yasato**	**0.67**	**303**	P		Pn	06 32 11.3 -0.3
JYT				*e*S		Sn	06 32 20.1 -0.8
JHO	**Hitachi**	**0.79**	**341**	P		Pn	06 32 13.2 -0.1
BSO3	**Boso 3**	**1.10**	**196**	P		Pn	06 32 17.6 +0.3

IDC 25 06:32:43.6±1.2, 37°.36N×142°.44E, h0km, mb3.6/5, mb1 3.7/7, mb1mx3.5/40, mbtmp3.7/7, ML3.6/2, Error ellipse: s-maj=27.4km s-min=23.6km az=116.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
MJAR	**Matsushiro Arr**	**3.49**	**258**	Pn		Pn	06 33 40.6 +1.5
1.7nm,0.3s,baz=81,slow=16,SNR=4.1							
MJAR				Sn		Sn	06 34 23.6 +2.4
2.3nm,0.3s,baz=85,slow=14,SNR=5.0							
MAT	**Matsushiro**	**3.49**	**258**	P		Pb	06 33 43.5 -2.7
MAT				*e*S		Sn	06 34 23.7 +2.5
JHJ	**Hachijo jima 2**	**4.76**	**208**	Pn		Pn	06 33 56.2 -0.4
26nm,0.3s,baz=300,slow=22,SNR=7.4							
JHJ				Sn		Sn	06 34 46.6 -5.8
13nm,0.3s,baz=233,slow=19,SNR=3.2							
USRK	**Ussuriysk Ar.**	**10.46**	**314**	Pn		Pn	06 35 18.4 +3.8
0.4nm,0.3s,baz=140,slow=14,SNR=6.7							
H11N2	**WAKE ISLAND Hy**	**27.62**	**123**	T		T	07 07 28.4
baz=315,slow=75,SNR=24							
H11N1	**WAKE ISLAND Hy**	**27.63**	**123**	T		T	07 07 30.6
baz=315,slow=75,SNR=24							
H11N3	**WAKE ISLAND Hy**	**27.64**	**123**	T		T	07 07 31.2
baz=315,slow=75,SNR=26							
SONM	**Songino Array**	**28.29**	**303**	P		P	06 38 38.4 -0.3
0.7nm,0.6s,baz=105,slow=8.9,SNR=4.3							
H11S1	**WAKE ISLAND Hy**	**28.36**	**125**	T		T	07 08 23.5
baz=317,slow=76,SNR=34							
H11S3	**WAKE ISLAND Hy**	**28.36**	**125**	T		T	07 08 23.8
baz=317,slow=76,SNR=35							
H11S2	**WAKE ISLAND Hy**	**28.38**	**125**	T		T	07 08 22.1
baz=317,slow=76,SNR=35							
MKAR	**Makanchi Array**	**44.64**	**302**	P		P	06 40 57.4 -0.3
0.6nm,0.7s,baz=98,slow=10,SNR=3.2							
KURBB	**Kurchatov Arra**	**46.45**	**308**	P		P	06 41 11.2 -0.7
1.1nm,0.5s,baz=83,slow=7.9,SNR=7.0							
WRA	**Warramunga Arr**	**57.51**	**189**	P		P	06 42 34.2 -0.4
0.8nm,0.9s,baz=6.8,slow=7.1,SNR=3.8							
YKA	**Yellowknife Ar**	**63.11**	**30**	P		P	06 43 13.1 +0.6
0.1nm,0.7s,baz=307,slow=6.8,SNR=2.8							

IDC ***25*** *06:45:32.4±6.3, 5°.90N×82°.75W, h0km, mb3.6/4, mb1 3.8/5, mb1mx3.6/31, mbtmp3.6/5, ML2.6/1, MS3.2/9, Ms1 3.3/9, ms1mx3.0/24, Error ellipse: s-maj=222.9km s-min=28.7km az=30.0*

ISCJB ***25*** *06:45:35.3±1.2, 5°.9N±0°.2×82°.6W±0°.2, h33km, mb3.5/4, MS3.2/6, Error ellipse: s-maj=34.7km s-min=10.6km az=35.2*

ISC 25 06:45:37.1±1.2, 5°.8N±0°.2×82°.8W±0°.1, h35km, n17, σ2°.19/11, mb3.7/4, MS3.3/6, South of Panama

Code	Station Name	Δ°	AZ°	Phase ID		Time	Res
				Op	ISC	h m s	ISC
SOLC	**Bahia Solano**	**5.40**	**86**	*e*P		**Pn**	**06 46 52.0 -3.2**
POPC	**Popayan, Colom**	**6.95**	**118**	*e*P		**Pn**	**06 47 15.5 -1.3**
CRUC	**La Cruz**	**7.23**	**126**	*e*P		**Pn**	**06 47 20.4 -0.3**
TOLC	**Tolima**	**7.58**	**99**	*e*P		**Pn**	**06 47 23.8 -1.6**
FLOC	**Florencia**	**8.31**	**120**	*e*P		**Pn**	**06 47 32.1 -3.1**
**ROS

TWY	**Chenhua**	**0.96 301**	*e*P	**Pg**	**06 47 49.6**	**-0.3**
	baz=306					
TWY			*e*S	**Sb**	**06 48 02.9**	**+0.4**
	baz=306					
NSK	**Sanguang**	**1.05 265**	*e*P	**Pb**	**06 47 51.2**	**-0.2**
	baz=264					
NSK			*e*S	**Sb**	**06 48 04.3**	**-0.8**
	baz=264					
TWD	**Chiawan**	**1.08 231**	*e*P	**Pn**	**06 47 52.6**	**+0.5**
	baz=226					
TWD			*e*S	**Sn**	**06 48 07.2**	**+0.1**
	baz=226					
NNS	**Nan Shan**	**1.09 252**	*e*P	**Pg**	**06 47 52.1**	**0.0**
	baz=250					
NNS			*e*S	**Sb**	**06 48 06.0**	**-0.2**
	baz=250					
IRIF	**Iriomote-Funau**	**1.19 111**	P	**Pg**	**06 47 54.3**	**+0.1**
IRIF			*e*S	**Sb**	**06 48 08.9**	**-0.2**
NSTT	**Nanjuang**	**1.38 264**	*e*P	**Pg**	**06 47 57.5**	**-0.2**
	baz=264					
NSTT			*e*S	**Sn**	**06 48 14.3**	**-0.1**
	baz=264					
JKRS	**Kuro-shima**	**1.47 111**	P	**Pg**	**06 47 59.0**	**-0.4**
JIJ	**Ishigaki jima**	**1.54 105**	P	**Pn**	**06 47 58.6**	**+0.1**
JIJ			*e*S	**Sn**	**06 48 18.4**	**0.0**
WDT	**Danda**	**1.61 231**	*e*P	**Pb**	**06 48 01.2**	**+0.1**
	baz=228					
WDT			*e*S	**Sb**	**06 48 21.7**	**+0.1**
	baz=228					
TYC	**Yuchr**	**1.74 240**	*e*P	**Pn**	**06 48 01.4**	**+0.2**
	baz=238					
TYC			*e*S	**Sb**	**06 48 24.8**	**0.0**
	baz=238					
TWF1	**Yuli**	**1.80 218**	*e*P	**Pb**	**06 48 03.3**	**-0.8**
	baz=214					
TWF1			*e*S	**Sn**	**06 48 25.3**	**+0.6**
	baz=214					
YUS	**Yu-Shan**	**1.91 228**	*e*P	**Pb**	**06 48 05.4**	**-0.9**
	baz=225					
YUS			*e*S	**Sn**	**06 48 28.2**	**0.0**
	baz=225					

THE ***25*** *06:49:33.8, 39°.46N×26°.31E, h3km±1km, ML3.1/7, Error ellipse: s-maj=1.7km s-min=0.5km az=266.0*
DDA ***25*** *06:49:33.4, 39°.49N×26°.34E, h12km, Md3.1*
ATH ***25*** *06:49:33.3, 39°.46N×26°.29E, h23km±1km, ML2.9/5, Error ellipse: s-maj=3.0km s-min=1.1km az=250.0*
ISCJB ***25*** *06:49:33.7±0.4, 39°.46N±0°.02×26°.30E±0°.03, h7km±3km, Error ellipse: s-maj=3.6km s-min=2.5km az=167.3*
CSEM ***25*** *06:49:33.7±0.1, 39°.45N×26°.30E, h10km, ML2.9, Error ellipse: s-maj=2.5km s-min=2.0km az=69.0*
SOF ***25*** *06:49:40.3, 39°.67N×25°.42E, h3km, MD2.7*

ISC 25 06:49:33.8±0.8, 39°.46N±0°.01×26°.30E±0°.02, h13km±6km, n70, σ0s58/115, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PRK	**Paraskevi**	**0.22**	**186**	P	**Pg**	**06 49 38.4**	**-0.1**
PRK				S	**Sg**	**06 49 41.5**	**-0.2**
PRK	**Paraskevi**	**0.22**	**186**	P	**Pg**	**06 49 38.4**	**-0.1**
PRK				S	**Sg**	**06 49 41.5**	**-0.2**
PRK	**Paraskevi**	**0.22**	**186**	P	**Pg**	**06 49 37.8**	**-0.7**
PRK				S	**Sb**	**06 49 42.6**	**-0.9**
PRK				AML	AML	06 49 46.2	
	comp=E,9816μm,0.4s						
PRK				AML	AML	06 49 47.9	
	comp=N,8410μm,0.6s						
AYVA	**Ayvalik**	**0.34**	**117**	P	**Pg**	**06 49 40.5**	**-0.2**
AYVA				S	**Sg**	**06 49 45.7**	**+0.4**
AYVA	**Ayvalik**	**0.34**	**117**	*i* P	**Pg**	**06 49 40.5**	**-0.2**
AYVA				*i* S	**Sg**	**06 49 45.6**	**+0.4**
EZN	**Ezine**	**0.36**	**3**	P	**Pg**	**06 49 40.8**	**-0.3**
EZN				S	**Sg**	**06 49 46.3**	**+0.2**
EZN	**Ezine**	**0.36**	**3**	P	**Pg**	**06 49 40.8**	**-0.3**
EZN				S	**Sg**	**06 49 46.3**	**+0.2**
BOZC	**Bozcaada**	**0.42**	**333**	*i* P	**Pg**	**06 49 42.2**	**0.0**
BOZC				*i* S	**Sg**	**06 49 48.5**	**+0.5**
SIGR	**SIGRI**	**0.43**	**234**	P	**Pg**	**06 49 42.3**	**+0.1**
SIGR				S	**Sb**	**06 49 49.0**	**-0.5**
SIGR	**SIGRI**	**0.43**	**234**	P	**Pg**	**06 49 42.3**	**+0.1**
SIGR				S	**Sg**	**06 49 48.1**	**+0.2**
SIGR	**SIGRI**	**0.43**	**234**	P	**Pg**	**06 49 42.3**	**+0.1**
SIGR				S	**Sg**	**06 49 48.1**	**+0.2**
SIGR				AML	AML	06 49 51.0	
	comp=E,4658μm,0.4s						
SIGR				AML	AML	06 49 52.0	
	comp=N,4178μm,0.5s						
LIA	**Limnos Island**	**0.96**	**297**	P	**Pb**	**06 49 52.3**	**-0.1**
LIA				S	**Sn**	**06 50 06.4**	**-0.2**
LIA	**Limnos Island**	**0.96**	**297**	P	**Pb**	**06 49 52.3**	**-0.1**
LIA				S	**Sn**	**06 50 06.8**	**+0.2**
BALY	**Balya**	**1.06**	**74**	P	**Pb**	**06 49 53.5**	**-0.5**
BALY				S	**Sn**	**06 50 08.8**	**-0.2**
BALY	**Balya**	**1.06**	**74**	*i* P	**Pb**	**06 49 53.5**	**-0.5**
BALY				*i* S	**Sn**	**06 50 08.8**	**-0.2**
CHOS	**Chios island**	**1.09**	**190**	P	**Pb**	**06 49 54.3**	**-0.2**
CHOS				S	**Sn**	**06 50 10.2**	**+0.4**
CHOS	**Chios island**	**1.09**	**190**	P	**Pg**	**06 49 54.6**	**-0.2**
CHOS				S	**Sb**	**06 50 08.6**	**-0.1**
CHOS	**Chios island**	**1.09**	**190**	P	**Pg**	**06 49 54.6**	**-0.2**
CHOS				S	**Sb**	**06 50 08.6**	**-0.1**
CHOS				AML	AML	06 50 15.6	
	comp=N,786μm,0.3s						
CHOS				AML	AML	06 50 19.9	
	comp=E,1650μm,0.5s						
URLA	**Izmir**	**1.12**	**168**	P	**Pb**	**06 49 54.4**	**-0.7**
URLA				S	**Sn**	**06 50 11.1**	**+0.5**
URLA	**Izmir**	**1.12**	**168**	*i* P	**Pb**	**06 49 54.4**	**-0.7**
URLA				*i* S	**Sn**	**06 50 11.1**	**+0.5**
SMTH	**Samothraki Isl**	**1.17**	**330**	P	**Pb**	**06 49 55.8**	**0.0**
SMTH				S	**Sn**	**06 50 12.0**	**+0.3**
SMTH	**Samothraki Isl**	**1.17**	**330**	P	**Pn**	**06 49 55.9**	**+0.1**
SMTH				S	**Sg**	**06 50 11.2**	**-0.3**
SMTH	**Samothraki Isl**	**1.17**	**330**	P	**Pn**	**06 49 55.9**	**+0.1**
SMTH				S	**Sg**	**06 50 11.2**	**-0.3**
SMTH				AML	AML	06 50 13.1	
	comp=N,1472μm,0.1s						
SMTH				AML	AML	06 50 15.3	
	comp=E,965μm,0.4s						
ZEY	**˜zmir**	**1.23**	**173**	*i* P	**Pn**	**06 49 56.2**	**-0.5**
ZEY				*i* S	**Sg**	**06 50 14.4**	**+0.9**
KNL	**Bal¨–kesir**	**1.24**	**49**	*i* P	**Pn**	**06 49 55.7**	**-1.1**
KNL				*i* S	**Sb**	**06 50 12.4**	**-0.6**
ENEZ	**Enez**	**1.28**	**355**	P	**Pb**	**06 49 57.9**	**+0.2**
ENEZ				S	**Sg**	**06 50 15.4**	**+0.4**
ENEZ	**Enez**	**1.28**	**355**	P	**Pb**	**06 49 57.9**	**+0.2**
ENEZ				S	**Sg**	**06 50 15.4**	**+0.4**
AKHS	**Akhisar**	**1.31**	**116**	P	**Pg**	**06 49 58.7**	**-0.3**
AKHS				S	**Sn**	**06 50 15.6**	**+0.4**
AKHS	**Akhisar**	**1.31**	**116**	*i* P	**Pg**	**06 49 58.7**	**-0.3**
AKHS				*i* S	**Sn**	**06 50 15.6**	**+0.4**
KESN	**Edirne-Kesan**	**1.39**	**12**	P	**Pn**	**06 49 59.2**	**-0.1**
KESN				S	**Sn**	**06 50 18.1**	**+0.4**
KESN	**Edirne-Kesan**	**1.39**	**12**	*i* P	**Pn**	**06 49 59.2**	**-0.1**
KESN				*i* S	**Sn**	**06 50 18.1**	**+0.4**
SART	**Tekirdag**	**1.40**	**29**	S	**Sn**	**06 50 17.6**	**+0.1**
SART	**Tekirdag**	**1.40**	**29**	*i* S	**Sn**	**06 50 17.6**	**+0.1**
ALN	**Alexandroupoli**	**1.45**	**352**	P	**Pb**	**06 50 00.2**	**-0.4**
ALN				S	**Sg**	**06 50 20.4**	**0.0**
ALN	**Alexandroupoli**	**1.45**	**352**	P	**Pb**	**06 50 00.2**	**-0.4**
ALN				S	**Sn**	**06 50 18.6**	**+0.1**
ALN	**Alexandroupoli**	**1.45**	**352**	P	**Pb**	**06 50 00.2**	**-0.4**
ALN				S	**Sn**	**06 50 18.6**	**+0.1**
ALN				AML	AML	06 50 21.3	
	comp=E,951μm,0.3s						
ALN				AML	AML	06 50 21.6	
	comp=N,783μm,0.8s						
DGB	**˜zmir**	**1.48**	**162**	*i* P	**Pn**	**06 49 59.8**	**-0.2**
DGB				*i* S	**Sg**	**06 50 20.7**	**-0.7**
DURS	**Dursunbey**	**1.69**	**85**	P	**Pn**	**06 50 03.0**	**-0.1**
DURS				S	**Sn**	**06 50 25.0**	**+0.4**
DURS	**Dursunbey**	**1.69**	**85**	*i* P	**Pn**	**06 50 03.0**	**-0.1**
DURS				*i* S	**Sn**	**06 50 25.0**	**+0.4**
SMG	**Samos**	**1.80**	**166**	P	**Pn**	**06 50 04.1**	**-0.4**
SMG				S	**Sb**	**06 50 28.8**	**-0.3**
SMG	**Samos**	**1.80**	**166**	P	**Pn**	**06 50 04.1**	**-0.4**
SMG				S	**Sb**	**06 50 28.8**	**-0.3**
SMG	**Samos**	**1.80**	**166**	P	**Pb**	**06 50 06.4**	**-0.2**
AOS	**Alonnisos**	**1.90**	**262**	P	**Pn**	**06 50 06.1**	**+0.2**
AOS	**Alonnisos**	**1.90**	**262**	P	**Pn**	**06 50 06.1**	**+0.2**
AOS	**Alonnisos**	**1.90**	**262**	P	**Pn**	**06 50 05.4**	**-0.4**
DEMI	**Demirci**	**1.92**	**102**	P	**Pb**	**06 50 09.6**	**+0.8**
DEMI				S	**Sg**	**06 50 35.1**	**-0.5**
DEMI	**Demirci**	**1.92**	**102**	*i* P	**Pb**	**06 50 09.6**	**+0.8**
DEMI				*i* S	**Sg**	**06 50 35.1**	**-0.5**
OUR	**Ouranopolis**	**1.98**	**297**	P	**Pn**	**06 50 07.5**	**+0.5**
OUR	**Ouranopolis**	**1.98**	**297**	P	**Pn**	**06 50 07.6**	**+0.5**
OUR	**Ouranopolis**	**1.98**	**297**	P	**Pn**	**06 50 07.6**	**+0.5**
KAVA	**Kavala**	**2.05**	**319**	P	**Pn**	**06 50 08.2**	**+0.2**
KAVA	**Kavala**	**2.05**	**319**	P	**Pn**	**06 50 08.2**	**+0.2**
KAVA	**Kavala**	**2.05**	**319**	P	**Pn**	**06 50 07.7**	**-0.3**
KULA	**Kula-Manisa**	**2.07**	**116**	P	**Pn**	**06 50 08.9**	**+0.6**
KULA	**Kula-Manisa**	**2.07**	**116**	P	**Pn**	**06 50 08.9**	**+0.6**
AYDN	**Tasoluk**	**2.18**	**145**	P	**Pn**	**06 50 09.4**	**-0.4**
AYDN	**Tasoluk**	**2.18**	**145**	*i* P	**Pn**	**06 50 09.4**	**-0.4**
AYDN				*i* S	**Sg**	**06 50 45.5**	**+1.6**
IGD	**Bursa**	**2.37**	**69**	*i* P	**Pn**	**06 50 12.1**	**-0.3**
IGD				*i* S	**Sg**	**06 50 48.4**	**-1.7**
APE	**Apeiranthos**	**2.46**	**194**	P	**Pn**	**06 50 13.2**	**-0.5**
APE	**Apeiranthos**	**2.46**	**194**	P	**Pn**	**06 50 13.2**	**-0.5**
GDZ	**Gediz**	**2.50**	**98**	*i* P	**Pg**	**06 50 21.6**	**0.0**
GDZ				*i* S	**Sg**	**06 50 53.6**	**-0.4**
RZN	**Rozhen**	**2.53**	**332**	P	**Pn**	**06 50 15.6**	**+0.9**
BUY	**Buyukada**	**2.57**	**56**	*i* P	**Pb**	**06 50 20.6**	**+0.9**
BUY				*i* S	**Sg**	**06 50 55.3**	**-1.0**
MMB	**Musomiste**	**2.89**	**318**	P	**Pn**	**06 50 20.6**	**+1.0**
JMB	**Yambol**	**3.01**	**4**	P	**Pg**	**06 50 30.1**	**-1.3**
BORA	**Eskisehir**	**3.23**	**81**	*i* P	**Pb**	**06 50 32.8**	**+1.7**
BORA				*i* S	**Sg**	**06 51 17.8**	**+0.1**
ESKT	**Eskisehir**	**3.52**	**88**	*i* P	**Pn**	**06 50 30.1**	**+1.8**
SEYT	**Eskypehyr**	**3.52**	**88**	P	**Pn**	**06 50 30.1**	**+1.8**
SZH	**Strazhica**	**3.81**	**356**	P	Pn	06 50 35.6	+3.4
MPEP	**Malo Peshtene**	**4.34**	**335**	P	**Pn**	**06 50 40.2**	**+0.8**

ISCJB ***25*** *06:50:23.7±0.7, 51°.41N±0°.03×16°.18E±0°.03, h0km, Error ellipse: s-maj=5.1km s-min=2.9km az=13.6*
IPEC ***25*** *06:50:24.5±0.5, 51°.47N×16°.27E, h0km±2km, ML1.9/3, Error ellipse: s-maj=3.5km s-min=2.4km az=45.0*
CSEM ***25*** *06:50:25.0±0.4, 51°.41N×16°.18E, h2km, ML3.1/12, Error ellipse: s-maj=6.0km s-min=3.5km az=3.0*
IDC ***25*** *06:50:25.2±1.2, 51°.40N×16°.33E, h0km, mb1 3.6/4, mb1mx3.3/43, mbtmp3.4/4, ML2.8/4, Error ellipse: s-maj=24.6km s-min=10.8km az=108.0*
WAR ***25*** *06:50:25.7, 51°.44N×16°.19E, h1km, Mw2.5*
PRU ***25*** *06:50:26.7, 51°.39N×16°.13E, h0km*

ISC 25 06:50:24.0±0.8, 51°.48N±0°.04×16°.15E±0°.02, h0km, n37, σ1s18/68, 1D, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.64**	**172**	*i* P	**Pg**	**06 50 36.9**	**+0.6**
KSP				*i* Sg	**Sg**	**06 50 44.9**	**+0.3**
KSP	**Ksiaz**	**0.64**	**172**	⇓*i* Pg	**Pg**	**06 50 36.9**	**+0.6**
KSP				*i* Sg	**Sg**	**06 50 44.9**	**+0.3**
KSP	**Ksiaz**	**0.64**	**172**	*i* Pgd	**Pg**	**06 50 36.9**	**+0.6**
KSP				*i* Sg	**Sg**	**06 50 44.9**	**+0.3**
UPC	**Upice**	**0.98**	**185**	*e*PG	**Pg**	**06 50 43.2**	**+0.5**
UPC				*e*SG	**Sg**	**06 50 55.8**	**+0.5**
	comp=Z,63nm,0.3s						
UPC	**Upice**	**0.98**	**185**	Pg	**Pg**	**06 50 43.2**	**+0.5**
UPC				Sg	**Sg**	**06 50 55.8**	**+0.5**
	63nm,0.3s						
DPC	**Dobruska-Polom**	**1.14**	**175**	*e*PG	**Pg**	**06 50 46.0**	**+0.3**
DPC				*e*SG	**Sg**	**06 51 00.0**	**-0.4**
	comp=Z,25nm,0.4s						
DPC	**Dobruska-Polom**	**1.14**	**175**	Pg	**Pg**	**06 50 46.0**	**+0.3**
DPC				Sg	**Sg**	**06 51 00.0**	**-0.4**
	25nm,0.4s						
PVCC	**Panska Ves**	**1.38**	**227**	*e*PG	**Pb**	**06 50 51.7**	**+1.0**
PVCC				*e*SG	**Sn**	**06 51 10.2**	**+0.7**
	comp=Z,95nm,0.4s						
PVCC	**Panska Ves**	**1.38**	**227**	Pg	**Pb**	**06 50 51.7**	**+1.0**
PVCC				Sg	**Sn**	**06 51 10.2**	**+0.7**
	95nm,0.4s						
KRLC	**Kraliky**	**1.46**	**164**	*e*PG	**Pg**	**06 50 51.9**	**-0.1**
KRLC				*e*SG	**Sg**	**06 51 10.3**	**-0.6**
KRLC	**Kraliky**	**1.46**	**164**	Pg	**Pg**	**06 50 51.9**	**-0.1**
KRLC				Sg	**Sg**	**06 51 10.3**	**-0.6**
BRG	**Berggiesshubel**	**1.52**	**247**	PG	**Pg**	**06 50 54.2**	**+1.2**
BRG				SG	**Sn**	**06 51 14.6**	**+1.8**
	27nm,0.3s						
GOPC	**GO Pecny, Ondr**	**1.79**	**210**	*e*PG	**Pg**	**06 50 58.3**	**0.0**
GOPC				*e*SG	**Sg**	**06 51 21.6**	**+0.1**
	comp=Z,15nm,0.3s						
GOPC	**GO Pecny, Ondr**	**1.79**	**210**	Pg	**Pg**	**06 50 58.3**	**0.0**
GOPC				Sg	**Sg**	**06 51 21.6**	**+0.1**
	15nm,0.3s						
PRU	**Pruhonice**	**1.81**	**215**	*e*PG	**Pg**	**06 50 58.6**	**0.0**
PRU				*e*SG	**Sg**	**06 51 22.0**	**-0.1**
	comp=Z,19nm,0.5s						
PRU	**Pruhonice**	**1.81**	**215**	Pg	**Pg**	**06 50 58.6**	**0.0**
PRU				Sg	**Sg**	**06 51 22.0**	**-0.1**
	19nm,0.5s						
MORC	**Moravsky Berou**	**1.92**	**152**	*e*Pn	**Pn**	**06 50 57.7**	**-0.3**
	baz=335						
MORC				*e*Sg	**Sn**	**06 51 23.2**	**+0.4**
	7.4nm,0.3s,baz=335						
CLL	**Collm**	**1.98**	**266**	*e*Pg	**Pg**	**06 51 03.0**	**+1.1**
CLL				*e*Sg	**Sg**	**06 51 29.0**	**+1.4**
OKC	**Ostrava-Krasne**	**2.08**	**142**	*e*SG	**Sb**	**06 51 28.8**	**0.0**
	comp=Z,14nm,0.5s						
OKC	**Ostrava-Krasne**	**2.08**	**142**	Sg	**Sb**	**06 51 28.8**	**0.0**
	14nm,0.5s						
VRAC	**Vranov**	**2.19**	**172**	Pn	**Pn**	**06 51 01.6**	**0.0**
	1.4nm,0.3s,baz=351,slow=16,SNR=2.9						
VRAC				Lg	Lg	06 51 31.2	
	3.0nm,0.3s,baz=98,slow=23,SNR=6.8						
VRAC	**Vranov**	**2.19**	**172**	*e*Pn	**Pn**	**06 51 01.9**	**+0.2**
	baz=355						
VRAC				*e*Sg	**Sb**	**06 51 32.4**	**+0.2**
	6.5nm,0.3s,baz=355						
TREC	**Trest**	**2.23**	**191**	*e*SG	**Sg**	**06 51 35.0**	**-0.5**
	comp=Z,10nm,0.3s						
TREC	**Trest**	**2.23**	**191**	Sg	**Sg**	**06 51 35.0**	**-0.5**
	10nm,0.3s						
KRUC	**Moravsky**	**2.43**	**176**	*e*Pg	**Pb**	**06 51 08.5**	**0.0**
	baz=358						
KRUC				*e*Sg	**Sb**	**06 51 40.0**	**+1.1**
	4.2nm,0.3s,baz=358						
OJC	**Ojcow**	**2.63**	**117**	*e*Pg	**Pg**	**06 51 14.4**	**0.0**
OJC				*e*Sg	**Sg**	**06 51 49.6**	**+1.1**
OJC	**Ojcow**	**2.63**	**117**	*e*Pg	**Pg**	**06 51 14.4**	**0.0**
OJC				*e*Sg	**Sg**	**06 51 49.6**	**+1.1**
OJC	**Ojcow**	**2.63**	**117**	*e*Pg	**Pg**	**06 51 14.4**	**0.0**
OJC				*e*Sg	**Sg**	**06 51 49.6**	**+1.1**
NKC	**Novy Kostel**	**2.66**	**243**	*e*PN	**Pn**	**06 51 09.3**	**+1.2**
NKC				*e*PG	**Pg**	**06 51 14.5**	**-0.4**
NKC				*e*SG	**Sg**	**06 51 50.7**	**+1.4**
	comp=Z,17nm,0.3s						
NKC	**Novy Kostel**	**2.66**	**243**	Pn	**Pn**	**06 51 09.3**	**+1.2**
KHC	**Kasperske Hory**	**2.87**	**216**	*e*PN	**Pn**	**06 51 12.1**	**+1.1**
KHC				*e*PG	**Pg**	**06 51 17.8**	**-1.2**
KHC				*e*SN	**Sn**	**06 51 46.1**	**-0.2**
KHC				*e*SG	**Sg**	**06 51 54.6**	**-1.6**
	comp=Z,7.7nm,0.3s						
KHC	**Kasperske Hory**	**2.87**	**216**	Pn	**Pn**	**06 51 12.1**	**+1.1**
GERES	**GERESS Array B**	**3.07**	**212**	Pn	**Pn**	**06 51 15.0**	**+1.2**
	0.4nm,0.3s,baz=32,slow=15,SNR=4.7						
GERES				Pg	**Pb**	**06 51 21.1**	**+1.6**
	2.6nm,0.3s,baz=30,slow=17,SNR=22						
GERES				Lg	Lg	06 51 59.2	
	2.6nm,0.3s,baz=36,slow=30,SNR=10						
STHS	**Stebnicka Huta**	**3.85**	**120**	*e*Pg	**Pg**	**06 51 38.4**	**+0.6**
STHS				*e*Sg	**Sg**	**06 52 31.8**	**+4.1**
STHS	**Stebnicka Huta**	**3.85**	**120**	*e*PG	**Pg**	**06 51 38.4**	**+0.6**
STHS				*e*SG	**Sg**	**06 52 31.8**	**+4.1**
FINES	**FINESS Array B**	**11.38**	**25**	Pn	**Pn**	**06 53 04.7**	**-2.9**
	0.2nm,0.3s,baz=203,slow=13,SNR=3.9						
ARCES	**ARCESS Array B**	**18.65**	**10**	Pn	**P**	**06 54 39.5**	**-3.4**
	0.2nm,0.3s,baz=192,slow=12,SNR=4.1						

IDC ***25*** *07:09:06.5±0.6, 8°.00S×67°.94E, h0km, mb4.4/23, mb1 4.5/23, mb1mx4.3/53, mbtmp4.4/23, MS3.5/13, Ms1 3.5/13, ms1mx3.2/43, Error ellipse: s-maj=17.4km s-min=14.0km az=147.0*
ISCJB ***25*** *07:09:07.0±0.4, 7°.95S±0°.08×67°.96E±0°.07, h15km, mb4.5/28, MS3.5/12, Error ellipse: s-maj=12.1km s-min=9.4km az=137.3*
NEIC ***25*** *07:09:07.8±0.3, 8°.03S×67°.94E, h10km, mb4.6/5, Error ellipse: s-maj=9.4km s-min=6.9km az=146.0*

ISC 25 07:09:08.8±0.5, 8°.0S±0°.1×67°.96E±0°.10, h15km, n56, σ0s75/49, mb4.5/28, MS3.5/12, Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08N3	**Diego Garcia H**	**3.45**	**61**	T	T	07 13 27.2	
	baz=240,slow=75,SNR=5465						
H08N2	**Diego Garcia H**	**3.47**	**61**	T	T	07 13 28.6	
	baz=240,slow=75,SNR=6582						
H08N1	**Diego Carcia H**	**3.47**	**61**	T	T	07 13 28.6	
	baz=240,slow=75,SNR=4866						
DGAR	**Diego Garcia**	**4.50**	**82**	*e*Pn	**Pn**	**07 10 15.9**	**-0.5**
PALK	**Pallekele**	**19.82**	**40**	LR	LR	07 19 26.5	
	comp=Z,182nm,21.1s,baz=296,slow=31						
OPO	**Ambohidratompo**	**22.73**	**241**	P	**P**	**07 14 10.4**	**-0.3**
	3.5nm,0.9s,baz=59,slow=12,SNR=3.4						
OPO				LR	LR	07 20 55.8	
	comp=Z,199nm,20.7s,baz=40,slow=31						
KMBO	**Kilima Mbogo**	**31.35**	**281**	LR	LR	07 25 36.0	
	comp=Z,126nm,20.4s,baz=74,slow=32						
LSZ	**Lusaka**	**39.56**	**256**	P	**P**	**07 16 39.9**	**+0.1**
	11nm,0.8s,baz=73,slow=6.7,SNR=13						
LSZ	**Lusaka**	**39.56**	**256**	*e*P	**P**	**07 16 39.9**	**+0.1**
	16nm,1.0s						
LSZ				P	**P**	**07 16 39.9**	**+0.1**
MATP	**Matopo**	**40.07**	**248**	P	**P**	**07 16 44.2**	**+0.1**
	2.0nm,0.7s,baz=65,slow=8.9,SNR=3.7						
CMAR	**Chiang Mai Arr**	**40.35**	**49**	LR	LR	07 33 10.8	
	comp=Z,36nm,18.2s,baz=196,slow=36						
LBTB	**Lobatse**	**43.75**	**242**	LR	LR	07 33 22.4	
	comp=Z,137nm,20.4s,baz=88,slow=33						
BOSA	**Boshof**	**45.09**	**237**	P	**P**	**07 17 23.6**	**-1.2**
	5.8nm,0.8s,baz=70,slow=11,SNR=5.4						
BOSA				LR	LR	07 35 13.6	
	comp=Z,74nm,18.6s,baz=27,slow=35						
SUR	**Sutherland**	**49.91**	**234**	LR	LR	07 38 21.2	
	comp=Z,5.8nm,18.1s,baz=44,slow=35						
H01W3	**Cape Leeuwin H**	**49.99**	**129**	T	T	08 11 38.2	
	baz=291,slow=75,SNR=8.2						
H01W2	**Cape Leeuwin H**	**50.00**	**129**	T	T	08 11 38.3	
	baz=291,slow=75,SNR=7.4						
H01W1	**Cape Leeuwin H**	**50.01**	**129**	T	T	08 11 36.2	
	baz=291,slow=75,SNR=7.8						
TSUM	**Tsumeb**	**50.04**	**252**	LR	LR	07 37 22.6	
	comp=Z,45nm,18.9s,baz=338,slow=34						
EKS2	**Erkin-Say**	**50.74**	**6**	*e*P	**P**	**07 18 07.6**	**-0.6**
	5.5nm,1.0s						
AAK	**Ala-Archa**	**50.78**	**6**	*e*P	**P**	**07 18 09.8**	**+1.1**
	5.9nm,1.0s						
MKAR	**Makanchi Array**	**56.07**	**12**	P	**P**	**07 18 46.0**	**-1.3**
	2.2nm,0.7s,baz=191,slow=6.9,SNR=9.3						
MKAR				PcP	**PcP**	**07 19 45.8**	**+0.5**
	3.2nm,1.0s,baz=232,slow=6.0,SNR=5.0						
KBZ	**Khabaz**	**56.32**	**338**	P	**P**	**07 18 49.5**	**+0.5**
	2.8nm,0.8s,baz=182,slow=6.8,SNR=5.2						
BRTR	**Keskin Array B**	**57.16**	**329**	P	**P**	**07 18 55.4**	**+0.1**
	3.6nm,0.9s,baz=144,slow=9.2,SNR=17						
ABKAR	**Akbulak array**	**57.49**	**354**	*e*P	**P**	**07 18 56.9**	**-0.3**
	7.0nm,1.0s						
AKTO	**Aktyubinsk**	**58.88**	**353**	P	**P**	**07 19 06.7**	**-0.2**
	6.7nm,1.0s,baz=183,slow=6.7,SNR=11						
KURBB	**Kurchatov Arra**	**59.14**	**8**	P	**P**	**07 19 08.6**	**-0.2**
	7.5nm,0.9s,baz=208,slow=7.0,SNR=28						
KURBB				PcP	**PcP**	**07 19 57.3**	**+0.1**
	1.4nm,0.9s,baz=200,slow=4.4,SNR=5.1						
KURK	**Kurchatov**	**59.24**	**8**	P	**P**	**07 19 08.6**	**-0.9**
KURK				PcP	**PcP**	**07 19 57.3**	**-0.3**
BVAR	**Borovoye Array**	**60.87**	**2**	P	**P**	**07 19 20.5**	**0.0**
	2.9nm,0.9s,baz=165,slow=6.2,SNR=12						
ZALV	**Zalesovo Beam**	**63.38**	**11**	P	**P**	**07 19 36.4**	**-1.0**
	3.0nm,0.8s,baz=218,slow=7.0,SNR=9.4						
ARU	**Arti**	**64.71**	**354**	P	**P**	**07 19 45.3**	**-0.8**
	7.5nm,0.2s,baz=190,slow=3.4,SNR=7.8						
ARU	**Arti**	**64.71**	**354**	P	**P**	**07 19 45.3**	**-0.8**
ARU				*e*P	**P**	**07 19 45.6**	**-0.5**
ASAR	**Alice Springs**	**64.81**	**112**	P	**P**	**07 19 47.8**	**+0.2**
	4.5nm,0.9s,baz=276,slow=5.8,SNR=27						
ASAR				LR	LR	07 45 59.2	
	comp=Z,20nm,18.9s,baz=278,slow=34						
WRA	**Warramunga Arr**	**65.14**	**108**	P	**P**	**07 19 50.1**	**+0.4**
	7.3nm,1.0s,baz=280,slow=6.1,SNR=22						
SONM	**Songino Array**	**65.17**	**27**	P	**P**	**07 19 50.1**	**+0.6**
	3.7nm,1.0s,baz=227

LIENZ	**Kamor/St.Gall**	**0.31 229**	⇑*iP**	**Pb**	**07 22 49.3**	**+0.3**
LIENZ			S*	**Sb**	**07 22 55.1**	**+0.8**
OBER	**Oberstdorf**	**0.32 107**	Pb	**Pb**	**07 22 49.4**	**+0.3**
OBER			Sb	**Sb**	**07 22 55.3**	**+0.9**
OBER	**Oberstdorf**	**0.32 107**	⇑*iP**	**Pb**	**07 22 49.4**	**+0.3**
OBER			*i* S*	**Sb**	**07 22 55.3**	**+0.9**
PLONS	**Plons/SG**	**0.55 215**	*e*Pg	**Pb**	**07 22 52.8**	**+0.2**
	210nm,0.2s					
PLONS			*e*Sg	**Sb**	**07 23 00.9**	**+0.6**
	210nm,0.2s					
PLONS	**Plons/SG**	**0.55 215**	*e*Pg	**Pb**	**07 22 52.8**	**+0.2**
	210nm,0.2s					
PLONS			*e*Sg	**Sb**	**07 23 00.9**	**+0.6**
	210nm,0.2s					
PLONS	**Plons/SG**	**0.55 215**	*e*Pg	**Pb**	**07 22 52.8**	**+0.2**
PLONS			*e*Sg	**Sb**	**07 23 00.9**	**+0.6**
WEIN	**Weingarten**	**0.58 273**	⇑*i*Pg	**Pn**	**07 22 53.6**	**0.0**
	135nm,0.2s					
WEIN			*i* Sg	**Sn**	**07 23 02.1**	**0.0**
	135nm,0.2s					
WEIN	**Weingarten**	**0.58 273**	⇑*i*Pg	**Pn**	**07 22 53.6**	**0.0**
	135nm,0.2s					
WEIN			*i* Sg	**Sn**	**07 23 02.1**	**0.0**
	135nm,0.2s					
SISB	**Singen-Schiene**	**0.62 288**	Pb	**Pb**	**07 22 54.0**	**+0.3**
SISB			Sb	**Sb**	**07 23 01.6**	**-0.5**
SISB	**Singen-Schiene**	**0.62 288**	⇑P*	**Pb**	**07 22 54.0**	**+0.3**
SISB			PmP		07 22 54.3	
SISB			S*	**Sb**	**07 23 01.6**	**-0.5**
RETA	**Reutte**	**0.63 91**	Pg	**Pb**	**07 22 53.7**	**-0.1**
	5.8nm,0.1s					
RETA			Sg	**Sb**	**07 23 02.9**	**+0.5**
	15nm,0.1s					
WILA	**Wila**	**0.64 262**	⇑*i*Pn	**Pb**	**07 22 54.4**	**+0.4**
	335nm,0.2s					
WILA	**Wila**	**0.64 262**	⇑*i*Pn	**Pb**	**07 22 54.4**	**+0.4**
	335nm,0.2s					
WILA			Sg	**Sn**	**07 23 03.7**	**+0.1**
WILA	**Wila**	**0.64 262**	*e*Pg	**Pb**	**07 22 54.4**	**+0.4**
WILA			*e*Sg	**Sn**	**07 23 03.7**	**+0.1**
DAVOX	**Davos/Dischmat**	**0.72 178**	⇓*i*Pg	**Pb**	**07 22 55.8**	**+0.3**
	65nm,0.4s					
DAVOX	**Davos/Dischmat**	**0.72 178**	⇓*i*Pg	**Pb**	**07 22 55.8**	**+0.3**
	65nm,0.4s					
GUT	**Gutenstein**	**0.75 320**	⇓*i*Pn	**Pn**	**07 22 56.2**	**+0.2**
GUT	**Gutenstein**	**0.75 320**	⇓*i*Pn	**Pn**	**07 22 56.2**	**+0.2**
GUT			Sg	**Sn**	**07 23 06.6**	**+0.2**
GUT	**Gutenstein**	**0.75 320**	⇓P	**Pn**	**07 22 56.1**	**+0.2**
GUT			Pg	**Pn**	**07 22 56.2**	**+0.2**
GUT			PmP		07 22 56.5	
GUT			Sg	**Sn**	**07 23 06.6**	**+0.2**
FETA	**Feichten**	**0.77 128**	Pg	**Pn**	**07 22 56.4**	**0.0**
	2.1nm,0.1s					
FETA			Sg	**Sb**	**07 23 07.2**	**+0.6**
	12nm,0.2s					
MOTA	**Moosalm**	**0.87 100**	Pg	**Pn**	**07 22 57.7**	**0.0**
	3.3nm,0.1s					
MOTA			Sg	**Sn**	**07 23 09.8**	**+0.3**
	8.6nm,0.1s					
FUORN	**Ofenpass-Fuorn**	**0.93 162**	⇓*i*P	**Pn**	**07 22 58.2**	**-0.4**
	58nm,0.4s					
FUORN	**Ofenpass-Fuorn**	**0.93 162**	⇓*i*P	**Pn**	**07 22 58.2**	**-0.4**
	58nm,0.4s					
SPAK	**Spaichingen-Ko**	**0.93 311**	Sg	**Sb**	**07 23 11.6**	**+0.6**
SPAK	**Spaichingen-Ko**	**0.93 311**	Sg	**Sb**	**07 23 11.6**	**+0.6**
SLE	**Schleitheim**	**0.95 287**	*e*Pn	**Pb**	**07 22 59.4**	**+0.2**
	210nm,0.4s					
SLE	**Schleitheim**	**0.95 287**	P	**Pn**	**07 22 58.2**	**-0.5**
SLE	**Schleitheim**	**0.95 287**	⇑P	**Pn**	**07 22 58.2**	**-0.5**
SLE			Pg	**Pb**	**07 22 59.5**	**+0.3**
SLE			Sg	**Sb**	**07 23 12.2**	**+0.8**
SQTA	**Sankt Quirin**	**0.97 106**	Pg	**Pn**	**07 22 59.6**	**+0.5**
SQTA			Sg	**Sb**	**07 23 13.0**	**+0.8**
BUCH	**Bad Urach**	**1.00 341**	Pg	**Pb**	**07 23 00.6**	**+0.5**
BUCH	**Bad Urach**	**1.00 341**	Pg	**Pb**	**07 23 00.6**	**+0.5**
HDH	**Heidenheim-Cha**	**1.11 13**	S	**Sn**	**07 23 13.6**	**-1.7**
HDH	**Heidenheim-Cha**	**1.11 13**	S	**Sn**	**07 23 13.6**	**-1.7**
SULZ	**Cheisacher**	**1.17 272**	P	**Pn**	**07 23 01.4**	**-0.3**
SULZ	**Cheisacher**	**1.17 272**	P	**Pn**	**07 23 01.4**	**-0.3**
WATA	**Walderalm**	**1.19 97**	Pg	**Pb**	**07 23 03.1**	**-0.2**
	1.8nm,0.1s					
WATA			Sg	**Sb**	**07 23 19.6**	**+1.2**
	8.3nm,0.2s					
WTTA	**Wattenberg**	**1.24 100**	Pg	**Pb**	**07 23 04.3**	**+0.1**
	0.8nm,0.1s					
WTTA			Sg	**Sb**	**07 23 21.3**	**+1.3**
WTTA	**Wattenberg**	**1.24 100**	*e*Pg	**Pb**	**07 23 04.3**	**+0.1**
WTTA			*e*Sg	**Sb**	**07 23 21.3**	**+1.3**
FELD	**Feldberg im Sc**	**1.30 287**	P	**Pn**	**07 23 03.0**	**-0.5**
FELD	**Feldberg im Sc**	**1.30 287**	P	**Pn**	**07 23 03.0**	**-0.5**
FELD			Pg	**Pb**	**07 23 05.6**	**+0.5**
FELD			Sg	**Sb**	**07 23 22.3**	**+0.9**
BFO	**Black Forest**	**1.31 310**	Pg	**Pb**	**07 23 06.0**	**+0.7**
BFO			S	**Sn**	**07 23 18.0**	**-2.2**
BFO			Sg	**Sb**	**07 23 22.6**	**+0.9**
BFO	**Black Forest**	**1.31 310**	Pg	**Pb**	**07 23 06.0**	**+0.7**
BFO			S	**Sn**	**07 23 17.9**	**-2.2**
BFO			*e*Sg	**Sb**	**07 23 22.6**	**+0.9**
KIZ	**Kirchzarten**	**1.37 290**	Sg	**Sb**	**07 23 24.8**	**+1.3**
KIZ	**Kirchzarten**	**1.37 290**	Sg	**Sb**	**07 23 24.8**	**+1.3**
BALST	**Balsthal**	**1.47 264**	Sg	**Sb**	**07 23 28.0**	**+1.8**
BALST	**Balsthal**	**1.47 264**	Sg	**Sb**	**07 23 28.0**	**+1.8**
OPP	**Oppenau**	**1.49 313**	S	**Sn**	**07 23 22.1**	**-2.5**
OPP	**Oppenau**	**1.49 313**	S	**Sn**	**07 23 22.1**	**-2.5**
SIND	**Sindeldorf**	**1.85 355**	S	**Sn**	**07 23 31.6**	**-1.9**
SIND	**Sindeldorf**	**1.85 355**	S	**Sn**	**07 23 31.6**	**-1.9**
GRC1	**Grafenberg Arr**	**1.87 36**	P	**Pn**	**07 23 09.8**	**-1.5**
GRC1	**Grafenberg Arr**	**1.87 36**	P	**Pn**	**07 23 09.8**	**-1.5**
ECH	**Echery**	**1.94 293**	*e*Sg	**Sb**	**07 23 43.1**	**+3.3**
CDF	**Champ du Feu**	**1.95 299**	*e*Pn	**Pn**	**07 23 12.0**	**-0.5**
CDF			*e*Sn	**Sn**	**07 23 35.1**	**-0.9**
	1.1nm,0.2s					
CDF	**Champ du Feu**	**1.95 299**	*e*Pn	**Pn**	**07 23 12.0**	**-0.5**
CDF			*e*Sn	**Sn**	**07 23 35.1**	**-0.9**
	0.6nm,0.2s					
HINF	**Hinteralfeld**	**2.04 280**	*e*Pn	**Pn**	**07 23 13.3**	**-0.4**
HINF			*e*Sn	**Sn**	**07 23 36.3**	**-2.0**
	4.9nm,0.3s					
HINF	**Hinteralfeld**	**2.04 280**	*e*Pn	**Pn**	**07 23 13.3**	**-0.4**
HINF			*e*Sn	**Sn**	**07 23 36.3**	**-2.0**
	2.5nm,0.3s					
GRF	**Grafenberg Arr**	**2.38 22**	*e*Sg	**Sb**	**07 23 56.3**	**+4.0**

NNC 25 07:23:35.1±0.5, 50°.07N×78°.71E, h0km, mb3.6, mpv3.3, 11C-3D, Error ellipse: s-maj=8.6km s-min=2.6km az=79.0, Suspected Mining explosion., Eastern Kazakhstan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KURK	**Kurchatov**	**0.65 355**		⇑P	Pg	07 23 47.8	+0.3
	50nm,0.3s						
KURK				⇑S	Sg	07 23 56.8	+0.9
	102nm,0.5s						
MK31	**Makanchi Array**	**4.05 143**		⇑Pn	Pn	07 24 38.8	+0.4
	0.3nm,0.2s,baz=278,slow=6.7,SNR=55						
MK31				⇓Pg	Pb	07 24 47.7	+0.4
	3.2nm,0.4s,baz=327,slow=14,SNR=21						
MK31				⇑Sn	Sn	07 25 28.1	+1.6
	6.4nm,0.7s,baz=258,slow=53,SNR=3.6						
MK31				⇑Lg	Lg	07 25 41.5	
	18nm,0.5s,baz=329,slow=27,SNR=13						
OTUK	**Ortayu**	**4.56 249**		⇑Pn	Pn	07 24 45.9	+0.5
	3.1nm,0.3s						
OTUK				⇓Lg	Lg	07 26 00.6	
	8.4nm,0.6s						
BVA0	**Borovoye Array**	**5.97 303**		Pg	Pb	07 25 21.6	+1.6
	1.0nm,0.4s,baz=119,slow=15,SNR=10						
BVA0				⇓Lg	Lg	07 26 48.6	
	3.6nm,0.6s,baz=118,slow=27						
PDGK	**Podgornoye**	**6.77 175**		⇑Lg	Lg	07 27 10.9	
	8.7nm,0.8s						
TKM2	**Tokmak 2**	**7.47 198**		⇑Lg	Lg	07 27 30.4	
	6.3nm,0.7s						
AAK	**Ala-Archa**	**7.99 203**		⇑Lg	Lg	07 27 48.8	
	5.9nm,0.7s						
MNAS	**Manas**	**8.71 212**		⇑Lg	Lg	07 28 09.3	
	3.8nm,0.8s						
KK31	**Karatay Array**	**8.96 222**		⇑Lg	Lg	07 28 22.1	
	1.4nm,0.5s,baz=47,slow=28,SNR=4.0						

NIED ***25*** *07:31:00, 37°.20N×143°.70E, h5km, Mw3.9 Best double couple: M₀7.00000×10¹⁴ NP1:φ₀=36.00000°, δ31.00000°, λ-89.00000°. NP2:φ₀=214.00000°, δ60.00000°, λ-91.00000°.*

IDC ***25*** *07:31:22.9±0.7, 37°.03N×144°.00E, h0km, mb3.7/13, mb1 3.9/17, mb1mx3.8/46, mbtmp3.8/17, ML3.9/3, MS3.1/6, Ms1 3.1/6, ms1mx2.6/44, Error ellipse: s-maj=19.6km s-min=16.1km az=128.0*

ISCJB ***25*** *07:31:26.5±0.5, 37°.15N±0°.05×143°.77E±0°.04, h33km, mb3.6/13, MS3.2/4, Error ellipse: s-maj=6.8km s-min=4.3km az=162.9*

JMA ***25*** *07:31:27.7±0.4, 37°.22N×143°.69E, h36km, M3.8*

ISC 25 07:31:28.2±0.7, 37°.11N±0°.06×143°.82E±0°.07, h35km, n35, σ1°44/40, mb3.7/13, MS3.3/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**2.36 277**		P	**Pn**	**07 32 04.3**	**-0.2**
JFK				*e*S	**Sn**	**07 32 31.1**	**-1.2**
ONAJ	**Iwakimizuishiy**	**2.41 271**		P	**Pn**	**07 32 04.8**	**-0.4**
ONAJ				*e*S	**Sn**	**07 32 31.5**	**-2.1**
JHO	**Hitachi**	**2.65 260**		*e*S	**Sn**	**07 32 38.6**	**-0.8**
JMK	**Ichinoseki**	**2.75 313**		P	**Pn**	**07 32 08.8**	**-1.1**
JMK				S	**Sn**	**07 32 39.3**	**-2.6**
JFT	**Otama**	**2.81 279**		P	**Pn**	**07 32 11.6**	**+1.0**
JFT				S	**Sn**	**07 32 43.6**	**+0.4**
JOM	**Ohasama**	**3.08 321**		P	**Pn**	**07 32 14.2**	**-0.2**
JOM				S	**Sn**	**07 32 47.1**	**-3.0**
JYK	**Kaneyama**	**3.27 305**		P	**Pn**	**07 32 17.5**	**+0.5**
JYK				*e*S	**Sn**	**07 32 52.4**	**-2.3**
JAG	**Ashikaga**	**3.57 260**		P	**Pn**	**07 32 21.5**	**+0.4**
JAG				S	**Sn**	**07 33 01.4**	**-0.7**
JANG	**Nango**	**3.72 332**		P	**Pn**	**07 32 21.9**	**-1.3**
JANG				S	Sn	07 33 01.0	-4.8
JRY	**Ryogami san**	**4.11 256**		P	**Pn**	**07 32 28.2**	**-0.3**
JRY				S	**Sn**	**07 33 12.9**	**-2.4**
MJAR	**Matsushiro Arr**	**4.54 265**		Pn	**Pn**	**07 32 35.8**	**+1.4**
	2.6nm,0.3s,baz=72,slow=9.3,SNR=9.4						
MJAR				Sn	**Sn**	**07 33 25.4**	**-0.5**
	1.9nm,0.3s,baz=70,slow=11,SNR=3.3						
MAT	**Matsushiro**	**4.54 265**		P	**Pn**	**07 32 35.8**	**+1.4**
MAT				*e*S	**Sn**	**07 33 24.2**	**-1.7**
JYN	**Shimob**	**4.55 251**		P	**Pn**	**07 32 35.7**	**+1.0**
JYN				*e*S	**Sn**	**07 33 25.8**	**-0.6**
JHJ	**Hachijo jima 2**	**5.17 221**		Pn	Pn	07 32 40.8	-2.4
	7.1nm,0.3s,baz=339,slow=23,SNR=4.7						
JHJ				Sn	**Sn**	**07 33 37.3**	**-4.3**
	9.6nm,0.3s,baz=88,slow=23,SNR=3.3						
ASAJ	**Asahikawa**	**7.06 353**		Pn	Pn	07 33 07.3	-1.7
	3.0nm,0.3s,baz=199,slow=12,SNR=15						
ASAJ				Sn	Sn	07 34 21.1	-6.9
	1.2nm,0.3s,baz=121,slow=5.9,SNR=2.5						
USRK	**Ussuriysk Ar.**	**11.43 312**		Pn	**Pn**	**07 34 10.4**	**+1.5**
	0.2nm,0.3s,baz=116,slow=13,SNR=3.3						
KSRS	**Korea Array**	**12.67 276**		LR	LR	07 38 46.5	
	comp=Z,28nm,20.8s,baz=90,slow=34						
KLR	**Kul'dur**	**14.95 328**		Pn	**P**	**07 35 01.4**	**-0.6**
	0.1nm,0.3s,baz=120,slow=9.4,SNR=9.2						
KLR				LR	LR	07 40 30.6	
	comp=Z,43nm,19.2s,baz=132,slow=36						
SEY	**Seymchan**	**26.38 9**		P	**P**	**07 37 00.1**	**-0.8**
	5.7nm,0.9s,baz=184,slow=13,SNR=8.9						
SONM	**Songino Array**	**29.34 303**		P	**P**	**07 37 29.6**	**+1.9**
	0.2nm,0.5s,baz=98,slow=10,SNR=2.5						
NRIK	**Noril'sk**	**44.01 335**		LR	LR	07 58 34.4	
	comp=Z,40nm,18.2s,baz=122,slow=37						
MKAR	**Makanchi Array**	**45.70 302**		P	**P**	**07 39 46.6**	**+1.0**
	0.7nm,0.7s,baz=91,slow=10,SNR=4.0						
MKAR				LR	LR	07 59 35.2	
	comp=Z,18nm,20.5s,baz=70,slow=37						
KURBB	**Kurchatov Arra**	**47.47 308**		P	**P**	**07 40 00.2**	**+0.8**
	1.1nm,0.8s,baz=81,slow=8.0,SNR=3.0						
ILAR	**Eielson Array**	**48.40 32**		P	**P**	**07 40 06.2**	**-0.2**
	0.8nm,0.8s,baz=257,slow=6.8,SNR=9.8						
INK	**Inuvik**	**53.44 27**		P	**P**	**07 40 44.1**	**-0.1**
	1.0nm,0.8s,baz=276,slow=5.2,SNR=3.6						
WRA	**Warramunga Arr**	**57.45 191**		P	**P**	**07 41 12.6**	**-1.0**
	1.0nm,0.7s,baz=11,slow=7.3,SNR=7.0						
ASAR	**Alice Springs**	**61.17 190**		P	**P**	**07 41 39.1**	**-0.2**
	0.4nm,0.8s,baz=14,slow=13,SNR=6.1						
YKA	**Yellowknife Ar**	**62.77 31**		P	**P**	**07 41 50.4**	**+0.8**
	0.1nm,0.6s,baz=301,slow=6.4,SNR=2.7						
KBZ	**Khabaz**	**72.30 312**		P	**P**	**07 42 50.9**	**+0.8**
	0.6nm,0.4s,baz=83,slow=3.2,SNR=3.8						
GNI	**Garni**	**73.19 308**		LR	LR	08 18 08.1	
	comp=Z,14nm,18.1s,baz=79,slow=38						
NVAR	**Mina Array Bea**	**73.39 54**		P	**P**	**07 42 57.4**	**+0.4**
	0.5nm,0.7s,baz=269,slow=8.7,SNR=3.8						
HFS	**Hagfors**	**74.80 337**		LR	LR	08 20 37.4	
	comp=Z,14nm,18.0s,baz=345,slow=39						
PDAR	**Pinedale Array**	**76.23 47**		P	**P**	**07 43 12.7**	**-0.6**
	0.2nm,0.5s,baz=253,slow=5.6,SNR=3.2						
TXAR	**Lajitas Array**	**88.54 54**		P	**P**	**07 44 17.5**	**-0.1**
	0.2nm,0.7s,baz=309,slow=2.6,SNR=3.6						
LPAZ	**La Paz**	**144.97 62**		PKP	PKPbc	07 51 03.5	+1.3
	0.9nm,0.9s,baz=350,slow=5.4,SNR=3.2						

ISCJB ***25*** *07:39:41.7±0.6, 37°.27N±0°.02×26°.80E±0°.03, h9km±5km, Error ellipse: s-maj=4.2km s-min=2.9km az=162.3*

CSEM ***25*** *07:39:41.9±0.2, 37°.28N×26°.81E, h12km, ML2.5, Error ellipse: s-maj=4.0km s-min=3.3km az=65.0*

ATH ***25*** *07:39:41.7, 37°.29N×26°.82E, h32km±1km, ML2.5/9, Error ellipse: s-maj=2.3km s-min=1.1km az=66.0*

THE ***25*** *07:39:42.3, 37°.27N×26°.83E, h7km±2km, ML2.6/5, Error ellipse: s-maj=2.1km s-min=0.7km az=69.0*

DDA ***25*** *07:39:43.5, 37°.44N×27°.10E, h7km, Md3.0*

ISC 25 07:39:41.8±1.0, 37°.29N±0°.02×26°.84E±0°.02, h19km±3km, n49, σ0°82/87, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SMG	**Samos**	**0.42 360**		P	**Pb**	**07 39 50.7**	**0.0**
SMG				S	**Sb**	**07 39 57.5**	**+0.7**
SMG	**Samos**	**0.42 360**		P	**Pg**	**07 39 50.4**	**-0.1**
SMG				S	**Sg**	**07 39 56.0**	**-0.4**
SMG	**Samos**	**0.42 360**		P	**Pg**	**07 39 50.4**	**-0.1**
SMG				S	**Sg**	**07 39 56.0**	**-0.4**
SMG				AML	AML	07 40 02.2	
	comp=E,2244μm,0.2s						
SMG				AML	AML	07 40 03.0	
	comp=N,2378μm,0.2s						
BODT	**Bodrum**	**0.44 121**		P	**Pg**	**07 39 50.6**	**-0.1**
BODT				S	**Sb**	**07 39 57.2**	**0.0**
BODT	**Bodrum**	**0.44 121**		P	**Pg**	**07 39 50.6**	**-0.1**
BODT				S	**Sb**	**07 39 57.2**	**0.0**
BDRM	**Kayabasi**	**0.53 114**		P	**Pg**	**07 39 52.2**	**-0.2**
BDRM				S	**Sb**	**07 40 00.4**	**+0.7**
BDRM	**Kayabasi**	**0.53 114**		*i* P	**Pg**	**07 39 52.2**	**-0.2**
BDRM				*i* S	**Sb**	**07 40 00.4**	**+0.7**
NISR	**Nisiros**	**0.71 161**		P	**Pg**	**07 39 56.2**	**+0.4**
NISR				S	**Sn**	**07 40 06.9**	**-0.3**
NISR	**Nisiros**	**0.71 161**		P	**Pg**	**07 39 56.2**	**+0.4**
NISR				S	**Sn**	**07 40 06.9**	**-0.3**
NISR	**Nisiros**	**0.71 161**		P	**Pn**	**07 39 57.9**	**+1.1**
NISR				S	**Sn**	**07 40 08.3**	**+1.0**
NISR				AML	AML	07 40 09.6	
	comp=E,1551μm,0.3s						
NISR				AML	AML	07 40 11.0	
	comp=N,794μm,0.2s						
NIS1	**Nisyros Isl.**	**0.73 158**		P	**Pn**	**07 39 58.7**	**+1.6**
DGB	**˜zmir**	**0.77 2**		*i* P	**Pb**	**07 39 56.4**	**-0.1**
DGB				*i* S	**Sn**	**07 40 08.2**	**-0.4**
AYDN	**Tasoluk**	**0.91 65**		P	**Pb**	**07 39 59.0**	**+0.1**
AYDN				S	**Sn**	**07 40 12.0**	**-0.2**
AYDN	**Tasoluk**	**0.91 65**		*i* P	**Pb**	**07 39 59.0**	**+0.1**
AYDN				*i* S	**Sn**	**07 40 12.0**	**-0.2**
ZEY	**˜zmir**	**0.99 344**		*i* P	**Pn**	**07 40 00.5**	**-0.1**
ZEY				*i* S	**Sn**	**07 40 15.4**	**+1.3**
APE	**Apeiranthos**	**1.07 259**		P	**Pn**	**07 40 01.9**	**+0.1**
APE				S	**Sg**	**07 40 16.9**	**+0.3**
APE	**Apeiranthos**	**1.07 259**		P	**Pn**	**07 40 01.9**	**+0.1**
APE				S	**Sg**	**07 40 16.6**	**0.0**
APE	**Apeiranthos**	**1.07 259**		P	**Pb**	**07 40 00.9**	**-0.8**
APE				S	**Sg**	**07 40 16.6**	**0.0**
APE				AML	AML	07 40 18.2	
	comp=N,530μm,0.3s						
APE				AML	AML	07 40 18.5	
	comp=E,330μm,0.3s						
URLA	**Izmir**	**1.09 350**		P	**Pn**	**07 40 02.1**	**0.0**
URLA				S	**Sg**	**07 40 17.5**	**+0.3**
URLA	**Izmir**	**1.09 350**		*i* P	**Pn**	**07 40 02.1**	**0.0**
URLA				*i* S	**Sg**	**07 40 17.6**	**+0.3**
YER	**Yerkesik**	**1.16 97**		P	**Pg**	**07 40 04.7**	**+0.4**
YER				S	**Sg**	**07 40 20.2**	**+0.7**
YER	**Yerkesik**	**1.16 97**		P	**Pg**	**07 40 04.7**	**+0.4**
YER				S	**Sg**	**07 40 20.2**	**+0.7**
CHOS	**Chios island**	**1.26 331**		P	**Pb**	**07 40 05.0**	**0.0**
CHOS				S	**Sg**	**07 40 23.6**	**+0.9**
CHOS	**Chios island**	**1.26 331**		P	**Pb**	**07 40 05.0**	**0.0**
CHOS				S	**Sg**	**07 40 22.1**	**-0.6**
CHOS	**Chios island**	**1.26 331**		P	**Pb**	**07 40 05.3**	**+0.3**
CHOS				S	**Sg**	**07 40 22.1**	**-0.6**
CHOS				AML	AML	07 40 26.1	
	comp=N,203μm,0.3s						
CHOS				AML	AML	07 40 30.2	
	comp=E,311μm,0.5s						
CMBO	**Columbo, Santo**	**1.41 235**		P	**Pg**	**07 40 08.9**	**-0.1**
CMBO				S	**Sb**	**07 40 25.0**	**0.0**
CMBO	**Columbo, Santo**	**1.41 235**		P	**Pg**	**07 40 08.9**	**-0.1**
CMBO				S	**Sb**	**07 40 25.0**	**0.0**
CMBO				AML	AML	07 40 30.9	
	comp=N,867μm,0.3s						
CMBO				AML	AML	07 40 35.1	
	comp=E,784μm,0.6s						
SANT	**Santorini**	**1.44 231**		P	**Pn**	**07 40 07.1**	**+0.3**
SANT	**Santorini**	**1.44 231**		P	**Pn**	**07 40 07.1**	**+0.3**
TURN	**Turunc**	**1.47 106**		*i* P	**Pn**	**07 40 04.4**	**-2.8**
TURN				*i* S	**Sn**	**07 40 22.2**	**-3.7**
ARG	**Arkhangelos**	**1.49 136**		P	**Pb**	**07 40 09.0**	**+0.2**
ARG				S	**Sn**	**07 40 26.4**	**0.0**
KARP	**Karpathos**	**1.75 171**		P	**Pn**	**07 40 11.3**	**+0.1**
KARP				S	**Sn**	**07 40 33.9**	**+0.8**
KARP	**Karpathos**	**1.75 171**		P	**Pn**	**07 40 11.3**	**+0.1**
KARP				S	**Sn**	**07 40 33.9**	**+0.8**
KARP	**Karpathos**	**1.75 171**		P	**Pn**	**07 40 10.9**	**-0.3**
KARP				S	**Sn**	**07 40 31.9**	**-1.2**
KARP				AML	AML	07 40 43.5	
	comp=E,96μm,0.4s						
KARP				AML	AML	07 40 47.1	
	comp=N,109μm,0.6s						
AKHS	**Akhisar**	**1.77 25**		P	**Pg**	**07 40 14.8**	**-1.0**
AKHS	**Akhisar**	**1.77 25**		*i* P	**Pg**	**07 40 14.8**	**-1.0**
AKHS				*i* S	**Sg**	**07 40 40.3**	**+1.6**
PRK	**Paraskevi**	**2.01 347**		P	**Pb**	**07 40 17.3**	**-0.3**
PRK				S	**Sn**	**07 40 40.6**	**+1.4**
PRK	**Paraskevi**	**2.01 347**		P	**Pb**	**07 40 17.3**	**-0.3**
PRK				S	**Sn**	**07 40 40.6**	**+1.4**
PRK				AML	AML	07 40 54.3	
	comp=N,152μm,0.5s						
PRK				AML	AML	07 41 05.0	
	comp=E,128μm,0.6s						
SIGR	**SIGRI**	**2.07 338**		P	**Pn**	**07 40 16.1**	**+0.6**
SIGR				S	**Sn**	**07 40 41.2**	**+0.3**
SIGR	**SIGRI**	**2.07 338**		P	**Pn**	**07 40 16.1**	**+0.6**
SIGR				S	**Sn**	**07 40 41.1**	**+0.3**
SIGR				AML	AML	07 40 53.6	
	comp=E,106μm,0.8s						
SIGR				AML	AML	07 40 56.7	
	comp=N,99μm,0.7s						
ZKR	**Zakros**	**2.23 193**		P	**Pn**	**07 40 18.3**	**+0.6**
ZKR				S	**Sb**	**07 40 47.0**	**-1.6**
ZKR	**Zakros**	**2.23 193**		P	**Pn**	**07 40 18.3**	**+0.6**
ZKR				S	**Sb**	**07 40 47.0**	**-1.6**
ZKR				AML	AML	07 40 55.1	
	comp=E,148μm,0.9s						
ZKR				AML	AML	07 41 02.4	
	comp=N,108μm,0.4s						
LAST	**Lasithi**	**2.39 208**		P	**Pn**	**07 40 20.4**	**+0.4**
LAST	**Lasithi**	**2.39 208**		P	**Pn**	**07 40 20.4**	**+0.4**
VLY	**Voula,Athens**	**2.49 284**		P	**Pn**	**07 40 20.3**	**-0.9**
VLY	**Voula,Athens**	**2.49 284**		P	**Pn**	**07 40 20.3**	**-0.9**
IDI	**Anoyia**	**2.54 219**		P	**Pn**	**07 40 22.0**	**-0.1**
IDI	**Anoyia**	**2.54 219**		P	**Pn**	**07 40 22.0**	**-0.1**
LIA	**Limnos Island**	**2.91 334**		P	**Pn**	**07 40 27.8**	**+0.7**

JMA 25 08:07:41.6, 37°.20N×141°.08E, h14km±1km, M2.9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.23 315**		P	Pg	08 07 46.7	0.0
JFK				S	Sg	08 07 50.4	+0.2
ONAJ	**Iwakimizuishiy**	**0.25 247**		P	Pg	08 07 46.7	-0.2
ONAJ				S	Sg	08 07 50.3	-0.2
JFT	**Otama**	**0.67 298**		P	Pg	08 07 54.8	+0.1
JFT				S	Sg	08 08 03.9	+0.3
JMM	**Marumori**	**0.70 341**		P	Pg	08 07 54.7	-0.6
JMM				S	Sg	08 08 04.4	-0.2
JHO	**Hitachi**	**0.72 215**		P	Pg	08 07 54.7	-0.8
J

NIED ***25*** *08:27:00,38.°10N×141.°60E,h62km,Mw4.0 Best double couple: Mϑ8.85000×1014 NP1:ϕϑ=30.00000°,δ45.00000°, λ102.00000°. NP2:ϕϑ=193.00000°,δ46.00000°,λ78.00000°.*
ISCJB ***25*** *08:27:51.9±0.6,38.°13N±0.°04×141.°63E±0.°08,h68km±5km, mb3.8/14,Error ellipse: s-maj=11.0km s-min=5.2km az=22.7*
JMA ***25*** *08:27:52.8,38.°14N×141.°60E,h60km±1km,M4.1*
JMA Felt II J1.
IDC ***25*** *08:27:54.1±2.0,38.°11N×141.°54E,h73km±19km,mb3.6/14, mb1 3.9/19,mb1mx3.7/44,mbtmp4.0/19,MS2.7/7, Ms1 2.7/7,ms1mx2.5/56,Error ellipse: s-maj=18.1km s-min=13.2km az=104.0*

ISC 25 08:27:52.0±1.2,38.°10N±0.°05×141.°74E±0.°08,h57km±10km, n45,σ1ϑ14/45,mb3.9/14,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.47**	**319**	P	**Pn**	**08 28 03.6**	**+0.2**
JIO				*e*S	**Sn**	**08 28 11.2**	**-0.5**
JMM	**Marumori**	**0.78**	**253**	P	**Pn**	**08 28 06.9**	**-0.2**
JMM				S	**Sn**	**08 28 17.2**	**-1.0**
JOU	**Okura**	**0.89**	**288**	P	**Pn**	**08 28 08.1**	**-0.4**
JOU				*e*S	**Sn**	**08 28 19.5**	**-1.1**
JMK	**Ichinoseki**	**0.95**	**335**	P	**Pn**	**08 28 09.3**	**+0.1**
JMK				*e*S	**Sn**	**08 28 21.3**	**-0.6**
JFK	**Kawauchi**	**1.00**	**224**	P	**Pn**	**08 28 10.4**	**+0.4**
JFK				*e*S	**Sn**	**08 28 23.4**	**+0.2**
JFT	**Otama**	**1.25**	**243**	P	**Pn**	**08 28 13.9**	**+0.6**
JFT				*e*S	**Sn**	**08 28 28.7**	**-0.5**
JYS	**Shiratake**	**1.33**	**276**	P	**Pn**	**08 28 14.0**	**-0.3**
JYS				*e*S	**Sn**	**08 28 30.3**	**-0.7**
JYK	**Kaneyama**	**1.36**	**308**	P	**Pn**	**08 28 14.3**	**-0.4**
JOM	**Ohasama**	**1.42**	**346**	P	**Pn**	**08 28 15.9**	**+0.4**
JOM				*e*S	**Sn**	**08 28 32.9**	**-0.3**
JRG	**Rokugo**	**1.56**	**327**	P	**Pn**	**08 28 17.6**	**+0.2**
JYA	**Atsumi**	**1.67**	**288**	P	**Pn**	**08 28 18.5**	**-0.4**
JFY	**Yanaizu**	**1.75**	**248**	P	**Pn**	**08 28 20.6**	**+0.5**
MJAR	**Matsushiro Arr**	**3.21**	**242**	P	**Pn**	**08 28 41.6**	**+1.5**
	6.7nm,0.3s,baz=56,slow=11,SNR=20						
MJAR				S	Sn	08 29 24.8	+7.7
	5.3nm,0.3s,baz=102,slow=26,SNR=4.8						
MJAR				LR	LR	08 30 14.9	
	comp=Z,123nm,20.3s,baz=75,slow=46						
MAT	**Matsushiro**	**3.22**	**242**	P	**Pn**	**08 28 41.8**	**+1.7**
MAT				S	**Sn**	**08 29 16.7**	**-0.5**
JHJ	**Hachijo jima 2**	**5.21**	**198**	P	**Pn**	**08 29 08.2**	**+0.8**
	11nm,0.3s,baz=53,slow=20,SNR=4.5						
JHJ				S	**Sn**	**08 30 01.8**	**-4.5**
	13nm,0.3s,baz=173,slow=23,SNR=2.4						
ASAJ	**Asahikawa**	**6.05**	**6**	P	**Pn**	**08 29 19.4**	**+0.6**
	2.0nm,0.3s,baz=138,slow=5.7,SNR=5.6						
ASAJ				S	**Sn**	**08 30 23.4**	**-3.3**
	1.0nm,0.3s,baz=303,slow=29,SNR=2.1						
USRK	**Ussuriysk Ar.**	**9.55**	**313**	P	**Pn**	**08 30 06.7**	**0.0**
	1.1nm,0.3s,baz=124,slow=14,SNR=14						
JNU	**Nakatsue**	**10.14**	**244**	LR	LR	08 34 55.7	
	comp=Z,30nm,20.5s,baz=116,slow=42						
KSRS	**Korea Array**	**10.96**	**271**	P	**Pn**	**08 30 26.9**	**+1.0**
	0.4nm,0.3s,baz=80,slow=14,SNR=4.8						
KSRS				LR	LR	08 34 22.3	
	comp=Z,34nm,18.4s,baz=50,slow=36						
JCJ	**Chichijima**	**10.98**	**178**	LR	LR	08 34 10.1	
	comp=Z,69nm,20.8s,baz=220,slow=34						
KLR	**Kul'dur**	**13.26**	**330**	LR	LR	08 35 29.8	
	comp=Z,41nm,19.9s,baz=128,slow=35						
PETK	**Petropavlovsk-**	**18.64**	**31**	LR	LR	08 38 38.9	
	comp=Z,21nm,21.9s,baz=165,slow=34						
GUMO	**Guam**	**24.57**	**173**	LR	LR	08 48 26.2	
	comp=Z,11nm,18.6s,baz=41,slow=50						
SEY	**Seymchan**	**25.70**	**11**	P	**P**	**08 33 17.5**	**+1.0**
	2.3nm,0.8s,baz=221,slow=20,SNR=4.6						
SONM	**Songino Array**	**27.42**	**302**	P	**P**	**08 33 31.8**	**-0.7**
	0.3nm,0.5s,baz=101,slow=7.5,SNR=2.6						
H11N2	**WAKE ISLAND Hy**	**28.49**	**123**	T	T	09 03 58.5	
	baz=316,slow=76,SNR=346						
H11N1	**WAKE ISLAND Hy**	**28.50**	**123**	T	T	09 03 59.3	
	baz=316,slow=76,SNR=624						
H11N3	**WAKE ISLAND Hy**	**28.50**	**123**	T	T	09 03 59.8	
	baz=316,slow=76,SNR=325						
H11S1	**WAKE ISLAND Hy**	**29.23**	**125**	T	T	09 04 54.1	
	baz=318,slow=76,SNR=179						
H11S3	**WAKE ISLAND Hy**	**29.24**	**125**	T	T	09 04 54.2	
	baz=318,slow=76,SNR=216						
H11S2	**WAKE ISLAND Hy**	**29.25**	**125**	T	T	09 04 54.6	
	baz=318,slow=76,SNR=141						
MKAR	**Makanchi Array**	**43.78**	**301**	P	**P**	**08 35 51.4**	**-0.6**
	1.0nm,0.6s,baz=85,slow=9.8,SNR=6.1						
KURBB	**Kurchatov Arra**	**45.56**	**307**	P	**P**	**08 36 05.3**	**-0.7**
	2.0nm,0.5s,baz=80,slow=7.8,SNR=12						
ILAR	**Eielson Array**	**48.46**	**33**	P	**P**	**08 36 29.0**	**+0.6**
	0.9nm,0.8s,baz=263,slow=6.6,SNR=12						
INK	**Inuvik**	**53.33**	**27**	P	**P**	**08 37 05.8**	**+0.9**
	2.0nm,0.9s,baz=287,slow=6.6,SNR=4.9						
WRA	**Warramunga Arr**	**58.15**	**188**	P	**P**	**08 37 39.6**	**-0.4**
	2.4nm,0.6s,baz=5.6,slow=7.1,SNR=64						
ASAR	**Alice Springs**	**61.87**	**188**	P	**P**	**08 38 05.7**	**+0.2**
	0.8nm,0.6s,baz=1.1,slow=4.3,SNR=17						
YKA	**Yellowknife Ar**	**62.76**	**30**	P	**P**	**08 38 11.2**	**+0.2**
	0.5nm,0.7s,baz=304,slow=6.7,SNR=9.0						
NB2	**NORSAR Subarra**	**73.31**	**337**	P	**P**	**08 39 16.7**	**-0.5**
	comp=Z,1.0nm,0.4s,baz=31,slow=6.5						
NOA	**NORSAR Array B**	**73.31**	**337**	P	**P**	**08 39 16.4**	**-0.8**
	comp=Z,0.6nm,0.4s,baz=52,slow=6.9,SNR=4.0						
AKASG	**Malin Array Be**	**73.62**	**322**	P	**P**	**08 39 17.9**	**-1.2**
	comp=Z,0.7nm,0.4s,baz=50,slow=5.1,SNR=3.6						
NVAR	**Mina Array Bea**	**74.15**	**54**	P	**P**	**08 39 24.4**	**+1.6**
	comp=Z,1.0nm,0.8s,baz=289,slow=5.8,SNR=7.2						
PDAR	**Pinedale Array**	**76.74**	**46**	P	**P**	**08 39 38.5**	**+0.9**
	comp=Z,1.1nm,0.7s,baz=262,slow=2.3,SNR=11						
TXAR	**Lajitas Array**	**89.27**	**53**	P	**P**	**08 40 43.2**	**+0.9**
	comp=Z,0.7nm,0.6s,baz=285,slow=3.3,SNR=13						
LPAZ	**La Paz**	**145.93**	**59**	PKPbc	**PKPbc**	**08 47 26.6**	**+0.2**
	comp=Z,1.0nm,0.5s,baz=309,slow=1.4,SNR=12						

GUC ***25*** *08:30:50.8±0.5,33.°00S×69.°55W,h16km±15km,ML1.9*
SJA ***25*** *08:30:51.0±0.4,32.°86S×69.°61W,h3km±6km,MD2.9*

ISC 25 08:30:49.4±2.0,33.°0S±0.°1×69.°5W±0.°1,h4km±16km,n10, σ0ϑ23/15,1D,Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AUSP	**Uspallata**	**0.78**	**5**	*e*P	**Pb**	**08 31 05.4**	**-0.3**
CLCH	**Cerro Calan**	**0.98**	**246**	*e*P	**Pb**	**08 31 08.7**	**-0.2**
CLCH				*i* S	**Sb**	**08 31 22.4**	**+0.1**
CLCH				IAML		08 31 23.4	
	comp=N,54nm,0.4s						
PEL	**Peldehue**	**1.03**	**262**	||*i*P	**Pg**	**08 31 09.3**	**0.0**
PEL				*i* S	**Sb**	**08 31 23.6**	**-0.2**
PEL				IAML		08 31 23.8	
	comp=N,93nm,0.1s						
ANTU	**Antumapu**	**1.13**	**240**	*e*S	**Sb**	**08 31 26.3**	**-0.2**
ANTU				IAML		08 31 27.0	
	comp=E,105nm,0.3s						
RTLS	**Leoncito**	**1.21**	**7**	*e*P	**Pn**	**08 31 13.3**	**0.0**
RCDM	**Rinconada Maip**	**1.22**	**246**	*e*P	**Pg**	**08 31 13.0**	**+0.1**
RCDM				*i* S	**Sb**	**08 31 29.6**	**+0.4**
ROCH	**El Roble**	**1.30**	**271**	*e*P	**Pn**	**08 31 14.5**	**0.0**
ROCH				*i* S	**Sn**	**08 31 32.4**	**0.0**
ROCH				IAML		08 31 33.1	
	comp=N,30nm,0.2s						
ROC1	**El Roble**	**1.30**	**271**	*e*P	**Pn**	**08 31 14.6**	**0.0**
ROC1				*e*S	**Sb**	**08 31 32.0**	**+0.3**
RTLL	**Cerro Villicun**	**1.87**	**27**	*e*P	**Pg**	**08 31 25.2**	**0.0**
AMOG	**MOGNA**	**2.22**	**22**	*e*P	**Pb**	**08 31 30.3**	**+0.2**

CSEM ***25*** *08:32:00.6,40.°65N×35.°21E,h7km,ML2.9*

DDA 25 08:32:00.6,40.°65N×35.°21E,h7km,Ml2.9,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
COAL	**Corum-Alaca**	**0.43**	**204**	P	Pg	08 32 08.4	-0.5
COAL				S	Sb	08 32 16.0	-1.3
COAL	**Corum-Alaca**	**0.43**	**204**	*i* P	Pg	08 32 08.4	-0.5
COAL				*i* S	Sb	08 32 16.0	-1.3
HAVZ	**Havza**	**0.57**	**42**	P	Pg	08 32 11.9	+0.2
HAVZ				S	Sb	08 32 21.0	-0.4
HAVZ	**Havza**	**0.57**	**42**	*i* P	Pg	08 32 11.9	+0.2
HAVZ				*i* S	Sb	08 32 21.0	-0.4
BOYT	**Boyabat**	**0.81**	**343**	P	Pg	08 32 15.5	-0.6
BOYT				S	Sg	08 32 27.3	+0.7
BOYT	**Boyabat**	**0.81**	**343**	*i* P	Pg	08 32 15.5	-0.6
BOYT				*i* S	Sg	08 32 27.3	+0.6
ILGA	**Ilgaz**	**1.21**	**290**	P	Pg	08 32 23.4	-0.3
ILGA				S	Sn	08 32 41.2	+0.4
ILGA	**Ilgaz**	**1.21**	**290**	*i* P	Pg	08 32 23.4	-0.3
ILGA				*i* S	Sn	08 32 41.1	+0.3
CDAG	**Cicekdag**	**1.21**	**213**	P	Pg	08 32 23.1	-0.7
CDAG				S	Sn	08 32 41.5	+0.8
CDAG	**Cicekdag**	**1.21**	**213**	*i* P	Pg	08 32 23.1	-0.7
CDAG				*i* S	Sn	08 32 41.5	+0.8

TEH ***25*** *08:32:11.6,39.°63N×44.°51E,h19km,ML2.9*

ISC 25 08:32:09.5±3.2,39.°7N±0.°2×44.°53E±0.°06,h7km,n4, σ0ϑ38/7,Iran-Armenia-Azerbaijan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CLDR	**Caldiran**	**0.71**	**222**	*e*PG	**Pb**	**08 32 24.0**	**-0.3**
CLDR				*e*SG	**Sg**	**08 32 32.6**	**+0.2**
IMRD	**Marand**	**1.32**	**136**	*e*Pg	**Pg**	**08 32 35.2**	**+0.3**
IMRD				*e*Sg	**Sn**	**08 32 52.8**	**+0.3**
IMRD				*e*AMB	AMB	08 32 58.4	
	comp=Z,3μm,0.1s						
ISHB	**Shabestar**	**1.63**	**148**	*e*Pn	**Pb**	**08 32 39.5**	**-0.5**
ISHB				*e*Sg	**Sg**	**08 33 01.6**	**-0.2**
ISHB				*e*AMB	AMB	08 33 06.5	
	comp=Z,1μm,0.2s						
ITBZ	**Tabriz**	**1.91**	**138**	*e*Pn	**Pn**	**08 32 42.7**	**0.0**
ITBZ				*e*AMB	AMB	08 33 32.3	
	comp=Z,774nm,0.2s						

ISCJB ***25*** *08:48:48.8±0.7,32.°21N±0.°04×115.°31W±0.°06,h13km±7km, Error ellipse: s-maj=9.2km s-min=5.0km az=148.3*
ECX ***25*** *08:48:50.1±0.5,32.°22N×115.°32W,h5km,MD2.8,ML3.0*
MEX ***25*** *08:48:50.8±0.5,32.°28N×115.°20W,h15km±48km,MD3.6*

ISC 25 08:48:48.3±1.0,32.°24N±0.°04×115.°27W±0.°06,h24km±9km, n16,σ0ϑ35/23,5C-6D,California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MBIG	**Mexicali**	**0.18**	**18**	*e*P	**Pb**	**08 48 53.7**	**+0.2**
MBIG				*i* S	**Sb**	**08 48 56.2**	**-0.9**
MBIG	**Mexicali**	**0.18**	**18**	||*e*P	**Pb**	**08 48 54.0**	**+0.5**
CPBX	**Cerro Prieto**	**0.18**	**350**	||*e*P	**Pb**	**08 48 53.7**	**+0.1**
CPBX				*e*S	**Sb**	**08 48 57.3**	**+0.1**
CPBX				AML	AML	08 48 58.4	
	comp=E,14μm,0.3s						
CPBX				*e*		08 48 58.4	
EMSC	**East Mesa**	**0.56**	**25**	||*i*P	**Pn**	**08 49 00.8**	**+0.1**
SGL	**Mount Signal**	**0.57**	**317**	||*i*P	**Pb**	**08 49 00.1**	**+0.5**
COA	**Coachella**	**0.64**	**11**	||*i*P	**Pn**	**08 49 01.9**	**0.0**
YUH	**Yuha Desert**	**0.69**	**307**	||*i*P	**Pb**	**08 49 01.9**	**+0.3**
COK	**Cook Ranch**	**0.73**	**328**	||*i*P	**Pn**	**08 49 03.2**	**+0.1**
RMX	**La Rumorosa**	**0.78**	**298**	*e*P	**Pb**	**08 49 03.0**	**-0.2**
RMX				*e*S	**Sb**	**08 49 13.6**	**+0.1**
ECBX	**El Chinero**	**0.78**	**166**	||*e*P	**Pb**	**08 49 03.1**	**-0.1**
ECBX				*e*S	**Sb**	**08 49 13.6**	**+0.2**
ECBX				AML	AML	08 49 18.2	
	comp=E,360nm,0.4s						
CBX	**Cerro Bola**	**1.19**	**274**	*i* P	**Pb**	**08 49 10.3**	**+0.1**
CBX				*e*S	**Sn**	**08 49 24.8**	**-0.2**
CBX	**Cerro Bola**	**1.19**	**274**	||*e*P	**Pb**	**08 49 10.4**	**+0.2**
CBX				AML	AML	08 49 27.9	
	comp=N,324nm,0.2s						
SPIG	**San Pedro Mart**	**1.20**	**188**	*e*P	**Pn**	**08 49 10.2**	**+0.3**
SPIG				*i* S	**Sn**	**08 49 25.6**	**+0.1**
SPIG	**San Pedro Mart**	**1.20**	**188**	||*e*P	**Pb**	**08 49 10.4**	**0.0**
SPX	**San Pedro Mart**	**1.20**	**188**	||*e*P	**Pb**	**08 49 10.4**	**-0.1**
TJIG	**Tijuana**	**1.21**	**280**	*i* P	**Pb**	**08 49 10.5**	**0.0**
TJIG				*i* S	**Sn**	**08 49 24.7**	**-0.7**

IDC ***25*** *09:05:28.1±2.3,12.°33N×144.°31E,h58km±23km,mb3.2/7, mb1 3.4/7,mb1mx3.2/35,mbtmp3.5/7,MS3.8/1,Ms1 3.8/1, ms1mx2.5/20,Error ellipse: s-maj=40.5km s-min=17.0km az=100.0*

ISC 25 09:05:24.9±1.0,12.°3N±0.°1×144.°3E±0.°3,h30km,n10, σ0ϑ66/10,mb3.6/7,South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**1.39**	**25**	P	**Pb**	**09 05 50.2**	**-0.1**
	82nm,0.3s,baz=195,slow=8.1,SNR=48						
GUMO				S	**Sb**	**09 06 08.2**	**+0.6**
	61nm,0.3s,baz=169,slow=23,SNR=5.8						
JCJ	**Chichijima**	**14.82**	**353**	LR	LR	09 12 59.9	
	comp=Z,378nm,19.5s,slow=30						
WRA	**Warramunga Arr**	**33.52**	**197**	P	**P**	**09 12 02.8**	**+0.7**
	0.4nm,0.9s,baz=24,slow=9.2,SNR=2.9						
ASAR	**Alice Springs**	**37.18**	**196**	P	**P**	**09 12 33.8**	**+0.2**
	0.4nm,0.7s,baz=24,slow=9.2,SNR=4.8						
MKAR	**Makanchi Array**	**61.99**	**317**	P	**P**	**09 15 42.7**	**+0.3**
	0.3nm,0.5s,baz=97,slow=6.3,SNR=5.2						
KURBB	**Kurchatov Arra**	**65.20**	**320**	P	**P**	**09 16 03.7**	**+0.3**
	0.3nm,0.4s,baz=104,slow=6.1,SNR=3.7						
ILAR	**Eielson Array**	**69.96**	**25**	P	**P**	**09 16 32.4**	**-0.8**
	0.2nm,0.4s,baz=246,slow=5.9,SNR=4.8						
BVAR	**Borovoye Array**	**70.55**	**322**	P	**P**	**09 16 37.1**	**0.0**
	0.6nm,0.4s,baz=94,slow=7.1,SNR=4.2						
YKA	**Yellowknife Ar**	**84.25**	**27**	P	**P**	**09 17 53.9**	**+0.4**
	0.1nm,0.3s,baz=285,slow=5.2,SNR=4.7						
TORD	**Torodi Ar. Bea**	**135.07**	**303**	PKP	**PKPdf**	**09 24 41.3**	**-1.1**
	0.5nm,0.9s,baz=48,slow=2.1,SNR=3.0						

ISK ***25*** *09:07:38.8,37.°07N×28.°59E,h16km,MD2.6*
CSEM ***25*** *09:07:39.6±0.3,37.°06N×28.°60E,h10km,ML2.2,Error ellipse: s-maj=9.0km s-min=4.8km az=40.0*
ISCJB ***25*** *09:07:41.7±0.7,37.°17N±0.°05×28.°53E±0.°07,h14km,Error ellipse: s-maj=8.6km s-min=5.5km az=145.9*
DDA ***25*** *09:07:41.9,37.°08N×28.°35E,h7km,Ml2.2*

ISC 25 09:07:39.5±1.0,37.°17N±0.°05×28.°64E±0.°04,h14km,n12, σ1ϑ51/19,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.28**	**263**	*e*PG	**Pg**	**09 07 44.5**	**-1.0**
YER				*e*SG	**Sg**	**09 07 49.1**	**-0.5**
YER	**Yerkesik**	**0.28**	**263**	*e*Pg	**Pg**	**09 07 44.5**	**-1.0**
YER				*e*Sg	**Sg**	**09 07 49.1**	**-0.5**
TURN	**Turunc**	**0.30**	**185**	*i* P	**Pb**	**09 07 47.5**	**+0.9**
TURN				*i* S	**Sb**	**09 07 53.6**	**+2.2**
DNZL	**Cakiroluk**	**0.61**	**32**	P	**Pn**	**09 07 53.8**	**-0.2**
DNZL	**Cakiroluk**	**0.61**	**32**	*i* P	**Pn**	**09 07 53.8**	**-0.2**
FETY	**Fethiye**	**0.64**	**146**	*e*PG	**Pb**	**09 07 50.7**	**-1.8**
FETY				*e*SG	**Sb**	**09 07 59.7**	**-1.7**
FETY	**Fethiye**	**0.64**	**146**	*e*Pg	**Pb**	**09 07 50.7**	**-1.8**
FETY				*e*Sg	**Sb**	**09 07 59.7**	**-1.7**
AYDN	**Tasoluk**	**0.78**	**309**	P	**Pn**	**09 07 56.3**	**+0.2**
AYDN				S	**Sb**	**09 08 07.2**	**+1.9**
AYDN	**Tasoluk**	**0.78**	**309**	*i* P	**Pn**	**09 07 56.3**	**+0.2**
AYDN				*i* S	**Sb**	**09 08 07.2**	**+1.9**
AYDB	**Zeytinkoy-Aydi**	**0.98**	**323**	*e*PG	**Pn**	**09 07 59.3**	**+0.4**
AYDB	**Zeytinkoy-Aydi**	**0.98**	**323**	*e*Pg	**Pn**	**09 07 59.3**	**+0.4**
AKAS	**Kas**	**1.22**	**140**	*i* P	**Pg**	**09 08 05.9**	**+2.9**
AKAS				*i* S	Sn	09 08 26.8	+8.3

IDC ***25*** *09:18:27.4±4.3,7.°91S×128.°67E,h155km±45km,mb3.5/6, mb1 3.7/9,mb1mx3.4/47,mbtmp4.1/9,Error ellipse: s-maj=69.1km s-min=18.7km az=89.0*

ISC 25 09:18:26.6±0.9,7.°985S±0.°07×128.°8E±0.°2,h150km,n9, σ1ϑ58/12,mb3.7/6,Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SIJI	**Sorong**	**7.49**	**20**	P	**Pn**	**09 20 13.7**	**+0.3**
	16nm,0.3s,baz=187,slow=6.0,SNR=1.9						
SIJI				S	**Sn**	**09 21 37.6**	**+0.4**
	5.1nm,0.3s,baz=183,slow=16,SNR=2.0						
WRA	**Warramunga Arr**	**13.06**	**156**	P	**Pn**	**09 21 27.4**	**+0.7**
	0.9nm,0.3s,baz=329,slow=13,SNR=35						
WRA				S	**Sn**	**09 23 49.5**	**-1.7**
	3.3nm,0.3s,baz=331,slow=21,SNR=10						
ASAR	**Alice Springs**	**16.35**	**163**	P	**P**	**09 22 10.9**	**+3.0**
	0.4nm,0.3s,baz=331,slow=9.4,SNR=29						
ASAR				S	**S**	**09 25 08.2**	**-1.4**
	0.7nm,0.3s,baz=338,slow=17,SNR=7.0						
MJAR	**Matsushiro Arr**	**45.17**	**11**	P	**P**	**09 26 26.2**	**-2.3**
	1.0nm,0.6s,baz=184,slow=9.4,SNR=5.2						
KSRS	**Korea Array**	**45.21**	**359**	P	**P**	**09 26 29.3**	**+0.7**
	2.0nm,0.4s,baz=176,slow=9.3,SNR=13						
USRK	**Ussuriysk Ar.**	**52.02**	**3**	P	**P**	**09 27 21.3**	**+0.6**
	2.3nm,0.6s,baz=181,slow=6.4,SNR=6.1						
SONM	**Songino Array**	**59.00**	**343**	P	**P**	**09 28 10.4**	**-0.2**
	0.6nm,0.7s,baz=163,slow=7.8,SNR=3.7						
MKAR	**Makanchi Array**	**68.39**	**328**	P	**P**	**09 29 11.2**	**-0.8**
	0.5nm,0.5s,baz=118,slow=8.1,SNR=5.5						
KURBB	**Kurchatov Arra**	**72.71**	**329**	P	**P**	**09 29 37.3**	**-0.8**
	0.4nm,0.2s,baz=130,slow=5.3,SNR=7.8						

IDC 25 09:20:31.2±1.7,27.°10N×92.°38E,h0km,mb3.7/5, mb1 3.9/5,mb1mx3.4/52,mbtmp3.7/5,Error ellipse: s-maj=70.6km s-min=21.1km az=66.0,Eastern Xizang-India border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LSA	**Lhasa**	**2.81**	**338**	Pn	Pg	09 21 35.5	+10
LSA				Sn	Sb	09 21 57.5	-0.2
LSA				smax	smax		
	comp=N,25nm,0.6s						
LSA				smax	smax		
	comp=E,82nm,0.6s						
MKAR	**Makanchi Array**	**21.21**	**341**	P	P	09 25 18.7	+0.2
	comp=E,2.4nm,0.6s,baz=153,slow=9.7,SNR=18						
SONM	**Songino Array**	**23.43**	**24**	P	P	09 25 41.9	-0.1
	comp=E,1.0nm,0.6s,baz=208,slow=8.6,SNR=6.3						
KURBB	**Kurchatov Arra**	**25.76**	**339**	P	P	09 26 03.3	-0.2
	comp=E,0.5nm,0.4s,baz=148,slow=10,SNR=3.8						
WRA	**Warramunga Arr**	**61.97**	**135**	P	P	09 30 53.1	-0.1
	comp=E,0.6nm,0.5s,baz=322,slow=7.4,SNR=8.6						
ASAR	**Alice Springs**	**64.46**	**138**	P	P	09 31 09.9	+0.2
	comp=E,0.5nm,0.7s,baz=331,slow=5.5,SNR=4.2						

ISK ***25*** *09:23:48.8,39.°07N×29.°10E,h5km,MD2.7*
ISCJB ***25*** *09:23:49.5±0.5,39.°09N±0.°02×29.°05E±0.°03,h2km±5km, Error ellipse: s-maj=4.2km s-min=3.4km az=162.4*
CSEM ***25*** *09:23:49.9±0.1,39.°08N×29.°05E,h8km,ML2.8,Error ellipse: s-maj=2.4km s-min=2.0km az=158.0*
DDA ***25*** *09:23:49.4,39.°10N×29.°06E,h7km,Ml2.8*

ISC 25 09:23:49.8±0.9,39.°10N±0.°02×29.°06E±0.°02,h10km±8km, n41,σ0ϑ29/63,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**259**	P	**Pg**	**09 23 55.3**	**-0.1**
DEMI				S	**Sg**	**09 23 59.0**	**-0.1**
DEMI	**Demirci**	**0.27**	**259**	*i* P	**Pg**	**09 23 55.3**	**-0.1**
DEMI				*i* S	**Sg**	**09 23 59.0**	**-0.1**
GDZ	**Gediz**	**0.33**	**91**	P	**Pg**	**09 23 56.4**	**0.0**
GDZ				S	**Sg**	**09 24 01.2**	**+0.3**
GDZ	**Gediz**	**0.33**	**91**	*i* P	**Pg**	**09 23 56.4**	**0.0**
GDZ				*i* S	**Sg**	**09 24 01.2**	**+0.3**
TVSB	**Tavsanli**	**0.47**	**42**	*e*PG	**Pg**	**09 23 58.8**	**-0.2**
TVSB				*e*SG	**Sg**	**09 24 05.2**	**-0.1**
TVSB	**Tavsanli**	**0.47**	**42**	*e*Pg	**Pg**	**09 23 58.8**	**-0.2**
KULA	**Kula-Manisa**	**0.66**	**208**	*e*PG	**Pg**	**09 24 02.3**	**-0.3**
KULA				*e*SG	**Sg**	**09 24 11.0**	**-0.3**
KULA	**Kula-Manisa**	**0.66**	**208**	*e*Pg	**Pg**	**09 24 02.3**	**-0.3**
KULA				*e*Sg	**Sg**	**09 24 11.0**	**-0.3**
DURS	**Dursunbey**	**0.68**	**318**	P	**Pg**	**09 24 02.7**	**-0.2**
DURS				S	**Sg**	**09 24 12.3**	**+0.4**
DURS	**Dursunbey**	**0.68**	**318**	*i* P	**Pg**	**09 24 02.7**	**-0.2**
DURS				*i* S	**Sg**	**09 24 12.3**	**+0.4**
KHAL	**Karahalli**	**0.80**	**155**	P	**Pg**	**09 24 05.3**	**0.0**
KHAL				S	**Sg**	**09 24 16.0**	**+0.2**
KHAL	**Karahalli**	**0.80**	**155**	*i* P	**Pg**	**09 24 05.3**	**0.0**
KHAL				*i* S	**Sg**	**09 24 16.0**	**+0.2**
ORLT	**Orhaneli**	**0.95**	**352**	*e*PG	**Pg**	**09 24 08.2**	**0.0**
ORLT				*e*SG	**Sn**	**09 24 22.5**	**-0.6**
ORLT	**Orhaneli**	**0.95**	**352**	*e*Pg	**Pg**	**09 24 08.2**	**0.0**
ORLT				*e*Sg	**Sn**	**09 24 22.5**	**-0.6**
AKHS	**Akhisar**	**0.99**	**258**	P	**Pb**	**09 24 09.2**	**0.0**
AKHS				S	**Sb**	**09 24 22.6**	**+0.3**
AKHS	**Akhisar**	**0.99**	**258**	*i* P	**Pb**	**09 24 09.2**	**0.0**
AKHS				*i* S	**Sb**	**09 24 22.6**	**+0.3**
AKS	**Akhisar**	**0.99**	**258**	*e*PG	**Pg**	**09 24 08.8**	**-0.2**
AKS	**Akhisar**	**0.99**	**258**	*e*Pg	**Pg**	**09 24 08.8**	**-0.2**
BALB	**Balikesir**

*IDC **25** 09:26:47.6±2.7, 20°.08S×176°.30W, h192km±25km, mb3.6/8, mb1 3.9/10, mb1mx3.6/32, mbtmp4.2/10, Error ellipse: s-maj=30.1km s-min=14.1km az=139.0*
ISC 25 09:26:47.8±0.8, 20°.45±0°.1×176°.0W±0°.2, h211km, n15, σ1§30/15, mb3.8/8, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**7.62**	**32**	P	**Pn**	**09 28 33.8**	**-2.4**
	1.7nm,0.3s,baz=344,slow=20,SNR=6.1						
AFI				S	S	09 29 50.1	-13
	2.6nm,0.3s,baz=29,slow=19,SNR=3.4						
URZ	**Urewera**	**18.75**	**197**	P	**Pn**	**09 30 54.1**	**+0.1**
	1.5nm,0.3s,baz=277,slow=4.1,SNR=16						
URZ				S	**S**	**09 34 11.0**	**-2.1**
	0.3nm,0.3s,baz=54,slow=19,SNR=2.4						
ASAR	**Alice Springs**	**46.40**	**256**	P	**P**	**09 34 54.1**	**+0.6**
	1.7nm,0.4s,baz=83,slow=8.5,SNR=49						
WRA	**Warramunga Arr**	**46.50**	**262**	P	**P**	**09 34 53.9**	**-0.5**
	1.2nm,0.3s,baz=95,slow=7.5,SNR=114						
PETK	**Petropavlovsk-**	**76.71**	**344**	P	**P**	**09 38 15.1**	**-0.3**
	3.5nm,0.7s,baz=157,slow=7.8,SNR=2.3						
NVAR	**Mina Array Bea**	**79.67**	**42**	P	**P**	**09 38 35.0**	**+2.8**
	1.1nm,0.6s,baz=230,slow=7.5,SNR=12						
TXAR	**Lajitas Array**	**85.42**	**57**	P	P	09 39 05.2	+3.2
	0.5nm,0.8s,baz=210,slow=9.7,SNR=7.0						
SEY	**Seymchan**	**86.75**	**346**	P	**P**	**09 39 07.3**	**-0.2**
	2.5nm,0.6s,baz=122,slow=7.6,SNR=8.8						
ILAR	**Eielson Array**	**87.84**	**12**	P	**P**	**09 39 12.6**	**-0.1**
	0.3nm,0.4s,baz=210,slow=4.9,SNR=8.9						
YKA	**Yellowknife Ar**	**95.66**	**24**	P	**P**	**09 39 49.8**	**+0.9**
	0.3nm,0.8s,baz=242,slow=4.4,SNR=7.6						
KURBB	**Kurchatov Arra**	**115.29**	**317**	PKP	**PKPdf**	**09 45 03.5**	**-0.5**
	0.5nm,0.2s,baz=72,slow=1.9,SNR=4.1						
BVAR	**Borovoye Array**	**120.25**	**320**	PKP	**PKPdf**	**09 45 13.3**	**-0.2**
	0.7nm,0.3s,baz=126,slow=2.0,SNR=3.9						
ARCES	**ARCESS Array B**	**129.18**	**350**	PKP	**PKPdf**	**09 45 29.9**	**-0.2**
	1.2nm,0.7s,baz=28,slow=4.1,SNR=3.9						
BRTR	**Keskin Array B**	**148.19**	**314**	PKPbc	**PKPbc**	**09 46 09.1**	**-0.1**
	0.7nm,0.6s,baz=142,slow=4.7,SNR=4.0						
GERES	**GERESS Array B**	**150.61**	**347**	PKPbc	**PKPbc**	**09 46 15.6**	**+0.9**
	1.2nm,0.5s,baz=48,slow=2.0,SNR=8.0						

*ISK **25** 09:30:23.8, 39°.14N×29°.02E, h13km, MD2.7*
*ISCJB **25** 09:30:24.2±0.5, 39°.15N±0°.03×29°.02E±0°.03, h7km±4km, Error ellipse: s-maj=4.4km s-min=4.0km az=147.7*
*CSEM **25** 09:30:24.3±0.1, 39°.15N×29°.02E, h10km, ML2.8, Error ellipse: s-maj=1.6km s-min=1.6km az=78.0*
*DDA **25** 09:30:24.5, 39°.13N×29°.02E, h7km, Ml2.8*
ISC 25 09:30:23.9±1.0, 39°.11N±0°.03×29°.04E±0°.02, h14km±8km, n43, σ0§33/58, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**255**	P	**Pb**	**09 30 29.9**	**-0.5**
DEMI				S	**Sg**	**09 30 33.4**	**+0.2**
DEMI	**Demirci**	**0.26**	**255**	*i* P	**Pb**	**09 30 29.9**	**-0.5**
DEMI				*i* S	**Sg**	**09 30 33.4**	**+0.2**
GDZ	**Gediz**	**0.35**	**93**	P	**Pb**	**09 30 32.1**	**+0.1**
GDZ				S	**Sb**	**09 30 37.5**	**+0.1**
GDZ	**Gediz**	**0.35**	**93**	*i* P	**Pb**	**09 30 32.1**	**+0.1**
GDZ				*i* S	**Sb**	**09 30 37.5**	**+0.1**
TVSB	**Tavsanli**	**0.47**	**44**	*e*PG	**Pb**	**09 30 33.7**	**-0.4**
TVSB				*e*SG	**Sg**	**09 30 40.2**	**+0.4**
TVSB	**Tavsanli**	**0.47**	**44**	*e*Pg	**Pb**	**09 30 33.7**	**-0.4**
TVSB				*e*Sg	**Sg**	**09 30 40.2**	**+0.4**
DURS	**Dursunbey**	**0.66**	**319**	P	**Pg**	**09 30 36.5**	**-0.3**
DURS	**Dursunbey**	**0.66**	**319**	*i* P	**Pg**	**09 30 36.5**	**-0.3**
KULA	**Kula-Manisa**	**0.66**	**206**	*e*PG	**Pb**	**09 30 37.6**	**+0.3**
KULA	**Kula-Manisa**	**0.66**	**206**	*e*Pg	**Pb**	**09 30 37.6**	**+0.3**
KHAL	**Karahalli**	**0.82**	**154**	P	**Pn**	**09 30 41.3**	**+0.1**
KHAL				S	**Sn**	**09 30 52.5**	**-0.7**
KHAL	**Karahalli**	**0.82**	**154**	*i* P	**Pn**	**09 30 41.3**	**+0.1**
KHAL				*i* S	**Sn**	**09 30 52.5**	**-0.7**
KHL	**Karahalli**	**0.87**	**154**	*e*PG	**Pn**	**09 30 41.8**	**-0.1**
KHL	**Karahalli**	**0.87**	**154**	*e*Pg	**Pn**	**09 30 41.8**	**-0.1**
ORLT	**Orhaneli**	**0.94**	**353**	*e*PG	**Pg**	**09 30 41.6**	**-0.5**
ORLT				*e*SG	**Sb**	**09 30 54.9**	**+0.5**
ORLT	**Orhaneli**	**0.94**	**353**	*e*Pg	**Pg**	**09 30 41.6**	**-0.5**
ORLT				*e*Sg	**Sb**	**09 30 54.9**	**+0.5**
AKHS	**Akhisar**	**0.98**	**257**	P	**Pn**	**09 30 43.3**	**+0.1**
AKHS				S	**Sn**	**09 30 56.9**	**0.0**
AKHS	**Akhisar**	**0.98**	**257**	*i* P	**Pn**	**09 30 43.3**	**+0.1**
AKHS				*i* S	**Sn**	**09 30 56.9**	**0.0**
AKS	**Akhisar**	**0.98**	**257**	*e*PG	**Pb**	**09 30 42.9**	**+0.2**
AKS	**Akhisar**	**0.98**	**257**	*e*Pg	**Pb**	**09 30 42.9**	**+0.2**
BALB	**Balikesir**	**1.04**	**301**	*e*PG	**Pb**	**09 30 43.7**	**0.0**
BALB	**Balikesir**	**1.04**	**301**	*e*Pg	**Pb**	**09 30 43.7**	**0.0**
IGD	**Bursa**	**1.16**	**6**	*i* P	**Pb**	**09 30 45.0**	**-0.7**
IGD				*i* S	**Sn**	**09 31 01.4**	**+0.1**
CAVI	**Cavuskoy**	**1.26**	**29**	*e*PN	**Pb**	**09 30 47.4**	**0.0**
CAVI	**Cavuskoy**	**1.26**	**29**	*e*Pn	**Pb**	**09 30 47.4**	**0.0**
MDNY	**Mudanya-Bursa**	**1.26**	**355**	*e*PN	**Pn**	**09 30 47.0**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.26**	**355**	*e*Pn	**Pn**	**09 30 47.0**	**-0.1**
BALY	**Balya**	**1.26**	**300**	P	**Pg**	**09 30 48.1**	**-0.2**
BALY				S	**Sg**	**09 31 04.7**	**-0.1**
BALY	**Balya**	**1.26**	**300**	*i* P	**Pg**	**09 30 48.1**	**-0.2**
BALY				*i* S	**Sg**	**09 31 04.7**	**-0.1**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*PN	**Pb**	**09 30 47.6**	**0.0**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*Pn	**Pb**	**09 30 47.6**	**0.0**
IZI	**Iznik**	**1.27**	**15**	*e*PN	**Pn**	**09 30 47.5**	**+0.2**
IZI	**Iznik**	**1.27**	**15**	*e*Pn	**Pn**	**09 30 47.5**	**+0.2**
GONE	**Gonen-Balikesi**	**1.40**	**312**	*e*PN	**Pn**	**09 30 49.2**	**+0.2**
GONE	**Gonen-Balikesi**	**1.40**	**312**	*e*Pn	**Pn**	**09 30 49.2**	**+0.2**
ADVT	**Abdulvahap**	**1.43**	**22**	*e*PN	**Pn**	**09 30 49.7**	**+0.3**
ADVT	**Abdulvahap**	**1.43**	**22**	*e*Pn	**Pn**	**09 30 49.7**	**+0.3**
ARMT	**Armutlu**	**1.46**	**355**	*e*PN	**Pn**	**09 30 50.1**	**+0.2**
ARMT	**Armutlu**	**1.46**	**355**	*e*Pn	**Pn**	**09 30 50.1**	**+0.2**
EDC	**Edincik**	**1.53**	**324**	*e*PN	**Pn**	**09 30 51.2**	**+0.4**
EDC	**Edincik**	**1.53**	**324**	*e*Pn	**Pn**	**09 30 51.2**	**+0.4**
GULT	**Gulveren**	**1.75**	**40**	*e*PN	**Pn**	**09 30 54.5**	**+0.6**
GULT	**Gulveren**	**1.75**	**40**	*e*Pn	**Pn**	**09 30 54.5**	**+0.6**

*NIED **25** 09:33:00, 37°.10N×142°.30E, h23km, Mw3.5 Best double couple: M0 1.78000×10^14 NP1:φs352.00000°, δ30.00000°, λ-123.00000°. NP2:φs209.00000°, δ65.00000°, λ-72.00000°.*
*IDC **25** 09:33:33.3±2.5, 37°.30N×142°.63E, h0km, mb3.7/3, mb1 3.8/5, mb1mx3.4/59, mbtmp3.7/5, ML3.3/2, Error ellipse: s-maj=57.2km s-min=27.5km az=71.0*
*JMA **25** 09:33:36.4±0.4, 37°.10N×142°.32E, h29km, M3.6*
ISC 25 09:33:39.2±1.3, 37°.07N±0°.05×141°.92E±0°.09, h19km, n11, σ1§27/16, mb3.6/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.89**	**290**	P	**Pg**	**09 33 57.3**	**+0.7**
JMM	**Marumori**	**1.20**	**312**	P	**Pb**	**09 34 00.9**	**-0.5**
JMM				*e*S	**Sg**	**09 34 19.1**	**+0.8**
JFT	**Otama**	**1.34**	**290**	P	**Pg**	**09 34 04.8**	**-0.4**
JFT				*e*S	**Sg**	**09 34 24.7**	**+2.0**
JOU	**Okura**	**1.64**	**323**	P	**Pn**	**09 34 07.1**	**+0.1**
JOU				*e*S	**Sb**	**09 34 29.2**	**+0.1**
JYK	**Kaneyama**	**2.22**	**327**	P	**Pn**	**09 34 15.2**	**+0.2**
MJAR	**Matsushiro Arr**	**3.03**	**261**	Pn	**Pb**	**09 34 31.0**	**-1.5**
	1.9nm,0.3s,baz=84,slow=16,SNR=13						
MAT	**Matsushiro**	**3.03**	**261**	P	**Pb**	**09 34 31.0**	**-1.5**
MAT				*e*S	**Sb**	**09 35 07.8**	**-1.3**
JHJ	**Hachijo jima 2**	**4.31**	**205**	Pn	**Pn**	**09 34 44.6**	**+0.9**
	6.1nm,0.3s,baz=234,slow=19,SNR=2.3						
JHJ				Sn	**Sn**	**09 35 34.9**	**+1.5**
	9.3nm,0.3s,baz=81,slow=19,SNR=3.3						
SONM	**Songino Array**	**28.11**	**304**	P	**P**	**09 39 31.3**	**+1.5**
	0.7nm,0.7s,baz=98,slow=9.4,SNR=4.8						
KURBB	**Kurchatov Arra**	**46.30**	**308**	P	**P**	**09 42 01.4**	**-2.0**
	0.5nm,0.2s,baz=82,slow=8.3,SNR=2.9						
WRA	**Warramunga Arr**	**57.15**	**188**	P	**P**	**09 43 24.5**	**-0.2**
	0.4nm,0.7s,baz=7.6,slow=7.1,SNR=9.1						

*NIED **25** 09:34:00, 39°.30N×142°.90E, h32km, Mw3.5 Best double couple: M0 1.81000×10^14 NP1:φs2.00000°, δ32.00000°, λ-173.00000°. NP2:φs266.00000°, δ86.00000°, λ-58.00000°.*
JMA 25 09:34:51.8±0.1, 39°.32N×142°.92E, h23km±2km, M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**0.89**	**287**	*e*S	Sb	09 35 20.2	+0.2
JTH	**Tanohata**	**1.02**	**307**	P	Pn	09 35 10.7	0.0
JTH				*e*S	Sb	09 35 23.8	-0.1
JOM	**Ohasama**	**1.27**	**277**	P	Pn	09 35 14.5	+0.4
JOM				*e*S	Sb	09 35 30.8	-0.1
JKZ	**Kuzumaki**	**1.40**	**299**	P	Pb	09 35 16.8	-0.4
JKZ				*e*S	Sb	09 35 34.5	-0.1
JANG	**Nango**	**1.51**	**315**	P	Pn	09 35 17.5	+0.1
JAH	**Hinai**	**1.96**	**297**	P	Pb	09 35 25.6	-1.2
JAH				*e*S	Sb	09 35 50.8	-0.1

*MEX **25** 10:01:45.7±0.7, 15°.93N×96°.86W, h22km±20km, MD4.0*
NEIC 25 10:01:45.7, 15°.93N×96°.86W, h22km, MD4.0(MEX)**, After MEX., Near coast of Oaxaca**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PANG	**Puerto Angel**	**0.45**	**125**	*e*P	Pb	10 01 53.9	-1.1
PANG				*i* S	Sb	10 01 59.4	-1.9
HUIG	**Huatulco**	**0.74**	**102**	*e*P	Pb	10 01 57.8	-2.1
HUIG				*i* S	Sb	10 02 06.3	-3.3
HUIG	**Huatulco**	**0.74**	**102**	*e*P	Pb	10 01 57.8	-2.1
HUIG				*i* S	Sb	10 02 06.3	-3.3
VHO	**Vista Hermosa**	**1.15**	**6**	*i* P	Pn	10 02 03.6	-3.0
VHO				*i* S	Sb	10 02 16.8	-4.7
VHO	**Vista Hermosa**	**1.15**	**6**	*i* P	Pn	10 02 03.6	-3.0
VHO				*i* S	Sb	10 02 16.8	-4.7
PNIG	**Pinotepa**	**1.30**	**291**	*i* P	Pn	10 02 04.9	-3.7
PNIG				*i* S	Sn	10 02 21.3	-4.1
PNIG	**Pinotepa**	**1.30**	**291**	*i* P	Pn	10 02 04.9	-3.7
PNIG				*i* S	Sn	10 02 21.3	-4.1
TLIG	**Tlapa**	**2.31**	**315**	*e*P	Pn	10 02 20.7	-1.9
TLIG				*i* S	Sn	10 02 47.0	-3.3
TPIG	**Tehuac#an**	**2.53**	**349**	*e*P	Pn	10 02 23.1	-2.4
TPIG				*i* S	Sn	10 02 53.1	-2.6
TPIG	**Tehuac#an**	**2.53**	**349**	*e*P	Pn	10 02 23.1	-2.4
TPIG				*i* S	Sn	10 02 53.1	-2.6
CAIG	**El Cayaco**	**3.46**	**289**	*i* P	Pn	10 02 35.8	-2.3
CAIG				*i* S	Sn	10 03 15.8	-2.7
CAIG	**El Cayaco**	**3.46**	**289**	*i* P	Pn	10 02 35.8	-2.3
CAIG				*i* S	Sn	10 03 15.8	-2.7
PCIG		**3.51**	**93**	*e*P	Pn	10 02 36.7	-2.2
PCIG				*i* S	Sn	10 03 16.3	-3.4
PCIG		**3.51**	**93**	*e*P	Pn	10 02 36.7	-2.2
PCIG				*i* S	Sn	10 03 16.3	-3.4
YAIG	**Yautepec**	**3.60**	**324**	*i* P	Pn	10 02 38.8	-1.5
YAIG				*i* S	Sn	10 03 18.6	-3.7
YAIG	**Yautepec**	**3.60**	**324**	*i* P	Pn	10 02 38.8	-1.5
YAIG				*i* S	Sn	10 03 18.6	-3.7

*NIED **25** 10:02:00, 48°.70N×148°.40E, h620km, Mw5.3 Best double couple: M0 8.84000×10^16 NP1:φs302.00000°, δ45.00000°, λ-125.00000°. NP2:φs167.00000°, δ55.00000°, λ-60.00000°.*
*JMA **25** 10:02:49.3±0.3, 48°.69N×148°.40E, h585km, M5.4*
JMA Felt I J1.
*SKHL **25** 10:02:49.6±1.2, 49°.12N×148°.34E, h557km±5km, mb5.8/8, mbh5.9/5, Ms3.8/1, msh5.9/11*
*ISCJB **25** 10:02:51.1±0.1, 49°.18N±0°.02×147°.53E±0°.02, h559km±2km, mb5.1/387, Error ellipse: s-maj=2.8km s-min=1.7km az=160.1*
*MOS **25** 10:02:51.3±0.8, 49°.14N×147°.55E, h563km, mb5.3/103, Error ellipse: s-maj=6.1km s-min=3.8km az=97.1*
*BJI **25** 10:02:51.2, 49°.09N×147°.49E, h557km, mb5.2/69, mB4.8/41*
*GCMT **25** 10:02:52.4±0.3, 49°.18N×147°.52E, h569km±2km, MW5.3/78, Moment Tensor Solution. s78,c118; Duration: 1§1 Moment tensor: Scale 10^17Nm; Mrr-0.47±.03; Mθθ 0.58±.04; Mφφ-0.11±.04; Mrθ-0.76±.04; Mθφ-0.65±.04; Mφr-0.17±.04; Best double couple: M0 1.14100×10^17 NP1:φs87.00000°, δ75.00000°, λ-127.00000°. NP2:φs338.00000°, δ40.00000°, λ-24.00000°. Principal axes: T 1.1860, Plg21.0000°, Azm204.0000°; N -0.0890, Plg36.0000°, Azm98.0000°; P -1.0970, Plg47.0000°, Azm318.0000°; nsta1 refers to body waves, cutoff=40s.*
*NEIC **25** 10:02:52.4±0.2, 49°.16N×147°.48E, h562km±2km, mb5.1/252 Error ellipse: s-maj=2.8km s-min=1.6km az=150.0*
*IDC **25** 10:02:52.9±0.4, 49°.14N×147°.52E, h570km±4km, mb4.7/43, mb1 4.7/53, mb1mx4.7/57, mbtmp5.6/53, Error ellipse: s-maj=5.8km s-min=4.8km az=151.0*
ISC 25 10:02:52.4±0.3, 49°.10N±0°.03×147°.61E±0°.03, h568km±2km, h567km:pP-P, n1673, σ1§28/1952, mb5.1/400, 50C-181D, Sea of Okhotsk

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
UGL	**Uglegorsk**	**3.65**	**272**	⇓*i* P	**P**	**10 04 13.8**	**+0.9**
UGL				*i* S	**S**	**10 05 19.5**	**+0.8**
UGL				pmax	pmax		
	comp=Z,3μm,1.0s						
UGL				pmax	pmax		
	comp=N,1μm,0.8s						
UGL				pmax	pmax		
	comp=E,1μm,0.8s						
UGL				pmax	pmax		
	comp=Z,3μm,0.8s						
UGL				smax	smax		
	comp=N,1μm,1.0s						
UGL				smax	smax		
	comp=E,3μm,1.0s						
UGL				smax	smax		
	comp=N,4μm,2.0s						
UGL				smax	smax		
	comp=E,8μm,2.0s						
UGL	**Uglegorsk**	**3.65**	**272**	*e*P	**P**	**10 04 13.3**	**+0.4**
UGL				AMB	AMB	10 04 14.0	
	comp=E,3μm,1.0s						
UGL				*i* S	**S**	**10 05 19.5**	**+0.8**
UGL				A	A	10 05 20.5	
	comp=E,1μm,1.0s						
UGL				A	A	10 05 20.5	
	comp=E,3μm,1.0s						
UGL				A	A	10 05 22.0	
	comp=E,4μm,2.0s						
UGL				A	A	10 05 22.0	
	comp=E,8μm,2.0s						
TYV	**Tymovskoe**	**3.66**	**301**	*e*P	**P**	**10 04 10.8**	**-2.1**
TYV				*e*S	**S**	**10 05 15.5**	**-3.4**
TYV				pmax	pmax		
	comp=Z,394nm,0.8s						
TYV				pmax	pmax		
	comp=N,6μm,4.0s						
TYV				pmax	pmax		
	comp=Z,2μm,4.0s						
TYV				smax	smax		
	comp=N,2μm,1.0s						
TYV	**Tymovskoe**	**3.66**	**301**	⇓*i* P	**P**	**10 04 14.6**	**+1.7**
TYV				AMB	AMB	10 04 15.0	
	comp=N,430nm,0.8s						
TYV				AMB	AMB	10 04 22.0	
	comp=N,6μm,4.0s						
TYV				AMB	AMB	10 04 22.0	
	comp=N,2μm,4.0s						
TYV				*i* S	**S**	**10 05 19.3**	**+0.4**
TYV				A	A	10 05 21.2	
	comp=N,2μm,1.0s						
KUR	**Kuril'sk**	**3.87**	**177**	*d* *i* P	**P**	**10 04 12.8**	**-1.8**
KUR				*i* S	**S**	**10 05 17.8**	**-3.8**
KUR				pmax	pmax		
	comp=Z,2μm,0.6s						
KUR				pmax	pmax		
	comp=N,225nm,0.3s						
KUR				pmax	pmax		
	comp=E,173nm,0.3s						
KUR				smax	smax		
	comp=E,1μm,1.0s						
KUR				smax	smax		
	comp=N,1μm,0.8s						
KUR				smax	smax		
	comp=E,27μm,1.9s						
KUR				smax	smax		
	comp=N,15μm,1.8s						
KUR	**Kuril'sk**	**3.87**	**177**	*e*P	**P**	**10 04 10.3**	**-4.3**
KUR				AMB	AMB	10 04 11.7	
	comp=N,2μm,0.6s						
KUR				*e*S	**S**	**10 05 13.8**	**-7.8**
KUR				A	A	10 05 19.0	
	comp=N,22μm,2.0s						
KUR				A	A	10 05 19.0	
	comp=N,27μm,2.0s						
KUR				A	A	10 05 20.0	
	comp=N,1μm,0.9s						
KUR				A	A	10 05 20.0	
	comp=N,1μm,0.9s						
YSS	**Yuzh-Sakhalins**	**3.90**	**238**	κ *i* P	**P**	**10 04 15.5**	**+0.7**
YSS				*i* S	**S**	**10 05 21.4**	**-0.7**
YSS				pmax	pmax		
	comp=Z,2μm,0.8s						
YSS				pmax	pmax		
	comp=N,800nm,0.5s						
YSS				pmax	pmax		
	comp=E,1μm,0.7s						
YSS				pmax	pmax		
	comp=Z,1μm,2.0s						
YSS				smax	smax		
	comp=N,13μm,2.0s						
YSS				smax	smax		
	comp=E,4μm,1.0s						
YSS	**Yuzh-Sakhalins**	**3.90**	**238**	*e*P	**P**	**10 04 15.5**	**+0.7**
YSS				*e*S	**S**	**10 05 19.5**	**-2.5**
YSS	**Yuzh-Sakhalins**	**3.90**	**238**	⇓*i* P	**P**	**10 04 15.5**	**+0.7**
YSS				AMB	AMB	10 04 15.9	
	comp=E,1μm,0.8s						
YSS				AMB	AMB	10 04 15.9	
	comp=E,2μm,0.8s						
YSS				AMB	AMB	10 04 15.9	
	comp=E,800nm,0.5s						
YSS				AMB	AMB	10 04 16.2	
	comp=E,1μm,2.0s						
YSS				*i* S	**S**	**10 05 21.4**	**-0.7**
YSS				A	A	10 05 22.7	
	comp=E,13μm,2.0s						
YSS				A	A	10 05 22.7	
	comp=E,12μm,2.0s						
YSS				A	A	10 05 24.0	
	comp=E,4μm,1.0s						
YUK	**Yuzh-Kuril'sk**	**5.21**	**194**	*c* *i* P	**P**	**10 04 22.5**	**-2.5**
YUK				*i* S	**S**	**10 05 35.4**	**-5.2**
YUK				pmax	pmax		
	comp=E,92nm,0.2s						
YUK				pmax	pmax		
	comp=Z,436nm,0.2s						
YUK				pmax	pmax		
	comp=N,178nm,0.3s						
YUK				smax	smax		
	comp=E,16μm,3.3s						
YUK				smax	smax		
	comp=N,11μm,2.6s						
YUK	**Yuzh-Kuril'sk**	**5.21**	**194**	⇑*i* P	**P**	**10 04 22.6**	**-2.5**
YUK				AMB	AMB	10 04 24.4	
	comp=N,860nm,0.8s						
YUK				*e*S	**S**	**10 05 35.5**	**-5.2**
YUK				A	A	10 05 37.4	
	comp=N,16μm,3.0s						
YUK				A	A	10 05 37.4	
	comp=N,11μm,3.0s						
YUK				A	A	10 05 44.0	
	comp=N,930nm,0.8s						
YUK				A	A	10 05 44.0	
	comp=N,940nm,0.8s						
SHO	**Shikotan**	**5.26**	**186**	*d* *i* P	P	10 04 20.8	-4.7
SHO				*i* S	S	10 05 31.9	-10
SHO				pmax	pmax		
	comp=Z,2μm,0.3s						
SHO				pmax	pmax		
	comp=E,260nm,0.5s						
SHO				pmax	pmax		
	comp=N,640nm,0.4s						
SHO	**Shikotan**	**5.26**	**186**	⇓*i* P	**P**	**10 04 21.0**	**-4.5**
SHO				AMB	AMB	10 04 22.8	
	comp=N,640nm,0.4s						
SHO				AMB	AMB	10 04 22.8	
	comp=N,260nm,0.4s						
SHO				AMB	AMB	10 04 22.8	
	comp=N,2μm,0.4s						
SHO				*e*S	S	10 05 32.8	-8.7
SHO				A	A	10 05 34.0	
	comp=N,2μm,0.8s						
SHO				A	A	10 05 34.0	
	comp=N,2μm,0.8s						
OKH	**Okha**	**5.34**	**328**	⇑*i* P	**P**	**10 04 27.4**	**+1.6**
OKH				*i* S	**S**	**10 05 45.0**	**+2.5**
OKH				pmax	pmax		
	comp=Z,5μm,3.6s						
OKH				smax	smax		
	comp=N,10μm,4.0s						
OKH				smax	smax		
	comp=E,14μm,7.0s						
OKH	**Okha**	**5.34**	**328**	⇑*i* P	**P**	**10 04 27.3**	**+1.5**
OKH				AMB	AMB	10 04 27.8	
	comp=E,2μm,4.0s						
OKH				AMB	AMB	10 04 27.8	
	comp=E,3μm,4.0s						
OKH				AMB	AMB	10 04 27.8	
	comp=E,5μm,4.0s						
OKH				AMB	AMB	10 04 28.1	
	comp=E,590nm,0.6s						
OKH				*i* S	**S**	**10 05 45.0**	**+2.5**
OKH				A	A	10 05 46.4	
	comp=E,14μm,7.0s						
OKH				A	A	10 05 47.4	
	comp=E,820nm,0.9s						
JSE	**Soyaes**	**5.38**	**222**	P	**P**	**10 04 25.6**	**-0.9**
JSE				*e*S	**S**	**10 05 40.9**	**-2.4**
JWK2	**Keihoku**	**5.43**	**228**	P	**P**	**10 04 26.9**	**0.0**
JWK2				S	**S**	**10 05 43.6**	**-0.5**
JRA	**Rausu**	**5.44**	**199**	P	**P**	**10 04 24.2**	**-2.8**
JRA				*e*S	**S**	**10 05 40.1**	**-4.2**
SKR	**Severo-Kuril's**	**5.72**	**71**	*e*P	P	10 04 18.2	-11
SKR				pmax	pmax		
	comp=N,1μm,2.0s						
SKR				pmax	pmax		
	comp=E,1μm,2.0s						
SKR				pmax	pmax		
	comp=Z,2μm,2.0s						
SKR				pmax	pmax		
	comp=N,90nm,0.5s						
SKR				pmax	pmax		
	comp=Z,320nm,0.5s						
SKR				pmax	pmax		
	comp=E,450nm,1.0s						
SKR				MLR	MLR		
	comp=Z,1μm,18.0s						
SKR	**Severo-Kuril's**	**5.72**	**71**	*e*P	P	10 04 18.7	-10
SKR				AMB	AMB	10 04 20.0	
	comp=Z,1μm,2.0s						
SKR				AMB	AMB	10 04 20.0	
	comp=Z,2μm,2.0s						
SKR				AMB	AMB	10 04 20.6	
	comp=Z,90nm,0.5s						
SKR				AMB	AMB	10 04 20.6	
	comp=Z,470nm,0.5s						
SKR				*i* S	S	10 05 35.5	-13
SKR				A	A	10 05 41.5	
	comp=Z,630nm,0.8s						
SKR				A	A	10 05 41.5	
	comp=Z,840nm,0.8s						
SKR				AMS	AMS	10 07 18.0	
	comp=Z,1μm,18.0s						
JTKR	**Abashiri--Toko**	**5.73**	**208**	⇓P	**P**	**10 04 27.5**	**-2.0**
JTKR				S	**S**	**10 05 46.3**	**-2.6**
JRR	**Rishiri**	**5.85**	**230**	P	**P**	**10 04 30.1**	**-0.4**
JRR				*e*S	**S**	**10 05 49.6**	**-1.1**
JNK	**Nakash**	**5.87**	**201**	P	**P**	**10 04 27.7**	**-3.0**
JMP	**Maruseppu**	**5.88**	**212**	P	**P**	**10 04 29.0**	**-1.8**
JMP			

NKL				smax	smax		
	comp=E,820nm,1.0s						
NKL				smax	smax		
	comp=N,3μm,8.0s						
NKL				smax	smax		
	comp=E,6μm,8.0s						
NKL				MLR	MLR		
	comp=E,500nm,5.0s						
NKL				MLR	MLR		
	comp=Z,700nm,4.0s						
NKL	**Nikolayevsk**	**5.96**	**316**	*i* P	**P**	**10 04 32.0**	**+0.8**
NKL				AMB	AMB	10 04 32.5	
	comp=Z,500nm,1.5s						
NKL				AMB	AMB	10 04 32.5	
	comp=Z,2μm,1.5s						
NKL				AMB	AMB	10 04 33.0	
	comp=Z,260nm,0.5s						
NKL				AMB	AMB	10 04 33.0	
	comp=Z,580nm,0.5s						
NKL				*i* S	**S**	**10 05 53.0**	**+0.6**
NKL				A	A	10 05 54.2	
	comp=Z,390nm,1.0s						
NKL				A	A	10 05 54.2	
	comp=Z,820nm,1.0s						
NKL				A	A	10 05 56.0	
	comp=Z,3μm,8.0s						
NKL				A	A	10 05 56.0	
	comp=Z,6μm,8.0s						
NKL				AMS	AMS	10 07 18.0	
	comp=Z,500nm,15.0s						
NKL				AMS	AMS	10 07 18.0	
	comp=Z,700nm,15.0s						
JKA	**Kamikawa-asahi**	**6.06**	**217**	*e*P	**P**	**10 04 31.3**	**-1.1**
JKA				*e*S	**S**	**10 05 50.4**	**-3.9**
ASAJ	**Asahikawa**	**6.06**	**217**	P	**P**	**10 04 31.3**	**-1.2**
	comp=Z,43nm,0.3s,baz=5.4,slow=3.8,SNR=677						
ASAJ				S	**S**	**10 05 50.4**	**-3.9**
	comp=Z,4.3nm,0.3s,baz=216,slow=29,SNR=10						
ASAJ				ScS	**ScS**	**10 16 28.1**	**-1.6**
	comp=Z,0.2nm,0.3s,baz=194,slow=33,SNR=3.8						
ASAJ	**Asahikawa**	**6.06**	**217**	P	**P**	**10 04 31.2**	**-1.2**
ASAJ				S	**S**	**10 05 51.7**	**-2.6**
ASAJ	**Asahikawa**	**6.06**	**217**	*e*P	**P**	**10 04 31.3**	**-1.2**
ASAJ				*e*S	**S**	**10 05 53.5**	**-0.8**
ASAJ				ScS	**ScS**	**10 16 28.1**	**-1.6**
JSS	**Shosan**	**6.14**	**222**	P	**P**	**10 04 32.3**	**-0.8**
JSS				*e*S	**S**	**10 05 53.5**	**-2.1**
JKK2	**Kamakawa 2**	**6.21**	**215**	P	**P**	**10 04 32.2**	**-1.6**
JKK2				S	**S**	**10 05 53.9**	**-2.9**
PAU	**Pauzhetka**	**6.36**	**65**	*e*P	**P**	**10 04 32.6**	**-2.2**
PAU				AMB	AMB	10 04 33.8	
	comp=Z,410nm,0.4s						
PAU				*e*S	**S**	**10 05 52.0**	**-6.9**
JAR	**Ashorobuto**	**6.38**	**206**	P	**P**	**10 04 33.0**	**-2.4**
JAR				*e*S	**S**	**10 05 54.7**	**-4.9**
JAK	**Akkeshi**	**6.43**	**199**	P	**P**	**10 04 31.8**	**-4.0**
JAB	**Ashibetsu**	**6.72**	**216**	P	**P**	**10 04 37.2**	**-1.3**
JAB				*e*S	**S**	**10 06 01.3**	**-4.0**
JHR	**Hokuryu**	**6.72**	**219**	P	**P**	**10 04 37.1**	**-1.4**
JHR				S	**S**	**10 06 02.9**	**-2.4**
JOB	**Onbets**	**6.73**	**204**	P	**P**	**10 04 35.6**	**-2.9**
JFR	**Furan**	**6.88**	**212**	P	**P**	**10 04 38.1**	**-1.9**
JFR				S	**S**	**10 06 03.8**	**-4.3**
JCH	**Churui**	**7.13**	**206**	P	**P**	**10 04 38.8**	**-3.5**
JCH				S	**S**	**10 06 07.5**	**-4.8**
GRNR	**Gornyy**	**7.42**	**287**	*i* P	**P**	**10 04 46.2**	**+1.4**
GRNR				AMB	AMB	10 04 46.9	
	comp=Z,730nm,0.9s						
GRNR				*e*S	**S**	**10 06 17.5**	**+0.4**
GRNR				A	A	10 06 18.1	
	comp=Z,210nm,1.0s						
PEA0	**Petropavlovsk-**	**7.51**	**54**	*e*P	**P**	**10 04 44.2**	**-1.5**
PEA0B	**Petropavlovsk-**	**7.51**	**54**	*e*P	**P**	**10 04 44.4**	**-1.3**
PETK	**Petropavlovsk-**	**7.51**	**54**	P	**P**	**10 04 44.6**	**-1.1**
	comp=Z,41nm,0.3s,baz=203,slow=5.5,SNR=134						
PETK				S	**S**	**10 06 15.8**	**-3.0**
	baz=270,slow=29,SNR=1.7						
PETK				ScP	**ScP**	**10 12 57.7**	**-0.1**
	comp=Z,0.4nm,0.3s,baz=163,slow=4.4,SNR=4.5						
JEW	**Eniwo**	**7.59**	**217**	P	**P**	**10 04 44.8**	**-1.9**
JEW				S	**S**	**10 06 13.5**	**-6.8**
JEM	**Erimo**	**7.74**	**205**	P	**P**	**10 04 45.1**	**-3.0**
ERM	**Erimo**	**7.74**	**205**	*de*P	**P**	**10 04 45.5**	**-2.6**
ERM				pmax	pmax		
	comp=Z,961nm,0.8s						
ERM	**Erimo**	**7.74**	**205**	*e*P	**P**	**10 04 46.3**	**-1.9**
ERM				*e*S	S	10 06 12.4	-11
ERM	**Erimo**	**7.74**	**205**	*e*P	**P**	**10 04 45.5**	**-2.6**
ERM				AMB	AMB	10 04 46.8	
	comp=Z,960nm,0.8s						
PET	**Petropavlovsk**	**7.99**	**56**	*j* P	**P**	**10 04 48.9**	**-1.3**
PET				*i* S	**S**	**10 06 19.3**	**-7.8**
PET				pmax	pmax		
	comp=Z,2μm,1.9s						
PET				pmax	pmax		
	comp=Z,624nm,0.8s						
PET				MLR	MLR		
	comp=Z,300nm,12.0s						
PET				MLR	MLR		
	comp=Z,600nm,10.0s						
PET	**Petropavlovsk**	**7.99**	**56**	*e*P	**P**	**10 04 49.2**	**-1.0**
PET	**Petropavlovsk**	**7.99**	**56**	*e*P	**P**	**10 04 48.6**	**-1.6**
PET				⇑*i*P	**P**	**10 04 48.6**	**-1.6**
PET				AMB	AMB	10 04 49.9	
	comp=Z,2μm,2.0s						
PET				AMB	AMB	10 04 50.9	
	comp=Z,620nm,0.8s						
PET				A	A	10 06 23.8	
	comp=Z,2μm,7.0s						
PET				AMS	AMS	10 08 01.0	
	comp=Z,400nm,12.0s						
HABR	**Khabarovsk**	**8.32**	**270**	*de*P	**P**	**10 04 51.8**	**-1.8**
HABR				*e*S	**S**	**10 06 31.6**	**-1.6**
HABR				pmax	pmax		
	comp=N,9.0nm,0.6s						
HABR				pmax	pmax		
	comp=Z,72nm,0.7s						
HABR				pmax	pmax		
	comp=E,51nm,0.6s						
HABR				MLR	MLR		
	comp=Z,64nm,13.0s						
HABR	**Khabarovsk**	**8.32**	**270**	⇓*e*P	**P**	**10 04 51.8**	**-1.8**
HABR				AMB	AMB	10 04 55.3	
	comp=Z,10.0nm,0.7s						
HABR				AMB	AMB	10 04 55.3	
	comp=Z,50nm,0.7s						
HABR				AMB	AMB	10 04 55.3	
	comp=Z,70nm,0.7s						
HABR				AMS	AMS	10 09 00.5	
	comp=Z,100nm,13.0s						
JSH	**Shimam**	**8.34**	**222**	P	**P**	**10 04 51.6**	**-2.3**
JSH				S	**S**	**10 06 27.9**	**-5.7**
TEY	**Ternei**	**8.54**	**246**	⇑*i*P	**P**	**10 04 56.2**	**+0.3**
TEY				AMB	AMB	10 04 56.9	
	comp=Z,700nm,1.0s						
TEY				AMB	AMB	10 04 56.9	
	comp=Z,1μm,1.0s						
TEY				AMB	AMB	10 04 56.9	
	comp=Z,60nm,0.6s						
TEY				AMB	AMB	10 04 56.9	
	comp=Z,130nm,0.6s						
TEY				AMB	AMB	10 04 56.9	
	comp=Z,190nm,0.6s						
TEY				A	A	10 06 35.6	
	comp=Z,2μm,2.0s						
TEY				A	A	10 06 35.6	
	comp=Z,1μm,2.0s						
TEY				A	A	10 06 36.8	
	comp=Z,770nm,1.0s						
JKB	**Kayabe**	**8.56**	**215**	P	**P**	**10 04 52.6**	**-3.5**
JKB				S	**S**	**10 06 31.1**	**-6.6**
JOT	**Ohata**	**8.99**	**213**	P	**P**	**10 04 57.1**	**-3.4**
JOT				*e*S	**S**	**10 06 39.0**	**-6.6**
JOSM	**Okushiri--Mats**	**9.04**	**222**	P	**P**	**10 05 00.9**	**0.0**
JOSM				S	**S**	**10 06 41.8**	**-4.5**
JTM	**Tenmabayashi**	**9.51**	**212**	P	**P**	**10 05 02.7**	**-3.0**
JTM				S	**S**	**10 06 47.9**	**-7.2**
EKMR	**Ekimchan**	**10.04**	**299**	*i* P	**P**	**10 05 11.5**	**+0.7**
EKMR				AMB	AMB	10 05 12.5	
	comp=Z,110nm,0.5s						
EKMR				AMB	AMB	10 05 12.5	
	comp=Z,120nm,0.5s						
KLR	**Kul'dur**	**10.39**	**277**	P	**P**	**10 05 14.3**	**-0.1**
	comp=Z,5.4nm,0.3s,baz=77,slow=8.8,SNR=265						
KLR				S	**S**	**10 07 10.9**	**-0.3**
	comp=Z,0.4nm,0.3s,baz=339,slow=22,SNR=8.3						
KLR				ScP	**ScP**	**10 13 01.0**	**-0.1**
	comp=Z,0.9nm,0.3s,baz=107,slow=1.9,SNR=13						
KLR				ScS	**ScS**	**10 16 35.6**	**-0.4**
	comp=Z,0.0nm,0.3s,baz=170,slow=22,SNR=12						
JOM	**Ohasama**	**10.63**	**208**	P	**P**	**10 05 16.6**	**-0.4**
JOM				S	**S**	**10 07 14.1**	**-1.7**
MA2	**Magadan**	**10.66**	**9**	P	**P**	**10 05 16.4**	**-0.4**
	comp=Z,41nm,0.3s,baz=211,slow=8.6,SNR=145						
MA2				S	**S**	**10 07 15.3**	**-0.5**
	baz=315,slow=18,SNR=6.3						
MA2	**Magadan**	**10.66**	**9**	*e*P	**P**	**10 05 16.8**	**-0.1**
MA2				*e*S	**S**	**10 07 15.5**	**-0.3**
MA2				pmax	pmax		
	comp=Z,1μm,0.6s						
MA2	**Magadan**	**10.66**	**9**	*e*P	**P**	**10 05 16.8**	**-0.1**
	comp=Z,1μm,0.6s						
MA2				*e*S	**S**	**10 07 15.5**	**-0.3**
MA2	**Magadan**	**10.66**	**9**	*e*P	**P**	**10 05 16.8**	**-0.1**
JMK	**Ichinoseki**	**11.13**	**207**	P	**P**	**10 05 21.7**	**-0.4**
JMK				*e*S	**S**	**10 07 18.3**	**-6.9**
USRK	**Ussuriysk Ar.**	**11.80**	**251**	P	**P**	**10 05 27.1**	**-1.7**
	comp=Z,5.0nm,0.3s,baz=61,slow=10.0,SNR=128						
USRK				S	**S**	**10 07 31.3**	**-6.2**
	baz=63,slow=22,SNR=6.2						
USRK				ScP	**ScP**	**10 13 03.1**	**0.0**
	comp=Z,0.2nm,0.3s,baz=260,slow=1.8,SNR=4.1						
USRK				ScS	**ScS**	**10 16 38.6**	**-0.4**
	comp=Z,0.1nm,0.3s,baz=148,slow=43,SNR=2.3						
JYA	**Atsumi**	**11.94**	**211**	P	**P**	**10 05 30.4**	**0.0**
JYA				S	**S**	**10 07 41.2**	**+0.8**
JMM	**Marumori**	**12.26**	**206**	P	**P**	**10 05 33.1**	**-0.6**
JMM				S	**S**	**10 07 49.0**	**+2.6**
VLA	**Vladivostok**	**12.44**	**247**	*c i* P	**P**	**10 05 33.5**	**-1.8**
VLA	**Vladivostok**	**12.44**	**247**	⇑*i*P	**P**	**10 05 33.5**	**-1.8**
BMKR	**Bomnak**	**12.86**	**303**	*i* P	**P**	**10 05 38.4**	**-1.2**
BMKR				AMB	AMB	10 05 38.9	
	comp=Z,50nm,0.6s						
BMKR				AMB	AMB	10 05 38.9	
	comp=Z,70nm,0.6s						
BMKR				AMB	AMB	10 05 38.9	
	comp=Z,160nm,0.6s						
JSD	**Sado**	**12.96**	**215**	P	**P**	**10 05 40.2**	**-0.6**
JSD				S	**S**	**10 07 59.4**	**0.0**
MDJ	**Mudanjiang**	**13.12**	**257**	P	**P**	**10 05 40.0**	**-2.3**
MDJ				S	**S**	**10 07 56.8**	**-5.4**
MDJ				PcP	**PcP**	**10 10 27.3**	**+1.9**
MDJ				ScP	**ScP**	**10 13 06.5**	**+1.3**
MDJ				PcS	**PcS**	**10 14 03.0**	**+3.0**
MDJ				ScS	**ScS**	**10 16 43.5**	**+1.6**
MDJ				pmax	pmax		
	comp=Z,100nm,0.9s						
MDJ				pmax	pmax		
	comp=Z,56nm,5.5s						
MDJ	**Mudanjiang**	**13.12**	**257**	*e*P	**P**	**10 05 40.2**	**-2.2**
	comp=Z,86nm,0.8s						
ZEA	**Zeya**	**13.52**	**298**	*e*P	**P**	**10 05 44.8**	**-1.5**
ZEA				*i* P	**P**	**10 05 44.8**	**-1.5**
ZEA				AMB	AMB	10 05 48.0	
	comp=Z,400nm,4.0s						
ZEA				AMB	AMB	10 05 48.0	
	comp=Z,600nm,4.0s						
ZEA				AMB	AMB	10 05 49.1	
	comp=Z,70nm,0.8s						
ZEA				AMB	AMB	10 05 49.1	
	comp=Z,50nm,0.8s						
ZEA				AMB	AMB	10 05 49.1	
	comp=Z,130nm,0.8s						
ZEA				A	A	10 08 11.0	
	comp=Z,1μm,4.0s						
ZEA				A	A	10 08 11.0	
	comp=Z,2μm,4.0s						
ZEA				A	A	10 08 13.9	
	comp=Z,370nm,1.2s						
KROS	**Kirovskiy**	**13.83**	**301**	*i* P	**P**	**10 05 49.0**	**-0.5**
KROS				AMB	AMB	10 05 50.2	
	comp=Z,100nm,0.6s						
KROS				AMB	AMB	10 05 50.2	
	comp=Z,130nm,0.6s						
KROS				AMB	AMB	10 05 50.2	
	comp=Z,200nm,0.6s						
JYT	**Yasato**	**13.96**	**206**	P	**P**	**10 05 49.9**	**-1.2**
SEY	**Seymchan**	**14.12**	**9**	P	**P**	**10 05 51.9**	**-0.4**
	comp=Z,5.9nm,0.3s,baz=187,slow=8.2,SNR=111						
SEY				S	**S**	**10 08 20.2**	**+0.2**
	baz=17,slow=20,SNR=9.0						
SEY				ScP	**ScP**	**10 13 06.6**	**+0.1**
	comp=Z,0.3nm,0.3s,baz=170,slow=7.8,SNR=5.3						
MJB9	**Matsu-Tunnel**	**14.30**	**212**	*e*P	**P**	**10 05 54.1**	**-0.5**
MJB9				*e*ScP	**ScP**	**10 13 07.0**	**-0.4**
MAJO	**Matsushiro**	**14.30**	**212**	*c i* P	**P**	**10 05 53.9**	**-0.7**
MAJO	**Matsushiro**	**14.30**	**212**	*e*P	**P**	**10 05 54.1**	**-0.5**
MAJO				*e*ScP	**ScP**	**10 13 06.5**	**-0.9**
MAJO	**Matsushiro**	**14.30**	**212**	⇑*i*P	**P**	**10 05 53.9**	**-0.7**
MAT	**Matsushiro**	**14.30**	**212**	P	**P**	**10 05 54.0**	**-0.6**
MAT				S	**S**	**10 08 26.8**	**+2.5**
MAT	**Matsushiro**	**14.30**	**212**	P	**P**	**10 05 54.0**	**-0.6**
MJAR	**Matsushiro Arr**	**14.30**	**212**	P	**P**	**10 05 54.2**	**-0.4**
	comp=Z,43nm,0.3s,baz=18,slow=10,SNR=1987						
MJAR				ScP	**ScP**	**10 13 06.5**	**-0.8**
	comp=Z,0.6nm,0.3s,baz=62,slow=1.2,SNR=9.9						
JNG	**Nsakai**	**14.46**	**212**	P	**P**	**10 05 55.8**	**-0.5**
JRY	**Ryogami san**	**14.55**	**209**	P	**P**	**10 05 56.4**	**-0.6**
JRY				*e*S	**S**	**10 08 26.1**	**-2.7**
JOD2	**Odawara 2**	**15.18**	**208**	P	**P**	**10 06 01.9**	**-1.4**
JOD2				*e*S	**S**	**10 08 40.8**	**+0.9**
JGF	**Kuroka**	**15.45**	**213**	P	**P**	**10 06 05.6**	**-0.4**
CLNS	**Chul'man**	**15.67**	**308**	*e*P	**P**	**10 06 06.7**	**-1.1**
CLNS				*e*S	**S**	**10 08 48.7**	**+1.3**
CLNS				pmax	pmax		
	comp=Z,573nm,0.9s						
CLNS				pmax	pmax		
	comp=E,290nm,1.0s						
CLNS				pmax	pmax		
	comp=N,217nm,0.9s						
CLNS				smax	smax		
	comp=E,195nm,1.1s						
CLNS				smax	smax		
	comp=N,123nm,0.9s						
CLNS	**Chul'man**	**15.67**	**308**	*e*P	**P**	**10 06 06.7**	**-1.1**
INU	**Inuyama**	**15.80**	**214**	*e*P	**P**	**10 06 08.8**	**-0.5**
	comp=N,1μm,1.0s						
JSG	**Sagara**	**16.01**	**209**	P	**P**	**10 06 12.3**	**+1.0**
CN2	**Changchun**	**16.14**	**259**	*e*P	**P**	**10 06 09.8**	**-2.6**
CN2				*e*S	**S**	**10 08 50.0**	**-5.5**
CN2				pmax	pmax		
	comp=N,10.0nm,0.5s						
YAK	**Yakutsk**	**16.37**	**329**	P	**P**	**10 06 13.0**	**-1.1**
	comp=N,0.1nm,0.3s,baz=133,slow=10,SNR=95						
YAK				S	**S**	**10 08 56.3**	**-2.2**
	comp=N,0.0nm,0.3s,baz=167,slow=24,SNR=11						
YAK				ScS	**ScS**	**10 16 45.8**	**-4.0**
	comp=N,0.0nm,0.3s,baz=131,slow=23,SNR=11						
YAK	**Yakutsk**	**16.37**	**329**	*d i* P	**P**	**10 06 12.8**	**-1.3**
YAK				*e*S	**S**	**10 08 54.8**	**-3.7**
YAK				pmax	pmax		
	comp=Z,901nm,0.8s						
YAK				pmax	pmax		
	comp=E,197nm,1.0s						
YAK				pmax	pmax		
	comp=N,232nm,1.3s						
YAK				smax	smax		
	comp=N,4μm,2.5s						
YAK				smax	smax		
	comp=E,2μm,2.0s						
YAK	**Yakutsk**	**16.37**	**329**	*e*P	**P**	**10 06 12.6**	**-1.6**
	comp=E,1μm,0.8s						
YAK				*e*S	**S**	**10 08 57.3**	**-1.3**
YAK				ScS	**ScS**	**10 16 45.9**	**-4.0**
YAK	**Yakutsk**	**16.37**	**329**	⇓*i*P	**P**	**10 06 12.8**	**-1.3**
JWT	**Wachi**	**16.48**	**218**	P	**P**	**10 06 15.0**	**-0.5**
JWT				S	**S**	**10 09 00.5**	**-0.6**
JOI	**OKI**	**16.55**	**225**	P	**P**	**10 06 16.4**	**+0.2**
JIE	**Ise**	**16.77**	**213**	P	**P**	**10 06 18.6**	**+0.4**
JHJ2	**Mitsune**	**17.00**	**203**	P	**P**	**10 06 20.8**	**+0.5**
JHJ2	**Mitsune**	**17.00**	**203**	*e*P	**P**	**10 06 20.3**	**0.0**
	comp=E,491nm,0.9s						
JHJ	**Hachijo jima 2**	**17.00**	**203**	P	**P**	**10 06 20.5**	**+0.2**
	comp=E,38nm,0.3s,baz=343,slow=19,SNR=17						
JAD	**Aida**	**17.28**	**220**	P	**P**	**10 06 23.1**	**+0.3**
JAD				S	**S**	**10 09 14.5**	**+0.4**
TTO1	**TONANKAI O.B.S**	**17.44**	**212**	P	**P**	**10 06 25.9**	**+2.0**
JHS	**Saijyo**	**17.68**	**223**	P	**P**	**10 06 27.2**	**+0.7**
JWZ	**Kozaga**	**17.90**	**214**	P	**P**	**10 06 29.1**	**+0.6**
HIA	**Hailar**	**18.18**	**281**	*e*P	**P**	**10 06 30.0**	**-0.9**
HIA				*e*S	**S**	**10 09 26.2**	**-2.3**
HIA				pmax	pmax		
	comp=Z,132nm,0.8s						
HIA	**Hailar**	**18.18**	**281**	*e*P	**P**	**10 06 30.0**	**-0.9**
	comp=Z,132nm,0.8s						
HIA				*e*S	**S**	**10 09 26.2**	**-2.3**
HIA	**Hailar**	**18.18**	**281**	*e*P	**P**	**10 06 30.0**	**-0.9**
SNY	**Shenyang**	**18.31**	**256**	⇑P	**P**	**10 06 32.3**	**+0.2**
SNY				S	**S**	**10 09 31.8**	**+1.1**
SNY				ScS	**ScS**	**10 16 58.0**	**+1.4**
SNY				pmax	pmax		
	comp=Z,130nm,5.9s						
KS01	**Wonju Array Si**	**18.40**	**238**	*e*P	**P**	**10 06 33.7**	**+0.7**
KS01				*e*ScP	**ScP**	**10 13 15.2**	**-0.3**
KSRS	**Korea Array**	**18.40**	**238**	P	**P**	**10 06 34.2**	**+1.3**
	comp=Z,3.8nm,0.3s,baz=44,slow=9.7,SNR=246						
KSRS				S	**S**	**10 09 33.6**	**+1.4**
	comp=Z,0.1nm,0.3s,baz=357,slow=12,SNR=3.0						
KSRS				PcP	**PcP**	**10 10 34.1**	**+0.6**
	comp=Z,0.5nm,0.3s,baz=18,slow=1.5,SNR=11						
KSRS				ScP	**ScP**	**10 13 15.9**	**+0.4**
	comp=Z,0.6nm,0.3s,baz=14,slow=1.5,SNR=38						
KS15	**Wonju Array Si**	**18.43**	**238**	*e*P	**P**	**10 06 34.4**	**+1.1**
KS15				*e*ScP	**ScP**	**10 13 16.4**	**+0.8**
KSAR	**Wonju Array Be**	**18.43**	**238**	P	**P**	**10 06 34.3**	**+1.0**
KSAR				S	**S**	**10 09 33.7**	**+0.9**
KSAR	**Wonju Array Be**	**18.43**	**238**	P	**P**	**10 06 34.2**	**+1.0**
KSAR				S	**S**	**10 09 33.6**	**+0.9**
KSAR				PcP	**PcP**	**10 10 34.1**	**+0.5**
KSAR				ScP	**ScP**	**10 13 15.9**	**+0.3**
KSAR	**Wonju Array Be**	**18.43**	**238**	*e*P	**P**	**10 06 34.3**	**+1.0**
JMN	**Monobe**	**18.44**	**219**	P	**P**	**10 06 34.3**	**+0.8**
INCN	**Inchon**	**19.11**	**240**	P	**P**	**10 06 40.6**	**+1.1**
	SNR=8.2						
INCN	**Inchon**	**19.11**	**240**	P	**P**	**10 06 40.6**	**+1.1**
	SNR=8.2						
INCN	**Inchon**	**19.11**	**240**	*e*P	**P**	**10 06 40.4**	**+0.9**
	comp=Z,68nm,0.8s						
TJN	**Taejon**	**19.49**	**237**	*ce*P	**P**	**10 06 43.7**	**+0.8**
JTO	**Tosashimizu**	**19.64**	**220**	P	**P**	**10 06 45.3**	**+1.0**
JTU	**Tsushima**	**19.83**	**230**	P	**P**	**10 06 46.9**	**+0.9**
JNU	**Nakatsue**	**20.27**	**224**	P	**P**	**10 06 50.8**	**+0.8**
	comp=Z,176nm,0.9s,baz=56,slow=6.4,SNR=41						
JNU				S	**S**	**10 10 01.9**	**-0.4**
	comp=Z,11nm,0.9s,baz=250,slow=17,SNR=3.2						
JNU				ScP	**ScP**	**10 13 18.8**	**-1.2**
	comp=Z,13nm,1.0s,baz=324,slow=19,SNR=3.9						
JNU	**Nakatsue**	**20.27**	**224**	P	**P**	**10 06 50.8**	**+0.8**
JNU				S	**S**	**10 10 02.7**	**+0.4**
JNU	**Nakatsue**	**20.27**	**224**	*e*P	**P**	**10 06 50.7**	**+0.8**
	comp=Z,238nm,1.0s						
JNU				S	**S**	**10 10 01.9**	**-0.4**
JNU				ScP	**ScP**	**10 13 18.8**	**-1.2**
BILL	**Bilibino**	**21.17**	**19**	*d i* P	**P**	**10 06 57.1**	**-0.5**
BILL				*i* S	**S**	**10 10 13.6**	**-1.9**
BILL				pmax	pmax		
	comp=Z,60nm,1.0s						
BILL	**Bilibino**	**21.17**	**19**	*e*P	**P**	**10 06 57.3**	**-0.2**
	comp=Z,52nm,1.0s						
BILL	**Bilibino**	**21.17**	**19**	⇓*i*P	**P**	**10 06 57.1**	**-0.5**
DL2	**Dalian**	**21.19**	**251**	P	**P**	**10 06 58.3**	**+0.1**
DL2				sP	**sP**	**10 09 20.8**	**-4.3**
DL2				S	**S**	**10 10 16.8**	**+0.2**
DL2				ScP	**ScP**	**10 13 22.0**	**-0.1**
DL2				ScS	**ScS**	**10 17 03.5**	**-3.1**
DL2				pmax	pmax		
	comp=Z,57nm,0.5s						
DL2				pmax	pmax		
	comp=Z,160nm,7.3s						
BOD	**Bodaibo**	**21.63**	**307**	⇑*i*P	**P**	**10 07 00.6**	**-1.2**
BOD				*e*S	S	10 10 35.3	+12
BOD				pmax	pmax		
	comp=Z,73nm,1.0s						
BOD	**Bodaibo**	**21.63**	**307**	⇑*i*P	**P**	**10 07 00.6**	**-1.2**
JFU	**Fukue jima 2**	**21.66**	**228**	P	**P**	**10 07 03.2**	**+0.7**
JSJ	**Shimokoshiki**	**22.01**	**224**	P	**P**	**10 07 06.2**	**+0.6**
CBIJ	**Chichi jima**	**22.37**	**193**	P	**P**	**10 07 08.3**	**-0.6**
CBIJ	**Chichi jima**	**22.37**	**193**	*e*P	**P**	**10 07 08.2**	**-0.6**
	comp=Z,504nm,1.0s						
CBIJ				ScP	**ScP**	**10 13 23.5**	**-1.8**
JCJ	**Chichijima**	**22.37**	**193**	P	**P**	**10 07 08.5**	**-0.3**
	comp=Z,274nm,0.6s,baz=350,slow=6.1						
JCJ				ScP	**ScP**	**10 13 23.5**	**-1.8**
	comp=Z,52nm,0.6s,baz=270,slow=19,SNR=4.0						
BJI	**Beijing**	**24.01**	**260**	P	**P**	**10 07 22.5**	**-0.8**
BJI				S	**S**	**10 11 00.5**	**-0.4**
BJI				pmax	pmax		
	comp=Z,17nm,1.1s						
BJI				pmax	pmax		
	comp=Z,120nm,4.7s						
TIXI	**Tiksi**	**24.22**	**346**	P	**P**	**10 07 24.1**	**-0.6**
	comp=Z,74nm,0.4s,baz=141,slow=7.3,SNR=185						
TIXI				S	**S**	**10 11 01.8**	**-1.6**
	comp=Z,23nm,0.7s,baz=295,slow=20,SNR=25						
TIXI				ScP	**ScP**	**10 13 29.0**	**-0.5**
	comp=Z,17nm,0.8s,baz=96,slow=1.9,SNR=7.2						
TIXI				ScS	**ScS**	**10 17 15.0**	**-2.4**
	comp=Z,0.7nm,0.5s,baz=306,slow=20,SNR=6.2						
TIXI	**Tiksi**	**24.22**	**346**	*de*P	**P**	**10 07 23.7**	**-0.9**
TIXI				pmax	pmax		
	comp=Z,52nm,0.5s						
TIXI	**Tiksi**	**24.22**	**346**	*e*P	**P**	**10 07 24.1**	**-0.6**
	comp=Z,84nm,0.5s						
TIXI				S	**S**	**10 11 01.8**	**-1.6**
TIXI				ScP	**ScP**	**10 13 29.0**	**-0.5**
TIXI				ScS	**ScS**	**10 17 15.0**	**-2.4**
TIXI	**Tiksi**	**24.22**	**346**	⇓*e*P	**P**	**10 07 23.7**	**-0.9**
JAM	**Amami Oshima**	**24.86**	**220**	P	**P**	**10 07 31.3**	**+0.4**
JAMN	**Amaminishikomi**	**25.19**	**221**	P	**P**	**10 07 33.4**	**-0.4**
HHC	**Hu-ho-hao-te**	**26.60**	**266**	*e*P	**P**	**10 07 46.5**	**+0.3**
HHC				S	**S**	**10 11 41.5**	**-0.2**
HHC				pmax	pmax		
	comp=Z,64nm,0.8s						
HHC				pmax	pmax		
	comp=Z,150nm,3.8s						
ULN	**Ulaanbaatar**	**26.69**	**283**	*de*P	**P**	**10 07 47.1**	**+0.1**
ULN				pmax	pmax		
	comp

TLY *e*PcP **PcP** 10 10 54.4 +0.8
comp=Z,123nm,1.0s
TLY *e*ScP **ScP** 10 13 40.6 -0.1
TNA Tin City 28.30 38 *e*P **P** 10 08 01.2 +0.7
comp=Z,55nm,1.0s
TNA *e*pP **pP** 10 09 31.4 -0.5
ZAK Zakamensk 28.36 290 *e*P **P** 10 08 01.0 -0.5
ZAK pmax pmax
comp=Z,52nm,1.1s
MOY Mondy 29.45 293 *e*P **P** 10 08 11.4 +0.5
MOY pmax pmax
comp=Z,96nm,2.7s
SDPT Sand Point 31.77 59 *e*P **P** 10 08 30.2 -0.2
SDPT *e*PcP **PcP** 10 11 04.4 +0.5
YHNB Yeheng 31.88 230 *e*P **P** 10 08 32.3 +0.3
comp=Z,29nm,1.0s
XAN Xi'an 32.23 257 P **P** 10 08 34.8 0.0
XAN S **S** 10 13 04.8 -3.7
XAN pmax pmax
comp=Z,10.0nm,1.0s
SSLB Suanglung 32.82 229 *e*P **P** 10 08 39.6 -0.3
comp=Z,36nm,1.2s
YULB Yu-li 32.98 228 *e*P **P** 10 08 41.2 0.0
comp=Z,24nm,0.9s
QZH Quanzhou 33.09 234 P **P** 10 08 43.8 +1.8
QZH sP **sP** 10 11 24.0 +2.7
QZH S **S** 10 13 23.5 +2.0
QZH sS **sS** 10 16 14.5 -1.9
QZH pmax pmax
comp=Z,440nm,6.0s
TT01 Tatalina 33.21 44 *e*P **P** 10 08 43.3 +0.7
TT01 *e*pP **pP** 10 10 19.0 +2.3
KRAR Krasnoyarsk 33.21 303 ⇓*i*P **P** 10 08 42.2 -0.5
KRAR pmax pmax
comp=Z,125nm,0.9s
TTA Tatalina 33.21 44 *e*P **P** 10 08 43.5 +0.8
TTA pmax pmax
comp=Z,35nm,0.9s
TTA Tatalina 33.21 44 *e*P **P** 10 08 43.5 +0.8
comp=Z,35nm,0.9s
TTA *e*pP **pP** 10 10 19.7 +2.9
TPUB Ta-pu 33.39 229 *e*P **P** 10 08 44.6 -0.1
comp=Z,32nm,0.6s
SVW2 Sparrevohn 33.53 47 *e*P **P** 10 08 46.7 +1.4
comp=Z,48nm,1.1s
TWG Pinlang 33.57 228 *e*P **P** 10 08 46.3 +0.1
comp=Z,292nm,0.9s
LZH Lanzhou 34.27 264 P **P** 10 08 53.5 +1.5
LZH PP **pP** 10 10 29.0 +2.2
LZH pP PP 10 10 30.3 -4.5
LZH sP sP 10 11 32.0 +0.1
LZH S **S** 10 13 40.0 +0.5
LZH sS sS 10 16 34.0 -1.1
LZH pmax pmax
comp=Z,75nm,1.0s
LZH pmax pmax
comp=Z,200nm,4.0s
ENH Enshi 34.38 251 *e*P **P** 10 08 53.0 +0.1
comp=Z,20nm,0.3s
ENH *e*PcP **PcP** 10 11 12.2 +0.3
NRIK Noril'sk 34.81 327 P **P** 10 08 56.0 +0.1
comp=Z,51nm,0.5s,baz=97,slow=9.7,SNR=73
NRIK PcP **PcP** 10 11 12.9 +0.4
comp=Z,23nm,0.5s,baz=106,slow=2.9,SNR=7.0
NRIK S **S** 10 13 46.4 0.0
comp=Z,13nm,0.9s,baz=153,slow=23,SNR=5.7
NRIK ScP **ScP** 10 14 03.9 -0.2
comp=Z,16nm,0.7s,baz=85,slow=6.3,SNR=6.5
PPLA Purkeypile 34.96 44 *e*P **P** 10 08 58.5 +1.2
comp=Z,366nm,1.8s
PPLA *e*S **S** 10 13 54.9 +5.7
CAST Castle Rocks 34.96 43 *e*P **P** 10 08 58.2 +0.9
comp=Z,111nm,0.8s
RSO Redoubt South 34.99 48 *e*P **P** 10 08 58.6 +0.9
GTA Gaotai 35.05 272 ⇓P **P** 10 08 59.5 +1.0
GTA pP pP 10 10 37.5 +3.8
GTA PcP **PcP** 10 11 14.8 +0.9
GTA sP sP 10 11 37.8 -0.9
GTA S **S** 10 13 51.5 +0.3
GTA ScP **ScP** 10 14 06.0 +0.3
GTA PcS **PcS** 10 15 03.5 +1.6
GTA ScS **ScS** 10 18 11.8 +0.2
GTA pmax pmax
comp=Z,83nm,0.9s
GTA pmax pmax
comp=Z,360nm,5.9s
SPU Mount Spurr 35.22 47 *e*P **P** 10 09 00.4 +0.9
SPU *e*ScP **ScP** 10 14 06.1 +0.3
OHAK Old Harbor 35.31 54 *e*P **P** 10 09 00.1 0.0
comp=Z,82nm,0.7s
BPAW Bear Paw Mtn. 35.39 42 *e*P **P** 10 09 01.1 +0.3
comp=Z,42nm,0.8s
BPAW *e*ScP **ScP** 10 14 07.3 +1.0
MLY Manley 35.42 40 *e*P **P** 10 09 01.6 +0.5
comp=Z,30nm,0.6s
MLY *e*ScP **ScP** 10 14 07.2 +0.7
KTH Kantishna Hill 35.47 43 *e*P **P** 10 09 02.1 +0.6
comp=Z,117nm,0.8s
KTH *e*S **S** 10 13 59.0 +2.4
GUMO Guam 35.48 185 P **P** 10 09 00.9 -1.2
comp=Z,30nm,0.5s,baz=2.3,slow=18,SNR=4.2
COLD Coldfoot 35.55 36 *e*P **P** 10 09 02.3 +0.3
comp=Z,86nm,0.8s
COLD *e*S **S** 10 13 57.7 +0.1
KDAK Kodiak Island 35.56 53 *e*P **P** 10 09 02.2 0.0
KDAK pmax pmax
comp=Z,56nm,0.7s
KDAK Kodiak Island 35.56 53 *e*P **P** 10 09 02.2 0.0
comp=Z,56nm,0.7s
TRF Thorofare Moun 35.76 43 *e*P **P** 10 09 04.4 +0.4
comp=Z,34nm,0.6s
TRF *e*S **S** 10 14 02.9 +1.8
BRLK Bradley Lake 36.03 49 *e*P **P** 10 09 06.5 +0.3
comp=Z,64nm,0.9s
BRLK *e*PcP **PcP** 10 11 16.9 +0.5
BWN Browne 36.05 42 *e*P **P** 10 09 07.6 +1.4
comp=Z,305nm,1.0s
BWN *e*S **S** 10 14 09.5 +4.5
MCK McKinley 36.33 42 *e*P **P** 10 09 08.9 +0.4
MCK *e*S **S** 10 14 10.3 +1.0
MCK pmax pmax
comp=Z,78nm,0.8s
MCK McKinley 36.33 42 *e*P **P** 10 09 08.9 +0.4
comp=Z,78nm,0.8s
MCK *e*S **S** 10 14 10.3 +1.0
RC01 Rabbit Creek A 36.35 47 *e*P **P** 10 09 09.1 +0.4
comp=Z,76nm,1.1s
RND Reindeer 36.41 43 *e*P **P** 10 09 09.0 -0.2
RND *e*S **S** 10 14 10.8 +0.3
RND pmax pmax
comp=Z,118nm,1.2s
RND Reindeer 36.41 43 *e*P **P** 10 09 09.0 -0.2
comp=Z,118nm,1.2s
RND *e*S **S** 10 14 10.8 +0.3
MDM Murphy Dome 36.49 40 *e*P **P** 10 09 10.2 +0.3
comp=Z,84nm,1.0s
MDM *e*S **S** 10 14 11.1 -0.6
PMR Palmer 36.55 46 *e*P **P** 10 09 10.7 +0.4
PMR *e*S **S** 10 14 11.5 -1.0
PMR pmax pmax
comp=Z,39nm,0.6s
PMR Palmer 36.55 46 *e*P **P** 10 09 10.7 +0.4
comp=Z,39nm,0.6s
PMR *e*S **S** 10 14 11.5 -1.0
WRH Wood River Hil 36.61 41 *e*P **P** 10 09 11.5 +0.7
comp=Z,84nm,0.7s
WRH *e*S **S** 10 14 11.5 -1.8
COLA College 36.66 40 *d i*P **P** 10 09 11.5 +0.3
COLA pmax pmax
comp=Z,139nm,0.9s
COLA College 36.66 40 *e*P **P** 10 09 11.7 +0.5
comp=Z,200nm,0.8s
COLA *e*S **S** 10 14 17.0 +2.9
SEW Seward 36.67 48 *e*P **P** 10 09 11.4 +0.1
comp=Z,112nm,0.9s
CCB Clear Creek Bu 36.71 41 *e*P **P** 10 09 11.5 0.0
comp=Z,36nm,0.6s
CCB *e*ScP **ScP** 10 14 12.1 +0.9
SML Sawmill 36.89 45 *e*P **P** 10 09 13.4 +0.2
SML pmax pmax
comp=Z,165nm,1.0s
SML Sawmill 36.89 45 *e*P **P** 10 09 13.3 +0.2
comp=Z,165nm,1.0s
IL1 Eielson Array 37.09 40 *e*P **P** 10 09 14.6 -0.1
IL1 *e*ScP **ScP** 10 14 11.9 -0.7
ILAR Eielson Array 37.09 40 P **P** 10 09 14.8 +0.1
comp=Z,82nm,0.7s,baz=263,slow=6.3,SNR=662
ILAR PcP **PcP** 10 11 18.0 -1.5
comp=Z,7.4nm,0.5s,baz=291,slow=3.7,SNR=7.7
ILAR ScP **ScP** 10 14 12.3 -0.4
comp=Z,3.2nm,0.7s,baz=278,slow=4.2,SNR=7.0
ILAR S **S** 10 14 18.7 -1.8
comp=Z,2.9nm,1.0s,baz=278,slow=16,SNR=7.6
ILB Eielson Array 37.09 40 *e*P **P** 10 09 14.3 -0.3
ILB *e*ScP **ScP** 10 14 12.8 +0.1
SCM Sheep Creek Mo 37.35 45 *e*P **P** 10 09 17.6 +0.6
SCM pmax pmax
comp=Z,79nm,0.8s
SCM Sheep Creek Mo 37.35 45 *e*P **P** 10 09 17.6 +0.6
comp=Z,79nm,0.8s
SCM *e*ScP **ScP** 10 14 15.1 +1.3
FYU Fort Yukon 37.55 37 *e*P **P** 10 09 19.4 +1.0
comp=Z,195nm,0.6s
FYU *e*ScP **ScP** 10 14 16.6 +2.2
CD2 Chengdu 37.57 258 P **P** 10 09 18.0 -1.2
CD2 pP pP 10 10 54.3 -1.7
CD2 PP **PP** 10 11 03.3 -0.4
CD2 sP sP 10 11 58.5 -2.0
CD2 S **S** 10 14 27.5 -1.1
CD2 sS sS 10 17 25.5 -1.3
CD2 pmax pmax
comp=Z,30nm,0.6s
CD2 pmax pmax
comp=Z,100nm,7.1s
PAX Paxson 37.99 43 *e*P **P** 10 09 21.9 -0.3
PAX *e* 10 11 23.6
PAX pmax pmax
comp=Z,14nm,0.6s
PAX Paxson 37.99 43 *e*P **P** 10 09 21.9 -0.3
comp=Z,14nm,0.6s
PAX *e*PcP **PcP** 10 11 23.6 +1.1
PAX *e*ScP **ScP** 10 14 18.0 +1.7
KLU Klutina 38.08 45 *e*P **P** 10 09 23.5 +0.6
comp=Z,92nm,0.7s
KLU *e*S **S** 10 14 37.5 +2.2
DIV Divide 38.23 46 *e*P **P** 10 09 24.7 +0.6
comp=Z,85nm,0.6s
ZAA0 Zalesovo Array 38.23 302 *e*P **P** 10 09 23.8 -0.3
ZAA0 *e*PcP **PcP** 10 11 23.3 0.0
ZALV Zalesovo Beam 38.23 302 P **P** 10 09 23.9 -0.2
comp=Z,88nm,0.4s,baz=67,slow=6.6,SNR=171
ZALV PcP **PcP** 10 11 23.4 +0.1
comp=Z,18nm,0.3s,baz=75,slow=2.5,SNR=14
ZALV ScP **ScP** 10 14 16.7 -0.5
comp=Z,9.9nm,0.5s,baz=74,slow=3.3,SNR=7.9
EYAK Cordova Ski Ar 38.37 47 *e*P **P** 10 09 25.9 +0.7
comp=Z,66nm,0.8s
EYAK *e*ScP **ScP** 10 14 19.3 +1.7
DOT Dot Lake 38.48 42 *e*P **P** 10 09 25.3 -0.8
comp=Z,80nm,0.6s
MENT Mentasta 38.78 43 *e*P **P** 10 09 29.1 +0.6
comp=Z,37nm,0.8s
MENT *e*S **S** 10 14 48.3 +2.8
NVS Novosibirsk 38.81 304 *e*P **P** 10 09 29.0 +0.2
NVS *e* 10 11 18.9
NVS pmax pmax
comp=Z,153nm,1.7s
NVS pmax pmax
comp=N,72nm,1.8s
NVS Novosibirsk 38.81 304 *e*P **P** 10 09 29.0 +0.2
BMRM Bremner River 38.82 46 *e*P **P** 10 09 29.5 +0.7
comp=N,42nm,0.8s
BMRM *e*ScP **ScP** 10 14 21.0 +1.6
GYA Guiyang 38.83 250 ⇑*i*P **P** 10 09 29.5 0.0
GYA pP pP 10 11 08.8 +1.7
GYA PP **PP** 10 11 15.3 -1.3
GYA PcP **PcP** 10 11 27.0 +1.2
GYA sP sP 10 12 10.5 -0.9
GYA ScP **ScP** 10 14 22.5 +2.3
GYA S **S** 10 14 45.0 -2.3
GYA sS sS 10 17 44.0 -2.6
GYA pmax pmax
comp=N,40nm,0.8s
GYA pmax pmax
comp=N,140nm,5.0s
RAGM Ragged Mountai 38.93 47 *e*P **P** 10 09 31.4 +1.6
comp=N,63nm,0.8s
EGAK Eagle 39.50 40 *e*P **P** 10 09 34.0 -0.2
comp=N,137nm,0.6s
EGAK *e*S **S** 10 14 55.9 0.0
WMQ Urumqi 40.67 286 ⇓*i*P **P** 10 09 45.0 +1.1
WMQ sP sP 10 12 19.8 -7.1
WMQ S S 10 15 23.3 +10
WMQ ScS **ScS** 10 18 50.5 +6.3
WMQ pmax pmax
comp=N,61nm,0.6s
WMQ pmax pmax
comp=N,92nm,5.0s
INK Inuvik 41.69 33 P **P** 10 09 51.6 +0.1
comp=N,80nm,0.3s,baz=296,slow=9.7,SNR=852
INK PcP **PcP** 10 11 33.5 -0.8
comp=N,14nm,0.6s,baz=308,slow=3.8,SNR=8.1
INK ScP **ScP** 10 14 31.0 +0.5
comp=N,2.0nm,0.6s,baz=300,slow=11,SNR=3.6
INK S **S** 10 15 25.8 -1.5
comp=N,5.9nm,0.9s,baz=89,slow=29,SNR=11
INK ScS **ScS** 10 18 48.9 -0.5
comp=N,2.4nm,1.0s,baz=78,slow=31,SNR=12
KMI Kunming 42.23 252 P **P** 10 09 56.8 +0.1
KMI sP sP 10 12 41.5 +1.3
KMI S **S** 10 15 34.8 -1.9
KMI sS sS 10 18 40.3 +1.3
KMI SS **ScS** 10 18 58.8 +4.1
KMI pmax pmax
comp=N,13nm,1.2s
KMI pmax pmax
comp=N,51nm,3.1s
MK31 Makanchi Array 42.60 293 *i* P **P** 10 09 59.0 0.0
MK31 pmax pmax
comp=Z,159nm,0.7s
MK31 Makanchi Array 42.60 293 *e*P **P** 10 09 59.3 +0.3
MKAR Makanchi Array 42.60 293 P **P** 10 09 59.3 +0.3
comp=Z,172nm,0.7s,baz=69,slow=8.0,SNR=879
MKAR PcP **PcP** 10 11 37.7 -0.2
comp=Z,20nm,0.7s,baz=69,slow=4.1,SNR=6.7
MKAR ScP **ScP** 10 14 33.9 -0.8
comp=Z,6.9nm,0.5s,baz=62,slow=4.2,SNR=11
MKAR S **S** 10 15 40.4 -0.7
comp=Z,6.3nm,1.1s,baz=65,slow=18,SNR=3.9
MKAR ScS **ScS** 10 18 53.2 -2.8
comp=Z,0.9nm,0.7s,baz=75,slow=14,SNR=4.3
MK01 Makanchi Array 42.60 293 *e*P **P** 10 09 59.5 +0.5
QIZ Qiongzhong 42.63 239 P **P** 10 10 00.5 +0.9
QIZ S **S** 10 15 44.5 +2.5
QIZ sS **sS** 10 18 44.8 0.0
QIZ pmax pmax
comp=Z,31nm,1.1s
QIZ pmax pmax
comp=Z,130nm,6.4s
QIZ Qiongzhong 42.63 239 *e*P **P** 10 09 59.6 0.0
comp=Z,47nm,1.4s
MAKZ Makanchi 42.78 293 P **P** 10 10 00.2 -0.2
MAKZ pmax pmax
comp=Z,136nm,0.9s
MAKZ Makanchi 42.78 293 *e*P **P** 10 10 00.8 +0.3
comp=Z,119nm,0.9s
KURK Kurchatov 42.98 299 P **P** 10 10 01.2 -0.7
KURK Kurchatov 42.98 299 *e*P **P** 10 10 02.0 +0.1
comp=Z,422nm,1.0s
KURK PcP **PcP** 10 11 39.3 +0.2
KURK ScP **ScP** 10 14 35.8 -0.4
KURK S **S** 10 15 45.8 -0.6
KURK Kurchatov 42.98 299 *e*P **P** 10 10 01.2 -0.7
KURBB Kurchatov Arra 43.08 299 P **P** 10 10 02.8 +0.1
comp=Z,294nm,0.7s,baz=68,slow=8.3,SNR=684
KURBB PcP **PcP** 10 11 39.3 -0.1
comp=Z,25nm,0.8s,baz=67,slow=3.1,SNR=7.6
KURBB ScP **ScP** 10 14 35.8 -0.8
comp=Z,8.3nm,0.6s,baz=71,slow=4.1,SNR=9.0
KURBB S **S** 10 15 45.8 -1.9
comp=Z,6.1nm,0.7s,baz=93,slow=35,SNR=12
SKAG Skagway 43.69 46 *e*P **P** 10 10 08.6 +1.4
comp=Z,38nm,1.0s
WRAK Wrangell Islan 46.39 49 *e*P **P** 10 10 29.7 +1.8
comp=Z,65nm,1.4s
CRAG Craig 46.43 51 *e*P **P** 10 10 29.6 +1.4
comp=Z,28nm,0.9s
BVA0 Borovoye Array 46.50 306 *i* P **P** 10 10 28.6 -0.2
BVA0 pmax pmax
comp=Z,112nm,0.7s
BVAR Borovoye Array 46.50 306 P **P** 10 10 29.4 +0.6
comp=Z,98nm,0.4s,baz=47,slow=7.8,SNR=441
BVAR PcP **PcP** 10 11 51.4 0.0
comp=Z,30nm,0.5s,baz=94,slow=3.2,SNR=9.6
BVAR ScP **ScP** 10 14 50.3 -0.4
comp=Z,7.3nm,0.5s,baz=59,slow=3.0,SNR=6.7
BVAR S **S** 10 16 34.4 -1.2
comp=Z,2.5nm,0.8s,baz=58,slow=14,SNR=2.8
BRVK Borovoye 46.54 306 *de*P **P** 10 10 29.2 +0.1
BRVK pmax pmax
comp=Z,125nm,0.8s
BRVK Borovoye 46.54 306 *e*P **P** 10 10 29.4 +0.3
comp=Z,193nm,0.6s
BRVK Borovoye 46.54 306 ⇓*e*P **P** 10 10 29.2 +0.1
LSA Lhasa 46.57 267 *e*P **P** 10 10 32.0 +1.7
LSA pmax pmax
comp=Z,47nm,0.6s
LSA Lhasa 46.57 267 *e*P **P** 10 10 32.0 +1.7
comp=Z,47nm,0.6s
DLBC Dease Lake 46.61 46 P **P** 10 10 31.4 +1.8
comp=Z,35nm,0.9s,baz=291,slow=5.5,SNR=69
DLBC ScP **ScP** 10 14 52.6 +1.4
comp=Z,1.7nm,0.7s,baz=333,slow=1.1,SNR=4.0
DLBC Dease Lake 46.61 46 *e*P **P** 10 10 31.4 +1.8
comp=Z,46nm,1.0s
DLBC ScP **ScP** 10 14 52.6 +1.4
PANO Nakornpanom 47.12 243 P **P** 10 10 35.2 +1.3
comp=Z,53nm,1.3s
NONG Nongkai 47.27 245 P **P** 10 10 36.0 +0.9
comp=Z,52nm,0.8s,comp=Z,9μm
CRAI Chiangrai 47.30 250 P **P** 10 10 36.0 +0.7
comp=Z,78nm,1.1s
SKNT Sakolnakorn 47.63 243 P **P** 10 10 38.5 +0.7
comp=Z,48nm,1.1s,comp=Z,3μm
UBPT Khong Chiam 48.11 240 P **P** 10 10 42.8 +1.5
comp=Z,35nm,0.8s
PAYA Payao 48.27 249 P **P** 10 10 43.8 +1.3
comp=Z,12nm,0.7s
TKM2 Tokmak 2 48.67 291 *e*P **P** 10 10 46.2 +0.8
TKM2 pmax pmax
comp=Z,96nm,1.1s
TKM2 Tokmak 2 48.67 291 *e*P **P** 10 10 46.2 +0.8
comp=Z,96nm,1.1s
KHON Khomkaen 48.81 244 P **P** 10 10 48.0 +1.5
comp=Z,21nm,1.1s,comp=Z,3μm
LOEI Loei 48.83 247 P **P** 10 10 45.1 -1.6
comp=Z,29nm,1.0s
SHL Shillong 48.87 262 ⇓*i*P **P** 10 10 48.0 +0.9
SHL *e*S **S** 10 17 09.0 -0.4
LAMP Lampang 49.05 249 P **P** 10 10 50.0 +1.7
comp=Z,7.1nm,1.0s
UTTA Uttaradit 49.08 247 P **P** 10 10 49.7 +1.2
comp=Z,4.9nm,1.0s,comp=Z,51nm
CHTO Chiang Mai 49.25 250 P **P** 10 10 50.5 +0.7
comp=Z,118nm,0.8s
CHTO Chiang Mai 49.25 250 *e*P **P** 10 10 50.8 +1.0
CHTO pmax pmax
comp=Z,21nm,0.9s
CHTO Chiang Mai 49.25 250 P **P** 10 10 51.0 +1.3
SNR=5.6
CHTO Chiang Mai 49.25 250 P **P** 10 10 51.0 +1.3
SNR=5.6
CHTO Chiang Mai 49.25 250 *e*P **P** 10 10 50.8 +1.0
comp=Z,21nm,0.9s
FRU Bishkek 49.31 292 ⇓*i*P **P** 10 10 50.5 +0.5
FRU *e* 10 11 58.0
FRU *i* S **S** 10 17 16.0 +1.3
FRU pmax pmax
comp=Z,170nm,1.5s
FRU Bishkek 49.31 292 ⇓*i*P **P** 10 10 50.5 +0.5
AAK Ala-Archa 49.50 292 P **P** 10 10 51.8 +0.3
AAK pmax pmax
comp=Z,83nm,0.7s
AAK Ala-Archa 49.50 292 *e*P **P** 10 10 52.1 +0.6
comp=Z,109nm,0.8s
AAK Ala-Archa 49.50 292 *e*P **P** 10 10 51.8 +0.3
CM31 Chiang Mai Arr 49.52 250 *e*P **P** 10 10 53.2 +1.4
CMAR Chiang Mai Arr 49.52 250 P **P** 10 10 52.7 +1.0
comp=Z,5.5nm,0.6s,baz=30,slow=7.0,SNR=33
CMAR PcP **PcP** 10 12 03.9 +1.0
comp=Z,4.8nm,0.6s,baz=12,slow=3.3,SNR=10
CMAR ScP **ScP** 10 15 04.2 0.0
comp=Z,6.1nm,0.7s,baz=12,slow=3.4,SNR=14
CM01 Chiang Mai Arr 49.54 250 *e*P **P** 10 10 52.8 +1.0
CM01 *e*PcP **PcP** 10 12 04.1 +1.1
SVE Sverdlovsk 49.56 314 *c i*P **P** 10 10 52.0 +0.5
SVE *e*S **S** 10 17 17.6 +0.1
SVE pmax pmax
comp=Z,283nm,0.9s
SVE Sverdlovsk 49.56 314 ⇑*i*P **P** 10 10 52.0 +0.5
KBS Kingsbay 49.57 350 *e*P **P** 10 10 51.5 +0.3
KBS IAmb IAmb 10 10 52.4
comp=Z,128nm,0.7s
KBS Kingsbay 49.57 350 *e*P **P** 10 10 51.4 +0.2
KBS pmax pmax
comp=Z,124nm,0.8s
KBS Kingsbay 49.57 350 *e*P **P** 10 10 51.4 +0.2
comp=Z,124nm,0.8s
KBS Kingsbay 49.57 350 *e*P **P** 10 10 51.4 +0.2
SPA0 Spitsbergen Ar 49.60 348 *e*P **P** 10 10 51.2 -0.4
SPA0 IAmb IAmb 10 10 52.6
comp=Z,116nm,1.2s
SPA0 Spitsbergen Ar 49.60 348 *e*P **P** 10 10 51.1 -0.4
SPITS Spitsbergen Ar 49.60 348 P **P** 10 10 50.8 -0.7
comp=Z,16nm,0.5s,baz=52,slow=5.4,SNR=53
SPITS PcP **PcP** 10 12 01.8 -0.5
comp=Z,12nm,0.6s,baz=90,slow=2.9,SNR=4.4
CHAI Chaiyaphum 49.65 244 P **P** 10 10 53.1 +0.4
comp=Z,17nm,0.7s,comp=Z,172nm
PBKT Sadao Pong 49.73 246 P **P** 10 10 54.0 +0.7
comp=Z,31nm,0.6s
RES Resolute Bay 49.77 18 P **P** 10 10 52.5 -0.2
comp=Z,238nm,0.8s,baz=336,slow=5.2,SNR=213
RES PcP **PcP** 10 12 03.0 +0.1
comp=Z,29nm,0.7s,baz=336,slow=4.5,SNR=4.4
SUKH Sukhothai 49.84 248 P **P** 10 10 55.9 +1.8
comp=Z,4.4nm,0.8s,comp=Z,56nm
SOKR Solikamsk 49.90 318 *d i*P **P** 10 10 51.7 -2.2
SOKR pmax pmax
comp=Z,146nm,0.9s
MYLDM Lahad Datu 50.24 219 *e*P **P** 10 10 58.3 +1.2
comp=Z,44nm,1.1s
KSH Kashi 50.37 288 ⇓*i*P P 10 11 02.8 +4.9
KSH *e*PcP **PcP** 10 12 10.8 +4.8
KSH *e*pP pP 10 12 46.0 +2.8
KSH *e*PP PP 10 13 08.8 +7.7
KSH *e*sP sP 10 13 44.0 -1.3
KSH PcS **PcS** 10 16 07.5 +3.1
KSH S **S** 10 17 36.3 +7.0
KSH ScS **ScS** 10 19 54.0 +5.8
KSH SS **SKiKP** 10 21 22.0 -4.7
KSH pmax pmax
comp=Z,100nm,1.1s
KKM Kota Kinabalu 50.45 222 *e*P **P** 10 10 59.5 +0.9
comp=Z,56nm,1.0s
HSPB Hornsund (broa 50.63 347 *e*P **P** 10 10 58.4 -0.6
BBB Bella Bella 50.64 52 P **P** 10 11 00.4 +1.1
comp=Z,46nm,0.8s,baz=306,slow=7.3,SNR=48
ARU Arti 50.75 314 *d i*P **P** 10 11 00.2 0.0
ARU *e* 10 12 06.5
ARU 10 13 02.4
ARU S **S** 10 17 33.4 -0.1
ARU pmax pmax
comp=Z,446nm,1.2s
ARU Arti 50.75 314 *e*P **P** 10 11 00.4 +0.2
comp=Z,283nm,0.5s
ARU Arti 50.75 314 ⇓*i*P **P** 10 11 00.2 0.0
MNAS Manas 50.79 293 P **P** 10 11 01.2 +0.3
MNAS pmax pmax
comp=Z,67nm,0.6s
SRAK Srakaew 51.10 243 P **P** 10 11 02.0 -1.3
comp=Z,90nm,1.0s,comp=Z,922nm
YKW3 Yellowknife Ar 51.19 36 *e*P **P** 10 11 03.2 0.0
comp=Z,59nm,0.7s
GUN Gumba 51.22 269 *e*P **P** 10 11 05.0 +0.6
comp=Z,82nm,0.4s
GUN Gumba 51.22 269 *e*P **S** 10 17 42.2 +0.9
comp=Z,86nm,1.1s
YKA Yellowknife Ar 51.23 36 P **P** 10 11 03.4 -0.1
comp=Z,58nm,0.6s,baz=303,slow=7.1,SNR=1039
YKA PcP **PcP** 10 12 09.0 +0.4
comp=Z,9.4nm,0.4s,baz=307,slow=3.7,SNR=26
YKA pP **pP** 10 12 50.2 +0.9
comp=Z,3.7nm,0.7s,baz=304,slow=7.9,SNR=4.4
YKA ScP **ScP** 10 15 11.7 +0.9
comp=Z,4.2nm,0.7s,baz=302,slow=4.3,SNR=12

YKA P4KPbc 10 48 22.9
comp=Z,0.3nm,0.7s,baz=304,slow=4.3,SNR=9.3
YKB5 Yellowknife Ar 51.23 36 *e*P **P 10 11 02.6 -1.0**
KK31 Karatay Array 51.64 294 *i* P **P 10 11 06.6 -0.3**
KK31 pmax pmax
comp=Z,50nm,0.7s
KKAR Karatay Array 51.64 294 *e*P **P 10 11 07.1 +0.2**
KKAR pmax pmax
comp=Z,51nm,0.6s
KKAR Karatay Array 51.64 294 *e*P **P 10 11 07.1 +0.2**
comp=Z,51nm,0.6s
KKN Kakani 51.69 270 *e*P **P 10 11 08.5 +0.8**
KKN Kakani 51.69 270 *e*P **S 10 17 46.8 -0.6**
SWI Sorong 51.73 201 P **P 10 11 06.8 -1.0**
comp=Z,132nm,0.8s,comp=Z,2μm
JAY Jayapura 51.75 189 P **P 10 11 06.0 -2.0**
PKIN Phulchoki 51.76 269 *e*P **S 10 17 46.4 -2.0**
comp=Z,105nm,1.4s
DMN Daman 51.92 270 *e*P **P 10 11 10.4 +1.0**
comp=Z,309nm,0.9s
DMN Daman 51.92 270 *e*P **S 10 17 49.0 -1.6**
CHBT CHBT 51.94 242 P **P 10 11 10.7 +1.4**
comp=Z,49nm,1.1s,comp=Z,3μm
GKN Gorkha 51.97 270 *e*P **P 10 11 10.5 +0.9**
comp=Z,221nm,0.6s
GKN Gorkha 51.97 270 *e*P **S 10 17 51.5 +0.5**
comp=Z,88nm,1.1s
KOLN Koldanda 52.81 271 *e*P **P 10 11 16.6 +0.9**
comp=Z,122nm,0.5s
KOLN Koldanda 52.81 271 *e*P **S 10 18 00.8 -1.4**
PYUN Piuthan 52.99 272 *e*P **P 10 11 17.8 +0.9**
PYUN Piuthan 52.99 272 *e*P **S 10 18 05.3 +0.7**
LVZ Lovozero 53.09 334 *ce*P **P 10 11 16.6 -0.2**
LVZ pmax pmax
comp=Z,84nm,0.9s
LVZ Lovozero 53.09 334 *e*P **P 10 11 16.8 0.0**
comp=Z,90nm,0.7s
RABL Rabaul 53.22 174 *e*P **P 10 11 19.9 +1.5**
comp=Z,372nm,1.1s
MRSI Marisa 53.23 213 P **P 10 11 18.1 -0.4**
comp=Z,167nm,1.0s,comp=Z,2μm
PHET Kaeng Krachan 53.40 244 P **P 10 11 21.4 +1.7**
comp=Z,21nm,0.7s,comp=Z,236nm
FAKI Fak Fak 53.50 199 P **P 10 11 20.0 -0.4**
comp=Z,159nm,1.4s,comp=Z,2μm
FAKI Fak Fak 53.50 199 *e*P **P 10 11 20.5 +0.1**
comp=Z,242nm,1.3s
APA Apatity 53.66 334⇑ *i*P **P 10 11 19.6 -1.2**
APA pmax pmax
comp=Z,68nm,0.6s
APA MLR MLR
comp=Z,500nm,14.0s
APA Apatity 53.66 334⇑ *i*P **P 10 11 19.6 -1.2**
KEV Kevo 53.84 338 *e*P **P 10 11 22.0 0.0**
KEV pmax pmax
comp=Z,84nm,0.6s
KEV Kevo 53.84 338 *e*P **P 10 11 22.0 0.0**
comp=Z,84nm,0.6s
HAMF Hammerfest 53.97 340 *e*P **P 10 11 22.4 -0.5**
AB31 Akbulak array 54.07 306 *i* P **P 10 11 23.7 -0.2**
AB31 pmax pmax
comp=Z,57nm,0.4s
ABKAR Akbulak array 54.07 306 *e*P **P 10 11 24.3 +0.3**
comp=Z,131nm,0.4s
DAG Danmarks Havn 54.10 356⇓ *i*P **P 10 11 23.4 -0.4**
comp=Z,44nm,0.7s
DAG Danmarks Havn 54.10 356⇓ *i*P **P 10 11 23.4 -0.4**
DAG pmax pmax
comp=Z,30nm,0.7s
DAG Danmarks Havn 54.10 356⇓ *i*P **P 10 11 23.4 -0.4**
ARA0 ARCESS Array S 54.37 338 *e*P **P 10 11 25.6 -0.1**
ARCES ARCESS Array B 54.37 338 P **P 10 11 25.6 -0.1**
comp=Z,30nm,0.4s,baz=39,slow=8.7,SNR=307
ARCES PcP **PcP 10 12 20.6 +0.1**
comp=Z,17nm,0.7s,baz=22,slow=3.9,SNR=8.2
ARCES ScP **ScP 10 15 23.7 -0.7**
comp=Z,3.8nm,0.7s,baz=33,slow=5.4,SNR=4.3
ARCES PKKP **PKKPdf 10 33 02.4 +0.2**
comp=Z,3.2nm,1.0s,baz=80,slow=1.5,SNR=4.1
ARE0 ARCESS Array S 54.37 338 *e*P **P 10 11 25.8 +0.1**
ARE0 IAmb IAmb 10 11 27.0
comp=Z,73nm,0.9s
AKTO Aktyubinsk 54.38 308 P **P 10 11 25.6 -0.6**
AKTO pmax pmax
comp=Z,61nm,0.7s
TMCR Tamitsa 54.48 330 *e*P **P 10 11 26.8 +0.2**
TMCR pmax pmax
comp=Z,263nm,0.7s
OCP Olym-Cheeka Pk 54.68 55 P **P 10 11 29.2 +0.9**
SMLA Simla 54.81 279 *e*P **P 10 11 29.6 +0.2**
OTR Olympics--Tyee 54.96 55 P **P 10 11 31.7 +1.4**
OFR Olym-F Res Ctr 55.02 55 P **P 10 11 32.2 +1.6**
PGC Sidney 55.10 54 *e*P **P 10 11 31.8 +0.7**
comp=Z,60nm,0.6s
DZET Dzherino 55.23 291 P **P 10 11 32.0 -0.4**
DZET pmax pmax
comp=Z,69nm,0.6s
KTK1 Kautokeino 55.30 339 *e*P **P 10 11 32.3 +0.1**
KTK1 IAmb IAmb 10 11 33.3
comp=Z,109nm,0.7s
MCW Mount Constitu 55.41 54 P **P 10 11 34.4 +1.0**
MCW Mount Constitu 55.41 54 P **P 10 11 34.4 +1.0**
B04A Port Angeles 55.42 55 P **P 10 11 34.6 +1.1**
SBUM Sibu 55.44 225 *e*P **P 10 11 35.4 +1.5**
comp=Z,74nm,1.0s
SBUM *e*ScP **ScP 10 15 31.8 +1.9**
A04D Lummi Island 55.45 54 P **P 10 11 34.6 +1.0**
baz=307,SNR=10.0
OSD Olympics--Snow 55.46 55 P **P 10 11 35.0 +1.1**
KULLO Kullorsuaq 55.49 8⇓ *i*P **P 10 11 32.8 -0.6**
comp=Z,112nm,0.5s
KULLO Kullorsuaq 55.49 8⇓ *i*P **P 10 11 32.8 -0.6**
KULLO pmax pmax
comp=Z,110nm,0.5s
NLWA Neilton Lookou 55.63 55 *e*P **P 10 11 36.3 +1.4**
comp=Z,66nm,0.8s
SQM Sequim 55.66 54 P **P 10 11 36.5 +1.5**
BLN Blyn Mountain 55.74 54 P **P 10 11 36.8 +1.1**
TRO Tromso 55.80 341 *e*P **P 10 11 35.6 0.0**
TRO IAmb IAmb 10 11 36.8
comp=Z,233nm,0.9s
B05A Bryant 56.05 54 P **P 10 11 38.9 +1.1**
baz=308,SNR=25
KLMR Klimovskoe 56.14 326 *i* P **P 10 11 37.8 -0.3**
KLMR *e**PP **pP 10 13 25.1 -1.7**
KLMR *e*S **S 10 18 42.7 -1.5**
KLMR pmax pmax
comp=Z,152nm,0.8s
B06A Marblemount 56.22 53 *e*P **P 10 11 39.6 +0.8**
comp=Z,56nm,0.9s
E03A Lebam 56.31 56 *e*P **P 10 11 41.2 +1.7**
comp=Z,92nm,0.8s
F03A Seaside 56.69 57 *e*P **P 10 11 44.2 +2.0**
comp=Z,67nm,0.9s
D05A Enumclaw 56.77 55 *e*P **P 10 11 44.4 +1.7**
comp=Z,65nm,0.8s
C06D Leavenworth 56.90 53 P **P 10 11 44.5 +0.9**
baz=308
F04D Rainier, OR 56.90 56 P **P 10 11 45.7 +2.1**
baz=308
KDI Kendari 57.13 210 P **P 10 11 47.5 +1.9**
LON Longmire 57.14 55 *e*P **P 10 11 46.2 +0.9**
LON pmax pmax
comp=Z,14nm,0.8s
LON Longmire 57.14 55 *e*P **P 10 11 46.2 +0.9**
comp=Z,14nm,0.8s
KSM Kuching 57.19 226 *e*P **P 10 11 47.4 +1.4**
comp=Z,58nm,1.0s
G03D McMinnville, O 57.30 57 P **P 10 11 47.8 +1.4**
baz=309
F04A Amboy 57.32 56 P **P 10 11 47.7 +1.3**
B08A Colville Reser 57.44 52 *e*P **P 10 11 48.1 +0.7**
comp=Z,85nm,1.5s
COR Corvallis 57.67 58 *e*P **P 10 11 51.1 +2.2**
COR pmax pmax
comp=Z,103nm,0.8s
COR Corvallis 57.67 58 *e*P **P 10 11 51.1 +2.2**
comp=Z,103nm,0.8s
KBL Kabul 57.80 287 *e*P **P 10 11 49.6 -0.6**
KBL pmax pmax
comp=Z,127nm,0.8s
KBL Kabul 57.80 287 *e*P **P 10 11 49.6 -0.6**
comp=Z,127nm,0.8s
LOF Lofoten 58.16 342 *e*P **P 10 11 51.5 -0.3**
LOF IAmb IAmb 10 11 52.1
comp=Z,78nm,0.6s

I03D Drain, OR 58.21 59 P **P 10 11 54.6 +2.1**
baz=310,SNR=12
H04A Detroit Lake 58.23 57 *e*P **P 10 11 54.1 +1.4**
comp=Z,104nm,0.8s
PMG Port Moresby 58.25 181 *ce*P **P 10 11 53.7 +0.6**
PMG pmax pmax
comp=Z,168nm,0.9s
PMG Port Moresby 58.25 181 *e*P **P 10 11 54.1 +1.0**
comp=Z,34nm,0.8s
C09A Chrisman Ranch 58.34 52 *e*P **P 10 11 54.3 +0.9**
comp=Z,46nm,0.9s
G05D Wamic, OR 58.35 56 P **P 10 11 55.1 +1.5**
baz=310,SNR=12
SUMG Summit 58.55 2⇓ *i*P **P 10 11 55.5 +0.6**
comp=Z,155nm,0.5s
SUMG Summit 58.55 2⇓ *i*P **P 10 11 55.5 +0.6**
SUMG pmax pmax
comp=Z,160nm,0.5s
SUMG Summit 58.55 2 *e*P **P 10 11 54.9 +0.1**
comp=Z,155nm,0.5s
HAWA Hanford 58.58 54 *e*P **P 10 11 56.1 +1.1**
comp=Z,33nm,0.8s
NEW Newport 58.64 51 P **P 10 11 56.0 +0.6**
comp=Z,26nm,0.8s,baz=309,slow=5.1,SNR=22
NEW PcP **PcP 10 12 38.6 +0.7**
comp=Z,4.9nm,0.6s,baz=249,slow=6.8,SNR=3.3
NEW Newport 58.64 51 P **P 10 11 56.1 +0.6**
baz=310,SNR=16
NEW Newport 58.64 51 *e*P **P 10 11 56.1 +0.6**
NEW 10 12 38.6
NEW pmax pmax
comp=Z,31nm,0.8s
NEW Newport 58.64 51 *e*P **P 10 11 56.1 +0.6**
comp=Z,31nm,0.8s
NEW PcP **PcP 10 12 38.6 +0.7**
I04A Tendick Farm, 58.67 58 P **P 10 11 57.2 +1.5**
baz=310,SNR=20
G06A Carlson Farm, 58.73 56 *e*P **P 10 11 57.4 +1.3**
comp=Z,152nm,1.9s
I05D Terrebonne, OR 58.92 57 P **P 10 11 58.9 +1.5**
baz=310,SNR=29
KULM Kulim 58.95 238⇓P **P 10 11 59.7 +1.8**
KULM Kulim 58.95 238 *e*P **P 10 11 58.5 +0.5**
comp=Z,14nm,0.7s
L02D Cave Junction, 59.05 60 P **P 10 11 59.7 +1.5**
baz=310
KAPI Kappang 59.10 213 *e*P **P 10 11 59.5 +0.7**
comp=Z,32nm,0.6s
IPM Ipoh 59.41 237⇑P **P 10 12 01.4 +0.4**
IPM Ipoh 59.41 237 *e*P **P 10 12 01.4 +0.4**
comp=Z,13nm,0.7s
G08A Pilot Rock 59.60 55 *e*P **P 10 12 03.1 +1.2**
comp=Z,23nm,0.9s
KONS Konsvik 59.62 341 *e*P **P 10 12 01.5 -0.1**
J05D Fort Rock, OR 59.65 58 P **P 10 12 04.2 +1.8**
baz=311,SNR=37
STOK Stokkvaagen 59.79 341 *e*P **P 10 12 03.0 +0.4**
K04D Chiloquin, OR 59.79 59 P **P 10 12 04.8 +1.5**
baz=311,SNR=5.5
KHMM Horse Mountain 59.80 61 *e*P **P 10 12 05.4 +2.0**
comp=Z,49nm,0.8s
YBH Yreka Blue Hor 59.83 60 P **P 10 12 05.4 +1.8**
comp=Z,34nm,0.7s,baz=358,slow=5.5,SNR=73
YBH PcP **PcP 10 12 43.8 +0.9**
comp=Z,3.1nm,0.7s,baz=346,slow=3.8,SNR=1.6
YBH Yreka Blue Hor 59.83 60 *e*P **P 10 12 05.3 +1.8**
comp=Z,36nm,0.8s
YBH PcP **PcP 10 12 43.8 +0.9**
M02C Callahan 59.97 60 P **P 10 12 06.4 +1.9**
baz=311,SNR=18
F10A Beach Ranch, E 60.07 53 *e*P **P 10 12 06.1 +1.0**
comp=Z,30nm,0.9s
BSMT Bassoo Peak 60.10 50 *e*P **P 10 12 06.4 +1.1**
PUL Pulkovo 60.17 329 *de*P **P 10 12 05.1 -0.2**
PUL pmax pmax
comp=Z,299nm,0.9s
PUL Pulkovo 60.17 329⇓ *e*P **P 10 12 05.1 -0.2**
BLMT Blacktail Moun 60.21 50 *e*P **P 10 12 07.1 +1.1**
K05A Summer Lake 60.21 58 *e*P **P 10 12 08.1 +2.0**
comp=Z,108nm,0.9s
KMRM Mail Ridge 60.24 62 *e*P **P 10 12 08.5 +2.3**
comp=Z,51nm,0.7s
FIA1 FINESS Array S 60.28 332 *e*P **P 10 12 05.8 -0.2**
FINES FINESS Array B 60.28 332 P **P 10 12 05.8 -0.3**
comp=Z,232nm,0.7s,baz=37,slow=7.7,SNR=832
M04C Macdoel 60.29 59 P **P 10 12 08.3 +1.6**
baz=311,SNR=20
N02D Trinity Center 60.33 61 P **P 10 12 08.7 +1.8**
baz=311,SNR=26
MOS Moscow 60.37 322 *e*P **P 10 12 05.6 -1.1**
MOS pmax pmax
comp=Z,125nm,0.8s
MOS Moscow 60.37 322 *e*P **P 10 12 05.6 -1.1**
JTMT Jette 60.42 50 *e*P **P 10 12 08.4 +1.0**
YBMT Yellow Bay 60.48 50 *e*P **P 10 12 08.7 +0.9**
SCO Scoresbysund 60.49 356⇓ *i*P **P 10 12 07.6 +0.3**
comp=Z,50nm,0.9s
SCO Scoresbysund 60.49 356⇓ *i*P **P 10 12 07.6 +0.3**
SCO pmax pmax
comp=Z,50nm,0.9s
WDC Whiskeytown Da 60.68 61 *e*P **P 10 12 10.4 +1.3**
WDC pmax pmax
comp=Z,27nm,0.8s
WDC Whiskeytown Da 60.68 61 *e*P **P 10 12 10.4 +1.3**
comp=Z,27nm,0.8s
SWMT Swartz Lake 60.72 50 *e*P **P 10 12 10.3 +0.9**
BMO Blue Mountains 60.77 54 *e*P **P 10 12 10.8 +1.1**
BMO pmax pmax
comp=Z,56nm,1.3s
BMO Blue Mountains 60.77 54 *e*P **P 10 12 10.8 +1.1**
comp=Z,56nm,1.3s
MOD Modoc Plateau 61.08 58 *e*P **P 10 12 13.0 +1.2**
comp=Z,33nm,0.7s
ILULI Ilulissat 61.20 8⇓ *i*P **P 10 12 11.3 -0.6**
comp=Z,96nm,0.8s
ILULI Ilulissat 61.20 8⇓ *i*P **P 10 12 11.3 -0.6**
ILULI pmax pmax
comp=Z,96nm,0.8s
MSO Missoula 61.21 51 P **P 10 12 13.2 +0.7**
baz=312,SNR=45
MSO Missoula 61.21 51 *e*P **P 10 12 13.1 +0.6**
comp=Z,56nm,0.9s
OBN Obninsk 61.23 322 *d* *i*P **P 10 12 11.9 -0.5**
OBN *i* 10 12 47.4
OBN *i* *PP **pP 10 14 02.0 -1.8**
OBN *i* 10 14 35.2
OBN pmax pmax
comp=Z,121nm,0.9s
OBN Obninsk 61.23 322 *e*P **P 10 12 11.6 -0.8**
comp=Z,552nm,1.6s
OBN Obninsk 61.23 322⇓ *i*P **P 10 12 11.9 -0.5**
OBN pP **pP 10 14 02.0 -1.8**
FFC Flin Flon 61.25 38 *e*P **P 10 12 12.8 +0.3**
FFC pmax pmax
comp=Z,84nm,0.8s
FFC Flin Flon 61.25 38 *e*P **P 10 12 12.8 +0.3**
comp=Z,84nm,0.8s
FFC Flin Flon 61.25 38 *e*P **P 10 12 12.8 +0.3**
FCC Fort Churchill 61.26 32 *e*P **P 10 12 12.3 -0.2**
FCC pmax pmax
comp=Z,91nm,0.5s
FCC Fort Churchill 61.26 32 *e*P **P 10 12 12.3 -0.2**
comp=Z,91nm,0.5s
FCC Fort Churchill 61.26 32 *e*P **P 10 12 12.3 -0.2**
O03D Paynes Creek 61.29 61 P **P 10 12 13.8 +0.6**
baz=312,SNR=32
HOPS Hopland Field 61.42 63 *e*P **P 10 12 14.9 +1.0**
comp=Z,31nm,1.3s
CHMT Chamberlain Mo 61.50 50 *e*P **P 10 12 15.0 +0.4**
NSS Namsos 61.55 340 *e*P **P 10 12 14.1 -0.2**
NSS IAmb IAmb 10 12 14.9
comp=Z,64nm,0.6s
WVOR Wild Horse Val 61.65 57 *e*P **P 10 12 16.9 +1.3**
WVOR pmax pmax
comp=Z,64nm,1.0s
WVOR Wild Horse Val 61.65 57 *e*P **P 10 12 16.9 +1.3**
comp=Z,64nm,1.0s
MMRI Maumere 61.65 209 P **P 10 12 16.4 +0.7**
comp=Z,140nm,1.0s,comp=Z,3μm
MMRI Maumere 61.65 209 *e*P **P 10 12 15.8 +0.2**
comp=Z,197nm,1.2s
VRH Novokhopyorsk 61.80 317 *e*P **P 10 12 15.2 -0.9**
VRH pmax pmax
comp=Z,200nm,0.7s
ORV Oroville 61.96 61 *e*P **P 10 12 17.8 +0.4**
ORV pmax pmax

comp=Z,31nm,0.7s
ORV Oroville 61.96 61 *e*P **P 10 12 17.8 +0.4**
comp=Z,31nm,0.7s
PSI Prapat 61.97 238 *e*P **P 10 12 18.7 +0.8**
PSI pmax pmax
comp=Z,18nm,1.1s
PSI Prapat 61.97 238 *e*P **P 10 12 18.7 +0.8**
comp=Z,18nm,1.1s
LPSR Galich'ya Gora 62.04 319 *e*P **P 10 12 17.0 -0.7**
LPSR pmax pmax
comp=Z,200nm,0.7s
GEYT Alibeck 62.23 297 P **P 10 12 19.9 +0.7**
comp=Z,56nm,0.6s,baz=27,slow=3.6,SNR=57
HRY Holter Researc 62.35 50 *e*P **P 10 12 21.1 +1.1**
VSU Vasula 62.37 329 *de*P **P 10 12 19.4 -0.2**
VSU pmax pmax
comp=Z,330nm,0.7s
MFID Camas Ranch 62.52 55 *e*P **P 10 12 22.2 +1.0**
comp=Z,38nm,1.0s
LRM Limekiln Ridge 62.65 51 *e*P **P 10 12 22.9 +0.9**
AFDM Forest Hills D 62.67 61 *e*P **P 10 12 23.0 +0.9**
comp=Z,27nm,1.1s
DLMT Dillon 62.89 51 *e*P **P 10 12 24.4 +0.8**
comp=Z,88nm,0.8s
COEN Coen 62.90 185 *e*P **P 10 12 24.4 +0.8**
comp=Z,81nm,1.1s
VSR Storozhevoye 62.93 318 *e*P **P 10 12 22.6 -0.8**
VSR pmax pmax
comp=Z,150nm,0.6s
TBLU Trondheim 63.04 340 *e*P **P 10 12 22.9 -1.1**
TBLU IAmb IAmb 10 12 23.8
comp=Z,109nm,0.8s
PAHR Pah Rah Range 63.06 60 *e*P **P 10 12 25.6 +0.8**
comp=Z,58nm,0.8s
MCMT McKenzie Canyo 63.13 52 *e*P **P 10 12 25.5 +0.4**
HLID Hailey 63.18 54 P **P 10 12 26.6 +1.2**
baz=313,SNR=18
BOZ Bozeman (W) 63.19 51 P **P 10 12 26.7 +1.2**
baz=314,SNR=143
BOZ Bozeman (W) 63.19 51 *e*P **P 10 12 26.6 +1.2**
BOZ pmax pmax
comp=Z,64nm,0.8s
BOZ Bozeman (W) 63.19 51 *e*P **P 10 12 26.6 +1.2**
comp=Z,64nm,0.8s
BGMT Barton Gulch 63.27 51 *e*P **P 10 12 27.1 +1.1**
HYB Hyderabad 63.35 266 *i* P **P 10 12 26.0 -0.7**
MTN Manton Dam 63.37 198 *e*P **P 10 12 26.7 0.0**
comp=Z,107nm,0.8s
SFJD Kangerlussuaq 63.41 8 *i* P **P 10 12 25.7 -0.5**
SFJD Kangerlussuaq 63.41 8 *i* P **P 10 12 25.7 -0.5**
TWSI Taliwang, Sumb 63.59 214 P **P 10 12 29.4 +1.3**
comp=Z,24nm,0.8s
CMB Columbia Colle 63.62 62 *e*P **P 10 12 29.2 +1.0**
CMB pmax pmax
comp=Z,40nm,0.9s
CMB Columbia Colle 63.62 62 *e*P **P 10 12 29.2 +1.0**
comp=Z,40nm,0.9s
BMN Battle Mountai 63.79 58 *e*P **P 10 12 30.7 +1.4**
BMN pmax pmax
comp=Z,39nm,0.7s
BMN Battle Mountai 63.79 58 *e*P **P 10 12 30.7 +1.4**
comp=Z,39nm,0.7s
WAKR Walker 63.85 61 *e*P **P 10 12 31.1 +1.3**
QLMT Earthquake Lak 63.86 51 *e*P **P 10 12 30.9 +1.1**
GSI Gunungsitoli 63.95 239 *e*P **P 10 12 31.4 +0.9**
comp=Z,16nm,0.5s
YHB Horse Butte 64.03 51 *e*P **P 10 12 32.2 +1.3**
GCMT Greycliff 64.08 49 *e*P **P 10 12 32.2 +1.1**
YMC Maple Creek 64.12 51 *e*P **P 10 12 31.9 +0.5**
YHH Holmes Hill 64.18 51 *e*P **P 10 12 32.9 +1.0**
YMR Madison River 64.21 51 *e*P **P 10 12 33.3 +1.3**
comp=Z,47nm,0.7s
MOL Molde 64.24 341 *e*P **P 10 12 32.1 +0.5**
YPM Purple Mountai 64.26 51 *e*P **P 10 12 34.1 +1.6**
YFT Old Faithful 64.42 51 *e*P **P 10 12 35.9 +2.5**
comp=Z,73nm,0.8s
MCID Moose Creek 64.43 51 *e*P **P 10 12 35.2 +1.8**
NC303 NORSAR Array S 64.54 338 *e*P **P 10 12 33.6 0.0**
NV01 Mina Array Sit 64.55 60 *e*P **P 10 12 34.9 +0.6**
NVAR Mina Array Bea 64.55 60 P **P 10 12 35.5 +1.2**
comp=Z,42nm,0.7s,baz=299,slow=6.6,SNR=318
NC405 NORSAR Array S 64.56 338 *e*P **P 10 12 33.6 0.0**
YLT Little Thumb C 64.56 51 *e*P **P 10 12 37.0 +2.8**
LKWY Lake 64.57 51 *e*P **P 10 12 36.6 +2.3**
LKWY pmax pmax
comp=Z,38nm,0.9s
LKWY Lake 64.57 51 *e*P **P 10 12 36.6 +2.3**
comp=Z,38nm,0.9s
H17A Grant Village 64.60 51 P **P 10 12 37.0 +2.6**
baz=315,SNR=81
H17A Grant Village 64.60 51 *e*P **P 10 12 37.1 +2.6**
comp=Z,61nm,0.8s
NV11 Mina Array Sit 64.63 60 *e*P **P 10 12 35.9 +1.2**
comp=Z,35nm,0.8s
NC204 NORSAR Array S 64.64 339 *e*P **P 10 12 34.0 -0.3**
IZAR Zarasai 64.65 328 *e*P **P 10 12 34.2 0.0**
IZAR IAmb IAmb 10 12 35.0
comp=Z,50nm,0.6s
ELK Elko 64.67 57 *e*P **P 10 12 36.4 +1.4**
ELK pmax pmax
comp=Z,15nm,0.9s
ELK Elko 64.67 57 *e*P **P 10 12 36.4 +1.4**
comp=Z,15nm,0.9s
AKN Aaknes 64.71 341 *e*P **P 10 12 34.8 +0.2**
AKN IAmb IAmb 10 12 36.3
comp=Z,80nm,0.8s
NB201 NORSAR Array S 64.71 338 *e*P **P 10 12 34.5 -0.1**
NB2 NORSAR Subarra 64.74 338 P **P 10 12 34.7 -0.1**
comp=Z,87nm,0.6s,baz=28,slow=6.5
NB2 NORSAR Subarra 64.74 338 P **P 10 12 34.7 -0.1**
baz=28,slow=6.5
NOA NORSAR Array B 64.74 338 P **P 10 12 34.8 -0.1**
comp=Z,190nm,0.6s,baz=31,slow=6.7,SNR=352
RLMT Red Lodge 64.75 50 P **P 10 12 36.7 +1.3**
baz=315,SNR=55
RLMT Red Lodge 64.75 50 *e*P **P 10 12 36.6 +1.2**
comp=Z,202nm,1.6s
YTP The Promontory 64.75 51 *e*P **P 10 12 37.4 +2.0**
FLWY Flagg Ranch 64.75 51 *e*P **P 10 12 37.3 +1.8**
comp=Z,28nm,0.8s
IMW Indian Meadow 64.76 52 *e*P **P 10 12 37.2 +1.6**
comp=Z,27nm,0.7s
DGMT Dagmar 64.79 44 P **P 10 12 35.9 +0.6**
baz=317,SNR=41
DGMT Dagmar 64.79 44 *e*P **P 10 12 35.9 +0.6**
comp=Z,122nm,0.7s
MLAC Mammoth, Mammo 64.79 61 P **P 10 12 37.3 +1.4**
baz=314,SNR=7.6
IDID Didziasalis 64.81 327 *e*P **P 10 12 35.4 +0.1**
IDID IAmb IAmb 10 12 36.2
comp=Z,61nm,0.8s
NBO02 NORSAR Array S 64.82 338 *e*P **P 10 12 35.1 -0.2**
ISAL Salakas 64.83 328 *e*P **P 10 12 35.5 +0.1**
ISAL IAmb IAmb 10 12 36.3
comp=Z,78nm,1.1s
NBO00 NORSAR Array S 64.86 338 *e*P **P 10 12 35.5 -0.1**
NC602 NORSAR Array S 64.92 338 *e*P **P 10 12 35.5 -0.4**
NC602 NORSAR Array S 64.92 338 *e*P **P 10 12 35.5 -0.4**
MOOW Moose Ponds 64.96 52 *e*P **P 10 12 38.3 +1.5**
comp=Z,44nm,0.9s
NAO01 NORSAR Array S 64.99 338 *e*P **P 10 12 35.7 -0.7**
MICGM Minsk 65.03 326⇓ *e*P **P 10 12 36.0 -0.7**
MICGM PM 10 12 37.0
comp=Z,0.4nm,1.0s
MNK Minsk 65.03 326⇓ *e*P **P 10 12 36.0 -0.7**
MNK pmax pmax
comp=Z,390nm,1.0s
LAO LASA Array 65.12 47 P **P 10 12 38.4 +0.9**
baz=316,SNR=19
LAO LASA Array 65.12 47 *e*P **P 10 12 38.5 +1.0**
comp=Z,65nm,0.9s
SNOW Snow King Moun 65.16 52 *e*P **P 10 12 39.7 +1.6**
comp=Z,52nm,1.1s
NPI North Pocatell 65.16 54 *e*P **P 10 12 39.9 +1.9**
REDW Red Top Meadow 65.18 52 *e*P **P 10 12 39.5 +1.3**
comp=Z,44nm,0.9s
HVU Hansel Valley 65.28 54 *e*P **P 10 12 39.9 +1.2**
HVU pmax pmax
comp=Z,18nm,0.7s
HVU Hansel Valley 65.28 54 *e*P **P 10 12 39.9 +1.2**
comp=Z,18nm,0.7s
B25A Knox Farm, Ray 65.41 44 P **P 10 12 40.0 +0.7**
baz=317,SNR=5.5
A26A Wade Farm, Ken 65.45 43 P **P 10 12 40.2 +0.7**
baz=318,SNR=26
RCTC Rector, Farmer 65.47 62 P **P 10 12 40.3 +0.5**

baz=314,SNR=9.0
AHID Auburn Hatcher 65.47 53 *e*P **P 10 12 41.0 +1.0**
comp=Z,31nm,0.7s
MTUT Morton Thiokol 65.50 54 *e*P **P 10 12 41.5 +1.4**
GOF Gofitskoye 65.52 311 ⇓*i*P **P 10 12 40.4 +0.5**
GOF pmax pmax
comp=Z,455nm,0.7s
TIN Tinemaha, Big 65.54 61 P **P 10 12 41.7 +1.3**
baz=314
FOO Floro 65.65 341 *e*P **P 10 12 41.0 +0.6**
SMMC Simmler 65.72 64 P **P 10 12 42.6 +1.2**
baz=314,SNR=6.5
BGU Big Grassy Mou 65.74 55 *e*P **P 10 12 42.8 +1.1**
comp=Z,13nm,0.6s
B26A Jensen Ranch, 65.75 43 P **P 10 12 42.2 +0.8**
baz=318,SNR=16
A27A Ledoux Ranch, 65.77 42 P **P 10 12 42.1 +0.7**
baz=318
C25A Freed Ranch, W 65.77 44 P **P 10 12 42.4 +0.9**
baz=317,SNR=7.6
SPUT South Promonto 65.79 54 *e*P **P 10 12 43.5 +1.6**
comp=Z,30nm,0.7s
HYA Hoyanger 65.79 341 *e*P **P 10 12 41.5 +0.2**
HYA IAmb IAmb 10 12 42.5
comp=Z,108nm,0.8s
HDU Hyde Park 65.80 54 *e*P **P 10 12 42.5 +0.5**
OSL Oslo 65.82 338 *e*P **P 10 12 42.0 +0.4**
VES Vestal, Richgr 65.89 63 P **P 10 12 42.5 +0.1**
baz=314,SNR=18
BMUT Black Mountain 65.97 53 *e*P **P 10 12 44.3 +1.2**
HWUT Hardware Ranch 66.05 54 *e*P **P 10 12 44.6 +1.1**
comp=Z,61nm,0.8s
CWC Cottonwood Cre 66.05 62 P **P 10 12 44.6 +1.0**
baz=314
GRAC Grapevine Rang 66.08 61 P **P 10 12 45.0 +1.4**
baz=314,SNR=30
RSUT Red Spur Mount 66.10 54 *e*P **P 10 12 45.3 +1.3**
PKM Mcpherson Peak 66.12 64 P **P 10 12 45.2 +1.1**
baz=314,SNR=8.5
R11A Troy Canyon, C 66.14 59 P **P 10 12 45.1 +0.9**
baz=315,SNR=41
R11A Troy Canyon, C 66.14 59 *e*P **P 10 12 45.0 +0.9**
comp=Z,14nm,0.6s
D25A Fairfield 66.16 45 P **P 10 12 44.8 +0.8**
baz=317,SNR=22
B27A Peters Farms, 66.17 43 P **P 10 12 44.6 +0.7**
baz=318,SNR=7.0
BORG Borgarnes 66.17 355 *e*P **P 10 12 45.3 +1.7**
BORG pmax pmax
comp=Z,84nm,0.8s
BORG Borgarnes 66.17 355 *e*P **P 10 12 45.3 +1.7**
comp=Z,84nm,0.8s
SUE Sulen 66.19 341 *e*P **P 10 12 44.1 +0.3**
C26A Wahner Farm, P 66.22 44 P **P 10 12 45.3 +0.9**
baz=318,SNR=34
A28A Rude Farm, Bot 66.23 42 P **P 10 12 44.8 +0.4**
baz=318,SNR=20
BW06 Boulder Array 66.27 52 P **P 10 12 45.6 +0.6**
baz=316,SNR=162
BW06 Boulder Array 66.27 52 *e*P **P 10 12 45.5 +0.5**
comp=Z,83nm,0.9s
PD31 Pinedale Array 66.27 52 *e*P **P 10 12 45.5 +0.5**
PDAR Pinedale Array 66.27 52 P **P 10 12 45.5 +0.5**
comp=Z,46nm,0.5s,baz=320,slow=0.9,SNR=674
KONO Kongsberg 66.35 338 *e*P **P 10 12 45.2 +0.3**
KONO Kongsberg 66.35 338 *e*P **P 10 12 45.1 +0.3**
KONO pmax pmax
comp=Z,44nm,0.8s
KONO Kongsberg 66.35 338 *e*P **P 10 12 45.1 +0.3**
comp=Z,44nm,0.8s
NCK Nalchik 66.36 310 *i*P **P 10 12 45.7 +0.5**
NCK pmax pmax
comp=Z,95nm,0.6s
ISA Isabella, Lake 66.36 62 P **P 10 12 45.4 0.0**
baz=314,SNR=7.5
ISA Isabella, Lake 66.36 62 *e*P **P 10 12 45.8 +0.4**
ISA pmax pmax
comp=Z,18nm,0.8s
ISA Isabella, Lake 66.36 62 *e*P **P 10 12 45.8 +0.4**
comp=Z,18nm,0.8s
DUG Dugway, Tooele 66.38 56 P **P 10 12 46.7 +1.2**
baz=315,SNR=53
DUG Dugway, Tooele 66.38 56 *e*P **P 10 12 46.5 +0.9**
DUG Dugway, Tooele 66.38 56 *e*P **P 10 12 46.5 +0.9**
DAC Darwin (Calif) 66.45 61 *e*P **P 10 12 46.8 +0.7**
DAC pmax pmax
comp=Z,21nm,1.0s
DAC Darwin (Calif) 66.45 61 *e*P **P 10 12 46.8 +0.7**
comp=Z,21nm,1.0s
TCUT Toone Canyon 66.48 54 *e*P **P 10 12 47.5 +1.2**
comp=Z,77nm,0.8s
KIV Kislovodsk 66.48 310 *i*P **P 10 12 46.8 +0.7**
SNR=18
KIV Kislovodsk 66.48 310 *de*P **P 10 12 46.6 +0.5**
KIV pmax pmax
comp=Z,145nm,0.9s
KIV Kislovodsk 66.48 310 *e*P **P 10 12 46.8 +0.7**
comp=Z,162nm,0.8s
KIV Kislovodsk 66.48 310 ⇓*e*P **P 10 12 46.6 +0.5**
SBC Santa Barbara 66.49 64 P **P 10 12 47.0 +0.9**
baz=314
ARVC Arvin 66.53 63 P **P 10 12 46.8 +0.4**
baz=315
B28A Dugan Ranch, T 66.53 42 P **P 10 12 46.7 +0.5**
baz=319,SNR=26
KBZ Khabaz 66.54 310 P **P 10 12 47.1 +0.9**
comp=Z,135nm,0.9s,baz=68,slow=3.8,SNR=191
C27A Sayler Ranch, 66.57 43 P **P 10 12 47.3 +0.9**
baz=318
E25A Miller Ranch, 66.59 45 P **P 10 12 47.3 +0.6**
baz=318,SNR=62
ASK Askoy 66.62 341 *e*P **P 10 12 47.0 +0.5**
GUDG Gudauri 66.65 308 P **P 10 12 49.0 +1.7**
D26A Manning 66.65 44 P **P 10 12 47.7 +0.7**
baz=318,SNR=33
MPMC Manual Prospec 66.66 62 P **P 10 12 48.3 +0.8**
baz=315,SNR=28
A29A Manning Farm, 66.67 41 P **P 10 12 47.3 +0.2**
baz=319,SNR=41
ZEI Tsey 66.71 309 *e*P **P 10 12 47.3 -0.3**
ZEI pmax pmax
comp=Z,152nm,0.9s
FURC Furnace Creek, 66.73 61 P **P 10 12 48.9 +1.3**
baz=315,SNR=60
TPNV Topopah Spring 66.75 60 P **P 10 12 49.1 +1.1**
baz=315,SNR=105
TPNV Topopah Spring 66.75 60 *e*P **P 10 12 49.0 +1.1**
TPNV pmax pmax
comp=Z,72nm,0.8s
TPNV Topopah Spring 66.75 60 *e*P **P 10 12 49.0 +1.1**
comp=Z,72nm,0.8s
ODD1 Odda 66.82 340 *e*P **P 10 12 47.9 +0.2**
JLU Jordanelle 66.82 54 *e*P **P 10 12 49.4 +1.0**
comp=Z,27nm,0.8s
HTU Hoyt Peak 66.89 54 *e*P **P 10 12 50.3 +1.4**
DGRG David-gareji 66.91 307 P **P 10 12 49.0 +0.3**
DGRG David-gareji 66.91 307 *e*P **P 10 12 48.9 +0.3**
NLU North Lily Min 66.94 55 *e*P **P 10 12 50.2 +1.0**
comp=Z,46nm,0.8s
OSI Osito Audit: C 66.95 63 P **P 10 12 49.9 +0.9**
baz=315
LRMC Laurel Mtn Rad 66.95 62 P **P 10 12 49.8 +0.7**
baz=315,SNR=20
B29A Wagenman Farm, 66.97 42 P **P 10 12 49.3 +0.4**
baz=319,SNR=31
NEY Neytrino 66.98 310 *d i*P **P 10 12 49.9 +0.7**
NEY pmax pmax
comp=Z,10.0nm,0.7s
PSUT Pine Spring 66.98 57 *e*P **P 10 12 50.4 +1.0**
comp=Z,31nm,0.7s
F25A Bowman 66.99 46 P **P 10 12 49.8 +0.6**
baz=318,SNR=19
D27A Center 67.01 44 P **P 10 12 49.9 +0.7**
baz=318,SNR=5.8
TBLG Delisi 67.04 308 P P 10 12 56.3 +6.9
TBLG Delisi 67.04 308 *e*P **P 10 12 50.3 +0.9**
E26A Carlson Angus 67.06 45 P **P 10 12 49.9 +0.4**
baz=318,SNR=25
A30A Hoffart Farm, 67.06 41 P **P 10 12 49.5 +0.1**
baz=320,SNR=11
C28A Hausauer Farms 67.07 43 P **P 10 12 50.4 +0.8**
baz=319,SNR=17
ULM Lac du Bonnet 67.08 39 P **P 10 12 49.0 -0.5**
comp=Z,32nm,0.8s,baz=315,slow=7.1,SNR=29
ULM Lac du Bonnet 67.08 39 *e*P **P 10 12 49.0 -0.5**
ULM pmax pmax
comp=Z,48nm,1.0s
ULM Lac du Bonnet 67.08 39 *e*P **P 10 12 49.0 -0.5**
comp=Z,48nm,1.0s
ONI Oni 67.08 309 P **P 10 12 50.8 +1.0**
ONI Oni 67.08 309 *e*P **P 10 12 50.7 +1.0**
BLG Laguna Peak, P 67.10 64 P **P 10 12 50.4 +0.5**
baz=315
SUW Suwalki 67.11 328 *e*P **P 10 12 48.9 -0.7**
SUW Suwalki 67.11 328 *e*P **P 10 12 48.9 -0.7**
EDW2 Edwards Air Fo 67.19 63 P **P 10 12 51.5 +0.9**
baz=315,SNR=31
BLS5 Blasjo 67.30 340 *e*P **P 10 12 51.1 +0.5**
MDND Maddock 67.32 42 P **P 10 12 51.6 +0.5**
baz=319,SNR=20
MDND Maddock 67.32 42 *e*P **P 10 12 51.6 +0.5**
comp=Z,137nm,0.8s
D28A Regan 67.38 43 P **P 10 12 52.2 +0.7**
baz=319,SNR=9.3
LEVU Levan 67.40 55 *e*P **P 10 12 53.2 +1.3**
F26A Lodgepole 67.42 45 P **P 10 12 52.0 +0.3**
baz=318
B30A Myrvik Farm, E 67.42 41 P **P 10 12 52.0 +0.3**
baz=320,SNR=92
DECC Green Verdugo 67.43 63 P **P 10 12 52.6 +0.6**
baz=315,SNR=6.3
SHOC Shoshone, Teco 67.47 61 P **P 10 12 52.6 +0.4**
baz=315
AKASG Malin Array Be 67.49 323 P **P 10 12 51.5 -0.5**
comp=Z,93nm,0.4s,baz=37,slow=6.3,SNR=157
AKASG Malin Array Be 67.49 323 *i*P **P 10 12 51.5 -0.5**
AKASG pmax pmax
comp=Z,99nm,0.4s
KIEV Kiev 67.50 323 *d i*P **P 10 12 51.4 -0.6**
KIEV pmax pmax
comp=Z,127nm,1.0s
KIEV Kiev 67.50 323 *e*P **P 10 12 51.5 -0.6**
comp=Z,147nm,0.7s
E27A Carson 67.50 44 P **P 10 12 53.0 +0.8**
baz=318,SNR=78
G25A Newell 67.55 46 P **P 10 12 52.6 +0.1**
baz=318,SNR=24
PASC Pasadena Art C 67.58 63 *e*P **P 10 12 53.7 +0.8**
comp=Z,27nm,0.8s
GSC Goldstone, Bar 67.59 62 P **P 10 12 53.8 +0.8**
baz=315,SNR=24
GSC Goldstone, Bar 67.59 62 *e*P **P 10 12 53.8 +0.8**
GSC pmax pmax
comp=Z,31nm,0.9s
GSC Goldstone, Bar 67.59 62 *e*P **P 10 12 53.8 +0.8**
comp=Z,31nm,0.9s
MWC Mount Wilson 67.62 63 *e*P **P 10 12 54.0 +0.7**
MWC pmax pmax
comp=Z,30nm,0.8s
MWC Mount Wilson 67.62 63 *e*P **P 10 12 54.0 +0.7**
comp=Z,30nm,0.8s
KLNR Kaliningrad 67.62 330 *i*P **P 10 12 52.2 -0.5**
KLNR pmax pmax
comp=Z,149nm,1.2s
SHPR Sheep Range 67.68 60 *e*P **P 10 12 54.9 +1.3**
comp=Z,33nm,0.8s
CHVG Ch'k'valeri 67.68 310 ⇑*i*P **P 10 12 54.5 +1.2**
CHVG Ch'k'valeri 67.68 310 P **P 10 12 54.3 +0.9**
B31A Greenbush Farm 67.73 41 P **P 10 12 53.6 0.0**
baz=320,SNR=28
KMY Karmoy 67.76 340 *e*P **P 10 12 53.9 +0.4**
RRX Edison Barstow 67.78 62 P **P 10 12 54.9 +0.8**
baz=315
E28A Huff 67.79 44 P **P 10 12 54.3 +0.3**
baz=319,SNR=12
YEL1 Yell 67.81 344 *e*P **P 10 12 53.9 +0.1**
BFSC Mount Baldy Ra 67.84 63 P **P 10 12 55.2 +0.6**
baz=315,SNR=24
A32A Rocking H Ranc 67.85 40 P **P 10 12 53.8 -0.5**
baz=320,SNR=18
G26A Maurine 67.87 46 P **P 10 12 54.8 +0.3**
baz=318,SNR=87
TMUT Trail Mountain 67.88 55 *e*P **P 10 12 56.0 +1.0**
comp=Z,63nm,0.7s
H25A Fruitdale 67.89 47 P **P 10 12 54.8 +0.1**
baz=318,SNR=9.7
K22A Casper 67.90 50 P **P 10 12 55.0 +0.2**
baz=317,SNR=13
K22A Casper 67.90 50 *e*P **P 10 12 55.1 +0.2**
comp=Z,34nm,0.6s
AKH Akhalkalaki 67.91 308 ⇑*i*P **P 10 12 56.9 +1.9**
MSU Marysvale 67.92 56 *e*P **P 10 12 56.6 +1.5**
MSU Marysvale 67.92 56 *e*P **P 10 12 56.6 +1.5**
D29A Pettibone, Tap 67.92 43 P **P 10 12 54.6 -0.1**
baz=319
C30A Mose, Pekin 67.93 42 P **P 10 12 54.6 -0.1**
baz=320,SNR=9.7
BGD Bogdanovka 67.97 308 P **P 10 12 57.0 +1.7**
CIS Catalina Islan 67.98 64 P **P 10 12 55.7 +0.3**
baz=315
TUQ Turquoise Moun 68.00 61 P **P 10 12 56.5 +1.0**
baz=315,SNR=38
P17A Butcher Ranch, 68.01 55 *e*P **P 10 12 56.6 +1.0**
comp=Z,52nm,1.0s
RSSD Black Hills 68.05 47 P **P 10 12 56.1 +0.3**
baz=318
SNART Snartemo 68.09 339 *e*P **P 10 12 55.6 +0.1**
SNART IAmb IAmb 10 12 56.7
comp=Z,79nm,0.7s
G27A Dupree 68.12 45 P **P 10 12 56.1 +0.1**
baz=319,SNR=35
P18A Preston Nutter 68.16 54 *e*P **P 10 12 57.7 +1.0**
comp=Z,42nm,0.9s
GNI Garni 68.17 306 P **P 10 12 58.0 +1.4**
Q16A Castle Valley 68.17 56 *e*P **P 10 12 57.8 +1.1**
comp=Z,32nm,1.0s
C31A Landman Farms, 68.18 41 P **P 10 12 56.0 -0.2**
baz=320,SNR=49
HEC Hector,Ludlow 68.19 62 P **P 10 12 57.7 +1.1**
baz=316,SNR=29
LRW Lerwick 68.22 344 ⇓*e*P **P 10 12 56.0 -0.2**
SOC Sochi 68.22 312 *e*P **P 10 12 55.6 -1.0**
SOC *e**PP **pP 10 14 50.8 -0.7**
SOC *e* 10 15 38.0
SOC *e*S **S 10 21 07.9 -4.5**
SOC pmax pmax
comp=Z,85nm,0.8s
SOC Sochi 68.22 312 *e*P **P 10 12 55.6 -1.0**
SOC pP **pP 10 14 50.8 -0.7**
B32A Ashes, Strandq 68.23 40 P **P 10 12 56.0 -0.5**
baz=321,SNR=44
MTPU Mount Pierson 68.25 57 *e*P **P 10 12 58.9 +1.6**
comp=Z,23nm,0.7s
BBRC Big Bear Solar 68.25 63 P **P 10 12 57.9 +0.7**
baz=315,SNR=30
D30A Buchanan 68.25 42 P **P 10 12 56.8 0.0**
baz=320,SNR=23
E29A Napoleon 68.27 43 P **P 10 12 56.8 -0.1**
baz=320
I25A Rochford 68.27 47 P **P 10 12 57.3 +0.1**
baz=318,SNR=50
H26A Fairpoint 68.29 46 P **P 10 12 57.1 +0.1**
baz=318,SNR=7.9
A33A Warroad 68.29 39 P **P 10 12 56.6 -0.3**
baz=321,SNR=45
SAN1 Sandwick 68.34 344 *e*P **P 10 12 56.9 0.0**
SRU San Rafael Swe 68.39 55 *e*P **P 10 12 58.7 +0.8**
SRU pmax pmax
comp=Z,92nm,0.9s
SRU San Rafael Swe 68.39 55 *e*P **P 10 12 58.6 +0.8**
comp=Z,92nm,0.9s
LCMT Little Creek M 68.40 58 *e*P **P 10 12 59.2 +1.2**
comp=Z,17nm,0.8s
ANN Anapa 68.42 314 *d i*P **P 10 12 57.4 -0.3**
ANN *e*S **S 10 21 15.7 +1.2**
ANN pmax pmax
comp=Z,62nm,0.5s
ANN Anapa 68.42 314 ⇓*i*P **P 10 12 57.4 -0.3**
MURC Murrieta 68.56 63 P **P 10 12 59.3 +0.5**
baz=316,SNR=11
H27A Howes 68.61 46 P **P 10 12 59.2 +0.2**
baz=319,SNR=12
PKCU Pink Cliffs 68.61 57 *e*P **P 10 13 01.5 +2.1**
comp=Z,23nm,0.8s
GMRC Granite Mounta 68.61 61 P **P 10 13 00.2 +0.9**
baz=316,SNR=27
MMU Miners Mountai 68.62 56 *e*P **P 10 13 00.8 +1.3**
KNB Kanab 68.63 58 *e*P **P 10 13 00.7 +1.3**
KNB pmax pmax
comp=Z,31nm,1.0s
KNB Kanab 68.63 58 *e*P **P 10 13 00.7 +1.3**
comp=Z,30nm,1.0s
E30A Jud 68.65 43 P **P 10 12 59.2 +0.1**
baz=320,SNR=9.3
C32A Crookston 68.68 41 P **P 10 12 58.8 -0.5**
baz=321
LDFC Landfair 68.72 61 *e*P **P 10 13 00.7 +0.8**
comp=Z,85nm,0.8s
B33A Robert and Kas 68.73 40 P **P 10 12 58.9 -0.7**
baz=321,SNR=16
F29A Eureka 68.74 44 P **P 10 12 59.8 0.0**
baz=320,SNR=9.9
D31A Mcclaflin, Tow 68.76 42 P **P 10 12 59.7 -0.1**
baz=320,SNR=12
BSD Bornholm Skovb 68.85 333 ⇓*i*P **P 10 12 59.5 -0.6**
comp=Z,101nm,0.5s
BSD Bornholm Skovb 68.85 333 ⇓*i*P **P 10 12 59.5 -0.6**
BSD pmax pmax
comp=Z,100nm,0.5s
O20A White River Ci 68.86 53 P **P 10 13 01.1 +0.4**
baz=317,SNR=24
O20A White River Ci 68.86 53 *e*P **P 10 13 01.1 +0.4**
comp=Z,56nm,0.9s
CTAO Charters Tower 68.88 181 *e*P **P 10 13 00.9 +0.2**
CTAO pmax pmax
comp=Z,158nm,1.0s
CTAO Charters Tower 68.88 181 *e*P **P 10 13 00.9 +0.2**
comp=Z,158nm,1.0s
B34A Aery, Baudette 68.95 39 P **P 10 13 00.2 -0.7**
baz=322,SNR=29
BELC Belle Mtn. Jos 68.98 62 P **P 10 13 01.8 +0.3**
baz=316,SNR=24
PFO Pinyon Flats O 68.99 63 P **P 10 13 02.0 +0.5**
comp=Z,18nm,0.9s,baz=320,slow=5.5,SNR=17
TPFO Pinon Flats 68.99 63 P **P 10 13 01.9 +0.3**
baz=316,SNR=14
D32A Dogwood Acres, 69.00 41 P **P 10 13 00.8 -0.4**
baz=321,SNR=14
C33A Trail 69.05 40 P **P 10 13 00.8 -0.7**
baz=321,SNR=11
E31A Nome 69.06 42 P **P 10 13 01.6 0.0**
baz=320,SNR=44
COP Copenhagen 69.08 335 ⇓*i*P **P 10 13 01.5 +0.1**
comp=Z,61nm,0.6s
COP Copenhagen 69.08 335 ⇓*i*P **P 10 13 01.5 +0.1**
COP pmax pmax
comp=Z,61nm,0.6s
F30A Leola 69.11 43 P **P 10 13 01.6 -0.3**
baz=320
J26A Sides Ranch, S 69.12 48 P **P 10 13 02.4 +0.3**
baz=319,SNR=20
109C Camp Elliot, M 69.12 64 P **P 10 13 02.7 +0.5**
baz=316
G29A Hoven 69.19 44 P **P 10 13 02.3 -0.1**
baz=320
NEE2 Needles Airpor 69.23 61 P **P 10 13 03.4 +0.6**
baz=316
U15A North Rim 69.35 58 *e*P **P 10 13 04.9 +1.1**
IRM Iron Mountain 69.36 62 P **P 10 13 04.7 +1.0**
baz=316,SNR=46
E32A Braaten, Kindr 69.39 42 P **P 10 13 03.2 -0.3**
baz=321,SNR=5.4
W13A Hualapai Mount 69.41 60 *e*P **P 10 13 05.0 +0.9**
B35A Bob, Littlefor 69.43 39 P **P 10 13 03.3 -0.4**
baz=322,SNR=99
F31A Hecla 69.44 43 P **P 10 13 03.6 -0.2**
baz=320,SNR=30
H29A Onida 69.48 45 P **P 10 13 04.3 +0.1**
baz=320,SNR=15
N23A Red Feather La 69.48 51 P **P 10 13 05.3 +0.7**
baz=318,SNR=24
N23A Red Feather La 69.48 51 *e*P **P 10 13 05.5 +0.9**
comp=Z,29nm,0.9s
C34A RKJ Ranch, Bem 69.50 40 P **P 10 13 03.5 -0.7**
baz=322,SNR=7.0
D33A AnnSam, Waubun 69.50 41 P **P 10 13 03.7 -0.5**
baz=321
I28A Midland 69.51 46 P **P 10 13 04.5 +0.1**
baz=319,SNR=26
MONP2 Monument Peak 69.52 63 P **P 10 13 05.4 +0.6**
baz=316,SNR=8.4
BAR Barrett 69.53 64 *e*P **P 10 13 05.2 +0.5**
comp=Z,22nm,0.8s
BC3 Big Chuckawall 69.54 62 P **P 10 13 05.3 +0.5**
baz=316,SNR=26
PV09 Paradox Valley 69.58 55 *e*P **P 10 13 06.0 +0.8**
G30A Faulkton 69.59 44 P **P 10 13 04.6 -0.2**
baz=320,SNR=19
NRS Narsarsuaq 69.60 7 *i*P **P 10 13 03.9 -0.6**
comp=Z,21nm,0.7s
NRS Narsarsuaq 69.60 7 *e*P **P 10 13 03.9 -0.6**
NRS pmax pmax
comp=Z,21nm,0.7s
PV10 Paradox Valley 69.72 55 *e*P **P 10 13 07.2 +1.3**
BEL Belsk 69.72 328 *e*P **P 10 13 05.9 +0.5**
BEL Belsk 69.72 328 ⇓*e*P **P 10 13 05.9 +0.5**
WRAB Tennant Creek 69.73 193 *e*P **P 10 13 05.9 +0.1**
WRAB pmax pmax
comp=Z,228nm,1.2s
WRAB Tennant Creek 69.73 193 *e*P **P 10 13 05.7 -0.1**
comp=Z,97nm,1.2s
WB2 Warramunga Arr 69.74 193 *e*P **P 10 13 06.0 +0.2**
WRA Warramunga Arr 69.74 193 P **P 10 13 06.0 +0.2**
comp=Z,34nm,0.6s,baz=7.6,slow=6.4,SNR=538
WRA pP **pP 10 15 02.7 +1.0**
comp=Z,2.1nm,0.6s,baz=12,slow=6.4,SNR=3.2
WRA PP **PP 10 15 48.7 -2.0**
comp=Z,4.7nm,1.0s,baz=7.8,slow=8.7,SNR=5.0
WRA PKP2bc 10 41 02.9
comp=Z,3.2nm,0.8s,baz=192,slow=2.8,SNR=14
PV04 Paradox Valley 69.78 55 *e*P **P 10 13 06.9 +0.7**
PDMCI Parker Dam,Lak 69.83 61 P **P 10 13 07.2 +0.8**
baz=316,SNR=17
SIM Simferopol' 69.85 316 *i*P **P 10 13 06.0 -0.3**
SIM pmax pmax
comp=Z,71nm,0.7s
SWSC Sam W. Stewart 69.85 63 P **P 10 13 07.0 +0.5**
baz=316,SNR=8.8
C35A Jirik Farms, M 69.85 39 P **P 10 13 05.5 -0.8**
baz=322,SNR=21
SORM Soroca 69.86 322 ⇓*i*P **P 10 13 05.8 -0.5**
SORM Soroca 69.86 322 ⇓P **P 10 13 05.8 -0.5**
IKP In-Ko-Pah, Jac 69.88 63 P **P 10 13 07.5 +0.7**
baz=316,SNR=12
I29A Vivian Onida 69.90 45 P **P 10 13 06.8 +0.1**
baz=320,SNR=18
PV05 Paradox Valley 69.90 55 *e*P **P 10 13 08.0 +0.9**
E33A Westby DABS, E 69.93 41 P **P 10 13 06.5 -0.2**
baz=321,SNR=36
F32A Veblen 69.93 42 P **P 10 13 06.3 -0.5**
baz=321,SNR=7.9
G31A Conde 69.94 43 P **P 10 13 06.7 -0.2**
baz=320,SNR=7.0
Y12C Blythe 70.01 61 P **P 10 13 08.6 +1.1**
baz=316,SNR=24
Y12C Blythe 70.01 61 *e*P **P 10 13 08.7 +1.2**
comp=Z,51nm,0.8s
PV01 Paradox Valley 70.14 55 *e*P **P 10 13 09.1 +0.6**
LVV L'vov 70.20 325 *e*P **P 10 13 07.3 -1.0**
SUSD Miller 70.20 44 P **P 10 13 08.5 0.0**
baz=320,SNR=17
SMCO Snowmass 70.22 53 *e*P **P 10 13 09.7 +0.5**
comp=Z,43nm,0.7s
G32A Webster 70.24 43 P **P 10 13 08.7 0.0**
baz=321,SNR=6.5
BIGH Upper Bighouse 70.25 345 ⇓*e*P **P 10 13 08.0 -0.4**
C36A Pine Crest Far 70.28 39 P **P 10 13 08.4 -0.4**
baz=323,SNR=53
E34A Wadena 70.28 41 P **P 10 13 08.3 -0.5**
baz=322,SNR=11
D35A Remer 70.31 40 P **P 10 13 08.2 -0.8**
baz=322,SNR=16
F33A 5 Mile Ranch, 70.32 42 P **P 10 13 08.9 -0.2**
baz=321,SNR=53
MLA1 Latheron 70.33 344 ⇓*e*P **P 10 13 08.8 -0.1**
GLA Glamis 70.34 62 P **P 10 13 10.5 +1.0**
baz=316,SNR=38
GLA Glamis 70.34 62 *e*P **P 10 13 10.5 +1.0**
GLA pmax pmax
comp=Z,51nm,0.8s
GLA Glamis 70.34 62 *e*P **P 10 13 10.5 +1.0**
comp=Z,51nm,0.8s
I30A Oacoma 70.39 45 P **P 10 13 09.7 +0.1**
baz=320,SNR=18
H31A Wolsey 70.39 44 P **P 10 13 09.4 -0.1**
baz=321,SNR=22
ISCO Idaho Springs 70.47 52 P **P 10 13 11.3 +0.9**
baz=318,SNR=25
ISCO Idaho Springs 70.47 52 *e*P **P 10 13 10.9 +0.5**

ISCO pmax pmax
comp=Z,20nm,1.0s
ISCO Idaho Springs 70.47 52 *eP* **P 10 13 10.9 +0.5**
comp=Z,20nm,1.0s
WUAZ Wupatki 70.52 58 P **P 10 13 11.9 +1.2**
baz=317,SNR=18
WUAZ Wupatki 70.52 58 *eP* **P 10 13 11.3 +0.6**
comp=Z,21nm,0.9s
C37A Embarrass 70.56 38 P **P 10 13 09.9 -0.6**
baz=323,SNR=50
KIS Kishinev 70.56 320⇓*iP* **P 10 13 10.0 -0.5**
comp=Z,400nm,1.2s
KIS *i* pP **pP 10 15 12.0 +5.5**
KIS Kishinev 70.56 320*k iP* **P 10 13 10.0 -0.5**
KIS *e* 11 15 56.0
KIS pmax pmax
comp=Z,400nm,1.2s
KIS pmax pmax
comp=Z,400nm,2.0s
E35A Pequot Lakes 70.57 40 P **P 10 13 09.9 -0.7**
baz=322,SNR=9.7
D36A Goodland 70.60 39 P **P 10 13 10.0 -0.7**
baz=323,SNR=25
EYMN Ely 70.67 38 P **P 10 13 10.6 -0.5**
baz=324,SNR=91
EYMN Ely 70.67 38 *eP* **P 10 13 10.5 -0.7**
comp=Z,76nm,0.8s
I31A Royce, Wessing 70.72 44 P **P 10 13 11.4 -0.1**
baz=321
Y14A Wickenburg 70.75 60 *eP* **P 10 13 13.0 +1.1**
G33A Ortonville 70.76 42 P **P 10 13 11.5 -0.2**
baz=321,SNR=45
F34A Alexandria 70.80 41 P **P 10 13 11.6 -0.4**
baz=322,SNR=17
J30A Dallas 70.81 45 P **P 10 13 12.3 +0.2**
baz=320,SNR=42
H32A Carlson Farm, 70.85 43 P **P 10 13 11.9 -0.3**
baz=321,SNR=9.1
KWP Kalwaria Pacla 70.85 326 *eP* **P 10 13 12.8 +0.6**
KWP Kalwaria Pacla 70.85 326⇓*iP* **P 10 13 13.1 +0.9**
KWP Kalwaria Pacla 70.85 326 ⇓P **P 10 13 13.1 +0.9**
MVCO Mesa Verde 70.86 55 P **P 10 13 13.5 +0.8**
baz=318,SNR=52
MVCO Mesa Verde 70.86 55 *eP* **P 10 13 13.5 +0.8**
comp=Z,60nm,0.8s
D37A Cotton 70.92 39 P **P 10 13 11.9 -0.7**
baz=323,SNR=28
C38A Sawbill Land. 70.94 38 P **P 10 13 12.1 -0.6**
baz=324,SNR=93
MCD Coleburn Disti 70.99 344⇓*eP* **P 10 13 12.6 -0.2**
H33A Prehn Over Nor 71.02 43 P **P 10 13 13.1 -0.1**
baz=321,SNR=28
F35A Swanville 71.05 41 P **P 10 13 13.0 -0.4**
baz=322,SNR=25
G34A Benson 71.07 42 P **P 10 13 13.4 -0.2**
baz=322,SNR=22
E36A McGregor 71.09 40 P **P 10 13 13.3 -0.3**
baz=323,SNR=52
113A Mohawk Valley, 71.16 62 *eP* **P 10 13 14.8 +0.6**
RRR Rubha Reidh 71.17 345⇓*eP* **P 10 13 13.1 -0.7**
J31A Geddes 71.19 45 P **P 10 13 14.3 +0.1**
baz=321,SNR=25
MME1 Meikle Cairn 71.19 344⇓*eP* **P 10 13 13.2 -0.7**
I32A Karley and Nic 71.21 44 P **P 10 13 13.9 -0.4**
baz=321
LEOM Leova 71.22 320⇓*iP* **P 10 13 14.6 +0.3**
LEOM Leova 71.22 320 ⇓P **P 10 13 14.6 +0.3**
K30A Basset 71.26 46 P **P 10 13 15.2 +0.5**
baz=320,SNR=21
RRH Rhenigidale 71.26 346⇓*eP* **P 10 13 14.0 -0.3**
C39A Grand Marais 71.32 37 P **P 10 13 13.8 -1.1**
baz=324,SNR=17
MDO Dochfour 71.32 344⇓*eP* **P 10 13 14.4 -0.4**
Q24A Divide 71.33 52 P **P 10 13 16.0 +0.5**
baz=319,SNR=17
Q24A Divide 71.33 52 *eP* **P 10 13 16.1 +0.5**
comp=Z,19nm,0.7s
S22A 4UR Ranch, Cre 71.36 54 P **P 10 13 16.8 +1.1**
baz=318,SNR=53
S22A 4UR Ranch, Cre 71.36 54 *eP* **P 10 13 16.8 +1.1**
comp=Z,37nm,1.0s
S22A *e*pP **pP 10 15 16.1 +4.0**
E37A Wrenshall 71.41 39 P **P 10 13 14.9 -0.5**
baz=323
OGNE Ogallala 71.41 49 P **P 10 13 16.1 +0.4**
baz=320,SNR=8.9
OGNE Ogallala 71.41 49 *eP* **P 10 13 16.1 +0.4**
comp=Z,113nm,0.8s
OJC Ojcow 71.42 328 *eP* **P 10 13 15.7 +0.3**
OJC Ojcow 71.42 328⇓*eP* **P 10 13 15.7 +0.3**
OJC Ojcow 71.42 328 *eP* **P 10 13 15.1 -0.4**
comp=Z,129nm,1.1s
OJC Ojcow 71.42 328 *eP* **P 10 13 15.7 +0.3**
KAC Achnashellach 71.43 345⇓*eP* **P 10 13 15.3 -0.1**
H34A Spellman Lake, 71.46 42 P **P 10 13 15.6 -0.2**
baz=322,SNR=11
DRUM Mains of Drumt 71.48 343⇓*eP* **P 10 13 15.3 -0.3**
I33A Coleman 71.49 43 P **P 10 13 16.1 0.0**
baz=322,SNR=15
F36A Milaca 71.50 40 P **P 10 13 15.2 -0.8**
baz=323,SNR=31
BUR08 Bucovina Ar. S 71.52 323 *eP* **P 10 13 16.4 +0.2**
BURAR Bucovina Array 71.54 323⇑*iP* **P 10 13 16.8 +0.5**
BURAR Bucovina Array 71.54 323⇑P **P 10 13 16.8 +0.5**
J32A Parkston 71.54 44 P **P 10 13 16.1 -0.2**
baz=321,SNR=31
STHS Stebnicka Huta 71.57 326 *eP* **P 10 13 17.1 +0.7**
STHS pmax pmax
comp=Z,58nm,0.7s
STHS Stebnicka Huta 71.57 326 *eP* **P 10 13 17.1 +0.7**
KOLS Kolonicke sedl 71.59 325 *eP* **P 10 13 16.7 +0.2**
KOLS pmax pmax
comp=Z,61nm,1.1s
KOLS Kolonicke sedl 71.59 325 *eP* **P 10 13 16.7 +0.2**
G35A Watkins 71.59 41 P **P 10 13 16.5 -0.1**
baz=322,SNR=30
KPL Plockton 71.64 345⇓*eP* **P 10 13 16.7 +0.1**
KPL AMB AMB 10 13 17.2
comp=Z,120nm,0.6s
K31A O'Neill 71.70 45 P **P 10 13 17.5 +0.2**
baz=321,SNR=13
W18A Petrified Fore 71.72 57 P **P 10 13 18.9 +1.1**
baz=318,SNR=5.4
W18A Petrified Fore 71.72 57 *eP* **P 10 13 19.0 +1.3**
comp=Z,14nm,0.8s
KSB Sheil Bridge 71.73 345⇓*eP* **P 10 13 17.0 -0.1**
ECSD EROS Data Cent 71.82 43 P **P 10 13 17.8 -0.1**
baz=322,SNR=118
ECSD EROS Data Cent 71.82 43 *eP* **P 10 13 17.9 -0.1**
comp=Z,80nm,0.6s
UZH Uzhgorod 71.83 325*c iP* **P 10 13 17.3 -0.5**
UZH *i* 10 13 36.3
UZH *e* 10 16 02.8
UZH *e*S **S 10 21 50.9 -2.2**
UZH *i* SP **ScS 10 22 28.7 -1.0**
UZH Uzhgorod 71.83 325⇑*iP* **P 10 13 17.3 -0.5**
TESR Tescani 71.85 321⇓*iP* **P 10 13 18.3 +0.3**
H35A Sunnyside Ranc 71.85 42 P **P 10 13 18.1 0.0**
baz=322,SNR=48
G36A St. Michael 71.90 41 P **P 10 13 17.7 -0.6**
baz=323,SNR=8.5
NIE Niedzica 71.91 327 *eP* **P 10 13 19.1 +0.7**
NIE Niedzica 71.91 327 *eP* **P 10 13 19.1 +0.7**
CRVS Cervenica-Dubn 71.92 326 *eP* **P 10 13 18.8 +0.4**
CRVS *e* 10 16 07.7
CRVS Cervenica-Dubn 71.92 326 *eP* **P 10 13 18.8 +0.4**
CRVS *e*PP **PP 10 16 07.7 +0.1**
J33A Davis 71.98 44 P **P 10 13 18.6 -0.3**
baz=322,SNR=13
L31A Butterfield Fa 72.00 46 P **P 10 13 19.3 +0.3**
baz=321,SNR=33
TLCR 72.00 319⇑*iP* **P 10 13 19.3 +0.4**
TLCR 72.00 319 ⇑P **P 10 13 19.3 +0.4**
K32A Verdigre 72.03 45 P **P 10 13 18.7 -0.5**
baz=321,SNR=9.6
X18A Snowflake 72.04 58 *eP* **P 10 13 20.8 +1.2**
SDCO Great Sand Dun 72.06 53 P **P 10 13 20.5 +0.8**
baz=319,SNR=49
SDCO Great Sand Dun 72.06 53 *eP* **P 10 13 20.3 +0.5**
comp=Z,22nm,0.8s
KSP Ksiaz 72.08 330 *eP* **P 10 13 19.5 +0.2**
KSP Ksiaz 72.08 330⇓*eP* **P 10 13 19.5 +0.2**
BMR Baia Mare 72.16 324⇓*iP* **P 10 13 20.6 +0.8**
BMR Baia Mare 72.16 324 ⇓P **P 10 13 20.6 +0.8**
ODBI Odobesti 72.29 321⇓*iP* **P 10 13 22.3 +1.8**

CFR Carcaliu 72.30 320⇑*iP* **P 10 13 21.0 +0.4**
CFR Carcaliu 72.30 320⇑P **P 10 13 21.0 +0.4**
214A Organ Pipe Nat 72.30 62 P **P 10 13 21.9 +0.9**
baz=317,SNR=41
214A Organ Pipe Nat 72.30 62 *eP* **P 10 13 21.9 +0.9**
comp=Z,135nm,0.9s
214A *e*PcP **PcP 10 13 35.9 +0.7**
ARCR ARCALIA 72.31 323⇓*iP* **P 10 13 21.8 +1.1**
SPMN Marine on St. 72.31 40 P **P 10 13 20.3 -0.4**
baz=323,SNR=17
SPMN Marine on St. 72.31 40 *eP* **P 10 13 20.3 -0.4**
comp=Z,86nm,1.3s
OKC Ostrava-Krasne 72.31 328⇓*eP* **P 10 13 21.1 +0.5**
OKC *ex* x 10 13 25.6
OKC Ostrava-Krasne 72.31 328 *eP* **P 10 13 21.1 +0.5**
VRI Vrincioaia 72.34 321⇓*iP* **P 10 13 21.4 +0.5**
VRI Vrincioaia 72.34 321 ⇓P **P 10 13 21.4 +0.5**
H36A Jessenland, He 72.34 41 P **P 10 13 21.2 +0.3**
baz=323,SNR=14
PLOR Plostina 72.38 321⇓*iP* **P 10 13 21.6 +0.4**
PLOR Plostina 72.38 321 ⇓P **P 10 13 21.6 +0.4**
WBK Wadi Bani Khal 72.39 284 P **P 10 13 22.9 +1.3**
SNR=7.5
WBK Wadi Bani Khal 72.39 284 P **P 10 13 22.9 +1.3**
SNR=7.5
LANS Liptovska Anna 72.43 327 *eP* **P 10 13 22.7 +1.3**
LANS *e* 10 16 08.1
LANS Liptovska Anna 72.43 327 *eP* **P 10 13 22.7 +1.3**
LANS *e*PP **PP 10 16 08.1 -3.9**
ESY Stoneypath 72.44 343⇓*eP* **P 10 13 21.1 -0.2**
I35A Creekview Farm 72.45 42 P **P 10 13 21.2 -0.4**
baz=322,SNR=6.7
UOSS Minazif 72.46 288 *eP* **P 10 13 21.9 0.0**
comp=Z,13nm,1.4s
UPC Upice 72.46 330⇓*eP* **P 10 13 21.8 +0.3**
UPC *ex* x 10 13 26.8
UPC Upice 72.46 330 *eP* **P 10 13 21.8 +0.3**
J34A George 72.47 43 P **P 10 13 21.4 -0.3**
baz=322,SNR=9.0
SCHQ Schefferville 72.48 20 P **P 10 13 21.0 -0.5**
comp=Z,24nm,0.5s,baz=343,slow=5.4,SNR=80
DPC Dobruska-Polom 72.49 330 *eP* **P 10 13 22.4 +0.7**
DPC *ex* x 10 15 56.3
DPC *e*PP **PP 10 16 13.5 +1.0**
DPC Dobruska-Polom 72.49 330 *eP* **P 10 13 22.4 +0.7**
DPC *e* 10 16 13.5
EAB Aberfoyle 72.51 344⇓*eP* **P 10 13 21.6 0.0**
K33A Hardington 72.53 44 P **P 10 13 22.0 0.0**
baz=322,SNR=16
L32A Elgin 72.53 45 P **P 10 13 22.0 -0.1**
baz=321,SNR=9.6
MORC Moravsky Berou 72.57 329⇓*iP* **P 10 13 22.9 +0.7**
MORC Moravsky Berou 72.57 329 ⇓P **P 10 13 22.9 +0.7**
MORC Moravsky Berou 72.57 329 *eP* **P 10 13 22.7 +0.5**
comp=Z,462nm,0.8s
KRLC Kraliky 72.58 329⇓*iP* **P 10 13 22.7 +0.5**
KRLC Kraliky 72.58 329⇓*iP* **P 10 13 22.7 +0.5**
M31A Lambtecht Ranc 72.58 46 P **P 10 13 22.1 -0.3**
baz=321,SNR=6.0
HATD Hatta, Dubai 72.59 288 *i P* **P 10 13 22.8 +0.2**
SNR=11
KECS Kecovo 72.62 326 *eP* **P 10 13 23.1 +0.7**
KECS *e* 10 16 13.0
KECS pmax pmax
comp=Z,30nm,0.9s
KECS Kecovo 72.62 326 *eP* **P 10 13 23.1 +0.7**
KECS *e* 10 16 02.4
KECS *e*PP **PP 10 16 13.0 -0.5**
GRER 72.63 321⇑*iP* **P 10 13 24.4 +1.9**
SMDO Samad 72.66 285 P **P 10 13 23.6 +0.4**
SNR=6.7
SMDO Samad 72.66 285 P **P 10 13 23.6 +0.4**
SNR=6.7
KBSD Kabsdagh 72.71 307 *eP* **P 10 13 21.3 -1.9**
CLL Collm 72.73 332⇓*iP* **P 10 13 22.8 -0.2**
comp=Z,209nm,0.6s
CLL *e*pP **pP 10 15 18.0 -1.9**
CLL *e* 10 21 19.0
CLL *e*sS sS 10 25 34.0 +2.4
CLL *e*SSS SSS 10 30 48.0
CLL *e*SSSS 10 33 18.0
CLL *e* 10 38 00.0
CLL Collm 72.73 332⇓*iP* **P 10 13 22.8 -0.2**
CLL *e*PP **pP 10 15 18.0 -1.9**
CLL pmax pmax
comp=Z,209nm,0.6s
CLL Collm 72.73 332 *eP* **P 10 13 22.4 -0.6**
comp=Z,191nm,0.5s
CLL Collm 72.73 332⇓*iP* **P 10 13 22.8 -0.2**
CLL pP **pP 10 15 18.0 -1.9**
ASHO Ashiyiah 72.74 288 *i P* **P 10 13 23.6 0.0**
SNR=9.5
J35A Milford 72.74 43 P **P 10 13 22.9 -0.3**
baz=322,SNR=6.9
I36A Fitzsimmons Fa 72.75 42 P **P 10 13 23.0 -0.2**
baz=323,SNR=11
TIRR Tirgusor 72.76 319 *eP* **P 10 13 23.1 -0.1**
TIRR pmax pmax
comp=Z,51nm,0.9s
TIRR Tirgusor 72.76 319 *eP* **P 10 13 23.1 -0.1**
comp=Z,51nm,0.9s
NAZ Nazwa, Dubai 72.76 288 *i P* **P 10 13 23.5 -0.2**
SNR=6.1
H37A Dierke Farm, C 72.78 41 P **P 10 13 23.3 -0.1**
baz=323,SNR=12
HARR Harsova 72.78 320⇓*iP* **P 10 13 23.8 +0.4**
HARR Harsova 72.78 320 ⇓P **P 10 13 23.8 +0.4**
DOPR Dopca 72.81 322⇑*iP* **P 10 13 24.8 +1.2**
BRG Berggiesshubel 72.81 331⇓*iP* **P 10 13 23.4 -0.1**
comp=Z,55nm,1.0s
BRG *e* 10 16 11.3
comp=Z,6.9nm,0.6s
BRG Berggiesshubel 72.81 331⇓*iP* **P 10 13 23.4 -0.1**
BRG *e* 10 16 11.3
BRG pmax pmax
comp=Z,55nm,1.0s
BRG pmax pmax
comp=Z,7.0nm,0.6s
BRG Berggiesshubel 72.81 331⇓*iP* **P 10 13 23.4 -0.1**
DZM Mont Dzumac 72.81 162 *eP* **P 10 13 24.6 +0.8**
K34A Le Mars 72.88 44 P **P 10 13 23.8 -0.3**
baz=322,SNR=12
PGBU Glenifferbraes 72.89 344⇓*eP* **P 10 13 23.7 -0.1**
PGBU AMB AMB 10 13 25.0
comp=Z,172nm,1.5s
CJR Cluj-Napoca 72.91 323⇑*iP* **P 10 13 25.4 +1.2**
CJR Cluj-Napoca 72.91 323⇑P **P 10 13 25.4 +1.2**
PVCC Panska Ves 72.91 331⇓*eP* **P 10 13 24.5 +0.5**
PVCC *ex* x 10 13 27.4
PVCC Panska Ves 72.91 331 *eP* **P 10 13 24.5 +0.5**
BGNE Belgrade 72.92 46 P **P 10 13 24.3 0.0**
baz=321,SNR=20
BGNE Belgrade 72.92 46 *eP* **P 10 13 24.3 0.0**
comp=Z,161nm,0.8s
FAQ Al Faqa, Dubai 72.98 288 *i P* **P 10 13 24.6 -0.3**
SNR=12
N31A Bailey Ranch, 73.00 47 P **P 10 13 24.6 -0.2**
baz=321,SNR=16
ISR Istrita 73.02 321⇑*iP* **P 10 13 26.0 +1.2**
ISR Istrita 73.02 321⇑P **P 10 13 26.0 +1.2**
I37A Lemond, Waseca 73.02 41 P **P 10 13 24.9 +0.1**
baz=323,SNR=34
T25A Trinidad 73.08 53 P **P 10 13 25.9 +0.3**
baz=319,SNR=44
T25A Trinidad 73.08 53 *eP* **P 10 13 26.0 +0.4**
comp=Z,43nm,0.8s
COWI Conover 73.11 37 *eP* **P 10 13 24.8 -0.5**
comp=Z,71nm,1.0s
JMDO Jabal Madar 73.12 285 P **P 10 13 26.1 +0.4**
SNR=12
JMDO Jabal Madar 73.12 285 P **P 10 13 26.1 +0.4**
SNR=12
ESK Eskdalemuir 73.12 343⇓*eP* **P 10 13 24.6 -0.5**
ESK AMB AMB 10 13 25.0
comp=Z,133nm,1.3s
ESK Eskdalemuir 73.12 343 *i P* **P 10 13 25.4 +0.3**
ESK Eskdalemuir 73.12 343 *eP* **P 10 13 25.2 0.0**
comp=Z,70nm,0.9s
J36A Seneca 1, Swea 73.16 42 P **P 10 13 25.1 -0.5**
baz=323,SNR=7.8
DRGR 73.19 324⇓*iP* **P 10 13 26.3 +0.5**
DRGR 73.19 324 ⇓P **P 10 13 26.3 +0.5**
MANR Mangalia 73.20 319⇓*iP* **P 10 13 26.4 +0.6**
TUC Tucson 73.20 60 *eP* **P 10 13 27.0 +0.8**

TUC pmax pmax
comp=Z,16nm,1.0s
TUC Tucson 73.20 60 *eP* **P 10 13 27.0 +0.8**
comp=Z,16nm,1.0s
VYHS Vyhne 73.21 327 *eP* **P 10 13 26.4 +0.6**
VYHS pmax pmax
comp=Z,41nm,0.6s
VYHS Vyhne 73.21 327 *eP* **P 10 13 26.4 +0.6**
VYHS *e*PP **PP 10 16 12.8 -5.6**
ECK Cauldkaine Hil 73.23 343⇓*eP* **P 10 13 25.8 0.0**
K35A Storm Lake 73.24 43 P **P 10 13 25.5 -0.6**
baz=323,SNR=9.4
M33A Taylor Creek F 73.24 45 P **P 10 13 26.0 -0.1**
baz=322,SNR=23
VRAC Vranov 73.30 329⇓*iP* **P 10 13 27.1 +0.8**
VRAC Vranov 73.30 329 ⇓P **P 10 13 27.1 +0.8**
PSZ Piszkesteto 73.31 326⇑*iP* **P 10 13 27.6 +1.1**
PSZ Piszkesteto 73.31 326 ⇑P **P 10 13 27.6 +1.1**
PSZ Piszkesteto 73.31 326 *eP* **P 10 13 26.3 -0.2**
comp=Z,66nm,0.8s
L34A Svendsen Farm, 73.31 44 P **P 10 13 26.1 -0.5**
baz=322,SNR=28
BHH Howats Hill 73.33 343⇓*eP* **P 10 13 26.6 +0.2**
O31A Woolen Ranch, 73.34 47 P **P 10 13 26.2 -0.6**
baz=321,SNR=14
BWH Wardlaw 73.34 343⇓*eP* **P 10 13 26.1 -0.3**
N32A Stulken Farm, 73.36 46 P **P 10 13 26.3 -0.5**
baz=321,SNR=5.4
GOPC GO Pecny, Ondr 73.37 330 *eP* **P 10 13 27.2 +0.5**
GOPC GO Pecny, Ondr 73.37 330 *eP* **P 10 13 27.2 +0.5**
SFNV Sufian 73.38 307 *eP* **P 10 13 27.5 +0.4**
PRU Pruhonice 73.39 331⇓*iP* **P 10 13 27.2 +0.4**
PRU Pruhonice 73.39 331⇓*iP* **P 10 13 27.2 +0.4**
PRU Pruhonice 73.39 331⇓*iP* **P 10 13 27.2 +0.4**
BSY Bisya 73.42 286 P **P 10 13 28.0 +0.6**
SNR=14
BSY Bisya 73.42 286 P **P 10 13 28.0 +0.6**
SNR=14
AS01 Alice Springs 73.45 193 *eP* **P 10 13 27.5 +0.1**
AS31 Alice Springs 73.46 193 *eP* **P 10 13 28.7 +1.2**
comp=Z,17nm,0.8s
ASAR Alice Springs 73.46 193 P **P 10 13 28.6 +1.2**
comp=Z,55nm,0.7s,baz=5.5,slow=5.4,SNR=689
ASAR pP **pP 10 15 24.8 -0.2**
comp=Z,3.3nm,0.7s,baz=8.9,slow=5.1,SNR=1.7
ASAR PKPPKP **P'P'df 10 40 54.2 -1.5**
comp=Z,0.7nm,0.9s,baz=152,slow=4.0,SNR=5.2
I38A Scanlan Farm, 73.46 41 P **P 10 13 26.7 -0.6**
baz=324,SNR=16
SULR 73.50 321⇑*iP* **P 10 13 28.2 +0.7**
J37A Redenius Farm, 73.52 42 P **P 10 13 27.3 -0.4**
baz=323,SNR=17
MZRK Al-Mazaregh 73.54 306 *eP* **P 10 13 27.4 -0.5**
MTUR Matau 73.54 322⇑*iP* **P 10 13 28.6 +0.7**
MTUR Matau 73.54 322 ⇑P **P 10 13 28.6 +0.7**
L35A Bielow Farm, R 73.58 44 P **P 10 13 27.3 -0.8**
baz=322,SNR=12
M34A Aspy Farms, Fr 73.58 45 P **P 10 13 28.0 -0.1**
baz=322,SNR=16
ANMO Albuquerque 73.65 55 P **P 10 13 29.8 +1.0**
comp=Z,13nm,0.7s,baz=322,slow=7.3,SNR=79
ANMO Albuquerque 73.65 55 P **P 10 13 29.8 +1.0**
baz=319
ANMO Albuquerque 73.65 55*de*P **P 10 13 29.7 +1.0**
ANMO pmax pmax
comp=Z,19nm,1.0s
ANMO Albuquerque 73.65 55 *eP* **P 10 13 29.7 +1.0**
comp=Z,21nm,0.9s
K36A Gilmore City 73.66 43 P **P 10 13 28.1 -0.3**
baz=323,SNR=25
BBO1 Bothel 73.68 343⇓*eP* **P 10 13 28.4 +0.1**
TREC Trest 73.68 330⇓*eP* **P 10 13 28.9 +0.4**
TREC Trest 73.68 330 *eP* **P 10 13 28.9 +0.4**
LAZ Ladron 73.69 56 *eP* **P 10 13 30.3 +1.3**
SMOL Smolenice 73.69 328 *eP* **P 10 13 29.7 +1.2**
SMOL Smolenice 73.69 328 *eP* **P 10 13 29.7 +1.2**
O32A Brockman Farm, 73.76 47 P **P 10 13 28.2 -0.9**
baz=322,SNR=9.4
N33A J Bar K, Exete 73.78 46 P **P 10 13 28.5 -0.7**
baz=322,SNR=6.3
KESW Keswick, Cumbr 73.79 343⇓*eP* **P 10 13 29.3 +0.4**
KESW AMB AMB 10 13 30.2
comp=Z,154nm,1.2s
GAL1 Galloway 73.83 344⇓*eP* **P 10 13 28.8 -0.4**
NKC Novy Kostel 73.84 332⇓*eP* **P 10 13 29.5 +0.1**
NKC Novy Kostel 73.84 332 *eP* **P 10 13 29.5 +0.1**
K37A Belmond 73.91 42 P **P 10 13 29.3 -0.6**
baz=323,SNR=20
WTSB Winterswijk 73.93 336 *eP* **P 10 13 29.6 -0.1**
comp=Z,109nm,0.6s
J38A Wedel Dairy, R 73.98 41 P **P 10 13 29.4 -0.8**
baz=324,SNR=10
L36A Harm Buss Farm 73.99 43 P **P 10 13 30.0 -0.3**
baz=323,SNR=30
M35A Neola 74.02 44 P **P 10 13 30.6 +0.1**
baz=323,SNR=31
LPM Los Pinos Moun 74.03 56 *eP* **P 10 13 32.4 +1.4**
SIRR Siria 74.03 324⇓*iP* **P 10 13 31.1 +0.6**
P32A Huiting Farm, 74.10 47 P **P 10 13 30.3 -0.7**
baz=322,SNR=42
BR131 Keskin Array S 74.11 313 *eP* **P 10 13 31.7 +0.5**
BRTR Keskin Array B 74.11 313 P **P 10 13 31.6 +0.3**
comp=Z,28nm,0.8s,baz=69,slow=4.1,SNR=141
BRTR PP **sP 10 16 27.0 -0.5**
comp=Z,17nm,1.1s,baz=68,slow=6.8,SNR=6.9
N34A Lincoln 74.14 45 P **P 10 13 30.5 -0.7**
baz=322,SNR=12
BNM Barren Site 74.15 56 *eP* **P 10 13 32.8 +1.1**
CBKS Cedar Bluff 74.17 49 P **P 10 13 30.9 -0.6**
baz=321,SNR=6.0
CBKS Cedar Bluff 74.17 49 *eP* **P 10 13 31.0 -0.6**
CBKS pmax pmax
comp=Z,41nm,0.8s
CBKS Cedar Bluff 74.17 49 *eP* **P 10 13 31.0 -0.5**
comp=Z,40nm,0.8s
EIDS Eidsvold 74.19 177 *eP* **P 10 13 32.8 +1.3**
comp=Z,17nm,0.8s
MBWA Marble Bar 74.23 207 *eP* **P 10 13 32.1 +0.3**
comp=Z,31nm,0.9s
O33A Hebron 74.23 46 P **P 10 13 30.8 -1.0**
baz=322,SNR=16
L37A Phoenix Point, 74.38 43 P **P 10 13 32.1 -0.5**
baz=323,SNR=20
KSRV Kasrt alli 74.38 307 *eP* **P 10 13 33.2 +0.5**
K38A Parkersburg 74.39 42 P **P 10 13 32.0 -0.6**
baz=324,SNR=8.2
ANTO Ankara 74.40 314 *eP* **P 10 13 33.6 +0.8**
ANTO pmax pmax
comp=Z,85nm,0.6s
ANTO Ankara 74.40 314 *eP* **P 10 13 33.6 +0.8**
comp=Z,85nm,0.6s
BR231 Keskin MP Arra 74.43 314 *eP* **P 10 13 32.2 -0.8**
M36A Felix, Anita 74.44 44 P **P 10 13 32.5 -0.4**
baz=323
KHC Kasperske Hory 74.44 331⇓*eP* **P 10 13 33.4 +0.6**
KHC *e*pP **pP 10 15 33.9 +3.4**
KHC *e*PP **PP 10 16 26.7 -2.0**
KHC Kasperske Hory 74.44 331 *eP* **P 10 13 33.4 +0.6**
KHC *e*PP **pP 10 15 33.9 +3.4**
KHC *e* 10 16 26.7
KHC Kasperske Hory 74.44 331 *eP* **P 10 13 33.4 +0.6**
comp=Z,39nm,0.7s
KHC Kasperske Hory 74.44 331 *eP* **P 10 13 33.4 +0.6**
KHC pP **pP 10 15 33.9 +3.4**
N35A Tabor 74.53 45 P **P 10 13 33.5 +0.2**
baz=323,SNR=45
O34A Beatrice 74.57 46 P **P 10 13 32.8 -0.9**
baz=322,SNR=23
BZS Buzias 74.59 324⇓*iP* **P 10 13 33.7 +0.1**
BZS Buzias 74.59 324 ⇓P **P 10 13 33.7 +0.1**
Q32A Meitler Ranch, 74.61 48 P **P 10 13 33.3 -0.6**
baz=322,SNR=34
GMM Mts of Mourne 74.65 344⇓*eP* **P 10 13 33.5 -0.3**
GEC2 GERESS Array S 74.65 330 *eP* **P 10 13 34.0 0.0**
GEC2 GERESS Array S 74.65 330 *eP* **P 10 13 34.0 0.0**
GERES GERESS Array B 74.65 330 P **P 10 13 34.0 0.0**
comp=Z,56nm,0.7s,baz=35,slow=5.6,SNR=294
GERES PP **sP 10 16 31.1 +0.6**
comp=Z,3.8nm,1.0s,baz=46,slow=7.6,SNR=3.8
GEA0 GERESS Array S 74.66 330 *eP* **P 10 13 33.3 -0.8**
P33A Williams Farm, 74.68 47 P **P 10 13 33.6 -0.7**
baz=322
L38A Oak Wood Farm, 74.72 42 P **P 10 13 33.8 -0.6**
baz=324,SNR=10
121A Cookes Peak, D 74.73 58 P **P 10 13 36.2 +1.3**

baz=319,SNR=23
121A Cookes Peak, D 74.73 58 *e*P P 10 13 36.2 +1.3
comp=Z,22nm,0.7s
CONA Conrad Observa 74.73 329 *i* P P 10 13 35.4 +0.9
SNR=52
CONA *i* P P 10 13 35.4 +0.9
comp=Z,89nm,0.7s
319A Douglas 74.75 60 *e*P P 10 13 36.2 +1.2
SRE Strehaia 74.76 322⇑*i*P P 10 13 35.1 +0.5
SRE Strehaia 74.76 322⇑P P 10 13 35.1 +0.5
SCIA State Center 74.79 42 *e*P P 10 13 35.0 +0.1
comp=Z,88nm,0.8s
M37A Trindle Farm, 74.82 43 P P 10 13 35.1 +0.1
baz=323,SNR=8.9
O35A Humboldt 74.87 45 P P 10 13 34.7 -0.7
baz=323,SNR=12
N36A Muff Farm, Cla 74.88 44 P P 10 13 35.4 0.0
baz=323,SNR=15
Q33A Connelly Farm, 74.96 47 P P 10 13 35.2 -0.7
baz=322,SNR=47
R32A Long Quarter, 74.98 48 P P 10 13 35.1 -0.9
baz=322,SNR=6.6
P34A Walnut Farm, R 75.01 46 P P 10 13 35.2 -0.9
baz=322,SNR=48
CWF Charnwood Fore 75.16 341 *e*P P 10 13 36.5 -0.2
CWF Charnwood Fore 75.16 341 *e*P P 10 13 36.5 -0.2
M38A Pleasantville 75.19 43 P P 10 13 36.8 -0.3
baz=324,SNR=34
HGN Heimansgroeve 75.25 336 *e*P P 10 13 37.0 -0.2
comp=Z,73nm,0.7s
MDVR Moldovita 75.25 323⇓*i*P P 10 13 37.3 -0.1
JFWS Jewell Farm 75.26 40 *e*P P 10 13 36.0 -1.5
JFWS pmax pmax
comp=Z,68nm,0.6s
JFWS Jewell Farm 75.26 40 *e*P P 10 13 36.0 -1.5
comp=Z,68nm,0.6s
N37A Lee Faris, Mou 75.26 44 P P 10 13 37.5 -0.1
baz=323,SNR=20
BEBN Eben Emael 75.28 336 P P 10 13 37.4 +0.1
comp=Z,39nm,0.8s
MOA Molln 75.34 330 *i* P P 10 13 38.2 +0.4
comp=Z,48nm,0.8s,SNR=32
MEM Membach 75.37 336 P P 10 13 37.7 -0.1
comp=Z,70nm,1.1s
P35A Duane Minner, 75.41 46 P P 10 13 37.5 -0.9
baz=323,SNR=23
FOEL Foel Wylfa 75.41 342⇓*e*P P 10 13 38.3 +0.1
O36A Bolckow 75.42 45 P P 10 13 38.3 0.0
baz=323,SNR=54
R33A Olander Ranch, 75.43 48 P P 10 13 37.7 -0.8
baz=322,SNR=13
ARSA Arzberg 75.43 329 *i* P P 10 13 38.9 +0.6
SNR=17
S32A Newby Ranch, P 75.44 49 P P 10 13 37.9 -0.6
baz=322
Q34A Chapman 75.45 47 P P 10 13 37.9 -0.7
baz=322,SNR=5.6
KSU1 Kansas State U 75.47 46 P P 10 13 37.8 -0.8
baz=322
KSU1 Kansas State U 75.47 46 *e*P P 10 13 38.3 -0.4
comp=Z,65nm,0.8s
HSIG 75.55 62 *e*P P 10 13 40.2 +0.9
comp=Z,30nm,1.3s
N38A Joes South For 75.68 43 P P 10 13 39.6 -0.2
baz=324,SNR=16
DSB Dublin 75.68 344 *e*P P 10 13 39.9 +0.3
comp=Z,77nm,1.0s
HLM1 Long Mynd 75.70 342⇓*e*P P 10 13 39.7 0.0
P36A Good Intent, A 75.71 45 P P 10 13 39.6 -0.4
baz=323,SNR=17
BCLA Clavier 75.73 336 P P 10 13 39.8 -0.1
comp=Z,42nm,1.2s
O37A Wolven Farm, M 75.77 44 P P 10 13 40.2 -0.1
baz=324,SNR=13
R34A Isabella, Hill 75.79 47 P P 10 13 39.8 -0.7
baz=322,SNR=16
T32A Huddler Ranch, 75.85 49 P P 10 13 40.5 -0.3
baz=322,SNR=11
SNF Seneffe 75.91 337 P P 10 13 40.5 -0.4
Q35A Mercer Eighty, 75.93 46 P P 10 13 40.5 -0.7
baz=323,SNR=16
N39A Derby Farms, D 75.94 43 P P 10 13 40.9 -0.3
baz=324,SNR=30
S33A Kaszmaul Farm, 75.98 48 P P 10 13 41.2 -0.3
baz=322,SNR=9.2
SKP1 Kophill 76.01 340⇓*e*P P 10 13 40.8 -0.6
SOKA Soboth 76.09 329 *i* P P 10 13 42.4 +0.3
comp=Z,112nm,1.3s,SNR=39
PERS Pernice 76.10 328 *i* P P 10 13 42.2 +0.1
O38A Galt 76.11 44 P P 10 13 42.1 -0.1
baz=324,SNR=13
Q36A Arnold C. Orve 76.12 46 P P 10 13 41.6 -0.7
baz=323
STU Stuttgart 76.12 333 *e*P P 10 13 42.3 +0.2
STU pmax pmax
comp=Z,65nm,0.9s
STU Stuttgart 76.12 333 *e*P P 10 13 42.3 +0.2
comp=Z,64nm,0.9s
P37A Lathrop 76.14 45 P P 10 13 42.4 0.0
baz=324,SNR=68
WLF Walferdange 76.19 335 P P 10 13 42.6 +0.2
WLF Walferdange 76.19 335 *e*P P 10 13 42.6 +0.2
WLF pmax pmax
comp=Z,27nm,0.9s
WLF Walferdange 76.19 335 *e*P P 10 13 42.6 +0.2
comp=Z,27nm,0.9s
DOU Dourbes 76.21 336 P P 10 13 42.3 -0.2
MCH1 Michaelchurch 76.22 342 *e*P P 10 13 42.3 -0.2
AMTX Amarillo 76.23 52 P P 10 13 43.6 +0.5
baz=321
AMTX Amarillo 76.23 52 *e*P P 10 13 43.5 +0.5
comp=Z,78nm,1.1s
STRD Stroud 76.25 341 *e*P P 10 13 42.7 0.0
T33A Patterson Ranc 76.26 49 P P 10 13 42.7 -0.4
baz=322,SNR=6.8
R35A Emporia Munici 76.28 47 P P 10 13 43.0 -0.1
baz=323,SNR=15
KBA Koelnbreinsper 76.31 330 *i* P P 10 13 43.9 +0.4
SNR=65
LPW Lampeter 76.32 342 *e*P P 10 13 42.8 -0.3
S34A Willow Spring 76.33 48 P P 10 13 42.7 -0.7
baz=322
LANF Langenberg 76.34 334⇓*e*P P 10 13 43.5 +0.2
MSTX Muleshoe 76.36 54 P P 10 13 43.9 0.0
baz=321,SNR=12
MSTX Muleshoe 76.36 54 *e*P P 10 13 44.0 +0.1
OBKA Obir 76.41 329 *i* P P 10 13 43.9 +0.1
SNR=14
RABH Abou Rabah 76.42 307 *e*P P 10 13 42.5 -1.6
SWN1 Swindon 76.42 341⇓*e*P P 10 13 43.9 +0.3
SWN1 AMB AMB 10 13 44.6
comp=Z,244nm,0.9s
O39A Kirksville 76.42 43 P P 10 13 43.8 -0.1
baz=324,SNR=28
U32A Winter Ranch, 76.44 50 P P 10 13 44.3 +0.2
baz=322,SNR=14
GOLS Golise 76.47 328 *i* P P 10 13 44.0 -0.1
P38A Dawn 76.48 44 P P 10 13 44.3 +0.1
baz=324,SNR=74
WOL Wolverton 76.48 340⇓*e*P P 10 13 43.8 -0.2
WOL AMB AMB 10 13 44.4
comp=Z,146nm,0.7s
DIVS Divibare 76.49 324 P P 10 13 43.9 -0.4
HMNX Herstmonceux 76.55 339⇓*e*P P 10 13 45.0 +0.7
HMNX AMB AMB 10 13 45.7
comp=Z,247nm,0.8s
ROOS tl_alroos 76.58 307 *e*P P 10 13 42.3 -2.7
R36A Gordon, Harris 76.61 46 P P 10 13 44.6 -0.4
baz=323,SNR=19
MYKA Terra Mystica 76.61 329 *i* P P 10 13 44.7 -0.2
SNR=13
Q37A Longview Farm, 76.66 45 P P 10 13 44.8 -0.5
baz=324,SNR=12
ALN Alexandroupoli 76.66 318 P P 10 13 45.2 0.0
WATA Walderalm 76.66 331 *i* P P 10 13 45.8 +0.5
SNR=44
MNTX Cornudas Mount 76.69 57 P P 10 13 46.5 +0.9
baz=320,SNR=40
MNTX Cornudas Mount 76.69 57 *e*P P 10 13 46.3 +0.8
comp=Z,29nm,1.0s
WTTA Wattenberg 76.71 331 *i* P P 10 13 46.2 +0.7
SNR=34
S35A Otter Creek Ra 76.73 47 P P 10 13 45.5 -0.1
baz=323,SNR=27
ENEZ Enez 76.75 318 P P 10 13 45.9 +0.3
BFO Black Forest 76.77 333 *i* P P 10 13 45.7 0.0
BFO Black Forest 76.77 333 *e*P P 10 13 45.6 0.0

RETA Reutte 76.79 332 *i* P P 10 13 46.2 +0.3
comp=Z,46nm,0.7s,SNR=17
MOTA Moosalm 76.81 331 *i* P P 10 13 46.4 +0.4
comp=Z,58nm,0.5s,SNR=56
T34A McClaskey Farm 76.83 48 P P 10 13 46.0 -0.2
baz=323,SNR=24
O40A La Belle 76.83 43 P P 10 13 46.1 -0.1
baz=325,SNR=86
U33A Lingo Farm, Me 76.84 49 P P 10 13 46.3 0.0
baz=322,SNR=28
ABTA Abfaltersbach 76.88 330 *i* P P 10 13 46.3 -0.1
SNR=15
V32A Arapaho 76.93 50 P P 10 13 47.3 +0.5
baz=322,SNR=8.0
R37A Teagarden Farm 76.93 46 P P 10 13 46.1 -0.6
baz=324,SNR=27
P39B Salisbury 76.95 44 P P 10 13 46.5 -0.3
baz=324,SNR=27
Q38A Cooks Store, C 76.98 45 P P 10 13 46.8 -0.2
baz=324,SNR=37
BLY Banja Luka 77.00 326⇑*i*P P 10 13 46.5 -0.4
BOJS Bojanci 77.04 328 *i* P P 10 13 46.7 -0.4
S36A Lake Cedric, C 77.04 47 P P 10 13 47.1 -0.3
baz=323,SNR=18
ISP Isparta 77.11 314 *e*P P 10 13 47.6 -0.2
ISP pmax pmax
comp=Z,25nm,0.8s
ISP Isparta 77.11 314 *e*P P 10 13 47.6 -0.2
comp=Z,24nm,0.8s
MARH Ras Al Marh 77.12 307 *e*P P 10 13 48.4 +0.2
U34A Anderson Ranch 77.12 49 P P 10 13 48.0 +0.2
baz=322,SNR=26
U34A Anderson Ranch 77.12 49 *e*P P 10 13 48.1 +0.3
Q39A Willow Grove F 77.20 44 P P 10 13 48.2 0.0
baz=324,SNR=84
FETA Feichten 77.21 331 *i* P P 10 13 48.6 +0.4
SNR=26
ECH Echery 77.22 334⇓*e*P P 10 13 47.9 -0.2
NVR Nevrokopi 77.23 320 P P 10 13 48.4 +0.1
P40A Paris 77.23 43 P P 10 13 48.3 0.0
baz=325,SNR=69
V33A Lossen Ranch, 77.23 50 P P 10 13 48.5 0.0
baz=322,SNR=17
DAVA Damuels 77.24 332 *i* P P 10 13 48.3 -0.1
comp=Z,66nm,0.8s,SNR=23
T35A Sooner Cattle 77.24 48 P P 10 13 48.6 +0.2
baz=323,SNR=43
KAVA Kavala 77.24 319 P P 10 13 48.2 -0.1
W32A Sentinel 77.30 51 P P 10 13 49.6 +0.8
baz=322,SNR=26
TRI Trieste 77.37 329 *e*P P 10 13 47.6 -1.3
TRI pmax pmax
comp=Z,40nm,0.8s
TRI Trieste 77.37 329 *e*P P 10 13 47.6 -1.3
comp=Z,40nm,0.8s
PLE Pljevlja 77.38 324⇓*i*P P 10 13 49.5 +0.3
S37A Fort Scott 77.38 46 P P 10 13 48.7 -0.4
baz=324,SNR=29
KULA Kula-Manisa 77.42 315 P P 10 13 49.5 0.0
T36A Boggs Farm, Ca 77.43 47 P P 10 13 49.5 +0.1
baz=323,SNR=34
HTL Hartland 77.47 342 *e*P P 10 13 49.4 0.0
HTL AMB AMB 10 13 49.4
comp=Z,60nm,1.4s
R38A Fenwick Farm, 77.47 45 P P 10 13 48.5 -1.1
baz=324,SNR=27
ZALF Zalf 77.52 306 *e*P P 10 13 50.4 +0.3
SRS Serrai 77.53 320 P P 10 13 49.7 -0.2
MOF Molkenrain 77.55 334⇓*e*P P 10 13 49.8 -0.2
U35A Pawnee 77.57 48 P P 10 13 50.4 +0.2
baz=323,SNR=32
IVA Berane 77.57 323⇓*i*P P 10 13 50.3 +0.1
HDIL Hopedale 77.60 41 P P 10 13 49.9 -0.4
baz=326,SNR=5.1
HDIL Hopedale 77.60 41 *e*P P 10 13 50.0 -0.4
comp=Z,30nm,0.5s
V34A Guthrie 77.61 49 P P 10 13 50.8 +0.4
baz=323,SNR=11
V34A Guthrie 77.61 49 *e*P P 10 13 51.0 +0.6
Q40A Laux Farm, Aux 77.66 44 P P 10 13 50.4 -0.2
baz=325,SNR=29
TOTH TOTAH 77.66 307 *e*P P 10 13 50.6 -0.2
W33A Caddo, Fort Co 77.67 50 P P 10 13 51.6 +0.8
baz=322,SNR=10
UPM Unac-Piva 77.67 324⇓*i*P P 10 13 49.5 -1.4
UDBI Udbina 77.70 327 P P 10 13 50.1 -0.7
SKO Skopje 77.71 322 P P 10 13 51.1 +0.2
SKO Skopje 77.71 322 *i* P P 10 13 51.3 +0.4
FUORN Ofenpass-Fuorn 77.71 331 *e*P P 10 13 51.6 +0.5
R39A Chumby, Stover 77.77 45 P P 10 13 50.8 -0.5
baz=324,SNR=40
PVY Plav 77.78 323⇓*i*P P 10 13 50.1 -1.3
KNT Kendrikon 77.79 321 P P 10 13 51.2 -0.1
VAY Valandovo 77.79 321 P P 10 13 51.5 +0.2
VAY Valandovo 77.79 321 *i* P P 10 13 51.5 +0.2
X32A Elmer 77.83 51 P P 10 13 51.8 +0.1
baz=322,SNR=18
WMOK Wichita Mounta 77.83 51 P P 10 13 51.9 +0.2
baz=322,SNR=35
WMOK Wichita Mounta 77.83 51 *e*P P 10 13 52.0 +0.3
WMOK pmax pmax
comp=Z,56nm,1.3s
WMOK Wichita Mounta 77.83 51 *e*P P 10 13 52.0 +0.3
comp=Z,56nm,1.3s
T37A Chenyville 18 77.84 47 P P 10 13 51.6 -0.1
baz=324,SNR=36
LIA Limnos Island 77.86 318 P P 10 13 51.4 -0.3
BRBR Barbar 77.87 307 *e*P P 10 13 51.1 -1.1
PRK Paraskevi 77.91 317 P P 10 13 51.4 -0.6
S38A Stockton 77.92 46 P P 10 13 51.1 -0.9
baz=324,SNR=21
W34A Bridge Creek, 77.95 50 P P 10 13 52.9 +0.5
baz=323,SNR=8.0
W34A Bridge Creek, 77.95 50 *e*P P 10 13 53.0 +0.7
NKY Niksic 77.97 324⇓*i*P P 10 13 50.5 -1.9
SADO Sadowa 77.98 32 *e*P P 10 13 51.1 -1.1
NVLJ Novalja 77.99 328 P P 10 13 51.2 -1.1
V35A Meyer Ranch, C 78.00 49 P P 10 13 52.7 +0.1
baz=323,SNR=9.6
CSS Mathiatis 78.00 310 P P 10 13 52.3 -0.3
CSS Mathiatis 78.00 310 *e*P P 10 13 52.6 +0.1
comp=Z,11nm,0.7s
SALA Sala 78.00 306 *e*P P 10 13 50.2 -2.6
OUR Ouranopolis 78.02 319 P P 10 13 52.1 -0.4
U36A Oologah 78.04 47 P P 10 13 52.9 +0.2
baz=323,SNR=16
BRY Bratogost 78.07 324⇓*i*P P 10 13 51.2 -1.7
LOMF Lomont 78.09 334⇓*e*P P 10 13 53.0 +0.1
SIGR SIGRI 78.13 318 P P 10 13 52.8 -0.3
TUE Stuetta 78.13 332 *e*P P 10 13 53.5 +0.2
comp=Z,56nm,0.8s
X33A Lawton 78.13 50 P P 10 13 53.2 -0.1
baz=322,SNR=8.1
R40A Maddies Statio 78.14 44 P P 10 13 52.9 -0.3
baz=325,SNR=40
S39A Bolivar 78.14 45 P P 10 13 52.4 -0.9
baz=324,SNR=32
GRG Griva 78.17 321 P P 10 13 53.1 -0.3
PDG Podgorica 78.19 324⇓*i*P P 10 13 53.2 -0.2
PDG Podgorica 78.19 324 P P 10 13 52.9 -0.5
TTG Podgorica 78.19 324⇓*i*P P 10 13 52.4 -1.0
T38A Diamond 78.21 46 P P 10 13 53.3 -0.3
baz=324,SNR=42
PLG Polygyros 78.21 320 P P 10 13 53.1 -0.5
LMQ La Malbaie 78.28 25 *e*P P 10 13 53.2 -0.5
U37A Salina 78.32 47 P P 10 13 54.4 +0.1
baz=324,SNR=6.3
CCA1 Carnmenellis 78.38 343⇓*e*P P 10 13 54.0 -0.3
CCA1 AMB AMB 10 13 55.4
comp=Z,79nm,0.9s
TUL1 Leonard 78.39 48 P P 10 13 55.0 +0.4
baz=323,SNR=39
TUL1 Leonard 78.39 48 *e*P P 10 13 55.0 +0.4
Q42A Golden Eagle 78.42 43 P P 10 13 54.8 +0.1
baz=326,SNR=26
V36A Jenks 78.42 48 P P 10 13 55.1 +0.3
baz=323,SNR=18
X34A Smith Ranch, M 78.42 50 P P 10 13 55.4 +0.6
baz=323,SNR=18
TCHB Talchebab 78.44 307 *e*P P 10 13 55.1 +0.1
BUM Brajici-Budva 78.44 324⇓*i*P P 10 13 53.9 -1.0
AAM Ann Arbor 78.45 36 *e*P P 10 13 55.0 +0.2
AAM pmax pmax
comp=Z,72nm,0.8s
AAM Ann Arbor 78.45 36 *e*P P 10 13 55.0 +0.2

comp=Z,72nm,0.8s
W35A Tecumseh 78.46 49 P P 10 13 55.4 +0.3
baz=323,SNR=16
HCY Herceg Novi 78.47 324⇓*i*P P 10 13 53.7 -1.2
PAIG Paliouri 78.48 319 P P 10 13 54.5 -0.5
Y33A Hilltop Ranch, 78.49 51 P P 10 13 55.4 +0.2
baz=322,SNR=11
BIA Bitola 78.56 322 *i* P P 10 13 55.2 -0.3
ULC Ulcinj 78.59 323⇓*i*P P 10 13 54.8 -0.8
S40A Lebanon 78.59 45 P P 10 13 55.3 -0.4
baz=325,SNR=55
U38A Gravette 78.65 47 P P 10 13 55.7 -0.3
baz=324,SNR=21
JQE Queens East 78.65 340⇓*e*P P 10 13 55.7 0.0
T39A Clever 78.65 46 P P 10 13 55.5 -0.5
baz=324,SNR=11
JRS Jersey 78.67 340 *e*P P 10 13 56.0 +0.2
SFIN Lafayette 78.68 39 P P 10 13 55.7 -0.4
baz=327,SNR=15
SFIN Lafayette 78.68 39 *e*P P 10 13 55.7 -0.4
JSA Saint Aubin 78.69 340⇓*e*P P 10 13 55.7 -0.2
JSA AMB AMB 10 13 56.6
comp=Z,111nm,0.9s
OHR Ohrid 78.69 322 *i* P P 10 13 55.8 -0.4
CHOS Chios island 78.71 317 P P 10 13 56.1 -0.3
YER Yerkesik 78.71 315 P P 10 13 56.9 +0.5
V37A Hulbert 78.73 47 P P 10 13 56.6 +0.2
baz=324,SNR=35
FNA Florina 78.73 321 P P 10 13 55.8 -0.6
FETY Fethiye 78.74 314 P P 10 13 56.5 0.0
SLM Saint Louis 78.77 43 *e*P P 10 13 55.8 -0.8
SLM pmax pmax
comp=Z,89nm,0.6s
SLM Saint Louis 78.77 43 *e*P P 10 13 55.8 -0.8
comp=Z,89nm,0.6s
W36A Wetumka 78.80 49 P P 10 13 57.1 +0.3
baz=323,SNR=22
CCM Cathedral Cave 78.80 44 *e*P P 10 13 55.9 -0.8
CCM Cathedral Cave 78.80 44 *e*P P 10 13 55.9 -0.8
LIT Litokhoron 78.84 320 P P 10 13 56.0 -1.0
SENIN Lac Senin/Sane 78.85 333 *e*P P 10 13 57.0 -0.1
TIR Tirane 78.87 323⇓*i*P P 10 13 57.1 0.0
TIR Tirane 78.87 323 ⇓P P 10 13 57.1 0.0
TIR Tirane 78.87 323 *e*P P 10 13 57.0 -0.1
comp=Z,115nm,0.6s
SMG Samos 78.91 316 P P 10 13 56.5 -0.9
T40A Mansfield 78.95 45 P P 10 13 57.0 -0.6
baz=325,SNR=23
Y34A Reagan Ranch, 78.97 50 P P 10 13 57.9 +0.2
baz=323,SNR=14
KZN Kozani 78.97 321 P P 10 13 56.6 -1.1
Z33A Whitaker Ranch 78.98 51 P P 10 13 57.8 0.0
baz=322,SNR=17
X35A Drake 79.01 50 P P 10 13 58.0 0.0
baz=323,SNR=27
AOS Alonnisos 79.03 319 P P 10 13 57.2 -0.7
ABTX Abilene, Hawle 79.05 52 P P 10 13 58.5 +0.3
baz=322,SNR=14
ABTX Abilene, Hawle 79.05 52 *e*P P 10 13 58.6 +0.3
V38A Canehill 79.10 47 P P 10 13 58.4 0.0
baz=324,SNR=36
U39A Green Forest 79.12 46 P P 10 13 58.4 -0.1
baz=324,SNR=33
XOR Xorichti 79.16 319 P P 10 13 57.7 -1.0
NEST Nestorio 79.18 321 P P 10 13 58.3 -0.6
W37B Quinton 79.19 48 P P 10 13 59.4 +0.6
baz=324,SNR=26
X36A Centrahoma 79.19 49 P P 10 13 59.3 +0.5
baz=323,SNR=25
NEO Neokhori 79.19 319 P P 10 13 58.0 -0.9
BODT Bodrum 79.22 315 P P 10 13 58.5 -0.5
PENT Pentalofos 79.33 321 P P 10 13 59.0 -0.6
Z34A Collier Ranch, 79.35 51 P P 10 13 59.8 0.0
baz=323
Y35A Marietta 79.37 50 P P 10 14 00.1 +0.2
baz=323,SNR=12
T41A Mountain View 79.39 44 P P 10 13 59.6 -0.3
baz=325,SNR=60
KPRO Kipourio 79.44 321 P P 10 13 59.3 -0.9
U40A Yellville 79.44 46 P P 10 13 60.0 -0.2
baz=325,SNR=85
133A Hamilton Ranch 79.44 52 P P 10 14 00.4 +0.2
baz=322,SNR=23
TX31 Lajitas Ar. Si 79.45 57 *e*P P 10 14 01.1 +0.7
TXAR Lajitas Array 79.45 57 P P 10 14 01.2 +0.8
comp=Z,36nm,0.7s,baz=296,slow=4.1,SNR=500
TXAR pP **pP** 10 16 01.6 +1.4
comp=Z,2.9nm,0.8s,baz=286,slow=3.6,SNR=4.7
V39A Pettigrew 79.48 46 P P 10 14 00.2 -0.3
baz=324,SNR=30
THL Klokotos Trika 79.49 320 P P 10 13 58.5 -1.9
SMIA Simia 79.56 319 P P 10 14 00.0 -0.8
LPIG La Paz 79.61 65 P P 10 14 02.0 +0.8
comp=Z,17nm,0.6s,baz=69,slow=2.0,SNR=4.4
OLIL Olney 79.63 41 *e*P P 10 14 00.9 -0.2
comp=Z,54nm,0.9s
X37A Clayton 79.66 48 P P 10 14 01.6 +0.2
baz=324,SNR=8.5
W38A Poteau 79.69 47 P P 10 14 01.9 +0.5
baz=324,SNR=28
S43A Fulton Ridge, 79.72 43 P P 10 14 01.4 -0.3
baz=326,SNR=26
Z35A Perchaven, San 79.72 50 P P 10 14 01.6 -0.1
baz=323,SNR=14
Y36A Durant 79.75 49 P P 10 14 02.0 +0.2
baz=323,SNR=27
FRNY Flat Rock 79.76 28 *e*P P 10 14 00.7 -1.0
comp=Z,13nm,0.9s
AGG Agios Georgios 79.81 320 P P 10 14 00.3 -1.8
AGG Agios Georgios 79.81 320 *e*P P 10 14 00.9 -1.2
AGG Agios Georgios 79.81 320 *e*P P 10 14 00.8 -1.2
X38A Whitesboro 79.86 48 P P 10 14 02.9 +0.5
baz=324,SNR=28
VLC Villacollemand 79.87 330 *e*P P 10 14 01.8 -0.5
comp=Z,18nm,0.9s
134A White-Moore Ra 79.90 51 P P 10 14 02.9 +0.3
baz=323,SNR=15
V40A Witts Springs 79.90 46 P P 10 14 02.2 -0.4
baz=325,SNR=24
233A Rising Star 79.92 52 P P 10 14 03.0 +0.3
baz=322,SNR=21
BLO Bloomington 79.93 40 *e*P P 10 14 02.5 -0.2
BLO pmax pmax
comp=Z,31nm,0.6s
BLO Bloomington 79.93 40 *e*P P 10 14 02.5 -0.2
comp=Z,31nm,0.6s
W39A Magazine 79.94 47 P P 10 14 02.8 0.0
baz=324
SIUC Southern Illin 79.98 42 *e*P P 10 14 03.0 0.0
comp=Z,111nm,0.8s
ERPA Erie 79.99 34 *e*P P 10 14 02.8 -0.1
comp=Z,73nm,0.6s
Y37A Hugo 80.02 49 P P 10 14 03.5 +0.2
baz=324,SNR=7.3
EVR Evrytania 80.12 320 P P 10 14 02.7 -1.1
SLBS Sierra La Lagu 80.14 65 *e*P P 10 14 05.5 +1.4
comp=Z,19nm,0.8s
VLY Voula,Athens 80.16 318 P P 10 14 02.2 -1.7
HPIG 80.17 60 *e*P P 10 14 04.9 +0.5
Z36A Blue Ridge 80.18 50 P P 10 14 04.2 +0.1
baz=323,SNR=17
SGD Sagiada 80.19 321 P P 10 14 03.4 -0.6
MMNY Mt. Morris Dam 80.20 32 *e*P P 10 14 03.4 -0.6
PBMO Poplar Bluff 80.21 44 *e*P P 10 14 04.3 +0.1
comp=Z,85nm,0.9s
V41A Mountainview 80.23 45 P P 10 14 04.0 -0.4
baz=325,SNR=47
DSL Palaion Diasel 80.24 321 P P 10 14 03.8 -0.5
DSF Desfina 80.24 319 P P 10 14 02.5 -1.9
GDM Grand'Maison 80.25 333⇓*e*P P 10 14 04.9 +0.5
135A Vickery Place, 80.26 51 P P 10 14 05.1 +0.6
baz=323,SNR=20
PLDF La Plantade 80.26 335⇓*e*P P 10 14 04.6 +0.2
W40A Ferguson Farm, 80.28 46 P P 10 14 04.7 +0.2
baz=325,SNR=12
KEK Kerkira 80.28 322 P P 10 14 03.8 -0.7
AGO Saint Agoulin 80.31 336⇓*e*P P 10 14 05.2 +0.6
234A Clairette 80.32 52 P P 10 14 05.3 +0.4
baz=323,SNR=77
GRN Grenoble 80.32 334⇓*e*P P 10 14 05.3 +0.6
X39A Fountain Ranch 80.33 48 P P 10 14 05.3 +0.5
baz=324,SNR=28
NCB Newcomb 80.34 29 *e*P P 10 14 04.2 -0.5
comp=Z,0.2nm,0.7s
ALLY Alegheny Colle 80.34 34 *e*P P 10 14 04.8 0.0
comp=Z,107nm,1.0s

ANX	Ano Chora	80.35	320	P	P	10 14 03.8	-1.2
LTK	Loutraki	80.38	319	P	P	10 14 02.9	-2.2
333A	Richland Sprin	80.42	53	P	P	10 14 05.7	+0.3
	baz=322						
AQU	L'Aquila	80.44	327	eP	P	10 14 05.6	+0.2
AQU	L'Aquila	80.44	327	eP	P	10 14 05.5	+0.2
USIN	University of	80.46	41	eP	P	10 14 05.7	+0.3
	comp=Z,80nm,0.8s						
ACSO	Alum Creek Sta	80.48	37	eP	P	10 14 05.5	0.0
	comp=Z,82nm,0.8s						
Y38A	Idabel	80.50	48	P	P	10 14 05.6	-0.1
	baz=324,SNR=12						
KARP	Karpathos	80.53	315	P	P	10 14 04.8	-1.1
KARP	Karpathos	80.53	315	eP	P	10 14 05.0	-0.9
X201	Greenbrier Sit	80.54	46	eP	P	10 14 05.8	-0.1
	comp=Z,123nm,1.4s						
X301	Greenbrier Sit	80.56	46	eP	P	10 14 05.8	-0.2
	comp=Z,112nm,1.4s						
MIAR	Mount Ida	80.56	47	P	P	10 14 06.3	+0.3
	baz=324,SNR=21						
MIAR	Mount Ida	80.56	47	eP	P	10 14 06.4	+0.3
MIAR				pmax	pmax		
	comp=Z,28nm,0.6s						
MIAR	Mount Ida	80.56	47	eP	P	10 14 06.4	+0.4
	comp=Z,28nm,0.6s						
V42A	Cord	80.57	45	P	P	10 14 05.7	-0.3
	baz=325,SNR=25						
WHAR	Wooly Hollow	80.57	46	eP	P	10 14 06.0	-0.1
	comp=Z,153nm,1.2s						
WHAR				epP	pP	10 16 09.4	+3.1
PARMO	Parma	80.62	43	eP	P	10 14 07.4	+1.1
LAKA	Lakka	80.62	320	P	P	10 14 05.0	-1.3
PYM	Petit Puy Mans	80.62	336	‖eP	P	10 14 06.8	+0.5
SSB	Saint Sauveur	80.63	335	‖eP	P	10 14 06.5	+0.2
SSB	Saint Sauveur	80.63	335	eP	P	10 14 06.5	+0.2
SSB	Saint Sauveur	80.63	335	eP	P	10 14 06.5	+0.2
M54A	Oil Creek Stat	80.64	34	P	P	10 14 06.1	-0.3
	baz=331,SNR=16						
MDV	Middlebury	80.64	29	eP	P	10 14 06.0	-0.3
Z37A	Pogue Cattle C	80.65	49	P	P	10 14 06.9	+0.4
	baz=324,SNR=9.5						
JCT	Junction City	80.65	54	P	P	10 14 06.8	+0.2
	baz=322,SNR=17						
JCT	Junction City	80.65	54	eP	P	10 14 06.8	+0.2
JCT				pmax	pmax		
	comp=Z,40nm,0.8s						
JCT	Junction City	80.65	54	eP	P	10 14 06.8	+0.2
	comp=Z,40nm,0.8s						
PDO	Prodromos	80.65	320	P	P	10 14 05.7	-0.8
PKME	Peaks-Kenny Pk	80.65	25	eP	P	10 14 06.2	-0.1
	comp=Z,22nm,0.9s						
WHTX	Lake Whitney,	80.68	51	P	P	10 14 07.2	+0.5
	baz=323,SNR=23						
W41B	Gary Mavity, V	80.69	46	P	P	10 14 06.6	0.0
	baz=325,SNR=45						
DID	Didima	80.69	318	P	P	10 14 03.8	-2.9
MATE	Matera	80.70	324	⇑iP	P	10 14 05.7	-0.9
KLV	Kalavryta, Ach	80.71	319	P	P	10 14 05.4	-1.4
LKD2	Lefkada island	80.71	321	P	P	10 14 04.2	-2.6
136A	Ennis	80.77	50	P	P	10 14 07.3	+0.2
	baz=323,SNR=11						
STKA	Stephens Creek	80.79	185	P	P	10 14 07.8	+0.8
	comp=Z,11nm,0.8s,baz=350,slow=7.3,SNR=13						
STKA	Stephens Creek	80.79	185	eP	P	10 14 08.0	+1.0
STKA	Stephens Creek	80.79	185	eP	P	10 14 08.0	+1.0
334A	Lometa	80.80	52	P	P	10 14 07.6	+0.2
	baz=323,SNR=46						
Y39A	Lockesburg	80.81	48	P	P	10 14 07.6	+0.3
	baz=324,SNR=18						
433A	Art	80.81	53	P	P	10 14 07.3	-0.1
	baz=322,SNR=18						
LBNH	Lisbon	80.81	28	eP	P	10 14 07.6	+0.4
LBNH				pmax	pmax		
	comp=Z,19nm,0.8s						
LBNH	Lisbon	80.81	28	eP	P	10 14 07.6	+0.4
	comp=Z,19nm,0.8s						
Z38A	Mt. Pleasant	80.92	49	P	P	10 14 08.0	+0.1
	baz=324,SNR=8.6						
AUTN	L'Aution	80.95	332	eP	P	10 14 07.9	-0.3
X40A	Basin Creek Fa	80.97	47	P	P	10 14 08.3	+0.2
	baz=325,SNR=33						
DRO	Drossia	80.97	320	P	P	10 14 07.6	-0.6
N54A	Moraine State	81.00	34	P	P	10 14 08.1	-0.1
	baz=331,SNR=22						
ACCN	Adirondack Com	81.04	29	eP	P	10 14 08.0	-0.4
137A	Heron Place, G	81.06	50	P	P	10 14 09.1	+0.4
	baz=324						
FRNF	Fournols	81.08	336	eP	P	10 14 09.5	+0.9
X41A	Kaden, Bauxite	81.11	46	P	P	10 14 09.0	+0.1
	baz=325,SNR=14						
MVIF	Mont Vial	81.12	332	‖eP	P	10 14 08.5	-0.5
Y40A	Okolona	81.14	47	P	P	10 14 09.2	+0.1
	baz=325,SNR=7.0						
236A	Katherine and	81.15	51	P	P	10 14 09.3	+0.2
	baz=324,SNR=9.7						
VLX	Vlachokerasia	81.18	319	P	P	10 14 07.8	-1.5
HNH	Hanover	81.19	28	eP	P	10 14 09.3	+0.2
WVL	Waterville	81.19	26	eP	P	10 14 09.2	+0.1
	comp=Z,29nm,0.6s						
434A	Burnet	81.19	53	P	P	10 14 09.2	-0.2
	baz=323,SNR=8.7						
REVF	Revere	81.20	332	‖eP	P	10 14 09.4	+0.2
KFL	Anninata	81.23	320	P	P	10 14 08.2	-1.2
V44A	Blytheville	81.24	44	P	P	10 14 09.9	+0.4
	baz=326						
VLS	Valsamata	81.26	320	P	P	10 14 08.8	-0.8
335A	Moody	81.26	52	P	P	10 14 09.9	+0.2
	baz=323,SNR=6.6						
UTMT	University of	81.28	43	eP	P	10 14 10.4	+0.7
LMN	Caledonia Moun	81.30	22	eP	P	10 14 09.8	+0.1
Z39A	Irene McRaven,	81.32	48	P	P	10 14 10.5	+0.5
	baz=324						
ZKR	Zakros	81.32	315	P	P	10 14 08.8	-1.2
AMT	Artemida-Makis	81.33	319	P	P	10 14 08.7	-1.3
BINY	Binghamton	81.33	31	eP	P	10 14 09.4	-0.5
	comp=Z,23nm,0.8s						
CALN	Calern	81.34	332	‖eP	P	10 14 09.7	-0.4
138A	Matatall Enter	81.34	49	P	P	10 14 10.9	+0.8
	baz=324,SNR=6.9						
533A	Kerrville	81.38	54	P	P	10 14 10.5	+0.1
	baz=323,SNR=20						
336A	Riesel	81.48	51	P	P	10 14 10.8	+0.1
	baz=323,SNR=7.5						
VLI	Veliai	81.48	318	P	P	10 14 07.7	-3.0
NPS	Neapolis	81.48	315	P	P	10 14 09.3	-1.5
237A	Washetta, Mont	81.51	50	P	P	10 14 11.4	+0.4
	baz=324						
ITM	Ithomi	81.53	319	P	P	10 14 09.6	-1.4
Y41A	Eaglette Beard	81.57	47	P	P	10 14 11.7	+0.5
	baz=325						
435B	Jarrell	81.58	52	P	P	10 14 11.6	+0.2
	baz=323						
ZKS	Zakynthos	81.58	320	P	P	10 14 09.5	-1.8
FFD	Franklin Falls	81.59	28	eP	P	10 14 11.6	+0.4
	comp=Z,406nm,1.8s						
CUC	Castrocucco	81.61	325	eP	P	10 14 10.0	-1.4
LAST	Lasithi	81.63	315	‖iP	P	10 14 11.4	-0.2
LAST	Lasithi	81.63	315	P	P	10 14 10.9	-0.7
LAST	Lasithi	81.63	315	eP	P	10 14 10.6	-1.0
TRY	Troy	81.63	29	eP	P	10 14 11.3	0.0
139A	Bunkhouse Ranc	81.67	49	P	P	10 14 12.4	+0.7
	baz=324						
Z40A	Long Farm, Mag	81.69	48	P	P	10 14 12.7	+0.8
	baz=325,SNR=11						
534A	Blanco	81.71	53	P	P	10 14 12.0	-0.1
	baz=323,SNR=15						
633A	Saathoff Ranch	81.79	54	P	P	10 14 12.9	+0.4
	baz=323,SNR=14						
IDI	Anoyia	81.79	316	P	P	10 14 09.9	-2.5
IDI	Anoyia	81.79	316	eP	P	10 14 10.4	-2.0
W44A	Shelby Farms P	81.85	44	P	P	10 14 12.9	+0.3
	baz=326						
PYL	PYLOS	81.85	319	P	P	10 14 10.8	-1.8
238A	Jacksonville	81.86	50	P	P	10 14 13.8	+1.1
	baz=324						
X43A	Marvell	81.87	45	P	P	10 14 13.2	+0.5
	baz=326						
WVT	Waverly	81.92	42	eP	P	10 14 13.2	+0.2
WVT	Waverly	81.92	42	eP	P	10 14 13.2	+0.2
TIP	Timpagrande	81.95	324	‖iP	P	10 14 13.2	0.0
TIP	Timpagrande	81.95	324	P	P	10 14 12.7	-0.5
TIP	Timpagrande	81.95	324	eP	P	10 14 12.9	-0.3
KSPA	Keystone Colle	81.98	31	eP	P	10 14 13.0	-0.2
Z41A	Richland Creek	81.98	47	P	P	10 14 14.0	+0.6
	baz=325						
436A	Wall Ranch, Ga	81.99	52	P	P	10 14 14.2	+0.7
	baz=324						
Y42A	Garnett, Star	82.00	46	P	P	10 14 14.1	+0.7
	baz=325,SNR=7.1						
VAM	Vamos	82.01	316	P	P	10 14 13.2	-0.2
337A	Centerville	82.02	51	P	P	10 14 14.7	+1.1
	baz=324						
ANKY	Antikythira Is	82.03	317	P	P	10 14 10.4	-3.1
SSPA	Standing Stone	82.05	33	eP	P	10 14 13.3	-0.2
SIVA	Sivas	82.05	316	⇑iP	P	10 14 13.8	+0.1
SIVA	Sivas	82.05	316	P	P	10 14 13.0	-0.7
IMMV	Iera Moni Meta	82.06	317	P	P	10 14 12.9	-0.8
140A	Cam and Jess,	82.11	48	P	P	10 14 15.1	+1.1
	baz=325,SNR=5.5						
W45A	Hickory Valley	82.12	44	P	P	10 14 14.2	+0.2
	baz=326,SNR=11						
O56A	Blue Knob Stat	82.13	34	P	P	10 14 14.0	0.0
	baz=332,SNR=22						
239A	Gary	82.17	49	P	P	10 14 15.2	+0.9
	baz=324,SNR=8.5						
535A	Dale	82.18	53	P	P	10 14 14.7	+0.3
	baz=323						
X44A	Crenshaw	82.22	45	P	P	10 14 14.9	+0.4
	baz=326						
338A	Crockett	82.28	50	P	P	10 14 15.8	+0.9
	baz=324,SNR=9.3						
437A	Phantom Ranch,	82.28	51	P	P	10 14 15.9	+1.0
	baz=324						
NATX	Nacogdoches	82.28	50	P	P	10 14 16.0	+1.2
	baz=324,SNR=17						
NATX	Nacogdoches	82.28	50	eP	P	10 14 16.1	+1.2
832A	Faith Ranch, C	82.29	55	P	P	10 14 15.8	+0.9
	baz=322,SNR=32						
634A	China Grove, S	82.29	54	P	P	10 14 15.6	+0.6
	baz=323						
733A	Divot King Ran	82.31	55	P	P	10 14 15.9	+0.8
	baz=323,SNR=15						
Y43A	Makayla and Ka	82.34	46	P	P	10 14 16.0	+0.8
	baz=326						
Z42A	Norrel Spur, H	82.38	47	P	P	10 14 16.2	+0.8
	baz=325						
536A	Bastrop	82.41	52	P	P	10 14 16.1	+0.6
	baz=323						
QUA2	Belchertown	82.46	29	eP	P	10 14 15.4	-0.2
141A	Papa Simpson,	82.47	48	P	P	10 14 16.8	+1.0
	baz=325,SNR=11						
HRV	Adam Dziewonsk	82.50	28	eP	P	10 14 16.0	+0.2
HRV	Adam Dziewonsk	82.50	28	eP	P	10 14 16.0	+0.2
240A	Hunter Patters	82.50	49	P	P	10 14 16.7	+0.7
	baz=325						
N59A	State Game Lan	82.55	32	P	P	10 14 16.0	-0.1
	baz=333,SNR=18						
OXF	Oxford	82.55	44	eP	P	10 14 16.6	+0.4
OXF	Oxford	82.55	44	eP	P	10 14 16.6	+0.4
833A	Chaparral WMA,	82.57	55	P	P	10 14 17.2	+0.8
	baz=323,SNR=11						
635A	Leesville	82.59	53	P	P	10 14 16.9	+0.4
	baz=323						
734A	La Parita Cree	82.60	54	P	P	10 14 17.5	+1.0
	baz=323,SNR=14						
X45A	UM Field Stati	82.63	44	P	P	10 14 16.5	-0.1
	baz=326						
Y44A	Strider, Charl	82.64	45	P	P	10 14 17.0	+0.4
	baz=326,SNR=6.9						
339A	Huntington	82.68	50	P	P	10 14 17.6	+0.7
	baz=324						
WES	Weston	82.68	28	eP	P	10 14 16.9	+0.2
WES	Weston	82.68	28	eP	P	10 14 16.9	+0.2
438A	Sam Houston St	82.69	51	P	P	10 14 18.0	+1.1
	baz=324						
PLAL	Pickwick Lake	82.77	43	eP	P	10 14 17.0	-0.2
BCX	Boston College	82.77	28	eP	P	10 14 17.4	+0.3
537A	Green Hill Far	82.79	52	P	P	10 14 18.7	+1.2
	baz=324						
ODNJ	Ogdensburg	82.80	31	eP	P	10 14 17.1	-0.2
636A	Smothers Creek	82.89	53	P	P	10 14 19.1	+1.1
	baz=324,SNR=9.0						
241A	Mo Tay, Goldon	82.93	48	P	P	10 14 19.2	+1.1
	baz=325,SNR=7.2						
340A	Bronson	82.95	49	P	P	10 14 18.7	+0.5
	baz=325,SNR=5.9						
LUPA	Lehigh Univers	82.97	32	eP	P	10 14 17.9	-0.3
142A	Monroe	82.98	47	P	P	10 14 19.2	+0.9
	baz=325						
735A	Kenedy	82.99	53	P	P	10 14 19.8	+1.3
	baz=323,SNR=9.8						
439A	Center Grove,	83.01	50	P	P	10 14 19.5	+0.9
	baz=324,SNR=9.4						
Y45A	Yeager Farm, C	83.03	45	P	P	10 14 19.2	+0.7
	baz=326,SNR=11						
BRYW	Bryant College	83.04	28	eP	P	10 14 18.6	+0.1
CEL	Celeste	83.08	324	eP	P	10 14 17.2	-1.6
Z44A	Pea Ridge, Bel	83.10	46	P	P	10 14 19.7	+0.8
	baz=326,SNR=5.8						
PAL	Palisades	83.10	30	eP	P	10 14 18.7	-0.1
PAL	Palisades	83.10	30	eP	P	10 14 18.7	-0.1
538A	Harpers Horsep	83.10	51	P	P	10 14 20.7	+1.7
	baz=324						
143A	Socs Landing,	83.11	47	P	P	10 14 20.0	+1.0
	baz=326						
MVL	Millersville	83.16	32	eP	P	10 14 19.2	+0.1
BRNJ	Basking Ridge	83.17	31	eP	P	10 14 19.1	-0.1
834A	Tilen	83.18	54	P	P	10 14 21.6	+2.2
	baz=323,SNR=5.7						
933A	Laredo	83.19	55	P	P	10 14 21.1	+1.6
	baz=323,SNR=33						
CPNY	Central Park	83.27	30	eP	P	10 14 19.6	-0.1
242A	Grayson	83.28	48	P	P	10 14 20.7	+0.9
	baz=325						
637A	Eagle Lake	83.30	52	P	P	10 14 21.3	+1.3
	baz=324						
736A	Circle Diamond	83.30	53	P	P	10 14 21.6	+1.6
	baz=324,SNR=6.7						
Y46A	Houston	83.33	44	P	P	10 14 20.4	+0.3
	baz=327,SNR=65						
LRDF	Laroque-de-Fa	83.35	335	‖eP	P	10 14 21.2	+1.1
Z45A	Winona	83.37	45	P	P	10 14 21.0	+0.7
	baz=326,SNR=12						
341A	Kurthwood	83.37	49	P	P	10 14 21.2	+0.9
	baz=325,SNR=10						
835A	Beeville	83.43	54	P	P	10 14 22.4	+1.8
	baz=323,SNR=7.2						
SDMD	Soldier's Deli	83.51	33	eP	P	10 14 20.9	0.0
SWET	Sewanee	83.52	42	eP	P	10 14 20.8	-0.3
934A	Benavides	83.61	55	P	P	10 14 23.2	+1.6
	baz=323						
144A	Alexander Plac	83.64	46	P	P	10 14 22.6	+1.0
	baz=326						
SJAF	Saint Jean de	83.67	335	eP	P	10 14 22.0	+0.3
CARF	Carcanieres	83.68	335	‖eP	P	10 14 22.4	+0.6
FILF	Fillols	83.69	335	eP	P	10 14 22.7	+0.9
243A	Waterproof	83.75	47	P	P	10 14 23.3	+1.2
	baz=326,SNR=5.8						
342A	Flagon Creek P	83.75	48	P	P	10 14 23.5	+1.2
	baz=325						
Y47A	UCPARC, Winfie	83.77	44	P	P	10 14 21.9	-0.4
	baz=327,SNR=29						
441A	DeRidder	83.84	49	P	P	10 14 23.9	+1.2
	baz=325						
Z46A	Louisville	83.86	45	P	P	10 14 23.4	+0.7
	baz=327,SNR=9.4						
145A	Houston Renfro	83.89	46	P	P	10 14 23.9	+1.0
	baz=326						
CPCT	Cooper Cave	83.93	40	eP	P	10 14 23.0	-0.1
VBMS	Vicksburg	83.93	46	P	P	10 14 24.1	+1.1
	baz=326,SNR=6.4						
034A	Hebbronville	83.95	55	P	P	10 14 25.1	+1.8
	baz=323,SNR=17						
VALF	Valcebollere	83.99	335	‖eP	P	10 14 24.5	+1.1
244A	Avery, Jackson	84.00	47	P	P	10 14 24.5	+1.1
	baz=326,SNR=26						
RESF	Ens	84.07	336	eP	P	10 14 24.7	+1.0
TKL	Tuckaleechee C	84.07	40	P	P	10 14 23.6	-0.1
	comp=Z,27nm,0.6s,baz=156,slow=1.1,SNR=61						
VIEF	Viey	84.08	337	‖eP	P	10 14 24.6	+0.8
BLA	Blacksburg	84.09	37	eP	P	10 14 23.3	-0.6
BLA	Blacksburg	84.09	37	eP	P	10 14 23.3	-0.6
343A	Vidalia	84.17	48	P	P	10 14 25.8	+1.5
	baz=326						
LARF	Larrau	84.19	337	eP	P	10 14 24.7	+0.4
442A	Mamou	84.24	49	P	P	10 14 26.3	+1.7
	baz=325						
Z47A	Carrollton	84.26	44	P	P	10 14 24.7	+0.1
	baz=327,SNR=17						
146A	Union	84.27	45	P	P	10 14 26.0	+1.2
	baz=327,SNR=19						
Z48A	Northport	84.35	44	P	P	10 14 24.7	-0.4
	baz=327,SNR=19						
035A	Encino	84.36	55	P	P	10 14 27.6	+2.4
	baz=323						
VSL	Villasalto	84.37	329	eP	P	10 14 24.1	-1.0
CBN	Corbin Frederi	84.38	34	eP	P	10 14 25.7	+0.5
245A	Little AP, Sta	84.38	46	P	P	10 14 26.5	+1.2
	baz=326,SNR=16						
936A	North Padre Is	84.40	54	P	P	10 14 26.1	+0.6
	baz=324						
344A	Westbrook Farm	84.46	47	P	P	10 14 27.1	+1.4
	baz=326,SNR=14						
147A	Livingston	84.61	45	P	P	10 14 26.8	+0.4
	baz=327,SNR=19						
035Z	Hargill	84.76	55	P	P	10 14 28.8	+1.6
	baz=323						
246A	Jackson Lee, B	84.76	46	P	P	10 14 28.5	+1.3
	baz=327						
LRAL	Lakeview Retre	84.89	43	eP	P	10 14 27.4	-0.4
345A	Thompson Farm,	84.92	47	P	P	10 14 29.1	+1.1
	baz=326,SNR=9.5						
247A	Quitman	84.97	45	P	P	10 14 29.5	+1.4
	baz=327						
444A	Pine Grove	85.06	47	P	P	10 14 30.2	+1.6
	baz=326						
346A	Big Creek Wild	85.12	46	P	P	10 14 29.9	+1.0
	baz=327						
ZAIG	Zacatecas	85.16	61	eP	P	10 14 30.7	+1.1
445A	Amite	85.25	47	P	P	10 14 30.8	+1.3
	baz=326						
248A	Dixon Mills	85.34	44	P	P	10 14 30.7	+0.8
	baz=327,SNR=7.2						
544A	White Castle	85.36	48	P	P	10 14 31.8	+1.8
	baz=326						
KMSC	Kings Mountain	85.52	38	P	P	10 14 30.4	-0.3
	baz=330,SNR=8.1						
KMSC	Kings Mountain	85.52	38	eP	P	10 14 30.6	-0.2
347A	Saraland	85.54	45	P	P	10 14 32.3	+1.3
	baz=327,SNR=13						
446A	Poplarville	85.66	46	P	P	10 14 32.7	+1.2
	baz=327						
348A	Jackson	85.83	45	P	P	10 14 33.5	+1.2
	baz=327,SNR=7.6						
546A	Slidell	85.96	47	P	P	10 14 34.5	+1.6
	baz=327						
447A	Lucedale	86.00	46	P	P	10 14 34.2	+1.1
	baz=327						
GOGA	Godfrey	86.12	41	eP	P	10 14 34.0	+0.4
GOGA	Godfrey	86.12	41	eP	P	10 14 34.0	+0.4
645A	Chauvin	86.17	48	P	P	10 14 35.4	+1.4
	baz=326						
448A	Bay Minette	86.25	45	P	P	10 14 35.8	+1.5
	baz=327						
JSC	Jenkinsville	86.30	39	eP	P	10 14 34.6	+0.1
JSC	Jenkinsville	86.30	39	eP	P	10 14 34.6	+0.1
BRAL	Brewton	86.43	44	eP	P	10 14 36.8	+1.6
	comp=Z,134nm,0.7s						
PBRG	Braganca	86.70	341	eP	P	10 14 35.0	-1.3
	comp=Z,29nm,1.5s						
PGAV	Gavieira, Arco	86.87	342	eP	P	10 14 35.7	-1.4
	comp=Z,37nm,1.4s						
POLO	Lamas de Olo	87.34	342	eP	P	10 14 38.0	-1.4
	comp=Z,20nm,1.5s						
MVO	Moncorvo	87.38	341	eP	P	10 14 38.3	-1.2
PVRL	Vila Real	87.42	342	eP	P	10 14 38.5	-1.2
	comp=Z,43nm,1.5s						
DAMY	Dhamar	87.54	289	eP	P	10 14 42.0	+1.1
CMAH	Djebel Manchou	87.62	329	P	P	10 14 37.8	-3.0
TIGA	Tifton	87.76	42	P	P	10 14 42.2	+0.8
	baz=329,SNR=5.7						
TIGA	Tifton	87.76	42	eP	P	10 14 42.3	+1.0
	comp=Z,113nm,0.8s						
KEST	Kesra	87.76	327	P	P	10 14 41.1	-0.4
	comp=Z,38nm,0.8s,baz=18,slow=1.1,SNR=33						
ABSA	Djebel Ababsia	87.92	329	P	P	10 14 39.6	-2.6
ES19	SONSECA Array	88.06	338	eP	P	10 14 42.0	-0.8
CKFL	Kef-Lekhel	88.06	329	P	P	10 14 40.3	-2.6
ESDC	Sonseca Array	88.10	338	P	P	10 14 41.8	-1.1
	comp=Z,2.7nm,0.5s,baz=12,slow=4.5,SNR=7.0						
ESDC				pP	pP	10 16 46.5	+0.5
	comp=Z,0.4nm,0.3s,baz=16,slow=5.6,SNR=3.6						
CTEI	Djebel Teioual	88.47	329	P	P	10 14 43.1	-1.7
CKHR	Kef el Ahmar	88.81	330	P	P	10 14 44.4	-2.0
PMRV	Marv??o	89.12	341	eP	P	10 14 46.0	-1.6
PMTG	Montargil	89.64	341	eP	P	10 14 48.3	-1.7
PESTR	Estremoz	89.70	341	eP	P	10 14 48.0	-2.3
	comp=Z,31nm,1.5s						
PBAR	Barrancos	90.25	340	eP	P	10 14 51.6	-1.2
PNCL	Nicolau / Gran	90.63	341	eP	P	10 14 53.5	-1.1
MESJ	Messejana	90.82	341	eP	P	10 14 54.5	-1.0
PSET	Sete Cidades	93.25	355	eS	S	10 25 24.9	-0.3
PSET				A	A	10 25 26.2	
	comp=Z,55nm,0.1s						
PDA	Ponta Delgada	93.33	355	eS	S	10 25 22.3	-3.5
PDA				A	A	10 25 23.8	
	comp=Z,39nm,0.1s						
TORD	Torodi Ar. Bea	111.10	324	Pdiff	Pdif	10 16 26.4	-0.3
	comp=Z,0.5nm,0.6s,baz=16,slow=3.0,SNR=3.9						
TORD				PKiKP	PKiKP	10 20 21.2	-0.9
	comp=Z,3.0nm,0.4s,baz=21,slow=2.1,SNR=56						
TORD				PP	PP	10 21 07.9	-3.3
	comp=Z,5.6nm,0.8s,baz=18,slow=7.2,SNR=12						
DBIC	Dimbokro	119.47	328	PKP	PKPdf	10 20 37.2	-1.0
	comp=Z,9.7nm,0.4s,baz=4.9,slow=2.3,SNR=24						
DBIC				PP	PP	10 22 06.2	-2.7
	comp=Z,8.2nm,0.9s,baz=2.9,slow=8.4,SNR=4.4						
TIC	Toumodi	119.55	328	ePKIKP	PKPdf	10 20 37.2	-1.1
KIC	Kosan Boka	119.72	328	ePKIKP	PKPdf	10 20 37.5	-1.1
	comp=Z,13nm,0.4s						
LIC	Lamto	119.95	328	ePKIKP	PKPdf	10 20 37.9	-1.2
VNDA	Vanda	126.66	176	PKP	PKPdf	10 20 49.4	-0.6
	comp=Z,1.1nm,0.6s,baz=330,slow=5.1,SNR=9.9						
VNDA				SKP		10 23 29.2	
	comp=Z,1.5nm,0.7s,baz=329,slow=2.6,SNR=6.1						
BOSA	Boshof	131.94	273	PKP	PKPdf	10 21 01.6	-0.1
	comp=Z,4.1nm,0.7s,baz=2.3,slow=3.3,SNR=8.0						
BOSA				SKPbc	SKPbc	10 23 33.2	-1.7
	comp=

MSTX			eLg	Lg	10 05 11.4	
TUC	**Tucson**	**4.67 291**	P	**Pn**	**10 04 11.7**	**+0.2**
	baz=109					
TUC	**Tucson**	**4.67 291**	ePn	**Pn**	**10 04 12.0**	**+0.5**
TUC			eSg	**Sg**	**10 05 27.2**	**-3.7**
TUC			eLg	Lg	10 05 33.4	
JCT	**Junction City**	**5.04 91**	ePg	**Pg**	**10 04 36.9**	**-0.3**
JCT			eSg	**Sg**	**10 05 41.6**	**-0.8**
Y14A	**Wickenburg**	**7.01 299**	ePn	**Pn**	**10 04 44.4**	**+0.8**
KSCO	**Kaye Shedlock'**	**8.64 16**	ePn	**Pn**	**10 05 03.5**	**-2.4**
O16A	**Springville**	**10.61 335**	ePn	**Pn**	**10 05 33.8**	**+0.9**

MEX 25 10:04:57.9±0.4, 15°.95N×96°.90W, h16km±6km, MD3.7, Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PANG	**Puerto Angel**	**0.50**	**125**	i P	Pg	10 05 05.8	-2.1
PANG				i S	Sg	10 05 12.6	-1.9
HUIG	**Huatulco**	**0.78**	**103**	eP	Pb	10 05 10.5	-2.7
HUIG				i S	Sb	10 05 19.6	-3.9
VHO	**Vista Hermosa**	**1.12**	**8**	eP	Pb	10 05 15.6	-3.5
VHO				i S	Sb	10 05 28.9	-4.7
PNIG	**Pinotepa**	**1.26**	**291**	eP	Pn	10 05 17.3	-3.5
PNIG				i S	Sb	10 05 32.1	-5.2
TLIG	**Tlapa**	**2.26**	**315**	i P	Pn	10 05 31.3	-3.5

*ISK **25** 10:08:02.7, 39°.09N×29°.05E, h11km, MD2.8*
*ISCJB **25** 10:08:03.0±0.5, 39°.10N±0°.03×29°.06E±0°.04, h7km±5km, Error ellipse: s-maj=5.3km s-min=4.2km az=41.9*
*CSEM **25** 10:08:03.3±0.1, 39°.10N×29°.06E, h10km, ML2.8, Error ellipse: s-maj=2.4km s-min=2.1km az=132.0*
*DDA **25** 10:08:03.6, 39°.08N×29°.05E, h7km, Ml2.8*
ISC 25 10:08:02.8±1.0, 39°.09N±0°.03×29°.10E±0°.03, h14km±9km, n43, σ0°.24/53, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.30**	**261**	P	**Pg**	**10 08 09.0**	**-0.1**
DEMI	**Demirci**	**0.30**	**261**	i P	**Pg**	**10 08 09.0**	**-0.1**
GDZ	**Gediz**	**0.30**	**90**	P	**Pb**	**10 08 10.0**	**0.0**
GDZ	**Gediz**	**0.30**	**90**	i P	**Pb**	**10 08 10.0**	**0.0**
TVSB	**Tavsanli**	**0.46**	**38**	ePG	**Pb**	**10 08 12.5**	**-0.2**
TVSB				eSG	**Sb**	**10 08 19.3**	**-0.2**
TVSB	**Tavsanli**	**0.46**	**38**	ePg	**Pb**	**10 08 12.5**	**-0.2**
TVSB				eSg	**Sb**	**10 08 19.3**	**-0.2**
KULA	**Kula-Manisa**	**0.67**	**211**	ePG	**Pb**	**10 08 16.2**	**0.0**
KULA				eSG	**Sg**	**10 08 24.8**	**+0.2**
KULA	**Kula-Manisa**	**0.67**	**211**	ePg	**Pb**	**10 08 16.2**	**0.0**
KULA				eSg	**Sg**	**10 08 24.8**	**+0.2**
DURS	**Dursunbey**	**0.70**	**317**	P	**Pb**	**10 08 17.4**	**+0.5**
DURS	**Dursunbey**	**0.70**	**317**	i P	**Pb**	**10 08 17.4**	**+0.5**
KHAL	**Karahalli**	**0.78**	**156**	P	**Pn**	**10 08 19.5**	**+0.1**
KHAL	**Karahalli**	**0.78**	**156**	i P	**Pn**	**10 08 19.6**	**+0.1**
KHL	**Karahalli**	**0.83**	**156**	ePG	**Pn**	**10 08 20.2**	**0.0**
KHL	**Karahalli**	**0.83**	**156**	ePg	**Pn**	**10 08 20.2**	**0.0**
ORLT	**Orhaneli**	**0.97**	**351**	ePG	**Pb**	**10 08 21.3**	**-0.1**
ORLT				eSG	**Sn**	**10 08 35.6**	**0.0**
ORLT	**Orhaneli**	**0.97**	**351**	ePg	**Pb**	**10 08 21.3**	**-0.1**
ORLT				eSg	**Sn**	**10 08 35.6**	**0.0**
AKHS	**Akhisar**	**1.02**	**259**	P	**Pn**	**10 08 22.8**	**+0.1**
AKHS				S	**Sg**	**10 08 35.9**	**0.0**
AKHS	**Akhisar**	**1.02**	**259**	i P	**Pn**	**10 08 22.8**	**+0.1**
AKHS				i S	**Sg**	**10 08 35.9**	**0.0**
AKS	**Akhisar**	**1.02**	**259**	ePG	**Pb**	**10 08 21.9**	**-0.3**
AKS	**Akhisar**	**1.02**	**259**	ePg	**Pb**	**10 08 21.9**	**-0.3**
BALB	**Balikesir**	**1.09**	**301**	ePG	**Pb**	**10 08 23.2**	**-0.2**
BALB				eSG	**Sn**	**10 08 38.5**	**0.0**
BALB	**Balikesir**	**1.09**	**301**	ePg	**Pb**	**10 08 23.2**	**-0.2**
BALB				eSg	**Sn**	**10 08 38.5**	**0.0**
IGD	**Bursa**	**1.18**	**4**	i P	**Pn**	**10 08 24.5**	**-0.3**
CAVI	**Cavuskoy**	**1.25**	**27**	ePN	**Pb**	**10 08 26.6**	**+0.4**
CAVI	**Cavuskoy**	**1.25**	**27**	ePn	**Pb**	**10 08 26.6**	**+0.4**
MDNY	**Mudanya-Bursa**	**1.29**	**353**	ePN	**Pb**	**10 08 27.1**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.29**	**353**	ePn	**Pb**	**10 08 27.1**	**+0.3**
KCTX	**Karacabey (Bur**	**1.31**	**334**	ePN	**Pb**	**10 08 27.1**	**0.0**
KCTX	**Karacabey (Bur**	**1.31**	**334**	ePn	**Pb**	**10 08 27.1**	**0.0**
BALY	**Balya**	**1.32**	**300**	P	**Pg**	**10 08 28.3**	**+0.2**
BALY	**Balya**	**1.32**	**300**	i P	**Pg**	**10 08 28.3**	**+0.2**
BORA	**Eskisehir**	**1.32**	**53**	P	**Pg**	**10 08 28.3**	**+0.2**
BORA	**Eskisehir**	**1.32**	**53**	i P	**Pg**	**10 08 28.3**	**+0.2**
ADVT	**Abdulvahap**	**1.43**	**20**	ePN	**Pb**	**10 08 29.4**	**+0.1**
ADVT	**Abdulvahap**	**1.43**	**20**	ePn	**Pb**	**10 08 29.4**	**+0.1**
GONE	**Gonen-Balikesi**	**1.45**	**312**	ePN	**Pb**	**10 08 29.2**	**-0.4**
GONE	**Gonen-Balikesi**	**1.45**	**312**	ePn	**Pb**	**10 08 29.2**	**-0.4**
ARMT	**Armutlu**	**1.49**	**353**	ePN	**Pb**	**10 08 30.0**	**-0.2**
ARMT	**Armutlu**	**1.49**	**353**	ePn	**Pb**	**10 08 30.0**	**-0.2**
GPA	**Golpazari**	**1.52**	**38**	ePN	**Pb**	**10 08 30.9**	**+0.1**
GPA	**Golpazari**	**1.52**	**38**	ePn	**Pb**	**10 08 30.9**	**+0.1**
GULT	**Gulveren**	**1.73**	**39**	ePN	**Pb**	**10 08 33.8**	**-0.6**
GULT	**Gulveren**	**1.73**	**39**	ePn	**Pb**	**10 08 33.8**	**-0.6**

*CSEM **25** 10:09:57.5, 37°.40N×22°.07E, h21km, ML1.5/4*
ATH 25 10:09:57.5, 37°.40N×22°.07E, h21km±3km, ML1.5/4, Error ellipse: s-maj=3.2km s-min=1.1km az=156.0, Southern Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TRIP	**Tripoli**	**0.20**	**51**	P	Pb	10 10 03.1	-0.4
TRIP				S	Sb	10 10 05.9	-1.8
TRIP	**Tripoli**	**0.20**	**51**	P	Pb	10 10 03.1	-0.4
TRIP				S	Sb	10 10 05.9	-1.9
VLX	**Vlachokerasia**	**0.24**	**97**	P	Pb	10 10 04.4	+0.7
VLX				S	Sb	10 10 08.6	+0.5
VLX	**Vlachokerasia**	**0.24**	**97**	P	Pb	10 10 04.4	+0.7
VLX				S	Sb	10 10 08.6	+0.5
VLX				AML	AML	10 10 09.8	
	comp=N,192μm,0.4s						
VLX				AML	AML	10 10 11.1	
	comp=E,218μm,0.4s						
ITM	**Ithomi**	**0.25**	**208**	P	Pb	10 10 03.3	-0.4
ITM				S	Sb	10 10 06.6	-1.3
ITM	**Ithomi**	**0.25**	**208**	P	Pb	10 10 03.3	-0.3
ITM				S	Sb	10 10 06.5	-1.4
ITM				AML	AML	10 10 07.5	
	comp=E,282μm,0.2s						
ITM				AML	AML	10 10 07.8	
	comp=N,368μm,0.3s						
AMT	**Artemida-Makis**	**0.32**	**295**	P	Pb	10 10 04.0	-0.5
AMT				S	Sb	10 10 07.9	-1.4
AMT	**Artemida-Makis**	**0.32**	**295**	P	Pb	10 10 04.0	-0.4
AMT				S	Sb	10 10 07.9	-1.3
PYL	**PYLOS**	**0.57**	**208**	P	Pb	10 10 09.3	+0.5
PYL				S	Sn	10 10 18.5	-0.6
PYL	**PYLOS**	**0.57**	**208**	P	Pb	10 10 09.3	+0.5
PYL				S	Sn	10 10 18.5	-0.6
PYL				AML	AML	10 10 20.8	
	comp=E,153μm,0.3s						
PYL				AML	AML	10 10 21.1	
	comp=N,104μm,0.3s						
DRO	**Drossia**	**0.62**	**332**	P	Pn	10 10 11.2	+0.1
DRO	**Drossia**	**0.62**	**332**	P	Pn	10 10 11.2	+0.1
KLV	**Kalavryta, Ach**	**0.65**	**5**	P	Pb	10 10 09.7	-0.5
KLV				S	Sn	10 10 20.2	-0.9
KLV	**Kalavryta, Ach**	**0.65**	**5**	P	Pb	10 10 09.7	-0.5
KLV				S	Sn	10 10 20.2	-0.9
KLV				AML	AML	10 10 22.4	
	comp=N,68μm,0.4s						
KLV				AML	AML	10 10 22.5	
	comp=E,85μm,0.2s						
LAKA	**Lakka**	**0.84**	**355**	P	Pb	10 10 13.5	+0.1
LAKA				S	Sn	10 10 26.4	+0.5
LAKA	**Lakka**	**0.84**	**355**	P	Pb	10 10 13.5	+0.1
LAKA				S	Sn	10 10 26.4	+0.5
DID	**Didima**	**0.93**	**83**	P	Pb	10 10 13.9	-1.0
DID	**Didima**	**0.93**	**83**	P	Pb	10 10 13.9	-1.1
LTK	**Loutraki**	**0.94**	**48**	P	Pn	10 10 16.5	+1.0
LTK	**Loutraki**	**0.94**	**48**	P	Pn	10 10 16.5	+1.0
VLI	**Veliai**	**0.97**	**134**	P	Pb	10 10 15.6	0.0
VLI	**Veliai**	**0.97**	**134**	P	Pb	10 10 15.6	0.0
EFP	**Efpalio**	**1.03**	**353**	P	Pn	10 10 17.5	+0.8
EFP	**Efpalio**	**1.03**	**353**	P	Pn	10 10 17.5	+0.8
ZKS	**Zakynthos**	**1.07**	**287**	P	Pb	10 10 17.7	+0.5
ZKS				S	Sn	10 10 33.3	+1.9
ZKS	**Zakynthos**	**1.07**	**287**	P	Pb	10 10 17.7	+0.4
ZKS				S	Sn	10 10 33.3	+1.9
DSF	**Desfina**	**1.07**	**19**	P	Pn	10 10 16.2	-1.1
DSF	**Desfina**	**1.07**	**19**	P	Pn	10 10 16.2	-1.1
ANX	**Ano Chora**	**1.20**	**354**	P	Pb	10 10 19.9	+0.4

*ISK **25** 10:11:26.1, 39°.02N×29°.19E, h7km, MD2.4*
*DDA **25** 10:11:26.6, 39°.10N×29°.00E, h7km, Md2.5*
*CSEM **25** 10:11:27.2±0.2, 39°.12N×29°.01E, h2km, MD2.5, Error ellipse: s-maj=4.0km s-min=3.8km az=110.0*
ISC 25 10:11:27.2±1.0, 39.09N±0°.02×29.02E±0.02, h4km±11km, n24, σ1°.02/35, 1C-1D, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**259**	P	**Pg**	**10 11 31.6**	**-0.2**
DEMI				S	**Sg**	**10 11 35.0**	**0.0**
DEMI	**Demirci**	**0.24**	**259**	i P	**Pg**	**10 11 31.6**	**-0.2**
DEMI				i S	**Sg**	**10 11 35.0**	**0.0**
GDZ	**Gediz**	**0.36**	**90**	P	**Pg**	**10 11 34.6**	**+0.4**
GDZ				S	**Sg**	**10 11 39.3**	**+0.4**
GDZ	**Gediz**	**0.36**	**90**	i P	**Pg**	**10 11 34.6**	**+0.4**
GDZ				i S	**Sg**	**10 11 39.4**	**+0.4**
TVSB	**Tavsanli**	**0.50**	**44**	ePG	**Pg**	**10 11 36.2**	**-0.5**
TVSB				eSG	**Sg**	**10 11 42.7**	**-0.5**
TVSB	**Tavsanli**	**0.50**	**44**	ePg	**Pg**	**10 11 36.3**	**-0.5**
TVSB				eSg	**Sg**	**10 11 42.7**	**-0.5**
KULA	**Kula-Manisa**	**0.64**	**206**	ePG	**Pg**	**10 11 39.6**	**+0.2**
KULA				eSG	**Sg**	**10 11 48.4**	**+0.6**
DURS	**Dursunbey**	**0.66**	**320**	P	**Pg**	**10 11 39.3**	**-0.6**
DURS	**Dursunbey**	**0.66**	**320**	i P	**Pg**	**10 11 39.3**	**-0.6**
KHAL	**Karahalli**	**0.81**	**153**	P	**Pb**	**10 11 43.9**	**+0.1**
KHAL				S	**Sg**	**10 11 54.2**	**+1.0**
KHAL	**Karahalli**	**0.81**	**153**	i P	**Pb**	**10 11 43.9**	**+0.1**
KHAL				i S	**Sg**	**10 11 54.2**	**+1.0**
KHL	**Karahalli**	**0.86**	**153**	ePG	**Pg**	**10 11 40.7**	**-3.0**
KHL	**Karahalli**	**0.86**	**153**	ePg	**Pg**	**10 11 40.7**	**-3.0**
CAVI	**Cavuskoy**	**1.28**	**30**	ePN	**Pg**	**10 11 51.0**	**-0.7**
CAVI	**Cavuskoy**	**1.28**	**30**	ePn	**Pg**	**10 11 51.0**	**-0.7**
KCTX	**Karacabey (Bur**	**1.28**	**337**	ePN	**Pn**	**10 11 52.7**	**+0.9**
KCTX	**Karacabey (Bur**	**1.28**	**337**	ePn	**Pn**	**10 11 52.7**	**+0.9**
BORA	**Eskisehir**	**1.36**	**54**	P	**Pn**	**10 11 52.1**	**-0.9**
BORA				S	**Sn**	**10 12 11.6**	**+0.1**
BORA	**Eskisehir**	**1.36**	**54**	i P	**Pn**	**10 11 52.1**	**-0.9**
BORA				i S	**Sn**	**10 12 11.6**	**+0.1**
ARMT	**Armutlu**	**1.48**	**355**	ePN	**Pb**	**10 11 55.0**	**-0.2**
ARMT	**Armutlu**	**1.48**	**355**	ePn	**Pb**	**10 11 55.0**	**-0.2**
ARNB	**Al Arnab**	**6.40**	**118**	eP	**Pg**	**10 13 31.9**	**+2.1**
GIUM	**Giurgiulesti**	**6.42**	**355**	i P	**Pb**	**10 13 20.0**	**+0.7**
ARR	**Arges**	**7.07**	**334**	i P	**Pb**	**10 13 29.9**	**-0.5**

IDC 25 10:13:52.8±2.1, 37°.37N×144°.92E, h0km, mb3.7/2, mb1 3.7/5, mb1mx3.4/43, mbtmp3.7/5, ML3.3/3, Error ellipse: s-maj=48.6km s-min=32.1km az=80.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**5.44**	**263**	Pn	Pn	10 15 15.6	+0.5
	0.8nm,0.3s,baz=81,slow=16,SNR=4.4						
MJAR				Sn	Sn	10 16 13.9	-4.5
	0.5nm,0.3s,baz=93,slow=26,SNR=3.9						
JHJ	**Hachijo jima 2**	**5.97**	**226**	Pn	Pn	10 15 20.9	-1.5
	6.1nm,0.3s,baz=74,slow=19,SNR=6.1						
JHJ				Sn	Sn	10 16 20.6	-11
	9.1nm,0.3s,baz=75,slow=20,SNR=2.7						
ASAJ	**Asahikawa**	**6.97**	**346**	Pn	Pn	10 15 35.8	-0.4
	0.4nm,0.3s,baz=216,slow=19,SNR=3.5						
ASAJ				Sn	Sn	10 16 49.8	-6.3
	0.1nm,0.3s,baz=90,slow=20,SNR=1.8						
WRA	**Warramunga Arr**	**57.87**	**192**	P	P	10 23 46.3	-0.1
	0.7nm,0.4s,baz=9.8,slow=7.0,SNR=13						
ASAR	**Alice Springs**	**61.59**	**191**	P	P	10 24 12.2	+0.2
	0.2nm,0.5s,baz=5.6,slow=7.1,SNR=3.7						

*NEIC **25** 10:15:20.2, 35°.24S×178°.60E, h279km, MG4.1(WEL), After WEL.*
WEL 25 10:15:17.8±0.8, 35°.21S×178°.93E, h298km±6km, ML4.2/10, Error ellipse: s-maj=20.7km s-min=11.2km az=90.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WMGZ	**Waiomatatini S**	**2.63**	**189**	PN	Pn	10 16 10.5	+0.6
WMGZ	**Waiomatatini S**	**2.63**	**189**	Pn	Pn	10 16 10.5	+0.6
HAZ	**Te Kaha**	**2.70**	**200**	PN	Pn	10 16 10.7	+0.2
HAZ				SN	S	10 16 50.5	-2.0
PUZ	**Puketiti**	**2.91**	**191**	PN	Pn	10 16 13.0	+0.5
PUZ				SN	S	10 16 54.9	-1.2
PUZ				AML	AML	10 16 59.7	
PUZ	**Puketiti**	**2.91**	**191**	Pn	Pn	10 16 13.0	+0.5
TWGZ	**Tauwhareparae**	**3.06**	**194**	PN	Pn	10 16 14.9	+1.0
TWGZ	**Tauwhareparae**	**3.06**	**194**	Pn	Pn	10 16 14.9	+1.0
MWZ	**Matawai**	**3.31**	**199**	PN	Pn	10 16 17.3	+0.7
MWZ				SN	S	10 17 04.2	+0.6
MWZ	**Matawai**	**3.31**	**199**	Pn	Pn	10 16 17.3	+0.7
CNGZ	**Carnagh Statio**	**3.32**	**190**	PN	Pn	10 16 17.7	+1.1
CNGZ	**Carnagh Statio**	**3.32**	**190**	Pn	Pn	10 16 17.7	+1.1
TKGZ	**Te Karaka**	**3.34**	**195**	PN	Pn	10 16 17.2	+0.4
TKGZ	**Te Karaka**	**3.34**	**195**	Pn	Pn	10 16 17.2	+0.4
URZ	**Urewera**	**3.37**	**205**	PN	Pn	10 16 17.1	-0.1
URZ				AML	AML	10 17 06.6	
URZ				AML	AML	10 17 07.1	
URZ	**Urewera**	**3.37**	**205**	Pn	Pn	10 16 17.1	-0.1
RIGZ	**Rimuhau**	**3.61**	**195**	PN	Pn	10 16 20.1	+0.4
SNGZ	**Shannon Statio**	**3.78**	**199**	PN	Pn	10 16 22.3	+0.7
SNGZ	**Shannon Statio**	**3.78**	**199**	Pn	Pn	10 16 22.3	+0.7
KNZ	**Kokohu**	**3.93**	**194**	PN	Pn	10 16 23.3	+0.2
KNZ	**Kokohu**	**3.93**	**194**	Pn	Pn	10 16 23.3	+0.2
RAHZ	**Arahi**	**3.98**	**201**	PN	Pn	10 16 24.3	+0.6
RAHZ	**Arahi**	**3.98**	**201**	Pn	Pn	10 16 24.3	+0.6
MHGZ	**Mahia Peninsul**	**4.02**	**191**	PN	Pn	10 16 25.2	+1.1
MHGZ	**Mahia Peninsul**	**4.02**	**191**	Pn	Pn	10 16 25.2	+1.1
NMHZ	**Naumai**	**4.23**	**203**	PN	Pn	10 16 27.4	+0.9
NMHZ	**Naumai**	**4.23**	**203**	Pn	Pn	10 16 27.4	+0.9
ARHZ	**Aropaoanui**	**4.33**	**200**	PN	Pn	10 16 28.4	+0.9
ARHZ	**Aropaoanui**	**4.33**	**200**	Pn	Pn	10 16 28.4	+0.9
BKZ	**Black Stump Fm**	**4.40**	**206**	PN	Pn	10 16 29.1	+0.7
BKZ	**Black Stump Fm**	**4.40**	**206**	Pn	Pn	10 16 29.1	+0.7
MCHZ	**McNeill Hill**	**4.58**	**202**	PN	Pn	10 16 31.2	+0.8
MCHZ	**McNeill Hill**	**4.58**	**202**	Pn	Pn	10 16 31.2	+0.8
KWHZ	**Kaweka Forest**	**4.66**	**205**	PN	Pn	10 16 31.7	+0.4
BHHZ	**Black Hill Sta**	**4.84**	**207**	PN	Pn	10 16 33.7	+0.3
BHHZ	**Black Hill Sta**	**4.84**	**207**	Pn	Pn	10 16 33.7	+0.3
KAHZ	**Kahuranaki**	**4.86**	**199**	PN	Pn	10 16 34.2	+0.6
KAHZ	**Kahuranaki**	**4.86**	**199**	Pn	Pn	10 16 34.2	+0.6
KRHZ	**Kereru**	**4.87**	**204**	PN	Pn	10 16 33.8	+0.1
PXZ	**Pawanui**	**5.08**	**198**	PN	Pn	10 16 36.3	+0.2
PXZ				AML	AML	10 17 42.8	
PXZ	**Pawanui**	**5.08**	**198**	Pn	Pn	10 16 36.3	+0.2
PNHZ	**Pukenui**	**5.17**	**204**	PN	Pn	10 16 37.5	+0.3
PNHZ	**Pukenui**	**5.17**	**204**	Pn	Pn	10 16 37.5	+0.3
TSZ	**Takapari Road**	**5.38**	**205**	PN	Pn	10 16 39.5	-0.2
TSZ	**Takapari Road**	**5.38**	**205**	Pn	Pn	10 16 39.5	-0.2
DVHZ	**Dannevirke**	**5.53**	**202**	PN	Pn	10 16 42.0	+0.6
DVHZ	**Dannevirke**	**5.53**	**202**	Pn	Pn	10 16 42.0	+0.6
ANWZ	**Angora Road**	**5.59**	**200**	PN	Pn	10 16 43.1	+1.0
POWZ	**Post Office Ro**	**5.75**	**205**	PN	Pn	10 16 44.4	+0.5
POWZ	**Post Office Ro**	**5.75**	**205**	Pn	Pn	10 16 44.4	+0.5
PRWZ	**Pori Road**	**5.82**	**203**	PN	Pn	10 16 45.5	+0.6
PRWZ	**Pori Road**	**5.82**	**203**	Pn	Pn	10 16 45.5	+0.6
BFZ	**Birch Farm**	**5.86**	**200**	PN	Pn	10 16 45.8	+0.5
BFZ	**Birch Farm**	**5.86**	**200**	Pn	Pn	10 16 45.8	+0.5
MRZ	**Mangatainoka R**	**6.05**	**205**	PN	Pn	10 16 47.3	-0.3
MRZ	**Mangatainoka R**	**6.05**	**205**	Pn	Pn	10 16 47.3	-0.3
TIWZ	**Tintock**	**6.05**	**202**	PN	Pn	10 16 47.9	+0.3
TIWZ				AML	AML	10 18 02.5	
TIWZ	**Tintock**	**6.05**	**202**	Pn	Pn	10 16 47.9	+0.3
CPWZ	**Castlepoint**	**6.08**	**200**	PN	Pn	10 16 49.6	+1.7
CPWZ	**Castlepoint**	**6.08**	**200**	Pn	Pn	10 16 49.6	+1.7
HOWZ	**Holdsworth Sta**	**6.28**	**204**	PN	Pn	10 16 50.2	-0.2
HOWZ	**Holdsworth Sta**	**6.28**	**204**	Pn	Pn	10 16 50.2	-0.2
OGWZ	**Otaki Gorge**	**6.33**	**207**	PN	Pn	10 16 50.6	-0.3
OGWZ	**Otaki Gorge**	**6.33**	**207**	Pn	Pn	10 16 50.6	-0.3
KIW	**Kapiti Island**	**6.47**	**208**	PN	Pn	10 16 52.6	0.0
KIW	**Kapiti Island**	**6.47**	**208**	Pn	Pn	10 16 52.6	0.0
MTW	**Mount Morrison**	**6.52**	**203**	PN	Pn	10 16 53.0	-0.3
MTW	**Mount Morrison**	**6.52**	**203**	Pn	Pn	10 16 53.0	-0.3
CAW	**Cannon Point**	**6.62**	**206**	PN	Pn	10 16 53.9	-0.6
CAW	**Cannon Point**	**6.62**	**206**	Pn	Pn	10 16 53.9	-0.6
TRWZ	**Traveller**	**6.68**	**201**	PN	Pn	10 16 55.8	+0.6
TRWZ	**Traveller**	**6.68**	**201**	Pn	Pn	10 16 55.8	+0.6
MSWZ	**Moikau Station**	**6.84**	**204**	PN	Pn	10 16 56.5	-0.6
MSWZ	**Moikau Station**	**6.84**	**204**	Pn	Pn	10 16 56.5	-0.6
WEL	**Wellington**	**6.89**	**207**	PN	Pn	10 16 57.2	-0.5
WEL	**Wellington**	**6.89**	**207**	Pn	Pn	10 16 57.2	-0.5
BHW	**Baring Head**	**6.96**	**206**	PN	Pn	10 16 57.7	-0.8
BHW	**Baring Head**	**6.96**	**206**	Pn	Pn	10 16 57.7	-0.8
PLWZ	**Palliser**	**6.97**	**203**	PN	Pn	10 16 58.8	0.0
PLWZ	**Palliser**	**6.97**	**203**	Pn	Pn	10 16 58.8	0.0
TCW	**Tory Channel**	**7.02**	**210**	PN	Pn	10 16 58.6	-0.7
TCW	**Tory Channel**	**7.02**	**210**	Pn	Pn	10 16 58.6	-0.7

IDC 25 10:36:44.2±3.4, 6°.71S×149°.74E, h0km, mb2.8/1, mb1 3.5/3, mb1mx3.3/26, mbtmp3.3/3, ML3.5/1, Error ellipse: s-maj=139.0km s-min=36.4km az=122.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**3.70**	**223**	Pn	Pn	10 37 44.2	+1.5
	1.1nm,0.3s,baz=30,slow=14,SNR=2.9						
PMG				Sn	Sn	10 38 28.8	+1.8
	0.9nm,0.3s,baz=251,slow=18,SNR=2.6						
WRA	**Warramunga Arr**	**19.91**	**227**	P	P	10 41 17.4	-0.3
	0.1nm,0.3s,baz=52,slow=10,SNR=10						
ASAR	**Alice Springs**	**22.71**	**220**	P	P	10 41 46.8	-1.1
	0.3nm,0.8s,baz=58,slow=9.0,SNR=4.3						
TORD	**Torodi Ar. Bea**	**147.90**	**284**	PKPbc	PKPbc	10 56 32.2	-0.3
	0.2nm,0.7s,baz=79,slow=2.6,SNR=2.5						

*ISCJB **25** 10:48:31.4±0.4, 39°.14N±0°.02×28°.98E±0°.02, h2km±4km, Error ellipse: s-maj=3.6km s-min=2.7km az=160.0*
*DDA **25** 10:48:31.4, 39°.14N×29°.00E, h6km, Ml3.6*
*ISK **25** 10:48:31.2, 39°.14N×29°.00E, h6km, ML3.6*
*CSEM **25** 10:48:31.9±0.1, 39°.14N×28°.99E, h5km, ML3.6, Error ellipse: s-maj=2.1km s-min=1.9km az=152.0*
*THE **25** 10:48:33.9, 39°.07N×28°.86E, h4km±5km, ML3.1/2, Error ellipse: s-maj=5.9km s-min=1.3km az=128.0*
ISC 25 10:48:31.9±0.9, 39°.14N±0°.02×29°.00E±0°.02, h8km±8km, n109, σ0°.56/136, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**246**	P	**Pg**	**10 48 36.9**	**+0.1**
DEMI				S	**Sg**	**10 48 40.2**	**+0.1**
DEMI	**Demirci**	**0.24**	**246**	i P	**Pg**	**10 48 36.9**	**+0.1**
DEMI				i S	**Sg**	**10 48 40.2**	**+0.1**
GDZ	**Gediz**	**0.38**	**98**	P	**Pg**	**10 48 39.2**	**-0.2**
GDZ				S	**Sg**	**10 48 44.1**	**-0.3**
GDZ	**Gediz**	**0.38**	**98**	i P	**Pg**	**10 48 39.2**	**-0.2**
GDZ				i S	**Sg**	**10 48 44.1**	**-0.3**
TVSB	**Tavsanli**	**0.47**	**49**	PG	**Pg**	**10 48 40.8**	**-0.3**
TVSB				eSG	**Sg**	**10 48 47.5**	**+0.1**
TVSB	**Tavsanli**	**0.47**	**49**	i Pg	**Pg**	**10 48 40.8**	**-0.3**
TVSB				eSg	**Sg**	**10 48 47.5**	**+0.1**
DST	**Dursunbey**	**0.55**	**328**	ePG	**Pg**	**10 48 42.3**	**-0.3**
DST				eSG	**Sg**	**10 48 49.6**	**-0.2**
DST	**Dursunbey**	**0.55**	**328**	ePg	**Pg**	**10 48 42.3**	**-0.3**
DST				eSg	**Sg**	**10 48 49.6**	**-0.2**
DURS	**Dursunbey**	**0.61**	**319**	P	**Pg**	**10 48 43.7**	**-0.1**
DURS	**Dursunbey**	**0.61**	**319**	i P	**Pg**	**10 48 43.7**	**-0.1**
KULA	**Kula-Manisa**	**0.68**	**203**	PG	**Pg**	**10 48 44.5**	**-0.6**
KULA				eSG	**Sg**	**10 48 53.6**	**-

BOZC	Bozcaada	2.38	288	*i* P		Pn	10 49 11.4 +0.2
KORT	Korkueli	2.39	153	P		Pn	10 49 12.6 +1.1
KORT	Korkueli	2.39	153	*i* P		Pn	10 49 12.6 +1.1
CHOS	Chios island	2.42	253	P		Pn	10 49 11.7 -0.2
CHOS	Chios island	2.42	253	P		Pn	10 49 11.7 -0.2
SIGR	SIGRI	2.44	273	P		Pn	10 49 12.3 +0.2
SIGR				S		Sn	10 49 40.7 -1.4
SIGR	SIGRI	2.44	273	P		Pn	10 49 12.3 +0.2
SIGR				S		Sn	10 49 40.7 -1.4
KDHN	Kadinhani	2.51	103	P		Pn	10 49 14.0 +0.9
KDHN	Kadinhani	2.51	103	*i* P		Pn	10 49 14.0 +0.9
ENEZ	Enez	2.71	307	P		Pn	10 49 16.4 +0.7
ENEZ	Enez	2.71	307	P		Pn	10 49 16.4 +0.7
ALN	Alexandroupoli	2.87	309	P		Pn	10 49 18.2 +0.3
ALN	Alexandroupoli	2.87	309	P		Pn	10 49 18.2 +0.3
BCAM	Yenicaga	2.89	54	*i* P		Pb	10 49 22.9 -0.9
KDZ	Kurdzhali	3.71	314	P		Pn	10 49 29.8 +0.3
JMB	Yambol	3.79	332	P		Pn	10 49 31.7 +1.1
RZN	Rozhen	4.14	309	P		Pn	10 49 36.1 +0.5
PRD	Provadia	4.23	344	P		Pn	10 49 37.5 +0.9
SZH	Strazhica	4.72	332	P		Pn	10 49 44.7 +1.2

ISK ***25*** *10:56:47.8, 39.°09N×29.°10E, h5km, MD2.8*
ISCJB ***25*** *10:56:48.5±0.4, 39.°10N±0.°03×29.°08E±0.°04, h9km, Error ellipse: s-maj=4.3km s-min=3.4km az=28.6*
DDA ***25*** *10:56:48.8, 39.°12N×29.°06E, h7km, Ml2.8*
CSEM ***25*** *10:56:48.4±0.1, 39.°11N×29.°08E, h5km, ML2.8, Error ellipse: s-maj=2.6km s-min=2.3km az=112.0*

ISC 25 10:56:48.5±0.8, 39.°10N±0.°02×29.°08E±0.°02, h9km, n55, σ0.°37/63, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.29	259	P		Pg	10 56 54.3 0.0
DEMI				S		Sg	10 56 58.0 -0.1
DEMI	Demirci	0.29	259	*i* P		Pg	10 56 54.3 0.0
DEMI				*i* S		Sg	10 56 58.0 -0.1
GDZ	Gediz	0.32	92	P		Pg	10 56 55.5 +0.7
GDZ	Gediz	0.32	92	*i* P		Pg	10 56 55.5 +0.7
TVSB	Tavsanli	0.46	40	*e*PG		Pg	10 56 57.5 0.0
TVSB				*e*SG		Sg	10 57 03.7 +0.1
TVSB	Tavsanli	0.46	40	*e*Pg		Pg	10 56 57.5 0.0
TVSB				*e*Sg		Sg	10 57 03.7 +0.1
DST	Dursunbey	0.61	325	*e*PG		Pg	10 57 00.8 +0.4
DST	Dursunbey	0.61	325	*e*Pg		Pg	10 57 00.8 +0.4
KULA	Kula-Manisa	0.67	209	*e*PG		Pg	10 57 01.4 0.0
KULA				*e*SG		Sg	10 57 10.3 +0.1
KULA	Kula-Manisa	0.67	209	*e*Pg		Pg	10 57 01.5 0.0
KULA				*e*Sg		Sg	10 57 10.3 +0.1
DURS	Dursunbey	0.68	317	P		Pb	10 57 02.4 -0.3
DURS	Dursunbey	0.68	317	*i* P		Pb	10 57 02.4 -0.3
KHAL	Karahalli	0.80	156	P		Pb	10 57 05.0 +0.4
KHAL	Karahalli	0.80	156	*i* P		Pb	10 57 05.0 +0.4
KHL	Karahalli	0.85	156	*e*PG		Pg	10 57 03.9 -1.0
KHL				*e*SG		Sb	10 57 16.8 -0.3
KHL	Karahalli	0.85	156	*e*Pg		Pg	10 57 03.9 -1.0
KHL				*e*Sg		Sb	10 57 16.8 -0.3
ORLT	Orhaneli	0.95	352	*e*PG		Pg	10 57 06.3 -0.6
ORLT	Orhaneli	0.95	352	*e*Pg		Pg	10 57 06.3 -0.6
AKHS	Akhisar	1.01	258	P		Pg	10 57 08.2 +0.3
AKHS	Akhisar	1.01	258	*i* P		Pg	10 57 08.2 +0.3
AKS	Akhisar	1.01	258	*e*PG		Pg	10 57 07.8 -0.1
AKS	Akhisar	1.01	258	*e*Pg		Pg	10 57 07.8 -0.1
BALB	Balikesir	1.07	301	*e*PN		Pg	10 57 09.2 +0.1
BALB	Balikesir	1.07	301	*e*Pn		Pg	10 57 09.2 +0.1
IGD	Bursa	1.17	5	*i* P		Pb	10 57 09.8 -1.0
CAVI	Cavuskoy	1.25	28	*e*PN		Pn	10 57 11.8 -0.4
CAVI	Cavuskoy	1.25	28	*e*Pn		Pn	10 57 11.8 -0.4
IZI	Iznik	1.27	14	*e*PN		Pn	10 57 12.4 -0.1
IZI	Iznik	1.27	14	*e*Pn		Pn	10 57 12.4 -0.1
MDNY	Mudanya-Bursa	1.28	353	*e*PN		Pb	10 57 12.8 +0.1
MDNY	Mudanya-Bursa	1.28	353	*e*Pn		Pb	10 57 12.8 +0.1
KCTX	Karacabey (Bur	1.29	335	*e*PN		Pg	10 57 13.3 0.0
KCTX	Karacabey (Bur	1.29	335	*e*Pn		Pg	10 57 13.3 0.0
BALY	Balya	1.30	300	P		Pn	10 57 12.9 +0.1
BALY	Balya	1.30	300	*i* P		Pn	10 57 12.9 +0.1
GEMT	Gemlik	1.34	4	*e*PN		Pg	10 57 14.3 +0.1
GEMT	Gemlik	1.34	4	*e*Pn		Pg	10 57 14.3 +0.1
ADVT	Abdulvahap	1.43	21	*e*PN		Pn	10 57 14.9 +0.3
ADVT	Abdulvahap	1.43	21	*e*Pn		Pn	10 57 14.9 +0.3
GONE	Gonen-Balikesi	1.43	312	*e*PN		Pb	10 57 15.2 -0.1
GONE	Gonen-Balikesi	1.43	312	*e*Pn		Pb	10 57 15.2 -0.1
ARMT	Armutlu	1.47	354	*e*PN		Pb	10 57 15.9 -0.2
ARMT	Armutlu	1.47	354	*e*Pn		Pb	10 57 15.9 -0.2
GPA	Golpazari	1.52	38	*e*PN		Pn	10 57 15.9 -0.1
GPA	Golpazari	1.52	38	*e*Pn		Pn	10 57 15.9 -0.1
EDC	Edincik	1.56	323	*e*PN		Pn	10 57 16.9 +0.5
EDC	Edincik	1.56	323	*e*Pn		Pn	10 57 16.9 +0.5
AYDN	Tasoluk	1.72	214	P		Pg	10 57 21.6 +0.1
AYDN	Tasoluk	1.72	214	*i* P		Pg	10 57 21.6 +0.1
GULT	Gulveren	1.73	39	*e*PN		Pn	10 57 19.2 +0.3
GULT	Gulveren	1.73	39	*e*Pn		Pn	10 57 19.2 +0.3
SILT	Sile	2.10	12	*e*PN		Pn	10 57 24.5 +0.7
SILT	Sile	2.10	12	*e*Pn		Pn	10 57 24.5 +0.7
MDUB	Mudurnu	2.13	49	*e*PN		Pn	10 57 24.6 +0.3
MDUB	Mudurnu	2.13	49	*e*Pn		Pn	10 57 24.7 +0.3

IDC 25 10:57:36.8±7.3, 7.°02S×147.°82E, h82km±65km, mb3.2/1, mb1 3.5/3, mb1mx3.2/27, mbtmp3.6/3, ML3.5/1, MS2.9/3, Ms1 2.9/3, ms1mx2.6/15, Error ellipse: s-maj=123.7km s-min=63.1km az=130.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	Port Moresby	2.46	195	P		Pn	10 58 14.8 0.0
	4.9nm,0.3s,baz=8.6,slow=12,SNR=19						
PMG				S		Sn	10 58 48.0 +4.0
	2.1nm,0.3s,baz=42,slow=18,SNR=3.7						
PMG				LR		LR	10 58 58.9
	comp=Z,75nm,20.4s,baz=216,slow=33						
WRA	Warramunga Arr	18.33	224	P		Pn	11 01 45.7 0.0
	0.2nm,0.3s,baz=50,slow=11,SNR=17						
GUMO	Guam	20.68	352	LR		LR	11 10 07.0
	comp=Z,33nm,18.5s,baz=150,slow=36						
ASAR	Alice Springs	21.27	217	P		P	11 02 16.4 -0.2
	1.4nm,0.6s,baz=51,slow=9.6,SNR=18						
AFI	Afiamalu	40.27	103	LR		LR	11 20 06.5
	comp=Z,64nm,19.5s,baz=45,slow=34						
TORD	Torodi Ar. Bea	146.12	283	PKPbc		PKPdf	11 17 07.5 0.0
	0.8nm,1.0s,baz=76,slow=3.1,SNR=5.5						

ISCJB ***25*** *10:58:26.0±0.3, 33.°72S±0.°04×70.°08W±0.°07, h122km±3km, mb4.4/8, Error ellipse: s-maj=9.7km s-min=6.3km az=15.5*
SJA ***25*** *10:58:26.2±1.0, 33.°69S×70.°09W, h111km±31km, MD3.8*
IDC ***25*** *10:58:27.4±2.4, 33.°69S×69.°94W, h119km±22km, mb3.9/6, mb1 3.9/11, mb1mx3.8/28, mbtmp4.1/11, MS3.7/2, Ms1 3.7/2, ms1mx2.8/30, Error ellipse: s-maj=26.4km s-min=16.1km az=90.0*
NEIC ***25*** *10:58:27.0, 33.°66S×70.°24W, h121km, mb4.6/2, After GUC.*
NEIC Felt [II] at Rancagua, San Bernardo, Santiago and Tiltil.
GUC ***25*** *10:58:27.2±0.5, 33.°66S×70.°25W, h121km±2km, ML4.6*

ISC 25 10:58:27.0±0.7, 33.°68S±0.°05×70.°10W±0.°07, h120km±5km, n40, σ0.°98/51, mb3.9/8, 4C-4D, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SJCH	San Jose de Ma	0.22	279	⇓*i* P		Pn	10 58 43.8 +0.1
SJCH				*i* S		Sn	10 58 56.3 -0.1
FSR	Penalolen	0.41	298	⇓*i* P		Pn	10 58 44.6 +0.1
FSR				*i* S		Sn	10 58 57.8 +0.2
ANTU	Antumapu	0.46	283	⇑*i* P		Pn	10 58 44.8 +0.1
ANTU				*i* S		Sn	10 58 57.9 -0.2
ANTU				IAML			10 58 59.0
	comp=N,16μm,0.2s						
CLCH	Cerro Calan	0.46	307	⇓*i* P		Pn	10 58 44.8 0.0
CLCH				*i* S		Sn	10 58 58.1 0.0
CLCH				IAML			10 58 59.8
	comp=E,31μm,0.4s						
STL	Santa Lucia	0.52	298	⇑*i* P		Pn	10 58 44.9 -0.1
STL				*i* S		Sn	10 58 58.2 -0.4
RCDM	Rinconada Maip	0.62	287	⇑*i* P		Pn	10 58 45.4 -0.3
RCDM				*i* S		Sn	10 58 59.3 -0.6
PEL	Peldehue	0.72	317	⇓*i* P		Pn	10 58 46.5 -0.1
PEL				*i* S		Sn	10 59 01.0 -0.3
PEL				IAML			10 59 01.7
	comp=N,29μm,0.6s						
ROC1	El Roble	1.04	312	*e*P		Pn	10 58 49.3 -0.3
ROC1				*e*S		Sn	10 59 05.9 -0.9
ROCH	El Roble	1.04	312	⇑*i* P		Pn	10 58 49.3 -0.4
ROCH				*i* S		Sn	10 59 06.3 -0.4
AUSP	Uspallata	1.57	23	*e*P		Pn	10 58 55.9 +0.4
RTLS	Leoncito	1.99	20	*e*P		Pn	10 59 01.8 +1.2
RTCV	Cerro Valdivia	2.23	36	*e*P		Pn	10 59 03.2 -0.2
RTLL	Cerro Villicun	2.71	31	*e*P		Pn	10 59 09.4 -0.1
ACAN	Cantantal	2.81	61	*e*P		Pn	10 59 10.9 0.0
AMOG	MOGNA	3.05	27	*e*P		Pn	10 59 13.9 -0.1
CCHI	Chillan	3.34	209	*i* P		Pn	10 59 17.1 -0.6
CCHI				*i* S		Sn	10 59 55.5 -1.4
LCO	Las Campanas	4.68	353	*e*Pn		Pn	10 59 34.9 -1.0
LCO				*e*Sn		Sn	11 00 25.6 -3.7
PLCA	Paso Flores	7.05	183	P		Pn	11 00 06.7 -1.0
	comp=N,0.4nm,0.3s,baz=9.9,slow=12,SNR=14						
TRQA	Tornquist	7.90	126	*e*Pn		Pn	11 00 18.2 -0.9
	comp=N,18nm,0.6s						
LVC	Limon Verde	11.07	6	P		Pn	11 01 03.4 +1.1
	comp=N,18nm,0.3s,baz=180,slow=11,SNR=4.2						
LVC				LR		LR	11 05 21.4
	comp=N,418nm,21.8s,baz=292,slow=37						
CPUP	Villa Florida	13.26	60	P		Pn	11 01 29.3 -1.2
	comp=N,0.2nm,0.3s,baz=236,slow=14,SNR=3.6						
LPAZ	La Paz	17.40	6	P		Pn	11 02 23.5 +0.5
	comp=N,0.1nm,0.3s,baz=203,slow=9.7,SNR=3.4						
SIV	San Ignacio	19.40	27	P		P	11 02 43.4 -0.4
	comp=N,0.3nm,0.3s,baz=227,slow=13,SNR=9.0						
USHA	Ushuaia	21.18	177	P		P	11 03 04.2 +1.6
	comp=N,85nm,0.8s,baz=351,slow=8.6,SNR=12						
VNA3	Neumayer Olymp	49.05	158	P		P	11 07 02.5 +1.1
VNA2	Neumayer--Watz	49.69	157	P		P	11 07 04.5 -1.7
	baz=286,slow=8.0						
TXAR	Lajitas Array	70.26	329	P		P	11 09 28.6 +1.3
	comp=N,1.1nm,0.7s,baz=154,slow=8.9,SNR=14						
WCI	Wyandotte Cave	73.11	347	*e*P		P	11 09 43.3 -0.7
	comp=N,864nm,0.6s						
BOSA	Boshof	78.78	117	P		P	11 10 17.1 +0.3
	comp=N,1.3nm,0.5s,baz=262,slow=7.1,SNR=3.2						
ECSD	EROS Data Cent	80.75	341	*e*P		P	11 10 27.2 +0.5
	comp=N,8.4nm,1.4s						
TORD	Torodi Ar. Bea	82.58	69	P		P	11 10 36.8 -0.2
	comp=N,0.7nm,0.8s,baz=253,slow=4.9,SNR=5.6						
PDAR	Pinedale Array	84.22	332	P		P	11 10 45.6 +0.6
	comp=N,0.8nm,0.6s,baz=148,slow=4.2,SNR=6.3						
NVAR	Mina Array Bea	84.56	324	P		P	11 10 48.4 +1.5
	comp=N,0.8nm,0.5s,baz=154,slow=5.4,SNR=7.5						
PAF	Port-aux-Franc	90.12	155	*e*P		P	11 11 13.9 +0.5
NEW	Newport	91.77	331	LR		LR	11 50 49.4
	comp=N,36nm,18.1s,baz=298,slow=34						
YKA	Yellowknife Ar	102.28	341	P		Pdif	11 12 07.6 -0.3
	comp=N,0.1nm,0.7s,baz=140,slow=4.8,SNR=3.9						
WRA	Warramunga Arr	121.81	207	PKP		PKPdf	11 17 07.0 -0.5
	comp=N,0.2nm,0.3s,baz=155,slow=1.8,SNR=7.5						
ZALV	Zalesovo Beam	153.07	34	PKPbc		PKPbc	11 18 09.4 -0.4
	comp=N,1.6nm,0.4s,baz=303,slow=2.3,SNR=6.1						
MKAR	Makanchi Array	155.33	50	PKPab		PKPab	11 18 32.2 +0.5
	comp=N,0.3nm,0.4s,baz=318,slow=1.9,SNR=3.3						
LSA	Lhasa	163.55	99	*e*PKPdf		PKPdf	11 18 17.3 +0.9
LSA				*e*PKPab		PKPab	11 19 06.1 -2.5

IDC 25 10:59:08.7±2.1, 19.°80S×177.°60W, h542km±25km, mb3.4/4, mb1 3.6/5, mb1mx3.1/28, mbtmp4.4/5, Error ellipse: s-maj=55.7km s-min=18.0km az=143.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	Afiamalu	8.09	44	P		P	11 01 05.6 -1.7
	3.8nm,0.3s,baz=214,slow=8.0,SNR=5.7						
AFI				S		S	11 02 38.9 -5.5
	8.5nm,0.3s,baz=174,slow=21,SNR=12						
STKA	Stephens Creek	38.43	243	P		P	11 05 44.6 +0.4
	1.2nm,0.5s,baz=101,slow=14,SNR=5.1						
ASAR	Alice Springs	45.05	256	P		P	11 06 36.9 +0.2
	6.5nm,0.5s,baz=90,slow=7.8,SNR=108						
ASAR				PcP		PcP	11 08 05.4 -0.7
	0.4nm,0.5s,baz=96,slow=3.7,SNR=2.8						
ASAR				S		S	11 12 35.5 -0.9
	1.1nm,0.8s,baz=95,slow=16,SNR=9.9						
WRA	Warramunga Arr	45.07	261	P		P	11 06 36.6 -0.3
	5.7nm,0.4s,baz=97,slow=8.3,SNR=285						
MJAR	Matsushiro Arr	69.88	323	P		P	11 09 25.7 +0.3
	0.9nm,0.7s,baz=134,slow=7.0,SNR=3.6						
BRTR	Keskin Array B	146.65	313	PKPbc		PKPbc	11 17 49.8 -0.5
	0.4nm,0.4s,baz=68,slow=0.8,SNR=4.1						
GERES	GERESS Array B	149.63	345	PKPbc		PKPbc	11 17 56.9 -0.4
	0.3nm,0.3s,baz=58,slow=3.7,SNR=3.4						

ROM ***25*** *11:14:16.8±0.1, 43.°90N×12.°02E, h7km±1km, Md2.6/16, Ml2.3/17, Error ellipse: s-maj=2.2km s-min=1.0km az=34.0*
CSEM ***25*** *11:14:17.0±0.1, 43.°90N×12.°00E, h15km, ML2.9/11, Error ellipse: s-maj=3.8km s-min=1.8km az=27.0*
GEN ***25*** *11:14:18.6, 43.°91N×11.°90E, h4km, ML2.1*

ISC 25 11:14:16.8±0.9, 43.°92N±0.°03×12.°00E±0.°02, h15km±6km, n41, σ0.°48/67, 6C, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFI	Santa Sofia	0.11	265	Pg		Pg	11 14 20.1 -0.2
SFI				Sg		Sg	11 14 22.4 -0.1
	839nm,0.3s						
SFI	Santa Sofia	0.11	265	Pg		Pg	11 14 20.1 -0.2
SFI				Sg		Sg	11 14 22.4 -0.1
	839nm,0.3s						
ASQU	Asqua	0.19	232	⇑*i*Pg		Pg	11 14 21.4 0.0
ASQU				Sg		Sg	11 14 24.6 +0.1
	808nm,0.2s						
ASQU	Asqua	0.19	232	⇑*i*Pg		Pg	11 14 21.4 0.0
ASQU				Sg		Sg	11 14 24.6 +0.1
	808nm,0.2s						
PARC	Parchiule	0.32	147	⇑*i*Pg		Pg	11 14 23.4 0.0
PARC				Sg		Sb	11 14 28.8 -0.4
	447nm,0.3s						
PARC	Parchiule	0.32	147	⇑*i*Pg		Pg	11 14 23.4 0.0
PARC				Sg		Sb	11 14 28.8 -0.4
	447nm,0.3s						
VMG	Vicchio	0.33	278	Pg		Pb	11 14 24.4 -0.1
VMG				Sg		Sb	11 14 30.3 +0.7
	133nm,0.1s						
VMG	Vicchio	0.33	278	Pg		Pb	11 14 24.4 -0.1
VMG				Sg		Sb	11 14 30.3 +0.7
	133nm,0.1s						
BADI	Badiali	0.44	156	Pg		Pg	11 14 25.5 -0.2
BADI				Sg		Sb	11 14 32.3 -0.4
	291nm,0.2s						
BADI	Badiali	0.44	156	Pg		Pg	11 14 25.5 -0.2
BADI				Sg		Sb	11 14 32.3 -0.4
	291nm,0.2s						
SEI	Scarperia	0.48	287	Pg		Pb	11 14 26.9 -0.2
SEI				Sg		Sb	11 14 35.3 +1.3
	920nm,0.4s						
SEI	Scarperia	0.48	287	Pg		Pb	11 14 26.9 -0.2
SEI				Sg		Sb	11 14 35.3 +1.3
	920nm,0.4s						
PIEI	Pieia	0.54	134	Pg		Pg	11 14 27.2 -0.3
PIEI				Sg		Sb	11 14 35.8 +0.1
	78nm,0.3s						
PIEI	Pieia	0.54	134	Pg		Pg	11 14 27.2 -0.3
PIEI				Sg		Sb	11 14 35.8 +0.1
	78nm,0.3s						
ATPC	Poggio Castell	0.55	142	Pg		Pg	11 14 27.4 -0.2
ATPC				Sg		Sb	11 14 36.5 +0.7
	309nm,0.2s						
ATPC	Poggio Castell	0.55	142	Pg		Pg	11 14 27.4 -0.2
ATPC				Sg		Sb	11 14 36.5 +0.7
	309nm,0.2s						
CAFI	Castiglion Fio	0.59	182	⇑*i*Pg		Pg	11 14 28.2 -0.2
CAFI				Sg		Sb	11 14 37.2 +0.3
	101nm,0.6s						
CAFI	Castiglion Fio	0.59	182	⇑*i*Pg		Pg	11 14 28.2 -0.2
CAFI				Sg		Sb	11 14 37.2 +0.3
	101nm,0.6s						
FSSB	Fossombrone	0.61	111	Pg		Pg	11 14 28.7 0.0
FSSB				Sg		Sb	11 14 38.3 +0.8
	205nm,0.3s						
FSSB	Fossombrone	0.61	111	Pg		Pg	11 14 28.7 0.0
FSSB				Sg		Sb	11 14 38.3 +0.8
	205nm,0.3s						
ATVO	AVT- Monte Val	0.61	151	Pg		Pg	11 14 28.5 -0.3
ATVO				Sg		Sb	11 14 38.1 +0.5
	119nm,0.6s						
ATVO	AVT- Monte Val	0.61	151	Pg		Pg	11 14 28.5 -0.3
ATVO				Sg		Sb	11 14 38.1 +0.5
	119nm,0.6s						
FRON	Frontone	0.66	127	Pg		Pg	11 14 29.6 -0.1
	61nm,0.4s						
FRON	Frontone	0.66	127	Pg		Pg	11 14 29.6 -0.1
	61nm,0.4s						
FNVD	Fontana Vidola	0.68	292	Pg		Pb	11 14 30.6 +0.2
	159nm,0.6s						
FNVD	Fontana Vidola	0.68	292	Pg		Pb	11 14 30.6 +0.2
	159nm,0.6s						
SSFR	Montelago di S	0.74	130	Pg		Pg	11 14 31.1 -0.2
	151nm,0.2s						
SSFR	Montelago di S	0.74	130	Pg		Pg	11 14 31.1 -0.2
	151nm,0.2s						
ATTE	AVT- Monte Tez	0.76	160	Pg		Pg	11 14 31.1 -0.6
	82nm,0.4s						
ATTE	AVT- Monte Tez	0.76	160	Pg		Pg	11 14 31.1 -0.6
	82nm,0.4s						
ARVD	Arcevia	0.80	121	Pg		Pb	11 14 32.9 +0.5
	44nm,0.7s						
ARVD	Arcevia	0.80	121	Pg		Pb	11 14 32.9 +0.5
	44nm,0.7s						
FROS	Frosini	0.93	221	Pg		Pn	11 14 35.3 -0.1
	87nm,0.8s						
FROS	Frosini	0.93	221	Pg		Pn	11 14 35.3 -0.1
	87nm,0.8s						
MGAB	Montegabbione	1.01	175	Pg		Pb	11 14 36.0 +0.1
	76nm,0.4s						
MGAB	Montegabbione	1.01	175	Pg		Pb	11 14 36.0 +0.1
	76nm,0.4s						
SACS	San Casciano d	1.07	184	Pg		Pn	11 14 37.2 -0.1
	36nm,0.5s						
MAIM	Mastiano	1.09	270	P		Pn	11 14 37.5 0.0
MAIM				S		Sb	11 14 50.0 -1.4
SARO	Sassorosso	1.18	284	P		Pb	11 14 39.2 +0.2
SARO				S		Sb	11 14 53.4 -0.8
NVLJ	Novalja	2.16	72	*e*Pn		Pn	11 14 52.3 +0.1
NVLJ				Sn		Sb	11 15 21.3 -0.9
NVLJ	Novalja	2.16	72	*e*Pn		Pn	11 14 52.3 +0.1
NVLJ				Sn		Sb	11 15 21.3 -0.9

CSEM ***25*** *11:20:46.8±0.1, 39.°14N×29.°13E, h2km, MD2.9, Error ellipse: s-maj=3.1km s-min=2.6km az=140.0*
ISK ***25*** *11:20:46.2, 39.°11N×29.°12E, h5km, MD2.6*
DDA ***25*** *11:20:46.3, 39.°13N×29.°14E, h8km, Md2.9*

ISC 25 11:20:47.2±1.1, 39.°14N±0.°02×29.°13E±0.°02, h3km±12km, n56, σ0.°60/62, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	Gediz	0.28	100	P		Pg	11 20 52.3 -0.3
GDZ				S		Sg	11 20 56.1 -0.2
GDZ	Gediz	0.28	100	*i* P		Pg	11 20 52.3 -0.3
GDZ				*i* S		Sg	11 20 56.1 -0.2
DEMI	Demirci	0.33	254	P		Pg	11 20 53.4 -0.2
DEMI				S		Sg	11 20 58.7 +0.7
DEMI	Demirci	0.33	254	*i* P		Pg	11 20 53.4 -0.2
DEMI				*i* S		Sg	11 20 58.7 +0.7
TVSB	Tavsanli	0.41	40	*e*PG		Pg	11 20 54.5 -0.5
TVSB	Tavsanli	0.41	40	*e*Pg		Pg	11 20 54.5 -0.5
DST	Dursunbey	0.61	320	*e*PG		Pg	11 20 58.8 -0.1
DST	Dursunbey	0.61	320	*e*Pg		Pg	11 20 58.8 -0.1
DURS	Dursunbey	0.69	313	P		Pg	11 21 00.2 -0.1
DURS	Dursunbey	0.69	313	*i* P		Pg	11 21 00.2 -0.1
KULA	Kula-Manisa	0.72	210	*e*PG		Pg	11 21 00.5 -0.5
KULA				*e*SG		Sg	11 21 09.8 -0.5
KULA	Kula-Manisa	0.72	210	*e*Pg		Pg	11 21 00.5 -0.5
KHL	Karahalli	0.87	159	*e*PG		Pg	11 21 03.1 -0.8
KHL	Karahalli	0.87	159	*e*Pg		Pg	11 21 03.1 -0.8
ORLT	Orhaneli	0.92	349	*e*PG		Pg	11 21 05.0 +0.1
ORLT	Orhaneli	0.92	349	*e*Pg		Pg	11 21 05.0 +0.1
AKHS	Akhisar	1.05	256	S		Sb	11 21 22.0 -0.2
AKHS	Akhisar	1.05	256	*i* S		Sb	11 21 22.0 -0.2
AKS	Akhisar	1.05	256	*e*PG		Pg	11 21 06.9 -0.5
AKS	Akhisar	1.05	256	*e*Pg		Pg	11 21 06.9 -0.5
BALB	Balikesir	1.09	298	*e*PN		Pg	11 21 07.8 -0.2
BALB	Balikesir	1.09	298	*e*Pn		Pg	11 21 07.8 -0.2
IGD	Bursa	1.13	3	*i* P		Pg	11 21 07.1 -1.6
IGD				*i* S		Sg	11 21 22.9 -0.4
CAVI	Cavuskoy	1.20	27	*e*PN		Pg	11 21 10.1 0.0
CAVI	Cavuskoy	1.20	27	*e*Pn		Pg	11 21 10.1 0.0
IZI	Iznik	1.23	12	*e*PN		Pg	11 21 10.7 0.0
IZI	Iznik	1.23	12	*e*Pn		Pg	11 21 10.7 0.0
MDNY	Mudanya-Bursa	1.24	351	*e*PN		Pg	11 21 10.8 -0.2
MDNY	Mudanya-Bursa	1.24	351	*e*Pn		Pg	11 21 10.8 -0.2
KCTX	Karacabey (Bur	1.27	332	*e*PN		Pg

MDNY	**Mudanya-Bursa**	**1.24**	**351**	*e*Pn	**Pn**	**11 25 35.6**	**+0.5**
KCTX	**Karacabey (Bur**	**1.27**	**332**	*e*PN	**Pg**	**11 25 36.4**	**+0.5**
KCTX	**Karacabey (Bur**	**1.27**	**332**	*e*Pn	**Pg**	**11 25 36.4**	**+0.5**
GEMT	**Gemlik**	**1.29**	**1**	*e*PN	**Pg**	**11 25 36.4**	**+0.3**
GEMT	**Gemlik**	**1.29**	**1**	*e*Pn	**Pg**	**11 25 36.4**	**+0.3**
ADVT	**Abdulvahap**	**1.36**	**19**	*e*PN	**Pg**	**11 25 38.0**	**+0.4**
ADVT	**Abdulvahap**	**1.36**	**19**	*e*Pn	**Pg**	**11 25 38.0**	**+0.4**
ESKT	**Eskisehir**	**1.37**	**74**	*i* P	**Pn**	**11 25 36.5**	**-0.5**
ESKT				*i* S	**Sg**	**11 25 55.4**	**-0.2**
SEYT	**Eskypehyr**	**1.37**	**74**	P	**Pn**	**11 25 36.5**	**-0.5**
SEYT				S	**Sg**	**11 25 55.4**	**-0.2**
ARMT	**Armutlu**	**1.44**	**351**	*e*PN	**Pg**	**11 25 38.6**	**-0.3**
ARMT	**Armutlu**	**1.44**	**351**	*e*Pn	**Pg**	**11 25 38.7**	**-0.3**
GONE	**Gonen-Balikesi**	**1.44**	**309**	*e*PN	**Pg**	**11 25 39.7**	**+0.6**
GONE	**Gonen-Balikesi**	**1.44**	**309**	*e*Pn	**Pg**	**11 25 39.7**	**+0.6**
GPA	**Golpazari**	**1.45**	**38**	*e*PN	**Pg**	**11 25 38.8**	**-0.5**
GPA	**Golpazari**	**1.45**	**38**	*e*Pn	**Pg**	**11 25 38.8**	**-0.5**
DNZL	**Cakiroluk**	**1.46**	**183**	P	**Pg**	**11 25 39.2**	**-0.1**
DNZL				S	**Sg**	**11 25 59.8**	**+1.6**
DNZL	**Cakiroluk**	**1.46**	**183**	*i* P	**Pg**	**11 25 39.2**	**-0.1**
DNZL				*i* S	**Sg**	**11 25 59.8**	**+1.6**
EDC	**Edincik**	**1.56**	**321**	*e*PN	**Pb**	**11 25 40.1**	**-0.4**
EDC	**Edincik**	**1.56**	**321**	*e*Pn	**Pb**	**11 25 40.1**	**-0.4**
GULT	**Gulveren**	**1.66**	**39**	*e*PN	**Pb**	**11 25 41.9**	**-0.4**
GULT	**Gulveren**	**1.66**	**39**	*e*Pn	**Pb**	**11 25 41.9**	**-0.4**
HRT	**Hereke**	**1.72**	**13**	*e*PN	**Pb**	**11 25 42.7**	**-0.6**
HRT	**Hereke**	**1.72**	**13**	*e*Pn	**Pb**	**11 25 42.7**	**-0.6**
SPNC	**Sapanca-Adapaz**	**1.78**	**30**	*e*PN	**Pb**	**11 25 43.4**	**-0.9**
SPNC	**Sapanca-Adapaz**	**1.78**	**30**	*e*Pn	**Pb**	**11 25 43.4**	**-0.9**
SVRH	**Sivrihisar-ESK**	**1.87**	**80**	*e*PN	**Pn**	**11 25 44.7**	**+0.9**
SVRH	**Sivrihisar-ESK**	**1.87**	**80**	*e*Pn	**Pn**	**11 25 44.7**	**+0.9**
ISK	**Istanbul-Kandi**	**1.92**	**358**	*e*PN	**Pb**	**11 25 45.6**	**-1.1**
ISK	**Istanbul-Kandi**	**1.92**	**358**	*e*Pn	**Pb**	**11 25 45.6**	**-1.1**
SILT	**Sile**	**2.04**	**11**	*e*PN	**Pb**	**11 25 47.9**	**-0.9**
SILT	**Sile**	**2.04**	**11**	*e*Pn	**Pb**	**11 25 47.9**	**-0.9**
MDUB	**Mudurnu**	**2.06**	**49**	*e*PN	**Pn**	**11 25 47.5**	**+1.0**
MDUB	**Mudurnu**	**2.06**	**49**	*e*Pn	**Pn**	**11 25 47.5**	**+1.0**
DGB	**˜zmir**	**2.08**	**239**	*i* P	**Pb**	**11 25 49.5**	**0.0**
DGB				*i* S	**Sg**	**11 26 18.1**	**-0.2**

ISK ***25*** *11:28:06.8, 39.°11N×29.°18E, h8km, MD2.7*
ISCJB ***25*** *11:28:07.2±0.5, 39.°12N±0.°03×29.°14E±0.°04, h6km±6km, Error ellipse: s-maj=5.2km s-min=4.4km az=36.5*
CSEM ***25*** *11:28:07.5±0.1, 39.°12N×29.°15E, h8km, MD2.6, Error ellipse: s-maj=2.6km s-min=2.4km az=102.0*
DDA ***25*** *11:28:07.1, 39.°12N×29.°13E, h7km, Md2.6*

ISC 25 11:28:07.6±0.9, 39.°13N±0.°03×29.°14E±0.°02, h13km±10km, n33, σ0.°35/42, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.27**	**98**	P	**Pg**	**11 28 13.3**	**+0.1**
GDZ				S	**Sg**	**11 28 17.2**	**+0.2**
GDZ	**Gediz**	**0.27**	**98**	*i* P	**Pg**	**11 28 13.3**	**+0.1**
GDZ				*i* S	**Sg**	**11 28 17.2**	**+0.2**
DEMI	**Demirci**	**0.34**	**256**	P	**Pg**	**11 28 14.5**	**0.0**
DEMI				S	**Sg**	**11 28 19.3**	**+0.1**
DEMI	**Demirci**	**0.34**	**256**	*i* P	**Pg**	**11 28 14.5**	**0.0**
DEMI				*i* S	**Sg**	**11 28 19.3**	**+0.1**
TVSB	**Tavsanli**	**0.41**	**37**	*e*PG	**Pg**	**11 28 15.5**	**-0.2**
TVSB				*e*SG	**Sg**	**11 28 20.8**	**-0.4**
TVSB	**Tavsanli**	**0.41**	**37**	*e*Pg	**Pg**	**11 28 15.5**	**-0.2**
TVSB				*e*Sg	**Sg**	**11 28 20.8**	**-0.4**
DST	**Dursunbey**	**0.63**	**320**	*e*PG	**Pb**	**11 28 20.6**	**+0.2**
DST	**Dursunbey**	**0.63**	**320**	*e*Pg	**Pb**	**11 28 20.6**	**+0.2**
DURS	**Dursunbey**	**0.70**	**313**	P	**Pg**	**11 28 21.1**	**-0.2**
DURS	**Dursunbey**	**0.70**	**313**	*i* P	**Pg**	**11 28 21.1**	**-0.2**
KULA	**Kula-Manisa**	**0.72**	**212**	*e*PG	**Pg**	**11 28 21.1**	**-0.4**
KULA				*e*SG	**Sg**	**11 28 30.9**	**-0.1**
KHAL	**Karahalli**	**0.80**	**160**	P	**Pg**	**11 28 23.2**	**+0.1**
KHAL	**Karahalli**	**0.80**	**160**	*i* P	**Pg**	**11 28 23.2**	**+0.1**
KHL	**Karahalli**	**0.85**	**159**	*e*PG	**Pg**	**11 28 23.3**	**-0.8**
KHL				*e*SG	**Sg**	**11 28 35.2**	**-0.1**
ORLT	**Orhaneli**	**0.94**	**348**	*e*PG	**Pg**	**11 28 25.0**	**-0.7**
ORLT	**Orhaneli**	**0.94**	**348**	*e*Pg	**Pg**	**11 28 25.0**	**-0.7**
AKS	**Akhisar**	**1.06**	**257**	*e*PN	**Pn**	**11 28 28.3**	**+0.1**
AKS	**Akhisar**	**1.06**	**257**	*e*Pn	**Pn**	**11 28 28.3**	**+0.1**
IGD	**Bursa**	**1.14**	**2**	*i* P	**Pb**	**11 28 28.0**	**-1.1**
IGD				*i* S	**Sg**	**11 28 44.4**	**+0.1**
CAVI	**Cavuskoy**	**1.20**	**26**	*e*PN	**Pg**	**11 28 30.7**	**0.0**
CAVI	**Cavuskoy**	**1.20**	**26**	*e*Pn	**Pg**	**11 28 30.7**	**0.0**
MDNY	**Mudanya-Bursa**	**1.26**	**351**	*e*PN	**Pb**	**11 28 31.4**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.26**	**351**	*e*Pn	**Pb**	**11 28 31.4**	**+0.2**
KCTX	**Karacabey (Bur**	**1.29**	**332**	*e*PN	**Pg**	**11 28 32.7**	**+0.3**
KCTX	**Karacabey (Bur**	**1.29**	**332**	*e*Pn	**Pg**	**11 28 32.7**	**+0.3**
ADVT	**Abdulvahap**	**1.38**	**19**	*e*PN	**Pb**	**11 28 33.4**	**+0.1**
ADVT	**Abdulvahap**	**1.38**	**19**	*e*Pn	**Pb**	**11 28 33.4**	**+0.1**
GONE	**Gonen-Balikesi**	**1.45**	**310**	*e*PN	**Pb**	**11 28 34.4**	**-0.1**
GONE	**Gonen-Balikesi**	**1.45**	**310**	*e*Pn	**Pb**	**11 28 34.4**	**-0.1**
ARMT	**Armutlu**	**1.45**	**352**	*e*PN	**Pb**	**11 28 34.7**	**+0.2**
ARMT	**Armutlu**	**1.45**	**352**	*e*Pn	**Pb**	**11 28 34.7**	**+0.2**
GULT	**Gulveren**	**1.68**	**39**	*e*PN	**Pn**	**11 28 37.1**	**+0.4**
GULT	**Gulveren**	**1.68**	**39**	*e*Pn	**Pn**	**11 28 37.1**	**+0.4**

IDC 25 11:35:53.7±1.9, 0.°63N×125.°69E, h0km, mb3.2/3, mb1 3.4/3, mb1mx3.2/44, mbtmp3.2/3, Error ellipse: s-maj=177.0km s-min=24.9km az=65.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**22.13**	**158**	P	P	11 40 50.5	-0.6
	0.2nm,0.4s,baz=336,slow=10,SNR=8.7						
ASAR	**Alice Springs**	**25.43**	**162**	P	P	11 41 23.9	+0.5
	0.2nm,0.4s,baz=343,slow=11,SNR=7.8						
MKAR	**Makanchi Array**	**59.53**	**327**	P	P	11 45 58.9	-0.1
	0.3nm,0.5s,baz=132,slow=8.7,SNR=2.9						

IDC 25 11:40:56.7±9.2, 13.°58N×88.°62W, h131km±54km, mb3.2/6, mb1 3.6/7, mb1mx3.3/52, mbtmp3.7/7, MS2.9/1, Ms1 2.9/1, ms1mx2.3/17, Error ellipse: s-maj=88.3km s-min=61.2km az=2.0, El Salvador

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TEIG	**Tepich**	**6.62**	**3**	P	Pn	11 42 31.8	+0.3
	2.8nm,0.3s,baz=269,slow=24,SNR=25						
TXAR	**Lajitas Array**	**20.99**	**321**	P	P	11 45 29.1	-0.7
	1.2nm,0.7s,baz=145,slow=11,SNR=13						
SJG	**San Juan**	**22.07**	**75**	LR	LR	11 53 45.7	
	comp=Z,31nm,19.2s,baz=268,slow=35						
NVAR	**Mina Array Bea**	**36.11**	**319**	P	P	11 47 47.0	+0.5
	0.2nm,0.4s,baz=133,slow=7.6,SNR=2.6						
YKA	**Yellowknife Ar**	**52.23**	**345**	P	P	11 49 53.7	-0.3
	0.6nm,0.4s,baz=142,slow=7.5,SNR=36						
DLBC	**Dease Lake**	**54.41**	**335**	P	P	11 50 11.0	+0.8
	1.1nm,0.6s,baz=153,slow=3.9,SNR=3.5						
INK	**Inuvik**	**61.80**	**343**	P	P	11 51 00.8	-0.5
	1.0nm,0.6s,baz=149,slow=6.3,SNR=6.2						
ILAR	**Eielson Array**	**64.54**	**336**	P	P	11 51 19.6	+0.2
	0.4nm,0.6s,baz=172,slow=5.1,SNR=5.8						
WRA	**Warramunga Arr**	**138.47**	**255**	PKP	PKPdf	12 00 06.2	-1.5
	0.4nm,0.7s,baz=91,slow=3.1,SNR=5.3						
ASAR	**Alice Springs**	**138.61**	**250**	PKP	PKPdf	12 00 08.1	+0.1
	0.4nm,0.7s,baz=97,slow=2.1,SNR=4.1						

IDC ***25*** *11:41:04.8±0.8, 6.°57S×147.°99E, h0km, mb4.2/14, mb1 4.3/16, mb1mx4.2/40, mbtmp4.2/16, ML4.1/1, MS3.6/15, Ms1 3.7/15, ms1mx3.5/31, Error ellipse: s-maj=34.6km s-min=13.9km az=96.0*
ISCJB ***25*** *11:41:10.0±0.4, 6.°67S±0.°04×147.°90E±0.°09, h51km, mb4.4/23, MS3.5/14, Error ellipse: s-maj=12.5km s-min=5.9km az=12.0*
NEIC ***25*** *11:41:14.2±0.6, 6.°70S×147.°85E, h73km±6km, mb4.3/10, Error ellipse: s-maj=8.3km s-min=5.8km az=107.0*

ISC 25 11:41:11.7±0.5, 6.°68S±0.°05×148.°05E±0.°06, h51km, n52, σ2.°00/51, mb4.2/22, MS3.5/14, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.85**	**198**	Pn	**Pn**	**11 41 54.8**	**+0.1**
	28nm,0.3s,baz=17,slow=8.5,SNR=72						
PMG				Sn	**Sn**	**11 42 34.4**	**+6.6**
	61nm,0.3s,baz=12,slow=16,SNR=8.5						
PMG				LR	LR	11 43 13.0	
	comp=Z,1μm,20.5s,baz=156,slow=44						
PMG	**Port Moresby**	**2.85**	**198**	*e*Pn	**Pn**	**11 41 55.7**	**+1.0**
PMG				Sn	**Sn**	**11 42 34.4**	**+6.6**
MANU	**Manus Island**	**4.66**	**352**	*e*Pn	**Pn**	**11 42 22.4**	**+2.8**
RABL	**Rabaul**	**4.78**	**59**	*e*Pn	**Pn**	**11 42 25.8**	**+4.5**
JAY	**Jayapura**	**8.41**	**299**	Pn	**Pn**	**11 43 12.0**	**+0.9**
	0.1nm,0.3s,baz=90,slow=20,SNR=4.9						
JAY				LR	LR	11 46 38.9	
	comp=Z,24nm,20.5s,baz=163,slow=40						
COEN	**Coen**	**8.68**	**213**	*e*Pn	**Pn**	**11 43 13.3**	**-1.4**
COEN				*e*Sn	**Sn**	**11 44 48.8**	**-2.4**
HNR	**Honiara**	**12.09**	**104**	Pn	P	11 44 07.3	-5.4
	2.1nm,0.3s,baz=203,slow=6.5,SNR=9.1						
HNR				Sn	**Sn**	**11 46 13.2**	**-1.6**
	6.8nm,0.3s,baz=41,slow=20,SNR=2.2						
HNR	**Honiara**	**12.09**	**104**	*e*Pn	**P**	**11 44 08.0**	**-4.7**
	169nm,1.2s						
HNR				*e*Sn	**Sn**	**11 46 14.5**	**-0.3**
WRAB	**Tennant Creek**	**18.72**	**224**	*e*P	**Pn**	**11 45 26.5**	**-0.7**
	31nm,1.3s						
WB2	**Warramunga Arr**	**18.73**	**224**	*e*P	**Pn**	**11 45 27.0**	**-0.2**
	24nm,1.3s						
WRA	**Warramunga Arr**	**18.73**	**224**	P	**P**	**11 45 25.4**	**-1.1**
	0.6nm,0.3s,baz=51,slow=11,SNR=28						
WRA				LR	LR	11 53 44.0	
	comp=Z,628nm,18.1s,baz=60,slow=40						
EIDS	**Eidsvold**	**18.81**	**171**	*e*P	**Pn**	**11 45 28.2**	**+0.1**
	29nm,1.4s						
GUMO	**Guam**	**20.39**	**351**	LR	LR	11 51 51.7	
	comp=Z,208nm,21.3s,baz=176,slow=32						
AS01	**Alice Springs**	**21.65**	**217**	*e*P	**P**	**11 45 57.0**	**-1.1**
AS31	**Alice Springs**	**21.68**	**217**	*e*P	**P**	**11 45 57.9**	**-0.4**
	3.5nm,0.6s						
ASAR	**Alice Springs**	**21.68**	**217**	P	**P**	**11 45 56.7**	**-1.7**
	4.8nm,0.6s,baz=51,slow=8.9,SNR=66						
ASAR				LR	LR	11 54 46.3	
	comp=Z,231nm,19.9s,baz=41,slow=38						
STKA	**Stephens Creek**	**25.78**	**193**	P	**P**	**11 46 38.4**	**+0.5**
	5.0nm,0.9s,baz=4.8,slow=10,SNR=8.5						
STKA				LR	LR	11 57 30.2	
	comp=Z,212nm,18.1s,baz=16,slow=38						
STKA	**Stephens Creek**	**25.78**	**193**	*e*P	**P**	**11 46 37.5**	**-0.4**
	1.8nm,1.0s						
LUWI	**Luwuk**	**25.83**	**281**	*e*P	**P**	**11 46 38.8**	**+0.2**
	89nm,1.1s						
TGY	**Tagaytay City**	**33.92**	**308**	LR	LR	12 01 25.8	
	comp=Z,81nm,21.4s,baz=136,slow=36						
JHJ	**Hachijo jima 2**	**40.35**	**349**	LR	LR	12 04 51.3	
	comp=Z,60nm,18.3s,baz=190,slow=36						
JNU	**Nakatsue**	**42.82**	**339**	LR	LR	12 03 18.8	
	comp=Z,110nm,21.2s,baz=116,slow=31						
MJAR	**Matsushiro Arr**	**43.98**	**349**	P	**P**	**11 49 12.6**	**-1.4**
	3.8nm,1.0s,baz=172,slow=8.6,SNR=10						
MJAR				LR	LR	12 05 06.8	
	comp=Z,66nm,21.5s,baz=175,slow=33						
MAT	**Matsushiro**	**43.98**	**349**	P	**P**	**11 49 12.6**	**-1.4**
KSRS	**Korea Array**	**47.76**	**338**	P	**P**	**11 49 42.9**	**-1.0**
	1.5nm,0.7s,baz=160,slow=9.7,SNR=10						
KSRS				LR	LR	12 08 21.3	
	comp=Z,70nm,20.2s,baz=164,slow=34						
KSAR	**Wonju Array Be**	**47.77**	**338**	P	**P**	**11 49 42.9**	**-1.0**
KS01	**Wonju Array Si**	**47.79**	**338**	*e*P	**P**	**11 49 43.7**	**-0.3**
GSI	**Gunungsitoli**	**51.00**	**277**	*e*P	**P**	**11 50 08.3**	**-0.6**
	14nm,0.8s						
USRK	**Ussuriysk Ar.**	**52.68**	**346**	P	**P**	**11 50 19.8**	**-1.1**
	1.5nm,0.7s,baz=166,slow=8.8,SNR=5.4						
CMAR	**Chiang Mai Arr**	**54.49**	**298**	P	**P**	**11 50 35.2**	**+0.4**
	1.1nm,0.4s,baz=121,slow=6.4,SNR=6.6						
CMAR				LR	LR	12 12 44.9	
	comp=Z,22nm,21.5s,baz=120,slow=35						
CD2	**Chengdu**	**56.50**	**314**	P	**P**	**11 50 48.8**	**-0.2**
CD2				pmax	pmax		
	comp=Z,11nm,0.6s						
KLR	**Kul'dur**	**57.48**	**347**	P	**P**	**11 50 55.1**	**-0.3**
	comp=Z,2.8nm,1.0s,baz=151,slow=9.3,SNR=5.8						
HHC	**Hu-ho-hao-te**	**57.96**	**328**	*e*P	**P**	**11 51 02.0**	**+2.8**
HHC				pmax	pmax		
	comp=Z,14nm,1.1s						
HHC				pmax	pmax		
	comp=Z,72nm,6.6s						
PETK	**Petropavlovsk-**	**60.12**	**7**	P	**P**	**11 51 14.8**	**+1.0**
	comp=Z,6.7nm,0.9s,baz=138,slow=4.4,SNR=6.8						
PETK				LR	LR	12 15 33.6	
	comp=Z,32nm,19.9s,baz=188,slow=34						
SONM	**Songino Array**	**65.51**	**331**	P	**P**	**11 51 49.3**	**-0.5**
	comp=Z,2.0nm,1.1s,baz=151,slow=7.7,SNR=8.5						
SONA1	**Songino Array**	**65.51**	**331**	*e*P	**P**	**11 51 49.9**	**-0.1**
VNDA	**Vanda**	**71.18**	**177**	P	**P**	**11 52 25.6**	**+1.0**
	comp=Z,2.1nm,0.9s,baz=305,slow=6.1,SNR=11						
VNDA				LR	LR	12 23 07.5	
	comp=Z,52nm,18.1s,baz=341,slow=35						
VNDA	**Vanda**	**71.18**	**177**	*e*P	**P**	**11 52 25.7**	**+1.0**
	comp=Z,3.5nm,1.0s						
WMQ	**Urumqi**	**73.99**	**319**	*e*P	**P**	**11 52 43.5**	**+1.4**
WMQ				pmax	pmax		
	comp=Z,30nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,39nm,6.4s						
WMQ				LR	LR		
	comp=Z,14nm,39.0s						
MK01	**Makanchi Array**	**78.67**	**320**	*e*P	**P**	**11 53 07.0**	**-1.5**
MKAR	**Makanchi Array**	**78.69**	**320**	P	**P**	**11 53 07.5**	**-1.1**
	comp=Z,0.7nm,0.8s,baz=102,slow=6.6,SNR=6.1						
MAKZ	**Makanchi**	**78.89**	**320**	*e*P	**P**	**11 53 08.1**	**-1.7**
	comp=Z,4.4nm,1.2s						
ZALV	**Zalesovo Beam**	**80.14**	**328**	P	**P**	**11 53 14.7**	**-1.6**
	comp=Z,0.9nm,0.4s,baz=111,slow=6.3,SNR=3.6						
ZALV				LR	LR	12 28 29.8	
	comp=Z,49nm,20.4s,baz=4.0,slow=36						
PPLA	**Purkeypile**	**82.74**	**24**	*e*P	**P**	**11 53 30.7**	**+0.6**
QSPA	**South Pole Qui**	**83.29**	**180**	*e*P	**P**	**11 53 33.1**	**+0.2**
	comp=Z,16nm,0.7s						
ILAR	**Eielson Array**	**85.69**	**23**	P	**P**	**11 53 43.8**	**-1.0**
	comp=Z,1.5nm,0.9s,baz=252,slow=4.9,SNR=11						
NRIK	**Noril'sk**	**86.24**	**342**	LR	LR	12 31 33.5	
	comp=Z,28nm,20.6s,baz=87,slow=35						
BRVK	**Borovoye**	**88.00**	**324**	*e*P	**P**	**11 53 55.0**	**-1.3**
	comp=Z,5.6nm,1.2s						
YKA	**Yellowknife Ar**	**99.28**	**28**	P	**Pdif**	**11 54 48.2**	**+0.3**
	comp=Z,0.5nm,1.1s,baz=278,slow=4.3,SNR=4.6						
GERES	**GERESS Array B**	**123.06**	**326**	PKP	**PKPdf**	**12 00 03.8**	**+1.0**
	comp=Z,0.4nm,0.3s,baz=90,slow=2.7,SNR=4.3						
SAML	**Samuel**	**145.21**	**116**	*e*PKPbc	**PKPdf**	**12 00 45.0**	**+0.2**
TORD	**Torodi Ar. Bea**	**146.27**	**284**	PKPbc	**PKPbc**	**12 00 47.6**	**-0.1**
	comp=Z,2.9nm,0.6s,baz=72,slow=2.1,SNR=22						

ISK ***25*** *11:42:58.5, 39.°11N×28.°98E, h8km, MD2.5*
DDA ***25*** *11:42:59.1, 39.°09N×29.°04E, h7km, Ml3.0*
CSEM ***25*** *11:42:59.2±0.1, 39.°12N×29.°02E, h5km, ML3.0, Error ellipse: s-maj=1.9km s-min=1.7km az=136.0*

ISC 25 11:42:59.0±0.9, 39.°11N±0.°03×29.°02E±0.°02, h15km±8km, n27, σ0.°26/39, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**255**	P	**Pg**	**11 43 04.5**	**+0.1**
DEMI				S	**Sg**	**11 43 08.0**	**0.0**
DEMI	**Demirci**	**0.24**	**255**	*i* P	**Pg**	**11 43 04.5**	**+0.1**
DEMI				*i* S	**Sg**	**11 43 08.0**	**0.0**
GDZ	**Gediz**	**0.36**	**93**	P	**Pg**	**11 43 06.2**	**-0.2**
GDZ				S	**Sg**	**11 43 11.6**	**+0.1**
GDZ	**Gediz**	**0.36**	**93**	*i* P	**Pg**	**11 43 06.2**	**-0.2**
GDZ				*i* S	**Sg**	**11 43 11.6**	**+0.1**
TVSB	**Tavsanli**	**0.49**	**45**	*e*PG	**Pg**	**11 43 08.5**	**-0.2**
TVSB	**Tavsanli**	**0.49**	**45**	*e*Pg	**Pg**	**11 43 08.5**	**-0.2**
DURS	**Dursunbey**	**0.65**	**320**	P	**Pg**	**11 43 11.8**	**0.0**
DURS	**Dursunbey**	**0.65**	**320**	*i* P	**Pg**	**11 43 11.8**	**0.0**
KULA	**Kula-Manisa**	**0.65**	**205**	*e*PG	**Pg**	**11 43 11.8**	**+0.1**
KULA				*e*SG	**Sg**	**11 43 20.1**	**-0.3**
KULA	**Kula-Manisa**	**0.65**	**205**	*e*Pg	**Pg**	**11 43 11.9**	**+0.1**
KULA				*e*Sg	**Sg**	**11 43 20.1**	**-0.3**
KHAL	**Karahalli**	**0.82**	**153**	P	**Pn**	**11 43 15.7**	**-0.4**
KHAL				S	**Sb**	**11 43 26.6**	**+0.6**
KHAL	**Karahalli**	**0.82**	**153**	*i* P	**Pn**	**11 43 15.7**	**-0.4**
KHAL				*i* S	**Sb**	**11 43 26.6**	**+0.6**
ORLT	**Orhaneli**	**0.94**	**354**	*e*PG	**Pb**	**11 43 16.8**	**-0.3**
ORLT	**Orhaneli**	**0.94**	**354**	*e*Pg	**Pb**	**11 43 16.8**	**-0.3**
AKHS	**Akhisar**	**0.97**	**257**	P	**Pn**	**11 43 18.1**	**+0.1**
AKHS	**Akhisar**	**0.97**	**257**	*i* P	**Pn**	**11 43 18.1**	**+0.1**
BALB	**Balikesir**	**1.03**	**302**	*e*PG	**Pn**	**11 43 18.9**	**0.0**
BALB				*e*SG	**Sg**	**11 43 32.3**	**-0.1**
IGD	**Bursa**	**1.17**	**7**	*i* P	**Pb**	**11 43 21.0**	**+0.2**
IGD				*i* S	**Sb**	**11 43 35.6**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.27**	**355**	*e*PN	**Pb**	**11 43 22.6**	**0.0**
CAVI	**Cavuskoy**	**1.27**	**30**	*e*PN	**Pg**	**11 43 23.4**	**0.0**
CAVI	**Cavuskoy**	**1.27**	**30**	*e*Pn	**Pg**	**11 43 23.4**	**0.0**
BORA	**Eskisehir**	**1.35**	**55**	P	**Pb**	**11 43 24.3**	**+0.2**
BORA				S	**Sg**	**11 43 43.0**	**+0.3**
BORA	**Eskisehir**	**1.35**	**55**	*i* P	**Pb**	**11 43 24.3**	**+0.2**
BORA				*i* S	**Sg**	**11 43 43.0**	**+0.3**
ARMT	**Armutlu**	**1.46**	**355**	*e*PN	**Pb**	**11 43 26.0**	**+0.1**
GULT	**Gulveren**	**1.76**	**41**	*e*PN	**Pb**	**11 43 30.8**	**-0.2**
GULT	**Gulveren**	**1.76**	**41**	*e*Pn	**Pb**	**11 43 30.8**	**-0.2**
DGB	**˜zmir**	**1.98**	**239**	*i* P	**Pg**	**11 43 36.6**	**-0.3**

CASC 25 11:44:55.1±1.2, 8.°68N×83.°60W, h13km±9km, MD3.7, 1C-1D, Costa Rica

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ACR	**Cerro Adams**	**0.42**	**93**	*e*P	Pg	11 45 03.4	-0.2
ACR				*e*S	Sg	11 45 10.1	+0.8
BUS	**Buena Vista**	**0.89**	**350**	*e*P	Pg	11 45 12.1	-0.3
BUS				*e*S	Sn	11 45 25.9	-0.7
QCR	**Quepos**	**0.93**	**323**	*e*P	Pb	11 45 12.1	-1.0
QCR				*e*S	Sg	11 45 23.9	-1.4
URSC	**Urasca**	**1.17**	**351**	*i* P	Pb	11 45 16.3	-1.0
URSC				*e*S	Sb	11 45 32.2	-0.1
CGA2	**Cerro Gallo 2**	**1.58**	**327**	*e*P	Pn	11 45 22.6	-0.4
CGA2				*e*S	Sb	11 45 44.1	-0.2
JCR	**Jicaral**	**1.90**	**308**	*e*P	Pn	11 45 27.3	+0.1

IDC ***25*** *11:55:23.1±0.6, 17.°18S×173.°35W, h0km, mb4.6/15, mb1 4.8/17, mb1mx4.5/43, mbtmp4.6/17, ML4.3/2, MS3.6/14, Ms1 3.6/14, ms1mx3.4/31, Error ellipse: s-maj=22.4km s-min=14.6km az=137.0*
ISCJB ***25*** *11:55:26.9±0.2, 17.°14S±0.°07×173.°46W±0.°06, h35km, mb4.7/78, MS3.7/12, Error ellipse: s-maj=11.8km s-min=5.5km az=140.9*
NEIC ***25*** *11:55:37.7±1.6, 17.°31S×173.°43W, h120km±15km, mb4.6/55, Error ellipse: s-maj=12.1km s-min=6.2km az=149.0*

ISC 25 11:55:27.2±0.4, 17.°30S±0.°07×173.°14W±0.°07, h35km, n132, σ1.°97/111, mb4.8/78, MS3.7/12, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**3.62**	**21**	Pn	**Pn**	**11 56 20.3**	**-0.6**
	30nm,0.3s,baz=198,slow=2.9,SNR=98						
AFI				Sn	**Sn**	**11 56 57.4**	**-5.0**
	364nm,0.3s,baz=209,slow=12,SNR=19						
AFI				LR	LR	11 57 13.8	
	comp=Z,119nm,20.2s,baz=227,slow=31						
MSVF	**Nonsavu**	**8.42**	**266**	*e*Pn	Pn	11 57 34.5	+7.6
RAR	**Rarotonga**	**13.21**	**109**	Pn	**Pn**	**11 58 33.5**	**+1.2**
	10nm,0.3s,baz=250,slow=12,SNR=13						
RAR				Sn	Sn	12 00 47.1	-11
	1.3nm,0.3s,baz=172,slow=19,SNR=2.2						
RAR				LR	LR	12 02 28.2	
	comp=Z,280nm,18.2s,baz=278,slow=32						
RAR	**Rarotonga**	**13.21**	**109**	*e*Pn	**Pn**	**11 58 33.3**	**+0.9**
RAR				Sn	Sn	12 00 47.1	-11
RAR				*e*Sn	**Sn**	**12 00 52.6**	**-5.5**
**

10nm,1.3s
KSM Kuching 77.61 275 *e*P **P 12 07 18.4 -2.2**
21nm,1.1s
KSRS Korea Array 77.68 316 P **P 12 07 22.0 +1.6**
2.7nm,1.1s,baz=122,slow=5.9,SNR=6.7
KSRS LR LR 12 35 08.6
comp=Z,20nm,19.4s,baz=137,slow=31
KSAR Wonju Array Be 77.70 316 P **P 12 07 22.0 +1.5**
KS01 Wonju Array Si 77.72 316 *e*P **P 12 07 21.8 +1.2**
WVOR Wild Horse Val 77.76 38 *e*P **P 12 07 21.5 +0.6**
5.3nm,1.0s
X16A Lo Mia Camp, P 77.98 48 *e*P **P 12 07 24.9 +2.5**
319A Douglas 78.06 52 *e*P **P 12 07 25.2 +2.4**
8.2nm,0.9s
LCMT Little Creek M 78.09 45 *e*P **P 12 07 22.1 -0.8**
6.2nm,1.3s
KNB Kanab 78.38 45 *e*P **P 12 07 27.1 +2.5**
12nm,1.5s
U15A North Rim 78.43 46 *e*P **P 12 07 27.4 +2.5**
PSUT Pine Spring 78.50 43 *e*P **P 12 07 27.3 +2.1**
3.8nm,0.8s
WUAZ Wupatki 78.59 47 *e*P **P 12 07 25.0 -0.7**
18nm,1.8s
ELK Elko 78.84 41 *e*P **P 12 07 26.4 -0.6**
5.7nm,1.2s
HPIG 78.84 57 *e*P **P 12 07 28.7 +1.4**
8.8nm,1.2s
USRK Ussuriysk Ar. 79.04 323 LR LR 12 36 24.9
comp=Z,53nm,21.2s,baz=61,slow=31
MTPU Mount Pierson 79.35 45 *e*P **P 12 07 32.4 +2.4**
18nm,1.5s
DUG Dugway, Tooele 80.08 43 *e*P **P 12 07 34.6 +0.9**
11nm,1.5s
TMUT Trail Mountain 80.65 44 *e*P **P 12 07 38.9 +1.9**
9.0nm,1.1s
HLID Hailey 80.93 39 *e*P **P 12 07 38.3 0.0**
6.1nm,1.0s
SRU San Rafael Swe 81.01 44 *e*P **P 12 07 40.5 +1.8**
6.3nm,1.1s
P17A Butcher Ranch, 81.06 44 *e*P **P 12 07 41.6 +2.6**
19nm,1.6s
MNTX Cornudas Mount 81.16 53 *e*P **P 12 07 38.6 -0.9**
6.1nm,1.1s
PV05 Paradox Valley 81.46 46 *e*P **P 12 07 44.0 +2.7**
TX31 Lajitas Ar. Si 81.46 56 *e*P **P 12 07 43.3 +2.0**
TXAR Lajitas Array 81.46 56 P **P 12 07 43.3 +2.0**
4.2nm,1.1s,baz=219,slow=5.8,SNR=19
TXAR LR LR 12 38 35.2
comp=Z,49nm,19.5s,baz=0.0,slow=32
P18A Preston Nutter 81.46 44 *e*P **P 12 07 43.3 +2.0**
10nm,1.5s
TCUT Toone Canyon 81.47 42 *e*P **P 12 07 41.5 +0.2**
50nm,1.7s
PV09 Paradox Valley 81.64 45 *e*P **P 12 07 44.6 +2.3**
PV10 Paradox Valley 81.65 46 *e*P **P 12 07 43.7 +1.4**
ANMO Albuquerque 81.83 50 *e*P **P 12 07 45.7 +2.4**
13nm,1.5s
PV01 Paradox Valley 81.85 46 *e*P **P 12 07 45.2 +1.9**
PMSA Palmer Station 82.35 156 LR LR 12 39 19.5
comp=Z,43nm,18.9s,baz=202,slow=32
MCMT McKenzie Canyo 82.57 39 *e*P **P 12 07 48.7 +1.8**
S22A 4UR Ranch, Cre 82.87 47 *e*P **P 12 07 51.1 +2.4**
10nm,0.9s
REDW Red Top Meadow 83.00 41 *e*P **P 12 07 50.5 +1.3**
11nm,1.2s
DLMT Dillon 83.01 38 *e*P **P 12 07 47.8 -1.3**
7.8nm,1.3s
SNOW Snow King Moun 83.11 41 *e*P **P 12 07 50.6 +0.8**
7.4nm,1.0s
IMW Indian Meadow 83.23 40 *e*P **P 12 07 52.4 +2.0**
12nm,1.3s
MOOW Moose Ponds 83.27 40 *e*P **P 12 07 49.6 -0.9**
7.6nm,1.4s
LOHW Long Hollow 83.29 40 *e*P **P 12 07 49.6 -1.0**
4.9nm,1.1s
SMCO Snowmass 83.45 46 *e*P **P 12 07 53.7 +1.9**
6.0nm,1.0s
FLWY Flagg Ranch 83.47 40 *e*P **P 12 07 49.5 -2.1**
15nm,1.3s
BW06 Boulder Array 83.51 42 *e*P **P 12 07 52.4 +0.6**
0.2nm,1.0s
PD31 Pinedale Array 83.51 42 *e*P **P 12 07 53.0 +1.1**
PDAR Pinedale Array 83.51 42 P **P 12 07 52.9 +1.1**
3.1nm,0.9s,baz=219,slow=3.8,SNR=17
PDAR LR LR 12 37 05.3
comp=Z,62nm,21.3s,baz=241,slow=30
YMR Madison River 83.62 39 *e*P **P 12 07 55.4 +3.1**
24nm,1.7s
BOZ Bozeman (W) 83.74 38 *e*P **P 12 07 54.4 +1.5**
17nm,1.7s
WRH Wood River Hil 83.76 11 *e*P **P 12 07 53.5 +1.2**
9.2nm,1.1s
DOT Dot Lake 83.79 13 *e*P **P 12 07 50.3 -2.2**
11nm,0.9s
SDCO Great Sand Dun 83.80 48 *e*P **P 12 07 55.2 +1.7**
4.1nm,1.1s
LKWY Lake 83.91 40 *e*P **P 12 07 56.9 +3.0**
6.9nm,1.1s
CCB Clear Creek Bu 83.97 11 *e*P **P 12 07 53.8 +0.5**
12nm,1.3s
MSTX Muleshoe 84.12 52 *e*P **P 12 07 57.0 +1.9**
15nm,1.0s
COLA College 84.17 11 *e*P **P 12 07 55.1 +0.7**
14nm,1.3s
MDM Murphy Dome 84.18 10 *e*P **P 12 07 55.2 +0.7**
9.7nm,1.2s
ILAR Eielson Array 84.25 11 P **P 12 07 55.0 +0.3**
7.6nm,1.4s,baz=212,slow=5.0,SNR=8.4
IL1 Eielson Array 84.25 11 *e*P **P 12 07 54.8 0.0**
SEY Seymchan 84.41 345 P **P 12 07 56.2 +0.6**
3.3nm,0.8s,baz=89,slow=7.3,SNR=6.1
AMTX Amarillo 85.33 51 *e*P **P 12 08 02.2 +1.1**
3.4nm,0.7s
ABTX Abilene, Hawle 85.96 54 *e*P **P 12 08 06.0 +1.8**
15nm,1.0s
PSI Prapat 88.85 273 *e*P **P 12 08 17.9 -0.7**
15nm,1.1s
GYA Guiyang 89.15 298 *e*P **P 12 08 19.0 -0.8**
GYA pP sP 12 08 50.5 +16
GYA sP pP 12 09 02.0 +31
GYA PP **PP 12 11 51.5 +1.0**
GYA Guiyang 89.15 298 SKS SKSac 12 18 35.5 -12
GYA Guiyang 89.15 298 S S 12 18 55.3 -11
GYA pmax pmax
comp=Z,10.0nm,1.0s
GSI Gunungsitoli 89.70 271 *e*P **P 12 08 23.1 +0.6**
comp=Z,20nm,0.8s
HHC Hu-ho-hao-te 90.49 313 *e*P **P 12 08 26.5 +0.8**
HHC pmax pmax
comp=Z,17nm,1.3s
HHC pmax pmax
comp=Z,78nm,7.6s
YKA Yellowknife Ar 91.73 23 P **P 12 08 31.2 +0.5**
comp=Z,1.0nm,1.0s,baz=245,slow=4.1,SNR=10
KMI Kunming 92.07 296 P **P 12 08 36.3 +2.8**
KMI pmax pmax
comp=Z,12nm,1.0s
CD2 Chengdu 93.01 301 P **P 12 08 36.0 -1.5**
CD2 pmax pmax
comp=Z,24nm,0.5s
CM01 Chiang Mai Arr 93.42 288 *e*P **P 12 08 40.2 +0.6**
CMAR Chiang Mai Arr 93.44 288 P **P 12 08 41.5 +1.8**
comp=Z,1.4nm,0.6s,baz=101,slow=3.2,SNR=11
BVAR Borovoye Array 119.52 322 PKP **PKPdf 12 14 13.4 +0.4**
comp=Z,0.6nm,0.4s,baz=64,slow=3.4,SNR=4.0
KMBO Kilima Mbogo 144.90 242 PKP **PKPdf 12 15 03.0 +1.0**
comp=Z,7.9nm,0.7s,baz=93,slow=3.4,SNR=16
KMBO Kilima Mbogo 144.90 242 *e*PKPdf **PKPdf 12 15 03.2 +1.2**
VYHS Vyhne 147.38 345 *e*PKP **PKPab 12 15 08.9 -0.3**
BRTR Keskin Array B 147.77 319 PKPbc **PKPbc 12 15 09.9 +1.1**
comp=Z,2.9nm,0.8s,baz=126,slow=2.1,SNR=15
GERES GERESS Array B 148.04 351 PKPbc **PKPbc 12 15 08.8 -0.4**
comp=Z,0.4nm,0.3s,baz=2.6,slow=2.2,SNR=5.7
MMAI Mount Meron Ar 149.93 307 PKPbc **PKPbc 12 15 16.2 +1.8**
comp=Z,0.5nm,0.3s,baz=74,slow=6.2,SNR=3.2

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*IDC **25** 11:59:55.0±0.8, 55°.86S×27°.05W, h0km, mb4.2/5, mb1 4.4/5, mb1mx4.0/23, mbtmp4.2/5, MS3.4/3, Ms1 3.4/3, ms1mx3.0/17, Error ellipse: s-maj=36.0km s-min=25.1km az=65.0*
*ISCJB **25** 11:59:58.8±0.8, 55°.8S±0°.1×27°.3W±0°.3, h35km, mb4.2/7, MS3.4/3, Error ellipse: s-maj=25.1km s-min=9.9km az=142.0*
*NEIC **25** 12:00:00.2±0.4, 55°.87S×27°.18W, h35km, mb4.2/2, Error ellipse: s-maj=17.0km s-min=9.3km az=224.0*
ISC 25 12:00:00.4±0.7, 55°.8S±0°.1×27°.2W±0°.2, h35km, n20, σ0.69/18, mb4.2/6, MS3.2/3, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HOPE	**Hope Point**	**5.56**	**282**	*e*Pn	**Pn**	**12 01 20.2**	**-0.3**
	51nm,0.4s						
VNA3	**Neumayer Olymp**	**17.20**	**161**	P	**P**	**12 03 59.6**	**+0.7**
VNA2	**Neumayer--Watz**	**17.40**	**158**	P	**P**	**12 04 00.5**	**-0.5**
	baz=313,slow=13						
SNAA	**Sanae**	**18.95**	**156**	P	**Pn**	**12 04 19.4**	**+0.4**
SNAA	**Sanae**	**18.95**	**156**	*e*P	**P**	**12 04 17.8**	**-0.4**
	245nm,0.9s						
PMSA	**Palmer Station**	**20.04**	**229**	LR	LR	12 10 36.7	
	comp=Z,101nm,19.3s,baz=172,slow=32						
TRQA	**Tornquist**	**29.23**	**293**	*e*P	**P**	**12 05 58.9**	**+0.2**
	2.1nm,0.6s						
CPUP	**Villa Florida**	**36.66**	**311**	P	**P**	**12 07 03.3**	**-0.1**
	3.7nm,0.9s,baz=154,slow=10,SNR=5.1						
CPUP				LR	LR	12 20 20.4	
	comp=Z,33nm,19.4s,baz=165,slow=33						
VNDA	**Vanda**	**46.80**	**183**	P	**P**	**12 08 26.0**	**+0.2**
	1.2nm,0.6s,baz=184,slow=7.9,SNR=12						
LPAZ	**La Paz**	**50.24**	**305**	P	**P**	**12 08 54.5**	**+0.8**
	3.8nm,0.4s,baz=97,slow=4.3,SNR=25						
SAML	**Samuel**	**54.64**	**315**	*e*P	**P**	**12 09 25.4**	**-0.1**
	3.0nm,0.8s						
OPO	**Ambohidratompo**	**66.08**	**88**	LR	LR	12 34 02.3	
	comp=Z,62nm,21.6s,baz=224,slow=31						
TORD	**Torodi Ar. Bea**	**72.86**	**30**	P	**P**	**12 11 26.1**	**+0.6**
	0.7nm,0.5s,baz=199,slow=5.9,SNR=13						
ASAR	**Alice Springs**	**99.20**	**162**	P	**Pdif**	**12 13 36.7**	**-1.6**
	0.2nm,0.6s,baz=185,slow=3.8,SNR=4.5						
FINES	**FINESS Array B**	**124.19**	**28**	PKP	**PKPdf**	**12 18 52.8**	**-0.8**
	1.1nm,0.7s,baz=205,slow=2.9,SNR=4.7						
YKA	**Yellowknife Ar**	**136.00**	**318**	PKP	**PKPdf**	**12 19 16.8**	**+0.8**
	0.2nm,0.4s,baz=134,slow=2.1,SNR=10						
INK	**Inuvik**	**145.62**	**321**	PKPbc	**PKPbc**	**12 19 33.2**	**-0.3**
	1.9nm,0.7s,baz=84,slow=3.1,SNR=11						
ILAR	**Eielson Array**	**149.96**	**312**	PKPbc	**PKPbc**	**12 19 44.9**	**-0.6**
	1.3nm,0.7s,baz=135,slow=2.6,SNR=15						
SONM	**Songino Array**	**150.72**	**86**	PKPbc	**PKPbc**	**12 19 47.5**	**-0.5**
	0.6nm,0.4s,baz=244,slow=2.9,SNR=4.9						
BPAW	**Bear Paw Mtn.**	**151.58**	**310**	*e*PKPbc	**PKPbc**	**12 19 48.8**	**-0.5**

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*CSEM **25** 12:03:47.2, 43°.89N×12°.01E, h7km, MD2.4/12*
ROM 25 12:03:47.2±0.2, 43°.89N×12°.01E, h7km±1km, Md2.4/12, Ml2.0/10, Error ellipse: s-maj=2.7km s-min=1.2km az=41.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFI	**Santa Sofia**	**0.12**	**278**	Pg	Pg	12 03 50.4	+0.6
SFI				Sg	Sg	12 03 52.8	+1.3
	589nm,0.5s						
SFI	**Santa Sofia**	**0.12**	**278**	Pg	Pg	12 03 50.4	+0.6
SFI				Sg	Sg	12 03 52.8	+1.3
	589nm,0.5s						
ASQU	**Asqua**	**0.18**	**240**	Pg	Pg	12 03 51.6	+0.7
ASQU				Sg	Sg	12 03 54.6	+1.2
	908nm,0.3s						
ASQU	**Asqua**	**0.18**	**240**	Pg	Pg	12 03 51.6	+0.7
ASQU				Sg	Sg	12 03 54.6	+1.2
	908nm,0.3s						
PARC	**Parchiule**	**0.29**	**145**	Pg	Pg	12 03 53.7	+0.8
PARC				Sg	Sb	12 03 58.7	-1.2
	187nm,0.3s						
PARC	**Parchiule**	**0.29**	**145**	Pg	Pg	12 03 53.7	+0.8
PARC				Sg	Sb	12 03 58.7	-1.2
	187nm,0.3s						
VMG	**Vicchio**	**0.34**	**282**	Pg	Pg	12 03 54.7	+0.8
VMG				Sg	Sb	12 04 00.6	-0.8
	278nm,0.3s						
VMG	**Vicchio**	**0.34**	**282**	Pg	Pg	12 03 54.7	+0.8
VMG				Sg	Sb	12 04 00.6	-0.8
	278nm,0.3s						
BADI	**Badiali**	**0.42**	**156**	Pg	Pg	12 03 56.0	+0.7
BADI				Sg	Sb	12 04 02.8	-0.6
	142nm,0.3s						
BADI	**Badiali**	**0.42**	**156**	Pg	Pg	12 03 56.0	+0.7
BADI				Sg	Sb	12 04 02.8	-0.6
	142nm,0.3s						
SEI	**Scarperia**	**0.50**	**290**	Pg	Pg	12 03 57.2	+0.4
	455nm,0.2s						
SEI	**Scarperia**	**0.50**	**290**	Pg	Pg	12 03 57.2	+0.4
	455nm,0.2s						
PIEI	**Pieia**	**0.52**	**133**	Pg	Pg	12 03 57.3	+0.1
PIEI				Sg	Sb	12 04 05.6	-0.9
	39nm,0.1s						
PIEI	**Pieia**	**0.52**	**133**	Pg	Pg	12 03 57.3	+0.1
PIEI				Sg	Sb	12 04 05.6	-0.9
	39nm,0.1s						
ATPC	**Poggio Castell**	**0.52**	**141**	Pg	Pg	12 03 58.0	+0.7
ATPC				Sg	Sb	12 04 06.5	0.0
	71nm,0.3s						
ATPC	**Poggio Castell**	**0.52**	**141**	Pg	Pg	12 03 58.0	+0.7
ATPC				Sg	Sb	12 04 06.5	0.0
	71nm,0.3s						
ATVO	**AVT- Monte Val**	**0.58**	**150**	Pg	Pg	12 03 59.1	+0.7
ATVO				Sg	Sb	12 04 08.6	+0.3
	82nm,0.6s						
ATVO	**AVT- Monte Val**	**0.58**	**150**	Pg	Pg	12 03 59.1	+0.7
ATVO				Sg	Sb	12 04 08.6	+0.3
	82nm,0.6s						
FSSB	**Fossombrone**	**0.59**	**109**	Pg	Pg	12 03 59.1	+0.5
FSSB				Sg	Sb	12 04 08.9	+0.4
FSSB	**Fossombrone**	**0.59**	**109**	Pg	Pg	12 03 59.1	+0.5
FSSB				Sg	Sb	12 04 08.9	+0.4
FNVD	**Fontana Vidola**	**0.70**	**294**	Pg	Pb	12 04 01.2	-0.5
	74nm,0.6s						
FNVD	**Fontana Vidola**	**0.70**	**294**	Pg	Pb	12 04 01.2	-0.5
	74nm,0.6s						
SSFR	**Montelago di S**	**0.72**	**129**	Pg	Pg	12 04 01.6	+0.5
SSFR				Sg	Sb	12 04 12.8	+0.5
	67nm,0.2s						
SSFR	**Montelago di S**	**0.72**	**129**	Pg	Pg	12 04 01.6	+0.5
SSFR				Sg	Sb	12 04 12.8	+0.5
	67nm,0.2s						
ATTE	**AVT- Monte Tez**	**0.73**	**160**	Pg	Pg	12 04 01.5	+0.2
ATTE				Sg	Sb	12 04 12.2	-0.5
	59nm,1.1s						
ATTE	**AVT- Monte Tez**	**0.73**	**160**	Pg	Pg	12 04 01.5	+0.2
ATTE				Sg	Sb	12 04 12.2	-0.5
	59nm,1.1s						

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*CSEM **25** 12:04:22.0, 43°.88N×12°.00E, h8km, ML1.5/3*
ROM 25 12:04:22.0±0.1, 43°.88N×12°.00E, h8km, Ml1.5/3, Error ellipse: s-maj=1.8km s-min=0.6km az=29.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFI	**Santa Sofia**	**0.11**	**284**	Pg	Pg	12 04 25.0	+0.4
SFI				Sg	Sg	12 04 27.4	+0.9
	101nm,0.5s						
SFI	**Santa Sofia**	**0.11**	**284**	Pg	Pg	12 04 25.0	+0.4
SFI				Sg	Sg	12 04 27.4	+0.9
	101nm,0.5s						
ASQU	**Asqua**	**0.17**	**242**	Pg	Pg	12 04 26.2	+0.6
ASQU				Sg	Sg	12 04 29.2	+1.1
	75nm,0.3s						
ASQU	**Asqua**	**0.17**	**242**	Pg	Pg	12 04 26.2	+0.6
ASQU				Sg	Sg	12 04 29.2	+1.1
	75nm,0.3s						
PARC	**Parchiule**	**0.29**	**143**	Pg	Pb	12 04 28.8	-0.6
PARC				Sg	Sb	12 04 33.5	-0.8
	75nm,0.3s						
PARC	**Parchiule**	**0.29**	**143**	Pg	Pb	12 04 28.8	-0.6
PARC				Sg	Sb	12 04 33.5	-0.8
	75nm,0.3s						
VMG	**Vicchio**	**0.34**	**285**	Pg	Pb	12 04 29.8	-0.5
VMG				Sg	Sb	12 04 35.1	-0.7
	37nm,0.3s						
VMG	**Vicchio**	**0.34**	**285**	Pg	Pb	12 04 29.8	-0.5
VMG				Sg	Sb	12 04 35.1	-0.7
	37nm,0.3s						
SEI	**Scarperia**	**0.50**	**291**	Pg	Pg	12 04 32.0	+0.4
	36nm,0.2s						
SEI	**Scarperia**	**0.50**	**291**	Pg	Pg	12 04 32.0	+0.4
	36nm,0.2s						

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*CSEM **25** 12:04:58.3, 43°.88N×12°.00E, h8km, ML1.8/4*
ROM 25 12:04:58.3±0.1, 43°.88N×12°.00E, h8km, Ml1.8/4, Error ellipse: s-maj=1.8km s-min=0.6km az=31.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFI	**Santa Sofia**	**0.11**	**282**	Pg	Pg	12 05 01.4	+0.5
SFI				Sg	Sg	12 05 03.8	+1.0
	223nm,0.5s						
SFI	**Santa Sofia**	**0.11**	**282**	Pg	Pg	12 05 01.4	+0.5
SFI				Sg	Sg	12 05 03.8	+1.0
	223nm,0.5s						
ASQU	**Asqua**	**0.17**	**241**	Pg	Pg	12 05 02.6	+0.6
ASQU				Sg	Sg	12 05 05.7	+1.2
	151nm,0.3s						
ASQU	**Asqua**	**0.17**	**241**	Pg	Pg	12 05 02.6	+0.6
ASQU				Sg	Sg	12 05 05.7	+1.2
	151nm,0.3s						
PARC	**Parchiule**	**0.29**	**144**	Pg	Pg	12 05 04.8	+0.7
PARC				Sg	Sb	12 05 09.8	-0.9
	187nm,0.3s						
PARC	**Parchiule**	**0.29**	**144**	Pg	Pg	12 05 04.8	+0.7
PARC				Sg	Sb	12 05 09.8	-0.9
	187nm,0.3s						
VMG	**Vicchio**	**0.34**	**284**	Pg	Pg	12 05 05.8	+0.8
VMG				Sg	Sb	12 05 11.6	-0.6
	92nm,0.3s						
VMG	**Vicchio**	**0.34**	**284**	Pg	Pg	12 05 05.8	+0.8
VMG				Sg	Sb	12 05 11.6	-0.6
	92nm,0.3s						
SEI	**Scarperia**	**0.50**	**291**	Pg	Pg	12 05 08.4	+0.5
	91nm,0.2s						
SEI	**Scarperia**	**0.50**	**291**	Pg	Pg	12 05 08.4	+0.5
	91nm,0.2s						
PIEI	**Pieia**	**0.52**	**132**	Pg	Pb	12 05 09.3	-0.4
PIEI				Sg	Sb	12 05 17.0	-0.4
	39nm,0.1s						
PIEI	**Pieia**	**0.52**	**132**	Pg	Pb	12 05 09.3	-0.4
PIEI				Sg	Sb	12 05 17.0	-0.4
	39nm,0.1s						

IDC 25 12:05:17.7±2.9, 6°.92S×147°.48E, h0km, mb3.3/1, mb1 3.7/3, mb1mx3.4/33, mbtmp3.5/3, ML3.1/1, Error ellipse: s-maj=76.5km s-min=22.7km az=92.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.49**	**187**	Pn	Pb	12 06 01.6	-1.8
	2.8nm,0.3s,baz=27,slow=9.1,SNR=7.3						
PMG				Lg	Lg	12 06 35.9	
	2.6nm,0.3s,baz=80,slow=15,SNR=3.2						
WRA	**Warramunga Arr**	**18.17**	**223**	P	P	12 09 32.1	+0.1
	0.1nm,0.3s,baz=48,slow=11,SNR=3.6						
ASAR	**Alice Springs**	**21.15**	**217**	P	P	12 10 03.0	-1.6
	0.9nm,0.5s,baz=51,slow=8.9,SNR=14						
TORD	**Torodi Ar. Bea**	**145.77**	**283**	PKPbc	PKPdf	12 24 59.3	-0.1
	0.6nm,0.9s,baz=63,slow=0.6,SNR=3.3						

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*ISCJB **25** 12:07:41.7±0.3, 43°.89N±0°.02×11°.96E±0°.02, h17km±4km, Error ellipse: s-maj=4.4km s-min=2.5km az=25.9*
*ROM **25** 12:07:41.1±0.1, 43°.88N×12°.01E, h6km±1km, Ml2.8/23, Error ellipse: s-maj=2.1km s-min=1.0km az=39.0*
*CSEM **25** 12:07:41.3±0.1, 43°.90N×12°.00E, h5km, ML3.4/14, Error ellipse: s-maj=2.6km s-min=2.0km az=36.0*
*GEN **25** 12:07:42.0, 43°.98N×11°.95E, h2km, ML2.5*
*LDG **25** 12:07:43.0±0.9, 43°.75N×11°.98E, h2km, Ml3.2/5, Error ellipse: s-maj=19.6km s-min=9.1km az=86.0*
ISC 25 12:07:41.7±0.8, 43°.89N±0°.02×11°.97E±0°.02, h12km±5km, n110, σ1.07/146, 4C-4D, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFI	**Santa Sofia**	**0.09**	**282**	⇓*i*Pg	**Pg**	**12 07 44.3**	**-0.2**
SFI				Sg	**Sg**	**12 07 46.6**	**0.0**
	3μm,0.3s						
SFI	**Santa Sofia**	**0.09**	**282**	⇓*i*Pg	**Pg**	**12 07 44.3**	**-0.2**
SFI				Sg	**Sg**	**12 07 46.6**	**0.0**
	3μm,0.3s						
ASQU	**Asqua**	**0.16**	**237**	⇓*i*Pg	**Pg**	**12 07 45.5**	**0.0**
ASQU				Sg	**Sg**	**12 07 48.6**	**+0.5**
	6μm,0.3s						
ASQU	**Asqua**	**0.16**	**237**	⇓*i*Pg	**Pg**	**12 07 45.5**	**0.0**
ASQU				Sg	**Sg**	**12 07 48.6**	**+0.5**
	6μm,0.3s						
PARC	**Parchiule**	**0.30**	**141**	Pg	**Pg**	**12 07 47.6**	**-0.3**
PARC				Sg	**Sg**	**12 07 52.6**	**+0.5**
	2μm,0.3s						
PARC	**Parchiule**	**0.30**	**141**	Pg	**Pg**	**12 07 47.6**	**-0.3**
PARC				Sg	**Sg**	**12 07 52.6**	**+0.5**
	2μm,0.3s						
VMG	**Vicchio**	**0.32**	**284**	⇑*i*Pg	**Pg**	**12 07 48.5**	**+0.3**
	316nm,0.3s						
VMG	**Vicchio**	**0.32**	**284**	⇑*i*Pg	**Pg**	**12 07 48.5**	**+0.3**
	316nm,0.3s						
BADI	**Badiali**	**0.42**	**152**	Pg	**Pg**	**12 07 49.5**	**-0.6**
BADI				Sg	**Sg**	**12 07 56.8**	**+1.1**
	1μm,0.2s						
BADI	**Badiali**	**0.42**	**152**	Pg	**Pg**	**12 07 49.5**	**-0.6**
BADI				Sg	**Sg**	**12 07 56.8**	**+1.1**
	1μm,0.2s						
SEI	**Scarperia**	**0.48**	**291**	⇑*i*Pg	**Pg**	**12 07 51.0**	**-0.1**
SEI				Sg	**Sb**	**12 07 59.3**	**+0.2**
	1μm,0.2s						
SEI	**Scarperia**	**0.48**	**291**	⇑*i*Pg	**Pg**	**12 07 51.0**	**-0.1**
SEI				Sg	**Sb**	**12 07 59.3**	**+0.2**
	1μm,0.2s						
IMOL	**Imola, Italy**	**0.50**	**341**	Pg	**Pb**	**12 07 52.7**	**+0.2**
	157nm,0.4s						
IMOL	**Imola, Italy**	**0.50**	**341**	Pg	**Pb**	**12 07 52.7**	**+0.2**
	157nm,0.4s						
ATPC	**Poggio Castell**	**0.54**	**139**	Pg	**Pg**	**12 07 51.7**	**-0.5**
ATPC				Sg	**Sg**	**12 08 00.3**	**+1.0**
	522nm,0.3s						
ATPC	**Poggio Castell**	**0.54**	**139**	Pg	**Pg**	**12 07 51.7**	**-0.5**
ATPC				Sg	**Sg**	**12 08 00.3**	**+1.0**
	522nm,0.3s						
PIEI	**Pieia**	**0.54**	**130**	Pg	**Pg**	**12 07 51.2**	**-1.0**
PIEI				Sg	**Sg**	**12 08 00.0**	**+0.7**
	231nm,0.4s						
PIEI	**Pieia**	**0.54**	**130**	Pg	**Pg**	**12 07 51.2**	**-1.0**
PIEI				Sg	**Sg**	**12 08 00.0**	**+0.7**
	231nm,0.4s						
ATVO	**AVT- Monte Val**	**0.59**	**148**	Pg	**Pg**	**12 07 52.8**	**-0.5**
ATVO				Sg	**Sg**	**12 08 02.4**	**+1.3**
	618nm,0.5s						
ATVO	**AVT- Monte Val**	**0.59**	**148**	Pg	**Pg**	**12 07 52.8**	**-0.5**
ATVO				Sg	**Sg**	**12 08 02.4**	**+1.3**
	618nm,0.5s						
MTRZ	**Monterenzio**	**0.61**	**324**	Pg	**Pg**	**12 07 54.2**	**+0.5**
	2μm,0.7s						
MTRZ	**Monterenzio**	**0.61**	**324**	Pg	**Pg**	**12 07 54.2**	**+0.5**
	2μm,0.7s						
FSSB	**Fossombrone**	**0.61**	**108**	Pg	**Pg**	**12 07 52.8**	**-0.9**
FSSB				Sg	**Sg**	**12 08 02.6**	**+0.8**
	751nm,0.3s						
FSSB	**Fossombrone**	**0.61**	**108**	Pg	**Pg**	**12 07 52.8**	**-0.9**
FSSB				Sg	**Sg**	**12 08 02.6**	**+0.8**
	751nm,0.3s						
PESA	**Pesaro**	**0.63**	**85**	Pg	**Pg**	**12 07 53.9**	**-0.1**
	370nm,0.3s						
PESA	**Pesaro**	**0.63**	**85**	Pg	**Pg**	**12 07 53.9**	**-0.1**
	370nm,0.3s						
FNVD	**Fontana Vidola**	**0.68**	**295**	Pg	**Pg**	**12 07 54.8**	**-0.1**
	485nm,0.7s						
FNVD	**Fontana Vidola**	**0.68**	**295**	Pg	**Pg**	**12 07 54.8**	**-0.1**
	485nm,0.7s						
SSFR	**Montelago di S**	**0.74**	**127**	Pg	**Pg**	**12 07 55.0**	**-1.0**
	402nm,0.2s						
SSFR	**Montelago di S**	**0.74**	**127**	Pg	**Pg**	**12 07 55.0**	**-1.0**
	402nm,0.2s						
MURB	**Monte Urbino**	**0.74**	**147**	Pg	**Pg**	**12 07 55.4**	**-0.7**
	697nm,0.3s						
MURB	**Monte Urbino**	**0.74**	**147**	Pg	**Pg**	**12 07 55.4**	**-0.7**
	697nm,0.3s						
ATTE	**AVT- Monte Tez**	**0.74**	**158**	Pg	**Pg**	**12 07 55.4**	**-0.7**
	308nm,0.9s						
**

	95nm,0.2s						
FROS	**Frosini**	**0.90**	**222**	Pg	**Pg**	**12 07 59.2**	**+0.1**
	395nm,0.6s						
FROS	**Frosini**	**0.90**	**222**	Pg	**Pg**	**12 07 59.2**	**+0.1**
	395nm,0.6s						
MGAB	**Montegabbione**	**0.98**	**174**	Pg	**Pg**	**12 08 00.1**	**-0.5**
	271nm,0.5s						
MGAB	**Montegabbione**	**0.98**	**174**	Pg	**Pg**	**12 08 00.1**	**-0.5**
	271nm,0.5s						
BDI	**Bagni Di Lucca**	**1.01**	**281**	Pg	**Pg**	**12 08 01.1**	**-0.1**
	143nm,0.8s						
BDI	**Bagni Di Lucca**	**1.01**	**281**	Pg	**Pg**	**12 08 01.1**	**-0.1**
	143nm,0.8s						
CING	**Cingoli**	**1.02**	**119**	Pg	**Pg**	**12 08 00.7**	**-0.7**
	188nm,0.6s						
CING	**Cingoli**	**1.02**	**119**	Pg	**Pg**	**12 08 00.7**	**-0.7**
	188nm,0.6s						
SACS	**San Casciano d**	**1.04**	**183**	Pg	**Pg**	**12 08 01.2**	**-0.5**
	213nm,0.8s						
MAIM	**Mastiano**	**1.07**	**272**	Pg	**Pg**	**12 08 01.6**	**-0.8**
	107nm,0.6s						
MAIM	**Mastiano**	**1.07**	**272**	P	**Pg**	**12 08 01.6**	**-0.8**
MAIM				S	**Sg**	**12 08 15.1**	**-1.2**
ARCI	**Arcidosso**	**1.09**	**200**	Pg	**Pg**	**12 08 02.1**	**-0.7**
	209nm,0.9s						
ARCI	**Arcidosso**	**1.09**	**200**	Pg	**Pg**	**12 08 02.1**	**-0.7**
	209nm,0.9s						
TRIF	**Trifonti**	**1.09**	**226**	Pg	**Pg**	**12 08 02.5**	**-0.3**
TRIF	**Trifonti**	**1.09**	**226**	Pg	**Pg**	**12 08 02.5**	**-0.3**
SARO	**Sassorosso**	**1.17**	**285**	P	**Pg**	**12 08 03.1**	**-1.2**
SARO				S	**Sg**	**12 08 17.4**	**-2.2**
TEOL	**Teolo**	**1.49**	**352**	*e*Pn	**Pn**	**12 08 08.5**	**+0.1**
TEOL	**Teolo**	**1.49**	**352**	*e*Pn	**Pn**	**12 08 08.5**	**+0.1**
CGRP	**Cima Grappa**	**2.00**	**357**	*e*Pn	**Pn**	**12 08 15.8**	**+0.3**
CGRP				*e*Sn	**Sn**	**12 08 40.9**	**+0.3**
CGRP	**Cima Grappa**	**2.00**	**357**	*e*Pn	**Pn**	**12 08 15.8**	**+0.3**
CGRP				*e*Sn	**Sn**	**12 08 40.9**	**+0.3**
VARN	**Col Varnada, M**	**2.11**	**2**	*e*Pn	**Pn**	**12 08 17.0**	**+0.1**
VARN	**Col Varnada, M**	**2.11**	**2**	*e*Pn	**Pn**	**12 08 17.1**	**+0.1**
NVLJ	**Novalja**	**2.19**	**71**	*e*Pn	**Pn**	**12 08 18.2**	**+0.3**
NVLJ				Sn	**Sn**	**12 08 45.8**	**+0.8**
NVLJ	**Novalja**	**2.19**	**71**	*e*Pn	**Pn**	**12 08 18.2**	**+0.3**
NVLJ				Sn	**Sn**	**12 08 45.8**	**+0.8**
PANI	**Panarotta**	**2.21**	**348**	*e*Pn	**Pn**	**12 08 18.1**	**-0.4**
PANI	**Panarotta**	**2.21**	**348**	*e*Pn	**Pn**	**12 08 18.1**	**-0.4**
CIMO	**Cimolais**	**2.45**	**8**	*e*Pn	**Pn**	**12 08 21.2**	**-0.3**
CIMO	**Cimolais**	**2.45**	**8**	*e*Pn	**Pn**	**12 08 21.2**	**-0.3**
JAVS	**Javornik**	**2.50**	**36**	*i* Pn	**Pn**	**12 08 21.9**	**-0.4**
JAVS				*i* Sn	**Sn**	**12 08 53.3**	**+0.5**
JAVS	**Javornik**	**2.50**	**36**	*i* Pn	**Pn**	**12 08 21.9**	**-0.4**
JAVS				*i* Sn	**Sn**	**12 08 53.3**	**+0.5**
VINO	**Villanova**	**2.55**	**21**	*e*Pn	**Pn**	**12 08 22.6**	**-0.3**
VINO	**Villanova**	**2.55**	**21**	*e*Pn	**Pn**	**12 08 22.6**	**-0.3**
PGF	**Pioggiola**	**2.55**	**239**	*e*Pn	**Pn**	**12 08 22.7**	**-0.3**
PGF	**Pioggiola**	**2.55**	**239**	*e*Pn	**Pn**	**12 08 22.7**	**-0.3**
CADS	**Cadrg**	**2.66**	**27**	*e*Pn	**Pn**	**12 08 24.1**	**-0.3**
CADS	**Cadrg**	**2.66**	**27**	*e*Pn	**Pn**	**12 08 24.1**	**-0.3**
CARE	**Lago del Cares**	**2.70**	**341**	*e*Pn	**Pn**	**12 08 25.3**	**+0.1**
CARE	**Lago del Cares**	**2.70**	**341**	*e*Pn	**Pn**	**12 08 25.3**	**+0.1**
VISS	**Visnje**	**2.80**	**46**	*i* Pn	**Pn**	**12 08 26.4**	**+0.1**
VISS				*i* Sn	**Sn**	**12 09 01.5**	**+1.5**
VISS	**Visnje**	**2.80**	**46**	*i* Pn	**Pn**	**12 08 26.5**	**+0.1**
VISS				*i* Sn	**Sn**	**12 09 01.5**	**+1.5**
UDBI	**Udbina**	**2.80**	**75**	*e*Pn	**Pn**	**12 08 27.3**	**+0.9**
UDBI				Sn	**Sn**	**12 09 01.4**	**+1.2**
UDBI	**Udbina**	**2.80**	**75**	*e*Pn	**Pn**	**12 08 27.3**	**+0.9**
UDBI				Sn	**Sn**	**12 09 01.4**	**+1.2**
ACOM	**Acomizza, Ital**	**2.88**	**22**	*e*Pn	**Pn**	**12 08 27.5**	**-0.1**
ACOM	**Acomizza, Ital**	**2.88**	**22**	*e*Pn	**Pn**	**12 08 27.5**	**-0.1**
FETA	**Feichten**	**3.26**	**345**	*i* Pn	**Pb**	**12 08 38.8**	**-0.8**
SBF	**Sospel**	**3.28**	**271**	*e*Pn	**Pn**	**12 08 32.8**	**-0.2**
SBF	**Sospel**	**3.28**	**271**	*e*Pn	**Pn**	**12 08 32.8**	**-0.2**
KBA	**Koelnbreinsper**	**3.34**	**16**	*i* Pn	**Pn**	**12 08 32.5**	**-1.4**
	5.1nm,0.4s						
KBA	**Koelnbreinsper**	**3.34**	**16**	Pn	**Pn**	**12 08 32.5**	**-1.4**
	5.1nm,0.4s						
DAVA	**Damuels**	**3.71**	**337**	*i* Pn	**Pb**	**12 08 44.1**	**-3.1**
	10nm,0.6s						
DAVA				*i* Sn	**Sn**	**12 09 27.2**	**+4.6**
	17nm,0.8s						
DAVA	**Damuels**	**3.71**	**337**	Pn	**Pb**	**12 08 44.1**	**-3.1**
	10nm,0.6s						
DAVA				Sn	**Sn**	**12 09 27.2**	**+4.6**
	17nm,0.8s						
FRF	**La Foret Royal**	**3.88**	**267**	*e*Pn	**Pn**	**12 08 41.3**	**+0.2**
FRF	**La Foret Royal**	**3.88**	**267**	*e*Pn	**Pn**	**12 08 41.3**	**+0.2**
LMR	**La Mourre**	**4.01**	**264**	*e*Pn	**Pn**	**12 08 42.6**	**-0.3**
LMR	**La Mourre**	**4.01**	**264**	*e*Pn	**Pn**	**12 08 42.6**	**-0.3**
ORIF	**Oris-en-Rattie**	**4.49**	**285**	*e*Pn	**Pn**	**12 08 51.7**	**+2.1**
ORIF	**Oris-en-Rattie**	**4.49**	**285**	*e*Pn	**Pn**	**12 08 51.7**	**+2.1**
SMRF	**Simiane la Rot**	**4.62**	**273**	*e*Pn	**Pn**	**12 08 52.5**	**+1.0**
SMRF	**Simiane la Rot**	**4.62**	**273**	*e*Pn	**Pn**	**12 08 52.5**	**+1.0**
CABF	**La Chapelle**	**4.97**	**305**	*e*Pn	**Pn**	**12 08 58.4**	**+2.1**
CABF	**La Chapelle**	**4.97**	**305**	*e*Pn	**Pn**	**12 08 58.4**	**+2.1**
HINF	**Hinteralfeld**	**5.32**	**320**	*e*Sn	**Sn**	**12 10 03.4**	**+1.3**
	7.1nm,0.4s						
HINF	**Hinteralfeld**	**5.32**	**320**	*e*Sn	**Sn**	**12 10 03.4**	**+1.3**
	3.5nm,0.4s						
KHC	**Kasperske Hory**	**5.36**	**11**	*e*SN	**Sn**	**12 10 02.3**	**-1.0**
CDF	**Champ du Feu**	**5.58**	**326**	*e*Pn	**Pn**	**12 09 06.1**	**+1.5**
CDF				*e*Sn	**Sn**	**12 10 07.2**	**-1.5**
	4.6nm,0.3s						
CDF	**Champ du Feu**	**5.58**	**326**	*e*Pn	**Pn**	**12 09 06.1**	**+1.5**
CDF				*e*Sn	**Sn**	**12 10 07.2**	**-1.5**
	2.3nm,0.3s						
HAU	**Haudompre**	**5.69**	**318**	*e*Sn	**Sn**	**12 10 11.7**	**+0.4**
	14nm,0.4s						
HAU	**Haudompre**	**5.69**	**318**	*e*Sn	**Sn**	**12 10 11.7**	**+0.4**
	6.8nm,0.4s						
PAGF	**Fort de Pagny**	**6.37**	**319**	*e*Sn	**Sn**	**12 10 26.7**	**-1.4**
	1.9nm,0.4s						
PAGF	**Fort de Pagny**	**6.37**	**319**	*e*Sn	**Sn**	**12 10 26.7**	**-1.4**
	0.9nm,0.4s						
LOR	**Lormes**	**6.62**	**304**	*e*Pn	**Pn**	**12 09 21.0**	**+2.1**
	baz=108						
LOR				*e*Sn	**Sn**	**12 10 34.9**	**+0.6**
	4.6nm,0.4s						
LOR	**Lormes**	**6.62**	**304**	*e*Pn	**Pn**	**12 09 21.0**	**+2.1**
LOR				*e*Sn	**Sn**	**12 10 34.9**	**+0.6**
	2.3nm,0.4s						
MTLF	**Montolieu**	**7.10**	**269**	*e*Pn	**Pn**	**12 09 25.7**	**+0.2**
MTLF	**Montolieu**	**7.10**	**269**	*e*Pn	**Pn**	**12 09 25.7**	**+0.2**

*ROM **25** 12:08:29.9±0.1, 43°.89N×12°.01E, h7km±1km, Md1.6/4, Ml1.7/2, Error ellipse: s-maj=2.1km s-min=0.7km az=30.0*
CSEM 25 12:08:29.9, 43°.89N×12°.01E, h7km, MD1.6/4, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFI	**Santa Sofia**	**0.12**	**279**	Pg	Pg	12 08 32.9	+0.4
SFI				Sg	Sg	12 08 35.1	+0.8
	179nm,0.1s						
SFI	**Santa Sofia**	**0.12**	**279**	Pg	Pg	12 08 32.9	+0.4
SFI				Sg	Sg	12 08 35.1	+0.8
	179nm,0.1s						
ASQU	**Asqua**	**0.18**	**241**	Pg	Pg	12 08 34.1	+0.5
ASQU				Sg	Sg	12 08 37.3	+1.2
	199nm,0.2s						
ASQU	**Asqua**	**0.18**	**241**	Pg	Pg	12 08 34.1	+0.5
ASQU				Sg	Sg	12 08 37.3	+1.2
	199nm,0.2s						
PARC	**Parchiule**	**0.29**	**145**	Pg	Pg	12 08 36.3	+0.7
PARC				Sg	Sb	12 08 41.5	-1.0
	305nm,0.3s						
PARC	**Parchiule**	**0.29**	**145**	Pg	Pg	12 08 36.3	+0.7
PARC				Sg	Sb	12 08 41.5	-1.0
	305nm,0.3s						
SEI	**Scarperia**	**0.50**	**290**	Pg	Pb	12 08 40.5	-0.6
SEI				Sg	Sb	12 08 47.9	-0.7
SEI	**Scarperia**	**0.50**	**290**	Pg	Pb	12 08 40.5	-0.6
SEI				Sg	Sb	12 08 47.9	-0.7

*CSEM **25** 12:09:55.1, 43°.90N×12°.01E, h7km, MD1.9/7*
ROM 25 12:09:55.1±0.2, 43°.90N×12°.01E, h7km±1km, Md1.9/7, Ml1.7/1, Error ellipse: s-maj=2.6km s-min=0.9km az=35.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFI	**Santa Sofia**	**0.12**	**274**	Pg	Pg	12 09 58.4	+0.7
SFI				Sg	Sg	12 10 00.6	+1.0
	197nm,0.1s						
SFI	**Santa Sofia**	**0.12**	**274**	Pg	Pg	12 09 58.4	+0.7
SFI				Sg	Sg	12 10 00.6	+1.0
	197nm,0.1s						
ASQU	**Asqua**	**0.19**	**238**	Pg	Pg	12 09 59.6	+0.7
ASQU				Sg	Sg	12 10 02.7	+1.1
ASQU	**Asqua**	**0.19**	**238**	Pg	Pg	12 09 59.6	+0.7
ASQU				Sg	Sg	12 10 02.7	+1.1
PARC	**Parchiule**	**0.30**	**146**	Pg	Pg	12 10 01.7	+0.8
PARC				Sg	Sb	12 10 06.9	-1.0
PARC	**Parchiule**	**0.30**	**146**	Pg	Pg	12 10 01.7	+0.8
PARC				Sg	Sb	12 10 06.9	-1.0
BADI	**Badiali**	**0.42**	**156**	Pg	Pb	12 10 04.1	-0.8
BADI				Sg	Sb	12 10 10.8	-0.6
BADI	**Badiali**	**0.42**	**156**	Pg	Pb	12 10 04.1	-0.8
BADI				Sg	Sb	12 10 10.8	-0.6
SEI	**Scarperia**	**0.50**	**289**	Pg	Pg	12 10 05.2	+0.4
SEI				Sg	Sb	12 10 13.3	-0.4
SEI	**Scarperia**	**0.50**	**289**	Pg	Pg	12 10 05.2	+0.4
SEI				Sg	Sb	12 10 13.3	-0.4
ATPC	**Poggio Castell**	**0.53**	**142**	Pg	Pb	12 10 06.2	-0.5
ATPC				Sg	Sb	12 10 14.4	-0.1
ATPC	**Poggio Castell**	**0.53**	**142**	Pg	Pb	12 10 06.2	-0.5
ATPC				Sg	Sb	12 10 14.4	-0.1
ATVO	**AVT- Monte Val**	**0.59**	**151**	Pg	Pg	12 10 06.8	+0.4
ATVO				Sg	Sb	12 10 16.5	+0.2
ATVO	**AVT- Monte Val**	**0.59**	**151**	Pg	Pg	12 10 06.8	+0.4
ATVO				Sg	Sb	12 10 16.5	+0.2

*CSEM **25** 12:10:42.4, 43°.89N×12°.02E, h7km, ML2.1/7*
ROM 25 12:10:42.4±0.2, 43°.89N×12°.02E, h7km±1km, Ml2.1/7, Error ellipse: s-maj=3.1km s-min=1.1km az=36.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFI	**Santa Sofia**	**0.12**	**275**	Pg	Pg	12 10 45.7	+0.6
SFI				Sg	Sg	12 10 47.9	+1.0
	359nm,0.1s						
SFI	**Santa Sofia**	**0.12**	**275**	Pg	Pg	12 10 45.7	+0.6
SFI				Sg	Sg	12 10 47.9	+1.0
	359nm,0.1s						
ASQU	**Asqua**	**0.19**	**240**	Pg	Pg	12 10 47.0	+0.7
ASQU				Sg	Sg	12 10 50.0	+1.1
	1μm,0.2s						
ASQU	**Asqua**	**0.19**	**240**	Pg	Pg	12 10 47.0	+0.7
ASQU				Sg	Sg	12 10 50.0	+1.1
	1μm,0.2s						
PARC	**Parchiule**	**0.29**	**147**	Pg	Pg	12 10 49.0	+0.9
PARC				Sg	Sb	12 10 54.1	-1.0
	218nm,0.2s						
PARC	**Parchiule**	**0.29**	**147**	Pg	Pg	12 10 49.0	+0.9
PARC				Sg	Sb	12 10 54.1	-1.0
	218nm,0.2s						
VMG	**Vicchio**	**0.35**	**281**	Pg	Pg	12 10 50.1	+0.9
VMG	**Vicchio**	**0.35**	**281**	Pg	Pg	12 10 50.1	+0.9
BADI	**Badiali**	**0.42**	**157**	Pg	Pg	12 10 51.1	+0.6
BADI				Sg	Sb	12 10 58.1	-0.6
	176nm,0.2s						
BADI	**Badiali**	**0.42**	**157**	Pg	Pg	12 10 51.1	+0.6
BADI				Sg	Sb	12 10 58.1	-0.6
	176nm,0.2s						
SEI	**Scarperia**	**0.51**	**289**	Pg	Pg	12 10 52.7	+0.5
SEI				Sg	Sb	12 11 01.6	+0.3
	307nm,0.4s						
SEI	**Scarperia**	**0.51**	**289**	Pg	Pg	12 10 52.7	+0.5
SEI				Sg	Sb	12 11 01.6	+0.3
	307nm,0.4s						
ATPC	**Poggio Castell**	**0.52**	**142**	Pg	Pb	12 10 53.3	-0.6
ATPC				Sg	Sb	12 11 01.9	+0.2
	70nm,0.2s						
ATPC	**Poggio Castell**	**0.52**	**142**	Pg	Pb	12 10 53.3	-0.6
ATPC				Sg	Sb	12 11 01.9	+0.2
	70nm,0.2s						
ATVO	**AVT- Monte Val**	**0.58**	**151**	Pg	Pg	12 10 54.2	+0.6
	67nm,0.4s						
ATVO	**AVT- Monte Val**	**0.58**	**151**	Pg	Pg	12 10 54.2	+0.6
	67nm,0.4s						
SSFR	**Montelago di S**	**0.72**	**129**	Pg	Pg	12 10 56.7	+0.5
	68nm,0.2s						
SSFR	**Montelago di S**	**0.72**	**129**	Pg	Pg	12 10 56.7	+0.5
	68nm,0.2s						

*CSEM **25** 12:11:32.2, 43°.89N×12°.01E, h8km, ML1.8/6*
ROM 25 12:11:32.2±0.1, 43°.89N×12°.01E, h8km±1km, Ml1.8/6, Error ellipse: s-maj=1.8km s-min=0.6km az=32.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFI	**Santa Sofia**	**0.12**	**277**	Pg	Pg	12 11 35.5	+0.6
SFI				Sg	Sg	12 11 37.6	+0.8
	237nm,0.2s						
SFI	**Santa Sofia**	**0.12**	**277**	Pg	Pg	12 11 35.5	+0.6
SFI				Sg	Sg	12 11 37.6	+0.8
	237nm,0.2s						
ASQU	**Asqua**	**0.19**	**240**	Pg	Pg	12 11 36.7	+0.7
ASQU				Sg	Sg	12 11 39.8	+1.1
	188nm,0.3s						
ASQU	**Asqua**	**0.19**	**240**	Pg	Pg	12 11 36.7	+0.7
ASQU				Sg	Sg	12 11 39.8	+1.1
	188nm,0.3s						
PARC	**Parchiule**	**0.29**	**146**	Pg	Pg	12 11 38.8	+0.8
PARC				Sg	Sb	12 11 44.2	-0.6
PARC	**Parchiule**	**0.29**	**146**	Pg	Pg	12 11 38.8	+0.8
PARC				Sg	Sb	12 11 44.2	-0.6
VMG	**Vicchio**	**0.35**	**282**	Pg	Pb	12 11 40.1	-0.6
VMG				Sg	Sb	12 11 45.5	-0.8
	78nm,0.4s						
VMG	**Vicchio**	**0.35**	**282**	Pg	Pb	12 11 40.1	-0.6
VMG				Sg	Sb	12 11 45.5	-0.8
	78nm,0.4s						
BADI	**Badiali**	**0.42**	**156**	Pg	Pg	12 11 41.0	+0.7
BADI				Sg	Sb	12 11 48.0	-0.3
	90nm,0.2s						
BADI	**Badiali**	**0.42**	**156**	Pg	Pg	12 11 41.0	+0.7
BADI				Sg	Sb	12 11 48.0	-0.3
	90nm,0.2s						
SEI	**Scarperia**	**0.50**	**289**	Pg	Pg	12 11 42.6	+0.7
SEI				Sg	Sb	12 11 50.5	-0.3
	36nm,0.2s						
SEI	**Scarperia**	**0.50**	**289**	Pg	Pg	12 11 42.6	+0.7
SEI				Sg	Sb	12 11 50.5	-0.3
	36nm,0.2s						
PIEI	**Pieia**	**0.52**	**133**	Pg	Pg	12 11 42.8	+0.6
PIEI				Sg	Sb	12 11 50.9	-0.4
	52nm,0.2s						
PIEI	**Pieia**	**0.52**	**133**	Pg	Pg	12 11 42.8	+0.6
PIEI				Sg	Sb	12 11 50.9	-0.4
	52nm,0.2s						
CAFI	**Castiglion Fio**	**0.56**	**183**	Pg	Pg	12 11 43.6	+0.5
	52nm,0.5s						
CAFI	**Castiglion Fio**	**0.56**	**183**	Pg	Pg	12 11 43.6	+0.5
	52nm,0.5s						
ATVO	**AVT- Monte Val**	**0.58**	**151**	Pg	Pb	12 11 44.2	-0.5
	48nm,0.5s						
ATVO	**AVT- Monte Val**	**0.58**	**151**	Pg	Pb	12 11 44.2	-0.5
	48nm,0.5s						

*CSEM **25** 12:12:11.7, 43°.89N×12°.00E, h8km, ML1.8/4*
ROM 25 12:12:11.7±0.1, 43°.89N×12°.00E, h8km, Ml1.8/4, Error ellipse: s-maj=2.2km s-min=0.7km az=33.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFI	**Santa Sofia**	**0.11**	**280**	Pg	Pg	12 12 14.8	+0.5
SFI				Sg	Sg	12 12 16.9	+0.8
	237nm,0.2s						
SFI	**Santa Sofia**	**0.11**	**280**	Pg	Pg	12 12 14.8	+0.5
SFI				Sg	Sg	12 12 16.9	+0.8
	237nm,0.2s						
ASQU	**Asqua**	**0.18**	**240**	Pg	Pg	12 12 16.0	+0.6
ASQU				Sg	Sg	12 12 19.0	+1.1
	188nm,0.3s						
ASQU	**Asqua**	**0.18**	**240**	Pg	Pg	12 12 16.0	+0.6
ASQU				Sg	Sg	12 12 19.0	+1.1
	188nm,0.3s						
PARC	**Parchiule**	**0.29**	**144**	Pg	Pg	12 12 18.1	+0.6
PARC				Sg	Sb	12 12 23.5	-0.8
PARC	**Parchiule**	**0.29**	**144**	Pg	Pg	12 12 18.1	+0.6
PARC				Sg	Sb	12 12 23.5	-0.8
VMG	**Vicchio**	**0.34**	**283**	Pg	Pg	12 12 19.1	+0.7
VMG				Sg	Sb	12 12 24.9	-0.6
	78nm,0.4s						
VMG	**Vicchio**	**0.34**	**283**	Pg	Pg	12 12 19.1	+0.7
VMG				Sg	Sb	12 12 24.9	-0.6
	78nm,0.4s						
BADI	**Badiali**	**0.42**	**155**	Pg	Pg	12 12 20.4	+0.6
BADI				Sg	Sb	12 12 27.2	-0.6
	90nm,0.2s						
BADI	**Badiali**	**0.42**	**155**	Pg	Pg	12 12 20.4	+0.6
BADI				Sg	Sb	12 12 27.2	-0.6
	90nm,0.2s						
SEI	**Scarperia**	**0.49**	**290**	Pg	Pg	12 12 21.8	+0.5
	36nm,0.2s						
SEI	**Scarperia**	**0.49**	**290**	Pg	Pg	12 12 21.8	+0.5
	36nm,0.2s						
PIEI	**Pieia**	**0.52**	**132**	Pg	Pb	12 12 22.8	-0.3
PIEI				Sg	Sb	12 12 30.5	-0.4
	52nm,0.2s						
PIEI	**Pieia**	**0.52**	**132**	Pg	Pb	12 12 22.8	-0.3
PIEI				Sg	Sb	12 12 30.5	-0.4
	52nm,0.2s						

*CSEM **25** 12:12:54.1±0.2, 43°.90N×12°.01E, h10km, ML2.9/9, Error ellipse: s-maj=4.0km s-min=2.1km az=27.0*
ROM 25 12:12:53.5±0.1, 43°.89N×12°.02E, h7km±1km, Ml2.3/10, Error ellipse: s-maj=2.3km s-min=1.0km az=34.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFI	**Santa Sofia**	**0.12**	**276**	Pg	Pg	12 12 56.8	+0.7
SFI				Sg	Sg	12 12 58.9	+1.0
	784nm,0.2s						
SFI	**Santa Sofia**	**0.12**	**276**	Pg	Pg	12 12 56.8	+0.7
SFI				Sg	Sg	12 12 58.9	+1.0
	784nm,0.2s						
ASQU	**Asqua**	**0.19**	**240**	Pg	Pg	12 12 57.9	+0.6
ASQU				Sg	Sg	12 13 01.0	+1.1
	1μm,0.3s						
ASQU	**Asqua**	**0.19**	**240**	Pg	Pg	12 12 57.9	+0.6
ASQU				Sg	Sg	12 13 01.0	+1.1
	1μm,0.3s						
PARC	**Parchiule**	**0.29**	**146**	Pg	Pg	12 13 00.1	+0.9
PARC				Sg	Sb	12 13 05.5	-0.7
PARC	**Parchiule**	**0.29**	**146**	Pg	Pg	12 13 00.1	+0.9
PARC				Sg	Sb	12 13 05.5	-0.7
VMG	**Vicchio**	**0.35**	**282**	Pg	Pb	12 13 01.3	-0.8
VMG				Sg	Sb	12 13 06.9	-0.9
	352nm,0.4s						
VMG	**Vicchio**	**0.35**	**282**	Pg	Pb	12 13 01.3	-0.8
VMG				Sg	Sb	12 13 06.9	-0.9
	352nm,0.4s						
BADI	**Badiali**	**0.42**	**156**	Pg	Pg	12 13 02.2	+0.6
BADI				Sg	Sb	12 13 09.2	-0.5
	380nm,0.2s						
BADI	**Badiali**	**0.42**	**156**	Pg	Pg	12 13 02.2	+0.6
BADI				Sg	Sb	12 13 09.2	-0.5
	380nm,0.2s						
SEI	**Scarperia**	**0.50**	**289**	Pg	Pg	12 13 03.6	+0.4
SEI				Sg	Sb	12 13 12.6	+0.3
	275nm,0.2s						
SEI	**Scarperia**	**0.50**	**289**	Pg	Pg	12 13 03.6	+0.4
SEI				Sg	Sb	12 13 12.6	+0.3
	275nm,0.2s						
PIEI	**Pieia**	**0.52**	**133**	Pg	Pg	12 13 04.0	+0.5
PIEI				Sg	Sb	12 13 12.5	-0.2
	70nm,0.2s						
PIEI	**Pieia**	**0.52**	**133**	Pg	Pg	12 13 04.0	+0.5
PIEI				Sg	Sb	12 13 12.5	-0.2
	70nm,0.2s						
ATPC	**Poggio Castell**	**0.52**	**142**	Pg	Pg	12 13 04.1	+0.6
ATPC				Sg	Sb	12 13 13.1	+0.3
	174nm,0.5s						
ATPC	**Poggio Castell**	**0.52**	**142**	Pg	Pg	12 13 04.1	+0.6
ATPC				Sg	Sb	12 13 13.1	+0.3
	174nm,0.5s						
CAFI	**Castiglion Fio**	**0.56**	**184**	Pg	Pg	12 13 04.9	+0.6
CAFI				Sg	Sb	12 13 13.5	-0.5
	94nm,0.5s						
CAFI	**Castiglion Fio**	**0.56**	**184**	Pg	Pg	12 13 04.9	+0.6
CAFI				Sg	Sb	12 13 13.5	-0.5
	94nm,0.5s						
ATVO	**AVT- Monte Val**	**0.58**	**151**	Pg	Pb	12 13 05.4	-0.7
ATVO				Sg	Sb	12 13 14.2	-0.4
	152nm,0.5s						
ATVO	**AVT- Monte Val**	**0.58**	**151**	Pg	Pb	12 13 05.4	-0.7
ATVO				Sg	Sb	12 13 14.2	-0.4
	152nm,0.5s						
FSSB	**Fossombrone**	**0.59**	**110**	Pg	Pb	12 13 05.7	-0.4
FSSB	**Fossombrone**	**0.59**	**110**	Pg	Pb	12 13 05.7	-0.4
MURB	**Monte Urbino**	**0.73**	**149**	Pg	Pg	12 13 07.8	+0.3
	168nm,0.3s						
MURB	**Monte Urbino**	**0.73**	**149**	Pg	Pg	12 13 07.8	+0.3
	168nm,0.3s						
ATTE	**AVT- Monte Tez**	**0.73**	**160**	Pg	Pb	12 13 08.3	-0.4
	74nm,0.7s						
ATTE	**AVT- Monte Tez**	**0.73**	**160**	Pg	Pb	12 13 08.3	-0.4
	74nm,0.7s						
FROS	**Frosini**	**0.92**	**223**	Pg	Pb	12 13 12.0	+0.1
	70nm,0.6s						
FROS	**Frosini**	**0.92**	**223**	Pg	Pb	12 13 12.0	+0.1
	70nm,0.6s						
NVLJ	**Novalja**	**2.16**	**71**	*e*Pn	Pn	12 13 30.4

DEMI	Demirci	0.30	255	*i* P	Pg	12 15 46.6	+0.4
GDZ	Gediz	0.31	95	P	Pg	12 15 46.1	-0.2
GDZ	Gediz	0.31	95	*i* P	Pg	12 15 46.1	-0.2
TVSB	Tavsanli	0.44	41	*e*PG	Pg	12 15 48.7	-0.1
TVSB				*e*SG	Sg	12 15 54.5	-0.1
TVSB	Tavsanli	0.44	41	*e*Pg	Pg	12 15 48.7	-0.1
TVSB				*e*Sg	Sg	12 15 54.5	-0.1
DST	Dursunbey	0.61	323	*e*PG	Pg	12 15 52.1	+0.1
DST	Dursunbey	0.61	323	*e*Pg	Pg	12 15 52.1	+0.1
DURS	Dursunbey	0.68	316	P	Pg	12 15 53.3	-0.1
DURS	Dursunbey	0.68	316	*i* P	Pg	12 15 53.3	-0.1
KULA	Kula-Manisa	0.69	209	*e*PG	Pg	12 15 53.7	+0.1
KULA	Kula-Manisa	0.69	209	P	Pg	12 15 53.4	-0.2
KULA				S	Sg	12 16 02.4	-0.2
KULA	Kula-Manisa	0.69	209	P	Pg	12 15 53.4	-0.2
KULA	Kula-Manisa	0.69	209	*e*Pg	Pg	12 15 53.7	+0.1
KULA				S	Sg	12 16 02.4	-0.2
KHAL	Karahalli	0.81	157	P	Pg	12 15 55.7	-0.2
KHAL	Karahalli	0.81	157	*i* P	Pg	12 15 55.7	-0.2
KHL	Karahalli	0.86	157	*e*PG	Pg	12 15 57.0	0.0
KHL	Karahalli	0.86	157	*e*Pg	Pg	12 15 57.0	0.0
AKHS	Akhisar	1.02	257	P	Pg	12 16 00.0	0.0
AKHS	Akhisar	1.02	257	*i* P	Pg	12 16 00.0	0.0
AKS	Akhisar	1.02	257	*e*PG	Pb	12 16 00.3	-0.4
AKS	Akhisar	1.02	257	*e*Pg	Pb	12 16 00.4	-0.4
BALB	Balikesir	1.07	299	*e*PG	Pb	12 16 01.7	+0.1
BALB				*e*SG	Sb	12 16 16.5	+0.5
BALB	Balikesir	1.07	299	*e*Pg	Pb	12 16 01.7	+0.1
BALB				*e*Sg	Sb	12 16 16.5	+0.5
IGD	Bursa	1.15	4	*i* P	Pg	12 16 00.7	-1.7
CAVI	Cavuskoy	1.23	28	*e*PN	Pg	12 16 03.8	-0.2
CAVI	Cavuskoy	1.23	28	*e*Pn	Pg	12 16 03.8	-0.2
IZI	Iznik	1.25	14	*e*PN	Pg	12 16 04.4	0.0
MDNY	Mudanya-Bursa	1.26	353	*e*PN	Pg	12 16 04.2	-0.3
MDNY	Mudanya-Bursa	1.26	353	*e*Pn	Pg	12 16 04.2	-0.3
KCTX	Karacabey (Bur	1.28	334	*e*PN	Pg	12 16 04.7	-0.2
KCTX	Karacabey (Bur	1.28	334	*e*Pn	Pg	12 16 04.7	-0.2
GEMT	Gemlik	1.32	3	*e*PN	Pg	12 16 05.0	-0.6
GEMT	Gemlik	1.32	3	*e*Pn	Pg	12 16 05.0	-0.6
DENT	Denizli	1.36	182	*e*PN	Pb	12 16 07.5	+0.9
DENT	Denizli	1.36	182	*e*Pn	Pb	12 16 07.5	+0.9
ADVT	Abdulvahap	1.41	21	*e*PN	Pb	12 16 07.5	+0.2
GONE	Gonen-Balikesi	1.43	311	*e*PN	Pb	12 16 07.5	-0.1
GONE	Gonen-Balikesi	1.43	311	*e*Pn	Pb	12 16 07.5	-0.1
DNZL	Cakiroluk	1.43	181	P	Pn	12 16 07.0	-0.4
DNZL	Cakiroluk	1.43	181	*i* P	Pn	12 16 07.0	-0.4
ARMT	Armutlu	1.46	353	*e*PN	Pn	12 16 06.5	-1.1
ARMT	Armutlu	1.46	353	*e*Pn	Pn	12 16 06.6	-1.1
AYDB	Zeytinkoy-Aydi	1.50	219	*e*PN	Pn	12 16 08.0	-0.3
AYDB	Zeytinkoy-Aydi	1.50	219	*e*Pn	Pn	12 16 08.0	-0.3
GPA	Golpazari	1.50	38	*e*PN	Pg	12 16 09.2	0.0
GPA	Golpazari	1.50	38	*e*Pn	Pg	12 16 09.2	0.0
EDC	Edincik	1.55	323	*e*PN	Pn	12 16 09.1	+0.2
EDC	Edincik	1.55	323	*e*Pn	Pn	12 16 09.1	+0.2
DKL	Dikili	1.70	269	*e*PN	Pn	12 16 11.3	+0.4
DKL	Dikili	1.70	269	*e*Pn	Pn	12 16 11.3	+0.4
GULT	Gulveren	1.71	39	*e*PN	Pn	12 16 11.1	-0.1
GULT	Gulveren	1.71	39	*e*Pn	Pn	12 16 11.1	-0.1
ISP	Isparta	1.71	139	*e*PN	Pn	12 16 11.9	+0.6
ISP	Isparta	1.71	139	⇑*i*P	Pn	12 16 10.5	-0.8
ISP	Isparta	1.71	139	P	Pn	12 16 11.8	+0.6
ISP				S	Sb	12 16 34.6	0.0
ISP	Isparta	1.71	139	P	Pn	12 16 11.8	+0.6
ISP				S	Sg	12 16 35.5	0.0
AYDN	Tasoluk	1.74	214	P	Pg	12 16 13.5	-0.2
AYDN	Tasoluk	1.74	214	*i* P	Pg	12 16 13.5	-0.2
HRT	Hereke	1.76	14	*e*PN	Pn	12 16 12.1	+0.3
HRT	Hereke	1.76	14	*e*Pn	Pn	12 16 12.1	+0.3
SPNC	Sapanca-Adapaz	1.82	31	*e*PN	Pn	12 16 13.0	+0.3
MRMT	Marmara Adasi	1.88	323	*e*PN	Pn	12 16 13.7	+0.2
MRMT	Marmara Adasi	1.88	323	*e*Pn	Pn	12 16 13.7	+0.2
SVRH	Sivrihisar-ESK	1.92	79	*e*PN	Pn	12 16 14.8	+0.7
SVRH	Sivrihisar-ESK	1.92	79	*e*Pn	Pn	12 16 14.8	+0.7
ISK	Istanbul-Kandi	1.94	359	*e*PN	Pn	12 16 14.0	-0.3
ISK	Istanbul-Kandi	1.94	359	P	Pb	12 16 16.6	+0.1
ISK				S	Sg	12 16 42.9	0.0
ISK	Istanbul-Kandi	1.94	359	*e*Pn	Pn	12 16 14.0	-0.3
ISK	Istanbul-Kandi	1.94	359	P	Pb	12 16 16.6	+0.1
ISK				S	Sg	12 16 42.9	0.0
GLHS	Gihisar (BURDU	1.99	171	*e*PN	Pn	12 16 16.0	+1.0
GLHS	Gihisar (BURDU	1.99	171	*e*Pn	Pn	12 16 16.0	+1.0
BGKT	Bogazkoy	2.07	353	*e*PN	Pn	12 16 16.3	+0.2
BGKT	Bogazkoy	2.07	353	*e*Pn	Pn	12 16 16.3	+0.2
SILT	Sile	2.08	12	*e*PN	Pn	12 16 16.4	+0.3
SILT	Sile	2.08	12	*e*Pn	Pn	12 16 16.4	+0.3
YER	Yerkesik	2.08	198	*e*PN	Pn	12 16 17.3	+1.1
YER	Yerkesik	2.08	198	P	Pn	12 16 15.5	-0.7
YER	Yerkesik	2.08	198	*e*Pn	Pn	12 16 17.3	+1.1
MDUB	Mudurnu	2.11	50	*e*PN	Pn	12 16 17.5	+0.8
MDUB	Mudurnu	2.11	50	*e*Pn	Pn	12 16 17.5	+0.8
RKY	Sarkoy-Tekirda	2.15	317	*e*PN	Pn	12 16 17.9	+0.7
RKY	Sarkoy-Tekirda	2.15	317	*e*Pn	Pn	12 16 17.9	+0.7
CTKS	Kestanelik-??a	2.16	348	*e*PN	Pn	12 16 17.4	+0.1
CTKS	Kestanelik-??a	2.16	348	*e*Pn	Pn	12 16 17.4	+0.1
KIZT	Kizilcal	2.19	95	*e*PN	Pn	12 16 18.3	+0.5
KIZT	Kizilcal	2.19	95	*e*Pn	Pn	12 16 18.3	+0.5
LPK	Lapseki	2.19	306	*e*PN	Pn	12 16 18.7	+1.0
LPK	Lapseki	2.19	306	*e*Pn	Pn	12 16 18.7	+1.0
PRK	Paraskevi	2.19	274	P	Pn	12 16 17.4	-0.3
PRK				S	Sn	12 16 45.6	+0.2
PRK	Paraskevi	2.19	274	P	Pn	12 16 17.4	-0.3
PRK				S	Sn	12 16 45.6	+0.2
SUTC	Sutluce-Ispart	2.22	137	*e*PN	Pn	12 16 19.2	+0.9
SUTC	Sutluce-Ispart	2.22	137	*e*Pn	Pn	12 16 19.2	+0.9
SMG	Samos	2.26	232	P	Pn	12 16 17.1	-1.6
SMG				S	Sn	12 16 45.5	-1.6
SMG	Samos	2.26	232	P	Pn	12 16 17.1	-1.6
SMG				S	Sn	12 16 45.5	-1.6
DALY	Dalyan (Mu¨la	2.32	189	*e*PN	Pn	12 16 21.2	+1.7
GELI	Tayfur-Gelibol	2.39	303	*e*PN	Pn	12 16 20.8	+0.4
GELI	Tayfur-Gelibol	2.39	303	*e*Pn	Pn	12 16 20.8	+0.4
CTYL	Yalikoy Yolu	2.43	346	*e*PN	Pn	12 16 20.5	-0.5
CTYL	Yalikoy Yolu	2.43	346	*e*Pn	Pn	12 16 20.5	-0.5
FETY	Fethiye	2.48	180	*e*PN	Pn	12 16 22.4	+0.7
FETY	Fethiye	2.48	180	P	Pn	12 16 22.1	+0.4
FETY	Fethiye	2.48	180	P	Pn	12 16 22.1	+0.4
FETY	Fethiye	2.48	180	*e*Pn	Pn	12 16 22.4	+0.7
CHOS	Chios island	2.48	254	*e*PN	Pn	12 16 23.1	+1.3
CHOS	Chios island	2.48	254	P	Pn	12 16 21.1	-0.7
CHOS				S	Sn	12 16 52.7	+0.1
CHOS	Chios island	2.48	254	P	Pn	12 16 21.1	-0.7
CHOS	Chios island	2.48	254	*e*Pn	Pn	12 16 23.1	+1.3
CHOS				S	Sn	12 16 52.7	+0.1
BODT	Bodrum	2.49	215	*e*PN	Pn	12 16 22.6	+0.8
BODT	Bodrum	2.49	215	P	Pn	12 16 21.2	-0.6
BODT	Bodrum	2.49	215	P	Pn	12 16 21.2	-0.6
BODT	Bodrum	2.49	215	*e*Pn	Pn	12 16 22.6	+0.8
SIGR	SIGRI	2.52	273	*e*PN	Pn	12 16 22.7	+0.6
SIGR	SIGRI	2.52	273	P	Pn	12 16 21.8	-0.3
SIGR	SIGRI	2.52	273	P	Pn	12 16 21.8	-0.3
SIGR	SIGRI	2.52	273	*e*Pn	Pn	12 16 22.7	+0.6
ERIK	Erikli-Kesan	2.52	309	*e*PN	Pn	12 16 23.2	+1.0
ERIK	Erikli-Kesan	2.52	309	*e*Pn	Pn	12 16 23.2	+1.0
GADA	Gvkgeada	2.69	295	*e*PN	Pn	12 16 25.1	+0.6
GADA	Gvkgeada	2.69	295	P	Pn	12 16 25.4	+0.9
GADA	Gvkgeada	2.69	295	*e*Pn	Pn	12 16 25.1	+0.6
GADA	Gvkgeada	2.69	295	P	Pn	12 16 25.4	+0.9
KONT	Konya--Tatoy	2.82	114	*e*PN	Pn	12 16 27.5	+1.1
KONT	Konya--Tatoy	2.82	114	*e*Pn	Pn	12 16 27.5	+1.1
ALN	Alexandroupoli	2.94	308	*e*PN	Pn	12 16 27.9	0.0
ALN	Alexandroupoli	2.94	308	P	Pn	12 16 27.8	-0.1
ALN				S	Sn	12 17 05.3	+1.6
ALN	Alexandroupoli	2.94	308	*e*Pn	Pn	12 16 27.9	0.0
ALN				S	Sn	12 17 05.3	+1.6
SMTH	Samothraki Isl	3.06	297	P	Pn	12 16 29.5	-0.1
SMTH				S	Sn	12 17 06.2	-0.5
SMTH	Samothraki Isl	3.06	297	P	Pn	12 16 29.5	-0.1
SMTH				S	Sn	12 17 06.2	-0.5
APE	Apeiranthos	3.47	235	⇑*i*P	Pn	12 16 34.8	-0.6
APE	Apeiranthos	3.47	235	⇑*i*P	Pn	12 16 34.8	-0.6
LAST	Lasithi	4.89	217	⇓*i*P	Pn	12 16 54.8	-0.1
LAST	Lasithi	4.89	217	⇓*i*P	Pn	12 16 54.8	-0.1
MSAB	Monastry St. A	5.06	350	⇓*i*P	Pn	12 16 56.2	-0.9
MSAB	Monastry St. A	5.06	350	⇓*i*P	Pn	12 16 56.2	-0.9
TIRR	Tirgusor	5.36	355	⇓*i*P	Pn	12 17 00.9	-0.3
TIRR	Tirgusor	5.36	355	⇓*i*P	Pn	12 17 00.9	-0.3
CFR	Carcaliu	6.10	354	⇑*i*P	Pn	12 17 10.5	-0.8
CFR	Carcaliu	6.10	354	⇑*i*P	Pn	12 17 10.5	-0.8
MLR	Muntele Rosu	6.78	341	⇑*i*P	Pn	12 17 18.9	-2.0
MLR	Muntele Rosu	6.78	341	⇑*i*P	Pn	12 17 18.9	-2.0
PLOR	Plostina	6.96	346	⇑*i*P	Pn	12 17 22.3	-1.0
PLOR	Plostina	6.96	346	⇑*i*P	Pn	12 17 22.3	-1.0
VRI	Vrincioaia	6.96	346	⇑*i*P	Pn	12 17 23.0	-0.3
VRI	Vrincioaia	6.96	346	⇑*i*P	Pn	12 17 23.0	-0.3
VOIR		6.99	336	⇑*i*P	Pn	12 17 23.3	-0.4
VOIR		6.99	336	⇑*i*P	Pn	12 17 23.3	-0.4
MDVR	Moldovita	7.89	318	⇑*i*P	Pn	12 17 34.3	-1.7
MDVR	Moldovita	7.89	318	⇑*i*P	Pn	12 17 34.3	-1.7

ISCJB ***25*** *12:20:29.8±0.6, 43°.90N±0°.06×12°.02E±0°.06, h12km±9km, Error ellipse: s-maj=12.2km s-min=3.7km az=36.6*
ROM ***25*** *12:20:29.3±0.1, 43°.90N×12°.02E, h6km±1km, Md2.5/13, Ml1.8/9, Error ellipse: s-maj=2.1km s-min=0.8km az=35.0*
CSEM ***25*** *12:20:30.0±0.2, 43°.89N×12°.01E, h10km, ML2.5/5, Error ellipse: s-maj=4.2km s-min=2.0km az=27.0*

ISC 25 12:20:30.1±0.9, 43°.88N±0°.04×12°.00E±0°.03, h10km±7km, n32, σ0°.35/52, 52, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFI	**Santa Sofia**	**0.11**	**281**	Pg	**Pg**	**12 20 32.7**	**-0.2**
SFI				Sg	**Sg**	**12 20 35.0**	**0.0**
SFI	**Santa Sofia**	**0.11**	**281**	Pg	**Pg**	**12 20 32.7**	**-0.2**
SFI				Sg	**Sg**	**12 20 35.0**	**0.0**
ASQU	**Asqua**	**0.18**	**240**	Pg	**Pg**	**12 20 33.9**	**0.0**
ASQU				Sg	**Sg**	**12 20 37.1**	**+0.5**
ASQU	**Asqua**	**0.18**	**240**	Pg	**Pg**	**12 20 33.9**	**0.0**
ASQU				Sg	**Sg**	**12 20 37.1**	**+0.5**
PARC	**Parchiule**	**0.29**	**144**	Pg	**Pg**	**12 20 36.0**	**0.0**
PARC				Sg	**Sb**	**12 20 41.1**	**-1.2**
	23nm,0.2s						
PARC	**Parchiule**	**0.29**	**144**	Pg	**Pg**	**12 20 36.0**	**0.0**
PARC				Sg	**Sb**	**12 20 41.1**	**-1.2**
	23nm,0.2s						
VMG	**Vicchio**	**0.34**	**283**	Pg	**Pg**	**12 20 37.1**	**+0.2**
VMG				Sg	**Sb**	**12 20 43.1**	**-0.6**
VMG	**Vicchio**	**0.34**	**283**	Pg	**Pg**	**12 20 37.1**	**+0.2**
VMG				Sg	**Sb**	**12 20 43.1**	**-0.6**
BADI	**Badiali**	**0.41**	**155**	Pg	**Pg**	**12 20 38.1**	**-0.1**
BADI				Sg	**Sb**	**12 20 45.4**	**-0.4**
	181nm,0.2s						
BADI	**Badiali**	**0.41**	**155**	Pg	**Pg**	**12 20 38.1**	**-0.1**
BADI				Sg	**Sb**	**12 20 45.4**	**-0.4**
	181nm,0.2s						
SEI	**Scarperia**	**0.50**	**290**	Pg	**Pg**	**12 20 39.6**	**-0.2**
SEI				Sg	**Sb**	**12 20 47.9**	**-0.3**
SEI	**Scarperia**	**0.50**	**290**	Pg	**Pg**	**12 20 39.6**	**-0.2**
SEI				Sg	**Sb**	**12 20 47.9**	**-0.3**
PIEI	**Pieia**	**0.52**	**132**	Pg	**Pg**	**12 20 39.9**	**-0.3**
PIEI				Sg	**Sb**	**12 20 48.4**	**-0.5**
	33nm,0.3s						
PIEI	**Pieia**	**0.52**	**132**	Pg	**Pg**	**12 20 39.9**	**-0.3**
PIEI				Sg	**Sb**	**12 20 48.4**	**-0.5**
	33nm,0.3s						
ATPC	**Poggio Castell**	**0.52**	**141**	Pg	**Pg**	**12 20 40.0**	**-0.2**
ATPC				Sg	**Sb**	**12 20 49.0**	**+0.1**
	59nm,0.2s						
ATPC	**Poggio Castell**	**0.52**	**141**	Pg	**Pg**	**12 20 40.0**	**-0.2**
ATPC				Sg	**Sb**	**12 20 49.0**	**+0.1**
	59nm,0.2s						
CAFI	**Castiglion Fio**	**0.56**	**183**	Pg	**Pg**	**12 20 41.1**	**+0.2**
CAFI	**Castiglion Fio**	**0.56**	**183**	Pg	**Pg**	**12 20 41.1**	**+0.2**
ATVO	**AVT- Monte Val**	**0.58**	**150**	Pg	**Pg**	**12 20 41.4**	**0.0**
ATVO				Sg	**Sb**	**12 20 50.8**	**+0.2**
	81nm,0.4s						
ATVO	**AVT- Monte Val**	**0.58**	**150**	Pg	**Pg**	**12 20 41.4**	**0.0**
ATVO				Sg	**Sb**	**12 20 50.8**	**+0.2**
	81nm,0.4s						
FSSB	**Fossombrone**	**0.59**	**109**	Pg	**Pg**	**12 20 41.6**	**0.0**
FSSB	**Fossombrone**	**0.59**	**109**	Pg	**Pg**	**12 20 41.6**	**0.0**
FRON	**Frontone**	**0.64**	**125**	Pg	**Pg**	**12 20 42.5**	**0.0**
	29nm,1.1s						
FRON	**Frontone**	**0.64**	**125**	Pg	**Pg**	**12 20 42.5**	**0.0**
	29nm,1.1s						
SSFR	**Montelago di S**	**0.72**	**128**	Pg	**Pg**	**12 20 44.1**	**+0.1**
	46nm,0.3s						
SSFR	**Montelago di S**	**0.72**	**128**	Pg	**Pg**	**12 20 44.1**	**+0.1**
	46nm,0.3s						
ATTE	**AVT- Monte Tez**	**0.73**	**159**	Pg	**Pg**	**12 20 43.8**	**-0.4**
	45nm,0.3s						
ATTE	**AVT- Monte Tez**	**0.73**	**159**	Pg	**Pg**	**12 20 43.8**	**-0.4**
	45nm,0.3s						
MGAB	**Montegabbione**	**0.97**	**175**	Pg	**Pg**	**12 20 48.6**	**-0.2**
	44nm,0.6s						
MGAB	**Montegabbione**	**0.97**	**175**	Pg	**Pg**	**12 20 48.6**	**-0.2**
	44nm,0.6s						
NVLJ	**Novalja**	**2.17**	**71**	*e*Pn	**Pn**	**12 21 06.4**	**+0.2**
NVLJ				Sn	**Sn**	**12 21 33.3**	**+0.1**
NVLJ	**Novalja**	**2.17**	**71**	*e*Pn	**Pn**	**12 21 06.4**	**+0.2**
NVLJ				Sn	**Sn**	**12 21 33.2**	**+0.1**

ISCJB ***25*** *12:28:44.1±0.3, 34°.75S±0°.05×15°.11W±0°.08, h10km, mb4.7/27, MS4.6/25, Error ellipse: s-maj=9.7km s-min=6.8km az=151.8*
IDC ***25*** *12:28:44.2±0.6, 34°.67S×15°.16W, h0km, mb4.4/14, mb1 4.5/14, mb1mx4.3/38, mbtmp4.4/14, MS4.5/20, Ms1 4.5/20, ms1mx4.5/23, Error ellipse: s-maj=24.9km s-min=16.9km az=151.0*
BJI ***25*** *12:28:45.7, 34°.70S×15°.10W, h10km, mB5.5/12, Ms5.3/11, Ms7 5.0/12*
GCMT ***25*** *12:28:45.7±0.1, 34°.68S×14°.96W, h12km, MW5.2/113, Moment Tensor Solution. s68,c92; s113,c179; Duration: 1s0 Moment tensor: Scale 10^17^Nm; Mrr=0.71±.01; Mθθ=0.01±.01; Mϕϕ=0.72±.01; Mrθ=0.21±.04; Mθϕ=0.17±.01; Mϕr=0.04±.03; Best double couple: M0=0.76500×10^17^ NP1:φs=207.00000°, δ=50.00000°, λ=-70.00000°. NP2:φs=358.00000°, δ=44.00000°, λ=-112.00000°. Principal axes: T 0.7630, Plg=3.0000°, Azm=283.0000°; N 0.0050, Plg=15.0000°, Azm=14.0000°; P =-0.7680, Plg=75.0000°, Azm=181.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
NEIC ***25*** *12:28:45.7±0.2, 34°.73S×15°.09W, h10km, mb5.0/16 Error ellipse: s-maj=8.1km s-min=7.6km az=72.0*

ISC 25 12:28:45.6±0.4, 34°.75S±0°.07×15°.14W±0°.08, h10km, n86, σ1°.34/70, mb4.7/27, MS4.8/25, Tristan da Cunha region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H09N1	**TRISTAN DA CUN**	**3.26**	**136**	T	T	12 33 04.8	
	SNR=27						
TRIS	**Tristan da Cun**	**3.26**	**136**	*e*Pn	**Pn**	**12 29 34.3**	**-2.3**
TRIS				*e*Sn	**Sn**	**12 30 14.9**	**-0.6**
H09W1	**TRISTAN DA CUN**	**3.27**	**137**	T	T	12 33 06.2	
	SNR=161						
H10S2	**ASCENSION HYDR**	**25.67**	**1**	T	T	13 00 53.6	
	baz=181,slow=75,SNR=669						
H10S3	**ASCENSION HYDR**	**25.68**	**1**	T	T	13 00 54.0	
	baz=181,slow=75,SNR=933						
H10S1	**ASCENSION HYDR**	**25.69**	**1**	T	T	13 00 54.9	
	baz=181,slow=75,SNR=973						
H10N1	**ASCENSION HYDR**	**26.78**	**1**	T	T	13 02 14.2	
	baz=181,slow=72,SNR=33						
H10N3	**ASCENSION HYDR**	**26.78**	**1**	T	T	13 02 15.4	
	baz=181,slow=72,SNR=262						
H10N2	**ASCENSION HYDR**	**26.80**	**1**	T	T	13 02 20.1	
	baz=181,slow=72,SNR=127						
SUR	**Sutherland**	**29.95**	**96**	LR	LR	12 44 11.8	
	comp=Z,163nm,20.4s,baz=262,slow=31						
BOSA	**Boshof**	**34.74**	**91**	P	**P**	**12 35 35.4**	**-0.7**
	8.8nm,1.0s,baz=238,slow=8.0,SNR=4.4						
BOSA				LR	LR	12 46 53.0	
	comp=Z,2μm,21.1s,baz=232,slow=31						
VNA1	**Neumayer--Stat**	**36.16**	**176**	P	**P**	**12 35 48.1**	**+0.5**
VNA2	**Neumayer--Watz**	**36.48**	**176**	P	**P**	**12 35 50.9**	**+0.5**
	baz=342,slow=10						
VNA3	**Neumayer Olymp**	**36.67**	**177**	P	**P**	**12 35 52.1**	**0.0**
CPUP	**Villa Florida**	**37.08**	**271**	P	**P**	**12 35 56.2**	**+0.1**
	3.4nm,0.9s,baz=111,slow=4.8,SNR=4.3						
CPUP				LR	LR	12 48 54.6	
	comp=Z,1μm,18.5s,baz=124,slow=33						
SNAA	**Sanae**	**37.55**	**174**	P	P	12 35 53.5	-6.1
SNAA	**Sanae**	**37.55**	**174**	*e*P	**P**	**12 36 00.7**	**+1.1**
	17nm,1.3s						
MATP	**Matopo**	**40.90**	**81**	P	**P**	**12 36 27.7**	**-0.6**
	14nm,1.1s,baz=239,slow=10.0,SNR=9.9						
DBIC	**Dimbokro**	**42.32**	**15**	P	**P**	**12 36 38.8**	**-0.9**
	10.0nm,1.0s,baz=180,slow=6.9,SNR=5.4						
DBIC				LR	LR	12 50 09.8	
	comp=Z,212nm,20.4s,baz=170,slow=30						
DBIC	**Dimbokro**	**42.32**	**15**	*e*P	**P**	**12 36 39.2**	**-0.5**
	29nm,1.4s						
PLCA	**Paso Flores**	**43.62**	**245**	P	**P**	**12 36 50.8**	**+0.7**
	5.2nm,1.0s,baz=112,slow=4.5,SNR=9.3						
PLCA				LR	LR	12 53 12.4	
	comp=Z,1μm,18.6s,baz=113,slow=34						
TOA0	**Torodi Ar. Sit**	**50.24**	**22**	*e*P	**P**	**12 37 41.5**	**-0.5**
TORD	**Torodi Ar. Bea**	**50.24**	**22**	P	**P**	**12 37 41.2**	**-0.8**
	17nm,1.0s,baz=198,slow=8.6,SNR=41						
TORD				LR	LR	12 54 45.3	
	comp=Z,724nm,20.1s,baz=195,slow=31						
LPAZ	**La Paz**	**50.65**	**277**	P	**P**	**12 37 44.6**	**-1.3**
	1.9nm,0.8s,baz=97,slow=6.9,SNR=7.0						
LPAZ				LR	LR	12 58 51.3	
	comp=Z,853nm,19.3s,baz=122,slow=36						
LPAZ	**La Paz**	**50.65**	**277**	*e*P	**P**	**12 37 45.0**	**-0.9**
	11nm,1.4s						
SAML	**Samuel**	**50.84**	**289**	*e*P	**P**	**12 37 47.5**	**+0.9**
	8.0nm,1.0s						
PTGA	**Pitinga**	**53.76**	**299**	*e*P	**P**	**12 38 08.7**	**+0.3**
	22nm,1.4s						
QSPA	**South Pole Qui**	**55.50**	**180**	*e*P	**P**	**12 38 21.1**	**+0.6**
	107nm,1.1s						
QSPA				*e*PcP	**PcP**	**12 39 20.9**	**+0.6**
KMBO	**Kilima Mbogo**	**59.10**	**67**	LR	LR	13 02 07.9	
	comp=Z,2μm,19.9s,baz=248,slow=34						
TAM	**Tamanrasset**	**60.49**	**22**	*e*P	**P**	**12 38 55.9**	**0.0**
	11nm,1.2s						
GDHS	**Morne Mazeau,**	**67.35**	**311**	*e*P	**P**	**12 39 41.8**	**+0.7**
	68nm,0.5s						
SBA	**Scott Base**	**67.66**	**180**	*e*P	**P**	**12 39 43.0**	**+0.8**
	14nm,1.2s						
VNDA	**Vanda**	**67.98**	**179**	P	**P**	**12 39 45.7**	**+1.4**
	3.6nm,1.2s,baz=224,slow=8.2,SNR=5.6						
VNDA				LR	LR	13 05 33.3	
	comp=Z,166nm,21.8s,baz=179,slow=32						
VNDA	**Vanda**	**67.98**	**179**	*e*P	**P**	**12 39 45.9**	**+1.6**
	17nm,1.6s						
SDV	**Santo Domingo**	**68.05**	**299**	*e*P	**P**	**12 39 45.2**	**-0.5**
	21nm,1.1s						
CASY	**Casey**	**71.06**	**160**	*e*P	**P**	**12 40 03.9**	**+0.5**
	24nm,1.4s						
HUMP	**Col San Antoni**	**71.33**	**309**	*e*P	**P**	**12 40 04.7**	**-0.9**
	14nm,0.9s						
KEST	**Kesra**	**73.75**	**21**	P	**P**	**12 40 19.9**	**+0.1**
	6.1nm,0.8s,baz=306,slow=3.1,SNR=7.3						
KEST				LR	LR	13 10 50.5	
	comp=Z,628nm,18.2s,baz=176,slow=34						
KEST	**Kesra**	**73.75**	**21**	*e*P	**P**	**12 40 20.6**	**+0.8**
	17nm,1.0s						
ESDC	**Sonseca Array**	**74.77**	**9**	P	**P**	**12 40 26.0**	**+0.4**
	0.2nm,0.3s,baz=182,slow=6.7,SNR=9.7						
ESDC				LR	LR	13 11 22.2	
	comp=Z,98nm,18.4s,baz=170,slow=34						
ES19	**SONSECA Array**	**74.80**	**9**	*e*P	**P**	**12 40 25.7**	**-0.1**
TIP	**Timpagrande**	**79.25**	**25**	*e*P	**P**	**12 40 50.1**	**-0.8**
	34nm,1.4s						
KARP	**Karpathos**	**80.31

HHC				LR	LR		
	comp=N,230nm,21.4s						
HHC				LR	LR		
	comp=E,300nm,21.0s						
HHC				LR	LR		
	comp=Z,390nm,20.0s						
ILAR	**Eielson Array**	**138.38**	**331**	PKP	**PKPdf**	**12 48 10.2**	**-0.1**
	3.8nm,1.2s,baz=334,slow=0.8,SNR=11						
TRF	**Thorofare Moun**	**140.28**	**330**	*e*PKPdf	**PKPdf**	**12 48 14.2**	**+0.1**
TNA	**Tin City**	**145.15**	**341**	*e*PKPbc	**PKPbc**	**12 48 21.9**	**0.0**
BILL	**Bilibino**	**146.65**	**359**	*e*PKPdf	**PKPdf**	**12 48 24.6**	**-0.3**
KSAR	**Wonju Array Be**	**150.12**	**74**	PKPbc	**PKPbc**	**12 48 36.8**	**+0.3**
KSRS	**Korea Array**	**150.15**	**74**	PKPbc	**PKPbc**	**12 48 36.8**	**+0.2**
	2.9nm,0.8s,baz=261,slow=2.1,SNR=14						
SEY	**Seymchan**	**150.73**	**12**	PKPbc	**PKPbc**	**12 48 37.8**	**+0.7**
	4.2nm,0.7s,baz=186,slow=1.3,SNR=11						
KLR	**Kul'dur**	**151.71**	**49**	PKPbc	**PKPbc**	**12 48 39.5**	**-0.3**
	7.6nm,1.1s,baz=338,slow=1.6,SNR=3.4						

IDC 25 12:38:18.8±3.8, 6°.47S×147°.68E, h0km, mb3.2/1, mb1 3.5/3, mb1mx3.3/30, mbtmp3.3/3, ML3.3/1, Error ellipse: s-maj=106.9km s-min=42.6km az=98.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.96**	**190**	Pn	Pn	12 39 08.7	+1.6
	3.1nm,0.3s,baz=21,slow=7.9,SNR=12						
PMG				Sn	Sn	12 39 42.4	-1.0
	2.2nm,0.3s,baz=273,slow=18,SNR=3.5						
WRA	**Warramunga Arr**	**18.64**	**223**	P	P	12 42 38.0	-0.2
	0.1nm,0.3s,baz=48,slow=9.8,SNR=5.2						
ASAR	**Alice Springs**	**21.63**	**216**	P	P	12 43 09.4	-1.4
	0.8nm,0.7s,baz=53,slow=9.0,SNR=10						
TORD	**Torodi Ar. Bea**	**145.86**	**284**	PKPbc	PKPdf	12 58 00.8	+0.1
	0.3nm,0.4s,baz=82,slow=2.4,SNR=4.1						

*JMA **25** 12:48:22.9±0.1, 23°.66N×121°.61E, h34km±2km, M3.3*
*ISCJB **25** 12:48:23.8±0.3, 23°.67N±0°.02×121°.66E±0°.02, h28km±2km, Error ellipse: s-maj=3.2km s-min=2.0km az=144.9*
*TAP **25** 12:48:24.0, 23°.68N×121°.59E, h35km, ML3.8, B*
ISC 25 12:48:23.8±0.9, 23°.66N±0°.02×121°.65E±0°.02, h32km±6km, n71, σ0°.96/116, 10C-7D, Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TEGC	**Jichi Village**	**0.11**	**298**	*e*P	**Pn**	**12 48 30.5**	**+1.3**
	baz=306						
TEGC				*e*S	**Sb**	**12 48 34.9**	**+1.5**
	baz=306						
ESF	**Shoufeng Towns**	**0.25**	**329**	*e*P	**Pn**	**12 48 31.4**	**+0.2**
	baz=328						
ESF				*e*S	**Sn**	**12 48 36.2**	**+0.3**
	baz=328						
ESL	**Shilin**	**0.25**	**309**	↑*i*P	**Pb**	**12 48 30.5**	**-0.4**
	baz=308						
ESL				*i* S	**Sb**	**12 48 35.1**	**-0.6**
	baz=308						
HWA	**Hwalien**	**0.32**	**353**	P	**Pn**	**12 48 31.8**	**-0.4**
	baz=7.0						
HWA				S	**Sn**	**12 48 38.3**	**+0.5**
	baz=7.0						
EHY	**Hungye**	**0.33**	**243**	P	**Pb**	**12 48 31.5**	**-0.4**
	baz=242						
EHY				*e*S	**Sb**	**12 48 36.5**	**-0.9**
	baz=242						
TWD	**Chiawan**	**0.42**	**354**	↑*i*P	**Pb**	**12 48 33.2**	**0.0**
	baz=351						
TWD				*e*S	**Sb**	**12 48 39.4**	**-0.2**
	baz=351						
TWF1	**Yuli**	**0.44**	**227**	↓*i*P	**Pb**	**12 48 33.2**	**-0.2**
	baz=231						
TWF1				*e*S	**Sb**	**12 48 39.2**	**-0.8**
	baz=231						
WDT	**Danda**	**0.48**	**282**	↑*i*P	**Pb**	**12 48 33.7**	**-0.5**
	baz=281						
WDT				S	**Sb**	**12 48 40.0**	**-1.4**
	baz=281						
WHF	**Hehuan Shan**	**0.60**	**324**	↑*i*P	**Pb**	**12 48 35.1**	**-1.1**
	baz=320						
WHF				*e*S	**Sb**	**12 48 43.0**	**-1.7**
	baz=320						
CHKT	**Chengkung**	**0.61**	**205**	*e*P	**Pn**	**12 48 36.5**	**+0.3**
	baz=187						
CHKT				*e*S	**Sn**	**12 48 46.3**	**+1.3**
	baz=187						
YUS	**Yu-Shan**	**0.66**	**255**	P	**Pb**	**12 48 37.1**	**-0.1**
	baz=253						
YUS				S	**Sb**	**12 48 45.2**	**-1.2**
	baz=253						
SMLT	**Sun Moon Lake**	**0.72**	**288**	↑*i*P	**Pb**	**12 48 37.2**	**-0.7**
	baz=291						
SMLT				*e*S	**Sb**	**12 48 45.5**	**-2.2**
	baz=291						
TWT	**Tachien**	**0.73**	**324**	↑*i*P	**Pb**	**12 48 37.8**	**-0.5**
	baz=324						
TWT				S	**Sb**	**12 48 46.5**	**-1.6**
	baz=324						
ELDTW	**Lidau**	**0.74**	**231**	*e*P	**Pb**	**12 48 37.3**	**-1.1**
	baz=227						
TYC	**Yuchr**	**0.76**	**289**	↑*i*P	**Pb**	**12 48 37.8**	**-0.8**
	baz=296						
TYC				*e*S	**Sb**	**12 48 47.5**	**-1.2**
	baz=296						
ENA	**Nanau**	**0.77**	**6**	↑*i*P	**Pb**	**12 48 38.2**	**-0.6**
	baz=356						
ENA				*e*S	**Sb**	**12 48 48.0**	**-1.0**
	baz=356						
ALS	**Alishan**	**0.79**	**259**	↓*i*P	**Pn**	**12 48 39.2**	**+0.3**
	baz=266						
ALS				*e*S	**Sb**	**12 48 48.9**	**-0.8**
	baz=266						
NNS	**Nan Shan**	**0.82**	**342**	P	**Pb**	**12 48 38.7**	**-0.9**
	baz=351						
NNS				S	**Sb**	**12 48 48.6**	**-1.9**
	baz=351						
CHN5	**Tsauling**	**0.89**	**266**	↓*i*P	**Pb**	**12 48 40.7**	**-0.1**
	baz=266						
CHN5				S	**Sb**	**12 48 52.1**	**-0.3**
	baz=266						
WNT	**Mingjian**	**0.91**	**284**	*e*P	**Pb**	**12 48 41.1**	**+0.1**
	baz=285						
WNT				S	**Sn**	**12 48 53.1**	**+0.8**
	baz=285						
STYT	**Tauyuan**	**0.95**	**239**	P	**Pn**	**12 48 41.2**	**+0.2**
	baz=233						
STYT				*e*S	**Sb**	**12 48 53.2**	**-1.0**
	baz=233						
TWC	**Suao**	**0.96**	**11**	*e*P	**Pn**	**12 48 41.2**	**+0.1**
	baz=21						
ENTT	**Nioudou**	**0.98**	**356**	P	**Pn**	**12 48 41.1**	**-0.2**
	baz=357						
ENTT				S	**Sb**	**12 48 53.2**	**-1.7**
	baz=357						
TWG	**Pinlang**	**0.99**	**212**	*e*P	**Pn**	**12 48 40.3**	**-1.1**
	baz=197						
WGK	**Gukeng**	**0.99**	**272**	*e*P	**Pb**	**12 48 42.1**	**-0.3**
	baz=272						
WGK				*e*S	**Sn**	**12 48 55.4**	**+1.0**
	baz=272						
TCU	**Taichung**	**1.01**	**299**	*e*P	**Pb**	**12 48 42.9**	**+0.1**
	baz=299						
CHN4	**Tsaushan**	**1.01**	**253**	↓P	**Pb**	**12 48 42.8**	**-0.1**
	baz=253						
CHN4				S	**Sn**	**12 48 56.8**	**+1.9**
	baz=253						
WTP	**Ta-pu**	**1.03**	**247**	*e*P	**Pn**	**12 48 41.8**	**-0.2**
	baz=247						
WTP				*e*S	**Sn**	**12 48 57.0**	**+1.6**
	baz=247						
NSK	**Sanguang**	**1.05**	**346**	↑P	**Pn**	**12 48 42.4**	**+0.1**
	baz=355						
NSK				S	**Sn**	**12 48 54.8**	**-1.0**
	baz=355						
TWQ1	**Liyutan**	**1.05**	**311**	↑*i*P	**Pb**	**12 48 43.5**	**0.0**
	baz=323						
TWQ1				*e*S	**Sb**	**12 48 57.0**	**0.0**
	baz=323						
TWE	**Neicheng**	**1.06**	**1**	*e*P	**Pn**	**12 48 42.3**	**-0.1**
	baz=3.0						
CHN2	**Minshiung**	**1.08**	**264**	*e*P	**Pb**	**12 48 44.4**	**+0.5**
	baz=264						
CHN2				*e*S	**Sb**	**12 48 58.1**	**+0.4**
	baz=264						
NSY	**Sanyi**	**1.11**	**313**	*e*P	**Pb**	**12 48 44.5**	**+0.1**
	baz=313						
NSY				*e*S	**Sb**	**12 48 58.8**	**+0.2**
	baz=313						
CHN1	**Nanshi**	**1.13**	**246**	↓P	**Pb**	**12 48 44.4**	**-0.4**
	baz=246						
CHN1				S	**Sb**	**12 48 59.8**	**+0.6**
	baz=246						
CHY	**Chiayi**	**1.13**	**262**	*e*P	**Pb**	**12 48 44.5**	**-0.2**
	baz=263						
CHY				*e*S	**Sb**	**12 48 58.9**	**-0.3**
	baz=263						
SGST	**Jiashian**	**1.13**	**240**	*e*P	**Pb**	**12 48 44.6**	**-0.2**
	baz=233						
SGST				S	**Sb**	**12 48 60.0**	**+0.7**
	baz=233						
TWK	**Hsinying**	**1.13**	**250**	*e*P	**Pb**	**12 48 44.8**	**-0.1**
	baz=251						
TWK				*e*S	**Sb**	**12 48 59.6**	**+0.4**
	baz=251						
NSTT	**Nanjuang**	**1.13**	**329**	P	**Pb**	**12 48 44.4**	**-0.5**
	baz=337						
NSTT				S	**Sn**	**12 48 57.7**	**-0.2**
	baz=337						
EGS		**1.21**	**12**	*e*P	**Pb**	**12 48 47.0**	**+0.9**
	baz=3.0						
ECL	**Taimali**	**1.23**	**211**	*e*P	**Pn**	**12 48 43.0**	**-1.8**
	baz=199						
WTCT	**Ta-ch'eng**	**1.27**	**280**	*e*P	**Pn**	**12 48 45.6**	**+0.4**
	baz=281						
WTCT				*e*S	**Sb**	**12 49 03.0**	**0.0**
	baz=281						
WSF	**Szhu**	**1.30**	**269**	*e*P	**Pb**	**12 48 47.2**	**-0.5**
	baz=271						
WSF				*e*S	**Sb**	**12 49 03.5**	**-0.6**
	baz=271						
CHN3	**Shinhua**	**1.31**	**244**	*e*P	**Pn**	**12 48 46.7**	**+0.9**
	baz=244						
TWA	**Mucha**	**1.32**	**358**	*e*P	**Pb**	**12 48 48.6**	**+0.6**
	baz=359						
CHN8	**Yiju**	**1.35**	**257**	*e*P	**Pn**	**12 48 47.2**	**+0.8**
	baz=258						
CHN8				*e*S	**Sb**	**12 49 04.8**	**-0.7**
	baz=258						
NCU	**National Centr**	**1.37**	**342**	*e*P	**Pb**	**12 48 48.2**	**-0.7**
	baz=342						
TWB1	**Santiao Chiao**	**1.38**	**13**	*e*P	**Pb**	**12 48 48.0**	**-1.0**
	baz=358						
TWM1	**Shoushan**	**1.40**	**234**	*e*P	**Pb**	**12 48 50.0**	**+0.7**
	baz=233						
NWF	**Wu-fen Shan**	**1.41**	**5**	*e*P	**Pn**	**12 48 48.1**	**+0.8**
	baz=5.0						
SCLT	**Jiali**	**1.42**	**250**	*e*P	**Pb**	**12 48 48.7**	**-0.9**
	baz=252						
SCLT				*e*S	**Sb**	**12 49 07.6**	**+0.3**
	baz=252						
JYNG	**Yonagunijimaku**	**1.43**	**56**	P	**Pn**	**12 48 48.3**	**+0.9**
JYNG				S	**Sn**	**12 49 06.1**	**+1.0**
TWS1	**Kuangyinshan**	**1.45**	**352**	*e*P	**Pb**	**12 48 49.3**	**-0.9**
	baz=1.0						
TWS1				*e*S	**Sb**	**12 49 07.3**	**-1.1**
	baz=1.0						
EAST	**Anshuo**	**1.47**	**210**	*e*P	**Pn**	**12 48 46.1**	**-1.9**
	baz=200						
TAW	**Tawu**	**1.47**	**208**	*e*P	**Pb**	**12 48 49.1**	**-1.3**
	baz=197						
YOJ	**Yonaguni jima**	**1.48**	**57**	P	**Pb**	**12 48 49.3**	**-1.4**
YOJ				S	**Sn**	**12 49 07.6**	**+1.2**
YOJ	**Yonaguni jima**	**1.48**	**57**	↓*e*P	**Pb**	**12 48 49.5**	**-1.3**
	baz=59						
YOJ				*e*S	**Sn**	**12 49 07.7**	**+1.2**
	baz=59						
LAY	**Lan-yu**	**1.61**	**183**	*e*P	**Pn**	**12 48 49.3**	**-0.7**
	baz=174						
HEN	**Hengchun**	**1.84**	**207**	*e*P	**Pb**	**12 48 55.1**	**-1.8**
	baz=198						
WDGT	**Dungji**	**1.87**	**258**	*e*P	**Pn**	**12 48 53.8**	**+0.4**
	baz=259						
TWK1	**Hengchun**	**1.87**	**205**	*e*P	**Pn**	**12 48 54.6**	**+1.0**
	baz=192						
TSEB	**Hengchuen, Pin**	**1.88**	**202**	*e*P	**Pb**	**12 48 55.7**	**-1.7**
	baz=191						
PNG	**Penghu**	**1.92**	**268**	↓P	**Pn**	**12 48 54.6**	**+0.4**
	baz=268						
HATJ	**Hateruma jima**	**2.02**	**78**	S	**Sn**	**12 49 20.3**	**+0.7**
IRIF	**Iriomote-Funau**	**2.02**	**70**	P	**Pn**	**12 48 56.9**	**+1.3**
IRIF				S	**Sn**	**12 49 21.8**	**+2.0**
JKRS	**Kuro-shima**	**2.24**	**75**	P	**Pn**	**12 49 00.7**	**+2.1**
JKRS				S	**Sn**	**12 49 27.2**	**+2.1**
JIJ	**Ishigaki jima**	**2.39**	**72**	P	**Pn**	**12 49 01.3**	**+0.6**
JIJ				S	**Sn**	**12 49 29.3**	**+0.4**
JISG	**Ishigakijimahi**	**2.60**	**69**	P	**Pn**	**12 49 04.4**	**+0.8**
JISG				*e*S	**Sn**	**12 49 34.3**	**+0.1**
JTJ	**Tarama**	**2.96**	**70**	P	**Pn**	**12 49 09.9**	**+1.4**
JTJ				S	**Sn**	**12 49 44.0**	**+1.1**
QZH	**Quanzhou**	**3.07**	**295**	Pn	Pn	12 49 04.0	-6.0
QZH				Sn	Sn	12 49 37.0	-8.5
QZH				smax	smax		
	comp=N,270nm,0.8s						
QZH				smax	smax		
	comp=E,170nm,0.9s						
JIRB	**Irabujima**	**3.42**	**69**	*e*S	**Sn**	**12 49 54.7**	**+0.3**
JIKM	**Ikemajima**	**3.52**	**68**	S	**Sn**	**12 49 57.2**	**+0.4**

*IDC **25** 12:49:20.4±1.6, 7°.04S×156°.02E, h0km, mb3.9/7, mb1 4.1/7, mb1mx3.8/37, mbtmp3.9/7, MS2.7/3, Ms1 2.7/3, ms1mx2.5/31, Error ellipse: s-maj=56.5km s-min=25.8km az=118.0*
*ISCJB **25** 12:49:27.2±0.7, 6°.9S±0°.1×155°.72E±0°.08, h50km, mb3.9/9, MS3.8/2, Error ellipse: s-maj=18.1km s-min=8.8km az=24.9*
*NEIC **25** 12:49:33.4±1.4, 7°.32S×156°.01E, h109km±13km, mb4.3/2, Error ellipse: s-maj=18.0km s-min=12.5km az=170.0*
ISC 25 12:49:28.4±0.7, 7°.1S±0°.1×155°.6E±0°.1, h50km, n14, σ1°.56/17, mb3.9/9, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	**Honiara**	**4.87**	**119**	Lg	Lg	12 51 38.3	
	4.6nm,0.3s,baz=16,slow=23,SNR=3.6						
HNR				LR	LR	12 51 53.0	
	comp=Z,11nm,20.9s,baz=250,slow=34						
HNR	**Honiara**	**4.87**	**119**	*e*Pn	**Pn**	**12 50 38.9**	**-0.2**
HNR				*e*Sn	**Sn**	**12 51 36.2**	**+2.0**
HNR				Lg	Lg	12 51 38.3	
PMG	**Port Moresby**	**8.70**	**254**	Pn	Pn	12 51 40.1	+8.4
	3.4nm,0.3s,baz=50,slow=7.4,SNR=12						
PMG				LR	LR	12 54 51.8	
	comp=Z,101nm,19.3s,baz=30,slow=36						
CTAO	**Charters Tower**	**15.80**	**214**	*e*Pn	Pn	12 53 02.7	-5.1
	202nm,1.7s						
ARMA	**Armidale**	**23.52**	**189**	P	**P**	**12 54 30.6**	**-3.5**
	49nm,1.7s						
WRAB	**Tennant Creek**	**24.27**	**236**	*e*P	**P**	**12 54 43.4**	**+2.2**
	11nm,1.6s						
WRA	**Warramunga Arr**	**24.29**	**236**	P	**P**	**12 54 43.4**	**+2.0**
	0.9nm,0.4s,baz=60,slow=9.6,SNR=15						
WRA				PcP	**PcP**	**12 58 20.7**	**+0.2**
	0.4nm,0.6s,baz=63,slow=2.5,SNR=5.0						
ASAR	**Alice Springs**	**26.59**	**229**	P	**P**	**12 55 03.2**	**+1.0**
	1.1nm,0.6s,baz=60,slow=9.8,SNR=14						
ASAR				PcP	**PcP**	**12 58 26.0**	**+0.3**
	0.4nm,0.5s,baz=61,slow=2.8,SNR=6.6						
ASAR				LR	LR	13 05 04.2	
	comp=Z,64nm,18.1s,baz=100,slow=35						
CMAR	**Chiang Mai Arr**	**61.39**	**295**	P	**P**	**12 59 41.3**	**+1.4**
	0.6nm,0.6s,baz=117,slow=5.4,SNR=4.1						
CMAR				pP	**pP**	**12 59 53.6**	**-0.2**
	1.8nm,0.8s,baz=118,slow=5.2,SNR=5.0						
SONM	**Songino Array**	**69.75**	**327**	P	**P**	**13 00 33.7**	**+0.3**
	0.6nm,0.5s,baz=132,slow=6.2,SNR=4.6						
SONM				PcP	**PcP**	**13 00 55.3**	**-0.6**
	0.7nm,0.7s,baz=128,slow=5.3,SNR=3.8						
ILAR	**Eielson Array**	**83.23**	**21**	P	**P**	**13 01 48.2**	**-1.0**
	0.4nm,0.9s,baz=253,slow=5.0,SNR=3.7						
MKAR	**Makanchi Array**	**83.89**	**319**	P	**P**	**13 01 54.0**	**+1.0**
	1.7nm,0.6s,baz=101,slow=5.9,SNR=15						
MKAR				LR	LR	13 38 33.8	
	comp=Z,206nm,21.9s,baz=219,slow=35						
BVAR	**Borovoye Array**	**92.75**	**323**	P	**P**	**13 02 33.9**	**-1.3**
	0.6nm,0.7s,baz=80,slow=11,SNR=3.6						
TORD	**Torodi Ar. Bea**	**153.66**	**285**	PKPbc	**PKPbc**	**13 09 21.8**	**-1.0**
	0.8nm,0.7s,baz=65,slow=2.8,SNR=4.3						
TORD				pPKPbc	**PKPab**	**13 09 35.4**	**-0.2**
	0.7nm,0.7s,baz=78,slow=3.4,SNR=4.0						

*BJI **25** 13:04:27.2, 29°.33N×92°.39E, h7km, ML3.8/3*
*ISCJB **25** 13:04:31.8±0.8, 29°.27N±0°.09×93°.9E±0°.2, h10km, mb3.5/4, MS3.3/4, Error ellipse: s-maj=27.2km s-min=11.4km az=165.5*
*IDC **25** 13:04:31.8±1.5, 29°.19N×93°.98E, h0km, mb3.4/5, mb1 3.5/6, mb1mx3.3/57, mbtmp3.4/6, ML3.4/1, MS3.4/4, Ms1 3.4/4, ms1mx2.9/44, Error ellipse: s-maj=68.1km s-min=20.2km az=65.0*
ISC 25 13:04:33.1±1.0, 29°.23N±0°.09×93°.9E±0°.2, h10km, n12, σ1°.22/8, mb3.6/4, MS3.3/4, 1D, Xizang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHL	**Shillong**	**4.07**	**207**	↓*i*P	**Pn**	**13 05 35.0**	**-0.6**
SHL				*i* x	x	13 05 47.0	
SHL				*i* S	**Sb**	**13 06 35.0**	**+0.7**
CMAR	**Chiang Mai Arr**	**11.66**	**156**	Pn	Pn	13 07 23.7	+4.0
	0.2nm,0.3s,baz=324,slow=12,SNR=2.6						
WMQ	**Urumqi**	**15.39**	**343**	*e*P	P	13 08 23.0	+8.0
MKAR	**Makanchi Array**	**19.75**	**336**	P	**Pn**	**13 09 03.8**	**-0.7**
	0.1nm,0.3s,baz=143,slow=12,SNR=4.0						
SONM	**Songino Array**	**20.94**	**24**	P	**P**	**13 09 15.9**	**-0.2**
	0.4nm,0.6s,baz=211,slow=9.9,SNR=3.3						
SONM				LR	LR	13 18 32.4	
	comp=Z,31nm,18.9s,baz=250,slow=40						
TLY	**Talaya**	**23.58**	**15**	LR	LR	13 20 12.9	
	comp=Z,57nm,18.2s,baz=191,slow=40						
KURBB	**Kurchatov Arra**	**24.31**	**336**	P	**P**	**13 09 50.2**	**-0.5**
	0.8nm,0.6s,baz=144,slow=10,SNR=7.6						
ZALV	**Zalesovo Beam**	**25.58**	**348**	P	**P**	**13 10 04.4**	**+2.3**
	0.9nm,0.5s,baz=173,slow=8.2,SNR=5.2						
GNI	**Garni**	**41.41**	**299**	LR	LR	13 33 23.4	
	comp=Z,187nm,19.5s,baz=127,slow=42						
VRAC	**Vranov**	**60.47**	**313**	LR	LR	13 41 59.8	
	comp=Z,39nm,19.0s,baz=176,slow=37						
WRA	**Warramunga Arr**	**62.53**	**137**	P	**P**	**13 14 56.7**	**-0.6**
	0.4nm,0.8s,baz=325,slow=7.7,SNR=3.3						
ASAR	**Alice Springs**	**65.16**	**140**	P	**P**	**13 15 15.1**	**+0.5**
	0.3nm,0.9s,baz=328,slow=6.8,SNR=4.2						

*IDC **25** 13:16:02.0±1.4, 3°.65S×149°.56E, h0km, mb3.9/7, mb1 4.2/7, mb1mx3.9/29, mbtmp3.9/7, MS4.1/19, Ms1 4.1/19, ms1mx3.9/32, Error ellipse: s-maj=47.8km s-min=22.0km az=114.0*
*ISCJB **25** 13:16:04.0±1.1, 3°.6S±0°.1×149°.4E±0°.3, h20km, mb4.0/8, MS4.1/16, Error ellipse: s-maj=39.7km s-min=14.8km az=23.2*
*GCMT **25** 13:16:07.4±0.2, 3°.44S×149°.29E, h15km±1km, MW5.0/103, Moment Tensor Solution. s35,c42; s103,c151; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-0.29±.11; $M_{\theta\theta}$1.84±.09; $M_{\phi\phi}$-1.55±.10; $M_{r\theta}$-0.22±.29; $M_{\theta\phi}$3.26±.08; $M_{\phi r}$-0.32±.29; Best double couple: $M_0$3.69300×10^{16} NP1:ϕ_s194.00000°, δ89.00000°, λ175.00000°. NP2: ϕ_s284.00000°, δ85.00000°, λ1.00000°. Principal axes: T 3.8490, Plg5.0000°, Azm149.0000°; N -0.3160, Plg84.0000°, Azm358.0000°; P -3.5370, Plg3.0000°, Azm239.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **25** 13:16:07.4±1.0, 3°.65S×149°.55E, h35km, mb4.6/1 Error ellipse: s-maj=39.1km s-min=14.5km az=117.0*
ISC 25 13:16:05.3±1.4, 3°.6S±0°.2×149°.6E±0°.3, h20km, n24, σ0°.92/9, mb4.0/8, MS4.1/16, Bismarck Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**6.23**	**202**	LR	LR	13 20 08.6	
	comp=Z,2μm,20.1s,baz=14,slow=40						
HNR	**Honiara**	**11.83**	**120**	LR	LR	13 23 32.1	
	comp=Z,905nm,20.2s,baz=295,slow=38						
GUMO	**Guam**	**17.71**	**345**	LR	LR	13 26 18.7	
	comp=Z,444nm,18.3s,baz=168,slow=35						
WRAB	**Tennant Creek**	**21.98**	**221**	*e*P	**P**	**13 20 59.8**	**+1.5**
	21nm,0.8s						
WRA	**Warramunga Arr**	**21.99**	**221**	P	**P**	**13 20 57.2**	**-1.3**
	14nm,0.9s,baz=43,slow=10.0,SNR=24						
WRA				LR	LR	13 29 39.7	
	comp=Z,540nm,19.9s,baz=50,slow=37						
ASAR	**Alice Springs**	**25.02**	**216**	P	**P**	**13 21 27.8**	**-0.5**
	2.9nm,0.8s,baz=46,slow=7.8,SNR=14						
ASAR				LR	LR	13 32 13.8	
	comp=Z,911nm,18.6s,baz=47,slow=39						
STKA	**Stephens Creek**	**29.10**	**194**	LR	LR	13 34 59.9	
	comp=Z,280nm,18.9s,baz=12,slow=39						
JCJ	**Chichijima**	**31.34**	**347**	LR	LR	13 33 29.2	
	comp=Z,419nm,21.5s,baz=145,slow=33						
TGY	**Tagaytay City**	**33.39**	**302**	LR	LR	13 33 23.0	
	comp=Z,207nm,21.7s,baz=115,slow=31						
MJAR	**Matsushiro Arr**	**41.33**	**346**	LR	LR	13 38 06.8	
	comp=Z,232nm,21.9s,baz=165,slow=32						
LEM	**Lembang**	**41.87**	**264**	LR	LR	13 42 54.1	
	comp=Z,120nm,21.9s,baz=74,slow=38						
KSRS	**Korea Array**	**45.54**	**336**	LR	LR	13 42 49.0	
	comp=Z,178nm,18.6s,baz=198,slow=35						
USRK	**Ussuriysk Ar.**	**50.14**	**344**	P	**P**	**13 24 59.0**	**-0.4**
	1.0nm,0.5s,baz=157,slow=4.1,SNR=4.5						
USRK				LR	LR	13 43 59.3	
	comp=Z,190nm,21.1s,baz=185,slow=33						
CMAR	**Chiang Mai Arr**	**54.45**	**296**	P	**P**	**13 25 32.4**	**+0.6**
	1.0nm,0.5s,baz=116,slow=5.7,SNR=9.5						
CMAR				LR	LR	13 47 12.5	
	comp=Z,59nm,21.1s,baz=265,slow=34						
SONM	**Songino Array**	**63.62**	**329**	P	**P**	**13 26 34.8**	**-0.3**
	1.2nm,1.1s,baz=129,slow=5.7,SNR=2.8						
TLY	**Talaya**	**67.45**	**331**	LR	LR	13 56 04.8	
	comp=Z,157nm,20.4s,baz=148,slow=36						
VNDA	**Vanda**	**74.15**	**177**	LR	LR	13 56 02.6	
	comp=Z,142nm,20.9s,baz=355,slow=32						
MKAR	**Makanchi Array**	**77.31**	**319**	LR	LR	14 02 56.2	
	comp=Z,103nm,18.1s,baz=92,slow=36						
AAK	**Ala-Archa**	**81.51**	**314**	LR	LR	14 04 39.1	
	comp=Z,138nm,19.5s,baz=74,slow=36						
ILAR	**Eielson Array**	**82.30**	**23**	P	**P**	**13 28 25.2**	**-0.1**
	0.5nm,0.9s,baz=253,slow=5.5,SNR=5.0						
GEYT	**Alibeck**	**93.33**	**308**	LR	LR	14 14 04.2	
	comp=Z,77nm,19.4s,baz=85,slow=37						
NVAR	**Mina Array Bea**	**93.90**	**52**	LR	LR	14 06 28.2	
	comp=Z,106nm,19.0s,baz=264,slow=32						
YKA	**Yellowknife Ar**	**95.89**	**28**	P	**P**	**13 29 31.0**	**+0.6**
	0.1nm,0.7s,baz=274,slow=5.1,SNR=3.6						
TORD	**Torodi Ar. Bea**	**146.86**	**289**	PKPbc	**PKPbc**	**13 35 47.0**	**-0.4**
	0.9nm,0.7s,ba

MMIG	**Aquila**	**1.83**	**285**	*e*P	Pn	13 31 14.7	-2.0
MMIG				*i* S	Sn	13 31 36.2	-2.7
MOIG	**Morelia**	**1.86**	**8**	*i* P	Pn	13 31 14.9	-2.5
MOIG				*i* S	Sn	13 31 36.6	-3.5
PLIG	**Platanillo**	**1.96**	**73**	*e*P	Pn	13 31 17.2	-1.4
PLIG				*i* S	Sn	13 31 39.3	-3.0
YAIG	**Yautepec**	**2.51**	**65**	*e*P	Pn	13 31 24.9	-1.4
YAIG				*e*S	Sn	13 31 54.4	-1.6
EZ5V		**2.60**	**310**	*e*P	Pn	13 31 25.2	-2.3
EZ5V				*i* S	Sn	13 31 56.3	-1.9
R15V		**2.73**	**300**	*i* P	Pn	13 31 27.9	-1.2
R15V				*i* S	Sn	13 31 59.0	-2.1
TLIG	**Tlapa**	**2.79**	**95**	*i* P	Pn	13 31 29.0	-1.1
TLIG				*i* S	Sn	13 31 59.5	-3.3

JMA 25 13:43:33.3±0.3, 38°.56N×144°.60E, h40km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.35**	**284**	P	Pn	13 44 10.6	+1.2
MIYJ	**Miyakonagasawa**	**2.39**	**296**	P	Pn	13 44 10.9	+1.0
MIYJ				*e*S	Sn	13 44 38.9	+0.9
JMK	**Ichinoseki**	**2.67**	**279**	P	Pn	13 44 15.4	+1.6
JOM	**Ohasama**	**2.73**	**291**	P	Pn	13 44 16.7	+2.0
JOM				*e*S	Sn	13 44 48.4	+1.9
JANG	**Nango**	**3.00**	**308**	P	Pn	13 44 18.7	+0.4
JANG				*e*S	Sn	13 44 52.9	-0.1
JOU	**Okura**	**3.10**	**268**	S	Sn	13 44 57.0	+1.6
JRG	**Rokugo**	**3.20**	**286**	P	Pn	13 44 23.3	+2.2
JRG				S	Sn	13 45 00.7	+2.7
JYK	**Kaneyama**	**3.34**	**277**	P	Pn	13 44 25.4	+2.5
JYK				S	Sn	13 45 03.6	+2.3
JAH	**Hinai**	**3.48**	**299**	P	Pn	13 44 27.3	+2.5
JAH				*e*S	Sn	13 45 07.5	+2.8
JTM	**Tenmabayashi**	**3.52**	**310**	P	Pn	13 44 26.6	+1.2
JTM				*e*S	Sn	13 45 05.5	-0.3
JFT	**Otama**	**3.52**	**254**	P	Pn	13 44 27.6	+2.1
JFT				S	Sn	13 45 08.5	+2.5
JOT	**Ohata**	**3.92**	**317**	P	Pn	13 44 33.1	+2.1
JOT				S	Sn	13 45 14.9	-0.8
JRY	**Ryogami san**	**5.20**	**243**	P	Pn	13 44 49.8	+1.2
JRY				S	Sn	13 45 47.2	-0.2

TAP ***25*** *13:58:04.8, 24°.76N×122°.37E, h4km±1km, ML2.8, D*
JMA ***25*** *13:58:04.0±0.1, 24°.70N×122°.54E, h35km±3km, M1.8*
ISC 25 13:58:02.0±1.3, 24°.80N±0°.05×122°.56E±0°.02, h11km±10km, n24, σ0°.54/46, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JYNG	**Yonagunijimaku**	**0.50**	**134**	P	**Pb**	**13 58 13.5**	**+0.8**
JYNG				S	**Sb**	**13 58 20.2**	**+0.3**
YOJ	**Yonaguni jima**	**0.53**	**129**	P	**Pb**	**13 58 14.2**	**+0.8**
YOJ				*e*S	**Sb**	**13 58 21.4**	**+0.4**
TWB1	**Santiao Chiao** baz=305	**0.56**	**292**	P	**Pb**	**13 58 14.3**	**+0.5**
TWB1	baz=305			S	**Sb**	**13 58 21.5**	**-0.2**
TWC	**Suao** baz=252	**0.67**	**254**	P	**Pb**	**13 58 15.7**	**0.0**
TWC	baz=252			S	**Sg**	**13 58 23.8**	**0.0**
NWF	**Wu-fen Shan** baz=300	**0.75**	**291**	P	**Pn**	**13 58 18.4**	**-0.3**
NWF	baz=300			S	**Sb**	**13 58 27.9**	**+0.4**
TWE	**Neicheng** baz=266	**0.81**	**265**	P	**Pb**	**13 58 18.4**	**+0.3**
TWE	baz=266			S	**Sg**	**13 58 28.3**	**0.0**
ENA	**Nanau** baz=239	**0.83**	**244**	*e*P	**Pb**	**13 58 18.6**	**+0.2**
ENA	baz=239			*e*S	**Sg**	**13 58 28.8**	**-0.1**
ENTT	**Nioudou** baz=260	**0.91**	**260**	P	**Pn**	**13 58 20.6**	**-0.2**
ENTT	baz=260			S	**Sg**	**13 58 31.6**	**0.0**
NSK	**Sanguang** baz=264	**1.10**	**264**	*e*P	**Pn**	**13 58 23.2**	**-0.1**
NSK	baz=264			S	**Sg**	**13 58 36.1**	**-1.3**
NNS	**Nan Shan** baz=250	**1.13**	**252**	*e*P	**Pn**	**13 58 24.2**	**+0.3**
NNS	baz=250			*e*S	**Sb**	**13 58 38.5**	**+0.1**
IRIF	**Iriomote-Funau**	**1.17**	**113**	P	**Pb**	**13 58 23.6**	**-0.5**
IRIF				S	**Sb**	**13 58 39.2**	**0.0**
WHF	**Hehuan Shan** baz=238	**1.34**	**241**	*e*P	**Pg**	**13 58 27.9**	**0.0**
WHF	baz=238			*e*S	**Sn**	**13 58 45.2**	**+0.1**
TWT	**Tachien** baz=245	**1.37**	**247**	*e*P	**Pg**	**13 58 29.3**	**+1.0**
TWT	baz=245			*e*S	**Sn**	**13 58 45.8**	**+0.3**
ESL	**Shilin** baz=222	**1.42**	**226**	*e*P	**Pg**	**13 58 29.2**	**-0.1**
ESL	baz=222			*e*S	**Sg**	**13 58 48.1**	**+0.4**
NSTT	**Nanjuang** baz=264	**1.42**	**264**	*e*P	**Pg**	**13 58 29.2**	**-0.1**
NSTT	baz=264			*e*S	**Sb**	**13 58 46.8**	**+0.1**
JKRS	**Kuro-shima**	**1.44**	**113**	S	**Sn**	**13 58 45.3**	**-1.5**
JIJ	**Ishigaki jima**	**1.51**	**106**	P	**Pn**	**13 58 28.9**	**0.0**
WDT	**Danda** baz=228	**1.66**	**232**	*e*P	**Pb**	**13 58 32.9**	**+0.1**
WDT	baz=228			*e*S	**Sb**	**13 58 54.0**	**+0.1**
TWQ1	**Liyutan** baz=254	**1.68**	**255**	*e*P	**Pb**	**13 58 33.5**	**+0.5**
TWQ1	baz=254			*e*S	**Sb**	**13 58 53.8**	**-0.5**
SMLT	**Sun Moon Lake** baz=236	**1.76**	**239**	*e*P	**Pb**	**13 58 34.8**	**+0.4**
SMLT	baz=236			*e*S	**Sb**	**13 58 56.5**	**-0.2**
TYC	**Yuchr** baz=238	**1.79**	**240**	*e*P	**Pb**	**13 58 34.1**	**-0.6**
TYC	baz=238			*e*S	**Sb**	**13 58 56.6**	**-0.6**
YUS	**Yu-Shan** baz=225	**1.96**	**229**	*e*P	**Pb**	**13 58 37.4**	**-0.6**
YUS	baz=225			*e*S	**Sb**	**13 59 02.0**	**-0.6**
ALS	**Alishan** baz=228	**2.05**	**232**	*e*P	**Pb**	**13 58 38.5**	**-0.9**
ALS	baz=228			*e*S	**Sn**	**13 59 03.0**	**+0.6**
CHN5	**Tsauling** baz=233	**2.09**	**235**	*e*P	**Pb**	**13 58 39.6**	**-0.4**
CHN5	baz=233			*e*S	**Sn**	**13 59 04.2**	**+1.1**

ISK ***25*** *13:58:54.9, 39°.09N×29°.14E, h6km, MD2.8*
ISCJB ***25*** *13:58:55.3±0.4, 39°.10N±0°.02×29°.11E±0°.03, h3km±5km, Error ellipse: s-maj=4.1km s-min=3.7km az=158.7*
CSEM ***25*** *13:58:55.6±0.1, 39°.11N×29°.12E, h5km, ML2.7, Error ellipse: s-maj=2.0km s-min=1.9km az=110.0*
DDA ***25*** *13:58:55.3, 39°.10N×29°.08E, h7km, Ml2.7*
ISC 25 13:58:55.7±0.9, 39°.10N±0°.02×29°.11E±0°.02, h11km±8km, n53, σ0°.41/72, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.29**	**92**	P	**Pg**	**13 59 01.8**	**+0.1**
GDZ				S	**Sg**	**13 59 06.1**	**+0.4**
GDZ	**Gediz**	**0.29**	**92**	*i* P	**Pg**	**13 59 01.8**	**+0.1**
GDZ				*i* S	**Sg**	**13 59 06.1**	**+0.4**
DEMI	**Demirci**	**0.31**	**259**	P	**Pg**	**13 59 02.0**	**0.0**
DEMI				S	**Sg**	**13 59 06.3**	**+0.1**
DEMI	**Demirci**	**0.31**	**259**	*i* P	**Pg**	**13 59 02.0**	**0.0**
DEMI				*i* S	**Sg**	**13 59 06.3**	**+0.1**
TVSB	**Tavsanli**	**0.44**	**38**	*e*PG	**Pg**	**13 59 04.2**	**-0.2**
TVSB				*e*SG	**Sg**	**13 59 09.8**	**-0.6**
TVSB	**Tavsanli**	**0.44**	**38**	*e*Pg	**Pg**	**13 59 04.2**	**-0.2**
TVSB				*e*Sg	**Sg**	**13 59 09.8**	**-0.6**
KULA	**Kula-Manisa**	**0.68**	**211**	*e*PG	**Pg**	**13 59 08.9**	**0.0**
KULA				*e*SG	**Sg**	**13 59 18.1**	**+0.2**
KULA	**Kula-Manisa**	**0.68**	**211**	*e*Pg	**Pg**	**13 59 08.9**	**0.0**
KULA				*e*Sg	**Sg**	**13 59 18.1**	**+0.2**
DURS	**Dursunbey**	**0.70**	**316**	P	**Pg**	**13 59 08.8**	**-0.5**
DURS				S	**Sg**	**13 59 18.4**	**-0.1**
DURS	**Dursunbey**	**0.70**	**316**	*i* P	**Pg**	**13 59 08.8**	**-0.5**
DURS				*i* S	**Sg**	**13 59 18.4**	**-0.1**
KHAL	**Karahalli**	**0.79**	**157**	P	**Pb**	**13 59 11.4**	**-0.1**
KHAL				S	**Sb**	**13 59 21.9**	**-0.4**
KHAL	**Karahalli**	**0.79**	**157**	*i* P	**Pb**	**13 59 11.4**	**-0.1**
KHAL				*i* S	**Sb**	**13 59 21.9**	**-0.4**
KHL	**Karahalli**	**0.84**	**157**	*e*PG	**Pg**	**13 59 11.1**	**-0.8**
KHL				*e*SG	**Sg**	**13 59 22.9**	**-0.1**
KHL	**Karahalli**	**0.84**	**157**	*e*Pg	**Pg**	**13 59 11.1**	**-0.8**
KHL				*e*Sg	**Sg**	**13 59 22.9**	**-0.1**
ORLT	**Orhaneli**	**0.96**	**350**	*e*PG	**Pg**	**13 59 13.6**	**-0.6**
ORLT	**Orhaneli**	**0.96**	**350**	*e*Pg	**Pg**	**13 59 13.6**	**-0.6**
AKHS	**Akhisar**	**1.03**	**258**	P	**Pg**	**13 59 15.3**	**-0.3**
AKHS				S	**Sb**	**13 59 29.3**	**+0.1**
AKHS	**Akhisar**	**1.03**	**258**	*i* P	**Pg**	**13 59 15.3**	**-0.3**
AKHS				*i* S	**Sb**	**13 59 29.3**	**+0.1**
AKS	**Akhisar**	**1.03**	**258**	*e*PG	**Pg**	**13 59 15.5**	**-0.1**
AKS	**Akhisar**	**1.03**	**258**	*e*Pg	**Pg**	**13 59 15.5**	**-0.1**
BALB	**Balikesir**	**1.09**	**300**	*e*PN	**Pn**	**13 59 17.0**	**0.0**
BALB	**Balikesir**	**1.09**	**300**	*e*Pn	**Pn**	**13 59 17.0**	**0.0**
IGD	**Bursa**	**1.16**	**4**	*i* P	**Pb**	**13 59 16.6**	**-1.3**
IGD				*i* S	**Sn**	**13 59 34.5**	**+0.6**
CAVI	**Cavuskoy**	**1.24**	**27**	*e*PN	**Pg**	**13 59 19.7**	**+0.2**
CAVI	**Cavuskoy**	**1.24**	**27**	*e*Pn	**Pg**	**13 59 19.7**	**+0.2**
IZI	**Iznik**	**1.27**	**13**	*e*PN	**Pb**	**13 59 19.7**	**+0.1**
IZI	**Iznik**	**1.27**	**13**	*e*Pn	**Pb**	**13 59 19.7**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.28**	**352**	*e*PN	**Pg**	**13 59 20.4**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.28**	**352**	*e*Pn	**Pg**	**13 59 20.4**	**+0.1**
KCTX	**Karacabey (Bur**	**1.30**	**334**	*e*PN	**Pn**	**13 59 19.7**	**-0.2**
KCTX	**Karacabey (Bur**	**1.30**	**334**	*e*Pn	**Pn**	**13 59 19.7**	**-0.2**
BALY	**Balya**	**1.32**	**299**	P	**Pb**	**13 59 20.5**	**0.0**
BALY				S	**Sg**	**13 59 37.9**	**-0.2**
BALY	**Balya**	**1.32**	**299**	*i* P	**Pb**	**13 59 20.4**	**0.0**
BALY				*i* S	**Sg**	**13 59 37.9**	**-0.2**
GEMT	**Gemlik**	**1.33**	**3**	*e*PN	**Pg**	**13 59 21.1**	**-0.2**
GEMT	**Gemlik**	**1.33**	**3**	*e*Pn	**Pg**	**13 59 21.2**	**-0.2**
ADVT	**Abdulvahap**	**1.42**	**20**	*e*PN	**Pn**	**13 59 21.0**	**-0.4**
ADVT	**Abdulvahap**	**1.42**	**20**	*e*Pn	**Pn**	**13 59 21.0**	**-0.4**
GONE	**Gonen-Balikesi**	**1.45**	**311**	*e*PN	**Pg**	**13 59 23.2**	**-0.3**
GONE	**Gonen-Balikesi**	**1.45**	**311**	*e*Pn	**Pg**	**13 59 23.2**	**-0.3**
ARMT	**Armutlu**	**1.48**	**353**	*e*PN	**Pb**	**13 59 23.2**	**0.0**
ARMT	**Armutlu**	**1.48**	**353**	*e*Pn	**Pb**	**13 59 23.2**	**0.0**
EDC	**Edincik**	**1.57**	**323**	*e*PN	**Pb**	**13 59 24.9**	**+0.1**
EDC	**Edincik**	**1.57**	**323**	*e*Pn	**Pb**	**13 59 24.9**	**+0.1**
GULT	**Gulveren**	**1.72**	**39**	*e*PN	**Pn**	**13 59 25.8**	**+0.1**
GULT	**Gulveren**	**1.72**	**39**	*e*Pn	**Pn**	**13 59 25.8**	**+0.1**
SVRH	**Sivrihisar-ESK**	**1.91**	**79**	*e*PN	**Pn**	**13 59 28.7**	**+0.4**
SVRH	**Sivrihisar-ESK**	**1.91**	**79**	*e*Pn	**Pn**	**13 59 28.7**	**+0.4**
ISK	**Istanbul-Kandi**	**1.96**	**359**	*e*PN	**Pn**	**13 59 30.0**	**+1.0**
ISK	**Istanbul-Kandi**	**1.96**	**359**	*e*Pn	**Pn**	**13 59 30.0**	**+1.0**
SILT	**Sile**	**2.09**	**11**	*e*PN	**Pn**	**13 59 31.6**	**+0.9**
SILT	**Sile**	**2.09**	**11**	*e*Pn	**Pn**	**13 59 31.6**	**+0.9**
MDUB	**Mudurnu**	**2.11**	**49**	*e*PN	**Pn**	**13 59 31.3**	**+0.1**
MDUB	**Mudurnu**	**2.11**	**49**	*e*Pn	**Pn**	**13 59 31.3**	**+0.1**

CSEM ***25*** *14:05:00.7, 36°.97N×34°.58E, h7km, MD2.7*
DDA 25 14:05:00.7, 36°.97N×34°.58E, h7km, Md2.7, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DED	**Mersin**	**0.17**	**91**	*i* P	Pg	14 05 04.5	+0.3
DED				*i* S	Sg	14 05 07.8	+1.1
GULE	**Gulek**	**0.35**	**26**	P	Pg	14 05 07.8	+0.1
GULE				S	Sg	14 05 13.5	+1.1
GULE	**Gulek**	**0.35**	**26**	*i* P	Pg	14 05 07.8	+0.1
GULE				*i* S	Sg	14 05 13.5	+1.1
KERG	**Konya-Eregli**	**0.58**	**321**	P	Pg	14 05 11.1	-0.8
KERG				S	Sb	14 05 21.4	-0.3
KERG	**Konya-Eregli**	**0.58**	**321**	*i* P	Pg	14 05 11.1	-0.8
KERG				*i* S	Sb	14 05 21.4	-0.4
KIZK	**Mersin**	**0.60**	**216**	P	Pg	14 05 12.0	-0.2
KIZK				S	Sb	14 05 21.8	-0.3
KIZK	**Mersin**	**0.60**	**216**	*i* P	Pg	14 05 12.0	-0.3
KIZK				*i* S	Sb	14 05 21.8	-0.4
YURE	**YUREGIR**	**0.85**	**99**	P	Pn	14 05 19.2	0.0
YURE				S	Sn	14 05 34.0	+2.0
YURE	**YUREGIR**	**0.85**	**99**	*i* P	Pn	14 05 19.2	0.0
YURE				*i* S	Sn	14 05 34.0	+2.1

NIED ***25*** *14:20:00, 35°.50N×140°.90E, h20km, Mw4.0 Best double couple: M0=1.19000×10^15 NP1:φs=163.00000°, δ33.00000°, λ-179.00000°. NP2:φs=72.00000°, δ89.00000°, λ-57.00000°.*
IDC ***25*** *14:20:48.4±0.8, 35°.41N×141°.06E, h0km, mb3.7/8, mb1 3.8/13, mb1mx3.7/46, mbtmp3.7/13, ML3.5/4, MS3.2/9, Ms1 3.2/9, ms1mx2.9/51, Error ellipse: s-maj=22.8km s-min=16.6km az=83.0*
ISCJB ***25*** *14:20:50.9±0.6, 35°.47N±0°.04×140°.98E±0°.07, h33km, mb3.7/8, MS3.3/6, Error ellipse: s-maj=7.9km s-min=5.3km az=13.4*
JMA ***25*** *14:20:51.2±0.1, 35°.50N×140°.93E, h24km±1km, M3.9*
JMA Felt II J1.
ISC 25 14:20:52.9±0.8, 35°.48N±0°.05×140°.91E±0°.07, h33km, n35, σ1°.65/26, mb3.6/8, MS3.4/6, 2C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.22**	**349**	⇑P	**Pn**	**14 20 56.9**	**-2.7**
CHOJ				S	**Sn**	**14 21 01.0**	**-2.0**
JCN	**Nagara**	**0.58**	**264**	P	**Pb**	**14 21 03.7**	**-1.2**
KTR	**Katsuura**	**0.59**	**236**	P	**Pn**	**14 21 02.9**	**-2.1**
KTR				*e*S	**Sb**	**14 21 11.5**	**-1.7**
BSO4	**Boso 4**	**0.68**	**224**	P	**Pn**	**14 21 05.3**	**-0.8**
BSO3	**Boso 3**	**0.76**	**206**	⇑P	**Pn**	**14 21 05.8**	**-1.2**
BSO1	**Boso 1**	**0.83**	**176**	P	**Pn**	**14 21 05.9**	**-1.9**
JYT	**Yasato**	**0.95**	**322**	P	**Pn**	**14 21 08.2**	**-1.7**
JYT				S	**Sn**	**14 21 21.5**	**-0.8**
JHO	**Hitachi**	**1.16**	**346**	P	**Pn**	**14 21 11.2**	**-1.7**
JIM2	**Oshima 3**	**1.44**	**238**	P	**Pn**	**14 21 14.9**	**-1.8**
JIM2				S	**Sn**	**14 21 33.3**	**-1.1**
MJAR	**Matsushiro Arr** 4.7nm,0.3s,baz=100,slow=15,SNR=41	**2.43**	**297**	Pn	**Pn**	**14 21 32.4**	**+2.0**
JHJ	**Hachijo jima 2** comp=Z,69nm,20.4s,baz=32,slow=30	**2.54**	**202**	LR	LR	14 22 04.9	
JCJ	**Chichijima** 3.2nm,0.3s,baz=280,slow=19,SNR=3.7	**8.43**	**172**	Pn	**Pn**	**14 22 50.6**	**-2.2**
ASAJ	**Asahikawa** 1.1nm,0.3s,baz=233,slow=8.9,SNR=14	**8.72**	**8**	Pn	**Pn**	**14 22 54.8**	**-1.9**
KSRS	**Korea Array** 0.1nm,0.3s,baz=100,slow=13,SNR=2.9	**10.65**	**284**	Pn	**Pn**	**14 23 25.0**	**+1.9**
KSRS	comp=Z,120nm,20.1s,baz=59,slow=37			LR	LR	14 27 31.9	
USRK	**Ussuriysk Ar.** 0.1nm,0.3s,baz=132,slow=11,SNR=2.9	**11.08**	**324**	Pn	**Pn**	**14 23 30.5**	**+1.5**
KLR	**Kul'dur** comp=Z,88nm,18.9s,baz=94,slow=36	**15.30**	**337**	LR	LR	14 30 10.2	
MA2	**Magadan** comp=Z,48nm,20.6s,baz=212,slow=36	**24.95**	**12**	LR	LR	14 35 48.5	
H11N2	**WAKE ISLAND Hy** baz=310,slow=76,SNR=597	**27.75**	**118**	T	T	14 55 34.5	
H11N1	**WAKE ISLAND Hy** baz=310,slow=76,SNR=829	**27.75**	**118**	T	T	14 55 35.0	
H11N3	**WAKE ISLAND Hy** baz=310,slow=76,SNR=710	**27.76**	**118**	T	T	14 55 39.7	
SONM	**Songino Array** 0.5nm,0.6s,baz=108,slow=9.3,SNR=2.7	**28.35**	**306**	P	**P**	**14 26 45.5**	**+1.6**
SONM				LR	LR	14 38 10.0	
H11S1	**WAKE ISLAND Hy** comp=Z,84nm,19.3s,baz=80,slow=37	**28.40**	**120**	T	T	14 56 21.9	
H11S3	**WAKE ISLAND Hy** baz=312,slow=76,SNR=2565	**28.40**	**120**	T	T	14 56 21.6	
H11S2	**WAKE ISLAND Hy** baz=312,slow=76,SNR=2097	**28.41**	**120**	T	T	14 56 22.6	
ZALV	**Zalesovo Beam** 0.5nm,0.4s,baz=90,slow=7.2,SNR=3.4	**42.67**	**314**	P	**P**	**14 28 47.2**	**+0.9**
NRIK	**Noril'sk** comp=Z,51nm,18.3s,baz=118,slow=36	**44.51**	**336**	LR	LR	14 47 29.7	
MKAR	**Makanchi Array** comp=Z,40nm,19.8s,baz=41,slow=37	**44.62**	**303**	LR	LR	14 48 14.1	
ILAR	**Eielson Array** 0.7nm,0.6s,baz=263,slow=6.0,SNR=8.6	**51.02**	**32**	P	**P**	**14 29 52.5**	**+1.1**
WRA	**Warramunga Arr** 2.1nm,0.8s,baz=4.3,slow=7.5,SNR=21	**55.47**	**188**	P	**P**	**14 30 23.7**	**-0.8**
INK	**Inuvik** 1.0nm,0.7s,baz=290,slow=8.0,SNR=4.2	**55.95**	**27**	P	**P**	**14 30 28.1**	**+0.7**
ASAR	**Alice Springs** 0.3nm,0.8s,baz=11,slow=7.2,SNR=7.0	**59.20**	**187**	P	**P**	**14 30 51.9**	**+1.1**
ARCES	**ARCESS Array B** comp=Z,20nm,18.4s,baz=35,slow=40	**65.31**	**340**	LR	LR	15 04 40.8	
YKA	**Yellowknife Ar** 0.3nm,0.8s,baz=302,slow=6.5,SNR=5.5	**65.35**	**30**	P	**P**	**14 31 32.2**	**+0.7**
AKASG	**Malin Array Be** 0.2nm,0.3s,baz=42,slow=6.8,SNR=4.6	**75.28**	**322**	P	**P**	**14 32 32.6**	**+0.2**
NOA	**NORSAR Array B** comp=Z,19nm,18.1s,baz=30,slow=38	**75.46**	**337**	LR	LR	15 08 59.8	

BJI ***25*** *14:22:59.2, 25°.88N×98°.58E, h8km, mb3.5/1, ML3.6/7*
ISCJB ***25*** *14:23:05.5±0.7, 26°.0N±0°.2×97°.95E±0°.07, h33km, Error ellipse: s-maj=33.4km s-min=6.8km az=10.9*
ISC 25 14:23:08.0±1.3, 26°.0N±0°.3×98°.0E±0°.1, h35km, n9, σ1°.10/10, Myanmar-China border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KMI	**Kunming**	**4.40**	**100**	Pg	**Pn**	**14 24 12.8**	**+0.3**
KMI				Sg	**Sn**	**14 25 02.3**	**-0.4**
KMI	comp=N,140nm,1.3s			smax	smax		
KMI	comp=E,110nm,1.0s			smax	smax		
KMI	comp=N,280nm,4.6s			LR	LR		
KMI	comp=E,490nm,8.0s			LR	LR		
KMI	comp=Z,390nm,9.9s			LR	LR		
GUN	**Gumba** comp=Z,11nm,0.4s	**10.95**	**283**	*e*P	**Pn**	**14 25 43.9**	**+1.4**
PKIN	**Phulchoki** comp=Z,8.8nm,0.6s	**11.34**	**281**	*e*P	**Pn**	**14 25 48.3**	**+0.6**
KKN	**Kakani** comp=Z,15nm,0.5s	**11.46**	**282**	*e*P	**Pn**	**14 25 50.1**	**+0.7**
DMN	**Daman** comp=Z,8.9nm,0.5s	**11.60**	**281**	*e*P	**Pn**	**14 25 51.6**	**+0.3**
GKN	**Gorkha** comp=Z,8.0nm,0.4s	**12.05**	**283**	*e*P	**Pn**	**14 25 57.9**	**+0.5**
KOLN	**Koldanda** comp=Z,6.0nm,0.6s	**12.94**	**281**	*e*P	**Pn**	**14 26 08.7**	**-0.9**
PYUN	**Piuthan**	**13.51**	**282**	*e*P	**Pn**	**14 26 15.3**	**-2.1**
WMQ	**Urumqi**	**19.68**	**337**	*e*P	**P**	**14 27 34.0**	**-0.1**

ISCJB ***25*** *14:30:59.3±0.5, 39°.10N±0°.03×29°.02E±0°.03, h2km±6km, Error ellipse: s-maj=4.7km s-min=3.8km az=141.2*
DDA ***25*** *14:30:59.3, 39°.08N×29°.02E, h7km, Ml3.2*
ISK ***25*** *14:30:59.1, 39°.10N×29°.04E, h7km, ML2.7*
CSEM ***25*** *14:30:59.5±0.1, 39°.11N×29°.03E, h2km, ML3.2, Error ellipse: s-maj=1.6km s-min=1.4km az=107.0*
ISC 25 14:30:59.4±0.9, 39°.11N±0°.02×29°.01E±0°.02, h13km±8km, n54, σ0°.75/69, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**253**	P	**Pg**	**14 31 04.8**	**+0.2**
DEMI				S	**Sg**	**14 31 08.1**	**0.0**
DEMI	**Demirci**	**0.24**	**253**	*i* P	**Pg**	**14 31 04.8**	**+0.2**
DEMI				*i* S	**Sg**	**14 31 08.1**	**0.0**
GDZ	**Gediz**	**0.36**	**94**	P	**Pg**	**14 31 07.0**	**+0.2**
GDZ				S	**Sg**	**14 31 12.1**	**+0.3**
GDZ	**Gediz**	**0.36**	**94**	*i* P	**Pg**	**14 31 07.0**	**+0.2**
GDZ				*i* S	**Sg**	**14 31 12.1**	**+0.3**
GDZ	**Gediz**	**0.36**	**94**	*i* P	Pn	14 31 15.6	+5.1
GDZ				*i* S	**Sn**	**14 31 19.6**	**+2.0**
TVSB	**Tavsanli**	**0.48**	**46**	*e*PG	**Pg**	**14 31 09.0**	**+0.1**
TVSB				*e*SG	**Sg**	**14 31 15.7**	**+0.3**
TVSB	**Tavsanli**	**0.48**	**46**	*e*Pg	**Pg**	**14 31 09.0**	**+0.1**
TVSB				*e*Sg	**Sg**	**14 31 15.7**	**+0.3**
DURS	**Dursunbey**	**0.64**	**319**	P	**Pb**	**14 31 12.4**	**-0.1**
DURS	**Dursunbey**	**0.64**	**319**	*i* P	**Pb**	**14 31 12.4**	**-0.1**
KULA	**Kula-Manisa**	**0.66**	**205**	*e*PG	**Pb**	**14 31 12.7**	**-0.1**
KULA	**Kula-Manisa**	**0.66**	**205**	*e*Pg	**Pb**	**14 31 12.7**	**-0.1**
MANT	**Manisa**	**0.72**	**210**	P	**Pg**	**14 31 13.3**	**-0.1**
MANT				S	**Sg**	**14 31 22.4**	**-0.4**
MANT	**Manisa**	**0.72**	**210**	*i* P	**Pg**	**14 31 13.3**	**-0.1**
MANT				*i* S	**Sg**	**14 31 22.4**	**-0.4**
KHAL	**Karahalli**	**0.83**	**153**	P	**Pg**	**14 31 15.5**	**0.0**
KHAL				S	**Sg**	**14 31 25.8**	**-0.6**
KHAL	**Karahalli**	**0.83**	**153**	*i* P	**Pg**	**14 31 15.5**	**0.0**
KHAL				*i* S	**Sg**	**14 31 25.8**	**-0.6**
KHL	**Karahalli**	**0.89**	**153**	*e*PG	**Pg**	**14 31 16.3**	**-0.2**
KHL				*e*SG	**Sb**	**14 31 28.3**	**-0.1**
KHL	**Karahalli**	**0.89**	**153**	*e*Pg	**Pg**	**14 31 16.3**	**-0.2**
KHL				*e*Sg	**Sb**	**14 31 28.3**	**-0.1**
ORLT	**Orhaneli**	**0.94**	**354**	*e*PG	**Pb**	**14 31 17.7**	**+0.2**
ORLT	**Orhaneli**	**0.94**	**354**	*e*Pg	**Pb**	**14 31 17.7**	**+0.2**
AKHS	**Akhisar**	**0.96**	**256**	P	**Pn**	**14 31 18.7**	**+0.1**
AKHS				S	**Sg**	**14 31 30.6**	**0.0**
AKHS	**Akhisar**	**0.96**	**256**	*i* P	**Pn**	**14 31 18.7**	**+0.1**
AKHS				*i* S	**Sg**	**14 31 30.6**	**0.0**
AKS	**Akhisar**	**0.96**	**256**	*e*PG	**Pg**	**14 31 18.0**	**0.0**
AKS	**Akhisar**	**0.96**	**256**	*e*Pg	**Pg**	**14 31 18.0**	**0.0**
BALB	**Balikesir**	**1.02**	**301**	*e*PG	**Pg**	**14 31 19.4**	**+0.3**
BALB	**Balikesir**	**1.02**	**301**	*e*Pg	**Pg**	**14 31 19.4**	**+0.3**
IGD	**Bursa**	**1.16**	**7**	*i* P	**Pb**	**14 31 21.2**	**0.0**
IGD				*i* S	**Sb**	**14 31 31.5**	**-4.7**
BALY	**Balya**	**1.25**	**301**	P	**Pg**	**14 31 24.2**	**+0.8**
BALY	**Balya**	**1.25**	**301**	*i* P	**Pg**	**14 31 24.2**	**+0.8**

BGD	**Bogdanovka**	**0.17**	**257**	P	Pg	14 39 09.7	-0.4
BGD				S	Sg	14 39 12.4	-0.6
BGD	**Bogdanovka**	**0.17**	**257**	P	Pg	14 39 09.7	-0.4
BGD				S	Sg	14 39 12.4	-0.6
AKH	**Akhalkalaki**	**0.27**	**294**	P	Pg	14 39 11.6	-0.1
AKH				S	Sg	14 39 15.7	+0.1
AKH	**Akhalkalaki**	**0.27**	**294**	P	Pg	14 39 11.6	0.0
AKH				S	Sg	14 39 15.7	+0.1
TBLG	**Delisi**	**0.81**	**58**	P	Pn	14 39 22.4	-0.5
TBLG				S	Sn	14 39 33.6	-1.1
TBLG	**Delisi**	**0.81**	**58**	P	Pn	14 39 22.4	-0.4
TBLG				S	Sb	14 39 33.6	+1.1
DGRG	**David-gareji**	**1.18**	**82**	P	Pg	14 39 29.8	+1.2
DGRG				S	Sg	14 39 46.4	+2.5
DGRG	**David-gareji**	**1.18**	**82**	P	Pg	14 39 30.0	+1.5
DGRG				S	Sg	14 39 46.4	+2.5

IDC 25 14:59:42.7±2.2, 5°.68N×126°.69E, h0km, mb3.5/4, mb1 3.6/4, mb1mx3.4/51, mbtmp3.5/4, Error ellipse: s-maj=186.1km s-min=24.2km az=65.0, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**26.55**	**164**	P	P	15 05 22.6	+0.1
	0.3nm,0.3s,baz=345,slow=10,SNR=8.5						
ASAR	**Alice Springs**	**30.00**	**167**	P	P	15 05 53.2	-0.1
	0.2nm,0.4s,baz=342,slow=7.0,SNR=12						
STKA	**Stephens Creek**	**39.96**	**160**	P	P	15 07 18.8	-0.2
	1.5nm,0.8s,baz=330,slow=8.1,SNR=3.8						
MKAR	**Makanchi Array**	**55.95**	**325**	P	P	15 09 22.7	-0.1
	0.2nm,0.4s,baz=117,slow=8.6,SNR=3.3						

*ISK **25** 15:04:17.6, 39°.12N×28°.98E, h5km, MD2.7*
*ISCJB **25** 15:04:18.3±0.5, 39°.13N±0°.03×29°.01E±0°.03, h3km±5km, Error ellipse: s-maj=4.3km s-min=3.9km az=168.4*
*CSEM **25** 15:04:18.7±0.1, 39°.12N×29°.01E, h8km, MD2.7, Error ellipse: s-maj=3.2km s-min=2.9km az=87.0*
*DDA **25** 15:04:18.9, 39°.09N×29°.02E, h7km, Md2.7*
ISC 25 15:04:18.6±0.9, 39°.12N±0°.02×28°.98E±0°.02, h13km±8km, n36, σ0.45/53, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.22**	**250**	P	Pb	15 04 24.3	-0.3
DEMI				S	Sg	15 04 27.7	+1.0
DEMI	**Demirci**	**0.22**	**250**	*i* P	Pb	15 04 24.3	-0.3
DEMI				*i* S	Sg	15 04 27.7	+1.0
GDZ	**Gediz**	**0.39**	**95**	P	Pg	15 04 26.2	-0.2
GDZ				S	Sg	15 04 31.4	-0.3
GDZ	**Gediz**	**0.39**	**95**	*i* P	Pg	15 04 26.2	-0.2
GDZ				*i* S	Sg	15 04 31.4	-0.3
TVSB	**Tavsanli**	**0.49**	**48**	*e*PG	Pg	15 04 28.1	-0.3
TVSB				*e*SG	Sg	15 04 34.9	-0.1
TVSB	**Tavsanli**	**0.49**	**48**	*e*Pg	Pg	15 04 28.1	-0.3
TVSB				*e*Sg	Sg	15 04 34.9	-0.1
DURS	**Dursunbey**	**0.62**	**321**	P	Pb	15 04 32.1	+0.7
DURS				S	Sg	15 04 38.6	-0.4
DURS	**Dursunbey**	**0.62**	**321**	*i* P	Pb	15 04 32.1	+0.7
DURS				*i* S	Sg	15 04 38.6	-0.4
KULA	**Kula-Manisa**	**0.66**	**203**	*e*PG	Pg	15 04 30.7	-0.7
KULA	**Kula-Manisa**	**0.66**	**203**	*e*Pg	Pg	15 04 30.7	-0.7
KHAL	**Karahalli**	**0.85**	**152**	P	Pb	15 04 35.3	0.0
KHAL				S	Sg	15 04 45.8	-0.3
KHAL	**Karahalli**	**0.85**	**152**	*i* P	Pb	15 04 35.3	0.0
KHAL				*i* S	Sg	15 04 45.8	-0.3
KHL	**Karahalli**	**0.90**	**152**	*e*PG	Pg	15 04 35.4	-0.6
KHL				*e*SG	Sb	15 04 48.2	+0.1
KHL	**Karahalli**	**0.90**	**152**	*e*Pg	Pg	15 04 35.4	-0.6
KHL				*e*Sg	Sb	15 04 48.3	+0.1
ORLT	**Orhaneli**	**0.93**	**356**	*e*PG	Pg	15 04 35.6	-0.9
ORLT	**Orhaneli**	**0.93**	**356**	*e*Pg	Pg	15 04 35.6	-0.9
AKHS	**Akhisar**	**0.94**	**256**	P	Pn	15 04 38.0	+0.4
AKHS				S	Sn	15 04 51.3	+0.4
AKHS	**Akhisar**	**0.94**	**256**	*i* P	Pn	15 04 38.0	+0.4
AKHS				*i* S	Sn	15 04 51.3	+0.4
AKS	**Akhisar**	**0.94**	**256**	*e*PG	Pg	15 04 36.0	-0.8
IGD	**Bursa**	**1.15**	**8**	*i* P	Pg	15 04 40.5	-0.4
IGD				*i* S	Sg	15 04 55.8	0.0
KCTX	**Karacabey (Bur**	**1.24**	**337**	*e*PN	Pn	15 04 41.7	0.0
KCTX	**Karacabey (Bur**	**1.24**	**337**	*e*Pn	Pn	15 04 41.7	0.0
MDNY	**Mudanya-Bursa**	**1.25**	**357**	*e*PN	Pb	15 04 41.9	-0.1
MDNY	**Mudanya-Bursa**	**1.25**	**357**	*e*Pn	Pb	15 04 41.9	-0.1
CAVI	**Cavuskoy**	**1.27**	**31**	*e*PN	Pb	15 04 42.3	-0.1
CAVI	**Cavuskoy**	**1.27**	**31**	*e*Pn	Pb	15 04 42.3	-0.1
IZI	**Iznik**	**1.27**	**17**	*e*PN	Pb	15 04 42.4	-0.1
GEMT	**Gemlik**	**1.32**	**7**	*e*PN	Pb	15 04 43.3	0.0
GEMT	**Gemlik**	**1.32**	**7**	*e*Pn	Pb	15 04 43.3	0.0
BORA	**Eskisehir**	**1.37**	**56**	P	Pg	15 04 44.6	-0.3
BORA				S	Sg	15 05 02.7	+0.1
BORA	**Eskisehir**	**1.37**	**56**	*i* P	Pg	15 04 44.6	-0.3
BORA				*i* S	Sg	15 05 02.7	+0.1
ADVT	**Abdulvahap**	**1.43**	**24**	*e*PN	Pb	15 04 45.0	-0.2
ARMT	**Armutlu**	**1.45**	**356**	*e*PN	Pb	15 04 45.0	-0.3
ARMT	**Armutlu**	**1.45**	**356**	*e*Pn	Pb	15 04 45.1	-0.3
GULT	**Gulveren**	**1.76**	**42**	*e*PN	Pn	15 04 49.5	+0.6
GULT	**Gulveren**	**1.76**	**42**	*e*Pn	Pn	15 04 49.5	+0.6

*ISCJB **25** 15:17:33.0±0.5, 14°.25S±0°.07×166°.79E±0°.08, h33km, mb4.1/17, MS3.6/7, Error ellipse: s-maj=11.9km s-min=9.8km az=152.9*
*IDC **25** 15:17:38.5±5.5, 14°.25S×166°.71E, h64km±45km, mb3.9/14, mb1 4.0/15, mb1mx3.9/30, mbtmp4.2/15, ML4.8/1, MS3.5/8, Ms1 3.5/8, ms1mx3.1/39, Error ellipse: s-maj=33.7km s-min=17.1km az=98.0*
*NEIC **25** 15:17:39.0±2.5, 14°.23S×166°.75E, h71km±20km, mb4.4/4, Error ellipse: s-maj=19.8km s-min=9.9km az=101.0*
ISC 25 15:17:34.8±0.7, 14°.25S±0°.10×166°.9E±0°.1, h35km, n31, σ1.14/28, mb4.2/17, MS3.5/7, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	**Honiara**	**8.33**	**304**	P	Pn	15 19 35.4	+2.3
	11nm,0.3s,baz=163,slow=9.1,SNR=4.7						
HNR				S	Sn	15 21 05.0	-1.1
	15nm,0.3s,baz=18,slow=20,SNR=4.4						
HNR				LR	LR	15 22 37.4	
	comp=Z,142nm,21.5s,baz=168,slow=37						
HNR	**Honiara**	**8.33**	**304**	*e*Pn	Pn	15 19 35.0	+1.8
	65nm,0.6s						
HNR				S	Sn	15 21 05.0	-1.1
EIDS	**Eidsvold**	**18.53**	**231**	*e*P	Pn	15 21 49.1	+0.2
CTAO	**Charters Tower**	**20.57**	**251**	*e*P	P	15 22 11.1	+0.4
	96nm,1.1s						
URZ	**Urewera**	**25.57**	**161**	LR	LR	15 31 42.6	
	comp=Z,121nm,18.6s,baz=324,slow=33						
STKA	**Stephens Creek**	**29.05**	**229**	P	P	15 23 31.9	+0.1
	4.9nm,0.6s,baz=51,slow=13,SNR=17						
STKA				LR	LR	15 35 06.6	
	comp=Z,196nm,19.0s,baz=32,slow=36						
RPZ	**Rata Peaks**	**29.58**	**174**	LR	LR	15 33 53.1	
	comp=Z,111nm,21.4s,baz=10.0,slow=33						
WRAB	**Tennant Creek**	**31.60**	**255**	*e*P	P	15 23 54.5	-0.1
	4.5nm,1.1s						
WRA	**Warramunga Arr**	**31.61**	**255**	P	P	15 23 52.5	-2.2
	1.0nm,0.8s,baz=86,slow=8.2,SNR=5.4						
ASAR	**Alice Springs**	**32.52**	**248**	P	P	15 24 01.1	-1.7
	0.9nm,0.5s,baz=74,slow=9.3,SNR=13						
ASAR				LR	LR	15 36 13.7	
	comp=Z,92nm,19.6s,baz=76,slow=34						
MJAR	**Matsushiro Arr**	**57.32**	**333**	P	P	15 27 19.3	-0.1
	2.3nm,0.9s,baz=168,slow=7.6,SNR=6.1						
JNU	**Nakatsue**	**58.33**	**325**	LR	LR	15 49 09.9	
	comp=Z,22nm,21.8s,baz=114,slow=32						
KSRS	**Korea Array**	**63.15**	**326**	P	P	15 27 58.0	-1.3
	0.5nm,0.4s,baz=139,slow=7.6,SNR=4.8						
KSAR	**Wonju Array Be**	**63.16**	**326**	P	P	15 27 58.0	-1.4
VNDA	**Vanda**	**63.33**	**181**	P	P	15 28 00.9	+1.0
	0.6nm,0.7s,baz=345,slow=8.3,SNR=6.9						
SBA	**Scott Base**	**63.62**	**180**	*e*P	P	15 28 02.0	+0.2
USRK	**Ussuriysk Ar.**	**66.30**	**333**	P	P	15 28 20.8	+1.1
	3.1nm,0.9s,baz=152,slow=7.1,SNR=6.9						
PETK	**Petropavlovsk-**	**67.55**	**354**	P	P	15 28 28.4	+0.9
	3.9nm,0.8s,baz=147,slow=3.0,SNR=5.8						
CMAR	**Chiang Mai Arr**	**74.44**	**294**	P	P	15 29 11.2	+1.2
	0.8nm,0.8s,baz=127,slow=3.8,SNR=5.6						
MA2	**Magadan**	**74.72**	**352**	LR	LR	15 58 07.6	
	comp=Z,30nm,19.8s,baz=156,slow=32						
QSPA	**South Pole Qui**	**75.78**	**180**	*e*P	P	15 29 17.3	+0.3
ULN	**Ulaanbaatar**	**81.54**	**324**	*e*P	P	15 29 49.5	+0.5
	2.2nm,0.8s						
SONM	**Songino Array**	**81.90**	**324**	P	P	15 29 51.0	+0.1
	1.3nm,0.9s,baz=137,slow=6.4,SNR=5.9						
BILL	**Bilibino**	**82.06**	**360**	*e*P	P	15 29 51.4	+0.3
	4.8nm,0.6s						
ILAR	**Eielson Array**	**86.18**	**18**	P	P	15 30 11.8	-0.3
	1.2nm,0.5s,baz=242,slow=5.1,SNR=30						
NVAR	**Mina Array Bea**	**87.22**	**49**	LR	LR	16 01 48.2	
	comp=Z,60nm,20.1s,baz=265,slow=30						
MKAR	**Makanchi Array**	**96.62**	**316**	P	P	15 30 59.7	-1.6
	0.7nm,0.7s,baz=95,slow=7.4,SNR=5.3						
ZALV	**Zalesovo Beam**	**96.80**	**324**	P	P	15 31 00.9	-0.9
	0.7nm,0.4s,baz=108,slow=4.8,SNR=4.4						
YKA	**Yellowknife Ar**	**97.28**	**27**	P	P	15 31 03.4	-0.4
	0.1nm,0.4s,baz=258,slow=5.2,SNR=3.9						
ARCES	**ARCESS Array B**	**119.70**	**345**	PKP	PKPdf	15 36 20.3	-0.3
	1.3nm,0.6s,baz=22,slow=1.3,SNR=12						
FINES	**FINESS Array B**	**125.15**	**338**	PKP	PKPdf	15 36 30.0	-1.2
	2.3nm,0.9s,baz=63,slow=3.7,SNR=3.4						

*ISCJB **25** 15:24:20.5±0.4, 24°.77N±0°.03×122°.55E±0°.02, h15km±3km, Error ellipse: s-maj=5.1km s-min=2.4km az=8.4*
*JMA **25** 15:24:21.0±0.1, 24°.74N×122°.54E, h30km±2km, M2.2*
*TAP **25** 15:24:22.4, 24°.76N×122°.45E, h13km±1km, ML3.3, D*
ISC 25 15:24:19.0±1.1, 24°.76N±0°.03×122°.56E±0°.02, h12km±9km, n41, σ0.72/76, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JYNG	**Yonagunijimaku**	**0.47**	**131**	P	Pn	15 24 30.6	-1.0
JYNG				S	Sb	15 24 37.4	+1.3
YOJ	**Yonaguni jima**	**0.51**	**126**	P	Pn	15 24 31.4	-0.7
YOJ				S	Sb	15 24 38.6	+1.3
TWB1	**Santiao Chiao**	**0.57**	**296**	P	Pb	15 24 31.4	+0.4
	baz=301						
TWB1				S	Sg	15 24 37.9	+0.1
	baz=301						
EGS		**0.57**	**279**	P	Pb	15 24 32.0	+1.0
	baz=280						
EGS				S	Sb	15 24 38.8	-0.4
	baz=280						
TWC	**Suao**	**0.66**	**257**	P	Pb	15 24 32.8	+0.3
	baz=254						
TWC				S	Sg	15 24 40.7	+0.1
	baz=254						
ILA	**Ilan**	**0.74**	**271**	S	Sb	15 24 44.4	+0.5
	baz=270						
NWF	**Wu-fen Shan**	**0.77**	**294**	P	Pn	15 24 35.4	-0.4
	baz=297						
NWF				S	Sb	15 24 44.9	0.0
	baz=297						
TWE	**Neicheng**	**0.81**	**267**	P	Pb	15 24 35.3	+0.3
	baz=266						
TWE				S	Sg	15 24 45.2	-0.1
	baz=266						
ENA	**Nanau**	**0.81**	**246**	P	Pb	15 24 35.5	+0.4
	baz=242						
ENA				S	Sg	15 24 45.7	+0.2
	baz=242						
ENTT	**Nioudou**	**0.91**	**263**	P	Pn	15 24 37.6	0.0
	baz=261						
ENTT				S	Sg	15 24 47.9	-0.6
	baz=261						
TWA	**Mucha**	**0.91**	**284**	*e*S	Sb	15 24 49.0	+0.1
	baz=285						
PCYT	**Pengchaiyu**	**0.97**	**333**	*e*P	Pn	15 24 39.1	+0.6
	baz=338						
TAP	**Taipei**	**0.99**	**286**	*e*S	Sg	15 24 51.2	0.0
	baz=288						
TWY	**Chenhua**	**1.01**	**301**	*e*P	Pn	15 24 39.2	+0.2
	baz=303						
TWY				*e*S	Sg	15 24 51.6	-0.1
	baz=303						
TWS1	**Kuangyinshan**	**1.09**	**288**	*e*P	Pb	15 24 38.1	-1.7
	baz=290						
TWS1				*e*S	Sb	15 24 53.6	-0.4
	baz=290						
NSK	**Sanguang**	**1.09**	**266**	P	Pn	15 24 40.5	+0.2
	baz=265						
NSK				S	Sb	15 24 53.2	-1.0
	baz=265						
TWD	**Chiawan**	**1.11**	**232**	*e*P	Pn	15 24 40.5	+0.1
	baz=228						
TWD				*e*S	Sg	15 24 54.7	-0.1
	baz=228						
NNS	**Nan Shan**	**1.12**	**254**	P	Pn	15 24 41.3	+0.6
	baz=251						
NNS				S	Sb	15 24 54.8	-0.4
	baz=251						
IRIF	**Iriomote-Funau**	**1.15**	**111**	P	Pg	15 24 41.2	0.0
IRIF				*e*S	Sg	15 24 56.3	+0.2
WHF	**Hehuan Shan**	**1.33**	**243**	P	Pg	15 24 44.5	-0.1
	baz=240						
WHF				S	Sb	15 25 01.1	-0.2
	baz=240						
HATJ	**Hateruma jima**	**1.34**	**121**	*e*S	Sb	15 25 00.6	-0.5
TWT	**Tachien**	**1.36**	**248**	P	Pg	15 24 46.3	+1.2
	baz=246						
TWT				S	Sb	15 25 00.9	-1.0
	baz=246						
ESL	**Shilin**	**1.39**	**228**	P	Pg	15 24 45.8	0.0
	baz=224						
ESL				*e*S	Sn	15 25 02.4	-0.2
	baz=224						
NSTT	**Nanjuang**	**1.42**	**265**	P	Pg	15 24 46.4	+0.1
	baz=264						
NSTT				*e*S	Sn	15 25 03.3	-0.1
	baz=264						
JKRS	**Kuro-shima**	**1.42**	**111**	P	Pb	15 24 45.5	0.0
JKRS				S	Sb	15 25 03.7	+0.1
JIJ	**Ishigaki jima**	**1.50**	**105**	P	Pb	15 24 46.9	+0.1
JIJ				*e*S	Sn	15 25 04.7	-0.5
JISG	**Ishigakijimahi**	**1.60**	**96**	S	Sn	15 25 07.6	-0.3
NSY	**Sanyi**	**1.67**	**259**	*e*P	Pg	15 24 50.9	-0.2
	baz=257						
NSY				*e*S	Sn	15 25 09.8	+0.2
	baz=257						
TWQ1	**Liyutan**	**1.68**	**256**	*e*P	Pb	15 24 50.1	+0.3
	baz=254						
TWQ1				*e*S	Sn	15 25 09.3	-0.4
	baz=254						
SMLT	**Sun Moon Lake**	**1.75**	**240**	P	Pg	15 24 52.3	-0.3
	baz=238						
SMLT				*e*S	Sb	15 25 13.4	+0.4
	baz=238						
TYC	**Yuchr**	**1.77**	**242**	P	Pg	15 24 52.4	-0.7
	baz=239						
TYC				*e*S	Sb	15 25 13.8	+0.1
	baz=239						
TWF1	**Yuli**	**1.81**	**220**	*e*P	Pn	15 24 50.3	+0.2
	baz=216						
TWF1				*e*S	Sn	15 25 12.3	-0.8
	baz=216						
YUS	**Yu-Shan**	**1.94**	**230**	P	Pb	15 24 54.2	-0.4
	baz=227						
YUS				*e*S	Sb	15 25 18.6	-0.3
	baz=227						
ALS	**Alishan**	**2.03**	**232**	P	Pb	15 24 55.8	-0.2
	baz=230						
ALS				*e*S	Sb	15 25 21.4	+0.1
	baz=230						
CHN5	**Tsauling**	**2.07**	**236**	P	Pb	15 24 56.9	+0.3
	baz=234						
CHN5				*e*S	Sb	15 25 22.5	+0.1
	baz=234						
CHN4	**Tsaushan**	**2.28**	**232**	P	Pb	15 24 59.7	-0.4
	baz=230						
CHN4				*e*S	Sn	15 25 23.7	-0.8
	baz=230						
STYT	**Tauyuan**	**2.29**	**226**	P	Pn	15 24 58.2	+1.5
	baz=224						
STYT				*e*S	Sn	15 25 26.1	+1.2
	baz=224						
WTP	**Ta-pu**	**2.33**	**230**	*e*P	Pn	15 24 56.7	-0.5
	baz=227						
WTP				*e*S	Sn	15 25 26.3	+0.4
	baz=227						
TWK	**Hsinying**	**2.41**	**232**	*e*P	Pn	15 25 00.3	+2.0
	baz=230						
TWK				*e*S	Sn	15 25 27.6	-0.1
	baz=230						
CHN1	**Nanshi**	**2.43**	**230**	*e*P	Pb	15 25 01.3	-1.5
	baz=228						
CHN1				*e*S	Sn	15 25 29.9	+1.6
	baz=228						
SGST	**Jiashian**	**2.46**	**228**	*e*P	Pn	15 25 00.4	+1.3
	baz=225						
SGST				*e*S	Sb	15 25 31.5	-2.0
	baz=225						

*IDC **25** 15:36:17.6±0.8, 20°.88N×121°.33E, h0km, mb3.7/10, mb1 3.9/11, mb1mx3.6/57, mbtmp3.7/11, ML3.4/1, MS3.1/2, Ms1 3.2/2, ms1mx2.4/67, Error ellipse: s-maj=33.6km s-min=16.2km az=68.0*
*ISCJB **25** 15:36:23.4±0.7, 20°.89N±0°.09×121°.3E±0°.2, h60km, mb3.7/10, MS3.1/2, Error ellipse: s-maj=21.3km s-min=12.5km az=166.2*
ISC 25 15:36:25.3±0.8, 20°.9N±0°.1×121°.3E±0°.2, h60km, n18, σ0.94/11, mb3.6/10, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSRS	**Korea Array**	**17.45**	**18**	P	Pn	15 40 23.1	-1.4
	0.1nm,0.3s,baz=199,slow=12,SNR=5.7						
CMAR	**Chiang Mai Arr**	**21.21**	**267**	P	P	15 41 04.8	-1.4
	0.8nm,0.7s,baz=78,slow=9.3,SNR=6.1						
CMAR				LR	LR	15 48 59.7	
	comp=Z,30nm,20.9s,baz=70,slow=36						
SONM	**Songino Array**	**29.44**	**339**	P	P	15 42 23.6	+0.2
	0.9nm,0.7s,baz=165,slow=9.7,SNR=5.6						
MKAR	**Makanchi Array**	**40.82**	**319**	P	P	15 44 01.5	+0.5
	0.5nm,0.6s,baz=123,slow=8.5,SNR=3.5						
WRA	**Warramunga Arr**	**42.56**	**162**	P	P	15 44 14.9	-0.4
	0.5nm,0.8s,baz=345,slow=9.4,SNR=10						
H11N1	**WAKE ISLAND Hy**	**42.64**	**83**	T	T	16 29 45.5	
	baz=273						
H11N2	**WAKE ISLAND Hy**	**42.64**	**83**	T	T	16 29 43.1	
	baz=273						
H11N3	**WAKE ISLAND Hy**	**42.66**	**83**	T	T	16 29 46.3	
	baz=273						
H11S3	**WAKE ISLAND Hy**	**42.67**	**85**	T	T	16 29 47.3	
	baz=280						
H11S1	**WAKE ISLAND Hy**	**42.68**	**85**	T	T	16 29 51.5	
	baz=280						
H11S2	**WAKE ISLAND Hy**	**42.69**	**85**	T	T	16 29 50.0	
	baz=280						
ZALV	**Zalesovo Beam**	**43.08**	**329**	P	P	15 44 19.1	0.0
	0.5nm,0.3s,baz=116,slow=8.5,SNR=2.9						
ASAR	**Alice Springs**	**45.98**	**164**	P	P	15 44 41.6	-1.1
	0.3nm,0.5s,baz=347,slow=8.0,SNR=3.5						
NRIK	**Noril'sk**	**52.58**	**346**	P	P	15 45 32.8	+0.3
	2.4nm,0.7s,baz=129,slow=7.0,SNR=6.0						
STKA	**Stephens Creek**	**55.97**	**159**	P	P	15 45 58.5	+0.9
	1.4nm,0.7s,baz=352,slow=7.1,SNR=3.5						
MMAI	**Mount Meron Ar**	**75.62**	**300**	LR	LR	16 27 32.8	
	comp=Z,24nm,19.0s,baz=250,slow=41						
EIL	**Elat**	**76.92**	**297**	P	P	15 48 12.4	+0.8
	1.6nm,0.4s,baz=199,slow=3.5,SNR=2.7						
YKA	**Yellowknife Ar**	**85.92**	**23**	P	P	15 48 58.8	+0.3
	0.4nm,0.7s,baz=308,slow=4.5,SNR=5.5						

*ISCJB **25** 15:39:29.9±0.4, 51°.48N±0°.02×16°.09E±0°.02, h0km, mb3.5/1, Error ellipse: s-maj=3.0km s-min=1.9km az=10.2*
*CSEM **25** 15:39:31.6±0.2, 51°.48N×16°.10E, h2km, ML3.6/10, Error ellipse: s-maj=3.6km s-min=1.9km az=12.0*
*IDC **25** 15:39:32.8±0.8, 51°.46N×16°.05E, h0km, mb3.4/1, mb1 3.5/7, mb1mx3.3/49, mbtmp3.4/7, ML3.1/6, MS2.7/1, Ms1 2.7/1, ms1mx1.8/42, Error ellipse: s-maj=13.8km s-min=7.6km az=103.0*
*WAR **25** 15:39:32.6, 51°.49N×16°.09E, h1km, Mw2.8*
*BGR **25** 15:39:32.6±0.5, 51°.49N×16°.11E, h1km, ML3.2/10, Error ellipse: s-maj=7.8km s-min=5.6km az=158.0*
*PRU **25** 15:39:33.0, 51°.47N×16°.13E, h0km*
*VIE **25** 15:39:34.0, 51°.43N×15°.98E, h0km, Suspected Mining induced.*
ISC 25 15:39:30.9±0.7, 51°.55N±0°.03×16°.11E±0°.02, h0km, n82, σ0.96/152, 7D, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.71**	**171**	*i* Pg	Pg	15 39 45.0	+0.4
KSP				*e*Sg	Sg	15 39 53.8	0.0
KSP	**Ksiaz**	**0.71**	**171**	‖ *i* Pg	Pg	15 39 45.0	+0.4
KSP				*e*Sg	Sg	15 39 53.8	0.0
KSP	**Ksiaz**	**0.71**	**171**	*i* Pgd	Pg	15 39 45.0	+0.4
KSP				*e*Sg	Sg	15 39 53.8	0.0
UPC	**Upice**	**1.04**	**183**	‖ *i* PG	Pg	15 39 51.0	+0.2
UPC				*e*SG	Sg	15 40 04.2	-0.1
	comp=Z,138nm,0.4s						
UPC	**Upice**	**1.04**	**183**	Pg	Pg	15 39 51.0	+0.2
UPC				Sg	Sg	15 40 04.2	-0.1
	138nm,0.4s						
DPC	**Dobruska-Polom**	**1.21**	**173**	*e*PG	Pg	15 39 53.8	-0.2
DPC				*e*SG	Sg	15 40 09.0	-0.6
	comp=Z,60nm,0.4s						
DPC	**Dobruska-Polom**	**1.21**	**173**	Pg	Pg	15 39 53.8	-0.2
DPC				Sg	Sg	15 40 09.0	-0.6
	60nm,0.4s						
PVCC	**Panska Ves**	**1.41**	**224**	‖ *e*PG	Pn	15 39 57.7	-0.1
PVCC				*e*SG	Sn	15 40 16.9	-0.1
	comp=Z,159nm,0.2s						
PVCC	**Panska Ves**	**1.41**	**224**	Pg	Pn	15 39 57.7	-0.1
PVCC				Sg	Sn	15 40 16.9	-0.1
	159nm,0.2s						
BRG	**Berggiesshubel**	**1.52**	**245**	PN	Pn	15 39 59.0	-0.3
BRG				PG	Pg	15 40 00.9	+0.9
BRG				SG	Sn	15 40 20.4	+0.6
	97nm,9.4s						
BRG	**Berggiesshubel**	**1.52**	**245**	Pn	Pn	15 39 58.7	-0.6
	SNR=2.0						
BRG	**Berggiesshubel**	**1.52**	**245**	*e*Pn	Pn	15 39 58.7	-0.6
	SNR=2.0						
BRG				*e*Pg	Pg	15 40 00.8	+0.8
	SNR=69						
BRG				*e*Sg	Sn	15 40 20.4	+0.6
	SNR=6.9						
KRLC	**Kraliky**	**1.53**	**164**	*e*PG	Pn	15 39 59.3	-0.3
KRLC				*e*SG	Sg	15 40 19.0	-1.1
KRLC	**Kraliky**	**1.53**	**164**	Pg	Pn	15 39 59.3	-0.3
KRLC				Sg	Sg	15 40 19.0	-1.1
GOPC	**GO Pecny, Ondr**	**1.84**	**208**	*e*PN	Pn	15 40 03.6	-0.1
GOPC				*e*PG	Pb	15 40 05.5	+0.1
GOPC				*e*SG

TREC			Sg	Sb	15 40 42.6	+0.7
	comp=Z,45nm,0.3s					
WERD	**Werda**	**2.64 247**	Pn	**Pn**	**15 40 15.2**	**+0.4**
	SNR=2.3					
WERD	**Werda**	**2.64 247**	*e*Pn	**Pn**	**15 40 15.2**	**+0.4**
	SNR=2.3					
WERD			*e*Pg	**Pg**	**15 40 21.1**	**-0.4**
	SNR=7.7					
WERD			*e*Sg	**Sg**	**15 40 54.8**	**-0.9**
	SNR=1.5					
NKC	**Novy Kostel**	**2.66 242**	⇓*e*PN	**Pn**	**15 40 15.9**	**+0.8**
NKC			*e*PG	**Pg**	**15 40 22.2**	**+0.3**
NKC			*e*SG	**Sg**	**15 40 57.1**	**+0.7**
	comp=Z,54nm,0.3s					
NKC	**Novy Kostel**	**2.66 242**	Pn	**Pn**	**15 40 15.9**	**+0.8**
WERN	**Wernitzgruen**	**2.68 243**	Pn	**Pn**	**15 40 16.3**	**+1.0**
	SNR=6.4					
WERN	**Wernitzgruen**	**2.68 243**	*e*Pn	**Pn**	**15 40 16.3**	**+1.0**
	SNR=6.4					
WERN			*e*Pg	**Pg**	**15 40 23.1**	**+0.9**
	SNR=3.7					
WERN			*e*Sg	**Sg**	**15 40 57.2**	**+0.3**
	SNR=3.0					
OJC	**Ojcow**	**2.69 118**	*e*Pn	**Pn**	**15 40 15.1**	**-0.3**
OJC			*e*Pg	**Pg**	**15 40 22.5**	**+0.1**
OJC			*e*Sg	**Sg**	**15 40 58.3**	**+1.1**
OJC	**Ojcow**	**2.69 118**	*e*Pn	**Pn**	**15 40 15.1**	**-0.3**
OJC	**Ojcow**	**2.69 118**	*e*Pn	**Pn**	**15 40 15.1**	**-0.3**
OJC			*e*Pg	**Pg**	**15 40 22.5**	**+0.1**
OJC			*e*Sg	**Sg**	**15 40 58.3**	**+1.1**
NEUB	**Neuenburg**	**2.74 265**	Pg	**Pg**	**15 40 23.7**	**+0.4**
	SNR=3.6					
NEUB			Sg	**Sg**	**15 41 00.1**	**+1.3**
	SNR=4.2					
NEUB	**Neuenburg**	**2.74 265**	*e*Pg	**Pg**	**15 40 23.7**	**+0.4**
	SNR=3.6					
NEUB			*e*Sg	**Sg**	**15 41 00.1**	**+1.3**
	SNR=4.2					
KHC	**Kasperske Hory**	**2.91 215**	*e*PN	**Pn**	**15 40 18.4**	**-0.1**
KHC			*e*PG	**Pb**	**15 40 24.6**	**+0.9**
KHC			*e*SN	**Sn**	**15 40 53.1**	**-1.1**
KHC			*e*SG	**Sg**	**15 41 03.3**	**-1.1**
	comp=Z,22nm,0.5s					
KHC	**Kasperske Hory**	**2.91 215**	Pn	**Pn**	**15 40 18.4**	**-0.1**
MOX	**Moxa**	**2.97 254**	Pn	**Pn**	**15 40 19.5**	**+0.2**
	SNR=2.5					
MOX	**Moxa**	**2.97 254**	*e*Pn	**Pn**	**15 40 19.5**	**+0.2**
	SNR=2.5					
MOX			*e*Pg	**Pg**	**15 40 27.2**	**-0.7**
	SNR=4.5					
MOX			*e*Sg	**Sg**	**15 41 06.6**	**+0.3**
	SNR=4.9					
MANZ	**Manzenberg**	**2.98 240**	Pn	**Pn**	**15 40 19.9**	**+0.5**
	SNR=4.2					
MANZ			Sg	**Sg**	**15 41 06.5**	**-0.1**
	SNR=3.3					
MANZ	**Manzenberg**	**2.98 240**	*e*Pn	**Pn**	**15 40 19.9**	**+0.5**
	SNR=4.2					
MANZ			*e*Sg	**Sg**	**15 41 06.5**	**-0.1**
	SNR=3.3					
ROTZ	**Rotzenmuhle**	**3.06 236**	Pn	**Pn**	**15 40 21.1**	**+0.7**
	SNR=4.9					
ROTZ	**Rotzenmuhle**	**3.06 236**	*e*Pn	**Pn**	**15 40 21.1**	**+0.7**
	SNR=4.9					
ROTZ			*e*Pg	**Pg**	**15 40 29.6**	**+0.2**
	SNR=1.9					
ROTZ			*e*Sg	**Sg**	**15 41 08.6**	**-0.4**
	SNR=4.4					
GEC2	**GERESS Array S**	**3.12 211**	Pn	**Pn**	**15 40 22.2**	**+0.9**
	SNR=7.9					
GEC2	**GERESS Array S**	**3.12 211**	*e*Pn	**Pn**	**15 40 22.2**	**+0.9**
	SNR=7.9					
GEC2			*e*Pg	**Pb**	**15 40 28.1**	**+0.9**
	SNR=1.5					
GEC2			*e*Sg	**Sg**	**15 41 09.8**	**-1.1**
	SNR=2.5					
GERES	**GERESS Array B**	**3.12 211**	Pn	**Pn**	**15 40 22.0**	**+0.7**
	comp=Z,2.2nm,0.3s,baz=27,slow=12,SNR=35					
GERES			Pg	**Pb**	**15 40 28.2**	**+1.0**
	comp=Z,4.8nm,0.3s,baz=30,slow=20,SNR=28					
GERES			Sn	**Sn**	**15 40 56.2**	**-3.1**
	comp=Z,2.4nm,0.3s,baz=34,slow=18,SNR=5.9					
GERES			Lg	Lg	15 41 08.5	
	comp=Z,7.7nm,0.3s,baz=34,slow=27,SNR=12					
SMOL	**Smolenice**	**3.15 164**	*e*Pg	**Pg**	**15 40 31.8**	**+0.5**
SMOL			*e*Sg	**Sg**	**15 41 14.4**	**+2.3**
SMOL	**Smolenice**	**3.15 164**	*e*PG	**Pg**	**15 40 31.8**	**+0.5**
SMOL			*e*SG	**Sg**	**15 41 14.4**	**+2.3**
WET	**Wettzell**	**3.17 222**	Pn	**Pn**	**15 40 22.3**	**+0.2**
	SNR=3.7					
WET	**Wettzell**	**3.17 222**	*e*Pn	**Pn**	**15 40 22.3**	**+0.2**
	SNR=3.7					
LANS	**Liptovska Anna**	**3.22 137**	*e*Pg	**Pg**	**15 40 32.2**	**-0.4**
LANS			*e*Sg	**Sg**	**15 41 13.0**	**-1.4**
LANS	**Liptovska Anna**	**3.22 137**	*e*PG	**Pg**	**15 40 32.2**	**-0.4**
LANS			*e*SG	**Sg**	**15 41 13.0**	**-1.4**
VYHS	**Vyhne**	**3.53 149**	*e*Pn	**Pn**	**15 40 26.6**	**-0.3**
VYHS	**Vyhne**	**3.53 149**	*e*PN	**Pn**	**15 40 26.6**	**-0.3**
VYHS			*e*PG	**Pg**	**15 40 39.2**	**+0.8**
VYHS			*e*SG	**Sg**	**15 41 22.6**	**-1.5**
VYHS			*e*LG	Lg	15 41 27.9	
CLZ	**Clausthal**	**3.58 277**	Pn	**Pn**	**15 40 29.3**	**+1.6**
	SNR=2.6					
CLZ	**Clausthal**	**3.58 277**	*e*Pn	**Pn**	**15 40 29.3**	**+1.6**
	SNR=2.6					
GRA1	**Grafenberg Arr**	**3.62 241**	Sg	**Sg**	**15 41 27.3**	**+0.1**
	SNR=3.9					
GRF	**Grafenberg Arr**	**3.62 241**	*e*Sg	**Sg**	**15 41 27.3**	**+0.1**
	SNR=3.9					
CONA	**Conrad Observa**	**3.62 183**	*i* Pn	**Pn**	**15 40 29.4**	**+1.0**
	comp=Z,1.5nm,0.2s					
CONA	**Conrad Observa**	**3.62 183**	Pn	**Pn**	**15 40 29.4**	**+1.0**
	comp=Z,1.5nm,0.2s					
CONA	**Conrad Observa**	**3.62 183**	Pg	**Pg**	**15 40 39.1**	**-1.3**
	comp=Z,6.5nm,0.3s					
CONA			Sg	**Sg**	**15 41 25.4**	**-1.9**
	comp=Z,27nm,0.5s					
BSD	**Bornholm Skovb**	**3.65 349**	*i* P	**Pn**	**15 40 29.1**	**+0.6**
BSD			*i* S	**Sn**	**15 41 09.6**	**-2.6**
BSD	**Bornholm Skovb**	**3.65 349**	*i* P	**Pn**	**15 40 29.1**	**+0.6**
BSD			*i* S	**Sn**	**15 41 09.6**	**-2.6**
STHS	**Stebnicka Huta**	**3.91 121**	*e*PN	**Pn**	**15 40 32.9**	**+0.7**
STHS			*e*PG	**Pg**	**15 40 46.4**	**+0.6**
STHS			*e*SG	**Sg**	**15 41 40.9**	**+4.4**
STHS			*e*LG	Lg	15 41 55.9	
KECS	**Kecovo**	**4.17 136**	*e*PN	**Pn**	**15 40 35.6**	**-0.1**
KECS			*e*PG	**Pg**	**15 40 50.7**	**0.0**
KECS			*e*SG	**Sg**	**15 41 43.9**	**-0.8**
KECS			*e*LG	Lg	15 41 50.9	
CRVS	**Cervenica-Dubn**	**4.34 126**	*e*Pn	**Pn**	**15 40 36.3**	**-1.8**
CRVS	**Cervenica-Dubn**	**4.34 126**	*e*PN	**Pn**	**15 40 36.3**	**-1.8**
CRVS			*e*PG	**Pg**	**15 40 55.1**	**+1.1**
CRVS			*e*SG	**Sg**	**15 41 49.6**	**-0.6**
KOLS	**Kolonicke sedl**	**4.74 121**	*e*Pn	**Pn**	**15 40 44.0**	**+0.4**
KOLS	**Kolonicke sedl**	**4.74 121**	*e*PN	**Pn**	**15 40 44.0**	**+0.4**
KOLS			*e*PG	**Pg**	**15 41 03.7**	**+2.0**
DAVOX	**Davos/Dischmat**	**6.28 223**	Lg	Lg	15 42 49.8	
	comp=Z,0.2nm,0.3s,baz=336,slow=20,SNR=3.0					
AKASG	**Malin Array Be**	**8.30 91**	Pn	**Pn**	**15 41 31.3**	**-1.1**
	comp=Z,0.9nm,0.3s,baz=280,slow=12,SNR=3.2					
HFS	**Hagfors**	**8.71 352**	Pn	**Pn**	**15 41 38.5**	**+0.4**
	comp=Z,0.2nm,0.3s,baz=179,slow=27,SNR=2.2					
HFS			Pg	Pg	15 42 00.8	-17
	comp=Z,0.2nm,0.3s,baz=184,slow=18,SNR=2.7					
MLR	**Muntele Rosu**	**8.90 129**	Lg	Lg	15 44 11.3	
	comp=Z,0.0nm,0.3s,baz=90,slow=2.0,SNR=4.1					
FINES	**FINESS Array B**	**11.33 25**	Pn	**Pn**	**15 42 13.3**	**-0.5**
	comp=Z,0.2nm,0.3s,baz=214,slow=11,SNR=5.6					
FINES			LR	LR	15 47 28.9	
	comp=Z,40nm,21.7s,baz=352,slow=42					
ARCES	**ARCESS Array B**	**18.59 10**	Pn	**P**	**15 43 45.9**	**-3.4**
	comp=Z,0.2nm,0.3s,baz=187,slow=13,SNR=5.8					
YKA	**Yellowknife Ar**	**59.82 336**	P	**P**	**15 49 39.1**	**+1.7**
	comp=Z,0.3nm,0.7s,baz=28,slow=6.7,SNR=4.2					

IDC 25 *15:40:50.4±2.1,* **0°.95N×126°.47E, h0km, mb3.4/3, mb1 3.7/3, mb1mx3.3/44, mbtmp3.5/3, Error ellipse: s-maj=178.2km s-min=27.3km az=65.0, Northern Molucca Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**22.15**	**160**	P	P	15 45 47.5	-0.6
	1.6nm,0.7s,baz=338,slow=11,SNR=6.6						
ASAR	**Alice Springs**	**25.52**	**164**	P	P	15 46 21.4	+0.6
	0.4nm,0.7s,baz=349,slow=8.6,SNR=2.7						
MKAR	**Makanchi Array**	**59.69**	**326**	P	P	15 50 56.8	-0.1
	0.6nm,0.8s,baz=118,slow=8.5,SNR=4.9						

CSEM ***25*** *15:42:01.9, 43°.89N×12°.01E, h6km, ML1.2/2*
ROM 25 15:42:01.9±0.2, 43°.89N×12°.01E, h6km±2km, Ml1.2/2, Error ellipse: s-maj=3.2km s-min=1.4km az=45.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFI	**Santa Sofia**	**0.12**	**276**	Pg	Pg	15 42 05.2	+0.7
SFI				Sg	Sg	15 42 07.3	+1.1
SFI	**Santa Sofia**	**0.12**	**276**	Pg	Pg	15 42 05.2	+0.7
SFI				Sg	Sg	15 42 07.3	+1.1
ASQU	**Asqua**	**0.19**	**239**	Pg	Pg	15 42 05.8	+0.1
ASQU				Sg	Sg	15 42 09.4	+1.2
ASQU	**Asqua**	**0.19**	**239**	Pg	Pg	15 42 05.8	+0.1
ASQU				Sg	Sg	15 42 09.4	+1.2
VMG	**Vicchio**	**0.34**	**282**	Pg	Pb	15 42 09.6	-0.8
VMG				Sg	Sb	15 42 15.2	-1.0
VMG	**Vicchio**	**0.34**	**282**	Pg	Pb	15 42 09.6	-0.8
VMG				Sg	Sb	15 42 15.2	-1.0
BADI	**Badiali**	**0.42**	**156**	Pg	Pb	15 42 10.9	-0.8
BADI				Sg	Sb	15 42 18.0	-0.3
BADI	**Badiali**	**0.42**	**156**	Pg	Pb	15 42 10.9	-0.8
BADI				Sg	Sb	15 42 18.0	-0.3
SEI	**Scarperia**	**0.50**	**289**	Pg	Pg	15 42 12.2	+0.7
SEI				Sg	Sb	15 42 20.3	-0.4
SEI	**Scarperia**	**0.50**	**289**	Pg	Pg	15 42 12.2	+0.7
SEI				Sg	Sb	15 42 20.3	-0.4
PIEI	**Pieia**	**0.52**	**133**	Pg	Pg	15 42 12.5	+0.6
PIEI				Sg	Sb	15 42 21.0	-0.3
	144nm,2.9s						
PIEI	**Pieia**	**0.52**	**133**	Pg	Pg	15 42 12.5	+0.6
PIEI				Sg	Sb	15 42 21.0	-0.3
	144nm,2.9s						
ATPC	**Poggio Castell**	**0.52**	**142**	Pg	Pb	15 42 12.8	-0.7
ATPC				Sg	Sb	15 42 21.7	+0.4
	518nm,4.8s						
ATPC	**Poggio Castell**	**0.52**	**142**	Pg	Pb	15 42 12.8	-0.7
ATPC				Sg	Sb	15 42 21.7	+0.4
	518nm,4.8s						

IDC 25 15:51:18.6±1.5, 6°.66S×147°.87E, h0km, mb3.7/4, mb1 3.9/6, mb1mx3.6/41, mbtmp3.8/6, ML3.9/1, MS2.7/4, Ms1 2.7/4, ms1mx2.5/34, Error ellipse: s-maj=60.7km s-min=22.4km az=94.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.82**	**194**	Pn	Pn	15 52 06.9	+2.1
	12nm,0.3s,baz=64,slow=5.0,SNR=25						
PMG				Sn	Sb	15 52 44.0	-0.8
	6.2nm,0.3s,baz=67,slow=9.0,SNR=4.3						
PMG				LR	LR	15 53 22.1	
	comp=Z,181nm,21.6s,baz=344,slow=44						
JAY	**Jayapura**	**8.25**	**300**	LR	LR	15 57 21.7	
	comp=Z,7.1nm,18.7s,baz=0.0,slow=44						
WRA	**Warramunga Arr**	**18.63**	**224**	P	P	15 55 36.8	-1.1
	0.4nm,0.3s,baz=50,slow=11,SNR=17						
GUMO	**Guam**	**20.34**	**352**	LR	LR	16 04 00.8	
	comp=Z,30nm,18.4s,baz=192,slow=38						
ASAR	**Alice Springs**	**21.59**	**217**	P	P	15 56 09.6	-0.6
	2.3nm,0.5s,baz=53,slow=9.0,SNR=29						
STKA	**Stephens Creek**	**25.76**	**192**	P	P	15 56 52.1	+0.9
	1.9nm,0.9s,baz=13,slow=15,SNR=3.3						
URZ	**Urewera**	**41.11**	**144**	LR	LR	16 13 54.2	
	comp=Z,40nm,18.7s,baz=290,slow=33						
SONM	**Songino Array**	**65.40**	**331**	P	P	16 02 03.6	+0.4
	0.2nm,0.4s,baz=149,slow=6.7,SNR=2.9						
VNDA	**Vanda**	**71.21**	**177**	P	P	16 02 38.0	-1.0
	0.8nm,0.8s,baz=315,slow=6.1,SNR=4.2						
NOA	**NORSAR Array B**	**116.89**	**338**	PKP	PKPdf	16 10 05.0	-0.1
	2.3nm,0.9s,baz=56,slow=3.4,SNR=3.4						
TORD	**Torodi Ar. Bea**	**146.09**	**284**	PKPbc	PKPdf	16 11 00.5	-0.4
	0.8nm,0.6s,baz=87,slow=3.0,SNR=5.3						

SOME ***25*** *15:53:33.0, 44°.35N×83°.08E, h0km*
NNC ***25*** *15:53:37.8±5.4, 44°.61N×82°.89E, h0km, mb2.6, mpv2.2, Error ellipse: s-maj=57.5km s-min=15.1km az=114.0*
ISC 25 15:53:37.3±2.4, 44°.36N±0°.08×83°.0E±0°.1, h17km, n8, σ1§83/13, 3C-3D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DJR	**Jarkent**	**2.33**	**270**	*e*P	**Pn**	**15 54 16.6**	**+1.6**
DJR				*e*S	**Sb**	**15 54 48.4**	**+0.9**
MK31	**Makanchi Array**	**2.49**	**348**	⇓Pg	**Pn**	**15 54 18.5**	**+1.4**
	0.8nm,0.8s,baz=155,slow=11,SNR=24						
MK31				⇓Lg	Lg	15 54 48.3	
	0.6nm,0.3s,baz=159,slow=27,SNR=7.8						
MAKZ	**Makanchi**	**2.56**	**343**	⇑Pg	**Pn**	**15 54 19.5**	**+1.5**
	1.7nm,0.7s						
MAKZ				⇑Lg	Lg	15 54 50.8	
	1.8nm,0.7s						
SHLS	**Shalkode**	**2.59**	**243**	*e*P	**Pn**	**15 54 20.9**	**+2.3**
	3.5nm,0.2s						
SHLS				*e*S	**Sb**	**15 54 55.4**	**+0.5**
	18nm,0.3s						
PDGK	**Podgornoye**	**2.77**	**249**	⇓Pg	**Pg**	**15 54 29.5**	**-0.9**
	0.8nm,0.5s						
PDGK				⇑Lg	Lg	15 55 02.4	
	8.0nm,0.5s						
KAPS	**Kapalarasan**	**2.78**	**291**	*e*P	**Pb**	**15 54 24.4**	**-2.2**
	0.4nm,0.2s						
KAPS				*e*S	**Sb**	**15 55 01.6**	**+1.3**
	2.9nm,0.4s						
UZB	**Uzynbulak**	**3.16**	**249**	*e*P	**Pb**	**15 54 31.5**	**-1.5**
	0.5nm,0.1s						
UZB				*e*S	**Sb**	**15 55 13.3**	**+2.0**
	3.2nm,0.3s						
SATY	**Saty**	**3.60**	**250**	*e*P	**Pb**	**15 54 38.1**	**-2.5**
SATY				*e*S	**Sb**	**15 55 24.7**	**+0.6**

IDC ***25*** *16:01:53.9±2.4, 36°.76N×144°.58E, h0km, mb3.6/3, mb1 3.7/6, mb1mx3.3/64, mbtmp3.7/6, ML3.5/3, MS2.7/1, Ms1 2.7/1, ms1mx2.1/51, Error ellipse: s-maj=52.5km s-min=28.1km az=87.0*
ISCJB ***25*** *16:01:56.2±0.9, 36°.85N±0°.05×144°.40E±0°.07, h26km, mb3.6/3, MS2.6/1, Error ellipse: s-maj=8.5km s-min=7.0km az=30.8*
JMA ***25*** *16:01:59.5±0.3, 36°.94N×144°.30E, h46km, M3.6*
ISC 25 16:01:57.9±1.4, 36°.90N±0°.07×144°.46E±0°.10, h26km, n24, σ1§34/22, mb3.7/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**2.90**	**280**	P	**Pn**	**16 02 42.5**	**+0.1**
JFK				S	**Sn**	**16 03 14.7**	**-1.7**
JIO	**Ouri**	**2.91**	**303**	P	**Pn**	**16 02 42.9**	**+0.4**
JIO				*e*S	**Sn**	**16 03 14.8**	**-1.8**
ONAJ	**Iwakimizuishiy**	**2.94**	**275**	P	**Pn**	**16 02 43.4**	**+0.5**
ONAJ				*e*S	**Sn**	**16 03 16.0**	**-1.3**
JMK	**Ichinoseki**	**3.28**	**310**	P	**Pn**	**16 02 48.4**	**+0.9**
JMK				*e*S	**Sn**	**16 03 25.9**	**+0.3**
JFT	**Otama**	**3.35**	**282**	*e*S	**Sn**	**16 03 27.1**	**-0.3**
BSO1	**Boso 1**	**3.61**	**233**	S	**Sn**	**16 03 32.2**	**-0.9**
JRY	**Ryogami san**	**4.56**	**260**	P	**Pn**	**16 03 05.3**	**0.0**
JRY				S	**Sn**	**16 03 55.5**	**-2.0**
JOD2	**Odawara 2**	**4.64**	**251**	P	**Pn**	**16 03 08.2**	**+1.8**
MJAR	**Matsushiro Arr**	**5.03**	**268**	Pn	**Pn**	**16 03 12.0**	**+0.4**
	1.2nm,0.3s,baz=88,slow=16,SNR=9.0						
JOT	**Ohata**	**5.20**	**330**	P	**Pn**	**16 03 15.4**	**+1.5**
JOT				*e*S	**Sn**	**16 04 10.5**	**-2.5**
JHJ	**Hachijo jima 2**	**5.38**	**227**	Pn	Pn	16 03 14.0	-2.4
	4.1nm,0.3s,baz=84,slow=19,SNR=3.1						
JHJ				Sn	Sn	16 04 11.1	-6.4
	7.8nm,0.3s,baz=27,slow=9.0,SNR=2.3						
JCH	**Churui**	**5.77**	**352**	P	**Pn**	**16 03 20.7**	**-1.0**
JCH				S	Sn	16 04 22.7	-4.3
JOSM	**Okushiri--Mats**	**6.45**	**325**	P	**Pn**	**16 03 32.5**	**+1.4**
ASAJ	**Asahikawa**	**7.34**	**349**	Pn	**Pn**	**16 03 43.4**	**0.0**
	0.9nm,0.3s,baz=235,slow=14,SNR=11						
H11N2	**WAKE ISLAND Hy**	**26.03**	**125**	T	T	16 34 19.1	
	baz=316,slow=75,SNR=97						
H11N1	**WAKE ISLAND Hy**	**26.04**	**125**	T	T	16 34 20.8	
	baz=316,slow=75,SNR=51						
H11N3	**WAKE ISLAND Hy**	**26.05**	**125**	T	T	16 34 18.8	
	baz=316,slow=75,SNR=83						
H11S1	**WAKE ISLAND Hy**	**26.79**	**127**	T	T	16 35 15.3	
	baz=318,slow=76,SNR=22						
YAK	**Yakutsk**	**26.79**	**345**	LR	LR	16 19 30.5	
	comp=Z,16nm,18.6s,baz=312,slow=39						
H11S3	**WAKE ISLAND Hy**	**26.79**	**127**	T	T	16 35 13.8	
	baz=318,slow=76,SNR=30						
H11S2	**WAKE ISLAND Hy**	**26.80**	**127**	T	T	16 35 18.4	
	baz=318,slow=76,SNR=27						
MKAR	**Makanchi Array**	**46.25**	**303**	P	**P**	**16 10 21.4**	**+0.6**
	0.6nm,0.7s,baz=90,slow=8.5,SNR=4.8						
KURBB	**Kurchatov Arra**	**48.00**	**308**	P	**P**	**16 10 36.4**	**+2.0**
	1.0nm,0.6s,baz=82,slow=7.9,SNR=11						
WRA	**Warramunga Arr**	**57.34**	**191**	P	**P**	**16 11 42.9**	**-0.8**
	0.3nm,1.0s,baz=12,slow=7.7,SNR=1.4						

IDC ***25*** *16:08:39.1±0.6, 74°.14N×8°.81E, h0km, mb3.8/19, mb1 3.9/23, mb1mx3.8/51, mbtmp3.8/23, ML3.1/3, MS3.6/36, Ms1 3.7/36, ms1mx3.6/58, Error ellipse: s-maj=14.3km s-min=9.6km az=65.0*
ISCJB ***25*** *16:08:39.8±0.3, 74°.25N±0°.03×9°.6E±0°.2, h10km, mb4.2/42, MS3.6/38, Error ellipse: s-maj=6.9km s-min=4.5km az=160.6*
MOS ***25*** *16:08:40.5±1.6, 74°.38N×9°.03E, h10km, mb4.4/17, Error ellipse: s-maj=28.0km s-min=6.0km az=94.0*
CSEM ***25*** *16:08:40.6±0.2, 74°.26N×9°.55E, h10km, mb4.4/9, Error ellipse: s-maj=10.1km s-min=5.7km az=70.0*
NEIC ***25*** *16:08:40.9±0.4, 74°.23N×9°.13E, h10km, mb4.5/7, Error ellipse: s-maj=9.2km s-min=5.8km az=63.0*
BER ***25*** *16:08:40.1±3.0, 74°.19N×9°.33E, h10km, MD2.1, ML2.8, ML3.9(NAO)*
NAO ***25*** *16:08:42.5±4.1, 74°.28N×10°.74E, h2km±37km, ML3.9*
ISC 25 16:08:41.7±0.4, 74°.23N±0°.04×9°.60E±0°.05, h10km, n188, σ2§45/179, mb4.2/42, MS3.5/38, 4C, Greenland Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BJO1	**Bjornoya**	**2.56**	**79**	Pn	**Pn**	**16 09 20.8**	**-2.4**
BJO1				Sn	**Sn**	**16 09 50.3**	**-3.9**
BJO	**Bjornoya**	**2.61**	**79**	Pn	**Pn**	**16 09 20.8**	**-3.1**
BJO				Sn	**Sn**	**16 09 48.7**	**-6.9**
BJO				IAML		16 09 52.2	
	comp=Z,131nm,0.4s						
BJO	**Bjornoya**	**2.61**	**79**	Pn	**Pn**	**16 09 20.8**	**-3.1**
BJO				Sn	**Sn**	**16 09 50.3**	**-5.2**
HSPB	**Hornsund (broa**	**3.16**	**25**	Pn	**Pn**	**16 09 29.3**	**-2.0**
HSPB	**Hornsund (broa**	**3.16**	**25**	*e*P	**Pn**	**16 09 29.9**	**-1.4**
HSPB	**Hornsund (broa**	**3.16**	**25**	Pn	**Pn**	**16 09 29.3**	**-2.0**
HSPB	**Hornsund (broa**	**3.16**	**25**	*e*P	**Pn**	**16 09 29.9**	**-1.4**
HSP	**Hornsund**	**3.16**	**25**	Pn	**Pn**	**16 09 29.3**	**-2.1**
SPA0	**Spitsbergen Ar**	**4.29**	**19**	Pn	**Pn**	**16 09 45.2**	**-1.6**
	baz=199,slow=16						
SPA0				Sn	**Sn**	**16 10 33.4**	**-3.4**
SPA0	**Spitsbergen Ar**	**4.29**	**19**	Pn	**Pn**	**16 09 45.2**	**-1.6**
	baz=199,slow=16						
SPA0				Sn	**Sn**	**16 10 33.4**	**-3.4**
SPA0	**Spitsbergen Ar**	**4.29**	**19**	Pn	**Pn**	**16 09 45.2**	**-1.6**
	SNR=488						
SPA0				Sn	**Sn**	**16 10 33.4**	**-3.4**
SPA0	**Spitsbergen Ar**	**4.29**	**19**	*e*Pn	**Pn**	**16 09 45.4**	**-1.4**
SPITS	**Spitsbergen Ar**	**4.29**	**19**	Pn	**Pn**	**16 09 45.4**	**-1.4**
	baz=192,slow=16,SNR=330						
SPITS				Sn	**Sn**	**16 10 34.5**	**-2.3**
	baz=208,slow=27,SNR=1.6						
SPITS				LR	LR	16 11 24.0	
	comp=Z,432nm,20.5s,baz=215,slow=37						
HOPEN	**Hopen**	**4.52**	**52**	Pn	**Pn**	**16 09 48.4**	**-1.6**
HOPEN				Sn	**Sn**	**16 10 38.0**	**-4.5**
HOPEN	**Hopen**	**4.52**	**52**	Pn	**Pn**	**16 09 48.4**	**-1.6**
HOPEN				Sn	**Sn**	**16 10 38.0**	**-4.5**
HOPEN				IAML		16 10 42.5	
	comp=Z,66nm,0.2s						
HOPEN	**Hopen**	**4.52**	**52**	Pn	**Pn**	**16 09 48.4**	**-1.6**
KBS	**Kingsbay**	**4.75**	**5**	Pn	**Pn**	**16 09 49.9**	**-3.3**
KBS	**Kingsbay**	**4.75**	**5**	Pn	**Pn**	**16 09 49.9**	**-3.3**
KBS				IAML		16 10 47.5	
	comp=Z,19nm,0.5s						
KBS	**Kingsbay**	**4.75**	**5**	*e*P	**Pn**	**16 09 49.9**	**-3.3**
KBS	**Kingsbay**	**4.75**	**5**	*e*P	**Pn**	**16 09 49.9**	**-3.3**
KBS	**Kingsbay**	**4.75**	**5**	*e*Pn	**Pn**	**16 09 49.9**	**-3.3**
TRO	**Tromso**	**5.45**	**143**	*e*Pn	**Pn**	**16 10 02.8**	**0.0**
TRO				Sn	Sn	16 10 57.5	-7.8
TRO				IAML		16 11 04.6	
	comp=Z,18nm,0.4s						
TRO	**Tromso**	**5.45**	**143**	*e*Pn	**Pn**	**16 10 02.8**	**0.0**
	SNR=50						
TRO	**Tromso**	**5.45**	**143**	P	**Pn**	**16 10 03.8**	**+1.0**
HAMF	**Hammerfest**	**5.57**	**123**	*e*Pn	**Pn**	**16 10 02.0**	**-2.4**
HAMF				Sn	**Sn**	**16 11 02.1**	**-6.3**
HAMF	**Hammerfest**	**5.57**	**123**	*e*Pn	**Pn**	**16 10 02.0**	**-2.4**
	SNR=50						
HAMF				Sn	**Sn**	**16 11 02.1**	**-6.3**
	SNR=50						
JNE	**Jan Mayen East**	**6.25**	**248**	*e*Pn	Pn	16 10 08.0	-5.8

VSU Vasula 17.13 148 *e*P **Pn 16 12 41.3 +0.6**
VSU pmax pmax
comp=Z,45nm,0.9s
VSU Vasula 17.13 148 *e*P **Pn 16 12 41.3 +0.6**
comp=Z,45nm,0.9s
KLMR Klimovskoe 17.30 125 *e*P **P 16 12 45.5 +1.2**
KLMR pmax pmax
comp=Z,45nm,1.5s
KLMR Klimovskoe 17.30 125 *e*P **P 16 12 45.5 +1.2**
comp=Z,45nm,1.5s
KLNR Kaliningrad 20.16 162 *e*P Pn 16 13 21.8 +4.2
KLNR pmax pmax
comp=Z,91nm,0.6s
SFJD Kangerlussuaq 20.30 281 LR LR 16 20 03.2
comp=Z,318nm,21.2s,baz=45,slow=34
MOS Moscow 21.60 134 *e*P **P 16 13 33.4 +2.2**
MOS pmax pmax
comp=Z,49nm,0.7s
OBN Obninsk 21.98 136 LR LR 16 22 28.3
comp=Z,361nm,19.6s,baz=320,slow=38
OBN Obninsk 21.98 136 *i* P **P 16 13 36.9 +1.6**
OBN pmax pmax
comp=Z,19nm,1.2s
OBN MLR MLR
comp=Z,348nm,17.0s
OBN Obninsk 21.98 136 *i* P **P 16 13 36.9 +1.6**
comp=Z,348nm,17.0s
SOKR Solikamsk 22.68 105 *e*P **P 16 13 38.6 -4.1**
SOKR pmax pmax
comp=Z,10.0nm,0.9s
SOKR MLR MLR
comp=Z,275nm,21.0s
CLL Collm 23.05 175 *e*P **P 16 13 50.0 +3.3**
CLL *i* 16 13 56.5
comp=Z,27nm,1.6s
CLL *e*S **S 16 17 58.0 +0.8**
CLL Lm MLR 16 22 00.0
comp=N,100nm,19.2s
CLL Lm MLR 16 22 00.0
comp=E,100nm,18.2s
CLL Lm MLR 16 22 00.0
comp=Z,200nm,18.7s
CLL Collm 23.05 175 *e*P **P 16 13 50.0 +3.3**
CLL *i* 16 13 56.5
CLL *e*S **S 16 17 58.0 +0.8**
CLL MLR MLR
comp=Z,200nm,18.7s
CLL Collm 23.05 175 *e*P **P 16 13 50.3 +3.5**
NRIK Noril'sk 23.15 62 P **P 16 13 48.9 +1.4**
comp=Z,1.1nm,0.5s,baz=311,slow=6.6,SNR=4.9
NRIK LR LR 16 25 41.5
comp=Z,134nm,18.2s,baz=300,slow=44
BRG Berggiesshubel 23.52 173 *e*P **P 16 13 55.3 +3.9**
comp=Z,18nm,1.8s
BRG Berggiesshubel 23.52 173 *e*P **P 16 13 55.3 +3.9**
BRG pmax pmax
comp=Z,18nm,1.8s
NKC Novy Kostel 24.11 176 *e*P **P 16 13 56.5 -0.7**
NKC *e*pP **sP 16 14 03.2 +1.7**
NKC Novy Kostel 24.11 176 *e*P **P 16 13 56.5 -0.7**
NKC *e* 16 14 03.2
NKC Novy Kostel 24.11 176 *e*P **P 16 13 56.5 -0.7**
RES Resolute Bay 24.62 322 LR LR 16 23 24.1
comp=Z,116nm,20.1s,baz=55,slow=36
LPSR Galich'ya Gora 24.82 135 *e*P **P 16 14 04.2 +0.7**
LPSR pmax pmax
comp=Z,10.0nm,1.1s
AKASG Malin Array Be 25.02 150 P **P 16 14 04.9 -0.5**
comp=Z,1.7nm,0.7s,baz=341,slow=9.3,SNR=5.1
AKASG LR LR 16 23 37.0
comp=Z,274nm,22.0s,baz=335,slow=36
KIEV Kiev 25.03 150 *e*P **P 16 14 10.5 +5.1**
KIEV pmax pmax
comp=Z,5.0nm,1.1s
KIEV Kiev 25.03 150 *e*P **P 16 14 05.0 -0.4**
comp=Z,201nm,0.9s
KIEV Kiev 25.03 150 *e*P **P 16 14 05.0 -0.4**
comp=Z,201nm,0.9s
VRAC Vranov 25.19 169 LR LR 16 24 08.5
comp=Z,130nm,18.8s,baz=352,slow=37
STHS Stebnicka Huta 25.40 162 *e*P **P 16 14 10.0 +1.2**
STHS pmax pmax
comp=Z,6.0nm,1.3s
STHS pmax pmax
comp=N,25nm,0.7s
STHS Stebnicka Huta 25.40 162 *e*P **P 16 14 10.0 +1.2**
comp=N,6.3nm,1.3s
STHS Stebnicka Huta 25.40 162 *e*P **P 16 14 10.0 +1.2**
STHS *e* 16 46 07.1
LANS Liptovska Anna 25.52 165 *e*P **P 16 14 14.3 +4.3**
LANS Liptovska Anna 25.52 165 *e*P **P 16 14 14.3 +4.3**
LANS *e* 16 45 56.2
GEC2 GERESS Array S 25.54 174 *e*P **P 16 14 09.7 -0.4**
GEC2 pmax pmax
comp=Z,10.0nm,1.1s
GEC2 GERESS Array S 25.54 174 *e*P **P 16 14 09.7 -0.4**
comp=Z,10nm,1.1s
GEC2 GERESS Array S 25.54 174 *e*P **P 16 14 09.7 -0.4**
comp=Z,10nm,1.1s
GERES GERESS Array B 25.54 174 P **P 16 14 09.8 -0.4**
comp=Z,0.5nm,0.6s,baz=347,slow=13,SNR=3.1
GERES LR LR 16 24 14.4
comp=Z,125nm,19.6s,baz=347,slow=37
GEA0 GERESS Array S 25.54 174 *e*P **P 16 14 10.2 0.0**
GEA0 GERESS Array S 25.54 174 *e*P **P 16 14 10.2 0.0**
ARU Arti 25.90 106 P **P 16 14 14.6 +1.3**
comp=Z,1.8nm,0.5s,baz=339,slow=6.9,SNR=8.5
ARU LR LR 16 25 20.6
comp=Z,161nm,19.2s,baz=329,slow=38
ARU Arti 25.90 106*c i*P **P 16 14 15.4 +2.1**
ARU 16 14 53.3
ARU S **S 16 18 48.1 +5.2**
ARU SS **SnSn 16 19 45.1 +6.4**
ARU pmax pmax
comp=Z,17nm,1.7s
ARU Arti 25.90 106 *e*P **P 16 14 13.5 +0.2**
comp=Z,20nm,1.0s
ARU Arti 25.90 106 *e*P **P 16 14 13.5 +0.2**
comp=Z,20nm,1.0s
CRVS Cervenica-Dubn 25.93 162 *e*P **P 16 14 16.8 +3.2**
CRVS Cervenica-Dubn 25.93 162 *e*P **P 16 14 16.8 +3.2**
BFO Black Forest 26.00 182*ce*P **P 16 14 18.7 +4.4**
BFO Black Forest 26.00 182 *e*P **P 16 14 15.0 +0.8**
comp=Z,22nm,1.3s
BFO Black Forest 26.00 182 *e*P **P 16 14 15.0 +0.8**
comp=Z,22nm,1.3s
VYHS Vyhne 26.13 166 *e*P **P 16 14 16.9 +1.4**
VYHS pmax pmax
comp=N,7.0nm,0.6s
VYHS Vyhne 26.13 166 *e*P **P 16 14 16.9 +1.4**
VYHS Vyhne 26.13 166 *e*P **P 16 14 16.9 +1.4**
VYHS *e* 16 45 59.8
VSR Storozhevoye 26.18 135 *e*P **P 16 14 19.0 +3.2**
VSR pmax pmax
comp=Z,10.0nm,1.3s
DAVOX Davos/Dischmat 27.54 180 LR LR 16 26 42.9
comp=Z,91nm,18.0s,baz=81,slow=40
FRB Frobisher Bay 27.56 290 LR LR 16 25 56.5
comp=Z,54nm,19.1s,baz=24,slow=38
TIXI Tiksi 29.54 34 P **P 16 14 46.9 +1.2**
comp=Z,1.9nm,1.0s,baz=6.9,slow=9.4,SNR=6.3
TIXI LR LR 16 28 28.5
comp=Z,38nm,18.6s,baz=325,slow=40
TIXI Tiksi 29.54 34 *e*P **P 16 14 48.5 +2.8**
TIXI pmax pmax
comp=Z,4.0nm,1.2s
TIXI Tiksi 29.54 34 *e*P **P 16 14 47.2 +1.5**
comp=Z,4.9nm,1.3s
TIXI Tiksi 29.54 34 *e*P **P 16 14 47.2 +1.5**
comp=Z,4.9nm,1.3s
MLR Muntele Rosu 29.74 156 LR LR 16 26 40.1
comp=Z,51nm,20.8s,baz=354,slow=36
AKTO Aktyubinsk 31.18 112 P **P 16 15 01.1 +0.7**
comp=Z,4.5nm,1.0s,baz=324,slow=10,SNR=6.3
AKTO LR LR 16 28 39.0
comp=Z,257nm,18.4s,baz=359,slow=38
BRVK Borovoye 32.03 97*ce*P P 16 15 12.7 +4.8
BRVK pmax pmax
comp=Z,11nm,2.5s
BVAR Borovoye Array 32.09 97 P **P 16 15 09.6 +1.2**
comp=Z,2.2nm,0.9s,baz=352,slow=5.8,SNR=7.2
ABKAR Abkulak array 32.75 111 *e*P **P 16 15 14.8 +0.6**
ABKAR Abkulak array 32.75 111 *e*P **P 16 15 14.8 +0.6**
KIV Kislovodsk 33.82 135 *e*P **P 16 15 25.6 +1.9**
KIV pmax pmax
comp=Z,3.0nm,0.9s
KVAR Kislovodsk Arr 33.82 135 LR LR 16 29 51.4
comp=Z,240nm,19.6s,baz=342,slow=38
NVS Novosibirsk 33.98 83 *e*P **P 16 15 27.7 +2.9**
KBZ Khabaz 34.08 135 LR LR 16 30 00.4
comp=Z,277nm,20.0s,baz=348,slow=38
SCHQ Schefferville 34.75 279 LR LR 16 28 34.0
comp=Z,221nm,18.8s,baz=1.5,slow=35
ZALV Zalesovo Beam 35.21 82 P **P 16 15 37.4 +2.0**
comp=Z,0.6nm,0.3s,baz=333,slow=12,SNR=3.1
ZALV LR LR 16 33 33.5
comp=Z,137nm,18.6s,baz=336,slow=42
INK Inuvik 35.75 338 P **P 16 15 38.2 -1.6**
comp=Z,1.4nm,0.9s,baz=23,slow=8.5,SNR=3.3
BR231 Keskin MP Arra 36.16 149 *e*P **P 16 15 45.3 +1.4**
BR231 Keskin MP Arra 36.16 149 *e*P **P 16 15 45.4 +1.4**
BRTR Keskin Array B 36.40 148 P **P 16 15 45.9 0.0**
comp=Z,0.4nm,0.5s,baz=357,slow=5.8,SNR=4.3
BRTR LR LR 16 32 50.9
comp=Z,44nm,18.4s,baz=354,slow=40
BRTR Keskin Array B 36.40 148 *i* P **P 16 15 48.0 +2.0**
KURK Kurchatov 36.42 91 *e*P **P 16 15 47.1 +1.3**
KURK pmax pmax
comp=Z,6.0nm,0.9s
KURK Kurchatov 36.42 91 *e*P **P 16 15 47.1 +1.3**
comp=Z,6.1nm,0.9s
KURK Kurchatov 36.42 91 *e*P **P 16 15 47.1 +1.3**
comp=Z,6.1nm,0.9s
BILL Bilibino 37.18 14 *i* P P 16 15 58.8 +6.7
BILL *i* 16 17 22.9
BILL *i* 16 18 13.5
BILL pmax pmax
comp=Z,4.0nm,1.6s
BILL MLR MLR
comp=Z,47nm,15.0s
GNI Garni 37.89 134 LR LR 16 32 30.4
comp=Z,172nm,20.2s,baz=304,slow=38
YAK Yakutsk 38.41 41 *e*P **P 16 16 04.8 +2.3**
YAK pmax pmax
comp=Z,3.0nm,0.9s
KEST Kesra 38.58 180 LR LR 16 33 33.9
comp=Z,73nm,18.9s,baz=312,slow=39
YKA Yellowknife Ar 38.69 322 P **P 16 16 02.6 -2.3**
comp=Z,1.0nm,0.9s,baz=9.8,slow=8.2,SNR=8.8
YKA LR LR 16 32 13.8
comp=Z,9.1nm,18.5s,baz=0.0,slow=37
ILAR Eielson Array 40.40 345 P **P 16 16 18.7 -0.4**
comp=Z,1.2nm,0.9s,baz=4.6,slow=6.7,SNR=12
ILAR LR LR 16 35 05.7
comp=Z,30nm,18.7s,baz=6.5,slow=39
HDA Harding Lake 40.76 345 *e*P **P 16 16 23.0 +0.9**
comp=Z,19nm,1.1s
HDA Harding Lake 40.76 345 *e*P **P 16 16 23.0 +0.9**
comp=Z,19nm,1.1s
MKAR Makanchi Array 40.99 90 P **P 16 16 25.3 +1.0**
comp=Z,0.7nm,0.8s,baz=350,slow=6.0,SNR=4.0
MK01 Makanchi Array 41.02 90 *e*P **P 16 16 25.3 +0.8**
MK01 Makanchi Array 41.02 90 *e*P **P 16 16 25.3 +0.8**
GEYT Alibeck 42.94 120 P **P 16 16 41.2 +0.9**
comp=Z,2.8nm,0.7s,baz=308,slow=7.3,SNR=6.5
GEYT LR LR 16 37 34.0
comp=Z,272nm,18.0s,baz=350,slow=40
MMAI Mount Meron Ar 43.24 148 LR LR 16 36 08.1
comp=Z,41nm,20.6s,baz=255,slow=38
FFC Flin Flon 43.52 308 *e*P **P 16 16 42.9 -1.8**
FFC pmax pmax
comp=Z,7.0nm,1.3s
FFC Flin Flon 43.52 308 *e*P **P 16 16 42.9 -1.8**
comp=Z,6.9nm,1.3s
FFC Flin Flon 43.52 308 *e*P **P 16 16 42.9 -1.8**
comp=Z,6.9nm,1.3s
WMQ Urumqi 45.21 86 *e*P P 16 17 02.8 +4.3
WMQ pP P 16 17 02.8 +4.3
WMQ sP sP 16 17 06.0 +3.2
WMQ S **S 16 23 38.8 +0.8**
WMQ pmax pmax
comp=Z,7.0nm,0.6s
WMQ pmax pmax
comp=Z,67nm,5.2s
WMQ LR LR
comp=N,61nm,24.8s
WMQ LR LR
comp=E,120nm,22.0s
WMQ LR LR
comp=Z,46nm,29.0s
ULM Lac du Bonnet 46.32 301 LR LR 16 36 22.3
comp=Z,172nm,19.6s,baz=87,slow=36
SONA1 Songino Array 46.44 67 *e*P **P 16 17 09.3 +1.0**
SONA1 Songino Array 46.44 67 *e*P **P 16 17 09.3 +1.0**
SONM Songino Array 46.45 67 P **P 16 17 09.3 +1.0**
comp=Z,1.1nm,1.0s,baz=331,slow=8.9,SNR=6.0
SONM LR LR 16 41 11.3
comp=Z,50nm,18.2s,baz=330,slow=42
EIL Elat 46.46 149 LR LR 16 37 14.3
comp=Z,72nm,21.5s,baz=266,slow=37
ULN Ulaanbaatar 46.59 67 *e*P **P 16 17 10.3 +0.9**
ULN pmax pmax
comp=Z,5.0nm,2.5s
PNT Penticton 52.11 320 *e*P **P 16 17 53.8 +2.4**
PNT Penticton 52.11 320 *e*P **P 16 17 53.8 +2.4**
GTA Gaotai 52.60 77 *e*P P 16 18 03.0 +7.8
GTA pP sP 16 18 07.5 +7.9
GTA sP pP 16 18 10.0 +12
GTA pmax pmax
comp=Z,5.0nm,1.7s
HHC Hu-ho-hao-te 54.29 66 *e*P **P 16 18 07.3 -0.3**
HHC pmax pmax
comp=Z,23nm,1.2s
HHC pmax pmax
comp=Z,75nm,6.8s
BW06 Boulder Array 56.45 309 *e*P **P 16 18 22.6 -0.7**
BW06 Boulder Array 56.45 309 *e*P **P 16 18 22.6 -0.7**
PDAR Pinedale Array 56.45 309 P **P 16 18 21.4 -1.9**
comp=Z,0.4nm,0.9s,baz=20,slow=5.8,SNR=3.3
LZH Lanzhou 56.79 75 *e*P **P 16 18 29.0 +3.3**
LZH pP sP 16 18 34.3 +4.1
LZH sP pP 16 18 37.3 +8.4
LZH pmax pmax
comp=Z,13nm,1.0s
TORD Torodi Ar. Bea 61.23 189 P **P 16 18 54.7 -1.8**
comp=Z,2.6nm,1.0s,baz=3.0,slow=6.6,SNR=11
TORD LR LR 16 44 59.7
comp=Z,30nm,21.4s,baz=355,slow=36
CD2 Chengdu 61.67 77 P **P 16 18 57.8 -1.6**
CD2 pmax pmax
comp=Z,5.0nm,0.7s
NVAR Mina Array Bea 62.39 316 LR LR 16 47 26.8
comp=Z,212nm,18.1s,baz=80,slow=37
KMI Kunming 66.89 80 P **P 16 19 35.8 +1.9**
KMI pmax pmax
comp=Z,14nm,0.6s
KMI pmax pmax
comp=Z,69nm,5.0s
KMI LR LR
comp=N,120nm,22.5s
KMI LR LR
comp=E,140nm,22.0s
KMI LR LR
comp=Z,160nm,21.6s
TX31 Lajitas Ar. Si 68.01 300 *e*P **P 16 19 39.9 -0.9**
TX31 Lajitas Ar. Si 68.01 300 *e*P **P 16 19 39.9 -0.9**
TXAR Lajitas Array 68.01 300 P **P 16 19 39.6 -1.2**
comp=Z,0.1nm,0.4s,baz=38,slow=10,SNR=3.2
DBIC Dimbokro 68.03 196 LR LR 16 50 12.3
comp=Z,43nm,18.9s,baz=4.0,slow=37
CMAR Chiang Mai Arr 72.20 85 P **P 16 20 07.6 +1.1**
comp=Z,0.4nm,0.3s,baz=324,slow=5.7,SNR=4.1
CMAR LR LR 16 55 58.0
comp=Z,23nm,21.0s,baz=345,slow=39
CM01 Chiang Mai Arr 72.24 85 *e*P **P 16 20 06.3 -0.4**
CM01 Chiang Mai Arr 72.24 85 *e*P **P 16 20 06.3 -0.4**
QIZ Qiongzhong 74.59 75 P **P 16 20 17.5 -3.0**
QIZ S **S 16 29 56.0 +0.2**
QIZ LR LR
comp=Z,44nm,22.2s
PALK Pallekele 77.95 106*ce*P **P 16 20 42.8 +3.1**
RCBR Riachuelo 84.62 225 LR LR 16 49 25.8
comp=Z,19nm,21.6s,baz=291,slow=29
ASAR Alice Springs 121.69 63 PKP **PKPdf 16 27 32.9 -2.1**
comp=Z,0.2nm,0.8s,baz=1.6,slow=1.8,SNR=3.9

*IDC **25** 16:10:42.9±0.9, 74°.18N×9°.03E, h0km, mb3.7/8, mb1 3.8/10, mb1mx3.6/47, mbtmp3.7/10, ML2.6/1, Error ellipse: s-maj=26.1km s-min=14.6km az=82.0*
*ISCJB **25** 16:10:43.4±0.8, 74°.34N±0°.05×10°.1E±0°.4, h10km, mb3.7/8, Error ellipse: s-maj=13.8km s-min=7.7km az=6.6*
*BER **25** 16:10:45.8±1.5, 74°.26N×9°.80E, h10km, ML2.5*

ISC 25 16:10:44.5±0.8, 74°.27N±0°.06×9°.93E±0°.10, h10km, n16, σ1°98/20, mb3.6/8, Greenland Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HSPB	**Hornsund (broa**	**3.08**	**24**	*e*Pn	**Pn**	**16 11 33.5**	**+0.3**
SPA0	**Spitsbergen Ar**	**4.22**	**18**	*e*Pn	**Pn**	**16 11 49.3**	**+0.5**
SPITS	**Spitsbergen Ar**	**4.22**	**18**	Pn	**Pn**	**16 11 48.9**	**+0.2**
	baz=191,slow=17,SNR=8.4						
SPITS				Sn	**Sn**	**16 12 36.5**	**-1.4**
	baz=194,slow=18,SNR=1.6						
HOPEN	**Hopen**	**4.42**	**52**	*e*Pn	**Pn**	**16 11 52.2**	**+0.7**
HOPEN				Sn	**Sn**	**16 12 40.0**	**-3.0**
HOPEN				IAML		16 12 42.5	
	comp=Z,32nm,0.3s						
KBS	**Kingsbay**	**4.71**	**5**	*e*Pn	**Pn**	**16 11 53.9**	**-1.6**
KBS				Sn	**Sn**	**16 12 47.0**	**-3.0**
KBS				IAML		16 12 51.9	
	comp=Z,8.5nm,0.3s						
ARCES	**ARCESS Array B**	**6.77**	**127**	Sn	**Sn**	**16 13 36.4**	**-4.4**
	comp=Z,1.5nm,0.3s,baz=322,slow=22,SNR=5.2						
FINES	**FINESS Array B**	**14.16**	**147**	Pn	**Pn**	**16 14 03.6**	**-1.1**
	comp=Z,0.1nm,0.3s,baz=316,slow=14,SNR=2.4						
TIXI	**Tiksi**	**29.46**	**34**	P	**P**	**16 16 48.8**	**+1.0**
	comp=Z,0.8nm,0.8s,baz=18,slow=9.6,SNR=2.1						
BRTR	**Keskin Array B**	**36.39**	**148**	P	**P**	**16 17 49.7**	**+1.0**
	comp=Z,0.3nm,0.4s,baz=357,slow=6.3,SNR=2.4						
YKA	**Yellowknife Ar**	**38.71**	**322**	P	**P**	**16 18 07.9**	**-0.1**
	comp=Z,0.3nm,0.7s,baz=15,slow=8.5,SNR=4.8						
YKA				PcP	**PcP**	**16 20 18.5**	**-0.8**
	comp=Z,0.1nm,0.6s,baz=14,slow=2.5,SNR=3.6						
ILAR	**Eielson Array**	**40.38**	**345**	P	**P**	**16 18 22.7**	**+0.8**
	comp=Z,0.6nm,0.8s,baz=2.0,slow=6.8,SNR=6.1						
GEYT	**Alibeck**	**42.88**	**120**	P	**P**	**16 18 45.2**	**+2.5**
	comp=Z,0.9nm,0.3s,baz=322,slow=4.2,SNR=2.2						
SONM	**Songino Array**	**46.35**	**68**	P	**P**	**16 19 12.7**	**+2.3**
	comp=Z,0.4nm,0.6s,baz=322,slow=6.1,SNR=3.0						
TORD	**Torodi Ar. Bea**	**61.29**	**189**	P	**P**	**16 20 58.4**	**-1.4**
	comp=Z,2.9nm,0.9s,baz=2.0,slow=6.2,SNR=11						
CMAR	**Chiang Mai Arr**	**72.11**	**86**	P	**P**	**16 22 10.0**	**+1.2**
	comp=Z,0.4nm,0.3s,baz=318,slow=7.6,SNR=3.6						
ASAR	**Alice Springs**	**121.59**	**63**	PKP	**PKPdf**	**16 29 35.6**	**-2.1**
	comp=Z,0.4nm,0.8s,baz=7.6,slow=1.4,SNR=4.1						

IDC 25 16:14:43.1±58.0, 20°.19S×175°.95W, h0km, mb4.0/3, mb1 4.2/3, mb1mx3.7/27, mbtmp4.0/3, Error ellipse: s-maj=1078.0km s-min=168.3km az=83.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**39.65**	**244**	P	P	16 22 15.9	-1.0
	1.1nm,0.5s,baz=94,slow=15,SNR=5.4						
ASAR	**Alice Springs**	**46.46**	**256**	P	P	16 23 12.1	-0.1
	1.9nm,0.7s,baz=98,slow=7.4,SNR=21						
WRA	**Warramunga Arr**	**46.54**	**261**	P	P	16 23 13.5	+0.5
	0.6nm,0.3s,baz=92,slow=8.1,SNR=86						

*ISCJB **25** 16:41:33.6±1.4, 35°.63N±0°.05×141°.59E±0°.08, h18km±9km, mb3.6/6, MS3.4/1, Error ellipse: s-maj=10.9km s-min=7.9km az=168.2*
*IDC **25** 16:41:33.3±1.1, 35°.56N×141°.48E, h0km, mb3.7/6, mb1 3.7/10, mb1mx3.5/68, mbtmp3.7/10, ML3.1/3, MS2.8/2, Ms1 2.8/2, ms1mx2.3/50, Error ellipse: s-maj=29.7km s-min=16.6km az=82.0*
*JMA **25** 16:41:35.6±0.2, 35°.62N×141°.42E, h12km±2km, M3.3*

ISC 25 16:41:34.5±2.0, 35°.60N±0°.06×141°.49E±0°.08, h9km±11km, n25, σ0°72/23, mb3.7/6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.52**	**281**	P	**Pg**	**16 41 44.9**	**+0.3**
CHOJ				S	**Sg**	**16 41 51.5**	**+0.1**
KTR	**Katsuura**	**1.06**	**245**	P	**Pb**	**16 41 55.1**	**+0.2**
JCN	**Nagara**	**1.06**	**260**	P	**Pn**	**16 41 55.7**	**+0.2**
JCN				*e*S	**Sn**	**16 42 10.0**	**-0.4**
BSO3	**Boso 3**	**1.13**	**225**	P	**Pb**	**16 41 55.9**	**-0.1**
JYT	**Yasato**	**1.22**	**301**	P	**Pb**	**16 41 57.5**	**-0.2**
JYT				*e*S	**Sb**	**16 42 12.2**	**-1.4**
JAG	**Ashikaga**	**1.84**	**297**	P	**Pn**	**16 42 06.6**	**+0.3**
JOD2	**Odawara 2**	**1.99**	**261**	P	**Pn**	**16 42 08.7**	**+0.4**
MJAR	**Matsushiro Arr**	**2.81**	**290**	Pn	**Pn**	**16 42 20.2**	**+0.5**
	3.7nm,0.3s,baz=101,slow=7.6,SNR=34						
MJAR				LR	LR	16 42 57.6	
	comp=Z,49nm,21.7s,baz=120,slow=30						
MAT	**Matsushiro**	**2.82**	**290**	P	**Pn**	**16 42 20.5**	**+0.8**
MAT				*e*S	**Sn**	**16 42 53.8**	**0.0**
JHJ	**Hachijo jima 2**	**2.85**	**210**	Pn	**Pn**	**16 42 20.2**	**+0.1**
	8.9nm,0.3s,baz=56,slow=11,SNR=3.1						
JHJ				Sn	**Sn**	**16 42 55.0**	**+0.5**
	18nm,0.3s,baz=24,slow=20,SNR=3.6						
JCJ	**Chichijima**	**8.50**	**176**	Pn	**Pn**	**16 43 36.4**	**-1.4**
	baz=345,slow=16						
ASAJ	**Asahikawa**	**8.55**	**5**	Pn	**Pn**	**16 43 37.2**	**-1.1**
	0.2nm,0.3s,baz=322,slow=19,SNR=3.5						
H11N2	**WAKE ISLAND Hy 27.39**	**119**		T	T	17 16 18.1	
	baz=311,slow=75,SNR=74						
H11N1	**WAKE ISLAND Hy 27.40**	**119**		T	T	17 16 18.8	
	baz=311,slow=75,SNR=71						
H11N3	**WAKE ISLAND Hy 27.41**	**119**		T	T	17 16 24.2	
	baz=311,slow=75,SNR=71						
H11S1	**WAKE ISLAND Hy 28.06**	**121**		T	T	17 17 09.6	
	baz=312,slow=75,SNR=69						
H11S3	**WAKE ISLAND Hy 28.06**	**121**		T	T	17 17 12.4	
	baz=312,slow=75,SNR=64						
H11S2	**WAKE ISLAND Hy 28.07**	**121**		T	T	17 17 13.6	
	baz=312,slow=75,SNR=48						
SONM	**Songino Array**	**28.65**	**306**	P	**P**	**16 47 31.5**	**-0.1**
	0.6nm,0.5s,baz=114,slow=10,SNR=4.8						
DAV	**Davao City (W)**	**31.93**	**211**	LR	LR	17 00 22.5	
	comp=Z,76nm,21.1s,baz=105,slow=35						
ZALV	**Zalesovo Beam**	**42.93**	**314**	P	**P**	**16 49 33.3**	**0.0**
	0.9nm,0.5s,baz=109,slow=8.2,SNR=3.8						
MKAR	**Makanchi Array**	**44.94**	**303**	P	**P**	**16 49 49.9**	**+0.2**
	0.9nm,0.6s,baz=87,slow=9.8,SNR=9.7						
ILAR	**Eielson Array**	**50.67**	**32**	P	**P**	**16 50 35.3**	**+1.5**
	0.3nm,0.8s,baz=280,slow=5.4,SNR=3.1						
WRA	**Warramunga Arr**	**55.65**	**188**	P	**P**	**16 51 10.2**	**-0.8**
	0.6nm,0.4s,baz=2.1,slow=7.7,SNR=18						
ASAR	**Alice Springs**	**59.38**	**188**	P	**P**	**16 51 37.6**	**+0.4**
	0.5nm,1.1s,baz=359,slow=6.3,SNR=10						

*ISCJB **25** 16:45:02.0±0.3, 51°.55N±0°.02×16°.15E±0°.02, h0km, mb3.4/1, MS3.0/2, Error ellipse: s-maj=2.3km s-min=1.9km az=30.7*
*CSEM **25** 16:45:04.2±0.1, 51°.55N×16°.12E, h2km, ML3.8/13, Error ellipse: s-maj=3.0km s-min=2.6km az=47.0*
*IDC **25** 16:45:05.3±0.7, 51°.55N×16°.00E, h0km, mb3.4/1, mb1 3.5/7, mb1mx3.3/54, mbtmp3.4/7, ML3.0/6, MS3.1/2, Ms1 3.1/2, ms1mx2.2/46, Error ellipse: s-maj=11.7km s-min=6.4km az=119.0*
*WAR **25** 16:45:05.3, 51°.53N×16°.10E, h1km, Mw3.0*
*BGR **25** 16:45:06.1±0.5, 51°.55N×16°.08E, h1km, ML3.5/7, Error ellipse: s-maj=6.7km s-min=5.6km az=2.0*
*VIE **25** 16:45:08.9±1.9, 51°.23N×15°.93E, h0km, mb2.7/9, ML2.8/10, Error ellipse: s-maj=11.1km s-min=9.3km az=165.0, Suspected Mining induced.*
*UPP **25** 16:45:09.0±2.8, 51°.87N×15°.53E, h0km, ML2.3, Suspected explosion*

ISC 25 16:45:02.7±0.6, 51°.56N±0°.02×16°.12E±0°.02, h0km, n112, σ1°82/187, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.72**	**171**	*i* Pg	**Pb**	**16 45 18.4**	**+0.3**
KSP				*e*Sg	**Sb**	**16 45 27.8**	**-0.8**
KSP				*e*		16 45 32.6	
KSP	**Ksiaz**	**0.72**	**171**	*i* Pg	**Pb**	**16 45 18.4**	**+0.3**
KSP				*e*Sg	**Sb**	**16 45 27.8**	**-0.8**
KSP	**Ksiaz**	**0.72**	**171**	*i* Pgd	**Pb**	**16 45 18.4**	**+0.3**
KSP				*e*Sg	**Sb**	**16 45 27.8**	**-0.8**
KSP				*e*		16 45 32.6	
UPC	**Upice**	**1.05**	**184**	*e*PG	**Pn**	**16 45 24.3**	**-0.4**
UPC				*e*SG	**Sb**	**16 45 38.2**	**+0.1**
	comp=Z,331nm,0.3s						
UPC	**Upice**	**1.05**	**184**	Pg	**Pn**	**16 45 24.3**	**-0.4**
UPC				Sg	**Sb**	**16 45 38.2**	**+0.1**

331nm,0.3s
DPC Dobruska-Polom 1.21 174 *e*PG **Pn 16 45 27.0 +0.1**
DPC *e*SG **Sb 16 45 42.7 -0.1**
comp=Z,128nm,0.6s
DPC Dobruska-Polom 1.21 174 Pg **Pn 16 45 27.0 +0.1**
DPC Sg **Sb 16 45 42.7 -0.1**
128nm,0.6s
PVCC Panska Ves 1.42 224 *e*PG **Pb 16 45 31.0 +1.0**
PVCC *e*SG **Sn 16 45 50.1 +1.0**
comp=Z,490nm,0.3s
PVCC Panska Ves 1.42 224 Pg **Pb 16 45 31.0 +1.0**
BRG Berggiesshubel 1.53 244 PN **Pg 16 45 32.0 0.0**
BRG PG **Pb 16 45 33.8 +1.9**
BRG SG **Sn 16 45 53.7 +1.9**
254nm,0.3s
BRG Berggiesshubel 1.53 244 Pn **Pg 16 45 33.4 +1.4**
SNR=19
BRG Berggiesshubel 1.53 244 Pg **Pg 16 45 34.0 +2.0**
SNR=67
BRG Sg **Sn 16 45 53.7 +1.9**
SNR=6.5
BRG Berggiesshubel 1.53 244 *e*Pn **Pg 16 45 33.4 +1.4**
SNR=19
BRG *e*Pg **Pg 16 45 34.0 +2.0**
SNR=67
BRG *e*Sg **Sn 16 45 53.7 +1.9**
SNR=6.5
KRLC Kraliky 1.54 164 *e*PG **Pg 16 45 32.3 +0.1**
KRLC *e*SG **Sb 16 45 52.5 +0.3**
KRLC Kraliky 1.54 164 Pg **Pg 16 45 32.3 +0.1**
RUE Ruedersdorf 1.72 304 Pn **Pb 16 45 34.6 -0.4**
SNR=3.5
RUE Sg **Sg 16 46 00.4 +2.6**
SNR=4.5
RUE Ruedersdorf 1.72 304 *e*Pn **Pb 16 45 34.6 -0.4**
SNR=3.5
RUE *e*Sg **Sg 16 46 00.4 +2.6**
SNR=4.5
GOPC GO Pecny, Ondr 1.85 208 *e*PN **Pb 16 45 36.6 -0.7**
GOPC *e*PG **Pg 16 45 38.6 +0.5**
GOPC *e*SG **Sg 16 46 02.8 +0.8**
comp=Z,67nm,0.4s
GOPC GO Pecny, Ondr 1.85 208 Pn **Pb 16 45 36.6 -0.7**
FBE Freiberg 1.85 251 Pn **Pg 16 45 39.3 +1.2**
SNR=27
FBE Sg **Sg 16 46 03.5 +1.4**
SNR=3.6
FBE Freiberg 1.85 251 *e*Pn **Pg 16 45 39.3 +1.2**
SNR=27
FBE *e*Sg **Sg 16 46 03.5 +1.4**
SNR=3.6
PRU Pruhonice 1.86 213 *e*PN **Pb 16 45 36.8 -0.7**
PRU *e*PG **Pg 16 45 38.8 +0.5**
PRU *e*SG **Sg 16 46 02.7 +0.2**
comp=Z,113nm,0.3s
PRU Pruhonice 1.86 213 Pn **Pb 16 45 36.8 -0.7**
CLL Collm 1.97 264 *e*Pn **Pn 16 45 38.0 +0.7**
CLL *e*Pg **Pg 16 45 41.0 +0.7**
CLL *e* 16 45 44.0
CLL *i* Sg **Sg 16 46 06.8 +1.0**
comp=Z,99nm,0.5s
CLL Collm 1.97 264 Pn **Pn 16 45 37.9 +0.7**
SNR=12
CLL Collm 1.97 264 *e*Pn **Pn 16 45 37.9 +0.7**
SNR=12
CLL *e*Sg **Sg 16 46 07.4 +1.6**
SNR=4.2
MORC Moravsky Berou 2.00 153 *e*Pn **Pn 16 45 38.7 +1.0**
MORC *e*Sg **Sg 16 46 06.9 +0.1**
OKC Ostrava-Krasne 2.15 142 *e*PN **Pn 16 45 40.2 +0.5**
OKC *e*PG **Pg 16 45 44.4 +0.6**
OKC *e*SG **Sg 16 46 12.1 +0.4**
comp=Z,105nm,0.6s
OKC Ostrava-Krasne 2.15 142 Pn **Pn 16 45 40.2 +0.5**
VRAC Vranov 2.27 172 *e*Pn **Pb 16 45 43.7 -0.8**
VRAC *e*Sg **Sb 16 46 14.1 +1.0**
TREC Trest 2.30 190 *e*PN **Pn 16 45 43.3 +1.5**
TREC *e*PG **Pg 16 45 47.2 +0.5**
TREC *e*SG **Sg 16 46 16.9 +0.4**
comp=Z,68nm,0.5s
TREC Trest 2.30 190 Pn **Pn 16 45 43.3 +1.5**
WERD Werda 2.65 247 Pn **Pn 16 45 47.9 +1.2**
SNR=12
WERD Werda 2.65 247 *e*Pn **Pn 16 45 47.9 +1.2**
SNR=12
NKC Novy Kostel 2.68 242 *e*PN **Pn 16 45 48.4 +1.4**
NKC *e*PG **Pg 16 45 55.1 +1.2**
NKC *e*SG **Sg 16 46 30.3 +1.7**
comp=Z,217nm,0.5s
NKC Novy Kostel 2.68 242 Pn **Pn 16 45 48.4 +1.4**
OJC Ojcow 2.69 118 *e*Pg **Pg 16 45 55.7 +1.6**
OJC *e*Sg **Sg 16 46 30.7 +1.8**
OJC Ojcow 2.69 118 *e*Pg **Pg 16 45 55.7 +1.6**
OJC *e*Sg **Sg 16 46 30.7 +1.8**
OJC Ojcow 2.69 118 *e*Pg **Pg 16 45 55.7 +1.6**
OJC *e*Sg **Sg 16 46 30.7 +1.8**
WERN Wernitzgruen 2.69 243 Pn **Pn 16 45 48.6 +1.4**
SNR=13
WERN Wernitzgruen 2.69 243 *e*Pn **Pn 16 45 48.6 +1.4**
SNR=13
NEUB Neuenburg 2.75 264 Pn **Pn 16 45 49.9 +2.0**
SNR=2.4
NEUB Sg **Sg 16 46 32.5 +1.7**
SNR=4.4
NEUB Neuenburg 2.75 264 *e*Pn **Pn 16 45 49.9 +2.0**
SNR=2.4
NEUB *e*Sg **Sg 16 46 32.5 +1.7**
SNR=4.4
KHC Kasperske Hory 2.92 215 *e*PN **Pn 16 45 51.4 +1.0**
KHC *e*PG **Pg 16 45 57.9 -0.8**
KHC *e*SN **Sn 16 46 26.4 +0.1**
KHC *e*SG **Sg 16 46 35.7 -0.8**
comp=Z,38nm,0.5s
KHC Kasperske Hory 2.92 215 Pn **Pn 16 45 51.4 +1.0**
MOX Moxa 2.98 254 Pn **Pn 16 45 52.3 +1.1**
SNR=3.7
MOX Sg **Sg 16 46 40.7 +2.3**
SNR=5.4
MOX Moxa 2.98 254 *e*Pn **Pn 16 45 52.3 +1.1**
SNR=3.7
MOX *e*Sg **Sg 16 46 40.7 +2.3**
SNR=5.4
MANZ Manzenberg 2.99 240 Pn **Pn 16 45 53.2 +1.9**
SNR=11
MANZ Manzenberg 2.99 240 *e*Pn **Pn 16 45 53.2 +1.9**
SNR=11
ROTZ Rotzenmuhle 3.07 236 Pn **Pn 16 45 54.2 +1.8**
SNR=14
ROTZ Rotzenmuhle 3.07 236 *e*Pn **Pn 16 45 54.2 +1.8**
SNR=14
GEC2 GERESS Array S 3.13 211 Pn **Pn 16 45 55.5 +2.2**
SNR=12
GEC2 GERESS Array S 3.13 211 *e*Pn **Pn 16 45 55.5 +2.2**
SNR=12
GERES GERESS Array B 3.13 211 Pn **Pn 16 45 55.2 +1.9**
comp=Z,3.2nm,0.3s,baz=29,slow=13,SNR=53
GERES Pg **Pg 16 46 01.9 -0.7**
comp=Z,7.8nm,0.3s,baz=32,slow=19,SNR=29
GERES Sn **Sn 16 46 31.5 +0.1**
comp=Z,6.4nm,0.3s,baz=25,slow=24,SNR=5.0
GERES Lg Lg 16 46 41.5
comp=Z,8.8nm,0.3s,baz=36,slow=27,SNR=5.6
SMOL Smolenice 3.16 164 *e*Pg **Pg 16 46 03.8 +0.6**
SMOL *e*Sg **Sg 16 46 45.5 +1.4**
SMOL Smolenice 3.16 164 *e*PG **Pg 16 46 03.8 +0.6**
SMOL *e*SG **Sg 16 46 45.5 +1.4**
WET Wettzell 3.19 222 Pn **Pn 16 45 55.5 +1.5**
SNR=7.6
WET Wettzell 3.19 222 *e*Pn **Pn 16 45 55.5 +1.5**
SNR=7.6
LANS Liptovska Anna 3.22 137 *e*Pg **Pg 16 46 05.1 +0.6**
LANS *e*Sg **Sg 16 46 49.6 +3.4**
LANS Liptovska Anna 3.22 137 *e*PG **Pg 16 46 05.0 +0.6**
LANS *e*SG **Sg 16 46 49.6 +3.4**
NIE Niedzica 3.42 127 *e*P **Pg 16 46 09.0 +0.8**
NIE *e*S **Sg 16 46 53.0 +0.5**
NIE Niedzica 3.42 127 *e*P **Pg 16 46 09.0 +0.8**
NIE *e*S **Sg 16 46 53.0 +0.5**
VYHS Vyhne 3.53 149 *e*Pg **Pg 16 46 12.0 +1.7**
VYHS *e*Sg **Sg 16 46 56.6 +0.6**
VYHS Vyhne 3.53 149 *e*PG **Pg 16 46 12.0 +1.7**
VYHS *e*SG **Sg 16 46 56.6 +0.6**
VYHS *e*LG Lg 16 47 02.5
CLZ Clausthal 3.59 277 Pn **Pn 16 46 01.7 +2.2**
SNR=9.4
CLZ Clausthal 3.59 277 *e*Pn **Pn 16 46 01.7 +2.2**
SNR=9.4
CONA Conrad Observa 3.64 183 Pn **Pn 16 46 02.5 +2.3**
comp=Z,3.0nm,0.3s
CONA Sg **Sg 16 46 57.0 -2.4**
comp=Z,53nm,0.6s
BSD Bornholm Skovb 3.64 349 *i* P **Pn 16 46 00.6 +0.5**
BSD *i* S **Sn 16 46 40.5 -3.2**
BSD Bornholm Skovb 3.64 349 *i* P **Pn 16 46 00.6 +0.5**
BSD *i* S **Sn 16 46 40.5 -3.2**
NRDL Niedersach Rie 3.83 287 Pn **Pn 16 46 05.2 +2.4**
SNR=2.4
NRDL Niedersach Rie 3.83 287 *e*Pn **Pn 16 46 05.2 +2.4**
SNR=2.4
MOA Molln 3.90 199 Pn **Pn 16 46 05.8 +2.0**
comp=Z,5.3nm,0.2s
MOA Sg **Sg 16 47 06.4 -1.5**
comp=Z,54nm,0.6s
STHS Stebnicka Huta 3.91 121 *e*Pg **Pg 16 46 19.2 +1.7**
STHS *e*Sg **Sg 16 47 12.6 +4.4**
STHS Stebnicka Huta 3.91 121 *e*PG **Pg 16 46 19.2 +1.7**
STHS *e*SG **Sg 16 47 12.6 +4.4**
STHS *e*LG Lg 16 47 20.6
KECS Kecovo 4.17 136 *e*Pg **Pg 16 46 23.5 +1.0**
KECS *e*Sg **Sg 16 47 16.2 -0.3**
KECS Kecovo 4.17 136 *e*PG **Pg 16 46 23.5 +1.0**
KECS *e*SG **Sg 16 47 16.2 -0.3**
KECS *e*LG Lg 16 47 29.0
ARSA Arzberg 4.33 185 Pn **Pn 16 46 13.7 +4.0**
comp=Z,2.6nm,0.3s
ARSA Sg **Sg 16 47 19.7 -1.9**
comp=Z,19nm,0.5s
CRVS Cervenica-Dubn 4.34 126 *e*Pg **Pg 16 46 28.8 +3.1**
CRVS *e*Sg **Sg 16 47 24.7 +2.8**
CRVS Cervenica-Dubn 4.34 126 *e*PG **Pg 16 46 28.8 +3.1**
CRVS *e*SG **Sg 16 47 24.7 +2.8**
KOLS Kolonicke sedl 4.74 121 *e*Pn **Pn 16 46 16.9 +1.5**
KOLS Kolonicke sedl 4.74 121 *e*PN **Pn 16 46 16.9 +1.5**
KOLS *e*PG **Pg 16 46 37.2 +3.7**
KOLS *e*SG **Sg 16 47 37.1 +2.2**
BLEU Blekinge 4.76 358 P **Pn 16 46 16.2 +0.7**
BLEU S **Sn 16 47 07.8 -3.6**
BLEU Blekinge 4.76 358 P **Pn 16 46 16.2 +0.7**
KBA Koelnbreinsper 4.84 203 Pn **Pn 16 46 18.8 +2.0**
comp=Z,4.8nm,0.4s
KBA Sg **Sg 16 47 41.0 +3.1**
comp=Z,9.8nm,0.4s
BJUU Bjuv 4.88 339 P **Pn 16 46 17.1 -0.2**
BJUU S **Sn 16 47 10.2 -4.3**
BJUU Bjuv 4.88 339 P **Pn 16 46 17.1 -0.2**
DEL Delary 5.10 346 P **Pn 16 46 20.4 +0.3**
DEL Delary 5.10 346 P **Pn 16 46 20.5 +0.3**
OBKA Obir 5.16 192 Sg **Sg 16 47 44.6 -3.6**
comp=Z,18nm,0.7s
MYKA Terra Mystica 5.19 199 Sg **Sg 16 47 49.5 +0.1**
comp=Z,7.5nm,0.4s
ABTA Abfaltersbach 5.36 208 Pn **Pn 16 46 26.6 +2.6**
comp=Z,2.0nm,0.4s
ABTA Sg **Sg 16 47 55.1 +0.2**
comp=Z,8.9nm,0.6s
RETA Reutte 5.36 223 Pn **Pn 16 46 25.0 +1.0**
comp=Z,0.6nm,0.2s
RETA Sg **Sg 16 47 52.2 -2.6**
comp=Z,11nm,0.6s
VXJU Vaexsjoe 5.42 353 P **Pn 16 46 25.5 +0.8**
VXJU S **Sn 16 47 23.0 -4.7**
VXJU Vaexsjoe 5.42 353 P **Pn 16 46 25.5 +0.8**
OSKU Oskarshamn 5.65 360 P **Pn 16 46 28.7 +0.9**
OSKU Oskarshamn 5.65 360 P **Pn 16 46 28.7 +0.9**
BYXU Byxelkrok 5.77 5 P **Pn 16 46 30.4 +1.0**
BYXU Byxelkrok 5.77 5 P **Pn 16 46 30.4 +1.0**
ASPU Aespoe 5.88 3 P **Pn 16 46 32.5 +1.5**
ASPU Aespoe 5.88 3 P **Pn 16 46 32.5 +1.5**
DAVA Damuels 5.90 226 Pn **Pn 16 46 32.2 +0.8**
comp=Z,1.6nm,0.3s
DAVA Sg **Sg 16 48 15.6 +3.5**
comp=Z,13nm,0.6s
VSTU Vaesterwik 6.12 2 P **Pn 16 46 36.0 +1.7**
VSTU Vaesterwik 6.12 2 P **Pn 16 46 36.0 +1.7**
DAVOX Davos/Dischmat 6.29 223 Pn **Pn 16 46 39.9 +3.1**
comp=Z,0.5nm,0.3s,baz=29,slow=13,SNR=3.4
DAVOX Sn **Sn 16 47 50.0 +0.5**
comp=Z,0.6nm,0.3s,baz=161,slow=18,SNR=2.6
DAVOX Lg Lg 16 48 22.9
comp=Z,1.0nm,0.3s,baz=180,slow=19,SNR=3.0
AKASG Malin Array Be 8.29 91 Pn **Pn 16 47 03.9 -0.2**
comp=Z,1.9nm,0.3s,baz=279,slow=12,SNR=9.1
AKASG Sn **Sn 16 48 34.2 -4.0**
comp=Z,1.0nm,0.3s,baz=307,slow=32,SNR=3.2
AKASG Lg Lg 16 49 31.6
comp=Z,0.4nm,0.3s,baz=275,slow=32,SNR=5.1
HFS Hagfors 8.71 352 Pn **Pn 16 47 10.2 +0.6**
comp=Z,0.1nm,0.3s,baz=176,slow=26,SNR=4.3
HFS Sn **Sn 16 48 43.1 -5.3**
comp=Z,0.3nm,0.3s,baz=184,slow=17,SNR=3.7
HFS Lg Lg 16 49 37.3
comp=Z,0.1nm,0.3s,baz=193,slow=31,SNR=2.7
FINES FINESS Array B 11.32 25 Pn **Pn 16 47 45.0 -0.4**
comp=Z,0.1nm,0.3s,baz=215,slow=11,SNR=4.1
FINES Sn **Sn 16 49 46.6 -5.9**
comp=Z,0.3nm,0.3s,baz=209,slow=17,SNR=4.9
FINES Lg Lg 16 51 01.1
comp=Z,0.0nm,0.3s,baz=196,slow=25,SNR=3.0
EKA Eskdalemuir Ar 12.09 296 Pn **Pn 16 47 54.6 -1.4**
baz=90,slow=14,SNR=2.9
ARCES ARCESS Array B 18.58 10 Pn **P 16 49 18.3 -2.6**
comp=Z,0.1nm,0.3s,baz=200,slow=13,SNR=5.0
MMAI Mount Meron Ar 23.26 135 LR LR 17 02 28.9
comp=Z,15nm,18.2s,baz=50,slow=45
ASF Jabal al Asfar 24.64 134 LR LR 17 01 46.4
comp=Z,154nm,20.0s,baz=259,slow=41
YKA Yellowknife Ar 59.82 336 P **P 16 55 11.0 +1.8**
comp=Z,0.2nm,0.5s,baz=25,slow=7.1,SNR=5.0

IDC ***25*** *16:50:44.0±0.7,2°.65S×136°.63E,h0km,mb4.1/13, mb1 4.2/15,mb1mx4.1/47,mbtmp4.2/15,ML4.2/2,MS3.5/10, Ms1 3.5/10,ms1mx3.2/40,Error ellipse: s-maj=33.8km s-min=15.2km az=82.0*
ISCJB ***25*** *16:50:46.9±0.3,2°.71S±0°.04×136°.80E±0°.03,h33km, mb4.3/21,MS3.4/8,Error ellipse: s-maj=5.4km s-min=4.6km az=173.7*
NEIC ***25*** *16:50:49.9±0.9,2°.72S×136°.77E,h45km±9km,mb4.5/5, Error ellipse: s-maj=8.9km s-min=7.0km az=86.0*
DJA ***25*** *16:50:57.4±0.4,3°.5±5°.5×13°.7E±°,h67km±13km,M4.6/7, mB5.3/2,mb4.5/7,MLv4.6/3,Mw(mB)4.7/2*
ISC 25 16:50:49.2±0.5,2°.68S±0°.06×136°.81E±0°.05,h35km,n49, σ1°51/47,mb4.5/21,MS3.4/8,1C,Irian Jaya region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GENI	**Genyem**	**3.35**	**89**	P	**Pn**	**16 51 41.2**	**+2.1**
GENI				S	**Sn**	**16 52 16.5**	**-1.3**
JAY	**Jayapura**	**3.89**	**88**	Pn	**Pn**	**16 51 47.8**	**+1.2**
	4.1nm,0.3s,baz=259,slow=21,SNR=175						
JAY				Sn	**Sn**	**16 52 32.1**	**+0.9**
	0.4nm,0.3s,baz=90,slow=20,SNR=3.0						
JAY	**Jayapura**	**3.89**	**88**	P	**Pn**	**16 51 47.8**	**+1.2**
JAY				S	**Sn**	**16 52 30.0**	**-1.2**
FAKI	**Fak Fak**	**4.56**	**267**	P	**Pn**	**16 51 59.4**	**+3.6**
FAKI	**Fak Fak**	**4.56**	**267**	*e*Pn	**Pn**	**16 51 55.9**	**+0.1**
SWI	**Sorong**	**5.83**	**288**	P	**Pn**	**16 52 13.5**	**+0.3**
MTN	**Manton Dam**	**11.56**	**209**	*e*Pn	**Pn**	**16 53 32.3**	**+0.5**
MTN				*e*Sn	**Sn**	**16 55 39.4**	**-0.3**
PMG	**Port Moresby**	**12.27**	**123**	LR	LR	17 00 02.9	
	comp=Z,194nm,19.1s,baz=286,slow=45						
COEN	**Coen**	**12.85**	**151**	*e*Pn	**Pn**	**16 53 50.6**	**+1.1**
KDI	**Kendari**	**14.22**	**264**	P	P	16 54 21.2	+6.1
	19nm,1.1s						
SOEI	**Soe**	**14.31**	**240**	P	**Pn**	**16 54 12.1**	**+2.6**
SOEI	**Soe**	**14.31**	**240**	*e*Pn	**Pn**	**16 54 09.7**	**+0.2**
WRAB	**Tennant Creek**	**17.32**	**188**	*e*Pn	**Pn**	**16 54 47.6**	**-0.7**
	27nm,0.8s						
WB2	**Warramunga Arr**	**17.33**	**188**	*e*Pn	**Pn**	**16 54 46.4**	**-2.0**
	30nm,0.9s						
WRA	**Warramunga Arr**	**17.33**	**188**	P	**Pn**	**16 54 46.3**	**-2.2**
	1.4nm,0.3s,baz=8.8,slow=12,SNR=40						
WRA				S	Sn	16 57 48.3	-12
	0.5nm,0.3s,baz=11,slow=22,SNR=4.3						
WRA				LR	LR	17 02 12.8	
	comp=Z,720nm,19.0s,baz=0.0,slow=40						
GUMO	**Guam**	**18.03**	**26**	LR	LR	17 02 05.7	
	comp=Z,70nm,19.6s,baz=208,slow=38						
TWSI	**Taliwang, Sumb**	**20.71**	**252**	P	Pn	16 55 29.0	-0.2
AS01	**Alice Springs**	**21.05**	**187**	*e*P	**P**	**16 55 28.1**	**-2.1**
AS31	**Alice Springs**	**21.05**	**187**	*e*P	**P**	**16 55 30.6**	**+0.2**
	15nm,0.7s						
ASAR	**Alice Springs**	**21.05**	**187**	P	**P**	**16 55 30.5**	**+0.2**
	31nm,0.7s,baz=12,slow=11,SNR=110						
ASAR				S	**S**	**16 59 20.4**	**-2.6**
	4.6nm,0.9s,baz=13,slow=23,SNR=6.2						
ASAR				LR	LR	17 04 19.7	
	comp=Z,574nm,19.5s,baz=3.5,slow=39						
TGY	**Tagaytay City**	**22.93**	**317**	LR	LR	17 03 40.5	
	comp=Z,50nm,21.6s,baz=98,slow=34						
STKA	**Stephens Creek**	**29.39**	**172**	P	**P**	**16 56 49.7**	**+0.4**
	1.6nm,0.7s,baz=298,slow=15,SNR=4.4						
STKA				LR	LR	17 09 40.6	
	comp=Z,93nm,18.6s,baz=12,slow=39						
JCJ	**Chichijima**	**30.05**	**10**	LR	LR	17 07 03.3	
	comp=Z,39nm,22.0s,baz=146,slow=33						
MJAR	**Matsushiro Arr**	**39.04**	**2**	LR	LR	17 11 59.3	
	comp=Z,61nm,19.7s,baz=165,slow=33						
KSAR	**Wonju Array Be**	**40.77**	**349**	P	**P**	**16 58 27.0**	**0.0**
KSRS	**Korea Array**	**40.77**	**349**	P	**P**	**16 58 27.0**	**0.0**
	0.8nm,0.8s,baz=187,slow=8.5,SNR=2.7						
KMI	**Kunming**	**43.07**	**312**	P	**P**	**16 58 47.5**	**+1.2**
KMI				pmax	pmax		
	comp=Z,11nm,0.5s						
KMI				LR	LR		
	comp=Z,50nm,21.5s						
XAN	**Xi'an**	**44.98**	**327**	P	**P**	**16 59 00.5**	**-0.8**
XAN				pP	sP	16 59 15.0	-0.8
XAN				pmax	pmax		
	comp=Z,7.0nm,0.7s						
CD2	**Chengdu**	**45.90**	**319**	P	**P**	**16 59 09.0**	**+0.4**
CD2				pmax	pmax		
	comp=Z,9.0nm,0.6s						
HHC	**Hu-ho-hao-te**	**49.07**	**335**	*e*P	**P**	**16 59 35.8**	**+2.7**
HHC				pmax	pmax		
	comp=Z,16nm,1.0s						
HHC				pmax	pmax		
	comp=Z,71nm,6.1s						
LZH	**Lanzhou**	**49.34**	**324**	*e*P	**P**	**16 59 36.5**	**+1.2**
LZH				pP	sP	16 59 51.8	+1.8
LZH				sP	pP	16 59 57.8	+12
LZH				pmax	pmax		
	comp=Z,25nm,1.0s						
URZ	**Urewera**	**51.07**	**139**	LR	LR	17 20 16.5	
	comp=Z,95nm,18.7s,baz=318,slow=35						
KLR	**Kul'dur**	**51.89**	**356**	P	**P**	**16 59 54.1**	**0.0**
	comp=Z,2.7nm,0.9s,baz=219,slow=5.7,SNR=8.9						
GTA	**Gaotai**	**53.93**	**325**	⇑P	**P**	**17 00 10.0**	**+0.4**
GTA				pP	sP	17 00 24.3	0.0
GTA				sP	pP	17 00 31.3	+11
GTA				pmax	pmax		
	comp=Z,5.0nm,0.9s						
LSA	**Lhasa**	**54.23**	**310**	*e*P	**P**	**17 00 12.8**	**+0.4**
	comp=Z,5.0nm,0.6s						
SONM	**Songino Array**	**56.90**	**336**	P	**P**	**17 00 30.6**	**-0.2**
	comp=Z,1.3nm,0.7s,baz=153,slow=7.0,SNR=7.5						
MA2	**Magadan**	**63.04**	**8**	P	**P**	**17 01 11.7**	**-0.8**
	comp=Z,5.5nm,0.8s,baz=180,slow=19,SNR=2.9						
WMQ	**Urumqi**	**63.82**	**322**	*e*P	**P**	**17 01 17.3**	**-0.8**
WMQ				PcS		17 05 56.8	
WMQ				S	**S**	**17 09 48.0**	**-3.0**
WMQ				ScS	**SKSac**	**17 11 04.5**	**-4.7**
YAK	**Yakutsk**	**64.76**	**356**	P	**P**	**17 01 23.9**	**+0.2**
	comp=Z,0.5nm,0.3s,baz=182,slow=18,SNR=3.6						
YAK	**Yakutsk**	**64.76**	**356**	*e*P	**P**	**17 01 23.7**	**0.0**
	comp=Z,13nm,0.8s						
SEY	**Seymchan**	**66.49**	**8**	P	**P**	**17 01 35.0**	**0.0**
	comp=Z,1.6nm,0.6s,baz=234,slow=3.5,SNR=6.2						
MKAR	**Makanchi Array**	**68.61**	**323**	P	**P**	**17 01 48.2**	**-0.5**
	comp=Z,0.7nm,0.8s,baz=108,slow=7.4,SNR=5.7						
ZALV	**Zalesovo Beam**	**70.96**	**330**	P	**P**	**17 02 01.9**	**-1.1**
	comp=Z,1.0nm,0.6s,baz=134,slow=4.3,SNR=4.7						
KURK	**Kurchatov**	**72.61**	**326**	P	**P**	**17 02 12.3**	**-0.7**
KURBB	**Kurchatov Arra**	**72.62**	**325**	P	**P**	**17 02 12.3**	**-0.7**
	comp=Z,0.8nm,0.8s,baz=125,slow=5.7,SNR=7.4						
VNDA	**Vanda**	**75.98**	**175**	P	**P**	**17 02 32.8**	**+0.7**
	comp=Z,1.0nm,0.6s,baz=339,slow=6.0,SNR=9.1						
BVAR	**Borovoye Array**	**78.21**	**326**	P	**P**	**17 02 44.9**	**-0.2**
	comp=Z,3.0nm,0.7s,baz=68,slow=9.4,SNR=2.9						
NRIK	**Noril'sk**	**79.16**	**344**	LR	LR	17 37 06.3	
	comp=Z,27nm,21.9s,baz=122,slow=35						
TORD	**Torodi Ar. Bea**	**134.42**	**286**	PKP	**PKPdf**	**17 10 04.4**	**-0.3**
	comp=Z,1.5nm,1.0s,baz=58,slow=2.1,SNR=4.4						

MOS ***25*** *16:55:35.4±1.2,74°.24N×8°.81E,h10km,mb5.0/57,Error ellipse: s-maj=18.6km s-min=3.8km az=95.1*
IDC ***25*** *16:55:35.9±0.4,74°.16N×8°.79E,h0km,mb4.3/30, mb1 4.4/37,mb1mx4.2/66,mbtmp4.3/37,ML3.9/6,MS4.1/38, Ms1 4.1/38,ms1mx4.0/51,Error ellipse: s-maj=10.8km s-min=8.0km az=67.0*
ISCJB ***25*** *16:55:35.5±0.1,74°.22N±0°.02×8°.92E±0°.08,h10km, mb4.7/157,MS4.2/48,Error ellipse: s-maj=3.4km s-min=2.3km az=149.1*
CSEM ***25*** *16:55:36.4±0.1,74°.27N×9°.21E,h10km,mb5.0/39,Error ellipse: s-maj=5.4km s-min=3.5km az=54.0*
NEIC ***25*** *16:55:37.2±0.1,74°.17N×8°.76E,h10km,mb4.9/92,Error ellipse: s-maj=4.0km s-min=2.6km az=53.0*
BER ***25*** *16:55:38.0±3.8,74°.24N×9°.21E,h14km±27km,MD2.9, ML3.1,ML4.5(NAO)*
NAO ***25*** *16:55:40.0±4.5,74°.19N×9°.98E,h26km±47km,ML4.5*
ISC 25 16:55:37.3±0.7,74°.26N±0°.03×8°.68E±0°.04,h11km±4km, n541,σ1°94/563,mb4.8/165,MS4.2/49,42C-14D, Greenland Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BJO1	**Bjornoya**	**2.80**	**80**	Pn	**Pn**	**16 56 18.7**	**-3.2**
BJO1				Sn	**Sn**	**16 56 47.4**	**-8.3**
BJO	**Bjornoya**	**2.85**	**80**	Pn	**Pn**	**16 56 18.7**	**-3.9**
BJO				Sn	Sn	16 56 47.4	-10
BJO	**Bjornoya**	**2.85**	**80**	Pn	**Pn**	**16 56 18.7**	**-3.9**
HSPB	**Hornsund (broa**	**3.25**	**29**	Pn	**Pn**	**16 56 26.2**	**-1.8**
HSPB	**Hornsund (broa**	**3.25**	**29**	*e*P	**Pn**	**16 56 26.2**	**-1.8**
HSPB				*e*S	**Sn**	**16 57 00.8**	**-5.7**
HSPB	**Hornsund (broa**	**3.25**	**29**	*e*P	**Pn**	**16 56 26.2**	**-1.8**
HSPB				*e*S	**Sn**	**16 57 00.8**	**-5.7**
HSP	**Hornsund**	**3.25**	**28**	Pn	**Pn**	**16 56 26.2**	**-1.9**
SPA0	**Spitsbergen Ar**	**4.35**	**21**	Pn	**Pn**	**16 56 42.2**	**-0.9**
	baz=202,slow=14						
SPA0				Sn	**Sn**	**16 57 30.1**	**-3.6**
	baz=201,slow=37						
SPA0	**Spitsbergen Ar**	**4.35**	**21**	Pn	**Pn**	**16 56 42.2**	**-0.9**
	baz=202,slow=14						
SPA0				Sn	**Sn**	**16 57 30.1**	**-3.6**
	baz=201,slow=37						
SPA0	**Spitsbergen Ar**	**4.35**	**21**	*e*Pn	**Pn**	**16 56 41.9**	**-1.3**
SPA0				Sn	**Sn**	**16 57 30.1**	**-3.6**
	SNR=4.8						
SPA0	**Spitsbergen Ar**	**4.35**	**21**	*e*Pn	**Pn**	**16 56 41.9**	**-1.3**
SPITS	**Spitsbergen Ar**	**4.35**	**21**	Pn	**Pn**	**16 56 42.0**	**-1.1**
	baz=189,slow=16,SNR=897						
SPITS				Sn	**Sn**	**16 57 30.8**	**-2.9**
	baz=151,slow=39,SNR=1.6						
SPITS				LR	LR	16 58 20.4	
	comp=Z,1μm,20.0s,baz=205,slow=37						
HOPEN	**Hopen**	**4.71**	**54**	Pn	**Pn**	**16 56 45.1**	**-2.9**
HOPEN				Sn	**Sn**	**16 57 35.3**	**-7.1**
HOPEN	**Hopen**	**4.71**	**54**	Pn	**Pn**	**16 56 45.1**	**-2.9**
HOPEN				Sn	**Sn**	**16 57 35.3**	**-7.1**
HOPEN				IAML		16 57 37.9	
	comp=Z,279nm,0.3s						
HOPEN	**Hopen**	**4.71**	**54**	Pn	**Pn**	**16 56 45.1**	**-2.9**
KBS	**Kingsbay**	**4.76**	**8**	Pn	**Pn**	**16 56 46.8**	**-2.0**
KBS	**Kingsbay**	**4.76**	**8**	Pn	**Pn**	**16 56 46.8**	**-2.0**
KBS				IAML		16 57 44.4	
	comp=Z,72nm,0.5s						
KBS	**Kingsbay**	**4.76**	**8**	*e*P	**Pn**	**16 56 46.6**	**-2.2**
KBS	**Kingsbay**	**4.76**	**8**	*i* P	**Pn**	**16 56 46.8**	**-2.0**
	SNR=49						
KBS				*i* S	**Sn**	**16 57 37.7**	**-6.1**
	SNR=49						
KBS	**Kingsbay**	**4.76**	**8**	*e*Pn	**Pn**	**16 56 46.6**	**-2.2**
TRO	**Tromso**	**5.62**	**141**	*e*P	**Pn**	**16 56 59.1**	**-1.6**
TRO				*e*S	**Sn**	**16 57 57.4**	**-7.7**
TRO				IAML		16 58 00.9	
	comp=Z,47nm,0.4s						
TRO	**Tromso**	**5.62**	**141**	*e*P	**Pn**	**16 56 59.1**	**-1.6**
	SNR=53				

comp=Z,49nm,0.4s
HAMF Hammerfest 5.80 121 *e*P **Pn 16 56 59.4 -3.6**
SNR=53
JNE Jan Mayen East 6.03 246 *e*P **Pn 16 57 05.2 -1.1**
JNE Jan Mayen East 6.03 246 *e*P **Pn 16 57 05.2 -1.1**
SNR=53
JNW Jan Mayen West 6.04 246 *e*P **Pn 16 57 05.3 -1.1**
JNW Jan Mayen West 6.04 246 *e*P **Pn 16 57 05.3 -1.1**
SNR=53
JMIC Jan Mayen 6.09 246 Pn **Pn 16 57 05.1 -1.9**
comp=Z,24nm,0.3s,baz=43,slow=4.7,SNR=6.0
JMIC LR LR 16 58 44.7
comp=Z,1μm,21.8s,baz=65,slow=31
JMIC Jan Mayen 6.09 246 *e*P **Pn 16 57 05.6 -1.4**
LOF Lofoten 6.35 163 *e*P **Pn 16 57 08.8 -1.9**
LOF *e*S Sn 16 58 13.2 -10
LOF IAML 16 58 19.0
comp=Z,52nm,0.7s
LOF Lofoten 6.35 163 *e*P **Pn 16 57 08.8 -1.9**
SNR=51
KIF Kilpisjarvi 6.50 138 P **Pn 16 57 12.3 -0.4**
KTK1 Kautokeino 6.97 132 *e*P **Pn 16 57 17.9 -1.2**
KTK1 *e*S **Sn 16 58 30.4 -7.9**
KTK1 IAML 16 58 38.4
comp=Z,22nm,0.5s
KTK1 Kautokeino 6.97 132 P **Pn 16 57 17.6 -1.5**
ARA0 ARCESS Array S 7.04 124 Pn **Pn 16 57 16.2 -3.9**
baz=324,slow=12
ARA0 Sn Sn 16 58 28.9 -11
baz=322,slow=18
ARA0 ARCESS Array S 7.04 124 Pn **Pn 16 57 16.2 -3.9**
baz=324,slow=12
ARA0 Sn Sn 16 58 28.9 -11
baz=322,slow=18
ARA0 ARCESS Array S 7.04 124 *e*Pn **Pn 16 57 16.7 -3.4**
ARA0 ARCESS Array S 7.04 124 *e*Pn **Pn 16 57 16.7 -3.4**
ARCES ARCESS Array B 7.04 124 Pn **Pn 16 57 16.4 -3.8**
comp=Z,4.6nm,0.3s,baz=321,slow=12,SNR=40
ARCES Sn Sn 16 58 27.9 -12
comp=Z,13nm,0.3s,baz=321,slow=17,SNR=9.5
ARCES LR LR 17 00 24.4
comp=Z,2μm,19.3s,baz=352,slow=41
ARE0 ARCESS Array S 7.04 124 *e*Pn **Pn 16 57 16.3 -3.8**
ARE0 ARCESS Array S 7.04 124 P **Pn 16 57 18.3 -1.8**
ARE0 ARCESS Array S 7.04 124 *e*Pn **Pn 16 57 16.3 -3.8**
KEV Kevo 7.22 119 *e*P **Pn 16 57 19.3 -3.3**
KEV Kevo 7.22 119 *e*Pn **Pn 16 57 19.3 -3.3**
KEV Kevo 7.22 119 P **Pn 16 57 19.6 -3.0**
KEV Kevo 7.22 119 *e*Pn **Pn 16 57 19.3 -3.3**
DAG Danmarks Havn 7.25 303 *i* P **Pn 16 57 19.2 -3.7**
DAG *i* S Sn 16 58 34.1 -11
DAG Danmarks Havn 7.25 303 *i* P **Pn 16 57 19.2 -3.7**
HEF Hetta 7.56 133 P **Pn 16 57 26.0 -1.3**
KONS Konsvik 7.93 167 *e*P **Pn 16 57 31.1 -1.2**
KONS *e*S Sn 16 58 49.8 -12
KONS IAML 16 58 54.6
comp=Z,12nm,0.4s
KONS Konsvik 7.93 167 *e*P **Pn 16 57 31.1 -1.2**
SNR=51
STOK Stokkvaagen 8.09 167 *e*P **Pn 16 57 33.0 -1.5**
STOK IAML 16 58 56.8
comp=N,11nm,0.7s
STOK Stokkvaagen 8.09 167 *e*P **Pn 16 57 33.0 -1.5**
SNR=51
SGF Sodankyl 8.96 131 P **Pn 16 57 44.6 -1.8**
VRF Varrio 9.38 123 P **Pn 16 57 48.8 -3.4**
TOF Tornio 9.73 139 P **Pn 16 57 56.5 -0.5**
SCO Scoresbysund 9.93 263 *i* P **Pn 16 57 57.3 -2.4**
SCO *i* S Sn 16 59 40.4 -11
SCO Scoresbysund 9.93 263 *i* P **Pn 16 57 57.3 -2.4**
APA0 Apatity Array 10.29 118 Pn Pn 16 57 58.9 -5.6
baz=323,slow=11
APA0 Apatity Array 10.29 118 Pn Pn 16 57 58.9 -5.6
baz=323,slow=11
APA Apatity 10.42 117⇓ *i*P **Pn 16 58 05.8 -0.5**
APA pmax pmax
comp=Z,26nm,0.8s
APA Apatity 10.42 117 *i* P **Pn 16 58 05.8 -0.5**
comp=Z,26nm,0.8s
LVZ Lovozero 10.47 114 *e*P **Pn 16 58 02.6 -4.5**
LVZ Lovozero 10.47 114 *e*P **Pn 16 58 02.6 -4.5**
LVZ Lovozero 10.47 114 *e*Pn Pn 16 58 01.6 -5.5
MSF Maaselka 10.79 130 P **Pn 16 58 09.0 -2.5**
KU6 Riekki 10.88 128 P **Pn 16 58 10.0 -2.6**
OUL Oulu 10.92 139 P **Pn 16 58 10.9 -2.2**
NC204 NORSAR Array S 13.06 176 *e*Pn **Pn 16 58 40.6 -2.0**
NC204 NORSAR Array S 13.06 176 *e*Pn **Pn 16 58 40.6 -2.0**
SUF Sumiainen 13.14 143 P **Pn 16 58 40.8 -2.8**
SUMG Summit 13.28 286 *e*P **Pn 16 58 44.8 -0.9**
SUMG Summit 13.28 286 *e*P **Pn 16 58 44.8 -0.9**
SUMG Summit 13.28 286 *e*Pn **Pn 16 58 44.8 -0.9**
NB2 NORSAR Subarra 13.31 175 Pn **Pn 16 58 43.8 -2.1**
baz=356,slow=16
NB2 NORSAR Subarra 13.31 175 Pn **Pn 16 58 43.8 -2.1**
baz=356,slow=16
NB2 NORSAR Subarra 13.31 175 Pn **Pn 16 58 43.8 -2.1**
SNR=4.2
NOA NORSAR Array B 13.31 175 Pn **Pn 16 58 43.5 -2.4**
comp=Z,0.4nm,0.3s,baz=356,slow=13,SNR=4.8
NOA LR LR 17 03 23.8
comp=Z,445nm,19.6s,baz=350,slow=35
KEF Keuruu 13.46 146 P **Pn 16 58 45.5 -2.4**
KAF Kangasniemi 13.74 143 P **Pn 16 58 49.2 -2.5**
BORG Borgarnes 13.97 243 LR LR 17 02 36.1
comp=Z,416nm,19.7s,baz=349,slow=30
TMCR Tamitsa 14.30 120 *e*P **Pn 16 58 57.9 -1.4**
TMCR *e* 17 01 35.4
TMCR pmax pmax
comp=Z,19nm,0.7s
TMCR Tamitsa 14.30 120 *e*P **Pn 16 58 57.9 -1.4**
comp=Z,19nm,0.7s
HFS Hagfors 14.31 170 Pn **Pn 16 58 57.6 -1.9**
baz=1.0,slow=12
HFS Hagfors 14.31 170 Pn **Pn 16 58 57.4 -2.1**
comp=Z,0.5nm,0.3s,baz=347,slow=11,SNR=12
HFS LR LR 17 03 56.1
comp=Z,638nm,19.5s,baz=354,slow=35
HFS Hagfors 14.31 170 Pn **Pn 16 58 57.6 -1.9**
baz=1.0,slow=12
HFS Hagfors 14.31 170 Pn **Pn 16 58 57.6 -1.9**
SNR=1.8
FIA0 FINESS Array S 14.34 145 Pn **Pn 16 58 56.6 -3.2**
baz=353,slow=12
FIA0 FINESS Array S 14.34 145 Pn **Pn 16 58 56.6 -3.2**
baz=353,slow=12
FIA0 FINESS Array S 14.34 145 Pn **Pn 16 58 56.6 -3.2**
SNR=7.0
FINES FINESS Array B 14.34 145 Pn **Pn 16 58 56.4 -3.4**
comp=Z,0.5nm,0.3s,baz=345,slow=14,SNR=16
FINES LR LR 17 04 50.1
comp=Z,420nm,18.5s,baz=339,slow=39
PUL Pulkovo 16.63 139 *e*P **Pn 16 59 26.8 -3.1**
PUL pmax pmax
comp=Z,84nm,0.8s
VSU Vasula 17.28 147 *e*P **Pn 16 59 36.0 -2.2**
VSU pmax pmax
comp=Z,84nm,1.0s
VSU Vasula 17.28 147 *e*P **Pn 16 59 36.0 -2.2**
comp=Z,84nm,1.0s
KLMR Klimovskoe 17.52 124 *e*P **Pn 16 59 36.5 -4.6**
KLMR pmax pmax
comp=Z,117nm,1.3s
EKA Eskdalemuir Ar 19.58 200 P **P 17 00 04.2 -0.6**
baz=357,slow=12,SNR=3.2
SFJD Kangerlussuaq 20.05 280 LR LR 17 06 59.8
comp=Z,973nm,20.8s,baz=42,slow=34
SFJD Kangerlussuaq 20.05 280 *e*P **P 17 00 09.6 -0.3**
SFJD pmax pmax
comp=Z,142nm,1.7s
SFJD Kangerlussuaq 20.05 280 *e*P **P 17 00 09.6 -0.3**
comp=Z,142nm,1.7s
SFJD Kangerlussuaq 20.05 280 *e*P **P 17 00 09.6 -0.3**
comp=Z,142nm,1.7s
KLNR Kaliningrad 20.27 160 *e*P Pn 17 00 13.9 -0.4
KLNR pmax pmax
comp=Z,97nm,1.0s
KLNR Kaliningrad 20.27 160 *e*P Pn 17 00 13.9 -0.4
comp=Z,97nm,1.0s
NACGM Naroch 20.73 150 *e* **P 17 00 16.0 -1.4**
NACGM *e*LR LR 17 06 21.0
SUW Suwalki 21.16 156 *e*P **P 17 00 21.1 -0.8**
SUW Suwalki 21.16 156 *e*P **P 17 00 21.1 -0.8**
SUW Suwalki 21.16 156 *e*P **P 17 00 21.1 -0.8**
MICGM Minsk 21.28 148⇓ *e*P **P 17 00 22.0 -1.3**
MICGM PM 17 00 23.0
comp=Z,0.1nm,2.0s
MICGM *e*LR LR 17 08 30.0
MNK Minsk 21.28 148⇓ *e*P **P 17 00 22.0 -1.3**
MNK pmax pmax
comp=Z,80nm,2.0s
MNK Minsk 21.28 148 *e*P **P 17 00 22.0 -1.3**
comp=Z,80nm,2.0s
MOS Moscow 21.80 133 *e*P **P 17 00 27.2 -1.6**
MOS *e* 17 00 47.9
MOS pmax pmax
comp=Z,103nm,0.9s
MOS Moscow 21.80 133 *e*P **P 17 00 27.2 -1.6**
comp=Z,103nm,0.9s
CWF Charnwood Fore 21.99 196 *e*P **P 17 00 29.7 -1.2**
comp=Z,168nm,1.9s
CWF Charnwood Fore 21.99 196 *e*P **P 17 00 29.7 -1.2**
comp=Z,168nm,1.9s
OBN Obninsk 22.18 135 LR LR 17 09 25.0
comp=Z,1μm,19.7s,baz=340,slow=38
OBN Obninsk 22.18 135 *i* P **P 17 00 32.0 -0.9**
OBN *i* 17 00 57.6
OBN *i* S **S 17 04 37.6 +1.0**
OBN pmax pmax
comp=Z,43nm,1.2s
OBN MLR MLR
comp=Z,979nm,18.0s
OBN Obninsk 22.18 135 *e*P **P 17 00 31.2 -1.7**
OBN Obninsk 22.18 135 *e*P **P 17 00 31.2 -1.7**
SOKR Solikamsk 22.93 104 *c i*P **P 17 00 40.4 -0.4**
SOKR S S 17 04 38.9 -11
SOKR pmax pmax
comp=Z,46nm,0.8s
SOKR MLR MLR
comp=Z,657nm,23.0s
CLL Collm 23.11 173 *e*P **P 17 00 42.0 -0.7**
CLL *i* 17 00 47.2
comp=Z,26nm,1.3s
CLL *i* 17 00 52.8
comp=Z,44nm,1.4s
CLL *i* 17 01 02.1
CLL *e*S **S 17 04 55.0 +1.6**
CLL Lm MLR 17 10 00.0
comp=N,300nm,19.1s
CLL Lm MLR 17 10 00.0
comp=E,200nm,18.7s
CLL Lm MLR 17 10 00.0
comp=Z,400nm,18.3s
CLL Collm 23.11 173 *e*P **P 17 00 42.0 -0.7**
CLL *i* 17 00 47.2
CLL *e*S **S 17 04 55.0 +1.6**
CLL MLR MLR
comp=Z,400nm,18.3s
CLL Collm 23.11 173 *e*P **P 17 00 42.0 -0.7**
CLL Collm 23.11 173 *e*P **P 17 00 41.5 -1.2**
comp=Z,44nm,1.4s
NRIK Noril'sk 23.35 61 P **P 17 00 45.5 +0.4**
comp=Z,13nm,1.2s,baz=330,slow=6.1,SNR=7.0
NRIK LR LR 17 11 50.9
comp=Z,287nm,18.9s,baz=314,slow=42
NRIK Noril'sk 23.35 61 P **P 17 00 45.5 +0.4**
NRIK pmax pmax
comp=Z,3.0nm,0.8s
NRIK MLR MLR
comp=Z,287nm,18.9s
BRG Berggiesshubel 23.57 172 *e*P **P 17 00 47.3 -0.1**
comp=Z,38nm,1.7s
BRG Berggiesshubel 23.57 172 *e*P **P 17 00 47.3 -0.1**
BRG pmax pmax
comp=Z,38nm,1.7s
MEM Membach 23.76 184 P **P 17 00 49.5 +0.3**
comp=Z,10nm,1.2s
SNF Seneffe 23.91 187 P **P 17 00 50.8 +0.2**
PVCC Panska Ves 23.95 171 AMS AMS 17 12 40.0
comp=Z,500nm,11.4s
NKC Novy Kostel 24.16 174 *e*P **P 17 00 53.4 +0.3**
NKC *e*pP **sP 17 00 59.7 +1.7**
NKC *e*x x 17 01 06.3
NKC Novy Kostel 24.16 174 *e*P **P 17 00 53.4 +0.3**
NKC *e* 17 00 59.7
NKC Novy Kostel 24.16 174 P **P 17 00 53.4 +0.3**
DPC Dobruska-Polom 24.21 168 *e*P **P 17 00 53.4 -0.2**
DPC *e*x x 17 01 07.3
DPC Dobruska-Polom 24.21 168 *e*P **P 17 00 53.4 -0.2**
DPC Dobruska-Polom 24.21 168 P **P 17 00 53.4 -0.2**
ABH Alteburg 24.47 182⇑ *e*P **P 17 00 56.8 +0.9**
PRU Pruhonice 24.48 171 *e*P **P 17 00 56.4 +0.4**
PRU Pruhonice 24.48 171 *e*P **P 17 00 56.4 +0.4**
PRU Pruhonice 24.48 171 P **P 17 00 56.4 +0.4**
KRLC Kraliky 24.51 167 *e*P **P 17 00 55.9 -0.4**
KRLC *e*pP **sP 17 01 01.9 +0.7**
KRLC *e*x x 17 01 07.0
KRLC Kraliky 24.51 167 *e*P **P 17 00 55.9 -0.4**
KRLC *e* 17 01 01.9
KRLC Kraliky 24.51 167 P **P 17 00 55.9 -0.4**
GOPC GO Pecny, Ondr 24.57 170 *e*P **P 17 00 57.1 +0.3**
GOPC GO Pecny, Ondr 24.57 170 *e*P **P 17 00 57.1 +0.3**
GOPC GO Pecny, Ondr 24.57 170 P **P 17 00 57.1 +0.3**
OJC Ojcow 24.58 163 *e*P **P 17 00 57.1 +0.2**
OJC Ojcow 24.58 163 *e*P **P 17 00 56.0 -0.9**
OJC pmax pmax
comp=Z,24nm,1.1s
OJC Ojcow 24.58 163 *e*P **P 17 00 57.1 +0.2**
OJC Ojcow 24.58 163 *e*P **P 17 00 56.0 -0.9**
comp=Z,24nm,1.1s
RUP Ruppelstein 24.65 183⇑ *e*P **P 17 00 58.3 +0.7**
TOD Tromm 24.74 180⇑ *e*P **P 17 00 58.8 +0.5**
OKC Ostrava-Krasne 24.84 165 *e*P **P 17 00 58.9 -0.3**
OKC AMS AMS 17 12 30.0
comp=Z,400nm,10.2s
OKC Ostrava-Krasne 24.84 165 *e*P **P 17 00 58.9 -0.3**
OKC MLR MLR
comp=Z,400nm,10.2s
OKC Ostrava-Krasne 24.84 165 P **P 17 00 58.9 -0.3**
MORC Moravsky Berou 24.86 166⇑ *i*P **P 17 00 59.3 -0.1**
MORC Moravsky Berou 24.86 166⇑⇑ *i*P **P 17 00 59.3 -0.1**
MORC Moravsky Berou 24.86 166⇑ *i*P **P 17 00 59.3 -0.1**
MORC Moravsky Berou 24.86 166 *e*P **P 17 00 59.0 -0.5**
comp=Z,77nm,1.3s
LPSR Galich'ya Gora 25.01 133 *e*P **P 17 00 59.7 -1.0**
LPSR pmax pmax
comp=Z,20nm,0.9s
KTD Kalmit 25.03 181⇑ *e*P **P 17 01 01.6 +0.7**
AKASG Malin Array Be 25.17 148 P **P 17 01 00.6 -1.6**
comp=Z,11nm,0.9s,baz=346,slow=9.4,SNR=18
AKASG PcP **PcP 17 04 34.9 -0.5**
comp=Z,1.0nm,0.7s,baz=350,slow=2.3,SNR=4.1
AKASG LR LR 17 10 22.3
comp=Z,711nm,21.8s,baz=335,slow=35
AKBB Malin Array Si 25.17 148 *e*P **P 17 01 00.8 -1.4**
AKBB pmax pmax
comp=Z,32nm,1.3s
AKBB Malin Array Si 25.17 148 *e*P **P 17 01 00.8 -1.4**
comp=Z,32nm,1.3s
KIEV Kiev 25.18 148 *e*P **P 17 01 00.5 -1.7**
KIEV pmax pmax
comp=Z,45nm,1.5s
KIEV Kiev 25.18 148 *e*P **P 17 01 00.5 -1.7**
comp=Z,46nm,1.5s
AK11 Malin Array Si 25.19 148 *e*P **P 17 00 59.8 -2.5**
VRAC Vranov 25.27 168⇑ *i*P **P 17 01 03.1 0.0**
VRAC Vranov 25.27 168⇑⇑ *i*P **P 17 01 03.1 0.0**
VRAC Vranov 25.27 168⇑ *i*P **P 17 01 03.1 0.0**
KHC Kasperske Hory 25.30 172 *e*P **P 17 01 04.2 +0.8**
KHC *e*pP **sP 17 01 09.7 +1.4**
KHC Kasperske Hory 25.30 172 *e*P **P 17 01 04.2 +0.8**
KHC *e* 17 01 09.7
KHC Kasperske Hory 25.30 172 P **P 17 01 04.2 +0.8**
KHC Kasperske Hory 25.30 172 *e*P **P 17 01 03.3 -0.2**
comp=Z,9.9nm,1.6s
LANF Langenberg 25.37 181 *e*P **P 17 01 04.0 0.0**
LANF Langenberg 25.37 181 *e*P **P 17 01 04.0 0.0**
LVV L'vov 25.38 156 *e*P **P 17 01 02.7 -1.4**
NIE Niedzica 25.42 162 *e*P **P 17 01 05.1 +0.6**
NIE Niedzica 25.42 162 *e*P **P 17 01 05.1 +0.6**
NIE Niedzica 25.42 162 *e*P **P 17 01 05.1 +0.6**
KWP Kalwaria Pacla 25.43 158 *e*P **P 17 01 04.8 +0.3**
KWP Kalwaria Pacla 25.43 158⇑ *i*P **P 17 01 04.8 +0.3**
KWP Kalwaria Pacla 25.43 158 *e*P **P 17 01 04.8 +0.3**
KWP Kalwaria Pacla 25.43 158 *e*P **P 17 01 04.8 +0.3**
STHS Stebnicka Huta 25.50 161 *e*P **P 17 01 06.2 +1.0**
STHS pmax pmax
comp=Z,13nm,1.0s
STHS Stebnicka Huta 25.50 161 *e*P **P 17 01 06.2 +1.0**
comp=Z,13nm,1.0s
STHS Stebnicka Huta 25.50 161 *e*P **P 17 01 06.2 +1.0**
GEC2 GERESS Array S 25.59 172 *e*P **P 17 01 06.5 +0.4**
GEC2 pmax pmax
comp=Z,41nm,1.5s
GEC2 GERESS Array S 25.59 172 *e*P **P 17 01 06.5 +0.4**
comp=Z,41nm,1.5s
GERES GERESS Array B 25.59 172 P **P 17 01 07.0 +0.9**
comp=Z,3.5nm,0.8s,baz=12,slow=7.4,SNR=20
GERES LR LR 17 11 19.5
comp=Z,290nm,18.2s,baz=358,slow=37
GERES GERESS Array B 25.59 172 P **P 17 01 07.0 +0.9**
GEA0 GERESS Array S 25.60 172 *e*P **P 17 01 06.2 0.0**
LANS Liptovska Anna 25.62 163 *e*P **P 17 01 06.8 +0.5**
LANS Liptovska Anna 25.62 163 *e*P **P 17 01 06.8 +0.5**
LANS Liptovska Anna 25.62 163 *e*P **P 17 01 06.8 +0.5**
BFO Black Forest 26.02 181 *c e*P **P 17 01 10.7 +0.8**
BFO Black Forest 26.02 181 *e*P **P 17 01 09.8 -0.1**
comp=Z,49nm,1.2s
CRVS Cervenica-Dubn 26.03 161 *e*P **P 17 01 11.1 +1.0**
CRVS Cervenica-Dubn 26.03 161 *e*P **P 17 01 11.1 +1.0**
CRVS Cervenica-Dubn 26.03 161 *e*P **P 17 01 11.0 +1.0**
KOLS Kolonicke sedl 26.08 159 *e*P **P 17 01 10.6 +0.1**
KOLS pmax pmax
comp=Z,122nm,3.1s
KOLS Kolonicke sedl 26.08 159 *e*P **P 17 01 10.6 +0.1**
comp=Z,122nm,3.1s
KOLS Kolonicke sedl 26.08 159 *e*P **P 17 01 10.5 +0.1**
ECH Echery 26.14 182⇑ *e*P **P 17 01 11.5 +0.5**
ECH Echery 26.14 182⇑ *e*P **P 17 01 11.5 +0.5**
ARU Arti 26.15 105 P **P 17 01 11.3 +0.3**
comp=Z,10nm,0.6s,baz=320,slow=4.8,SNR=17
ARU LR LR 17 12 08.1
comp=Z,478nm,20.1s,baz=328,slow=38
ARU Arti 26.15 105 *d i*P **P 17 01 10.7 -0.3**
ARU 17 01 49.1
ARU 17 04 40.5
ARU S **S 17 05 45.0 +2.9**
ARU SS **SnSn 17 06 45.1 +4.9**
ARU pmax pmax
comp=Z,43nm,1.7s
ARU MLR MLR
comp=Z,559nm,23.0s
ARU Arti 26.15 105 *e*P **P 17 01 10.7 -0.3**
comp=Z,124nm,1.2s
LIBD Limburg 26.20 182 *e*P **P 17 01 12.0 +0.5**
VYHS Vyhne 26.22 165 *e*P **P 17 01 11.8 +0.1**
VYHS *e* 17 01 19.3
VYHS pmax pmax
comp=Z,16nm,1.6s
VYHS Vyhne 26.22 165 *e*P **P 17 01 11.8 +0.1**
comp=Z,16nm,1.6s
VYHS Vyhne 26.22 165 *e*P **P 17 01 11.8 +0.1**
VYHS *e* 17 01 19.3
SVE Sverdlovsk 26.35 103 *e*P **P 17 01 12.8 0.0**
SVE pmax pmax
comp=Z,52nm,1.5s
SVE MLR MLR
comp=Z,618nm,20.0s
KECS Kecovo 26.36 162 *e*P **P 17 01 13.3 +0.3**
KECS pmax pmax
comp=Z,4.0nm,0.9s
KECS Kecovo 26.36 162 *e*P **P 17 01 13.3 +0.3**
comp=Z,4.4nm,0.9s
KECS Kecovo 26.36 162 *e*P **P 17 01 13.2 +0.3**
VSR Storozhevoye 26.38 134 *e*P **P 17 01 16.3 +3.2**
VSR pmax pmax
comp=Z,30nm,1.6s
UZH Uzhgorod 26.38 159 *e*P **P 17 01 09.7 -3.4**
UZH *e* 17 01 13.9
UZH *e* 17 01 16.7
UZH *e* 17 02 03.9
UZH *e*S **S 17 05 37.3 -8.5**
UZH *e*SS **SnSn 17 06 58.7 +13**
FELD Feldberg im Sc 26.47 181⇑ *e*P **P 17 01 14.6 +0.5**
MOF Molkenrain 26.50 182 *e*P **P 17 01 14.8 +0.4**
MOF Molkenrain 26.50 182 *e*P **P 17 01 14.8 +0.4**
CONA Conrad Observa 26.60 169 *i* pP **P 17 01 15.8 +0.5**
comp=Z,9.5nm,1.1s
RETA Reutte 26.88 177 *i* pP **P 17 01 19.0 +1.3**
comp=Z,2.5nm,0.9s
PSZ Piszkesteto 26.88 163⇓ *i*P **P 17 01 19.1 +1.4**
PSZ Piszkesteto 26.88 163⇓⇓ *i*P **P 17 01 19.1 +1.4**
PSZ Piszkesteto 26.88 163⇓ *i*P **P 17 01 19.1 +1.4**
PSZ Piszkesteto 26.88 163 *e*P **P 17 01 17.7 0.0**
comp=Z,33nm,1.4s
VRH Novokhopyorsk 26.91 131 *e*P **P 17 01 16.3 -1.5**
VRH pmax pmax
comp=Z,20nm,1.2s
LOMF Lomont 27.01 183 *e*P **P 17 01 19.3 +0.4**
LOMF Lomont 27.01 183 *e*P **P 17 01 19.3 +0.4**
MOTA Moosalm 27.02 176 *i* pP **P 17 01 19.8 +0.7**
comp=Z,3.6nm,0.6s
DAVA Damuels 27.07 178 *i* pP **P 17 01 20.9 +1.4**
comp=Z,7.1nm,0.8s
FRB Frobisher Bay 27.32 289 LR LR 17 11 23.6
comp=Z,445nm,20.9s,baz=32,slow=35
FETA Feichten 27.34 177 *i* sP **P 17 01 25.9 +3.9**
comp=Z,11nm,1.2s
KBA Koelnbreinsper 27.34 173 *i* P **P 17 01 24.8 +2.7**
comp=Z,5.4nm,1.0s
SORM Soroca 27.56 151⇑ *i*P **P 17 01 22.6 -1.2**
SORM Soroca 27.56 151 ⇑P **P 17 01 22.6 -1.2**
SORM Soroca 27.56 151⇑ *i*P **P 17 01 22.6 -1.2**
DAVOX Davos/Dischmat 27.57 178 LR LR 17 12 14.6
comp=Z,211nm,18.8s,baz=81,slow=36
ABTA Abfaltersbach 27.65 174 *i* pP **P 17 01 29.5 +4.8**
comp=Z,11nm,1.4s
BUR08 Bucovina Ar. S 27.66 156 *e*P **P 17 01 24.3 -0.5**
BURAR Bucovina Array 27.69 156⇑ *i*P **P 17 01 24.6 -0.4**
BURAR Bucovina Array 27.69 156⇑P **P 17 01 24.6 -0.4**
MYKA Terra Mystica 27.80 173 *i* pP **P 17 01 27.1 +1.0**
comp=Z,10.0nm,1.1s
TUE Stuetta 27.88 179 *e*P **P 17 01 27.0 +0.2**
comp=Z,28nm,1.3s
OBKA Obir 27.96 171 *i* pP **P 17 01 28.5 +1.1**
comp=Z,9.7nm,1.3s
SENIN Lac Senin/Sane 27.99 182 *e*P **P 17 01 28.5 +0.6**
comp=Z,61nm,1.7s
BZS Buzias 29.30 161⇑ *i*P **P 17 01 40.6 +1.3**
BZS Buzias 29.30 161⇑P **P 17 01 40.6 +1.3**
BZS Buzias 29.30 161⇑ *i*P **P 17 01 40.6 +1.3**
DOPR Dopca 29.33 156⇑ *i*P **P 17 01 40.3 +0.7**
DOPR Dopca 29.33 156⇑ *i*P **P 17 01 40.3 +0.7**
VRI Vrincioaia 29.59 154⇑ *i*P **P 17 01 41.9 +0.1**
VRI Vrincioaia 29.59 154⇑P **P 17 01 41.9 +0.1**
VRI Vrincioaia 29.59 154⇑ *i*P **P 17 01 41.9 +0.1**
TIXI Tiksi 29.66 34 P **P 17 01 43.1 +0.9**
comp=Z,4.8nm,1.0s,baz=336,slow=7.9,SNR=17
TIXI Tiksi 29.66 34 *e*P **P 17 01 43.4 +1.2**
TIXI pmax pmax
comp=Z,23nm,1.1s
TIXI Tiksi 29.66 34 *e*P **P 17 01 43.4 +1.2**
comp=Z,23nm,1.1s
LOT Lotru 29.68 158⇓ *i*P **P 17 01 42.9 +0.2**
LOT Lotru 29.68 158⇓ *i*P **P 17 01 42.9 +0.2**
VOIR 29.82 156⇑ *i*P **P 17 01 44.2 +0.2**
VOIR 29.82 156⇑P **P 17 01 44.2 +0.2**
VOIR 29.82 156⇑ *i*P **P 17 01 44.2 +0.2**
MLR Muntele Rosu 29.87 155 P **P 17 01 46.4 +1.9**
comp=Z,1.3nm,1.0s,baz=235,slow=4.8,SNR=6.2
MLR LR LR 17 13 36.8
comp=Z,123nm,20.5s,baz=356,slow=36
MLR Muntele Rosu 29.87 155⇓ *i*P **P 17 01 45.0 +0.6**
MLR Muntele Rosu 29.87 155⇓⇓ *i*P **P 17 01 45.0 +0.6**
MLR Muntele Rosu 29.87 155⇓ *i*P **P 17 01 45.0 +0.6**
MLR Muntele Rosu 29.87 155 *e*P **P 17 01 46.0 +1.5**
comp=Z,14nm,1.4s
MDVR Moldovita 30.14 161⇓ *i*P **P 17 01 48.0 +1.2**
MDVR Moldovita 30.14 161⇓⇓ *i*P **P 17 01 48.0 +1.2**
CFR Carcaliu 30.44 152⇑ *i*P **P 17 01 48.7 -0.6**
CFR Carcaliu 30.44 152⇑P **P 17 01 48.7 -0.6**
CFR Carcaliu 30.44 152⇑ *i*P **P 17 01 48.7 -0.6**
TIRR Tirgusor 31.18 152⇑ *i*P **P 17 01 55.3 -0.6**
TIRR Tirgusor 31.18 152⇑P **P 17 01 55.3 -0.6**
TIRR Tirgusor 31.18 152⇑ *i*P **P 17 01 55.3 -0.6**
TIRR Tirgusor 31.18 152 *e*P **P 17 01 55.1 -0.8**
comp=Z,24nm,1.6s
AKTO Aktyubinsk 31.42 111 P **P 17 01 57.6 -0.4**
comp=Z,6.4nm,0.7s,baz=334,slow=9.9,SNR=13
AKTO LR LR 17 15 26.5
comp=Z,663nm,19.1s,baz=351,slow=38
SIM Simferopol' 31.52 144 P P 17 02 09.8 +11
SIM *e* 17 12 24.0
SIM pmax pmax

comp=Z,7.0nm,0.6s
SIM MLR MLR
comp=E,160nm,16.0s
ANN Anapa 32.22 140 *e*P **P 17 02 01.2 -3.8**
ANN *e* 17 03 07.1
ANN pmax pmax
comp=Z,31nm,1.4s
BRVK Borovoye 32.29 96 *c*e**P P 17 02 04.0 -1.5**
BRVK pmax pmax
comp=Z,15nm,0.8s
BRVK Borovoye 32.29 96 *e*P **P 17 02 05.6 +0.1**
comp=Z,32nm,1.1s
BVAR Borovoye Array 32.35 96 P **P 17 02 06.8 +0.7**
comp=Z,7.6nm,0.9s,baz=311,slow=9.0,SNR=13
BVAR PP **PnPn 17 03 11.5 -0.9**
comp=Z,3.7nm,0.7s,baz=327,slow=16,SNR=2.6
BVAR LR LR 17 16 40.9
comp=Z,452nm,19.5s,baz=39,slow=39
ABKAR Akbulak array 33.00 110 *e*P **P 17 02 11.3 -0.5**
GOF Gofitskoye 33.03 133⇑ *e*P **P 17 02 11.8 -0.3**
SOC Sochi 33.81 138 *e*P **P 17 02 18.8 -0.1**
SOC *e* 17 03 27.5
SOC *e*S **S 17 07 44.8 +2.5**
SOC *e*SS **SnSn 17 09 42.5 -4.3**
SOC MLR MLR
comp=Z,674nm,18.0s
KIV Kislovodsk 34.02 134 *e*P **P 17 02 20.2 -0.6**
KIV *e*S **S 17 07 45.4 -0.3**
KIV pmax pmax
comp=Z,11nm,1.0s
KIV MLR MLR
comp=Z,444nm,15.0s
KVAR Kislovodsk Arr 34.02 134 LR LR 17 16 48.2
comp=Z,680nm,19.7s,baz=333,slow=38
NVS Novosibirsk 34.23 82 *e*P **P 17 02 25.8 +3.4**
NVS pmax pmax
comp=N,21nm,1.5s
NVS pmax pmax
comp=Z,43nm,1.5s
KBZ Khabaz 34.28 134 P **P 17 02 23.7 +0.8**
comp=Z,4.2nm,0.9s,baz=329,slow=3.3,SNR=9.3
KBZ LR LR 17 16 57.6
comp=Z,762nm,20.3s,baz=346,slow=38
SCHQ Schefferville 34.50 278 LR LR 17 15 21.5
comp=Z,640nm,19.0s,baz=64,slow=34
NEY Neytrino 34.70 134 *e*P **P 17 02 27.9 +1.0**
NEY pmax pmax
comp=Z,2.0nm,0.8s
ES19 SONSECA Array 35.15 197 *e*P **P 17 02 30.7 +0.1**
ESDC Sonseca Array 35.18 197 P **P 17 02 31.1 +0.2**
comp=Z,1.3nm,0.7s,baz=4.9,slow=8.9,SNR=11
ESLA Sonseca Array 35.18 197 *e*P **P 17 02 30.8 -0.1**
comp=Z,41nm,1.6s
PCBR Castelo Branco 35.33 202 *e*P **P 17 02 31.7 -0.4**
PCBR Castelo Branco 35.33 202 *e*P **P 17 02 31.7 -0.4**
PAB San Pablo 35.34 198 *e*P **P 17 02 32.3 0.0**
PAB pmax pmax
comp=Z,49nm,1.8s
PAB San Pablo 35.34 198 *e*P **P 17 02 32.3 0.0**
comp=Z,49nm,1.8s
ZEI Tsey 35.38 133 *e*P **P 17 02 31.4 -1.4**
ZEI *e* 17 03 55.8
ZEI pmax pmax
comp=Z,8.0nm,0.4s
ZAA0 Zalesovo Array 35.45 82 *e*P **P 17 02 32.3 -0.7**
ZALV Zalesovo Beam 35.45 82 P **P 17 02 33.2 +0.2**
comp=Z,4.7nm,0.9s,baz=318,slow=11,SNR=7.9
ZALV LR LR 17 20 30.0
comp=Z,402nm,18.2s,baz=10,slow=42
INK Inuvik 35.63 337 P **P 17 02 34.4 0.0**
comp=Z,5.9nm,0.9s,baz=24,slow=12,SNR=5.6
INK Inuvik 35.63 337 *e*P **P 17 02 34.5 +0.2**
INK pmax pmax
comp=Z,20nm,1.1s
INK Inuvik 35.63 337 *e*P **P 17 02 34.5 +0.2**
comp=Z,20nm,1.1s
PMRV Marv??o 35.73 202 *e*P **P 17 02 36.4 +0.8**
comp=Z,37nm,1.6s
PMRV Marv??o 35.73 202 *e*P **P 17 02 36.4 +0.8**
comp=Z,37nm,1.6s
PMTG Montargil 36.17 203 *e*P **P 17 02 38.5 -0.8**
PMTG Montargil 36.17 203 *e*P **P 17 02 38.5 -0.8**
PESTR Estremoz 36.31 202 *e*P **P 17 02 41.1 +0.6**
comp=Z,30nm,1.7s
PESTR Estremoz 36.31 202 *e*P **P 17 02 41.1 +0.6**
comp=Z,30nm,1.7s
BR231 Keskin MP Arra 36.31 148 *e*P **P 17 02 41.4 +0.7**
BR131 Keskin Array S 36.55 147 *e*P **P 17 02 42.5 -0.3**
BRTR Keskin Array B 36.55 147 P **P 17 02 43.1 +0.3**
comp=Z,3.5nm,0.8s,baz=343,slow=6.5,SNR=22
BRTR LR LR 17 18 43.4
comp=Z,196nm,21.2s,baz=352,slow=38
KURK Kurchatov 36.67 90 *e*P **P 17 02 43.4 0.0**
KURK 17 04 03.8
KURK 17 05 06.2
KURK pmax pmax
comp=Z,26nm,1.0s
KURK Kurchatov 36.67 90 *e*P **P 17 02 43.4 0.0**
comp=Z,26nm,1.0s
KURK PP **PnPn 17 04 03.8 -2.6**
KURK PcP **PcP 17 05 06.2 +0.4**
KURBB Kurchatov Arra 36.73 90 P **P 17 02 44.1 +0.2**
comp=Z,5.7nm,0.9s,baz=333,slow=7.2,SNR=20
KURBB PP **PnPn 17 04 03.7 -3.4**
comp=Z,6.4nm,1.2s,baz=334,slow=11,SNR=4.5
KURBB PcP **PcP 17 05 06.2 +0.2**
comp=Z,0.3nm,0.3s,baz=328,slow=3.6,SNR=3.3
PBAR Barrancos 36.94 201 *e*P **P 17 02 45.9 0.0**
PBAR Barrancos 36.94 201 *e*P **P 17 02 45.9 0.0**
PBEJ Beja 37.17 202 *e*P **P 17 02 49.0 +1.2**
PBEJ Beja 37.17 202 *e*P **P 17 02 49.0 +1.2**
BILL Bilibino 37.21 14 *i*P **P 17 02 48.6 +0.7**
BILL *i* 17 04 18.2
BILL pmax pmax
comp=Z,13nm,1.9s
BILL MLR MLR
comp=Z,127nm,16.0s
BILL Bilibino 37.21 14 *e*P **P 17 02 48.5 +0.6**
comp=Z,16nm,1.3s
PBDV Barranco-do-Ve 37.95 202 *e*P **P 17 02 55.8 +1.3**
PBDV Barranco-do-Ve 37.95 202 *e*P **P 17 02 55.8 +1.3**
GNI Garni 38.09 133 LR LR 17 19 27.8
comp=Z,438nm,20.5s,baz=350,slow=38
COLD Coldfoot 38.10 347 *e*P **P 17 02 56.2 +0.9**
comp=Z,9.3nm,1.0s
EMHD Djebel Mahouad 38.24 187 P **P 17 02 58.2 +1.2**
FYU Fort Yukon 38.41 344 *e*P **P 17 02 59.8 +1.8**
comp=Z,26nm,1.2s
YKW3 Yellowknife Ar 38.45 321 *e*P **P 17 02 58.1 -0.3**
comp=Z,14nm,1.1s
YKA Yellowknife Ar 38.51 321 P **P 17 02 59.3 +0.4**
comp=Z,2.2nm,0.8s,baz=17,slow=8.6,SNR=22
YKA PcP **PcP 17 05 11.8 +0.6**
comp=Z,1.3nm,0.7s,baz=16,slow=2.9,SNR=14
YKB5 Yellowknife Ar 38.51 321 *e*P **P 17 02 58.7 -0.2**
YKB5 *e*PcP **PcP 17 05 11.3 +0.1**
YAK Yakutsk 38.55 40 *e*P **P 17 02 56.8 -2.4**
YAK pmax pmax
comp=Z,3.0nm,1.0s
EANR `Ain N'Sour 38.56 190 P **P 17 03 01.0 +1.3**
KEST Kesra 38.61 179 P **P 17 02 59.9 -0.2**
comp=Z,4.3nm,0.8s,baz=250,slow=13,SNR=4.9
KEST LR LR 17 20 20.0
comp=Z,151nm,18.9s,baz=291,slow=38
KEST Kesra 38.61 179 *e*P **P 17 02 59.8 -0.2**
comp=Z,40nm,1.6s
BOD Bodaibo 39.28 55 *e*P **P 17 03 03.1 -2.3**
BOD pmax pmax
comp=Z,8.0nm,1.7s
EGAK Eagle 39.82 340 *e*P **P 17 03 11.0 +1.2**
comp=Z,23nm,1.3s
MDM Murphy Dome 40.22 345 *e*P **P 17 03 14.9 +1.8**
comp=Z,13nm,1.0s
COLA College 40.27 345 *e*P **P 17 03 16.1 +2.6**
COLA pmax pmax
comp=Z,4.0nm,0.9s
IL1 Eielson Array 40.30 344 *e*P **P 17 03 14.9 +1.1**
ILAR Eielson Array 40.30 344 P **P 17 03 15.8 +1.9**
comp=Z,4.9nm,0.9s,baz=3.1,slow=6.3,SNR=33
ILAR PcP **PcP 17 05 17.4 +0.5**
comp=Z,1.4nm,1.0s,baz=320,slow=3.5,SNR=5.0
ILAR LR LR 17 20 39.1
comp=Z,72nm,19.1s,baz=34,slow=37
ILB Eielson Array 40.30 344 *e*P **P 17 03 15.4 +1.6**
CCB Clear Creek Bu 40.49 345 *e*P **P 17 03 16.5 +1.1**
comp=Z,9.4nm,0.9s

HDA Harding Lake 40.67 344 *e*P **P 17 03 18.2 +1.4**
comp=Z,12nm,0.9s
WRH Wood River Hil 40.69 345 *e*P **P 17 03 18.9 +1.9**
comp=Z,13nm,1.1s
SEY Seymchan 40.99 24 P **P 17 03 21.0 +1.5**
comp=Z,4.0nm,0.9s,baz=307,slow=6.1,SNR=6.4
MAKZ Makanchi 41.15 89 *e*P **P 17 03 22.0 +1.0**
MAKZ pmax pmax
comp=Z,34nm,1.6s
MAKZ Makanchi 41.15 89 *e*P **P 17 03 22.0 +1.0**
comp=Z,34nm,1.6s
DOT Dot Lake 41.19 342 *e*P **P 17 03 22.8 +1.7**
comp=Z,65nm,1.0s
MK31 Makanchi Array 41.24 89 *e*P **P 17 03 21.9 +0.1**
MK31 Makanchi Array 41.24 89 *e*P **P 17 03 21.9 +0.1**
MKAR Makanchi Array 41.24 89 P **P 17 03 22.0 +0.2**
comp=Z,8.0nm,1.0s,baz=6.9,slow=7.8,SNR=8.4
MKAR PP **PP 17 04 58.6 +1.9**
comp=Z,6.3nm,1.1s,baz=345,slow=8.6,SNR=4.7
MKAR LR LR 17 23 48.4
comp=Z,434nm,19.9s,baz=330,slow=41
BPAW Bear Paw Mtn. 41.25 347 *e*P **P 17 03 23.0 +1.3**
comp=Z,9.4nm,1.0s
MK01 Makanchi Array 41.27 89 *e*P **P 17 03 21.9 -0.2**
KKAR Karatay Array 41.46 103 *e*P **P 17 03 24.0 +0.4**
KKAR Karatay Array 41.46 103 *e*P **P 17 03 24.0 +0.4**
MOY Mondy 41.77 69 *e*P **P 17 03 28.1 +1.9**
MOY pmax pmax
comp=Z,67nm,1.8s
KTH Kantishna Hill 41.79 346 *e*P **P 17 03 29.1 +3.0**
comp=Z,10nm,1.0s
PAX Paxson 41.97 343 *e*P **P 17 03 28.5 +0.8**
PAX pmax pmax
comp=Z,9.0nm,1.0s
PAX Paxson 41.97 343 *e*P **P 17 03 28.5 +0.8**
comp=Z,8.7nm,1.0s
CAST Castle Rocks 42.00 347 *e*P **P 17 03 29.6 +1.8**
comp=Z,19nm,1.0s
TLY Talaya 42.43 67 P **P 17 03 32.6 +1.1**
comp=Z,1.9nm,0.7s,baz=90,slow=2.0,SNR=2.1
TLY Talaya 42.43 67 *e*P **P 17 03 32.6 +1.1**
TLY *e* 17 05 12.0
TLY *e*S **S 17 09 57.8 +5.3**
TLY pmax pmax
comp=Z,9.0nm,1.3s
TLY MLR MLR
comp=Z,236nm,19.0s
TTA Tatalina 42.70 350 *e*P **P 17 03 33.8 +0.3**
TTA pmax pmax
comp=Z,58nm,1.9s
TTA Tatalina 42.70 350 *e*P **P 17 03 33.8 +0.3**
comp=Z,58nm,1.9s
EKS2 Erkin-Say 42.75 100 *e*P **P 17 03 35.2 +0.9**
EKS2 pmax pmax
comp=Z,10.0nm,1.0s
EKS2 Erkin-Say 42.75 100 *e*P **P 17 03 35.2 +0.9**
comp=Z,9.7nm,1.0s
FRU Bishkek 42.81 99 *e*P **P 17 03 34.0 -0.7**
FRU *e* 17 05 17.0
FRU pmax pmax
comp=Z,70nm,2.4s
AAK Ala-Archa 42.96 99 P **P 17 03 36.5 +0.5**
comp=Z,0.8nm,0.3s,baz=322,slow=9.1,SNR=3.8
AAK Ala-Archa 42.96 99 *e*P **P 17 03 34.7 -1.3**
AAK pmax pmax
comp=Z,1.0nm,1.4s
AAK Ala-Archa 42.96 99 *e*P **P 17 03 34.7 -1.3**
comp=Z,1.2nm,1.4s
TKM2 Tokmak 2 43.00 98 *e*P **P 17 03 37.3 +0.9**
TKM2 pmax pmax
comp=Z,15nm,1.0s
TKM2 Tokmak 2 43.00 98 *e*P **P 17 03 37.3 +0.9**
comp=Z,15nm,1.0s
GEYT Alibeck 43.18 119 P **P 17 03 38.1 +0.5**
comp=Z,9.6nm,0.9s,baz=322,slow=9.1,SNR=8.9
GEYT PP **PP 17 05 18.5 +0.8**
comp=Z,3.8nm,0.8s,baz=294,slow=10,SNR=4.1
GEYT LR LR 17 23 54.9
comp=Z,814nm,19.3s,baz=340,slow=39
SCM Sheep Creek Mo 43.24 344 *e*P **P 17 03 39.5 +1.5**
SCM pmax pmax
comp=Z,23nm,0.9s
SCM Sheep Creek Mo 43.24 344 *e*P **P 17 03 39.5 +1.5**
comp=Z,23nm,0.9s
FFC Flin Flon 43.30 308 *e*P **P 17 03 38.1 -0.3**
FFC pmax pmax
comp=Z,25nm,1.2s
FFC Flin Flon 43.30 308 *e*P **P 17 03 38.1 -0.3**
comp=Z,26nm,1.2s
SML Sawmill 43.34 344 *e*P **P 17 03 42.5 +3.8**
SML pmax pmax
comp=Z,27nm,1.1s
SML Sawmill 43.34 344 *e*P **P 17 03 42.5 +3.8**
comp=Z,27nm,1.1s
BMRM Bremner River 43.88 342 *e*P **P 17 03 46.8 +3.7**
comp=Z,17nm,1.0s
DLBC Dease Lake 44.74 330 P **P 17 03 51.9 +1.9**
comp=Z,0.8nm,0.4s,baz=0.0,slow=4.0,SNR=2.9
DLBC Dease Lake 44.74 330 *e*P **P 17 03 51.1 +1.1**
comp=Z,5.2nm,1.0s
FRNY Flat Rock 45.40 278 *e*P **P 17 03 56.3 +1.0**
comp=Z,98nm,1.5s
WMQ Urumqi 45.46 86 SS SS 17 13 58.3 -1.4
WMQ pmax pmax
comp=Z,6.0nm,0.6s
WMQ pmax pmax
comp=Z,73nm,4.6s
WMQ LR LR
comp=N,240nm,15.2s
WMQ LR LR
comp=E,240nm,18.6s
WMQ LR LR
comp=Z,170nm,17.0s
WMQ Urumqi 45.46 86 P **P 17 03 57.0 +1.1**
WMQ pP sP 17 04 01.8 +1.0
WMQ sP pP 17 04 04.0 +4.6
WMQ PP **PP 17 05 46.0 +4.1**
WMQ S **S 17 10 44.3 +7.4**
LONY Lake Ozonia 45.87 279 *e*P **P 17 04 00.3 +1.2**
comp=Z,26nm,0.9s
ULM Lac du Bonnet 46.09 300 P **P 17 04 00.8 +0.1**
comp=Z,4.6nm,0.8s,baz=25,slow=10.0,SNR=2.9
ULM LR LR 17 23 28.2
comp=Z,516nm,18.4s,baz=346,slow=36
KSH Kashi 46.27 99 *e*P **P 17 04 03.5 +1.1**
KSH *e*sP sP 17 04 10.5 +3.1
KSH *e*PP **PP 17 05 52.8 +2.0**
KSH PcS **PcS 17 09 33.0 +0.7**
KSH S **S 17 10 48.3 -0.5**
KSH Kashi 46.27 99 SS SS 17 14 06.0 -7.7
KSH pmax pmax
comp=Z,100nm,3.7s
KSH LR LR
comp=N,130nm,9.4s
KSH LR LR
comp=E,210nm,10.5s
KSH LR LR
comp=Z,280nm,13.9s
EIL Elat 46.62 148 P **P 17 04 05.1 0.0**
comp=Z,4.6nm,0.8s,baz=307,slow=7.4,SNR=5.2
SONA1 Songino Array 46.66 67 *e*P **P 17 04 05.5 +0.1**
SONM Songino Array 46.67 67 P **P 17 04 06.1 +0.7**
comp=Z,2.0nm,0.9s,baz=331,slow=7.3,SNR=15
SONM PP **PP 17 05 59.9 +5.0**
comp=Z,0.7nm,1.0s,baz=355,slow=8.7,SNR=3.5
ACCN Adirondack Com 46.77 277 *e*P **P 17 04 06.8 +0.7**
comp=Z,22nm,1.3s
ULN Ulaanbaatar 46.81 66 *e*P **P 17 04 07.0 +0.4**
ULN pmax pmax
comp=Z,29nm,1.3s
ULN Ulaanbaatar 46.81 66 *e*P **P 17 04 07.0 +0.4**
comp=Z,29nm,1.3s
EYMN Ely 47.18 296 *e*P **P 17 04 09.3 0.0**
comp=Z,9.4nm,1.0s
KLR Kul'dur 51.04 45 LR LR 17 28 25.9
comp=Z,198nm,19.1s,baz=356,slow=39
KLR Kul'dur 51.04 45 *i*P **P 17 04 37.2 -1.6**
TAM Tamanrasset 51.53 184 *e*P **P 17 04 43.9 +1.0**
TAM pmax pmax
comp=Z,15nm,1.2s
TAM Tamanrasset 51.53 184 *e*P **P 17 04 43.9 +1.0**
comp=Z,15nm,1.2s
ECSD EROS Data Cent 52.37 298 *e*P **P 17 04 48.1 -0.7**
comp=Z,36nm,1.8s
BSMT Bassoo Peak 52.44 315 *e*P **P 17 04 50.5 +1.0**
SWMT Swartz Lake 52.61 314 *e*P **P 17 04 50.6 -0.1**

GTA Gaotai 52.84 76 ⇑P **P 17 04 53.3 +0.8**
GTA pP sP 17 04 59.3 +1.9
GTA sP pP 17 05 02.0 +5.9
GTA PcP **PcP 17 05 59.3 -2.3**
GTA PP **PP 17 06 55.5 +4.0**
GTA S **S 17 12 23.0 +2.4**
GTA sS sS 17 12 32.5 +6.0
GTA Gaotai 52.84 76 SS **SS 17 16 01.5 +2.8**
GTA pmax pmax
comp=Z,8.0nm,1.6s
GTA pmax pmax
comp=Z,110nm,5.5s
GTA LR LR
comp=N,260nm,20.9s
GTA LR LR
comp=E,200nm,19.0s
GTA LR LR
comp=Z,350nm,18.1s
CHMT Chamberlain Mo 53.03 313 *e*P **P 17 04 53.6 -0.3**
MSO Missoula 53.25 314 *e*P **P 17 04 56.1 +0.7**
comp=Z,40nm,1.4s
GCMT Greycliff 53.37 310 *e*P **P 17 04 57.0 +0.6**
LRM Limekiln Ridge 53.92 312 *e*P **P 17 04 57.0 -3.4**
BOZ Bozeman (W) 53.92 311 *e*P **P 17 05 00.5 +0.1**
BOZ pmax pmax
comp=Z,1.0nm,0.8s
BOZ Bozeman (W) 53.92 311 *e*P **P 17 05 00.5 +0.1**
comp=Z,0.9nm,0.8s
RLMT Red Lodge 53.93 309 *e*P **P 17 05 00.5 0.0**
comp=Z,11nm,0.6s
HHC Hu-ho-hao-te 54.51 65 *e*P **P 17 05 05.0 +0.4**
HHC pP sP 17 05 09.5 -0.1
HHC sP pP 17 05 12.5 +4.2
HHC S **S 17 12 40.3 -2.9**
HHC pmax pmax
comp=Z,28nm,1.1s
HHC pmax pmax
comp=Z,150nm,6.6s
HHC LR LR
comp=N,310nm,12.9s
HHC LR LR
comp=E,280nm,13.8s
HHC LR LR
comp=Z,310nm,15.7s
MCMT McKenzie Canyo 54.95 312 *e*P **P 17 05 07.9 -0.1**
FLWY Flagg Ranch 55.22 310 *e*P **P 17 05 11.2 +1.2**
comp=Z,24nm,1.0s
IMW Indian Meadow 55.45 310 *e*P **P 17 05 12.2 +0.6**
comp=Z,15nm,1.3s
MOOW Moose Ponds 55.55 310 *e*P **P 17 05 12.4 +0.1**
comp=Z,10nm,1.4s
LOHW Long Hollow 55.65 310 *e*P **P 17 05 14.2 +1.2**
comp=Z,7.8nm,1.1s
PDAR Pinedale Array 56.24 309 LR LR 17 29 43.0
comp=Z,325nm,18.6s,baz=16,slow=36
CCM Cathedral Cave 56.40 291 *e*P **P 17 05 18.8 +0.6**
CCM pmax pmax
comp=Z,9.0nm,1.1s
CCM Cathedral Cave 56.40 291 *e*P **P 17 05 18.8 +0.6**
comp=Z,9.1nm,1.1s
HLID Hailey 56.48 313 *e*P **P 17 05 19.2 +0.3**
comp=Z,6.4nm,1.1s
TKL Tuckaleechee C 56.72 283 *e*P **P 17 05 19.2 -1.2**
TKL pmax pmax
comp=Z,32nm,1.6s
TKL Tuckaleechee C 56.72 283 *e*P **P 17 05 19.2 -1.2**
comp=Z,32nm,1.6s
LZH Lanzhou 57.03 74 *e*P P 17 05 30.3 +7.4
LZH pP sP 17 05 33.8 +5.9
LZH sP pP 17 05 35.5 +9.0
LZH PP PP 17 07 39.0 +10
LZH S **S 17 13 20.3 +3.3**
LZH sS sS 17 13 29.0 +6.1
LZH Lanzhou 57.03 74 SS **SS 17 17 06.0 +1.2**
LZH pmax pmax
comp=Z,21nm,1.0s
LZH pmax pmax
comp=Z,72nm,4.0s
LZH LR LR
comp=N,690nm,19.2s
LZH LR LR
comp=E,440nm,18.7s
LZH LR LR
comp=Z,650nm,20.7s
O20A White River Ci 58.47 307 *e*P **P 17 05 33.5 +0.5**
comp=Z,29nm,1.2s
O20A White River Ci 58.47 307 *e*P **P 17 05 33.5 +0.5**
comp=Z,29nm,1.2s
PYUN Piuthan 58.94 97 *e*P **P 17 05 36.3 -0.1**
comp=Z,114nm,1.0s
SMCO Snowmass 59.11 305 *e*P **P 17 05 37.5 -0.2**
comp=Z,7.9nm,0.9s
SMCO Snowmass 59.11 305 *e*P **P 17 05 37.5 -0.2**
comp=Z,7.9nm,0.9s
X301 Greenbrier Sit 59.36 291 *e*P **P 17 05 34.8 -4.1**
comp=Z,81nm,1.7s
P18A Preston Nutter 59.39 308 *e*P **P 17 05 40.0 +0.5**
comp=Z,11nm,0.8s
P18A Preston Nutter 59.39 308 *e*P **P 17 05 40.0 +0.5**
comp=Z,11nm,0.8s
KOLN Koldanda 59.42 96 *e*P **P 17 05 39.5 -0.2**
comp=Z,24nm,1.0s
GKN Gorkha 59.48 95 *e*P **P 17 05 39.8 -0.3**
comp=Z,53nm,1.2s
U34A Anderson Ranch 59.51 296 *e*P **P 17 05 39.9 -0.1**
comp=Z,82nm,1.7s
U34A Anderson Ranch 59.51 296 *e*P **P 17 05 39.9 -0.1**
comp=Z,82nm,1.7s
LSA Lhasa 59.65 88 *e*P **P 17 05 42.1 +0.5**
LSA pmax pmax
comp=Z,13nm,1.2s
LSA Lhasa 59.65 88 *e*P **P 17 05 42.1 +0.5**
comp=Z,13nm,1.2s
LSA Lhasa 59.65 88 *e*P **P 17 05 42.1 +0.5**
comp=Z,13nm,1.2s
KKN Kakani 59.85 95 *e*P **P 17 05 42.6 -0.1**
comp=Z,48nm,1.1s
GUN Gumba 59.90 94 *e*P **P 17 05 43.3 +0.1**
comp=Z,69nm,1.0s
TMUT Trail Mountain 59.92 309 *e*P **P 17 05 42.5 -0.7**
comp=Z,23nm,1.4s
TMUT Trail Mountain 59.92 309 *e*P **P 17 05 42.5 -0.7**
comp=Z,23nm,1.4s
DMN Daman 59.98 95 *e*P **P 17 05 43.4 -0.2**
SDCO Great Sand Dun 60.15 304 *e*P **P 17 05 44.5 -0.2**
comp=Z,9.7nm,1.4s
SDCO Great Sand Dun 60.15 304 *e*P **P 17 05 44.5 -0.2**
comp=Z,9.7nm,1.4s
PV09 Paradox Valley 60.24 307 *e*P **P 17 05 46.3 +1.0**
PV09 Paradox Valley 60.24 307 *e*P **P 17 05 46.3 +1.0**
Q16A Castle Valley 60.27 309 *e*P **P 17 05 45.6 +0.1**
comp=Z,27nm,1.4s
Q16A Castle Valley 60.27 309 *e*P **P 17 05 45.6 +0.1**
comp=Z,27nm,1.4s
XAN Xi'an 60.28 70 P P 17 05 51.5 +6.1
XAN pP sP 17 05 58.0 +7.6
XAN pmax pmax
comp=Z,17nm,1.6s
XAN pmax pmax
comp=Z,85nm,6.0s
MIAR Mount Ida 60.32 292 *e*P **P 17 05 44.0 -1.5**
MIAR pmax pmax
comp=Z,38nm,1.5s
MIAR Mount Ida 60.32 292 *e*P **P 17 05 44.0 -1.5**
comp=Z,38nm,1.5s
MIAR Mount Ida 60.32 292 *e*P **P 17 05 44.0 -1.5**
comp=Z,38nm,1.5s
S22A 4UR Ranch, Cre 60.45 305 *e*P **P 17 05 45.3 -1.5**
comp=Z,12nm,1.2s
S22A 4UR Ranch, Cre 60.45 305 *e*P **P 17 05 45.4 -1.5**
comp=Z,12nm,1.2s
PV01 Paradox Valley 60.46 306 *e*P **P 17 05 42.9 -3.9**
PV05 Paradox Valley 60.63 307 *e*P **P 17 05 48.0 0.0**
PV05 Paradox Valley 60.63 307 *e*P **P 17 05 48.0 0.0**
PSUT Pine Spring 61.20 311 *e*P **P 17 05 53.2 +1.4**
comp=Z,13nm,1.3s
PSUT Pine Spring 61.20 311 *e*P **P 17 05 53.2 +1.4**
comp=Z,13nm,1.3s
TORD Torodi Ar. Bea 61.22 188 P **P 17 05 51.8 -0.1**
comp=Z,18nm,0.9s,baz=357,slow=6.9,SNR=83
TORD LR LR 17 32 18.9
comp=Z,73nm,19.5s,baz=225,slow=36
MTPU Mount Pierson 61.33 309 *e*P **P 17 05 54.5 +1.7**
comp=Z,21nm,1.4s
MTPU Mount Pierson 61.33 309 *e*P **P 17 05 54.5 +1.7**
comp=Z,21nm,1.4s

MVCO	Mesa Verde	61.33	306	eP		P	17 05 53.4	+0.7
	comp=Z,22nm,1.3s							
MVCO	Mesa Verde	61.33	306	eP		P	17 05 53.4	+0.7
	comp=Z,22nm,1.3s							
WMOK	Wichita Mounta	61.43	297	eP		P	17 05 53.8	+0.6
WMOK					pmax	pmax		
	comp=Z,18nm,1.1s							
WMOK	Wichita Mounta	61.43	297	eP		P	17 05 53.8	+0.6
	comp=Z,18nm,1.1s							
WMOK	Wichita Mounta	61.43	297	eP		P	17 05 53.8	+0.6
	comp=Z,18nm,1.1s							
R11A	Troy Canyon, C	61.74	312	eP		P	17 05 55.1	-0.3
	comp=Z,13nm,1.4s							
R11A	Troy Canyon, C	61.74	312	eP		P	17 05 55.1	-0.3
	comp=Z,13nm,1.4s							
NV01	Mina Array Sit	62.20	315	eP		P	17 05 59.3	+0.8
NV01	Mina Array Sit	62.20	315	eP		P	17 05 59.3	+0.8
NVAR	Mina Array Bea	62.20	315	P		P	17 06 00.1	+1.5
	comp=Z,1.6nm,0.8s,baz=358,slow=4.9,SNR=4.1							
NVAR				LR		LR	17 34 06.5	
	comp=Z,427nm,18.6s,baz=80,slow=37							
KNB	Kanab	62.45	310	eP		P	17 06 01.7	+1.5
KNB					pmax	pmax		
	comp=Z,28nm,1.6s							
KNB	Kanab	62.45	310	eP		P	17 06 01.7	+1.5
	comp=Z,28nm,1.6s							
KNB	Kanab	62.45	310	eP		P	17 06 01.7	+1.5
	comp=Z,28nm,1.6s							
LCMT	Little Creek M	62.54	310	eP		P	17 06 02.7	+1.9
	comp=Z,20nm,1.4s							
LCMT	Little Creek M	62.54	310	eP		P	17 06 02.7	+1.9
	comp=Z,20nm,1.4s							
MSTX	Muleshoe	63.12	300	eP		P	17 06 05.5	+0.9
	comp=Z,24nm,1.1s							
MSTX	Muleshoe	63.12	300	eP		P	17 06 05.5	+0.9
	comp=Z,24nm,1.1s							
TPNV	Topopah Spring	63.22	313	eP		P	17 06 05.8	+0.5
TPNV					pmax	pmax		
	comp=Z,13nm,1.2s							
TPNV	Topopah Spring	63.22	313	eP		P	17 06 05.8	+0.5
	comp=Z,12nm,1.2s							
TPNV	Topopah Spring	63.22	313	eP		P	17 06 05.8	+0.5
	comp=Z,12nm,1.2s							
SHPR	Sheep Range	63.43	312	eP		P	17 06 07.8	+1.2
	comp=Z,15nm,1.4s							
SHPR	Sheep Range	63.43	312	eP		P	17 06 07.8	+1.2
	comp=Z,15nm,1.4s							
WUAZ	Wupatki	63.59	308	eP		P	17 06 08.8	+1.1
	comp=Z,17nm,1.4s							
WUAZ	Wupatki	63.59	308	eP		P	17 06 08.8	+1.1
	comp=Z,17nm,1.4s							
ENH	Enshi	64.01	71	eP		P	17 06 09.2	-1.2
	comp=Z,54nm,1.6s							
ENH	Enshi	64.01	71	eP		P	17 06 09.2	-1.2
	comp=Z,54nm,1.6s							
DAC	Darwin (Calif)	64.14	314	eP		P	17 06 11.8	+0.4
DAC					pmax	pmax		
	comp=Z,20nm,1.4s							
DAC	Darwin (Calif)	64.14	314	eP		P	17 06 11.8	+0.4
	comp=Z,20nm,1.4s							
DAC	Darwin (Calif)	64.14	314	eP		P	17 06 11.8	+0.4
	comp=Z,20nm,1.4s							
MJAR	Matsushiro Arr	64.51	43	P		P	17 06 12.8	-0.7
	comp=Z,0.6nm,0.3s,baz=344,slow=4.1,SNR=4.5							
MJAR				LR		LR	17 36 10.8	
	comp=Z,95nm,19.4s,baz=295,slow=38							
W13A	Hualapai Mount	64.52	310	eP		P	17 06 14.5	+0.5
	comp=Z,5.4nm,1.1s							
W13A	Hualapai Mount	64.52	310	eP		P	17 06 14.5	+0.5
	comp=Z,5.4nm,1.1s							
JCT	Junction City	65.74	296	eP		P	17 06 22.1	+0.4
JCT					pmax	pmax		
	comp=Z,10.0nm,0.9s							
JCT	Junction City	65.74	296	eP		P	17 06 22.1	+0.4
	comp=Z,10.0nm,0.9s							
JCT	Junction City	65.74	296	eP		P	17 06 22.1	+0.4
	comp=Z,10.0nm,0.9s							
MNTX	Cornudas Mount	65.91	302	eP		P	17 06 24.2	+1.5
	comp=Z,8.7nm,1.5s							
MNTX	Cornudas Mount	65.91	302	eP		P	17 06 24.2	+1.5
	comp=Z,8.7nm,1.5s							
TUC	Tucson	66.55	307	eP		P	17 06 28.0	+1.1
TUC					pmax	pmax		
	comp=Z,35nm,1.6s							
TUC	Tucson	66.55	307	eP		P	17 06 28.0	+1.1
	comp=Z,35nm,1.6s							
TUC	Tucson	66.55	307	eP		P	17 06 28.0	+1.1
	comp=Z,35nm,1.6s							
GLA	Glamis	66.70	310	eP		P	17 06 29.9	+2.1
GLA					pmax	pmax		
	comp=Z,6.0nm,0.8s							
GLA	Glamis	66.70	310	eP		P	17 06 29.9	+2.1
	comp=Z,5.9nm,0.8s							
GLA	Glamis	66.70	310	eP		P	17 06 29.9	+2.1
	comp=Z,5.9nm,0.8s							
GYA	Guiyang	66.90	75⇑	iP		P	17 06 35.3	+6.0
GYA					PP	PP	17 08 58.5	+2.3
GYA					ScP		17 11 01.0	
GYA					S	S	17 15 20.5	-1.3
GYA					SKS	SKSac	17 16 22.8	-3.2
GYA	Guiyang	66.90	75		SS	SS	17 19 39.0	-0.4
GYA					pmax	pmax		
	comp=Z,20nm,0.9s							
GYA					pmax	pmax		
	comp=Z,120nm,5.9s							
GYA					LR	LR		
	comp=N,460nm,19.6s							
GYA					LR	LR		
	comp=E,450nm,20.0s							
GYA					LR	LR		
	comp=Z,420nm,19.8s							
KMI	Kunming	67.13	79		P	P	17 06 31.0	+0.1
KMI					pP	pP	17 06 34.5	0.0
KMI					sP	sP	17 06 36.5	+0.6
KMI					S	S	17 15 20.5	-4.3
KMI					pmax	pmax		
	comp=Z,15nm,0.7s							
KMI					pmax	pmax		
	comp=Z,82nm,4.2s							
KMI					LR	LR		
	comp=N,270nm,21.7s							
KMI					LR	LR		
	comp=E,180nm,20.7s							
KMI					LR	LR		
	comp=Z,330nm,20.2s							
TX31	Lajitas Ar. Si	67.78	299	eP		P	17 06 35.0	+0.3
TX31	Lajitas Ar. Si	67.78	299	eP		P	17 06 35.0	+0.3
TXAR	Lajitas Array	67.78	299	P		P	17 06 34.7	-0.1
	comp=Z,4.3nm,1.1s,baz=78,slow=5.6,SNR=8.5							
TXAR				LR		LR	17 36 38.2	
	comp=Z,421nm,18.8s,baz=0.0,slow=36							
DBIC	Dimbokro	68.00	195	LR		LR	17 36 56.8	
	comp=Z,47nm,20.2s,baz=4.0,slow=36							
CRAI	Chiangrai	71.15	83	P		P	17 07 01.2	+5.6
	comp=Z,221nm,1.0s							
CHTO	Chiang Mai	72.11	84	P		P	17 07 02.1	+0.7
	comp=Z,92nm,1.3s							
CHTO	Chiang Mai	72.11	84	eP		P	17 07 00.8	-0.6
CHTO					pmax	pmax		
	comp=Z,25nm,1.1s							
CHTO	Chiang Mai	72.11	84	eP		P	17 07 00.8	-0.6
	comp=Z,25nm,1.1s							
CMAR	Chiang Mai Arr	72.45	85	P		P	17 07 03.2	-0.1
	comp=Z,2.4nm,0.9s,baz=328,slow=6.4,SNR=17							
CMAR					PP	PP	17 09 45.9	+1.7
	comp=Z,0.8nm,1.0s,baz=340,slow=7.1,SNR=3.0							
CMAR				LR		LR	17 44 37.4	
	comp=Z,79nm,20.0s,baz=315,slow=41							
CM01	Chiang Mai Arr	72.49	85	eP		P	17 07 02.9	-0.7
LAMP	Lampang	72.58	84	P		P	17 07 11.4	+7.3
	comp=Z,4.4nm,1.0s							
NONG	Nongkai	73.96	81	P		P	17 07 18.2	+5.9
	comp=Z,32nm,1.1s							
PBKT	Sadao Pong	74.80	83	P		P	17 07 23.6	+6.4
	comp=Z,20nm,1.4s							
QIZ	Qiongzhong	74.83	74	P		P	17 07 18.0	+0.7
QIZ				S		S	17 16 50.8	-2.9
QIZ					pmax	pmax		
	comp=Z,19nm,1.5s							
QIZ				LR		LR		
	comp=E,230nm,16.8s							
QIZ				LR		LR		
	comp=Z,200nm,20.4s							
SKNT	Sakolnakorn	75.23	80	P		P	17 07 27.3	+7.6
	comp=Z,15nm,1.5s							
CHAI	Chaiyaphum	75.71	82	P		P	17 07 29.7	+7.2
	comp=Z,3.2nm,1.3s							
SRDT	SRDT	76.42	86	P		P	17 07 32.9	+6.4
LEM	Lembang	98.96	83	LR		LR	18 00 05.6	
	comp=Z,95nm,21.0s,slow=39							
WRA	Warramunga Arr	118.42	60	PKP		PKPdf	17 14 24.9	+0.7
	comp=Z,1.1nm,1.0s,baz=339,slow=2.9,SNR=2.8							
ASAR	Alice Springs	121.90	62	PKP		PKPdf	17 14 29.6	-1.2
	comp=Z,0.7nm,0.6s,baz=358,slow=1.6,SNR=13							
PLCA	Paso Flores	125.91	247	PKP		PKPdf	17 14 38.3	+0.3
	comp=Z,2.4nm,0.8s,baz=52,slow=4.6,SNR=5.2							
VNA1	Neumayer--Stat	145.08	190	P		PKPdf	17 15 12.4	0.0
VNA2	Neumayer--Watz	145.31	189	P		PKPbc	17 15 12.5	-0.2
	baz=354,slow=4.3							
VNA3	Neumayer Olymp	145.73	190	P		PKPbc	17 15 13.9	-0.2
SNAA	Sanae	145.89	186	P		PKPdf	17 15 12.0	-1.9
SNAA	Sanae	145.89	186	ePKP2		PKPbc	17 15 14.3	-0.3
SNAA	Sanae	145.89	186	ePKPdf		PKPbc	17 15 14.3	-0.3

BKK 25 16:57:51.3±1.1, 21°N±7°×10°0E±°, h10km, MLv3.9/9, Myanmar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRAI	Chiangrai	0.72	148	P	Pg	16 58 04.2	-1.0
CRAI				S	Sg	16 58 09.4	-5.1
CHTO	Chiang Mai	2.23	206	P	Pn	16 58 29.9	+1.5
CHTO				S	Sb	16 58 58.9	-0.7
LAMP	Lampang	2.33	188	P	Pn	16 58 30.7	+1.0
LAMP				S	Sb	16 59 01.5	-0.7
UTTA	Uttaradit	3.13	170	P	Pn	16 58 40.5	-0.2
UTTA				S	Sb	16 59 22.0	-3.3
MHMT	Maesarieng	3.27	216	P	Pn	16 58 44.9	+2.2
MHMT				S	Sb	16 59 29.7	+0.2
SUKH	Sukhothai	3.36	186	P	Pn	16 58 44.8	+1.0
SUKH				S	Sb	16 59 32.7	+0.9
LOEI	Loei	3.53	160	P	Pn	16 58 48.6	+2.3
LOEI				S	Sb	16 59 35.6	-1.3
NONG	Nongkai	4.08	132	P	Pn	16 58 55.2	+1.5
NONG				S	Sb	16 59 54.3	+1.8
PBKT	Sadao Pong	4.35	167	P	Pn	16 58 58.7	+1.2
PBKT				S	Sb	16 59 59.8	-0.7
KHON	Khomkaen	5.23	148	S	Sb	17 00 26.6	+0.8
CHAI	Chaiyaphum	5.27	158	P	Pn	16 59 08.9	-1.3
CHAI				S	Sb	17 00 28.8	+1.8
SKNT	Sakolnakorn	5.40	135	S	Sb	17 00 28.5	-2.3
PANO	Nakornpanom	5.72	129	S	Sb	17 00 41.7	+1.7
KHLT	Khaolaem Dam	6.15	193	S	Sb	17 00 52.5	+0.2
SRDT	SRDT	6.50	187	S	Sb	17 01 06.6	+4.1
SRAK	Srakaew	7.07	163	S	Sg	17 01 29.4	-9.0

NIED ***25*** *16:58:00, 36°.80N×140°.50E, h8km, Mw3.6 Best double couple: M0=2.79000×10^14 NP1:φs=306.00000°, δ46.00000°, λ-125.00000°. NP2:φs=171.00000°, δ54.00000°, λ-60.00000°.*

IDC ***25*** *16:58:27.9±1.3, 36°.27N×140°.61E, h0km, mb3.7/4, mb1 4.0/4, mb1mx3.4/58, mbtmp3.7/4, MS2.8/1, Ms1 2.8/1, ms1mx2.2/50, Error ellipse: s-maj=34.9km s-min=23.8km az=14.0*

ISCJB ***25*** *16:58:29.8±0.6, 36°.78N±0°.03×140°.58E±0°.05, h11km±4km, mb3.7/4, MS2.7/1, Error ellipse: s-maj=7.4km s-min=4.3km az=26.9*

JMA ***25*** *16:58:30.2, 36°.79N×140°.54E, h8km±1km, M3.6 Broadband fault plane solution: P waves. NP1: φs=327.00000°, δ53.00000°, λ-106.00000°. NP2: φs=174.00000°, δ40.00000°, λ-69.00000°. Principal axes: T Plg7.0000°, Azm69.0000°; N Plg13.0000°, Azm337.0000°; P Plg75.0000°, Azm187.0000°;*

JMA Felt I J1.

ISC 25 16:58:30.3±1.2, 36°.79N±0°.03×140°.52E±0°.04, h4km±10km, n21, σ0°76/21, mb3.7/4, 7C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	Hitachi	0.18	168	⇑P	Pg	16 58 33.9	+0.1
JHO				S	Sg	16 58 36.7	+0.5
ONAJ	Iwakimizuishiy	0.38	35	⇑P	Pg	16 58 37.5	-0.1
ONAJ				S	Sg	16 58 42.9	+0.2
JSB	Shiboa	0.52	290	⇑P	Pg	16 58 41.0	+0.8
JSB				S	Sb	16 58 48.7	-1.1
JYT	Yasato	0.62	205	⇑P	Pg	16 58 41.9	-0.2
JYT				S	Sg	16 58 50.5	+0.3
JFK	Kawauchi	0.64	26	⇑P	Pg	16 58 42.0	-0.6
JFK				S	Sg	16 58 50.5	-0.4
JFT	Otama	0.74	348	⇑P	Pg	16 58 44.4	-0.1
JFT				S	Sg	16 58 54.6	+0.4
JFY	Yanaizu	0.90	314	P	Pg	16 58 47.7	+0.2
JAG	Ashikaga	0.94	247	⇑P	Pg	16 58 47.3	-0.9
MJAR	Matsushiro Arr	1.88	263	Pn	Pn	16 59 03.0	-0.2
	12nm,0.3s,baz=86,slow=15,SNR=109						
MJAR				Sn	Sb	16 59 27.9	-1.1
	12nm,0.3s,baz=82,slow=27,SNR=13						
MAT	Matsushiro	1.88	263	P	Pn	16 59 02.9	-0.3
MAT				S	Sb	16 59 28.3	-0.7
MA2	Magadan	23.75	13	LR	LR	17 14 56.0	
	comp=Z,23nm,18.6s,baz=258,slow=41						
H11N2	WAKE ISLAND Hy	28.64	119	T	T	17 34 13.4	
	baz=313,slow=75,SNR=23						
H11N1	WAKE ISLAND Hy	28.65	119	T	T	17 34 14.1	
	baz=313,slow=75,SNR=25						
H11N3	WAKE ISLAND Hy	28.66	119	T	T	17 34 14.4	
	baz=313,slow=75,SNR=16						
H11S1	WAKE ISLAND Hy	29.33	121	T	T	17 35 05.2	
	baz=314,slow=75,SNR=103						
H11S3	WAKE ISLAND Hy	29.33	121	T	T	17 35 05.0	
	baz=314,slow=75,SNR=85						
H11S2	WAKE ISLAND Hy	29.35	121	T	T	17 35 05.7	
	baz=314,slow=75,SNR=64						
ZALV	Zalesovo Beam	41.55	313	P	P	17 06 20.7	+2.0
	0.5nm,0.5s,baz=68,slow=8.0,SNR=1.6						
KURBB	Kurchatov Arra	45.59	308	P	P	17 06 51.1	-0.2
	0.5nm,0.7s,baz=84,slow=8.0,SNR=3.9						
WRA	Warramunga Arr	56.73	187	P	P	17 08 09.6	-5.6
	1.0nm,0.9s,baz=4.3,slow=7.5,SNR=5.6						
NVAR	Mina Array Bea	75.70	53	P	P	17 10 17.3	0.0
	0.4nm,0.2s,baz=251,slow=2.8,SNR=6.2						

CSEM ***25*** *17:00:06.9, 47°.41N×12°.62E, h0km, ML1.2/5, Suspected Mining explosion.*

VIE 25 17:00:06.9±0.5, 47°.41N×12°.62E, h0km, mb1.1/1, ML1.2/5, Error ellipse: s-maj=4.0km s-min=3.0km az=168.0, Suspected Mining explosion., Austria

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KBA	Koelnbreinsper	0.59	123	Pg	Pg	17 00 18.3	0.0
	1.4nm,0.2s						
KBA				Sg	Sb	17 00 27.7	-1.6
	1.6nm,0.2s						
ABTA	Abfaltersbach	0.66	186	Pg	Pg	17 00 19.3	-0.3
	0.5nm,0.1s						
ABTA				Sg	Sg	17 00 29.0	+0.8
	1.7nm,0.2s						
WTTA	Wattenberg	0.68	258	Pg	Pg	17 00 18.7	-1.3
	1.7nm,0.2s						
WTTA				Sg	Sg	17 00 28.4	-0.4
	3.8nm,0.4s						
WATA	Walderalm	0.71	265	Pg	Pg	17 00 19.6	-0.9
	0.9nm,0.1s						
WATA				Sg	Sb	17 00 31.4	-1.3
	2.5nm,0.2s						
RETA	Reutte	1.26	274	Pg	Pn	17 00 32.1	+0.2
	1.6nm,0.2s						
RETA				Sg	Sn	17 00 50.9	+1.3
	2.2nm,0.3s						

NIED ***25*** *17:04:00, 43°.90N×148°.20E, h20km, Mw3.8 Best double couple: M0=5.90000×10^14 NP1:φs=213.00000°, δ19.00000°, λ88.00000°. NP2:φs=35.00000°, δ71.00000°, λ91.00000°.*

JMA ***25*** *17:04:07.2±0.4, 43°.87N×148°.25E, h0km, M4.2*

SKHL ***25*** *17:04:08.7±0.4, 43°.95N×148°.49E, h45km±5km, mb4.6/4*

MOS ***25*** *17:04:09.7±1.3, 44°.16N×148°.38E, h42km, mb4.3/5, Error ellipse: s-maj=13.9km s-min=12.8km az=39.2*

IDC ***25*** *17:04:13.8±3.5, 44°.33N×148°.27E, h53km±28km, mb3.5/11, mb1 3.7/14, mb1mx3.5/49, mbtmp3.8/14, ML3.3/3, Error ellipse: s-maj=43.9km s-min=19.4km az=158.0*

ISC 25 17:04:06.1±3.3, 43°.98N±0°.06×148°.34E±0°.07, h6km±20km, n53, σ1°85/56, mb3.9/11, 6D, East of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHO	Shikotan	1.10	265	*d* iPN	Pn	17 04 28.1	+0.1
SHO				*i* S	Sn	17 04 44.0	+0.5
SHO				pmax	pmax		
	comp=E,105nm,0.3s						
SHO				pmax	pmax		
	comp=Z,163nm,0.3s						
SHO				pmax	pmax		
	comp=N,40nm,0.2s						
SHO				smax	smax		
	comp=N,2μm,0.4s						
SHO				smax	smax		
	comp=E,997nm,0.3s						
SHO	Shikotan	1.10	265	⇓ iP	Pn	17 04 28.5	+0.5
SHO				AMB	AMB	17 04 32.7	
	comp=E,40nm,0.3s						
SHO				AMB	AMB	17 04 32.7	
	comp=E,110nm,0.3s						
SHO				AMB	AMB	17 04 32.7	
	comp=E,160nm,0.3s						
SHO				*i* S	Sn	17 04 43.2	-0.3
SHO				A	A	17 04 46.0	
	comp=E,2μm,0.4s						
SHO				A	A	17 04 46.0	
	comp=E,1μm,0.4s						
KUR	Kuril'sk	1.30	345	*d* iPN	Pn	17 04 30.5	-0.3
KUR				*e*S	Sb	17 04 47.9	0.0
KUR				pmax	pmax		
	comp=N,139nm,0.6s						
KUR				pmax	pmax		
	comp=Z,199nm,0.6s						
KUR				pmax	pmax		
	comp=E,58nm,0.3s						
KUR				smax	smax		
	comp=N,437nm,0.5s						
KUR				smax	smax		
	comp=E,129nm,0.4s						
KUR	Kuril'sk	1.30	345	⇓ iP	Pn	17 04 30.5	-0.3
KUR				AMB	AMB	17 04 31.4	
	comp=E,270nm,0.4s						
KUR				*e*S	Sb	17 04 46.6	-1.3
KUR				A	A	17 04 51.6	
	comp=E,410nm,0.3s						
KUR				A	A	17 04 51.6	
	comp=E,880nm,0.3s						
YUK	Yuzh-Kuril'sk	1.79	273	*d* iPN	Pn	17 04 38.1	+0.5
YUK				*i* S	Sb	17 05 00.9	-1.1
YUK				pmax	pmax		
	comp=Z,276nm,0.2s						
YUK				pmax	pmax		
	comp=N,71nm,0.1s						
YUK				pmax	pmax		
	comp=E,117nm,0.2s						
YUK				smax	smax		
	comp=N,677nm,0.4s						
YUK				smax	smax		
	comp=E,1μm,0.3s						
YUK	Yuzh-Kuril'sk	1.79	273	⇓ iP	Pn	17 04 38.1	+0.5
YUK				AMB	AMB	17 04 43.4	
	comp=E,70nm,0.2s						
YUK				AMB	AMB	17 04 43.4	
	comp=E,120nm,0.2s						
YUK				AMB	AMB	17 04 43.4	
	comp=E,280nm,0.2s						
YUK				*i* S	Sb	17 05 00.5	-1.5
YUK				A	A	17 05 05.6	
	comp=E,680nm,0.4s						
YUK				A	A	17 05 05.6	
	comp=E,1μm,0.4s						
NEM2	Nemuro 2	1.98	253	P	Pb	17 04 41.1	-1.5
NEM2				*e*S	Sb	17 05 05.3	-2.2
JRA	Rausu	2.33	270	P	Pb	17 04 47.0	-1.4
JRA				*e*S	Sb	17 05 15.9	-1.5
JNK	Nakash	2.65	263	P	Pn	17 04 50.8	+1.4
JAK	Akkeshi	2.83	251	P	Pn	17 04 53.2	+1.4
JAK				*e*S	Sb	17 05 27.6	-4.3
JTKR	Abashiri--Toko	3.20	271	P	Pn	17 04 59.1	+2.2
JAR	Ashorobuto	3.39	260	P	Pn	17 05 01.8	+2.3
JCH	Churui	3.88	251	P	Pn	17 05 09.0	+2.7
JCH				*e*S	Sn	17 05 53.6	+1.4
JKK2	Kamakawa 2	4.04	270	P	Pn	17 05 12.3	+3.7
JKA	Kamikawa-asahi	4.14	274	*e*P	Pn	17 05 13.9	+4.0
ASAJ	Asahikawa	4.14	274	P	Pn	17 05 13.9	+4.0
	comp=E,3.2nm,0.3s,baz=90,slow=13,SNR=16						
JFR	Furan	4.25	261	P	Pn	17 05 15.4	+3.9
JNBK	Urakawa-nobuka	4.43	249	P	Pn	17 05 16.0	+2.2
YSS	Yuzh-Sakhalins	4.93	309	*e*PN	Pn	17 05 22.6	+1.9
YSS	Yuzh-Sakhalins	4.93	309	*e*P	Pn	17 05 22.6	+1.9
JEW	Eniwo	5.15	260	P	Pn	17 05 28.5	+4.8
JKB	Kayabe	5.76	251	P	Pn	17 05 34.5	+2.4
JKB				*e*S	Sn	17 06 37.5	-0.9
JOT	Ohata	5.97	247	P	Pn	17 05 36.7	+1.7
JANG	Nango	6.22	237	P	Pn	17 05 38.8	+0.3
TYV	Tymovskoe	7.89	333	*e*P	Pn	17 06 03.7	+2.3
PETK	Petropavlovsk-	11.03	31	P	Pn	17 06 45.0	+0.7
	comp=E,0.3nm,0.3s,baz=198,slow=9.3,SNR=5.0						
PET	Petropavlovsk	11.33	33	AMS	AMS	17 29 11.0	
	comp=E,200nm,20.0s						
EKMR	Ekimchan	13.64	317	*e*P	Pn	17 07 22.6	+2.6
EKMR				AMB	AMB	17 07 27.0	
	comp=E,5.0nm,0.8s						
KSRS	Korea Array	16.78	254	P	P	17 08 05.8	+1.9
	comp=E,0.1nm,0.3s,baz=57,slow=12,SNR=4.9						
H11N2	WAKE ISLAND Hy	28.73	141	T	T	17 40 50.2	
	baz=332,slow=76,SNR=58						
H11N1	WAKE ISLAND Hy	28.74	141	T	T	17 40 56.0	
	baz=332,slow=76,SNR=66						
H11N3	WAKE ISLAND Hy	28.74	141	T	T	17 40 52.6	
	baz=332,slow=76,SNR=74						
SONM	Songino Array	29.18	293	P	P	17 10 08.4	+0.2
	comp=E,0.4nm,0.4s,baz=96,slow=7.7,SNR=3.5						
H11S1	WAKE ISLAND Hy	29.71	143	T	T	17 42 06.9	
	baz=333,slow=76,SNR=68						
H11S3	WAKE ISLAND Hy	29.72	143	T	T	17 42 11.3	
	baz=333,slow=76,SNR=73						
H11S2	WAKE ISLAND Hy	29.73	143	T	T	17 42 03.5	
	baz=333,slow=76,SNR=59						
ZALV	Zalesovo Beam	41.55	307	PcP	PcP	17 13 49.9	-1.5
	comp=E,0.4nm,0.4s,baz=92,slow=4.6,SNR=2.6						
MKAR	Makanchi Array	45.24	298	P	P	17 12 24.2	+0.1
	comp=E,1.3nm,0.7s,baz=69,slow=8.2,SNR=10						
KURK	Kurchatov	46.12	304	P	P	17 12 31.1	+0.2
KURK	Kurchatov	46.12	304	*e*P	P	17 12 31.1	+0.2
KURBB	Kurchatov Arra	46.20	304	P	P	17 12 31.1	-0.5
	comp=E,0.4nm,0.4s,baz=73,slow=8.7,SNR=5.8						
CMAR	Chiang Mai Arr	48.42	254	P	P	17 12 50.7	+1.5
	comp=E,0.2nm,0.5s,baz=46,slow=7.7,SNR=3.3						
YKA	Yellowknite Ar	55.13	34	P	P	17 13 38.7	-0.1
	comp=E,0.3nm,0.6s,baz=300,slow=7.2,SNR=3.8						
FINES	FINESS Array B	65.06	333	P	P	17 14 45.0	-1.9
	comp=E,1.2nm,0.5s,baz=35,slow=7.0,SNR=9.1						
FINES	FINESS Array B	65.06	333	P	P	17 14 45.0	-1.9
FINES				pmax	pmax		
	comp=Z,1.0nm,0.5s						
FINES	FINESS Array B	65.06	333	*e*P	P	17 14 45.0	-1.9
NOA	NORSAR Array B	69.70	339	P	P	17 15 15.1	-1.3
	comp=Z,0.4nm,0.4s,baz=32,slow=6.6,S

σ2°31/10, **Jujuy Province**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YJA	**Yavi**	**0.98**	**49**	*e*P	**Pn**	**17 15 22.9**	**+1.1**
YJA				*e*S	**S**	**17 15 44.9**	**-4.8**
YJA				IAML		17 15 55.8	
	comp=Z,32nm,0.6s						
AZAP	**Zapla**	**1.80**	**141**	*e*P	**Pn**	**17 15 27.2**	**0.0**
ASTB	**Santa Barbara**	**2.04**	**123**	*e*P	**Pn**	**17 15 29.9**	**+0.6**
ALOL	**LOMAS DE OLMED**	**2.36**	**115**	*e*P	**Pn**	**17 15 33.0**	**+0.9**
FSA	**Cafayete**	**3.28**	**175**	*e*P	**Pn**	**17 15 43.2**	**+1.2**
LPAZ	**La Paz**	**6.73**	**345**	P	**Pn**	**17 16 26.1**	**+1.9**
	comp=Z,0.5nm,0.3s,baz=180,slow=10,SNR=16						
LPAZ				S	**S**	**17 17 40.5**	**-2.0**
	comp=Z,0.1nm,0.3s,baz=281,slow=18,SNR=4.7						
PLCA	**Paso Flores**	**18.21**	**190**	P	**Pn**	**17 18 43.6**	**-0.7**
	comp=Z,0.1nm,0.3s,baz=339,slow=8.6,SNR=4.5						
TXAR	**Lajitas Array**	**63.10**	**324**	P	P	17 24 36.2	-11
	comp=Z,0.7nm,0.9s,baz=142,slow=9.0,SNR=6.1						
TORD	**Torodi Ar. Bea**	**75.56**	**69**	P	**P**	**17 26 05.7**	**+1.7**
	comp=Z,0.4nm,0.4s,baz=249,slow=5.3,SNR=7.3						

RSPR 25 17:16:14.5, 18.′00N×68.′50W, h86km±6km, 9C-2D, Mona Passage

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DR12	**Loma Pena Alta**	**1.15**	**313**	*e*P	Pn	17 16 35.1	-0.7
DR12	**Loma Pena Alta**	**1.15**	**313**	*e*P	Pn	17 16 34.8	-0.9
DR12				*e*S	Sn	17 16 49.1	-2.5
CRPR	**Cabo Rojo, PR**	**1.32**	**90**	*e*P	Pn	17 16 37.1	-0.6
GBPR	**Guanica, Bosqu**	**1.54**	**91**	*e*S	Sn	17 16 59.3	-1.0
AOPR	**Arecibo Observ**	**1.69**	**78**	*e*P	Pn	17 16 42.2	-0.4
AOPR	**Arecibo Observ**	**1.69**	**78**	*e*S	Sn	17 17 03.4	-0.4
AOPR	**Arecibo Observ**	**1.69**	**78**	*e*P	Pn	17 16 42.2	-0.4
AOPR	**Arecibo Observ**	**1.69**	**78**	*e*S	Sn	17 17 03.4	-0.4
OBIP	**Obispado Ponce**	**1.80**	**88**	*e*P	Pn	17 16 43.3	-0.6
OBIP	**Obispado Ponce**	**1.80**	**88**	*e*P	Pn	17 16 43.3	-0.6
CBYP	**Canovanas**	**2.52**	**83**	*e*P	Pn	17 16 52.8	-0.8
CBYP	**Canovanas**	**2.52**	**83**	*e*P	Pn	17 16 52.8	-0.8
MTP	**Monte Pirata**	**2.80**	**88**	*e*P	Pn	17 16 57.3	+0.1
MTP	**Monte Pirata**	**2.80**	**88**	*e*P	Pn	17 16 56.9	-0.3

*ISCJB **25** 17:17:04.7±0.6, 50.′10N±0.′04×18.′36E±0.′03, h0km, Error ellipse: s-maj=5.3km s-min=2.7km az=9.4*
*IPEC **25** 17:17:05.7±0.2, 50.′07N×18.′46E, h0km±3km, ML1.5/3, Error ellipse: s-maj=2.0km s-min=1.1km az=160.0*
*CSEM **25** 17:17:05.5±0.3, 50.′08N×18.′38E, h1km, ML2.6/6, Error ellipse: s-maj=6.3km s-min=3.1km az=7.0*
*WAR **25** 17:17:05.1, 50.′06N×18.′41E, h1km, Mw2.3*
*PRU **25** 17:17:07.6, 50.′03N×18.′31E, h0km*
ISC 25 17:17:05.7±0.8, **50.′11N**±0.′04×**18.′42E**±0.′02, **h0**km, **n30**, σ0°91/49, **Poland**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAC	**Raciborz**	**0.15**	**260**	*e*Sg	**Sg**	**17 17 12.9**	**+2.4**
OKC	**Ostrava-Krasne**	**0.33**	**213**	*e*PG	**Pg**	**17 17 12.0**	**+0.1**
OKC				*e*SG	**Sg**	**17 17 16.5**	**+0.4**
	comp=Z,25nm,0.4s						
OKC	**Ostrava-Krasne**	**0.33**	**213**	Pg	**Pg**	**17 17 12.0**	**+0.1**
OKC				Sg	**Sg**	**17 17 16.5**	**+0.4**
	25nm,0.4s						
MORC	**Moravsky Berou**	**0.66**	**240**	*e*Pg	**Pg**	**17 17 18.3**	**0.0**
MORC				*e*Sg	**Sg**	**17 17 26.3**	**-0.5**
	13nm,0.3s						
OJC	**Ojcow**	**0.89**	**82**	*e*Pg	**Pg**	**17 17 22.6**	**-0.2**
OJC				*e*Sg	**Sb**	**17 17 36.1**	**-0.4**
OJC	**Ojcow**	**0.89**	**82**	*e*Pg	**Pg**	**17 17 22.6**	**-0.2**
OJC				*e*Sg	**Sb**	**17 17 36.1**	**-0.4**
OJC	**Ojcow**	**0.89**	**82**	*e*Pg	**Pg**	**17 17 22.6**	**-0.2**
OJC				*e*Sg	**Sb**	**17 17 36.1**	**-0.4**
KRLC	**Kraliky**	**1.06**	**269**	*e*PG	**Pg**	**17 17 25.5**	**-0.4**
KRLC				*e*SG	**Sg**	**17 17 39.6**	**0.0**
KRLC	**Kraliky**	**1.06**	**269**	Pg	**Pg**	**17 17 25.5**	**-0.4**
KRLC				Sg	**Sg**	**17 17 39.6**	**0.0**
LANS	**Liptovska Anna**	**1.18**	**144**	*e*Pg	**Pg**	**17 17 27.9**	**-0.3**
LANS				*e*Sg	**Sb**	**17 17 44.6**	**-0.1**
LANS	**Liptovska Anna**	**1.18**	**144**	*e*PG	**Pg**	**17 17 27.9**	**-0.3**
LANS				*e*SG	**Sb**	**17 17 44.6**	**-0.1**
DPC	**Dobruska-Polom**	**1.37**	**281**	*e*PG	**Pg**	**17 17 31.9**	**0.0**
DPC				*e*SG	**Sb**	**17 17 50.1**	**-0.2**
	comp=Z,12nm,0.5s						
DPC	**Dobruska-Polom**	**1.37**	**281**	Pg	**Pg**	**17 17 31.9**	**0.0**
DPC				Sg	**Sb**	**17 17 50.1**	**-0.2**
	12nm,0.5s						
NIE	**Niedzica**	**1.40**	**119**	*e*Pg	**Pb**	**17 17 32.7**	**0.0**
NIE				*e*Sg	**Sn**	**17 17 53.0**	**+1.3**
NIE	**Niedzica**	**1.40**	**119**	*e*Pg	**Pb**	**17 17 32.7**	**0.0**
NIE				*e*Sg	**Sn**	**17 17 53.0**	**+1.3**
VRAC	**Vranov**	**1.43**	**237**	*e*Pg	**Pn**	**17 17 32.1**	**-0.9**
VRAC				*e*Sg	**Sg**	**17 17 50.4**	**-1.3**
	6.2nm,0.2s						
UPC	**Upice**	**1.60**	**285**	*e*SG	**Sg**	**17 17 57.5**	**+0.6**
	comp=Z,6.3nm,0.3s						
UPC	**Upice**	**1.60**	**285**	Sg	**Sg**	**17 17 57.5**	**+0.6**
	6.3nm,0.3s						
VYHS	**Vyhne**	**1.64**	**170**	*e*Pg	**Pn**	**17 17 35.0**	**-0.8**
VYHS				*e*Sn	**Sn**	**17 17 56.9**	**-0.7**
VYHS	**Vyhne**	**1.64**	**170**	*e*PG	**Pn**	**17 17 35.0**	**-0.8**
VYHS				*e*SN	**Sn**	**17 17 56.9**	**-0.7**
KRUC	**Moravsky**	**1.69**	**232**	*e*Pg	**Pn**	**17 17 36.0**	**-0.4**
KRUC				*e*Sg	**Sn**	**17 17 58.2**	**-0.5**
	4.0nm,0.2s						
STHS	**Stebnicka Huta**	**1.96**	**110**	*e*PN	**Pg**	**17 17 43.4**	**+0.2**
STHS				*e*SN	**Sg**	**17 18 10.6**	**+2.1**
STHS				*e*LG	Lg	17 18 14.5	
GOPC	**GO Pecny, Ondr**	**2.35**	**267**	*e*SG	**Sb**	**17 18 18.8**	**+0.2**
GOPC	**GO Pecny, Ondr**	**2.35**	**267**	Sg	**Sb**	**17 18 18.8**	**+0.2**
PRU	**Pruhonice**	**2.50**	**269**	*e*SG	**Sb**	**17 18 23.3**	**+0.4**
PRU	**Pruhonice**	**2.50**	**269**	Sg	**Sb**	**17 18 23.3**	**+0.4**
PVCC	**Panska Ves**	**2.50**	**281**	*e*SG	**Sg**	**17 18 25.6**	**-0.5**
	comp=Z,6.0nm,0.2s						
PVCC	**Panska Ves**	**2.50**	**281**	Sg	**Sg**	**17 18 25.6**	**-0.5**
	6.0nm,0.2s						
KHC	**Kasperske Hory**	**3.30**	**255**	*e*SG	**Sb**	**17 18 48.6**	**+2.8**
KHC	**Kasperske Hory**	**3.30**	**255**	Sg	**Sb**	**17 18 48.6**	**+2.8**

*NIED **25** 17:27:00, 39.′80N×142.′30E, h41km, Mw4.0 Best double couple: M0 1.24000×10^15 NP1:φ0±186.00000°, δ23.00000°, λ73.00000°. NP2:φ0±25.00000°, δ68.00000°, λ97.00000°.*
*ISCJB **25** 17:27:34.4±0.7, 39.′77N±0.′03×142.′45E±0.′07, h48km±4km, mb4.1/33, MS3.2/2, Error ellipse: s-maj=9.6km s-min=5.1km az=16.7*
*JMA **25** 17:27:35.7, 39.′75N×142.′35E, h41km±1km, M3.8*
JMA Felt I J1.
*MOS **25** 17:27:35.5±1.0, 39.′86N×142.′43E, h56km, mb4.4/13, Error ellipse: s-maj=10.6km s-min=7.6km az=93.2*
*NEIC **25** 17:27:37.4±0.7, 39.′76N×142.′52E, h63km±6km, mb4.6/5, Error ellipse: s-maj=10.3km s-min=5.7km az=113.0*
*IDC **25** 17:27:37.3±2.4, 39.′76N×142.′48E, h61km±20km, mb3.8/19, mb1 3.8/23, mb1mx3.7/56, mbtmp4.1/23, ML3.3/4, MS3.1/3, Ms1 3.1/3, ms1mx2.7/40, Error ellipse: s-maj=20.8km s-min=13.3km az=95.0*
ISC 25 17:27:35.3±0.6, **39.′77N**±0.′04×**142.′39E**±0.′06, **h39**km±3km, **n86**, σ1°10/80, **mb4.2**/33, **9C-1D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**0.44**	**293**	P	**Pn**	**17 27 45.5**	**+0.3**
JTH				*e*S	**Sn**	**17 27 52.4**	**+0.2**
MIYJ	**Miyakonagasawa**	**0.48**	**247**	P	**Pn**	**17 27 45.6**	**-0.2**
MIYJ				S	**Sn**	**17 27 52.7**	**-0.4**
JKZ	**Kuzumaki**	**0.85**	**285**	P	**Pn**	**17 27 51.0**	**+0.2**
JKZ				*e*S	**Sn**	**17 28 01.5**	**-0.6**
OFUJ	**Ofunato**	**0.89**	**220**	P	**Pn**	**17 27 51.2**	**-0.1**
OFUJ				S	**Sn**	**17 28 02.3**	**-0.7**
JOM	**Ohasama**	**0.90**	**251**	P	**Pn**	**17 27 51.7**	**+0.2**
JANG	**Nango**	**0.91**	**312**	P	**Pn**	**17 27 51.5**	**-0.1**
JANG				*e*S	**Sn**	**17 28 03.3**	**-0.2**
JMK	**Ichinoseki**	**1.22**	**229**	P	**Pn**	**17 27 56.1**	**+0.2**
JMK				*e*S	**Sn**	**17 28 11.0**	**-0.1**
JRG	**Rokugo**	**1.41**	**255**	P	**Pn**	**17 27 58.8**	**+0.3**
JAH	**Hinai**	**1.42**	**288**	P	**Pn**	**17 27 59.2**	**+0.6**
JTM	**Tenmabayashi**	**1.44**	**316**	P	**Pn**	**17 27 59.3**	**+0.4**
JIO	**Ouri**	**1.54**	**212**	P	**Pn**	**17 28 00.3**	**0.0**
JIO				*e*S	**Sn**	**17 28 18.6**	**-0.5**
ERM	**Erimo**	**2.32**	**14**	*e*P	**Pn**	**17 28 12.9**	**+1.9**
ERM	**Erimo**	**2.32**	**14**	*e*Pn	**Pn**	**17 28 12.9**	**+1.9**
ASAJ	**Asahikawa**	**4.35**	**2**	P	**Pn**	**17 28 40.4**	**+1.5**
	1.9nm,0.3s,baz=226,slow=8.3,SNR=24						
MAJO	**Matsushiro**	**4.61**	**227**	*c i* P	Pn	17 28 45.4	+2.9
MAJO	**Matsushiro**	**4.61**	**227**	*e*Pn	**Pn**	**17 28 45.2**	**+2.7**
MAT	**Matsushiro**	**4.61**	**227**	P	Pn	17 28 45.4	+2.9
MAT				S	**Sn**	**17 29 38.8**	**+4.0**
MJAR	**Matsushiro Arr**	**4.61**	**227**	P	**Pn**	**17 28 45.0**	**+2.5**
	3.2nm,0.3s,baz=30,slow=12,SNR=44						
MJAR	**Matsushiro Arr**	**4.61**	**227**	P	**Pn**	**17 28 45.0**	**+2.5**
KUR	**Kuril'sk**	**6.80**	**35**	*d i* P	**Pn**	**17 29 13.0**	**+0.6**
KUR				*i* S	**Sn**	**17 30 26.0**	**-2.5**
KUR				pmax	pmax		
	comp=N,7.0nm,0.6s						
KUR				pmax	pmax		
	comp=Z,15nm,0.6s						
KUR				pmax	pmax		
	comp=E,7.0nm,0.3s						
KUR				smax	smax		
	comp=N,12nm,0.4s						
KUR				smax	smax		
	comp=E,26nm,0.4s						
YSS	**Yuzh-Sakhalins**	**7.19**	**2**	*e*P	Pn	17 29 14.7	-3.1
USRK	**Ussuriysk Ar.**	**8.92**	**303**	P	Pn	17 29 45.2	+3.6
	comp=E,0.4nm,0.3s,baz=123,slow=12,SNR=8.6						
MDJ	**Mudanjiang**	**10.66**	**301**	*e*P	Pn	17 30 09.4	+4.0
	comp=E,8.1nm,0.8s						
KSRS	**Korea Array**	**11.56**	**263**	P	Pn	17 30 22.1	+4.5
	comp=E,0.5nm,0.3s,baz=71,slow=14,SNR=6.4						
KSAR	**Wonju Array Be**	**11.59**	**263**	P	Pn	17 30 22.2	+4.0
KSAR	**Wonju Array Be**	**11.59**	**263**	P	Pn	17 30 22.1	+4.0
PETK	**Petropavlovsk-**	**16.96**	**33**	LR	LR	17 37 37.9	
	comp=E,42nm,20.4s,baz=252,slow=36						
YAK	**Yakutsk**	**23.60**	**345**	P	**P**	**17 32 40.9**	**-1.4**
	comp=E,0.5nm,0.3s,baz=345,slow=20,SNR=3.7						
YAK	**Yakutsk**	**23.60**	**345**	*e*P	**P**	**17 32 40.6**	**-1.7**
YAK				pmax	pmax		
	comp=Z,10.0nm,0.9s						
YAK				pmax	pmax		
	comp=N,6.0nm,1.1s						
SEY	**Seymchan**	**23.96**	**11**	P	**P**	**17 32 46.4**	**+0.7**
	comp=N,5.1nm,0.9s,baz=197,slow=17,SNR=9.3						
SEY	**Seymchan**	**23.96**	**11**	*e*P	**P**	**17 32 45.1**	**-0.6**
BOD	**Bodaibo**	**25.70**	**324**	*e*P	**P**	**17 32 59.9**	**-1.6**
BOD				pmax	pmax		
	comp=Z,3.0nm,1.0s						
ULN	**Ulaanbaatar**	**26.57**	**299**	*e*P	**P**	**17 33 08.8**	**-0.9**
ULN				pmax	pmax		
	comp=Z,1.0nm,0.9s						
SONM	**Songino Array**	**27.01**	**299**	P	**P**	**17 33 13.8**	**+0.2**
	comp=Z,1.3nm,0.6s,baz=84,slow=9.2,SNR=8.3						
SONM				LR	LR	17 44 44.4	
	comp=Z,59nm,18.7s,baz=312,slow=38						
H11N2	**WAKE ISLAND Hy**	**29.02**	**126**	T	T	18 04 08.6	
	baz=318,slow=75,SNR=1568						
H11N1	**WAKE ISLAND Hy**	**29.02**	**126**	T	T	18 04 08.5	
	baz=318,slow=75,SNR=1302						
H11N3	**WAKE ISLAND Hy**	**29.03**	**126**	T	T	18 04 11.7	
	baz=318,slow=75,SNR=1982						
TLY	**Talaya**	**29.21**	**307**	*e*P	**P**	**17 33 32.9**	**-0.2**
TLY				pmax	pmax		
	comp=Z,4.0nm,1.5s						
ZAK	**Zakamensk**	**29.27**	**304**	*e*P	P	17 33 27.5	-6.3
ZAK				pmax	pmax		
	comp=Z,3.0nm,1.3s						
H11S1	**WAKE ISLAND Hy**	**29.82**	**128**	T	T	18 05 06.8	
	baz=320,slow=76,SNR=126						
H11S3	**WAKE ISLAND Hy**	**29.82**	**128**	T	T	18 05 08.4	
	baz=320,slow=76,SNR=90						
H11S2	**WAKE ISLAND Hy**	**29.84**	**128**	T	T	18 05 08.1	
	baz=320,slow=76,SNR=79						
BILL	**Bilibino**	**31.19**	**17**	*e*P	**P**	**17 33 48.0**	**-2.4**
BILL				*i*		17 34 51.9	
BILL				*i*		17 36 48.6	
BILL				pmax	pmax		
	comp=Z,2.0nm,1.6s						
TIXI	**Tiksi**	**32.68**	**352**	P	**P**	**17 34 02.6**	**-0.8**
	comp=Z,1.1nm,0.7s,baz=232,slow=2.9						
ZALV	**Zalesovo Beam**	**40.70**	**310**	P	**P**	**17 35 11.8**	**+0.1**
	comp=Z,2.5nm,0.4s,baz=95,slow=8.2,SNR=14						
LSA	**Lhasa**	**42.79**	**273**	*e*P	**P**	**17 35 30.1**	**+0.3**
LSA				pmax	pmax		
	comp=Z,2.0nm,0.5s						
LSA	**Lhasa**	**42.79**	**273**	*e*P	**P**	**17 35 30.1**	**+0.3**
	comp=Z,1.6nm,0.5s						
CMAR	**Chiang Mai Arr**	**42.98**	**253**	P	**P**	**17 35 31.3**	**+0.5**
	comp=Z,0.5nm,0.8s,baz=43,slow=5.6,SNR=5.6						
CMAR	**Chiang Mai Arr**	**42.98**	**253**	*c e*P	**P**	**17 35 32.2**	**+1.4**
CMAR				pmax	pmax		
	comp=Z,1.0nm,0.8s						
MKAR	**Makanchi Array**	**43.38**	**300**	P	**P**	**17 35 33.6**	**-0.2**
	comp=Z,1.4nm,0.6s,baz=86,slow=10,SNR=18						
MKAR				LR	LR	17 54 12.4	
	comp=Z,27nm,18.5s,baz=70,slow=37						
MKAR	**Makanchi Array**	**43.38**	**300**	*c e*P	**P**	**17 35 33.5**	**-0.3**
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.6s						
KURK	**Kurchatov**	**44.90**	**306**	P	**P**	**17 35 46.2**	**+0.3**
KURK				pmax	pmax		
	comp=Z,4.0nm,0.5s						
KURK	**Kurchatov**	**44.90**	**306**	*e*P	**P**	**17 35 45.3**	**-0.6**
	comp=Z,6.6nm,0.5s						
KURBB	**Kurchatov Arra**	**44.98**	**306**	P	**P**	**17 35 46.2**	**-0.3**
	comp=Z,3.4nm,0.5s,baz=80,slow=8.4,SNR=34						
ILAR	**Eielson Array**	**46.79**	**34**	P	**P**	**17 36 00.9**	**+0.4**
	comp=Z,0.6nm,0.7s,baz=260,slow=6.1,SNR=7.3						
ILAR	**Eielson Array**	**46.79**	**34**	P	**P**	**17 36 01.0**	**+0.4**
GUN	**Gumba**	**47.70**	**274**	*e*P	**P**	**17 36 08.7**	**+0.1**
KKN	**Kakani**	**48.22**	**274**	*e*P	**P**	**17 36 12.6**	**+0.1**
	comp=Z,9.3nm,0.5s						
GKN	**Gorkha**	**48.61**	**275**	*e*P	**P**	**17 36 15.1**	**-0.3**
	comp=Z,7.6nm,0.5s						
TKM2	**Tokmak 2**	**49.05**	**297**	*e*P	**P**	**17 36 19.1**	**+0.4**
TKM2				pmax	pmax		
	comp=Z,4.0nm,0.8s						
TKM2	**Tokmak 2**	**49.05**	**297**	*e*P	**P**	**17 36 19.1**	**+0.4**
	comp=Z,3.6nm,0.8s						
BVAR	**Borovoye Array**	**49.34**	**311**	P	**P**	**17 36 20.4**	**0.0**
	comp=Z,1.4nm,0.6s,baz=62,slow=7.4,SNR=7.7						
BRVK	**Borovoye**	**49.39**	**311**	*c e*P	**P**	**17 36 20.3**	**-0.6**
BRVK				pmax	pmax		
	comp=Z,10.0nm,2.5s						
BRVK	**Borovoye**	**49.39**	**311**	*e*P	**P**	**17 36 20.7**	**-0.1**
KOLN	**Koldanda**	**49.52**	**275**	*e*P	**P**	**17 36 21.4**	**-1.0**
PYUN	**Piuthan**	**49.83**	**276**	*e*P	**P**	**17 36 24.9**	**+0.1**
ARU	**Arti**	**54.85**	**318**	P	**P**	**17 37 01.6**	**+0.3**
	comp=Z,4.0nm,0.6s,baz=78,slow=2.6,SNR=9.1						
ARU	**Arti**	**54.85**	**318**	*c i* P	**P**	**17 37 01.3**	**0.0**
ARU						17 38 01.1	
ARU						17 39 04.1	
ARU				S	**S**	**17 44 41.7**	**+2.2**
ARU				SS	**SS**	**17 48 24.1**	**+1.6**
ARU				pmax	pmax		
	comp=Z,8.0nm,1.0s						
ARU	**Arti**	**54.85**	**318**	*e*P	**P**	**17 37 01.3**	**0.0**
	comp=Z,7.8nm,1.0s						
ABKAR	**Akbulak array**	**56.79**	**309**	*e*P	**P**	**17 37 15.1**	**-0.3**
	comp=Z,4.1nm,0.6s						
AKTO	**Aktyubinsk**	**57.45**	**311**	P	**P**	**17 37 19.4**	**-0.6**
	comp=Z,2.8nm,0.7s,baz=64,slow=13,SNR=7.9						
WRAB	**Tennant Creek**	**59.86**	**189**	*c e*P	**P**	**17 37 37.2**	**+0.2**
WRAB				pmax	pmax		
	comp=Z,34nm,2.5s						
WRAB	**Tennant Creek**	**59.86**	**189**	*e*P	**P**	**17 37 36.6**	**-0.4**
WRA	**Warramunga Arr**	**59.87**	**189**	P	**P**	**17 37 36.0**	**-1.1**
	comp=Z,1.0nm,0.6s,baz=6,0,slow=7,0,SNR=13						
WRA	**Warramunga Arr**	**59.87**	**189**	*c e*P	P	17 37 43.5	+6.4
WRA				pmax	pmax		
	comp=Z,1.0nm,0.7s						
ASAR	**Alice Springs**	**63.60**	**189**	P	**P**	**17 38 01.9**	**-0.3**
	comp=Z,1.2nm,1.0s,baz=0.5,slow=6.3,SNR=18						
OBN	**Obninsk**	**66.38**	**323**	*i* P	**P**	**17 38 20.5**	**+0.7**
OBN				*i*		17 40 46.7	
OBN				pmax	pmax		
	comp=Z,5.0nm,1.0s						
FINES	**FINESS Array B**	**66.76**	**332**	P	**P**	**17 38 22.1**	**-0.1**
	comp=Z,2.1nm,0.7s,baz=38,slow=9.6,SNR=6.7						
ZEI	**Tsey**	**69.67**	**309**	*e*P	**P**	**17 38 39.6**	**-1.5**
ZEI				pmax	pmax		
	comp=Z,4.0nm,0.4s						
KVAR	**Kislovodsk Arr**	**69.70**	**311**	P	**P**	**17 38 42.6**	**+1.5**
	comp=Z,4.0nm,0.7s,baz=165,slow=4.6,SNR=4.3						
KIV	**Kislovodsk**	**69.71**	**311**	*e*P	**P**	**17 38 41.5**	**+0.4**
KIV				pmax	pmax		
	comp=Z,9.0nm,0.9s						
KBZ	**Khabaz**	**69.72**	**310**	P	**P**	**17 38 41.4**	**+0.4**
	comp=Z,2.1nm,0.7s,baz=49,slow=3.8,SNR=6.1						
HFS	**Hagfors**	**71.92**	**336**	P	**P**	**17 38 53.9**	**-0.2**
	comp=Z,0.6nm,0.4s,baz=77,slow=7.6,SNR=4.5						
AKASG	**Malin Array Be**	**72.61**	**322**	P	**P**	**17 38 58.3**	**-0.1**
	comp=Z,1.3nm,0.4s,baz=44,slow=6.1,SNR=9.8						
AKASG	**Malin Array Be**	**72.61**	**322**	*c e*P	**P**	**17 38 58.2**	**-0.2**
AKASG				pmax	pmax		
	comp=Z,1.0nm,0.4s						
BORG	**Borgarnes**	**75.04**	**353**	*c e*P	**P**	**17 39 13.8**	**+1.4**

*ISCJB **25** 17:30:17.1±0.6, 10.′77N±0.′05×62.′37W±0.′03, h90km±7km, Error ellipse: s-maj=7.8km s-min=4.1km az=160.3*
*FUNV **25** 17:30:18.5, 10.′77N×62.′27W, h78km, MW3.0*
*TRN **25** 17:30:19.6, 10.′79N×62.′18W, h99km, MD3.3*
ISC 25 17:30:17.3±1.3, **10.′75N**±0.′05×**62.′36W**±0.′03, **h92**km±9km, **n19**, σ1°32/33, **2C-2D, Near coast of Venezuela**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUIV	**Guiria**	**0.17**	**126**	*e*P	**Pn**	**17 30 30.0**	**-0.4**
GUIV				*e*S	**Sn**	**17 30 37.6**	**-2.5**
TCE	**Chacachacare**	**0.60**	**95**	*e*P	**Pn**	**17 30 34.7**	**+1.6**
GUNV	**Guanoco**	**0.81**	**224**	*e*P	**Pn**	**17 30 36.4**	**+1.3**
GUNV				*e*S	**Sn**	**17 30 49.1**	**+0.7**
CRUV	**Carupano**	**0.86**	**265**	*e*P	**Pn**	**17 30 35.8**	**+0.2**
CRUV				*e*S	**Sn**	**17 30 48.3**	**-0.9**
TRN	**Trinidad (W)**	**0.95**	**96**	*e*P	**Pn**	**17 30 37.6**	**+1.1**
TRN				*e*S	**Sn**	**17 30 50.4**	**-0.6**
TPP	**Pointe-a-Pierr**	**0.99**	**115**	*e*P	**Pn**	**17 30 38.9**	**+1.9**
TPP				*e*S	**Sn**	**17 30 53.2**	**+1.3**
TBH	**Brigand Hill**	**1.30**	**102**	*e*P	**Pn**	**17 30 42.3**	**+1.6**
TBH				*e*S	**Sn**	**17 30 57.1**	**-1.2**
BOT	**Bacolet**	**1.67**	**75**	*e*P	**Pn**	**17 30 46.2**	**+0.9**
BOT				*e*S	**Sn**	**17 31 05.5**	**-1.0**
GRSS	**Sisters**	**1.71**	**26**	*e*P	**Pn**	**17 30 47.0**	**+1.2**
GRSS				*e*S	**Sn**	**17 31 07.7**	**+0.3**
TOSP	**Speyside**	**1.88**	**73**	*e*P	**Pn**	**17 30 47.5**	**-0.4**
TOSP				*e*S	**Sn**	**17 31 09.2**	**-2.1**
ORIV	**Oritupano**	**1.96**	**212**	*e*P	**Pn**	**17 30 50.5**	**+1.4**
PCRV	**Puerto La Cruz**	**2.31**	**256**	*e*P	**Pn**	**17 30 54.9**	**+1.3**
PCRV				*e*S	**Sn**	**17 31 21.4**	**0.0**
SVB	**Belmont**	**2.73**	**23**	*e*P	**Pn**	**17 31 00.1**	**+0.8**
SVB				*e*S	**Sn**	**17 31 30.8**	**-0.8**
PRGV	**PARIAGUAN**	**2.99**	**229**	*e*P	**Pn**	**17 31 03.6**	**+0.8**
GURV	**El Guri**	**3.05**	**194**	*e*P	**Pn**	**17 31 04.2**	**+0.6**
CUPV	**Cœpira**	**3.44**	**259**	*e*P	**Pn**	**17 31 10.3**	**+1.4**
CUPV				*e*S	**Sn**	**17 31 48.5**	**-0.2**
BIRV	**Birongo**	**3.85**	**266**	*e*P	**Pn**	**17 31 15.6**	**+1.2**
BIRV				*e*S	**Sn**	**17 31 58.3**	**-0.3**
LUEV	**Luepa**	**4.96**	**170**	*e*P	**Pn**	**17 31 28.9**	**-0.6**
BAUV	**El Baul**	**5.88**	**253**	*e*P	**Pn**	**17 31 41.6**	**-0.2**
BAUV				*e*S	**Sn**	**17 32 44.8**	**-3.1**

IDC 25 17:51:18.2±1.6, **1.′74S**×**133.′49E**, **h0**km, **mb4.0**/3, **mb1 4.3**/5, **mb1mx3.8**/34, **mbtmp4.1**/5, **ML4.1**/2, **Error ellipse: s-maj=48.4km s-min=20.3km az=58.0, Irian Jaya region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SIJI	**Sorong**	**2.38**	**291**	Pn	Pn	17 51 59.3	+0.7
	21nm,0.3s,baz=90,slow=23,SNR=9.4						
SIJI				Sn	Sn	17 52 28.5	-0.1
	21nm,0.3s,baz=268,slow=24,SNR=6.7						
WRA	**Warramunga Arr**	**18.11**	**177**	P	P	17 55 31.8	0.0
	0.8nm,0.3s,baz=356,slow=12,SNR=59						
ASAR	**Alice Springs**	**21.80**	**179**	P	P	17 56 12.6	+0.5
	2.9nm,0.5s,baz=5.3,slow=12,SNR=78						
MKAR	**Makanchi Array**	**65.90**	**324**	P	P	18 02 06.0	0.0
	1.1nm,0.5s,baz=116,slow=7.3,SNR=16						
VNDA	**Vanda**	**77.24**	**174**	P	P	18 03 13

AYDB	**Zeytinkoy-Aydi**	**1.47**	**217**	*e*Pn	**Pn**	**17 55 52.2**	**-0.7**
ESKT	**Eskisehir**	**1.48**	**74**	*i* P	**Pb**	**17 55 54.0**	**+0.1**
SEYT	**Eskypehyr**	**1.48**	**74**	P	**Pb**	**17 55 54.0**	**+0.1**
EDC	**Edincik**	**1.50**	**324**	*e*PN	**Pn**	**17 55 52.8**	**-0.4**
EDC	**Edincik**	**1.50**	**324**	*e*Pn	**Pn**	**17 55 52.8**	**-0.4**
GPA	**Golpazari**	**1.53**	**41**	*e*PN	**Pn**	**17 55 53.7**	**0.0**
GPA	**Golpazari**	**1.53**	**41**	*e*Pn	**Pn**	**17 55 53.7**	**0.0**
BOLV	**Bolvadin**	**1.58**	**105**	P	**Pg**	**17 55 55.8**	**-0.4**
BOLV	**Bolvadin**	**1.58**	**105**	*i* P	**Pg**	**17 55 55.8**	**-0.4**
BOLV				*i* S	**Sg**	**17 56 18.7**	**+2.0**
KNL	**Bal¨–kesir**	**1.61**	**315**	*i* P	**Pb**	**17 55 55.8**	**-0.1**
KNL				*i* S	**Sg**	**17 56 18.5**	**+0.8**
DKL	**Dikili**	**1.63**	**268**	*e*PN	**Pn**	**17 55 54.6**	**-0.4**
DKL	**Dikili**	**1.63**	**268**	*e*Pn	**Pn**	**17 55 54.6**	**-0.4**
AYDN	**Tasoluk**	**1.72**	**211**	P	**Pn**	**17 55 55.9**	**-0.3**
AYDN	**Tasoluk**	**1.72**	**211**	*i* P	**Pn**	**17 55 55.9**	**-0.3**
AYDN				*i* S	**Sg**	**17 56 22.6**	**+1.5**
GULT	**Gulveren**	**1.74**	**42**	*e*PN	**Pn**	**17 55 56.6**	**0.0**
GULT	**Gulveren**	**1.74**	**42**	*e*Pn	**Pn**	**17 55 56.6**	**0.0**
HRT	**Hereke**	**1.76**	**17**	*e*PN	**Pn**	**17 55 56.6**	**-0.2**
HRT	**Hereke**	**1.76**	**17**	*e*Pn	**Pn**	**17 55 56.6**	**-0.2**
ISP	**Isparta**	**1.77**	**137**	*e*PN	**Pn**	**17 55 57.1**	**+0.1**
ISP	**Isparta**	**1.77**	**137**	*e*Pn	**Pn**	**17 55 57.1**	**+0.1**
MRMT	**Marmara Adasi**	**1.82**	**324**	*e*PN	**Pn**	**17 55 57.7**	**0.0**
MRMT	**Marmara Adasi**	**1.82**	**324**	*e*Pn	**Pn**	**17 55 57.7**	**0.0**
SPNC	**Sapanca-Adapaz**	**1.85**	**33**	*e*PN	**Pn**	**17 55 57.7**	**-0.3**
SPNC	**Sapanca-Adapaz**	**1.85**	**33**	*e*Pn	**Pn**	**17 55 57.7**	**-0.3**
ISK	**Istanbul-Kandi**	**1.93**	**1**	*e*PN	**Pn**	**17 55 58.9**	**-0.2**
ISK	**Istanbul-Kandi**	**1.93**	**1**	*e*Pn	**Pn**	**17 55 58.9**	**-0.2**
SVRH	**Sivrihisar-ESK**	**1.98**	**80**	*e*PN	**Pn**	**17 56 00.2**	**+0.3**
SVRH	**Sivrihisar-ESK**	**1.98**	**80**	*e*Pn	**Pn**	**17 56 00.2**	**+0.3**
DGB	**¨zmir**	**1.98**	**238**	*i* P	**Pg**	**17 56 05.0**	**+1.0**
DGB				*i* S	**Sg**	**17 56 31.0**	**+1.3**
URLA	**Izmir**	**2.03**	**248**	*i* P	**Pg**	**17 56 06.6**	**+1.6**
URLA				*i* S	**Sg**	**17 56 32.1**	**+0.7**
BGKT	**Bogazkoy**	**2.05**	**355**	*e*PN	**Pn**	**17 56 00.6**	**-0.1**
BGKT	**Bogazkoy**	**2.05**	**355**	*e*Pn	**Pn**	**17 56 00.6**	**-0.1**
SILT	**Sile**	**2.08**	**13**	*e*PN	**Pn**	**17 56 00.9**	**-0.2**
SILT	**Sile**	**2.08**	**13**	*e*Pn	**Pn**	**17 56 00.9**	**-0.2**
RKY	**Sarkoy-Tekirda**	**2.09**	**318**	*e*PN	**Pn**	**17 56 01.6**	**+0.2**
RKY	**Sarkoy-Tekirda**	**2.09**	**318**	*e*Pn	**Pn**	**17 56 01.6**	**+0.2**
LPK	**Lapseki**	**2.12**	**306**	*e*PN	**Pn**	**17 56 01.2**	**-0.6**
LPK	**Lapseki**	**2.12**	**306**	*e*Pn	**Pn**	**17 56 01.2**	**-0.6**
CTKS	**Kestanelik-??a**	**2.13**	**350**	*e*PN	**Pn**	**17 56 01.8**	**-0.1**
CTKS	**Kestanelik-??a**	**2.13**	**350**	*e*Pn	**Pn**	**17 56 01.8**	**-0.1**
ZEY	**¨zmir**	**2.15**	**246**	*i* P	**Pg**	**17 56 08.2**	**+1.0**
ZEY				*i* S	**Sg**	**17 56 36.0**	**+0.9**
MDUB	**Mudurnu**	**2.15**	**51**	*e*PN	**Pn**	**17 56 02.2**	**-0.1**
MDUB	**Mudurnu**	**2.15**	**51**	*e*Pn	**Pn**	**17 56 02.2**	**-0.1**
KIZT	**Kizilcal**	**2.26**	**96**	*e*PN	**Pn**	**17 56 03.6**	**0.0**
KIZT	**Kizilcal**	**2.26**	**96**	*e*Pn	**Pn**	**17 56 03.7**	**0.0**
SUTC	**Sutluce-Ispart**	**2.28**	**136**	*e*PN	**Pn**	**17 56 03.6**	**-0.4**
SUTC	**Sutluce-Ispart**	**2.28**	**136**	*e*Pn	**Pn**	**17 56 03.7**	**-0.4**
GELI	**Tayfur-Gelibol**	**2.32**	**304**	*e*PN	**Pn**	**17 56 04.2**	**-0.3**
GELI	**Tayfur-Gelibol**	**2.32**	**304**	*e*Pn	**Pn**	**17 56 04.2**	**-0.3**
SIGR	**SIGRI**	**2.45**	**273**	*e*PN	**Pn**	**17 56 06.4**	**+0.2**
SIGR	**SIGRI**	**2.45**	**273**	*e*Pn	**Pn**	**17 56 06.4**	**+0.2**
ERIK	**Erikli-Kesan**	**2.45**	**309**	*e*PN	**Pn**	**17 56 06.3**	**+0.1**
ERIK	**Erikli-Kesan**	**2.45**	**309**	*e*Pn	**Pn**	**17 56 06.3**	**+0.1**
BODT	**Bodrum**	**2.46**	**213**	*e*PN	**Pn**	**17 56 06.6**	**+0.1**
BODT	**Bodrum**	**2.46**	**213**	*e*Pn	**Pn**	**17 56 06.6**	**+0.1**
FETY	**Fethiye**	**2.50**	**178**	*e*PN	**Pn**	**17 56 06.9**	**0.0**
FETY	**Fethiye**	**2.50**	**178**	*e*Pn	**Pn**	**17 56 06.9**	**0.0**
ALN	**Alexandroupoli**	**2.87**	**309**	*e*PN	**Pn**	**17 56 12.4**	**+0.3**
ALN	**Alexandroupoli**	**2.87**	**309**	*e*Pn	**Pn**	**17 56 12.4**	**+0.3**

*ISCJB **25** 17:57:05.0±0.8, 6°.79N±0°.07×73°.07W±0°.07, h158km±7km, Error ellipse: s-maj=14.7km s-min=5.5km az=43.2*
*RSNC **25** 17:57:06.9±0.7, 6°.79N×73°.10W, h149km±6km, ML2.7*
*FUNV **25** 17:57:07.2, 6°.97N×73°.18W, h162km, MW2.9*

ISC 25 17:57:05.2±1.5, 6°.82N±0°.07×73°.09W±0°.07, h159km±9km, n17, σ1°.02/27, 1C, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BTLC	**Betulia, Santa**	**0.20**	**300**	*e*P	**Pn**	**17 57 27.2**	**+0.3**
BARC	**Barichara**	**0.24**	**202**	*e*P	**Pn**	**17 57 26.7**	**-0.3**
BARC				*e*S	**Sn**	**17 57 41.8**	**-1.8**
BARC				*i*		17 57 43.7	
	comp=Z,80nm,0.3s						
GIRC	**Giron, Santand**	**0.28**	**339**	*e*P	**Pn**	**17 57 26.7**	**-0.2**
PAMC	**Pamplona, Colo**	**0.65**	**37**	*e*P	**Pn**	**17 57 29.6**	**+0.7**
PAMC				*e*S	**Sn**	**17 57 46.9**	**-0.2**
BRRC	**Barranca, Sant**	**0.68**	**295**	⇑*i* P	**Pn**	**17 57 28.8**	**+0.2**
BRRC				*i*		17 57 29.1	
	comp=Z,168nm,0.1s						
BRRC				*e*S	**Sn**	**17 57 46.0**	**-0.4**
GRMC	**Gramalote, San**	**0.94**	**18**	*e*P	**Pn**	**17 57 32.6**	**+2.1**
GRMC				*e*S	**Sn**	**17 57 52.1**	**+2.1**
GRMC				*i*		17 57 53.4	
	comp=Z,60nm,0.3s						
CBRI	**Barrientos, No**	**0.94**	**18**	*e*P	**Pn**	**17 57 31.3**	**+0.8**
CAPV	**Capacho**	**1.29**	**37**	*e*P	**Pn**	**17 57 34.4**	**+0.7**
CAPV				*e*S	**Sn**	**17 57 55.3**	**-0.3**
OCAC	**Ocana**	**1.43**	**351**	*e*P	**Pn**	**17 57 34.8**	**-0.1**
OCAC				*e*S	**Sn**	**17 57 58.4**	**+0.5**
OCAC				*i*		17 58 03.4	
	comp=Z,59nm,0.3s						
NORC	**Norcasia**	**2.16**	**235**	*e*P	**Pn**	**17 57 42.9**	**0.0**
NORC				*e*S	**Sn**	**17 58 11.2**	**-0.6**
HELC	**Santa Helena**	**2.50**	**256**	*e*P	**Pn**	**17 57 47.5**	**+0.4**
HELC				*i*		17 58 24.3	
	comp=Z,14nm,0.5s						
VIGV	**El Vigia**	**2.64**	**40**	*e*P	**Pn**	**17 57 48.0**	**-0.5**
VIGV				*e*S	**Sn**	**17 58 19.6**	**-2.4**
SOCV	**Socops**	**2.65**	**57**	*e*P	**Pn**	**17 57 49.6**	**+1.0**
SOCV				*e*S	**Sn**	**17 58 21.3**	**-1.0**
PRAC	**Prado**	**3.56**	**210**	*e*P	**Pn**	**17 58 00.7**	**+0.6**
PRAC				*e*S	**Sn**	**17 58 43.3**	**+0.4**
VIRV	**Villa del Rosa**	**3.72**	**10**	*e*P	**Pn**	**17 58 01.7**	**-0.4**
VIRV				*e*S	Sn	17 58 41.1	-5.4
CURV	**Curarigua**	**4.43**	**44**	*e*P	**Pn**	**17 58 11.9**	**+0.5**
BAUV	**El Baul**	**5.43**	**67**	*e*P	**Pn**	**17 58 25.1**	**+0.6**

KRSC 25 18:11:00.2±0.8, 52°.51N×159°.40E, h27km±10km, ML3.9, Off east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RUS	**Russkaya**	**0.55**	**262**	*i* P	Pb	18 11 11.4	+0.2
RUS				*e*S	Sn	18 11 19.7	-0.7
DALK	**Dalny**	**0.65**	**323**	*i* P	Pb	18 11 13.3	+0.3
DALK				S	Sn	18 11 22.8	-0.2
NLC	**Nalytchevo**	**0.66**	**357**	*e*P	Pb	18 11 13.0	-0.2
NLC				*e*S	Sb	18 11 22.5	+0.5
PET	**Petropavlovsk**	**0.69**	**319**	*i* P	Pb	18 11 13.8	+0.2
PET				*e*S	Sn	18 11 23.5	-0.3
MTVR	**Mutnovka**	**0.74**	**268**	*i* P	Pb	18 11 14.6	0.0
MTVR				*i* S	Sn	18 11 25.0	-0.5
UGLR	**Uglovaya**	**0.78**	**334**	*i* P	Pn	18 11 15.6	+0.1
UGLR				*e*S	Sn	18 11 26.8	+0.4
GRL	**Gorelyy**	**0.81**	**274**	P	Pn	18 11 16.8	+0.9
SDLR	**Sedlovina**	**0.83**	**338**	*i* P	Pb	18 11 15.9	-0.2
SDLR				*e*S	Sn	18 11 27.3	-0.3
KRMR	**Karymshinskiy**	**0.84**	**293**	*i* P	Pb	18 11 16.0	-0.1
KRMR				*e*S	Sn	18 11 27.7	+0.2
SMAR	**Somma**	**0.84**	**335**	*i* P	Pb	18 11 16.1	-0.2
AVH	**Avacha**	**0.86**	**332**	*i* P	Pn	18 11 16.6	+0.1
AVH				*e*S	Sn	18 11 28.5	+0.3
KRER	**Koryakskii**	**0.89**	**334**	*i* P	Pb	18 11 17.1	0.0
KRER				S	Sn	18 11 29.2	0.0
KOK	**Koryaka**	**0.91**	**330**	*e*P	Pb	18 11 17.7	+0.3
KOK				S	Sn	18 11 30.3	+0.8
ASAK	**Asacha**	**0.93**	**263**	*i* P	Pn	18 11 17.4	-0.1
ASAK				*e*S	Sn	18 11 29.8	-0.1
KRX	**Arik**	**0.96**	**332**	*i* P	Pn	18 11 18.0	-0.1
KRX				S	Sb	18 11 30.7	-0.1
GNL	**Ganaly**	**1.48**	**324**	*i* P	Pn	18 11 25.9	+0.8
GNL				*e*S	Sb	18 11 44.7	-0.7
KII	**Karymskiy**	**1.53**	**1**	*e*P	Pb	18 11 27.5	-0.4
KII				*e*S	Sb	18 11 47.9	+1.0
KMNR	**Kamenistaya**	**3.29**	**8**	P	Pn	18 11 52.3	+2.3
ESO	**Esso**	**3.45**	**353**	*e*P	Pn	18 11 55.1	+3.0
SMKR	**Semkarok**	**4.26**	**16**	P	Pn	18 12 08.4	+5.2
SRKR	**Sorokina**	**4.28**	**13**	P	Pn	18 12 07.9	+4.4

*IDC **25** 18:22:04.6±1.2, 34°.97S×15°.49W, h0km, mb4.0/2, mb1 4.1/2, mb1mx3.6/23, mbtmp4.0/2, MS3.8/16, Ms1 3.8/16, ms1mx3.7/24, Error ellipse: s-maj=31.7km s-min=28.8km az=27.0*

ISC 25 18:22:06.9±1.6, 35°.9S±0°.4×15°.2W±0°.2, h10km, n26, σ0°.35/5, MS3.9/16, Tristan da Cunha region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H09W1	**TRISTAN DA CUN**	**2.63**	**119**	Pn	**Pg**	**18 22 57.2**	**0.0**
H09W1				T	T	18 26 22.4	
	SNR=46						
H09N1	**TRISTAN DA CUN**	**2.63**	**118**	Pn	**Pg**	**18 22 57.2**	**-0.1**
H09N1				T	T	18 26 25.3	
	SNR=17						
H10S2	**ASCENSION HYDR**	**26.79**	**1**	T	T	18 54 17.2	
	baz=181,slow=75,SNR=57						
H10S3	**ASCENSION HYDR**	**26.79**	**1**	T	T	18 54 17.6	
	baz=181,slow=75,SNR=66						
H10S1	**ASCENSION HYDR**	**26.80**	**1**	T	T	18 54 17.9	
	baz=181,slow=75,SNR=58						
H10N1	**ASCENSION HYDR**	**27.90**	**2**	T	T	18 55 40.3	
	baz=181						
H10N3	**ASCENSION HYDR**	**27.90**	**2**	T	T	18 55 41.0	
	baz=181,slow=74,SNR=42						
H10N2	**ASCENSION HYDR**	**27.91**	**2**	T	T	18 55 41.8	
	baz=181,slow=74,SNR=9.2						
BOSA	**Boshof**	**34.80**	**90**	LR	LR	18 40 04.9	
	comp=Z,246nm,22.0s,baz=235,slow=31						
CPUP	**Villa Florida**	**37.05**	**273**	LR	LR	18 42 35.7	
	comp=Z,176nm,18.2s,baz=124,slow=34						
PLCA	**Paso Flores**	**43.09**	**246**	P	**P**	**18 30 07.3**	**0.0**
	1.0nm,0.8s,baz=115,slow=14,SNR=2.5						
PLCA				LR	LR	18 46 35.9	
	comp=Z,146nm,19.2s,baz=144,slow=34						
DBIC	**Dimbokro**	**43.42**	**15**	LR	LR	18 43 14.5	
	comp=Z,38nm,19.9s,baz=164,slow=30						
LPAZ	**La Paz**	**50.73**	**278**	LR	LR	18 52 23.6	
	comp=Z,99nm,18.2s,baz=111,slow=36						
TORD	**Torodi Ar. Bea**	**51.30**	**21**	P	P	18 31 04.0	-7.3
	3.3nm,0.9s,baz=200,slow=6.4,SNR=12						
TORD				LR	LR	18 48 08.3	
	comp=Z,86nm,20.2s,baz=225,slow=31						
KMBO	**Kilima Mbogo**	**59.59**	**67**	LR	LR	18 55 20.9	
	comp=Z,210nm,20.5s,baz=110,slow=34						
VNDA	**Vanda**	**66.87**	**179**	LR	LR	19 01 18.7	
	comp=Z,28nm,18.1s,baz=153,slow=35						
ROSC	**El Rosal**	**68.49**	**293**	LR	LR	19 01 59.4	
	comp=Z,228nm,18.2s,baz=116,slow=35						
ATD	**Arta Tunnel**	**72.22**	**61**	LR	LR	19 02 44.9	
	comp=Z,105nm,19.7s,slow=34						
MMAI	**Mount Meron Ar**	**83.30**	**41**	LR	LR	19 10 54.6	
	comp=Z,39nm,18.3s,baz=245,slow=35						
GERES	**GERESS Array B**	**88.18**	**19**	LR	LR	19 12 17.2	
	comp=Z,32nm,18.2s,baz=262,slow=34						
WSAR	**Wadi Sarin**	**91.20**	**62**	LR	LR	19 14 16.8	
	comp=Z,55nm,19.1s,baz=230,slow=34						
GNI	**Garni**	**93.61**	**42**	LR	LR	19 14 17.8	
	comp=Z,21nm,20.2s,baz=234,slow=34						
PALK	**Pallekele**	**99.00**	**88**	LR	LR	19 12 58.9	
	comp=Z,53nm,20.7s,baz=296,slow=31						
GEYT	**Alibeck**	**99.95**	**50**	LR	LR	19 19 13.5	
	comp=Z,63nm,20.5s,baz=250,slow=34						
ILAR	**Eielson Array**	**139.33**	**331**	PKP	**PKPdf**	**18 41 33.0**	**-0.3**
	0.8nm,0.9s,baz=20,slow=2.9,SNR=4.8						
KSRS	**Korea Array**	**150.50**	**76**	PKPbc	**PKPbc**	**18 41 59.0**	**+0.4**
	1.1nm,0.7s,baz=290,slow=2.6,SNR=5.2						

*VIE **25** 18:26:45.1±1.2, 45°.40N×12°.91E, h8km, mb1.8/6, ML2.1/8, Error ellipse: s-maj=8.7km s-min=3.0km az=8.0*
*CSEM **25** 18:26:45.0±0.5, 45°.36N×12°.95E, h15km, ML2.5/6, Error ellipse: s-maj=10.0km s-min=4.8km az=155.0*
*ROM **25** 18:26:45.2±0.4, 45°.30N×13°.00E, h10km, Md2.3/7, Ml1.9/4, Error ellipse: s-maj=5.4km s-min=2.1km az=146.0*

ISC 25 18:26:44.7±1.1, 45°.34N±0°.04×12°.93E±0°.03, h14km±9km, n32, σ0°.54/47, 1C, Northern Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IESO	**Jesolo**	**0.32**	**304**	⇑*e*Pg	**Pg**	**18 26 50.8**	**-0.5**
IESO				*e*Sg	**Sg**	**18 26 56.0**	**+0.3**
MTLO	**Montello**	**0.75**	**309**	*e*Pg	**Pn**	**18 27 00.4**	**-0.6**
MTLO				*e*Sg	**Sn**	**18 27 13.3**	**+1.1**
SABO	**M.te Sabotino**	**0.80**	**36**	Pg	**Pn**	**18 27 01.3**	**-0.4**
	26nm,0.3s						
SABO	**M.te Sabotino**	**0.80**	**36**	Pg	**Pn**	**18 27 01.3**	**-0.4**
	26nm,0.3s						
SABO	**M.te Sabotino**	**0.80**	**36**	*e*Pg	**Pn**	**18 27 01.2**	**-0.4**
SABO				*e*Sg	**Sn**	**18 27 12.5**	**-0.9**
VARN	**Col Varnada, M**	**0.87**	**319**	*e*Pg	**Pg**	**18 27 02.1**	**+0.5**
VARN				*e*Sg	**Sn**	**18 27 16.4**	**+1.1**
TEOL	**Teolo**	**0.89**	**272**	Pg	**Pn**	**18 27 02.6**	**-0.2**
TEOL				Sg	**Sn**	**18 27 15.9**	**+0.4**
TEOL	**Teolo**	**0.89**	**272**	Pg	**Pn**	**18 27 02.6**	**-0.2**
TEOL				Sg	**Sn**	**18 27 15.9**	**+0.4**
TEOL	**Teolo**	**0.89**	**272**	*e*Pg	**Pn**	**18 27 02.3**	**-0.5**
TEOL				*e*Sg	**Sn**	**18 27 15.5**	**-0.1**
STAL	**STALIGIAL**	**0.93**	**351**	Pg	**Pn**	**18 27 03.3**	**-0.2**
	29nm,0.2s						
STAL	**STALIGIAL**	**0.93**	**351**	Pg	**Pn**	**18 27 03.3**	**-0.2**
	29nm,0.2s						
VINO	**Villanova**	**0.95**	**15**	Pg	**Pg**	**18 27 03.0**	**-0.1**
VINO				Sg	**Sn**	**18 27 16.7**	**-0.5**
	20nm,0.2s						
VINO	**Villanova**	**0.95**	**15**	Pg	**Pg**	**18 27 03.0**	**-0.1**
VINO				Sg	**Sn**	**18 27 16.7**	**-0.5**
	20nm,0.2s						
VINO	**Villanova**	**0.95**	**15**	*e*Pg	**Pg**	**18 27 02.9**	**-0.1**
CGRP	**Cima Grappa**	**0.96**	**305**	*e*Pg	**Pb**	**18 27 02.7**	**-0.5**
DRE	**Drenchia**	**0.97**	**31**	*e*Pg	**Pn**	**18 27 04.2**	**+0.1**
CIMO	**Cimolais**	**1.03**	**341**	*e*Pg	**Pb**	**18 27 04.1**	**-0.3**
PTCC	**Patocco-Chiusa**	**1.11**	**15**	Pg	**Pn**	**18 27 05.8**	**-0.1**
PTCC	**Patocco-Chiusa**	**1.11**	**15**	Pg	**Pn**	**18 27 05.8**	**-0.1**
ZOU	**Zoufplan**	**1.22**	**2**	*e*Pg	**Pb**	**18 27 07.7**	**0.0**
MARN	**Marana (Italy)**	**1.24**	**284**	*e*Pg	**Pg**	**18 27 08.4**	**-0.3**
ACOM	**Acomizza, Ital**	**1.27**	**18**	Pg	**Pg**	**18 27 09.2**	**-0.1**
ACOM	**Acomizza, Ital**	**1.27**	**18**	Pg	**Pg**	**18 27 09.2**	**-0.1**
ACOM	**Acomizza, Ital**	**1.27**	**18**	*e*Pg	**Pg**	**18 27 09.1**	**-0.1**
DDS	**Dosso del Somm**	**1.33**	**295**	*e*Pg	**Pb**	**18 27 09.6**	**-0.1**
MYKA	**Terra Mystica**	**1.38**	**21**	Pg	**Pg**	**18 27 11.7**	**+0.4**
	1.9nm,0.2s						
MYKA				Sg	**Sg**	**18 27 30.4**	**+1.1**
	5.7nm,0.3s						
ABTA	**Abfaltersbach**	**1.44**	**349**	Pg	**Pg**	**18 27 11.8**	**-0.6**
	2.8nm,0.3s						
ABTA				Sg	**Sg**	**18 27 31.1**	**+0.1**
	2.4nm,0.3s						
NVLJ	**Novalja**	**1.58**	**119**	*e*Pn	**Pg**	**18 27 14.6**	**-0.5**
NVLJ				Sn	**Sg**	**18 27 37.0**	**+1.3**
OBKA	**Obir**	**1.63**	**44**	Pg	**Pg**	**18 27 15.2**	**-0.8**
	1.2nm,0.2s						
OBKA				Sg	**Sg**	**18 27 37.8**	**+0.7**
	7.1nm,0.4s						
KBA	**Koelnbreinsper**	**1.76**	**9**	Pg	**Pb**	**18 27 17.6**	**+0.6**
	1.0nm,0.3s						
KBA				Sg	**Sg**	**18 27 41.5**	**0.0**
	1.5nm,0.2s						
SOKA	**Soboth**	**1.99**	**47**	Pg	**Pg**	**18 27 23.1**	**+0.3**
	0.9nm,0.3s						
SOKA				Sg	**Sg**	**18 27 47.5**	**-1.1**
	3.3nm,0.4s						
UDBI	**Udbina**	**2.17**	**111**	Sn	**Sb**	**18 27 51.1**	**+0.3**

IDC 25 18:29:08.9±6.1, 30°.44S×178°.55W, h0km, mb3.5/2, mb1 3.8/2, mb1mx3.5/23, mbtmp3.5/2, Error ellipse: s-maj=242.6km s-min=55.7km az=155.0, Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**42.64**	**267**	P	P	18 37 06.5	-0.8
	0.3nm,0.6s,baz=109,slow=7.3,SNR=3.4						
WRA	**Warramunga Arr**	**43.63**	**272**	P	P	18 37 15.8	+0.5
	0.6nm,0.5s,baz=112,slow=7.8,SNR=12						
FINES	**FINESS Array B**	**145.02**	**340**	PKPbc	PKPbc	18 48 45.9	-0.9
	1.6nm,0.8s,baz=70,slow=6.3,SNR=8.2						

*ISCJB **25** 18:38:25.8±0.5, 39°.13N±0°.03×29°.01E±0°.03, h1km±7km, Error ellipse: s-maj=4.9km s-min=3.9km az=164.1*
*ISK **25** 18:38:25.3, 39°.09N×29°.07E, h6km, MD2.7*
*DDA **25** 18:38:25.9, 39°.14N×29°.01E, h7km, Md2.5*
*CSEM **25** 18:38:26.0±0.1, 39°.14N×29°.02E, h2km, MD2.5, Error ellipse: s-maj=2.0km s-min=1.7km az=131.0*

ISC 25 18:38:26.1±1.0, 39°.13N±0°.02×29°.02E±0°.02, h7km±10km, n45, σ0°.39/61, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**250**	P	**Pg**	**18 38 30.8**	**-0.3**
DEMI				S	**Sg**	**18 38 34.7**	**+0.3**
DEMI	**Demirci**	**0.25**	**250**	*i* P	**Pg**	**18 38 30.8**	**-0.3**
DEMI				*i* S	**Sg**	**18 38 34.7**	**+0.3**
GDZ	**Gediz**	**0.36**	**96**	P	**Pg**	**18 38 33.3**	**0.0**
GDZ				S	**Sg**	**18 38 38.7**	**+0.6**
GDZ	**Gediz**	**0.36**	**96**	*i* P	**Pg**	**18 38 33.4**	**0.0**
GDZ				*i* S	**Sg**	**18 38 38.7**	**+0.6**
TVSB	**Tavsanli**	**0.47**	**47**	*e*PG	**Pg**	**18 38 34.8**	**-0.5**
TVSB				*e*SG	**Sg**	**18 38 41.2**	**-0.2**
TVSB	**Tavsanli**	**0.47**	**47**	*e*Pg	**Pg**	**18 38 34.8**	**-0.5**
TVSB				*e*Sg	**Sg**	**18 38 41.2**	**-0.2**
DURS	**Dursunbey**	**0.63**	**318**	P	**Pg**	**18 38 38.3**	**0.0**
DURS				S	**Sg**	**18 38 46.8**	**+0.3**
DURS	**Dursunbey**	**0.63**	**318**	*i* P	**Pg**	**18 38 38.3**	**0.0**
DURS				*i* S	**Sg**	**18 38 46.8**	**+0.3**
KULA	**Kula-Manisa**	**0.68**	**204**	*e*PG	**Pg**	**18 38 38.8**	**-0.3**
KULA				*e*SG	**Sg**	**18 38 47.6**	**-0.3**
KULA	**Kula-Manisa**	**0.68**	**204**	*e*Pg	**Pg**	**18 38 38.8**	**-0.3**
KULA				*e*Sg	**Sg**	**18 38 47.6**	**-0.3**
MANT	**Manisa**	**0.73**	**209**	P	**Pg**	**18 38 40.0**	**-0.2**
MANT	**Manisa**	**0.73**	**209**	*i* P	**Pg**	**18 38 40.0**	**-0.2**
MANT				*i* S	**Sn**	**18 38 54.6**	**-0.1**
KHAL	**Karahalli**	**0.84**	**154**	P	**Pb**	**18 38 43.2**	**0.0**
KHAL				S	**Sb**	**18 38 54.8**	**0.0**
KHAL	**Karahalli**	**0.84**	**154**	*i* P	**Pb**	**18 38 43.2**	**0.0**
KHAL				*i* S	**Sb**	**18 38 54.9**	**0.0**
AKHS	**Akhisar**	**0.97**	**255**	P	**Pg**	**18 38 44.9**	**+0.1**
AKHS				S	**Sb**	**18 38 57.9**	**-0.4**
AKHS	**Akhisar**	**0.97**	**255**	*i* P	**Pg**	**18 38 44.9**	**+0.1**
AKHS				*i* S	**Sb**	**18 38 57.9**	**-0.4**
AKS	**Akhisar**	**0.97**	**255**	*e*PG	**Pg**	**18 38 44.6**	**-0.2**
AKS	**Akhisar**	**0.97**	**255**	*e*Pg	**Pg**	**18 38 44.6**	**-0.2**
BALB	**Balikesir**	**1.02**	**300**	*e*PG	**Pb**	**18 38 46.4**	**+0.3**
BALB	**Balikesir**	**1.02**	**300**	*e*Pg	**Pb**	**18 38 46.4**	**+0.3**
IGD	**Bursa**	**1.14**	**7**	*i* P	**Pg**	**18 38 46.1**	**-1.9**
IGD				*i* S	**Sb**	**18 39 04.1**	**+0.8**
BALY	**Balya**	**1.24**	**300**	P	**Pn**	**18 38 50.0**	**0.0**
BALY	**Balya**	**1.24**	**300**	*i* P	**Pn**	**18 38 50.0**	**0.0**
MDNY	**Mudanya-Bursa**	**1.24**	**355**	*e*PN	**Pn**	**18 38 50.4**	**+0.4**
MDNY	**Mudanya-Bursa**	**1.24**	**355**	*e*Pn	**Pn**	**18 38 50.4**	**+0.4**
KCTX	**Karacabey (Bur**	**1.24**	**336**	*e*PN	**Pn**	**18 38 50.1**	**+0.1**
KCTX	**Karacabey (Bur**	**1.24**	**336**	*e*Pn	**Pn**	**18 38 50.1**	**+0.1**
CAVI	**Cavuskoy**	**1.25**	**31**	*e*PN	**Pg**	**18 38 50.0**	**0.0**
CAVI	**Cavuskoy**	**1.25**	**31**	*e*Pn	**Pg**	**18 38 50.1**	**0.0**
IZI	**Iznik**	**1.25**	**16**	*e*PN	**Pn**	**18 38 50.5**	**+0.3**
IZI	**Iznik**	**1.25**	**16**	*e*Pn	**Pn**	**18 38

*CSEM **25** 19:09:12.5±0.9, 32.°76N×46.°22E, h10km, ML2.5, Error ellipse: s-maj=18.6km s-min=6.7km az=3.0*
*ISN **25** 19:09:15.7±0.3, 32.°82N×46.°29E, h0km, ML2.5*
TEH 25 19:09:16.3, 32.°83N×46.°30E, h18km, ML2.5, Iran-Iraq border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IKFM	**Kafar-mosalman**	**1.48**	**61**	*e*Pg	Pb	19 09 43.9	+0.7
IKFM				*e*Sg	Sb	19 10 02.6	+1.0
IKFM				*e*AMB	AMB	19 10 06.0	
	comp=Z,99nm,0.2s						
IKFM	**Kafar-mosalman**	**1.48**	**61**	*e*Pg	Pb	19 09 43.9	+0.7
IKFM				*e*Sg	Sb	19 10 02.6	+1.0
IGHG	**Ghaleghazi**	**1.52**	**9**	*e*Pg	Pb	19 09 43.8	-0.3
IGHG				*e*AMB	AMB	19 10 05.4	
	comp=Z,1μm,0.2s						
IGHG	**Ghaleghazi**	**1.52**	**9**	*e*Pg	Pb	19 09 43.8	-0.3
IVIS	**Veis**	**1.76**	**15**	*e*Pg	Pb	19 09 47.9	-0.2
IVIS				*e*AMB	AMB	19 10 10.5	
	comp=Z,566nm,0.2s						
IVIS	**Veis**	**1.76**	**15**	*e*Pg	Pb	19 09 47.9	-0.2
IDHR	**Dehrash**	**1.87**	**2**	*e*Pg	Pb	19 09 50.1	0.0
IDHR				*e*AMB	AMB	19 10 14.9	
	comp=Z,724nm,0.2s						
IDHR	**Dehrash**	**1.87**	**2**	*e*Pg	Pb	19 09 50.1	0.0
IKMR	**Kamar-syah**	**1.88**	**68**	*e*Pg	Pb	19 09 49.5	-0.6
IKMR				*e*AMB	AMB	19 10 16.6	
	comp=Z,99nm,0.2s						
IKMR	**Kamar-syah**	**1.88**	**68**	*e*Pg	Pb	19 09 49.5	-0.6

IDC 25 19:10:51.2±7.9, 22.°14S×170.°63E, h0km, mb3.8/4, mb1 4.0/4, mb1mx3.7/27, mbtmp3.8/4, Error ellipse: s-maj=178.7km s-min=40.8km az=37.0, Southeast of Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**27.55**	**243**	P	P	19 16 38.5	-1.4
	1.2nm,0.7s,baz=59,slow=11,SNR=2.9						
ASAR	**Alice Springs**	**33.80**	**260**	P	P	19 17 35.3	0.0
	1.3nm,0.7s,baz=89,slow=7.5,SNR=18						
WRA	**Warramunga Arr**	**33.89**	**267**	P	P	19 17 36.7	+0.6
	0.6nm,0.5s,baz=96,slow=8.4,SNR=42						
VNDA	**Vanda**	**55.59**	**182**	P	P	19 20 28.2	0.0
	0.9nm,0.7s,baz=3.9,slow=7.3,SNR=4.3						

*DDA **25** 19:18:56.8, 39.°09N×29.°02E, h9km, Ml3.1*
*ISK **25** 19:18:57.0, 39.°09N×29.°08E, h5km, MD2.8*
*CSEM **25** 19:18:57.3±0.1, 39.°09N×29.°05E, h2km, ML3.1, Error ellipse: s-maj=2.4km s-min=2.2km az=114.0*
ISC 25 19:18:57.0±1.0, 39.°11N±0.°02×29.°03E±0.°02, h7km±9km, n71, σ0°79/90, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**255**	P	**Pg**	**19 19 02.2**	**+0.1**
DEMI				S	**Sg**	**19 19 05.7**	**+0.2**
DEMI	**Demirci**	**0.25**	**255**	*i* P	**Pg**	**19 19 02.2**	**+0.1**
DEMI				*i* S	**Sg**	**19 19 05.7**	**+0.2**
GDZ	**Gediz**	**0.35**	**93**	P	**Pg**	**19 19 03.9**	**0.0**
GDZ				S	**Sg**	**19 19 08.9**	**+0.3**
GDZ	**Gediz**	**0.35**	**93**	*i* P	**Pg**	**19 19 03.9**	**0.0**
GDZ				*i* S	**Sg**	**19 19 08.9**	**+0.3**
TVSB	**Tavsanli**	**0.48**	**44**	*e*PG	**Pg**	**19 19 06.4**	**+0.1**
TVSB				*e*SG	**Sg**	**19 19 12.7**	**+0.1**
TVSB	**Tavsanli**	**0.48**	**44**	*e*Pg	**Pg**	**19 19 06.4**	**+0.1**
TVSB				*e*Sg	**Sg**	**19 19 12.7**	**+0.1**
DURS	**Dursunbey**	**0.66**	**319**	P	**Pg**	**19 19 09.9**	**+0.2**
DURS	**Dursunbey**	**0.66**	**319**	*i* P	**Pg**	**19 19 09.9**	**+0.2**
KULA	**Kula-Manisa**	**0.66**	**206**	*e*PG	**Pg**	**19 19 09.4**	**-0.4**
KULA	**Kula-Manisa**	**0.66**	**206**	*e*Pg	**Pg**	**19 19 09.4**	**-0.4**
MANT	**Manisa**	**0.72**	**211**	P	**Pg**	**19 19 10.4**	**-0.5**
MANT				S	**Sg**	**19 19 19.6**	**-0.7**
MANT	**Manisa**	**0.72**	**211**	*i* P	**Pg**	**19 19 10.4**	**-0.5**
MANT				*i* S	**Sg**	**19 19 19.6**	**-0.7**
KHAL	**Karahalli**	**0.82**	**154**	P	**Pg**	**19 19 12.6**	**-0.2**
KHAL				S	**Sb**	**19 19 24.1**	**-0.8**
KHAL	**Karahalli**	**0.82**	**154**	*i* P	**Pg**	**19 19 12.6**	**-0.2**
KHAL				*i* S	**Sb**	**19 19 24.1**	**-0.8**
KHL	**Karahalli**	**0.87**	**154**	*e*PG	**Pb**	**19 19 14.2**	**-0.3**
KHL	**Karahalli**	**0.87**	**154**	*e*Pg	**Pb**	**19 19 14.2**	**-0.3**
AKHS	**Akhisar**	**0.98**	**257**	P	**Pb**	**19 19 16.0**	**-0.2**
AKHS				S	**Sb**	**19 19 29.5**	**+0.2**
AKHS	**Akhisar**	**0.98**	**257**	*i* P	**Pb**	**19 19 16.1**	**-0.2**
AKHS				*i* S	**Sb**	**19 19 29.5**	**+0.2**
AKS	**Akhisar**	**0.98**	**257**	*e*PG	**Pb**	**19 19 15.9**	**-0.3**
AKS	**Akhisar**	**0.98**	**257**	*e*Pg	**Pb**	**19 19 15.9**	**-0.3**
BALB	**Balikesir**	**1.04**	**301**	*e*PG	**Pn**	**19 19 18.0**	**0.0**
BALB	**Balikesir**	**1.04**	**301**	*e*Pg	**Pn**	**19 19 18.0**	**0.0**
IGD	**Bursa**	**1.16**	**6**	*i* P	**Pb**	**19 19 18.1**	**-1.3**
IGD				*i* S	**Sn**	**19 19 35.7**	**-0.1**
CAVI	**Cavuskoy**	**1.26**	**30**	*e*PN	**Pg**	**19 19 21.7**	**+0.5**
CAVI	**Cavuskoy**	**1.26**	**30**	*e*Pn	**Pg**	**19 19 21.7**	**+0.5**
BALY	**Balya**	**1.26**	**300**	P	**Pg**	**19 19 21.5**	**+0.2**
BALY				S	**Sn**	**19 19 38.3**	**0.0**
BALY	**Balya**	**1.26**	**300**	*i* P	**Pg**	**19 19 21.5**	**+0.2**
BALY				*i* S	**Sn**	**19 19 38.3**	**0.0**
MDNY	**Mudanya-Bursa**	**1.27**	**355**	*e*PN	**Pg**	**19 19 21.8**	**+0.5**
MDNY	**Mudanya-Bursa**	**1.27**	**355**	*e*Pn	**Pg**	**19 19 21.8**	**+0.5**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*PN	**Pg**	**19 19 22.2**	**+0.8**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*Pn	**Pg**	**19 19 22.2**	**+0.8**
IZI	**Iznik**	**1.27**	**15**	*e*PN	**Pg**	**19 19 21.9**	**+0.4**
IZI	**Iznik**	**1.27**	**15**	*e*Pn	**Pg**	**19 19 21.9**	**+0.4**
GEMT	**Gemlik**	**1.33**	**5**	*e*PN	**Pg**	**19 19 22.5**	**-0.1**
GEMT	**Gemlik**	**1.33**	**5**	*e*Pn	**Pg**	**19 19 22.5**	**-0.1**
GONE	**Gonen-Balikesi**	**1.40**	**312**	*e*PN	**Pg**	**19 19 23.6**	**-0.3**
GONE	**Gonen-Balikesi**	**1.40**	**312**	*e*Pn	**Pg**	**19 19 23.6**	**-0.3**
DNZL	**Cakiroluk**	**1.42**	**180**	P	**Pg**	**19 19 23.8**	**-0.4**
DNZL	**Cakiroluk**	**1.42**	**180**	*i* P	**Pg**	**19 19 23.8**	**-0.4**
DNZL				*i* S	**Sg**	**19 19 46.7**	**+4.1**
ADVT	**Abdulvahap**	**1.43**	**22**	*e*PN	**Pg**	**19 19 24.6**	**+0.1**
ADVT	**Abdulvahap**	**1.43**	**22**	*e*Pn	**Pg**	**19 19 24.6**	**+0.1**
ARMT	**Armutlu**	**1.46**	**355**	*e*PN	**Pg**	**19 19 25.2**	**+0.2**
ARMT	**Armutlu**	**1.46**	**355**	*e*Pn	**Pg**	**19 19 25.3**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**1.46**	**218**	*e*PN	**Pg**	**19 19 25.2**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**1.46**	**218**	*e*Pn	**Pg**	**19 19 25.3**	**+0.2**
EDC	**Edincik**	**1.53**	**324**	*e*PN	**Pg**	**19 19 26.2**	**-0.2**
EDC	**Edincik**	**1.53**	**324**	*e*Pn	**Pg**	**19 19 26.2**	**-0.2**
KNL	**Bal¨–kesir**	**1.64**	**315**	*i* P	**Pn**	**19 19 26.5**	**+0.2**
KNL				*i* S	**Sg**	**19 19 49.8**	**-0.1**
AYDN	**Tasoluk**	**1.71**	**212**	P	**Pb**	**19 19 28.5**	**-0.2**
AYDN	**Tasoluk**	**1.71**	**212**	*i* P	**Pb**	**19 19 28.5**	**-0.2**
AYDN				*i* S	**Sg**	**19 19 54.1**	**+2.3**
GULT	**Gulveren**	**1.75**	**40**	*e*PN	**Pn**	**19 19 28.3**	**+0.5**
GULT	**Gulveren**	**1.75**	**40**	*e*Pn	**Pn**	**19 19 28.3**	**+0.5**
HRT	**Hereke**	**1.78**	**16**	*e*PN	**Pb**	**19 19 29.8**	**-0.2**
HRT	**Hereke**	**1.78**	**16**	*e*Pn	**Pb**	**19 19 29.8**	**-0.2**
MRMT	**Marmara Adasi**	**1.86**	**324**	*e*PN	**Pb**	**19 19 31.4**	**+0.1**
MRMT	**Marmara Adasi**	**1.86**	**324**	*e*Pn	**Pb**	**19 19 31.4**	**+0.1**
ISK	**Istanbul-Kandi**	**1.96**	**1**	*e*PN	**Pb**	**19 19 32.4**	**-0.6**
ISK	**Istanbul-Kandi**	**1.96**	**1**	*e*Pn	**Pb**	**19 19 32.4**	**-0.6**
SVRH	**Sivrihisar-ESK**	**1.96**	**79**	*e*PN	**Pb**	**19 19 32.0**	**-1.1**
SVRH	**Sivrihisar-ESK**	**1.96**	**79**	*e*Pn	**Pb**	**19 19 32.0**	**-1.1**
DGB	**¨zmir**	**1.99**	**239**	*i* P	**Pg**	**19 19 35.2**	**+0.1**
DGB				*i* S	**Sg**	**19 20 01.6**	**+0.8**
SILT	**Sile**	**2.10**	**13**	*e*PN	**Pn**	**19 19 33.8**	**+1.3**
SILT	**Sile**	**2.10**	**13**	*e*Pn	**Pn**	**19 19 33.8**	**+1.3**
EZN	**Ezine**	**2.21**	**290**	*e*PN	**Pb**	**19 19 36.2**	**-1.2**
EZN	**Ezine**	**2.21**	**290**	*e*Pn	**Pb**	**19 19 36.2**	**-1.2**
KIZT	**Kizilcal**	**2.23**	**95**	*e*PN	**Pn**	**19 19 34.6**	**+0.1**
KIZT	**Kizilcal**	**2.23**	**95**	*e*Pn	**Pn**	**19 19 34.6**	**+0.1**
GELI	**Tayfur-Gelibol**	**2.36**	**304**	*e*PN	**Pb**	**19 19 37.6**	**-2.2**
GELI	**Tayfur-Gelibol**	**2.36**	**304**	*e*Pn	**Pb**	**19 19 37.6**	**-2.2**
ERIK	**Erikli-Kesan**	**2.49**	**310**	*e*PN	**Pb**	**19 19 40.8**	**-1.2**
ERIK	**Erikli-Kesan**	**2.49**	**310**	*e*Pn	**Pb**	**19 19 40.8**	**-1.2**

*IDC **25** 19:59:33.9±0.9, 25.°41N×142.°82E, h0km, mb3.8/11, mb1 4.0/11, mb1mx3.7/61, mbtmp3.8/11, MS2.9/5, Ms1 2.9/5, ms1mx2.6/40, Error ellipse: s-maj=30.8km s-min=16.2km az=85.0*
*ISCJB **25** 19:59:37.2±0.7, 25.°31N±0.°06×142.°9E±0.°2, h40km, mb3.9/12, MS2.8/2, Error ellipse: s-maj=23.2km s-min=7.6km az=166.9*
*NEIC **25** 19:59:39.4±1.8, 25.°40N×142.°81E, h38km±16km, mb4.4/1, Error ellipse: s-maj=19.9km s-min=10.2km az=91.0*

ISC 25 19:59:39.3±0.9, 25.°36N±0.°10×142.°9E±0.°2, h40km, n18, σ0°83/17, mb3.9/12, Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**1.84**	**341**	Pn	**Pn**	**20 00 07.6**	**-0.8**
CBIJ				Sn	**Sn**	**20 00 31.6**	**+1.2**
JCJ	**Chichijima**	**1.84**	**341**	Pn	**Pn**	**20 00 07.6**	**-0.8**
	baz=262,slow=16						
JCJ				Sn	**Sn**	**20 00 31.6**	**+1.2**
	baz=287,slow=19						
JHJ	**Hachijo jima 2**	**8.19**	**341**	LR	LR	20 04 39.9	
	comp=Z,84nm,18.5s,baz=280,slow=38						
JNU	**Nakatsue**	**13.01**	**309**	LR	LR	20 07 18.1	
	comp=Z,31nm,19.2s,baz=116,slow=36						
KSRS	**Korea Array**	**17.53**	**317**	LR	LR	20 10 08.0	
	comp=Z,41nm,18.0s,baz=89,slow=36						
KLR	**Kul'dur**	**25.36**	**343**	P	**P**	**20 05 03.4**	**+0.8**
	1.0nm,0.5s,baz=132,slow=10,SNR=5.9						
PETK	**Petropavlovsk-**	**29.87**	**18**	P	**P**	**20 05 42.4**	**-0.5**
	6.0nm,1.0s,baz=226,slow=16,SNR=3.8						
PETK				LR	LR	20 17 35.6	
	comp=Z,12nm,21.5s,baz=90,slow=36						
SONM	**Songino Array**	**36.40**	**318**	P	**P**	**20 06 39.9**	**-0.1**
	0.3nm,0.5s,baz=115,slow=7.6,SNR=4.8						
SONM				LR	LR	20 22 27.2	
	comp=Z,29nm,18.2s,baz=78,slow=38						
WRAB	**Tennant Creek**	**45.78**	**191**	*e*P	**P**	**20 07 56.7**	**-0.4**
	2.5nm,0.5s						
WRA	**Warramunga Arr**	**45.79**	**191**	P	**P**	**20 07 58.3**	**+1.1**
	1.2nm,0.4s,baz=11,slow=8.8,SNR=17						
ASAR	**Alice Springs**	**49.50**	**191**	P	**P**	**20 08 26.8**	**+0.8**
	0.3nm,0.8s,baz=358,slow=6.6,SNR=3.3						
MKAR	**Makanchi Array**	**52.06**	**311**	P	**P**	**20 08 44.0**	**-1.2**
	0.2nm,0.5s,baz=103,slow=7.3,SNR=3.6						
KURK	**Kurchatov**	**54.64**	**315**	P	**P**	**20 09 03.5**	**-0.5**
KURBB	**Kurchatov Arra**	**54.70**	**315**	P	**P**	**20 09 03.5**	**-0.9**
	1.3nm,0.5s,baz=92,slow=8.4,SNR=30						
ILAR	**Eielson Array**	**58.94**	**28**	P	**P**	**20 09 34.0**	**-0.3**
	0.2nm,0.8s,baz=280,slow=5.4,SNR=4.4						
BVAR	**Borovoye Array**	**59.74**	**318**	P	**P**	**20 09 39.6**	**-0.4**
	1.7nm,0.5s,baz=86,slow=6.9,SNR=20						
YKA	**Yellowknife Ar**	**73.37**	**28**	P	**P**	**20 11 07.3**	**+0.5**
	1.0nm,1.0s,baz=286,slow=5.1,SNR=4.9						
FINES	**FINESS Array B**	**79.77**	**334**	P	**P**	**20 11 43.3**	**+0.3**
	1.2nm,0.5s,baz=72,slow=4.7,SNR=15						

*IDC **25** 20:06:35.1±1.7, 31.°00S×177.°81W, h0km, mb4.4/3, mb1 4.5/4, mb1mx3.9/23, mbtmp4.4/4, ML3.5/1, Error ellipse: s-maj=47.1km s-min=22.8km az=121.0*
*NEIC **25** 20:06:40.1±1.2, 31.°00S×177.°86W, h35km, mb4.5/1, Error ellipse: s-maj=35.8km s-min=15.3km az=112.0*
ISC 25 20:06:41.1±1.6, 30.°9S±0.°1×177.°9W±0.°3, h46km, n13, σ1°83/12, mb4.3/4, Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.64**	**359**	Pn	**Pn**	**20 07 07.3**	**0.0**
	117nm,0.3s,baz=76,slow=19,SNR=8.4						
RAO				Sn	**Sn**	**20 07 24.4**	**-2.8**
	539nm,0.3s,baz=270,slow=20,SNR=12						
URZ	**Urewera**	**8.42**	**208**	Pn	**Pn**	**20 08 37.6**	**-2.8**
	0.6nm,0.3s,baz=153,slow=18,SNR=3.2						
URZ				Sn	**Sn**	**20 10 13.7**	**-0.4**
	3.2nm,0.3s,baz=204,slow=21,SNR=7.8						
STKA	**Stephens Creek**	**34.45**	**258**	P	**P**	**20 13 26.4**	**+1.9**
	5.1nm,0.6s,baz=99,slow=11,SNR=18						
ASAR	**Alice Springs**	**43.17**	**267**	P	**P**	**20 14 37.7**	**+0.1**
	2.3nm,0.6s,baz=104,slow=7.6,SNR=35						
WRAB	**Tennant Creek**	**44.20**	**273**	*e*P	**P**	**20 14 45.4**	**-0.4**
	4.8nm,0.6s						
WRA	**Warramunga Arr**	**44.20**	**273**	P	**P**	**20 14 45.9**	**0.0**
	2.5nm,0.5s,baz=111,slow=8.1,SNR=49						
VNA3	**Neumayer Olymp**	**77.81**	**176**	PKP	P	20 18 41.4	+8.3
VNA2	**Neumayer--Watz**	**78.25**	**177**	PKP	P	20 18 42.7	+7.2
	baz=180,slow=4.8						
VNA1	**Neumayer--Stat**	**78.47**	**176**	PKP	P	20 18 45.1	+8.4
MKAR	**Makanchi Array**	**118.15**	**310**	PKP	**PKPdf**	**20 25 25.0**	**+2.2**
	0.2nm,0.5s,baz=174,slow=1.9,SNR=4.8						
FINES	**FINESS Array B**	**145.63**	**340**	PKPbc	**PKPdf**	**20 26 13.9**	**+0.3**
	2.9nm,0.4s,baz=55,slow=3.6,SNR=25						
NOA	**NORSAR Array B**	**149.25**	**351**	PKPbc	**PKPbc**	**20 26 23.4**	**-0.6**
	0.7nm,0.6s,baz=18,slow=4.3,SNR=3.4						
BRTR	**Keskin Array B**	**152.91**	**298**	PKPbc	**PKPbc**	**20 26 35.6**	**+2.3**
	0.3nm,0.4s,baz=126,slow=4.6,SNR=3.5						

*NIED **25** 20:29:00, 39.°60N×143.°70E, h17km, Mw4.7 Best double couple: M0 1.20000×10^16 NP1:φ0=181.00000°, δ25.00000°, λ61.00000°. NP2:φ0=33.00000°, δ68.00000°, λ103.00000°.*
*ISCJB **25** 20:29:25.7±1.0, 39.°67N±0.°03×143.°46E±0.°04, h7km±6km, mb4.8/109, MS4.4/30, Error ellipse: s-maj=5.6km s-min=3.8km az=38.4*
*IDC **25** 20:29:25.9±0.6, 39.°62N×143.°46E, h0km, mb4.6/30, mb1 4.7/38, mb1mx4.6/51, mbtmp4.6/38, ML3.9/7, MS4.1/12, Ms1 4.1/12, ms1mx3.7/31, Error ellipse: s-maj=13.8km s-min=11.3km az=118.0*
*JMA **25** 20:29:26.3±0.2, 39.°68N×143.°67E, h30km, M4.8*
JMA Felt I J1.
*NEIC **25** 20:29:28.9±2.4, 39.°63N×143.°39E, h18km±15km, mb4.8/35, Error ellipse: s-maj=7.8km s-min=4.6km az=132.0*
NEIC Recorded [1 JMA] in Iwate and Miyagi.
*MOS **25** 20:29:31.0±0.9, 39.°88N×143.°23E, h34km, mb5.1/47, MS4.5/7, Error ellipse: s-maj=7.3km s-min=4.3km az=108.6*
ISC 25 20:29:29.2±0.7, 39.°70N±0.°04×143.°49E±0.°04, h23km±4km, n298, σ1°58/323, mb4.9/120, MS4.5/31, 38C-8D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.28**	**281**	P	**Pn**	**20 29 51.0**	**-0.7**
JTH				*e*S	**Sb**	**20 30 08.5**	**-0.1**
MIYJ	**Miyakonagasawa**	**1.30**	**265**	P	**Pn**	**20 29 50.9**	**-1.1**
JANG	**Nango**	**1.66**	**295**	P	**Pn**	**20 29 55.9**	**-1.1**
JOM	**Ohasama**	**1.71**	**263**	P	**Pn**	**20 29 57.5**	**-0.2**
JMK	**Ichinoseki**	**1.91**	**248**	P	**Pn**	**20 29 59.9**	**-0.5**
JTM	**Tenmabayashi**	**2.15**	**301**	P	**Pn**	**20 30 03.6**	**-0.1**
JRG	**Rokugo**	**2.23**	**263**	P	**Pn**	**20 30 04.7**	**-0.1**
JAH	**Hinai**	**2.25**	**283**	P	**Pn**	**20 30 05.0**	**-0.1**
ERM	**Erimo**	**2.33**	**354**	*ce*P	**Pn**	**20 30 05.4**	**-0.7**
ERM				pmax	pmax		
	comp=Z,100nm,0.8s						
ERM	**Erimo**	**2.33**	**354**	*e*Pn	**Pn**	**20 30 05.4**	**-0.7**
JOT	**Ohata**	**2.51**	**313**	P	**Pn**	**20 30 08.5**	**-0.1**
JYK	**Kanayama**	**2.55**	**253**	P	**Pn**	**20 30 09.4**	**+0.2**
JOU	**Okura**	**2.57**	**240**	P	**Pn**	**20 30 08.9**	**-0.7**
JNBK	**Urakawa-nobuka**	**2.64**	**348**	P	**Pn**	**20 30 11.5**	**+1.1**
JCH	**Churui**	**2.91**	**358**	P	**Pn**	**20 30 13.8**	**-0.4**
JCH				*e*S	**Sn**	**20 30 47.7**	**-0.8**
JFT	**Otama**	**3.29**	**230**	P	**Pn**	**20 30 18.4**	**-1.1**
JAK	**Akkeshi**	**3.42**	**15**	P	**Pn**	**20 30 20.4**	**-0.7**
JAK				*e*S	**Sn**	**20 30 59.2**	**-1.7**
ASAJ	**Asahikawa**	**4.46**	**352**	Pn	**Pn**	**20 30 35.5**	**0.0**
	comp=Z,8.6nm,0.3s,baz=208,slow=13,SNR=51						
ASAJ				Sn	**Sn**	**20 31 28.1**	**+1.3**
	comp=Z,15nm,0.3s,baz=331,slow=23,SNR=4.9						
MAJO	**Matsushiro**	**5.22**	**235**	*c* P	**Pn**	**20 30 46.5**	**+0.5**
MAJO	**Matsushiro**	**5.22**	**235**	*e*Pn	**Pn**	**20 30 46.5**	**+0.5**
	comp=Z,205nm,0.8s						
MJAR	**Matsushiro Arr**	**5.22**	**235**	Pn	**Pn**	**20 30 46.4**	**+0.4**
	comp=Z,8.7nm,0.3s,baz=38,slow=12,SNR=230						
KUR	**Kuril'sk**	**6.41**	**29**	*e*P	**Pn**	**20 31 02.5**	**+0.4**
KUR				*e*S	**Sn**	**20 32 10.5**	**-4.0**
KUR				pmax	pmax		
	comp=N,16nm,0.4s						
KUR				pmax	pmax		
	comp=E,27nm,0.4s						
KUR				pmax	pmax		
	comp=Z,67nm,0.4s						
KUR				pmax	pmax		
	comp=N,513nm,2.2s						
KUR				pmax	pmax		
	comp=N,118nm,0.6s						
KUR				pmax	pmax		
	comp=E,187nm,0.6s						
JHJ2	**Mitsune**	**7.21**	**205**	*e*Pn	**Pn**	**20 31 11.1**	**-2.1**
JHJ	**Hachijo jima 2**	**7.21**	**206**	Pn	**Pn**	**20 31 11.6**	**-1.8**
	comp=E,30nm,0.3s,baz=243,slow=23,SNR=9.2						
JHJ				Sn	Sn	20 32 24.2	-10
	comp=E,62nm,0.3s,baz=62,slow=22,SNR=10						
YSS	**Yuzh-Sakhalins**	**7.27**	**356**	*e*P	**Pn**	**20 31 14.6**	**+0.6**
YSS				*e*S	**Sn**	**20 32 38.9**	**+3.1**
YSS				MLR	MLR		
	comp=N,2μm,14.0s						
YSS				MLR	MLR		
	comp=Z,1μm,14.0s						
YSS	**Yuzh-Sakhalins**	**7.27**	**356**	*e*Pn	**Pn**	**20 31 15.2**	**+1.1**
	comp=Z,75nm,1.0s						
VLA	**Vladivostok**	**9.37**	**295**	*i* P	**Pn**	**20 31 43.1**	**+0.4**
UGL	**Uglegorsk**	**9.43**	**354**	*e*P	**Pn**	**20 31 44.0**	**+0.4**
UGL				pmax	pmax		
	comp=Z,66nm,0.9s						
USRK	**Ussuriysk Ar.**	**9.68**	**301**	Pn	**Pn**	**20 31 48.6**	**+1.6**
	comp=Z,1.3nm,0.3s,baz=106,slow=13,SNR=62						
USRK				LR	LR	20 35 32.1	
	comp=Z,2μm,18.4s,baz=109,slow=38						
HABR	**Khabarovsk**	**10.66**	**328**	*e*P	**Pn**	**20 31 58.4**	**-2.0**
HABR				*e*S	**Sn**	**20 33 56.1**	**-2.9**
HABR				pmax	pmax		
	comp=N,15nm,1.4s						
HABR				pmax	pmax		
	comp=E,34nm,1.4s						
HABR				pmax	pmax		
	comp=Z,39nm,1.4s						
HABR				MLR	MLR		
	comp=Z,1μm,16.0s						
TYV	**Tymovskoe**	**11.18**	**357**	*e*P	**Pn**	**20 32 06.8**	**-0.7**
TYV				*e*S	**Sn**	**20 34 13.0**	**+1.3**
TYV				pmax	pmax		
	comp=N,22nm,1.0s						
TYV				pmax	pmax		
	comp=Z,62nm,1.0s						
TYV				smax	smax		
	comp=E,500nm,5.0s						
TYV				MLR	MLR		
	comp=N,2μm,16.0s						
TYV				MLR	MLR		
	comp=Z,2μm,16.0s						
MDJ	**Mudanjiang**	**11.42**	**300**	P	**Pn**	**20 32 13.5**	**+2.6**
MDJ				S	Sn	20 34 27.5	+10
MDJ				pmax	pmax		
	comp=Z,35nm,1.0s						
MDJ				pmax	pmax		
	comp=Z,260nm,7.2s						
MDJ				LR	LR		
	comp=N,1μm,11.2s						
MDJ				LR	LR		
	comp=E,890nm,20.0s						
MDJ				LR	LR		
	comp=Z,2μm,16.0s						
MDJ	**Mudanjiang**	**11.42**	**300**	*e*Pn	**Pn**	**20 32 12.8**	**+1.9**
	comp=Z,54nm,1.1s						
JNU	**Nakatsue**	**12.09**	**241**	Pn	**Pn**	**20 32 19.8**	**-0.4**
	comp=Z,0.3nm,0.3s,baz=74,slow=3.2,SNR=4.8						
KSRS	**Korea Array**	**12.39**	**265**	Pn	**Pn**	**20 32 25.4**	**+1.2**
	comp=Z,0.6nm,0.3s,baz=87,slow=13,SNR=37						
KSAR	**Wonju Array Be**	**12.42**	**264**	P	**Pn**	**20 32 25.4**	**+0.8**
KSAR	**Wonju Array Be**	**12.42**	**264**	Pn	**Pn**	**20 32 25.4**	**+0.8**
CBIJ	**Chichi jima**	**12.62**	**185**	Pn	Pn	20 32 22.2	-5.2
CBIJ				Sn	Sn	20 34 31.6	-16
JCJ	**Chichijima**	**12.62**	**185**	Pn	Pn	20 32 22.2	-5.2
	comp=Z,3.6nm,0.3s,baz=253,slow=20,SNR=4.8						
JCJ				Sn	Sn	20 34 31.6	-16
	comp=Z,2.1nm,0.3s,baz=270,slow=20,SNR=1.6						
KLR	**Kul'dur**	**12.68**	**323**	Pn	**Pn**	**20 32 28.3**	**+0.2**
	comp=Z,0.3nm,0.3s,baz=135,slow=13,SNR=19						
TJN	**Taejon**	**13.14**	**260**	*ce*P	**Pn**	**20 32 33.9**	**-0.5**
CN2	**Changchun**	**14.08**	**293**	*e*P	**Pn**	**20 32 44.8**	**-2.4**
CN2				*e*S	**Sn**	**20 35 28.0**	**+5.4**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
CN2				LR	LR		
	comp=N,800nm,17.0s						
CN2				LR	LR		
	comp=E,1μm,17.0s						
CN2				LR	LR		
	comp=Z,300nm,18.0s						
SNY	**Shenyang**	**15.24**	**284**	⇓P	**P**	**20 33 13.3**	**+5.7**
SNY				S	S	20 36 27.0	+20
SNY				pmax	pmax		
	comp=Z,19nm,0.8s						
SNY				pmax	pmax		
	comp=Z,200nm,12.0s						
SNY				LR	LR		
	comp=N

YAK	**Yakutsk**	**23.89 344**	*e*P	**P**	**20 34 39.0**	**-1.9**
YAK			*e*S	**S**	**20 38 53.7**	**-1.9**
YAK			pmax	pmax		
	comp=Z,42nm,0.9s					
YAK			pmax	pmax		
	comp=E,7.0nm,0.9s					
YAK			pmax	pmax		
	comp=N,25nm,1.1s					
YAK			smax	smax		
	comp=E,44nm,1.5s					
CIT	**Chita**	**24.03 311**	*e*P	**P**	**20 34 40.5**	**-1.9**
CIT			*e*		20 34 50.6	
CIT			pmax	pmax		
	comp=Z,178nm,1.1s					
SSLB	**Suanglung**	**24.78 237**	*e*P	**P**	**20 34 46.9**	**-2.5**
	comp=Z,25nm,0.8s					
YULB	**Yu-li**	**24.84 236**	*e*P	**P**	**20 34 46.4**	**-3.6**
	comp=Z,34nm,1.2s					
TPUB	**Ta-pu**	**25.33 237**	*e*P	**P**	**20 34 52.3**	**-2.1**
	comp=Z,17nm,0.8s					
WHN	**Wuhan**	**25.44 258**	⇓P	**P**	**20 34 55.3**	**0.0**
WHN			S	S	20 39 09.0	-12
WHN			pmax	pmax		
	comp=Z,210nm,0.8s					
WHN			LR	LR		
	comp=N,2μm,13.4s					
WHN			LR	LR		
	comp=E,1μm,15.6s					
WHN			LR	LR		
	comp=Z,2μm,17.4s					
BOD	**Bodaibo**	**26.25 323**	⇓*i*P	**P**	**20 35 02.2**	**-0.2**
BOD			pmax	pmax		
	comp=Z,57nm,1.1s					
ULN	**Ulaanbaatar**	**27.34 299**	*ce*P	**P**	**20 35 12.8**	**+0.3**
ULN			pmax	pmax		
	comp=Z,47nm,1.2s					
ULN	**Ulaanbaatar**	**27.34 299**	*e*P	**P**	**20 35 12.8**	**+0.3**
	comp=Z,31nm,1.0s					
SONM	**Songino Array**	**27.78 299**	P	**P**	**20 35 16.9**	**+0.5**
	comp=Z,17nm,0.8s,baz=91,slow=8.3,SNR=100					
SONM			LR	LR	20 46 56.9	
	comp=Z,962nm,19.3s,baz=91,slow=38					
XAN	**Xi'an**	**28.11 269**	P	**P**	**20 35 18.0**	**-1.5**
XAN			pP	sP	20 35 28.5	-0.6
XAN			S	S	20 40 21.0	+18
XAN			pmax	pmax		
	comp=Z,26nm,0.7s					
XAN			pmax	pmax		
	comp=Z,68nm,7.2s					
XAN			LR	LR		
	comp=E,890nm,15.2s					
XAN			LR	LR		
	comp=Z,790nm,15.2s					
ENH	**Enshi**	**29.26 262**	*e*P	**P**	**20 35 28.9**	**-0.8**
	comp=Z,40nm,0.7s					
IRK	**Irkutsk**	**29.63 308**	*e*P	**P**	**20 35 32.0**	**-0.7**
IRK			pmax	pmax		
	comp=Z,36nm,1.4s					
TLY	**Talaya**	**29.93 307**	P	**P**	**20 35 35.7**	**+0.3**
	comp=Z,3.1nm,0.7s,baz=128,slow=7.6,SNR=7.5					
TLY	**Talaya**	**29.93 307**	*e*P	**P**	**20 35 36.1**	**+0.7**
TLY			pmax	pmax		
	comp=Z,15nm,1.4s					
TLY			MLR	MLR		
	comp=Z,459nm,16.0s					
ZAK	**Zakamensk**	**30.01 304**	*e*P	**P**	**20 35 36.0**	**-0.2**
ZAK			pmax	pmax		
	comp=Z,14nm,1.3s					
BILL	**Bilibino**	**31.01 16**	*i*P	**P**	**20 35 43.5**	**-1.2**
BILL			*i*		20 36 51.8	
BILL			pmax	pmax		
	comp=Z,9.0nm,1.0s					
BILL			MLR	MLR		
	comp=Z,236nm,16.0s					
BILL	**Bilibino**	**31.01 16**	*e*P	**P**	**20 35 45.4**	**+0.7**
	comp=Z,7.9nm,0.9s					
LZH	**Lanzhou**	**31.32 276**	*e*P	**P**	**20 35 48.5**	**+0.5**
LZH			pP	sP	20 36 02.8	+5.2
LZH			sP	pP	20 36 08.5	+14
LZH			S	S	20 40 43.0	-11
LZH			sS	sS	20 40 59.0	-6.1
LZH			pmax	pmax		
	comp=Z,26nm,1.0s					
LZH			pmax	pmax		
	comp=Z,170nm,7.4s					
LZH			LR	LR		
	comp=N,640nm,14.7s					
LZH			LR	LR		
	comp=E,1μm,13.4s					
LZH			LR	LR		
	comp=Z,1μm,14.6s					
MOY	**Mondy**	**31.57 307**	*e*P	**P**	**20 35 50.3**	**+0.4**
MOY			pmax	pmax		
	comp=Z,21nm,1.4s					
TIXI	**Tiksi**	**32.87 352**	P	**P**	**20 36 00.8**	**-0.1**
	comp=Z,1.9nm,0.7s,baz=137,slow=7.5,SNR=9.3					
TIXI	**Tiksi**	**32.87 352**	*ce*P	**P**	**20 36 00.4**	**-0.5**
TIXI			pmax	pmax		
	comp=Z,3.0nm,0.8s					
GYA	**Guiyang**	**33.33 258**	⇑*i*P	**P**	**20 36 04.5**	**-1.1**
GYA			pmax	pmax		
	comp=Z,40nm,0.8s					
GTA	**Gaotai**	**33.43 284**	⇑P	**P**	**20 36 06.5**	**+0.1**
GTA			pP	sP	20 36 17.0	+1.0
GTA			sP	pP	20 36 21.3	+8.1
GTA			PcP	**PcP**	**20 38 48.8**	**+1.4**
GTA			S	**S**	**20 41 25.8**	**-0.7**
GTA			sS	sS	20 41 42.0	+4.2
GTA			SS	**SnSn**	**20 43 30.8**	**+2.2**
GTA			pmax	pmax		
	comp=Z,23nm,1.2s					
GTA			pmax	pmax		
	comp=Z,130nm,5.5s					
GTA			LR	LR		
	comp=N,330nm,16.6s					
GTA			LR	LR		
	comp=E,1μm,16.2s					
GTA			LR	LR		
	comp=Z,1μm,16.6s					
QIZ	**Qiongzhong**	**35.53 244**	P	**P**	**20 36 24.3**	**-0.3**
QIZ			S	**S**	**20 42 05.3**	**+6.3**
QIZ			LR	LR		
	comp=N,460nm,16.3s					
QIZ			LR	LR		
	comp=E,320nm,16.3s					
QIZ			LR	LR		
	comp=Z,460nm,14.0s					
KRAR	**Krasnoyarsk**	**36.74 313**	*e*P	**P**	**20 36 35.3**	**+0.7**
KRAR			pmax	pmax		
	comp=Z,21nm,0.3s					
KMI	**Kunming**	**37.02 259**	P	**P**	**20 36 36.0**	**-1.6**
KMI			pP	pP	20 36 45.5	+1.1
KMI			sP	sP	20 36 49.5	+2.3
KMI			PP	**PnPn**	**20 38 04.5**	**+2.2**
KMI			S	**S**	**20 42 25.8**	**+3.7**
KMI			sS	ScP	20 42 40.0	-3.7
KMI			SS	**SS**	**20 45 01.8**	**-2.6**
KMI			pmax	pmax		
	comp=Z,23nm,1.0s					
KMI			pmax	pmax		
	comp=Z,160nm,4.9s					
KMI			LR	LR		
	comp=N,370nm,14.6s					
KMI			LR	LR		
	comp=E,430nm,18.1s					
KMI			LR	LR		
	comp=Z,510nm,15.1s					
NONG	**Nongkai**	**40.94 250**	P	**P**	**20 37 11.2**	**+1.1**
	comp=Z,15nm,0.9s					
ZALV	**Zalesovo Beam**	**41.38 310**	P	**P**	**20 37 13.8**	**+0.4**
	comp=Z,15nm,0.7s,baz=87,slow=7.6,SNR=67					
ZALV			PcP	**PcP**	**20 39 12.1**	**+0.9**
	comp=Z,6.6nm,0.8s,baz=79,slow=3.0,SNR=5.4					
NRIK	**Noril'sk**	**41.57 334**	P	**P**	**20 37 14.7**	**0.0**
	comp=Z,2.3nm,0.5s,baz=112,slow=9.6,SNR=6.3					
CRAI	**Chiangrai**	**41.62 255**	P	**P**	**20 37 16.2**	**+0.4**
	comp=Z,458nm,0.8s					
NVS	**Novosibirsk**	**42.24 312**	⇓*i*P	**P**	**20 37 21.0**	**+0.7**
NVS			pmax	pmax		
	comp=Z,17nm,1.0s					
NVS			pmax	pmax		
	comp=N,4.0nm,0.7s					
NVS			pmax	pmax		
	comp=E,7.0nm,0.6s					
KHON	**Khomkaen**	**42.29 248**	P	**P**	**20 37 21.7**	**+0.5**
	comp=E,11nm,0.9s,comp=E,472nm					
UTTA	**Uttaradit**	**43.03 252**	P	**P**	**20 37 27.4**	**+0.2**
	comp=E,5.1nm,1.0s,comp=E,41nm					
LAMP	**Lampang**	**43.22 254**	P	**P**	**20 37 29.7**	**+0.9**
	comp=E,6.0nm,0.8s					
CHTO	**Chiang Mai**	**43.55 255**	P	**P**	**20 37 31.5**	**0.0**
	comp=E,52nm,0.9s					
CHTO	**Chiang Mai**	**43.55 255**	*e*P	**P**	**20 37 31.1**	**-0.3**
CHTO			pmax	pmax		
	comp=Z,7.0nm,0.7s					
CHTO	**Chiang Mai**	**43.55 255**	*e*P	**P**	**20 37 31.1**	**-0.3**
	comp=Z,7.4nm,0.7s					
LSA	**Lhasa**	**43.64 273**	P	**P**	**20 37 33.3**	**+0.7**
LSA			pmax	pmax		
	comp=Z,8.0nm,1.0s					
LSA	**Lhasa**	**43.64 273**	*e*P	**P**	**20 37 33.5**	**+0.9**
LSA			pmax	pmax		
	comp=Z,16nm,0.8s					
LSA	**Lhasa**	**43.64 273**	*e*P	**P**	**20 37 33.5**	**+0.9**
	comp=Z,16nm,0.8s					
CMAR	**Chiang Mai Arr**	**43.77 254**	P	**P**	**20 37 33.4**	**+0.1**
	comp=Z,3.1nm,0.7s,baz=45,slow=7.3,SNR=35					
MKAR	**Makanchi Array**	**44.14 300**	P	**P**	**20 37 36.0**	**+0.1**
	comp=Z,20nm,0.9s,baz=83,slow=9.1,SNR=115					
MKAR			LR	LR	20 56 54.5	
	comp=Z,446nm,19.1s,baz=76,slow=37					
SRAK	**Srakaew**	**44.41 247**	P	**P**	**20 37 35.8**	**-2.5**
	comp=Z,42nm,0.9s					
KTH	**Kantishna Hill**	**44.63 35**	*e*P	**P**	**20 37 41.5**	**+1.9**
	comp=Z,8.4nm,0.9s					
COLD	**Coldfoot**	**45.03 30**	*e*P	**P**	**20 37 44.5**	**+1.8**
	comp=Z,2.8nm,0.9s					
KURK	**Kurchatov**	**45.62 306**	P	**P**	**20 37 48.1**	**+0.5**
KURK	**Kurchatov**	**45.62 306**	P	**P**	**20 37 48.1**	**+0.5**
KURBB	**Kurchatov Arra**	**45.70 306**	P	**P**	**20 37 48.1**	**-0.1**
	comp=Z,30nm,0.8s,baz=81,slow=8.2,SNR=215					
COLA	**College**	**45.96 34**	*e*P	**P**	**20 37 52.4**	**+2.4**
COLA			pmax	pmax		
	comp=Z,11nm,0.9s					
COLA	**College**	**45.96 34**	*e*P	**P**	**20 37 52.4**	**+2.4**
	comp=Z,12nm,0.9s					
ILAR	**Eielson Array**	**46.37 34**	P	**P**	**20 37 54.9**	**+1.5**
	comp=Z,4.5nm,0.7s,baz=265,slow=6.6,SNR=54					
PHET	**Kaeng Krachan**	**46.87 248**	P	**P**	**20 37 59.3**	**+1.5**
	comp=Z,10nm,0.9s,comp=Z,110nm					
DOT	**Dot Lake**	**47.69 35**	*e*P	**P**	**20 38 04.3**	**+0.6**
	comp=Z,7.4nm,0.7s					
GUN	**Gumba**	**48.55 274**	*e*P	**P**	**20 38 11.4**	**+0.2**
	comp=Z,109nm,0.7s					
EGAK	**Eagle**	**48.82 33**	*e*P	**P**	**20 38 14.4**	**+2.1**
	comp=Z,8.1nm,0.8s					
KKN	**Kakani**	**49.07 275**	*e*P	**P**	**20 38 15.2**	**+0.2**
	comp=Z,85nm,0.7s					
DMN	**Daman**	**49.29 275**	*e*P	**P**	**20 38 17.0**	**+0.2**
	comp=Z,66nm,1.1s					
GKN	**Gorkha**	**49.46 275**	*e*P	**P**	**20 38 17.9**	**0.0**
	comp=Z,32nm,0.7s					
TKM2	**Tokmak 2**	**49.84 297**	*e*P	**P**	**20 38 21.2**	**+0.5**
TKM2			pmax	pmax		
	comp=Z,41nm,0.8s					
TKM2	**Tokmak 2**	**49.84 297**	*e*P	**P**	**20 38 21.2**	**+0.5**
	comp=Z,41nm,0.8s					
BVAR	**Borovoye Array**	**50.02 311**	P	**P**	**20 38 22.2**	**+0.5**
	comp=Z,12nm,0.7s,baz=78,slow=8.2,SNR=52					
BRVK	**Borovoye**	**50.08 311**	*ce*P	**P**	**20 38 22.9**	**+0.8**
BRVK			pmax	pmax		
	comp=Z,26nm,1.0s					
BRVK	**Borovoye**	**50.08 311**	*e*P	**P**	**20 38 22.6**	**+0.6**
	comp=Z,23nm,0.8s					
KOLN	**Koldanda**	**50.37 276**	*e*P	**P**	**20 38 25.0**	**+0.1**
	comp=Z,39nm,0.8s					
KRAB	**Krabi**	**50.43 244**	P	**P**	**20 38 26.4**	**+1.2**
	comp=Z,26nm,0.8s,comp=Z,574nm					
FRU	**Bishkek**	**50.54 297**	*i*P	**P**	**20 38 26.0**	**+0.2**
FRU			*e*		20 38 33.0	
PYUN	**Piuthan**	**50.68 276**	*e*P	**P**	**20 38 27.4**	**+0.2**
	comp=Z,162nm,1.1s					
AAK	**Ala-Archa**	**50.70 297**	P	**P**	**20 38 27.4**	**+0.2**
	comp=Z,7.3nm,0.8s,baz=112,slow=5.4,SNR=20					
AAK	**Ala-Archa**	**50.70 297**	*ce*P	**P**	**20 38 27.2**	**0.0**
AAK			pmax	pmax		
	comp=Z,23nm,0.9s					
KSH	**Kashi**	**50.85 293**	P	**P**	**20 38 32.8**	**+4.5**
KSH			*e*pP	sP	20 38 51.8	+14
KSH			*e*sP	pP	20 39 00.3	+25
KSH			*e*PcP	**PcP**	**20 39 48.0**	**+3.2**
KSH			S	**S**	**20 45 41.3**	**-1.9**
KSH			sS	sS	20 46 14.3	+20
KSH	**Kashi**	**50.85 293**	SS	**SS**	**20 49 15.0**	**-2.6**
KSH			pmax	pmax		
	comp=Z,16nm,0.9s					
KSH			pmax	pmax		
	comp=Z,110nm,4.7s					
KSH			LR	LR		
	comp=N,410nm,14.7s					
KSH			LR	LR		
	comp=E,350nm,14.5s					
KSH			LR	LR		
	comp=Z,650nm,18.3s					
EKS2	**Erkin-Say**	**51.18 297**	*e*P	**P**	**20 38 30.7**	**0.0**
EKS2			pmax	pmax		
	comp=Z,13nm,0.7s					
EKS2	**Erkin-Say**	**51.18 297**	*e*P	**P**	**20 38 30.7**	**0.0**
	comp=Z,13nm,0.7s					
INK	**Inuvik**	**51.27 28**	P	**P**	**20 38 32.1**	**+1.3**
	comp=Z,3.8nm,0.8s,baz=282,slow=4.2,SNR=8.3					
KKAR	**Karatay Array**	**53.23 299**	*e*P	**P**	**20 38 45.3**	**-0.6**
KKAR			pmax	pmax		
	comp=Z,9.0nm,0.8s					
KKAR	**Karatay Array**	**53.23 299**	*e*P	**P**	**20 38 45.2**	**-0.6**
	comp=Z,9.4nm,0.8s					
SVE	**Sverdlovsk**	**54.25 318**	⇓*e*P	**P**	**20 38 54.2**	**+1.1**
SVE			pmax	pmax		
	comp=Z,33nm,1.1s					
SVE			MLR	MLR		
	comp=Z,1μm,15.0s					
SOKR	**Solikamsk**	**55.23 322**	*e*P	P	20 39 09.2	+9.2
SOKR			pmax	pmax		
	comp=Z,16nm,0.9s					
ARU	**Arti**	**55.47 318**	*c i*P	**P**	**20 39 02.2**	**+0.4**
ARU					20 40 02.1	
ARU					20 41 03.7	
ARU			S	**S**	**20 46 46.8**	**+1.5**
ARU			SS	**SS**	**20 50 22.8**	**-6.7**
ARU			pmax	pmax		
	comp=Z,40nm,1.0s					
ARU			MLR	MLR		
	comp=Z,915nm,15.0s					
ARU	**Arti**	**55.47 318**	*e*P	**P**	**20 39 01.9**	**+0.1**
	comp=Z,35nm,1.0s					
GSI	**Gunungsitoli**	**56.56 239**	*e*P	**P**	**20 39 09.7**	**-0.5**
	comp=Z,9.6nm,0.8s					
WRA	**Warramunga Arr**	**59.94 190**	P	**P**	**20 39 32.4**	**-1.2**
	comp=Z,6.0nm,0.8s,baz=7,2,slow=6.7,SNR=27					
WRA	**Warramunga Arr**	**59.94 190**	*i*P	**P**	**20 39 32.9**	**-0.8**
WRA			pmax	pmax		
	comp=Z,6.0nm,0.8s					
YKA	**Yellowknife Ar**	**60.69 31**	P	**P**	**20 39 39.4**	**+1.1**
	comp=Z,1.4nm,0.8s,baz=300,slow=6.7,SNR=19					
TMCR	**Tamitsa**	**61.20 331**	*e*P	**P**	**20 39 42.4**	**+0.7**
TMCR			pmax	pmax		
	comp=Z,24nm,0.9s					
ARCES	**ARCESS Array B**	**62.08 339**	P	**P**	**20 39 48.1**	**+0.5**
	comp=Z,3.9nm,0.8s,baz=44,slow=8.8,SNR=5.8					
KLMR	**Klimovskoe**	**62.38 328**	*e*P	**P**	**20 39 48.7**	**-1.0**
KLMR			*e*		20 42 06.1	
KLMR			pmax	pmax		
	comp=Z,11nm,0.9s					
DAG	**Danmarks Havn**	**63.26 355**	⇑*i*P	**P**	**20 39 55.9**	**+0.6**
	comp=Z,11nm,0.8s					
DAG	**Danmarks Havn**	**63.26 355**	⇑*i*P	**P**	**20 39 55.9**	**+0.6**
DAG			pmax	pmax		
	comp=Z,8.0nm,0.8s					
ASAR	**Alice Springs**	**63.67 190**	P	**P**	**20 39 58.0**	**-0.7**
	comp=Z,2.2nm,0.8s,baz=9.5,slow=6.5,SNR=20					
ASAR			LR	LR	21 07 23.2	
	comp=Z,26nm,20.9s,baz=19,slow=36					
GEYT	**Alibeck**	**63.98 299**	P	**P**	**20 40 00.9**	**+0.1**
	comp=Z,7.9nm,0.8s,baz=38,slow=2.6,SNR=21					
DZM	**Mont Dzumac**	**65.08 156**	*e*LR	LR	20 59 25.8	
	comp=Z,196nm,21.9s					
VRH	**Novokhopyorsk**	**66.70 318**	*e*P	**P**	**20 40 17.1**	**-1.0**
VRH			pmax	pmax		
	comp=Z,20nm,0.9s					
OBN	**Obninsk**	**66.94 323**	*i*P	**P**	**20 40 19.6**	**+0.1**
OBN			*i*		20 40 47.4	
OBN			pmax	pmax		
	comp=Z,14nm,1.1s					
OBN			MLR	MLR		
	comp=Z,462nm,15.0s					
FINES	**FINESS Array B**	**67.22 332**	P	**P**	**20 40 21.7**	**+0.5**
	comp=Z,14nm,0.7s,baz=54,slow=7.5,SNR=33					
FINES			LR	LR	21 12 55.4	
	comp=Z,494nm,18.1s,baz=32,slow=39					
LPSR	**Galich'ya Gora**	**67.30 320**	*e*P	**P**	**20 40 21.2**	**-0.7**
LPSR			pmax	pmax		
	comp=Z,10.0nm,0.7s					
VSR	**Storozhevoye**	**68.00 319**	*e*P	**P**	**20 40 26.1**	**-0.3**
VSR			pmax	pmax		
	comp=Z,20nm,1.1s					
SUMG	**Summit**	**68.02 1**	⇑*i*P	**P**	**20 40 28.1**	**+1.5**
	comp=Z,15nm,0.8s					
SUMG	**Summit**	**68.02 1**	⇑*i*P	**P**	**20 40 28.1**	**+1.5**
SUMG			pmax	pmax		
	comp=Z,15nm,0.8s					
SUMG	**Summit**	**68.02 1**	*e*P	**P**	**20 40 27.8**	**+1.2**
	comp=Z,12nm,0.8s					
VSU	**Vasula**	**68.98 330**	*e*P	**P**	**20 40 32.7**	**+0.4**
VSU			pmax	pmax		
	comp=Z,52nm,1.7s					
GOF	**Gofitskoye**	**69.53 312**	⇑*i*P	**P**	**20 40 36.8**	**+0.8**
GOF			pmax	pmax		
	comp=Z,47nm,0.8s					
GUDG	**Gudauri**	**70.21 309**	P	**P**	**20 40 42.7**	**+2.1**
ZEI	**Tsey**	**70.37 310**	*e*P	**P**	**20 40 40.9**	**-0.6**
ZEI			pmax	pmax		
	comp=Z,29nm,0.9s					
KIV	**Kislovodsk**	**70.39 311**	*e*P	**P**	**20 40 42.2**	**+0.8**
KIV			pmax	pmax		
	comp=Z,58nm,0.9s					
KIV			MLR	MLR		
	comp=Z,350nm,17.0s					
KIV	**Kislovodsk**	**70.39 311**	*e*P	**P**	**20 40 42.3**	**+0.9**
	comp=Z,54nm,0.9s					
KBZ	**Khabaz**	**70.40 311**	P	**P**	**20 40 42.5**	**+1.2**
	comp=Z,20nm,0.9s,baz=74,slow=3.9,SNR=47					
KBZ			LR	LR	21 13 49.3	
	comp=Z,120nm,19.9s,baz=34,slow=38					
TBLG	**Delisi**	**70.49 308**	P	**P**	**20 40 42.6**	**+0.6**
TBLG	**Delisi**	**70.49 308**	*e*P	**P**	**20 40 42.6**	**+0.6**
FFC	**Flin Flon**	**70.58 34**	*e*P	**P**	**20 40 42.9**	**+0.6**
FFC			pmax	pmax		
	comp=Z,6.0nm,0.8s					
FFC	**Flin Flon**	**70.58 34**	*e*P	**P**	**20 40 42.9**	**+0.6**
	comp=Z,5.5nm,0.8s					
ONI	**Oni**	**70.75 310**	P	**P**	**20 40 44.4**	**+0.8**
ONI	**Oni**	**70.75 310**	*e*P	**P**	**20 40 44.4**	**+0.8**
NEY	**Neytrino**	**70.79 311**	*e*P	**P**	**20 40 45.0**	**+1.0**
NEY			pmax	pmax		
	comp=Z,2.0nm,0.8s					
STKA	**Stephens Creek**	**71.24 182**	P	**P**	**20 40 46.0**	**-0.4**
	comp=Z,1.8nm,0.8s,baz=111,slow=10,SNR=3.9					
STKA			LR	LR	21 16 13.8	
	comp=Z,28nm,18.6s,baz=27,slow=40					
STKA	**Stephens Creek**	**71.24 182**	P	**P**	**20 40 46.0**	**-0.4**
DLMT	**Dillon**	**71.31 46**	*e*P	**P**	**20 40 49.4**	**+2.3**
	comp=Z,6.6nm,1.1s					
AKH	**Akhalkalaki**	**71.43 309**	⇑*i*P	**P**	**20 40 49.5**	**+1.6**
CHVG	**Ch'k'valeri**	**71.48 310**	⇑*i*P	**P**	**20 40 49.6**	**+1.6**
CHVG	**Ch'k'valeri**	**71.48 310**	P	**P**	**20 40 48.9**	**+0.9**
BOZ	**Bozeman (W)**	**71.67 46**	*e*P	**P**	**20 40 50.7**	**+1.4**
BOZ			pmax	pmax		
	comp=Z,9.0nm,1.0s					
BOZ	**Bozeman (W)**	**71.67 46**	*e*P	**P**	**20 40 50.7**	**+1.4**
	comp=Z,8.9nm,1.0s					
NVAR	**Mina Array Bea**	**72.10 55**	P	**P**	**20 40 54.6**	**+2.5**
	comp=Z,2.4nm,0.7s,baz=279,slow=8.1,SNR=3.5					
SOC	**Sochi**	**72.33 312**	*e*P	**P**	**20 40 52.2**	**-0.8**
SOC			*e*S	**S**	**20 50 12.3**	**-2.6**
SOC			*e*SS	**SS**	**20 54 49.7**	**-2.6**
SOC			MLR	MLR		
	comp=Z,304nm,17.0s					
NB2	**NORSAR Subarra**	**72.35 338**	P	**P**	**20 40 53.3**	**+0.4**
	comp=Z,17nm,0.8s,baz=37,slow=6.2					
NB2	**NORSAR Subarra**	**72.35 338**	P	**P**	**20 40 53.3**	**+0.4**
	baz=37,slow=6.2					
NOA	**NORSAR Array B**	**72.35 338**	P	**P**	**20 40 53.8**	**+0.9**
	comp=Z,16nm,0.8s,baz=38,slow=6.0,SNR=44					
ANN	**Anapa**	**72.85 314**	*e*P	**P**	**20 40 54.3**	**-1.8**
ANN			*e*S	**S**	**20 50 17.5**	**-3.3**
ANN			pmax	pmax		
	comp=Z,27nm,1.3s					
H17A	**Grant Village**	**73.04 46**	*e*P	**P**	**20 41 00.6**	**+3.0**
	comp=Z,11nm,1.1s					
IMW	**Indian Meadow**	**73.15 47**	*e*P	**P**	**20 41 00.6**	**+2.3**
	comp=Z,6.9nm,0.5s					
AKASG	**Malin Array Be**	**73.18 323**	P	**P**	**20 40 58.1**	**+0.1**
	comp=Z,6.9nm,0.7s,baz=45,slow=5.9,SNR=30					
AKASG	**Malin Array Be**	**73.18 323**	*i*P	**P**	**20 40 58.0**	**+0.1**
AKASG			pmax	pmax		
	comp=Z,6.0nm,0.6s					
KIEV	**Kiev**	**73.19 323**	*e*P	**P**	**20 40 57.0**	**-1.0**
KIEV			pmax	pmax		
	comp=Z,10.0nm,0.9s					
KIEV	**Kiev**	**73.19 323**	*e*P	**P**	**20 40 57.8**	**-0.2**
	comp=Z,10nm,0.8s					
RLMT	**Red Lodge**	**73.30 45**	*e*P	**P**	**20 40 57.6**	**-1.5**
	comp=Z,14nm,0.7s					
MOOW	**Moose Ponds**	**73.35 47**	*e*P	**P**	**20 41 01.4**	**+2.0**
	comp=Z,2.2nm,0.6s					
HWUT	**Hardware Ranch**	**74.23 49**	*e*P	**P**	**20 41 05.6**	**+1.0**
	comp=Z,11nm,1.5s					
DUG	**Dugway, Tooele**	**74.39 51**	*e*P	**P**	**20 41 07.4**	**+2.0**
DUG			pmax	pmax		
	comp=Z,8.0nm,1.1s					
DUG	**Dugway, Tooele**	**74.39 51**	*e*P	**P**	**20 41 07.4**	**+2.0**
	comp=Z,7.9nm,1.1s					
SIM	**Simferopol'**	**74.56 316**	*e*P	**P**	**20 41 07.3**	**+1.1**
SIM			pmax	pmax		
	comp=Z,12nm,0.9s					
SIM			MLR	MLR		
	comp=N,90nm,16.1s					
SORM	**Soroca**	**75.36 321**	⇓*i*P	**P**	**20 41 10.8**	**+0.2**
BEL	**Belsk**	**76.10 327**	*e*P	**P**	**20 41 16.2**	**+1.4**
BEL	**Belsk**	**76.10 327**	*e*P	**P**	**20 41 16.2**	**+1.4**
LVV	**L'vov**	**76.18 324**	*e*P	**P**	**20 41 15.3**	**0.0**
LVV			MLR	MLR		
	comp=N,260nm,15.0s					
LVV			MLR	MLR		
	comp=E,380nm,15.0s					
LVV			MLR	MLR		
	comp=Z,390nm,15.0s					
ULM	**Lac du Bonnet**	**76.38 35**	P	**P**	**20 41 16.4**	**-0.1**
	comp=Z,2.9nm,0.6s,baz=299,slow=10,SNR=2.7					
KWP	**Kalwaria Pacla**	**76.90 325**	*e*P	**P**	**20 41 20.7**	**+1.2**
KWP	**Kalwaria Pacla**	**76.90 325**	⇑*i*P	**P**	**20 41 20.9**	**+1.4**
KWP	**Kalwaria Pacla**	**76.90 325**	*e*P	**P**	**20 41 20.7**	**+1.2**
BURAR	**Bucovina Array**	**77.22 322**	⇑*i*P	**P**	**20 41 22.3**	**+0.9**
TESR	**Tescani**	**77.32 321**	⇑*i*P	**P**	**20 41 22.0**	**+0.1**
CFR	**Carcaliu**	**77.52 319**	⇑*i*P	**P**	**20 41 23.4**	**+0.4**
KOLS	**Kolonicke sedl**	**77.61 325**	*e*P	**P**	**20 41 23.8**	**+0.4**
KOLS			pmax	pmax		
	comp=Z,8.0nm,1.1s					
KOLS	**Kolonicke sedl**	**77.61 325**	*e*P	**P**	**20 41 23.8**	**+0.4**
STHS	**Stebnicka Huta**	**77.70 326**	*e*P	**P**	**20 41 25.9**	**+1.9**
STHS			pmax	pmax		
	comp=Z,7.0nm,0.9s					
STHS	**Stebnicka Huta**	**77.70 326**	*e*P	**P**	**20 41 25.9**	**+1.9**
OJC	**Ojcow**	**77.72 327**	*e*P	**P**	**20 41 25.0**	**+1.0**
OJC	**Ojcow**	**77.72 327**	*e*P	**P**	**20 41 25.0**	**+1.0**
VRI	**Vrincioaia**	**77.74 320**	⇑*i*P	**P**	**20 41 26.4**	**+2.2**
PLOR	**Plostina**	**77.79 320**	⇑*i*P	**P**	**20 41 26.0**	**+1.5**

LANS	Liptovska Anna	78.67	327	eP	P	20 41 30.2 +0.8
OKC	Ostrava-Krasne	78.70	327	eP	P	20 41 30.6 +1.1
OKC	Ostrava-Krasne	78.70	327	eP	P	20 41 30.6 +1.1
KECS	Kecovo	78.73	325	eP	P	20 41 30.6 +0.9
KECS				pmax	pmax	
	comp=Z,3.0nm,1.0s					
KECS	Kecovo	78.73	325	eP	P	20 41 30.6 +0.9
VOIR		78.87	321	⇑iP	P	20 41 32.2 +1.6
DRGR		78.99	323	⇑iP	P	20 41 32.0 +0.8
MORC	Moravsky Berou	79.00	328	⇑iP	P	20 41 32.3 +1.1
DPC	Dobruska-Polom	79.05	329	eP	P	20 41 32.8 +1.3
DPC				epP	sP	20 41 41.3 -0.2
DPC	Dobruska-Polom	79.05	329	eP	P	20 41 32.8 +1.3
DPC				e		20 41 41.3
KRLC	Kraliky	79.08	328	eP	P	20 41 32.7 +1.1
KRLC				ex	x	20 41 44.1
KRLC	Kraliky	79.08	328	eP	P	20 41 32.7 +1.1
KRLC				e		20 41 44.1
ARR	Arges	79.12	321	⇓iP	P	20 41 33.5 +1.6
PSZ	Piszkesteto	79.42	325	⇑iP	P	20 41 34.8 +1.3
VYHS	Vyhne	79.44	326	eP	P	20 41 34.8 +1.2
VYHS				e		20 41 47.5
VYHS	Vyhne	79.44	326	eP	P	20 41 34.8 +1.2
VYHS				e		20 41 47.5
BRG	Berggiesshubel	79.57	330	eP	P	20 41 35.1 +0.9
	comp=Z,7.2nm,0.9s					
BRG	Berggiesshubel	79.57	330	eP	P	20 41 35.1 +0.9
BRG				pmax	pmax	
	comp=Z,7.0nm,0.9s					
CLL	Collm	79.58	331	⇑iP	P	20 41 34.4 +0.2
	comp=Z,15nm,0.9s					
CLL				e		20 41 44.0
CLL				i		20 41 47.2
CLL				i		20 41 55.7
CLL				ePP	PP	20 44 30.0 -4.2
CLL				Lm	MLR	21 19 00.0
	comp=Z,200nm,19.8s					
CLL	Collm	79.58	331	⇑iP	P	20 41 34.4 +0.2
CLL				e		20 41 44.0
CLL				i		20 41 47.2
CLL				pmax	pmax	
	comp=Z,15nm,0.9s					
CLL				MLR	MLR	
	comp=Z,200nm,19.8s					
PVCC	Panska Ves	79.61	330	eP	P	20 41 35.5 +1.1
PVCC	Panska Ves	79.61	330	eP	P	20 41 35.5 +1.1
VRAC	Vranov	79.75	328	⇑iP	P	20 41 36.8 +1.5
GOPC	GO Pecny, Ondr	80.01	329	eP	P	20 41 37.7 +1.1
GOPC				epP	pP	20 41 40.8 -3.2
GOPC	GO Pecny, Ondr	80.01	329	eP	P	20 41 37.7 +1.1
GOPC				e		20 41 40.8
PRU	Pruhonice	80.05	329	eP	P	20 41 37.9 +1.1
PRU				ex	x	20 41 50.8
PRU	Pruhonice	80.05	329	eP	P	20 41 37.9 +1.1
PRU				e		20 41 50.8
TREC	Trest	80.22	328	eP	P	20 41 38.7 +0.9
TREC				epP	sP	20 41 47.9 +0.1
TREC				ex	x	20 41 51.1
TREC	Trest	80.22	328	eP	P	20 41 38.7 +0.9
TREC				e		20 41 47.9
TREC				e		20 41 51.1
BZS	Buzias	80.37	323	⇑iP	P	20 41 39.1 +0.5
NKC	Novy Kostel	80.66	331	eP	P	20 41 41.4 +1.3
NKC	Novy Kostel	80.66	331	eP	P	20 41 41.4 +1.3
MDVR	Moldovita	80.95	322	⇑iP	P	20 41 42.1 +0.3
KHC	Kasperske Hory	81.11	329	eP	P	20 41 43.5 +0.9
KHC				ex	x	20 41 53.7
KHC	Kasperske Hory	81.11	329	eP	P	20 41 43.5 +0.9
KHC				e		20 41 53.7
KHC	Kasperske Hory	81.11	329	eP	P	20 41 43.2 +0.6
CONA	Conrad Observa	81.14	327	i pP	P	20 41 44.2 +1.4
	comp=Z,9.7nm,1.0s					
GERES	GERESS Array B	81.29	329	P	P	20 41 44.1 +0.5
	comp=Z,3.1nm,0.8s,baz=34,slow=5.0,SNR=23					
GERES				LR	LR	21 22 27.3
	comp=Z,239nm,18.3s,baz=11,slow=39					
ARSA	Arzberg	81.81	327	i pP	P	20 41 47.2 +0.9
	comp=Z,5.9nm,0.9s					
MOA	Molln	81.86	328	i pP	P	20 41 47.4 +0.8
	comp=Z,6.4nm,1.4s					
SCHQ	Schefferville	82.32	17	LR	LR	21 22 18.8
	comp=Z,38nm,19.6s,baz=359,slow=38					
GROS	Grobnik	82.45	327	i P	P	20 41 49.9 +0.2
PERS	Pernice	82.47	327	i P	P	20 41 50.4 +0.6
SOKA	Soboth	82.47	327	i pP	P	20 41 50.6 +0.8
	comp=Z,21nm,1.0s,SNR=7.7					
OBKA	Obir	82.81	327	i pP	P	20 41 52.2 +0.5
	comp=Z,8.8nm,0.9s					
KBA	Koelnbreinsper	82.85	328	i pP	P	20 41 53.5 +1.5
	comp=Z,15nm,1.1s					
CRES	Cresnjev	82.97	326	i P	P	20 41 52.5 +0.1
SKO	Skopje	83.19	320	i P	P	20 41 55.2 +1.6
WATA	Walderalm	83.35	329	i pP	P	20 41 55.7 +1.3
	comp=Z,6.0nm,1.0s					
WTTA	Wattenberg	83.38	329	i pP	P	20 41 54.7 0.0
ABTA	Abfaltersbach	83.45	328	i P	P	20 41 54.9 -0.1
	comp=Z,7.3nm,1.1s					
MOTA	Moosalm	83.53	330	i pP	P	20 41 56.1 +0.7
	comp=Z,14nm,0.9s,SNR=9.2					
RETA	Reutte	83.54	330	i pP	P	20 41 56.2 +0.8
	comp=Z,14nm,1.0s					
BFO	Black Forest	83.76	332	i P	P	20 41 57.8 +1.4
PMOR	Pomariorio Rege	83.79	115	eT	T	22 14 23.3
	comp=Z,3.9nm,0.3s					
PDG	Podgorica	83.90	322	⇑iP	P	20 41 57.7 +0.6
FETA	Feichten	83.94	330	i pP	P	20 41 58.3 +0.7
	comp=Z,7.5nm,0.9s					
DAVA	Damuels	84.05	330	i pP	P	20 41 58.7 +0.7
	comp=Z,15nm,0.9s,SNR=6.0					
OHR	Ohrid	84.15	320	i P	P	20 41 59.1 +0.6
PPT2	Papeete2	84.42	118	eLR	LR	21 08 33.7
	comp=Z,196nm,22.5s					
TUE	Stuetta	84.93	330	eP	P	20 42 02.9 +0.3
	comp=Z,8.1nm,0.9s					
TXAR	Lajitas Array	87.22	54	P	P	20 42 14.7 +0.6
	comp=Z,0.4nm,0.6s,baz=292,slow=3.4,SNR=5.4					
KEST	Kesra	93.86	324	LR	LR	21 29 34.9
	comp=Z,110nm,18.7s,baz=340,slow=38					
ESDC	Sonseca Array	95.59	335	P	P	20 42 53.2 +0.4
	comp=Z,0.2nm,0.4s,baz=19,slow=4.4,SNR=4.5					
ESDC				LR	LR	21 31 50.0
	comp=Z,133nm,18.4s,baz=355,slow=39					
VNA2	Neumayer--Watz	145.33	196	PKP	PKPbc	20 49 03.9 +0.1
	baz=119,slow=3.7					
VNA3	Neumayer Olymp	145.56	195	PKP	PKPdf	20 49 03.2 -1.1
VNA1	Neumayer--Stat	145.73	196	PKP	PKPbc	20 49 05.2 +0.2

*DDA **25** 20:41:14.4, 39°.13N×29°.01E, h7km, Md2.8*
*ISK **25** 20:41:14.4, 39°.11N×29°.03E, h5km, MD2.5*
*CSEM **25** 20:41:15.0±0.1, 39°.12N×29°.01E, h5km, MD2.8, Error ellipse: s-maj=2.2km s-min=1.8km az=118.0*

ISC 25 20:41:15.1±1.0, 39°.12N±0°.02×29°.01E±0°.02, h8km±9km, n32, σ0°33/50, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.24	251	P	Pg	20 41 20.2	+0.2
DEMI				S	Sg	20 41 23.8	+0.5
DEMI	Demirci	0.24	251	i P	Pg	20 41 20.2	+0.2
DEMI				i S	Sg	20 41 23.8	+0.5
GDZ	Gediz	0.37	95	P	Pg	20 41 21.9	-0.4
GDZ				S	Sg	20 41 27.4	+0.2
GDZ	Gediz	0.37	95	i P	Pg	20 41 21.9	-0.4
GDZ				i S	Sg	20 41 27.4	+0.2
TVSB	Tavsanli	0.48	47	ePG	Pg	20 41 24.2	-0.2
TVSB				eSG	Sg	20 41 30.7	0.0
TVSB	Tavsanli	0.48	47	ePg	Pg	20 41 24.2	-0.2
TVSB				eSg	Sg	20 41 30.7	0.0
DURS	Dursunbey	0.63	319	P	Pg	20 41 27.5	+0.2
DURS				S	Sg	20 41 34.5	-1.1
DURS	Dursunbey	0.63	319	i P	Pg	20 41 27.5	+0.2
DURS				i S	Sg	20 41 34.5	-1.1
KULA	Kula-Manisa	0.67	204	ePG	Pg	20 41 27.9	0.0
KULA				eSG	Sg	20 41 36.8	+0.1
KULA	Kula-Manisa	0.67	204	ePg	Pg	20 41 27.9	0.0
KULA				eSg	Sg	20 41 36.8	+0.1
MANT	Manisa	0.72	209	P	Pg	20 41 28.8	-0.3
MANT				S	Sg	20 41 38.3	-0.2
MANT	Manisa	0.72	209	i P	Pg	20 41 28.8	-0.3
MANT				i S	Sg	20 41 38.3	-0.2
KHAL	Karahalli	0.84	153	P	Pg	20 41 31.4	+0.1
KHAL				S	Sg	20 41 42.3	+0.1
KHAL	Karahalli	0.84	153	i P	Pg	20 41 31.4	+0.1
KHAL				i S	Sg	20 41 42.3	+0.1
BALY	Balya	1.24	300	P	Pg	20 41 39.2	+0.3
BALY				S	Sn	20 41 55.8	+0.1
BALY	Balya	1.24	300	i P	Pg	20 41 39.2	+0.3
BALY				i S	Sn	20 41 55.8	+0.1
KCTX	Karacabey (Bur	1.25	336	ePN	Pn	20 41 38.4	-0.4
KCTX	Karacabey (Bur	1.25	336	ePn	Pn	20 41 38.4	-0.4
MDNY	Mudanya-Bursa	1.25	356	ePN	Pb	20 41 39.0	+0.1
MDNY	Mudanya-Bursa	1.25	356	ePn	Pb	20 41 39.0	+0.1
CAVI	Cavuskoy	1.25	31	ePN	Pn	20 41 39.0	+0.1
CAVI	Cavuskoy	1.25	31	ePn	Pn	20 41 39.0	+0.1
BORA	Eskisehir	1.35	55	P	Pn	20 41 40.3	+0.1
BORA				S	Sg	20 41 58.5	+0.1
BORA	Eskisehir	1.35	55	i P	Pn	20 41 40.3	+0.1
BORA				i S	Sg	20 41 58.5	+0.1
ADVT	Abdulvahap	1.42	23	ePN	Pg	20 41 42.5	+0.1
ADVT	Abdulvahap	1.42	23	ePn	Pg	20 41 42.5	+0.1
ARMT	Armutlu	1.45	355	ePN	Pb	20 41 42.3	+0.1
ARMT	Armutlu	1.45	355	ePn	Pb	20 41 42.3	+0.1
AYDB	Zeytinkoy-Aydi	1.47	217	ePN	Pb	20 41 42.3	-0.4
AYDB	Zeytinkoy-Aydi	1.47	217	ePn	Pb	20 41 42.3	-0.4
GULT	Gulveren	1.75	41	ePN	Pn	20 41 46.1	+0.4
GULT	Gulveren	1.75	41	ePn	Pn	20 41 46.1	+0.4

MEX 25 20:42:27.4±0.5, 17°.23N×96°.77W, h76km±3km, MD3.8, Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VHO	Vista Hermosa	0.16	168	i P	Pn	20 42 37.4	-1.5
VHO				i S	Sn	20 42 45.3	-1.9
OXBJ	Oaxaca	0.16	166	eP	Pn	20 42 37.3	-1.6
OXBJ				eS	Sn	20 42 45.1	-2.2
TPIG	Tehuac#an	1.31	335	eP	Pn	20 42 49.3	-1.1
TPIG				eS	Sn	20 43 05.4	-2.2
PNIG	Pinotepa	1.54	238	eP	Pn	20 42 52.1	-1.1
PNIG				eS	Sn	20 43 10.3	-2.4
HUIG	Huatulco	1.58	156	eP	Pn	20 42 52.8	-0.9
HUIG				eS	Sn	20 43 11.1	-2.5
TLIG	Tlapa	1.75	281	eP	Pn	20 42 55.6	-0.4
TLIG				eS	Sn	20 43 15.9	-1.8
PPM	Popocatepetl	2.54	316	i P	Pn	20 43 06.7	-0.3
PPM				eS	Sn	20 43 35.9	-1.4
YAIG	Yautepec	2.73	307	i P	Pn	20 43 08.2	-1.0
YAIG				eS	Sn	20 43 39.5	-1.7
PCIG		3.73	113	eP	Pn	20 43 21.1	-1.5
PCIG				i S	Sn	20 44 03.9	-1.4

*NEIC **25** 20:53:50.9, 52°.22N×170°.41W, h25km, mb4.1/6, ML4.2(AEIC), After AEIC.*
*ISCJB **25** 20:53:51.5±0.5, 52°.28N±0°.09×170°.52W±0°.07, h55km, mb4.0/17, MS3.2/10, Error ellipse: s-maj=13.9km s-min=3.0km az=158.7*
*IDC **25** 20:53:56.8±5.7, 52°.48N×170°.61W, h92km±51km, mb3.5/14, mb1 3.8/16, mb1mx3.5/47, mbtmp3.8/16, ML3.6/2, MS3.2/12, Ms1 3.2/12, ms1mx3.1/30, Error ellipse: s-maj=23.6km s-min=13.8km az=173.0*

ISC 25 20:53:52.9±0.7, 52°.4N±0°.1×170°.55W±0°.06, h55km, n68, σ1°21/63, mb4.0/17, MS3.2/10, Fox Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NIKH	Nikolski High	1.20	59	P	Pn	20 54 11.1	-2.2
NIKH				S	Sn	20 54 26.1	-2.5
OKAK	Okmok	1.80	46	P	Pn	20 54 20.2	-1.3
OKTU	Okmok Mt. Tuli	1.83	55	P	Pn	20 54 21.6	-0.3
OKER	Okmok East Rim	1.87	53	P	Pn	20 54 22.7	+0.2
KOFP	Korovin Flat P	2.18	269	P	Pn	20 54 27.3	+0.5
KOKL	Mount Kliuchef	2.24	271	P	Pn	20 54 28.1	+0.5
KOWE	Korovin West	2.27	272	P	Pn	20 54 28.4	+0.5
MSOM	Makushin Julie	2.61	55	P	Pn	20 54 32.5	0.0
MGOD	Makushin Gods	2.64	56	P	Pn	20 54 32.7	-0.3
MSW	Makushin Switc	2.75	54	P	Pn	20 54 34.8	+0.3
MSW				S	Sn	20 55 08.0	+1.5
MTBL	Makushin Table	2.83	54	P	Pn	20 54 36.0	+0.3
UNV	Unalaska Valle	2.86	57	P	Pn	20 54 35.5	-0.4
AKRB	Akutan Reef Bi	3.22	55	P	Pn	20 54 41.7	+0.8
LVA	Lava Point	3.25	55	P	Pn	20 54 42.4	+1.0
AKGG	Akutan Green G	3.30	54	P	Pn	20 54 42.9	+0.9
AKGG				S	Sn	20 55 21.4	+1.6
AKUT	Akutan	3.37	56	P	Pn	20 54 44.0	+1.1
AKUT				S	Sn	20 55 23.4	+1.7
GSMY	Great Sitkin M	3.41	267	P	Pn	20 54 43.6	+0.2
AKSA	Akutan Strait	3.41	57	P	Pn	20 54 45.2	+1.7
AKSA				S	Sn	20 55 26.2	+3.5
GSTD	Great Sitkin T	3.46	267	P	Pn	20 54 44.0	-0.2
ETKA	Kagalaska Isla	3.65	264	P	Pn	20 54 47.4	+0.7
ADAG	Mount Adagdak	3.75	267	P	Pn	20 54 49.0	+0.9
WECS	Westdahl Cape	4.08	55	P	Pn	20 54 53.7	+1.0
WESP	Westdahl Peak	4.09	56	P	Pn	20 54 53.8	+0.9
WESE	West Dahl East	4.15	57	P	Pn	20 54 54.5	+0.8
WESN	West Dahl Nort	4.19	56	P	Pn	20 54 56.1	+1.9
TAPA	Tanaga Point A	4.51	266	P	Pn	20 54 59.6	+0.9
TAFL	Tanaga Flats	4.58	265	P	Pn	20 55 02.4	+2.9
TASE	Tanaga Southea	4.65	266	P	Pn	20 55 01.8	+1.3
ISLZ	Isanotski Laza	4.71	57	P	Pn	20 55 01.6	+0.2
FALS	False Pass	4.93	57	P	Pn	20 55 06.6	+2.4
GANE	Gareloi Northe	5.11	267	P	Pn	20 55 09.4	+2.7
DTNA	Dutton South F	5.66	57	P	Pn	20 55 14.4	+0.1
PPLA	Purkeypile	14.36	36	P	Pn	20 57 14.4	+1.4
KTH	Kantishna Hill	15.22	35	eP	P	20 57 27.7	-0.4
	18nm,1.1s						
BPAW	Bear Paw Mtn.	15.55	33	eP	P	20 57 30.9	-0.7
	2.9nm,0.9s						
ILAR	Eielson Array	17.37	35	P	Pn	20 57 51.7	+0.6
	0.1nm,0.3s,baz=218,slow=9.5,SNR=5.9						
ILAR				LR	LR	21 03 58.0	
	comp=Z,118nm,19.7s,baz=251,slow=35						
PETK	Petropavlovsk-	19.17	285	P	P	20 58 12.1	+0.5
	0.5nm,0.3s,baz=88,slow=12,SNR=4.2						
PETK				LR	LR	21 07 05.3	
	comp=Z,43nm,18.0s,baz=72,slow=41						
EGAK	Eagle	19.50	39	eP	Pn	20 58 18.2	+1.5
	4.2nm,0.4s						
SKAG	Skagway	20.78	56	eP	P	20 58 29.5	+0.5
	7.8nm,0.7s						
INK	Inuvik	23.75	34	P	P	20 58 59.0	-0.7
	2.4nm,0.8s,baz=276,slow=9.0,SNR=4.3						
YKA	Yellowknife Ar	30.79	49	P	P	21 00 02.8	0.0
	0.4nm,0.6s,baz=272,slow=7.8,SNR=7.1						
YKA				LR	LR	21 13 07.9	
	comp=Z,13nm,20.4s,baz=0.0,slow=38						
H11N2	WAKE ISLAND Hy	37.01	217	T	T	21 40 09.0	
	baz=21,slow=75,SNR=29						
H11N3	WAKE ISLAND Hy	37.01	217	T	T	21 40 13.8	
	baz=21,slow=75,SNR=34						
H11N1	WAKE ISLAND Hy	37.02	217	T	T	21 40 07.1	
	baz=21,slow=75,SNR=46						
H11S1	WAKE ISLAND Hy	38.20	216	T	T	21 41 44.4	
	baz=22,slow=76,SNR=487						
H11S2	WAKE ISLAND Hy	38.21	216	T	T	21 41 42.9	
	baz=22,slow=76,SNR=430						
H11S3	WAKE ISLAND Hy	38.22	216	T	T	21 41 43.1	
	baz=22,slow=76,SNR=362						
NVAR	Mina Array Bea	38.38	90	LR	LR	21 14 01.0	
	comp=Z,65nm,21.4s,baz=267,slow=31						
MJAR	Matsuhiro Arr	38.98	267	P	P	21 01 13.9	+0.3
	1.0nm,0.5s,baz=39,slow=7.9,SNR=4.3						
MJAR				LR	LR	21 15 30.6	
	comp=Z,28nm,21.3s,baz=70,slow=33						
RLMT	Red Lodge	39.96	75	eP	P	21 01 22.4	+0.6
	4.7nm,1.0s						
BW06	Boulder Array	41.11	78	eP	P	21 01 31.6	+0.1
	4.2nm,1.0s						
PDAR	Pinedale Array	41.11	78	P	P	21 01 31.9	+0.5
	3.4nm,0.9s,baz=288,slow=4.5,SNR=22						
PV04	Paradox Valley	44.16	83	eP	P	21 01 56.3	+0.2
PV01	Paradox Valley	44.52	83	eP	P	21 01 59.4	+0.3
	277nm,0.7s						
KSRS	Korea Array	44.69	276	LR	LR	21 20 49.3	
	comp=Z,27nm,19.6s,baz=72,slow=36						
NRIK	Noril'sk	46.09	331	LR	LR	21 24 41.2	
	comp=Z,34nm,18.1s,baz=112,slow=40						
SONM	Songino Array	50.68	300	P	P	21 02 46.1	-0.5
	0.2nm,0.3s,baz=54,slow=7.3,SNR=4.2						
SONM				LR	LR	21 23 57.2	
	comp=Z,26nm,21.8s,baz=46,slow=36						
TXAR	Lajitas Array	53.47	88	P	P	21 03 07.8	+0.3
	2.7nm,0.6s,baz=301,slow=5.5,SNR=33						
TXAR				PcP	PcP	21 04 14.4	+0.6
	0.6nm,0.7s,baz=283,slow=1.6,SNR=2.0						
ZALV	Zalesovo Beam	56.94	317	LR	LR	21 29 29.0	
	comp=Z,28nm,18.1s,baz=72,slow=38						
ARCES	ARCESS Array B	57.85	353	P	P	21 03 37.4	-0.8
	2.8nm,0.8s,baz=24,slow=7.0,SNR=3.6						
MKAR	Makanchi Array	63.28	313	P	P	21 04 14.9	-0.6
	0.4nm,0.9s,baz=40,slow=5.5,SNR=2.9						
MKAR				LR	LR	21 31 53.9	
	comp=Z,19nm,21.4s,baz=24,slow=36						
ARU	Arti	64.30	332	LR	LR	21 37 50.6	
	comp=Z,39nm,18.3s,baz=16,slow=41						
FINES	FINESS Array B	65.77	351	P	P	21 04 30.2	-1.3
	2.7nm,0.9s,baz=20,slow=6.3,SNR=4.5						
NOA	NORSAR Array B	66.94	359	P	P	21 04 38.3	-0.7
	0.8nm,0.7s,baz=2.3,slow=6.6,SNR=2.9						
CMAR	Chiang Mai Arr	75.92	282	P	P	21 05 33.7	0.0
	0.8nm,0.6s,baz=24,slow=6.9,SNR=6.4						
CMAR				LR	LR	21 42 31.8	
	comp=Z,12nm,19.2s,baz=200,slow=38						
WRA	Warramunga Arr	86.44	231	P	P	21 06 28.2	-1.1
	0.5nm,0.8s,baz=38,slow=10,SNR=3.6						
ESDC	Sonseca Array	87.60	10	P	P	21 06 33.2	-1.7
	0.2nm,0.5s,baz=348,slow=4.1,SNR=3.3						
ASAR	Alice Springs	89.84	229	P	P	21 06 45.0	-0.5
	0.9nm,0.7s,baz=28,slow=4.8,SNR=9.5						

IDC 25 20:57:57.0±6.3, 27°.61S×178°.42W, h80km±75km, mb3.1/2, mb1 3.4/2, mb1mx3.1/17, mbtmp3.4/2, Error ellipse: s-maj=92.1km s-min=62.6km az=77.0, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	Raoul Island	1.69	165	P	Pn	20 58 24.5	-0.3
	961nm,0.3s,baz=91,slow=7.3,SNR=69						
RAO				S	Sn	20 58 46.1	+0.2
	161nm,0.3s,baz=90,slow=20,SNR=3.6						
ASAR	Alice Springs	42.96	264	P	P	21 05 47.9	-0.5
	0.3nm,0.6s,baz=101,slow=7.8,SNR=6.1						
WRA	Warramunga Arr	43.69	269	P	P	21 05 54.5	+0.2
	0.6nm,0.7s,baz=110,slow=8.0,SNR=8.4						
FINES	FINESS Array B	142.41	341	PKP	PKPdf	21 17 19.0	-0.8
	2.7nm,0.9s,baz=46,slow=6.0,SNR=7.2						

*ISCJB **25** 21:06:27.7±0.5, 39°.12N±0°.03×28°.99E±0°.04, h9km±5km, Error ellipse: s-maj=5.2km s-min=4.6km az=135.3*
*ISK **25** 21:06:27.4, 39°.11N×29°.02E, h10km, MD2.3*
*CSEM **25** 21:06:27.8±0.1, 39°.12N×28°.99E, h8km, MD2.9, Error ellipse: s-maj=1.8km s-min=1.4km az=103.0*
*DDA **25** 21:06:27.5, 39°.12N×28°.98E, h12km, Md2.9*

ISC 25 21:06:27.9±0.9, 39°.12N±0°.02×28°.99E±0°.02, h11km±8km, n27, σ0°34/39, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.23	251	P	Pg	21 06 32.9	+0.1
DEMI				S	Sg	21 06 36.1	0.0
DEMI	Demirci	0.23	251	i P	Pg	21 06 32.9	+0.1
DEMI				i S	Sg	21 06 36.1	0.0
GDZ	Gediz	0.38	94	P	Pg	21 06 35.5	-0.1
GDZ				S	Sg	21 06 41.1	+0.4
GDZ	Gediz	0.38	94	i P	Pg	21 06 35.5	-0.1
GDZ				i S	Sg	21 06 41.1	+0.4
TVSB	Tavsanli	0.49	48	ePG	Pg	21 06 37.2	-0.4
TVSB				eSG	Sg	21 06 44.3	+0.2
TVSB	Tavsanli	0.49	48	ePg	Pg	21 06 37.2	-0.4
TVSB				eSg	Sg	21 06 44.3	+0.2
DURS	Dursunbey	0.63	320	P	Pg	21 06 39.9	-0.3
DURS				S	Sg	21 06 48.7	+0.2
DURS	Dursunbey	0.63	320	i P	Pg	21 06 39.9	-0.3
DURS				i S	Sg	21 06 48.7	+0.2
KULA	Kula-Manisa	0.66	203	ePG	Pg	21 06 40.6	-0.1
KULA	Kula-Manisa	0.66	203	ePg	Pg	21 06 40.6	-0.1
MANT	Manisa	0.71	209	P	Pg	21 06 41.9	+0.1
MANT				S	Sg	21 06 50.4	-0.7
MANT	Manisa	0.71	209	i P	Pg	21 06 41.9	+0.1
MANT				i S	Sg	21 06 50.4	-0.7
KHAL	Karahalli	0.84	152	P	Pb	21 06 44.8	+0.2
KHAL				S	Sb	21 06 55.6	-0.4
KHAL	Karahalli	0.84	152	i P	Pb	21 06 44.8	+0.2
KHAL				i S	Sb	21 06 55.6	-0.4
BALY	Balya	1.23	301	i P	Sn	21 07 08.7	+0.9
KCTX	Karacabey (Bur	1.25	337	ePN	Pb	21 06 51.6	+0.1
KCTX	Karacabey (Bur	1.25	337	ePn	Pb	21 06 51.6	+0.1
MDNY	Mudanya-Bursa	1.25	356	ePN	Pb	21 06 51.7	+0.1
MDNY	Mudanya-Bursa	1.25	356	ePn	Pb	21 06 51.7	+0.1
CAVI	Cavuskoy	1.27	31	ePN	Pb	21 06 51.9	+0.1
CAVI	Cavuskoy	1.27	31	ePn	Pb	21 06 51.9	+0.1
ADVT	Abdulvahap	1.43	23	ePN	Pn	21 06 53.7	-0.1
ADVT	Abdulvahap	1.43	23	ePn	Pn	21 06 53.7	-0.1
ARMT	Armutlu	1.45	356	ePN	Pb	21 06 54.5	-0.5
ARMT	Armutlu	1.45	356	ePn	Pb	21 06 54.5	-0.5
GULT	Gulveren	1.76	41	ePN	Pn	21 06 58.5	+0.1
GULT	Gulveren	1.76	41	ePn	Pn	21 06 58.5	+0.1

SGS 25 21:13:26.5, 25°.20N×37°.80E, h17km, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LNY12	LNY12	0.08	342	P	Pg	21 13 30.1	+0.1
LNY10	LNY10	0.09	40	S	Sg	21 13 32.7	+0.3
LNY10				P	Pg	21 13 30.1

NKME	Niksic	1.31	121	⇑	iPg	Pn	21 19 38.6	-0.4
NKME					eSg	Sn	21 19 58.1	+1.1
NKY	Niksic	1.32	119	⇓	iPg	Pn	21 19 38.4	-0.7
NKY					eSg	Sn	21 19 57.9	+0.8
NKY	Niksic	1.32	119	⇓	iPg	Pn	21 19 38.4	-0.7
NKY					eSg	Sn	21 19 57.9	+0.8
DOB	Doboj	1.37	21		ePg	Pn	21 19 38.4	-1.3
DOB					eSg	Sn	21 19 56.7	-1.5
CEME	Cevo	1.42	129	⇑	iPg	Pn	21 19 39.9	-0.6
CEME					eSg	Sg	21 20 01.7	+2.2
CEME	Cevo	1.42	129	⇑	iPg	Pn	21 19 39.9	-0.6
CEME					eSg	Sg	21 20 01.7	+2.2
PLE	Pljevlja	1.44	94	⇓	iPg	Pn	21 19 40.8	0.0
PLE					eSg	Sg	21 20 03.1	+3.1
PLE	Pljevlja	1.44	94	⇓	iPg	Pn	21 19 40.8	0.0
PLE					eSg	Sg	21 20 03.1	+3.1
BBLS	Lazići	1.50	73		ePn	Pn	21 19 41.7	+0.2
BBLS					eSg	Sn	21 20 00.4	-1.1
BBLS	Lazići	1.50	73	⇑	iPn	Pn	21 19 41.5	0.0
BBLS					eSg	Sn	21 20 00.4	-1.1
BBLS					eSn	Sg	21 20 02.8	+0.9
BUM	Brajici-Budva	1.58	136	⇓	iPg	Pb	21 19 42.9	-0.7
BUM					eSg	Sg	21 20 06.5	+1.9
BUM	Brajici-Budva	1.58	136	⇓	iPg	Pb	21 19 42.9	-0.7
BUM					eSg	Sg	21 20 06.5	+1.9
UDBI	Udbina	1.61	312		i Pn	Pn	21 19 42.8	-0.2
PDG	Podgorica	1.69	127		ePg	Pb	21 19 45.6	+0.2
PDG					eSg	Sg	21 20 10.0	+1.9
PDG	Podgorica	1.69	127		ePn	Pb	21 19 44.9	-0.5
PDG					eSn	Sg	21 20 07.1	-1.0
PDG					eSg	Sg	21 20 10.0	+1.9
TTG	Podgorica	1.69	127	⇑	iPn	Pb	21 19 45.4	0.0
TTG					eSn	Sg	21 20 10.1	+1.9
DRME	Dracevica, Mon	1.81	134	⇑	iPn	Pb	21 19 47.1	-0.4
DRME					eSn	Sg	21 20 13.3	+1.3
DRME	Dracevica, Mon	1.81	134		ePn	Pn	21 19 46.1	+0.3
DRME					eSn	Sg	21 20 10.8	-1.2
TEKS	Tekeris	1.87	54		ePn	Pn	21 19 47.1	+0.5
TEKS					eSn	Sn	21 20 11.8	+1.1
TEKS	Tekeris	1.87	54		ePn	Pn	21 19 46.9	+0.3
TEKS					eSn	Sn	21 20 11.5	+0.8
BEY	Berane	1.90	107		ePn	Pb	21 19 49.2	+0.1
BEY					eSn	Sg	21 20 15.3	+0.5
IVA	Berane	1.90	107		ePn	Pb	21 19 49.2	+0.1
IVA					eSn	Sg	21 20 15.3	+0.5
DIVS	Divibare	1.97	70		ePn	Pn	21 19 48.3	+0.3
DIVS					eSg	Sb	21 20 14.1	-1.1
DIVS	Divibare	1.97	70		ePn	Pn	21 19 48.1	+0.1
DIVS					eSg	Sb	21 20 14.1	-1.1
ULC	Ulcinj	2.01	137	⇑	iPn	Pb	21 19 50.2	-0.6
ULC					eSn	Sg	21 20 18.1	-0.1
ULC	Ulcinj	2.01	137	⇑	iPn	Pb	21 19 50.2	-0.6
ULC					eSn	Sg	21 20 18.1	-0.1
PVY	Plav	2.05	114		ePn	Pb	21 19 51.1	-0.5
PVY					eSn	Sg	21 20 19.2	-0.4
PVY	Plav	2.05	114		ePn	Pb	21 19 51.1	-0.5
PVY					eSn	Sg	21 20 19.2	-0.4
NVLJ	Novalja	2.15	302		ePn	Pn	21 19 50.8	+0.4
NVLJ					Sn	Sn	21 20 18.5	+1.1
NVLJ	Novalja	2.15	302		ePn	Pn	21 19 50.7	+0.4
NVLJ					Sn	Sn	21 20 18.5	+1.1
FGSL	Fruska Gora	2.42	44		ePn	Pn	21 19 53.5	-0.6
FGSL					eSn	Sn	21 20 24.6	+0.5
FRGS	Fruska Gora	2.42	44		ePn	Pn	21 19 53.5	-0.6
FRGS					eSn	Sn	21 20 24.6	+0.5
GRUS	Gruza	2.43	79		ePn	Pb	21 19 56.7	-1.3
GRUS					eSg	Sb	21 20 29.5	+1.2
GRUS	Gruza	2.43	79		ePn	Pb	21 19 56.7	-1.3
GRUS					eSg	Sb	21 20 29.5	+1.2
BOJS	Bojanci	2.57	324		i Pn	Pn	21 19 57.8	+1.6
BOJS					i Sn	Sn	21 20 31.4	+3.5
SELS	Selova	2.71	94		ePn	Pn	21 19 59.2	+1.1
SELS					eSn	Sn	21 20 32.9	+1.6
SELS	Selova	2.71	94		ePn	Pn	21 19 59.2	+1.1
SELS					eSn	Sn	21 20 32.9	+1.6
CRES	Cresnjev	2.75	330		ePn	Pn	21 19 58.1	-0.6
CRES					eSn	Sn	21 20 31.0	-1.5
VISS	Visnje	2.99	323		i Pn	Pn	21 20 04.5	+2.6
VISS					i Sn	Sb	21 20 43.5	-0.8
CEY	Cerknica	3.13	318		ePn	Pn	21 20 03.1	-0.8
CEY					eSn	Sn	21 20 39.7	-2.0
BARS	Barje	3.28	100		ePn	Pn	21 20 07.0	+1.1
BARS					eSn	Sn	21 20 46.7	+1.3
BARS	Barje	3.28	100		ePn	Pn	21 20 07.0	+1.1
BARS					eSn	Sn	21 20 46.7	+1.3
JAVS	Javornik	3.42	317		i Pn	Pn	21 20 09.1	+1.2
JAVS					i Sn	Sn	21 20 51.9	+2.9
BZS	Buzias	3.70	53		ePn	Pn	21 20 11.8	+0.1
BZS					eSn	Sn	21 20 55.0	-0.7
BZS	Buzias	3.70	53		ePn	Pn	21 20 11.8	+0.1
BZS					eSn	Sn	21 20 55.0	-0.7
ZAPS	Zavoj	3.81	91		ePn	Pn	21 20 16.2	+3.0
ZAPS					eSn	Sn	21 20 59.1	+0.7

*IDC **25** 21:33:05.0±0.9, 16°.03S×172°.46W, h0km, mb4.1/8, mb1 4.3/9, mb1mx4.0/39, mbtmp4.1/9, ML4.0/1, MS3.6/16, Ms1 3.6/16, ms1mx3.4/34, Error ellipse: s-maj=42.5km s-min=16.2km az=130.0*
*ISCJB **25** 21:33:07.5±0.3, 15°.97S±0°.07×172°.63W±0°.09, h24km, mb4.9/29, MS3.7/16, Error ellipse: s-maj=14.5km s-min=5.6km az=36.3*
*NEIC **25** 21:33:10.5±0.4, 15°.95S×172°.59W, h35km, mb5.2/20, Error ellipse: s-maj=18.2km s-min=7.3km az=129.0*
ISC 25 21:33:09.5±0.6, 15°.95S±0°.1×172°.6W±0°.1, h24km, n61, σ1§67/53, mb5.0/29, MS3.6/16, Samoa Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**2.16**	**21**	Pn	**Pn**	**21 33 42.5**	**-1.6**
	42nm,0.3s,baz=37,slow=1.1,SNR=24						
AFI				Sn	**Sn**	**21 34 10.8**	**+0.6**
	142nm,0.3s,baz=191,slow=23,SNR=6.6						
AFI	**Afiamalu**	**2.16**	**21**	ePn	**Pn**	**21 33 42.5**	**-1.6**
AFI				eSn	**Sn**	**21 34 10.5**	**+0.3**
AFI				eLg	Lg	21 34 10.8	
MSVF	**Nonsavu**	**9.15**	**257**	ePn	**Pn**	**21 35 21.9**	**+1.8**
DZM	**Mont Dzumac**	**20.74**	**250**	eLQ	LQ	21 42 12.9	
	518nm,27.6s						
DZM				eLR	LR	21 43 08.2	
	622nm,24.1s						
PPT	**Papeete**	**22.08**	**97**	LR	LR	21 44 03.2	
	comp=Z,145nm,20.0s,baz=341,slow=30						
PPT2	**Papeete2**	**22.08**	**98**	eLR	LR	21 42 50.8	
	398nm,25.5s						
TBI	**Tubuai**	**22.96**	**112**	eLQ	LQ	21 42 23.0	
	616nm,28.2s						
TBI				eLR	LR	21 43 19.5	
	317nm,26.5s						
MXZ	**Matakaoa Point**	**23.00**	**199**	eP	**P**	**21 38 09.8**	**-2.7**
	280nm,1.3s						
XMAS	**Kiritimati**	**23.30**	**41**	eP	**P**	**21 38 13.3**	**-2.5**
	225nm,1.3s						
URZ	**Urewera**	**24.02**	**200**	P	**P**	**21 38 21.2**	**-1.3**
	17nm,0.8s,baz=45,slow=4.3,SNR=5.0						
URZ				LR	LR	21 45 50.5	
	comp=Z,173nm,19.5s,baz=22,slow=32						
URZ	**Urewera**	**24.02**	**200**	eP	**P**	**21 38 21.7**	**-0.7**
BKZ	**Black Stump Fm**	**25.04**	**200**	eP	**P**	**21 38 31.8**	**-0.1**
	115nm,1.9s						
HIZ	**Hauiti**	**25.06**	**204**	eP	**P**	**21 38 31.6**	**-0.4**
	205nm,1.4s						
LTZ	**Lake Taylor**	**29.73**	**203**	eP	**P**	**21 39 17.2**	**+3.3**
	156nm,1.9s						
FOZ	**Fox Glacier**	**31.32**	**205**	eP	**P**	**21 39 28.0**	**+0.1**
	600nm,2.0s						
DCZ	**Deep Cove**	**34.00**	**206**	eP	**P**	**21 39 51.2**	**-0.1**
	120nm,1.9s						
WHZ	**Wether Hill Ro**	**34.02**	**205**	eP	**P**	**21 39 52.3**	**+0.7**
	166nm,2.0s						
ARMA	**Armidale**	**35.75**	**240**	eP	**P**	**21 40 05.7**	**-1.1**
	49nm,1.5s						
HPAH	**Hawaii Prepara**	**39.41**	**25**	eP	**P**	**21 40 34.8**	**-2.9**
	383nm,1.6s						
COEN	**Coen**	**42.74**	**267**	eP	**P**	**21 41 06.2**	**+1.0**
	49nm,1.7s						
STKA	**Stephens Creek**	**44.46**	**241**	P	**P**	**21 41 17.6**	**-1.2**
	7.3nm,0.9s,baz=70,slow=8.0,SNR=12						
STKA				LR	LR	21 58 35.8	
	comp=Z,71nm,19.2s,baz=32,slow=34						
STKA	**Stephens Creek**	**44.46**	**241**	eP	**P**	**21 41 17.6**	**-1.2**
	2.8nm,1.0s						
BBOO	**Buckleboo**	**49.23**	**240**	eP	**P**	**21 41 55.7**	**-0.5**
	72nm,1.8s						
WB2	**Warramunga Arr**	**50.48**	**257**	eP	**P**	**21 42 05.2**	**-0.7**
	9.5nm,1.1s						
WRAB	**Tennant Creek**	**50.48**	**257**	eP	**P**	**21 42 04.0**	**-2.0**
	31nm,1.5s						
WR1	**Warramunga Arr**	**50.49**	**257**	eP	**P**	**21 42 05.5**	**-0.6**
	18nm,1.4s						
WRA	**Warramunga Arr**	**50.49**	**257**	P	**P**	**21 42 05.5**	**-0.6**
	0.6nm,0.4s,baz=95,slow=7.0,SNR=14						
AS01	**Alice Springs**	**50.66**	**252**	eP	**P**	**21 42 05.3**	**-2.0**
AS31	**Alice Springs**	**50.70**	**252**	eP	**P**	**21 42 07.0**	**-0.5**
	2.6nm,0.6s						
ASAR	**Alice Springs**	**50.70**	**252**	P	**P**	**21 42 07.0**	**-0.5**
	8.4nm,0.7s,baz=88,slow=8.2,SNR=65						
ASAR				LR	LR	22 03 06.3	
	comp=Z,45nm,19.2s,baz=90,slow=36						
GUMO	**Guam**	**51.29**	**303**	LR	LR	22 01 40.7	
	comp=Z,59nm,18.1s,baz=67,slow=33						
MBWA	**Marble Bar**	**63.97**	**254**	eP	**P**	**21 43 39.6**	**-1.7**
	25nm,1.3s						
DAV	**Davao City (W)**	**65.34**	**286**	LR	LR	22 11 20.1	
	comp=Z,40nm,19.9s,baz=56,slow=35						
MJAR	**Matsushiro Art**	**69.86**	**320**	LR	LR	22 09 49.6	
	comp=Z,29nm,21.7s,baz=105,slow=32						
TGY	**Tagaytay City**	**72.16**	**291**	LR	LR	22 12 17.0	
	comp=Z,29nm,21.5s,baz=94,slow=32						
PETK	**Petropavlovsk-**	**73.39**	**342**	LR	LR	22 13 00.3	
	comp=Z,33nm,20.3s,baz=108,slow=33						
TUC	**Tucson**	**76.12**	**50**	eP	**P**	**21 44 56.6**	**+0.9**
	3.6nm,0.9s						
KSRS	**Korea Array**	**77.10**	**315**	LR	LR	22 13 34.8	
	comp=Z,19nm,19.8s,baz=74,slow=32						
MSU	**Marysvale**	**78.26**	**44**	eP	**P**	**21 45 08.6**	**+0.8**
TX31	**Lajitas Ar. Si**	**80.26**	**56**	eP	**P**	**21 45 19.1**	**+0.4**
TX31				ePP	**PP**	**21 48 22.9**	**+1.2**
LTX	**Lajitas**	**80.26**	**56**	eP	**P**	**21 45 17.2**	**-1.6**
TXAR	**Lajitas Array**	**80.26**	**56**	P	**P**	**21 45 17.2**	**-1.5**
	1.2nm,1.1s,baz=222,slow=9.4,SNR=5.5						
TXAR				LR	LR	22 15 52.1	
	comp=Z,29nm,18.2s,baz=0.0,slow=32						
PD31	**Pinedale Array**	**82.14**	**41**	eP	**P**	**21 45 27.9**	**-0.8**
PDAR	**Pinedale Array**	**82.14**	**41**	P	**P**	**21 45 27.9**	**-0.8**
	0.4nm,0.7s,baz=235,slow=5.2,SNR=4.4						
PDAR				LR	LR	22 14 02.7	
	comp=Z,24nm,20.7s,baz=312,slow=30						
WRH	**Wood River Hil**	**82.33**	**10**	eP	**P**	**21 45 30.1**	**+1.3**
	21nm,1.6s						
CCB	**Clear Creek Bu**	**82.55**	**10**	eP	**P**	**21 45 31.7**	**+1.9**
	18nm,1.8s						
IL1	**Eielson Array**	**82.82**	**11**	eP	**P**	**21 45 32.1**	**+0.7**
ILAR	**Eielson Array**	**82.82**	**11**	P	**P**	**21 45 29.9**	**-1.4**
	0.6nm,0.7s,baz=221,slow=6.5,SNR=6.3						
ILAR				LR	LR	22 16 13.2	
	comp=Z,33nm,19.8s,baz=241,slow=31						
ILB	**Eielson Array**	**82.82**	**11**	eP	**P**	**21 45 29.9**	**-1.4**
EGMT	**Eagleton**	**84.68**	**37**	eP	**P**	**21 45 42.3**	**+0.9**
	2µm,0.9s						
EGMT				ePP	**PP**	**21 49 04.7**	**+7.0**
YKA	**Yellowknife Ar**	**90.28**	**23**	P	**P**	**21 46 08.2**	**+0.3**
	0.2nm,0.7s,baz=249,slow=6.0,SNR=4.1						
YKB5	**Yellowknife Ar**	**90.28**	**23**	eP	**P**	**21 46 08.2**	**+0.3**
ATAH	**Atahualpa**	**92.06**	**98**	LR	LR	22 17 33.0	
	comp=Z,85nm,18.7s,baz=208,slow=29						
SONM	**Songino Array**	**95.77**	**318**	LR	LR	22 25 15.3	
	comp=Z,23nm,21.4s,baz=88,slow=33						
LVC	**Limon Verde**	**96.07**	**115**	LR	LR	22 21 27.4	
	comp=Z,188nm,19.9s,baz=286,slow=30						
DPC	**Dobruska-Polom**	**144.93**	**350**	ePKP	**PKPdf**	**21 52 45.7**	**+1.1**
DPC				epPKP	**pPKPdf**	**21 52 55.3**	**+2.6**
PRU	**Pruhonice**	**145.55**	**352**	ePKP	**PKPab**	**21 52 47.3**	**+1.3**
KHC	**Kasperske Hory**	**146.52**	**353**	ePKP	**PKPab**	**21 52 49.7**	**-0.1**
GERES	**GERESS Array B**	**146.78**	**352**	PKPbc	**PKPbc**	**21 52 49.9**	**+0.3**
	0.8nm,0.8s,baz=288,slow=0.9,SNR=4.7						
BR101	**Keskin Array S**	**147.07**	**321**	ePKPdf	**PKPab**	**21 52 52.2**	**-0.2**
BRTR	**Keskin Array B**	**147.07**	**321**	PKPbc	**PKPab**	**21 52 52.2**	**-0.2**
	1.7nm,0.9s,baz=116,slow=2.9,SNR=9.1						

*CSEM **25** 21:54:59.7, 37°.95N×21°.12E, h12km, ML1.2/4*
ATH 25 21:54:59.7, 37°.95N×21°.12E, h12km±2km, ML1.2/3, Error ellipse: s-maj=2.5km s-min=1.1km az=159.0, Southern Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VTN	**Vitineika**	**0.06**	**122**	P	Pg	21 55 01.2	-0.9
VTN				S	Sg	21 55 04.1	+0.2
VTN	**Vitineika**	**0.06**	**122**	P	Pg	21 55 01.2	-0.9
VTN				S	Sg	21 55 04.1	+0.2
RLS	**Riolos of Patr**	**0.29**	**68**	P	Pg	21 55 04.7	-1.1
RLS				S	Sb	21 55 10.8	-0.9
RLS	**Riolos of Patr**	**0.29**	**68**	S	Sb	21 55 10.8	-0.9
RLS				AML	AML	21 55 12.1	
	comp=E,67µm,0.3s						
RLS				AML	AML	21 55 12.5	
	comp=N,86µm,0.2s						
KFL	**Anninata**	**0.31**	**302**	P	Pg	21 55 06.3	+0.3
KFL	**Anninata**	**0.31**	**302**	P	Pg	21 55 06.3	+0.4
AXS	**Araxos**	**0.32**	**39**	P	Pg	21 55 06.6	+0.4
AXS				S	Sg	21 55 11.4	+0.8
AXS	**Araxos**	**0.32**	**39**	P	Pg	21 55 06.6	+0.4
AXS				S	Sg	21 55 11.4	+0.9
ZKS	**Zakynthos**	**0.36**	**227**	P	Pg	21 55 07.0	0.0
ZKS				S	Sb	21 55 14.0	+0.2
ZKS	**Zakynthos**	**0.36**	**227**	P	Pg	21 55 07.0	0.0
ZKS				S	Sb	21 55 14.0	+0.3
ZKS				AML	AML	21 55 15.0	
	comp=E,216µm,0.2s						
ZKS				AML	AML	21 55 15.5	
	comp=N,236µm,0.2s						
DRO	**Drossia**	**0.47**	**89**	P	Pg	21 55 09.3	+0.4
DRO				S	Sg	21 55 14.8	-0.3
DRO	**Drossia**	**0.47**	**89**	P	Pg	21 55 09.3	+0.4
DRO				S	Sg	21 55 14.8	-0.4
DRO				AML	AML	21 55 19.3	
	comp=E,131µm,0.6s						
DRO				AML	AML	21 55 20.1	
	comp=N,97µm,0.3s						
VLS	**Valsamata**	**0.48**	**299**	P	Pg	21 55 07.9	-1.2
VLS				S	Sg	21 55 15.3	-0.1
AMT	**Artemida-Makis**	**0.62**	**131**	P	Pg	21 55 11.8	-0.1
AMT				S	Sb	21 55 21.6	+0.3
AMT	**Artemida-Makis**	**0.62**	**131**	P	Pg	21 55 11.8	-0.1
AMT				S	Sb	21 55 21.6	+0.3
PDO	**Prodromos**	**0.65**	**4**	P	Pb	21 55 12.8	-0.2
PDO	**Prodromos**	**0.65**	**4**	P	Pb	21 55 12.8	-0.2
PVO	**Paravola**	**0.74**	**25**	P	Pb	21 55 14.8	+0.3
PVO	**Paravola**	**0.74**	**25**	P	Pb	21 55 14.8	+0.3
KLV	**Kalavryta, Ach**	**0.82**	**83**	P	Pg	21 55 13.5	-2.1
KLV				S	Sb	21 55 27.4	+0.5
KLV	**Kalavryta, Ach**	**0.82**	**83**	P	Pg	21 55 13.5	-2.1
KLV				S	Sb	21 55 27.4	+0.4
ITM	**Ithomi**	**1.00**	**140**	P	Pb	21 55 18.1	-0.8
ITM	**Ithomi**	**1.00**	**140**	P	Pb	21 55 18.1	-0.9

*ROM **25** 21:56:05.3±0.1, 43°.87N×12°.03E, h8km±1km, Md2.5/17, Ml2.0/14, Error ellipse: s-maj=2.0km s-min=0.9km az=24.0*
*CSEM **25** 21:56:05.5±0.1, 43°.87N×12°.02E, h15km, ML2.6/12, Error ellipse: s-maj=3.3km s-min=2.1km az=27.0*
ISC 25 21:56:05.6±0.8, 43°.88N±0°.03×12°.03E±0°.02, h13km±6km, n40, σ0§58/69, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFI	**Santa Sofia**	**0.14**	**283**	Pg	**Pg**	**21 56 08.6**	**-0.4**
SFI				Sg	**Sg**	**21 56 11.3**	**-0.2**
SFI	**Santa Sofia**	**0.14**	**283**	Pg	**Pg**	**21 56 08.6**	**-0.4**
SFI				Sg	**Sg**	**21 56 11.3**	**-0.2**
ASQU	**Asqua**	**0.19**	**246**	Pg	**Pg**	**21 56 09.7**	**-0.2**
ASQU				Sg	**Sg**	**21 56 13.2**	**+0.3**
	676nm,0.2s						
ASQU	**Asqua**	**0.19**	**246**	Pg	**Pg**	**21 56 09.7**	**-0.2**
ASQU				Sg	**Sg**	**21 56 13.2**	**+0.3**
	676nm,0.2s						
CPGN	**Carpegna, Ital**	**0.22**	**109**	Pg	**Pb**	**21 56 11.1**	**-0.5**
CPGN				Sg	**Sg**	**21 56 14.6**	**+0.8**
	200nm,0.4s						
CPGN	**Carpegna, Ital**	**0.22**	**109**	Pg	**Pb**	**21 56 11.1**	**-0.5**
CPGN				Sg	**Sg**	**21 56 14.6**	**+0.8**
	200nm,0.4s						
PARC	**Parchiule**	**0.27**	**146**	Pg	**Pg**	**21 56 11.3**	**0.0**
PARC				Sg	**Sb**	**21 56 16.1**	**-0.8**
	188nm,0.4s						
PARC	**Parchiule**	**0.27**	**146**	Pg	**Pg**	**21 56 11.3**	**0.0**
PARC				Sg	**Sb**	**21 56 16.1**	**-0.8**
	188nm,0.4s						
VMG	**Vicchio**	**0.36**	**284**	Pg	**Pg**	**21 56 13.0**	**+0.1**
VMG				Sg	**Sb**	**21 56 19.4**	**-0.1**
	149nm,0.2s						
VMG	**Vicchio**	**0.36**	**284**	Pg	**Pg**	**21 56 13.0**	**+0.1**
VMG				Sg	**Sb**	**21 56 19.4**	**-0.1**
	149nm,0.2s						
BADI	**Badiali**	**0.40**	**157**	Pg	**Pg**	**21 56 13.4**	**-0.1**
BADI				Sg	**Sb**	**21 56 20.1**	**-0.4**
	179nm,0.5s						
BADI	**Badiali**	**0.40**	**157**	Pg	**Pg**	**21 56 13.4**	**-0.1**
BADI				Sg	**Sb**	**21 56 20.1**	**-0.4**
	179nm,0.5s						
BLLA	**Bellaria**	**0.42**	**50**	Pg	**Pb**	**21 56 14.9**	**+0.1**
BLLA	**Bellaria**	**0.42**	**50**	Pg	**Pb**	**21 56 14.9**	**+0.1**
PIEI	**Pieia**	**0.50**	**133**	Pg	**Pg**	**21 56 15.1**	**-0.3**
PIEI				Sg	**Sb**	**21 56 23.2**	**-0.3**
	41nm,0.3s						
PIEI	**Pieia**	**0.50**	**133**	Pg	**Pg**	**21 56 15.1**	**-0.3**
PIEI				Sg	**Sb**	**21 56 23.2**	**-0.3**
	41nm,0.3s						
ATPC	**Poggio Castell**	**0.50**	**142**	Pg	**Pg**	**21 56 15.6**	**+0.2**
ATPC				Sg	**Sb**	**21 56 24.0**	**+0.5**
	98nm,0.6s						
ATPC	**Poggio Castell**	**0.50**	**142**	Pg	**Pg**	**21 56 15.6**	**+0.2**
ATPC				Sg	**Sb**	**21 56 24.0**	**+0.5**
	98nm,0.6s						
SEI	**Scarperia**	**0.52**	**290**	Pg	**Pg**	**21 56 15.5**	**-0.3**
SEI				Sg	**Sb**	**21 56 24.1**	**+0.1**
	349nm,0.2s						
SEI	**Scarperia**	**0.52**	**290**	Pg	**Pg**	**21 56 15.5**	**-0.3**
SEI				Sg	**Sb**	**21 56 24.1**	**+0.1**
	349nm,0.2s						
CAFI	**Castiglion Fio**	**0.55**	**185**	Pg	**Pg**	**21 56 16.2**	**-0.1**
CAFI				Sg	**Sb**	**21 56 25.1**	**+0.3**
	100nm,0.8s						
CAFI	**Castiglion Fio**	**0.55**	**185**	Pg	**Pg**	**21 56 16.2**	**-0.1**
CAFI				Sg	**Sb**	**21 56 25.1**	**+0.3**
	100nm,0.8s						
ATVO	**AVT- Monte Val**	**0.56**	**151**	Pg	**Pg**	**21 56 16.5**	**-0.1**
ATVO				Sg	**Sb**	**21 56 25.9**	**+0.6**
	74nm,0.6s						
ATVO	**AVT- Monte Val**	**0.56**	**151**	Pg	**Pg**	**21 56 16.5**	**-0.1**
ATVO				Sg	**Sb**	**21 56 25.9**	**+0.6**
	74nm,0.6s						
FRON	**Frontone**	**0.62**	**125**	Pg	**Pg**	**21 56 17.4**	**-0.2**
	38nm,0.7s						
FRON	**Frontone**	**0.62**	**125**	Pg	**Pg**	**21 56 17.4**	**-0.2**
	38nm,0.7s						
SSFR	**Montelago di S**	**0.70**	**129**	Pg	**Pg**	**21 56 18.9**	**-0.3**
SSFR				Sg	**Sb**	**21 56 30.1**	**+0.8**
	62nm,0.2s						
SSFR	**Montelago di S**	**0.70**	**129**	Pg	**Pg**	**21 56 18.9**	**-0.3**
SSFR				Sg	**Sb**	**21 56 30.1**	**+0.8**
	62nm,0.2s						
MURB	**Monte Urbino**	**0.71**	**149**	Pg	**Pb**	**21 56 19.6**	**-0.2**
	85nm,0.3s						
MURB	**Monte Urbino**	**0.71**	**149**	Pg	**Pb**	**21 56 19.6**	**-0.2**
	85nm,0.3s						
ATTE	**AVT- Monte Tez**	**0.72**	**161**	Pg	**Pg**	**21 56 19.1**	**-0.4**
ATTE				Sg	**Sb**	**21 56 29.3**	**-0.5**
	44nm,0.4s						
ATTE	**AVT- Monte Tez**	**0.72**	**161**	Pg	**Pg**	**21 56 19.1**	**-0.4**
ATTE				Sg	**Sb**	**21 56 29.3**	**-0.5**
	44nm,0.4s						
FROS	**Frosini**	**0.92**	**224**	Pg	**Pb**	**21 56 23.6**	**+0.2**
	44nm,0.6s						
FROS	**Frosini**	**0.92**	**224**	Pg	**Pb**	**21 56 23.6**	**+0.2**
	44nm,0.6s						
MGAB	**Montegabbione**	**0.96**	**176**	Pg	**Pg**	**21 56 24.1**	**-0.1**
	97nm,1.1s						
MGAB	**Montegabbione**	**0.96**	**176**	Pg	**Pg**	**21 56 24.1**	**-0.1**
	97nm,1.1s						
NVLJ	**Novalja**	**2.16**	**70**	ePn	**Pn**	**21 56 41.1**	**-0.1**
NVLJ				Sn	**Sn**	**21 57 08.8**	**+1.0**
NVLJ	**Novalja**	**2.16**	**70**	ePn	**Pn**	**21 56 41.0**	**-0.1**
NVLJ				Sn	**Sn**	**21 57 08.7**	**+1.0**
UDBI	**Udbina**	**2.76**	**75**	ePn	**Pn**	**21 56 51.1**	**+1.5**
UDBI				Sn	**Sn**	**21 57 20.8**	**-2.2**
UDBI	**Udbina**	**2.76**	**75**	Sn	**Sn**	**21 57 20.7**	**-2.2**

IDC 25 22:04:12.3±11.0, 5°.04S×130°.41E, h383km±154km, mb2.7/1, mb1 2.7/3, mb1mx2.5/40, mbtmp3.4/3, Error ellipse: s-maj=177.5km s-min=56.6km az=72.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**15.30**	**166**	P	P	22 07 27.8	-1.1
	0.1nm,0.3s,baz=349,slow=11,SNR=9.7						
WRA	

PAMC				*e*S		**Sn**	**22 32 57.6**	**-0.6**
BRRC	**Barranca, Sant**	**0.65**	**294**	*e*P		**Pn**	**22 32 39.5**	**+0.6**
BRRC				*e*S		**Sn**	**22 32 57.1**	**-0.2**
BRRC				*i*			22 33 00.8	
	comp=Z,84nm,0.2s							
GRMC	**Gramalote, San**	**0.93**	**20**	*e*P		**Pn**	**22 32 43.5**	**+2.6**
GRMC				*e*S		**Sn**	**22 33 03.2**	**+2.2**
GRMC				*i*			22 33 04.4	
	comp=Z,92nm,0.2s							
CBRI	**Barrientos, No**	**0.93**	**20**	*e*P		**Pn**	**22 32 42.2**	**+1.2**
CBRI				*e*S		**Sn**	**22 33 00.1**	**-0.8**
RUSC	**La Rusia**	**0.94**	**178**	*e*P		**Pn**	**22 32 41.4**	**0.0**
RUSC				*e*S		**Sn**	**22 33 00.1**	**-1.7**
RUSC				*i*			22 33 01.8	
	comp=Z,86nm,0.2s							
CAPV	**Capacho**	**1.29**	**38**	*e*P		**Pn**	**22 32 44.9**	**+0.9**
CAPV				*e*S		**Sn**	**22 33 07.3**	**+0.8**
OCAC	**Ocana**	**1.40**	**352**	*e*P		**Pn**	**22 32 46.9**	**+1.8**
OCAC				*e*S		**Sn**	**22 33 08.2**	**-0.1**
OCAC				*i*			22 33 13.2	
	comp=Z,83nm,0.3s							
NORC	**Norcasia**	**2.16**	**234**	*e*P		**Pn**	**22 32 53.4**	**+0.4**
NORC				*e*S		**Sn**	**22 33 21.3**	**-1.0**
ROSC	**El Rosal**	**2.32**	**211**	*e*P		**Pn**	**22 32 57.2**	**+2.0**
ROSC				*i*			22 33 33.4	
	comp=Z,63nm,0.5s							
HELC	**Santa Helena**	**2.48**	**255**	*e*P		**Pn**	**22 32 58.8**	**+1.8**
HELC				*e*S		**Sn**	**22 33 29.5**	**-0.1**
HELC				*i*			22 33 36.7	
	comp=Z,44nm,0.4s							
VIGV	**El Vigia**	**2.64**	**41**	*e*P		**Pn**	**22 32 59.7**	**+1.1**
VIGV				*e*S		**Sn**	**22 33 31.7**	**-0.8**
SOCV	**Socops**	**2.66**	**57**	*e*P		**Pn**	**22 33 00.0**	**+1.2**
SOCV				*e*S		**Sn**	**22 33 32.3**	**-0.6**
GUYC	**Guyana, Colomb**	**2.77**	**235**	*e*P		**Pn**	**22 33 01.9**	**+1.2**
GUYC				*e*S		**Sn**	**22 33 36.1**	**0.0**
GUYC				*i*			22 33 43.5	
	comp=Z,81nm,0.4s							
DBBC	**Dabeiba**	**3.08**	**273**	*e*P		**Pn**	**22 33 05.5**	**+1.5**
TOLC	**Tolima**	**3.14**	**225**	*e*P		**Pn**	**22 33 06.8**	**+1.7**
MOTC	**Monteria, Cord**	**3.18**	**307**	*e*P		**Pn**	**22 33 04.8**	**-0.4**
SDV	**Santo Domingo**	**3.19**	**50**	*e*P		**Pn**	**22 33 07.5**	**+1.9**
PRAC	**Prado**	**3.57**	**210**	*e*P		**Pn**	**22 33 11.0**	**+0.8**
PRAC				*e*S		**Sn**	**22 33 52.7**	**-0.6**
PRAC				*i*			22 33 58.8	
	comp=Z,44nm,0.1s							
ELOV	**Elorza**	**3.61**	**87**	*e*P		**Pn**	**22 33 11.9**	**+1.2**
SJAC	**San Juan de Ar**	**3.64**	**193**	*e*P		**Pn**	**22 33 11.0**	**-0.2**
SJCC	**San Jacinto, C**	**3.66**	**326**	*e*P		**Pn**	**22 33 11.5**	**+0.1**
SJCC				*i*			22 33 57.4	
	comp=Z,16nm,0.4s							
VIRV	**Villa del Rosa**	**3.71**	**11**	*e*P		**Pn**	**22 33 12.7**	**+0.7**
VIRV				*e*S		**Sn**	**22 33 53.1**	**-3.2**
SANV	**Sanarito**	**4.42**	**53**	*e*P		**Pn**	**22 33 21.7**	**+0.4**
CURV	**Curarigua**	**4.44**	**44**	*e*P		**Pn**	**22 33 22.4**	**+1.0**
CAPC	**Capurgana**	**4.56**	**293**	*e*P		**Pn**	**22 33 22.3**	**-0.6**
URIC	**Uribia, Colomb**	**4.96**	**13**	*e*P		**Pn**	**22 33 27.7**	**-0.4**
BAUV	**El Baul**	**5.44**	**67**	*e*P		**Pn**	**22 33 34.2**	**-0.3**
MAPV	**Macapo**	**5.48**	**57**	*e*P		**Pn**	**22 33 35.4**	**+0.3**
MONV	**Montecano**	**5.95**	**31**	*e*P		**Pn**	**22 33 41.5**	**+0.2**

ISCJB ***25*** *22:40:36.4±0.9, 33°.43N×0°.03×35°.56E±0°.05, h1km±7km, Error ellipse: s-maj=7.8km s-min=5.0km az=163.6*
CSEM ***25*** *22:40:36.8±0.3, 33°.44N×35°.58E, h2km, ML1.2, Error ellipse: s-maj=6.0km s-min=3.3km az=72.0*
NSSC ***25*** *22:40:36.6±1.1, 33°.44N×35°.59E, h0km±3km, MD1.1, ML1.2*
GRAL ***25*** *22:40:36.0±0.3, 33°.38N×35°.61E, h13km±2km, MD2.8*
ISC 25 22:40:37.1±1.2, 33°.44N±0°.03×35°.60E±0°.04, h7km±9km, n20, σ0s57/37, Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RCY	**Rachaya**	**0.20**	**73**	*e*P		**Pg**	**22 40 40.7**	**-0.6**
RCY				*e*S		**Sg**	**22 40 44.1**	**0.0**
DQRL	**Deir Qamar**	**0.27**	**354**	*e*P		**Pg**	**22 40 42.3**	**-0.1**
DQRL				*e*S		**Sg**	**22 40 47.0**	**+1.0**
DQRL	**Deir Qamar**	**0.27**	**354**	*e*P		**Pg**	**22 40 42.3**	**-0.1**
DQRL				*e*S		**Sg**	**22 40 47.0**	**+1.0**
BRBR	**Barbar**	**0.29**	**95**	*e*P		**Pg**	**22 40 42.5**	**-0.5**
BRBR				*e*S		**Sg**	**22 40 47.7**	**+0.8**
BRBR				AML	AML		22 40 49.0	
	comp=N,103nm,0.5s							
BRBR				AML	AML		22 40 49.8	
	comp=E,63nm,0.6s							
BRBR	**Barbar**	**0.29**	**95**	*e*P		**Pg**	**22 40 42.5**	**-0.5**
BRBR				*e*S		**Sg**	**22 40 47.7**	**+0.8**
	comp=E,63nm,0.6s							
BHL	**Bhannes**	**0.47**	**5**	*e*P		**Pg**	**22 40 45.6**	**-0.5**
BHL	**Bhannes**	**0.47**	**5**	*e*P		**Pg**	**22 40 45.7**	**-0.5**
TOTH	**TOTAH**	**0.70**	**96**	*e*P		**Pg**	**22 40 50.4**	**-0.1**
TOTH				*e*S		**Sb**	**22 41 00.9**	**-0.5**
TOTH				AML	AML		22 41 02.9	
	comp=E,10.0nm,0.4s							
TOTH				AML	AML		22 41 07.4	
	comp=N,12nm,0.5s							
TOTH	**TOTAH**	**0.70**	**96**	*e*P		**Pg**	**22 40 50.4**	**-0.1**
TOTH				*e*S		**Sb**	**22 41 00.9**	**-0.5**
	comp=N,12nm,0.5s							
TCHB	**Talchebab**	**0.83**	**158**	*e*P		**Pb**	**22 40 53.3**	**-0.5**
TCHB				*e*S		**Sb**	**22 41 05.1**	**0.0**
TCHB				AML	AML		22 41 15.6	
	comp=E,17nm,0.3s							
TCHB				AML	AML		22 41 21.7	
	comp=N,16nm,0.4s							
TCHB	**Talchebab**	**0.83**	**158**	*e*P		**Pb**	**22 40 53.3**	**-0.5**
TCHB				*e*S		**Sb**	**22 41 05.1**	**0.0**
	comp=N,16nm,0.4s							
HWQ	**Hawqa**	**0.89**	**19**	*e*P		**Pg**	**22 40 52.4**	**-1.7**
MARH	**Ras Al Marh**	**0.94**	**51**	*i* Pg		**Pg**	**22 40 54.9**	**-0.3**
MARH				*e*S		**Sb**	**22 41 09.2**	**+0.5**
MARH				AML	AML		22 41 13.4	
	comp=E,11nm,0.4s							
MARH				AML	AML		22 41 15.9	
	comp=N,4.7nm,0.3s							
MARH	**Ras Al Marh**	**0.94**	**51**	*i* Pg		**Pg**	**22 40 54.9**	**-0.3**
MARH				*e*S		**Sb**	**22 41 09.2**	**+0.5**
	comp=N,5.0nm,0.3s							
SALA	**Sala**	**1.20**	**127**	*e*P		**Pb**	**22 40 60.0**	**-0.2**
SALA				*e*S		**Sb**	**22 41 16.6**	**+0.7**
SALA				AML	AML		22 41 18.4	
	comp=E,1.8nm,0.3s							
SALA				AML	AML		22 41 18.6	
	comp=N,6.2nm,0.4s							
SALA	**Sala**	**1.20**	**127**	*e*P		**Pb**	**22 41 00.0**	**-0.2**
SALA				*e*S		**Sb**	**22 41 16.6**	**+0.7**
	comp=N,6.0nm,0.4s							
ZALF	**Zalf**	**1.54**	**109**	*e*P		**Pn**	**22 41 05.0**	**0.0**
ZALF				*e*S		**Sn**	**22 41 25.7**	**+0.4**
ZALF				AML	AML		22 41 31.2	
	comp=N,5.4nm,0.3s							
ZALF				AML	AML		22 41 31.4	
	comp=E,4.0nm,0.4s							
ZALF	**Zalf**	**1.54**	**109**	*e*P		**Pn**	**22 41 05.0**	**0.0**
ZALF				*e*S		**Sn**	**22 41 25.7**	**+0.4**
	comp=E,4.0nm,0.4s							
ROOS	**tl_alroos**	**1.58**	**62**	*e*P		**Pb**	**22 41 06.6**	**-0.1**
ROOS				*e*S		**Sg**	**22 41 27.8**	**-0.2**
ROOS				AML	AML		22 41 40.8	
	comp=N,5.9nm,0.4s							
ROOS				AML	AML		22 41 44.0	
	comp=E,5.4nm,0.4s							
ROOS	**tl_alroos**	**1.58**	**62**	*e*P		**Pb**	**22 41 06.6**	**-0.1**
ROOS				*e*S		**Sg**	**22 41 27.8**	**-0.2**
	comp=E,5.0nm,0.4s							

CSEM ***25*** *22:43:50.2, 36°.96N×45°.21E, h1km, ML2.7*
TEH 25 22:43:50.2, 36°.96N×45°.21E, h1km, ML2.7, Iran-Iraq border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CUKT	**Cukurca**	**1.31**	**283**	*e*PN	Pg	22 44 13.9	-1.4
HKR	**Hakkari**	**1.32**	**298**	*e*PN	Pg	22 44 12.8	-2.8
HKR				*e*SN	Sn	22 44 33.9	-0.4
ISHB	**Shabestar**	**1.36**	**14**	*e*Pg	Pg	22 44 14.0	-2.3
ISHB				*e*Sg	Sg	22 44 33.1	-0.8
ISHB				*e*AMB	AMB	22 44 37.3	
	comp=Z,2μm,0.2s						
ITBZ	**Tabriz**	**1.47**	**30**	*e*Pg	Pn	22 44 16.3	-1.8
ITBZ				*e*Sg	Sg	22 44 36.3	-1.3
ITBZ				*e*AMB	AMB	22 44 43.2	
	comp=Z,1μm,0.2s						
ITBZ	**Tabriz**	**1.47**	**30**	*e*Pg	Pn	22 44 16.3	-1.8
ITBZ				*e*Sg	Sg	22 44 36.3	-1.3
IBST	**Bostanabad**	**1.53**	**61**	*e*AMB	AMB	22 44 40.1	
	comp=Z,914nm,0.2s						
IMRD	**Marand**	**1.79**	**13**	*e*Pn	Pn	22 44 22.0	-0.5
IMRD				*e*AMB	AMB	22 45 01.5	
	comp=Z,673nm,0.2s						
IMRD	**Marand**	**1.79**	**13**	*e*Pn	Pn	22 44 22.0	-0.5
IHRS	**Heris**	**1.99**	**47**	*e*Pn	Pn	22 44 25.7	+0.5
IHRS				*e*AMB	AMB	22 44 55.9	
	comp=Z,493nm,0.1s						
IHRS	**Heris**	**1.99**	**47**	*e*Pn	Pn	22 44 25.7	+0.5
ISRB	**Sarab**	**2.14**	**66**	*e*Pn	Pn	22 44 27.8	+0.5
ISRB				*e*Sg	Sb	22 44 56.8	-0.3
ISRB				*e*AMB	AMB	22 45 02.0	
	comp=Z,555nm,0.2s						
ISRB	**Sarab**	**2.14**	**66**	*e*Pn	Pn	22 44 27.8	+0.5
ISRB				*e*Sg	Sb	22 44 56.8	-0.3

ISCJB ***25*** *22:54:25.7±0.5, 39°.08N±0°.03×29°.06E±0°.03, h4km±7km, Error ellipse: s-maj=5.1km s-min=4.4km az=164.0*
CSEM ***25*** *22:54:25.9±0.1, 39°.07N×29°.07E, h8km, MD2.6, Error ellipse: s-maj=2.0km s-min=1.5km az=118.0*
ISK ***25*** *22:54:25.2, 39°.06N×29°.10E, h9km, MD2.7*
DDA ***25*** *22:54:26.1, 39°.07N×29°.07E, h7km, Md2.6*
ISC 25 22:54:26.1±0.9, 39°.08N±0°.02×29°.07E±0°.02, h12km±9km, n37, σ0s39/52, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**263**	P		**Pg**	**22 54 31.8**	**-0.1**
DEMI				S		**Sg**	**22 54 35.6**	**-0.1**
DEMI	**Demirci**	**0.28**	**263**	*i* P		**Pg**	**22 54 31.8**	**-0.1**
DEMI				*i* S		**Sg**	**22 54 35.6**	**-0.1**
GDZ	**Gediz**	**0.32**	**88**	P		**Pg**	**22 54 32.6**	**0.0**
GDZ				S		**Sg**	**22 54 37.5**	**+0.4**
GDZ	**Gediz**	**0.32**	**88**	*i* P		**Pg**	**22 54 32.6**	**0.0**
GDZ				*i* S		**Sg**	**22 54 37.5**	**+0.4**
TVSB	**Tavsanli**	**0.48**	**39**	*e*PG		**Pg**	**22 54 35.0**	**-0.5**
TVSB	**Tavsanli**	**0.48**	**39**	*e*Pg		**Pg**	**22 54 35.1**	**-0.5**
KULA	**Kula-Manisa**	**0.65**	**210**	*e*PG		**Pg**	**22 54 38.1**	**-0.5**
KULA				*e*SG		**Sg**	**22 54 47.0**	**-0.2**
KULA	**Kula-Manisa**	**0.65**	**210**	*e*Pg		**Pg**	**22 54 38.2**	**-0.5**
KULA				*e*Sg		**Sg**	**22 54 47.0**	**-0.2**
MANT	**Manisa**	**0.71**	**214**	P		**Pg**	**22 54 39.8**	**-0.1**
MANT				S		**Sg**	**22 54 49.2**	**0.0**
MANT	**Manisa**	**0.71**	**214**	*i* P		**Pg**	**22 54 39.8**	**-0.1**
MANT				*i* S		**Sg**	**22 54 49.2**	**0.0**
KHAL	**Karahalli**	**0.78**	**155**	P		**Pn**	**22 54 43.4**	**+0.4**
KHAL				S		**Sb**	**22 54 52.2**	**0.0**
KHAL	**Karahalli**	**0.78**	**155**	*i* P		**Pn**	**22 54 43.4**	**+0.4**
KHAL				*i* S		**Sb**	**22 54 52.2**	**0.0**
KHL	**Karahalli**	**0.83**	**155**	*e*PG		**Pg**	**22 54 41.7**	**-0.5**
KHL				*e*SG		**Sg**	**22 54 52.5**	**-0.6**
KHL	**Karahalli**	**0.83**	**155**	*e*Pg		**Pg**	**22 54 41.7**	**-0.5**
KHL				*e*Sg		**Sg**	**22 54 52.5**	**-0.6**
ORLT	**Orhaneli**	**0.98**	**352**	*e*PG		**Pg**	**22 54 44.6**	**-0.3**
ORLT	**Orhaneli**	**0.98**	**352**	*e*Pg		**Pg**	**22 54 44.6**	**-0.3**
AKS	**Akhisar**	**1.00**	**259**	*e*PG		**Pg**	**22 54 45.1**	**-0.2**
AKS	**Akhisar**	**1.00**	**259**	*e*Pg		**Pg**	**22 54 45.1**	**-0.2**
BALB	**Balikesir**	**1.08**	**302**	*e*PN		**Pn**	**22 54 47.2**	**+0.2**
BALB	**Balikesir**	**1.08**	**302**	*e*Pn		**Pn**	**22 54 47.2**	**+0.2**
IGD	**Bursa**	**1.19**	**5**	*i* P		**Pn**	**22 54 47.1**	**-1.4**
IGD				*i* S		**Sb**	**22 55 03.8**	**-0.1**
CAVI	**Cavuskoy**	**1.27**	**28**	*e*PN		**Pn**	**22 54 49.4**	**-0.3**
CAVI	**Cavuskoy**	**1.27**	**28**	*e*Pn		**Pn**	**22 54 49.4**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.30**	**354**	*e*PN		**Pn**	**22 54 50.4**	**+0.4**
MDNY	**Mudanya-Bursa**	**1.30**	**354**	*e*Pn		**Pn**	**22 54 50.4**	**+0.4**
KCTX	**Karacabey (Bur**	**1.31**	**335**	*e*PN		**Pb**	**22 54 50.8**	**+0.2**
KCTX	**Karacabey (Bur**	**1.31**	**335**	*e*Pn		**Pb**	**22 54 50.8**	**+0.2**
BORA	**Eskisehir**	**1.34**	**53**	P		**Pn**	**22 54 51.0**	**+0.3**
BORA				S		**Sg**	**22 55 09.3**	**+0.1**
BORA	**Eskisehir**	**1.34**	**53**	*i* P		**Pn**	**22 54 51.0**	**+0.3**
BORA				*i* S		**Sg**	**22 55 09.3**	**+0.1**
GONE	**Gonen-Balikesi**	**1.44**	**313**	*e*PN		**Pb**	**22 54 53.0**	**+0.1**
GONE	**Gonen-Balikesi**	**1.44**	**313**	*e*Pn		**Pb**	**22 54 53.0**	**+0.1**
ADVT	**Abdulvahap**	**1.45**	**21**	*e*PN		**Pn**	**22 54 52.4**	**+0.3**
ADVT	**Abdulvahap**	**1.45**	**21**	*e*Pn		**Pn**	**22 54 52.4**	**+0.3**
ARMT	**Armutlu**	**1.50**	**354**	*e*PN		**Pn**	**22 54 53.4**	**+0.7**
ARMT	**Armutlu**	**1.50**	**354**	*e*Pn		**Pn**	**22 54 53.4**	**+0.7**
GULT	**Gulveren**	**1.75**	**39**	*e*PN		**Pn**	**22 54 56.5**	**+0.1**
GULT	**Gulveren**	**1.75**	**39**	*e*Pn		**Pn**	**22 54 56.5**	**+0.1**

ISK ***25*** *22:55:14.9, 39°.12N×29°.08E, h4km, MD2.9*
DDA ***25*** *22:55:14.7, 39°.11N×29°.05E, h7km, Md2.8*
ISCJB ***25*** *22:55:15.0±0.4, 39°.11N±0°.02×29°.06E±0°.03, h2km±5km, Error ellipse: s-maj=3.8km s-min=3.5km az=146.6*
CSEM ***25*** *22:55:15.3±0.1, 39°.11N×29°.06E, h2km, MD2.8, Error ellipse: s-maj=2.4km s-min=2.1km az=114.0*
ISC 25 22:55:15.2±1.0, 39°.12N±0°.02×29°.05E±0°.02, h8km±9km, n59, σ0s41/78, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**254**	P		**Pg**	**22 55 20.8**	**+0.2**
DEMI				S		**Sg**	**22 55 24.6**	**+0.3**
DEMI	**Demirci**	**0.27**	**254**	*i* P		**Pg**	**22 55 20.8**	**+0.2**
DEMI				*i* S		**Sg**	**22 55 24.6**	**+0.3**
GDZ	**Gediz**	**0.34**	**95**	P		**Pg**	**22 55 21.9**	**0.0**
GDZ				S		**Sg**	**22 55 26.6**	**+0.3**
GDZ	**Gediz**	**0.34**	**95**	*i* P		**Pg**	**22 55 21.9**	**0.0**
GDZ				*i* S		**Sg**	**22 55 26.6**	**+0.3**
TVSB	**Tavsanli**	**0.46**	**44**	*e*PG		**Pb**	**22 55 25.0**	**-0.7**
TVSB				*e*SG		**Sg**	**22 55 30.1**	**-0.1**
TVSB	**Tavsanli**	**0.46**	**44**	*e*Pg		**Pb**	**22 55 25.0**	**-0.7**
TVSB				*e*Sg		**Sg**	**22 55 30.1**	**-0.1**
DURS	**Dursunbey**	**0.66**	**317**	P		**Pg**	**22 55 27.8**	**-0.1**
DURS	**Dursunbey**	**0.66**	**317**	*i* P		**Pg**	**22 55 27.8**	**-0.1**
KULA	**Kula-Manisa**	**0.68**	**207**	*e*PG		**Pg**	**22 55 28.1**	**-0.2**
KULA	**Kula-Manisa**	**0.68**	**207**	*e*Pg		**Pg**	**22 55 28.1**	**-0.2**
MANT	**Manisa**	**0.74**	**212**	P		**Pg**	**22 55 29.2**	**-0.2**
MANT				S		**Sg**	**22 55 38.6**	**-0.4**
MANT	**Manisa**	**0.74**	**212**	*i* P		**Pg**	**22 55 29.2**	**-0.2**
MANT				*i* S		**Sg**	**22 55 38.6**	**-0.4**
KHAL	**Karahalli**	**0.82**	**155**	P		**Pg**	**22 55 30.9**	**-0.2**
KHAL				S		**Sg**	**22 55 41.5**	**-0.3**
KHAL	**Karahalli**	**0.82**	**155**	*i* P		**Pg**	**22 55 30.9**	**-0.2**
KHAL				*i* S		**Sg**	**22 55 41.5**	**-0.3**
KHL	**Karahalli**	**0.88**	**155**	*e*PG		**Pg**	**22 55 32.0**	**-0.1**
KHL	**Karahalli**	**0.88**	**155**	*e*Pg		**Pg**	**22 55 32.0**	**-0.1**
ORLT	**Orhaneli**	**0.93**	**353**	*e*PG		**Pg**	**22 55 33.3**	**+0.1**
ORLT	**Orhaneli**	**0.93**	**353**	*e*Pg		**Pg**	**22 55 33.3**	**+0.1**
AKS	**Akhisar**	**0.99**	**256**	*e*PG		**Pb**	**22 55 34.6**	**-0.1**
AKS	**Akhisar**	**0.99**	**256**	*e*Pg		**Pb**	**22 55 34.6**	**-0.1**
BALB	**Balikesir**	**1.05**	**300**	*e*PG		**Pn**	**22 55 36.2**	**+0.1**
BALB				*e*SG		**Sn**	**22 55 51.2**	**+0.2**
BALB	**Balikesir**	**1.05**	**300**	*e*Pg		**Pn**	**22 55 36.3**	**+0.1**
BALB				*e*Sg		**Sn**	**22 55 51.2**	**+0.2**
IGD	**Bursa**	**1.15**	**6**	*i* P		**Pg**	**22 55 36.5**	**-0.8**
IGD				*i* S		**Sg**	**22 55 52.3**	**+0.1**
CAVI	**Cavuskoy**	**1.24**	**29**	*e*PN		**Pg**	**22 55 39.2**	**+0.2**
CAVI	**Cavuskoy**	**1.24**	**29**	*e*Pn		**Pg**	**22 55 39.2**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.25**	**354**	*e*PN		**Pn**	**22 55 38.8**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.25**	**354**	*e*Pn		**Pn**	**22 55 38.8**	**-0.3**
IZI	**Iznik**	**1.26**	**15**	*e*PN		**Pg**	**22 55 39.5**	**+0.1**
IZI	**Iznik**	**1.26**	**15**	*e*Pn		**Pg**	**22 55 39.5**	**+0.1**
KCTX	**Karacabey (Bur**	**1.26**	**335**	*e*PN		**Pb**	**22 55 39.5**	**+0.2**
KCTX	**Karacabey (Bur**	**1.26**	**335**	*e*Pn		**Pb**	**22 55 39.5**	**+0.2**
BORA	**Eskisehir**	**1.32**	**55**	P		**Pn**	**22 55 40.0**	**-0.1**
BORA				S		**Sn**	**22 55 57.9**	**-0.1**
BORA	**Eskisehir**	**1.32**	**55**	*i* P		**Pn**	**22 55 40.0**	**-0.1**
BORA				*i* S		**Sn**	**22 55 57.9**	**-0.1**
GONE	**Gonen-Balikesi**	**1.40**	**312**	*e*PN		**Pg**	**22 55 42.2**	**+0.1**
GONE	**Gonen-Balikesi**	**1.40**	**312**	*e*Pn		**Pg**	**22 55 42.2**	**+0.1**
ADVT	**Abdulvahap**	**1.42**	**22**	*e*PN		**Pb**	**22 55 41.8**	**-0.1**
ADVT	**Abdulvahap**	**1.42**	**22**	*e*Pn		**Pb**	**22 55 41.8**	**-0.1**
ARMT	**Armutlu**	**1.45**	**354**	*e*PN		**Pb**	**22 55 42.7**	**+0.2**
ARMT	**Armutlu**	**1.45**	**354**	*e*Pn		**Pb**	**22 55 42.7**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**1.48**	**218**	*e*PN		**Pg**	**22 55 43.7**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**1.48**	**218**	*e*Pn		**Pg**	**22 55 43.7**	**0.0**
EDC	**Edincik**	**1.53**	**324**	*e*PN		**Pb**	**22 55 44.3**	**+0.4**
EDC	**Edincik**	**1.53**	**324**	*e*Pn		**Pb**	**22 55 44.3**	**+0.4**
BOLV	**Bolvadin**	**1.53**	**105**	P		**Pg**	**22 55 44.6**	**-0.1**
BOLV				S		**Sb**	**22 56 03.6**	**0.0**
BOLV	**Bolvadin**	**1.53**	**105**	*i* P		**Pg**	**22 55 44.6**	**-0.1**
BOLV				*i* S		**Sb**	**22 56 03.6**	**0.0**
AYDN	**Tasoluk**	**1.72**	**213**	P		**Pb**	**22 55 47.1**	**-0.1**
AYDN				S		**Sn**	**22 56 07.9**	**+0.1**
AYDN	**Tasoluk**	**1.72**	**213**	*i* P		**Pb**	**22 55 47.1**	**-0.1**
AYDN				*i* S		**Sn**	**22 56 07.9**	**+0.1**
GULT	**Gulveren**	**1.73**	**40**	*e*PN		**Pn**	**22 55 46.4**	**+0.7**
GULT	**Gulveren**	**1.73**	**40**	*e*Pn		**Pn**	**22 55 46.4**	**+0.7**
HRT	**Hereke**	**1.77**	**15**	*e*PN		**Pb**	**22 55 47.5**	**-0.4**
HRT	**Hereke**	**1.77**	**15**	*e*Pn		**Pb**	**22 55 47.5**	**-0.4**
ISK	**Istanbul-Kandi**	**1.94**	**0**	*e*PN		**Pb**	**22 55 50.1**	**-0.7**
ISK	**Istanbul-Kandi**	**1.94**	**0**	*e*Pn		**Pb**	**22 55 50.2**	**-0.7**
SVRH	**Sivrihisar-ESK**	**1.95**	**80**	*e*PN		**Pn**	**22 55 49.6**	**+0.9**
SVRH	**Sivrihisar-ESK**	**1.95**	**80**	*e*Pn		**Pn**	**22 55 49.6**	**+0.9**
SILT	**Sile**	**2.08**	**12**	*e*PN		**Pn**	**22 55 51.0**	**+0.6**
SILT	**Sile**	**2.08**	**12**	*e*Pn		**Pn**	**22 55 51.0**	**+0.6**
RKY	**Sarkoy-Tekirda**	**2.13**	**318**	*e*PN		**Pb**	**22 55 52.7**	**-1.4**
RKY	**Sarkoy-Tekirda**	**2.13**	**318**	*e*Pn		**Pb**	**22 55 52.7**	**-1.4**

CSEM ***25*** *22:59:26.6, 42°.86N×13°.26E, h9km, MD1.6/5*
ROM 25 22:59:26.6±0.1, 42°.86N×13°.26E, h9km±1km, Md1.6/5, MI0.9/5, Error ellipse: s-maj=1.7km s-min=1.0km az=29.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FDMO	**Fiordimonte**	**0.21**	**324**	Pg	Pg	22 59 31.9	+0.9
FDMO				Sg	Sg	22 59 35.6	+1.5
	29nm,0.3s						
FDMO	**Fiordimonte**	**0.21**	**324**	Pg	Pg	22 59 31.9	+0.9
FDMO				Sg	Sg	22 59 35.6	+1.5
	29nm,0.3s						
CESI	**CESI - Serrava**	**0.30**	**299**	Pg	Pg	22 59 33.3	+0.7
CESI				Sg	Sb	22 59 38.3	-0.9
	4.0nm,0.4s						
CESI	**CESI - Serrava**	**0.30**	**299**	Pg	Pg	22 59 33.3	+0.7
CESI				Sg	Sb	22 59 38.3	-0.9
	4.0nm,0.4s						
LNSS	**Leonessa**	**0.31**	**212**	Pg	Pg	22 59 33.5	+0.8
LNSS				Sg	Sb	22 59 38.8	-0.6
	18nm,0.2s						
LNSS	**Leonessa**	**0.31**	**212**	Pg	Pg	22 59 33.5	+0.8
LNSS				Sg	Sb	22 59 38.8	-0.6
	18nm,0.2s						
TERO	**Teramo**	**0.35**	**133**	Pg	Pg	22 59 34.1	+0.6
TERO				Sg	Sb	22 59 40.1	-0.5
	14nm,0.1s						
TERO	**Teramo**	**0.35**	**133**	Pg	Pg	22 59 34.1	+0.6
TERO				Sg	Sb	22 59 40.1	-0.5
	14nm,0.1s						
RM33	**Pellescritta (**	**0.35**	**185**	Pg	Pg	22 59 34.2	+0.5
RM33				Sg	Sb	22 59 40.1	-0.7
	8.0nm,0.5s						
RM33	**Pellescritta (**	**0.35**	**185**	Pg	Pg	22 59 34.2	+0.5
RM33				Sg	Sb	22 59 40.1	-0.7
	8.0nm,0.5s						

NIED ***25*** *23:01:00, 37°.50N×144°.70E, h5km, Mw3.8 Best double couple: M0=5.13000×10^14 NP1:φ=29.00000°, δ=16.00000°, λ=-92.00000°. NP2:φ=210.00000°, δ=74.00000°, λ=-

RLS				S	Sg	23 28 01.0	-0.3
RLS	**Riolos of Patr**	0.32	62	P	Pg	23 27 55.5	-1.4
RLS				S	Sg	23 28 00.2	-1.0
RLS	**Riolos of Patr**	0.32	62	S	Sg	23 28 00.2	-1.0
RLS				AML	AML	23 28 01.4	
RLS				AML	AML	23 28 03.0	
RLS	**Riolos of Patr**	0.32	62	P	Pg	23 27 55.5	-1.4
KFL	**Anninata**	0.32	308	P	Pg	23 27 56.3	-0.7
KFL	**Anninata**	0.32	308	P	Pg	23 27 56.5	-0.5
KFL				S	Sg	23 28 01.0	-0.5
KFL	**Anninata**	0.32	308	P	Pg	23 27 56.5	-0.5
KFL				S	Sg	23 28 01.0	-0.5
ZKS	**Zakynthos**	0.34	230	P	Pg	23 27 57.0	-0.2
ZKS				S	Sb	23 28 03.5	+0.1
ZKS	**Zakynthos**	0.34	230	P	Pb	23 27 57.4	-0.7
ZKS				S	Sb	23 28 02.7	-0.6
ZKS	**Zakynthos**	0.34	230	P	Pb	23 27 57.4	-0.7
ZKS				S	Sb	23 28 02.7	-0.6
ZKS				AML	AML	23 28 06.0	
ZKS				AML	AML	23 28 10.4	
AXS	**Araxos**	0.35	36	P	Pg	23 27 56.2	-1.3
AXS				S	Sg	23 28 01.9	-0.5
AXS	**Araxos**	0.35	36	P	Pg	23 27 56.3	-1.3
AXS				S	Sg	23 28 00.8	-1.6
AXS	**Araxos**	0.35	36	P	Pg	23 27 56.3	-1.2
AXS				S	Sg	23 28 00.8	-1.6
DRO	**Drossia**	0.47	85	P	Pg	23 27 58.5	-1.2
DRO				S	Sb	23 28 06.8	-0.6
DRO	**Drossia**	0.47	85	P	Pg	23 27 59.0	-0.8
DRO				S	Sg	23 28 04.7	-1.4
DRO	**Drossia**	0.47	85	P	Pg	23 27 59.0	-0.8
DRO				S	Sg	23 28 04.7	-1.4
DRO				AML	AML	23 28 08.4	
DRO				AML	AML	23 28 09.5	
VLS	**Valsamata**	0.49	303	P	Pg	23 27 58.6	-1.4
VLS				S	Sg	23 28 06.8	+0.2
VLS	**Valsamata**	0.49	303	P	Pg	23 27 58.6	-1.4
VLS	**Valsamata**	0.49	303	P	Pg	23 27 58.1	-1.9
VLS				S	Sg	23 28 05.2	-1.4
VLS	**Valsamata**	0.49	303	P	Pg	23 27 58.6	-1.4
AMT	**Artemida-Makis**	0.61	128	P	Pg	23 28 01.9	-0.3
AMT				S	Sb	23 28 11.8	+0.7
AMT	**Artemida-Makis**	0.61	128	P	Pg	23 28 01.9	-0.3
AMT				S	Sb	23 28 11.8	+0.7
UPR	**University Cam**	0.65	55	P	Pg	23 28 02.2	-0.8
UPR				S	Sg	23 28 11.7	+0.1
UPR	**University Cam**	0.65	55	P	Pg	23 28 02.5	-0.5
UPR				S	Sg	23 28 09.9	-1.7
UPR	**University Cam**	0.65	55	P	Pg	23 28 02.5	-0.5
UPR				S	Sg	23 28 09.9	-1.7
PDO	**Prodromos**	0.69	5	P	Pg	23 28 02.5	-1.2
PDO	**Prodromos**	0.69	5	P	Pg	23 28 02.6	-1.2
PDO				S	Sg	23 28 10.9	-2.0
PDO	**Prodromos**	0.69	5	P	Pg	23 28 02.6	-1.2
PDO				S	Sg	23 28 10.9	-2.0
PDO				AML	AML	23 28 18.7	
PDO				AML	AML	23 28 19.5	
LAKA	**Lakka**	0.76	64	P	Pg	23 28 03.5	-1.6
LAKA				S	Sg	23 28 15.1	0.0
LAKA	**Lakka**	0.76	64	P	Pg	23 28 03.5	-1.6
LAKA	**Lakka**	0.76	64	*e*Pn	Pg	23 28 04.1	-1.0
LAKA				S	Sg	23 28 14.4	-0.7
LAKA	**Lakka**	0.76	64	P	Pg	23 28 03.5	-1.6
LAKA				S	Sg	23 28 14.4	-0.7
LAKA				AML	AML	23 28 17.1	
LAKA				AML	AML	23 28 19.2	
	comp=N,97707µm,0.9s						
LAKA	**Lakka**	0.76	64	*e*Pg	Pg	23 28 03.5	-1.6
LAKA				*e*Pn	Pg	23 28 04.1	-1.0
LAKA				*e*Sg	Sg	23 28 14.6	-0.5
PVO	**Paravola**	0.78	25	P	Pg	23 28 03.9	-1.5
PVO	**Paravola**	0.78	25	P	Pg	23 28 04.1	-1.3
PVO				S	Sg	23 28 14.5	-1.1
PVO	**Paravola**	0.78	25	P	Pg	23 28 04.1	-1.3
PVO				S	Sg	23 28 14.5	-1.1
PVO				AML	AML	23 28 19.6	
PVO				AML	AML	23 28 21.3	
EFP	**Efpalio**	0.81	50	P	Pg	23 28 04.9	-1.2
EFP				S	Sb	23 28 17.2	+0.2
EFP	**Efpalio**	0.81	50	P	Pg	23 28 04.2	-1.9
EFP				S	Sg	23 28 15.5	-1.2
EFP	**Efpalio**	0.81	50	P	Pg	23 28 04.2	-1.9
EFP				S	Sg	23 28 15.5	-1.2
KLV	**Kalavryta, Ach**	0.83	81	P	Pg	23 28 04.3	-2.2
KLV				S	Sb	23 28 18.2	+0.5
KLV	**Kalavryta, Ach**	0.83	81	P	Pg	23 28 04.1	-2.4
KLV	**Kalavryta, Ach**	0.83	81	*e*Pn	Pg	23 28 05.6	-0.9
KLV				S	Sg	23 28 17.0	-0.4
KLV	**Kalavryta, Ach**	0.83	81	P	Pg	23 28 04.0	-2.4
KLV				S	Sg	23 28 17.1	-0.4
KLV				AML	AML	23 28 23.0	
KLV				AML	AML	23 28 25.9	
KLV	**Kalavryta, Ach**	0.83	81	*e*Pg	Pg	23 28 04.3	-2.2
KLV				*e*Pn	Pg	23 28 05.6	-0.9
KLV				*e*Sg	Sb	23 28 17.7	0.0
KLV				*e*Sn	Sb	23 28 18.2	+0.5
SERG	**Sergoula**	0.90	56	P	Pg	23 28 05.9	-1.8
SERG	**Sergoula**	0.90	56	P	Pg	23 28 05.9	-1.8
SERG				S	Sg	23 28 17.9	-1.6
ANX	**Ano Chora**	0.93	43	P	Pg	23 28 06.6	-1.8
ANX				S	Sg	23 28 19.9	-0.7
ANX	**Ano Chora**	0.93	43	P	Pg	23 28 06.6	-1.8
ANX				S	Sg	23 28 19.5	-1.1
ANX	**Ano Chora**	0.93	43	S	Sg	23 28 19.5	-1.1
ANX				AML	AML	23 28 24.2	
ANX				AML	AML	23 28 27.0	
LKD2	**Lefkada island**	0.95	338	P	Pg	23 28 06.9	-1.7
LKD2	**Lefkada island**	0.95	338	P	Pg	23 28 06.8	-1.8
LKD2				S	Sb	23 28 21.2	+0.2
LKD2	**Lefkada island**	0.95	338	P	Pg	23 28 06.8	-1.8
LKD2				S	Sg	23 28 20.1	-1.0
LKD2				AML	AML	23 28 27.5	
LKD2				AML	AML	23 28 28.5	
LKD2	**Lefkada island**	0.95	338	P	Pg	23 28 06.9	-1.7
LKD2				S	Sb	23 28 21.2	+0.2
ITM	**Ithomi**	0.98	138	P	Pg	23 28 08.0	-1.2
ITM				S	Sn	23 28 23.6	+0.3
ITM	**Ithomi**	0.98	138	P	Pg	23 28 07.9	-1.2
ITM				S	Sb	23 28 22.5	+0.7
ITM	**Ithomi**	0.98	138	P	Pg	23 28 07.9	-1.2
ITM				S	Sb	23 28 22.5	+0.7
ITM				AML	AML	23 28 30.2	
	comp=E,68695µm,0.6s						
ITM				AML	AML	23 28 37.4	
	comp=N,72601µm,0.9s						
ITM	**Ithomi**	0.98	138	P	Pg	23 28 08.0	-1.2
PYL	**PYLOS**	1.13	153	P	Pb	23 28 10.5	-1.2
PYL				S	Sn	23 28 28.9	+1.8
PYL	**PYLOS**	1.13	153	P	Pb	23 28 10.3	-1.4
PYL				S	Sb	23 28 25.8	-0.5
PYL	**PYLOS**	1.13	153	P	Pb	23 28 10.3	-1.4
PYL				S	Sb	23 28 25.8	-0.5
PYL				AML	AML	23 28 35.4	
	comp=E,64437µm,0.5s						
PYL				AML	AML	23 28 43.8	
	comp=N,57485µm,0.7s						
PYL	**PYLOS**	1.13	153	*e*Pg	Pb	23 28 10.5	-1.2
PYL				*e*Sg	Sn	23 28 28.9	+1.8
PYL				*e*Sn	Sn	23 28 29.0	+1.8
VLX	**Vlachokerasia**	1.14	118	P	Pb	23 28 10.9	-1.0
VLX				S	Sn	23 28 29.6	+2.1
VLX	**Vlachokerasia**	1.14	118	P	Pb	23 28 11.1	-0.8
VLX	**Vlachokerasia**	1.14	118	*e*Pn	Pb	23 28 11.5	-0.4
VLX				S	Sg	23 28 27.2	0.0
VLX	**Vlachokerasia**	1.14	118	P	Pb	23 28 11.1	-0.8
VLX				S	Sg	23 28 27.2	0.0
VLX				AML	AML	23 28 35.9	
VLX				AML	AML	23 28 38.7	
VLX	**Vlachokerasia**	1.14	118	*e*Pg	Pb	23 28 10.9	-1.0
VLX				*e*Pn	Pb	23 28 11.5	-0.4
VLX				*e*Sg	Sn	23 28 28.6	+1.1
VLX				*e*Sn	Sn	23 28 29.6	+2.1
EVR	**Evrytania**	1.14	28	P	Pb	23 28 09.7	-2.3
EVR				S	Sn	23 28 27.8	+0.2
EVR	**Evrytania**	1.14	28	P	Pb	23 28 09.5	-2.5
EVR				S	Sn	23 28 27.8	+0.2
EVR	**Evrytania**	1.14	28	P	Pb	23 28 09.5	-2.5
EVR				AML	AML	23 28 39.5	
	comp=N,79619µm,0.8s						
EVR	**Evrytania**	1.14	28	P	Pb	23 28 09.7	-2.3
EVR				S	Sn	23 28 27.8	+0.2
DSL	**Palaion Diasel**	1.22	359	P	Pn	23 28 11.2	-1.8
DSL				S	Sn	23 28 29.7	+0.3
DSL	**Palaion Diasel**	1.22	359	P	Pn	23 28 10.9	-2.1
DSL	**Palaion Diasel**	1.22	359	*e*Pn	Pn	23 28 12.3	-0.7
DSL				S	Sb	23 28 28.6	-0.3
DSL	**Palaion Diasel**	1.22	359	P	Pn	23 28 10.9	-2.1
DSL				S	Sb	23 28 28.6	-0.3
DSL				AML	AML	23 28 40.1	
	comp=E,75115µm,0.4s						
DSL				AML	AML	23 28 41.2	
	comp=N,83329µm,0.7s						
DSL	**Palaion Diasel**	1.22	359	*e*Pg	Pn	23 28 11.2	-1.8
DSL				*e*Pn	Pn	23 28 12.3	-0.7
DSL				*e*Sg	Sn	23 28 29.7	+0.3
DSL				*e*Sn	Sg	23 28 30.4	+0.6
DSF	**Desfina**	1.22	65	P	Pn	23 28 11.2	-1.9
DSF				S	Sn	23 28 30.7	+1.3
DSF	**Desfina**	1.22	65	P	Pn	23 28 10.6	-2.5
DSF				S	Sb	23 28 28.4	-0.5
DSF				*e*Sg	Sn	23 28 30.3	+0.9
DSF	**Desfina**	1.22	65	P	Pn	23 28 10.6	-2.5
DSF				S	Sb	23 28 28.4	-0.5
DSF				AML	AML	23 28 36.8	
	comp=N,50648µm,0.9s						
DSF				AML	AML	23 28 41.5	
	comp=E,74061µm,0.6s						
DSF	**Desfina**	1.22	65	*e*Pn	Pn	23 28 11.2	-1.9
DSF				*e*Sg	Sn	23 28 30.3	+0.9
DSF				*e*Sn	Sn	23 28 30.7	+1.3
AGG	**Agios Georgios**	1.46	40	*e*PN	Pn	23 28 15.4	-1.0
AGG	**Agios Georgios**	1.46	40	P	Pn	23 28 15.7	-0.7
AGG	**Agios Georgios**	1.46	40	*e*P	Pn	23 28 15.7	-0.7
AGG				*e*		23 28 37.1	
AGG	**Agios Georgios**	1.46	40	P	Pn	23 28 15.7	-0.7
AGG	**Agios Georgios**	1.46	40	*e*Pg	Pn	23 28 16.5	+0.1
AGG				S	Sb	23 28 36.3	+0.4
AGG	**Agios Georgios**	1.46	40	P	Pn	23 28 15.7	-0.7
AGG				S	Sb	23 28 36.3	+0.4
AGG				AML	AML	23 28 44.3	
AGG				AML	AML	23 28 44.7	
AGG	**Agios Georgios**	1.46	40	*e*Pn	Pn	23 28 15.7	-0.7
AGG				*e*Pg	Pn	23 28 16.5	+0.1
AGG				*e*Sn	Sg	23 28 37.1	-0.5
AGG				*e*Sn	Sb	23 28 37.2	+1.3
LTK	**Loutraki**	1.47	85	P	Pn	23 28 15.8	-0.7
LTK				S	Sg	23 28 38.6	+0.9
LTK	**Loutraki**	1.47	85	P	Pn	23 28 15.9	-0.5
LTK	**Loutraki**	1.47	85	*e*Pg	Pn	23 28 16.5	+0.1
LTK				S	Sg	23 28 37.4	-0.3
LTK	**Loutraki**	1.47	85	P	Pn	23 28 15.9	-0.5
LTK				S	Sg	23 28 37.4	-0.3
LTK				AML	AML	23 28 47.9	
	comp=E,73217µm,0.7s						
LTK				AML	AML	23 28 48.3	
	comp=N,72312µm,0.9s						
LTK	**Loutraki**	1.47	85	*e*Pn	Pn	23 28 15.8	-0.7
LTK				*e*Pg	Pn	23 28 16.5	+0.1
LTK				*e*Sn	Sg	23 28 37.6	-0.1
LTK				*e*Sg	Sg	23 28 38.6	+0.9
LKR	**Lokris**	1.66	63	P	Pn	23 28 19.3	+0.3
LKR	**Lokris**	1.66	63	P	Pb	23 28 20.6	-0.1
LKR				S	Sb	23 28 42.0	+0.5
LKR	**Lokris**	1.66	63	P	Pb	23 28 20.6	-0.1
LKR				S	Sb	23 28 42.0	+0.5
LKR				AML	AML	23 28 45.9	
	comp=N,74144µm,0.8s						
LKR				AML	AML	23 28 46.5	
	comp=E,45597µm,0.7s						
LKR	**Lokris**	1.66	63	P	Pn	23 28 19.3	+0.3
LKR				S	Sb	23 28 42.2	+0.8
KRND	**KRANIDI**	1.70	107	P	Pb	23 28 21.4	0.0
KRND				S	Sb	23 28 43.3	+0.6
KRND	**KRANIDI**	1.70	107	P	Pn	23 28 20.3	+0.7
KRND				S	Sb	23 28 43.3	+0.6
KRND	**KRANIDI**	1.70	107	P	Pn	23 28 20.3	+0.7
KRND				S	Sb	23 28 43.3	+0.6
KRND				AML	AML	23 28 51.3	
	comp=N,85145µm,0.8s						
KRND				AML	AML	23 28 52.5	
IGT	**Igoumenitsa**	1.73	340	P	Pn	23 28 20.8	+0.8
IGT				S	Sb	23 28 43.5	0.0
IGT	**Igoumenitsa**	1.73	340	*e*P	Pn	23 28 20.3	+0.3
IGT				*e*		23 28 43.5	
IGT	**Igoumenitsa**	1.73	340	P	Pn	23 28 20.3	+0.3
IGT				S	Sb	23 28 43.7	+0.2
IGT	**Igoumenitsa**	1.73	340	P	Pn	23 28 20.3	+0.3
IGT				S	Sb	23 28 43.7	+0.2
IGT				AML	AML	23 28 58.4	
	comp=E,17056µm,0.7s						
IGT				AML	AML	23 29 03.6	
	comp=N,17977µm,0.6s						
IGT	**Igoumenitsa**	1.73	340	*e*Pn	Pn	23 28 20.3	+0.3
IGT				*e*Pg	Pn	23 28 20.8	+0.8
IGT				*e*Sn	Sb	23 28 43.5	0.0
IGT				*e*Sg	Sg	23 28 44.2	-1.8
DID	**Didima**	1.73	103	P	Pb	23 28 21.3	-0.7
DID				S	Sg	23 28 45.8	-0.3
DID	**Didima**	1.73	103	*e*Pn	Pb	23 28 21.1	-0.9
DID	**Didima**	1.73	103	P	Pb	23 28 21.5	-0.4
DID				S	Sb	23 28 44.5	+0.9
DID	**Didima**	1.73	103	P	Pb	23 28 21.5	-0.4
DID				S	Sb	23 28 44.5	+0.9
DID				AML	AML	23 28 50.3	
	comp=N,71544µm,1.2s						
DID				AML	AML	23 28 55.3	
	comp=E,97736µm,0.8s						
DID	**Didima**	1.73	103	*e*Pn	Pb	23 28 21.1	-0.9
DID				*e*Pg	Pb	23 28 21.3	-0.7
DID				*e*Sn	Sb	23 28 44.2	+0.6
DID				*e*Sg	Sg	23 28 45.8	-0.3
JAN	**Janina**	1.75	353	P	Pn	23 28 21.2	+0.8
JAN	**Janina**	1.75	353	P	Pn	23 28 21.2	+0.8
JAN				S	Sb	23 28 44.1	-0.2
JAN	**Janina**	1.75	353	P	Pb	23 28 22.0	-0.3
JAN				S	Sb	23 28 44.5	+0.2
JAN	**Janina**	1.75	353	S	Sb	23 28 44.5	+0.2
JAN				AML	AML	23 28 56.4	
	comp=E,30573µm,1.0s						
JAN	**Janina**	1.75	353	P	Pn	23 28 21.2	+0.8
JAN				S	Sb	23 28 44.1	-0.2
THL	**Klokotos Trika**	1.79	23	P	Pn	23 28 21.4	+0.5
THL	**Klokotos Trika**	1.79	23	P	Pn	23 28 21.4	+0.5
THL				S	Sb	23 28 46.2	+0.8
SGD	**Sagiada**	1.83	338	P	Pn	23 28 22.3	+0.9
SGD	**Sagiada**	1.83	338	P	Pn	23 28 22.3	+0.9
VLI	**Veliai**	1.88	129	P	Pb	23 28 24.6	+0.2
VLI	**Veliai**	1.88	129	P	Pn	23 28 21.9	-0.1
VLI	**Veliai**	1.88	129	*e*Pn	Pn	23 28 22.8	+0.7
VLI				S	Sb	23 28 48.2	+0.4
VLI	**Veliai**	1.88	129	P	Pn	23 28 21.9	-0.1
VLI				S	Sb	23 28 48.2	+0.4
VLI				AML	AML	23 29 00.4	
	comp=N,34681µm,0.8s						
VLI				AML	AML	23 29 03.1	
	comp=E,31956µm,1.2s						
VLI	**Veliai**	1.88	129	*e*Pn	Pn	23 28 22.8	+0.7
VLI				*e*Pg	Pb	23 28 24.6	+0.2
VLI				*e*Sn	Sb	23 28 48.4	+0.6
SMIA	**Simia**	1.91	59	P	Pn	23 28 22.8	+0.3
SMIA	**Simia**	1.91	59	P	Pn	23 28 22.8	+0.3
SMIA				S	Sb	23 28 49.0	+0.3
SMIA	**Simia**	1.91	59	P	Pb	23 28 24.6	-0.4
SMIA				S	Sb	23 28 49.0	+0.3
SMIA				AML	AML	23 28 58.8	
	comp=E,79764µm,0.9s						
SMIA				AML	AML	23 28 60.0	
	comp=N,82666µm,0.6s						
KPRO	**Kipourio**	2.05	5	P	Pb	23 28 26.6	-0.8
KPRO	**Kipourio**	2.05	5	P	Pb	23 28 26.6	-0.8
KPRO				AML	AML	23 29 05.3	
	comp=E,39702µm,1.1s						
KPRO				AML	AML	23 29 08.4	
	comp=N,29601µm,1.0s						
ATH	**Athens Observa**	2.06	88	P	Pn	23 28 25.9	+1.4
ATH	**Athens Observa**	2.06	88	P	Pn	23 28 25.9	+1.4
ATH				S	Sb	23 28 52.7	-0.3
ATH	**Athens Observa**	2.06	88	P	Pn	23 28 25.2	+0.7
ATH				S	Sb	23 28 53.2	+0.2
ATH	**Athens Observa**	2.06	88	P	Pn	23 28 25.9	+1.4
ATH				S	Sb	23 28 52.7	-0.3
FYTO	**Fytoko, Volos**	2.07	43	P	Pn	23 28 25.9	+1.2
FYTO	**Fytoko, Volos**	2.07	43	*e*Pn	Pn	23 28 25.4	+0.7
FYTO	**Fytoko, Volos**	2.07	43	P	Pb	23 28 26.5	-1.2
FYTO	**Fytoko, Volos**	2.07	43	P	Pb	23 28 26.5	-1.2
FYTO	**Fytoko, Volos**	2.07	43	*e*Pn	Pn	23 28 25.4	+0.7
FYTO				*e*Pg	Pn	23 28 25.9	+1.2
FYTO				*e*Sn	Sn	23 28 51.8	+1.5
KEK	**Kerkira**	2.07	331	P	Pn	23 28 25.2	+0.5
KEK	**Kerkira**	2.07	331	P	Pn	23 28 25.1	+0.4
KEK				S	Sb	23 28 52.8	-0.5
KEK	**Kerkira**	2.07	331	P	Pn	23 28 25.2	+0.5
KEK				S	Sb	23 28 52.8	-0.5
VLY	**Voula,Athens**	2.12	91	P	Pn	23 28 25.7	+0.3
VLY				S	Sb	23 28 54.6	-0.2
VLY	**Voula,Athens**	2.12	91	P	Pn	23 28 25.7	+0.3
VLY	**Voula,Athens**	2.12	91	*e*Pg	Pn	23 28 26.1	+0.7
VLY				S	Sb	23 28 54.6	-0.2
VLY	**Voula,Athens**	2.12	91	*e*Pn	Pn	23 28 25.7	+0.3
VLY				*e*Pg	Pn	23 28 26.1	+0.7
VLY				*e*Sn	Sb	23 28 54.4	-0.4
VLY				*e*Sg	Sb	23 28 54.6	-0.2
NEO	**Neokhori**	2.16	49	P	Pn	23 28 26.3	+0.3
NEO	**Neokhori**	2.16	49	P	Pn	23 28 27.5	+1.5
NEO				S	Sb	23 28 54.7	-1.3
NEO	**Neokhori**	2.16	49	P	Pn	23 28 27.4	+1.5
NEO	**Neokhori**	2.16	49	P	Pn	23 28 26.3	+0.3
NEO				S	Sb	23 28 54.7	-1.3
PTL	**Penteli**	2.18	86	P	Pn	23 28 27.0	+0.8
PTL	**Penteli**	2.18	86	P	Pn	23 28 27.0	+0.8
PTL	**Penteli**	2.18	86	*e*Pg	Pn	23 28 27.3	+1.1
PTL				S	Sb	23 28 55.9	-0.6
PTL	**Penteli**	2.18	86	P	Pb	23 28 28.0	-1.6
PTL				S	Sb	23 28 55.9	-0.6
PTL	**Penteli**	2.18	86	*e*Pn	Pn	23 28 27.0	+0.8
PTL				*e*Pg	Pn	23 28 27.3	+1.1
PTL				*e*Sn	Sb	23 28 55.9	-0.6
XOR	**Xorichti**	2.18	48	P	Pn	23 28 27.0	+0.7
XOR	**Xorichti**	2.18	48	P	Pn	23 28 27.0	+0.7
XOR	**Xorichti**	2.18	48	P	Pb	23 28 28.2	-1.4
XOR	**Xorichti**	2.18	48	P	Pn	23 28 27.0	+0.7
KYTH	**Kithira**	2.26	136	P	Pb	23 28 30.1	-0.8
KYTH	**Kithira**	2.26	136	P	Pb	23 28 30.1	-0.8
KYTH	**Kithira**	2.26	136	*e*Pn	Pb	23 28 30.1	-0.8
LIT	**Litokhoron**	2.44	26	P	Pn	23 28 30.4	+0.6
LIT	**Litokhoron**	2.44	26	*e*P	Pn	23 28 30.4	+0.6
LIT	**Litokhoron**	2.44	26	P	Pn	23 28 30.3	+0.6
LIT	**Litokhoron**	2.44	26	P	Pn	23 28 30.3	+0.6
LIT				AML	AML	23 29 15.6	
	comp=N,16021µm,1.1s						
LIT				AML	AML	23 29 21.0	
	comp=E,13971µm,0.8s						
LIT	**Litokhoron**	2.44	26	*e*Pn	Pn	23 28 30.4	+0.6
KZN	**Kozani**	2.45	12	P	Pn	23 28 31.3	+1.4
KZN	**Kozani**	2.45	12	P	Pn	23 28 31.3	+1.4
KZN	**Kozani**	2.45	12	P	Pn	23 28 31.9	+2.0
KZN	**Kozani**	2.45	12	P	Pn	23 28 31.3	+1.4
NEST	**Nestorio**	2.50	359	P	Pn	23 28 32.7	+2.0
NEST	**Nestorio**	2.50	359	P	Pn	23 28 32.7	+2.0
AOS	**Alonnisos**	2.51	59	*e*PN	Pn	23 28 31.3	+0.6
AOS	**Alonnisos**	2.51	59	P	Pn	23 28 30.8	0.0
AOS	**Alonnisos**	2.51	59	*e*Pn	Pn	23 28 30.7	0.0
AOS	**Alonnisos**	2.51	59	P	Pn	23 28 31.6	+0.9
AOS	**Alonnisos**	2.51	59	P	Pn	23 28 31.6	+0.9
AOS	**Alonnisos**	2.51	59	*e*Pn	Pn	23 28 30.7	0.0
ANKY	**Antikythira Is**	2.69	139	P	Pn	23 28 35.6	+2.4
ANKY	**Antikythira Is**	2.69	139	*e*Pn	Pn	23 28 34.7	+1.5
ANKY	**Antikythira Is**	2.69	139	P	Pb	23 28 36.2	-2.1
ANKY	**Antikythira Is**	2.69	139	P	Pb	23 28 36.2	-2.1
ANKY	**Antikythira Is**	2.69	139	*e*Pn	Pn	23 28 34.7	+1.5
SERI	**Serifos**	2.78	105	P	Pn	23 28 37.0	+2.5
SERI	**Serifos**	2.78	105	P	Pn	23 28 37.0	+2.5
PAIG	**Paliouri**	2.84	44	P	Pn	23 28 35.5	+0.3
PAIG	**Paliouri**	2.84	44	*e*P	Pn	23 28 35.5	+0.3
PAIG	**Paliouri**	2.84	44	P	Pn	23 28 35.6	+0.3
PAIG	**Paliouri**	2.84	44	P	Pn	23 28 35.6	+0.3
PAIG	**Paliouri**	2.84	44	*e*Pn	Pn	23 28 35.5	+0.3
FNA	**Florina**	2.88	4	*e*PN	Pn	23 28 37.7	+1.9
FNA	**Florina**	2.88	4	P	Pn	23 28 37.2	+1.4
FNA	**Florina**	2.88	4	P	Pn	23 28 37.2	+1.4
FNA	**Florina**	2.88	4	P	Pn	23 28 36.7	+0.9
FNA	**Florina**	2.88	4	*e*Pn	Pn	23 28 37.7	+1.9
FNA	**Florina**	2.88	4	P	Pn	23 28 36.6	+0.9
FNA	**Florina**	2.88	4	P	Pn	23 28 37.2	+1.4
MHLO	**Agia Marina, M**	2.89	114	P	Pn	23 28 37.0	+1

comp=N,8974µm,2.2s
APE AML AML 23 29 57.2
comp=E,4777µm,0.8s
APE Apeiranthos 3.61 102 *e*Pn **Pn 23 28 47.4 +1.5**
TIP Timpagrande 3.64 292 ⇑*i*P **Pn 23 28 45.8 -0.5**
TIP Timpagrande 3.64 292 *e*Pn **Pn 23 28 46.0 -0.4**
TIP S **Sn 23 29 28.8 -0.3**
TIP Timpagrande 3.64 292 P **Pn 23 28 45.8 -0.5**
TIP Timpagrande 3.64 292 *e*Pn **Pn 23 28 46.0 -0.4**
THR5 Thira Island, 3.70 113 *e*Pn **Pn 23 28 49.2 +2.2**
THR5 Thira Island, 3.70 113 *e*Pn **Pn 23 28 49.2 +2.2**
CMBO Columbo, Santo 3.72 111 P **Pn 23 28 49.0 +1.7**
CMBO Columbo, Santo 3.72 111 P **Pn 23 28 48.4 +1.1**
CMBO Columbo, Santo 3.72 111 P **Pn 23 28 48.4 +1.1**
SRS Serrai 3.73 30 P **Pn 23 28 48.4 +0.9**
SRS Serrai 3.73 30 *e*P **Pn 23 28 48.4 +0.9**
SRS Serrai 3.73 30 P **Pn 23 28 48.5 +0.9**
SRS Serrai 3.73 30 P **Pn 23 28 48.5 +0.9**
SRS Serrai 3.73 30 *e*Pn **Pn 23 28 48.4 +0.9**
LIA Limnos Island 3.74 57 P **Pn 23 28 49.1 +1.4**
LIA Limnos Island 3.74 57 P **Pn 23 28 49.2 +1.5**
LIA Limnos Island 3.74 57 P **Pn 23 28 49.1 +1.4**
SANT Santorini 3.80 113 *e*Pn **Pn 23 28 50.5 +2.0**
SANT Santorini 3.80 113 *e*Pn **Pn 23 28 50.5 +2.0**
GVD Gavdhos 3.89 141 P **Pn 23 28 50.4 +0.6**
GVD Gavdhos 3.89 141 P **Pn 23 28 50.4 +0.6**
GVD Gavdhos 3.89 141 *e*Pn **Pn 23 28 50.4 +0.6**
CHOS Chios island 3.92 82 *e*PN **Pn 23 28 52.9 +2.6**
CHOS Chios island 3.92 82 P **Pn 23 28 51.6 +1.3**
CHOS Chios island 3.92 82 P **Pn 23 28 52.2 +2.0**
CHOS Chios island 3.92 82 *e*Pn **Pn 23 28 52.9 +2.6**
CHOS Chios island 3.92 82 P **Pn 23 28 52.2 +2.0**
CHOS Chios island 3.92 82 P **Pn 23 28 51.6 +1.3**
TAR1 Taranto 3.96 312 *e*Pn **Pn 23 28 50.2 -0.4**
IDI Anoyia 4.01 130 Pn **Pn 23 28 51.5 +0.1**
comp=E,4.8nm,0.3s,baz=222,slow=9.2,SNR=83
IDI Sn **Sn 23 29 38.9 +0.7**
comp=E,42nm,0.3s,baz=358,slow=15,SNR=7.1
IDI Anoyia 4.01 130 ⇓*i*P **Pn 23 28 53.3 +1.9**
IDI Anoyia 4.01 130 P **Pn 23 28 53.0 +1.6**
IDI *e*Sn **Sn 23 29 36.0 -2.3**
IDI S **Sn 23 29 39.4 +1.1**
IDI Anoyia 4.01 130 P **Pn 23 28 53.0 +1.6**
IDI Anoyia 4.01 130 *e*Pn **Pn 23 28 51.5 +0.1**
IDI *e*Sn **Sn 23 29 36.0 -2.3**
NVR Nevrokopi 4.04 31 P **Pn 23 28 52.4 +0.6**
NVR Nevrokopi 4.04 31 P **Pn 23 28 52.4 +0.6**
NVR Nevrokopi 4.04 31 P **Pn 23 28 52.4 +0.6**
KAVA Kavala 4.05 39 P **Pn 23 28 52.0 +0.1**
KAVA Kavala 4.05 39 P **Pn 23 28 52.0 +0.1**
SKO Skopje 4.06 3 *i* Pn **Pn 23 28 52.7 +0.5**
SKO *i* Pg **Pg 23 29 07.3 -0.9**
SKO Skopje 4.06 3 *i* Pn **Pn 23 28 52.6 +0.5**
CEL Celeste 4.13 276 *e*Pn **Pn 23 28 52.3 -0.8**
CEL *e*Sn **Sn 23 29 42.0 +0.7**
CEL Celeste 4.13 276 *e*Pn **Pn 23 28 52.3 -0.8**
CEL *e*Sn **Sn 23 29 42.0 +0.7**
SIVA Sivas 4.15 133 ⇓*i*P **Pn 23 28 54.8 +1.5**
SIVA Sivas 4.15 133 P **Pn 23 28 53.9 +0.6**
SIVA Sivas 4.15 133 P **Pn 23 28 53.9 +0.6**
NOCI Noci 4.25 314 P **Pn 23 28 52.9 -1.8**
NOCI Noci 4.25 314 P **Pn 23 28 52.9 -1.8**
PRK Paraskevi 4.26 70 P **Pn 23 28 56.5 +1.8**
PRK Paraskevi 4.26 70 P **Pn 23 28 56.5 +1.8**
PRK Paraskevi 4.26 70 P **Pn 23 28 56.8 +2.1**
PRK Paraskevi 4.26 70 P **Pn 23 28 56.8 +2.1**
PRK Paraskevi 4.26 70 P **Pn 23 28 56.5 +1.8**
SMTH Samothraki Isl 4.28 52 P **Pn 23 28 56.9 +1.8**
SMTH Samothraki Isl 4.28 52 P **Pn 23 28 56.9 +1.8**
ULC Ulcinj 4.29 341 ⇑*i*Pn **Pn 23 28 55.1 -0.2**
ULC *e*Sn **Sn 23 29 45.6 +0.4**
ULC Ulcinj 4.29 341 ⇑*i*Pn **Pn 23 28 55.1 -0.2**
ULC *e*Sn **Sn 23 29 45.6 +0.4**
GADA Gvkgeada 4.37 57 *e*PN **Pn 23 28 57.9 +1.7**
GADA Gvkgeada 4.37 57 P **Pn 23 28 56.9 +0.7**
GADA Gvkgeada 4.37 57 P **Pn 23 28 56.9 +0.7**
GADA Gvkgeada 4.37 57 *e*Pn **Pn 23 28 57.9 +1.7**
GADA Gvkgeada 4.37 57 *e*Pn **Pn 23 28 56.9 +0.7**
MATE Matera 4.38 310 ⇓*i*P **Pn 23 28 56.5 +0.1**
MATE Matera 4.38 310 ⇓*i*P **Pn 23 28 56.5 +0.1**
LAST Lasithi 4.46 127 ⇓*i*P **Pn 23 28 58.7 +1.1**
LAST Lasithi 4.46 127 P **Pn 23 28 58.9 +1.3**
LAST Lasithi 4.46 127 P **Pn 23 28 58.1 +0.5**
LAST *e*Sn **Sn 23 29 45.8 -3.6**
LAST Lasithi 4.46 127 P **Pn 23 28 58.1 +0.5**
LAST Lasithi 4.46 127 *e*Pn **Pn 23 28 58.9 +1.3**
LAST *e*Sn **Sn 23 29 45.8 -3.6**
NPS Neapolis 4.48 125 P **Pn 23 28 58.6 +0.7**
NPS Neapolis 4.48 125 P **Pn 23 28 58.6 +0.7**
EZN Ezine 4.50 63 *e*PN **Pn 23 28 59.2 +1.2**
EZN Ezine 4.50 63 *e*Pn **Pn 23 28 59.2 +1.2**
SG1 Sgolgore (BA) 4.51 312 *e*Pn **Pn 23 28 58.0 -0.3**
DRME Dracevica, Mon 4.52 342 ⇑*i*Pn **Pn 23 28 58.4 +0.1**
DRME *e*Sn **Sn 23 29 51.6 +0.9**
DRME Dracevica, Mon 4.52 342 ⇑*i*Pn **Pn 23 28 58.4 +0.1**
DRME *e*Sn **Sn 23 29 51.6 +0.9**
SMG Samos 4.54 91 P **Pn 23 29 00.1 +1.5**
SMG Samos 4.54 91 P **Pn 23 29 00.6 +2.0**
SMG Samos 4.54 91 P **Pn 23 29 00.6 +2.0**
SMG Samos 4.54 91 P **Pn 23 29 00.1 +1.5**
BAI Bari 4.57 316 *e*Pn **Pn 23 28 59.2 +0.2**
CUC Castrocucco 4.62 298 *e*Pn **Pn 23 29 00.4 +0.6**
CUC Castrocucco 4.62 298 P **Pn 23 29 01.1 +1.3**
CUC *e*Sn **Sn 23 29 46.8 -6.5**
CUC Castrocucco 4.62 298 P **Pn 23 29 01.1 +1.3**
CUC Castrocucco 4.62 298 *e*Pn **Pn 23 29 00.4 +0.6**
CUC *e*Sn **Sn 23 29 46.8 -6.5**
DKL Dikili 4.69 74 *e*PN **Pn 23 29 03.3 +2.6**
DKL Dikili 4.69 74 *e*Pn **Pn 23 29 03.3 +2.6**
BUM Brajici-Budva 4.70 339 ⇓*i*Pn **Pn 23 29 00.3 -0.6**
BUM *e*Sn **Sn 23 29 56.1 +0.8**
BUM Brajici-Budva 4.70 339 ⇓*i*Pn **Pn 23 29 00.3 -0.6**
BUM *e*Sn **Sn 23 29 56.1 +0.8**
PDG Podgorica 4.73 343 ⇓*i*P **Pn 23 29 00.5 -0.7**
PDG Podgorica 4.73 343 ⇓*i*P **Pn 23 29 00.5 -0.7**
PDG Podgorica 4.73 343 ⇑*i*Pn **Pn 23 29 01.1 -0.1**
PDG *e*Sn **Sn 23 29 56.7 +0.8**
PDG S **Sn 23 29 57.2 +1.3**
TTG Podgorica 4.73 343 ⇑*i*Pn **Pn 23 29 01.1 -0.1**
TTG *e*Sn **Sn 23 29 56.7 +0.8**
PVY Plav 4.76 350 ⇓*i*Pn **Pn 23 29 02.3 +0.5**
PVY *e*Sn **Sn 23 29 57.3 +0.5**
PVY Plav 4.76 350 ⇓*i*Pn **Pn 23 29 02.3 +0.5**
PVY *e*Sn **Sn 23 29 57.3 +0.5**
ENEZ Enez 4.82 53 *e*PN **Pn 23 29 05.1 +2.6**
ENEZ Enez 4.82 53 *e*Pn **Pn 23 29 05.1 +2.6**
ALN Alexandroupoli 4.85 51 *e*PN **Pn 23 29 04.5 +1.7**
ALN Alexandroupoli 4.85 51 P **Pn 23 29 03.5 +0.7**
ALN Alexandroupoli 4.85 51 P **Pn 23 29 03.5 +0.7**
ALN Alexandroupoli 4.85 51 P **Pn 23 29 03.5 +0.7**
ALN Alexandroupoli 4.85 51 *e*Pn **Pn 23 29 04.5 +1.7**
ALN Alexandroupoli 4.85 51 P **Pn 23 29 03.5 +0.7**
ALN Alexandroupoli 4.85 51 P **Pn 23 29 03.5 +0.7**
GELI Tayfur-Gelibol 4.85 58 *e*PN **Pn 23 29 04.0 +1.1**
GELI Tayfur-Gelibol 4.85 58 *e*Pn **Pn 23 29 04.0 +1.1**
CDT Castel del Mon 4.90 312 *e*Pn **Pn 23 29 03.6 0.0**
CEME Cevo 4.92 341 ⇑*i*Pn **Pn 23 29 03.3 -0.7**
CEME *e*Sn **Sn 23 30 00.6 -0.2**
CEME Cevo 4.92 341 ⇑*i*Pn **Pn 23 29 03.3 -0.7**
CEME *e*Sn **Sn 23 30 00.6 -0.2**
BARS Barje 4.93 6 ⇓*i*Pn **Pn 23 29 04.0 0.0**
HCY Herceg Novi 4.95 337 ⇑*i*Pn **Pn 23 29 03.3 -1.0**
HCY *e*Sn **Sn 23 30 02.0 +0.6**
HCY Herceg Novi 4.95 337 ⇑*i*Pn **Pn 23 29 03.3 -1.0**
HCY *e*Sn **Sn 23 30 02.0 +0.6**
ZKR Zakros 4.97 123 P **Pn 23 29 06.3 +1.8**
ZKR Zakros 4.97 123 P **Pn 23 29 06.3 +1.8**
NISR Nisiros 4.97 103 P **Pn 23 29 06.5 +1.9**
NISR Nisiros 4.97 103 P **Pn 23 29 06.5 +1.9**
BODT Bodrum 5.00 98 *e*PN **Pn 23 29 07.5 +2.5**
BODT Bodrum 5.00 98 P **Pn 23 29 07.5 +2.5**
BODT Bodrum 5.00 98 P **Pn 23 29 07.5 +2.5**
BODT Bodrum 5.00 98 *e*Pn **Pn 23 29 07.5 +2.5**
NIS1 Nisyros Isl. 5.01 103 *e*PN **Pn 23 29 09.6 +4.5**
NIS1 Nisyros Isl. 5.01 103 P **Pn 23 29 08.3 +3.2**
NIS1 Nisyros Isl. 5.01 103 *e*Pn **Pn 23 29 09.6 +4.5**
NIS1 Nisyros Isl. 5.01 103 P **Pn 23 29 08.3 +3.2**
ERIK Erikli-Kesan 5.01 55 *e*PN **Pn 23 29 06.4 +1.3**
ERIK Erikli-Kesan 5.01 55 *e*Pn **Pn 23 29 06.4 +1.3**
LPK Lapseki 5.03 59 *e*PN **Pn 23 29 06.9 +1.5**
LPK Lapseki 5.03 59 *e*Pn **Pn 23 29 06.9 +1.5**
BEY Berane 5.04 350 ⇓*i*Pn **Pn 23 29 05.9 +0.3**
BEY *e*Sn **Sn 23 30 03.9 +0.2**
IVA Berane 5.04 350 ⇓*i*Pn **Pn 23 29 05.9 +0.3**
IVA *e*Sn **Sn 23 30 03.9 +0.2**
NKME Niksic 5.12 342 ⇓*i*Pn **Pn 23 29 06.8 +0.1**
NKME *e*Sn **Sn 23 30 05.9 +0.3**
NKME Niksic 5.12 342 ⇓*i*Pn **Pn 23 29 06.8 +0.1**
NKME *e*Sn **Sn 23 30 05.9 +0.3**
NKY Niksic 5.16 342 ⇑*i*Pn **Pn 23 29 07.5 +0.3**
NKY *e*Sn **Sn 23 30 07.0 +0.5**
NKY Niksic 5.16 342 ⇑*i*Pn **Pn 23 29 07.5 +0.3**
NKY *e*Sn **Sn 23 30 07.0 +0.5**
TREB Trebinje 5.24 337 *e*Pn **Pn 23 29 06.7 -1.6**
VAE Valguarnera 5.33 267 Pn **Pn 23 29 09.6 0.0**
comp=E,6.8nm,0.3s,baz=322,slow=23,SNR=27
VAE Sn **Sn 23 30 09.7 -1.1**
comp=E,12nm,0.3s,baz=216,slow=19,SNR=4.2
BRY Bratogost 5.36 339 ⇑*i*Pn **Pn 23 29 09.7 -0.3**
BRY *e*Sn **Sn 23 30 10.8 -0.7**
BRY Bratogost 5.36 339 ⇑*i*Pn **Pn 23 29 09.7 -0.3**
BRY *e*Sn **Sn 23 30 10.8 -0.7**
AYDB Zeytinkoy-Aydi 5.36 88 *e*PN **Pn 23 29 13.0 +3.0**
KARP Karpathos 5.40 114 *e*Pn **Pn 23 29 11.1 +0.6**
KARP Karpathos 5.40 114 P **Pn 23 29 13.5 +3.0**
KARP Karpathos 5.40 114 P **Pn 23 29 13.5 +3.0**
KARP Karpathos 5.40 114 *e*Pn **Pn 23 29 11.1 +0.6**
RKY Sarkoy-Tekirda 5.46 58 *e*PN **Pn 23 29 14.4 +3.1**
UPM Unac-Piva 5.55 343 ⇓*i*Pn **Pn 23 29 13.1 +0.5**
UPM *e*Sn **Sn 23 30 16.4 +0.1**
UPM Unac-Piva 5.55 343 ⇓*i*Pn **Pn 23 29 13.1 +0.5**
UPM *e*Sn **Sn 23 30 16.4 +0.1**
BALB Balikesir 5.56 70 *e*PN **Pn 23 29 15.1 +2.4**
PLE Pljevlja 5.57 347 ⇑*i*Pn **Pn 23 29 13.8 +0.9**
PLE *e*Sn **Sn 23 30 16.6 -0.1**
PLE Pljevlja 5.57 347 ⇑*i*Pn **Pn 23 29 13.8 +0.9**
PLE *e*Sn **Sn 23 30 16.6 -0.1**
WDD Wied Dalam 5.66 251 *e*Pn **Pn 23 29 13.7 -0.3**
WDD Wied Dalam 5.66 251 *e*Pn **Pn 23 29 13.7 -0.3**
MRMT Marmara Adasi 5.70 60 *e*PN **Pn 23 29 16.5 +1.8**
EDRB Edirne 5.85 46 *e*PN **Pn 23 29 17.7 +1.1**
ARG Arkhangelos 5.86 105 P **Pn 23 29 19.5 +2.8**
ARG Arkhangelos 5.86 105 P **Pn 23 29 19.5 +2.8**
ARG Arkhangelos 5.86 105 P **Pn 23 29 19.8 +3.1**
ARG Arkhangelos 5.86 105 P **Pn 23 29 19.5 +2.8**
BBLS Lazići 6.09 348 *e*Pn **Pn 23 29 19.5 -0.5**
DIVS Divibare 6.24 353 *e*Pn **Pn 23 29 20.4 -1.2**
CLTB Caltabellotta 6.27 269 *e*Pn **Pn 23 29 23.5 +1.0**
CLTB Caltabellotta 6.27 269 *e*Pn **Pn 23 29 23.5 +1.0**
LTBQ Tobruq 6.28 158 *i* P **Pn 23 29 21.9 -0.6**
SNR=34
HAPS Han Pijesak,BI 6.38 346 *e*Pn **Pn 23 29 21.8 -2.2**
ZIMR 6.58 28 ⇑*i*P **Pn 23 29 29.2 +2.5**
TEKS Tekeris 6.74 350 *e*Pn **Pn 23 29 27.0 -1.8**
MDVR Moldovita 6.88 4 ⇑*i*P **Pn 23 29 30.2 -0.6**
SRE Strehaia 6.93 12 ⇓*i*P **Pn 23 29 32.7 +1.3**
KSL Kastellorizon 7.00 102 P **Pn 23 29 35.8 +3.4**
LJBD Adjabya 7.02 186 *i* P **Pn 23 29 34.9 +2.2**
SNR=34
DOB Doboj 7.18 343 *e*Pn **Pn 23 29 32.5 -2.4**
SLUM Salum 7.24 151 P **Pn 23 29 32.2 -3.5**
baz=154
SLUM AMP 23 30 00.0
comp=N,430µm,0.6s,logA/T=5.8,baz=154
SLUM S **Sn 23 30 50.6 -7.1**
baz=154
FGSL Fruska Gora 7.30 353 ⇑*i*Pn **Pn 23 29 35.3 -1.3**
AQU L'Aquila 7.39 309 *e*P **Pn 23 29 39.7 +1.9**
AQU L'Aquila 7.39 309 *e*P **Pn 23 29 39.7 +1.9**
AQU L'Aquila 7.39 309 *e*Pn **Pn 23 29 39.7 +1.9**
BLY Banja Luka 7.44 338 ⇓*i*P **Pn 23 29 37.7 -0.8**
BLY Banja Luka 7.44 338 ⇓*i*P **Pn 23 29 37.7 -0.8**
ISP Isparta 7.45 88 ⇑*i*P **Pn 23 29 39.5 +0.9**
ISP Isparta 7.45 88 *e*P **Pn 23 29 43.3 +4.7**
ISP Isparta 7.45 88 ⇑*i*P **Pn 23 29 39.5 +0.9**
ISP Isparta 7.45 88 *e*Pn **Pn 23 29 43.3 +4.7**
ISP Isparta 7.45 88 *e*Pn **Pn 23 29 43.3 +4.7**
BANR Banloc 7.46 0 ⇑*i*P **Pn 23 29 39.3 +0.5**
BANR Banloc 7.46 0 ⇑*i*P **Pn 23 29 39.3 +0.5**
GOLR 7.50 21 ⇑*i*P **Pn 23 29 40.5 +1.2**
GOLR 7.50 21 ⇑*i*P **Pn 23 29 40.5 +1.2**
BZS Buzias 7.71 3 ⇑*i*P **Pn 23 29 41.2 -0.9**
BZS Buzias 7.71 3 ⇑*i*P **Pn 23 29 41.2 -0.9**
UDBI Udbina 7.74 330 *i* Pn **Pn 23 29 42.8 +0.1**
UDBI Sn **Sn 23 31 05.7 -4.4**
UDBI Udbina 7.74 330 *i* Pn **Pn 23 29 42.7 +0.1**
LSRT Sirt 7.74 210 *i* P **Pn 23 29 40.8 -1.8**
SNR=34
SULR 7.79 28 ⇓*i*P **Pn 23 29 45.9 +2.7**
SULR 7.79 28 ⇓*i*P **Pn 23 29 45.9 +2.7**
ARR Arges 7.90 18 ⇓*i*P **Pn 23 29 46.4 +1.6**
ARR Arges 7.90 18 ⇓*i*P **Pn 23 29 46.4 +1.6**
MSAB Monastry St. A 7.99 37 ⇓*i*P **Pn 23 29 48.2 +2.2**
MSAB Monastry St. A 7.99 37 ⇓*i*P **Pn 23 29 48.2 +2.2**
SECR 8.03 26 ⇓*i*P **Pn 23 29 48.5 +2.0**
SECR 8.03 26 ⇓*i*P **Pn 23 29 48.5 +2.0**
VOIR 8.07 20 ⇓*i*P **Pn 23 29 48.6 +1.4**
VOIR 8.07 20 ⇓*i*P **Pn 23 29 48.6 +1.4**
NVLJ Novalja 8.14 327 *i* Pn **Pn 23 29 47.7 -0.3**
NVLJ Sn **Sn 23 31 16.1 -3.6**
NVLJ Novalja 8.14 327 *i* Pn **Pn 23 29 47.7 -0.3**
ISR Istrita 8.27 28 ⇓*i*P **Pn 23 29 53.1 +3.2**
MLR Muntele Rosu 8.39 24 Pn **Pn 23 29 51.3 -0.3**
comp=N,0.2nm,0.3s,baz=67,slow=2.3,SNR=22
MLR Muntele Rosu 8.39 24 ⇓*i*P **Pn 23 29 54.3 +2.7**
HMAT Matruh 8.40 142 S Sn 23 31 17.4 -9.0
baz=145
HMAT AMP 23 31 00.0
comp=E,270µm,1.0s,logA/T=5.4,baz=145
TIRR Tirgusor 8.54 38 ⇓*i*P **Pn 23 29 55.5 +1.9**
TIRR Tirgusor 8.54 38 *e*P **Pn 23 29 56.3 +2.7**
TIRR Tirgusor 8.54 38 *e*Pn **Pn 23 29 56.2 +2.7**
TIRR Tirgusor 8.54 38 *e*Pn **Pn 23 29 56.2 +2.7**
DOPR Dopca 8.66 20 ⇓*i*P **Pn 23 29 56.6 +1.5**
DOPR Dopca 8.66 20 ⇓*i*P **Pn 23 29 56.6 +1.5**
GHAR Gharyan 8.76 231 *i* P **Pn 23 29 54.8 -1.8**
SNR=34
BOJS Bojanci 8.76 332 *i* Pn **Pn 23 29 56.1 -0.4**
BOJS Bojanci 8.76 332 Pn **Pn 23 29 56.1 -0.4**
PLOR Plostina 8.94 26 ⇓*i*P **Pn 23 30 01.9 +2.8**
PLOR Plostina 8.94 26 ⇓*i*P **Pn 23 30 01.9 +2.8**
GBRS Gornja Briga 8.95 330 *i* Pn **Pn 23 29 58.3 -0.9**
DRGR 8.95 7 ⇑*i*P **Pn 23 29 59.5 +0.2**
DRGR 8.95 7 ⇑*i*P **Pn 23 29 59.5 +0.2**
CRES Cresnjev 8.96 334 *e*Pn **Pn 23 29 57.3 -2.0**
CFR Carcaliu 8.96 34 ⇑*i*P **Pn 23 30 00.0 +0.7**
CFR Carcaliu 8.96 34 ⇑*i*P **Pn 23 30 00.0 +0.7**
VRI Vrincioaia 8.98 26 ⇑*i*P **Pn 23 30 02.3 +2.7**
VRI Vrincioaia 8.98 26 ⇑*i*P **Pn 23 30 02.3 +2.7**
ODBI Odobesti 9.01 28 ⇓*i*P Pn 23 30 06.5 +6.6
BEHE Becsehely 9.14 341 *e*Pn **Pn 23 30 00.7 -1.0**
BEHE *e*Sn **Sn 23 31 37.6 -6.7**
BEHE Becsehely 9.14 341 *e*P **Pn 23 30 00.7 -1.0**
VISS Visnje 9.17 331 *i* Pn **Pn 23 30 01.4 -0.7**
VISS *i* Sn **Sn 23 31 39.1 -5.9**
VISS Visnje 9.17 331 *i* Pn **Pn 23 30 01.4 -0.7**
CEY Cerknica 9.27 330 *e*Pn **Pn 23 30 02.9 -0.7**
TLCR 9.28 36 ⇓*i*P **Pn 23 30 06.4 +2.8**
TLCR 9.28 36 ⇓*i*P **Pn 23 30 06.4 +2.8**
BR231 Keskin MP Arra 9.30 74 *e*Pn Pn 23 30 11.1 +7.0
BR231 Keskin MP Arra 9.30 74 *e*Pn Pn 23 30 11.1 +7.1
VSL Villasalto 9.31 283 *e*Pn Pn 23 30 08.9 +4.8
VSL Villasalto 9.31 283 *e*Pn Pn 23 30 08.9 +4.8
ANTO Ankara 9.32 74 *e*P Pn 23 30 09.0 +4.7
ANTO Ankara 9.32 74 *e*Pn Pn 23 30 09.0 +4.7
ANTO Ankara 9.32 74 *e*Pn Pn 23 30 09.0 +4.7
SWA2 9.37 156 P **Pn 23 30 02.2 -2.8**
baz=158
SWA2 S **Sn 23 31 42.7 -7.5**
baz=158
AKMC Akamas 9.48 104 P **Pn 23 30 05.4 -1.1**
LJU Ljubljana 9.49 331 *i* Pn **Pn 23 30 05.1 -1.4**
LJU *e*Sn **Sn 23 31 48.0 -4.9**
LJU *e* 23 33 04.7
LJU Ljubljana 9.49 331 *e*Pn **Pn 23 30 04.7 -1.8**
TESR Tescani 9.52 24 ⇓*i*P **Pn 23 30 08.7 +1.7**
TESR Tescani 9.52 24 ⇓*i*P **Pn 23 30 08.7 +1.7**
TRI Trieste 9.52 327 *e*P **Pn 23 30 05.8 -1.2**
TRI Trieste 9.52 327 *e*P **Pn 23 30 05.8 -1.2**
TRI Trieste 9.52 327 *e*Pn **Pn 23 30 05.8 -1.2**
JAVS Javornik 9.55 329 *i* Pn **Pn 23 30 06.4 -1.0**
PPCY Paphos 9.55 105 P **Pn 23 30 07.5 +0.2**
ALFC Alefka 9.64 103 P **Pn 23 30 08.4 -0.3**
KEST Kesra 9.68 261 Pn **Pn 23 30 08.9 -0.3**
comp=E,1.2nm,0.3s,baz=37,slow=5.5,SNR=21
BUD Budapest 9.69 352 *e*Sn **Sn 23 31 56.0 -1.8**
SOKA Soboth 9.85 335 *i* Pn **Pn 23 30 09.8 -1.7**
comp=E,16nm,0.6s,SNR=26
SOKA Soboth 9.85 335 Pn **Pn 23 30 09.8 -1.7**
comp=E,16nm,0.6s,SNR=26
OBKA Obir 9.87 333 *i* Pn **Pn 23 30 10.9 -1.0**
comp=E,15nm,0.4s
OBKA *i* Sn **Sn 23 32 02.9 +0.4**
comp=E,50nm,0.5s
OBKA Obir 9.87 333 Pn **Pn 23 30 10.9 -1.0**
comp=E,15nm,0.4s
OBKA Sn **Sn 23 32 02.9 +0.4**
comp=E,50nm,0.5s
BR131 Keskin Array S 9.94 76 *e*Pn **Pn 23 30 16.9 +4.0**
BR131 Keskin Array S 9.94 76 *e*Pn **Pn 23 30 16.9 +4.0**
BRTR Keskin Array B 9.94 76 Pn **Pn 23 30 16.2 +3.3**
comp=E,2.0nm,0.3s,baz=256,slow=12,SNR=61
BRTR LR LR 23 34 57.7
comp=E,526nm,18.2s,baz=254,slow=44
BRTR Keskin Array B 9.94 76 *ce*P **Pn 23 30 16.6 +3.7**
BRTR pmax pmax
comp=Z,17nm,0.6s
BR101 Keskin Array S 9.94 76 *e*Pn **Pn 23 30 16.2 +3.3**
BR101 Keskin Array S 9.94 76 *e*Pn **Pn 23 30 16.2 +3.3**
SZAC Souni 10.00 105 P **Pn 23 30 13.4 -0.3**
PSZ Piszkesteto 10.04 355 ⇑*i*P **Pn 23 30 14.3 +0.1**
PSZ Piszkesteto 10.04 355 *e*Pn **Pn 23 30 15.4 +1.2**
PSZ Piszkesteto 10.04 355 *e*P **Pn 23 30 14.1 -0.1**
PSZ Piszkesteto 10.04 355 *e*P **Pn 23 30 14.1 -0.1**
PSZ Piszkesteto 10.04 355 *e*Pn **Pn 23 30 14.1 -0.1**
MAMC Mammari 10.12 102 P **Pn 23 30 15.7 +0.5**
BURAR Bucovina Array 10.15 16 ⇓*i*P **Pn 23 30 18.5 +2.8**
BURAR Bucovina Array 10.15 16 ⇓*i*P **Pn 23 30 18.5 +2.8**
BUR08 Bucovina Ar. S 10.18 16 *e*Pn **Pn 23 30 18.5 +2.4**
BUR08 Bucovina Ar. S 10.18 16 *e*Pn **Pn 23 30 18.5 +2.4**
ARSA Arzberg 10.20 338 *i* Pn **Pn 23 30 15.1 -1.2**
comp=Z,5.8nm,0.4s,SNR=7.4
ARSA Arzberg 10.20 338 Pn **Pn 23 30 15.1 -1.2**
comp=Z,5.8nm,0.4s,SNR=7.4
CSS Mathiatis 10.27 103 P **Pn 23 30 17.2 -0.2**
CSS Mathiatis 10.27 103 *e*Pn **Pn 23 30 14.7 -2.6**
CSS Mathiatis 10.27 103 *e*Pn **Pn 23 30 14.7 -2.6**
MYKA Terra Mystica 10.32 330 *i* Pn **Pn 23 30 21.8 +3.9**
comp=Z,4.9nm,0.6s
SOP Sopron 10.32 343 *e*Pn **Pn 23 30 16.8 -1.1**
SOP *e*Sn **Sn 23 32 10.1 -3.2**
SOP Sopron 10.32 343 *e*P **Pn 23 30 16.8 -1.1**
KECS Kecovo 10.58 358 *e*P **Pn 23 30 19.1 -2.3**
KECS Kecovo 10.58 358 *e*P **Pn 23 30 19.1 -2.3**
KECS Kecovo 10.58 358 *e*PN **Pn 23 30 19.1 -2.3**
MILM Milestii Mici 10.64 30 ⇓*i*P **Pn 23 30 24.6 +2.3**
MILM Milestii Mici 10.64 30 ⇓*i*P **Pn 23 30 24.6 +2.3**
VYHS Vyhne 10.71 352 *e*P **Pn 23 30 22.3 -0.9**
VYHS Vyhne 10.71 352 *e*P **Pn 23 30 22.3 -0.9**
VYHS Vyhne 10.71 352 *e*PN **Pn 23 30 22.3 -0.9**
KIS Kishinev 10.71 30 *e*P Pn 23 30 30.0 +6.8
KIS *e*S **Sn 23 32 30.0 +7.1**
KIS *e*Li 23 33 30.0
KIS *e*LQ LQ 23 34 20.0
KIS LRM MLR 23 35 56.0
comp=Z,2µm,10.0s
KIS Kishinev 10.71 30 *e*P Pn 23 30 30.0 +6.8
KIS *e*S **Sn 23 32 30.0 +7.1**
KIS MLR MLR
comp=N,4µm,10.0s
KIS MLR MLR
comp=Z,2µm,10.0s
KIS MLR MLR
comp=E,1µm,11.0s
CONA Conrad Observa 10.72 341 *i* Pn **Pn 23 30 25.1 +1.6**
comp=E,4.9nm,0.6s
CONA Conrad Observa 10.72 341 Pn **Pn 23 30 25.1 +1.6**
comp=E,4.9nm,0.6s
UZH Uzhgorod 10.75 4 *e*P Pn 23 30 28.5 +4.7
UZH *e*S **Sn 23 32 30.5 +6.7**
ABTA Abfaltersbach 10.88 327 *i* Pn **Pn 23 30 25.2 -0.4**
comp=E,4.2nm,0.3s,SNR=8.3
ABTA Abfaltersbach 10.88 327 Pn **Pn 23 30 25.2 -0.4**
comp=E,4.2nm,0.3s,SNR=8.3
SMOL Smolenice 10.93 347 *e*P **Pn 23 30 28.5 +2.2**
SMOL Smolenice 10.93 347 *e*P **Pn 23 30 28.5 +2.2**
SMOL Smolenice 10.93 347 *e*PN **Pn 23 30 28.5 +2.2**
CMAH Djebel Manchou 10.99 267 P **Pn 23 30 26.7 -0.5**
CMAH Djebel Manchou 10.99 267 P **Pn 23 30 26.7 -0.5**
CRVS Cervenica-Dubn 10.99 1 *e*P **Pn 23 30 27.0 -0.1**
CRVS Cervenica-Dubn 10.99 1 *e*P **Pn 23 30 27.0 -0.1**
CRVS Cervenica-Dubn 10.99 1 *e*PN **Pn 23 30 27.0 -0.1**
ABSA Djebel Ababsia 11.01 266 P **Pn 23 30 29.5 +1.9**
ABSA Djebel Ababsia 11.01 266 P **Pn 23 30 29.5 +1.9**
KOLS Kolonicke sedl 11.05 4 *e*P **Pn 23 30 29.7 +1.8**
KOLS Kolonicke sedl 11.05 4 *e*P **Pn 23 30 29.7 +1.8**
KOLS Kolonicke sedl 11.05 4 *e*PN **Pn 23 30 29.7 +1.8**
MOA Molln 11.12 335 *i* Pn **Pn 23 30 28.0 -1.0**
comp=E,6.3nm,0.3s,SNR=15
MOA Molln 11.12 335 Pn **Pn 23 30 28.0 -1.0**
comp=E,6.3nm,0.3s,SNR=15
LANS Liptovska Anna 11.30 354 *e*P **Pn 23 30 34.0 +2.7**
LANS Liptovska Anna 11.30 354 *e*P **Pn 23 30 34.0 +2.7**
LANS Liptovska Anna 11.30 354 *e*PN **Pn 23 30 34.0 +2.7**
CAEH 'Ain El Ouahch 11.41 269 P **Pn 23 30 35.4 +2.5**
HNAT Natroun 11.43 133 P **Pn 23 30 29.1 -4.0**
baz=135
STHS Stebnicka Huta 11.50 0 *e*P **Pn 23 30 37.6 +3.5**
STHS Stebnicka Huta 11.50 0 *e*PN **Pn 23 30 37.6 +3.5**
SORM Soroca 11.50 25 ⇓*i*P **Pn 23 30 35.7 +1.6**
SORM Soroca 11.50 25 ⇓*i*P **Pn 23 30 35.7 +1.6**
NIE Niedzica 11.52 357 *e*P **Pn 23 30 37.5 +3.2**
NIE Niedzica 11.52 357 *e*P **Pn 23 30 37.5 +3.2**
AWBH 11.58 143 P **Pn 23 30 32.0 -3.2**
baz=145
SQR Saqqara 11.58 131 P **Pn 23 30 30.9 -4.4**
baz=133
WTTA Wattenberg 11.66 326 *i* Pn **Pn 23 30 38.2 +1.8**
comp=E,4.1nm,0.3s
WTTA Wattenberg 11.66 326 Pn **Pn 23 30 38.2 +1.8**
comp=E,4.1nm,0.3s
WATA Walderalm 11.74 326 *i* Pn **Pn 23 30 38.1 +0.6**
comp=E,5.6nm,0.3s

comp=Z,3µm,11.4s
MORC Moravsky Berou 12.14 349⇑ *i*P Pn 23 30 43.7 +0.9
MORC Moravsky Berou 12.14 349 *e*P Pn 23 30 45.1 +2.3
MORC Moravsky Berou 12.14 349 *e*Pn Pn 23 30 41.6 -1.2
MORC Moravsky Berou 12.14 349 *e*P Pn 23 30 45.1 +2.3
MORC Moravsky Berou 12.14 349 *e*Pn Pn 23 30 45.1 +2.3
DAVOX Davos/Dischmat 12.14 320 Pn **Pn 23 30 45.0 +2.0**
comp=Z,1.8nm,0.3s,baz=300,slow=23,SNR=15
DAVOX Sn **Sn 23 32 55.1 -3.0**
comp=Z,1.6nm,0.3s,baz=311,slow=19,SNR=4.2
DAVOX LR LR 23 35 57.0
comp=Z,894nm,20.7s,baz=124,slow=40
DAVOX Davos/Dischmat 12.14 320 P **Pn 23 30 45.0 +2.0**
DAVOX Davos/Dischmat 12.14 320 Pn **Pn 23 30 45.0 +2.0**
GEA0 GERESS Array S 12.17 336 *e*Pn **Pn 23 30 42.5 -0.8**
GEA0 GERESS Array S 12.17 336 *e*Pn **Pn 23 30 42.5 -0.8**
GEC2 GERESS Array S 12.18 336 *e*P **Pn 23 30 42.9 -0.5**
GEC2 GERESS Array S 12.18 336 *e*P **Pn 23 30 42.9 -0.5**
GEC2 GERESS Array S 12.18 336 *e*Pn **Pn 23 30 42.9 -0.5**
GERES GERESS Array B 12.18 336 Pn **Pn 23 30 42.8 -0.7**
comp=Z,1.3nm,0.3s,baz=157,slow=14,SNR=26
GERES Sn **Sn 23 32 55.5 -3.5**
comp=Z,2.5nm,0.3s,baz=156,slow=24,SNR=9.4
GERES LR LR 23 36 19.2
comp=Z,1µm,18.4s,baz=144,slow=42
TUE Stuetta 12.21 318 *e*Pn **Pn 23 30 46.6 +2.7**
TUE Stuetta 12.21 318 *e*Pn **Pn 23 30 46.6 +2.7**
RETA Reutte 12.22 325 *i* Pn **Pn 23 30 44.8 +0.9**
comp=Z,4.8nm,0.4s
RETA Reutte 12.22 325 Pn **Pn 23 30 44.8 +0.9**
comp=Z,4.8nm,0.4s
DFRA Djebel Bou Aff 12.22 268 P **Pn 23 30 43.2 -0.9**
DFRA Djebel Bou Aff 12.22 268 P **Pn 23 30 43.2 -0.9**
OJC Ojcow 12.34 356 *e*P **P 23 31 00.2 +2.5**
OJC Ojcow 12.34 356 *e*P **P 23 31 00.2 +2.5**
OJC Ojcow 12.34 356 *e*P **P 23 31 00.2 +2.5**
DRWC Darouich 12.46 91 *e*P **Pn 23 30 47.2 -0.1**
DRWC *e*S Sn 23 32 52.9 -13
DRWC AML AML 23 33 07.2
comp=E,5.2nm,0.5s
DRWC AML AML 23 33 26.4
comp=N,3.9nm,0.7s
DRWC Darouich 12.46 91 *e*P **Pn 23 30 47.2 -0.1**
KHC Kasperske Hory 12.47 336 *e*P **Pn 23 30 45.1 -2.2**
KHC *e*x x 23 31 01.0
KHC *e*S **Sn 23 33 00.8 -5.2**
KHC AMS AMS 23 36 30.0
comp=N,3µm,9.9s
KHC Kasperske Hory 12.47 336 *e*P **Pn 23 30 45.1 -2.2**
KHC *e*S **Sn 23 33 00.8 -5.2**
KHC MLR MLR
comp=Z,3µm,9.9s
KHC Kasperske Hory 12.47 336 P **Pn 23 30 45.1 -2.2**
KHC Kasperske Hory 12.47 336 *e*Pn **Pn 23 30 45.1 -2.2**
LGHD Ghdames 12.47 234 *i* P **Pn 23 30 45.2 -2.3**
SNR=34
DAVA Damuels 12.49 322 *i* Pn **Pn 23 30 49.6 +1.9**
comp=Z,4.0nm,0.4s
DAVA Damuels 12.49 322 Pn **Pn 23 30 49.6 +1.9**
comp=Z,4.0nm,0.4s
RSH 12.50 120 P Pn 23 30 42.7 -5.1
baz=122
WRDH Warideh 12.51 96 *e*P **Pn 23 30 46.9 -1.1**
WRDH *e*S Sn 23 32 52.9 -14
WRDH AML AML 23 33 46.1
comp=E,8.4nm,0.8s
WRDH AML AML 23 35 34.3
comp=N,7.1nm,0.7s
WRDH Warideh 12.51 96 *e*P **Pn 23 30 46.9 -1.1**
NBNS Bani Suef 12.58 134 P **Pn 23 30 45.1 -3.7**
baz=136
SUZ Suez 12.63 126 P **Pn 23 30 45.3 -4.2**
baz=128
MMAI Mount Meron Ar 12.63 108 Pn **Pn 23 30 47.0 -2.6**
comp=N,3.4nm,0.3s,baz=291,slow=13,SNR=31
MMAI Sn **Sn 23 33 05.9 -4.2**
comp=N,3.5nm,0.3s,baz=239,slow=4.7,SNR=7.4
GOPC GO Pecny, Ondr 12.83 341 AMS AMS 23 36 30.0
comp=N,4µm,11.2s
ZAF Zafarana 12.83 129 P **Pn 23 30 48.0 -4.3**
baz=131
BRBR Barbar 12.87 106 *e*P **Pn 23 30 50.6 -2.5**
BRBR *e*S Sn 23 32 59.4 -17
BRBR AML AML 23 33 20.8
comp=E,20nm,0.5s
BRBR AML AML 23 33 24.4
comp=N,25nm,0.8s
DPC Dobruska-Polom 12.90 346 *e*P **Pn 23 30 54.3 +1.1**
DPC *e*x x 23 31 00.5
DPC *e*x x 23 31 19.3
DPC AMS AMS 23 36 40.0
comp=N,5µm,11.7s
DPC Dobruska-Polom 12.90 346 *e*P **Pn 23 30 54.3 +1.1**
DPC MLR MLR
comp=Z,5µm,11.7s
DPC Dobruska-Polom 12.90 346 P **Pn 23 30 54.3 +1.1**
LUMB Murzuk 12.91 206 *i* P **Pn 23 30 55.6 +2.1**
SNR=45
BNI Bardonecchia 12.95 308 *e*P Pn 23 30 45.2 -8.8
BNI Bardonecchia 12.95 308 *e*Pn Pn 23 30 45.2 -8.8
BNI Bardonecchia 12.95 308 *e*Pn Pn 23 30 45.2 -8.9
PRU Pruhonice 12.96 341 *e*P **Pn 23 30 55.6 +1.6**
PRU *e*x x 23 31 03.2
PRU *e*x x 23 31 06.9
PRU AMS AMS 23 36 40.0
comp=Z,4µm,11.1s
PRU Pruhonice 12.96 341 *e*P **Pn 23 30 55.6 +1.6**
PRU MLR MLR
comp=Z,4µm,11.1s
PRU Pruhonice 12.96 341 P **Pn 23 30 55.6 +1.6**
MARH Ras Al Marh 13.04 103 *e*P **Pn 23 30 53.6 -1.8**
MARH *e*S Sn 23 33 04.1 -16
MARH AML AML 23 33 31.6
comp=E,19nm,0.5s
MARH AML AML 23 33 58.2
comp=N,7.9nm,0.7s
UPC Upice 13.11 346 AMS AMS 23 36 50.0
comp=N,5µm,10.9s
TCHB Talchebab 13.21 109 *e*P **Pn 23 30 55.3 -2.2**
TCHB *e*S Sn 23 33 05.9 -18
TCHB AML AML 23 33 31.9
comp=E,39nm,0.6s
TCHB AML AML 23 33 35.7
comp=N,44nm,0.6s
TOTH TOTAH 13.26 105 *e*P **Pn 23 30 55.7 -2.5**
TOTH *e*S Sn 23 33 08.0 -17
TOTH AML AML 23 33 35.4
comp=N,20nm,0.7s
TOTH AML AML 23 33 38.2
comp=E,20nm,0.7s
SENIN Lac Senin/Sane 13.27 314 *e*Pn **Pn 23 31 01.0 +2.6**
SENIN Lac Senin/Sane 13.27 314 *e*Pn **Pn 23 31 01.0 +2.6**
HNKL Nakhl 13.32 123 P **Pn 23 30 54.8 -4.1**
baz=125
PVCC Panska Ves 13.45 342 AMS AMS 23 36 50.0
comp=E,4µm,10.5s
RABH Abou Rabah 13.46 100 *e*P **Pn 23 30 59.6 -1.3**
RABH AML AML 23 33 49.8
comp=E,10nm,0.6s
RABH Abou Rabah 13.46 100 *e*P **Pn 23 30 59.6 -1.3**
ROOS tl_alroos 13.61 101 *e*P **Pn 23 31 02.5 -0.5**
ROOS *e*S Sn 23 33 17.1 -17
ROOS *e*S Sn 23 33 18.3 -16
ROOS AML AML 23 33 39.9
comp=N,16nm,0.5s
ROOS AML AML 23 34 16.2
comp=E,15nm,0.7s
ROOS tl_alroos 13.61 101 *e*P **Pn 23 31 02.5 -0.5**
GRB Gharib 13.71 131 P **Pn 23 31 00.5 -3.8**
baz=133
SALA Sala 13.77 107 *e*P **Pn 23 31 03.5 -1.8**
SALA *e*S Sn 23 33 19.0 -19
SALA AML AML 23 33 41.0
comp=N,13nm,0.7s
NKC Novy Kostel 13.79 336 AMS AMS 23 37 10.0
comp=N,3µm,10.5s
FELD Feldberg im Sc 13.82 320 *e*P P 23 31 20.0 +5.7
BRG Berggiesshubel 13.93 341 *e*P **Pn 23 31 08.7 +1.5**
comp=N,11nm,1.4s
BRG *e* 23 31 19.8
comp=N,16nm,1.6s
comp=N,2µm,17.5s
comp=E,4µm,11.2s
comp=Z,3µm,22.3s
BRG Berggiesshubel 13.93 341 *e*P **Pn 23 31 08.7 +1.6**

BRG pmax pmax
comp=Z,11nm,1.4s
BRG pmax pmax
comp=Z,16nm,1.6s
BRG MLR MLR
comp=N,2µm,17.5s
BRG MLR MLR
comp=E,4µm,11.2s
BRG MLR MLR
comp=Z,3µm,22.3s
BRG Berggiesshubel 13.93 341 *e*P **Pn 23 31 08.7 +1.6**
comp=Z,3µm,22.3s
BFO Black Forest 13.96 322 *e*P **Pn 23 31 10.8 +3.1**
BFO Black Forest 13.96 322 *e*Pn **Pn 23 31 10.8 +3.1**
BFO Black Forest 13.96 322 *e*Pn **Pn 23 31 10.8 +3.1**
AK11 Malin Array Si 13.99 22 *e*Pn **P 23 31 15.0 -1.0**
AK11 Malin Array Si 13.99 22 *e*Pn **P 23 31 15.0 -1.0**
KIEV Kiev 14.02 22 *e*P **Pn 23 31 08.1 -0.3**
KIEV Kiev 14.02 22 *e*P **Pn 23 31 08.1 -0.3**
KIEV Kiev 14.02 22 *e*Pn **Pn 23 31 09.0 +0.6**
KIEV Kiev 14.02 22 *e*Pn **Pn 23 31 09.0 +0.6**
AKASG Malin Array Be 14.03 22 Pn **Pn 23 31 06.6 -2.0**
comp=Z,0.8nm,0.3s,baz=209,slow=12,SNR=5.9
AKASG LR LR 23 36 39.6
comp=Z,955nm,18.8s,baz=205,slow=38
AKBB Malin Array Si 14.03 22 *e*P **Pn 23 31 06.6 -2.0**
AKBB Malin Array Si 14.03 22 *e*Pn **Pn 23 31 06.6 -2.0**
AKBB Malin Array Si 14.03 22 *e*Pn **Pn 23 31 06.6 -2.0**
ANN Anapa 14.05 56 *e*P **Pn 23 31 12.7 +3.9**
ANN pmax pmax
comp=Z,45nm,1.0s
ANN MLR MLR
comp=Z,742nm,13.0s
ANN Anapa 14.05 56 *e*P **Pn 23 31 12.7 +3.9**
comp=Z,742nm,13.0s
LOMF Lomont 14.11 316 *e*P **P 23 31 20.0 +2.6**
LOMF Lomont 14.11 316 *e*P **P 23 31 20.0 +2.6**
EIL Elat 14.13 121 Pn **Pn 23 31 08.0 -2.1**
comp=Z,1.2nm,0.3s,baz=217,slow=3.7,SNR=17
EIL Sn **Sn 23 33 38.2 -8.5**
comp=Z,1.7nm,0.3s,baz=6.3,slow=18,SNR=5.9
EIL LR LR 23 39 00.8
comp=Z,498nm,18.9s,baz=298,slow=48
ZALF Zalf 14.13 106 *e*P **Pn 23 31 07.8 -2.3**
ZALF *e*S Sn 23 33 28.5 -18
ZALF AML AML 23 34 06.2
comp=N,6.8nm,0.7s
ZALF AML AML 23 34 10.2
comp=E,8.3nm,0.7s
ASF Jabal al Asfar 14.14 109 Pn **Pn 23 31 09.9 -0.4**
comp=E,0.4nm,0.3s,baz=237,slow=4.1,SNR=12
HDK1 Dakhla 14.20 148 P **Pn 23 31 08.2 -2.8**
baz=149
MOF Molkenrain 14.25 319 *e*P P 23 31 24.0 +5.0
MOF Molkenrain 14.25 319 *e*P P 23 31 24.0 +5.0
NUB 14.34 124 P **Pn 23 31 09.1 -3.9**
baz=126
ECH Echery 14.47 320 *e*P **P 23 31 25.2 +3.8**
ECH Echery 14.47 320 *e*P **P 23 31 25.2 +3.8**
HDHB Dhahab 14.53 125 P **Pn 23 31 12.2 -3.3**
baz=127
CLL Collm 14.57 339 *e*(P) **P 23 31 21.0 -1.5**
CLL *e* 23 31 25.0
CLL *e* 23 31 30.0
comp=Z,38nm,1.4s
CLL *i* 23 31 39.9
CLL Lmax 23 37 00.0
CLL Lm MLR 23 37 00.0
comp=Z,2µm,18.3s
CLL Collm 14.57 339 *e*P **P 23 31 21.0 -1.5**
CLL Collm 14.57 339 *e*P **P 23 31 22.0 -0.4**
CLL Collm 14.57 339 *e*P **P 23 31 22.1 -0.4**
EMHD Djebel Mahouad 14.60 269 P **P 23 31 22.3 -0.7**
EMHD Djebel Mahouad 14.60 269 P **P 23 31 22.3 -0.7**
TR1 Tor 1 14.61 129 P **Pn 23 31 13.2 -3.4**
baz=130
LANF Langenberg 14.67 323⇑ *e*P P 23 31 28.9 +5.4
LANF Langenberg 14.67 323⇑ *e*P P 23 31 28.9 +5.4
SH2 Sharm el Sheik 14.78 129 P **Pn 23 31 15.5 -3.4**
baz=130
KTD Kalmit 14.78 325⇑ *e*P P 23 31 31.2 +6.4
HHRG Al Ghardaqah 14.95 132 P **Pn 23 31 18.7 -2.5**
baz=133
SOC Sochi 15.19 62 *e*P **Pn 23 31 26.3 +2.0**
SOC *e* 23 34 15.8
SOC MLR MLR
comp=Z,345nm,10.0s
LBL Lubilhac 15.22 304 *e*P **P 23 31 29.4 -0.4**
LBL Lubilhac 15.22 304 *e*P **P 23 31 29.4 -0.4**
PLDF La Plantade 15.28 307 *e*P **P 23 31 32.0 +1.5**
PLDF La Plantade 15.28 307 *e*P **P 23 31 32.0 +1.5**
PYM Petit Puy Mans 15.58 306 *e*P **P 23 31 35.1 +1.3**
PYM Petit Puy Mans 15.58 306 *e*P **P 23 31 35.1 +1.3**
AGO Saint Agoulin 15.63 307 *e*P **P 23 31 35.6 +1.4**
AGO Saint Agoulin 15.63 307 *e*P **P 23 31 35.6 +1.4**
EBNR Beni Rached 15.71 270 P **Pn 23 31 31.9 +0.6**
ECHA Ech Chlef 15.87 270 P **Pn 23 31 32.5 -0.7**
WLF Walferdange 15.92 322 P **P 23 31 40.3 +2.8**
comp=Z,48nm,1.9s
WLF Walferdange 15.92 322 *e*P **Pn 23 31 33.3 -0.6**
WLF pmax pmax
comp=Z,59nm,1.2s
WLF Walferdange 15.92 322 *e*Pn **Pn 23 31 33.3 -0.6**
comp=Z,59nm,1.2s
WLF Walferdange 15.92 322 *e*Pn **Pn 23 31 33.3 -0.6**
comp=Z,59nm,1.2s
ETRT Tiaret 16.10 267 P **P 23 31 40.5 +0.8**
ETRT Tiaret 16.10 267 P **P 23 31 40.5 +0.8**
EANR 'Ain N'Sour 16.12 269 P **Pn 23 31 36.1 -0.5**
SUW Suwalki 16.17 4 *e*P **Pn 23 31 36.0 -1.0**
SUW Suwalki 16.17 4 *e*P **Pn 23 31 35.9 -1.0**
MEM Membach 16.64 325 P **P 23 31 50.2 +4.9**
KLNR Kaliningrad 16.71 358 *e*P **Pn 23 31 43.4 -0.4**
DOU Dourbes 16.97 321 P **P 23 31 51.1 +2.0**
DOU Dourbes 16.97 321 P **P 23 31 51.0 +2.0**
MICGM Minsk 17.23 13 *e*P **Pn 23 31 50.0 -0.4**
MICGM *e*LR LR 23 38 36.0
MNK Minsk 17.23 13 *e*P **Pn 23 31 50.0 -0.4**
NEY Neytrino 17.24 65 *e*P **P 23 31 53.0 +0.6**
NEY pmax pmax
comp=Z,1.0nm,0.8s
NEY Neytrino 17.24 65 *e*P **P 23 31 53.0 +0.6**
comp=Z,1.0nm,0.8s
KIV Kislovodsk 17.36 63 *i* P **P 23 31 54.0 +0.4**
SNR=14
KIV Kislovodsk 17.36 63 *e*P **Pn 23 31 52.4 +0.1**
KIV *e*S **Sn 23 35 07.1 +1.8**
KIV pmax pmax
comp=Z,27nm,1.0s
KIV MLR MLR
comp=Z,183nm,13.0s
KIV Kislovodsk 17.36 63 *e*Pn **Pn 23 31 52.8 +0.6**
comp=Z,39nm,1.0s
KIV Kislovodsk 17.36 63 P **P 23 31 54.0 +0.4**
SNR=14
KIV Kislovodsk 17.36 63 *e*Pn **Pn 23 31 52.8 +0.6**
comp=Z,39nm,1.0s
KVAR Kislovodsk Arr 17.37 63 P **Pn 23 31 52.8 +0.5**
baz=110,slow=2.1,SNR=6.9
NACGM Naroch 17.43 11 *e* Pn 23 31 45.0 -7.9
NACGM *e*LQ LQ 23 37 12.0
NACGM *e*LR LR 23 38 50.0
KBZ Khabaz 17.46 64 P **P 23 31 54.9 +0.4**
comp=Z,0.4nm,0.3s,baz=270,slow=9.6,SNR=12
AKH Akhalkalaki 17.57 72 P **P 23 32 03.0 +7.0**
AKH Akhalkalaki 17.57 72 *e*P **P 23 32 03.0 +7.0**
BGD Bogdanovka 17.64 72 P **P 23 32 02.6 +5.8**
ONI Oni 17.67 68 P **P 23 32 00.8 +3.9**
ONI Oni 17.67 68 *e*P **P 23 32 00.8 +3.9**
BSD Bornholm Skovb 17.71 348 *i* P **P 23 31 59.4 +2.2**
BSD Bornholm Skovb 17.71 348 *e*P **P 23 31 59.4 +2.2**
BSD Bornholm Skovb 17.71 348 *e*P **P 23 31 59.4 +2.2**
IDID Didziasalis 17.82 11 *e*P **Pn 23 31 56.8 -0.9**
IDID IAmb IAmb 23 32 10.2
comp=Z,12nm,0.7s
IDID Didziasalis 17.82 11 *e*P **Pn 23 31 56.8 -0.9**
SNR=40
GOF Gofitskoye 17.89 60⇑ *i*P **P 23 32 03.3 +4.1**
GOF pmax pmax
comp=Z,45nm,0.9s
NCK Nalchik 17.91 65⇑ *i*P **P 23 32 01.5 +1.9**
NCK pmax pmax
comp=Z,33nm,1.0s
NCK Nalchik 17.91 65 *i* P **P 23 32 01.5 +1.9**

comp=Z,33nm,1.0s
ISAL Salakas 17.99 9 *e*P **Pn 23 31 59.2 -0.6**
ISAL IAmb IAmb 23 32 08.1
comp=Z,12nm,1.0s
ISAL Salakas 17.99 9 *e*P **Pn 23 31 59.2 -0.6**
SNR=35
ZEI Tsey 18.02 67 *e*P **Pn 23 32 00.5 0.0**
ZEI pmax pmax
comp=Z,38nm,0.6s
ZEI MLR MLR
comp=Z,1µm,15.0s
ZEI Tsey 18.02 67 *e*P **Pn 23 32 00.5 0.0**
comp=Z,1µm,15.0s
IZAR Zarasai 18.18 9 *e*P **Pn 23 32 01.4 -0.7**
IZAR IAmb IAmb 23 32 12.1
comp=Z,12nm,0.8s
IZAR Zarasai 18.18 9 *e*P **Pn 23 32 01.4 -0.7**
SNR=35
GUDG Gudauri 18.40 68 P **Pn 23 32 08.4 +3.2**
VSR Storozhevoye 18.44 38 *e*P **Pn 23 32 06.4 +1.1**
VSR pmax pmax
comp=Z,50nm,1.2s
VSR MLR MLR
comp=Z,890nm,12.0s
VSR Storozhevoye 18.44 38 *e*P **Pn 23 32 06.4 +1.1**
comp=Z,890nm,12.0s
GNI Garni 18.48 76 P **Pn 23 32 07.4 +1.2**
comp=Z,1.1nm,0.3s,baz=10,slow=3.8,SNR=6.0
GNI LR LR 23 39 20.0
comp=Z,682nm,18.5s,baz=278,slow=38
GNI Garni 18.48 76 *e*P **Pn 23 32 06.8 +0.6**
GNI pmax pmax
comp=Z,133nm,1.4s
GNI Garni 18.48 76 *e*P **Pn 23 32 06.8 +0.6**
comp=Z,133nm,1.4s
GNI Garni 18.48 76 *e*P **Pn 23 32 06.8 +0.6**
comp=Z,133nm,1.4s
TBLG Delisi 18.53 71 P **Pn 23 32 10.0 +3.4**
TBLG Delisi 18.53 71 *e*P **Pn 23 32 10.0 +3.4**
VORR Voronezh 18.75 37 P **P 23 32 08.0 -0.6**
VORR pmax pmax
comp=Z,250nm,1.6s
VORR Voronezh 18.75 37 P **P 23 32 08.0 -0.6**
comp=Z,250nm,1.6s
LPSR Galich'ya Gora 19.23 35 *e*P **Pn 23 32 15.3 +0.3**
LPSR pmax pmax
comp=Z,80nm,0.8s
LPSR MLR MLR
comp=Z,400nm,11.0s
LPSR Galich'ya Gora 19.23 35 *e*P **Pn 23 32 15.3 +0.3**
comp=Z,400nm,11.0s
ES19 SONSECA Array 19.56 283 *e*P **Pn 23 32 19.8 +0.8**
ES19 SONSECA Array 19.56 283 *e*P **Pn 23 32 19.8 +0.8**
ESDC Sonseca Array 19.61 283 P **P 23 32 18.1 -0.1**
comp=Z,0.8nm,0.3s,baz=78,slow=11,SNR=26
ESDC LR LR 23 40 18.0
comp=Z,230nm,18.6s,baz=90,slow=38
ESLA Sonseca Array 19.61 283 *e*P **Pn 23 32 20.7 +1.1**
comp=Z,22nm,1.0s
ESLA Sonseca Array 19.61 283 *e*P **Pn 23 32 20.7 +1.1**
comp=Z,22nm,1.0s
VRH Novokhopyorsk 19.72 41 *e*P **P 23 32 19.6 +0.4**
VRH pmax pmax
comp=Z,20nm,0.5s
VRH MLR MLR
comp=Z,900nm,17.0s
VRH Novokhopyorsk 19.72 41 *e*P **P 23 32 19.6 +0.4**
comp=Z,900nm,17.0s
PAB San Pablo 19.91 283 *e*P **Pn 23 32 27.3 +4.0**
PAB pmax pmax
comp=Z,23nm,1.2s
PAB San Pablo 19.91 283 *e*P **Pn 23 32 27.3 +4.0**
comp=Z,23nm,1.2s
PAB San Pablo 19.91 283 *e*P **Pn 23 32 27.3 +4.0**
comp=Z,23nm,1.2s
OBN Obninsk 20.15 26 P **P 23 32 23.1 -0.8**
comp=Z,26nm,0.3s,baz=177,slow=23,SNR=9.3
OBN Obninsk 20.15 26 *i* P **P 23 32 23.4 -0.5**
OBN *i* 23 32 31.5
OBN *i* 23 32 42.4
OBN *i* S **S 23 36 07.3 -2.3**
OBN pmax pmax
comp=Z,57nm,1.2s
OBN MLR MLR
comp=Z,938nm,16.0s
OBN Obninsk 20.15 26 *e*P **P 23 32 23.1 -0.8**
comp=Z,117nm,1.2s
OBN Obninsk 20.15 26 *e*P **P 23 32 23.1 -0.8**
comp=Z,117nm,1.2s
TAM Tamanrasset 20.16 226 *e*P Pn 23 32 26.6 +0.3
TAM pmax pmax
comp=Z,12nm,1.1s
TAM Tamanrasset 20.16 226 *e*P Pn 23 32 26.6 +0.3
comp=Z,12nm,1.1s
TAM Tamanrasset 20.16 226 *e*P Pn 23 32 26.6 +0.3
comp=Z,12nm,1.1s
VSU Vasula 20.89 8*c* *i*P **P 23 32 29.3 -2.6**
VSU pmax pmax
comp=Z,189nm,0.9s
MOS Moscow 21.01 27 *e*P **P 23 32 28.9 -4.4**
MOS *e*S **S 23 36 21.7 -5.1**
MOS *e* 23 36 33.6
MOS pmax pmax
comp=Z,60nm,0.8s
MOS MLR MLR
comp=Z,800nm,13.0s
CWF Charnwood Fore 21.51 321 *e*P **P 23 32 44.9 +6.2**
comp=Z,145nm,1.8s
PBRG Braganca 21.69 289 *e*P **P 23 32 42.1 +1.3**
comp=Z,38nm,1.7s
PBRG Braganca 21.69 289 *e*P **P 23 32 42.1 +1.3**
comp=Z,38nm,1.7s
MVO Moncorvo 21.91 287 *e*P **P 23 32 43.8 +0.7**
comp=Z,58nm,1.7s
MVO *e*LR LR 23 37 55.9
comp=Z,250nm,16.0s
MVO Moncorvo 21.91 287 *e*P **P 23 32 43.8 +0.7**
comp=Z,58nm,1.7s
PBAR Barrancos 22.14 279 *e*P **P 23 32 46.4 +0.8**
comp=Z,65nm,1.4s
PBAR *e*LR LR 23 38 26.9
comp=Z,476nm,18.0s
PBAR Barrancos 22.14 279 *e*P **P 23 32 46.4 +0.8**
comp=Z,65nm,1.4s
PMRV Marv??o 22.27 283 *e*P **P 23 32 45.8 -1.2**
comp=Z,24nm,1.4s
PMRV *e*LR LR 23 38 51.3
comp=Z,287nm,16.0s
PMRV Marv??o 22.27 283 *e*P **P 23 32 45.8 -1.2**
comp=Z,24nm,1.4s
PCBR Castelo Branco 22.30 284 *e*P **P 23 32 46.5 -0.8**
comp=Z,34nm,1.6s
PCBR Castelo Branco 22.30 284 *e*P **P 23 32 46.5 -0.8**
comp=Z,34nm,1.6s
MTE Manteigas 22.32 285 *e*P **P 23 32 48.8 +1.2**
comp=Z,74nm,1.8s
MTE *e*S **S 23 36 47.7 -5.0**
MTE *e*LR LR 23 38 26.9
comp=Z,427nm,16.0s
MTE Manteigas 22.32 285 *e*P **P 23 32 48.8 +1.2**
comp=Z,74nm,1.8s
MTE Manteigas 22.32 285 *e*P **P 23 32 50.2 +2.7**
comp=Z,124nm,1.7s
POLO Lamas de Olo 22.48 288 *e*S S 23 36 45.1 -11
POLO *e*LR LR 23 40 41.6
comp=Z,116nm,16.0s
PESTR Estremoz 22.48 281 *e*P **P 23 32 50.3 +1.0**
PESTR Estremoz 22.48 281 *e*P **P 23 32 50.3 +1.0**
PUL Pulkovo 22.65 12 *e*P **P 23 32 51.5 +0.7**
PUL pmax pmax
comp=Z,22nm,0.8s
HFS Hagfors 22.74 350 P **P 23 32 49.9 -1.8**
comp=Z,19nm,0.5s,baz=161,slow=10,SNR=39
KIB El Ksiba 22.77 265 *i* P **P 23 32 52.0 -0.4**
PVAQ Vaqueiros 22.80 278 *e*P **P 23 32 56.4 +3.8**
comp=Z,41nm,2.4s
PVAQ *e*LR LR 23 38 42.1
comp=Z,172nm,18.0s
PBEJ Beja 22.81 279 *e*P **P 23 32 52.4 -0.3**
comp=Z,36nm,1.6s
PBEJ Beja 22.81 279 *e*P **P 23 32 52.4 -0.3**
comp=Z,36nm,1.6s
PGAV Gavieira, Arco 22.84 289 *e*S **S 23 37 04.1 +2.0**
PGAV *e*LR LR 23 40 11.5
comp=Z,239nm,18.0s
PGAV Gavieira, Arco 22.84 289 *e*S **S 23 37 04.1 +2.0**
PMTG Montargil 22.95 282 *e*P **P 23 32 52.4 -1.8**

comp=Z,32nm,1.7s
PMTG eS **S** 23 36 58.5 -5.4
PMTG eLR LR 23 40 00.7
comp=Z,267nm,18.0s
PMTG Montargil 22.95 282 eP **P 23 32 52.4 -1.8**
comp=Z,32nm,1.7s
KONO Kongsberg 22.97 345 eP **P 23 32 54.2 0.0**
KONO pmax pmax
comp=Z,80nm,1.1s
PBDV Barranco-do-Ve 22.99 277 eP **P 23 32 55.4 +0.7**
comp=Z,72nm,1.6s
PBDV eS **S** 23 36 55.0 -10
PBDV Barranco-do-Ve 22.99 277 eP **P 23 32 55.4 +0.7**
comp=Z,72nm,1.6s
PTOM Tomar 23.04 283 eP **P 23 32 57.3 +2.2**
comp=Z,44nm,1.3s
PTOM Tomar 23.04 283 eP **P 23 32 57.3 +2.2**
comp=Z,44nm,1.3s
PNCL Nicolau / Gran 23.31 280 eP **P 23 33 01.8 +3.9**
PTEO Sao Teotonio 23.56 278 eP **P 23 33 06.1 +5.8**
NC602 NORSAR Array S 23.63 348 eP **P 23 32 59.9 -0.9**
NC602 NORSAR Array S 23.63 348 eP **P 23 32 59.9 -0.9**
FIA0 FINESS Array S 23.76 6 eP **P 23 33 00.2 -1.8**
FIA0 FINESS Array S 23.76 6 eP **P 23 33 00.2 -1.8**
FIA0 FINESS Array S 23.76 6 eP **P 23 33 00.2 -1.8**
FINES FINESS Array B 23.76 6 P **P 23 33 00.2 -1.8**
comp=Z,8.5nm,0.5s,baz=174,slow=10,SNR=28
FINES LR LR 23 43 10.8
comp=Z,846nm,20.1s,baz=189,slow=39
FINES PKPPKP **P'P'df 00 08 06.0 -6.4**
comp=Z,0.9nm,0.6s,baz=68,slow=4.9,SNR=6.4
FINES FINESS Array B 23.76 6 *i* P **P 23 33 00.6 -1.4**
FINES pmax pmax
comp=Z,9.0nm,0.5s
FIA1 FINESS Array S 23.76 6 eP **P 23 33 02.2 +0.2**
FIA1 FINESS Array S 23.76 6 eP **P 23 33 02.2 +0.2**
PMAFR Mafra 23.78 282 eLR LR 23 40 10.7
comp=Z,179nm,18.0s
NAO01 NORSAR Array S 23.84 348 eP **P 23 33 05.3 +2.5**
NAO01 NORSAR Array S 23.84 348 eP **P 23 33 05.3 +2.5**
EKA Eskdalemuir Ar 23.91 325 P **P 23 33 03.4 -0.2**
comp=Z,3.1nm,0.4s,baz=130,slow=10.0,SNR=23
ESK Eskdalemuir 23.93 325 eP **P 23 33 08.4 +4.7**
ESK pmax pmax
comp=Z,40nm,0.9s
ESK Eskdalemuir 23.93 325 eP **P 23 33 08.4 +4.7**
comp=Z,40nm,0.9s
NC405 NORSAR Array S 23.96 349 eP **P 23 33 02.8 -1.2**
NC405 NORSAR Array S 23.96 349 eP **P 23 33 02.9 -1.2**
NB201 NORSAR Array S 23.97 348 eP **P 23 33 04.4 +0.3**
NB201 NORSAR Array S 23.97 348 eP **P 23 33 04.4 +0.3**
NB2 NORSAR Subarra 23.97 348 P **P 23 33 02.9 -1.2**
comp=Z,23nm,1.0s,baz=153,slow=10
NB2 NORSAR Subarra 23.97 348 P **P 23 33 02.9 -1.2**
comp=Z,23nm,1.0s,SNR=0.4
NB200 NORSAR Array S 23.97 348 eP **P 23 33 02.7 -1.4**
NB200 NORSAR Array S 23.97 348 eP **P 23 33 02.7 -1.4**
NOA NORSAR Array B 23.97 348 P **P 23 33 02.7 -1.4**
comp=Z,18nm,1.0s,baz=146,slow=9.6,SNR=22
NOA LR LR 23 44 19.7
comp=Z,490nm,18.8s,baz=170,slow=42
NBO00 NORSAR Array S 24.04 348 eP **P 23 33 04.6 -0.1**
NBO00 NORSAR Array S 24.04 348 eP **P 23 33 04.5 -0.1**
NBO02 NORSAR Array S 24.04 348 eP **P 23 33 05.7 +1.0**
NBO02 NORSAR Array S 24.04 348 eP **P 23 33 05.7 +1.0**
NC303 NORSAR Array S 24.12 348 eP **P 23 33 04.9 -0.6**
NC303 NORSAR Array S 24.12 348 eP **P 23 33 04.9 -0.6**
NC204 NORSAR Array S 24.27 348 eP **P 23 33 06.8 -0.1**
NC204 NORSAR Array S 24.27 348 eP **P 23 33 06.8 -0.1**
KLMR Klimovskoe 25.72 21 eP **P 23 33 17.7 -2.2**
KLMR pmax pmax
comp=Z,90nm,1.1s
TMCR Tamitsa 28.17 16 eP **P 23 33 41.8 -0.1**
TMCR pmax pmax
comp=Z,26nm,0.9s
AKTO Aktyubinsk 28.97 52 P **P 23 33 48.0 -1.2**
comp=Z,7.2nm,0.4s,baz=242,slow=7.2,SNR=16
AKTO LR LR 23 47 58.0
comp=Z,186nm,19.2s,baz=322,slow=42
GEYT Alibeck 29.07 78 P **P 23 33 49.8 -0.5**
comp=Z,2.4nm,0.4s,baz=289,slow=9.1,SNR=11
GEYT LR LR 23 46 54.9
comp=Z,233nm,20.6s,baz=310,slow=40
AB31 Akbulak array 30.01 55 *i* P **P 23 33 56.9 -1.6**
AB31 pmax pmax
comp=Z,2.0nm,0.4s
ARU Arti 30.95 41 P **P 23 34 05.4 -1.3**
comp=Z,13nm,0.5s,baz=268,slow=7.6,SNR=26
ARU Arti 30.95 41 *d i* P **P 23 34 06.7 0.0**
ARU 23 35 06.6
ARU 23 36 57.1
ARU S **S** **23 39 13.9 +3.4**
ARU SS **SnSn** **23 40 56.4 +5.9**
ARU pmax pmax
comp=Z,18nm,1.0s
ARU MLR MLR
comp=Z,546nm,15.0s
ARU Arti 30.95 41 eP **P 23 34 05.4 -1.3**
comp=Z,14nm,0.5s
ARU Arti 30.95 41 eP **P 23 34 05.4 -1.3**
comp=Z,14nm,0.5s
LVZ Lovozero 30.98 10 eP **P 23 34 06.3 -0.5**
LVZ pmax pmax
comp=Z,2.0nm,0.4s
DAMY Dhamar 31.08 132 eP **P 23 34 10.6 +2.1**
comp=Z,30nm,1.1s
DAMY Dhamar 31.08 132 eP **P 23 34 10.6 +2.1**
comp=Z,30nm,1.1s
ARA0 ARCESS Array S 31.77 3 eP **P 23 34 12.3 -1.5**
ARA0 ARCESS Array S 31.77 3 eP **P 23 34 12.3 -1.5**
ARCES ARCESS Array B 31.77 3 P **P 23 34 12.3 -1.5**
comp=Z,4.7nm,0.5s,baz=193,slow=9.6,SNR=21
ARCES LR LR 23 49 47.6
comp=Z,285nm,18.6s,baz=182,slow=42
NAZ Nazwa, Dubai 31.98 104 *i* P **P 23 34 15.8 -0.3**
SNR=7.2
BANOM Banah 31.99 102 *i* P **P 23 34 16.7 +0.5**
SNR=6.2
BANOM *i* P **P 23 34 16.7 +0.5**
SNR=6.2
BANOM Banah 31.99 102 pP **P 23 34 15.2 -1.0**
SNR=6.2
FAQ Al Faqa, Dubai 32.06 104 *i* P **P 23 34 16.1 -0.7**
SNR=6.5
SVE Sverdlovsk 32.16 41 eP **P 23 34 16.9 -0.5**
SVE pmax pmax
comp=Z,38nm,0.8s
SVE MLR MLR
comp=Z,757nm,15.0s
UOSS Minazif 32.42 103 eP **P 23 34 19.1 -0.8**
comp=Z,4.6nm,1.0s
UOSS Minazif 32.42 103 eP **P 23 34 19.1 -0.8**
comp=Z,4.6nm,1.0s
HATD Hatta, Dubai 32.43 103 *i* P **P 23 34 19.2 -0.8**
SNR=9.4
HATD Hatta, Dubai 32.43 103 P **P 23 34 19.4 -0.6**
HATD P **P** 23 34 19.4 -0.6
HATD Hatta, Dubai 32.43 103 pP **P 23 34 19.4 -0.6**
ASHO Ashiyiah 32.45 104 *i* P **P 23 34 19.3 -1.0**
SNR=15
ASHO Ashiyiah 32.45 104 P **P 23 34 19.2 -1.0**
SNR=27
ASHO P **P** **23 34 19.2 -1.0**
SNR=27
ASHO Sn **S** **23 39 31.5 -3.1**
ASHO Sn **S** **23 39 31.5 -3.1**
ASHO Ashiyiah 32.45 104 pP **P 23 34 19.2 -1.0**
SNR=27
ATD Arta Tunnel 32.69 138 LR LR 23 49 10.9
comp=Z,122nm,18.1s,baz=317,slow=39
BRVK Borovoye 36.87 50 *ce*P **P 23 34 58.0 -0.1**
BRVK pmax pmax
comp=Z,10.0nm,0.7s
BRVK Borovoye 36.87 50 eP **P 23 34 58.3 +0.2**
comp=Z,23nm,1.0s
BRVK Borovoye 36.87 50 eP **P 23 34 58.3 +0.2**
comp=Z,23nm,1.0s
KK31 Karatay Array 37.48 66 *i* P **P 23 35 02.6 -0.8**
KK31 pmax pmax
comp=Z,17nm,0.8s
KK31 Karatay Array 37.48 66 *i* P **P 23 35 02.6 -0.8**
comp=Z,17nm,0.8s
OTUK Ortayu 38.17 57 *i* P **P 23 35 08.3 -0.9**
OTUK pmax pmax
comp=Z,22nm,1.0s
OTUK Ortayu 38.17 57 *i* P **P 23 35 08.3 -0.9**
comp=Z,22nm,1.0s
KBL Kabul 38.48 80 eP **P 23 35 12.0 -0.2**
KBL pmax pmax
comp=Z,7.0nm,1.0s
KBL Kabul 38.48 80 eP **P 23 35 12.0 -0.2**
comp=Z,6.5nm,1.0s
KBL Kabul 38.48 80 eP **P 23 35 12.0 -0.2**
comp=Z,6.5nm,1.0s
DBIC Dimbokro 39.02 224 P **P 23 35 15.3 -1.3**
comp=Z,8.6nm,0.9s,baz=14,slow=8.2,SNR=8.8
DBIC Dimbokro 39.02 224 eP **P 23 35 15.3 -1.3**
DBIC pmax pmax
comp=Z,82nm,1.9s
DBIC Dimbokro 39.02 224 eP **P 23 35 15.3 -1.3**
comp=Z,82nm,1.9s
DBIC Dimbokro 39.02 224 eP **P 23 35 15.3 -1.3**
comp=Z,82nm,1.9s
MNAS Manas 39.03 67 *i* P **P 23 35 14.6 -2.1**
MNAS pmax pmax
comp=Z,15nm,1.5s
TIC Toumodi 39.13 224 *e*PKP2 **P 23 35 19.0 +1.4**
KIC Kosan Boka 39.21 223 *e*PKP2 **P 23 35 18.9 +0.7**
comp=Z,106nm,1.6s
LIC Lamto 39.48 224 *e*PKP2 **P 23 35 20.2 -0.3**
comp=Z,104nm,1.2s
EKS2 Erkin-Say 39.92 66 eP **P 23 35 24.0 0.0**
EKS2 pmax pmax
comp=Z,18nm,0.8s
EKS2 Erkin-Say 39.92 66 eP **P 23 35 24.0 0.0**
comp=Z,18nm,0.8s
EKS2 Erkin-Say 39.92 66 eP **P 23 35 24.0 0.0**
comp=Z,18nm,0.8s
SPITS Spitsbergen Ar 40.42 358 P **P 23 35 27.4 -0.3**
comp=Z,5.1nm,0.7s,baz=163,slow=11,SNR=12
AAK Ala-Archa 40.44 66 *i* P **P 23 35 27.9 -0.5**
AAK pmax pmax
comp=Z,7.0nm,0.6s
AAK Ala-Archa 40.44 66 eP **P 23 35 28.4 0.0**
comp=Z,24nm,1.0s
AAK Ala-Archa 40.44 66 eP **P 23 35 28.4 0.0**
comp=Z,24nm,1.0s
FRU Bishkek 40.49 66 *i* P **P 23 35 28.0 -0.7**
FRU pmax pmax
comp=Z,70nm,2.1s
FRU Bishkek 40.49 66 *i* P **P 23 35 28.0 -0.7**
comp=Z,70nm,2.1s
TKM2 Tokmak 2 41.17 65 eP **P 23 35 33.9 -0.6**
TKM2 pmax pmax
comp=Z,23nm,1.6s
TKM2 Tokmak 2 41.17 65 eP **P 23 35 33.9 -0.6**
comp=Z,23nm,1.6s
TKM2 Tokmak 2 41.17 65 eP **P 23 35 33.9 -0.6**
comp=Z,23nm,1.6s
KMBO Kilima Mbogo 41.61 155 *ce*P **P 23 35 40.0 +1.6**
comp=Z,2.1nm,0.7s,baz=299,slow=3.8,SNR=5.7
KMBO LR LR 23 54 34.7
comp=Z,244nm,19.9s,baz=346,slow=39
KMBO Kilima Mbogo 41.61 155 *ce*P **P 23 35 39.0 +0.7**
KMBO pmax pmax
comp=Z,2.0nm,0.7s
KMBO Kilima Mbogo 41.61 155 eP **P 23 35 39.0 +0.7**
comp=Z,2.0nm,0.7s
KMBO Kilima Mbogo 41.61 155 eP **P 23 35 40.0 +1.6**
comp=Z,7.4nm,1.3s
KURK Kurchatov 42.06 53 eP **P 23 35 40.9 -0.5**
KURK pmax pmax
comp=Z,21nm,0.9s
KURK Kurchatov 42.06 53 eP **P 23 35 40.9 -0.5**
comp=Z,21nm,0.9s
KURK Kurchatov 42.06 53 eP **P 23 35 40.9 -0.5**
comp=Z,21nm,0.9s
KSH Kashi 42.27 70 P **P 23 35 42.0 -1.5**
KSH *e*PcP **PcP** **23 37 38.8 +1.6**
KSH *e*ScP **ScP** **23 41 28.5 +1.2**
KSH PcS **PcS** **23 41 29.0 -0.1**
KSH S **S** **23 42 00.5 -3.3**
KSH Kashi 42.27 70 ScS ScS 23 45 44.3 -1.1
KSH pmax pmax
comp=Z,130nm,6.2s
KSH LR LR
comp=N,98nm,7.0s
KSH LR LR
comp=E,140nm,6.3s
KSH LR LR
comp=Z,210nm,14.1s
DAG Danmarks Havn 42.66 347 *i* P **P 23 35 48.2 +2.3**
comp=Z,1.1nm,0.4s
DAG Danmarks Havn 42.66 347 *i* P **P 23 35 48.2 +2.3**
DAG pmax pmax
comp=Z,1.0nm,0.4s
NVS Novosibirsk 44.52 47 eP **P 23 36 01.3 +0.1**
NVS *e*S **S** **23 42 32.5 -3.4**
NVS pmax pmax
comp=Z,38nm,1.0s
NVS pmax pmax
comp=E,13nm,0.8s
NVS smax smax
comp=N,17nm,1.9s
NVS smax smax
comp=E,10.0nm,1.7s
NVS Novosibirsk 44.52 47 eP **P 23 36 01.3 +0.1**
comp=E,17nm,1.9s
MAKZ Makanchi 44.83 58 eP **P 23 36 03.0 -0.9**
MAKZ pmax pmax
comp=Z,15nm,0.8s
MAKZ Makanchi 44.83 58 eP **P 23 36 03.0 -0.9**
comp=Z,15nm,0.8s
MAKZ Makanchi 44.83 58 eP **P 23 36 03.0 -0.9**
comp=Z,15nm,0.8s
MK31 Makanchi Array 45.04 58 eP **P 23 36 04.6 -1.0**
MK31 Makanchi Array 45.04 58 eP **P 23 36 04.6 -1.0**
MK31 Makanchi Array 45.04 58 eP **P 23 36 04.6 -1.0**
MK32 Makanchi Array 45.04 58 eP **P 23 36 04.3 -1.3**
MK32 Makanchi Array 45.04 58 eP **P 23 36 04.3 -1.3**
MK32 *e*S **S** **23 42 40.5 -3.4**
MKAR Makanchi Array 45.04 58 P **P 23 36 04.3 -1.2**
comp=Z,13nm,0.4s,baz=276,slow=7.3,SNR=140
MKAR S **S** **23 42 40.5 -3.4**
comp=Z,2.3nm,0.8s,baz=276,slow=12,SNR=7.2
MKAR LR LR 23 59 05.2
comp=Z,141nm,18.5s,baz=276,slow=42
MKAR Makanchi Array 45.04 58 eP **P 23 36 04.6 -1.0**
MKAR Makanchi Array 45.04 58 eP **P 23 36 04.6 -1.0**
MK01 Makanchi Array 45.05 58 eP **P 23 36 04.2 -1.5**
MK01 Makanchi Array 45.05 58 eP **P 23 36 04.2 -1.5**
SUMG Summit 45.24 339 *i* P **P 23 36 09.7 +2.5**
comp=Z,1.7nm,0.4s
SUMG Summit 45.24 339 eP **P 23 36 09.7 +2.5**
SUMG pmax pmax
comp=Z,2.0nm,0.4s
SUMG Summit 45.24 339 eP **P 23 36 09.7 +2.5**
comp=Z,2.0nm,0.4s
SUMG Summit 45.24 339 eP **P 23 36 11.7 +4.5**
comp=Z,15nm,1.1s
ZAA0 Zalesovo Array 45.52 48 eP **P 23 36 07.9 -1.3**
ZAA0 Zalesovo Array 45.52 48 eP **P 23 36 07.9 -1.3**
ZAA1 Zalesovo Array 45.52 48 eP **P 23 36 07.9 -1.3**
ZAA1 Zalesovo Array 45.52 48 eP **P 23 36 07.9 -1.3**
ZAA1 *e*S **S** **23 42 47.6 -3.0**
ZALV Zalesovo Beam 45.52 48 P **P 23 36 07.9 -1.3**
comp=Z,18nm,0.6s,baz=275,slow=8.9,SNR=32
ZALV S **S** **23 42 47.6 -3.0**
comp=Z,0.6nm,0.5s,baz=295,slow=14,SNR=3.4
ZALV LR LR 23 55 56.0
comp=Z,173nm,21.0s,baz=250,slow=37
NRIK Noril'sk 46.83 26 P **P 23 36 19.7 +0.4**
comp=Z,4.1nm,0.4s,baz=263,slow=6.1,SNR=8.1
WMQ Urumqi 49.48 61 P **P 23 36 40.0 -0.2**
WMQ pP sP 23 36 44.5 -1.8
WMQ sP pP 23 36 47.5 +2.9
WMQ S **S** **23 43 44.8 -2.5**
WMQ ScS **ScS** **23 46 28.8 -2.9**
WMQ Urumqi 49.48 61 SS SS 23 47 15.8 -3.0
WMQ pmax pmax
comp=Z,10.0nm,0.6s
WMQ pmax pmax
comp=Z,57nm,3.6s
WMQ LR LR
comp=N,160nm,33.6s
WMQ LR LR
comp=E,67nm,37.6s
WMQ LR LR
comp=Z,54nm,31.8s
POO Poona 49.63 98 eP P 23 36 37.0 -4.7
KRAR Krasnoyarsk 49.81 44 eP **P 23 36 43.2 +0.8**
KRAR pmax pmax
comp=Z,11nm,1.0s
PYUN Piuthan 51.97 82 eP **P 23 36 57.9 -1.5**
comp=Z,89nm,0.7s
KOLN Koldanda 52.60 82 eP **P 23 37 02.2 -1.9**
comp=Z,38nm,0.7s
GKN Gorkha 53.30 81 eP **P 23 37 07.3 -1.9**
DMN Daman 53.85 81 eP **P 23 37 11.7 -1.7**
comp=Z,36nm,0.5s
KKN Kakani 53.91 81 eP **P 23 37 11.6 -2.1**
comp=Z,32nm,0.8s
GUN Gumba 54.32 80 eP **P 23 37 14.8 -2.0**
MOY Mondy 55.58 48 eP **P 23 37 28.4 +3.0**
ZAK Zakamensk 57.38 49 eP **P 23 37 35.9 -2.3**
ZAK pmax pmax
comp=Z,5.0nm,0.8s
LSA Lhasa 57.55 76 P **P 23 37 38.8 -1.3**
LSA pmax pmax
comp=Z,12nm,0.8s
LSA Lhasa 57.55 76 eP **P 23 37 39.4 -0.7**
LSA pmax pmax
comp=Z,8.0nm,0.8s
LSA Lhasa 57.55 76 eP **P 23 37 39.4 -0.7**
comp=Z,8.5nm,0.8s
LSA Lhasa 57.55 76 eP **P 23 37 39.4 -0.7**
comp=Z,8.5nm,0.8s
SCHQ Schefferville 58.97 318 P **P 23 37 49.3 +0.1**
comp=Z,9.3nm,0.3s,baz=72,slow=5.2,SNR=72
SCHQ LR LR 00 02 01.6
comp=Z,167nm,20.7s,baz=68,slow=35
SCHQ Schefferville 58.97 318 eP **P 23 37 49.3 +0.1**
comp=Z,14nm,1.0s
SCHQ Schefferville 58.97 318 eP **P 23 37 49.3 +0.1**
comp=Z,14nm,1.0s
GTA Gaotai 59.54 62 ||P **P 23 37 56.8 +3.3**
GTA pP sP 23 38 00.8 +1.2
GTA sP pP 23 38 03.3 +5.4
GTA S **S** **23 46 11.5 +8.6**
GTA sS sS 23 46 18.8 +8.5
GTA Gaotai 59.54 62 SS SS 23 50 10.0 +12
GTA pmax pmax
comp=Z,8.0nm,1.2s
GTA pmax pmax
comp=Z,68nm,4.5s
GTA LR LR
comp=N,230nm,16.6s
GTA LR LR
comp=E,180nm,17.1s
GTA LR LR
comp=Z,170nm,16.2s
TIXI Tiksi 59.74 20 *ce*P **P 23 37 55.3 +1.2**
TIXI pmax pmax
comp=Z,6.0nm,0.8s
TIXI Tiksi 59.74 20 eP **P 23 37 52.4 -1.7**
comp=Z,10nm,1.1s
TIXI Tiksi 59.74 20 eP **P 23 37 52.4 -1.7**
comp=Z,10nm,1.1s
SHL Shillong 60.14 80 eP **P 23 37 57.0 -0.8**
SONA0 Songino Array 60.27 51 eP **P 23 37 57.3 -1.0**
comp=Z,16nm,1.1s
SONA0 Songino Array 60.27 51 eP **P 23 37 57.3 -1.0**
comp=Z,16nm,1.1s
SONA1 Songino Array 60.27 51 eP **P 23 37 57.1 -1.2**
SONA1 Songino Array 60.27 51 eP **P 23 37 57.1 -1.2**
SONM Songino Array 60.27 51 P **P 23 37 57.3 -1.0**
comp=Z,4.7nm,0.8s,baz=282,slow=8.4,SNR=24
BOD Bodaibo 60.30 38 eP **P 23 37 56.4 -1.8**
BOD pmax pmax
comp=Z,12nm,1.0s
ULN Ulaanbaatar 60.66 50 *ce*P **P 23 38 00.1 -0.9**
ULN pmax pmax
comp=Z,9.0nm,1.7s
ULN Ulaanbaatar 60.66 50 eP **P 23 38 00.2 -0.8**
comp=Z,6.6nm,0.9s
ULN Ulaanbaatar 60.66 50 eP **P 23 38 00.2 -0.8**
comp=Z,6.6nm,0.9s
LZH Lanzhou 63.90 63 eP **P 23 38 21.5 -1.5**
LZH pP pP 23 38 25.0 -2.5
LZH sP sP 23 38 26.3 -2.9
LZH pmax pmax
comp=Z,13nm,1.0s
LZH pmax pmax
comp=Z,74nm,4.1s
LZH LR LR
comp=N,200nm,13.2s
LZH LR LR
comp=E,150nm,12.6s
LZH LR LR
comp=Z,250nm,13.8s
YAK Yakutsk 65.11 30 eP P 23 38 35.5 +5.3
YAK pmax pmax
comp=Z,22nm,0.9s
YAK pmax pmax
comp=N,7.0nm,0.9s
YAK pmax pmax
comp=E,2.0nm,1.0s
BOSA Boshof 66.29 176 P **P 23 38 38.5 +0.2**
comp=E,5.7nm,0.8s,baz=4.4,slow=6.8,SNR=9.7
BOSA LR LR 00 09 56.5
comp=E,281nm,18.6s,baz=0.0,slow=38
CD2 Chengdu 66.44 68 P **P 23 38 37.0 -2.4**
CD2 pmax pmax
comp=Z,30nm,0.7s
HHC Hu-ho-hao-te 66.80 56 eP **P 23 38 42.0 +0.4**
HHC S **S** **23 47 32.5 -1.1**
HHC SKS **SKSac** **23 48 36.0 -2.3**
HHC pmax pmax
comp=Z,27nm,1.2s
HHC pmax pmax
comp=Z,110nm,7.1s
HHC LR LR
comp=N,220nm,14.8s
HHC LR LR
comp=E,220nm,15.1s
HHC LR LR
comp=Z,170nm,13.2s
XAN Xi'an 68.53 63 P **P 23 38 56.5 +4.0**
XAN pP sP 23 39 04.3 +5.6
XAN pmax pmax
comp=Z,9.0nm,1.1s
KMI Kunming 68.73 74 P **P 23 38 53.5 -0.7**
KMI pP pP 23 38 57.0 -1.7
KMI sP sP 23 38 58.8 -1.5
KMI pmax pmax
comp=Z,8.0nm,1.0s
KMI pmax pmax
comp=Z,110nm,4.2s
KMI LR LR
comp=Z,96nm,25.9s
MHMT Maesarieng 68.83 83 P **P 23 38 53.9 -0.6**
comp=Z,26nm,0.9s,comp=Z,270nm
CHTO Chiang Mai 69.26 82 P **P 23 38 56.0 -1.2**
comp=Z,72nm,1.1s
CHTO Chiang Mai 69.26 82 eP **P 23 38 56.1 -1.2**
CHTO pmax pmax
comp=Z,15nm,1.0s
CHTO Chiang Mai 69.26 82 eP **P 23 38 56.1 -1.2**
comp=Z,15nm,1.0s
CHTO Chiang Mai 69.26 82 eP **P 23 38 56.1 -1.2**
comp=Z,15nm,1.0s
CMMT Chiang Mai 69.27 82 P **P 23 38 55.9 -1.4**
comp=Z,16nm,1.1s
CM31 Chiang Mai Arr 69.46 82 eP **P 23 38 57.5 -1.0**
CM31 Chiang Mai Arr 69.46 82 eP **P 23 38 57.5 -1.0**
CMAR Chiang Mai Arr 69.46 82 P **P 23 38 57.5 -1.1**
comp=Z,7.1nm,0.6s,baz=304,slow=7.8,SNR=53
CMAR LR LR 00 16 33.4
comp=Z,32nm,19.2s,baz=290,slow=42
CM01 Chiang Mai Arr 69.50 82 eP **P 23 38 57.1 -1.6**
CM01 Chiang Mai Arr 69.50 82 eP **P 23 38 57.1 -1.6**
FCC Fort Churchill 69.71 330 eP **P 23 39 01.6 +2.2**
FCC pmax pmax
comp=Z,5.0nm,0.8s
FCC Fort Churchill 69.71 330 eP **P 23 39 01.6 +2.2**
comp=Z,5.2nm,0.8s
FCC Fort Churchill 69.71 330 eP **P 23 39 01.6 +2.2**
comp=Z,5.2nm,0.8s
LAMP Lampang 69.97 82 P **P 23 39 00.8 -0.8**
comp=Z,10nm,0.8s
GYA Guiyang 70.97 71 eP **P 23 39 08.0 +0.2**
GYA pmax pmax
comp=Z,10.0nm,1.0s
UTTA Uttaradit 71.13 82 P **P 23 39 07.7 -1.0**
comp=Z,3.9nm,0.8s
BILL Bilibino 71.17 13 *i* P **P 23 39 06.9 -1.2**
BILL *i* 23 41 42.2
BILL pmax pmax

comp=Z,3.0nm,0.9s
BILL MLR MLR
comp=Z,174nm,18.0s
BILL Bilibino 71.17 13 *eP* **P 23 39 08.2 +0.1**
comp=Z,7.1nm,0.7s
BILL Bilibino 71.17 13 *eP* **P 23 39 08.2 +0.1**
comp=Z,7.1nm,0.7s
SRDT SRDT 71.94 86 P **P 23 39 12.7 -0.9**
comp=Z,82nm,1.1s
PBKT Sadao Pong 72.12 83 P **P 23 39 13.8 -0.9**
comp=Z,15nm,1.0s,comp=Z,848nm
SEY Seymchan 72.22 21 *cePP* **23 39 14.0 -0.5**
INK Inuvik 72.40 350 *eP* **P 23 39 18.6 +3.1**
INK pmax pmax
comp=Z,9.0nm,1.3s
INK Inuvik 72.40 350 *eP* **P 23 39 18.6 +3.1**
comp=Z,9.4nm,1.3s
INK Inuvik 72.40 350 *eP* **P 23 39 18.6 +3.1**
comp=Z,9.4nm,1.3s
NONG Nongkai 72.97 80 P **P 23 39 18.8 -0.9**
comp=Z,90nm,0.8s
KHON Khomkaen 73.71 82 P **P 23 39 23.2 -0.9**
comp=Z,25nm,0.8s,comp=Z,569nm
YKW3 Yellowknife Ar 73.75 340 *eP* **P 23 39 24.8 +1.3**
comp=Z,11nm,1.2s
YKW3 Yellowknife Ar 73.75 340 *eP* **P 23 39 24.8 +1.3**
comp=Z,11nm,1.2s
KLR Kul'dur 73.78 40 *ieP* **P 23 39 22.5 -1.5**
YKA Yellowknife Ar 73.80 340 P **P 23 39 23.7 -0.1**
comp=Z,1.1nm,0.6s,baz=33,slow=5.2,SNR=20
YKA LR LR 00 13 10.4
comp=Z,24nm,19.5s,baz=0.0,slow=37
YKB5 Yellowknife Ar 73.80 340 *eP* **P 23 39 23.7 -0.2**
YKB5 Yellowknife Ar 73.80 340 *eP* **P 23 39 23.7 -0.2**
SKNT Sakolnakorn 74.25 81 P **P 23 39 26.4 -0.9**
comp=Z,27nm,1.0s
SRAK Srakaew 74.44 84 P **P 23 39 30.3 +1.9**
comp=Z,94nm,0.8s,comp=Z,764nm
PANO Nakornpanom 74.64 80 P **P 23 39 29.1 -0.4**
comp=Z,46nm,1.2s
SEUS St. Eustatius 74.90 281 *eP* **P 23 39 31.8 +0.8**
comp=Z,168nm,0.6s
SEUS St. Eustatius 74.90 281 *eP* **P 23 39 31.8 +0.8**
comp=Z,168nm,0.6s
COLD Coldfoot 74.98 357 *eP* **P 23 39 32.1 +1.4**
comp=Z,9.1nm,1.1s
COLD Coldfoot 74.98 357 *eP* **P 23 39 32.1 +1.4**
comp=Z,9.1nm,1.1s
EYMN Ely 75.61 320 *eP* **P 23 39 35.8 +1.1**
comp=Z,11nm,1.1s
EYMN Ely 75.61 320 *eP* **P 23 39 35.8 +1.1**
comp=Z,11nm,1.1s
FFC Flin Flon 75.65 330 *eP* **P 23 39 35.9 +1.2**
FFC pmax pmax
comp=Z,11nm,1.0s
FFC Flin Flon 75.65 330 *eP* **P 23 39 35.9 +1.2**
comp=Z,11nm,1.0s
FFC Flin Flon 75.65 330 *eP* **P 23 39 35.9 +1.2**
comp=Z,11nm,1.0s
ULM Lac du Bonnet 76.19 324 P **P 23 39 38.4 +0.5**
comp=Z,6.9nm,0.6s,baz=46,slow=4.3,SNR=6.7
ULM LR LR 00 13 51.2
comp=Z,187nm,19.0s,baz=24,slow=36
ULM Lac du Bonnet 76.19 324 *eP* **P 23 39 41.3 +3.4**
comp=Z,13nm,0.9s
ULM Lac du Bonnet 76.19 324 *eP* **P 23 39 41.3 +3.4**
comp=Z,13nm,0.9s
MDM Murphy Dome 77.12 355 *eP* **P 23 39 44.1 +1.1**
comp=Z,14nm,1.2s
MDM Murphy Dome 77.12 355 *eP* **P 23 39 44.1 +1.1**
comp=Z,14nm,1.2s
USRK Ussuriysk Ar. 77.15 44 P **P 23 39 42.4 -1.1**
comp=Z,5.5nm,0.7s,baz=290,slow=5.1,SNR=17
USRK LR LR 00 17 31.8
comp=Z,298nm,18.0s,baz=309,slow=39
COLA College 77.18 355 *eP* **P 23 39 42.2 -1.0**
COLA pmax pmax
comp=Z,2.0nm,0.8s
DAWY Dawson 77.19 351 *eP* **P 23 39 46.8 +3.4**
comp=Z,6.9nm,0.8s
DAWY Dawson 77.19 351 *eP* **P 23 39 46.8 +3.4**
comp=Z,6.9nm,0.8s
MLY Manley 77.19 356 *eP* **P 23 39 47.3 +3.9**
comp=Z,9.8nm,1.1s
MLY Manley 77.19 356 *eP* **P 23 39 47.3 +3.9**
comp=Z,9.8nm,1.1s
IL1 Eielson Array 77.22 355 *eP* **P 23 39 44.3 +0.8**
IL1 Eielson Array 77.22 355 *eP* **P 23 39 44.3 +0.8**
ILAR Eielson Array 77.22 355 P **P 23 39 44.4 +0.9**
comp=Z,1.1nm,0.9s,baz=358,slow=4.0,SNR=8.5
ILAR LR LR 00 18 07.8
comp=Z,78nm,18.4s,baz=32,slow=39
ILB Eielson Array 77.22 355 *eP* **P 23 39 44.3 +0.9**
ILB Eielson Array 77.22 355 *eP* **P 23 39 44.4 +0.9**
QIZ Qiongzhong 77.59 76 P **P 23 39 45.0 -1.3**
QIZ S **S 23 49 38.8 +1.1**
QIZ LR LR
comp=Z,49nm,36.1s
WRH Wood River Hil 77.60 355 *eP* **P 23 39 45.9 +0.3**
comp=Z,9.3nm,0.8s
WRH Wood River Hil 77.60 355 *eP* **P 23 39 45.9 +0.3**
comp=Z,9.3nm,0.8s
DOT Dot Lake 78.09 353 *eP* **P 23 39 49.9 +1.5**
comp=Z,30nm,1.2s
DOT Dot Lake 78.09 353 *eP* **P 23 39 49.9 +1.5**
comp=Z,30nm,1.2s
BPAW Bear Paw Mtn. 78.13 356 *eP* **P 23 39 49.2 +0.6**
comp=Z,24nm,1.6s
BPAW Bear Paw Mtn. 78.13 356 *eP* **P 23 39 49.2 +0.6**
comp=Z,24nm,1.6s
MCK McKinley 78.39 355 *eP* **P 23 39 53.7 +3.7**
MCK pmax pmax
comp=Z,38nm,1.6s
MCK McKinley 78.39 355 *eP* **P 23 39 53.7 +3.7**
comp=Z,38nm,1.6s
MCK McKinley 78.39 355 *eP* **P 23 39 53.7 +3.7**
comp=Z,38nm,1.6s
GSI Gunungsitoli 78.53 97 *eP* **P 23 39 51.1 -0.5**
comp=Z,24nm,1.0s
GSI Gunungsitoli 78.53 97 *eP* **P 23 39 51.1 -0.5**
comp=Z,24nm,1.0s
PSI Prapat 78.67 95 *eP* **P 23 39 51.7 -0.8**
PSI pmax pmax
comp=Z,15nm,0.9s
PSI Prapat 78.67 95 *eP* **P 23 39 51.7 -0.8**
comp=Z,15nm,0.9s
CAST Castle Rocks 78.86 357 *eP* **P 23 39 56.2 +3.5**
comp=Z,29nm,1.6s
CAST Castle Rocks 78.86 357 *eP* **P 23 39 56.2 +3.5**
comp=Z,29nm,1.6s
KS01 Wonju Array Si 79.10 51 *eP* **P 23 39 53.3 -1.1**
KS01 Wonju Array Si 79.10 51 *eP* **P 23 39 53.3 -1.1**
KS15 Wonju Array Si 79.12 51 *eP* **P 23 39 53.5 -1.0**
KS15 Wonju Array Si 79.12 51 *eP* **P 23 39 53.5 -1.0**
KSAR Wonju Array Be 79.12 51 P **P 23 39 53.5 -1.0**
KSAR Wonju Array Be 79.12 51 P **P 23 39 53.5 -1.0**
KSAR Wonju Array Be 79.12 51 P **P 23 39 53.5 -1.0**
KSRS Korea Array 79.14 51 P **P 23 39 53.5 -1.1**
comp=Z,5.6nm,0.7s,baz=310,slow=5.2,SNR=19
KSRS LR LR 00 19 07.4
comp=Z,73nm,20.7s,baz=314,slow=39
TJN Taejon 79.47 52 *eP* **P 23 39 56.6 +0.2**
CPCT Cooper Cave 79.67 307 *eP* **P 23 40 02.3 +4.7**
comp=Z,6.4nm,1.2s
YSS Yuzh-Sakhalins 80.71 36 *ieP* **P 23 40 02.8 -0.1**
YSS *e* 23 40 07.8
YSS *e* 23 40 15.4
YSS pmax pmax
comp=Z,30nm,0.6s
ECSD EROS Data Cent 81.10 319 *eP* **P 23 40 06.1 +1.0**
comp=Z,35nm,1.9s
ECSD EROS Data Cent 81.10 319 *eP* **P 23 40 06.1 +1.0**
comp=Z,35nm,1.9s
PETK Petropavlovsk- 81.85 25 LR LR 00 20 27.8
comp=Z,142nm,18.1s,baz=316,slow=39
LRAL Lakeview Retre 82.79 306 *eP* **P 23 40 15.2 +1.0**
comp=Z,12nm,1.3s
LRAL Lakeview Retre 82.79 306 *eP* **P 23 40 15.2 +1.0**
comp=Z,12nm,1.3s
WRAK Wrangell Islan 83.37 346 *eP* **P 23 40 13.7 -3.0**
comp=Z,91nm,0.2s
LAO LASA Array 83.48 327 *eP* **P 23 40 19.6 +2.0**
comp=Z,24nm,1.4s
LAO LASA Array 83.48 327 *eP* **P 23 40 19.6 +2.0**
comp=Z,24nm,1.4s
KDAK Kodiak Island 84.52 357 *cePP* **23 40 23.7 +1.2**
YBMT Yellow Bay 85.70 332 *eP* **P 23 40 29.9 +1.0**
YBMT Yellow Bay 85.70 332 *eP* **P 23 40 29.9 +1.0**
BLMT Blacktail Moun 85.71 332 *eP* P 23 40 34.0 +5.0
MJAR Matsushiro Arr 85.84 46 P **P 23 40 29.0 -0.6**
comp=Z,4.4nm,0.8s,baz=313,slow=4.5,SNR=10
MJAR LR LR 00 22 20.2
comp=Z,131nm,19.2s,baz=280,slow=38
JTMT Jette 85.90 332 *eP* **P 23 40 31.1 +1.2**
JTMT Jette 85.90 332 *eP* **P 23 40 31.1 +1.2**
SWMT Swartz Lake 85.99 331 *eP* **P 23 40 31.6 +1.3**
SWMT Swartz Lake 85.99 331 *eP* **P 23 40 31.6 +1.3**
CHMT Chamberlain Mo 86.20 331 *eP* **P 23 40 35.4 +3.9**
BOZ Bozeman (W) 86.59 329 *eP* **P 23 40 34.7 +1.4**
BOZ pmax pmax
comp=Z,7.0nm,1.1s
BOZ Bozeman (W) 86.59 329 *eP* **P 23 40 34.7 +1.4**
comp=Z,6.7nm,1.1s
BOZ Bozeman (W) 86.59 329 *eP* **P 23 40 34.7 +1.4**
comp=Z,6.7nm,1.1s
LRM Limekiln Ridge 86.78 330 *eP* **P 23 40 38.7 +4.3**
PHWY Pilot Hill 87.29 323 *eP* **P 23 40 38.2 +1.2**
comp=Z,6.6nm,1.1s
PHWY Pilot Hill 87.29 323 *eP* **P 23 40 38.2 +1.2**
comp=Z,6.6nm,1.1s
MOOW Moose Ponds 87.76 327 *eP* **P 23 40 40.7 +1.6**
comp=Z,4.7nm,1.3s
MOOW Moose Ponds 87.76 327 *eP* **P 23 40 40.7 +1.6**
comp=Z,4.7nm,1.3s
BW06 Boulder Array 88.03 326 *eP* **P 23 40 40.3 -0.1**
BW06 Boulder Array 88.03 326 *eP* **P 23 40 40.3 -0.1**
PD31 Pinedale Array 88.03 326 *eP* **P 23 40 40.2 -0.3**
PD31 Pinedale Array 88.03 326 *eP* **P 23 40 40.2 -0.3**
PDAR Pinedale Array 88.03 326 P **P 23 40 40.2 -0.3**
comp=Z,0.6nm,0.7s,baz=50,slow=5.7,SNR=5.2
PDAR LR LR 00 21 55.8
comp=Z,97nm,18.2s,baz=42,slow=37
O20A White River Ci 89.52 324 *eP* **P 23 40 48.2 +0.7**
comp=Z,16nm,1.4s
O20A White River Ci 89.52 324 *eP* **P 23 40 48.2 +0.7**
comp=Z,16nm,1.4s
HWUT Hardware Ranch 89.85 327 *eP* **P 23 40 49.8 +0.8**
comp=Z,6.8nm,0.9s
HWUT Hardware Ranch 89.85 327 *eP* **P 23 40 49.8 +0.8**
comp=Z,6.8nm,0.9s
PV09 Paradox Valley 91.24 323 *eP* **P 23 40 57.3 +1.7**
PV09 Paradox Valley 91.24 323 *eP* **P 23 40 57.3 +1.7**
PSUT Pine Spring 93.37 326 *eP* **P 23 41 03.9 -1.5**
PSUT Pine Spring 93.37 326 *eP* **P 23 41 03.9 -1.5**
NVAR Mina Array Bea 95.34 329 LR LR 00 26 57.4
comp=Z,178nm,18.8s,baz=8.5,slow=37
LTX Lajitas 95.49 314 *eP* **P 23 41 16.2 +1.1**
LTX Lajitas 95.49 314 *eP* **P 23 41 16.2 +1.1**
LTX Lajitas 95.49 314 *eP* **P 23 41 16.2 +1.1**
TXAR Lajitas Array 95.49 314 P **P 23 41 16.2 +1.0**
comp=Z,0.4nm,0.7s,baz=76,slow=5.3,SNR=5.1
TXAR LR LR 00 26 06.6
comp=Z,81nm,18.4s,baz=0.0,slow=37
Y14A Wickenburg 96.76 323 *eP* **P 23 41 18.3 -2.5**
comp=Z,10nm,0.8s
Y14A Wickenburg 96.76 323 *eP* **P 23 41 18.3 -2.5**
comp=Z,10nm,0.8s
CPUP Villa Florida 97.34 242 LR LR 00 28 03.4
comp=Z,176nm,18.3s,baz=58,slow=37
LPAZ La Paz 99.24 257 LR LR 00 27 55.5
comp=Z,30nm,19.3s,baz=54,slow=36
WR1 Warramunga Arr 120.06 93 *ePKIKP* **PKPdf 23 46 40.1 -0.9**
WR1 Warramunga Arr 120.06 93 *ePKPdf* **PKPdf 23 46 40.1 -0.9**
WRA Warramunga Arr 120.06 93 PKP **PKPdf 23 46 40.1 -0.9**
comp=Z,1.3nm,0.8s,baz=317,slow=1.9,SNR=6.5
AS31 Alice Springs 121.68 97 *ePKIKP* **PKPdf 23 46 43.2 -0.9**
AS31 Alice Springs 121.68 97 *ePKPdf* **PKPdf 23 46 43.1 -0.9**
ASAR Alice Springs 121.68 97 PKP **PKPdf 23 46 43.1 -0.9**
comp=Z,0.9nm,0.5s,baz=348,slow=2.3,SNR=9.3
STKA Stephens Creek 131.52 102 PKP **PKPdf 23 47 01.1 -1.4**
comp=Z,1.5nm,0.8s,baz=326,slow=4.9,SNR=2.9

*ISK **25** 23:28:41.4, 39°.14N×29°.04E, h6km, ML3.1*
CSEM 25 23:28:41.4, 39°.14N×29°.04E, h6km, ML3.1, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TVSB	**Tavsanli**	**0.45**	**46**	*e*PG	Pg	23 28 50.6	+0.3
TVSB				*e*SG	Sg	23 28 56.8	+0.6
TVSB	**Tavsanli**	**0.45**	**46**	*e*Pg	Pg	23 28 50.6	+0.4
TVSB				*e*Sg	Sg	23 28 56.8	+0.6
KULA	**Kula-Manisa**	**0.69**	**205**	*e*PG	Pg	23 28 54.3	-0.4
KULA	**Kula-Manisa**	**0.69**	**205**	*e*Pg	Pg	23 28 54.3	-0.3
KHL	**Karahalli**	**0.90**	**155**	*e*PG	Pb	23 28 59.1	-0.3
KHL	**Karahalli**	**0.90**	**155**	*e*Pg	Pb	23 28 59.1	-0.3
ORLT	**Orhaneli**	**0.91**	**353**	*e*PG	Pb	23 28 59.4	-0.4
ORLT	**Orhaneli**	**0.91**	**353**	*e*Pg	Pb	23 28 59.4	-0.3
AKS	**Akhisar**	**0.99**	**255**	*e*PG	Pg	23 29 00.5	+0.2
AKS	**Akhisar**	**0.99**	**255**	*e*Pg	Pg	23 29 00.5	+0.2
BALB	**Balikesir**	**1.03**	**300**	*e*PG	Pn	23 29 02.1	-0.2
BALB	**Balikesir**	**1.03**	**300**	*e*Pg	Pn	23 29 02.1	-0.2
CAVI	**Cavuskoy**	**1.23**	**30**	*e*PN	Pn	23 29 06.0	+0.8
CAVI	**Cavuskoy**	**1.23**	**30**	*e*Pn	Pn	23 29 06.1	+0.9
MDNY	**Mudanya-Bursa**	**1.24**	**355**	*e*PN	Pg	23 29 05.1	0.0
MDNY	**Mudanya-Bursa**	**1.24**	**355**	*e*Pn	Pg	23 29 05.1	0.0
KCTX	**Karacabey (Bur**	**1.24**	**335**	*e*PN	Pn	23 29 05.4	0.0
KCTX	**Karacabey (Bur**	**1.24**	**335**	*e*Pn	Pn	23 29 05.4	0.0
GEMT	**Gemlik**	**1.30**	**5**	*e*PN	Pg	23 29 07.4	+1.1
GEMT	**Gemlik**	**1.30**	**5**	*e*Pn	Pg	23 29 07.4	+1.0
ADVT	**Abdulvahap**	**1.40**	**22**	*e*PN	Pg	23 29 08.8	+0.5
ADVT	**Abdulvahap**	**1.40**	**22**	*e*Pn	Pg	23 29 08.8	+0.5
ARMT	**Armutlu**	**1.43**	**355**	*e*PN	Pg	23 29 08.8	-0.1
ARMT	**Armutlu**	**1.43**	**355**	*e*Pn	Pg	23 29 08.8	-0.1
AYDB	**Zeytinkoy-Aydi**	**1.49**	**217**	*e*PN	Pb	23 29 09.5	0.0
AYDB	**Zeytinkoy-Aydi**	**1.49**	**217**	*e*Pn	Pb	23 29 09.5	0.0
EDC	**Edincik**	**1.51**	**324**	*e*PN	Pb	23 29 09.4	-0.4
EDC	**Edincik**	**1.51**	**324**	*e*Pn	Pn	23 29 09.4	+0.4
GULT	**Gulveren**	**1.72**	**41**	*e*PN	Pn	23 29 12.4	+0.4
GULT	**Gulveren**	**1.72**	**41**	*e*Pn	Pn	23 29 12.4	+0.4
HRT	**Hereke**	**1.75**	**16**	*e*PN	Pb	23 29 13.3	-0.7
HRT	**Hereke**	**1.75**	**16**	*e*Pn	Pb	23 29 13.3	-0.7
KRBG	**Karabiga-Canak**	**1.83**	**314**	*e*PN	Pn	23 29 14.2	+0.7
KRBG	**Karabiga-Canak**	**1.83**	**314**	*e*Pn	Pn	23 29 14.2	+0.8
MRMT	**Marmara Adasi**	**1.84**	**323**	*e*PN	Pn	23 29 13.5	0.0
MRMT	**Marmara Adasi**	**1.84**	**323**	*e*Pn	Pn	23 29 13.5	-0.1
YER	**Yerkesik**	**2.08**	**197**	*e*PN	Pb	23 29 18.3	-1.3
YER	**Yerkesik**	**2.08**	**197**	*e*PN	Pb	23 29 19.2	-0.5
YER	**Yerkesik**	**2.08**	**197**	*e*Pn	Pn	23 29 18.3	+1.3

*ISCJB **25** 23:34:22.8±0.5, 39°.11N±0°.03×29°.03E±0°.04, h4km±6km,*
Error ellipse: s-maj=5.2km s-min=4.2km az=141.6
*DDA **25** 23:34:22.8, 39°.09N×29°.01E, h7km, Md2.4*
*ISK **25** 23:34:22.9, 39°.12N×29°.09E, h8km, MD2.9*
*CSEM **25** 23:34:23.2±0.1, 39°.10N×29°.04E, h8km, MD2.4, Error*
ellipse: s-maj=3.1km s-min=2.5km az=93.0
ISC 25 23:34:23.1±1.1, 39°.13N±0°.02×29°.01E±0°.02, h4km±13km,
n44, σ0s47/55, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**250**	P	Pg	23 34 27.9	+0.1
DEMI				S	Sg	23 34 31.5	+0.5
DEMI	**Demirci**	**0.24**	**250**	*i* P	Pg	23 34 27.9	+0.1
DEMI				*i* S	Sg	23 34 31.5	+0.5
GDZ	**Gediz**	**0.37**	**96**	P	Pg	23 34 30.2	-0.1
GDZ				S	Sg	23 34 35.4	+0.3
GDZ	**Gediz**	**0.37**	**96**	*i* P	Pg	23 34 30.2	-0.1
GDZ				*i* S	Sg	23 34 35.4	+0.3
TVSB	**Tavsanli**	**0.48**	**47**	*e*PG	Pg	23 34 31.9	-0.4
TVSB				*e*SG	Sg	23 34 38.5	0.0
TVSB	**Tavsanli**	**0.48**	**47**	*e*Pg	Pg	23 34 31.9	-0.4
TVSB				*e*Sg	Sg	23 34 38.5	0.0
DURS	**Dursunbey**	**0.63**	**319**	P	Pb	23 34 36.5	-0.2
DURS	**Dursunbey**	**0.63**	**319**	*i* P	Pb	23 34 36.5	-0.2
KULA	**Kula-Manisa**	**0.67**	**204**	*e*PG	Pg	23 34 35.7	-0.3
KULA	**Kula-Manisa**	**0.67**	**204**	*e*Pg	Pg	23 34 35.7	-0.3
MANT	**Manisa**	**0.73**	**209**	P	Pg	23 34 36.6	-0.5
MANT				S	Sg	23 34 46.1	-0.4
MANT	**Manisa**	**0.73**	**209**	*i* P	Pg	23 34 36.6	-0.5
MANT				*i* S	Sg	23 34 46.1	-0.4
KHAL	**Karahalli**	**0.84**	**153**	P	Pg	23 34 39.2	-0.1
KHAL				S	Sg	23 34 50.5	+0.2
KHAL	**Karahalli**	**0.84**	**153**	*i* P	Pg	23 34 39.2	-0.1
KHAL				*i* S	Sg	23 34 50.5	+0.2
KHL	**Karahalli**	**0.90**	**153**	*e*PG	Pg	23 34 40.0	-0.3
KHL	**Karahalli**	**0.90**	**153**	*e*Pg	Pg	23 34 40.0	-0.3
ORLT	**Orhaneli**	**0.92**	**355**	*e*PG	Pb	23 34 41.9	+0.2
ORLT	**Orhaneli**	**0.92**	**355**	*e*Pg	Pb	23 34 41.9	+0.2
BALB	**Balikesir**	**1.01**	**301**	*e*PG	Pn	23 34 43.7	-0.4
BALB	**Balikesir**	**1.01**	**301**	*e*Pg	Pn	23 34 43.7	-0.4
IGD	**Bursa**	**1.15**	**7**	*i* P	Pg	23 34 44.0	-1.0
IGD				*i* S	Sb	23 35 01.2	+0.5
DMT	**Demirtas**	**1.15**	**3**	P	Pn	23 34 48.4	+2.4
SNR=32							
BALY	**Balya**	**1.24**	**300**	P	Pn	23 34 47.3	0.0
BALY	**Balya**	**1.24**	**300**	*i* P	Pn	23 34 47.3	0.0
KCTX	**Karacabey (Bur**	**1.24**	**336**	*e*PN	Pg	23 34 46.7	-0.3
KCTX	**Karacabey (Bur**	**1.24**	**336**	*e*Pn	Pg	23 34 46.7	-0.3
MDNY	**Mudanya-Bursa**	**1.24**	**356**	*e*PN	Pg	23 34 46.4	-0.6
MDNY	**Mudanya-Bursa**	**1.24**	**356**	*e*Pn	Pg	23 34 46.4	-0.6
CAVI	**Cavuskoy**	**1.25**	**31**	*e*PN	Pb	23 34 47.2	0.0
CAVI	**Cavuskoy**	**1.25**	**31**	*e*Pn	Pb	23 34 47.3	0.0
ADVT	**Abdulvahap**	**1.42**	**23**	*e*PN	Pn	23 34 49.4	-0.3
ADVT	**Abdulvahap**	**1.42**	**23**	*e*Pn	Pn	23 34 49.4	-0.3
ARMT	**Armutlu**	**1.44**	**356**	PN	Pn	23 34 50.2	+0.1
ARMT	**Armutlu**	**1.44**	**356**	*i* Pn	Pn	23 34 50.2	+0.1
AYDB	**Zeytinkoy-Aydi**	**1.47**	**217**	*e*PN	Pb	23 34 51.0	-0.1
AYDB	**Zeytinkoy-Aydi**	**1.47**	**217**	*e*Pn	Pb	23 34 51.0	-0.1
EDC	**Edincik**	**1.50**	**324**	*e*PN	Pg	23 34 51.9	-0.1
EDC	**Edincik**	**1.50**	**324**	*e*Pn	Pg	23 34 51.9	-0.1
GULT	**Gulveren**	**1.75**	**41**	*e*PN	Pn	23 34 54.2	-0.1
GULT	**Gulveren**	**1.75**	**41**	*e*Pn	Pn	23 34 54.2	-0.1
ISK	**Istanbul-Kandi**	**1.94**	**1**	*e*PN	Pn	23 34 57.1	+0.3
ISK	**Istanbul-Kandi**	**1.94**	**1**	*e*Pn	Pn	23 34 57.1	+0.3
CTKS	**Kestanelik-??a**	**2.14**	**350**	*e*PN	Pn	23 34 59.8	+0.2
CTKS	**Kestanelik-??a**	**2.14**	**350**	*e*Pn	Pn	23 34 59.8	+0.2

*ATH **25** 23:42:37.9, 39°.44N×26°.36E, h24km±1km, ML2.2/5, Error*
ellipse: s-maj=3.4km s-min=0.9km az=254.0
*ISK **25** 23:42:37.6, 39°.48N×26°.31E, h5km, MD3.2*
*CSEM **25** 23:42:38.7±0.1, 39°.44N×26°.27E, h8km, ML2.2, Error*
ellipse: s-maj=3.0km s-min=2.2km az=67.0
*ISCJB **25** 23:42:38.7±0.4, 39°.46N±0°.02×26°.30E±0°.03, h6km±3km,*
Error ellipse: s-maj=4.1km s-min=2.6km az=164.9
*DDA **25** 23:42:38.3, 39°.48N×26°.34E, h2km, Ml2.8*
*THE **25** 23:42:39.0, 39°.47N×26°.32E, h8km±1km, ML2.3/6, Error*
ellipse: s-maj=1.8km s-min=0.6km az=261.0
ISC 25 23:42:38.8±0.8, 39°.47N±0°.01×26°.33E±0°.02, h14km±6km,
n82, σ0s64/116, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PRK	**Paraskevi**	**0.23**	**191**	P	Pg	23 42 43.5	-0.2
PRK				S	Sg	23 42 47.4	+0.4
PRK	**Paraskevi**	**0.23**	**191**	P	Pg	23 42 43.5	-0.2
PRK				S	Sg	23 42 47.2	+0.2
PRK	**Paraskevi**	**0.23**	**191**	P	Pg	23 42 43.4	-0.2
PRK				S	Sg	23 42 47.2	+0.2
PRK				AML	AML	23 42 51.0	
comp=N,915μm,0.5s							
PRK				AML	AML	23 42 51.1	
comp=E,1994μm,0.5s							
AYVA	**Ayvalik**	**0.32**	**119**	P	Pg	23 42 45.6	+0.2
AYVA				S	Sb	23 42 50.9	-0.4
AYVA	**Ayvalik**	**0.32**	**119**	*i* P	Pg	23 42 45.6	+0.2
AYVA				*i* S	Sb	23 42 50.9	-0.4
EZN	**Ezine**	**0.36**	**359**	*e*PG	Pg	23 42 45.9	-0.1
EZN				*e*SG	Sg	23 42 51.5	+0.6
EZN	**Ezine**	**0.36**	**359**	P	Pg	23 42 45.9	-0.1
EZN				S	Sg	23 42 51.2	+0.3
EZN	**Ezine**	**0.36**	**359**	P	Pg	23 42 45.9	-0.1
EZN				S	Sg	23 42 51.2	+0.3
BOZC	**Bozcaada**	**0.43**	**330**	*i* P	Pg	23 42 47.5	+0.1
BOZC				*i* S	Sb	23 42 53.8	-0.8
DKL	**Dikili**	**0.60**	**131**	*e*PG	Pg	23 42 50.7	+0.3
DKL	**Dikili**	**0.60**	**131**	*e*Pg	Pg	23 42 50.7	+0.3
GADA	**Gvkgeada**	**0.80**	**335**	*e*PG	Pg	23 42 53.9	-0.3
GADA	**Gvkgeada**	**0.80**	**335**	P	Pg	23 42 53.9	-0.3
GADA				S	Sb	23 43 04.9	-0.1
GADA	**Gvkgeada**	**0.80**	**335**	P	Pg	23 42 53.9	-0.3
GADA				S	Sb	23 43 04.9	-0.1
GELI	**Tayfur-Gelibol**	**0.94**	**7**	*e*PG	Pg	23 42 56.8	-0.1
GELI	**Tayfur-Gelibol**	**0.94**	**7**	*e*Pg	Pg	23 42 56.8	-0.1
LPK	**Lapseki**	**0.96**	**20**	*e*PG	Pb	23 42 56.8	-0.4
LPK	**Lapseki**	**0.96**	**20**	*e*Pg	Pb	23 42 56.8	-0.4
LIA	**Limnos Island**	**0.98**	**296**	P	Pg	23 42 57.6	-0.2
LIA				S	Sn	23 43 11.4	-0.5
LIA	**Limnos Island**	**0.98**	**296**	P	Pg	23 42 57.6	-0.2
LIA				S	Sn	23 43 11.4	-0.5
BALY	**Balya**	**1.03**	**74**	P	Pn	23 42 59.0	+0.1
BALY	**Balya**	**1.03**	**74**	*i* P	Pn	23 42 59.0	+0.1
CHOS	**Chios island**	**1.10**	**191**	*e*PN	Pn	23 42 59.8	0.0
CHOS	**Chios island**	**1.10**	**191**	P	Pb	23 42 59.4	-0.2
CHOS				S	Sn	23 43 15.9	+1.0
CHOS	**Chios island**	**1.10**	**191**	*e*Pn	Pn	23 42 59.8	0.0
CHOS				S	Sb	23 43 13.7	-0.2
CHOS	**Chios island**	**1.10**	**191**	P	Pg	23 42 60.0	0.0
CHOS				S	Sb	23 43 13.7	-0.2
CHOS				AML	AML	23 43 18.6	
comp=N,161μm,0.3s							
CHOS				AML	AML	23 43 23.2	
comp=E,309μm,0.4s							
URLA	**Izmir**	**1.12**	**169**	P	Pb	23 42 59.8	-0.2
URLA				S	Sn	23 43 15.5	+0.1
URLA	**Izmir**	**1.12**	**169**	*i* P	Pb	23 42 59.8	-0.2
URLA				*i* S	Sn	23 43 15.5	+0.1
SMTH	**Samothraki Isl**	**1.18**	**329**	P	Pb	23 43 00.9	0.0
SMTH				S	Sg	23 43 16.8	+0.1
SMTH	**Samothraki Isl**	**1.18**	**329**	P	Pb	23 43 00.9	0.0
SMTH				S	Sg	23 43 16.8	+0.1
SMTH	**Samothraki Isl**	**1.18**	**329**	P	Pb	23 43 00.9	0.0
SMTH				S	Sn	23 43 16.3	-0.4
SMTH				AML	AML	23 43 18.0	
comp=N,244μm,0.2s							
SMTH				AML	AML	23 43 21.2	
comp=E,160μm,0.2s							
GONE	**Gonen-Balikesi**	**1.20**	**61**	*e*PN	Pb	23 43 01.4	+0.2
GONE	**Gonen-Balikesi**	**1.20**	**61**	*e*Pn	Pb	23 43 01.4	+0.2
ERIK	**Erikli-Kesan**	**1.21**	**7**	*e*PN	Pb	23 43 01.4	-0.1
ERIK	**Erikli-Kesan**	**1.21**	**7**	*e*Pn	Pb	23 43 01.4	-0.1
BALB	**Balikesir**	**1.21**	**81**	*e*PN	Pg	23 43 02.2	+0.1
BALB	**Balikesir**	**1.21**	**81**	*e*Pn	Pg	23 43 02.2	+0.1
KNL	**Bal¨–kesir**	**1.22**	**49**	*i* P	Pb	23 43 01.9

SMG				AML	AML	23 43 41.3
	comp=N,86μm,0.6s					
SMG				AML	AML	23 43 42.2
	comp=E,84μm,0.5s					
OUR	**Ouranopolis**	**2.00 296**		P	**Pn**	**23 43 13.1 +0.9**
OUR	**Ouranopolis**	**2.00 296**		P	**Pn**	**23 43 13.1 +0.9**
KULA	**Kula-Manisa**	**2.05 117**	*e*PN	**Pb**		**23 43 15.0 -0.9**
KULA	**Kula-Manisa**	**2.05 117**	*e*Pn	**Pb**		**23 43 15.0 -0.9**
ORLT	**Orhaneli**	**2.06 73**	*e*PN	**Pb**		**23 43 15.1 -0.9**
ORLT	**Orhaneli**	**2.06 73**	*e*Pn	**Pb**		**23 43 15.1 -0.9**
PAIG	**Paliouri**	**2.10 284**	P	**Pn**		**23 43 14.0 +0.5**
PAIG	**Paliouri**	**2.10 284**	P	**Pn**		**23 43 14.0 +0.5**
MDNY	**Mudanya-Bursa**	**2.16 65**	*e*PN	**Pb**		**23 43 16.4 -1.3**
MDNY	**Mudanya-Bursa**	**2.16 65**	*e*Pn	**Pb**		**23 43 16.4 -1.3**
ARMT	**Armutlu**	**2.23 60**	*e*PN	**Pb**		**23 43 17.7 -1.2**
ARMT	**Armutlu**	**2.23 60**	*e*Pn	**Pb**		**23 43 17.7 -1.2**
CTKS	**Kestanelik-??a**	**2.43 43**	*e*PN	**Pb**		**23 43 20.3 -1.9**
CTKS	**Kestanelik-??a**	**2.43 43**	*e*Pn	**Pb**		**23 43 20.3 -1.9**
APE	**Apeiranthos**	**2.48 195**	P	**Pn**		**23 43 17.5 -1.2**
APE	**Apeiranthos**	**2.48 195**	P	**Pn**		**23 43 17.5 -1.2**
SRS	**Serrai**	**2.66 309**	P	**Pn**		**23 43 21.2 -0.1**
SRS	**Serrai**	**2.66 309**	P	**Pn**		**23 43 21.2 -0.1**

IDC ***25*** *23:52:16.0±0.7, 35°.43N×26°.15E, h0km, mb3.9/11, mb1 3.9/16, mb1mx3.8/42, mbtmp3.8/16, ML3.6/5, Error ellipse: s-maj=22.5km s-min=8.7km az=171.0*
ATH ***25*** *23:52:16.6, 35°.31N×26°.18E, h28km±1km, ML3.7/16, Error ellipse: s-maj=2.0km s-min=0.7km az=170.0*
ISCJB ***25*** *23:52:17.1±0.3, 35°.24N±0°.02×26°.22E±0°.02, h27km±3km, mb3.8/11, Error ellipse: s-maj=3.5km s-min=2.1km az=29.0*
THE ***25*** *23:52:17.6, 35°.31N×26°.16E, h0km, ML3.9/13, Error ellipse: s-maj=1.0km s-min=0.5km az=8.0*
CSEM ***25*** *23:52:17.7±0.1, 35°.27N×26°.18E, h15km, ML3.7, Error ellipse: s-maj=3.4km s-min=2.1km az=30.0*
ISK ***25*** *23:52:18.1, 35°.53N×26°.19E, h2km, ML3.5*
HLW ***25*** *23:52:18.3, 35°.45N×26°.37E, h33km±22km, Ml3.3*
GII ***25*** *23:52:23.3±0.3, 34°.90N×26°.57E, h10km, mb4.1/2, MD3.8/3*
ISC 25 23:52:17.8±0.7, 35°.27N±0°.02×26°.18E±0°.02, h18km±2km, n279, σ1°25/340, mb4.0/11, Crete

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ZKR	**Zakros**	**0.16 169**		P	**Pb**	**23 52 21.8 +0.5**
ZKR				S	**Sg**	**23 52 26.0 +0.8**
ZKR	**Zakros**	**0.16 169**		P	**Pg**	**23 52 22.1 -0.1**
ZKR				S	**Sg**	**23 52 24.9 -0.3**
ZKR	**Zakros**	**0.16 169**		P	**Pg**	**23 52 22.1 -0.1**
ZKR				S	**Sg**	**23 52 24.9 -0.3**
ZKR				AML	AML	23 52 26.3
ZKR				AML	AML	23 52 26.3
NPS	**Neapolis**	**0.47 269**		P	**Pg**	**23 52 26.9 -0.4**
NPS				S	**Sg**	**23 52 33.0 -0.7**
NPS	**Neapolis**	**0.47 269**		P	**Pg**	**23 52 26.9 -0.4**
NPS				S	**Sg**	**23 52 33.0 -0.7**
NPS	**Neapolis**	**0.47 269**		P	**Pg**	**23 52 26.9 -0.4**
NPS				S	**Sg**	**23 52 33.1 -0.7**
NPS				AML	AML	23 52 33.6
	comp=E,26451μm,0.2s					
NPS				AML	AML	23 52 38.6
	comp=N,16968μm,0.5s					
LAST	**Lasithi**	**0.59 260**		P	**Pg**	**23 52 28.8 -0.8**
LAST				S	**Sg**	**23 52 37.0 -0.4**
LAST	**Lasithi**	**0.59 260**		P	**Pg**	**23 52 29.4 -0.1**
LAST				S	**Sg**	**23 52 37.0 -0.4**
LAST	**Lasithi**	**0.59 260**		P	**Pg**	**23 52 29.4 -0.1**
KARP	**Karpathos**	**0.85 71**		*e*PG	**Pb**	**23 52 33.9 -0.1**
KARP				*e*SG	**Sg**	**23 52 46.1 +0.5**
KARP	**Karpathos**	**0.85 71**		P	**Pb**	**23 52 33.9 -0.1**
KARP				S	**Sn**	**23 52 46.8 0.0**
KARP	**Karpathos**	**0.85 71**		P	**Pb**	**23 52 34.1 +0.1**
KARP				*e*Sg	**Sg**	**23 52 46.1 +0.5**
KARP	**Karpathos**	**0.85 71**		P	**Pb**	**23 52 34.1 +0.1**
KARP				S	**Sn**	**23 52 46.3 -0.6**
KARP				AML	AML	23 52 47.5
	comp=E,13262μm,0.5s					
KARP				AML	AML	23 52 48.4
	comp=N,11888μm,0.4s					
IACM	**Heraklion**	**0.91 273**		P	**Pb**	**23 52 35.1 +0.1**
IACM				S	**Sn**	**23 52 48.2 -0.1**
IACM	**Heraklion**	**0.91 273**		P	**Pb**	**23 52 35.1 +0.1**
IACM				S	**Sb**	**23 52 46.0 -0.8**
IACM	**Heraklion**	**0.91 273**		P	**Pb**	**23 52 34.4 -0.7**
IACM				S	**Sb**	**23 52 46.0 -0.8**
IACM				AML	AML	23 52 49.9
	comp=N,52990μm,0.3s					
IACM				AML	AML	23 52 51.6
	comp=E,50014μm,0.5s					
IDI	**Anoyia**	**1.06 271**		Pg	**Pb**	**23 52 36.8 -0.8**
	comp=E,146nm,0.3s,baz=141,slow=5.6,SNR=1714					
IDI				Lg	Lg	23 52 50.5
	comp=E,244nm,0.3s,baz=343,slow=20,SNR=18					
IDI	**Anoyia**	**1.06 271**		P	**Pb**	**23 52 36.7 -0.9**
IDI				S	**Sg**	**23 52 52.9 +0.6**
IDI	**Anoyia**	**1.06 271**		P	**Pb**	**23 52 37.0 -0.6**
IDI				S	**Sg**	**23 52 52.9 +0.6**
IDI	**Anoyia**	**1.06 271**		P	**Pb**	**23 52 37.0 -0.6**
SIVA	**Sivas**	**1.15 258**		P	**Pb**	**23 52 39.2 0.0**
SIVA				S	**Sg**	**23 52 55.4 +0.1**
SIVA	**Sivas**	**1.15 258**		P	**Pb**	**23 52 39.2 0.0**
SIVA				S	**Sb**	**23 52 54.0 +0.2**
SIVA	**Sivas**	**1.15 258**		P	**Pb**	**23 52 39.5 +0.4**
SIVA				S	**Sb**	**23 52 54.0 +0.2**
SIVA				AML	AML	23 52 59.8
	comp=E,9264μm,0.4s					
SIVA				AML	AML	23 53 00.5
	comp=N,8156μm,0.5s					
SANT	**Santorini**	**1.25 332**		P	**Pn**	**23 52 39.3 -1.1**
SANT				S	**Sn**	**23 52 56.8 +0.1**
SANT	**Santorini**	**1.25 332**		P	**Pn**	**23 52 39.7 -0.7**
SANT				S	**Sn**	**23 52 56.8 +0.1**
SANT	**Santorini**	**1.25 332**		P	**Pn**	**23 52 39.7 -0.7**
SANT				S	**Sb**	**23 52 56.6 0.0**
SANT				AML	AML	23 52 57.9
	comp=E,14505μm,0.4s					
SANT				AML	AML	23 52 59.0
	comp=N,6689μm,0.2s					
THR6	**Thira Island,**	**1.26 330**		P	**Pn**	**23 52 39.8 -0.7**
THR6	**Thira Island,**	**1.26 330**		P	**Pn**	**23 52 39.8 -0.7**
THT1	**Athinios (Pele**	**1.27 331**		P	**Pn**	**23 52 39.7 -0.9**
THT1	**Athinios (Pele**	**1.27 331**		P	**Pn**	**23 52 39.7 -0.9**
THR3	**Thira Island,**	**1.30 331**		P	**Pn**	**23 52 40.4 -0.7**
THR3	**Thira Island,**	**1.30 331**		P	**Pn**	**23 52 40.4 -0.7**
THR7	**Fira-Santorini**	**1.30 332**		P	**Pn**	**23 52 40.3 -0.8**
THR7	**Fira-Santorini**	**1.30 332**		P	**Pn**	**23 52 40.3 -0.8**
THR2	**Thira island,**	**1.32 333**		P	**Pn**	**23 52 40.5 -0.9**
THR2	**Thira island,**	**1.32 333**		P	**Pn**	**23 52 40.5 -0.9**
THR5	**Thira Island,**	**1.33 330**	*e*PN	**Pn**		**23 52 40.7 -0.8**
THR5	**Thira Island,**	**1.33 330**	P	**Pn**		**23 52 40.9 -0.6**
THR5	**Thira Island,**	**1.33 330**	P	**Pn**		**23 52 40.9 -0.6**
CMBO	**Columbo, Santo**	**1.35 332**		P	**Pn**	**23 52 41.6 -0.2**
CMBO				S	**Sb**	**23 52 59.7 +0.1**
CMBO	**Columbo, Santo**	**1.35 332**		P	**Pn**	**23 52 41.6 -0.2**
CMBO				S	**Sb**	**23 52 59.7 +0.1**
CMBO	**Columbo, Santo**	**1.35 332**		P	**Pn**	**23 52 41.4 -0.4**
CMBO				S	**Sb**	**23 52 59.7 +0.1**
CMBO				AML	AML	23 53 00.2
	comp=N,13312μm,0.5s					
CMBO				AML	AML	23 53 00.7
	comp=E,12245μm,0.4s					
NISR	**Nisiros**	**1.54 30**		P	**Pn**	**23 52 44.5 +0.1**
NISR	**Nisiros**	**1.54 30**		P	**Pn**	**23 52 44.5 +0.1**
NISR				S	**Sn**	**23 53 03.9 -0.1**
NISR	**Nisiros**	**1.54 30**		P	**Pn**	**23 52 44.0 -0.4**
NISR				S	**Sn**	**23 53 03.9 -0.1**
NISR				AML	AML	23 53 11.5
	comp=E,7436μm,0.4s					
NISR				AML	AML	23 53 11.9
	comp=N,4747μm,0.4s					
NIS1	**Nisyros Isl.**	**1.56 31**	*e*PN	**Pn**		**23 52 44.9 +0.3**
NIS1	**Nisyros Isl.**	**1.56 31**	P	**Pn**		**23 52 44.5 -0.1**
NIS1	**Nisyros Isl.**	**1.56 31**	P	**Pn**		**23 52 44.5 -0.1**
NIS1	**Nisyros Isl.**	**1.56 31**	*e*Pn	**Pn**		**23 52 44.9 +0.3**
NIS1	**Nisyros Isl.**	**1.56 31**	P	**Pn**		**23 52 43.2 -1.4**
VAM	**Vamos**	**1.63 275**		P	**Pn**	**23 52 45.1 -0.4**
VAM				S	**Sb**	**23 53 08.7 +1.3**
VAM	**Vamos**	**1.63 275**		P	**Pn**	**23 52 45.1 -0.4**
VAM				S	**Sn**	**23 53 06.5 +0.5**
GVD	**Gavdhos**	**1.77 257**		P	**Pg**	**23 52 51.1 -0.8**
GVD	**Gavdhos**	**1.77 257**		P	**Pg**	**23 52 51.1 -0.8**
GVD	**Gavdhos**	**1.77 257**		P	**Pg**	**23 52 51.1 -0.8**
IMMV	**Iera Moni Meta**	**1.81 277**		P	**Pn**	**23 52 48.0 -0.1**
IMMV				S	**Sn**	**23 53 11.1 +0.6**
IMMV	**Iera Moni Meta**	**1.81 277**		P	**Pn**	**23 52 48.0 -0.1**
IMMV				S	**Sn**	**23 53 11.1 +0.6**
IMMV	**Iera Moni Meta**	**1.81 277**		P	**Pn**	**23 52 46.8 -1.3**
IMMV				S	**Sn**	**23 53 11.1 +0.6**
IMMV				AML	AML	23 53 13.7
	comp=N,4445μm,0.3s					
IMMV				AML	AML	23 53 15.0
	comp=E,3194μm,0.4s					
ARG	**Arkhangelos**	**1.84 59**		P	**Pn**	**23 52 49.4 +0.9**
ARG				S	**Sb**	**23 53 13.8 +0.1**
ARG	**Arkhangelos**	**1.84 59**		P	**Pn**	**23 52 49.4 +0.9**
ARG				S	**Sn**	**23 53 11.5 +0.2**
APE	**Apeiranthos**	**1.87 344**	*e*PN	**Pn**		**23 52 48.1 -0.8**
APE	**Apeiranthos**	**1.87 344**	P	**Pn**		**23 52 48.2 -0.8**
APE	**Apeiranthos**	**1.87 344**	P	**Pn**		**23 52 48.2 -0.8**
APE				S	**Sn**	**23 53 10.6 -1.5**
APE	**Apeiranthos**	**1.87 344**	P	**Pn**		**23 52 48.2 -0.8**
APE				S	**Sn**	**23 53 10.6 -1.5**
APE				AML	AML	23 53 16.1
	comp=N,1649μm,0.5s					
APE				AML	AML	23 53 17.3
	comp=E,1971μm,0.4s					
BODT	**Bodrum**	**2.01 27**	*e*PN	**Pn**		**23 52 50.5 -0.3**
BODT	**Bodrum**	**2.01 27**	*e*Pn	**Pn**		**23 52 50.5 -0.3**
MHLO	**Agia Marina, M**	**2.02 315**	P	**Pn**		**23 52 51.0 0.0**
MHLO	**Agia Marina, M**	**2.02 315**	P	**Pn**		**23 52 51.4 +0.4**
MHLO				S	**Sn**	**23 53 15.6 -0.2**
MHLO	**Agia Marina, M**	**2.02 315**	P	**Pn**		**23 52 51.4 +0.4**
MHLO				S	**Sn**	**23 53 15.6 -0.2**
MHLO				AML	AML	23 53 24.1
	comp=E,5898μm,0.4s					
MHLO				AML	AML	23 53 24.5
	comp=N,6335μm,0.5s					
SERI	**Serifos**	**2.33 324**		P	**Pn**	**23 52 54.1 -1.2**
SERI				S	**Sn**	**23 53 22.4 -1.1**
SERI	**Serifos**	**2.33 324**		P	**Pn**	**23 52 54.1 -1.2**
SERI				S	**Sn**	**23 53 22.4 -1.1**
SERI				AML	AML	23 53 31.5
	comp=E,467μm,0.3s					
SERI				AML	AML	23 53 33.2
	comp=N,488μm,0.2s					
ANKY	**Antikythira Is**	**2.42 285**		P	**Pn**	**23 52 56.1 -0.4**
ANKY	**Antikythira Is**	**2.42 285**		P	**Pn**	**23 52 56.1 -0.4**
ANKY	**Antikythira Is**	**2.42 285**		P	**Pn**	**23 52 55.7 -0.8**
SMG	**Samos**	**2.49 12**		P	**Pn**	**23 52 56.5 -0.9**
SMG	**Samos**	**2.49 12**		P	**Pn**	**23 52 56.5 -0.9**
SMG	**Samos**	**2.49 12**		P	**Pn**	**23 52 56.1 -1.3**
SMG				S	**Sn**	**23 53 24.9 -2.4**
SMG				AML	AML	23 53 41.5
	comp=E,784μm,0.5s					
SMG				AML	AML	23 53 43.0
	comp=N,649μm,0.5s					
YER	**Yerkesik**	**2.52 42**	*e*PN	**Pn**		**23 52 58.7 +0.8**
YER	**Yerkesik**	**2.52 42**	P	**Pn**		**23 52 58.9 +1.0**
YER	**Yerkesik**	**2.52 42**	*e*Pn	**Pn**		**23 52 58.7 +0.8**
DALY	**Dalyan (Mu¨la**	**2.53 52**	*e*PN	**Pn**		**23 52 59.5 +1.6**
DALY	**Dalyan (Mu¨la**	**2.53 52**	*e*Pn	**Pn**		**23 52 59.5 +1.6**
FETY	**Fethiye**	**2.72 59**	*e*PN	**Pn**		**23 53 02.8 +2.2**
FETY	**Fethiye**	**2.72 59**	P	**Pn**		**23 53 02.3 +1.7**
FETY	**Fethiye**	**2.72 59**	P	**Pn**		**23 53 02.3 +1.7**
FETY	**Fethiye**	**2.72 59**	*e*Pn	**Pn**		**23 53 02.8 +2.2**
KYTH	**Kithira**	**2.74 292**	P	**Pn**		**23 53 00.4 -0.4**
KYTH	**Kithira**	**2.74 292**	P	**Pn**		**23 53 00.4 -0.4**
KSL	**Kastellorizon**	**2.90 71**	P	**Pn**		**23 53 02.0 -1.1**
KSL				S	**Sn**	**23 53 35.9 -1.6**
KSL				AML	AML	23 53 43.6
	comp=E,474μm,1.0s					
KSL				AML	AML	23 53 43.8
	comp=N,239μm,0.8s					
VLI	**Veliai**	**3.00 300**		P	**Pn**	**23 53 04.1 -0.4**
VLI	**Veliai**	**3.00 300**		P	**Pn**	**23 53 04.3 -0.1**
VLI	**Veliai**	**3.00 300**		P	**Pn**	**23 53 04.3 -0.1**
AYDB	**Zeytinkoy-Aydi**	**3.00 27**	*e*PN	**Pn**		**23 53 05.4 +0.8**
AYDB	**Zeytinkoy-Aydi**	**3.00 27**	*e*Pn	**Pn**		**23 53 05.4 +0.8**
CHOS	**Chios island**	**3.11 358**	*e*PN	**Pn**		**23 53 06.6 +0.5**
CHOS	**Chios island**	**3.11 358**	P	**Pn**		**23 53 05.4 -0.7**
CHOS	**Chios island**	**3.11 358**	*e*Pn	**Pn**		**23 53 06.6 +0.5**
CHOS	**Chios island**	**3.11 358**	P	**Pn**		**23 53 05.4 -0.7**
CHOS				S	**Sn**	**23 53 41.0 -1.8**
VLY	**Voula,Athens**	**3.21 324**	P	**Pn**		**23 53 07.6 +0.2**
VLY	**Voula,Athens**	**3.21 324**	P	**Pn**		**23 53 07.6 +0.2**
VLY	**Voula,Athens**	**3.21 324**	P	**Pn**		**23 53 08.1 +0.7**
KRND	**KRANIDI**	**3.23 312**	P	**Pn**		**23 53 08.2 +0.6**
KRND				S	**Sn**	**23 53 46.8 +1.2**
KRND	**KRANIDI**	**3.23 312**	P	**Pn**		**23 53 07.8 +0.2**
KRND				S	**Sn**	**23 53 46.8 +1.2**
KRND	**KRANIDI**	**3.23 312**	P	**Pn**		**23 53 07.8 +0.2**
KRND				S	**Sn**	**23 53 44.1 -1.5**
KRND				AML	AML	23 53 53.8
	comp=N,499μm,0.4s					
KRND				AML	AML	23 53 54.8
	comp=E,529μm,0.3s					
DID	**Didima**	**3.26 314**		P	**Pn**	**23 53 08.1 +0.1**
DID				S	**Sn**	**23 53 48.3 +1.9**
DID	**Didima**	**3.26 314**		P	**Pn**	**23 53 08.2 +0.2**
DID				S	**Sn**	**23 53 48.3 +1.9**
DID	**Didima**	**3.26 314**		P	**Pn**	**23 53 08.2 +0.2**
DID				S	**Sn**	**23 53 45.1 -1.3**
DID				AML	AML	23 53 54.9
	comp=E,508μm,0.4s					
DID				AML	AML	23 53 58.0
	comp=N,453μm,0.5s					
GLHS	**Glhisar (BURDU**	**3.28 54**	*e*PN	**Pn**		**23 53 10.4 +2.1**
GLHS	**Glhisar (BURDU**	**3.28 54**	*e*Pn	**Pn**		**23 53 10.5 +2.1**
PTL	**Penteli**	**3.34 327**	P	**Pn**		**23 53 09.6 +0.4**
PTL	**Penteli**	**3.34 327**	P	**Pn**		**23 53 09.6 +0.4**
PTL	**Penteli**	**3.34 327**	P	**Pn**		**23 53 09.8 +0.6**
ATH	**Athens Observa**	**3.35 324**	P	**Pn**		**23 53 10.1 +0.9**
ATH				S	**Sn**	**23 53 47.8 -0.7**
ELL	**Elmali**	**3.36 63**	*e*PN	**Pn**		**23 53 12.2 +2.7**
ELL	**Elmali**	**3.36 63**	*e*Pn	**Pn**		**23 53 12.3 +2.7**
DENT	**Denizli**	**3.38 42**	*e*PN	**Pn**		**23 53 11.3 +1.6**
DENT	**Denizli**	**3.38 42**	*e*Pn	**Pn**		**23 53 11.3 +1.6**
VLX	**Vlachokerasia**	**3.72 305**	P	**Pn**		**23 53 15.1 +0.7**
VLX	**Vlachokerasia**	**3.72 305**	P	**Pn**		**23 53 15.1 +0.7**
VLX	**Vlachokerasia**	**3.72 305**	P	**Pn**		**23 53 15.8 +1.4**
LTK	**Loutraki**	**3.77 318**	P	**Pn**		**23 53 16.2 +1.1**
LTK	**Loutraki**	**3.77 318**	P	**Pn**		**23 53 16.0 +0.9**
LTK	**Loutraki**	**3.77 318**	P	**Pn**		**23 53 16.0 +0.9**
KULA	**Kula-Manisa**	**3.80 31**	*e*PN	**Pn**		**23 53 16.9 +1.5**
KULA	**Kula-Manisa**	**3.80 31**	*e*Pn	**Pn**		**23 53 17.0 +1.5**
DKL	**Dikili**	**3.84 8**	*e*PN	**Pn**		**23 53 15.7 -0.2**
DKL	**Dikili**	**3.84 8**	*e*Pn	**Pn**		**23 53 15.7 -0.2**
ITM	**Ithomi**	**3.93 300**	P	**Pn**		**23 53 18.1 +0.8**
ITM	**Ithomi**	**3.93 300**	P	**Pn**		**23 53 17.3 0.0**
ITM	**Ithomi**	**3.93 300**	P	**Pn**		**23 53 17.3 0.0**
PYL	**PYLOS**	**3.94 296**	P	**Pn**		**23 53 18.1 +0.7**
PYL	**PYLOS**	**3.94 296**	P	**Pn**		**23 53 18.1 +0.7**
PRK	**Paraskevi**	**3.97 1**	P	**Pn**		**23 53 16.3 -1.4**
PRK	**Paraskevi**	**3.97 1**	P	**Pn**		**23 53 16.3 -1.4**
LKR	**Lokris**	**4.23 324**	P	**Pn**		**23 53 22.0 +0.7**
LKR	**Lokris**	**4.23 324**	P	**Pn**		**23 53 22.0 +0.7**
LKR	**Lokris**	**4.23 324**	P	**Pn**		**23 53 22.1 +0.8**
HMAT	**Matruh**	**4.24 169**	P	**Pn**		**23 53 22.7 +1.3**
	baz=171					
HMAT				S	**Sn**	**23 54 09.2 -1.2**
	baz=171					
HMAT	**Matruh**	**4.24 169**	P	**Pn**		**23 53 22.7 +1.3**
HMAT				S	**Sn**	**23 54 09.2 -1.2**
AMT	**Artemida-Makis**	**4.26 303**	P	**Pn**		**23 53 24.4 +2.6**
AMT	**Artemida-Makis**	**4.26 303**	P	**Pn**		**23 53 24.4 +2.6**
KLV	**Kalavryta, Ach**	**4.26 312**	P	**Pn**		**23 53 22.5 +0.7**
KLV	**Kalavryta, Ach**	**4.26 312**	P	**Pn**		**23 53 22.5 +0.7**
KLV	**Kalavryta, Ach**	**4.26 312**	P	**Pn**		**23 53 23.3 +1.5**
DSF	**Desfina**	**4.29 318**	P	**Pn**		**23 53 23.8 +1.6**
DSF	**Desfina**	**4.29 318**	P	**Pn**		**23 53 23.8 +1.6**
DSF	**Desfina**	**4.29 318**	P	**Pn**		**23 53 23.9 +1.6**
AOS	**Alonnisos**	**4.30 335**	*e*PN	**Pn**		**23 53 23.1 +0.7**
AOS	**Alonnisos**	**4.30 335**	*e*Pn	**Pn**		**23 53 23.1 +0.7**
AOS	**Alonnisos**	**4.30 335**	P	**Pn**		**23 53 23.8 +1.4**
AOS	**Alonnisos**	**4.30 335**	P	**Pn**		**23 53 23.8 +1.4**
SMIA	**Simia**	**4.32 327**	P	**Pn**		**23 53 23.4 +0.9**
SMIA	**Simia**	**4.32 327**	P	**Pn**		**23 53 23.4 +0.9**
LAKA	**Lakka**	**4.49 313**	P	**Pn**		**23 53 26.4 +1.4**
LAKA	**Lakka**	**4.49 313**	P	**Pn**		**23 53 26.4 +1.4**
SERG	**Sergoula**	**4.56 315**	P	**Pn**		**23 53 26.7 +0.8**
EFP	**Efpalio**	**4.66 314**	P	**Pn**		**23 53 30.6 +3.4**
NEO	**Neokhori**	**4.67 331**	P	**Pn**		**23 53 28.0 +0.6**
NEO	**Neokhori**	**4.67 331**	P	**Pn**		**23 53 28.0 +0.6**
LIA	**Limnos Island**	**4.69 351**	P	**Pn**		**23 53 26.6 -1.0**
XOR	**Xorichti**	**4.73 331**	P	**Pn**		**23 53 29.0 +0.7**
XOR	**Xorichti**	**4.73 331**	P	**Pn**		**23 53 29.0 +0.7**
ANX	**Ano Chora**	**4.76 315**	P	**Pn**		**23 53 29.9 +1.2**
ANX	**Ano Chora**	**4.76 315**	P	**Pn**		**23 53 29.9 +1.2**
AGG	**Agios Georgios**	**4.85 322**	P	**Pn**		**23 53 31.3 +1.4**
AGG	**Agios Georgios**	**4.85 322**	P	**Pn**		**23 53 31.3 +1.4**
AGG	**Agios Georgios**	**4.85 322**	P	**Pn**		**23 53 32.4 +2.6**
EVR	**Evrytania**	**5.05 317**	P	**Pn**		**23 53 35.9 +3.3**
PAIG	**Paliouri**	**5.06 338**	P	**Pn**		**23 53 32.0 -0.7**
PAIG	**Paliouri**	**5.06 338**	P	**Pn**		**23 53 32.0 -0.7**
SMTH	**Samothraki Isl**	**5.22 355**	P	**Pn**		**23 53 33.1 -1.8**
SMTH	**Samothraki Isl**	**5.22 355**	P	**Pn**		**23 53 33.1 -1.8**
OUR	**Ouranopolis**	**5.35 342**	P	**Pn**		**23 53 35.5 -1.2**
OUR	**Ouranopolis**	**5.35 342**	P	**Pn**		**23 53 35.5 -1.2**
THL	**Klokotos Trika**	**5.42 324**	P	**Pn**		**23 53 36.6 -1.1**
PLG	**Polygyros**	**5.54 338**	P	**Pn**		**23 53 36.5 -2.9**
DSL	**Palaion Diasel**	**5.60 315**	P	**Pn**		**23 53 41.9 +1.7**
DSL	**Palaion Diasel**	**5.60 315**	P	**Pn**		**23 53 41.9 +1.7**
ALN	**Alexandroupoli**	**5.62 359**	P	**Pn**		**23 53 39.6 -0.8**
ALN	**Alexandroupoli**	**5.62 359**	P	**Pn**		**23 53 39.6 -0.8**
LIT	**Litokhoron**	**5.64 330**	P	**Pn**		**23 53 40.8 0.0**
LIT	**Litokhoron**	**5.64 330**	P	**Pn**		**23 53 40.8 0.0**
LKD2	**Lefkada island**	**5.64 310**	P	**Pn**		**23 53 43.2 +2.4**
LKD2	**Lefkada island**	**5.64 310**	P	**Pn**		**23 53 43.1 +2.4**
HORT	**Hortiatis**	**5.85 336**	P	**Pn**		**23 53 44.0 +0.3**
HORT	**Hortiatis**	**5.85 336**	P	**Pn**		**23 53 44.0 +0.3**
CSS	**Mathiatis**	**5.87 91**	Pn	**Pn**		**23 53 44.5 +0.6**
CSS	**Mathiatis**	**5.87 91**	Pn	**Pn**		**23 53 44.5 +0.6**
SOH	**Sokhos**	**5.97 339**	P	**Pn**		**23 53 45.8 +0.5**
SOH	**Sokhos**	**5.97 339**	P	**Pn**		**23 53 45.8 +0.5**
KPRO	**Kipourio**	**6.04 322**	P	**Pn**		**23 53 45.8 -0.5**
KPRO	**Kipourio**	**6.04 322**	P	**Pn**		**23 53 45.8 -0.5**
SWA2		**6.04 186**		P	**Pn**	**23 53 48.4 +2.2**
	baz=188					
SWA2				AMP		23 55 00.0
	comp=N,20μm,0.4s,logA/T=4.7,baz=188					
SWA2		**6.04 186**		P	**Pn**	**23 53 48.4 +2.2**
SRS	**Serrai**	**6.18 342**		P	**Pn**	**23 53 47.9 -0.3**
SRS	**Serrai**	**6.18 342**		P	**Pn**	**23 53 47.9 -0.3**
IGT	**Igoumenitsa**	**6.31 314**		P	**Pn**	**23 53 50.0 +0.1**
IGT	**Igoumenitsa**	**6.31 314**		P	**Pn**	**23 53 50.0 +0.1**
PENT	**Pentalofos**	**6.34 322**		P	**Pn**	**23 53 52.8 +2.4**
PENT	**Pentalofos**	**6.34 322**		P	**Pn**	**23 53 52.8 +2.4**
GRG	**Griva**	**6.41 333**		P	**Pn**	**23 53 52.4 +1.1**
GRG	**Griva**	**6.41 333**		P	**Pn**	**23 53 52.4 +1.1**
SGD	**Sagiada**	**6.42 314**		P	**Pn**	**23 53 50.9 -0.5**
SGD	**Sagiada**	**6.42 314**		P	**Pn**	**23 53 50.9 -0.5**
KNT	**Kendrikon**	**6.42 337**		P	**Pn**	**23 53 51.4 -0.1**
KNT	**Kendrikon**	**6.42 337**		P	**Pn**	**23 53 51.4 -0.1**
NEST	**Nestorio**	**6.55 323**		P	**Pn**	**23 53 56.1 +2.8**
NEST	**Nestorio**	**6.55 323**		P	**Pn**	**23 53 56.1 +2.8**
FNA	**Florina**	**6.68 327**		P	**Pn**	**23 53 57.2 +2.1**
FNA	**Florina**	**6.68 327**		P	**Pn**	**23 53 57.2 +2.1**
HNAT	**Natroun**	**6.75 145**		P	**Pn**	**23 53 56.1 +0.1**
	baz=147					
HNAT	**Natroun**	**6.75 145**		P	**Pn**	**23 53 56.1 +0.1**
AWBH		**7.30 161**		P	**Pn**	**23 54 04.7 +1.1**
	baz=162					
AWBH		**7.30 161**		P	**Pn**	**23 54 04.7 +1.1**
GLL	**Jalalah**	**7.35 139**		P	**Pn**	**23 54 04.3 +0.1**
	baz=140					
GLL	**Jalalah**	**7.35 139**		P	**Pn**	**23 54 04.3 +0.1**
BRTR	**Ke

CMAR	Chiang Mai Arr	65.73	84	P	P	00 03 03.1	+1.4
	comp=N,0.5nm,0.5s,baz=291,slow=8.6,SNR=4.2						
YKA	Yellowknife Ar	77.60	343	P	P	00 04 11.3	-1.1
	comp=N,0.1nm,0.3s,baz=29,slow=5.2,SNR=4.2						

*KRNET **26** 00:04:54.4±0.1, 39.2°22N×70.0°00E, mb3.3*
*NNC **26** 00:04:54.2±1.4, 38.°68N×70.°56E, h0km, mb4.0, mpv3.5, Error ellipse: s-maj=14.6km s-min=3.3km az=156.0*
*ISCJB **26** 00:04:58.7±1.0, 39.°09N±0.°07×70.°29E±0.°05, h17km, Error ellipse: s-maj=10.7km s-min=5.2km az=160.0*

ISC 26 00:04:58.6±1.5, 39.°06N±0.°10×70.°33E±0.°07, h17km, n14, σ2°18/23, 18C-10D, Tajikistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BTK	Batken	1.06	20	⇑eP	Pb	00 05 15.0	-3.6
BTK	baz=37			⇑eS	Sb	00 05 30.4	-1.9
DZET	Dzherino	1.20	258	⇑P	Pg	00 05 20.0	-1.9
DZET	2.8nm,0.2s			⇓S	Sg	00 05 38.4	+0.8
ARSB	Arslanbob	3.04	41	⇑eP	Pn	00 05 47.2	+1.2
ARSB	baz=46			⇑eS	Sb	00 06 25.9	-3.2
MNAS	Manas	3.80	25	⇑eP	Pn	00 05 57.1	+0.6
MNAS	baz=29			⇑eS	Sn	00 06 42.2	+1.4
MNAS	Manas	3.80	25	⇑Pn	Pn	00 05 58.2	+1.8
MNAS	4.4nm,0.4s			⇑Sn	Sb	00 06 47.1	-4.0
KK31	Karatay Array	4.04	2	⇑Pn	Pn	00 06 01.6	+1.9
KK31	2.6nm,0.3s,baz=182,slow=13,SNR=52			⇓Sn	Sb	00 06 57.0	-0.8
ARLS	Aral	4.13	46	⇓eP	Pn	00 06 02.3	+1.2
ARLS	baz=50			⇓eS	Sn	00 06 51.7	+2.6
EKS2	Erkin-Say	4.44	35	⇑iP	Pn	00 06 06.7	+1.4
EKS2	baz=39			⇑iS	Sn	00 06 57.9	+1.2
UCH	Uchtor	4.48	44	⇑iP	Pn	00 06 07.3	+1.1
UCH	baz=47			⇑iS	Sn	00 07 01.2	+3.0
AAK	Ala-Archa	4.76	40	⇓iP	Pn	00 06 09.5	-0.3
AAK	baz=44			⇓iS	Sn	00 07 08.2	+3.6
AAK	Ala-Archa	4.76	40	⇓Pn	Pn	00 06 09.4	-0.3
AAK	5.4nm,0.5s			⇑Sn	Sn	00 07 09.9	+5.3
TKM2	Tokmak 2	5.54	44	⇑Pn	Pn	00 06 20.9	+0.4
TKM2	5.3nm,0.5s			⇓Sn	Sn	00 07 27.1	+3.2
AB31	Akbulak array	12.62	327	⇑Pn	Pn	00 07 56.6	-0.6
AB31	5.0nm,0.5s			⇑Sn	Sn	00 10 19.2	+2.0
AKTO	Aktyubinsk	14.33	327	⇓Pn	P	00 08 23.5	-4.0
AKTO	0.8nm,0.5s,baz=140,slow=13,SNR=19			⇓Sn	Sn	00 11 01.5	+2.6
	1.8nm,0.9s						

*ISK **26** 00:08:36.5, 39.°05N×29.°16E, h8km, MD2.7*
*ISCJB **26** 00:08:37.3±0.5, 39.°09N±0.°03×29.°07E±0.°04, h6km±6km, Error ellipse: s-maj=5.7km s-min=4.0km az=138.6*
*CSEM **26** 00:08:37.4±0.1, 39.°09N×29.°07E, h5km, MD2.7, Error ellipse: s-maj=2.1km s-min=1.5km az=115.0*
*DDA **26** 00:08:37.1, 39.°13N×29.°05E, h7km, Md2.7*

ISC 26 00:08:37.5±0.9, 39.°09N±0.°02×29.°07E±0.°03, h11km±9km, n27, σ0°39/42, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.28	260	P	Pg	00 08 43.2	-0.1
DEMI				S	Sg	00 08 47.2	0.0
DEMI	Demirci	0.28	260	iP	Pg	00 08 43.2	-0.1
DEMI				iS	Sg	00 08 47.2	0.0
GDZ	Gediz	0.32	90	P	Pg	00 08 44.0	0.0
GDZ				S	Sg	00 08 48.8	+0.5
GDZ	Gediz	0.32	90	iP	Pg	00 08 44.0	0.0
GDZ				iS	Sg	00 08 48.8	+0.5
TVSB	Tavsanli	0.47	40	ePG	Pg	00 08 46.3	-0.4
TVSB				eSG	Sg	00 08 53.0	0.0
TVSB	Tavsanli	0.47	40	ePg	Pg	00 08 46.3	-0.4
TVSB				eSg	Sg	00 08 53.0	0.0
KULA	Kula-Manisa	0.66	209	ePG	Pg	00 08 49.7	-0.6
KULA				eSG	Sg	00 08 59.1	+0.1
KULA	Kula-Manisa	0.66	209	ePg	Pg	00 08 49.7	-0.6
KULA				eSg	Sg	00 08 59.1	+0.1
MANT	Manisa	0.72	214	P	Pg	00 08 51.5	0.0
MANT				S	Sg	00 09 01.0	0.0
MANT	Manisa	0.72	214	iP	Pg	00 08 51.5	0.0
MANT				iS	Sg	00 09 01.0	0.0
KHAL	Karahalli	0.79	155	P	Pb	00 08 53.2	-0.1
KHAL				S	Sb	00 09 03.7	-0.3
KHAL	Karahalli	0.79	155	iP	Pb	00 08 53.2	-0.1
KHAL				iS	Sb	00 09 03.7	-0.3
ORLT	Orhaneli	0.96	352	ePG	Pg	00 08 56.0	-0.1
ORLT	Orhaneli	0.96	352	ePg	Pg	00 08 56.0	-0.1
BALB	Balikesir	1.08	301	ePN	Pn	00 08 59.2	+0.7
BALB	Balikesir	1.08	301	ePn	Pn	00 08 59.2	+0.7
IGD	Bursa	1.18	5	iP	Pb	00 08 58.6	-1.2
IGD				iS	Sb	00 09 14.8	-0.3
MDNY	Mudanya-Bursa	1.28	354	ePN	Pg	00 09 02.2	0.0
MDNY	Mudanya-Bursa	1.28	354	ePn	Pg	00 09 02.2	0.0
KCTX	Karacabey (Bur	1.30	335	ePN	Pg	00 09 02.7	+0.3
KCTX	Karacabey (Bur	1.30	335	ePn	Pg	00 09 02.7	+0.3
BORA	Eskisehir	1.33	53	P	Pb	00 09 02.5	0.0
BORA				S	Sb	00 09 18.9	-0.6
BORA	Eskisehir	1.33	53	iP	Pb	00 09 02.5	0.0
BORA				iS	Sb	00 09 18.9	-0.6
GEMT	Gemlik	1.35	4	ePN	Pb	00 09 02.5	-0.2
GEMT	Gemlik	1.35	4	ePn	Pb	00 09 02.5	-0.2
ARMT	Armutlu	1.48	354	ePN	Pb	00 09 04.9	-0.2
ARMT	Armutlu	1.48	354	ePn	Pb	00 09 04.9	-0.2

IDC 26 00:11:36.4±1.3, 39.°67N×141.°82E, h0km, mb3.4/5, mb1 3.6/6, mb1mx3.4/41, mbtmp3.5/6, ML3.4/1, Error ellipse: s-maj=32.2km s-min=24.1km az=93.0, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAJ	Asahikawa	4.48	7	Pn	Pn	00 12 44.3	-1.2
ASAJ	1.7nm,0.3s,baz=200,slow=14,SNR=4.1			Sn	Sn	00 13 36.5	-1.8
USRK	Ussuriysk Ar.	8.61	305	Pn	Pn	00 13 49.2	+7.0
USRK	1.4nm,0.3s,baz=341,slow=13,SNR=2.3						
SONM	Songino Array	26.67	300	P	P	00 17 17.8	+0.8
SONM	0.2nm,0.3s,baz=103,slow=13,SNR=7.2						
ZALV	Zalesovo Beam	40.42	310	P	P	00 19 15.1	-1.0
ZALV	0.3nm,0.6s,baz=81,slow=8.9,SNR=2.4						
MKAR	Makanchi Array	43.04	300	P	P	00 19 37.6	0.0
MKAR	1.0nm,0.5s,baz=85,slow=8.7,SNR=3.7						
WRA	Warramunga Arr	59.71	188	P	P	00 21 42.2	-0.5
WRA	0.3nm,0.5s,baz=82,slow=9.3,SNR=6.5						
YKA	Yellowknife Ar	61.38	31	P	P	00 21 54.4	+0.7
YKA	0.6nm,0.8s,baz=8.5,slow=7.3,SNR=3.0						
	0.1nm,0.7s,baz=281,slow=8.5,SNR=2.6						

*ISK **26** 00:26:47.8, 39.°08N×29.°09E, h5km, MD2.4*
*DDA **26** 00:26:47.7, 39.°10N×29.°03E, h7km, Md2.6*
*ISCJB **26** 00:26:48.2±0.6, 39.°10N±0.°03×29.°05E±0.°03, h2km±8km, Error ellipse: s-maj=5.8km s-min=4.5km az=4.9*
*CSEM **26** 00:26:48.4±0.1, 39.°09N×29.°04E, h4km±1km, MD2.6, Error ellipse: s-maj=1.8km s-min=1.6km az=9.0*

ISC 26 00:26:48.4±1.0, 39.°10N±0.°03×29.°05E±0.°02, h9km±10km, n25, σ0°23/38, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.26	258	P	Pg	00 26 53.7	0.0
DEMI				S	Sg	00 26 57.3	0.0
DEMI	Demirci	0.26	258	iP	Pg	00 26 53.7	0.0
DEMI				iS	Sg	00 26 57.3	0.0
GDZ	Gediz	0.34	91	P	Pg	00 26 55.3	+0.1
GDZ				S	Sg	00 26 59.9	+0.2
GDZ	Gediz	0.34	91	iP	Pg	00 26 55.3	+0.1
GDZ				iS	Sg	00 26 59.9	+0.2
TVSB	Tavsanli	0.48	42	ePG	Pg	00 26 57.5	-0.2
TVSB				eSG	Sg	00 27 04.0	-0.1
TVSB	Tavsanli	0.48	42	ePg	Pg	00 26 57.6	-0.2
TVSB				eSg	Sg	00 27 04.0	-0.1
KULA	Kula-Manisa	0.65	207	ePG	Pg	00 27 00.9	-0.2
KULA	Kula-Manisa	0.65	207	ePg	Pg	00 27 00.9	-0.2
DURS	Dursunbey	0.67	319	P	Pg	00 27 01.7	+0.3
DURS				S	Sg	00 27 10.2	0.0
DURS	Dursunbey	0.67	319	iP	Pg	00 27 01.7	+0.3
DURS				iS	Sg	00 27 10.2	0.0
KHAL	Karahalli	0.80	154	P	Pg	00 27 04.1	+0.2
KHAL				S	Sg	00 27 14.4	0.0
KHAL	Karahalli	0.80	154	iP	Pg	00 27 04.1	+0.2
KHAL				iS	Sg	00 27 14.4	0.0
IGD	Bursa	1.17	6	iP	Pb	00 27 09.8	-1.0
IGD				iS	Sb	00 27 26.1	-0.1
MDNY	Mudanya-Bursa	1.28	354	ePN	Pb	00 27 12.7	0.0
MDNY	Mudanya-Bursa	1.28	354	ePn	Pb	00 27 12.7	0.0
BALY	Balya	1.28	301	P	Pg	00 27 13.0	0.0
BALY	Balya	1.28	301	iP	Pg	00 27 13.0	0.0
KCTX	Karacabey (Bur	1.28	336	ePN	Pg	00 27 13.2	+0.1
KCTX	Karacabey (Bur	1.28	336	ePn	Pg	00 27 13.2	+0.1
BORA	Eskisehir	1.34	54	P	Pg	00 27 14.3	+0.1
BORA				S	Sn	00 27 31.5	+0.1
BORA	Eskisehir	1.34	54	iP	Pg	00 27 14.3	+0.1
BORA				iS	Sn	00 27 31.5	+0.1
ADVT	Abdulvahap	1.44	22	ePN	Pb	00 27 15.3	-0.1
ADVT	Abdulvahap	1.44	22	ePn	Pb	00 27 15.3	-0.1
ARMT	Armutlu	1.48	355	ePN	Pb	00 27 16.3	+0.3
ARMT	Armutlu	1.48	355	ePn	Pb	00 27 16.3	+0.3

IDC 26 00:32:13.3±1.7, 5.°55S×146.°03E, h0km, mb3.3/2, mb1 3.8/4, mb1mx3.5/27, mbtmp3.6/4, ML2.2/1, MS2.9/2, Ms1 2.9/2, ms1mx2.6/15, Error ellipse: s-maj=54.2km s-min=26.5km az=102.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	Port Moresby	3.99	164	Pn	Pn	00 33 15.9	+0.2
PMG	12nm,0.3s,baz=87,slow=2.0,SNR=9.6			Sn	Sn	00 34 04.0	+0.8
PMG	4.7nm,0.3s,baz=237,slow=21,SNR=2.8			LR	LR	00 35 22.0	
WRA	Warramunga Arr	18.27	217	P	Pn	00 36 28.2	-0.3
GUMO	Guam	19.05	357	LR	LR	00 42 28.9	
ASAR	Alice Springs	21.47	212	P	P	00 37 03.7	+0.1
ILAR	Eielson Array	85.45	23	P	P	00 44 52.6	0.0
	0.5nm,0.5s,baz=45,slow=8.9,SNR=4.5						
	0.3nm,0.7s,baz=238,slow=4.6,SNR=3.0						

*ISK **26** 00:44:57.8, 39.°06N×29.°15E, h5km, MD2.6*
*ISCJB **26** 00:44:58.4±0.7, 39.°13N±0.°04×29.°05E±0.°04, h0km±8km, Error ellipse: s-maj=7.4km s-min=4.2km az=153.8*
*DDA **26** 00:44:58.3, 39.°13N×29.°05E, h7km, Md2.5*
*CSEM **26** 00:44:58.7±0.1, 39.°11N×29.°05E, h4km±1km, MD2.5, Error ellipse: s-maj=4.5km s-min=2.4km az=145.0*

ISC 26 00:44:58.8±1.0, 39.°12N±0.°03×29.°06E±0.°03, h7km±10km, n29, σ0°51/42, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.28	254	P	Pg	00 45 04.8	+0.6
DEMI				S	Sg	00 45 07.7	-0.2
DEMI	Demirci	0.28	254	iP	Pg	00 45 04.8	+0.6
DEMI				iS	Sg	00 45 07.7	-0.2
GDZ	Gediz	0.33	95	P	Pg	00 45 05.3	0.0
GDZ				S	Sg	00 45 10.1	+0.4
GDZ	Gediz	0.33	95	iP	Pg	00 45 05.3	0.0
GDZ				iS	Sg	00 45 10.1	+0.4
TVSB	Tavsanli	0.45	43	ePG	Pg	00 45 07.2	-0.4
TVSB				eSG	Sg	00 45 13.3	-0.3
TVSB	Tavsanli	0.45	43	ePg	Pg	00 45 07.2	-0.4
TVSB				eSg	Sg	00 45 13.3	-0.3
KULA	Kula-Manisa	0.68	207	ePG	Pg	00 45 11.5	-0.4
KULA				eSG	Sg	00 45 20.4	-0.3
KULA	Kula-Manisa	0.68	207	ePg	Pg	00 45 11.5	-0.4
KULA				eSg	Sg	00 45 20.4	-0.3
BALB	Balikesir	1.05	300	ePN	Pn	00 45 20.6	+0.6
BALB	Balikesir	1.05	300	ePn	Pn	00 45 20.6	+0.6
IGD	Bursa	1.15	5	iP	Pg	00 45 18.6	-2.3
IGD				iS	Sg	00 45 35.5	-0.2
MDNY	Mudanya-Bursa	1.25	354	ePN	Pn	00 45 22.8	0.0
MDNY	Mudanya-Bursa	1.25	354	ePn	Pn	00 45 22.8	0.0
IZI	Iznik	1.26	15	ePN	Pn	00 45 22.9	0.0
IZI	Iznik	1.26	15	ePn	Pn	00 45 22.9	0.0
KCTX	Karacabey (Bur	1.27	335	ePN	Pn	00 45 23.0	0.0
KCTX	Karacabey (Bur	1.27	335	ePn	Pn	00 45 23.0	0.0
GEMT	Gemlik	1.32	4	PN	Pg	00 45 24.8	+0.8
GEMT	Gemlik	1.32	4	iPn	Pg	00 45 24.8	+0.8
BORA	Eskisehir	1.32	54	P	Pb	00 45 23.9	0.0
BORA				S	Sg	00 45 41.4	+0.2
BORA	Eskisehir	1.32	54	iP	Pb	00 45 23.9	0.0
BORA				iS	Sg	00 45 41.4	+0.2
ESKT	Eskisehir	1.45	73	iP	Pg	00 45 26.5	0.0
ESKT				iS	Sn	00 45 45.0	+0.2
SEYT	Eskypehyr	1.45	73	P	Pg	00 45 26.5	0.0
SEYT				S	Sn	00 45 45.0	+0.2
ARMT	Armutlu	1.45	354	ePN	Pb	00 45 26.1	-0.1
ARMT	Armutlu	1.45	354	ePn	Pb	00 45 26.1	-0.1
AYDB	Zeytinkoy-Aydi	1.49	218	ePN	Pn	00 45 25.7	-0.4
AYDB	Zeytinkoy-Aydi	1.49	218	ePn	Pn	00 45 25.7	-0.4
GULT	Gulveren	1.73	40	ePN	Pn	00 45 29.7	+0.4
GULT	Gulveren	1.73	40	ePn	Pn	00 45 29.7	+0.4

*SOME **26** 01:01:53.2, 39.°63N×74.°15E, h10km*
*KRNET **26** 01:01:53.0±0.1, 39.°51N×74.°09E, mb3.3*
*NNC **26** 01:01:56.8±1.8, 39.°73N×74.°21E, h0km, mb3.5, mpv3.1, Error ellipse: s-maj=16.7km s-min=10.3km az=129.0*

ISC 26 01:01:50.1±1.6, 39.°57N±0.°06×74.°21E±0.°03, h4km±15km, n28, σ1°69/52, 16C-17D, Southern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ARSB	Arslanbob	1.99	332	⇓eP	Pg	01 02 29.9	+1.6
ARSB	baz=335			⇓eS	Sg	01 02 57.4	+3.3
ARLS	Aral	2.29	2	⇑eP	Pg	01 02 35.0	+0.9
ARLS	baz=4.0			⇑eS	Sg	01 03 06.8	+3.0
NRN	Naryn	2.31	36	⇓eP	Pg	01 02 36.1	+1.7
NRN	baz=36			⇓eS	Sg	01 03 07.4	+3.1
KZA	Kyzart	2.63	17	⇑iP	Pg	01 02 41.2	+0.7
KZA	baz=19			⇑iS	Sg	01 03 15.0	+0.4
BTK	Batken	2.66	282	⇓eP	Pg	01 02 39.6	-1.5
BTK	baz=283			⇓eS	Sb	01 03 12.3	+0.8
UCH	Uchtor	2.67	5	⇑iP	Pg	01 02 41.1	-0.2
UCH	baz=7.0			⇑iS	Sg	01 03 17.5	+1.6
AAK	Ala-Archa	3.07	4	⇓iP	Pg	01 02 48.5	-0.5
AAK	baz=5.0			⇓iS	Sg	01 03 28.9	+0.1
AAK	Ala-Archa	3.07	4	⇓Pg	Pg	01 02 48.5	-0.5
AAK	12nm,0.6s			⇓Lg	Lg	01 03 29.2	
MNAS	Manas	3.19	337	⇓eP	Pb	01 02 46.7	-0.8
MNAS	13nm,0.7s			⇓eS	Sb	01 03 27.1	+0.3
MNAS	Manas	3.19	337	⇑Pn	Pb	01 02 46.1	-1.4
MNAS	2.9nm,0.4s			⇑Lg	Lg	01 03 32.0	
BOOM	Boomskoye usch	3.20	24	⇑eP	Pb	01 02 47.7	0.0
BOOM	baz=25			⇑eS	Sb	01 03 28.9	+1.8
MRKS	Merke	3.26	347	eP	Pg	01 02 51.7	-1.0
MRKS	8.3nm,0.4s			eS	Sg	01 03 33.6	-1.3
KDJ	Kajisay	3.41	40	⇑eP	Pb	01 02 51.7	+0.5
KDJ	baz=41			⇑eS	Sb	01 03 34.3	+1.2
TKM2	Tokmak 2	3.51	17	⇓Pn	Pb	01 02 52.3	-0.6
TKM2	2.6nm,0.6s			⇓Lg	Lg	01 03 41.9	
KST	Kastek	3.71	20	eP	Pb	01 02 57.3	+0.9
KST	2.4nm,0.3s			eS	Sb	01 03 43.2	+1.4
DGS	Degeres	3.85	17	eP	Pg	01 03 03.3	-0.7
DGS	3.9nm,0.4s			eS	Sg	01 03 54.0	0.0
IZV	Izvestkoviy	3.91	27	eP	Pg	01 03 02.9	-2.1
IZV	9.9nm,0.4s			eS	Sg	01 03 54.0	-1.7
TNSS	Tian-Shan	4.04	30	eP	Pg	01 03 06.3	-1.2
TNSS	12nm,0.5s			eS	Sg	01 03 59.5	-0.3
IUG	Iuzhnay	4.09	310	eP	Pb	01 03 02.5	-0.3
IUG	9.8nm,0.8s			eS	Sb	01 03 52.2	-0.3
MDOK	Medeo	4.18	30	eP	Pg	01 03 09.0	-1.2
MDOK	11nm,0.5s			eS	Sg	01 04 03.3	-1.0
DZET	Dzherino	4.25	261	⇓Pn	Pb	01 03 03.2	-2.4
DZET	16nm,1.0s			⇑Pg	Pg	01 03 14.0	+2.4
DZET	1.8nm,0.4s			⇓Lg	Lg	01 04 14.4	
KOTS	Kotyrbulak	4.26	30	eP	Pg	01 03 10.7	-1.1
KOTS	2.5nm,0.4s			eS	Sg	01 04 06.3	-0.7
KK31	Karatay Array	4.50	323	Pn	Pb	01 03 04.2	-5.5
KK31	21nm,0.7s			⇑Pg	Pg	01 03 15.7	-0.7
KK31	0.5nm,0.4s,baz=132,slow=12,SNR=12			⇑Sn	Sb	01 03 58.9	-5.4
KK31	0.8nm,0.5s,baz=133,slow=16,SNR=3.7			⇑Lg	Lg	01 04 13.9	
SATY	Saty	4.71	41	eP	Pg	01 03 19.5	-0.8
SATY	3.0nm,0.6s			eS	Sg	01 04 21.4	+0.2
CHKK	Chushkaly	4.78	25	eP	Pg	01 03 19.8	-1.8
CHKK	16nm,0.8s			eS	Sg	01 04 22.1	-1.4
ZHN	Zhinishke	4.80	40	eP	Pg	01 03 20.5	-1.6
ZHN	4.6nm,0.4s			eS	Sg	01 04 22.7	-1.5
ARXS	Arharly	5.37	29	eP	Pg	01 03 30.1	-2.9
ARXS	7.7nm,0.7s			eS	Sg	01 04 40.0	-2.5
AB31	Akbulak array	14.04	318	⇓Pn	Pn	01 05 11.4	+1.6
	2.5nm,0.4s						
	3.6nm,0.1s						
	2.5nm,0.1s						
	4.3nm,0.4s						
	5.5nm,0.7s						
	0.7nm,0.7s,baz=134,slow=13,SNR=8.3						

*NIED **26** 01:06:00, 35.°90N×141.°80E, h8km, Mw3.8 Best double couple: M0 5.38000×10^14 NP1:ϕ=197.00000°, δ=45.00000°, λ=-65.00000°. NP2:ϕ=344.00000°, δ=50.00000°, λ=-113.00000°.*
*IDC **26** 01:06:15.9±0.9, 35.°63N×141.°75E, h0km, mb3.8/9, mb1 3.9/11, mb1mx3.7/43, mbtmp3.8/11, ML3.8/2, MS2.7/3, Ms1 2.8/3, ms1mx2.4/35, Error ellipse: s-maj=22.4km s-min=17.0km az=92.0*
*ISCJB **26** 01:06:17.9±0.6, 35.°67N±0.°05×141.°82E±0.°06, h25km, mb3.8/9, MS2.5/1, Error ellipse: s-maj=7.2km s-min=6.9km az=141.2*
*JMA **26** 01:06:18.1±0.2, 35.°79N×141.°83E, h32km±3km, M4.1*
JMA Felt I J1.

ISC 26 01:06:20.1±0.8, 35.°68N±0.°06×141.°74E±0.°07, h25km, n31, σ1°17/25, mb3.8/9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	0.72	272	P	Pb	01 06 33.0	-1.0
CHOJ				S	Sb	01 06 43.2	-0.3
BSO1	Boso 1	1.20	212	P	Pn	01 06 40.6	-0.2
JHO	Hitachi	1.33	315	P	Pn	01 06 41.0	-2.1
BSO3	Boso 3	1.34	229	P	Pn	01 06 43.2	+0.3
JAG	Ashikaga	2.00	293	P	Pn	01 06 50.7	-1.6
JIM2	Oshima 3	2.12	244	P	Pn	01 06 53.1	-0.9
JOD2	Odawara 2	2.21	260	P	Pn	01 06 55.1	-0.1
JKT	Katashina	2.29	299	P	Pn	01 06 55.5	-0.9
MJAR	Matsushiro Arr	2.99	288	Pn	Pn	01 07 05.8	-0.1
	7.7nm,0.3s,baz=104,slow=8.9,SNR=37						
MJAR				Sn	Sn	01 07 40.7	-0.3
	4.5nm,0.3s,baz=243,slow=13,SNR=6.0						
MAT	Matsushiro	2.99	288	P	Pn	01 07 06.2	+0.2
MAT				eS	Sn	01 07 42.9	+1.8
JHJ	Hachijo jima 2	3.02	213	Pn	Pn	01 07 05.5	-0.9
	58nm,0.3s,baz=63,slow=21,SNR=11						
JHJ				Sn	Sn	01 07 42.1	+0.3
	70nm,0.3s,baz=56,slow=22,SNR=8.1						
JCJ	Chichijima	8.56	177	LR	LR	01 11 43.3	
	comp=Z,94nm,22.0s,slow=38						
KSRS	Korea Array	11.26	283	LR	LR	01 13 06.6	
	comp=Z,26nm,18.7s,baz=138,slow=36						
USRK	Ussuriysk Ar.	11.33	322	Pn	Pn	01 09 03.5	+3.1
	0.3nm,0.3s,baz=126,slow=43,SNR=3.8						
H11N2	WAKE ISLAND Hy 27.24	119	T	T	T	01 40 26.5	
	baz=311,slow=75,SNR=49						
H11N1	WAKE ISLAND Hy 27.25	119	T	T	T	01 40 29.4	
	baz=311,slow=75,SNR=34						
H11N3	WAKE ISLAND Hy 27.26	119	T	T	T	01 40 37.5	
	baz=311,slow=75,SNR=43						
H11S1	WAKE ISLAND Hy 27.91	121	T	T	T	01 41 20.0	
	baz=313,slow=74,SNR=41						
H11S3	WAKE ISLAND Hy 27.91	121	T	T	T	01 41 20.1	
	baz=133,slow=74,SNR=33						
H11S2	WAKE ISLAND Hy 27.93	121	T	T	T	01 42 14.2	
	SNR=34						
SONM	Songino Array	28.78	306	P	P	01 12 16.0	+0.1
	0.6nm,0.6s,baz=81,slow=9.2,SNR=3.8						
CMAR	Chiang Mai Arr	41.43	257	LR	LR	01 31 53.3	
	comp=Z,6.9nm,19.3s,baz=150,slow=37						
ZALV	Zalesovo Beam	43.03	313	P	P	01 14 17.4	-0.1
	0.7nm,0.4s,baz=104,slow=7.0,SNR=2.9						
MKAR	Makanchi Array	45.08	303	P	P	01 14 33.6	-0.4
	1.0nm,0.7s,baz=86,slow=11,SNR=9.1						
ILAR	Eielson Array	50.50	32	P	P	01 15 17.2	+1.5
	0.5nm,0.7s,baz=261,slow=5.9,SNR=5.3						
WRA	Warramunga Arr	55.76	188	P	P	01 15 53.6	-1.3
	3.7nm,0.7s,baz=5.3,slow=7.4,SNR=16						
ASAR	Alice Springs	59.49	188	P	P	01 16 20.6	-0.5
	1.1nm,0.7s,baz=8.0,slow=6.7,SNR=8.3						
YKA	Yellowknife Ar	64.85	30	P	P	01 16 56.2	-0.4
	0.2nm,0.7s,baz=297,slow=6.6,SNR=3.3						
FINES	FINESS Array B	70.14	333	P	P	01 17 29.0	-1.0
	1.1nm,0.7s,baz=320,slow=17,SNR=2.5						
BRTR	Keskin Array B	79.95	312	P	P	01 18 27.3	0.0
	0.7nm,1.0s,baz=101,slow=6.4,SNR=3.9						
H06S1	SOCORRO T	92.52	65	T	T	03 03 10.5	
	SNR=4.4						

*IDC **26** 01:18:18.3±6.1, 33.°98N×23.°74E, h0km, mb3.8/2, mb1 3.6/5, mb1mx3.3/30, mbtmp3.5/5, ML3.9/2, MS3.2/5,*

Ms1 3.2/5, ms1mx2.8/41, Error ellipse: s-maj=102.4km s-min=45.5km az=29.0
*ATH **26** 01:18:21.1, 34°.23N×23°.56E, h19km±4km, ML3.5/2, Error ellipse: s-maj=6.5km s-min=2.0km az=29.0*
*CSEM **26** 01:18:23.9±0.7, 34°.31N×23°.73E, h15km, ML3.1, Error ellipse: s-maj=14.8km s-min=8.0km az=24.0*
*THE **26** 01:18:25.8, 34°.42N×23°.75E, h6km±2km, ML3.1/6, Error ellipse: s-maj=3.0km s-min=1.6km az=288.0*
*ISK **26** 01:18:29.7, 34°.71N×24°.00E, h89km, MD3.7*
ISC 26 01:18:24.3±2.2, 34°.33N±0°.08×23°.73E±0°.06, h17km±10km, n72, σ1§07/82, MS3.1/5, Crete

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GVD	**Gavdhos**	**0.59**	**30**	P	**Pg**	**01 18 35.6**	**-0.4**
GVD	**Gavdhos**	**0.59**	**30**	P	**Pb**	**01 18 36.5**	**+0.4**
GVD	**Gavdhos**	**0.59**	**30**	P	**Pb**	**01 18 36.5**	**+0.4**
SIVA	**Sivas**	**1.12**	**52**	P	**Pn**	**01 18 45.7**	**+0.4**
SIVA				S	**Sn**	**01 19 01.5**	**+1.2**
SIVA	**Sivas**	**1.12**	**52**	P	**Pn**	**01 18 45.7**	**+0.4**
SIVA				S	**Sn**	**01 19 01.5**	**+1.2**
SIVA	**Sivas**	**1.12**	**52**	P	**Pb**	**01 18 45.5**	**+0.2**
SIVA				S	**Sn**	**01 19 04.7**	**+4.4**
SIVA				AML	AML	01 19 11.7	
	comp=E,3630μm,0.7s						
SIVA				AML	AML	01 19 16.5	
	comp=N,2837μm,0.8s						
VAM	**Vamos**	**1.14**	**20**	P	**Pn**	**01 18 44.6**	**-0.9**
VAM				S	**Sb**	**01 19 00.1**	**-0.1**
VAM	**Vamos**	**1.14**	**20**	P	**Pn**	**01 18 44.8**	**-0.7**
VAM				S	**Sb**	**01 19 00.1**	**-0.1**
IMMV	**Iera Moni Meta**	**1.15**	**10**	P	**Pn**	**01 18 44.7**	**-0.9**
IMMV				S	**Sb**	**01 19 01.3**	**+1.0**
IMMV	**Iera Moni Meta**	**1.15**	**10**	P	**Pn**	**01 18 44.7**	**-0.9**
IMMV				S	**Sb**	**01 19 01.3**	**+1.0**
IMMV	**Iera Moni Meta**	**1.15**	**10**	P	**Pn**	**01 18 44.2**	**-1.4**
IMMV				S	**Sg**	**01 19 02.5**	**+0.9**
IMMV				AML	AML	01 19 10.9	
	comp=E,3996μm,1.0s						
IMMV				AML	AML	01 19 15.9	
	comp=N,2449μm,0.7s						
IDI	**Anoyia**	**1.35**	**45**	P	**Pn**	**01 18 49.0**	**+0.6**
IDI				S	**Sb**	**01 19 06.9**	**+0.6**
IDI	**Anoyia**	**1.35**	**45**	P	**Pn**	**01 18 49.0**	**+0.6**
IDI				S	**Sb**	**01 19 06.9**	**+0.6**
IDI	**Anoyia**	**1.35**	**45**	P	**Pn**	**01 18 49.1**	**+0.6**
ANKY	**Antikythira Is**	**1.57**	**347**	P	**Pn**	**01 18 52.7**	**+1.2**
ANKY	**Antikythira Is**	**1.57**	**347**	P	**Pn**	**01 18 52.4**	**+0.9**
ANKY	**Antikythira Is**	**1.57**	**347**	P	**Pn**	**01 18 52.4**	**+0.9**
LAST	**Lasithi**	**1.66**	**60**	P	**Pn**	**01 18 53.8**	**+1.1**
LAST				S	**Sb**	**01 19 15.4**	**+0.2**
LAST	**Lasithi**	**1.66**	**60**	P	**Pn**	**01 18 53.8**	**+1.1**
LAST				S	**Sb**	**01 19 15.4**	**+0.2**
LAST	**Lasithi**	**1.66**	**60**	P	**Pb**	**01 18 54.0**	**-0.5**
NPS	**Neapolis**	**1.81**	**58**	P	**Pn**	**01 18 55.8**	**+1.1**
NPS				S	**Sn**	**01 19 17.7**	**+0.5**
NPS	**Neapolis**	**1.81**	**58**	P	**Pn**	**01 18 55.8**	**+1.1**
NPS				S	**Sn**	**01 19 17.7**	**+0.5**
NPS	**Neapolis**	**1.81**	**58**	P	**Pb**	**01 18 56.8**	**-0.2**
ZKR	**Zakros**	**2.19**	**68**	P	**Pn**	**01 19 00.6**	**+0.6**
ZKR	**Zakros**	**2.19**	**68**	P	**Pn**	**01 19 01.1**	**+1.1**
ZKR	**Zakros**	**2.19**	**68**	P	**Pn**	**01 19 01.1**	**+1.1**
THR5	**Thira Island,**	**2.47**	**32**	*e*PN	**Pn**	**01 19 03.8**	**0.0**
THR5				*e*SN	Sn	01 19 28.2	-5.3
THR5	**Thira Island,**	**2.47**	**32**	P	**Pn**	**01 19 04.0**	**+0.3**
THR5	**Thira Island,**	**2.47**	**32**	*e*Pn	**Pn**	**01 19 03.8**	**0.0**
VLI	**Veliai**	**2.47**	**345**	P	**Pn**	**01 19 05.4**	**+1.6**
VLI	**Veliai**	**2.47**	**345**	P	**Pn**	**01 19 05.5**	**+1.6**
KARP	**Karpathos**	**3.07**	**66**	*e*PN	**Pn**	**01 19 13.4**	**+1.4**
KARP	**Karpathos**	**3.07**	**66**	P	**Pn**	**01 19 13.2**	**+1.1**
KARP	**Karpathos**	**3.07**	**66**	P	**Pn**	**01 19 13.2**	**+1.1**
KARP	**Karpathos**	**3.07**	**66**	P	**Pn**	**01 19 13.0**	**+1.0**
KRND	**KRANIDI**	**3.08**	**351**	P	**Pn**	**01 19 13.7**	**+1.5**
KRND	**KRANIDI**	**3.08**	**351**	P	**Pn**	**01 19 13.7**	**+1.5**
APE	**Apeiranthos**	**3.10**	**28**	*e*PN	**Pn**	**01 19 12.6**	**+0.1**
APE	**Apeiranthos**	**3.10**	**28**	P	**Pn**	**01 19 11.2**	**-1.3**
APE	**Apeiranthos**	**3.10**	**28**	*e*Pn	**Pn**	**01 19 12.6**	**+0.1**
APE	**Apeiranthos**	**3.10**	**28**	P	**Pn**	**01 19 11.2**	**-1.3**
DID	**Didima**	**3.20**	**353**	P	**Pn**	**01 19 14.1**	**+0.3**
DID	**Didima**	**3.20**	**353**	P	**Pn**	**01 19 14.2**	**+0.3**
VLY	**Voula,Athens**	**3.52**	**1**	P	**Pn**	**01 19 17.8**	**-0.4**
VLY	**Voula,Athens**	**3.52**	**1**	P	**Pn**	**01 19 17.8**	**-0.4**
PTL	**Penteli**	**3.71**	**2**	P	**Pn**	**01 19 20.1**	**-0.8**
PTL	**Penteli**	**3.71**	**2**	P	**Pn**	**01 19 20.1**	**-0.8**
BODT	**Bodrum**	**3.99**	**46**	*e*PN	**Pn**	**01 19 24.2**	**-0.5**
BODT	**Bodrum**	**3.99**	**46**	*e*Pn	**Pn**	**01 19 24.2**	**-0.5**
ARG	**Arkhangelos**	**4.06**	**61**	P	**Pn**	**01 19 24.9**	**-0.7**
CHOS	**Chios island**	**4.46**	**24**	*e*PN	**Pn**	**01 19 30.0**	**-1.3**
CHOS	**Chios island**	**4.46**	**24**	*e*Pn	**Pn**	**01 19 30.0**	**-1.3**
YER	**Yerkesik**	**4.64**	**52**	*e*PN	**Pn**	**01 19 32.8**	**-0.9**
YER	**Yerkesik**	**4.64**	**52**	*e*Pn	**Pn**	**01 19 32.8**	**-0.9**
DALY	**Dalyan (Mu¨la**	**4.72**	**57**	*e*PN	**Pn**	**01 19 34.1**	**-0.6**
DALY	**Dalyan (Mu¨la**	**4.72**	**57**	*e*Pn	**Pn**	**01 19 34.1**	**-0.6**
AGG	**Agios Georgios**	**4.82**	**347**	P	**Pn**	**01 19 37.3**	**+1.2**
AYDB	**Zeytinkoy-Aydi**	**4.94**	**42**	*e*PN	**Pn**	**01 19 36.4**	**-1.4**
AYDB	**Zeytinkoy-Aydi**	**4.94**	**42**	*e*Pn	**Pn**	**01 19 36.4**	**-1.4**
FETY	**Fethiye**	**4.94**	**61**	*e*PN	**Pn**	**01 19 37.2**	**-0.5**
FETY	**Fethiye**	**4.94**	**61**	*e*Pn	**Pn**	**01 19 37.2**	**-0.5**
ELL	**Elmali**	**5.59**	**63**	*e*PN	**Pn**	**01 19 45.9**	**-0.8**
ELL	**Elmali**	**5.59**	**63**	*e*Pn	**Pn**	**01 19 45.9**	**-0.8**
BRTR	**Keskin Array B**	**9.58**	**53**	Pn	**Pn**	**01 20 43.3**	**+1.8**
	comp=N,0.0nm,0.3s,baz=215,slow=15,SNR=5.5						
GERES	**GERESS Array B**	**16.31**	**336**	Pn	**P**	**01 22 15.1**	**-0.3**
	comp=N,0.1nm,0.3s,baz=149,slow=14,SNR=6.2						
AKASG	**Malin Array Be**	**16.85**	**12**	P	**P**	**01 22 21.1**	**-0.1**
	comp=N,0.7nm,0.3s,baz=205,slow=11,SNR=3.5						
NOA	**NORSAR Array B**	**27.92**	**347**	LR	LR	01 38 05.3	
	comp=N,21nm,18.6s,baz=240,slow=42						
ARCES	**ARCESS Array B**	**35.27**	**1**	LR	LR	01 41 06.6	
	comp=N,45nm,19.7s,baz=244,slow=38						
DBIC	**Dimbokro**	**38.13**	**230**	LR	LR	01 41 30.0	
	comp=N,31nm,19.2s,baz=12,slow=37						
MKAR	**Makanchi Array**	**45.21**	**56**	P	**P**	**01 26 39.3**	**-1.2**
	comp=N,0.8nm,0.7s,baz=287,slow=5.8,SNR=5.7						
ZALV	**Zalesovo Beam**	**46.43**	**46**	P	**P**	**01 26 47.5**	**-2.3**
	comp=N,0.4nm,0.3s,baz=288,slow=5.9,SNR=2.5						
ZALV				LR	LR	01 48 11.4	
	comp=N,15nm,20.0s,baz=264,slow=38						
BOSA	**Boshof**	**62.62**	**178**	LR	LR	01 57 21.0	
	comp=N,43nm,18.5s,baz=190,slow=38						

*IDC **26** 01:19:19.0±9.2, 23°.35N×118°.92E, h0km, mb3.4/3, mb1 3.4/3, mb1mx3.2/27, mbtmp3.4/3, Error ellipse: s-maj=206.4km s-min=109.5km az=108.0*
TAP 26 01:18:51.0, 24°.79N×122°.51E, h31km±1km, ML2.4, C, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWB1	**Santiao Chiao**	**0.52**	**295**	P	Pb	01 19 01.5	-0.4
	baz=295						
TWB1				*e*S	Sb	01 19 08.7	-0.6
	baz=295						
TWC	**Suao**	**0.62**	**254**	*e*P	Pb	01 19 03.0	-0.6
	baz=261						
TWC				*e*S	Sb	01 19 11.8	-0.3
	baz=261						
ENA	**Nanau**	**0.78**	**243**	P	Pn	01 19 05.7	-0.2
	baz=254						
ENA				S	Sb	01 19 15.8	-0.7
	baz=254						
ENTT	**Nioudou**	**0.87**	**260**	*e*P	Pb	01 19 07.6	-0.1
	baz=261						
ENTT				*e*S	Sn	01 19 18.8	+0.1
	baz=261						
SONM	**Songino Array**	**26.31**	**335**	P	P	01 24 57.3	+33
	0.2nm,0.4s,baz=166,slow=13,SNR=2.6						
MKAR	**Makanchi Array**	**38.76**	**315**	P	P	01 26 34.8	+22
	0.7nm,0.8s,baz=117,slow=9.8,SNR=5.0						
AKASG	**Malin Array Be**	**73.22**	**318**	P	P	01 30 45.3	+26
	0.2nm,0.3s,baz=83,slow=11,SNR=2.2						

*ISCJB **26** 01:37:07.7±0.7, 39°.10N±0°.05×29°.02E±0°.05, h9km, Error ellipse: s-maj=7.4km s-min=4.7km az=155.9*
*CSEM **26** 01:37:07.7±0.1, 39°.11N×29°.00E, h8km, ML2.6, Error ellipse: s-maj=3.3km s-min=2.2km az=137.0*
*DDA **26** 01:37:07.8, 39°.06N×29°.03E, h7km, Ml2.6*
ISC 26 01:37:08.1±1.1, 39°.10N±0°.04×29°.02E±0°.03, h9km, n11, σ0§99/19, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**256**	P	**Pg**	**01 37 13.0**	**-0.1**
DEMI				S	**Sg**	**01 37 16.5**	**+0.1**
DEMI	**Demirci**	**0.24**	**256**	*i* P	**Pg**	**01 37 13.0**	**-0.1**
DEMI				*i* S	**Sg**	**01 37 16.5**	**+0.1**
GDZ	**Gediz**	**0.36**	**92**	P	**Pg**	**01 37 15.0**	**-0.3**
GDZ				S	**Sg**	**01 37 20.3**	**+0.2**
GDZ	**Gediz**	**0.36**	**92**	*i* P	**Pg**	**01 37 15.0**	**-0.3**
GDZ				*i* S	**Sg**	**01 37 20.3**	**+0.2**
TVSB	**Tavsanli**	**0.49**	**45**	*e*PG	**Pg**	**01 37 17.5**	**-0.2**
TVSB				*e*SG	**Sg**	**01 37 24.1**	**0.0**
TVSB	**Tavsanli**	**0.49**	**45**	*e*Pg	**Pg**	**01 37 17.5**	**-0.2**
TVSB				*e*Sg	**Sg**	**01 37 24.1**	**0.0**
KULA	**Kula-Manisa**	**0.65**	**206**	PG	**Pb**	**01 37 20.1**	**-1.6**
KULA	**Kula-Manisa**	**0.65**	**206**	*i* Pg	**Pb**	**01 37 20.2**	**-1.6**
MANT	**Manisa**	**0.71**	**211**	*i* P	Pn	01 37 29.9	+5.3
MANT				*i* S	**Sn**	**01 37 38.9**	**+3.2**
KHAL	**Karahalli**	**0.82**	**153**	P	**Pb**	**01 37 24.3**	**-0.3**
KHAL				S	**Sg**	**01 37 34.2**	**-0.4**
KHAL	**Karahalli**	**0.82**	**153**	*i* P	**Pb**	**01 37 24.3**	**-0.3**
KHAL				*i* S	**Sg**	**01 37 34.2**	**-0.4**

*NIED **26** 01:37:00, 37°.20N×141°.00E, h62km, Mw3.6 Best double couple: M≈2.86000×10^14 NP1:φs=131.00000°, δ41.00000°, λ0.00000°. NP2:φs=41.00000°, δ90.00000°, λ131.00000°.*
JMA 26 01:37:09.0±0.1, 37°.24N×141°.04E, h30km±1km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.18**	**314**	P	Pb	01 37 14.8	-0.3
JFK				S	Sb	01 37 18.6	-0.7
ONAJ	**Iwakimizuishiy**	**0.24**	**235**	P	Pb	01 37 15.5	-0.2
ONAJ				S	Sb	01 37 19.9	-0.4
JFT	**Otama**	**0.62**	**297**	P	Pb	01 37 21.4	-0.1
JFT				*e*S	Sb	01 37 30.1	+0.1
JMM	**Marumori**	**0.66**	**343**	P	Pb	01 37 21.2	-0.8
JMM				S	Sb	01 37 30.2	-0.6
JHO	**Hitachi**	**0.73**	**211**	P	Pb	01 37 22.1	-1.2
JHO				*e*S	Sb	01 37 31.7	-1.3
JSB	**Shiboa**	**0.94**	**253**	P	Pb	01 37 26.8	+0.1
JSB				*e*S	Sb	01 37 39.4	+0.6
JFY	**Yanaizu**	**1.08**	**279**	P	Pn	01 37 28.5	+0.4
JFY				*e*S	Sb	01 37 43.0	+0.2
JOU	**Okura**	**1.16**	**345**	P	Pn	01 37 29.5	+0.2
JOU				*e*S	Sb	01 37 45.2	0.0
MAT	**Matsushiro**	**2.38**	**254**	P	Pn	01 37 48.2	+2.3
MAT				S	Sb	01 38 18.8	-1.2

*ISCJB **26** 01:38:23.0±0.5, 39°.12N±0°.03×29°.12E±0°.03, h2km±6km, Error ellipse: s-maj=4.9km s-min=3.9km az=12.7*
*DDA **26** 01:38:22.6, 39°.11N×29°.11E, h13km, Ml2.8*
*ISK **26** 01:38:22.9, 39°.14N×29°.11E, h4km, MD2.9*
*CSEM **26** 01:38:23.2±0.1, 39°.12N×29°.12E, h2km, ML2.8, Error ellipse: s-maj=2.8km s-min=2.6km az=87.0*
ISC 26 01:38:23.3±1.1, 39°.13N±0°.02×29°.11E±0°.02, h4km±12km, n49, σ0§42/64, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.30**	**98**	P	**Pg**	**01 38 29.3**	**+0.2**
GDZ				S	**Sg**	**01 38 32.9**	**-0.1**
GDZ	**Gediz**	**0.30**	**98**	*i* P	**Pg**	**01 38 29.3**	**+0.2**
GDZ				*i* S	**Sg**	**01 38 32.9**	**-0.1**
DEMI	**Demirci**	**0.32**	**254**	P	**Pg**	**01 38 29.5**	**0.0**
DEMI				S	**Sg**	**01 38 34.0**	**+0.4**
DEMI	**Demirci**	**0.32**	**254**	*i* P	**Pg**	**01 38 29.5**	**0.0**
DEMI				*i* S	**Sg**	**01 38 34.0**	**+0.4**
TVSB	**Tavsanli**	**0.42**	**41**	*e*PG	**Pg**	**01 38 31.5**	**0.0**
TVSB				*e*SG	**Sg**	**01 38 37.4**	**+0.4**
TVSB	**Tavsanli**	**0.42**	**41**	*e*Pg	**Pg**	**01 38 31.5**	**0.0**
TVSB				*e*Sg	**Sg**	**01 38 37.4**	**+0.4**
DURS	**Dursunbey**	**0.68**	**314**	P	**Pg**	**01 38 36.0**	**-0.3**
DURS				S	**Sb**	**01 38 47.8**	**+0.2**
DURS	**Dursunbey**	**0.68**	**314**	*i* P	**Pg**	**01 38 36.0**	**-0.3**
DURS				*i* S	**Sb**	**01 38 47.8**	**+0.2**
KULA	**Kula-Manisa**	**0.71**	**209**	*e*PG	**Pg**	**01 38 36.5**	**-0.4**
KULA	**Kula-Manisa**	**0.71**	**209**	*e*Pg	**Pg**	**01 38 36.5**	**-0.4**
KHAL	**Karahalli**	**0.82**	**158**	P	**Pg**	**01 38 38.7**	**-0.3**
KHAL				S	**Sg**	**01 38 49.0**	**-0.6**
KHAL	**Karahalli**	**0.82**	**158**	*i* P	**Pg**	**01 38 38.7**	**-0.3**
KHAL				*i* S	**Sg**	**01 38 49.0**	**-0.6**
KHL	**Karahalli**	**0.87**	**158**	*e*PG	**Pg**	**01 38 40.3**	**+0.3**
KHL	**Karahalli**	**0.87**	**158**	*e*Pg	**Pg**	**01 38 40.3**	**+0.3**
BALB	**Balikesir**	**1.08**	**298**	*e*PG	**Pg**	**01 38 43.6**	**-0.4**
BALB				*e*SG	**Sb**	**01 38 59.2**	**+0.3**
BALB	**Balikesir**	**1.08**	**298**	*e*Pg	**Pg**	**01 38 43.6**	**-0.4**
BALB				*e*Sg	**Sb**	**01 38 59.2**	**+0.3**
IGD	**Bursa**	**1.13**	**4**	*i* P	**Pg**	**01 38 44.1**	**-1.0**
IGD				*i* S	**Sg**	**01 39 00.1**	**+0.4**
CAVI	**Cavuskoy**	**1.21**	**28**	*e*PN	**Pg**	**01 38 45.9**	**-0.6**
CAVI	**Cavuskoy**	**1.21**	**28**	*e*Pn	**Pg**	**01 38 45.9**	**-0.6**
MDNY	**Mudanya-Bursa**	**1.25**	**352**	*e*PN	**Pn**	**01 38 47.7**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.25**	**352**	*e*Pn	**Pn**	**01 38 47.7**	**+0.2**
KCTX	**Karacabey (Bur**	**1.27**	**333**	*e*PN	**Pg**	**01 38 47.5**	**-0.2**
KCTX	**Karacabey (Bur**	**1.27**	**333**	*e*Pn	**Pg**	**01 38 47.5**	**-0.2**
BORA	**Eskisehir**	**1.28**	**54**	P	**Pg**	**01 38 47.8**	**-0.1**
BORA				S	**Sg**	**01 39 04.6**	**0.0**
BORA	**Eskisehir**	**1.28**	**54**	*i* P	**Pg**	**01 38 47.8**	**-0.1**
BORA				*i* S	**Sg**	**01 39 04.6**	**0.0**
GEMT	**Gemlik**	**1.30**	**3**	*e*PN	**Pg**	**01 38 48.2**	**-0.1**
GEMT	**Gemlik**	**1.30**	**3**	*e*Pn	**Pg**	**01 38 48.2**	**-0.1**
ADVT	**Abdulvahap**	**1.39**	**20**	*e*PN	**Pn**	**01 38 49.0**	**-0.4**
ADVT	**Abdulvahap**	**1.39**	**20**	*e*Pn	**Pn**	**01 38 49.1**	**-0.4**
GONE	**Gonen-Balikesi**	**1.43**	**310**	*e*PN	**Pg**	**01 38 50.7**	**0.0**
GONE	**Gonen-Balikesi**	**1.43**	**310**	*e*Pn	**Pg**	**01 38 50.7**	**0.0**
ARMT	**Armutlu**	**1.44**	**353**	*e*PN	**Pn**	**01 38 50.3**	**0.0**
ARMT	**Armutlu**	**1.44**	**353**	*e*Pn	**Pn**	**01 38 50.3**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**1.52**	**219**	*e*PN	**Pb**	**01 38 52.0**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**1.52**	**219**	*e*Pn	**Pb**	**01 38 52.0**	**-0.1**
EDC	**Edincik**	**1.54**	**322**	*e*PN	**Pn**	**01 38 52.0**	**+0.3**
EDC	**Edincik**	**1.54**	**322**	*e*Pn	**Pn**	**01 38 52.0**	**+0.3**
GULT	**Gulveren**	**1.69**	**39**	*e*PN	**Pn**	**01 38 54.2**	**+0.4**
GULT	**Gulveren**	**1.69**	**39**	*e*Pn	**Pn**	**01 38 54.2**	**+0.4**
MRMT	**Marmara Adasi**	**1.87**	**322**	*e*PN	**Pb**	**01 38 57.5**	**-0.7**
MRMT	**Marmara Adasi**	**1.87**	**322**	*e*Pn	**Pb**	**01 38 57.5**	**-0.7**
ISK	**Istanbul-Kandi**	**1.93**	**359**	*e*PN	**Pn**	**01 38 57.0**	**+0.1**
ISK	**Istanbul-Kandi**	**1.93**	**359**	*e*Pn	**Pn**	**01 38 57.1**	**+0.1**
SILT	**Sile**	**2.06**	**11**	*e*PN	**Pn**	**01 38 59.6**	**+0.9**
SILT	**Sile**	**2.06**	**11**	*e*Pn	**Pn**	**01 38 59.6**	**+0.9**
KLYT	**Kilyos**	**2.12**	**359**	*e*PN	**Pn**	**01 39 00.0**	**+0.5**
KLYT	**Kilyos**	**2.12**	**359**	*e*Pn	**Pn**	**01 39 00.0**	**+0.5**
CTKS	**Kestanelik-??a**	**2.15**	**348**	*e*PN	**Pn**	**01 39 00.8**	**+0.8**
CTKS	**Kestanelik-??a**	**2.15**	**348**	*e*Pn	**Pn**	**01 39 00.8**	**+0.8**

*NIED **26** 01:43:00, 38°.80N×142°.20E, h80km, Mw3.7 Best double couple: M≈4.61000×10^14 NP1:φs=201.00000°, δ22.00000°, λ14.00000°. NP2:φs=98.00000°, δ85.00000°, λ112.00000°.*
*IDC **26** 01:43:48.4±1.3, 38°.98N×143°.12E, h0km, mb3.3/4, mb1 3.5/5, mb1mx3.3/27, mbtmp3.3/5, ML3.2/1, Error ellipse: s-maj=32.6km s-min=27.9km az=113.0*
*JMA **26** 01:43:58.6±0.1, 38°.84N×142°.16E, h42km±1km, M3.5*
JMA Felt I J1.
ISC 26 01:43:55.8±2.3, 38°.85N±0°.06×142°.3E±0°.1, h25km±14km, n15, σ1§68/20, mb3.4/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.55**	**294**	P	**Pn**	**01 44 09.0**	**+0.9**
OFUJ				S	**Sn**	**01 44 16.0**	**-0.5**
JIO	**Ouri**	**0.85**	**242**	P	**Pn**	**01 44 12.5**	**+0.3**
JIO				*e*S	**Sb**	**01 44 21.7**	**-1.3**
JMK	**Ichinoseki**	**0.86**	**277**	P	**Pn**	**01 44 12.7**	**+0.4**
JMK				S	**Sb**	**01 44 22.6**	**-0.6**
JOM	**Ohasama**	**1.01**	**308**	P	**Pb**	**01 44 15.5**	**+0.9**
JOM				*e*S	**Sb**	**01 44 27.5**	**+0.1**
JOU	**Okura**	**1.38**	**250**	P	**Pb**	**01 44 20.4**	**-0.6**
JRG	**Rokugo**	**1.42**	**293**	P	**Pb**	**01 44 20.8**	**-0.7**
JYK	**Kaneyama**	**1.53**	**273**	P	**Pn**	**01 44 22.1**	**+0.6**
JMM	**Marumori**	**1.55**	**231**	P	**Pn**	**01 44 22.3**	**+0.5**
JMM				*e*S	**Sn**	**01 44 40.3**	**-0.8**
JANG	**Nango**	**1.64**	**338**	P	**Pb**	**01 44 24.9**	**-0.4**
MJAR	**Matsushiro Arr**	**3.99**	**236**	Pn	**Pn**	**01 44 59.5**	**+4.1**
	1.2nm,0.3s,baz=43,slow=10,SNR=6.3						
MAT	**Matsushiro**	**3.99**	**236**	P	**Pn**	**01 44 59.4**	**+4.0**
MAT				*e*S	**Sn**	**01 45 42.0**	**+0.6**
SONM	**Songino Array**	**27.41**	**301**	P	**P**	**01 49 39.2**	**-0.2**
	0.3nm,0.5s,baz=98,slow=11,SNR=2.4						
MKAR	**Makanchi Array**	**43.78**	**301**	P	**P**	**01 52 00.2**	**+0.9**
	0.3nm,0.4s,baz=85,slow=11,SNR=3.1						
WRA	**Warramunga Arr**	**58.96**	**189**	P	**P**	**01 53 50.9**	**-2.2**
	0.4nm,0.9s,baz=1.8,slow=6.6,SNR=2.8						
YKA	**Yellowknife Ar**	**61.88**	**31**	P	P	01 54 06.1	-6.5
	0.2nm,0.9s,baz=295,slow=11,SNR=2.9						

*ISK **26** 01:47:19.9, 39°.08N×29°.16E, h5km, MD2.5*
*ISCJB **26** 01:47:20.3±0.5, 39°.11N±0°.03×29°.09E±0°.03, h2km±7km, Error ellipse: s-maj=5.1km s-min=4.3km az=167.5*
*CSEM **26** 01:47:20.5±0.1, 39°.11N×29°.10E, h2km, ML2.7, Error ellipse: s-maj=1.6km s-min=1.4km az=121.0*
*DDA **26** 01:47:20.0, 39°.11N×29°.09E, h9km, Ml2.7*
ISC 26 01:47:20.8±1.0, 39°.12N±0°.02×29°.10E±0°.02, h5km±13km, n33, σ0§42/48, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.30**	**96**	P	**Pg**	**01 47 26.7**	**0.0**
GDZ				S	**Sg**	**01 47 31.0**	**+0.3**
GDZ	**Gediz**	**0.30**	**96**	*i* P	**Pg**	**01 47 26.7**	**0.0**
GDZ				*i* S	**Sg**	**01 47 31.0**	**+0.3**
DEMI	**Demirci**	**0.31**	**256**	P	**Pg**	**01 47 26.8**	**0.0**
DEMI				S	**Sg**	**01 47 31.1**	**+0.3**
DEMI	**Demirci**	**0.31**	**256**	*i* P	**Pg**	**01 47 26.8**	**0.0**
DEMI				*i* S	**Sg**	**01 47 31.1**	**+0.3**
TVSB	**Tavsanli**	**0.43**	**41**	*e*PG	**Pg**	**01 47 29.1**	**-0.1**
TVSB				*e*SG	**Sg**	**01 47 34.9**	**0.0**
TVSB	**Tavsanli**	**0.43**	**41**	*e*Pg	**Pg**	**01 47 29.1**	**-0.1**
TVSB				*e*Sg	**Sg**	**01 47 34.9**	**0.0**
DURS	**Dursunbey**	**0.68**	**315**	P	**Pg**	**01 47 33.6**	**-0.3**
DURS				S	**Sg**	**01 47 42.8**	**0.0**
DURS	**Dursunbey**	**0.68**	**315**	*i* P	**Pg**	**01 47 33.6**	**-0.3**
DURS				*i* S	**Sg**	**01 47 42.8**	**0.0**
KULA	**Kula-Manisa**	**0.69**	**210**	*e*PG	**Pg**	**01 47 33.7**	**-0.5**
KULA				*e*SG	**Sg**	**01 47 42.8**	**-0.4**
KULA	**Kula-Manisa**	**0.69**	**210**	*e*Pg	**Pg**	**01 47 33.7**	**-0.5**
KULA				*e*Sg	**Sg**	**01 47 42.8**	**-0.4**
KHAL	**Karahalli**	**0.81**	**157**	P	**Pg**	**01 47 36.1**	**-0.2**
KHAL				S	**Sg**	**01 47 46.2**	**-0.6**
KHAL	**Karahalli**	**0.81**	**157**	*i* P	**Pg**	**01 47 36.1**	**-0.2**
KHAL				*i* S	**Sg**	**01 47 46.2**	**-0.6**
BALB	**Balikesir**	**1.08**	**299**	*e*PN	**Pb**	**01 47 42.1**	**+0.1**
BALB	**Balikesir**	**1.08**	**299**	*e*Pn	**Pb**	**01 47 42.1**	**+0.1**
IGD	**Bursa**	**1.15**	**4**	*i* P	**Pg**	**01 47 41.4**	**-1.4**
IGD				*i* S	**Sg**	**01 47 56.7**	**-0.9**
CAVI	**Cavuskoy**	**1.22**	**28**	*e*PN	**Pg**	**01 47 44.4**	**+0.1**
CAVI	**Cavuskoy**	**1.22**	**28**	*e*Pn	**Pg**	**01 47 44.4**	**+0.1**
IZI	**Iznik**	**1.25**	**13**	*e*PN	**Pb**	**01 47 45.2**	**+0.3**
IZI	**Iznik**	**1.25**	**13**	*e*Pn	**Pb**	**01 47 45.2**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.26**	**353**	*e*PN	**Pb**	**01 47 45.2**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.26**	**353**	*e*Pn	**Pb**	**01 47 45.2**	**+0.2**
KCTX	**Karacabey (Bur**	**1.28**	**334**	*e*PN	**Pn**	**01 47

FROS	**Frosini**	**0.88**	**224**	Pg	**Pb**	**01 51 59.5**	**+0.3**
	65nm,0.6s						
FROS	**Frosini**	**0.88**	**224**	Pg	**Pb**	**01 51 59.5**	**+0.3**
	65nm,0.6s						
POPM	**Popiglio**	**0.91**	**283**	P	**Pg**	**01 51 59.4**	**-0.1**
MGAB	**Montegabbione**	**0.94**	**175**	Pg	**Pg**	**01 51 59.9**	**-0.2**
	85nm,0.6s						
MGAB	**Montegabbione**	**0.94**	**175**	Pg	**Pg**	**01 51 59.9**	**-0.2**
	85nm,0.6s						
MAIM	**Mastiano**	**1.08**	**274**	P	**Pb**	**01 52 01.6**	**-1.1**
MAIM				S	**Sb**	**01 52 14.8**	**-2.0**
SARO	**Sassorosso**	**1.19**	**287**	P	**Pb**	**01 52 03.5**	**-1.1**
SARO				S	**Sb**	**01 52 17.8**	**-2.2**
MARN	**Marana (Italy)**	**1.87**	**343**	*e*Pg	**Pn**	**01 52 14.8**	**+1.0**
MARN	**Marana (Italy)**	**1.87**	**343**	*e*Pg	**Pn**	**01 52 14.8**	**+0.9**
CGRP	**Cima Grappa**	**2.03**	**356**	*e*Pg	**Pn**	**01 52 15.7**	**-0.5**
CGRP				*e*Sg	**Sn**	**01 52 42.1**	**+0.5**
DDS	**Dosso del Somm**	**2.11**	**345**	*e*Pn	**Pb**	**01 52 19.7**	**-0.5**
DDS	**Dosso del Somm**	**2.11**	**345**	*e*Pn	**Pb**	**01 52 19.7**	**-0.5**
NVLJ	**Novalja**	**2.19**	**70**	*e*Pn	**Pn**	**01 52 16.8**	**-1.4**
NVLJ				Sn	**Sn**	**01 52 46.2**	**+1.0**
NVLJ	**Novalja**	**2.19**	**70**	*e*Pn	**Pn**	**01 52 16.7**	**-1.5**
NVLJ				Sn	**Sn**	**01 52 46.1**	**+0.9**
ZOU	**Zoufplan**	**2.79**	**14**	*e*Pn	**Pn**	**01 52 26.4**	**-0.3**
UDBI	**Udbina**	**2.80**	**75**	*e*Pn	**Pn**	**01 52 26.8**	**+0.1**
UDBI	**Udbina**	**2.80**	**75**	*e*Pn	**Pn**	**01 52 26.7**	**+0.1**
ABTA	**Abfaltersbach**	**2.92**	**7**	*i* Pn	**Pn**	**01 52 28.9**	**+0.6**
	1.8nm,0.6s						
ABTA				*i* Sn	**Sn**	**01 53 04.7**	**+1.3**
	5.3nm,0.7s						
ABTA	**Abfaltersbach**	**2.92**	**7**	Pn	**Pn**	**01 52 28.9**	**+0.6**
	1.8nm,0.6s						
ABTA				Sn	**Sn**	**01 53 04.7**	**+1.3**
	5.3nm,0.7s						
OBKA	**Obir**	**3.21**	**33**	Pg	**Pg**	**01 52 44.5**	**+1.0**
	1.6nm,0.5s						
OBKA				*i* Sg	**Sg**	**01 53 24.6**	**-0.5**
	10nm,0.7s						
OBKA	**Obir**	**3.21**	**33**	Pg	**Pg**	**01 52 44.5**	**+1.0**
	1.6nm,0.5s						
OBKA				Sg	**Sg**	**01 53 24.6**	**-0.5**
	10nm,0.7s						

CSEM ***26*** *01:52:17.1, 43°.87N×12°.02E, h8km, ML2.1/16*
ROM 26 01:52:17.1±0.1, 43°.87N×12°.02E, h8km±1km, Ml2.1/16, Error ellipse: s-maj=2.5km s-min=1.1km az=35.0, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFI	**Santa Sofia**	**0.13**	**287**	Pg	Pg	01 52 20.1	+0.1
SFI				Sg	Sg	01 52 22.6	+0.7
	862nm,0.4s						
SFI	**Santa Sofia**	**0.13**	**287**	Pg	Pg	01 52 20.1	+0.1
SFI				Sg	Sg	01 52 22.6	+0.7
	862nm,0.4s						
ASQU	**Asqua**	**0.18**	**247**	Pg	Pg	01 52 21.4	+0.6
ASQU				Sg	Sg	01 52 24.7	+1.4
	724nm,0.4s						
ASQU	**Asqua**	**0.18**	**247**	Pg	Pg	01 52 21.4	+0.6
ASQU				Sg	Sg	01 52 24.7	+1.4
	724nm,0.4s						
CPGN	**Carpegna, Ital**	**0.23**	**106**	Pg	Pg	01 52 23.1	+1.4
	342nm,0.8s						
CPGN	**Carpegna, Ital**	**0.23**	**106**	Pg	Pg	01 52 23.1	+1.4
	342nm,0.8s						
PARC	**Parchiule**	**0.27**	**144**	Pg	Pg	01 52 23.1	+0.6
PARC				Sg	Sb	01 52 28.2	-0.8
	305nm,0.6s						
PARC	**Parchiule**	**0.27**	**144**	Pg	Pg	01 52 23.1	+0.6
PARC				Sg	Sb	01 52 28.2	-0.8
	305nm,0.6s						
BADI	**Badiali**	**0.39**	**155**	Pg	Pg	01 52 25.2	+0.4
BADI				Sg	Sb	01 52 32.2	-0.3
	233nm,0.4s						
BADI	**Badiali**	**0.39**	**155**	Pg	Pg	01 52 25.2	+0.4
BADI				Sg	Sb	01 52 32.2	-0.3
	233nm,0.4s						
PIEI	**Pieia**	**0.50**	**131**	Pg	Pg	01 52 27.0	+0.2
	61nm,0.7s						
PIEI	**Pieia**	**0.50**	**131**	Pg	Pg	01 52 27.0	+0.2
	61nm,0.7s						
ATPC	**Poggio Castell**	**0.50**	**140**	Pg	Pg	01 52 27.3	+0.5
	132nm,0.4s						
ATPC	**Poggio Castell**	**0.50**	**140**	Pg	Pg	01 52 27.3	+0.5
	132nm,0.4s						
SEI	**Scarperia**	**0.51**	**292**	Pg	Pg	01 52 27.1	+0.1
SEI				Sg	Sb	01 52 35.7	-0.4
	825nm,0.4s						
SEI	**Scarperia**	**0.51**	**292**	Pg	Pg	01 52 27.1	+0.1
SEI				Sg	Sb	01 52 35.7	-0.4
	825nm,0.4s						
IMOL	**Imola, Italy**	**0.53**	**338**	Pg	Pb	01 52 28.7	0.0
	33nm,0.4s						
IMOL	**Imola, Italy**	**0.53**	**338**	Pg	Pb	01 52 28.7	0.0
	33nm,0.4s						
CAFI	**Castiglion Fio**	**0.54**	**184**	Pg	Pg	01 52 28.0	+0.5
	64nm,0.3s						
CAFI	**Castiglion Fio**	**0.54**	**184**	Pg	Pg	01 52 28.0	+0.5
	64nm,0.3s						
ATVO	**AVT- Monte Val**	**0.56**	**150**	Pg	Pg	01 52 28.4	+0.5
	97nm,0.4s						
ATVO	**AVT- Monte Val**	**0.56**	**150**	Pg	Pg	01 52 28.4	+0.5
	97nm,0.4s						
FSSB	**Fossombrone**	**0.58**	**107**	Pg	Pg	01 52 28.6	+0.4
	103nm,0.3s						
FSSB	**Fossombrone**	**0.58**	**107**	Pg	Pg	01 52 28.6	+0.4
	103nm,0.3s						
FRON	**Frontone**	**0.62**	**124**	Pg	Pg	01 52 29.3	+0.2
	45nm,0.6s						
FRON	**Frontone**	**0.62**	**124**	Pg	Pg	01 52 29.3	+0.2
	45nm,0.6s						
MTRZ	**Monterenzio**	**0.65**	**322**	Pg	Pb	01 52 30.4	-0.3
	133nm,0.4s						
MTRZ	**Monterenzio**	**0.65**	**322**	Pg	Pb	01 52 30.4	-0.3
	133nm,0.4s						
SSFR	**Montelago di S**	**0.70**	**127**	Pg	Pg	01 52 30.7	+0.1
	56nm,0.2s						
SSFR	**Montelago di S**	**0.70**	**127**	Pg	Pg	01 52 30.7	+0.1
	56nm,0.2s						
ATTE	**AVT- Monte Tez**	**0.71**	**160**	Pg	Pb	01 52 31.6	-0.2
	91nm,0.4s						
ATTE	**AVT- Monte Tez**	**0.71**	**160**	Pg	Pb	01 52 31.6	-0.2
	91nm,0.4s						
FNVD	**Fontana Vidola**	**0.71**	**295**	Pg	Pg	01 52 31.2	+0.4
FNVD	**Fontana Vidola**	**0.71**	**295**	Pg	Pg	01 52 31.2	+0.4
FROS	**Frosini**	**0.91**	**224**	Pg	Pb	01 52 35.3	+0.2
	65nm,0.6s						
FROS	**Frosini**	**0.91**	**224**	Pg	Pb	01 52 35.3	+0.2
	65nm,0.6s						

ISCJB ***26*** *01:53:48.6±0.5, 39°.11N±0°.04×29°.02E±0°.04, h9km, Error ellipse: s-maj=5.4km s-min=4.4km az=145.5*
CSEM ***26*** *01:53:48.6±0.1, 39°.12N×29°.01E, h5km, ML2.6, Error ellipse: s-maj=2.9km s-min=2.3km az=105.0*
ISK ***26*** *01:53:48.0, 39°.11N×29°.04E, h5km, MD2.5*
DDA ***26*** *01:53:48.1, 39°.09N×29°.02E, h7km, Ml2.6*
ISC 26 01:53:48.6±0.9, 39°.12N±0°.03×29°.02E±0°.03, h9km, n23, σ0°31/31, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**253**	P	**Pg**	**01 53 53.6**	**0.0**
DEMI				S	**Sg**	**01 53 57.0**	**0.0**
DEMI	**Demirci**	**0.24**	**253**	*i* P	**Pg**	**01 53 53.6**	**0.0**
DEMI				*i* S	**Sg**	**01 53 57.0**	**0.0**
GDZ	**Gediz**	**0.36**	**94**	P	**Pg**	**01 53 55.6**	**-0.2**
GDZ				S	**Sg**	**01 54 00.8**	**+0.1**
GDZ	**Gediz**	**0.36**	**94**	*i* P	**Pg**	**01 53 55.6**	**-0.2**
GDZ				*i* S	**Sg**	**01 54 00.8**	**+0.1**
TVSB	**Tavsanli**	**0.48**	**46**	*e*PG	**Pg**	**01 53 57.8**	**-0.2**
TVSB				*e*SG	**Sg**	**01 54 04.2**	**-0.1**
TVSB	**Tavsanli**	**0.48**	**46**	*e*Pg	**Pg**	**01 53 57.8**	**-0.2**
TVSB				*e*Sg	**Sg**	**01 54 04.2**	**-0.1**
KULA	**Kula-Manisa**	**0.66**	**205**	*e*PG	**Pg**	**01 54 01.1**	**-0.4**
KULA	**Kula-Manisa**	**0.66**	**205**	*e*Pg	**Pg**	**01 54 01.1**	**-0.4**
KHAL	**Karahalli**	**0.83**	**153**	P	**Pb**	**01 54 05.5**	**+0.2**
KHAL				S	**Sg**	**01 54 15.3**	**-0.2**
KHAL	**Karahalli**	**0.83**	**153**	*i* P	**Pb**	**01 54 05.5**	**+0.2**
KHAL				*i* S	**Sg**	**01 54 15.3**	**-0.2**
IGD	**Bursa**	**1.16**	**7**	*i* P	**Pb**	**01 54 09.8**	**-1.0**
KCTX	**Karacabey (Bur**	**1.25**	**336**	*e*PN	**Pn**	**01 54 12.5**	**+0.1**
KCTX	**Karacabey (Bur**	**1.25**	**336**	*e*Pn	**Pn**	**01 54 12.5**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.25**	**355**	*e*PN	**Pn**	**01 54 12.5**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.25**	**355**	*e*Pn	**Pn**	**01 54 12.5**	**+0.1**
CAVI	**Cavuskoy**	**1.26**	**30**	*e*PN	**Pg**	**01 54 13.0**	**+0.2**
CAVI	**Cavuskoy**	**1.26**	**30**	*e*Pn	**Pg**	**01 54 13.0**	**+0.2**
ADVT	**Abdulvahap**	**1.43**	**23**	*e*PN	**Pb**	**01 54 15.2**	**-0.2**
ADVT	**Abdulvahap**	**1.43**	**23**	*e*Pn	**Pb**	**01 54 15.2**	**-0.2**
ARMT	**Armutlu**	**1.45**	**355**	*e*PN	**Pb**	**01 54 16.1**	**+0.2**
ARMT	**Armutlu**	**1.45**	**355**	*e*Pn	**Pb**	**01 54 16.1**	**+0.2**
GULT	**Gulveren**	**1.75**	**41**	*e*PN	**Pn**	**01 54 19.8**	**+0.5**
GULT	**Gulveren**	**1.75**	**41**	*e*Pn	**Pn**	**01 54 19.8**	**+0.5**

ISCJB ***26*** *01:58:30.5±0.8, 36°.46N±0°.07×142°.1E±0°.1, h26km, mb3.5/8, MS3.1/2, Error ellipse: s-maj=14.1km s-min=8.7km az=24.8*
IDC ***26*** *01:58:37.9±2.5, 36°.42N×141°.73E, h78km±24km, mb3.2/8, mb1 3.5/11, mb1mx3.3/52, mbtmp3.6/11, MS2.9/5, Ms1 2.9/5, ms1mx2.6/25, Error ellipse: s-maj=24.8km s-min=15.1km az=84.0*
ISC 26 01:58:32.3±0.8, 36°.52N±0°.09×142°.02E±0°.09, h26km, n20, σ1°28/13, mb3.5/8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**3.06**	**272**	P	**Pn**	**01 59 20.6**	**+1.5**
	8.6nm,0.3s,baz=103,slow=9.6,SNR=42						
MJAR				LR	LR	02 00 48.8	
	comp=Z,114nm,19.6s,baz=115,slow=47						
MAT	**Matsushiro**	**3.07**	**272**	P	**Pn**	**01 59 20.7**	**+1.6**
MAT				S	**Sb**	**02 00 03.4**	**+0.2**
JHJ	**Hachijo jima 2**	**3.86**	**209**	P	**Pn**	**01 59 31.1**	**+1.1**
	11nm,0.3s,baz=319,slow=23,SNR=4.8						
JHJ				S	**Sn**	**02 00 14.4**	**0.0**
	46nm,0.3s,baz=302,slow=22,SNR=8.6						
USRK	**Ussuriysk Ar.**	**10.82**	**318**	P	Pn	02 01 10.4	+4.9
	0.2nm,0.3s,baz=120,slow=12,SNR=5.8						
KSRS	**Korea Array**	**11.31**	**279**	LR	LR	02 05 37.1	
	comp=Z,62nm,18.3s,baz=87,slow=38						
KLR	**Kul'dur**	**14.74**	**333**	LR	LR	02 07 07.1	
	comp=Z,37nm,19.3s,baz=130,slow=34						
H11N2	**WAKE ISLAND Hy**	**27.47**	**121**	T	T	02 33 44.0	
	baz=313,slow=75,SNR=12						
H11N1	**WAKE ISLAND Hy**	**27.48**	**121**	T	T	02 33 54.0	
	baz=313,slow=75,SNR=8.3						
H11N3	**WAKE ISLAND Hy**	**27.49**	**121**	T	T	02 33 51.2	
	baz=313,slow=75,SNR=8.7						
SONM	**Songino Array**	**28.47**	**305**	P	**P**	**02 04 24.6**	**-0.6**
	1.3nm,0.7s,baz=107,slow=10,SNR=7.7						
TLY	**Talaya**	**31.03**	**311**	LR	LR	02 16 23.0	
	comp=Z,23nm,18.9s,baz=96,slow=34						
MKAR	**Makanchi Array**	**44.80**	**303**	P	**P**	**02 06 42.3**	**-1.5**
	0.2nm,0.4s,baz=228,slow=48,SNR=2.6						
KURBB	**Kurchatov Arra**	**46.70**	**308**	P	**P**	**02 06 56.9**	**-1.8**
	0.9nm,0.7s,baz=83,slow=7.9,SNR=7.2						
ILAR	**Eielson Array**	**49.67**	**32**	P	**P**	**02 07 23.1**	**+1.6**
	0.2nm,0.6s,baz=256,slow=6.6,SNR=5.6						
AAK	**Ala-Archa**	**51.16**	**299**	LR	LR	02 29 44.6	
	comp=Z,36nm,18.1s,baz=64,slow=37						
WRA	**Warramunga Arr**	**56.62**	**189**	P	**P**	**02 08 12.5**	**-0.6**
	1.0nm,1.0s,baz=4.8,slow=7.4,SNR=2.6						
YKA	**Yellowknife Ar**	**64.01**	**30**	P	**P**	**02 09 04.1**	**+0.9**
	0.1nm,0.4s,baz=128,slow=46,SNR=3.1						
AKASG	**Malin Array Be**	**75.00**	**323**	P	**P**	**02 10 10.6**	**-0.6**
	0.3nm,0.3s,baz=42,slow=1.6,SNR=4.2						
TXAR	**Lajitas Array**	**90.05**	**53**	P	**P**	**02 11 29.6**	**-0.5**
	0.1nm,0.6s,baz=310,slow=5.3,SNR=2.5						
H06N1	**SOCORRO T-PHAS**	**91.87**	**65**	T	T	03 56 06.7	
	SNR=9.3						

ISK ***26*** *02:03:37.7, 39°.10N×29°.03E, h5km, MD2.8*
DDA ***26*** *02:03:38.4, 39°.13N×29°.03E, h7km, Md2.7*
CSEM ***26*** *02:03:38.4±0.1, 39°.12N×29°.02E, h5km, MD2.7, Error ellipse: s-maj=2.2km s-min=1.8km az=142.0*
ISC 26 02:03:38.5±1.0, 39°.12N±0°.02×29°.02E±0°.02, h8km±9km, n45, σ0°46/62, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**252**	P	**Pg**	**02 03 43.7**	**+0.2**
DEMI				S	**Sg**	**02 03 47.0**	**+0.1**
DEMI	**Demirci**	**0.25**	**252**	*i* P	**Pg**	**02 03 43.7**	**+0.2**
DEMI				*i* S	**Sg**	**02 03 47.0**	**+0.1**
GDZ	**Gediz**	**0.36**	**95**	P	**Pg**	**02 03 45.5**	**0.0**
GDZ				S	**Sg**	**02 03 51.0**	**+0.7**
GDZ	**Gediz**	**0.36**	**95**	*i* P	**Pg**	**02 03 45.5**	**0.0**
GDZ				*i* S	**Sg**	**02 03 51.0**	**+0.7**
TVSB	**Tavsanli**	**0.47**	**46**	*e*PG	**Pg**	**02 03 47.6**	**-0.1**
TVSB				*e*SG	**Sg**	**02 03 53.8**	**-0.1**
TVSB	**Tavsanli**	**0.47**	**46**	*e*Pg	**Pg**	**02 03 47.6**	**-0.1**
TVSB				*e*Sg	**Sg**	**02 03 53.8**	**-0.1**
DURS	**Dursunbey**	**0.64**	**319**	P	**Pg**	**02 03 50.1**	**-0.8**
DURS	**Dursunbey**	**0.64**	**319**	*i* P	**Pg**	**02 03 50.1**	**-0.8**
KULA	**Kula-Manisa**	**0.67**	**205**	*e*PG	**Pg**	**02 03 51.1**	**-0.2**
KULA				*e*SG	**Sg**	**02 04 00.3**	**+0.2**
KULA	**Kula-Manisa**	**0.67**	**205**	*e*Pg	**Pg**	**02 03 51.1**	**-0.2**
KULA				*e*Sg	**Sg**	**02 04 00.3**	**+0.2**
KHAL	**Karahalli**	**0.83**	**154**	P	**Pb**	**02 03 55.1**	**-0.2**
KHAL				S	**Sb**	**02 04 06.1**	**-0.6**
KHAL	**Karahalli**	**0.83**	**154**	*i* P	**Pb**	**02 03 55.1**	**-0.2**
KHAL				*i* S	**Sb**	**02 04 06.1**	**-0.6**
AKHS	**Akhisar**	**0.97**	**256**	P	**Pb**	**02 03 57.3**	**-0.3**
AKHS				S	**Sb**	**02 04 10.4**	**-0.2**
AKHS	**Akhisar**	**0.97**	**256**	*i* P	**Pb**	**02 03 57.3**	**-0.3**
AKHS				*i* S	**Sb**	**02 04 10.4**	**-0.2**
AKS	**Akhisar**	**0.97**	**256**	*e*PG	**Pg**	**02 03 56.7**	**-0.4**
AKS	**Akhisar**	**0.97**	**256**	*e*Pg	**Pg**	**02 03 56.7**	**-0.4**
IGD	**Bursa**	**1.15**	**7**	*i* P	**Pg**	**02 03 59.2**	**-1.4**
IGD				*i* S	**Sn**	**02 04 16.8**	**-0.2**
BALY	**Balya**	**1.25**	**300**	P	**Pg**	**02 04 02.5**	**0.0**
BALY				S	**Sn**	**02 04 20.3**	**+0.9**
BALY	**Balya**	**1.25**	**300**	*i* P	**Pg**	**02 04 02.5**	**0.0**
BALY				*i* S	**Sn**	**02 04 20.3**	**+0.9**
CAVI	**Cavuskoy**	**1.25**	**30**	*e*PN	**Pb**	**02 04 02.3**	**-0.1**
CAVI	**Cavuskoy**	**1.25**	**30**	*e*Pn	**Pb**	**02 04 02.3**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.25**	**355**	*e*PN	**Pg**	**02 04 02.3**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.25**	**355**	*e*Pn	**Pg**	**02 04 02.3**	**-0.2**
KCTX	**Karacabey (Bur**	**1.25**	**336**	*e*PN	**Pb**	**02 04 02.2**	**-0.2**
KCTX	**Karacabey (Bur**	**1.25**	**336**	*e*Pn	**Pb**	**02 04 02.2**	**-0.2**
IZI	**Iznik**	**1.26**	**16**	*e*PN	**Pg**	**02 04 02.7**	**0.0**
IZI	**Iznik**	**1.26**	**16**	*e*Pn	**Pg**	**02 04 02.7**	**0.0**
GEMT	**Gemlik**	**1.32**	**6**	*e*PN	**Pg**	**02 04 03.7**	**-0.1**
GEMT	**Gemlik**	**1.32**	**6**	*e*Pn	**Pg**	**02 04 03.7**	**-0.1**
BORA	**Eskisehir**	**1.34**	**55**	P	**Pn**	**02 04 03.3**	**-0.4**
BORA				S	**Sn**	**02 04 22.1**	**+0.3**
BORA	**Eskisehir**	**1.34**	**55**	*i* P	**Pn**	**02 04 03.3**	**-0.4**
BORA				*i* S	**Sn**	**02 04 22.1**	**+0.3**
GONE	**Gonen-Balikesi**	**1.39**	**312**	*e*PN	**Pg**	**02 04 04.7**	**-0.4**
GONE	**Gonen-Balikesi**	**1.39**	**312**	*e*Pn	**Pg**	**02 04 04.7**	**-0.4**
ADVT	**Abdulvahap**	**1.42**	**23**	*e*PN	**Pb**	**02 04 05.2**	**-0.1**
ADVT	**Abdulvahap**	**1.42**	**23**	*e*Pn	**Pb**	**02 04 05.2**	**-0.1**
ARMT	**Armutlu**	**1.45**	**355**	*e*PN	**Pb**	**02 04 05.5**	**-0.3**
ARMT	**Armutlu**	**1.45**	**355**	*e*Pn	**Pb**	**02 04 05.5**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**217**	*e*PN	**Pb**	**02 04 05.6**	**-0.5**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**217**	*e*Pn	**Pb**	**02 04 05.6**	**-0.5**
EDC	**Edincik**	**1.52**	**324**	*e*PN	**Pb**	**02 04 06.4**	**-0.5**
EDC	**Edincik**	**1.52**	**324**	*e*Pn	**Pb**	**02 04 06.4**	**-0.5**
GULT	**Gulveren**	**1.74**	**41**	*e*PN	**Pn**	**02 04 09.4**	**+0.2**
GULT	**Gulveren**	**1.74**	**41**	*e*Pn	**Pn**	**02 04 09.4**	**+0.2**
CTKS	**Kestanelik-??a**	**2.15**	**350**	*e*PN	**Pn**	**02 04 15.8**	**+1.1**
CTKS	**Kestanelik-??a**	**2.15**	**350**	*e*Pn	**Pn**	**02 04 15.8**	**+1.1**

ISCJB ***26*** *02:07:11.9±0.8, 39°.13N±0°.07×29°.04E±0°.09, h9km, Error ellipse: s-maj=13.3km s-min=4.8km az=137.9*
CSEM ***26*** *02:07:11.8±0.2, 39°.16N×29°.01E, h3km±2km, MD2.5, Error ellipse: s-maj=8.8km s-min=3.7km az=128.0*
ISK ***26*** *02:07:11.6, 39°.14N×29°.05E, h7km, MD2.5*
DDA ***26*** *02:07:15.6, 38°.96N×28°.71E, h7km, Md2.2*
ISC 26 02:07:11.9±1.1, 39°.13N±0°.04×29°.03E±0°.04, h9km, n18, σ0°12/22, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**252**	P	**Pg**	**02 07 17.2**	**0.0**
DEMI				S	**Sg**	**02 07 20.7**	**0.0**
DEMI	**Demirci**	**0.26**	**252**	*i* P	**Pg**	**02 07 17.2**	**0.0**
DEMI				*i* S	**Sg**	**02 07 20.7**	**0.0**
TVSB	**Tavsanli**	**0.47**	**46**	*e*PG	**Pg**	**02 07 21.0**	**0.0**
TVSB				*e*Sg	**Sg**	**02 07 27.2**	**+0.1**
KULA	**Kula-Manisa**	**0.68**	**206**	*e*PG	**Pg**	**02 07 24.8**	**-0.2**
KULA	**Kula-Manisa**	**0.68**	**206**	*e*Pg	**Pg**	**02 07 24.8**	**-0.2**
CAVI	**Cavuskoy**	**1.24**	**30**	*e*PN	**Pn**	**02 07 35.5**	**0.0**
CAVI	**Cavuskoy**	**1.24**	**30**	*e*Pn	**Pn**	**02 07 35.5**	**0.0**
MDNY	**Mudanya-Bursa**	**1.25**	**355**	*e*PN	**Pg**	**02 07 36.0**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.25**	**355**	*e*Pn	**Pg**	**02 07 36.0**	**+0.1**
KCTX	**Karacabey (Bur**	**1.25**	**336**	*e*PN	**Pg**	**02 07 35.9**	**-0.1**
KCTX	**Karacabey (Bur**	**1.25**	**336**	*e*Pn	**Pg**	**02 07 35.9**	**-0.1**
IZI	**Iznik**	**1.26**	**16**	*e*PN	**Pn**	**02 07 35.8**	**0.0**
IZI	**Iznik**	**1.26**	**16**	*e*Pn	**Pn**	**02 07 35.8**	**0.0**
ARMT	**Armutlu**	**1.45**	**355**	*e*PN	**Pn**	**02 07 38.1**	**-0.2**
ARMT	**Armutlu**	**1.45**	**355**	*e*Pn	**Pn**	**02 07 38.1**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**1.48**	**218**	*e*PN	**Pg**	**02 07 40.5**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**1.48**	**218**	*e*Pn	**Pg**	**02 07 40.5**	**+0.2**

IDC ***26*** *02:10:26.2±0.4, 17°.78S×172°.06W, h0km, mb4.8/24, mb1 4.9/24, mb1mx4.8/33, mbtmp4.7/24, ML6.2/1, MS4.6/23, Ms1 4.6/23, ms1mx4.5/31, Error ellipse: s-maj=15.9km s-min=13.3km az=139.0*
ISCJB ***26*** *02:10:29.8±0.1, 17°.74S±0°.04×172°.11W±0°.03, h33km, mb5.1/173, MS4.7/39, Error ellipse: s-maj=6.4km s-min=3.7km az=151.9*
GCMT ***26*** *02:10:30.7±0.1, 17°.83S×171°.78W, h12km, MW5.4/116, Moment Tensor Solution. s87,c140; s116,c211; Duration: 1s2 Moment tensor: Scale 10^17 Nm; Mrr-1.08±.03; Mθθ-0.74±.03; Mφφ 1.82±.02; Mrθ-0.11±.07; Mθφ-0.26±.02; Mφr 0.50±.05; Best double couple: Mo 1.55200×10^17 NP1:φs 167.00000°, δ55.00000°, λ-100.00000°. NP2:φs 5.00000°, δ36.00000°, λ-75.00000°. Principal axes: T 1.9300, Plg10.0000°, Azm264.0000°; N -0.7590, Plg9.0000°, Azm173.0000°; P -1.1740, Plg77.0000°, Azm42.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
NEIC ***26*** *02:10:30.7±3.0, 17°.68S×172°.22W, h28km±20km, mb5.2/122 Error ellipse: s-maj=7.3km s-min=4.4km az=145.0*
BJI ***26*** *02:10:31.3, 17°.06S×171°.89W, h29km, mb5.1/39, mB5.6/37, Ms5.0/30, Ms7 4.7/28*
MOS ***26*** *02:10:32.2±1.8, 17°.54S×172°.22W, h41km, mb5.2/61, MS4.5/6, Error ellipse: s-maj=9.0km s-min=7.6km az=56.5*
ISC 26 02:10:30.6±0.6, 17°.83S±0°.05×172°.06W±0°.05, h31km±3km, h31km:pP-P, n696, σ1°34/718, mb5.2/171, MS4.7/40, 13C-36D, Tonga Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSVF	**Nonsavu**	**9.43**	**269**	*e*P	**Pn**	**02 12 43.7**	**-0.6**
MSVF	**Nonsavu**	**9.43**	**269**	*e*Pn	**Pn**	**02 12 43.7**	**-0.6**
RAR	**Rarotonga**	**12.06**	**108**	Pn	Pn	02 13 15.0	-5.4
	27nm,0.3s,baz=265,slow=7.4,SNR=33						
RAR				Sn	Sn	02 15 18.3	-16
	3.0nm,0.3s,baz=158,slow=22,SNR=3.5						
RAR				LR	LR	02 17 07.7	
	comp=Z,1μm,19.2s,baz=249,slow=33						
RAR	**Rarotonga**	**12.06**	**108**	P	Pn	02 13 15.0	-5.3
RAR				pmax	pmax		
	comp=Z,27nm,0.3s						
RAR				MLR	MLR		
	comp=Z,1μm,19.2s						
RAR	**Rarotonga**	**12.06**	**108**	*e*Pn	Pn	02 13 14.0	-6.4
RAR				*e*S	Sn	02 15 18.4	-15
RAO	**Raoul Island**	**12.57**	**204**	Pn	**Pn**	**02 13 25.0**	**-2.3**
	comp=Z,120nm,0.3s,baz=269,slow=21,SNR=4.9						
RAO				Sn	**Sn**	**02 15 39.3**	**-7.0**
	comp=Z,67nm,0.3s,baz=64,slow=22,SNR=5.6						
RAO				LR	LR	02 17 33.2	
	comp=Z,700nm,21.9s,baz=26,slow=34						
RAO	**Raoul Island**	**12.57**	**204**	P	**Pn**	**02 13 25.0**	**-2.3**
RAO				pmax	pmax		
	comp=Z,120nm,0.3s						
RAO				MLR	MLR		
	comp=Z,701nm,21.9s						
RAO	**Raoul Island**	**12.57**	**204**	*e

PMG Port Moresby 40.44 276 *ce*P **P 02 18 09.0 +2.6**
PMG pmax pmax
comp=Z,122nm,0.9s
H11S2 WAKE ISLAND Hy 41.70 329 T T 03 02 43.1
baz=149,slow=76,SNR=3.4
H11S3 WAKE ISLAND Hy 41.71 329 T T 03 02 45.5
baz=149,slow=76,SNR=4.5
H11S1 WAKE ISLAND Hy 41.72 329 T T 03 02 46.3
baz=149,slow=76,SNR=3.1
H11N3 WAKE ISLAND Hy 42.65 330 T T 03 03 54.2
baz=147,slow=74,SNR=4.0
H11N1 WAKE ISLAND Hy 42.65 330 T T 03 03 55.8
baz=147
H11N2 WAKE ISLAND Hy 42.66 330 T T 03 03 53.9
baz=147
COEN Coen 43.15 268 *e*P **P 02 18 26.9 -1.8**
comp=Z,34nm,0.9s
STKA Stephens Creek 44.00 242 P **P 02 18 34.9 -0.4**
comp=Z,33nm,1.1s,baz=80,slow=10,SNR=24
STKA LR LR 02 35 09.9
comp=Z,2µm,18.5s,baz=73,slow=34
STKA Stephens Creek 44.00 242 *e*P **P 02 18 35.3 0.0**
comp=Z,12nm,1.3s
JAY Jayapura 48.75 283 P **P 02 19 13.2 +0.3**
comp=Z,0.5nm,0.4s,baz=88,slow=23,SNR=5.2
BBOO Buckleboo 48.76 242 *e*P **P 02 19 12.2 -0.5**
comp=Z,72nm,1.3s
WB2 Warramunga Arr 50.57 259 *e*P **P 02 19 25.3 -1.4**
comp=Z,47nm,0.9s
WRAB Tennant Creek 50.58 259 *d i*P **P 02 19 25.3 -1.4**
WRAB pmax pmax
comp=Z,144nm,1.0s
WRAB Tennant Creek 50.58 259 *e*P **P 02 19 25.2 -1.5**
comp=Z,49nm,0.9s
AS01 Alice Springs 50.58 254 *e*P **P 02 19 25.1 -1.7**
WRA Warramunga Arr 50.59 259 P **P 02 19 25.2 -1.6**
comp=Z,26nm,0.7s,baz=98,slow=6.8,SNR=169
WRA LR LR 02 39 05.4
comp=Z,3µm,21.3s,baz=110,slow=34
AS31 Alice Springs 50.63 254 *e*P **P 02 19 26.5 -0.6**
comp=Z,45nm,0.8s
ASAR Alice Springs 50.63 254 P **P 02 19 26.4 -0.6**
comp=Z,134nm,0.7s,baz=93,slow=7.7,SNR=618
ASAR LR LR 02 39 54.7
comp=Z,2µm,20.0s,baz=100,slow=35
GUMO Guam 52.73 303 P **P 02 19 43.5 +0.7**
comp=Z,36nm,0.7s,baz=153,slow=16,SNR=5.6
GUMO LR LR 02 39 31.4
comp=Z,286nm,20.5s,baz=128,slow=33
SBA Scott Base 60.95 185 *e*P **P 02 20 42.7 +2.6**
SBA pmax pmax
comp=Z,157nm,1.8s
SBA Scott Base 60.95 185 *e*P **P 02 20 42.7 +2.6**
comp=Z,157nm,1.8s
VNDA Vanda 61.11 186 P **P 02 20 43.3 +2.1**
comp=Z,9.5nm,0.9s,baz=8.0,slow=6.8,SNR=56
VNDA LR LR 02 42 19.5
comp=Z,278nm,19.7s,baz=28,slow=31
VNDA Vanda 61.11 186 *e*P **P 02 20 43.3 +2.1**
comp=Z,16nm,1.0s
SOEI Soe 62.12 268 *e*P **P 02 20 50.1 +0.9**
comp=Z,287nm,1.1s
MBWA Marble Bar 63.95 255 *e*P **P 02 21 00.8 -0.4**
comp=Z,927nm,1.5s
MMRI Maumere 64.35 269 *e*P **P 02 21 03.4 -0.5**
comp=Z,473nm,1.7s
NWAO Narrogin (SRO) 64.58 242 *e*P **P 02 21 05.7 +0.6**
NWAO Narrogin (SRO) 64.58 242 *e*P **P 02 21 05.7 +0.6**
LUWI Luwuk 66.08 277 *e*P **P 02 21 14.3 -0.9**
comp=Z,226nm,1.1s
KAPI Kappang 67.73 272 P **P 02 21 26.1 +0.5**
comp=Z,4.7nm,0.3s,baz=200,slow=1.5,SNR=9.2
KAPI Kappang 67.73 272 *e*P **P 02 21 26.0 +0.4**
comp=Z,108nm,1.6s
CASY Casey 68.76 205 *e*P **P 02 21 32.1 +0.9**
comp=Z,0.3nm,0.7s
MJAR Matsushiro Arr 71.61 320 P **P 02 21 49.1 0.0**
comp=Z,5.0nm,0.7s,baz=159,slow=6.1,SNR=10
MAJO Matsushiro 71.62 320 *e*P **P 02 21 48.6 -0.5**
MAJO pmax pmax
comp=Z,5.0nm,0.6s
MAJO Matsushiro 71.62 320 *e*P **P 02 21 48.6 -0.5**
comp=Z,5.2nm,0.6s
SBC Santa Barbara 71.96 43 P **P 02 21 51.1 -0.1**
baz=233
MYLDM Lahad Datu 72.19 282 *e*P **P 02 21 56.3 +3.2**
comp=Z,91nm,1.3s
CIS Catalina Islan 72.20 45 P **P 02 21 52.5 -0.2**
baz=234
QSPA South Pole Qui 72.23 180 *e*P **P 02 21 53.5 +1.0**
comp=Z,247nm,1.5s
SAO San Andreas Ge 72.30 41 *e*P **P 02 21 54.9 +1.7**
SAO pmax pmax
comp=Z,71nm,1.6s
SAO San Andreas Ge 72.30 41 *e*P **P 02 21 54.9 +1.7**
comp=Z,71nm,1.6s
KUR Kuril'sk 72.56 332 *d i*P **P 02 21 54.8 +0.3**
KUR *e*S **S 02 31 13.3 -3.6**
KUR pmax pmax
comp=Z,224nm,3.5s
KUR MLR MLR
comp=E,241nm,21.0s
KUR MLR MLR
comp=Z,313nm,21.0s
OSI Osito Audit: C 72.72 44 P **P 02 21 56.2 +0.4**
baz=233
ARVC Arvin 72.96 43 P **P 02 21 57.5 +0.4**
baz=233
MURC Murrieta 73.14 45 P **P 02 21 58.2 -0.1**
baz=235
KMRM Mail Ridge 73.20 37 *e*P **P 02 22 01.4 +2.9**
comp=Z,141nm,1.8s
BFSC Mount Baldy Ra 73.20 45 P **P 02 21 58.7 -0.1**
baz=234
VES Vestal, Richgr 73.22 43 P **P 02 21 58.9 +0.3**
baz=233
MONP2 Monument Peak 73.27 46 P **P 02 21 59.5 +0.2**
baz=235
IKP In-Ko-Pah, Jac 73.35 47 P **P 02 21 59.9 +0.3**
baz=236
EDW2 Edwards Air Fo 73.36 44 P **P 02 21 59.8 +0.2**
baz=234,SNR=8.7
ISA Isabella, Lake 73.51 43 P **P 02 22 00.8 +0.3**
baz=233
ISA Isabella, Lake 73.51 43 *e*P **P 02 22 01.4 +0.9**
ISA pmax pmax
comp=Z,31nm,1.3s
ISA Isabella, Lake 73.51 43 *e*P **P 02 22 01.4 +0.9**
comp=Z,31nm,1.3s
PFO Pinyon Flats O 73.65 46 *e*P **P 02 22 01.5 0.0**
PFO pmax pmax
comp=Z,17nm,1.2s
PFO Pinyon Flats O 73.65 46 *e*P **P 02 22 01.5 0.0**
comp=Z,17nm,1.2s
TPFO Pinon Flats 73.65 46 P **P 02 22 01.5 0.0**
baz=235
BBRC Big Bear Solar 73.72 45 P **P 02 22 01.3 -0.6**
baz=235
SWSC Sam W. Stewart 73.73 47 P **P 02 22 01.8 +0.1**
baz=236
CMB Columbia Colle 73.75 40 *e*P **P 02 22 00.8 -1.0**
CMB pmax pmax
comp=Z,48nm,1.8s
CMB Columbia Colle 73.75 40 *e*P **P 02 22 00.8 -1.0**
comp=Z,48nm,1.8s
LRMC Laurel Mtn Rad 73.92 44 P **P 02 22 02.8 -0.2**
baz=234
AFDM Forest Hills D 73.97 39 *e*P **P 02 22 04.0 +1.0**
comp=Z,23nm,1.4s
RRX Edison Barstow 74.02 45 P **P 02 22 03.4 0.0**
baz=234
ORV Oroville 74.05 38 *e*P **P 02 22 06.2 +2.8**
ORV pmax pmax
comp=Z,47nm,2.0s
ORV Oroville 74.05 38 *e*P **P 02 22 06.2 +2.8**
comp=Z,47nm,2.0s
WDC Whiskeytown Da 74.11 37 *e*P **P 02 22 04.6 +0.8**
WDC pmax pmax
comp=Z,63nm,1.7s
WDC Whiskeytown Da 74.11 37 *e*P **P 02 22 04.6 +0.8**
comp=Z,63nm,1.7s
BELC Belle Mtn. Jos 74.19 46 P **P 02 22 04.4 -0.2**
baz=235
ASAJ Asahikawa 74.27 328 P **P 02 22 05.2 +0.5**
comp=Z,5.1nm,0.4s,baz=255,slow=17,SNR=4.0
N02D Trinity Center 74.27 37 P **P 02 22 05.0 +0.2**
baz=229
O03D Paynes Creek 74.35 38 P **P 02 22 05.1 -0.2**
baz=230
BC3 Big Chuckawall 74.37 46 P **P 02 22 05.7 +0.1**
baz=236
MPMC Manual Prospec 74.39 43 P **P 02 22 06.0 +0.3**
baz=234,SNR=10
JNU Nakatsue 74.39 313 P **P 02 22 07.2 +1.5**
comp=Z,6.5nm,0.8s,baz=75,slow=6.3,SNR=2.6
GSC Goldstone, Bar 74.39 44 P **P 02 22 05.8 +0.1**
baz=234
GSC Goldstone, Bar 74.39 44 *e*P **P 02 22 06.3 +0.6**
GSC pmax pmax
comp=Z,38nm,1.5s
GSC Goldstone, Bar 74.39 44 *e*P **P 02 22 06.3 +0.6**
comp=Z,38nm,1.5s
HEC Hector,Ludlow 74.44 45 P **P 02 22 05.7 -0.3**
baz=235
DAC Darwin (Calif) 74.45 43 *e*P **P 02 22 06.4 +0.3**
DAC pmax pmax
comp=Z,17nm,1.3s
DAC Darwin (Calif) 74.45 43 *e*P **P 02 22 06.3 +0.3**
comp=Z,16nm,1.3s
GLA Glamis 74.47 47 P **P 02 22 06.3 +0.3**
baz=236
GLA Glamis 74.47 47 *e*P **P 02 22 07.1 +1.0**
GLA pmax pmax
comp=Z,50nm,1.5s
GLA Glamis 74.47 47 *e*P **P 02 22 07.1 +1.0**
comp=Z,50nm,1.5s
M02C Callahan 74.47 36 P **P 02 22 06.4 +0.4**
baz=229
TIN Tinemaha, Big 74.50 42 P **P 02 22 06.7 +0.4**
baz=233
L02D Cave Junction, 74.56 35 P **P 02 22 07.3 +0.9**
baz=228
WAKR Walker 74.63 40 *e*P **P 02 22 08.8 +1.7**
YBH Yreka Blue Hor 74.77 36 *e*P **P 02 22 07.4 -0.3**
YBH pmax pmax
comp=Z,18nm,1.3s
YBH Yreka Blue Hor 74.77 36 *e*P **P 02 22 07.4 -0.3**
comp=Z,18nm,1.3s
IRM Iron Mountain 74.86 46 P **P 02 22 08.5 +0.2**
baz=236
GMRC Granite Mounta 74.87 45 P **P 02 22 08.5 +0.1**
baz=235
PET Petropavlovsk 74.97 342 *e*P **P 02 22 06.2 -2.2**
PET *e*S **SKiKP 02 31 36.4 +5.9**
PET pmax pmax
comp=Z,200nm,13.9s
GRAC Grapevine Rang 75.02 43 P **P 02 22 09.9 +0.7**
baz=234
FURC Furnace Creek, 75.04 43 P **P 02 22 09.4 +0.2**
baz=234
113A Mohawk Valley, 75.06 48 *e*P **P 02 22 10.0 +0.6**
TUQ Turquoise Moun 75.06 45 P **P 02 22 09.5 -0.1**
baz=235
Y12C Blythe 75.06 47 P **P 02 22 09.7 +0.2**
baz=236
Y12C Blythe 75.06 47 *e*P **P 02 22 11.0 +1.6**
comp=Z,67nm,1.8s
SHOC Shoshone, Teco 75.09 44 P **P 02 22 09.5 -0.2**
baz=235
HUMO Hull Mountain 75.22 35 *e*P **P 02 22 11.0 +0.8**
comp=Z,75nm,1.9s
NV01 Mina Array Sit 75.29 41 *e*P **P 02 22 11.0 +0.1**
NVAR Mina Array Bea 75.29 41 P **P 02 22 11.4 +0.5**
comp=Z,4.2nm,0.7s,baz=236,slow=9.8,SNR=5.9
NVAR LR LR 02 47 40.0
comp=Z,586nm,21.6s,baz=268,slow=30
M04C Macdoel 75.30 36 P **P 02 22 10.9 +0.1**
baz=229
214A Organ Pipe Nat 75.30 49 P **P 02 22 10.9 0.0**
baz=238
214A Organ Pipe Nat 75.30 49 *e*P **P 02 22 11.0 +0.1**
comp=Z,120nm,1.5s
PETK Petropavlovsk- 75.33 342 P **P 02 22 10.5 -0.1**
comp=Z,3.2nm,0.7s,baz=120,slow=8.5,SNR=3.0
PETK LR LR 02 52 22.4
comp=Z,212nm,19.2s,baz=151,slow=33
PETK Petropavlovsk- 75.33 342 P **P 02 22 10.5 -0.1**
PETK pmax pmax
comp=Z,2.0nm,0.5s
NV11 Mina Array Sit 75.38 41 *e*P **P 02 22 12.1 +0.6**
comp=Z,58nm,1.5s
NEE2 Needles Airpor 75.56 46 P **P 02 22 12.5 +0.2**
baz=236
PDMCI Parker Dam,Lak 75.63 46 P **P 02 22 12.9 +0.2**
baz=236
TPNV Topopah Spring 75.72 43 P **P 02 22 13.3 -0.1**
baz=234
SHPR Sheep Range 76.18 44 *e*P **P 02 22 16.8 +0.8**
comp=Z,49nm,1.8s
YSS Yuzh-Sakhalins 76.22 330 *e*P **P 02 22 16.1 +0.4**
YSS *e* 02 25 07.0
YSS *e*S **S 02 32 00.6 +2.8**
YSS *e*SS **SS 02 36 44.0 -8.5**
YSS pmax pmax
comp=Z,20nm,0.7s
YSS pmax pmax
comp=Z,300nm,4.0s
YSS Yuzh-Sakhalins 76.22 330 *e*P **P 02 22 15.4 -0.4**
Y14A Wickenburg 76.22 47 *e*P **P 02 22 16.9 +0.7**
W13A Hualapai Mount 76.25 46 *e*P **P 02 22 19.1 +2.6**
comp=Z,72nm,2.0s
I04A Tendick Farm, 76.30 35 P **P 02 22 16.8 +0.4**
baz=228
K05A Summer Lake 76.44 36 *e*P **P 02 22 18.1 +0.7**
comp=Z,37nm,1.4s
J05D Fort Rock, OR 76.61 36 P **P 02 22 18.5 +0.2**
baz=230
TUC Tucson 76.95 50 P **P 02 22 20.6 +0.3**
baz=239
TUC Tucson 76.95 50 *e*P **P 02 22 20.9 +0.5**
TUC pmax pmax
comp=Z,64nm,1.7s
TUC Tucson 76.95 50 *e*P **P 02 22 20.9 +0.5**
comp=Z,64nm,1.7s
R11A Troy Canyon, C 76.96 42 P **P 02 22 20.7 +0.3**
baz=235
R11A Troy Canyon, C 76.96 42 *e*P **P 02 22 20.7 +0.3**
comp=Z,41nm,1.8s
BMN Battle Mountai 77.16 40 *e*P **P 02 22 21.7 +0.2**
BMN pmax pmax
comp=Z,44nm,1.6s
BMN Battle Mountai 77.16 40 *e*P **P 02 22 21.7 +0.2**
comp=Z,44nm,1.6s
I05D Terrebonne, OR 77.24 35 P **P 02 22 21.8 +0.1**
baz=229
WVOR Wild Horse Val 77.55 38 *e*P **P 02 22 21.9 -1.7**
WVOR Wild Horse Val 77.55 38 *e*P **P 02 22 21.9 -1.7**
319A Douglas 77.58 51 *e*P **P 02 22 25.1 +1.2**
LCMT Little Creek M 77.74 44 *e*P **P 02 22 25.7 +1.0**
comp=Z,53nm,1.9s
KNB Kanab 78.02 45 *e*P **P 02 22 27.4 +1.0**
KNB pmax pmax
comp=Z,78nm,1.9s
KNB Kanab 78.02 45 *e*P **P 02 22 27.4 +1.0**
comp=Z,78nm,1.9s
PSUT Pine Spring 78.18 43 *e*P **P 02 22 28.6 +1.4**
comp=Z,74nm,0.9s
WUAZ Wupatki 78.20 47 P **P 02 22 28.1 +0.7**
baz=238
WUAZ Wupatki 78.20 47 *e*P **P 02 22 27.9 +0.5**
comp=Z,23nm,1.4s
HPIG 78.26 57 *e*P **P 02 22 28.4 +0.5**
comp=Z,82nm,1.9s
ELK Elko 78.57 40 *e*P **P 02 22 28.8 -0.6**
ELK pmax pmax
comp=Z,8.0nm,1.0s
ELK Elko 78.57 40 *e*P **P 02 22 28.8 -0.6**
comp=Z,7.7nm,1.0s
X18A Snowflake 78.69 48 *e*P **P 02 22 30.9 +0.7**
KSM Kuching 78.69 275 *e*P **P 02 22 31.5 +1.1**
comp=Z,90nm,1.3s
LEM Lembang 78.76 266 P **P** 02 22 37.0 +6.1
comp=Z,15nm,0.4s,baz=126,slow=6.7,SNR=8.6
KSRS Korea Array 78.78 315 P **P 02 22 32.1 +1.8**
comp=Z,7.3nm,1.0s,baz=122,slow=5.0,SNR=17
KSRS LR LR 02 55 32.1
comp=Z,92nm,18.6s,baz=115,slow=34
D05A Enumclaw 78.79 32 *e*P **P 02 22 31.7 +1.6**
comp=Z,55nm,1.6s
KSAR Wonju Array Be 78.80 315 P **P 02 22 32.2 +1.7**
KSAR Wonju Array Be 78.80 315 P **P 02 22 32.1 +1.7**
KS01 Wonju Array Si 78.81 315 *e*P **P 02 22 31.7 +1.2**
ZAIG Zacatecas 78.99 62 *e*P **P 02 22 33.3 +1.1**
comp=Z,28nm,1.4s
MTPU Mount Pierson 79.00 44 *e*P **P 02 22 33.6 +1.6**
comp=Z,69nm,2.0s
W18A Petrified Fore 79.14 48 P **P 02 22 33.1 +0.5**
baz=239
121A Cookes Peak, D 79.26 51 P **P 02 22 34.3 +1.0**
baz=241
121A Cookes Peak, D 79.26 51 *e*P **P 02 22 34.5 +1.2**
comp=Z,28nm,1.4s
MSU Marysvale 79.27 44 *e*P **P 02 22 34.8 +1.5**
MSU Marysvale 79.27 44 *e*P **P 02 22 34.8 +1.5**
A04D Lummi Island 79.46 31 P **P 02 22 34.4 +0.6**
baz=227
MMU Miners Mountai 79.68 44 *e*P **P 02 22 36.1 +0.6**
DUG Dugway, Tooele 79.78 42 P **P 02 22 36.0 +0.1**
baz=236
DUG Dugway, Tooele 79.78 42 *e*P **P 02 22 36.3 +0.4**
DUG pmax pmax
comp=Z,34nm,1.8s
DUG Dugway, Tooele 79.78 42 *e*P **P 02 22 36.3 +0.4**
comp=Z,34nm,1.8s
MFID Camas Ranch 79.78 38 *e*P **P 02 22 35.7 -0.1**
comp=Z,9.1nm,1.0s
USRK Ussuriysk Ar. 80.09 323 P **P 02 22 37.2 -0.1**
comp=Z,1.7nm,0.6s,baz=122,slow=2.5,SNR=7.3
USRK LR LR 02 51 49.7
comp=Z,410nm,21.9s,baz=124,slow=31
Q16A Castle Valley 80.14 44 *e*P **P 02 22 39.4 +1.3**
comp=Z,9.9nm,1.1s
TMUT Trail Mountain 80.32 43 *e*P **P 02 22 41.0 +1.9**
comp=Z,15nm,1.1s
TLIG Tlapa 80.39 68 *e*P **P 02 22 41.7 +2.0**
comp=Z,106nm,1.9s
F10A Beach Ranch, E 80.53 35 *e*P **P 02 22 39.5 -0.3**
comp=Z,12nm,1.0s
LAZ Ladron 80.64 49 *e*P **P 02 22 42.2 +1.4**
Y22D IRIS PASSCAL I 80.64 50 P **P 02 22 40.8 +0.1**
baz=241
MNTX Cornudas Mount 80.66 52 P **P 02 22 41.1 +0.4**
baz=242
MNTX Cornudas Mount 80.66 52 *e*P **P 02 22 41.1 +0.4**
comp=Z,56nm,1.6s
SRU San Rafael Swe 80.67 44 *e*P **P 02 22 41.5 +0.7**
SRU pmax pmax
comp=Z,6.0nm,0.8s
SRU San Rafael Swe 80.67 44 *e*P **P 02 22 41.5 +0.7**
comp=Z,6.1nm,0.8s
HLID Hailey 80.70 38 P **P 02 22 41.3 +0.4**
baz=235
HLID Hailey 80.70 38 *e*P **P 02 22 40.7 -0.2**
comp=Z,12nm,1.2s
P17A Butcher Ranch, 80.72 43 *e*P **P 02 22 42.8 +1.7**
comp=Z,16nm,1.3s
BNM Barren Site 80.89 50 *e*P **P 02 22 42.8 +0.7**
TX31 Lajitas Ar. Si 80.91 55 *e*P **P 02 22 43.2 +1.0**
TXAR Lajitas Array 80.91 55 P **P 02 22 43.0 +0.8**
comp=Z,10.0nm,1.1s,baz=219,slow=7.8,SNR=39
TXAR LR LR 02 53 28.7
comp=Z,343nm,18.3s,baz=0.0,slow=32
TXAR Lajitas Array 80.91 55 P **P 02 22 43.0 +0.8**
TXAR pmax pmax
comp=Z,10.0nm,1.1s
LPM Los Pinos Moun 80.96 50 *e*P **P 02 22 45.2 +2.7**
MVCO Mesa Verde 81.06 46 P **P 02 22 43.2 +0.2**
baz=240
MVCO Mesa Verde 81.06 46 *e*P **P 02 22 44.4 +1.4**
comp=Z,18nm,1.4s
HABR Khabarovsk 81.07 328 *e*P **P 02 22 41.4 -1.0**
HABR *e**PP **pP 02 22 52.0 -0.4**
HABR *e**SP **sP 02 22 55.9 -0.1**
HABR *e* 02 25 45.2
HABR PPP PPP 02 27 35.7
HABR *e*S **S 02 32 47.3 -2.3**
HABR *e*SS **SS 02 38 01.5 -3.8**
HABR pmax pmax
comp=N,39nm,1.5s
HABR pmax pmax
comp=Z,20nm,1.5s
HABR pmax pmax
comp=E,12nm,0.8s
HABR MLR MLR
comp=Z,114nm,21.0s
PV05 Paradox Valley 81.09 45 *e*P **P 02 22 44.5 +1.3**
P18A Preston Nutter 81.13 44 *e*P **P 02 22 44.2 +0.8**
comp=Z,8.4nm,1.1s
PMR Palmer 81.24 11 *e*P **P 02 22 42.3 -0.7**
PMR pmax pmax
comp=Z,19nm,1.3s
PMR Palmer 81.24 11 *e*P **P 02 22 42.2 -0.7**
comp=Z,19nm,1.3s
PV09 Paradox Valley 81.28 45 *e*P **P 02 22 46.0 +1.7**
PV10 Paradox Valley 81.28 45 *e*P **P 02 22 44.7 +0.5**
comp=Z,93nm,0.6s
HWUT Hardware Ranch 81.34 41 *e*P **P 02 22 46.2 +1.9**
comp=Z,25nm,1.9s
PV04 Paradox Valley 81.38 45 *e*P **P 02 22 44.1 -0.5**
ANMO Albuquerque 81.39 49 P **P 02 22 45.1 +0.3**
baz=241
ANMO Albuquerque 81.39 49 *de*P **P 02 22 45.0 +0.3**
ANMO pmax pmax
comp=Z,13nm,1.2s
ANMO Albuquerque 81.39 49 *e*P **P 02 22 45.1 +0.3**
comp=Z,28nm,1.5s
DIV Divide 81.47 13 *e*P **P 02 22 43.3 -1.0**
comp=Z,13nm,1.0s
TTA Tatalina 81.48 7 *e*P **P 02 22 44.4 0.0**
TTA pmax pmax
comp=Z,33nm,1.5s
TTA Tatalina 81.48 7 *e*P **P 02 22 44.4 0.0**
comp=Z,33nm,1.5s
PV01 Paradox Valley 81.48 46 *e*P **P 02 22 45.5 +0.3**
BMRM Bremner River 81.57 13 *e*P **P 02 22 43.2 -1.7**
comp=Z,20nm,1.2s
MDJ Mudanjiang 81.72 322 P **P 02 22 47.0 +1.0**
MDJ pP pP 02 22 56.5 +0.5
MDJ sP sP 02 23 00.3 +0.7
MDJ PP **PP 02 25 50.5 -3.0**
MDJ S **S 02 32 57.0 +0.3**
MDJ SS **SS 02 38 10.3 -5.0**
MDJ pmax pmax
comp=Z,10.0nm,0.6s
MDJ pmax pmax
comp=Z,260nm,5.9s
MDJ LR LR
comp=Z,200nm,21.3s
MDJ LR LR
comp=Z,260nm,21.9s
MDJ LR LR
comp=Z,310nm,20.8s
MDJ Mudanjiang 81.72 322 *e*P **P 02 22 45.9 -0.1**
comp=Z,6.2nm,0.3s
SCM Sheep Creek Mo 81.80 12 *e*P **P 02 22 45.6 -0.5**
SCM pmax pmax
comp=Z,79nm,1.8s
SCM Sheep Creek Mo 81.80 12 *e*P **P 02 22 45.6 -0.5**
comp=Z,79nm,1.8s
NEW Newport 82.00 34 P **P 02 22 47.4 -0.1**
baz=232
BALM Baldy 82.14 14 *e*P **P 02 22 47.6 -0.4**
BALM pmax pmax
comp=Z,7.0nm,0.9s
BALM Baldy 82.14 14 *e*P **P 02 22 47.6 -0.4**
comp=Z,6.5nm,0.9s
MCMT McKenzie Canyo 82.35 38 *e*P **P 02 22 49.6 0.0**
CAST Castle Rocks 82.48 9 *e*P **P 02 22 48.6 -1.0**
comp=Z,5.4nm,0.8s
S22A 4UR Ranch, Cre 82.48 47 P **P 02 22 51.1 +0.6**
baz=241
SKAG Skagway 82.63 18 *e*P **P 02 22 53.3 +2.9**
comp=Z,49nm,1.8s
O20A White River Ci 82.71 44 P **P 02 22 52.0 +0.4**
baz=240
O20A White River Ci 82.71 44 *e*P **P 02 22 51.3 -0.3**
comp=Z,64nm,1.8s
REDW Red Top Meadow 82.74 40 *e*P **P 02 22 51.7 0.0**
comp=Z,41nm,1.6s
TPAW Teton Pass 82.75 40 *e*P **P 02 22 51.6 -0.2**
comp=Z,9.3nm,1.1s
KTH Kantishna Hill 82.78 9 *e*P **P 02 22 49.1 -2.1**
comp=Z,54nm,1.8s
TRF Thorofare Moun 82.78 10 *e*P **P 02 22 50.0 -1.3**
comp=Z,14nm,0.8s
DLMT Dillon 82.80 38 *e*P **P 02 22 52.0 +0.2**
comp=Z,52nm,1.9s
SNOW Snow King Moun 82.85 40 *e*P **P 02 22 52.5 +0.2**
comp=Z,15nm,1.2s
MSO Missoula 82.87 36 P **P 02 22 51.4 -0.7**
baz=235
MSO Missoula 82.87 36 *e*P **P 02 22 51.0 -1.1**

comp=Z,27nm,1.6s
IMW Indian Meadow 82.97 40 *e*P **P 02 22 53.5 +0.5**
comp=Z,57nm,1.8s
RND Reindeer 82.98 10 *e*P **P 02 22 51.9 -0.3**
RND pmax pmax
comp=Z,13nm,0.9s
RND Reindeer 82.98 10 *e*P **P 02 22 51.9 -0.3**
comp=Z,13nm,0.9s
BSMT Bassoo Peak 83.00 35 *e*P **P 02 22 52.6 -0.3**
MOOW Moose Ponds 83.01 40 *e*P **P 02 22 53.4 +0.3**
comp=Z,40nm,1.9s
LOHW Long Hollow 83.03 40 *e*P **P 02 22 53.0 -0.1**
comp=Z,49nm,2.0s
SMCO Snowmass 83.08 45 *e*P **P 02 22 53.9 +0.1**
comp=Z,47nm,1.4s
LRM Limekiln Ridge 83.14 37 *e*P **P 02 22 53.8 +0.1**
QLMT Earthquake Lak 83.19 39 *e*P **P 02 22 55.1 +1.1**
TNA Tin City 83.19 2 *e*P **P 02 22 51.7 -1.5**
comp=Z,135nm,2.0s
FLWY Flagg Ranch 83.22 40 *e*P **P 02 22 55.0 +0.9**
comp=Z,79nm,1.8s
BW06 Boulder Array 83.22 41 P **P 02 22 54.0 -0.2**
baz=238
BW06 Boulder Array 83.22 41 *e*P **P 02 22 53.0 -1.2**
comp=Z,26nm,1.6s
PD31 Pinedale Array 83.22 41 *e*P **P 02 22 53.9 -0.3**
PDAR Pinedale Array 83.22 41 P **P 02 22 53.4 -0.8**
comp=Z,2.5nm,0.7s,baz=190,slow=3.2,SNR=17
PDAR LR LR 02 52 31.7
comp=Z,267nm,20.9s,baz=248,slow=30
KLR Kul'dur 83.25 327 P **P 02 22 53.9 +0.1**
comp=Z,6.9nm,1.3s,baz=127,slow=7.0,SNR=5.5
MCK McKinley 83.27 10 *e*P **P 02 22 52.8 -0.8**
MCK pmax pmax
comp=Z,17nm,0.9s
MCK McKinley 83.27 10 *e*P **P 02 22 52.8 -0.8**
comp=Z,18nm,0.9s
BPAW Bear Paw Mtn. 83.28 9 *e*P **P 02 22 52.8 -0.9**
comp=Z,13nm,1.4s
CHMT Chamberlain Mo 83.30 36 *e*P **P 02 22 54.1 -0.4**
832A Faith Ranch, C 83.40 58 P **P 02 22 55.4 +0.3**
baz=246
SDCO Great Sand Dun 83.40 47 P **P 02 22 55.5 +0.2**
baz=242,SNR=15
SDCO Great Sand Dun 83.40 47 *e*P **P 02 22 54.9 -0.4**
comp=Z,43nm,1.8s
H17A Grant Village 83.46 39 P **P 02 22 56.2 +0.8**
baz=238
H17A Grant Village 83.46 39 *e*P **P 02 22 56.0 +0.6**
comp=Z,36nm,1.8s
BOZ Bozeman (W) 83.52 38 P **P 02 22 55.5 -0.1**
baz=237
BOZ Bozeman (W) 83.52 38 *e*P **P 02 22 55.1 -0.4**
BOZ pmax pmax
comp=Z,54nm,1.8s
BOZ Bozeman (W) 83.52 38 *e*P **P 02 22 55.1 -0.4**
comp=Z,54nm,1.8s
MSTX Muleshoe 83.64 51 P **P 02 22 56.6 +0.2**
baz=244
MSTX Muleshoe 83.64 51 *e*P **P 02 22 57.0 +0.6**
comp=Z,90nm,1.6s
LKWY Lake 83.66 39 *e*P **P 02 22 57.7 +1.2**
LKWY pmax pmax
comp=Z,33nm,1.5s
LKWY Lake 83.66 39 *e*P **P 02 22 57.7 +1.2**
comp=Z,33nm,1.5s
933A Laredo 83.69 59 P **P 02 22 57.3 +0.6**
baz=246,SNR=10
CN2 Changchun 83.76 320 *e*P **P 02 22 55.8 -0.8**
CN2 pmax pmax
comp=Z,10.0nm,1.0s
DL2 Dalian 83.79 314 P **P 02 22 57.8 +0.9**
DL2 pmax pmax
comp=Z,27nm,1.0s
DL2 pmax pmax
comp=Z,440nm,4.9s
833A Chaparral WMA, 83.88 58 P **P 02 22 57.9 +0.3**
baz=246
T25A Trinidad 83.88 48 P **P 02 22 58.1 +0.4**
baz=242
T25A Trinidad 83.88 48 *e*P **P 02 22 58.2 +0.5**
comp=Z,11nm,1.1s
SNY Shenyang 83.93 317 ⇑P **P 02 22 59.0 +1.5**
SNY pmax pmax
comp=Z,26nm,2.5s
SNY pmax pmax
comp=Z,500nm,7.5s
SNY LR LR
comp=Z,190nm,14.9s
SNY LR LR
comp=Z,220nm,15.9s
SNY LR LR
comp=Z,270nm,16.1s
034A Hebbronville 83.95 59 P **P 02 22 58.5 +0.5**
baz=247
DOT Dot Lake 84.09 12 *e*P **P 02 22 56.8 -1.1**
comp=Z,20nm,1.0s
WRH Wood River Hil 84.09 10 *e*P **P 02 22 57.0 -0.9**
comp=Z,146nm,2.0s
733A Divot King Ran 84.12 57 P **P 02 22 58.9 +0.1**
baz=246
MLY Manley 84.20 9 *e*P **P 02 22 57.4 -1.0**
comp=Z,27nm,1.4s
Q24A Divide 84.22 46 P **P 02 22 59.6 +0.1**
baz=242
Q24A Divide 84.22 46 *e*P **P 02 23 00.4 +0.9**
comp=Z,25nm,1.3s
934A Benavides 84.30 59 P **P 02 22 59.9 +0.1**
baz=247
CCB Clear Creek Bu 84.30 10 *e*P **P 02 22 57.8 -1.1**
comp=Z,15nm,0.9s
ISCO Idaho Springs 84.30 45 P **P 02 23 00.1 +0.2**
baz=242
ISCO Idaho Springs 84.30 45 *e*P **P 02 23 00.5 +0.6**
ISCO pmax pmax
comp=Z,33nm,1.9s
ISCO Idaho Springs 84.30 45 *e*P **P 02 23 00.5 +0.6**
comp=Z,32nm,1.9s
035A Encino 84.38 60 P **P 02 23 01.0 +0.9**
baz=247
JCT Junction City 84.43 56 P **P 02 23 00.4 0.0**
baz=246
834A Tilden 84.48 58 P **P 02 23 01.8 +1.1**
baz=247,SNR=14
COLA College 84.51 10*d i*P **P 02 22 59.0 -0.9**
COLA pmax pmax
comp=Z,27nm,0.9s
COLA College 84.51 10 *e*P **P 02 22 58.6 -1.3**
comp=Z,30nm,1.0s
633A Saathoff Ranch 84.51 57 P **P 02 23 01.2 +0.4**
baz=246
MDM Murphy Dome 84.52 10 *e*P **P 02 22 59.0 -1.0**
comp=Z,86nm,1.7s
IL1 Eielson Array 84.58 11 *e*P **P 02 22 58.5 -1.8**
ILAR Eielson Array 84.58 11 P **P 02 22 59.1 -1.2**
comp=Z,4.6nm,0.7s,baz=224,slow=6.1,SNR=43
ILAR LR LR 02 57 45.8
comp=Z,314nm,18.3s,baz=194,slow=34
ILB Eielson Array 84.58 11 *e*P **P 02 22 59.4 -0.9**
N23A Red Feather La 84.61 44 P **P 02 23 00.9 -0.5**
baz=241
N23A Red Feather La 84.61 44 *e*P **P 02 23 02.5 +1.2**
RLMT Red Lodge 84.64 39 P **P 02 23 01.6 +0.3**
baz=238
RLMT Red Lodge 84.64 39 *e*P **P 02 23 01.8 +0.5**
comp=Z,12nm,1.3s
GCMT Greycliff 84.75 39 *e*P **P 02 23 04.7 +2.9**
734A La Parita Cree 84.76 58 P **P 02 23 01.9 -0.1**
baz=247
AMTX Amarillo 84.85 51 P **P 02 23 02.9 +0.4**
baz=244
AMTX Amarillo 84.85 51 *e*P **P 02 23 01.8 -0.7**
comp=Z,116nm,2.0s
533A Kerrville 84.87 56 P **P 02 23 02.5 -0.2**
baz=246
QIZ Qiongzhong 85.00 292 P **P 02 23 03.5 +0.1**
QIZ PP **PP 02 26 20.5 -0.3**
QIZ S **S 02 33 32.3 +1.5**
QIZ SS **SS 02 39 03.5 -1.2**
QIZ pmax pmax
comp=Z,380nm,11.7s
QIZ LR LR
comp=Z,290nm,24.7s
QIZ LR LR
comp=Z,530nm,26.6s
K22A Casper 85.09 42 P **P 02 23 03.2 -0.5**
baz=241
K22A Casper 85.09 42 *e*P **P 02 23 02.6 -1.0**
comp=Z,22nm,1.4s
433A Art 85.10 56 P **P 02 23 03.5 -0.3**
baz=246
SEY Seymchan 85.19 345*c e*P **P 02 23 03.2 -0.2**
534A Blanco 85.30 57 P **P 02 23 04.6 -0.2**
baz=247,SNR=12
333A Richland Sprin 85.42 55 P **P 02 23 05.2 -0.1**
baz=246
ABTX Abilene, Hawle 85.44 54 P **P 02 23 05.5 +0.1**
baz=246,SNR=5.3
ABTX Abilene, Hawle 85.44 54 *e*P **P 02 23 05.6 +0.1**
comp=Z,102nm,1.7s
DAWY Dawson 85.45 14 *e*P **P 02 23 03.9 -0.9**
635A Leesville 85.61 57 P **P 02 23 06.6 +0.4**
baz=247
EGAK Eagle 85.69 13 *e*P **P 02 23 05.3 -0.5**
comp=Z,9.1nm,0.9s
233A Rising Star 85.76 55 P **P 02 23 06.7 -0.4**
baz=246
434A Burnet 85.78 56 P **P 02 23 07.1 0.0**
baz=247,SNR=15
EGMT Eagleton 85.89 37 *e*P **P 02 23 11.9 +4.5**
KSCO Kaye Shedlock' 85.99 47 P **P 02 23 07.5 -0.6**
baz=244
133A Hamilton Ranch 85.99 54 P **P 02 23 08.5 +0.4**
baz=246,SNR=14
334A Lometa 86.01 55 P **P 02 23 08.4 +0.2**
baz=247,SNR=17
535A Dale 86.02 57 P **P 02 23 08.8 +0.5**
baz=247
636A Smothers Creek 86.22 58 P **P 02 23 10.5 +1.2**
baz=247
435B Jarrell 86.30 56 P **P 02 23 10.1 +0.4**
baz=247
COLD Coldfoot 86.34 8 *e*P **P 02 23 08.8 -0.2**
comp=Z,64nm,1.9s
234A Clairette 86.35 55 P **P 02 23 10.3 +0.4**
baz=247
Z33A Whitaker Ranch 86.38 54 P **P 02 23 10.2 +0.1**
baz=246
536A Bastrop 86.44 57 P **P 02 23 10.9 +0.5**
baz=247
X32A Elmer 86.45 52 P **P 02 23 10.6 +0.3**
baz=246
134A White-Moore Ra 86.62 54 P **P 02 23 11.5 +0.3**
baz=247,SNR=5.1
335A Moody 86.62 56 P **P 02 23 11.4 +0.1**
baz=247
W32A Sentinel 86.77 52 P **P 02 23 12.2 +0.3**
baz=246
Y33A Hilltop Ranch, 86.78 53 P **P 02 23 12.2 +0.3**
baz=246
637A Eagle Lake 86.79 58 P **P 02 23 12.5 +0.5**
baz=248
WHTX Lake Whitney, 86.88 55 P **P 02 23 13.1 +0.6**
baz=247
WHTX Lake Whitney, 86.88 55 *e*P **P 02 23 12.2 -0.2**
comp=Z,68nm,1.5s
436A Wall Ranch, Ga 86.92 56 P **P 02 23 12.7 0.0**
baz=247
PLCA Paso Flores 86.94 132 P **P 02 23 14.5 +1.6**
comp=Z,5.7nm,1.0s,baz=256,slow=3.8,SNR=7.8
PLCA LR LR 02 55 49.1
comp=Z,653nm,18.8s,baz=286,slow=31
WMOK Wichita Mounta 86.96 52 P **P 02 23 12.4 -0.5**
baz=246
537A Green Hill Far 87.04 57 P **P 02 23 14.0 +0.7**
baz=248
Z34A Collier Ranch, 87.06 54 P **P 02 23 13.6 +0.3**
baz=247
BILL Bilibino 87.08 352*c i*P **P 02 23 12.3 -0.3**
BILL *i* 02 23 22.3
BILL *e* 02 26 44.4
BILL *i* S S 02 33 37.0 -12
BILL pmax pmax
comp=Z,41nm,1.7s
BILL MLR MLR
comp=Z,140nm,17.0s
BILL Bilibino 87.08 352 *e*P **P 02 23 11.8 -0.8**
comp=Z,80nm,1.8s
X33A Lawton 87.09 52 P **P 02 23 13.4 -0.1**
baz=246
336A Riesel 87.12 56 P **P 02 23 13.8 +0.1**
baz=247
135A Vickery Place, 87.14 55 P **P 02 23 14.1 +0.4**
baz=247
V32A Arapaho 87.16 51 P **P 02 23 14.5 +0.6**
baz=246
OGNE Ogallala 87.26 45 P **P 02 23 14.3 0.0**
baz=244
LAO LASA Array 87.27 39 P **P 02 23 13.9 -0.2**
baz=241
W33A Caddo, Fort Co 87.36 52 P **P 02 23 14.4 -0.4**
baz=246
RSSD Black Hills 87.39 42 P **P 02 23 15.1 +0.2**
baz=242
RSSD Black Hills 87.39 42 *e*P **P 02 23 13.6 -1.4**
RSSD pmax pmax
comp=Z,2.0nm,1.0s
RSSD Black Hills 87.39 42 *e*P **P 02 23 13.6 -1.4**
comp=Z,2.1nm,1.0s
Y34A Reagan Ranch, 87.42 53 P **P 02 23 15.1 0.0**
baz=247
U32A Winter Ranch, 87.46 51 P **P 02 23 15.4 +0.1**
baz=246
437A Phantom Ranch, 87.47 57 P **P 02 23 15.6 +0.2**
baz=248
Z35A Perchaven, San 87.56 54 P **P 02 23 16.2 +0.5**
baz=247
236A Katherine and 87.61 55 P **P 02 23 16.4 +0.4**
baz=248
X34A Smith Ranch, M 87.62 53 P **P 02 23 16.9 +0.9**
baz=247
V33A Lossen Ranch, 87.76 51 P **P 02 23 17.0 +0.3**
baz=246
136A Ennis 87.79 55 P **P 02 23 17.3 +0.5**
baz=248
T32A Huddler Ranch, 87.84 50 P **P 02 23 17.1 0.0**
baz=246
337A Centerville 87.85 56 P **P 02 23 17.9 +0.7**
baz=248
W34A Bridge Creek, 87.91 52 P **P 02 23 17.4 0.0**
baz=247
Y35A Marietta 87.95 54 P **P 02 23 17.1 -0.5**
baz=247
S32A Newby Ranch, P 88.05 49 P **P 02 23 18.2 +0.1**
baz=246
BJT Baijiatuau 88.06 313 *e*P **P 02 23 18.3 +0.3**
BJT pmax pmax
comp=Z,35nm,1.3s
BJT Baijiatuau 88.06 313 *e*P **P 02 23 18.3 +0.3**
comp=Z,35nm,1.3s
BJI Beijing 88.06 313 P **P 02 23 19.3 +1.3**
BJI PP **PP 02 26 46.5 +1.3**
BJI pmax pmax
comp=Z,20nm,1.0s
BJI pmax pmax
comp=Z,610nm,3.4s
BJI LR LR
comp=Z,220nm,26.6s
BJI LR LR
comp=Z,160nm,34.4s
Z36A Blue Ridge 88.17 54 P **P 02 23 19.5 +0.9**
baz=248
237A Washetta, Mont 88.17 56 P **P 02 23 19.2 +0.5**
baz=248
X35A Drake 88.19 53 P **P 02 23 19.2 +0.5**
baz=247
338A Crockett 88.33 56 P **P 02 23 19.8 +0.3**
baz=248
R32A Long Quarter, 88.51 49 P **P 02 23 21.1 +0.9**
baz=246
Y36A Durant 88.52 54 P **P 02 23 21.1 +0.7**
baz=248
W35A Tecumseh 88.56 52 P **P 02 23 20.8 +0.4**
baz=247
U34A Anderson Ranch 88.57 51 P **P 02 23 20.3 -0.2**
baz=247
238A Jacksonville 88.72 56 P **P 02 23 21.8 +0.6**
baz=248
Z37A Pogue Cattle C 88.77 55 P **P 02 23 22.2 +0.7**
baz=248
O31A Woolen Ranch, 88.78 47 P **P 02 23 22.1 +0.7**
baz=246
G26A Maurine 88.83 41 P **P 02 23 22.2 +0.6**
baz=243
339A Huntington 88.92 57 P **P 02 23 23.2 +0.9**
baz=249
138A Matatall Enter 88.98 55 P **P 02 23 23.3 +0.8**
baz=248
NATX Nacogdoches 88.99 56 P **P 02 23 23.0 +0.4**
baz=248
NATX Nacogdoches 88.99 56 *e*P **P 02 23 22.8 +0.2**
KULM Kulim 89.03 276 *e*P **P 02 23 23.6 +0.4**
F26A Lodgepole 89.04 41 P **P 02 23 23.4 +0.9**
baz=245
W36A Wetumka 89.04 53 P **P 02 23 23.4 +0.6**
baz=248
Y37A Hugo 89.06 54 P **P 02 23 23.1 +0.2**
baz=248
U35A Pawnee 89.14 51 P **P 02 23 23.4 +0.3**
baz=247
I28A Midland 89.17 43 P **P 02 23 23.4 +0.2**
baz=244
239A Gary 89.23 56 P **P 02 23 24.3 +0.6**
baz=249
X37A Clayton 89.48 53 P **P 02 23 24.8 0.0**
baz=248
T35A Sooner Cattle 89.51 51 P **P 02 23 24.7 -0.2**
baz=247
R34A Isabella, Hill 89.51 49 P **P 02 23 25.3 +0.4**
baz=247
139A Bunkhouse Ranc 89.54 55 P **P 02 23 25.3 +0.2**
baz=249
O32A Brockman Farm, 89.56 47 P **P 02 23 25.4 +0.3**
baz=246
SKNT Sakolnakorn 89.56 288 P **P 02 23 28.8 +3.2**
comp=Z,54nm,1.1s
W37B Quinton 89.64 53 P **P 02 23 25.4 -0.1**
baz=248
D26A Manning 89.72 40 P **P 02 23 25.5 -0.2**
baz=243
Y38A Idabel 89.73 54 P **P 02 23 26.1 +0.1**
baz=248
B25A Knox Farm, Ray 89.85 39 P **P 02 23 26.1 -0.2**
baz=243
PSI Prapat 89.91 273 *e*P **P 02 23 27.8 +0.3**
PSI Prapat 89.91 273 *e*P **P 02 23 27.8 +0.3**
X38A Whitesboro 89.93 53 P **P 02 23 27.5 +0.6**
baz=248
C26A Wahner Farm, P 90.28 39 P **P 02 23 27.8 -0.5**
baz=244
GYA Guiyang 90.31 298 *e*P **P 02 23 30.0 +1.0**
GYA pP sP 02 23 41.3 -1.4
GYA PP **PP 02 27 06.5 +2.9**
GYA SKS **SKSac 02 33 56.8 -1.7**
GYA S **S 02 34 19.3 -2.4**
GYA sS sS 02 34 37.0 -1.4
GYA SS **SS 02 40 22.5 +0.1**
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,130nm,6.2s
GYA LR LR
comp=Z,320nm,20.4s
GYA LR LR
comp=Z,300nm,21.0s
GYA LR LR
comp=Z,350nm,20.6s
W38A Poteau 90.31 53 P **P 02 23 29.0 +0.3**
baz=249
INK Inuvik 90.32 13 *e*P **P 02 23 27.2 -0.7**
INK Inuvik 90.32 13 *e*P **P 02 23 27.2 -0.7**
VNA3 Neumayer Olymp 90.33 174 P **P 02 23 29.1 +0.9**
X39A Fountain Ranch 90.42 54 P **P 02 23 29.4 +0.2**
baz=249
SNAA Sanae 90.42 177 P **P 02 23 29.1 +0.4**
SNAA Sanae 90.42 177 *e*P **P 02 23 28.9 +0.2**
SNAA Sanae 90.42 177 *e*P **P 02 23 28.9 +0.2**
SYO Syowa Base 90.47 191‖ *e*P **P 02 23 29.4 +0.6**
SYO Syowa Base 90.47 191‖ *e*sP sP 02 23 42.0 -0.6
141A Papa Simpson, 90.68 56 P **P 02 23 30.9 +0.4**
baz=249
V38A Canehill 90.69 53 P **P 02 23 30.8 +0.3**
baz=249
TRTT Trang 90.71 278 P **P 02 23 33.9 +2.9**
comp=Z,43nm,1.4s,comp=Z,703nm
342A Flagon Creek P 90.71 57 P **P 02 23 31.0 +0.4**
baz=250
T37A Cheneyville 18 90.77 51 P **P 02 23 30.9 +0.1**
baz=248
R36A Gordon, Harris 90.79 50 P **P 02 23 30.7 -0.1**
baz=248
A26A Wade Farm, Ken 90.79 38 P **P 02 23 30.6 -0.1**
baz=244
VNA2 Neumayer--Watz 90.84 175 P **P 02 23 31.4 +0.8**
baz=179,slow=2.6
Y40A Okolona 90.89 55 P **P 02 23 32.2 +0.8**
baz=249
W39A Magazine 90.92 53 P **P 02 23 32.0 +0.5**
baz=249
VNA1 Neumayer--Stat 91.03 175 P **P 02 23 32.4 +1.0**
XAN Xi'an 91.08 305 P **P 02 23 33.5 +1.1**
XAN pmax pmax
comp=Z,15nm,1.3s
XAN pmax pmax
comp=Z,150nm,4.4s
XAN LR LR
comp=Z,99nm,27.8s
XAN LR LR
comp=Z,250nm,27.6s
XAN LR LR
comp=Z,250nm,25.8s
W40A Ferguson Farm, 91.47 54 P **P 02 23 34.6 +0.6**
baz=249
U39A Green Forest 91.58 52 P **P 02 23 35.2 +0.7**
baz=249
HHC Hu-ho-hao-te 91.61 312 *e*P **P 02 23 36.5 +1.8**
HHC S **S 02 34 32.3 -0.7**
HHC pmax pmax
comp=Z,31nm,1.4s
HHC pmax pmax
comp=Z,230nm,7.5s
HHC LR LR
comp=Z,380nm,17.5s
HHC LR LR
comp=Z,320nm,17.8s
HHC LR LR
comp=Z,320nm,18.8s
YKA Yellowknife Ar 91.81 23 P **P 02 23 33.4 -1.6**
comp=Z,1.8nm,0.9s,baz=235,slow=4.1,SNR=18
YKA PP **PP 02 27 15.0 +0.6**
comp=Z,0.4nm,1.0s,baz=233,slow=8.1,SNR=4.0
YKA LR LR 03 00 51.2
comp=Z,24nm,18.5s,baz=180,slow=33
YKB5 Yellowknife Ar 91.81 23 *e*P **P 02 23 33.0 -2.0**
YKW3 Yellowknife Ar 91.85 23 *e*P **P 02 23 34.9 -0.2**
V40A Witts Springs 91.87 53 P **P 02 23 36.2 +0.3**
baz=250
T39A Clever 91.88 52 P **P 02 23 36.0 +0.1**
baz=249
R38A Fenwick Farm, 91.91 51 P **P 02 23 36.1 +0.1**
baz=249
X301 Greenbrier Sit 92.00 54 *e*P **P 02 23 39.9 +3.4**
U40A Yellville 92.04 53 P **P 02 23 37.0 +0.3**
baz=250
X201 Greenbrier Sit 92.04 54 *e*P **P 02 23 38.3 +1.6**
ECSD EROS Data Cent 92.07 45 P **P 02 23 37.2 +0.6**
baz=247
ECSD EROS Data Cent 92.07 45 *e*P **P 02 23 39.6 +2.9**
W41B Gary Mavity, V 92.09 54 P **P 02 23 37.0 +0.1**
baz=250
WHAR Wooly Hollow 92.10 54 *e*P **P 02 23 38.0 +1.0**
PBKT Sadao Pong 92.18 287 P **P 02 23 40.1 +2.4**
comp=Z,24nm,2.3s,comp=Z,648nm
V41A Mountainview 92.37 53 P **P 02 23 37.9 -0.3**
baz=250
345A Thompson Farm, 92.54 58 P **P 02 23 39.2 +0.1**
baz=251
T40A Mansfield 92.57 52 P **P 02 23 39.2 +0.1**
baz=250
R39A Chumby, Stover 92.59 51 P **P 02 23 38.5 -0.6**
baz=250
N37A Lee Faris, Mou 92.61 48 P **P 02 23 38.8 -0.5**
baz=249
K35A Storm Lake 92.62 46 P **P 02 23 38.5 -0.7**
baz=248
P38A Dawn 92.69 49 P **P 02 23 39.1 -0.5**
baz=249
S40A Lebanon 92.74 51 P **P 02 23 40.0 +0.1**
baz=250
446A Poplarville 92.91 59 P **P 02 23 40.2 -0.6**
baz=251
UTTA Uttaradit 92.91 288 P P 02 23 48.5 +7.4

comp=Z,3.0nm,0.8s
V42A Cord 92.96 53 P **P 02 23 40.5 -0.4**
baz=250
T41A Mountain View 93.10 52 P **P 02 23 41.0 -0.6**
baz=250
NANT Nan 93.10 289 P **P 02 23 45.2 +3.2**
comp=Z,4.0nm,0.8s,comp=Z,1μm
R40A Maddies Statio 93.15 51 P **P 02 23 41.3 -0.4**
baz=250
KMI Kunming 93.23 295 P **P 02 23 44.0 +1.3**
KMI pP sP 02 23 55.0 -1.4
KMI sP pP 02 23 59.0 +6.2
KMI PP **PP 02 27 28.3 +1.5**
KMI SKS **SKSac 02 34 17.0 +1.8**
KMI S **S 02 34 45.5 -2.8**
KMI sS sS 02 35 02.0 -3.1
KMI SS **SS 02 41 04.0 -0.6**
KMI pmax pmax
comp=Z,24nm,1.0s
KMI pmax pmax
comp=Z,300nm,6.0s
KMI LR LR
comp=Z,170nm,23.0s
KMI LR LR
comp=Z,240nm,20.5s
KMI LR LR
comp=Z,400nm,33.0s
FFC Flin Flon 93.42 33 *eP* **P 02 23 42.4 -0.2**
FFC Flin Flon 93.42 33 *eP* **P 02 23 42.4 -0.2**
CRAI Chiangrai 93.82 290 P **P 02 23 48.7 +3.4**
comp=Z,44nm,1.6s
LAMP Lampang 93.98 288 P P 02 23 55.2 +9.2
CD2 Chengdu 94.16 301 P **P 02 23 46.8 +0.1**
CD2 pP pP 02 23 57.5 +0.7
CD2 PP **PP 02 27 33.0 -0.8**
CD2 SKS **SKSac 02 34 18.5 -1.2**
CD2 S **SKKSac 02 34 47.3 +6.7**
CD2 sS sS 02 35 09.5 -3.2
CD2 SS **SS 02 41 16.8 -0.7**
CD2 pmax pmax
comp=Z,20nm,0.5s
CD2 pmax pmax
comp=Z,210nm,5.7s
CD2 LR LR
comp=Z,330nm,7.8s
CD2 LR LR
comp=Z,230nm,15.0s
H36A Jessenland, He 94.18 45 P **P 02 23 45.5 -0.8**
baz=249
Y46A Houston 94.30 56 P **P 02 23 46.8 -0.4**
baz=252
G36A St. Michael 94.53 44 P **P 02 23 47.7 -0.2**
baz=250
CM01 Chiang Mai Arr 94.56 288 *eP* **P 02 23 50.5 +1.8**
CMAR Chiang Mai Arr 94.59 288 P **P 02 23 50.5 +1.7**
comp=Z,1.3nm,0.4s,baz=102,slow=3.5,SNR=9.6
CMAR LR LR 03 03 02.9
comp=Z,173nm,21.0s,baz=118,slow=33
CMMT Chiang Mai 94.69 288 P **P 02 23 51.9 +2.6**
CHTO Chiang Mai 94.69 288 P **P 02 23 52.0 +2.7**
comp=Z,72nm,1.1s
A33A Warroad 94.82 40 P **P 02 23 48.8 -0.4**
baz=249
F36A Milaca 94.90 43 P **P 02 23 49.0 -0.6**
baz=250
ULM Lac du Bonnet 95.01 39 LR LR 03 00 00.5
comp=Z,604nm,21.4s,baz=251,slow=31
I38A Scanlan Farm, 95.07 45 P **P 02 23 49.8 -0.6**
baz=250
C35A Jirik Farms, M 95.25 42 P **P 02 23 50.0 -1.2**
baz=250
LZH Lanzhou 95.69 306 *eP* P 02 23 58.8 +5.1
LZH pP sP 02 24 09.3 +1.9
LZH *e*SKS **SKSac 02 34 25.0 -2.9**
LZH *eS* **S 02 35 09.3 +0.1**
LZH sS sS 02 35 27.3 +1.2
LZH pmax pmax
comp=Z,20nm,1.0s
LZH pmax pmax
comp=Z,100nm,4.8s
D37A Cotton 96.05 42 P **P 02 23 53.7 -1.1**
baz=251
EYMN Ely 96.91 42 P **P 02 23 58.7 -0.1**
baz=251
C38A Sawbill Land. 96.98 42 P **P 02 23 59.1 +0.1**
baz=252
ULN Ulaanbaatar 97.09 318 *eP* Pdif 02 24 00.9 +1.0
ULN pmax pmax
comp=Z,1.0nm,1.0s
SONM Songino Array 97.50 318 P Pdif 02 24 02.0 +0.3
comp=Z,0.4nm,0.6s,baz=119,slow=3.2,SNR=3.7
SONM PP **PP 02 27 56.3 -3.0**
comp=Z,0.3nm,0.4s,baz=123,slow=5.5,SNR=5.1
SONM LR LR 03 04 08.4
comp=Z,78nm,21.3s,baz=112,slow=33
SFIN Lafayette 97.61 50 P Pdif 02 24 02.1 0.0
baz=253
TIXI Tiksi 97.68 344 *eP* **P 02 24 01.4 -0.2**
TIXI pmax pmax
comp=Z,3.0nm,1.3s
TIXI MLR MLR
comp=Z,202nm,20.0s
TIXI Tiksi 97.68 344 *eP* Pdif 02 24 02.4 +0.7
LPAZ La Paz 97.78 110 P Pdif 02 24 05.2 +1.0
comp=Z,1.0nm,0.8s,baz=235,slow=3.6,SNR=3.7
LPAZ LR LR 02 59 50.5
comp=Z,423nm,19.8s,baz=242,slow=30
ROSC El Rosal 98.82 88 LR LR 02 58 21.2
comp=Z,126nm,18.8s,baz=248,slow=29
WMQ Urumqi 109.43 311 Pdif **Pdif 02 24 53.8 -0.9**
WMQ PP **PP 02 29 25.5 -3.0**
WMQ AMB AMB
comp=Z,120nm,8.4s
WMQ LR LR
comp=Z,66nm,31.0s
WMQ LR LR
comp=Z,76nm,27.4s
WMQ LR LR
comp=Z,76nm,27.4s
NRIK Noril'sk 110.21 338 PP PP 02 29 30.9 -2.3
comp=Z,2.0nm,0.5s,baz=130,slow=3.2,SNR=4.3
MKAR Makanchi Array 113.44 314 PKIKP **PKiKP 02 29 05.0 -0.5**
comp=Z,0.8nm,0.7s,baz=103,slow=0.4,SNR=6.0
KURK Kurchatov 115.80 318 PKIKP **PKPdf 02 29 08.8 -1.0**
KURK pmax pmax
comp=Z,2.0nm,0.6s
KURK Kurchatov 115.80 318 PKP **PKPdf 02 29 08.8 -1.0**
KURBB Kurchatov Arra 115.87 318 PKP **PKPdf 02 29 08.8 -1.1**
comp=Z,1.5nm,0.6s,baz=88,slow=1.8,SNR=12
KSH Kashi 117.94 306 *e*PKP **PKPdf 02 29 15.5 +1.0**
KSH *es*PKP 02 29 30.0
KSH *e*PP **PP 02 30 34.3 +5.2**
KSH SKS **SKSdf 02 36 25.5 +1.0**
KSH SS **SS 02 46 43.0 +1.7**
KSH AMB AMB
comp=Z,180nm,7.3s
TKM2 Tokmak 2 118.20 310 *e*PKIKP **PKPdf 02 29 14.7 -0.3**
TKM2 Tokmak 2 118.20 310 *e*PKPdf **PKPdf 02 29 14.7 -0.3**
AAK Ala-Archa 119.02 309 PKP **PKPdf 02 29 16.7 +0.2**
comp=Z,1.0nm,0.4s,baz=298,slow=4.5,SNR=3.6
SPITS Spitsbergen Ar 119.48 358 PKP **PKPdf 02 29 15.0 -1.2**
comp=Z,6.8nm,0.8s,baz=224,slow=7.0,SNR=2.9
SPITS Spitsbergen Ar 119.48 358 PKIKP **PKPdf 02 29 15.0 -1.2**
SPITS pmax pmax
comp=Z,7.0nm,0.8s
BVAR Borovoye Array 120.58 322 PKP **PKPdf 02 29 18.7 -0.3**
comp=Z,1.7nm,0.4s,baz=96,slow=3.0,SNR=14
BRVK Borovoye 120.63 322 *c i*PKIKP **PKPdf 02 29 19.6 +0.6**
BRVK pmax pmax
comp=Z,13nm,1.7s
BRVK Borovoye 120.63 322 *e*PKPdf **PKPdf 02 29 18.9 -0.1**
SOKR Solikamsk 125.51 332 *e*PKIKP **PKPdf 02 29 25.8 -2.3**
SOKR pmax pmax
comp=Z,7.0nm,0.6s
ARU Arti 126.07 328 PKP **PKPdf 02 29 29.6 +0.2**
comp=Z,2.2nm,0.4s,baz=150,slow=3.8,SNR=6.1
ARU Arti 126.07 328 *i* PKIKP **PKPdf 02 29 29.4 0.0**
ARU 02 36 38.1
ARU Arti 126.07 328 *e*PKPdf **PKPdf 02 29 28.6 -0.8**
ARCES ARCESS Array B 127.18 352 PKP **PKPdf 02 29 31.3 +0.1**
comp=Z,5.3nm,0.9s,baz=321,slow=1.6,SNR=8.4
ABKAR Akbulak array 127.89 319 *e*PKPdf **PKPdf 02 29 33.2 +0.2**
ABKAR *e*PP **PP 02 31 28.8 -6.8**
AKTO Aktyubinsk 128.68 321 PKP **PKPdf 02 29 35.4 +0.8**
comp=Z,1.2nm,0.5s,baz=354,slow=4.5,SNR=5.9
BOSA Boshof 130.89 200 PKP **PKPdf 02 29 39.9 +0.2**
comp=Z,5.4nm,1.0s,baz=73,slow=5.3,SNR=4.4
GEYT Alibeck 131.97 305 PKP **PKPdf 02 29 41.7 +0.4**
comp=Z,2.9nm,0.7s,baz=170,slow=0.9,SNR=5.6
FINES FINESS Array B 134.58 348 PKhKP PKPpre 02 29 42.0
comp=Z,1.1nm,0.6s,baz=128,slow=3.1,SNR=3.9
FINES FINESS Array B 134.58 348 PKIKP PKPpre 02 29 42.0
FINES pmax pmax
comp=Z,1.0nm,0.6s
FINES FINESS Array B 134.58 348 PKPpre PKPpre 02 29 42.0
OBN Obninsk 136.84 336⇓ *e*PKIKP **PKPdf 02 29 48.9 -0.8**
OBN *e* 02 29 59.8
OBN pmax pmax
comp=Z,40nm,1.8s
OBN MLR MLR
comp=Z,216nm,20.0s
HFS Hagfors 137.55 356 PKhKP PKPpre 02 29 46.7
comp=Z,1.3nm,0.7s,baz=160,slow=6.0,SNR=2.8
NCK Nalchik 140.53 318 *e*PKIKP **PKPdf 02 29 57.7 +0.8**
ZEI Tsey 140.68 317 *i* PKIKP **PKPdf 02 29 59.8 +2.3**
ZEI pmax pmax
comp=Z,10.0nm,0.9s
KIV Kislovodsk 140.88 319 *i* PKIKP **PKPdf 02 29 59.4 +1.8**
KIV pmax pmax
comp=Z,5.0nm,1.0s
NEY Neytrino 141.21 318 *e*PKIKP **PKPdf 02 30 00.0 +1.6**
AKASG Malin Array Be 143.06 337 PKhKP PKPpre 02 29 57.5
comp=Z,2.8nm,0.6s,baz=35,slow=3.6,SNR=5.7
AKASG SKPbc **SKiKP 02 33 41.0 +2.6**
comp=Z,0.3nm,0.3s,baz=348,slow=4.6,SNR=4.5
ANN Anapa 143.52 324 *i* PKHKP PKPpre 02 29 45.3
ANN pmax pmax
comp=Z,18nm,0.8s
DAMY Dhamar 144.88 270 *e*PKPdf **PKPdf 02 30 06.7 +0.9**
SIM Simferopol' 145.22 327 *e*PKIKP **PKPdf 02 30 05.1 0.0**
SIM pmax pmax
comp=Z,22nm,1.5s
SORM Soroca 145.49 336⇓ *i*P **PKPbc 02 30 04.7 -0.8**
SORM Soroca 145.49 336 ⇓PKP2 **PKPbc 02 30 04.7 -0.8**
KMBO Kilima Mbogo 145.54 240 PKPbc **PKPab 02 30 08.6 +1.3**
comp=Z,19nm,1.0s,baz=93,slow=2.6,SNR=40
LVV L'vov 145.56 341 *e*PKP2 **PKPdf 02 30 04.7 -0.9**
KWP Kalwaria Pacla 146.11 343 *e*PKP **PKPab 02 30 08.5 +0.4**
KWP Kalwaria Pacla 146.11 343⇓ *i*P **PKPbc 02 30 07.6 +0.1**
KWP Kalwaria Pacla 146.11 343⇓PKP2 **PKPbc 02 30 07.6 +0.1**
KIS Kishinev 146.21 334 *e*P **PKPbc 02 30 08.0 +0.2**
KIS Kishinev 146.21 334 *e*PKP2 **PKPbc 02 30 08.0 +0.2**
OJC Ojcow 146.31 346 *e*PKP **PKPbc 02 30 08.3 +0.2**
OJC Ojcow 146.31 346 *e*PKP2 **PKPbc 02 30 08.3 +0.2**
CLL Collm 146.36 354⇓ *i*PKPbc **PKPbc 02 30 08.1 0.0**
comp=Z,68nm,1.4s
CLL *i* 02 30 10.0
comp=Z,130nm,1.6s
CLL *i* pPKPbc pPKPbc 02 30 17.9 -0.5
CLL *e*PKPlp 02 30 22.0
comp=Z,300nm,14.4s
CLL *e* 02 30 26.0
CLL LmV 03 37 00.0
comp=Z,200nm,20.1s
CLL Collm 146.36 354⇓ *i*PKP2 **PKPbc 02 30 08.1 0.0**
CLL *i* 02 30 10.0
CLL *i* 02 30 17.9
CLL pmax pmax
comp=Z,68nm,1.4s
CLL MLR MLR
comp=Z,200nm,20.1s
KSP Ksiaz 146.40 350 *e*PKP **PKPab 02 30 08.9 -0.2**
KSP Ksiaz 146.40 350 *e*PKP2 **PKPab 02 30 08.9 -0.2**
BRG Berggiesshubel 146.69 353 *e*PKP **PKPbc 02 30 09.3 +0.2**
comp=Z,67nm,1.6s
BRG Berggiesshubel 146.69 353 *e*PKP2 **PKPbc 02 30 09.3 +0.2**
BRG pmax pmax
comp=Z,67nm,1.6s
STHS Stebnicka Huta 146.71 344 *e*PKP2 **PKPab 02 30 10.1 -0.3**
STHS Stebnicka Huta 146.71 344 *e*PKP **PKPab 02 30 10.1 -0.3**
UPC Upice 146.76 351 *e*PKP **PKPab 02 30 10.0 -0.6**
UPC Upice 146.76 351 *e*PKP2 **PKPab 02 30 10.0 -0.6**
KOLS Kolonicke sedl 146.87 343 *e*PKP2 **PKPbc 02 30 09.0 -0.8**
KOLS Kolonicke sedl 146.87 343 *e*PKP **PKPbc 02 30 08.9 -0.8**
DPC Dobruska-Polom 146.87 350 *e*PKP **PKPab 02 30 10.3 -0.7**
DPC *ep*PKP **pPKPdf 02 30 19.8 +1.5**
DPC Dobruska-Polom 146.87 350 *e*PKP2 **PKPab 02 30 10.3 -0.7**
NIE Niedzica 146.94 345 *e*PKP **PKPbc 02 30 10.2 +0.2**
NIE Niedzica 146.94 345 *e*PKP2 **PKPbc 02 30 10.2 +0.2**
PVCC Panska Ves 146.95 352 *e*PKP **PKPab 02 30 10.7 -0.6**
PVCC Panska Ves 146.95 352 *e*PKP2 **PKPab 02 30 10.7 -0.6**
OKC Ostrava-Krasne 147.03 348 *e*PKP **PKPbc 02 30 10.6 +0.5**
OKC Ostrava-Krasne 147.03 348 *e*PKP2 **PKPbc 02 30 10.6 +0.5**
KRLC Kraliky 147.06 350 *e*PKP **PKPbc 02 30 10.7 +0.4**
KRLC Kraliky 147.06 350 *e*PKP2 **PKPbc 02 30 10.7 +0.4**
BURAR Bucovina Array 147.09 338⇓ *i*P **PKPab 02 30 11.9 -0.2**
BURAR Bucovina Array 147.09 338 ⇓PKP2 **PKPab 02 30 11.9 -0.2**
CRVS Cervenica-Dubn 147.12 343 *e*PKIKP **PKPdf 02 30 09.1 +0.8**
CRVS Cervenica-Dubn 147.12 343 *e*PKP **PKPdf 02 30 09.1 +0.8**
UZH Uzhgorod 147.13 342 *e*PKP2 **PKPbc 02 30 11.1 +0.7**
MORC Moravsky Berou 147.21 348⇓ *i*P **PKPbc 02 30 10.3 -0.4**
MORC Moravsky Berou 147.21 348 ⇓PKP2 **PKPbc 02 30 10.3 -0.4**
MEM Membach 147.26 2 PKPbc **PKPbc 02 30 10.8 +0.1**
SNF Senefte 147.27 4 PKPbc **PKPbc 02 30 10.8 +0.1**
LANS Liptovska Anna 147.39 346 *e*PKP2 **PKPbc 02 30 10.9 -0.3**
LANS Liptovska Anna 147.39 346 *e*PKP **PKPbc 02 30 10.8 -0.4**
BCLA Clavier 147.42 3 PKPbc **PKPbc 02 30 11.5 +0.3**
NKC Novy Kostel 147.47 355 *e*PKP **PKPbc 02 30 12.0 +0.6**
NKC Novy Kostel 147.47 355 *e*PKP2 **PKPbc 02 30 12.0 +0.6**
TESR Tescani 147.48 336⇓ *i*P **PKPbc 02 30 11.5 0.0**
PRU Pruhonice 147.48 352 *e*PKP **PKPbc 02 30 11.8 +0.4**
PRU Pruhonice 147.48 352 *e*PKP2 **PKPbc 02 30 11.8 +0.4**
GOPC GO Pecny, Ondr 147.52 352 *e*PKP **PKPbc 02 30 12.0 +0.5**
GOPC *ep*PKP **pPKPdf 02 30 20.3 +1.0**
GOPC GO Pecny, Ondr 147.52 352 *e*PKP2 **PKPbc 02 30 12.0 +0.5**
TLCR 147.63 332⇑ *i*P **PKPbc 02 30 12.7 +0.8**
TLCR 147.63 332 ⇑PKP2 **PKPbc 02 30 12.7 +0.8**
DOU Dourbes 147.70 4 PKPbc **PKPbc 02 30 11.9 -0.1**
KECS Kecovo 147.76 344 *e*PKP2 **PKPbc 02 30 11.6 -0.6**
KECS Kecovo 147.76 344 *e*PKP **PKPbc 02 30 11.6 -0.6**
KECS *e* 02 30 13.1
VRAC Vranov 147.83 349 PKP **PKPdf 02 30 10.2 +0.8**
comp=Z,10.0nm,1.1s,baz=215,slow=0.3,SNR=10
VRAC PKPbc **PKPbc 02 30 12.9 +0.5**
comp=Z,8.4nm,1.0s,baz=31,slow=2.9,SNR=12
VRAC Vranov 147.83 349⇓ *i*P **PKPbc 02 30 13.0 +0.6**
VRAC Vranov 147.83 349 ⇓PKP2 **PKPbc 02 30 13.0 +0.6**
CFR Carcaliu 147.94 333⇓ *i*P **PKPdf 02 30 11.1 +1.4**
CFR Carcaliu 147.94 333 ⇓PKIKP **PKPdf 02 30 11.1 +1.4**
VRI Vrincioaia 147.98 335⇓ *i*P **PKPbc 02 30 12.9 0.0**
VRI Vrincioaia 147.98 335 ⇓PKP2 **PKPbc 02 30 12.9 0.0**
PLOR Plostina 148.02 335⇓ *i*P **PKPbc 02 30 13.3 +0.3**
PLOR Plostina 148.02 335 ⇓PKP2 **PKPbc 02 30 13.3 +0.3**
TREC Trest 148.03 351 AMS AMS 03 40 50.0
comp=Z,400nm,10.9s
VYHS Vyhne 148.15 346 *e*PKIKP **PKPdf 02 30 11.0 +1.0**
VYHS *e* 02 30 14.1
VYHS Vyhne 148.15 346 *e*PKP **PKPdf 02 30 11.0 +1.0**
VYHS *e* 02 30 14.1
WLF Walferdange 148.21 2 PKPbc **PKPbc 02 30 13.7 +0.3**
WLF Walferdange 148.21 2 *e*PKIKP **PKPdf 02 30 11.1 +1.1**
WLF *e* 02 30 12.9
WLF Walferdange 148.21 2 *e*PKPdf **PKPdf 02 30 11.1 +1.1**
WLF *e*PKPbc **PKPbc 02 30 12.9 -0.4**
TIRR Tirgusor 148.37 331⇓ *i*P **PKPbc 02 30 13.0 -0.9**
TIRR Tirgusor 148.37 331 ⇓PKP2 **PKPbc 02 30 13.0 -0.9**
DOPR Dopca 148.42 336⇓ *i*P **PKPbc 02 30 15.0 +0.9**
CJR Cluj-Napoca 148.43 339⇓ *i*P **PKPbc 02 30 14.8 +0.7**
CJR Cluj-Napoca 148.43 339 ⇓PKP2 **PKPbc 02 30 14.8 +0.7**
SMOL Smolenice 148.43 348 *e*PKP2 **PKPbc 02 30 15.2 +1.2**
SMOL Smolenice 148.43 348 *e*PKP **PKPbc 02 30 15.2 +1.2**
PSZ Piszkesteto 148.44 345⇓ *i*P **PKPbc 02 30 12.4 -1.7**
PSZ Piszkesteto 148.44 345 ⇓PKIKP **PKPbc 02 30 12.4 -1.7**
PSZ Piszkesteto 148.44 345 *e*PKPdf **PKPdf 02 30 10.5 -0.1**
PSZ *e*PKPbc **PKiKP 02 30 14.9 -0.8**
KHC Kasperske Hory 148.44 353 *e*PKP **PKPdf 02 30 11.2 +0.7**
KHC *ex* x 02 30 14.6
KHC *ep*PKP **pPKPdf 02 30 19.8 -1.1**
KHC AMS AMS 03 39 50.0
comp=Z,500nm,17.0s
KHC Kasperske Hory 148.44 353 *e*PKIKP **PKPdf 02 30 11.2 +0.7**
KHC *e* 02 30 14.6
KHC *e* 02 30 19.8
KHC MLR MLR
comp=Z,500nm,17.0s
KHC Kasperske Hory 148.44 353 *e*PKPdf **PKPdf 02 30 11.8 +1.3**
KHC *e*PKPbc **PKPbc 02 30 14.6 +0.6**
MLR Muntele Rosu 148.60 335 PKP **PKPdf 02 30 11.2 +0.2**
comp=Z,1.5nm,0.7s,baz=25,slow=2.3,SNR=11
MLR PKPbc **PKPbc 02 30 15.1 +0.4**
comp=Z,1.5nm,0.7s,baz=46,slow=5.7,SNR=13
MLR Muntele Rosu 148.60 335 PKIKP **PKPdf 02 30 11.2 +0.2**
MLR 02 30 15.1
MLR pmax pmax
comp=Z,2.0nm,0.7s
MLR pmax pmax
comp=Z,2.0nm,0.7s
DRGR 148.65 340⇓ *i*P **PKPbc 02 30 14.8 +0.1**
DRGR 148.65 340 ⇓PKP2 **PKPbc 02 30 14.8 +0.1**
GERES GERESS Array B 148.71 353 PKPbc **PKPbc 02 30 13.9 -0.9**
comp=Z,4.2nm,0.8s,baz=5.7,slow=2.7,SNR=14
BRTR Keskin Array B 148.84 320 PKP **PKPdf 02 30 12.1 +0.5**
comp=Z,3.2nm,0.6s,baz=132,slow=1.8,SNR=16
BRTR PKPbc **PKiKP 02 30 16.5 -0.4**
comp=Z,5.7nm,0.8s,baz=122,slow=2.0,SNR=25
LANF Langenberg 148.93 0 PKP **PKPbc 02 30 16.1 +0.9**
ARR Arges 149.21 337⇓ *i*P **PKPbc 02 30 17.3 +1.2**
CONA Conrad Observa 149.29 350 *i* PKPbc **PKPdf 02 30 13.4 +1.4**
comp=Z,8.6nm,1.5s,SNR=12
CONA *i* PKiKP **PKiKP 02 30 17.3 -0.2**
comp=Z,49nm,1.5s
BFO Black Forest 149.58 359 *c i*PKP2 **PKPbc 02 30 17.7 +0.8**
BFO Black Forest 149.58 359 *e*PKPdf **PKPdf 02 30 11.8 -0.5**
BFO *e*PKPbc **PKPbc 02 30 17.0 +0.1**
MOA Molln 149.62 352 *i* PKiKP **PKiKP 02 30 17.8 -0.3**
comp=Z,7.5nm,0.8s
ECH Echery 149.69 1 PKP **PKPbc 02 30 16.3 -0.9**
GZR Gura Zlata 149.86 339⇑ *i*P **PKPbc 02 30 16.8 -0.9**
GZR Gura Zlata 149.86 339 ⇑PKIKP **PKPbc 02 30 16.8 -0.9**
ARSA Arzberg 150.00 350 *i* PKPdf **PKPdf 02 30 13.1 +0.1**
comp=Z,8.0nm,1.6s
ARSA *i* PKiKP **PKiKP 02 30 18.6 -0.3**
comp=Z,12nm,1.2s
BZS Buzias 150.04 341⇓ *i*P **PKPdf 02 30 13.4 +0.3**
MOF Molkenrain 150.05 1 PKP **PKPbc 02 30 18.0 -0.2**
ASF Jabal al Asfar 150.24 304 PKP **PKPdf 02 30 14.8 +0.8**
comp=Z,0.8nm,0.4s,baz=79,slow=4.0,SNR=3.4
ASF PKPbc **PKiKP 02 30 20.6 +0.6**
comp=Z,6.7nm,0.9s,baz=18,slow=0.5,SNR=14
RETA Reutte 150.33 356 *i* PKiKP **PKiKP 02 30 19.4 -0.2**
comp=Z,11nm,1.0s,SNR=5.9
WATA Walderalm 150.42 355 *i* PKiKP **PKiKP 02 30 20.4 +0.5**
comp=Z,13nm,0.9s
MOTA Moosalm 150.45 356 *i* PKiKP **PKPbc 02 30 19.4 +0.2**
comp=Z,10nm,0.9s
WTTA Wattenberg 150.49 355 *i* PKiKP **PKiKP 02 30 19.9 -0.2**
comp=Z,12nm,0.8s
KBA Koelnbreinsper 150.49 352 *i* PKiKP **PKPbc 02 30 19.4 0.0**
comp=Z,9.6nm,0.9s
LOMF Lomont 150.54 2 PKP **PKPbc 02 30 18.5 -0.8**
DAVA Damuels 150.58 357 *i* PKiKP **PKiKP 02 30 20.2 0.0**
comp=Z,22nm,1.2s,SNR=5.9
SOKA Soboth 150.64 350 *i* PKPdf **PKPdf 02 30 14.0 -0.1**
comp=Z,5.4nm,1.4s
SOKA *i* PKiKP **PKPbc 02 30 19.7 +0.1**
comp=Z,13nm,1.0s
PERS Pernice 150.67 350 *i* PKPdf **PKPbc 02 30 19.3 -0.3**
MDVR Moldovita 150.75 340⇑ *i*P **PKPbc 02 30 19.9 0.0**
FETA Feichten 150.80 356 *i* PKiKP **PKiKP 02 30 20.9 +0.2**
comp=Z,13nm,1.0s
OBKA Obir 150.88 351 *i* PKiKP **PKiKP 02 30 20.5 -0.3**
comp=Z,4.8nm,0.7s
MYKA Terra Mystica 150.90 352 *i* PKPbc **PKPbc 02 30 19.1 -1.0**
comp=Z,8.1nm,0.9s
ABTA Abfaltersbach 150.92 354 *i* PKPbc **PKPbc 02 30 19.7 -0.6**
comp=Z,14nm,0.7s,SNR=6.4
MMAI Mount Meron Ar 151.07 307 PKPbc **PKPbc 02 30 21.9 +0.9**
comp=Z,7.6nm,0.6s,baz=74,slow=6.2,SNR=23
DAVOX Davos/Dischmat 151.09 357 PKP **PKPdf 02 30 15.5 +0.5**
comp=Z,7.8nm,0.8s,baz=33,slow=1.8,SNR=4.4
DAVOX PKPbc **PKiKP 02 30 21.3 0.0**
comp=Z,7.9nm,0.6s,baz=330,slow=4.2,SNR=12
MPEP Malo Peshtene 151.25 336 *i* P **PKPbc 02 30 21.9 +0.9**
TUE Stuetta 151.41 358 *e*PKPdf **PKPdf 02 30 15.8 +0.3**
VISS Visnje 151.52 350 *e*PKPdf **PKPbc 02 30 21.6 +0.1**
JAVS Javornik 151.56 351 *i* PKPdf **PKPbc 02 30 21.4 -0.3**
DIM Dimitrovgrad 151.57 332 *i* P **PKPbc 02 30 22.5 +0.7**
AGO Saint Agoulin 151.58 7 PKP **PKPbc 02 30 22.9 +1.2**
CSS Mathiatis 151.69 312 *e*PKPbc **PKPbc 02 30 22.0 -0.3**
PLDF La Plantade 151.71 6 PKP **PKPbc 02 30 22.2 +0.1**
BOJS Bojanci 151.74 349 *i* PKPdf **PKPbc 02 30 22.3 +0.3**
PYM Petit Puy Mans 151.86 7 PKP **PKPbc 02 30 22.4 0.0**
KDZ Kurdzhali 151.94 331 *i* P **PKPbc 02 30 23.8 +1.1**
BLY Banja Luka 152.06 346⇑ *i*P **PKPbc 02 30 22.5 -0.3**
LBL Lubilhac 152.40 7 PKP **PKPbc 02 30 24.5 +0.8**
EIL Elat 152.69 301 PKPbc **PKPbc 02 30 25.9 +1.2**
comp=Z,3.9nm,0.6s,baz=339,slow=4.1,SNR=6.4
EIL PKPab **PKPab 02 30 37.2 +1.8**
comp=Z,7.0nm,0.8s,baz=3.5,slow=3.4,SNR=6.1
MMB Musomiste 152.73 334 *i* P **PKPbc 02 30 24.3 -0.2**
KKB Krupnik 152.77 335 *i* P **PKPdf 02 30 18.2 +0.8**
ESDC Sonseca Array 155.91 23 PKP **PKPdf 02 30 22.0 +0.1**
comp=Z,0.2nm,0.5s,baz=90,slow=1.3,SNR=2.9
ESDC PKPab **PKPab 02 30 49.7 +0.9**
comp=Z,1.3nm,0.8s,baz=310,slow=4.4,SNR=4.8
BBTS Babate 156.30 94 PKPab **PKPab 02 30 52.8 +1.6**
comp=Z,37nm,1.1s,baz=217,slow=2.5,SNR=2.2
TAM Tamanrasset 174.57 24 *e*PKIKP **PKPdf 02 30 39.2 +1.1**
TAM Tamanrasset 174.57 24 *e*PKPdf **PKPdf 02 30 39.2 +1.1**

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*IDC **26** 02:12:22.1±4.0, 19°.18N×121°.32E, h0km, mb3.9/4, mb1 4.1/4, mb1mx3.5/50, mbtmp3.9/4, Error ellipse: s-maj=149.1km s-min=43.6km az=28.0*
*ISCJB **26** 02:12:26.4±0.7, 19°.32N±0°.05×121°.13E±0°.08, h32km, mb3.8/4, Error ellipse: s-maj=11.4km s-min=6.6km az=173.0*
*MAN **26** 02:12:26, 19°.22N×121°.15E, h12km, mb4.7, ML3.6, MS3.8*
ISC 26 02:12:27.7±1.0, 19°.26N±0°.06×121°.13E±0°.08, h32km, n11, σ1°21/17, mb3.8/4, 1C, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PIP	**Pasuquin**	**1.05**	**208**⇑	*i* P	**Pn**	**02 12 44.4**	**-1.8**
PIP				*e*S	**Sb**	**02 13 01.5**	**+0.7**
SGCP	**Mt. Cagua**	**1.33**	**139**	*e*P	**Pn**	**02 12 49.9**	**-0.2**
SGCP				*e*S	**Sn**	**02 13 07.6**	**+0.9**
APYP	**Conner**	**1.40**	**176**	*e*P	**Pn**	**02 12 50.5**	**-0.5**
APYP				*e*S	**Sn**	**02 13 08.7**	**+0.4**
ABRA	**Dolores**	**1.65**	**194**	*e*P	**Pn**	**02 12 53.1**	**-1.4**
ABRA				*e*S	**Sn**	**02 13 16.1**	**+1.5**
BOLP	**Bolinao**	**3.09**	**202**	*e*P	**Pn**	**02 13 14.8**	**+0.5**
BOLP				*e*S	**Sb**	**02 13 59.9**	**+0.6**
BALP	**Baler**	**3.53**	**173**	*e*P	**Pn**	**02 13 21.8**	**+1.5**
BALP				*e*S	**Sb**	**02 14 09.1**	**-2.7**
MKAR	**Makanchi Array**	**41.94**	**320**	P	**P**	**02 20 16.4**	**+0.9**
	1.1nm,0.9s,baz=123,slow=8.8,SNR=3.6						
ZALV	**Zalesovo Beam**	**44.40**	**330**	P	**P**	**02 20 35.4**	**+0.2**
	0.4nm,0.4s,baz=108,slow=9.3,SNR=3.0						
KURBB	**Kurchatov Arra**	**45.92**	**323**	P	**P**	**02 20 47.5**	**+0.2**
	1.7nm,0.8s,baz=120,slow=7.7,SNR=13						
YKA	**Yellowknife Ar**	**87.51**	**23**	P	**P**	**02 25 11.6**	**-0.5**
	1.4nm,0.7s,baz=310,slow=4.6,SNR=15						
TXAR	**Lajitas Array**	**115.18**	**43**	PKP	**PKPdf**	**02 31 06.1**	**-0.5**
	0.5nm,0.8s,baz=225,slow=1.1,SNR=5.1						

DDA 26 02:13:46.8, 37°.92N×29°.46E, h7km, Md2.4, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KHAL	**Karahalli**	**0.45**	**4**	*i* P	Pg	02 13 55.9	+0.3
KHAL				*i* S	Sb	02 14 03.7	-0.5

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*IDC **26** 02:16:45.9±0.9, 19°.27N×121°.55E, h0km, mb3.8/7, mb1 4.0/7, mb1mx3.6/63, mbtmp3.8/7, Error ellipse: s-maj=40.1km s-min=19.8km az=59.0*
*MAN **26** 02:16:48, 19°.27N×121°.09E, h6km, mb4.5, ML3.4, MS3.3*
ISC 26 02:16:48.5±2.0, 19°.31N±0°.06×121°.22E±0°.07, h13km±13km, n22, σ1°80/22, mb3.9/8, 1C, Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PIP	**Pasuquin**	**1.13**	**210**⇑	*i* P	**Pb**	**02 17 08.2**	**-1.7**
PIP				*e*S	**Sb**	**02 17 24.6**	**0.0**
SGCP	**Mt. Cagua**	**1.31**	**143**	*e*P	**Pg**	**02 17 13.4**	**-0.4**
SGCP				*e*S	**Sg**	**02 17 32.9**	**+1.9**
APYP	**Conner**	**1.44**	**179**	*e*P	**Pn**	**02 17 14.1**	**-0.2**
APYP				*e*S	**Sb**	**02 17 32.5**	**-0.9**
ABRA	**Dolores**	**1.72**	**196**	*e*P	**Pn**	**02 17 17.2**	**-1.0**
ABRA				*e*S	**Sg**	**02 17 46.0**	**+2.2**

CAUP	**Cauayan**	**2.42**	**166**	*e*P	**Pb**	**02 17 31.2**	**-0.8**
CAUP				*e*S	**Sg**	**02 18 06.8**	**+0.6**
BOLP	**Bolinao**	**3.16**	**203**	*e*P	**Pb**	**02 17 41.6**	**-3.0**
BOLP				*e*S	**Sb**	**02 18 23.5**	**+0.3**
BALP	**Baler**	**3.56**	**174**	*e*P	**Pn**	**02 17 44.7**	**+1.2**
BALP				*e*S	**Sn**	**02 18 28.2**	**+2.7**
CMAR	**Chiang Mai Arr**	**21.10**	**271**	P	**P**	**02 21 36.9**	**+3.9**
	0.8nm,0.3s,baz=79,slow=7.7,SNR=4.7						
LEM	**Lembang**	**29.22**	**209**	P		02 22 55.2	+4.7
	21nm,0.5s,baz=42,slow=12,SNR=4.6						
WRA	**Warramunga Arr**	**41.07**	**161**	P	**P**	**02 24 29.9**	**-2.3**
	0.5nm,0.5s,baz=342,slow=9.0,SNR=5.9						
MKAR	**Makanchi Array**	**41.96**	**320**	P	**P**	**02 24 40.6**	**+1.3**
	0.3nm,0.4s,baz=120,slow=8.5,SNR=3.7						
H11S3	**WAKE ISLAND Hy**	**42.93**	**83**	T	T	03 10 28.1	
	baz=261						
H11S1	**WAKE ISLAND Hy**	**42.94**	**83**	T	T	03 10 29.4	
	baz=261						
H11S2	**WAKE ISLAND Hy**	**42.95**	**83**	T	T	03 10 35.3	
	baz=261						
H11N1	**WAKE ISLAND Hy**	**42.95**	**82**	T	T	03 10 26.5	
	baz=277,slow=75,SNR=23						
H11N2	**WAKE ISLAND Hy**	**42.95**	**82**	T	T	03 10 29.6	
	baz=277,slow=75,SNR=18						
H11N3	**WAKE ISLAND Hy**	**42.97**	**82**	T	T	03 10 28.2	
	baz=277,slow=75,SNR=9.9						
ASAR	**Alice Springs**	**44.47**	**163**	P	**P**	**02 24 57.8**	**-1.9**
	0.5nm,0.4s,baz=348,slow=6.9,SNR=4.6						
KURBB	**Kurchatov Arra**	**45.93**	**323**	P	**P**	**02 25 11.2**	**+0.2**
	1.8nm,0.9s,baz=122,slow=7.5,SNR=9.3						
AKTO	**Aktyubinsk**	**58.34**	**318**	P	**P**	**02 26 43.5**	**+0.1**
	0.8nm,0.5s,baz=98,slow=11,SNR=3.3						
YKA	**Yellowknife Ar**	**87.44**	**23**	P	**P**	**02 29 35.1**	**-0.4**
	1.4nm,0.7s,baz=312,slow=4.7,SNR=26						
TXAR	**Lajitas Array**	**115.09**	**43**	PKP	**PKPdf**	**02 35 29.8**	**-0.5**
	0.2nm,0.6s,baz=101,slow=0.9,SNR=3.1						

*ATH **26** 02:19:28.9, 39°.47N×26°.36E, h14km±3km, ML1.7/2, Error ellipse: s-maj=4.4km s-min=1.0km az=248.0*
*ISK **26** 02:19:28.3, 39°.50N×26°.37E, h5km, MD2.7*
*ISCJB **26** 02:19:29.3±0.4, 39°.48N±0°.03×26°.37E±0°.05, h10km, Error ellipse: s-maj=5.9km s-min=3.7km az=174.6*
*CSEM **26** 02:19:29.2±0.1, 39°.48N×26°.36E, h5km, ML1.7, Error ellipse: s-maj=4.1km s-min=2.7km az=79.0*

ISC 26 02:19:29.3±0.8, 39°.47N±0°.02×26°.36E±0°.03, h10km, n38, σ0§52/45, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
PRK	**Paraskevi**	**0.23**	**196**	P	**Pg**		**02 19 34.0**	**-0.1**
PRK				S	**Sg**		**02 19 37.6**	**+0.2**
PRK	**Paraskevi**	**0.23**	**196**	P	**Pg**		**02 19 34.0**	**-0.1**
PRK				S	**Sg**		**02 19 37.6**	**+0.2**
PRK				AML	AML		02 19 42.2	
	comp=N,310μm,0.3s							
PRK				AML	AML		02 19 43.1	
	comp=E,659μm,0.5s							
EZN	**Ezine**	**0.35**	**356**	*e*PG	**Pg**		**02 19 36.0**	**-0.4**
EZN				*e*SG	**Sg**		**02 19 41.5**	**+0.4**
EZN	**Ezine**	**0.35**	**356**	*e*Pg	**Pg**		**02 19 36.0**	**-0.4**
EZN				*e*Sg	**Sg**		**02 19 41.5**	**+0.4**
DKL	**Dikili**	**0.58**	**133**	*e*PG	**Pg**		**02 19 41.3**	**+0.6**
DKL	**Dikili**	**0.58**	**133**	*e*Pg	**Pg**		**02 19 41.3**	**+0.6**
GADA	**Gvkgeada**	**0.80**	**334**	*e*PG	**Pg**		**02 19 44.7**	**-0.1**
GADA	**Gvkgeada**	**0.80**	**334**	*e*Pg	**Pg**		**02 19 44.7**	**-0.1**
GELI	**Tayfur-Gelibol**	**0.93**	**6**	*e*PG	**Pg**		**02 19 47.2**	**-0.1**
GELI	**Tayfur-Gelibol**	**0.93**	**6**	*e*Pg	**Pg**		**02 19 47.2**	**-0.1**
LPK	**Lapseki**	**0.95**	**19**	*e*PG	**Pg**		**02 19 46.8**	**-0.9**
LPK	**Lapseki**	**0.95**	**19**	*e*Pg	**Pg**		**02 19 46.8**	**-0.9**
LIA	**Limnos Island**	**1.00**	**296**	P	**Pg**		**02 19 48.2**	**-0.4**
LIA				S	**Sg**		**02 20 01.7**	**+0.1**
CHOS	**Chios island**	**1.11**	**192**	*e*PN	**Pn**		**02 19 51.1**	**+0.1**
CHOS	**Chios island**	**1.11**	**192**	P	**Pg**		**02 19 50.2**	**-0.5**
CHOS	**Chios island**	**1.11**	**192**	*e*Pn	**Pn**		**02 19 51.1**	**+0.1**
CHOS	**Chios island**	**1.11**	**192**	P	**Pg**		**02 19 50.2**	**-0.5**
SMTH	**Samothraki Isl**	**1.18**	**328**	P	**Pb**		**02 19 51.8**	**-0.1**
SMTH				S	**Sb**		**02 20 07.3**	**0.0**
SMTH	**Samothraki Isl**	**1.18**	**328**	P	**Pb**		**02 19 51.8**	**-0.1**
SMTH				S	**Sb**		**02 20 07.3**	**0.0**
SMTH				AML	AML		02 20 08.5	
	comp=N,86μm,0.2s							
SMTH				AML	AML		02 20 11.7	
	comp=E,61μm,0.2s							
BALB	**Balikesir**	**1.19**	**81**	*e*PN	**Pb**		**02 19 51.3**	**-0.7**
BALB	**Balikesir**	**1.19**	**81**	*e*Pn	**Pb**		**02 19 51.3**	**-0.7**
ERIK	**Erikli-Kesan**	**1.20**	**6**	*e*PN	**Pn**		**02 19 51.8**	**-0.4**
ERIK	**Erikli-Kesan**	**1.20**	**6**	*e*Pn	**Pn**		**02 19 51.8**	**-0.4**
ENEZ	**Enez**	**1.27**	**353**	*e*PN	**Pn**		**02 19 52.8**	**-0.4**
ENEZ	**Enez**	**1.27**	**353**	*e*Pn	**Pn**		**02 19 52.8**	**-0.4**
RKY	**Sarkoy-Tekirda**	**1.37**	**27**	*e*PN	**Pn**		**02 19 54.9**	**+0.3**
RKY	**Sarkoy-Tekirda**	**1.37**	**27**	*e*Pn	**Pn**		**02 19 54.9**	**+0.3**
ALN	**Alexandroupoli**	**1.44**	**351**	*e*PN	**Pn**		**02 19 55.8**	**+0.3**
ALN	**Alexandroupoli**	**1.44**	**351**	P	**Pn**		**02 19 55.8**	**+0.3**
ALN	**Alexandroupoli**	**1.44**	**351**	P	**Pn**		**02 19 55.8**	**+0.3**
EDC	**Edincik**	**1.45**	**53**	*e*PN	**Pb**		**02 19 56.8**	**+0.4**
EDC	**Edincik**	**1.45**	**53**	*e*Pn	**Pb**		**02 19 56.8**	**+0.4**
MRMT	**Marmara Adasi**	**1.48**	**40**	*e*PN	**Pn**		**02 19 56.6**	**+0.5**
MRMT	**Marmara Adasi**	**1.48**	**40**	*e*Pn	**Pn**		**02 19 56.6**	**+0.5**
SMG	**Samos**	**1.80**	**168**	P	**Pb**		**02 20 01.6**	**-0.8**
SMG	**Samos**	**1.80**	**168**	P	**Pb**		**02 20 01.6**	**-0.8**
OUR	**Ouranopolis**	**2.02**	**296**	*e*PN	**Pn**		**02 20 04.7**	**+1.3**
OUR	**Ouranopolis**	**2.02**	**296**	*e*Pn	**Pn**		**02 20 04.7**	**+1.3**

*ISCJB **26** 02:21:39.4±0.5, 39°.13N±0°.03×29°.05E±0°.03, h3km±7km, Error ellipse: s-maj=5.5km s-min=4.2km az=162.1*
*CSEM **26** 02:21:39.5±0.1, 39°.13N×29°.05E, h2km, MD2.5, Error ellipse: s-maj=2.4km s-min=2.3km az=127.0*
*ISK **26** 02:21:39.4, 39°.13N×29°.07E, h6km, MD2.8*
*DDA **26** 02:21:39.2, 39°.14N×29°.06E, h7km, Md2.5*

ISC 26 02:21:39.5±0.9, 39°.12N±0°.02×29°.05E±0°.02, h11km±9km, n45, σ0§35/56, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**255**	P	**Pg**		**02 21 45.1**	**0.0**
DEMI				S	**Sg**		**02 21 48.9**	**+0.1**
DEMI	**Demirci**	**0.27**	**255**	*i* P	**Pg**		**02 21 45.1**	**0.0**
DEMI				*i* S	**Sg**		**02 21 48.9**	**+0.1**
GDZ	**Gediz**	**0.33**	**95**	P	**Pg**		**02 21 46.1**	**-0.1**
GDZ				S	**Sg**		**02 21 51.2**	**+0.5**
GDZ	**Gediz**	**0.33**	**95**	*i* P	**Pg**		**02 21 46.1**	**-0.1**
GDZ				*i* S	**Sg**		**02 21 51.2**	**+0.5**
TVSB	**Tavsanli**	**0.46**	**43**	*e*PG	**Pg**		**02 21 48.0**	**-0.5**
TVSB				*e*SG	**Sg**		**02 21 54.1**	**-0.5**
TVSB	**Tavsanli**	**0.46**	**43**	*e*Pg	**Pg**		**02 21 48.0**	**-0.5**
TVSB				*e*Sg	**Sg**		**02 21 54.1**	**-0.5**
DURS	**Dursunbey**	**0.66**	**317**	P	**Pb**		**02 21 53.0**	**-0.1**
DURS	**Dursunbey**	**0.66**	**317**	*i* P	**Pb**		**02 21 53.0**	**-0.1**
KULA	**Kula-Manisa**	**0.67**	**207**	*e*PG	**Pg**		**02 21 52.7**	**+0.2**
KULA	**Kula-Manisa**	**0.67**	**207**	*e*Pg	**Pg**		**02 21 52.7**	**+0.2**
KHAL	**Karahalli**	**0.82**	**155**	P	**Pb**		**02 21 55.8**	**0.0**
KHAL				S	**Sb**		**02 22 07.1**	**+0.2**
KHAL	**Karahalli**	**0.82**	**155**	*i* P	**Pb**		**02 21 55.8**	**0.0**
KHAL				*i* S	**Sb**		**02 22 07.1**	**+0.2**
KHL	**Karahalli**	**0.87**	**155**	*e*PG	**Pn**		**02 21 57.4**	**-0.4**
KHL	**Karahalli**	**0.87**	**155**	*e*Pg	**Pn**		**02 21 57.4**	**-0.4**
AKHS	**Akhisar**	**0.99**	**257**	P	**Pg**		**02 21 58.3**	**-0.3**
AKHS	**Akhisar**	**0.99**	**257**	*i* P	**Pg**		**02 21 58.4**	**-0.3**
BALB	**Balikesir**	**1.05**	**300**	*e*PG	**Pn**		**02 21 60.0**	**-0.2**
BALB	**Balikesir**	**1.05**	**300**	*e*Pg	**Pn**		**02 22 00.0**	**-0.2**
IGD	**Bursa**	**1.15**	**6**	*i* P	**Pb**		**02 22 00.1**	**-1.3**
IGD				*i* S	**Sg**		**02 22 16.8**	**+0.2**
CAVI	**Cavuskoy**	**1.24**	**29**	*e*PN	**Pg**		**02 22 03.5**	**+0.1**
CAVI	**Cavuskoy**	**1.24**	**29**	*e*Pn	**Pg**		**02 22 03.5**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.26**	**354**	*e*PN	**Pg**		**02 22 03.7**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.26**	**354**	*e*Pn	**Pg**		**02 22 03.7**	**+0.1**
IZI	**Iznik**	**1.26**	**15**	*e*PN	**Pb**		**02 22 03.5**	**+0.1**
IZI	**Iznik**	**1.26**	**15**	*e*Pn	**Pb**		**02 22 03.5**	**+0.1**
KCTX	**Karacabey (Bur**	**1.27**	**335**	*e*PN	**Pg**		**02 22 03.6**	**-0.2**
KCTX	**Karacabey (Bur**	**1.27**	**335**	*e*Pn	**Pg**		**02 22 03.6**	**-0.2**
BALY	**Balya**	**1.27**	**300**	P	**Pb**		**02 22 03.3**	**-0.2**
BALY	**Balya**	**1.27**	**300**	*i* P	**Pb**		**02 22 03.3**	**-0.2**
GEMT	**Gemlik**	**1.32**	**5**	*e*PN	**Pg**		**02 22 05.4**	**+0.6**
GEMT	**Gemlik**	**1.32**	**5**	*e*Pn	**Pg**		**02 22 05.4**	**+0.6**
BORA	**Eskisehir**	**1.32**	**54**	P	**Pn**		**02 22 04.0**	**-0.1**
BORA				S	**Sg**		**02 22 22.2**	**0.0**
BORA	**Eskisehir**	**1.32**	**54**	*i* P	**Pn**		**02 22 04.0**	**-0.1**
BORA				*i* S	**Sg**		**02 22 22.2**	**0.0**
GONE	**Gonen-Balikesi**	**1.41**	**312**	*e*PN	**Pb**		**02 22 05.9**	**+0.1**
GONE	**Gonen-Balikesi**	**1.41**	**312**	*e*Pn	**Pb**		**02 22 05.9**	**+0.1**
ADVT	**Abdulvahap**	**1.42**	**22**	*e*PN	**Pg**		**02 22 06.7**	**0.0**
ADVT	**Abdulvahap**	**1.42**	**22**	*e*Pn	**Pg**		**02 22 06.7**	**0.0**
ARMT	**Armutlu**	**1.46**	**354**	*e*PN	**Pg**		**02 22 07.4**	**0.0**
ARMT	**Armutlu**	**1.46**	**354**	*e*Pn	**Pg**		**02 22 07.4**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**1.48**	**218**	*e*PN	**Pb**		**02 22 06.9**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**1.48**	**218**	*e*Pn	**Pb**		**02 22 06.9**	**-0.2**
EDC	**Edincik**	**1.53**	**324**	*e*PN	**Pb**		**02 22 08.3**	**+0.3**
EDC	**Edincik**	**1.53**	**324**	*e*Pn	**Pb**		**02 22 08.3**	**+0.3**
GULT	**Gulveren**	**1.73**	**40**	*e*PN	**Pn**		**02 22 10.3**	**+0.7**
GULT	**Gulveren**	**1.73**	**40**	*e*Pn	**Pn**		**02 22 10.4**	**+0.7**

*NIED **26** 02:24:00, 37°.50N×142°.90E, h26km, Mw3.8 Best double couple: M0=5.38000×10^14 NP1:φ=230.00000°, δ=35.00000°, λ=110.00000°. NP2:φ=26.00000°, δ=57.00000°, λ=76.00000°.*
*IDC **26** 02:24:43.4±1.4, 37°.46N×143°.18E, h0km, mb4.0/9, mb1 4.1/14, mb1mx3.8/58, mbtmp4.0/14, ML3.4/4, Error ellipse: s-maj=36.9km s-min=20.3km az=86.0*
*ISCJB **26** 02:24:45.8±0.7, 37°.38N±0°.05×142°.92E±0°.06, h24km, mb3.9/9, Error ellipse: s-maj=8.1km s-min=5.9km az=37.4*
*JMA **26** 02:24:46.6±0.2, 37°.48N×142°.85E, h31km, M3.9*

ISC 26 02:24:47.0±0.9, 37°.42N±0°.05×142°.99E±0°.08, h24km, n31, σ1§80/35, mb4.0/9, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.66**	**309**	P	**Pn**		**02 25 12.9**	**-1.7**
JFK	**Kawauchi**	**1.69**	**269**	P	**Pn**		**02 25 13.3**	**-1.7**
JFK				*e*S	**Sn**		**02 25 32.5**	**-3.3**
ONAJ	**Iwakimizuishiy**	**1.78**	**260**	P	**Pn**		**02 25 14.9**	**-1.4**
ONAJ				*e*S	**Sn**		**02 25 35.1**	**-3.0**
JMM	**Marumori**	**1.80**	**285**	P	**Pn**		**02 25 14.6**	**-1.9**
JOU	**Okura**	**2.07**	**298**	P	**Pn**		**02 25 18.9**	**-1.4**
JMK	**Ichinoseki**	**2.07**	**318**	P	**Pn**		**02 25 18.7**	**-1.5**
JFT	**Otama**	**2.11**	**274**	P	**Pn**		**02 25 20.1**	**-0.7**
JFT				*e*S	**Sn**		**02 25 44.4**	**-2.0**
JOM	**Ohasama**	**2.45**	**328**	P	**Pn**		**02 25 24.0**	**-1.4**
JYK	**Kaneyama**	**2.56**	**307**	P	**Pn**		**02 25 25.9**	**-1.1**
JAG	**Ashikaga**	**3.00**	**252**	P	**Pn**		**02 25 32.8**	**-0.3**
JAG				*e*S	**Sn**		**02 26 07.3**	**-1.0**
JAW	**Awa shima**	**3.13**	**290**	P	**Pn**		**02 25 34.7**	**-0.2**
JRY	**Ryogami san**	**3.57**	**248**	P	**Pn**		**02 25 41.0**	**+0.1**
JRY				*e*S	**Sn**		**02 26 20.6**	**-1.7**
MJAR	**Matsushiro Arr**	**3.93**	**259**	Pn	**Pn**		**02 25 46.8**	**+1.0**
	2.9nm,0.3s,baz=79,slow=14,SNR=15							
MAT	**Matsushiro**	**3.93**	**259**	P	**Pn**		**02 25 47.4**	**+1.6**
MAT				S	**Sb**		**02 26 45.7**	**+3.1**
JHJ	**Hachijo jima 2**	**5.03**	**212**	Pn	**Pn**		**02 26 01.9**	**+1.1**
	6.0nm,0.3s,baz=235,slow=15,SNR=1.9							
JHJ				Sn	**Sn**		**02 26 56.8**	**-1.4**
	16nm,0.3s,baz=231,slow=23,SNR=3.3							
JCJ	**Chichijima**	**10.31**	**184**	Pn	**Pn**		**02 27 12.1**	**-1.4**
JCJ				Sn	**Sn**		**02 29 03.4**	**-4.9**
USRK	**Ussuriysk Ar.**	**10.74**	**313**	Pn	Pn		02 27 23.5	+4.3
	0.3nm,0.3s,baz=125,slow=14,SNR=9.1							
KSRS	**Korea Array**	**11.98**	**275**	Pn	**Pn**		**02 27 38.6**	**+2.4**
	0.2nm,0.3s,baz=90,slow=15,SNR=3.6							
KLR	**Kul'dur**	**14.34**	**329**	Pn	**Pn**		**02 28 06.6**	**-1.8**
	0.1nm,0.3s,baz=153,slow=16,SNR=2.9							
H11N2	**WAKE ISLAND Hy**	**27.29**	**124**	T	T		02 59 34.0	
	baz=313							
H11N1	**WAKE ISLAND Hy**	**27.29**	**124**	T	T		02 59 34.7	
	baz=313							
H11N3	**WAKE ISLAND Hy**	**27.30**	**124**	T	T		02 59 37.8	
	baz=313							
SONM	**Songino Array**	**28.62**	**303**	P	**P**		**02 30 41.9**	**+0.4**
	0.8nm,0.7s,baz=99,slow=9.2,SNR=5.6							
ZALV	**Zalesovo Beam**	**42.59**	**312**	P	**P**		**02 32 41.6**	**+0.8**
	1.2nm,0.4s,baz=94,slow=7.7,SNR=5.2							
MKAR	**Makanchi Array**	**44.98**	**302**	P	**P**		**02 33 00.9**	**+0.6**
	0.7nm,0.8s,baz=82,slow=11,SNR=3.7							
WRA	**Warramunga Arr**	**57.63**	**190**	P	**P**		**02 34 35.9**	**+0.7**
	0.3nm,0.5s,baz=7.4,slow=7.5,SNR=4.6							
ARCES	**ARCESS Array B**	**64.08**	**340**	P	**P**		**02 35 19.0**	**+0.5**
	2.8nm,1.0s,baz=27,slow=4.2,SNR=3.0							
GEYT	**Alibeck**	**64.75**	**299**	P	**P**		**02 35 24.8**	**+1.4**
	1.1nm,0.4s,baz=74,slow=5.1,SNR=2.6							
FINES	**FINESS Array B**	**69.06**	**333**	P	**P**		**02 35 51.1**	**+0.8**
	6.2nm,1.1s,baz=25,slow=6.3,SNR=4.9							
KBZ	**Khabaz**	**71.60**	**311**	P	**P**		**02 36 06.9**	**+0.7**
	1.3nm,0.7s,baz=40,slow=1.7,SNR=3.5							
AKASG	**Malin Array Be**	**74.76**	**323**	P	**P**		**02 36 25.3**	**+0.6**
	0.5nm,0.4s,baz=45,slow=6.4,SNR=2.3							

*ISCJB **26** 02:26:15.0±0.6, 51°.52N±0°.03×16°.13E±0°.03, h0km, Error ellipse: s-maj=4.3km s-min=2.9km az=19.0*
*CSEM **26** 02:26:16.2±0.3, 51°.54N×16°.12E, h2km, ML3.2/10, Error ellipse: s-maj=4.4km s-min=3.8km az=16.0*
*WAR **26** 02:26:17.2, 51°.53N×16°.09E, h1km, Mw2.4*
*VIE **26** 02:26:20.2±0.7, 51°.30N×16°.04E, h0km, mb2.3/2, ML2.5/4, Error ellipse: s-maj=8.2km s-min=4.3km az=98.0, Suspected Mining induced.*

ISC 26 02:26:15.3±0.9, 51°.61N±0°.03×16°.14E±0°.02, h0km, n35, σ0§93/75, Poland

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
KSP	**Ksiaz**	**0.77**	**173**	*i* Pg	**Pg**		**02 26 30.4**	**+0.3**
KSP				*e*Sg	**Sg**		**02 26 39.7**	**-0.3**
KSP	**Ksiaz**	**0.77**	**173**	*i* Pg	**Pg**		**02 26 30.4**	**+0.3**
KSP				*e*Sg	**Sg**		**02 26 39.7**	**-0.3**
KSP	**Ksiaz**	**0.77**	**173**	*i* Pgd	**Pg**		**02 26 30.4**	**+0.3**
KSP				*e*Sg	**Sg**		**02 26 39.7**	**-0.3**
UPC	**Upice**	**1.10**	**184**	*e*PG	**Pg**		**02 26 36.5**	**0.0**
UPC				*e*SG	**Sg**		**02 26 50.4**	**-0.3**
	comp=Z,42nm,0.3s							
UPC	**Upice**	**1.10**	**184**	Pg	**Pg**		**02 26 36.5**	**0.0**
UPC				Sg	**Sg**		**02 26 50.4**	**-0.3**
	42nm,0.3s							
DPC	**Dobruska-Polom**	**1.26**	**175**	*e*PG	**Pg**		**02 26 39.2**	**-0.3**
DPC				*e*SG	**Sg**		**02 26 54.9**	**-1.0**
	comp=Z,14nm,0.3s							
DPC	**Dobruska-Polom**	**1.26**	**175**	Pg	**Pg**		**02 26 39.2**	**-0.3**
DPC				Sg	**Sg**		**02 26 54.9**	**-1.0**
	14nm,0.3s							
PVCC	**Panska Ves**	**1.47**	**223**	*e*PG	**Pb**		**02 26 43.5**	**+0.1**
PVCC				*e*SG	**Sn**		**02 27 03.0**	**+0.1**
	comp=Z,91nm,0.2s							
PVCC	**Panska Ves**	**1.47**	**223**	Pg	**Pb**		**02 26 43.5**	**+0.1**
PVCC				Sg	**Sn**		**02 27 03.0**	**+0.1**
	91nm,0.2s							
BRG	**Berggiesshubel**	**1.56**	**243**	PG	**Pg**		**02 26 45.9**	**+0.7**
BRG				SG	**Sg**		**02 27 05.7**	**+0.2**
	57nm,0.4s							
KRLC	**Kraliky**	**1.59**	**165**	*e*PG	**Pn**		**02 26 45.1**	**+0.4**
KRLC				*e*SG	**Sn**		**02 27 05.3**	**-0.7**
KRLC	**Kraliky**	**1.59**	**165**	Pg	**Pn**		**02 26 45.1**	**+0.4**
KRLC				Sg	**Sn**		**02 27 05.3**	**-0.7**
GOPC	**GO Pecny, Ondr**	**1.90**	**207**	*e*PN	**Pb**		**02 26 50.2**	**-0.7**
GOPC				*e*PG	**Pg**		**02 26 51.3**	**-0.4**
GOPC				*e*SG	**Sb**		**02 27 14.8**	**-0.3**
	comp=Z,8.7nm,0.2s							
PRU	**Pruhonice**	**1.91**	**213**	*e*PN	**Pn**		**02 26 49.2**	**+0.1**
PRU				*e*PG	**Pb**		**02 26 51.4**	**+0.4**
PRU				*e*SG	**Sb**		**02 27 15.2**	**-0.2**
	comp=Z,15nm,0.3s							
PRU	**Pruhonice**	**1.91**	**213**	Pn	**Pn**		**02 26 49.2**	**+0.1**
PRU				Sg	**Sb**		**02 27 15.2**	**-0.2**
	15nm,0.3s							
CLL	**Collm**	**1.98**	**263**	*e*Pn	**Pn**		**02 26 50.0**	**-0.1**
CLL				*e*Pg	**Pg**		**02 26 53.0**	**-0.3**
CLL				*e*Sg	**Sg**		**02 27 19.0**	**0.0**
	comp=Z,20nm,0.6s							
OKC	**Ostrava-Krasne**	**2.18**	**143**	*e*PG	**Pg**		**02 26 57.0**	**-0.1**
OKC				*e*SG	**Sg**		**02 27 24.5**	**-0.9**
	comp=Z,13nm,0.4s							
OKC	**Ostrava-Krasne**	**2.18**	**143**	Pg	**Pg**		**02 26 57.0**	**-0.1**
OKC				Sg	**Sg**		**02 27 24.5**	**-0.9**
	comp=Z,13nm,0.4s							
VRAC	**Vranov**	**2.32**	**173**	*e*Pn	**Pn**		**02 26 55.1**	**+0.3**
VRAC				*e*Sg	**Sb**		**02 27 28.2**	**+1.0**
TREC	**Trest**	**2.35**	**190**	*e*PN	**Pn**		**02 26 56.0**	**+0.8**
TREC				*e*PG	**Pb**		**02 26 59.3**	**+0.7**
TREC				*e*SG	**Sb**		**02 27 29.1**	**+1.0**
	comp=Z,8.9nm,0.3s							
OJC	**Ojcow**	**2.70**	**120**	*e*Pg	**Pg**		**02 27 07.3**	**+0.2**
OJC				*e*Sg	**Sg**		**02 27 43.0**	**+1.0**
OJC	**Ojcow**	**2.70**	**120**	*e*Pg	**Pg**		**02 27 07.3**	**+0.2**
OJC				*e*Sg	**Sg**		**02 27 43.0**	**+1.0**
OJC	**Ojcow**	**2.70**	**120**	*e*Pg	**Pg**		**02 27 07.3**	**+0.2**
OJC				*e*Sg	**Sg**		**02 27 43.0**	**+1.0**
NKC	**Novy Kostel**	**2.71**	**241**	*e*PN	**Pn**		**02 27 01.1**	**+1.0**
NKC				*e*PG	**Pg**		**02 27 08.2**	**+1.0**
NKC				*e*SG	**Sg**		**02 27 42.9**	**+0.6**
	comp=Z,44nm,0.3s							
NKC	**Novy Kostel**	**2.71**	**241**	Pn	**Pn**		**02 27 01.1**	**+1.0**
NKC				Sg	**Sg**		**02 27 42.9**	**+0.6**
	comp=Z,44nm,0.3s							
KHC	**Kasperske Hory**	**2.97**	**214**	*e*PN	**Pn**		**02 27 04.6**	**+0.8**
KHC				*e*PG	**Pb**		**02 27 10.1**	**+1.0**
KHC				*e*SN	**Sn**		**02 27 39.1**	**-1.0**
KHC				*e*SG	**Sg**		**02 27 49.5**	**-1.2**
	comp=Z,6.7nm,0.4s							
SMOL	**Smolenice**	**3.21**	**164**	*e*Sg	**Sg**		**02 27 59.4**	**+1.1**
SMOL	**Smolenice**	**3.21**	**164**	*e*SG	**Sg**		**02 27 59.4**	**+1.1**
LANS	**Liptovska Anna**	**3.25**	**138**	*e*PG	**Pg**		**02 27 17.5**	**-0.2**
LANS				*e*SG	**Sg**		**02 28 00.9**	**+1.1**
VYHS	**Vyhne**	**3.57**	**150**	*e*Pg	**Pg**		**02 27 23.7**	**0.0**
VYHS				*e*Sg	**Sg**		**02 28 07.2**	**-2.7**
VYHS	**Vyhne**	**3.57**	**150**	*e*PG	**Pg**		**02 27 23.7**	**0.0**
VYHS				*e*SG	**Sg**		**02 28 07.2**	**-2.7**
BSD	**Bornholm Skovb**	**3.59**	**349**	*i* P	**Pn**		**02 27 13.0**	**+0.9**
BSD				*i* S	**Sn**		**02 27 52.7**	**-2.5**
BSD	**Bornholm Skovb**	**3.59**	**349**	*i* P	**Pn**		**02 27 13.1**	**+0.9**
	SNR=49							
BSD				*i* S	**Sn**		**02 27 52.7**	**-2.5**
CONA	**Conrad Observa**	**3.69**	**183**	Pn	**Pn**		**02 27 14.6**	**+1.0**
	comp=Z,0.2nm,0.1s							
CONA				Sg	**Sg**		**02 28 11.6**	**-2.1**
	comp=Z,8.7nm,0.6s							
MOA	**Molln**	**3.95**	**199**	Pn	**Pn**		**02 27 17.8**	**+0.6**
	comp=Z,2.2nm,0.3s							
MOA				Sg	**Sg**		**02 28 20.4**	**-1.8**

*ISCJB **26** 02:50:33.6±0.5, 39°.11N±0°.03×29°.02E±0°.03, h1km±6km, Error ellipse: s-maj=4.7km s-min=3.5km az=164.7*
*CSEM **26** 02:50:33.8±0.1, 39°.10N×29°.03E, h2km, MD2.7, Error ellipse: s-maj=2.0km s-min=1.7km az=147.0*
*ISK **26** 02:50:33.3, 39°.09N×29°.04E, h5km, MD2.9*
*DDA **26** 02:50:33.7, 39°.12N×29°.03E, h7km, Md2.7*

ISC 26 02:50:34.2±1.1, 39°.11N±0°.02×29°.02E±0°.02, h4km±10km, n55, σ0§47/73, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**254**	P	**

Error ellipse: s-maj=8.6km s-min=5.5km az=30.2
*CSEM **26** 03:11:14.8±0.2, 39°.09N×29°.06E, h10km, MD2.5, Error ellipse: s-maj=5.5km s-min=4.0km az=86.0*
*DDA **26** 03:11:15.2, 39°.07N×29°.07E, h7km, Md2.5*
ISC 26 03:11:14.7±1.0, 39°.08N±0°.03×29°.06E±0°.04, h13km±11km, n16, σ0s40/26, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.33**	**88**	P	**Pg**	**03 11 21.4**	**-0.1**
GDZ				S	**Sg**	**03 11 26.6**	**+0.5**
GDZ	**Gediz**	**0.33**	**88**	*i* P	**Pg**	**03 11 21.4**	**-0.1**
GDZ				*i* S	**Sg**	**03 11 26.6**	**+0.5**
TVSB	**Tavsanli**	**0.49**	**40**	*e*PG	**Pg**	**03 11 23.8**	**-0.6**
TVSB				*e*SG	**Sg**	**03 11 30.7**	**-0.2**
TVSB	**Tavsanli**	**0.49**	**40**	*e*Pg	**Pg**	**03 11 23.8**	**-0.6**
TVSB				*e*Sg	**Sg**	**03 11 30.7**	**-0.2**
KULA	**Kula-Manisa**	**0.64**	**209**	*e*PG	**Pg**	**03 11 26.8**	**-0.4**
KULA				*e*SG	**Sg**	**03 11 35.9**	**+0.2**
KULA	**Kula-Manisa**	**0.64**	**209**	*e*Pg	**Pg**	**03 11 26.8**	**-0.4**
KULA				*e*Sg	**Sg**	**03 11 35.9**	**+0.2**
DURS	**Dursunbey**	**0.69**	**319**	P	**Pb**	**03 11 28.9**	**+0.2**
DURS	**Dursunbey**	**0.69**	**319**	*i* P	**Pb**	**03 11 28.9**	**+0.2**
KHAL	**Karahalli**	**0.78**	**154**	P	**Pn**	**03 11 31.3**	**-0.3**
KHAL				S	**Sb**	**03 11 41.2**	**+0.4**
KHAL	**Karahalli**	**0.78**	**154**	*i* P	**Pn**	**03 11 31.3**	**-0.3**
KHAL				*i* S	**Sb**	**03 11 41.2**	**+0.4**
KCTX	**Karacabey (Bur**	**1.31**	**336**	*e*PN	**Pn**	**03 11 38.5**	**-0.2**
KCTX				*e*SN	**Sg**	**03 11 57.5**	**+0.6**
KCTX	**Karacabey (Bur**	**1.31**	**336**	*e*Pn	**Pn**	**03 11 38.5**	**-0.2**
KCTX				*e*Sn	**Sg**	**03 11 57.5**	**+0.6**
GEMT	**Gemlik**	**1.36**	**4**	*e*PN	**Pn**	**03 11 39.1**	**-0.3**
GEMT	**Gemlik**	**1.36**	**4**	*e*Pn	**Pn**	**03 11 39.1**	**-0.3**
ARMT	**Armutlu**	**1.50**	**354**	*e*PN	**Pn**	**03 11 41.5**	**+0.2**
ARMT	**Armutlu**	**1.50**	**354**	*e*Pn	**Pn**	**03 11 41.5**	**+0.2**

*CSEM **26** 03:19:41.9±0.1, 39°.10N×29°.06E, h2km, MD2.9, Error ellipse: s-maj=2.0km s-min=1.5km az=129.0*
*ISK **26** 03:19:41.4, 39°.08N×29°.08E, h6km, MD2.7*
*DDA **26** 03:19:41.6, 39°.11N×29°.03E, h10km, Md2.9*
ISC 26 03:19:42.1±1.1, 39°.10N±0°.02×29°.05E±0°.02, h4km±12km, n46, σ0s52/60, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**258**	P	**Pg**	**03 19 47.1**	**-0.3**
DEMI				S	**Sg**	**03 19 51.0**	**+0.1**
DEMI	**Demirci**	**0.27**	**258**	*i* P	**Pg**	**03 19 47.1**	**-0.3**
DEMI				*i* S	**Sg**	**03 19 51.0**	**+0.1**
GDZ	**Gediz**	**0.33**	**92**	P	**Pg**	**03 19 48.5**	**-0.1**
GDZ				S	**Sg**	**03 19 53.5**	**+0.5**
GDZ	**Gediz**	**0.33**	**92**	*i* P	**Pg**	**03 19 48.5**	**-0.1**
GDZ				*i* S	**Sg**	**03 19 53.5**	**+0.5**
TVSB	**Tavsanli**	**0.47**	**42**	*e*PG	**Pg**	**03 19 50.9**	**-0.3**
TVSB				*e*SG	**Sg**	**03 19 57.9**	**+0.5**
TVSB	**Tavsanli**	**0.47**	**42**	*e*Pg	**Pg**	**03 19 50.9**	**-0.3**
TVSB				*e*Sg	**Sg**	**03 19 57.9**	**+0.5**
KULA	**Kula-Manisa**	**0.66**	**208**	*e*PG	**Pg**	**03 19 54.6**	**-0.2**
KULA				*e*SG	**Sg**	**03 20 03.5**	**+0.1**
KULA	**Kula-Manisa**	**0.66**	**208**	*e*Pg	**Pg**	**03 19 54.6**	**-0.2**
KULA				*e*Sg	**Sg**	**03 20 03.5**	**+0.1**
DURS	**Dursunbey**	**0.67**	**318**	P	**Pg**	**03 19 55.0**	**-0.1**
DURS	**Dursunbey**	**0.67**	**318**	*i* P	**Pg**	**03 19 55.0**	**-0.1**
MANT	**Manisa**	**0.72**	**213**	*i* P	**Pg**	**03 19 53.4**	**-2.5**
KHAL	**Karahalli**	**0.80**	**155**	P	**Pg**	**03 19 57.8**	**+0.3**
KHAL	**Karahalli**	**0.80**	**155**	*i* P	**Pg**	**03 19 57.8**	**+0.3**
KHL	**Karahalli**	**0.86**	**154**	*e*PG	**Pg**	**03 19 58.0**	**-0.6**
KHL	**Karahalli**	**0.86**	**154**	*e*Pg	**Pg**	**03 19 58.0**	**-0.6**
AKHS	**Akhisar**	**0.99**	**258**	P	**Pg**	**03 20 00.8**	**-0.4**
AKHS				S	**Sg**	**03 20 14.3**	**+0.3**
AKHS	**Akhisar**	**0.99**	**258**	*i* P	**Pg**	**03 20 00.8**	**-0.4**
AKHS				*i* S	**Sg**	**03 20 14.3**	**+0.3**
AKS	**Akhisar**	**0.99**	**258**	*e*PG	**Pg**	**03 20 01.1**	**0.0**
AKS	**Akhisar**	**0.99**	**258**	*e*Pg	**Pg**	**03 20 01.1**	**0.0**
IGD	**Bursa**	**1.17**	**6**	*i* P	**Pg**	**03 20 02.8**	**-1.7**
IGD				*i* S	**Sg**	**03 20 19.3**	**-0.4**
CAVI	**Cavuskoy**	**1.26**	**29**	*e*PN	**Pg**	**03 20 06.0**	**-0.3**
CAVI	**Cavuskoy**	**1.26**	**29**	*e*Pn	**Pg**	**03 20 06.0**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.28**	**354**	*e*PN	**Pn**	**03 20 06.8**	**0.0**
MDNY	**Mudanya-Bursa**	**1.28**	**354**	*e*Pn	**Pn**	**03 20 06.8**	**0.0**
IZI	**Iznik**	**1.28**	**15**	*e*PN	**Pn**	**03 20 06.9**	**0.0**
IZI	**Iznik**	**1.28**	**15**	*e*Pn	**Pn**	**03 20 06.9**	**0.0**
KCTX	**Karacabey (Bur**	**1.28**	**335**	*e*PN	**Pg**	**03 20 06.5**	**-0.3**
KCTX	**Karacabey (Bur**	**1.28**	**335**	*e*Pn	**Pg**	**03 20 06.5**	**-0.3**
ADVT	**Abdulvahap**	**1.43**	**21**	*e*PN	**Pn**	**03 20 09.1**	**+0.1**
ADVT	**Abdulvahap**	**1.43**	**21**	*e*Pn	**Pn**	**03 20 09.1**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**219**	*e*PN	**Pn**	**03 20 09.6**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**219**	*e*Pn	**Pn**	**03 20 09.6**	**0.0**
ARMT	**Armutlu**	**1.47**	**354**	*e*PN	**Pn**	**03 20 09.6**	**+0.1**
ARMT	**Armutlu**	**1.47**	**354**	*e*Pn	**Pn**	**03 20 09.6**	**+0.1**
AYDN	**Tasoluk**	**1.71**	**213**	P	**Pg**	**03 20 14.6**	**-0.3**
AYDN				S	**Sb**	**03 20 36.4**	**+0.4**
AYDN	**Tasoluk**	**1.71**	**213**	*i* P	**Pg**	**03 20 14.6**	**-0.3**
AYDN				*i* S	**Sb**	**03 20 36.4**	**+0.4**
GULT	**Gulveren**	**1.75**	**40**	*e*PN	**Pn**	**03 20 13.3**	**0.0**
GULT	**Gulveren**	**1.75**	**40**	*e*Pn	**Pn**	**03 20 13.3**	**0.0**
SPNC	**Sapanca-Adapaz**	**1.86**	**31**	*e*PN	**Pn**	**03 20 14.6**	**-0.2**
SPNC	**Sapanca-Adapaz**	**1.86**	**31**	*e*Pn	**Pn**	**03 20 14.6**	**-0.2**
SVRH	**Sivrihisar-ESK**	**1.95**	**79**	*e*PN	**Pn**	**03 20 15.3**	**-0.8**
SVRH	**Sivrihisar-ESK**	**1.95**	**79**	*e*Pn	**Pn**	**03 20 15.4**	**-0.8**
DGB	**¨zmir**	**2.00**	**239**	*i* P	**Pb**	**03 20 19.1**	**+0.1**
DGB				*i* S	**Sb**	**03 20 44.6**	**+0.4**
KLYT	**Kilyos**	**2.15**	**360**	*e*PN	**Pn**	**03 20 19.3**	**+0.5**
KLYT	**Kilyos**	**2.15**	**360**	*e*Pn	**Pn**	**03 20 19.3**	**+0.5**
ZEY	**¨zmir**	**2.17**	**248**	*i* P	**Pb**	**03 20 22.0**	**0.0**

*AZER **26** 03:21:39.3±0.4, 38°.79N×48°.78E, h39km, Error ellipse: s-maj=1.5km s-min=0.8km az=251.0*
*ISCJB **26** 03:21:40.4±0.5, 38°.76N±0°.02×48°.79E±0°.05, h47km±5km, Error ellipse: s-maj=6.2km s-min=4.2km az=177.6*
*CSEM **26** 03:21:40.9±0.1, 38°.76N×48°.77E, h35km±2km, ML3.0, Error ellipse: s-maj=4.4km s-min=3.2km az=81.0*
*TEH **26** 03:21:41.7, 38°.62N×48°.70E, h23km, ML2.9*
ISC 26 03:21:41.8±1.0, 38°.80N±0°.02×48°.77E±0°.03, h33km±2km, n62, σ0s99/94, 18C-28D, Iran-Armenia-Azerbaijan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LKRN	**Lenkeran, Azer**	**0.09**	**173**	⇑P	**Pb**	**03 21 47.2**	**-0.3**
	SNR=102						
LKRN				⇑S	**Sb**	**03 21 52.6**	**+1.1**
LKRN	**Lenkeran, Azer**	**0.09**	**173**	P	**Pb**	**03 21 47.2**	**-0.3**
	SNR=102						
LKRN				S	**Sb**	**03 21 52.6**	**+1.1**
ASTR	**Astara**	**0.24**	**175**	⇓P	**Pn**	**03 21 48.0**	**-0.5**
ASTR				⇓S	**Sb**	**03 21 54.1**	**+0.4**
ASTR	**Astara**	**0.24**	**175**	P	**Pn**	**03 21 48.0**	**-0.5**
LRK	**Lerik**	**0.37**	**245**	⇓P	**Pb**	**03 21 49.8**	**-0.8**
LRK				⇑S	**Sn**	**03 21 57.1**	**+0.4**
LRK	**Lerik**	**0.37**	**245**	P	**Pb**	**03 21 49.8**	**-0.8**
LRK				S	**Sn**	**03 21 57.1**	**+0.4**
GLBA	**Clilabad**	**0.53**	**327**	⇑P	**Pb**	**03 21 51.8**	**-1.1**
	SNR=41						
GLBA				⇑S	**Sb**	**03 22 01.1**	**+0.6**
GLBA	**Clilabad**	**0.53**	**327**	P	**Pb**	**03 21 51.8**	**-1.1**
	SNR=41						
GLBA				S	**Sb**	**03 22 01.1**	**+0.6**
GRMI	**Germi**	**0.68**	**271**	*e*Pg	**Pn**	**03 21 53.5**	**-1.7**
SAAT	**Saatly**	**1.09**	**346**	⇓P	**Pn**	**03 22 00.6**	**-0.2**
SAAT				⇑S	**Sb**	**03 22 16.9**	**+0.7**
SAAT	**Saatly**	**1.09**	**346**	P	**Pn**	**03 22 00.6**	**-0.2**
SAAT				S	**Sb**	**03 22 16.9**	**+0.7**
ALIB	**Äli-Bayra**	**1.17**	**9**	⇓P	**Pn**	**03 22 01.3**	**-0.6**
ALIB				⇓S	**Sn**	**03 22 17.9**	**+1.2**
ALIB	**Äli-Bayra**	**1.17**	**9**	P	**Pn**	**03 22 01.3**	**-0.6**
ALIB				S	**Sn**	**03 22 17.9**	**+1.2**
ISRB	**Sarab**	**1.30**	**222**	*e*AMB	AMB	03 22 04.7	
	comp=Z,2μm,0.1s						
ISRB				*e*Pg	**Pn**	**03 22 02.5**	**-1.3**
ZRD	**Zardab**	**1.70**	**331**	⇑Pn	**Pn**	**03 22 08.7**	**-0.4**
ZRD				⇑Sn	**Sn**	**03 22 31.0**	**+1.4**
ZRD	**Zardab**	**1.70**	**331**	Pn	**Pn**	**03 22 08.7**	**-0.4**
ZRD				Sn	**Sn**	**03 22 31.0**	**+1.4**
GBS	**Qobustan**	**1.74**	**4**	⇑Pn	**Pn**	**03 22 09.8**	**0.0**
GBS				⇑Sn	**Sn**	**03 22 31.7**	**+0.9**
GBS	**Qobustan**	**1.74**	**4**	Pn	**Pn**	**03 22 09.8**	**0.0**
GBS				Sn	**Sn**	**03 22 31.7**	**+0.9**
IBST	**Bostanabad**	**1.84**	**234**	*e*Pn	**Pn**	**03 22 10.0**	**-1.2**
IBST				*e*AMB	AMB	03 22 40.1	
	comp=Z,572nm,0.1s						
IBST	**Bostanabad**	**1.84**	**234**	*e*Pn	**Pn**	**03 22 10.0**	**-1.2**
BRDA	**Brd**	**1.91**	**321**	⇓Pn	**Pn**	**03 22 11.9**	**-0.1**
	SNR=5.8						
BRDA				⇓Sn	**Sn**	**03 22 37.3**	**+2.5**
BRDA	**Brd**	**1.91**	**321**	Pn	**Pn**	**03 22 11.9**	**-0.1**
	SNR=5.8						
BRDA				Sn	**Sn**	**03 22 37.3**	**+2.5**
PQL	**Pirkuli**	**1.99**	**356**	⇑Pn	**Pn**	**03 22 12.6**	**-0.7**
	SNR=5.0						
PQL				⇓Sn	**Sn**	**03 22 37.3**	**+0.2**
PQL	**Pirkuli**	**1.99**	**356**	Pn	**Pn**	**03 22 12.6**	**-0.7**
	SNR=5.0						
PQL				Sn	**Sn**	**03 22 37.3**	**+0.2**
IML	**Ismayilli**	**2.04**	**347**	⇓Pn	**Pn**	**03 22 14.0**	**+0.1**
IML				⇑Sn	**Sn**	**03 22 38.4**	**+0.1**
IML	**Ismayilli**	**2.04**	**347**	Pn	**Pn**	**03 22 14.0**	**+0.1**
IML				Sn	**Sn**	**03 22 38.4**	**+0.1**
ATGJ	**Altiaghaj**	**2.06**	**4**	⇓Sn	**Sn**	**03 22 39.9**	**+1.1**
ATGJ	**Altiaghaj**	**2.06**	**4**	Sn	**Sn**	**03 22 39.9**	**+1.1**
ZNJK	**Zanjan**	**2.12**	**182**	*e*Pg	**Pn**	**03 22 17.0**	**+1.8**
ITBZ	**Tabriz**	**2.13**	**255**	*e*Pn	**Pn**	**03 22 15.2**	**0.0**
ITBZ				*e*AMB	AMB	03 22 18.4	
	comp=Z,495nm,0.1s						
ITBZ	**Tabriz**	**2.13**	**255**	*e*Pn	**Pn**	**03 22 15.2**	**0.0**
QBL	**Gabala**	**2.26**	**342**	⇓Pn	**Pn**	**03 22 16.5**	**-0.4**
QBL				⇓Sn	**Sn**	**03 22 43.1**	**-0.6**
QBL	**Gabala**	**2.26**	**342**	Pn	**Pn**	**03 22 16.5**	**-0.4**
SIZA	**Siyzn**	**2.28**	**3**	⇓Pn	**Pn**	**03 22 17.7**	**+0.5**
SIZA				⇓Sn	**Sn**	**03 22 44.9**	**+0.8**
SIZA	**Siyzn**	**2.28**	**3**	Pn	**Pn**	**03 22 17.7**	**+0.5**
SIZA				Sn	**Sn**	**03 22 44.9**	**+0.8**
IMRD	**Marand**	**2.40**	**269**	*e*Pn	**Pn**	**03 22 18.8**	**0.0**
IMRD				*e*AMB	AMB	03 22 57.5	
	comp=Z,1μm,0.1s						
IMRD	**Marand**	**2.40**	**269**	*e*Pn	**Pn**	**03 22 18.8**	**0.0**
XNQ	**Khinaliq**	**2.42**	**349**	⇑Pn	**Pn**	**03 22 18.0**	**-1.2**
XNQ				⇓Sn	**Sn**	**03 22 46.6**	**-1.1**
XNQ	**Khinaliq**	**2.42**	**349**	Pn	**Pn**	**03 22 18.0**	**-1.2**
XNQ				Sn	**Sn**	**03 22 46.6**	**-1.1**
NAX	**Nakhchivan**	**2.58**	**279**	⇓Pn	**Pn**	**03 22 21.3**	**+0.1**
	SNR=3.1						
NAX				⇓Sn	**Sn**	**03 22 53.1**	**+1.7**
NAX	**Nakhchivan**	**2.58**	**279**	Pn	**Pn**	**03 22 21.3**	**+0.1**
	SNR=3.1						
NAX				Sn	**Sn**	**03 22 53.1**	**+1.7**
GANJ	**Ganja**	**2.64**	**315**	⇓Pn	**Pn**	**03 22 20.6**	**-1.4**
GANJ				⇓Sn	**Sn**	**03 22 52.2**	**-0.7**
GANJ	**Ganja**	**2.64**	**315**	Pn	**Pn**	**03 22 20.6**	**-1.4**
GANJ				Sn	**Sn**	**03 22 52.2**	**-0.7**
SEKA	**Sheki**	**2.69**	**334**	⇓Pn	**Pn**	**03 22 21.5**	**-1.3**
SEKA				⇓Sn	**Sn**	**03 22 53.1**	**-1.2**
SEKA	**Sheki**	**2.69**	**334**	Pn	**Pn**	**03 22 21.5**	**-1.3**
SEKA				Sn	**Sn**	**03 22 53.1**	**-1.2**
QSAR	**Qusar**	**2.74**	**352**	⇓Pn	**Pn**	**03 22 23.9**	**+0.5**
QSAR				⇑Sn	**Sn**	**03 22 56.9**	**+1.5**
GDB	**GEDABAY**	**3.01**	**311**	⇑Pn	**Pn**	**03 22 27.1**	**-0.2**
GDB	**GEDABAY**	**3.01**	**311**	Pn	**Pn**	**03 22 27.1**	**-0.2**
MAKU	**Maku**	**3.23**	**281**	*e*Pn	**Pn**	**03 22 33.0**	**+2.8**
ZKTA	**Zakatala**	**3.28**	**331**	⇓Pn	**Pn**	**03 22 29.7**	**-1.1**
	SNR=10.0						
ZKTA				⇓Sn	**Sn**	**03 23 08.4**	**-0.2**
QZX	**Qazax, Azerbai**	**3.45**	**312**	⇑Pn	**Pn**	**03 22 32.7**	**-0.5**
QZX				⇓Sn	**Sn**	**03 23 13.2**	**+0.3**
QZX	**Qazax, Azerbai**	**3.45**	**312**	Pn	**Pn**	**03 22 32.7**	**-0.5**
QZX				Sn	**Sn**	**03 23 13.2**	**+0.3**
IAFJ	**Afjeh**	**3.76**	**140**	*e*Pn	**Pn**	**03 22 36.2**	**-1.5**
IAFJ				*e*AMB	AMB	03 22 38.6	
	comp=Z,713nm,0.1s						
IAFJ	**Afjeh**	**3.76**	**140**	*e*Pn	**Pn**	**03 22 36.2**	**-1.5**
IDMV	**Damavand**	**4.14**	**140**	*e*Pn	**Pn**	**03 22 42.6**	**-0.3**
IDMV				*e*AMB	AMB	03 22 45.5	
	comp=Z,244nm,0.1s						
IDMV	**Damavand**	**4.14**	**140**	*e*Pn	**Pn**	**03 22 42.6**	**-0.3**
IVRN	**Varamin**	**4.48**	**147**	*e*Pn	**Pn**	**03 22 46.3**	**-1.1**
IVRN				*e*AMB	AMB	03 22 53.4	
	comp=Z,133nm,0.1s						
IVRN	**Varamin**	**4.48**	**147**	*e*Pn	**Pn**	**03 22 46.3**	**-1.1**
AB31	**Akbulak array**	**13.17**	**34**	⇑Pn	Pn	03 24 39.7	-6.7
	comp=Z,0.2nm,0.3s,baz=214,slow=10,SNR=11						
AB31				⇓Sn	Sn	03 26 57.3	-14
	comp=Z,0.2nm,0.3s,baz=221,slow=23,SNR=3.7						
AB31	**Akbulak array**	**13.17**	**34**	Pn	Pn	03 24 39.7	-6.7
	comp=Z,0.2nm,0.3s,SNR=11						
AB31				Sn	Sn	03 26 57.3	-14
	comp=Z,0.2nm,0.3s,SNR=3.7						
AKTO	**Aktyubinsk**	**13.36**	**26**	⇓Pn	Pn	03 24 41.1	-7.8
	comp=Z,1.5nm,0.7s						
AKTO				⇑Sn	Sn	03 27 01.3	-15
	comp=Z,2.7nm,1.1s						
AKTO	**Aktyubinsk**	**13.36**	**26**	Pn	Pn	03 24 41.1	-7.8
	comp=Z,1.5nm,0.7s						
AKTO				Sn	Sn	03 27 01.3	-15
	comp=Z,2.7nm,1.1s						

JMA 26 03:22:51.2, 36°.70N×140°.62E, h7km±1km, M2.8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.10**	**205**	P	Pg	03 22 53.5	+0.1
JHO				S	Sg	03 22 55.1	+0.1
ONAJ	**Iwakimizuishiy**	**0.43**	**20**	P	Pg	03 22 59.4	-0.1
ONAJ				S	Sg	03 23 05.3	+0.2
JYT	**Yasato**	**0.58**	**216**	P	Pg	03 23 02.3	-0.1
JSB	**Shiboa**	**0.62**	**296**	P	Pb	03 23 03.9	-0.5
JFK	**Kawauchi**	**0.70**	**17**	P	Pg	03 23 04.4	-0.2
MAT	**Matsushiro**	**1.95**	**266**	P	Pn	03 23 25.4	+0.7
MAT				S	Sb	03 23 50.5	-1.0

*ISCJB **26** 03:23:16.8±1.5, 43°.34N±0°.09×146°.88E±0°.10, h44km±21km, Error ellipse: s-maj=17.6km s-min=6.3km az=143.9*
*JMA **26** 03:23:17.2±0.2, 43°.24N×146°.81E, h50km±3km, M3.0*
*SKHL **26** 03:23:19.4±0.7, 43°.47N×146°.97E, h38km±2km, mb4.4/3*
ISC 26 03:23:15.3±2.5, 43°.3N±0°.1×146°.97E±0°.09, h26km±14km, n13, σ1s40/18, 1C, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHO	**Shikotan**	**0.62**	**350**	*i* P	**Pn**	**03 23 28.5**	**+0.1**
SHO				AMB	AMB	03 23 28.6	
	360nm,0.3s						
SHO				*i* S	**Sb**	**03 23 35.3**	**-0.6**
SHO				A	A	03 23 36.7	
	4μm,0.3s						
SHO				A	A	03 23 36.7	
	1μm,0.3s						
NEM2	**Nemuro 2**	**0.90**	**277**	P	**Pb**	**03 23 32.2**	**-0.1**
NEM2				*e*S	**Sb**	**03 23 43.1**	**-0.8**
YUK	**Yuzh-Kuril'sk**	**1.12**	**314**	⇑*i*P	**Pb**	**03 23 36.1**	**+0.2**
YUK				AMB	AMB	03 23 37.5	
	120nm,0.2s						
YUK				AMB	AMB	03 23 37.5	
	290nm,0.2s						
YUK				*i* S	**Sn**	**03 23 48.1**	**-1.6**
YUK				A	A	03 23 51.0	
	900nm,0.2s						
YUK				A	A	03 23 51.0	
	440nm,0.2s						
JRA	**Rausu**	**1.50**	**297**	P	**Pn**	**03 23 41.1**	**+0.6**
JRA				*e*S	**Sn**	**03 23 58.1**	**-1.2**
JNK	**Nakash**	**1.67**	**282**	*e*S	**Sn**	**03 24 02.1**	**-1.4**
JAK	**Akkeshi**	**1.69**	**262**	P	**Pn**	**03 23 43.4**	**+0.4**
KUR	**Kuril'sk**	**2.08**	**18**	*e*P	**Pn**	**03 23 48.8**	**+0.4**
KUR				AMB	AMB	03 23 49.3	
	40nm,0.2s						
KUR				*e*S	**Sn**	**03 24 11.4**	**-1.9**
KUR				A	A	03 24 13.0	
	180nm,0.2s						
JOB	**Onbets**	**2.33**	**262**	*e*S	**Sn**	**03 24 18.6**	**-0.9**
JTKR	**Abashiri--Toko**	**2.34**	**289**	P	**Pn**	**03 23 53.3**	**+1.4**
JAR	**Ashorobuto**	**2.34**	**272**	*e*S	**Sn**	**03 24 19.5**	**-0.4**
JCH	**Churui**	**2.73**	**258**	*e*S	**Sn**	**03 24 28.5**	**-1.0**
YSS	**Yuzh-Sakhalins**	**4.75**	**323**	*e*P	**Pn**	**03 24 27.3**	**+2.2**
TYV	**Tymovskoe**	**8.15**	**340**	*e*P	**Pn**	**03 25 14.6**	**+2.8**

*ISCJB **26** 03:23:33.9±0.6, 35°.46N±0°.04×140°.80E±0°.07, h35km, mb3.4/5, Error ellipse: s-maj=8.2km s-min=5.4km az=4.9*
*JMA **26** 03:23:34.3±0.1, 35°.53N×140°.72E, h26km±1km, M3.1*
JMA Felt I J1.
*IDC **26** 03:23:36.8±4.0, 35°.34N×140°.71E, h36km±35km, mb3.2/5, mb1 3.6/8, mb1mx3.4/42, mbtmp3.6/8, ML3.2/2, Error ellipse: s-maj=32.9km s-min=17.4km az=87.0*
ISC 26 03:23:35.8±0.8, 35°.49N±0°.05×140°.78E±0°.07, h35km, n22, σ1s93/20, mb3.4/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.22**	**17**	P	**Pn**	**03 23 40.1**	**-2.7**
CHOJ				S	**Sn**	**03 23 44.3**	**-3.2**
JCN	**Nagara**	**0.48**	**261**	P	**Pn**	**03 23 44.2**	**-1.9**
KTR	**Katsuura**	**0.52**	**228**	P	**Pn**	**03 23 44.2**	**-2.4**
KTR				*e*S	**Sn**	**03 23 51.7**	**-2.5**
BSO4	**Boso 4**	**0.62**	**216**	P	**Pn**	**03 23 46.8**	**-1.2**
BSO3	**Boso 3**	**0.73**	**198**	P	**Pn**	**03 23 48.7**	**-0.6**
BSO1	**Boso 1**	**0.85**	**169**	P	**Pn**	**03 23 49.6**	**-1.2**
JYT	**Yasato**	**0.87**	**327**	P	**Pn**	**03 23 49.4**	**-2.2**
MJAR	**Matsushiro Arr**	**2.33**	**297**	Pn	**Pn**	**03 24 12.6**	**+0.9**
	3.0nm,0.3s,baz=93,slow=13,SNR=13						
MAT	**Matsushiro**	**2.33**	**297**	P	**Pn**	**03 24 12.9**	**+1.2**
MAT				*e*S	**Sn**	**03 24 37.8**	**-1.4**
JHJ	**Hachijo jima 2**	**2.51**	**200**	Pn	**Pn**	**03 24 12.8**	**-1.3**
	28nm,0.3s,baz=261,slow=21,SNR=5.2						
JHJ				Sn	**Sn**	**03 24 41.2**	**-2.2**
	21nm,0.3s,baz=74,slow=22,SNR=3.1						
JCJ	**Chichijima**	**8.46**	**171**	Pn	**Pn**	**03 25 34.4**	**-1.4**
H11N2	**WAKE ISLAND Hy**	**27.85**	**117**	T	T	03 58 25.4	
	baz=310,slow=75,SNR=42						
H11N1	**WAKE ISLAND Hy**	**27.85**	**117**	T	T	03 58 30.9	
	baz=310,slow=75,SNR=69						
H11N3	**WAKE ISLAND Hy**	**27.86**	**117**	T	T	03 58 32.3	
	baz=310,slow=75,SNR=52						
H11S3	**WAKE ISLAND Hy**	**28.50**	**120**	T	T	03 59 18.3	
	baz=312,slow=75,SNR=361						
H11S1	**WAKE ISLAND Hy**	**28.50**	**120**	T	T	03 59 14.3	
	baz=312,slow=75,SNR=320						
H11S2	**WAKE ISLAND Hy**	**28.51**	**120**	T	T	03 59 19.4	
	baz=312,slow=75,SNR=234						
MKAR	**Makanchi Array**	**44.52**	**303**	P	**P**	**03 31 44.9**	**+1.0**
	0.4nm,0.6s,baz=92,slow=12,SNR=3.1						
ILAR	**Eielson Array**	**51.07**	**32**	P	**P**	**03 32 36.3**	**+2.1**
	0.4nm,0.8s,baz=268,slow=6.4,SNR=4.2						
WRA	**Warramunga Arr**	**55.47**	**187**	P	**P**	**03 33 06.6**	**-0.5**
	0.4nm,0.5s,baz=7.2,slow=7.7,SNR=7.6						
ASAR	**Alice Springs**	**59.20**	**187**	P	**P**	**03 33 33.2**	**-0.2**
	0.3nm,0.4s,baz=7.8,slow=7.5,SNR=3.3						
YKA	**Yellowknife Ar**	**65.39**	**30**	P	**P**	**03 34 16.5**	**+2.1**
	0.1nm,0.8s,baz=297,slow=5.5,SNR=2.8						

*ISK **26** 03:27:53.7, 39°.07N×29°.05E, h6km, MD2.3*
*DDA **26** 03:27:54.8, 39°.06N×29°.08E, h7km, Md2.5*
*CSEM **26** 03:27:54.6±0.2, 39°.11N×29°.02E, h2km, MD2.5, Error ellipse: s-maj=4.1km s-min=3.5km az=117.0*
ISC 26 03:27:54.4±1.0, 39°.05N±0°.04×29°.09E±0°.03, h15km±9km, n14, σ0s35/23, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.31**	**83**	P	**Pb**	**03 28 01.7**	**-0.1**
GDZ				S	**Sg**	**03 28 05.8**	**+0.3**
GDZ	**Gediz**	**0.31**	**83**	*i* P	**Pb**	**03 28 01.7**	**-0.1**
GDZ				*i* S	**Sg**	**03 28 05.8**	**

PIEI	**Pieia**	**0.50**	**132**	Pg	**Pg**	**04 04 09.6**	**-0.4**
PIEI				Sg	**Sb**	**04 04 17.8**	**-0.5**
23nm,0.2s							
PIEI	**Pieia**	**0.50**	**132**	Pg	**Pg**	**04 04 09.6**	**-0.4**
PIEI				Sg	**Sb**	**04 04 17.8**	**-0.5**
23nm,0.2s							
ATPC	**Poggio Castell**	**0.51**	**141**	Pg	**Pg**	**04 04 10.2**	**+0.2**
ATPC				Sg	**Sb**	**04 04 18.4**	**+0.1**
62nm,0.2s							
ATPC	**Poggio Castell**	**0.51**	**141**	Pg	**Pg**	**04 04 10.2**	**+0.2**
ATPC				Sg	**Sb**	**04 04 18.4**	**+0.1**
62nm,0.2s							
SEI	**Scarperia**	**0.51**	**290**	Pg	**Pg**	**04 04 10.1**	**0.0**
377nm,0.3s							
SEI	**Scarperia**	**0.51**	**290**	Pg	**Pg**	**04 04 10.1**	**0.0**
377nm,0.3s							
CAFI	**Castiglion Fio**	**0.55**	**184**	Pg	**Pg**	**04 04 10.8**	**0.0**
47nm,0.5s							
CAFI	**Castiglion Fio**	**0.55**	**184**	Pg	**Pg**	**04 04 10.8**	**0.0**
47nm,0.5s							
ATVO	**AVT- Monte Val**	**0.57**	**151**	Pg	**Pg**	**04 04 11.1**	**-0.1**
ATVO				Sg	**Sb**	**04 04 20.1**	**0.0**
43nm,0.4s							
ATVO	**AVT- Monte Val**	**0.57**	**151**	Pg	**Pg**	**04 04 11.1**	**-0.1**
ATVO				Sg	**Sb**	**04 04 20.1**	**0.0**
43nm,0.4s							
FSSB	**Fossombrone**	**0.58**	**108**	Pg	**Pg**	**04 04 11.0**	**-0.3**
FSSB				Sg	**Sb**	**04 04 20.6**	**+0.3**
74nm,0.3s							
FSSB	**Fossombrone**	**0.58**	**108**	Pg	**Pg**	**04 04 11.0**	**-0.3**
FSSB				Sg	**Sb**	**04 04 20.6**	**+0.3**
74nm,0.3s							
FRON	**Frontone**	**0.62**	**125**	Pg	**Pg**	**04 04 11.8**	**-0.4**
23nm,0.6s							
FRON	**Frontone**	**0.62**	**125**	Pg	**Pg**	**04 04 11.8**	**-0.4**
23nm,0.6s							
SSFR	**Montelago di S**	**0.70**	**128**	Pg	**Pg**	**04 04 13.3**	**-0.5**
40nm,0.2s							
SSFR	**Montelago di S**	**0.70**	**128**	Pg	**Pg**	**04 04 13.3**	**-0.5**
40nm,0.2s							
ATTE	**AVT- Monte Tez**	**0.72**	**160**	Pg	**Pg**	**04 04 13.6**	**-0.4**
32nm,0.5s							
ATTE	**AVT- Monte Tez**	**0.72**	**160**	Pg	**Pg**	**04 04 13.6**	**-0.4**
32nm,0.5s							
NVLJ	**Novalja**	**2.16**	**70**	*i* Pn	**Pn**	**04 04 35.6**	**-0.3**
NVLJ				Sn	**Sn**	**04 05 03.9**	**+1.2**
NVLJ	**Novalja**	**2.16**	**70**	*i* Pn	**Pn**	**04 04 35.6**	**-0.3**
NVLJ				Sn	**Sn**	**04 05 03.8**	**+1.2**
UDBI	**Udbina**	**2.77**	**75**	Sn	**Sn**	**04 05 18.5**	**+0.7**
UDBI	**Udbina**	**2.77**	**75**	Sn	**Sn**	**04 05 18.5**	**+0.7**

*DDA **26** 04:14:09.0, 39.′14N×29.′02E, h7km, Ml2.3*
*ISK **26** 04:14:08.5, 39.′05N×29.′12E, h8km, MD2.8*
*ISCJB **26** 04:14:09.2±0.5, 39.′11N±0.′03×29.′02E±0.′03, h2km±6km, Error ellipse: s-maj=4.7km s-min=3.5km az=156.5*
*CSEM **26** 04:14:09.6±0.1, 39.′11N×29.′02E, h5km, ML2.3, Error ellipse: s-maj=2.2km s-min=1.9km az=153.0*

ISC 26 04:14:08.8±1.0, 39.′06N±0.′02×29.′07E±0.′02, h10km±9km, n41, σ0§57/60, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**266**	P	**Pg**	**04 14 14.8**	**+0.4**
DEMI				S	**Sg**	**04 14 18.2**	**0.0**
DEMI	**Demirci**	**0.27**	**266**	*i* P	**Pg**	**04 14 14.8**	**+0.4**
DEMI				*i* S	**Sg**	**04 14 18.2**	**0.0**
GDZ	**Gediz**	**0.32**	**85**	P	**Pb**	**04 14 17.0**	**+0.2**
GDZ				S	**Sb**	**04 14 22.2**	**+0.1**
GDZ	**Gediz**	**0.32**	**85**	*i* P	**Pb**	**04 14 16.9**	**+0.2**
GDZ				*i* S	**Sb**	**04 14 22.2**	**+0.1**
TVSB	**Tavsanli**	**0.49**	**38**	*e*PG	**Pg**	**04 14 18.6**	**+0.1**
TVSB				*e*SG	**Sg**	**04 14 24.9**	**-0.1**
TVSB	**Tavsanli**	**0.49**	**38**	*e*Pg	**Pg**	**04 14 18.6**	**+0.1**
TVSB				*e*Sg	**Sg**	**04 14 24.9**	**-0.1**
KULA	**Kula-Manisa**	**0.63**	**210**	*e*PG	**Pb**	**04 14 22.2**	**+0.2**
KULA				*e*SG	**Sb**	**04 14 30.9**	**0.0**
KULA	**Kula-Manisa**	**0.63**	**210**	*e*Pg	**Pb**	**04 14 22.2**	**+0.2**
KULA				*e*Sg	**Sb**	**04 14 30.9**	**0.0**
DURS	**Dursunbey**	**0.71**	**320**	P	**Pg**	**04 14 21.8**	**-0.8**
DURS				S	**Sg**	**04 14 30.4**	**-1.5**
DURS	**Dursunbey**	**0.71**	**320**	*i* P	**Pg**	**04 14 21.8**	**-0.8**
DURS				*i* S	**Sg**	**04 14 30.4**	**-1.5**
KHAL	**Karahalli**	**0.77**	**154**	P	**Pn**	**04 14 26.1**	**+0.3**
KHAL				S	**Sn**	**04 14 36.9**	**-0.5**
KHAL	**Karahalli**	**0.77**	**154**	*i* P	**Pn**	**04 14 26.1**	**+0.3**
KHAL				*i* S	**Sn**	**04 14 36.9**	**-0.5**
KHL	**Karahalli**	**0.82**	**154**	*e*PG	**Pg**	**04 14 23.7**	**-0.9**
KHL	**Karahalli**	**0.82**	**154**	*e*Pg	**Pg**	**04 14 23.7**	**-0.9**
AKHS	**Akhisar**	**0.99**	**260**	P	**Pb**	**04 14 28.4**	**+0.3**
AKHS				S	**Sb**	**04 14 41.4**	**+0.1**
AKHS	**Akhisar**	**0.99**	**260**	*i* P	**Pb**	**04 14 28.4**	**+0.3**
AKHS				*i* S	**Sb**	**04 14 41.4**	**+0.1**
AKS	**Akhisar**	**0.99**	**260**	*e*PG	**Pb**	**04 14 28.2**	**+0.1**
AKS	**Akhisar**	**0.99**	**260**	*e*Pg	**Pb**	**04 14 28.2**	**+0.1**
BALB	**Balikesir**	**1.09**	**302**	*e*PN	**Pn**	**04 14 30.9**	**+0.8**
BALB	**Balikesir**	**1.09**	**302**	*e*Pn	**Pn**	**04 14 30.9**	**+0.8**
IGD	**Bursa**	**1.21**	**5**	*i* P	**Pb**	**04 14 29.9**	**-1.8**
IGD				*i* S	**Sb**	**04 14 46.5**	**-0.9**
CAVI	**Cavuskoy**	**1.29**	**27**	*e*PN	**Pg**	**04 14 33.9**	**+0.3**
CAVI	**Cavuskoy**	**1.29**	**27**	*e*Pn	**Pg**	**04 14 33.9**	**+0.3**
BALY	**Balya**	**1.31**	**302**	P	**Pb**	**04 14 33.8**	**+0.2**
BALY				S	**Sb**	**04 14 50.5**	**+0.1**
BALY	**Balya**	**1.31**	**302**	*i* P	**Pb**	**04 14 33.8**	**+0.2**
BALY				*i* S	**Sb**	**04 14 50.5**	**+0.1**
IZI	**Iznik**	**1.31**	**14**	*e*PN	**Pg**	**04 14 34.5**	**+0.5**
MDNY	**Mudanya-Bursa**	**1.31**	**354**	*e*PN	**Pn**	**04 14 33.3**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.31**	**354**	*e*Pn	**Pn**	**04 14 33.3**	**+0.1**
KCTX	**Karacabey (Bur**	**1.32**	**336**	*e*PN	**Pb**	**04 14 33.9**	**+0.2**
KCTX	**Karacabey (Bur**	**1.32**	**336**	*e*Pn	**Pb**	**04 14 33.9**	**+0.2**
BORA	**Eskisehir**	**1.35**	**52**	P	**Pg**	**04 14 34.6**	**-0.1**
BORA				S	**Sg**	**04 14 52.9**	**+0.7**
BORA	**Eskisehir**	**1.35**	**52**	*i* P	**Pg**	**04 14 34.6**	**-0.1**
BORA				*i* S	**Sg**	**04 14 52.9**	**+0.7**
AYDB	**Zeytinkoy-Aydi**	**1.45**	**220**	*e*PN	**Pn**	**04 14 35.7**	**+0.5**
AYDB	**Zeytinkoy-Aydi**	**1.45**	**220**	*e*Pn	**Pn**	**04 14 35.7**	**+0.5**
GONE	**Gonen-Balikesi**	**1.45**	**313**	*e*PN	**Pb**	**04 14 36.3**	**+0.4**
GONE	**Gonen-Balikesi**	**1.45**	**313**	*e*Pn	**Pb**	**04 14 36.3**	**+0.4**
ADVT	**Abdulvahap**	**1.46**	**20**	*e*PN	**Pn**	**04 14 35.7**	**+0.4**
ARMT	**Armutlu**	**1.51**	**354**	*e*PN	**Pb**	**04 14 37.2**	**+0.2**
ARMT	**Armutlu**	**1.51**	**354**	*e*Pn	**Pb**	**04 14 37.2**	**+0.2**
GULT	**Gulveren**	**1.77**	**39**	*e*PN	**Pn**	**04 14 40.3**	**+0.8**
GULT	**Gulveren**	**1.77**	**39**	*e*Pn	**Pn**	**04 14 40.3**	**+0.8**

*CSEM **26** 04:14:38.6, 40.′45N×15.′76E, h11km, MD1.9/9*

ROM 26 04:14:38.6±0.1, 40.′45N×15.′76E, h11km±1km, Md1.9/9, Ml1.3/7, Error ellipse: s-maj=1.8km s-min=0.8km az=36.0, Southern Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MCEL	**Monticello**	**0.13**	**166**	Pg	Pg	04 14 42.4	+0.5
MCEL				Sg	Sg	04 14 44.9	+0.7
132nm,0.2s							
MCEL	**Monticello**	**0.13**	**166**	Pg	Pg	04 14 42.4	+0.5
MCEL				Sg	Sg	04 14 44.9	+0.7
132nm,0.2s							
MTSN	**Montesano sull**	**0.19**	**182**	Pg	Pg	04 14 43.3	+0.6
MTSN				Sg	Sg	04 14 47.1	+1.5
33nm,0.3s							
MTSN	**Montesano sull**	**0.19**	**182**	Pg	Pg	04 14 43.3	+0.6
MTSN				Sg	Sg	04 14 47.1	+1.5
33nm,0.3s							
SIRI	**Monte Sirino -**	**0.28**	**163**	Pg	Pg	04 14 44.8	+0.4
SIRI				Sg	Sg	04 14 49.2	+0.9
73nm,0.3s							
SIRI	**Monte Sirino -**	**0.28**	**163**	Pg	Pg	04 14 44.8	+0.4
SIRI				Sg	Sg	04 14 49.2	+0.9
73nm,0.3s							
CDRU	**Civita di Ruta**	**0.35**	**276**	Pg	Pg	04 14 46.0	+0.4
CDRU				Sg	Sb	04 14 51.4	-1.0
18nm,0.3s							
CDRU	**Civita di Ruta**	**0.35**	**276**	Pg	Pg	04 14 46.0	+0.4
CDRU				Sg	Sb	04 14 51.4	-1.0
18nm,0.3s							
SCHR	**S. Chirico Rap**	**0.35**	**136**	Pg	Pg	04 14 45.9	+0.3
SCHR				Sg	Sb	04 14 51.4	-1.0
16nm,0.5s							
MGR	**Morigerati**	**0.35**	**207**	Pg	Pg	04 14 45.9	+0.2
MGR				Sg	Sg	04 14 51.3	+0.9
20nm,0.3s							
MGR	**Morigerati**	**0.35**	**207**	Pg	Pg	04 14 45.9	+0.2
MGR				Sg	Sg	04 14 51.3	+0.9
20nm,0.3s							
CMPR	**Campora**	**0.37**	**249**	Pg	Pg	04 14 46.6	+0.5
CMPR				Sg	Sg	04 14 51.9	+0.8
CMPR	**Campora**	**0.37**	**249**	Pg	Pg	04 14 46.6	+0.5
CMPR				Sg	Sg	04 14 51.9	+0.8
CUC	**Castrocucco**	**0.46**	**175**	Pg	Pg	04 14 47.9	+0.2
CUC				Sg	Sg	04 14 54.6	+0.8
20nm,0.2s							
CUC	**Castrocucco**	**0.46**	**175**	Pg	Pg	04 14 47.9	+0.2
CUC				Sg	Sg	04 14 54.6	+0.8
20nm,0.2s							
BULG	**Bulgheria - Ca**	**0.47**	**218**	Pg	Pg	04 14 48.2	+0.3
BULG				Sg	Sb	04 14 55.7	-0.3
BULG	**Bulgheria - Ca**	**0.47**	**218**	Pg	Pg	04 14 48.2	+0.3
BULG				Sg	Sb	04 14 55.7	-0.3

*ISCJB **26** 04:14:41.6±0.3, 37.′94N±0.′02×21.′11E±0.′02, h8km±2km, mb3.8/10, Error ellipse: s-maj=3.3km s-min=2.6km az=31.2*
*THE **26** 04:14:41.8, 37.′93N×21.′13E, h0km±1km, ML3.8/14, Error ellipse: s-maj=1.8km s-min=0.4km az=223.0*
*CSEM **26** 04:14:41.9±0.2, 37.′95N×21.′14E, h2km, ML3.8, Error ellipse: s-maj=4.7km s-min=3.4km az=37.0*
*ATH **26** 04:14:41.0, 37.′94N×21.′14E, h17km±1km, ML3.8/4, Error ellipse: s-maj=1.3km s-min=0.7km az=210.0*
*IDC **26** 04:14:47.9±1.9, 37.′93N×21.′17E, h66km±21km, mb3.6/10, mb1 3.5/16, mb1mx3.4/51, mbtmp3.7/16, MS2.7/2, Ms1 2.7/2, ms1mx2.3/44, Error ellipse: s-maj=17.5km s-min=13.2km az=50.0*

ISC 26 04:14:40.9±0.7, 37.′93N±0.′02×21.′10E±0.′02, h11km±4km, n185, σ1§43/223, mb3.9/10, 6C-10D, Southern Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VTN	**Vitineika**	**0.07**	**98**	P	**Pg**	**04 14 43.4**	**+0.2**
VTN				S	**Sg**	**04 14 45.9**	**+1.1**
VTN	**Vitineika**	**0.07**	**98**	P	**Pg**	**04 14 43.4**	**+0.2**
VTN				S	**Sg**	**04 14 45.4**	**+0.6**
KFL	**Anninata**	**0.31**	**307**	P	**Pg**	**04 14 48.0**	**+0.9**
KFL				S	**Sb**	**04 14 52.8**	**-0.8**
KFL	**Anninata**	**0.31**	**307**	P	**Pg**	**04 14 48.1**	**+0.9**
KFL				S	**Sb**	**04 14 52.8**	**-0.8**
KFL	**Anninata**	**0.31**	**307**	P	**Pg**	**04 14 48.1**	**+0.9**
KFL				S	**Sb**	**04 14 53.7**	**+0.1**
RLS	**Riolos of Patr**	**0.32**	**65**	P	**Pg**	**04 14 46.9**	**-0.4**
RLS				S	**Sg**	**04 14 51.6**	**0.0**
RLS	**Riolos of Patr**	**0.32**	**65**	P	**Pg**	**04 14 46.8**	**-0.5**
RLS				S	**Sg**	**04 14 51.5**	**0.0**
RLS	**Riolos of Patr**	**0.32**	**65**	S	**Sg**	**04 14 52.7**	**+1.2**
RLS				AML	AML	04 14 53.3	
comp=E,41268μm,0.4s							
RLS				AML	AML	04 14 53.9	
comp=N,51137μm,0.4s							
ZKS	**Zakynthos**	**0.34**	**228**	P	**Pb**	**04 14 48.8**	**-0.2**
ZKS				S	**Sb**	**04 14 54.6**	**+0.2**
ZKS	**Zakynthos**	**0.34**	**228**	P	**Pb**	**04 14 49.0**	**0.0**
ZKS				S	**Sb**	**04 14 54.6**	**+0.2**
ZKS	**Zakynthos**	**0.34**	**228**	P	**Pb**	**04 14 49.0**	**0.0**
ZKS				S	**Sb**	**04 14 55.2**	**+0.7**
ZKS				AML	AML	04 15 01.4	
comp=N,64251μm,0.5s							
ZKS				AML	AML	04 15 02.3	
comp=E,75480μm,0.4s							
AXS	**Araxos**	**0.35**	**39**	P	**Pg**	**04 14 47.9**	**+0.1**
AXS				S	**Sg**	**04 14 53.3**	**+0.9**
AXS	**Araxos**	**0.35**	**39**	P	**Pg**	**04 14 47.5**	**-0.3**
AXS				S	**Sg**	**04 14 52.4**	**0.0**
AXS	**Araxos**	**0.35**	**39**	P	**Pg**	**04 14 47.5**	**-0.3**
AXS				S	**Sg**	**04 14 53.0**	**+0.5**
VLS	**Valsamata**	**0.48**	**302**	P	**Pg**	**04 14 50.7**	**+0.5**
VLS				S	**Sb**	**04 14 58.4**	**0.0**
VLS	**Valsamata**	**0.48**	**302**	P	**Pg**	**04 14 50.7**	**+0.5**
VLS				S	**Sb**	**04 14 58.8**	**+0.4**
DRO	**Drossia**	**0.48**	**87**	P	**Pg**	**04 14 49.8**	**-0.5**
DRO				S	**Sg**	**04 14 57.3**	**+0.6**
DRO	**Drossia**	**0.48**	**87**	P	**Pg**	**04 14 49.6**	**-0.7**
DRO				S	**Sg**	**04 14 57.2**	**+0.6**
DRO	**Drossia**	**0.48**	**87**	P	**Pg**	**04 14 49.5**	**-0.7**
DRO				S	**Sg**	**04 14 57.7**	**+1.0**
DRO				AML	AML	04 14 59.8	
comp=N,49719μm,0.4s							
DRO				AML	AML	04 15 00.1	
comp=E,87992μm,0.4s							
AMT	**Artemida-Makis**	**0.62**	**129**	P	**Pg**	**04 14 53.0**	**+0.1**
AMT				S	**Sb**	**04 15 02.7**	**+0.2**
AMT	**Artemida-Makis**	**0.62**	**129**	P	**Pg**	**04 14 53.0**	**+0.1**
AMT				S	**Sg**	**04 15 02.4**	**+1.3**
AMT	**Artemida-Makis**	**0.62**	**129**	P	**Pg**	**04 14 53.8**	**+0.8**
AMT				S	**Sb**	**04 15 03.8**	**+1.3**
AMT				AML	AML	04 15 07.5	
comp=N,16272μm,0.5s							
AMT				AML	AML	04 15 15.2	
comp=E,17031μm,0.5s							
UPR	**University Cam**	**0.65**	**56**	P	**Pg**	**04 14 54.3**	**+0.9**
UPR	**University Cam**	**0.65**	**56**	P	**Pg**	**04 14 53.3**	**0.1**
UPR				S	**Sg**	**04 15 01.5**	**-0.4**
UPR	**University Cam**	**0.65**	**56**	P	**Pb**	**04 14 54.5**	**+0.3**
UPR				S	**Sg**	**04 15 01.5**	**-0.4**
PDO	**Prodromos**	**0.68**	**5**	P	**Pg**	**04 14 54.1**	**+0.1**
PDO				S	**Sg**	**04 15 03.5**	**+0.6**
PDO	**Prodromos**	**0.68**	**5**	P	**Pg**	**04 14 54.1**	**+0.1**
PDO	**Prodromos**	**0.68**	**5**	P	**Pg**	**04 14 54.8**	**+0.8**
LAKA	**Lakka**	**0.76**	**65**	P	**Pg**	**04 14 55.0**	**-0.6**
LAKA				S	**Sb**	**04 15 07.0**	**+0.4**
LAKA	**Lakka**	**0.76**	**65**	P	**Pg**	**04 14 55.0**	**-0.6**
LAKA				S	**Sg**	**04 15 05.1**	**-0.4**
PVO	**Paravola**	**0.77**	**26**	P	**Pg**	**04 14 55.7**	**0.0**
PVO				S	**Sb**	**04 15 07.0**	**+0.3**
PVO	**Paravola**	**0.77**	**26**	P	**Pg**	**04 14 55.7**	**0.0**
PVO	**Paravola**	**0.77**	**26**	P	**Pg**	**04 14 56.1**	**+0.4**
EFP	**Efpalio**	**0.81**	**51**	P	**Pg**	**04 14 56.2**	**-0.3**
EFP				S	**Sb**	**04 15 08.2**	**+0.3**
EFP	**Efpalio**	**0.81**	**51**	P	**Pg**	**04 14 56.2**	**-0.3**
EFP				S	**Sb**	**04 15 08.2**	**+0.3**
EFP	**Efpalio**	**0.81**	**51**	P	**Pg**	**04 14 55.5**	**-1.0**
KLV	**Kalavryta, Ach**	**0.84**	**82**	P	**Pg**	**04 14 57.0**	**0.0**
KLV				S	**Sg**	**04 15 09.0**	**+1.0**
KLV	**Kalavryta, Ach**	**0.84**	**82**	P	**Pg**	**04 14 57.0**	**0.0**
KLV				S	**Sg**	**04 15 08.5**	**+0.5**
KLV	**Kalavryta, Ach**	**0.84**	**82**	P	**Pg**	**04 14 55.4**	**-1.6**
SERG	**Sergoula**	**0.90**	**57**	P	**Pg**	**04 14 57.9**	**-0.3**
SERG				S	**Sb**	**04 15 11.5**	**+1.0**
SERG	**Sergoula**	**0.90**	**57**	P	**Pg**	**04 14 57.9**	**-0.3**
SERG				S	**Sg**	**04 15 09.9**	**0.0**
ANX	**Ano Chora**	**0.93**	**44**	P	**Pg**	**04 14 58.2**	**-0.6**
ANX				S	**Sb**	**04 15 12.8**	**+1.3**
ANX	**Ano Chora**	**0.93**	**44**	P	**Pg**	**04 14 58.2**	**-0.6**
ANX	**Ano Chora**	**0.93**	**44**	P	**Pg**	**04 14 58.2**	**-0.6**
LKD2	**Lefkada island**	**0.93**	**338**	P	**Pg**	**04 14 58.4**	**-0.4**
LKD2				S	**Sn**	**04 15 13.3**	**-0.1**
LKD2	**Lefkada island**	**0.93**	**338**	P	**Pg**	**04 14 58.4**	**-0.4**
LKD2	**Lefkada island**	**0.93**	**338**	P	**Pg**	**04 14 58.0**	**-0.8**
ITM	**Ithomi**	**0.99**	**138**	P	**Pg**	**04 14 59.7**	**-0.3**
ITM				S	**Sb**	**04 15 14.7**	**+1.5**
ITM	**Ithomi**	**0.99**	**138**	P	**Pg**	**04 14 59.7**	**-0.3**
ITM				S	**Sb**	**04 15 14.7**	**+1.5**
ITM	**Ithomi**	**0.99**	**138**	P	**Pg**	**04 14 59.6**	**-0.3**
EVR	**Evrytania**	**1.13**	**29**	P	**Pb**	**04 15 02.0**	**-0.6**
EVR	**Evrytania**	**1.13**	**29**	P	**Pb**	**04 15 02.0**	**-0.6**
EVR	**Evrytania**	**1.13**	**29**	P	**Pb**	**04 15 01.7**	**-0.9**
PYL	**PYLOS**	**1.15**	**153**	P	**Pb**	**04 15 02.0**	**-0.8**
PYL	**PYLOS**	**1.15**	**153**	P	**Pb**	**04 15 02.0**	**-0.8**
PYL	**PYLOS**	**1.15**	**153**	P	**Pb**	**04 15 01.2**	**-1.6**
VLX	**Vlachokerasia**	**1.16**	**118**	P	**Pb**	**04 15 02.9**	**-0.1**
VLX				S	**Sn**	**04 15 20.3**	**+1.3**
VLX	**Vlachokerasia**	**1.16**	**118**	P	**Pb**	**04 15 02.9**	**-0.1**
VLX				S	**Sn**	**04 15 20.3**	**+1.3**
VLX	**Vlachokerasia**	**1.16**	**118**	P	**Pb**	**04 15 02.1**	**-0.9**
DSL	**Palaion Diasel**	**1.21**	**360**	P	**Pn**	**04 15 03.2**	**-0.6**
DSL	**Palaion Diasel**	**1.21**	**360**	P	**Pn**	**04 15 03.2**	**-0.6**
DSL	**Palaion Diasel**	**1.21**	**360**	P	**Pn**	**04 15 02.4**	**-1.4**
DSF	**Desfina**	**1.22**	**66**	P	**Pn**	**04 15 02.9**	**-1.1**
DSF	**Desfina**	**1.22**	**66**	P	**Pn**	**04 15 02.9**	**-1.1**
DSF	**Desfina**	**1.22**	**66**	P	**Pn**	**04 15 02.2**	**-1.9**
AGG	**Agios Georgios**	**1.46**	**41**	P	**Pb**	**04 15 08.3**	**+0.1**
AGG	**Agios Georgios**	**1.46**	**41**	P	**Pb**	**04 15 08.2**	**+0.1**
AGG	**Agios Georgios**	**1.46**	**41**	P	**Pb**	**04 15 08.2**	**+0.1**
LTK	**Loutraki**	**1.48**	**86**	P	**Pn**	**04 15 07.8**	**+0.3**
LTK	**Loutraki**	**1.48**	**86**	P	**Pn**	**04 15 07.8**	**+0.3**
LTK	**Loutraki**	**1.48**	**86**	P	**Pn**	**04 15 07.2**	**-0.3**
LKR	**Lokris**	**1.66**	**64**	P	**Pn**	**04 15 10.9**	**+0.9**
LKR	**Lokris**	**1.66**	**64**	P	**Pn**	**04 15 10.9**	**+0.9**
LKR	**Lokris**	**1.66**	**64**	P	**Pn**	**04 15 10.6**	**+0.6**
KRND	**KRANIDI**	**1.71**	**108**	P	**Pb**	**04 15 13.6**	**+1.2**
KRND	**KRANIDI**	**1.71**	**108**	P	**Pb**	**04 15 13.6**	**+1.2**
KRND	**KRANIDI**	**1.71**	**108**	P	**Pg**	**04 15 13.9**	**+0.2**
IGT	**Igoumenitsa**	**1.71**	**340**	P	**Pb**	**04 15 12.8**	**+0.4**
IGT	**Igoumenitsa**	**1.71**	**340**	P	**Pb**	**04 15 12.8**	**+0.4**
IGT	**Igoumenitsa**	**1.71**	**340**	P	**Pb**	**04 15 12.5**	**0.0**
DID	**Didima**	**1.74**	**103**	P	**Pb**	**04 15 13.7**	**+0.7**
DID	**Didima**	**1.74**	**103**	P	**Pb**	**04 15 13.7**	**+0.7**
DID	**Didima**	**1.74**	**103**	P	**Pb**	**04 15 13.9**	**+0.9**
THL	**Klokotos Trika**	**1.79**	**23**	P	**Pb**	**04 15 14.8**	**+1.2**
THL	**Klokotos Trika**	**1.79**	**23**	P	**Pb**	**04 15 14.8**	**+1.2**
SGD	**Sagiada**	**1.82**	**338**	P	**Pb**	**04 15 14.2**	**0.0**
SGD	**Sagiada**	**1.82**	**338**	P	**Pb**	**04 15 14.0**	**-0.2**
SGD	**Sagiada**	**1.82**	**338**	P	**Pb**	**04 15 14.0**	**-0.2**
VLI	**Veliai**	**1.90**	**129**	P	**Pg**	**04 15 17.2**	**0.0**
VLI	**Veliai**	**1.90**	**129**	P	**Pg**	**04 15 17.2**	**0.0**
SMIA	**Simia**	**1.91**	**59**	P	**Pb**	**04 15 15.9**	**+0.1**
SMIA	**Simia**	**1.91**	**59**	P	**Pb**	**04 15 15.9**	**+0.1**
KPRO	**Kipourio**	**2.04**	**6**	P	**Pb**	**04 15 18.1**	**+0.1**
KPRO	**Kipourio**	**2.04**	**6**	P	**Pb**	**04 15 18.1**	**+0.1**
KEK	**Kerkira**	**2.06**	**331**	P	**Pg**	**04 15 20.2**	**-0.1**
KEK	**Kerkira**	**2.06**	**331**	P	**Pg**	**04 15 20.2**	**-0.1**
FYTO	**Fytoko, Volos**	**2.06**	**44**	P	**Pb**	**04 15 17.7**	**-0.7**
FYTO	**Fytoko, Volos**	**2.06**	**44**	P	**Pb**	**04 15 17.7**	**-0.7**
VLY	**Voula,Athens**	**2.13**	**91**	P	**Pn**	**04 15 17.4**	**+0.9**
VLY	**Voula,Athens**	**2.13**	**91**	P	**Pn**	**04 15 17.6**	**+1.1**
VLY	**Voula,Athens**	**2.13**	**91**	P	**Pn**	**04 15 17.6**	**+1.1**
XOR	**Xorichti**	**2.18**	**48**	P	**Pb**	**04 15 19.5**	**-0.9**
XOR	**Xorichti**	**2.18**	**48**	P	**Pb**	**04 15 19.5**	**-0.9**
XOR	**Xorichti**	**2.18**	**48**	P	**Pb**	**04 15 19.9**	**-0.4**
PTL	**Penteli**	**2.19**	**86**	P	**Pb**	**04 15 19.6**	**-0.9**
PTL	**Penteli**	**2.19**	**86**	P	**Pb**	**04 15 19.6**	**-0.9**
PENT	**Pentalofos**	**2.27**	**1**	P	**Pb**	**04 15 22.2**	**+0.3**
PENT	**Pentalofos**	**2.27**	**1**	P	**Pb**	**04 15 22.2**	**+0.3**
LIT	**Litokhoron**	**2.43**	**26**	P	**Pb**	**04 15 24.6**	**0.0**
LIT	**Litokhoron**	**2.43**	**26**	P	**Pb**	**04 15 24.0**	**-0.6**
LIT	**Litokhoron**	**2.43**	**26**	P	**Pb**	**04 15 24.0**	**-0.6**
NEST	**Nestorio**	**2.49**	**359**	P	**Pb**	**04 15 25.4**	**-0.3**
AOS	**Alonnisos**	**2.51**	**59**	P	**Pn**	**04 15 23.7**	**+2.1**
AOS	**Alonnisos**	**2.51**	**59**	P	**Pn**	**04 15 23.7**	**+2.1**
AOS	**Alonnisos**	**2.51**	**59**	P	**Pn**	**04 15 20.5**	**-1.1**
PAIG	**Paliouri**	**2.83**	**44**	P	**Pn**	**04 15 27.1**	**+1.0**
PAIG	**Paliouri**	**2.83**	**44**	P	**Pn**	**04 15 27.1**	**+1.0**
FNA	**Florina**	**2.86**	**4**	P	**Pn**	**04 15 26.8**	**+0.2**
PLG	**Polygyros**	**3.05**	**36**	P	**Pn**	**04 15 31.6**	**+2.5**
PLG	**Polygyros**	**3.05**	**36**	P	**Pn**	**04 15 31.6**	**+2.5**
HORT	**Hortiatis**	**3.09**	**30**	P	**Pn**	**04 15 31.7**	**+2.0**
HORT	**Hortiatis**	**3.09**	**30**	P	**Pn**	**04 15 31.7**	**+2.0**
BIA	**Bitola**	**3.10**	**3**	*i* Pn	**Pb**	**04 15 37.0**	**+1.0**
GRG	**Griva**	**3.19**	**18**	P	**Pn**	**04 15 32.8**	**+1.7**
**GR

*IDC **26** 04:19:40.9±1.9, 7.°04S×155.°94E, h104km±17km, mb4.1/22, mb1 4.2/24, mb1mx4.1/38, mbtmp4.4/24, MS3.3/9, Ms1 3.4/9, ms1mx3.1/21, Error ellipse: s-maj=13.6km s-min=12.2km az=92.0*

*NEIC **26** 04:19:41.8±0.7, 7.°04S×155.°85E, h113km±6km, mb4.8/24, Error ellipse: s-maj=6.5km s-min=5.5km az=115.0*

ISC 26 04:19:40.8±0.3, 7.°11S±0.°06×155.°83E±0.°06, h100km, n108, σ1s64/109, mb4.6/50, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RABL	**Rabaul**	**4.66**	**308**	*e*Pn	**Pn**	**04 20 50.3**	**+1.4**
RABL				*e*Sn	Sn	04 21 51.7	+10
HNR	**Honiara**	**4.68**	**120**	P	**Pn**	**04 20 47.5**	**-1.7**
27nm,0.3s,baz=199,slow=5.3,SNR=4.1							
HNR				S	**Sn**	**04 21 42.4**	**0.0**
35nm,0.3s,baz=274,slow=23,SNR=10.0							
HNR				LR	LR	04 22 42.6	
comp=Z,280nm,19.1s,baz=342,slow=39							
HNR	**Honiara**	**4.68**	**120**	*e*P	**Pn**	**04 20 50.0**	**+0.9**
HNR				*e*S	**Sn**	**04 21 46.0**	**+3.6**
HNR	**Honiara**	**4.68**	**120**	*e*Pn	**Pn**	**04 20 50.1**	**+0.9**
HNR				*e*S	**Sn**	**04 21 46.4**	**+3.9**
PMG	**Port Moresby**	**8.88**	**254**	P	**Pn**	**04 21 49.3**	**+2.9**
6.4nm,0.3s,baz=55,slow=7.3,SNR=11							
PMG				LR	LR	04 25 12.0	
comp=Z,209nm,19.0s,baz=48,slow=37							
PMG	**Port Moresby**	**8.88**	**254**	*e*Pn	**Pn**	**04 21 47.8**	**+1.5**
PATS	**Pohnpei**	**14.07**	**10**	*e*Pn	Pn	04 22 48.1	-7.5
COEN	**Coen**	**14.18**	**240**	*e*Pn	**Pn**	**04 22 58.4**	**+1.2**
DZM	**Mont Dzumac**	**18.06**	**147**	*e*P	**P**	**04 23 41.2**	**-3.3**
96nm,1.8s							
EIDS	**Eidsvold**	**18.72**	**194**	*e*P	**Pn**	**04 23 53.2**	**+0.1**
25nm,1.4s							
KWAJ	**Kwajalein Atol**	**19.69**	**37**	*e*P	**Pn**	**04 24 09.3**	**+4.7**
211nm,0.6s							
GUMO	**Guam**	**23.26**	**332**	LR	LR	04 32 05.2	
comp=Z,69nm,19.7s,baz=130,slow=32							
WRAB	**Tennant Creek**	**24.43**	**236**	*e*P	**P**	**04 24 50.9**	**+0.6**
11nm,0.6s							
WB2	**Warramunga Arr**	**24.43**	**236**	*e*P	**P**	**04 24 51.0**	**+0.6**
14nm,1.0s							
WRA	**Warramunga Arr**	**24.44**	**236**	P	**P**	**04 24 50.9**	**+0.4**
11nm,0.6s,baz=63,slow=9.5,SNR=78							
WRA				PcP	**PcP**	**04 28 27.7**	**+0.6**
1.8nm,0.5s,baz=71,slow=3.1,SNR=9.2							
MTN	**Manton Dam**	**24.98**	**255**	*e*P	**P**	**04 24 55.7**	**+0.4**
52nm,1.1s							
AS01	**Alice Springs**	**26.69**	**230**	*e*P	**P**	**04 25 10.0**	**-0.7**
AS31	**Alice Springs**	**26.73**	**230**	*e*P	**P**	**04 25 11.1**	**0.0**
3.0nm,0.4s							
ASAR	**Alice Springs**	**26.73**	**230**	P	**P**	**04 25 10.9**	**-0.2**
3.2nm,0.5s,baz=59,slow=9.6,SNR=65							
ASAR				PcP	**PcP**	**04 28 32.9**	**+0.7**
1.4nm,0.4s,baz=63,slow=2.6,SNR=9.5							
ASAR				LR	LR	04 35 14.1	
comp=Z,93nm,19.6s,baz=104,slow=35							
H11S3	**WAKE ISLAND Hy**	**27.60**	**23**	T	T	04 53 42.3	
baz=202,slow=76,SNR=632							
H11S2	**WAKE ISLAND Hy**	**27.60**	**23**	T	T	04 53 42.5	
baz=202,slow=76,SNR=494							
H11S1	**WAKE ISLAND Hy**	**27.62**	**23**	T	T	04 53 43.5	
baz=202,slow=76,SNR=510							
STKA	**Stephens Creek**	**28.00**	**206**	P	**P**	**04 25 23.8**	**+1.5**
1.7nm,0.4s,baz=40,slow=16,SNR=6.3							
STKA				PcP	**PcP**	**04 28 35.1**	**+0.1**
1.6nm,0.6s,baz=292,slow=5.1,SNR=3.4							
STKA				LR	LR	04 36 17.9	
comp=Z,108nm,19.5s,baz=21,slow=36							
H11N1	**WAKE ISLAND Hy**	**28.79**	**22**	T	T	04 55 05.6	
baz=202,slow=76,SNR=46							
H11N3	**WAKE ISLAND Hy**	**28.80**	**22**	T	T	04 55 25.5	
baz=202,slow=76,SNR=43							
H11N2	**WAKE ISLAND Hy**	**28.81**	**22**	T	T	04 55 15.5	
baz=202,slow=76,SNR=22							
FITZ	**Fitzroy Crossi**	**31.37**	**247**	*e*P	**P**	**04 25 51.9**	**-0.4**
15nm,0.6s							
KAPI	**Kappang**	**35.93**	**271**	*e*P	**P**	**04 26 31.9**	**0.0**
14nm,0.8s							
MBWA	**Marble Bar**	**37.58**	**244**	*e*P	**P**	**04 26 44.9**	**-0.9**
33nm,0.7s							
KKM	**Kota Kinabalu**	**41.63**	**287**	*e*P	**P**	**04 27 18.9**	**-0.7**
11nm,0.6s							
NWAO	**Narrogin (SRO)**	**44.05**	**229**	*e*P	**P**	**04 27 38.5**	**-0.3**
18nm,0.6s							
KSM	**Kuching**	**46.22**	**279**	*e*P	**P**	**04 27 55.9**	**-0.4**
22nm,0.5s							
MJAR	**Matsushiro Arr**	**46.46**	**340**	P	**P**	**04 27 55.1**	**-2.6**
1.0nm,0.3s,baz=164,slow=7.7,SNR=4.4							
KSRS	**Korea Array**	**51.43**	**332**	P	**P**	**04 28 35.1**	**-0.6**
2.6nm,0.8s,baz=145,slow=7.7,SNR=10							
KSRS				LR	LR	04 50 11.6	
comp=Z,36nm,18.6s,baz=281,slow=36							
KSAR	**Wonju Array Be**	**51.44**	**332**	P	**P**	**04 28 35.1**	**-0.6**
ASAJ	**Asahikawa**	**52.37**	**348**	P	**P**	**04 28 42.9**	**+0.3**
4.9nm,0.6s,baz=158,slow=11,SNR=4.3							
NJ2	**Nanjing**	**52.53**	**320**	*e*P	**P**	**04 28 45.8**	**+1.8**
NJ2				pmax	pmax		
comp=Z,11nm,0.5s							
USRK	**Ussuriysk Ar.**	**55.42**	**339**	P	**P**	**04 29 04.6**	**-0.2**
comp=Z,2.8nm,0.8s,baz=172,slow=9.3,SNR=6.9							
IPM	**Ipoh**	**55.90**	**280**	*e*P	**P**	**04 29 07.3**	**-1.5**
comp=Z,16nm,0.8s							
KULM	**Kulim**	**56.43**	**281**	*e*P	**P**	**04 29 11.3**	**-1.3**
comp=Z,16nm,0.9s							
CN2	**Changchun**	**57.65**	**334**	*e*P	**P**	**04 29 23.5**	**+2.9**
GYA	**Guiyang**	**58.18**	**307**	*e*P	**P**	**04 29 26.3**	**+1.5**
GYA				pP	sP	04 29 56.8	-3.6
GYA				sP	PcP	04 30 11.0	-4.3
GYA				ScP	**ScP**	**04 34 02.5**	**-4.1**
GYA				S	**S**	**04 37 16.5**	**-2.6**
GYA				sS	sS	04 38 09.3	+8.1
GYA				pmax	pmax		
comp=Z,10.0nm,1.0s							
GSI	**Gunungsitoli**	**58.72**	**276**	*e*P	**P**	**04 29 26.9**	**-1.8**
comp=Z,16nm,0.6s							
PETK	**Petropavlovsk-**	**60.00**	**1**	P	**P**	**04 29 36.4**	**-0.3**
comp=Z,3.4nm,0.7s,baz=151,slow=9.0,SNR=4.1							
PETK				LR	LR	04 52 24.2	
comp=Z,35nm,21.5s,baz=166,slow=33							
KMI	**Kunming**	**60.77**	**304**	P	**P**	**04 29 47.0**	**+4.2**
KMI				pmax	pmax		
comp=Z,9.0nm,0.7s							
CM01	**Chiang Mai Arr**	**61.56**	**295**	*e*P	**P**	**04 29 47.9**	**0.0**
CMAR	**Chiang Mai Arr**	**61.58**	**295**	P	**P**	**04 29 48.8**	**+0.7**
comp=Z,2.6nm,0.8s,baz=122,slow=5.2,SNR=9.7							
CMAR				LR	LR	04 58 45.4	
comp=Z,6.1nm,18.4s,baz=95,slow=38							
CD2	**Chengdu**	**62.52**	**310**	P	**P**	**04 29 53.0**	**-1.2**
CD2				pmax	pmax		
comp=Z,20nm,0.5s							
HHC	**Hu-ho-hao-te**	**62.67**	**323**	*e*P	**P**	**04 29 56.5**	**+1.4**
HHC				pmax	pmax		
comp=Z,7.0nm,0.9s							
HHC				pmax	pmax		
comp=Z,89nm,8.2s							
LZH	**Lanzhou**	**64.98**	**315**	*e*P	**P**	**04 30 12.5**	**+2.1**
LZH				pP	PcP	04 30 42.8	+0.1
LZH				sP	sP	04 30 57.5	+11
LZH				pmax	pmax		
comp=Z,14nm,1.0s							
ULN	**Ulaanbaatar**	**69.54**	**327**	*e*P	**P**	**04 30 38.0**	**-0.9**
comp=Z,6.8nm,0.7s							
SONM	**Songino Array**	**69.88**	**327**	P	**P**	**04 30 41.2**	**+0.2**
comp=Z,9.5nm,0.8s,baz=140,slow=7.1,SNR=44							
SONA1	**Songino Array**	**69.88**	**327**	*e*P	**P**	**04 30 41.0**	**0.0**
SEY	**Seymchan**	**69.88**	**358**	P	**P**	**04 30 40.3**	**-0.3**
comp=Z,0.9nm,0.5s,baz=90,slow=20,SNR=3.2							
VNDA	**Vanda**	**70.45**	**179**	P	**P**	**04 30 43.0**	**-0.9**
comp=Z,1.4nm,0.8s,baz=324,slow=7.3,SNR=8.2							
SBA	**Scott Base**	**70.94**	**178**	*e*P	**P**	**04 30 48.4**	**+1.5**
comp=Z,4.1nm,1.0s							
TLY	**Talaya**	**73.58**	**329**	P	**P**	**04 31 02.9**	**-0.1**
comp=Z,1.1nm,0.3s,baz=317,slow=16,SNR=2.9							
BILL	**Bilibino**	**75.33**	**4**	*e*P	**P**	**04 31 11.6**	**-1.1**
comp=Z,12nm,1.4s							
GUN	**Gumba**	**75.89**	**301**	*e*P	**P**	**04 31 17.4**	**+0.2**
comp=Z,37nm,0.7s							
KKN	**Kakani**	**76.36**	**301**	*e*P	**P**	**04 31 19.9**	**+0.1**
comp=Z,12nm,0.4s							
DMN	**Daman**	**76.47**	**301**	*e*P	**P**	**04 31 20.6**	**+0.2**
comp=Z,25nm,0.6s							
GKN	**Gorkha**	**76.97**	**301**	*e*P	**P**	**04 31 23.0**	**-0.1**
comp=Z,21nm,0.5s							
KOLN	**Koldanda**	**77.80**	**300**	*e*P	**P**	**04 31 27.4**	**-0.4**
comp=Z,17nm,0.5s							
PYUN	**Piuthan**	**78.40**	**300**	*e*P	**P**	**04 31 30.6**	**-0.5**
comp=Z,11nm,0.5s							
WMQ	**Urumqi**	**79.47**	**317**	*e*P	**P**	**04 31 32.8**	**-3.7**
WMQ				S	**S**	**04 41 31.8**	**+2.0**
WMQ				pmax	pmax		
comp=Z,4.0nm,0.6s							
WMQ				pmax	pmax		
comp=Z,51nm,5.0s							
TIXI	**Tiksi**	**80.58**	**352**	P	**P**	**04 31 42.3**	**+0.6**
comp=Z,1.4nm,0.4s,baz=101,slow=4.9,SNR=5.1							
QSPA	**South Pole Qui**	**82.87**	**180**	*e*P	**P**	**04 31 54.5**	**+0.4**
comp=Z,28nm,0.6s							
ILAR	**Eielson Array**	**83.17**	**21**	P	**P**	**04 31 54.2**	**-1.2**
comp=Z,0.5nm,0.4s,baz=247,slow=5.4,SNR=13							
ILAR				LR	LR	05 03 41.9	
comp=Z,36nm,20.3s,baz=234,slow=32							
MK01	**Makanchi Array**	**84.02**	**318**	*e*P	**P**	**04 31 59.8**	**-0.5**
MK31	**Makanchi Array**	**84.04**	**319**	*e*P	**P**	**04 32 00.5**	**+0.2**
MKAR	**Makanchi Array**	**84.04**	**319**	P	**P**	**04 32 00.3**	**0.0**
comp=Z,6.7nm,0.8s,baz=101,slow=6.0,SNR=34							
MKAR	**Makanchi Array**	**84.04**	**319**	*e*P	**P**	**04 32 00.5**	**+0.2**
MAKZ	**Makanchi**	**84.25**	**318**	*e*P	**P**	**04 32 00.4**	**-1.0**
comp=Z,6.1nm,0.8s							
ZAA0	**Zalesovo Array**	**84.74**	**326**	*e*P	**P**	**04 32 02.2**	**-1.4**
ZALV	**Zalesovo Beam**	**84.74**	**326**	P	**P**	**04 32 02.3**	**-1.3**
comp=Z,5.2nm,0.5s,baz=111,slow=6.2,SNR=10							
KSH	**Kashi**	**86.72**	**310**	P	**P**	**04 32 16.0**	**+2.0**
KSH				*e*pP	sP	04 32 48.8	-2.0
KSH				*e*sP	pP	04 33 02.0	+22
KSH				*e*PP	**PP**	**04 35 44.3**	**+6.6**
KSH	**Kashi**	**86.72**	**310**	S	**S**	**04 42 42.3**	**-1.1**
KURK	**Kurchatov**	**87.43**	**322**	P	**P**	**04 32 15.7**	**-1.3**
KURBB	**Kurchatov Arra**	**87.47**	**322**	P	**P**	**04 32 15.7**	**-1.5**
comp=Z,1.6nm,0.5s,baz=104,slow=4.0,SNR=19							
TKM2	**Tokmak 2**	**87.69**	**314**	*e*P	**P**	**04 32 18.5**	**-0.1**
comp=Z,2.7nm,0.8s							
AAK	**Ala-Archa**	**88.43**	**313**	*e*P	**P**	**04 32 20.6**	**-1.5**
comp=Z,1.5nm,0.6s							
NRIK	**Noril'sk**	**89.11**	**341**	P	**P**	**04 32 23.5**	**-1.0**
comp=Z,1.5nm,0.4s,baz=79,slow=4.3,SNR=2.4							
INK	**Inuvik**	**89.53**	**21**	P	**P**	**04 32 25.7**	**-0.7**
comp=Z,0.8nm,0.5s,baz=164,slow=4.9,SNR=2.7							
PAHR	**Pah Rah Range**	**90.49**	**50**	*e*P	**P**	**04 32 31.2**	**-0.6**
comp=Z,6.5nm,0.8s							
YKA	**Yellowknife Ar**	**96.04**	**28**	P	**P**	**04 32 55.8**	**-0.8**
comp=Z,0.3nm,0.5s,baz=268,slow=4.4,SNR=11							
PDAR	**Pinedale Array**	**98.16**	**48**	P	**P**	**04 33 04.3**	**-2.7**
comp=Z,0.2nm,0.3s,baz=251,slow=2.8,SNR=3.1							
ARCES	**ARCESS Array B**	**109.93**	**343**	PKIKP	**PKiKP**	**04 37 59.0**	**-0.9**
comp=Z,3.4nm,0.9s,baz=29,slow=2.8,SNR=5.2							
FINES	**FINESS Array B**	**114.38**	**336**	PKP	PKPdf	04 38 07.9	-0.6
comp=Z,2.5nm,0.9s,baz=98,slow=2.8,SNR=2.7							
PLCA	**Paso Flores**	**116.13**	**142**	PKP	**PKPdf**	**04 38 12.1**	**-0.7**
comp=Z,0.7nm,0.6s,baz=196,slow=3.8,SNR=4.7							
AKASG	**Malin Array Be**	**118.11**	**325**	PKP	**PKPdf**	**04 38 15.0**	**-1.1**
comp=Z,1.9nm,0.6s,baz=57,slow=2.2,SNR=8.8							
AK11	**Malin Array Si**	**118.15**	**325**	*e*PKPdf	**PKPdf**	**04 38 15.4**	**-0.8**
KMBO	**Kilima Mbogo**	**118.18**	**265**	PKP	**PKPdf**	**04 38 18.1**	**+0.5**
comp=Z,0.6nm,0.3s,baz=49,slow=6.8,SNR=2.5							
BRTR	**Keskin Array B**	**119.08**	**312**	PKP	**PKPdf**	**04 38 17.7**	**-0.8**
comp=Z,0.5nm,0.4s,baz=114,slow=2.6,SNR=3.6							
NOA	**NORSAR Array B**	**120.08**	**341**	PKP	**PKPdf**	**04 38 18.5**	**-1.1**
comp=Z,0.4nm,0.5s,baz=52,slow=1.8,SNR=2.9							
BOSA	**Boshof**	**120.60**	**231**	PKP	**PKPdf**	**04 38 21.9**	**+0.2**
comp=Z,3.1nm,0.6s,baz=354,slow=0.3,SNR=7.6							
GERES	**GERESS Array B**	**127.57**	**329**	PKP	**PKPdf**	**04 38 34.4**	**0.0**
comp=Z,1.3nm,0.5s,baz=78,slow=1.9,SNR=14							
GEA0	**GERESS Array S**	**127.58**	**329**	*e*PKPdf	**PKPdf**	**04 38 30.6**	**-3.8**
PMRV	**Marv??o**	**144.45**	**337**	*e*PKP	PKPbc	04 39 05.1	+0.6
PTOM	**Tomar**	**144.67**	**339**	*e*PKP	**PKPab**	**04 39 05.1**	**+0.1**
PESTR	**Estremoz**	**145.02**	**337**	*e*PKP	**PKPbc**	**04 39 04.3**	**-2.0**
PBAR	**Barrancos**	**145.40**	**336**	*e*PKP	**PKPdf**	**04 39 06.5**	**-1.0**
PNCL	**Nicolau / Gran**	**146.03**	**338**	*e*PKP	**PKPdf**	**04 39 08.3**	**-0.2**
TAM	**Tamanrasset**	**147.45**	**302**	*e*PKPbc	**PKPbc**	**04 39 14.5**	**+0.3**
TORD	**Torodi Ar. Bea**	**153.86**	**285**	PKP	**PKPdf**	**04 39 20.6**	**-0.8**
comp=Z,0.6nm,0.7s,baz=198,slow=0.5,SNR=3.6							
TORD				PKPbc	**PKPbc**	**04 39 29.0**	**-0.5**
comp=Z,3.3nm,0.7s,baz=102,slow=1.7,SNR=27							
KIC	**Kosan Boka**	**160.69**	**269**	*e*PKP1	**PKPab**	**04 40 12.7**	**+0.2**
comp=Z,34nm,0.7s							
DBIC	**Dimbokro**	**160.82**	**270**	PKPab	**PKPab**	**04 40 13.2**	**+0.1**
comp=Z,8.1nm,0.5s,baz=78,slow=3.9,SNR=19							
LIC	**Lamto**	**160.97**	**269**	*e*PKP1	**PKPab**	**04 40 13.8**	**+0.1**
TIC	**Toumodi**	**160.99**	**270**	*e*PKP1	**PKPab**	**04 40 13.8**	**0.0**

*CSEM **26** 04:19:53.6±0.1, 39.°10N×29.°04E, h2km, ML2.5, Error ellipse: s-maj=2.4km s-min=2.0km az=108.0*

*ISK **26** 04:19:53.1, 39.°07N×29.°08E, h6km, MD2.6*

*DDA **26** 04:19:53.2, 39.°10N×29.°05E, h7km, Ml2.5*

ISC 26 04:19:53.4±0.9, 39.°08N±0.°02×29.°04E±0.°02, h14km±8km, n35, σ0s33/48, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**263**	P	**Pg**	**04 19 59.0**	**+0.1**
DEMI				S	**Sg**	**04 20 02.7**	**0.0**
DEMI	**Demirci**	**0.26**	**263**	*i* P	**Pg**	**04 19 59.0**	**+0.1**
DEMI				*i* S	**Sg**	**04 20 02.6**	**0.0**
GDZ	**Gediz**	**0.34**	**88**	P	**Pg**	**04 20 00.6**	**+0.1**
GDZ				S	**Sg**	**04 20 05.6**	**+0.3**
GDZ	**Gediz**	**0.34**	**88**	*i* P	**Pg**	**04 20 00.6**	**+0.1**
GDZ				*i* S	**Sg**	**04 20 05.6**	**+0.3**
TVSB	**Tavsanli**	**0.49**	**41**	*e*PG	**Pg**	**04 20 03.0**	**-0.2**
TVSB				*e*SG	**Sg**	**04 20 09.3**	**-0.6**
TVSB	**Tavsanli**	**0.49**	**41**	*e*Pg	**Pg**	**04 20 03.0**	**-0.2**
TVSB				*e*Sg	**Sg**	**04 20 09.3**	**-0.6**
KULA	**Kula-Manisa**	**0.64**	**208**	*e*PG	**Pb**	**04 20 06.4**	**+0.1**
KULA				*e*SG	**Sb**	**04 20 15.0**	**0.0**
KULA	**Kula-Manisa**	**0.64**	**208**	*e*Pg	**Pb**	**04 20 06.4**	**+0.1**
KULA				*e*Sg	**Sb**	**04 20 15.0**	**0.0**
DURS	**Dursunbey**	**0.68**	**320**	P	**Pg**	**04 20 06.4**	**-0.3**
DURS	**Dursunbey**	**0.68**	**320**	*i* P	**Pg**	**04 20 06.4**	**-0.3**
KHAL	**Karahalli**	**0.79**	**153**	P	**Pn**	**04 20 09.9**	**-0.2**
KHAL				S	**Sb**	**04 20 20.0**	**+0.6**
KHAL	**Karahalli**	**0.79**	**153**	*i* P	**Pn**	**04 20 09.9**	**-0.2**
KHAL				*i* S	**Sb**	**04 20 20.0**	**+0.6**
KHL	**Karahalli**	**0.84**	**153**	*e*PG	**Pb**	**04 20 09.1**	**-0.7**
KHL	**Karahalli**	**0.84**	**153**	*e*Pg	**Pb**	**04 20 09.1**	**-0.7**
ORLT	**Orhaneli**	**0.97**	**353**	*e*PG	**Pn**	**04 20 12.5**	**-0.2**
ORLT	**Orhaneli**	**0.97**	**353**	*e*Pg	**Pn**	**04 20 12.5**	**-0.2**
AKS	**Akhisar**	**0.98**	**259**	*e*PG	**Pn**	**04 20 12.7**	**+0.1**
AKS	**Akhisar**	**0.98**	**259**	*e*Pg	**Pn**	**04 20 12.7**	**+0.1**
IGD	**Bursa**	**1.19**	**6**	*i* P	**Pn**	**04 20 14.8**	**-0.8**
IGD				*i* S	**Sg**	**04 20 32.1**	**+0.1**
CAVI	**Cavuskoy**	**1.28**	**29**	*e*PN	**Pg**	**04 20 18.6**	**+0.5**
CAVI	**Cavuskoy**	**1.28**	**29**	*e*Pn	**Pg**	**04 20 18.6**	**+0.5**
MDNY	**Mudanya-Bursa**	**1.30**	**355**	*e*PN	**Pg**	**04 20 18.3**	**0.0**
MDNY	**Mudanya-Bursa**	**1.30**	**355**	*e*Pn	**Pg**	**04 20 18.3**	**0.0**
KCTX	**Karacabey (Bur**	**1.30**	**336**	*e*PN	**Pg**	**04 20 18.9**	**+0.5**
KCTX	**Karacabey (Bur**	**1.30**	**336**	*e*Pn	**Pg**	**04 20 18.9**	**+0.5**
IZI	**Iznik**	**1.30**	**15**	*e*PN	**Pg**	**04 20 18.6**	**+0.1**
IZI	**Iznik**	**1.30**	**15**	*e*Pn	**Pg**	**04 20 18.6**	**+0.1**
BORA	**Eskisehir**	**1.36**	**53**	P	**Pb**	**04 20 18.8**	**+0.2**
BORA				S	**Sg**	**04 20 37.2**	**+0.1**
BORA	**Eskisehir**	**1.36**	**53**	*i* P	**Pb**	**04 20 18.8**	**+0.2**
BORA				*i* S	**Sg**	**04 20 37.2**	**+0.1**
ADVT	**Abdulvahap**	**1.46**	**21**	*e*PN	**Pb**	**04 20 20.5**	**+0.3**
ADVT	**Abdulvahap**	**1.46**	**21**	*e*Pn	**Pb**	**04 20 20.5**	**+0.3**
ARMT	**Armutlu**	**1.49**	**355**	*e*PN	**Pb**	**04 20 20.8**	**-0.1**
ARMT	**Armutlu**	**1.49**	**355**	*e*Pn	**Pb**	**04 20 20.8**	**-0.1**
GULT	**Gulveren**	**1.77**	**40**	*e*PN	**Pb**	**04 20 25.5**	**-0.1**
GULT	**Gulveren**	**1.77**	**40**	*e*Pn	**Pb**	**04 20 25.5**	**-0.1**

*ISCJB **26** 04:26:24.8±0.6, 43.°90N±0.°04×11.°98E±0.°04, h13km±6km, Error ellipse: s-maj=7.8km s-min=3.8km az=31.9*

*ROM **26** 04:26:24.6±0.2, 43.°89N×12.°00E, h7km±1km, Md2.4/13, Ml1.9/13, Error ellipse: s-maj=2.9km s-min=1.5km az=22.0*

*CSEM **26** 04:26:25.1±0.2, 43.°89N×11.°99E, h10km, ML2.6/11, Error ellipse: s-maj=4.9km s-min=2.8km az=20.0*

ISC 26 04:26:25.4±0.8, 43.°88N±0.°04×12.°00E±0.°03, h9km±6km, n32, σ0s54/58, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFI	**Santa Sofia**	**0.11**	**284**	Pg	**Pg**	**04 26 27.7**	**-0.5**
SFI				Sg	**Sg**	**04 26 29.9**	**-0.2**
290nm,0.2s							
SFI	**Santa Sofia**	**0.11**	**284**	Pg	**Pg**	**04 26 27.7**	**-0.5**
SFI				Sg	**Sg**	**04 26 29.9**	**-0.2**
290nm,0.2s							
ASQU	**Asqua**	**0.17**	**242**	Pg	**Pg**	**04 26 28.9**	**-0.2**
ASQU				Sg	**Sg**	**04 26 32.0**	**+0.3**
743nm,0.2s							
ASQU	**Asqua**	**0.17**	**242**	Pg	**Pg**	**04 26 28.9**	**-0.2**
ASQU				Sg	**Sg**	**04 26 32.0**	**+0.3**
743nm,0.2s							
CPGN	**Carpegna, Ital**	**0.24**	**108**	Pg	**Pb**	**04 26 31.0**	**+0.5**
94nm,0.4s							
CPGN	**Carpegna, Ital**	**0.24**	**108**	Pg	**Pb**	**04 26 31.0**	**+0.5**
94nm,0.4s							
PARC	**Parchiule**	**0.29**	**143**	Pg	**Pg**	**04 26 30.9**	**-0.3**
PARC				Sg	**Sb**	**04 26 36.5**	**-1.2**
175nm,0.2s							
PARC	**Parchiule**	**0.29**	**143**	Pg	**Pg**	**04 26 30.9**	**-0.3**
PARC				Sg	**Sb**	**04 26 36.5**	**-1.2**
175nm,0.2s							
BADI	**Badiali**	**0.41**	**154**	Pg	**Pg**	**04 26 33.0**	**-0.4**
BADI				Sg	**Sb**	**04 26 40.2**	**-0.9**
144nm,0.1s							
BADI	**Badiali**	**0.41**	**154**	Pg	**Pg**	**04 26 33.0**	**-0.4**
BADI				Sg	**Sb**	**04 26 40.2**	**-0.9**
144nm,0.1s							
SEI	**Scarperia**	**0.50**	**291**	Pg	**Pg**	**04 26 34.7**	**-0.4**
SEI				Sg	**Sb**	**04 26 43.0**	**-0.7**
421nm,0.4s							
SEI	**Scarperia**	**0.50**	**291**	Pg	**Pg**	**04 26 34.7**	**-0.4**
SEI				Sg	**Sb**	**04 26 43.0**	**-0.7**
421nm,0.4s							
ATPC	**Poggio Castell**	**0.52**	**140**	Pg	**Pg**	**04 26 35.0**	**-0.5**
ATPC				Sg	**Sb**	**04 26 44.2**	**-0.1**
82nm,0.3s							
ATPC	**Poggio Castell**	**0.52**	**140**	Pg	**Pg**	**04 26 35.0**	**-0.5**
ATPC				Sg	**Sb**	**04 26 44.2**	**-0.1**
82nm,0.3s							
PIEI	**Pieia**	**0.52**	**131**	Pg	**Pg**	**04 26 34.8**	**-0.7**
PIEI				Sg	**Sb**	**04 26 43.7**	**-0.6**
28nm,0.1s							
PIEI	**Pieia**	**0.52**	**131**	Pg	**Pg**	**04 26 34.8**	**-0.7**
PIEI				Sg	**Sb**	**04 26 43.7**	**-0.6**
28nm,0.1s							
CAFI	**Castiglion Fio**	**0.55**	**182**	Pg	**Pg**	**04 26 35.8**	**-0.3**
CAFI				Sg	**Sb**	**04 26 44.8**	**-0.4**
52nm,0.4s							
CAFI	**Castiglion Fio**	**0.55**	**182**	Pg	**Pg**	**04 26 35.8**	**-0.3**
CAFI				Sg	**Sb**	**04 26 44.8**	**-0.4**
52nm,0.4s							
ATVO	**AVT- Monte Val**	**0.58**	**149**	Pg	**Pg**	**04 26 36.2**	**-0.4**
ATVO				Sg	**Sb**	**04 26 46.4**	**+0.4**
62nm,0.4s							
ATVO	**AVT- Monte Val**	**0.58**	**149**	Pg	**Pg**	**04 26 36.2**	**-0.4**
ATVO				Sg	**Sb**	**04 26 46.4**	**+0.4**
62nm,0.4s							
FSSB	**Fossombrone**	**0.59**	**108**	Pg	**Pg**	**04 26 36.5**	**-0.4**
FSSB				Sg	**Sb**	**04 26 46.3**	**-0.2**
FSSB	**Fossombrone**	**0.59**	**108**	Pg	**Pg**	**04 26 36.5**	**-0.4**
FSSB				Sg	**Sb**	**04 26 46.3**	**-0.2**
FRON	**Frontone**	**0.64**	**124**	Pg	**Pg**	**04 26 37.1**	**-0.7**
FRON				Sg	**Sb**	**04 26 48.0**	**+0.2**
22nm,0.8s							
FRON	**Frontone**	**0.64**	**124**	Pg	**Pg**	**04 26 37.1**	**-0.

KULA	**Kula-Manisa**	**0.65**	**203**	*e*PG	**Pb**	**04 37 40.8**	**+0.1**
KULA	**Kula-Manisa**	**0.65**	**203**	*e*Pg	**Pg**	**04 37 40.0**	**-0.1**
KULA				*e*Sg	**Sb**	**04 37 49.2**	**-0.5**
KHAL	**Karahalli**	**0.84**	**152**	P	**Pn**	**04 37 45.0**	**-0.1**
KHAL				S	**Sb**	**04 37 55.1**	**0.0**
KHAL	**Karahalli**	**0.84**	**152**	*i* P	**Pn**	**04 37 45.0**	**-0.1**
KHAL				*i* S	**Sb**	**04 37 55.1**	**0.0**
KCTX	**Karacabey (Bur**	**1.25**	**337**	*e*PN	**Pn**	**04 37 50.6**	**-0.1**
KCTX				*e*SN	**Sn**	**04 38 07.9**	**+0.4**
KCTX	**Karacabey (Bur**	**1.25**	**337**	*e*Pn	**Pn**	**04 37 50.6**	**-0.1**
KCTX				*e*Sn	**Sn**	**04 38 07.9**	**+0.4**
CAVI	**Cavuskoy**	**1.27**	**31**	*e*PN	**Pn**	**04 37 50.2**	**-0.8**
CAVI	**Cavuskoy**	**1.27**	**31**	*e*Pn	**Pn**	**04 37 50.2**	**-0.8**
BORA	**Eskisehir**	**1.37**	**55**	P	**Pg**	**04 37 53.3**	**-0.4**
BORA				S	**Sg**	**04 38 12.1**	**+0.7**
BORA	**Eskisehir**	**1.37**	**55**	*i* P	**Pg**	**04 37 53.3**	**-0.4**
BORA				*i* S	**Sg**	**04 38 12.1**	**+0.7**
ARMT	**Armutlu**	**1.46**	**356**	*e*PN	**Pn**	**04 37 52.9**	**-0.6**
ARMT	**Armutlu**	**1.46**	**356**	*e*Pn	**Pn**	**04 37 52.9**	**-0.6**

WEL 26 04:55:58.7±0.1, 43°.32S×170°.85E, h5km, ML3.8/16, 2C-2D, Error ellipse: s-maj=1.1km s-min=0.8km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RPZ	**Rata Peaks**	**0.42**	**159**	PG	Pg	04 56 07.5	+0.6
RPZ				SG	Sg	04 56 13.1	+0.7
RPZ				AML	AML	04 56 13.8	
INZ	**Inchbonnie**	**0.74**	**37**	P*	Pg	04 56 11.9	-1.0
FOZ	**Fox Glacier**	**0.78**	**254**	P*	Pg	04 56 13.7	-0.1
FOZ				AML	AML	04 56 27.5	
FOZ				AML	AML	04 56 28.0	
OXZ	**Oxford**	**0.87**	**91**	⇓P*	Pb	04 56 15.9	-0.4
OXZ				S*	Sb	04 56 27.6	-0.7
LBZ	**Lake Benmore**	**1.17**	**204**	⇑P*	Pg	04 56 20.2	-1.0
LBZ				AML	AML	04 56 22.7	
LBZ				AML	AML	04 56 23.2	
LTZ	**Lake Taylor**	**1.17**	**63**	P*	Pg	04 56 21.3	0.0
LTZ				AML	AML	04 56 39.8	
LTZ				AML	AML	04 56 40.0	
CRLZ	**Canterbury Las**	**1.32**	**102**	P*	Pn	04 56 23.2	-0.6
CRLZ				AML	AML	04 56 56.7	
MQZ	**McQueen's Vall**	**1.37**	**107**	PN	Pn	04 56 23.6	-0.9
MQZ				AML	AML	04 56 49.6	
MQZ				AML	AML	04 58 54.4	
JCZ	**Jackson Bay**	**1.67**	**243**	⇑PN	Pn	04 56 28.5	-0.3
JCZ				AML	AML	04 56 54.7	
JCZ				AML	AML	04 56 56.1	
DSZ	**Denniston Nort**	**1.73**	**25**	PN	Pn	04 56 28.6	-0.8
DSZ				AML	AML	04 56 55.5	
DSZ				AML	AML	04 56 59.2	
ODZ	**Otahua Downs**	**1.73**	**185**	PN	Pn	04 56 29.2	-0.3
ODZ				AML	AML	04 57 03.1	
ODZ				AML	AML	04 57 04.4	
WKZ	**Wanaka**	**2.00**	**221**	⇓PN	Pn	04 56 32.5	-0.7
WKZ				AML	AML	04 57 13.5	
WKZ				AML	AML	04 57 16.8	
THZ	**Tophouse**	**2.18**	**45**	PN	Pn	04 56 36.0	+0.4
THZ				AML	AML	04 57 10.0	
THZ				AML	AML	04 57 12.4	
EAZ	**Earnscleugh**	**2.21**	**209**	PN	Pn	04 56 35.1	-1.0
EAZ				AML	AML	04 57 18.0	
EAZ				AML	AML	04 57 26.7	
TUZ	**Tuapeka**	**2.77**	**198**	PN	Pn	04 56 42.6	-1.1
TUZ				AML	AML	04 57 33.8	
TUZ				AML	AML	04 57 42.6	
QRZ	**Quartz Range**	**2.79**	**27**	PN	Pn	04 56 43.3	-0.7
QRZ				AML	AML	04 57 30.8	
QRZ				AML	AML	04 57 32.0	
NNZ	**Nelson**	**2.82**	**43**	PN	Pn	04 56 44.9	+0.5
MLZ	**Mavora Lakes**	**2.83**	**223**	PN	Pn	04 56 43.6	-1.1
MLZ				AML	AML	04 57 38.8	
MLZ				AML	AML	04 57 42.4	
DUWZ	**D'Urville Isla**	**3.40**	**43**	AML	AML	04 57 40.3	
DUWZ				AML	AML	04 57 43.0	
APZ	**The Paps**	**4.05**	**209**	PN	Pn	04 56 59.4	-2.0

*IDC **26** 05:05:42.9±1.9, 31°.67S×178°.41W, h0km, mb4.2/2, mb1 4.5/2, mb1mx3.8/24, mbtmp4.2/2, Error ellipse: s-maj=69.9km s-min=45.1km az=15.0*
ISC 26 05:05:57.4±1.9, 32°.2S±0°.1×179°.1W±0°.3, h96km, n11, σ2°59/12, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CNGZ	**Carnagh Statio**	**6.64**	**199**	PN	**Pn**	**05 07 31.2**	**-1.0**
CNGZ				SN	**Sn**	**05 08 51.9**	**+5.6**
PNHZ	**Pukenui**	**8.58**	**205**	SN	**Sn**	**05 09 35.1**	**+1.3**
ANWZ	**Angora Road**	**8.97**	**202**	SN	**Sn**	**05 09 43.8**	**+0.5**
ANWZ				SN		05 09 44.0	
PRWZ	**Pori Road**	**9.23**	**204**	SN	**Sn**	**05 09 49.4**	**-0.1**
BFZ	**Birch Farm**	**9.25**	**203**	SN	**Sn**	**05 09 50.3**	**+0.3**
HOWZ	**Holdsworth Sta**	**9.69**	**205**	SN	**Sn**	**05 09 58.2**	**-2.6**
BHW	**Baring Head**	**10.37**	**206**	SN	**Sn**	**05 10 13.5**	**-3.9**
ASAR	**Alice Springs**	**42.12**	**269**	P	**P**	**05 13 41.6**	**+1.2**
	0.7nm,0.3s,baz=104,slow=7.6,SNR=11						
WRA	**Warramunga Arr**	**43.27**	**275**	P	**P**	**05 13 50.8**	**+1.1**
	2.6nm,0.3s,baz=114,slow=7.9,SNR=67						
FINES	**FINESS Array B**	**146.50**	**338**	PKPbc	**PKPdf**	**05 25 23.8**	**-1.3**
	2.5nm,0.8s,baz=64,slow=4.4,SNR=8.0						
TORD	**Torodi Ar. Bea**	**161.01**	**182**	PKPab	**PKPab**	**05 26 30.1**	**0.0**
	0.7nm,0.7s,baz=186,slow=5.2,SNR=5.9						

*ISK **26** 05:10:44.9, 39°.09N×29°.16E, h10km, MD2.5*
*ISCJB **26** 05:10:45.9±0.5, 39°.10N±0°.03×29°.11E±0°.04, h8km±5km, Error ellipse: s-maj=5.1km s-min=4.4km az=139.9*
*CSEM **26** 05:10:45.8±0.1, 39°.10N×29°.13E, h10km, ML2.3, Error ellipse: s-maj=2.6km s-min=2.1km az=115.0*
*DDA **26** 05:10:45.9, 39°.09N×29°.12E, h7km, Ml2.3*
ISC 26 05:10:45.4±0.9, 39°.07N±0°.03×29°.15E±0°.03, h15km±9km, n20, σ0°35/36, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.26**	**86**	P	**Pb**	**05 10 52.0**	**+0.2**
GDZ				S	**Sb**	**05 10 56.3**	**+0.2**
GDZ	**Gediz**	**0.26**	**86**	*i* P	**Pb**	**05 10 52.0**	**+0.2**
GDZ				*i* S	**Sb**	**05 10 56.3**	**+0.2**
DEMI	**Demirci**	**0.34**	**265**	P	**Pg**	**05 10 52.7**	**+0.2**
DEMI				S	**Sg**	**05 10 57.2**	**-0.1**
DEMI	**Demirci**	**0.34**	**265**	*i* P	**Pg**	**05 10 52.7**	**+0.2**
DEMI				*i* S	**Sg**	**05 10 57.1**	**-0.1**
TVSB	**Tavsanli**	**0.45**	**32**	*e*PG	**Pg**	**05 10 54.1**	**-0.3**
TVSB				*e*SG	**Sg**	**05 11 00.2**	**-0.3**
TVSB	**Tavsanli**	**0.45**	**32**	*e*Pg	**Pg**	**05 10 54.1**	**-0.3**
TVSB				*e*Sg	**Sg**	**05 11 00.2**	**-0.3**
KULA	**Kula-Manisa**	**0.68**	**215**	*e*PG	**Pb**	**05 10 58.8**	**-0.1**
KULA				*e*SG	**Sb**	**05 11 08.7**	**+0.6**
KULA	**Kula-Manisa**	**0.68**	**215**	*e*Pg	**Pb**	**05 10 58.8**	**-0.1**
KULA				*e*Sg	**Sb**	**05 11 08.7**	**+0.6**
DURS	**Dursunbey**	**0.75**	**315**	P	**Pb**	**05 11 00.1**	**0.0**
DURS				S	**Sg**	**05 11 09.7**	**-0.1**
DURS	**Dursunbey**	**0.75**	**315**	*i* P	**Pb**	**05 11 00.1**	**0.0**
DURS				*i* S	**Sg**	**05 11 09.7**	**-0.1**
KHAL	**Karahalli**	**0.75**	**159**	P	**Pn**	**05 11 01.4**	**-0.1**
KHAL				S	**Sn**	**05 11 11.9**	**-0.7**
KHAL	**Karahalli**	**0.75**	**159**	*i* P	**Pn**	**05 11 01.4**	**-0.1**
KHAL				*i* S	**Sn**	**05 11 11.9**	**-0.7**
CAVI	**Cavuskoy**	**1.25**	**25**	*e*PN	**Pb**	**05 11 08.7**	**+0.1**
CAVI	**Cavuskoy**	**1.25**	**25**	*e*Pn	**Pb**	**05 11 08.7**	**+0.1**
IZI	**Iznik**	**1.29**	**11**	*e*PN	**Pn**	**05 11 09.1**	**+0.2**
IZI	**Iznik**	**1.29**	**11**	*e*Pn	**Pn**	**05 11 09.1**	**+0.2**
BORA	**Eskisehir**	**1.29**	**51**	P	**Pg**	**05 11 10.4**	**+0.1**
BORA				S	**Sg**	**05 11 27.6**	**+0.5**
BORA	**Eskisehir**	**1.29**	**51**	*i* P	**Pg**	**05 11 10.4**	**+0.1**
BORA				*i* S	**Sg**	**05 11 27.6**	**+0.5**
ARMT	**Armutlu**	**1.51**	**352**	*e*PN	**Pb**	**05 11 12.7**	**-0.4**
ARMT				*e*SN	**Sb**	**05 11 32.5**	**+0.5**
ARMT	**Armutlu**	**1.51**	**352**	*e*Pn	**Pb**	**05 11 12.7**	**-0.4**
ARMT				*e*Sn	**Sb**	**05 11 32.6**	**+0.5**

*CSEM **26** 05:16:13.9±0.1, 39°.12N×29°.01E, h2km, ML3.0, Error ellipse: s-maj=2.4km s-min=2.1km az=161.0*
*ISK **26** 05:16:13.5, 39°.11N×29°.01E, h5km, MD2.8*
*DDA **26** 05:16:13.5, 39°.13N×29°.03E, h7km, Ml3.0*
ISC 26 05:16:14.0±1.0, 39°.13N±0°.02×29°.01E±0°.02, h5km±10km, n52, σ0°41/74, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**250**	P	**Pg**	**05 16 18.6**	**-0.1**
DEMI				S	**Sg**	**05 16 21.9**	**+0.1**
DEMI	**Demirci**	**0.24**	**250**	*i* P	**Pg**	**05 16 18.6**	**-0.1**
DEMI				*i* S	**Sg**	**05 16 21.9**	**+0.1**
GDZ	**Gediz**	**0.37**	**96**	P	**Pg**	**05 16 21.1**	**-0.1**
GDZ				S	**Sg**	**05 16 26.3**	**+0.3**
GDZ	**Gediz**	**0.37**	**96**	*i* P	**Pg**	**05 16 21.1**	**-0.1**
GDZ				*i* S	**Sg**	**05 16 26.3**	**+0.3**
TVSB	**Tavsanli**	**0.48**	**47**	*e*PG	**Pg**	**05 16 23.1**	**-0.1**
TVSB				*e*SG	**Sg**	**05 16 29.9**	**+0.4**
TVSB	**Tavsanli**	**0.48**	**47**	*e*Pg	**Pg**	**05 16 23.1**	**-0.1**
TVSB				*e*Sg	**Sg**	**05 16 29.9**	**+0.4**
DURS	**Dursunbey**	**0.63**	**319**	P	**Pg**	**05 16 25.6**	**-0.5**
DURS				S	**Sg**	**05 16 34.6**	**+0.3**
DURS	**Dursunbey**	**0.63**	**319**	*i* P	**Pg**	**05 16 25.6**	**-0.5**
DURS				*i* S	**Sg**	**05 16 34.6**	**+0.3**
KULA	**Kula-Manisa**	**0.67**	**204**	*e*PG	**Pg**	**05 16 26.4**	**-0.4**
KULA				*e*SG	**Sg**	**05 16 35.4**	**-0.1**
KULA	**Kula-Manisa**	**0.67**	**204**	*e*Pg	**Pg**	**05 16 26.4**	**-0.4**
KULA				*e*Sg	**Sg**	**05 16 35.4**	**-0.1**
KHAL	**Karahalli**	**0.84**	**153**	P	**Pg**	**05 16 29.8**	**-0.4**
KHAL	**Karahalli**	**0.84**	**153**	*i* P	**Pg**	**05 16 29.8**	**-0.4**
KHL	**Karahalli**	**0.90**	**153**	*e*PG	**Pg**	**05 16 31.0**	**-0.2**
KHL	**Karahalli**	**0.90**	**153**	*e*Pg	**Pg**	**05 16 31.0**	**-0.2**
ORLT	**Orhaneli**	**0.92**	**355**	*e*PG	**Pg**	**05 16 31.3**	**-0.4**
ORLT	**Orhaneli**	**0.92**	**355**	*e*Pg	**Pg**	**05 16 31.3**	**-0.4**
AKHS	**Akhisar**	**0.96**	**256**	P	**Pb**	**05 16 32.9**	**-0.3**
AKHS				S	**Sb**	**05 16 46.5**	**+0.3**
AKHS	**Akhisar**	**0.96**	**256**	*i* P	**Pb**	**05 16 32.9**	**-0.3**
AKHS				*i* S	**Sb**	**05 16 46.5**	**+0.3**
AKS	**Akhisar**	**0.96**	**256**	*e*PG	**Pg**	**05 16 32.6**	**+0.2**
AKS	**Akhisar**	**0.96**	**256**	*e*Pg	**Pg**	**05 16 32.6**	**+0.2**
BALB	**Balikesir**	**1.01**	**301**	*e*PG	**Pg**	**05 16 33.5**	**+0.1**
BALB	**Balikesir**	**1.01**	**301**	*e*Pg	**Pg**	**05 16 33.5**	**+0.1**
IGD	**Bursa**	**1.15**	**7**	*i* P	**Pg**	**05 16 34.3**	**-1.7**
IGD				*i* S	**Sg**	**05 16 50.7**	**-0.1**
BALY	**Balya**	**1.24**	**300**	P	**Pg**	**05 16 37.7**	**0.0**
BALY				S	**Sn**	**05 16 55.2**	**0.0**
BALY	**Balya**	**1.24**	**300**	*i* P	**Pg**	**05 16 37.7**	**0.0**
BALY				*i* S	**Sn**	**05 16 55.2**	**0.0**
KCTX	**Karacabey (Bur**	**1.24**	**336**	*e*PN	**Pn**	**05 16 38.1**	**0.0**
KCTX	**Karacabey (Bur**	**1.24**	**336**	*e*Pn	**Pn**	**05 16 38.1**	**0.0**
MDNY	**Mudanya-Bursa**	**1.25**	**356**	*e*PN	**Pg**	**05 16 37.5**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.25**	**356**	*e*Pn	**Pg**	**05 16 37.5**	**-0.3**
CAVI	**Cavuskoy**	**1.25**	**31**	*e*PN	**Pn**	**05 16 38.5**	**+0.2**
CAVI	**Cavuskoy**	**1.25**	**31**	*e*Pn	**Pn**	**05 16 38.5**	**+0.2**
IZI	**Iznik**	**1.26**	**16**	*e*PN	**Pn**	**05 16 38.8**	**+0.4**
IZI	**Iznik**	**1.26**	**16**	*e*Pn	**Pn**	**05 16 38.8**	**+0.4**
BORA	**Eskisehir**	**1.35**	**56**	P	**Pn**	**05 16 39.0**	**-0.6**
BORA				S	**Sb**	**05 16 57.4**	**0.0**
BORA	**Eskisehir**	**1.35**	**56**	*i* P	**Pn**	**05 16 39.0**	**-0.6**
BORA				*i* S	**Sb**	**05 16 57.4**	**0.0**
ADVT	**Abdulvahap**	**1.42**	**23**	*e*PN	**Pg**	**05 16 41.2**	**0.0**
ADVT	**Abdulvahap**	**1.42**	**23**	*e*Pn	**Pg**	**05 16 41.2**	**0.0**
ARMT	**Armutlu**	**1.44**	**356**	*e*PN	**Pb**	**05 16 41.4**	**0.0**
ARMT	**Armutlu**	**1.44**	**356**	*e*Pn	**Pb**	**05 16 41.4**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**217**	*e*PN	**Pb**	**05 16 41.6**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**217**	*e*Pn	**Pb**	**05 16 41.6**	**-0.2**
ESKT	**Eskisehir**	**1.48**	**74**	*i* P	**Pn**	**05 16 40.8**	**-0.7**
ESKT				*i* S	**Sb**	**05 17 01.2**	**-0.1**
SEYT	**Eskypehyr**	**1.48**	**74**	P	**Pn**	**05 16 40.8**	**-0.7**
SEYT				S	**Sb**	**05 17 01.2**	**-0.1**
BOLV	**Bolvadin**	**1.57**	**104**	P	**Pg**	**05 16 44.3**	**+0.2**
BOLV				S	**Sg**	**05 17 05.5**	**+1.1**
BOLV	**Bolvadin**	**1.57**	**104**	*i* P	**Pg**	**05 16 44.3**	**+0.2**
BOLV				*i* S	**Sg**	**05 17 05.5**	**+1.1**
GULT	**Gulveren**	**1.75**	**41**	*e*PN	**Pb**	**05 16 46.2**	**-0.4**
GULT	**Gulveren**	**1.75**	**41**	*e*Pn	**Pb**	**05 16 46.2**	**-0.4**
HRT	**Hereke**	**1.77**	**16**	*e*PN	**Pn**	**05 16 45.8**	**+0.4**
HRT	**Hereke**	**1.77**	**16**	*e*Pn	**Pn**	**05 16 45.8**	**+0.4**
ISK	**Istanbul-Kandi**	**1.94**	**1**	*e*PN	**Pn**	**05 16 48.1**	**+0.5**
ISK	**Istanbul-Kandi**	**1.94**	**1**	*e*Pn	**Pn**	**05 16 48.1**	**+0.5**
KAND	**Kocaeli-Kandir**	**2.17**	**24**	*i* P	**Pb**	**05 16 54.1**	**+0.4**
KAND				*i* S	**Sg**	**05 17 23.2**	**-0.3**

*ISCJB **26** 05:19:11.4±0.5, 39°.10N±0°.03×29°.05E±0°.03, h0km±6km, Error ellipse: s-maj=4.5km s-min=3.6km az=169.7*
*CSEM **26** 05:19:11.7±0.1, 39°.10N×29°.05E, h2km, ML3.0, Error ellipse: s-maj=2.2km s-min=2.0km az=149.0*
*ISK **26** 05:19:11.1, 39°.09N×29°.07E, h6km, MD2.9*
*DDA **26** 05:19:11.3, 39°.10N×29°.05E, h7km, Ml3.0*
ISC 26 05:19:12.0±1.1, 39°.10N±0°.02×29°.05E±0°.02, h5km±11km, n51, σ0°37/68, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**257**	P	**Pg**	**05 19 17.1**	**0.0**
DEMI				S	**Sg**	**05 19 20.9**	**+0.2**
DEMI	**Demirci**	**0.27**	**257**	*i* P	**Pg**	**05 19 17.1**	**0.0**
DEMI				*i* S	**Sg**	**05 19 20.9**	**+0.2**
GDZ	**Gediz**	**0.34**	**92**	P	**Pg**	**05 19 18.5**	**0.0**
GDZ				S	**Sg**	**05 19 23.4**	**+0.4**
GDZ	**Gediz**	**0.34**	**92**	*i* P	**Pg**	**05 19 18.5**	**0.0**
GDZ				*i* S	**Sg**	**05 19 23.4**	**+0.4**
TVSB	**Tavsanli**	**0.47**	**43**	*e*PG	**Pg**	**05 19 20.9**	**-0.2**
TVSB				*e*SG	**Sg**	**05 19 27.2**	**-0.1**
TVSB	**Tavsanli**	**0.47**	**43**	*e*Pg	**Pg**	**05 19 20.9**	**-0.2**
TVSB				*e*Sg	**Sg**	**05 19 27.2**	**-0.1**
KULA	**Kula-Manisa**	**0.66**	**207**	*e*PG	**Pg**	**05 19 24.4**	**-0.2**
KULA				*e*SG	**Sg**	**05 19 33.0**	**-0.3**
KULA	**Kula-Manisa**	**0.66**	**207**	*e*Pg	**Pg**	**05 19 24.4**	**-0.2**
KULA				*e*Sg	**Sg**	**05 19 33.0**	**-0.3**
DURS	**Dursunbey**	**0.67**	**318**	P	**Pg**	**05 19 24.1**	**-0.7**
DURS	**Dursunbey**	**0.67**	**318**	*i* P	**Pg**	**05 19 24.1**	**-0.7**
KHAL	**Karahalli**	**0.81**	**154**	P	**Pg**	**05 19 27.4**	**-0.1**
KHAL				S	**Sg**	**05 19 38.4**	**+0.4**
KHAL	**Karahalli**	**0.81**	**154**	*i* P	**Pg**	**05 19 27.4**	**-0.1**
KHAL				*i* S	**Sg**	**05 19 38.4**	**+0.4**
KHL	**Karahalli**	**0.86**	**154**	*e*PG	**Pg**	**05 19 27.8**	**-0.7**
KHL	**Karahalli**	**0.86**	**154**	*e*Pg	**Pg**	**05 19 27.8**	**-0.7**
ORLT	**Orhaneli**	**0.95**	**353**	*e*PG	**Pg**	**05 19 29.6**	**-0.6**
ORLT	**Orhaneli**	**0.95**	**353**	*e*Pg	**Pg**	**05 19 29.6**	**-0.6**
AKHS	**Akhisar**	**0.99**	**257**	P	**Pg**	**05 19 31.1**	**+0.2**
AKHS				S	**Sb**	**05 19 44.8**	**0.0**
AKHS	**Akhisar**	**0.99**	**257**	*i* P	**Pg**	**05 19 31.1**	**+0.2**
AKHS				*i* S	**Sb**	**05 19 44.8**	**0.0**
AKS	**Akhisar**	**0.99**	**257**	*e*PG	**Pg**	**05 19 30.8**	**-0.1**
AKS	**Akhisar**	**0.99**	**257**	*e*Pg	**Pg**	**05 19 30.8**	**-0.1**
BALB	**Balikesir**	**1.05**	**301**	*e*PG	**Pg**	**05 19 32.2**	**+0.1**
BALB				*e*SG	**Sb**	**05 19 46.8**	**+0.1**
BALB	**Balikesir**	**1.05**	**301**	*e*Pg	**Pg**	**05 19 32.2**	**+0.1**
BALB				*e*Sg	**Sb**	**05 19 46.8**	**+0.1**
IGD	**Bursa**	**1.17**	**6**	*i* P	**Pg**	**05 19 33.1**	**-1.2**
IGD				*i* S	**Sg**	**05 19 49.6**	**+0.2**
CAVI	**Cavuskoy**	**1.26**	**29**	*e*PN	**Pg**	**05 19 35.5**	**-0.6**
CAVI	**Cavuskoy**	**1.26**	**29**	*e*Pn	**Pg**	**05 19 35.5**	**-0.6**
MDNY	**Mudanya-Bursa**	**1.27**	**354**	*e*PN	**Pg**	**05 19 36.1**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.27**	**354**	*e*Pn	**Pg**	**05 19 36.1**	**-0.3**
IZI	**Iznik**	**1.27**	**15**	*e*PN	**Pg**	**05 19 36.3**	**-0.1**
IZI	**Iznik**	**1.27**	**15**	*e*Pn	**Pg**	**05 19 36.3**	**-0.1**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*PN	**Pg**	**05 19 36.4**	**-0.1**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*Pn	**Pg**	**05 19 36.4**	**-0.1**
BORA	**Eskisehir**	**1.34**	**54**	P	**Pn**	**05 19 37.2**	**-0.1**
BORA				S	**Sb**	**05 19 54.9**	**-0.1**
BORA	**Eskisehir**	**1.34**	**54**	*i* P	**Pn**	**05 19 37.2**	**-0.1**
BORA				*i* S	**Sb**	**05 19 54.9**	**-0.1**
GONE	**Gonen-Balikesi**	**1.41**	**312**	*e*PN	**Pn**	**05 19 38.2**	**-0.1**
GONE	**Gonen-Balikesi**	**1.41**	**312**	*e*Pn	**Pn**	**05 19 38.2**	**-0.1**
ADVT	**Abdulvahap**	**1.43**	**22**	*e*PN	**Pn**	**05 19 38.6**	**+0.1**
ADVT	**Abdulvahap**	**1.43**	**22**	*e*Pn	**Pn**	**05 19 38.6**	**+0.1**
ESKT	**Eskisehir**	**1.46**	**73**	*i* P	**Pg**	**05 19 40.4**	**+0.5**
SEYT	**Eskypehyr**	**1.46**	**73**	P	**Pg**	**05 19 40.4**	**+0.5**
ARMT	**Armutlu**	**1.47**	**354**	*e*PN	**Pn**	**05 19 39.2**	**+0.1**
ARMT	**Armutlu**	**1.47**	**354**	*e*Pn	**Pn**	**05 19 39.2**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**219**	*e*PN	**Pn**	**05 19 38.9**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**219**	*e*Pn	**Pn**	**05 19 38.9**	**-0.3**
EDC	**Edincik**	**1.54**	**324**	*e*PN	**Pn**	**05 19 40.5**	**+0.4**
EDC	**Edincik**	**1.54**	**324**	*e*Pn	**Pn**	**05 19 40.5**	**+0.4**
GULT	**Gulveren**	**1.74**	**40**	*e*PN	**Pn**	**05 19 43.5**	**+0.5**
GULT	**Gulveren**	**1.74**	**40**	*e*Pn	**Pn**	**05 19 43.5**	**+0.5**
SVRH	**Sivrihisar-ESK**	**1.95**	**79**	*e*PN	**Pn**	**05 19 45.5**	**-0.3**
SVRH	**Sivrihisar-ESK**	**1.95**	**79**	*e*Pn	**Pn**	**05 19 45.5**	**-0.3**
RKY	**Sarkoy-Tekirda**	**2.14**	**318**	*e*PN	**Pn**	**05 19 48.8**	**+0.5**
RKY	**Sarkoy-Tekirda**	**2.14**	**318**	*e*Pn	**Pn**	**05 19 48.8**	**+0.5**

*IDC **26** 05:31:35.0±0.8, 38°.13S×176°.69E, h173km±11km, mb3.0/2, mb1 3.3/3, mb1mx3.2/20, mbtmp3.7/3, Error ellipse: s-maj=45.1km s-min=19.6km az=130.0*
*NEIC **26** 05:31:37.8, 37°.83S×176°.67E, h160km, MG4.4(WEL), After WEL.*
*WEL **26** 05:31:37.5±0.3, 37°.85S×176°.64E, h164km±2km, ML4.6/16, Error ellipse: s-maj=1.6km s-min=1.3km az=0.0*
*ISCJB **26** 05:31:39.0±0.3, 38°.02S±0°.04×176°.61E±0°.05, h150km, mb3.1/2, Error ellipse: s-maj=6.1km s-min=4.8km az=147.0*
ISC 26 05:31:36.9±1.0, 37°.94S±0°.05×176°.60E±0°.04, h150km, n162, σ2°15/169, 38C-7D, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OPRZ	**Ohinepanea**	**0.10**	**339**	PN	**Pn**	**05 31 59.1**	**+2.1**
OPRZ				SN	**Sn**	**05 32 15.7**	**+3.5**
OPRZ	**Ohinepanea**	**0.10**	**339**	Pn	**Pn**	**05 31 59.1**	**+2.1**
OPRZ				Sn	**Sn**	**05 32 15.7**	**+3.5**
RRRZ	**Republican Roa**	**0.41**	**190**	⇑PN	**Pn**	**05 32 00.4**	**+2.6**
RRRZ				SN	**Sn**	**05 32 17.6**	**+3.7**
RRRZ	**Republican Roa**	**0.41**	**190**	Pn	**Pn**	**05 32 00.4**	**+2.6**
RRRZ				Sn	**Sn**	**05 32 17.6**	**+3.7**
URZ	**Urewera**	**0.52**	**129**	P	**Pn**	**05 32 00.2**	**+1.9**
	211nm,0.3s,baz=266,slow=3.5,SNR=320						
URZ				S	**Sn**	**05 32 17.3**	**+2.7**
	192nm,0.3s,baz=180,slow=22,SNR=51						
GRRZ	**Galatos Road**	**0.56**	**223**	PN	**Pn**	**05 32 01.5**	**+2.9**
PRRZ	**Plateau Road**	**0.58**	**196**	PN	**Pn**	**05 32 01.3**	**+2.7**
PRRZ				SN	**Sn**	**05 32 19.5**	**+4.1**
PRRZ	**Plateau Road**	**0.58**	**196**	Pn	**Pn**	**05 32 01.3**	**+2.7**
PRRZ				Sn	**Sn**	**05 32 19.5**	**+4.1**
ALRZ	**Allen Road**	**0.66**	**198**	PN	**Pn**	**05 32 01.7**	**+2.6**
ALRZ	**Allen Road**	**0.66**	**198**	Pn	**Pn**	**05 32 01.7**	**+2.6**
WPRZ	**Whakapapatarin**	**0.68**	**211**	⇑PN	**Pn**	**05 32 02.2**	**+2.9**
WPRZ	**Whakapapatarin**	**0.68**	**211**	Pn	**Pn**	**05 32 02.2**	**+2.9**
RTZ	**Ruatahuna**	**0.74**	**156**	PN	**Pn**	**05 32 02.2**	**+2.4**
RTZ				SN	**Sn**	**05 32 21.0**	**+3.7**
KUTZ	**Kaahu Road**	**0.82**	**228**	Pn	**Pn**	**05 32 03.3**	**+3.0**
MWZ	**Matawai**	**0.83**	**119**	⇑PN	**Pn**	**05 32 02.1**	**+1.7**
MWZ				AML	AML	05 32 22.9	
MWZ				AML	AML	05 32 25.1	
MWZ	**Matawai**	**0.83**	**119**	Pn	**Pn**	**05 32 02.1**	**+1.7**
RAGZ	**Rawiri**	**0.85**	**131**	PN	**Pn**	**05 32 02.8**	**+2.3**
RAGZ	**Rawiri**	**0.85**	**131**	Pn	**Pn**	**05 32 02.8**	**+2.3**
TOZ	**Tahuroa Road**	**0.89**	**283**	P

BFZ	Birch Farm	2.75	186	AML	AML	05 32 59.5
BFZ				AML	AML	05 32 60.0
TIWZ	Tintock	2.89	191	PN	Pn	05 32 23.2 +0.4
TIWZ				AML	AML	05 33 01.8
TIWZ				AML	AML	05 33 03.4
TIWZ	Tintock	2.89	191	Pn	Pn	05 32 23.2 +0.4
CPWZ	Castlepoint	2.98	186	⇓PN	Pn	05 32 25.0 +1.0
CPWZ	Castlepoint	2.98	186	Pn	Pn	05 32 25.0 +1.0
HOWZ	Holdsworth Sta	3.07	196	⇑PN	Pn	05 32 25.0 -0.2
HOWZ	Holdsworth Sta	3.07	196	Pn	Pn	05 32 25.0 -0.2
OGWZ	Otaki Gorge	3.08	201	⇑PN	Pn	05 32 25.4 +0.2
OGWZ	Otaki Gorge	3.08	201	Pn	Pn	05 32 25.4 +0.2
KIW	Kapiti Island	3.20	204	PN	Pn	05 32 26.5 -0.2
KIW				AML	AML	05 33 06.0
KIW				AML	AML	05 33 07.3
KIW	Kapiti Island	3.20	204	Pn	Pn	05 32 26.5 -0.2
TMWZ	Te Maipa	3.21	190	PN	Pn	05 32 26.7 -0.2
TMWZ	Te Maipa	3.21	190	Pn	Pn	05 32 26.7 -0.2
MTW	Mount Morrison	3.33	194	⇑PN	Pn	05 32 27.7 -0.7
MTW				AML	AML	05 33 10.1
MTW				AML	AML	05 33 11.6
MTW	Mount Morrison	3.33	194	Pn	Pn	05 32 27.7 -0.7
CAW	Cannon Point	3.38	200	PN	Pn	05 32 28.5 -0.5
CAW				AML	AML	05 33 10.7
CAW				AML	AML	05 33 14.6
CAW	Cannon Point	3.38	200	Pn	Pn	05 32 28.6 -0.5
TRWZ	Traveller	3.53	191	PN	Pn	05 32 30.4 -0.6
TRWZ				AML	AML	05 33 14.7
TRWZ				AML	AML	05 33 15.0
TRWZ	Traveller	3.53	191	Pn	Pn	05 32 30.4 -0.6
DUWZ	D'Urville Isla	3.53	215	⇓PN	Pn	05 32 30.4 -0.6
DUWZ	D'Urville Isla	3.53	215	Pn	Pn	05 32 30.4 -0.6
PAWZ	Paruwai Farm	3.56	194	⇑PN	Pn	05 32 30.5 -0.9
PAWZ				AML	AML	05 33 14.2
PAWZ				AML	AML	05 33 15.1
PAWZ	Paruwai Farm	3.56	194	Pn	Pn	05 32 30.5 -0.9
MSWZ	Moikau Station	3.63	196	⇑PN	Pn	05 32 31.2 -1.0
MSWZ				AML	AML	05 33 15.0
MSWZ				AML	AML	05 33 17.2
MSWZ	Moikau Station	3.63	196	Pn	Pn	05 32 31.2 -1.0
WEL	Wellington	3.63	202	PN	Pn	05 32 31.7 -0.6
WEL	Wellington	3.63	202	Pn	Pn	05 32 31.7 -0.6
BHW	Baring Head	3.71	201	PN	Pn	05 32 32.3 -1.0
BHW				AML	AML	05 33 18.2
BHW				AML	AML	05 33 18.2
BHW	Baring Head	3.71	201	Pn	Pn	05 32 32.3 -1.0
TCW	Tory Channel	3.73	208	PN	Pn	05 32 32.8 -0.8
TCW				AML	AML	05 33 18.8
TCW				AML	AML	05 33 19.0
TCW	Tory Channel	3.73	208	Pn	Pn	05 32 32.8 -0.8
PLWZ	Palliser	3.77	196	PN	Pn	05 32 32.9 -1.3
PLWZ	Palliser	3.77	196	Pn	Pn	05 32 32.9 -1.3
TUWZ	Tuamarina	4.04	210	PN	Pn	05 32 36.5 -1.2
TUWZ				AML	AML	05 33 25.2
TUWZ				AML	AML	05 33 26.3
TUWZ	Tuamarina	4.04	210	Pn	Pn	05 32 36.5 -1.2
NNZ	Nelson	4.11	216	PN	Pn	05 32 37.4 -1.1
NNZ	Nelson	4.11	216	Pn	Pn	05 32 37.4 -1.1
RPZ	Rata Peaks	7.14	214	P	Pn	05 33 16.7 -2.0
	2.8nm,0.3s,baz=42,slow=2.7,SNR=10					
RPZ				S	Sn	05 34 32.4 -6.2
	9.8nm,0.3s,baz=59,slow=19,SNR=16					
ASAR	Alice Springs	39.00	279	P	P	05 38 46.2 -2.6
	0.2nm,0.3s,baz=115,slow=6.4,SNR=3.1					
WRA	Warramunga Arr	40.70	284	P	P	05 38 58.9 -4.0
	0.5nm,1.0s,baz=117,slow=8.3,SNR=2.6					
ARCES	ARCESS Array B	144.74	343	PKP	PKPab	05 50 48.8 -5.1
	4.4nm,1.0s,baz=17,slow=3.8,SNR=6.4					
FINES	FINESS Array B	150.19	332	PKPbc	PKPdf	05 51 03.6 -0.2
	1.5nm,0.6s,baz=29,slow=4.4,SNR=3.8					

*ISCJB **26** 05:45:03.0±0.5, 39°.09N±0°.03×29°.02E±0°.04, h2km±7km, Error ellipse: s-maj=5.8km s-min=4.6km az=8.2*
*ISK **26** 05:45:02.6, 39°.03N×29°.10E, h7km, ML2.4*
*DDA **26** 05:45:02.9, 39°.10N×29°.02E, h7km, Ml2.7*
*CSEM **26** 05:45:02.2±0.2, 39°.07N×29°.03E, h5km, ML2.7, Error ellipse: s-maj=3.9km s-min=3.4km az=113.0*

ISC 26 05:45:02.6±0.9, 39°.04N±0°.02×29°.06E±0°.02, h13km±8km, n35, σ0ˢ.54/52, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.27	272	P	Pg	05 45 08.4	+0.1
DEMI				S	Sg	05 45 11.8	-0.2
DEMI	Demirci	0.27	272	*i* P	Pg	05 45 08.3	+0.1
DEMI				*i* S	Sg	05 45 11.8	-0.2
GDZ	Gediz	0.34	81	P	Pb	05 45 10.3	-0.3
GDZ				S	Sb	05 45 15.4	-0.5
GDZ	Gediz	0.34	81	*i* P	Pb	05 45 10.3	-0.3
GDZ				*i* S	Sb	05 45 15.4	-0.5
TVSB	Tavsanli	0.52	37	*e*PG	Pg	05 45 12.7	-0.2
TVSB	Tavsanli	0.52	37	*e*Pg	Pg	05 45 12.7	-0.2
KULA	Kula-Manisa	0.61	211	*e*PG	Pb	05 45 14.9	-0.2
KULA				*e*SG	Sb	05 45 24.1	+0.5
KULA	Kula-Manisa	0.61	211	*e*Pg	Pb	05 45 14.9	-0.2
KULA				*e*Sg	Sb	05 45 24.1	+0.5
DURS	Dursunbey	0.72	322	P	Pg	05 45 15.6	-1.1
DURS	Dursunbey	0.72	322	*i* P	Pg	05 45 15.6	-1.1
KHAL	Karahalli	0.75	153	P	Pn	05 45 19.3	+0.3
KHAL				S	Sn	05 45 30.0	-0.3
KHAL	Karahalli	0.75	153	*i* P	Pn	05 45 19.3	+0.3
KHAL				*i* S	Sn	05 45 30.0	-0.3
KHL	Karahalli	0.80	153	*e*PG	Pg	05 45 17.6	-0.5
KHL	Karahalli	0.80	153	*e*Pg	Pg	05 45 17.6	-0.5
AKS	Akhisar	0.98	261	*e*PG	Pn	05 45 22.8	+0.6
AKS	Akhisar	0.98	261	*e*Pg	Pn	05 45 22.8	+0.6
ORLT	Orhaneli	1.02	353	*e*PG	Pn	05 45 22.8	+0.1
ORLT	Orhaneli	1.02	353	*e*Pg	Pn	05 45 22.8	+0.1
IGD	Bursa	1.23	5	*i* P	Pn	05 45 25.0	-0.6
IGD				*i* S	Sb	05 45 40.1	-1.5
CAVI	Cavuskoy	1.31	27	*e*PN	Pb	05 45 27.4	+0.2
CAVI				*e*SN	Sg	05 45 46.3	+1.3
CAVI	Cavuskoy	1.31	27	*e*Pn	Pb	05 45 27.4	+0.2
CAVI				*e*Sn	Sg	05 45 46.3	+1.3
IZI	Iznik	1.34	14	*e*PN	Pb	05 45 27.9	+0.3
IZI	Iznik	1.34	14	*e*Pn	Pb	05 45 27.9	+0.3
MDNY	Mudanya-Bursa	1.34	354	*e*PN	Pg	05 45 28.5	+0.1
MDNY	Mudanya-Bursa	1.34	354	*e*Pn	Pg	05 45 28.5	+0.1
KCTX	Karacabey (Bur	1.34	336	*e*PN	Pb	05 45 27.9	+0.2
KCTX	Karacabey (Bur	1.34	336	*e*Pn	Pb	05 45 27.9	+0.2
BORA	Eskisehir	1.37	52	P	Pg	05 45 28.5	-0.5
BORA				S	Sg	05 45 46.9	+0.1
BORA	Eskisehir	1.37	52	*i* P	Pg	05 45 28.5	-0.5
BORA				*i* S	Sg	05 45 46.9	+0.1
ESKT	Eskisehir	1.47	70	*i* P	Pg	05 45 31.6	+0.6
ESKT				*i* S	Sg	05 45 50.4	+0.3
SEYT	Eskypehyr	1.47	70	P	Pg	05 45 31.6	+0.6
SEYT				S	Sg	05 45 50.4	+0.3
ARMT	Armutlu	1.54	354	*e*PN	Pb	05 45 31.2	+0.2
ARMT	Armutlu	1.54	354	*e*Pn	Pb	05 45 31.2	+0.2
GULT	Gulveren	1.79	38	*e*PN	Pb	05 45 35.0	-0.4
GULT				*e*SN	Sb	05 45 57.9	+0.1
GULT	Gulveren	1.79	38	*e*Pn	Pb	05 45 35.0	-0.4
GULT				*e*Sn	Sb	05 45 57.9	+0.1

*ISK **26** 05:49:35.0, 39°.19N×28°.93E, h6km, MD2.1*
*ISCJB **26** 05:49:36.3±0.5, 39°.14N±0°.03×29°.08E±0°.04, h13km±5km, Error ellipse: s-maj=6.0km s-min=5.2km az=149.8*
*DDA **26** 05:49:36.9, 39°.15N×29°.14E, h7km, Ml2.5*
*CSEM **26** 05:49:36.3±0.2, 39°.14N×29°.07E, h15km, ML2.5, Error ellipse: s-maj=6.1km s-min=4.9km az=95.0*

ISC 26 05:49:36.0±1.1, 39°.14N±0°.03×29°.05E±0°.03, h10km±12km, n30, σ0ˢ.73/40, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.28	249	P	Pb	05 49 44.2	+0.9
DEMI				S	Sb	05 49 48.8	+0.7
DEMI	Demirci	0.28	249	*i* P	Pb	05 49 44.2	+0.9
DEMI				*i* S	Sb	05 49 48.8	+0.7
GDZ	Gediz	0.34	99	P	Pg	05 49 42.7	-0.1
GDZ				S	Sg	05 49 46.7	-0.6
GDZ	Gediz	0.34	99	*i* P	Pg	05 49 42.7	-0.1
GDZ				*i* S	Sg	05 49 46.7	-0.6
TVSB	Tavsanli	0.44	46	*e*PG	Pg	05 49 45.1	+0.5
TVSB	Tavsanli	0.44	46	*e*Pg	Pg	05 49 45.2	+0.5
DURS	Dursunbey	0.64	316	P	Pn	05 49 50.6	-0.7
DURS	Dursunbey	0.64	316	*i* P	Pn	05 49 50.6	-0.7
KULA	Kula-Manisa	0.70	206	*e*PG	Pg	05 49 49.0	-0.6
KULA				*e*SG	Sg	05 49 59.3	+0.6
KULA	Kula-Manisa	0.70	206	*e*Pg	Pg	05 49 49.0	-0.6
KULA				*e*Sg	Sg	05 49 59.3	+0.6
KHAL	Karahalli	0.84	156	P	Pb	05 49 53.0	+0.1
KHAL				S	Sg	05 50 03.2	-0.1
KHAL	Karahalli	0.84	156	*i* P	Pb	05 49 53.0	+0.1
KHAL				*e*S	Sg	05 50 03.2	-0.1
KHL	Karahalli	0.90	156	*e*PG	Pn	05 49 54.4	-0.4
KHL	Karahalli	0.90	156	*e*Pg	Pn	05 49 54.4	-0.4
CAVI	Cavuskoy	1.22	30	*e*PN	Pn	05 49 58.8	-0.4
CAVI	Cavuskoy	1.22	30	*e*Pn	Pn	05 49 58.8	-0.4
IZI	Iznik	1.23	15	*e*PN	Pn	05 49 58.8	-0.7
IZI	Iznik	1.23	15	*e*Pn	Pn	05 49 58.8	-0.7
KCTX	Karacabey (Bur	1.24	335	*e*PN	Pn	05 49 57.7	-1.8
KCTX	Karacabey (Bur	1.24	335	*e*Pn	Pn	05 49 57.7	-1.8
BORA	Eskisehir	1.31	55	P	Pb	05 50 00.8	0.0
BORA				S	Sg	05 50 18.3	+0.1
BORA	Eskisehir	1.31	55	*i* P	Pb	05 50 00.8	0.0
BORA				*i* S	Sg	05 50 18.3	+0.1
GONE	Gonen-Balikesi	1.39	311	*e*PN	Pn	05 50 00.4	-1.1
GONE	Gonen-Balikesi	1.39	311	*e*Pn	Pn	05 50 00.4	-1.1
ARMT	Armutlu	1.43	354	*e*PN	Pn	05 50 01.4	-0.6
ARMT	Armutlu	1.43	354	*e*Pn	Pn	05 50 01.5	-0.6
GULT	Gulveren	1.71	41	*e*PN	Pn	05 50 06.5	+0.5
GULT	Gulveren	1.71	41	*e*Pn	Pn	05 50 06.5	+0.5
SILT	Sile	2.06	12	*e*PN	Pn	05 50 10.1	-0.6
SILT	Sile	2.06	12	*e*Pn	Pn	05 50 10.1	-0.6

*NEIC **26** 05:51:30.7±0.7, 31°.71S×178°.29W, h35km, mb4.6/3, Error ellipse: s-maj=17.6km s-min=11.8km az=101.0*
*IDC **26** 05:51:31.6±8.9, 31°.76S×178°.42W, h33km±62km, mb4.1/3, mb1 4.4/4, mb1mx3.9/31, mbtmp4.4/4, ML4.4/1, MS3.3/2, Ms1 3.3/2, ms1mx2.6/30, Error ellipse: s-maj=52.2km s-min=25.3km az=140.0*

ISC 26 05:51:30.8±1.0, 31°.75S±0°.09×178°.4W±0°.2, h35km, n27, σ0ˢ.92/18, mb4.6/7, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	Raoul Island	2.52	9	Pn	Pn	05 52 10.7	+1.5
	78nm,0.3s,baz=38,slow=22,SNR=7.1						
RAO				Sn	Sn	05 52 39.0	+0.3
	210nm,0.3s,baz=201,slow=23,SNR=5.7						
RAO	Raoul Island	2.52	9	*e*Pn	Pn	05 52 09.1	-0.2
RAO				Sn	Sn	05 52 39.0	+0.3
RAO				*e*Sn	Sn	05 52 39.5	+0.8
TIWZ	Tintock	10.13	206	SN	Sn	05 55 36.7	-9.5
MRZ	Mangatainoka R	10.15	207	PN	Pn	05 53 49.3	-4.7
MRZ				SN	Sn	05 55 36.1	-10
HOWZ	Holdsworth Sta	10.38	207	SN	Sn	05 55 41.3	-11
KIW	Kapiti Island	10.59	209	PN	Pn	05 53 55.2	-4.9
KIW				SN	Sn	05 55 46.5	-11
TCW	Tory Channel	11.15	210	SN	Sn	05 56 00.4	-11
KHZ	Kahutara	12.45	209	SN	Sn	05 56 29.2	-14
OXZ	Oxford	13.83	211	SN	Sn	05 56 59.5	-17
MSVF	Nonsavu	14.33	346	*e*Pn	Pn	05 54 49.8	-1.6
RPZ	Rata Peaks	14.58	212	LR	LR	06 00 37.8	
	comp=Z,116nm,20.9s,baz=33,slow=38						
STKA	Stephens Creek	33.91	259	P	P	05 58 10.1	-0.4
	0.7nm,0.3s,baz=105,slow=23,SNR=4.1						
STKA				LR	LR	06 09 28.7	
	comp=Z,55nm,19.9s,baz=159,slow=32						
PMG	Port Moresby	38.94	297	*e*P	P	05 58 54.5	+1.0
	4.6nm,0.3s						
COEN	Coen	39.38	288	*e*P	P	05 58 57.3	0.0
	12nm,1.1s						
ASAR	Alice Springs	42.76	269	P	P	05 59 25.8	+0.7
	2.6nm,0.7s,baz=106,slow=7.6,SNR=21						
WRAB	Tennant Creek	43.86	274	*e*P	P	05 59 34.7	+0.7
	6.4nm,0.6s						
WRA	Warramunga Arr	43.87	274	P	P	05 59 34.5	+0.5
	6.3nm,0.6s,baz=112,slow=8.0,SNR=70						
QSPA	South Pole Qui	58.36	180	*e*P	P	06 01 22.0	-0.3
	29nm,1.1s						
SNAA	Sanae	76.82	179	P	P	06 03 25.3	+6.8
VNA3	Neumayer Olymp	76.98	176	P	P	06 03 26.6	+7.2
VNA2	Neumayer--Watz	77.41	177	P	P	06 03 28.8	+7.0
	baz=154,slow=2.5						
ABKAR	Akbulak array	133.55	310	*e*PKPdf	PKPdf	06 10 41.1	-2.0
FINES	FINESS Array B	146.30	339	PKPbc	PKPbc	06 11 07.2	+0.2
	1.8nm,0.4s,baz=66,slow=3.8,SNR=18						
NB2	NORSAR Subarra	150.04	351	PKP	PKPbc	06 11 16.9	-0.1
	comp=Z,1.0nm,0.5s,baz=16,slow=4.1						
NOA	NORSAR Array B	150.04	351	PKPbc	PKPbc	06 11 17.7	+0.7
	comp=Z,0.3nm,0.6s,baz=159,slow=14,SNR=2.8						
BRTR	Keskin Array B	152.95	296	PKPbc	PKPbc	06 11 25.1	+0.6
	comp=Z,0.5nm,0.6s,baz=120,slow=4.5,SNR=3.7						
TORD	Torodi Ar. Bea	161.48	180	PKPab	PKPab	06 12 13.2	+0.5
	comp=Z,0.5nm,0.8s,baz=188,slow=3.4,SNR=5.1						

*NIED **26** 06:00:00, 34°.80N×142°.90E, h11km, Mw4.1 Best double couple: M0=1.73000×10^15 NP1:φ=1.00000°, δ=30.00000°, λ=-96.00000°. NP2:φ=187.00000°, δ=60.00000°, λ=-87.00000°.*
*IDC **26** 06:00:30.4±0.7, 34°.85N×142°.92E, h0km, mb4.0/15, mb1 4.2/20, mb1mx4.0/47, mbtmp4.0/20, ML4.1/4, MS3.2/15, Ms1 3.2/15, ms1mx3.0/43, Error ellipse: s-maj=17.0km s-min=16.6km az=101.0*
*JMA **26** 06:00:32.8±0.4, 34°.80N×142°.87E, h47km, M4.1*
*ISCJB **26** 06:00:33.2±0.5, 34°.88N±0°.04×142°.81E±0°.04, h33km, mb4.0/20, MS3.2/11, Error ellipse: s-maj=5.4km s-min=5.2km az=2.1*
*NEIC **26** 06:00:35.5±0.5, 34°.88N×142°.81E, h35km, mb4.2/5, Error ellipse: s-maj=9.7km s-min=8.7km az=133.0*

ISC 26 06:00:35.5±0.7, 34°.89N±0°.05×142°.78E±0°.07, h35km, n68, σ1ˢ.77/64, mb4.0/20, MS3.1/11, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	Boso 1	1.50	262	P	Pn	06 00 58.6	-0.8
BSO1				*e*S	Sn	06 01 18.2	+0.7
CHOJ	Chosi	1.77	298	P	Pn	06 01 03.6	0.0
CHOJ				*e*S	Sn	06 01 25.6	+0.7
BSO3	Boso 3	1.87	268	P	Pn	06 01 04.7	0.0
BSO4	Boso 4	2.01	274	P	Pn	06 01 06.9	+0.1
JCN	Nagara	2.18	285	P	Pn	06 01 09.8	+0.6
JHJ2	Mitsune	3.03	235	P	Pn	06 01 19.5	-1.5
JHJ2				*e*S	Sn	06 01 52.3	-3.7
JHJ2	Mitsune	3.03	235	*e*Pn	Pn	06 01 19.4	-1.5
JHJ2				*e*Sn	Sn	06 01 52.0	-4.1
JHJ	Hachijo jima 2	3.05	236	Pn	Pn	06 01 19.6	-1.6
	60nm,0.3s,baz=98,slow=23,SNR=35						
JHJ				Sn	Sn	06 01 52.4	-4.1
	88nm,0.3s,baz=70,slow=24,SNR=6.8						
JOD2	Odawara 2	3.05	278	P	Pn	06 01 20.3	-0.9
JOD2				*e*S	Sn	06 01 55.6	-1.0
JAG	Ashikaga	3.12	301	P	Pn	06 01 21.9	-0.2
JFT	Otama	3.29	324	P	Pn	06 01 24.7	+0.2
JFT				*e*S	Sn	06 02 01.3	-1.1
JRY	Ryogami san	3.36	291	P	Pn	06 01 26.1	+0.6
JYN	Shimob	3.52	281	P	Pn	06 01 27.1	-0.7
JYN				*e*S	Sn	06 02 06.1	-2.2
JNS	Sasagawa	4.05	317	P	Pn	06 01 35.3	+0.4
JNS				*e*S	Sn	06 02 20.7	-0.4
MJAR	Matsushiro Arr	4.07	295	Pn	Pn	06 01 35.5	+0.2
	9.8nm,0.3s,baz=97,slow=11,SNR=39						
MJAR				LR	LR	06 03 43.6	
	comp=Z,331nm,19.2s,baz=130,slow=46						
MAJO	Matsushiro	4.07	295	*e*Pn	Pn	06 01 35.7	+0.4
MAT	Matsushiro	4.07	295	P	Pn	06 01 35.6	+0.3
MAT				*e*S	Sn	06 02 23.9	+2.2
MAT	Matsushiro	4.07	295	P	Pn	06 01 35.5	+0.3
JMK	Ichinoseki	4.25	343	P	Pn	06 01 37.4	-0.2
JMK				*e*S	Sn	06 02 23.5	-2.5
JYK	Kaneyama	4.47	335	P	Pn	06 01 40.7	0.0
JYK				*e*S	Sn	06 02 29.5	-1.9
JOM	Ohasama	4.73	346	*e*S	Sn	06 02 35.4	-2.5
ERM	Erimo	7.12	2	*e*Pn	Pn	06 02 15.8	-1.4
ERM				*e*Sn	Sn	06 03 30.1	-6.7
JCJ	Chichijima	7.78	184	Sn	Sn	06 03 42.1	-11
	8.7nm,0.3s,baz=292,slow=19,SNR=3.8						
ASAJ	Asahikawa	9.22	359	Pn	Pn	06 02 44.6	-1.2
	4.8nm,0.3s,baz=245,slow=6.2,SNR=7.0						
ASAJ	Asahikawa	9.22	359	Pn	Pn	06 02 44.6	-1.2
	1.7nm,0.4s						
JNU	Nakatsue	10.04	263	LR	LR	06 07 15.3	
	comp=Z,170nm,18.3s,baz=116,slow=40						
KSRS	Korea Array	12.28	286	Pn	Pn	06 03 29.2	+1.4
	0.2nm,0.3s,baz=96,slow=12,SNR=7.1						
KSRS				LR	LR	06 09 29.1	
	comp=Z,116nm,18.4s,baz=96,slow=43						
KSAR	Wonju Array Be	12.31	286	Pn	Pn	06 03 29.2	+1.0
USRK	Ussuriysk Ar.	12.48	321	Pn	Pn	06 03 31.4	+1.0
	0.2nm,0.3s,baz=122,slow=13,SNR=3.1						
JOW	Kunigami	14.81	241	*e*Pn	Pn	06 03 59.1	-3.2
KLR	Kul'dur	16.48	334	LR	LR	06 10 59.6	
	comp=Z,78nm,18.1s,baz=114,slow=38						
PETK	Petropavlovsk-	21.07	26	LR	LR	06 11 53.1	
	comp=Z,38nm,21.8s,baz=199,slow=32						
GUMO	Guam	21.29	174	LR	LR	06 15 10.5	
	comp=Z,24nm,18.5s,baz=70,slow=41						
BJT	Baijiatuau	21.70	292	*e*P	P	06 05 22.4	-1.0
	18nm,1.2s						
HIA	Hailar	22.22	317	*e*P	P	06 05 32.7	+3.8
	6.9nm,0.6s						
MA2	Magadan	25.25	10	LR	LR	06 14 54.5	
	comp=Z,14nm,21.3s,baz=356,slow=34						
H11N2	WAKE ISLAND Hy	26.11	119	T	T	06 33 16.0	
	baz=311,slow=75,SNR=26						
H11N1	WAKE ISLAND Hy	26.12	119	T	T	06 33 16.5	
	baz=311,slow=75,SNR=21						
H11N3	WAKE ISLAND Hy	26.13	119	T	T	06 33 17.3	
	baz=311,slow=75,SNR=31						
H11S1	WAKE ISLAND Hy	26.78	121	T	T	06 34 13.8	
	baz=312,slow=76,SNR=26						
H11S3	WAKE ISLAND Hy	26.78	121	T	T	06 34 06.0	
	baz=312,slow=76,SNR=29						
H11S2	WAKE ISLAND Hy	26.79	121	T	T	06 34 07.2	
	baz=312,slow=76,SNR=22						
ENH	Enshi	28.35	270	*e*P	P	06 06 25.3	-1.0
	12nm,1.4s						
SEY	Seymchan	28.71	9	P	P	06 06 29.1	+0.1
	1.9nm,0.4s,baz=190,slow=5.1,SNR=3.9						
SONM	Songino Array	29.93	307	P	P	06 06 41.6	+1.4
	0.6nm,0.5s,baz=101,slow=7.9,SNR=7.5						
CMAR	Chiang Mai Arr	42.10	259	LR	LR	06 27 54.7	
	comp=Z,12nm,18.8s,baz=195,slow=39						
ZALV	Zalesovo Beam	44.19	314	P	P	06 08 41.5	+0.7
	0.9nm,0.3s,baz=95,slow=8.8,SNR=3.0						
KAPI	Kappang	45.23	213	LR	LR	06 28 38.7	
	comp=Z,16nm,18.9s,baz=89,slow=37						
MKAR	Makanchi Array	46.22	304	P	P	06 08 57.9	+0.9
	0.5nm,0.7s,baz=87,slow=7.8,SNR=4.0						
MKAR				LR	LR	06 29 08.1	
	comp=Z,24nm,20.8s,baz=62,slow=37						
KURK	Kurchatov	48.14	310	P	P	06 09 11.8	0.0
KURBB	Kurchatov Arra	48.21	310	P	P	06 09 11.8	-0.6
	1.0nm,0.4s,baz=82,slow=7.7,SNR=6.9						
ILAR	Eielson Array	50.73	31	P	P	06 09 29.9	-1.5
	1.5nm,1.0s,baz=266,slow=6.0,SNR=8.7						
BVAR	Borovoye Array	52.85	314	P	P	06 09 49.3	+1.9
	0.5nm,0.5s,baz=50,slow=7.8,SNR=2.8						
WRAB	Tennant Creek	55.10	190	*e*P	P	06 10 04.4	+0.3
	1.1nm,0.6s						
WRA	Warramunga Arr	55.11	190	P	P	06 10 04.2	0.0
	3.5nm,0.9s,baz=9.9,slow=7.7,SNR=15						
ASAR	Alice Springs	58.84	190	P	P	06 10 30.5	0.0
	1.5nm,0.9s,baz=360,slow=7.1,SNR=9.2						
ABKAR	Akbulak array	60.18	311	*e*P	P	06 10 39.7	+0.1
	1.7nm,1.1s						
YKA	Yellowknife Ar	65.11	30	P	P	06 11 12.4	+0.2
	1.3nm,1.0s,baz=297,slow=6.0,SNR=12						
NVAR	Mina Array Bea	75.38	53	P	P	06 12 16.9	+1.0
	2.2nm,0.8s,baz=292,slow=7.1,SNR=11						
NVAR				LR	LR	06 37 46.4	
	comp=Z,38nm,21.4s,baz=266,slow=30						
NB2	NORSAR Subarra	76.59	338	P	P	06 12 25.0	+3.0
	comp=Z,0.5nm,0.5s,baz=40,slow=5.9						
NOA	NORSAR Array B	76.59	338	P	P	06 12 23.2	+1.2
	comp=Z,0.7nm,0.5s,baz=39,slow=5.6,SNR=4.1						
NOA				LR	LR	06 49 50.7	
	comp=Z,13nm,19.9s,baz=235,slow=39						
AKASG	Malin Array Be	76.68	323	P	P	06 12 23.9	+1.3
	comp=Z,0.6nm,0.4s,baz=50,slow=5.3,SNR=5.2						
PFO	Pinyon Flats O	79.30	57	LR	LR	06 41 42.7	
	comp=Z,54nm,19.9s,baz=278,slow=31						
BRTR	Keskin Array B	81.11	312	P	P	06 12 48.2	+0.8
	comp=Z,0.4nm,0.5s,baz=151,slow=3.3,SNR=2.6						
PPT	Papeete	82.67	117	LR	LR	06 44 17.8	
	comp=Z,53nm,21.9s,baz=360,sl

WRA	**Warramunga Arr**	**55.04**	**190**	P		**P**		**06 19 35.5**	**+1.0**
	1.7nm,1.0s,baz=7.3,slow=7.7,SNR=5.8								

*KRNET **26** 06:23:40.6±0.1, 40.°93N×69.°18E, mb3.0*
*SOME **26** 06:23:44.1, 41.°00N×69.°67E, h0km*
*NNC **26** 06:23:44.7±1.5, 41.°04N×69.°62E, h0km, mb3.4, mpv3.0, Error ellipse: s-maj=20.8km s-min=9.7km az=117.0*

ISC 26 06:23:41.1±2.2, 40.°91N±0.°06×69.°2E±0.°2, h7km±18km, n18, σ1♀69/30, 15C-10D, Tajikistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IUG	**luzhnay**	**1.38**	**26**	*eP*	**Pg**	**06 24 06.8**	**-0.8**
	237nm,0.3s						
IUG				*eS*	**Sb**	**06 24 24.0**	**-1.2**
	96nm,0.4s						
BTK	**Batken**	**1.50**	**124**	⇑*eP*	**Pn**	**06 24 08.2**	**-0.3**
	baz=124						
BTK				⇑*eS*	**Sb**	**06 24 28.8**	**+0.3**
	baz=124						
BRLS	**Borolday**	**1.91**	**11**	*eP*	**Pg**	**06 24 18.3**	**+0.6**
	19nm,0.2s						
BRLS				*eS*	**Sg**	**06 24 43.7**	**+1.3**
	67nm,0.5s						
DZET	**Dzherino**	**2.12**	**188**	⇓Pg	Pg	06 24 27.2	+5.4
	2.0nm,0.4s						
DZET				⇓Lg	Lg	06 24 58.1	
	33nm,0.6s						
ARK	**Arkit**	**2.26**	**66**	⇓*eP*	**Pn**	**06 24 19.5**	**+0.6**
	baz=67						
ARK				⇓*eS*	**Sb**	**06 24 48.2**	**-2.2**
	baz=67						
KK31	**Karatay Array**	**2.40**	**24**	Pg	**Pg**	**06 24 25.1**	**-1.9**
	2.7nm,0.2s,baz=197,slow=16,SNR=118						
KK31				⇓Lg	Lg	06 24 55.3	
	25nm,0.5s,baz=206,slow=22,SNR=4.8						
ARSB	**Arslanbob**	**2.88**	**81**	⇑*eP*	**Pn**	**06 24 29.0**	**+1.4**
	baz=81						
ARSB				⇑*eS*	**Sn**	**06 25 03.1**	**+0.5**
	baz=81						
MNAS	**Manas**	**2.93**	**56**	⇑*eP*	**Pn**	**06 24 29.8**	**+1.6**
	baz=57						
MNAS				⇑*eS*	**Sn**	**06 25 04.5**	**+0.8**
	baz=57						
MNAS	**Manas**	**2.93**	**56**	⇑Pg	**Pb**	**06 24 30.7**	**-3.1**
	3.8nm,0.5s						
MNAS				⇓Lg	Lg	06 25 06.3	
	6.8nm,0.5s						
MRKS	**Merke**	**3.52**	**57**	*eP*	**Pb**	**06 24 42.6**	**-1.1**
	12nm,0.4s						
MRKS				*eS*	**Sb**	**06 25 24.5**	**-2.2**
	13nm,0.6s						
AML	**Almayashu**	**3.58**	**69**	⇑*iP*	**Pn**	**06 24 38.6**	**+1.2**
	baz=69						
AML				⇑*iS*	**Sn**	**06 25 18.7**	**-1.5**
	baz=69						
ARLS	**Aral**	**3.97**	**75**	⇓*eP*	**Pn**	**06 24 44.0**	**+1.5**
	baz=75						
ARLS				⇓*eS*	**Sn**	**06 25 29.7**	**+0.4**
	baz=75						
UCH	**Uchtor**	**4.20**	**70**	⇑*iP*	**Pn**	**06 24 47.1**	**+1.2**
	baz=70						
UCH				⇑*iS*	**Sn**	**06 25 33.8**	**-1.5**
	baz=70						
AAK	**Ala-Archa**	**4.31**	**65**	⇑Pg	**Pb**	**06 24 57.9**	**+0.6**
	5.9nm,0.9s						
AAK				⇓Lg	Lg	06 25 49.3	
	6.3nm,0.8s						
KZA	**Kyzart**	**4.69**	**74**	⇑*eP*	**Pn**	**06 24 53.6**	**+1.0**
	baz=74						
KZA				⇑*iS*	**Sn**	**06 25 44.7**	**-2.7**
	baz=74						
TKM2	**Tokmak 2**	**5.17**	**65**	⇑Pg	**Pb**	**06 25 11.7**	**-0.3**
	2.9nm,0.7s						
TKM2				⇓Lg	Lg	06 26 16.0	
	7.1nm,0.8s						
DGS	**Degeres**	**5.41**	**62**	*eP*	**Pb**	**06 25 16.7**	**+0.7**
	3.6nm,0.6s						
DGS				*eS*	**Sb**	**06 26 23.4**	**+2.2**
	6.3nm,0.5s						
KST	**Kastek**	**5.47**	**65**	*eP*	**Pb**	**06 25 18.8**	**+1.8**
	1.4nm,0.2s						
KST				*eS*	**Sb**	**06 26 26.4**	**+3.5**
	9.8nm,0.7s						

MEX 26 06:34:19.6±0.7, 16.°04N×91.°29W, h7km±10km, MD3.9, Mexico-Guatemala border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CCIG	**Comitan**	**0.85**	**287**	*eP*	Pg	06 34 34.1	-2.0
CCIG				*i S*	Sg	06 34 45.5	-1.7
THIG		**1.47**	**220**	*eP*	Pn	06 34 43.4	-3.2
THIG				*i S*	Sn	06 35 01.7	-4.3
TGBT	**Tuxtla Gutierr**	**1.88**	**293**	*i P*	Pn	06 34 49.6	-2.6
TGBT				*i S*	Sn	06 35 11.5	-4.8
PCIG		**1.89**	**260**	*eP*	Pn	06 34 49.5	-2.8
PCIG				*i S*	Sn	06 35 12.5	-4.0
SCIG	**Sabancuy**	**2.91**	**2**	*eP*	Pn	06 35 04.6	-1.9
SCIG				*i S*	Sn	06 35 38.2	-3.6
TEIG	**Tepich**	**5.05**	**34**	*eP*	Pn	06 35 34.5	-1.4
TEIG				*eS*	Sn	06 36 31.1	-3.5

*ISK **26** 06:39:33.8, 38.°97N×29.°31E, h23km, ML1.8*
*ISCJB **26** 06:39:36.0±0.6, 39.°11N±0.°03×29.°04E±0.°04, h9km±5km, Error ellipse: s-maj=6.0km s-min=4.7km az=138.9*
*CSEM **26** 06:39:35.9±0.2, 39.°11N×29.°06E, h12km, MD2.6, Error ellipse: s-maj=6.1km s-min=5.0km az=114.0*
*DDA **26** 06:39:36.6, 39.°10N×29.°05E, h7km, Md2.6*

ISC 26 06:39:35.3±1.0, 39.°13N±0.°03×29.°05E±0.°03, h14km±10km, n19, σ0♀48/30, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**253**	P	**Pb**	**06 39 42.1**	**-0.1**
DEMI				S	**Sg**	**06 39 45.5**	**+0.4**
DEMI	**Demirci**	**0.28**	**253**	*i P*	**Pb**	**06 39 42.1**	**-0.1**
DEMI				*i S*	**Sg**	**06 39 45.5**	**+0.4**
GDZ	**Gediz**	**0.34**	**96**	P	**Pb**	**06 39 43.6**	**+0.4**
GDZ				S	**Sb**	**06 39 48.4**	**-0.1**
GDZ	**Gediz**	**0.34**	**96**	*i P*	**Pb**	**06 39 43.6**	**+0.4**
GDZ				*i S*	**Sb**	**06 39 48.4**	**-0.1**
TVSB	**Tavsanli**	**0.45**	**44**	*e*PG	**Pg**	**06 39 44.3**	**-0.1**
TVSB				*e*SG	**Sb**	**06 39 52.0**	**+0.1**
TVSB	**Tavsanli**	**0.45**	**44**	*e*Pg	**Pg**	**06 39 44.3**	**-0.1**
TVSB				*e*Sg	**Sb**	**06 39 52.0**	**+0.1**
DURS	**Dursunbey**	**0.65**	**317**	P	**Pn**	**06 39 49.9**	**-0.5**
DURS	**Dursunbey**	**0.65**	**317**	*i P*	**Pn**	**06 39 49.9**	**-0.5**
KULA	**Kula-Manisa**	**0.68**	**207**	*e*PG	**Pg**	**06 39 47.9**	**-0.8**
KULA				*e*SG	**Sg**	**06 39 57.8**	**+0.1**
KULA	**Kula-Manisa**	**0.68**	**207**	*e*Pg	**Pg**	**06 39 47.9**	**-0.8**
KULA				*e*Sg	**Sg**	**06 39 57.8**	**+0.1**
KHAL	**Karahalli**	**0.83**	**155**	P	**Pn**	**06 39 52.3**	**-0.4**
KHAL				S	**Sb**	**06 40 03.1**	**+0.4**
KHAL	**Karahalli**	**0.83**	**155**	*i P*	**Pn**	**06 39 52.3**	**-0.4**
KHAL				*i S*	**Sb**	**06 40 03.1**	**+0.4**
KHL	**Karahalli**	**0.88**	**155**	*e*PG	Pb	06 39 47.4	-5.1
AKHS	**Akhisar**	**1.00**	**256**	P	**Pn**	**06 39 56.1**	**+1.1**
AKHS	**Akhisar**	**1.00**	**256**	*i P*	**Pn**	**06 39 56.1**	**+1.1**
IZI	**Iznik**	**1.25**	**15**	*e*PN	**Pn**	**06 39 58.3**	**-0.3**
IZI	**Iznik**	**1.25**	**15**	*e*Pn	**Pn**	**06 39 58.3**	**-0.3**
ARMT	**Armutlu**	**1.45**	**354**	*e*PN	**Pb**	**06 40 01.9**	**-0.2**
ARMT				*e*SN	**Sg**	**06 40 22.3**	**+0.3**
ARMT	**Armutlu**	**1.45**	**354**	*e*Pn	**Pb**	**06 40 01.9**	**-0.2**
ARMT				*e*Sn	**Sg**	**06 40 22.3**	**+0.3**

*NIED **26** 06:40:00, 34.°90N×142.°70E, h11km, Mw3.8 Best double couple: M0=4.81000×10^14 NP1:φs=15.00000°, δ=26.00000°, λ=-88.00000°. NP2:φs=193.00000°, δ=64.00000°, λ=-91.00000°.*
*IDC **26** 06:40:29.8±0.7, 34.°79N×142.°77E, h0km, mb4.0/9, mb1 4.2/14, mb1mx4.0/48, mbtmp4.1/14, ML4.0/5, MS2.7/3, Ms1 2.7/3, ms1mx2.4/40, Error ellipse: s-maj=20.2km s-min=15.7km az=102.0*
*ISCJB **26** 06:40:33.3±0.5, 34.°78N±0.°05×142.°65E±0.°05, h42km, mb4.2/14, MS2.5/1, Error ellipse: s-maj=6.6km s-min=5.6km az=172.4*
*JMA **26** 06:40:33.0±0.4, 34.°88N×142.°74E, h60km, M3.9*
*NEIC **26** 06:40:34.8±0.6, 34.°90N×142.°72E, h35km, mb4.3/4, Error ellipse: s-maj=12.0km s-min=10.3km az=116.0*

ISC 26 06:40:34.6±0.7, 34.°78N±0.°06×142.°73E±0.°07, h42km, n46, σ1♀69/43, mb4.2/14, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**1.45**	**265**	P	**Pn**	**06 40 57.3**	**-0.5**
BSO1				S	**Sn**	**06 41 16.1**	**+0.8**
CHOJ	**Chosi**	**1.78**	**302**	P	**Pn**	**06 41 02.2**	**-0.7**
BSO3	**Boso 3**	**1.82**	**271**	P	**Pn**	**06 41 03.3**	**0.0**
BSO4	**Boso 4**	**1.98**	**277**	P	**Pn**	**06 41 05.8**	**+0.3**
JIM2	**Oshima 3**	**2.71**	**270**	P	**Pn**	**06 41 14.5**	**-1.3**
JIM2				*e*S	**Sn**	**06 41 46.0**	**-1.4**
JHJ2	**Mitsune**	**2.94**	**236**	*e*Pn	**Pn**	**06 41 18.1**	**-0.6**
JHJ2				*e*Sn	**Sn**	**06 41 48.5**	**-4.3**
JHJ	**Hachijo jima 2**	**2.96**	**237**	Pn	**Pn**	**06 41 18.3**	**-0.8**
	90nm,0.3s,baz=346,slow=17,SNR=36						
JHJ				Sn	**Sn**	**06 41 50.8**	**-2.5**
	101nm,0.3s,baz=215,slow=22,SNR=16						
JFK	**Kawauchi**	**2.98**	**330**	P	**Pn**	**06 41 16.7**	**-2.8**
JOD2	**Odawara 2**	**3.02**	**280**	S	**Sn**	**06 41 54.0**	**-1.0**
JAG	**Ashikaga**	**3.13**	**303**	P	**Pn**	**06 41 20.5**	**-1.0**
JAG				S	**Sn**	**06 41 56.5**	**-1.1**
JFT	**Otama**	**3.35**	**325**	P	**Pn**	**06 41 22.9**	**-1.5**
JFT				S	**Sn**	**06 41 59.6**	**-3.3**
JRY	**Ryogami san**	**3.36**	**293**	P	**Pn**	**06 41 24.8**	**+0.2**
JYN	**Shimob**	**3.50**	**283**	P	**Pn**	**06 41 25.7**	**-0.9**
MJAR	**Matsushiro Arr**	**4.08**	**297**	Pn	**Pn**	**06 41 34.2**	**-0.3**
	8.0nm,0.3s,baz=91,slow=12,SNR=45						
MJAR				LR	LR	06 43 30.6	
	comp=Z,83nm,18.6s,baz=145,slow=44						
MAJO	**Matsushiro**	**4.08**	**297**	*e*Pn	**Pn**	**06 41 34.2**	**-0.3**
MAT	**Matsushiro**	**4.08**	**297**	P	**Pn**	**06 41 34.3**	**-0.2**
MAT				*e*S	**Sn**	**06 42 19.2**	**-1.8**
MAT	**Matsushiro**	**4.08**	**297**	P	**Pn**	**06 41 34.3**	**-0.2**
ERM	**Erimo**	**7.23**	**3**	*e*Pn	Pn	06 42 13.8	-3.9
CBIJ	**Chichi jima**	**7.68**	**184**	Pn	**Pn**	**06 42 20.9**	**-3.0**
CBIJ				Sn	Sn	06 43 39.6	-10
CBIJ				*e*Sn	Sn	06 43 41.6	-8.0
JCJ	**Chichijima**	**7.68**	**184**	Pn	**Pn**	**06 42 20.9**	**-3.0**
	7.9nm,0.3s,baz=285,slow=23,SNR=10.0						
JCJ				Sn	Sn	06 43 39.6	-10
	6.2nm,0.3s,baz=345,slow=20,SNR=2.6						
ASAJ	**Asahikawa**	**9.32**	**359**	Pn	**Pn**	**06 42 43.3**	**-3.1**
	2.6nm,0.3s,baz=314,slow=14,SNR=6.2						
ASAJ	**Asahikawa**	**9.32**	**359**	Pn	**Pn**	**06 42 43.3**	**-3.1**
	1.1nm,0.8s						
KSRS	**Korea Array**	**12.27**	**287**	Pn	**Pn**	**06 43 25.8**	**-0.8**
	0.1nm,0.3s,baz=101,slow=14,SNR=4.7						
KSRS				LR	LR	06 48 15.3	
	comp=Z,44nm,19.1s,baz=103,slow=38						
KSAR	**Wonju Array Be**	**12.29**	**287**	Pn	**Pn**	**06 43 25.8**	**-1.2**
PETK	**Petropavlovsk-**	**21.18**	**26**	LR	LR	06 55 17.2	
	comp=Z,19nm,19.2s,baz=104,slow=42						
H11N2	**WAKE ISLAND Hy**	**26.11**	**119**	T	T	07 13 22.8	
	baz=310,slow=75,SNR=5.3						
H11N1	**WAKE ISLAND Hy**	**26.11**	**119**	T	T	07 13 23.5	
	baz=310,slow=75,SNR=5.6						
H11N3	**WAKE ISLAND Hy**	**26.12**	**119**	T	T	07 13 24.5	
	baz=310,slow=75,SNR=4.8						
H11S1	**WAKE ISLAND Hy**	**26.76**	**121**	T	T	07 14 13.0	
	baz=312,slow=76,SNR=7.6						
H11S3	**WAKE ISLAND Hy**	**26.76**	**121**	T	T	07 14 17.1	
	baz=312,slow=76,SNR=8.4						
H11S2	**WAKE ISLAND Hy**	**26.78**	**121**	T	T	07 14 10.9	
	baz=312,slow=76,SNR=6.1						
SEY	**Seymchan**	**28.82**	**9**	P	**P**	**06 46 28.7**	**+0.3**
	1.5nm,0.5s,baz=42,slow=20,SNR=4.0						
SONM	**Songino Array**	**29.96**	**307**	P	**P**	**06 46 40.0**	**+1.1**
	0.5nm,0.5s,baz=99,slow=9.2,SNR=5.1						
ZALV	**Zalesovo Beam**	**44.23**	**314**	P	**P**	**06 48 40.6**	**+1.1**
	1.8nm,0.4s,baz=93,slow=5.8,SNR=2.2						
MKAR	**Makanchi Array**	**46.24**	**304**	P	**P**	**06 48 57.0**	**+1.4**
	1.2nm,0.7s,baz=95,slow=10.0,SNR=4.4						
ILAR	**Eielson Array**	**50.84**	**31**	P	**P**	**06 49 31.2**	**+0.5**
	0.5nm,0.7s,baz=255,slow=5.7,SNR=5.0						
TKM2	**Tokmak 2**	**51.66**	**300**	*e*P	P	06 49 39.6	+2.1
	0.9nm,0.6s						
WRAB	**Tennant Creek**	**54.99**	**190**	*e*P	**P**	**06 50 02.6**	**+0.8**
	7.6nm,0.9s						
WRA	**Warramunga Arr**	**55.00**	**190**	P	**P**	**06 50 02.9**	**+1.1**
	3.8nm,0.8s,baz=8.9,slow=7.6,SNR=22						
KKAR	**Karatay Array**	**55.20**	**302**	*e*P	P	06 49 54.2	-9.0
	2.0nm,0.4s						
ASAR	**Alice Springs**	**58.73**	**189**	P	**P**	**06 50 29.6**	**+1.4**
	1.4nm,0.7s,baz=15,slow=11,SNR=17						
ABKAR	**Akbulak array**	**60.22**	**312**	*e*P	**P**	**06 50 39.7**	**+1.4**
	1.0nm,0.6s						
LVZ	**Lovozero**	**64.60**	**337**	*e*P	**P**	**06 51 06.2**	**-1.1**
	48nm,1.0s						
YKA	**Yellowknife Ar**	**65.22**	**30**	P	**P**	**06 51 12.0**	**+0.7**
	0.4nm,0.8s,baz=296,slow=6.1,SNR=5.9						
NVAR	**Mina Array Bea**	**75.48**	**53**	P	**P**	**06 52 16.7**	**+1.9**
	1.8nm,0.7s,baz=298,slow=6.6,SNR=9.5						
LPAZ	**La Paz**	**146.81**	**64**	PKPbc	**PKPab**	**07 00 14.9**	**+0.1**
	1.1nm,0.6s,baz=342,slow=2.0,SNR=6.0						

IDC 26 06:44:45.7±6.0, 10.°76S×165.°30E, h0km, mb3.7/3, mb1 4.0/3, mb1mx3.5/37, mbtmp3.7/3, MS3.1/2, Ms1 3.1/2, ms1mx2.6/22, Error ellipse: s-maj=327.2km s-min=31.9km az=139.0, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	**Honiara**	**5.43**	**284**	LR	LR	06 48 28.8	
	comp=Z,166nm,20.3s,baz=130,slow=41						
PMG	**Port Moresby**	**17.91**	**273**	LR	LR	06 55 43.4	
	comp=Z,73nm,18.3s,baz=164,slow=37						
WRA	**Warramunga Arr**	**31.18**	**249**	P	P	06 51 06.8	0.0
	1.0nm,0.9s,baz=80,slow=9.0,SNR=4.8						
ASAR	**Alice Springs**	**32.54**	**243**	P	P	06 51 18.6	-0.1
	1.1nm,1.0s,baz=67,slow=10,SNR=4.3						
ILAR	**Eielson Array**	**83.38**	**19**	P	P	06 57 14.4	0.0
	0.6nm,0.7s,baz=233,slow=5.0,SNR=10						

*IDC **26** 06:48:16.5±2.4, 12.°15N×144.°37E, h53km±23km, mb3.2/7, mb1 3.4/7, mb1mx3.3/41, mbtmp3.5/7, Error ellipse: s-maj=39.7km s-min=15.9km az=101.0*

ISC 26 06:48:13.7±1.1, 12.°2N±0.°1×144.°4E±0.°3, h29km, n8, σ0♀61/9, mb3.5/7, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**1.49**	**19**	P	**Pb**	**06 48 40.3**	**-0.6**
	69nm,0.3s,baz=168,slow=7.3,SNR=25						
GUMO				LR	LR	06 48 57.7	
	comp=Z,34nm,18.5s,baz=244,slow=27						
GUMO				S	**Sb**	**06 49 00.0**	**+0.7**
	61nm,0.3s,baz=30,slow=20,SNR=14						
WRA	**Warramunga Arr**	**33.40**	**197**	P	**P**	**06 54 50.2**	**+0.2**
	0.6nm,0.9s,baz=7.7,slow=9.1,SNR=3.7						
ASAR	**Alice Springs**	**37.06**	**196**	P	**P**	**06 55 21.6**	**+0.1**
	0.5nm,0.6s,baz=21,slow=10.0,SNR=7.8						
SONM	**Songino Array**	**47.62**	**326**	P	**P**	**06 56 48.0**	**+0.6**
	0.3nm,0.5s,baz=102,slow=4.7,SNR=2.6						
MKAR	**Makanchi Array**	**62.18**	**317**	P	**P**	**06 58 32.3**	**-0.3**
	0.5nm,0.6s,baz=87,slow=8.6,SNR=4.4						
ILAR	**Eielson Array**	**70.05**	**25**	P	**P**	**06 59 22.1**	**-0.6**
	0.2nm,0.6s,baz=242,slow=5.0,SNR=2.8						
BVAR	**Borovoye Array**	**70.74**	**322**	P	**P**	**06 59 26.8**	**-0.4**
	0.5nm,0.4s,baz=99,slow=8.9,SNR=4.9						
YKA	**Yellowknife Ar**	**84.33**	**27**	P	**P**	**07 00 43.5**	**+0.7**
	0.1nm,0.4s,baz=284,slow=5.1,SNR=4.7						

NNC 26 06:48:24.8±3.3, 36.°96N×71.°30E, h0km, mb3.8, mpv3.5, 6C-2D, Error ellipse: s-maj=26.4km s-min=12.9km az=168.0, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**2.68**	**314**	⇓Pn	Pn	06 49 09.1	-0.3
	9.0nm,0.2s						
DZET				⇓Sn	Sn	06 49 44.1	+1.5
	30nm,0.3s						
MNAS	**Manas**	**5.59**	**9**	⇑Pn	Pn	06 49 49.6	+0.2
	1.5nm,0.4s						
MNAS				⇑Sn	Sn	06 50 56.0	+1.5
	7.4nm,0.7s						
KK31	**Karatay Array**	**6.16**	**355**	⇑Pn	Pn	06 49 55.7	-1.3
	0.9nm,0.4s,baz=183,slow=13,SNR=14						
KK31				⇑Sn	Sn	06 51 07.0	-1.3
	1.2nm,0.4s,baz=183,slow=26,SNR=5.5						
AAK	**Ala-Archa**	**6.17**	**22**	⇑Pn	Pn	06 49 57.9	+0.5
	2.3nm,0.4s						
AAK				⇑Sn	Sn	06 51 11.6	+2.8
	2.9nm,0.6s						

*NIED **26** 06:57:00, 39.°60N×142.°10E, h53km, Mw4.1 Best double couple: M0=1.79000×10^15 NP1:φs=198.00000°, δ=21.00000°, λ=90.00000°. NP2:φs=17.00000°, δ=69.00000°, λ=90.00000°.*
*ISCJB **26** 06:57:33.6±0.5, 39.°62N±0.°03×142.°10E±0.°07, h58km±3km, mb4.2/21, MS3.0/5, Error ellipse: s-maj=9.5km s-min=4.7km az=16.3*
*JMA **26** 06:57:34.5±0.1, 39.°63N×142.°10E, h48km±1km, M4.1*
JMA Felt III J1.
*NEIC **26** 06:57:36.1±0.6, 39.°63N×142.°11E, h68km±6km, mb4.5/5, Error ellipse: s-maj=9.3km s-min=5.4km az=113.0*
NEIC Recorded [3 JMA] in Iwate.
*IDC **26** 06:57:37.2±2.1, 39.°55N×142.°03E, h78km±19km, mb3.8/18, mb1 4.0/23, mb1mx3.9/43, mbtmp4.2/23, MS2.9/11, Ms1 3.0/11, ms1mx2.8/32, Error ellipse: s-maj=16.8km s-min=13.1km az=95.0*

ISC 26 06:57:34.4±0.9, 39.°61N±0.°04×142.°11E±0.°08, h49km±7km, n60, σ1♀67/65, mb4.2/21, MS3.1/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**0.23**	**261**	P	**Pn**	**06 57 42.8**	**-0.1**
MIYJ				*e*S	**Sn**	**06 57 48.5**	**-0.4**
JTH	**Tanohata**	**0.38**	**329**	P	**Pn**	**06 57 44.0**	**-0.3**
JTH				*e*S	**Sn**	**06 57 50.5**	**-0.8**
OFUJ	**Ofunato**	**0.64**	**213**	P	**Pn**	**06 57 47.2**	**-0.1**
OFUJ				*e*S	**Sn**	**06 57 56.2**	**-0.4**
JOM	**Ohasama**	**0.65**	**258**	P	**Pn**	**06 57 47.7**	**+0.2**
JOM				*e*S	**Sn**	**06 57 57.1**	**+0.1**
JKZ	**Kuzumaki**	**0.71**	**302**	P	**Pn**	**06 57 48.2**	**-0.1**
JKZ				*e*S	**Sn**	**06 57 57.8**	**-0.6**
JANG	**Nango**	**0.89**	**329**	P	**Pn**	**06 57 50.1**	**-0.5**
JANG				*e*S	**Sn**	**06 58 00.8**	**-1.7**
JMK	**Ichinoseki**	**0.96**	**227**	P	**Pn**	**06 57 51.6**	**0.0**
JMK				*e*S	**Sn**	**06 58 04.0**	**-0.1**
JRG	**Rokugo**	**1.17**	**260**	P	**Pn**	**06 57 54.4**	**0.0**
JAH	**Hinai**	**1.27**	**297**	P	**Pn**	**06 57 55.9**	**+0.1**
JTM	**Tenmabayashi**	**1.42**	**326**	P	**Pn**	**06 57 57.6**	**-0.2**
ERM	**Erimo**	**2.53**	**18**	*e*Pn	**Pn**	**06 58 13.8**	**+0.9**
ERM				*e*Sn	**Sn**	**06 58 44.3**	**+1.8**
MAJO	**Matsushiro**	**4.35**	**226**	*e*Pn	**Pn**	**06 58 40.8**	**+2.8**
MAT	**Matsushiro**	**4.35**	**226**	P	**Pn**	**06 58 40.5**	**+2.5**
MAT				*e*S	**Sn**	**06 59 32.8**	**+5.4**
MJAR	**Matsushiro Arr**	**4.35**	**226**	P	**Pn**	**06 58 40.8**	**+2.8**
	5.7nm,0.3s,baz=33,slow=13,SNR=82						
MJAR				LR	LR	07 00 17.2	
	comp=Z,69nm,20.9s,baz=80,slow=38						
ASAJ	**Asahikawa**	**4.51**	**4**	P	**Pn**	**06 58 40.6**	**+0.4**
	3.6nm,0.3s,baz=264,slow=8.5,SNR=6.0						
ASAJ				S	**Sn**	**06 59 35.6**	**+4.3**
	1.8nm,0.3s,baz=108,slow=20,SNR=3.9						
ASAJ	**Asahikawa**	**4.51**	**4**	P	**Pn**	**06 58 40.6**	**+0.4**
ASAJ				S	**Sn**	**06 59 35.6**	**+4.3**
ASAJ				*e*Sn	Sn	06 59 37.3	+5.9
JHJ	**Hachijo jima 2**	**6.75**	**197**	P	**Pn**	**06 59 11.6**	**+0.6**
	4.8nm,0.3s,baz=40,slow=18,SNR=4.3						
JHJ				S	**Sn**	**07 00 23.4**	**-3.0**
	12nm,0.3s,baz=60,slow=20,SNR=2.9						
JHJ2	**Mitsune**	**6.75**	**197**	*e*Pn	**Pn**	**06 59 11.8**	**+0.9**
JHJ2				*e*Sn	**Sn**	**07 00 23.7**	**-2.7**
YSS	**Yuzh-Sakhalins**	**7.35**	**3**	*e*Pn	**Pn**	**06 59 20.6**	**+1.5**
USRK	**Ussuriysk Ar.**	**8.83**	**305**	P	**Pn**	**06 59 42.6**	**+3.3**
	0.9nm,0.3s,baz=109,slow=14,SNR=23						
USRK				LR	LR	07 02 58.8	
	comp=Z,116nm,19.2s,baz=144,slow=36						
MDJ	**Mudanjiang**	**10.56**	**302**	*e*Pn	**Pn**	**07 00 01.5**	**-1.5**
JNU	**Nakatsue**	**11.13**	**238**	LR	LR	07 05 06.3	
	comp=Z,32nm,21.3s,baz=306,slow=41						
KSRS	**Korea Array**	**11.32**	**264**	P	**Pn**	**07 00 16.9**	**+3.5**
	1.3nm,0.3s,baz=70,slow=14,SNR=14						
KSRS				LR	LR	07 04 13.1	
	comp=Z,46nm,19.7s,baz=74,slow=35						
KSAR	**Wonju Array Be**	**11.36**	**263**	P	**Pn**	**07 00 16.9**	**+3.0**
KLR	**Kul'dur**	**12.12**	**326**	P	**Pn**	**07 00 26.0**	**+1.6**
	0.1nm,0.3s,baz=45,slow=19,SNR=3.8						
KLR				LR	LR	07 04 43.8	
	comp=Z,74nm,21.5s,baz=158,slow=35						
PETK	**Petropavlovsk-**	**17.20**	**33**	LR	LR	07 08 28.1	
	comp=Z,34nm,18.9s,baz=214,slow=38						
BJT	**Baijiatuau**	**19.92**	**279**	*e*P	**P**	**07 02 01.1**	**-0.8**
	11nm,0.7s						
MA2	**Magadan**	**20.72**	**13**	P	**P**	**07 02 10.3**	**-0.1**
	4.6nm,0.5s,baz=224,slow=9.1,SNR=4.6						
YAK	**Yakutsk**	**23.70**	**345**	*e*P	**P**	**07 02 39.7**	**-1.6**
	19nm,0.6s						
SEY	**Seymchan**	**24.16**	**11**	P	**P**	**07 02 45.5**	**-0.1**
	7.6nm,0.8s,baz=210,slow=7.7,SNR=16						
SONM	**Songino Array**	**26.90**	**300**	P	**P**	**07 03 09.4**	**-1.4**
	1.2nm,0.7s,baz=86,slow=8.0,SN

*ISK **26** 07:03:19.8, 39°.18N×28°.92E, h3km, MD2.3*
*CSEM **26** 07:03:21.7±0.3, 39°.20N×28°.94E, h10km, MD2.5, Error ellipse: s-maj=7.7km s-min=4.9km az=110.0*
*ISCJB **26** 07:03:22.1±0.6, 39°.16N±0°.03×28°.99E±0°.04, h11km±5km, Error ellipse: s-maj=6.4km s-min=4.3km az=36.4*
*DDA **26** 07:03:23.4, 39°.07N×29°.02E, h7km, Md2.5*
ISC 26 07:03:22.4±1.3, 39°.17N±0°.03×28°.99E±0°.03, h21km±2km, n19, σ1°.14/33, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**240**	P	**Pb**	**07 03 28.5**	**-0.1**
DEMI				S	**Sb**	**07 03 31.9**	**-1.0**
DEMI	**Demirci**	**0.24**	**240**	*i* P	**Pb**	**07 03 28.5**	**-0.1**
DEMI				*i* S	**Sb**	**07 03 31.9**	**-1.0**
GDZ	**Gediz**	**0.39**	**101**	P	**Pb**	**07 03 30.6**	**-0.1**
GDZ				S	**Sb**	**07 03 35.7**	**-0.5**
GDZ	**Gediz**	**0.39**	**101**	*i* P	**Pb**	**07 03 30.6**	**-0.1**
GDZ				*i* S	**Sb**	**07 03 35.7**	**-0.5**
TVSB	**Tavsanli**	**0.47**	**52**	*e*PG	**Pb**	**07 03 30.4**	**-1.6**
TVSB				*e*SG	**Sb**	**07 03 38.1**	**-0.2**
TVSB	**Tavsanli**	**0.47**	**52**	*e*Pg	**Pb**	**07 03 30.4**	**-1.6**
TVSB				*e*Sg	**Sb**	**07 03 38.2**	**-0.2**
DURS	**Dursunbey**	**0.59**	**318**	*i* P	**Pn**	**07 03 37.2**	**+1.5**
KULA	**Kula-Manisa**	**0.70**	**201**	*e*PG	**Pb**	**07 03 34.2**	**-1.8**
KULA				*e*SG	**Sb**	**07 03 44.1**	**-1.1**
KULA	**Kula-Manisa**	**0.70**	**201**	*e*Pg	**Pb**	**07 03 34.2**	**-1.8**
KULA				*e*Sg	**Sb**	**07 03 44.1**	**-1.1**
MANT	**Manisa**	**0.75**	**207**	P	**Pb**	**07 03 37.0**	**+0.1**
MANT				S	**Sb**	**07 03 46.5**	**-0.4**
MANT	**Manisa**	**0.75**	**207**	*i* P	**Pb**	**07 03 37.0**	**+0.1**
MANT				*i* S	**Sb**	**07 03 46.5**	**-0.4**
ORLT	**Orhaneli**	**0.88**	**356**	*e*PG	**Pb**	**07 03 36.9**	**-2.2**
ORLT	**Orhaneli**	**0.88**	**356**	*e*Pg	**Pb**	**07 03 36.9**	**-2.2**
KHAL	**Karahalli**	**0.89**	**153**	P	**Pn**	**07 03 40.9**	**+1.1**
KHAL				S	**Sb**	**07 03 50.5**	**-0.1**
KHAL	**Karahalli**	**0.89**	**153**	*i* P	**Pn**	**07 03 40.9**	**+1.1**
KHAL				*i* S	**Sb**	**07 03 50.5**	**-0.1**
ARMT	**Armutlu**	**1.40**	**356**	*e*PN	**Pb**	**07 03 47.1**	**-0.8**
ARMT				*e*SN	**Sb**	**07 04 06.7**	**+1.4**
ARMT	**Armutlu**	**1.40**	**356**	*e*Pn	**Pb**	**07 03 47.1**	**-0.8**
ARMT				*e*Sn	**Sb**	**07 04 06.7**	**+1.4**
SPNC	**Sapanca-Adapaz**	**1.83**	**33**	*e*PN	**Pn**	**07 03 53.5**	**+0.9**
SPNC	**Sapanca-Adapaz**	**1.83**	**33**	*e*Pn	**Pn**	**07 03 53.6**	**+0.9**

*ISCJB **26** 07:28:56.9±0.6, 6°.83N±0°.05×73°.05W±0°.05, h160km±5km, mb3.2/1, Error ellipse: s-maj=10.3km s-min=4.2km az=42.0*
*IDC **26** 07:28:57.2±5.7, 7°.16N×74°.10W, h152km±35km, mb2.7/1, mb1 3.0/2, mb1mx2.8/27, mbtmp3.2/2, Error ellipse: s-maj=414.9km s-min=37.6km az=92.0*
*FUNV **26** 07:28:57.1, 6°.74N×73°.14W, h169km, MW3.1*
*RSNC **26** 07:28:59.1±0.8, 6°.78N×73°.09W, h148km±4km, ML2.8*
ISC 26 07:28:55.8±1.0, 6°.79N±0°.05×73°.04W±0°.05, h167km±6km, n26, σ1°.43/45, 2C, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BARC	**Barichara**	**0.25**	**216**	*i* P	**Pn**	**07 29 18.9**	**+0.3**
BARC				*i*		07 29 19.1	
	comp=Z,138nnm,0.2s						
BARC				*e*S	**Sn**	**07 29 34.7**	**-1.4**
BTLC	**Betulia, Santa**	**0.26**	**298**	*i* P	**Pn**	**07 29 19.1**	**+0.5**
BTLC				*e*S	**Sn**	**07 29 35.1**	**-0.9**
GIRC	**Giron, Santand**	**0.32**	**331**	*e*P	**Pn**	**07 29 19.0**	**+0.3**
GIRC				*e*S	**Sn**	**07 29 34.3**	**-1.9**
PAMC	**Pamplona, Colo**	**0.64**	**32**	*e*P	**Pn**	**07 29 21.7**	**+1.3**
PAMC				*e*S	**Sn**	**07 29 39.0**	**-0.3**
PAMC				*i*		07 29 41.3	
	comp=Z,51nm,0.2s						
BRRC	**Barranca, Sant**	**0.74**	**295**	⇑*i*P	**Pn**	**07 29 20.8**	**+0.4**
BRRC				*e*S	**Sn**	**07 29 38.4**	**-0.9**
BRRC				*i*		07 29 40.5	
	comp=Z,185nnm,0.1s						
RUSC	**La Rusia**	**0.90**	**183**	*e*P	**Pn**	**07 29 22.8**	**+0.6**
RUSC				*e*S	**Sn**	**07 29 41.0**	**-1.3**
RUSC				*i*		07 29 42.5	
	comp=Z,51nm,0.2s						
CBRI	**Barrientos, No**	**0.95**	**15**	*e*P	**Pn**	**07 29 23.5**	**+1.4**
CBRI				*e*S	**Sn**	**07 29 41.5**	**-0.9**
CBRI				*i*		07 29 45.3	
	comp=Z,93nm,0.2s						
GRMC	**Gramalote, San**	**0.95**	**14**	*e*P	**Pn**	**07 29 24.7**	**+2.7**
GRMC				*e*S	**Sn**	**07 29 44.3**	**+1.9**
GRMC				*i*		07 29 45.5	
	comp=Z,134nm,0.3s						
GUEC	**Guerrero, Nort**	**1.04**	**6**	*e*P	**Pn**	**07 29 24.4**	**+1.4**
CAPV	**Capacho**	**1.28**	**34**	⇑*i*P	**Pn**	**07 29 26.8**	**+1.9**
CAPV				*e*S	**Sn**	**07 29 48.3**	**+0.9**
OCAC	**Ocana**	**1.46**	**349**	*e*P	**Pn**	**07 29 27.3**	**+0.8**
OCAC				*e*S	**Sn**	**07 29 50.0**	**-0.3**
OCAC				*i*		07 29 54.2	
	comp=Z,102nm,0.1s						
NORC	**Norcasia**	**2.19**	**236**	*e*P	**Pn**	**07 29 34.7**	**+0.4**
NORC				*e*S	**Sn**	**07 30 02.9**	**-1.1**
ROSC	**El Rosal**	**2.32**	**213**	P	**Pn**	**07 29 38.0**	**+1.9**
	comp=Z,3.7nm,0.3s,baz=274,slow=19,SNR=26						
ROSC				S	**Sn**	**07 30 07.1**	**-0.3**
	comp=Z,5.2nm,0.3s,baz=119,slow=16,SNR=11						
HELC	**Santa Helena**	**2.55**	**257**	*e*P	**Pn**	**07 29 40.7**	**+1.9**
HELC				*e*S	**Sn**	**07 30 12.3**	**+0.4**
HELC				*i*		07 30 19.3	
	comp=Z,27nm,0.2s						
SOCV	**Socops**	**2.62**	**55**	*e*P	**Pn**	**07 29 41.2**	**+1.9**
SOCV				*e*S	**Sn**	**07 30 13.0**	**0.0**
VIGV	**El Vigia**	**2.62**	**39**	*e*P	**Pn**	**07 29 41.2**	**+1.8**
VIGV				*e*S	**Sn**	**07 30 13.9**	**+0.7**
DBBC	**Dabeiba**	**3.16**	**274**	*e*P	**Pn**	**07 29 47.3**	**+1.3**
TOLC	**Tolima**	**3.16**	**226**	*e*P	**Pn**	**07 29 48.2**	**+2.0**
PRAC	**Prado**	**3.57**	**211**	*e*P	**Pn**	**07 29 53.1**	**+1.9**
VIRV	**Villa del Rosa**	**3.74**	**10**	*e*P	**Pn**	**07 29 53.5**	**+0.3**
VIRV				*e*S	**Sn**	**07 30 36.2**	**-1.8**
QARV	**Quebrada Arrib**	**4.21**	**36**	*e*P	**Pn**	**07 30 00.7**	**+1.5**
QARV				*e*S	**Sn**	**07 30 48.0**	**-0.8**
CURV	**Curarigua**	**4.42**	**43**	*e*P	**Pn**	**07 30 03.5**	**+1.4**
CURV				*e*S	**Sn**	**07 30 51.8**	**-1.9**
BAUV	**El Baul**	**5.39**	**66**	*e*P	**Pn**	**07 30 15.4**	**+0.7**
BAUV				*e*S	**Sn**	**07 31 14.0**	**-2.5**
MONV	**Montecano**	**5.95**	**30**	*e*P	**Pn**	**07 30 22.9**	**+0.8**
YKA	**Yellowknife Ar**	**63.32**	**340**	P	**P**	**07 39 04.7**	**-1.9**
	comp=Z,0.2nm,0.6s,baz=129,slow=6.5,SNR=2.9						
WRA	**Warramunga Arr**	**150.40**	**241**	PKPbc	**PKPbc**	**07 48 29.7**	**+1.3**
	comp=Z,0.3nm,0.9s,baz=116,slow=2.1,SNR=3.5						

*SKHL **26** 07:33:23.1±1.0, 53°.90N×141°.90E, h10km, mb4.6/4, ms3.1/1*
*MOS **26** 07:33:23.6±1.7, 53°.56N×142°.06E, h10km, mb4.1/2, Error ellipse: s-maj=24.1km s-min=17.5km az=71.9*
*IDC **26** 07:33:28.4±5.1, 53°.57N×141°.95E, h26km±36km, mb3.4/4, mb1 3.6/6, mb1mx3.3/40, mbtmp3.6/6, ML2.7/1, MS2.5/1, Ms1 2.5/1, ms1mx2.0/31, Error ellipse: s-maj=27.5km s-min=20.5km az=136.0*
ISC 26 07:33:26.4±0.7, 53°.64N±0°.06×142°.07E±0°.03, h10km, n20, σ2°.53/27, mb3.7/4, 1C-1D, Sakhalin Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OKH	**Okha**	**0.52**	**99**	⇑*i*PN	**Pg**	**07 33 36.1**	**-0.4**
OKH				*e*S	**Sb**	**07 33 45.0**	**-0.2**
OKH	**Okha**	**0.52**	**99**	*e*Pg	**Pg**	**07 33 36.1**	**-0.4**
OKH				⇓*i*Pg	**Pg**	**07 33 36.1**	**-0.4**
OKH				AMB	AMB	07 33 36.3	
	400nm,0.5s						
OKH				*e*Sg	**Sb**	**07 33 45.0**	**-0.2**
OKH				A	A	07 33 46.1	
	2μm,0.5s						
OKH				A	A	07 33 46.1	
	2μm,0.5s						
NKL	**Nikolayevsk**	**0.97**	**240**	*i* PN	**Pg**	**07 33 43.7**	**-1.2**
NKL				*e*S	**Sg**	**07 33 59.0**	**+1.5**
NKL				pmax	pmax		
	comp=N,150nm,0.3s						
NKL				pmax	pmax		
	comp=Z,430nm,0.3s						
NKL				smax	smax		
	comp=E,2μm,1.0s						
NKL				smax	smax		
	comp=N,950nm,0.3s						
NKL				smax	smax		
	comp=E,830nm,0.3s						
NKL	**Nikolayevsk**	**0.97**	**240**	*i* Pg	**Pg**	**07 33 43.8**	**-1.2**
NKL				AMB	AMB	07 33 46.0	
	comp=E,150nm,0.3s						
NKL				AMB	AMB	07 33 46.0	
	comp=E,430nm,0.3s						
NKL				*e*Sg	**Sg**	**07 33 59.0**	**+1.5**
NKL				A	A	07 33 59.5	
	comp=E,2μm,1.0s						
NKL				A	A	07 33 59.5	
	comp=E,950nm,0.3s						
NKL				A	A	07 33 59.5	
	comp=E,830nm,0.3s						
NKL				AMS	AMS	07 34 33.0	
	comp=E,700nm,5.0s						
NKL				AMS	AMS	07 34 33.0	
	comp=E,600nm,5.0s						
TYV	**Tymovskoe**	**2.80**	**172**	*e*PN	**Pn**	**07 34 06.9**	**-4.3**
TYV	**Tymovskoe**	**2.80**	**172**	*e*P	**Pn**	**07 34 13.3**	**+2.1**
TYV				*e*Pg	Pg	07 34 25.5	+5.4
TYV				AMB	AMB	07 34 29.0	
	comp=E,22nm,0.8s						
TYV				AMB	AMB	07 34 29.0	
	comp=E,24nm,0.8s						
TYV				*e*Sg	Sg	07 35 09.5	+13
TYV				A	A	07 35 10.5	
	comp=E,39nm,0.8s						
GRNR	**Gornyy**	**4.51**	**233**	*e*Pg	**Pg**	**07 34 52.5**	**-0.2**
GRNR				AMB	AMB	07 34 53.5	
	comp=E,19nm,0.5s						
GRNR				*e*Sg	**Sg**	**07 35 55.0**	**+3.9**
GRNR				A	A	07 35 56.5	
	comp=E,84nm,0.8s						
EKMR	**Ekimchan**	**5.49**	**268**	*e*P	**Pn**	**07 34 46.3**	**-2.0**
EKMR				*e*Pg	**Pg**	**07 35 10.9**	**-0.7**
EKMR				AMB	AMB	07 35 20.0	
	comp=E,41nm,0.6s						
EKMR				AMB	AMB	07 35 20.0	
	comp=E,76nm,0.6s						
EKMR				AMB	AMB	07 35 20.0	
	comp=E,78nm,0.6s						
EKMR				*e*S	**Sn**	**07 35 47.3**	**-4.2**
EKMR				*e*Sg	**Sg**	**07 36 25.5**	**+2.8**
EKMR				A	A	07 36 33.5	
	comp=E,74nm,0.7s						
EKMR				A	A	07 36 33.5	
	comp=E,18nm,0.7s						
EKMR				A	A	07 36 33.5	
	comp=E,41nm,0.7s						
MA2	**Magadan**	**7.64**	**35**	LR	LR	07 38 25.0	
	comp=E,29nm,18.9s,baz=321,slow=38						
KLR	**Kul'dur**	**7.81**	**240**	Pg	Pg	07 35 50.9	-5.0
	comp=E,0.7nm,0.3s,baz=49,slow=19,SNR=14						
KLR				Lg	Lg	07 37 33.0	
	comp=E,1.3nm,0.3s,baz=143,slow=19,SNR=5.8						
BMKR	**Bomnak**	**7.84**	**283**	*e*Pg	**Pb**	**07 35 46.5**	**+4.2**
BMKR				*e*Sg	**Sg**	**07 37 42.6**	**+4.8**
BMKR				A	A	07 37 47.4	
	comp=E,10.0nm,0.5s						
YASR	**Yasnyy**	**8.42**	**273**	*e*Pg	**Pb**	**07 35 55.4**	**+3.3**
YASR				*e*Sg	Sb	07 37 42.0	+10
YASR				A	A	07 37 49.0	
	comp=E,700nm,0.1s						
YASR				A	A	07 37 49.0	
	comp=E,20nm,0.1s						
ZEA	**Zeya**	**8.80**	**277**	*e*Sg	**Sg**	**07 38 04.0**	**-4.6**
KROS	**Kirovskiy**	**8.93**	**281**	*e*Sg	Sg	07 38 04.0	-8.6
KROS				A	A	07 38 18.5	
	comp=E,9.0nm,0.7s						
PETK	**Petropavlovsk-**	**9.36**	**87**	Pn	**Pn**	**07 35 41.2**	**0.0**
	comp=E,0.3nm,0.3s,baz=284,slow=12,SNR=9.1						
TIXI	**Tiksi**	**18.98**	**347**	P	**P**	**07 37 46.6**	**-0.9**
	comp=E,0.2nm,0.3s,baz=147,slow=12,SNR=3.1						
ILAR	**Eielson Array**	**36.02**	**44**	P	**P**	**07 40 28.6**	**+1.3**
	comp=E,0.3nm,0.8s,baz=276,slow=10,SNR=4.0						
MKAR	**Makanchi Array**	**37.85**	**285**	P	**P**	**07 40 42.1**	**-0.9**
	comp=E,1.1nm,0.6s,baz=62,slow=7.4,SNR=11						
WRA	**Warramunga Arr**	**73.58**	**188**	P	**P**	**07 44 58.1**	**-1.3**
	comp=E,0.6nm,1.0s,baz=6.8,slow=6.2,SNR=2.7						
ASAR	**Alice Springs**	**77.30**	**188**	P	**P**	**07 45 20.3**	**-0.5**
	comp=E,0.5nm,0.6s,baz=355,slow=5.6,SNR=4.3						

JMA 26 07:40:49.6±0.2, 38°.24N×143°.87E, h16km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**1.92**	**297**	P	Pn	07 41 22.5	+0.9
OFUJ				S	Sb	07 41 46.7	-1.2
JIO	**Ouri**	**1.99**	**277**	S	Sn	07 41 47.6	+0.4
JMK	**Ichinoseki**	**2.19**	**290**	P	Pn	07 41 26.6	+1.2
JMK				*e*S	Sb	07 41 54.3	-1.5
JOM	**Ohasama**	**2.36**	**302**	*e*S	Sn	07 41 58.2	+1.9
JOU	**Okura**	**2.52**	**274**	P	Pn	07 41 31.5	+1.5
JOU				S	Sn	07 42 02.0	+1.6
JRG	**Rokugo**	**2.78**	**296**	P	Pn	07 41 35.9	+2.5
JRG				*e*S	Sn	07 42 09.4	+2.8
JYK	**Kaneyama**	**2.83**	**285**	P	Pn	07 41 35.7	+1.5
JYK				S	Sn	07 42 09.7	+1.7
JFT	**Otama**	**2.89**	**257**	P	Pn	07 41 35.5	+0.6
JFT				*e*S	Sn	07 42 09.8	+0.5
JNBK	**Urakawa-nobuka**	**4.12**	**348**	P	Pn	07 41 53.1	+1.2
JNBK				S	Sn	07 42 39.8	0.0
JRY	**Ryogami san**	**4.55**	**242**	P	Pn	07 41 57.5	-0.3
JRY				S	Sn	07 42 47.3	-3.0

*ISK **26** 07:46:20.2, 39°.06N×29°.15E, h13km, ML2.0*
*ISCJB **26** 07:46:21.1±0.5, 39°.10N±0°.03×29°.04E±0°.04, h6km±6km, Error ellipse: s-maj=5.4km s-min=4.1km az=139.9*
*DDA **26** 07:46:21.2, 39°.11N×29°.00E, h7km, Md2.7*
*CSEM **26** 07:46:21.1±0.2, 39°.10N×29°.06E, h10km, MD2.7, Error ellipse: s-maj=5.8km s-min=3.9km az=107.0*
ISC 26 07:46:20.9±0.9, 39°.08N±0°.02×29°.07E±0°.03, h13km±8km, n33, σ0°.55/52, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**263**	P	**Pg**	**07 46 27.1**	**+0.3**
DEMI				S	**Sg**	**07 46 30.5**	**-0.3**
DEMI	**Demirci**	**0.28**	**263**	*i* P	**Pg**	**07 46 27.1**	**+0.3**
DEMI				*i* S	**Sg**	**07 46 30.5**	**-0.3**
GDZ	**Gediz**	**0.32**	**88**	P	**Pb**	**07 46 29.0**	**+0.5**
GDZ				S	**Sb**	**07 46 34.3**	**+0.7**
GDZ	**Gediz**	**0.32**	**88**	*i* P	**Pb**	**07 46 29.0**	**+0.5**
GDZ				*i* S	**Sb**	**07 46 34.3**	**+0.7**
TVSB	**Tavsanli**	**0.48**	**39**	*e*PG	**Pg**	**07 46 29.8**	**-0.6**
TVSB				*e*SG	**Sg**	**07 46 36.5**	**-0.3**
TVSB	**Tavsanli**	**0.48**	**39**	*e*Pg	**Pg**	**07 46 29.8**	**-0.6**
TVSB				*e*Sg	**Sg**	**07 46 36.5**	**-0.3**
KULA	**Kula-Manisa**	**0.65**	**210**	*e*PG	**Pb**	**07 46 34.2**	**+0.1**
KULA				*e*SG	**Sb**	**07 46 43.0**	**0.0**
KULA	**Kula-Manisa**	**0.65**	**210**	*e*Pg	**Pb**	**07 46 34.2**	**+0.1**
KULA				*e*Sg	**Sb**	**07 46 43.1**	**0.0**
MANT	**Manisa**	**0.71**	**215**	P	**Pb**	**07 46 35.5**	**+0.2**
MANT				S	**Sg**	**07 46 44.6**	**+0.4**
MANT	**Manisa**	**0.71**	**215**	*i* P	**Pb**	**07 46 35.5**	**+0.2**
MANT				*i* S	**Sg**	**07 46 44.6**	**+0.4**
KHAL	**Karahalli**	**0.78**	**155**	P	**Pn**	**07 46 38.3**	**+0.6**
KHAL				S	**Sn**	**07 46 48.8**	**-0.4**
KHAL	**Karahalli**	**0.78**	**155**	*i* P	**Pn**	**07 46 38.3**	**+0.6**
KHAL				*i* S	**Sn**	**07 46 48.8**	**-0.4**
KHL	**Karahalli**	**0.83**	**155**	*e*PG	**Pg**	**07 46 36.0**	**-1.0**
KHL	**Karahalli**	**0.83**	**155**	*e*Pg	**Pg**	**07 46 36.0**	**-1.0**
ORLT	**Orhaneli**	**0.98**	**352**	*e*PG	**Pg**	**07 46 39.7**	**-0.1**
ORLT	**Orhaneli**	**0.98**	**352**	*e*Pg	**Pg**	**07 46 39.7**	**-0.1**
IGD	**Bursa**	**1.19**	**5**	*i* P	**Pg**	**07 46 43.6**	**-0.2**
IGD				*i* S	**Sg**	**07 46 59.8**	**+0.5**
CAVI	**Cavuskoy**	**1.27**	**28**	*e*PN	**Pn**	**07 46 43.8**	**-0.5**
CAVI	**Cavuskoy**	**1.27**	**28**	*e*Pn	**Pn**	**07 46 43.8**	**-0.5**
IZI	**Iznik**	**1.29**	**14**	*e*PN	**Pb**	**07 46 44.9**	**-0.2**
IZI	**Iznik**	**1.29**	**14**	*e*Pn	**Pb**	**07 46 44.9**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.30**	**354**	*e*PN	**Pb**	**07 46 45.2**	**0.0**
MDNY	**Mudanya-Bursa**	**1.30**	**354**	*e*Pn	**Pb**	**07 46 45.2**	**0.0**
KCTX	**Karacabey (Bur**	**1.31**	**335**	*e*PN	**Pb**	**07 46 45.2**	**-0.2**
KCTX				*e*SN	**Sg**	**07 47 03.9**	**+0.7**
KCTX	**Karacabey (Bur**	**1.31**	**335**	*e*Pn	**Pb**	**07 46 45.2**	**-0.2**
KCTX				*e*Sn	**Sg**	**07 47 03.9**	**+0.7**
BORA	**Eskisehir**	**1.33**	**53**	P	**Pg**	**07 46 47.0**	**+0.4**
BORA				S	**Sg**	**07 47 05.2**	**+1.2**
BORA	**Eskisehir**	**1.33**	**53**	*i* P	**Pg**	**07 46 47.0**	**+0.4**
BORA				*i* S	**Sg**	**07 47 05.2**	**+1.2**
ARMT	**Armutlu**	**1.50**	**354**	*e*PN	**Pb**	**07 46 48.2**	**-0.3**
ARMT				*e*SN	**Sb**	**07 47 07.9**	**+0.5**
ARMT	**Armutlu**	**1.50**	**354**	*e*Pn	**Pb**	**07 46 48.2**	**-0.3**
ARMT				*e*Sn	**Sb**	**07 47 07.9**	**+0.5**
GPA	**Golpazari**	**1.54**	**38**	*e*PN	**Pn**	**07 46 47.6**	**-0.5**
GPA	**Golpazari**	**1.54**	**38**	*e*Pn	**Pn**	**07 46 47.6**	**-0.5**
SVRH	**Sivrihisar-ESK**	**1.94**	**78**	*e*PN	**Pn**	**07 46 52.8**	**-0.8**
SVRH	**Sivrihisar-ESK**	**1.94**	**78**	*e*Pn	**Pn**	**07 46 52.8**	**-0.8**

*IDC **26** 08:00:24.3±3.5, 53°.48N×90°.49E, h0km, mb1 3.1/3, mb1mx3.0/41, mbtmp3.1/3, ML2.6/3, Error ellipse: s-maj=31.9km s-min=23.3km az=37.0*
*NNC **26** 08:00:26.2±2.9, 53°.47N×90°.29E, h0km, mb3.6, mpv3.3, Error ellipse: s-maj=25.2km s-min=21.9km az=171.0*
ISC 26 08:00:27.4±4.3, 53°.6N±0°.2×90°.5E±0°.2, h35km, n8, σ0°76/9, 1C-5D, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**3.41**	**278**	*i*		08 22 30.0	
	baz=92,slow=320,SNR=14						
ZALV	**Zalesovo Beam**	**3.41**	**278**	Pn	**Pn**	**08 01 18.2**	**+0.1**
	0.5nm,0.3s,baz=99,slow=18,SNR=2.6						
ZALV				Lg	Lg	08 02 11.7	
	3.4nm,0.3s,baz=95,slow=26,SNR=13						
KURBB	**Kurchatov Arra**	**7.97**	**253**	Pn	**Pn**	**08 02 20.6**	**-0.1**
	0.1nm,0.3s,baz=65,slow=14,SNR=6.2						
KURBB				Sn	**Sn**	**08 03 48.4**	**-1.2**
	0.1nm,0.3s,baz=68,slow=26,SNR=4.8						
KURBB				Lg	Lg	08 04 36.7	
	0.1nm,0.3s,baz=68,slow=33,SNR=11						
KURBB	**Kurchatov Arra**	**7.97**	**253**	⇓Pn	**Pn**	**08 02 20.3**	**-0.4**
	0.9nm,0.3s						
KURBB				⇓Sn	**Sn**	**08 03 50.9**	**+1.4**
	9.2nm,0.7s						
KURBB				⇓Lg	Lg	08 04 34.2	
MK31	**Makanchi Array**	**8.63**	**221**	Pn	**Pn**	**08 02 29.8**	**+0.1**
	0.4nm,0.6s,baz=40,slow=13,SNR=5.5						
MK31				⇓Lg	Lg	08 04 56.1	
	8.5nm,0.9s,baz=51,slow=34,SNR=4.0						
MKAR	**Makanchi Array**	**8.63**	**221**	Pn	**Pn**	**08 02 29.5**	**-0.2**
	0.3nm,0.3s,baz=40,slow=13,SNR=7.8						
MKAR				Lg	Lg	08 04 54.6	
	0.1nm,0.3s,baz=38,slow=26,SNR=3.6						
MAKZ	**Makanchi**	**8.74**	**222**	⇓Pn	**Pn**	**08 02 31.5**	**+0.2**
	1.4nm,0.7s						
MAKZ				Sn	**Sn**	**08 04 08.6**	**+0.1**
	2.7nm,0.7s						
MAKZ				⇑Lg	Lg	08 04 58.2	
	3.3nm,0.9s						
SONM	**Songino Array**	**11.58**	**114**	Lg	Lg	08 06 15.3	
	baz=297,slow=24,SNR=6.7						

*ISK **26** 08:07:05.0, 39°.22N×28°.80E, h9km, MD2.5*
*ISCJB **26** 08:07:06.5±0.5, 39°.14N±0°.05×29°.03E±0°.05, h20km±9km, Error ellipse: s-maj=9.1km s-min=6.2km az=152.1*
*CSEM **26** 08:07:06.2±0.3, 39°.12N×29°.04E, h20km, MD2.6, Error ellipse: s-maj=10.4km s-min=6.6km az=116.0*
*DDA **26** 08:07:07.2, 39°.07N×29°.06E, h7km, Md2.6*
ISC 26 08:07:06.6±1.1, 39°.14N±0°.03×29°.04E±0°.03, h19km±3km, n22, σ1°.15/35, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**249**	P	**Pg**	**08 07 12.9**	**+0.2**
DEMI				S	**Sg**	**08 07 16.8**	**-0.1**
DEMI	**Demirci**	**0.27**	**249**	*i* P	**Pg**	**08 07 12.9**	**+0.2**
DEMI				*i* S	**Sg**	**08 07 16.8**	**-0.1**
GDZ	**Gediz**	**0.35**	**98**	P	**Pg**	**08 07 13.9**	**-0.2**
GDZ				S	**Sg**	**08 07 18.7**	**-0.5**
GDZ	**Gediz**	**0.35**	**98**	*i* P	**Pg**	**08 07 13.9**	**-0.2**
GDZ				*i* S	**Sg**	**08 07 18.7**	**-0.5**
TVSB	**Tavsanli**	**0.45**	**47**	*e*PG	**Pb**	**08 07 16.4**	**+0.3**
TVSB	**Tavsanli**	**0.45**	**47**	*e*Pg	**Pb**	**08 07 16.4**	**+0.3**
DURS	**Dursunbey**	**0.63**	**317**	P	**Pn**	**08 07 21.2**	**+0.5**
DURS	**Dursunbey**	**0.63**	**317**	*i* P	**Pn**	**08 07 21.2**	**+0.5**
DURS				*i* S	**Sn**	**08 07 34.5**	**+4.2**
KULA	**Kula-Manisa**	**0.69**	**205**	*e*PG	**Pb**	**08 07 19.0**	**-1.0**
KULA	**Kula-Manisa**	**0.69**	**205**	*e*Pg	**Pb**	**08 07 19.0**	**-1.0**
MANT	**Manisa**	**0.75**	**210**	P	**Pb**	**08 07 21.0**	**-0.2**
MANT				S	**Sb**	**08 07 30.5**	**-0.6**
MANT	**Manisa**	**0.75**	**210**	*i* P	**Pb**	**08 07 20.9**	**-0.2**
MANT				*i* S	**Sb**	**08 07 30.4**	**-0.6**
ORLT	**Orhaneli**	**0.91**	**353**	*e*PG	**Pb**	**08 07 21.4**	**-2.4**
ORLT	**Orhaneli**	**0.91**	**353**	*e*Pg	**Pb**	**08 07 21.4**	**-2.4**
CAVI	**Cavuskoy**	**1.23**	**30**	*e*PN	**Pb**	**08 07 29.4**	**+0.1**
CAVI				*e*SN	**Sg**	**08 07 47.2**	**+0.7**
CAVI	**Cavuskoy**	**1.23**	**30**	*e*Pn	**Pb**	**08 07 29.4**	**+0.1**
CAVI				*e*Sn	**Sg**	**08 07 47.2**	**+0.7**
MDNY	**

*CSEM **26** 08:24:35.2±0.3, 34°.37N×36°.63E, h8km, ML2.8, Error ellipse: s-maj=6.2km s-min=4.6km az=2.0*
*GRAL **26** 08:24:38.0±0.3, 34°.31N×36°.56E, h1km±13km, MD2.8*
ISC 26 08:24:35.1±1.1, 34°.33N±0°.05×36°.63E±0°.03, h10km±9km, n17, σ0°.36/28, Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FKH	**Fakeheh**	**0.20**	**245**	*eP*	**Pb**	**08 24 40.5**	**-0.3**
FKH				*eS*	**Sg**	**08 24 42.5**	**+0.2**
FKH	**Fakeheh**	**0.20**	**245**	*eP*	**Pb**	**08 24 40.5**	**-0.3**
FKH				*eS*	**Sg**	**08 24 42.5**	**+0.2**
MARH	**Ras Al Marh**	**0.33**	**202**	*eP*	**Pb**	**08 24 42.7**	**-0.4**
MARH				*eS*	**Sb**	**08 24 49.2**	**+0.7**
MARH				AML	AML	08 24 51.6	
	comp=N,171nm,0.3s						
MARH				AML	AML	08 24 53.1	
	comp=E,488nm,0.2s						
MARH	**Ras Al Marh**	**0.33**	**202**	*eP*	**Pb**	**08 24 42.7**	**-0.4**
MARH				*eS*	**Sb**	**08 24 49.2**	**+0.7**
	comp=E,488nm,0.2s						
HWQ	**Hawqa**	**0.56**	**265**	*eP*	**Pb**	**08 24 47.2**	**+0.1**
HWQ				*eS*	**Sg**	**08 24 54.0**	**+0.4**
HWQ	**Hawqa**	**0.56**	**265**	*eP*	**Pb**	**08 24 47.2**	**+0.1**
HWQ				*eS*	**Sg**	**08 24 54.0**	**+0.4**
ROOS	**tl_alroos**	**0.57**	**106**	*eP*	**Pg**	**08 24 45.9**	**-0.3**
ROOS				*eS*	**Sg**	**08 24 54.3**	**+0.5**
ROOS				AML	AML	08 24 57.3	
	comp=N,239nm,0.3s						
ROOS				AML	AML	08 25 06.2	
	comp=E,136nm,0.5s						
ROOS	**tl_alroos**	**0.57**	**106**	*eP*	**Pg**	**08 24 45.9**	**-0.3**
ROOS				*eS*	**Sg**	**08 24 54.3**	**+0.5**
	comp=E,136nm,0.5s						
RCY	**Rachaya**	**1.06**	**219**	*eP*	**Pn**	**08 24 56.2**	**+0.1**
RCY				*eS*	**Sb**	**08 25 09.5**	**0.0**
DQRL	**Deir Qamar**	**1.07**	**235**	*eP*	**Pn**	**08 24 56.2**	**0.0**
DQRL	**Deir Qamar**	**1.07**	**235**	*eP*	**Pn**	**08 24 56.2**	**0.0**
ZALF	**Zalf**	**1.52**	**157**	*eP*	**Pb**	**08 25 03.6**	**+0.2**
ZALF	**Zalf**	**1.52**	**157**	*eP*	**Pb**	**08 25 03.6**	**+0.2**
SALA	**Sala**	**1.62**	**177**	*eP*	**Pg**	**08 25 05.8**	**-0.3**
SALA				*eS*	**Sb**	**08 25 25.3**	**-0.3**
SALA				AML	AML	08 25 34.5	
	comp=N,33nm,0.3s						
SALA				AML	AML	08 25 36.5	
	comp=E,4.3nm,0.4s						
SALA	**Sala**	**1.62**	**177**	*eP*	**Pg**	**08 25 05.8**	**-0.3**
SALA				*eS*	**Sb**	**08 25 25.3**	**-0.3**
	comp=E,4.0nm,0.4s						
ARNB	**Al Arnab**	**1.62**	**341**	*eP*	**Pn**	**08 25 03.6**	**-0.1**
ARNB	**Al Arnab**	**1.62**	**341**	*eP*	**Pn**	**08 25 03.6**	**-0.1**

IDC 26 08:26:46.3±1.2, 25°.49N×141°.52E, h0km, mb3.7/3, mb1 3.9/3, mb1mx3.4/39, mbtmp3.7/3, Error ellipse: s-maj=77.5km s-min=18.9km az=102.0, Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCJ	**Chichijima**	**1.71**	**20**	Pn	Pn	08 27 17.4	0.0
	57nm,0.3s,baz=280,slow=23,SNR=44						
JCJ				Sn	Sb	08 27 40.4	-0.4
	43nm,0.3s,baz=280,slow=22,SNR=10						
WRA	**Warramunga Arr**	**45.69**	**189**	P	P	08 35 09.3	+0.1
	0.4nm,0.4s,baz=9.1,slow=8.7,SNR=5.9						
ASAR	**Alice Springs**	**49.42**	**189**	P	P	08 35 37.7	-0.4
	0.4nm,0.9s,baz=10,slow=12,SNR=3.2						
FINES	**FINESS Array B**	**79.12**	**334**	P	P	08 38 52.6	+0.2
	0.6nm,0.4s,baz=64,slow=6.3,SNR=4.8						

*ISK **26** 08:31:03.4, 39°.05N×29°.19E, h5km, MD2.5*
*DDA **26** 08:31:04.2, 39°.07N×29°.04E, h7km, Md2.4*
*CSEM **26** 08:31:04.2±0.1, 39°.10N×29°.04E, h2km, MD2.4, Error ellipse: s-maj=3.3km s-min=2.0km az=124.0*
ISC 26 08:31:04.2±1.0, 39°.09N±0°.03×29°.06E±0°.03, h8km±10km, n20, σ0°.37/32, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**260**	P	**Pg**	**08 31 09.6**	**0.0**
DEMI				S	**Sg**	**08 31 13.4**	**+0.2**
DEMI	**Demirci**	**0.27**	**260**	*i* P	**Pg**	**08 31 09.6**	**0.0**
DEMI				*i* S	**Sg**	**08 31 13.4**	**+0.2**
GDZ	**Gediz**	**0.33**	**90**	P	**Pg**	**08 31 11.0**	**+0.2**
GDZ				S	**Sg**	**08 31 15.9**	**+0.7**
GDZ	**Gediz**	**0.33**	**90**	*i* P	**Pg**	**08 31 11.0**	**+0.2**
GDZ				*i* S	**Sg**	**08 31 15.9**	**+0.7**
TVSB	**Tavsanli**	**0.48**	**41**	*e*PG	**Pg**	**08 31 12.8**	**-0.8**
TVSB				*e*SG	**Sg**	**08 31 19.6**	**-0.2**
TVSB	**Tavsanli**	**0.48**	**41**	*e*Pg	**Pg**	**08 31 12.8**	**-0.8**
TVSB				*e*Sg	**Sg**	**08 31 19.6**	**-0.2**
KULA	**Kula-Manisa**	**0.65**	**208**	*e*PG	**Pg**	**08 31 16.9**	**0.0**
KULA	**Kula-Manisa**	**0.65**	**208**	*e*Pg	**Pg**	**08 31 16.9**	**0.0**
MANT	**Manisa**	**0.71**	**213**	P	**Pg**	**08 31 18.2**	**+0.2**
MANT				S	**Sg**	**08 31 27.3**	**-0.1**
MANT	**Manisa**	**0.71**	**213**	*i* P	**Pg**	**08 31 18.2**	**+0.2**
MANT				*i* S	**Sg**	**08 31 27.3**	**-0.1**
KHAL	**Karahalli**	**0.80**	**154**	P	**Pb**	**08 31 20.1**	**-0.3**
KHAL				S	**Sb**	**08 31 30.8**	**-0.5**
KHAL	**Karahalli**	**0.80**	**154**	*i* P	**Pb**	**08 31 20.1**	**-0.3**
KHAL				*i* S	**Sb**	**08 31 30.8**	**-0.5**
IZI	**Iznik**	**1.28**	**14**	*e*PN	**Pg**	**08 31 28.9**	**0.0**
IZI	**Iznik**	**1.28**	**14**	*e*Pn	**Pg**	**08 31 28.9**	**0.0**
BORA	**Eskisehir**	**1.34**	**54**	P	**Pg**	**08 31 30.2**	**+0.3**
BORA				S	**Sn**	**08 31 47.7**	**+0.4**
BORA	**Eskisehir**	**1.34**	**54**	*i* P	**Pg**	**08 31 30.2**	**+0.3**
BORA				*i* S	**Sn**	**08 31 47.7**	**+0.4**
ADVT	**Abdulvahap**	**1.44**	**21**	*e*PN	**Pb**	**08 31 31.1**	**-0.2**
ADVT	**Abdulvahap**	**1.44**	**21**	*e*Pn	**Pb**	**08 31 31.1**	**-0.2**
ARMT	**Armutlu**	**1.48**	**354**	*e*PN	**Pb**	**08 31 32.3**	**+0.3**
ARMT	**Armutlu**	**1.48**	**354**	*e*Pn	**Pb**	**08 31 32.3**	**+0.3**

*ISCJB **26** 08:35:04.3±0.5, 35°.79N±0°.05×23°.51E±0°.05, h5km±5km, mb3.6/2, Error ellipse: s-maj=10.4km s-min=3.3km az=43.2*
*IDC **26** 08:35:04.2±1.7, 33°.32N×25°.69E, h0km, mb3.8/2, mb1 3.6/3, mb1mx3.3/42, mbtmp3.6/3, ML2.9/1, Error ellipse: s-maj=223.8km s-min=26.7km az=141.0*
*CSEM **26** 08:35:04.1, 35°.81N×23°.51E, h16km, ML3.3/5*
*ATH **26** 08:35:04.1, 35°.81N×23°.51E, h16km±1km, ML3.3/4, Error ellipse: s-maj=3.0km s-min=0.8km az=226.0*
ISC 26 08:35:04.1±0.9, 35°.79N±0°.03×23°.49E±0°.03, h10km±7km, n50, σ0°.77/59, Crete

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ANKY	**Antikythira Is**	**0.17**	**297**	P	**Pg**	**08 35 08.3**	**+0.5**
ANKY				S	**Sg**	**08 35 10.1**	**-0.2**
ANKY	**Antikythira Is**	**0.17**	**297**	P	**Pg**	**08 35 08.3**	**+0.5**
ANKY				S	**Sg**	**08 35 10.1**	**-0.2**
ANKY				AML	AML	08 35 11.3	
	comp=N,65941μm,0.5s						
ANKY				AML	AML	08 35 12.9	
	comp=E,42633μm,0.6s						
IMMV	**Iera Moni Meta**	**0.52**	**129**	P	**Pg**	**08 35 14.6**	**+0.3**
IMMV				S	**Sg**	**08 35 21.4**	**+0.3**
IMMV	**Iera Moni Meta**	**0.52**	**129**	P	**Pg**	**08 35 14.6**	**+0.3**
IMMV				S	**Sg**	**08 35 21.4**	**+0.3**
IMMV				AML	AML	08 35 23.8	
	comp=E,15667μm,0.2s						
IMMV				AML	AML	08 35 24.3	
	comp=N,14788μm,0.3s						
KYTH	**Kithira**	**0.59**	**323**	P	**Pb**	**08 35 16.3**	**-0.3**
KYTH				S	**Sg**	**08 35 23.8**	**+0.4**
KYTH	**Kithira**	**0.59**	**323**	P	**Pb**	**08 35 16.3**	**-0.3**
VAM	**Vamos**	**0.70**	**123**	P	**Pb**	**08 35 18.2**	**-0.1**
VAM				S	**Sg**	**08 35 26.7**	**0.0**
VLI	**Veliai**	**1.03**	**335**	P	**Pg**	**08 35 24.8**	**+1.0**
VLI				S	**Sg**	**08 35 37.4**	**+0.2**
VLI	**Veliai**	**1.03**	**335**	P	**Pg**	**08 35 24.8**	**+1.0**
VLI				S	**Sg**	**08 35 37.4**	**+0.2**
VLI				AML	AML	08 35 38.8	
	comp=N,1380μm,0.4s						
VLI				AML	AML	08 35 39.3	
	comp=E,1182μm,0.3s						
GVD	**Gavdhos**	**1.07**	**152**	P	**Pb**	**08 35 23.0**	**-1.7**
GVD				S	**Sn**	**08 35 41.2**	**+1.1**
GVD	**Gavdhos**	**1.07**	**152**	P	**Pb**	**08 35 23.0**	**-1.7**
GVD				S	**Sn**	**08 35 41.1**	**+1.1**
GVD				AML	AML	08 35 50.5	
	comp=E,2850μm,0.4s						
GVD				AML	AML	08 35 52.9	
	comp=N,2757μm,0.4s						
MHLO	**Agia Marina, M**	**1.16**	**39**	P	**Pg**	**08 35 27.0**	**+0.6**
MHLO	**Agia Marina, M**	**1.16**	**39**	P	**Pg**	**08 35 27.0**	**+0.6**
IDI	**Anoyia**	**1.25**	**113**	P	**Pg**	**08 35 28.4**	**+0.3**
IDI	**Anoyia**	**1.25**	**113**	P	**Pg**	**08 35 28.4**	**+0.3**
SIVA	**Sivas**	**1.33**	**125**	P	**Pn**	**08 35 28.3**	**-0.4**
SIVA	**Sivas**	**1.33**	**125**	P	**Pn**	**08 35 28.3**	**-0.4**
IACM	**Heraklion**	**1.38**	**110**	P	**Pg**	**08 35 31.3**	**+0.7**
IACM	**Heraklion**	**1.38**	**110**	P	**Pg**	**08 35 31.3**	**+0.7**
KRND	**KRANIDI**	**1.61**	**350**	P	**Pb**	**08 35 33.2**	**-0.7**
KRND	**KRANIDI**	**1.61**	**350**	P	**Pb**	**08 35 33.2**	**-0.7**
CMBO	**Columbo, Santo**	**1.69**	**66**	P	**Pg**	**08 35 36.2**	**-0.4**
CMBO	**Columbo, Santo**	**1.69**	**66**	P	**Pg**	**08 35 36.2**	**-0.4**
SANT	**Santorini**	**1.70**	**70**	P	**Pb**	**08 35 34.4**	**-1.1**
SANT	**Santorini**	**1.70**	**70**	P	**Pb**	**08 35 34.4**	**-1.1**
DID	**Didima**	**1.72**	**353**	P	**Pn**	**08 35 33.5**	**-0.7**
DID	**Didima**	**1.72**	**353**	P	**Pn**	**08 35 33.5**	**-0.7**
LAST	**Lasithi**	**1.74**	**111**	P	**Pn**	**08 35 34.3**	**-0.2**
LAST	**Lasithi**	**1.74**	**111**	P	**Pn**	**08 35 34.3**	**-0.2**
PYL	**PYLOS**	**1.79**	**309**	P	**Pg**	**08 35 38.1**	**-0.3**
PYL	**PYLOS**	**1.79**	**309**	P	**Pg**	**08 35 38.1**	**-0.3**
VLX	**Vlachokerasia**	**1.81**	**331**	P	**Pb**	**08 35 37.8**	**+0.4**
VLX	**Vlachokerasia**	**1.81**	**331**	P	**Pb**	**08 35 37.8**	**+0.4**
NPS	**Neapolis**	**1.81**	**106**	P	**Pb**	**08 35 37.3**	**-0.1**
NPS	**Neapolis**	**1.81**	**106**	P	**Pb**	**08 35 37.3**	**-0.1**
ITM	**Ithomi**	**1.87**	**318**	P	**Pg**	**08 35 40.0**	**0.0**
ITM	**Ithomi**	**1.87**	**318**	P	**Pg**	**08 35 40.0**	**0.0**
APE	**Apeiranthos**	**2.08**	**52**	P	**Pn**	**08 35 38.5**	**-0.6**
APE	**Apeiranthos**	**2.08**	**52**	P	**Pn**	**08 35 38.5**	**-0.6**
LTK	**Loutraki**	**2.27**	**350**	P	**Pn**	**08 35 42.2**	**+0.6**
LTK	**Loutraki**	**2.27**	**350**	P	**Pn**	**08 35 42.2**	**+0.6**
ZKR	**Zakros**	**2.33**	**106**	P	**Pn**	**08 35 42.9**	**+0.4**
ZKR	**Zakros**	**2.33**	**106**	P	**Pn**	**08 35 42.9**	**+0.4**
KLV	**Kalavryta, Ach**	**2.49**	**335**	P	**Pb**	**08 35 46.6**	**-2.3**
KLV	**Kalavryta, Ach**	**2.49**	**335**	P	**Pb**	**08 35 46.6**	**-2.3**
KARP	**Karpathos**	**3.00**	**94**	P	**Pn**	**08 35 51.2**	**-0.5**
KARP	**Karpathos**	**3.00**	**94**	P	**Pn**	**08 35 51.2**	**-0.5**
BRTR	**Keskin Array B**	**8.95**	**61**	Pn	Pn	08 37 19.1	+5.7
	comp=N,0.1nm,0.3s,baz=233,slow=16,SNR=4.3						
TORD	**Torodi Ar. Bea**	**29.89**	**227**	P	**P**	**08 41 12.1**	**+0.1**
	comp=N,0.7nm,0.6s,baz=37,slow=8.8,SNR=4.4						
MKAR	**Makanchi Array**	**44.57**	**57**	P	**P**	**08 43 16.4**	**+0.2**
	comp=N,0.5nm,0.5s,baz=272,slow=9.0,SNR=7.3						

*ISCJB **26** 08:36:21.5±0.6, 39°.13N±0°.04×29°.04E±0°.05, h14km±5km, Error ellipse: s-maj=7.8km s-min=5.4km az=139.8*
*DDA **26** 08:36:22.0, 39°.09N×29°.05E, h7km, Md2.4*
*ISK **26** 08:36:21.0, 39°.15N×29°.00E, h13km, MD2.5*
*CSEM **26** 08:36:21.5±0.1, 39°.13N×29°.03E, h14km±1km, MD2.4, Error ellipse: s-maj=2.3km s-min=1.5km az=137.0*
ISC 26 08:36:21.3±1.2, 39°.12N±0°.03×29°.06E±0°.04, h16km±12km, n19, σ0°.18/28, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**253**	P	**Pb**	**08 36 27.8**	**-0.2**
DEMI				S	**Sg**	**08 36 31.5**	**+0.1**
DEMI	**Demirci**	**0.28**	**253**	*i* P	**Pb**	**08 36 27.8**	**-0.2**
DEMI				*i* S	**Sg**	**08 36 31.5**	**+0.1**
GDZ	**Gediz**	**0.33**	**96**	P	**Pb**	**08 36 28.8**	**-0.1**
GDZ				S	**Sb**	**08 36 34.0**	**-0.1**
GDZ	**Gediz**	**0.33**	**96**	*i* P	**Pb**	**08 36 28.8**	**-0.1**
GDZ				*i* S	**Sb**	**08 36 34.0**	**-0.1**
TVSB	**Tavsanli**	**0.45**	**44**	*e*PG	**Pb**	**08 36 30.9**	**0.0**
TVSB	**Tavsanli**	**0.45**	**44**	*e*Pg	**Pb**	**08 36 31.0**	**0.0**
KULA	**Kula-Manisa**	**0.68**	**207**	*e*PG	**Pb**	**08 36 34.8**	**0.0**
KULA	**Kula-Manisa**	**0.68**	**207**	*e*Pg	**Pb**	**08 36 34.8**	**0.0**
MANT	**Manisa**	**0.74**	**212**	P	**Pb**	**08 36 36.0**	**0.0**
MANT				S	**Sg**	**08 36 45.5**	**-0.2**
MANT	**Manisa**	**0.74**	**212**	*i* P	**Pb**	**08 36 36.0**	**0.0**
MANT				*i* S	**Sg**	**08 36 45.5**	**-0.2**
KHL	**Karahalli**	**0.88**	**155**	*e*PG	**Pn**	**08 36 39.2**	**+0.1**
KHL	**Karahalli**	**0.88**	**155**	*e*Pg	**Pn**	**08 36 39.2**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.25**	**354**	*e*PN	**Pn**	**08 36 44.3**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.25**	**354**	*e*Pn	**Pn**	**08 36 44.3**	**+0.2**
IZI	**Iznik**	**1.25**	**15**	*e*PN	**Pb**	**08 36 44.6**	**0.0**
IZI				*e*SN	**Sg**	**08 37 01.8**	**0.0**
KCTX	**Karacabey (Bur**	**1.26**	**335**	*e*PN	**Pn**	**08 36 44.5**	**+0.2**
KCTX				*e*SN	**Sg**	**08 37 01.7**	**-0.4**
KCTX	**Karacabey (Bur**	**1.26**	**335**	*e*Pn	**Pn**	**08 36 44.5**	**+0.2**
KCTX				*e*Sn	**Sg**	**08 37 01.7**	**-0.4**
ARMT	**Armutlu**	**1.45**	**354**	*e*PN	**Pn**	**08 36 47.1**	**+0.3**
ARMT	**Armutlu**	**1.45**	**354**	*e*Pn	**Pn**	**08 36 47.1**	**+0.3**

*ISCJB **26** 08:43:23.7±0.4, 21°.72S±0°.09×170°.64E±0°.06, h50km, mb4.7/19, MS3.3/3, Error ellipse: s-maj=12.3km s-min=8.0km az=172.9*
*IDC **26** 08:43:25.6±5.9, 21°.77S×170°.60E, h50km±56km, mb4.1/9, mb1 4.3/10, mb1mx4.0/40, mbtmp4.4/10, ML4.4/1, MS3.4/6, Ms1 3.4/6, ms1mx3.2/32, Error ellipse: s-maj=27.7km s-min=23.4km az=1.0*
*NEIC **26** 08:43:27.8±1.7, 21°.66S×170°.65E, h74km±15km, mb5.0/9, Error ellipse: s-maj=13.1km s-min=10.0km az=152.0*
ISC 26 08:43:25.0±0.6, 21°.75S±0°.1×170°.70E±0°.07, h50km, n38, σ1°.34/34, mb4.7/19, MS3.3/3, 1C, Southeast of Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**3.96**	**264**	*e*Pn	**Pn**	**08 44 25.5**	**+2.1**
	216nm,0.2s						
DZM				*e*Sn	**Sn**	**08 45 07.2**	**-1.5**
	702nm,0.2s						
DZM	**Mont Dzumac**	**3.96**	**264**	*e*Pn	**Pn**	**08 44 25.4**	**+2.0**
DZM				*e*Sn	**Sn**	**08 45 07.0**	**-1.7**
RAO	**Raoul Island**	**12.71**	**128**	LR	LR	08 49 03.3	
	comp=Z,138nm,21.4s,baz=158,slow=26						
URZ	**Urewera**	**17.37**	**163**	LR	LR	08 52 40.4	
	comp=Z,185nm,19.5s,baz=350,slow=32						
EIDS	**Eidsvold**	**18.34**	**255**	*e*P	**Pn**	**08 47 37.9**	**+2.1**
	11nm,0.9s						
AFI	**Afiamalu**	**18.40**	**68**	P	**Pn**	**08 47 38.7**	**+2.1**
	1.2nm,0.3s,baz=258,slow=20,SNR=3.6						
AFI				LR	LR	08 53 58.0	
	comp=Z,65nm,22.0s,baz=154,slow=34						
RPZ	**Rata Peaks**	**21.92**	**179**	LR	LR	08 55 55.1	
	comp=Z,64nm,18.4s,baz=257,slow=34						
CTAO	**Charters Tower**	**22.89**	**270**	*e*P	**P**	**08 48 26.0**	**+1.4**
	86nm,0.9s						
TARA	**Tarawa**	**23.05**	**6**	*e*P	**P**	**08 48 24.5**	**-1.7**
	2.2nm,0.4s						
RAR	**Rarotonga**	**27.47**	**94**	LR	LR	08 59 21.0	
	comp=Z,75nm,18.6s,baz=270,slow=35						
STKA	**Stephens Creek**	**27.79**	**243**	P	**P**	**08 49 09.5**	**+0.1**
	3.3nm,0.8s,baz=96,slow=7.8,SNR=6.3						
BBOO	**Buckleboo**	**32.57**	**243**	*e*P	**P**	**08 49 51.5**	**-0.1**
	10nm,0.9s						
ASAR	**Alice Springs**	**33.94**	**260**	P	**P**	**08 50 03.8**	**0.0**
	7.0nm,0.8s,baz=86,slow=9.2,SNR=82						
WRAB	**Tennant Creek**	**33.97**	**266**	*e*P	**P**	**08 50 03.5**	**-0.5**
	8.5nm,0.7s						
WRA	**Warramunga Arr**	**33.98**	**266**	P	**P**	**08 50 03.6**	**-0.5**
	8.5nm,0.7s,baz=98,slow=8.6,SNR=72						
JAY	**Jayapura**	**34.86**	**299**	P	**P**	**08 50 10.7**	**-1.1**
	1.8nm,0.6s,baz=90,slow=20,SNR=5.6						
FITZ	**Fitzroy Crossi**	**42.41**	**267**	*e*P	**P**	**08 51 15.8**	**+0.8**
	13nm,0.7s						
GUMO	**Guam**	**43.30**	**322**	LR	LR	09 08 17.6	
	comp=Z,61nm,18.6s,baz=124,slow=34						
MBWA	**Marble Bar**	**47.26**	**261**	*e*P	**P**	**08 51 53.5**	**-0.1**
	49nm,0.7s						
TAOE	**Nuku Hiva Isla**	**48.91**	**83**	*e*LR	LR	09 06 31.6	
	228nm,24.2s						
VNDA	**Vanda**	**56.00**	**182**	P	**P**	**08 52 57.5**	**-0.4**
	0.7nm,0.8s,baz=5.7,slow=6.6,SNR=4.0						
SBA	**Scott Base**	**56.20**	**181**	*e*P	**P**	**08 53 01.1**	**+1.7**
	5.5nm,1.1s						
QSPA	**South Pole Qui**	**68.33**	**180**	*e*P	**P**	**08 54 21.0**	**+0.1**
	47nm,1.0s						
KSRS	**Korea Array**	**71.33**	**325**	P	**P**	**08 54 40.0**	**+0.6**
	0.4nm,0.3s,baz=142,slow=6.3,SNR=4.2						
KSAR	**Wonju Array Be**	**71.34**	**325**	P	**P**	**08 54 40.0**	**+0.5**
CMAR	**Chiang Mai Arr**	**80.77**	**294**	P	**P**	**08 55 34.9**	**+1.3**
	1.1nm,0.3s,baz=131,slow=4.2,SNR=9.8						
SYO	**Syowa Base**	**82.92**	**196**	*e*X	**P**	**08 55 40.3**	**-3.8**
SNAA	**Sanae**	**86.73**	**182**	P	**P**	**08 56 02.9**	**-0.4**
SNAA	**Sanae**	**86.73**	**182**	*e*P	**P**	**08 56 02.7**	**-0.7**
	286nm,0.8s						
VNA3	**Neumayer Olymp**	**87.27**	**180**	P	**P**	**08 56 05.3**	**-0.6**
VNA2	**Neumayer--Watz**	**87.58**	**181**	P	**P**	**08 56 07.3**	**-0.1**
	baz=175,slow=3.9						
VNA1	**Neumayer--Stat**	**87.86**	**180**	P	**P**	**08 56 08.4**	**-0.2**
SONM	**Songino Array**	**90.03**	**323**	P	**P**	**08 56 18.1**	**-1.2**
	2.4nm,0.9s,baz=133,slow=4.6,SNR=9.7						
LSA	**Lhasa**	**91.99**	**301**	*e*P	**P**	**08 56 28.1**	**-1.2**
	15nm,0.6s						
COLA	**College**	**92.03**	**16**	*e*P	**P**	**08 56 28.1**	**+0.2**
PLCA	**Paso Flores**	**95.77**	**138**	P	**P**	**08 56 46.5**	**+0.4**
	2.1nm,1.0s,baz=236,slow=9.4,SNR=2.9						
ARCES	**ARCESS Array B**	**127.82**	**345**	PKP	**PKPdf**	**09 02 23.8**	**-0.6**
	6.8nm,1.1s,baz=98,slow=1.7,SNR=5.4						
GERES	**GERESS Array B**	**147.33**	**331**	PKPbc	**PKPbc**	**09 03 04.5**	**+1.4**
	1.6nm,0.6s,baz=46,slow=3.9,SNR=8.4						

OMAN 26 08:43:34.8±2.7, 17°.49N×55°.23E, h4km±14km, Error ellipse: s-maj=22.5km s-min=6.1km az=172.0, Eastern Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHAO	**Shalim**	**0.66**	**35**	P	Pg	08 43 47.7	+0.3
	SNR=8.4						
SHAO	**Shalim**	**0.66**	**35**	P	Pg	08 43 47.7	+0.3
	SNR=8.4						
SHAO				S	Sg	08 43 56.3	+0.4

*ISCJB **26** 08:43:59.0±0.3, 25°.41N±0°.05×142°.52E±0°.07, h38km, mb4.5/36, MS3.6/8, Error ellipse: s-maj=9.6km s-min=6.6km az=165.7*
*NEIC **26** 08:44:00.1±2.3, 25°.47N×142°.53E, h32km±15km, mb4.7/11, Error ellipse: s-maj=8.7km s-min=5.9km az=80.0*
*IDC **26** 08:44:01.3±2.3, 25°.46N×142°.58E, h44km±20km, mb4.0/20, mb1 4.2/23, mb1mx4.0/52, mbtmp4.2/23, ML3.5/3, MS3.6/8, Ms1 3.6/8, ms1mx3.2/59, Error ellipse: s-maj=20.4km s-min=13.9km az=90.0*
ISC 26 08:44:00.5±0.5, 25°.39N±0°.07×142°.5E±0°.1, h38km, n74, σ1°.22/72, mb4.4/36, MS3.6/8, 1D, Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**1.72**	**351**	*e*Pn	**Pn**	**08 44 27.4**	**-0.5**
CBIJ				*e*Sn	**Sn**	**08 44 51.4**	**+2.7**
JCJ	**Chichijima**	**1.72**	**351**	P	**Pn**	**08 44 27.4**	**-0.5**
	468nm,0.3s,baz=256,slow=23,SNR=489						
JCJ				S	**Sn**	**08 44 51.4**	**+2.7**
	968nm,0.3s,baz=104,slow=23,SNR=22						
JCJ				LR	LR	08 44 59.7	
	comp=Z,389nm,19.8s,baz=130,slow=35						
JHJ	**Hachijo jima 2**	**8.05**	**344**	P	**Pn**	**08 45 54.9**	**0.0**
	1.8nm,0.3s,baz=72,slow=20,SNR=2.7						
INU	**Inuyama**	**10.99**	**336**	*e*Pn	**Pn**	**08 46 33.5**	**-1.6**
MJAR	**Matsushiro Arr**	**11.70**	**343**	P	**Pn**	**08 46 46.3**	**+1.3**
	0.8nm,0.3s,baz=220,slow=8.5,SNR=6.1						
MJAR				LR	LR	08 51 20.4	
	comp=Z,240nm,18.2s,baz=200,slow=38						
GUMO	**Guam**	**11.95**	**169**	LR	LR	08 50 46.3	
	comp=Z,138nm,20.0s,baz=1.5,slow=34						
JNU	**Nakatsue**	**12.72**	**310**	LR	LR	08 51 26.6	
	comp=Z,202nm,21.2s,baz=116,slow=35						
KSRS	**Korea Array**	**17.26**	**318**	P	**P**	**08 48 00.6**	**+0.8**
	0.1nm,0.3s,baz=127,slow=13,SNR=2.9						
KSRS				LR	LR	08 54 26.8	
	comp=Z,358nm,18.2s,baz=132,slow=36						
USRK	**Ussuriysk Ar.**	**20.62**	**338**	P	**P**	**08 48 36.0**	**-0.4**
	1.5nm,0.5s,baz=151,slow=7.9,SNR=12						
USRK				LR	LR	08 55 34.7	
	comp=Z,111nm,21.1s,baz=139,slow=34						
MDJ	**Mudanjiang**	**21.84**	**335**	P	**P**	**08 48 50.5**	**+0.8**
MDJ				pP	pP	08 48 58.5	-1.0
MDJ				sP	sP	08 49 02.5	-1.8
MDJ				S	**S**	**08 52 50.5**	**+1.5**
MDJ				sS	sS	08 53 04.0	-0.6
MDJ				pmax	pmax		
	comp=Z,4.0nm,0.5s						
MDJ				pmax	pmax		
	comp=Z,17nm,2.8s						
MDJ				LR	LR		
	comp=N,200nm,17.1s						
MDJ				LR	LR		
	comp=E,190nm,16.4s						
MDJ				LR	LR		
	comp=Z,330nm,16.0s						
H11N2	**WAKE ISLAND

STKA	Stephens Creek	56.95	181	P		P	08 53 41.7	-0.3
	comp=Z,2.9nm,0.9s,baz=358,slow=6.6,SNR=4.6							
STKA	Stephens Creek	56.95	181	*e*P		P	08 53 42.7	+0.7
	comp=Z,6.2nm,1.8s							
AFI	Afiamalu	59.26	126	*e*P		P	08 53 58.0	-0.6
	comp=Z,64nm,1.0s							
KKAR	Karatay Array	60.30	307	*e*P		P	08 54 06.4	+1.0
ABKAR	Akbulak array	66.47	315	*e*P		P	08 54 46.4	+0.2
DLBC	Dease Lake	67.45	35	LR		LR	09 22 31.1	
	comp=Z,35nm,19.4s,baz=312,slow=34							
YKA	Yellowknife Ar	73.52	28	P		P	08 55 27.9	-1.1
	comp=Z,2.3nm,0.8s,baz=294,slow=5.6,SNR=10.0							
YKB5	Yellowknife Ar	73.52	28	*e*P		P	08 55 28.2	-0.8
ARA0	ARCESS Array S	75.23	341	*e*P		P	08 55 39.0	0.0
ARCES	ARCESS Array B	75.23	341	P		P	08 55 39.0	0.0
	comp=Z,3.0nm,0.7s,baz=45,slow=12,SNR=4.2							
NEW	Newport	77.99	42	P		P	08 55 54.5	-0.5
	comp=Z,4.5nm,0.9s,baz=268,slow=3.8,SNR=4.3							
KBZ	Khabaz	79.36	313	P		P	08 56 03.2	+0.7
	comp=Z,2.6nm,0.6s,baz=149,slow=4.0,SNR=7.2							
FIA1	FINESS Array S	79.59	334	*e*P		P	08 56 03.5	+0.1
FIA0	FINESS Array S	79.59	334	*e*P		P	08 56 03.5	0.0
FINES	FINESS Array B	79.59	334	P		P	08 56 03.5	0.0
	comp=Z,4.3nm,0.4s,baz=75,slow=4.7,SNR=24							
CMB	Columbia Colle	80.05	53	*e*P		P	08 56 06.3	-0.1
	comp=Z,8.1nm,1.4s							
NV01	Mina Array Sit	81.37	52	*e*P		P	08 56 13.0	-0.8
NVAR	Mina Array Bea	81.37	52	P		P	08 56 13.0	-0.8
	comp=Z,1.2nm,0.7s,baz=281,slow=4.9,SNR=4.9							
NVAR	Mina Array Bea	81.37	52	P		P	08 56 13.0	-0.8
BOZ	Bozeman (W)	82.52	43	*e*P		P	08 56 19.5	-0.1
	comp=Z,8.4nm,1.8s							
FFC	Flin Flon	83.05	32	*e*P		P	08 56 21.6	-0.3
	comp=Z,4.6nm,0.8s							
AKASG	Malin Array Be	84.14	324	P		P	08 56 27.1	-0.5
	comp=Z,0.9nm,0.4s,baz=48,slow=5.7,SNR=7.9							
RLMT	Red Lodge	84.23	43	*e*P		P	08 56 29.0	+0.5
	comp=Z,30nm,1.9s							
NC405	NORSAR Array S	85.07	338	*e*P		P	08 56 31.4	-0.7
PDAR	Pinedale Array	85.24	45	P		P	08 56 32.4	-1.2
	comp=Z,1.0nm,0.9s,baz=286,slow=3.4,SNR=2.7							
NB201	NORSAR Array S	85.25	338	*e*P		P	08 56 33.3	+0.2
NB2	NORSAR Subarra	85.29	338	P		P	08 56 32.4	-0.8
	comp=Z,2.2nm,0.6s,baz=45,slow=4.8							
NB200	NORSAR Array S	85.29	338	*e*P		P	08 56 32.6	-0.7
NOA	NORSAR Array B	85.29	338	P		P	08 56 32.6	-0.7
	comp=Z,2.9nm,0.6s,baz=45,slow=4.9,SNR=9.9							
BR101	Keskin Array S	87.35	313	*e*P		P	08 56 44.2	+0.2
BRTR	Keskin Array B	87.35	313	P		P	08 56 44.2	+0.2
	comp=Z,0.9nm,0.7s,baz=69,slow=3.7,SNR=5.3							
PV10	Paradox Valley	87.81	48	*e*P		P	08 56 46.6	+0.3
BR231	Keskin MP Arra	87.86	314	*e*P		P	08 56 45.9	-0.4
ANMO	Albuquerque	91.37	50	*e*P		P	08 57 03.8	+0.8
	comp=Z,2.0nm,0.8s							
PLCA	Paso Flores	148.59	127	PKPbc		PKPbc	09 03 44.0	+0.3
	comp=Z,2.4nm,0.8s,baz=320,slow=3.3,SNR=5.9							
LPAZ	La Paz	150.06	78	PKPbc		PKPbc	09 03 48.5	-0.1
	comp=Z,3.0nm,0.8s,baz=0.3,slow=2.8,SNR=14							
SAML	Samuel	150.63	61	*e*PKPbc		PKPbc	09 03 49.0	-0.2

NEIC ***26*** *08:45:29.6, 19°.10N×66°.49W, h27km, MD2.7(RSPR), After RSPR.*

RSPR 26 08:45:29.6, 19°.10N×66°.49W, h27km±16km, MD2.7/4, 6C-2D, Puerto Rico region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AOPR	Arecibo Observ	0.79	199⇑	*e*P	Pb	08 45 42.5	-2.3
AOPR	Arecibo Observ	0.79	199⇑	*e*P	Pb	08 45 42.5	-2.3
AOPR				*e*S	Sb	08 45 53.1	-2.1
OBIP	Obispado Ponce	1.06	186⇓	*e*P	Pn	08 45 46.4	-2.2
OBIP	Obispado Ponce	1.06	186⇓	*e*P	Pn	08 45 46.4	-2.2
OBIP				*e*S	Sn	08 45 60.0	-2.6
HUMP	Col San Antoni	1.13	148	*e*S	Sn	08 46 01.7	-2.5
HUMP	Col San Antoni	1.13	148	*e*S	Sn	08 46 01.6	-2.6
CRPR	Cabo Rojo, PR	1.24	209⇑	*e*P	Pn	08 45 49.1	-2.0
CRPR	Cabo Rojo, PR	1.24	209⇑	*e*P	Pn	08 45 49.1	-2.0
CRPR				*e*S	Sn	08 46 04.8	-2.2
MTP	Monte Pirata	1.33	138⇑	*e*P	Pn	08 45 51.0	-1.5
MTP	Monte Pirata	1.33	138⇑	*e*P	Pn	08 45 51.0	-1.5
MTP				*e*S	Sn	08 46 06.7	-2.6

MOS ***26*** *08:48:38.8±1.0, 56°.28N×154°.33W, h16km, mb5.0/29, Error ellipse: s-maj=13.1km s-min=5.1km az=87.2*

ISCJB ***26*** *08:48:39.5±0.2, 56°.22N±0°.03×154°.14W±0°.03, h24km, mb4.7/68, MS3.7/16, Error ellipse: s-maj=4.1km s-min=2.1km az=149.4*

IDC ***26*** *08:48:40.6±3.9, 56°.09N×154°.42W, h21km±24km, mb4.4/23, mb1 4.5/26, mb1mx4.3/49, mbtmp4.5/26, ML4.2/3, MS3.8/14, Ms1 3.8/14, ms1mx3.5/57, Error ellipse: s-maj=17.6km s-min=11.5km az=177.0*

NEIC ***26*** *08:48:45.6, 56°.27N×154°.23W, h13km, mb4.8/22, MW4.3, ML4.3(AEIC), Moment Tensor Solution. s35 Moment tensor: Scale 10^15^Nm; Mrr-3.17; Mθθ1.93; Mφφ 1.24; Mrθ2.45; Mθφ1.98; Mφr-0.21; Best double couple: Mo=4.20000×10^15^ NP1:φs=253.00000°, δ63.00000°, λ-66.00000°. NP2:φs=28.00000°, δ36.00000°, λ-129.00000°. Principal axes: T 4.0500, Plg15.0000°, Azm326.0000°; N 0.2700, Plg21.0000°, Azm62.0000°; P -4.3200, Plg64.0000°, Azm204.0000°; After AEIC.*

ISC 26 08:48:42.0±0.5, 56°.34N±0°.06×154°.19W±0°.04, h24km, n298, σ1°51/311, mb4.8/68, MS3.7/16, 13C-1D, Kodiak Island region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OHAK	Old Harbor	1.01	29	*e*Pn	Pb	08 49 01.4	+0.5
OHAK				*e*Sn	Sn	08 49 20.1	+5.9
KDAK	Kodiak Island	1.69	31	*ce*P	Pn	08 49 10.3	+0.3
KDAK	Kodiak Island	1.69	31	*e*Pn	Pn	08 49 10.8	+0.8
PLK3	Peulik 3	1.76	321	P	Pn	08 49 11.9	+0.8
PLK2	Peulik 2	1.84	322	P	Pn	08 49 13.2	+1.1
KABR	Katmai Barrier	1.84	347	P	Pn	08 49 13.0	+0.8
PLK1	Peulik 1	1.97	319	P	Pn	08 49 14.8	+0.9
ANCK	Angle Creek	1.99	340	P	Pn	08 49 15.2	+0.9
KAKN	Katmai Knife C	2.02	347	P	Pn	08 49 15.5	+0.9
KAKN				S	Sn	08 49 41.1	+2.0
KABU	Katmai Buttres	2.02	343	P	Pn	08 49 16.0	+1.3
PLWL	Peulik Whale M	2.07	326	*e*Pn	Pn	08 49 15.8	+0.6
KAWH	Katmai	2.07	351	P	Pn	08 49 16.3	+0.9
KVTA	Katmai Vly 10	2.13	344	P	Pn	08 49 17.0	+0.9
ANNE	Aniakchak Nort	2.21	287	P	Pn	08 49 16.9	-0.4
ANPK	Aniakchak Peak	2.23	285	P	Pn	08 49 17.6	0.0
KELA	Mount Kelaz	2.26	339	P	Pn	08 49 18.5	+0.5
AZAC	Aniakchak	2.30	286	P	Pn	08 49 18.6	+0.1
ANPB	Aniakchak Plen	2.31	283	P	Pn	08 49 18.2	-0.4
CHGN	Chignik	2.35	271	*e*Pn	Pn	08 49 17.9	-1.2
CHGN				*e*Sn	Sn	08 49 45.8	-1.4
KAHC	Katmai Hardscr	2.35	350	P	Pn	08 49 20.2	+0.9
FOPK	Fourpeaked Vol	2.45	9	P	Pn	08 49 21.6	+1.0
FOSS	Fourpeaked Sta	2.48	6	*e*Pn	Pn	08 49 22.7	+1.8
CDD	Cape Douglas	2.61	6	P	Pn	08 49 24.6	+1.9
VNSG	Veniaminof 6	2.74	267	P	Pn	08 49 24.2	-0.3
VNHG	Veniaminof 1	2.77	270	P	Pn	08 49 25.3	+0.3
VNNF	Veniaminof 3	2.86	271	P	Pn	08 49 26.7	+0.5
VNSW	Veniaminof 7	3.01	267	P	Pn	08 49 27.8	-0.5
AUI	Augustine Isla	3.03	7	P	Pn	08 49 30.2	+1.8
AUSE	Augustine SEas	3.04	8	P	Pn	08 49 30.3	+1.8
AUE	Augustine Isla	3.06	8	*e*Pn	Pn	08 49 30.9	+2.1
AUW	Augustine West	3.06	7	P	Pn	08 49 30.8	+2.0
OPT	Oil Point	3.36	8	*e*Pn	Pn	08 49 34.7	+1.7
HOM	Homer	3.59	21	*e*Pn	Pn	08 49 37.6	+1.5
HOM				*e*Sn	Sn	08 50 18.8	+1.0
SDPT	Sand Point	3.68	257	*e*Pn	Pn	08 49 36.0	-1.4
SDPT				*e*Sn	Sn	08 50 18.0	-1.9
IVE	Iliamna Volcan	3.74	9	P	Pn	08 49 39.7	+1.5
ILW	Iliamna West	3.77	8	*e*Pn	Pn	08 49 40.0	+1.2
BRLK	Bradley Lake	3.85	26	*e*Pn	Pn	08 49 40.1	+0.3
BRLK				*e*Sn	Sn	08 50 24.4	+0.1
RSO	Redoubt South	4.20	10	*e*Pn	Pn	08 49 46.1	+1.4
RDWB	Redoubt West	4.22	9	P	Pn	08 49 45.9	+1.0
NCT	North Crescent	4.28	8	*e*Pn	Pn	08 49 47.1	+1.3
RDJH	Redoubt Jeurge	4.32	9	P	Pn	08 49 48.0	+1.7
PS4A	Pavlof South-4	4.43	260	P	Pn	08 49 46.5	-1.3
DOL	Dolgoi Island	4.50	258	P	Pn	08 49 47.1	-1.5
SEW	Seward	4.53	32	*e*Pn	Pn	08 49 48.6	-0.4
SEW				*e*Sn	Sb	08 50 48.9	-5.9
SLKM	Skilak Lake	4.67	25	*e*P	Pn	08 49 51.5	+0.5
SLKM	Skilak Lake	4.67	25	*e*Pn	Pn	08 49 51.5	+0.5
DTNA	Dutton South F	4.71	259	*e*Pn	Pn	08 49 50.3	-1.2
DT1	Dutton Round H	4.74	258	*e*Pn	Pn	08 49 50.3	-1.6
SVW2	Sparrevohn	4.82	352	*e*Pn	Pn	08 49 54.2	+1.1
CKL	Chakachamna La	4.96	10	P	Pn	08 49 56.0	+0.9
SPU	Mount Spurr	4.98	12	*e*Pn	Pn	08 49 56.4	+1.1
SPU				*e*Sn	Sn	08 50 55.5	+3.5
BALA	Baldy Mountain	4.99	260	*e*Pn	Pn	08 49 55.5	+0.2
SPWE	Spurr West	5.02	9	P	Pn	08 49 57.9	+2.1
MID	Middleton Isla	5.21	50	*e*P	Pn	08 50 00.1	+1.8
MID				*e*		08 51 03.8	
MID	Middleton Isla	5.21	50	*e*Pn	Pn	08 50 00.1	+1.8
MID				*e*Sn	Sn	08 51 03.8	+6.3
RC01	Rabbit Creek A	5.30	24	*e*Pn	Pn	08 49 60.0	+0.4
STLK	Strandline Lak	5.31	12	P	Pn	08 50 01.2	+1.3
FALS	False Pass	5.44	258	*e*Pn	Pn	08 50 00.0	-1.4
SUA	Susitna One	5.44	18	*e*Pn	Pn	08 50 02.3	+0.7
SUA				*e*Sn	Sn	08 51 04.7	+1.3
ISLZ	Isanotski Laza	5.64	257	P	Pn	08 50 03.1	-1.3
SSLN	Shishaldin Nor	5.77	259	P	Pn	08 50 05.5	-0.6
SKT	Skwentna	5.82	12	*e*Pn	Pn	08 50 07.7	+0.9
SSLW	Shishaldin Wes	5.85	259	P	Pn	08 50 06.5	-0.7
PMR	Palmer	5.88	24	*e*P	Pn	08 50 07.9	+0.4
PMR	Palmer	5.88	24	*e*Pn	Pn	08 50 07.9	+0.4
EYAK	Cordova Ski Ar	6.12	43	*e*Pn	Pn	08 50 10.6	-0.2
WESN	West Dahl Nort	6.17	258	*e*Pn	Pn	08 50 10.5	-1.2
WESE	West Dahl East	6.21	257	*e*Pn	Pn	08 50 10.9	-1.3
SML	Sawmill	6.26	26	*e*P	Pn	08 50 14.5	+1.7
SML	Sawmill	6.26	26	*e*Pn	Pn	08 50 14.5	+1.7
VLZ	Valdez	6.31	37	*e*Pn	Pn	08 50 13.3	-0.1
RAGM	Ragged Mountai	6.44	47	*e*Pn	Pn	08 50 15.1	-0.2
DIV	Divide	6.50	39	*e*Pn	Pn	08 50 16.0	-0.1
SCM	Sheep Creek Mo	6.54	30	*e*P	Pn	08 50 17.2	+0.5
SCM				*e*		08 51 29.1	
SCM	Sheep Creek Mo	6.54	30	*e*Pn	Pn	08 50 17.2	+0.5
SCM				*e*Sn	Sn	08 51 29.1	-1.4
TT01	Tatalina	6.65	353	*e*Pn	Pn	08 50 19.6	+1.5
PPLA	Purkeypile	6.65	8	*e*Pn	Pn	08 50 20.7	+2.4
TTA	Tatalina	6.67	353	*e*P	Pn	08 50 19.9	+1.4
TTA	Tatalina	6.67	353	*e*Pn	Pn	08 50 19.9	+1.4
KLU	Klutina	6.71	36	*e*Pn	Pn	08 50 19.2	+0.3
BMRM	Bremner River	6.82	43	*e*Pn	Pn	08 50 20.4	0.0
BERG	Berg Lake	6.85	49	*e*Pn	Pn	08 50 20.4	-0.4
BERG				*e*Sn	Sn	08 51 34.7	-3.2
GRIN	Grindle Hills	6.95	51	P	Pn	08 50 23.0	+0.7
GRIN				S	Sn	08 51 39.1	-1.4
AKUT	Akutan	6.98	256	*e*Pn	Pn	08 50 23.3	+0.7
CAST	Castle Rocks	7.18	8	*e*Pn	Pn	08 50 26.8	+1.4
KULT	Kultieth River	7.20	52	P	Pn	08 50 26.5	+0.8
KULT				S	Sn	08 51 45.1	-1.6
CRQM	Cirque	7.28	48	*e*Pn	Pn	08 50 28.9	+2.0
BARK	Barkley Ridge	7.37	52	*e*Pn	Pn	08 50 29.5	+1.4
TRF	Thorofare Moun	7.39	14	*e*Pn	Pn	08 50 30.6	+2.1
TGL	Tana Glacier	7.41	49	*e*Pn	Pn	08 50 29.5	+0.9
KTH	Kantishna Hill	7.42	11	*e*Pn	Pn	08 50 30.2	+1.5
VRDI	Verde Repeater	7.42	44	P	Pn	08 50 28.5	-0.4
UNV	Unalaska Valle	7.49	256	*e*Pn	Pn	08 50 27.2	-2.5
ISLE	Juniper Island	7.54	51	P	Pn	08 50 30.7	+0.3
MTBL	Makushin Table	7.54	257	*e*Pn	Pn	08 50 29.1	-1.3
RND	Reindeer	7.58	19	*e*P	Pn	08 50 32.3	+1.4
RND	Reindeer	7.58	19	*e*Pn	Pn	08 50 32.3	+1.4
BAGL	Bagley Icefiel	7.59	52	*e*Pn	Pn	08 50 32.3	+1.3
CHUM	Lake Minchumin	7.62	6	*e*Pn	Pn	08 50 32.9	+1.5
KIAG	Kiagna River	7.69	48	P	Pn	08 50 32.6	0.0
BALM	Baldy	7.75	48	*e*P	Pn	08 50 33.6	+0.2
BALM	Baldy	7.75	48	*e*Pn	Pn	08 50 33.6	+0.2
PTPK	Patty Peak	7.79	47	P	Pn	08 50 33.9	0.0
RKAV	Rock Avalanche	7.84	54	P	Pn	08 50 34.8	+0.2
GRNC	Granite Creek	7.85	51	P	Pn	08 50 34.8	0.0
MCK	McKinley	7.86	17	*e*P	Pn	08 50 36.5	+1.7
MCK	McKinley	7.86	17	*e*Pn	Pn	08 50 36.5	+1.7
BPAW	Bear Paw Mtn.	7.94	10	*e*Pn	Pn	08 50 36.8	+1.0
PAX	Paxson	7.97	30	*e*P	Pn	08 50 38.1	+1.7
PAX	Paxson	7.97	30	*e*Pn	Pn	08 50 38.1	+1.7
TABL	Table Mountain	7.99	54	P	Pn	08 50 36.5	-0.1
BARN	Barnard Glacie	8.05	49	*e*Pn	Pn	08 50 37.6	0.0
BWN	Browne	8.20	15	*e*Pn	Pn	08 50 40.0	+0.7
LOGN	Logan Glacier	8.22	51	P	Pn	08 50 39.6	-0.1
MENT	Mentasta	8.47	34	*e*Pn	Pn	08 50 43.5	+0.4
WRH	Wood River Hil	8.69	18	*e*Pn	Pn	08 50 46.5	+0.4
MLY	Manley	8.88	10	*e*Pn	Pn	08 50 51.7	+3.0
CCB	Clear Creek Bu	8.90	18	*e*Pn	Pn	08 50 49.2	+0.3
DOT	Dot Lake	8.90	30	*e*Pn	Pn	08 50 51.3	+2.3
COLA	College	9.10	17	*e*P	Pn	08 50 51.9	+0.2
COLA	College	9.10	17	*e*Pn	Pn	08 50 51.9	+0.2
MDM	Murphy Dome	9.12	16	*e*Pn	Pn	08 50 51.9	-0.1
IL1	Eielson Array	9.18	20	*e*Pn	Pn	08 50 54.3	+1.5
ILAR	Eielson Array	9.18	20	Pn	Pn	08 50 51.4	-1.5
	1.7nm,0.3s,baz=211,slow=9.6,SNR=57						
ILAR				Sn	Sn	08 52 30.6	-4.6
	0.8nm,0.3s,baz=202,slow=21,SNR=2.8						
ILAR				LR	LR	08 54 49.7	
	comp=Z,648nm,19.0s,baz=226,slow=39						
ILB	Eielson Array	9.18	20	*e*Pn	Pn	08 50 53.7	+0.9
ILB				*e*Sn	Sn	08 52 30.6	-4.6
IM3	Indian Mountai	9.68	1	P	Pn	08 51 00.0	+0.4
HYT	Haines Junctio	9.79	56	*e*Pn	Pn	08 51 01.3	0.0
PLBC	Pleasant Camp	9.98	64	*e*Pn	Pn	08 51 04.8	+1.0
SKAG	Skagway	10.50	65	*e*Pn	Pn	08 51 12.0	+1.1
EGAK	Eagle	10.59	32	*e*Pn	Pn	08 51 13.6	+1.5
COLD	Coldfoot	11.08	8	*e*Pn	Pn	08 51 19.2	+0.4
FYU	Fort Yukon	11.10	19	*e*Pn	Pn	08 51 21.0	+2.0
TNA	Tin City	11.37	330	*e*Pn	Pn	08 51 24.6	+1.9
DLBC	Dease Lake	13.18	71	Pn	Pn	08 51 48.1	+0.6
	0.2nm,0.3s,baz=208,slow=15,SNR=2.8						
DLBC				LR	LR	08 56 56.8	
	comp=Z,283nm,18.8s,baz=272,slow=37						
DLBC	Dease Lake	13.18	71	*e*Pn	Pn	08 51 49.9	+2.4
INK	Inuvik	15.25	30	Pn	P	08 52 18.4	-1.8
	2.0nm,0.3s,baz=231,slow=9.7,SNR=18						
INK				LR	LR	08 58 39.4	
	comp=Z,419nm,18.5s,baz=238,slow=38						
INK	Inuvik	15.25	30	*e*P	P	08 52 19.7	-0.4
INK				pmax	pmax		
	comp=Z,14nm,0.8s						
INK	Inuvik	15.25	30	*e*Pn	P	08 52 19.7	-0.4
	comp=Z,14nm,0.8s						
YKW3	Yellowknife Ar	20.78	56	*e*P	Pn	08 53 22.6	-0.8
	comp=Z,9.3nm,0.7s						
YKA	Yellowknife Ar	20.79	56	P	P	08 53 21.6	+0.6
	comp=Z,4.5nm,0.7s,baz=271,slow=9.7,SNR=148						
YKA				ScP	ScP	09 01 03.1	-0.7
	comp=Z,0.6nm,0.9s,baz=276,slow=2.9,SNR=5.1						
YKA				LR	LR	09 01 48.5	
	comp=Z,21nm,21.0s,baz=180,slow=38						
YKB5	Yellowknife Ar	20.79	56	*e*P	P	08 53 21.6	+0.6
BILL	Bilibino	21.38	319⇑	*i*P	P	08 53 25.4	-2.0
BILL				*e*S	S	08 57 23.8	+0.5
BILL				pmax	pmax		
	comp=Z,30nm,1.2s						
BILL	Bilibino	21.38	319	*e*P	P	08 53 26.4	-1.0
	comp=Z,31nm,1.2s						
NEW	Newport	23.81	94	LR	LR	09 02 11.9	
	comp=Z,166nm,19.5s,baz=298,slow=34						
SEY	Seymchan	27.08	306	P	P	08 54 20.6	-1.7
	comp=Z,9.2nm,0.8s,baz=91,slow=9.9,SNR=12						
SEY	Seymchan	27.08	306	*ce*P	P	08 54 21.2	-1.1
PEA1	Petropavlovsk-	27.52	284	*e*P	P	08 54 25.3	-1.1
PEA0	Petropavlovsk-	27.52	284	*e*P	P	08 54 27.9	+1.6
PETK	Petropavlovsk-	27.52	284	P	P	08 54 25.3	-1.1
	comp=Z,17nm,0.4s,baz=71,slow=12,SNR=53						
PETK				LR	LR	09 05 43.8	
	comp=Z,74nm,20.7s,baz=64,slow=37						
MA2	Magadan	28.67	300⇑	*e*P	P	08 54 37.0	+0.4
NV01	Mina Array Sit	29.72	112	*e*P	P	08 54 46.3	-0.1
NVAR	Mina Array Bea	29.72	112	P	P	08 54 46.5	+0.2
	comp=Z,0.9nm,0.8s,baz=308,slow=15,SNR=3.6						
NVAR				LR	LR	09 04 54.7	
	comp=Z,248nm,18.9s,baz=279,slow=33						
PDAR	Pinedale Array	31.38	96	P	P	08 55 00.6	-0.4
	comp=Z,0.6nm,0.6s,baz=343,slow=4.6,SNR=6.2						
PDAR				LR	LR	09 07 07.5	
	comp=Z,77nm,18.4s,baz=358,slow=35						
ARUT	Antelope Range	32.75	107	*e*P	P	08 55 12.2	-0.8
ARUT	Antelope Range	32.75	107	*e*P	P	08 55 12.2	-0.8
TIXI	Tiksi	34.13	327	P	P	08 55 23.4	-1.1
	comp=Z,8.0nm,0.6s,baz=82,slow=9.0,SNR=19						
TIXI	Tiksi	34.13	327	*ce*P	P	08 55 23.7	-0.7
TIXI				pmax	pmax		
	comp=Z,7.0nm,0.6s						
TIXI	Tiksi	34.13	327	*e*P	P	08 55 23.9	-0.5
PFO	Pinyon Flats O	34.40	115	LR	LR	09 07 39.2	
	comp=Z,142nm,18.2s,baz=314,slow=33						
ULM	Lac du Bonnet	34.45	75	LR	LR	09 09 43.9	
	comp=Z,129nm,18.2s,baz=308,slow=36						
PHWY	Pilot Hill	34.63	95	*e*P	P	08 55 32.0	+2.6
	comp=Z,44nm,1.5s						
YAK	Yakutsk	37.30	311	*e*P	P	08 55 50.3	-1.3
YAK				pmax	pmax		
	comp=Z,30nm,0.9s						
YAK				pmax	pmax		
	comp=N,3.0nm,0.8s						
YAK				pmax	pmax		
	comp=E,9.0nm,1.0s						
YAK				MLR	MLR		
	comp=Z,309nm,21.0s						
YAK				MLR	MLR		
	comp=N,100nm,19.0s						
YAK				MLR	MLR		
	comp=E,162nm,17.0s						
ANMO	Albuquerque	38.62	103	LR	LR	09 10 28.5	
	comp=E,62nm,18.2s,baz=314,slow=34						
HABR	Khabarovsk	42.09	290	*e*P	P	08 56 29.3	-2.3
HABR				*e**SP	pP	08 56 36.1	-2.8
HABR				*e*		08 58 06.6	
HABR				*e*		08 58 24.2	
HABR				S	S	09 02 48.2	-1.1
HABR				*e*SS	SS	09 05 56.8	+0.1
HABR				*e*		09 06 31.4	
HABR				pmax	pmax		
	comp=Z,15nm,1.2s						
HABR				MLR	MLR		
	comp=Z,81nm,18.0s						
KLR	Kul'dur	43.32	293	P	P	08 56 40.1	-1.6
	comp=Z,9.8nm,0.9s,baz=52,slow=7.6,SNR=21						
SUMG	Summit	44.01	23	*i*P	P	08 56 48.7	+1.3
	comp=Z,8.5nm,0.7s						
SUMG	Summit	44.01	23	*i*P	P	08 56 48.7	+1.3
SUMG				pmax	pmax		
	comp=Z,9.0nm,0.7s						
SUMG	Summit	44.01	23	*e*P	P	08 56 48.9	+1.5
	comp=Z,9.8nm,0.8s						
DAG	Danmarks Havn	44.21	13⇑	*i*P	P	08 56 48.9	+0.5
	comp=Z,17nm,0.8s						
DAG	Danmarks Havn	44.21	13⇑	*i*P	P	08 56 48.9	+0.5
DAG				pmax	pmax		
	comp=Z,13nm,0.8s						
LTX	Lajitas	44.44	106	*e*P	P	08 56 50.4	-0.6
LTX	Lajitas	44.44	106	*e*P	P	08 56 50.4	-0.6
TXAR	Lajitas Array	44.44	106	P	P	08 56 50.4	-0.6
	comp=Z,0.2nm,0.6s,baz=302,slow=5.2,SNR=3.5						
TXAR	Lajitas Array	44.44	106	P	P	08 56 50.4	-0.6
LPIG	La Paz	45.25	117	LR	LR	09 11 50.5	
	comp=Z,106nm,19.4s,baz=43,slow=31						
SCHQ	Schefferville	46.18	53	P	P	08 57 04.9	+0.5
	comp=Z,3.8nm,0.7s,baz=310,slow=6.4,SNR=9.3						
SCHQ				LR	LR	09 17 30.1	
	comp=Z,146nm,18.8s,baz=304,slow=37						
SCHQ	Schefferville	46.18	53	*e*P	P	08 57 05.7	+1.3
	comp=Z,36nm,1.7s						
BOD	Bodaibo	46.19	312	*e*P	P	08 57 03.1	-1.3
BOD				pmax	pmax		
	comp=Z,7.0nm,0.9s						
H11N2	WAKE ISLAND Hy	46.62	235	T	T	09 47 14.3	
	baz=29,slow=76,SNR=5.5						

GTA				pmax	pmax		
	comp=Z,8.0nm,0.9s						
MK31	**Makanchi Array**	**66.90**	**321**	*e*P	**P**	**08 59 31.9**	**0.0**
MK31	**Makanchi Array**	**66.90**	**321**	*e*P	**P**	**08 59 31.9**	**0.0**
MK32	**Makanchi Array**	**66.90**	**321**	*e*P	**P**	**08 59 31.6**	**-0.3**
MKAR	**Makanchi Array**	**66.90**	**321**	P	**P**	**08 59 31.6**	**-0.3**
	comp=Z,3.7nm,0.7s,baz=46,slow=6.7,SNR=29						
MKAR	**Makanchi Array**	**66.90**	**321**	*e*P	**P**	**08 59 31.9**	**0.0**
MKAR	**Makanchi Array**	**66.90**	**321**	*e*P	**P**	**08 59 31.9**	**0.0**
MK01	**Makanchi Array**	**66.92**	**321**	*e*P	**P**	**08 59 31.7**	**-0.3**
MAKZ	**Makanchi**	**67.00**	**322**	*e*P	**P**	**08 59 32.3**	**-0.2**
MAKZ				pmax	pmax		
	comp=Z,6.0nm,0.8s						
MAKZ	**Makanchi**	**67.00**	**322**	*e*P	**P**	**08 59 32.2**	**-0.2**
	comp=Z,5.7nm,0.8s						
WMQ	**Urumqi**	**67.47**	**316**	*e*P	P	08 59 42.3	+6.7
WMQ				SKS	**SKiKP**	**09 09 30.5**	**-1.4**
WMQ				pmax	pmax		
	comp=Z,5.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,57nm,4.8s						
OBN	**Obninsk**	**68.56**	**353**	*ce*P	**P**	**08 59 42.8**	**+0.7**
OBN				*e*		09 02 15.0	
OBN				pmax	pmax		
	comp=Z,57nm,2.5s						
OBN				MLR	MLR		
	comp=Z,220nm,17.0s						
LPSR	**Galich'ya Gora**	**70.88**	**352**	*e*P	**P**	**08 59 55.4**	**-1.0**
LPSR				pmax	pmax		
	comp=Z,9.0nm,0.9s						
ABKAR	**Akbulak array**	**71.00**	**337**	*e*P	**P**	**08 59 57.4**	**+0.2**
CD2	**Chengdu**	**71.05**	**297**	P	**P**	**08 59 57.5**	**-0.4**
CD2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
VRH	**Novokhopyorsk**	**72.01**	**350**	*e*P	**P**	**09 00 02.5**	**-0.8**
VRH				pmax	pmax		
	comp=Z,10.0nm,0.8s						
CLL	**Collm**	**72.19**	**8**	*e*P	**P**	**09 00 04.0**	**-0.4**
CLL				*e*		09 00 10.0	
CLL	**Collm**	**72.19**	**8**	*e*P	**P**	**09 00 04.0**	**-0.4**
CLL				*e*		09 00 10.0	
VSR	**Storozhevoye**	**72.24**	**351**	*e*P	**P**	**09 00 04.1**	**-0.5**
VSR				pmax	pmax		
	comp=Z,10.0nm,0.6s						
TKM2	**Tokmak 2**	**72.57**	**324**	*e*P	**P**	**09 00 08.3**	**+1.2**
TKM2				pmax	pmax		
	comp=Z,10.0nm,0.8s						
TKM2	**Tokmak 2**	**72.57**	**324**	*e*P	**P**	**09 00 08.2**	**+1.2**
	comp=Z,10nm,0.8s						
BRG	**Berggiesshubel**	**72.70**	**8**	*e*P	**P**	**09 00 08.4**	**+1.0**
	comp=Z,3.2nm,0.7s						
BRG	**Berggiesshubel**	**72.70**	**8**	*e*P	**P**	**09 00 08.4**	**+1.0**
BRG				pmax	pmax		
	comp=Z,3.0nm,0.7s						
PVCC	**Panska Ves**	**73.09**	**7**	*e*P	**P**	**09 00 11.0**	**+1.3**
AAK	**Ala-Archa**	**73.19**	**325**	*e*P	**P**	**09 00 11.7**	**+1.0**
AAK				pmax	pmax		
	comp=Z,9.0nm,0.9s						
AAK	**Ala-Archa**	**73.19**	**325**	*e*P	**P**	**09 00 11.7**	**+1.0**
	comp=Z,8.8nm,0.9s						
AKASG	**Malin Array Be**	**73.28**	**358**	P	**P**	**09 00 10.7**	**-0.2**
	comp=Z,5.1nm,0.6s,baz=7.1,slow=5.9,SNR=17						
AKBB	**Malin Array Si**	**73.28**	**358**	*e*P	**P**	**09 00 11.0**	**+0.1**
AKBB				pmax	pmax		
	comp=Z,11nm,0.8s						
AKBB	**Malin Array Si**	**73.28**	**358**	*e*P	**P**	**09 00 11.0**	**+0.1**
	comp=Z,11nm,0.8s						
KIEV	**Kiev**	**73.29**	**358**	*e*P	**P**	**09 00 10.8**	**-0.1**
KIEV				pmax	pmax		
	comp=Z,8.0nm,0.7s						
KIEV	**Kiev**	**73.29**	**358**	*e*P	**P**	**09 00 10.8**	**-0.1**
	comp=Z,8.0nm,0.7s						
DPC	**Dobruska-Polom**	**73.38**	**6**	*e*P	**P**	**09 00 12.9**	**+1.4**
EKS2	**Erkin-Say**	**73.39**	**325**	*e*P	**P**	**09 00 12.8**	**+1.0**
EKS2				pmax	pmax		
	comp=Z,9.0nm,0.9s						
EKS2	**Erkin-Say**	**73.39**	**325**	*e*P	**P**	**09 00 12.8**	**+1.0**
	comp=Z,9.2nm,0.9s						
PRU	**Pruhonice**	**73.62**	**8**	*e*P	**P**	**09 00 13.6**	**+0.7**
PPT2	**Papeete2**	**73.75**	**175**	*e*LR	LR	09 01 10.5	
	comp=Z,225nm,29.2s						
KKAR	**Karatay Array**	**74.00**	**328**	*e*P	**P**	**09 00 15.8**	**+0.6**
KKAR	**Karatay Array**	**74.00**	**328**	*e*P	**P**	**09 00 15.8**	**+0.6**
KHC	**Kasperske Hory**	**74.40**	**8**	*e*P	**P**	**09 00 18.8**	**+1.3**
KHC	**Kasperske Hory**	**74.40**	**8**	*e*P	**P**	**09 00 19.1**	**+1.6**
KHC				pmax	pmax		
	comp=Z,3.0nm,0.9s						
KHC	**Kasperske Hory**	**74.40**	**8**	*e*P	**P**	**09 00 19.1**	**+1.6**
	comp=Z,3.0nm,0.9s						
STHS	**Stebnicka Huta**	**74.54**	**3**	*e*P	**P**	**09 00 20.0**	**+1.7**
STHS				pmax	pmax		
	comp=Z,9.0nm,0.7s						
STHS	**Stebnicka Huta**	**74.54**	**3**	*e*P	**P**	**09 00 20.0**	**+1.7**
GEC2	**GERESS Array S**	**74.70**	**8**	*e*P	**P**	**09 00 20.6**	**+1.3**
GEC2				pmax	pmax		
	comp=Z,4.0nm,0.8s						
GEC2	**GERESS Array S**	**74.70**	**8**	*e*P	**P**	**09 00 20.6**	**+1.3**
	comp=Z,4.4nm,0.8s						
GERES	**GERESS Array B**	**74.70**	**8**	P	**P**	**09 00 19.7**	**+0.4**
	comp=Z,3.0nm,0.7s,baz=357,slow=4.5,SNR=19						
GEA0	**GERESS Array S**	**74.70**	**8**	*e*P	**P**	**09 00 20.2**	**+0.8**
LANS	**Liptovska Anna**	**74.74**	**4**	*e*P	**P**	**09 00 21.4**	**+1.9**
LANS	**Liptovska Anna**	**74.74**	**4**	*e*P	**P**	**09 00 21.4**	**+1.9**
VYHS	**Vyhne**	**75.37**	**5**	*e*P	**P**	**09 00 24.1**	**+1.0**
VYHS				pmax	pmax		
	comp=Z,3.0nm,0.9s						
VYHS	**Vyhne**	**75.37**	**5**	*e*P	**P**	**09 00 24.1**	**+1.0**
KECS	**Kecovo**	**75.45**	**4**	*e*P	**P**	**09 00 24.9**	**+1.4**
KECS				pmax	pmax		
	comp=Z,5.0nm,0.8s						
KECS	**Kecovo**	**75.45**	**4**	*e*P	**P**	**09 00 24.9**	**+1.4**
KSH	**Kashi**	**75.49**	**322**	*e*P	**P**	**09 00 27.5**	**+3.4**
KSH				*es*P	sP	09 00 34.3	-0.3
KSH				*e*PcP	**PcP**	**09 00 41.0**	**+3.9**
KSH				*e*PP	**PP**	**09 03 18.5**	**+5.8**
KSH				S	**S**	**09 10 05.5**	**+2.6**
KSH	**Kashi**	**75.49**	**322**	ScS	**ScS**	**09 10 36.8**	**+0.9**
KSH				pmax	pmax		
	comp=Z,14nm,0.8s						
KSH				pmax	pmax		
	comp=Z,140nm,4.9s						
KSH				LR	LR		
	comp=N,280nm,12.7s						
KSH				LR	LR		
	comp=E,150nm,6.5s						
KSH				LR	LR		
	comp=Z,430nm,16.9s						
KMI	**Kunming**	**76.31**	**295**	P	**P**	**09 00 32.5**	**+3.4**
KMI				pP	pP	09 00 36.3	-0.5
KMI				sP	sP	09 00 37.8	-1.9
KMI				pmax	pmax		
	comp=Z,16nm,0.6s						
BUR08	**Bucovina Ar. S**	**76.38**	**0**	*e*P	**P**	**09 00 29.9**	**+0.9**
ANN	**Anapa**	**78.75**	**352**	*e*P	P	09 00 34.2	-7.9
ANN				pmax	pmax		
	comp=Z,37nm,1.1s						
KIV	**Kislovodsk**	**79.06**	**348**	*e*P	**P**	**09 00 45.4**	**+1.4**
KIV				pmax	pmax		
	comp=Z,9.0nm,0.8s						
KBZ	**Khabaz**	**79.26**	**347**	P	**P**	**09 00 46.5**	**+1.6**
	comp=Z,7.7nm,0.8s,baz=341,slow=5.6,SNR=14						
ZEI	**Tsey**	**80.06**	**347**	*e*P	**P**	**09 00 48.4**	**-1.2**
ZEI				pmax	pmax		
	comp=Z,11nm,0.9s						
ES19	**SONSECA Array**	**81.06**	**23**	*e*P	**P**	**09 00 56.5**	**+1.7**
ESDC	**Sonseca Array**	**81.07**	**23**	P	**P**	**09 00 55.9**	**+1.0**
	comp=Z,2.9nm,0.7s,baz=345,slow=5.5,SNR=11						
GEYT	**Alibeck**	**82.17**	**335**	P	**P**	**09 01 01.6**	**+1.0**
	comp=Z,5.8nm,0.7s,baz=344,slow=4.9,SNR=9.7						
CM31	**Chiang Mai Arr**	**83.80**	**294**	*e*P	**P**	**09 01 09.3**	**0.0**
CMAR	**Chiang Mai Arr**	**83.80**	**294**	P	**P**	**09 01 08.6**	**-0.8**
	comp=Z,5.4nm,0.7s,baz=9.0,slow=5.8,SNR=21						
CM01	**Chiang Mai Arr**	**83.82**	**294**	*e*P	**P**	**09 01 09.1**	**-0.3**
BR231	**Keskin MP Arra**	**84.00**	**355**	*e*P	**P**	**09 01 11.0**	**+0.8**
BR101	**Keskin Array S**	**84.07**	**354**	*e*P	**P**	**09 01 10.9**	**+0.3**
BRTR	**Keskin Array B**	**84.07**	**354**	P	**P**	**09 01 10.9**	**+0.3**
	comp=Z,3.3nm,0.8s,baz=1.5,slow=2.5,SNR=13						
KKM	**Kota Kinabalu**	**84.79**	**273**	*e*P	**P**	**09 01 14.0**	**-0.5**
	comp=Z,72nm,1.2s						
BOSA	**Boshof**	**152.28**	**1**	PKPbc	**PKPbc**	**09 08 34.4**	**-1.0**
	comp=Z,5.6nm,1.0s,baz=127,slow=16,SNR=3.7						

JMA 26 08:50:53.4±0.1, 38°.22N×142°.14E, h15km±1km, M3.6,

2011 MAY

Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.67**	**291**	P	Pg	08 51 06.2	-0.2
JIO				*e*S	Sg	08 51 14.7	-0.5
OFUJ	**Ofunato**	**0.94**	**337**	P	Pb	08 51 10.8	-0.5
OFUJ				*e*S	Sb	08 51 23.5	0.0
JMK	**Ichinoseki**	**1.03**	**316**	P	Pb	08 51 12.8	-0.1
JMK				*e*S	Sb	08 51 26.2	0.0
JMM	**Marumori**	**1.12**	**252**	P	Pb	08 51 13.6	-0.9
JMM				*e*S	Sb	08 51 28.4	-0.5
JOU	**Okura**	**1.17**	**278**	P	Pn	08 51 15.2	-0.1
JOU				*e*S	Sn	08 51 30.8	-0.2
JFK	**Kawauchi**	**1.32**	**230**	P	Pn	08 51 16.6	-0.7
JOM	**Ohasama**	**1.42**	**332**	P	Pn	08 51 18.6	0.0
JOM				*e*S	Sb	08 51 37.5	+0.1

*ISCJB **26** 08:54:21.6±0.5, 39°.13N±0°.03×29°.02E±0°.03, h2km±7km, Error ellipse: s-maj=5.8km s-min=4.1km az=158.2*
*CSEM **26** 08:54:21.7±0.1, 39°.13N×29°.03E, h2km, MD2.6, Error ellipse: s-maj=1.9km s-min=1.6km az=173.0*
*ISK **26** 08:54:21.2, 39°.11N×29°.06E, h5km, MD2.6*
*DDA **26** 08:54:21.4, 39°.13N×29°.02E, h7km, Md2.6*
ISC 26 08:54:22.0±1.0, 39°.13N±0°.02×29°.02E±0°.02, h9km±9km, n37, σ0°.35/50, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**251**	P	**Pg**	**08 54 27.0**	**-0.1**
DEMI				S	**Sg**	**08 54 30.5**	**0.0**
DEMI	**Demirci**	**0.25**	**251**	*i* P	**Pg**	**08 54 26.9**	**-0.1**
DEMI				*i* S	**Sg**	**08 54 30.5**	**0.0**
GDZ	**Gediz**	**0.36**	**96**	P	**Pg**	**08 54 29.2**	**+0.1**
GDZ				S	**Sg**	**08 54 34.5**	**+0.6**
GDZ	**Gediz**	**0.36**	**96**	*i* P	**Pg**	**08 54 29.2**	**+0.1**
GDZ				*i* S	**Sg**	**08 54 34.5**	**+0.6**
TVSB	**Tavsanli**	**0.47**	**46**	*e*PG	**Pg**	**08 54 30.7**	**-0.5**
TVSB				*e*SG	**Sg**	**08 54 37.2**	**-0.2**
TVSB	**Tavsanli**	**0.47**	**46**	*e*Pg	**Pg**	**08 54 30.7**	**-0.5**
TVSB				*e*Sg	**Sg**	**08 54 37.2**	**-0.2**
DURS	**Dursunbey**	**0.64**	**318**	P	**Pg**	**08 54 33.8**	**-0.5**
DURS	**Dursunbey**	**0.64**	**318**	*i* P	**Pg**	**08 54 33.8**	**-0.5**
KULA	**Kula-Manisa**	**0.67**	**205**	*e*PG	**Pg**	**08 54 34.7**	**-0.2**
KULA	**Kula-Manisa**	**0.67**	**205**	*e*Pg	**Pg**	**08 54 34.7**	**-0.2**
KHAL	**Karahalli**	**0.84**	**154**	P	**Pn**	**08 54 40.1**	**0.0**
KHAL				S	**Sg**	**08 54 49.2**	**+0.1**
KHAL	**Karahalli**	**0.84**	**154**	*i* P	**Pn**	**08 54 40.1**	**0.0**
KHAL				*i* S	**Sg**	**08 54 49.2**	**+0.1**
KHL	**Karahalli**	**0.89**	**154**	*e*PG	**Pg**	**08 54 38.4**	**-0.7**
KHL	**Karahalli**	**0.89**	**154**	*e*Pg	**Pg**	**08 54 38.4**	**-0.7**
AKHS	**Akhisar**	**0.97**	**256**	P	**Pg**	**08 54 40.4**	**-0.3**
AKHS				S	**Sg**	**08 54 53.4**	**+0.1**
AKHS	**Akhisar**	**0.97**	**256**	*i* P	**Pg**	**08 54 40.4**	**-0.3**
AKHS				*i* S	**Sg**	**08 54 53.4**	**+0.1**
AKS	**Akhisar**	**0.97**	**256**	*e*PG	**Pg**	**08 54 40.7**	**0.0**
AKS	**Akhisar**	**0.97**	**256**	*e*Pg	**Pg**	**08 54 40.7**	**0.0**
BALB	**Balikesir**	**1.02**	**300**	*e*PG	**Pb**	**08 54 41.9**	**+0.1**
BALB	**Balikesir**	**1.02**	**300**	*e*Pg	**Pb**	**08 54 41.9**	**+0.1**
IGD	**Bursa**	**1.15**	**7**	*i* P	**Pg**	**08 54 42.7**	**-1.3**
IGD				*i* S	**Sn**	**08 54 59.6**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.25**	**355**	*e*PN	**Pg**	**08 54 45.9**	**0.0**
MDNY	**Mudanya-Bursa**	**1.25**	**355**	*e*Pn	**Pg**	**08 54 45.9**	**0.0**
BALY	**Balya**	**1.25**	**300**	P	**Pn**	**08 54 45.4**	**-0.2**
BALY				S	**Sn**	**08 55 02.7**	**+0.2**
BALY	**Balya**	**1.25**	**300**	*i* P	**Pn**	**08 54 45.4**	**-0.2**
BALY				*i* S	**Sn**	**08 55 02.7**	**+0.2**
KCTX	**Karacabey (Bur**	**1.25**	**336**	*e*PN	**Pg**	**08 54 46.2**	**+0.3**
KCTX	**Karacabey (Bur**	**1.25**	**336**	*e*Pn	**Pg**	**08 54 46.2**	**+0.3**
IZI	**Iznik**	**1.26**	**16**	*e*PN	**Pg**	**08 54 46.0**	**-0.1**
IZI	**Iznik**	**1.26**	**16**	*e*Pn	**Pg**	**08 54 46.0**	**-0.1**
GONE	**Gonen-Balikesi**	**1.38**	**312**	*e*PN	**Pb**	**08 54 48.2**	**+0.3**
GONE	**Gonen-Balikesi**	**1.38**	**312**	*e*Pn	**Pb**	**08 54 48.2**	**+0.3**
ARMT	**Armutlu**	**1.44**	**355**	*e*PN	**Pb**	**08 54 49.0**	**0.0**
ARMT	**Armutlu**	**1.44**	**355**	*e*Pn	**Pb**	**08 54 49.0**	**0.0**
EDC	**Edincik**	**1.51**	**324**	*e*PN	**Pb**	**08 54 50.2**	**+0.1**
EDC	**Edincik**	**1.51**	**324**	*e*Pn	**Pb**	**08 54 50.2**	**+0.1**
GULT	**Gulveren**	**1.74**	**41**	*e*PN	**Pn**	**08 54 52.8**	**+0.4**
GULT	**Gulveren**	**1.74**	**41**	*e*Pn	**Pn**	**08 54 52.8**	**+0.4**

*BJI **26** 08:57:30.3, 8°.20S×121°.70E, h15km, mb5.2/71, mB5.5/61, Ms5.0/63, Ms7 4.6/55*
*ISCJB **26** 08:57:33.9±0.4, 8°.33S±0°.02×121°.80E±0°.02, h44km±3km, mb5.2/119, MS4.5/36, Error ellipse: s-maj=4.4km s-min=3.2km az=139.3*
*MOS **26** 08:57:33.6±1.2, 8°.19S×121°.57E, h33km, mb5.4/42, MS4.1/4, Error ellipse: s-maj=12.4km s-min=6.6km az=105.3*
*GCMT **26** 08:57:34.3±0.1, 8°.38S×121°.70E, h12km, MW5.3/121, Moment Tensor Solution. s91,c149; s121,c199; Duration: 1s1 Moment tensor: Scale 10^17Nm; M_{rr}1.05±.01; $M_{\theta\theta}$-0.15±.01; $M_{\phi\phi}$-0.89±.01; $M_{r\theta}$-0.26±.03; $M_{\theta\phi}$-0.20±.01; $M_{r\phi}$0.01±.03; Best double couple: $M_0$1.03000×10^17 NP1:ϕ_s206.00000°, δ48.00000°, λ106.00000°. NP2:ϕ_s3.00000°, δ45.00000°, λ73.00000°. Principal axes: T 1.1070, Plg78.0000°, Azm188.0000°; N -0.1560, Plg12.0000°, Azm15.0000°; P -0.9530, Plg2.0000°, Azm285.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **26** 08:57:34.3±1.3, 8°.30S×121°.67E, h30km±9km, mb5.3/56 Error ellipse: s-maj=6.6km s-min=3.8km az=56.0*
NEIC Felt [IV] at Ende and [III] at Maumere and Ruteng.
*KLM **26** 08:57:35.6, 8°.42S×121°.94E, h51km, mb5.4, ML5.3, MS6.2*
*DJA **26** 08:57:35.2±0.3, 8°.S±2°×12°.2E±°, h19km±3km, M5.2/36, mb5.3/36, mB5.6/22, MLv5.4/4, Mw(mB)5.1/22*
*IDC **26** 08:57:36.8±2.8, 8°.25S×121°.69E, h52km±24km, mb4.7/22, mb1 4.8/24, mb1mx4.8/31, mbtmp5.0/24, ML4.1/3, MS4.5/20, Ms1 4.5/20, ms1mx4.3/33, Error ellipse: s-maj=16.0km s-min=10.3km az=57.0*
ISC 26 08:57:33.1±0.4, 8°.35S±0°.03×121°.72E±0°.03, h23km±2km, h23km:pP-P, n450, σ1°.96/501, mb5.3/119, MS4.5/37, 24C-10D, Flores region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MMRI	**Maumere**	**0.59**	**119**	P	**Pb**	**08 57 44.8**	**-0.1**
MMRI				S	**Sb**	**08 57 53.2**	**+0.3**
MMRI	**Maumere**	**0.59**	**119**	*e*Pn	**Pb**	**08 57 44.8**	**-0.1**
MMRI				*e*Sn	**Sn**	**08 57 54.6**	**-0.4**
WSI	**Waingapu**	**1.92**	**227**	P	**Pb**	**08 58 07.5**	**0.0**
WSI				S	**Sb**	**08 58 31.3**	**+0.2**
BASI	**Baing, Sumba**	**2.17**	**211**	P	**Pn**	**08 58 08.9**	**+1.0**
BASI				S	**Sn**	**08 58 36.0**	**+1.9**
BSSI	**Bau Bau, Buton**	**2.50**	**331**	P	**Pn**	**08 58 13.1**	**+0.6**
BSSI				S	**Sn**	**08 58 40.9**	**-1.4**
SOEI	**Soe**	**2.88**	**119**	P	**Pb**	**08 58 23.1**	**-0.9**
SOEI				S	**Sn**	**08 58 53.7**	**+1.9**
SOEI	**Soe**	**2.88**	**119**	*e*Pn	**Pb**	**08 58 21.2**	**-2.8**
SOEI				*e*Sn	**Sn**	**08 58 54.1**	**+2.3**
KAPI	**Kappang**	**3.84**	**329**	P	**Pn**	**08 58 32.2**	**+1.3**
	24nm,0.3s,baz=167,slow=9.6,SNR=58						
KAPI				S	**Sn**	**08 59 15.1**	**-0.2**
	46nm,0.3s,baz=60,slow=18,SNR=5.3						
KAPI	**Kappang**	**3.84**	**329**	*e*Pn	**Pn**	**08 58 31.5**	**+0.6**
KAPI				*e*Sn	**Sn**	**08 59 11.1**	**-4.2**
PLAI	**Plampang**	**3.92**	**263**	P	**Pn**	**08 58 32.3**	**+0.3**
KDI	**Kendari**	**4.45**	**12**	P	**Pn**	**08 58 39.6**	**+0.3**
TWSI	**Taliwang, Sumb**	**4.80**	**265**	P	**Pn**	**08 58 43.4**	**-0.6**
TTSI	**Tana Toraja**	**5.59**	**340**	P	Pn	08 58 59.5	+4.5
SRBI	**Singaraja**	**6.44**	**272**	P	**Pn**	**08 59 09.6**	**+3.0**
DNP	**Denpasar**	**6.44**	**267**	P	Pn	08 59 14.5	+7.9
LUWI	**Luwuk**	**7.33**	**8**	P	**Pn**	**08 59 20.3**	**+1.4**
	664nm,0.9s,6μm2.0nm						
LUWI	**Luwuk**	**7.33**	**8**	*e*Pn	**Pn**	**08 59 19.4**	**+0.5**
NLAI	**Namlea**	**7.38**	**47**	P	Pn	08 59 24.7	+5.2
ABJI	**Asem Bagus**	**7.43**	**274**	P	Pn	08 59 25.0	+4.8
JAGI	**Jajag, Banyuwa**	**7.48**	**269**	P	**Pn**	**08 59 19.6**	**-1.4**
JAGI	**Jajag, Banyuwa**	**7.48**	**269**	*e*Pn	**Pn**	**08 59 19.2**	**-1.7**
JAGI				*e*Sn	**Sn**	**09 00 42.7**	**-2.5**
SANI	**Sanana**	**7.56**	**34**	P	**Pn**	**08 59 23.4**	**+1.3**
PCI	**Palu**	**7.62**	**346**	P	Pn	08 59 28.5	+5.6
	104nm,1.1s,2μm0.8nm						
GMJI	**Gumukmas**	**8.19**	**270**	P	**Pn**	**08 59 34.7**	**+4.1**
BBKI	**Banjar Baru**	**8.38**	**305**	P	Pn	08 59 39.2	+5.9
MRSI	**Marisa**	**8.77**	**1**	P	**Pn**	**08 59 39.9**	**+1.3**
LBMI	**Labuha**	**9.58**	**37**	P	Pn	08 59 54.7	+4.9

PWJI	**Pagerwojo**	**9.82**	**271**	P	**Pn**	**08 59 57.1**	**+4.1**
MTN	**Manton Dam**	**10.28**	**117**	*e*Pn	**Pn**	**09 00 00.7**	**+1.4**
MTN				*e*Sn	**Sn**	**09 01 52.5**	**-1.4**
FITZ	**Fitzroy Crossi**	**10.42**	**159**	*e*Pn	**Pn**	**09 00 02.9**	**+1.6**
FITZ				*e*Sn	**Sn**	**09 01 56.2**	**-1.2**
PCJI	**Pacitan**	**10.43**	**270**	P	**Pn**	**09 00 04.5**	**+3.1**
WOJI	**Wonogiri, Jawa**	**10.70**	**272**	P	**Pn**	**09 00 09.2**	**+4.2**
UGM	**Wanagama**	**11.09**	**271**	*e*Pn	**Pn**	**09 00 11.3**	**+0.9**
UGM				*e*Sn	**Sn**	**09 02 15.3**	**+1.5**
SWI	**Sorong**	**12.07**	**52**	P	**P**	**09 00 33.3**	**-3.2**
MBWA	**Marble Bar**	**12.88**	**188**	*e*Pn	**Pn**	**09 00 34.6**	**-0.3**
MBWA				*e*Sn	**Sn**	**09 02 51.8**	**-5.9**
STKI	**Sintang**	**13.19**	**309**	P	**Pn**	**09 00 43.2**	**+4.1**
CISI	**Cisompet, Garu**	**13.79**	**272**	P	**Pn**	**09 00 50.9**	**+3.5**
MYLDM	**Lahad Datu**	**13.81**	**346**	⇓P	**P**	**09 00 51.5**	**-4.4**
LEM	**Lembang**	**14.06**	**275**	P	**P**	**09 00 57.7**	**-1.1**
	3.5nm,0.3s,baz=139,slow=19,SNR=6.1						
LEM				LR	LR	09 06 41.3	
	comp=Z,7μm,21.3s,baz=76,slow=39						
LEM	**Lembang**	**14.06**	**275**	P	**P**	**09 01 01.1**	**+2.3**
RKPI	**Ransiki, Papua**	**14.14**	**62**	P	**P**	**09 01 02.0**	**+2.4**
SBUM	**Sibu**	**14.31**	**318**	⇓P	**P**	**09 00 59.9**	**-1.5**
CNJI	**Cibinong**	**14.49**	**273**	P	P	09 01 13.2	+10
CBJI	**Citeko**	**14.87**	**276**	P	**P**	**09 01 09.2**	**+1.6**
KSM	**Kuching**	**14.98**	**310**	⇓P	**P**	**09 01 08.9**	**0.0**
KSM	**Kuching**	**14.98**	**310**	*e*Pn	**Pn**	**09 01 04.6**	**+1.0**
KSM				*e*Sn	**Sn**	**09 03 47.6**	**-1.4**
KKM	**Kota Kinabalu**	**15.31**	**339**	⇑P	**P**	**09 01 11.5**	**-1.2**
DAV	**Davao City (W)**	**15.79**	**14**	LR	LR	09 09 00.3	
	comp=Z,1μm,18.2s,baz=198,slow=44						
CGJI	**Cibinong**	**15.98**	**275**	P	**P**	**09 01 20.7**	**+0.7**
WR1	**Warramunga Arr**	**16.80**	**135**	*e*Pn	**Pn**	**09 01 24.7**	**-2.4**
	75nm,0.9s						
WR1				*e*Sn	**Sn**	**09 04 23.6**	**-10**
WRA	**Warramunga Arr**	**16.80**	**135**	P	**Pn**	**09 01 24.7**	**-2.4**
	3.4nm,0.3s,baz=307,slow=15,SNR=108						
WRA				S	**Sn**	**09 04 23.6**	**-10**
	3.8nm,0.3s,baz=307,slow=23,SNR=19						
WRA				LR	LR	09 09 11.4	
	comp=Z,6μm,18.1s,baz=305,slow=41						
WRAB	**Tennant Creek**	**16.80**	**135**	*ce*P	**Pn**	**09 01 25.3**	**-1.8**
WRAB				pmax	pmax		
	comp=Z,86nm,0.6s						
WRAB	**Tennant Creek**	**16.80**	**135**	*e*Pn	**Pn**	**09 01 26.3**	**-0.7**
	comp=Z,59nm,0.7s						
WRAB				*e*Sn	**Sn**	**09 04 25.4**	**-7.8**
WB2	**Warramunga Arr**	**16.81**	**135**	*e*Pn	**Pn**	**09 01 25.8**	**-1.3**
	comp=Z,62nm,0.7s						
WB2				*e*Sn	**Sn**	**09 04 25.6**	**-7.7**
KLI	**Kotabumi**	**17.10**	**281**	P	**P**	**09 01 36.0**	**+3.6**
	comp=Z,101nm,0.8s						
KASI	**Kota Agung**	**17.32**	**278**	P	P	09 01 43.0	+8.2
LHSI	**Lahat**	**18.63**	**283**	P	**Pn**	**09 01 53.7**	**+3.9**
	comp=Z,161nm,1.0s						
AS31	**Alice Springs**	**19.19**	**144**	*e*P	**Pn**	**09 01 57.2**	**+0.7**
	comp=Z,34nm,0.6s						
AS31				*es*Sn	**Sn**	**09 05 22.5**	**-8.6**
ASAR	**Alice Springs**	**19.20**	**144**	P	**Pn**	**09 01 56.5**	**0.0**
	comp=Z,2.5nm,0.3s,baz=319,slow=10,SNR=129						
ASAR				S	Sn	09 05 20.3	-11
	comp=Z,0.8nm,0.3s,baz=319,slow=22,SNR=7.5						
ASAR				LR	LR	09 09 11.9	
	comp=Z,2μm,20.0s,baz=317,slow=36						
AS01	**Alice Springs**	**19.22**	**144**	*e*P	**Pn**	**09 01 57.3**	**+0.5**
AS01				*es*Sn	**Sn**	**09 05 22.6**	**-9.1**
GENI	**Genyem**	**19.23**	**74**	P	**Pn**	**09 02 02.3**	**+5.3**
JAY	**Jayapura**	**19.76**	**74**	P	**Pn**	**09 02 03.0**	**-0.4**
	comp=Z,0.1nm,0.3s,baz=95,slow=22,SNR=6.6						
JAY				LR	LR	09 12 49.2	
	comp=Z,50nm,18.8

YHNB	**Yeheng**	**32.82**	**359**	*e*P	**P**	**09 04 05.1**	**+0.1**
	comp=Z,59nm,0.9s						
QZH	**Quanzhou**	**33.23**	**355**	P	**P**	**09 04 03.8**	**-4.7**
QZH				S	**S**	**09 09 22.0**	**-5.3**
UTTA	**Uttaradit**	**33.30**	**321**	P	**P**	**09 04 11.2**	**+1.9**
	comp=Z,11nm,0.9s,comp=Z,91nm						
LAMP	**Lampang**	**34.46**	**321**	P	**P**	**09 04 21.6**	**+2.2**
	comp=Z,15nm,1.1s						
CM01	**Chiang Mai Arr**	**34.81**	**320**	*e*P	**P**	**09 04 23.3**	**+0.9**
CMAR	**Chiang Mai Arr**	**34.85**	**320**	P	**P**	**09 04 23.4**	**+0.7**
	comp=Z,20nm,0.9s,baz=146,slow=6.7,SNR=46						
CMAR				PcP	**PcP**	**09 06 55.9**	**+0.2**
	comp=Z,2.4nm,0.5s,baz=160,slow=4.0,SNR=4.2						
CMAR				LR	LR	09 21 43.9	
	comp=Z,777nm,18.9s,baz=164,slow=42						
CMMT	**Chiang Mai**	**35.11**	**320**	P	**P**	**09 04 26.4**	**+1.4**
	comp=Z,75nm,1.1s,comp=Z,880nm						
CHTO	**Chiang Mai**	**35.11**	**320**	P	**P**	**09 04 26.5**	**+1.5**
	comp=Z,151nm,1.2s,comp=Z,3μm						
CHTO	**Chiang Mai**	**35.11**	**320**	*e*P	**P**	**09 04 25.9**	**+0.9**
CHTO				pmax	pmax		
	comp=Z,58nm,1.3s						
CHTO	**Chiang Mai**	**35.11**	**320**	*e*P	**P**	**09 04 25.8**	**+0.8**
	comp=Z,58nm,1.4s						
MHMT	**Maesarieng**	**35.30**	**318**	P	**P**	**09 04 28.4**	**+1.8**
	comp=Z,16nm,1.2s						
CRAI	**Chiangrai**	**35.32**	**324**	P	**P**	**09 04 28.4**	**+1.6**
	comp=Z,339nm,1.1s						
GYA	**Guiyang**	**37.56**	**338**⇑	*i*P	**P**	**09 04 47.0**	**+1.0**
GYA				PP	**PnPn**	**09 06 15.5**	**+2.6**
GYA				PcP	**PcP**	**09 07 06.0**	**+2.2**
GYA				S	**S**	**09 10 36.8**	**+2.7**
GYA				ScP	**ScP**	**09 10 51.3**	**+1.4**
GYA				ScS	**ScS**	**09 14 58.5**	**0.0**
GYA				pmax	pmax		
	comp=Z,20nm,0.9s						
GYA				pmax	pmax		
	comp=Z,140nm,5.8s						
GYA				LR	LR		
	comp=Z,920nm,17.4s						
GYA				LR	LR		
	comp=Z,850nm,18.0s						
GYA				LR	LR		
	comp=Z,850nm,17.6s						
KMI	**Kunming**	**38.06**	**331**	P	**P**	**09 04 52.8**	**+2.5**
KMI				pP	pP	09 04 56.0	-1.4
KMI				sP	sP	09 04 59.3	-1.0
KMI				S	**S**	**09 10 47.8**	**+5.8**
KMI				sS	sS	09 10 53.0	-0.7
KMI				pmax	pmax		
	comp=Z,40nm,1.1s						
KMI				pmax	pmax		
	comp=Z,690nm,8.0s						
KMI				LR	LR		
	comp=Z,280nm,22.5s						
KMI				LR	LR		
	comp=Z,710nm,18.1s						
WHN	**Wuhan**	**39.31**	**350**⇓	P	**P**	**09 05 01.5**	**+1.1**
WHN				sP	**sP**	**09 05 13.0**	**+2.6**
WHN				S	**S**	**09 11 06.0**	**+5.8**
WHN				pmax	pmax		
	comp=Z,200nm,1.0s						
WHN				LR	LR		
	comp=Z,1μm,12.3s						
ENH	**Enshi**	**40.15**	**343**	*e*P	**P**	**09 05 08.5**	**+0.9**
	comp=Z,53nm,0.8s						
NJ2	**Nanjing**	**40.26**	**356**	*e*P	**P**	**09 05 10.0**	**+1.6**
NJ2				pmax	pmax		
	comp=Z,54nm,0.9s						
CD2	**Chengdu**	**42.66**	**337**	P	**P**	**09 05 28.8**	**+0.6**
CD2				sP	pP	09 05 35.3	0.0
CD2				PP	**PP**	**09 07 08.0**	**+0.6**
CD2				S	**S**	**09 11 52.8**	**+2.5**
CD2				sS	sS	09 12 00.5	-1.5
CD2				pmax	pmax		
	comp=Z,160nm,1.0s						
CD2				pmax	pmax		
	comp=Z,840nm,8.0s						
CD2				LR	LR		
	comp=Z,1μm,14.4s						
CD2				LR	LR		
	comp=Z,680nm,14.4s						
XAN	**Xi'an**	**43.87**	**345**	P	**P**	**09 05 37.3**	**-0.6**
XAN				S	**S**	**09 12 08.0**	**+0.2**
XAN				pmax	pmax		
	comp=Z,52nm,0.8s						
XAN				pmax	pmax		
	comp=Z,420nm,7.2s						
XAN				LR	LR		
	comp=Z,590nm,15.9s						
XAN				LR	LR		
	comp=Z,370nm,15.1s						
XAN				LR	LR		
	comp=Z,640nm,16.3s						
TIA	**Tai'an**	**44.53**	**355**	*e*P	**P**	**09 05 42.5**	**-0.6**
TIA				pmax	pmax		
	comp=Z,20nm,0.8s						
DZM	**Mont Dzumac**	**45.09**	**113**	*e*S	**S**	**09 12 22.9**	**-3.3**
	comp=Z,776nm,32.5s						
DZM				*e*LR	LR	09 18 39.1	
	comp=Z,2μm,34.9s						
KS15	**Wonju Array Si**	**45.91**	**7**	*e*P	**P**	**09 05 55.0**	**+1.0**
KSRS	**Korea Array**	**45.93**	**7**	P	**P**	**09 05 54.2**	**+0.1**
	comp=Z,3.2nm,0.8s,baz=173,slow=11,SNR=13						
KSRS				LR	LR	09 26 09.1	
	comp=Z,185nm,20.3s,baz=198,slow=37						
KS01	**Wonju Array Si**	**45.95**	**7**	*e*P	**P**	**09 05 54.3**	**0.0**
TIY	**Taiyuan**	**46.63**	**350**	*e*P	**P**	**09 06 00.5**	**+0.7**
TIY				S	**S**	**09 12 46.8**	**-1.0**
TIY				pmax	pmax		
	comp=Z,23nm,0.5s						
TIY				pmax	pmax		
	comp=Z,350nm,11.9s						
TIY				LR	LR		
	comp=Z,240nm,5.1s						
TIY				LR	LR		
	comp=Z,190nm,6.3s						
TIY				LR	LR		
	comp=Z,250nm,6.3s						
DL2	**Dalian**	**47.01**	**360**	P	**P**	**09 06 01.8**	**-0.8**
DL2				S	**S**	**09 12 51.8**	**-1.1**
DL2				pmax	pmax		
	comp=Z,35nm,0.7s						
DL2				pmax	pmax		
	comp=Z,340nm,8.0s						
DL2				LR	LR		
	comp=Z,410nm,17.1s						
DL2				LR	LR		
	comp=Z,380nm,20.6s						
MAJO	**Matsushiro**	**47.26**	**18***c*	*i*P	**P**	**09 06 04.0**	**-0.7**
MAJO				pmax	pmax		
	comp=Z,116nm,0.9s						
MAJO	**Matsushiro**	**47.26**	**18**	*e*P	**P**	**09 06 04.3**	**-0.4**
	comp=Z,23nm,0.9s						
MAT	**Matsushiro**	**47.26**	**18**	P	**P**	**09 06 04.0**	**-0.7**
MAT				S	**S**	**09 12 56.2**	**-0.5**
MJAR	**Matsushiro Arr**	**47.26**	**18**	P	**P**	**09 06 03.4**	**-1.3**
	comp=Z,21nm,0.9s,baz=192,slow=8.3,SNR=41						
MJAR				PcP	**PcP**	**09 07 35.0**	**-0.7**
	comp=Z,4.5nm,0.8s,baz=186,slow=3.9,SNR=4.4						
MJB9	**Matsu-Tunnel**	**47.27**	**18**	*e*P	**P**	**09 06 04.5**	**-0.2**
	comp=Z,6.1nm,1.0s						
LZH	**Lanzhou**	**47.29**	**340**	⇑P	**P**	**09 06 06.5**	**+1.4**
LZH				pP	pP	09 06 10.5	-1.8
LZH				sP	sP	09 06 12.5	-2.6
LZH				PP	**PP**	**09 07 57.0**	**+0.5**
LZH				*e*S	**S**	**09 12 53.0**	**-4.4**
LZH				pmax	pmax		
	comp=Z,250nm,1.8s						
LZH				pmax	pmax		
	comp=Z,730nm,7.2s						
LZH				LR	LR		
	comp=Z,450nm,12.9s						
LZH				LR	LR		
	comp=Z,950nm,15.3s						
LZH				LR	LR		
	comp=Z,860nm,13.2s						
LSA	**Lhasa**	**47.91**	**323**	P	**P**	**09 06 11.5**	**+1.1**
LSA				pP	**pP**	**09 06 17.0**	**-0.6**
LSA				PP	**PP**	**09 07 59.3**	**-3.3**
LSA				S	**S**	**09 13 04.0**	**-3.1**
LSA				pmax	pmax		
	comp=Z,89nm,1.2s						
LSA				LR	LR		
	comp=Z,380nm,28.1s						
LSA				LR	LR		
	comp=Z,2μm,30.2s						
LSA				LR	LR		
	comp=Z,1μm,21.6s						
LSA	**Lhasa**	**47.91**	**323**	*e*P	**P**	**09 06 11.5**	**+1.1**
LSA				pmax	pmax		
	comp=Z,64nm,0.9s						
LSA	**Lhasa**	**47.91**	**323**	*e*P	**P**	**09 06 11.5**	**+1.1**
	comp=Z,64nm,0.9s						
BJT	**Baijiatuau**	**48.39**	**354**	*e*P	**P**	**09 06 13.4**	**+0.1**
BJT				pmax	pmax		
	comp=Z,35nm,0.7s						
BJT	**Baijiatuau**	**48.39**	**354**	*e*P	**P**	**09 06 13.4**	**+0.1**
	comp=Z,35nm,0.7s						
BJI	**Beijing**	**48.41**	**354**	P	**P**	**09 06 13.5**	**0.0**
BJI				PP	**PP**	**09 08 08.3**	**+1.9**
BJI				S	**S**	**09 13 12.8**	**0.0**
BJI				pmax	pmax		
	comp=Z,36nm,0.9s						
BJI				pmax	pmax		
	comp=Z,360nm,4.8s						
BJI				LR	LR		
	comp=Z,390nm,13.5s						
BJI				LR	LR		
	comp=Z,460nm,13.5s						
BJI				LR	LR		
	comp=Z,320nm,21.7s						
HYB	**Hyderabad**	**49.74**	**301**	*i*P	**P**	**09 06 23.0**	**-1.1**
HHC	**Hu-ho-hao-te**	**49.84**	**350**	*e*P	**P**	**09 06 26.5**	**+2.0**
HHC				S	**S**	**09 13 38.5**	**+5.4**
HHC				pmax	pmax		
	comp=Z,20nm,1.1s						
HHC				pmax	pmax		
	comp=Z,440nm,6.3s						
HHC				LR	LR		
	comp=Z,1μm,15.4s						
HHC				LR	LR		
	comp=Z,1μm,15.9s						
HHC				LR	LR		
	comp=Z,1μm,15.2s						
GUN	**Gumba**	**50.00**	**317**	*e*P	**P**	**09 06 25.9**	**-0.4**
	comp=Z,156nm,0.6s						
PKIN	**Phulchoki**	**50.11**	**317**	*e*P	**P**	**09 06 26.3**	**-0.7**
	comp=Z,33nm,0.7s						
KKN	**Kakani**	**50.32**	**317**	*e*P	**P**	**09 06 28.1**	**-0.5**
	comp=Z,71nm,0.8s						
DMN	**Daman**	**50.33**	**317**	*e*P	**P**	**09 06 28.1**	**-0.6**
	comp=Z,104nm,0.9s						
GKN	**Gorkha**	**50.90**	**317**	*e*P	**P**	**09 06 31.9**	**-1.0**
	comp=Z,108nm,0.9s						
KOLN	**Koldanda**	**51.46**	**316**	*e*P	**P**	**09 06 36.8**	**-0.4**
	comp=Z,59nm,0.7s						
GTA	**Gaotai**	**51.68**	**338**	P	**P**	**09 06 38.8**	**+0.3**
GTA				pP	pP	09 06 43.0	-2.8
GTA				sP	sP	09 06 46.3	-2.3
GTA				S	**S**	**09 13 58.3**	**-0.4**
GTA				sS	sS	09 14 05.5	-5.2
GTA				SS	**SS**	**09 17 33.3**	**-2.2**
GTA				pmax	pmax		
	comp=Z,41nm,1.1s						
GTA				pmax	pmax		
	comp=Z,520nm,6.7s						
GTA				LR	LR		
	comp=Z,350nm,18.1s						
GTA				LR	LR		
	comp=Z,320nm,16.9s						
GTA				LR	LR		
	comp=Z,380nm,20.4s						
CN2	**Changchun**	**52.01**	**3**	*e*P	**P**	**09 06 44.5**	**+3.8**
CN2				*e*sP	sP	09 06 51.5	+0.7
CN2				*e*S	**S**	**09 14 07.0**	**+4.2**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.7s						
CN2				pmax	pmax		
	comp=Z,200nm,6.0s						
CN2				LR	LR		
	comp=Z,600nm,20.0s						
CN2				LR	LR		
	comp=Z,500nm,20.0s						
CN2				LR	LR		
	comp=Z,300nm,22.0s						
VLA	**Vladivostok**	**52.05**	**9**⇑	*e*P	**P**	**09 06 41.4**	**+0.4**
VLA				pmax	pmax		
	comp=Z,36nm,1.2s						
PYUN	**Piuthan**	**52.09**	**316**	*e*P	**P**	**09 06 40.8**	**-1.0**
	comp=Z,116nm,0.9s						
USRK	**Ussuriysk Ar.**	**53.12**	**9**	P	**P**	**09 06 48.0**	**-0.8**
	comp=Z,8.1nm,0.7s,baz=185,slow=6.7,SNR=19						
USRK				LR	LR	09 30 20.6	
	comp=Z,134nm,20.1s,baz=182,slow=37						
MDJ	**Mudanjiang**	**53.19**	**7**	P	**P**	**09 06 51.3**	**+1.9**
MDJ				pP	pP	09 06 54.5	-2.2
MDJ				sP	sP	09 06 55.8	-3.8
MDJ				PcP	**PcP**	**09 07 54.5**	**-2.8**
MDJ				PP	**PP**	**09 08 51.3**	**+1.5**
MDJ				S	**S**	**09 14 19.5**	**+0.5**
MDJ				ScS	**ScS**	**09 16 37.5**	**-0.1**
MDJ				pmax	pmax		
	comp=Z,25nm,0.8s						
MDJ				pmax	pmax		
	comp=Z,240nm,6.4s						
MDJ				LR	LR		
	comp=Z,210nm,18.6s						
MDJ				LR	LR		
	comp=Z,150nm,14.6s						
MDJ				LR	LR		
	comp=Z,260nm,20.1s						
MDJ	**Mudanjiang**	**53.19**	**7**	*e*P	**P**	**09 06 49.9**	**+0.5**
	comp=Z,42nm,1.1s						
WHZ	**Wether Hill Ro**	**54.46**	**142**	*e*P	**P**	**09 07 00.1**	**+1.3**
	comp=Z,37nm,1.0s						
RPZ	**Rata Peaks**	**55.47**	**138**	P	**P**	**09 07 06.4**	**+0.2**
	comp=Z,58nm,0.7s,baz=223,slow=3.9,SNR=29						
THZ	**Tophouse**	**55.97**	**135**	*e*P	**P**	**09 07 11.5**	**+1.7**
	comp=Z,239nm,1.6s						
OXZ	**Oxford**	**55.97**	**137**	*e*P	**P**	**09 07 11.4**	**+1.6**
	comp=Z,44nm,0.9s						
HIA	**Hailar**	**57.39**	**358**	*e*P	**P**	**09 07 20.2**	**+0.5**
HIA				pmax	pmax		
	comp=Z,26nm,0.9s						
HIA	**Hailar**	**57.39**	**358**	*e*P	**P**	**09 07 20.2**	**+0.5**
	comp=Z,26nm,0.9s						
ULN	**Ulaanbaatar**	**57.45**	**348**⇓	*i*P	**P**	**09 07 20.2**	**-0.1**
ULN				pmax	pmax		
	comp=Z,68nm,1.0s						
ULN	**Ulaanbaatar**	**57.45**	**348**	*e*P	**P**	**09 07 20.1**	**-0.1**
	comp=Z,74nm,1.0s						
SONA0	**Songino Array**	**57.56**	**348**	*e*P	**P**	**09 07 20.7**	**-0.3**
	comp=Z,79nm,1.0s						
SONM	**Songino Array**	**57.56**	**348**	P	**P**	**09 07 20.7**	**-0.3**
	comp=Z,48nm,0.9s,baz=165,slow=6.1,SNR=149						
SONA1	**Songino Array**	**57.57**	**348**	*e*P	**P**	**09 07 20.4**	**-0.7**
BKZ	**Black Stump Fm**	**57.70**	**131**	*e*P	**P**	**09 07 23.6**	**+1.4**
	comp=Z,39nm,0.8s						
HABR	**Khabarovsk**	**57.78**	**10**	*e*P	**P**	**09 07 19.9**	**-2.5**
HABR				*e**SP	**pP**	**09 07 28.9**	**-0.8**
HABR				*e*		09 08 12.7	
HABR				*e*		09 09 28.0	
HABR				*e*S	**S**	**09 15 18.2**	**-1.9**
HABR				*e**SS	**sS**	**09 15 29.2**	**-3.1**
HABR				*e*		09 17 08.4	
HABR				*e*SS	**SS**	**09 19 10.6**	**-0.6**
HABR				pmax	pmax		
	comp=E,67nm,2.4s						
HABR				pmax	pmax		
	comp=N,43nm,2.4s						
HABR				pmax	pmax		
	comp=Z,39nm,2.4s						
HABR				MLR	MLR		
	comp=Z,80nm,18.0s						
URZ	**Urewera**	**57.91**	**130**	P	**P**	**09 07 23.6**	**+0.1**
	comp=Z,26nm,0.8s,baz=32,slow=18,SNR=4.7						
KLR	**Kul'dur**	**58.00**	**8**⇓	*i*P	**P**	**09 07 23.7**	**-0.2**
YSS	**Yuzh-Sakhalins**	**58.16**	**17**⇑	*e*P	**P**	**09 07 24.7**	**-0.3**
YSS				*e*		09 09 33.0	
YSS				*e*S	**S**	**09 15 19.9**	**-5.2**
YSS				*e*SS	**SS**	**09 19 18.0**	**+0.9**
YSS				pmax	pmax		
	comp=Z,20nm,1.2s						
YSS				pmax	pmax		
	comp=Z,400nm,6.3s						
YSS				MLR	MLR		
	comp=Z,200nm,19.0s						
YSS	**Yuzh-Sakhalins**	**58.16**	**17**	*e*P	**P**	**09 07 25.5**	**+0.5**
	comp=Z,58nm,1.4s						
KUR	**Kuril'sk**	**58.29**	**21***d*	*i*P	**P**	**09 07 29.3**	**+3.3**
KUR				*e*S	**S**	**09 15 30.7**	**+3.8**
CASY	**Casey**	**58.36**	**185**	*e*P	**P**	**09 07 27.0**	**+0.8**
	comp=Z,58nm,1.8s						
WMQ	**Urumqi**	**60.38**	**332**⇑	*i*P	**P**	**09 07 41.5**	**+0.9**
WMQ				pP	pP	09 07 45.3	-2.7
WMQ				sP	sP	09 07 51.3	+0.5
WMQ				S	**S**	**09 15 54.3**	**0.0**
WMQ				SS	**SS**	**09 19 49.3**	**-3.2**
WMQ				pmax	pmax		
	comp=Z,23nm,1.0s						
WMQ				pmax	pmax		
	comp=Z,280nm,7.0s						
WMQ				LR	LR		
	comp=Z,190nm,18.4s						
WMQ				LR	LR		
	comp=Z,150nm,23.6s						
WMQ				LR	LR		
	comp=Z,130nm,23.6s						
ZAK	**Zakamensk**	**60.64**	**347**	*e*P	**P**	**09 07 41.2**	**-1.1**
ZAK				pmax	pmax		
	comp=Z,41nm,1.2s						
TYV	**Tymovskoe**	**61.70**	**15**	*e*P	**P**	**09 07 51.0**	**+1.7**
TYV				pmax	pmax		
	comp=Z,44nm,1.0s						
TYV				pmax	pmax		
	comp=Z,22nm,0.8s						
TLY	**Talaya**	**61.78**	**347**	*e*P	**P**	**09 07 49.9**	**0.0**
TLY				*e*S	**S**	**09 16 13.5**	**+1.9**
TLY				pmax	pmax		
	comp=Z,109nm,1.8s						
TLY	**Talaya**	**61.78**	**347**	*e*P	**P**	**09 07 49.9**	**0.0**
	comp=Z,56nm,1.0s						
IRK	**Irkutsk**	**62.18**	**348**	*e*P	**P**	**09 07 52.1**	**-0.4**
IRK				pmax	pmax		
	comp=Z,82nm,1.7s						
MOY	**Mondy**	**62.38**	**346**	*e*P	**P**	**09 07 53.8**	**-0.2**
MOY				pmax	pmax		
	comp=Z,101nm,1.8s						
NKL	**Nikolayevsk**	**63.35**	**13**	*e*P	**P**	**09 08 00.5**	**+0.3**
NKL				*e*		09 16 34.0	
NKL				*e*		09 17 52.0	
NKL				pmax	pmax		
	comp=E,22nm,1.0s						
NKL				pmax	pmax		
	comp=Z,110nm,1.0s						
NKL				pmax	pmax		
	comp=N,350nm,6.0s						
NKL				pmax	pmax		
	comp=Z,500nm,6.0s						
KSH	**Kashi**	**63.72**	**322**	*e*P	**P**	**09 08 02.3**	**-0.9**
KSH				*e*pP	pP	09 08 06.5	-4.1
KSH				*e*PcP	**PcP**	**09 08 39.5**	**+0.3**
KSH				PcS		09 12 42.0	
KSH				S	**S**	**09 16 32.0**	**-4.6**
KSH				ScS	**SKSac**	**09 17 51.0**	**-4.6**
KSH				SS	**SS**	**09 20 42.0**	**-3.0**
KSH				pmax	pmax		
	comp=Z,13nm,0.7s						
KSH				pmax	pmax		
	comp=Z,340nm,6.9s						
KSH				LR	LR		
	comp=Z,370nm,10.3s						
KSH				LR	LR		
	comp=Z,300nm,14.8s						
KSH				LR	LR		
	comp=Z,430nm,16.9s						
PDGK	**Podgornoye**	**64.14**	**327**	P	**P**	**09 08 05.1**	**-0.6**
PDGK				pmax	pmax		
	comp=Z,23nm,1.3s						
MK01	**Makanchi Array**	**65.12**	**331**	*e*P	**P**	**09 08 10.5**	**-1.6**
MK31	**Makanchi Array**	**65.14**	**331**	*i*P	**P**	**09 08 11.8**	**-0.4**
MK31				pmax	pmax		
	comp=Z,43nm,0.9s						
MK31	**Makanchi Array**	**65.14**	**331**	*e*P	**P**	**09 08 11.5**	**-0.8**
MK32	**Makanchi Array**	**65.14**	**331**	*e*P	**P**	**09 08 11.0**	**-1.3**
MKAR	**Makanchi Array**	**65.14**	**331**	P	**P**	**09 08 11.0**	**-1.2**
	comp=Z,26nm,0.7s,baz=144,slow=6.7,SNR=72						
MKAR	**Makanchi Array**	**65.14**	**331**	*e*P	**P**	**09 08 11.1**	**-1.2**
MKAR	**Makanchi Array**	**65.14**	**331**	*e*P	**P**	**09 08 11.1**	**-1.2**
MAKZ	**Makanchi**	**65.30**	**331**	*e*P	**P**	**09 08 13.1**	**-0.1**
MAKZ				pmax	pmax		
	comp=Z,35nm,1.2s						
MAKZ	**Makanchi**	**65.30**	**331**	*e*P	**P**	**09 08 13.1**	**-0.1**
	comp=Z,35nm,1.2s						
KBL	**Kabul**	**65.55**	**314**	*e*P	**P**	**09 08 14.0**	**-1.4**
KBL				pmax	pmax		
	comp=Z,14nm,0.8s						
KBL	**Kabul**	**65.55**	**314**	*e*P	**P**	**09 08 14.0**	**-1.4**
	comp=Z,14nm,0.8s						
TKM2	**Tokmak 2**	**66.05**	**325**	*e*P	**P**	**09 08 17.6**	**-0.8**
TKM2				pmax	pmax		
	comp=Z,10.0nm,1.4s						
TKM2	**Tokmak 2**	**66.05**	**325**	*e*P	**P**	**09 08 17.6**	**-0.8**
	comp=Z,10nm,1.4s						
BOD	**Bodaibo**	**66.24**	**356**	*e*P	**P**	**09 08 18.4**	**-0.6**
BOD				pmax	pmax		
	comp=Z,45nm,1.1s						
AAK	**Ala-Archa**	**66.51**	**324**⇑	*i*P	**P**	**09 08 21.7**	**+0.4**
AAK				pmax	pmax		
	comp=Z,20nm,0.9s						
AAK	**Ala-Archa**	**66.51**	**324**	*e*P	**P**	**09 08 20.9**	**-0.4**
	comp=Z,9.4nm,0.9s						
FRU	**Bishkek**	**66.56**	**324**	P	**P**	**09 08 21.0**	**-0.5**
FRU				*e*		09 08 45.5	
EKS2	**Erkin-Say**	**66.94**	**323**	*e*P	**P**	**09 08 23.3**	**-0.8**
EKS2				pmax	pmax		
	comp=Z,9.0nm,1.0s						
EKS2	**Erkin-Say**	**66.94**	**323**	*e*P	**P**	**09 08 23.3**	**-0.8**
	comp=Z,9.3nm,1.0s						
MNAS	**Manas**	**67.60**	**323**	P	**P**	**09 08 27.5**	**-0.7**
MNAS				pmax	pmax		
	comp=Z,13nm,1.1s						
PEA0	**Petropavlovsk-**	**68.43**	**22**	*e*P	**P**	**09 08 33.5**	**+0.4**
PETK	**Petropavlovsk-**	**68.43**	**22**	P	**P**	**09 08 33.8**	**+0.7**
	comp=Z,20nm,1.1s,baz=211,slow=1.7,SNR=6.7						
PETK				LR	LR	09 39 34.5	
	comp=Z,72nm,20.3s,baz=229,slow=37						
PEA1	**Petropavlovsk-**	**68.43**	**22**	*e*P	**P**	**09 08 33.8**	**+0.7**
PET	**Petropavlovsk**	**68.72**	**23**	*e*P	**P**	**09 08 36.1**	**+1.3**
PET				*e*S	**S**	**09 17 39.9**	**+3.3**
PET				*e*SS	**SS**	**09 22 07.1**	**+5.2**
PET				pmax	pmax		
	comp=Z,300nm,7.0s						
PET				pmax	pmax		
	comp=Z,500nm,7.7s						
PET				MLR	MLR		
	comp=Z,200nm,17.0s						
ZAA0	**Zalesovo Array**	**69.42**	**338**	*e*P	**P**	**09 08 38.0**	**-1.2**
ZALV	**Zalesovo Beam**	**69.42**	**338**	P	**P**	**09 08 37.8**	**-1.4**
	comp=Z,23nm,0.7s,baz=141,slow=4.1,SNR=24						
ZALV				PKP2bc		09 36 48.4	
	comp=Z,0.9nm,0.5s,baz=335,slow=6.6,SNR=5.4						
ZAA1	**Zalesovo Array**	**69.43**	**338**	*e*P	**P**	**09 08 37.8**	**-1.4**
KURK	**Kurchatov**	**69.63**	**332**⇑	*i*P	**P**	**09 08 40.9**	**+0.4**
KURK				pmax	pmax		
	comp=Z,85nm,1.3s						
YAK	**Yakutsk**	**70.44**	**4**	*e*P	**P**	**09 08 44.7**	**-0.5**
YAK				*e*		09 09 05.6	
YAK				*e*S	**S**	**09 17 57.1**	**+0.6**
YAK				*e*		09 18 46.8	
YAK				*e*SS	**SS**	**09 22 21.4**	**-6.6**
YAK				pmax	pmax		
	comp=Z,63nm,0.9s						
YAK				pmax	pmax		
	comp=E,5.0nm,1.0s						
YAK				pmax	pmax		
	comp=N,26nm,1.1s						
YAK				pmax	pmax		
	comp=Z,168nm,5.1s						
YAK				pmax	pmax		
	comp=N,84nm,4.4s						
YAK				pmax	pmax		
	comp=E,105nm,4.3s						
YAK				smax	smax		
	comp=E,187nm,5.7s						
YAK				smax	smax		
	comp=N,101nm,4.6s						
YAK				MLR	MLR		
	comp=Z,109nm,22.0s						
YAK				MLR	MLR		
	comp=N,63nm,21.0s						
YAK				MLR	MLR		
	comp=E,66nm,18.0s						
NVS	**Novosibirsk**	**70.70**	**338**	*e*P	**P**	**09 08 45.2**	**-1.8**
NVS				pmax	pmax		
	comp=Z,15nm,1.0s						

NVS pmax pmax
comp=N,7.0nm,0.9s
NVS pmax pmax
comp=E,9.0nm,1.0s
OTUK Ortayu 71.13 328 P **P 09 08 49.2 -0.6**
OTUK pmax pmax
comp=Z,19nm,0.9s
MA2 Magadan 71.57 15 *i* P **P 09 08 53.8 +1.6**
VNDA Vanda 72.22 172 P **P 09 08 56.4 +0.5**
comp=Z,14nm,0.6s,baz=314,slow=7.1,SNR=97
VNDA LR LR 09 41 52.6
comp=Z,568nm,18.0s,baz=331,slow=37
VNDA Vanda 72.22 172 *e*P **P 09 08 57.0 +1.1**
VNDA pmax pmax
comp=Z,16nm,0.7s
VNDA Vanda 72.22 172 *e*P **P 09 08 56.8 +0.9**
comp=Z,16nm,0.7s
OPO Ambohidratompo 72.78 253 P **P 09 09 00.9 +0.3**
comp=Z,12nm,0.9s,baz=60,slow=3.7,SNR=9.8
SBA Scott Base 73.20 171 *e*P **P 09 09 03.5 +1.8**
SBA pmax pmax
comp=Z,20nm,1.0s
SBA Scott Base 73.20 171 *e*P **P 09 09 03.3 +1.6**
comp=Z,20nm,0.9s
SEY Seymchan 74.86 14⇑ *i*P **P 09 09 12.7 +1.2**
GEYT Alibeck 74.95 313 P **P 09 09 12.2 -0.5**
comp=Z,1.8nm,0.3s,baz=186,slow=5.4,SNR=6.8
GEYT LR LR 09 47 45.1
comp=Z,181nm,18.9s,baz=120,slow=40
BVAR Borovoye Array 75.01 331 LR LR 09 46 40.0
comp=Z,392nm,19.6s,baz=87,slow=39
BRVK Borovoye 75.08 331⇑ *i*P **P 09 09 12.1 -0.9**
BRVK pmax pmax
comp=Z,15nm,1.3s
BRVK Borovoye 75.08 331 *e*P **P 09 09 12.4 -0.6**
comp=Z,11nm,0.6s
CHKZ Chkalovo 75.30 331 P **P 09 09 12.3 -1.9**
CHKZ pmax pmax
comp=Z,5.0nm,0.6s
ZRNK Zerenda 75.64 330 *e*P **P 09 09 14.8 -1.5**
ZRNK pmax pmax
comp=Z,12nm,0.8s
ZRNK Zerenda 75.64 330 *e*P **P 09 09 14.8 -1.5**
comp=Z,12nm,0.8s
AB31 Akbulak array 78.60 324 *i*P **P 09 09 30.8 -2.1**
AB31 pmax pmax
comp=Z,2.0nm,0.6s
ABKAR Akbulak array 78.60 324 *e*P **P 09 09 32.6 -0.3**
SYO Syowa Base 79.43 201⇑ *e*P **P 09 09 36.6 -0.6**
TIXI Tiksi 79.97 2*c i*P **P 09 09 38.8 -1.1**
TIXI pmax pmax
comp=Z,31nm,1.0s
TIXI Tiksi 79.97 2 *e*P **P 09 09 38.5 -1.4**
comp=Z,29nm,0.9s
NRIK Noril'sk 81.04 348 P **P 09 09 44.9 -0.8**
comp=Z,6.8nm,0.8s,baz=122,slow=4.6,SNR=5.6
QSPA South Pole Qui 81.64 180 *e*P **P 09 09 50.9 +1.6**
BILL Bilibino 82.44 15*c e*P **P 09 09 55.2 +2.0**
BILL *i* 09 10 02.7
BILL pmax pmax
comp=Z,4.0nm,0.9s
BILL MLR MLR
comp=Z,175nm,23.0s
KMBO Kilima Mbogo 84.36 270 P **P 09 10 03.5 -1.1**
comp=Z,6.2nm,0.9s,baz=60,slow=5.3,SNR=14
KMBO LR LR 09 41 59.2
comp=Z,291nm,21.4s,baz=94,slow=32
KMBO Kilima Mbogo 84.36 270 *e*P **P 09 10 03.5 -1.1**
KMBO pmax pmax
comp=Z,11nm,1.0s
KMBO Kilima Mbogo 84.36 270 *e*P **P 09 10 03.5 -1.1**
comp=Z,11nm,1.0s
TBI Tubuai 85.67 113 *e*S S 09 20 30.9 -11
comp=Z,353nm,28.0s
TBI Tubuai 85.67 113 *e*LR LR 09 37 13.4
comp=Z,565nm,34.0s
PPT2 Papeete2 86.30 107 *e*LR LR 09 37 41.5
comp=Z,2μm,38.0s
PPT Papeete 86.30 107 LR LR 09 45 34.9
comp=Z,118nm,21.4s,baz=267,slow=33
ZEI Tsey 86.78 314 *e*P **P 09 10 13.2 -2.7**
ZEI pmax pmax
comp=Z,13nm,0.6s
NCK Nalchik 87.17 315⇑ *e*P **P 09 10 19.2 +1.6**
KBZ Khabaz 87.72 315 P **P 09 10 19.3 -0.9**
comp=Z,3.8nm,0.9s,baz=80,slow=3.7,SNR=9.4
KBZ LR LR 09 58 31.3
comp=Z,126nm,18.9s,baz=94,slow=42
NVL N'lazarevskaya 88.59 198 *e*P P 09 10 19.2 -4.6
LSZ Lusaka 91.20 254 *e*P **P 09 10 37.4 +0.1**
LSZ pmax pmax
comp=Z,31nm,1.4s
LSZ Lusaka 91.20 254 *e*P **P 09 10 37.4 +0.1**
comp=Z,31nm,1.4s
BOSA Boshof 91.67 241 P **P 09 10 38.4 -0.9**
comp=Z,10nm,0.8s,baz=90,slow=3.8,SNR=9.4
BOSA LR LR 09 48 15.3
comp=Z,162nm,18.4s,baz=100,slow=33
SNAA Sanae 92.34 195 P **P 09 10 42.9 +1.5**
SNAA Sanae 92.34 195⇑ *i*P **P 09 10 42.9 +1.5**
SNAA pmax pmax
comp=Z,883nm,0.9s
SNAA Sanae 92.34 195 *e*P **P 09 10 42.7 +1.3**
comp=Z,16nm,0.9s
BR101 Keskin Array S 93.79 309 *e*P **P 09 10 46.4 -2.5**
BRTR Keskin Array B 93.79 309 P **P 09 10 46.4 -2.5**
comp=Z,1.5nm,0.9s,baz=98,slow=5.1,SNR=5.9
BRTR LR LR 09 59 29.7
comp=Z,124nm,19.5s,baz=99,slow=40
TTA Tatalina 93.86 27 *e*P **P 09 10 49.1 +0.6**
TTA pmax pmax
comp=Z,14nm,1.3s
TTA Tatalina 93.86 27 *e*P **P 09 10 49.1 +0.6**
comp=Z,14nm,1.4s
VNA2 Neumayer--Watz 93.96 195 P **P 09 10 50.8 +2.0**
baz=95,slow=4.0
OBN Obninsk 94.01 325⇓ *e*P **P 09 10 46.8 -2.4**
OBN pmax pmax
comp=Z,7.0nm,1.2s
VNA3 Neumayer Olymp 94.31 194 P **P 09 10 51.9 +1.5**
VNA1 Neumayer--Stat 94.36 195 P **P 09 10 52.5 +1.9**
BPAW Bear Paw Mtn. 96.26 26 *e*P **P 09 10 58.4 -0.9**
comp=Z,18nm,1.8s
TAOE Nuku Hiva Isla 96.68 100 *e*LR LR 09 42 16.2
comp=Z,386nm,23.9s
COLD Coldfoot 96.89 23 *e*P **P 09 11 02.2 +0.1**
comp=Z,6.3nm,1.1s
APA Apatity 97.00 337⇑ *i*P **P 09 11 02.3 -0.3**
APA *i* 09 14 55.0
APA *i* 09 21 38.0
APA *i* S **S 09 22 22.0 -1.7**
APA *i* PS **PS 09 23 49.0 +1.0**
MCK McKinley 97.13 27 *e*P **P 09 11 02.5 -0.8**
MCK pmax pmax
comp=Z,19nm,1.2s
MCK McKinley 97.13 27 *e*P **P 09 11 02.1 -1.2**
comp=Z,19nm,1.2s
RND Reindeer 97.14 27 *e*P **P 09 11 02.1 -1.3**
RND pmax pmax
comp=Z,14nm,1.0s
RND Reindeer 97.14 27 *e*P **P 09 11 02.1 -1.3**
comp=Z,14nm,1.0s
WRH Wood River Hil 97.55 26 *e*P **P 09 11 03.7 -1.5**
comp=Z,11nm,1.2s
CCB Clear Creek Bu 97.69 26 *e*P **P 09 11 04.4 -1.3**
comp=Z,11nm,1.2s
AKASG Malin Array Be 97.97 320 LR LR 10 04 04.8
comp=Z,154nm,18.5s,baz=45,slow=41
IL1 Eielson Array 98.08 26 *e*P **P 09 11 06.0 -1.5**
ILAR Eielson Array 98.08 26 P **P 09 11 05.5 -2.1**
comp=Z,1.6nm,1.0s,baz=266,slow=4.3,SNR=8.6
ILAR PP **PP 09 15 06.3 -0.5**
comp=Z,0.9nm,1.0s,baz=271,slow=6.6,SNR=6.0
ILAR PKKPbc **PKKPbc 09 27 41.0 -2.2**
comp=Z,1.2nm,0.8s,baz=114,slow=1.6,SNR=13
ILB Eielson Array 98.08 26 *e*P **P 09 11 05.5 -2.1**
PAX Paxson 98.66 27 *e*P **P 09 11 10.1 -0.2**
PAX pmax pmax
comp=Z,10.0nm,1.2s
PAX Paxson 98.66 27 *e*P **P 09 11 09.5 -0.8**
comp=Z,9.5nm,1.2s
RKT Rikitea 98.83 115 *e*LR LR 09 43 23.2
comp=Z,402nm,40.8s
FINES FINESS Array B 99.97 331 LR LR 10 02 46.6
comp=Z,319nm,18.7s,baz=102,slow=39
CLL Collm 108.15 321 *e*PP PP 09 16 13.0 -9.4
CLL *e*PS **PS 09 25 54.0 +7.5**
CLL *e*PPS PPS 09 26 54.0
YKA Yellowknife Ar 112.49 25 PKiKP **PKiKP 09 16 05.6 -1.4**
comp=Z,0.8nm,0.7s,baz=305,slow=1.8,SNR=19
YKA PKKPbc **PKKPbc 09 26 56.8 -2.1**
comp=Z,1.0nm,0.9s,baz=102,slow=2.4,SNR=13
J05D Fort Rock, OR 115.29 46 P **PKPdf 09 16 12.8 -0.5**
baz=283
BSMT Bassoo Peak 118.32 40 *e*PKPdf **PKPdf 09 16 20.1 +1.1**
NV01 Mina Array Sit 118.53 51 *e*PKPdf **PKPdf 09 16 19.8 0.0**
NVAR Mina Array Bea 118.53 51 PKP **PKPdf 09 16 20.4 +0.6**
comp=Z,1.5nm,0.8s,baz=285,slow=3.1,SNR=5.7
NVAR PKKPbc **PKKPbc 09 26 38.1 +0.6**
comp=Z,1.1nm,0.7s,baz=122,slow=5.5,SNR=6.4
MSO Missoula 119.22 41 P **PKPdf 09 16 19.8 -0.9**
baz=291
MSO Missoula 119.22 41 *e*PKPdf **PKPdf 09 16 21.4 +0.7**
HLID Hailey 120.00 44 P **PKPdf 09 16 22.3 -0.1**
baz=289
HLID Hailey 120.00 44 *e*PKPdf **PKPdf 09 16 23.1 +0.7**
ELK Elko 120.25 47 *e*PKIKP **PKPdf 09 16 23.5 +0.5**
ELK Elko 120.25 47 *e*PKPdf **PKPdf 09 16 20.2 -2.8**
R11A Troy Canyon, C 120.63 50 P **PKPdf 09 16 23.3 -0.4**
baz=285
TORD Torodi Ar. Bea 120.99 280 PKP **PKPdf 09 16 23.5 -1.3**
comp=Z,3.3nm,0.9s,baz=58,slow=2.0,SNR=15
TOA1 Torodi Ar. Sit 120.99 280 *e*PKPdf **PKPdf 09 16 23.5 -1.3**
BOZ Bozeman (W) 121.14 41 P **PKPdf 09 16 24.3 -0.2**
baz=292
BOZ Bozeman (W) 121.14 41 *e*PKIKP **PKPdf 09 16 24.4 -0.1**
BOZ Bozeman (W) 121.14 41 *e*PKPdf **PKPdf 09 16 24.4 -0.1**
FFC Flin Flon 122.17 28 *e*PKIKP **PKPdf 09 16 25.4 -0.6**
FFC Flin Flon 122.17 28 *e*PKPdf **PKPdf 09 16 25.4 -0.6**
REDW Red Top Meadow 122.50 43 *e*PKPdf **PKPdf 09 16 28.7 +1.4**
SNOW Snow King Moun 122.53 43 *e*PKPdf **PKPdf 09 16 27.5 +0.2**
LOHW Long Hollow 122.58 43 *e*PKPdf **PKPdf 09 16 27.4 0.0**
W13A Hualapai Mount 122.75 54 *e*PKPdf **PKPdf 09 16 28.5 +0.5**
LCMT Little Creek M 122.77 51 *e*PKPdf **PKPdf 09 16 29.4 +1.5**
BW06 Boulder Array 123.60 44 *e*PKPdf **PKPdf 09 16 28.6 -0.8**
PD31 Pinedale Array 123.60 44 *e*PKPdf **PKPdf 09 16 30.3 +0.9**
PDAR Pinedale Array 123.60 44 PKP **PKPdf 09 16 27.8 -1.6**
comp=Z,1.5nm,0.9s,baz=233,slow=0.7,SNR=8.5
PDAR PKKPbc **PKKPab 09 26 17.1 +0.1**
comp=Z,1.7nm,0.8s,baz=104,slow=3.7,SNR=14
TMUT Trail Mountain 123.63 48 *e*PKPdf **PKPdf 09 16 26.6 -3.1**
LAO LASA Array 124.12 38 P **PKPdf 09 16 30.7 +0.7**
baz=298
LAO LASA Array 124.12 38 *e*PKPdf **PKPdf 09 16 30.8 +0.7**
SRU San Rafael Swe 124.20 48 *e*PKIKP PKPdf 09 16 21.8 -8.8
DGMT Dagmar 124.46 35 *e*PKPdf **PKPdf 09 16 31.7 +1.1**
X16A Lo Mia Camp, P 124.87 54 *e*PKPdf **PKPdf 09 16 31.7 -0.3**
O20A White River Ci 125.50 46 P **PKPdf 09 16 33.7 +0.6**
baz=292
O20A White River Ci 125.50 46 *e*PKPdf **PKPdf 09 16 33.5 +0.5**
PV10 Paradox Valley 125.53 48 *e*PKPdf **PKPdf 09 16 33.1 -0.2**
K22A Casper 125.70 43 P **PKPdf 09 16 32.6 -0.7**
baz=295
A27A Ledoux Ranch, 125.86 34 P **PKPdf 09 16 33.8 +0.6**
baz=304
E25A Miller Ranch, 125.92 37 P **PKPdf 09 16 34.1 +0.6**
baz=300
PV01 Paradox Valley 125.96 49 *e*PKPdf **PKPdf 09 16 34.0 0.0**
F25A Bowman 126.17 38 P **PKPdf 09 16 33.9 -0.1**
baz=300
MVCO Mesa Verde 126.33 50 P **PKPdf 09 16 35.1 +0.3**
baz=289
MVCO Mesa Verde 126.33 50 *e*PKPdf **PKPdf 09 16 34.9 +0.1**
E26A Carlson Angus 126.49 37 P **PKPdf 09 16 34.6 0.0**
baz=301
G25A Newell 126.56 39 P **PKPdf 09 16 33.0 -1.8**
baz=299
B28A Dugan Ranch, T 126.63 34 P **PKPdf 09 16 34.8 +0.1**
baz=304
RSSD Black Hills 126.68 40 P **PKPdf 09 16 34.3 -0.9**
baz=298
RSSD Black Hills 126.68 40 *e*PKIKP **PKPdf 09 16 34.3 -0.9**
RSSD Black Hills 126.68 40 *e*PKPdf **PKPdf 09 16 34.3 -0.9**
F26A Lodgepole 126.68 38 P **PKPdf 09 16 35.0 0.0**
baz=300
I25A Rochford 126.92 40 P **PKPdf 09 16 34.9 -0.8**
baz=298
A29A Manning Farm, 126.97 33 P **PKPdf 09 16 34.6 -0.8**
baz=306
G26A Maurine 127.01 38 P **PKPdf 09 16 34.8 -0.8**
baz=300
E27A Carson 127.04 36 P **PKPdf 09 16 35.2 -0.4**
baz=302
B29A Wagenman Farm, 127.17 33 P **PKPdf 09 16 35.6 -0.1**
baz=306
G27A Dupree 127.37 38 P **PKPdf 09 16 35.3 -1.0**
baz=301
MDND Maddock 127.39 34 P **PKPdf 09 16 35.7 -0.5**
baz=305
MDND Maddock 127.39 34 *e*PKPdf **PKPdf 09 16 36.0 -0.2**
S22A 4UR Ranch, Cre 127.39 48 P **PKPdf 09 16 37.5 +0.6**
baz=291
S22A 4UR Ranch, Cre 127.39 48 *e*PKPdf **PKPdf 09 16 38.0 +1.2**
E28A Huff 127.47 36 P **PKPdf 09 16 36.2 -0.2**
baz=303
ISCO Idaho Springs 127.49 46 P **PKPdf 09 16 37.3 +0.3**
baz=294
ISCO Idaho Springs 127.49 46 *e*PKIKP **PKPdf 09 16 38.8 +1.8**
ISCO Idaho Springs 127.49 46 *e*PKPdf **PKPdf 09 16 38.8 +1.8**
H27A Howes 127.66 39 P **PKPdf 09 16 36.3 -0.6**
baz=300
B30A Myrvik Farm, E 127.73 33 P **PKPdf 09 16 35.9 -0.9**
baz=307
ULM Lac du Bonnet 127.88 30 PKP **PKPdf 09 16 35.7 -1.3**
comp=Z,2.7nm,0.5s,baz=296,slow=2.2,SNR=3.3
C30A Mose, Pekin 128.09 34 P **PKPdf 09 16 37.3 -0.3**
baz=306
B31A Greenbush Farm 128.11 32 P **PKPdf 09 16 36.6 -0.9**
baz=307
D30A Buchanan 128.28 34 P **PKPdf 09 16 39.0 +1.1**
baz=305
SDCO Great Sand Dun 128.37 48 P **PKPdf 09 16 39.2 +0.5**
baz=292
SDCO Great Sand Dun 128.37 48 *e*PKPdf **PKPdf 09 16 39.5 +0.8**
C31A Landman Farms, 128.44 33 P **PKPdf 09 16 37.4 -0.8**
baz=307
E30A Jud 128.54 35 P **PKPdf 09 16 38.0 -0.4**
baz=305
I28A Midland 128.54 39 P **PKPdf 09 16 38.5 0.0**
baz=301
ANMO Albuquerque 128.63 52 P **PKPdf 09 16 40.2 +1.0**
baz=289
ANMO Albuquerque 128.63 52⇑ *i*PKIKP **PKPdf 09 16 40.5 +1.3**
ANMO pmax pmax
comp=Z,6.0nm,1.2s
ANMO Albuquerque 128.63 52 *e*PKPdf **PKPdf 09 16 40.4 +1.2**
B32A Ashes, Strandq 128.71 32 P **PKPdf 09 16 37.9 -0.8**
baz=308
D31A Mcclaflin, Tow 128.89 34 P **PKPdf 09 16 38.8 -0.3**
baz=306
G30A Faulkton 129.17 37 P **PKPdf 09 16 39.3 -0.3**
baz=304
T25A Trinidad 129.40 48 P **PKPdf 09 16 41.7 +1.1**
baz=293
T25A Trinidad 129.40 48 *e*PKPdf **PKPdf 09 16 42.0 +1.4**
C33A Trail 129.51 32 P **PKPdf 09 16 39.8 -0.4**
baz=309
B34A Aery, Baudette 129.63 31 P **PKPdf 09 16 40.5 +0.1**
baz=311
PLCA Paso Flores 129.87 168 PKP **PKPdf 09 16 41.1 -0.1**
comp=Z,3.7nm,0.9s,baz=235,slow=5.5,SNR=4.7
B35A Bob, Littlefor 130.18 30 P **PKPdf 09 16 42.6 +1.2**
baz=312
K30A Basset 130.20 40 P **PKPdf 09 16 41.8 +0.1**
baz=301
MNTX Cornudas Mount 130.51 55 P **PKPdf 09 16 43.5 +0.9**
baz=288
MNTX Cornudas Mount 130.51 55 *e*PKPdf **PKPdf 09 16 43.7 +1.0**
L31A Butterfield Fa 130.94 40 P **PKPdf 09 16 43.8 +0.6**
baz=302
ECSD EROS Data Cent 131.46 37 P **PKPdf 09 16 44.9 +0.8**
baz=305
ECSD EROS Data Cent 131.46 37 *e*PKPdf **PKPdf 09 16 44.7 +0.7**
F36A Milaca 131.91 33 P **PKPdf 09 16 44.1 -0.7**
baz=310
H35A Sunnyside Ranc 131.92 35 P **PKPdf 09 16 45.7 +0.8**
baz=308
LTX Lajitas 132.62 58 *e*PKIKP **PKPdf 09 16 47.1 +0.3**
LTX Lajitas 132.62 58 *e*PKPdf **PKPdf 09 16 47.0 +0.3**
TXAR Lajitas Array 132.62 58 PKP **PKPdf 09 16 47.0 +0.2**
comp=Z,0.4nm,0.8s,baz=270,slow=1.3,SNR=3.5
O33A Hebron 132.85 42 P **PKPdf 09 16 46.8 0.0**
baz=302
SCHQ Schefferville 133.14 7 PKP **PKPdf 09 16 47.8 +0.9**
comp=Z,2.1nm,0.9s,baz=74,slow=7.4,SNR=3.6
R33A Olander Ranch, 133.47 44 P **PKPdf 09 16 48.1 +0.1**
baz=300
U35A Pawnee 135.29 46 P **PKPdf 09 16 51.9 +0.5**
baz=299
JCT Junction City 135.43 55 *e*PKIKP **PKPdf 09 16 53.1 +1.2**
JCT Junction City 135.43 55 *e*PKPdf **PKPdf 09 16 53.1 +1.2**
R37A Teagarden Farm 135.59 42 P **PKPdf 09 16 49.8 -2.2**
baz=303
333A Richland Sprin 135.78 53 P **PKPdf 09 16 51.5 -1.0**
baz=292
S37A Fort Scott 135.89 43 P **PKPdf 09 16 51.8 -0.7**
baz=302
433A Art 135.90 54 P **PKPdf 09 16 52.2 -0.6**
baz=292
Q38A Cooks Store, C 136.03 40 P **PKPdf 09 16 52.8 +0.1**
baz=305
Q39A Willow Grove F 136.39 40 P **PKPdf 09 16 52.7 -0.7**
baz=306
R39A Chumby, Stover 136.77 41 P **PKPdf 09 16 53.7 -0.4**
baz=305
Y36A Durant 136.77 48 P **PKPdf 09 16 54.0 -0.3**
baz=297
S39A Bolivar 136.93 42 P **PKPdf 09 16 54.0 -0.5**
baz=304
R40A Maddies Statio 137.28 40 P **PKPdf 09 16 55.3 +0.2**
baz=306
T40A Mansfield 137.76 42 P **PKPdf 09 16 56.4 +0.4**
baz=304
V40A Witts Springs 138.30 44 P **PKPdf 09 16 57.8 +0.7**
baz=303
MRA San Martin 138.85 170 *e*P PKPpre 09 16 46.3
SADO Sadowa 139.45 23 *e*PKPdf **PKPdf 09 16 57.6 -1.3**
LCO Las Campanas 140.98 163 *e*PKPpre PKPpre 09 16 58.2
WCI Wyandotte Cave 140.98 36 *e*PKHKP PKPpre 09 16 56.0
WCI Wyandotte Cave 140.98 36 *e*PKPpre PKPpre 09 16 56.0
AGUA GUANDACOL 141.12 166 *e*P PKPpre 09 16 57.1
WVT Waverly 141.41 40 *e*PKHKP PKPpre 09 16 57.1
WVT Waverly 141.41 40 *e*PKPpre PKPpre 09 16 57.1
VCA Vinchina 141.91 166⇓ *e*P PKPpre 09 17 00.5
CYA Choya 142.71 169 *e*P PKPpre 09 17 01.9
Y47A UCPARC, Winfie 142.74 43 P **PKPdf 09 17 04.7 -0.4**
baz=306
Z48A Northport 143.25 43 P PKPbc 09 17 02.8 -0.2
baz=306
SSPA Standing Stone 143.41 25 *e*PKPpre PKPpre 09 17 02.6
O56A Blue Knob Stat 143.42 26 P PKPpre 09 17 02.8
baz=325
LRAL Lakeview Retre 143.83 43 *e*PKPpre PKPpre 09 17 04.0
CPCT Cooper Cave 143.90 38 *e*PKPpre PKPpre 09 17 03.7
N59A State Game Lan 144.03 23 P **PKPab 09 17 04.5 -0.1**
baz=330
TKL Tuckaleechee C 144.20 37 PKP **PKPab 09 17 04.8 -0.6**
comp=Z,9.0nm,0.9s,baz=178,slow=2.1,SNR=9.9
TKL Tuckaleechee C 144.20 37 *e*PKIKP **PKPab 09 17 04.7 -0.7**
TKL Tuckaleechee C 144.20 37 *e*PKPdf **PKPab 09 17 04.7 -0.7**
ODNJ Ogdensburg 144.32 21 *e*PKPdf **PKPab 09 17 05.5 -0.2**
AHML Horco Molle 144.41 169 *e*P PKPbc 09 17 07.8 +1.0
MVL Millersville 144.59 24 *e*PKPdf **PKPab 09 17 06.2 -0.5**
BRNJ Basking Ridge 144.69 22 *e*PKPdf **PKPab 09 17 07.0 0.0**
CPNY Central Park 144.81 21 *e*PKPdf **PKPab 09 17 07.4 0.0**
BRAL Brewton 144.87 46 *e*PKPdf **PKPdf 09 17 09.7 +0.7**
FSA Cafayete 144.94 168 *e*P PKPbc 09 17 09.2 +0.6
BLA Blacksburg 144.95 32 *e*PKIKP **PKPab 09 17 07.2 -1.0**
BLA Blacksburg 144.95 32 *e*PKPbc **PKPab 09 17 07.2 -1.0**
PSUB Penn St. - Bra 145.01 23 *e*PKPbc **PKPab 09 17 07.0 -1.2**
CPUP Villa Florida 145.52 182 *e*P **PKPab 09 17 10.8 +0.3**
CPUP Villa Florida 145.52 182 PKPbc **PKPab 09 17 11.1 +0.7**
comp=Z,37nm,0.8s,baz=178,slow=3.0,SNR=55
CPUP Villa Florida 145.52 182 *e*PKP2 **PKPab 09 17 11.2 +0.8**
CBN Corbin Frederi 145.64 27 *e*PKPdf **PKPbc 09 17 10.4 +0.1**
GOGA Godfrey 145.90 39 *e*PKP2 **PKPdf 09 17 10.8 +0.2**
GOGA Godfrey 145.90 39 *e*PKPdf **PKPdf 09 17 10.8 +0.2**
KMSC Kings Mountain 145.98 35 P **PKPbc 09 17 11.3 -0.1**
baz=316
JSC Jenkinsville 146.64 36 *e*PKP2 **PKPbc 09 17 13.9 +0.5**
JSC Jenkinsville 146.64 36 *e*PKPdf **PKPbc 09 17 13.9 +0.5**
AZAP Zapla 146.96 169 *e*P **PKPbc 09 17 15.1 +0.1**
TIGA Tifton 147.09 42 P **PKPbc 09 17 15.1 +0.3**
baz=309
PB04 IPOC Station P 147.37 159 *e*PKPbc **PKPab 09 17 17.8 0.0**
LVC Limon Verde 147.52 162 *e*PKPbc **PKPab 09 17 18.3 -0.4**
HJA Humahuaca 147.88 168 *e*P **PKPdf 09 17 15.4 +0.6**
PB01 IPOC Station P 148.79 160 *e*PKPbc **PKPbc 09 17 20.5 +0.7**
YJA Yavi 148.85 167 *e*P **PKPbc 09 17 18.6 -1.7**
PB11 IPOC Station P 149.91 158 *e*PKPbc **PKPbc 09 17 23.2 +0.5**
TGUH Tegucigalpa,Un 151.02 76 *e*PKPdf **PKPdf 09 17 20.0 +0.6**
TGUH *e*PKPbc **PKiKP 09 17 25.7 -0.1**
TGUH *e*PKPab **PKPab 09 17 31.2 -1.5**
LPAZ La Paz 153.66 158 PKP **PKPdf 09 17 24.7 +0.6**
comp=Z,2.7nm,0.9s,baz=164,slow=1.5,SNR=9.0
LPAZ PKPbc **PKiKP 09 17 33.1 +1.1**
comp=Z,8.1nm,1.0s,baz=52,slow=3.6,SNR=9.4
LPAZ PKPab **PKPab 09 17 45.2 +0.9**
comp=Z,13nm,0.6s,baz=134,slow=2.2,SNR=18
OTAV Otavalo 158.35 111 *e*PKPdf **PKPdf 09 17 30.4 +0.1**
SAML Samuel 162.14 164 *e*PKPdf **PKPdf 09 17 33.4 -0.4**
SAML *e*PKPab **PKPab 09 18 21.1 +0.9**
PTGA Pitinga 170.83 169 *e*PKPab **PKPab 09 19 00.9 +2.4**

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*ISK **26** 09:01:12.8, 38°56N×39°65E, h20km, MD2.3*
*CSEM **26** 09:01:14.3±1.1, 38°51N×39°50E, h30km, MD2.3, Error ellipse: s-maj=32.9km s-min=12.5km az=116.0*
*ISCJB **26** 09:01:16.0±1.5, 38°56N±0°05×39°5E±0°1, h9km, Error ellipse: s-maj=14.1km s-min=4.9km az=24.3*
*DDA **26** 09:01:17.4, 38°71N×39°14E, h28km, Md2.3*
ISC 26 09:01:13.4±1.6, 38°57N±0°05×39°6E±0°1, h9km, n10, σ0$45/18, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SVRC	**Sivrice-ELAZID**	**0.27**	**225**	*e*PG	**Pb**	**09 01 20.2**	**-0.3**
SVRC				*e*SG	**Sb**	**09 01 25.7**	**+0.3**
SVRC	**Sivrice-ELAZID**	**0.27**	**225**	*e*Pg	**Pb**	**09 01 20.3**	**-0.3**
SVRC				*e*Sg	**Sb**	**09 01 25.7**	**+0.3**
PTK	**Pertek**	**0.34**	**339**	*e*PG	**Pb**	**09 01 21.5**	**-0.4**
PTK				*e*SG	**Sb**	**09 01 27.8**	**+0.3**
PTK	**Pertek**	**0.34**	**339**	*e*Pg	**Pb**	**09 01 21.5**	**-0.4**
PTK				*e*Sg	**Sb**	**09 01 27.8**	**+0.3**
ELZG	**Elazig**	**0.45**	**261**	P	**Pb**	**09 01 24.2**	**+0.6**
ELZG				S	**Sb**	**09 01 29.9**	**-0.6**
ELZG	**Elazig**	**0.45**	**261**	*i* P	**Pb**	**09 01 24.2**	**+0.6**
ELZG				*i* S	**Sb**	**09 01 29.9**	**-0.6**
TNCL	**Tunceli-Merkez**	**0.54**	**359**	P	**Pn**	**09 01 27.7**	**+0.2**
TNCL				S	**Sn**	**09 01 37.1**	**+0.4**
TNCL	**Tunceli-Merkez**	**0.54**	**359**	*i* P	**Pn**	**09 01 27.7**	**+0.2**
TNCL				*i* S	**Sn**	**09 01 37.1**	**+0.4**
ILIC	**ilic-Erzincan**	**1.17**	**319**	*e*PN	**Pg**	**09 01 35.4**	**-0.4**
ILIC	**ilic-Erzincan**	**1.17**	**319**	*e*Pn	**Pg**	**09 01 35.4**	**-0.4**

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*SCB **26** 09:06:32.3±0.8, 20°44S×71°87W, h10km, Ml3.5/1, Error ellipse: s-maj=22.0km s-min=5.6km az=60.0*
*GUC **26** 09:06:46.4±0.7, 19°95S×70°89W, h29km±4km, ML3.2*
ISC 26 09:06:44.3±2.7, 19°92S±0°05×70°9W±0°1, h9km±13km, n13, σ1$52/19, 1C-5D, Near coast of northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PSGC	**Pisagua**	**0.83**	**67**⇓	*i*P	**Pg**	**09 07 00.8**	**+0.5**
PSGC				*i* S	**Sg**	**09 07 12.0**	**+0.7**
PSGC				IAML		09 07 13.3	
comp=N,763nm,0.4s							
PB12	**IPOC Station P**	**1.42**	**24**⇓	*i*P	**Pn**	**09 07 11.2**	**+0.8**
PB12				*i* S	**Sb**	**09 07 30.4**	**+1.1**
MNMC	**Minye Minye**	**1.49**	**58**⇓	*i*P	**Pn**	**09 07 11.9**	**+0.4**
MNMC				*i* S	**Sn**	**09 07 31.3**	**+0.1**
MNMC				IAML		09 07 38.5	
comp=N,2μm,0.3s							
PB08	**IPOC Station P**	**1.69**	**98**⇓	*i*P	**Pn**	**09 07 15.0**	**+0.6**
PB08				*i* S	**Sn**	**09 07 36.8**	**+0.4**
PB08				IAML		09 07 43.2	
comp=E,436nm,0.8s							
PB01	**IPOC Station P**	**1.76**	**130**⇓	*i*P	**Pn**	**09 07 15.5**	**+0.4**
PB01				*i* S	**Sb**	**09 07 38.5**	**-0.6**
PB01				IAML		09 07 44.9	
comp=N,525nm,0.7s							
PB13	**IPOC Station P**	**2.08**	**41**⇑	*i*P	**Pb**	**09 07 21.8**	**-0.8**
PB13				*i* S	**Sb**	**09 07 50.1**	**+1.3**
PB09	**IPOC Station P**	**2.45**	**140**	*e*P	**Pn**	**09 07 26.5**	**+1.9**

BBOJ	**La Paz, Jacaqu**	**3.92**	**42**	*e*Pn	**Pb**	**09 07 53.7**	**-0.2**
BBOD	**La Paz, Gloria**	**3.95**	**35**	*e*Pn	**Pb**	**09 07 53.1**	**-1.3**
BBOE	**La Paz, Chanca**	**4.17**	**43**	*e*Pn	**Pb**	**09 07 56.8**	**-1.5**
LPAZ	**La Paz**	**4.49**	**37**	*e*Pn	**Pb**	**09 08 01.1**	**-2.6**
BBOB	**La Paz, Bander**	**4.61**	**36**	*e*Pn	**Pb**	**09 08 02.1**	**-3.6**
MOCB	**Mochara**	**5.14**	**106**	*e*Pn	Pn	09 08 06.9	+5.0
MOCB				*e*Sn	**Sb**	**09 09 15.6**	**-1.1**
	comp=N,46nm,1.6s						

ISK ***26*** *09:10:54.8,* $39^{\circ}.12$*N×*$29^{\circ}.06$*E,h*8^{km}*,ML2.4*
ISCJB ***26*** *09:10:55.3±0.4,* $39^{\circ}.12$*N±*$0^{\circ}.03$*×*$29^{\circ}.08$*E±*$0^{\circ}.04$*,h*9^{km}*, Error ellipse: s-maj=4.5km s-min=4.2km az=31.5*
CSEM ***26*** *09:10:55.4±0.1,* $39^{\circ}.12$*N×*$29^{\circ}.08$*E,h*8^{km}*±*1^{km}*,MD2.4, Error ellipse: s-maj=2.9km s-min=2.6km az=125.0*
DDA ***26*** *09:10:55.8,* $39^{\circ}.10$*N×*$29^{\circ}.10$*E,h*6^{km}*,Md2.4*
ISC 26 09:10:55.0±0.8, 39°.11N±0°.03×29°.07E±0°.02, h9km, n32, σ1♀22/40, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**257**	P	**Pb**	**09 11 02.2**	**-0.1**
DEMI				S	**Sg**	**09 11 06.4**	**+2.0**
DEMI	**Demirci**	**0.28**	**257**	*i* P	**Pb**	**09 11 02.2**	**-0.1**
DEMI				*i* S	**Sg**	**09 11 06.4**	**+2.0**
GDZ	**Gediz**	**0.32**	**93**	P	**Pg**	**09 11 01.8**	**+0.4**
GDZ				S	**Sg**	**09 11 06.2**	**+0.5**
GDZ	**Gediz**	**0.32**	**93**	*i* P	**Pg**	**09 11 01.8**	**+0.4**
GDZ				*i* S	**Sg**	**09 11 06.2**	**+0.5**
TVSB	**Tavsanli**	**0.46**	**41**	*e*PG	**Pg**	**09 11 04.0**	**0.0**
TVSB	**Tavsanli**	**0.46**	**41**	*e*Pg	**Pg**	**09 11 04.0**	**0.0**
KULA	**Kula-Manisa**	**0.67**	**209**	PG	**Pg**	**09 11 08.4**	**+0.5**
KULA				SG	**Sg**	**09 11 18.1**	**+1.4**
KULA	**Kula-Manisa**	**0.67**	**209**	*i* Pg	**Pg**	**09 11 08.4**	**+0.5**
KULA				*i* Sg	**Sg**	**09 11 18.1**	**+1.4**
KHAL	**Karahalli**	**0.81**	**156**	P	**Pb**	**09 11 11.7**	**+0.5**
KHAL				S	**Sg**	**09 11 22.1**	**+1.2**
KHAL	**Karahalli**	**0.81**	**156**	*i* P	**Pb**	**09 11 11.7**	**+0.5**
KHAL				*i* S	**Sg**	**09 11 22.1**	**+1.2**
KHL	**Karahalli**	**0.86**	**155**	*e*PG	**Pb**	**09 11 12.4**	**+0.4**
KHL	**Karahalli**	**0.86**	**155**	*e*Pg	**Pb**	**09 11 12.5**	**+0.4**
ORLT	**Orhaneli**	**0.95**	**352**	*e*PG	**Pb**	**09 11 13.9**	**+0.3**
ORLT	**Orhaneli**	**0.95**	**352**	*e*Pg	**Pb**	**09 11 13.9**	**+0.3**
AKS	**Akhisar**	**1.00**	**257**	*e*PG	**Pg**	**09 11 14.1**	**-0.2**
AKS	**Akhisar**	**1.00**	**257**	*e*Pg	**Pg**	**09 11 14.1**	**-0.2**
CAVI	**Cavuskoy**	**1.25**	**28**	*e*PN	**Pn**	**09 11 18.8**	**+0.2**
CAVI	**Cavuskoy**	**1.25**	**28**	*e*Pn	**Pn**	**09 11 18.8**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.27**	**354**	*e*PN	**Pg**	**09 11 19.6**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.27**	**354**	*e*Pn	**Pg**	**09 11 19.6**	**+0.2**
KCTX	**Karacabey (Bur**	**1.28**	**335**	*e*PN	**Pb**	**09 11 19.7**	**+0.4**
KCTX	**Karacabey (Bur**	**1.28**	**335**	*e*Pn	**Pb**	**09 11 19.7**	**+0.4**
GONE	**Gonen-Balikesi**	**1.42**	**312**	*e*PN	**Pn**	**09 11 21.5**	**+0.5**
GONE	**Gonen-Balikesi**	**1.42**	**312**	*e*Pn	**Pn**	**09 11 21.5**	**+0.5**
ARMT	**Armutlu**	**1.47**	**354**	*e*PN	**Pn**	**09 11 21.7**	**+0.1**
ARMT	**Armutlu**	**1.47**	**354**	*e*Pn	**Pn**	**09 11 21.7**	**+0.1**
EDC	**Edincik**	**1.55**	**324**	*e*PN	**Pn**	**09 11 23.1**	**+0.3**
EDC	**Edincik**	**1.55**	**324**	*e*Pn	**Pn**	**09 11 23.1**	**+0.3**
AYDN	**Tasoluk**	**1.72**	**213**	*i* P	Pg	09 11 36.2	+8.3
AYDN				*i* S	**Sn**	**09 11 41.2**	**-6.0**
GCAM	**G?zelcaml?**	**2.01**	**226**	*i* P	**Pg**	**09 11 34.2**	**+0.7**
GCAM				*i* S	Sn	09 11 38.0	-16
SILT	**Sile**	**2.09**	**12**	*e*PN	**Pn**	**09 11 30.7**	**+0.5**
SILT	**Sile**	**2.09**	**12**	*e*Pn	**Pn**	**09 11 30.7**	**+0.5**

IDC 26 09:14:27.7±1.5, 8°.22S×121°.68E, h0km, mb3.9/3, mb1 3.9/5, mb1mx3.6/39, mbtmp3.8/5, ML3.1/1, Error ellipse: s-maj=142.1km s-min=21.1km az=59.0, Flores region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAPI	**Kappang**	**3.72**	**329**	Pn	Pn	09 15 27.0	+0.7
	1.7nm,0.3s,baz=152,slow=14,SNR=4.1						
WRA	**Warramunga Arr**	**16.91**	**135**	Sn	Sn	09 21 24.2	-10
	0.1nm,0.3s,baz=316,slow=24,SNR=5.7						
ASAR	**Alice Springs**	**19.32**	**144**	P	P	09 18 54.3	-0.3
	baz=322,slow=12,SNR=9.8						
ASAR				S	Sn	09 22 22.9	-10
	0.0nm,0.3s,baz=320,slow=26,SNR=4.0						
STKA	**Stephens Creek**	**29.95**	**145**	P	P	09 20 38.1	+0.3
	0.6nm,0.3s,baz=316,slow=7.4,SNR=6.0						
SONM	**Songino Array**	**57.43**	**348**	P	P	09 24 18.5	+0.2
	0.3nm,0.3s,baz=178,slow=7.1,SNR=5.5						
MKAR	**Makanchi Array**	**65.01**	**331**	P	P	09 25 09.2	-0.5
	0.6nm,0.5s,baz=139,slow=7.5,SNR=7.3						

DDA ***26*** *09:17:52.4,* $39^{\circ}.18$*N×*$29^{\circ}.01$*E,h*7^{km}*,Md2.2*
ISK ***26*** *09:17:54.1,* $39^{\circ}.06$*N×*$28^{\circ}.79$*E,h*7^{km}*,MD2.7*
CSEM ***26*** *09:17:55.0±0.2,* $39^{\circ}.05$*N×*$28^{\circ}.79$*E,h*10^{km}*,MD2.2, Error ellipse: s-maj=10.4km s-min=4.8km az=88.0*
ISC 26 09:17:53.5±1.2, 39°.01N±0°.03×29°.02E±0°.03, h1km±12km, n20, σ1♀02/28, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.23**	**279**	P	**Pg**	**09 17 58.3**	**+0.3**
DEMI				S	**Sg**	**09 18 01.8**	**+0.7**
DEMI	**Demirci**	**0.23**	**279**	*i* P	**Pg**	**09 17 58.3**	**+0.3**
DEMI				*i* S	**Sg**	**09 18 01.8**	**+0.7**
GDZ	**Gediz**	**0.37**	**77**	*i* P	**Pg**	**09 18 00.3**	**-0.3**
GDZ				*i* S	**Sg**	**09 18 05.6**	**+0.1**
KULA	**Kula-Manisa**	**0.56**	**209**	*e*PG	**Pg**	**09 18 04.8**	**+0.5**
KULA				*e*SG	**Sb**	**09 18 13.8**	**-1.0**
KULA	**Kula-Manisa**	**0.56**	**209**	*e*Pg	**Pg**	**09 18 04.8**	**+0.5**
KULA				*e*Sg	**Sb**	**09 18 13.8**	**-1.0**
KHAL	**Karahalli**	**0.74**	**149**	*i* P	**Pb**	**09 18 09.2**	**-0.1**
KHAL				*i* S	**Sg**	**09 18 14.4**	**-2.8**
KHL	**Karahalli**	**0.79**	**150**	*e*PG	**Pn**	**09 18 12.7**	**+0.8**
KHL				*e*SG	**Sn**	**09 18 25.7**	**+1.3**
KHL	**Karahalli**	**0.79**	**150**	*e*Pg	**Pn**	**09 18 12.7**	**+0.8**
KHL				*e*Sg	**Sn**	**09 18 25.7**	**+1.3**
CAVI	**Cavuskoy**	**1.35**	**28**	*e*PN	**Pg**	**09 18 20.6**	**+1.1**
CAVI	**Cavuskoy**	**1.35**	**28**	*e*Pn	**Pg**	**09 18 20.6**	**+1.1**
KCTX	**Karacabey (Bur**	**1.36**	**338**	*e*PN	**Pn**	**09 18 18.4**	**-1.2**
KCTX	**Karacabey (Bur**	**1.36**	**338**	*e*Pn	**Pn**	**09 18 18.4**	**-1.2**
MDNY	**Mudanya-Bursa**	**1.36**	**356**	*e*PN	**Pb**	**09 18 19.9**	**0.0**
MDNY	**Mudanya-Bursa**	**1.36**	**356**	*e*Pn	**Pb**	**09 18 19.9**	**0.0**
IZI	**Iznik**	**1.37**	**15**	*e*PN	**Pg**	**09 18 20.7**	**+0.8**
IZI	**Iznik**	**1.37**	**15**	*e*Pn	**Pg**	**09 18 20.7**	**+0.8**
ARMT	**Armutlu**	**1.56**	**356**	*e*PN	**Pn**	**09 18 21.4**	**-1.0**
ARMT	**Armutlu**	**1.56**	**356**	*e*Pn	**Pn**	**09 18 21.4**	**-1.0**
GULT	**Gulveren**	**1.83**	**39**	*e*PN	**Pb**	**09 18 28.0**	**0.0**
GULT	**Gulveren**	**1.83**	**39**	*e*Pn	**Pb**	**09 18 28.0**	**0.0**

ISCJB ***26*** *09:19:08.7±1.1,* $39^{\circ}.21$*N±*$0^{\circ}.05$*×*$28^{\circ}.81$*E±*$0^{\circ}.08$*,h*9^{km}*, Error ellipse: s-maj=9.6km s-min=5.6km az=35.1*
ISK ***26*** *09:19:08.0,* $39^{\circ}.19$*N×*$28^{\circ}.84$*E,h*5^{km}*,MD1.9*
CSEM ***26*** *09:19:09.0±0.4,* $39^{\circ}.21$*N×*$28^{\circ}.80$*E,h*10^{km}*,MD2.0, Error ellipse: s-maj=9.1km s-min=5.9km az=113.0*
DDA ***26*** *09:19:13.0,* $39^{\circ}.10$*N×*$29^{\circ}.02$*E,h*7^{km}*,Md2.0*
ISC 26 09:19:10.4±1.1, 39°.18N±0°.04×28°.95E±0°.04, h9km, n10, σ2♀00/16, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.22**	**234**	P	Pg	09 19 18.3	+3.3
DEMI				S	**Sg**	**09 19 21.9**	**+3.8**
DEMI	**Demirci**	**0.22**	**234**	*i* P	Pg	09 19 18.3	+3.3
DEMI				*i* S	**Sg**	**09 19 21.9**	**+3.8**
GDZ	**Gediz**	**0.42**	**102**	P	**Pb**	**09 19 20.4**	**+0.2**
GDZ				S	**Sg**	**09 19 25.9**	**+1.5**
GDZ	**Gediz**	**0.42**	**102**	*i* P	**Pb**	**09 19 20.4**	**+0.2**
GDZ				*i* S	**Sg**	**09 19 25.9**	**+1.5**
TVSB	**Tavsanli**	**0.48**	**55**	*e*PG	**Pg**	**09 19 19.6**	**-0.3**
TVSB				*e*SG	**Sb**	**09 19 28.1**	**-0.4**
TVSB	**Tavsanli**	**0.48**	**55**	*e*Pg	**Pg**	**09 19 19.6**	**-0.3**
TVSB				*e*Sg	**Sb**	**09 19 28.1**	**-0.4**
KULA	**Kula-Manisa**	**0.70**	**199**	*e*PG	**Pg**	**09 19 22.3**	**-1.6**
KULA				*e*SG	**Sb**	**09 19 32.8**	**-1.7**
KULA	**Kula-Manisa**	**0.70**	**199**	*e*Pg	**Pg**	**09 19 22.3**	**-1.6**
KULA				*e*Sg	**Sb**	**09 19 32.8**	**-1.7**
ORLT	**Orhaneli**	**0.87**	**357**	*e*PG	**Pg**	**09 19 25.4**	**-1.8**
ORLT	**Orhaneli**	**0.87**	**357**	*e*Pg	**Pg**	**09 19 25.4**	**-1.8**

KRSC 26 09:23:04.4±0.9, 54°.97N×165°.68E, h22km±7km, ML3.6, Komandorsky Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BKI	**Bering**	**0.29**	**35**	*i* P	Pb	09 23 11.5	+0.5
BKI				*i* S	Sb	09 23 14.9	-0.6
MKZ	**Mys Kozlova**	**2.33**	**261**	P	Pb	09 23 44.6	-1.0
MKZ				S	Sb	09 24 12.0	-1.8
NLC	**Nalytchevo**	**4.14**	**247**	S	Sn	09 24 57.2	+3.2
SDLR	**Sedlovina**	**4.34**	**250**	P	Pn	09 24 13.8	+4.6
SMAR	**Somma**	**4.39**	**250**	P	Pn	09 24 14.5	+4.5
KRER	**Koryakskii**	**4.41**	**251**	P	Pn	09 24 14.6	+4.5
UGLR	**Uglovaya**	**4.41**	**249**	P	Pn	09 24 14.7	+4.7
AVH	**Avacha**	**4.43**	**250**	P	Pn	09 24 15.3	+5.0
GNL	**Ganaly**	**4.71**	**257**	P	Pn	09 24 19.0	+4.9
KRMR	**Karymshinskiy**	**4.95**	**247**	S	Sn	09 25 19.0	+5.0
RUS	**Russkaya**	**4.96**	**242**	P	Pn	09 24 22.2	+4.7

IDC ***26*** *09:23:19.6±2.2,* $36^{\circ}.10$*N×*$142^{\circ}.13$*E,h*0^{km}*,mb3.4/3, mb1 3.5/4,mb1mx3.3/52,mbtmp3.4/4,ML3.1/1, Error ellipse: s-maj=59.5km s-min=28.2km az=52.0*
ISCJB ***26*** *09:23:21.1±1.3,* $36^{\circ}.26$*N±*$0^{\circ}.09$*×*$142^{\circ}.1$*E±*$0^{\circ}.1$*,h*19^{km}*, mb3.5/3, Error ellipse: s-maj=13.7km s-min=12.3km az=26.5*
JMA ***26*** *09:23:24.7±0.3,* $36^{\circ}.29$*N×*$141^{\circ}.80$*E,h*75^{km}*,M2.9*
ISC 26 09:23:22.1±1.6, 36°.33N±0°.09×142°.1E±0°.1, h19km, n11, σ1♀03/13, mb3.5/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.21**	**239**	P	**Pn**	**09 23 43.1**	**-0.8**
JHO	**Hitachi**	**1.29**	**283**	P	**Pn**	**09 23 43.5**	**-1.6**
ONAJ	**Iwakimizuishiy**	**1.32**	**306**	P	**Pn**	**09 23 45.1**	**-0.4**
JFK	**Kawauchi**	**1.45**	**316**	P	**Pb**	**09 23 47.9**	**-0.5**
BSO3	**Boso 3**	**2.02**	**221**	P	**Pn**	**09 23 55.0**	**+0.2**
JAG	**Ashikaga**	**2.16**	**273**	P	**Pn**	**09 23 56.5**	**-0.6**
MJAR	**Matsushiro Arr**	**3.17**	**275**	Pn	**Pn**	**09 24 11.3**	**+0.4**
	2.2nm,0.3s,baz=111,slow=8.7,SNR=16						
MJAR				Sn	**Sn**	**09 24 49.0**	**+0.8**
	1.2nm,0.3s,baz=34,slow=18,SNR=4.4						
MAT	**Matsushiro**	**3.17**	**275**	P	**Pn**	**09 24 11.6**	**+0.6**
MAT				*e*S	**Sn**	**09 24 47.9**	**-0.4**
MKAR	**Makanchi Array**	**44.98**	**303**	P	**P**	**09 31 37.5**	**+1.5**
	0.4nm,0.6s,baz=91,slow=9.2,SNR=3.0						
KURBB	**Kurchatov Arra**	**46.89**	**309**	P	**P**	**09 31 52.4**	**+1.4**
	0.2nm,0.3s,baz=84,slow=7.6,SNR=3.4						
WRA	**Warramunga Arr**	**56.45**	**189**	P	**P**	**09 33 01.5**	**-1.1**
	0.5nm,0.9s,baz=7.2,slow=7.4,SNR=2.6						

IDC 26 09:30:37.5±3.4, 15°.50S×69°.87W, h238km±36km, mb2.9/2, mb1 3.1/2, mb1mx2.9/24, mbtmp3.5/2, Error ellipse: s-maj=216.3km s-min=48.6km az=20.0, Peru-Bolivia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LPAZ	**La Paz**	**1.84**	**115**	P	Pn	09 31 18.4	+0.2
	18nm,0.3s,baz=300,slow=9.3,SNR=556						
LPAZ				S	S	09 31 50.4	+0.3
	1.1nm,0.3s,baz=45,slow=23,SNR=9.3						
TORD	**Torodi Ar. Bea**	**76.29**	**72**	P	P	09 42 00.8	+0.1
	0.3nm,0.3s,baz=255,slow=4.4,SNR=4.5						
YKA	**Yellowknife Ar**	**85.26**	**341**	P	P	09 42 46.9	-0.1
	0.1nm,0.6s,baz=140,slow=4.5,SNR=4.6						

ISK ***26*** *09:33:29.6,* $39^{\circ}.16$*N×*$28^{\circ}.98$*E,h*8^{km}*,MD2.4*
ISCJB ***26*** *09:33:30.3±0.5,* $39^{\circ}.13$*N±*$0^{\circ}.03$*×*$29^{\circ}.01$*E±*$0^{\circ}.04$*,h*10^{km}*±*5^{km}*, Error ellipse: s-maj=5.5km s-min=4.8km az=2.8*
DDA ***26*** *09:33:30.1,* $39^{\circ}.11$*N×*$29^{\circ}.02$*E,h*8^{km}*,Md2.6*
CSEM ***26*** *09:33:30.2±0.1,* $39^{\circ}.13$*N×*$29^{\circ}.01$*E,h*10^{km}*,MD2.6, Error ellipse: s-maj=2.3km s-min=2.2km az=85.0*
ISC 26 09:33:30.3±0.9, 39°.13N±0°.03×29°.02E±0°.02, h13km±9km, n20, σ0♀19/34, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**249**	P	**Pg**	**09 33 35.8**	**+0.1**
DEMI				S	**Sg**	**09 33 39.0**	**-0.2**
DEMI	**Demirci**	**0.25**	**249**	*i* P	**Pg**	**09 33 35.8**	**+0.1**
DEMI				*i* S	**Sg**	**09 33 39.0**	**-0.2**
GDZ	**Gediz**	**0.36**	**97**	P	**Pg**	**09 33 37.6**	**-0.1**
GDZ				S	**Sg**	**09 33 42.8**	**+0.1**
GDZ	**Gediz**	**0.36**	**97**	*i* P	**Pg**	**09 33 37.6**	**-0.1**
GDZ				*i* S	**Sg**	**09 33 42.8**	**+0.1**
TVSB	**Tavsanli**	**0.47**	**47**	*e*PG	**Pg**	**09 33 39.4**	**-0.2**
TVSB				*e*SG	**Sg**	**09 33 46.2**	**+0.3**
TVSB	**Tavsanli**	**0.47**	**47**	*e*Pg	**Pg**	**09 33 39.4**	**-0.2**
TVSB				*e*Sg	**Sg**	**09 33 46.3**	**+0.3**
DURS	**Dursunbey**	**0.63**	**318**	P	**Pg**	**09 33 42.7**	**+0.1**
DURS				S	**Sb**	**09 33 52.2**	**+0.2**
DURS	**Dursunbey**	**0.63**	**318**	*i* P	**Pg**	**09 33 42.7**	**+0.1**
DURS				*i* S	**Sb**	**09 33 52.2**	**+0.2**
KULA	**Kula-Manisa**	**0.68**	**204**	*e*PG	**Pg**	**09 33 43.4**	**-0.1**
KULA	**Kula-Manisa**	**0.68**	**204**	*e*Pg	**Pg**	**09 33 43.4**	**-0.1**
KHAL	**Karahalli**	**0.85**	**154**	P	**Pg**	**09 33 46.8**	**+0.1**
KHAL				S	**Sg**	**09 33 57.8**	**0.0**
KHAL	**Karahalli**	**0.85**	**154**	*i* P	**Pg**	**09 33 46.8**	**+0.1**
KHAL				*i* S	**Sg**	**09 33 57.8**	**0.0**
KCTX	**Karacabey (Bur**	**1.24**	**336**	*e*PN	**Pn**	**09 33 53.1**	**-0.3**
KCTX				*e*SN	**Sg**	**09 34 10.2**	**-0.1**
KCTX	**Karacabey (Bur**	**1.24**	**336**	*e*Pn	**Pn**	**09 33 53.1**	**-0.3**
KCTX				*e*Sn	**Sg**	**09 34 10.3**	**-0.1**
CAVI	**Cavuskoy**	**1.25**	**31**	*e*PN	**Pb**	**09 33 53.9**	**+0.2**
CAVI	**Cavuskoy**	**1.25**	**31**	*e*Pn	**Pb**	**09 33 53.9**	**+0.2**
IZI	**Iznik**	**1.25**	**16**	*e*PN	**Pn**	**09 33 53.6**	**0.0**
IZI	**Iznik**	**1.25**	**16**	*e*Pn	**Pn**	**09 33 53.6**	**0.0**
BORA	**Eskisehir**	**1.34**	**56**	P	**Pb**	**09 33 55.5**	**+0.2**
BORA				S	**Sg**	**09 34 13.3**	**-0.2**
BORA	**Eskisehir**	**1.34**	**56**	*i* P	**Pb**	**09 33 55.5**	**+0.2**
BORA				*i* S	**Sg**	**09 34 13.3**	**-0.2**

DDA ***26*** *09:35:18.9,* $39^{\circ}.12$*N×*$29^{\circ}.02$*E,h*8^{km}*,Md2.5*
ISK ***26*** *09:35:18.4,* $38^{\circ}.94$*N×*$29^{\circ}.24$*E,h*2^{km}*,MD2.4*
ISCJB ***26*** *09:35:19.2±0.5,* $39^{\circ}.10$*N±*$0^{\circ}.04$*×*$29^{\circ}.02$*E±*$0^{\circ}.04$*,h*4^{km}*±*9^{km}*, Error ellipse: s-maj=6.0km s-min=5.1km az=21.9*
CSEM ***26*** *09:35:19.4±0.3,* $39^{\circ}.10$*N×*$29^{\circ}.02$*E,h*2^{km}*,MD2.5, Error ellipse: s-maj=6.9km s-min=6.3km az=121.0*
ISC 26 09:35:19.1±0.9, 39°.12N±0°.03×29°.02E±0°.03, h16km±9km, n20, σ0♀39/30, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**252**	P	**Pg**	**09 35 24.6**	**0.0**
DEMI				S	**Sg**	**09 35 28.3**	**0.0**
DEMI	**Demirci**	**0.24**	**252**	*i* P	**Pg**	**09 35 24.6**	**0.0**
DEMI				*i* S	**Sg**	**09 35 28.3**	**0.0**
GDZ	**Gediz**	**0.36**	**95**	P	**Pg**	**09 35 26.4**	**-0.2**
GDZ				S	**Sg**	**09 35 31.6**	**-0.2**
GDZ	**Gediz**	**0.36**	**95**	*i* P	**Pg**	**09 35 26.4**	**-0.2**
GDZ				*i* S	**Sg**	**09 35 31.6**	**-0.2**
TVSB	**Tavsanli**	**0.48**	**46**	*e*PG	**Pb**	**09 35 29.8**	**+0.5**
TVSB	**Tavsanli**	**0.48**	**46**	*e*Pg	**Pb**	**09 35 29.8**	**+0.5**
DURS	**Dursunbey**	**0.64**	**319**	P	**Pg**	**09 35 31.0**	**-0.7**
DURS				S	**Sg**	**09 35 40.2**	**0.0**
DURS	**Dursunbey**	**0.64**	**319**	*i* P	**Pg**	**09 35 31.0**	**-0.7**
DURS				*i* S	**Sg**	**09 35 40.2**	**0.0**
KULA	**Kula-Manisa**	**0.67**	**205**	*e*PG	**Pg**	**09 35 31.4**	**-0.8**
KULA				*e*SG	**Sg**	**09 35 41.0**	**0.0**
KULA	**Kula-Manisa**	**0.67**	**205**	*e*Pg	**Pg**	**09 35 31.4**	**-0.8**
KULA				*e*Sg	**Sg**	**09 35 41.0**	**0.0**
KHAL	**Karahalli**	**0.84**	**153**	P	**Pb**	**09 35 35.7**	**+0.4**
KHAL				S	**Sg**	**09 35 46.4**	**0.0**
KHAL	**Karahalli**	**0.84**	**153**	*i* P	**Pb**	**09 35 35.7**	**+0.4**
KHAL				*i* S	**Sg**	**09 35 46.4**	**0.0**
MDNY	**Mudanya-Bursa**	**1.25**	**355**	*e*PN	Pg	09 35 46.5	+3.3
MDNY	**Mudanya-Bursa**	**1.25**	**355**	*e*Pn	Pg	09 35 46.5	+3.3
BORA	**Eskisehir**	**1.35**	**55**	P	**Pg**	**09 35 44.9**	**-0.2**
BORA				S	**Sg**	**09 36 02.1**	**-0.5**
BORA	**Eskisehir**	**1.35**	**55**	*i* P	**Pg**	**09 35 44.9**	**-0.2**
BORA				*i* S	**Sg**	**09 36 02.1**	**-0.5**
GULT	**Gulveren**	**1.75**	**41**	*e*PN	**Pb**	**09 35 51.3**	**+0.4**
GULT	**Gulveren**	**1.75**	**41**	*e*Pn	**Pb**	**09 35 51.3**	**+0.4**
SVRH	**Sivrihisar-ESK**	**1.97**	**80**	*e*PN	**Pn**	**09 35 52.1**	**+0.1**
SVRH	**Sivrihisar-ESK**	**1.97**	**80**	*e*Pn	**Pn**	**09 35 52.1**	**+0.1**

ISK ***26*** *09:36:23.6,* $39^{\circ}.10$*N×*$28^{\circ}.74$*E,h*5^{km}*,MD2.5*
ISCJB ***26*** *09:36:27.9±0.6,* $39^{\circ}.14$*N±*$0^{\circ}.03$*×*$29^{\circ}.02$*E±*$0^{\circ}.04$*,h*7^{km}*±*6^{km}*, Error ellipse: s-maj=6.1km s-min=4.9km az=39.4*
DDA ***26*** *09:36:27.6,* $39^{\circ}.15$*N×*$29^{\circ}.04$*E,h*8^{km}*,Md2.8*
CSEM ***26*** *09:36:27.7±0.3,* $39^{\circ}.14$*N×*$29^{\circ}.00$*E,h*10^{km}*,MD2.8, Error ellipse: s-maj=6.6km s-min=5.3km az=50.0*
ISC 26 09:36:27.5±0.9, 39°.10N±0°.03×29°.00E±0°.03, h17km±7km, n22, σ1♀42/36, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.23**	**257**	P	**Pg**	**09 36 33.7**	**+0.9**
DEMI				S	**Sg**	**09 36 37.7**	**+1.3**
DEMI	**Demirci**	**0.23**	**257**	*i* P	**Pg**	**09 36 33.7**	**+0.9**
DEMI				*i* S	**Sg**	**09 36 37.7**	**+1.3**
GDZ	**Gediz**	**0.38**	**91**	P	**Pg**	**09 36 34.8**	**-0.6**
GDZ				S	**Sg**	**09 36 39.9**	**-0.8**
GDZ	**Gediz**	**0.38**	**91**	*i* P	**Pg**	**09 36 34.8**	**-0.6**
GDZ				*i* S	**Sg**	**09 36 39.9**	**-0.8**
TVSB	**Tavsanli**	**0.50**	**45**	*e*PG	**Pg**	**09 36 37.2**	**-0.5**
TVSB	**Tavsanli**	**0.50**	**45**	*e*Pg	**Pg**	**09 36 37.2**	**-0.5**
KULA	**Kula-Manisa**	**0.64**	**205**	*e*PG	**Pg**	**09 36 36.5**	**-3.6**
KULA	**Kula-Manisa**	**0.64**	**205**	*e*Pg	**Pg**	**09 36 36.5**	**-3.6**
DURS	**Dursunbey**	**0.65**	**321**	P	**Pg**	**09 36 40.0**	**-0.3**
DURS				S	**Sb**	**09 36 49.0**	**-0.2**
DURS	**Dursunbey**	**0.65**	**321**	*i* P	**Pg**	**09 36 40.0**	**-0.3**
DURS				*i* S	**Sb**	**09 36 49.0**	**-0.2**
KHAL	**Karahalli**	**0.82**	**152**	P	**Pg**	**09 36 44.5**	**+1.0**
KHAL				S	**Sb**	**09 36 56.0**	**+1.9**
KHAL	**Karahalli**	**0.82**	**152**	*i* P	**Pg**	**09 36 44.5**	**+1.0**
KHAL				*i* S	**Sb**	**09 36 56.0**	**+1.9**
AKS	**Akhisar**	**0.95**	**257**	*e*PG	Pg	09 36 38.8	-7.1
IGD	**Bursa**	**1.18**	**8**	*i* P	**Pb**	**09 36 48.8**	**-0.6**
IGD				*i* S	**Sn**	**09 37 05.5**	**+0.7**
MDNY	**Mudanya-Bursa**	**1.27**	**356**	*e*PN	**Pn**	**09 36 49.4**	**-1.1**
MDNY	**Mudanya-Bursa**	**1.27**	**356**	*e*Pn	**Pn**	**09 36 49.4**	**-1.1**
IZI	**Iznik**	**1.29**	**16**	*e*PN	**Pn**	**09 36 51.0**	**+0.2**
IZI				*e*SN	**Sn**	**09 37 10.6**	**+2.8**
IZI	**Iznik**	**1.29**	**16**	*e*Pn	**Pn**	**09 36 51.0**	**+0.2**
IZI				*e*Sn	**Sn**	**09 37 10.6**	**+2.8**
BORA	**Eskisehir**	**1.37**	**55**	P	**Pg**	**09 36 53.6**	**-0.3**
BORA				S	**Sg**	**09 37 10.9**	**-0.9**
BORA	**Eskisehir**	**1.37**	**55**	*i* P	**Pg**	**09 36 53.6**	**-0.3**
BORA				*i* S	**Sg**	**09 37 10.9**	**-0.9**
ARMT	**Armutlu**	**1.47**	**356**	*e*PN	**Pn**	**09 36 52.5**	**-0.7**
ARMT				*e

BAGO	Egridir - ISPA	1.75	130	*i* P	Pn	09 42 48.0	-1.0
BAGO				*i* S	Sg	09 43 19.0	+4.6
SPNC	Sapanca-Adapaz	1.81	31	*e*PN	Pn	09 42 49.2	-0.4
SPNC	Sapanca-Adapaz	1.81	31	*e*Pn	Pn	09 42 49.3	-0.4
MRMT	Marmara Adasi	1.86	322	*e*PN	Pn	09 42 50.1	-0.4
MRMT	Marmara Adasi	1.86	322	*e*Pn	Pn	09 42 50.1	-0.4
KRBG	Karabiga-Canak	1.87	313	*e*PN	Pn	09 42 50.1	-0.4
KRBG	Karabiga-Canak	1.87	313	*e*Pn	Pn	09 42 50.1	-0.4
AYVA	Ayvalik	1.87	276	*i* P	Pg	09 42 54.3	+0.4
AYVA				*i* S	Sg	09 43 20.0	+1.8
SVRH	Sivrihisar-ESK	1.91	80	*e*PN	Pn	09 42 50.2	-0.9
SVRH	Sivrihisar-ESK	1.91	80	*e*Pn	Pn	09 42 50.3	-0.9
ISK	Istanbul-Kandi	1.93	359	*e*PN	Pn	09 42 50.9	-0.5
GOLH	Golhisar	1.93	169	P	Pn	09 42 51.3	-0.2
GOLH	Golhisar	1.93	169	*i* P	Pn	09 42 51.4	-0.2
GOLH				*i* S	Sg	09 43 23.1	+3.0
GLHS	Glhisar (BURDU	2.00	171	*e*PN	Pn	09 42 51.1	-1.4
GLHS	Glhisar (BURDU	2.00	171	*e*Pn	Pn	09 42 51.1	-1.4
DGB	˜zmir	2.04	239	*i* P	Pg	09 42 56.6	-0.5
DGB				*i* S	Sg	09 43 23.9	+0.3
BGKT	Bogazkoy	2.06	353	*e*PN	Pn	09 42 53.0	-0.1
SILT	Sile	2.06	12	*e*PN	Pn	09 42 52.8	-0.3
SILT	Sile	2.06	12	*e*Pn	Pn	09 42 52.8	-0.3
YER	Yerkesik	2.10	198	*e*PN	Pn	09 42 52.6	-1.0
YER	Yerkesik	2.10	198	*e*Pn	Pn	09 42 52.7	-1.0
URLA	Izmir	2.10	249	*i* P	Pg	09 42 58.0	-0.2
URLA				*i* S	Sg	09 43 26.3	+0.8
KLYT	Kilyos	2.12	359	*e*PN	Pn	09 42 53.5	-0.4
KAND	Kocaeli-Kandir	2.13	23	P	Pn	09 42 54.9	+0.8
KAND	Kocaeli-Kandir	2.13	23	*i* P	Pn	09 42 54.9	+0.8
KAND				*i* S	Sb	09 43 24.0	+0.3
RKY	Sarkoy-Tekirda	2.14	317	*e*PN	Pn	09 42 54.0	-0.3
RKY	Sarkoy-Tekirda	2.14	317	*e*Pn	Pn	09 42 54.0	-0.3
CTKS	Kestanelik-??a	2.15	348	*e*PN	Pn	09 42 54.2	-0.1
CTKS	Kestanelik-??a	2.15	348	*e*Pn	Pn	09 42 54.2	-0.1
LPK	Lapseki	2.18	305	*e*PN	Pn	09 42 54.4	-0.4
LPK	Lapseki	2.18	305	*e*Pn	Pn	09 42 54.4	-0.4
KIZT	Kizilcal	2.19	96	*e*PN	Pn	09 42 53.8	-1.2
KIZT	Kizilcal	2.19	96	*e*Pn	Pn	09 42 53.8	-1.2
TKR	Tekirdag	2.20	328	*e*PN	Pn	09 42 54.4	-0.7
TKR	Tekirdag	2.20	328	*e*Pn	Pn	09 42 54.4	-0.7
ZEY	˜zmir	2.21	247	*i* P	Pg	09 43 01.0	+0.5
ZEY				*i* S	Sg	09 43 30.9	+1.8
SUTC	Sutluce-Ispart	2.24	137	*e*PN	Pn	09 42 54.4	-1.3
SUTC	Sutluce-Ispart	2.24	137	*e*Pn	Pn	09 42 54.4	-1.3
CRLT	Corlu	2.25	333	*e*PN	Pn	09 42 55.4	-0.3
CRLT	Corlu	2.25	333	*e*Pn	Pn	09 42 55.4	-0.3
DALY	Dalyan (Mu¨la	2.34	189	*e*PN	Pn	09 42 56.3	-0.7
DALY	Dalyan (Mu¨la	2.34	189	*e*Pn	Pn	09 42 56.3	-0.7
GELI	Tayfur-Gelibol	2.38	303	*e*PN	Pn	09 42 57.5	0.0
GELI	Tayfur-Gelibol	2.38	303	*e*Pn	Pn	09 42 57.5	0.0
CTYL	Yalikoy Yolu	2.42	346	*e*PN	Pn	09 42 58.0	0.0
CTYL	Yalikoy Yolu	2.42	346	*e*Pn	Pn	09 42 58.0	0.0
ELL	Elmali	2.47	165	*e*PN	Pn	09 42 58.0	-0.9
ELL	Elmali	2.47	165	*e*Pn	Pn	09 42 58.0	-0.9
CHOS	Chios island	2.49	253	*e*PN	Pn	09 42 58.7	-0.4
FETY	Fethiye	2.50	180	*e*PN	Pn	09 42 58.0	-1.1
BODT	Bodrum	2.50	215	*e*PN	Pn	09 42 58.0	-1.2
BODT	Bodrum	2.50	215	*e*Pn	Pn	09 42 58.0	-1.2
ERIK	Erikli-Kesan	2.51	309	*e*PN	Pn	09 42 59.0	-0.3
ERIK	Erikli-Kesan	2.51	309	*e*Pn	Pn	09 42 59.0	-0.3
SIGR	SIGRI	2.52	273	*e*PN	Pn	09 42 58.7	-0.7
SIGR	SIGRI	2.52	273	*e*Pn	Pn	09 42 58.7	-0.7
GADA	Gvkgeada	2.68	294	*e*PN	Pn	09 43 01.0	-0.7
GADA	Gvkgeada	2.68	294	*e*Pn	Pn	09 43 01.0	-0.7
KONT	Konya--Tatoy	2.83	114	*e*PN	Pn	09 43 02.2	-1.5
KONT	Konya--Tatoy	2.83	114	*e*Pn	Pn	09 43 02.2	-1.5
ALN	Alexandroupoli	2.93	308	*e*PN	Pn	09 43 05.5	+0.5
ALN	Alexandroupoli	2.93	308	*e*Pn	Pn	09 43 05.5	+0.5
EDRB	Edirne	3.25	327	*e*PN	Pn	09 43 09.6	+0.2
EDRB	Edirne	3.25	327	*e*Pn	Pn	09 43 09.6	+0.2
CFR	Carcaliu	6.08	354	⇓*i*P	Pn	09 43 49.3	+0.9
CFR	Carcaliu	6.08	354	⇓*i*P	Pn	09 43 49.3	+0.9
MLR	Muntele Rosu	6.76	341	⇓*i*P	Pn	09 44 00.5	+2.6
PLOR	Plostina	6.95	346	⇓*i*P	Pn	09 44 02.8	+2.4
VRI	Vrincioaia	6.95	346	⇓*i*P	Pn	09 44 02.3	+2.0
VRI	Vrincioaia	6.95	346	⇓*i*P	Pn	09 44 02.3	+2.0
VOIR		6.97	336	⇑*i*P	Pn	09 44 02.0	+1.3
VOIR		6.97	336	⇑*i*P	Pn	09 44 02.0	+1.3
DOPR	Dopca	7.35	339	⇓*i*P	Pn	09 44 07.7	+1.8
DOPR	Dopca	7.35	339	⇓*i*P	Pn	09 44 07.7	+1.8

WEL 26 09:48:02.1±0.4,38°.63S×175°.72E,h151km±3km,ML3.8/12, 12C-2D,Error ellipse: s-maj=1.8km s-min=1.7km az=0.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUTZ	Kaahu Road	0.16	30	PN	Pn	09 48 22.7	+0.1
TLZ	Tolley Road	0.33	335	PN	Pn	09 48 23.0	0.0
TLZ				SN	Sn	09 48 39.3	+0.5
KATZ	Kakaramea	0.34	183	PN	Pn	09 48 22.9	-0.2
RITZ	Rihia Road	0.36	162	PN	Pn	09 48 23.2	+0.1
KRVZ	Karewarewa	0.47	187	PN	Pn	09 48 23.4	-0.2
WTVZ	West Tongariro	0.49	192	PN	Pn	09 48 23.7	0.0
HSRZ	Hossack Road	0.52	52	PN	Pn	09 48 23.9	+0.1
OTVZ	Oturere	0.53	184	PN	Pn	09 48 23.8	-0.1
OTVZ				SN	Sn	09 48 40.2	-0.5
NGZ	Ngauruhoe	0.55	189	PN	Pn	09 48 24.1	0.0
MRHZ	Matea Rd	0.58	110	PN	Pn	09 48 23.9	-0.2
MRHZ				SN	Sn	09 48 39.5	-1.3
FWVZ	Far West T-bar	0.64	192	PN	Pn	09 48 24.5	-0.1
TUVZ	Tukino	0.64	184	PN	Pn	09 48 24.5	0.0
HIZ	Hauiti	0.69	280	⇑PN	Pn	09 48 24.5	-0.1
WNVZ	Wahianoa	0.70	188	⇑PN	Pn	09 48 24.9	0.0
MOVZ	Moawhango	0.78	178	PN	Pn	09 48 25.1	-0.2
MTVZ	Mangateitei	0.78	194	PN	Pn	09 48 25.3	-0.1
BKZ	Black Stump Fm	0.81	132	⇑PN	Pn	09 48 25.4	-0.1
BKZ				AML	AML	09 48 42.9	
BKZ				AML	AML	09 48 42.9	
VRZ	Vera Road	0.90	236	⇑PN	Pn	09 48 26.0	-0.1
BHHZ	Black Hill Sta	0.90	163	⇑PN	Pn	09 48 25.9	-0.3
BHHZ				SN	Sn	09 48 42.5	-2.2
KWHZ	Kaweka Forest	0.96	145	PN	Pn	09 48 26.8	0.0
NMHZ	Naumai	0.97	119	PN	Pn	09 48 27.6	+0.8
RTZ	Ruatahuna	0.99	89	⇓PN	Pn	09 48 26.8	-0.2
RAHZ	Arahi	1.11	105	PN	Pn	09 48 28.4	+0.5
RAHZ				SN	Sn	09 48 47.6	-0.1
MCHZ	McNeill Hill	1.11	137	⇑PN	Pn	09 48 28.8	+0.8
KRHZ	Kereru	1.13	154	⇑PN	Pn	09 48 28.2	0.0
URZ	Urewera	1.16	72	PN	Pn	09 48 27.7	-0.6
URZ				SN	Sn	09 48 46.3	-2.0
URZ				AML	AML	09 48 47.2	
MHEZ	Mangahewa	1.18	247	PN	Pn	09 48 28.7	+0.2
ARHZ	Aropaoanui	1.18	123	PN	Pn	09 48 29.1	+0.5
WAZ	Wanganui	1.26	207	PN	Pn	09 48 29.0	-0.3
WHHZ	Waihua	1.27	111	PN	Pn	09 48 29.9	+0.5
LREZ	Lake Rotokare	1.32	231	PN	Pn	09 48 30.0	+0.1
PNHZ	Pukenui	1.33	164	PN	Pn	09 48 29.8	-0.3
RAGZ	Rawiri	1.34	85	PN	Pn	09 48 30.1	-0.1
TSZ	Takapari Road	1.44	173	⇑PN	Pn	09 48 30.7	-0.4
TSZ				AML	AML	09 48 31.3	
TSZ				AML	AML	09 48 31.6	
MWZ	Matawai	1.45	79	PN	Pn	09 48 30.8	-0.4
MWZ				AML	AML	09 48 52.6	
MWZ				AML	AML	09 48 52.9	
KAHZ	Kahuranaki	1.47	143	PN	Pn	09 48 31.6	+0.2
CKHZ	Cape Kidnapper	1.47	135	PN	Pn	09 48 31.8	+0.4
WPHZ	Waipukurau	1.54	159	⇑PN	Pn	09 48 31.8	-0.3
KNZ	Kokohu	1.58	105	PN	Pn	09 48 32.5	0.0
RIGZ	Rimuhau	1.60	93	PN	Pn	09 48 32.9	+0.1
OHWZ	Ohakea	1.60	191	⇑PN	Pn	09 48 32.7	-0.1
PXZ	Pawanui	1.66	148	⇑PN	Pn	09 48 33.1	-0.3
PXZ				AML	AML	09 48 57.1	
PXZ				AML	AML	09 48 57.3	
TKGZ	Te Karaka	1.68	84	⇓PN	Pn	09 48 33.9	+0.2
DVHZ	Dannevirke	1.70	168	PN	Pn	09 48 33.1	-0.9
PRGZ	Paritu Road	1.72	100	PN	Pn	09 48 34.0	-0.1
POWZ	Post Office Ro	1.76	179	PN	Pn	09 48 33.6	-0.9
PRHZ	Porangahau	1.78	157	PN	Pn	09 48 34.3	-0.4
MHGZ	Mahia Peninsul	1.79	108	PN	Pn	09 48 34.9	+0.1
HAZ	Te Kaha	1.85	62	PN	Pn	09 48 34.6	-0.9
ANWZ	Angora Road	1.92	162	PN	Pn	09 48 35.7	-0.6
PRWZ	Pori Road	1.93	174	PN	Pn	09 48 35.6	-0.9
CNGZ	Carnagh Station	1.96	86	PN	Pn	09 48 36.9	+0.1
PKGZ	Pakihiroa	2.00	69	PN	Pn	09 48 37.1	-0.2
MRZ	Mangatainoka R	2.03	183	⇑PN	Pn	09 48 36.2	-1.4
PUZ	Puketiti	2.07	75	PN	Pn	09 48 37.5	-0.7
BFZ	Birch Farm	2.09	169	PN	Pn	09 48 37.1	-1.2
TIWZ	Tintock	2.15	177	AML	AML	09 49 06.6	
TIWZ				AML	AML	09 49 07.0	
OGWZ	Otaki Gorge	2.22	191	PN	Pn	09 48 38.3	-1.5
HOWZ	Holdsworth Sta	2.27	184	PN	Pn	09 48 38.6	-1.9
CPWZ	Castlepoint	2.31	171	PN	Pn	09 48 39.9	-0.9
KIW	Kapiti Island	2.31	195	PN	Pn	09 48 39.0	-1.9
KIW				AML	AML	09 49 09.1	
TMWZ	Te Maipa	2.48	177	PN	Pn	09 48 41.0	-1.9
CAW	Cannon Point	2.52	191	PN	Pn	09 48 41.4	-2.1
CAW				AML	AML	09 49 13.5	
CAW				AML	AML	09 49 14.1	
MTW	Mount Morrison	2.53	184	PN	Pn	09 48 41.3	-2.3
MTW				AML	AML	09 49 13.5	
MTW				AML	AML	09 49 14.0	
WEL	Wellington	2.75	195	PN	Pn	09 48 43.8	-2.5
PAWZ	Paruwai Farm	2.76	185	PN	Pn	09 48 43.9	-2.5
PAWZ				AML	AML	09 49 18.4	
TRWZ	Traveller	2.76	180	PN	Pn	09 48 44.2	-2.3
TRWZ				AML	AML	09 49 19.3	
TRWZ				AML	AML	09 49 19.4	
TCW	Tory Channel	2.80	203	PN	Pn	09 48 44.6	-2.4
BHW	Baring Head	2.85	193	PN	Pn	09 48 44.9	-2.7
BHW				AML	AML	09 49 20.1	
PLWZ	Palliser	2.96	187	PN	Pn	09 48 46.1	-2.9
TUWZ	Tuamarina	3.11	205	PN	Pn	09 48 48.0	-2.8
NNZ	Nelson	3.15	214	PN	Pn	09 48 48.5	-2.8
QRZ	Quartz Range	3.29	227	PN	Pn	09 48 50.0	-3.2

IDC ***26*** *09:50:59.7±0.9,25°.47N×142°.75E,h0km,mb3.7/7, mb1 3.9/7,mb1mx3.6/48,mbtmp3.7/7,MS2.9/1,Ms1 2.9/1, ms1mx2.4/41,Error ellipse: s-maj=36.4km s-min=17.2km az=87.0*

ISCJB ***26*** *09:51:03.3±0.8,25°.38N±0°.09×142°.8E±0°.2,h40km, mb3.8/7,Error ellipse: s-maj=33.0km s-min=10.6km az=167.8*

ISC 26 09:51:05.4±1.0,25°.4N±0°.1×142°.8E±0°.3,h40km,n9, σ1§00/9,mb4.0/7,Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCJ	Chichijima	1.74	343	Pn	Pn	09 51 32.7	-0.5
	80nm,0.3s,baz=120,slow=23,SNR=102						
JCJ				Sn	Sn	09 51 55.7	+1.6
	122nm,0.3s,baz=273,slow=21,SNR=14						
KSRS	Korea Array	17.42	317	LR	LR	10 00 59.1	
	comp=Z,39nm,18.4s,baz=115,slow=34						
WRA	Warramunga Arr	45.84	191	P	P	09 59 24.7	+1.1
	0.8nm,0.4s,baz=9.2,slow=8.2,SNR=11						
ASAR	Alice Springs	49.55	191	P	P	09 59 52.6	+0.2
	0.2nm,0.7s,baz=17,slow=10,SNR=4.1						
KURBB	Kurchatov Arra	54.59	315	P	P	10 00 28.4	-1.2
	0.6nm,0.4s,baz=93,slow=8.0,SNR=6.1						
ILAR	Eielson Array	58.92	28	P	P	10 00 59.8	-0.4
	0.3nm,0.7s,baz=243,slow=6.0,SNR=4.0						
BVAR	Borovoye Array	59.63	318	P	P	10 01 04.5	-0.7
	0.9nm,0.5s,baz=104,slow=6.1,SNR=3.0						
YKA	Yellowknife Ar	73.36	28	P	P	10 02 33.0	+0.3
	0.3nm,0.6s,baz=292,slow=6.1,SNR=8.8						
FINES	FINESS Array B	79.67	334	P	P	10 03 08.7	+0.2
	2.1nm,0.8s,baz=79,slow=7.2,SNR=6.3						

ISCJB ***26*** *10:02:05.7±0.4,37°.52N±0°.04×72°.42E±0°.07,h176km, mb3.5/4,Error ellipse: s-maj=8.2km s-min=3.9km az=155.5*

SOME ***26*** *10:02:05.1,38°.33N×71°.98E,h15km*

IDC ***26*** *10:02:07.0±3.7,37°.40N×72°.45E,h194km±33km,mb3.4/4, mb1 3.4/8,mb1mx3.0/52,mbtmp3.9/8,Error ellipse: s-maj=30.4km s-min=25.5km az=19.0*

NNC ***26*** *10:02:11.6±2.8,37°.93N×72°.19E,h191km±34km,mb2.5, mpv3.6,Error ellipse: s-maj=29.7km s-min=12.2km az=140.0*

ISC 26 10:02:05.7±0.7,37°.51N±0°.06×72°.43E±0°.06,h176km,n25, σ1§64/35,mb3.5/4,7C-4D,Tajikistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	Dzherino	3.12	296	⇑P	Pn	10 02 58.0	+2.2
	22nm,0.3s						
DZET				⇓S	Sn	10 03 35.1	+0.4
	151nm,0.3s						
MNAS	Manas	4.97	1	⇓P	Pn	10 03 21.0	+1.7
	6.8nm,0.4s						
MNAS				⇑S	Sn	10 04 15.6	-1.5
	25nm,0.5s						
IUG	Iuzhnay	4.99	339	*e*P	Pn	10 03 21.7	+2.3
	60nm,0.2s						
IUG				*e*S	Sn	10 04 16.8	-0.5
	144nm,0.3s						
MRKS	Merke	5.26	6	*e*P	Pn	10 03 24.8	+1.7
	28nm,0.3s						
MRKS				*e*S	Sn	10 04 22.6	-1.3
	54nm,0.2s						
AAK	Ala-Archa	5.36	17	P	Pn	10 03 26.8	+2.5
	1.5nm,0.3s,baz=158,slow=7.8,SNR=12						
AAK				S	Sn	10 04 26.3	+0.2
	2.9nm,0.3s,baz=325,slow=21,SNR=15						
AAK	Ala-Archa	5.36	17	⇑P	Pn	10 03 26.6	+2.2
	2.6nm,0.5s						
AAK				⇓S	Sn	10 04 25.6	-0.5
	20nm,0.6s						
BRLS	Borolday	5.68	339	*e*P	Pn	10 03 29.4	+1.1
	10nm,0.1s						
BRLS				*e*S	Sn	10 04 29.2	-4.2
THN	Thein Dam	5.74	151	*e*P	Pn	10 03 28.6	-0.6
THN				*e*S	Sn	10 04 34.4	-0.5
KK31	Karatay Array	5.78	346	⇑P	Pn	10 03 30.9	+1.2
	1.4nm,0.2s,baz=153,slow=9.5,SNR=46						
KK31				⇓S	Sn	10 04 31.8	-4.0
	12nm,0.5s,baz=148,slow=24,SNR=6.8						
TKM2	Tokmak 2	5.92	23	⇑P	Pn	10 03 33.7	+2.0
	2.0nm,0.5s						
TKM2				⇑S	Sn	10 04 36.8	-2.7
	2.0nm,0.5s						
PYUN	Piuthan	12.91	134	*e*P	Pn	10 05 03.3	+0.2
	12nm,0.3s						
KOLN	Koldanda	13.51	133	*e*P	Pn	10 05 11.7	+1.0
	7.4nm,0.3s						
KURBB	Kurchatov Arra	13.82	16	P	P	10 05 17.4	+0.6
	0.1nm,0.3s,baz=204,slow=11,SNR=2.8						
GKN	Gorkha	13.96	129	*e*P	P	10 05 17.9	-1.0
	11nm,0.3s						
KKN	Kakani	14.51	128	*e*P	P	10 05 24.8	-0.2
	7.4nm,0.2s						
DMN	Daman	14.54	129	*e*P	P	10 05 24.7	-0.6
	4.8nm,0.2s						
PKIN	Phulchoki	14.74	128	*e*P	P	10 05 28.1	+0.5
	6.9nm,0.3s						
GUN	Gumba	14.81	126	*e*P	P	10 05 28.7	+0.3
	11nm,0.4s						
AB31	Akbulak array	14.82	326	P	Pn	10 05 26.4	-0.1
	2.0nm,0.8s,baz=136,slow=12,SNR=18						
AB31				⇑S	Sn	10 08 02.5	-9.1
	1.4nm,0.6s,baz=155,slow=23,SNR=4.9						
BVAR	Borovoye Array	15.58	355	P	P	10 05 37.4	+1.0
	0.4nm,0.3s,baz=172,slow=12,SNR=4.6						
AKTO	Aktyubinsk	16.53	326	P	Pn	10 05 48.3	+0.9
	0.6nm,0.3s,baz=116,slow=11,SNR=9.9						
ARCES	ARCESS Array B	40.66	337	P	P	10 09 28.4	+0.2
	6.4nm,1.1s,baz=120,slow=8.4,SNR=2.9						
TORD	Torodi Ar. Bea	66.88	269	P	P	10 12 38.6	-0.6
	0.7nm,0.4s,baz=49,slow=5.9,SNR=21						
YKA	Yellowknife Ar	80.18	3	P	P	10 13 55.7	-0.2
	0.2nm,0.5s,baz=349,slow=5.6,SNR=10						
WRA	Warramunga Arr	81.56	123	P	P	10 14 02.8	-1.1
	0.5nm,1.0s,baz=322,slow=4.5,SNR=5.9						

DDA ***26*** *10:02:06.3,39°.11N×29°.09E,h7km,Md2.8*

ISK ***26*** *10:02:06.4,39°.16N×29°.08E,h5km,ML2.5*

CSEM ***26*** *10:02:07.0±0.1,39°.14N×29°.08E,h2km,MD2.8,Error ellipse: s-maj=3.4km s-min=3.0km az=62.0*

ISC 26 10:02:06.8±0.9,39°.12N±0°.03×29°.09E±0°.02,h13km±8km, n35,σ0§37/48,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.30	255	P	Pg	10 02 12.9	-0.1
DEMI				S	Sg	10 02 17.2	0.0
DEMI	Demirci	0.30	255	*i* P	Pg	10 02 12.9	-0.1
DEMI				*i* S	Sg	10 02 17.2	0.0
GDZ	Gediz	0.31	96	P	Pg	10 02 13.2	+0.1
GDZ				S	Sg	10 02 17.6	+0.2
GDZ	Gediz	0.31	96	*i* P	Pg	10 02 13.2	+0.1
GDZ				*i* S	Sg	10 02 17.6	+0.2
TVSB	Tavsanli	0.44	41	PG	Pg	10 02 15.1	-0.4
TVSB	Tavsanli	0.44	41	*i* Pg	Pg	10 02 15.1	-0.4
DURS	Dursunbey	0.68	315	P	Pg	10 02 19.5	-0.4
DURS				S	Sb	10 02 29.5	-0.4
DURS	Dursunbey	0.68	315	*i* P	Pg	10 02 19.5	-0.4
DURS				*i* S	Sb	10 02 29.5	-0.4
KHAL	Karahalli	0.81	157	P	Pg	10 02 22.4	-0.2
KHAL				S	Sg	10 02 32.9	-0.4
KHAL	Karahalli	0.81	157	*i* P	Pg	10 02 22.4	-0.2
KHAL				*i* S	Sg	10 02 32.9	-0.4
KHL	Karahalli	0.87	157	*e*PG	Pn	10 02 25.0	+0.1
KHL	Karahalli	0.87	157	*e*Pg	Pn	10 02 25.0	+0.1
ORLT	Orhaneli	0.94	351	*e*PG	Pb	10 02 25.0	0.0
ORLT	Orhaneli	0.94	351	*e*Pg	Pb	10 02 25.0	0.0
AKS	Akhisar	1.02	257	*e*PG	Pn	10 02 27.0	+0.1
AKS	Akhisar	1.02	257	*e*Pg	Pn	10 02 27.0	+0.1
IGD	Bursa	1.14	4	*i* P	Pb	10 02 27.8	-0.7
IGD				*i* S	Sn	10 02 44.4	+0.3
CAVI	Cavuskoy	1.23	28	*e*PN	Pb	10 02 30.1	+0.2
CAVI	Cavuskoy	1.23	28	*e*Pn	Pb	10 02 30.1	+0.2
IZI	Iznik	1.25	14	*e*PN	Pg	10 02 31.2	+0.4
IZI	Iznik	1.25	14	*e*Pn	Pg	10 02 31.2	+0.4
MDNY	Mudanya-Bursa	1.25	353	*e*PN	Pg	10 02 30.7	-0.2
MDNY	Mudanya-Bursa	1.25	353	*e*Pn	Pg	10 02 30.7	-0.2
KCTX	Karacabey (Bur	1.27	334	*e*PN	Pg	10 02 31.2	-0.1
KCTX	Karacabey (Bur	1.27	334	*e*Pn	Pg	10 02 31.2	-0.1
ADVT	Abdulvahap	1.40	21	*e*PN	Pg	10 02 33.7	0.0
ADVT	Abdulvahap	1.40	21	*e*Pn	Pg	10 02 33.7	0.0
GONE	Gonen-Balikesi	1.42	311	*e*PN	Pg	10 02 33.7	-0.4
GONE				*e*SN	Sg	10 02 53.6	+0.9
GONE	Gonen-Balikesi	1.42	311	*e*Pn	Pg	10 02 33.7	-0.4
GONE				*e*Sn	Sg	10 02 53.6	+0.9
ARMT	Armutlu	1.45	353	*e*PN	Pb	10 02 34.1	+0.3
ARMT	Armutlu	1.45	353	*e*Pn	Pb	10 02 34.1	+0.3
GULT	Gulveren	1.71	40	*e*PN	Pb	10 02 38.5	+0.4
GULT				*e*SN	Sg	10 03 01.1	-0.7
GULT	Gulveren	1.71	40	*e*Pn	Pb	10 02 38.5	+0.4
GULT				*e*Sn	Sg	10 03 01.1	-0.7
SPNC	Sapanca-Adapaz	1.82	31	*e*PN	Pb	10 02 40.2	+0.2
SPNC	Sapanca-Adapaz	1.82	31	*e*Pn	Pb	10 02 40.2	+0.2

CSEM ***26*** *10:10:17.4,39°.11N×29°.09E,h7km,MD2.9*

DDA 26 10:10:17.4,39°.11N×29°.09E,h7km,Md2.9,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.30	257	P	Pg	10 10 24.1	+0.8
DEMI				S	Sg	10 10 28.2	+0.9
DEMI	Demirci	0.30	257	*i* P	Pg	10 10 24.1	+0.7
DEMI				*i* S	Sg	10 10 28.2	+0.9
GDZ	Gediz	0.30	94	P	Pg	10 10 24.0	+0.6
GDZ				S	Sg	10 10 28.6	+1.2
GDZ	Gediz	0.30	94	*i* P	Pg	10 10 24.0	+0.6
GDZ				*i* S	Sg	10 10 28.6	+1.1
DURS	Dursunbey	0.68	316	P	Pg	10 10 30.9	+0.3
DURS				S	Sg	10 10 40.4	+0.9
DURS	Dursunbey	0.68	316	*i* P	Pg	10 10 30.9	+0.4
DURS				*i* S	Sg	10 10 40.4	+0.9
KHAL	Karahalli	0.80	157	P	Pb	10 10 33.6	-0.2
KHAL				S	Sg	10 10 44.0	+0.7
KHAL	Karahalli	0.80	157	*i* P	Pb	10 10 33.6	-0.1
KHAL				*i* S	Sg	10 10 44.0	+0.7
AKHS	Akhisar	1.02	257	P	Pb	10 10 37.7	+0.3
AKHS				S	Sn	10 10 52.3	-0.5
AKHS	Akhisar	1.02	257	*i* P	Pb	10 10 37.7	+0.3
AKH

EDC	Edincik	1.54	321	*e*Pn	Pn	10 11 08.1 +0.2
AYDB	Zeytinkoy-Aydi	1.54	219	*e*PN	Pn	10 11 08.5 +0.4
AYDB	Zeytinkoy-Aydi	1.54	219	*e*Pn	Pn	10 11 08.5 +0.4
GULT	Gulveren	1.67	40	*e*PN	Pn	10 11 10.3 +0.4
GULT	Gulveren	1.67	40	*e*Pn	Pn	10 11 10.3 +0.4
HRT	Hereke	1.72	14	*e*PN	Pn	10 11 10.7 +0.2
HRT	Hereke	1.72	14	*e*Pn	Pn	10 11 10.7 +0.2
DKL	Dikili	1.72	268	*e*PN	Pn	10 11 11.0 +0.5
DKL	Dikili	1.72	268	*e*Pn	Pn	10 11 11.0 +0.5
ISP	Isparta	1.73	140	*e*PN	Pb	10 11 11.7 -0.2
ISP	Isparta	1.73	140	⇑*i*P	Pn	10 11 09.0 -1.6
ISP	Isparta	1.73	140	*e*Pn	Pb	10 11 11.7 -0.2
SPNC	Sapanca-Adapaz	1.78	31	*e*PN	Pn	10 11 12.0 +0.7
SPNC	Sapanca-Adapaz	1.78	31	*e*Pn	Pn	10 11 12.0 +0.7
MRMT	Marmara Adasi	1.86	322	*e*PN	Pn	10 11 12.4 -0.1
MRMT	Marmara Adasi	1.86	322	*e*Pn	Pn	10 11 12.4 -0.1
SVRH	Sivrihisar-ESK	1.89	80	*e*PN	Pb	10 11 14.0 -0.8
SVRH	Sivrihisar-ESK	1.89	80	*e*Pn	Pb	10 11 14.0 -0.8
ISK	Istanbul-Kandi	1.91	359	*e*PN	Pn	10 11 13.7 +0.6
ISK	Istanbul-Kandi	1.91	359	*e*Pn	Pn	10 11 13.7 +0.6
GLHS	Glhisar (BURDU	2.02	171	*e*PN	Pn	10 11 15.4 +0.8
GLHS	Glhisar (BURDU	2.02	171	*e*Pn	Pn	10 11 15.4 +0.8
SILT	Sile	2.04	11	*e*PN	Pn	10 11 15.3 +0.6
SILT	Sile	2.04	11	*e*Pn	Pn	10 11 15.4 +0.6
BCK	Bucak	2.05	145	*e*PN	Pn	10 11 16.3 +1.3
BCK	Bucak	2.05	145	*e*Pn	Pn	10 11 16.3 +1.3
KLYT	Kilyos	2.10	358	*e*PN	Pn	10 11 16.1 +0.4
KLYT	Kilyos	2.10	358	*e*Pn	Pn	10 11 16.1 +0.4
YER	Yerkesik	2.12	198	*e*PN	Pn	10 11 17.1 +1.1
YER	Yerkesik	2.12	198	*e*Pn	Pn	10 11 17.1 +1.1
CTKS	Kestanelik-??a	2.13	348	*e*PN	Pn	10 11 16.6 +0.5
CTKS	Kestanelik-??a	2.13	348	*e*Pn	Pn	10 11 16.6 +0.5
RKY	Sarkoy-Tekirda	2.14	316	*e*PN	Pn	10 11 16.8 +0.5
RKY	Sarkoy-Tekirda	2.14	316	*e*Pn	Pn	10 11 16.8 +0.5
KIZT	Kizilcal	2.17	96	*e*PN	Pn	10 11 17.4 +0.7
KIZT	Kizilcal	2.17	96	*e*Pn	Pn	10 11 17.4 +0.7
LPK	Lapseki	2.19	305	*e*PN	Pn	10 11 17.6 +0.7
LPK	Lapseki	2.19	305	*e*Pn	Pn	10 11 17.6 +0.7
SUTC	Sutluce-Ispart	2.23	138	*e*PN	Pn	10 11 18.6 +1.0
SUTC	Sutluce-Ispart	2.23	138	*e*Pn	Pn	10 11 18.6 +1.0
CRLT	Corlu	2.24	332	*e*PN	Pn	10 11 18.3 +0.7
CRLT	Corlu	2.24	332	*e*Pn	Pn	10 11 18.3 +0.7
EZN	Ezine	2.26	288	*e*PN	Pn	10 11 18.7 +0.8
EZN	Ezine	2.26	288	*e*Pn	Pn	10 11 18.7 +0.8
GELI	Tayfur-Gelibol	2.39	302	*e*PN	Pn	10 11 20.8 +1.2
GELI	Tayfur-Gelibol	2.39	302	*e*Pn	Pn	10 11 20.8 +1.2
CTYL	Yalikoy Yolu	2.40	345	*e*PN	Pn	10 11 20.3 +0.5
CTYL	Yalikoy Yolu	2.40	345	*e*Pn	Pn	10 11 20.3 +0.5
ERIK	Erikli-Kesan	2.51	308	*e*PN	Pn	10 11 22.1 +0.8
ERIK	Erikli-Kesan	2.51	308	*e*Pn	Pn	10 11 22.1 +0.8
LOD	Lodumlu	2.92	74	*e*PN	Pn	10 11 28.6 +1.6
LOD	Lodumlu	2.92	74	*e*Pn	Pn	10 11 28.6 +1.6
APE	Apeiranthos	3.51	235	⇓*i*P	Pg	10 11 45.8 -1.0
BRTR	Keskin Array B	3.55	79	Pn	Pn	10 11 36.1 +0.4
	0.9nm,0.3s,baz=256,slow=13,SNR=16					
BRTR				Pg	Pg	10 11 47.0 -0.5
	2.9nm,0.3s,baz=261,slow=17,SNR=23					
BRTR				Sn	Sn	10 12 16.4 -1.9
	5.4nm,0.3s,baz=253,slow=23,SNR=13					
BRTR				Lg	Lg	10 12 35.1
	3.3nm,0.3s,baz=267,slow=24,SNR=8.7					
KDZ	Kurdzhali	3.77	313	P	Pg	10 11 50.9 -0.8
RZN	Rozhen	4.21	308	P	Pg	10 11 59.0 -1.1
IDI	Anoyia	5.12	222	Pn	Pn	10 11 56.6 -0.7
	0.2nm,0.3s,baz=25,slow=14,SNR=2.1					
TLCR		6.03	358	⇓*i*P	Pn	10 12 08.2 -1.5
TLCR		6.03	358	⇓*i*P	Pn	10 12 08.2 -1.5
CFR	Carcaliu	6.07	353	⇑*i*P	Pn	10 12 09.7 -0.4
CFR	Carcaliu	6.07	353	⇑*i*P	Pn	10 12 09.7 -0.4
MLR	Muntele Rosu	6.75	341	Pn	Pn	10 12 20.4 +0.7
	0.1nm,0.3s,baz=164,slow=1.7,SNR=10					
MLR	Muntele Rosu	6.75	341	⇑*i*P	Pn	10 12 20.2 +0.4
MLR	Muntele Rosu	6.75	341	⇑*i*P	Pn	10 12 20.2 +0.4
VRI	Vrincioaia	6.94	346	⇑*i*P	Pn	10 12 22.2 +0.1
VRI	Vrincioaia	6.94	346	⇑*i*P	Pn	10 12 22.2 +0.1
PLOR	Plostina	6.94	346	⇑*i*P	Pn	10 12 22.8 +0.6
PLOR	Plostina	6.94	346	⇑*i*P	Pn	10 12 22.8 +0.6
VOIR		6.96	336	⇑*i*P	Pn	10 12 23.0 +0.4
VOIR		6.96	336	⇑*i*P	Pn	10 12 23.0 +0.4
DOPR	Dopca	7.34	339	⇑*i*P	Pn	10 12 28.1 +0.4
DOPR	Dopca	7.34	339	⇑*i*P	Pn	10 12 28.1 +0.4
TESR	Tescani	7.58	347	⇓*i*P	Pn	10 12 29.8 -1.1
TESR	Tescani	7.58	347	⇓*i*P	Pn	10 12 29.8 -1.1
MMAI	Mount Meron Ar	7.96	138	Pn	Pn	10 12 35.3 -1.0
	1.8nm,0.3s,baz=325,slow=12,SNR=6.7					
BURAR	Bucovina Array	8.92	343	⇑*i*P	Pn	10 12 50.6 +1.2
BURAR	Bucovina Array	8.92	343	⇑*i*P	Pn	10 12 50.6 +1.2
SORM	Soroca	9.00	357	⇑*i*P	Pn	10 12 48.8 -1.5
SORM	Soroca	9.00	357	⇑*i*P	Pn	10 12 48.8 -1.5
NOA	NORSAR Array B	24.57	339	P	P	10 16 01.6 +0.9
	1.8nm,0.9s,baz=134,slow=6.7,SNR=3.6					
TORD	Torodi Ar. Bea	35.47	231	P	P	10 17 35.4 -2.0
	0.5nm,0.7s,baz=46,slow=9.0,SNR=3.5					
MKAR	Makanchi Array	39.00	61	P	P	10 18 08.5 +1.3
	0.2nm,0.4s,baz=269,slow=8.6,SNR=2.6					

JMA 26 10:14:48.7,36°92N×139°75E,h6^{km}±1^{km},M1.5,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JKT	Katashina	0.43	249	S	Sg	10 15 03.0	+0.3
JFY	Yanaizu	0.49	356	P	Pg	10 14 58.3	+0.2
JAG	Ashikaga	0.55	206	P	Pg	10 14 59.1	-0.2
JHK	Hiroka	0.67	299	P	Pg	10 15 01.9	+0.3
JHK				S	Sg	10 15 10.5	+0.1

ISK ***26*** *10:15:12.8,39°12N×29°11E,h3^{km},ML3.0*
ISCJB ***26*** *10:15:14.0±0.3,39°11N±0°03×29°11E±0°03,h9^{km}, Error ellipse: s-maj=4.0km s-min=3.4km az=43.6*
CSEM ***26*** *10:15:13.6±0.1,39°13N×29°10E,h2^{km},ML3.5, Error ellipse: s-maj=2.9km s-min=2.8km az=147.0*
DDA ***26*** *10:15:13.6,39°11N×29°10E,h8^{km},Ml3.5*
ISC 26 10:15:14.1±0.8,39°13N±0°02×29°10E±0°02,h9^{km},n73, σ0^{s}54/81,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	Gediz	0.30	98	P	Pg	10 15 20.1	0.0
GDZ				S	Sg	10 15 24.0	-0.1
GDZ	Gediz	0.30	98	*i* P	Pg	10 15 20.1	0.0
GDZ				*i* S	Sg	10 15 24.0	-0.1
DEMI	Demirci	0.31	254	P	Pg	10 15 20.0	-0.3
DEMI	Demirci	0.31	254	*i* P	Pg	10 15 20.0	-0.3
TVSB	Tavsanli	0.42	41	*e*PG	Pg	10 15 21.6	-0.8
TVSB	Tavsanli	0.42	41	*e*Pg	Pg	10 15 21.6	-0.8
DURS	Dursunbey	0.68	314	P	Pg	10 15 26.8	-0.3
DURS	Dursunbey	0.68	314	*i* P	Pg	10 15 26.8	-0.3
KHAL	Karahalli	0.82	158	P	Pg	10 15 29.3	-0.6
KHAL	Karahalli	0.82	158	*i* P	Pg	10 15 29.3	-0.6
KHL	Karahalli	0.87	158	*e*PG	Pg	10 15 30.3	-0.6
KHL				*e*SG	Sg	10 15 42.1	-0.1
KHL	Karahalli	0.87	158	*e*Pg	Pg	10 15 30.3	-0.6
KHL				*e*Sg	Sg	10 15 42.1	-0.1
ORLT	Orhaneli	0.93	350	*e*PG	Pg	10 15 31.5	-0.4
ORLT	Orhaneli	0.93	350	*e*Pg	Pg	10 15 31.5	-0.4
AKHS	Akhisar	1.03	256	P	Pg	10 15 33.4	-0.5
AKHS	Akhisar	1.03	256	*i* P	Pg	10 15 33.4	-0.5
AKS	Akhisar	1.03	256	*e*PG	Pg	10 15 33.3	-0.7
AKS	Akhisar	1.03	256	*e*Pg	Pg	10 15 33.3	-0.7
BALB	Balikesir	1.07	299	*e*PN	Pg	10 15 34.3	-0.4
BALB				*e*SN	Sn	10 15 50.3	0.0
BALB	Balikesir	1.07	299	*e*Pn	Pg	10 15 34.3	-0.4
BALB				*e*Sn	Sn	10 15 50.3	0.0
IGD	Bursa	1.13	4	*i* P	Pb	10 15 34.3	-1.6
CAVI	Cavuskoy	1.21	28	*e*PN	Pb	10 15 36.4	-0.8
CAVI	Cavuskoy	1.21	28	*e*Pn	Pb	10 15 36.4	-0.8
IZI	Iznik	1.24	13	*e*PN	Pb	10 15 38.1	+0.4
IZI	Iznik	1.24	13	*e*Pn	Pb	10 15 38.1	+0.4
MDNY	Mudanya-Bursa	1.25	352	*e*PN	Pn	10 15 37.5	-0.2
MDNY				*e*SN	Sn	10 15 55.5	+0.9
MDNY	Mudanya-Bursa	1.25	352	*e*Pn	Pn	10 15 37.5	-0.2
MDNY				*e*Sn	Sn	10 15 55.5	+0.9
KCTX	Karacabey (Bur	1.27	333	*e*PN	Pn	10 15 37.6	-0.4
KCTX	Karacabey (Bur	1.27	333	*e*Pn	Pn	10 15 37.6	-0.4
BORA	Eskisehir	1.28	54	P	Pn	10 15 38.2	-0.1
BORA	Eskisehir	1.28	54	*i* P	Pn	10 15 38.2	-0.1
BALY	Balya	1.30	298	P	Pb	10 15 38.9	+0.2
BALY	Balya	1.30	298	*i* P	Pb	10 15 38.9	+0.2
ADVT	Abdulvahap	1.39	20	*e*PN	Pn	10 15 40.1	+0.5
ADVT	Abdulvahap	1.39	20	*e*Pn	Pn	10 15 40.1	+0.5
ESKT	Eskisehir	1.41	74	*i* P	Pn	10 15 40.4	+0.4
SEYT	Eskypehyr	1.41	74	P	Pn	10 15 40.4	+0.4
GONE	Gonen-Balikesi	1.43	310	*e*PN	Pb	10 15 40.9	+0.1
GONE	Gonen-Balikesi	1.43	310	*e*Pn	Pb	10 15 40.9	+0.1
DNZL	Cakiroluk	1.44	182	P	Pn	10 15 40.6	+0.1
DNZL	Cakiroluk	1.44	182	*i* P	Pn	10 15 40.6	+0.1
ARMT	Armutlu	1.44	353	*e*PN	Pn	10 15 40.1	-0.3
ARMT	Armutlu	1.44	353	*e*Pn	Pn	10 15 40.1	-0.3
GPA	Golpazari	1.48	39	*e*PN	Pn	10 15 41.8	+0.8
GPA	Golpazari	1.48	39	*e*Pn	Pn	10 15 41.8	+0.8
EDC	Edincik	1.54	322	*e*PN	Pn	10 15 42.4	+0.6
EDC	Edincik	1.54	322	*e*Pn	Pn	10 15 42.4	+0.6
KNL	Bal¨–kesir	1.66	314	*i* P	Pb	10 15 44.8	-0.1
GULT	Gulveren	1.69	40	*e*PN	Pn	10 15 44.3	+0.4
GULT	Gulveren	1.69	40	*e*Pn	Pn	10 15 44.3	+0.4
BUY	Buyukada	1.72	0	P	Pg	10 15 46.8	-0.2
BUY	Buyukada	1.72	0	*i* P	Pg	10 15 46.8	-0.2
HRT	Hereke	1.74	14	*e*PN	Pn	10 15 45.2	+0.6
HRT	Hereke	1.74	14	*e*Pn	Pn	10 15 45.2	+0.6
BAGO	Egridir - ISPA	1.75	130	*i* P	Pn	10 15 44.2	-0.5
AYDN	Tasoluk	1.75	214	P	Pn	10 15 45.1	+0.4
AYDN	Tasoluk	1.75	214	*i* P	Pn	10 15 45.1	+0.4
AYVA	Ayvalik	1.88	276	P	Pb	10 15 48.6	0.0
AYVA	Ayvalik	1.88	276	*i* P	Pb	10 15 48.6	0.0
SVRH	Sivrihisar-ESK	1.91	80	*e*PN	Pn	10 15 47.4	+0.6
SVRH	Sivrihisar-ESK	1.91	80	*e*Pn	Pn	10 15 47.4	+0.6
ISK	Istanbul-Kandi	1.93	359	*e*PN	Pn	10 15 47.4	+0.3
ISK	Istanbul-Kandi	1.93	359	*e*Pn	Pn	10 15 47.4	+0.3
SILT	Sile	2.06	11	*e*PN	Pn	10 15 49.7	+0.8
SILT	Sile	2.06	11	*e*Pn	Pn	10 15 49.7	+0.8
URLA	Izmir	2.11	249	*i* P	Pb	10 15 52.7	+0.3
KAND	Kocaeli-Kandir	2.13	23	P	Pb	10 15 51.9	-0.9
KAND	Kocaeli-Kandir	2.13	23	*i* P	Pb	10 15 51.9	-0.9
SAHE	Sakarya_HENDEK	2.18	38	P	Pn	10 15 50.7	+0.1
SAHE	Sakarya_HENDEK	2.18	38	*i* P	Pn	10 15 50.7	+0.1
KESN	Edirne-Kesan	2.51	313	P	Pn	10 15 56.0	+0.5
KESN	Edirne-Kesan	2.51	313	*i* P	Pn	10 15 56.0	+0.5
BCAM	Yenicaga	2.83	53	*i* P	Pb	10 16 06.1	+1.3

NIED ***26*** *10:15:00,37°10N×140°80E,h5^{km},Mw3.7 Best double couple: M=3.66000×10^{14} NP1:φ=101.00000°,δ=23.00000°, λ=-53.00000°. NP2:φ=242.00000°,δ=72.00000°, λ=-104.00000°.*
ISCJB ***26*** *10:15:52.7±0.9,37°10N±0°03×140°96E±0°05,h6^{km}±4^{km}, mb3.7/8,Error ellipse: s-maj=7.7km s-min=5.4km az=23.1*
JMA ***26*** *10:15:54.2,37°11N×140°84E,h7^{km},M3.7 Broadband fault plane solution: P waves. NP1:φ=234.00000°, δ=61.00000°,λ=-98.00000°. NP2:φ=70.00000°,δ=30.00000°, λ=-76.00000°. Principal axes: T Plg15.0000°, Azm330.0000°; N Plg7.0000°, Azm238.0000°; P Plg73.0000°, Azm125.0000°;*
JMA Felt III J1.
IDC ***26*** *10:16:02.0±3.6,37°01N×140°78E,h70^{km}±29^{km},mb3.4/8, mb1 3.6/11,mb1mx3.4/55,mbtmp3.7/11,ML2.8/3 Error ellipse: s-maj=28.4km s-min=18.8km az=89.0*
ISC 26 10:15:53.5±1.4,37°05N±0°06×140°85E±0°06,h4^{km}±8^{km}, n25,σ0^{s}67/25,mb3.8/8,5C-1D,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.07	323	⇓P	Pg	10 15 55.5	+0.4
ONAJ				S	Sg	10 15 56.5	+0.4
JFK	Kawauchi	0.32	3	⇑P	Pg	10 15 59.4	-0.3
JHO	Hitachi	0.49	208	⇑P	Pb	10 16 04.5	-0.1
JHO				S	Sb	10 16 12.0	-0.2
JFT	Otama	0.62	319	⇑P	Pg	10 16 05.5	0.0
JFT				S	Sg	10 16 13.3	-0.3
JSB	Shiboa	0.75	264	P	Pb	10 16 09.2	+0.1
JSB				S	Sb	10 16 19.9	+0.2
JMM	Marumori	0.82	357	⇑P	Pg	10 16 08.4	-0.8
JMM				S	Sg	10 16 18.9	-1.0
JFY	Yanaizu	0.98	292	⇑P	Pg	10 16 12.3	0.0
JFY				S	Sg	10 16 25.0	-0.1
MJAR	Matsushiro Arr	2.18	257	P	Pb	10 16 32.9	-0.6
	12nm,0.3s,baz=80,slow=17,SNR=57						
MJAR				S	Sb	10 17 00.8	-0.1
	12nm,0.3s,baz=84,slow=27,SNR=9.8						
MAT	Matsushiro	2.18	257	P	Pb	10 16 33.0	-0.5
MAT				S	Sg	10 17 02.4	-1.1
USRK	Ussuriysk Ar.	9.82	319	P	Pn	10 18 19.6	+4.3
	0.2nm,0.3s,baz=123,slow=16,SNR=4.2						
KSRS	Korea Array	10.32	276	P	Pn	10 18 28.1	+5.9
	0.1nm,0.3s,baz=93,slow=13,SNR=10						
SONM	Songino Array	27.41	304	P	P	10 21 41.4	+1.3
	0.5nm,0.6s,baz=106,slow=9.7,SNR=4.6						
H11N2	WAKE ISLAND Hy	28.54	120	T	T	10 51 34.7	
	baz=313,slow=75,SNR=118						
H11N1	WAKE ISLAND Hy	28.55	120	T	T	10 51 35.2	
	baz=313,slow=75,SNR=118						
H11N3	WAKE ISLAND Hy	28.56	120	T	T	10 51 35.5	
	baz=313,slow=75,SNR=162						
H11S1	WAKE ISLAND Hy	29.25	122	T	T	10 52 27.3	
	baz=314,slow=76,SNR=76						
H11S3	WAKE ISLAND Hy	29.25	122	T	T	10 52 26.3	
	baz=314,slow=76,SNR=50						
H11S2	WAKE ISLAND Hy	29.26	122	T	T	10 52 28.6	
	baz=314,slow=76,SNR=57						
ZALV	Zalesovo Beam	41.57	312	P	P	10 23 42.0	-0.1
	1.3nm,0.5s,baz=101,slow=7.5,SNR=3.1						
MKAR	Makanchi Array	43.73	302	P	P	10 23 59.5	-0.3
	0.5nm,0.6s,baz=88,slow=9.7,SNR=5.6						
ILAR	Eielson Array	49.73	32	P	P	10 24 48.0	+1.6
	0.3nm,0.6s,baz=267,slow=8.0,SNR=4.4						
WRA	Warramunga Arr	57.01	187	P	P	10 25 39.9	-0.5
	0.8nm,0.6s,baz=5.0,slow=7.4,SNR=7.6						
ASAR	Alice Springs	60.74	187	P	P	10 26 06.6	+0.3
	0.3nm,0.5s,baz=8.7,slow=6.7,SNR=3.5						
FINES	FINESS Array B	68.59	332	P	P	10 26 57.0	-0.1
	2.9nm,0.9s,baz=51,slow=13,SNR=3.7						
AKASG	Malin Array Be	74.01	322	P	P	10 27 29.3	-0.8
	0.4nm,0.3s,baz=45,slow=5.7,SNR=4.1						

ISCJB ***26*** *10:17:57.3±0.3,58°54N±0°04×156°19W±0°07, h185^{km}±3^{km},mb3.4/3,Error ellipse: s-maj=7.2km s-min=3.7km az=135.3*
NEIC ***26*** *10:17:59.6,58°50N×156°12W,h177^{km},mb3.9/7,After AEIC.*
IDC ***26*** *10:18:00.2±7.5,59°01N×156°27W,h182^{km}±63^{km},mb3.1/4, mb1 3.4/6,mb1mx3.0/53,mbtmp3.7/6,Error ellipse: s-maj=63.1km s-min=18.9km az=24.0*
ISC 26 10:17:58.2±0.8,58°53N±0°05×156°17W±0°05, h179^{km}±6^{km},n93,σ0^{s}95/103,mb3.5/3,Alaska Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KELA	Mount Kelaz	0.24	112	P	Pn	10 18 22.2	0.0
KVTA	Katmai Vly 10	0.48	108	P	Pn	10 18 23.1	+0.3
KABU	Katmai Buttres	0.54	119	P	Pn	10 18 23.6	+0.4
KABU				S	Sn	10 18 42.8	+0.5
ACHA	Angle Creek He	0.55	126	P	Pn	10 18 23.4	+0.3
ACHA				S	Sn	10 18 43.1	+0.8
KAHC	Katmai Hardscr	0.62	79	P	Pn	10 18 23.8	+0.2
KAKN	Katmai Knife C	0.63	112	P	Pn	10 18 23.9	+0.4
KAKN				S	Sn	10 18 43.5	+0.4
PLK5	Peulik 5	0.66	215	P	Pn	10 18 24.1	+0.5
KAWH	Katmai	0.73	101	P	Pn	10 18 24.3	+0.2
KABR	Katmai Barrier	0.75	122	P	Pn	10 18 24.4	+0.3
PLK1	Peulik 1	0.77	198	P	Pn	10 18 24.6	+0.4
PLK2	Peulik 2	0.78	186	P	Pn	10 18 24.9	+0.6
PLK3	Peulik 3	0.85	184	P	Pn	10 18 25.5	+0.7
PLK4	Peulik 4	0.91	186	P	Pn	10 18 25.9	+0.6
CDD	Cape Douglas	1.38	72	P	Pn	10 18 29.3	+0.4
FOPK	Fourpeaked Vol	1.43	80	P	Pn	10 18 29.8	+0.5
AUW	Augustine West	1.63	58	P	Pn	10 18 32.1	+0.8
AUL	Augustine Lava	1.65	58	P	Pn	10 18 32.2	+0.7
OPT	Oil Point	1.89	52	P	Pn	10 18 34.4	+0.5
ANNE	Aniakchak Nort	1.92	213	P	Pn	10 18 34.1	-0.2
ANNW	Aniakchak Nort	1.92	216	P	Pn	10 18 35.0	+0.7
OHAK	Old Harbor	2.02	129	P	Pn	10 18 35.3	0.0
OHAK				S	Sn	10 19 02.0	-2.1
KDAK	Kodiak Island	2.04	110	P	Pn	10 18 35.5	0.0
KDAK				S	Sn	10 19 02.7	-1.9
ANPB	Aniakchak Plen	2.07	214	P	Pn	10 18 35.7	-0.3
SVW2	Sparrevohn	2.59	6	P	Pn	10 18 42.1	+0.4
SVW2				S	Sn	10 19 16.0	+0.2
RDWB	Redoubt West	2.59	39	P	Pn	10 18 42.2	+0.3
NCT	North Crescent	2.62	38	P	Pn	10 18 42.9	+0.6
VNHG	Veniaminof 1	2.83	216	P	Pn	10 18 44.7	-0.1
BRLK	Bradley Lake	2.99	63	P	Pn	10 18 46.9	+0.3
BRLK				S	Sn	10 19 22.7	-1.6
VNKR	Veniaminof 5	3.05	216	P	Pn	10 18 47.5	+0.1
CKL	Chakachamna La	3.30	34	P	Pn	10 18 51.3	+0.9
SPWE	Spurr West	3.30	32	P	Pn	10 18 51.3	+0.9
SLKM	Skilak Lake	3.62	54	P	Pn	10 18 55.3	+0.9
STLK	Strandline Lak	3.69	34	P	Pn	10 18 56.4	+1.2
SEW	Seward	3.79	63	P	Pn	10 18 56.8	+0.4
SEW				S	Sn	10 19 39.6	-2.4
SDPT	Sand Point	3.97	218	P	Pn	10 18 58.2	-0.6
SDPT				S	Sn	10 19 44.6	-1.6
SUA	Susitna One	4.01	41	P	Pn	10 18 59.4	0.0
SUA				S	Sn	10 19 47.1	-0.1
FIB	Fire Island	4.01	46	P	Pn	10 18 59.8	+0.6
RC01	Rabbit Creek A	4.14	49	P	Pn	10 19 00.3	-0.6
SKT	Skwentna	4.16	32	P	Pn	10 19 01.8	+0.6
TT01	Tatalina	4.39	1	P	Pn	10 19 04.5	+0.5
PMR	Palmer	4.67	46	P	Pn	10 19 06.7	-1.0
DTNA	Dutton South F	4.76	227	P	Pn	10 19 09.0	+0.1
PPLA	Purkeypile	4.79	22	P	Pn	10 19 10.7	+1.3
DT1	Dutton Round H	4.80	227	P	Pn	10 19 09.4	-0.1
DRIA	Deer Island	4.90	226	P	Pn	10 19 10.3	-0.5
SML	Sawmill	5.11	47	*e*Pn	Pn	10 19 13.3	0.0
	4.4nm,0.5s						
MID	Middleton Isla	5.16	76	P	Pn	10 19 14.5	+0.4
CAST	Castle Rocks	5.29	20	P	Pn	10 19 15.8	+0.1
FALS	False Pass	5.43	230	P	Pn	10 19 17.4	-0.2
HUR	Hurricane	5.49	33	P	Pn	10 19 16.8	-1.5
SCM	Sheep Creek Mo	5.51	49	P	Pn	10 19 17.5	-1.2
VLZ	Valdez	5.60	58	P	Pn	10 19 19.8	0.0
KTH	Kantishna Hill	5.64	25	P	Pn	10 19 19.5	-0.9
EYAK	Cordova Ski Ar	5.67	65	P	Pn	10 19 20.6	-0.1
CHUM	Lake Minchumin	5.68	17	P	Pn	10 19 21.5	+0.8
TRF	Thorofare Moun	5.70	28	P	Pn	10 19 20.0	-1.2
DIV	Divide	5.85	59	P	Pn	10 19 23.3	+0.1
KLU	Klutina	5.93	56	P	Pn	10 19 23.6	-0.6
BPAW	Bear Paw Mtn.	6.12	22	*e*Pn	Pn	10 19 25.6	-0.9
	2.3nm,0.5s						
MCK	McKinley	6.28	31	P	Pn	10 19 27.5	-1.2
BMRM	Bremner River	6.33	62	P	Pn	10 19 29.6	+0.2
PS11	TAPS Pump St11	6.39	52	P	Pn	10 19 30.7	+0.6
NICHA	Nichawak Mount	6.46	69	P	Pn	10 19 31.0	-0.1
BERG	Berg Lake	6.62	68	P	Pn	10 19 32.8	-0.4
PAX	Paxson	6.87	45	*e*Pn	Pn	10 19 35.5	-1.0
	4.6nm,0.4s						
VRDI	Verde Repeater	6.95	62	P	Pn	10 19 37.7	+0.1
CRQM	Cirque	6.97	66	P	Pn	10 19 38.6	+0.7
KULT	Kultieth River	7.08	70	P	Pn	10 19 39.6	+0.4
MCARA	McCarthy VSAT	7.19	61	P	Pn	10 19 41.0	+0.3
BARK

ESKT	Eskisehir	1.52	74	*i* P		Pg	10 26 19.7	+0.3
SEYT	Eskypehyr	1.52	74	P		Pg	10 26 19.7	+0.3

ISK ***26*** *10:28:53.8, 39°.12N×29°.02E, h5km, MD2.7*
ISCJB ***26*** *10:28:54.2±0.4, 39°.11N±0°.03×29°.01E±0°.04, h9km, Error ellipse: s-maj=4.4km s-min=4.1km az=8.7*
CSEM ***26*** *10:28:54.2±0.1, 39°.12N×29°.01E, h5km, ML3.1, Error ellipse: s-maj=1.5km s-min=1.5km az=139.0*
DDA ***26*** *10:28:54.2, 39°.13N×29°.02E, h7km, Ml3.1*
ISC 26 10:28:54.3±0.9, 39°.12N±0°.03×29°.01E±0°.03, h9km, n56, σ0°56/60, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**252**	P	**Pg**	**10 28 59.0**	**-0.2**
DEMI	**Demirci**	**0.24**	**252**	*i* P	**Pg**	**10 28 59.0**	**-0.2**
GDZ	**Gediz**	**0.37**	**94**	P	**Pg**	**10 29 01.8**	**+0.3**
GDZ	**Gediz**	**0.37**	**94**	*i* P	**Pg**	**10 29 01.8**	**+0.3**
TVSB	**Tavsanli**	**0.48**	**46**	*e*PG	**Pg**	**10 29 03.5**	**-0.2**
TVSB				*e*SG	**Sg**	**10 29 10.2**	**+0.2**
TVSB	**Tavsanli**	**0.48**	**46**	*e*Pg	**Pg**	**10 29 03.5**	**-0.2**
TVSB				*e*Sg	**Sg**	**10 29 10.2**	**+0.2**
DURS	**Dursunbey**	**0.64**	**319**	P	**Pg**	**10 29 06.3**	**-0.3**
DURS	**Dursunbey**	**0.64**	**319**	*i* P	**Pg**	**10 29 06.3**	**-0.3**
KULA	**Kula-Manisa**	**0.66**	**205**	*e*PG	**Pg**	**10 29 06.6**	**-0.5**
KULA	**Kula-Manisa**	**0.66**	**205**	*e*Pg	**Pg**	**10 29 06.6**	**-0.5**
KHAL	**Karahalli**	**0.83**	**153**	P	**Pg**	**10 29 10.5**	**+0.2**
KHAL	**Karahalli**	**0.83**	**153**	*i* P	**Pg**	**10 29 10.5**	**+0.2**
KHL	**Karahalli**	**0.89**	**153**	*e*PG	**Pg**	**10 29 11.3**	**0.0**
KHL				*e*SG	**Sb**	**10 29 24.1**	**+0.2**
KHL	**Karahalli**	**0.89**	**153**	*e*Pg	**Pg**	**10 29 11.3**	**0.0**
KHL				*e*Sg	**Sb**	**10 29 24.1**	**+0.2**
ORLT	**Orhaneli**	**0.93**	**354**	*e*PG	**Pg**	**10 29 12.0**	**-0.2**
ORLT	**Orhaneli**	**0.93**	**354**	*e*Pg	**Pg**	**10 29 12.0**	**-0.2**
AKHS	**Akhisar**	**0.96**	**256**	P	**Pg**	**10 29 13.3**	**+0.5**
AKHS	**Akhisar**	**0.96**	**256**	*i* P	**Pg**	**10 29 13.3**	**+0.5**
AKS	**Akhisar**	**0.96**	**256**	*e*PG	**Pg**	**10 29 12.9**	**+0.1**
AKS	**Akhisar**	**0.96**	**256**	*e*Pg	**Pg**	**10 29 12.9**	**+0.1**
BALB	**Balikesir**	**1.02**	**301**	*e*PG	**Pg**	**10 29 13.8**	**-0.1**
BALB	**Balikesir**	**1.02**	**301**	*e*Pg	**Pg**	**10 29 13.8**	**-0.1**
IGD	**Bursa**	**1.16**	**7**	*i* P	**Pb**	**10 29 15.6**	**-0.8**
BALY	**Balya**	**1.25**	**300**	P	**Pn**	**10 29 18.1**	**+0.2**
BALY	**Balya**	**1.25**	**300**	*i* P	**Pn**	**10 29 18.1**	**+0.2**
KCTX	**Karacabey (Bur**	**1.25**	**336**	*e*PN	**Pn**	**10 29 18.2**	**+0.2**
KCTX	**Karacabey (Bur**	**1.25**	**336**	*e*Pn	**Pn**	**10 29 18.2**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.25**	**356**	*e*PN	**Pn**	**10 29 18.1**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.25**	**356**	*e*Pn	**Pn**	**10 29 18.1**	**+0.1**
CAVI	**Cavuskoy**	**1.26**	**30**	*e*PN	**Pn**	**10 29 18.2**	**+0.1**
CAVI	**Cavuskoy**	**1.26**	**30**	*e*Pn	**Pn**	**10 29 18.2**	**+0.1**
IZI	**Iznik**	**1.27**	**16**	*e*PN	**Pn**	**10 29 18.4**	**+0.1**
IZI	**Iznik**	**1.27**	**16**	*e*Pn	**Pn**	**10 29 18.4**	**+0.1**
BORA	**Eskisehir**	**1.35**	**55**	P	**Pn**	**10 29 19.8**	**+0.4**
BORA	**Eskisehir**	**1.35**	**55**	*i* P	**Pn**	**10 29 19.8**	**+0.4**
GONE	**Gonen-Balikesi**	**1.38**	**313**	*e*PN	**Pn**	**10 29 20.3**	**+0.6**
GONE	**Gonen-Balikesi**	**1.38**	**313**	*e*Pn	**Pn**	**10 29 20.3**	**+0.6**
ADVT	**Abdulvahap**	**1.43**	**23**	*e*PN	**Pn**	**10 29 20.9**	**+0.5**
ADVT	**Abdulvahap**	**1.43**	**23**	*e*Pn	**Pn**	**10 29 20.9**	**+0.5**
ARMT	**Armutlu**	**1.45**	**355**	*e*PN	**Pn**	**10 29 20.9**	**+0.2**
ARMT	**Armutlu**	**1.45**	**355**	*e*Pn	**Pn**	**10 29 20.9**	**+0.2**
ESKT	**Eskisehir**	**1.48**	**74**	*i* P	**Pn**	**10 29 18.6**	**-2.6**
EDC	**Edincik**	**1.51**	**325**	*e*PN	**Pn**	**10 29 22.1**	**+0.5**
EDC	**Edincik**	**1.51**	**325**	*e*Pn	**Pn**	**10 29 22.1**	**+0.5**
GPA	**Golpazari**	**1.54**	**40**	*e*PN	**Pn**	**10 29 22.5**	**+0.5**
GPA	**Golpazari**	**1.54**	**40**	*e*Pn	**Pn**	**10 29 22.5**	**+0.5**
GULT	**Gulveren**	**1.75**	**41**	*e*PN	**Pn**	**10 29 25.5**	**+0.6**
GULT	**Gulveren**	**1.75**	**41**	*e*Pn	**Pn**	**10 29 25.5**	**+0.6**
HRT	**Hereke**	**1.77**	**16**	*e*PN	**Pn**	**10 29 25.8**	**+0.6**
HRT	**Hereke**	**1.77**	**16**	*e*Pn	**Pn**	**10 29 25.8**	**+0.6**
ISK	**Istanbul-Kandi**	**1.95**	**1**	*e*PN	**Pn**	**10 29 28.4**	**+0.9**
ISK	**Istanbul-Kandi**	**1.95**	**1**	*e*Pn	**Pn**	**10 29 28.4**	**+0.9**
SVRH	**Sivrihisar-ESK**	**1.98**	**80**	*e*PN	**Pn**	**10 29 28.7**	**+0.7**
SVRH	**Sivrihisar-ESK**	**1.98**	**80**	*e*Pn	**Pn**	**10 29 28.7**	**+0.7**
SILT	**Sile**	**2.09**	**13**	*e*PN	**Pn**	**10 29 30.4**	**+1.0**
SILT	**Sile**	**2.09**	**13**	*e*Pn	**Pn**	**10 29 30.5**	**+1.0**

IDC 26 10:30:42.0±2.9, 36°.63N×141°.92E, h0km, mb3.7/2, mb1 3.9/3, mb1mx3.4/35, mbtmp3.6/3, ML3.6/1, Error ellipse: s-maj=61.7km s-min=32.7km az=39.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**2.99**	**269**	Pn	Pn	10 31 30.5	-0.2
	8.0nm,0.3s,baz=108,slow=11,SNR=80						
MJAR				Sn	Sn	10 32 07.5	+0.3
	3.6nm,0.3s,baz=72,slow=22,SNR=4.4						
MAT	**Matsushiro**	**2.99**	**269**	P	Pn	10 31 30.5	-0.2
MAT				S	Sn	10 32 06.2	-1.0
SONM	**Songino Array**	**28.34**	**304**	P	P	10 36 37.7	0.0
	0.4nm,0.5s,baz=103,slow=9.5,SNR=3.9						
WRA	**Warramunga Arr**	**56.72**	**189**	P	P	10 40 27.4	-0.1
	1.1nm,1.2s,baz=5.6,slow=7.2,SNR=4.8						

ISCJB ***26*** *10:33:57.9±0.5, 39°.10N±0°.03×29°.10E±0°.04, h7km±6km, Error ellipse: s-maj=5.7km s-min=4.6km az=159.5*
ISK ***26*** *10:33:57.5, 39°.10N×29°.13E, h6km, MD2.5*
DDA ***26*** *10:33:57.6, 39°.12N×29°.09E, h7km, Md2.6*
CSEM ***26*** *10:33:58.0±0.1, 39°.10N×29°.10E, h8km, MD2.6, Error ellipse: s-maj=3.0km s-min=2.1km az=86.0*
ISC 26 10:33:58.0±0.9, 39°.11N±0°.02×29°.11E±0°.03, h14km±8km, n26, σ0°26/35, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.29**	**94**	P	**Pg**	**10 34 04.1**	**0.0**
GDZ				S	**Sg**	**10 34 08.6**	**+0.3**
GDZ	**Gediz**	**0.29**	**94**	*i* P	**Pg**	**10 34 04.1**	**0.0**
GDZ				*i* S	**Sg**	**10 34 08.6**	**+0.3**
DEMI	**Demirci**	**0.31**	**258**	P	**Pg**	**10 34 04.4**	**-0.1**
DEMI				S	**Sg**	**10 34 08.7**	**-0.2**
DEMI	**Demirci**	**0.31**	**258**	*i* P	**Pg**	**10 34 04.4**	**-0.1**
DEMI				*i* S	**Sg**	**10 34 08.7**	**-0.2**
TVSB	**Tavsanli**	**0.44**	**39**	*e*PG	**Pg**	**10 34 06.3**	**-0.4**
TVSB	**Tavsanli**	**0.44**	**39**	*e*Pg	**Pg**	**10 34 06.3**	**-0.4**
KULA	**Kula-Manisa**	**0.69**	**211**	*e*PG	**Pg**	**10 34 11.3**	**-0.1**
KULA	**Kula-Manisa**	**0.69**	**211**	*e*Pg	**Pg**	**10 34 11.3**	**-0.1**
KHAL	**Karahalli**	**0.80**	**158**	P	**Pb**	**10 34 13.7**	**+0.1**
KHAL				S	**Sb**	**10 34 24.3**	**0.0**
KHAL	**Karahalli**	**0.80**	**158**	*i* P	**Pb**	**10 34 13.7**	**+0.1**
KHAL				*i* S	**Sb**	**10 34 24.3**	**0.0**
KHL	**Karahalli**	**0.85**	**157**	*e*PG	**Pg**	**10 34 14.1**	**-0.3**
KHL				*e*SG	**Sb**	**10 34 26.1**	**+0.3**
KHL	**Karahalli**	**0.85**	**157**	*e*Pg	**Pg**	**10 34 14.1**	**-0.3**
KHL				*e*Sg	**Sb**	**10 34 26.1**	**+0.3**
ORLT	**Orhaneli**	**0.95**	**350**	*e*PG	**Pb**	**10 34 16.3**	**0.0**
ORLT				*e*SG	**Sn**	**10 34 30.1**	**-0.2**
BALB	**Balikesir**	**1.09**	**299**	*e*PN	**Pg**	**10 34 19.0**	**0.0**
BALB	**Balikesir**	**1.09**	**299**	*e*Pn	**Pg**	**10 34 19.0**	**0.0**
CAVI	**Cavuskoy**	**1.23**	**27**	PN	**Pb**	**10 34 21.3**	**+0.3**
IZI	**Iznik**	**1.26**	**13**	*e*PN	**Pg**	**10 34 22.0**	**-0.2**
IZI	**Iznik**	**1.26**	**13**	*e*Pn	**Pg**	**10 34 22.0**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.27**	**352**	*e*PN	**Pg**	**10 34 22.4**	**0.0**
MDNY	**Mudanya-Bursa**	**1.27**	**352**	*e*Pn	**Pg**	**10 34 22.4**	**0.0**
ADVT	**Abdulvahap**	**1.41**	**20**	*e*PN	**Pb**	**10 34 24.4**	**+0.4**
ADVT	**Abdulvahap**	**1.41**	**20**	*e*Pn	**Pb**	**10 34 24.4**	**+0.4**
ARMT	**Armutlu**	**1.47**	**353**	*e*PN	**Pb**	**10 34 25.3**	**+0.3**
ARMT	**Armutlu**	**1.47**	**353**	*e*Pn	**Pb**	**10 34 25.3**	**+0.3**
GULT	**Gulveren**	**1.71**	**39**	*e*PN	**Pb**	**10 34 28.8**	**-0.4**
GULT	**Gulveren**	**1.71**	**39**	*e*Pn	**Pb**	**10 34 28.8**	**-0.4**

IDC 26 10:36:01.5±7.8, 4°.97S×151°.73E, h92km±54km, mb3.2/2, mb1 3.5/3, mb1mx3.1/30, mbtmp3.6/3, ML2.1/1, Error ellipse: s-maj=149.5km s-min=49.2km az=126.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**6.33**	**226**	P	Pn	10 37 33.2	+1.0
	2.8nm,0.3s,baz=90,slow=3.0,SNR=7.7						
PMG				S	Sn	10 38 44.3	+1.1
	4.5nm,0.3s,baz=98,slow=19,SNR=7.3						
WRA	**Warramunga Arr**	**22.55**	**227**	P	P	10 40 53.9	-0.3
	0.6nm,0.3s,baz=53,slow=10,SNR=14						
ASAR	**Alice Springs**	**25.32**	**221**	P	P	10 41 19.7	-0.2
	0.3nm,0.4s,baz=54,slow=9.8,SNR=8.3						
TORD	**Torodi Ar. Bea**	**149.34**	**287**	PKPbc	PKPbc	10 55 40.5	-0.4
	0.5nm,0.9s,baz=89,slow=2.6,SNR=5.7						

DDA ***26*** *10:36:15.2, 39°.13N×29°.06E, h7km, Md2.5*
CSEM ***26*** *10:36:16.2±0.4, 39°.01N×29°.05E, h2km, MD2.3, Error ellipse: s-maj=10.8km s-min=8.7km az=122.0*
ISCJB ***26*** *10:36:17.3±0.8, 39°.17N±0°.05×28°.96E±0°.07, h9km, Error ellipse: s-maj=9.3km s-min=4.5km az=42.2*
ISK ***26*** *10:36:17.9, 39°.16N×29°.00E, h6km, MD2.3*
ISC 26 10:36:16.8±1.0, 39°.09N±0°.04×29°.06E±0°.04, h9km, n11, σ1°28/17, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**260**	P	**Pg**	**10 36 21.2**	**-1.2**
DEMI				S	**Sg**	**10 36 25.1**	**-1.0**
DEMI	**Demirci**	**0.28**	**260**	*i* P	**Pg**	**10 36 21.2**	**-1.2**
DEMI				*i* S	**Sg**	**10 36 25.1**	**-1.0**
GDZ	**Gediz**	**0.33**	**91**	P	**Pg**	**10 36 22.1**	**-1.2**
GDZ	**Gediz**	**0.33**	**91**	*i* P	**Pg**	**10 36 22.1**	**-1.2**
TVSB	**Tavsanli**	**0.47**	**41**	*e*PG	**Pb**	**10 36 27.8**	**+0.4**
TVSB				*e*SG	**Sb**	**10 36 34.2**	**-0.3**
TVSB	**Tavsanli**	**0.47**	**41**	*e*Pg	**Pb**	**10 36 27.8**	**+0.4**
TVSB				*e*Sg	**Sb**	**10 36 34.2**	**-0.3**
KULA	**Kula-Manisa**	**0.66**	**209**	*e*PG	**Pb**	**10 36 31.8**	**+1.2**
KULA				*e*SG	**Sb**	**10 36 41.8**	**+1.9**
KHAL	**Karahalli**	**0.80**	**155**	P	**Pg**	**10 36 30.8**	**-1.4**
KHAL	**Karahalli**	**0.80**	**155**	*i* P	**Pg**	**10 36 30.8**	**-1.4**
KHAL				*i* S	**Sb**	**10 36 46.0**	**+2.2**
CAVI	**Cavuskoy**	**1.26**	**28**	*e*PG	**Pg**	**10 36 41.6**	**+0.6**
CAVI	**Cavuskoy**	**1.26**	**28**	*e*Pg	**Pg**	**10 36 41.6**	**+0.6**

ISK ***26*** *10:37:10.8, 39°.04N×29°.12E, h5km, MD2.4*
ISCJB ***26*** *10:37:11.7±0.5, 39°.09N±0°.04×29°.02E±0°.04, h5km±9km, Error ellipse: s-maj=6.6km s-min=4.8km az=146.0*
DDA ***26*** *10:37:11.8, 39°.06N×29°.02E, h7km, Md2.6*
CSEM ***26*** *10:37:11.9±0.2, 39°.10N×29°.01E, h5km, MD2.6, Error ellipse: s-maj=4.3km s-min=3.3km az=108.0*
ISC 26 10:37:11.3±1.0, 39°.06N±0°.04×29°.07E±0°.03, h12km±9km, n20, σ0°39/30, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**268**	P	**Pg**	**10 37 17.1**	**+0.1**
DEMI				S	**Sg**	**10 37 20.6**	**-0.3**
DEMI	**Demirci**	**0.28**	**268**	*i* P	**Pg**	**10 37 17.1**	**+0.1**
DEMI				*i* S	**Sg**	**10 37 20.6**	**-0.3**
GDZ	**Gediz**	**0.32**	**84**	P	**Pb**	**10 37 19.3**	**+0.2**
GDZ				S	**Sb**	**10 37 24.3**	**0.0**
GDZ	**Gediz**	**0.32**	**84**	*i* P	**Pb**	**10 37 19.3**	**+0.2**
GDZ				*i* S	**Sb**	**10 37 24.3**	**0.0**
TVSB	**Tavsanli**	**0.50**	**38**	*e*PG	**Pg**	**10 37 20.8**	**-0.3**
TVSB				*e*SG	**Sg**	**10 37 27.8**	**0.0**
TVSB	**Tavsanli**	**0.50**	**38**	*e*Pg	**Pg**	**10 37 20.8**	**-0.3**
TVSB				*e*Sg	**Sg**	**10 37 27.8**	**0.0**
KULA	**Kula-Manisa**	**0.63**	**211**	*e*PG	**Pg**	**10 37 23.5**	**0.0**
KULA				*e*SG	**Sb**	**10 37 32.7**	**-0.3**
KULA	**Kula-Manisa**	**0.63**	**211**	*e*Pg	**Pg**	**10 37 23.5**	**0.0**
KULA				*e*Sg	**Sb**	**10 37 32.7**	**-0.3**
KHAL	**Karahalli**	**0.76**	**154**	P	**Pn**	**10 37 28.7**	**+0.8**
KHAL				S	**Sn**	**10 37 38.5**	**-0.8**
KHAL	**Karahalli**	**0.76**	**154**	*i* P	**Pn**	**10 37 28.7**	**+0.8**
KHAL				*i* S	**Sn**	**10 37 38.5**	**-0.8**
ORLT	**Orhaneli**	**1.00**	**352**	*e*PG	**Pb**	**10 37 30.8**	**+0.2**
ORLT	**Orhaneli**	**1.00**	**352**	*e*Pg	**Pb**	**10 37 30.8**	**+0.2**
BALB	**Balikesir**	**1.09**	**303**	*e*PN	**Pn**	**10 37 32.8**	**+0.4**
BALB	**Balikesir**	**1.09**	**303**	*e*Pn	**Pn**	**10 37 32.8**	**+0.4**
CAVI	**Cavuskoy**	**1.29**	**27**	*e*PN	**Pb**	**10 37 35.9**	**+0.3**
CAVI	**Cavuskoy**	**1.29**	**27**	*e*Pn	**Pb**	**10 37 35.9**	**+0.3**
ADVT	**Abdulvahap**	**1.47**	**20**	*e*PN	**Pb**	**10 37 38.6**	**0.0**
ADVT	**Abdulvahap**	**1.47**	**20**	*e*Pn	**Pb**	**10 37 38.6**	**0.0**
ARMT	**Armutlu**	**1.52**	**354**	*e*PN	**Pb**	**10 37 39.6**	**+0.2**
ARMT	**Armutlu**	**1.52**	**354**	*e*Pn	**Pb**	**10 37 39.6**	**+0.2**

IDC ***26*** *10:46:51.0±1.7, 54°.30N×161°.69W, h0km, mb4.1/14, mb1 4.1/16, mb1mx3.9/49, mbtmp4.0/16, ML3.6/2, MS3.1/1, Ms1 3.3/1, ms1mx2.5/53, Error ellipse: s-maj=44.4km s-min=15.7km az=145.0*
ISCJB ***26*** *10:46:53.0±0.5, 54°.20N±0°.05×161°.32W±0°.06, h23km, mb4.0/14, Error ellipse: s-maj=7.7km s-min=3.9km az=156.6*
NEIC ***26*** *10:46:56.5, 54°.36N×161°.51W, h36km, ML3.7(AEIC), After AEIC.*
ISC 26 10:46:54.5±0.8, 54°.31N±0°.07×161°.48W±0°.05, h23km, n55, σ1°57/54, mb4.2/14, Alaska Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DOL	**Dolgoi Island**	**0.87**	**345**	P	**Pb**	**10 47 11.3**	**+0.5**
DTNA	**Dutton South F**	**0.95**	**332**	P	**Pb**	**10 47 12.6**	**+0.4**
HAG	**Hague Volcano**	**1.04**	**347**	P	**Pb**	**10 47 14.4**	**+0.7**
PS4A	**Pavlof South-4**	**1.06**	**348**	P	**Pb**	**10 47 14.6**	**+0.5**
PVV	**Pavlof Volcano**	**1.08**	**351**	P	**Pb**	**10 47 14.9**	**+0.5**
BALA	**Baldy Mountain**	**1.16**	**320**	P	**Pb**	**10 47 16.9**	**+1.0**
BALA				S	**Sb**	**10 47 31.6**	**+1.1**
SDPT	**Sand Point**	**1.19**	**29**	P	**Pb**	**10 47 16.8**	**+0.4**
SDPT				S	**Sb**	**10 47 33.0**	**+1.7**
FALS	**False Pass**	**1.25**	**297**	P	**Pn**	**10 47 17.1**	**+0.6**
FALS				S	**Sb**	**10 47 34.6**	**+1.6**
SSLS	**Shishaldin Sou**	**1.52**	**286**	P	**Pb**	**10 47 21.9**	**-0.1**
SSLS				S	**Sb**	**10 47 41.2**	**+0.4**
SSLN	**Shishaldin Nor**	**1.55**	**290**	P	**Pb**	**10 47 22.5**	**+0.1**
SSLW	**Shishaldin Wes**	**1.61**	**288**	P	**Pb**	**10 47 22.9**	**-0.6**
WESE	**West Dahl East**	**1.82**	**276**	P	**Pn**	**10 47 25.9**	**+1.4**
WESN	**West Dahl Nort**	**1.83**	**279**	P	**Pb**	**10 47 26.5**	**-0.7**
WEBT	**Westdahl Beart**	**1.93**	**280**	P	**Pb**	**10 47 28.0**	**-0.9**
VNWF	**Veniaminof 8**	**2.15**	**30**	P	**Pn**	**10 47 30.7**	**+1.8**
VNHG	**Veniaminof 1**	**2.33**	**34**	P	**Pn**	**10 47 32.3**	**+0.9**
AKSA	**Akutan Strait**	**2.48**	**268**	P	**Pn**	**10 47 34.7**	**+1.3**
AKUT	**Akutan**	**2.52**	**268**	P	**Pn**	**10 47 35.5**	**+1.5**
ZRO	**Akutan Zero**	**2.65**	**267**	P	**Pn**	**10 47 37.1**	**+1.4**
UNV	**Unalaska Valle**	**2.99**	**263**	P	**Pn**	**10 47 41.6**	**+1.2**
MTBL	**Makushin Table**	**3.08**	**266**	P	**Pn**	**10 47 42.9**	**+1.2**
MCIR	**Makushin Cirqu**	**3.20**	**266**	P	**Pn**	**10 47 44.8**	**+1.4**
MGOD	**Makushin Gods**	**3.22**	**263**	P	**Pn**	**10 47 45.5**	**+1.9**
MSOM	**Makushin Julie**	**3.26**	**263**	P	**Pn**	**10 47 45.8**	**+1.7**
OKTU	**Okmok Mt. Tuli**	**3.99**	**259**	P	**Pn**	**10 47 56.9**	**+2.7**
KABR	**Katmai Barrier**	**5.28**	**41**	P	**Pn**	**10 48 12.8**	**+1.0**
OHAK	**Old Harbor**	**5.47**	**54**	P	**Pn**	**10 48 15.9**	**+1.5**
KDAK	**Kodiak Island**	**6.08**	**51**	P	**Pn**	**10 48 25.4**	**+2.6**
BPAW	**Bear Paw Mtn.**	**11.17**	**24**	*e*Pn	**Pn**	**10 49 33.9**	**+1.3**
	1.0nm,0.9s						
PAX	**Paxson**	**12.00**	**37**	*e*Pn	**Pn**	**10 49 44.6**	**+0.7**
	2.0nm,0.6s						
ILAR	**Eielson Array**	**12.79**	**29**	Pn	**Pn**	**10 49 52.0**	**-2.6**
	0.1nm,0.3s,baz=223,slow=13,SNR=4.7						
ILAR				Sn	**Sn**	**10 52 08.8**	**-7.4**
	0.0nm,0.3s,baz=84,slow=33,SNR=2.4						
ILAR				LR	LR	10 55 15.5	
	comp=Z,86nm,18.5s,baz=135,slow=39						
DAWY	**Dawson**	**14.86**	**40**	*e*Pn	**Pn**	**10 50 25.1**	**+2.2**
	3.3nm,0.6s						
INK	**Inuvik**	**19.15**	**32**	Pn	**P**	**10 51 15.1**	**-0.6**
	0.2nm,0.3s,baz=224,slow=18,SNR=6.5						
PETK	**Petropavlovsk-**	**23.96**	**284**	P	**P**	**10 52 06.1**	**-0.6**
	4.5nm,0.5s,baz=76,slow=13,SNR=11						
YKA	**Yellowknife Ar**	**25.36**	**52**	P	**P**	**10 52 20.5**	**+1.2**
	0.2nm,0.4s,baz=269,slow=8.9,SNR=13						
H11N2	**WAKE ISLAND Hy**	**42.10**	**227**	T	T	11 39 37.1	
	baz=27,slow=76,SNR=36						
H11N3	**WAKE ISLAND Hy**	**42.11**	**227**	T	T	11 39 35.1	
	baz=27,slow=76,SNR=33						
H11N1	**WAKE ISLAND Hy**	**42.12**	**227**	T	T	11 39 37.4	
	baz=27,slow=76,SNR=36						
H11S1	**WAKE ISLAND Hy**	**43.27**	**227**	T	T	11 41 06.0	
	baz=26,slow=76,SNR=29						
H11S2	**WAKE ISLAND Hy**	**43.28**	**227**	T	T	11 41 07.0	
	baz=26,slow=76,SNR=15						
H11S3	**WAKE ISLAND Hy**	**43.28**	**227**	T	T	11 41 07.6	
	baz=26,slow=76,SNR=20						
KSRS	**Korea Array**	**49.79**	**281**	P	**P**	**10 55 45.4**	**+0.3**
	1.9nm,0.8s,baz=46,slow=7.8,SNR=6.5						
KSAR	**Wonju Array Be**	**49.82**	**281**	P	**P**	**10 55 45.4**	**+0.1**
SONM	**Songino Array**	**54.26**	**304**	P	**P**	**10 56 18.1**	**-0.3**
	1.5nm,0.7s,baz=52,slow=7.6,SNR=8.7						
ARCES	**ARCESS Array B**	**56.36**	**357**	P	**P**	**10 56 32.3**	**-0.7**
	2.6nm,0.8s,baz=9.2,slow=7.3,SNR=3.9						
FINES	**FINESS Array B**	**64.43**	**356**	P	**P**	**10 57 27.6**	**-0.6**
	3.8nm,0.7s,baz=19,slow=8.8,SNR=9.4						
NB2	**NORSAR Subarra**	**64.85**	**4**	P	**P**	**10 57 30.8**	**-0.3**
	comp=Z,0.8nm,0.5s,baz=358,slow=6.5						
NOA	**NORSAR Array B**	**64.85**	**4**	P	**P**	**10 57 30.8**	**-0.3**
	comp=Z,1.3nm,0.7s,baz=332,slow=5.5,SNR=5.2						
MKAR	**Makanchi Array**	**65.74**	**317**	P	**P**	**10 57 36.1**	**-0.9**
	comp=Z,0.5nm,0.7s,baz=50,slow=8.1,SNR=5.5						
AKASG	**Malin Array Be**	**74.97**	**353**	P	**P**	**10 58 32.6**	**-0.7**
	comp=Z,3.2nm,0.5s,baz=8.3,slow=5.8,SNR=7.4						
GERES	**GERESS Array B**	**77.14**	**3**	P	**P**	**10 58 46.4**	**+0.5**
	comp=Z,0.3nm,0.3s,baz=345,slow=4.6,SNR=6.0						
KBZ	**Khabaz**	**80.14**	**342**	P	**P**	**10 59 02.9**	**+0.7**
	comp=Z,3.6nm,0.9s,baz=291,slow=4.2,SNR=7.0						
CMAR	**Chiang Mai Arr**	**80.65**	**288**	P	**P**	**10 59 05.4**	**0.0**
	comp=Z,0.9nm,0.4s,baz=24,slow=5.4,SNR=6.7						
BRTR	**Keskin Array B**	**85.44**	**348**	P	**P**	**10 59 30.7**	**+0.6**
	comp=Z,1.6nm,0.8s,baz=18,slow=4.2,SNR=8.1						
ASAR	**Alice Springs**	**95.34**	**236**	P	**P**	**11 00 16.1**	**-0.4**
	comp=Z,0.1nm,0.6s,baz=27,slow=6.3,SNR=2.9						

ISK ***26*** *10:47:27.7, 39°.09N×29°.08E, h5km, MD2.7*
ISCJB ***26*** *10:47:28.5±0.4, 39°.10N±0°.03×29°.06E±0°.03, h9km, Error ellipse: s-maj=4.0km s-min=3.6km az=153.0*
CSEM ***26*** *10:47:28.5±0.1, 39°.11N×29°.06E, h5km, ML3.0, Error ellipse: s-maj=2.5km s-min=2.3km az=123.0*
DDA ***26*** *10:47:28.3, 39°.12N×29°.05E, h7km, Ml3.0*
ISC 26 10:47:28.6±0.9, 39°.11N±0°.02×29°.06E±0°.02, h9km, n57, σ0°49/65, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**257**	P	**Pg**	**10 47 33.9**	**-0.2**
DEMI				S	**Sg**	**10 47 37.7**	**-0.2**
DEMI	**Demirci**	**0.28**	**257**	*i* P	**Pg**	**10 47 33.9**	**-0.2**
DEMI				*i* S	**Sg**	**10 47 37.7**	**-0.2**
GDZ	**Gediz**	**0.33**	**93**	P	**Pg**	**10 47 35.2**	**+0.1**
GDZ				S	**Sg**	**10 47 39.9**	**+0.5**
GDZ	**Gediz**	**0.33**	**93**	*i* P	**Pg**	**10 47 35.2**	**+0.1**
GDZ				*i* S	**Sg**	**10 47 39.9**	**+0.5**
TVSB	**Tavsanli**	**0.46**	**42**	*e*PG	**Pg**	**10 47 37.3**	**-0.3**
TVSB				*e*SG	**Sg**	**10 47 43.4**	**-0.3**
TVSB	**Tavsanli**	**0.46**	**42**	*e*Pg	**Pg**	**10 47 37.3**	**-0.3**
TVSB				*e*Sg	**Sg**	**10 47 43.4**	**-0.3**
KULA	**Kula-Manisa**	**0.67**	**208**	*e*PG	**Pg**	**10 47 40.9**	**-0.6**
KULA	**Kula-Manisa**	**0.67**	**208**	*e*Pg	**Pg**	**10 47 40.9**	**-0.6**
KHAL	**Karahalli**	**0.81**	**155**	P	**Pb**	**10 47

ISC 26 10:56:38.5±0.5,36°.71N±0°.03×140°.63E±0°.03,h26km,σ3km, n352,σ1°60/375,mb4.8/151,MS3.8/19,32C-24D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase Op	ID ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.11**	**205**	⇑P	**Pb**	**10 56 38.7**	**-4.6**
ONAJ	**Iwakimizuishiy**	**0.41**	**19**	⇑P	**Pb**	**10 56 44.1**	**-3.2**
ONAJ				S	**Sb**	**10 56 50.7**	**-2.6**
JYT	**Yasato**	**0.60**	**216**	⇑P	**Pb**	**10 56 47.6**	**-2.8**
JYT				*e*S	**Sb**	**10 56 56.1**	**-2.3**
JSB	**Shiboa**	**0.62**	**294**	⇑P	**Pb**	**10 56 48.8**	**-2.0**
JSB				S	**Sb**	**10 56 57.3**	**-1.9**
JFK	**Kawauchi**	**0.68**	**17**	⇑P	**Pb**	**10 56 48.9**	**-2.9**
JFK				S	**Sb**	**10 56 58.3**	**-2.5**
JFT	**Otama**	**0.84**	**344**	⇓P	**Pb**	**10 56 52.1**	**-2.3**
JAG	**Ashikaga**	**0.99**	**253**	⇑P	**Pn**	**10 56 54.1**	**-2.6**
MJAR	**Matsushiro Arr**	**1.96**	**266**	Pn	**Pn**	**10 57 09.7**	**-0.3**
	226nm,0.3s,baz=86,slow=15,SNR=1197						
MJAR				LR	LR	10 57 35.0	
	comp=Z,878nm,20.6s,baz=105,slow=34						
MJAR				Sn	**Sb**	**10 57 35.5**	**-1.8**
	820nm,0.3s,baz=87,slow=27,SNR=31						
MAJO	**Matsushiro**	**1.96**	**266**	*c i*P	**Pn**	**10 57 10.4**	**+0.3**
MAJO	**Matsushiro**	**1.96**	**266**	*e*Pn	**Pn**	**10 57 10.3**	**+0.3**
MAJO				*e*Sn	**Sn**	**10 57 34.9**	**+1.2**
MAT	**Matsushiro**	**1.96**	**266**	P	**Pn**	**10 57 10.3**	**+0.3**
MAT				S	**Sb**	**10 57 36.6**	**-0.8**
MJB9	**Matsu-Tunnel**	**1.96**	**266**	*e*Pn	**Pn**	**10 57 10.4**	**+0.3**
MJB9				*e*Sn	**Sn**	**10 57 35.1**	**+1.3**
INU	**Inuyama**	**3.23**	**246**	*e*Pn	**Pn**	**10 57 28.3**	**+0.8**
JHJ	**Hachijo jima 2**	**3.65**	**191**	Pn	**Pn**	**10 57 32.8**	**-0.6**
	53nm,0.3s,baz=95,slow=22,SNR=15						
JHJ				Sn	**Sn**	**10 58 15.7**	**0.0**
	85nm,0.3s,baz=252,slow=19,SNR=7.1						
JHJ2	**Mitsune**	**3.66**	**191**	*e*Pn	**Pn**	**10 57 36.0**	**+2.6**
ERM	**Erimo**	**5.64**	**20**	*c i*P	**Pn**	**10 58 02.1**	**+1.4**
ERM	**Erimo**	**5.64**	**20**	*e*Pn	**Pn**	**10 58 02.3**	**+1.6**
ASAJ	**Asahikawa**	**7.54**	**11**	Pn	**Pn**	**10 58 26.3**	**-0.5**
ASAJ				Sn	**Sn**	**10 59 51.9**	**+0.4**
	1.3nm,0.3s,baz=301,slow=19,SNR=3.6						
ASAJ	**Asahikawa**	**7.54**	**11**	*e*Pn	**Pn**	**10 58 27.4**	**+0.7**
ASAJ				Sn	**Sn**	**10 59 51.9**	**+0.4**
JNU	**Nakatsue**	**8.77**	**249**	Pn	**Pn**	**10 58 44.5**	**+0.8**
	0.2nm,0.3s,baz=68,slow=5.4,SNR=1.9						
JNU				LR	LR	11 02 19.4	
	comp=Z,566nm,19.7s,baz=118,slow=40						
VLA	**Vladivostok**	**9.27**	**316**	⇑*e*P	**Pn**	**10 58 51.2**	**+0.8**
CBIJ	**Chichi jima**	**9.68**	**172**	Pn	**Pn**	**10 58 53.5**	**-2.6**
CBIJ				Sn	Sn	11 00 31.7	-12
JCJ	**Chichijima**	**9.68**	**172**	Pn	**Pn**	**10 58 53.5**	**-2.6**
	20nm,0.3s,baz=286,slow=21,SNR=10						
JCJ				Sn	Sn	11 00 31.7	-12
	3.5nm,0.3s,baz=259,slow=17,SNR=2.1						
JCJ				LR	LR	11 02 31.9	
	comp=Z,326nm,19.4s,baz=110,slow=37						
USRK	**Ussuriysk Ar.**	**9.96**	**321**	Pn	Pn	10 59 04.6	+4.8
	0.8nm,0.3s,baz=128,slow=12,SNR=24						
KUR	**Kuril'sk**	**10.11**	**30**	*e*P	**Pn**	**10 59 00.5**	**-1.4**
KUR				*i* S	**Sn**	**11 00 49.0**	**-5.5**
KUR				smax	smax		
	comp=E,22nm,0.5s						
KUR				smax	smax		
	comp=N,8.0nm,0.3s						
KUR				MLR	MLR		
	comp=N,284nm,18.0s						
KUR				MLR	MLR		
	comp=Z,221nm,18.0s						
KUR				MLR	MLR		
	comp=E,326nm,17.0s						
KSRS	**Korea Array**	**10.18**	**278**	Pn	**Pn**	**10 59 06.0**	**+3.1**
	comp=E,0.4nm,0.3s,baz=88,slow=14,SNR=12						
KSRS				LR	LR	11 02 43.0	
	comp=E,560nm,20.1s,baz=85,slow=37						
KSRS	**Korea Array**	**10.18**	**278**	P	**Pn**	**10 59 06.0**	**+3.1**
KSRS				MLR	MLR		
	comp=Z,560nm,20.1s						
KS01	**Wonju Array Si**	**10.20**	**278**	*e*Pn	**Pn**	**10 59 04.1**	**+0.9**
KSAR	**Wonju Array Be**	**10.21**	**278**	P	**Pn**	**10 59 06.0**	**+2.6**
KSAR	**Wonju Array Be**	**10.21**	**278**	Pn	**Pn**	**10 59 06.0**	**+2.6**
YSS	**Yuzh-Sakhalins**	**10.35**	**8**	*e*P	**Pn**	**10 59 04.6**	**-0.6**
YSS				*e*S	Sn	11 00 48.1	-12
YSS				pmax	pmax		
	comp=Z,20nm,1.2s						
YSS				MLR	MLR		
	comp=Z,500nm,14.0s						
YSS				MLR	MLR		
	comp=N,700nm,16.0s						
YSS				MLR	MLR		
	comp=E,500nm,15.0s						
YSS	**Yuzh-Sakhalins**	**10.35**	**8**	*e*Pn	**Pn**	**10 59 04.8**	**-0.5**
MDJ	**Mudanjiang**	**11.51**	**317**	P	**Pn**	**10 59 25.3**	**+4.3**
MDJ	**Mudanjiang**	**11.51**	**317**	Pn	**Pn**	**10 59 21.6**	**+0.6**
	comp=E,44nm,1.3s						
HABR	**Khabarovsk**	**12.45**	**343**	*e*P	**Pn**	**10 59 33.0**	**-0.8**
HABR				*e*S	**Sn**	**11 01 49.7**	**-1.8**
HABR				pmax	pmax		
	comp=E,11nm,1.1s						
HABR				pmax	pmax		
	comp=N,23nm,1.1s						
HABR				pmax	pmax		
	comp=Z,32nm,1.2s						
HABR				MLR	MLR		
	comp=Z,340nm,16.0s						
CN2	**Changchun**	**13.57**	**306**	*e*P	**Pn**	**10 59 53.0**	**+3.7**
CN2				*es*P	sP	11 00 11.8	
CN2				*e*S	**Sn**	**11 02 21.0**	**+1.8**
KLR	**Kul'dur**	**14.08**	**335**	Pn	**Pn**	**10 59 54.8**	**-1.4**
	comp=Z,0.2nm,0.3s,baz=160,slow=5.6,SNR=5.2						
SNY	**Shenyang**	**14.16**	**296**	⇑P	**Pn**	**11 00 00.0**	**+2.8**
SNY				S	**Sn**	**11 02 40.3**	**+6.9**
TYV	**Tymovskoe**	**14.22**	**5**	*e*P	**Pn**	**10 59 56.0**	**-2.0**
TYV				pmax	pmax		
	comp=Z,48nm,1.0s						
DL2	**Dalian**	**15.18**	**284**	P	**P**	**11 00 15.0**	**-0.9**
DL2				S	**S**	**11 03 10.0**	**-4.8**
NJ2	**Nanjing**	**18.55**	**262**	*e*P	**Pn**	**11 00 55.5**	**+1.9**
TIA	**Tai'an**	**18.91**	**276**	*e*P	**P**	**11 00 55.8**	**-1.4**
BJI	**Beijing**	**19.44**	**287**	P	**P**	**11 01 02.5**	**-0.5**
BJI				S	**S**	**11 04 34.5**	**-6.7**
PETK	**Petropavlovsk-**	**20.28**	**31**	P	Pn	11 01 13.8	-0.3
	comp=Z,11nm,1.0s,baz=164,slow=7.2,SNR=4.5						
PETK				LR	LR	11 08 37.2	
	comp=Z,227nm,20.9s,baz=224,slow=36						
MA2	**Magadan**	**23.80**	**13**	P	**P**	**11 01 48.8**	**-0.1**
	comp=Z,15nm,0.7s,baz=216,slow=6.8,SNR=10						
MA2				LR	LR	11 12 24.5	
	comp=Z,131nm,18.4s,baz=220,slow=40						
MA2	**Magadan**	**23.80**	**13**	P	**P**	**11 01 48.8**	**-0.1**
MA2				pmax	pmax		
	comp=Z,17nm,0.8s						
MA2				MLR	MLR		
	comp=Z,131nm,18.4s						
XAN	**Xi'an**	**25.93**	**274**	P	**P**	**11 02 10.0**	**+1.3**
XAN				S	**S**	**11 06 38.3**	**+0.8**
YAK	**Yakutsk**	**26.25**	**348**	LR	LR	11 13 12.2	
	comp=Z,215nm,19.1s,baz=150,slow=38						
YAK	**Yakutsk**	**26.25**	**348**	*e*P	**P**	**11 02 09.5**	**-1.7**
YAK				*e*		11 05 36.8	
YAK				*e*S	**S**	**11 06 41.0**	**-0.8**
YAK				*e*SS	**SnSn**	**11 07 47.2**	**+5.1**
YAK				*e*		11 12 55.6	
YAK				pmax	pmax		
	comp=Z,25nm,1.1s						
YAK				pmax	pmax		
	comp=N,14nm,1.1s						
YAK				pmax	pmax		
	comp=E,9.0nm,1.3s						
YAK				pmax	pmax		
	comp=Z,103nm,3.2s						
YAK				pmax	pmax		
	comp=E,13nm,1.6s						
YAK				smax	smax		
	comp=E,79nm,2.7s						
YAK				smax	smax		
	comp=N,87nm,2.8s						
YAK				MLR	MLR		
	comp=E,210nm,16.0s						
YAK				MLR	MLR		
	comp=Z,227nm,17.0s						
YAK				MLR	MLR		
	comp=N,108nm,17.0s						
ENH	**Enshi**	**26.68**	**265**	*e*P	**P**	**11 02 14.7**	**-0.8**
	comp=N,10.0nm,0.5s						
ULN	**Ulaanbaatar**	**27.02**	**305**	⇑*i*P	**P**	**11 02 17.0**	**-1.5**
ULN				pmax	pmax		
	comp=Z,10.0nm,1.0s						
ULN	**Ulaanbaatar**	**27.02**	**305**	*e*P	**P**	**11 02 16.6**	**-1.9**
	comp=Z,7.7nm,0.8s						
SEY	**Seymchan**	**27.23**	**12**	P	**P**	**11 02 20.5**	**+0.5**
	comp=Z,11nm,1.0s,baz=207,slow=5.3,SNR=11						
SEY	**Seymchan**	**27.23**	**12**	⇓*i*P	**P**	**11 02 21.4**	**+1.4**
SEY				*e**PP	**sP**	**11 02 34.0**	**+3.2**
SONA1	**Songino Array**	**27.44**	**305**	*e*P	**P**	**11 02 20.4**	**-1.9**
SONM	**Songino Array**	**27.45**	**305**	P	**P**	**11 02 20.2**	**-2.1**
	comp=Z,11nm,0.8s,baz=109,slow=8.0,SNR=48						
SONM				PcP	**PcP**	**11 05 41.3**	**+0.9**
	comp=Z,0.6nm,0.5s,baz=113,slow=3.7,SNR=4.2						
SONM				LR	LR	11 13 20.1	
	comp=Z,93nm,18.8s,baz=102,slow=37						
BOD	**Bodaibo**	**27.47**	**329**	*e*P	**P**	**11 02 20.9**	**-1.3**
BOD				pmax	pmax		
	comp=Z,9.0nm,1.3s						
H11N2	**WAKE ISLAND Hy**	**28.53**	**119**	T	T	11 32 16.1	
	baz=312,slow=75,SNR=4147						
H11N1	**WAKE ISLAND Hy**	**28.54**	**119**	T	T	11 32 16.7	
	baz=312,slow=75,SNR=5837						
H11N3	**WAKE ISLAND Hy**	**28.55**	**119**	T	T	11 32 17.5	
	baz=312,slow=75,SNR=4450						
H11S1	**WAKE ISLAND Hy**	**29.22**	**121**	T	T	11 33 06.2	
	baz=314,slow=76						
H11S3	**WAKE ISLAND Hy**	**29.22**	**121**	T	T	11 33 05.5	
	baz=314,slow=76						
H11S2	**WAKE ISLAND Hy**	**29.24**	**121**	T	T	11 33 07.3	
	baz=314,slow=76						
LZH	**Lanzhou**	**29.50**	**280**	*e*P	**P**	**11 02 43.5**	**+2.7**
LZH				pP	pP	11 02 49.5	+1.1
LZH				sP	sP	11 02 52.5	+0.9
ZAK	**Zakamensk**	**29.98**	**309**	*e*P	**P**	**11 02 43.5**	**-1.3**
ZAK				*e*		11 05 42.4	
ZAK				pmax	pmax		
	comp=Z,3.0nm,1.0s						
ZAK				pmax	pmax		
	comp=Z,3.0nm,1.4s						
TLY	**Talaya**	**30.07**	**312**	LR	LR	11 14 11.5	
	comp=Z,78nm,18.0s,baz=110,slow=35						
TLY	**Talaya**	**30.07**	**312**	*e*P	**P**	**11 02 46.0**	**+0.5**
TLY				pmax	pmax		
	comp=Z,6.0nm,0.8s						
TLY				MLR	MLR		
	comp=Z,76nm,11.0s						
GYA	**Guiyang**	**30.55**	**260**	*e*P	**P**	**11 02 51.3**	**+1.2**
GYA				pP	sP	11 03 06.8	+6.0
GYA				PP	**PnPn**	**11 03 52.5**	**+3.0**
GYA				PcP	**PcP**	**11 05 51.0**	**+2.4**
GYA				S	**S**	**11 07 47.5**	**-2.9**
GYA				sS	sS	11 08 12.3	+9.3
GYA				ScP	**ScP**	**11 09 27.0**	**-2.3**
GYA	**Guiyang**	**30.55**	**260**	ScS	ScS	11 13 21.8	-4.0
CD2	**Chengdu**	**31.05**	**270**	P	**P**	**11 02 53.0**	**-1.4**
QIZ	**Qiongzhong**	**32.22**	**245**	P	**P**	**11 03 06.3**	**+1.6**
QIZ				S	**S**	**11 08 14.5**	**-2.0**
KMI	**Kunming**	**34.29**	**261**	P	**P**	**11 03 25.3**	**+2.3**
KMI				S	**S**	**11 08 46.0**	**-2.9**
KMI				SS	**SnSn**	**11 10 55.3**	**-3.6**
BILL	**Bilibino**	**34.51**	**17**	*c i*P	**P**	**11 03 24.4**	**+0.2**
BILL				pmax	pmax		
	comp=Z,19nm,1.7s						
BILL	**Bilibino**	**34.51**	**17**	*e*P	**P**	**11 03 23.6**	**-0.5**
	comp=Z,14nm,1.2s						
TIXI	**Tiksi**	**35.53**	**354**	P	**P**	**11 03 32.0**	**-0.9**
	comp=Z,3.0nm,0.4s,baz=138,slow=6.5,SNR=14						
TIXI	**Tiksi**	**35.53**	**354**	*c i*P	**P**	**11 03 32.4**	**-0.5**
TIXI				pmax	pmax		
	comp=Z,5.0nm,1.1s						
TIXI	**Tiksi**	**35.53**	**354**	*e*P	**P**	**11 03 32.0**	**-0.9**
	comp=Z,16nm,1.4s						
WMQ	**Urumqi**	**40.42**	**297**	P	**P**	**11 04 15.8**	**+1.2**
WMQ				pP	sP	11 04 29.0	+3.5
WMQ				sP	pP	11 04 37.5	+15
CMAR	**Chiang Mai Arr**	**40.81**	**255**	P	**P**	**11 04 17.8**	**-0.2**
	comp=Z,0.7nm,0.4s,baz=52,slow=5.8,SNR=3.1						
CMAR				PcP	**PcP**	**11 06 20.2**	**+1.4**
	comp=Z,0.7nm,0.4s,baz=46,slow=2.6,SNR=4.6						
CMAR				LR	LR	11 23 18.1	
	comp=Z,141nm,18.0s,baz=25,slow=39						
CMAR	**Chiang Mai Arr**	**40.81**	**255**	P	**P**	**11 04 17.8**	**-0.2**
CMAR						11 06 20.2	
CMAR				pmax	pmax		
	comp=Z,1.0nm,0.4s						
CMAR				pmax	pmax		
	comp=Z,1.0nm,0.4s						
CMAR				MLR	MLR		
	comp=Z,141nm,18.0s						
LSA	**Lhasa**	**41.61**	**275**	*e*P	**P**	**11 04 24.4**	**-0.6**
LSA	**Lhasa**	**41.61**	**275**	*e*P	**P**	**11 04 24.4**	**-0.6**
ZAA0	**Zalesovo Array**	**41.67**	**313**	*e*P	**P**	**11 04 23.7**	**-0.9**
ZALV	**Zalesovo Beam**	**41.67**	**313**	P	**P**	**11 04 23.7**	**-0.9**
	comp=Z,14nm,0.5s,baz=95,slow=6.5,SNR=36						
ZALV				PcP	**PcP**	**11 06 19.9**	**-1.0**
	comp=Z,1.6nm,0.4s,baz=87,slow=3.0,SNR=5.7						
ZALV				LR	LR	11 20 16.0	
	comp=Z,51nm,19.0s,baz=76,slow=34						
NVS	**Novosibirsk**	**42.61**	**314**	*e*P	**P**	**11 04 32.3**	**+0.1**
NVS				pmax	pmax		
	comp=N,2.0nm,0.4s						
NVS				pmax	pmax		
	comp=E,5.0nm,0.4s						
NVS				pmax	pmax		
	comp=Z,7.0nm,0.4s						
NRIK	**Noril'sk**	**43.30**	**336**	P	**P**	**11 04 38.0**	**+0.3**
	comp=Z,2.5nm,0.5s,baz=93,slow=11,SNR=3.7						
NRIK				PcP	**PcP**	**11 06 26.8**	**+0.7**
	comp=Z,9.3nm,1.1s,baz=186,slow=5.8,SNR=3.8						
NRIK				LR	LR	11 24 18.7	
	comp=Z,176nm,18.9s,baz=100,slow=38						
MK01	**Makanchi Array**	**43.75**	**302**	*e*P	**P**	**11 04 40.7**	**-1.0**
MK31	**Makanchi Array**	**43.76**	**302**	*i* P	**P**	**11 04 41.7**	**0.0**
MK31				pmax	pmax		
	comp=Z,7.0nm,0.9s						
MK31	**Makanchi Array**	**43.76**	**302**	*e*P	**P**	**11 04 41.9**	**+0.2**
MKAR	**Makanchi Array**	**43.76**	**302**	P	**P**	**11 04 41.5**	**-0.2**
	comp=Z,3.2nm,0.7s,baz=89,slow=9.9,SNR=27						
MKAR				LR	LR	11 22 49.8	
	comp=Z,91nm,19.7s,baz=93,slow=36						
MKAR	**Makanchi Array**	**43.76**	**302**	*e*P	**P**	**11 04 41.9**	**+0.2**
MAKZ	**Makanchi**	**43.97**	**302**	*e*P	**P**	**11 04 43.4**	**0.0**
MAKZ				pmax	pmax		
	comp=Z,6.0nm,0.9s						
MAKZ	**Makanchi**	**43.97**	**302**	*e*P	**P**	**11 04 43.4**	**0.0**
	comp=Z,5.7nm,0.9s						
KURK	**Kurchatov**	**45.63**	**308**	*e*P	**P**	**11 04 56.2**	**-0.4**
KURK				pmax	pmax		
	comp=Z,34nm,0.8s						
KURK	**Kurchatov**	**45.63**	**308**	*e*P	**P**	**11 04 56.2**	**-0.4**
	comp=Z,34nm,0.8s						
KURBB	**Kurchatov Arra**	**45.70**	**308**	P	**P**	**11 04 56.3**	**-0.8**
	comp=Z,22nm,0.8s,baz=84,slow=7.9,SNR=146						
KAPI	**Kappang**	**45.87**	**210**	LR	LR	11 21 44.4	
	comp=Z,48nm,20.2s,baz=28,slow=33						
KAPI	**Kappang**	**45.87**	**210**	*e*P	**P**	**11 04 59.9**	**+1.1**
	comp=Z,19nm,1.0s						
PDGK	**Podgornoye**	**46.37**	**298**	P	**P**	**11 05 01.8**	**-0.7**
PDGK				pmax	pmax		
	comp=Z,35nm,1.2s						
SOEI	**Soe**	**48.72**	**202**	*e*P	**P**	**11 05 22.3**	**+1.2**
	comp=Z,86nm,1.0s						
TKM2	**Tokmak 2**	**49.23**	**298**	P	**P**	**11 05 25.1**	**+0.2**
TKM2				pmax	pmax		
	comp=Z,21nm,1.1s						
TKM2	**Tokmak 2**	**49.23**	**298**	*e*P	**P**	**11 05 25.4**	**+0.5**
	comp=Z,59nm,1.8s						
SML	**Sawmill**	**49.62**	**36**	*e*P	**P**	**11 05 28.9**	**+1.5**
SML	**Sawmill**	**49.62**	**36**	*e*P	**P**	**11 05 28.9**	**+1.5**
COLA	**College**	**49.68**	**32**	⇓*i*P	**P**	**11 05 28.1**	**+0.4**
COLA				pmax	pmax		
	comp=Z,3.0nm,1.0s						
FRU	**Bishkek**	**49.95**	**299**	P	**P**	**11 05 30.0**	**-0.2**
KSH	**Kashi**	**49.96**	**294**	*e*P	**P**	**11 05 34.5**	**+4.1**
KSH				*es*P	sP	11 05 57.0	+16
KSH				PcS	**PcS**	**11 10 49.3**	**+1.9**
KSH				S	**S**	**11 12 39.0**	**-0.5**
KSH	**Kashi**	**49.96**	**294**	SS	**SS**	**11 16 09.8**	**-2.4**
CHKZ	**Chkalovo**	**50.07**	**313**	P	**P**	**11 05 29.9**	**-1.0**
CHKZ				pmax	pmax		
	comp=Z,12nm,0.6s						
AAK	**Ala-Archa**	**50.09**	**298**	P	**P**	**11 05 31.3**	**-0.1**
	comp=Z,2.4nm,0.4s,baz=175,slow=2.3,SNR=7.2						
AAK	**Ala-Archa**	**50.09**	**298**	⇑*i*P	**P**	**11 05 30.4**	**-1.0**
AAK				pmax	pmax		
	comp=Z,8.0nm,0.7s						
AAK	**Ala-Archa**	**50.09**	**298**	*e*P	**P**	**11 05 30.4**	**-1.0**
	comp=Z,3.5nm,0.6s						
IL1	**Eielson Array**	**50.10**	**32**	*e*P	**P**	**11 05 31.6**	**+0.6**
ILAR	**Eielson Array**	**50.10**	**32**	P	**P**	**11 05 31.1**	**+0.2**
	comp=Z,2.6nm,0.9s,baz=267,slow=6.4,SNR=22						
ILAR				LR	LR	11 28 22.6	
	comp=Z,120nm,19.4s,baz=288,slow=38						
ILB	**Eielson Array**	**50.10**	**32**	*e*P	**P**	**11 05 31.6**	**+0.7**
BVA0	**Borovoye Array**	**50.32**	**312**	*i* P	**P**	**11 05 32.4**	**-0.4**
BVA0				pmax	pmax		
	comp=Z,6.0nm,0.7s						
BRVK	**Borovoye**	**50.38**	**312**	⇑*i*P	**P**	**11 05 33.0**	**-0.2**
BRVK				pmax	pmax		
	comp=Z,19nm,1.2s						
BRVK	**Borovoye**	**50.38**	**312**	*e*P	**P**	**11 05 32.4**	**-0.8**
	comp=Z,12nm,0.9s						
COEN	**Coen**	**50.45**	**177**	*e*P	**P**	**11 05 35.1**	**+1.0**
	comp=Z,57nm,1.4s						
EKS2	**Erkin-Say**	**50.59**	**299**	*e*P	**P**	**11 05 35.1**	**-0.1**
EKS2				pmax	pmax		
	comp=Z,5.0nm,0.8s						
EKS2	**Erkin-Say**	**50.59**	**299**	*e*P	**P**	**11 05 35.0**	**-0.1**
	comp=Z,4.7nm,0.8s						
ZRNK	**Zerenda**	**51.16**	**313**	*e*P	**P**	**11 05 38.7**	**-0.4**
ZRNK				pmax	pmax		
	comp=Z,24nm,1.0s						
ZRNK	**Zerenda**	**51.16**	**313**	*e*P	**P**	**11 05 38.7**	**-0.4**
	comp=Z,24nm,1.0s						
DOT	**Dot Lake**	**51.42**	**34**	*e*P	**P**	**11 05 41.5**	**+0.6**
	comp=Z,33nm,1.5s						
MNAS	**Manas**	**51.54**	**299**	P	**P**	**11 05 42.4**	**+0.1**
MNAS				pmax	pmax		
	comp=Z,13nm,0.8s						
MENT	**Mentasta**	**51.65**	**34**	*e*P	**P**	**11 05 44.3**	**+1.6**
	comp=Z,7.1nm,1.1s						
EGAK	**Eagle**	**52.54**	**32**	*e*P	**P**	**11 05 50.0**	**+0.8**
	comp=Z,18nm,1.7s						
KK31	**Karatay Array**	**52.74**	**300**	*i* P	**P**	**11 05 50.6**	**-0.5**
KK31				pmax	pmax		
	comp=Z,16nm,1.2s						
KKAR	**Karatay Array**	**52.74**	**300**	*e*P	**P**	**11 05 50.5**	**-0.6**
KKAR				pmax	pmax		
	comp=Z,20nm,1.2s						
KKAR	**Karatay Array**	**52.74**	**300**	*e*P	**P**	**11 05 50.5**	**-0.6**
	comp=Z,20nm,1.2s						
GSI	**Gunungsitoli**	**53.10**	**239**	*e*P	**P**	**11 05 53.6**	**-0.3**
	comp=Z,64nm,1.4s						
INK	**Inuvik**	**54.96**	**27**	P	**P**	**11 06 07.7**	**+0.9**
	comp=Z,3.6nm,0.8s,baz=290,slow=7.6,SNR=16						
INK	**Inuvik**	**54.96**	**27**	*e*P	**P**	**11 06 08.1**	**+1.3**
INK				pmax	pmax		
	comp=Z,6.0nm,1.0s						
INK	**Inuvik**	**54.96**	**27**	*e*P	**P**	**11 06 08.1**	**+1.3**
	comp=Z,5.8nm,1.0s						
SVE	**Sverdlovsk**	**54.97**	**319**	*e*P	**P**	**11 06 07.1**	**0.0**
SVE				pmax	pmax		
	comp=Z,28nm,1.1s						
ARU	**Arti**	**56.18**	**319**	*d i*P	**P**	**11 06 15.2**	**-0.6**
ARU				*PP	**sP**	**11 06 28.5**	**+1.6**
ARU						11 07 08.4	
ARU						11 08 18.9	
ARU				S	**S**	**11 14 01.9**	**-1.5**
ARU				SS	**SS**	**11 17 48.3**	**-1.2**
ARU				pmax	pmax		
	comp=Z,28nm,1.2s						
ARU	**Arti**	**56.18**	**319**	*e*P	**P**	**11 06 15.3**	**-0.5**
	comp=Z,25nm,1.1s						
WRAB	**Tennant Creek**	**56.65**	**187**	⇓*i*P	**P**	**11 06 19.3**	**-0.2**
WRAB				pmax	pmax		
	comp=Z,36nm,0.9s						
WRAB	**Tennant Creek**	**56.65**	**187**	*e*P	**P**	**11 06 19.6**	**+0.1**
	comp=Z,15nm,0.8s						
WB2	**Warramunga Arr**	**56.66**	**187**	*e*P	**P**	**11 06 19.4**	**-0.2**
	comp=Z,14nm,0.8s						
WRA	**Warramunga Arr**	**56.66**	**187**	P	**P**	**11 06 18.9**	**-0.6**
	comp=Z,15nm,0.9s,baz=4.0,slow=7.2,SNR=54						
WRA	**Warramunga Arr**	**56.66**	**187**	P	**P**	**11 06 19.0**	**-0.6**
WRA				pmax	pmax		
	comp=Z,15nm,0.9s						
HYB	**Hyderabad**	**57.56**	**268**	*i* P	**P**	**11 06 26.0**	**-0.2**
AB31	**Akbulak array**	**57.66**	**310**	*i* P	**P**	**11 06 25.8**	**-0.6**
AB31				pmax	pmax		
	comp=Z,23nm,1.1s						
ABKAR	**Akbulak array**	**57.66**	**310**	*e*P	**P**	**11 06 25.8**	**-0.7**
DLBC	**Dease Lake**	**59.26**	**38**	P	**P**	**11 06 40.1**	**+2.5**
	comp=Z,2.2nm,0.6s,baz=298,slow=8.3,SNR=5.4						
DLBC	**Dease Lake**	**59.26**	**38**	*e*P	**P**	**11 06 40.5**	**+2.9**
	comp=Z,28nm,1.9s						
AS01	**Alice Springs**	**60.38**	**187**	*e*P	**P**	**11 06 45.0**	**-0.5**
AS31	**Alice Springs**	**60.39**	**187**	*e*P	**P**	**11 06 45.5**	**0.0**
	comp=Z,2.6nm,0.8s						
ASAR	**Alice Springs**	**60.39**	**187**	P	**P**	**11 06 45.2**	**-0.3**
	comp=Z,7.8nm,0.8s,baz=9.6,slow=5.9,SNR=33						
APA	**Apatity**	**62.72**	**336**	⇑*i*P	P	11 06 54.0	-6.8
APA				MLR	MLR		
	comp=Z,1μm,12.0s						
GEYT	**Alibeck**	**63.44**	**299**	P	**P**	**11 07 05.8**	**-0.2**
	comp=Z,1.2nm,0.3s,baz=53,slow=7.6,SNR=5.1						
KLMR	**Klimovskoe**	**63.69**	**328**	*e*P	**P**	**11 07 05.8**	**-1.5**
KLMR				pmax	pmax		
	comp=Z,8.0nm,0.6s						
ARCES	**ARCESS Array B**	**64.07**	**339**	P	**P**	**11 07 09.4**	**-0.3

ORV pmax pmax
comp=Z,8.0nm,1.1s
ORV Oroville 72.99 53 *eP* **P 11 08 08.0 +2.1**
comp=Z,8.2nm,1.1s
ANN Anapa 73.30 314 *eP* **P 11 08 04.9 -2.7**
ANN *e**PP **sP 11 08 18.2 -0.6**
ANN pmax pmax
comp=Z,27nm,1.1s
MSO Missoula 73.38 44 *eP* **P 11 08 09.4 +1.2**
comp=Z,11nm,1.3s
AKASG Malin Array Be 74.16 322 P **P 11 08 11.6 -0.9**
comp=Z,4.1nm,0.5s,baz=47,slow=6.3,SNR=28
AKBB Malin Array Si 74.16 322 *eP* **P 11 08 12.0 -0.6**
AKBB pmax pmax
comp=Z,12nm,0.9s
AKBB Malin Array Si 74.16 322 *eP* **P 11 08 12.0 -0.6**
comp=Z,12nm,0.9s
KIEV Kiev 74.18 322⇑*iP* **P 11 08 12.5 -0.1**
KIEV pmax pmax
comp=Z,11nm,1.0s
KIEV Kiev 74.18 322 *eP* **P 11 08 11.6 -1.0**
comp=Z,18nm,1.2s
NC204 NORSAR Array S 74.20 337 *eP* **P 11 08 12.8 +0.1**
AK11 Malin Array Si 74.21 322 *eP* **P 11 08 12.0 -0.8**
NB2 NORSAR Subarra 74.24 337 P **P 11 08 12.3 -0.6**
comp=Z,18nm,1.2s,baz=41,slow=5.9
NOA NORSAR Array B 74.24 337 P **P 11 08 12.6 -0.3**
comp=Z,5.3nm,0.8s,baz=39,slow=5.8,SNR=16
NOA LR LR 11 44 02.3
comp=Z,74nm,18.9s,baz=25,slow=38
PAHR Pah Rah Range 74.26 52 *eP* **P 11 08 15.5 +1.9**
comp=Z,12nm,1.1s
MFID Camas Ranch 74.30 47 *eP* **P 11 08 15.7 +2.0**
comp=Z,16nm,1.3s
FFC Flin Flon 74.31 32 *eP* **P 11 08 13.8 +0.4**
FFC pmax pmax
comp=Z,12nm,1.1s
FFC Flin Flon 74.31 32 *eP* **P 11 08 13.8 +0.4**
comp=Z,12nm,1.1s
NBO02 NORSAR Array S 74.34 337 *eP* **P 11 08 13.2 -0.2**
CMB Columbia Colle 74.56 54 *eP* **P 11 08 17.2 +2.0**
CMB pmax pmax
comp=Z,10.0nm,1.0s
CMB Columbia Colle 74.56 54 *eP* **P 11 08 17.2 +2.0**
comp=Z,10nm,1.0s
FCC Fort Churchill 74.57 26 *eP* **P 11 08 15.0 +0.3**
FCC pmax pmax
comp=Z,12nm,1.0s
FCC Fort Churchill 74.57 26 *eP* **P 11 08 15.0 +0.3**
comp=Z,12nm,1.0s
YERR Yerington 74.76 53 *eP* **P 11 08 18.3 +1.8**
LRM Limekiln Ridge 74.81 44 *eP* **P 11 08 18.6 +1.8**
WAKR Walker 74.91 53 *eP* **P 11 08 19.7 +2.3**
DLMT Dillon 75.01 44 *eP* **P 11 08 19.7 +1.9**
comp=Z,15nm,1.0s
HLID Hailey 75.05 47 *eP* **P 11 08 20.2 +2.2**
comp=Z,5.6nm,1.0s
NV01 Mina Array Sit 75.68 53 *eP* **P 11 08 23.6 +1.7**
NVAR Mina Array Bea 75.68 53 P **P 11 08 23.3 +1.4**
comp=Z,4.7nm,0.8s,baz=289,slow=6.7,SNR=22
NVAR LR LR 11 34 37.0
comp=Z,39nm,21.2s,baz=267,slow=30
NV11 Mina Array Sit 75.78 53 *eP* **P 11 08 23.9 +1.5**
comp=Z,7.8nm,1.2s
ELK Elko 76.23 49 *eP* **P 11 08 27.5 +2.5**
ELK pmax pmax
comp=Z,8.0nm,1.4s
ELK Elko 76.23 49 *eP* **P 11 08 27.5 +2.5**
comp=Z,8.3nm,1.4s
SORM Soroca 76.24 320⇓*iP* **P 11 08 24.0 -0.5**
SORM Soroca 76.24 320⇓P **P 11 08 24.0 -0.5**
GCMT Greycliff 76.37 43 *eP* **P 11 08 27.6 +2.1**
H17A Grant Village 76.74 44 *eP* **P 11 08 31.5 +3.7**
comp=Z,20nm,1.1s
IMW Indian Meadow 76.84 45 *eP* **P 11 08 31.1 +2.6**
comp=Z,8.3nm,0.9s
RLMT Red Lodge 77.01 43 *eP* **P 11 08 31.2 +1.9**
comp=Z,13nm,1.4s
REDW Red Top Meadow 77.23 45 *eP* **P 11 08 32.8 +2.2**
comp=Z,9.7nm,1.1s
LVV L'vov 77.26 324 *eP* **P 11 08 30.1 -0.2**
DAC Darwin (Calif) 77.40 54 *eP* **P 11 08 33.2 +1.6**
DAC pmax pmax
comp=Z,5.0nm,1.0s
DAC Darwin (Calif) 77.40 54 *eP* **P 11 08 33.2 +1.6**
comp=Z,5.0nm,1.0s
R11A Troy Canyon, C 77.45 51 *eP* **P 11 08 33.4 +1.6**
comp=Z,14nm,1.1s
TPNV Topopah Spring 77.87 53 *eP* **P 11 08 36.2 +2.0**
TPNV pmax pmax
comp=Z,12nm,1.0s
TPNV Topopah Spring 77.87 53 *eP* **P 11 08 36.1 +2.0**
comp=Z,12nm,1.0s
HWUT Hardware Ranch 77.91 47 *eP* **P 11 08 36.5 +2.1**
comp=Z,16nm,1.1s
KWP Kalwaria Pacla 78.02 324⇓*iP* **P 11 08 35.3 +0.7**
KWP Kalwaria Pacla 78.02 324⇓P **P 11 08 35.3 +0.7**
DUG Dugway, Tooele 78.04 49 *eP* **P 11 08 37.2 +2.2**
DUG pmax pmax
comp=Z,12nm,1.0s
DUG Dugway, Tooele 78.04 49 *eP* **P 11 08 37.2 +2.2**
comp=Z,12nm,1.0s
BUR08 Bucovina Ar. S 78.16 321 *eP* **P 11 08 35.6 +0.1**
BURAR Bucovina Array 78.17 321⇓*iP* **P 11 08 35.6 0.0**
BURAR Bucovina Array 78.17 321⇓P **P 11 08 35.6 0.0**
TESR Tescani 78.17 320⇑*iP* **P 11 08 35.8 +0.3**
CFR Carcaliu 78.27 318⇓*iP* **P 11 08 34.9 -1.1**
CFR Carcaliu 78.27 318⇓P **P 11 08 34.9 -1.1**
BW06 Boulder Array 78.34 45 *eP* **P 11 08 36.9 +0.2**
PD31 Pinedale Array 78.34 45 *eP* **P 11 08 38.0 +1.2**
PDAR Pinedale Array 78.34 45 P **P 11 08 38.0 +1.2**
comp=Z,2.4nm,0.7s,baz=264,slow=1.7,SNR=20
PSUT Pine Spring 78.42 50 *eP* **P 11 08 39.2 +2.0**
comp=Z,11nm,1.1s
VRI Vrincioaia 78.56 319⇓*iP* **P 11 08 38.5 +0.9**
VRI Vrincioaia 78.56 319⇓P **P 11 08 38.5 +0.9**
BR131 Keskin Array S 78.59 311 *eP* **P 11 08 38.3 +0.2**
BRTR Keskin Array B 78.59 311 P **P 11 08 38.1 0.0**
comp=Z,3.1nm,0.9s,baz=96,slow=5.0,SNR=15
JLU Jordanelle 78.60 48 *eP* **P 11 08 39.4 +1.1**
comp=Z,24nm,1.4s
PLOR Plostina 78.61 319⇑*iP* **P 11 08 39.1 +1.1**
PLOR Plostina 78.61 319⇑P **P 11 08 39.1 +1.1**
SHPR Sheep Range 78.83 53 *eP* **P 11 08 41.6 +2.1**
comp=Z,10nm,1.1s
STHS Stebnicka Huta 78.86 325 *eP* **P 11 08 40.3 +1.1**
STHS pmax pmax
comp=Z,7.0nm,1.1s
STHS Stebnicka Huta 78.86 325 *eP* **P 11 08 40.3 +1.1**
UZH Uzhgorod 78.91 323 *eP* **P 11 08 36.7 -2.8**
UZH *e* 11 08 44.5
OJC Ojcow 78.95 326 *eP* **P 11 08 39.9 +0.2**
OJC Ojcow 78.95 326 *eP* **P 11 08 39.9 +0.2**
OJC Ojcow 78.95 326 *eP* **P 11 08 39.9 +0.2**
comp=Z,20nm,1.1s
BR231 Keskin MP Arra 79.04 312 *eP* **P 11 08 38.9 -1.6**
CRVS Cervenica-Dubn 79.11 324 *eP* **P 11 08 43.9 +3.3**
CRVS *e* 11 08 51.1
CRVS Cervenica-Dubn 79.11 324 *eP* **P 11 08 43.9 +3.3**
CRVS *e* 11 08 51.0
MSAR Monastry St. A 79.14 317⇓*iP* **P 11 08 41.2 +0.4**
DOPR Dopca 79.19 320⇑*iP* **P 11 08 42.3 +1.2**
MLR Muntele Rosu 79.22 319⇑*iP* **P 11 08 42.5 +1.1**
MLR Muntele Rosu 79.22 319⇑P **P 11 08 42.5 +1.1**
TMUT Trail Mountain 79.56 49 *eP* **P 11 08 45.6 +2.0**
comp=Z,9.7nm,1.2s
P17A Butcher Ranch, 79.73 48 *eP* **P 11 08 46.5 +2.1**
comp=Z,14nm,0.9s
LCMT Little Creek M 79.74 51 *eP* **P 11 08 46.7 +2.3**
comp=Z,10nm,1.0s
Q16A Castle Valley 79.83 49 *eP* **P 11 08 47.2 +2.2**
comp=Z,20nm,1.4s
LANS Liptovska Anna 79.87 325 *eP* **P 11 08 45.9 +1.1**
LANS Liptovska Anna 79.87 325 *eP* **P 11 08 45.9 +1.1**
ARR Arges 79.98 320⇓*iP* **P 11 08 46.1 +0.6**
KNB Kanab 80.00 51 *eP* **P 11 08 48.4 +2.5**
KNB pmax pmax
comp=Z,16nm,1.2s
KNB Kanab 80.00 51 *eP* **P 11 08 48.4 +2.5**
comp=Z,16nm,1.2s
SRU San Rafael Swe 80.09 48 *eP* **P 11 08 47.7 +1.3**
SRU pmax pmax
comp=Z,13nm,0.7s
SRU San Rafael Swe 80.09 48 *eP* **P 11 08 47.7 +1.3**
comp=Z,12nm,0.7s
ULM Lac du Bonnet 80.11 33 P **P 11 08 45.9 -0.1**
comp=Z,1.1nm,0.3s,baz=289,slow=3.6,SNR=5.1
ULM Lac du Bonnet 80.11 33 *eP* **P 11 08 46.7 +0.7**
ULM pmax pmax
comp=Z,10.0nm,0.9s
ULM Lac du Bonnet 80.11 33 *eP* **P 11 08 46.7 +0.7**
comp=Z,9.7nm,0.9s
MDND Maddock 80.14 36 *eP* **P 11 08 47.1 +0.8**
comp=Z,14nm,0.8s
MORC Moravsky Berou 80.28 327⇓*iP* **P 11 08 47.5 +0.5**
MORC Moravsky Berou 80.28 327⇓P **P 11 08 47.5 +0.5**
MORC Moravsky Berou 80.28 327 *eP* **P 11 08 47.5 +0.5**
comp=Z,51nm,1.2s
LOT Lotru 80.38 320⇓*iP* **P 11 08 48.4 +0.7**
DPC Dobruska-Polom 80.39 328 *eP* **P 11 08 48.2 +0.6**
DPC *e*pP **pP 11 08 56.9 +1.1**
DPC Dobruska-Polom 80.39 328 *eP* **P 11 08 48.2 +0.6**
DPC *e* 11 08 56.9
PSZ Piszkesteto 80.55 324⇑*iP* **P 11 08 48.8 +0.3**
PSZ Piszkesteto 80.55 324⇑P **P 11 08 48.9 +0.4**
PSZ Piszkesteto 80.55 324 *eP* **P 11 08 49.3 +0.8**
comp=Z,13nm,1.0s
VYHS Vyhne 80.63 325 *eP* **P 11 08 49.4 +0.6**
VYHS pmax pmax
comp=Z,5.0nm,1.3s
VYHS Vyhne 80.63 325 *eP* **P 11 08 49.4 +0.6**
U15A North Rim 80.70 51 *eP* **P 11 08 52.2 +2.5**
comp=Z,11nm,1.1s
Y12C Blythe 80.93 55 *eP* **P 11 08 52.6 +1.9**
comp=Z,9.7nm,1.2s
BRG Berggiesshubel 81.00 329 *eP* **P 11 08 51.0 +0.2**
comp=Z,8.9nm,1.0s
BRG Berggiesshubel 81.00 329 *eP* **P 11 08 51.0 +0.2**
BRG pmax pmax
comp=Z,9.0nm,1.0s
CLL Collm 81.06 330⇓*iP* **P 11 08 50.9 -0.1**
comp=Z,13nm,0.9s
CLL Collm 81.06 330⇓*iP* **P 11 08 50.9 -0.1**
CLL pmax pmax
comp=Z,13nm,0.9s
CLL Collm 81.06 330 *eP* **P 11 08 51.2 +0.2**
comp=Z,16nm,1.0s
PRU Pruhonice 81.42 328 *eP* **P 11 08 53.2 +0.2**
PRU Pruhonice 81.42 328 *eP* **P 11 08 53.2 +0.2**
PV04 Paradox Valley 81.53 48 *eP* **P 11 08 54.6 +0.6**
N23A Red Feather La 81.60 45 *eP* **P 11 08 56.1 +1.6**
comp=Z,14nm,1.2s
PHWY Pilot Hill 81.61 44 *eP* **P 11 08 56.6 +2.0**
comp=Z,37nm,1.8s
PV05 Paradox Valley 81.61 48 *eP* **P 11 08 56.8 +2.2**
Y14A Wickenburg 81.80 54 *eP* **P 11 08 57.2 +1.8**
comp=Z,56nm,0.2s
NKC Novy Kostel 82.11 329 *eP* **P 11 08 57.2 +0.5**
NKC Novy Kostel 82.11 329 *eP* **P 11 08 57.2 +0.5**
SMCO Snowmass 82.15 47 *eP* **P 11 08 59.3 +1.7**
comp=Z,12nm,1.3s
CONA Conrad Observa 82.39 326 *i* P **P 11 08 58.5 +0.3**
comp=Z,10nm,1.4s
KHC Kasperske Hory 82.48 328 *eP* **P 11 08 58.9 +0.2**
KHC Kasperske Hory 82.48 328 *eP* **P 11 08 58.9 +0.2**
KHC Kasperske Hory 82.48 328 *eP* **P 11 08 58.9 +0.2**
comp=Z,5.3nm,1.2s
X16A Lo Mia Camp, P 82.51 52 *eP* **P 11 09 01.0 +1.7**
comp=Z,5.8nm,1.0s
ISCO Idaho Springs 82.52 45 *eP* **P 11 09 01.0 +1.6**
ISCO pmax pmax
comp=Z,4.0nm,1.0s
ISCO Idaho Springs 82.52 45 *eP* **P 11 09 01.0 +1.6**
comp=Z,3.7nm,1.0s
MVCO Mesa Verde 82.54 49 *eP* **P 11 09 00.9 +1.5**
comp=Z,12nm,1.2s
GEC2 GERESS Array S 82.65 328 *eP* **P 11 08 59.8 +0.2**
GEC2 pmax pmax
comp=Z,11nm,1.3s
GEC2 GERESS Array S 82.65 328 *eP* **P 11 08 59.8 +0.2**
comp=Z,11nm,1.3s
GERES GERESS Array B 82.65 328 P **P 11 08 59.4 -0.2**
comp=Z,2.4nm,0.5s,baz=36,slow=6.3,SNR=15
GERES LR LR 11 50 28.5
comp=Z,52nm,18.8s,baz=53,slow=39
GEA0 GERESS Array S 82.66 328 *eP* **P 11 08 59.3 -0.3**
ARSA Arzberg 83.05 326 *i* P **P 11 09 02.4 +0.8**
comp=Z,4.4nm,0.8s
MOA Molln 83.16 327 *i* PcP **P 11 09 03.0 +0.8**
comp=Z,11nm,1.6s
S22A 4UR Ranch, Cre 83.19 48 *eP* **P 11 09 05.1 +2.3**
comp=Z,8.3nm,1.0s
X18A Snowflake 83.38 52 *eP* **P 11 09 05.7 +1.9**
comp=Z,9.8nm,1.3s
SOKA Soboth 83.71 326 *i* P **P 11 09 04.8 -0.3**
comp=Z,18nm,1.2s
SDCO Great Sand Dun 83.97 47 *eP* **P 11 09 08.8 +1.9**
comp=Z,5.7nm,1.0s
KBA Koelnbreinsper 84.16 327 *i* PcP **P 11 09 08.3 +0.8**
comp=Z,4.3nm,0.7s
TUC Tucson 84.28 54 *eP* **P 11 09 09.7 +1.5**
TUC pmax pmax
comp=Z,6.0nm,1.1s
TUC Tucson 84.28 54 *eP* **P 11 09 09.7 +1.5**
comp=Z,6.3nm,1.1s
MEM Membach 84.31 333 P **P 11 09 07.7 -0.2**
MYKA Terra Mystica 84.37 326 *i* P **P 11 09 08.1 -0.3**
comp=Z,1.9nm,0.4s
ECSD EROS Data Cent 84.56 38 *eP* **P 11 09 10.2 +0.8**
comp=Z,6.0nm,0.8s
ABTA Abfaltersbach 84.77 327 *i* P **P 11 09 09.9 -0.6**
comp=Z,2.4nm,0.6s
PDG Podgorica 84.81 321⇓*iP* **P 11 09 10.7 +0.1**
RETA Reutte 84.95 328 *i* PcP **P 11 09 11.8 +0.4**
comp=Z,11nm,1.4s
T25A Trinidad 85.02 47 *eP* **P 11 09 13.6 +1.5**
comp=Z,8.3nm,0.8s
PPT Papeete 85.06 116 LR LR 11 39 28.9
comp=Z,45nm,20.6s,baz=240,slow=30
DOU Dourbes 85.25 333 P **P 11 09 12.3 -0.3**
BFO Black Forest 85.27 330 *ceP* **P 11 09 13.3 +0.4**
BFO Black Forest 85.27 330 *eP* **P 11 09 13.0 +0.1**
comp=Z,16nm,1.1s
ANMO Albuquerque 85.27 49 *c iP* **P 11 09 15.6 +2.2**
ANMO pmax pmax
comp=Z,6.0nm,1.2s
ANMO Albuquerque 85.27 49 *eP* **P 11 09 15.3 +1.9**
comp=Z,7.2nm,1.1s
FETA Feichten 85.33 328 *eP* **P 11 09 12.8 -0.5**
comp=Z,4.8nm,0.8s
DAVA Damuels 85.47 329 *i* PcP **P 11 09 14.2 +0.1**
comp=Z,8.3nm,0.9s
FUORN Ofenpass-Fuorn 85.84 328 *eP* **P 11 09 16.4 +0.3**
comp=Z,25nm,1.4s
319A Douglas 85.85 54 *eP* **P 11 09 18.1 +1.9**
comp=Z,6.0nm,0.9s
TUE Stuetta 86.34 329 *eP* **P 11 09 18.3 -0.2**
comp=Z,6.5nm,1.0s
MNTX Cornudas Mount 88.12 51 *eP* **P 11 09 28.9 +1.8**
comp=Z,5.9nm,1.5s
WMOK Wichita Mounta 89.95 45 *eP* **P 11 09 37.0 +1.3**
WMOK pmax pmax
comp=Z,7.0nm,1.3s
WMOK Wichita Mounta 89.95 45 *eP* **P 11 09 37.0 +1.3**
comp=Z,7.4nm,1.3s
TX31 Lajitas Ar. Si 90.81 52 *eP* **P 11 09 40.8 +0.9**
TXAR Lajitas Array 90.81 52 P **P 11 09 40.9 +1.0**
comp=Z,2.0nm,0.8s,baz=262,slow=2.5,SNR=10
TXAR LR LR 11 44 04.1
comp=Z,40nm,21.9s,baz=0.0,slow=31
ABTX Abilene, Hawle 90.97 47 *eP* **P 11 09 41.3 +0.8**
comp=Z,14nm,1.3s
TORD Torodi Ar. Bea 117.11 314 PKP **PKPdf 11 15 21.1 -0.7**
comp=Z,1.3nm,1.0s,baz=47,slow=1.6,SNR=4.1
SNAA Sanae 140.26 197 PKP PKPpre 11 15 57.8
VNA2 Neumayer--Watz 141.84 196 PKP PKPpre 11 16 01.7
baz=122,slow=1.7
SAML Samuel 144.91 44 *e*PKPbc **PKPab 11 16 12.8 -0.2**
LPAZ La Paz 147.40 59 PKPbc **PKPbc 11 16 21.6 +0.4**
comp=Z,4.7nm,0.8s,baz=332,slow=3.6,SNR=8.5

ISCJB ***26*** *11:08:11.9±0.9, 13°.2S±0°.2×66°.6E±0°.1, h10km, mb4.2/16, MS3.8/17, Error ellipse: s-maj=28.8km s-min=15.6km az=30.2*
IDC ***26*** *11:08:12.3±0.9, 13°.23S×66°.58E, h0km, mb4.1/13, mb1 4.3/13, mb1mx4.0/50, mbtmp4.1/13, MS3.8/18, Ms1 3.8/18, ms1mx3.6/44, Error ellipse: s-maj=32.4km s-min=18.7km az=31.0*
NEIC ***26*** *11:08:14.2±0.4, 13°.20S×66°.60E, h10km, mb4.6/2, Error ellipse: s-maj=18.0km s-min=11.3km az=211.0*
ISC 26 11:08:14.0±0.9, 13°.2S±0°.2×66°.6E±0°.2, h10km, n56, σ0.75/38, mb4.3/16, MS3.8/17, Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08S1	**Diego Carcia H**	**8.02**	**47**	T	T	11 18 16.3	
	baz=226,slow=75,SNR=2273						
H08S2	**Diego Garcia H**	**8.03**	**47**	T	T	11 18 17.3	
	baz=226,slow=75,SNR=2525						
H08S3	**Diego Garcia H**	**8.04**	**47**	T	T	11 18 14.1	
	baz=226,slow=75,SNR=2364						
H08N3	**Diego Garcia H**	**8.10**	**33**	T	T	11 18 23.5	
	baz=212,slow=75,SNR=2575						
H08N1	**Diego Carcia H**	**8.11**	**33**	T	T	11 18 24.8	
	baz=212,slow=75,SNR=2067						
H08N2	**Diego Garcia H**	**8.12**	**33**	T	T	11 18 25.1	
	baz=212,slow=75,SNR=1773						
OPO	**Ambohidratompo**	**19.39**	**252**	LR	LR	11 18 25.4	
	comp=Z,528nm,20.9s,baz=54,slow=32						
PALK	**Pallekele**	**24.73**	**35**	LR	LR	11 21 04.3	
	comp=Z,556nm,21.4s,baz=296,slow=31						
KMBO	**Kilima Mbogo**	**31.42**	**290**	LR	LR	11 24 44.3	
	comp=Z,162nm,21.0s,baz=94,slow=32						
BOSA	**Boshof**	**41.30**	**242**	LR	LR	11 30 03.4	
	comp=Z,229nm,21.7s,baz=63,slow=32						
CMAR	**Chiang Mai Arr**	**44.83**	**46**	P	**P**	**11 16 29.9**	**+1.3**
	0.7nm,0.3s,baz=237,slow=8.3,SNR=8.3						
CMAR				LR	LR	11 32 39.4	
	comp=Z,126nm,20.9s,baz=179,slow=33						
H01W3	**Cape Leeuwin H**	**47.96**	**125**	T	T	12 08 07.6	
	baz=284,slow=75,SNR=9.3						
H01W2	**Cape Leeuwin H**	**47.96**	**125**	T	T	12 08 11.8	
	baz=284,slow=75,SNR=11						
H01W1	**Cape Leeuwin H**	**47.98**	**125**	T	T	12 08 13.1	
	baz=284,slow=75,SNR=13						
KBZ	**Khabaz**	**60.66**	**340**	P	**P**	**11 18 25.3**	**+0.1**
	2.4nm,0.9s,baz=161,slow=4.7,SNR=3.3						
BRTR	**Keskin Array B**	**60.94**	**331**	P	**P**	**11 18 27.9**	**+0.5**
	2.7nm,1.1s,baz=142,slow=7.2,SNR=5.2						
MKAR	**Makanchi Array**	**61.38**	**12**	P	**P**	**11 18 29.3**	**-0.8**
	1.5nm,0.8s,baz=198,slow=7.6,SNR=10.0						
MKAR				LR	LR	11 43 45.0	
	comp=Z,34nm,18.6s,baz=170,slow=35						
ABKAR	**Akbulak array**	**62.48**	**355**	*eP*	**P**	**11 18 37.1**	**-0.2**
	2.2nm,0.6s						
ASAR	**Alice Springs**	**64.22**	**110**	P	**P**	**11 18 49.0**	**-0.6**
	2.4nm,0.8s,baz=275,slow=6.4,SNR=27						
ASAR				LR	LR	11 43 54.4	
	comp=Z,75nm,18.8s,baz=258,slow=33						
WRA	**Warramunga Arr**	**64.93**	**106**	P	**P**	**11 18 54.5**	**+0.2**
	5.3nm,1.0s,baz=273,slow=5.7,SNR=26						
WRAB	**Tennant Creek**	**64.94**	**106**	*eP*	**P**	**11 18 54.2**	**-0.2**
	2.6nm,0.6s						
ZALV	**Zalesovo Beam**	**68.69**	**11**	P	**P**	**11 19 16.7**	**-0.8**
	2.4nm,0.7s,baz=206,slow=5.8,SNR=8.3						
ZALV				LR	LR	11 49 37.2	
	comp=Z,52nm,18.3s,baz=68,slow=36						
TORD	**Torodi Ar. Bea**	**69.43**	**290**	P	**P**	**11 19 22.9**	**0.0**
	0.9nm,0.9s,baz=123,slow=7.1,SNR=4.0						
TORD				LR	LR	11 46 52.0	
	comp=Z,65nm,21.7s,baz=215,slow=33						
SONM	**Songino Array**	**70.36**	**27**	P	**P**	**11 19 28.4**	**+0.2**
	2.2nm,0.9s,baz=218,slow=7.0,SNR=8.6						
SONM				LR	LR	11 50 02.9	
	comp=Z,105nm,20.7s,baz=232,slow=36						
STKA	**Stephens Creek**	**70.51**	**119**	LR	LR	11 46 15.0	
	comp=Z,66nm,20.8s,baz=208,slow=32						
AKASG	**Malin Array Be**	**71.52**	**336**	P	**P**	**11 19 34.4**	**-0.5**
	1.8nm,0.6s,baz=135,slow=5.1,SNR=5.5						
DBIC	**Dimbokro**	**73.63**	**281**	LR	LR	11 49 59.0	
	comp=Z,43nm,20.0s,baz=116,slow=34						
KSAR	**Wonju Array Be**	**76.43**	**46**	P	**P**	**11 20 03.9**	**-0.1**
KSRS	**Korea Array**	**76.47**	**46**	P	**P**	**11 20 03.9**	**-0.2**
	1.4nm,0.5s,baz=242,slow=6.7,SNR=6.5						
KSRS				LR	LR	11 55 22.5	
	comp=Z,56nm,18.1s,baz=198,slow=37						
JNU	**Nakatsue**	**76.66**	**51**	LR	LR	11 52 30.9	
	comp=Z,33nm,21.2s,baz=136,slow=35						
GERES	**GERESS Array B**	**77.43**	**327**	P	**P**	**11 20 09.0**	**-0.5**
	0.4nm,0.2s,baz=98,slow=7.0,SNR=2.9						
BRG	**Berggiesshubel**	**78.54**	**329**	*eP*	P	11 20 22.4	+6.9
	4.3nm,1.0s						
PMG	**Port Moresby**	**78.81**	**97**	LR	LR	11 50 25.9	
	comp=Z,48nm,20.6s,baz=206,slow=32						
GUMO	**Guam**	**82.00**	**74**	LR	LR	11 51 44.5	
	comp=Z,26nm,20.5s,baz=220,slow=32						
ESDC	**Sonseca Array**	**83.92**	**313**	P	**P**	**11 20 45.3**	**+0.8**
	0.2nm,0.3s,baz=98,slow=2.3,SNR=5.2						
KLR	**Kul'dur**	**84.47**	**37**	LR	LR	12 01 16.5	
	comp=Z,52nm,18.1s,baz=192,slow=38						
YAK	**Yakutsk**	**89.58**	**25**	LR	LR	12 01 35.1	
	comp=Z,72nm,18.8s,baz=240,slow=36						
INK	**Inuvik**	**123.43**	**9**	PKP	**PKPdf**	**11 27 09.9**	**-1.0**
	1.7nm,0.9s,baz=127,slow=4.2,SNR=3.1						
ILAR	**Eielson Array**	**123.61**	**16**	PKP	**PKPdf**	**11 27 09.5**	**-1.9**
	0.8nm,0.9s,baz=298,slow=3.4,SNR=5.2						
YKA	**Yellowknife Ar**	**130.79**	**1**	PKP	**PKPdf**	**11 27 24.6**	**-0.5**
	0.5nm,0.7s,baz=354,slow=2.1,SNR=15						
ECSD	**EROS Data Cent**	**146.33**	**338**	*e*PKPdf	**PKPdf**	**11 27 54.6**	**+0.5**
DLMT	**Dillon**	**147.96**	**359**	*e*PKPdf	**PKPdf**	**11 27 57.5**	**+0.5**
RLMT	**Red Lodge**	**148.01**	**354**	*e*PKPbc	**PKPbc**	**11 28 00.2**	**0.0**
RSSD	**Black Hills**	**148.17**	**347**	*e*PKPdf	**PKPdf**	**11 27 58.4**	**+1.0**
LRAL	**Lakeview Retre**	**148.85**	**314**	*e*PKPdf	**PKPdf**	**11 27 58.6**	**+0.1**
HUMO	**Hull Mountain**	**149.58**	**14**	*e*PKPbc	**PKPbc**	**11 28 04.6**	**+0.6**
SNOW	**Snow King Moun**	**149.78**	**356**	*e*PKPbc	**PKPbc**	**11 28 05.9**	**+1.1**
MFID	**Camas Ranch**	**149.84**	**3**	*e*PKPbc	**PKPbc**	**11 28 05.8**	**+1.0**
REDW	**Red Top Meadow**	**149.88**	**356**	*e*PKPbc	**PKPbc**	**11 28 05.8**	**+0.8**
K22A	**Casper**	**150.07**	**350**	*e*PKPbc	**PKPbc**	**11 28 05.1**	**-0.3**
BW06	**Boulder Array**	**150.37**	**354**	*e*PKPbc	**PKPbc**	**11 28 06.1**	**-0.1**
PDAR	**Pinedale Array**	**150.37**	**354**	PKP	**PKPdf**	**11 28 02.0**	**+1.0**
	3.0nm,0.8s,baz=7.6,slow=2.7,SNR=4.7						
PDAR				PKPbc	**PKPbc**	**11 28 06.3**	**+0.1**
	3.0nm,0.8s,baz=58,slow=2.2,SNR=13						
PDAR				PKPab	**PKPab**	**11 28 12.3**	**-0.1**
	4.0nm,0.9s,baz=93,slow=2.0,SNR=9.2						
MOD	**Modoc Plateau**	**150.80**	**11**	*e*PKPbc	**PKPbc**	**11 28 07.3**	**+0.1**
HWUT	**Hardware Ranch**	**151.67**	**357**	*e*PKPbc	**PKPbc**	**11 28 09.7**	**+0.5**
NVAR	**Mina Array Bea**	**154.52**	**9**	PKPbc	**PKPbc**	**11 28 16.9**	**+1.3**
	0.4nm,0.5s,baz=300,slow=0.7,SNR=4.1						
NVAR				PKPab	**PKPab**	**11 28 28.9**	**-1.1**
	0.4nm,0.4s,baz=324,slow=3.8,SNR=3.8						
TXAR	**Lajitas Array**	**161.58**	**332**	PKPab	**PKPab**	**11 29 01.1**	**+0.5**
	0.9nm,0.9s,baz=20,slow=2.9,SNR=5.5						

ISCJB ***26*** *11:10:58.0±0.6, 39°.10N±0°.04×29°.03E±0°.05, h9km, Error ellipse: s-maj=7.4km s-min=4.1km az=143.9*
ISK ***26*** *11:10:57.2, 39°.06N×29°.10E, h7km, MD2.6*
DDA ***26*** *11:10:58.2, 39°.09N×29°.03E, h7km, Md2.6*
CSEM ***26*** *11:10:58.0±0.1, 39°.09N×29°.02E, h10km, MD2.6, Error ellipse: s-maj=4.2km s-min=2.5km az=129.0*
ISC 26 11:10:57.8±1.0, 39°.08N±0°.04×29°.07E±0°.03, h9km, n15, σ0.33/22, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**263**	P	**Pg**	**11 11 03.6**	**+0.1**
DEMI				S	**Sg**	**11 11 07.1**	**-0.1**
DEMI	**Demirci**	**0.28**	**263**	*i* P	**Pg**	**11 11 03.6**	**+0.1**
DEMI				*i* S	**Sg**	**11 11 07.1**	**-0.1**
GDZ	**Gediz**	**0.32**	**88**	P	**Pb**	**11 11 05.7**	**-0.1**
GDZ				S	**Sb**	**11 11 10.7**	**-0.4**
GDZ	**Gediz**	**0.32**	**88**	*i* P	**Pb**	**11 11 05.7**	**-0.1**
GDZ				*i* S	**Sb**	**11 11 10.7**	**-0.4**
TVSB	**Tavsanli**	**0.48**	**39**	*e*PG	**Pg**	**11 11 07.1**	**-0.1**
TVSB				*e*SG	**Sg**	**11 11 14.2**	**+0.6**
TVSB	**Tavsanli**	**0.48**	**39**	*e*Pg	**Pg**	**11 11 07.1**	**-0.1**
TVSB				*e*Sg	**Sg**	**11 11 14.2**	**+0.6**
KULA	**Kula-Manisa**	**0.65**	**210**	*e*PG	**Pg**	**11 11 10.3**	**0.0**
KULA				*e*SG	**Sg**	**11 11 19.4**	**+0.6**
KULA	**Kula-Manisa**	**0.65**	**210**	*e*Pg	**Pg**	**11 11 10.3**	**0.0**
KULA				*e*Sg	**Sg**	**11 11 19.4**	**+0.6**
**K

λ-103.00000°.
*IDC **26** 11:12:48.9±0.6, 36°.74N×140°.53E, h0km, mb4.0/22, mb1 4.2/24, mb1mx4.1/50, mbtmp4.1/24, ML3.5/1, MS2.9/2, Ms1 2.9/2, ms1mx2.6/39, Error ellipse: s-maj=16.0km s-min=13.1km az=100.0*
*ISCJB **26** 11:12:49.5±0.7, 36°.71N±0°.03×140°.73E±0°.05, h16km±4km, mb4.0/24, Error ellipse: s-maj=7.3km s-min=5.2km az=23.3*
*JMA **26** 11:12:50.4, 36°.72N×140°.63E, h6km±1km, M4.0 Broadband fault plane solution: P waves. NP1: φs136.00000°, δ59.00000°, λ-106.00000°. NP2: φs345.00000°, δ34.00000°, λ-65.00000°. Principal axes: T Plg13.0000°, Azm237.0000°; N Plg14.0000°, Azm144.0000°; P Plg71.0000°, Azm9.0000°;*
JMA Felt III J1.
*NEIC **26** 11:12:54.2±0.3, 36°.77N×140°.53E, h35km, mb4.3/2 Error ellipse: s-maj=8.1km s-min=6.6km az=136.0*
NEIC Recorded [3 JMA] in Ibaraki.

ISC 26 11:12:49.8±1.0, 36°.75N±0°.03×140°.50E±0°.04, h7km±7km, n52, σ1§04/49, mb4.1/24, 6C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.15**	**159**	⇑P	**Pg**	**11 12 53.0**	**0.0**
JHO				S	**Sg**	**11 12 55.4**	**+0.2**
ONAJ	**Iwakimizuishiy**	**0.42**	**34**	⇑P	**Pg**	**11 12 58.3**	**+0.2**
JSB	**Shiboa**	**0.51**	**295**	⇑P	**Pn**	**11 13 03.1**	**-0.5**
JSB				S	**Sn**	**11 13 11.8**	**-0.8**
JYT	**Yasato**	**0.58**	**205**	⇑P	**Pg**	**11 13 01.9**	**+0.9**
JFK	**Kawauchi**	**0.68**	**26**	⇑P	**Pg**	**11 13 03.2**	**+0.2**
JFT	**Otama**	**0.77**	**350**	⇓P	**Pb**	**11 13 06.3**	**+0.7**
JFT				S	**Sb**	**11 13 17.4**	**+1.1**
JAG	**Ashikaga**	**0.90**	**249**	⇑P	**Pb**	**11 13 08.4**	**+0.6**
MJAR	**Matsushiro Arr**	**1.85**	**264**	Pn	**Pb**	**11 13 24.0**	**-0.1**
	69nm,0.3s,baz=83,slow=12,SNR=646						
MJAR				Sn	**Sg**	**11 13 49.5**	**0.0**
	140nm,0.3s,baz=86,slow=28,SNR=23						
MJAR				LR	LR	11 14 15.4	
	comp=Z,192nm,19.0s,baz=120,slow=47						
MAJO	**Matsushiro**	**1.86**	**264**	*e*Pn	**Pb**	**11 13 24.5**	**+0.5**
MAT	**Matsushiro**	**1.86**	**264**	P	**Pb**	**11 13 24.6**	**+0.5**
MAT				S	**Sg**	**11 13 50.8**	**+1.3**
JHJ	**Hachijo jima 2**	**3.67**	**189**	Pn	**Pn**	**11 13 47.7**	**+0.7**
	11nm,0.3s,baz=270,slow=20,SNR=5.8						
JHJ				Sn	**Sn**	**11 14 32.0**	**+1.4**
	39nm,0.3s,baz=250,slow=21,SNR=8.5						
ASAJ	**Asahikawa**	**7.53**	**12**	Pn	**Pn**	**11 14 40.2**	**+0.3**
	baz=185,slow=14						
JNU	**Nakatsue**	**8.69**	**248**	LR	LR	11 19 01.9	
	comp=Z,46nm,18.2s,baz=116,slow=43						
CBIJ	**Chichi jima**	**9.73**	**171**	Pn	**Pn**	**11 15 06.8**	**-3.5**
JCJ	**Chichijima**	**9.74**	**171**	Pn	**Pn**	**11 15 06.8**	**-3.5**
	4.2nm,0.3s,baz=278,slow=22,SNR=2.7						
USRK	**Ussuriysk Ar.**	**9.86**	**322**	Pn	Pn	11 15 19.5	+7.6
	0.1nm,0.3s,baz=123,slow=11,SNR=5.7						
KSRS	**Korea Array**	**10.07**	**278**	Pn	Pn	11 15 23.8	+9.0
	0.1nm,0.3s,baz=90,slow=14,SNR=5.4						
KSRS				LR	LR	11 18 47.0	
	comp=Z,88nm,18.7s,baz=106,slow=35						
KSAR	**Wonju Array Be**	**10.10**	**278**	Pn	Pn	11 15 23.9	+8.6
BJT	**Baijiatuau**	**19.34**	**287**	P	**P**	**11 17 13.6**	**-2.1**
	33nm,0.3s						
MA2	**Magadan**	**23.79**	**13**	P	**P**	**11 18 02.8**	**0.0**
	5.5nm,0.5s,baz=198,slow=12,SNR=4.8						
SEY	**Seymchan**	**27.21**	**11**	P	**P**	**11 18 34.0**	**+0.1**
	0.7nm,0.3s,baz=256,slow=5.5,SNR=4.2						
SONM	**Songino Array**	**27.34**	**305**	P	**P**	**11 18 36.1**	**+0.8**
	2.3nm,0.7s,baz=113,slow=8.7,SNR=14						
H11N2	**WAKE ISLAND Hy**	**28.64**	**119**	T	T	11 48 29.7	
	baz=312,slow=75,SNR=63						
H11N1	**WAKE ISLAND Hy**	**28.65**	**119**	T	T	11 48 30.1	
	baz=312,slow=75,SNR=73						
H11N3	**WAKE ISLAND Hy**	**28.66**	**119**	T	T	11 48 30.9	
	baz=312,slow=75,SNR=56						
H11S1	**WAKE ISLAND Hy**	**29.33**	**121**	T	T	11 49 22.2	
	baz=314,slow=76,SNR=396						
H11S3	**WAKE ISLAND Hy**	**29.33**	**121**	T	T	11 49 21.8	
	baz=314,slow=76,SNR=257						
H11S2	**WAKE ISLAND Hy**	**29.35**	**121**	T	T	11 49 22.4	
	baz=314,slow=76,SNR=239						
ZALV	**Zalesovo Beam**	**41.56**	**313**	P	**P**	**11 20 38.4**	**+0.5**
	3.6nm,0.5s,baz=98,slow=7.1,SNR=9.8						
MKAR	**Makanchi Array**	**43.65**	**302**	P	**P**	**11 20 55.9**	**+1.0**
	1.0nm,0.8s,baz=88,slow=8.9,SNR=4.8						
KURK	**Kurchatov**	**45.53**	**308**	P	**P**	**11 21 10.9**	**+1.1**
KURBB	**Kurchatov Arra**	**45.60**	**308**	P	**P**	**11 21 10.9**	**+0.5**
	4.7nm,0.6s,baz=83,slow=7.8,SNR=32						
ILAR	**Eielson Array**	**50.12**	**32**	P	**P**	**11 21 45.6**	**+0.4**
	0.7nm,0.8s,baz=273,slow=6.3,SNR=8.8						
BVAR	**Borovoye Array**	**50.22**	**312**	P	**P**	**11 21 46.7**	**+0.6**
	1.3nm,0.6s,baz=69,slow=7.9,SNR=8.7						
INK	**Inuvik**	**54.97**	**27**	P	**P**	**11 22 22.1**	**+1.0**
	0.8nm,0.7s,baz=311,slow=7.1,SNR=5.4						
WRAB	**Tennant Creek**	**56.68**	**187**	*e*P	**P**	**11 22 34.2**	**+0.4**
	3.8nm,0.9s						
WRA	**Warramunga Arr**	**56.69**	**187**	P	**P**	**11 22 33.1**	**-0.9**
	2.5nm,0.7s,baz=4.6,slow=7.3,SNR=22						
ABKAR	**Akbulak array**	**57.56**	**310**	*e*P	**P**	**11 22 39.6**	**-0.2**
	1.3nm,0.6s						
ASAR	**Alice Springs**	**60.42**	**187**	P	**P**	**11 23 00.0**	**+0.1**
	1.8nm,0.9s,baz=12,slow=8.9,SNR=16						
YKA	**Yellowknife Ar**	**64.42**	**30**	P	**P**	**11 23 26.3**	**+0.1**
	0.4nm,0.7s,baz=306,slow=6.9,SNR=11						
YKA				PcP	**PcP**	**11 24 01.6**	**+1.0**
	0.4nm,0.6s,baz=302,slow=3.7,SNR=8.0						
STKA	**Stephens Creek**	**68.28**	**179**	P	**P**	**11 23 51.6**	**+0.4**
	1.4nm,0.8s,baz=63,slow=8.9,SNR=3.3						
FINES	**FINESS Array B**	**68.72**	**332**	P	**P**	**11 23 53.7**	**0.0**
	2.9nm,0.7s,baz=62,slow=8.9,SNR=4.9						
KBZ	**Khabaz**	**70.53**	**310**	P	**P**	**11 24 04.8**	**-0.4**
	0.5nm,0.4s,baz=16,slow=2.2,SNR=3.6						
AKASG	**Malin Array Be**	**74.07**	**322**	P	**P**	**11 24 24.8**	**-1.4**
	0.9nm,0.4s,baz=47,slow=6.3,SNR=5.3						
NB2	**NORSAR Subarra**	**74.16**	**337**	P	**P**	**11 24 26.8**	**+0.1**
	comp=Z,1.2nm,0.6s,baz=39,slow=6.2						
NOA	**NORSAR Array B**	**74.16**	**337**	P	**P**	**11 24 26.1**	**-0.6**
	comp=Z,1.6nm,0.8s,baz=39,slow=5.9,SNR=4.9						
NVAR	**Mina Array Bea**	**75.74**	**53**	P	**P**	**11 24 37.5**	**+1.0**
	comp=Z,0.7nm,0.5s,baz=300,slow=6.4,SNR=4.3						
PDAR	**Pinedale Array**	**78.38**	**45**	P	**P**	**11 24 51.9**	**+0.6**
	comp=Z,0.5nm,0.6s,baz=242,slow=2.7,SNR=5.3						
BRTR	**Keskin Array B**	**78.49**	**311**	P	**P**	**11 24 52.7**	**+0.9**
	comp=Z,0.4nm,0.4s,baz=72,slow=4.7,SNR=3.4						
GERES	**GERESS Array B**	**82.56**	**328**	P	**P**	**11 25 13.7**	**+0.3**
	comp=Z,0.5nm,0.3s,baz=46,slow=5.6,SNR=5.0						
TXAR	**Lajitas Array**	**90.87**	**52**	P	**P**	**11 25 54.1**	**-0.4**
	comp=Z,0.3nm,0.5s,baz=318,slow=3.5,SNR=4.1						
LPAZ	**La Paz**	**147.47**	**59**	PKPbc	**PKPbc**	**11 32 35.8**	**+0.1**
	comp=Z,1.0nm,0.6s,baz=341,slow=5.3,SNR=4.5						

*ISK **26** 11:17:26.1, 39°.00N×29°.40E, h18km, MD2.5*
*ISCJB **26** 11:17:27.1±0.7, 39°.08N±0°.05×29°.05E±0°.05, h9km, Error ellipse: s-maj=7.0km s-min=4.7km az=158.6*
*DDA **26** 11:17:27.4, 39°.11N×29°.01E, h7km, Md2.1*
*CSEM **26** 11:17:27.5±0.3, 39°.15N×29°.04E, h2km, MD2.5, Error ellipse: s-maj=8.6km s-min=7.2km az=141.0*

ISC 26 11:17:25.8±0.9, 39°.03N±0°.03×29°.08E±0°.03, h9km, n18, σ1§05/26, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.29**	**272**	P	**Pb**	**11 17 32.8**	**-0.4**
DEMI				S	**Sg**	**11 17 36.0**	**+0.6**
DEMI	**Demirci**	**0.29**	**272**	*i* P	**Pb**	**11 17 32.8**	**-0.4**
DEMI				*i* S	**Sg**	**11 17 36.0**	**+0.6**
GDZ	**Gediz**	**0.32**	**79**	P	**Pb**	**11 17 35.1**	**+1.4**
GDZ				S	**Sb**	**11 17 40.2**	**+1.2**
GDZ	**Gediz**	**0.32**	**79**	*i* P	**Pb**	**11 17 35.1**	**+1.4**
GDZ				*i* S	**Sb**	**11 17 40.2**	**+1.2**
TVSB	**Tavsanli**	**0.51**	**35**	*e*PG	**Pg**	**11 17 35.7**	**-0.1**
TVSB				*e*SG	**Sg**	**11 17 42.5**	**0.0**
TVSB	**Tavsanli**	**0.51**	**35**	*e*Pg	**Pg**	**11 17 35.7**	**-0.1**
TVSB				*e*Sg	**Sg**	**11 17 42.5**	**0.0**
KULA	**Kula-Manisa**	**0.61**	**213**	*e*PG	**Pn**	**11 17 40.8**	**0.0**
KULA	**Kula-Manisa**	**0.61**	**213**	*e*Pg	**Pn**	**11 17 40.8**	**0.0**
DURS	**Dursunbey**	**0.74**	**320**	P	**Pg**	**11 17 39.8**	**-0.3**
DURS	**Dursunbey**	**0.74**	**320**	*i* P	**Pg**	**11 17 39.8**	**-0.3**
KHL	**Karahalli**	**0.79**	**154**	*e*PG	**Pg**	**11 17 40.4**	**-0.6**
IZI	**Iznik**	**1.34**	**13**	*e*PN	**Pn**	**11 17 49.9**	**-0.9**
IZI	**Iznik**	**1.34**	**13**	*e*Pn	**Pn**	**11 17 49.9**	**-0.9**
KCTX	**Karacabey (Bur**	**1.35**	**336**	*e*PN	**Pg**	**11 17 53.0**	**+1.2**
KCTX	**Karacabey (Bur**	**1.35**	**336**	*e*Pn	**Pg**	**11 17 53.0**	**+1.2**
ARMT	**Armutlu**	**1.54**	**354**	*e*PN	**Pb**	**11 17 54.7**	**+0.1**
ARMT				*e*SN	**Sg**	**11 18 15.3**	**-0.1**
ARMT	**Armutlu**	**1.54**	**354**	*e*Pn	**Pb**	**11 17 54.7**	**+0.1**
ARMT				*e*Sn	**Sg**	**11 18 15.3**	**-0.1**
SVRH	**Sivrihisar-ESK**	**1.94**	**77**	*e*PN	**Pn**	**11 17 55.5**	**-3.6**

IDC 26 11:18:38.0±14.0, 19°.40S×175°.25W, h123km±121km, mb3.8/6, mb1 4.1/6, mb1mx3.6/26, mbtmp4.1/6, Error ellipse: s-maj=70.1km s-min=28.2km az=142.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**47.29**	**255**	P	P	11 26 59.6	+0.2
	4.8nm,0.5s,baz=94,slow=8.6,SNR=90						
ASAR				PcP	PcP	11 28 28.5	-0.2
	0.8nm,0.8s,baz=106,slow=4.9,SNR=5.0						
WRA	**Warramunga Arr**	**47.33**	**260**	P	P	11 26 59.2	-0.5
	1.6nm,0.4s,baz=97,slow=7.4,SNR=50						
WRA				PcP	PcP	11 28 28.2	-0.6
	0.6nm,0.9s,baz=90,slow=3.5,SNR=3.2						
MJAR	**Matsushiro Arr**	**70.91**	**322**	P	P	11 29 42.0	+0.1
	2.9nm,0.9s,baz=153,slow=6.1,SNR=6.9						
NVAR	**Mina Array Bea**	**78.46**	**42**	P	P	11 30 26.1	+0.4
	0.3nm,0.3s,baz=231,slow=8.0,SNR=4.6						
ILAR	**Eielson Array**	**86.69**	**12**	P	P	11 31 06.8	-0.6
	0.2nm,0.8s,baz=218,slow=6.8,SNR=4.1						
YKA	**Yellowknife Ar**	**94.45**	**24**	P	P	11 31 43.5	-0.2
	0.3nm,0.8s,baz=239,slow=4.5,SNR=6.2						
BRTR	**Keskin Array B**	**147.95**	**315**	PKPbc	PKPbc	11 38 09.1	-0.2
	1.1nm,0.7s,baz=120,slow=2.6,SNR=5.3						
GERES	**GERESS Array B**	**149.75**	**348**	PKPbc	PKPbc	11 38 12.6	-0.9
	0.4nm,0.2s,baz=29,slow=2.2,SNR=4.1						

JMA 26 11:19:13.6±0.2, 35°.74N×140°.94E, h12km±1km, M3.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.08**	**241**	P	Pg	11 19 16.0	-0.1
CHOJ				S	Sg	11 19 17.8	-0.2
JCN	**Nagara**	**0.68**	**242**	P	Pb	11 19 27.6	+0.2
JCN				*e*S	Sb	11 19 38.1	+1.3
JYT	**Yasato**	**0.78**	**309**	P	Pg	11 19 27.9	-0.7
JYT				S	Sg	11 19 38.5	-0.3
BSO4	**Boso 4**	**0.90**	**213**	P	Pb	11 19 31.1	+0.1
BSO3	**Boso 3**	**1.00**	**201**	P	Pb	11 19 31.9	-0.8
MAT	**Matsushiro**	**2.35**	**291**	P	Pn	11 19 51.2	-0.9
MAT				S	Sn	11 20 18.8	-2.1

*IDC **26** 11:19:47.8±2.1, 6°.37S×104°.05E, h0km, mb3.7/8, mb1 3.8/8, mb1mx3.6/34, mbtmp3.7/8, Error ellipse: s-maj=74.3km s-min=19.7km az=58.0*
*ISCJB **26** 11:19:51.5±0.8, 6°.59S±0°.06×103°.94E±0°.07, h48km, mb3.8/8, Error ellipse: s-maj=11.1km s-min=7.4km az=145.9*
*DJA **26** 11:19:51.2±0.8, 7°.5±5°.×10°.4E±°, h10km, M4.1/6, MLv4.1/6*

ISC 26 11:19:54.2±1.0, 6°.50S±0°.09×104°.04E±0°.09, h48km, n19, σ1§56/20, mb3.9/8, Sunda Strait

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KASI	**Kota Agung**	**1.07**	**25**	P	**Pn**	**11 20 10.9**	**-1.9**
KASI				S	**Sn**	**11 20 26.2**	**-0.4**
LWLI	**Liwa**	**1.47**	**1**	P	**Pn**	**11 20 17.7**	**-0.7**
LWLI				S	**Sn**	**11 20 39.0**	**+2.5**
CGJI	**Cibinong**	**1.65**	**94**	P	**Pn**	**11 20 19.9**	**-0.8**
CGJI				S	**Sn**	**11 20 40.6**	**-0.2**
KLI	**Kotabumi**	**1.81**	**27**	P	**Pn**	**11 20 24.1**	**+1.1**
MNAI	**Manna**	**2.38**	**333**	P	**Pn**	**11 20 29.7**	**-1.0**
MNAI				S	**Sn**	**11 21 02.5**	**+3.8**
LHSI	**Lahat**	**2.70**	**349**	P	**Pn**	**11 20 35.9**	**+0.8**
CBJI	**Citeko**	**2.80**	**89**	P	**Pn**	**11 20 39.3**	**+2.8**
H08S2	**Diego Garcia H**	**31.32**	**266**	T	T	11 58 48.6	
	baz=90,slow=75,SNR=4.8						
H08S3	**Diego Garcia H**	**31.33**	**266**	T	T	11 58 56.2	
	baz=90,slow=75,SNR=5.0						
H08S1	**Diego Carcia H**	**31.34**	**266**	T	T	11 58 49.7	
	baz=90,slow=75,SNR=6.5						
WRA	**Warramunga Arr**	**32.31**	**117**	P	**P**	**11 26 19.1**	**+0.1**
	0.3nm,0.6s,baz=291,slow=7.9,SNR=5.0						
ASAR	**Alice Springs**	**33.39**	**124**	P	**P**	**11 26 28.8**	**+0.4**
	0.1nm,0.4s,baz=303,slow=8.6,SNR=4.3						
STKA	**Stephens Creek**	**43.18**	**131**	P	**P**	**11 27 50.9**	**+0.4**
	0.5nm,0.4s,baz=292,slow=7.3,SNR=4.2						
KSRS	**Korea Array**	**49.08**	**25**	P	**P**	**11 28 36.0**	**-0.7**
	0.8nm,0.6s,baz=221,slow=8.0,SNR=4.5						
SONM	**Songino Array**	**54.13**	**2**	P	**P**	**11 29 14.3**	**-0.3**
	1.6nm,0.7s,baz=186,slow=8.0,SNR=8.1						
USRK	**Ussuriysk Ar.**	**56.41**	**24**	P	**P**	**11 29 29.4**	**-1.4**
	1.7nm,0.6s,baz=231,slow=5.9,SNR=3.9						
MKAR	**Makanchi Array**	**56.46**	**342**	P	**P**	**11 29 30.1**	**-1.1**
	0.6nm,0.6s,baz=145,slow=7.9,SNR=5.1						
ZALV	**Zalesovo Beam**	**62.35**	**347**	P	**P**	**11 30 10.9**	**-0.8**
	0.5nm,0.3s,baz=172,slow=13,SNR=2.2						
TXAR	**Lajitas Array**	**145.38**	**46**	PKPbc	**PKPab**	**11 39 28.4**	**+0.6**
	0.5nm,0.8s,baz=336,slow=2.0,SNR=3.0						

*CSEM **26** 11:26:23.0, 40°.42N×21°.87E, h0km, Suspected Mining explosion.*
*SKO **26** 11:26:24.9, 40°.42N×21°.92E, h6km*

ATH 26 11:26:23.1, 40°.42N×21°.87E, h0km±4km, Error ellipse: s-maj=5.0km s-min=1.1km az=176.0, Suspected Mining explosion., Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KZN	**Kozani**	**0.14**	**214**	P	Pg	11 26 24.9	-0.8
KZN				S	Sg	11 26 27.6	+0.1
FNA	**Florina**	**0.52**	**314**	P	Pg	11 26 31.4	-1.7
FNA				S	Sg	11 26 41.5	+1.7
FNA	**Florina**	**0.52**	**314**	P	Pg	11 26 31.4	-1.6
FNA				S	Sg	11 26 41.5	+1.6
LIT	**Litokhoron**	**0.57**	**124**	P	Pg	11 26 34.4	+0.4
LIT	**Litokhoron**	**0.57**	**124**	P	Pg	11 26 34.4	+0.4
PENT	**Pentalofos**	**0.60**	**248**	P	Pg	11 26 34.5	-0.1
PENT	**Pentalofos**	**0.60**	**248**	P	Pg	11 26 34.5	-0.1
KPRO	**Kipourio**	**0.61**	**220**	P	Pg	11 26 33.7	-1.0
KPRO	**Kipourio**	**0.61**	**220**	P	Pg	11 26 33.7	-1.0
NEST	**Nestorio**	**0.63**	**269**	P	Pg	11 26 34.0	-1.1
NEST				S	Sb	11 26 45.6	-0.8
NEST	**Nestorio**	**0.63**	**269**	P	Pg	11 26 34.0	-1.0
NEST				S	Sb	11 26 45.6	-0.8
GRG	**Griva**	**0.67**	**37**	P	Pg	11 26 33.8	-2.1
GRG				S	Sb	11 26 47.6	+0.1
GRG	**Griva**	**0.67**	**37**	P	Pg	11 26 33.8	-2.1
GRG				S	Sb	11 26 47.6	+0.1
THL	**Klokotos Trika**	**0.86**	**173**	P	Pg	11 26 39.3	-0.3
THL				S	Sb	11 26 53.3	+0.3
HORT	**Hortiatis**	**0.95**	**79**	P	Pb	11 26 42.3	-0.2
HORT	**Hortiatis**	**0.95**	**79**	P	Pb	11 26 42.3	-0.2
KNT	**Kendrikon**	**1.07**	**46**	P	Pg	11 26 41.0	-2.6
KNT				S	Sg	11 26 57.5	0.0
KNT	**Kendrikon**	**1.07**	**46**	P	Pg	11 26 41.0	-2.6
KNT				S	Sg	11 26 57.5	0.0
SOH	**Sokhos**	**1.20**	**70**	P	Pb	11 26 46.6	0.0
SOH	**Sokhos**	**1.20**	**70**	P	Pb	11 26 46.6	0.0
DSL	**Palaion Diasel**	**1.42**	**205**	P	Pn	11 26 49.8	-0.3
DSL	**Palaion Diasel**	**1.42**	**205**	P	Pn	11 26 49.9	-0.3
AGG	**Agios Georgios**	**1.44**	**166**	P	Pn	11 26 50.0	-0.5
AGG	**Agios Georgios**	**1.44**	**166**	P	Pn	11 26 50.0	-0.5
ANX	**Ano Chora**	**1.83**	**179**	P	Pg	11 26 58.2	+0.1

MEX 26 11:28:33.6±0.4, 14°.85N×93°.59W, h33km±8km, MD3.8, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		**0.92**	**23**	*i* P	Pn	11 28 48.2	-2.1
PCIG				*e*S	Sn	11 28 59.7	-2.7
TGBT	**Tuxtla Gutierr**	**1.98**	**14**	*i* P	Pn	11 29 03.4	-1.4
TGBT				*i* S	Sn	11 29 25.7	-2.8
CCIG	**Comitan**	**2.00**	**44**	*e*P	Pn	11 29 03.6	-1.6
CCIG				*i* S	Sn	11 29 26.0	-3.2

*ISK **26** 11:29:26.9, 39°.12N×28°.99E, h4km, ML2.5*
*ISCJB **26** 11:29:28.0±0.5, 39°.11N±0°.04×29°.02E±0°.04, h10km±6km, Error ellipse: s-maj=7.8km s-min=4.7km az=150.5*
*DDA **26** 11:29:28.9, 39°.14N×29°.04E, h7km, Md2.5*
*CSEM **26** 11:29:28.0±0.2, 39°.11N×28°.99E, h10km, MD2.5, Error ellipse: s-maj=5.8km s-min=4.7km az=126.0*

ISC 26 11:29:27.8±1.0, 39°.09N±0°.03×29°.02E±0°.03, h16km±9km, n28, σ0§62/37, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**258**	P	**Pb**	**11 29 34.5**	**+0.7**
DEMI				S	**Sb**	**11 29 38.7**	**+0.9**
DEMI	**Demirci**	**0.24**	**258**	*i* P	**Pb**	**11 29 34.5**	**+0.7**
DEMI				*i* S	**Sb**	**11 29 38.7**	**+0.9**
GDZ	**Gediz**	**0.36**	**91**	P	**Pb**	**11 29 36.0**	**+0.1**
GDZ				S	**Sg**	**11 29 40.8**	**+0.3**
GDZ	**Gediz**	**0.36**	**91**	*i* P	**Pb**	**11 29 36.0**	**+0.1**
GDZ				*i* S	**Sg**	**11 29 40.8**	**+0.3**
TVSB	**Tavsanli**	**0.50**	**44**	*e*PG	**Pg**	**11 29 37.0**	**-0.7**
TVSB				*e*SG	**Sg**	**11 29 44.3**	**-0.1**
TVSB	**Tavsanli**	**0.50**	**44**	*e*Pg	**Pg**	**11 29 37.0**	**-0.7**
TVSB				*e*Sg	**Sg**	**11 29 44.3**	**-0.1**
KULA	**Kula-Manisa**	**0.64**	**206**	*e*PG	**Pg**	**11 29 40.2**	**-0.2**
KULA				*e*SG	**Sn**	**11 29 50.7**	**-1.4**
KULA	**Kula-Manisa**	**0.64**	**206**	*e*Pg	**Pg**	**11 29 40.2**	**-0.2**
KULA				*e*Sg	**Sn**	**11 29 50.7**	**-1.4**
DURS	**Dursunbey**	**0.66**	**320**	*i* P	Pn	11 29 48.2	+5.7
KHL	**Karahalli**	**0.86**	**153**	*e*PG	**Pg**	**11 29 44.5**	**-0.1**
KHL	**Karahalli**	**0.86**	**153**	*e*Pg	**Pg**	**11 29 44.5**	**-0.1**
ORLT	**Orhaneli**	**0.96**	**354**	*e*PG	**Pb**	**11 29 45.5**	**-0.4**
ORLT	**Orhaneli**	**0.96**	**354**	*e*Pg	**Pb**	**11 29 45.5**	**-0.4**
AKS	**Akhisar**	**0.96**	**258**	*e*PG	**Pb**	**11 29 45.3**	**-0.7**
AKS	**Akhisar**	**0.96**	**258**	*e*Pg	**Pb**	**11 29 45.3**	**-0.7**
IGD	**Bursa**	**1.18**	**7**	*i* P	**Pg**	**11 29 50.5**	**0.0**
KCTX	**Karacabey (Bur**	**1.28**	**337**	*e*PN	**Pb**	**11 29 51.0**	**-0.4**
KCTX				*e*SN	**Sg**	**11 30 09.2**	**+0.2**
KCTX	**Karacabey (Bur**	**1.28**	**337**	*e*Pn	**Pb**	**11 29 51.0**	**-0.4**
KCTX				*e*Sn	**Sg**	**11 30 09.2**	**+0.2**
IZI	**Iznik**	**1.29**	**16**	*e*PN	**Pb**	**11 29 51.8**	**+0.1**
IZI	**Iznik**	**1.29**	**16**	*e*Pn	**Pb**	**11 29 51.8**	**+0.1**
BORA	**Eskisehir**	**1.36**	**54**	P	**Pg**	**11 29 54.9**	**+0.9**
BORA	**Eskisehir**	**1.36**	**54**	*i* P	**Pg**	**11 29 54.9**	**+0.9**
ARMT	**Armutlu**	**1.48**	**355**	*e*PN	**Pb**	**11 29 54.6**	**-0.2**
ARMT	**Armutlu**	**1.48**	**355**	*e*Pn	**Pb**	**11 29 54.6**	**-0.2**
EDC	**Edincik**	**1.54**	**325**	*e*PN	**Pn**	**11 29 54.9**	**+0.5**
EDC	**Edincik**	**1.54**	**325**	*e*Pn	**Pn**	**11 29 54.9**	**+0.5**
GULT	**Gulveren**	**1.77**	**40**	*e*PN	**Pb**	**11 29 59.2**	**-0.6**
GULT	**Gulveren**	**1.77**	**40**	*e*Pn	**Pb**	**11 29 59.2**	**-0.6**

*NIED **26** 11:37:00, 34°.80N×142°.80E, h8km, Mw3.9 Best double couple: M0:8.30000×10^14 NP1:φs18.00000°, δ36.00000°, λ-100.00000°. NP2:φs210.00000°, δ55.00000°, λ-83.00000°.*
*ISCJB **26** 11:37:24.0±0.5, 34°.69N±0°.06×142°.75E±0°.05, h10km, mb3.8/12, Error ellipse: s-maj=8.2km s-min=6.1km az=16.9*
*IDC **26** 11:37:24.2±0.7, 34°.67N×142°.85E, h0km, mb3.9/12, mb1 4.1/15, mb1mx3.9/46, mbtmp3.9/15, ML4.0/3, Error ellipse: s-maj=21.7km s-min=15.4km az=111.0*
*JMA **26** 11:37:26.4±0.4, 34°.82N×142°.81E, h58km, M3.8*

ISC 26 11:37:25.6±0.7, 34°.75N±0°.06×142°.74E±0°.07, h10km, n33, σ1§67/33, mb3.9/12, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**1.45**	**267**	P	**Pn**	**11 37 51.5**	**+0.1**
BSO1				*e*X		11 38 10.0	
CHOJ	**Chosi**	**1.81**	**302**	P	**Pn**	**11 37 56.4**	**-0.4**
CHOJ				*e*S	**Sn**	**11 38 18.4**	**-1.3**
BSO3	**Boso 3**	**1.83**	**272**	P	**Pn**	**11 37 57.4**	**+0.5**
BSO3				X		11 38 19.6	
BSO4	**Boso 4**	**1.99**	**278**	P	**Pn**	**11 37 59.8**	**+0.6**
BSO4				X		11 38 26.5	
JCN	**Nagara**	**2.18**	**288**	P	**Pn**	**11 38 02.1**	**+0.2**
JCN

MANT S **Sg** **11 40 41.4 -0.3**
MANT Manisa 0.74 213 *i* P **Pg** **11 40 32.2 +0.2**
MANT *i* S **Sg** **11 40 41.4 -0.3**
KHAL Karahalli 0.81 156 P **Pb** **11 40 33.7 -0.3**
KHAL Karahalli 0.81 156 *i* P **Pb** **11 40 33.6 -0.3**
KHL Karahalli 0.86 156 *e*PG **Pb** **11 40 35.2 +0.4**
KHL Karahalli 0.86 156 *e*Pg **Pb** **11 40 35.2 +0.4**
ORLT Orhaneli 0.94 351 *e*PG **Pg** **11 40 34.9 -0.9**
ORLT Orhaneli 0.94 351 *e*Pg **Pg** **11 40 34.9 -0.9**
AKHS Akhisar 1.01 257 P **Pn** **11 40 38.2 +0.2**
AKHS Akhisar 1.01 257 *i* P **Pn** **11 40 38.2 +0.2**
IGD Bursa 1.15 5 *i* P **Pb** **11 40 39.3 -0.4**
CAVI Cavuskoy 1.24 28 *e*PN **Pg** **11 40 41.5 +0.1**
CAVI Cavuskoy 1.24 28 *e*Pn **Pg** **11 40 41.5 +0.1**
IZI Iznik 1.26 14 *e*PN **Pg** **11 40 41.9 +0.1**
IZI Iznik 1.26 14 *e*Pn **Pg** **11 40 41.9 +0.1**
MDNY Mudanya-Bursa 1.26 353 *e*PN **Pn** **11 40 41.2 -0.3**
MDNY Mudanya-Bursa 1.26 353 *e*Pn **Pn** **11 40 41.2 -0.3**
KCTX Karacabey (Bur 1.28 334 *e*PN **Pn** **11 40 41.2 -0.5**
KCTX Karacabey (Bur 1.28 334 *e*Pn **Pn** **11 40 41.2 -0.5**
BALY Balya 1.29 299 *i* P Pn 11 40 32.8 -9.1
ARMT Armutlu 1.46 353 *e*PN **Pn** **11 40 44.4 +0.2**
ARMT Armutlu 1.46 353 *e*Pn **Pn** **11 40 44.4 +0.2**
GULT Gulveren 1.72 40 *e*PN **Pn** **11 40 48.6 +0.8**
GULT Gulveren 1.72 40 *e*Pn **Pn** **11 40 48.6 +0.8**

IDC 26 11:46:13.1±5.0, 5.75S×154.56E, h186km±45km, mb3.5/10, mb1 3.8/11, mb1mx3.5/40, mbtmp4.1/11, Error ellipse: s-maj=37.8km s-min=18.1km az=102.0, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**8.19**	**243**	P	Pn	11 48 09.6	+0.7
	5.7nm,0.3s,baz=47,slow=7.9,SNR=8.0						
WRA	**Warramunga Arr**	**24.20**	**233**	P	P	11 51 12.8	+0.1
	4.3nm,0.7s,baz=58,slow=10.0,SNR=32						
ASAR	**Alice Springs**	**26.69**	**226**	P	P	11 51 34.7	-0.6
	0.6nm,0.3s,baz=57,slow=9.2,SNR=40						
STKA	**Stephens Creek**	**28.68**	**203**	P	P	11 51 52.8	0.0
	1.5nm,0.7s,baz=12,slow=9.2,SNR=4.2						
KSRS	**Korea Array**	**49.65**	**332**	P	P	11 54 45.3	-0.6
	1.9nm,0.8s,baz=149,slow=7.2,SNR=8.8						
KLR	**Kul'dur**	**58.26**	**343**	P	P	11 55 47.6	-0.4
	1.5nm,0.6s,baz=168,slow=4.8,SNR=6.5						
CMAR	**Chiang Mai Arr**	**59.87**	**295**	P	P	11 56 00.1	+0.4
	2.2nm,0.3s,baz=111,slow=5.0,SNR=5.1						
SONM	**Songino Array**	**68.07**	**327**	P	P	11 56 53.0	+0.3
	1.0nm,0.6s,baz=149,slow=7.9,SNR=6.4						
MKAR	**Makanchi Array**	**82.19**	**319**	P	P	11 58 13.8	+0.4
	0.6nm,0.7s,baz=116,slow=6.6,SNR=4.8						
ILAR	**Eielson Array**	**82.39**	**22**	P	P	11 58 14.1	+0.1
	0.7nm,0.7s,baz=242,slow=6.1,SNR=9.9						
YKA	**Yellowknife Ar**	**95.45**	**28**	P	P	11 59 16.6	+0.3
	0.1nm,0.7s,baz=272,slow=4.8,SNR=4.9						

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*ISCJB **26** 11:47:03.0±0.9, 27.°79S±0.°04×71.°93W±0.°09, h50km, mb5.1/3, Error ellipse: s-maj=12.0km s-min=4.9km az=7.0*
*IDC **26** 11:47:03.2±1.9, 27.°88S×71.°41W, h0km, mb4.5/2, mb1 4.3/4, mb1mx3.9/29, mbtmp4.3/4, ML4.3/2, MS3.6/4, Ms1 3.6/4, ms1mx3.2/20, Error ellipse: s-maj=76.5km s-min=25.9km az=107.0*
*GUC **26** 11:47:04.8±0.6, 27.°95S×71.°56W, h65km±9km, ML4.6*
*NEIC **26** 11:47:04.0, 27.°95S×71.°56W, h65km, MG4.6(GUC), After GUC.*
ISC 26 11:47:04.7±1.5, 27.°91S±0.°04×71.°7W±0.°1, h54km±15km, n37, σ1°98/33, mb4.5/3, 1C-10D, Near coast of northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VACH	**Vallenar**	**1.03**	**130**	*i* P	**Pn**	**11 47 22.4**	**-0.6**
VACH				*i* S	**Sn**	**11 47 35.6**	**-1.0**
VACH				IAML		11 47 42.0	
	comp=N,23μm,0.0s						
CDCH	**Caldera**	**1.12**	**42**	*i* P	**Pn**	**11 47 24.2**	**+0.1**
CDCH				*i* S	**Sn**	**11 47 38.5**	**-0.1**
CPCH	**Copiapo**	**1.28**	**65**	*i* P	**Pn**	**11 47 26.1**	**-0.3**
CPCH				*i* S	**Sn**	**11 47 42.3**	**-0.2**
CPCH				IAML		11 47 51.0	
	comp=E,40μm,0.1s						
LCO	**Las Campanas**	**1.38**	**143**	*e*P	**Pn**	**11 47 28.2**	**+0.3**
LCO				⇓*e*S	**Sn**	**11 47 45.2**	**-0.1**
LCO	**Las Campanas**	**1.38**	**143**	⇓*i*P	**Pn**	**11 47 28.1**	**+0.2**
LCO				*e*S	**Sn**	**11 47 44.2**	**-1.1**
LCO	**Las Campanas**	**1.38**	**143**	*e*Pn	**Pn**	**11 47 27.9**	**-0.1**
LCO				*e*Sn	**Sn**	**11 47 43.9**	**-1.4**
LSCH	**La Serena**	**2.02**	**170**	*i* P	**Pn**	**11 47 35.8**	**-0.6**
LSCH				*i* S	**Sn**	**11 47 59.8**	**-0.7**
LSCH				IAML		11 48 12.8	
	comp=N,2μm,0.7s						
TLL	**Tololo Astrono**	**2.37**	**162**	*i* P	**Pn**	**11 47 41.7**	**+0.4**
TLL				*e*S	**Sn**	**11 48 11.4**	**+2.0**
TLL				IAML		11 48 22.1	
	comp=N,5μm,0.7s						
VCA	**Vinchina**	**3.15**	**106**	*e*S	Sn	11 48 44.3	+16
VCA				IAML		11 48 53.5	
	comp=Z,392nm,0.6s						
AGUA	**GUANDACOL**	**3.19**	**120**	*e*P	Pn	11 47 58.6	+6.0
AMOG	**MOGNA**	**4.09**	**138**	*e*P	Pn	11 48 09.7	+4.9
RTLS	**Leoncito**	**4.38**	**153**	*e*P	Pn	11 48 13.5	+4.5
RTLS				*e*S	Sn	11 49 12.4	+13
RTLL	**Cerro Villicun**	**4.39**	**142**	*e*P	Pn	11 48 12.9	+4.0
RTLL				⇓*e*S	Sn	11 49 18.5	+20
SJA	**San Juan**	**4.50**	**144**	IAML		11 49 56.9	
	comp=Z,179nm,0.2s						
AUSP	**Uspallata**	**4.73**	**156**	*e*P	**Pn**	**11 48 17.5**	**+3.8**
RTCV	**Cerro Valdivia**	**4.78**	**146**	⇓*e*P	**Pn**	**11 48 17.8**	**+3.6**
RTCV				⇓*e*S	Sn	11 49 30.1	+22
ROC1	**El Roble**	**5.08**	**174**	⇓*e*P	Pn	11 48 23.6	+5.1
ROC1				⇓*e*S	Sn	11 49 40.1	+24
CYA	**Choya**	**5.20**	**97**	⇓*e*P	**Pn**	**11 48 23.2**	**+3.3**
CYA				IAML		11 48 30.7	
	comp=Z,102nm,0.6s						
AHML	**Horco Molle**	**5.74**	**80**	⇓*e*P	Pn	11 48 33.7	+6.4
AHML				IAML		11 50 11.8	
	comp=Z,46nm,0.7s						
ACAN	**Cantantal**	**5.82**	**139**	⇓*e*P	**Pn**	**11 48 31.4**	**+2.9**
LVC	**Limon Verde**	**5.83**	**26**	Pn	**Pn**	**11 48 29.9**	**+0.9**
	comp=Z,64nm,0.3s,baz=202,slow=10,SNR=17						
LVC				Sn	**Sn**	**11 49 35.9**	**+1.1**
	comp=Z,109nm,0.3s,baz=282,slow=20,SNR=4.7						
LVC				Lg	Lg	11 50 06.1	
	comp=Z,244nm,0.3s,baz=265,slow=18,SNR=7.1						
LVC	**Limon Verde**	**5.83**	**26**	*e*Pn	**Pn**	**11 48 29.4**	**+0.4**
	comp=Z,31nm,0.7s						
LVC				Pn	Pn	11 48 29.9	+0.9
LVC				*e*Sn	**Sn**	**11 49 33.7**	**-1.1**
LVC				Sn	Sn	11 49 35.9	+1.1
LVC				Lg	Lg	11 50 06.1	
MRA	**San Martin**	**6.83**	**133**	⇓*e*P	**Pn**	**11 48 44.5**	**+2.1**
MRA				IAML		11 50 18.2	
	comp=Z,121nm,0.7s						
TCA	**Tanti**	**7.03**	**121**	*e*S	Sn	11 50 14.4	+11
TCA				IAML		11 50 20.2	
	comp=Z,87nm,0.7s						
LPAZ	**La Paz**	**12.02**	**16**	Pn	**Pn**	**11 49 53.6**	**-0.3**
	comp=Z,0.2nm,0.3s,baz=216,slow=7.3,SNR=7.4						
LPAZ				LR	LR	11 55 28.5	
	comp=Z,108nm,20.4s,baz=204,slow=42						
PLCA	**Paso Flores**	**12.82**	**176**	LR	LR	11 55 06.7	
	comp=Z,266nm,20.1s,baz=184,slow=38						
CPUP	**Villa Florida**	**12.86**	**86**	Pn	**P**	**11 50 10.3**	**-3.7**
	comp=Z,0.1nm,0.3s,baz=247,slow=14,SNR=2.8						
CPUP				Lg	Lg	11 53 37.4	
	comp=Z,0.1nm,0.3s,baz=174,slow=19,SNR=2.6						
TRQA	**Tornquist**	**12.97**	**144**	*e*Pn	**Pn**	**11 50 05.4**	**-0.8**
	comp=Z,5.5nm,0.6s						
SIV	**San Ignacio**	**15.39**	**42**	Pn	**P**	**11 50 45.8**	**+3.6**
	comp=Z,0.4nm,0.3s,baz=244,slow=15,SNR=39						
SAML	**Samuel**	**20.49**	**25**	*e*P	**P**	**11 51 37.3**	**-0.9**
	comp=Z,9.0nm,1.0s						
SNAA	**Sanae**	**57.12**	**159**	*e*P	**P**	**11 56 46.4**	**+1.0**
	comp=Z,540nm,1.2s						
PPT	**Papeete**	**71.56**	**260**	LR	LR	12 20 29.1	
	comp=Z,39nm,21.7s,baz=119,slow=28						
DBIC	**Dimbokro**	**72.99**	**73**	P	P	11 58 34.1	+5.0
	comp=Z,4.4nm,0.7s,baz=240,slow=8.1,SNR=4.1						
TORD	**Torodi Ar. Bea**	**81.85**	**71**	P	P	11 59 23.4	+4.8
	comp=Z,3.5nm,0.9s,baz=248,slow=4.4,SNR=8.8						
AFI	**Afiamalu**	**92.28**	**253**	LR	LR	12 30 38.3	
	comp=Z,63nm,20.3s,baz=112,slow=28						
ZALV	**Zalesovo Beam**	**148.78**	**27**	PKPbc	**PKPab**	**12 06 51.7**	**+2.1**
	comp=Z,3.4nm,0.4s,baz=306,slow=3.9,SNR=14						
MKAR	**Makanchi Array**	**152.20**	**40**	PKPbc	**PKPab**	**12 07 00.1**	**-4.0**
	comp=Z,1.7nm,0.8s,baz=314,slow=1.5,SNR=8.4						

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*ISCJB **26** 11:47:27.5±0.6, 39.°11N±0.°04×29.°10E±0.°04, h3km±9km, Error ellipse: s-maj=7.1km s-min=4.6km az=147.6*
*DDA **26** 11:47:27.6, 39.°09N×29.°09E, h7km, Md2.3*
*CSEM **26** 11:47:27.6±0.2, 39.°13N×29.°11E, h2km, MD2.3, Error ellipse: s-maj=6.4km s-min=4.4km az=111.0*
*ISK **26** 11:47:27.2, 39.°09N×29.°22E, h7km, MD2.5*
ISC 26 11:47:27.4±1.0, 39.°10N±0.°02×29.°13E±0.°03, h8km±9km, n22, σ0°45/34, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.28**	**92**	P	**Pg**	**11 47 33.6**	**+0.6**
GDZ				S	**Sb**	**11 47 39.0**	**-0.6**
GDZ	**Gediz**	**0.28**	**92**	*i* P	**Pg**	**11 47 33.6**	**+0.6**
GDZ				*i* S	**Sb**	**11 47 39.0**	**-0.6**
DEMI	**Demirci**	**0.32**	**261**	P	**Pg**	**11 47 33.6**	**-0.2**
DEMI				S	**Sg**	**11 47 38.3**	**+0.2**
DEMI	**Demirci**	**0.32**	**261**	*i* P	**Pg**	**11 47 33.6**	**-0.2**
DEMI				*i* S	**Sg**	**11 47 38.3**	**+0.2**
TVSB	**Tavsanli**	**0.44**	**36**	*e*PG	**Pg**	**11 47 35.6**	**-0.4**
TVSB				*e*SG	**Sg**	**11 47 41.8**	**+0.1**
TVSB	**Tavsanli**	**0.44**	**36**	*e*Pg	**Pg**	**11 47 35.6**	**-0.4**
TVSB				*e*Sg	**Sg**	**11 47 41.8**	**+0.1**
KULA	**Kula-Manisa**	**0.69**	**212**	*e*PG	**Pb**	**11 47 41.1**	**-0.6**
KULA	**Kula-Manisa**	**0.69**	**212**	*e*Pg	**Pb**	**11 47 41.1**	**-0.6**
MANT	**Manisa**	**0.75**	**216**	P	**Pb**	**11 47 42.6**	**-0.2**
MANT				S	**Sg**	**11 47 51.9**	**+0.2**
MANT	**Manisa**	**0.75**	**216**	*i* P	**Pb**	**11 47 42.6**	**-0.2**
MANT				*i* S	**Sg**	**11 47 51.9**	**+0.2**
KHAL	**Karahalli**	**0.78**	**158**	P	**Pn**	**11 47 45.1**	**+0.3**
KHAL				S	**Sb**	**11 47 53.9**	**-0.1**
KHAL	**Karahalli**	**0.78**	**158**	*i* P	**Pn**	**11 47 45.1**	**+0.3**
KHAL				*i* S	**Sb**	**11 47 53.9**	**-0.1**
KHL	**Karahalli**	**0.83**	**158**	*e*PG	**Pg**	**11 47 43.2**	**-0.2**
KHL	**Karahalli**	**0.83**	**158**	*e*Pg	**Pg**	**11 47 43.2**	**-0.2**
CAVI	**Cavuskoy**	**1.23**	**26**	*e*PN	**Pn**	**11 47 50.4**	**-0.6**
CAVI	**Cavuskoy**	**1.23**	**26**	*e*Pn	**Pn**	**11 47 50.4**	**-0.6**
IZI	**Iznik**	**1.27**	**12**	*e*PN	**Pg**	**11 47 51.9**	**+0.2**
IZI				*e*SN	**Sn**	**11 48 09.7**	**+0.9**
IZI	**Iznik**	**1.27**	**12**	*e*Pn	**Pg**	**11 47 51.9**	**+0.2**
IZI				*e*Sn	**Sn**	**11 48 09.7**	**+0.9**
GONE	**Gonen-Balikesi**	**1.46**	**311**	*e*PN	**Pg**	**11 47 55.9**	**+0.4**
GONE	**Gonen-Balikesi**	**1.46**	**311**	*e*Pn	**Pg**	**11 47 55.9**	**+0.4**
ARMT	**Armutlu**	**1.48**	**352**	*e*PN	**Pb**	**11 47 55.1**	**-0.1**
ARMT	**Armutlu**	**1.48**	**352**	*e*Pn	**Pb**	**11 47 55.1**	**-0.1**

IDC 26 11:52:22.9±3.8, 3.°49S×152.°05E, h0km, mb3.6/2, mb1 3.9/2, mb1mx3.4/42, mbtmp3.6/2, Error ellipse: s-maj=156.7km s-min=49.6km az=117.0, New Ireland region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**23.79**	**225**	P	P	11 57 38.5	+0.9
	2.0nm,0.6s,baz=51,slow=9.6,SNR=32						
ASAR	**Alice Springs**	**26.64**	**220**	P	P	11 58 03.1	-0.5
	0.2nm,0.5s,baz=50,slow=8.7,SNR=5.2						
TORD	**Torodi Ar. Bea**	**149.17**	**290**	PKPbc	PKPbc	12 12 13.6	-1.0
	0.2nm,0.7s,baz=91,slow=2.7,SNR=4.1						

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*IDC **26** 11:55:29.9±0.7, 27.°51N×143.°64E, h0km, mb4.0/17, mb1 4.2/20, mb1mx4.1/45, mbtmp4.0/20, ML3.5/3, MS3.0/2, Ms1 3.0/2, ms1mx2.5/42, Error ellipse: s-maj=18.6km s-min=17.5km az=154.0*
*NEIC **26** 11:55:31.6±0.5, 27.°59N×143.°61E, h10km, mb4.0/1, Error ellipse: s-maj=11.4km s-min=10.5km az=47.0*
*JMA **26** 11:55:34.2±0.1, 27.°96N×143.°17E, h10km, M4.7*
*ISCJB **26** 11:55:35.2±0.5, 27.°92N±0.°03×143.°32E±0.°06, h33km, mb4.0/19, Error ellipse: s-maj=8.1km s-min=4.2km az=15.7*
ISC 26 11:55:36.2±0.7, 27.°76N±0.°06×143.°43E±0.°08, h35km, n36, σ1°27/40, mb4.0/19, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**1.29**	**239**	P	**Pn**	**11 55 57.0**	**-0.7**
CBIJ				*e*S	**Sn**	**11 56 13.5**	**-0.3**
CBIJ	**Chichi jima**	**1.29**	**239**	*e*Pn	**Pn**	**11 55 57.0**	**-0.7**
CBIJ				Pn	**Pn**	**11 55 57.1**	**-0.7**
CBIJ				Sn	**Sn**	**11 56 12.6**	**-1.2**
JCJ	**Chichijima**	**1.29**	**239**	Pn	**Pn**	**11 55 57.1**	**-0.6**
	45nm,0.3s,baz=24,slow=8.1,SNR=62						
JCJ				Sn	**Sn**	**11 56 12.6**	**-1.2**
	118nm,0.3s,baz=302,slow=18,SNR=15						
JCJ				LR	LR	11 56 38.5	
	comp=Z,510nm,20.7s,baz=183,slow=50						
BSO1	**Boso 1**	**7.18**	**344**	*e*S	**Sn**	**11 58 35.7**	**-2.6**
BSO2	**Boso 2**	**7.33**	**342**	S	**Sn**	**11 58 42.1**	**-0.2**
BSO3	**Boso 3**	**7.45**	**341**	*e*S	**Sn**	**11 58 43.6**	**-1.6**
BSO4	**Boso 4**	**7.67**	**341**	*e*S	**Sn**	**11 58 49.0**	**-2.0**
MJAR	**Matsushiro Arr**	**9.80**	**335**	Pn	**Pn**	**11 57 54.4**	**-0.3**
	1.2nm,0.3s,baz=159,slow=10,SNR=11						
MJAR				Sn	**Sn**	**11 59 41.2**	**-2.3**
	0.7nm,0.3s,baz=13,slow=16,SNR=4.2						
MAJO	**Matsushiro**	**9.81**	**335**	*e*Pn	**Pn**	**11 57 55.5**	**+0.8**
	16nm,0.8s						
MAT	**Matsushiro**	**9.81**	**335**	P	**Pn**	**11 57 54.4**	**-0.3**
MAT				*e*S	**Sn**	**11 59 41.4**	**-2.2**
JNU	**Nakatsue**	**12.07**	**299**	LR	LR	12 03 25.2	
	comp=Z,91nm,18.2s,baz=117,slow=38						
KSRS	**Korea Array**	**16.23**	**310**	Pn	**P**	**11 59 23.3**	**-0.9**
	0.2nm,0.3s,baz=121,slow=13,SNR=5.4						
KSRS				LR	LR	12 06 35.7	
	comp=Z,35nm,18.9s,baz=147,slow=40						
KSAR	**Wonju Array Be**	**16.25**	**310**	Pn	**P**	**11 59 23.3**	**-1.2**
USRK	**Ussuriysk Ar.**	**18.80**	**334**	P	**Pn**	**11 59 55.7**	**+2.4**
	0.3nm,0.3s,baz=140,slow=11,SNR=7.8						
KLR	**Kul'dur**	**23.25**	**340**	P	**P**	**12 00 41.7**	**+1.4**
	2.0nm,0.8s,baz=142,slow=11,SNR=5.1						
SONM	**Songino Array**	**35.01**	**315**	P	**P**	**12 02 27.7**	**+2.3**
	1.5nm,0.7s,baz=116,slow=8.2,SNR=8.0						
SEY	**Seymchan**	**35.66**	**7**	P	**P**	**12 02 31.6**	**+1.0**
	1.2nm,0.6s,baz=183,slow=14,SNR=5.0						
TIXI	**Tiksi**	**44.67**	**353**	P	**P**	**12 03 43.3**	**-1.8**
	0.6nm,0.3s,baz=168,slow=2.7,SNR=3.9						
ZALV	**Zalesovo Beam**	**49.71**	**319**	P	**P**	**12 04 25.3**	**+0.6**
	0.6nm,0.3s,baz=103,slow=6.2,SNR=2.5						
MKAR	**Makanchi Array**	**50.91**	**309**	P	**P**	**12 04 35.2**	**+1.3**
	1.0nm,0.8s,baz=96,slow=9.1,SNR=7.8						
ASAR	**Alice Springs**	**51.95**	**191**	P	P	12 04 37.7	-4.2
	5.0nm,0.8s,baz=329,slow=6.9,SNR=52						
ILAR	**Eielson Array**	**56.60**	**29**	P	**P**	**12 05 14.6**	**-0.7**
	1.3nm,0.9s,baz=258,slow=5.9,SNR=8.8						
INK	**Inuvik**	**61.97**	**25**	P	**P**	**12 05 52.5**	**+0.3**
	0.8nm,0.5s,baz=300,slow=4.6,SNR=4.6						
ABKAR	**Akbulak array**	**65.42**	**314**	*e*P	**P**	**12 06 16.3**	**+0.9**
	0.4nm,0.3s						
YKA	**Yellowknife Ar**	**71.03**	**29**	P	**P**	**12 06 49.5**	**-0.7**
	0.4nm,0.6s,baz=294,slow=6.4,SNR=8.7						
FINES	**FINESS Array B**	**77.83**	**334**	P	**P**	**12 07 30.6**	**+0.8**
	0.8nm,0.5s,baz=60,slow=8.2,SNR=3.9						
KBZ	**Khabaz**	**78.36**	**313**	P	**P**	**12 07 34.5**	**+1.5**
	5.6nm,0.8s,baz=97,slow=4.7,SNR=13						
NVAR	**Mina Array Bea**	**79.24**	**52**	P	**P**	**12 07 38.1**	**-0.2**
	0.6nm,0.5s,baz=297,slow=5.9,SNR=4.0						
AKASG	**Malin Array Be**	**82.73**	**324**	P	**P**	**12 07 56.4**	**+0.1**
	0.6nm,0.5s,baz=47,slow=5.7,SNR=4.6						
PDAR	**Pinedale Array**	**82.96**	**45**	P	**P**	**12 07 57.8**	**-0.2**
	0.3nm,0.4s,baz=283,slow=4.3,SNR=3.6						
NOA	**NORSAR Array B**	**83.40**	**339**	P	**P**	**12 07 59.5**	**-0.1**
	1.1nm,0.8s,baz=40,slow=4.9,SNR=3.7						
BRTR	**Keskin Array B**	**86.35**	**313**	P	**P**	**12 08 15.2**	**+0.1**
	1.6nm,0.8s,baz=104,slow=4.0,SNR=7.3						
TXAR	**Lajitas Array**	**94.32**	**54**	P	**P**	**12 08 50.7**	**-1.9**
	0.6nm,0.8s,baz=0.0,slow=3.9,SNR=3.5						
TORD	**Torodi Ar. Bea**	**124.96**	**313**	PKP	**PKPdf**	**12 14 32.9**	**-0.6**
	0.8nm,1.0s,baz=349,slow=1.5,SNR=2.9						
LPAZ	**La Paz**	**148.69**	**75**	PKPbc	**PKPbc**	**12 15 21.2**	**0.0**
	2.3nm,0.9s,baz=0.0,slow=5.1,SNR=6.1						
PLCA	**Paso Flores**	**149.28**	**124**	PKPbc	**PKPbc**	**12 15 21.6**	**+0.2**
	1.1nm,0.5s,baz=257,slow=5.3,SNR=3.9						

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*ISK **26** 11:56:49.5, 39.°13N×29.°15E, h5km, MD2.7*
*ISCJB **26** 11:56:50.7±0.5, 39.°11N±0.°03×29.°10E±0.°04, h6km±5km, Error ellipse: s-maj=4.7km s-min=4.2km az=27.0*
*CSEM **26** 11:56:50.8±0.1, 39.°11N×29.°12E, h8km, MD2.5, Error ellipse: s-maj=3.1km s-min=2.4km az=97.0*
*DDA **26** 11:56:50.9, 39.°10N×29.°08E, h7km, Md2.5*
ISC 26 11:56:50.6±0.9, 39.°09N±0.°02×29.°14E±0.°02, h17km±7km, n32, σ0°59/48, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.27**	**90**	P	**Pb**	**11 56 57.2**	**+0.1**
GDZ				S	**Sg**	**11 57 01.9**	**+1.2**
GDZ	**Gediz**	**0.27**	**90**	*i* P	**Pb**	**11 56 57.1**	**+0.1**
GDZ				*i* S	**Sg**	**11 57 01.9**	**+1.2**
DEMI	**Demirci**	**0.33**	**262**	P	**Pg**	**11 56 57.5**	**-0.1**
DEMI				S	**Sg**	**11 57 01.6**	**-0.8**
DEMI	**Demirci**	**0.33**	**262**	*i* P	**Pg**	**11 56 57.5**	**-0.1**
DEMI				*i* S	**Sg**	**11 57 01.6**	**-0.8**
TVSB	**Tavsanli**	**0.44**	**35**	*e*PG	**Pg**	**11 56 58.6**	**-0.9**
TVSB				*e*SG	**Sg**	**11 57 05.4**	**-0.2**
TVSB	**Tavsanli**	**0.44**	**35**	*e*Pg	**Pg**	**11 56 58.6**	**-0.9**
TVSB				*e*Sg	**Sg**	**11 57 05.4**	**-0.2**
KULA	**Kula-Manisa**	**0.69**	**213**	*e*PG	**Pg**	**11 57 04.7**	**+0.6**
KULA	**Kula-Manisa**	**0.69**	**213**	*e*Pg	**Pg**	**11 57 04.7**	**+0.6**
DURS	**Dursunbey**	**0.72**	**315**	P	**Pb**	**11 57 04.8**	**0.0**
DURS				S	**Sb**	**11 57 13.6**	**-0.9**
DURS	**Dursunbey**	**0.72**	**315**	*i* P	**Pb**	**11 57 04.8**	**0.0**
DURS				*i* S	**Sb**	**11 57 13.6**	**-0.9**
MANT	**Manisa**	**0.75**	**217**	P	**Pb**	**11 57 05.3**	**-0.1**
MANT				S	**Sb**	**11 57 15.1**	**-0.3**
MANT	**Manisa**	**0.75**	**217**	*i* P	**Pb**	**11 57 05.3**	**-0.1**
MANT				*i* S	**Sb**	**11 57 15.1**	**-0.3**
KHAL	**Karahalli**	**0.77**	**159**	P	**Pn**	**11 57 06.6**	**-0.2**
KHAL				S	**Sn**	**11 57 17.8**	**-0.3**
KHAL	**Karahalli**	**0.77**	**159**	*i* P	**Pn**	**11 57 06.6**	**-0.2**
KHAL				*i* S	**Sn**	**11 57 17.8**	**-0.3**
KHL	**Karahalli**	**0.82**	**158**	*e*PG	**Pb**	**11 57 06.4**	**-0.1**
KHL	**Karahalli**	**0.82**	**158**	*e*Pg	**Pb**	**11 57 06.4**	**-0.1**
ORLT	**Orhaneli**	**0.97**	**349**	*e*PG	**Pb**	**11 57 08.6**	**-0.5**
ORLT	**Orhaneli**	**0.97**	**349**	*e*Pg	**Pb**	**11 57 08.6**	**-0.5**
CAVI	**Cavuskoy**	**1.24**	**26**	*e*PN	**Pb**	**11 57 13.6**	**0.0**
CAVI				*e*SN	**Sg**	**11 57 31.4**	**+0.8**
CAVI	**Cavuskoy**	**1.24**	**26**	*e*Pn	**Pb**	**11 57 13.6**	**0.0**
CAVI				*e*Sn	**Sg**	**11 57 31.4**	**+0.8**
IZI	**Iznik**	**1.27**	**12**	*e*PN	**Pb**	**11 57 14.2**	**0.0**
IZI				*e*SN	**Sg**	**11 57 32.2**	**+0.4**
IZI	**Iznik**	**1.27**	**12**	*e*Pn	**Pb**	**11 57 14.2**	**0.0**
IZI				*e*Sn	**Sg**	**11 57 32.2**	**+0.4**
KCTX	**Karacabey (Bur**	**1.32**	**333**	*e*PN	**Pb**	**11 57 15.5**	**+0.5**
KCTX	**Karacabey (Bur**	**1.32**	**333**	*e*Pn	**Pb**	**11 57 15.5**	**+0.5**
GONE	**Gonen-Balikesi**	**1.47**	**311**	*e*PN	**Pb**	**11 57 18.1**	**+0.6**
GONE	**Gonen-Balikesi**	**1.47**	**311**	*e*Pn	**Pb**	**11 57 18.1**	**+0.6**
ARMT	**Armutlu**	**1.49**	**352**	*e*PN	**Pb**	**11 57 17.9**	**+0.1**
ARMT	**Armutlu**	**1.49**	**352**	*e*Pn	**Pb**	**11 57 17.9**	**+0.1**
SVRH	**Sivrihisar-ESK**	**1.89**	**78**	*e*PN	**Pb**	**11 57 24.2**	**-0.4**
SVRH	**Sivrihisar-ESK**	**1.89**	**78**	*e*Pn	**Pb**	**11 57 24.2**	**-0.4**
SILT	**Sile**	**2.10**	**10**	*e*PN	**Pn**	**11 57 26.1**	**+1.2**
SILT	**Sile**	**2.10**	**10**	*e*Pn	**Pn**	**11 57 26.1**	**+1.2**

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*ISCJB **26** 11:59:17.4±0.2, 0.°25S±0.°03×124.°59E±0.°03, h60km, mb4.5/43, MS3.3/6, Error ellipse: s-maj=4.7km s-min=3.5km az=38.6*
*DJA **26** 11:59:17.2±0.9, 0.°5S±3.°×12.°5E±.°, h17km±12km, M4.8/10, mb5.0/4, mB5.2/3, MLv4.6/10, Mw(mB)4.6/3*
*NEIC **26** 11:

comp=Z,12nm,0.8s
STKA Stephens Creek 35.30 155 P **P 12 06 08.3 0.0**
comp=Z,1.6nm,0.6s,baz=323,slow=10,SNR=5.4
CD2 Chengdu 36.79 329 P **P 12 06 21.3 +0.2**
CD2 pmax pmax
comp=Z,18nm,0.5s
XAN Xi'an 37.17 338 P **P 12 06 24.8 +0.5**
XAN pmax pmax
comp=Z,7.0nm,0.6s
KSAR Wonju Array Be 37.65 4 P **P 12 06 28.8 +0.6**
KSRS Korea Array 37.66 4 P **P 12 06 28.8 +0.5**
comp=Z,1.4nm,0.7s,baz=181,slow=9.6,SNR=8.0
KSRS LR LR 12 22 02.7
comp=Z,14nm,20.8s,baz=180,slow=36
MJAR Matsushiro Arr 38.74 18 P **P 12 06 36.7 -0.8**
comp=Z,3.0nm,0.8s,baz=191,slow=9.4,SNR=7.9
LZH Lanzhou 41.01 334 *e*P **P 12 06 58.0 +1.6**
LZH pP pP 12 07 15.3 +3.6
LZH sP sP 12 07 24.5 +5.8
LZH pmax pmax
comp=Z,17nm,1.0s
LZH pmax pmax
comp=Z,58nm,4.4s
HHC Hu-ho-hao-te 42.61 345 *e*P P 12 07 15.0 +5.6
HHC pmax pmax
comp=Z,27nm,1.0s
HHC pmax pmax
comp=Z,140nm,5.6s
USRK Ussuriysk Ar. 44.76 8 P **P 12 07 26.8 +0.3**
comp=Z,2.1nm,0.4s,baz=187,slow=6.8,SNR=11
GTA Gaotai 45.55 333 *e*P **P 12 07 33.5 +0.5**
GTA pP pP 12 07 37.5 -11
GTA sP sP 12 07 40.5 -15
GTA pmax pmax
comp=Z,11nm,1.0s
GUN Gumba 46.51 310 *e*P **P 12 07 40.5 -0.5**
comp=Z,23nm,0.5s
PKIN Phulchoki 46.72 310 *e*P **P 12 07 42.2 -0.3**
comp=Z,6.9nm,0.6s
GKN Gorkha 47.51 310 *e*P **P 12 07 47.6 -1.0**
comp=Z,10nm,0.4s
KOLN Koldanda 48.20 309 *e*P **P 12 07 53.1 -0.9**
comp=Z,16nm,0.5s
PYUN Piuthan 48.83 309 *e*P **P 12 07 58.0 -0.8**
comp=Z,28nm,0.5s
KLR Kul'dur 49.69 6 P **P 12 08 05.2 +0.5**
comp=Z,2.5nm,0.4s,baz=188,slow=6.1,SNR=13
ULN Ulaanbaatar 50.32 345 *e*P **P 12 08 10.2 +0.5**
comp=Z,4.7nm,0.8s
SONM Songino Array 50.47 344 P **P 12 08 11.2 +0.4**
comp=Z,5.0nm,0.8s,baz=152,slow=6.7,SNR=22
SONA1 Songino Array 50.48 344 *e*P **P 12 08 11.2 +0.2**
WMQ Urumqi 54.86 328 *e*P P 12 08 47.0 +3.7
WMQ pmax pmax
comp=Z,5.0nm,0.6s
WMQ pmax pmax
comp=Z,41nm,7.8s
KSH Kashi 59.45 318 *e*P **P 12 09 17.3 +1.4**
KSH *e*pP sP 12 09 37.0 -1.7
KSH *e*PcP **PcP 12 10 04.3 +1.2**
KSH *e*ScP **ScP 12 13 57.0 -1.9**
KSH PcS **PcS 12 14 04.3 -1.0**
KSH S **S 12 17 17.0 -4.0**
KSH pmax pmax
comp=Z,150nm,4.9s
KSH LR LR
comp=N,150nm,8.5s
KSH LR LR
comp=E,97nm,11.4s
MK01 Makanchi Array 59.67 328 *e*P **P 12 09 15.8 -1.4**
MK31 Makanchi Array 59.69 328 *e*P **P 12 09 16.0 -1.3**
MKAR Makanchi Array 59.69 328 P **P 12 09 15.5 -1.7**
comp=E,3.8nm,0.6s,baz=124,slow=7.8,SNR=28
MKAR PcP **PcP 12 10 03.0 -0.7**
comp=E,1.9nm,0.7s,baz=128,slow=4.2,SNR=4.9
MKAR LR LR 12 36 19.9
comp=E,18nm,18.4s,baz=57,slow=37
MKAR Makanchi Array 59.69 328 *e*P **P 12 09 16.0 -1.3**
MKAR PcP **PcP 12 10 03.0 -0.7**
MAKZ Makanchi 59.87 327 *e*P **P 12 09 17.7 -0.8**
comp=E,3.8nm,0.6s
PETK Petropavlovsk- 59.91 22 P **P 12 09 21.3 +2.7**
comp=E,4.3nm,0.7s,baz=181,slow=4.3,SNR=5.7
TKM2 Tokmak 2 61.40 321 *e*P **P 12 09 29.7 +0.5**
comp=E,6.1nm,0.8s
AAK Ala-Archa 61.96 320 *e*P **P 12 09 34.1 +1.1**
comp=E,4.3nm,0.6s
EKS2 Erkin-Say 62.44 320 *e*P **P 12 09 37.1 +1.0**
comp=E,6.3nm,0.8s
ZALV Zalesovo Beam 63.23 335 P **P 12 09 40.1 -0.8**
comp=E,2.2nm,0.4s,baz=136,slow=5.7,SNR=4.5
ZRNK Zerenda 70.24 328 *e*P **P 12 10 23.8 -1.8**
comp=E,6.3nm,0.6s
TIXI Tiksi 71.85 1 *e*P **P 12 10 34.5 -0.5**
comp=E,3.4nm,1.0s
ABKAR Abkulak array 73.93 322 *e*P **P 12 10 46.0 -1.7**
ARU Arti 77.19 329 *e*P **P 12 11 06.8 +0.6**
comp=E,5.8nm,0.8s
COLD Coldfoot 88.38 23 *e*P **P 12 12 05.6 +1.6**
comp=E,2.9nm,0.6s
ILAR Eielson Array 89.60 25 P **P 12 12 08.9 -0.8**
comp=E,0.5nm,0.6s,baz=247,slow=4.4,SNR=12
BRTR Keskin Array B 90.92 310 P **P 12 12 14.3 -2.3**
comp=E,0.4nm,0.5s,baz=117,slow=5.7,SNR=2.8
ARCES ARCESS Array B 93.44 340 P **P 12 12 27.0 -0.5**
comp=E,2.7nm,0.7s,baz=90,slow=2.4,SNR=4.5
FINES FINESS Array B 94.32 332 P **P 12 12 29.6 -2.1**
comp=E,2.4nm,0.9s,baz=134,slow=8.2,SNR=3.4
IDI Anoyia 98.09 305 LR LR 13 03 09.3
comp=E,323nm,21.4s,baz=262,slow=39
TORD Torodi Ar. Bea 122.03 285 PKP **PKPdf 12 18 07.3 -0.4**
comp=E,0.4nm,0.5s,baz=65,slow=2.8,SNR=4.3

*ISK **26** 12:20:08.6,39.°02N×29.°22E,h14km,ML2.5*
*ISCJB **26** 12:20:09.2±0.5,39.°09N±0.°03×29.°01E±0.°03,h7km±5km, Error ellipse: s-maj=5.3km s-min=4.0km az=141.8*
*CSEM **26** 12:20:09.1±0.2,39.°11N×29.°00E,h5km,MD2.6,Error ellipse: s-maj=4.3km s-min=3.2km az=130.0*
*DDA **26** 12:20:09.2,39.°09N×28.°98E,h7km,Md2.6*
ISC 26 12:20:09.1±0.9,39.°10N±0.°02×29.°03E±0.°03,h10km±9km, n26,σ0s67/43,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**257**	P	**Pg**	**12 20 14.1**	**0.0**
DEMI				S	**Sg**	**12 20 17.4**	**-0.2**
DEMI	**Demirci**	**0.25**	**257**	*i* P	**Pg**	**12 20 14.1**	**0.0**
DEMI				*i* S	**Sg**	**12 20 17.4**	**-0.2**
GDZ	**Gediz**	**0.35**	**91**	P	**Pb**	**12 20 17.3**	**-0.3**
GDZ				S	**Sb**	**12 20 22.9**	**-0.4**
GDZ	**Gediz**	**0.35**	**91**	*i* P	**Pb**	**12 20 17.3**	**-0.3**
GDZ				*i* S	**Sb**	**12 20 22.9**	**-0.4**
TVSB	**Tavsanli**	**0.49**	**44**	*e*PG	**Pg**	**12 20 18.5**	**-0.1**
TVSB				*e*SG	**Sg**	**12 20 25.5**	**+0.4**
TVSB	**Tavsanli**	**0.49**	**44**	*e*Pg	**Pg**	**12 20 18.5**	**-0.1**
TVSB				*e*Sg	**Sg**	**12 20 25.5**	**+0.4**
KULA	**Kula-Manisa**	**0.65**	**206**	*e*PG	**Pg**	**12 20 21.6**	**-0.1**
KULA	**Kula-Manisa**	**0.65**	**206**	*e*Pg	**Pg**	**12 20 21.6**	**-0.1**
DURS	**Dursunbey**	**0.66**	**320**	P	**Pg**	**12 20 21.5**	**-0.4**
DURS	**Dursunbey**	**0.66**	**320**	*i* P	**Pg**	**12 20 21.5**	**-0.4**
DURS				*i* S	**Sn**	**12 20 34.3**	**-0.8**
MANT	**Manisa**	**0.71**	**211**	P	**Pg**	**12 20 23.0**	**+0.2**
MANT				S	**Sg**	**12 20 31.8**	**-0.3**
MANT	**Manisa**	**0.71**	**211**	*i* P	**Pg**	**12 20 23.0**	**+0.2**
MANT				*i* S	**Sg**	**12 20 31.8**	**-0.3**
KHAL	**Karahalli**	**0.81**	**153**	P	**Pb**	**12 20 25.4**	**0.0**
KHAL				S	**Sb**	**12 20 36.3**	**-0.1**
KHAL	**Karahalli**	**0.81**	**153**	*i* P	**Pb**	**12 20 25.4**	**0.0**
KHAL				*i* S	**Sb**	**12 20 36.4**	**-0.1**
AKHS	**Akhisar**	**0.97**	**257**	P	**Pg**	**12 20 26.9**	**-0.8**
AKHS				S	**Sg**	**12 20 39.5**	**-0.8**
AKHS	**Akhisar**	**0.97**	**257**	*i* P	**Pg**	**12 20 26.9**	**-0.8**
AKHS				*i* S	**Sg**	**12 20 39.5**	**-0.8**
AKS	**Akhisar**	**0.97**	**257**	*e*PN	**Pn**	**12 20 30.6**	**+1.9**
AKS	**Akhisar**	**0.97**	**257**	*e*Pn	**Pn**	**12 20 30.7**	**+1.9**
IZI	**Iznik**	**1.28**	**15**	*e*PN	**Pb**	**12 20 33.3**	**-0.1**
IZI				*e*SN	**Sg**	**12 20 51.5**	**+1.1**
IZI	**Iznik**	**1.28**	**15**	*e*Pn	**Pb**	**12 20 33.3**	**-0.1**
IZI				*e*Sn	**Sg**	**12 20 51.5**	**+1.1**
ARMT	**Armutlu**	**1.47**	**355**	*e*PN	**Pg**	**12 20 36.9**	**-0.4**
ARMT				*e*SN	**Sg**	**12 20 57.3**	**+0.9**
ARMT	**Armutlu**	**1.47**	**355**	*e*Pn	**Pg**	**12 20 36.9**	**-0.4**
ARMT				*e*Sn	**Sg**	**12 20 57.3**	**+0.9**
GULT	**Gulveren**	**1.76**	**40**	*e*PN	**Pn**	**12 20 39.1**	**-0.6**
GULT	**Gulveren**	**1.76**	**40**	*e*Pn	**Pn**	**12 20 39.1**	**-0.6**
SPNC	**Sapanca-Adapaz**	**1.87**	**31**	*e*PN	**Pn**	**12 20 41.2**	**+0.1**
SPNC	**Sapanca-Adapaz**	**1.87**	**31**	*e*Pn	**Pn**	**12 20 41.2**	**+0.1**

*ISCJB **26** 12:28:10.7±0.5,39.°11N±0.°02×27.°53E±0.°04,h0km,Error ellipse: s-maj=4.9km s-min=3.4km az=15.0*
*DDA **26** 12:28:10.8,39.°12N×27.°53E,h7km,Md2.6,Suspected Mining explosion.*
*CSEM **26** 12:28:11.0±0.4,39.°08N×27.°58E,h1km,MD2.6,Error ellipse: s-maj=9.7km s-min=6.1km az=97.0,Suspected Mining explosion.*
*ISK **26** 12:28:15.5,39.°20N×28.°10E,h14km,MD2.5*
ISC 26 12:28:10.8±0.8,39.°09N±0.°02×27.°57E±0.°03,h0km,n23, σ1s23/37,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKHS	**Akhisar**	**0.28**	**138**	P	**Pg**	**12 28 17.1**	**+0.9**
AKHS				S	**Sg**	**12 28 22.6**	**+2.7**
AKHS	**Akhisar**	**0.28**	**138**	*i* P	**Pg**	**12 28 17.1**	**+0.9**
AKHS				*i* S	**Sg**	**12 28 22.6**	**+2.7**
BALY	**Balya**	**0.65**	**3**	P	**Pb**	**12 28 23.9**	**-1.2**
BALY				S	**Sg**	**12 28 31.6**	**-0.1**
BALY	**Balya**	**0.65**	**3**	*i* P	**Pb**	**12 28 23.9**	**-1.2**
BALY				*i* S	**Sg**	**12 28 31.6**	**-0.1**
DURS	**Dursunbey**	**0.86**	**54**	P	**Pg**	**12 28 27.5**	**+0.1**
DURS				S	**Sb**	**12 28 40.9**	**0.0**
DURS	**Dursunbey**	**0.86**	**54**	*i* P	**Pg**	**12 28 27.5**	**+0.1**
DURS				*i* S	**Sb**	**12 28 40.9**	**0.0**
MANT	**Manisa**	**0.97**	**128**	P	**Pg**	**12 28 29.6**	**+0.1**
MANT	**Manisa**	**0.97**	**128**	*i* P	**Pg**	**12 28 29.6**	**+0.1**
MANT				*i* S	**Sn**	**12 28 46.1**	**-0.5**
KULA	**Kula-Manisa**	**1.03**	**124**	*e*PG	**Pb**	**12 28 31.6**	**+0.2**
KULA	**Kula-Manisa**	**1.03**	**124**	*e*Pg	**Pb**	**12 28 31.7**	**+0.2**
URLA	**Izmir**	**1.06**	**227**	P	**Pg**	**12 28 31.3**	**+0.3**
URLA				S	**Sg**	**12 28 45.8**	**+1.1**
URLA	**Izmir**	**1.06**	**227**	*i* P	**Pg**	**12 28 31.3**	**+0.3**
URLA				*i* S	**Sg**	**12 28 45.8**	**+1.1**
ZEY	**¨zmir**	**1.19**	**225**	*i* P	**Pg**	**12 28 33.1**	**-0.6**
ZEY				*i* S	**Sb**	**12 28 51.4**	**+1.2**
EDC	**Edincik**	**1.27**	**10**	*e*PN	**Pn**	**12 28 37.9**	**+2.0**
EDC				*e*SN	**Sn**	**12 28 54.2**	**+0.5**
EDC	**Edincik**	**1.27**	**10**	*e*Pn	**Pn**	**12 28 37.9**	**+2.0**
EDC				*e*Sn	**Sn**	**12 28 54.2**	**+0.5**
KCTX	**Karacabey (Bur**	**1.32**	**27**	*e*PG	**Pn**	**12 28 36.6**	**0.0**
KCTX	**Karacabey (Bur**	**1.32**	**27**	*e*Pg	**Pn**	**12 28 36.6**	**0.0**
AYDN	**Tasoluk**	**1.45**	**170**	P	**Pn**	**12 28 36.5**	**-1.8**
AYDN				S	**Sg**	**12 28 56.7**	**-0.6**
AYDN	**Tasoluk**	**1.45**	**170**	*i* P	**Pn**	**12 28 36.5**	**-1.8**
AYDN				*i* S	**Sg**	**12 28 56.7**	**-0.6**
TVSB	**Tavsanli**	**1.51**	**76**	*e*PN	**Pn**	**12 28 36.8**	**-2.4**
TVSB	**Tavsanli**	**1.51**	**76**	*e*Pn	**Pn**	**12 28 36.8**	**-2.4**
ARMT	**Armutlu**	**1.78**	**34**	PN	**Pn**	**12 28 42.4**	**-0.4**
ARMT	**Armutlu**	**1.78**	**34**	*i* Pn	**Pn**	**12 28 42.4**	**-0.4**

IDC 26 12:28:43.9±2.2,26.°53S×147.°12E,h0km,mb3.8/2, mb1 4.1/5,mb1mx3.7/19,mbtmp3.9/5,ML4.1/3,Error ellipse: s-maj=54.7km s-min=40.8km az=123.0, Queensland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**7.19**	**221**	Pn	Pn	12 30 30.6	+0.3
	4.8nm,0.3s,baz=43,slow=10,SNR=20						
STKA				Sn	Sn	12 31 48.0	-4.7
	6.8nm,0.3s,baz=313,slow=21,SNR=11						
ASAR	**Alice Springs**	**12.31**	**281**	Pn	Pn	12 31 41.0	+0.5
	0.9nm,0.3s,baz=103,slow=14,SNR=39						
ASAR				Sn	Sn	12 33 52.0	-6.5
	0.5nm,0.3s,baz=102,slow=24,SNR=8.6						
WRA	**Warramunga Arr**	**13.45**	**297**	Pn	Pn	12 31 54.9	-1.2
	0.5nm,0.3s,baz=120,slow=13,SNR=22						
WRA				Sn	Sn	12 34 20.8	-5.6
	0.4nm,0.3s,baz=128,slow=24,SNR=5.7						
SONM	**Songino Array**	**82.58**	**334**	P	P	12 41 09.1	+0.3
	0.2nm,0.3s,baz=123,slow=5.3,SNR=4.2						
MKAR	**Makanchi Array**	**93.49**	**321**	P	P	12 42 01.4	0.0
	0.2nm,0.6s,baz=137,slow=5.3,SNR=2.3						
TORD	**Torodi Ar. Bea**	**144.98**	**254**	PKP	PKPab	12 48 22.4	-0.7
	0.3nm,0.7s,baz=103,slow=3.4,SNR=4.6						

*ISCJB **26** 12:34:15.1±0.5,49.°81N±0.°04×18.°44E±0.°03,h0km,Error ellipse: s-maj=5.3km s-min=2.7km az=16.9*
*CSEM **26** 12:34:16.1±0.2,49.°80N×18.°45E,h1km,ML2.5/5,Error ellipse: s-maj=5.3km s-min=2.7km az=12.0*
*IPEC **26** 12:34:16.2±0.2,49.°80N×18.°50E,h0km,ML1.6/3,Error ellipse: s-maj=2.1km s-min=1.1km az=162.0*
ISC 26 12:34:16.0±0.8,49.°78N±0.°04×18.°48E±0.°02,h0km,n24, σ0s86/41,Czech and Slovak Republics

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OKC	**Ostrava-Krasne**	**0.22**	**285**	*e*PG	**Pg**	**12 34 21.0**	**+0.8**
OKC				*e*SG	**Sg**	**12 34 24.7**	**+1.6**
	comp=Z,41nm,0.6s						
OKC	**Ostrava-Krasne**	**0.22**	**285**	Pg	**Pg**	**12 34 21.0**	**+0.8**
OKC				Sg	**Sg**	**12 34 24.7**	**+1.6**
	41nm,0.6s						
MORC	**Moravsky Berou**	**0.60**	**270**	*e*Pg	**Pg**	**12 34 28.1**	**+0.5**
	baz=87						
MORC				*e*Sg	**Sg**	**12 34 35.6**	**+0.2**
	14nm,0.3s,baz=87						
LANS	**Liptovska Anna**	**0.90**	**134**	*e*Pg	**Pb**	**12 34 34.7**	**+0.1**
LANS				*e*Sg	**Sb**	**12 34 47.3**	**+0.1**
LANS	**Liptovska Anna**	**0.90**	**134**	*e*PG	**Pb**	**12 34 34.7**	**+0.1**
LANS				*e*SG	**Sb**	**12 34 47.2**	**+0.1**
OJC	**Ojcow**	**0.96**	**62**	*e*Pg	**Pg**	**12 34 34.3**	**-0.1**
OJC				*e*Sg	**Sg**	**12 34 46.4**	**-0.5**
OJC	**Ojcow**	**0.96**	**62**	*e*Pg	**Pg**	**12 34 34.3**	**-0.1**
OJC				*e*Sg	**Sg**	**12 34 46.4**	**-0.5**
KRLC	**Kraliky**	**1.13**	**286**	*e*PG	**Pg**	**12 34 37.4**	**-0.3**
KRLC				*e*SG	**Sb**	**12 34 53.2**	**-0.6**
KRLC	**Kraliky**	**1.13**	**286**	*e*Pg	**Pg**	**12 34 37.4**	**-0.3**
KRLC				*e*Sg	**Sb**	**12 34 53.2**	**-0.6**
VYHS	**Vyhne**	**1.31**	**169**	*e*Pn	**Pb**	**12 34 41.5**	**0.0**
VYHS				*e*Sn	**Sb**	**12 34 59.1**	**+0.3**
VYHS	**Vyhne**	**1.31**	**169**	*e*PN	**Pb**	**12 34 41.5**	**0.0**
VYHS				*e*SN	**Sb**	**12 34 59.1**	**+0.3**
VYHS				*e*LG	Lg	12 35 01.8	
VRAC	**Vranov**	**1.31**	**250**	*e*Pg	**Pg**	**12 34 41.0**	**-0.2**
	baz=68						
VRAC				*e*Sg	**Sg**	**12 34 58.1**	**-0.1**
	12nm,0.4s,baz=68						
DPC	**Dobruska-Polom**	**1.50**	**293**	*e*PG	**Pn**	**12 34 43.6**	**-0.6**
DPC				*e*SG	**Sg**	**12 35 04.0**	**-0.2**
	comp=Z,7.9nm,0.5s						
KRUC	**Moravsky**	**1.54**	**243**	*e*Pg	**Pn**	**12 34 44.6**	**-0.1**
	baz=61						
KRUC				*e*Sg	**Sn**	**12 35 05.0**	**-0.4**
	4.4nm,0.3s,baz=61						
UPC	**Upice**	**1.74**	**296**	*e*PG	**Pn**	**12 34 47.7**	**+0.1**
UPC				*e*SG	**Sg**	**12 35 11.9**	**-0.1**
	comp=Z,3.3nm,0.2s						
UPC	**Upice**	**1.74**	**296**	Pg	**Pn**	**12 34 47.7**	**+0.1**
UPC				Sg	**Sg**	**12 35 11.9**	**-0.1**
	3.3nm,0.2s						
STHS	**Stebnicka Huta**	**1.84**	**100**	*e*SN	**Sg**	**12 35 17.9**	**+2.9**
STHS				*e*LG	Lg	12 35 20.6	
KECS	**Kecovo**	**1.85**	**134**	*e*Pn	**Pb**	**12 34 50.0**	**-0.7**
KECS	**Kecovo**	**1.85**	**134**	*e*PN	**Pb**	**12 34 50.0**	**-0.7**
KECS				*e*SN	**Sn**	**12 35 12.9**	**-0.2**
KECS				*e*LG	Lg	12 35 14.6	
GOPC	**GO Pecny, Ondr**	**2.39**	**275**	*e*SG	**Sb**	**12 35 31.2**	**+1.2**
GOPC	**GO Pecny, Ondr**	**2.39**	**275**	Sg	**Sb**	**12 35 31.2**	**+1.2**
BRG	**Berggiesshubel**	**3.10**	**292**	SG	**Sg**	**12 35 56.6**	**+0.9**
	4.2nm,0.7s						
KHC	**Kasperske Hory**	**3.26**	**260**	*e*SG	**Sg**	**12 35 59.0**	**-1.7**
KHC	**Kasperske Hory**	**3.26**	**260**	Sg	**Sg**	**12 35 59.0**	**-1.7**

*ISCJB **26** 12:36:05.4±0.4,39.°08N±0.°02×28.°96E±0.°03,h10km±4km, Error ellipse: s-maj=4.3km s-min=4.1km az=150.6*
*ISK **26** 12:36:05.0,39.°08N×28.°93E,h10km,MD2.5*
*CSEM **26** 12:36:05.6±0.1,39.°08N×28.°96E,h10km,MD2.7,Error ellipse: s-maj=2.1km s-min=1.8km az=79.0*
*DDA **26** 12:36:05.3,39.°07N×28.°99E,h7km,Md2.7*

ISC 26 12:36:05.4±1.0,39.°07N±0.°02×28.°97E±0.°03,h16km±9km, n38,σ0s25/53,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.20**	**261**	P	**Pb**	**12 36 10.8**	**0.0**
DEMI				S	**Sb**	**12 36 14.0**	**-0.4**
DEMI	**Demirci**	**0.20**	**261**	*i* P	**Pb**	**12 36 10.8**	**0.0**
DEMI				*i* S	**Sb**	**12 36 14.0**	**-0.4**
GDZ	**Gediz**	**0.40**	**88**	P	**Pg**	**12 36 13.6**	**+0.1**
GDZ				S	**Sg**	**12 36 18.9**	**-0.1**
GDZ	**Gediz**	**0.40**	**88**	*i* P	**Pg**	**12 36 13.6**	**+0.1**
GDZ				*i* S	**Sg**	**12 36 18.9**	**-0.1**
TVSB	**Tavsanli**	**0.53**	**45**	*e*PG	**Pg**	**12 36 16.2**	**+0.2**
TVSB	**Tavsanli**	**0.53**	**45**	*e*Pg	**Pg**	**12 36 16.2**	**+0.2**
KULA	**Kula-Manisa**	**0.61**	**204**	*e*PG	**Pg**	**12 36 17.3**	**-0.1**
KULA	**Kula-Manisa**	**0.61**	**204**	*e*Pg	**Pg**	**12 36 17.3**	**-0.1**
DURS	**Dursunbey**	**0.65**	**324**	P	**Pb**	**12 36 18.7**	**+0.2**
DURS				S	**Sb**	**12 36 27.5**	**+0.1**
DURS	**Dursunbey**	**0.65**	**324**	*i* P	**Pb**	**12 36 18.7**	**+0.2**
DURS				*i* S	**Sb**	**12 36 27.5**	**+0.1**
MANT	**Manisa**	**0.67**	**209**	P	**Pb**	**12 36 19.1**	**+0.3**
MANT				S	**Sb**	**12 36 27.7**	**-0.2**
MANT	**Manisa**	**0.67**	**209**	*i* P	**Pb**	**12 36 19.1**	**+0.3**
MANT				*i* S	**Sb**	**12 36 27.7**	**-0.2**
KHAL	**Karahalli**	**0.81**	**150**	P	**Pg**	**12 36 21.1**	**-0.1**
KHAL				S	**Sb**	**12 36 32.0**	**0.0**
KHAL	**Karahalli**	**0.81**	**150**	*i* P	**Pg**	**12 36 21.1**	**-0.1**
KHAL				*i* S	**Sb**	**12 36 31.9**	**0.0**
KHL	**Karahalli**	**0.86**	**150**	*e*PG	**Pg**	**12 36 22.5**	**+0.3**
KHL				*e*SG	**Sn**	**12 36 35.4**	**0.0**
KHL	**Karahalli**	**0.86**	**150**	*e*Pg	**Pg**	**12 36 22.5**	**+0.3**
KHL				*e*Sg	**Sn**	**12 36 35.4**	**0.0**
AKS	**Akhisar**	**0.92**	**258**	*e*PG	**Pb**	**12 36 22.9**	**-0.2**
AKS				*e*SG	**Sg**	**12 36 35.4**	**0.0**
AKS	**Akhisar**	**0.92**	**258**	*e*Pg	**Pb**	**12 36 22.9**	**-0.2**
AKS				*e*Sg	**Sg**	**12 36 35.4**	**0.0**
ORLT	**Orhaneli**	**0.97**	**357**	*e*PG	**Pb**	**12 36 23.9**	**0.0**
ORLT	**Orhaneli**	**0.97**	**357**	*e*Pg	**Pb**	**12 36 23.9**	**0.0**
BALB	**Balikesir**	**1.02**	**304**	*e*PG	**Pb**	**12 36 24.4**	**-0.2**
BALB	**Balikesir**	**1.02**	**304**	*e*Pg	**Pb**	**12 36 24.4**	**-0.2**
IGD	**Bursa**	**1.20**	**8**	*i* P	**Pn**	**12 36 27.2**	**-0.3**
IGD				*i* S	**Sb**	**12 36 43.0**	**-0.1**
KCTX	**Karacabey (Bur**	**1.28**	**338**	*e*PN	**Pb**	**12 36 29.2**	**0.0**
MDNY	**Mudanya-Bursa**	**1.29**	**357**	*e*PN	**Pb**	**12 36 29.6**	**+0.2**
CAVI	**Cavuskoy**	**1.31**	**31**	*e*PN	**Pb**	**12 36 30.0**	**+0.3**
IZI	**Iznik**	**1.32**	**17**	*e*PN	**Pb**	**12 36 30.1**	**+0.2**
GEMT	**Gemlik**	**1.37**	**7**	*e*PN	**Pb**	**12 36 30.7**	**0.0**
GEMT	**Gemlik**	**1.37**	**7**	*e*Pn	**Pb**	**12 36 30.7**	**0.0**
GONE	**Gonen-Balikesi**	**1.39**	**315**	*e*PN	**Pb**	**12 36 30.8**	**-0.2**
ADVT	**Abdulvahap**	**1.48**	**23**	*e*PN	**Pb**	**12 36 32.5**	**0.0**
ADVT	**Abdulvahap**	**1.48**	**23**	*e*Pn	**Pb**	**12 36 32.6**	**0.0**
ARMT	**Armutlu**	**1.49**	**357**	*e*PN	**Pb**	**12 36 32.3**	**-0.5**
ARMT	**Armutlu**	**1.49**	**357**	*e*Pn	**Pb**	**12 36 32.3**	**-0.5**
EDC	**Edincik**	**1.53**	**326**	*e*PN	**Pn**	**12 36 32.6**	**+0.5**
EDC	**Edincik**	**1.53**	**326**	*e*Pn	**Pn**	**12 36 32.6**	**+0.5**
GULT	**Gulveren**	**1.80**	**41**	*e*PN	**Pb**	**12 36 37.5**	**-0.6**
GULT	**Gulveren**	**1.80**	**41**	*e*Pn	**Pb**	**12 36 37.5**	**-0.6**

*CSEM **26** 12:36:20.4,39.°09N×29.°02E,h7km,MD2.6*
DDA 26 12:36:20.4,39.°09N×29.°02E,h7km,Md2.6,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**260**	P	Pg	12 36 25.9	+0.8
DEMI				S	Sg	12 36 29.4	+1.1
DEMI	**Demirci**	**0.24**	**260**	*i* P	Pg	12 36 25.9	+0.8
DEMI				*i* S	Sg	12 36 29.4	+1.0
GDZ	**Gediz**	**0.36**	**89**	P	Pg	12 36 28.3	+0.8
GDZ				S	Sg	12 36 32.9	+0.6
GDZ	**Gediz**	**0.36**	**89**	*i* P	Pg	12 36 28.3	+0.9
GDZ				*i* S	Sg	12 36 32.9	+0.6
DURS	**Dursunbey**	**0.67**	**321**	P	Pg	12 36 32.9	-0.3
DURS				S	Sn	12 36 47.4	+0.3
DURS	**Dursunbey**	**0.67**	**321**	*e*P	Pg	12 36 32.9	-0.4
DURS				*i* S	Sn	12 36 47.4	+0.4
MANT	**Manisa**	**0.69**	**211**	P	Pb	12 36 34.8	-0.1
MANT				S	Sg	12 36 43.7	+0.9
MANT	**Manisa**	**0.69**	**211**	*e*P	Pb	12 36 34.8	-0.1
MANT				*i* S	Sg	12 36 43.7	+0.9
KHAL	**Karahalli**	**0.81**	**152**	P	Pb	12 36 36.6	-0.1
KHAL				S	Sb	12 36 47.6	-0.3
KHAL	**Karahalli**	**0.81**	**152**	*i* P	Pb	12 36 36.6	-0.2
KHAL				*i* S	Sb	12 36 47.6	-0.3

*DDA **26** 12:40:17.3,39.°11N×28.°99E,h7km,Md2.8*
*CSEM **26** 12:40:17.8±0.1,39.°11N×28.°98E,h2km,MD2.8,Error ellipse: s-maj=1.6km s-min=1.4km az=85.0*
*ISK **26** 12:40:17.4,39.°10N×28.°95E,h5km,MD2.7*
ISC 26 12:40:17.3±0.9,39.°11N±0.°02×28.°99E±0.°02,h16km±6km, n47,σ0s29/64,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.22**	**253**	P	**Pg**	**12 40 22.6**	**+0.1**
DEMI				S	**Sg**	**12 40 25.8**	**-0.2**
DEMI	**Demirci**	**0.22**	**253**	*i* P	**Pg**	**12 40 22.6**	**+0.1**
DEMI				*i* S	**Sg**	**12 40 25.8**	**-0.2**
GDZ	**Gediz**	**0.38**	**92**	P	**Pg**	**12 40 25.3**	**0.0**
GDZ				S	**Sg**	**12 40 30.7**	**0.0**
GDZ	**Gediz**	**0.38**	**92**	*i* P	**Pg**	**12 40 25.3**	**0.0**
GDZ				*i* S	**Sg**	**12 40 30.7**	**0.0**
TVSB	**Tavsanli**	**0.50**	**47**	*e*PG	**Pg**	**12 40 27.3**	**-0.1

*ISCJB **26** 12:43:43.5±0.4,39.°09N±0.°02×29.°05E±0.°03,h5km±6km, Error ellipse: s-maj=4.5km s-min=3.8km az=14.2*
*DDA **26** 12:43:43.4,39.°11N×29.°06E,h7km,Md2.7*
*CSEM **26** 12:43:43.8±0.1,39.°09N×29.°05E,h5km,MD2.7,Error ellipse: s-maj=1.8km s-min=1.4km az=100.0*
*ISK **26** 12:43:43.1,39.°09N×29.°07E,h6km,MD2.6*
ISC 26 12:43:43.6±0.9,39.°09N±0.°02×29.°06E±0.°02,h15km±7km, n37,σ0§43/55,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**259**	P	**Pg**	**12 43 49.5**	**+0.1**
DEMI				S	**Sg**	**12 43 53.4**	**0.0**
DEMI	**Demirci**	**0.27**	**259**	*i* P	**Pg**	**12 43 49.5**	**+0.1**
DEMI				*i* S	**Sg**	**12 43 53.4**	**0.0**
GDZ	**Gediz**	**0.33**	**91**	P	**Pg**	**12 43 50.6**	**+0.1**
GDZ				S	**Sg**	**12 43 55.4**	**+0.2**
GDZ	**Gediz**	**0.33**	**91**	*i* P	**Pg**	**12 43 50.6**	**+0.1**
GDZ				*i* S	**Sg**	**12 43 55.4**	**+0.2**
TVSB	**Tavsanli**	**0.47**	**41**	PG	**Pg**	**12 43 52.9**	**-0.2**
TVSB				*e*SG	**Sg**	**12 43 59.5**	**+0.1**
TVSB	**Tavsanli**	**0.47**	**41**	*i* Pg	**Pg**	**12 43 52.9**	**-0.2**
TVSB				*e*Sg	**Sg**	**12 43 59.6**	**+0.1**
KULA	**Kula-Manisa**	**0.66**	**208**	*e*PG	**Pg**	**12 43 56.2**	**-0.2**
KULA				*e*SG	**Sg**	**12 44 05.0**	**-0.1**
KULA	**Kula-Manisa**	**0.66**	**208**	*e*Pg	**Pg**	**12 43 56.2**	**-0.2**
KULA				*e*Sg	**Sg**	**12 44 05.0**	**-0.1**
DURS	**Dursunbey**	**0.68**	**318**	P	**Pb**	**12 43 57.0**	**-0.2**
DURS	**Dursunbey**	**0.68**	**318**	*i* P	**Pb**	**12 43 57.0**	**-0.2**
DURS				*i* S	**Sn**	**12 44 10.6**	**+1.5**
MANT	**Manisa**	**0.72**	**213**	P	**Pg**	**12 43 57.5**	**-0.1**
MANT				S	**Sg**	**12 44 07.0**	**-0.1**
MANT	**Manisa**	**0.72**	**213**	*i* P	**Pg**	**12 43 57.5**	**-0.1**
MANT				*i* S	**Sg**	**12 44 07.0**	**-0.1**
KHAL	**Karahalli**	**0.80**	**155**	P	**Pn**	**12 44 00.0**	**-0.3**
KHAL				S	**Sb**	**12 44 10.2**	**+0.4**
KHAL	**Karahalli**	**0.80**	**155**	*i* P	**Pn**	**12 44 00.0**	**-0.3**
KHAL				*i* S	**Sb**	**12 44 10.2**	**+0.4**
KHL	**Karahalli**	**0.85**	**154**	*e*PG	**Pb**	**12 43 59.8**	**-0.3**
KHL				*e*SG	**Sg**	**12 44 11.9**	**+0.6**
KHL	**Karahalli**	**0.85**	**154**	*e*Pg	**Pb**	**12 43 59.8**	**-0.3**
KHL				*e*Sg	**Sg**	**12 44 11.9**	**+0.6**
ORLT	**Orhaneli**	**0.96**	**353**	*e*PG	**Pg**	**12 44 02.1**	**-0.1**
ORLT				*e*SG	**Sn**	**12 44 16.0**	**0.0**
ORLT	**Orhaneli**	**0.96**	**353**	*e*Pg	**Pg**	**12 44 02.1**	**-0.1**
ORLT				*e*Sg	**Sn**	**12 44 16.0**	**0.0**
AKS	**Akhisar**	**0.99**	**258**	*e*PG	**Pg**	**12 44 02.6**	**-0.2**
AKS	**Akhisar**	**0.99**	**258**	*e*Pg	**Pg**	**12 44 02.6**	**-0.2**
BALB	**Balikesir**	**1.06**	**301**	*e*PG	**Pg**	**12 44 04.1**	**0.0**
BALB	**Balikesir**	**1.06**	**301**	*e*Pg	**Pg**	**12 44 04.1**	**0.0**
IGD	**Bursa**	**1.18**	**5**	*i* P	**Pb**	**12 44 05.6**	**0.0**
IGD				*i* S	**Sn**	**12 44 21.2**	**0.0**
CAVI	**Cavuskoy**	**1.26**	**28**	*e*PN	**Pg**	**12 44 07.7**	**-0.2**
CAVI	**Cavuskoy**	**1.26**	**28**	*e*Pn	**Pg**	**12 44 07.7**	**-0.2**
IZI	**Iznik**	**1.28**	**14**	*e*PN	**Pg**	**12 44 08.1**	**-0.2**
IZI	**Iznik**	**1.28**	**14**	*e*Pn	**Pg**	**12 44 08.1**	**-0.2**
KCTX	**Karacabey (Bur**	**1.29**	**335**	*e*PN	**Pg**	**12 44 08.4**	**0.0**
KCTX	**Karacabey (Bur**	**1.29**	**335**	*e*Pn	**Pg**	**12 44 08.4**	**0.0**
ADVT	**Abdulvahap**	**1.44**	**21**	*e*PN	**Pb**	**12 44 10.4**	**+0.4**
ADVT	**Abdulvahap**	**1.44**	**21**	*e*Pn	**Pb**	**12 44 10.5**	**+0.4**
ARMT	**Armutlu**	**1.48**	**354**	*e*PN	**Pb**	**12 44 11.2**	**+0.4**
ARMT	**Armutlu**	**1.48**	**354**	*e*Pn	**Pb**	**12 44 11.2**	**+0.4**
GULT	**Gulveren**	**1.75**	**40**	*e*PN	**Pb**	**12 44 15.2**	**-0.2**
GULT	**Gulveren**	**1.75**	**40**	*e*Pn	**Pb**	**12 44 15.2**	**-0.2**
SILT	**Sile**	**2.11**	**12**	*e*PN	**Pb**	**12 44 20.0**	**-1.4**
SILT	**Sile**	**2.11**	**12**	*e*Pn	**Pb**	**12 44 20.0**	**-1.4**

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*ISCJB **26** 12:52:01.6±0.5,6.°31N±0.°04×73.°55W±0.°04,h130km±5km, mb3.3/1,Error ellipse: s-maj=8.6km s-min=4.2km az=42.1*
*FUNV **26** 12:52:01.6,6.°11N×73.°50W,h14km,MW2.9*
*RSNC **26** 12:52:03.7±0.6,6.°31N×73.°59W,h113km±4km,ML3.0*
*IDC **26** 12:52:04.4±6.2,6.°20N×75.°39W,h117km±75km,mb3.1/1, mb1 3.5/1,mb1mx3.0/32,mbtmp3.5/1,Error ellipse: s-maj=171.1km s-min=34.2km az=81.0*
ISC 26 12:52:02.0±0.9,6.°31N±0.°04×73.°56W±0.°05,h126km±6km, n29,σ1§14/43,1C-1D,Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BARC	**Barichara**	**0.47**	**53**	*i* P	**Pn**	**12 52 21.0**	**+0.3**
BARC				*e*S	**Sn**	**12 52 33.8**	**-1.1**
BARC				*i*		12 52 35.7	
	comp=Z,471nm,0.2s						
RUSC	**La Rusia**	**0.63**	**131**	⇓*i*P	**Pn**	**12 52 22.3**	**+0.3**
RUSC				*i*		12 52 23.0	
	comp=Z,140nm,0.3s						
RUSC				*e*S	**Sn**	**12 52 36.2**	**-0.9**
BTLC	**Betulia, Santa**	**0.67**	**25**	*i* P	**Pn**	**12 52 22.4**	**+0.3**
BRRC	**Barranca, Sant**	**0.81**	**349**	*e*P	**Pn**	**12 52 22.6**	**-0.3**
BRRC				*e*S	**Sn**	**12 52 37.8**	**-0.9**
BRRC				*i*		12 52 43.6	
	comp=Z,132nm,0.1s						
GIRC	**Giron, Santand**	**0.85**	**25**	*e*P	**Pn**	**12 52 23.8**	**+0.4**
PAMC	**Pamplona, Colo**	**1.33**	**40**	*e*P	**Pn**	**12 52 29.0**	**+0.5**
PAMC				*e*S	**Sn**	**12 52 48.5**	**-0.1**
NORC	**Norcasia**	**1.50**	**240**	*e*P	**Pn**	**12 52 29.7**	**-0.2**
NORC				*e*S	**Sn**	**12 52 50.1**	**-1.0**
GRMC	**Gramalote, San**	**1.59**	**28**	*e*P	**Pn**	**12 52 33.0**	**+2.0**
GRMC				*e*S	**Sn**	**12 52 56.4**	**+3.3**
GRMC				*i*		12 53 00.6	
	comp=Z,92nm,0.4s						
CBRI	**Barrientos, No**	**1.59**	**28**	*e*P	**Pn**	**12 52 31.9**	**+0.9**
ROSC	**El Rosal**	**1.64**	**207**	P	**Pn**	**12 52 34.5**	**+2.6**
	comp=Z,12nm,0.3s,baz=119,slow=13,SNR=15						
ROSC				S	**Sn**	**12 52 57.6**	**+3.0**
	comp=Z,9.4nm,0.3s,baz=186,slow=14,SNR=6.6						
ROSC	**El Rosal**	**1.64**	**207**	*e*P	**Pn**	**12 52 31.7**	**-0.2**
ROSC				*e*S	**Sn**	**12 52 55.3**	**+0.6**
ROSC				*i*		12 53 03.6	
	comp=Z,125nm,0.2s						
OCAC	**Ocana**	**1.93**	**7**	*e*P	**Pn**	**12 52 35.2**	**+0.1**
OCAC				*e*S	**Sn**	**12 53 00.3**	**-0.1**
OCAC				*i*		12 53 08.2	
	comp=Z,90nm,0.3s						
HELC	**Santa Helena**	**1.96**	**267**	*e*P	**Pn**	**12 52 35.7**	**0.0**
HELC				*e*S	**Sn**	**12 53 01.4**	**+0.1**
HELC				*i*		12 53 05.8	
	comp=Z,89nm,0.5s						
CAPV	**Capacho**	**1.98**	**39**⇑	*e*P	**Pn**	**12 52 36.8**	**+1.1**
CAPV				*e*S	**Sn**	**12 53 02.0**	**+0.5**
TOLC	**Tolima**	**2.45**	**226**	*e*P	**Pn**	**12 52 42.3**	**+0.6**
DBBC	**Dabeiba**	**2.73**	**285**	*e*P	**Pn**	**12 52 45.6**	**+0.6**
PRAC	**Prado**	**2.90**	**207**	*e*P	**Pn**	**12 52 48.1**	**+0.9**
PRAC				*e*S	**Sn**	**12 53 22.9**	**+0.8**
SOCV	**Socops**	**3.32**	**54**	*e*P	**Pn**	**12 52 52.9**	**+0.1**
SOCV				*e*S	**Sn**	**12 53 30.6**	**-1.4**
VIGV	**El Vigia**	**3.33**	**41**	*e*P	**Pn**	**12 52 53.8**	**+1.0**
VIGV				*e*S	**Sn**	**12 53 32.6**	**+0.6**
ELOV	**Elorza**	**4.11**	**80**	*e*P	**Pn**	**12 53 02.9**	**-0.2**
VIRV	**Villa del Rosa**	**4.32**	**15**	*e*S	**Sn**	**12 53 56.4**	**+0.8**
QARV	**Quebrada Arrib**	**4.90**	**38**	*e*P	**Pn**	**12 53 15.4**	**+1.7**
CURV	**Curarigua**	**5.12**	**44**	*e*P	**Pn**	**12 53 17.1**	**+0.4**
SIQV	**Siquisique**	**5.69**	**40**	*e*P	**Pn**	**12 53 24.6**	**+0.2**
BAUV	**El Baul**	**6.06**	**64**	*e*P	**Pn**	**12 53 28.6**	**-0.7**
CUPV	**Cœpira**	**8.55**	**64**	*e*P	**Pn**	**12 54 03.0**	**+0.1**
YKA	**Yellowknife Ar**	**63.59**	**340**	P	**P**	**13 02 19.1**	**+0.1**
	comp=Z,0.2nm,0.4s,baz=135,slow=6.5,SNR=10.0						
ASAR	**Alice Springs**	**148.46**	**234**	PKPbc	**PKPbc**	**13 11 33.2**	**-1.5**
	comp=Z,0.3nm,0.7s,baz=117,slow=2.6,SNR=3.2						
WRA	**Warramunga Arr**	**149.71**	**241**	PKPbc	**PKPbc**	**13 11 36.8**	**-1.1**
	comp=Z,0.2nm,0.4s,baz=109,slow=2.8,SNR=6.8						

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*IDC **26** 12:56:16.6±0.5,37.°95N×21.°13E,h0km,mb4.5/32, mb1 4.5/45,mb1mx4.5/59,mbtmp4.4/45,ML4.2/12, MS3.9/34,Ms1 3.9/34,ms1mx3.8/58,Error ellipse: s-maj=10.9km s-min=9.5km az=33.0*
*NEIC **26** 12:56:18.4,37.°92N×21.°16E,h15km,mb4.8/58, ML4.5(ATH),ML4.7(THE),After ATH.*
NEIC Felt [III] at Zakynthos. Also felt at Naxos, Patrai and Pelopion.
*ISCJB **26** 12:56:18.1±0.3,37.°94N±0.°01×21.°04E±0.°01,h15km±2km, mb4.7/126,MS3.9/36,Error ellipse: s-maj=2.1km s-min=1.6km az=31.6*
*THE **26** 12:56:18.6,37.°93N×21.°16E,h0km±1km,ML4.7/18,Error ellipse: s-maj=1.0km s-min=0.3km az=181.0*
*CSEM **26** 12:56:18.2±0.1,37.°93N×21.°11E,h5km,mb4.7/78,Mw4.3, Error ellipse: s-maj=2.4km s-min=1.8km az=28.0*
*ATH **26** 12:56:18.3,37.°94N×21.°16E,h17km,ML4.5/25,Error ellipse: s-maj=0.8km s-min=0.6km az=229.0*
*PDG **26** 12:56:18.7±0.3,38.°05N×21.°15E,h10km±1km,MD4.8/2, ML4.7/13,Error ellipse: s-maj=1.8km s-min=0.8km az=90.0*
*MOS **26** 12:56:20.5±1.5,37.°95N×21.°04E,h34km,mb4.9/53,Error ellipse: s-maj=5.3km s-min=3.1km az=78.2*
*HLW **26** 12:56:21.6,38.°08N×22.°01E,h33km±20km,Ml4.1*
ISC 26 12:56:18.8±0.6,37.°92N±0.°01×21.°09E±0.°02,h10km±3km, n948,σ1§62/1079,mb4.8/126,MS4.0/36,42C-22D, Southern Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VTN	**Vitineika**	**0.07**	**93**	P	**Pg**	**12 56 21.0**	**0.0**
VTN				S	**Sg**	**12 56 22.3**	**-0.3**
VTN	**Vitineika**	**0.07**	**93**	P	**Pg**	**12 56 21.0**	**0.0**
VTN				S	**Sg**	**12 56 22.3**	**-0.3**
KFL	**Anninata**	**0.31**	**308**	P	**Pg**	**12 56 25.2**	**+0.2**
KFL				S	**Sb**	**12 56 30.6**	**-0.9**
KFL	**Anninata**	**0.31**	**308**	P	**Pg**	**12 56 25.2**	**+0.2**
KFL				S	**Sb**	**12 56 30.6**	**-0.9**
KFL	**Anninata**	**0.31**	**308**	P	**Pb**	**12 56 25.8**	**-0.6**
KFL				S	**Sb**	**12 56 30.3**	**-1.2**
RLS	**Riolos of Patr**	**0.33**	**65**	P	**Pg**	**12 56 24.0**	**-1.3**
RLS				S	**Sg**	**12 56 27.9**	**-1.7**
RLS	**Riolos of Patr**	**0.33**	**65**	P	**Pg**	**12 56 24.0**	**-1.3**
RLS				S	**Sg**	**12 56 29.0**	**-0.6**
RLS	**Riolos of Patr**	**0.33**	**65**	S	**Sg**	**12 56 29.7**	**+0.1**
RLS				AML	AML	12 56 30.6	
RLS				AML	AML	12 56 34.3	
RLS	**Riolos of Patr**	**0.33**	**65**	P	**Pg**	**12 56 24.0**	**-1.3**
RLS				S	**Sg**	**12 56 27.9**	**-1.7**
ZKS	**Zakynthos**	**0.33**	**228**	P	**Pb**	**12 56 25.7**	**-1.1**
ZKS				S	**Sb**	**12 56 31.2**	**-1.0**
ZKS	**Zakynthos**	**0.33**	**228**	P	**Pb**	**12 56 25.7**	**-1.1**
ZKS				S	**Sb**	**12 56 31.2**	**-1.0**
ZKS	**Zakynthos**	**0.33**	**228**	P	**Pb**	**12 56 26.6**	**-0.2**
ZKS				S	**Sb**	**12 56 32.8**	**+0.6**
ZKS				AML	AML	12 56 39.3	
ZKS				AML	AML	12 56 40.1	
AXS	**Araxos**	**0.35**	**39**	P	**Pg**	**12 56 24.6**	**-1.2**
AXS				S	**Sg**	**12 56 29.5**	**-1.1**
AXS	**Araxos**	**0.35**	**39**	P	**Pg**	**12 56 24.7**	**-1.2**
AXS				S	**Sg**	**12 56 29.5**	**-1.1**
AXS	**Araxos**	**0.35**	**39**	P	**Pg**	**12 56 24.6**	**-1.2**
AXS				S	**Sg**	**12 56 29.0**	**-1.5**
VLS	**Valsamata**	**0.47**	**303**	P	**Pg**	**12 56 27.9**	**-0.1**
VLS				S	**Sb**	**12 56 36.0**	**-0.3**
VLS	**Valsamata**	**0.47**	**303**	P	**Pg**	**12 56 27.6**	**-0.4**
VLS				S	**Sb**	**12 56 35.6**	**-0.7**
VLS	**Valsamata**	**0.47**	**303**	P	**Pg**	**12 56 27.6**	**-0.4**
VLS				S	**Sb**	**12 56 35.6**	**-0.7**
VLS	**Valsamata**	**0.47**	**303**	P	**Pg**	**12 56 27.6**	**-0.4**
VLS				S	**Sb**	**12 56 35.6**	**-0.7**
DRO	**Drossia**	**0.49**	**86**	P	**Pg**	**12 56 26.8**	**-1.5**
DRO				S	**Sg**	**12 56 33.3**	**-1.5**
DRO	**Drossia**	**0.49**	**86**	P	**Pg**	**12 56 26.9**	**-1.4**
DRO				S	**Sg**	**12 56 33.8**	**-1.0**
DRO	**Drossia**	**0.49**	**86**	P	**Pg**	**12 56 26.6**	**-1.7**
DRO				S	**Sg**	**12 56 33.8**	**-1.0**
DRO				AML	AML	12 56 36.5	
DRO				AML	AML	12 56 37.0	
AMT	**Artemida-Makis**	**0.62**	**128**	P	**Pg**	**12 56 30.1**	**-0.8**
AMT				S	**Sg**	**12 56 38.7**	**-0.4**
AMT	**Artemida-Makis**	**0.62**	**128**	P	**Pg**	**12 56 30.2**	**-0.7**
AMT				S	**Sg**	**12 56 38.7**	**-0.4**
AMT	**Artemida-Makis**	**0.62**	**128**	P	**Pg**	**12 56 30.7**	**-0.2**
AMT				S	**Sg**	**12 56 39.2**	**+0.1**
AMT				AML	AML	12 56 43.6	
AMT				AML	AML	12 56 55.4	
	comp=N,98510μm,0.6s						
UPR	**University Cam**	**0.66**	**56**	P	**Pg**	**12 56 30.5**	**-1.0**
UPR	**University Cam**	**0.66**	**56**	P	**Pg**	**12 56 30.5**	**-1.0**
UPR				S	**Sg**	**12 56 38.8**	**-1.3**
UPR	**University Cam**	**0.66**	**56**	P	**Pb**	**12 56 32.2**	**-0.1**
PDO	**Prodromos**	**0.68**	**6**	P	**Pg**	**12 56 31.2**	**-0.8**
PDO				S	**Sg**	**12 56 40.8**	**-0.1**
PDO	**Prodromos**	**0.68**	**6**	P	**Pg**	**12 56 31.2**	**-0.8**
PDO				S	**Sg**	**12 56 40.8**	**-0.1**
PDO	**Prodromos**	**0.68**	**6**	P	**Pg**	**12 56 31.7**	**-0.3**
PDO				S	**Sg**	**12 56 41.0**	**+0.1**
PDO				AML	AML	12 56 47.0	
PDO				AML	AML	12 56 49.1	
LAKA	**Lakka**	**0.77**	**65**	P	**Pg**	**12 56 31.7**	**-1.9**
LAKA	**Lakka**	**0.77**	**65**	P	**Pg**	**12 56 31.7**	**-1.9**
LAKA				S	**Sg**	**12 56 42.9**	**-0.8**
LAKA	**Lakka**	**0.77**	**65**	P	**Pg**	**12 56 31.5**	**-2.1**
PVO	**Paravola**	**0.77**	**26**	P	**Pg**	**12 56 32.6**	**-1.1**
PVO				S	**Sg**	**12 56 43.0**	**-0.9**
PVO	**Paravola**	**0.77**	**26**	P	**Pg**	**12 56 32.8**	**-0.9**
PVO				S	**Sg**	**12 56 42.9**	**-0.9**
PVO	**Paravola**	**0.77**	**26**	P	**Pg**	**12 56 33.9**	**+0.2**
EFP	**Efpalio**	**0.82**	**51**	P	**Pg**	**12 56 32.8**	**-1.7**
EFP	**Efpalio**	**0.82**	**51**	P	**Pg**	**12 56 33.0**	**-1.5**
EFP				S	**Sg**	**12 56 44.9**	**-0.3**
EFP	**Efpalio**	**0.82**	**51**	P	**Pg**	**12 56 33.0**	**-1.5**
EFP				S	**Sg**	**12 56 44.9**	**-0.3**
EFP				AML	AML	12 56 53.5	
	comp=N,95412μm,0.6s						
EFP				AML	AML	12 56 58.4	
	comp=E,83027μm,0.5s						
KLV	**Kalavryta, Ach**	**0.84**	**81**	P	**Pg**	**12 56 33.2**	**-1.9**
KLV	**Kalavryta, Ach**	**0.84**	**81**	P	**Pg**	**12 56 33.2**	**-1.9**
KLV				S	**Sg**	**12 56 44.5**	**-1.6**
KLV	**Kalavryta, Ach**	**0.84**	**81**	P	**Pg**	**12 56 32.9**	**-2.2**
KLV				S	**Sg**	**12 56 44.5**	**-1.6**
KLV				AML	AML	12 56 51.6	
	comp=N,36403μm,0.6s						
KLV				AML	AML	12 56 53.5	
	comp=E,37512μm,0.7s						
KLV	**Kalavryta, Ach**	**0.84**	**81**	P	**Pg**	**12 56 32.8**	**-2.3**
SERG	**Sergoula**	**0.91**	**57**	P	**Pg**	**12 56 34.2**	**-2.0**
SERG	**Sergoula**	**0.91**	**57**	P	**Pg**	**12 56 34.2**	**-2.0**
SERG				S	**Sg**	**12 56 47.1**	**-0.9**
LKD2	**Lefkada island**	**0.93**	**339**	P	**Pg**	**12 56 35.9**	**-0.9**
LKD2				S	**Sb**	**12 56 50.2**	**+0.7**
LKD2	**Lefkada island**	**0.93**	**339**	P	**Pg**	**12 56 35.9**	**-0.9**
LKD2				S	**Sb**	**12 56 49.5**	**0.0**
LKD2	**Lefkada island**	**0.93**	**339**	P	**Pg**	**12 56 35.2**	**-1.5**
LKD2				S	**Sb**	**12 56 49.9**	**+0.4**
LKD2				AML	AML	12 56 58.6	
LKD2				AML	AML	12 56 59.1	
LKD2	**Lefkada island**	**0.93**	**339**	P	**Pg**	**12 56 35.6**	**-1.2**
LKD2				S	**Sn**	**12 56 51.4**	**-0.1**
ANX	**Ano Chora**	**0.94**	**44**	P	**Pg**	**12 56 35.2**	**-1.6**
ANX				S	**Sg**	**12 56 48.8**	**-0.2**
ANX	**Ano Chora**	**0.94**	**44**	P	**Pg**	**12 56 35.2**	**-1.6**
ANX				S	**Sg**	**12 56 47.9**	**-1.1**
ITM	**Ithomi**	**0.99**	**138**	P	**Pg**	**12 56 36.5**	**-1.4**
ITM				S	**Sb**	**12 56 51.3**	**+0.1**
ITM	**Ithomi**	**0.99**	**138**	P	**Pg**	**12 56 36.5**	**-1.4**
ITM				S	**Sb**	**12 56 51.3**	**+0.1**
ITM	**Ithomi**	**0.99**	**138**	P	**Pg**	**12 56 36.2**	**-1.7**
ITM				S	**Sb**	**12 56 51.8**	**+0.5**
ITM				AML	AML	12 57 06.6	
	comp=N,33671μm,0.9s						
ITM				AML	AML	12 57 07.0	
	comp=E,38822μm,0.8s						
ITM	**Ithomi**	**0.99**	**138**	P	**Pg**	**12 56 36.5**	**-1.4**
ITM				S	**Sb**	**12 56 51.3**	**+0.1**
TRIP	**Tripoli**	**1.01**	**112**	P	**Pg**	**12 56 38.0**	**-0.3**
TRIP				S	**Sg**	**12 56 50.7**	**-0.8**
TRIP	**Tripoli**	**1.01**	**112**	P	**Pg**	**12 56 38.0**	**-0.3**
TRIP				S	**Sg**	**12 56 50.7**	**-0.8**
TRIP				AML	AML	12 57 00.9	
	comp=E,56269μm,0.8s						
TRIP				AML	AML	12 57 06.5	
	comp=N,38245μm,0.6s						
EVR	**Evrytania**	**1.14**	**29**	P	**Pg**	**12 56 38.7**	**-2.1**
EVR				S	**Sg**	**12 56 55.5**	**-0.1**
EVR	**Evrytania**	**1.14**	**29**	P	**Pg**	**12 56 39.2**	**-1.6**
EVR				S	**Sg**	**12 56 55.5**	**-0.1**
EVR	**Evrytania**	**1.14**	**29**	P	**Pg**	**12 56 39.2**	**-1.6**
EVR				S	**Sg**	**12 56 53.7**	**-1.9**
EVR				AML	AML	12 57 07.4	
	comp=N,35666μm,1.0s						
EVR	**Evrytania**	**1.14**	**29**	P	**Pg**	**12 56 38.7**	**-2.1**
EVR				S	**Sg**	**12 56 55.5**	**0.0**
PYL	**PYLOS**	**1.15**	**153**	P	**Pg**	**12 56 39.1**	**-1.7**
PYL				S	**Sb**	**12 56 56.5**	**+0.9**
PYL	**PYLOS**	**1.15**	**153**	P	**Pg**	**12 56 39.1**	**-1.7**
PYL				S	**Sg**	**12 56 55.1**	**-0.6**
PYL	**PYLOS**	**1.15**	**153**	P	**Pg**	**12 56 38.4**	**-2.4**
PYL				S	**Sg**	**12 56 55.5**	**-0.2**
PYL				AML	AML	12 57 10.5	
	comp=E,31301μm,0.6s						
PYL				AML	AML	12 57 16.1	
	comp=N,21217μm,0.8s						
PYL	**PYLOS**	**1.15**	**153**	P	**Pg**	**12 56 39.0**	**-1.7**
PYL				S	**Sb**	**12 56 56.0**	**+0.4**
VLX	**Vlachokerasia**	**1.16**	**118**	P	**Pg**	**12 56 39.8**	**-1.3**
VLX				S	**Sg**	**12 56 55.9**	**-0.2**
VLX	**Vlachokerasia**	**1.16**	**118**	P	**Pg**	**12 56 40.1**	**-1.0**
VLX				S	**Sg**	**12 56 55.9**	**-0.2**
VLX	**Vlachokerasia**	**1.16**	**118**	P	**Pg**	**12 56 40.1**	**-1.0**
VLX				S	**Sg**	**12 56 56.1**	**0.0**
VLX				AML	AML	12 57 05.0	
	comp=N,48917μm,0.9s						
VLX				AML	AML	12 57 18.7	
	comp=E,40438μm,0.6s						
VLX	**Vlachokerasia**	**1.16**	**118**	P	**Pg**	**12 56 39.8**	**-1.3**
VLX				S	**Sg**	**12 56 55.9**	**-0.2**
DSL	**Palaion Diasel**	**1.21**	**0**	P	**Pg**	**12 56 40.2**	**-1.9**
DSL	**Palaion Diasel**	**1.21**	**0**	P	**Pg**	**12 56 40.2**	**-1.9**
DSL				S	**Sb**	**12 56 58.0**	**+0.4**
DSL	**Palaion Diasel**	**1.21**	**0**	P	**Pg**	**12 56 39.6**	**-2.5**
DSL				S	**Sb**	**12 56 58.0**	**+0.4**
DSL				AML	AML	12 57 06.9	
	comp=N,73606μm,0.7s						
DSL				AML	AML	12 57 08.4	
	comp=E,71155μm,0.9s						
DSL	**Palaion Diasel**	**1.21**	**0**	P	**Pg**	**12 56 40.2**	**-1.9**
DSF	**Desfina**	**1.23**	**66**	P	**Pg**	**12 56 40.0**	**-2.5**
DSF				S	**Sg**	**12 56 58.5**	**0.0**
DSF	**Desfina**	**1.23**	**66**	P	**Pg**	**12 56 40.0**	**-2.5**
DSF				S	**Sg**	**12 56 57.3**	**-1.2**
DSF	**Desfina**	**1.23**	**66**	P	**Pg**	**12 56 39.0**	**-3.4**
DSF				S	**Sg**	**12 56 57.3**	**-1.2**
DSF				AML	AML	12 57 04.6	
	comp=N,20766μm,0.5s						
DSF				AML	AML	12 57 08.1	
	comp=E,24235μm,0.4s						
DSF	**Desfina**	**1.23**	**66**	P	**Pg**	**12 56 40.0**	**-2.5**
DSF				S	**Sg**	**12 56 58.5**	**0.0**
AGG	**Agios Georgios**	**1.47**	**41**	P	**Pn**	**12 56 44.9**	**-0.5**
AGG				S	**Sb**	**12 57 05.8**	**+0.8**
AGG	**Agios Georgios**	**1.47**	**41**	*e*P	**Pb**	**12 56 46.2**	**0.0**
AGG	**Agios Georgios**	**1.47**	**41**	P	**Pn**	**12 56 44.9**	**-0.5**
AGG	**Agios Georgios**	**1.47**	**41**	*e*Pn	**Pb**	**12 56 46.2**	**0.0**
AGG				S	**Sn**	**12 57 03.1**	**-1.6**
AGG	**Agios Georgios**	**1.47**	**41**	P	**Pn**	**12 56 44.6**	**-0.8**
AGG				S	**Sn**	**12 57 03.1**	**-1.6**
AGG				AML	AML	12 57 22.0	
	comp=N,60593μm,1.0s						
AGG				AML	AML	12 57 23.8	
	comp=E,52796μm,1.1s						
AGG	**Agios Georgios**	**1.47**	**41**	*e*Pn	**Pb**	**12 56 46.2**	**0.0**
LTK	**Loutraki**	**1.48**	**85**	P	**Pn**	**12 56 44.9**	**-0.7**
LTK	**Loutraki**	**1.48**	**85**	P	**Pn**	**12 56 44.9**	**-0.7**
LTK	**Loutraki**	**1.48**	**85**	P	**Pn**	**12 56 43.7**	**-1.8**
LTK	**Loutraki**	**1.48**	**85**	P	**Pn**	**12 56 44.3**	**-1.3**
LKR	**Lokris**	**1.67**	**63**	P	**Pn**	**12 56 47.9**	**-0.2**
LKR	**Lokris**	**1.67**	**63**	P	**Pn**	**12 56 47.9**	**-0.2**
LKR				S	**Sn**	**12 57 08.9**	**-0.6**
LKR	**Lokris**	**1.67**	**63**	P	**Pn**	**12 56 47.9**	**-0.2**
LKR				S	**Sn**	**12 57 08.9**	**-0.6**
LKR				AML	AML	12 57 22.2	
	comp=N,11238μm,0.6s						
LKR				AML	AML	12 57 36.7	
	comp=E,14127μm,1.0s						
LKR	**Lokris**	**1.67**	**63**	P	**Pn**	**12 56 47.9**	**-0.2**
IGT	**Igoumenitsa**	**1.72**	**340**	P	**Pn**	**12 56 49.2**	**+0.4**
IGT				S	**Sb**	**12 57 12.9**	**+0.8**
IGT	**Igoumenitsa**	**1.72**	**340**	P	**Pn**	**12 56 49.2**	**+0.4**
IGT				S	**Sb**	**12 57 12.9**	**+0.8**
IGT	**Igoumenitsa**	**1.72**	**340

VLY	Voula,Athens	2.14	91	P	Pn	12 56 54.8	+0.2
NEO	Neokhori	2.17	50	P	Pn	12 56 55.0	0.0
NEO	Neokhori	2.17	50	P	Pn	12 56 55.0	0.0
NEO	Neokhori	2.17	50	P	Pn	12 56 56.8	+1.8
NEO	Neokhori	2.17	50	P	Pn	12 56 55.0	0.0
XOR	Xorichti	2.19	48	P	Pn	12 56 55.3	0.0
XOR	Xorichti	2.19	48	P	Pn	12 56 55.3	0.0
XOR	Xorichti	2.19	48	P	Pn	12 56 56.2	+1.0
XOR	Xorichti	2.19	48	P	Pn	12 56 55.3	0.0
PTL	Penteli	2.19	86	P	Pn	12 56 55.2	-0.1
PTL	Penteli	2.19	86	P	Pn	12 56 55.2	-0.1
PTL				S	Sn	12 57 21.8	-0.8
PTL	Penteli	2.19	86	P	Pn	12 56 55.0	-0.4
PTL				S	Sn	12 57 21.8	-0.8
PTL				AML	AML	12 57 27.6	
	comp=E,10778µm,0.7s						
PTL				AML	AML	12 57 34.9	
	comp=N,10047µm,0.8s						
PTL	Penteli	2.19	86	P	Pn	12 56 55.5	+0.2
KYTH	Kithira	2.27	136	P	Pg	12 57 01.7	-0.7
PENT	Pentalofos	2.27	1	P	Pb	12 57 00.2	+0.2
PENT	Pentalofos	2.27	1	P	Pb	12 57 00.2	+0.2
LIT	Litokhoron	2.43	26	P	Pn	12 56 59.4	+0.8
LIT	Litokhoron	2.43	26	P	Pn	12 56 59.4	+0.8
KZN	Kozani	2.44	12	P	Pn	12 56 59.3	+0.5
KZN	Kozani	2.44	12	P	Pn	12 56 59.3	+0.5
KZN	Kozani	2.44	12	P	Pn	12 56 59.1	+0.3
KZN	Kozani	2.44	12	P	Pn	12 56 59.3	+0.5
NEST	Nestorio	2.49	359	P	Pb	12 57 03.0	-0.7
NEST	Nestorio	2.49	359	P	Pb	12 57 03.0	-0.7
AOS	Alonnisos	2.52	59	P	Pn	12 56 59.2	-0.6
AOS	Alonnisos	2.52	59	P	Pn	12 56 59.2	-0.6
AOS				S	Sn	12 57 29.3	-1.2
AOS	Alonnisos	2.52	59	P	Pn	12 56 59.2	-0.6
AOS				S	Sn	12 57 29.3	-1.2
AOS				AML	AML	12 57 43.5	
	comp=N,4852µm,1.7s						
AOS				AML	AML	12 57 53.3	
	comp=E,4548µm,1.2s						
AOS	Alonnisos	2.52	59	P	Pn	12 56 59.2	-0.6
ANKY	Antikythira Is	2.71	139	P	Pn	12 57 02.5	+0.1
ANKY	Antikythira Is	2.71	139	P	Pn	12 57 02.5	+0.1
ANKY	Antikythira Is	2.71	139	P	Pn	12 57 05.1	+2.7
ANKY	Antikythira Is	2.71	139	P	Pn	12 57 02.5	+0.1
PAIG	Paliouri	2.84	44	P	Pn	12 57 04.3	+0.1
PAIG	Paliouri	2.84	44	P	Pn	12 57 04.3	+0.1
PAIG	Paliouri	2.84	44	P	Pn	12 57 04.3	+0.1
PAIG	Paliouri	2.84	44	P	Pn	12 57 04.4	+0.2
PAIG	Paliouri	2.84	44	P	Pn	12 57 04.3	+0.1
FNA	Florina	2.87	4	P	Pn	12 57 05.2	+0.6
FNA	Florina	2.87	4	P	Pn	12 57 05.2	+0.6
FNA	Florina	2.87	4	P	Pn	12 57 05.2	+0.6
FNA	Florina	2.87	4	P	Pn	12 57 06.0	+1.4
FNA	Florina	2.87	4	P	Pn	12 57 05.2	+0.6
MHLO	Agia Marina, M	2.91	114	P	Pn	12 57 04.8	-0.4
MHLO	Agia Marina, M	2.91	114	P	Pn	12 57 04.8	-0.4
MHLO	Agia Marina, M	2.91	114	P	Pn	12 57 07.9	+2.7
PLG	Polygyros	3.06	36	P	Pn	12 57 07.5	+0.3
PLG	Polygyros	3.06	36	P	Pn	12 57 07.5	+0.3
PLG	Polygyros	3.06	36	P	Pn	12 57 07.1	-0.1
PLG	Polygyros	3.06	36	P	Pn	12 57 07.1	-0.1
PLG	Polygyros	3.06	36	P	Pn	12 57 07.5	+0.3
THE	Thessaloniki	3.07	28	P	Pn	12 57 07.8	+0.4
THE	Thessaloniki	3.07	28	P	Pn	12 57 07.8	+0.4
THE	Thessaloniki	3.07	28	P	Pn	12 57 07.8	+0.4
THE	Thessaloniki	3.07	28	P	Pn	12 57 09.1	+1.7
THE	Thessaloniki	3.07	28	P	Pn	12 57 07.8	+0.4
HORT	Hortiatis	3.09	30	P	Pn	12 57 08.1	+0.3
HORT	Hortiatis	3.09	30	P	Pn	12 57 08.1	+0.3
HORT	Hortiatis	3.09	30	P	Pn	12 57 08.4	+0.6
HORT	Hortiatis	3.09	30	P	Pn	12 57 08.1	+0.3
BIA	Bitola	3.10	3	P	Pn	12 57 08.6	+0.8
BIA	Bitola	3.10	3	*i* Pn	Pn	12 57 09.1	+1.3
BIA	Bitola	3.10	3	P	Pn	12 57 08.6	+0.8
BIA	Bitola	3.10	3	*i* Pn	Pn	12 57 09.1	+1.3
BIA	Bitola	3.10	3	P	Pn	12 57 08.6	+0.8
OHR	Ohrid	3.19	356	*i* Pn	Pn	12 57 10.7	+1.6
OHR	Ohrid	3.19	356	*i* Pn	Pn	12 57 10.7	+1.6
GRG	Griva	3.20	18	P	Pn	12 57 09.7	+0.6
GRG	Griva	3.20	18	P	Pn	12 57 09.7	+0.6
GRG	Griva	3.20	18	P	Pn	12 57 09.4	+0.2
GRG	Griva	3.20	18	P	Pn	12 57 09.4	+0.2
GRG	Griva	3.20	18	P	Pn	12 57 09.7	+0.6
OUR	Ouranopolis	3.29	42	P	Pn	12 57 11.0	+0.6
OUR	Ouranopolis	3.29	42	P	Pn	12 57 11.0	+0.6
OUR	Ouranopolis	3.29	42	P	Pn	12 57 11.0	+0.6
OUR	Ouranopolis	3.29	42	P	Pn	12 57 11.4	+1.0
OUR	Ouranopolis	3.29	42	P	Pn	12 57 11.0	+0.6
IMMV	Iera Moni Meta	3.38	136	P	Pn	12 57 12.5	+0.8
IMMV	Iera Moni Meta	3.38	136	P	Pn	12 57 12.4	+0.8
IMMV	Iera Moni Meta	3.38	136	P	Pn	12 57 12.4	+0.8
SOH	Sokhos	3.39	30	P	Pn	12 57 12.0	+0.2
SOH	Sokhos	3.39	30	P	Pn	12 57 12.0	+0.2
SOH	Sokhos	3.39	30	P	Pn	12 57 12.0	+0.2
SOH	Sokhos	3.39	30	P	Pn	12 57 13.3	+1.5
SOH	Sokhos	3.39	30	P	Pn	12 57 12.0	+0.2
KNT	Kendrikon	3.52	23	P	Pn	12 57 15.7	+2.1
KNT	Kendrikon	3.52	23	P	Pn	12 57 15.7	+2.1
VAM	Vamos	3.54	134	P	Pn	12 57 15.8	+2.0
TIR	Tirane	3.55	345 ⇑	*i* P	Pn	12 57 15.3	+1.3
TIR	Tirane	3.55	345	*e*P	Pn	12 57 15.4	+1.4
TIR	Tirane	3.55	345	P	Pn	12 57 15.2	+1.3
TIR	Tirane	3.55	345	P	Pn	12 57 15.2	+1.3
TIR	Tirane	3.55	345	*e*Pn	Pn	12 57 15.4	+1.3
VAY	Valandovo	3.58	18	*i* Pn	Pn	12 57 15.3	+0.9
VAY	Valandovo	3.58	18	*i* Pn	Pn	12 57 15.3	+0.9
TIP	Timpagrande	3.62	292 ⇓	*i* P	Pn	12 57 14.7	-0.3
TIP	Timpagrande	3.62	292	P	Pn	12 57 13.3	-1.7
TIP	Timpagrande	3.62	292	*e*Pn	Pn	12 57 14.8	-0.3
TIP	Timpagrande	3.62	292	P	Pn	12 57 13.3	-1.7
TIP	Timpagrande	3.62	292	*e*Pn	Pn	12 57 14.8	-0.2
APE	Apeiranthos	3.63	102	*e*PN	Pn	12 57 18.4	+3.3
APE	Apeiranthos	3.63	102 ⇓	*i* P	Pn	12 57 17.2	+2.1
APE	Apeiranthos	3.63	102	P	Pn	12 57 15.7	+0.6
APE	Apeiranthos	3.63	102	*c i* P	Pn	12 57 17.9	+2.8
APE	Apeiranthos	3.63	102	P	Pn	12 57 15.7	+0.6
APE	Apeiranthos	3.63	102	*e*Pn	Pn	12 57 18.4	+3.3
APE	Apeiranthos	3.63	102	P	Pn	12 57 16.0	+0.9
APE	Apeiranthos	3.63	102	P	Pn	12 57 15.7	+0.6
THR5	Thira Island,	3.71	113	*e*PN	Pb	12 57 23.9	-0.6
SRS	Serrai	3.73	30	P	Pn	12 57 17.9	+1.4
SRS	Serrai	3.73	30	P	Pn	12 57 17.9	+1.4
CMBO	Columbo, Santo	3.73	111	P	Pn	12 57 19.3	+2.8
CMBO	Columbo, Santo	3.73	111	P	Pn	12 57 19.3	+2.8
LIA	Limnos Island	3.75	57	P	Pn	12 57 16.7	0.0
LIA	Limnos Island	3.75	57	P	Pn	12 57 16.7	0.0
LIA	Limnos Island	3.75	57	P	Pn	12 57 16.7	0.0
SANT	Santorini	3.81	113 ⇑	*i* P	Pn	12 57 21.5	+3.9
SANT	Santorini	3.81	113	*e*Pn	Pn	12 57 18.8	+1.2
SANT	Santorini	3.81	113	P	Pn	12 57 20.7	+3.0
SANT	Santorini	3.81	113	P	Pn	12 57 20.7	+3.0
SANT	Santorini	3.81	113	*e*Pn	Pn	12 57 18.8	+1.2
GVD	Gavdhos	3.91	141	P	Pn	12 57 18.9	0.0
GVD	Gavdhos	3.91	141	P	Pn	12 57 18.9	0.0
GVD	Gavdhos	3.91	141	P	Pn	12 57 17.8	-1.2
GVD	Gavdhos	3.91	141	P	Pn	12 57 18.9	0.0
CHOS	Chios island	3.94	82	*e*PN	Pn	12 57 19.9	+0.5
CHOS	Chios island	3.94	82	P	Pn	12 57 19.6	+0.2
CHOS	Chios island	3.94	82	P	Pn	12 57 19.2	-0.2
CHOS	Chios island	3.94	82	*e*Pn	Pn	12 57 19.9	+0.5
CHOS	Chios island	3.94	82	P	Pn	12 57 19.2	-0.2
CHOS	Chios island	3.94	82	P	Pn	12 57 19.6	+0.2
SIGR	SIGRI	3.95	69	*e*PN	Pn	12 57 20.2	+0.8
SIGR	SIGRI	3.95	69	P	Pn	12 57 19.9	+0.5
SIGR	SIGRI	3.95	69	P	Pn	12 57 19.9	+0.5
SIGR	SIGRI	3.95	69	*e*Pn	Pn	12 57 20.2	+0.8
SIGR	SIGRI	3.95	69	P	Pn	12 57 21.7	+2.3
SIGR	SIGRI	3.95	69	P	Pn	12 57 19.9	+0.5
IDI	Anoyia	4.03	130	Pn	Pn	12 57 21.4	+0.8
	comp=E,4.0nm,0.3s,baz=253,slow=12,SNR=17						
IDI				Sn	Sn	12 58 09.7	+1.8
	comp=E,12nm,0.3s,baz=302,slow=11,SNR=4.9						
IDI	Anoyia	4.03	130 ⇓	*i* P	Pn	12 57 23.5	+2.9
IDI	Anoyia	4.03	130	P	Pn	12 57 20.9	+0.3
IDI	Anoyia	4.03	130	*e*Pn	Pn	12 57 20.2	-0.4
IDI	Anoyia	4.03	130	P	Pn	12 57 20.9	+0.3
IDI				Sn	Sn	12 58 09.7	+1.8
IDI	Anoyia	4.03	130	P	Pn	12 57 21.0	+0.3
IDI	Anoyia	4.03	130	*e*Pn	Pn	12 57 20.2	-0.4
IDI				Sn	Sn	12 58 09.7	+1.8
NVR	Nevrokopi	4.04	31	P	Pn	12 57 20.8	+0.1
NVR	Nevrokopi	4.04	31	P	Pn	12 57 20.5	-0.2
NVR	Nevrokopi	4.04	31	P	Pn	12 57 20.8	+0.1
KAVA	Kavala	4.05	40	P	Pn	12 57 20.9	0.0
KAVA	Kavala	4.05	40	P	Pn	12 57 20.7	-0.2
KAVA	Kavala	4.05	40	P	Pn	12 57 20.7	-0.2
KAVA	Kavala	4.05	40	P	Pn	12 57 20.9	0.0
SKO	Skopje	4.06	4	*i* Pn	Pn	12 57 22.4	+1.4
SKO	Skopje	4.06	4	*i* Pn	Pn	12 57 22.3	+1.4
CEL	Celeste	4.12	276	*e*Pn	Pn	12 57 21.4	-0.4
CEL	Celeste	4.12	276	*e*Pn	Pn	12 57 21.4	-0.4
SIVA	Sivas	4.17	133 ⇑	*i* P	Pn	12 57 25.7	+3.3
SIVA	Sivas	4.17	133	P	Pn	12 57 23.8	+1.4
SIVA	Sivas	4.17	133	P	Pn	12 57 23.8	+1.4
NOCI	Noci	4.24	314	P	Pn	12 57 22.1	-1.3
NOCI	Noci	4.24	314	P	Pn	12 57 22.1	-1.3
PRK	Paraskevi	4.27	70	P	Pn	12 57 26.3	+2.5
PRK	Paraskevi	4.27	70	P	Pn	12 57 26.3	+2.5
ULC	Ulcinj	4.28	341 ⇑	*i* Pn	Pn	12 57 23.6	-0.4
ULC				*e*Sn	Sn	12 58 13.0	-1.0
ULC	Ulcinj	4.28	341 ⇑	*i* Pn	Pn	12 57 23.6	-0.4
ULC				*e*Sn	Sn	12 58 13.0	-1.0
SMTH	Samothraki Isl	4.29	52	P	Pn	12 57 24.7	+0.6
SMTH	Samothraki Isl	4.29	52	P	Pn	12 57 24.7	+0.6
MATE	Matera	4.36	310 ⇑	*i* P	Pn	12 57 25.3	+0.2
MATE	Matera	4.36	310 ⇑	*i* P	Pn	12 57 25.3	+0.2
GADA	Gvkgeada	4.37	57	*e*PN	Pn	12 57 28.2	+2.9
GADA	Gvkgeada	4.37	57	*e*Pn	Pn	12 57 28.2	+2.9
LAST	Lasithi	4.48	127 ⇑	*i* P	Pn	12 57 27.8	+1.0
LAST	Lasithi	4.48	127	P	Pn	12 57 26.3	-0.5
LAST	Lasithi	4.48	127	*e*Pn	Pn	12 57 27.4	+0.6
LAST	Lasithi	4.48	127	P	Pn	12 57 26.3	-0.5
LAST	Lasithi	4.48	127	*e*Pn	Pn	12 57 27.4	+0.6
SG1	Sgolgore (BA)	4.49	312	*i* Pn	Pn	12 57 27.1	+0.1
EZN	Ezine	4.50	63	*e*PN	Pn	12 57 28.8	+1.7
EZN	Ezine	4.50	63	*e*Pn	Pn	12 57 28.8	+1.7
DRME	Dracevica, Mon	4.51	342 ⇓	*i* Pn	Pn	12 57 27.1	0.0
DRME				*e*Sn	Sn	12 58 18.9	-0.7
DRME	Dracevica, Mon	4.51	342 ⇓	*i* Pn	Pn	12 57 27.1	0.0
DRME				*e*Sn	Sn	12 58 18.9	-0.7
SMG	Samos	4.55	91	P	Pn	12 57 28.6	+0.8
SMG	Samos	4.55	91	P	Pn	12 57 28.3	+0.5
SMG	Samos	4.55	91	P	Pn	12 57 28.3	+0.5
SMG	Samos	4.55	91	P	Pn	12 57 28.6	+0.8
BAI	Bari	4.55	316	*e*Pn	Pn	12 57 28.7	+1.0
CUC	Castrocucco	4.61	298	P	Pn	12 57 29.2	+0.7
CUC	Castrocucco	4.61	298	*e*Pn	Pn	12 57 30.1	+1.6
CUC	Castrocucco	4.61	298	P	Pn	12 57 29.2	+0.7
CUC	Castrocucco	4.61	298	*e*Pn	Pn	12 57 30.1	+1.6
BUM	Brajici-Budva	4.69	340 ⇑	*i* Pn	Pn	12 57 29.5	-0.2
BUM				*e*Sn	Sn	12 58 23.0	-1.2
BUM	Brajici-Budva	4.69	340 ⇑	*i* Pn	Pn	12 57 29.5	-0.2
BUM				*e*Sn	Sn	12 58 23.0	-1.2
DKL	Dikili	4.70	74	*e*PN	Pn	12 57 30.7	+0.9
DKL	Dikili	4.70	74	*e*Pn	Pn	12 57 30.7	+0.9
PDG	Podgorica	4.72	343 ⇓	*i* P	Pn	12 57 29.8	-0.2
PDG	Podgorica	4.72	343 ⇓	*i* P	Pn	12 57 29.8	-0.2
PDG	Podgorica	4.72	343 ⇑	*i* Pn	Pn	12 57 30.3	+0.3
PDG				*e*Sn	Sn	12 58 23.9	-0.9
TTG	Podgorica	4.72	343 ⇑	*i* Pn	Pn	12 57 30.3	+0.3
TTG				*e*Sn	Sn	12 58 23.9	-0.9
PVY	Plav	4.75	350 ⇓	*i* Pn	Pn	12 57 30.1	-0.5
PVY				*e*Sn	Sn	12 58 24.6	-1.1
PVY	Plav	4.75	350 ⇓	*i* Pn	Pn	12 57 30.1	-0.5
PVY				*e*Sn	Sn	12 58 24.6	-1.1
ENEZ	Enez	4.83	53	*e*Pn	Pn	12 57 35.4	+3.9
ENEZ	Enez	4.83	53	*e*Pn	Pn	12 57 35.4	+3.9
ALN	Alexandroupoli	4.85	51	*e*PN	Pn	12 57 35.6	+3.8
ALN	Alexandroupoli	4.85	51	P	Pn	12 57 32.0	+0.2
ALN	Alexandroupoli	4.85	51	*e*Pn	Pn	12 57 35.6	+3.8
ALN	Alexandroupoli	4.85	51	P	Pn	12 57 32.0	+0.2
GELI	Tayfur-Gelibol	4.86	58	*e*PN	Pn	12 57 34.3	+2.4
GELI	Tayfur-Gelibol	4.86	58	*e*Pn	Pn	12 57 34.3	+2.4
CDT	Castel del Mon	4.88	312	*e*Pn	Pn	12 57 32.6	+0.3
CEME	Cevo	4.91	341 ⇑	*i* Pn	Pn	12 57 31.8	-0.9
CEME				*e*Sn	Sn	12 58 28.9	-0.7
CEME	Cevo	4.91	341 ⇑	*i* Pn	Pn	12 57 31.8	-0.9
CEME				*e*Sn	Sn	12 58 28.9	-0.7
BARS	Barje	4.92	6 ⇑	*i* Pn	Pn	12 57 32.6	-0.2
HCY	Herceg Novi	4.94	337 ⇑	*i* Pn	Pn	12 57 32.3	-0.8
HCY				*e*Sn	Sn	12 58 29.0	-1.3
HCY	Herceg Novi	4.94	337 ⇑	*i* Pn	Pn	12 57 32.3	-0.8
HCY				*e*Sn	Sn	12 58 29.0	-1.3
ZKR	Zakros	4.99	123	P	Pn	12 57 35.1	+1.4
ZKR	Zakros	4.99	123	P	Pn	12 57 34.9	+1.2
ZKR	Zakros	4.99	123	P	Pn	12 57 34.9	+1.2
ZKR	Zakros	4.99	123	P	Pn	12 57 35.1	+1.4
BODT	Bodrum	5.02	98	*e*PN	Pn	12 57 37.0	+2.8
BODT	Bodrum	5.02	98	P	Pn	12 57 35.1	+0.9
BODT	Bodrum	5.02	98	P	Pn	12 57 35.1	+0.9
BODT	Bodrum	5.02	98	*e*Pn	Pn	12 57 37.0	+2.8
BODT	Bodrum	5.02	98	P	Pn	12 57 35.1	+0.9
ERIK	Erikli-Kesan	5.02	55	PN	Pn	12 57 36.7	+2.5
ERIK	Erikli-Kesan	5.02	55	*i* Pn	Pn	12 57 36.7	+2.5
NIS1	Nisyros Isl.	5.03	103	*e*PN	Pn	12 57 38.2	+3.9
NIS1	Nisyros Isl.	5.03	103	*e*Pn	Pn	12 57 38.2	+3.9
BEY	Berane	5.03	350 ⇑	*i* Pn	Pn	12 57 34.5	+0.1
BEY				*e*Sn	Sn	12 58 31.4	-1.2
IVA	Berane	5.03	350 ⇑	*i* Pn	Pn	12 57 34.5	+0.1
IVA				*e*Sn	Sn	12 58 31.4	-1.2
LPK	Lapseki	5.04	59	*e*PN	Pn	12 57 37.2	+2.8
LPK	Lapseki	5.04	59	*e*Pn	Pn	12 57 37.2	+2.8
NKME	Niksic	5.11	342 ⇓	*i* Pn	Pn	12 57 34.6	-0.8
NKME				*e*Sn	Sn	12 58 33.3	-1.2
NKME	Niksic	5.11	342 ⇓	*i* Pn	Pn	12 57 34.6	-0.8
NKME				*e*Sn	Sn	12 58 33.3	-1.2
NKY	Niksic	5.14	342 ⇓	*i* Pn	Pn	12 57 35.5	-0.5
NKY				*e*Sn	Sn	12 58 34.1	-1.3
NKY	Niksic	5.14	342 ⇓	*i* Pn	Pn	12 57 35.5	-0.5
NKY				*e*Sn	Sn	12 58 34.1	-1.3
TREB	Trebinje	5.23	337	*e*Pn	Pn	12 57 35.7	-1.3
VAE	Valguarnera	5.32	267	Pn	Pn	12 57 37.8	-0.5
	baz=106,slow=2.7,SNR=7.1						
VAE				Sn	Sn	12 58 41.7	+2.1
	comp=E,6.2nm,0.3s,baz=178,slow=4.4,SNR=4.5						
BRY	Bratogost	5.34	339 ⇑	*i* Pn	Pn	12 57 37.9	-0.8
BRY				*e*Sn	Sn	12 58 38.9	-1.5
BRY	Bratogost	5.34	339 ⇑	*i* Pn	Pn	12 57 37.9	-0.8
BRY				*e*Sn	Sn	12 58 38.9	-1.5
AKS	Akhisar	5.37	78	*e*PN	Pn	12 57 39.4	+0.5
AKS	Akhisar	5.37	78	*e*Pn	Pn	12 57 39.4	+0.5
AYDB	Zeytinkoy-Aydi	5.37	88	*e*PN	Pn	12 57 40.4	+1.3
AYDB	Zeytinkoy-Aydi	5.37	88	*e*Pn	Pn	12 57 40.4	+1.3
KARP	Karpathos	5.42	114	P	Pn	12 57 40.5	+0.8
KARP	Karpathos	5.42	114	P	Pn	12 57 39.3	-0.4
KARP	Karpathos	5.42	114	P	Pn	12 57 39.3	-0.4
KARP	Karpathos	5.42	114	*e*Pn	Pn	12 57 42.8	+3.2
RKY	Sarkoy-Tekirda	5.47	58	*e*PN	Pn	12 57 43.1	+2.7
UPM	Unac-Piva	5.53	343 ⇓	*i* Pn	Pn	12 57 41.6	+0.2
UPM				*e*Sn	Sn	12 58 43.4	-1.8
UPM	Unac-Piva	5.53	343 ⇓	*i* Pn	Pn	12 57 41.6	+0.2
UPM				*e*Sn	Sn	12 58 43.4	-1.8
PLE	Pljevlja	5.56	347 ⇑	*i* Pn	Pn	12 57 41.9	+0.2
PLE				*e*Sn	Sn	12 58 44.0	-1.6
PLE	Pljevlja	5.56	347 ⇑	*i* Pn	Pn	12 57 41.9	+0.2
PLE				*e*Sn	Sn	12 58 44.0	-1.6
GONE	Gonen-Balikesi	5.56	66	*e*PN	Pn	12 57 42.8	+1.3
BALB	Balikesir	5.57	70	*e*PN	Pn	12 57 43.4	+1.6
WDD	Wied Dalam	5.65	251	*e*Pn	Pn	12 57 42.7	-0.1
WDD	Wied Dalam	5.65	251	*e*Pn	Pn	12 57 42.7	-0.1
MRMT	Marmara Adasi	5.71	60	*e*PN	Pn	12 57 46.6	+2.9
YER	Yerkesik	5.77	96	*e*PN	Pn	12 57 47.7	+3.2
EDC	Edincik	5.79	63	*e*PN	Pn	12 57 46.1	+1.3
TKR	Tekirdag	5.85	56	*e*PN	Pn	12 57 48.7	+3.1
KULA	Kula-Manisa	5.99	82	PN	Pn	12 57 48.9	+1.4
BBLS	Lazići	6.08	348	*e*Pn	Pn	12 57 48.2	-0.5
KCTX	Karacabey (Bur	6.12	65	*e*PN	Pn	12 57 50.8	+1.6
DALY	Dalyan (Mu`la	6.12	98	*e*PN	Pn	12 57 53.2	+3.9
DIVS	Divibare	6.23	353	*e*Pn	Pn	12 57 49.7	-1.1
DENT	Denizli	6.29	89	*e*PN	Pn	12 57 53.7	+2.1
LTBQ	Tobruq	6.29	158	*i* P	Pn	12 57 51.7	0.0
	SNR=23						
HAPS	Han Pljesak,Bl	6.37	346	*e*Pn	Pn	12 57 50.8	-2.0
FETY	Fethiye	6.50	99	*e*PN	Pn	12 57 58.5	+4.0
ARMT	Armutlu	6.58	64	*e*PN	Pn	12 57 57.4	+1.8
KHL	Karahalli	6.66	84	*e*PN	Pn	12 57 58.7	+1.9
TVSB	Tavsanli	6.72	74	*e*PN	Pn	12 57 59.0	+1.4
GLHS	Gihisar (BURDU	6.72	94	*e*PN	Pn	12 57 50.1	-7.6
TEKS	Tekeris	6.73	350	*e*Pn	Pn	12 57 56.5	-1.1
MDVR	Moldovita	6.87	4 ⇑	*i* P	Pn	12 57 58.1	-1.5
SLUM	Salum	7.25	151	P	Pn	12 58 03.1	-1.7
	baz=157						
SLUM				AMP		12 59 00.0	
	comp=E,150µm,0.6s,logA/T=5.4,baz=157						
SLUM				S	Sn	12 59 17.6	-10
	baz=157						
SLUM	Salum	7.25	151	P	Pn	12 58 03.2	-1.7
AQU	L'Aquila	7.37	309	*e*P	Pn	12 58 08.0	+1.5
AQU	L'Aquila	7.37	309	*e*P	Pn	12 58 08.0	+1.5
AQU	L'Aquila	7.37	309	*e*Pn	Pn	12 58 08.0	+1.5
BLY	Banja Luka	7.43	338 ⇑	*i* P	Pn	12 58 06.5	-0.7
BLY	Banja Luka	7.43	338	S	Sn	12 59 30.6	-0.9
BLY	Banja Luka	7.43	338	*e*Pn	Pn	12 58 06.2	-1.0
ISP	Isparta	7.46	88	*e*P	Pn	12 58 11.6	+3.8
ISP	Isparta	7.46	88	*e*Pn	Pn	12 58 11.6	+3.8
LMSR	Misrath	7.49	224	*i* P	Pn	12 58 07.8	-0.3
BZS	Buzias	7.70	3 ⇓	*i* P	Pn	12 58 10.3	-0.6
LOT	Lotru	7.78	14 ⇑	*i* P	Pn	12 58 14.6	+2.4
ARR	Arges	7.90	18 ⇑	*i* P	Pn	12 58 16.0	+2.3
MSAB	Monastry St. A	7.99	37 ⇑	*i* P	Pn	12 58 18.3	+3.4
VOIR		8.07	20 ⇓	*i* P	Pn	12 58 18.4	+2.3
NVLJ	Novalja	8.12	327	*i* Pn	Pn	12 58 16.9	+0.1
NVLJ	Novalja	8.12	327	*i* Pn	Pn	12 58 16.8	+0.1
ISR	Istrita	8.27	28 ⇓	*i* P	Pn	12 58 21.2	+2.4
MLR	Muntele Rosu	8.39	24	Pn	Pn	12 58 21.6	+1.1
	comp=E,0.2nm,0.3s,baz=172,slow=11,SNR=10						
MLR	Muntele Rosu	8.39	24 ⇓	*i* P	Pn	12 58 23.3	+2.8
MLR	Muntele Rosu	8.39	24	*e*Pn	Pn	12 58 22.4	+1.9
MLR	Muntele Rosu	8.39	24	*e*Pn	Pn	12 58 22.4	+1.9
HMAT	Matruh	8.42	142	P	Pn	12 58 18.3	-2.6
	baz=147						
HMAT				S	Sn	12 59 43.0	-13
	baz=147

CKFL Kef-Lekhel 11.57 267 P **Pn 12 59 04.4 +0.3**
CKFL Kef-Lekhel 11.57 267 P **Pn 12 59 04.4 +0.3**
WTTA Wattenberg 11.64 326 *i* Pn **Pn 12 59 08.1 +3.0**
comp=Z,3.1nm,0.3s
WTTA *i* Sn **Sn 13 01 11.3 -3.9**
comp=Z,42nm,0.6s
WATA Walderalm 11.72 326 *i* Pn **Pn 12 59 07.9 +1.7**
comp=Z,14nm,0.5s
WATA Walderalm 11.72 326 Pn **Pn 12 59 07.9 +1.7**
comp=Z,14nm,0.5s
CASM Ain Smara 11.78 266 P **Pn 12 59 07.7 +0.8**
CASM Ain Smara 11.78 266 P **Pn 12 59 07.7 +0.8**
FUORN Ofenpass-Fuorn 11.82 321 *e*Pn **Pn 12 59 10.1 +2.5**
FUORN Ofenpass-Fuorn 11.82 321 *e*Pn **Pn 12 59 10.1 +2.5**
VRAC Vranov 11.84 346 Pn **Pn 12 59 07.0 -0.6**
comp=Z,0.8nm,0.3s,baz=151,slow=13,SNR=2.9
VRAC LR LR 13 03 57.4
comp=Z,958nm,19.8s,baz=174,slow=39
FETA Feichten 11.88 323 *i* Pn **Pn 12 59 10.7 +2.4**
comp=Z,4.8nm,0.5s
FETA *i* Sn **Sn 13 01 21.2 +0.3**
FETA Feichten 11.88 323 Pn **Pn 12 59 10.7 +2.4**
comp=Z,4.8nm,0.5s
FETA Sn **Sn 13 01 21.2 +0.3**
CTEI Djebel Teioual 11.89 266 P **Pn 12 59 08.7 +0.2**
CTEI Djebel Teioual 11.89 266 P **Pn 12 59 08.7 +0.2**
MOTA Moosalm 11.94 325 *i* Pn **Pn 12 59 10.1 +0.9**
comp=Z,29nm,0.8s,SNR=18
MOTA Moosalm 11.94 325 Pn **Pn 12 59 10.1 +0.9**
comp=Z,29nm,0.8s,SNR=18
SIM Simferopol' 12.03 50 *e*P Pn 12 59 22.1 +12
SIM pmax pmax
comp=Z,14nm,0.9s
SIM MLR MLR
comp=Z,310nm,10.2s
TREC Trest 12.07 342 AMS AMS 13 04 30.0
comp=Z,3μm,11.2s
LVV L'vov 12.08 9 *e*P **Pn 12 59 14.3 +3.4**
LVV MLR MLR
comp=Z,500nm,12.0s
LVV MLR MLR
comp=N,400nm,11.0s
LVV MLR MLR
comp=E,400nm,11.0s
OKC Ostrava-Krasne 12.10 351 AMS AMS 13 05 30.0
comp=E,2μm,12.1s
DAVOX Davos/Dischmat 12.12 320 Pn **Pn 12 59 11.6 -0.1**
comp=E,1.0nm,0.3s,baz=148,slow=19,SNR=7.0
DAVOX Sn **Sn 13 01 23.6 -3.4**
comp=E,2.8nm,0.3s,baz=307,slow=20,SNR=6.1
DAVOX LR LR 13 04 25.6
comp=E,614nm,20.2s,baz=88,slow=40
MORC Moravsky Berou 12.12 349 *e*P **Pn 12 59 13.2 +1.6**
MORC Moravsky Berou 12.12 349 *e*P **Pn 12 59 13.2 +1.6**
MORC Moravsky Berou 12.12 349 *e*Pn **Pn 12 59 13.2 +1.6**
GLL Jalalah 12.13 130 P **Pn 12 59 08.0 -3.7**
baz=133
GEA0 GERESS Array S 12.16 336 *e*Pn **Pn 12 59 10.5 -1.5**
GEA0 GERESS Array S 12.16 336 *e*Pn **Pn 12 59 10.5 -1.5**
GEC2 GERESS Array S 12.16 336 *e*P **Pn 12 59 11.7 -0.5**
GEC2 GERESS Array S 12.16 336 *e*P **Pn 12 59 11.7 -0.5**
GEC2 GERESS Array S 12.16 336 *e*Pn **Pn 12 59 11.7 -0.5**
GERES GERESS Array B 12.16 336 Pn **Pn 12 59 11.2 -0.9**
comp=E,1.2nm,0.3s,baz=156,slow=14,SNR=12
GERES Sn **Sn 13 01 23.8 -4.0**
comp=E,2.2nm,0.3s,baz=153,slow=24,SNR=8.0
GERES LR LR 13 04 47.9
comp=E,536nm,20.3s,baz=146,slow=42
TUE Stuetta 12.19 318 *e*Pn **Pn 12 59 13.2 +0.6**
TUE Stuetta 12.19 318 *e*Pn **Pn 12 59 13.2 +0.6**
DFRA Djebel Bou Aff 12.21 268 P **Pn 12 59 13.4 +0.6**
DFRA Djebel Bou Aff 12.21 268 P **Pn 12 59 13.4 +0.6**
KHC Kasperske Hory 12.45 337 *e*P **Pn 12 59 14.5 -1.6**
KHC *ex* x 12 59 28.4
KHC *ex* x 12 59 43.1
KHC *e*S **Sn 13 01 28.7 -6.1**
KHC AMS AMS 13 04 50.0
comp=E,2μm,10.9s
KHC Kasperske Hory 12.45 337 *e*P **Pn 12 59 14.5 -1.6**
KHC *e*S **Sn 13 01 28.7 -6.1**
KHC MLR MLR
comp=Z,2μm,10.9s
KHC Kasperske Hory 12.45 337 P **Pn 12 59 14.5 -1.6**
KHC Kasperske Hory 12.45 337 *e*Pn **Pn 12 59 14.9 -1.2**
KHC Kasperske Hory 12.45 337 *e*Pn **Pn 12 59 14.9 -1.2**
LGHD Ghdames 12.47 234 *i* P **Pn 12 59 15.5 -0.9**
SNR=22
DAVA Damuels 12.47 322 *i* Pn **Pn 12 59 17.8 +1.4**
comp=Z,3.7nm,0.5s
DAVA *i* Sn **Sn 13 01 31.8 -3.7**
comp=Z,35nm,0.6s
DAVA Damuels 12.47 322 Pn **Pn 12 59 17.8 +1.4**
comp=Z,3.7nm,0.5s
RSH 12.52 120 P Pn 12 59 12.6 -4.4
baz=123
CKHR Kef el Ahmar 12.61 266 P **Pn 12 59 15.0 -3.3**
SUZ Suez 12.64 126 P **Pn 12 59 14.9 -3.8**
baz=129
MMAI Mount Meron Ar 12.65 108 Pn **Pn 12 59 17.7 -1.1**
comp=Z,1.7nm,0.3s,baz=318,slow=12,SNR=4.5
MMAI Sn **Sn 13 01 31.9 -7.8**
comp=Z,1.5nm,0.3s,baz=240,slow=26,SNR=4.1
SET Setif 12.65 267 P Pn 12 59 14.0 -4.9
GOPC GO Pecny, Ondr 12.82 341 *e*P **Pn 12 59 22.3 +1.3**
GOPC *ex* x 12 59 27.2
GOPC AMS AMS 13 05 00.0
comp=Z,2μm,11.9s
DPC Dobruska-Polom 12.89 346 *ex* x 12 59 29.9
DPC AMS AMS 13 05 10.0
comp=Z,3μm,11.8s
BNI Bardonecchia 12.93 308 *e*P **Pn 12 59 23.3 +0.5**
BNI Bardonecchia 12.93 308 *e*Pn **Pn 12 59 23.2 +0.5**
BNI Bardonecchia 12.93 308 *e*Pn **Pn 12 59 23.2 +0.5**
PRU Pruhonice 12.95 341 AMS AMS 13 05 00.0
comp=Z,2μm,11.1s
ZNM Zenema 12.99 128 P **Pn 12 59 19.6 -3.9**
baz=130
UPC Upice 13.10 346 AMS AMS 13 05 20.0
comp=Z,3μm,11.5s
SENIN Lac Senin/Sane 13.25 314 *e*Pn **Pn 12 59 27.9 +0.8**
SENIN Lac Senin/Sane 13.25 314 *e*Pn **Pn 12 59 27.9 +0.8**
HNKL Nakhl 13.33 123 P **Pn 12 59 24.0 -4.2**
baz=126
PVCC Panska Ves 13.44 342 AMS AMS 13 05 20.0
comp=Z,2μm,10.1s
NKC Novy Kostel 13.78 336 *e*P **P 12 59 39.1 -3.6**
NKC AMS AMS 13 05 40.0
comp=Z,2μm,10.6s
NKC Novy Kostel 13.78 336 *e*P **P 12 59 39.1 -3.6**
NKC MLR MLR
comp=Z,2μm,10.6s
BRG Berggiesshubel 13.91 341 *e*P **P 12 59 40.5 -3.7**
comp=Z,2.1nm,0.7s
BRG *e* 12 59 46.4
comp=Z,13nm,1.4s
comp=N,1μm,15.1s
comp=E,2μm,14.2s
comp=Z,2μm,10.4s
BRG Berggiesshubel 13.91 341 *e*P **P 12 59 40.5 -3.7**
BRG pmax pmax
comp=Z,2.0nm,0.7s
BRG pmax pmax
comp=Z,13nm,1.4s
BRG MLR MLR
comp=N,1μm,15.1s
BRG MLR MLR
comp=E,2μm,14.2s
BRG MLR MLR
comp=Z,2μm,10.4s
BFO Black Forest 13.95 322 *e*P **Pn 12 59 39.1 +2.6**
BFO Black Forest 13.95 322 *e*Pn **Pn 12 59 39.1 +2.6**
AK11 Malin Array Si 13.99 22 *e*Pn **Pn 12 59 39.7 +2.7**
KIEV Kiev 14.02 22⇑ *e*P **Pn 12 59 38.9 +1.6**
KIEV Kiev 14.02 22 *e*Pn **Pn 12 59 37.5 +0.2**
KIEV Kiev 14.02 22 *e*P **Pn 12 59 38.9 +1.6**
KIEV Kiev 14.02 22 *e*Pn **Pn 12 59 37.5 +0.2**
AKASG Malin Array Be 14.03 22 Pn **Pn 12 59 35.6 -1.9**
comp=Z,0.7nm,0.3s,baz=211,slow=12,SNR=8.2
AKASG LR LR 13 05 08.0
comp=Z,596nm,19.2s,baz=205,slow=38
AKBB Malin Array Si 14.03 22 *e*P **Pn 12 59 39.9 +2.4**
AKBB Malin Array Si 14.03 22 *e*P **Pn 12 59 39.9 +2.4**
AKBB Malin Array Si 14.03 22 *e*Pn **Pn 12 59 39.9 +2.4**
ANN Anapa 14.05 56 *e*P **Pn 12 59 38.0 +0.2**
ANN pmax pmax
comp=Z,36nm,1.3s
ANN MLR MLR
comp=E,236nm,12.0s
ANN MLR MLR
comp=N,352nm,12.0s
ANN MLR MLR
comp=Z,444nm,12.0s
ANN Anapa 14.05 56 *e*P **Pn 12 59 38.0 +0.2**
comp=Z,444nm,12.0s
EIL Elat 14.15 121 Pn **Pn 12 59 40.2 +0.9**
comp=Z,0.8nm,0.3s,baz=197,slow=6.5,SNR=6.1
ASF Jabal al Asfar 14.15 109 Pn **Pn 12 59 39.5 0.0**
comp=Z,0.4nm,0.3s,baz=306,slow=3.8,SNR=5.5
SSB Saint Sauveur 14.39 306 *e*P **Pn 12 59 44.2 +1.7**
SSB Saint Sauveur 14.39 306 *e*Pn **Pn 12 59 44.2 +1.7**
SSB Saint Sauveur 14.39 306 *e*Pn **Pn 12 59 44.2 +1.7**
CLL Collm 14.56 339 *e*(P) **P 12 59 52.0 +0.7**
CLL *i* 12 59 56.3
CLL *e* 13 00 04.0
CLL *e* 13 00 09.0
CLL Lmax 13 05 00.0
CLL Lm MLR 13 06 00.0
comp=Z,1μm,18.3s
CLL Collm 14.56 339 *e*P **P 12 59 48.6 -2.7**
CLL Collm 14.56 339 *e*Pn **P 12 59 48.6 -2.7**
TR1 Tor 1 14.62 129 P **Pn 12 59 42.7 -3.1**
baz=131
SOC Sochi 15.20 62 *e*P **P 13 00 01.6 +3.2**
SOC pmax pmax
comp=Z,23nm,0.8s
WLF Walferdange 15.91 322 *e*P **P 13 00 08.1 +1.8**
WLF pmax pmax
comp=Z,69nm,0.9s
WLF Walferdange 15.91 322 *e*P **P 13 00 08.1 +1.8**
comp=Z,69nm,0.9s
WLF Walferdange 15.91 322 *e*Pn **P 13 00 08.1 +1.8**
comp=Z,69nm,0.9s
NEY Neytrino 17.25 65⇑ *i*P **P 13 00 23.5 +2.0**
NEY pmax pmax
comp=Z,11nm,1.6s
NEY Neytrino 17.25 65 *i* P **P 13 00 23.5 +2.0**
comp=Z,11nm,1.6s
KIV Kislovodsk 17.37 63 *e*P **P 13 00 24.2 +1.5**
KIV *e*S **Sn 13 03 37.8 +3.1**
KIV pmax pmax
comp=Z,18nm,1.1s
KIV MLR MLR
comp=Z,94nm,13.0s
KIV Kislovodsk 17.37 63 *e*Pn **Pn 13 00 21.4 0.0**
comp=Z,25nm,1.0s
KIV Kislovodsk 17.37 63 *e*P **P 13 00 24.2 +1.5**
comp=Z,18nm,1.1s
KIV Kislovodsk 17.37 63 *e*Pn **Pn 13 00 21.4 0.0**
comp=Z,25nm,1.0s
KVAR Kislovodsk Arr 17.38 63 P **P 13 00 24.4 +1.6**
baz=140,slow=1.1,SNR=4.4
NACGM Naroch 17.43 11 *e* **Pn 13 00 21.0 -0.8**
NACGM *e*LR LR 13 07 04.0
KBZ Khabaz 17.47 64 P **P 13 00 27.2 +3.5**
comp=Z,0.2nm,0.3s,baz=265,slow=10,SNR=8.4
BSD Bornholm Skovb 17.70 348 *i* P **P 13 00 28.7 +2.6**
BSD Bornholm Skovb 17.70 348 *e*P **P 13 00 28.7 +2.6**
BSD Bornholm Skovb 17.70 348 *e*P **P 13 00 28.8 +2.6**
SNR=127
GOF Gofitskoye 17.89 60⇑ *e*P **P 13 00 30.5 +2.2**
ZEI Tsey 18.03 67 *e*P **P 13 00 30.4 +0.3**
ZEI pmax pmax
comp=Z,42nm,0.7s
ZEI Tsey 18.03 67 *e*P **P 13 00 30.4 +0.3**
comp=Z,42nm,0.7s
VSR Storozhevoye 18.44 38 *e*P **Pn 13 00 36.8 +2.5**
VSR pmax pmax
comp=Z,30nm,1.6s
VSR Storozhevoye 18.44 38 *e*P **Pn 13 00 36.8 +2.5**
comp=Z,30nm,1.6s
GNI Garni 18.50 76 P **Pn 13 00 37.0 +1.7**
comp=Z,1.1nm,0.3s,baz=263,slow=8.0,SNR=2.2
GNI LR LR 13 07 48.1
comp=Z,318nm,18.4s,baz=277,slow=38
GNI Garni 18.50 76 P **Pn 13 00 37.0 +1.7**
GNI pmax pmax
comp=Z,1.0nm,0.3s
GNI MLR MLR
comp=Z,318nm,18.4s
GNI Garni 18.50 76 P **Pn 13 00 37.0 +1.7**
comp=Z,318nm,18.4s
LPSR Galich'ya Gora 19.24 35 *e*P **Pn 13 00 46.2 +2.2**
LPSR pmax pmax
comp=Z,40nm,0.7s
ES19 SONSECA Array 19.54 283 *e*P **Pn 13 00 47.6 -0.2**
ES19 SONSECA Array 19.54 283 *e*P **Pn 13 00 47.6 -0.2**
ESDC Sonseca Array 19.59 283 P **P 13 00 46.8 -0.3**
comp=Z,0.7nm,0.3s,baz=79,slow=11,SNR=22
ESDC LR LR 13 08 57.1
comp=Z,176nm,18.9s,baz=125,slow=39
ESLA Sonseca Array 19.59 283 *e*P **P 13 00 47.1 0.0**
comp=Z,18nm,0.8s
ESLA Sonseca Array 19.59 283 *e*P **P 13 00 47.1 0.0**
comp=Z,18nm,0.8s
VRH Novokhopyorsk 19.72 41 *e*P **P 13 00 48.4 +0.1**
VRH pmax pmax
comp=Z,30nm,0.7s
VRH Novokhopyorsk 19.72 41 *e*P **P 13 00 48.4 +0.1**
comp=Z,30nm,0.7s
PAB San Pablo 19.90 283 *e*P **Pn 13 00 51.8 -0.3**
PAB pmax pmax
comp=Z,17nm,0.9s
PAB San Pablo 19.90 283 *e*P **Pn 13 00 51.8 -0.3**
comp=Z,17nm,0.9s
PAB San Pablo 19.90 283 *e*P **Pn 13 00 51.8 -0.3**
comp=Z,17nm,0.9s
OBN Obninsk 20.15 26 *ce*P Pn 13 00 55.1 +0.3
OBN pmax pmax
comp=Z,95nm,1.2s
OBN MLR MLR
comp=Z,561nm,16.0s
OBN Obninsk 20.15 26 *e*P Pn 13 00 55.1 +0.3
comp=Z,561nm,16.0s
TAM Tamanrasset 20.15 226 *e*P Pn 13 00 55.4 +0.2
TAM pmax pmax
comp=Z,9.0nm,1.0s
TAM Tamanrasset 20.15 226 *e*P Pn 13 00 55.4 +0.2
comp=Z,8.8nm,1.0s
TAM Tamanrasset 20.15 226 *e*P Pn 13 00 55.4 +0.2
comp=Z,8.8nm,1.0s
VSU Vasula 20.88 8 *ce*P **P 13 00 59.9 -0.9**
VSU pmax pmax
comp=Z,448nm,1.2s
VSU Vasula 20.88 8 *e*P **P 13 00 59.9 -0.9**
comp=Z,448nm,1.2s
MOS Moscow 21.01 27 *e*P **P 13 01 06.2 +3.9**
MOS *e* 13 01 25.0
MOS pmax pmax
comp=Z,98nm,1.3s
MOS MLR MLR
comp=Z,600nm,15.0s
PBRG Braganca 21.67 289 *e*P **P 13 01 11.5 +1.9**
MVO Moncorvo 21.89 287 *e*P **P 13 01 11.8 -0.2**
comp=Z,54nm,1.2s
PBAR Barrancos 22.13 279 *e*P **P 13 01 14.8 +0.4**
comp=Z,76nm,1.2s
PBAR *e*pP **sP 13 01 18.6 0.0**
PMRV Marv??o 22.26 283 *e*P **P 13 01 14.8 -1.1**
comp=Z,31nm,1.1s
PCBR Castelo Branco 22.29 284 *e*P **P 13 01 15.2 -1.0**
MTE Manteigas 22.30 285 *e*P **P 13 01 15.9 -0.5**
comp=Z,72nm,1.6s
PESTR Estremoz 22.47 281 *e*P **P 13 01 16.9 -1.2**
comp=Z,25nm,1.5s
HFS Hagfors 22.73 350 P **P 13 01 20.0 -0.6**
comp=Z,7.7nm,0.4s,baz=156,slow=11,SNR=19
HFS LR LR 13 11 37.4
comp=Z,216nm,19.7s,baz=164,slow=41
HFS Hagfors 22.73 350 P **P 13 01 20.0 -0.6**
HFS pmax pmax
comp=Z,8.0nm,0.4s
HFS MLR MLR
comp=Z,216nm,19.7s
HFS Hagfors 22.73 350 P **P 13 01 20.0 -0.6**
comp=Z,216nm,19.7s
PVAQ Vaqueiros 22.78 278 *e*P **P 13 01 21.3 -0.1**
comp=Z,41nm,1.5s
PBEJ Beja 22.79 279 *e*P **P 13 01 20.1 -1.5**
comp=Z,26nm,1.5s
PMTG Montargil 22.94 282 *e*P **P 13 01 21.4 -1.6**
comp=Z,41nm,1.3s
PBDV Barranco-do-Ve 22.98 277 *e*P **P 13 01 24.2 +0.7**
comp=Z,52nm,1.2s
PTOM Tomar 23.02 283 *e*P **P 13 01 24.3 +0.4**
MESJ Messejana 23.10 279 *e*P **P 13 01 24.7 0.0**
MESJ AMb AMB 13 01 25.8
comp=Z,26nm,1.0s
MESJ Messejana 23.10 279 *e*P **P 13 01 24.5 -0.2**
comp=Z,46nm,1.4s
MESJ Messejana 23.10 279 *e*P **P 13 01 24.7 0.0**
MESJ pmax pmax
comp=Z,26nm,1.0s
MESJ Messejana 23.10 279 *e*P **P 13 01 24.7 0.0**
comp=Z,26nm,1.0s
PNCL Nicolau / Gran 23.30 280 *e*P **P 13 01 26.2 -0.5**
NC602 NORSAR Array S 23.62 348 *e*P **P 13 01 28.9 -0.8**
NC602 NORSAR Array S 23.62 348 *e*P **P 13 01 28.9 -0.8**
FINES FINESS Array B 23.75 6 P **P 13 01 30.1 -0.8**
comp=Z,31nm,0.9s,baz=175,slow=12,SNR=21
FINES LR LR 13 11 29.6
comp=Z,625nm,18.5s,baz=190,slow=38
FIA1 FINESS Array S 23.75 6 *e*P **P 13 01 31.0 0.0**
FIA1 FINESS Array S 23.75 6 *e*P **P 13 01 30.5 -0.5**
FIA1 *e*P **P 13 01 30.9 0.0**
NAO01 NORSAR Array S 23.83 348 *e*P **P 13 01 31.3 -0.5**
NAO01 NORSAR Array S 23.83 348 *e*P **P 13 01 31.3 -0.5**
EKA Eskdalemuir Ar 23.90 325 P **P 13 01 32.1 -0.3**
comp=Z,13nm,0.7s,baz=129,slow=9.4,SNR=26
ESK Eskdalemuir 23.91 325 *i* P **P 13 01 33.7 +1.1**
ESK Eskdalemuir 23.91 325 *e*P **P 13 01 33.2 +0.6**
comp=Z,85nm,1.4s
ESK Eskdalemuir 23.91 325 *e*P **P 13 01 33.2 +0.6**
comp=Z,85nm,1.4s
NC405 NORSAR Array S 23.95 349 *e*P **P 13 01 32.4 -0.6**
NC405 NORSAR Array S 23.95 349 *e*P **P 13 01 32.4 -0.6**
NB201 NORSAR Array S 23.96 348 *e*P **P 13 01 32.5 -0.5**
NB201 NORSAR Array S 23.96 348 *e*P **P 13 01 32.5 -0.5**
NB2 NORSAR Subarra 23.96 348 P **P 13 01 32.1 -1.0**
comp=Z,29nm,1.1s,baz=155,slow=10
NB2 NORSAR Subarra 23.96 348 P **P 13 01 32.1 -1.0**
comp=Z,29nm,1.1s,SNR=9.4
NOA NORSAR Array B 23.96 348 P **P 13 01 32.2 -0.8**
comp=Z,12nm,0.8s,baz=168,slow=11,SNR=21
NOA LR LR 13 12 48.6
comp=Z,269nm,19.2s,baz=170,slow=42
NOA NORSAR Array B 23.96 348 P **P 13 01 32.3 -0.8**
NOA pmax pmax
comp=Z,10.0nm,0.9s
NOA MLR MLR
comp=Z,269nm,19.2s
NBO00 NORSAR Array S 24.02 348 *e*P **P 13 01 33.7 +0.1**
NBO00 NORSAR Array S 24.02 348 *e*P **P 13 01 33.7 +0.1**
NBO02 NORSAR Array S 24.03 348 *e*P **P 13 01 33.2 -0.5**
NBO02 NORSAR Array S 24.03 348 *e*P **P 13 01 33.2 -0.5**
NC303 NORSAR Array S 24.11 348 *e*P **P 13 01 33.4 -1.0**
NC303 NORSAR Array S 24.11 348 *e*P **P 13 01 33.4 -1.0**
NC204 NORSAR Array S 24.26 348 *e*P **P 13 01 36.1 +0.3**
NC204 NORSAR Array S 24.26 348 *e*P **P 13 01 36.1 +0.3**
KLMR Klimovskoe 25.72 21 *e*P **P 13 01 46.5 -2.5**
KLMR *e* 13 02 22.3
KLMR pmax pmax
comp=Z,25nm,0.7s
TMCR Tamitsa 28.16 16 *e*P **P 13 02 13.7 +2.8**
TMCR pmax pmax
comp=Z,19nm,0.5s
TMCR Tamitsa 28.16 16 *e*P **P 13 02 13.7 +2.8**
comp=Z,19nm,0.5s
AKTK Aktyubinsk 28.98 52 P **P 13 02 17.8 -0.6**
comp=Z,8.0nm,0.8s
AKTO Aktyubinsk 28.98 52 P **P 13 02 17.3 -1.0**
comp=Z,6.3nm,0.7s,baz=270,slow=9.4,SNR=8.1
AKTO LR LR 13 16 44.2
comp=Z,103nm,18.8s,baz=350,slow=42
AKTO Aktyubinsk 28.98 52 P **P 13 02 17.8 -0.6**
AKTO pmax pmax
comp=Z,8.0nm,0.8s
GEYT Alibeck 29.08 78 P **P 13 02 22.1 +2.6**
comp=Z,2.2nm,0.4s,baz=268,slow=15,SNR=4.4
GEYT LR LR 13 15 44.8
comp=Z,95nm,18.3s,baz=260,slow=40
AB31 Akbulak array 30.02 55 *i* P **P 13 02 26.7 -0.9**
AB31 pmax pmax
comp=Z,7.0nm,0.8s
AB31 Akbulak array 30.02 55 *i* P **P 13 02 26.7 -0.9**
comp=Z,7.0nm,0.8s
ABKAR Akbulak array 30.02 55 *e*P **P 13 02 26.8 -0.8**
ABKAR Akbulak array 30.02 55 *e*P **P 13 02 26.8 -0.8**
TOA0 Torodi Ar. Sit 30.12 220 *e*P **P 13 02 28.6 -0.2**
comp=Z,11nm,0.8s
TOA0 Torodi Ar. Sit 30.12 220 *e*P **P 13 02 28.6 -0.2**
comp=Z,11nm,0.8s
TORD Torodi Ar. Bea 30.12 220 P **P 13 02 28.6 -0.2**
comp=Z,8.0nm,0.8s,baz=32,slow=8.9,SNR=34
ARU Arti 30.95 41 P **P 13 02 34.9 -0.9**
comp=Z,3.6nm,0.4s,baz=280,slow=4.5,SNR=5.8
ARU Arti 30.95 41 *d i* P **P 13 02 37.4 +1.6**
ARU 13 03 34.1
ARU 13 05 37.2
ARU S **S 13 07 42.7 +2.7**
ARU SS **SnSn 13 09 19.4 -0.3**
ARU pmax pmax
comp=Z,21nm,2.5s
ARU Arti 30.95 41 *e*P **P 13 02 37.2 +1.4**
comp=Z,9.1nm,0.7s
ARU S **S 13 07 42.7 +2.7**
ARU Arti 30.95 41 *e*P **P 13 02 37.2 +1.4**
comp=Z,9.1nm,0.7s
SOKR Solikamsk 31.39 35 *e*P **P 13 02 40.2 +0.6**
SOKR pmax pmax
comp=Z,9.0nm,0.6s
SOKR MLR MLR
comp=Z,286nm,17.0s
ARCES ARCESS Array B 31.77 3 P **P 13 02 41.0 -1.8**
comp=Z,4.6nm,0.8s,baz=188,slow=9.2,SNR=12
ARCES LR LR 13 16 40.8
comp=Z,379nm,19.1s,baz=168,slow=39
ARCES ARCESS Array B 31.77 3 P **P 13 02 41.0 -1.8**
ARCES pmax pmax
comp=Z,13nm,1.0s
ARCES MLR MLR
comp=Z,379nm,19.1s
SVE Sverdlovsk 32.17 41 *e*P **P 13 02 45.5 -1.0**
SVE pmax pmax
comp=Z,23nm,0.8s
SVE Sverdlovsk 32.17 41 *e*P **P 13 02 45.5 -1.0**
comp=Z,23nm,0.8s
WSAR Wadi Sarin 35.22 104 P **P 13 03 11.2 -2.2**
comp=Z,4.8nm,0.7s,baz=318,slow=12,SNR=2.5
ZRNK Zerenda 36.10 50 *e*P **P 13 03 20.1 -0.5**
ZRNK pmax pmax
comp=Z,18nm,1.2s
ZRNK Zerenda 36.10 50 *e*P **P 13 03 20.1 -0.5**
comp=Z,18nm,1.2s
ZRNK Zerenda 36.10 50 *e*P **P 13 03 20.1 -0.5**
comp=Z,18nm,1.2s
BRVK Borovoye 36.88 50 *c i*P **P 13 03 27.7 +0.5**
BRVK Borovoye 36.88 50 *i* P **P 13 03 27.7 +0.5**
BRVK Borovoye 36.88 50 *e*P **P 13 03 26.7 -0.6**
comp=Z,12nm,0.9s
BVA0 Borovoye Array 36.94 50 P **P 13 03 30.4 +2.6**
BVA0 pmax pmax
comp=Z,6.0nm,0.7s
BVA0 Borovoye Array 36.94 50 P **P 13 03 30.4 +2.6**
comp=Z,6.0nm,0.7s
BVAR Borovoye Array 36.94 50 P **P 13 03 27.1 -0.7**
comp=Z,5.1nm,0.6s,baz=268,slow=6.0,SNR=31
CHKZ Chkalovo 37.12 49 P **P 13 03 28.6 -0.7**
CHKZ pmax pmax
comp=Z,12nm,0.7s
CHKZ Chkalovo 37.12 49 P **P 13 03 28.6 -0.7**
comp=Z,12nm,0.7s
KK31 Karatay Array 37.49 66 *i* P **P 13 03 30.6 -2.0**
KK31 pmax pmax
comp=Z,12nm,0.8s
KK31 Karatay Array 37.49 66 *i* P **P 13 03 30.6 -2.0**
comp=Z,12nm,0.8s
OTUK Ortayu 38.18 57 P **P 13 03 37.1 -1.3**
OTUK pmax pmax
comp=Z,20nm,1.2s
OTUK Ortayu 38.18 57 P **P 13 03 37.1 -1.3**
comp=Z,20nm,1.2s
DBIC Dimbokro 39.01 224 P **P 13 03 45.4 -0.3**
comp=Z,8.6nm,0.7s,baz=7.3,slow=10,SNR=6.2
MNAS Manas 39.04 67 P **P 13 03 49.4 +3.6**
MNAS pmax pmax
comp=Z,4.0nm,0.9s
EKS2 Erkin-Say 39.93 66 *e*P **P 13 03 52.8 -0.4**

EKS2 pmax pmax
comp=Z,15nm,0.8s
EKS2 Erkin-Say 39.93 66 *e*P **P 13 03 52.8 -0.4**
comp=Z,15nm,0.8s
EKS2 Erkin-Say 39.93 66 *e*P **P 13 03 52.8 -0.4**
comp=Z,15nm,0.8s
SPITS Spitsbergen Ar 40.41 358 P **P 13 03 56.6 0.0**
comp=Z,1.6nm,0.5s,baz=163,slow=12,SNR=14
AAK Ala-Archa 40.45 66 P **P 13 03 56.9 -0.7**
comp=Z,2.8nm,0.5s,baz=225,slow=8.6,SNR=3.9
AAK Ala-Archa 40.45 66 ⇑*i*P **P 13 04 01.3 +3.7**
AAK pmax pmax
comp=Z,5.0nm,0.8s
AAK Ala-Archa 40.45 66 *e*P **P 13 03 57.2 -0.4**
comp=Z,9.5nm,0.8s
AAK Ala-Archa 40.45 66 *e*P **P 13 03 57.2 -0.4**
comp=Z,9.5nm,0.8s
FRU Bishkek 40.50 66 *e*P **P 13 03 57.0 -0.8**
FRU *e* 13 05 43.0
FRU pmax pmax
comp=Z,50nm,1.8s
FRU Bishkek 40.50 66 *e*P **P 13 03 57.0 -0.8**
comp=Z,50nm,1.8s
TKM2 Tokmak 2 41.19 65 *e*P **P 13 04 03.1 -0.6**
TKM2 pmax pmax
comp=Z,10.0nm,1.4s
TKM2 Tokmak 2 41.19 65 *e*P **P 13 04 03.1 -0.6**
comp=Z,10.0nm,1.4s
TKM2 Tokmak 2 41.19 65 *e*P **P 13 04 03.0 -0.6**
comp=Z,9.8nm,1.4s
KMBO Kilima Mbogo 41.62 155 P **P 13 04 06.8 -0.7**
comp=Z,0.9nm,0.3s,baz=338,slow=8.7,SNR=2.7
KMBO LR LR 13 22 53.2
comp=Z,147nm,20.6s,baz=50,slow=38
KURBB Kurchatov Arra 42.02 53 P **P 13 04 08.6 -1.5**
comp=Z,7.3nm,0.5s,baz=278,slow=8.7,SNR=74
KURK Kurchatov 42.07 53 P **P 13 04 08.6 -1.9**
KURK pmax pmax
comp=Z,7.0nm,0.5s
KURK Kurchatov 42.07 53 P **P 13 04 08.6 -1.9**
comp=Z,7.0nm,0.5s
KURK Kurchatov 42.07 53 P **P 13 04 08.6 -1.9**
KSH Kashi 42.29 70 *e*P **P 13 04 11.3 -1.4**
KSH *e*pP sP 13 04 15.8 -1.2
KSH *e*sP pP 13 04 18.8 +3.0
KSH *e*ScP **ScP 13 09 56.3 -0.7**
KSH PcS **PcS 13 09 59.5 +1.2**
KSH S **S 13 10 27.8 -5.6**
KSH Kashi 42.29 70 ScS ScS 13 14 14.0 -1.0
KSH pmax pmax
comp=Z,120nm,5.8s
KSH LR LR
comp=N,210nm,9.8s
KSH LR LR
comp=E,160nm,5.4s
NVS Novosibirsk 44.52 47 *e*P **P 13 04 30.1 -0.2**
NVS pmax pmax
comp=N,17nm,1.4s
NVS pmax pmax
comp=E,17nm,1.4s
NVS pmax pmax
comp=Z,46nm,1.4s
NVS Novosibirsk 44.52 47 *e*P **P 13 04 30.1 -0.2**
MAKZ Makanchi 44.84 58 *e*P **P 13 04 33.2 +0.2**
MAKZ pmax pmax
comp=Z,10.0nm,1.0s
MAKZ Makanchi 44.84 58 *e*P **P 13 04 33.2 +0.2**
comp=Z,10nm,1.0s
MAKZ Makanchi 44.84 58 *e*P **P 13 04 33.2 +0.2**
comp=Z,10nm,1.0s
MK31 Makanchi Array 45.05 58 *e*P **P 13 04 33.0 -1.7**
MK31 pmax pmax
comp=Z,15nm,0.7s
MK31 Makanchi Array 45.05 58 *e*P **P 13 04 33.3 -1.4**
MK31 Makanchi Array 45.05 58 *e*P **P 13 04 33.4 -1.4**
MKAR Makanchi Array 45.05 58 P **P 13 04 32.9 -1.8**
comp=Z,6.0nm,0.4s,baz=277,slow=7.4,SNR=37
MKAR LR LR 13 27 33.5
comp=Z,80nm,18.7s,baz=278,slow=42
MKAR Makanchi Array 45.05 58 *e*P **P 13 04 33.3 -1.4**
MKAR Makanchi Array 45.05 58 *e*P **P 13 04 33.4 -1.4**
MK01 Makanchi Array 45.06 58 *e*P **P 13 04 33.4 -1.4**
MK01 Makanchi Array 45.06 58 *e*P **P 13 04 33.4 -1.4**
SUMG Summit 45.23 339 *e*P **P 13 04 37.3 +1.1**
SUMG pmax pmax
comp=Z,7.0nm,0.8s
SUMG Summit 45.23 339 *e*P **P 13 04 37.3 +1.1**
comp=Z,7.5nm,0.8s
SUMG Summit 45.23 339 *e*P **P 13 04 37.3 +1.1**
comp=Z,7.5nm,0.8s
ZAA0 Zalesovo Array 45.53 48 *e*P **P 13 04 36.2 -2.1**
ZAA0 Zalesovo Array 45.53 48 *e*P **P 13 04 36.2 -2.1**
ZALV Zalesovo Beam 45.53 48 P **P 13 04 36.5 -1.8**
comp=Z,8.3nm,0.5s,baz=274,slow=9.3,SNR=26
ZALV LR LR 13 27 09.2
comp=Z,95nm,18.1s,baz=248,slow=41
NRIK Noril'sk 46.82 26 P **P 13 04 47.7 -0.6**
comp=Z,2.9nm,0.4s,baz=264,slow=3.8,SNR=2.2
NRIK LR LR 13 25 18.5
comp=Z,166nm,18.7s,baz=280,slow=37
WMQ Urumqi 49.49 61 P **P 13 05 13.3 +3.9**
WMQ pP P 13 05 13.3 +3.9
WMQ sP sP 13 05 16.0 +2.3
WMQ pmax pmax
comp=Z,6.0nm,0.6s
WMQ pmax pmax
comp=Z,98nm,6.0s
WMQ LR LR
comp=N,120nm,35.6s
WMQ LR LR
comp=Z,32nm,31.6s
PYUN Piuthan 51.98 82 *e*P **P 13 05 26.6 -2.0**
comp=Z,44nm,0.6s
KOLN Koldanda 52.62 82 *e*P **P 13 05 30.3 -3.0**
comp=Z,16nm,0.6s
GKN Gorkha 53.32 81 *e*P **P 13 05 38.8 +0.4**
comp=Z,29nm,0.6s
LSZ Lusaka 53.33 171 LR LR 13 28 45.8
comp=Z,114nm,20.7s,baz=346,slow=36
DMN Daman 53.87 81 *e*P **P 13 05 40.9 -1.7**
comp=Z,17nm,0.5s
PKIN Phulchoki 54.11 81 *e*P **P 13 05 43.1 -1.2**
comp=Z,14nm,0.7s
GUN Gumba 54.33 80 *e*P **P 13 05 47.6 +1.6**
comp=Z,18nm,0.5s
MOY Mondy 55.59 48 *e*P P 13 05 59.4 +4.9
TSUM Tsumeb 56.91 184 LR LR 13 32 29.1
comp=Z,276nm,20.8s,baz=326,slow=38
TLY Talaya 57.13 47 *e*P **P 13 06 07.1 +1.7**
TLY pmax pmax
comp=Z,16nm,1.0s
TLY MLR MLR
comp=Z,169nm,19.0s
TLY Talaya 57.13 47 *e*P **P 13 06 07.1 +1.7**
comp=Z,169nm,19.0s
TLY Talaya 57.13 47 *e*P **P 13 06 09.6 +4.2**
comp=Z,16nm,1.1s
ZAK Zakamensk 57.39 49 *e*P **P 13 06 03.1 -4.2**
ZAK pmax pmax
comp=Z,5.0nm,1.4s
MATP Matopo 58.45 172 LR LR 13 34 02.6
comp=Z,113nm,18.1s,slow=39
SCHQ Schefferville 58.95 318 P **P 13 06 17.1 -1.0**
comp=Z,10nm,0.6s,baz=66,slow=5.4,SNR=14
SCHQ LR LR 13 30 30.1
comp=Z,100nm,20.3s,baz=10,slow=35
SCHQ Schefferville 58.95 318 *e*P **P 13 06 18.0 -0.1**
comp=Z,14nm,0.8s
SCHQ Schefferville 58.95 318 *e*P **P 13 06 18.0 -0.1**
comp=Z,14nm,0.8s
TIXI Tiksi 59.73 20 *ce*P **P 13 06 24.3 +1.1**
TIXI pmax pmax
comp=Z,12nm,1.7s
TIXI Tiksi 59.73 20 *e*P **P 13 06 23.6 +0.4**
comp=Z,4.6nm,0.7s
TIXI Tiksi 59.73 20 *e*P **P 13 06 23.6 +0.4**
comp=Z,4.6nm,0.7s
SHL Shillong 60.15 80 *e*P **P 13 06 28.0 +1.0**
SONA1 Songino Array 60.27 51 *e*P **P 13 06 26.2 -1.3**
SONA1 Songino Array 60.27 51 *e*P **P 13 06 26.2 -1.3**
SONM Songino Array 60.27 51 P **P 13 06 26.2 -1.2**
comp=Z,8.6nm,1.0s,baz=288,slow=7.1,SNR=18
BOD Bodaibo 60.30 38 *e*P **P 13 06 25.6 -1.7**
BOD pmax pmax
comp=Z,8.0nm,0.9s
BOD Bodaibo 60.30 38 *e*P **P 13 06 25.6 -1.7**
comp=Z,8.0nm,0.9s
ULN Ulaanbaatar 60.66 50⇑*e*P **P 13 06 33.1 +2.9**
ULN pmax pmax
comp=Z,8.0nm,0.8s
ULN Ulaanbaatar 60.66 50 *e*P **P 13 06 29.9 -0.3**
comp=Z,8.4nm,0.9s
ULN Ulaanbaatar 60.66 50 *e*P **P 13 06 29.9 -0.3**
comp=Z,8.5nm,0.9s
PALK Pallekele 61.71 104 LR LR 13 36 56.4
comp=Z,99nm,18.3s,baz=296,slow=40
LBTB Lobatse 62.74 175 LR LR 13 36 05.3
comp=Z,167nm,18.4s,baz=18,slow=38
LZH Lanzhou 63.91 63 *e*P P 13 06 57.0 +4.9
LZH pP sP 13 07 01.8 +5.2
LZH sP pP 13 07 05.5 +10
LZH pmax pmax
comp=Z,18nm,1.0s
BOSA Boshof 66.30 176 LR LR 13 38 25.0
comp=Z,168nm,18.3s,baz=10.0,slow=38
CD2 Chengdu 66.45 68 P **P 13 07 07.3 -1.2**
CD2 pmax pmax
comp=Z,7.0nm,0.6s
HHC Hu-ho-hao-te 66.81 56 *e*P **P 13 07 11.5 +0.7**
HHC pmax pmax
comp=Z,21nm,1.2s
HHC pmax pmax
comp=Z,130nm,6.8s
XAN Xi'an 68.54 63 P **P 13 07 25.8 +4.1**
XAN pmax pmax
comp=Z,5.0nm,0.5s
KMI Kunming 68.74 74 P **P 13 07 24.5 +1.2**
KMI pP sP 13 07 28.3 +0.5
KMI sP pP 13 07 29.5 +2.9
KMI S **S 13 16 28.5 +1.4**
KMI Kunming 68.74 74 SS SS 13 20 51.3 -0.1
KMI pmax pmax
comp=Z,10.0nm,0.7s
KMI pmax pmax
comp=Z,72nm,3.8s
KMI LR LR
comp=Z,43nm,25.9s
CHTO Chiang Mai 69.28 82 P **P 13 07 27.8 +1.3**
comp=Z,60nm,1.1s
CHTO Chiang Mai 69.28 82 *e*P **P 13 07 24.8 -1.7**
CHTO pmax pmax
comp=Z,11nm,0.9s
CHTO Chiang Mai 69.28 82 *e*P **P 13 07 24.8 -1.7**
comp=Z,11nm,0.9s
CHTO Chiang Mai 69.28 82 *e*P **P 13 07 24.8 -1.7**
comp=Z,11nm,0.9s
CMMT Chiang Mai 69.28 82 P **P 13 07 27.8 +1.3**
comp=Z,13nm,1.1s,comp=Z,598nm
CM31 Chiang Mai Arr 69.48 82 *e*P **P 13 07 27.0 -0.7**
CM31 Chiang Mai Arr 69.48 82 *e*P **P 13 07 26.9 -0.7**
CMAR Chiang Mai Arr 69.48 82 P **P 13 07 26.1 -1.6**
comp=Z,6.6nm,1.0s,baz=305,slow=7.6,SNR=28
CM01 Chiang Mai Arr 69.51 82 *e*P **P 13 07 25.5 -2.4**
CM01 Chiang Mai Arr 69.51 82 *e*P **P 13 07 25.5 -2.4**
CRAI Chiangrai 69.60 80 P **P 13 07 27.3 -1.2**
comp=Z,63nm,1.0s
FCC Fort Churchill 69.70 330 *e*P **P 13 07 29.4 +1.0**
FCC pmax pmax
comp=Z,7.0nm,0.8s
FCC Fort Churchill 69.70 330 *e*P **P 13 07 29.4 +1.0**
comp=Z,7.1nm,0.8s
FCC Fort Churchill 69.70 330 *e*P **P 13 07 29.4 +1.0**
comp=Z,7.1nm,0.8s
LAMP Lampang 69.98 82 P **P 13 07 30.2 -0.6**
comp=Z,9.8nm,0.6s
BJI Beijing 70.22 54 P **P 13 07 31.5 -0.4**
BJI pmax pmax
comp=Z,5.0nm,0.7s
UTTA Uttaradit 71.14 82 P **P 13 07 41.4 +3.6**
comp=Z,3.9nm,0.9s
BILL Bilibino 71.17 13⇑*i*P **P 13 07 41.1 +3.9**
BILL pmax pmax
comp=Z,13nm,1.1s
BILL MLR MLR
comp=Z,108nm,18.0s
BILL Bilibino 71.17 13 *e*P **P 13 07 38.2 +1.0**
comp=Z,8.3nm,0.8s
BILL Bilibino 71.17 13 *e*P **P 13 07 38.2 +1.0**
comp=Z,8.3nm,0.8s
SEY Seymchan 72.21 21⇓*i*P **P 13 07 44.4 +0.8**
SEY Seymchan 72.21 21 *i*P **P 13 07 44.4 +0.8**
SSPA Standing Stone 72.36 308 *e*P **P 13 07 47.0 +2.1**
comp=Z,8.4nm,1.1s
SSPA Standing Stone 72.36 308 *e*P **P 13 07 47.0 +2.1**
comp=Z,8.4nm,1.1s
INK Inuvik 72.39 350 P **P 13 07 42.5 -2.0**
comp=Z,0.9nm,0.5s,baz=34,slow=4.3,SNR=8.4
KHON Khomkaen 73.72 82 P **P 13 07 55.1 +1.8**
comp=Z,18nm,0.8s
CN2 Changchun 73.73 47 *e*P **P 13 07 53.5 +0.6**
CN2 pmax pmax
comp=Z,10.0nm,0.6s
YKW3 Yellowknife Ar 73.73 340 *e*P **P 13 07 53.6 +1.0**
comp=Z,5.5nm,1.1s
YKW3 Yellowknife Ar 73.73 340 *e*P **P 13 07 53.6 +1.0**
comp=Z,5.5nm,1.1s
KLR Kul'dur 73.78 40 P **P 13 07 52.5 -0.6**
comp=Z,15nm,1.0s,baz=332,slow=4.0,SNR=8.2
YKA Yellowknife Ar 73.78 340 P **P 13 07 52.5 -0.4**
comp=Z,0.8nm,0.5s,baz=36,slow=5.4,SNR=20
YKA LR LR 13 41 39.5
comp=Z,14nm,20.0s,baz=0.0,slow=37
YKB5 Yellowknife Ar 73.78 340 *e*P **P 13 07 53.6 +0.7**
YKB5 Yellowknife Ar 73.78 340 *e*P **P 13 07 53.6 +0.7**
SKNT Sakolnakorn 74.26 81 P **P 13 07 58.8 +2.4**
MA2 Magadan 74.34 24 *e*P **P 13 07 55.9 -0.3**
MA2 pmax pmax
comp=Z,101nm,0.7s
MA2 Magadan 74.34 24 *e*P **P 13 07 55.9 -0.3**
comp=Z,101nm,0.7s
MA2 Magadan 74.34 24 *e*P **P 13 07 55.9 -0.3**
comp=Z,101nm,0.7s
COLD Coldfoot 74.97 357 *e*P **P 13 08 00.9 +1.2**
comp=Z,5.8nm,0.9s
COLD Coldfoot 74.97 357 *e*P **P 13 08 00.9 +1.2**
comp=Z,5.8nm,0.9s
FYU Fort Yukon 75.31 354 *e*P **P 13 08 04.5 +2.8**
comp=Z,11nm,1.0s
FYU Fort Yukon 75.31 354 *e*P **P 13 08 04.5 +2.8**
comp=Z,11nm,1.0s
NKL Nikolayevsk 75.32 33 *e*P P 13 07 51.5 -10
ULM Lac du Bonnet 76.17 324 P **P 13 08 06.4 -0.5**
comp=Z,7.0nm,0.7s,baz=61,slow=4.4,SNR=7.3
ULM LR LR 13 42 30.3
comp=Z,103nm,18.6s,baz=347,slow=36
ULM Lac du Bonnet 76.17 324 *e*P **P 13 08 07.1 +0.1**
comp=Z,15nm,1.0s
ULM Lac du Bonnet 76.17 324 *e*P **P 13 08 07.1 +0.1**
comp=Z,15nm,1.0s
EGAK Eagle 76.69 352 *e*P **P 13 08 10.4 +0.8**
comp=Z,4.7nm,1.1s
EGAK Eagle 76.69 352 *e*P **P 13 08 10.4 +0.8**
comp=Z,4.7nm,1.1s
MDM Murphy Dome 77.11 355 *e*P **P 13 08 13.4 +1.4**
comp=Z,5.8nm,0.8s
MDM Murphy Dome 77.11 355 *e*P **P 13 08 13.4 +1.4**
comp=Z,5.8nm,0.8s
USRK Ussuriysk Ar. 77.16 44 P **P 13 08 11.1 -1.5**
comp=Z,9.7nm,0.7s,baz=293,slow=3.1,SNR=4.8
COLA College 77.17 355⇑*e*P **P 13 08 12.2 -0.1**
COLA pmax pmax
comp=Z,2.0nm,0.9s
COLA College 77.17 355 *e*P **P 13 08 12.2 -0.1**
comp=Z,2.0nm,0.9s
DAWY Dawson 77.18 351 *e*P **P 13 08 12.9 +0.4**
DAWY Dawson 77.18 351 *e*P **P 13 08 12.8 +0.4**
MLY Manley 77.18 356 *e*P **P 13 08 13.9 +1.4**
comp=Z,5.5nm,0.8s
MLY Manley 77.18 356 *e*P **P 13 08 13.9 +1.4**
comp=Z,5.5nm,0.8s
IL1 Eielson Array 77.21 355 *e*P **P 13 08 13.6 +1.1**
IL1 Eielson Array 77.21 355 *e*P **P 13 08 13.6 +1.1**
ILAR Eielson Array 77.21 355 P **P 13 08 12.7 +0.2**
comp=Z,1.3nm,0.9s,baz=354,slow=4.0,SNR=16
ILAR LR LR 13 46 28.0
comp=Z,53nm,18.5s,baz=55,slow=39
ILB Eielson Array 77.21 355 *e*P **P 13 08 14.2 +1.6**
ILB Eielson Array 77.21 355 *e*P **P 13 08 14.2 +1.6**
CCB Clear Creek Bu 77.39 355 *e*P **P 13 08 14.7 +1.2**
comp=Z,6.3nm,1.3s
CCB Clear Creek Bu 77.39 355 *e*P **P 13 08 14.7 +1.2**
comp=Z,6.3nm,1.3s
HDA Harding Lake 77.57 355 *e*P **P 13 08 15.4 +0.8**
comp=Z,13nm,0.8s
HDA Harding Lake 77.57 355 *e*P **P 13 08 15.4 +0.8**
comp=Z,13nm,0.8s
WRH Wood River Hil 77.59 355 *e*P **P 13 08 14.5 -0.1**
comp=Z,9.2nm,0.7s
WRH Wood River Hil 77.59 355 *e*P **P 13 08 14.5 -0.1**
comp=Z,9.2nm,0.7s
QIZ Qiongzhong 77.60 76 P **P 13 08 12.8 -2.7**
QIZ S **S 13 18 12.5 +5.1**
QIZ LR LR
comp=Z,37nm,23.2s
DOT Dot Lake 78.08 353 *e*P **P 13 08 18.3 +0.8**
comp=Z,16nm,1.0s
DOT Dot Lake 78.08 353 *e*P **P 13 08 18.3 +0.8**
comp=Z,16nm,1.0s
BPAW Bear Paw Mtn. 78.12 356 *e*P **P 13 08 17.9 +0.2**
comp=Z,6.1nm,0.8s
BPAW Bear Paw Mtn. 78.12 356 *e*P **P 13 08 17.9 +0.2**
comp=Z,6.1nm,0.8s
MCK McKinley 78.38 355 *e*P **P 13 08 19.7 +0.6**
MCK pmax pmax
comp=Z,9.0nm,0.9s
MCK McKinley 78.38 355 *e*P **P 13 08 19.7 +0.6**
comp=Z,9.2nm,0.9s
MCK McKinley 78.38 355 *e*P **P 13 08 19.7 +0.6**
comp=Z,9.2nm,0.9s
PSI Prapat 78.68 95 *e*P **P 13 08 23.3 +1.6**
PSI pmax pmax
comp=Z,50nm,1.9s
PSI Prapat 78.68 95 *e*P **P 13 08 23.3 +1.6**
comp=Z,50nm,1.9s
RND Reindeer 78.69 355 *e*P **P 13 08 23.5 +2.6**
RND pmax pmax
comp=Z,5.0nm,0.9s
RND Reindeer 78.69 355 *e*P **P 13 08 23.5 +2.6**
comp=Z,4.7nm,0.9s
RND Reindeer 78.69 355 *e*P **P 13 08 23.5 +2.6**
comp=Z,4.7nm,0.9s
TRF Thorofare Moun 78.73 356 *e*P **P 13 08 22.1 +0.9**
comp=Z,7.1nm,1.0s
TRF Thorofare Moun 78.73 356 *e*P **P 13 08 22.1 +0.9**
comp=Z,7.1nm,1.0s
MENT Mentasta 78.75 353 *e*P **P 13 08 24.1 +2.9**
comp=Z,5.8nm,1.1s
MENT Mentasta 78.75 353 *e*P **P 13 08 24.1 +2.9**
comp=Z,5.8nm,1.1s
CAST Castle Rocks 78.85 357 *e*P **P 13 08 23.5 +1.8**
comp=Z,8.4nm,0.9s
CAST Castle Rocks 78.85 357 *e*P **P 13 08 23.5 +1.8**
comp=Z,8.4nm,0.9s
KS01 Wonju Array Si 79.11 51 *e*P **P 13 08 22.8 -0.8**
KS01 Wonju Array Si 79.11 51 *e*P **P 13 08 22.8 -0.8**
KS15 Wonju Array Si 79.13 51 *e*P **P 13 08 24.1 +0.4**
KS15 Wonju Array Si 79.13 51 *e*P **P 13 08 24.1 +0.4**
KSAR Wonju Array Be 79.13 51 P **P 13 08 22.6 -1.1**
KSAR Wonju Array Be 79.13 51 P **P 13 08 22.6 -1.1**
KSAR Wonju Array Be 79.13 51 P **P 13 08 22.6 -1.1**
KSRS Korea Array 79.14 51 P **P 13 08 22.6 -1.2**
comp=Z,4.1nm,0.7s,baz=313,slow=4.6,SNR=11
KSRS LR LR 13 47 54.4
comp=Z,56nm,18.5s,baz=316,slow=39
PPLA Purkeypile 79.38 357 *e*P **P 13 08 25.0 +0.2**
comp=Z,8.9nm,0.8s
PPLA Purkeypile 79.38 357 *e*P **P 13 08 25.0 +0.2**
comp=Z,8.9nm,0.8s
SML Sawmill 80.25 355 *e*P **P 13 08 30.1 +0.7**
SML pmax pmax
comp=Z,71nm,2.0s
SML Sawmill 80.25 355 *e*P **P 13 08 30.0 +0.7**
comp=Z,71nm,2.0s
SML Sawmill 80.25 355 *e*P **P 13 08 30.1 +0.7**
comp=Z,71nm,2.0s
BALM Baldy 80.47 352 *e*P **P 13 08 32.6 +2.0**
BALM pmax pmax
comp=Z,7.0nm,0.9s
BALM Baldy 80.47 352 *e*P **P 13 08 32.6 +2.0**
comp=Z,6.9nm,0.9s
BALM Baldy 80.47 352 *e*P **P 13 08 32.6 +2.0**
comp=Z,6.9nm,0.9s
YSS Yuzh-Sakhalins 80.71 36 *e*P **P 13 08 31.6 -0.4**
YSS pmax pmax
comp=Z,110nm,1.0s
YSS Yuzh-Sakhalins 80.71 36 *e*P **P 13 08 32.6 +0.6**
comp=Z,40nm,0.9s
YSS Yuzh-Sakhalins 80.71 36 *e*P **P 13 08 32.6 +0.6**
comp=Z,40nm,0.9s
RC01 Rabbit Creek A 81.06 356 *e*P **P 13 08 36.8 +3.1**
comp=Z,10nm,0.5s
ECSD EROS Data Cent 81.08 319 *e*P **P 13 08 34.9 +0.8**
comp=Z,6.9nm,1.0s
ECSD EROS Data Cent 81.08 319 *e*P **P 13 08 34.9 +0.8**
comp=Z,6.9nm,1.0s
SPU Mount Spurr 81.09 357 *e*P **P 13 08 34.4 +0.5**
SPU Mount Spurr 81.09 357 *e*P **P 13 08 34.4 +0.5**
PETK Petropavlovsk- 81.85 25 P **P 13 08 38.4 +0.4**
comp=Z,3.8nm,0.8s,baz=336,slow=3.2,SNR=3.2
PETK LR LR 13 49 27.8
comp=Z,66nm,19.0s,baz=311,slow=39
ASAJ Asahikawa 82.71 38 Pn **P 13 08 39.0 -3.6**
comp=Z,0.2nm,0.3s,baz=51,slow=14,SNR=2.7
ASAJ Asahikawa 82.71 38 P **P 13 08 39.1 -3.6**
LRAL Lakeview Retre 82.78 306 *e*P **P 13 08 46.2 +3.0**
comp=Z,8.5nm,1.1s
PTGA Pitinga 83.39 264 *e*P **P 13 08 48.5 +1.9**
comp=Z,6.3nm,0.9s
PTGA Pitinga 83.39 264 *e*P **P 13 08 48.5 +1.9**
comp=Z,6.3nm,0.9s
WHAR Wooly Hollow 84.54 311 *e*P **P 13 08 54.2 +2.0**
comp=Z,11nm,1.1s
WHAR Wooly Hollow 84.54 311 *e*P **P 13 08 54.2 +2.0**
comp=Z,11nm,1.1s
GCMT Greycliff 85.64 328 *e*P **P 13 09 00.1 +2.3**
GCMT Greycliff 85.64 328 *e*P **P 13 09 00.1 +2.3**
MJAR Matsushiro Arr 85.84 46 LR LR 13 50 48.9
comp=Z,76nm,19.2s,baz=100,slow=38
JTMT Jette 85.89 332 *e*P **P 13 09 00.7 +1.8**
JTMT Jette 85.89 332 *e*P **P 13 09 00.7 +1.8**
SWMT Swartz Lake 85.98 331 *e*P **P 13 09 01.5 +2.2**
SWMT Swartz Lake 85.98 331 *e*P **P 13 09 01.5 +2.2**
RLMT Red Lodge 86.01 327 P **P 13 09 00.4 +0.7**
comp=Z,20nm,0.8s
RLMT Red Lodge 86.01 327 P **P 13 09 00.4 +0.7**
comp=Z,20nm,0.8s
MSO Missoula 86.52 331 *e*P **P 13 09 04.6 +2.6**
comp=Z,3.7nm,0.8s
MSO Missoula 86.52 331 *e*P **P 13 09 04.6 +2.6**
comp=Z,3.7nm,0.8s
BOZ Bozeman (W) 86.57 329 *e*P **P 13 09 02.3 -0.1**
BOZ pmax pmax
comp=Z,6.0nm,0.6s
BOZ Bozeman (W) 86.57 329 *e*P **P 13 09 02.3 -0.1**
comp=Z,5.8nm,0.6s
BOZ Bozeman (W) 86.57 329 *e*P **P 13 09 02.3 -0.1**
comp=Z,5.8nm,0.6s
LRM Limekiln Ridge 86.76 329 *e*P **P 13 09 07.3 +3.9**
QLMT Earthquake Lak 87.15 328 *e*P **P 13 09 03.0 -2.3**
QLMT Earthquake Lak 87.15 328 *e*P **P 13 09 03.0 -2.3**
DPW Davenport 87.20 334 *e*P **P 13 09 08.2 +2.9**
DPW Davenport 87.20 334 *e*P **P 13 09 08.2 +2.9**
PHWY Pilot Hill 87.28 323 *e*P **P 13 09 07.5 +1.4**
comp=Z,3.2nm,0.8s
PHWY Pilot Hill 87.28 323 *e*P **P 13 09 07.5 +1.4**
comp=Z,3.2nm,0.8s
C09A Chrisman Ranch 87.29 334 *e*P **P 13 09 08.9 +3.3**
comp=Z,13nm,0.6s
BW06 Boulder Array 88.01 326 *e*P **P 13 09 10.5 +1.0**
BW06 Boulder Array 88.01 326 *e*P **P 13 09 10.5 +1.0**
PDAR Pinedale Array 88.01 326 P **P 13 09 09.7 +0.2**
comp=Z,0.5nm,0.6s,baz=59,slow=4.0,SNR=5.4
PDAR LR LR 13 48 54.7
comp=Z,62nm,21.6s,baz=34,slow=36
MFID Camas Ranch 90.10 330 *e*P **P 13 09 21.3 +2.2**
comp=Z,2.6nm,0.7s
ABTX Abilene, Hawle 90.73 313 *e*P **P 13 09 23.7 +1.5**
comp=Z,6.7nm,0.9s
MTPU Mount Pierson 93.01 325 *e*P **P 13 09 33.3 +0.3**
comp=Z,12nm,0.6s
NVAR Mina Array Bea 95.32 329 P **P 13 09 43.1 -0.4**
comp=Z,0.5nm,0.7s,baz=49,slow=4.2,SNR=3.1
NVAR LR LR 13 55 16.8
comp=Z,111nm,18.7s,baz=8.0,slow=37
TXAR Lajitas Array 95.48 314 P **P 13 09 44.3 +0.2**
comp=Z,0.5nm,0.7s,baz=64,slow=6.3,SNR=3.2
TXAR LR LR 13 51 35.1
comp=Z,49nm,21.6s,baz=0.0,slow=35
CPUP Villa Florida 97.33 242 LR LR 13 56 23.8

comp=Z,138nm,18.2s,baz=165,slow=37
KAPI Kappang 99.89 89 LR LR 14 02 24.5
comp=Z,32nm,18.3s,baz=43,slow=40
WRA Warramunga Arr 120.08 93 PKP **PKPdf 13 15 08.0 -2.1**
comp=Z,0.5nm,0.6s,baz=321,slow=1.9,SNR=13
ASAR Alice Springs 121.70 97 PKP **PKPdf 13 15 11.7 -1.5**
comp=Z,0.7nm,0.8s,baz=306,slow=1.5,SNR=12

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*NIED **26** 13:07:00.38′.50N×142°.20E, h17km, Mw3.4 Best double couple: M0:1.54000×10^14 NP1:φ=187.00000°, δ=40.00000°, λ=-39.00000°. NP2:φ=309.00000°, δ=66.00000°, λ=-123.00000°.*
*IDC **26** 13:07:35.8±1.8, 40°.06N×142°.44E, h0km, mb3.7/2, mb1 3.6/4, mb1mx3.3/38, mbtmp3.4/4, ML2.6/2, Error ellipse: s-maj=82.0km s-min=31.3km az=101.0*
*JMA **26** 13:07:51.0±0.1, 38°.45N×142°.22E, h28km±2km, M3.8*
ISC 26 13:07:47.6±2.0, 38°.34N±0°.04×142°.14E±0°.09, h2km±11km, n13, σ1°.27/21, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.63**	**281**	P	**Pn**	**13 08 04.2**	**+0.7**
JIO				*e*S	**Sn**	**13 08 13.1**	**-1.0**
OFUJ	**Ofunato**	**0.83**	**334**	P	**Pn**	**13 08 05.4**	**-0.8**
OFUJ				*e*S	**Sb**	**13 08 15.4**	**-0.8**
JMK	**Ichinoseki**	**0.94**	**311**	P	**Pn**	**13 08 08.1**	**+0.3**
JMK				*e*S	**Sb**	**13 08 20.3**	**+0.7**
JOU	**Okura**	**1.16**	**272**	P	**Pn**	**13 08 12.7**	**+1.9**
JOU				*e*S	**Sn**	**13 08 28.4**	**+1.2**
JMM	**Marumori**	**1.16**	**247**	P	**Pn**	**13 08 12.1**	**+1.4**
JMM				*e*S	**Sn**	**13 08 27.8**	**+0.7**
JOM	**Ohasama**	**1.31**	**330**	P	**Pb**	**13 08 13.0**	**+0.1**
JOM				*e*S	**Sg**	**13 08 29.3**	**-0.4**
JFK	**Kawauchi**	**1.39**	**226**	P	**Pg**	**13 08 15.1**	**+0.9**
JFK				*e*S	**Sg**	**13 08 32.5**	**+0.2**
JYK	**Kaneyama**	**1.51**	**293**	P	**Pg**	**13 08 17.2**	**+0.7**
JRG	**Rokugo**	**1.58**	**313**	P	**Pg**	**13 08 18.1**	**+0.2**
MJAR	**Matsushiro Arr**	**3.60**	**241**	Pn	**Pb**	**13 08 49.8**	**-2.2**
	0.9nm,0.3s,baz=57,slow=12,SNR=8.9						
MAT	**Matsushiro**	**3.60**	**241**	P	**Pb**	**13 08 50.3**	**-1.7**
MAT				*e*S	**Sb**	**13 09 33.5**	**-2.6**
WRA	**Warramunga Arr**	**58.43**	**189**	P	**P**	**13 17 45.2**	**+0.5**
	0.5nm,0.5s,baz=6.3,slow=7.0,SNR=9.2						
ASAR	**Alice Springs**	**62.16**	**189**	P	**P**	**13 18 10.3**	**+0.1**
	0.4nm,0.9s,baz=5.8,slow=5.6,SNR=5.1						

KRSC 26 13:15:35.8±1.6, 50°.72N×157°.82E, h48km±24km, ML3.6, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**1.08**	**269**	*i* P	Pn	13 15 54.6	0.0
SKR				*i* S	Sn	13 16 08.0	-0.5
ASAK	**Asacha**	**1.67**	**2**	P	Pn	13 16 04.8	+2.1
ASAK				S	Sn	13 16 24.5	+1.6
RUS	**Russkaya**	**1.77**	**14**	*e*P	Pn	13 16 05.4	+1.4
RUS				*e*S	Sn	13 16 26.5	+1.2
MTVR	**Mutnovka**	**1.78**	**7**	*e*P	Pn	13 16 06.8	+2.5
MTVR				*e*S	Sn	13 16 28.1	+2.3
KRMR	**Karymshinskiy**	**2.12**	**5**	*e*P	Pn	13 16 12.6	+3.8
KRMR				S	Sn	13 16 38.0	+4.1
PET	**Petropavlovsk**	**2.37**	**12**	*e*P	Pn	13 16 14.7	+2.6
PET				*e*S	Sn	13 16 42.6	+2.7
UGLR	**Uglovaya**	**2.57**	**14**	*e*P	Pn	13 16 18.6	+3.6
UGLR				S	Sn	13 16 48.8	+3.7
AVH	**Avacha**	**2.61**	**12**	*e*P	Pn	13 16 19.9	+4.3
AVH				S	Sn	13 16 50.2	+4.1
SMAR	**Somma**	**2.62**	**13**	*e*P	Pn	13 16 19.1	+3.3
SDLR	**Sedlovina**	**2.65**	**14**	*e*P	Pn	13 16 18.4	+2.3
SDLR				S	Sn	13 16 49.6	+2.6
KRER	**Koryakskii**	**2.65**	**12**	*e*P	Pn	13 16 20.2	+4.0
KRER				S	Sn	13 16 51.2	+4.0
KRX	**Arik**	**2.69**	**11**	*e*P	Pn	13 16 20.2	+3.4
KRX				S	Sn	13 16 51.8	+3.6
GNL	**Ganaly**	**2.98**	**1**	*e*P	Pn	13 16 24.7	+4.0
MKZ	**Mys Kozlova**	**4.52**	**30**	P	Pn	13 16 44.4	+2.8

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*ISCJB **26** 13:25:43.1±0.5, 21°.2N±0°.1×94°.6E±0°.1, h100km, mb3.8/10, Error ellipse: s-maj=20.0km s-min=4.5km az=40.8*
*IDC **26** 13:25:45.3±3.0, 21°.24N×94°.78E, h103km±24km, mb3.6/10, mb1 3.7/11, mb1mx3.4/43, mbtmp3.9/11, Error ellipse: s-maj=64.7km s-min=13.6km az=57.0*
*BKK **26** 13:25:48.2±1.0, 20°.N±14°.×9°.5E±°, h10km, M4.4/6, mb4.9/5, mB4.8/2, MLv4.1/6, Mw(mB)4.1/2*
ISC 26 13:25:44.4±0.7, 21°.2N±0°.1×94°.5E±0°.1, h100km, n32, σ1°.40/39, mb3.7/10, Myanmar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHTO	**Chiang Mai**	**4.80**	**119**	P	**Pn**	**13 26 53.2**	**-1.3**
CHTO	**Chiang Mai**	**4.80**	**119**	P	**Pn**	**13 26 53.2**	**-1.3**
152nm,0.7s,0.8nm							
CMMT	**Chiang Mai**	**4.80**	**119**	P	**Pn**	**13 26 53.1**	**-1.4**
CMMT	**Chiang Mai**	**4.80**	**119**	P	**Pn**	**13 26 53.5**	**-1.0**
35nm,0.9s,499nm0.2nm							
CMMT				S	Sn	13 27 57.2	+8.2
35nm,0.9s,499nm0.2nm							
SHL	**Shillong**	**4.97**	**331**	*e*P	**Pn**	**13 26 59.5**	**+2.5**
SHL				*e*S	**Sn**	**13 27 52.5**	**-0.9**
CMAR	**Chiang Mai Arr**	**4.99**	**122**	P	**Pn**	**13 26 56.1**	**-0.9**
1.7nm,0.3s,baz=299,slow=14,SNR=72							
LAMP	**Lampang**	**5.51**	**118**	P	**Pn**	**13 27 02.9**	**-1.2**
LAMP	**Lampang**	**5.51**	**118**	P	**Pn**	**13 27 02.8**	**-1.3**
13nm,0.7s,0.0nm							
CRAI	**Chiangrai**	**5.57**	**99**	P	**Pn**	**13 27 04.5**	**-0.5**
104nm,0.7s,8μm0.5nm							
CRAI	**Chiangrai**	**5.57**	**99**	P	**Pn**	**13 27 02.8**	**-2.2**
104nm,0.7s,8μm0.5nm							
CRAI				S	Sn	13 28 17.7	+10
104nm,0.7s,8μm0.5nm							
UMPA	**Umpang Tak**	**6.45**	**140**	P	**Pn**	**13 27 17.8**	**+0.8**
UTTA	**Uttaradit**	**6.66**	**120**	P	**Pn**	**13 27 18.8**	**-0.9**
9.4nm,0.7s,86nm0.0nm							
UTTA	**Uttaradit**	**6.66**	**120**	P	**Pn**	**13 27 18.6**	**-1.1**
9.4nm,0.7s,86nm0.0nm							
PBKT	**Sadao Pong**	**7.65**	**126**	P	**Pn**	**13 27 33.1**	**-0.2**
28nm,0.9s,0.1nm							
PBKT	**Sadao Pong**	**7.65**	**126**	P	**Pn**	**13 27 33.0**	**-0.2**
GUN	**Gumba**	**10.31**	**312**	*e*P	**Pn**	**13 28 10.6**	**+0.9**
43nm,0.2s							
PKIN	**Phulchoki**	**10.45**	**309**	*e*P	**Pn**	**13 28 12.4**	**+0.9**
38nm,0.3s							
PKIN				*e*S	**Sn**	**13 30 03.1**	**-3.7**
KKN	**Kakani**	**10.66**	**310**	*e*P	**Pn**	**13 28 14.8**	**+0.5**
29nm,0.2s							
DMN	**Daman**	**10.68**	**309**	*e*P	**Pn**	**13 28 15.3**	**+0.6**
26nm,0.3s							
GKN	**Gorkha**	**11.25**	**309**	*e*P	**Pn**	**13 28 22.8**	**+0.6**
79nm,0.3s							
GKN				*e*S	**Sn**	**13 30 22.9**	**-3.1**
KOLN	**Koldanda**	**11.89**	**306**	*e*P	**Pn**	**13 28 31.4**	**+0.5**
44nm,0.2s							
KOLN				*e*S	Sn	13 30 37.2	-4.5
PYUN	**Piuthan**	**12.52**	**306**	*e*P	**Pn**	**13 28 39.8**	**+0.5**
27nm,0.2s							
MKAR	**Makanchi Array**	**27.40**	**342**	P	**P**	**13 31 22.4**	**+1.9**
0.6nm,0.4s,baz=149,slow=9.4,SNR=8.0							
MKAR				PcP	**PcP**	**13 34 38.8**	**+1.9**
0.2nm,0.3s,baz=128,slow=4.4,SNR=4.0							
MKAR				ScP	**ScP**	**13 38 09.3**	**+0.8**
0.4nm,0.5s,baz=139,slow=2.8,SNR=4.4							
ZALV	**Zalesovo Beam**	**33.52**	**350**	P	**P**	**13 32 16.0**	**+1.7**
2.2nm,0.3s,baz=170,slow=8.2,SNR=8.6							
BVAR	**Borovoye Array**	**36.78**	**336**	P	**P**	**13 32 42.8**	**+0.5**
0.3nm,0.3s,baz=139,slow=8.0,SNR=3.3							
BVAR				PcP	**PcP**	**13 35 03.9**	**+1.4**
0.8nm,0.5s,baz=145,slow=5.4,SNR=3.7							
WRA	**Warramunga Arr**	**56.48**	**134**	P	**P**	**13 35 15.7**	**-0.7**
0.5nm,0.5s,baz=320,slow=7.5,SNR=15							
ASAR	**Alice Springs**	**58.82**	**137**	P	**P**	**13 35 32.0**	**-0.7**
0.7nm,0.6s,baz=313,slow=6.9,SNR=6.7							
ASAR				PcP	**PcP**	**13 36 21.3**	**0.0**
0.4nm,0.8s,baz=328,slow=4.8,SNR=4.3							
FINES	**FINESS Array B**	**61.31**	**329**	P	**P**	**13 35 49.6**	**+0.4**
3.2nm,0.9s,baz=105,slow=4.5,SNR=4.0							
ARCES	**ARCESS Array B**	**62.99**	**338**	P	**P**	**13 36 01.1**	**+0.8**
2.2nm,0.9s,baz=97,slow=7.5,SNR=5.9							
NOA	**NORSAR Array B**	**68.47**	**329**	P	**P**	**13 36 36.0**	**+0.4**
0.5nm,0.6s,baz=99,slow=5.1,SNR=2.4							
ILAR	**Eielson Array**	**82.34**	**22**	P	**P**	**13 37 54.4**	**-0.5**
0.4nm,0.6s,baz=292,slow=4.7,SNR=7.4							
YKA	**Yellowknife Arr**	**93.45**	**13**	P	**P**	**13 38 46.6**	**-1.9**
0.2nm,0.8s,baz=330,slow=5.7,SNR=4.3							

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*TRN **26** 13:27:58.6, 15°.11N×61°.09W, h149km, MD3.6*
*ISCJB **26** 13:27:59.3±0.7, 15°.11N±0°.03×61°.13W±0°.09, h146km±5km, Error ellipse: s-maj=14.0km s-min=4.2km az=165.6*
*FUNV **26** 13:28:03.0, 12°.73N×58°.27W, h194km, MW3.2*
ISC 26 13:27:59.1±1.5, 15°.09N±0°.04×61°.15W±0°.09, h151km±8km, n36, σ1°.28/52, 5C-1D, Leeward Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SVN	**Savane Anatole**	**0.24**	**183**	*e*P	**Pn**	**13 28 20.1**	**+0.3**
DSHT	**Scott's Head**	**0.25**	**301**	*e*P	**Pn**	**13 28 21.0**	**+1.3**
DSHT				*e*S	**Sn**	**13 28 35.3**	**0.0**
DLPL	**La Plaine**	**0.26**	**340**	*e*P	**Pn**	**13 28 19.8**	**+0.1**
DLPL				*e*S	**Sn**	**13 28 34.9**	**-0.6**
BAMF	**Morne Balai**	**0.27**	**179**	*e*P	**Pn**	**13 28 20.1**	**+0.2**
CXM	**Morne La Croix**	**0.28**	**183**	*e*P	**Pn**	**13 28 20.2**	**+0.2**
CXM				*e*S	**Sn**	**13 28 35.6**	**-0.2**
PCM	**Pelee Case Pet**	**0.28**	**191**	*e*P	**Pn**	**13 28 20.1**	**+0.3**
PCM	**Pelee Case Pet**	**0.28**	**191**	*e*P	**Pn**	**13 28 20.1**	**+0.3**
GBMF	**Grand Be**	**0.29**	**182**	*e*P	**Pn**	**13 28 20.1**	**+0.2**
PML	**Morne Lenard**	**0.31**	**185**	*e*P	**Pn**	**13 28 20.9**	**+1.0**
FDF	**Fort de France**	**0.35**	**179**	*e*P	**Pn**	**13 28 20.3**	**+0.2**
FDF				*e*S	**Sn**	**13 28 35.5**	**-0.5**
DWS	**Wesley**	**0.50**	**342**	*e*P	**Pn**	**13 28 20.7**	**+0.1**
DWS				*e*S	**Sn**	**13 28 36.8**	**-0.3**
ZAM	**Aeronautique**	**0.53**	**167**	*e*P	**Pn**	**13 28 20.6**	**-0.1**
BBL	**Barber's Block**	**0.53**	**325**	*i* P	**Pn**	**13 28 21.3**	**+0.5**
BBL				*e*S	**Sn**	**13 28 37.8**	**+0.4**
LPMF	**Morne Lapointe**	**0.54**	**160**	*e*P	**Pn**	**13 28 20.5**	**-0.3**
TRMF	**Trois Ilets**	**0.56**	**170**	*e*P	**Pn**	**13 28 21.0**	**+0.1**
BIM	**Bigot**	**0.57**	**172**	*e*P	**Pn**	**13 28 21.2**	**+0.1**
BIM				*e*S	**Sn**	**13 28 37.6**	**-0.2**
MVM	**Montagne Vaucl**	**0.58**	**155**	*i* P	**Pn**	**13 28 21.1**	**0.0**
MGG	**Marie-Galante**	**0.84**	**349**	*i* P	**Pn**	**13 28 23.0**	**+0.3**
MGG				*e*S	**Sn**	**13 28 40.4**	**-0.5**
TBG	**Guadaloupe-3**	**0.90**	**328**	*e*P	**Pn**	**13 28 23.3**	**+0.1**
SLW	**Petit Monier**	**1.08**	**169**	*e*P	**Pn**	**13 28 24.6**	**-0.2**
DEG	**La Desirade**	**1.22**	**4**	*e*P	**Pn**	**13 28 26.1**	**+0.1**
MCLT	**Moule a Chique**	**1.39**	**171**	*e*P	**Pn**	**13 28 27.5**	**-0.2**
MCLT				*e*S	**Sn**	**13 28 49.2**	**-0.3**
SVV	**Soufriere Volc**	**1.76**	**182**	*i* P	**Pn**	**13 28 32.0**	**+0.3**
SVB	**Belmont**	**1.81**	**183**	*e*P	**Pn**	**13 28 32.4**	**+0.3**
MLYT	**Lee's Yard**	**1.91**	**329**	*e*P	**Pn**	**13 28 33.9**	**+0.6**
MLYT				*e*S	**Sn**	**13 28 60.0**	**+0.4**
FCV	**Fort Charlotte**	**1.92**	**183**	*e*P	**Pn**	**13 28 33.6**	**+0.2**
FCV				*e*S	**Sn**	**13 29 01.1**	**+1.3**
BPA	**Boggy Peak**	**2.06**	**341**	*e*P	**Pn**	**13 28 35.9**	**+0.8**
NEV	**Hard Times**	**2.45**	**326**	*e*P	**Pn**	**13 28 41.0**	**+1.3**
BBGH	**Gun Hill**	**2.48**	**141**	*e*P	**Pn**	**13 28 41.4**	**+1.4**
BBGH				*e*S	**Sn**	**13 29 11.1**	**-0.5**
ANWB	**Willy Bob**	**2.64**	**347**	*e*P	**Pn**	**13 28 41.8**	**-0.1**
ANWB				*e*S	**Sn**	**13 29 14.2**	**-0.9**
SABA	**Saba**	**3.22**	**322**	*e*P	**Pn**	**13 28 50.1**	**+0.8**
SMRT	**St. Maarten**	**3.48**	**328**	*e*P	**Pn**	**13 28 52.3**	**-0.3**
SMRT				*e*S	**Sn**	**13 29 32.6**	**-1.5**
GUIV	**Guiria**	**4.54**	**193**	*e*P	**Pn**	**13 29 07.6**	**+1.2**
GUIV				*e*S	**Sn**	**13 29 56.5**	**-2.5**
CRUV	**Carupano**	**4.83**	**205**	*e*P	Pn	13 29 19.1	+8.7
GUNV	**Guanoco**	**5.20**	**200**	*e*P	**Pn**	**13 29 18.8**	**+3.6**
GUNV				*e*S	**Sn**	**13 30 15.4**	**+0.8**
ORIV	**Oritupano**	**6.37**	**200**	*e*P	**Pn**	**13 29 32.0**	**+1.2**
ORIV				*e*S	**Sn**	**13 30 36.4**	**-6.4**

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*ISCJB **26** 13:33:43.3±0.8, 22°.7S±0°.2×178°.1W±0°.2, h650km, mb3.5/8, Error ellipse: s-maj=33.9km s-min=19.1km az=153.5*
*IDC **26** 13:33:47.2±4.4, 22°.64S×178°.06W, h683km±53km, mb3.0/7, mb1 3.4/7, mb1mx3.1/19, mbtmp4.0/7, Error ellipse: s-maj=29.8km s-min=23.2km az=5.0*
ISC 26 13:33:44.9±0.8, 22°.5S±0°.2×178°.1W±0°.2, h650km, n18, σ2°.21/18, mb3.7/8, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**44.04**	**259**	P	**P**	**13 40 59.5**	**+1.4**
1.6nm,0.5s,baz=94,slow=7.6,SNR=30							
ASAR				PcP	**PcP**	**13 42 31.5**	**+3.0**
0.5nm,0.5s,baz=106,slow=3.7,SNR=6.2							
WRA	**Warramunga Arr**	**44.31**	**264**	P	**P**	**13 40 59.5**	**-0.6**
1.2nm,0.4s,baz=97,slow=7.5,SNR=84							
VNDA	**Vanda**	**55.92**	**185**	P	**P**	**13 42 22.2**	**-1.0**
0.4nm,0.3s,baz=356,slow=12,SNR=8.3							
NVAR	**Mina Array Bea**	**82.51**	**43**	P	**P**	**13 45 01.5**	**-0.4**
0.8nm,0.5s,baz=235,slow=7.9,SNR=5.5							
TXAR	**Lajitas Array**	**88.18**	**57**	P	**P**	**13 45 30.5**	**+1.4**
0.7nm,0.8s,baz=220,slow=7.6,SNR=5.0							
ILAR	**Eielson Array**	**90.27**	**13**	P	P	13 45 32.5	-5.3
1.0nm,0.7s,baz=218,slow=5.6,SNR=11							
PDAR	**Pinedale Array**	**90.45**	**43**	P	**P**	**13 45 39.2**	**-0.3**
0.8nm,0.7s,baz=206,slow=3.1,SNR=6.7							
CMAR	**Chiang Mai Arr**	**90.73**	**290**	P	**P**	**13 45 39.7**	**-1.3**
0.8nm,0.8s,baz=110,slow=2.9,SNR=4.8							
MKAR	**Makanchi Array**	**112.53**	**313**	PKiKP	**PKiKP**	**13 51 08.7**	**-0.3**
0.2nm,0.4s,baz=89,slow=0.9,SNR=3.0							
BVAR	**Borovoye Array**	**120.57**	**319**	PKP	**PKPdf**	**13 51 23.9**	**-0.3**
0.9nm,0.4s,baz=133,slow=2.3,SNR=6.4							
SPITS	**Spitsbergen Ar**	**123.85**	**356**	PKP	**PKPdf**	**13 51 29.6**	**-0.3**
4.5nm,1.0s,baz=14,slow=2.5,SNR=2.8							
ARCES	**ARCESS Array B**	**130.87**	**349**	PKP	**PKPdf**	**13 51 43.1**	**-0.3**
4.8nm,1.0s,baz=324,slow=6.0,SNR=4.3							
FINES	**FINESS Array B**	**137.67**	**343**	PKP	**PKPdf**	**13 51 53.3**	**-3.0**
2.2nm,1.0s,baz=56,slow=5.4,SNR=2.6							
AKASG	**Malin Array Be**	**144.72**	**330**	PKP	**PKPdf**	**13 52 06.1**	**-3.1**
1.6nm,0.6s,baz=42,slow=4.5,SNR=14							
BRTR	**Keskin Array B**	**148.11**	**310**	PKPbc	**PKPdf**	**13 52 18.6**	**+3.1**
0.8nm,0.5s,baz=116,slow=2.9,SNR=3.6							
MMAI	**Mount Meron Ar**	**148.72**	**297**	PKPbc	**PKPbc**	**13 52 21.3**	**+0.1**
1.3nm,0.4s,baz=76,slow=7.0,SNR=4.8							
MLR	**Muntele Rosu**	**149.85**	**325**	PKPbc	**PKPdf**	**13 52 23.3**	**+5.3**
0.4nm,0.6s,baz=200,slow=4.0,SNR=3.3							
GERES	**GERESS Array B**	**152.10**	**343**	PKPbc	**PKPbc**	**13 52 27.9**	**-0.7**
0.7nm,0.6s,baz=323,slow=3.3,SNR=5.7							

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*ISK **26** 13:39:54.6, 38°.98N×29°.27E, h6km, MD2.3*
*ISCJB **26** 13:39:56.3±0.5, 39°.09N±0°.03×29°.05E±0°.04, h5km±11km, Error ellipse: s-maj=5.4km s-min=4.8km az=162.5*
*CSEM **26** 13:39:56.4±0.3, 39°.10N×29°.05E, h5km, MD2.6, Error ellipse: s-maj=6.9km s-min=5.8km az=96.0*
*DDA **26** 13:39:56.2, 39°.07N×29°.05E, h7km, Md2.6*
ISC 26 13:39:55.6±1.0, 39°.06N±0°.03×29°.09E±0°.03, h11km±9km, n18, σ0°.57/30, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.29**	**266**	P	**Pg**	**13 40 01.6**	**0.0**
DEMI				S	**Sg**	**13 40 05.3**	**-0.3**
DEMI	**Demirci**	**0.29**	**266**	*i* P	**Pg**	**13 40 01.6**	**0.0**
DEMI				*i* S	**Sg**	**13 40 05.3**	**-0.3**
GDZ	**Gediz**	**0.31**	**85**	P	**Pb**	**13 40 03.0**	**-0.2**
GDZ				S	**Sb**	**13 40 07.9**	**-0.4**
GDZ	**Gediz**	**0.31**	**85**	*i* P	**Pb**	**13 40 03.0**	**-0.2**
GDZ				*i* S	**Sb**	**13 40 08.0**	**-0.4**
TVSB	**Tavsanli**	**0.48**	**37**	*e*PG	**Pg**	**13 40 04.8**	**-0.4**
TVSB				*e*SG	**Sg**	**13 40 11.8**	**+0.2**
TVSB	**Tavsanli**	**0.48**	**37**	*e*Pg	**Pg**	**13 40 04.8**	**-0.4**
TVSB				*e*Sg	**Sg**	**13 40 11.8**	**+0.2**
KULA	**Kula-Manisa**	**0.64**	**211**	*e*PG	**Pg**	**13 40 07.9**	**-0.2**
KULA				*e*SG	**Sb**	**13 40 17.5**	**-0.3**
KULA	**Kula-Manisa**	**0.64**	**211**	*e*Pg	**Pg**	**13 40 07.9**	**-0.2**
KULA				*e*Sg	**Sb**	**13 40 17.5**	**-0.3**
DURS	**Dursunbey**	**0.72**	**319**	P	**Pb**	**13 40 10.0**	**-0.1**
DURS				S	**Sb**	**13 40 19.9**	**-0.1**
DURS	**Dursunbey**	**0.72**	**319**	*i* P	**Pb**	**13 40 10.0**	**-0.1**
DURS				*i* S	**Sb**	**13 40 19.9**	**-0.1**
KHAL	**Karahalli**	**0.76**	**155**	P	**Pn**	**13 40 13.9**	**+1.5**
KHAL				S	**Sn**	**13 40 22.9**	**-1.0**
KHAL	**Karahalli**	**0.76**	**155**	*i* P	**Pn**	**13 40 13.9**	**+1.5**
KHAL				*i* S	**Sn**	**13 40 22.9**	**-1.0**
ORLT	**Orhaneli**	**0.99**	**352**	*e*PN	**Pn**	**13 40 16.0**	**+0.5**
ORLT	**Orhaneli**	**0.99**	**352**	*e*Pn	**Pn**	**13 40 16.0**	**+0.5**
CAVI	**Cavuskoy**	**1.28**	**27**	*e*PN	**Pb**	**13 40 19.8**	**+0.1**
CAVI	**Cavuskoy**	**1.28**	**27**	*e*Pn	**Pb**	**13 40 19.8**	**+0.1**
ARMT	**Armutlu**	**1.51**	**353**	*e*PN	**Pg**	**13 40 24.7**	**+0.1**
ARMT	**Armutlu**	**1.51**	**353**	*e*Pn	**Pg**	**13 40 24.7**	**+0.1**

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*ISCJB **26** 13:46:09.6±0.5, 39°.11N±0°.03×29°.11E±0°.03, h4km±6km, Error ellipse: s-maj=4.8km s-min=4.0km az=26.5*
*DDA **26** 13:46:09.4, 39°.09N×29°.11E, h7km, Md2.9*
*CSEM **26** 13:46:09.9±0.1, 39°.10N×29°.12E, h5km, MD2.9, Error ellipse: s-maj=2.2km s-min=2.0km az=107.0*
*ISK **26** 13:46:09.4, 39°.10N×29°.16E, h6km, MD2.5*
ISC 26 13:46:09.8±0.9, 39°.10N±0°.02×29°.12E±0°.02, h13km±7km, n35, σ0°.37/52, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.28**	**93**	P	**Pg**	**13 46 16.0**	**+0.3**
GDZ				S	**Sg**	**13 46 19.9**	**+0.2**
GDZ	**Gediz**	**0.28**	**93**	*i* P	**Pg**	**13 46 16.0**	**+0.3**
GDZ				*i* S	**Sg**	**13 46 19.9**	**+0.2**
DEMI	**Demirci**	**0.32**	**259**	P	**Pg**	**13 46 16.2**	**-0.2**
DEMI				S	**Sg**	**13 46 21.0**	**+0.1**
DEMI	**Demirci**	**0.32**	**259**	*i* P	**Pg**	**13 46 16.2**	**-0.2**
DEMI				*i* S	**Sg**	**13 46 21.0**	**+0.1**
TVSB	**Tavsanli**	**0.43**	**37**	*e*PG	**Pg**	**13 46 18.4**	**-0.1**
TVSB				*e*SG	**Sg**	**13 46 24.0**	**-0.4**
TVSB	**Tavsanli**	**0.43**	**37**	*e*Pg	**Pg**	**13 46 18.4**	**-0.1**
TVSB				*e*Sg	**Sg**	**13 46 24.0**	**-0.4**
KULA	**Kula-Manisa**	**0.69**	**212**	*e*PG	**Pg**	**13 46 23.1**	**-0.2**
KULA	**Kula-Manisa**	**0.69**	**212**	*e*Pg	**Pg**	**13 46 23.1**	**-0.2**
DURS	**Dursunbey**	**0.71**	**315**	P	**Pg**	**13 46 23.5**	**-0.1**
DURS				S	**Sg**	**13 46 33.1**	**+0.2**
DURS	**Dursunbey**	**0.71**	**315**	*i* P	**Pg**	**13 46 23.5**	**-0.1**
DURS				*i* S	**Sg**	**13 46 33.1**	**+0.2**
KHAL	**Karahalli**	**0.79**	**158**	P	**Pg**	**13 46 24.4**	**-0.7**
KHAL				S	**Sb**	**13 46 36.0**	**0.0**
KHAL	**Karahalli**	**0.79**	**158**	*i* P	**Pg**	**13 46 24.4**	**-0.7**
KHAL				*i* S	**Sb**	**13 46 36.0**	**0.0**
KHL	**Karahalli**	**0.84**	**158**	*e*PG	**Pg**	**13 46 25.9**	**-0.2**
KHL				*e*SG	**Sb**	**13 46 37.6**	**+0.1**
KHL	**Karahalli**	**0.84**	**158**	*e*Pg	**Pg**	**13 46 25.9**	**-0.2**
KHL				*e*Sg	**Sb**	**13 46 37.6**	**+0.1**
ORLT	**Orhaneli**	**0.96**	**350**	*e*PG	**Pb**	**13 46 28.6**	**+0.2**
ORLT	**Orhaneli**	**0.96**	**350**	*e*Pg	**Pb**	**13 46 28.6**	**+0.2**
AKS	**Akhisar**	**1.04**	**258**	*e*PG	**Pn**	**13 46 30.2**	**0.0**
AKS	**Akhisar**	**1.04**	**258**	*e*Pg	**Pn**	**13 46 30.2**	**0.0**
BALB	**Balikesir**	**1.10**	**299**	*e*PN	**Pn**	**13 46 31.4**	**+0.5**
BALB	**Balikesir**	**1.10**	**299**	*e*Pn	**Pn**	**13 46 31.4**	**+0.5**
IGD	**Bursa**	**1.16**	**3**	*i* P	**Pb**	**13 46 30.9**	**-0.8**
IGD				*i* S	**Sb**	**13 46 45.3**	**-1.5**
CAVI	**Cavuskoy**	**1.23**	**27**	*e*PN	**Pg**	**13 46 33.4**	**-0.1**
CAVI	**Cavuskoy**	**1.23**	**27**	*e*Pn	**Pg**	**13 46 33.4**	**-0.1**
IZI	**Iznik**	**1.26**	**12**	*e*PN	**Pg**	**13 46 34.1**	**0.0**
IZI	**Iznik**	**1.26**	**12**	*e*Pn	**Pg**	**13 46 34.1**	**0.0**
BORA	**Eskisehir**	**1.29**	**53**	P	**Pb**	**13 46 34.0**	**0.0**
BORA				S	**Sn**	**13 46 51.3**	**+0.5**
BORA	**Eskisehir**	**1.29**	**53**	*i* P	**Pb**	**13 46 34.0**	**0.0**
BORA				*i* S	**Sn**	**13 46 51.3**	**+0.5**
KCTX	**Karacabey (Bur**	**1.30**	**333**	*e*PN	**Pg**	**13 46 35.3**	**+0.4**
KCTX	**Karacabey (Bur**	**1.30**	**333**	*e*Pn	**Pg**	**13 46 35.3**	**+0.4**
ESKT	**Eskisehir**	**1.40**	**72**

DEMI				*i* S		**Sg**	**14 15 54.7**	**+0.1**
GDZ	**Gediz**	**0.36**	**92**	P		**Pg**	**14 15 53.3**	**0.0**
GDZ				S		**Sg**	**14 15 58.5**	**+0.4**
GDZ	**Gediz**	**0.36**	**92**	*i* P		**Pg**	**14 15 53.3**	**0.0**
GDZ				*i* S		**Sg**	**14 15 58.5**	**+0.4**
TVSB	**Tavsanli**	**0.48**	**45**	*e*PG		**Pg**	**14 15 55.4**	**-0.3**
TVSB				*e*SG		**Sg**	**14 16 01.8**	**-0.3**
TVSB	**Tavsanli**	**0.48**	**45**	*e*Pg		**Pg**	**14 15 55.4**	**-0.3**
TVSB				*e*Sg		**Sg**	**14 16 01.8**	**-0.3**
DURS	**Dursunbey**	**0.65**	**320**	P		**Pg**	**14 15 58.1**	**-0.8**
DURS				S		**Sg**	**14 16 07.5**	**+0.1**
DURS	**Dursunbey**	**0.65**	**320**	*i* P		**Pg**	**14 15 58.1**	**-0.8**
DURS				*i* S		**Sg**	**14 16 07.5**	**+0.1**
KULA	**Kula-Manisa**	**0.65**	**206**	*e*PG		**Pg**	**14 15 58.8**	**0.0**
KULA				*e*SG		**Sg**	**14 16 07.3**	**-0.1**
KULA	**Kula-Manisa**	**0.65**	**206**	*e*Pg		**Pg**	**14 15 58.8**	**0.0**
KULA				*e*Sg		**Sg**	**14 16 07.3**	**-0.1**
KHAL	**Karahalli**	**0.82**	**153**	P		**Pg**	**14 16 02.2**	**+0.2**
KHAL				S		**Sb**	**14 16 13.3**	**-0.5**
KHAL	**Karahalli**	**0.82**	**153**	*i* P		**Pg**	**14 16 02.2**	**+0.2**
KHAL				*i* S		**Sb**	**14 16 13.3**	**-0.5**
KHL	**Karahalli**	**0.87**	**153**	*e*PG		**Pg**	**14 16 02.7**	**-0.3**
KHL	**Karahalli**	**0.87**	**153**	*e*Pg		**Pg**	**14 16 02.7**	**-0.3**
ORLT	**Orhaneli**	**0.94**	**354**	*e*PG		**Pg**	**14 16 04.6**	**+0.2**
ORLT	**Orhaneli**	**0.94**	**354**	*e*Pg		**Pg**	**14 16 04.6**	**+0.2**
AKHS	**Akhisar**	**0.97**	**257**	P		**Pb**	**14 16 05.0**	**-0.2**
AKHS				S		**Sb**	**14 16 18.1**	**+0.1**
AKHS	**Akhisar**	**0.97**	**257**	*i* P		**Pb**	**14 16 05.0**	**-0.2**
AKHS				*i* S		**Sb**	**14 16 18.1**	**+0.1**
AKS	**Akhisar**	**0.97**	**257**	*e*PG		**Pb**	**14 16 05.4**	**+0.3**
AKS	**Akhisar**	**0.97**	**257**	*e*Pg		**Pb**	**14 16 05.4**	**+0.3**
BALB	**Balikesir**	**1.03**	**301**	*e*PG		**Pn**	**14 16 06.7**	**-0.1**
BALB	**Balikesir**	**1.03**	**301**	*e*Pg		**Pn**	**14 16 06.7**	**-0.1**
CAVI	**Cavuskoy**	**1.27**	**30**	*e*PN		**Pb**	**14 16 10.2**	**0.0**
CAVI	**Cavuskoy**	**1.27**	**30**	*e*Pn		**Pb**	**14 16 10.2**	**0.0**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*PN		**Pg**	**14 16 10.9**	**+0.4**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*Pn		**Pg**	**14 16 10.9**	**+0.4**
IZI	**Iznik**	**1.28**	**16**	*e*PN		**Pg**	**14 16 10.7**	**-0.1**
IZI	**Iznik**	**1.28**	**16**	*e*Pn		**Pg**	**14 16 10.7**	**-0.1**
GONE	**Gonen-Balikesi**	**1.40**	**313**	*e*PN		**Pg**	**14 16 13.1**	**+0.1**
GONE	**Gonen-Balikesi**	**1.40**	**313**	*e*Pn		**Pg**	**14 16 13.1**	**+0.1**
ADVT	**Abdulvahap**	**1.44**	**22**	*e*PN		**Pb**	**14 16 13.0**	**-0.2**
ADVT	**Abdulvahap**	**1.44**	**22**	*e*Pn		**Pb**	**14 16 13.0**	**-0.2**
ARMT	**Armutlu**	**1.46**	**355**	*e*PN		**Pb**	**14 16 13.8**	**+0.2**
ARMT	**Armutlu**	**1.46**	**355**	*e*Pn		**Pb**	**14 16 13.8**	**+0.2**
GULT	**Gulveren**	**1.76**	**40**	*e*PN		**Pn**	**14 16 17.4**	**+0.5**
GULT	**Gulveren**	**1.76**	**40**	*e*Pn		**Pn**	**14 16 17.4**	**+0.5**

MAN 26 14:17:40, 13°.46N×122°.87E, h86km, mb3.8, ML2.5, MS2.1, 1D, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GQP	**Guinayangan**	**0.60**	**317**	⇓*e*P	Pn	14 17 57.5	+2.2
GQP				*e*S	Sn	14 18 05.6	-1.0
PVCP	**Virac**	**1.26**	**84**	*e*P	Pn	14 18 03.8	+1.3
PVCP				*e*S	Sn	14 18 29.4	+10
POLP	**Polilio Island**	**1.55**	**325**	*e*P	Pn	14 18 07.3	+1.1
POLP				*e*S	Sn	14 18 27.7	+1.6

JMA 26 14:18:22.5, 35°.10N×136°.62E, h12km±1km, M2.7, 4D Broadband fault plane solution: P waves. NP1: ϕ_s359.00000°, δ54.00000°, λ119.00000°. NP2: ϕ_s136.00000°, δ45.00000°, λ56.00000°. Principal axes: T Plg66.0000°, Azm328.0000°; N Plg23.0000°, Azm161.0000°; P Plg5.0000°, Azm69.0000°; Western Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JEG	**Eigenji**	**0.19**	**281**	⇓P	Pg	14 18 26.9	+0.2
JEG				S	Sg	14 18 29.8	+0.1
TSUJ	**Tsu 2**	**0.42**	**203**	⇓P	Pg	14 18 30.7	-0.2
TSUJ				S	Sg	14 18 36.4	-0.1
JGM	**Miyama**	**0.60**	**8**	⇓P	Pg	14 18 34.6	+0.3
JGM				S	Sg	14 18 42.2	-0.1
JIE	**Ise**	**0.71**	**174**	S	Sg	14 18 44.8	-0.8
JHE	**Heguri**	**0.89**	**240**	P	Pg	14 18 38.8	-0.9
JKN2	**Miekihoku**	**0.91**	**198**	P	Pg	14 18 39.0	-1.0
JWT	**Wachi**	**1.01**	**281**	⇓P	Pb	14 18 41.4	-0.6
JWT				S	Sg	14 18 54.3	-1.0
MAT	**Matsushiro**	**1.93**	**41**	P	Pn	14 18 56.0	+0.8
MAT				S	Sn	14 19 20.0	+0.5

IDC 26 14:20:03.4±3.4, 17°.47S×174°.38W, h163km±57km, mb3.9/4, mb1 4.0/5, mb1mx3.4/31, mbtmp4.4/5 Error ellipse: s-maj=61.0km s-min=32.3km az=99.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**4.34**	**36**	P	Pn	14 21 10.0	+1.5
	31nm,0.3s,baz=199,slow=2.8,SNR=72						
AFI				S	Sn	14 21 59.0	-0.3
	27nm,0.3s,baz=195,slow=20,SNR=9.6						
URZ	**Urewera**	**22.01**	**198**	P	P	14 24 44.5	-0.1
	39nm,1.1s,baz=90,slow=1.0,SNR=4.6						
STKA	**Stephens Creek**	**42.21**	**242**	P	P	14 27 40.8	+0.3
	2.0nm,0.7s,baz=58,slow=7.5,SNR=5.2						
WRA	**Warramunga Arr**	**48.48**	**259**	P	P	14 28 29.4	-0.6
	0.8nm,0.4s,baz=97,slow=7.0,SNR=44						
ASAR	**Alice Springs**	**48.60**	**254**	P	P	14 28 30.4	-0.4
	5.2nm,0.5s,baz=89,slow=8.4,SNR=119						
ASAR				PcP	PcP	14 29 54.6	+0.6
	0.3nm,0.5s,baz=101,slow=4.2,SNR=3.0						

MEX 26 14:21:18.9±1.0, 27°.92N×112°.13W, h5km, MD3.8, Baja California

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SRIG	**Santa Rosalia**	**0.61**	**189**	*e*P	Pg	14 21 29.6	-1.0
SRIG				*i* S	Sg	14 21 39.2	+0.7
HSIG		**1.51**	**43**	*e*P	Pn	14 21 42.0	-4.6
HSIG				*e*S	Sn	14 22 02.5	-4.2

*CSEM **26** 14:27:19.8±0.2, 37°.87N×21°.03E, h17km±1km, ML2.5, Error ellipse: s-maj=5.3km s-min=3.7km az=12.0*
*ATH **26** 14:27:20.1, 37°.89N×21°.04E, h23km±1km, ML2.2/8, Error ellipse: s-maj=2.1km s-min=0.9km az=185.0*

THE 26 14:27:20.4, 37°.90N×21°.05E, h20km±1km, ML2.5/10, Error ellipse: s-maj=1.2km s-min=0.4km az=232.0, Southern Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VTN	**Vitineika**	**0.11**	**82**	P	Pg	14 27 24.2	-0.2
VTN				S	Sg	14 27 27.5	+0.4
VTN	**Vitineika**	**0.11**	**82**	P	Pb	14 27 23.9	0.0
VTN				S	Sg	14 27 27.2	+0.1
KFL	**Anninata**	**0.29**	**315**	P	Pb	14 27 26.7	-0.3
KFL				S	Sg	14 27 31.7	+0.2
KFL	**Anninata**	**0.29**	**315**	P	Pb	14 27 26.7	-0.3
KFL				S	Sg	14 27 31.7	+0.2
KFL	**Anninata**	**0.29**	**315**	P	Pb	14 27 26.6	-0.4
KFL				S	Sg	14 27 33.0	+1.5
ZKS	**Zakynthos**	**0.29**	**226**	P	Pb	14 27 26.8	-0.2
ZKS				S	Sg	14 27 32.0	+0.5
ZKS	**Zakynthos**	**0.29**	**226**	P	Pb	14 27 26.6	-0.4
ZKS				S	Sg	14 27 32.0	+0.5
ZKS	**Zakynthos**	**0.29**	**226**	P	Pg	14 27 27.1	+0.1
ZKS				S	Sg	14 27 32.6	+1.1
ZKS				AML	AML	14 27 33.5	
	comp=E,3705μm,0.3s						
ZKS				AML	AML	14 27 34.1	
	comp=N,4585μm,0.3s						
RLS	**Riolos of Patr**	**0.36**	**65**	P	Pg	14 27 27.8	-0.4
RLS				S	Sg	14 27 33.4	-0.1
RLS	**Riolos of Patr**	**0.36**	**65**	P	Pg	14 27 27.8	-0.4
RLS				S	Sb	14 27 33.7	+0.2
RLS	**Riolos of Patr**	**0.36**	**65**	S	Sb	14 27 33.7	+0.2
RLS				AML	AML	14 27 34.5	
	comp=E,1244μm,0.3s						
RLS				AML	AML	14 27 34.7	
	comp=N,2050μm,0.2s						
AXS	**Araxos**	**0.39**	**41**	P	Pb	14 27 28.7	0.0
AXS				S	Sb	14 27 34.8	+0.5
AXS	**Araxos**	**0.39**	**41**	P	Pb	14 27 28.7	0.0
AXS				S	Sb	14 27 34.8	+0.5
AXS	**Araxos**	**0.39**	**41**	P	Pb	14 27 28.7	0.0
AXS				S	Sn	14 27 36.1	-1.7
VLS	**Valsamata**	**0.45**	**307**	P	Pb	14 27 29.3	-0.5
VLS				S	Sg	14 27 36.0	-0.1
VLS	**Valsamata**	**0.45**	**307**	P	Pb	14 27 29.3	-0.5
VLS				S	Sg	14 27 36.0	-0.1
DRO	**Drossia**	**0.53**	**84**	P	Pb	14 27 30.6	-0.4
DRO				S	Sg	14 27 38.3	+0.1
DRO	**Drossia**	**0.53**	**84**	P	Pb	14 27 30.5	-0.5
DRO				S	Sg	14 27 38.3	+0.1
DRO	**Drossia**	**0.53**	**84**	P	Pb	14 27 30.2	-0.7
DRO				S	Sn	14 27 40.2	-1.0
DRO				AML	AML	14 27 41.1	
	comp=N,1221μm,0.3s						
DRO				AML	AML	14 27 41.2	
	comp=E,1419μm,0.3s						
UPR	**University Cam**	**0.70**	**57**	P	Pn	14 27 35.0	-0.1
UPR				S	Sn	14 27 44.5	-0.8
UPR	**University Cam**	**0.70**	**57**	P	Pn	14 27 35.0	-0.1
UPR				S	Sn	14 27 44.5	-0.8
PDO	**Prodromos**	**0.70**	**9**	P	Pb	14 27 33.8	-0.2
PDO				S	Sg	14 27 44.1	+0.4
PDO	**Prodromos**	**0.70**	**9**	P	Pb	14 27 34.0	0.0
PDO				S	Sg	14 27 44.1	+0.4
PDO	**Prodromos**	**0.70**	**9**	P	Pb	14 27 33.5	-0.5
PDO				S	Sn	14 27 45.8	+0.2
PDO				AML	AML	14 27 46.0	
	comp=E,202μm,0.5s						
PDO				AML	AML	14 27 46.5	
	comp=N,404μm,0.3s						
PVO	**Paravola**	**0.81**	**28**	P	Pb	14 27 35.5	-0.2
PVO				S	Sg	14 27 46.7	-0.3
PVO	**Paravola**	**0.81**	**28**	P	Pb	14 27 35.5	-0.2
PVO				S	Sg	14 27 46.7	-0.3
PVO	**Paravola**	**0.81**	**28**	P	Pn	14 27 37.0	+0.3
LAKA	**Lakka**	**0.81**	**65**	P	Pb	14 27 35.1	-0.7
LAKA				S	Sg	14 27 47.0	0.0
LAKA	**Lakka**	**0.81**	**65**	P	Pb	14 27 35.1	-0.7
LAKA				S	Sg	14 27 47.0	0.0
EFP	**Efpalio**	**0.85**	**52**	P	Pb	14 27 36.3	-0.3
EFP				S	Sg	14 27 48.8	+0.3
EFP	**Efpalio**	**0.85**	**52**	P	Pb	14 27 36.3	-0.3
EFP				S	Sg	14 27 48.8	+0.3
EFP	**Efpalio**	**0.85**	**52**	P	Pb	14 27 36.0	-0.5
EFP				S	Sn	14 27 50.1	+0.9
EFP				AML	AML	14 27 50.8	
	comp=N,303μm,0.4s						
EFP				AML	AML	14 27 51.0	
	comp=E,369μm,0.3s						
KLV	**Kalavryta, Ach**	**0.88**	**80**	P	Pb	14 27 36.4	-0.7
LKD2	**Lefkada island**	**0.94**	**341**	P	Pb	14 27 37.5	-0.5
LKD2				S	Sg	14 27 50.8	-0.3
LKD2	**Lefkada island**	**0.94**	**341**	P	Pb	14 27 37.5	-0.5
LKD2				S	Sg	14 27 50.8	-0.3
LKD2	**Lefkada island**	**0.94**	**341**	P	Pb	14 27 37.0	-0.9
LKD2				S	Sn	14 27 51.8	+0.5
LKD2				AML	AML	14 27 54.0	
	comp=E,179μm,0.2s						
LKD2				AML	AML	14 27 54.4	
	comp=N,222μm,0.3s						
SERG	**Sergoula**	**0.94**	**57**	P	Pb	14 27 37.6	-0.5
SERG	**Sergoula**	**0.94**	**57**	P	Pb	14 27 37.6	-0.5
ANX	**Ano Chora**	**0.97**	**45**	P	Pb	14 27 38.3	-0.4
ANX				S	Sg	14 27 52.2	-0.1
ANX	**Ano Chora**	**0.97**	**45**	P	Pb	14 27 38.3	-0.4
ANX				S	Sg	14 27 52.2	-0.1
DSL	**Palaion Diasel**	**1.23**	**2**	P	Pn	14 27 42.4	-0.1
DSL				S	Sg	14 28 00.9	+0.5
DSL	**Palaion Diasel**	**1.23**	**2**	P	Pn	14 27 42.4	-0.1
DSL				S	Sg	14 28 00.9	+0.5
DSL				AML	AML	14 28 04.9	
	comp=E,83μm,0.4s						
DSL				AML	AML	14 28 05.2	
	comp=N,99μm,0.5s						
DSF	**Desfina**	**1.27**	**66**	P	Pn	14 27 41.9	-1.2
DSF	**Desfina**	**1.27**	**66**	P	Pn	14 27 41.9	-1.2
DSF				S	Sg	14 28 02.0	+0.3
DSF	**Desfina**	**1.27**	**66**	P	Pg	14 27 45.3	+0.2
DSF				S	Sg	14 28 02.0	+0.3
DSF				AML	AML	14 28 04.5	
	comp=N,48μm,0.3s						
DSF				AML	AML	14 28 05.5	
	comp=E,55μm,0.2s						
AGG	**Agios Georgios**	**1.50**	**42**	P	Pg	14 27 48.7	-0.7
AGG	**Agios Georgios**	**1.50**	**42**	P	Pg	14 27 48.6	-0.8

*CSEM **26** 14:28:03.7±0.2, 36°.39N×25°.43E, h6km±1km, ML2.6, Error ellipse: s-maj=6.3km s-min=4.0km az=70.0*
*ATH **26** 14:28:03.5, 36°.40N×25°.48E, h3km±1km, ML2.5/3, Error ellipse: s-maj=2.3km s-min=1.0km az=268.0*

THE 26 14:28:04.2, 36°.42N×25°.40E, h3km±1km, ML2.6/5, Error ellipse: s-maj=1.0km s-min=0.4km az=115.0, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THR3	**Thira Island,**	**0.01**	**176**	P	Pg	14 28 05.2	+0.5
THR3	**Thira Island,**	**0.01**	**176**	P	Pg	14 28 05.2	+0.5
THR7	**Fira-Santorini**	**0.02**	**84**	P	Pg	14 28 05.2	+0.3
THR7	**Fira-Santorini**	**0.02**	**84**	P	Pg	14 28 05.2	+0.3
THR2	**Thira island,**	**0.04**	**47**	P	Pg	14 28 05.2	+0.1
THR2	**Thira island,**	**0.04**	**47**	P	Pg	14 28 05.2	+0.1
THR5	**Thira Island,**	**0.04**	**266**	P	Pg	14 28 05.4	+0.3
THR5	**Thira Island,**	**0.04**	**266**	P	Pg	14 28 05.4	+0.3
THT1	**Athinios (Pele**	**0.04**	**145**	P	Pg	14 28 05.3	+0.2
THT1				S	Sg	14 28 06.2	+0.5
THT1	**Athinios (Pele**	**0.04**	**145**	P	Pg	14 28 05.3	+0.2
THT1				S	Sg	14 28 06.2	+0.5
CMBO	**Columbo, Santo**	**0.05**	**5**	P	Pg	14 28 05.5	+0.2
CMBO				S	Sg	14 28 06.6	+0.6
CMBO	**Columbo, Santo**	**0.05**	**5**	P	Pg	14 28 05.5	+0.2
CMBO				S	Sg	14 28 06.6	+0.6
CMBO	**Columbo, Santo**	**0.05**	**5**	P	Pg	14 28 05.6	+0.3
CMBO				S	Sg	14 28 07.2	+1.2
CMBO				AML	AML	14 28 07.4	
	comp=N,27067μm,0.1s						
CMBO				AML	AML	14 28 07.7	
	comp=E,24019μm,0.3s						
THR6	**Thira Island,**	**0.06**	**182**	P	Pg	14 28 05.4	-0.1
THR6	**Thira Island,**	**0.06**	**182**	P	Pg	14 28 05.4	-0.1
SANT	**Santorini**	**0.07**	**136**	P	Pg	14 28 05.9	+0.3
SANT				S	Sg	14 28 07.1	+0.5
SANT	**Santorini**	**0.07**	**136**	P	Pg	14 28 05.9	+0.3
SANT				S	Sg	14 28 07.1	+0.5
APE	**Apeiranthos**	**0.66**	**9**	P	Pg	14 28 16.6	-0.2
APE				S	Sb	14 28 26.9	-1.1
APE	**Apeiranthos**	**0.66**	**9**	P	Pg	14 28 16.4	-0.4
APE				S	Sb	14 28 26.9	-1.1
APE	**Apeiranthos**	**0.66**	**9**	P	Pg	14 28 16.4	-0.4
APE	**Apeiranthos**	**0.66**	**9**	P	Pg	14 28 16.4	-0.4
APE				S	Sg	14 28 26.0	+0.7
APE				AML	AML	14 28 28.7	
	comp=E,409μm,0.4s						
APE				AML	AML	14 28 29.2	
	comp=N,395μm,0.3s						
MHLO	**Agia Marina, M**	**0.85**	**289**	P	Pg	14 28 20.6	+0.1
MHLO				S	Sb	14 28 33.1	-0.3
MHLO	**Agia Marina, M**	**0.85**	**289**	P	Pg	14 28 20.6	+0.1
MHLO				S	Sb	14 28 33.1	-0.3
MHLO	**Agia Marina, M**	**0.85**	**289**	P	Pg	14 28 19.9	-0.6
MHLO				S	Sb	14 28 34.0	+0.6
MHLO				AML	AML	14 28 34.4	
	comp=N,540μm,0.8s						
MHLO				AML	AML	14 28 35.3	
	comp=E,534μm,0.5s						
NPS	**Neapolis**	**1.17**	**171**	P	Pg	14 28 25.4	-1.2
NPS	**Neapolis**	**1.17**	**171**	P	Pg	14 28 25.4	-1.2
LAST	**Lasithi**	**1.26**	**177**	P	Pg	14 28 26.5	-1.8
LAST	**Lasithi**	**1.26**	**177**	P	Pg	14 28 26.5	-1.8
ZKR	**Zakros**	**1.46**	**153**	P	Pn	14 28 30.9	-0.6
ZKR	**Zakros**	**1.46**	**153**	P	Pn	14 28 30.9	-0.6
KARP	**Karpathos**	**1.67**	**121**	P	Pn	14 28 33.8	-0.7
KARP	**Karpathos**	**1.67**	**121**	P	Pn	14 28 32.9	-1.6
KARP	**Karpathos**	**1.67**	**121**	P	Pn	14 28 32.9	-1.6

MAN 26 14:32:18, 18°.58N×121°.09E, h38km, mb4.3, ML3.2, MS3.0, 1D, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PIP	**Pasuquin**	**0.51**	**241**	⇓*i*P	Pn	14 32 30.2	+1.3
PIP				*e*S	Sn	14 32 39.9	+3.4
APYP	**Conner**	**0.73**	**169**	*e*P	Pn	14 32 32.9	+1.2
APYP				*e*S	Sn	14 32 43.7	+2.0
ABRA	**Dolores**	**0.99**	**201**	*e*P	Pn	14 32 35.1	-0.3
ABRA				*e*S	Sn	14 32 48.5	+0.3
CAUP	**Cauayan**	**1.77**	**157**	*e*P	Pn	14 32 47.9	+1.8
CAUP				*e*S	Sn	14 33 10.0	+2.7

IDC 26 14:46:23.8±57.0, 20°.22S×177°.33W, h0km, mb3.6/3, mb1 3.8/3, mb1mx3.6/20, mbtmp3.6/3, Error ellipse: s-maj=1052.0km s-min=173.3km az=83.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**38.48**	**244**	P	P	14 53 47.3	-0.4
	0.9nm,0.7s,baz=98,slow=13,SNR=2.8						
ASAR	**Alice Springs**	**45.20**	**256**	P	P	14 54 42.8	-0.1
	0.9nm,0.8s,baz=95,slow=8.6,SNR=14						
WRA	**Warramunga Arr**	**45.27**	**262**	P	P	14 54 43.5	+0.1
	0.3nm,0.3s,baz=95,slow=8.1,SNR=14						

*IDC **26** 14:46:48.9±7.5, 36°.24N×24°.59E, h0km, mb3.6/2, mb1 3.7/4, mb1mx3.3/30, mbtmp3.5/4, ML2.9/2, Error ellipse: s-maj=160.0km s-min=97.3km az=132.0*
*ISCJB **26** 14:47:19.7±0.6, 36°.58N±0°.05×26°.87E±0°.04, h117km±8km, mb3.4/2, Error ellipse: s-maj=9.4km s-min=4.4km az=160.6*
*ATH **26** 14:47:19.2, 36°.57N×26°.89E, h124km±5km, ML2.8/6, Error ellipse: s-maj=5.7km s-min=1.4km az=117.0*
*CSEM **26** 14:47:21.4±0.2, 36°.58N×26°.88E, h100km, MD3.0, Error ellipse: s-maj=6.8km s-min=4.2km az=163.0*
*ISK **26** 14:47:23.0, 36°.58N×26°.96E, h58km, MD3.0*

ISC 26 14:47:20.4±1.0, 36°.61N±0°.04×26°.89E±0°.03, h107km±10km, n48, σ1°12/64, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BODT	**Bodrum**	**0.57**	**37**	*e*PG	**Pn**	**14 47 36.0**	**-1.4**
BODT	**Bodrum**	**0.57**	**37**	*e*Pg	**Pn**	**14 47 36.0**	**-1.4**
ARG	**Arkhangelos**	**1.07**	**111**	P	**Pn**	**14 47 43.0**	**+0.9**
ARG				S	**Sn**	**14 47 59.8**	**+1.3**
KARP	**Karpathos**	**1.08**	**168**	*e*PG	**Pn**	**14 47 42.2**	**-0.1**
KARP	**Karpathos**	**1.08**	**168**	*e*Pg	**Pn**	**14 47 42.2**	**-0.1**
KARP	**Karpathos**	**1.08**	**168**	P	**Pn**	**14 47 42.8**	**+0.5**
KARP				S	**Sn**	**14 47 59.1**	**+0.4**
KARP	**Karpathos**	**1.08**	**168**	P	**Pn**	**14 47 42.8**	**+0.5**
KARP				S	**Sn**	**14 47 59.1**	**+0.4**
KARP				AML	AML	14 48 01.5	
	comp=N,668μm,0.2s						
KARP				AML	AML	14 48 02.0	
	comp=E,822μm,0.1s						
SMG	**Samos**	**1.10**	**358**	P	**Pn**	**14 47 42.5**	**+0.1**
SMG	**Samos**	**1.10**	**358**	P	**Pn**	**14 47 42.5**	**+0.1**
SANT	**Santorini**	**1.18**	**259**	P	**Pn**	**14 47 45.2**	**+1.9**
SANT	**Santorini**	**1.18**	**259**	P	**Pn**	**14 47 45.2**	**+1.9**
APE	**Apeiranthos**	**1.18**	**293**	*e*PN	**Pn**	**14 47 44.9**	**+1.5**
APE	**Apeiranthos**	**1.18**	**293**	*e*Pn	**Pn**	**14 47 44.9**	**+1.5**
APE	**Apeiranthos**	**1.18**	**293**	P	**Pn**	**14 47 45.2**	**+1.8**
APE	**Apeiranthos**	**1.18**	**293**	P	**Pn**	**14 47 45.2**	**+1.8**
YER	**Yerkesik**	**1.24**	**64**	*e*PN	**Pn**	**14 47 44.4**	**+0.4**
YER	**Yerkesik**	**1.24**	**64**	*e*Pn	**Pn**	**14 47 44.4**	**+0.4**
THR5	**Thira Island,**	**1.25**	**262**	*e*PN	**Pn**	**14 47 45.9**	**+1.8**
THR5	**Thira Island,**	**1.25**	**262**	*e*Pn	**Pn**	**14 47 45.9**	**+1.8**
DALY	**Dalyan (Mu¨la**	**1.43**	**81**	*e*PN	**Pn**	**14 47 47.2**	**+1.0**
DALY	**Dalyan (Mu¨la**	**1.43**	**81**	*e*Pn	**Pn**	**14 47 47.2**	**+1.0**
ZKR	**Zakros**	**1.59**	**200**	P	**Pn**	**14 47 48.1**	**0.0**
ZKR				S	**Sn**	**14 48 08.6**	**-0.5**
ZKR	**Zakros**	**1.59**	**200**	P	**Pn**	**14 47 48.1**	**0.0**
ZKR				S	**Sn**	**14 48 08.7**	**-0.5**
ZKR				AML	AML	14 48 12.7	
	comp=E,964μm,0.4s						
ZKR				AML	AML	14 48 12.8	
	comp=N,246μm,0.3s						
NPS	**Neapolis**	**1.69**	**218**	P	**Pn**	**14 47 50.1**	**+0.7**
NPS				S	**Sn**	**14 48 11.6**	**+0.1**
NPS	**Neapolis**	**1.69**	**218**	P	**Pn**	**14 47 50.1**	**+0.7**
NPS				S	**Sn**	**14 48 11.7**	**+0.1**
NPS				AML	AML	14 48 13.2	
	comp=E,457μm,0.3s						
NPS				AML	AML	14 48 13.4	
	comp=N,452μm,0.2s						
FETY	**Fethiye**	**1.77**	**88**	*e*PN	**Pn**	**14 47 51.2**	**+0.9**
FETY				*e*SN	**Sn**	**14 48 12.2**	**-0.9**
FETY	**Fethiye**	**1.77**	**88**	*e*Pn	**Pn**	**14 47 51.2**	**+0.9**
FETY				*e*Sn	**Sn**	**14 48 12.2**	**-0.9**
LAST	**Lasithi**	**1.84**	**219**	P	**Pn**	**14 47 51.4**	**0.0**
LAST				S	**Sn**	**14 48 15.6**	**+0.7**
LAST	**Lasithi**	**1.84**	**219**	P	**Pn**	**14 47 51.4**	**0.0**
SIVA	**Sivas**	**2.32**	**227**	P	**Pn**	**14 47 57.9**	**+0.6**
SIVA	**Sivas**	**2.32**	**227**	P	**Pn**	**14 47 57.9**	**+0.6**
ELL	**Elmali**	**2.43**	**86**	*e*PN	**Pn**	**14 48 01.2**	**+2.2**
ELL	**Elmali**	**2.43**	**86**	*e*Pn	**Pn**	**14 48 01.2**	**+2.2**
VAM	**Vamos**	**2.49**	**242**	P	**Pn**	**14 47 59.0**	**-0.6**
VAM				S	**Sn**	**14 48 29.0**	**-0.6**
IMMV	**Iera Moni Meta**	**2.62**	**245**	P	**Pn**	**14 48 01.2**	**-0.1**
IMMV				S	**Sn**	**14 48 31.4

KBG	Krutoberegovo	1.92	326	S	Sn	14 55 07.2	+0.3
ZLN	Zelenaya	2.57	303	eP	Pn	14 54 56.9	+4.0
ZLN				eS	Sn	14 55 27.7	+4.7
SMKR	Semkarok	2.62	318	P	Pn	14 54 56.2	+2.6
SMKR				eS	Sn	14 55 28.1	+3.9
BDR	Baidarnaya	2.71	315	eP	Pn	14 54 58.2	+3.3
BDR				eS	Sn	14 55 30.8	+4.3
KMNR	Kamenistaya	2.75	295	eP	Pn	14 54 59.2	+3.9
KRSR	Krestovskiy	2.79	305	P	Pn	14 54 58.7	+2.8
KRSR				S	Sn	14 55 31.8	+3.5
SRKR	Sorokina	2.79	316	P	Pn	14 54 59.4	+3.5
SRKR				eS	Sn	14 55 32.5	+4.2
KLY	Klyuchi	2.80	307	P	Pn	14 54 57.9	+2.0
KLY				S	Sn	14 55 29.6	+1.2
KPT	Kopyto	2.84	299	P	Pn	14 55 00.2	+3.6
ESO	Esso	3.62	292	P	Pn	14 55 10.7	+3.4
SDLR	Sedlovina	3.69	250	eP	Pn	14 55 12.5	+4.3
SMAR	Somma	3.74	250	eP	Pn	14 55 12.9	+3.9
UGLR	Uglovaya	3.75	249	eP	Pn	14 55 13.2	+4.1
KRER	Koryakskii	3.75	251	eP	Pn	14 55 12.9	+3.7
AVH	Avacha	3.77	250	eP	Pn	14 55 13.6	+4.2
KRX	Arik	3.78	252	eP	Pn	14 55 13.7	+4.1
PET	Petropavlovsk	3.92	247	eP	Pn	14 55 15.3	+3.9
GNL	Ganaly	4.06	259	eP	Pn	14 55 18.3	+4.9
KRMR	Karymshinskiy	4.29	247	P	Pn	14 55 20.9	+4.4
KRMR				S	Sn	14 56 08.5	+3.3
RUS	Russkaya	4.30	241	eP	Pn	14 55 21.1	+4.6
ASAK	Asacha	4.64	243	eP	Pn	14 55 26.1	+4.8

*CSEM **26** 15:01:08.6, 37°.92N×21°.09E, h12km, ML1.5/6*
ATH 26 15:01:08.6, 37°.92N×21°.09E, h12km±2km, ML1.5/6, Error ellipse: s-maj=2.3km s-min=0.9km az=165.0, Southern Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VTN	Vitineika	0.07	91	P	Pg	15 01 10.3	-0.8
VTN				S	Sg	15 01 13.2	+0.2
VTN	Vitineika	0.07	91	P	Pg	15 01 10.3	-0.9
VTN				S	Sg	15 01 13.2	+0.2
KFL	Anninata	0.31	309	P	Pg	15 01 15.4	+0.5
KFL	Anninata	0.31	309	P	Pg	15 01 15.4	+0.5
RLS	Riolos of Patr	0.33	65	P	Pg	15 01 13.7	-1.5
RLS				S	Sg	15 01 19.9	+0.2
RLS	Riolos of Patr	0.33	65	S	Sg	15 01 19.9	+0.2
RLS				AML	AML	15 01 20.8	
	comp=E,164μm,0.2s						
RLS				AML	AML	15 01 20.8	
	comp=N,176μm,0.3s						
ZKS	Zakynthos	0.33	228	P	Pb	15 01 16.2	-0.2
ZKS				S	Sb	15 01 20.8	-0.8
ZKS	Zakynthos	0.33	228	P	Pb	15 01 16.2	-0.2
ZKS				S	Sb	15 01 20.8	-0.8
ZKS				AML	AML	15 01 26.0	
	comp=N,756μm,0.2s						
ZKS				AML	AML	15 01 26.0	
	comp=E,756μm,0.2s						
AXS	Araxos	0.36	39	P	Pg	15 01 15.6	-0.2
AXS				S	Sg	15 01 20.6	0.0
AXS	Araxos	0.36	39	P	Pg	15 01 15.6	-0.2
AXS				S	Sg	15 01 20.6	+0.1
VLS	Valsamata	0.47	303	P	Pg	15 01 16.0	-1.9
VLS				S	Sb	15 01 25.4	-0.5
DRO	Drossia	0.49	86	P	Pg	15 01 17.5	-0.7
DRO				S	Sb	15 01 26.0	-0.3
DRO	Drossia	0.49	86	P	Pg	15 01 17.6	-0.7
DRO				S	Sb	15 01 26.0	-0.3
DRO				AML	AML	15 01 27.9	
	comp=N,293μm,0.3s						
DRO				AML	AML	15 01 28.6	
	comp=E,441μm,0.4s						
AMT	Artemida-Makis	0.62	128	P	Pg	15 01 20.1	-0.6
AMT				S	Sb	15 01 30.7	+0.6
AMT	Artemida-Makis	0.62	128	P	Pg	15 01 20.1	-0.6
AMT				S	Sb	15 01 30.7	+0.6
PDO	Prodromos	0.68	6	P	Pb	15 01 22.3	-0.2
PDO				S	Sb	15 01 31.7	-0.2
PDO	Prodromos	0.68	6	P	Pb	15 01 22.3	-0.2
PDO				S	Sb	15 01 31.7	-0.2
PDO				AML	AML	15 01 40.9	
	comp=N,85μm,0.3s						
PDO				AML	AML	15 01 41.3	
	comp=E,72μm,0.4s						
LAKA	Lakka	0.77	65	P	Pg	15 01 22.5	-1.0
LAKA				S	Sn	15 01 35.9	-0.9
LAKA	Lakka	0.77	65	P	Pg	15 01 22.5	-1.0
LAKA				S	Sn	15 01 35.9	-0.9
PVO	Paravola	0.78	26	P	Pb	15 01 24.0	-0.1
PVO	Paravola	0.78	26	P	Pb	15 01 24.0	-0.1
EFP	Efpalio	0.82	51	P	Pg	15 01 24.5	+0.1
EFP				S	Sg	15 01 34.2	-0.9
EFP	Efpalio	0.82	51	P	Pg	15 01 24.5	+0.1
EFP				S	Sg	15 01 34.2	-1.0
KLV	Kalavryta, Ach	0.85	81	P	Pg	15 01 23.2	-1.8
KLV				S	Sn	15 01 37.7	-1.1
KLV	Kalavryta, Ach	0.85	81	P	Pg	15 01 23.2	-1.8
KLV				S	Sn	15 01 37.7	-1.1
KLV				AML	AML	15 01 41.4	
	comp=E,35μm,0.4s						
KLV				AML	AML	15 01 41.5	
	comp=N,32μm,0.4s						
SERG	Sergoula	0.91	57	P	Pg	15 01 25.8	-0.3
ANX	Ano Chora	0.94	44	P	Pg	15 01 25.5	-1.2
ANX				S	Sb	15 01 40.1	+0.8
ANX	Ano Chora	0.94	44	S	Sb	15 01 40.1	+0.8
ANX				AML	AML	15 01 43.8	
	comp=E,42μm,0.4s						
ANX				AML	AML	15 01 44.0	
	comp=N,64μm,0.5s						
PYL	PYLOS	1.14	153	P	Pb	15 01 29.5	-0.8
PYL	PYLOS	1.14	153	P	Pb	15 01 29.5	-0.8

*DDA **26** 15:01:48.0, 36°.85N×35°.48E, h19km, Ml3.5*
*ISCJB **26** 15:01:49.6±0.4, 36°.88N±0°.03×35°.47E±0°.03, h18km±6km, Error ellipse: s-maj=5.3km s-min=3.4km az=9.7*
*ISK **26** 15:01:49.1, 36°.91N×35°.44E, h16km, MD3.2*
*CSEM **26** 15:01:49.7±0.2, 36°.86N×35°.46E, h20km, ML3.5, Error ellipse: s-maj=5.8km s-min=4.4km az=22.0*
ISC 26 15:01:49.3±0.9, 36°.83N±0°.03×35°.45E±0°.02, h29km±7km, n41, σ0.84/58, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YURE	YUREGIR	0.14	89	P	Pb	15 01 55.0	+0.1
YURE	YUREGIR	0.14	89	i P	Pb	15 01 55.0	+0.1
KRTS	Karatas	0.26	194	ePG	Pn	15 01 57.4	+0.2
KRTS	Karatas	0.26	194	ePg	Pn	15 01 57.4	+0.2
CEYT	Ceyhan	0.30	52	ePG	Pb	15 01 55.7	-0.9
CEYT	Ceyhan	0.30	52	ePg	Pb	15 01 55.7	-0.9
DED	Mersin	0.54	285	i P	Pb	15 01 59.3	-1.1
DED				i S	Sb	15 02 06.6	-1.3
AKO	Adana	0.64	359	i P	Pb	15 02 00.3	-1.7
AKO				i S	Sb	15 02 09.0	-1.6
GULE	Gulek	0.71	310	P	Pb	15 02 02.7	-0.6
GULE				S	Sb	15 02 12.2	-0.6
GULE	Gulek	0.71	310	i P	Pb	15 02 02.7	-0.6
GULE				i S	Sb	15 02 12.2	-0.6
TAHT	Tahtakopru-Hat	0.74	127	ePG	Pn	15 02 04.5	+0.6
TAHT	Tahtakopru-Hat	0.74	127	ePg	Pn	15 02 04.5	+0.6
MERS	Mersin	0.75	274	ePG	Pb	15 02 03.4	-0.5
MERS				eSG	Sn	15 02 15.0	+0.5
MERS	Mersin	0.75	274	ePg	Pb	15 02 03.4	-0.5
MERS				eSg	Sn	15 02 15.0	+0.5
YAYL	Yayladag	0.95	146	P	Pn	15 02 06.9	0.0
YAYL				S	Sn	15 02 20.2	+0.7
YAYL	Yayladag	0.95	146	i P	Pn	15 02 06.9	0.0
YAYL				i S	Sn	15 02 20.2	+0.7
KAMA	Osmaniye	1.04	69	i P	Pn	15 02 07.7	-0.3
KAMA				i S	Sn	15 02 20.9	-0.8
KIZK	Mersin	1.11	252	P	Pn	15 02 09.2	+0.3
KIZK				S	Sb	15 02 25.0	+1.1
KIZK	Mersin	1.11	252	i P	Pn	15 02 09.2	+0.3
KIZK				i S	Sb	15 02 25.1	+1.1
KERG	Konya-Eregli	1.21	299	P	Pn	15 02 10.4	-0.1
KERG				S	Sn	15 02 26.5	+0.4
KERG	Konya-Eregli	1.21	299	i P	Pn	15 02 10.4	-0.1
KERG				i S	Sn	15 02 26.5	+0.4
KUZU	Kuzuini	1.30	92	P	Pn	15 02 12.0	+0.3
KUZU				S	Sn	15 02 28.6	+0.4
KUZU	Kuzuini	1.30	92	i P	Pn	15 02 12.0	+0.3
KUZU				i S	Sn	15 02 28.6	+0.4
NIG	Nigde	1.45	333	ePN	Pn	15 02 14.3	+0.5
NIG	Nigde	1.45	333	ePn	Pn	15 02 14.4	+0.5
GAZ	Gaziantep	1.45	76	ePN	Pb	15 02 15.1	-0.6
GAZ	Gaziantep	1.45	76	ePn	Pb	15 02 15.1	-0.6
GZT	Gaziantep	1.77	72	i P	Pb	15 02 19.9	-1.3
GZT				i S	Sn	15 02 40.2	+0.4
GULA	Gulagac	1.80	328	ePN	Pn	15 02 19.2	+0.7
GULA	Gulagac	1.80	328	ePn	Pn	15 02 19.2	+0.7
AVNS	Nevsehir-Avano	2.04	347	P	Pb	15 02 25.1	-0.6
AVNS	Nevsehir-Avano	2.04	347	i P	Pb	15 02 25.1	-0.6
AVNS				i S	Sb	15 02 52.2	+1.5
BNN	Bunyan	2.05	9	ePN	Pn	15 02 22.7	+0.7
BNN	Bunyan	2.05	9	ePn	Pn	15 02 22.7	+0.7
ERMK	Ermenek	2.05	266	i P	Pb	15 02 26.1	+0.1
LFK	Lefkose	2.19	226	ePN	Pb	15 02 26.6	-1.8
LFK	Lefkose	2.19	226	ePn	Pb	15 02 26.6	-1.8
DARE	Darende-Malaty	2.37	42	ePN	Pn	15 02 27.7	+1.3
DARE	Darende-Malaty	2.37	42	ePn	Pn	15 02 27.7	+1.3
SERE	Sereflikochisa	2.59	325	ePN	Pn	15 02 30.6	+1.1
SERE	Sereflikochisa	2.59	325	ePn	Pn	15 02 30.6	+1.1

*CSEM **26** 15:03:19.2, 40°.14N×29°.42E, h5km, MD2.4*
ISK 26 15:03:19.2, 40°.14N×29°.42E, h5km, MD2.4, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IZI	Iznik	0.20	12	ePG	Pg	15 03 23.9	+0.7
IZI	Iznik	0.20	12	ePg	Pg	15 03 23.9	+0.7
ADVT	Abdulvahap	0.38	40	ePG	Pg	15 03 27.2	+0.6
ADVT	Abdulvahap	0.38	40	ePg	Pg	15 03 27.2	+0.6
ORLT	Orhaneli	0.41	257	ePG	Pg	15 03 27.8	+0.6
ORLT	Orhaneli	0.41	257	ePg	Pg	15 03 27.8	+0.6
ARMT	Armutlu	0.60	315	ePG	Pg	15 03 31.4	+0.6
ARMT				eSG	Sb	15 03 40.3	-0.8
ARMT	Armutlu	0.60	315	ePg	Pg	15 03 31.4	+0.6
ARMT				eSg	Sb	15 03 40.3	-0.8
TVSB	Tavsanli	0.69	177	ePG	Pg	15 03 33.0	+0.6
TVSB	Tavsanli	0.69	177	ePg	Pg	15 03 33.0	+0.5
KCTX	Karacabey (Bur	0.82	279	ePG	Pb	15 03 36.5	+0.4
KCTX	Karacabey (Bur	0.82	279	ePg	Pb	15 03 36.5	+0.5
GULT	Gulveren	0.89	70	ePG	Pb	15 03 36.9	-0.2
GULT	Gulveren	0.89	70	ePg	Pb	15 03 36.9	-0.2

*NIED **26** 15:04:00, 39°.10N×142°.50E, h35km, Mw4.0 Best double couple: M₀1.20000×10^15 NP1:φ₀=319.00000°, δ15.00000°, λ=-146.00000°. NP2:φ₀=196.00000°, δ82.00000°, λ=-77.00000°.*
*ISCJB **26** 15:04:38.4±0.7, 39°.06N±0°.03×142°.36E±0°.06, h48km±4km, mb4.2/33, MS3.4/3, Error ellipse: s-maj=8.7km s-min=4.5km az=23.5*
*JMA **26** 15:04:38.3±0.1, 39°.08N×142°.38E, h34km±1km, M4.2*
JMA Felt II J1.
*NEIC **26** 15:04:41.1±0.7, 39°.03N×142°.32E, h58km±6km, mb4.6/17, Error ellipse: s-maj=9.5km s-min=5.1km az=121.0*
NEIC Recorded [2 JMA] in Iwate and Miyagi.
*IDC **26** 15:04:41.9±2.3, 39°.05N×142°.28E, h61km±20km, mb3.8/17, mb1 3.8/20, mb1mx3.6/53, mbtmp4.0/20, MS3.3/5, Ms1 3.3/5, ms1mx2.8/40, Error ellipse: s-maj=18.5km s-min=12.0km az=110.0*
ISC 26 15:04:39.8±1.4, 39°.04N±0°.05×142°.32E±0°.08, h43km±11km, n83, σ1.41/87, mb4.3/33, MS3.3/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.51	275	P	Pn	15 04 49.7	-1.1
OFUJ				S	Sn	15 04 57.4	-1.1
MIYJ	Miyakonagasawa	0.66	324	P	Pn	15 04 51.0	-1.8
MIYJ				S	Sn	15 04 59.9	-2.3
JMK	Ichinoseki	0.86	265	P	Pn	15 04 54.9	-0.6
JMK				S	Sn	15 05 06.8	-0.1
JOM	Ohasama	0.91	299	P	Pn	15 04 55.5	-0.6
JOM				S	Sn	15 05 07.6	-0.5
JIO	Ouri	0.96	233	P	Pn	15 04 55.8	-1.0
JIO				S	Sn	15 05 08.1	-1.1
JTH	Tanohata	0.97	339	P	Pn	15 04 55.2	-1.7
JKZ	Kuzumaki	1.22	321	P	Pn	15 04 59.8	-0.6
JKZ				S	Sn	15 05 15.2	-0.5
JRG	Rokugo	1.36	286	P	Pn	15 05 02.2	-0.1
JRG				S	Sn	15 05 20.6	+1.5
ERM	Erimo	3.04	12	ePn	Pn	15 05 24.8	-0.6
ERM				eSn	Sn	15 05 57.7	-2.8
MJAR	Matsushiro Arr	4.10	234	P	Pn	15 05 42.1	+2.1
	5.3nm,0.3s,baz=39,slow=11,SNR=108						
MAJO	Matsushiro	4.10	234	ePn	Pn	15 05 42.0	+2.0
MAT	Matsushiro	4.10	234	P	Pn	15 05 42.0	+2.0
MAT				S	Sn	15 06 28.9	+2.2
MJB9	Matsu-Tunnel	4.10	234	ePn	Pn	15 05 41.7	+1.7
ASAJ	Asahikawa	5.08	2	P	Pn	15 05 53.4	0.0
	1.0nm,0.3s,baz=200,slow=9.3,SNR=23						
ASAJ				S	Sn	15 06 54.3	+3.6
	2.9nm,0.3s,baz=64,slow=25,SNR=7.2						
ASAJ	Asahikawa	5.08	2	ePn	Pn	15 05 53.5	+0.2
ASAJ				eSn	Sn	15 06 40.5	-10
ASAJ				S	Sn	15 06 54.3	+3.6
INU	Inuyama	5.61	231	ePn	Pn	15 06 03.6	+2.9
JHJ2	Mitsune	6.25	200	ePn	Pn	15 06 09.2	-0.2
YSS	Yuzh-Sakhalins	7.92	2	ePn	Pn	15 06 32.8	+0.5
USRK	Ussuriysk Ar.	9.30	307	P	Pn	15 06 52.7	+1.6
	0.5nm,0.3s,baz=102,slow=14,SNR=8.0						
USRK				LR	LR	15 10 20.6	
	comp=Z,144nm,18.1s,baz=106,slow=37						
KSRS	Korea Array	11.43	267	P	Pn	15 07 24.7	+4.3
	0.2nm,0.3s,baz=79,slow=13,SNR=6.6						
KS15	Wonju Array Si	11.47	267	ePn	Pn	15 07 22.3	+1.4
KSAR	Wonju Array Be	11.47	267	P	Pn	15 07 24.7	+3.9
KLR	Kul'dur	12.69	327	P	P	15 07 48.0	+0.1
	0.3nm,0.3s,baz=144,slow=9.3,SNR=11						
KLR				LR	LR	15 12 31.2	
	comp=Z,76nm,19.8s,baz=138,slow=37						
MA2	Magadan	21.25	12	P	P	15 09 22.1	+0.2
	6.7nm,0.6s,baz=224,slow=9.2,SNR=11						
NACB	Ninganchiao	22.97	236	eP	P	15 09 39.4	-1.2
	19nm,1.0s						
SSLB	Suanglung	23.66	236	eP	P	15 09 44.8	-2.5
	22nm,1.3s						
YULB	Yu-li	23.72	235	eP	P	15 09 45.9	-1.9
	20nm,1.3s						
YAK	Yakutsk	24.29	345	P	P	15 09 52.0	-0.7
	2.3nm,0.6s,baz=334,slow=23,SNR=9.6						
YAK	Yakutsk	24.29	345	eP	P	15 09 52.1	-0.7
	20nm,0.7s						
SEY	Seymchan	24.59	11	P	P	15 09 57.1	+0.7
	2.3nm,0.7s,baz=178,slow=7.4,SNR=9.3						
SONA1	Songino Array	27.32	301	eP	P	15 10 18.1	-2.4
SONA0	Songino Array	27.32	301	eP	P	15 10 20.3	-0.2
	4.7nm,1.4s						
SONM	Songino Array	27.32	301	P	P	15 10 20.3	-0.2
	0.7nm,0.5s,baz=92,slow=8.3,SNR=4.6						
H11N2	WAKE ISLAND Hy	28.64	125	T	T	15 40 56.0	
	baz=317,slow=75,SNR=207						
H11N1	WAKE ISLAND Hy	28.64	125	T	T	15 40 56.8	
	baz=317,slow=75,SNR=278						
H11N3	WAKE ISLAND Hy	28.65	125	T	T	15 40 57.4	
	baz=317,slow=75,SNR=255						
H11S1	WAKE ISLAND Hy	29.42	127	T	T	15 41 58.2	
	baz=318,slow=76,SNR=54						
H11S3	WAKE ISLAND Hy	29.42	127	T	T	15 41 58.3	
	baz=318,slow=76,SNR=68						
H11S2	WAKE ISLAND Hy	29.44	127	T	T	15 41 59.4	
	baz=318,slow=76,SNR=67						
BILL	Bilibino	31.91	17	eP	P	15 11 03.2	+2.5
	8.6nm,1.6s						
ZAA1	Zalesovo Array	41.12	311	eP	P	15 12 19.4	+0.1
ZAA0	Zalesovo Array	41.12	311	eP	P	15 12 18.0	-1.4
ZALV	Zalesovo Beam	41.12	311	P	P	15 12 19.4	+0.1
	2.7nm,0.5s,baz=90,slow=7.8,SNR=13						
ZALV				LR	LR	15 30 09.0	
	comp=Z,39nm,18.8s,baz=70,slow=37						
NRIK	Noril'sk	41.76	334	LR	LR	15 30 45.2	
	comp=Z,56nm,19.9s,baz=106,slow=38						
CM31	Chiang Mai Arr	42.72	254	eP	P	15 12 33.2	+0.4
CMAR	Chiang Mai Arr	42.72	254	P	P	15 12 33.5	+0.7
	0.9nm,0.8s,baz=44,slow=6.1,SNR=9.6						
CM01	Chiang Mai Arr	42.73	254	eP	P	15 12 33.0	+0.1
MK01	Makanchi Array	43.69	300	eP	P	15 12 40.5	+0.1
MK31	Makanchi Array	43.69	300	eP	P	15 12 40.5	+0.1
MK32	Makanchi Array	43.69	300	eP	P	15 12 40.5	+0.1
MKAR	Makanchi Array	43.69	300	P	P	15 12 40.5	+0.1
	3.6nm,0.7s,baz=83,slow=10.0,SNR=34						
MKAR	Makanchi Array	43.69	300	eP	P	15 12 40.7	+0.3
MAKZ	Makanchi	43.90	301	eP	P	15 12 41.7	-0.3
	4.2nm,0.8s						
SPU	Mount Spurr	45.22	38	eP	P	15 12 53.0	+0.6
KURK	Kurchatov	45.29	307	eP	P	15 12 53.3	+0.3
	8.9nm,0.6s						
IL1	Eielson Array	47.43	33	eP	P	15 13 10.1	+0.5
ILAR	Eielson Array	47.43	33	P	P	15 13 10.2	+0.6
	0.7nm,0.7s,baz=268,slow=6.4,SNR=5.6						
ILB	Eielson Array	47.43	33	eP	P	15 13 08.8	-0.8
KSM	Kuching	47.45	226	eP	P	15 13 08.1	-2.3
	9.0nm,1.0s						
TKM2	Tokmak 2	49.33	297	eP	P	15 13 25.0	+0.1
	5.4nm,0.8s						
VOSK	Vostochnaya	49.50	311	eP	P	15 13 25.1	-0.7
BVAR	Borovoye Array	49.77	311	P	P	15 13 28.3	+0.5
	2.9nm,0.6s,baz=70,slow=7.8,SNR=15						
AAK	Ala-Archa	50.19	297	eP	P	15 13 29.9	-1.5
	1.9nm,0.8s						
ZRNK	Zerenda	50.60	311	eP	P	15 13 34.2	+0.1
	4.7nm,0.8s						
EKS2	Erkin-Say	50.68	297	eP	P	15 13 35.2	+0.2
	2.4nm,0.7s						
IPM	Ipoh	50.80	238	eP	P	15 13 35.2	-0.8
	22nm,1.5s						
KKAR	Karatay Array	52.76	299	eP	P	15 13 50.3	-0.1
ARU	Arti	55.35	318	P	P	15 14 08.9	0.0
	4.4nm,0.5s,baz=310,slow=4.8,SNR=9.1						
ARU	Arti	55.35	318	eP	P	15 14 08.6	-0.3
	7.7nm,0.8s						
ABKAR	Akbulak array	57.21	309	eP	P	15 14 21.9	-0.5
KBL	Kabul	57.38	290	eP	P	15 14 24.7	+0.6
	3.7nm,0.4s						
AKTO	Aktyubinsk	57.88	311	P	P	15 14 26.2	-0.9
	1.5nm,0.8s,baz=79,slow=6.0,SNR=6.4						
WR1	Warramunga Arr	59.14	189	eP	P	15 14 35.5	-0.6
	37nm,2.0s						
WRA	Warramunga Arr	59.14	189	P	P	15 14 35.5	-0.6
	1.0nm,0.3s,baz=7.0,slow=7.0,SNR=28						
YKA	Yellowknife Ar	61.72	31	P	P	15 14 54.0	+0.8
	0.1nm,0.3s,baz=306,slow=8.1,SNR=3.7						
YKA	Yellowknife Ar	61.72	31	P	P	15 14 54.0	+0.8
ASAR	Alice Springs	62.87	189	P	P	15 15 01.8	+0.4
	0.5nm,0.7s,baz=8.1,slow=5.3,SNR=9.3						
FIA0	FINESS Array S	67.38	332	eP	P	15 15 29.5	-0.6
FINES	FINESS Array B	67.38	332	P	P	15 15 29.5	-0.6
	3.5nm,1.0s,baz=38,slow=9.6,SNR=4.4						
NB200	NORSAR Array S	72.62	337	eP	P	15 16 02.2	-0.1
NOA	NORSAR Array B	72.62	337	P	P	15 16 02.3	-0.1
	0.6nm,0.8s,baz=69,slow=7.8,SNR=2.7						
NOA				LR	LR	15 52 09.3	
	comp=Z,15nm,18.0s,baz=150,slow=39						
AKASG	Malin Array Be	73.15	322	P	P	15 16 05.2	-0.4
	1.4nm,0.4s,baz=43,slow=6.3,SNR=7.8						
PDAR	Pinedale Array	75.76	46	P	P	15 16 21.7	+0.4
	0.2nm,0.5s,baz=310,slow=4.6,SNR=2.5						

*ISCJB **26** 15:06:18.6±0.5, 37°.72N±0°.03×29°.34E±0°.04, h6km±6km, Error ellipse: s-maj=6.0km s-min=4.6km az=152.2*
*CSEM **26** 15:06:18.4±0.2, 37°.72N×29°.33E, h12km, ML2.9, Error ellipse: s-maj=4.6km s-min=3.1km az=71.0*
*ISK **26** 15:06:18.1, 37°.73N×29°.32E, h18km, MD2.8*
*DDA **26** 15:06:18.0, 37°.70N×29°.34E, h5km, Ml2.9*
ISC 26 15:06:18.5±1.0, 37°.73N±0°.03×29°.34E±0°.04, h14km±8km, n29, σ0.70/37, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DNZL	Cakiroluk	0.23	260	P	Pg	15 06 23.4	-0.3
DNZL				S	Sg	15 06 27.6	+0.4
DNZL	Cakiroluk	0.23	260	i P	Pg	15 06 23.4	-0.3
DNZL				i S	Sg	15 06 27.6	+0.4
DENT	Denizli	0.24	276	ePG	Pg	15 06 23.7	-0.1
DENT	Denizli	0.24	276	ePg	Pg	15 06 23.7	-0.1
GOLH	Golhisar	0.52	160	P	Pg	15 06 28.1	-0.7
GOLH				S	Sb	15 06 36.1	-0.9
GOLH	Golhisar	0.52	160	i P	Pg	15 06 28.1	-0.7
GOLH				i S	Sb	15 06 36.1	-0.9
GLHS	Glhisar (BURDU	0.59	167	ePG	Pb	15 06 30.3	-0.3
GLHS				eSG	Sb	15 06 39.5	+0.7
GLHS	Glhisar (BURDU	0.59	167	ePg	Pb	15 06 30.3	-0.3
GLHS				eSg	Sb	15 06 39.5	+0.7
KHL	Karahalli	0.61	14	ePG	Pg	15 06 30.5	0.0
KHL	Karahalli	0.61	14	ePg	Pg	15 06 30.5	0.0
KHAL	Karahalli	0.65	11	P	Pb	15 06 31.5	-0.3
KHAL	Karahalli	0.65	11	i P	Pb	15 06 31.5	-0.3
KHAL				i S	Sn	15 06 42.7	-1.0
KULA	Kula-Manisa	0.95	326	ePG	Pn	15 06 37.1	-0.4
KULA	Kula-Manisa	0.95	326	ePg	Pn	15 06 37.1	-0.4
YER	Yerkesik	1.03	235	ePG	Pg	15 06 38.2	-0.1
YER	Yerkesik	1.03	235	ePg	Pg	15 06 38.2	-0.1
TURN	Turunc	1.04	215	i P	Pg	15 06 44.3	+5.8
TURN				i S	Sn	15 07 03.0	+10
DALY	Dalyan (Mu¨la	1.06	211	ePG	Pg	15 06 38.7	-0.2
DALY	Dalyan (Mu¨la	1.06	211	ePg	Pg	15 06 38.7	-0.2
ELL	Elmali	1.08	155	ePN	Pb	15 06 38.7	-0.3
ELL	Elmali	1.08	155	ePn	Pb	15 06 38.7	-0.3
KORT	Kork

MJAR	**Matsushiro Arr**	**4.14 295**	Pn	**Pn**	**15 08 15.6**	**-0.4**
	4.6nm,0.3s,baz=94,slow=11,SNR=11					
MJAR			Sn	**Sn**	**15 09 05.0**	**+0.7**
	7.1nm,0.3s,baz=302,slow=26,SNR=4.3					
MAJO	**Matsushiro**	**4.14 295**	*e*Pn	**Pn**	**15 08 16.3**	**+0.4**
MAT	**Matsushiro**	**4.14 295**	P	**Pn**	**15 08 16.2**	**+0.2**
MAT			S	**Sn**	**15 09 02.6**	**-1.7**
MJB9	**Matsu-Tunnel**	**4.14 295**	*e*Pn	**Pn**	**15 08 15.7**	**-0.3**
CBIJ	**Chichi jima**	**7.78 184**	*e*Pn	**Pn**	**15 09 04.8**	**-1.1**
CBIJ			*e*Sn	Sn	15 10 21.9	-12
JCJ	**Chichijima**	**7.78 184**	Pn	**Pn**	**15 09 03.2**	**-2.7**
	3.3nm,0.3s,baz=3.5,slow=19,SNR=3.7					
JCJ			Sn	Sn	15 10 25.5	-8.5
	15nm,0.3s,baz=135,slow=23,SNR=4.8					
ASAJ	**Asahikawa**	**9.23 359**	Pn	**Pn**	**15 09 23.1**	**-2.8**
	1.2nm,0.3s,baz=170,slow=6.1,SNR=1.8					
ASAJ	**Asahikawa**	**9.23 359**	*e*Pn	**Pn**	**15 09 23.2**	**-2.6**
JNU	**Nakatsue**	**10.11 263**	*e*Pn	**Pn**	**15 09 40.1**	**+2.2**
KSRS	**Korea Array**	**12.35 286**	Pn	Pn	15 10 12.4	+3.9
	0.1nm,0.3s,baz=97,slow=14,SNR=4.3					
KSRS			LR	LR	15 15 12.3	
	comp=Z,57nm,20.9s,baz=98,slow=39					
KS15	**Wonju Array Si**	**12.38 286**	*e*Pn	Pn	15 10 12.4	+3.5
KSAR	**Wonju Array Be**	**12.38 286**	Pn	Pn	15 10 12.4	+3.5
USRK	**Ussuriysk Ar.**	**12.53 321**	Pn	**Pn**	**15 10 11.8**	**+0.9**
	0.2nm,0.3s,baz=146,slow=42,SNR=3.4					
MA2	**Magadan**	**25.25 9**	P	**P**	**15 12 38.9**	**+0.3**
	6.9nm,0.9s,baz=201,slow=7.3,SNR=4.9					
SEY	**Seymchan**	**28.70 9**	P	**P**	**15 13 10.7**	**+1.1**
	4.5nm,0.7s,baz=204,slow=9.0,SNR=13					
SONA0	**Songino Array**	**29.99 307**	*e*P	**P**	**15 13 23.1**	**+1.7**
	2.9nm,1.2s					
SONM	**Songino Array**	**29.99 307**	P	**P**	**15 13 23.1**	**+1.7**
	0.7nm,0.8s,baz=105,slow=7.1,SNR=3.0					
TIXI	**Tiksi**	**37.57 353**	P	**P**	**15 14 26.9**	**+0.2**
	0.4nm,0.3s,baz=144,slow=5.8,SNR=2.4					
CMAR	**Chiang Mai Arr**	**42.16 259**	P	**P**	**15 15 05.3**	**-0.3**
	0.6nm,0.8s,baz=50,slow=7.2,SNR=2.6					
ZAA0	**Zalesovo Array**	**44.25 314**	*e*P	**P**	**15 15 21.9**	**-0.1**
ZAA0			*e*PP	**PcP**	**15 17 06.3**	**0.0**
ZAA1	**Zalesovo Array**	**44.25 314**	*e*P	**P**	**15 15 21.9**	**0.0**
ZALV	**Zalesovo Beam**	**44.25 314**	P	**P**	**15 15 21.9**	**0.0**
	1.0nm,0.5s,baz=98,slow=6.6,SNR=6.5					
MK01	**Makanchi Array**	**46.28 304**	*e*P	**P**	**15 15 38.3**	**+0.1**
MK01			*e*PcP	**PcP**	**15 17 13.8**	**+0.3**
MK31	**Makanchi Array**	**46.28 304**	*e*P	**P**	**15 15 37.3**	**-1.0**
MK32	**Makanchi Array**	**46.28 304**	*e*P	**P**	**15 15 37.9**	**-0.4**
MKAR	**Makanchi Array**	**46.28 304**	P	**P**	**15 15 37.9**	**-0.4**
	1.1nm,0.7s,baz=91,slow=9.7,SNR=7.6					
MKAR	**Makanchi Array**	**46.28 304**	*e*P	**P**	**15 15 37.4**	**-0.9**
KDAK	**Kodiak Island**	**47.94 41**	*e*P	**P**	**15 15 51.1**	**+0.1**
	188nm,1.9s					
KURK	**Kurchatov**	**48.20 310**	*e*P	**P**	**15 15 54.0**	**+0.8**
KURBB	**Kurchatov Arra**	**48.27 310**	P	**P**	**15 15 54.0**	**+0.3**
	2.5nm,0.7s,baz=84,slow=7.6,SNR=11					
SML	**Sawmill**	**50.05 35**	*e*P	**P**	**15 16 08.4**	**+1.3**
	27nm,1.8s					
MDM	**Murphy Dome**	**50.13 31**	*e*P	**P**	**15 16 08.9**	**+1.2**
	13nm,1.9s					
ILAR	**Eielson Array**	**50.70 31**	P	**P**	**15 16 11.8**	**-0.3**
	0.6nm,0.6s,baz=264,slow=6.1,SNR=9.9					
ILB	**Eielson Array**	**50.70 31**	*e*P	**P**	**15 16 10.6**	**-1.5**
TKM2	**Tokmak 2**	**51.71 300**	*e*P	**P**	**15 16 21.7**	**+1.5**
	3.8nm,0.8s					
BVAR	**Borovoye Array**	**52.90 314**	P	**P**	**15 16 29.0**	**+0.3**
	0.4nm,0.5s,baz=89,slow=7.9,SNR=3.9					
ZRNK	**Zerenda**	**53.74 314**	*e*P	**P**	**15 16 35.3**	**+0.5**
	1.8nm,0.7s					
WB2	**Warramunga Arr**	**55.11 190**	*e*P	**P**	**15 16 44.7**	**-0.3**
	5.9nm,0.8s					
WR1	**Warramunga Arr**	**55.12 190**	*e*P	**P**	**15 16 45.2**	**+0.1**
	26nm,1.8s					
WRA	**Warramunga Arr**	**55.12 190**	P	**P**	**15 16 45.2**	**+0.1**
	4.1nm,0.7s,baz=8.8,slow=7.5,SNR=19					
FITZ	**Fitzroy Crossi**	**55.17 200**	*e*P	**P**	**15 16 46.3**	**+0.8**
	11nm,1.2s					
INK	**Inuvik**	**55.78 27**	P	**P**	**15 16 49.9**	**+0.7**
	1.8nm,0.6s,baz=310,slow=7.7,SNR=8.1					
INK	**Inuvik**	**55.78 27**	*e*P	**P**	**15 16 50.0**	**+0.7**
	7.6nm,1.5s					
ARU	**Arti**	**58.76 320**	P	**P**	**15 17 10.8**	**+0.3**
	1.9nm,0.4s,baz=75,slow=11,SNR=5.8					
ARU	**Arti**	**58.76 320**	*e*P	**P**	**15 17 10.3**	**-0.2**
	10nm,1.3s					
AS01	**Alice Springs**	**58.83 190**	*e*P	**P**	**15 17 11.0**	**-0.4**
AS31	**Alice Springs**	**58.84 190**	*e*P	**P**	**15 17 11.3**	**-0.1**
	0.8nm,0.6s					
ASAR	**Alice Springs**	**58.84 190**	P	**P**	**15 17 11.5**	**+0.1**
	0.9nm,0.6s,baz=17,slow=15,SNR=15					
ABKAR	**Akbulak array**	**60.24 311**	*e*P	**P**	**15 17 20.7**	**-0.2**
AKTO	**Aktyubinsk**	**61.00 313**	P	**P**	**15 17 26.5**	**+0.4**
	1.6nm,0.8s,baz=82,slow=13,SNR=6.2					
LVZ	**Lovozero**	**64.56 337**	*e*P	**P**	**15 17 51.5**	**+2.0**
	90nm,1.9s					
YKA	**Yellowknife Ar**	**65.08 30**	P	**P**	**15 17 51.8**	**-1.1**
	0.8nm,0.9s,baz=296,slow=6.9,SNR=7.6					
YKB5	**Yellowknife Ar**	**65.08 30**	*e*P	**P**	**15 17 51.8**	**-1.1**
GEYT	**Alibeck**	**65.92 300**	P	**P**	**15 17 59.7**	**+0.8**
	1.1nm,0.5s,baz=66,slow=5.4,SNR=3.0					
FIA0	**FINESS Array S**	**71.27 333**	*e*P	**P**	**15 18 31.8**	**0.0**
FINES	**FINESS Array B**	**71.27 333**	P	**P**	**15 18 31.8**	**0.0**
	2.4nm,0.8s,baz=1.9,slow=5.7,SNR=6.2					
KBZ	**Khabaz**	**73.21 312**	P	**P**	**15 18 44.4**	**+0.7**
	1.7nm,0.8s,baz=28,slow=6.6,SNR=4.4					
KVAR	**Kislovodsk Arr**	**73.21 312**	P	**P**	**15 18 45.5**	**+1.6**
	2.8nm,0.5s,baz=256,slow=2.7,SNR=3.1					
KIV	**Kislovodsk**	**73.22 312**	*e*P	**P**	**15 18 44.1**	**+0.3**
	5.4nm,0.6s					
NV01	**Mina Array Sit**	**75.33 53**	*e*P	**P**	**15 18 57.4**	**+0.9**
NVAR	**Mina Array Bea**	**75.33 53**	P	**P**	**15 18 57.0**	**+0.5**
	2.6nm,0.7s,baz=288,slow=6.9,SNR=16					
FCC	**Fort Churchill**	**75.39 27**	*e*P	**P**	**15 18 56.0**	**-0.2**
	10nm,1.4s					
CRGC	**Crocker Grade**	**76.10 57**	*e*P	**P**	**15 19 01.2**	**+0.3**
HFS	**Hagfors**	**76.53 336**	P	**P**	**15 19 03.0**	**+0.4**
	1.9nm,0.5s,baz=83,slow=3.4,SNR=8.3					
NB2	**NORSAR Subarra**	**76.62 338**	P	**P**	**15 19 03.5**	**+0.3**
	comp=Z,1.0nm,0.6s,baz=41,slow=5.9					
NB200	**NORSAR Array S**	**76.62 338**	*e*P	**P**	**15 19 03.2**	**0.0**
NOA	**NORSAR Array B**	**76.62 338**	P	**P**	**15 19 03.2**	**0.0**
	comp=Z,1.7nm,0.7s,baz=39,slow=5.7,SNR=7.1					
AKASG	**Malin Array Be**	**76.72 323**	P	**P**	**15 19 03.9**	**0.0**
	comp=Z,1.7nm,0.5s,baz=46,slow=6.2,SNR=7.2					
AKASG			LR	LR	15 55 00.1	
	comp=Z,15nm,18.7s,baz=295,slow=37					
IMW	**Indian Meadow**	**76.85 45**	*e*P	P	15 19 01.4	-3.7
	comp=Z,20nm,1.5s					
PD31	**Pinedale Array**	**78.33 46**	*e*P	**P**	**15 19 12.4**	**-1.0**
PDAR	**Pinedale Array**	**78.33 46**	P	**P**	**15 19 13.5**	**+0.1**
	comp=Z,0.5nm,0.6s,baz=270,slow=3.0,SNR=6.5					
SRU	**San Rafael Swe**	**79.93 49**	*e*P	**P**	**15 19 23.5**	**+1.3**
	comp=Z,4.1nm,0.7s					
BR101	**Keskin Array S**	**81.17 313**	*e*P	**P**	**15 19 29.6**	**+0.9**
BRTR	**Keskin Array B**	**81.17 313**	P	**P**	**15 19 29.6**	**+0.9**
	comp=Z,1.5nm,0.9s,baz=96,slow=3.7,SNR=7.7					
BR231	**Keskin MP Arra**	**81.62 313**	*e*P	**P**	**15 19 29.9**	**-1.1**
PV01	**Paradox Valley**	**81.74 49**	*e*P	**P**	**15 19 29.3**	**-2.6**
GERES	**GERESS Array B**	**85.16 329**	P	**P**	**15 19 49.1**	**+0.1**
	comp=Z,0.4nm,0.5s,baz=44,slow=7.9,SNR=4.7					
LTX	**Lajitas**	**90.48 53**	*e*P	**P**	**15 20 15.3**	**+0.2**
TXAR	**Lajitas Array**	**90.48 53**	P	**P**	**15 20 15.3**	**+0.3**
	comp=Z,0.3nm,0.7s,baz=267,slow=2.5,SNR=3.8					
LPAZ	**La Paz**	**146.67 64**	PKPbc	**PKPdf**	**15 26 54.5**	**+0.3**
	comp=Z,2.3nm,0.6s,baz=161,slow=4.6,SNR=7.6					

*ISK **26** 15:07:44.8,36°.76N×27°.53E,h2km,MD2.9*
*ATH **26** 15:07:44.7,36°.76N×27°.53E,h31km,ML2.7/6,Error ellipse: s-maj=2.0km s-min=1.0km az=233.0*
*DDA **26** 15:07:45.1,36°.75N×27°.54E,h7km,Ml3.1*
*ISCJB **26** 15:07:45.8±0.5,36°.75N±0°.02×27°.52E±0°.03,h10km±4km, Error ellipse: s-maj=4.0km s-min=3.4km az=14.3*
*THE **26** 15:07:45.3,36°.76N×27°.56E,h7km±1km,ML3.0/5,Error ellipse: s-maj=1.4km s-min=0.5km az=303.0*
*CSEM **26** 15:07:45.9±0.2,36°.75N×27°.54E,h10km,ML2.7,Error ellipse: s-maj=4.7km s-min=4.1km az=89.0*

ISC 26 15:07:45.5±1.0,36°.76N±0°.02×27°.53E±0°.02,h18km±7km, n61,σ0°.64/95,Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BDRM	**Kayabasi**	**0.31**	**348**	*i* P	**Pg**	**15 07 51.6**	**-0.7**
BDRM				*i* S	**Sb**	**15 07 57.1**	**-0.3**
NIS1	**Nisyros Isl.**	**0.32**	**241**	*e*PG	**Pb**	**15 07 52.4**	**-0.3**
NIS1	**Nisyros Isl.**	**0.32**	**241**	P	**Pb**	**15 07 52.4**	**-0.3**
NIS1				S	**Sb**	**15 07 57.6**	**0.0**
NIS1	**Nisyros Isl.**	**0.32**	**241**	P	**Pb**	**15 07 53.1**	**+0.3**
NIS1				S	**Sb**	**15 07 58.2**	**+0.5**
NIS1				AML	AML	15 08 01.7	
	comp=E,5609μm,0.3s						
NIS1				AML	AML	15 08 04.6	
	comp=N,6585μm,0.2s						
BODT	**Bodrum**	**0.35**	**330**	*e*PG	**Pg**	**15 07 52.6**	**-0.2**
BODT				*e*SG	**Sb**	**15 07 58.2**	**-0.2**
BODT	**Bodrum**	**0.35**	**330**	P	**Pg**	**15 07 52.5**	**-0.4**
BODT				S	**Sb**	**15 07 58.7**	**+0.3**
BODT	**Bodrum**	**0.35**	**330**	*e*Sg	**Sb**	**15 07 58.2**	**-0.2**
NISR	**Nisiros**	**0.35**	**245**	P	**Pb**	**15 07 52.8**	**-0.5**
NISR				S	**Sb**	**15 07 58.4**	**-0.1**
NISR	**Nisiros**	**0.35**	**245**	P	**Pb**	**15 07 53.4**	**+0.1**
NISR				S	**Sb**	**15 07 58.4**	**-0.1**
NISR	**Nisiros**	**0.35**	**245**	P	**Pb**	**15 07 53.4**	**+0.1**
NISR				S	**Sb**	**15 07 59.1**	**+0.6**
NISR				AML	AML	15 08 00.6	
	comp=N,4068μm,0.1s						
NISR				AML	AML	15 08 01.2	
	comp=E,6937μm,0.1s						
YER	**Yerkesik**	**0.71**	**58**	*e*PG	**Pg**	**15 07 58.8**	**-0.7**
YER	**Yerkesik**	**0.71**	**58**	P	**Pg**	**15 07 58.4**	**-1.1**
YER				S	**Sb**	**15 08 09.0**	**+0.1**
YER	**Yerkesik**	**0.71**	**58**	P	**Pg**	**15 07 58.4**	**-1.1**
YER				S	**Sb**	**15 08 09.0**	**+0.1**
ARG	**Arkhangelos**	**0.73**	**138**	P	**Pg**	**15 07 58.7**	**-1.0**
ARG				S	**Sb**	**15 08 09.9**	**+0.6**
ARG	**Arkhangelos**	**0.73**	**138**	P	**Pg**	**15 07 58.7**	**-1.0**
ARG				S	**Sb**	**15 08 09.8**	**+0.5**
TURN	**Turunc**	**0.87**	**82**	*i* P	Pb	15 07 55.3	-6.8
TURN				*i* S	Sb	15 08 03.1	-10
DALY	**Dalyan (Mu¨la**	**0.91**	**86**	*e*PG	**Pn**	**15 08 03.0**	**-0.3**
AYDN	**Tasoluk**	**0.94**	**17**	P	**Pb**	**15 08 02.8**	**-0.6**
AYDN				S	**Sn**	**15 08 17.2**	**+0.2**
AYDN	**Tasoluk**	**0.94**	**17**	*i* P	**Pb**	**15 08 02.8**	**-0.6**
AYDN				*i* S	**Sn**	**15 08 17.2**	**+0.2**
GCAM	**G?zelcaml?**	**0.97**	**346**	P	**Pn**	**15 08 04.3**	**+0.1**
GCAM				S	**Sn**	**15 08 18.5**	**+0.9**
GCAM	**G?zelcaml?**	**0.97**	**346**	*i* P	**Pn**	**15 08 04.3**	**+0.1**
GCAM				*i* S	**Sn**	**15 08 18.4**	**+0.9**
SMG	**Samos**	**1.09**	**330**	P	**Pb**	**15 08 05.7**	**-0.3**
SMG				S	**Sn**	**15 08 21.1**	**+0.4**
SMG	**Samos**	**1.09**	**330**	P	**Pg**	**15 08 06.6**	**-0.1**
SMG				S	**Sn**	**15 08 21.1**	**+0.4**
SMG	**Samos**	**1.09**	**330**	P	**Pg**	**15 08 06.6**	**-0.1**
SMG				S	**Sb**	**15 08 19.2**	**-0.7**
SMG				AML	AML	15 08 26.5	
	comp=N,743μm,0.3s						
SMG				AML	AML	15 08 27.2	
	comp=E,939μm,0.4s						
AYDB	**Zeytinkoy-Aydi**	**1.22**	**14**	*e*PN	**Pg**	**15 08 09.2**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**1.22**	**14**	*e*Pn	**Pg**	**15 08 09.2**	**+0.1**
KARP	**Karpathos**	**1.25**	**194**	*e*PN	**Pg**	**15 08 09.2**	**-0.4**
KARP	**Karpathos**	**1.25**	**194**	P	**Pb**	**15 08 08.2**	**-0.3**
KARP				S	**Sn**	**15 08 24.7**	**+0.2**
KARP	**Karpathos**	**1.25**	**194**	P	**Pb**	**15 08 08.6**	**+0.1**
KARP	**Karpathos**	**1.25**	**194**	*e*Pn	**Pg**	**15 08 09.2**	**-0.4**
KARP				S	**Sn**	**15 08 24.7**	**+0.2**
KARP	**Karpathos**	**1.25**	**194**	P	**Pb**	**15 08 08.6**	**+0.1**
KARP				S	**Sb**	**15 08 23.2**	**-1.0**
KARP				AML	AML	15 08 25.6	
	comp=E,542μm,0.2s						
KARP				AML	AML	15 08 25.8	
	comp=N,425μm,0.2s						
FETY	**Fethiye**	**1.26**	**95**	*e*PN	**Pg**	**15 08 10.1**	**+0.3**
FETY	**Fethiye**	**1.26**	**95**	P	**Pn**	**15 08 07.6**	**-0.6**
FETY	**Fethiye**	**1.26**	**95**	P	**Pn**	**15 08 07.6**	**-0.6**
GLHS	**Glhisar (BURDU**	**1.63**	**75**	*e*PN	**Pg**	**15 08 15.7**	**-1.1**
GLHS	**Glhisar (BURDU**	**1.63**	**75**	*e*Pn	**Pg**	**15 08 15.7**	**-1.1**
APE	**Apeiranthos**	**1.63**	**282**	*e*PN	**Pg**	**15 08 15.9**	**-1.0**
APE	**Apeiranthos**	**1.63**	**282**	P	**Pb**	**15 08 14.1**	**-1.0**
APE	**Apeiranthos**	**1.63**	**282**	*e*Pn	**Pg**	**15 08 15.9**	**-1.0**
APE				S	**Sn**	**15 08 33.9**	**0.0**
APE	**Apeiranthos**	**1.63**	**282**	P	**Pb**	**15 08 14.1**	**-1.0**
APE				S	**Sn**	**15 08 33.9**	**0.0**
APE				AML	AML	15 08 43.2	
	comp=N,87μm,0.2s						
APE				AML	AML	15 08 44.9	
	comp=E,114μm,0.4s						
ZEY	**¨zmir**	**1.69**	**331**	*i* P	**Pn**	**15 08 14.1**	**0.0**
GOLH	**Golhisar**	**1.70**	**73**	*i* P	**Pg**	**15 08 17.9**	**-0.3**
GOLH				*i* S	**Sg**	**15 08 40.8**	**+0.6**
AKAS	**Kas**	**1.76**	**107**	P	**Pb**	**15 08 17.8**	**+0.5**
AKAS				S	**Sg**	**15 08 43.1**	**+1.0**
AKAS	**Kas**	**1.76**	**107**	*i* P	**Pb**	**15 08 17.8**	**+0.5**
AKAS				*i* S	**Sg**	**15 08 43.1**	**+1.0**
URLA	**Izmir**	**1.76**	**335**	P	**Pg**	**15 08 18.7**	**-0.7**
URLA				S	**Sg**	**15 08 43.6**	**+1.3**
URLA	**Izmir**	**1.76**	**335**	*i* P	**Pg**	**15 08 18.7**	**-0.7**
URLA				*i* S	**Sg**	**15 08 43.6**	**+1.3**
ELL	**Elmali**	**1.91**	**90**	*e*PN	**Pb**	**15 08 19.8**	**-0.2**
ELL	**Elmali**	**1.91**	**90**	*e*Pn	**Pb**	**15 08 19.8**	**-0.2**
ZKR	**Zakros**	**1.96**	**213**	P	**Pb**	**15 08 20.0**	**-0.6**
ZKR				S	**Sn**	**15 08 42.5**	**+0.6**
ZKR	**Zakros**	**1.96**	**213**	P	**Pb**	**15 08 20.0**	**-0.6**
ZKR				S	**Sn**	**15 08 42.5**	**+0.6**
KULA	**Kula-Manisa**	**1.97**	**27**	*e*PN	**Pb**	**15 08 20.6**	**-0.3**
KULA	**Kula-Manisa**	**1.97**	**27**	*e*Pn	**Pb**	**15 08 20.6**	**-0.3**
CHOS	**Chios island**	**2.00**	**325**	*e*PN	**Pb**	**15 08 21.0**	**-0.4**
CHOS	**Chios island**	**2.00**	**325**	P	**Pn**	**15 08 18.7**	**+0.2**
CHOS	**Chios island**	**2.00**	**325**	*e*Pn	**Pb**	**15 08 21.0**	**-0.4**
CHOS	**Chios island**	**2.00**	**325**	P	**Pn**	**15 08 18.7**	**+0.2**
CHOS				S	**Sn**	**15 08 41.2**	**-1.9**
CHOS				AML	AML	15 08 56.1	
	comp=E,166μm,0.7s						
CHOS				AML	AML	15 08 56.2	
	comp=N,142μm,0.9s						
AKS	**Akhisar**	**2.13**	**6**	*e*PN	**Pb**	**15 08 23.3**	**-0.3**
AKS	**Akhisar**	**2.13**	**6**	*e*Pn	**Pb**	**15 08 23.3**	**-0.3**
SIGR	**SIGRI**	**2.78**	**332**	P	**Pn**	**15 08 30.3**	**+1.1**
SIGR				S	**Sn**	**15 09 01.8**	**-0.5**
SIGR	**SIGRI**	**2.78**	**332**	P	**Pn**	**15 08 30.3**	**+1.1**
SIGR				S	**Sn**	**15 09 01.8**	**-0.5**

*ISK **26** 15:08:40.8,39°.15N×29°.05E,h2km,MD2.9*
*CSEM **26** 15:08:41.9±0.1,39°.13N×29°.08E,h5km,ML3.3,Error ellipse: s-maj=2.0km s-min=1.9km az=43.0*
*DDA **26** 15:08:41.8,39°.15N×29°.09E,h7km,Ml3.3*

ISC 26 15:08:41.4±0.9,39°.15N±0°.02×29°.08E±0°.02,h18km±6km, n49,σ0°.36/63,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.30**	**250**	P	**Pb**	**15 08 48.4**	**0.0**
DEMI				S	**Sg**	**15 08 52.6**	**+0.1**
DEMI	**Demirci**	**0.30**	**250**	*i* P	**Pb**	**15 08 48.4**	**0.0**
DEMI				*i* S	**Sg**	**15 08 52.6**	**+0.1**
GDZ	**Gediz**	**0.32**	**100**	P	**Pg**	**15 08 48.4**	**+0.1**
GDZ				S	**Sg**	**15 08 52.8**	**-0.2**
GDZ	**Gediz**	**0.32**	**100**	*i* P	**Pg**	**15 08 48.4**	**+0.1**
GDZ				*i* S	**Sg**	**15 08 52.8**	**-0.2**
TVSB	**Tavsanli**	**0.42**	**44**	*e*PG	**Pg**	**15 08 50.2**	**0.0**
TVSB	**Tavsanli**	**0.42**	**44**	*e*Pg	**Pg**	**15 08 50.2**	**0.0**
DURS	**Dursunbey**	**0.65**	**314**	P	**Pn**	**15 08 55.4**	**-0.5**
DURS				S	**Sb**	**15 09 04.0**	**+0.8**
DURS	**Dursunbey**	**0.65**	**314**	*i* P	**Pn**	**15 08 55.4**	**-0.5**
DURS				*i* S	**Sb**	**15 09 04.0**	**+0.8**
KULA	**Kula-Manisa**	**0.71**	**208**	*e*PG	**Pg**	**15 08 55.4**	**0.0**
KULA	**Kula-Manisa**	**0.71**	**208**	*e*Pg	**Pg**	**15 08 55.4**	**0.0**
KHAL	**Karahalli**	**0.84**	**157**	P	**Pn**	**15 08 58.2**	**-0.3**
KHAL				S	**Sb**	**15 09 08.6**	**+0.1**
KHAL	**Karahalli**	**0.84**	**157**	*i* P	**Pn**	**15 08 58.2**	**-0.3**
KHAL				*i* S	**Sb**	**15 09 08.7**	**+0.1**
KHL	**Karahalli**	**0.89**	**157**	*e*PG	**Pg**	**15 08 58.7**	**-0.1**
KHL	**Karahalli**	**0.89**	**157**	*e*Pg	**Pg**	**15 08 58.7**	**-0.1**
ORLT	**Orhaneli**	**0.91**	**351**	*e*PG	**Pn**	**15 08 59.5**	**0.0**
ORLT	**Orhaneli**	**0.91**	**351**	*e*Pg	**Pn**	**15 08 59.5**	**0.0**
AKS	**Akhisar**	**1.02**	**255**	*e*PG	**Pn**	**15 09 00.8**	**-0.1**
AKS	**Akhisar**	**1.02**	**255**	*e*Pg	**Pn**	**15 09 00.8**	**-0.1**
BALB	**Balikesir**	**1.05**	**298**	*e*PG	**Pn**	**15 09 01.3**	**0.0**
BALB				*e*SG	**Sg**	**15 09 16.4**	**+0.7**
IGD	**Bursa**	**1.12**	**5**	*i* P	**Pn**	**15 09 02.2**	**0.0**
IGD				*i* S	**Sn**	**15 09 16.9**	**-0.3**
IZI	**Iznik**	**1.23**	**14**	*e*PN	**Pg**	**15 09 05.3**	**+0.1**
IZI	**Iznik**	**1.23**	**14**	*e*Pn	**Pg**	**15 09 05.3**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.23**	**353**	*e*PN	**Pg**	**15 09 05.0**	**-0.2**
KCTX	**Karacabey (Bur**	**1.25**	**334**	*e*PN	**Pg**	**15 09 05.8**	**+0.2**
KCTX	**Karacabey (Bur**	**1.25**	**334**	*e*Pn	**Pg**	**15 09 05.8**	**+0.2**
BALY	**Balya**	**1.28**	**298**	P	**Pg**	**15 09 06.2**	**+0.1**
BALY				S	**Sg**	**15 09 23.2**	**+0.4**
BALY	**Balya**	**1.28**	**298**	*i* P	**Pg**	**15 09 06.2**	**+0.1**
BALY				*i* S	**Sg**	**15 09 23.2**	**+0.4**
BORA	**Eskisehir**	**1.29**	**55**	P	**Pg**	**15 09 06.4**	**0.0**
BORA				S	**Sg**	**15 09 23.5**	**+0.2**
BORA	**Eskisehir**	**1.29**	**55**	*i* P	**Pg**	**15 09 06.4**	**0.0**
BORA				*i* S	**Sg**	**15 09 23.5**	**+0.2**
GEMT	**Gemlik**	**1.29**	**4**	*e*PN	**Pg**	**15 09 06.1**	**-0.3**
GEMT	**Gemlik**	**1.29**	**4**	*e*Pn	**Pg**	**15 09 06.1**	**-0.3**
ADVT	**Abdulvahap**	**1.38**	**21**	*e*PN	**Pg**	**15 09 07.9**	**-0.2**
ADVT	**Abdulvahap**	**1.38**	**21**	*e*Pn	**Pg**	**15 09 07.9**	**-0.2**
GONE	**Gonen-Balikesi**	**1.40**	**310**	*e*PN	**Pg**	**15 09 07.9**	**-0.6**
GONE	**Gonen-Balikesi**	**1.40**	**310**	*e*Pn	**Pg**	**15 09 07.9**	**-0.6**
ARMT	**Armutlu**	**1.43**	**353**	*e*PN	**Pg**	**15 09 08.3**	**-0.7**
GPA	**Golpazari**	**1.48**	**39**	*e*PN	**Pg**	**15 09 09.8**	**-0.3**
GPA	**Golpazari**	**1.48**	**39**	*e*Pn	**Pg**	**15 09 09.8**	**-0.3**
EDC	**Edincik**	**1.52**	**322**	*e*PN	**Pg**	**15 09 10.0**	**-0.8**
EDC	**Edincik**	**1.52**	**322**	*e*Pn	**Pg**	**15 09 10.0**	**-0.8**
GULT	**Gulveren**	**1.69**	**40**	*e*PN	**Pb**	**15 09 12.7**	**+0.5**
GULT	**Gulveren**	**1.69**	**40**	*e*Pn	**Pb**	**15 09 12.7**	**+0.5**
HRT	**Hereke**	**1.73**	**15**	*e*PN	**Pb**	**15 09 12.9**	**+0.1**
ISK	**Istanbul-Kandi**	**1.92**	**360**	*e*PN	**Pb**	**15 09 15.8**	**0.0**
ISK	**Istanbul-Kandi**	**1.92**	**360**	*e*Pn	**Pb**	**15 09 15.9**	**0.0**
SVRH	**Sivrihisar-ESK**	**1.92**	**80**	*e*PN	**Pb**	**15 09 16.1**	**+0.1**
SVRH	**Sivrihisar-ESK**	**1.92**	**80**	*e*Pn	**Pb**	**15 09 16.1**	**+0.1**
SILT	**Sile**	**2.05**	**12**	*e*PN	**Pb**	**15 09 17.4**	**-0.7**
SILT	**Sile**	**2.05**	**12**	*e*Pn	**Pb**	**15 09 17.4**	**-0.7**

IDC 26 15:15:07.3±346.0,52°.75N×32°.86E,h0km,Error ellipse: s-maj=141.5km s-min=100.7km az=20.0,Baltic States-Belarus-Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I43RU	**DUBNA INFRASON**	**4.72**	**31**	*i*		15 45 10.0	
	baz=214,slow=311,SNR=0.6						
I31KZ	**AKTYUBINSK INF**	**15.80**	**88**	*i*		16 53 10.0	
	baz=289,slow=309,SNR=0.4						
I48TN	**KESRA INFRASON**	**23.72**	**234**	*i*		17 40 10.0	
	baz=38,slow=314,SNR=0.2						

*DDA **26** 15:18:12.2,36°.74N×27°.54E,h7km,Ml3.0*
*ATH **26** 15:18:12.3,36°.77N×27°.55E,h31km±1km,ML2.3/5,Error ellipse: s-maj=2.0km s-min=1.0km az=226.0*
*ISK **26** 15:18:13.3,36°.78N×27°.

URLA	**Izmir**	**1.77**	**335**	P	**Pb**	**15 18 45.3**	**+0.1**
URLA	**Izmir**	**1.77**	**335**	*i* P	**Pb**	**15 18 45.3**	**+0.1**
URLA				*i* S	**Sg**	**15 19 13.6**	**+3.4**
ELL	**Elmali**	**1.89**	**90**	*e*PN	**Pb**	**15 18 46.8**	**-0.5**
ELL	**Elmali**	**1.89**	**90**	*e*Pn	**Pb**	**15 18 46.8**	**-0.5**
ZKR	**Zakros**	**1.97**	**214**	P	**Pn**	**15 18 46.5**	**+0.7**
ZKR	**Zakros**	**1.97**	**214**	P	**Pn**	**15 18 46.5**	**+0.7**
CHOS	**Chios island**	**2.01**	**324**	*e*PN	**Pb**	**15 18 48.9**	**-0.5**
CHOS	**Chios island**	**2.01**	**324**	P	**Pn**	**15 18 47.0**	**+0.6**
CHOS	**Chios island**	**2.01**	**324**	*e*Pn	**Pb**	**15 18 48.9**	**-0.5**
CHOS				S	**Sn**	**15 19 09.0**	**-2.2**
CHOS	**Chios island**	**2.01**	**324**	P	**Pn**	**15 18 47.0**	**+0.6**
CHOS				S	**Sn**	**15 19 09.0**	**-2.2**
CHOS				AML	AML	15 19 23.5	
	comp=N,56μm,0.8s						
CHOS				AML	AML	15 19 24.2	
	comp=E,77μm,0.9s						
SIGR	**SIGRI**	**2.79**	**332**	P	**Pn**	**15 18 57.6**	**+0.6**
SIGR	**SIGRI**	**2.79**	**332**	P	**Pn**	**15 18 57.6**	**+0.6**

MAN 26 15:29:58, 6.84N×123.79E, h8km, mb4.6, ML3.4, MS3.3, 1D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTBH	**Cotabato--PC H**	**0.59**	**50**	⇓*i*P	Pg	15 30 10.0	+0.6
CTBH				*i* S	Sg	15 30 16.9	-0.3
PAGZ	**Pagadian**	**1.08**	**338**	*e*P	Pn	15 30 19.6	+0.2
PAGZ				*e*S	Sn	15 30 35.3	+0.7
IPIL	**Ipil**	**1.53**	**308**	*e*P	Pn	15 30 26.0	+0.4
IPIL				*e*S	Sb	15 30 46.1	-0.1
BUKP	**Musuan**	**1.63**	**51**	*e*P	Pn	15 30 26.9	-0.2
BUKP				*e*S	Sb	15 30 48.9	-0.2

*CSEM **26** 15:35:35.4, 38.29N×22.17E, h8km, ML1.1/6*
ATH 26 15:35:35.4, 38.29N×22.17E, h8km±6km, ML1.1/5, Error ellipse: s-maj=6.3km s-min=1.1km az=279.0, Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SERG	**Sergoula**	**0.15**	**325**	P	Pg	15 35 38.2	-0.5
SERG				S	Sg	15 35 42.1	+1.2
LAKA	**Lakka**	**0.15**	**252**	P	Pg	15 35 38.0	-0.7
LAKA				S	Sg	15 35 41.9	+0.9
LAKA	**Lakka**	**0.15**	**252**	P	Pg	15 35 38.0	-0.7
LAKA				AML	AML	15 35 41.7	
	comp=N,70μm,0.3s						
LAKA				S	Sg	15 35 41.9	+0.9
LAKA				AML	AML	15 35 42.6	
	comp=E,43μm,0.2s						
EFP	**Efpalio**	**0.25**	**304**	P	Pg	15 35 39.9	-0.5
EFP				S	Sg	15 35 43.1	-0.6
EFP	**Efpalio**	**0.25**	**304**	P	Pg	15 35 39.9	-0.5
EFP				S	Sg	15 35 43.1	-0.6
EFP				AML	AML	15 35 44.9	
	comp=E,120μm,0.3s						
EFP				AML	AML	15 35 45.0	
	comp=N,200μm,0.4s						
KLV	**Kalavryta, Ach**	**0.25**	**183**	P	Pg	15 35 39.5	-0.9
KLV				S	Sg	15 35 43.6	-0.1
KLV	**Kalavryta, Ach**	**0.25**	**183**	P	Pg	15 35 39.5	-0.9
KLV				S	Sg	15 35 43.6	-0.1
DSF	**Desfina**	**0.31**	**67**	P	Pg	15 35 40.5	-1.1
DSF				S	Sg	15 35 46.0	+0.3
DSF	**Desfina**	**0.31**	**67**	P	Pg	15 35 40.5	-1.1
DSF				S	Sg	15 35 46.0	+0.3
DSF				AML	AML	15 35 47.3	
	comp=E,151μm,0.2s						
DSF				AML	AML	15 35 47.5	
	comp=N,175μm,0.2s						
ANX	**Ano Chora**	**0.36**	**328**	P	Pg	15 35 42.0	-0.5
ANX				S	Sg	15 35 47.7	+0.4
ANX	**Ano Chora**	**0.36**	**328**	S	Sg	15 35 47.7	+0.4
ANX				AML	AML	15 35 49.9	
	comp=N,87μm,0.2s						
ANX				AML	AML	15 35 50.7	
	comp=E,103μm,0.2s						
DRO	**Drossia**	**0.49**	**227**	P	Pb	15 35 46.7	+0.4
DRO				S	Sb	15 35 53.5	-0.2
DRO	**Drossia**	**0.49**	**227**	P	Pb	15 35 46.7	+0.4
DRO				S	Sb	15 35 53.5	-0.1
DRO				AML	AML	15 35 54.6	
	comp=N,33μm,0.3s						
DRO				AML	AML	15 35 58.7	
	comp=E,53μm,0.3s						
LTK	**Loutraki**	**0.69**	**113**	P	Pb	15 35 50.2	+0.6
LTK	**Loutraki**	**0.69**	**113**	P	Pb	15 35 50.2	+0.6
AGG	**Agios Georgios**	**0.74**	**10**	P	Pb	15 35 50.9	+0.3
AGG				S	Sb	15 36 01.4	+0.4
AGG	**Agios Georgios**	**0.74**	**10**	P	Pb	15 35 50.9	+0.2
AGG				S	Sb	15 36 01.4	+0.4

*ISCJB **26** 15:36:18.9±1.0, 36.68N±0.05×27.57E±0.09, h13km±7km, Error ellipse: s-maj=12.0km s-min=7.6km az=1.3*
*ISK **26** 15:36:18.8, 36.67N×27.54E, h8km, MD2.6*
*CSEM **26** 15:36:19.2±0.3, 36.68N×27.55E, h15km, MD2.6, Error ellipse: s-maj=7.6km s-min=5.1km az=110.0*
*DDA **26** 15:36:21.0, 36.80N×27.62E, h7km, Md2.7*
ISC 26 15:36:17.4±1.2, 36.64N±0.04×27.69E±0.04, h15km±13km, n16, σ1.59/24, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NIS1	**Nisyros Isl.**	**0.41**	**265**	*e*PG	**Pg**	**15 36 25.3**	**-0.3**
NIS1	**Nisyros Isl.**	**0.41**	**265**	*e*Pg	**Pg**	**15 36 25.3**	**-0.3**
BDRM	**Kayabasi**	**0.47**	**336**	P	**Pg**	**15 36 27.0**	**+0.3**
BDRM				S	**Sg**	**15 36 32.6**	**-0.4**
BDRM	**Kayabasi**	**0.47**	**336**	*i* P	**Pg**	**15 36 27.1**	**+0.3**
BDRM				*i* S	**Sg**	**15 36 32.6**	**-0.4**
BODT	**Bodrum**	**0.52**	**325**	*e*PG	**Pb**	**15 36 28.4**	**+0.1**
BODT				*e*SG	**Sg**	**15 36 34.0**	**-0.6**
BODT	**Bodrum**	**0.52**	**325**	*e*Pg	**Pb**	**15 36 28.4**	**+0.1**
BODT				*e*Sg	**Sg**	**15 36 34.0**	**-0.6**
YER	**Yerkesik**	**0.69**	**44**	*e*PG	**Pb**	**15 36 33.7**	**+2.5**
YER	**Yerkesik**	**0.69**	**44**	*e*Pg	**Pb**	**15 36 33.7**	**+2.5**
TURN	**Turunc**	**0.77**	**72**	*i* P	**Pb**	**15 36 31.2**	**-1.4**
TURN				*i* S	**Sb**	**15 36 38.4**	**-4.5**
AYDN	**Tasoluk**	**1.03**	**9**	P	**Pb**	**15 36 37.9**	**+0.9**
AYDN				S	**Sb**	**15 36 50.5**	**+0.1**
AYDN	**Tasoluk**	**1.03**	**9**	*i* P	**Pb**	**15 36 37.9**	**+0.9**
AYDN				*i* S	**Sb**	**15 36 50.5**	**+0.1**
GCAM	**G?zelcaml?**	**1.12**	**341**	*i* P	**Pb**	**15 36 38.7**	**+0.3**
GCAM				*i* S	**Sb**	**15 36 51.2**	**-1.6**
KARP	**Karpathos**	**1.17**	**201**	*e*PN	**Pb**	**15 36 41.2**	**+1.9**
KARP	**Karpathos**	**1.17**	**201**	*e*Pn	**Pb**	**15 36 41.2**	**+1.9**
AYDB	**Zeytinkoy-Aydi**	**1.32**	**7**	*e*PN	**Pg**	**15 36 44.0**	**+1.2**
AYDB	**Zeytinkoy-Aydi**	**1.32**	**7**	*e*Pn	**Pg**	**15 36 44.0**	**+1.2**

*KLM **26** 15:38:05.0, 1.27N×97.79E, h50km, mb4.6, ML4.4*
*ISCJB **26** 15:38:06.3±0.3, 1.81N±0.04×97.73E±0.04, h46km, mb4.5/42, MS3.4/5, Error ellipse: s-maj=6.7km s-min=4.2km az=143.7*
*DJA **26** 15:38:08.9±0.4, 2.1N±2.9×98.8E±., h27km±6km, M4.5/19, mb4.7/6, mB5.1/3, MLv4.4/5, MLv4.5/19, Mw(mB)4.4/3*
*NEIC **26** 15:38:10.1±1.1, 1.96N×97.93E, h63km±8km, mb4.6/20, Error ellipse: s-maj=12.9km s-min=5.8km az=46.0*
*IDC **26** 15:38:10.6±2.7, 1.93N×97.92E, h67km±22km, mb4.0/17, mb1 4.1/18, mb1mx3.9/35, mbtmp4.3/18, MS3.1/2, Ms1 3.1/2, ms1mx2.7/34, Error ellipse: s-maj=26.6km s-min=16.4km az=49.0*
ISC 26 15:38:08.1±0.4, 1.86N±0.04×97.84E±0.05, h46km, n134, σ1.71/138, mb4.5/43, MS3.6/5, 8C-8D, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GSI	**Gunungsitoli**	**0.61**	**205**	P	**Pn**	**15 38 22.0**	**+1.4**
GSI				S	**Sn**	**15 38 31.0**	**+1.5**
PSI	**Prapat**	**1.43**	**49**	P	**Pn**	**15 38 32.1**	**+0.4**
	81nm,0.3s,baz=206,slow=5.0,SNR=224						
PSI				LR	LR	15 39 21.3	
	comp=Z,883nm,20.9s,baz=316,slow=56						
PSI	**Prapat**	**1.43**	**49**	*e*Pn	**Pn**	**15 38 31.8**	**+0.1**
KCSI	**Kotacane, Aceh**	**1.65**	**358**	P	**Pn**	**15 38 35.4**	**+0.8**
KCSI				S	**Sn**	**15 38 55.3**	**+0.7**
TSI	**Tuntungan**	**1.78**	**24**	P	**Pn**	**15 38 38.4**	**+2.0**
MNSI	**Mandailing Nat**	**2.04**	**121**	P	**Pn**	**15 38 41.4**	**+1.4**
MLSI	**Meulaboh, Aceh**	**2.78**	**329**	P	**Pn**	**15 38 52.2**	**+2.1**

PPI	**Padang Panjang**	**3.45**	**132**	P	**Pn**	**15 39 03.0**	**+3.7**
PPI				S	**Sn**	**15 39 44.1**	**+5.2**
LHMI	**Lhok Sumawe**	**3.46**	**345**	P	**Pn**	**15 39 01.4**	**+2.0**
LHMI				S	**Sn**	**15 39 42.5**	**+3.4**
LHMI	**Lhok Sumawe**	**3.46**	**345**	*e*Pn	**Pn**	**15 39 00.0**	**+0.6**
BKNI	**Bangkinang**	**3.55**	**115**	P	**Pn**	**15 39 04.1**	**+3.4**
BKNI				S	Sn	15 39 53.7	+12
BKNI	**Bangkinang**	**3.55**	**115**	*e*Pn	Pn	15 39 08.2	+7.5
PDSI	**Padang**	**3.81**	**136**	P	**Pn**	**15 39 06.3**	**+2.0**
FRIM	**Kepong**	**4.02**	**70**	⇓P	**Pn**	**15 39 07.9**	**+0.7**
FRIM	**Kepong**	**4.02**	**70**	⇓P	**Pn**	**15 39 07.9**	**+0.7**
FRIM	**Kepong**	**4.02**	**70**	⇓P	**Pn**	**15 39 07.9**	**+0.7**
FRIM	**Kepong**	**4.02**	**70**	⇓P	**Pn**	**15 39 07.9**	**+0.7**
IPM	**Ipoh**	**4.11**	**51**	⇑P	**Pn**	**15 39 10.5**	**+2.0**
IPM	**Ipoh**	**4.11**	**51**	⇑P	**Pn**	**15 39 10.5**	**+2.0**
IPM	**Ipoh**	**4.11**	**51**	⇑P	**Pn**	**15 39 10.5**	**+2.0**
IPM	**Ipoh**	**4.11**	**51**	⇑P	**Pn**	**15 39 10.5**	**+2.0**
IPM	**Ipoh**	**4.11**	**51**	*e*Pn	**Pn**	**15 39 10.0**	**+1.6**
KULM	**Kulim**	**4.41**	**39**	⇓P	**Pn**	**15 39 14.5**	**+2.0**
KULM	**Kulim**	**4.41**	**39**	⇓P	**Pn**	**15 39 14.5**	**+2.0**
KULM	**Kulim**	**4.41**	**39**	⇓P	**Pn**	**15 39 14.5**	**+2.0**
KULM	**Kulim**	**4.41**	**39**	⇓P	**Pn**	**15 39 14.5**	**+2.0**
KULM	**Kulim**	**4.41**	**39**	*e*Pn	**Pn**	**15 39 13.5**	**+0.9**
SDSI	**Sungai Dareh**	**4.54**	**128**	P	**Pn**	**15 39 17.5**	**+3.2**
PPSI	**Pulau Pagai**	**5.08**	**155**	P	**Pn**	**15 39 23.3**	**+1.5**
	123nm,0.7s,0.7nm						
SKLT	**Songkhla**	**5.96**	**28**	P	**Pn**	**15 39 35.3**	**+1.6**
	110nm,0.9s						
MYKOM	**Kota Tinggi**	**6.01**	**91**	*e*Pn	**Pn**	**15 39 35.4**	**+0.9**
KTGM	**Kuala Trenggan**	**6.31**	**57**	⇑P	**Pn**	**15 39 40.7**	**+2.1**
KTGM	**Kuala Trenggan**	**6.31**	**57**	⇑P	**Pn**	**15 39 40.7**	**+2.1**
KTGM	**Kuala Trenggan**	**6.31**	**57**	⇑P	**Pn**	**15 39 40.7**	**+2.1**
KTGM	**Kuala Trenggan**	**6.31**	**57**	⇑P	**Pn**	**15 39 40.7**	**+2.1**
CMBY	**CAMPBELL BAY**	**6.43**	**323**	*e*P	**Pn**	**15 39 39.1**	**-1.1**
MASI	**Maura Aman, Be**	**6.64**	**138**	P	**Pn**	**15 39 41.7**	**-1.5**
	75nm,1.2s,7μm0.7nm						
TPRI	**Tanjung Pinang**	**6.75**	**98**	P	Pn	15 39 50.8	+6.1
	19nm,0.6s,0.5nm						
SURT	**Suratani**	**7.11**	**8**	P	**Pn**	**15 39 52.6**	**+3.0**
	15nm,0.9s,0.1nm						
MNAI	**Manna**	**8.03**	**140**	P	**Pn**	**15 40 03.5**	**+1.3**
CHBT	**CHBT**	**11.70**	**22**	P	**Pn**	**15 40 56.8**	**+4.4**
	21nm,0.5s						
SBUM	**Sibu**	**14.39**	**87**	*e*Pn	**Pn**	**15 41 28.2**	**-0.9**
PBKT	**Sadao Pong**	**14.94**	**12**	P	**P**	**15 41 40.7**	**-0.4**
	26nm,0.8s						
UTTA	**Uttaradit**	**16.00**	**9**	P	P	15 42 00.3	+7.3
CM01	**Chiang Mai Arr**	**16.49**	**4**	*e*Pn	**Pn**	**15 41 54.5**	**-1.7**
CM31	**Chiang Mai Arr**	**16.53**	**4**	*e*Pn	**Pn**	**15 41 57.0**	**+0.2**
CMAR	**Chiang Mai Arr**	**16.53**	**4**	P	**Pn**	**15 41 56.9**	**+0.1**
	0.6nm,0.3s,baz=194,slow=12,SNR=25						
CMMT	**Chiang Mai**	**16.88**	**4**	P	**Pn**	**15 42 01.6**	**+0.4**
	7.8nm,0.9s						
CHTO	**Chiang Mai**	**16.88**	**4**	P	**Pn**	**15 42 01.6**	**+0.4**
	42nm,1.1s						
CHTO	**Chiang Mai**	**16.88**	**4**	*e*Pn	**Pn**	**15 42 00.5**	**-0.7**
	5.0nm,0.8s						
PALK	**Pallekele**	**17.90**	**288**	LR	LR	15 48 21.8	
	comp=Z,77nm,18.1s,baz=116,slow=34						
CRAI	**Chiangrai**	**18.42**	**8**	P	**Pn**	**15 42 21.0**	**+0.9**
	136nm,1.4s						
QIZ	**Qiongzhong**	**20.72**	**34**	P	Pn	15 42 47.5	-0.1
QIZ				S	Sn	15 46 44.5	+3.9
QIZ				pmax	pmax		
	comp=Z,25nm,1.6s						
QIZ				LR	LR		
	comp=Z,94nm,20.4s						
KMI	**Kunming**	**23.60**	**11**	P	**P**	**15 43 17.5**	**+2.3**
KMI				pP	pP	15 43 25.8	-1.1
KMI				sP	sP	15 43 28.5	-4.0
KMI				S	**S**	**15 47 30.0**	**+3.4**
KMI				pmax	pmax		
	comp=Z,10.0nm,0.7s						
KMI				LR	LR		
	comp=N,170nm,20.8s						
KMI				LR	LR		
	comp=E,130nm,20.8s						
KMI				LR	LR		
	comp=Z,160nm,15.9s						
SHL	**Shillong**	**24.25**	**347**	*e*P	**P**	**15 43 19.3**	**-1.9**
HYB	**Hyderabad**	**24.45**	**310**	*i* P	**P**	**15 43 27.0**	**+4.1**
HYB	**Hyderabad**	**24.45**	**310**	*e*P	**P**	**15 43 25.6**	**+2.7**
HYB				IAmb	IAmb	15 43 27.5	
	comp=Z,12nm,0.5s						
BOK	**Bokaro**	**24.68**	**333**	*e*P	**P**	**15 43 25.8**	**+0.9**
H08S2	**Diego Garcia H**	**26.99**	**249**	T	T	16 11 11.2	
	baz=70,slow=75,SNR=54						
H08S3	**Diego Garcia H**	**26.99**	**249**	T	T	16 11 10.3	
	baz=70,slow=75,SNR=36						
H08S1	**Diego Carcia H**	**27.00**	**249**	T	T	16 11 12.4	
	baz=70,slow=75,SNR=52						
GUN	**Gumba**	**28.31**	**337**	*e*P	**P**	**15 43 58.2**	**+0.3**
	comp=Z,28nm,0.7s						
LSA	**Lhasa**	**28.40**	**348**	*e*P	**P**	**15 43 59.1**	**+0.3**
	comp=Z,5.7nm,1.1s						
KKN	**Kakani**	**28.44**	**336**	*e*P	**P**	**15 43 59.2**	**+0.3**
	comp=Z,17nm,0.7s						
SOEI	**Soe**	**28.74**	**114**	*e*P	**P**	**15 43 58.2**	**-3.5**
	comp=Z,92nm,0.7s						
GKN	**Gorkha**	**28.89**	**335**	*e*P	**P**	**15 44 03.5**	**+0.6**
BHPL	**Bhopal**	**29.04**	**319**	*e*P	**P**	**15 44 04.5**	**+0.4**
KOLN	**Koldanda**	**29.14**	**333**	*e*P	**P**	**15 44 06.6**	**+1.5**
	comp=Z,29nm,0.6s						
CD2	**Chengdu**	**29.43**	**10**	P	**P**	**15 44 09.0**	**+1.5**
CD2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
PYUN	**Piuthan**	**29.70**	**333**	*e*P	**P**	**15 44 11.5**	**+1.4**
ENH	**Enshi**	**30.34**	**20**	*e*P	**P**	**15 44 13.2**	**-2.3**
	comp=Z,12nm,0.3s						
XAN	**Xi'an**	**33.65**	**17**	P	**P**	**15 44 43.0**	**-1.5**
XAN				pmax	pmax		
	comp=Z,5.0nm,0.7s						
SMLA	**Simla**	**35.06**	**328**	*e*P	**P**	**15 44 57.2**	**+0.5**
DHRM	**DHARAMSHALA**	**36.40**	**328**	*e*P	**P**	**15 45 03.8**	**-4.7**
GTA	**Gaotai**	**37.41**	**3**	*e*P	**P**	**15 45 17.5**	**+0.6**
GTA				pP	pP	15 45 26.8	-2.5
GTA				sP	sP	15 45 30.8	-3.9
GTA				S	**S**	**15 51 05.8**	**+3.7**
GTA				sS	sS	15 51 21.8	-1.0
GTA				SS	**SnSn**	**15 53 41.8**	**-0.6**
GTA				pmax	pmax		
	comp=Z,9.0nm,0.9s						
GTA				pmax	pmax		
	comp=Z,92nm,6.4s						
GTA				LR	LR		
	comp=N,120nm,13.5s						
GTA				LR	LR		
	comp=E,110nm,11.9s						
GTA				LR	LR		
	comp=Z,120nm,14.7s						
HHC	**Hu-ho-hao-te**	**40.75**	**16**	*e*P	**P**	**15 45 47.8**	**+3.1**
HHC				pmax	pmax		
	comp=Z,21nm,1.1s						
HHC				pmax	pmax		
	comp=Z,100nm,5.5s						
WR1	**Warramunga Arr**	**41.85**	**123**	*e*P	**P**	**15 45 53.4**	**-0.6**
	comp=Z,5.9nm,0.6s						
WRA	**Warramunga Arr**	**41.85**	**123**	P	**P**	**15 45 53.4**	**-0.6**
	comp=Z,4.3nm,0.5s,baz=302,slow=9.0,SNR=6.2						
KSH	**Kashi**	**42.44**	**335**	*e*P	**P**	**15 45 58.0**	**-0.6**
KSH				*e*pP	pP	15 46 06.0	-5.1
KSH				*e*sP	sP	15 46 09.0	-7.5
KSH				PcS	**PcS**	**15 51 41.0**	**-2.1**
KSH				S	**S**	**15 52 18.0**	**+0.7**
KSH				ScS	**ScS**	**15 55 56.5**	**-0.2**
KSH				pmax	pmax		
	comp=Z,100nm,5.2s						
WMQ	**Urumqi**	**42.74**	**349**	*e*P	**P**	**15 46 03.0**	**+2.1**
WMQ				pmax	pmax		
	comp=Z,9.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,52nm,4.6s						
WMQ				LR	LR		
	comp=N,150nm,22.8s						
WMQ				LR	LR		
	comp=E,71nm,31.8s						
WMQ				LR	LR		
	comp=Z,34nm,18.2s						
ASAR	**Alice Springs**	**43.29**	**128**	PcP	**PcP**	**15 47 54.9**	**+0.7**
	comp=Z,1.2nm,0.8s,baz=307,slow=3.0,SNR=5.8						
AS31	**Alice Springs**	**43.30**	**128**	*e*P	P	15 45 57.4	-8.3
	comp=Z,4.7nm,0.4s						
AS31				*e*PcP	**PcP**	**15 47 54.9**	**+0.7**
KS15	**Wonju Array Si**	**44.91**	**34**	*e*P	**P**	**15 46 16.8**	**-1.6**

KSAR	**Wonju Array Be**	**44.91**	**34**	P	**P**	**15 46 17.6**	**-0.8**
KSRS	**Korea Array**	**44.95**	**34**	P	**P**	**15 46 17.6**	**-1.1**
	comp=Z,2.9nm,0.8s,baz=220,slow=9.3,SNR=11						
TKM2	**Tokmak 2**	**45.45**	**337**	*e*P	**P**	**15 46 19.8**	**-3.1**
	comp=Z,4.6nm,0.8s						
AAK	**Ala-Archa**	**45.65**	**336**	*e*P	**P**	**15 46 20.8**	**-3.6**
	comp=Z,2.7nm,0.9s						
EKS2	**Erkin-Say**	**45.97**	**335**	*e*P	**P**	**15 46 27.7**	**+0.9**
	comp=Z,4.8nm,0.6s						
SONA0	**Songino Array**	**46.39**	**8**	*e*P	**P**	**15 46 30.2**	**+0.2**
	comp=Z,6.5nm,1.0s						
SONA0				*e*PcP	**PcP**	**15 48 04.5**	**+0.1**
SONM	**Songino Array**	**46.39**	**8**	P	**P**	**15 46 30.2**	**+0.2**
	comp=Z,4.3nm,0.7s,baz=188,slow=8.7,SNR=28						
SONM				PcP	**PcP**	**15 48 04.5**	**+0.1**
	comp=Z,0.8nm,0.5s,baz=192,slow=4.6,SNR=3.5						
SONA1	**Songino Array**	**46.40**	**8**	*e*P	**P**	**15 46 29.9**	**-0.2**
SONA1				*e*PcP	**PcP**	**15 48 04.8**	**+0.3**
ULN	**Ulaanbaatar**	**46.51**	**9**	*e*P	**P**	**15 46 30.5**	**-0.5**
	comp=Z,4.3nm,1.0s						
MK01	**Makanchi Array**	**46.73**	**345**	*e*P	**P**	**15 46 33.2**	**+0.5**
MK31	**Makanchi Array**	**46.76**	**345**	*e*P	**P**	**15 46 33.4**	**+0.5**
MK32	**Makanchi Array**	**46.76**	**345**	*e*P	**P**	**15 46 33.4**	**+0.6**
MKAR	**Makanchi Array**	**46.76**	**345**	P	**P**	**15 46 33.4**	**+0.6**
	comp=Z,18nm,0.8s,baz=157,slow=8.2,SNR=86						
MKAR	**Makanchi Array**	**46.76**	**345**	*e*P	**P**	**15 46 33.5**	**+0.7**
MAKZ	**Makanchi**	**46.85**	**345**	*e*P	**P**	**15 46 33.7**	**+0.1**
	comp=Z,11nm,0.7s						
KKAR	**Karatay Array**	**47.75**	**333**	*e*P	**P**	**15 46 40.6**	**0.0**
TLY	**Talaya**	**49.88**	**5**	*e*P	**P**	**15 46 55.6**	**-1.2**
	comp=Z,4.7nm,0.8s						
MJAR	**Matsushiro Arr**	**50.77**	**42**	P	**P**	**15 47 02.4**	**-1.5**
	comp=Z,0.5nm,0.4s,baz=336,slow=17,SNR=4.2						
MJAR				LR	LR	16 09 09.6	
	comp=Z,16nm,22.0s,baz=225,slow=37						
GEYT	**Alibeck**	**51.12**	**320**	P	**P**	**15 47 07.2**	**+0.8**
	comp=Z,3.3nm,0.8s,baz=169,slow=12,SNR=6.0						
KURK	**Kurchatov**	**51.32**	**344**	*e*P	**P**	**15 47 07.4**	**-0.2**
	comp=Z,11nm,0.7s						
USRK	**Ussuriysk Ar.**	**51.88**	**31**	P	**P**	**15 47 11.9**	**-0.1**
	comp=Z,0.8nm,0.4s,baz=228,slow=6.5,SNR=3.7						
ZAA0	**Zalesovo Array**	**53.01**	**350**	*e*P	**P**	**15 47 19.9**	**-0.2**
ZALV	**Zalesovo Beam**	**53.01**	**350**	P	**P**	**15 47 20.4**	**+0.3**
	comp=Z,13nm,0.4s,baz=175,slow=6.9,SNR=81						
ZAA1	**Zalesovo Array**	**53.01**	**350**	*e*P	**P**	**15 47 20.4**	**+0.2**
STKA	**Stephens Creek**	**53.33**	**133**	P	**P**	**15 47 23.8**	**+0.8**
	comp=Z,0.8nm,0.5s,baz=321,slow=7.2,SNR=6.8						
VOSK	**Vostochnaya**	**55.39**	**340**	*e*P	**P**	**15 47 37.0**	**-0.5**
ZRNK	**Zerenda**	**56.25**	**339**	*e*P	**P**	**15 47 43.5**	**-0.1**
	comp=Z,4.7nm,0.8s						
ABKAR	**Akbulak array**	**57.23**	**331**	*e*P	**P**	**15 47 50.7**	**0.0**
YSS	**Yuzh-Sakhalins**	**59.45**	**34**	*e*P	**P**	**15 48 06.3**	**+0.1**
	comp=Z,11nm,0.8s						
KBZ	**Khabaz**	**63.99**	**319**	P	**P**	**15 48 37.2**	**+0.4**
	comp=Z,4.2nm,0.8s,baz=133,slow=5.9,SNR=12						
KIV	**Kislovodsk**	**64.22**	**319**	*e*P	**P**	**15 48 39.0**	**+0.5**
	comp=Z,6.5nm,0.9s						
NRIK	**Noril'sk**	**67.71**	**356**	P	**P**	**15 49 00.2**	**-0.1**
	comp=Z,4.0nm,0.9s,baz=142,slow=6.3,SNR=7.0						
BR101	**Keskin Array S**	**69.14**	**312**	*e*P	**P**	**15 49 09.7**	**-0.4**
BRTR	**Keskin Array B**	**69.14**	**312**	P	**P**	**15 49 09.7**	**-0.4**
	comp=Z,1.1nm,0.6s,baz=123,slow=4.6,SNR=5.0						
BR231	**Keskin MP Arra**	**69.81**	**312**	*e*P	**P**	**15 49 10.5**	**-3.6**
TIXI	**Tiksi**	**72.43**	**10**	*e*P	**P**	**15 49 27.8**	**-1.3**
	comp=Z,4.7nm,0.7s						
LBTB	**Lobatse**	**74.75**	**244**	*e*P	P	15 49 37.8	-6.1
	comp=Z,83nm,1.6s						
AKASG	**Malin Array Be**	**75.12**	**322**	P	**P**	**15 49 45.0**	**-0.4**
	comp=Z,2.2nm,0.5s,baz=89,slow=5.1,SNR=7.6						
KIEV	**Kiev**	**75.13**	**322**	*e*P	**P**	**15 49 45.0**	**-0.5**
	comp=Z,3.2nm,0.8s						
FIA0	**FINESS Array S**	**79.71**	**332**	*e*P	**P**	**15 50 10.7**	**-0.1**
FINES	**FINESS Array B**	**79.71**	**332**	P	**P**	**15 50 10.7**	**-0.1**
	comp=Z,3.0nm,0.5s,baz=102,slow=5.6,SNR=24						
ARA0	**ARCESS Array S**	**82.13**	**340**	*e*P	**P**	**15 50 23.2**	**-0.3**
ARCES	**ARCESS Array B**	**82.13**	**340**	P	**P**	**15 50 23.2**	**-0.3**
	comp=Z,3.6nm,1.0s,baz=94,slow=4.9,SNR=12						
GERES	**GERESS Array B**	**84.74**	**319**	P	**P**	**15 50 38.3**	**+0.8**
	comp=Z,0.4nm,0.5s,baz=97,slow=6.9,SN

USRK	Ussuriysk Ar.	31.21	14	P	P	15 47 47.4	-0.4
	2.2nm,0.7s,baz=182,slow=5.8,SNR=6.7						
ASAJ	Asahikawa	34.67	26	LR	LR	16 03 55.1	
	comp=Z,404nm,19.2s,slow=39						
ULN	Ulaanbaatar	36.02	343	*e*P	P	15 48 28.7	-1.1
	2.8nm,1.0s						
SONA0	Songino Array	36.18	342	*e*P	P	15 48 30.5	-0.7
	3.3nm,1.2s						
SONM	Songino Array	36.18	342	P	P	15 48 30.5	-0.7
	0.7nm,0.7s,baz=170,slow=8.8,SNR=3.1						
SONM				LR	LR	16 04 40.2	
	comp=Z,78nm,19.1s,baz=158,slow=39						
AS31	Alice Springs	39.17	163	*e*P	P	15 48 57.5	+0.9
	3.0nm,0.4s						
AS01	Alice Springs	39.18	163	*e*P	P	15 48 57.0	+0.3
MK32	Makanchi Array	46.65	323	*e*P	P	15 49 57.2	+0.1
MKAR	Makanchi Array	46.65	323	P	P	15 49 57.2	+0.1
	0.6nm,0.9s,baz=114,slow=9.8,SNR=3.4						
KKAR	Karatay Array	52.81	314	*e*P	P	15 50 43.9	-0.1
ZRNK	Zerenda	57.08	325	*e*P	P	15 51 15.8	+1.0
	3.0nm,1.1s						
TIXI	Tiksi	57.73	2	LR	LR	16 19 29.5	
	comp=Z,36nm,18.6s,baz=212,slow=40						
TIXI	Tiksi	57.73	2	*e*P	P	15 51 19.7	+0.6
	8.9nm,1.7s						
NRIK	Noril'sk	59.43	346	LR	LR	16 18 27.8	
	comp=Z,46nm,19.1s,baz=103,slow=37						
ABKAR	Akbulak array	61.46	319	*e*P	P	15 51 43.1	-2.0
ARU	Arti	63.92	326	*e*P	P	15 52 02.6	+1.1
	15nm,1.7s						
CAST	Castle Rocks	75.65	28	*e*P	P	15 53 13.2	-0.4
	20nm,1.9s						
ILAR	Eielson Array	77.81	26	P	P	15 53 27.4	+1.6
	0.3nm,0.7s,baz=263,slow=4.5,SNR=2.9						
FIA0	FINESS Array S	80.71	331	*e*P	P	15 53 41.1	-0.6
FINES	FINESS Array B	80.71	331	P	P	15 53 41.1	-0.6
	2.1nm,0.9s,baz=46,slow=8.0,SNR=3.0						
AKASG	Malin Array Be	81.16	320	LR	LR	16 30 13.9	
	comp=Z,21nm,20.3s,baz=335,slow=36						
NB200	NORSAR Array S	87.64	333	*e*P	P	15 54 15.2	-1.9
NOA	NORSAR Array B	87.64	333	P	P	15 54 15.2	-1.9
	0.9nm,0.9s,baz=83,slow=4.1,SNR=2.5						
NOA				LR	LR	16 36 51.4	
	comp=Z,30nm,18.9s,baz=30,slow=38						

*IDC **26** 15:41:52.5±1.6, 7°.47S×127°.00E, h0km, mb3.6/2, mb1 4.2/4, mb1mx3.8/25, mbtmp4.0/4, ML4.1/2, Error ellipse: s-maj=100.7km s-min=28.7km az=69.0*
*NEIC **26** 15:42:09.0±1.1, 7°.64S×127°.87E, h166km±13km, mb4.8/3, Error ellipse: s-maj=15.2km s-min=11.1km az=26.0*
*ISCJB **26** 15:42:09.8±0.6, 7°.75S±0°.05×128°.01E±0°.07, h200km, mb3.8/3, Error ellipse: s-maj=10.1km s-min=5.7km az=156.7*
ISC 26 15:42:09.9±0.7, 7°.80S±0°.06×128°.04E±0°.06, h200km, n19, σ3°.43/30, mb3.4/3, 1C, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SAUI	Saumlaki	3.24	93	*e*Pn	Pn	15 43 03.3	+0.9
SAUI				*e*Sn	Sn	15 43 40.3	-3.1
SOEI	Soe	4.20	242	*e*Pn	Pn	15 43 13.4	-1.0
SOEI				*e*Sn	Sn	15 43 59.6	-5.4
MTN	Manton Dam	5.87	149	*e*Pn	Pn	15 43 37.2	+1.7
MTN				*e*Sn	Sn	15 44 41.0	-2.1
FAKI	Fak Fak	6.41	41	*e*Pn	Pn	15 43 40.2	-2.4
FAKI				*e*Sn	Sn	15 44 48.7	-7.2
FITZ	Fitzroy Crossi	10.50	193	*e*Pn	Pn	15 44 34.3	-1.4
FITZ				*e*Sn	Sn	15 46 26.5	-6.5
WRAB	Tennant Creek	13.53	154	*e*Pn	P	15 45 16.9	+0.4
WRAB				*e*Sn	S	15 47 38.6	-6.3
WR1	Warramunga Arr	13.53	154	*e*Pn	Pn	15 45 15.7	+1.6
WR1				*e*Sn	S	15 47 41.7	-3.2
WRA	Warramunga Arr	13.53	154	Pn	Pn	15 45 15.7	+1.6
	0.7nm,0.3s,baz=328,slow=14,SNR=43						
WRA				Sn	S	15 47 41.7	-3.2
	2.5nm,0.3s,baz=324,slow=24,SNR=12						
WB2	Warramunga Arr	13.54	154	*e*Pn	Pn	15 45 15.5	+1.3
WB2				*e*Sn	S	15 47 38.7	-6.4
COEN	Coen	16.07	114	*e*P	Pn	15 45 49.6	+4.4
	96nm,1.8s						
COEN				*e*S	S	15 48 38.6	-4.7
AS31	Alice Springs	16.75	161	*e*P	Pn	15 45 56.4	+3.0
	4.7nm,0.4s						
AS31				*e*S	S	15 48 55.5	-1.5
ASAR	Alice Springs	16.75	161	P	Pn	15 45 57.5	+4.2
	1.4nm,0.3s,baz=338,slow=11,SNR=176						
ASAR				S	S	15 48 59.3	+2.3
	0.8nm,0.3s,baz=324,slow=18,SNR=9.0						
AS01	Alice Springs	16.77	161	*e*P	Pn	15 45 58.1	+4.6
AS01				*e*S	S	15 48 53.3	-4.0
BBOO	Buckleboo	25.98	164	*e*P	P	15 47 28.0	+3.8
	53nm,1.6s						
KSAR	Wonju Array Be	45.00	360	P	P	15 50 07.0	+1.6
KSRS	Korea Array	45.02	360	P	P	15 50 07.0	+1.5
	0.9nm,0.6s,baz=184,slow=9.4,SNR=6.8						
SONA1	Songino Array	58.61	343	*e*P	P	15 51 46.5	+0.5
MKAR	Makanchi Array	67.84	328	P	P	15 52 47.4	+0.9
	0.2nm,0.4s,baz=134,slow=6.3,SNR=2.7						
SYO	Syowa Base	82.22	201	*e*P	P	15 54 11.0	+2.7

*ISCJB **26** 15:58:14.4±0.5, 39°.10N±0°.02×29°.03E±0°.03, h7km±5km, Error ellipse: s-maj=4.3km s-min=4.1km az=15.1*
*DDA **26** 15:58:14.1, 39°.10N×29°.04E, h7km, Ml2.8*
*ISK **26** 15:58:14.3, 39°.09N×29°.00E, h11km, MD2.8*
*CSEM **26** 15:58:14.7±0.1, 39°.10N×29°.03E, h8km, ML2.8, Error ellipse: s-maj=1.9km s-min=1.6km az=90.0*
ISC 26 15:58:14.3±0.9, 39°.11N±0°.02×29°.03E±0°.02, h15km±7km, n39, σ0°.44/55, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.26	255	P	Pg	15 58 19.9	0.0
DEMI				S	Sg	15 58 23.8	+0.1
DEMI	Demirci	0.26	255	*i* P	Pg	15 58 19.9	0.0
DEMI				*i* S	Sg	15 58 23.8	+0.1
GDZ	Gediz	0.35	94	P	Pg	15 58 21.7	+0.1
GDZ				S	Sg	15 58 26.2	-0.3
GDZ	Gediz	0.35	94	*i* P	Pg	15 58 21.7	+0.1
GDZ				*i* S	Sg	15 58 26.2	-0.3
DURS	Dursunbey	0.65	319	P	Pb	15 58 27.4	-0.1
DURS				S	Sb	15 58 36.8	+0.4
DURS	Dursunbey	0.65	319	*i* P	Pb	15 58 27.4	-0.1
DURS				*i* S	Sb	15 58 36.8	+0.4
KULA	Kula-Manisa	0.66	206	*e*PG	Pb	15 58 27.6	0.0
KULA				*e*SG	Sg	15 58 36.0	-0.1
KULA	Kula-Manisa	0.66	206	*e*Pg	Pb	15 58 27.6	0.0
KULA				*e*Sg	Sg	15 58 36.0	-0.1
MANT	Manisa	0.72	211	P	Pg	15 58 28.5	+0.1
MANT				S	Sg	15 58 37.5	-0.5
MANT	Manisa	0.72	211	*i* P	Pg	15 58 28.5	+0.1
MANT				*i* S	Sg	15 58 37.5	-0.5
KHAL	Karahalli	0.82	154	P	Pb	15 58 30.7	+0.3
KHAL				S	Sg	15 58 41.0	-0.2
KHAL	Karahalli	0.82	154	*i* P	Pb	15 58 30.7	+0.3
KHAL				*i* S	Sg	15 58 41.0	-0.2
KHL	Karahalli	0.88	154	*e*PG	Pg	15 58 31.4	+0.1
KHL	Karahalli	0.88	154	*e*Pg	Pg	15 58 31.4	+0.1
ORLT	Orhaneli	0.94	354	*e*PG	Pn	15 58 33.3	+0.3
ORLT	Orhaneli	0.94	354	*e*Pg	Pn	15 58 33.3	+0.3
AKHS	Akhisar	0.98	257	P	Pn	15 58 34.4	+0.9
AKHS				S	Sn	15 58 46.8	-0.2
AKHS	Akhisar	0.98	257	*i* P	Pn	15 58 34.4	+0.9
AKHS				*i* S	Sn	15 58 46.8	-0.2
AKS	Akhisar	0.98	257	*e*PG	Pb	15 58 32.9	0.0
AKS	Akhisar	0.98	257	*e*Pg	Pb	15 58 32.9	0.0
IGD	Bursa	1.16	6	*i* P	Pn	15 58 35.3	-0.7
IGD				*i* S	Sg	15 58 51.8	0.0
CAVI	Cavuskoy	1.26	30	*e*PN	Pg	15 58 38.5	-0.1
CAVI	Cavuskoy	1.26	30	*e*Pn	Pg	15 58 38.5	-0.1
BALY	Balya	1.26	300	P	Pg	15 58 38.5	-0.1
BALY	Balya	1.26	300	*i* P	Pg	15 58 38.5	-0.1
BALY				*i* S	Sb	15 58 51.8	-2.0
MDNY	Mudanya-Bursa	1.26	355	*e*PN	Pg	15 58 38.5	-0.1
MDNY	Mudanya-Bursa	1.26	355	*e*Pn	Pg	15 58 38.5	-0.1
KCTX	Karacabey (Bur	1.27	336	*e*PN	Pg	15 58 39.0	+0.3
KCTX	Karacabey (Bur	1.27	336	*e*Pn	Pg	15 58 39.0	+0.3
IZI	Iznik	1.27	15	*e*PN	Pg	15 58 39.2	+0.5
IZI	Iznik	1.27	15	*e*Pn	Pg	15 58 39.3	+0.5
GONE	Gonen-Balikesi	1.40	312	*e*PN	Pb	15 58 40.3	+0.2
GONE	Gonen-Balikesi	1.40	312	*e*Pn	Pb	15 58 40.3	+0.2
ARMT	Armutlu	1.46	355	*e*PN	Pb	15 58 41.6	+0.5
ARMT	Armutlu	1.46	355	*e*Pn	Pb	15 58 41.7	+0.5
EDC	Edincik	1.53	324	*e*PN	Pb	15 58 42.7	+0.4
EDC	Edincik	1.53	324	*e*Pn	Pb	15 58 42.7	+0.4
GULT	Gulveren	1.75	40	*e*PN	Pb	15 58 45.9	-0.2
GULT	Gulveren	1.75	40	*e*Pn	Pb	15 58 45.9	-0.2

*CSEM **26** 16:00:30.8, 38°.06N×21°.97E, h1km, ML1.6/13*
ATH 26 16:00:30.8, 38°.06N×21°.97E, h1km±1km, ML1.6/12, Error ellipse: s-maj=1.5km s-min=0.5km az=38.0, Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KLV	Kalavryta, Ach	0.14	98	P	Pg	16 00 33.9	+0.3
KLV				S	Sg	16 00 35.4	-0.1
KLV	Kalavryta, Ach	0.14	98	P	Pg	16 00 33.9	+0.3
KLV				S	Sg	16 00 35.4	-0.1
KLV				AML	AML	16 00 36.5	
	comp=N,830μm,0.3s						
KLV				AML	AML	16 00 37.4	
	comp=E,535μm,0.2s						
LAKA	Lakka	0.18	2	P	Pg	16 00 34.4	+0.2
LAKA				S	Sg	16 00 37.7	+1.2
LAKA	Lakka	0.18	2	P	Pg	16 00 34.4	+0.1
LAKA				S	Sg	16 00 37.7	+1.2
LAKA				AML	AML	16 00 37.9	
	comp=N,458μm,0.1s						
LAKA				AML	AML	16 00 39.3	
	comp=E,714μm,0.4s						
DRO	Drossia	0.23	242	P	Pg	16 00 35.3	+0.1
DRO				S	Sg	16 00 39.7	+1.4
DRO	Drossia	0.23	242	P	Pg	16 00 35.3	+0.1
DRO				S	Sg	16 00 39.7	+1.4
DRO				AML	AML	16 00 42.3	
	comp=E,1857μm,0.2s						
DRO				AML	AML	16 00 43.0	
	comp=N,1478μm,0.3s						
UPR	University Cam	0.26	327	P	Pg	16 00 37.0	+1.2
UPR	University Cam	0.26	327	P	Pg	16 00 37.0	+1.2
SERG	Sergoula	0.36	11	P	Pg	16 00 37.8	+0.2
SERG				S	Sg	16 00 42.2	-0.1
EFP	Efpalio	0.37	352	P	Pg	16 00 38.2	+0.4
EFP				S	Sg	16 00 43.8	+1.2
EFP	Efpalio	0.37	352	P	Pg	16 00 38.2	+0.4
EFP				S	Sg	16 00 43.8	+1.2
EFP				AML	AML	16 00 45.7	
	comp=N,350μm,0.2s						
EFP				AML	AML	16 00 46.8	
	comp=E,311μm,0.2s						
RLS	Riolos of Patr	0.40	269	P	Pg	16 00 37.7	-0.7
RLS				S	Sg	16 00 44.2	+0.7
RLS	Riolos of Patr	0.40	269	S	Sg	16 00 44.2	+0.6
RLS				AML	AML	16 00 44.8	
	comp=E,239μm,0.1s						
RLS				AML	AML	16 00 45.1	
	comp=N,290μm,0.1s						
AXS	Araxos	0.49	286	P	Pg	16 00 39.8	-0.3
AXS				S	Sg	16 00 47.8	+1.4
AXS	Araxos	0.49	286	P	Pg	16 00 39.8	-0.3
AXS				S	Sg	16 00 47.8	+1.4
ANX	Ano Chora	0.53	356	P	Pg	16 00 40.8	-0.2
ANX				S	Sg	16 00 48.8	+0.9
ANX	Ano Chora	0.53	356	S	Sg	16 00 48.8	+0.9
ANX				AML	AML	16 00 53.1	
	comp=E,192μm,0.3s						
ANX				AML	AML	16 00 56.1	
	comp=N,222μm,0.3s						
DSF	Desfina	0.56	51	P	Pg	16 00 40.5	-1.0
DSF				S	Sg	16 00 49.4	+0.6
DSF	Desfina	0.56	51	P	Pg	16 00 40.5	-1.0
DSF				S	Sg	16 00 49.4	+0.6
DSF				AML	AML	16 00 53.3	
	comp=N,129μm,0.1s						
DSF				AML	AML	16 00 54.4	
	comp=E,88μm,0.2s						
AMT	Artemida-Makis	0.57	201	P	Pg	16 00 42.1	+0.4
AMT				S	Sg	16 00 49.7	+0.7
AMT	Artemida-Makis	0.57	201	P	Pg	16 00 42.1	+0.5
AMT				S	Sg	16 00 49.7	+0.7
AMT				AML	AML	16 00 56.6	
	comp=N,213μm,0.5s						
AMT				AML	AML	16 01 00.5	
	comp=E,156μm,0.6s						
TRIP	Tripoli	0.58	156	P	Pg	16 00 42.3	+0.3
TRIP				S	Sb	16 00 51.4	-1.3
TRIP	Tripoli	0.58	156	P	Pg	16 00 42.3	+0.3
TRIP				S	Sb	16 00 51.4	-1.3
TRIP				AML	AML	16 00 53.5	
	comp=E,69μm,0.2s						
TRIP				AML	AML	16 00 53.8	
	comp=N,104μm,0.5s						
PVO	Paravola	0.65	328	P	Pg	16 00 43.5	+0.2
PVO				S	Sb	16 00 54.4	-0.2
PVO	Paravola	0.65	328	P	Pg	16 00 43.5	+0.1
PVO				S	Sb	16 00 54.4	-0.2
VLX	Vlachokerasia	0.76	155	P	Pb	16 00 47.0	+0.1
VLX				S	Sb	16 00 56.6	-1.3
VLX	Vlachokerasia	0.76	155	P	Pb	16 00 47.0	+0.1
VLX				S	Sb	16 00 56.6	-1.3
LTK	Loutraki	0.79	93	P	Pg	16 00 45.6	-0.3
LTK				S	Sb	16 00 57.7	-0.8
LTK	Loutraki	0.79	93	P	Pg	16 00 45.6	-0.3
LTK				S	Sb	16 00 57.7	-0.8
LTK				AML	AML	16 01 01.5	
	comp=E,66μm,0.4s						
LTK				AML	AML	16 01 04.6	
	comp=N,78μm,0.4s						
PDO	Prodromos	0.82	311	P	Pg	16 00 46.8	+0.3
PDO				S	Sb	16 00 59.7	+0.4
PDO	Prodromos	0.82	311	P	Pg	16 00 46.8	+0.3
PDO				S	Sb	16 00 59.7	+0.3
PDO				AML	AML	16 01 03.7	
	comp=N,135μm,0.7s						
PDO				AML	AML	16 01 04.2	
	comp=E,180μm,0.5s						
EVR	Evrytania	0.86	352	P	Pg	16 00 46.6	-0.7
EVR	Evrytania	0.86	352	P	Pg	16 00 46.6	-0.7
ITM	Ithomi	0.88	182	P	Pb	16 00 49.0	+0.1
ITM				S	Sg	16 00 59.4	+0.3
ITM	Ithomi	0.88	182	P	Pb	16 00 49.0	+0.1
ITM				S	Sg	16 00 59.4	+0.3
KFL	Anninata	0.93	273	P	Pg	16 00 48.8	+0.1
KFL				S	Sb	16 01 01.8	-0.8
KFL	Anninata	0.93	273	P	Pg	16 00 48.8	+0.2
KFL				S	Sb	16 01 01.8	-0.9
AGG	Agios Georgios	1.00	16	P	Pg	16 00 49.1	-0.8
AGG				S	Sg	16 01 03.7	+0.8
AGG	Agios Georgios	1.00	16	P	Pg	16 00 49.1	-0.9
AGG				S	Sg	16 01 03.7	+0.8
AGG				AML	AML	16 01 06.8	
	comp=E,115μm,0.3s						
AGG				AML	AML	16 01 09.1	
	comp=N,96μm,0.4s						
LKR	Lokris	1.00	54	P	Pn	16 00 51.8	-0.2
LKR				S	Sg	16 01 03.3	+0.4
LKR	Lokris	1.00	54	P	Pn	16 00 51.8	-0.1
LKR				S	Sg	16 01 03.3	+0.3
ZKS	Zakynthos	1.01	249	P	Pg	16 00 50.4	+0.3
ZKS	Zakynthos	1.01	249	P	Pg	16 00 50.4	+0.4
VLS	Valsamata	1.09	276	P	Pg	16 00 51.2	-0.6
KRND	KRANIDI	1.16	126	P	Pb	16 00 53.3	-0.3
KRND				S	Sb	16 01 09.3	+0.2
KRND	KRANIDI	1.16	126	P	Pb	16 00 53.3	-0.3
KRND				S	Sb	16 01 09.3	+0.2
PYL	PYLOS	1.18	189	P	Pg	16 00 51.3	-2.1
PYL				S	Sb	16 01 09.5	-0.2
PYL	PYLOS	1.18	189	P	Pg	16 00 51.3	-2.1
PYL				S	Sb	16 01 09.5	-0.2
DSL	Palaion Diasel	1.27	328	P	Pn	16 00 57.0	+1.3
DSL	Palaion Diasel	1.27	328	P	Pn	16 00 57.0	+1.3

*DDA **26** 16:01:22.2, 39°.10N×29°.02E, h7km, Md2.6*
*ISK **26** 16:01:22.4, 39°.03N×29°.22E, h7km, MD2.6*
*CSEM **26** 16:01:22.8±0.2, 39°.08N×29°.05E, h2km, MD2.6, Error ellipse: s-maj=5.6km s-min=4.5km az=93.0*
ISC 26 16:01:22.8±1.1, 39°.06N±0°.03×29°.04E±0°.02, h2km±14km, n26, σ0°.86/38, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.25	266	P	Pg	16 01 27.8	+0.1
DEMI				S	Sg	16 01 31.3	+0.3
DEMI	Demirci	0.25	266	*i* P	Pg	16 01 27.8	+0.1
DEMI				*i* S	Sg	16 01 31.3	+0.3
GDZ	Gediz	0.34	86	P	Pg	16 01 29.6	+0.2
GDZ				S	Sg	16 01 34.9	+1.0
GDZ	Gediz	0.34	86	*i* P	Pg	16 01 29.6	+0.2
GDZ				*i* S	Sg	16 01 34.9	+1.0
TVSB	Tavsanli	0.51	40	*e*PG	Pg	16 01 31.9	-0.6
TVSB				*e*SG	Sg	16 01 38.6	-0.5
TVSB	Tavsanli	0.51	40	*e*Pg	Pg	16 01 31.9	-0.6
TVSB				*e*Sg	Sg	16 01 38.6	-0.5
KULA	Kula-Manisa	0.62	209	*e*PG	Pb	16 01 35.6	-0.8
KULA	Kula-Manisa	0.62	209	*e*Pg	Pb	16 01 35.6	-0.8
MANT	Manisa	0.69	214	P	Pb	16 01 36.5	-1.0
MANT				S	Sg	16 01 45.8	+0.9
MANT	Manisa	0.69	214	*i* P	Pb	16 01 36.5	-1.0
MANT				*i* S	Sg	16 01 45.8	+0.9
DURS	Dursunbey	0.69	321	P	Pg	16 01 34.9	-1.2
DURS				S	Sg	16 01 44.5	-0.7
DURS	Dursunbey	0.69	321	*i* P	Pg	16 01 34.9	-1.2
DURS				*i* S	Sg	16 01 44.5	-0.7
KHAL	Karahalli	0.78	153	P	Pb	16 01 39.3	+0.2
KHAL				S	Sb	16 01 49.4	-0.6
KHAL	Karahalli	0.78	153	*i* P	Pb	16 01 39.3	+0.2
KHAL				*i* S	Sb	16 01 49.4	-0.6
KHL	Karahalli	0.83	153	*e*PG	Pg	16 01 37.5	-1.2
KHL	Karahalli	0.83	153	*e*Pg	Pg	16 01 37.5	-1.2
BALB	Balikesir	1.07	303	*e*PN	Pn	16 01 46.0	+1.2
BALB	Balikesir	1.07	303	*e*Pn	Pn	16 01 46.0	+1.3
CAVI	Cavuskoy	1.29	28	*e*PN	Pg	16 01 47.1	-0.5
CAVI	Cavuskoy	1.29	28	*e*Pn	Pg	16 01 47.1	-0.5
KCTX	Karacabey (Bur	1.31	336	*e*PN	Pg	16 01 49.4	+1.4
KCTX	Karacabey (Bur	1.31	336	*e*Pn	Pg	16 01 49.4	+1.4
IZI	Iznik	1.31	15	*e*PN	Pg	16 01 47.6	-0.4
IZI	Iznik	1.31	15	*e*Pn	Pg	16 01 47.6	-0.4
ARMT	Armutlu	1.51	355	*e*PN	Pg	16 01 51.2	-0.4
ARMT	Armutlu	1.51	355	*e*Pn	Pg	16 01 51.3	-0.4

*ISCJB **26** 16:03:51.0±0.5, 39°.10N±0°.03×29°.02E±0°.04, h7km±6km, Error ellipse: s-maj=6.0km s-min=4.6km az=147.1*
*ISK **26** 16:03:50.0, 39°.07N×29°.03E, h8km, MD2.7*
*CSEM **26** 16:03:51.1±0.2, 39°.11N×29°.00E, h8km, MD2.9, Error ellipse: s-maj=4.6km s-min=4.0km az=124.0*
*DDA **26** 16:03:51.5, 39°.06N×29°.05E, h7km, Md2.9*
ISC 26 16:03:50.3±1.1, 39°.05N±0°.04×29°.03E±0°.03, h15km±11km, n24, σ0°.72/34, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.24	268	P	Pb	16 03 56.9	+0.4
DEMI				S	Sb	16 04 00.6	0.0
DEMI	Demirci	0.24	268	*i* P	Pb	16 03 56.9	+0.4
DEMI				*i* S	Sb	16 04 00.6	0.0
GDZ	Gediz	0.35	84	P	Pb	16 03 58.4	0.0
GDZ				S	Sb	16 04 03.3	-0.6
GDZ	Gediz	0.35	84	*i* P	Pb	16 03 58.4	0.0
GDZ				*i* S	Sb	16 04 03.3	-0.6
TVSB	Tavsanli	0.52	40	*e*PG	Pg	16 04 00.2	-0.5
TVSB				*e*SG	Sg	16 04 07.6	-0.1
TVSB	Tavsanli	0.52	40	*e*Pg	Pg	16 04 00.2	-0.5
TVSB				*e*Sg	Sg	16 04 07.6	-0.1
KULA	Kula-Manisa	0.61	208	*e*PG	Pb	16 04 02.7	0.0
KULA	Kula-Manisa	0.61	208	*e*Pg	Pb	16 04 02.7	0.0
MANT	Manisa	0.67	213	P	Pn	16 04 05.1	-0.4
MANT				S	Sn	16 04 14.6	-1.2
MANT	Manisa	0.67	213	*i* P	Pn	16 04 05.1	-0.4
MANT				*i* S	Sn	16 04 14.7	-1.2
KHAL	Karahalli	0.77	152	P	Pn	16 04 09.0	+2.2
KHAL				S	Sn	16 04 17.5	-0.6
KHAL	Karahalli	0.77	152	*i* P	Pn	16 04 09.0	+2.2
KHAL				*i* S	Sn	16 04 17.5	-0.6
AKS	Akhisar	0.96	260	*e*PG	Pg	16 04 08.8	-0.1
AKS	Akhisar	0.96	260	*e*Pg	Pg	16 04 08.8	-0.1
BALB	Balikesir	1.07	304	*e*PG	Pg	16 04 11.0	+0.1
BALB	Balikesir	1.07	304	*e*Pg	Pg	16 04 11.0	+0.1
KCTX	Karacabey (Bur	1.32	337	*e*PN	Pb	16 04 14.9	+0.1
KCTX	Karacabey (Bur	1.32	337	*e*Pn	Pb	16 04 14.9	+0.1
IZI	Iznik	1.33	15	*e*PN	Pb	16 04 15.2	+0.2
IZI	Iznik	1.33	15	*e*Pn	Pb	16 04 15.2	+0.2
GONE	Gonen-Balikesi	1.44	314	*e*PN	Pb	16 04 16.9	+0.1
GONE	Gonen-Balikesi	1.44	314	*e*Pn	Pb	16 04 16.9	+0.1
ARMT	Armutlu	1.52	355	*e*PN	Pb	16 04 18.4	+0.2
ARMT	Armutlu	1.52	355	*e*Pn	Pb	16 04 18.4	+0.2

IDC 26 16:08:52.3±3.8, 40°.31N×142°.66E, h58km±23km, mb3.5/7, mb1 3.6/10, mb1mx3.3/38, mbtmp3.7/10, ML3.4/2, MS2.8/1, Ms1 2.8/1, ms1mx2.1/43, Error ellipse: s-maj=49.5km s-min=18.9km az=115.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAJ	Asahikawa	3.80	359	P	Pn	16 09 47.8	-0.6
	4.2nm,0.3s,baz=202,slow=11,SNR=67						
ASAJ				S	Sn	16 10 32.3	+0.5
	1.3nm,0.3s,baz=135,slow=19,SNR=2.5						
MJAR	Matsushiro Arr	5.13	224	P	Pn	16 10 06.3	-0.4
	0.3nm,0.3s,baz=35,slow=12,SNR=4.0						
USRK	Ussuriysk Ar.	8.81	300	P	Pn	16 10 58.1	+1.2
	0.2nm,0.3s,baz=112,slow=16,SNR=3.0						
KLR	Kul'dur	11.80	323	LR	LR	16 15 48.9	
	comp=Z,48nm,18.8s,baz=158,slow=35						
SEY	Seymchan	23.39	11	P	P	16 13 56.5	+0.8
	1.1nm,0.6s,baz=235

BALP				*e*S	**Sb**	**16 16 45.7**	**+1.8**
ABRA	**Dolores**	**2.58**	**32**	*e*P	**Pn**	**16 16 18.1**	**+1.8**
ABRA				*e*S	**Sn**	**16 16 50.8**	**+4.1**
POLP	**Polilio Island**	**2.69**	**105**	*e*P	**Pb**	**16 16 24.1**	**+0.1**
CAUP	**Cauayan**	**2.87**	**59**	*e*P	**Pb**	**16 16 24.6**	**-2.6**
CAUP				*e*S	Sb	16 17 34.5	+33
APYP	**Conner**	**3.05**	**38**	*e*P	**Pn**	**16 16 24.2**	**+1.5**
NACB	**Ninganchiao**	**8.94**	**14**	*e*Pn	**Pn**	**16 17 39.9**	**-3.8**
CM01	**Chiang Mai Arr**	**19.64**	**281**	*e*P	**Pn**	**16 20 06.9**	**+2.5**
CM31	**Chiang Mai Arr**	**19.66**	**282**	*e*P	**Pn**	**16 20 05.8**	**+1.1**
CMAR	**Chiang Mai Arr**	**19.66**	**282**	P	**Pn**	**16 20 05.9**	**+1.2**
	0.1nm,0.3s,baz=97,slow=7.5,SNR=27						
CMAR				LR	LR	16 27 42.3	
	comp=Z,22nm,20.3s,baz=255,slow=36						
IPM	**Ipoh**	**20.99**	**241**	*e*P	**P**	**16 20 17.4**	**-0.2**
	16nm,1.5s						
KSAR	**Wonju Array Be**	**23.19**	**18**	P	**P**	**16 20 42.0**	**+1.2**
KSRS	**Korea Array**	**23.21**	**18**	P	**P**	**16 20 42.0**	**+1.0**
	1.0nm,0.8s,baz=189,slow=13,SNR=5.9						
BKNI	**Bangkinang**	**23.45**	**232**	*e*P	**P**	**16 20 45.0**	**+1.5**
	49nm,0.4s						
GSI	**Gunungsitoli**	**25.61**	**239**	*e*P	**P**	**16 21 04.6**	**+1.2**
	9.1nm,1.0s						
JHJ2	**Mitsune**	**25.61**	**43**	*e*P	**P**	**16 21 03.1**	**-0.1**
	1µm,1.6s						
MJAR	**Matsushiro Arr**	**26.93**	**35**	LR	LR	16 30 51.8	
	comp=Z,21nm,21.8s,baz=95,slow=34						
SONA0	**Songino Array**	**33.99**	**344**	*e*P	**P**	**16 22 18.1**	**+0.5**
	3.6nm,1.5s						
SONM	**Songino Array**	**33.99**	**344**	P	**P**	**16 22 18.1**	**+0.5**
	0.3nm,0.4s,baz=169,slow=9.6,SNR=3.3						
SONA1	**Songino Array**	**34.00**	**344**	*e*P	**P**	**16 22 17.7**	**+0.1**
WRAB	**Tennant Creek**	**38.17**	**157**	*e*P	**P**	**16 22 53.3**	**-0.2**
	7.5nm,0.9s						
WR1	**Warramunga Arr**	**38.18**	**157**	*e*P	**P**	**16 22 53.0**	**-0.5**
	6.2nm,1.0s						
WRA	**Warramunga Arr**	**38.18**	**157**	P	**P**	**16 22 53.0**	**-0.5**
	2.0nm,0.8s,baz=336,slow=9.4,SNR=15						
WB2	**Warramunga Arr**	**38.18**	**157**	*e*P	**P**	**16 22 52.4**	**-1.2**
	19nm,1.5s						
TLY	**Talaya**	**38.23**	**344**	*e*P	**P**	**16 22 52.2**	**-1.4**
	2.1nm,0.6s						
PALK	**Pallekele**	**38.61**	**262**	*e*P	**P**	**16 22 57.3**	**-0.1**
	28nm,1.3s						
ASAR	**Alice Springs**	**41.44**	**159**	P	**P**	**16 23 20.6**	**-0.1**
	0.7nm,0.4s,baz=336,slow=6.8,SNR=18						
AS01	**Alice Springs**	**41.45**	**159**	*e*P	**P**	**16 23 20.2**	**-0.5**
MK31	**Makanchi Array**	**43.80**	**323**	*e*P	**P**	**16 23 38.3**	**-1.3**
MK32	**Makanchi Array**	**43.80**	**323**	*e*P	**P**	**16 23 40.5**	**+0.9**
MKAR	**Makanchi Array**	**43.80**	**323**	P	**P**	**16 23 40.5**	**+0.9**
	0.1nm,0.3s,baz=106,slow=3.1,SNR=2.6						
MKAR	**Makanchi Array**	**43.80**	**323**	*e*P	**P**	**16 23 38.0**	**-1.5**
ZALV	**Zalesovo Beam**	**46.86**	**333**	P	**P**	**16 24 03.8**	**+0.1**
	1.1nm,0.3s,baz=126,slow=8.5,SNR=3.3						
ZAA1	**Zalesovo Array**	**46.87**	**333**	*e*P	**P**	**16 24 03.8**	**+0.1**
PETK	**Petropavlovsk-**	**48.19**	**30**	P	**P**	**16 24 14.0**	**0.0**
	2.8nm,0.7s,baz=258,slow=7.2,SNR=3.1						
PEA1	**Petropavlovsk-**	**48.19**	**30**	*e*P	**P**	**16 24 14.1**	**0.0**
STKA	**Stephens Creek**	**51.71**	**156**	P	**P**	**16 24 40.0**	**-1.0**
	1.5nm,1.0s,baz=324,slow=14,SNR=2.9						
BILL	**Bilibino**	**60.48**	**18**	*e*P	**P**	**16 25 44.4**	**+1.2**
	9.3nm,1.7s						
FUNA	**Funafuti**	**63.97**	**108**	*e*P	**P**	**16 26 05.0**	**-2.5**
	468nm,1.8s						
GNI	**Garni**	**68.44**	**307**	*e*P	**P**	**16 26 34.9**	**-1.1**
	18nm,1.4s						
YKA	**Yellowknife Ar**	**91.68**	**22**	P	**P**	**16 28 40.3**	**-0.4**
	0.2nm,0.6s,baz=307,slow=4.6,SNR=3.6						

*ISCJB **26** 16:16:32.9±0.4,39.°11N±0.°03×29.°02E±0.°03, h2km±6km, Error ellipse: s-maj=4.6km s-min=3.9km az=3.5*
*ISK **26** 16:16:32.9,39.°11N×29.°06E, h7km, MD2.8*
*DDA **26** 16:16:32.8,39.°11N×29.°02E, h7km, Ml3.0*
*CSEM **26** 16:16:33.3±0.1,39.°11N×29.°03E, h5km, ML3.0, Error ellipse: s-maj=1.4km s-min=1.3km az=108.0*

ISC 26 16:16:33.3±0.9,**39.°11N**±0.°02×**29.°03E**±0.°02,**h9**km±9km, **n43**,σ0°**37**/60,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**255**	P	**Pg**	**16 16 38.5**	**+0.1**
DEMI				S	**Sg**	**16 16 41.7**	**-0.1**
DEMI	**Demirci**	**0.25**	**255**	*i* P	**Pg**	**16 16 38.5**	**+0.1**
DEMI				*i* S	**Sg**	**16 16 41.7**	**-0.1**
GDZ	**Gediz**	**0.36**	**93**	P	**Pg**	**16 16 40.5**	**+0.1**
GDZ				S	**Sg**	**16 16 45.3**	**+0.1**
GDZ	**Gediz**	**0.36**	**93**	*i* P	**Pg**	**16 16 40.5**	**+0.1**
GDZ				*i* S	**Sg**	**16 16 45.3**	**+0.1**
TVSB	**Tavsanli**	**0.48**	**45**	*e*PG	**Pg**	**16 16 42.7**	**-0.1**
TVSB				*e*SG	**Sg**	**16 16 48.5**	**-0.6**
TVSB	**Tavsanli**	**0.48**	**45**	*e*Pg	**Pg**	**16 16 42.7**	**-0.1**
TVSB				*e*Sg	**Sg**	**16 16 48.5**	**-0.6**
DURS	**Dursunbey**	**0.65**	**319**	P	**Pg**	**16 16 46.1**	**+0.1**
DURS				S	**Sg**	**16 16 54.3**	**-0.2**
DURS	**Dursunbey**	**0.65**	**319**	*i* P	**Pg**	**16 16 46.1**	**+0.1**
DURS				*i* S	**Sg**	**16 16 54.4**	**-0.2**
KULA	**Kula-Manisa**	**0.66**	**206**	*e*PG	**Pg**	**16 16 46.3**	**+0.2**
KULA	**Kula-Manisa**	**0.66**	**206**	*e*Pg	**Pg**	**16 16 46.3**	**+0.2**
MANT	**Manisa**	**0.72**	**211**	P	**Pg**	**16 16 47.2**	**0.0**
MANT				S	**Sg**	**16 16 56.1**	**-0.5**
MANT	**Manisa**	**0.72**	**211**	*i* P	**Pg**	**16 16 47.2**	**0.0**
MANT				*i* S	**Sg**	**16 16 56.1**	**-0.5**
KHAL	**Karahalli**	**0.82**	**153**	P	**Pb**	**16 16 49.9**	**+0.1**
KHAL				S	**Sg**	**16 16 59.7**	**-0.2**
KHAL	**Karahalli**	**0.82**	**153**	*i* P	**Pb**	**16 16 49.9**	**+0.1**
KHAL				*i* S	**Sg**	**16 16 59.7**	**-0.2**
KHL	**Karahalli**	**0.88**	**153**	*e*PG	**Pg**	**16 16 49.9**	**-0.3**
KHL	**Karahalli**	**0.88**	**153**	*e*Pg	**Pg**	**16 16 49.9**	**-0.3**
ORLT	**Orhaneli**	**0.94**	**354**	*e*PG	**Pg**	**16 16 51.5**	**0.0**
ORLT	**Orhaneli**	**0.94**	**354**	*e*Pg	**Pg**	**16 16 51.5**	**0.0**
AKS	**Akhisar**	**0.97**	**257**	*e*PG	**Pb**	**16 16 52.5**	**+0.2**
AKS	**Akhisar**	**0.97**	**257**	*e*Pg	**Pb**	**16 16 52.5**	**+0.2**
BALB	**Balikesir**	**1.03**	**301**	*e*PG	**Pg**	**16 16 53.4**	**+0.2**
BALB	**Balikesir**	**1.03**	**301**	*e*Pg	**Pg**	**16 16 53.4**	**+0.2**
IGD	**Bursa**	**1.16**	**7**	*i* P	**Pg**	**16 16 54.8**	**-0.9**
IGD				*i* S	**Sg**	**16 17 10.1**	**-0.7**
MDNY	**Mudanya-Bursa**	**1.26**	**355**	*e*PN	**Pg**	**16 16 57.6**	**0.0**
MDNY	**Mudanya-Bursa**	**1.26**	**355**	*e*Pn	**Pg**	**16 16 57.6**	**0.0**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*PN	**Pg**	**16 16 58.1**	**+0.5**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*Pn	**Pg**	**16 16 58.1**	**+0.5**
IZI	**Iznik**	**1.27**	**16**	*e*PN	**Pn**	**16 16 57.5**	**+0.1**
IZI	**Iznik**	**1.27**	**16**	*e*Pn	**Pn**	**16 16 57.5**	**+0.1**
BORA	**Eskisehir**	**1.35**	**55**	P	**Pn**	**16 16 58.5**	**+0.1**
BORA				S	**Sg**	**16 17 16.9**	**+0.2**
BORA	**Eskisehir**	**1.35**	**55**	*i* P	**Pn**	**16 16 58.5**	**+0.1**
BORA				*i* S	**Sg**	**16 17 16.9**	**+0.2**
GONE	**Gonen-Balikesi**	**1.40**	**313**	*e*PN	**Pb**	**16 16 59.6**	**+0.1**
GONE	**Gonen-Balikesi**	**1.40**	**313**	*e*Pn	**Pb**	**16 16 59.6**	**+0.1**
ADVT	**Abdulvahap**	**1.43**	**22**	*e*PN	**Pn**	**16 16 59.6**	**+0.2**
ADVT	**Abdulvahap**	**1.43**	**22**	*e*Pn	**Pn**	**16 16 59.6**	**+0.2**
ARMT	**Armutlu**	**1.46**	**355**	*e*PN	**Pn**	**16 17 00.2**	**+0.3**
ARMT	**Armutlu**	**1.46**	**355**	*e*Pn	**Pn**	**16 17 00.2**	**+0.3**
ESKT	**Eskisehir**	**1.48**	**73**	*i* P	**Pg**	**16 17 02.6**	**+1.0**
ESKT				*i* S	**Sn**	**16 17 18.9**	**-0.7**
SEYT	**Eskypehyr**	**1.48**	**73**	P	**Pg**	**16 17 02.6**	**+1.0**
SEYT				S	**Sn**	**16 17 18.9**	**-0.7**
EDC	**Edincik**	**1.53**	**324**	*e*PN	**Pn**	**16 17 01.2**	**+0.4**
EDC	**Edincik**	**1.53**	**324**	*e*Pn	**Pn**	**16 17 01.2**	**+0.4**
GULT	**Gulveren**	**1.75**	**40**	*e*PN	**Pn**	**16 17 04.4**	**+0.5**
GULT	**Gulveren**	**1.75**	**40**	*e*Pn	**Pn**	**16 17 04.4**	**+0.5**

*ISCJB **26** 16:24:16.3±0.3,39.°31N±0.°02×27.°70E±0.°03, h0km, Error ellipse: s-maj=3.3km s-min=2.7km az=151.9*
*CSEM **26** 16:24:16.4±0.1,39.°31N×27.°69E, h1km, MD2.9, Error ellipse: s-maj=3.3km s-min=3.2km az=46.0, Suspected Mining explosion.*
*ISK **26** 16:24:16.4,39.°31N×27.°67E, h9km, MD2.9*
*DDA **26** 16:24:17.0,39.°28N×27.°71E, h7km, Md2.8, Suspected Mining explosion.*

ISC 26 16:24:16.2±0.8,**39.°34N**±0.°03×**27.°69E**±0.°02,**h0**km,**n54**, σ0°**56**/72,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BALB	**Balikesir**	**0.33**	**27**	*e*PG	**Pb**	**16 24 24.7**	**-0.3**
BALB	**Balikesir**	**0.33**	**27**	*e*Pg	**Pb**	**16 24 24.7**	**-0.3**
BALY	**Balya**	**0.40**	**352**	P	**Pb**	**16 24 26.1**	**-0.1**
BALY	**Balya**	**0.40**	**352**	*i* P	**Pb**	**16 24 26.1**	**-0.1**
AKHS	**Akhisar**	**0.47**	**168**	P	**Pg**	**16 24 25.1**	**-0.1**
AKHS				S	**Sg**	**16 24 31.6**	**+0.3**
AKHS	**Akhisar**	**0.47**	**168**	*i* P	**Pg**	**16 24 25.1**	**-0.1**
AKHS				*i* S	**Sg**	**16 24 31.6**	**+0.3**
AKS	**Akhisar**	**0.47**	**168**	*e*PG	**Pg**	**16 24 25.5**	**+0.3**
AKS	**Akhisar**	**0.47**	**168**	*e*Pg	**Pg**	**16 24 25.5**	**+0.3**
DURS	**Dursunbey**	**0.66**	**67**	P	**Pb**	**16 24 30.0**	**-0.7**
DURS				S	**Sb**	**16 24 39.3**	**-1.1**
DURS	**Dursunbey**	**0.66**	**67**	*i* P	**Pb**	**16 24 30.0**	**-0.7**
DURS				*i* S	**Sb**	**16 24 39.3**	**-1.1**
DKL	**Dikili**	**0.67**	**246**	*e*PG	**Pg**	**16 24 28.9**	**0.0**
DKL				*e*SG	**Sg**	**16 24 38.7**	**+1.2**
DKL	**Dikili**	**0.67**	**246**	*e*Pg	**Pg**	**16 24 28.9**	**0.0**
DKL				*e*Sg	**Sg**	**16 24 38.7**	**+1.2**
GONE	**Gonen-Balikesi**	**0.70**	**360**	*e*PG	**Pb**	**16 24 30.8**	**-0.5**
GONE	**Gonen-Balikesi**	**0.70**	**360**	*e*Pg	**Pb**	**16 24 30.8**	**-0.5**
AYVA	**Ayvalik**	**0.78**	**268**	P	**Pb**	**16 24 32.3**	**-0.2**
AYVA				S	**Sb**	**16 24 44.4**	**+0.8**
AYVA	**Ayvalik**	**0.78**	**268**	*i* P	**Pb**	**16 24 32.3**	**-0.2**
AYVA				*i* S	**Sb**	**16 24 44.4**	**+0.8**
DEMI	**Demirci**	**0.85**	**110**	P	**Pg**	**16 24 33.0**	**+0.5**
DEMI				S	**Sg**	**16 24 44.8**	**+1.2**
DEMI	**Demirci**	**0.85**	**110**	*i* P	**Pg**	**16 24 33.0**	**+0.5**
DEMI				*i* S	**Sg**	**16 24 44.8**	**+1.2**
EDC	**Edincik**	**1.01**	**8**	*e*PG	**Pn**	**16 24 37.1**	**-0.5**
EDC	**Edincik**	**1.01**	**8**	*e*Pg	**Pn**	**16 24 37.1**	**-0.5**
KCTX	**Karacabey (Bur**	**1.06**	**29**	*e*PN	**Pb**	**16 24 37.4**	**0.0**
KCTX	**Karacabey (Bur**	**1.06**	**29**	*e*Pn	**Pb**	**16 24 37.4**	**0.0**
MANT	**Manisa**	**1.09**	**141**	P	**Pg**	**16 24 37.2**	**+0.2**
MANT				S	**Sg**	**16 24 50.4**	**-0.7**
MANT	**Manisa**	**1.09**	**141**	*i* P	**Pg**	**16 24 37.2**	**+0.2**
MANT				*i* S	**Sg**	**16 24 50.4**	**-0.7**
KULA	**Kula-Manisa**	**1.12**	**137**	*e*PN	**Pg**	**16 24 37.9**	**+0.2**
KULA	**Kula-Manisa**	**1.12**	**137**	*e*Pn	**Pg**	**16 24 37.9**	**+0.2**
EZN	**Ezine**	**1.16**	**295**	*e*PN	**Pb**	**16 24 38.7**	**-0.4**
EZN	**Ezine**	**1.16**	**295**	*e*Pn	**Pb**	**16 24 38.7**	**-0.4**
ORLT	**Orhaneli**	**1.17**	**53**	*e*PN	**Pn**	**16 24 39.8**	**0.0**
ORLT	**Orhaneli**	**1.17**	**53**	*e*Pn	**Pn**	**16 24 39.8**	**0.0**
MRMT	**Marmara Adasi**	**1.26**	**357**	*e*PN	**Pn**	**16 24 41.1**	**-0.1**
MRMT	**Marmara Adasi**	**1.26**	**357**	*e*Pn	**Pn**	**16 24 41.1**	**-0.1**
URLA	**Izmir**	**1.30**	**221**	P	**Pg**	**16 24 40.1**	**-1.0**
URLA				S	**Sn**	**16 25 00.6**	**+0.9**
URLA	**Izmir**	**1.30**	**221**	*i* P	**Pg**	**16 24 40.1**	**-1.0**
URLA				*i* S	**Sn**	**16 25 00.6**	**+0.9**
TVSB	**Tavsanli**	**1.38**	**85**	*e*PN	**Pg**	**16 24 42.4**	**-0.2**
TVSB	**Tavsanli**	**1.38**	**85**	*e*Pn	**Pg**	**16 24 42.4**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**1.40**	**173**	*e*PN	**Pn**	**16 24 42.4**	**-0.7**
AYDB	**Zeytinkoy-Aydi**	**1.40**	**173**	*e*Pn	**Pn**	**16 24 42.4**	**-0.7**
GELI	**Tayfur-Gelibol**	**1.41**	**319**	*e*PN	**Pb**	**16 24 43.0**	**-0.4**
GELI	**Tayfur-Gelibol**	**1.41**	**319**	*e*Pn	**Pb**	**16 24 43.0**	**-0.4**
GDZ	**Gediz**	**1.42**	**100**	P	**Pb**	**16 24 43.6**	**+0.1**
GDZ				S	**Sb**	**16 25 02.2**	**0.0**
GDZ	**Gediz**	**1.42**	**100**	*i* P	**Pb**	**16 24 43.6**	**+0.1**
GDZ				*i* S	**Sb**	**16 25 02.2**	**0.0**
SIGR	**SIGRI**	**1.43**	**265**	*e*PN	**Pg**	**16 24 43.4**	**-0.2**
SIGR	**SIGRI**	**1.43**	**265**	*e*Pn	**Pg**	**16 24 43.4**	**-0.2**
DGB	**˜zmir**	**1.43**	**206**	*i* P	**Pn**	**16 24 43.4**	**0.0**
DGB				*i* S	**Sg**	**16 25 01.0**	**-1.3**
ZEY	**˜zmir**	**1.44**	**220**	*i* P	**Pn**	**16 24 43.4**	**-0.1**
ZEY				*i* S	**Sg**	**16 25 02.5**	**+0.1**
ARMT	**Armutlu**	**1.52**	**36**	*e*PN	**Pb**	**16 24 44.8**	**-0.4**
ARMT	**Armutlu**	**1.52**	**36**	*e*Pn	**Pb**	**16 24 44.8**	**-0.4**
ERIK	**Erikli-Kesan**	**1.60**	**326**	*e*PN	**Pb**	**16 24 46.1**	**-0.6**
ERIK	**Erikli-Kesan**	**1.60**	**326**	*e*Pn	**Pb**	**16 24 46.1**	**-0.6**
IZI	**Iznik**	**1.69**	**54**	*e*PN	**Pn**	**16 24 47.2**	**+0.1**
IZI	**Iznik**	**1.69**	**54**	*e*Pn	**Pn**	**16 24 47.2**	**+0.1**
CAVI	**Cavuskoy**	**1.87**	**62**	*e*PN	**Pn**	**16 24 49.8**	**+0.4**
CAVI	**Cavuskoy**	**1.87**	**62**	*e*Pn	**Pn**	**16 24 49.8**	**+0.4**

*DDA **26** 16:28:53.9,37.°83N×27.°11E, h7km, Md2.9*
*ISCJB **26** 16:28:54.1±0.5,37.°86N±0.°04×27.°14E±0.°05, h11km±6km, Error ellipse: s-maj=8.3km s-min=3.7km az=40.9*
*CSEM **26** 16:28:54.5±0.2,37.°87N×27.°15E, h10km, MD2.9, Error ellipse: s-maj=6.2km s-min=3.6km az=39.0*
*ISK **26** 16:28:54.1,37.°90N×27.°16E, h15km, MD2.6*

ISC 26 16:28:54.0±0.9,**37.°86N**±0.°05×**27.°16E**±0.°05,**h13**km±8km, **n17**,σ0°**23**/26,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GCAM	**G?zelcaml?**	**0.17**	**160**	*i* P	**Sg**	**16 28 58.0**	**+0.1**
GCAM				*i* S	**Sg**	**16 29 00.5**	**-0.1**
DGB	**˜zmir**	**0.29**	**311**	*i* P	**Pg**	**16 29 00.2**	**+0.1**
DGB				*i* S	**Sg**	**16 29 04.0**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**0.58**	**81**	*e*PG	**Pb**	**16 29 05.8**	**-0.3**
AYDB				*e*SG	**Sb**	**16 29 14.6**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**0.58**	**81**	*e*Pg	**Pb**	**16 29 05.8**	**-0.3**
AYDB				*e*Sg	**Sb**	**16 29 14.6**	**+0.2**
AYDN	**Tasoluk**	**0.60**	**109**	P	**Pb**	**16 29 06.5**	**+0.1**
AYDN	**Tasoluk**	**0.60**	**109**	*i* P	**Pb**	**16 29 06.5**	**+0.1**
AYDN				*i* S	**Sb**	**16 29 15.0**	**+0.2**
ZEY	**˜zmir**	**0.64**	**306**	*i* P	**Pg**	**16 29 06.2**	**-0.4**
ZEY				*i* S	**Sg**	**16 29 15.3**	**+0.3**
URLA	**Izmir**	**0.67**	**318**	P	**Pg**	**16 29 07.2**	**+0.1**
URLA				S	**Sb**	**16 29 17.1**	**+0.3**
URLA	**Izmir**	**0.67**	**318**	*i* P	**Pg**	**16 29 07.2**	**+0.1**
URLA				*i* S	**Sb**	**16 29 17.1**	**+0.3**
BODT	**Bodrum**	**0.80**	**172**	*e*PG	**Pn**	**16 29 10.9**	**-0.1**
BODT	**Bodrum**	**0.80**	**172**	*e*Pg	**Pn**	**16 29 10.9**	**-0.1**
BDRM	**Kayabasi**	**0.82**	**164**	P	**Pg**	**16 29 10.0**	**+0.1**
BDRM	**Kayabasi**	**0.82**	**164**	*i* P	**Pg**	**16 29 10.0**	**+0.1**
BDRM				*i* S	**Sg**	**16 29 21.0**	**+0.3**
CHOS	**Chios island**	**1.02**	**301**	*e*PG	**Pg**	**16 29 13.7**	**0.0**
CHOS	**Chios island**	**1.02**	**301**	*e*Pg	**Pg**	**16 29 13.7**	**0.0**
DALY	**Dalyan (Mu˜la**	**1.58**	**131**	*e*PN	**Pb**	**16 29 22.7**	**-0.3**
DALY	**Dalyan (Mu˜la**	**1.58**	**131**	*e*Pn	**Pb**	**16 29 22.7**	**-0.3**

WEL 26 16:36:09.5±0.1,**43.°53S**×**172.°70E**,**h5**km,**ML3.5**/9,**1C, Error ellipse: s-maj=1.3km s-min=0.6km az=90.0,South Island**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRLZ	**Canterbury Las**	**0.07**	**232**	PG	Pg	16 36 11.0	0.0
CRLZ				SG	Sg	16 36 12.2	+0.1
CRLZ				AML	AML	16 36 12.7	
MQZ	**McQueen's Vall**	**0.17**	**190**	⇑PG	Pg	16 36 12.9	0.0
MQZ				SG	Sg	16 36 15.5	+0.2
MQZ				AML	AML	16 36 15.9	
OXZ	**Oxford**	**0.52**	**293**	PG	Pg	16 36 19.4	-0.1
LTZ	**Lake Taylor**	**0.81**	**337**	P*	Pg	16 36 25.2	+0.2
LTZ				AML	AML	16 36 37.9	
LTZ				AML	AML	16 36 38.0	
WVZ	**Waitaha Valley**	**1.50**	**287**	AML	AML	16 37 07.4	
WVZ				AML	AML	16 37 14.1	
THZ	**Tophouse**	**1.78**	**5**	AML	AML	16 37 13.0	
LBZ	**Lake Benmore**	**2.00**	**244**	AML	AML	16 39 12.3	
LBZ				AML	AML	16 39 12.3	
FOZ	**Fox Glacier**	**2.09**	**269**	AML	AML	16 41 59.5	
FOZ				AML	AML	16 43 33.3	
EAZ	**Earnscleugh**	**2.96**	**234**	AML	AML	16 38 19.2	
TUZ	**Tuapeka**	**3.26**	**221**	AML	AML	16 37 58.0	
TUZ				AML	AML	16 39 03.1	

*IDC **26** 16:36:55.3±2.3, 11.°43S×165.°84E, h0km, mb3.6/4, mb1 3.8/5, mb1mx3.5/42, mbtmp3.7/5, ML3.9/1, MS3.3/4, Ms1 3.3/4, ms1mx3.0/23, Error ellipse: s-maj=71.9km s-min=32.5km az=142.0*
*ISCJB **26** 16:36:56.1±0.8, 11.°48S±0.°09×165.°8E±0.°1, h24km, mb4.4/8, MS3.3/2, Error ellipse: s-maj=15.9km s-min=13.1km az=155.1*
*NEIC **26** 16:36:59.1±4.3, 11.°44S×165.°84E, h30km±31km, mb4.8/5, Error ellipse: s-maj=18.1km s-min=13.7km az=60.0*

ISC 26 16:36:58.5±0.9,**11.°4S**±0.°1×**165.°8E**±0.°1,**h24**km,**n16**, σ1°**49**/15,**mb4.3**/8,**Santa Cruz Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	**Honiara**	**6.04**	**288**	Pn	**Pn**	**16 38 27.2**	**+0.7**
	2.7nm,0.3s,baz=330,slow=20,SNR=2.5						
HNR				Sn	**Sn**	**16 39 32.2**	**-2.8**
	2.1nm,0.3s,baz=60,slow=20,SNR=1.7						
HNR				LR	LR	16 41 05.6	
	comp=Z,145nm,18.3s,baz=88,slow=41						
DZM	**Mont Dzumac**	**10.64**	**177**	*e*Pn	**Pn**	**16 39 30.0**	**+0.4**
RABL	**Rabaul**	**15.25**	**297**	*e*Pn	**Pn**	**16 40 33.9**	**+1.4**
	20nm,1.1s						
PMG	**Port Moresby**	**18.40**	**274**	LR	LR	16 47 56.5	
	comp=Z,111nm,19.1s,baz=125,slow=36						
LHI	**Lord Howe Isla**	**20.96**	**196**	*e*P	**P**	**16 41 38.2**	**-1.7**
	198nm,1.3s						
STKA	**Stephens Creek**	**30.20**	**224**	LR	LR	16 54 27.1	
	comp=Z,54nm,18.3s,baz=195,slow=35						
WRAB	**Tennant Creek**	**31.37**	**250**	*e*P	**P**	**16 43 15.8**	**-1.9**
	27nm,1.5s						
WR1	**Warramunga Arr**	**31.38**	**250**	*e*P	**P**	**16 43 18.4**	**+0.6**
	13nm,1.4s						
WRA	**Warramunga Arr**	**31.38**	**250**	P	**P**	**16 43 18.4**	**+0.6**
	0.3nm,0.5s,baz=80,slow=9.0,SNR=5.2						
ASAR	**Alice Springs**	**32.65**	**244**	P	**P**	**16 43 29.6**	**+0.6**
	0.7nm,0.9s,baz=68,slow=10,SNR=5.3						
ASAR				LR	LR	16 55 58.3	
	comp=Z,59nm,18.3s,baz=104,slow=35						
HON	**Honolulu**	**48.21**	**48**	*e*P	**P**	**16 45 35.6**	**-1.9**
	271nm,1.0s						
GSI	**Gunungsitoli**	**68.91**	**276**	*e*P	**P**	**16 48 02.8**	**+0.6**
	18nm,1.3s						
CM01	**Chiang Mai Arr**	**72.24**	**294**	*e*P	**P**	**16 48 22.0**	**-0.3**
CM31	**Chiang Mai Arr**	**72.27**	**294**	*e*P	**P**	**16 48 21.9**	**-0.6**
ILAR	**Eielson Array**	**83.84**	**18**	P	**P**	**16 49 26.0**	**+0.2**
	0.4nm,0.7s,baz=218,slow=6.8,SNR=4.9						
MKAR	**Makanchi Array**	**93.78**	**317**	P	**P**	**16 50 15.8**	**+2.1**
	0.6nm,0.8s,baz=84,slow=4.5,SNR=2.5						

*IDC **26** 16:38:38.8±0.6, 8.°20S×67.°89E, h0km, mb4.2/24, mb1 4.3/24, mb1mx4.1/49, mbtmp4.2/24, MS3.6/18, Ms1 3.6/18, ms1mx3.4/46, Error ellipse: s-maj=18.5km s-min=14.9km az=29.0*
*ISCJB **26** 16:38:39.6±0.3, 8.°16S±0.°05×67.°91E±0.°04, h15km, mb4.6/80, MS3.6/17, Error ellipse: s-maj=7.5km s-min=5.4km az=10.6*
*NEIC **26** 16:38:40.2±0.3, 8.°25S×67.°85E, h10km, mb4.9/50, Error ellipse: s-maj=8.4km s-min=5.4km az=202.0*

ISC 26 16:38:41.5±0.4,**8.°15S**±0.°07×**67.°98E**±0.°05,**h15**km,**n139**, σ1°**36**/133,**mb4.7**/80,**MS3.7**/17,**1C,Mid-Indian Ridge**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08N3	**Diego Garcia H**	**3.49**	**59**	Pn	**Pn**	**16 39 34.9**	**-0.1**
	baz=51						
H08N3				Sn	**Sn**	**16 40 12.2**	**-3.7**
	baz=240						
H08N3				T	T	16 43 07.2	
	baz=237,slow=76,SNR=8547						
H08N2	**Diego Garcia H**	**3.50**	**59**	Pn	**Pn**	**16 39 35.1**	**-0.1**
	baz=51						
H08N2				Sn	**Sn**	**16 40 12.4**	**-3.9**
	baz=240						
H08N2				T	T	16 43 12.3	
	baz=237,slow=76,SNR=8708						
H08N1	**Diego Carcia H**	**3.51**	**59**	Pn	**Pn**	**16 39 35.2**	**-0.1**
	baz=51						
H08N1				Sn	**Sn**	**16 40 12.5**	**-4.0**
	baz=240						
H08N1				T	T	16 43 08.7	
	baz=237,slow=

MKAR LR LR 17 11 27.8
comp=Z,63nm,20.0s,baz=200,slow=35
KBZ Khabaz 56.42 338 P P 16 48 22.4 0.0
1.3nm,0.7s,baz=144,slow=5.1,SNR=4.5
FITZ Fitzroy Crossi 56.83 106 *eP* **P 16 48 26.6 +0.6**
18nm,1.4s
BR101 Keskin Array S 57.26 329 *eP* **P 16 48 28.9 +0.2**
BR131 Keskin Array S 57.26 329 *eP* **P 16 48 28.7 -0.1**
BRTR Keskin Array B 57.26 329 P **P 16 48 28.9 +0.2**
2.3nm,1.0s,baz=147,slow=9.7,SNR=14
BRTR LR LR 17 11 51.1
comp=Z,20nm,20.1s,baz=124,slow=35
ABKAR Akbulak array 57.59 354 *eP* **P 16 48 30.5 -0.1**
BR231 Keskin MP Arra 57.79 328 *eP* **P 16 48 29.8 -2.6**
SANT Santorini 59.61 321 *eP* **P 16 48 45.6 +0.5**
82nm,1.1s
YULB Yu-li 60.81 58 *eP* **P 16 48 52.4 -1.1**
23nm,1.2s
ZRNK Zerenda 60.87 1 *eP* **P 16 48 53.0 -0.3**
12nm,1.3s
NACB Ninganchiao 61.38 57 *eP* **P 16 48 56.9 -0.5**
37nm,1.3s
ZALV Zalesovo Beam 63.48 11 P **P 16 49 10.7 -0.1**
1.8nm,0.8s,baz=219,slow=6.9,SNR=10
ZALV LR LR 17 17 25.2
comp=Z,63nm,18.1s,baz=248,slow=37
ZAA1 Zalesovo Array 63.48 11 *eP* **P 16 49 10.7 -0.2**
SYO Syowa Base 63.56 191⇑*eP* **P 16 49 09.6 -1.6**
FAKI Fak Fak 64.13 89 *eP* **P 16 49 16.7 +0.8**
92nm,1.6s
ASAR Alice Springs 64.76 112 P **P 16 49 19.9 -0.1**
2.7nm,0.9s,baz=278,slow=6.5,SNR=38
ASAR LR LR 17 14 03.3
comp=Z,36nm,21.5s,baz=251,slow=33
AS31 Alice Springs 64.76 112 *eP* **P 16 49 18.7 -1.2**
2.0nm,1.3s
AS01 Alice Springs 64.80 112 *eP* **P 16 49 20.0 -0.3**
ARU Arti 64.81 354 *eP* **P 16 49 19.2 -0.3**
9.8nm,1.1s
CASY Casey 64.93 162 *eP* **P 16 49 22.6 +2.5**
11nm,1.2s
WR1 Warramunga Arr 65.09 108 *eP* **P 16 49 22.4 +0.3**
12nm,1.3s
WRA Warramunga Arr 65.09 108 P **P 16 49 22.4 +0.3**
5.8nm,1.1s,baz=280,slow=6.1,SNR=15
WRAB Tennant Creek 65.10 108 *eP* **P 16 49 22.4 +0.2**
11nm,0.9s
WB2 Warramunga Arr 65.10 108 *eP* **P 16 49 20.5 -1.8**
16nm,1.4s
SONA0 Songino Array 65.26 27 *eP* **P 16 49 23.5 +0.8**
17nm,1.5s
SONM Songino Array 65.26 27 P **P 16 49 23.5 +0.8**
3.3nm,1.0s,baz=218,slow=5.6,SNR=21
SONA1 Songino Array 65.27 27 *eP* **P 16 49 23.5 +0.6**
MLR Muntele Rosu 65.34 329 *eP* **P 16 49 24.1 +0.7**
28nm,2.0s
BJT Baijiatuau 65.38 39 *eP* **P 16 49 24.4 +0.9**
9.3nm,0.5s
ULN Ulaanbaatar 65.58 28 *eP* **P 16 49 25.4 +0.5**
5.8nm,1.3s
TLY Talaya 67.01 23 *eP* **P 16 49 34.8 +1.0**
11nm,1.6s
AKASG Malin Array Be 67.52 334 P **P 16 49 36.1 -0.9**
0.5nm,0.5s,baz=136,slow=5.1,SNR=6.1
KIEV Kiev 67.52 334 *eP* **P 16 49 35.9 -1.1**
4.7nm,1.0s
AK11 Malin Array Si 67.53 334 *eP* **P 16 49 36.5 -0.6**
JOW Kunigami 67.97 57 *eP* **P 16 49 38.9 -1.5**
76nm,1.7s
TOA0 Torodi Ar. Sit 69.14 287 *eP* **P 16 49 47.0 -0.9**
TORD Torodi Ar. Bea 69.14 287 P **P 16 49 46.9 -1.0**
0.7nm,1.0s,baz=168,slow=23,SNR=3.5
TORD LR LR 17 17 31.8
comp=Z,48nm,20.4s,baz=195,slow=34
TOA1 Torodi Ar. Sit 69.14 287 *eP* **P 16 49 46.9 -1.1**
7.8nm,1.1s
CRVS Cervenica-Dubn 69.89 329 *eP* **P 16 49 53.1 +1.2**
PSZ Piszkesteto 70.08 328 *eP* **P 16 49 53.6 +0.4**
4.7nm,0.9s
VYHS Vyhne 70.99 328 *eP* **P 16 49 57.9 -0.7**
OJC Ojcow 71.57 330 *eP* **P 16 49 59.4 -2.7**
28nm,2.0s
STKA Stephens Creek 71.85 121 P **P 16 50 04.3 +0.1**
0.7nm,0.5s,baz=289,slow=4.2,SNR=3.0
STKA Stephens Creek 71.85 121 *eP* **P 16 50 04.4 +0.2**
3.0nm,1.5s
VSL Villasalto 71.94 316 *eP* **P 16 50 02.1 -2.5**
12nm,1.3s
KS15 Wonju Array Si 71.95 46 *eP* **P 16 50 05.5 +0.9**
KSAR Wonju Array Be 71.95 46 P **P 16 50 06.2 +1.5**
KS01 Wonju Array Si 71.97 46 *eP* **P 16 50 03.7 -1.1**
KSRS Korea Array 71.98 46 P **P 16 50 06.2 +1.4**
1.7nm,0.9s,baz=240,slow=7.8,SNR=8.4
SHEL Horse Pasture 72.22 256 *eP* **P 16 50 06.0 -0.7**
145nm,1.1s
MORC Moravsky Berou 72.44 328 *eP* **P 16 50 07.5 +0.1**
33nm,1.5s
HIA Hailar 72.84 33 *eP* **P 16 50 10.6 +0.8**
8.1nm,1.0s
COEN Coen 73.78 102 *eP* **P 16 50 16.2 +0.2**
55nm,1.6s
GEA0 GERESS Array S 73.96 326 *eP* **P 16 50 14.8 -1.6**
DBIC Dimbokro 74.09 279 LR LR 17 20 27.6
comp=Z,38nm,21.8s,baz=137,slow=34
KHC Kasperske Hory 74.19 326 *eP* P 16 50 13.2 -4.5
FUORN Ofenpass-Fuorn 74.78 323 *eP* **P 16 50 20.4 -1.1**
9.9nm,1.1s
BRG Berggiesshubel 74.96 328 *eP* **P 16 50 22.3 +0.3**
6.9nm,1.3s
NKC Novy Kostel 75.41 327 *eP* **P 16 50 25.8 +1.1**
NKC *ex* x 16 50 33.6
FIA0 FINESS Array S 76.67 341 *eP* **P 16 50 31.4 -0.1**
FINES FINESS Array B 76.67 341 P **P 16 50 31.4 -0.1**
1.3nm,0.7s,baz=102,slow=13,SNR=2.6
FINES LR LR 17 24 21.6
comp=Z,39nm,18.5s,baz=143,slow=36
PMG Port Moresby 78.10 98 LR LR 17 25 01.8
comp=Z,33nm,18.4s,baz=176,slow=36
NRIK Noril'sk 78.50 7 P **P 16 50 42.5 +0.8**
2.9nm,0.5s,baz=214,slow=5.5,SNR=3.9
NRIK LR LR 17 26 31.1
comp=Z,42nm,19.2s,baz=134,slow=37
MJAR Matsushiro Arr 79.27 50 P **P 16 50 47.3 +0.6**
9.6nm,1.3s,baz=250,slow=6.7,SNR=8.7
GUMO Guam 79.31 75 LR LR 17 22 14.2
comp=Z,21nm,20.6s,baz=150,slow=33
KLR Kul'dur 79.60 37 P **P 16 50 47.4 -0.8**
1.6nm,1.0s,baz=300,slow=6.1,SNR=4.3
ESDC Sonseca Array 81.53 312 P **P 16 50 58.9 +0.1**
1.1nm,0.7s,baz=88,slow=3.3,SNR=8.1
NB200 NORSAR Array S 81.89 336 *eP* **P 16 50 59.8 -0.4**
NOA NORSAR Array B 81.89 336 P **P 16 50 59.7 -0.4**
2.0nm,1.1s,baz=113,slow=5.1,SNR=2.4
QSPA South Pole Qui 81.89 180 *eP* **P 16 51 00.3 -0.1**
ARA0 ARCESS Array S 82.82 346 *eP* **P 16 51 04.0 -0.9**
ARCES ARCESS Array B 82.82 346 P **P 16 51 04.0 -0.9**
5.4nm,0.9s,baz=94,slow=3.6,SNR=7.1
ARCES LR LR 17 29 54.3
comp=Z,23nm,18.4s,baz=75,slow=37
VNDA Vanda 82.94 167 P **P 16 51 05.0 -0.4**
1.5nm,1.0s,baz=259,slow=6.8,SNR=5.0
TIXI Tiksi 88.91 16 P **P 16 51 34.5 -0.4**
2.7nm,1.0s,baz=192,slow=1.4,SNR=7.7
TIXI LR LR 17 32 30.6
comp=Z,116nm,19.3s,baz=230,slow=36
ILAR Eielson Array 118.38 16 PKP **PKPdf 16 57 26.0 -2.2**
0.3nm,0.8s,baz=328,slow=3.3,SNR=3.9
ILAR Eielson Array 118.38 16 PKP **PKPdf 16 57 26.0 -2.2**
ILB Eielson Array 118.38 16 *e*PKPdf **PKPdf 16 57 26.7 -1.5**
YKA Yellowknife Ar 125.72 1 PKP **PKPdf 16 57 41.8 -0.4**
1.4nm,1.0s,baz=347,slow=2.3,SNR=10
LPAZ La Paz 130.24 241 PKP **PKPdf 16 57 52.0 -1.0**
0.6nm,0.7s,baz=76,slow=8.3,SNR=3.0
TKL Tuckaleechee C 142.37 321 *e*PKPdf **PKPdf 16 58 12.9 -1.3**
PLAL Pickwick Lake 145.42 324 *e*PKPbc **PKPbc 16 58 18.4 -1.0**
BW06 Boulder Array 145.45 357 *e*PKPdf **PKPbc 16 58 18.9 -0.7**
BW06 *e*PKPdf **PKPdf 16 58 19.5 -0.2**
PD31 Pinedale Array 145.45 357 *e*PKPdf **PKPbc 16 58 19.2 -0.5**
PDAR Pinedale Array 145.45 357 PKPbc **PKPbc 16 58 18.9 -0.8**
3.6nm,1.1s,baz=11,slow=1.5,SNR=14
NV01 Mina Array Sit 149.32 10 *e*PKPdf **PKPdf 16 58 28.1 +1.8**
NVAR Mina Array Bea 149.32 10 PKPbc **PKPdf 16 58 27.9 +1.7**
2.9nm,0.9s,baz=3.5,slow=2.5,SNR=7.7
LTX Lajitas 157.51 341 *e*PKPab **PKPab 16 59 09.4 -0.2**
TXAR Lajitas Array 157.51 341 PKPab **PKPab 16 59 09.4 -0.2**
1.8nm,1.0s,baz=46,slow=3.6,SNR=8.3

IDC ***26*** *16:43:36.8±12.0,* **6°78S×148°47E, h0km, mb3.1/2, mb1 3.4/3, mb1mx3.2/35, mbtmp3.2/3, ML3.2/1, Error ellipse: s-maj=181.3km s-min=80.5km az=14.0, New Britain region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**18.96**	**225**	P	Pn	16 48 00.1	-0.2
0.1nm,0.3s,baz=52,slow=9.5,SNR=11							
ASAR	**Alice Springs**	**21.86**	**218**	P	P	16 48 29.3	-1.9
0.1nm,0.6s,baz=48,slow=8.3,SNR=6.8							
STKA	**Stephens Creek**	**25.78**	**194**	P	P	16 49 10.4	+1.0
1.3nm,1.0s,baz=13,slow=14,SNR=2.7							

SKHL ***26*** *16:44:58.4±0.9, 46°46N×150°94E, h141km±9km, mb4.6/3, msh5.1/3*
IDC ***26*** *16:44:58.9±3.2, 46°91N×150°28E, h212km±34km, mb2.9/6, mb1 3.1/9, mb1mx2.9/47, mbtmp3.4/9, Error ellipse: s-maj=51.0km s-min=13.5km az=133.0*
ISC 26 16:44:54.9±0.8, 46°9N±0°2×150°6E±0°2, h167km, n15, σ1§10/14, mb3.2/6, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUR	**Kuril'sk**	**2.53**	**229**	*e*P	Pn	16 45 40.0	+2.8
KUR				AMB	AMB	16 45 40.9	
40nm,0.5s							
KUR				*e*S	**Sn**	**16 46 10.5**	**+0.6**
KUR				A	A	16 46 12.8	
150nm,0.5s							
SHO	**Shikotan**	**4.03**	**222**	*e*P	**Pn**	**16 45 58.1**	**+2.1**
SHO				AMB	AMB	16 45 58.5	
40nm,0.3s							
SHO				*e*S	**Sn**	**16 46 42.9**	**-0.7**
SHO				A	A	16 46 44.0	
40nm,0.2s							
YUK	**Yuzh-Kuril'sk**	**4.39**	**231**	*e*P	Pn	16 46 03.8	+3.1
YUK				AMB	AMB	16 46 04.7	
30nm,0.5s							
YUK				AMB	AMB	16 46 04.7	
50nm,0.5s							
YUK				*e*S	**Sn**	**16 46 53.7**	**+1.7**
YUK				A	A	16 46 58.3	
230nm,0.9s							
YSS	**Yuzh-Sakhalins**	**5.36**	**273**	*e*P	Pn	16 46 20.5	+7.3
MYR	**Moyori**	**6.96**	**231**	*e*P	**Pn**	**16 46 34.1**	**-0.3**
PETK	**Petropavlovsk-**	**7.71**	**34**	P	Pn	16 46 50.0	+5.7
0.2nm,0.3s,baz=218,slow=16,SNR=4.7							
USRK	**Ussuriysk Ar.**	**13.30**	**265**	P	**Pn**	**16 47 56.9**	**-0.3**
0.2nm,0.3s,baz=71,slow=15,SNR=2.6							
MJAR	**Matsushiro Arr**	**13.86**	**226**	P	**Pn**	**16 48 04.7**	**+0.3**
0.2nm,0.3s,baz=54,slow=12,SNR=3.7							
KSRS	**Korea Array**	**19.21**	**249**	P	**P**	**16 49 05.2**	**-0.7**
0.1nm,0.3s,baz=57,slow=9.9,SNR=3.2							
ILAR	**Eielson Array**	**37.51**	**39**	P	**P**	**16 51 52.5**	**+0.3**
0.3nm,0.4s,baz=276,slow=7.8,SNR=5.4							
INK	**Inuvik**	**42.44**	**32**	P	**P**	**16 52 33.5**	**+0.8**
0.4nm,0.3s,baz=298,slow=5.5,SNR=5.5							
YKA	**Yellowknife Ar**	**51.82**	**36**	P	**P**	**16 53 45.4**	**+0.2**
0.4nm,0.6s,baz=301,slow=8.4,SNR=4.8							
WRA	**Warramunga Arr**	**68.14**	**196**	P	**P**	**16 55 35.2**	**-1.6**
0.3nm,0.8s,baz=360,slow=6.7,SNR=2.8							
ASAR	**Alice Springs**	**71.85**	**196**	P	**P**	**16 55 58.5**	**-0.9**
0.1nm,0.7s,baz=8.9,slow=6.6,SNR=3.5							
TXAR	**Lajitas Array**	**78.91**	**59**	P	**P**	**16 56 40.1**	**+0.2**
0.1nm,0.3s,baz=298,slow=1.9,SNR=8.4							

KRSC 26 16:50:06.7±1.1, 48°15N×156°44E, h6km±29km, ML4.0, East of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**2.54**	**355**	P	Pn	16 50 49.6	+1.2
SKR				S	Sb	16 51 22.2	-2.0
PAU	**Pauzhetka**	**3.33**	**4**	P	Pn	16 51 02.0	+2.8
PAU				*e*S	Sn	16 51 42.7	+3.7
ASAK	**Asacha**	**4.34**	**12**	P	Pn	16 51 17.7	+4.5
RUS	**Russkaya**	**4.49**	**16**	*e*P	Pn	16 51 18.6	+3.5
RUS				*e*S	Sn	16 52 12.6	+5.0
KRMR	**Karymshinskiy**	**4.81**	**12**	P	Pn	16 51 23.9	+4.4
KRMR				S	Sn	16 52 21.4	+5.9
PET	**Petropavlovsk**	**5.08**	**15**	P	Pn	16 51 27.1	+3.9
UGLR	**Uglovaya**	**5.29**	**16**	P	Pn	16 51 30.9	+4.7
AVH	**Avacha**	**5.33**	**15**	P	Pn	16 51 31.8	+5.1
SMAR	**Somma**	**5.33**	**15**	P	Pn	16 51 31.7	+4.7
KRER	**Koryakskii**	**5.37**	**15**	P	Pn	16 51 32.3	+4.9
SDLR	**Sedlovina**	**5.37**	**16**	P	Pn	16 51 31.0	+3.7
GNL	**Ganaly**	**5.63**	**9**	P	Pn	16 51 35.1	+4.1

IDC 26 17:00:02.7±2.4, 5°89S×130°16E, h0km, mb3.5/1, mb1 3.7/3, mb1mx3.4/25, mbtmp3.5/3, ML3.6/2, Error ellipse: s-maj=143.5km s-min=31.6km az=70.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**14.55**	**164**	Pn	Pn	17 03 28.3	-1.7
0.3nm,0.3s,baz=347,slow=14,SNR=16							
WRA				Sn	Sn	17 06 01.1	-11
0.6nm,0.3s,baz=344,slow=22,SNR=10							
ASAR	**Alice Springs**	**18.04**	**169**	P	P	17 04 15.9	+0.4
0.2nm,0.3s,baz=352,slow=12,SNR=15							
ASAR				S	Sn	17 07 26.6	-10
0.2nm,0.3s,baz=358,slow=28,SNR=5.1							
MKAR	**Makanchi Array**	**67.39**	**327**	P	P	17 11 00.0	0.0
0.3nm,0.5s,baz=119,slow=6.9,SNR=4.5							

NEIC ***26*** *17:02:14.6, 15°50N×94°75W, h19km, MD4.0(MEX), After MEX.*
MEX 26 17:02:14.6±0.5, 15°50N×94°75W, h19km±14km, MD4.0, Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HUIG	**Huatulco**	**1.34**	**282**	*e*P	Pn	17 02 35.4	-2.8
HUIG				*e*S	Sn	17 02 51.1	-4.4
HUIG	**Huatulco**	**1.34**	**282**	*e*P	Pn	17 02 35.4	-2.8
HUIG				*e*S	Sn	17 02 51.1	-4.4
PCIG		**1.49**	**82**	*e*P	Pn	17 02 36.7	-3.5
PCIG				*i* S	Sn	17 02 55.3	-3.8
PCIG		**1.49**	**82**	*e*P	Pn	17 02 36.7	-3.5
PCIG				*i* S	Sn	17 02 55.3	-3.8
PANG	**Puerto Angel**	**1.67**	**276**	*i* P	Pn	17 02 39.1	-3.8
PANG				*i* S	Sn	17 02 59.1	-4.6
VHO	**Vista Hermosa**	**2.47**	**310**	*e*P	Pn	17 02 51.0	-3.0
VHO				*i* S	Sn	17 03 19.7	-4.0
VHO	**Vista Hermosa**	**2.47**	**310**	*e*P	Pn	17 02 51.0	-3.0
VHO				*i* S	Sn	17 03 19.7	-4.0
CCIG	**Comitan**	**2.63**	**72**	*e*P	Pn	17 02 54.1	-2.1
CCIG				*i* S	Sn	17 03 24.2	-3.5
CCIG	**Comitan**	**2.63**	**72**	*e*P	Pn	17 02 54.1	-2.1
CCIG				*i* S	Sn	17 03 24.2	-3.5
PNIG	**Pinotepa**	**3.37**	**286**	*i* P	Pn	17 03 04.2	-2.0
PNIG				*e*S	Sn	17 03 42.4	-3.4
PNIG	**Pinotepa**	**3.37**	**286**	*i* P	Pn	17 03 04.2	-2.0
PNIG				*e*S	Sn	17 03 42.4	-3.4

IDC ***26*** *17:11:30.7±0.8, 16°99N×147°80E, h0km, mb3.8/16, mb1 4.0/17, mb1mx3.8/49, mbtmp3.8/17, ML4.0/1, Error ellipse: s-maj=22.8km s-min=17.0km az=101.0*
ISCJB ***26*** *17:11:35.1±0.7, 16°98N±0°07×147°6E±0°1, h41km, mb3.7/16, Error ellipse: s-maj=18.9km s-min=8.1km az=24.3*
ISC 26 17:11:36.6±0.9, 17°0N±0°1×147°7E±0°2, h41km, n17, σ0§63/18, mb3.8/16, Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**4.33**	**220**	Pn	**Pn**	**17 12 39.8**	**-0.2**
7.1nm,0.3s,baz=284,slow=3.3,SNR=9.3							
GUMO				Sn	**Sn**	**17 13 29.0**	**-0.2**
7.0nm,0.3s,baz=18,slow=20,SNR=2.3							
MJAR	**Matsushiro Arr**	**21.25**	**338**	P	**P**	**17 16 20.1**	**+0.8**
3.8nm,0.7s,baz=170,slow=10,SNR=12							
KSRS	**Korea Array**	**26.86**	**323**	P	**P**	**17 17 11.8**	**-1.6**
0.7nm,0.7s,baz=146,slow=8.9,SNR=4.1							
KLR	**Kul'dur**	**34.71**	**342**	P	**P**	**17 18 22.4**	**0.0**
1.0nm,0.6s,baz=145,slow=6.6,SNR=5.5							
WRA	**Warramunga Arr**	**38.95**	**200**	P	**P**	**17 18 59.3**	**+0.5**
0.4nm,0.5s,baz=30,slow=9.2,SNR=7.7							
ASAR	**Alice Springs**	**42.57**	**199**	P	**P**	**17 19 28.6**	**-0.1**
0.6nm,1.1s,baz=23,slow=6.6,SNR=6.1							
SONM	**Songino Array**	**45.70**	**322**	P	**P**	**17 19 53.5**	**-0.2**
0.2nm,0.5s,baz=123,slow=5.3,SNR=4.2							
CMAR	**Chiang Mai Arr**	**46.38**	**280**	P	**P**	**17 19 59.8**	**+0.5**
2.0nm,0.9s,baz=73,slow=6.8,SNR=13							
ZALV	**Zalesovo Beam**	**60.56**	**323**	P	**P**	**17 21 42.6**	**-0.1**
0.6nm,0.6s,baz=96,slow=8.8,SNR=3.3							
MKAR	**Makanchi Array**	**61.05**	**314**	P	**P**	**17 21 46.3**	**0.0**
0.4nm,0.6s,baz=87,slow=8.6,SNR=5.1							
KURBB	**Kurchatov Arra**	**63.89**	**318**	P	**P**	**17 22 05.8**	**+0.7**
1.5nm,0.5s,baz=96,slow=7.1,SNR=6.1							
ILAR	**Eielson Array**	**64.37**	**26**	P	**P**	**17 22 07.0**	**-1.0**
0.4nm,0.6s,baz=246,slow=6.8,SNR=6.5							
BVAR	**Borovoye Array**	**69.04**	**321**	P	**P**	**17 22 38.6**	**+0.6**
0.9nm,0.5s,baz=87,slow=7.4,SNR=5.9							
YKA	**Yellowknife Ar**	**78.62**	**28**	P	**P**	**17 23 34.5**	**+0.6**
0.5nm,0.5s,baz=286,slow=5.4,SNR=6.8							
NVAR	**Mina Array Bea**	**82.69**	**52**	P	**P**	**17 23 56.7**	**+0.2**
0.6nm,0.6s,baz=262,slow=6.1,SNR=3.1							
PDAR	**Pinedale Array**	**87.66**	**46**	P	**P**	**17 24 21.1**	**-0.2**
0.2nm,0.4s,baz=224,slow=2.5,SNR=3.0							
FINES	**FINESS Array B**	**89.26**	**336**	P	**P**	**17 24 28.2**	**+0.1**
0.9nm,0.7s,baz=55,slow=5.6,SNR=2.6							

IDC ***26*** *17:12:55.6±0.8, 17°05N×147°63E, h0km, mb3.7/14, mb1 4.0/15, mb1mx3.7/51, mbtmp3.8/15, ML3.9/1, Error ellipse: s-maj=24.2km s-min=17.1km az=99.0*
ISCJB ***26*** *17:12:59.7±0.7, 17°04N±0°08×147°6E±0°1, h41km, mb3.7/14, Error ellipse: s-maj=21.8km s-min=8.3km az=23.9*
ISC 26 17:13:01.4±0.8, 17°0N±0°1×147°6E±0°2, h41km, n16, σ0§80/17, mb3.7/14, Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**4.32**	**218**	Pn	**Pn**	**17 14 05.2**	**+0.5**
6.9nm,0.3s,baz=26,slow=15,SNR=2.3							
GUMO				Sn	**Sn**	**17 14 53.7**	**-0.1**
5.7nm,0.3s,baz=18,slow=20,SNR=2.4							
MJAR	**Matsushiro Arr**	**21.14**	**339**	P	**P**	**17 17 43.7**	**+0.8**
2.6nm,0.7s,baz=169,slow=9.6,SNR=6.4							
WRA	**Warramunga Arr**	**38.98**	**200**	P	**P**	**17 20 23.3**	**-0.6**
0.4nm,0.6s,baz=25,slow=10,SNR=3.6							
ASAR	**Alice Springs**	**42.60**	**199**	P	**P**	**17 20 53.4**	**-0.4**
0.5nm,1.0s,baz=19,slow=7.0,SNR=2.9							
SONM	**Songino Array**	**45.58**	**322**	P	**P**	**17 21 15.7**	**-1.9**
0.2nm,0.4s,baz=106,slow=3.1,SNR=2.9							
CMAR	**Chiang Mai Arr**	**46.26**	**279**	P	**P**	**17 21 23.4**	**+0.1**
1.6nm,0.8s,baz=74,slow=6.7,SNR=6.9							
TIXI	**Tiksi**	**55.73**	**353**	P	**P**	**17 22 34.5**	**+1.0**
0.2nm,0.3s,baz=89,slow=1.6,SNR=1.9							
ZALV	**Zalesovo Beam**	**60.44**	**323**	P	**P**	**17 23 06.9**	**+0.2**
0.5nm,0.4s,baz=60,slow=5.8,SNR=3.8							
MKAR	**Makanchi Array**	**60.92**	**314**	P	**P**	**17 23 09.8**	**-0.5**
0.2nm,0.5s,baz=82,slow=7.2,SNR=3.8							
KURBB	**Kurchatov Arra**	**63.77**	**318**	P	**P**	**17 23 29.6**	**+0.4**
1.5nm,0.5s,baz=94,slow=7.5,SNR=8.0							
ILAR	**Eielson Array**	**64.34**	**26**	P	**P**	**17 23 31.6**	**-1.0**
0.3nm,0.6s,baz=248,slow=6.4,SNR=5.0							
BVAR	**Borovoye Array**	**68.91**	**321**	P	**P**	**17 24 02.5**	**+0.4**
0.9nm,0.5s,baz=89,slow=7.6,SNR=4.6							
YKA	**Yellowknife Ar**	**78.60**	**28**	P	**P**	**17 24 58.1**	**-0.5**
0.4nm,0.4s,baz=285,slow=5.7,SNR=5.4							
NVAR	**Mina Array Bea**	**82.73**	**52**	P	**P**	**17 25 22.1**	**+0.6**
0.5nm,0.6s,baz=285,slow=7.4,SNR=3.5							
FINES	**FINESS Array B**	**89.15**	**336**	P	**P**	**17 25 53.3**	**+0.8**
1.4nm,0.8s,baz=49,slow=5.7,SNR=2.9							
LPAZ	**La Paz**	**145.78**	**94**	PKPbc	**PKPab**	**17 32 38.5**	**+0.3**
0.6nm,0.4s,baz=299,slow=3.1,SNR=3.4							

MAN 26 17:16:15, 7°48N×123°65E, h1km, mb3.5, ML2.2, MS1.7, 1C-1D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CGP	**Cagayan de Oro**	**1.42**	**47**⇑*e*P		Pn	17 16 41.2	-0.7
CGP				*i* S	Sn	17 17 02.1	+0.8
BUKP	**Musuan**	**1.45**	**74**	*e*P	Pn	17 16 42.5	0.0
BUKP				*e*S	Sn	17 17 05.4	+3.2
TBP	**Tagbilaran**	**2.21**	**5**⇓*e*P		Pn	17 16 53.9	+1.0

ISCJB ***26*** *17:19:00.7±0.8, 36°53N±0°03×141°51E±0°04, h25km±5km, mb4.2/44, MS3.5/10, Error ellipse: s-maj=6.0km s-min=4.4km az=19.7*
NIED ***26*** *17:19:00, 36°60N×141°40E, h38km, Mw4.3 Best double couple: M0=3.74000×10^15 NP1:φ0=170.00000°, δ10.00000°, λ156.00000°. NP2:φ0=283.00000°, δ86.00000°, λ81.00000°.*
MOS ***26*** *17:19:02.0±1.1, 36°58N×141°49E, h31km, mb4.4/24, Error ellipse: s-maj=8.7km s-min=6.0km az=99.2*
NEIC ***26*** *17:19:03.0±1.6, 36°53N×141°39E, h26km±11km, mb4.6/7, Error ellipse: s-maj=6.8km s-min=4.6km az=113.0*
NEIC Recorded [2 JMA] in Fukushima.
JMA ***26*** *17:19:04.4±0.1, 36°56N×141°25E, h46km±2km, M4.3*
JMA Felt II J1.
IDC ***26*** *17:19:04.2±3.4, 36°53N×141°29E, h33km±26km, mb3.9/31, mb1 4.1/37, mb1mx4.0/59, mbtmp4.2/37, ML3.9/5, MS3.5/9, Ms1 3.5/9, ms1mx3.3/24, Error ellipse: s-maj=14.4km s-min=10.0km az=101.0*
ISC 26 17:19:02.8±0.7, 36°52N±0°04×141°43E±0°05, h26km±4km, n112, σ1§39/118, mb4.2/44, MS3.4/10, 4C-7D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.70**	**278**	P	**Pb**	**17 19 15.9**	**-0.5**
JHO				S	**Sb**	**17 19 24.4**	**-1.2**
ONAJ	**Iwakimizuishiy**	**0.77**	**319**	P	**Pb**	**17 19 17.0**	**-0.6**
ONAJ				*e*S	**Sb**	**17 19 25.6**	**-2.2**
JFK	**Kawauchi**	**0.96**	**332**	P	**Pn**	**17 19 19.8**	**-0.7**
JFK				*e*S	**Sb**	**17 19 30.9**	**-2.1**
JYT	**Yasato**	**1.04**	**254**	P	**Pn**	**17 19 21.0**	**-0.6**
JFT	**Otama**	**1.33**	**319**	P	**Pn**	**17 19 25.9**	**+0.3**
JFT				S	**Sn**	**17 19 41.5**	**-1.0**
JMM	**Marumori**	**1.44**	**339**	P	**Pn**	**17 19 27.0**	**-0.1**
JAG	**Ashikaga**	**1.60**	**267**	P	**Pn**	**17 19 29.1**	**-0.2**
JFY	**Yanaizu**	**1.64**	**303**	P	**Pn**	**17 19 30.1**	**+0.1**
MJA0	**Matsu Arr-Jizo**	**2.56**	**271**	*e*P	**Pn**	**17 19 43.8**	**+1.1**
MJA0				pmax	pmax		
comp=Z,68nm,0.3s							
MJAR	**Matsushiro Arr**	**2.59**	**271**	Pn	**Pn**	**17 19 43.9**	**+0.8**
comp=Z,68nm,0.3s,baz=88,slow=9.9,SNR=451							
MJAR				Sn	**Sn**	**17 20 15.0**	**+1.3**
comp=Z,41nm,0.3s,baz=84,slow=21,SNR=12							
MAJO	**Matsushiro**	**2.60**	**271**	*e*P	**Pn**	**17 19 44.5**	**+1.4**
MAJO	**Matsushiro**	**2.60**	**271**	*

comp=E,6.0nm,0.6s
KUR pmax pmax
comp=Z,15nm,0.6s
KUR smax smax
comp=N,19nm,0.5s
KUR smax smax
comp=E,32nm,0.5s
YSS Yuzh-Sakhalins 10.47 5⇑ *e*P **Pn 17 21 32.1 +1.0**
YSS *e*S **Sn 17 23 25.5 -2.0**
YSS MLR MLR
comp=Z,300nm,16.0s
YSS MLR MLR
comp=N,300nm,14.0s
YSS MLR MLR
comp=E,200nm,19.0s
YSS Yuzh-Sakhalins 10.47 5 *e*Pn **Pn 17 21 30.3 -0.8**
comp=E,14nm,0.5s
USRK Ussuriysk Ar. 10.52 320 Pn Pn 17 21 35.0 +3.2
comp=E,1.3nm,0.3s,baz=133,slow=13,SNR=45
KSRS Korea Array 10.85 279 Pn Pn 17 21 40.8 +4.5
comp=E,0.2nm,0.3s,baz=90,slow=14,SNR=10
KSAR Wonju Array Be 10.88 279 P Pn 17 21 40.8 +4.1
KSAR Wonju Array Be 10.88 279 Pn Pn 17 21 40.8 +4.1
MDJ Mudanjiang 12.09 316 P **Pn 17 21 52.8 -0.5**
comp=E,17nm,1.1s
TYV Tymovskoe 14.37 3 *e*P **Pn 17 22 23.0 -1.3**
TYV pmax pmax
comp=Z,40nm,0.8s
TYV MLR MLR
comp=Z,600nm,20.0s
KLR Kul'dur 14.54 334 Pn **Pn 17 22 26.6 0.0**
comp=Z,0.2nm,0.3s,baz=131,slow=8.4,SNR=4.3
KLR LR LR 17 27 57.4
comp=Z,172nm,18.9s,baz=159,slow=37
PETK Petropavlovsk- 20.13 29 P **P 17 23 35.3 +0.7**
comp=Z,4.5nm,1.0s,baz=254,slow=41,SNR=3.8
MA2 Magadan 23.85 12 P **P 17 24 13.8 +0.1**
comp=Z,7.1nm,0.7s,baz=213,slow=8.5,SNR=6.8
MA2 LR LR 17 33 04.0
comp=Z,99nm,21.8s,baz=238,slow=35
YAK Yakutsk 26.57 348 P **P 17 24 38.1 -0.2**
comp=Z,0.7nm,0.3s,baz=149,slow=19,SNR=4.6
YAK LR LR 17 35 30.4
comp=Z,119nm,18.4s,baz=174,slow=37
YAK Yakutsk 26.57 348 *e*P **P 17 24 37.6 -0.7**
YAK *e* 17 25 16.5
YAK *e* 17 28 02.6
YAK *e*S **S 17 29 08.2 -2.9**
YAK *e*SS **SnSn 17 30 12.9 -1.3**
YAK *e* 17 35 35.4
YAK pmax pmax
comp=Z,22nm,0.9s
YAK pmax pmax
comp=N,10.0nm,1.1s
YAK pmax pmax
comp=E,4.0nm,1.2s
YAK pmax pmax
comp=Z,36nm,2.8s
YAK pmax pmax
comp=N,32nm,2.5s
YAK smax smax
comp=E,50nm,2.3s
YAK smax smax
comp=N,32nm,2.3s
YAK MLR MLR
comp=Z,128nm,20.0s
YAK MLR MLR
comp=E,57nm,20.0s
YAK MLR MLR
comp=N,124nm,19.0s
YAK Yakutsk 26.57 348 *e*P **P 17 24 37.8 -0.5**
comp=N,20nm,0.6s
SEY Seymchan 27.29 11 P **P 17 24 45.1 +0.3**
comp=N,6.3nm,0.8s,baz=197,slow=10,SNR=11
SEY Seymchan 27.29 11⇑ *i*P **P 17 24 48.4 +3.6**
SEY *i* *PP **sP 17 24 57.6 +1.9**
ENH Enshi 27.31 266 *e*P **P 17 24 44.1 -1.2**
comp=N,14nm,0.6s
ULN Ulaanbaatar 27.66 305⇑ *i*P **P 17 24 48.6 +0.1**
ULN pmax pmax
comp=Z,4.0nm,1.0s
ULN Ulaanbaatar 27.66 305 *e*P **P 17 24 48.8 +0.3**
comp=Z,1.9nm,0.5s
H11N2 WAKE ISLAND Hy 27.88 120 T T 17 54 09.0
baz=313,slow=75,SNR=503
H11N1 WAKE ISLAND Hy 27.88 120 T T 17 54 06.2
baz=313,slow=75,SNR=580
H11N3 WAKE ISLAND Hy 27.89 120 T T 17 54 10.9
baz=313,slow=75,SNR=524
BOD Bodaibo 27.97 328 *e*P **P 17 24 50.4 -0.6**
BOD pmax pmax
comp=Z,6.0nm,1.3s
SONM Songino Array 28.09 305 P **P 17 24 50.9 -1.4**
comp=Z,3.4nm,0.8s,baz=100,slow=11,SNR=22
H11S1 WAKE ISLAND Hy 28.57 122 T T 17 55 17.4
baz=315,slow=76,SNR=296
H11S3 WAKE ISLAND Hy 28.57 122 T T 17 55 16.8
baz=315,slow=76,SNR=351
H11S2 WAKE ISLAND Hy 28.59 122 T T 17 55 08.6
baz=315,slow=76,SNR=216
ZAK Zakamensk 30.60 309 *e*P **P 17 25 11.9 -2.6**
ZAK pmax pmax
comp=Z,2.0nm,1.1s
TLY Talaya 30.68 312 *e*P **P 17 25 13.0 -2.1**
TLY pmax pmax
comp=Z,2.0nm,0.7s
TLY MLR MLR
comp=Z,49nm,13.0s
BILL Bilibino 34.52 16⇓ *i*P **P 17 25 48.5 +0.1**
BILL pmax pmax
comp=Z,8.0nm,1.7s
BILL MLR MLR
comp=Z,67nm,20.0s
TIXI Tiksi 35.80 353 P **P 17 25 58.9 -0.5**
comp=Z,2.0nm,0.8s,baz=141,slow=7.3,SNR=10
TIXI Tiksi 35.80 353⇓ *i*P **P 17 25 59.9 +0.5**
TIXI *i* *PP **sP 17 26 10.1 -0.3**
TIXI pmax pmax
comp=Z,3.0nm,1.0s
TIXI Tiksi 35.80 353 *e*P **P 17 25 59.1 -0.3**
comp=Z,2.0nm,0.6s
CMAR Chiang Mai Arr 41.38 256 P **P 17 26 45.1 -1.8**
comp=Z,0.9nm,0.7s,baz=46,slow=5.5,SNR=6.6
CMAR LR LR 17 46 06.8
comp=Z,43nm,18.5s,baz=30,slow=39
CMAR Chiang Mai Arr 41.38 256 *e*P **P 17 26 47.0 +0.1**
CMAR pmax pmax
comp=Z,1.0nm,0.7s
LSA Lhasa 42.27 276 *e*P **P 17 26 55.9 +1.2**
LSA Lhasa 42.27 276 *e*P **P 17 26 55.9 +1.2**
ZALV Zalesovo Beam 42.27 313 P **P 17 26 53.9 +0.1**
comp=Z,3.2nm,0.5s,baz=93,slow=7.2,SNR=15
ZALV LR LR 17 44 14.7
comp=Z,38nm,19.4s,baz=74,slow=36
NRIK Noril'sk 43.74 336 LR LR 17 47 39.5
comp=Z,61nm,18.8s,baz=123,slow=39
MKAR Makanchi Array 44.41 303 P **P 17 27 12.1 +1.0**
comp=Z,1.4nm,0.6s,baz=87,slow=9.9,SNR=17
KAPI Kappang 46.03 211 P **P 17 27 24.0 -0.2**
comp=Z,9.6nm,0.6s,baz=66,slow=20,SNR=5.5
KURK Kurchatov 46.26 308 P **P 17 27 25.9 +0.2**
KURK pmax pmax
comp=Z,3.0nm,0.6s
KURK Kurchatov 46.26 308 P **P 17 27 25.9 +0.2**
KURBB Kurchatov Arra 46.33 308 P **P 17 27 25.9 -0.3**
comp=Z,3.4nm,0.6s,baz=82,slow=7.7,SNR=25
KKN Kakani 47.75 276 *e*P **P 17 27 39.0 +1.0**
GKN Gorkha 48.18 277 *e*P **P 17 27 41.2 0.0**
comp=Z,22nm,0.8s
KOLN Koldanda 49.11 277 *e*P **P 17 27 48.2 -0.2**
comp=Z,4.3nm,0.5s
PYUN Piuthan 49.45 278 *e*P **P 17 27 51.2 +0.2**
COLA College 49.51 32⇓ *e*P **P 17 27 53.0 +2.4**
COLA pmax pmax
comp=Z,6.0nm,0.5s
TKM2 Tokmak 2 49.89 299 *e*P **P 17 27 56.0 +1.8**
TKM2 Tokmak 2 49.89 299 *e*P **P 17 27 56.0 +1.8**
ILAR Eielson Array 49.92 32 P **P 17 27 55.0 +1.2**
comp=Z,2.7nm,0.8s,baz=270,slow=6.5,SNR=36
ILAR LR LR 17 52 36.4
comp=Z,35nm,18.2s,baz=277,slow=40
BVAR Borovoye Array 50.93 313 P **P 17 28 01.7 +0.1**
comp=Z,1.2nm,0.5s,baz=81,slow=8.9,SNR=8.5
GSI Gunungsitoli 53.55 239 *e*P **P 17 28 20.8 -0.7**
comp=Z,16nm,0.6s
INK Inuvik 54.84 27 P **P 17 28 31.2 +1.1**
comp=Z,1.4nm,0.5s,baz=280,slow=5.6,SNR=11
INK Inuvik 54.84 27 P **P 17 28 31.3 +1.1**
INK pmax pmax
comp=Z,3.0nm,0.7s
WRAB Tennant Creek 56.54 188 *ce*P **P 17 28 43.6 +0.7**
WRAB pmax pmax
comp=Z,34nm,1.7s
WRAB Tennant Creek 56.54 188 *e*P **P 17 28 42.9 -0.1**
WRA Warramunga Arr 56.55 188 P **P 17 28 43.2 +0.2**
comp=Z,4.1nm,0.5s,baz=6.9,slow=7.5,SNR=116
ARU Arti 56.76 319 P **P 17 28 43.5 -0.7**
comp=Z,3.1nm,0.5s,baz=243,slow=0.2,SNR=5.8
ARU Arti 56.76 319 *d i*P **P 17 28 44.2 0.0**
ARU 17 29 39.6
ARU 17 30 47.6
ARU S **S 17 36 34.8 -0.4**
ARU SS **SS 17 40 23.6 +0.9**
ARU pmax pmax
comp=Z,10.0nm,1.7s
ARU Arti 56.76 319 *e*P **P 17 28 44.1 0.0**
comp=Z,5.1nm,0.6s
ABKAR Akbulak array 58.28 310 *e*P **P 17 28 54.5 -0.5**
comp=Z,1.8nm,0.6s
AKTO Aktyubinsk 59.03 312 P **P 17 29 00.3 +0.2**
comp=Z,0.5nm,0.2s,baz=105,slow=16,SNR=2.9
ASAR Alice Springs 60.28 188 P **P 17 29 09.3 +0.3**
comp=Z,3.2nm,0.8s,baz=15,slow=13,SNR=44
MBWA Marble Bar 60.92 203 *e*P **P 17 29 13.5 +0.1**
SPITS Spitsbergen Ar 61.03 349 P **P 17 29 14.3 +0.8**
comp=Z,1.3nm,0.8s,baz=37,slow=13,SNR=3.0
YKA Yellowknife Ar 64.25 30 P **P 17 29 36.1 +1.0**
comp=Z,1.3nm,0.8s,baz=301,slow=6.8,SNR=16
ARCES ARCESS Array B 64.48 339 P **P 17 29 35.5 -1.1**
comp=Z,3.3nm,0.8s,baz=78,slow=8.4,SNR=3.1
STKA Stephens Creek 68.04 180 P **P 17 29 59.4 -0.3**
comp=Z,1.6nm,0.9s,baz=342,slow=7.5,SNR=6.8
STKA Stephens Creek 68.04 180 *e*P **P 17 30 01.5 +1.8**
STKA pmax pmax
comp=Z,2.0nm,0.9s
FINES FINESS Array B 69.28 332 P **P 17 30 06.8 -0.4**
comp=Z,2.8nm,0.8s,baz=106,slow=12,SNR=4.4
FINES LR LR 18 02 41.1
comp=Z,83nm,18.9s,baz=5.0,slow=38
ZEI Tsey 71.14 310 *e*P P 17 30 29.7 +10
ZEI pmax pmax
comp=Z,5.0nm,0.5s
KIV Kislovodsk 71.25 311 *e*P P 17 30 32.2 +12
KIV pmax pmax
comp=Z,10.0nm,0.9s
KIV MLR MLR
comp=Z,33nm,17.0s
NWAO Narrogin (SRO) 72.70 201 *e*P **P 17 30 28.0 -0.2**
NWAO Narrogin (SRO) 72.70 201 *e*P **P 17 30 28.0 -0.2**
FFC Flin Flon 74.13 33 *i*P **P 17 30 38.9 +2.4**
NB2 NORSAR Subarra 74.67 337 P **P 17 30 39.6 0.0**
comp=Z,1.5nm,0.7s,baz=38,slow=5.9
NOA NORSAR Array B 74.67 337 P **P 17 30 39.2 -0.3**
comp=Z,2.7nm,0.8s,baz=39,slow=5.8,SNR=9.6
NOA NORSAR Array B 74.67 337 *e*P **P 17 30 40.0 +0.4**
NOA pmax pmax
comp=Z,3.0nm,0.8s
AKASG Malin Array Be 74.71 322 P **P 17 30 39.5 -0.5**
comp=Z,0.2nm,0.3s,baz=47,slow=6.1,SNR=4.4
KIEV Kiev 74.72 322 P **P 17 30 41.1 +1.1**
KIEV pmax pmax
comp=Z,2.0nm,0.8s
NVAR Mina Array Bea 75.29 53 P **P 17 30 45.6 +1.7**
comp=Z,0.9nm,0.8s,baz=286,slow=6.6,SNR=5.9
PDAR Pinedale Array 78.02 45 P **P 17 30 59.4 +0.1**
comp=Z,0.3nm,0.2s,baz=245,slow=3.1,SNR=4.0
BRTR Keskin Array B 79.20 312 P **P 17 31 06.1 +0.5**
comp=Z,0.6nm,0.8s,baz=100,slow=2.6,SNR=2.6
MMAI Mount Meron Ar 82.27 305 P **P 17 31 21.5 -0.7**
comp=Z,0.2nm,0.3s,baz=52,slow=2.4,SNR=2.8
GERES GERESS Array B 83.16 328 P **P 17 31 26.6 +0.1**
comp=Z,0.4nm,0.5s,baz=46,slow=5.6,SNR=3.4
TXAR Lajitas Array 90.42 52 P **P 17 32 03.1 +0.8**
comp=Z,0.3nm,0.6s,baz=324,slow=5.6,SNR=3.4
LPAZ La Paz 146.94 60 PKPbc **PKPab 17 38 45.6 +0.1**
comp=Z,0.7nm,0.5s,baz=25,slow=3.7,SNR=3.2

*ISK **26** 17:20:21.5, 36°.85N×26°.44E, h11km, MD2.8*
*ISCJB **26** 17:20:22.9±0.5, 37°.02N±0°.03×26°.42E±0°.04, h24km±7km, Error ellipse: s-maj=5.4km s-min=4.6km az=160.4*
*ATH **26** 17:20:22.4, 37°.08N×26°.45E, h36km±4km, ML2.1/2, Error ellipse: s-maj=4.2km s-min=1.6km az=286.0*
*CSEM **26** 17:20:22.8±0.2, 37°.01N×26°.42E, h20km, MD2.8, Error ellipse: s-maj=6.7km s-min=4.9km az=159.0*
*DDA **26** 17:20:23.7, 37°.12N×26°.50E, h7km, Md2.8*

ISC 26 17:20:22.6±1.1, 36°.99N±0°.03×26°.45E±0°.02, h25km±13km, n36, σ0s93/54, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BODT	**Bodrum**	**0.69**	**84**	*e*PG	**Pn**	**17 20 36.3**	**-0.5**
BODT				*e*SG	**Sn**	**17 20 46.7**	**-0.1**
BODT	**Bodrum**	**0.69**	**84**	*e*Pg	**Pn**	**17 20 36.3**	**-0.5**
BODT				*e*Sg	**Sn**	**17 20 46.7**	**-0.1**
NIS1	**Nisyros Isl.**	**0.70**	**124**	*e*PG	**Pb**	**17 20 34.3**	**-1.9**
APE	**Apeiranthos**	**0.74**	**276**	*e*PG	**Pb**	**17 20 36.5**	**-0.4**
APE	**Apeiranthos**	**0.74**	**276**	*e*Pg	**Pb**	**17 20 36.5**	**-0.4**
APE	**Apeiranthos**	**0.74**	**276**	P	**Pb**	**17 20 36.9**	**0.0**
APE				S	**Sb**	**17 20 47.1**	**+0.4**
APE	**Apeiranthos**	**0.74**	**276**	P	**Pb**	**17 20 36.9**	**0.0**
APE				S	**Sb**	**17 20 47.1**	**+0.4**
APE				AML	AML	17 20 51.0	
	comp=E,200μm,0.2s						
APE				AML	AML	17 20 51.4	
	comp=N,205μm,0.2s						
SMG	**Samos**	**0.78**	**23**	P	**Pb**	**17 20 36.4**	**-1.1**
SMG				S	**Sb**	**17 20 46.7**	**-1.0**
SMG	**Samos**	**0.78**	**23**	P	**Pb**	**17 20 36.4**	**-1.1**
SMG				S	**Sb**	**17 20 46.7**	**-1.0**
SMG				AML	AML	17 20 50.4	
	comp=N,428μm,0.4s						
SMG				AML	AML	17 20 50.6	
	comp=E,485μm,0.2s						
BDRM	**Kayabasi**	**0.80**	**85**	P	**Pn**	**17 20 38.6**	**+0.3**
BDRM				S	**Sn**	**17 20 49.2**	**-0.2**
BDRM	**Kayabasi**	**0.80**	**85**	*i* P	**Pn**	**17 20 38.6**	**+0.3**
BDRM				*i* S	**Sn**	**17 20 49.2**	**-0.2**
GCAM	**G?zelcaml?**	**0.94**	**41**	P	**Pn**	**17 20 40.2**	**0.0**
GCAM				S	**Sn**	**17 20 52.9**	**0.0**
GCAM	**G?zelcaml?**	**0.94**	**41**	*i* P	**Pn**	**17 20 40.2**	**0.0**
GCAM				*i* S	**Sn**	**17 20 52.9**	**0.0**
SANT	**Santorini**	**1.01**	**232**	P	**Pb**	**17 20 43.4**	**+1.9**
SANT	**Santorini**	**1.01**	**232**	P	**Pb**	**17 20 43.4**	**+1.9**
THR5	**Thira Island,**	**1.06**	**237**	*e*PG	**Pn**	**17 20 40.8**	**-1.1**
THR5	**Thira Island,**	**1.06**	**237**	*e*Pg	**Pn**	**17 20 40.8**	**-1.1**
DGB	**˜zmir**	**1.11**	**18**	*i* P	**Pn**	**17 20 42.4**	**-0.2**
DGB				*i* S	**Sn**	**17 20 56.8**	**-0.3**
ZEY	**˜zmir**	**1.24**	**2**	*i* P	**Pb**	**17 20 45.1**	**-0.4**
ZEY				*i* S	**Sn**	**17 20 59.2**	**-1.2**
AYDN	**Tasoluk**	**1.32**	**59**	P	**Pn**	**17 20 45.5**	**0.0**
AYDN				S	**Sb**	**17 21 05.1**	**+1.8**
AYDN	**Tasoluk**	**1.32**	**59**	*i* P	**Pn**	**17 20 45.5**	**0.0**
AYDN				*i* S	**Sb**	**17 21 05.1**	**+1.8**
URLA	**Izmir**	**1.37**	**5**	P	**Pb**	**17 20 47.2**	**-0.4**
URLA				S	**Sb**	**17 21 06.2**	**+1.5**
URLA	**Izmir**	**1.37**	**5**	*i* P	**Pb**	**17 20 47.2**	**-0.4**
URLA				*i* S	**Sb**	**17 21 06.2**	**+1.5**
CHOS	**Chios island**	**1.43**	**347**	*e*PN	**Pb**	**17 20 49.9**	**+1.3**
CHOS	**Chios island**	**1.43**	**347**	P	**Pn**	**17 20 46.8**	**-0.2**
CHOS				S	**Sn**	**17 21 03.8**	**-1.2**
CHOS	**Chios island**	**1.43**	**347**	P	**Pn**	**17 20 46.8**	**-0.2**
CHOS				S	**Sn**	**17 21 03.8**	**-1.2**
YER	**Yerkesik**	**1.47**	**84**	*e*PN	**Pb**	**17 20 49.1**	**-0.3**
YER	**Yerkesik**	**1.47**	**84**	*e*Pn	**Pb**	**17 20 49.1**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**1.49**	**50**	*e*PN	**Pb**	**17 20 50.5**	**+0.8**
AYDB	**Zeytinkoy-Aydi**	**1.49**	**50**	*e*Pn	**Pb**	**17 20 50.5**	**+0.8**
KARP	**Karpathos**	**1.55**	**158**	*e*PN	**Pn**	**17 20 48.1**	**-0.7**
KARP	**Karpathos**	**1.55**	**158**	*e*Pn	**Pn**	**17 20 48.1**	**-0.7**
KARP	**Karpathos**	**1.55**	**158**	P	**Pb**	**17 20 50.1**	**-0.7**
KARP	**Karpathos**	**1.55**	**158**	P	**Pb**	**17 20 50.1**	**-0.7**
FETY	**Fethiye**	**2.14**	**99**	*e*PN	**Pn**	**17 20 58.1**	**+1.3**
FETY	**Fethiye**	**2.14**	**99**	*e*Pn	**Pn**	**17 20 58.1**	**+1.3**

*ISK **26** 17:34:08.4, 39°.10N×29°.07E, h2km, MD2.9*
*DDA **26** 17:34:08.4, 39°.11N×29°.07E, h11km, Ml3.5*
*CSEM **26** 17:34:09.0±0.1, 39°.10N×29°.08E, h2km, ML3.5, Error ellipse: s-maj=2.1km s-min=1.9km az=117.0*

ISC 26 17:34:08.7±0.9, 39°.10N±0°.02×29°.06E±0°.02, h13km±7km, n74, σ0s66/100, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**257**	P	**Pg**	**17 34 14.5**	**+0.1**
DEMI				S	**Sg**	**17 34 18.4**	**+0.1**
DEMI	**Demirci**	**0.27**	**257**	*i* P	**Pg**	**17 34 14.5**	**+0.1**
DEMI				*i* S	**Sg**	**17 34 18.4**	**+0.1**
GDZ	**Gediz**	**0.33**	**92**	P	**Pg**	**17 34 15.1**	**-0.4**
GDZ				S	**Sg**	**17 34 19.7**	**-0.3**
GDZ	**Gediz**	**0.33**	**92**	*i* P	**Pg**	**17 34 15.1**	**-0.4**
GDZ				*i* S	**Sg**	**17 34 19.7**	**-0.3**
TVSB	**Tavsanli**	**0.47**	**42**	*e*PG	**Pg**	**17 34 17.5**	**-0.4**
TVSB	**Tavsanli**	**0.47**	**42**	*e*Pg	**Pg**	**17 34 17.5**	**-0.4**
DURS	**Dursunbey**	**0.67**	**318**	P	**Pg**	**17 34 21.7**	**-0.1**
DURS				S	**Sn**	**17 34 33.3**	**-1.1**
DURS	**Dursunbey**	**0.67**	**318**	*i* P	**Pg**	**17 34 21.7**	**-0.1**
DURS				*i* S	**Sn**	**17 34 33.3**	**-1.1**
MANT	**Manisa**	**0.73**	**213**	P	**Pg**	**17 34 22.7**	**-0.1**
MANT				S	**Sg**	**17 34 32.0**	**-0.4**
MANT	**Manisa**	**0.73**	**213**	*i* P	**Pg**	**17 34 22.7**	**-0.1**
MANT				*i* S	**Sg**	**17 34 31.9**	**-0.4**
KHAL	**Karahalli**	**0.81**	**155**	P	**Pg**	**17 34 24.4**	**+0.1**
KHAL				S	**Sb**	**17 34 35.5**	**0.0**
KHAL	**Karahalli**	**0.81**	**155**	*i* P	**Pg**	**17 34 24.4**	**+0.1**
KHAL				*i* S	**Sb**	**17 34 35.5**	**0.0**
KHL	**Karahalli**	**0.86**	**155**	*e*PG	**Pb**	**17 34 25.7**	**+0.2**
KHL	**Karahalli**	**0.86**	**155**	*e*Pg	**Pb**	**17 34 25.7**	**+0.2**
AKHS	**Akhisar**	**0.99**	**257**	P	**Pn**	**17 34 28.2**	**-0.2**
AKHS				S	**Sg**	**17 34 41.5**	**+0.7**
AKHS	**Akhisar**	**0.99**	**257**	*i* P	**Pn**	**17 34 28.2**	**-0.2**
AKHS				*i* S	**Sg**	**17 34 41.5**	**+0.7**
AKS	**Akhisar**	**1.00**	**257**	*e*PG	**Pn**	**17 34 28.4**	**0.0**
AKS	**Akhisar**	**1.00**	**257**	*e*Pg	**Pn**	**17 34 28.4**	**0.0**
BALB	**Balikesir**	**1.06**	**301**	*e*PG	**Pn**	**17 34 29.9**	**+0.7**
BALB	**Balikesir**	**1.06**	**301**	*e*Pg	**Pn**	**17 34 29.9**	**+0.7**
IGD	**Bursa**	**1.16**	**5**	*i* P	**Pb**	**17 34 29.9**	**+1.1**
IGD				*i* S	**Sn**	**17 34 46.4**	**0.0**
CAVI	**Cavuskoy**	**1.25**	**29**	*e*PN	**Pg**	**17 34 33.1**	**+0.3**
CAVI	**Cavuskoy**	**1.25**	**29**	*e*Pn	**Pg**	**17 34 33.1**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.27**	**354**	*e*PN	**Pg**	**17 34 33.5**	**+0.4**
MDNY				*e*SN	**Sg**	**17 34 52.3**	**+2.6**
MDNY	**Mudanya-Bursa**	**1.27**	**354**	*e*Pn	**Pg**	**17 34 33.5**	**+0.4**
MDNY				*e*Sn	**Sg**	**17 34 52.3**	**+2.6**
IZI	**Iznik**	**1.27**	**14**	*e*PN	**Pg**	**17 34 33.7**	**+0.6**
IZI	**Iznik**	**1.27**	**14**	*e*Pn	**Pg**	**17 34 33.7**	**+0.6**
KCTX	**Karacabey (Bur**	**1.28**	**335**	*e*PN	**Pg**	**17 34 33.9**	**+0.6**
KCTX	**Karacabey (Bur**	**1.28**	**335**	*e*Pn	**Pg**	**17 34 33.9**	**+0.6**
BALY	**Balya**	**1.28**	**300**	P	**Pg**	**17 34 33.3**	**0.0**
BALY				S	**Sb**	**17 34 48.8**	**-0.3**
BALY	**Balya**	**1.28**	**300**	*i* P	**Pg**	**17 34 33.3**	**0.0**
BALY				*i* S	**Sb**	**17 34 48.8**	**-0.3**
BORA	**Eskisehir**	**1.33**	**54**	P	**Pn**	**17 34 33.2**	**+0.1**
BORA				S	**Sb**	**17 34 50.4**	**-0.1**
BORA	**Eskisehir**	**1.33**	**54**	*i* P	**Pn**	**17 34 33.2**	**+0.1**
BORA				*i* S	**Sb**	**17 34 50.4**	**-0.1**
GEMT	**Gemlik**	**1.33**	**4**	*e*PN	**Pg**	**17 34 34.1**	**-0.1**
GEMT	**Gemlik**	**1.33**	**4**	*e*Pn	**Pg**	**17 34 34.2**	**-0.1**
DENT	**Denizli**	**1.35**	**181**	*e*PN	**Pg**	**17 34 34.8**	**+0.2**
DENT	**Denizli**	**1.35**	**181**	*e*Pn	**Pg**	**17 34 34.8**	**+0.2**
DNZL	**Cakiroluk**	**1.41**	**180**	P	**Pg**	**17 34 36.3**	**+0.5**
DNZL				S	**Sg**	**17 34 56.2**	**+2.0**
DNZL	**Cakiroluk**	**1.41**	**180**	*i* P	**Pg**	**17 34 36.3**	**+0.5**
DNZL				*i* S	**Sg**	**17 34 56.2**	**+2.0**
GONE	**Gonen-Balikesi**	**1.42**	**312**	*e*PN	**Pg**	**17 34 35.9**	**0.0**
GONE	**Gonen-Balikesi**	**1.42**	**312**	*e*Pn	**Pg**	**17 34 35.9**	**0.0**
ADVT	**Abdulvahap**	**1.43**	**21**	*e*PN	**Pg**	**17 34 36.3**	**+0.2**
ADVT	**Abdulvahap**	**1.43**	**21**	*e*Pn	**Pg**	**17 34 36.3**	**+0.2**
ESKT	**Eskisehir**	**1.45**	**73**	*i* P	**Pn**	**17 34 35.1**	**+0.3**
ESKT				*i* S	**Sb**	**17 34 53.9**	**-0.1**
SEYT	**Eskypehyr**	**1.45**	**73**	P	**Pn**	**17 34 35.1**	**+0.3**
SEYT				*i* S	**Sb**	**17 34 53.9**	**-0.1**
ARMT	**Armutlu**	**1.47**	**354**	*e*PN	**Pg**	**17 34 36.6**	**-0.3**
ARMT	**Armutlu**	**1.47**	**354**	*e*Pn	**Pg**	**17 34 36.6**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**219**	*e*PN	**Pg**	**17 34 36.8**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**219**	*e*Pn	**Pg**	**17 34 36.8**	**-0.2**
GPA	**Golpazari**	**1.53**	**39**	*e*PN	**Pg**	**17 34 37.8**	**-0.2**
GPA	**Golpazari**	**1.53**	**39**	*e*Pn	**Pg**	**17 34 37.8**	**-0.2**
EDC	**Edincik**	**1.55**	**324**	*e*PN	**Pg**	**17 34 37.8**	**-0.6**
EDC	**Edincik**	**1.55**	**324**	*e*Pn	**Pg**	**17 34 37.8**	**-0.6**
DKL	**Dikili**	**1.68**	**270**	*e*PN	**Pb**	**17 34 39.8**	**+0.5**
DKL	**Dikili**	**1.68**	**270**	*e*Pn	**Pb**	**17 34 39.8**	**+0.5**
AYDN	**Tasoluk**	**1.71**	**213**	P	**Pb**	**17 34 39.4**	**-0.6**
AYDN				S	**Sg**	**17 35 03.9**	**+0.2**
AYDN	**Tasoluk**	**1.71**	**213**	*i* P	**Pb**	**17 34 39.4**	**-0.6**
AYDN				*i* S	**Sg**	**17 35 03.9**	**+0.2**
ISP	**Isparta**	**1.72**	**138**	*e*PN	**Pb**	**17 34 40.1**	**-0.1**
ISP	**Isparta**	**1.72**	**138**	*e*Pn	**Pb**	**17 34 40.1**	**-0.1**
GULT	**Gulveren**	**1.74**	**40**	*e*PN	**Pb**	**17 34 40.9**	**+0.4**
GULT	**Gulveren**	**1.74**	**40**	*e*Pn	**Pb**	**17 34 40.9**	**+0.4**
HRT	**Hereke**	**1.78**	**15**	*e*PN	**Pb**	**17 34 41.0**	**-0.1**
HRT	**Hereke**	**1.78**	**15**	*e*Pn	**Pb**	**17 34 41.1**	**-0.1**
SVRH	**Sivrihisar-ESK**	**1.94**	**79**	*e*PN	**Pb**	**17 34 43.1**	**-0.9**
SVRH	**Sivrihisar-ESK**	**1.94**	**79**	*e*Pn	**Pb**	**17 34 43.1**	**-0.9**
ISK	**Istanbul-Kandi**	**1.96**	**0**	*e*PN	**Pb**	**17 34 43.9**	**-0.3**
ISK	**Istanbul-Kandi**	**1.96**	**0**	*e*Pn	**Pb**	**17 34 43.9**	**-0.3**
DGB	**˜zmir**	**2.00**	**239**	*i* P	**Pb**	**17 34 45.5**	**+0.6**
DGB				*i* S	**Sg**	**17 35 12.7**	**-0.4**
SILT	**Sile**	**2.10**	**12**	*e*PN	**Pb**	**17 34 45.7**	**-0.8**
SILT	**Sile**	**2.10**	**12**	*e*Pn	**Pb**	**17 34 45.7**	**-0.8**
RKY	**Sarkoy-Tekirda**	**2.14**	**318**	*e*PN	**Pb**	**17 34 46.5**	**-0.9**
RKY	**Sarkoy-Tekirda**	**2.14**	**318**	*e*Pn	**Pb**	**17 34 46.5**	**-0.9**
CTKS	**Kestanelik-??a**	**2.17**	**349**	*e*PN	**Pb**	**17 34 46.9**	**-0.9**
CTKS	**Kestanelik-??a**	**2.17**	**349**	*e*Pn	**Pb**	**17 34 46.9**	**-0.9**

IDC 26 17:36:40.7±9.4, 22°.75S×177°.45W, h0km, mb3.3/3, mb1 3.6/3, mb1mx3.4/17, mbtmp3.3/3, Error ellipse: s-maj=410.5km s-min=37.1km az=147.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**44.55**	**259**	P	P	17 44 54.5	-0.2
	0.1nm,0.5s,baz=98,slow=8.2,SNR=4.6						
WRA	**Warramunga Arr**	**44.84**	**264**	P	P	17 44 57.0	0.0
	0.2nm,0.5s,baz=102,slow=8.5,SNR=9.9						
ILAR	**Eielson Array**	**90.39**	**13**	P	P	17 49 43.6	+0.3
	0.2nm,0.7s,baz=203,slow=6.6,SNR=3.4						
AKASG	**Malin Array Be**	**145.22**	**330**	PKPbc	PKPbc	17 56 18.3	-1.4
	0.8nm,0.4s,baz=36,slow=3.7,SNR=5.3						

*ISCJB **26** 17:39:46.7±0.5, 39°.08N±0°.03×29°.05E±0°.04, h6km±7km, Error ellipse: s-maj=6.0km s-min=4.0km az=149.9*
*CSEM **26** 17:39:46.9±0.1, 39°.10N×29°.06E, h2km, MD2.8, Error ellipse: s-maj=3.6km s-min=2.8km az=126.0*
*ISK **26** 17:39:46.6, 39°.12N×29°.08E, h5km, MD2.7*
*DDA **26** 17:39:46.6, 39°.06N×29°.06E, h7km, Md2.8*

ISC 26 17:39:46.9±1.1, 39°.10N±0°.03×29°.05E±0°.02, h4km±14km, n30, σ0s34/42, Turkey

| Code | Station Name | Δ° | AZ

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
AKHS	**Akhisar**	**0.99**	**258**	P	**Pg**	**17 40 05.3**	**-0.6**
AKHS				S	**Sg**	**17 40 17.8**	**-0.9**
AKHS	**Akhisar**	**0.99**	**258**	*i* P	**Pg**	**17 40 05.3**	**-0.6**
AKHS				*i* S	**Sg**	**17 40 17.8**	**-0.9**
AKS	**Akhisar**	**0.99**	**258**	*e*PG	**Pb**	**17 40 06.7**	**+0.1**
AKS	**Akhisar**	**0.99**	**258**	*e*Pg	**Pb**	**17 40 06.7**	**+0.1**
CAVI	**Cavuskoy**	**1.26**	**29**	*e*PN	**Pg**	**17 40 10.7**	**-0.3**
CAVI	**Cavuskoy**	**1.26**	**29**	*e*Pn	**Pg**	**17 40 10.7**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.27**	**354**	*e*PN	**Pn**	**17 40 11.7**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.27**	**354**	*e*Pn	**Pn**	**17 40 11.7**	**+0.2**
GEMT	**Gemlik**	**1.34**	**4**	*e*PN	**Pb**	**17 40 12.8**	**+0.2**
GEMT	**Gemlik**	**1.34**	**4**	*e*Pn	**Pb**	**17 40 12.8**	**+0.2**
ARMT	**Armutlu**	**1.47**	**354**	*e*PN	**Pn**	**17 40 14.6**	**+0.4**
ARMT	**Armutlu**	**1.47**	**354**	*e*Pn	**Pn**	**17 40 14.6**	**+0.4**
GULT	**Gulveren**	**1.74**	**40**	*e*PN	**Pn**	**17 40 18.4**	**+0.3**
GULT	**Gulveren**	**1.74**	**40**	*e*Pn	**Pn**	**17 40 18.4**	**+0.3**

*ISCJB **26** 17:42:32.0±0.8, 30°.19S±0°.05×69°.23W±0°.06, h33km, mb3.4/2, Error ellipse: s-maj=7.8km s-min=7.0km az=6.4*
*GUC **26** 17:42:33.5±0.3, 30°.40S×69°.56W, h20km±2km, ML3.9*
*IDC **26** 17:43:08.0±6.3, 24°.14S×66°.67W, h114km±38km, mb3.2/2, mb1 3.4/4, mb1mx3.3/16, mbtmp3.5/4, Error ellipse: s-maj=112.8km s-min=27.8km az=38.0*

ISC 26 17:42:34.7±0.9, 30°.30S±0°.05×69°.33W±0°.07, h35km, n11, σ2s10/17, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
TLL	**Tololo Astrono**	**1.28**	**276**	*e*P	**Pn**	**17 42 55.0**	**-1.4**
TLL				*e*S	**Sn**	**17 43 11.0**	**-1.5**
TLL				IAML		17 43 12.6	
	comp=E,3μm,0.4s						
LSCH	**La Serena**	**1.70**	**283**	*e*P	**Pn**	**17 43 01.4**	**-0.6**
LSCH				*e*S	**Sn**	**17 43 22.4**	**-0.1**
VACH	**Vallenar**	**2.12**	**324**	*e*P	**Pn**	**17 43 09.9**	**+2.2**
VACH				*e*S	**Sn**	**17 43 37.7**	**+4.8**
ROCH	**El Roble**	**3.02**	**208**	*e*P	**Pn**	**17 43 21.2**	**+0.9**
ROCH				*e*S	**Sn**	**17 43 57.6**	**+2.2**
ROCH				IAML		17 44 00.8	
	comp=E,513nm,0.5s						
PEL	**Peldehue**	**3.06**	**202**	*e*P	**Pn**	**17 43 21.4**	**+0.8**
PEL				*e*S	**Sn**	**17 43 57.9**	**+1.8**
PEL				IAML		17 44 06.8	
	comp=N,277nm,0.4s						
CLCH	**Cerro Calan**	**3.25**	**198**	*e*P	**Pn**	**17 43 24.1**	**+0.8**
CLCH				*e*S	**Sn**	**17 44 02.8**	**+1.9**
CLCH				IAML		17 44 16.4	
	comp=N,370nm,1.0s						
CPUP	**Villa Florida**	**11.29**	**72**	P	**Pn**	**17 45 11.2**	**-2.4**
	comp=N,0.2nm,0.3s,baz=258,slow=13,SNR=3.1						
TXAR	**Lajitas Array**	**67.73**	**328**	P	**P**	**17 53 28.3**	**-0.5**
	comp=N,0.2nm,0.6s,baz=151,slow=8.1,SNR=2.4						
TORD	**Torodi Ar. Bea**	**80.77**	**69**	P	**P**	**17 54 44.1**	**-0.9**
	comp=N,0.3nm,0.4s,baz=269,slow=6.1,SNR=4.1						
ZALV	**Zalesovo Beam**	**149.88**	**31**	PKP	**PKPab**	**18 02 29.2**	**+2.9**
	comp=N,0.8nm,0.5s,baz=297,slow=4.2,SNR=4.8						
MKAR	**Makanchi Array**	**152.57**	**45**	PKPbc	**PKPab**	**18 02 36.9**	**-0.9**
	comp=N,0.4nm,0.6s,baz=300,slow=2.8,SNR=3.7						

*NIED **26** 17:44:00, 36°.40N×141°.00E, h32km, Mw3.4 Best double couple: M0 1.47000×10^14 NP1:φ=270.00000°, δ44.00000°, λ114.00000°. NP2:φ=58.00000°, δ50.00000°, λ68.00000°.*

JMA 26 17:44:22.1±0.1, 36°.43N×141°.04E, h46km±1km, M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
JHO	**Hitachi**	**0.42**	**296**	P	Pn	17 44 31.9	-0.3
JHO				S	Sn	17 44 38.5	-0.8
ONAJ	**Iwakimizuishiy**	**0.70**	**344**	P	Pn	17 44 35.2	-0.5
ONAJ				S	Sn	17 44 44.4	-1.2
JYT	**Yasato**	**0.71**	**254**	P	Pn	17 44 35.8	0.0
JYT				S	Sn	17 44 45.0	-0.8
JFK	**Kawauchi**	**0.94**	**352**	P	Pn	17 44 38.5	-0.5
JFT	**Otama**	**1.22**	**333**	P	Pn	17 44 43.9	+1.1
JFT				S	Sn	17 44 59.1	+0.9
JAG	**Ashikaga**	**1.28**	**270**	P	Pn	17 44 43.9	+0.4
JMM	**Marumori**	**1.45**	**352**	P	Pn	17 44 46.1	+0.3
JMM				*e*S	Sn	17 45 03.4	-0.2
JFY	**Yanaizu**	**1.45**	**313**	P	Pn	17 44 46.9	+1.0
JKT	**Katashina**	**1.48**	**284**	P	Pn	17 44 47.3	+0.9
MAT	**Matsushiro**	**2.29**	**274**	P	Pn	17 44 59.0	+1.7
MAT				S	Sn	17 45 28.3	+4.0

JMA 26 17:48:15.0±0.2, 38°.52N×144°.44E, h39km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
OFUJ	**Ofunato**	**2.24**	**285**	P	Pn	17 48 51.0	+1.5
MIYJ	**Miyakonagasawa**	**2.30**	**298**	P	Pn	17 48 51.6	+1.3
MIYJ				*e*S	Sn	17 49 18.7	+1.3
JMK	**Ichinoseki**	**2.56**	**281**	P	Pn	17 48 55.6	+1.7
JMK				*e*S	Sn	17 49 25.7	+2.0
JOM	**Ohasama**	**2.63**	**292**	P	Pn	17 48 56.7	+1.8
JOM				*e*S	Sn	17 49 28.0	+2.4
JANG	**Nango**	**2.92**	**310**	P	Pn	17 49 00.2	+1.2
JYK	**Kaneyama**	**3.22**	**278**	P	Pn	17 49 05.3	+2.3
JYK				*e*S	Sn	17 49 43.1	+3.1
JFT	**Otama**	**3.39**	**254**	P	Pn	17 49 07.5	+2.1
JFT				*e*S	Sn	17 49 46.2	+1.8
JOT	**Ohata**	**3.87**	**319**	*e*S	Sn	17 49 56.8	+0.7
JCH	**Churui**	**4.17**	**349**	P	Pn	17 49 16.3	+0.2
JCH				*e*S	Sn	17 50 01.6	-1.9
NEM2	**Nemuro 2**	**4.94**	**11**	P	Pn	17 49 23.9	-2.7
NEM2				*e*S	Sn	17 50 16.4	-6.0
JRY	**Ryogami san**	**5.08**	**242**	P	Pn	17 49 29.3	+0.8
JRY				*e*S	Sn	17 50 24.8	-1.1
JTKR	**Abashiri--Toko**	**5.46**	**356**	P	Pn	17 49 33.5	-0.3
JTKR				*e*S	Sn	17 50 31.5	-3.8

*CSEM **26** 17:56:54.9, 36°.41N×25°.41E, h2km, ML0.9/1*

THE 26 17:56:54.9, 36°.41N×25°.41E, h2km±1km, ML0.9/1, Error ellipse: s-maj=1.0km s-min=0.4km az=53.0, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
THR3	**Thira Island,**	**0.01**	**308**	P	Pg	17 56 55.5	+0.1
THR3	**Thira Island,**	**0.01**	**308**	P	Pg	17 56 55.5	+0.1
THR7	**Fira-Santorini**	**0.02**	**45**	P	Pg	17 56 55.9	+0.3
THR7	**Fira-Santorini**	**0.02**	**45**	P	Pg	17 56 55.9	+0.3
THT1	**Athinios (Pele**	**0.03**	**137**	P	Pg	17 56 55.5	0.0
THT1				S	Sg	17 56 56.4	+0.4
THT1	**Athinios (Pele**	**0.03**	**137**	P	Pg	17 56 55.5	0.0
THT1				S	Sg	17 56 56.4	+0.4
THR2	**Thira island,**	**0.05**	**29**	P	Pg	17 56 56.0	+0.1
THR2	**Thira island,**	**0.05**	**29**	P	Pg	17 56 56.0	+0.1
THR5	**Thira Island,**	**0.05**	**284**	P	Pg	17 56 56.1	+0.1
THR5	**Thira Island,**	**0.05**	**284**	P	Pg	17 56 56.1	+0.1
THR6	**Thira Island,**	**0.05**	**189**	P	Pg	17 56 56.2	+0.3
THR6	**Thira Island,**	**0.05**	**189**	P	Pg	17 56 56.2	+0.3
SANT	**Santorini**	**0.05**	**129**	P	Pg	17 56 56.3	+0.3
SANT				S	Sg	17 56 57.3	+0.5
SANT	**Santorini**	**0.05**	**129**	P	Pg	17 56 56.3	+0.3
SANT				S	Sg	17 56 57.3	+0.5

*ISK **26** 17:57:13.8, 38°.34N×28°.10E, h3km, MD3.3*
*DDA **26** 17:57:13.6, 38°.39N×28°.09E, h7km, Md3.3*
*CSEM **26** 17:57:14.1±0.1, 38°.35N×28°.09E, h2km, MD3.3, Error ellipse: s-maj=2.9km s-min=2.6km az=130.0*
*THE **26** 17:57:14.2, 38°.37N×28°.12E, h3km±4km, ML2.9/3, Error ellipse: s-maj=4.3km s-min=1.0km az=112.0*
*ATH **26** 17:57:15.9, 38°.46N×27°.84E, h14km±4km, ML2.6/3, Error ellipse: s-maj=7.0km s-min=2.1km az=260.0*

ISC 26 17:57:14.1±1.0, 38°.36N±0°.02×28°.07E±0°.02, h5km±9km, n91, σ1s03/136, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
MANT	**Manisa**	**0.40**	**71**	P	**Pg**	**17 57 21.9**	**0.0**
MANT				S	**Sg**	**17 57 26.9**	**-0.4**
MANT	**Manisa**	**0.40**	**71**	*i* P	**Pg**	**17 57 21.9**	**0.0**
MANT				*i* S	**Sg**	**17 57 26.9**	**-0.4**
AYDB	**Zeytinkoy-Aydi**	**0.44**	**199**	*e*PG	**Pg**	**17 57 23.1**	**+0.5**
AYDB				*e*SG	**Sg**	**17 57 29.6**	**+1.2**
AYDB	**Zeytinkoy-Aydi**	**0.44**	**199**	*e*Pg	**Pg**	**17 57 23.1**	**+0.5**
AYDB				*e*Sg	**Sg**	**17 57 29.6**	**+1.2**
KULA	**Kula-Manisa**	**0.48**	**72**	*e*PG	**Pg**	**17 57 23.6**	**+0.1**
KULA				*e*SG	**Sg**	**17 57 30.3**	**+0.5**
KULA	**Kula-Manisa**	**0.48**	**72**	P	**Pg**	**17 57 23.4**	**-0.1**
KULA				S	**Sg**	**17 57 29.3**	**-0.5**
KULA	**Kula-Manisa**	**0.48**	**72**	P	**Pg**	**17 57 23.4**	**-0.1**
KULA				S	**Sg**	**17 57 29.3**	**-0.5**
KULA				*e*Sg	**Sg**	**17 57 30.3**	**+0.5**
AKHS	**Akhisar**	**0.55**	**339**	P	**Pg**	**17 57 24.9**	**+0.1**
AKHS				S	**Sg**	**17 57 31.9**	**-0.1**
AKHS	**Akhisar**	**0.55**	**339**	*i* P	**Pg**	**17 57 24.9**	**+0.1**
AKHS				*i* S	**Sg**	**17 57 31.9**	**-0.1**
AKS	**Akhisar**	**0.56**	**338**	*e*PG	**Pg**	**17 57 25.1**	**+0.3**
AKS	**Akhisar**	**0.56**	**338**	*e*Pg	**Pg**	**17 57 25.1**	**+0.3**
AYDN	**Tasoluk**	**0.72**	**192**	P	**Pg**	**17 57 28.1**	**+0.2**
AYDN	**Tasoluk**	**0.72**	**192**	*i* P	**Pg**	**17 57 28.1**	**+0.2**
DEMI	**Demirci**	**0.84**	**36**	P	**Pg**	**17 57 30.2**	**-0.1**
DEMI				S	**Sg**	**17 57 40.3**	**-1.0**
DEMI	**Demirci**	**0.84**	**36**	*i* P	**Pg**	**17 57 30.2**	**-0.1**
DEMI				*i* S	**Sg**	**17 57 40.3**	**-1.0**
GCAM	**G?zelcaml?**	**0.94**	**225**	P	**Pg**	**17 57 32.4**	**+0.3**
GCAM				S	**Sg**	**17 57 42.9**	**-1.3**
GCAM	**G?zelcaml?**	**0.94**	**225**	*i* P	**Pg**	**17 57 32.4**	**+0.3**
GCAM				*i* S	**Sg**	**17 57 42.9**	**-1.3**
DGB	**˜zmir**	**0.99**	**252**	*i* P	**Pg**	**17 57 33.6**	**+0.6**
DGB				*i* S	**Sg**	**17 57 44.9**	**-1.0**
DNZL	**Cakiroluk**	**1.02**	**131**	P	**Pb**	**17 57 34.8**	**+0.5**
DNZL				S	**Sb**	**17 57 47.7**	**-0.4**
DNZL	**Cakiroluk**	**1.02**	**131**	*i* P	**Pb**	**17 57 34.8**	**+0.5**
DNZL				*i* S	**Sb**	**17 57 47.7**	**-0.4**
KHAL	**Karahalli**	**1.11**	**89**	P	**Pg**	**17 57 35.4**	**-0.1**
KHAL				S	**Sg**	**17 57 49.1**	**-0.9**
KHAL	**Karahalli**	**1.11**	**89**	*i* P	**Pg**	**17 57 35.4**	**-0.1**
KHAL				*i* S	**Sg**	**17 57 49.1**	**-0.9**
KHL	**Karahalli**	**1.14**	**92**	*e*PN	**Pb**	**17 57 36.1**	**-0.2**
KHL	**Karahalli**	**1.14**	**92**	*e*Pn	**Pb**	**17 57 36.1**	**-0.2**
DKL	**Dikili**	**1.16**	**308**	*e*PN	**Pb**	**17 57 37.0**	**+0.5**
DKL	**Dikili**	**1.16**	**308**	*e*Pn	**Pb**	**17 57 37.0**	**+0.5**
URLA	**Izmir**	**1.16**	**270**	P	**Pg**	**17 57 36.4**	**0.0**
URLA				S	**Sg**	**17 57 51.9**	**+0.4**
URLA	**Izmir**	**1.16**	**270**	*i* P	**Pg**	**17 57 36.4**	**0.0**
URLA				*i* S	**Sg**	**17 57 51.9**	**+0.4**
SMG	**Samos**	**1.18**	**237**	P	**Pg**	**17 57 36.0**	**-0.6**
SMG				S	**Sg**	**17 57 52.4**	**+0.5**
SMG	**Samos**	**1.18**	**237**	P	**Pg**	**17 57 36.0**	**-0.6**
SMG				S	**Sg**	**17 57 52.4**	**+0.5**
SMG	**Samos**	**1.18**	**237**	P	**Pg**	**17 57 35.8**	**-0.8**
SMG				S	**Sg**	**17 57 50.9**	**-1.0**
SMG				AML	AML	17 57 53.5	
	comp=N,600μm,0.3s						
SMG				AML	AML	17 57 55.8	
	comp=E,606μm,0.3s						
YER	**Yerkesik**	**1.24**	**172**	*e*PN	**Pg**	**17 57 37.7**	**-0.1**
YER	**Yerkesik**	**1.24**	**172**	P	**Pg**	**17 57 37.6**	**-0.2**
YER				S	**Sb**	**17 57 54.6**	**+0.4**
YER	**Yerkesik**	**1.24**	**172**	P	**Pg**	**17 57 37.6**	**-0.2**
YER				S	**Sb**	**17 57 54.6**	**+0.4**
ZEY	**˜zmir**	**1.24**	**265**	*i* P	**Pg**	**17 57 37.3**	**-0.6**
ZEY				*i* S	**Sg**	**17 57 53.8**	**-0.3**
DURS	**Dursunbey**	**1.28**	**14**	P	**Pg**	**17 57 37.7**	**-0.9**
DURS				S	**Sb**	**17 57 55.5**	**+0.1**
DURS	**Dursunbey**	**1.28**	**14**	*i* P	**Pg**	**17 57 37.7**	**-0.9**
DURS				*i* S	**Sb**	**17 57 55.5**	**+0.1**
BALB	**Balikesir**	**1.28**	**353**	*e*PN	**Pn**	**17 57 39.5**	**+0.9**
GDZ	**Gediz**	**1.32**	**56**	P	**Pg**	**17 57 38.2**	**-1.2**
GDZ				S	**Sg**	**17 57 55.9**	**-0.6**
GDZ	**Gediz**	**1.32**	**56**	*i* P	**Pg**	**17 57 38.2**	**-1.2**
GDZ				*i* S	**Sg**	**17 57 55.9**	**-0.6**
BDRM	**Kayabasi**	**1.39**	**201**	P	**Pn**	**17 57 39.2**	**-0.9**
BDRM				S	**Sg**	**17 57 56.4**	**-2.3**
BDRM	**Kayabasi**	**1.39**	**201**	*i* P	**Pn**	**17 57 39.2**	**-0.9**
BDRM				*i* S	**Sg**	**17 57 56.4**	**-2.3**
BALY	**Balya**	**1.42**	**346**	P	**Pn**	**17 57 39.7**	**-0.9**
BALY				S	**Sg**	**17 57 58.0**	**-1.8**
BALY	**Balya**	**1.42**	**346**	*i* P	**Pn**	**17 57 39.6**	**-0.9**
BALY				*i* S	**Sg**	**17 57 58.0**	**-1.8**
BODT	**Bodrum**	**1.43**	**205**	*e*PN	**Pg**	**17 57 41.8**	**+0.2**
BODT	**Bodrum**	**1.43**	**205**	P	**Pn**	**17 57 39.7**	**-1.0**
BODT	**Bodrum**	**1.43**	**205**	P	**Pn**	**17 57 39.7**	**-1.0**
BODT	**Bodrum**	**1.43**	**205**	*e*Pn	**Pg**	**17 57 41.8**	**+0.2**
AYVA	**Ayvalik**	**1.44**	**312**	P	**Pn**	**17 57 40.8**	**+0.1**
AYVA				S	**Sb**	**17 57 59.2**	**-0.6**
AYVA	**Ayvalik**	**1.44**	**312**	*i* P	**Pn**	**17 57 40.8**	**+0.1**
AYVA				*i* S	**Sb**	**17 57 59.2**	**-0.6**
TVSB	**Tavsanli**	**1.53**	**44**	*e*PN	**Pg**	**17 57 43.4**	**-0.1**
CHOS	**Chios island**	**1.59**	**271**	*e*PN	**Pn**	**17 57 43.7**	**+0.8**
CHOS	**Chios island**	**1.59**	**271**	P	**Pn**	**17 57 42.6**	**-0.3**
CHOS				S	**Sn**	**17 58 04.6**	**+0.8**
CHOS	**Chios island**	**1.59**	**271**	P	**Pn**	**17 57 42.7**	**-0.2**
CHOS	**Chios island**	**1.59**	**271**	*e*Pn	**Pn**	**17 57 43.7**	**+0.8**
CHOS				S	**Sn**	**17 58 03.2**	**-0.6**
CHOS	**Chios island**	**1.59**	**271**	P	**Pn**	**17 57 42.7**	**-0.2**
CHOS				S	**Sn**	**17 58 03.2**	**-0.6**
CHOS				AML	AML	17 58 08.9	
	comp=N,364μm,0.3s						
CHOS				AML	AML	17 58 10.0	
	comp=E,452μm,0.4s						
PRK	**Paraskevi**	**1.66**	**303**	P	**Pn**	**17 57 43.6**	**-0.2**
PRK				S	**Sn**	**17 58 06.2**	**+0.7**
PRK	**Paraskevi**	**1.66**	**303**	P	**Pn**	**17 57 43.7**	**-0.2**
PRK				S	**Sn**	**17 58 06.2**	**+0.7**
PRK	**Paraskevi**	**1.66**	**303**	P	**Pn**	**17 57 43.7**	**-0.2**
PRK				S	**Sn**	**17 58 03.7**	**-1.8**
PRK				AML	AML	17 58 10.4	
	comp=N,302μm,0.5s						
PRK				AML	AML	17 58 10.9	
	comp=E,416μm,0.4s						
GONE	**Gonen-Balikesi**	**1.71**	**350**	*e*PN	**Pb**	**17 57 45.9**	**-0.1**
NIS1	**Nisyros Isl.**	**1.90**	**202**	P	**Pg**	**17 57 51.4**	**+0.9**
NIS1	**Nisyros Isl.**	**1.90**	**202**	P	**Pg**	**17 57 51.4**	**+0.9**
KCTX	**Karacabey (Bur**	**1.91**	**6**	*e*PN	**Pb**	**17 57 48.8**	**-0.7**
SIGR	**SIGRI**	**1.93**	**297**	*e*PN	**Pn**	**17 57 48.9**	**+1.4**
SIGR	**SIGRI**	**1.93**	**297**	P	**Pn**	**17 57 46.8**	**-0.7**
SIGR				S	**Sn**	**17 58 12.0**	**-0.1**
SIGR	**SIGRI**	**1.93**	**297**	P	**Pn**	**17 57 46.8**	**-0.7**
SIGR	**SIGRI**	**1.93**	**297**	*e*Pn	**Pn**	**17 57 48.9**	**+1.4**
SIGR				S	**Sn**	**17 58 12.0**	**-0.1**
SIGR	**SIGRI**	**1.93**	**297**	P	**Pn**	**17 57 46.7**	**-0.7**
EDC	**Edincik**	**1.99**	**355**	*e*PN	**Pb**	**17 57 50.1**	**-0.7**
MDNY	**Mudanya-Bursa**	**2.10**	**17**	*e*PN	**Pb**	**17 57 51.7**	**-0.9**
GEMT	**Gemlik**	**2.24**	**22**	*e*PN	**Pn**	**17 57 53.5**	**+1.6**
IZI	**Iznik**	**2.25**	**28**	*e*PN	**Pn**	**17 57 53.3**	**+1.3**
ARMT	**Armutlu**	**2.28**	**15**	*e*PN	**Pn**	**17 57 53.5**	**+1.1**
CAVI	**Cavuskoy**	**2.29**	**36**	*e*PN	**Pn**	**17 57 54.1**	**+1.5**
GELI	**Tayfur-Gelibol**	**2.38**	**329**	*e*PN	**Pn**	**17 57 55.3**	**+1.6**
GELI	**Tayfur-Gelibol**	**2.38**	**329**	*e*Pn	**Pn**	**17 57 55.3**	**+1.6**
ADVT	**Abdulvahap**	**2.44**	**31**	*e*PN	**Pn**	**17 57 56.0**	**+1.5**
GADA	**Gvkgeada**	**2.49**	**318**	*e*PN	**Pn**	**17 57 56.9**	**+1.7**
GADA	**Gvkgeada**	**2.49**	**318**	*e*Pn	**Pn**	**17 57 56.9**	**+1.7**
ERIK	**Erikli-Kesan**	**2.60**	**333**	*e*PN	**Pn**	**17 57 59.0**	**+2.2**
ERIK	**Erikli-Kesan**	**2.60**	**333**	*e*Pn	**Pn**	**17 57 59.0**	**+2.2**
HRT	**Hereke**	**2.75**	**26**	*e*PN	**Pn**	**17 58 00.3**	**+1.5**
ENEZ	**Enez**	**2.80**	**329**	*e*PN	**Pn**	**17 58 01.7**	**+2.2**
ENEZ	**Enez**	**2.80**	**329**	*e*Pn	**Pn**	**17 58 01.7**	**+2.3**
GULT	**Gulveren**	**2.80**	**42**	*e*PN	**Pn**	**17 58 01.4**	**+1.8**
BGKT	**Bogazkoy**	**2.87**	**11**	*e*PN	**Pn**	**17 58 02.6**	**+2.2**
CTKS	**Kestanelik-??a**	**2.89**	**6**	*e*PN	**Pn**	**17 58 03.0**	**+2.3**
ALN	**Alexandroupoli**	**2.98**	**329**	*e*PN	**Pn**	**17 58 03.3**	**+1.4**
ALN	**Alexandroupoli**	**2.98**	**329**	*e*Pn	**Pn**	**17 58 03.3**	**+1.4**
EDRB	**Edirne**	**3.63**	**344**	*e*PN	**Pn**	**17 58 13.7**	**+2.8**
EDRB	**Edirne**	**3.63**	**344**	*e*Pn	**Pn**	**17 58 13.7**	**+2.8**

DJA 26 17:59:31.8±0.2, 2°N±2°×9°9E±°, h10km, M3.9/16, mB5.2/1, mb4.3/2, MLv3.7/16, Mw(mB)4.6/1, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
SBSI	**Sibolga**	**0.35**	**230**	P	Pg	17 59 38.9	+0.1
SBSI				S	Sb	17 59 46.7	+0.8
MNSI	**Mandailing Nat**	**1.06**	**157**	P	Pg	17 59 50.0	-2.3
MNSI				S	Sn	18 00 08.5	+0.8
GSI	**Gunungsitoli**	**1.65**	**253**	P	Pn	17 59 59.1	-1.8
GSI				S	Sb	18 00 23.3	0.0
TSI	**Tuntungan**	**1.81**	**341**	P	Pn	18 00 03.6	+0.5
KCSI	**Kotacane, Aceh**	**2.22**	**321**	P	Pn	18 00 07.4	-1.3
KCSI				S	Sn	18 00 37.7	+1.5
BKNI	**Bangkinang**	**2.37**	**128**	P	Pn	18 00 12.5	+1.7
BKNI				S	Sn	18 00 40.6	+0.7
PPI	**Padang Panjang**	**2.54**	**151**	P	Pn	18 00 14.6	+1.5
PDSI	**Padang**	**2.97**	**154**	P	Pn	18 00 21.8	+2.7
MLSI	**Meulaboh, Aceh**	**3.70**	**312**	P	Pn	18 00 28.9	-0.2
RGRI	**Rengat**	**3.81**	**124**	P	Pn	18 00 28.6	-2.0
RGRI				S	Sn	18 01 15.4	-0.2
TPRI	**Tanjung Pinang**	**5.43**	**99**	P	Pn	18 00 54.7	+1.8
	22nm,0.4s,2μm0.2nm						

*IDC **26** 18:05:05.7±1.9, 21°.54N×123°.12E, h0km, mb3.3/3, mb1 3.6/4, mb1mx3.3/39, mbtmp3.5/4, ML3.6/1, Error ellipse: s-maj=44.1km s-min=31.1km az=64.0*
*JMA **26** 18:05:10.1±0.5, 21°.74N×122°.82E, h43km, M4.3*
*TAP **26** 18:05:11.9, 21°.71N×122°.64E, h38km±1km, ML4.3, D*

ISC 26 18:05:07.3±3.1, 21°.63N±0°.06×122°.92E±0°.03, h17km±21km, n82, σ2s14/149, mb3.4/3, 1C-1D, Taiwan region

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
LAY	**Lan-yu**	**1.33**	**288**	⇑ *i* P	**Pn**	**18 05 30.6**	**-0.6**
	baz=288						
LAY				*e*S	**Sb**	**18 05 43.5**	**-5.2**
	baz=288						
TSEB	**Hengchuen, Pin**	**1.89**	**279**	P	**Pn**	**18 05 40.0**	**+1.1**
	baz=276						
TSEB				S	**Sn**	**18 06 03.0**	**+0.6**
	baz=276						
TTN	**Taitung**	**1.98**	**305**	*e*P	**Pn**	**18 05 38.9**	**-1.3**
	baz=317						
TTN				*e*S	**Sn**	**18 06 01.9**	**-2.8**
	baz=317						
TWK1	**Hengchun**	**1.99**	**279**	P	**Pn**	**18 05 41.6**	**+1.4**
	baz=277						
TWK1				S	**Sn**	**18 06 03.8**	**-0.9**
	baz=277						
CHKT	**Chengkung**	**2.05**	**316**	*i* P	**Pn**	**18 05 40.5**	**-0.5**
	baz=330						
CHKT				*e*S	**Sn**	**18 06 02.0**	**-4.2**
	baz=330						
ECL	**Taimali**	**2.06**	**298**	*i* P	**Pn**	**18 05 41.2**	**+0.1**
	baz=287						
ECL				*i* S	**Sn**	**18 06 02.6**	**-3.9**
	baz=287						
HEN	**Hengchun**	**2.06**	**281**	*e*P	**Pn**	**18 05 43.1**	**+2.0**
	baz=291						
HEN				*e*S	**Sn**	**18 06 05.7**	**-0.7**
	baz=291						
EAST	**Anshuo**	**2.06**	**292**	*i* P	**Pn**	**18 05 41.3**	**+0.1**
	baz=292						
EAST				*e*S	**Sn**	**18 06 02.8**	**-3.8**
	baz=292						
TWG	**Pinlang**	**2.08**	**305**	*e*P	**Pn**	**18 05 42.0**	**+0.6**
	baz=316						
TWG				*e*S	**Sn**	**18 06 04.2**	**-2.8**
	baz=316						
SCZT	**Fangliau**	**2.25**	**290**	*e*P	**Pn**	**18 05 44.8**	**+0.9**
	baz=289						
SCZT				S	**Sn**	**18 06 09.5**	**-1.8**
	baz=289						
TWF1	**Yuli**	**2.27**	**319**	⇓ *i* P	**Pn**	**18 05 44.1**	**-0.1**
	baz=323						
TWF1				S	**Sn**	**18 06 08.7**	**-3.2**
	baz=323						
ELDTW	**Lidau**	**2.34**	**312**	P	**Pn**	**18 05 45.1**	**-0.1**
	baz=315						
ELDTW				S	**Sn**	**18 06 10.1**	**-3.6**
	baz=315						
EHY	**Hungye**	**2.38**	**322**	*e*P	**Pn**	**18 05 45.8**	**+0.3**
	baz=326						
EHY				*e*S	**Sn**	**18 06 11.0**	**-3.4**
	baz=326						
TWP	**Hsiaoliuchiu**	**2.47**	**287**	*e*P	**Pb**	**18 05 50.5**	**-0.8**
	baz=287						
TWP				*e*S	**Sn**	**18 06 16.8**	**+0.1**
	baz=287						
SGLT	**Jiouru**	**2.50**	**296**	*e*P	**Pb**	**18 05 51.2**	**-0.5**
	baz=297						
STYT	**

	baz=302						
ENA	**Nanau**	**2.99**	**339**	*e*P	**Pn**	**18 05 55.4**	**+1.4**
	baz=343						
ENA				*e*S	**Sn**	**18 06 28.0**	**-1.4**
	baz=343						
CHN8	**Yiju**	**3.03**	**305**	*e*P	**Pn**	**18 05 57.9**	**+3.4**
	baz=306						
CHN8				*e*S	**Sn**	**18 06 30.4**	**0.0**
	baz=306						
WNT	**Mingjian**	**3.04**	**318**	*e*P	**Pn**	**18 05 58.2**	**+3.5**
	baz=321						
WNT				*e*S	**Sn**	**18 06 32.4**	**+1.7**
	baz=321						
TWT	**Tachien**	**3.06**	**329**	P	**Pn**	**18 05 57.2**	**+2.1**
	baz=332						
TWT				S	**Sn**	**18 06 29.6**	**-2.0**
	baz=332						
TWC	**Suao**	**3.12**	**342**	*i* P	**Pn**	**18 05 57.8**	**+2.0**
	baz=346						
TWC				*e*S	**Sn**	**18 06 31.8**	**-1.0**
	baz=346						
NNS	**Nan Shan**	**3.14**	**333**	P	**Pn**	**18 05 57.8**	**+1.7**
	baz=346						
NNS				*e*S	**Sn**	**18 06 30.8**	**-2.5**
	baz=346						
WSF	**Szhu**	**3.19**	**309**	*e*P	**Pn**	**18 05 57.4**	**+0.7**
	baz=298						
WSF				*e*S	**Sn**	**18 06 34.8**	**+0.4**
	baz=298						
JISG	**Ishigakijimahi**	**3.21**	**23**	P	**Pn**	**18 05 58.1**	**+1.1**
JISG				*e*S	**Sn**	**18 06 33.1**	**-1.8**
ENTT	**Nioudou**	**3.24**	**338**	P	**Pn**	**18 05 59.7**	**+2.2**
	baz=341						
ENTT				*e*S	**Sn**	**18 06 35.7**	**0.0**
	baz=341						
TCU	**Taichung**	**3.25**	**321**	*e*P	**Pn**	**18 06 01.3**	**+3.8**
	baz=312						
TCU				*e*S	**Sn**	**18 06 37.2**	**+1.4**
	baz=312						
TWE	**Neicheng**	**3.28**	**340**	*e*P	**Pn**	**18 06 00.3**	**+2.3**
	baz=344						
TWE				*e*S	**Sn**	**18 06 36.6**	**-0.1**
	baz=344						
TWQ1	**Liyutan**	**3.35**	**324**	*e*P	**Pn**	**18 06 02.5**	**+3.5**
	baz=339						
TWQ1				*e*S	**Sn**	**18 06 40.0**	**+1.6**
	baz=339						
NSK	**Sanguang**	**3.35**	**335**	*e*P	**Pn**	**18 06 01.2**	**+2.1**
	baz=339						
NSK				*e*S	**Sn**	**18 06 36.9**	**-1.7**
	baz=339						
NSY	**Sanyi**	**3.41**	**325**	*e*P	**Pn**	**18 06 03.7**	**+3.9**
	baz=338						
NSY				*e*S	**Sn**	**18 06 42.1**	**+2.2**
	baz=338						
JTJ	**Tarama**	**3.42**	**28**	P	**Pn**	**18 06 01.3**	**+1.4**
JTJ				S	**Sn**	**18 06 39.1**	**-0.9**
WDGT	**Dungji**	**3.42**	**299**	*e*P	**Pn**	**18 06 01.3**	**+1.4**
	baz=299						
WDGT				*e*S	**Sn**	**18 06 38.0**	**-2.1**
	baz=299						
NSTT	**Nanjuang**	**3.47**	**330**	*e*P	**Pn**	**18 06 03.9**	**+3.4**
	baz=333						
NSTT				*e*S	**Sn**	**18 06 41.5**	**+0.2**
	baz=333						
TWB1	**Santiao Chiao**	**3.47**	**346**	*e*P	**Pn**	**18 06 03.2**	**+2.7**
	baz=350						
TWB1				*e*S	**Sn**	**18 06 41.9**	**+0.6**
	baz=350						
TWA	**Mucha**	**3.55**	**340**	*e*P	**Pn**	**18 06 05.1**	**+3.4**
	baz=344						
TWA				*e*S	**Sn**	**18 06 45.1**	**+1.7**
	baz=344						
NWF	**Wu-fen Shan**	**3.58**	**343**	*e*P	**Pn**	**18 06 05.2**	**+3.0**
	baz=347						
NWF				*e*S	**Sn**	**18 06 44.6**	**+0.5**
	baz=347						
PNG	**Penghu**	**3.66**	**302**	*e*P	**Pn**	**18 06 04.5**	**+1.4**
	baz=303						
PNG				*e*S	**Sn**	**18 06 43.0**	**-2.8**
	baz=303						
NCU	**National Centr**	**3.68**	**335**	*e*P	**Pn**	**18 06 07.1**	**+3.5**
	baz=347						
NCU				*e*S	**Sn**	**18 06 48.4**	**+1.8**
	baz=347						
JIRB	**Irabujima**	**3.80**	**33**	P	**Pn**	**18 06 06.2**	**+1.1**
JIRB				*e*S	**Sn**	**18 06 48.4**	**-1.1**
TWY	**Chenhua**	**3.83**	**342**	*e*P	**Pn**	**18 06 08.6**	**+3.2**
	baz=345						
JMJ	**Miyako jima 2**	**3.85**	**34**	P	**Pn**	**18 06 07.9**	**+2.1**
JOGS	**Gusukube**	**3.87**	**36**	P	**Pn**	**18 06 08.5**	**+2.4**
JIKM	**Ikemajima**	**3.92**	**33**	P	**Pn**	**18 06 08.8**	**+2.1**
JIKM				S	**Sn**	**18 06 51.0**	**-1.4**
KNM	**Kinmen**	**4.97**	**305**	*e*P	**Pn**	**18 06 25.6**	**+4.3**
	baz=304						
KNM				*e*S	**Sn**	**18 07 19.7**	**+1.3**
	baz=304						
JKE	**Kume jima 2**	**5.86**	**36**	P	**Pn**	**18 06 35.2**	**+1.7**
JKE				*e*S	**Sn**	**18 07 38.7**	**-1.7**
JAGN	**Aguni-jima**	**6.32**	**38**	P	**Pn**	**18 06 41.8**	**+2.0**
JNTH	**Nagotoyohara**	**6.74**	**43**	P	**Pn**	**18 06 46.8**	**+1.2**
JIH	**Iheya**	**7.08**	**40**	P	**Pn**	**18 06 51.0**	**+0.8**
JIH				*e*S	**Sn**	**18 08 07.8**	**-2.6**
JOW	**Kunigami**	**7.12**	**42**	P	**Pn**	**18 06 52.0**	**+1.2**
JOW				*e*S	**Sn**	**18 08 06.3**	**-5.1**
JOKE	**Okinoerabujima**	**7.69**	**41**	P	**Pn**	**18 06 58.5**	**0.0**
JTK	**Tokunoshima**	**8.22**	**41**	P	**Pn**	**18 07 06.0**	**+0.1**
JAMN	**Amaminishikomi**	**8.69**	**40**	P	**Pn**	**18 07 14.4**	**+2.1**
JAMN				*e*S	**Sn**	**18 08 45.9**	**-4.1**
KSRS	**Korea Array**	**16.36**	**14**	Pn	**P**	**18 08 58.6**	**-0.4**
	0.2nm,0.3s,baz=188,slow=12,SNR=7.3						
CMAR	**Chiang Mai Arr**	**22.73**	**266**	P	**P**	**18 10 11.6**	**+2.8**
	0.8nm,0.6s,baz=70,slow=7.9,SNR=11						
MKAR	**Makanchi Array**	**41.28**	**317**	P	**P**	**18 12 53.7**	**+1.9**
	0.6nm,0.6s,baz=114,slow=9.5,SNR=6.8						
WRA	**Warramunga Arr**	**42.80**	**164**	P	**P**	**18 13 04.4**	**-0.1**
	0.4nm,1.1s,baz=347,slow=9.4,SNR=1.4						

*ISCJB **26** 18:13:00.4±0.5,39.°13N±0.°03×29.°03E±0.°04, h8km±5km, Error ellipse: s-maj=5.2km s-min=4.6km az=145.2*
*CSEM **26** 18:13:00.5±0.1,39.°13N×29.°03E, h8km, MD2.5, Error ellipse: s-maj=2.5km s-min=2.0km az=106.0*
*ISK **26** 18:13:00.1,39.°10N×29.°13E, h12km, MD2.7*
*DDA **26** 18:13:00.1,39.°12N×29.°01E, h7km, Md2.5*
ISC 26 18:13:00.5±0.9,39.°13N±0.°03×29.°03E±0.°02, h11km±9km, n26,σ0s36/38, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**252**	P	**Pg**	**18 13 05.9**	**0.0**
DEMI				S	**Sg**	**18 13 09.5**	**0.0**
DEMI	**Demirci**	**0.26**	**252**	*i* P	**Pg**	**18 13 05.9**	**0.0**
DEMI				*i* S	**Sg**	**18 13 09.5**	**0.0**
GDZ	**Gediz**	**0.35**	**96**	P	**Pg**	**18 13 07.7**	**+0.1**
GDZ				S	**Sg**	**18 13 12.9**	**+0.7**
GDZ	**Gediz**	**0.35**	**96**	*i* P	**Pg**	**18 13 07.7**	**+0.1**
GDZ				*i* S	**Sg**	**18 13 12.9**	**+0.7**
TVSB	**Tavsanli**	**0.46**	**46**	*e*PG	**Pg**	**18 13 09.4**	**-0.3**
TVSB				*e*SG	**Sg**	**18 13 15.8**	**0.0**
TVSB	**Tavsanli**	**0.46**	**46**	*e*Pg	**Pg**	**18 13 09.4**	**-0.3**
TVSB				*e*Sg	**Sg**	**18 13 15.8**	**0.0**
DURS	**Dursunbey**	**0.64**	**318**	P	**Pg**	**18 13 12.9**	**-0.1**
DURS				S	**Sg**	**18 13 21.2**	**-0.3**
DURS	**Dursunbey**	**0.64**	**318**	*i* P	**Pg**	**18 13 12.9**	**-0.1**
DURS				*i* S	**Sg**	**18 13 21.2**	**-0.3**
KULA	**Kula-Manisa**	**0.68**	**206**	*e*PG	**Pg**	**18 13 13.9**	**+0.3**
KULA	**Kula-Manisa**	**0.68**	**206**	*e*Pg	**Pg**	**18 13 13.9**	**+0.3**
MANT	**Manisa**	**0.73**	**211**	P	**Pg**	**18 13 14.8**	**0.0**
MANT				S	**Sg**	**18 13 23.8**	**-0.6**
MANT	**Manisa**	**0.73**	**211**	*i* P	**Pg**	**18 13 14.8**	**0.0**
MANT				*i* S	**Sg**	**18 13 23.8**	**-0.6**
KHAL	**Karahalli**	**0.83**	**154**	P	**Pb**	**18 13 16.9**	**-0.2**
KHAL				S	**Sb**	**18 13 28.2**	**-0.2**
KHAL	**Karahalli**	**0.83**	**154**	*i* P	**Pb**	**18 13 16.9**	**-0.2**
KHAL				*i* S	**Sb**	**18 13 28.2**	**-0.2**
BALB	**Balikesir**	**1.03**	**300**	*e*PN	**Pn**	**18 13 21.8**	**+0.9**
BALB	**Balikesir**	**1.03**	**300**	*e*Pn	**Pn**	**18 13 21.8**	**+0.9**
CAVI	**Cavuskoy**	**1.24**	**30**	*e*PN	**Pn**	**18 13 23.7**	**-0.2**
CAVI	**Cavuskoy**	**1.24**	**30**	*e*Pn	**Pn**	**18 13 23.7**	**-0.2**
KCTX	**Karacabey (Bur**	**1.25**	**336**	*e*PN	**Pg**	**18 13 25.1**	**+0.5**
KCTX	**Karacabey (Bur**	**1.25**	**336**	*e*Pn	**Pg**	**18 13 25.1**	**+0.5**
IZI	**Iznik**	**1.26**	**15**	*e*PN	**Pn**	**18 13 24.0**	**-0.1**
IZI	**Iznik**	**1.26**	**15**	*e*Pn	**Pn**	**18 13 24.0**	**-0.1**
ARMT	**Armutlu**	**1.44**	**355**	*e*PN	**Pn**	**18 13 26.7**	**0.0**
ARMT	**Armutlu**	**1.44**	**355**	*e*Pn	**Pn**	**18 13 26.7**	**0.0**
SPNC	**Sapanca-Adapaz**	**1.84**	**32**	*e*PN	**Pn**	**18 13 32.3**	**+0.2**
SPNC	**Sapanca-Adapaz**	**1.84**	**32**	*e*Pn	**Pn**	**18 13 32.3**	**+0.2**

*NIED **26** 18:25:00,38.°00N×143.°90E, h5km, Mw3.6 Best double couple: M0=2.73000×10^14 NP1:φs=351.00000°, δ38.00000°, λ-135.00000°. NP2:φs=223.00000°, δ64.00000°, λ-61.00000°.*
*IDC **26** 18:25:05.1±0.8,37.°81N×144.°27E, h0km, mb3.6/7, mb1 3.9/10, mb1mx3.6/43, mbtmp3.7/10, ML3.8/3, MS2.7/3, Ms1 2.7/3, ms1mx2.3/48, Error ellipse: s-maj=24.9km s-min=17.5km az=114.0*
*ISCJB **26** 18:25:07.6±0.6,38.°10N±0.°04×143.°96E±0.°05, h33km, mb3.7/8, MS3.4/1, Error ellipse: s-maj=6.0km s-min=4.7km az=33.1*
*JMA **26** 18:25:08.4±0.2,38.°05N×143.°87E, h42km, M3.9*
ISC 26 18:25:09.8±0.9,38.°05N±0.°05×143.°90E±0.°07, h35km, n28, σ1s58/35, mb3.6/8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.03**	**301**	P	**Pn**	**18 25 40.9**	**-0.6**
OFUJ				*e*S	**Sn**	**18 26 05.5**	**-0.2**
JIO	**Ouri**	**2.05**	**282**	P	**Pn**	**18 25 41.3**	**-0.4**
JIO				*e*S	**Sn**	**18 26 04.9**	**-1.2**
JMK	**Ichinoseki**	**2.29**	**294**	P	**Pn**	**18 25 44.8**	**-0.2**
JOM	**Ohasama**	**2.49**	**306**	P	**Pn**	**18 25 47.6**	**-0.2**
JOM				*e*S	**Sn**	**18 26 17.4**	**+0.5**
JFT	**Otama**	**2.87**	**261**	P	**Pn**	**18 25 53.2**	**+0.1**
JFT				*e*S	**Sn**	**18 26 26.2**	**-0.2**
JYK	**Kaneyama**	**2.91**	**288**	P	**Pn**	**18 25 54.0**	**+0.4**
JYK				*e*S	**Sn**	**18 26 28.3**	**+0.9**
JANG	**Nango**	**2.97**	**322**	P	**Pn**	**18 25 54.0**	**-0.5**
JANG				*e*S	**Sn**	**18 26 27.4**	**-1.5**
JAW	**Awa shima**	**3.69**	**278**	P	**Pn**	**18 26 05.0**	**+0.8**
JOT	**Ohata**	**3.99**	**327**	*e*S	**Sn**	**18 26 53.0**	**-1.0**
JKB	**Kayabe**	**4.42**	**331**	P	**Pn**	**18 26 15.2**	**+0.8**
JKB				*e*S	**Sn**	**18 27 02.3**	**-2.3**
JRY	**Ryogami san**	**4.48**	**245**	P	**Pn**	**18 26 14.7**	**-0.5**
JRY				*e*S	**Sn**	**18 27 02.5**	**-3.7**
JCH	**Churui**	**4.58**	**355**	P	**Pn**	**18 26 15.5**	**-1.0**
JCH				*e*S	**Sn**	**18 27 06.0**	**-2.5**
JOD2	**Odawara 2**	**4.76**	**236**	P	**Pn**	**18 26 18.3**	**-0.8**
JOD2				*e*S	**Sn**	**18 27 09.0**	**-4.1**
MJAR	**Matsushiro Arr**	**4.78**	**253**	Pn	**Pn**	**18 26 20.4**	**+1.0**
	2.8nm,0.3s,baz=87,slow=15,SNR=21						
MJAR				Sn	**Sn**	**18 27 16.8**	**+3.3**
	1.4nm,0.3s,baz=73,slow=28,SNR=3.8						
MJAR				LR	LR	18 28 21.4	
	comp=Z,30nm,19.9s,baz=60,slow=39						
MAT	**Matsushiro**	**4.78**	**253**	P	**Pn**	**18 26 20.4**	**+1.1**
MAT				S	**Sn**	**18 27 15.6**	**+2.1**
NEM2	**Nemuro 2**	**5.50**	**14**	P	Pn	18 26 25.8	-3.3
NEM2				*e*S	Sn	18 27 24.8	-6.2
JHJ	**Hachijo jima 2**	**5.95**	**216**	Pn	**Pn**	**18 26 32.6**	**-2.8**
	10nm,0.3s,baz=344,slow=24,SNR=6.3						
JHJ				Sn	Sn	18 27 35.6	-6.7
	15nm,0.3s,baz=72,slow=20,SNR=4.6						
ASAJ	**Asahikawa**	**6.14**	**351**	Pn	**Pn**	**18 26 38.8**	**+0.8**
	1.8nm,0.3s,baz=221,slow=14,SNR=24						
ASAJ				Sn	**Sn**	**18 27 46.8**	**-0.3**
	0.9nm,0.3s,baz=59,slow=25,SNR=6.5						
KSRS	**Korea Array**	**12.66**	**272**	LR	LR	18 32 39.0	
	comp=Z,19nm,18.9s,baz=155,slow=35						
SONM	**Songino Array**	**28.90**	**302**	P	P	18 31 08.7	+3.4
	0.5nm,0.9s,baz=88,slow=3.5,SNR=3.5						
ZALV	**Zalesovo Beam**	**42.71**	**312**	P	P	18 33 10.5	+7.4
	0.4nm,0.3s,baz=83,slow=12,SNR=2.7						
MKAR	**Makanchi Array**	**45.27**	**302**	P	P	18 33 28.4	+4.7
	0.5nm,0.6s,baz=87,slow=11,SNR=3.8						
ILAR	**Eielson Array**	**47.58**	**33**	P	**P**	**18 33 42.5**	**+0.8**
	0.7nm,0.8s,baz=267,slow=6.6,SNR=7.2						
AAK	**Ala-Archa**	**51.75**	**298**	LR	LR	18 58 05.8	
	comp=Z,32nm,18.2s,baz=26,slow=38						
WRA	**Warramunga Arr**	**58.38**	**191**	P	**P**	**18 35 00.8**	**-0.8**
	3.7nm,0.8s,baz=11,slow=7.2,SNR=18						
YKA	**Yellowknife Ar**	**61.93**	**31**	P	**P**	**18 35 26.2**	**+0.7**
	0.4nm,0.8s,baz=305,slow=7.5,SNR=5.1						
ASAR	**Alice Springs**	**62.10**	**190**	P	**P**	**18 35 26.8**	**-0.3**
	0.8nm,0.8s,baz=13,slow=8.6,SNR=11						
PDAR	**Pinedale Array**	**75.54**	**47**	P	**P**	**18 36 51.5**	**+0.6**
	0.3nm,0.6s,baz=352,slow=3.6,SNR=2.7						

IDC 26 18:27:34.8±1.8,7.°60S×118.°46E, h0km, mb3.4/2, mb1 3.6/4, mb1mx3.3/36, mbtmp3.4/4, ML3.5/2, Error ellipse: s-maj=45.8km s-min=23.4km az=71.0, Flores Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAPI	**Kappang**	**2.87**	**27**	Pn	Pn	18 28 21.4	-0.4
	2.4nm,0.3s,baz=91,slow=8.9,SNR=6.4						
KAPI				Sn	Sn	18 28 58.9	+1.9
	2.0nm,0.3s,baz=169,slow=22,SNR=7.5						
WRA	**Warramunga Arr**	**19.68**	**130**	P	P	18 32 05.5	-0.2
	0.2nm,0.3s,baz=308,slow=11,SNR=16						
ASAR	**Alice Springs**	**21.79**	**139**	P	P	18 32 28.8	+0.2
	0.5nm,0.3s,baz=313,slow=10,SNR=37						
MKAR	**Makanchi Array**	**62.97**	**333**	P	P	18 38 03.3	0.0
	0.4nm,0.6s,baz=129,slow=8.1,SNR=4.8						

*ISCJB **26** 18:29:51.8±0.8,24.°63N±0.°07×122.°90E±0.°02, h103km±6km, Error ellipse: s-maj=11.9km s-min=3.4km az=175.8*
*JMA **26** 18:29:51.5±0.2,24.°75N×122.°94E, h108km±2km, M2.0*
*TAP **26** 18:29:52.8,24.°50N×122.°93E, h84km±1km, ML2.9, D*
ISC 26 18:29:51.5±1.8,24.°65N±0.°10×122.°91E±0.°03, h109km±11km, n25,σ0s90/45, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JYNG	**Yonagunijimaku**	**0.20**	**170**	P	**Pn**	**18 30 07.1**	**+0.3**
JYNG				*e*S	**Sn**	**18 30 18.9**	**+0.7**
YOJ	**Yonaguni jima**	**0.21**	**153**	P	**Pn**	**18 30 07.2**	**+0.4**
YOJ				S	**Sn**	**18 30 18.9**	**+0.6**
IRIF	**Iriomote-Funau**	**0.81**	**113**	P	**Pn**	**18 30 10.8**	**+0.1**
IRIF				S	**Sn**	**18 30 25.3**	**+0.1**
TWC	**Suao**	**0.96**	**268**	*e*P	**Pn**	**18 30 12.2**	**0.0**
	baz=276						
TWC				*e*S	**Sn**	**18 30 26.8**	**-1.1**
	baz=276						
HATJ	**Hateruma jima**	**1.01**	**126**	P	**Pn**	**18 30 13.4**	**+0.7**
HATJ				S	**Sn**	**18 30 28.9**	**+0.2**
ENA	**Nanau**	**1.08**	**258**	*e*P	**Pn**	**18 30 13.7**	**+0.2**
	baz=266						
ENA				*e*S	**Sn**	**18 30 28.4**	**-1.7**
	baz=266						
JKRS	**Kuro-shima**	**1.08**	**112**	P	**Pn**	**18 30 14.0**	**+0.5**
JKRS				S	**Sn**	**18 30 30.3**	**+0.2**
TWE	**Neicheng**	**1.13**	**274**	*e*P	**Pn**	**18 30 14.5**	**+0.6**
	baz=281						
TWE				*e*S	**Sn**	**18 30 30.4**	**-0.6**
	baz=281						
JIJ	**Ishigaki jima**	**1.16**	**104**	P	**Pn**	**18 30 14.5**	**+0.2**
JIJ				S	**Sn**	**18 30 30.7**	**-0.9**
ENTT	**Nioudou**	**1.22**	**270**	*e*P	**Pn**	**18 30 15.7**	**+0.7**
	baz=276						
JISG	**Ishigakijimahi**	**1.28**	**93**	P	**Pn**	**18 30 15.5**	**-0.1**
JISG				S	**Sn**	**18 30 33.0**	**-0.9**
TWD	**Chiawan**	**1.32**	**245**	*e*P	**Pn**	**18 30 16.5**	**+0.4**
	baz=251						
TWD				*e*S	**Sn**	**18 30 32.5**	**-2.3**
	baz=251						
NSK	**Sanguang**	**1.41**	**271**	*e*P	**Pn**	**18 30 17.8**	**+0.6**
	baz=277						
NSK				*e*S	**Sn**	**18 30 36.6**	**-0.2**
	baz=277						
NNS	**Nan Shan**	**1.41**	**262**	*e*P	**Pn**	**18 30 17.7**	**+0.4**
	baz=267						
NNS				*e*S	**Sn**	**18 30 36.2**	**-0.7**
	baz=267						
WHF	**Hehuan Shan**	**1.58**	**252**	*e*P	**Pn**	**18 30 19.7**	**+0.1**
	baz=256						
ESL	**Shilin**	**1.58**	**239**	*e*S	**Sn**	**18 30 38.6**	**-1.7**
	baz=243						
TWT	**Tachien**	**1.63**	**256**	*e*P	**Pn**	**18 30 20.5**	**+0.6**
	baz=261						
TWT				*e*S	**Sn**	**18 30 41.4**	**-0.2**
	baz=261						
JTJ	**Tarama**	**1.63**	**90**	P	**Pn**	**18 30 20.0**	**+0.2**
JTJ				S	**Sn**	**18 30 40.4**	**-1.0**
TWF1	**Yuli**	**1.96**	**229**	*e*P	**Pn**	**18 30 23.8**	**-0.1**
	baz=232						
TWF1				*e*S	**Sn**	**18 30 46.7**	**-2.0**
	baz=232						
SMLT	**Sun Moon Lake**	**1.98**	**248**	*e*P	**Pn**	**18 30 24.4**	**0.0**
	baz=251						
SMLT				*e*S	**Sn**	**18 30 50.0**	**+0.6**
	baz=251						
TYC	**Yuchr**	**2.01**	**249**	*e*P	**Pn**	**18 30 26.0**	**+1.4**
	baz=252						
TYC				*e*S	**Sn**	**18 30 50.1**	**+0.3**
	baz=252						
YUS	**Yu-Shan**	**2.13**	**238**	*e*P	**Pn**	**18 30 27.2**	**+0.7**
	baz=240						
YUS				*e*S	**Sn**	**18 30 52.8**	**-0.5**
	baz=240						
ALS	**Alishan**	**2.23**	**240**	*e*S	**Sn**	**18 30 55.6**	**+0.3**
	baz=243						
CHN5	**Tsauling**	**2.29**	**243**	*e*P	**Pn**	**18 30 29.9**	**+1.7**
	baz=246						
CHN5				*e*S	**Sn**	**18 30 57.6**	**+1.2**
	baz=246						
CHN1	**Nanshi**	**2.62**	**237**	*e*S	**Sn**	**18 31 02.6**	**-1.4**
	baz=239						

*ISK **26** 18:34:32.4,36.°83N×26.°52E, h5km, MD2.7*
*CSEM **26** 18:34:32.6±0.5,36.°95N×26.°46E, h5km, MD2.6, Error ellipse: s-maj=11.9km s-min=9.0km az=168.0*
*ISCJB **26** 18:34:33.4±1.1,36.°98N±0.°05×26.°44E±0.°06, h22km±12km, Error ellipse: s-maj=9.0km s-min=6.8km az=44.0*
*DDA **26** 18:34:38.3,37.°33N×26.°78E, h7km, Md2.6*
ISC 26 18:34:33.6±1.2,36.°97N±0.°04×26.°49E±0.°04, h26km±13km, n18,σ0s66/29, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BODT	**Bodrum**	**0.66**	**82**	*e*PG	**Pb**	**18 34 46.0**	**-0.6**
BODT				*e*SG	**Sb**	**18 34 55.7**	**+0.2**
BODT	**Bodrum**	**0.66**	**82**	*e*Pg	**Pb**	**18 34 46.0**	**-0.6**
BODT				*e*Sg	**Sb**	**18 34 55.7**	**+0.2**
BDRM	**Kayabasi**	**0.77**	**83**	P	**Pn**	**18 34 49.0**	**+0.2**
BDRM				S	**Sn**	**18 34 59.8**	**+0.2**
BDRM	**Kayabasi**	**0.77**	**83**	*i* P	**Pn**	**18 34 49.0**	**+0.2**
BDRM				*i* S	**Sn**	**18 34 59.8**	**+0.2**
APE	**Apeiranthos**	**0.78**	**277**	*e*PG	**Pb**	**18 34 48.7**	**+0.2**
APE	**Apeiranthos**	**0.78**	**277**	*e*Pg	**Pb**	**18 34 48.7**	**+0.2**
GCAM	**G?zelcaml?**	**0.94**	**39**	P	**Pb**	**18 34 50.5**	**-0.7**
GCAM				S	**Sb**	**18 35 03.3**	**+0.1**
GCAM	**G?zelcaml?**	**0.94**	**39**	*i* P	**Pb**	**18 34 50.5**	**-0.7**
GCAM				*i* S	**Sb**	**18 35 03.3**	**+0.1**
DGB	**˜zmir**	**1.12**	**16**	*i* P	**Pn**	**18 34 53.0**	**-0.6**
DGB				*i* S	**Sn**	**18 35 07.4**	**-0.9**
ZEY	**˜zmir**	**1.26**	**0**	*i* P	**Pn**	**18 34 55.5**	**-0.1**
ZEY				*i* S	**Sn**	**18 35 11.4**	**-0.3**
AYDN	**Tasoluk**	**1.30**	**58**	P	**Pb**	**18 34 57.0**	**-0.5**
AYDN	**Tasoluk**	**1.30**	**58**	*i* P	**Pb**	**18 34 57.0**	**-0.5**
AYDN				*i* S	**Sb**	**18 35 15.7**	**+1.9**
URLA	**Izmir**	**1.39**	**3**	P	**Pn**	**18 34 57.2**	**-0.2**
URLA				S	**Sb**	**18 35 16.6**	**+0.4**
URLA	**Izmir**	**1.39**	**3**	*i* P	**Pn**	**18 34 57.2**	**-0.2**
URLA				*i* S	**Sb**	**18 35 16.6**	**+0.4**
AYDB	**Zeytinkoy-Aydi**	**1.48**	**48**	*e*PN	**Pb**	**18 35 01.7**	**+1.2**
AYDB	**Zeytinkoy-Aydi**	**1.48**	**48**	*e*Pn	**Pb**	**18 35 01.7**	**+1.2**
KARP	**Karpathos**	**1.52**	**159**	*e*PN	**Pn**	**18 34 58.9**	**-0.3**
KARP	**Karpathos**	**1.52**	**159**	*e*Pn	**Pn**	**18 34 58.9**	**-0.3**

*ISCJB **26** 18:49:50.4±0.5,39.°12N±0.°03×28.°99E±0.°04, h10km±5km, Error ellipse: s-maj=5.4km s-min=4.7km az=39.2*
*DDA **26** 18:49:50.5,39.°10N×28.°98E, h7km, Md2.8*
*ISK **26** 18:49:50.0,39.°15N×28.°97E, h6km, MD2.8*
*CSEM **26** 18:49:50.3±0.1,39.°13N×28.°98E, h10km, MD2.8, Error ellipse: s-maj=2.5km s-min=2.1km az=85.0*
ISC 26 18:49:50.3±0.9,39.°12N±0.°02×28.°98E±0.°03, h15km±8km, n22,σ0s26/34, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.22**	**249**	P	**Pg**	**18 49 55.4**	**+0.1**
DEMI				S	**Sg**	**18 49 58.6**	**-0.1**
DEMI	**Demirci**	**0.22**	**249**	*i* P	**Pg**	**18 49 55.4**	**+0.1**
DEMI				*i* S	**Sg**	**18 49 58.6**	**-0.1**
GDZ	**Gediz**	**0.39**	**95**	P	**Pg**	**18 49 58.1**	**-0.1**
GDZ				S	**Sg**	**18 50 03.8**	**+0.2**
GDZ	**Gediz**	**0.39**	**95**	*i* P	**Pg**	**18 49 58.1**	**-0.1**
GDZ				*i* S	**Sg**	**18 50 03.8**	**+0.2**
TVSB	**Tavsanli**	**0.49**	**49**	*e*PG	**Pg**	**18 49 59.9**	**-0.3**
TVSB				*e*SG	**Sg**	**18 50 07.1**	**+0.3**
TVSB	**Tavsanli**	**0.49**	**49**	*e*Pg	**Pg**	**18 49 59.9**	**-0.3**
TVSB				*e*Sg	**Sg**	**18 50 07.1**	**+0.3**
DURS	**Dursunbey**	**0.62**	**321**	P	**Pg**	**18 50 02.2**	**-0.3**
DURS				S	**Sb**	**18 50 12.1**	**+0.6**
DURS	**Dursunbey**	**0.62**	**321**	*i* P	**Pg**	**18 50 02.2**	**-0.3**
DURS				*i* S	**Sb**	**18 50 12.1**	**+0.6**
KULA	**Kula-Manisa**	**0.66**	**203**	*e*PG	**Pb**	**18 50 03.6**	**+0.1**
KULA	**Kula-Manisa**	**0.66**	**203**	*e*Pg	**Pb**	**18 50 03.6**	**+0

JMA 26 19:17:14.0,36°.17N×137°.47E,h5km±1km,M0.5,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JGN	**Niukaw**	**0.14**	**293**	P	Pg	19 17 17.0	+0.2
JGN				S	Sg	19 17 19.0	+0.3

*ISCJB **26** 19:22:24.8±0.5,37°.67N±0°.03×29°.39E±0°.04,h1km±9km, Error ellipse: s-maj=5.9km s-min=4.6km az=140.6*
*CSEM **26** 19:22:24.9±0.1,37°.66N×29°.36E,h8km,MD2.8,Error ellipse: s-maj=3.6km s-min=2.9km az=51.0*
*ISK **26** 19:22:24.7,37°.65N×29°.35E,h6km,MD2.8*
*DDA **26** 19:22:24.6,37°.69N×29°.36E,h5km,Md2.8*
ISC 26 19:22:25.0±1.1,37°.68N±0°.03×29°.37E±0°.03,h10km±9km, n28,σ0°46/37,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DNZL	**Cakiroluk**	**0.25**	**272**	P	Pg	19 22 29.8	-0.4
DNZL				S	Sg	19 22 34.4	+0.6
DNZL	**Cakiroluk**	**0.25**	**272**	*i* P	Pg	19 22 29.8	-0.4
DNZL				*i* S	Sg	19 22 34.4	+0.6
DENT	**Denizli**	**0.27**	**286**	*e*PG	Pg	19 22 30.6	0.0
DENT	**Denizli**	**0.27**	**286**	*e*Pg	Pg	19 22 30.6	0.0
GOLH	**Golhisar**	**0.47**	**161**	P	Pg	19 22 34.2	0.0
GOLH	**Golhisar**	**0.47**	**161**	*i* P	Pg	19 22 34.1	0.0
GOLH				*i* S	Sb	19 22 42.9	+0.4
GLHS	**Glhisar (BURDU**	**0.53**	**168**	*e*PG	Pg	19 22 35.2	-0.2
GLHS	**Glhisar (BURDU**	**0.53**	**168**	*e*Pg	Pg	19 22 35.2	-0.2
KHL	**Karahalli**	**0.65**	**11**	*e*PG	Pb	19 22 38.5	-0.2
KHL	**Karahalli**	**0.65**	**11**	*e*Pg	Pb	19 22 38.5	-0.2
KHAL	**Karahalli**	**0.70**	**8**	P	Pg	19 22 37.9	-0.6
KHAL				S	Sb	19 22 48.7	-0.4
KHAL	**Karahalli**	**0.70**	**8**	*i* P	Pg	19 22 37.9	-0.6
KHAL				*i* S	Sb	19 22 48.7	-0.4
ISP	**Isparta**	**0.93**	**81**	*e*PG	Pb	19 22 43.2	-0.1
ISP	**Isparta**	**0.93**	**81**	*e*Pg	Pb	19 22 43.2	-0.1
BCK	**Bucak**	**1.00**	**102**	*e*PG	Pg	19 22 44.3	+0.1
BCK	**Bucak**	**1.00**	**102**	*e*Pg	Pg	19 22 44.3	+0.1
KULA	**Kula-Manisa**	**1.00**	**326**	*e*PG	Pg	19 22 44.3	0.0
KULA				*e*SG	Sn	19 22 59.4	-0.1
KULA	**Kula-Manisa**	**1.00**	**326**	*e*Pg	Pg	19 22 44.3	0.0
KULA				*e*Sg	Sn	19 22 59.4	-0.1
ELL	**Elmali**	**1.03**	**155**	*e*PG	Pg	19 22 44.1	-0.7
ELL	**Elmali**	**1.03**	**155**	*e*Pg	Pg	19 22 44.1	-0.7
FETY	**Fethiye**	**1.07**	**192**	*e*PG	Pg	19 22 44.9	-0.6
FETY	**Fethiye**	**1.07**	**192**	*e*Pg	Pg	19 22 44.9	-0.6
AYDN	**Tasoluk**	**1.18**	**269**	P	Pb	19 22 46.9	-0.6
AYDN				S	Sn	19 23 04.8	+1.0
AYDN	**Tasoluk**	**1.18**	**269**	*i* P	Pb	19 22 46.9	-0.6
AYDN				*i* S	Sn	19 23 04.8	+1.0
AYDB	**Zeytinkoy-Aydi**	**1.20**	**283**	*e*PN	Pg	19 22 48.1	+0.1
AYDB	**Zeytinkoy-Aydi**	**1.20**	**283**	*e*Pn	Pg	19 22 48.1	+0.1
SUTC	**Sutluce-Ispart**	**1.31**	**98**	*e*PN	Pg	19 22 50.2	0.0
SUTC	**Sutluce-Ispart**	**1.31**	**98**	*e*Pn	Pg	19 22 50.3	0.0

*ISCJB **26** 19:28:00.8±0.5,39°.07N±0°.03×29°.06E±0°.04,h3km±7km, Error ellipse: s-maj=5.7km s-min=4.7km az=2.1*
*DDA **26** 19:28:00.5,39°.08N×29°.08E,h7km,Md2.5*
*ISK **26** 19:28:00.5,39°.07N×29°.08E,h4km,MD2.6*
*CSEM **26** 19:28:00.9±0.1,39°.08N×29°.06E,h2km,MD2.5,Error ellipse: s-maj=3.6km s-min=3.0km az=100.0*
ISC 26 19:28:00.7±1.0,39°.07N±0°.02×29°.08E±0°.02,h9km±9km, n28,σ0°43/40,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**264**	P	Pg	19 28 06.4	0.0
DEMI				S	Sg	19 28 10.3	+0.1
DEMI	**Demirci**	**0.28**	**264**	*i* P	Pg	19 28 06.4	0.0
DEMI				*i* S	Sg	19 28 10.3	+0.1
GDZ	**Gediz**	**0.32**	**87**	P	Pg	19 28 07.1	0.0
GDZ				S	Sg	19 28 11.6	+0.3
GDZ	**Gediz**	**0.32**	**87**	*i* P	Pg	19 28 07.1	0.0
GDZ				*i* S	Sg	19 28 11.6	+0.3
TVSB	**Tavsanli**	**0.48**	**38**	*e*PG	Pg	19 28 09.5	-0.6
TVSB	**Tavsanli**	**0.48**	**38**	*e*Pg	Pg	19 28 09.5	-0.6
KULA	**Kula-Manisa**	**0.65**	**210**	*e*PG	Pb	19 28 13.7	-0.5
KULA	**Kula-Manisa**	**0.65**	**210**	*e*Pg	Pb	19 28 13.7	-0.5
DURS	**Dursunbey**	**0.70**	**319**	P	Pg	19 28 14.2	-0.2
DURS				S	Sb	19 28 24.4	-0.7
DURS	**Dursunbey**	**0.70**	**319**	*i* P	Pg	19 28 14.2	-0.2
DURS				*i* S	Sb	19 28 24.4	-0.7
MANT	**Manisa**	**0.71**	**215**	P	Pg	19 28 14.6	+0.2
MANT				S	Sg	19 28 23.9	+0.2
MANT	**Manisa**	**0.71**	**215**	*i* P	Pg	19 28 14.6	+0.2
MANT				*i* S	Sg	19 28 23.9	+0.2
KHAL	**Karahalli**	**0.77**	**155**	P	Pb	19 28 16.6	+0.2
KHAL				S	Sb	19 28 26.9	-0.1
KHAL	**Karahalli**	**0.77**	**155**	*i* P	Pb	19 28 16.6	+0.2
KHAL				*i* S	Sb	19 28 26.9	-0.1
BALB	**Balikesir**	**1.09**	**302**	*e*PN	Pb	19 28 21.7	0.0
BALB				*e*SN	Sn	19 28 37.3	+0.1
BALB	**Balikesir**	**1.09**	**302**	*e*Pn	Pb	19 28 21.7	0.0
BALB				*e*Sn	Sn	19 28 37.3	+0.1
CAVI	**Cavuskoy**	**1.27**	**27**	*e*PN	Pg	19 28 25.6	+0.4
CAVI	**Cavuskoy**	**1.27**	**27**	*e*Pn	Pg	19 28 25.6	+0.4
IZI	**Iznik**	**1.30**	**14**	*e*PN	Pg	19 28 26.4	+0.7
IZI	**Iznik**	**1.30**	**14**	*e*Pn	Pg	19 28 26.4	+0.7
MDNY	**Mudanya-Bursa**	**1.30**	**354**	*e*PN	Pg	19 28 26.4	+0.6
MDNY	**Mudanya-Bursa**	**1.30**	**354**	*e*Pn	Pg	19 28 26.4	+0.6
KCTX	**Karacabey (Bur**	**1.31**	**335**	*e*PN	Pg	19 28 26.9	+0.9
KCTX	**Karacabey (Bur**	**1.31**	**335**	*e*Pn	Pg	19 28 26.9	+0.9
ARMT	**Armutlu**	**1.50**	**354**	*e*PN	Pg	19 28 29.2	-0.2
ARMT	**Armutlu**	**1.50**	**354**	*e*Pn	Pg	19 28 29.3	-0.2
GULT	**Gulveren**	**1.75**	**39**	*e*PN	Pb	19 28 32.9	-0.2
GULT	**Gulveren**	**1.75**	**39**	*e*Pn	Pb	19 28 32.9	-0.2

*DDA **26** 19:29:06.9,39°.09N×29°.04E,h7km,Md2.7*
*ISK **26** 19:29:06.8,39°.07N×29°.14E,h6km,MD2.8*
*ISCJB **26** 19:29:07.0±0.5,39°.09N±0°.03×29°.06E±0°.03,h2km±6km, Error ellipse: s-maj=4.9km s-min=3.8km az=149.8*
*CSEM **26** 19:29:07.3±0.1,39°.09N×29°.08E,h2km,MD2.7,Error ellipse: s-maj=2.8km s-min=2.4km az=123.0*
ISC 26 19:29:06.7±1.0,39°.07N±0°.02×29°.10E±0°.02,h10km±11km, n37,σ0°50/52,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.30**	**86**	P	Pb	19 29 14.1	-0.2
GDZ				S	Sb	19 29 18.9	-0.4
GDZ	**Gediz**	**0.30**	**86**	*i* P	Pb	19 29 14.1	-0.2
GDZ				*i* S	Sb	19 29 18.9	-0.4
DEMI	**Demirci**	**0.30**	**265**	P	Pg	19 29 12.7	-0.1
DEMI				S	Sg	19 29 16.4	-0.4
DEMI	**Demirci**	**0.30**	**265**	*i* P	Pg	19 29 12.7	-0.1
DEMI				*i* S	Sg	19 29 16.4	-0.4
TVSB	**Tavsanli**	**0.47**	**36**	*e*PG	Pg	19 29 16.4	+0.5
TVSB				*e*SG	Sg	19 29 22.6	+0.4
TVSB	**Tavsanli**	**0.47**	**36**	*e*Pg	Pg	19 29 16.4	+0.5
TVSB				*e*Sg	Sg	19 29 22.6	+0.4
KULA	**Kula-Manisa**	**0.65**	**212**	*e*PG	Pb	19 29 20.1	-0.2
KULA	**Kula-Manisa**	**0.65**	**212**	*e*Pg	Pb	19 29 20.1	-0.2
MANT	**Manisa**	**0.72**	**216**	P	Pg	19 29 21.0	+0.4
MANT				S	Sg	19 29 30.5	+0.5
MANT	**Manisa**	**0.72**	**216**	*i* P	Pg	19 29 21.0	+0.4
MANT				*i* S	Sg	19 29 30.5	+0.5
DURS	**Dursunbey**	**0.72**	**318**	P	Pg	19 29 20.9	+0.3
DURS				S	Sg	19 29 29.1	-0.9
DURS	**Dursunbey**	**0.72**	**318**	*i* P	Pg	19 29 20.9	+0.3
DURS				*i* S	Sg	19 29 29.1	-0.9
KHAL	**Karahalli**	**0.76**	**156**	P	Pn	19 29 23.3	-0.4
KHAL				S	Sb	19 29 33.1	+0.4
KHAL	**Karahalli**	**0.76**	**156**	*i* P	Pn	19 29 23.3	-0.4
KHAL				*i* S	Sb	19 29 33.1	+0.4
KHL	**Karahalli**	**0.82**	**156**	*e*PG	Pg	19 29 22.6	+0.1
KHL	**Karahalli**	**0.82**	**156**	*e*Pg	Pg	19 29 22.6	+0.1
AKHS	**Akhisar**	**1.02**	**260**	P	Pn	19 29 27.1	0.0
AKHS				S	Sg	19 29 40.0	+0.4
AKHS	**Akhisar**	**1.02**	**260**	*i* P	Pn	19 29 27.1	0.0
AKHS				*i* S	Sg	19 29 40.0	+0.4
AKS	**Akhisar**	**1.02**	**260**	*e*PG	Pn	19 29 27.4	+0.2
AKS	**Akhisar**	**1.02**	**260**	*e*Pg	Pn	19 29 27.4	+0.2
BALB	**Balikesir**	**1.10**	**301**	*e*PN	Pg	19 29 28.8	+0.8
BALB	**Balikesir**	**1.10**	**301**	*e*Pn	Pg	19 29 28.8	+0.8
IGD	**Bursa**	**1.19**	**4**	*i* P	Pn	19 29 29.3	-0.2
IGD				*i* S	Sb	19 29 44.4	-0.6
CAVI	**Cavuskoy**	**1.27**	**27**	*e*PN	Pg	19 29 31.4	+0.4
CAVI	**Cavuskoy**	**1.27**	**27**	*e*Pn	Pg	19 29 31.5	+0.4
IZI	**Iznik**	**1.30**	**13**	*e*PN	Pg	19 29 32.4	+0.8
IZI	**Iznik**	**1.30**	**13**	*e*Pn	Pg	19 29 32.4	+0.8
MDNY	**Mudanya-Bursa**	**1.31**	**353**	*e*PN	Pg	19 29 32.2	+0.5
MDNY	**Mudanya-Bursa**	**1.31**	**353**	*e*Pn	Pg	19 29 32.3	+0.5
KCTX	**Karacabey (Bur**	**1.32**	**335**	*e*PN	Pg	19 29 33.1	+0.9
KCTX	**Karacabey (Bur**	**1.32**	**335**	*e*Pn	Pg	19 29 33.1	+0.9
ADVT	**Abdulvahap**	**1.45**	**20**	*e*PN	Pb	19 29 33.9	+0.1
ADVT	**Abdulvahap**	**1.45**	**20**	*e*Pn	Pb	19 29 33.9	+0.1
GONE	**Gonen-Balikesi**	**1.47**	**312**	*e*PN	Pg	19 29 35.1	+0.3
GONE	**Gonen-Balikesi**	**1.47**	**312**	*e*Pn	Pg	19 29 35.1	+0.3
GULT	**Gulveren**	**1.74**	**38**	*e*PN	Pb	19 29 38.2	-0.7
GULT	**Gulveren**	**1.74**	**38**	*e*Pn	Pb	19 29 38.2	-0.7

IDC 26 19:31:10.3±44.0,17°.18S×173°.76W,h0km,mb4.1/3, mb1 4.3/3,mb1mx3.7/38,mbtmp4.1/3,MS2.6/1,Ms1 2.6/1, ms1mx2.4/37,Error ellipse: s-maj=842.8km s-min=179.5km az=80.0,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**42.87**	**241**	P	P	19 39 11.0	+0.3
	2.2nm,1.1s,baz=101,slow=10.0,SNR=3.1						
JAY	**Jayapura**	**47.02**	**283**	LR	LR	19 58 58.8	
	comp=Z,6.9nm,21.2s,baz=190,slow=36						
WRA	**Warramunga Arr**	**49.13**	**258**	P	P	19 40 00.0	-0.2
	1.1nm,0.3s,baz=97,slow=7.1,SNR=55						
ASAR	**Alice Springs**	**49.25**	**253**	P	P	19 40 00.8	-0.3
	1.3nm,0.5s,baz=86,slow=8.3,SNR=57						

*CSEM **26** 19:31:20.1±0.2,39°.86N×41°.73E,h15km,MD2.9,Error ellipse: s-maj=4.9km s-min=4.0km az=11.0*
*DDA **26** 19:31:20.4,39°.91N×41°.77E,h7km,Md2.9*
*ISCJB **26** 19:31:21.0±0.5,39°.88N±0°.03×41°.76E±0°.04,h10km±5km, Error ellipse: s-maj=5.1km s-min=4.5km az=24.2*
ISC 26 19:31:20.2±1.1,39°.89N±0°.03×41°.77E±0°.03,h14km±9km, n19,σ0°46/33,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HOMI	**Horasan**	**0.19**	**33**	*i* P	Pg	19 31 24.6	-0.2
HOMI				*i* S	Sb	19 31 29.4	0.0
ERZM	**Erzurum**	**0.31**	**274**	P	Pb	19 31 27.7	0.0
ERZM				S	Sb	19 31 32.5	-0.3
ERZM	**Erzurum**	**0.31**	**274**	*i* P	Pb	19 31 27.7	0.0
ERZM				*i* S	Sb	19 31 32.5	-0.3
EZM	**Erzurum**	**0.31**	**274**	*e*PG	Pb	19 31 27.6	-0.2
EZM				*e*SG	Sb	19 31 32.7	-0.2
EATA	**Eleskirt**	**0.56**	**92**	P	Pg	19 31 31.5	+0.2
EATA				S	Sb	19 31 40.3	+0.4
EATA	**Eleskirt**	**0.56**	**92**	*i* P	Pg	19 31 31.4	+0.2
EATA				*i* S	Sb	19 31 40.4	+0.4
EKAR	**Karacoban**	**0.67**	**160**	P	Pg	19 31 33.5	+0.2
EKAR	**Karacoban**	**0.67**	**160**	*i* P	Pg	19 31 33.5	+0.2
EKAR				*i* S	Sn	19 31 45.8	-0.1
SENK	**Senkaya-Erzuru**	**0.81**	**33**	*e*PG	Pn	19 31 37.4	0.0
SENK	**Senkaya-Erzuru**	**0.81**	**33**	*e*Pg	Pn	19 31 37.4	0.0
TUTA	**Tutak**	**0.94**	**121**	P	Pb	19 31 37.9	-0.6
TUTA				S	Sn	19 31 52.6	-0.1
TUTA	**Tutak**	**0.94**	**121**	*i* P	Pb	19 31 37.9	-0.6
TUTA				*i* S	Sn	19 31 52.6	-0.1
DDEM	**Demirkent**	**1.01**	**359**	P	Pb	19 31 38.8	-0.7
DDEM				S	Sn	19 31 53.4	-0.7
DDEM	**Demirkent**	**1.01**	**359**	*i* P	Pb	19 31 38.8	-0.7
DDEM				*i* S	Sn	19 31 53.4	-0.7
YEDI	**Yedisu-Bingol**	**1.05**	**245**	*e*PG	Pb	19 31 40.1	-0.1
YEDI	**Yedisu-Bingol**	**1.05**	**245**	*e*Pg	Pb	19 31 40.1	-0.1
DBAD	**Bademkaya**	**1.13**	**357**	P	Pn	19 31 41.8	0.0
DBAD				S	Sn	19 31 58.3	+1.1
DBAD	**Bademkaya**	**1.13**	**357**	*i* P	Pn	19 31 41.8	0.0
DBAD				*i* S	Sn	19 31 58.3	+1.1
DAGI	**Agillar**	**1.20**	**5**	*i* P	Pb	19 31 43.0	+0.2
DAGI				*i* S	Sg	19 31 59.3	+0.4

*ISCJB **26** 19:32:31.9±0.5,39°.10N±0°.03×29°.05E±0°.04,h4km±9km, Error ellipse: s-maj=5.3km s-min=4.6km az=156.1*
*DDA **26** 19:32:31.8,39°.09N×29°.04E,h7km,Md2.6*
*ISK **26** 19:32:31.6,39°.09N×29°.11E,h6km,MD2.6*
*CSEM **26** 19:32:32.1±0.1,39°.10N×29°.04E,h5km,MD2.6,Error ellipse: s-maj=2.3km s-min=2.1km az=87.0*
ISC 26 19:32:32.1±0.9,39°.10N±0°.02×29°.05E±0°.02,h12km±10km, n21,σ0°35/33,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**258**	P	Pg	19 32 37.7	+0.1
DEMI				S	Sg	19 32 41.3	0.0
DEMI	**Demirci**	**0.26**	**258**	*i* P	Pg	19 32 37.7	+0.1
DEMI				*i* S	Sg	19 32 41.3	0.0
GDZ	**Gediz**	**0.34**	**91**	P	Pg	19 32 39.0	+0.1
GDZ				S	Sg	19 32 44.0	+0.4
GDZ	**Gediz**	**0.34**	**91**	*i* P	Pg	19 32 39.0	+0.1
GDZ				*i* S	Sg	19 32 44.0	+0.4
TVSB	**Tavsanli**	**0.48**	**42**	*e*PG	Pg	19 32 41.1	-0.4
TVSB				*e*SG	Sg	19 32 47.1	-0.7
TVSB	**Tavsanli**	**0.48**	**42**	*e*Pg	Pg	19 32 41.1	-0.4
TVSB				*e*Sg	Sg	19 32 47.1	-0.7
KULA	**Kula-Manisa**	**0.66**	**208**	*e*PG	Pg	19 32 45.0	+0.1
DURS	**Dursunbey**	**0.67**	**319**	P	Pg	19 32 44.7	-0.5
DURS				S	Sg	19 32 54.5	+0.5
DURS	**Dursunbey**	**0.67**	**319**	*i* P	Pg	19 32 44.7	-0.5
DURS				*i* S	Sg	19 32 54.5	+0.5
MANT	**Manisa**	**0.72**	**212**	P	Pg	19 32 45.9	-0.2
MANT				S	Sg	19 32 55.1	-0.4
MANT	**Manisa**	**0.72**	**212**	*i* P	Pg	19 32 45.9	-0.2
MANT				*i* S	Sg	19 32 55.1	-0.4
KHAL	**Karahalli**	**0.81**	**154**	P	Pb	19 32 48.0	-0.1
KHAL				S	Sg	19 32 58.4	+0.2
KHAL	**Karahalli**	**0.81**	**154**	*i* P	Pb	19 32 48.0	-0.1
KHAL				*i* S	Sg	19 32 58.4	+0.2
BALB	**Balikesir**	**1.05**	**301**	*e*PN	Pn	19 32 52.8	+0.1
BALB	**Balikesir**	**1.05**	**301**	*e*Pn	Pn	19 32 52.8	+0.1
IZI	**Iznik**	**1.28**	**15**	*e*PN	Pg	19 32 57.1	+0.4
IZI	**Iznik**	**1.28**	**15**	*e*Pn	Pg	19 32 57.1	+0.4
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*PN	Pg	19 32 56.9	+0.1
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*Pn	Pg	19 32 56.9	+0.1
ARMT	**Armutlu**	**1.47**	**354**	*e*PN	Pb	19 32 59.5	+0.1
ARMT	**Armutlu**	**1.47**	**354**	*e*Pn	Pb	19 32 59.5	+0.1

IDC 26 19:36:19.5±7.4,30°.98S×178°.34W,h0km,mb3.5/2, mb1 3.8/2,mb1mx3.5/38,mbtmp3.5/2,Error ellipse: s-maj=311.3km s-min=60.6km az=156.0,Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**42.79**	**268**	P	P	19 44 18.8	-0.4
	0.4nm,0.7s,baz=108,slow=7.6,SNR=2.7						
WRA	**Warramunga Arr**	**43.83**	**273**	P	P	19 44 27.7	+0.1
	0.5nm,0.4s,baz=111,slow=8.1,SNR=3.6						
FINES	**FINESS Array B**	**145.58**	**339**	PKPbc	PKPdf	19 55 58.4	-0.7
	2.1nm,1.0s,baz=28,slow=4.5,SNR=6.4						

MEX 26 19:38:48.3±0.5,14°.25N×92°.72W,h25km±93km,MD3.7, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		**1.52**	**342**	*e*P	Pn	19 39 11.7	-2.3
PCIG				*e*S	Sn	19 39 29.3	-3.7
CCIG	**Comitan**	**2.10**	**15**	*i* P	Pn	19 39 19.4	-2.6
CCIG				*i* S	Sn	19 39 44.7	-2.7

IDC 26 19:46:07.1±4.3,7°.97S×121°.09E,h219km±85km,mb3.3/1, mb1 2.8/3,mb1mx2.5/44,mbtmp3.3/3,Error ellipse: s-maj=124.1km s-min=58.0km az=39.0,Flores Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**17.50**	**134**	P	P	19 49 56.8	+0.4
	0.0nm,0.3s,baz=312,slow=12,SNR=4.4						
WRA				S	S	19 53 07.6	+0.7
	0.1nm,0.3s,baz=318,slow=20,SNR=4.1						
ASAR	**Alice Springs**	**19.86**	**143**	P	P	19 50 21.6	-0.3
	0.1nm,0.3s,baz=317,slow=8.8,SNR=6.1						
ASAR				S	S	19 53 54.4	+0.9
	0.0nm,0.3s,baz=318,slow=20,SNR=4.0						
STKA	**Stephens Creek**	**30.49**	**144**	P	P	19 51 59.7	-0.1
	0.5nm,0.3s,baz=332,slow=10.0,SNR=5.9						

*ECX **26** 19:46:30.3±0.5,30°.82N×113°.93W,h10km,MD3.7,ML3.8*
*MEX **26** 19:46:49.4±0.7,30°.86N×115°.33W,h4km±25km,MD3.8*
ISC 26 19:46:23.2±1.6,31°.3N±0°.2×113°.54W±0°.09,h10km,n9, σ1°61/13,Gulf of California

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ECBX	**El Chinero**	**1.31**	**280**	*e*P	Pg	19 46 50.6	+2.2
ECBX				*e*S	Sg	19 47 05.9	+0.5
ECBX				AML	AML	19 47 16.6	
	comp=N,1μm,0.4s						
ECBX				AML	AML	19 47 18.8	
	comp=E,2μm,0.5s						
SPX	**San Pedro Mart**	**1.66**	**263**	*e*P	Pn	19 46 53.2	+0.4
SPX				*e*S	Sn	19 47 11.8	-2.5
SPIG	**San Pedro Mart**	**1.67**	**263**	*e*P	Pn	19 46 53.5	+0.7
SPIG				*i* S	Sn	19 46 57.1	-17
SPIG	**San Pedro Mart**	**1.67**	**263**	*e*P	Pn	19 46 52.8	0.0
ZAX	**El Zacaton**	**2.35**	**277**	*e*P	Pb	19 47 05.4	-0.3
CBX	**Cerro Bola**	**2.86**	**292**	*e*P	Pg	19 47 18.6	+0.5
CBX				*i* S	Sn	19 47 40.2	-3.4
CBX	**Cerro Bola**	**2.86**	**292**	*e*P	Pb	19 47 14.6	+0.1
CBX				AML	AML	19 48 07.8	
	comp=N,356nm,0.6s						
TJIG	**Tijuana**	**2.92**	**295**	*i* P	Pg	19 47 20.2	+1.1
TJIG				*i* S	Sn	19 47 43.9	-0.9
HSIG		**3.16**	**134**	*e*P	Pn	19 47 13.0	0.0

*ISK **26** 19:48:02.9,39°.15N×28°.99E,h10km,MD2.5*
*ISCJB **26** 19:48:03.4±0.6,39°.12N±0°.04×29°.00E±0°.05,h12km±5km, Error ellipse: s-maj=7.5km s-min=4.9km az=144.1*
*CSEM **26** 19:48:03.5±0.1,39°.12N×29°.00E,h12km,MD2.7,Error ellipse: s-maj=3.8km s-min=2.7km az=128.0*
*DDA **26** 19:48:03.8,39°.07N×29°.00E,h7km,Md2.7*
ISC 26 19:48:03.7±0.9,39°.13N±0°.04×28°.99E±0°.03,h13km±9km, n18,σ0°35/28,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.23**	**249**	P	Pg	19 48 08.8	+0.1
DEMI				S	Sg	19 48 11.9	-0.2
DEMI	**Demirci**	**0.23**	**249**	*i* P	Pg	19 48 08.8	+0.1
DEMI				*i* S	Sg	19 48 11.9	-0.2
GDZ	**Gediz**	**0.38**	**96**	P	Pg	19 48 11.5	+0.1
GDZ				S	Sg	19 48 16.8	+0.2
GDZ	**Gediz**	**0.38**	**96**	*i* P	Pg	19 48 11.5	+0.1
GDZ				*i* S	Sg	19 48 16.8	+0.2
TVSB	**Tavsanli**	**0.49**	**48**	*e*PG	Pg	19 48 12.7	-0.6
TVSB				*e*SG	Sg	19 48 19.6	-0.2
TVSB	**Tavsanli**	**0.49**	**48**	*e*Pg	Pg	19 48 12.7	-0.6
TVSB				*e*Sg	Sg	19 48 19.6	-0.2
DURS	**Dursunbey**	**0.62**	**320**	P	Pb	19 48 16.9	+0.4
DURS				S	Sg	19 48 24.1	0.0
DURS	**Dursunbey**	**0.62**	**320**	*i* P	Pb	19 48 16.9	+0.4
DURS				*i* S	Sg	19 48 24.1	0.0
KULA	**Kula-Manisa**	**0.66**	**203**	*e*PG	Pg	19 48 16.6	0.0
KULA	**Kula-Manisa**	**0.66**	**203**	*e*Pg	Pg	19 48 16.7	0.0
MANT	**Manisa**	**0.72**	**208**	P	Pg	19 48 17.6	-0.1
MANT				S	Sg	19 48 26.4	-0.8
MANT	**Manisa**	**0.72**	**208**	*i* P	Pg	19 48 17.6	-0.1
MANT				*i* S	Sg	19 48 26.4	-0.8
IZI	**Iznik**	**1.26**	**17**	*e*PN	Pn	19 48 27.2	+0.1
IZI	**Iznik**	**1.26**	**17**	*e*Pn	Pn	19 48 27.2	+0.1
ARMT	**Armutlu**	**1.44**	**356**	*e*PN	Pn	19 48 29.2	-0.3
ARMT	**Armutlu**	**1.44**	**356**	*e*Pn	Pn	19 48 29.2	-0.3
GULT	**Gulveren**	**1.75**	**42**	*e*PN	Pn	19 48 33.9	+0.1
GULT	**Gulveren**	**1.75**	**42**	*e*Pn	Pn	19 48 33.9	+0.1

*NIED **26** 19:50:00,37°.10N×140°.60E,h5km,Mw3.6 Best double couple: M0=2.84000×10^14 NP1:φs305.00000°,δ35.00000°, λ-95.00000°. NP2:φs131.00000°,δ55.00000°, λ-87.00000°.*
*IDC **26** 19:50:40.4±1.1,37°.01N×140°.64E,h0km,mb3.5/6, mb1 3.6/7,mb1mx3.4/45,mbtmp3.5/7,ML3.2/1,Error ellipse: s-maj=24.2km s-min=20.6km az=108.0*
*ISCJB **26** 19:50:41.3±0.5,37°.08N±0°.03×140°.73E±0°.05,h19km±4km, mb3.5/6,Error ellipse: s-maj=6.8km s-min=5.0km az=29.1*
*JMA **26** 19:50:41.9,37°.08N×140°.63E,h8km±1km,M

GCAM				S	Sb	19 54 14.2	+0.2
GCAM	**G?zelcaml?**	**0.22**	**347**	*i* P	Pg	19 54 11.5	+0.2
GCAM				*i* S	Sb	19 54 14.2	+0.2
BODT	**Bodrum**	**0.43**	**178**	*e*PG	Pn	19 54 16.8	-0.4
BODT	**Bodrum**	**0.43**	**178**	*e*Pg	Pn	19 54 16.8	-0.4
BDRM	**Kayabasi**	**0.44**	**164**	P	Pn	19 54 17.4	0.0
BDRM				S	Sn	19 54 25.5	+0.7
BDRM	**Kayabasi**	**0.44**	**164**	*i* P	Pn	19 54 17.4	0.0
BDRM				*i* S	Sn	19 54 25.5	+0.7
AYDN	**Tasoluk**	**0.49**	**70**	P	Pn	19 54 18.2	0.0
AYDN				S	Sn	19 54 25.4	-0.9
AYDN	**Tasoluk**	**0.49**	**70**	*i* P	Pn	19 54 18.2	0.0
AYDN				*i* S	Sn	19 54 25.4	-0.9
DGB	**˜zmir**	**0.65**	**330**	*i* P	Pg	19 54 19.2	+0.2
AYDB	**Zeytinkoy-Aydi**	**0.66**	**46**	*e*PG	Pn	19 54 20.8	+0.3
AYDB				*e*SG	Sn	19 54 30.7	+0.3
AYDB	**Zeytinkoy-Aydi**	**0.66**	**46**	*e*Pg	Pn	19 54 20.8	+0.3
AYDB				*e*Sg	Sn	19 54 30.7	+0.3
YER	**Yerkesik**	**0.86**	**114**	*e*PG	Pn	19 54 23.7	+0.4
YER				*e*SG	Sn	19 54 35.1	-0.3
YER	**Yerkesik**	**0.86**	**114**	*e*Pg	Pn	19 54 23.7	+0.4
YER				*e*Sg	Sn	19 54 35.1	-0.3
ZEY	**˜zmir**	**0.98**	**320**	*i* P	Pb	19 54 24.0	-0.4
ZEY				*i* S	Sg	19 54 37.8	-0.1

*ISCJB **26** 19:58:49.6±0.5, 39.°10N±0.°03×29.°07E±0.°03, h5km±6km, Error ellipse: s-maj=4.8km s-min=4.3km az=148.4*
*CSEM **26** 19:58:49.9±0.1, 39.°11N×29.°07E, h5km, MD2.7, Error ellipse: s-maj=1.4km s-min=1.1km az=108.0*
*DDA **26** 19:58:49.5, 39.°11N×29.°07E, h7km, Md2.7*
*ISK **26** 19:58:49.6, 39.°10N×29.°11E, h6km, MD2.7*
ISC 26 19:58:50.2±1.0, 39.°12N±0.°02×29.°08E±0.°02, h9km±9km, n28, σ0°57/43, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.29**	**255**	P	Pg	19 58 56.2	+0.1
DEMI				S	Sg	19 59 00.0	0.0
DEMI	**Demirci**	**0.29**	**255**	*i* P	Pg	19 58 56.2	+0.1
DEMI				*i* S	Sg	19 58 60.0	0.0
GDZ	**Gediz**	**0.32**	**96**	P	Pg	19 58 56.5	0.0
GDZ				S	Sg	19 59 01.0	+0.3
GDZ	**Gediz**	**0.32**	**96**	*i* P	Pg	19 58 56.5	0.0
GDZ				*i* S	Sg	19 59 01.0	+0.3
TVSB	**Tavsanli**	**0.44**	**42**	*e*PG	Pg	19 58 58.8	-0.1
TVSB				*e*SG	Sg	19 59 04.4	-0.3
TVSB	**Tavsanli**	**0.44**	**42**	*e*Pg	Pg	19 58 58.8	-0.1
TVSB				*e*Sg	Sg	19 59 04.4	-0.3
DURS	**Dursunbey**	**0.67**	**316**	P	Pg	19 59 02.9	-0.3
DURS				S	Sg	19 59 11.9	-0.1
DURS	**Dursunbey**	**0.67**	**316**	*i* P	Pg	19 59 02.9	-0.3
DURS				*i* S	Sg	19 59 11.9	-0.1
KULA	**Kula-Manisa**	**0.69**	**208**	*e*PG	Pg	19 59 03.1	-0.4
KULA	**Kula-Manisa**	**0.69**	**208**	*e*Pg	Pg	19 59 03.1	-0.4
MANT	**Manisa**	**0.75**	**213**	P	Pg	19 59 04.1	-0.6
MANT				S	Sg	19 59 13.7	-0.8
MANT	**Manisa**	**0.75**	**213**	*i* P	Pg	19 59 04.1	-0.6
MANT				*i* S	Sg	19 59 13.7	-0.8
KHAL	**Karahalli**	**0.82**	**157**	P	Pg	19 59 05.4	-0.5
KHAL				S	Sg	19 59 16.0	-0.6
KHAL	**Karahalli**	**0.82**	**157**	*i* P	Pg	19 59 05.4	-0.5
KHAL				*i* S	Sg	19 59 16.0	-0.6
KHL	**Karahalli**	**0.87**	**156**	*e*PG	Pg	19 59 06.3	-0.6
BALB	**Balikesir**	**1.06**	**300**	*e*PN	Pb	19 59 11.2	+0.4
BALB				*e*SN	Sn	19 59 26.2	-0.1
BALB	**Balikesir**	**1.06**	**300**	*e*Pn	Pb	19 59 11.2	+0.4
BALB				*e*Sn	Sn	19 59 26.2	-0.1
IGD	**Bursa**	**1.15**	**5**	*i* P	Pg	19 59 09.7	-2.6
IGD				*i* S	Sb	19 59 27.7	+0.4
IZI	**Iznik**	**1.25**	**14**	*e*PN	Pb	19 59 14.4	+0.3
IZI	**Iznik**	**1.25**	**14**	*e*Pn	Pb	19 59 14.4	+0.3
KCTX	**Karacabey (Bur**	**1.27**	**334**	*e*PN	Pb	19 59 14.8	+0.4
KCTX	**Karacabey (Bur**	**1.27**	**334**	*e*Pn	Pb	19 59 14.8	+0.4
ADVT	**Abdulvahap**	**1.41**	**21**	*e*PN	Pn	19 59 16.4	+0.3
ADVT	**Abdulvahap**	**1.41**	**21**	*e*Pn	Pn	19 59 16.4	+0.3
ARMT	**Armutlu**	**1.45**	**353**	*e*PN	Pn	19 59 17.1	+0.4
ARMT	**Armutlu**	**1.45**	**353**	*e*Pn	Pn	19 59 17.2	+0.4
GULT	**Gulveren**	**1.71**	**40**	*e*PN	Pn	19 59 20.9	+0.5
GULT	**Gulveren**	**1.71**	**40**	*e*Pn	Pn	19 59 20.9	+0.5

*ISK **26** 20:04:15.7, 39.°12N×29.°08E, h3km, ML3.3*
*DDA **26** 20:04:15.7, 39.°11N×29.°08E, h7km, Ml3.5*
*CSEM **26** 20:04:16.4±0.1, 39.°11N×29.°07E, h2km, ML3.5, Error ellipse: s-maj=1.7km s-min=1.5km az=74.0*
ISC 26 20:04:16.4±1.1, 39.°12N±0.°02×29.°08E±0.°02, h3km±12km, n83, σ0°49/102, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.29**	**255**	P	Pg	20 04 22.2	+0.2
DEMI				S	Sg	20 04 26.3	+0.4
DEMI	**Demirci**	**0.29**	**255**	*i* P	Pg	20 04 22.2	+0.2
DEMI				*i* S	Sg	20 04 26.3	+0.4
GDZ	**Gediz**	**0.32**	**95**	P	Pg	20 04 22.4	-0.1
GDZ				S	Sg	20 04 26.9	+0.3
GDZ	**Gediz**	**0.32**	**95**	*i* P	Pg	20 04 22.4	-0.1
GDZ				*i* S	Sg	20 04 26.9	+0.3
TVSB	**Tavsanli**	**0.44**	**42**	*e*PG	Pg	20 04 24.7	-0.3
TVSB	**Tavsanli**	**0.44**	**42**	*e*Pg	Pg	20 04 24.7	-0.3
DURS	**Dursunbey**	**0.67**	**316**	P	Pg	20 04 29.1	-0.2
DURS				S	Sg	20 04 38.4	+0.4
DURS	**Dursunbey**	**0.67**	**316**	*i* P	Pg	20 04 29.1	-0.2
DURS				*i* S	Sg	20 04 38.4	+0.4
KULA	**Kula-Manisa**	**0.69**	**209**	*e*PG	Pg	20 04 29.2	-0.3
KULA	**Kula-Manisa**	**0.69**	**209**	*e*Pg	Pg	20 04 29.2	-0.3
MANT	**Manisa**	**0.75**	**213**	P	Pg	20 04 30.3	-0.4
MANT				S	Sg	20 04 39.9	-0.5
MANT	**Manisa**	**0.75**	**213**	*i* P	Pg	20 04 30.3	-0.4
MANT				*i* S	Sg	20 04 39.9	-0.5
KHAL	**Karahalli**	**0.81**	**157**	P	Pg	20 04 31.8	-0.2
KHAL				S	Sg	20 04 42.7	+0.1
KHAL	**Karahalli**	**0.81**	**157**	*i* P	Pg	20 04 31.8	-0.2
KHAL				*i* S	Sg	20 04 42.7	+0.1
KHL	**Karahalli**	**0.87**	**156**	*e*PG	Pg	20 04 32.9	-0.1
KHL				*e*SG	Sb	20 04 45.3	-0.8
KHL	**Karahalli**	**0.87**	**156**	*e*Pg	Pg	20 04 32.9	-0.1
KHL				*e*Sg	Sb	20 04 45.3	-0.8
ORLT	**Orhaneli**	**0.94**	**351**	*e*PG	Pg	20 04 34.1	-0.3
ORLT	**Orhaneli**	**0.94**	**351**	*e*Pg	Pg	20 04 34.1	-0.3
AKHS	**Akhisar**	**1.01**	**257**	P	Pg	20 04 35.9	+0.1
AKHS				S	Sg	20 04 49.0	0.0
AKHS	**Akhisar**	**1.01**	**257**	*i* P	Pg	20 04 35.9	+0.1
AKHS				*i* S	Sg	20 04 49.0	0.0
AKS	**Akhisar**	**1.01**	**257**	*e*PG	Pg	20 04 36.1	+0.2
AKS	**Akhisar**	**1.01**	**257**	*e*Pg	Pg	20 04 36.1	+0.2
BALB	**Balikesir**	**1.06**	**300**	*e*PG	Pg	20 04 37.0	+0.2
BALB				*e*SG	Sb	20 04 52.2	+0.5
BALB	**Balikesir**	**1.06**	**300**	*e*Pg	Pg	20 04 37.0	+0.2
BALB				*e*Sg	Sb	20 04 52.2	+0.5
IGD	**Bursa**	**1.15**	**5**	*i* P	Pg	20 04 36.9	-1.5
IGD				*i* S	Sb	20 04 54.3	+0.2
IZI	**Iznik**	**1.25**	**14**	*e*PN	Pb	20 04 40.7	0.0
IZI	**Iznik**	**1.25**	**14**	*e*Pn	Pb	20 04 40.7	0.0
MDNY	**Mudanya-Bursa**	**1.26**	**353**	*e*PN	Pg	20 04 40.5	0.0
MDNY	**Mudanya-Bursa**	**1.26**	**353**	*e*Pn	Pg	20 04 40.5	0.0
KCTX	**Karacabey (Bur**	**1.27**	**334**	*e*PN	Pg	20 04 40.4	-0.4
KCTX	**Karacabey (Bur**	**1.27**	**334**	*e*Pn	Pg	20 04 40.4	-0.4
BALY	**Balya**	**1.29**	**299**	P	Pg	20 04 40.5	-0.6
BALY				S	Sg	20 04 56.6	-1.2
BALY	**Balya**	**1.29**	**299**	*i* P	Pg	20 04 40.5	-0.6
BALY				*i* S	Sg	20 04 56.6	-1.2
GEMT	**Gemlik**	**1.32**	**4**	*e*PN	Pn	20 04 42.1	+0.4
GEMT	**Gemlik**	**1.32**	**4**	*e*Pn	Pn	20 04 42.1	+0.4
DENT	**Denizli**	**1.36**	**182**	*e*PN	Pg	20 04 42.2	-0.2
DENT	**Denizli**	**1.36**	**182**	*e*Pn	Pg	20 04 42.3	-0.2
ADVT	**Abdulvahap**	**1.41**	**21**	*e*PN	Pn	20 04 42.6	-0.3
ADVT	**Abdulvahap**	**1.41**	**21**	*e*Pn	Pn	20 04 42.6	-0.3
GONE	**Gonen-Balikesi**	**1.42**	**311**	*e*PN	Pn	20 04 43.1	0.0
GONE	**Gonen-Balikesi**	**1.42**	**311**	*e*Pn	Pn	20 04 43.1	0.0
ARMT	**Armutlu**	**1.46**	**353**	*e*PN	Pn	20 04 43.6	0.0
ARMT	**Armutlu**	**1.46**	**353**	*e*Pn	Pn	20 04 43.6	0.0
AYDB	**Zeytinkoy-Aydi**	**1.50**	**219**	*e*PN	Pn	20 04 44.0	-0.2
AYDB	**Zeytinkoy-Aydi**	**1.50**	**219**	*e*Pn	Pn	20 04 44.0	-0.2
GPA	**Golpazari**	**1.51**	**39**	*e*PN	Pb	20 04 44.9	-0.1
GPA	**Golpazari**	**1.51**	**39**	*e*Pn	Pb	20 04 44.9	-0.1
EDC	**Edincik**	**1.54**	**323**	*e*PN	Pn	20 04 44.9	+0.1
EDC	**Edincik**	**1.54**	**323**	*e*Pn	Pn	20 04 44.9	+0.1
DKL	**Dikili**	**1.69**	**269**	*e*PN	Pn	20 04 47.1	+0.3
DKL	**Dikili**	**1.69**	**269**	*e*Pn	Pn	20 04 47.1	+0.3
GULT	**Gulveren**	**1.72**	**40**	*e*PN	Pn	20 04 47.6	+0.4
GULT	**Gulveren**	**1.72**	**40**	*e*Pn	Pn	20 04 47.6	+0.4
ISP	**Isparta**	**1.72**	**138**	*e*PN	Pn	20 04 47.9	+0.6
ISP	**Isparta**	**1.72**	**138**	*e*Pn	Pn	20 04 47.9	+0.6
HRT	**Hereke**	**1.76**	**15**	*e*PN	Pn	20 04 47.6	-0.1
HRT	**Hereke**	**1.76**	**15**	*e*Pn	Pn	20 04 47.7	-0.1
SPNC	**Sapanca-Adapaz**	**1.83**	**31**	*e*PN	Pn	20 04 49.6	+0.9
SPNC	**Sapanca-Adapaz**	**1.83**	**31**	*e*Pn	Pn	20 04 49.6	+0.9
MRMT	**Marmara Adasi**	**1.87**	**323**	*e*PN	Pn	20 04 50.1	+0.8
MRMT	**Marmara Adasi**	**1.87**	**323**	*e*Pn	Pn	20 04 50.1	+0.8
SVRH	**Sivrihisar-ESK**	**1.93**	**79**	*e*PN	Pn	20 04 50.5	+0.4
SVRH	**Sivrihisar-ESK**	**1.93**	**79**	*e*Pn	Pn	20 04 50.5	+0.4
ISK	**Istanbul-Kandi**	**1.94**	**360**	*e*PN	Pn	20 04 50.5	+0.2
ISK	**Istanbul-Kandi**	**1.94**	**360**	*e*Pn	Pn	20 04 50.5	+0.2
BCK	**Bucak**	**2.04**	**144**	*e*PN	Pn	20 04 52.1	+0.5
BCK	**Bucak**	**2.04**	**144**	*e*Pn	Pn	20 04 52.1	+0.5
BGKT	**Bogazkoy**	**2.07**	**354**	*e*PN	Pn	20 04 51.9	-0.1
BGKT	**Bogazkoy**	**2.07**	**354**	*e*Pn	Pn	20 04 51.9	-0.1
KLYT	**Kilyos**	**2.13**	**359**	*e*PN	Pn	20 04 52.8	0.0
KLYT	**Kilyos**	**2.13**	**359**	*e*Pn	Pn	20 04 52.8	0.0
RKY	**Sarkoy-Tekirda**	**2.14**	**318**	*e*PN	Pn	20 04 54.0	+0.9
RKY	**Sarkoy-Tekirda**	**2.14**	**318**	*e*Pn	Pn	20 04 54.0	+0.9
CTKS	**Kestanelik-??a**	**2.16**	**348**	*e*PN	Pn	20 04 54.0	+0.8
CTKS	**Kestanelik-??a**	**2.16**	**348**	*e*Pn	Pn	20 04 54.0	+0.8
KIZT	**Kizilcal**	**2.20**	**95**	*e*PN	Pn	20 04 54.8	+0.9
KIZT	**Kizilcal**	**2.20**	**95**	*e*Pn	Pn	20 04 54.8	+0.9
TKR	**Tekirdag**	**2.21**	**328**	*e*PN	Pn	20 04 54.3	+0.4
TKR	**Tekirdag**	**2.21**	**328**	*e*Pn	Pn	20 04 54.3	+0.4
CRLT	**Corlu**	**2.26**	**333**	*e*PN	Pn	20 04 54.8	+0.2
CRLT	**Corlu**	**2.26**	**333**	*e*Pn	Pn	20 04 54.8	+0.2
CTYL	**Yalikoy Yolu**	**2.43**	**346**	*e*PN	Pn	20 04 57.7	+0.8
CTYL	**Yalikoy Yolu**	**2.43**	**346**	*e*Pn	Pn	20 04 57.7	+0.8

*ISCJB **26** 20:07:06.0±0.5, 39.°09N±0.°03×29.°10E±0.°03, h3km±7km, Error ellipse: s-maj=5.1km s-min=4.4km az=153.6*
*ISK **26** 20:07:05.7, 39.°07N×29.°18E, h8km, MD2.8*
*DDA **26** 20:07:06.1, 39.°07N×29.°09E, h7km, Md2.6*
*CSEM **26** 20:07:06.1±0.1, 39.°09N×29.°11E, h5km, MD2.6, Error ellipse: s-maj=2.7km s-min=2.3km az=99.0*
ISC 26 20:07:06.2±0.9, 39.°09N±0.°02×29.°11E±0.°02, h12km±9km, n32, σ0°41/44, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.29**	**89**	P	Pg	20 07 12.3	+0.1
GDZ				S	Sg	20 07 16.9	+0.7
GDZ	**Gediz**	**0.29**	**89**	*i* P	Pg	20 07 12.3	+0.1
GDZ				*i* S	Sg	20 07 16.9	+0.7
DEMI	**Demirci**	**0.31**	**262**	P	Pg	20 07 12.3	-0.3
DEMI				S	Sg	20 07 16.6	-0.2
DEMI	**Demirci**	**0.31**	**262**	*i* P	Pg	20 07 12.3	-0.3
DEMI				*i* S	Sg	20 07 16.6	-0.2
TVSB	**Tavsanli**	**0.46**	**37**	*e*PG	Pg	20 07 15.1	-0.1
TVSB				*e*SG	Sg	20 07 20.8	-0.5
TVSB	**Tavsanli**	**0.46**	**37**	*e*Pg	Pg	20 07 15.1	-0.1
TVSB				*e*Sg	Sg	20 07 20.8	-0.5
KULA	**Kula-Manisa**	**0.67**	**212**	*e*PG	Pg	20 07 19.0	-0.2
KULA	**Kula-Manisa**	**0.67**	**212**	*e*Pg	Pg	20 07 19.0	-0.2
DURS	**Dursunbey**	**0.71**	**316**	P	Pg	20 07 20.1	0.0
DURS				S	Sg	20 07 28.7	-0.8
DURS	**Dursunbey**	**0.71**	**316**	*i* P	Pg	20 07 20.1	0.0
DURS				*i* S	Sg	20 07 28.7	-0.8
MANT	**Manisa**	**0.73**	**216**	P	Pg	20 07 20.5	0.0
MANT				S	Sg	20 07 29.8	-0.3
MANT	**Manisa**	**0.73**	**216**	*i* P	Pg	20 07 20.5	0.0
MANT				*i* S	Sg	20 07 29.8	-0.3
KHAL	**Karahalli**	**0.77**	**157**	P	Pb	20 07 21.9	+0.2
KHAL				S	Sb	20 07 32.1	-0.1
KHAL	**Karahalli**	**0.77**	**157**	*i* P	Pb	20 07 21.9	+0.2
KHAL				*i* S	Sb	20 07 32.1	-0.1
KHL	**Karahalli**	**0.83**	**157**	*e*PG	Pg	20 07 21.5	-0.7
KHL	**Karahalli**	**0.83**	**157**	*e*Pg	Pg	20 07 21.5	-0.7
AKS	**Akhisar**	**1.03**	**259**	*e*PN	Pn	20 07 27.1	+0.5
AKS	**Akhisar**	**1.03**	**259**	*e*Pn	Pn	20 07 27.1	+0.5
BALB	**Balikesir**	**1.10**	**301**	*e*PN	Pn	20 07 28.2	+0.6
BALB	**Balikesir**	**1.10**	**301**	*e*Pn	Pn	20 07 28.2	+0.6
IZI	**Iznik**	**1.28**	**12**	*e*PN	Pn	20 07 29.9	-0.2
IZI	**Iznik**	**1.28**	**12**	*e*Pn	Pn	20 07 29.9	-0.2
KCTX	**Karacabey (Bur**	**1.31**	**334**	*e*PN	Pg	20 07 31.5	0.0
KCTX	**Karacabey (Bur**	**1.31**	**334**	*e*Pn	Pg	20 07 31.5	0.0
ADVT	**Abdulvahap**	**1.43**	**20**	*e*PN	Pb	20 07 32.6	-0.3
ADVT	**Abdulvahap**	**1.43**	**20**	*e*Pn	Pb	20 07 32.6	-0.3
GONE	**Gonen-Balikesi**	**1.46**	**312**	*e*PN	Pb	20 07 33.8	+0.4
GONE	**Gonen-Balikesi**	**1.46**	**312**	*e*Pn	Pb	20 07 33.8	+0.4
ARMT	**Armutlu**	**1.49**	**353**	*e*PN	Pb	20 07 34.3	+0.4
ARMT	**Armutlu**	**1.49**	**353**	*e*Pn	Pb	20 07 34.3	+0.4
GULT	**Gulveren**	**1.73**	**38**	*e*PN	Pn	20 07 36.5	+0.3
GULT	**Gulveren**	**1.73**	**38**	*e*Pn	Pn	20 07 36.5	+0.3

*ISCJB **26** 20:14:03.6±0.4, 39.°09N×0.°03×29.°14E±0.°03, h6km±5km, Error ellipse: s-maj=5.0km s-min=3.8km az=168.9*
*DDA **26** 20:14:03.4, 39.°11N×29.°13E, h7km, Md2.7*
*ISK **26** 20:14:03.2, 39.°11N×29.°14E, h6km, MD2.9*
*CSEM **26** 20:14:03.7±0.1, 39.°11N×29.°13E, h5km, MD2.7, Error ellipse: s-maj=1.6km s-min=1.4km az=122.0*
ISC 26 20:14:04.0±1.1, 39.°11N±0.°02×29.°13E±0.°02, h5km±10km, n54, σ0°35/69, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.28**	**95**	P	Pg	20 14 09.2	-0.1
GDZ				S	Sg	20 14 13.5	+0.5
GDZ	**Gediz**	**0.28**	**95**	*i* P	Pg	20 14 09.2	-0.1
GDZ				*i* S	Sg	20 14 13.5	+0.5
DEMI	**Demirci**	**0.33**	**258**	P	Pg	20 14 10.3	0.0
DEMI				S	Sg	20 14 15.3	+0.6
DEMI	**Demirci**	**0.33**	**258**	*i* P	Pg	20 14 10.3	0.0
DEMI				*i* S	Sg	20 14 15.3	+0.6
TVSB	**Tavsanli**	**0.42**	**37**	PG	Pg	20 14 11.5	-0.7
TVSB	**Tavsanli**	**0.42**	**37**	*i* Pg	Pg	20 14 11.5	-0.7
KULA	**Kula-Manisa**	**0.70**	**212**	PG	Pg	20 14 17.3	-0.1
KULA	**Kula-Manisa**	**0.70**	**212**	*i* Pg	Pg	20 14 17.3	-0.1
DURS	**Dursunbey**	**0.70**	**314**	P	Pg	20 14 17.1	-0.4
DURS	**Dursunbey**	**0.70**	**314**	*i* P	Pg	20 14 17.1	-0.4
DURS				*i* S	Sb	20 14 29.9	+1.0
MANT	**Manisa**	**0.76**	**216**	P	Pg	20 14 18.5	-0.2
MANT				S	Sg	20 14 28.5	-0.1
MANT	**Manisa**	**0.76**	**216**	*i* P	Pg	20 14 18.4	-0.2
MANT				*i* S	Sg	20 14 28.5	-0.1
KHAL	**Karahalli**	**0.79**	**159**	P	Pg	20 14 19.2	0.0
KHAL				S	Sg	20 14 29.6	+0.1
KHAL	**Karahalli**	**0.79**	**159**	*i* P	Pg	20 14 19.2	0.0
KHAL				*i* S	Sg	20 14 29.6	+0.1
KHL	**Karahalli**	**0.85**	**158**	*e*PG	Pg	20 14 19.6	-0.6
KHL	**Karahalli**	**0.85**	**158**	*e*Pg	Pg	20 14 19.6	-0.6
ORLT	**Orhaneli**	**0.95**	**349**	*e*PG	Pg	20 14 21.9	-0.3
ORLT	**Orhaneli**	**0.95**	**349**	*e*Pg	Pg	20 14 21.9	-0.3
AKHS	**Akhisar**	**1.05**	**258**	P	Pg	20 14 23.6	-0.5
AKHS				S	Sb	20 14 38.6	-0.1
AKHS	**Akhisar**	**1.05**	**258**	*i* P	Pg	20 14 23.6	-0.5
AKHS				*i* S	Sb	20 14 38.6	-0.1
AKS	**Akhisar**	**1.05**	**258**	*e*PG	Pg	20 14 24.0	-0.1
AKS	**Akhisar**	**1.05**	**258**	*e*Pg	Pg	20 14 24.0	-0.1
BALB	**Balikesir**	**1.10**	**299**	*e*PN	Pb	20 14 25.4	-0.1
BALB				*e*SN	Sb	20 14 40.4	+0.2
BALB	**Balikesir**	**1.10**	**299**	*e*Pn	Pb	20 14 25.4	-0.1
BALB				*e*Sn	Sb	20 14 40.4	+0.2
IZI	**Iznik**	**1.25**	**12**	*e*PN	Pg	20 14 28.0	0.0
IZI	**Iznik**	**1.25**	**12**	*e*Pn	Pg	20 14 28.0	0.0
MDNY	**Mudanya-Bursa**	**1.27**	**352**	*e*PN	Pg	20 14 28.1	-0.2
MDNY	**Mudanya-Bursa**	**1.27**	**352**	*e*Pn	Pg	20 14 28.1	-0.2
KCTX	**Karacabey (Bur**	**1.30**	**333**	*e*PN	Pn	20 14 28.5	-0.3
KCTX	**Karacabey (Bur**	**1.30**	**333**	*e*Pn	Pn	20 14 28.5	-0.3
GEMT	**Gemlik**	**1.32**	**2**	*e*PN	Pn	20 14 28.6	-0.5
GEMT	**Gemlik**	**1.32**	**2**	*e*Pn	Pn	20 14 28.6	-0.5
BALY	**Balya**	**1.33**	**299**	P	Pn	20 14 28.8	-0.4
BALY				S	Sn	20 14 47.6	+0.3
BALY	**Balya**	**1.33**	**299**	*i* P	Pn	20 14 28.8	-0.4
BALY				*i* S	Sn	20 14 47.6	+0.3
ADVT	**Abdulvahap**	**1.40**	**19**	*e*PN	Pn	20 14 29.9	-0.3
ADVT	**Abdulvahap**	**1.40**	**19**	*e*Pn	Pn	20 14 29.9	-0.3
GONE	**Gonen-Balikesi**	**1.45**	**310**	*e*PN	Pn	20 14 30.4	-0.5
GONE	**Gonen-Balikesi**	**1.45**	**310**	*e*Pn	Pn	20 14 30.4	-0.5
ARMT	**Armutlu**	**1.47**	**352**	*e*PN	Pn	20 14 31.2	0.0
ARMT	**Armutlu**	**1.47**	**352**	*e*Pn	Pn	20 14 31.2	0.0
GPA	**Golpazari**	**1.49**	**37**	*e*PN	Pn	20 14 31.4	0.0
GPA	**Golpazari**	**1.49**	**37**	*e*Pn	Pn	20 14 31.4	0.0
EDC	**Edincik**	**1.57**	**322**	*e*PN	Pn	20 14 32.5	-0.1
EDC	**Edincik**	**1.57**	**322**	*e*Pn	Pn	20 14 32.5	-0.1
GULT	**Gulveren**	**1.70**	**39**	*e*PN	Pn	20 14 34.4	0.0
GULT	**Gulveren**	**1.70**	**39**	*e*Pn	Pn	20 14 34.4	0.0
HRT	**Hereke**	**1.76**	**13**	*e*PN	Pn	20 14 34.9	-0.3
HRT	**Hereke**	**1.76**	**13**	*e*Pn	Pn	20 14 34.9	-0.3
SPNC	**Sapanca-Adapaz**	**1.82**	**30**	*e*PN	Pn	20 14 35.7	-0.2
SPNC	**Sapanca-Adapaz**	**1.82**	**30**	*e*Pn	Pn	20 14 35.7	-0.2
SVRH	**Sivrihisar-ESK**	**1.89**	**79**	*e*PN	Pn	20 14 37.0	0.0
SVRH	**Sivrihisar-ESK**	**1.89**	**79**	*e*Pn	Pn	20 14 37.0	0.0
ISK	**Istanbul-Kandi**	**1.95**	**358**	*e*PN	Pn	20 14 38.0	+0.3
ISK	**Istanbul-Kandi**	**1.95**	**358**	*e*Pn	Pn	20 14 38.1	+0.3

*NIED **26** 20:23:00, 46.°40N×151.°90E, h56km, Mw3.8 Best double couple: M0:6.50000×10^14 NP1:φ=282.00000°, δ17.00000°, λ-18.00000°. NP2:φ=30.00000°, δ85.00000°, λ-106.00000°.*
*JMA **26** 20:23:13.8±0.7, 46.°41N×151.°88E, h30km, M4.2*
*MOS **26** 20:23:13.6±1.3, 46.°32N×152.°06E, h80km, mb4.1/7, Error ellipse: s-maj=13.1km s-min=9.5km az=50.7*
*SKHL **26** 20:23:14.8±0.4, 46.°28N×152.°00E, h89km±5km, mb4.9/5, msh5.7/4*
*ISCJB **26** 20:23:15.3±0.6, 46.°12N±0.°07×151.°95E±0.°08, h100km, mb3.8/11, Error ellipse: s-maj=12.1km s-min=4.7km az=143.7*
*IDC **26** 20:23:17.2±2.7, 46.°52N×151.°93E, h92km±22km, mb3.5/10, mb1 3.7/15, mb1mx3.4/45, mbtmp3.8/15, MS2.8/1, Ms1 2.8/1, ms1mx2.1/40, Error ellipse: s-maj=33.2km s-min=16.0km az=151.0*
ISC 26 20:23:15.5±0.7, 46.°13N±0.°09×152.°05E±0.°08, h100km, n72, σ2°29/78, mb3.6/11, 5C, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUR	**Kuril'sk**	**3.07**	**254**	*ce*PN	Pn	20 24 02.3	+0.2
KUR				*i* S	Sn	20 24 37.7	-0.3
KUR				pmax	pmax		
	comp=Z,50nm,0.5s						
KUR				pmax	pmax		
	comp=N,25nm,0.3s						
KUR				smax	smax		
	comp=N,189nm,0.5s						
KUR				smax	smax		
	comp=E,40nm,

baz=339,slow=74
H11S3 WAKE ISLAND Hy 30.11 151 T T 21 01 11.5
baz=339,slow=74
H11S2 WAKE ISLAND Hy 30.11 151 T T 21 01 10.8
baz=339
COLA College 37.08 38 P **P 20 30 17.3 +1.8**
COLA College 37.08 38 *eP* **P 20 30 17.3 +1.8**
CMAR Chiang Mai Arr 51.51 256 P **P 20 32 13.5 +2.5**
comp=Z,1.0nm,0.7s,baz=41,slow=7.4,SNR=8.3
YKA Yellowknife Ar 51.86 36 P **P 20 32 14.1 +1.1**
comp=Z,0.3nm,0.6s,baz=296,slow=7.0,SNR=4.9
AAK Ala-Archa 53.45 296 P **P 20 32 25.7 +0.4**
AAK pmax pmax
comp=Z,9.0nm,1.4s
AAK Ala-Archa 53.45 296 *eP* **P 20 32 25.7 +0.4**
GUN Gumba 54.32 275 *eP* **P 20 32 34.1 +2.1**
comp=Z,14nm,0.5s
KKN Kakani 54.81 275 *eP* **P 20 32 37.9 +2.5**
comp=Z,14nm,0.6s
PKIN Phulchoki 54.86 275 *eP* **P 20 32 38.3 +2.5**
DMN Daman 55.04 275 *eP* **P 20 32 39.5 +2.4**
comp=Z,14nm,0.5s
GKN Gorkha 55.12 276 *eP* **P 20 32 39.9 +2.3**
comp=Z,22nm,0.6s
KOLN Koldanda 55.99 276 *eP* **P 20 32 46.2 +2.4**
comp=Z,20nm,0.6s
PYUN Piuthan 56.20 277 *eP* **P 20 32 47.7 +2.3**
comp=Z,18nm,0.5s
FINES FINESS Array B 64.28 334 P **P 20 33 38.8 -0.8**
comp=Z,0.8nm,0.4s,baz=54,slow=5.3,SNR=14
PDAR Pinedale Array 65.70 53 P **P 20 33 50.7 +1.2**
comp=Z,0.6nm,0.8s,baz=0.0,slow=1.5,SNR=4.1
NB2 NORSAR Subarra 68.57 341 P **P 20 34 07.5 +0.5**
comp=Z,0.6nm,0.5s,baz=27,slow=6.5
NOA NORSAR Array B 68.57 341 P **P 20 34 07.6 +0.6**
comp=Z,0.8nm,0.4s,baz=29,slow=6.5,SNR=7.7
KBZ Khabaz 70.76 314 P **P 20 34 22.3 +1.6**
comp=Z,2.1nm,0.8s,baz=112,slow=1.1,SNR=4.8
AKASG Malin Array Be 71.65 326 P **P 20 34 25.7 -0.2**
comp=Z,0.4nm,0.4s,baz=35,slow=6.1,SNR=3.3
BRTR Keskin Array B 78.33 316 P **P 20 35 05.9 +1.1**
comp=Z,0.6nm,0.6s,baz=84,slow=5.2,SNR=6.1
BRTR Keskin Array B 78.33 316 *eP* **P 20 35 06.6 +1.8**
BRTR pmax pmax
comp=Z,1.0nm,0.7s
TXAR Lajitas Array 78.44 60 P **P 20 35 07.6 +2.1**
comp=Z,0.5nm,0.5s,baz=298,slow=4.2,SNR=9.4
GERES GERESS Array B 78.68 333 P **P 20 35 07.6 +1.1**
comp=Z,0.3nm,0.6s,baz=2.9,slow=5.3,SNR=3.6
GERES GERESS Array B 78.68 333 *eP* **P 20 35 09.0 +2.5**
GERES GERESS Array B 78.68 333 *eP* **P 20 35 09.0 +2.5**

IDC 26 20:28:09.2±1.1, 7°.92S×122°.19E, h0km, mb4.0/5, mb1 4.0/8, mb1mx3.8/35, mbtmp3.9/8, ML3.5/3, MS2.9/4, Ms1 3.0/4, ms1mx2.6/32, Error ellipse: s-maj=107.9km s-min=17.3km az=56.0, Flores Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAPI	**Kappang**	**3.77**	**320**	Pn	Pn	20 29 10.5	+1.9
KAPI	2.6nm,0.3s,baz=202,slow=11,SNR=6.2			Sn	Sb	20 30 01.7	-1.2
KAPI	3.1nm,0.3s,baz=72,slow=20,SNR=2.7			LR	LR	20 30 41.4	
WRA	comp=Z,100nm,18.3s,baz=110,slow=40 **Warramunga Arr**	**16.77**	**137**	Pn	Pn	20 32 03.8	-2.0
WRA	0.1nm,0.3s,baz=306,slow=14,SNR=7.6			Sn	Sn	20 35 03.9	-9.0
ASAR	0.3nm,0.3s,baz=305,slow=23,SNR=4.8 **Alice Springs**	**19.27**	**146**	P	P	20 32 35.9	+0.2
PSI	0.3nm,0.3s,baz=327,slow=13,SNR=25 **Prapat**	**25.54**	**294**	LR	LR	20 46 08.2	
STKA	comp=Z,31nm,19.6s,baz=78,slow=42 **Stephens Creek**	**29.91**	**145**	P	P	20 34 19.7	+0.7
CMAR	1.4nm,0.5s,baz=318,slow=9.2,SNR=11 **Chiang Mai Arr**	**34.83**	**319**	P	P	20 35 02.0	-0.2
CMAR	0.3nm,0.7s,baz=142,slow=6.8,SNR=6.5			LR	LR	20 51 29.9	
SONM	comp=Z,7.3nm,18.1s,baz=165,slow=40 **Songino Array**	**57.24**	**347**	P	P	20 37 59.6	+1.0
MKAR	6.9nm,1.4s,baz=164,slow=9.2,SNR=10.0 **Makanchi Array**	**64.99**	**331**	P	P	20 38 50.5	-0.6
ZALV	1.0nm,0.5s,baz=145,slow=7.1,SNR=19 **Zalesovo Beam**	**69.21**	**337**	P	P	20 39 16.8	-0.9
ARU	1.3nm,0.5s,baz=134,slow=4.7,SNR=6.8 **Arti**	**82.49**	**330**	LR	LR	21 20 01.8	
	comp=Z,23nm,18.9s,baz=198,slow=38						

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*ISCJB **26** 20:28:31.6±0.5, 39°.10N±0°.03×29°.14E±0°.03, h7km±5km, Error ellipse: s-maj=4.9km s-min=4.2km az=161.4*
*CSEM **26** 20:28:31.7±0.1, 39°.12N×29°.13E, h5km, MD2.8, Error ellipse: s-maj=2.2km s-min=2.0km az=117.0*
*DDA **26** 20:28:31.5, 39°.10N×29°.13E, h7km, Md2.8*
*ISK **26** 20:28:31.2, 39°.13N×29°.16E, h6km, MD2.9*
ISC 26 20:28:31.1±0.9, 39°.11N±0°.03×29°.16E±0°.02, h15km±9km, n36, σ0°32/49, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.25**	**95**	P	**Pb**	**20 28 37.5**	**0.0**
GDZ				S	**Sb**	**20 28 41.4**	**-0.4**
GDZ	**Gediz**	**0.25**	**95**	*i* P	**Pb**	**20 28 37.5**	**0.0**
GDZ				*i* S	**Sb**	**20 28 41.4**	**-0.4**
DEMI	**Demirci**	**0.35**	**259**	P	**Pb**	**20 28 38.7**	**-0.4**
DEMI				S	**Sg**	**20 28 43.3**	**+0.1**
DEMI	**Demirci**	**0.35**	**259**	*i* P	**Pb**	**20 28 38.7**	**-0.4**
DEMI				*i* S	**Sg**	**20 28 43.3**	**+0.1**
TVSB	**Tavsanli**	**0.41**	**35**	*e*PG	**Pg**	**20 28 39.4**	**0.0**
TVSB				*e*SG	**Sg**	**20 28 45.1**	**-0.1**
TVSB	**Tavsanli**	**0.41**	**35**	*e*Pg	**Pg**	**20 28 39.4**	**0.0**
TVSB				*e*Sg	**Sg**	**20 28 45.1**	**-0.1**
KULA	**Kula-Manisa**	**0.71**	**213**	*e*PG	**Pb**	**20 28 45.3**	**0.0**
KULA	**Kula-Manisa**	**0.71**	**213**	*e*Pg	**Pb**	**20 28 45.3**	**0.0**
DURS	**Dursunbey**	**0.72**	**313**	P	**Pg**	**20 28 44.9**	**-0.3**
DURS	**Dursunbey**	**0.72**	**313**	*i* P	**Pg**	**20 28 44.9**	**-0.3**
DURS				*i* S	**Sn**	**20 28 57.7**	**+0.1**
MANT	**Manisa**	**0.78**	**217**	P	**Pb**	**20 28 46.6**	**+0.1**
MANT				S	**Sg**	**20 28 56.5**	**0.0**
MANT	**Manisa**	**0.78**	**217**	*i* P	**Pb**	**20 28 46.6**	**+0.1**
MANT				*i* S	**Sg**	**20 28 56.5**	**0.0**
KHAL	**Karahalli**	**0.79**	**160**	P	**Pn**	**20 28 47.5**	**-0.3**
KHAL				S	**Sb**	**20 28 57.7**	**+0.6**
KHAL	**Karahalli**	**0.79**	**160**	*i* P	**Pn**	**20 28 47.5**	**-0.3**
KHAL				*i* S	**Sb**	**20 28 57.7**	**+0.6**
BALB	**Balikesir**	**1.12**	**298**	*e*PN	**Pg**	**20 28 53.1**	**+0.4**
BALB	**Balikesir**	**1.12**	**298**	*e*Pn	**Pg**	**20 28 53.1**	**+0.4**
IZI	**Iznik**	**1.25**	**11**	*e*PN	**Pg**	**20 28 55.8**	**+0.6**
IZI	**Iznik**	**1.25**	**11**	*e*Pn	**Pg**	**20 28 55.8**	**+0.6**
KCTX	**Karacabey (Bur**	**1.31**	**332**	*e*PN	**Pg**	**20 28 56.1**	**-0.2**
KCTX	**Karacabey (Bur**	**1.31**	**332**	*e*Pn	**Pg**	**20 28 56.1**	**-0.2**
BALY	**Balya**	**1.34**	**298**	P	**Pg**	**20 28 57.1**	**+0.1**
BALY				S	**Sg**	**20 29 14.4**	**-0.1**
BALY	**Balya**	**1.34**	**298**	*i* P	**Pg**	**20 28 57.1**	**+0.1**
BALY				*i* S	**Sg**	**20 29 14.4**	**-0.1**
ADVT	**Abdulvahap**	**1.39**	**19**	*e*PN	**Pg**	**20 28 57.7**	**-0.2**
ADVT	**Abdulvahap**	**1.39**	**19**	*e*Pn	**Pg**	**20 28 57.7**	**-0.2**
ARMT	**Armutlu**	**1.47**	**351**	*e*PN	**Pb**	**20 28 58.2**	**0.0**
ARMT	**Armutlu**	**1.47**	**351**	*e*Pn	**Pb**	**20 28 58.2**	**0.0**
GONE	**Gonen-Balikesi**	**1.47**	**310**	*e*PN	**Pb**	**20 28 58.7**	**+0.6**
GONE	**Gonen-Balikesi**	**1.47**	**310**	*e*Pn	**Pb**	**20 28 58.7**	**+0.6**
EDC	**Edincik**	**1.58**	**321**	*e*PN	**Pb**	**20 29 00.1**	**0.0**
EDC	**Edincik**	**1.58**	**321**	*e*Pn	**Pb**	**20 29 00.1**	**0.0**
GULT	**Gulveren**	**1.68**	**38**	*e*PN	**Pb**	**20 29 02.5**	**+0.6**
GULT	**Gulveren**	**1.68**	**38**	*e*Pn	**Pb**	**20 29 02.5**	**+0.6**
SVRH	**Sivrihisar-ESK**	**1.87**	**79**	*e*PN	**Pb**	**20 29 04.9**	**-0.1**
SVRH	**Sivrihisar-ESK**	**1.87**	**79**	*e*Pn	**Pb**	**20 29 04.9**	**-0.1**
ISK	**Istanbul-Kandi**	**1.95**	**358**	*e*PN	**Pb**	**20 29 06.2**	**-0.1**
ISK	**Istanbul-Kandi**	**1.95**	**358**	*e*Pn	**Pb**	**20 29 06.2**	**-0.1**

WEL 26 20:35:59.7±0.8, 45°.32S×166°.37E, h5km, ML3.9/12, Error ellipse: s-maj=8.2km s-min=3.9km az=90.0, Off west coast of South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DCZ	**Deep Cove**	**0.57**	**105**	PG	Pg	20 36 10.9	+0.2
DCZ				SG	Sb	20 36 20.7	+0.1
DCZ				AML	AML	20 36 23.5	
PYZ	**Puysegur Point**	**0.88**	**166**	P*	Pg	20 36 16.3	-0.2
PYZ				S*	Sg	20 36 27.6	-0.3
PYZ				S*	Sb	20 36 28.7	-0.7
MLZ	**Mavora Lakes**	**1.23**	**93**	P*	Pg	20 36 22.2	-1.1
MLZ				AML	AML	20 36 44.9	
MLZ				AML	AML	20 36 46.6	
WHZ	**Wether Hill Ro**	**1.25**	**118**	P*	Pg	20 36 22.2	-1.4
WHZ				AML	AML	20 36 51.9	
WHZ				AML	AML	20 36 52.0	
APZ	**The Paps**	**1.89**	**144**	PN	Pn	20 36 32.6	0.0
APZ				AML	AML	20 37 02.4	
APZ				AML	AML	20 37 02.5	
WKZ	**Wanaka**	**1.94**	**76**	PN	Pb	20 36 34.6	-0.8
WKZ				AML	AML	20 37 12.7	
WKZ				AML	AML	20 37 15.1	
EAZ	**Earnscleugh**	**2.07**	**89**	PN	Pn	20 36 36.2	+1.0
EAZ				AML	AML	20 37 10.8	
EAZ				AML	AML	20 37 17.2	
JCZ	**Jackson Bay**	**2.12**	**55**	PN	Pb	20 36 38.4	-0.3
JCZ				AML	AML	20 37 14.2	
JCZ				AML	AML	20 37 17.6	
SYZ	**Scrubby Hill**	**2.28**	**123**	PN	Pn	20 36 38.7	+0.7
SYZ				AML	AML	20 37 12.3	
SYZ				AML	AML	20 37 23.1	
TUZ	**Tuapeka**	**2.37**	**107**	PN	Pn	20 36 40.5	+1.3
TUZ				AML	AML	20 37 19.1	
TUZ				AML	AML	20 37 19.1	
LBZ	**Lake Benmore**	**2.87**	**72**	PN	Pn	20 36 45.9	-0.1
LBZ				AML	AML	20 37 37.9	
LBZ				AML	AML	20 39 18.4	
ODZ	**Otahua Downs**	**3.03**	**86**	PN	Pn	20 36 47.8	-0.5
ODZ				AML	AML	20 37 41.5	
ODZ				AML	AML	20 37 43.0	
FOZ	**Fox Glacier**	**3.04**	**55**	AML	AML	20 37 45.6	
FOZ				AML	AML	20 37 50.3	

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*IDC **26** 20:36:14.5±0.7, 9°.68S×159°.65E, h0km, mb4.3/12, mb1 4.6/12, mb1mx4.3/34, mbtmp4.3/12, MS3.6/9, Ms1 3.7/9, ms1mx3.4/22, Error ellipse: s-maj=23.5km s-min=9.4km az=144.0*
*ISCJB **26** 20:36:17.1±0.6, 9°.85S±0°.07×159°.8E±0°.1, h26km, mb4.6/30, MS3.6/9, Error ellipse: s-maj=17.9km s-min=6.6km az=28.4*
*NEIC **26** 20:36:17.3±1.4, 9°.72S×159°.58E, h16km±9km, mb4.8/10, Error ellipse: s-maj=15.3km s-min=8.2km az=125.0*
ISC 26 20:36:18.6±0.7, 9°.79S±0°.10×159°.7E±0°.1, h26km, n42, σ1°33/32, mb4.7/30, MS3.7/9, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	**Honiara**	**0.42**	**33**	Pn	**Pb**	**20 36 27.0**	**-0.6**
HNR	3μm,0.3s,baz=218,slow=4.5,SNR=1198			Sn	**Sn**	**20 36 36.1**	**+0.2**
HNR	5μm,0.3s,baz=82,slow=13,SNR=45 **Honiara**	**0.42**	**33**	*e*Pg	**Pb**	**20 36 26.5**	**-1.0**
HNR				Pn	Pn	20 36 27.0	-2.0
HNR				Sn	**Sn**	**20 36 36.1**	**+0.2**
CTAO	**Charters Tower**	**16.55**	**230**	*e*Pn	**P**	**20 40 12.4**	**+0.9**
EIDS	421nm,1.2s **Eidsvold**	**17.54**	**207**	*e*Pn	**Pn**	**20 40 21.8**	**+0.4**
JAY	22nm,1.0s **Jayapura**	**20.23**	**290**	P	**P**	**20 40 50.8**	**-1.2**
JAY	0.6nm,0.5s,baz=84,slow=21,SNR=4.4 **Jayapura**	**20.23**	**290**	P	Pn	20 40 59.3	+5.3
WRAB	19nm,1.3s **Tennant Creek**	**26.48**	**245**	*e*P	**P**	**20 41 52.1**	**-1.9**
WRA	16nm,0.8s **Warramunga Arr**	**26.49**	**245**	P	**P**	**20 41 52.9**	**-1.3**
GUMO	5.2nm,0.7s,baz=72,slow=10,SNR=34 **Guam**	**27.51**	**327**	LR	LR	20 51 27.4	
STKA	comp=Z,67nm,19.9s,baz=98,slow=33 **Stephens Creek**	**27.66**	**215**	P	**P**	**20 42 05.1**	**+0.6**
STKA	4.5nm,0.8s,baz=44,slow=12,SNR=16			LR	LR	20 53 09.2	
ASAR	comp=Z,260nm,18.6s,baz=26,slow=37 **Alice Springs**	**28.25**	**238**	P	**P**	**20 42 07.7**	**-2.2**
ASAR	4.3nm,0.9s,baz=62,slow=9.9,SNR=28			LR	LR	20 52 42.8	
BBOO	comp=Z,244nm,20.1s,baz=67,slow=35 **Buckleboo**	**31.64**	**220**	*e*P	**P**	**20 42 39.2**	**-0.7**
PCI	13nm,0.8s **Palu**	**40.63**	**280**	P	**P**	**20 43 58.7**	**+1.8**
PPT	36nm,1.1s,513nm **Papeete**	**49.75**	**105**	LR	LR	21 03 56.5	
MJAR	comp=Z,73nm,18.3s,baz=50,slow=33 **Mashiro Arr**	**50.33**	**337**	LR	LR	21 04 31.6	
KSRS	comp=Z,24nm,21.9s,baz=95,slow=34 **Korea Array**	**55.64**	**329**	P	**P**	**20 45 51.4**	**-1.0**
KSAR	1.0nm,0.6s,baz=160,slow=7.7,SNR=6.1 **Wonju Array Be**	**55.65**	**329**	P	**P**	**20 45 51.4**	**-1.1**
SKNT	25nm,0.9s **Sakolnakorn**	**61.18**	**295**	P	P	20 46 34.9	+3.3
CHBT	15nm,0.9s **CHBT**	**61.23**	**290**	P	P	20 46 39.1	+7.1
PBKT	9.5nm,0.8s **Saiao Pong**	**63.74**	**294**	P	P	20 46 55.1	+6.5
UTTA	2.5nm,0.7s **Uttaradit**	**64.51**	**295**	P	P	20 47 00.4	+6.7
SRDT	64nm,0.8s **SRDT**	**64.70**	**291**	P	P	20 47 02.2	+7.2
NANT	4.6nm,0.7s **Nan**	**64.75**	**296**	P	**P**	**20 46 58.3**	**+3.0**
CRAI	59nm,0.8s **Chiangrai**	**65.55**	**297**	P	**P**	**20 47 03.6**	**+3.1**
LAMP	26nm,0.8s **Lampang**	**65.60**	**295**	P	P	20 47 07.7	+6.9
CMAR	6.1nm,0.8s **Chiang Mai Arr**	**66.19**	**295**	P	**P**	**20 47 04.8**	**+0.1**
CMAR	3.0nm,0.7s,baz=124,slow=5.3,SNR=21			LR	LR	21 15 05.3	
VNDA	comp=Z,16nm,20.5s,baz=100,slow=35 **Vanda**	**67.72**	**179**	P	**P**	**20 47 14.9**	**+1.6**
VNDA	2.9nm,0.8s,baz=337,slow=5.5,SNR=7.3			LR	LR	21 12 05.4	
ULN	comp=Z,107nm,18.8s,baz=286,slow=32 **Ulaanbaatar**	**73.88**	**326**	*e*P	**P**	**20 47 51.7**	**+0.2**
SONM	5.9nm,0.9s **Songino Array**	**74.22**	**326**	P	**P**	**20 47 53.5**	**+0.1**
SONM	3.7nm,0.6s,baz=140,slow=5.8,SNR=33			LR	LR	21 20 53.1	
LSA	comp=Z,25nm,18.2s,baz=125,slow=36 **Lhasa**	**76.70**	**304**	*e*P	**P**	**20 48 08.7**	**+0.3**
BILL	**Bilibino**	**77.77**	**3**	*e*P	**P**	**20 48 13.3**	**+0.3**
SML	9.4nm,1.0s **Sawmill**	**81.96**	**22**	*e*P	**P**	**20 48 36.4**	**+0.5**
COLA	3.4nm,0.9s **College**	**84.04**	**20**	*e*P	**P**	**20 48 44.6**	**-1.9**
ILAR	14nm,1.1s **Eielson Array**	**84.30**	**20**	P	**P**	**20 48 47.4**	**-0.6**
EGAK	3.2nm,0.8s,baz=254,slow=5.5,SNR=27 **Eagle**	**86.32**	**22**	*e*P	**P**	**20 48 59.0**	**+1.0**
MKAR	13nm,1.3s **Makanchi Array**	**88.58**	**318**	P	**P**	**20 49 08.8**	**-0.5**
ZALV	1.8nm,0.8s,baz=100,slow=5.5,SNR=10 **Zalesovo Beam**	**89.11**	**325**	P	**P**	**20 49 09.6**	**-2.0**
NVAR	0.4nm,0.4s,baz=127,slow=4.4,SNR=3.8 **Mina Array Bea**	**89.80**	**51**	P	**P**	**20 49 16.2**	**+0.7**
NVAR	1.3nm,0.8s,baz=243,slow=6.5,SNR=5.5			LR	LR	21 23 23.8	
YKA	comp=Z,59nm,19.3s,baz=264,slow=32 **Yellowknife Ar**	**96.61**	**28**	P	**P**	**20 49 45.9**	**0.0**
	1.1nm,0.9s,baz=256,slow=4.5,SNR=9.5						

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*CSEM **26** 20:43:00.8±0.3, 49°.73N×18°.40E, h1km, Error ellipse: s-maj=9.2km s-min=5.0km az=19.0*
PRU 26 20:43:00.8, 49°.81N×18°.46E, h0km, Czech and Slovak Republics

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OKC	**Ostrava-Krasne**	**0.20**	**278**	*e*PG	Pg	20 43 05.0	+0.3
OKC				*e*SG	Sg	20 43 08.1	+0.8
OKC	comp=Z,9.3nm,0.4s **Ostrava-Krasne**	**0.20**	**278**	Pg	Pg	20 43 05.0	+0.3
OKC				Sg	Sg	20 43 08.1	+0.8
MORC	9.3nm,0.4s **Moravsky Berou**	**0.60**	**267**	*e*Pg	Pg	20 43 12.1	-0.1
MORC				*e*Sg	Sg	20 43 20.3	+0.4
LANS	**Liptovska Anna**	**0.93**	**135**	*e*Pg	Pg	20 43 17.1	-1.5
LANS				*e*Sg	Sb	20 43 32.3	-0.5
LANS	**Liptovska Anna**	**0.93**	**135**	*e*PG	Pg	20 43 17.0	-1.6
LANS				*e*SG	Sb	20 43 32.3	-0.5
VRAC	**Vranov**	**1.31**	**248**	*e*Pg	Pg	20 43 25.1	-0.9
VRAC				*e*Sg	Sg	20 43 43.0	0.0
VYHS	**Vyhne**	**1.34**	**169**	*e*Pg	Pg	20 43 24.9	-1.6
VYHS				*e*Sn	Sg	20 43 42.0	-1.8
VYHS	**Vyhne**	**1.34**	**169**	*e*PG	Pg	20 43 24.9	-1.6
VYHS				*e*SN	Sg	20 43 42.0	-1.8
VYHS				*e*LG	Lg	20 43 43.8	
DPC	**Dobruska-Polom**	**1.48**	**292**	*e*PG	Pn	20 43 27.4	-1.3
DPC				*e*SG	Sg	20 43 47.1	-1.2
DPC	comp=Z,3.2nm,0.2s **Dobruska-Polom**	**1.48**	**292**	Pg	Pn	20 43 27.4	-1.3
DPC				Sg	Sg	20 43 47.1	-1.2
STHS	3.2nm,0.2s **Stebnicka Huta**	**1.85**	**101**	*e*Sn	Sg	20 44 02.8	+2.5
STHS	**Stebnicka Huta**	**1.85**	**101**	*e*Pn	Pb	20 43 35.2	-0.3
STHS	**Stebnicka Huta**	**1.85**	**101**	*e*PN	Pb	20 43 35.2	-0.3
STHS				*e*SN	Sg	20 44 02.8	+2.5
STHS				*e*LG	Lg	20 44 09.0	
KHC	**Kasperske Hory**	**3.26**	**260**	*e*SG	Sg	20 44 43.7	-1.6
KHC	**Kasperske Hory**	**3.26**	**260**	Sg	Sg	20 44 43.7	-1.6

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*CSEM **26** 20:43:12.9±0.4, 50°.14N×19°.16E, h1km, Error ellipse: s-maj=8.9km s-min=4.6km az=168.0*
PRU 26 20:43:13.6, 50°.14N×19°.15E, h0km, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OJC	**Ojcow**	**0.42**	**79**	*e*Pg	Pg	20 43 20.9	-0.8
OJC				*e*Sg	Sg	20 43 26.7	-0.5
OJC	**Ojcow**	**0.42**	**79**	*e*Pg	Pg	20 43 20.9	-0.8
OJC				*e*Sg	Sg	20 43 26.7	-0.5
OJC	**Ojcow**	**0.42**	**79**	*e*Pg	Pg	20 43 20.9	-0.8
OKC	**Ostrava-Krasne**	**0.71**	**245**	*e*SG	Sg	20 43 37.4	+0.9
OKC	**Ostrava-Krasne**	**0.71**	**245**	Sg	Sg	20 43 37.4	+0.9
LANS	**Liptovska Anna**	**1.01**	**168**	*e*SG	Sg	20 43 45.7	-0.4
LANS	**Liptovska Anna**	**1.01**	**168**	*e*SG	Sg	20 43 45.7	-0.4
VYHS	**Vyhne**	**1.66**	**187**	*e*Sn	Sn	20 44 03.5	-2.5
VYHS	**Vyhne**	**1.66**	**187**	*e*SN	Sn	20 44 03.5	-2.5
VYHS				*e*LG	Lg	20 44 10.4	
DPC	**Dobruska-Polom**	**1.83**	**278**	*e*SG	Sb	20 44 11.6	+0.2
DPC	comp=Z,3.1nm,0.4s **Dobruska-Polom**	**1.83**	**278**	Sg	Sb	20 44 11.6	+0.2
KHC	3.1nm,0.4s **Kasperske Hory**	**3.76**	**257**	*e*SG	Sg	20 45 13.6	-0.7
KHC	**Kasperske Hory**	**3.76**	**257**	Sg	Sg	20 45 13.6	-0.7

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*IDC **26** 20:43:31.0±5.3, 3°.24S×103°.14E, h0km, mb3.3/3, mb1 3.5/3, mb1mx3.2/32, mbtmp3.3/3, Error ellipse: s-maj=297.7km s-min=26.7km az=51.0*
*ISCJB **26** 20:43:36.5±0.8, 4°.37S±0°.09×102°.26E±0°.07, h74km±13km, mb3.3/3, Error ellipse: s-maj=17.5km s-min=6.1km az=35.3*
*DJA **26** 20:43:36.1±0.6, 4°.5S±3°.×10°.2E±°, h25km±5km, M3.7/11, MLv3.7/11*
ISC 26 20:43:36.5±1.9, 4°.4S±0°.1×102°.2E±0°.1, h69km±16km, n14, σ1°29/15, mb3.3/3, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MASI	**Maura Aman, Be**	**1.22**	**3**	P	**Pn**	**20 43 57.0**	**-0.7**
MASI				S	**Sn**	**20 44 15.7**	**+2.1**
LHSI	**Lahat**	**1.44**	**68**	P	**Pn**	**20 44 00.7**	**+0.1**
LHSI				S	**Sn**	**20 44 17.8**	**-0.9**
LWLI	**Liwa**	**1.98**	**109**	P	**Pn**	**20 44 08.1**	**+0.2**
LWLI				S	**Sn**	**20 44 31.6**	**-0.2**
KASI	**Kota Agung**	**2.58**	**117**	P	**Pn**	**20 44 15.9**	**0.0**
KASI				S	**Sn**	**20 44 44.7**	**-1.5**
PPSI	**Pulau Pagai**	**2.69**	**306**	P	Pn	20 44 18.5	+1.0
PPSI				S	Sn	20 44 52.9	+3.9
PDSI	**Padang**	**3.84**	**333**	P	Pn	20 44 39.3	+6.2
CGJI	**Cibinong**	**4.15**	**123**	P	**Pn**	**20 44 37.3**	**0.0**
PPI	**Padang Panjang**	**4.27**	**335**	P	Pn	20 44 40.4	+1.3
SBJI	**Serang**	**4.30**	**114**	P	**Pn**	**20 44 39.8**	**+0.4**
PPBI	**Pangkal Pinang**	**4.51**	**61**	P	**Pn**	**20 44 42.5**	**+0.2**
WRA	**Warramunga Arr**	**34.93**	**119**	P	**P**	**20 50 23.3**	**+1.3**
	0.1nm,0.3s,baz=298,slow=9.3,SNR=8.8						
ASAR	**Alice Springs**	**36.11**	**125**	P	**P**	**20 50 33.3**	**+1.2**
	0.3nm,0.8s,baz=302,slow=7.9,SNR=2.9						
MKAR	**Makanchi Array**	**53.89**	**343**	P	**P**	**20 52 50.4**	**-2.3**
	0.3nm,0.7s,baz=138,slow=8.7,SNR=2.4						
TXAR	**Lajitas Array**	**145.12**	**42**	PKP	**PKPdf**	**21 03 08.2**	**+1.2**
	0.3nm,0.5s,baz=263,slow=0.8,SNR=8.5						

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*ISCJB **26** 20:47:05.5±0.5, 39°.30N±0°.02×27°.71E±0°.03, h6km±5km, Error ellipse: s-maj=4.6km s-min=4.0km az=14.1*
*DDA **26** 20:47:05.3, 39°.30N×27°.73E, h7km, Md2.8*
*CSEM **26** 20:47:05.7±0.1, 39°.29N×27°.70E, h10km, MD2.8, Error ellipse: s-maj=2.8km s-min=2.3km az=75.0*
*ISK **26** 20:47:05.1, 39°.30N×27°.70E, h7km, MD2.8*
ISC 26 20:47:05.6±0.9, 39°.30N±0°.02×27°.70E±0°.02, h17km±8km, n42, σ0°36/56, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BALB	**Balikesir**	**0.36**	**23**	*e*PG	**Pg**	**20 47 13.1**	**0.0**
BALB				*e*SG	**Sg**	**20 47 18.2**	**-0.1**
BALB	**Balikesir**	**0.36**	**23**	*e*Pg	**Pg**	**20 47 13.1**	**0.0**
BALB				*e*Sg	**Sg**	**20 47 18.2**	**-0.1**
AKS	**Akhisar**	**0.43**	**168**	*e*PG	**Pg**	**20 47 14.0**	**-0.4**
AKS	**Akhisar**	**0.43**	**168**	*e*Pg	**Pg**	**20 47 14.0**	**-0.4**
AKHS	**Akhisar**	**0.43**	**168**	P	**Pg**	**20 47 14.0**	**-0.4**
AKHS				S	**Sb**	**20 47 20.7**	**-0.4**
AKHS	**Akhisar**	**0.43**	**168**	*i* P	**Pg**	**20 47 14.0**	**-0.4**
AKHS				*i* S	**Sb**	**20 47 20.7**	**-0.4**
BALY	**Balya**	**0.44**	**352**	P	**Pb**	**20 47 14.9**	**-0.1**
BALY	**Balya**	**0.44**	**352**	*i* P	**Pb**	**20 47 14.9**	**-0.1**
DKL	**Dikili**	**0.66**	**250**	*e*PG	**Pg**	**20 47 18.0**	**-0.5**
DKL	**Dikili**	**0.66**	**250**	*e*Pg	**Pg**	**20 47 18.0**	**-0.5**
DURS	**Dursunbey**	**0.67**	**63**	P	**Pg**	**20 47 18.5**	**-0.3**
DURS				S	**Sg**	**20 47 27.8**	**+0.1**
DURS	**Dursunbey**	**0.67**	**63**	*i* P	**Pg**	**20 47 18.5**	**-0.3**
DURS				*i* S	**Sg**	**20 47 27.

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GANE	**Gareloi Northe**	**2.23**	**43**	P	Pn	20 56 04.7	+0.2
TASE	**Tanaga Southea**	**2.58**	**50**	P	Pn	20 56 09.9	+0.5
TAPA	**Tanaga Point A**	**2.69**	**52**	P	Pn	20 56 10.6	-0.2
TAPA				S	Sn	20 56 44.4	+1.8
GSCK	**Great Sitkin C**	**3.66**	**59**	P	Pn	20 56 25.4	+1.2
GSMY	**Great Sitkin M**	**3.73**	**59**	P	Pn	20 56 26.3	+1.1
SMY	**Shemya**	**3.86**	**313**	P	Pn	20 56 28.0	+1.2
KOWE	**Korovin West**	**4.88**	**61**	P	Pn	20 56 43.1	+2.3
KOFP	**Korovin Flat P**	**4.93**	**63**	P	Pn	20 56 43.8	+2.2

*ISCJB **26** 21:03:53.0±0.5, 39°.12N±0°.03×28°.99E±0°.03, h4km±6km, Error ellipse: s-maj=4.9km s-min=4.3km az=166.3*
*ISK **26** 21:03:52.8, 39°.14N×29°.01E, h5km, MD2.7*
*DDA **26** 21:03:52.8, 39°.12N×28°.99E, h7km, Md2.7*
*CSEM **26** 21:03:53.2±0.1, 39°.13N×28°.99E, h5km, MD2.7, Error ellipse: s-maj=1.2km s-min=1.1km az=132.0*

ISC 26 21:03:53.2±1.0, 39°.13N±0°.02×29°.00E±0°.02, h12km±9km, n32, σ0°.26/46, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.23**	**249**	P	Pg	21 03 58.1	0.0
DEMI				S	Sg	21 04 01.7	+0.2
DEMI	**Demirci**	**0.23**	**249**	*i* P	Pg	21 03 58.1	0.0
DEMI				*i* S	Sg	21 04 01.7	+0.2
GDZ	**Gediz**	**0.38**	**95**	P	Pg	21 04 00.7	-0.1
GDZ				S	Sg	21 04 06.5	+0.6
GDZ	**Gediz**	**0.38**	**95**	*i* P	Pg	21 04 00.7	-0.1
GDZ				*i* S	Sg	21 04 06.5	+0.6
TVSB	**Tavsanli**	**0.48**	**48**	*e*PG	Pg	21 04 02.7	0.0
TVSB				*e*SG	Sg	21 04 08.9	-0.3
TVSB	**Tavsanli**	**0.48**	**48**	*e*Pg	Pg	21 04 02.7	0.0
TVSB				*e*Sg	Sg	21 04 08.9	-0.3
DURS	**Dursunbey**	**0.62**	**320**	P	Pg	21 04 05.5	+0.1
DURS				S	Sg	21 04 13.5	-0.1
DURS	**Dursunbey**	**0.62**	**320**	*i* P	Pg	21 04 05.5	+0.1
DURS				*i* S	Sg	21 04 13.5	-0.1
KULA	**Kula-Manisa**	**0.67**	**203**	*e*PG	Pg	21 04 06.3	+0.2
KULA	**Kula-Manisa**	**0.67**	**203**	*e*Pg	Pg	21 04 06.3	+0.2
MANT	**Manisa**	**0.72**	**208**	P	Pg	21 04 07.1	-0.1
MANT				S	Sg	21 04 16.3	-0.4
MANT	**Manisa**	**0.72**	**208**	*i* P	Pg	21 04 07.1	-0.1
MANT				*i* S	Sg	21 04 16.3	-0.4
KHAL	**Karahalli**	**0.85**	**153**	P	Pg	21 04 09.7	+0.1
KHAL				S	Sg	21 04 20.6	-0.1
KHAL	**Karahalli**	**0.85**	**153**	*i* P	Pg	21 04 09.7	+0.1
KHAL				*i* S	Sg	21 04 20.6	-0.1
AKS	**Akhisar**	**0.95**	**255**	*e*PG	Pg	21 04 11.6	0.0
AKS	**Akhisar**	**0.95**	**255**	*e*Pg	Pg	21 04 11.6	0.0
BALB	**Balikesir**	**1.01**	**301**	*e*PG	Pb	21 04 12.7	+0.1
BALB	**Balikesir**	**1.01**	**301**	*e*Pg	Pb	21 04 12.7	+0.1
KCTX	**Karacabey (Bur**	**1.24**	**337**	*e*PN	Pb	21 04 16.7	+0.1
KCTX	**Karacabey (Bur**	**1.24**	**337**	*e*Pn	Pb	21 04 16.7	+0.1
CAVI	**Cavuskoy**	**1.26**	**31**	*e*PN	Pg	21 04 17.5	+0.1
CAVI	**Cavuskoy**	**1.26**	**31**	*e*Pn	Pg	21 04 17.5	+0.1
IZI	**Iznik**	**1.26**	**17**	*e*PN	Pg	21 04 17.5	0.0
IZI	**Iznik**	**1.26**	**17**	*e*Pn	Pg	21 04 17.5	0.0
BORA	**Eskisehir**	**1.36**	**56**	P	Pb	21 04 18.7	0.0
BORA				S	Sn	21 04 36.4	+0.3
BORA	**Eskisehir**	**1.36**	**56**	*i* P	Pb	21 04 18.7	0.0
BORA				*i* S	Sn	21 04 36.4	+0.3
ARMT	**Armutlu**	**1.44**	**356**	*e*PN	Pb	21 04 20.2	+0.1
ARMT	**Armutlu**	**1.44**	**356**	*e*Pn	Pb	21 04 20.2	+0.1
EDC	**Edincik**	**1.50**	**325**	*e*PN	Pb	21 04 20.7	-0.3
EDC	**Edincik**	**1.50**	**325**	*e*Pn	Pb	21 04 20.7	-0.3
GULT	**Gulveren**	**1.75**	**41**	*e*PN	Pb	21 04 24.7	-0.7
GULT	**Gulveren**	**1.75**	**41**	*e*Pn	Pb	21 04 24.7	-0.7

*ISCJB **26** 21:05:30.0±0.5, 37°.82N±0°.03×29°.17E±0°.05, h8km±6km, Error ellipse: s-maj=6.1km s-min=4.4km az=2.7*
*DDA **26** 21:05:29.5, 37°.81N×29°.18E, h7km, Md2.7*
*CSEM **26** 21:05:30.0±0.2, 37°.82N×29°.18E, h5km, MD2.8, Error ellipse: s-maj=4.5km s-min=3.5km az=83.0*
*ISK **26** 21:05:30.0, 37°.81N×29°.16E, h12km, MD2.8*

ISC 26 21:05:29.5±1.1, 37°.84N±0°.02×29°.19E±0°.03, h6km±11km, n28, σ0°.40/40, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DENT	**Denizli**	**0.15**	**237**	*e*PG	Pg	21 05 33.0	+0.4
DENT	**Denizli**	**0.15**	**237**	*e*Pg	Pg	21 05 33.0	+0.4
DNZL	**Cakiroluk**	**0.19**	**218**	P	Pg	21 05 33.1	-0.2
DNZL				S	Sg	21 05 35.7	-0.2
DNZL	**Cakiroluk**	**0.19**	**218**	*i* P	Pg	21 05 33.1	-0.2
DNZL				*i* S	Sg	21 05 35.7	-0.2
KHL	**Karahalli**	**0.55**	**28**	*e*PG	Pb	21 05 42.1	+0.4
KHL	**Karahalli**	**0.55**	**28**	*e*Pg	Pb	21 05 42.1	+0.4
KHAL	**Karahalli**	**0.58**	**24**	P	Pg	21 05 40.8	0.0
KHAL				S	Sb	21 05 50.1	-0.7
KHAL	**Karahalli**	**0.58**	**24**	*i* P	Pg	21 05 40.9	0.0
KHAL				*i* S	Sb	21 05 50.1	-0.7
GOLH	**Golhisar**	**0.67**	**154**	P	Pg	21 05 42.3	-0.1
GOLH				S	Sb	21 05 54.0	+0.8
GOLH	**Golhisar**	**0.67**	**154**	*i* P	Pg	21 05 42.3	-0.1
GOLH				*i* S	Sb	21 05 54.0	+0.8
GLHS	**Gihisar (BURDU**	**0.72**	**160**	*e*PG	Pb	21 05 44.3	-0.3
GLHS	**Gihisar (BURDU**	**0.72**	**160**	*e*Pg	Pb	21 05 44.3	-0.3
KULA	**Kula-Manisa**	**0.80**	**328**	*e*PG	Pb	21 05 45.9	+0.1
KULA				*e*SG	Sb	21 05 57.9	+1.0
KULA	**Kula-Manisa**	**0.80**	**328**	*e*Pg	Pb	21 05 45.9	+0.1
KULA				*e*Sg	Sb	21 05 57.9	+1.0
MANT	**Manisa**	**0.82**	**323**	P	Pb	21 05 46.2	-0.2
MANT				S	Sb	21 05 57.4	-0.4
MANT	**Manisa**	**0.82**	**323**	*i* P	Pb	21 05 46.2	-0.2
MANT				*i* S	Sb	21 05 57.4	-0.4
YER	**Yerkesik**	**1.01**	**226**	*e*PG	Pb	21 05 49.6	+0.2
YER	**Yerkesik**	**1.01**	**226**	*e*Pg	Pb	21 05 49.6	+0.2
AYDB	**Zeytinkoy-Aydi**	**1.03**	**276**	*e*PG	Pb	21 05 49.9	-0.1
AYDB	**Zeytinkoy-Aydi**	**1.03**	**276**	*e*Pg	Pb	21 05 49.9	-0.1
AYDN	**Tasoluk**	**1.05**	**261**	P	Pg	21 05 49.6	-0.2
AYDN				S	Sg	21 06 03.4	-0.1
AYDN	**Tasoluk**	**1.05**	**261**	*i* P	Pg	21 05 49.6	-0.2
AYDN				*i* S	Sg	21 06 03.4	-0.1
DALY	**Dalyan (Mu¨la**	**1.10**	**203**	*e*PG	Pn	21 05 51.5	0.0
DALY	**Dalyan (Mu¨la**	**1.10**	**203**	*e*Pg	Pn	21 05 51.5	0.0
ELL	**Elmali**	**1.23**	**152**	*e*PN	Pb	21 05 53.1	-0.1
ELL	**Elmali**	**1.23**	**152**	*e*Pn	Pb	21 05 53.1	-0.1
BODT	**Bodrum**	**1.69**	**243**	*e*PN	Pn	21 05 59.5	-0.1
BODT	**Bodrum**	**1.69**	**243**	*e*Pn	Pn	21 05 59.5	-0.1

*IDC **26** 21:05:54.4±3.6, 36°.20N×71°.17E, h131km±33km, mb3.2/4, mb1 3.3/9, mb1mx3.0/45, mbtmp3.7/9, Error ellipse: s-maj=33.1km s-min=28.6km az=130.0*
*ISCJB **26** 21:05:57.1±0.6, 36°.61N±0°.04×71°.10E±0°.08, h188km, mb2.9/3, Error ellipse: s-maj=9.3km s-min=5.4km az=159.8*
*NNC **26** 21:06:01.3±2.3, 36°.83N×70°.98E, h147km±26km, mb3.1, mpv4.0, Error ellipse: s-maj=22.4km s-min=12.7km az=149.0*

ISC 26 21:05:58.2±0.9, 36°.64N±0°.07×70°.95E±0°.08, h188km, n21, σ2°.30/25, mb2.9/3, 4C-8D, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**2.74**	**323**	⇑P	Pn	21 06 43.0	-1.2
	39nm,0.4s						
DZET				⇓S	Sn	21 07 17.1	-3.2
	336nm,0.4s						
MNAS	**Manas**	**5.96**	**11**	⇓P	Pn	21 07 24.6	-0.2
	6.3nm,0.6s						
MNAS				⇑S	Sn	21 08 30.7	-2.6
	26nm,0.5s						
KK31	**Karatay Array**	**6.47**	**357**	⇓P	Pn	21 07 31.3	0.0
	7.8nm,0.3s						
KK31				⇑S	Sn	21 08 42.8	-2.1
	8.9nm,0.5s						
AAK	**Ala-Archa**	**6.58**	**23**	P	Pn	21 07 33.7	+0.8
	2.8nm,0.3s,baz=165,slow=5.5,SNR=17						
AAK				S	Sn	21 08 45.2	-2.7
	2.2nm,0.3s,baz=327,slow=21,SNR=13						
AAK	**Ala-Archa**	**6.58**	**23**	⇓P	Pn	21 07 33.7	+0.8
	4.1nm,0.5s						
AAK				⇓S	Sn	21 08 46.2	-1.6
	20nm,0.8s						
TKM2	**Tokmak 2**	**7.22**	**28**	⇓P	Pn	21 07 42.7	+1.4
	3.9nm,0.5s						
TKM2				⇑S	Sn	21 09 00.9	-2.1
	5.7nm,0.8s						
GEYT	**Alibeck**	**10.31**	**281**	P	Pn	21 08 22.2	+0.6
	0.5nm,0.3s,baz=114,slow=6.8,SNR=3.3						
MKAR	**Makanchi Array**	**13.20**	**36**	P	Pn	21 09 00.4	+1.9
	0.3nm,0.3s,baz=212,slow=10,SNR=7.9						
PYUN	**Piuthan**	**13.25**	**127**	*e*P	Pn	21 08 56.3	-3.2
PYUN				*e*S	Sn	21 11 11.4	-16
KOLN	**Koldanda**	**13.87**	**126**	*e*P	Pn	21 09 03.5	-3.7
	3.6nm,0.3s						
GKN	**Gorkha**	**14.41**	**123**	*e*P	Pn	21 09 11.8	-2.0
	9.9nm,0.4s						
AB31	**Akbulak array**	**14.95**	**331**	P	P	21 09 22.6	+1.6
	0.8nm,0.5s,baz=144,slow=12,SNR=23						
AB31				⇓S	Sn	21 12 03.0	-3.9
	0.3nm,0.3s,baz=158,slow=23,SNR=3.7						
KKN	**Kakani**	**14.98**	**122**	*e*P	Pn	21 09 18.3	-2.6
	10.0nm,0.7s						
KURBB	**Kurchatov Arra**	**15.01**	**19**	P	P	21 09 24.8	+3.1
	0.1nm,0.3s,baz=206,slow=11,SNR=7.1						
GUN	**Gumba**	**15.32**	**120**	*e*P	Pn	21 09 23.6	-1.6
	6.0nm,0.4s						
BVAR	**Borovoye Array**	**16.39**	**359**	P	Pn	21 09 41.9	+4.4
	0.2nm,0.3s,baz=164,slow=11,SNR=5.6						
AKTO	**Aktyubinsk**	**16.64**	**330**	⇓P	Pn	21 09 47.2	+6.6
	1.5nm,0.8s						
ZALV	**Zalesovo Beam**	**19.81**	**25**	P	Pn	21 10 16.9	-1.0
	2.7nm,0.4s,baz=221,slow=11,SNR=16						
YKA	**Yellowknife Ar**	**81.11**	**3**	P	P	21 17 57.1	+5.1
	0.1nm,0.4s,baz=352,slow=5.7,SNR=3.3						
WRA	**Warramunga Arr**	**82.09**	**122**	P	P	21 17 58.9	+1.1
	0.3nm,0.6s,baz=325,slow=5.1,SNR=6.3						
ASAR	**Alice Springs**	**84.36**	**125**	P	P	21 18 09.3	0.0
	0.1nm,0.4s,baz=320,slow=5.3,SNR=4.2						

IDC 26 21:07:28.8±2.2, 3°.13N×129°.19E, h0km, mb3.4/4, mb1 3.6/4, mb1mx3.3/40, mbtmp3.4/4, Error ellipse: s-maj=166.4km s-min=21.8km az=69.0, North of Halmahera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**23.48**	**168**	P	P	21 12 40.1	-0.2
	1.7nm,0.8s,baz=348,slow=10,SNR=6.8						
ASAR	**Alice Springs**	**27.02**	**170**	P	P	21 13 12.8	-0.1
	0.2nm,0.5s,baz=355,slow=8.2,SNR=5.0						
MKAR	**Makanchi Array**	**59.46**	**324**	P	P	21 17 34.0	+0.4
	0.1nm,0.4s,baz=106,slow=8.7,SNR=3.5						
KURBB	**Kurchatov Arra**	**63.58**	**327**	P	P	21 18 01.1	-0.3
	0.1nm,0.4s,baz=111,slow=5.2,SNR=3.2						

*ISCJB **26** 21:20:11.9±0.6, 37°.81N±0°.03×29°.19E±0°.04, h7km±7km, Error ellipse: s-maj=5.9km s-min=5.2km az=29.7*
*CSEM **26** 21:20:11.7±0.2, 37°.79N×29°.22E, h2km, MD2.6, Error ellipse: s-maj=5.4km s-min=5.0km az=134.0*
*ISK **26** 21:20:11.6, 37°.86N×29°.21E, h13km, MD2.7*
*DDA **26** 21:20:11.9, 37°.80N×29°.16E, h5km, Md2.6*

ISC 26 21:20:11.4±1.0, 37°.82N±0°.03×29°.22E±0°.03, h11km±8km, n20, σ0°.89/30, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DENT	**Denizli**	**0.16**	**245**	*e*PG	Pg	21 20 15.9	+0.8
DENT	**Denizli**	**0.16**	**245**	*e*Pg	Pg	21 20 15.9	+0.8
DNZL	**Cakiroluk**	**0.19**	**226**	P	Pg	21 20 15.1	-0.5
DNZL				S	Sg	21 20 17.6	-0.9
DNZL	**Cakiroluk**	**0.19**	**226**	*i* P	Pg	21 20 15.1	-0.5
DNZL				*i* S	Sg	21 20 17.6	-0.9
KHL	**Karahalli**	**0.55**	**26**	*e*PG	Pg	21 20 22.5	+0.2
KHL	**Karahalli**	**0.55**	**26**	*e*Pg	Pg	21 20 22.5	+0.2
KHAL	**Karahalli**	**0.59**	**21**	P	Pg	21 20 23.8	+0.9
KHAL				S	Sn	21 20 33.8	-1.8
KHAL	**Karahalli**	**0.59**	**21**	*i* P	Pg	21 20 23.8	+0.9
KHAL				*i* S	Sn	21 20 33.8	-1.8
GOLH	**Golhisar**	**0.65**	**155**	P	Pg	21 20 23.3	-0.7
GOLH				S	Sb	21 20 34.5	+0.6
GOLH	**Golhisar**	**0.65**	**155**	*i* P	Pg	21 20 23.3	-0.7
GOLH				*i* S	Sb	21 20 34.5	+0.6
KULA	**Kula-Manisa**	**0.82**	**328**	*e*PG	Pb	21 20 27.0	-0.8
YER	**Yerkesik**	**1.01**	**228**	*e*PG	Pb	21 20 31.9	+0.8
AYDB	**Zeytinkoy-Aydi**	**1.06**	**277**	*e*PG	Pb	21 20 32.1	+0.2
AYDB				*e*SG	Sb	21 20 47.0	+1.2
AYDB	**Zeytinkoy-Aydi**	**1.06**	**277**	*e*Pg	Pb	21 20 32.1	+0.2
AYDB				*e*Sg	Sb	21 20 47.0	+1.2
AYDN	**Tasoluk**	**1.07**	**262**	P	Pb	21 20 32.0	-0.1
AYDN				S	Sb	21 20 45.7	-0.5
AYDN	**Tasoluk**	**1.07**	**262**	*i* P	Pb	21 20 32.0	-0.1
AYDN				*i* S	Sb	21 20 45.7	-0.5
DALY	**Dalyan (Mu¨la**	**1.10**	**204**	*e*PN	Pn	21 20 33.7	+0.9
DALY	**Dalyan (Mu¨la**	**1.10**	**204**	*e*Pn	Pn	21 20 33.7	+0.9
ELL	**Elmali**	**1.21**	**153**	*e*PN	Pb	21 20 35.1	+0.7
ELL	**Elmali**	**1.21**	**153**	*e*Pn	Pb	21 20 35.1	+0.7

*CSEM **26** 21:51:19.8±0.2, 39°.06N×29°.05E, h12km, MD2.7, Error ellipse: s-maj=4.8km s-min=3.2km az=133.0*
*ISK **26** 21:51:19.0, 39°.05N×29°.08E, h5km, MD2.2*
*ISCJB **26** 21:51:20.0±0.6, 39°.04N±0°.03×29°.06E±0°.04, h12km±7km, Error ellipse: s-maj=6.6km s-min=4.5km az=139.8*
*DDA **26** 21:51:20.4, 39°.03N×29°.05E, h7km, Md2.7*

ISC 26 21:51:19.7±1.0, 39°.05N±0°.04×29°.07E±0°.03, h13km±8km, n14, σ0°.37/27, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**269**	P	Pg	21 51 25.8	+0.3
DEMI				S	Sg	21 51 29.2	-0.2
DEMI	**Demirci**	**0.28**	**269**	*i* P	Pg	21 51 25.8	+0.3
DEMI				*i* S	Sg	21 51 29.2	-0.2
GDZ	**Gediz**	**0.32**	**83**	P	Pb	21 51 27.3	-0.1
GDZ				S	Sb	21 51 32.7	+0.2
GDZ	**Gediz**	**0.32**	**83**	*i* P	Pb	21 51 27.3	-0.1
GDZ				*i* S	Sb	21 51 32.7	+0.2
TVSB	**Tavsanli**	**0.50**	**37**	*e*PG	Pg	21 51 29.3	-0.3
TVSB				*e*SG	Sg	21 51 36.7	+0.4
TVSB	**Tavsanli**	**0.50**	**37**	*e*Pg	Pg	21 51 29.3	-0.3
TVSB				*e*Sg	Sg	21 51 36.7	+0.4
KULA	**Kula-Manisa**	**0.62**	**211**	*e*PG	Pg	21 51 31.7	-0.2
KULA				*e*SG	Sb	21 51 40.9	-0.2
KULA	**Kula-Manisa**	**0.62**	**211**	*e*Pg	Pg	21 51 31.7	-0.2
KULA				*e*Sg	Sb	21 51 40.9	-0.2
MANT	**Manisa**	**0.69**	**216**	P	Pb	21 51 33.8	+0.2
MANT				S	Sb	21 51 43.0	-0.1
MANT	**Manisa**	**0.69**	**216**	*i* P	Pb	21 51 33.8	+0.2
MANT				*i* S	Sb	21 51 43.0	-0.1
DURS	**Dursunbey**	**0.72**	**320**	P	Pb	21 51 34.3	+0.2
DURS	**Dursunbey**	**0.72**	**320**	*i* P	Pb	21 51 34.3	+0.2
DURS				*i* S	Sn	21 51 45.7	-0.9
BALB	**Balikesir**	**1.10**	**303**	*e*PN	Pb	21 51 40.0	-0.4
BALB				*e*SN	Sn	21 51 56.4	+0.7
BALB	**Balikesir**	**1.10**	**303**	*e*Pn	Pb	21 51 40.0	-0.4
BALB				*e*Sn	Sn	21 51 56.4	+0.7

*ISK **26** 22:03:26.4, 39°.07N×29°.11E, h6km, MD2.5*
*ISCJB **26** 22:03:27.4±0.5, 39°.10N±0°.03×29°.03E±0°.04, h9km, Error ellipse: s-maj=5.0km s-min=4.2km az=162.7*
*DDA **26** 22:03:27.4, 39°.07N×29°.03E, h7km, Md2.1*
*CSEM **26** 22:03:27.4±0.1, 39°.10N×29°.02E, h5km, MD2.1, Error ellipse: s-maj=3.5km s-min=3.1km az=98.0*

ISC 26 22:03:27.0±0.8, 39°.07N±0°.03×29°.08E±0°.03, h9km, n28, σ0°.42/36, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**264**	P	Pg	22 03 32.4	-0.3
DEMI				S	Sg	22 03 35.9	-0.7
DEMI	**Demirci**	**0.28**	**264**	*i* P	Pg	22 03 32.4	-0.3
DEMI				*i* S	Sg	22 03 35.9	-0.7
GDZ	**Gediz**	**0.31**	**87**	P	Pb	22 03 34.5	-0.4
GDZ				S	Sb	22 03 39.8	-0.4
GDZ	**Gediz**	**0.31**	**87**	*i* P	Pb	22 03 34.5	-0.4
GDZ				*i* S	Sb	22 03 39.8	-0.4
TVSB	**Tavsanli**	**0.48**	**38**	*e*PG	Pg	22 03 36.2	-0.2
TVSB				*e*SG	Sg	22 03 43.0	+0.3
TVSB	**Tavsanli**	**0.48**	**38**	*e*Pg	Pg	22 03 36.2	-0.2
TVSB				*e*Sg	Sg	22 03 43.0	+0.3
KULA	**Kula-Manisa**	**0.65**	**211**	*e*PG	Pg	22 03 39.4	-0.1
KULA	**Kula-Manisa**	**0.65**	**211**	*e*Pg	Pg	22 03 39.4	-0.1
DURS	**Dursunbey**	**0.71**	**319**	P	Pg	22 03 40.8	+0.1
DURS	**Dursunbey**	**0.71**	**319**	*i* P	Pg	22 03 40.8	+0.1
MANT	**Manisa**	**0.71**	**215**	P	Pg	22 03 41.0	+0.2
MANT	**Manisa**	**0.71**	**215**	*i* P	Pg	22 03 41.0	+0.2
KHAL	**Karahalli**	**0.77**	**155**	P	Pn	22 03 44.1	-0.1
KHAL				S	Sb	22 03 54.3	+1.0
KHAL	**Karahalli**	**0.77**	**155**	*i* P	Pn	22 03 44.1	-0.1
KHAL				*i* S	Sb	22 03 54.4	+1.0
BALB	**Balikesir**	**1.09**	**302**	*e*PN	Pb	22 03 48.2	+0.1
BALB	**Balikesir**	**1.09**	**302**	*e*Pn	Pb	22 03 48.2	+0.1
KCTX	**Karacabey (Bur**	**1.32**	**335**	*e*PN	Pn	22 03 51.5	-0.2
KCTX	**Karacabey (Bur**	**1.32**	**335**	*e*Pn	Pn	22 03 51.5	-0.2
ADVT	**Abdulvahap**	**1.45**	**20**	*e*PN	Pb	22 03 53.9	-0.3
ADVT	**Abdulvahap**	**1.45**	**20**	*e*Pn	Pb	22 03 53.9	-0.3
GONE	**Gonen-Balikesi**	**1.45**	**313**	*e*PN	Pb	22 03 54.4	+0.2
GONE	**Gonen-Balikesi**	**1.45**	**313**	*e*Pn	Pb	22 03 54.4	+0.2
ARMT	**Armutlu**	**1.50**	**354**	*e*PN	Pn	22 03 54.6	+0.4
ARMT	**Armutlu**	**1.50**	**354**	*e*Pn	Pn	22 03 54.6	+0.4
EDC	**Edincik**	**1.58**	**324**	*e*PN	Pb	22 03 56.1	-0.4
EDC	**Edincik**	**1.58**	**324**	*e*Pn	Pb	22 03 56.1	-0.4
GULT	**Gulveren**	**1.75**	**39**	*e*PN	Pn	22 03 58.3	+0.6
GULT	**Gulveren**	**1.75**	**39**	*e*Pn	Pn	22 03 58.3	+0.6

*ISK **26** 22:03:58.8, 39°.09N×29°.10E, h9km, MD2.7*
*DDA **26** 22:03:59.0, 39°.08N×29°.02E, h7km, Md2.6*
*ISCJB **26** 22:03:59.0±0.5, 39°.09N±0°.03×29°.03E±0°.04, h5km±8km, Error ellipse: s-maj=6.1km s-min=4.5km az=145.8*
*CSEM **26** 22:03:59.2±0.1, 39°.10N×29°.02E, h5km, MD2.6, Error ellipse: s-maj=2.4km s-min=1.8km az=97.0*

ISC 26 22:03:59.4±1.0, 39°.10N±0°.03×29°.03E±0°.03, h6km±12km, n29, σ0°.29/39, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**257**	P	Pg	22 04 04.3	0.0
DEMI				S	Sg	22 04 07.5	-0.2
DEMI	**Demirci**	**0.25**	**257**	*i* P	Pg	22 04 04.3	0.0
DEMI				*i* S	Sg	22 04 07.5	-0.2
GDZ	**Gediz**	**0.35**	**92**	P	Pg	22 04 06.5	+0.2
GDZ				S	Sg	22 04 11.4	+0.5
GDZ	**Gediz**	**0.35**	**92**	*i* P	Pg	22 04 06.5	+0.2
GDZ				*i* S	Sg	22 04 11.4	+0.5
TVSB	**Tavsanli**	**0.48**	**44**	*e*PG	Pg	22 04 08.8	0.0
TVSB				*e*SG	Sg	22 04 14.4	-0.7
TVSB	**Tavsanli**	**0.48**	**44**	*e*Pg	Pg	22 04 08.8	0.0
TVSB				*e*Sg	Sg	22 04 14.4	-0.7
KULA	**Kula-Manisa**	**0.65**	**206**	*e*PG	Pg	22 04 12.0	+0.1
KULA	**Kula-Manisa**	**0.65**	**206**	*e*Pg	Pg	22 04 12.0	+0.1
DURS	**Dursunbey**	**0.66**	**319**	*i* P	Pn	22 04 15.7	+0.4
MANT	**Manisa**	**0.71**	**211**	P	Pg	22 04 12.9	-0.1
MANT				S	Sg	22 04 22.2	-0.1
MANT	**Manisa**	**0.71**	**211**	*i* P	Pg	22 04 12.9	-0.1
MANT				*i* S	Sg	22 04 22.2	-0.1
KHAL	**Karahalli**	**0.81**	**153**	P	Pb	22 04 16.0	+0.1
KHAL				S	Sg	22 04 25.7	+0.2
KHAL	**Karahalli**	**0.81**	**153**	*i* P	Pb	22 04 16.0	+0.1
KHAL				*i* S	Sg	22 04 25.7	+0.2
KHL	**Karahalli**	**0.87**	**153**	*e*PG	Pg	22 04 15.6	-0.4
KHL	**Karahalli**	**0.87**	**153**	*e*Pg	Pg	22 04 15.6	-0.4
ORLT	**Orhaneli**	**0.95**	**354**	*e*PG	Pg	22 04 17.8	+0.1
ORLT	**Orhaneli**	**0.95**	**354**	*e*Pg	Pg	22 04 17.8	+0.1
BALB	**Balikesir**	**1.04**	**302**	*e*PN	Pn	22 04 20.5	0.0
BALB	**Balikesir**	**1.04**	**302**	*e*Pn	Pn	22 04 20.5	0.0
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*PN	Pn	22 04 23.7	0.0
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*Pn	Pn	22 04 23.7	0.0
IZI	**Iznik**	**1.28**	**15**	*e*PN	Pn	22 04 23.4	-0.4
IZI	**Iznik**	**1.28**	**15**	*e*Pn	Pn	22 04 23.5	-0.4
GONE	**Gonen-Balikesi**	**1.41**	**313**	*e*PN	Pn	22 04 25.6	+0.2
GONE	**Gonen-Balikesi**	**1.41**	**313**	*e*Pn	Pn	22 04 25.6	+0.2
ADVT	**Abdulvahap**	**1.44**	**22**	*e*PN	Pn	22 04 25.6	-0.3
ADVT	**Abdulvahap**	**1.44**	**22**	*e*Pn	Pn	22 04 25.6	-0.3

*IDC **26** 22:09:11.9±1.5, 35°78N×141°02E, h0km, mb3.6/5, mb1 3.7/6, mb1mx3.4/45, mbtmp3.5/6, ML2.9/1, MS2.7/1, Ms1 2.7/1, ms1mx2.2/36, Error ellipse: s-maj=47.8km s-min=21.2km az=60.0*
*ISCJB **26** 22:09:13.9±0.9, 35°88N±0°07×141°11E±0°09, h31km, mb3.6/5, Error ellipse: s-maj=12.1km s-min=8.3km az=42.9*
*JMA **26** 22:09:14.5±0.1, 35°91N×141°06E, h29km±2km, M3.4*
JMA Felt I J1.

ISC 26 22:09:15.9±1.1, 35°89N±0°09×140°98E±0°10, h31km, n12, σ1§44/15, mb3.6/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	0.21	208	P	Pb	22 09 21.2	-1.2
CHOJ				S	Sb	22 09 25.7	-1.1
JYT	Yasato	0.72	298	P	Pn	22 09 28.6	-1.4
JYT				eS	Sb	22 09 38.7	-1.0
JHO	Hitachi	0.79	335	P	Pn	22 09 29.0	-2.0
JAG	Ashikaga	1.35	294	P	Pn	22 09 37.6	-1.0
MJAR	Matsushiro Arr	2.34	287	Pn	Pn	22 09 52.1	-0.1
	2.6nm,0.3s,baz=92,slow=9.1,SNR=21						
MJAR				Sn	Sn	22 10 21.8	+1.9
	3.9nm,0.3s,baz=111,slow=25,SNR=6.8						
MAT	Matsushiro	2.34	287	P	Pn	22 09 52.6	+0.4
MAT				S	Sb	22 10 23.7	-2.1
KSRS	Korea Array	10.61	282	LR	LR	22 15 44.1	
	comp=Z,38nm,19.9s,baz=94,slow=37						
ZALV	Zalesovo Beam	42.44	313	P	P	22 17 09.7	+2.1
	0.4nm,0.3s,baz=100,slow=7.2,SNR=2.4						
MKAR	Makanchi Array	44.44	303	P	P	22 17 24.5	+0.6
	0.5nm,0.6s,baz=90,slow=9.9,SNR=3.7						
WRA	Warramunga Arr	55.88	188	P	P	22 18 50.5	-0.2
	0.5nm,0.6s,baz=5.3,slow=7.5,SNR=4.9						
ASAR	Alice Springs	59.61	188	P	P	22 19 17.0	+0.1
	0.3nm,0.8s,baz=18,slow=10,SNR=3.0						
FINES	FINESS Array B	69.66	332	P	P	22 20 23.2	+1.1
	1.4nm,0.9s,baz=34,slow=10,SNR=2.3						

*IDC **26** 22:16:16.6±1.2, 35°33N×142°35E, h0km, mb3.6/5, mb1 3.7/6, mb1mx3.4/45, mbtmp3.5/6, ML3.0/1, Error ellipse: s-maj=34.8km s-min=22.4km az=72.0*
*ISCJB **26** 22:16:17.9±0.9, 35°35N±0°07×142°32E±0°07, h22km, mb3.5/5, Error ellipse: s-maj=10.3km s-min=8.4km az=12.9*
*JMA **26** 22:16:18.2±0.3, 35°34N×142°36E, h69km, M3.0*

ISC 26 22:16:20.0±1.2, 35°32N±0°09×142°23E±0°09, h22km, n12, σ0§98/15, mb3.5/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	1.18	289	P	Pn	22 16 40.7	-0.5
CHOJ				eS	Sn	22 16 56.5	0.0
BSO1	Boso 1	1.22	237	P	Pn	22 16 40.7	-0.6
BSO1				eS	Sb	22 16 58.2	+1.0
BSO3	Boso 3	1.50	250	P	Pn	22 16 45.3	-0.1
JAG	Ashikaga	2.51	297	S	Sn	22 17 29.2	-0.2
JOD2	Odawara 2	2.57	270	P	Pn	22 16 59.9	-0.4
MJAR	Matsushiro Arr	3.48	292	Pn	Pn	22 17 13.8	+0.9
	1.4nm,0.3s,baz=89,slow=12,SNR=8.4						
MAT	Matsushiro	3.48	292	P	Pn	22 17 13.3	+0.4
MAT				S	Sn	22 17 51.4	-2.0
SONM	Songino Array	29.31	306	P	P	22 22 22.4	+1.5
	0.5nm,0.8s,baz=95,slow=7.7,SNR=2.9						
ZALV	Zalesovo Beam	43.56	314	P	P	22 24 21.1	-1.0
	0.3nm,0.3s,baz=88,slow=7.8,SNR=2.4						
ILAR	Eielson Array	50.60	32	P	P	22 25 16.6	-0.2
	0.4nm,0.8s,baz=265,slow=7.0,SNR=6.1						
WRA	Warramunga Arr	55.47	189	P	P	22 25 52.4	-0.7
	0.7nm,0.7s,baz=6.4,slow=7.4,SNR=8.0						
ASAR	Alice Springs	59.19	189	P	P	22 26 20.3	+0.9
	0.3nm,0.6s,baz=356,slow=6.5,SNR=3.2						

*IDC **26** 22:22:22.3±1.2, 35°17N×142°47E, h0km, mb3.5/5, mb1 3.6/7, mb1mx3.4/42, mbtmp3.4/7, ML2.9/2, Error ellipse: s-maj=30.4km s-min=21.8km az=85.0*
*ISCJB **26** 22:22:26.0±1.0, 35°15N±0°10×142°3E±0°1, h42km, mb3.5/5, Error ellipse: s-maj=18.9km s-min=11.3km az=31.1*

ISC 26 22:22:28.0±1.2, 35°13N±0°10×142°3E±0°1, h42km, n7, σ1§50/8, mb3.5/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHJ	Hachijo jima 2	2.90	227	Pn	Pn	22 23 09.8	-1.9
	3.9nm,0.3s,baz=72,slow=19,SNR=3.0						
JHJ				Sn	Sn	22 23 45.9	+0.6
	16nm,0.3s,baz=233,slow=20,SNR=4.6						
MJAR	Matsushiro Arr	3.62	294	Pn	Pn	22 23 20.3	-1.3
	0.8nm,0.3s,baz=206,slow=18,SNR=5.8						
SONM	Songino Array	29.48	307	P	P	22 28 28.3	+0.2
	0.2nm,0.4s,baz=104,slow=9.2,SNR=2.9						
ZALV	Zalesovo Beam	43.75	314	P	P	22 30 30.5	+1.4
	0.5nm,0.5s,baz=79,slow=8.1,SNR=2.5						
ILAR	Eielson Array	50.72	32	P	P	22 31 22.0	-1.2
	0.4nm,0.8s,baz=271,slow=6.8,SNR=3.8						
WRA	Warramunga Arr	55.29	189	P	P	22 31 58.5	+1.2
	0.5nm,0.6s,baz=4.4,slow=7.3,SNR=5.4						
ASAR	Alice Springs	59.01	189	P	P	22 32 24.3	+0.7
	0.4nm,0.8s,baz=8.2,slow=8.4,SNR=3.2						

*ISCJB **26** 22:29:18.4±0.5, 39°12N±0°03×29°03E±0°04, h10km±5km, Error ellipse: s-maj=4.7km s-min=4.5km az=31.2*
*CSEM **26** 22:29:18.5±0.1, 39°11N×29°03E, h10km, MD2.6, Error ellipse: s-maj=1.5km s-min=1.2km az=68.0*
*DDA **26** 22:29:18.5, 39°10N×29°03E, h7km, Md2.6*
*ISK **26** 22:29:18.0, 39°13N×29°04E, h9km, MD2.8*

ISC 26 22:29:18.7±0.9, 39°12N±0°02×29°03E±0°02, h15km±8km, n30, σ0§41/42, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.26	253	P	Pg	22 29 24.4	+0.1
DEMI				S	Sg	22 29 28.1	-0.1
DEMI	Demirci	0.26	253	i P	Pg	22 29 24.4	+0.1
DEMI				i S	Sg	22 29 28.1	-0.1
GDZ	Gediz	0.35	94	P	Pg	22 29 26.0	-0.1
GDZ				S	Sg	22 29 31.0	0.0
GDZ	Gediz	0.35	94	i P	Pg	22 29 25.9	-0.1
GDZ				i S	Sg	22 29 31.0	0.0
TVSB	Tavsanli	0.47	45	ePG	Pg	22 29 28.0	-0.2
TVSB				eSG	Sg	22 29 34.0	-0.6
TVSB	Tavsanli	0.47	45	ePg	Pg	22 29 28.0	-0.2
TVSB				eSg	Sg	22 29 34.0	-0.6
DURS	Dursunbey	0.65	319	P	Pg	22 29 31.1	-0.4
DURS				S	Sb	22 29 40.5	-0.2
DURS	Dursunbey	0.65	319	i P	Pg	22 29 31.1	-0.4
DURS				i S	Sb	22 29 40.5	-0.2
KULA	Kula-Manisa	0.67	206	ePG	Pg	22 29 31.6	-0.2
KULA	Kula-Manisa	0.67	206	ePg	Pg	22 29 31.6	-0.2
MANT	Manisa	0.73	211	P	Pg	22 29 32.8	-0.1
MANT				S	Sg	22 29 42.0	-0.5
MANT	Manisa	0.73	211	i P	Pg	22 29 32.8	-0.1
MANT				i S	Sg	22 29 42.0	-0.5
KHAL	Karahalli	0.83	154	P	Pb	22 29 34.8	0.0
KHAL				S	Sg	22 29 45.5	-0.2
KHAL	Karahalli	0.83	154	i P	Pb	22 29 34.8	0.0
KHAL				i S	Sg	22 29 45.5	-0.2
KHL	Karahalli	0.88	154	ePG	Pg	22 29 35.3	-0.5
KHL	Karahalli	0.88	154	ePg	Pg	22 29 35.3	-0.5
ORLT	Orhaneli	0.93	354	ePG	Pg	22 29 36.4	-0.5
BALB	Balikesir	1.03	301	ePG	Pg	22 29 38.0	-0.7
BALB	Balikesir	1.03	301	ePg	Pg	22 29 38.0	-0.7
CAVI	Cavuskoy	1.25	30	ePN	Pb	22 29 42.5	+0.4
KCTX	Karacabey (Bur	1.26	336	ePN	Pb	22 29 42.5	+0.3
KCTX	Karacabey (Bur	1.26	336	ePn	Pb	22 29 42.5	+0.3
IZI	Iznik	1.27	16	ePN	Pn	22 29 42.0	0.0
GONE	Gonen-Balikesi	1.39	312	ePN	Pn	22 29 44.3	+0.7
GONE	Gonen-Balikesi	1.39	312	ePn	Pn	22 29 44.3	+0.7
ARMT	Armutlu	1.45	355	ePN	Pn	22 29 44.6	+0.2
ARMT	Armutlu	1.45	355	ePn	Pn	22 29 44.6	+0.2
EDC	Edincik	1.52	324	ePN	Pn	22 29 45.9	+0.5
EDC	Edincik	1.52	324	ePn	Pn	22 29 45.9	+0.5
GULT	Gulveren	1.74	41	ePN	Pn	22 29 49.4	+0.9

*ISK **26** 22:37:24.9, 39°06N×29°14E, h5km, MD2.6*

*ISCJB **26** 22:37:25.5±0.5, 39°08N±0°03×29°05E±0°04, h4km±9km, Error ellipse: s-maj=5.3km s-min=4.6km az=158.2*
*CSEM **26** 22:37:25.7±0.1, 39°08N×29°05E, h5km, MD2.7, Error ellipse: s-maj=2.6km s-min=2.3km az=94.0*
*DDA **26** 22:37:25.7, 39°07N×29°04E, h7km, Md2.7*

ISC 26 22:37:24.8±1.0, 39°04N±0°03×29°11E±0°04, h10km±11km, n19, σ0§30/30, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	Gediz	0.29	80	P	Pb	22 37 32.4	+0.1
GDZ				S	Sb	22 37 37.5	+0.2
GDZ	Gediz	0.29	80	i P	Pb	22 37 32.4	+0.1
GDZ				i S	Sb	22 37 37.5	+0.2
DEMI	Demirci	0.30	271	P	Pg	22 37 30.9	-0.1
DEMI				S	Sg	22 37 34.8	-0.3
DEMI	Demirci	0.30	271	i P	Pg	22 37 30.9	-0.1
DEMI				i S	Sg	22 37 34.8	-0.3
TVSB	Tavsanli	0.49	34	ePG	Pg	22 37 34.8	+0.4
TVSB				eSG	Sg	22 37 40.7	-0.3
KULA	Kula-Manisa	0.63	214	ePG	Pb	22 37 37.9	0.0
KULA	Kula-Manisa	0.63	214	ePg	Pb	22 37 37.9	0.0
MANT	Manisa	0.70	218	P	Pb	22 37 39.3	+0.1
MANT				S	Sg	22 37 47.7	+0.2
MANT	Manisa	0.70	218	i P	Pb	22 37 39.3	+0.1
MANT				i S	Sg	22 37 47.7	+0.2
KHAL	Karahalli	0.73	156	P	Pn	22 37 41.3	0.0
KHAL				S	Sn	22 37 52.1	-0.5
KHAL	Karahalli	0.73	156	i P	Pn	22 37 41.3	0.0
KHAL				i S	Sn	22 37 52.1	-0.5
DURS	Dursunbey	0.74	319	P	Pg	22 37 39.4	+0.2
DURS				S	Sg	22 37 48.9	-0.1
DURS	Dursunbey	0.74	319	i P	Pg	22 37 39.4	+0.2
DURS				i S	Sg	22 37 48.9	-0.1
BALB	Balikesir	1.12	303	ePN	Pg	22 37 47.0	+0.6
BALB	Balikesir	1.12	303	ePn	Pg	22 37 47.0	+0.6
ARMT	Armutlu	1.54	353	ePN	Pb	22 37 53.4	+0.1
ARMT	Armutlu	1.54	353	ePn	Pb	22 37 53.4	+0.1
GULT	Gulveren	1.76	38	ePN	Pb	22 37 56.9	-0.4
GULT	Gulveren	1.76	38	ePn	Pb	22 37 56.9	-0.4

*ISK **26** 22:38:22.8, 39°11N×29°03E, h5km, MD2.5*
*ISCJB **26** 22:38:23.3±0.5, 39°10N±0°03×29°02E±0°04, h7km±7km, Error ellipse: s-maj=5.2km s-min=4.7km az=138.8*
*CSEM **26** 22:38:23.5±0.1, 39°10N×29°02E, h8km, MD2.7, Error ellipse: s-maj=2.3km s-min=1.9km az=87.0*
*DDA **26** 22:38:23.6, 39°07N×29°01E, h7km, Md2.7*

ISC 26 22:38:23.1±0.9, 39°10N±0°03×29°02E±0°03, h17km±8km, n22, σ0§36/34, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.25	257	P	Pg	22 38 28.7	0.0
DEMI				S	Sg	22 38 32.2	-0.4
DEMI	Demirci	0.25	257	i P	Pg	22 38 28.7	0.0
DEMI				i S	Sg	22 38 32.2	-0.4
GDZ	Gediz	0.36	91	P	Pg	22 38 30.8	+0.2
GDZ				S	Sb	22 38 36.2	-0.2
GDZ	Gediz	0.36	91	i P	Pg	22 38 30.8	+0.2
GDZ				i S	Sb	22 38 36.2	-0.2
TVSB	Tavsanli	0.49	44	ePG	Pg	22 38 32.9	0.0
TVSB				eSG	Sg	22 38 39.6	0.0
TVSB	Tavsanli	0.49	44	ePg	Pg	22 38 32.9	0.0
TVSB				eSg	Sg	22 38 39.6	0.0
KULA	Kula-Manisa	0.65	206	ePG	Pb	22 38 35.9	-0.1
KULA	Kula-Manisa	0.65	206	ePg	Pb	22 38 35.9	-0.1
DURS	Dursunbey	0.66	320	P	Pb	22 38 36.7	+0.5
DURS				S	Sb	22 38 45.9	+0.8
DURS	Dursunbey	0.66	320	i P	Pb	22 38 36.7	+0.5
DURS				i S	Sb	22 38 45.9	+0.8
MANT	Manisa	0.71	211	P	Pb	22 38 37.3	+0.2
MANT				S	Sg	22 38 46.2	-0.2
MANT	Manisa	0.71	211	i P	Pb	22 38 37.3	+0.2
MANT				i S	Sg	22 38 46.2	-0.2
KHAL	Karahalli	0.81	153	P	Pn	22 38 39.6	-0.3
KHAL				S	Sg	22 38 50.2	+0.5
KHAL	Karahalli	0.81	153	i P	Pn	22 38 39.6	-0.3
KHAL				i S	Sg	22 38 50.2	+0.5
ORLT	Orhaneli	0.95	354	ePG	Pb	22 38 41.2	0.0
ORLT	Orhaneli	0.95	354	ePg	Pb	22 38 41.2	0.0
BALB	Balikesir	1.04	302	ePG	Pg	22 38 43.0	-0.1
BALB	Balikesir	1.04	302	ePg	Pg	22 38 43.0	-0.1
KCTX	Karacabey (Bur	1.27	336	ePN	Pg	22 38 47.6	-0.1
KCTX	Karacabey (Bur	1.27	336	ePn	Pg	22 38 47.6	-0.1
ARMT	Armutlu	1.47	355	ePN	Pg	22 38 50.8	-0.7
ARMT	Armutlu	1.47	355	ePn	Pg	22 38 50.8	-0.7

*NEIC **26** 22:50:25.4, 10°67N×64°78W, h11km, MW4.0(CAR), After CAR.*

FUNV 26 22:50:25.8, 10°62N×64°82W, h5km, MW3.0, 1C-1D, Near coast of Venezuela

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCRV	Puerto La Cruz	0.48	157	⇓eP	Pb	22 50 36.1	-0.6
PCRV				eS	Sg	22 50 42.3	+1.1
PCRV	Puerto La Cruz	0.48	157	eP	Pb	22 50 36.5	-0.2
PCRV				eS	Sg	22 50 42.3	+1.1
CUPV	Cœpira	1.10	240	⇑eP	Pg	22 50 46.8	-0.2
CUPV				eS	Sb	22 51 01.8	-0.3
CUPV	Cœpira	1.10	240	eP	Pg	22 50 46.9	-0.1
CUPV				eS	Sb	22 51 02.2	+0.2
BIRV	Birongo	1.43	264	eP	Pn	22 50 51.2	-1.2
BIRV				eS	Sb	22 51 11.2	-0.2
BIRV	Birongo	1.43	264	eP	Pn	22 50 51.4	-1.0
BIRV				eS	Sb	22 51 11.0	-0.5
CRUV	Carupano	1.56	88	eP	Pb	22 50 54.7	-0.4
CRUV				eS	Sb	22 51 15.5	+0.3
GUNV	Guanoco	1.91	104	eP	Pn	22 50 58.1	-0.9
GUNV				eS	Sn	22 51 23.3	0.0
FUNV	FUNVISIS	1.96	266	eP	Pn	22 50 59.7	-0.1
FUNV				eS	Sn	22 51 23.9	-0.9
MERV	Las Mercedes	1.99	227	eP	Pn	22 50 59.5	-0.6
MERV				eS	Sn	22 51 24.4	-1.0
MERV	Las Mercedes	1.99	227	eP	Pn	22 50 58.8	-1.3
MERV				eS	Sn	22 51 24.7	-0.7
TURV	Turiamo	2.97	267	eP	Pn	22 51 12.7	-0.9
TURV				eS	Sn	22 51 47.5	-2.1
TURV	Turiamo	2.97	267	eP	Pn	22 51 11.4	-2.2
TURV				eS	Sn	22 51 46.7	-2.9
BAUV	El Baul	3.58	243	eP	Pn	22 51 20.6	-1.4
BAUV				eS	Sn	22 52 02.1	-2.6
BAUV	El Baul	3.58	243	eP	Pn	22 51 20.1	-1.9
BAUV				eS	Sn	22 52 01.8	-3.0
MAPV	Macapo	3.66	258	eP	Pn	22 51 22.2	-1.0
MAPV				eS	Sn	22 52 02.9	-3.9
MAPV	Macapo	3.66	258	eP	Pn	22 51 22.6	-0.6
MAPV				eS	Sn	22 52 03.2	-3.6
TEPV	Terepaima	4.35	262	eP	Pn	22 51 30.4	-2.2
TEPV				eS	Sn	22 52 19.4	-4.4

*NIED **26** 22:52:00, 39°10N×142°50E, h26km, Mw3.4 Best double couple: M0:1.36000×10^14 NP1:φs:12.00000°, δ:11.00000°, λ:-84.00000°. NP2:φs:186.00000°, δ:79.00000°, λ:-91.00000°.*

JMA 26 22:52:59.2±0.1, 39°13N×142°49E, h31km±1km, M3.7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.64	266	P	Pb	22 53 11.7	-0.3
OFUJ				S	Sb	22 53 20.3	-0.4
MIYJ	Miyakonagasawa	0.69	311	P	Pb	22 53 12.2	-0.5
MIYJ				S	Sb	22 53 21.1	-0.8
JTH	Tanohata	0.94	329	P	Pn	22 53 16.2	-0.1
JOM	Ohasama	0.99	291	P	Pn	22 53 17.2	+0.2
JOM				S	Sn	22 53 30.1	+0.2
JMK	Ichinoseki	1.00	260	P	Pn	22 53 17.3	+0.2
JMK				S	Sn	22 53 30.1	-0.1
JIO	Ouri	1.12	233	P	Pn	22 53 18.2	-0.5
JIO				S	Sn	22 53 31.6	-1.4
JKZ	Kuzumaki	1.24	314	P	Pb	22 53 21.3	-0.7
JKZ				eS	Sn	22 53 36.8	+0.7
JANG	Nango	1.45	329	P	Pn	22 53 24.0	+0.7
JRG	Rokugo	1.47	281	P	Pb	22 53 24.7	-1.1

NNC 26 23:02:38.7±1.9, 36°83N×70°89E, h150km±25km, mb2.8, mpv3.5, 6C-5D, Error ellipse: s-maj=18.7km s-min=11.3km az=144.0, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	Dzherino	2.56	321	⇓P	Pn	23 03 20.6	-0.1
	3.5nm,0.2s						
DZET				⇓S	Sn	23 03 53.7	+0.5
	36nm,0.3s						
MNAS	Manas	5.79	12	⇑P	Pn	23 04 02.7	0.0
	3.5nm,0.6s						
MNAS				⇑S	Sn	23 05 09.8	+1.5
	4.3nm,0.4s						
KK31	Karatay Array	6.28	357	P	Pn	23 04 09.5	+0.5
	1.6nm,0.2s,baz=193,slow=17,SNR=59						
KK31				⇓S	Sn	23 05 21.0	+1.2
	1.7nm,0.5s,baz=184,slow=19,SNR=4.4						
AAK	Ala-Archa	6.43	24	⇓P	Pn	23 04 11.3	+0.1
	1.1nm,0.2s						
AAK				⇑S	Sn	23 05 23.6	0.0
	4.5nm,0.6s						
TKM2	Tokmak 2	7.08	29	⇓P	Pn	23 04 19.9	0.0
	1.1nm,0.3s						
TKM2				⇑S	Sn	23 05 38.8	-0.5
	3.6nm,1.1s						
AB31	Akbulak array	14.76	331	⇑P	P	23 06 01.6	-0.4
	0.2nm,0.2s,baz=160,slow=9.3,SNR=18						
AB31				⇑S	Sn	23 08 39.8	-3.7
	0.1nm,0.2s,baz=149,slow=21,SNR=3.8						

*NIED **26** 23:21:00, 37°10N×140°80E, h5km, Mw3.8 Best double couple: M0:5.54000×10^14 NP1:φs:93.00000°, δ:26.00000°, λ:-52.00000°. NP2:φs:232.00000°, δ:70.00000°, λ:-107.00000°.*
*IDC **26** 23:21:39.3±1.5, 36°99N×141°13E, h0km, mb3.7/7, mb1 3.8/9, mb1mx3.6/39, mbtmp3.7/9, ML2.7/2, MS3.8/2, Ms1 3.7/2, ms1mx2.7/45, Error ellipse: s-maj=32.6km s-min=26.7km az=77.0*
*ISCJB **26** 23:21:40.9±0.9, 37°10N±0°03×140°90E±0°06, h8km±4km, mb3.8/9, MS3.9/2, Error ellipse: s-maj=8.9km s-min=5.0km az=16.6*
*JMA **26** 23:21:41.6, 37°11N×140°83E, h8km±1km, M3.5*
JMA Felt II J1.
*NEIC **26** 23:21:44.9±0.9, 36°98N×141°03E, h35km, mb4.3/2, Error ellipse: s-maj=16.7km s-min=14.0km az=110.0*

ISC 26 23:21:41.8±1.0, 37°09N±0°04×140°83E±0°05, h6km±5km, n29, σ1§06/30, mb3.7/9, 6C-1D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.03	297	⇓P	Pg	23 21 42.9	-0.2
ONAJ				S	Sg	23 21 44.1	+0.1
JFK	Kawauchi	0.28	7	⇑P	Pg	23 21 46.7	-0.6
JFK				S	Sg	23 21 51.1	+0.1
JHO	Hitachi	0.52	204	⇑P	Pg	23 21 51.9	+0.1
JHO				S	Sg	23 21 59.2	+0.6
JFT	Otama	0.58	317	⇑P	Pg	23 21 52.8	-0.2
JFT				S	Sg	23 22 00.8	+0.1
JSB	Shiboa	0.74	261	⇑P	Pb	23 21 56.5	-0.6
JSB				S	Sb	23 22 07.0	-0.5
JMM	Marumori	0.78	358	⇑P	Pg	23 21 55.7	-1.0
JMM				S	Sg	23 22 06.5	-0.3
JFY	Yanaizu	0.96	290	⇑P	Pg	23 21 59.6	-0.5
JFY				S	Sg	23 22 12.3	-0.2
MJAR	Matsushiro Arr	2.18	256	Pn	Pb	23 22 20.3	-1.2
	11nm,0.3s,baz=69,slow=16,SNR=72						
MJAR				Sn	Sg	23 22 50.3	-1.4
	16nm,0.3s,baz=84,slow=28,SNR=16						
MJAR				LR	LR	23 23 31.4	
	comp=Z,49nm,20.0s,baz=25,slow=48						
MAJO	Matsushiro	2.18	256	ePn	Pb	23 22 20.7	-0.8
MAJO				eSn	Sg	23 22 51.4	-0.3
MAT	Matsushiro	2.18	256	P	Pb	23 22 20.6	-1.0
MAT				S	Sg	23 22 51.7	0.0
USRK	Ussuriysk Ar.	9.78	319	Pn	Pn	23 24 05.2	+2.4
	0.1nm,0.3s,baz=122,slow=14,SNR=2.5						
MDJ	Mudanjiang	11.35	315	ePn	Pn	23 24 27.3	+2.9
	4.3nm,0.4s						
ENH	Enshi	26.88	265	P	P	23 27 24.5	+1.1
	5.8nm,0.4s						
SONM	Songino Array	27.37	304	P	P	23 27 27.5	-0.3
	0.8nm,0.8s,baz=104,slow=8.9,SNR=6.1						
H11N2	WAKE ISLAND Hy	28.57	120	T	T	23 57 23.9	
	baz=313,slow=75,SNR=58						
H11N1	WAKE ISLAND Hy	28.58	120	T	T	23 57 22.6	
	baz=313,slow=75,SNR=47						
H11N3	WAKE ISLAND Hy	28.59	120	T	T	23 57 23.8	
	baz=313,slow=75,SNR=31						
H11S1	WAKE ISLAND Hy	29.28	122	T	T	23 58 22.0	
	baz=314,slow=76,SNR=31						
H11S3	WAKE ISLAND Hy	29.28	122	T	T	23 58 15.1	
	baz=314,slow=76,SNR=22						
H11S2	WAKE ISLAND Hy	29.30	122	T	T	23 58 19.4	
	baz=314,slow=76,SNR=18						
ZALV	Zalesovo Beam	41.54	312	P	P	23 29 30.4	+0.7
	0.5nm,0.3s,baz=103,slow=6.2,SNR=3.2						
MKAR	Makanchi Array	43.70	302	P	P	23 29 47.2	-0.2
	0.5nm,0.7s,baz=86,slow=10,SNR=4.1						
WRA	Warramunga Arr	57.05	187	P	P	23 31 26.6	-2.1
	0.4nm,0.5s,baz=2.9,slow=7.7,SNR=5.7						
FINES	FINESS Array B	68.55	332	P	P	23 32 45.4	+0.6
	2.5nm,0.9s,baz=67,slow=5.0,SNR=5.0						
AKASG	Malin Array Be	73.97	322	P	P	23 33 17.1	-0.7
	0.4nm,0.3s,baz=47,slow=6.9,SNR=5.6						
URZ	Urewera	82.11	152	LR	LR	00 02 15.8	
	comp=Z,163nm,22.0s,baz=23,slow=30						
GERES	GERESS Array B	82.42	328	P	P	23 34 05.0	+0.1
	0.3nm,0.5s,baz=32,slow=5.8,SNR=3.0						
SDCO	Great Sand Dun	83.59	47	eP	P	23 34 03.2	-8.1
	0.6nm,0.4s						
TXAR	Lajitas Array	90.45	52	LR	LR	00 15 13.6	
	comp=Z,14nm,18.0s,baz=0.0,slow=36						

*ISCJB **26** 23:29:18.9±0.8, 0°7N±0°3×25°2W±0°2, h10km, mb3.9/8, MS3.4/5, Error ellipse: s-maj=53.7km s-min=13.9km az=156.6*
*IDC **26** 23:29:19.1±1.2, 0°56N×25°14W, h0km, mb3.8/5, mb1 3.8/5, mb1mx3.5/36, mbtmp3.8/5, MS3.5/5, Ms1 3.5/5, ms1mx3.0/35, Error ellipse: s-maj=71.1km s-min=25.3km az=150.0*
*NEIC **26** 23:29:20.5±0.5, 0°56N×25°15W, h10km, mb4.2/3, Error ellip

0.5nm,0.6s,baz=256,slow=5.8,SNR=3.9
AKASG **Malin Array Be** 67.81 34 P **P** 23 40 18.6 -0.1
0.2nm,0.3s,baz=244,slow=5.6,SNR=3.8
GNI **Garni** 74.36 48 *e*P **P** 23 40 58.9 0.0
1.9nm,0.5s
ASAR **Alice Springs** 149.33 140 PKPbc **PKPbc** 23 49 10.3 -0.3
0.4nm,0.8s,baz=224,slow=2.6,SNR=3.9

NIED ***26*** *23:34:00,37°.10N×141°.40E,h5km,Mw3.8 Best double couple: M0:5.90000×10^14 NP1:φ0=26.00000°,δ44.00000°, λ-94.00000°. NP2:φ0=212.00000°,δ46.00000°, λ-86.00000°.*
IDC ***26*** *23:34:43.4±0.7,37°.06N×141°.26E,h0km,mb3.9/15, mb1 4.0/18,mb1mx3.9/43,mbtmp3.9/18,ML3.1/3,MS2.9/4, Ms1 2.9/4,ms1mx2.6/44,Error ellipse: s-maj=20.5km s-min=15.6km az=95.0*
ISCJB ***26*** *23:34:44.2±1.3,37°.06N±0°.04×141°.43E±0°.08,h20km±8km, mb3.9/18,MS3.1/2,Error ellipse: s-maj=10.9km s-min=5.8km az=14.4*
JMA ***26*** *23:34:44.9±0.1,37°.08N×141°.37E,h25km±1km,M4.3*
JMA Felt I J1.
NEIC ***26*** *23:34:50.0±0.9,37°.06N×141°.18E,h48km±6km,mb4.4/3, Error ellipse: s-maj=9.9km s-min=6.4km az=127.0*
NEIC Recorded [1 JMA] in Fukushima and Ibaraki.
ISC 26 23:34:46.3±1.0,37°.06N±0°.04×141°.28E±0°.05,h19km±3km, n40,σ0°.83/40,mb4.0/18,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.39**	**276**	P	**Pg**	**23 34 54.1**	**-0.3**
ONAJ				S	**Sb**	**23 35 00.9**	**+0.6**
JFK	**Kawauchi**	**0.45**	**313**	P	**Pg**	**23 34 54.5**	**-0.9**
JFK				S	**Sg**	**23 35 01.3**	**-0.3**
JHO	**Hitachi**	**0.73**	**232**	P	**Pb**	**23 34 59.3**	**-1.0**
JHO				S	**Sg**	**23 35 10.1**	**-0.2**
JFT	**Otama**	**0.88**	**301**	P	**Pb**	**23 35 02.6**	**-0.3**
JFT				S	**Sg**	**23 35 15.1**	**0.0**
JMM	**Marumori**	**0.89**	**334**	P	**Pb**	**23 35 01.7**	**-1.4**
JMM				S	**Sb**	**23 35 13.9**	**-0.7**
JSB	**Shiboa**	**1.09**	**266**	P	**Pn**	**23 35 06.6**	**0.0**
JSB				S	**Sg**	**23 35 22.2**	**+0.3**
MJAR	**Matsushiro Arr**	**2.52**	**259**	Pn	**Pn**	**23 35 27.1**	**+0.9**
	7.7nm,0.3s,baz=85,slow=16,SNR=38						
MJAR				LR	LR	23 36 41.1	
	comp=Z,126nm,19.9s,baz=80,slow=48						
MAJO	**Matsushiro**	**2.52**	**259**	*e*Pn	**Pn**	**23 35 27.9**	**+1.6**
MAT	**Matsushiro**	**2.52**	**259**	P	**Pn**	**23 35 27.4**	**+1.2**
MAT				S	**Sb**	**23 36 01.0**	**-0.6**
JHJ	**Hachijo jima 2**	**4.12**	**198**	**Pn**	**Pn**	**23 35 48.8**	**+0.6**
	19nm,0.3s,baz=33,slow=13,SNR=4.4						
JHJ				Sn	**Sn**	**23 36 35.5**	**-0.4**
	19nm,0.3s,baz=70,slow=18,SNR=2.8						
ERM	**Erimo**	**5.16**	**16**	*e*Pn	**Pn**	**23 36 04.8**	**+2.4**
USRK	**Ussuriysk Ar.**	**10.03**	**318**	Pn	**Pn**	**23 37 10.2**	**+0.9**
	0.2nm,0.3s,baz=106,slow=11,SNR=6.0						
USRK				LR	LR	23 40 43.7	
	comp=Z,81nm,20.9s,baz=182,slow=36						
MDJ	**Mudanjiang**	**11.62**	**314**	*e*Pn	**Pn**	**23 37 32.7**	**+1.6**
YAK	**Yakutsk**	**26.02**	**348**	*e*P	**P**	**23 40 17.1**	**-0.7**
	8.8nm,0.6s						
SEY	**Seymchan**	**26.78**	**11**	P	**P**	**23 40 26.1**	**+1.4**
	0.7nm,0.4s,baz=208,slow=13,SNR=4.2						
ENH	**Enshi**	**27.23**	**265**	*e*P	**P**	**23 40 28.7**	**-0.4**
	5.2nm,0.5s						
SONM	**Songino Array**	**27.68**	**304**	P	**P**	**23 40 32.2**	**-0.9**
	1.1nm,0.8s,baz=99,slow=8.8,SNR=7.7						
H11N2	**WAKE ISLAND Hy**	**28.25**	**121**	T	T	00 10 05.8	
	baz=313,slow=75,SNR=593						
H11N1	**WAKE ISLAND Hy**	**28.26**	**121**	T	T	00 10 10.3	
	baz=313,slow=75,SNR=578						
H11N3	**WAKE ISLAND Hy**	**28.27**	**121**	T	T	00 10 06.1	
	baz=313,slow=75,SNR=293						
H11S1	**WAKE ISLAND Hy**	**28.96**	**123**	T	T	00 11 36.2	
	baz=317,slow=74						
H11S3	**WAKE ISLAND Hy**	**28.96**	**123**	T	T	00 11 00.6	
	baz=317						
H11S2	**WAKE ISLAND Hy**	**28.98**	**123**	T	T	00 11 38.4	
	baz=317,slow=74						
DAV	**Davao City (W)**	**33.10**	**209**	LR	LR	23 53 11.6	
	comp=Z,21nm,19.6s,baz=178,slow=34						
ZALV	**Zalesovo Beam**	**41.82**	**312**	P	**P**	**23 42 34.4**	**-0.1**
	1.7nm,0.6s,baz=90,slow=5.7,SNR=7.4						
MKAR	**Makanchi Array**	**44.01**	**302**	P	**P**	**23 42 52.5**	**0.0**
	1.5nm,0.7s,baz=91,slow=9.7,SNR=12						
ILAR	**Eielson Array**	**49.53**	**32**	P	**P**	**23 43 35.5**	**+0.1**
	1.0nm,0.7s,baz=266,slow=6.2,SNR=13						
AAK	**Ala-Archa**	**50.38**	**298**	LR	LR	00 06 38.8	
	comp=Z,25nm,18.0s,baz=52,slow=38						
WRA	**Warramunga Arr**	**57.07**	**188**	P	**P**	**23 44 30.9**	**-0.4**
	1.7nm,0.6s,baz=5.5,slow=7.5,SNR=9.3						
ABKAR	**Akbulak array**	**57.84**	**310**	*e*P	**P**	**23 44 36.0**	**-0.4**
	0.6nm,0.2s						
AKTO	**Aktyubinsk**	**58.58**	**312**	P	**P**	**23 44 41.5**	**-0.1**
	1.1nm,0.8s,baz=81,slow=15,SNR=4.1						
ASAR	**Alice Springs**	**60.80**	**188**	P	**P**	**23 44 57.2**	**+0.1**
	0.7nm,0.5s,baz=9.5,slow=5.8,SNR=6.1						
GEYT	**Alibeck**	**63.73**	**299**	P	**P**	**23 45 17.1**	**+0.4**
	1.2nm,0.6s,baz=111,slow=3.3,SNR=4.8						
YKA	**Yellowknife Ar**	**63.84**	**30**	P	**P**	**23 45 17.4**	**+0.5**
	0.1nm,0.5s,baz=297,slow=6.7,SNR=4.1						
ARCES	**ARCESS Array B**	**63.93**	**339**	P	**P**	**23 45 17.2**	**-0.4**
	2.9nm,0.9s,baz=12,slow=6.2,SNR=5.0						
FINES	**FINESS Array B**	**68.74**	**332**	P	**P**	**23 45 48.6**	**+0.2**
	3.7nm,1.0s,baz=56,slow=10,SNR=5.3						
AKASG	**Malin Array Be**	**74.21**	**322**	P	**P**	**23 46 21.2**	**-0.4**
	0.7nm,0.3s,baz=47,slow=6.5,SNR=3.5						
BRTR	**Keskin Array B**	**78.75**	**311**	P	**P**	**23 46 47.6**	**-0.1**
	0.5nm,0.8s,baz=52,slow=5.6,SNR=2.5						
GERES	**GERESS Array B**	**82.63**	**328**	P	**P**	**23 47 08.2**	**0.0**
	0.1nm,0.3s,baz=22,slow=8.5,SNR=5.9						
LPAZ	**La Paz**	**146.77**	**59**	PKPbc	**PKPbc**	**23 54 28.5**	**+0.3**
	1.2nm,0.5s,baz=317,slow=3.8,SNR=6.7						

ISCJB ***26*** *23:38:12.8±0.5,39°.10N±0°.03×29°.10E±0°.03,h1km±7km, Error ellipse: s-maj=5.5km s-min=3.8km az=146.3*
DDA ***26*** *23:38:12.7,39°.11N×29°.09E,h7km,Md2.9*
ISK ***26*** *23:38:12.7,39°.09N×29°.14E,h6km,MD2.9*
CSEM ***26*** *23:38:13.2±0.1,39°.09N×29°.11E,h5km,MD2.9,Error ellipse: s-maj=2.1km s-min=1.8km az=111.0*
ISC 26 23:38:13.2±0.9,39°.10N±0°.02×29°.10E±0°.02,h12km±9km, n45,σ0°.41/60,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.30**	**92**	P	**Pg**	**23 38 19.3**	**-0.1**
GDZ				S	**Sg**	**23 38 23.9**	**+0.4**
GDZ	**Gediz**	**0.30**	**92**	*i* P	**Pg**	**23 38 19.3**	**-0.1**
GDZ				*i* S	**Sg**	**23 38 23.9**	**+0.4**
DEMI	**Demirci**	**0.30**	**259**	P	**Pg**	**23 38 19.4**	**0.0**
DEMI				S	**Sg**	**23 38 23.8**	**+0.2**
DEMI	**Demirci**	**0.30**	**259**	*i* P	**Pg**	**23 38 19.4**	**0.0**
DEMI				*i* S	**Sg**	**23 38 23.8**	**+0.2**
TVSB	**Tavsanli**	**0.45**	**39**	*e*PG	**Pg**	**23 38 21.8**	**-0.3**
TVSB				*e*SG	**Sg**	**23 38 27.7**	**-0.5**
TVSB	**Tavsanli**	**0.45**	**39**	*e*Pg	**Pg**	**23 38 21.8**	**-0.3**
TVSB				*e*Sg	**Sg**	**23 38 27.7**	**-0.5**
KULA	**Kula-Manisa**	**0.68**	**210**	*e*PG	**Pg**	**23 38 26.0**	**-0.3**
KULA	**Kula-Manisa**	**0.68**	**210**	*e*Pg	**Pg**	**23 38 26.0**	**-0.3**
DURS	**Dursunbey**	**0.70**	**316**	P	**Pg**	**23 38 26.1**	**-0.6**
DURS	**Dursunbey**	**0.70**	**316**	*i* P	**Pg**	**23 38 26.1**	**-0.6**
MANT	**Manisa**	**0.74**	**215**	P	**Pg**	**23 38 27.4**	**-0.2**
MANT				S	**Sg**	**23 38 36.9**	**-0.4**
MANT	**Manisa**	**0.74**	**215**	*i* P	**Pg**	**23 38 27.4**	**-0.2**
MANT				*i* S	**Sg**	**23 38 36.9**	**-0.4**
KHAL	**Karahalli**	**0.79**	**157**	P	**Pg**	**23 38 28.6**	**+0.1**
KHAL				S	**Sb**	**23 38 39.3**	**-0.3**
KHAL	**Karahalli**	**0.79**	**157**	*i* P	**Pg**	**23 38 28.6**	**+0.1**
KHAL				*i* S	**Sb**	**23 38 39.3**	**-0.3**
KHL	**Karahalli**	**0.84**	**157**	*e*PG	**Pg**	**23 38 29.3**	**-0.2**
KHL	**Karahalli**	**0.84**	**157**	*e*Pg	**Pg**	**23 38 29.3**	**-0.2**
ORLT	**Orhaneli**	**0.96**	**351**	*e*PG	**Pg**	**23 38 31.6**	**-0.1**
ORLT	**Orhaneli**	**0.96**	**351**	*e*Pg	**Pg**	**23 38 31.6**	**-0.1**
AKHS	**Akhisar**	**1.02**	**258**	P	**Pn**	**23 38 33.4**	**0.0**
AKHS				S	**Sg**	**23 38 46.6**	**+0.3**
AKHS	**Akhisar**	**1.02**	**258**	*i* P	**Pn**	**23 38 33.4**	**0.0**
AKHS				*i* S	**Sg**	**23 38 46.6**	**+0.3**
AKS	**Akhisar**	**1.02**	**258**	*e*PG	**Pn**	**23 38 33.3**	**-0.1**
AKS	**Akhisar**	**1.02**	**258**	*e*Pg	**Pn**	**23 38 33.3**	**-0.1**
BALB	**Balikesir**	**1.09**	**300**	*e*PN	**Pn**	**23 38 34.7**	**+0.5**
BALB	**Balikesir**	**1.09**	**300**	*e*Pn	**Pn**	**23 38 34.7**	**+0.5**
IGD	**Bursa**	**1.17**	**4**	*i* P	**Pb**	**23 38 33.5**	**-1.8**
IGD				*i* S	**Sg**	**23 38 50.9**	**+0.1**
IZI	**Iznik**	**1.27**	**13**	*e*PN	**Pg**	**23 38 37.6**	**0.0**
IZI	**Iznik**	**1.27**	**13**	*e*Pn	**Pg**	**23 38 37.6**	**0.0**
MDNY	**Mudanya-Bursa**	**1.28**	**353**	*e*PN	**Pg**	**23 38 37.9**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.28**	**353**	*e*Pn	**Pg**	**23 38 37.9**	**+0.1**
KCTX	**Karacabey (Bur**	**1.30**	**334**	*e*PN	**Pg**	**23 38 38.2**	**0.0**
KCTX	**Karacabey (Bur**	**1.30**	**334**	*e*Pn	**Pg**	**23 38 38.2**	**0.0**
BALY	**Balya**	**1.31**	**300**	P	**Pg**	**23 38 38.3**	**-0.1**
BALY				S	**Sg**	**23 38 55.4**	**-0.1**
BALY	**Balya**	**1.31**	**300**	*i* P	**Pg**	**23 38 38.3**	**-0.1**
BALY				*i* S	**Sg**	**23 38 55.4**	**-0.1**
ADVT	**Abdulvahap**	**1.42**	**20**	*e*PN	**Pb**	**23 38 39.8**	**+0.2**
ADVT	**Abdulvahap**	**1.42**	**20**	*e*Pn	**Pb**	**23 38 39.8**	**+0.2**
GONE	**Gonen-Balikesi**	**1.45**	**311**	*e*PN	**Pb**	**23 38 40.3**	**+0.3**
GONE	**Gonen-Balikesi**	**1.45**	**311**	*e*Pn	**Pb**	**23 38 40.3**	**+0.3**
ARMT	**Armutlu**	**1.48**	**353**	*e*PN	**Pb**	**23 38 40.6**	**0.0**
ARMT	**Armutlu**	**1.48**	**353**	*e*Pn	**Pb**	**23 38 40.6**	**0.0**
EDC	**Edincik**	**1.57**	**323**	*e*PN	**Pb**	**23 38 42.7**	**+0.6**
EDC	**Edincik**	**1.57**	**323**	*e*Pn	**Pb**	**23 38 42.7**	**+0.6**
GULT	**Gulveren**	**1.72**	**39**	*e*PN	**Pn**	**23 38 43.8**	**+0.7**
GULT	**Gulveren**	**1.72**	**39**	*e*Pn	**Pn**	**23 38 43.8**	**+0.7**
ISK	**Istanbul-Kandi**	**1.96**	**359**	*e*PN	**Pb**	**23 38 48.2**	**-0.6**
ISK	**Istanbul-Kandi**	**1.96**	**359**	*e*Pn	**Pb**	**23 38 48.3**	**-0.6**

IDC ***26*** *23:46:13.0±1.1,24°.17N×121°.75E,h0km,mb3.6/8, mb1 3.7/8,mb1mx3.4/59,mbtmp3.6/8,MS3.4/2,Ms1 3.4/2, ms1mx2.6/37,Error ellipse: s-maj=41.8km s-min=23.3km az=64.0*
JMA ***26*** *23:46:18.2±0.1,24°.22N×121°.72E,h37km±2km,M3.1*
ISCJB ***26*** *23:46:19.2±0.3,24°.29N±0°.02×121°.84E±0°.02,h27km±2km, mb3.4/8,MS2.8/1,Error ellipse: s-maj=3.6km s-min=2.4km az=38.5*
TAP ***26*** *23:46:19.1,24°.29N×121°.75E,h32km,ML4.1,B*
ISC 26 23:46:18.8±0.8,24°.27N±0°.02×121°.79E±0°.02,h32km±5km, n75,σ0°.96/114,mb3.5/8,11C-9D,Taiwan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EHP	**Heping Village**	**0.06**	**314**	*e*P	**Pb**	**23 46 24.8**	**+0.4**
	baz=355						
ENA	**Nanau**	**0.16**	**345**	P	**Pb**	**23 46 24.9**	**-0.1**
	baz=359						
TWD	**Chiawan**	**0.26**	**222**	⇓*i* P	**Pb**	**23 46 26.1**	**+0.1**
	baz=218						
TWD				*i* S	**Sn**	**23 46 31.5**	**+0.3**
	baz=218						
HWA	**Hwalien**	**0.34**	**209**	*e*P	**Pn**	**23 46 27.6**	**+0.2**
	baz=194						
HWA				*e*S	**Sn**	**23 46 34.1**	**+0.9**
	baz=194						
TWC	**Suao**	**0.34**	**10**	*e*P	**Pb**	**23 46 27.4**	**+0.3**
	baz=13						
NNS	**Nan Shan**	**0.41**	**294**	⇑*i* P	**Pb**	**23 46 27.9**	**-0.3**
	baz=293						
NNS				S	**Sb**	**23 46 34.1**	**-0.5**
	baz=293						
ENTT	**Nioudou**	**0.42**	**331**	⇓*i* P	**Pb**	**23 46 28.1**	**-0.1**
	baz=334						
ENTT				S	**Sb**	**23 46 34.5**	**-0.1**
	baz=334						
TWE	**Neicheng**	**0.46**	**346**	*i* P	**Pb**	**23 46 28.9**	**+0.1**
	baz=348						
TWE				*i* S	**Sb**	**23 46 35.6**	**-0.1**
	baz=348						
ESF	**Shoufeng Towns**	**0.47**	**213**	*e*P	**Pn**	**23 46 29.6**	**+0.2**
	baz=220						
WHF	**Hehuan Shan**	**0.49**	**255**	⇑*i* P	**Pb**	**23 46 29.4**	**-0.1**
	baz=252						
WHF				S	**Sb**	**23 46 37.0**	**0.0**
	baz=252						
ILA	**Ilan**	**0.49**	**356**	*e*P	**Pn**	**23 46 30.1**	**+0.4**
	baz=357						
ILA				*e*S	**Sn**	**23 46 37.2**	**+0.2**
	baz=357						
TWT	**Tachien**	**0.56**	**268**	⇑*i* P	**Pb**	**23 46 30.6**	**+0.2**
	baz=265						
TWT				*e*S	**Sb**	**23 46 38.3**	**-0.1**
	baz=265						
ESL	**Shilin**	**0.56**	**215**	*e*P	**Pb**	**23 46 29.8**	**-0.5**
	baz=222						
ESL				*e*S	**Sb**	**23 46 37.4**	**-0.8**
	baz=222						
NSK	**Sanguang**	**0.56**	**316**	⇓*i* P	**Pb**	**23 46 30.0**	**-0.4**
	baz=307						
NSK				*i* S	**Sb**	**23 46 37.3**	**-1.1**
	baz=307						
TEGC	**Jichi Village**	**0.60**	**202**	*e*P	**Pn**	**23 46 32.2**	**+1.1**
	baz=185						
TWA	**Mucha**	**0.73**	**345**	⇓*i* P	**Pn**	**23 46 33.3**	**+0.3**
	baz=336						
TWA				S	**Sb**	**23 46 42.9**	**-0.1**
	baz=336						
TWB1	**Santiao Chiao**	**0.76**	**14**	⇑*i* P	**Pb**	**23 46 34.0**	**+0.4**
	baz=22						
TWB1				*i* S	**Sn**	**23 46 44.4**	**+0.8**
	baz=22						
NWF	**Wu-fen Shan**	**0.80**	**360**	⇓*i* P	**Pb**	**23 46 34.7**	**+0.3**
	baz=356						
NWF				S	**Sn**	**23 46 45.9**	**+1.2**
	baz=356						
NSTT	**Nanjuang**	**0.80**	**297**	⇑*i* P	**Pb**	**23 46 34.5**	**+0.1**
	baz=296						
NSTT				*i* S	**Sn**	**23 46 45.1**	**+0.4**
	baz=296						
TAP1	**Taipei**	**0.80**	**343**	*e*P	**Pn**	**23 46 34.2**	**+0.3**
	baz=343						
TAP1				*e*S	**Sb**	**23 46 45.1**	**+0.2**
	baz=343						
TAP	**Taipei**	**0.81**	**342**	*e*P	**Pn**	**23 46 33.0**	**-1.0**
	baz=343						
EHY	**Hungye**	**0.87**	**209**	⇑*e*P	**Pn**	**23 46 33.9**	**-1.0**
	baz=206						
NCU	**National Centr**	**0.88**	**322**	P	**Pn**	**23 46 35.5**	**+0.5**
	baz=322						
NCU				S	**Sb**	**23 46 48.0**	**+0.7**
	baz=322						
TWS1	**Kuangyinshan**	**0.89**	**338**	⇓P	**Pn**	**23 46 35.3**	**+0.2**
	baz=339						
TWS1				S	**Sb**	**23 46 48.8**	**+1.4**
	baz=339						
SMLT	**Sun Moon Lake**	**0.90**	**245**	⇑P	**Pn**	**23 46 35.8**	**+0.5**
	baz=237						
HSN	**Hsinchu**	**0.91**	**306**	*e*P	**Pb**	**23 46 36.0**	**-0.2**
	baz=308						
HSN				*e*S	**Sb**	**23 46 49.1**	**+1.0**
	baz=308						
TYC	**Yuchr**	**0.92**	**247**	⇑P	**Pn**	**23 46 36.0**	**+0.4**
	baz=236						
TYC				*e*S	**Sb**	**23 46 51.4**	**+3.0**
	baz=236						
TWQ1	**Liyutan**	**0.93**	**275**	*i* P	**Pb**	**23 46 37.2**	**+0.8**
	baz=274						
TWQ1				*i* S	**Sb**	**23 46 49.4**	**+0.9**
	baz=274						
NSY	**Sanyi**	**0.95**	**279**	P	**Pb**	**23 46 37.6**	**+0.9**
	baz=278						
NSY				*e*S	**Sb**	**23 46 50.9**	**+1.8**
	baz=278						
TWY	**Chenhua**	**1.01**	**350**	*e*P	**Pn**	**23 46 36.7**	**-0.1**
	baz=338						
TWY				*e*S	**Sb**	**23 46 51.9**	**+0.9**
	baz=338						
TWF1	**Yuli**	**1.02**	**206**	*e*P	**Pn**	**23 46 35.9**	**-1.0**
	baz=214						
TCU	**Taichung**	**1.02**	**263**	⇑*i* P	**Pb**	**23 46 38.7**	**+0.7**
	baz=263						
TCU				S	**Sb**	**23 46 52.9**	**+1.8**
	baz=263						
JYNG	**Yonagunijimaku**	**1.07**	**80**	P	**Pn**	**23 46 38.3**	**+0.7**
WNT	**Mingjian**	**1.08**	**249**	*e*P	**Pb**	**23 46 39.5**	**+0.5**
	baz=249						
WNT				*e*S	**Sb**	**23 46 54.8**	**+2.0**
	baz=249						
YUS	**Yu-Shan**	**1.09**	**225**	⇑*i* P	**Pn**	**23 46 39.1**	**+0.8**
	baz=214						
YUS				*e*S	**Sb**	**23 46 53.6**	**+0.1**
	baz=214						
YOJ	**Yonaguni jima**	**1.13**	**80**	P	**Pn**	**23 46 39.4**	**+1.0**
YOJ				*e*S	**Sb**	**23 46 55.7**	**+1.4**
YOJ	**Yonaguni jima**	**1.13**	**80**	⇓*i* P	**Pn**	**23 46 39.5**	**+1.0**
	baz=81						
ALS	**Alishan**	**1.17**	**230**	⇑*e*P	**Pb**	**23 46 40.5**	**-0.3**
	baz=219						
CHN5	**Tsauling**	**1.22**	**237**	*e*P	**Pb**	**23 46 41.5**	**+0.1**
	baz=237						
CHN5				*e*S	**Sb**	**23 46 58.3**	**+1.5**
	baz=237						
CHKT	**Chengkung**	**1.23**	**198**	*e*P	**Pn**	**23 46 40.2**	**+0.5**
	baz=182						
WGK	**Gukeng**	**1.26**	**243**	⇓P	**Pb**	**23 46 42.7**	**+0.6**
	baz=243						
WGK				S	**Sb**	**23 46 59.9**	**+2.0**
	baz=243						
ELDTW	**Lidau**	**1.29**	**213**	*e*P	**Pn**	**23 46 40.7**	**+0.1**
	baz=201						
PCYT	**Pengchaiyu**	**1.38**	**11**	*e*P	**Pn**	**23 46 42.4**	**+0.6**
	baz=13						
CHN2	**Minshiung**	**1.41**	**239**	*e*P	**Pb**	**23 46 44.5**	**0.0**
	baz=240						
CHN2				*e*S	**Sb**	**23 47 04.3**	**+2.2**
	baz=240						
CHN4	**Tsaushan**	**1.43**	**230**	⇓*e*P	**Pb**	**23 46 44.6**	**-0.2**
	baz=222						
CHN4				*e*S	**Sb**	**23 47 04.0**	**+1.3**
	baz=222						
WTCT	**Ta-ch'eng**	**1.43**	**254**	*e*P	**Pb**	**23 46 44.6**	**-0.4**
	baz=268						
STYT	**Tauyuan**	**1.45**	**221**	*e*P	**Pn**	**23 46 44.2**	**+1.3**
	baz=214						
STYT				*e*S	**Sb**	**23 47 03.9**	**+0.5**
	baz=214						
CHY	**Chiayi**	**1.47**	**239**	*e*P	**Pb**	**23 46 45.4**	**-0.1**
	baz=240						
CHY				*e*S	**Sb**	**23 47 05.8**	**+2.0**
	baz=240						
WTP	**Ta-pu**	**1.48**	**227**	*e*P	**Pb**	**23 46 46.0**	**+0.2**
	baz=228						
WTP				*e*S	**Sb**	**23 47 05.5**	**+1.2**
	baz=228						
TWK	**Hsinying**	**1.55**	**230**	*e*P	**Pb**	**23 46 46.8**	**-0.3**
	baz=233						
TWK				S	**Sb**	**23 47 07.6**	**+1.2**
	baz=233						
WSF	**Szhu**	**1.56**	**247**	*e*P	**Pb**	**23 46 46.3**	**-0.8**
	baz=248						
WSF				*e*S	**Sb**	**23 47 06.5**	**-0.1**
	baz=248						
CHN1	**Nanshi**	**1.58**	**227**	*e*P	**Pb**	**23 46 47.2**	**-0.3**
	baz=231						
CHN1				*e*S	**Sb**	**23 47 07.7**	**+0.6**
	baz=231						
TWG	**Pinlang**	**1.58**	**205**	*e*P	**Pn**	**23 46 44.2**	**-0.5**
	baz=189						
SGST	**Jiashian**	**1.62**	**223**	*e*P	**Pb**	**23 46 47.1**	**-1.0**
	baz=214						
SGST				*e*S	**Sb**	**23 47 09.2**	**+1.0**
	baz=214						
CHN8	**Yiju**	**1.71**	**238**	*e*P	**Pn**	**23 46 48.2**	**+1.9**
	baz=229						
CHN8				*e*S	**Sb**	**23 47 11.6**	**+0.8**
	baz=229						
IRIF	**Iriomote-Funau**	**1.77**	**88**	P	**Pn**	**23 46 47.9**	**+0.7**
TWM1	**Shoushan**	**1.91**	**221**	*e*P	**Pb**	**23 46 52.6**	**-0.4**
	baz=223						
JKRS	**Kuro-shima**	**2.03**	**90**	P	**Pn**	**23 46 52.2**	**+1.4**
JKRS				S	**Sb**	**23 47 20.8**	**+0.9**
EAST	**Anshuo**	**2.07**	**205**	*e*P	**Pb**	**23 46 54.5**	**-1.3**
	baz=195						
JIJ	**Ishigaki jima**	**2.15**	**87**	P	**Pn**	**23 46 53.0**	**+0.6**
JIJ				*e*S	**Sn**	**23 47 18.9**	**+0.9**
PNG	**Penghu**	**2.16**	**252**	*e*P	**Pn**	**23 46 53.1**	**+0.6**
	baz=252						
SCZT	**Fangliau**	**2.17**	**210**	*e*P	**Pn**	**23 46 54.6**	**+1.9**
	baz=194						
WDGT	**Dungji**	**2.19**	**243**	*e*P	**Pn**	**23 46 53.7**	**+0.7**
	baz=245						
JISG	**Ishigakijimahi**	**2.32**	**82**	P	**Pn**	**23 46 55.5**	**+0.7**
JTJ	**Tarama**	**2.68**	**82**	P	**Pn**	**23 47 01.0**	**+1.3**
KNM	**Kinmen**	**3.06**	**273**	*e*P	**Pn**	**23 47 06.4**	**+1.4**
	baz=272						
JCJ	**Chichijima**	**18.60**	**77**	LR	LR	23 56 09.1	
	comp=Z,314nm,21.2s,baz=157,slow=32						
KLR	**Kul'dur**	**26.11**	**15**	P	**P**	**23 51 50.8**	**+1.1**
	0.6nm,0.4s,baz=139,slow=15,SNR=3.7						
KLR				LR	LR	00 04 18.5	
	comp=Z,26nm,18.9s,baz=230,slow=41						
SONM	**Songino Array**	**26.50**	**336**	P	**P**	**23 51 53.6**	**+0.2**
	0.5nm,0.6s,baz=152,slow=10,SNR=5.4						
MKAR	**Makanchi Array**	**38.66**	**316**	P	**P**	**23 53 39.2**	**-0.2**
	0.4nm,0.5s,baz=104,slow=10,SNR=3.7						
ZALV	**Zalesovo Beam**	**40.47**	**327**	P	**P**	**23 53 52.4**	**-1.9**
	0.6nm,0.4s,baz=126,slow=7.3,SNR=2.1						
KURBB	**Kurchatov Arra**	**42.40**	**320**	P	**P**	**23 54 08.4**	**-1.7**
	0.2nm,0.5s,baz=111,slow=9.3,SNR=2.8						
WRA	**Warramunga Arr**	**45.62**	**163**	P	**P**	**23 54 34.5**	**-1.8**
	0.4nm,0.9s,baz=342,slow=8.4,SNR=3.6						
BRTR	**Keskin Array B**	**73.56**	**307**	P	**P**	**23 57 49.5**	**+0.4**
	0.8nm,0.7s,baz=91,slow=6.5,SNR=6.3						
YKA	**Yellowknife Ar**	**82.68**	**23**	P	**P**	**23 58 37.8**	**-1.0**
	0.2nm,0.5s,baz=312,slow=5.1,SNR=8.5						

ISK ***26*** *23:51:34.9,39°.13N×29°.03E,h10km,MD2.6*
ISCJB ***26*** *23:51:35.1±0.5,39°.10N±0°.03×29°.02E±0°.03,h

*CSEM **26** 23:55:27.6±0.3, 40°.88N×52°.09E, h20km, ML3.6, Error ellipse: s-maj=8.2km s-min=5.6km az=152.0*
*THR **26** 23:55:27.1±0.4, 40°.74N×51°.83E, h15km, ML3.6*
*AZER **26** 23:55:30.7±0.0, 40°.63N×51°.78E, h48km, Error ellipse: s-maj=1.7km s-min=0.9km az=249.0*
*NNC **26** 23:55:31.4±3.6, 41°.34N×52°.36E, h0km, mb3.9, Error ellipse: s-maj=76.3km s-min=28.3km az=109.0*

ISC 26 23:55:25.4±0.7, **40°.84N**±0°.04×**52°.06E**±0°.05, **h10km, n87,** σ2§**24**/129, **mb3.5/3, 31C-26D, Turkmenistan**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GALA	**Gala**	**1.51**	**254**	⇓Pg	**Pn**	**23 55 54.1**	**+1.7**
GALA				⇑Sg	**Sn**	**23 56 13.5**	**+1.4**
GALA	**Gala**	**1.51**	**254**	Pg	**Pn**	**23 55 54.1**	**+1.7**
NDR	**Nardaran** SNR=4.7	**1.59**	**261**	⇓Pg	**Pb**	**23 55 57.0**	**+2.1**
NDR				⇑Sg	**Sn**	**23 56 17.3**	**+3.1**
NDR	**Nardaran** SNR=4.7	**1.59**	**261**	Pg	**Pb**	**23 55 57.0**	**+2.1**
GOBA	**Gobu**	**1.82**	**257**	⇓Pg	**Pn**	**23 55 59.2**	**+2.5**
GOBA				⇓Sg	**Sn**	**23 56 21.4**	**+1.5**
GOBA	**Gobu**	**1.82**	**257**	Pg	**Pn**	**23 55 59.2**	**+2.5**
ATGJ	**Altiaghaj** SNR=7.5	**2.37**	**272**	⇑Pn	**Pn**	**23 56 06.4**	**+2.1**
ATGJ				⇑Sn	**Sn**	**23 56 34.0**	**+0.5**
ATGJ	**Altiaghaj** SNR=7.5	**2.37**	**272**	Pn	**Pn**	**23 56 06.4**	**+2.1**
GBS	**Qobustan**	**2.39**	**264**	⇑Pn	**Pn**	**23 56 06.9**	**+2.3**
GBS	**Qobustan**	**2.39**	**264**	Pn	**Pn**	**23 56 06.9**	**+2.3**
SIZA	**Siyzn** SNR=3.8	**2.40**	**277**	⇑Pn	**Pn**	**23 56 07.1**	**+2.3**
SIZA				⇓Sn	**Sn**	**23 56 35.5**	**+1.1**
SIZA	**Siyzn** SNR=3.8	**2.40**	**277**	Pn	**Pn**	**23 56 07.1**	**+2.3**
ALIB	**Äli-Bayra**	**2.49**	**250**	⇑Pn	**Pn**	**23 56 07.7**	**+1.8**
ALIB	**Äli-Bayra**	**2.49**	**250**	Pn	**Pn**	**23 56 07.7**	**+1.8**
PQL	**Pirkuli** SNR=14	**2.63**	**270**	⇑Pn	**Pn**	**23 56 10.6**	**+2.6**
PQL				⇑Sn	**Sn**	**23 56 41.0**	**+0.9**
PQL	**Pirkuli** SNR=14	**2.63**	**270**	Pn	**Pn**	**23 56 10.6**	**+2.6**
QUBA	**Quba, Azerbaij** SNR=16	**2.74**	**282**	⇑Pn	**Pn**	**23 56 11.7**	**+2.3**
QUBA				⇓Sn	**Sn**	**23 56 42.1**	**-0.6**
QUBA	**Quba, Azerbaij** SNR=16	**2.74**	**282**	Pn	**Pn**	**23 56 11.7**	**+2.3**
IML	**Ismayilli**	**2.94**	**270**	⇓Pn	**Pn**	**23 56 13.7**	**+1.5**
IML				⇑Sn	**Sn**	**23 56 47.2**	**-0.4**
IML	**Ismayilli**	**2.94**	**270**	Pn	**Pn**	**23 56 13.7**	**+1.5**
IML				Sn	**Sn**	**23 56 47.2**	**-0.4**
QSAR	**Qusar**	**2.94**	**285**	⇓Pn	**Pn**	**23 56 14.2**	**+2.0**
QSAR				⇑Sn	**Sn**	**23 56 47.3**	**-0.3**
XNQ	**Khinaliq** SNR=4.8	**2.98**	**278**	⇓Pn	**Pn**	**23 56 14.6**	**+1.7**
XNQ				⇓Sn	**Sn**	**23 56 47.6**	**-1.2**
XNQ	**Khinaliq** SNR=4.8	**2.98**	**278**	Pn	**Pn**	**23 56 14.6**	**+1.7**
XNQ				Sn	**Sn**	**23 56 47.6**	**-1.2**
KDMR	**Kurdemir** SNR=5.5	**2.98**	**262**	⇓Pn	**Pn**	**23 56 13.9**	**+1.2**
KDMR				⇑Sn	**Sn**	**23 56 47.7**	**-0.8**
KDMR	**Kurdemir** SNR=5.5	**2.98**	**262**	Pn	**Pn**	**23 56 13.9**	**+1.2**
KDMR				Sn	**Sn**	**23 56 47.7**	**-0.8**
QBL	**Gabala**	**3.20**	**273**	⇑Pn	**Pn**	**23 56 17.7**	**+1.9**
QBL				⇓Sn	**Sn**	**23 56 52.4**	**-1.6**
QBL	**Gabala**	**3.20**	**273**	Pn	**Pn**	**23 56 17.7**	**+1.9**
QBL				Sn	**Sn**	**23 56 52.4**	**-1.6**
GLBA	**Clilabad** SNR=109	**3.23**	**242**	⇑Pn	**Pn**	**23 56 17.5**	**+1.4**
GLBA				⇓Sn	**Sn**	**23 56 52.5**	**-2.2**
GLBA	**Clilabad** SNR=109	**3.23**	**242**	Pn	**Pn**	**23 56 17.5**	**+1.4**
GLBA				Sn	**Sn**	**23 56 52.5**	**-2.2**
LKRN	**Lenkeran, Azer** SNR=6.9	**3.30**	**231**	⇑Pn	**Pn**	**23 56 17.2**	**+0.1**
LKRN				⇑Sn	**Sn**	**23 56 52.9**	**-3.4**
LKRN	**Lenkeran, Azer** SNR=6.9	**3.30**	**231**	Pn	**Pn**	**23 56 17.2**	**+0.1**
LKRN				Sn	**Sn**	**23 56 52.9**	**-3.4**
ZRD	**Zardab** SNR=13	**3.38**	**262**	⇓Pn	**Pn**	**23 56 20.5**	**+2.4**
ZRD				⇓Sn	**Sn**	**23 56 57.1**	**-1.1**
ZRD	**Zardab** SNR=13	**3.38**	**262**	Pn	**Pn**	**23 56 20.5**	**+2.4**
ZRD				Sn	**Sn**	**23 56 57.1**	**-1.1**
ASTR	**Astara** SNR=114	**3.39**	**229**	⇓Pn	**Pn**	**23 56 18.6**	**+0.2**
ASTR				⇑Sn	**Sn**	**23 56 54.6**	**-4.0**
ASTR	**Astara** SNR=114	**3.39**	**229**	Pn	**Pn**	**23 56 18.6**	**+0.2**
ASTR				Sn	**Sn**	**23 56 54.6**	**-4.0**
LRK	**Lerik** SNR=243	**3.61**	**234**	⇓Pn	**Pn**	**23 56 21.8**	**+0.3**
LRK				⇓Sn	**Sn**	**23 56 59.8**	**-4.4**
LRK	**Lerik** SNR=243	**3.61**	**234**	Pn	**Pn**	**23 56 21.8**	**+0.3**
LRK				Sn	**Sn**	**23 56 59.8**	**-4.4**
SEKA	**Sheki** SNR=8.0	**3.69**	**277**	⇑Pn	**Pn**	**23 56 24.3**	**+1.7**
SEKA				⇑Sn	**Sn**	**23 57 05.2**	**-1.0**
SEKA	**Sheki** SNR=8.0	**3.69**	**277**	Pn	**Pn**	**23 56 24.3**	**+1.7**
BRDA	**Brd** SNR=5.8	**3.76**	**263**	⇓Pn	**Pn**	**23 56 24.2**	**+0.8**
BRDA				⇑Sn	**Sn**	**23 57 05.9**	**-1.8**
BRDA	**Brd** SNR=5.8	**3.76**	**263**	Pn	**Pn**	**23 56 24.2**	**+0.8**
MNGR	**Mingechevir, A**	**3.77**	**271**	⇑Pn	**Pn**	**23 56 25.6**	**+2.0**
MNGR				⇓Sn	**Sn**	**23 57 07.0**	**-1.0**
MNGR	**Mingechevir, A**	**3.77**	**271**	Pn	**Pn**	**23 56 25.6**	**+2.0**
GRMI	**Germi** comp=N,96nm,0.6s	**3.79**	**239**	*e*Pn	**Pn**	**23 56 24.3**	**+0.3**
GRMI				AML	AML	23 57 07.5	
GRMI	**Germi** comp=N,96nm,0.6s	**3.79**	**239**	*e*Pn	**Pn**	**23 56 24.3**	**+0.3**
ZKTA	**Zakatala** SNR=5.3	**4.17**	**283**	⇓Pn	**Pn**	**23 56 30.4**	**+1.3**
ZKTA				⇑Sn	**Sn**	**23 57 15.5**	**-2.5**
GANJ	**Ganja** SNR=2.8	**4.36**	**269**	⇓Pn	**Pn**	**23 56 33.7**	**+2.0**
GANJ				⇓Sn	**Sn**	**23 57 18.2**	**-4.4**
GANJ	**Ganja** SNR=2.8	**4.36**	**269**	Pn	**Pn**	**23 56 33.7**	**+2.0**
MRVT	**Maraveh tapeh** comp=E,53nm,0.3s	**4.46**	**134**	*e*Pn	**Pn**	**23 56 37.0**	**+4.0**
MRVT				AML	AML	23 57 32.3	
GDB	**GEDABAY**	**4.79**	**271**	⇑Pn	**Pn**	**23 56 39.2**	**+1.5**
GDB	**GEDABAY**	**4.79**	**271**	Pn	**Pn**	**23 56 39.2**	**+1.5**
CHTH	**Charan**	**4.98**	**189**	*e*Pn	**Pn**	**23 56 41.9**	**+1.5**
CHTH	**Charan**	**4.98**	**189**	*e*Pn	**Pn**	**23 56 41.9**	**+1.5**
THKV	**Tehran--Karaj**	**5.00**	**191**	*e*Pn	**Pn**	**23 56 42.4**	**+1.7**
THKV	**Tehran--Karaj**	**5.00**	**191**	*e*Pn	**Pn**	**23 56 42.4**	**+1.7**
QZX	**Qazax, Azerbai**	**5.07**	**275**	⇓Pn	**Pn**	**23 56 41.0**	**-0.4**
QZX				⇑Sn	**Sn**	**23 57 35.9**	**-4.1**
QZX	**Qazax, Azerbai**	**5.07**	**275**	Pn	**Pn**	**23 56 41.0**	**-0.4**
DGRG	**David-gareji**	**5.08**	**279**	P	**Pn**	**23 56 42.4**	**+0.8**
DGRG				S	**Sn**	**23 57 36.5**	**-4.0**
BJRD	**Bojnurd**	**5.20**	**125**	*e*Pn	**Pn**	**23 56 48.0**	**+4.6**
BJRD				AML	AML	23 57 49.9	
BJRD	comp=E,39nm,0.5s			AML	AML	23 57 51.4	
NAX	**Nakhchivan** comp=N,45nm,0.6s	**5.30**	**254**	⇑P	**Pn**	**23 56 45.8**	**+1.1**
NAX				⇑S	**Sn**	**23 57 42.4**	**-3.5**
NAX	**Nakhchivan**	**5.30**	**254**	P	**Pn**	**23 56 45.8**	**+1.1**
GEYT	**Alibeck** comp=N,1.8nm,0.3s,baz=293,slow=16,SNR=17	**5.52**	**120**	Pn	**Pn**	**23 56 51.7**	**+4.0**
GEYT				Sn	**Sn**	**23 57 53.3**	**+2.2**
TBLG	**Delisi** comp=N,5.3nm,0.3s,baz=318,slow=14,SNR=11	**5.59**	**282**	P	**Pn**	**23 56 48.7**	**+0.1**
TBLG				S	**Sn**	**23 57 46.6**	**-6.1**
GNI	**Garni** comp=N,1.1nm,0.3s,baz=231,slow=2.3,SNR=4.3	**5.62**	**265**	Pn	**Pn**	**23 56 50.3**	**+1.2**
GNI				Sn	**Sn**	**23 57 50.4**	**-3.4**
DUS	**Dusheti** comp=N,0.9nm,0.3s,baz=6.7,slow=17,SNR=2.7	**5.67**	**285**	P	**Sn**	**23 57 51.6**	**-3.2**
SHRO	**Shahrood**	**5.75**	**146**	*e*Pn	**Pn**	**23 56 54.4**	**+3.5**
SHRO				AML	AML	23 58 05.0	
SHRO	comp=E,15nm,0.4s			AML	AML	23 58 13.5	
SHRO	**Shahrood** comp=N,14nm,0.7s	**5.75**	**146**	*e*Pn	**Pn**	**23 56 54.4**	**+3.5**
MAKU	**Maku**	**5.84**	**258**	*e*Pn	**Pn**	**23 56 53.1**	**+0.9**
MAKU	**Maku**	**5.84**	**258**	*e*Pn	**Pn**	**23 56 53.1**	**+0.9**
GUDG	**Gudauri**	**5.91**	**288**	P	**Pn**	**23 56 55.3**	**+2.2**
GUDG				S	**Sn**	**23 57 57.2**	**-3.7**
KBZ	**Khabaz** comp=N,0.3nm,0.3s,baz=94,slow=11,SNR=3.2	**7.38**	**296**	Pn	**Pn**	**23 57 12.8**	**-0.3**
KBZ				Sn	Sn	23 58 28.1	-8.8
KVAR	**Kislovodsk Arr** baz=45,slow=3.6,SNR=6.8	**7.60**	**297**	Pn	**Pn**	**23 57 15.8**	**-0.4**
KVAR				Sn	Sn	23 58 35.4	-7.0
AB31	**Akbulak array** comp=N,0.6nm,0.4s,baz=208,slow=13,SNR=4.1	**10.09**	**31**	⇑Pn	**Pn**	**23 57 50.4**	**+0.1**
AB31				⇑Sn	**Sn**	**23 59 40.5**	**-3.0**
AB31	**Akbulak array** comp=N,0.6nm,0.3s,baz=214,slow=23,SNR=4.8	**10.09**	**31**	Pn	**Pn**	**23 57 50.4**	**+0.1**
AB31				Sn	**Sn**	**23 59 40.5**	**-3.0**
AKTO	**Aktyubinsk** comp=N,1.1nm,0.3s,baz=206,slow=12,SNR=16	**10.46**	**21**	Pn	**Pn**	**23 57 56.1**	**+0.8**
AKTO				Sn	**Sn**	**23 59 46.5**	**-6.0**
AKTO	**Aktyubinsk** comp=N,5.0nm,0.8s	**10.46**	**21**	⇓Pn	**Pn**	**23 57 55.5**	**+0.2**
AKTO				⇑Sn	**Sn**	**23 59 46.8**	**-5.7**
AKTO	**Aktyubinsk** comp=N,4.0nm,0.7s	**10.46**	**21**	Pn	**Pn**	**23 57 55.5**	**+0.2**
BRTR	**Keskin Array B** comp=N,0.0nm,0.3s,baz=65,slow=10,SNR=2.4	**14.11**	**271**	Pn	**Pn**	**23 58 45.6**	**+0.3**
ZRNK	**Zerenda** comp=N,3.0nm,1.2s	**16.71**	**38**	⇑Pn	**Pn**	**23 59 19.1**	**-0.3**
ZRNK	**Zerenda** comp=N,3.0nm,1.2s	**16.71**	**38**	Pn	**Pn**	**23 59 19.1**	**-0.3**
BVA0	**Borovoye Array** comp=N,2.1nm,0.8s,baz=227,slow=10,SNR=11	**17.41**	**39**	⇓Pn	**Pn**	**23 59 28.3**	**+0.1**
BVA0	**Borovoye Array** comp=N,2.1nm,0.8s,SNR=11	**17.41**	**39**	Pn	**Pn**	**23 59 28.3**	**+0.1**
BVAR	**Borovoye Array** comp=N,0.4nm,0.3s,baz=232,slow=11,SNR=11	**17.41**	**39**	P	**Pn**	**23 59 29.3**	**+1.1**
KURBB	**Kurchatov Arra** comp=N,2.8nm,0.7s,baz=256,slow=12,SNR=34	**20.81**	**53**	P	**P**	**00 00 07.7**	**+1.0**
MKAR	**Makanchi Array** comp=N,0.9nm,0.8s,baz=265,slow=9.6,SNR=4.8	**22.53**	**65**	P	**P**	**00 00 26.1**	**+0.8**
ZALV	**Zalesovo Beam** comp=N,0.4nm,0.4s,baz=239,slow=8.5,SNR=3.0	**25.50**	**48**	P	**P**	**00 00 54.0**	**+0.3**
FINES	**FINESS Array B** comp=N,2.5nm,1.0s,baz=145,slow=8.2,SNR=3.6	**25.97**	**331**	P	**P**	**00 00 57.8**	**0.0**

*IDC **26** 23:58:46.4±3.5, 13°.99N×92°.74W, h0km, mb3.7/5, mb1 4.2/7, mb1mx3.8/38, mbtmp3.8/7, ML4.0/2, MS3.2/4, Ms1 3.3/4, ms1mx2.7/39, Error ellipse: s-maj=63.7km s-min=39.6km az=154.0*
*ISCJB **26** 23:58:51.6±0.6, 14°.23N±0°.05×92°.90W±0°.04, h37km, mb4.0/11, MS3.1/4, Error ellipse: s-maj=7.5km s-min=4.6km az=27.8*
*NEIC **26** 23:58:51.0, 14°.17N×93°.10W, h23km, mb4.0/9, MD3.9(MEX), After MEX.*
*MEX **26** 23:58:51.6±0.7, 14°.17N×93°.10W, h23km±20km, MD4.1*

ISC 26 23:58:52.6±0.8, **14°.17N**±0°.07×**93°.04W**±0°.05, **h37km, n29,** σ2§**11**/34, **mb4.0**/11, **MS3.1**/4, **Near coast of Chiapas**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THIG		**1.04**	**46**	*i* P	**Pn**	**23 59 08.8**	**-1.9**
THIG				*e*S	**Sn**	**23 59 21.1**	**-2.9**
PCIG		**1.53**	**353**	*e*P	**Pn**	**23 59 15.0**	**-2.4**
PCIG				*i* S	**Sn**	**23 59 32.9**	**-3.2**
CCIG	**Comitan**	**2.27**	**22**	*e*P	**Pn**	**23 59 26.4**	**-1.3**
CCIG				*i* S	**Sn**	**23 59 53.2**	**-1.3**
RBDL	**Robledal**	**3.25**	**91**	*e*P	**Pn**	**23 59 39.8**	**-1.4**
RBDL				*e*S	**Sn**	**00 00 15.6**	**-3.2**
RTR	**El Retiro**	**3.30**	**94**	*e*P	**Pn**	**23 59 41.5**	**-0.4**
MONT	**Ecomontaæa**	**3.30**	**95**	*e*P	**Pn**	**23 59 40.8**	**-1.2**
MONT				*e*S	**Sn**	**00 00 17.6**	**-2.6**
SBLS	**San Blas**	**3.33**	**95**	*e*P	**Pn**	**23 59 41.2**	**-1.1**
SBLS				*e*S	**Sn**	**00 00 17.5**	**-3.3**
HUIG	**Huatulco**	**3.37**	**298**	*i* P	**Pn**	**23 59 39.7**	**-2.9**
HUIG				*e*S	**Sn**	**00 00 17.3**	**-4.1**
LFRS	**El Faro**	**3.90**	**98**	*e*P	**Pn**	**23 59 48.6**	**-1.5**
TEIG	**Tepich** 5.8nm,0.3s,baz=89,slow=24,SNR=46	**7.54**	**36**	Pn	**Pn**	**00 00 38.9**	**-1.2**
TEIG				Sn	**Sn**	**00 02 03.8**	**-0.5**
TXAR	**Lajitas Array** 1.6nm,0.3s,baz=197,slow=19,SNR=2.5	**18.01**	**329**	P	**P**	**00 03 02.6**	**+2.2**
OTAV	**Otavalo** 0.1nm,0.3s,baz=134,slow=14,SNR=19	**20.00**	**133**	*e*P	**P**	**00 03 22.0**	**-0.7**
MIAR	**Mount Ida** 2.6nm,0.4s	**20.29**	**359**	*e*P	**P**	**00 03 24.5**	**-0.6**
121A	**Cookes Peak, D** 7.2nm,0.9s	**22.70**	**326**	*e*P	**P**	**00 03 53.9**	**+2.6**
TKL	**Tuckaleechee C** 4.6nm,0.7s	**22.96**	**20**	LR	LR	00 13 27.5	
ANMO	**Albuquerque** comp=Z,32nm,21.0s,baz=188,slow=38	**23.96**	**332**	P	**P**	**00 04 07.0**	**+3.2**
ANMO	1.2nm,0.7s,baz=147,slow=11,SNR=5.6			LR	LR	00 15 28.6	
ANMO	**Albuquerque** comp=Z,40nm,18.6s,baz=7.5,slow=41	**23.96**	**332**	*e*P	**P**	**00 04 05.5**	**+1.7**
HWUT	**Hardware Ranch** 7.3nm,1.7s	**31.72**	**333**	*e*P	**P**	**00 05 15.1**	**+2.0**
PDAR	**Pinedale Array** 1.1nm,0.6s	**31.85**	**337**	P	**P**	**00 05 15.2**	**+0.9**
NVAR	**Mina Array Bea** 0.4nm,0.8s,baz=156,slow=7.4,SNR=3.3	**32.91**	**322**	P	**P**	**00 05 25.8**	**+2.1**
SNOW	**Snow King Moun** 1.3nm,0.6s,baz=140,slow=7.4,SNR=7.2	**32.91**	**336**	*e*P	**P**	**00 05 25.2**	**+1.5**
CMB	**Columbia Colle** 6.5nm,0.7s	**33.94**	**319**	*e*P	**P**	**00 05 34.9**	**+2.4**
LPAZ	**La Paz** 3.2nm,0.4s	**39.01**	**140**	LR	LR	00 22 36.4	
SCHQ	**Schefferville** comp=Z,53nm,19.0s,baz=58,slow=39	**45.41**	**21**	LR	LR	00 28 21.1	
YKA	**Yellowknife Ar** 1.9nm,0.7s,baz=153,slow=7.4,SNR=35	**50.63**	**347**	P	**P**	**00 07 47.7**	**0.0**
DLBC	**Dease Lake** 0.9nm,0.5s	**52.09**	**336**	*e*P	**P**	**00 07 59.7**	**+0.9**
INK	**Inuvik** 1.7nm,0.7s	**59.99**	**344**	*e*P	**P**	**00 08 55.4**	**+0.3**
ILAR	**Eielson Array** 0.6nm,1.0s,baz=143,slow=5.1,SNR=6.2	**62.29**	**337**	P	**P**	**00 09 11.7**	**+1.0**
CMAR	**Chiang Mai Arr** 0.7nm,0.5s,baz=338,slow=3.2,SNR=5.0	**145.49**	**340**	PKPbc	**PKPab**	**00 18 28.0**	**0.0**

*ISCJB **27** 00:03:14.5±0.5, 39°.11N±0°.03×29°.05E±0°.04, h11km±5km, Error ellipse: s-maj=5.4km s-min=4.8km az=40.5*
*CSEM **27** 00:03:14.4±0.1, 39°.10N×29°.06E, h14km±1km, MD2.6, Error ellipse: s-maj=2.8km s-min=2.3km az=104.0*
*ISK **27** 00:03:14.1, 39°.10N×29°.09E, h16km, MD2.7*
*DDA **27** 00:03:14.8, 39°.06N×29°.05E, h7km, Md2.6*

ISC 27 00:03:14.5±0.9, **39°.10N**±0°.02×**29°.05E**±0°.03, **h15**km±8km, **n24,** σ0§**25**/36, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**257**	P	**Pg**	**00 03 20.4**	**+0.1**
DEMI				S	**Sg**	**00 03 24.0**	**-0.2**
DEMI	**Demirci**	**0.26**	**257**	*i* P	**Pg**	**00 03 20.4**	**+0.1**
DEMI				*i* S	**Sg**	**00 03 24.0**	**-0.2**
GDZ	**Gediz**	**0.34**	**92**	P	**Pg**	**00 03 21.6**	**0.0**
GDZ				S	**Sg**	**00 03 26.4**	**-0.1**
GDZ	**Gediz**	**0.34**	**92**	*i* P	**Pg**	**00 03 21.6**	**0.0**
GDZ				*i* S	**Sg**	**00 03 26.4**	**-0.1**
TVSB	**Tavsanli**	**0.47**	**43**	*e*PG	**Pg**	**00 03 24.0**	**0.0**
TVSB				*e*SG	**Sg**	**00 03 30.2**	**-0.2**
TVSB	**Tavsanli**	**0.47**	**43**	*e*Pg	**Pg**	**00 03 24.0**	**0.0**
TVSB				*e*Sg	**Sg**	**00 03 30.3**	**-0.2**
KULA	**Kula-Manisa**	**0.66**	**207**	*e*PG	**Pb**	**00 03 27.7**	**0.0**
KULA	**Kula-Manisa**	**0.66**	**207**	*e*Pg	**Pb**	**00 03 27.7**	**0.0**
DURS	**Dursunbey**	**0.67**	**319**	P	**Pb**	**00 03 28.6**	**+0.7**
DURS				S	**Sb**	**00 03 36.8**	**-0.2**
DURS	**Dursunbey**	**0.67**	**319**	*i* P	**Pb**	**00 03 28.6**	**+0.7**
DURS				*i* S	**Sb**	**00 03 36.8**	**-0.2**
MANT	**Manisa**	**0.72**	**212**	P	**Pg**	**00 03 28.5**	**-0.1**
MANT				S	**Sg**	**00 03 38.0**	**-0.1**
MANT	**Manisa**	**0.72**	**212**	*i* P	**Pg**	**00 03 28.5**	**-0.1**
MANT				*i* S	**Sg**	**00 03 38.0**	**-0.1**
KHAL	**Karahalli**	**0.81**	**154**	P	**Pb**	**00 03 30.8**	**+0.5**
KHAL				S	**Sb**	**00 03 41.1**	**0.0**
KHAL	**Karahalli**	**0.81**	**154**	*i* P	**Pb**	**00 03 30.8**	**+0.5**
KHAL				*i* S	**Sb**	**00 03 41.1**	**0.0**
ORLT	**Orhaneli**	**0.95**	**353**	*e*PG	**Pg**	**00 03 32.9**	**-0.1**
ORLT	**Orhaneli**	**0.95**	**353**	*e*Pg	**Pg**	**00 03 32.9**	**-0.1**
IZI	**Iznik**	**1.28**	**15**	*e*PN	**Pn**	**00 03 37.8**	**-0.1**
IZI	**Iznik**	**1.28**	**15**	*e*Pn	**Pn**	**00 03 37.8**	**-0.1**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*PN	**Pb**	**00 03 38.3**	**0.0**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*Pn	**Pb**	**00 03 38.3**	**0.0**
ARMT	**Armutlu**	**1.47**	**355**	*e*PN	**Pn**	**00 03 40.4**	**0.0**
ARMT	**Armutlu**	**1.47**	**355**	*e*Pn	**Pn**	**00 03 40.4**	**0.0**
GULT	**Gulveren**	**1.75**	**40**	*e*PN	**Pn**	**00 03 44.1**	**-0.2**
GULT	**Gulveren**	**1.75**	**40**	*e*Pn	**Pn**	**00 03 44.1**	**-0.2**

*NIED **27** 00:16:00, 38°.30N×144°.50E, h8km, Mw3.6 Best double couple: M0:3.08000×10^14 NP1:ϕ§=50.00000°, δ21.00000°, λ-32.00000°. NP2:ϕ§=170.00000°, δ79.00000°, λ-108.00000°.*

JMA 27 00:16:31.2±0.1, **38°.26N×144°.49E, h20km, M3.6, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.35**	**291**	P	Pn	00 17 10.0	+1.3
OFUJ				*e*S	Sn	00 17 38.6	+1.6
MIYJ	**Miyakonagasawa**	**2.46**	**303**	P	Pn	00 17 11.5	+1.3
MIYJ				*e*S	Sn	00 17 40.7	+1.0
JMK	**Ichinoseki**	**2.65**	**286**	P	Pn	00 17 14.4	+1.6
JMK				S	Sn	00 17 46.2	+1.8
JOM	**Ohasama**	**2.77**	**297**	P	Pn	00 17 16.2	+1.7
JOM				*e*S	Sn	00 17 49.7	+2.3
JOU	**Okura**	**3.01**	**273**	P	Pn	00 17 19.6	+1.8
JOU				S	Sn	00 17 55.4	+2.1
JANG	**Nango**	**3.13**	**313**	S	Sn	00 17 57.6	+1.5
JRG	**Rokugo**	**3.22**	**292**	P	Pn	00 17 22.5	+1.9
JRG				S	Sn	00 18 00.9	+2.6
JFT	**Otama**	**3.37**	**259**	*e*S	Sn	00 18 03.5	+1.4
JAH	**Hinai**	**3.56**	**304**	*e*S	Sn	00 18 08.9	+2.2
JTM	**Tenmabayashi**	**3.66**	**315**	*e*S	Sn	00 18 10.1	+1.0
JCH	**Churui**	**4.43**	**349**	*e*S	Sn	00 18 26.3	-2.0
JRY	**Ryogami san**	**4.99**	**245**	*e*S	Sn	00 18 39.9	-2.3
MAT	**Matsushiro**	**5.29**	**253**	P	Pn	00 17 51.7	+2.6
JTKR	**Abashiri--Toko**	**5.72**	**356**	*e*S	Sn	00 18 55.7	-4.3

*IDC **27** 00:20:58.0±0.9, 11°.23S×166°.41E, h0km, mb3.9/13, mb1 4.1/14, mb1mx4.0/33, mbtmp3.9/14, ML5.0/1, MS3.5/11, Ms1 3.5/11, ms1mx3.3/33, Error ellipse: s-maj=30.5km s-min=21.0km az=142.0*
*ISCJB **27** 00:21:04.0±0.5, 11°.13S±0°.08×166°.22E±0°.07, h50km, mb3.9/14, MS3.5/9, Error ellipse: s-maj=11.8km s-min=9.4km az=5.2*
*NEIC **27** 00:21:04.5±2.9, 11°.15S×166°.34E, h43km±24km, mb4.2/2, Error ellipse: s-maj=23.6km s-min=13.4km az=116.0*

ISC 27 00:21:05.6±0.6, **11°.1S**±0°.1×**166°.29E**±0°.09, **h50km, n33,** σ0§**98**/18, **mb4.0**/14, **MS3.5**/9, **Santa Cruz Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	**Honiara** 29nm,0.3s,baz=182,slow=2.0,SNR=9.3	**6.46**	**284**	Pn	**Pn**	**00 22 37.7**	**-0.4**
HNR				Sn	**Sn**	**00 23 50.7**	**+0.2**
DZM	**Mont Dzumac** 16nm,0.6s	**10.93**	**179**	*e*Pn	**Pn**	**00 23 40.9**	**+1.4**
DZM				*e*LR	LR	00 26 13.4	
PMG	**Port Moresby** comp=Z,314nm,20.6s,baz=88,slow=35	**18.90**	**273**	LR	LR	00 32 05.9	
EIDS	**Eidsvold** 12nm,0.8s	**20.24**	**223**	*e*P	Pn	00 25 37.1	-1.9
AFI	**Afiamalu** comp=Z,116nm,20.0s,baz=346,slow=33	**21.59**	**100**	LR	LR	00 32 49.7	
H11S2	**WAKE ISLAND Hy 29.38** baz=181,slow=76,SNR=11	**1**		T	T	00 57 39.1	
H11S3	**WAKE ISLAND Hy 29.39** baz=181,slow=76,SNR=6.8	**1**		T	T	00 57 39.4	
H11S1	**WAKE ISLAND Hy 29.40** baz=181,slow=76,SNR=7.4	**1**		T	T	00 57 40.7	
H11N1	**WAKE ISLAND Hy 30.61** baz=182,slow=76,SNR=9.6	**1**		T	T	00 59 10.9	
H11N3	**WAKE ISLAND Hy 30.61** baz=182,slow=76,SNR=9.5	**1**		T	T	00 59 11.3	
H11N2	**WAKE ISLAND Hy 30.62** baz=182,slow=76,SNR=10	**1**		T	T	00 59 12.3	
STKA	**Stephens Creek** comp=Z,134nm,19.5s,baz=27,slow=35	**30.79**	**224**	LR	LR	00 38 47.1	
WRA	**Warramunga Arr** 2.5nm,0.8s,baz=79,slow=9.0,SNR=9.5	**31.98**	**250**	P	**P**	**00 27 26.5**	**-0.8**
GUMO	**Guam** comp=Z,26nm,21.4s,baz=118,slow=35	**32.44**	**319**	LR	LR	00 39 50.5	
ASAR	**Alice Springs** 1.7nm,0.8s,baz=74,slow=9.5,SNR=12	**33.26**	**244**	P	**P**	**00 27 36.9**	**-1.6**
ASAR				LR	LR	00 40 11.0	
PPT2	**Papeete2** 150nm,27.0s	**43.17**	**104**	*e*LR	LR	00 41 31.9	
TBI	**Tubuai** 165nm,29.8s	**43.82**	**112**	*e*LR	LR	00 41 56.3	
USRK	**Ussuriysk Ar.** 0.4nm,0.3s,baz=159,slow=8.9,SNR=3.0

DURS	Dursunbey	0.55	322	*i* P	Pg	00 27 36.8	-1.1
KULA	Kula-Manisa	0.68	197	*e*PG	Pg	00 27 39.7	-0.4
KULA	Kula-Manisa	0.68	197	*e*Pg	Pg	00 27 39.7	-0.4
MANT	Manisa	0.73	203	P	Pb	00 27 41.4	-0.3
MANT	Manisa	0.73	203	*i* P	Pb	00 27 41.4	-0.3
KCTX	Karacabey (Bur	1.18	339	*e*PN	Pb	00 27 49.7	+0.4
KCTX	Karacabey (Bur	1.18	339	*e*Pn	Pb	00 27 49.7	+0.4
IZI	Iznik	1.25	20	*e*PN	Pb	00 27 50.6	+0.1
IZI	Iznik	1.25	20	*e*Pn	Pb	00 27 50.6	+0.1
ARMT	Armutlu	1.40	358	*e*PN	Pb	00 27 53.1	+0.1
ARMT	Armutlu	1.40	358	*e*Pn	Pb	00 27 53.2	+0.1
GULT	Gulveren	1.77	44	*e*PN	Pn	00 27 58.0	+0.6
GULT	Gulveren	1.77	44	*e*Pn	Pn	00 27 58.0	+0.6

*IDC **27** 00:38:59.6±1.2, 25°.46N×142°.78E, h0km, mb3.6/5, mb1 3.8/5, mb1mx3.4/50, mbtmp3.6/5, Error ellipse: s-maj=46.4km s-min=21.6km az=81.0*
*ISCJB **27** 00:39:03.4±1.2, 25°.4N±0°.1×142°.7E±0°.4, h40km, mb3.7/5, Error ellipse: s-maj=48.2km s-min=12.6km az=170.8*

ISC 27 00:39:05.3±1.3, 25°.4N±0°.1×142°.8E±0°.4, h40km, n6, σ0§95/7, mb3.7/5, Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCJ	**Chichijima**	**1.72**	**343**	Pn	**Pn**	**00 39 32.0**	**-0.9**
	42nm,0.3s,baz=205,slow=19,SNR=19						
JCJ				Sn	**Sn**	**00 39 55.1**	**+1.4**
	75nm,0.3s,baz=156,slow=17,SNR=14						
WRA	**Warramunga Arr**	**45.85**	**191**	P	**P**	**00 47 24.3**	**+0.5**
	0.5nm,0.5s,baz=11,slow=8.5,SNR=3.9						
KURBB	**Kurchatov Arra**	**54.56**	**315**	P	**P**	**00 48 28.7**	**-0.7**
	0.4nm,0.5s,baz=91,slow=8.5,SNR=5.6						
BVAR	**Borovoye Array**	**59.60**	**318**	P	**P**	**00 49 05.3**	**+0.2**
	0.7nm,0.5s,baz=72,slow=4.9,SNR=4.5						
YKA	**Yellowknife Ar**	**73.35**	**28**	P	**P**	**00 50 32.8**	**+0.1**
	0.2nm,0.7s,baz=294,slow=6.0,SNR=3.4						
FINES	**FINESS Array B**	**79.65**	**334**	P	**P**	**00 51 08.2**	**-0.2**
	0.8nm,0.6s,baz=64,slow=4.4,SNR=6.2						

MEX 27 00:54:12.6±0.5, 14°.61N×92°.96W, h3km±33km, MD3.8, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THIG		**0.73**	**66**	*i* P	Pg	00 54 25.5	-1.2
THIG				*i* S	Sg	00 54 36.2	-0.1
PCIG		**1.11**	**347**	*i* P	Pg	00 54 31.6	-2.4
PCIG				*i* S	Sg	00 54 45.5	-2.9
CCIG	**Comitan**	**1.84**	**25**	*e*P	Pn	00 54 41.4	-3.9
CCIG				*i* S	Sn	00 55 04.9	-4.3

*ISCJB **27** 00:56:16.3±0.7, 15°.85S±0°.08×71°.14W±0°.07, h167km, mb3.6/3, Error ellipse: s-maj=13.1km s-min=7.2km az=37.3*
*IDC **27** 00:56:18.8±1.4, 15°.74S×70°.99W, h170km±14km, mb3.4/3, mb1 3.6/8, mb1mx3.3/41, mbtmp4.0/8, Error ellipse: s-maj=29.2km s-min=16.5km az=16.0*

ISC 27 00:56:17.8±0.8, 15°.87S±0°.09×71°.10W±0°.08, h167km, n8, σ2§05/11, mb3.6/3, Southern Peru

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LPAZ	**La Paz**	**2.88**	**99**	P	**Pn**	**00 57 06.8**	**+1.8**
	3.4nm,0.3s,baz=264,slow=12,SNR=164						
LPAZ				S	**Sn**	**00 57 41.3**	**-0.3**
	0.9nm,0.3s,baz=17,slow=19,SNR=13						
NNA	**Nana**	**6.78**	**304**	P	**Pn**	**00 57 56.9**	**+1.8**
	3.8nm,0.3s,baz=126,slow=14,SNR=6.8						
NNA				S	**Sn**	**00 59 08.8**	**-2.8**
	2.6nm,0.3s,baz=128,slow=19,SNR=4.2						
LVC	**Limon Verde**	**7.02**	**163**	P	**Pn**	**00 58 01.0**	**+2.5**
	87nm,0.3s,baz=340,slow=12,SNR=32						
LVC				S	**Sn**	**00 59 15.5**	**-2.2**
	70nm,0.3s,baz=270,slow=20,SNR=14						
SIV	**San Ignacio**	**9.65**	**92**	P	**Pn**	**00 58 31.0**	**-2.0**
	0.6nm,0.3s,baz=276,slow=13,SNR=5.1						
PTGA	**Pitinga**	**18.62**	**37**	P	**P**	**01 00 22.1**	**-0.7**
	1.1nm,0.3s,baz=216,slow=15,SNR=11						
NVAR	**Mina Array Bea**	**69.80**	**322**	P	**P**	**01 07 09.1**	**-1.2**
	0.5nm,0.4s,baz=131,slow=7.5,SNR=3.9						
TORD	**Torodi Ar. Bea**	**77.53**	**72**	P	**P**	**01 07 55.8**	**+0.1**
	1.2nm,0.5s,baz=269,slow=4.3,SNR=29						
YKA	**Yellowknife Ar**	**85.21**	**341**	P	**P**	**01 08 36.6**	**+1.6**
	0.4nm,0.6s,baz=134,slow=5.1,SNR=11						

*ISCJB **27** 01:01:47.9±0.5, 50°.10N±0°.03×18°.37E±0°.03, h0km, Error ellipse: s-maj=4.7km s-min=2.5km az=10.7*
*CSEM **27** 01:01:48.9±0.2, 50°.07N×18°.42E, h2km, ML2.5/9, Error ellipse: s-maj=5.1km s-min=2.7km az=3.0*
*WAR **27** 01:01:49.0, 50°.04N×18°.44E, h1km, Mw2.4*
*IPEC **27** 01:01:49.3±0.2, 50°.03N×18°.49E, h1km±2km, ML1.9/3, Error ellipse: s-maj=2.1km s-min=1.1km az=160.0*
*PRU **27** 01:01:50.4, 50°.05N×18°.37E, h0km*

ISC 27 01:01:48.8±0.8, 50°.09N±0°.04×18°.43E±0°.02, h0km, n34, σ0§86/54, 5C, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAC	**Raciborz**	**0.15**	**268**	*e*Sg	**Sg**	**01 01 57.4**	**+3.7**
OKC	**Ostrava-Krasne**	**0.31**	**216**	⇑*i*PG	**Pg**	**01 01 55.5**	**+0.8**
OKC				*e*SG	**Sg**	**01 01 59.2**	**+0.4**
	comp=Z,49nm,0.5s						
OKC	**Ostrava-Krasne**	**0.31**	**216**	Pg	**Pg**	**01 01 55.5**	**+0.8**
OKC				Sg	**Sg**	**01 01 59.2**	**+0.4**
	49nm,0.5s						
MORC	**Moravsky Berou**	**0.66**	**242**	*e*Pg	**Pg**	**01 02 02.1**	**+0.8**
	baz=67						
MORC				*e*Sg	**Sg**	**01 02 10.2**	**+0.4**
	19nm,0.4s,baz=67						
OJC	**Ojcow**	**0.89**	**81**	*e*Pg	**Pg**	**01 02 05.9**	**+0.1**
OJC				*e*Sg	**Sb**	**01 02 19.0**	**-0.5**
OJC	**Ojcow**	**0.89**	**81**	*e*Pg	**Pg**	**01 02 05.9**	**+0.1**
OJC				*e*Sg	**Sb**	**01 02 19.0**	**-0.5**
OJC	**Ojcow**	**0.89**	**81**	*e*Pg	**Pg**	**01 02 05.9**	**+0.1**
OJC				*e*Sg	**Sb**	**01 02 19.0**	**-0.5**
KRLC	**Kraliky**	**1.06**	**270**	*e*SG	**Sg**	**01 02 23.3**	**+0.4**
KRLC	**Kraliky**	**1.06**	**270**	Sg	**Sg**	**01 02 23.3**	**+0.4**
LANS	**Liptovska Anna**	**1.16**	**144**	*e*PG	**Pg**	**01 02 10.9**	**0.0**
LANS				*e*SG	**Sb**	**01 02 27.2**	**0.0**
DPC	**Dobruska-Polom**	**1.38**	**282**	*e*PG	**Pb**	**01 02 15.5**	**0.0**
DPC				*e*SG	**Sg**	**01 02 33.3**	**+0.2**
	comp=Z,15nm,0.4s						
DPC	**Dobruska-Polom**	**1.38**	**282**	Pg	**Pb**	**01 02 15.5**	**0.0**
DPC				Sg	**Sg**	**01 02 33.3**	**+0.2**
	15nm,0.4s						
NIE	**Niedzica**	**1.39**	**118**	*e*Pg	**Pn**	**01 02 15.5**	**+0.1**
NIE				*e*Sg	**Sn**	**01 02 35.0**	**+0.6**
NIE	**Niedzica**	**1.39**	**118**	*e*Pg	**Pn**	**01 02 15.5**	**+0.1**
NIE				*e*Sg	**Sn**	**01 02 35.0**	**+0.6**
NIE	**Niedzica**	**1.39**	**118**	*e*Pg	**Pb**	**01 02 15.5**	**-0.1**
NIE				*e*Sg	**Sn**	**01 02 35.0**	**+0.6**
VRAC	**Vranov**	**1.43**	**237**	*e*Pg	**Pn**	**01 02 15.6**	**-0.4**
VRAC				*e*Sg	**Sg**	**01 02 34.2**	**-0.4**
	15nm,0.5s,baz=59						
UPC	**Upice**	**1.61**	**286**	⇑*e*SG	**Sg**	**01 02 41.1**	**+0.7**
UPC	**Upice**	**1.61**	**286**	Sg	**Sg**	**01 02 41.1**	**+0.7**
VYHS	**Vyhne**	**1.62**	**170**	*e*Pg	**Pn**	**01 02 18.0**	**-0.6**
VYHS				*e*Sn	**Sn**	**01 02 39.4**	**-0.8**
VYHS	**Vyhne**	**1.62**	**170**	*e*PG	**Pn**	**01 02 18.0**	**-0.6**
VYHS				*e*SN	**Sn**	**01 02 39.4**	**-0.8**
VYHS				eLG	Lg	01 02 45.0	
KRUC	**Moravsky**	**1.68**	**233**	*e*Pn	**Pn**	**01 02 19.6**	**+0.2**
	baz=54						
KRUC				*e*Sg	**Sn**	**01 02 41.7**	**+0.1**
	16nm,0.5s,baz=54						
SMOL	**Smolenice**	**1.71**	**203**	*e*Sn	**Sn**	**01 02 41.1**	**-1.3**
SMOL	**Smolenice**	**1.71**	**203**	*e*SN	**Sn**	**01 02 41.1**	**-1.3**
STHS	**Stebnicka Huta**	**1.94**	**109**	*e*Pn	**Pg**	**01 02 26.1**	**+0.1**
STHS				*e*Sn	**Sg**	**01 02 52.1**	**+0.9**
STHS	**Stebnicka Huta**	**1.94**	**109**	*e*PN	**Pg**	**01 02 26.1**	**+0.1**
STHS				*e*SN	**Sg**	**01 02 52.1**	**+0.9**
STHS				eLG	Lg	01 02 58.3	
TREC	**Trest**	**2.07**	**249**	⇑*e*SG	**Sb**	**01 02 53.0**	**-0.5**
	comp=Z,4.5nm,0.5s						
TREC	**Trest**	**2.07**	**249**	Sg	**Sb**	**01 02 53.0**	**-0.5**
	4.5nm,0.5s						
PRU	**Pruhonice**	**2.51**	**269**	⇑*e*SG	**Sb**	**01 03 07.3**	**+1.2**
	comp=Z,4.4nm,0.5s						
PRU	**Pruhonice**	**2.51**	**269**	Sg	**Sb**	**01 03 07.3**	**+1.2**
	4.4nm,0.5s						
PVCC	**Panska Ves**	**2.52**	**282**	⇑*e*SG	**Sg**	**01 03 09.2**	**-0.4**
	comp=Z,10nm,0.4s						
PVCC	**Panska Ves**	**2.52**	**282**	Sg	**Sg**	**01 03 09.2**	**-0.4**
	10nm,0.4s						
CONA	**Conrad Observa**	**2.75**	**219**	Pn	**Pb**	**01 02 39.3**	**+0.5**
CONA				Sn	**Sn**	**01 03 07.6**	**-0.5**
	2.0nm,0.5s						
BRG	**Berggiesshubel**	**2.97**	**287**	PG	**Pg**	**01 02 44.8**	**-1.0**
BRG				SG	**Sg**	**01 03 23.8**	**-0.4**
	3.7nm,0.7s						
KHC	**Kasperske Hory**	**3.30**	**255**	*e*SG	**Sg**	**01 03 32.1**	**-2.6**
	comp=Z,3.5nm,0.4s						

*ISCJB **27** 01:06:14.8±0.6, 51°.8N±0°.1×176°.50W±0°.06, h66km±3km, mb3.7/16, Error ellipse: s-maj=20.4km s-min=4.7km az=169.4*
*NEIC **27** 01:06:14.4, 51°.53N×176°.40W, h37km, ML4.1(AEIC), After AEIC.*
*IDC **27** 01:06:14.2±3.2, 51°.72N×176°.54W, h47km±28km, mb3.6/17, mb1 3.8/17, mb1mx3.6/50, mbtmp3.8/17, MS3.1/4, Ms1 3.1/4, ms1mx2.7/41, Error ellipse: s-maj=24.6km s-min=14.3km az=167.0*

ISC 27 01:06:15.1±1.3, 51°.7N±0°.1×176°.55W±0°.05, h54km±8km, n58, σ1§00/55, mb3.9/16, MS3.2/3, Andreanof Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ETKA	**Kagalaska Isla**	**0.18**	**30**	P	**Pn**	**01 06 23.2**	**-0.5**
ADAG	**Mount Adagdak**	**0.28**	**353**	P	**Pn**	**01 06 25.4**	**+1.0**
GSCK	**Great Sitkin C**	**0.39**	**38**	P	**Pn**	**01 06 25.3**	**-0.1**
KIRH	**Kanaga Island**	**0.39**	**300**	P	**Pn**	**01 06 26.3**	**+0.9**
KIKV	**Kanaga Island**	**0.42**	**294**	P	**Pn**	**01 06 26.5**	**+0.7**
GSTD	**Great Sitkin T**	**0.43**	**35**	P	**Pn**	**01 06 25.9**	**0.0**
GSMY	**Great Sitkin M**	**0.45**	**42**	P	**Pn**	**01 06 25.8**	**-0.3**
KICM	**Kanaga Island**	**0.45**	**298**	P	**Pn**	**01 06 27.0**	**+1.0**
TAPA	**Tanaga Point A**	**0.79**	**278**	P	**Pn**	**01 06 31.1**	**+0.9**
TAFL	**Tanaga Flats**	**0.84**	**274**	P	**Pn**	**01 06 31.7**	**+0.9**
TAFP	**Tanaga Falls P**	**0.91**	**283**	P	**Pn**	**01 06 33.0**	**+1.2**
TANO	**Tanaga North**	**1.00**	**283**	P	**Pn**	**01 06 34.5**	**+1.7**
GAEA	**Gareloi East**	**1.37**	**274**	P	**Pn**	**01 06 39.3**	**+1.5**
GALAA	**Gareloi Lava P**	**1.38**	**273**	P	**Pn**	**01 06 39.5**	**+1.4**
KOWE	**Korovin West**	**1.56**	**64**	P	**Pn**	**01 06 41.0**	**+0.5**
KOKL	**Mount Kliuchef**	**1.58**	**66**	P	**Pn**	**01 06 41.0**	**+0.3**
KOFP	**Korovin Flat P**	**1.62**	**68**	P	**Pn**	**01 06 41.1**	**-0.1**
NIKH	**Nikolski High**	**4.88**	**72**	P	**Pn**	**01 07 26.4**	**+0.5**
NIKH				S	**Sn**	**01 08 22.0**	**+0.9**
OKTU	**Okmok Mt. Tuli**	**5.46**	**69**	P	**Pn**	**01 07 35.6**	**+1.9**
MSOM	**Makushin Julie**	**6.20**	**66**	P	**Pn**	**01 07 45.1**	**+1.2**
UNV	**Unalaska Valle**	**6.46**	**67**	P	**Pn**	**01 07 49.9**	**+2.5**
UNV				S	**Sn**	**01 09 01.0**	**+1.3**
ZRO	**Akutan Zero**	**6.83**	**65**	P	**Pn**	**01 07 54.6**	**+2.2**
ISLZ	**Isanotski Laza**	**8.28**	**64**	P	**Pn**	**01 08 13.8**	**+1.5**
DTNA	**Dutton South F**	**9.20**	**62**	P	**Pn**	**01 08 26.6**	**+1.6**
KDAK	**Kodiak Island**	**15.07**	**57**	*e*Pn	**Pn**	**01 09 46.3**	**+2.0**
	12nm,0.4s						
PETK	**Petropavlovsk-**	**15.75**	**285**	LR	LR	01 15 27.7	
	comp=Z,35nm,21.8s,baz=87,slow=35						
SEW	**Seward**	**17.25**	**50**	*e*Pn	**Pn**	**01 10 10.9**	**-1.0**
SEY	**Seymchan**	**19.96**	**316**	P	**Pn**	**01 10 45.2**	**+0.8**
	baz=120,slow=14,SNR=2.5						
ILAR	**Eielson Array**	**20.11**	**38**	P	**P**	**01 10 44.2**	**+0.1**
	1.9nm,0.5s,baz=238,slow=10.0,SNR=24						
ILAR				PcP	**PcP**	**01 14 56.2**	**-0.7**
	0.3nm,0.6s,baz=270,slow=3.3,SNR=4.2						
INK	**Inuvik**	**26.39**	**35**	P	**P**	**01 11 45.2**	**-0.6**
	0.7nm,0.4s,baz=240,slow=7.8,SNR=6.7						
INK				PcP	**PcP**	**01 15 10.5**	**+0.6**
	1.4nm,0.5s,baz=256,slow=1.9,SNR=7.5						
DLBC	**Dease Lake**	**27.00**	**57**	LR	LR	01 22 34.6	
	comp=Z,70nm,18.1s,baz=156,slow=36						
TIXI	**Tiksi**	**31.05**	**330**	LR	LR	01 26 48.0	
	comp=Z,27nm,18.7s,baz=318,slow=40						
KLR	**Kul'dur**	**32.44**	**286**	P	**P**	**01 12 40.3**	**+0.6**
	1.1nm,0.6s,baz=65,slow=8.9,SNR=4.8						
YKA	**Yellowknife Ar**	**33.98**	**47**	P	**P**	**01 12 52.6**	**-0.3**
	0.2nm,0.5s,baz=283,slow=8.2,SNR=8.4						
YKA				PcP	**PcP**	**01 15 30.1**	**+0.4**
	1.4nm,0.6s,baz=288,slow=3.1,SNR=25						
YKA				ScP	**ScP**	**01 19 10.4**	**+0.6**
	0.4nm,0.8s,baz=287,slow=3.6,SNR=6.4						
H11N2	**WAKE ISLAND Hy**	**34.45**	**208**	T	T	01 49 32.4	
	baz=18,slow=76,SNR=1846						
H11N3	**WAKE ISLAND Hy**	**34.46**	**208**	T	T	01 49 33.1	
	baz=18,slow=76,SNR=2522						
H11N1	**WAKE ISLAND Hy**	**34.47**	**208**	T	T	01 49 33.8	
	baz=18,slow=76,SNR=2250						
USRK	**Ussuriysk Ar.**	**34.64**	**278**	P	**P**	**01 12 58.6**	**-0.4**
	0.6nm,0.4s,baz=57,slow=8.8,SNR=3.4						
H11S1	**WAKE ISLAND Hy**	**35.67**	**208**	T	T	01 50 56.3	
	baz=18,slow=76,SNR=1058						
H11S2	**WAKE ISLAND Hy**	**35.69**	**208**	T	T	01 50 57.6	
	baz=18,slow=76,SNR=817						
H11S3	**WAKE ISLAND Hy**	**35.69**	**208**	T	T	01 50 56.5	
	baz=18,slow=76,SNR=418						
PDAR	**Pinedale Array**	**44.87**	**74**	P	**P**	**01 14 24.1**	**-0.1**
	1.4nm,0.5s,baz=295,slow=3.7,SNR=18						
SONM	**Songino Array**	**47.75**	**297**	P	**P**	**01 14 46.1**	**-0.4**
	0.2nm,0.4s,baz=52,slow=7.7,SNR=2.9						
SONM				PcP	**PcP**	**01 16 15.0**	**+0.2**
	0.7nm,0.5s,baz=45,slow=3.2,SNR=4.3						
SPITS	**Spitsbergen Ar**	**50.14**	**357**	P	**P**	**01 15 03.6**	**-0.7**
	1.4nm,0.7s,baz=15,slow=6.1,SNR=8.2						
ZALV	**Zalesovo Beam**	**54.81**	**314**	PcP	**PcP**	**01 16 40.7**	**-0.1**
	0.8nm,0.5s,baz=22,slow=1.6,SNR=3.0						
TXAR	**Lajitas Array**	**57.22**	**83**	P	**P**	**01 15 56.2**	**-0.5**
	1.2nm,0.7s,baz=300,slow=4.6,SNR=20						
ARCES	**ARCESS Array B**	**57.99**	**351**	P	**P**	**01 16 01.5**	**-0.1**
	4.1nm,1.1s,baz=34,slow=8.8,SNR=4.8						
MKAR	**Makanchi Array**	**60.92**	**310**	P	**P**	**01 16 21.2**	**-0.8**
	0.2nm,0.5s,baz=44,slow=8.5,SNR=3.3						
FINES	**FINESS Array B**	**65.76**	**348**	P	**P**	**01 16 53.2**	**-0.5**
	1.1nm,0.8s,baz=10,slow=8.5,SNR=3.3						
NOA	**NORSAR Array B**	**67.43**	**356**	P	**P**	**01 17 05.0**	**+0.5**
	0.3nm,0.5s,baz=6.9,slow=6.6,SNR=3.2						
AKTO	**Aktyubinsk**	**68.22**	**326**	LR	LR	01 49 18.2	
	comp=Z,15nm,18.8s,slow=38						
CMAR	**Chiang Mai Arr**	**72.37**	**278**	P	**P**	**01 17 36.1**	**+0.8**
	0.7nm,0.4s,baz=26,slow=6.5,SNR=6.0						
WRA	**Warramunga Arr**	**83.24**	**226**	P	**P**	**01 18 35.1**	**-0.5**
	0.7nm,0.5s,baz=32,slow=5.8,SNR=5.1						
BRTR	**Keskin Array B**	**85.21**	**337**	P	**P**	**01 18 45.2**	**-0.5**
	0.5nm,0.6s,baz=23,slow=3.8,SNR=4.4						
ASAR	**Alice Springs**	**86.69**	**224**	P	**P**	**01 18 53.1**	**+0.3**
	1.3nm,0.7s,baz=27,slow=4.9,SNR=6.5						
TORD	**Torodi Ar. Bea**	**115.40**	**2**	PKP	**PKPdf**	**01 24 50.0**	**-0.8**
	0.5nm,0.4s,baz=355,slow=2.1,SNR=17						
DBIC	**Dimbokro**	**121.42**	**10**	PKP	**PKPdf**	**01 25 01.8**	**-0.7**
	1.6nm,0.5s,baz=352,slow=3.6,SNR=7.2						
BOSA	**Boshof**	**151.75**	**316**	PKPbc	**PKPbc**	**01 26 02.7**	**-0.7**
	4.4nm,0.5s,baz=14,slow=2.0,SNR=25						

*ISCJB **27** 01:06:42.9±0.4, 21°.71S±0°.06×179°.17W±0°.08, h602km, mb4.4/40, Error ellipse: s-maj=9.8km s-min=7.2km az=28.8*
*IDC **27** 01:06:42.3±1.4, 21°.52S×179°.14W, h574km±15km, mb3.6/20, mb1 3.8/22, mb1mx3.7/37, mbtmp4.6/22, Error ellipse: s-maj=15.1km s-min=12.5km az=117.0*
*NEIC **27** 01:06:42.9±0.8, 21°.70S×179°.05W, h594km±8km, mb4.6/21, Error ellipse: s-maj=12.0km s-min=8.9km az=116.0*

ISC 27 01:06:44.1±0.5, 21°.67S±0°.08×179°.18W±0°.08, h602km, n104, σ1§17/110, mb4.5/40, 14C-3D, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MSVF	**Nonsavu**	**4.71**	**326**	*e*P	**P**	**01 08 14.8**	**-0.3**
AFI	**Afiamalu**	**10.45**	**44**	P	**P**	**01 09 03.9**	**-3.7**
	6.3nm,0.3s,baz=204,slow=10.0,SNR=3.9						
AFI				S	S	01 10 55.5	-10
	2.5nm,0.3s,baz=171,slow=17,SNR=3.9						
DZM	**Mont Dzumac**	**13.36**	**266**	*e*P	**P**	**01 09 34.7**	**-2.0**
	16nm,0.6s						
OUZ	**Omahuta**	**14.91**	**204**	*e*P	**P**	**01 09 51.1**	**-0.1**
URZ	**Urewera**	**16.84**	**190**	P	**P**	**01 10 08.0**	**-0.8**
	6.4nm,0.3s,baz=26,slow=7.4,SNR=14						
URZ				S	**S**	**01 12 50.3**	**-5.1**
	0.8nm,0.3s,baz=221,slow=20,SNR=3.6						
URZ	**Urewera**	**16.84**	**190**	*e*P	**P**	**01 10 07.2**	**-1.6**
	31nm,0.8s						
SNZO	**South Karori**	**20.25**	**193**	*e*P	**P**	**01 10 39.0**	**-0.8**
	203nm,1.4s						
KHZ	**Kahutara**	**21.57**	**195**	*e*P	**P**	**01 10 50.3**	**-1.3**
RPZ	**Rata Peaks**	**23.43**	**198**	P	**P**	**01 11 08.5**	**+0.3**
	4.0nm,0.4s,baz=48,slow=12,SNR=4.8						
EIDS	**Eidsvold**	**27.49**	**256**	*e*P	**P**	**01 11 44.4**	**+0.3**
	17nm,0.6s						
ARMA	**Armidale**	**27.58**	**246**	*e*P	**P**	**01 11 46.5**	**+1.6**
	23nm,0.8s						
CAN	**Canberra**	**30.95**	**237**	*e*P	**P**	**01 12 14.8**	**+0.9**
	9.2nm,0.7s						
CTAO	**Charters Tower**	**32.30**	**266**	*e*P	**P**	**01 12 25.4**	**0.0**
	26nm,0.6s						
PMG	**Port Moresby**	**34.56**	**285**	P	**P**	**01 12 44.3**	**-0.2**
	31nm,0.8s,baz=84,slow=9.2,SNR=4.3						
PMG	**Port Moresby**	**34.56**	**285**	*e*P	**P**	**01 12 44.2**	**-0.3**
	37nm,0.8s						
STKA	**Stephens Creek**	**36.30**	**245**	P	**P**	**01 12 59.5**	**+0.9**
	12nm,0.5s,baz=93,slow=10,SNR=39						
STKA	**Stephens Creek**	**36.30**	**245**	*e*P	**P**	**01 12 59.5**	**+0.9**
	3.3nm,0.6s						
COEN	**Coen**	**36.58**	**276**	*e*P	**P**	**01 13 01.4**	**+0.3**
BBOO	**Buckleboo**	**41.05**	**245**	*e*P	**P**	**01 13 37.0**	**+0.2**
	23nm,0.8s						
AS01	**Alice Springs**	**43.15**	**258**	*e*P	**P**	**01 13 52.8**	**-0.6**
AS31	**Alice Springs**	**43.19**	**258**	*e*P	**P**	**01 13 53.8**	**0.0**
	9.5nm,0.6s						
ASAR	**Alice Springs**	**43.19**	**258**	P	**P**	**01 13 53.8**	**0.0**
	28nm,0.5s,baz=95,slow=7.8,SNR=314						
ASAR				PcP	**PcP**	**01 15 29.8**	**+0.6**
	3.0nm,0.7s,baz=97,slow=4.2,SNR=6.0						
ASAR				ScP	**ScP**	**01 18 27.2**	**+3.3**
	1.7nm,0.9s,baz=105,slow=4.0,SNR=5.7						
ASAR				S	**S**	**01 19 34.5**	**-3.8**
	2.9nm,0.8s,baz=95,slow=15,SNR=14						
WB2	**Warramunga Arr**	**43.35**	**264**	*e*P	**P**	**01 13 54.5**	**-0.5**
	40nm,0.9s						
WRAB	**Tennant Creek**	**43.36**	**264**	*e*P	**P**	**01 13 53.7**	**-1.3**
	43nm,1.0s						
WRA	**Warramunga Arr**	**43.37**	**264**	P	**P**	**01 13 54.4**	**-0.7**
	13nm,0.4s,baz=95,slow=7.7,SNR=212						
WRA				ScP	**ScP**	**01 18 28.6**	**+3.9**
	0.7nm,0.7s,baz=86,slow=3.2,SNR=3.6						
WRA				S	**S**	**01 19 40.6**	**-0.1**
	2.2nm,1.0s,baz=97,slow=14,SNR=3.4						
JAY	**Jayapura**	**43.40**	**290**	P	**P**	**01 13 55.2**	**-0.2**
	3.3nm,0.6s,baz=100,slow=23,SNR=23						
MTN	**Manton Dam**	**48.09**	**272**	*e*P	**P**	**01 14 30.3**	**-0.6**
	32nm,0.6s						
FITZ	**Fitzroy Crossi**	**51.80**	**264**	*e*P	**P**	**01 14 58.0**	**+0.1**
	12nm,0.9s						
SOEI	**Soe**	**55.45**	**273**	*e*P	**P**	**01 15 25.2**	**+1.4**
	55nm,0.7s						
MBWA	**Marble Bar**	**56.53**	**258**	*e*P	**P**	**01 15 30.5**	**-0.5**
	69nm,0.5s						
VNDA	**Vanda**	**56.65**	**185**	P	**P**	**01 15 33.3**	**+2.4**
	0.8nm,0.6s,baz=11,slow=6.1,SNR=8.5						
LUWI	**Luwuk**	**60.08**	**282**	*e*P	**P**	**01 15 54.9**	**-0.1**
MJAR	**Matsushiro Arr**	**70.51**	**325**	P	**P**	**01 16 59.1**	**-0.4**
	3.2nm,0.6s,baz=151,slow=6.3,SNR=8.1						
KSM	**Kuching**	**72.50**	**279**	*e*P	**P**	**01 17 11.7**	**+0.1**
	16nm,0.8s						
ASAJ	**Asahikawa**	**74.24**	**332**	P	**P**	**01 17 21.8**	**+1.1**
	5.3nm,0.6s,baz=10,slow=15,SNR=5.2						
PETK	**Petropavlovsk-**	**77.13**	**346**	P	**P**	**01 17 36.5**	**0.0**
	5.0nm,0.6s,baz=126,slow=7.5,SNR=4.8						
USRK	**Ussuriysk Ar.**	**79.32**	**327**	P	**P**	**01 17 48.9**	**+0.6**
	3.2nm,0.7s,baz=108,slow=2.6,SNR=9.0						
IPM	**Ipoh**	**82.20**	**278**	*e*P	**P**	**01 18 04.2**	**+0.2**
	11nm,0.6s						
KLR	**Kul'dur**	**82.98**	**330**	P	**P**	**01 18 07.4**	**+0.4**
	1.8nm,0.8s,baz=190,slow=2.1,SNR=6.9						
**SE

CONA	Conrad Observa	151.15	339	*i* PKiKP	PKPbc	01 25 30.4	+0.1
	comp=Z,5.9nm,1.1s						
ABTA	Abfaltersbach	153.24	342	*i* PKPbc	PKPbc	01 25 34.3	-0.6
	comp=Z,2.9nm,0.8s						
TIP	Timpagrande	157.85	326	*e*PKPab	PKPab	01 26 10.6	+0.6
KEST	Kesra	164.13	334	PKPab	PKPab	01 26 37.4	-0.3
	comp=Z,1.5nm,0.7s,baz=286,slow=3.9,SNR=5.1						
TORD	Torodi Ar. Bea	171.48	186	PKP	PKPdf	01 25 44.7	-0.6
	comp=Z,0.7nm,0.9s,baz=102,slow=0.7,SNR=4.0						

IDC ***27*** *01:13:05.2±1.0, 21°.35S×175°.55W, h0km, mb3.9/6, mb1 4.2/7, mb1mx4.0/30, mbtmp4.0/7, ML4.7/1, Error ellipse: s-maj=36.8km s-min=24.7km az=132.0*
ISCJB ***27*** *01:13:11.9±0.9, 21°.5S±0°.1×175°.6W±0°.2, h60km, mb3.9/6, Error ellipse: s-maj=28.9km s-min=12.6km az=21.2*
ISC 27 01:13:13.4±0.9, 21°.6S±0°.1×175°.6W±0°.2, h60km, n9, σ1§46/10, mb3.9/6, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	Urewera	17.75	199	P	Pn	01 17 16.3	-0.1
	2.7nm,0.3s,baz=293,slow=3.8,SNR=6.5						
URZ				S	Sn	01 20 30.8	-2.6
	0.4nm,0.3s,baz=29,slow=19,SNR=3.7						
RPZ	Rata Peaks	24.69	204	P	P	01 18 29.7	+1.0
	8.8nm,0.7s,baz=295,slow=2.1,SNR=5.9						
ASAR	Alice Springs	46.48	257	P	P	01 21 35.1	+0.2
	6.1nm,1.1s,baz=90,slow=8.0,SNR=17						
WRA	Warramunga Arr	46.70	263	P	P	01 21 36.3	-0.3
	0.5nm,0.3s,baz=96,slow=8.3,SNR=13						
VNDA	Vanda	57.02	186	P	P	01 22 54.7	+2.1
	1.0nm,0.9s,baz=327,slow=6.5,SNR=4.7						
TXAR	Lajitas Array	85.76	56	P	P	01 25 45.1	-1.5
	0.3nm,0.9s,baz=229,slow=5.5,SNR=3.3						
PDAR	Pinedale Array	88.23	42	P	P	01 25 58.3	0.0
	0.1nm,0.3s,baz=214,slow=4.2,SNR=2.3						
ARCES	ARCESS Array B	130.40	350	PKP	PKPdf	01 32 16.7	+0.3
	3.8nm,1.0s,baz=8.5,slow=1.8,SNR=6.6						
AKASG	Malin Array Be	145.06	332	PKP	PKPbc	01 32 42.8	-0.4
	1.6nm,0.4s,baz=40,slow=4.4,SNR=10						

NIED ***27*** *01:37:00, 35°.30N×140°.90E, h41km, Mw4.1 Best double couple: M0 1.73000×10^15 NP1:φs336.00000°, δ22.00000°, λ-164.00000°. NP2:φs231.00000°, δ84.00000°, λ-69.00000°.*
ISCJB ***27*** *01:37:55.4±0.5, 35°.27N±0°.03×140°.88E±0°.06, h46km±3km, mb4.2/39, MS3.2/4, Error ellipse: s-maj=7.9km s-min=5.1km az=175.0*
JMA ***27*** *01:37:55.9±0.1, 35°.34N×140°.87E, h41km±2km, M3.8*
JMA Felt I J1.
NEIC ***27*** *01:37:55.5±1.6, 35°.33N×140°.85E, h29km±11km, mb4.4/14, Error ellipse: s-maj=6.8km s-min=5.6km az=101.0*
NEIC Recorded [1 JMA] in Chiba.
IDC ***27*** *01:37:57.2±1.3, 35°.23N×140°.84E, h44km±11km, mb3.9/25, mb1 4.0/31, mb1mx3.9/50, mbtmp4.2/31, ML3.9/4, MS3.2/6, Ms1 3.2/6, ms1mx2.9/25, Error ellipse: s-maj=13.4km s-min=7.5km az=77.0*
ISC 27 01:37:55.7±1.1, 35°.28N±0°.04×140°.89E±0°.05, h32km±8km, n72, σ1§28/79, mb4.3/39, MS3.3/4, 3C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	0.43	356	∥P	Pb	01 38 04.9	-0.2
CHOJ				S	Sb	01 38 11.6	0.0
KTR	Katsuura	0.49	255	P	Pn	01 38 06.7	+0.3
KTR				S	Sn	01 38 14.0	+0.2
BSO4	Boso 4	0.54	238	⇑P	Pn	01 38 07.8	+0.8
BSO3	Boso 3	0.57	213	⇑P	Pn	01 38 08.3	+1.0
JCN	Nagara	0.58	284	P	Pn	01 38 07.9	+0.2
JCN				*e*S	Sn	01 38 16.5	+0.4
BSO1	Boso 1	0.63	173	⇑P	Pn	01 38 09.0	+1.2
JYT	Yasato	1.10	329	P	Pn	01 38 14.5	-0.4
JYT				*e*S	Sn	01 38 28.6	-0.4
JHJ2	Mitsune	2.34	203	*e*Pn	Pn	01 38 33.1	+1.2
JHJ	Hachijo jima 2	2.34	203	P	Pn	01 38 32.3	+0.4
	204nm,0.3s,baz=81,slow=21,SNR=26						
JHJ				S	Sn	01 38 59.0	-0.5
	91nm,0.3s,baz=212,slow=22,SNR=6.2						
MJAR	Matsushiro Arr	2.52	301	P	Pn	01 38 34.9	+0.5
	33nm,0.3s,baz=103,slow=9.1,SNR=128						
MJAR				S	Sn	01 39 05.6	+1.7
	8.3nm,0.3s,baz=129,slow=13,SNR=5.9						
MJAR				LR	LR	01 39 44.1	
	comp=Z,351nm,19.9s,baz=120,slow=43						
MAJO	Matsushiro	2.52	301	*e*Pn	Pn	01 38 35.6	+1.2
MAT	Matsushiro	2.52	301	P	Pn	01 38 36.1	+1.7
ERM	Erimo	6.96	14	*e*Pn	Pn	01 39 33.3	-2.0
	16nm,0.6s						
ERM				*e*Sn	Sn	01 40 49.4	-3.8
CBIJ	Chichi jima	8.23	172	P	Pn	01 39 52.8	-0.1
CBIJ				S	Sn	01 41 22.9	-1.8
JCJ	Chichijima	8.23	172	P	Pn	01 39 52.8	-0.1
	28nm,0.3s,baz=276,slow=22,SNR=17						
JCJ				S	Sn	01 41 22.9	-1.8
	baz=288,slow=20						
JNU	Nakatsue	8.57	258	P	Pn	01 39 57.2	-0.3
	0.2nm,0.3s,baz=169,slow=15,SNR=2.2						
JNU				S	Sn	01 41 28.2	-4.9
	0.5nm,0.3s,baz=219,slow=19,SNR=2.5						
JNU	Nakatsue	8.57	258	*e*Pn	Pn	01 39 58.1	+0.6
JNU				S	Sn	01 41 28.2	-4.9
ASAJ	Asahikawa	8.93	8	P	Pn	01 40 03.2	+0.9
	3.3nm,0.3s,baz=207,slow=7.6,SNR=5.5						
ASAJ				S	Sn	01 41 40.6	-1.1
	baz=201,slow=18						
ASAJ	Asahikawa	8.93	8	*e*Pn	Pn	01 39 59.8	-2.5
ASAJ				S	Sn	01 41 40.6	-1.1
USRK	Ussuriysk Ar.	11.23	325	P	Pn	01 40 35.7	+1.8
	0.2nm,0.3s,baz=145,slow=15,SNR=6.3						
USRK				LR	LR	01 45 00.8	
	comp=Z,70nm,18.1s,baz=122,slow=38						
PETK	Petropavlovsk-	21.42	29	P	P	01 42 41.4	+0.6
	1.2nm,0.4s,baz=242,slow=9.2,SNR=4.7						
ENH	Enshi	26.81	268	*e*P	P	01 43 30.9	-2.2
	10nm,0.4s						
H11N2	WAKE ISLAND Hy	27.67	117	T	T	02 12 41.1	
	baz=310,slow=76,SNR=369						
H11N1	WAKE ISLAND Hy	27.68	117	T	T	02 12 42.4	
	baz=310,slow=76,SNR=458						
H11N3	WAKE ISLAND Hy	27.69	117	T	T	02 12 41.1	
	baz=310,slow=76,SNR=280						
ULN	Ulaanbaatar	28.03	307	*e*P	P	01 43 43.2	-0.7
	1.8nm,0.5s						
H11S1	WAKE ISLAND Hy	28.31	119	T	T	02 13 30.6	
	baz=312,slow=76,SNR=598						
H11S3	WAKE ISLAND Hy	28.31	119	T	T	02 13 27.4	
	baz=312,slow=76,SNR=637						
H11S2	WAKE ISLAND Hy	28.33	119	T	T	02 13 32.8	
	baz=312,slow=76,SNR=467						
SONM	Songino Array	28.45	307	P	P	01 43 47.1	-0.6
	2.3nm,0.7s,baz=109,slow=8.7,SNR=13						
SONM				LR	LR	01 54 40.7	
	comp=Z,48nm,20.2s,baz=142,slow=35						
ZALV	Zalesovo Beam	42.80	314	P	P	01 45 50.4	+0.2
	2.7nm,0.4s,baz=101,slow=6.7,SNR=5.8						
ZALV				LR	LR	02 04 01.9	
	comp=Z,33nm,18.7s,baz=54,slow=37						
MKAR	Makanchi Array	44.71	304	P	P	01 46 05.7	0.0
	1.7nm,0.4s,baz=84,slow=9.5,SNR=19						
MKAR				LR	LR	02 04 60.0	
	comp=Z,33nm,19.9s,baz=93,slow=36						
KURK	Kurchatov	46.70	309	*e*P	P	01 46 20.6	-0.7
	23nm,0.6s						
KURBB	Kurchatov Arra	46.77	309	P	P	01 46 21.5	-0.3
	6.7nm,0.6s,baz=84,slow=7.7,SNR=71						
BPAW	Bear Paw Mtn.	49.43	32	*e*P	P	01 46 43.0	+0.9
	0.3nm,0.8s						
TKM2	Tokmak 2	50.11	300	*e*P	P	01 46 48.2	+0.3
	7.4nm,0.5s						
SML	Sawmill	50.66	35	*e*P	P	01 46 52.4	+0.8
	0.5nm,0.6s						
AAK	Ala-Archa	50.97	299	P	P	01 46 54.1	-0.3
	2.5nm,0.4s,baz=85,slow=4.2,SNR=6.6						
AAK	Ala-Archa	50.97	299	*e*P	P	01 46 53.9	-0.5
	1.9nm,0.6s						
ILAR	Eielson Array	51.20	32	P	P	01 46 56.7	+1.1
	1.2nm,0.7s,baz=263,slow=5.7,SNR=15						
BVAR	Borovoye Array	51.45	313	P	P	01 46 57.7	0.0
	1.7nm,0.3s,baz=97,slow=7.8,SNR=13						
EKS2	Erkin-Say	51.47	300	*e*P	P	01 46 58.2	+0.1
	2.3nm,0.7s						
DOT	Dot Lake	52.50	33	*e*P	P	01 47 05.6	+0.3
	3.4nm,0.7s						
KKAR	Karatay Array	53.65	301	*e*P	P	01 47 13.4	-0.7
	2.3nm,0.7s						
FITZ	Fitzroy Crossi	55.02	198	*e*P	P	01 47 25.2	+1.1
	3.2nm,0.7s						
WRAB	Tennant Creek	55.26	187	*e*P	P	01 47 26.0	+0.2
	4.4nm,0.8s						
WRA	Warramunga Arr	55.27	188	P	P	01 47 26.2	+0.3
	2.3nm,0.4s,baz=3.1,slow=7.3,SNR=21						
ARU	Arti	57.40	319	P	P	01 47 40.7	-0.1
	4.2nm,0.5s,baz=95,slow=5.9,SNR=8.3						
ARU	Arti	57.40	319	*e*P	P	01 47 40.1	-0.7
	3.2nm,0.6s						
ABKAR	Akbulak array	58.76	311	*e*P	P	01 47 49.7	-0.7
	3.6nm,0.4s						
ASAR	Alice Springs	58.99	187	P	P	01 47 52.7	+0.5
	0.9nm,0.5s,baz=20,slow=11,SNR=11						
AKTO	Aktyubinsk	59.54	313	P	P	01 47 55.5	-0.3
	1.7nm,0.5s,baz=78,slow=11,SNR=9.1						
SPITS	Spitsbergen Ar	62.16	349	P	P	01 48 13.4	+0.2
	1.6nm,0.8s,baz=58,slow=5.4,SNR=3.5						
ARCES	ARCESS Array B	65.49	340	P	P	01 48 35.3	+0.1
	4.1nm,1.1s,baz=58,slow=9.1,SNR=3.6						
YKA	Yellowknife Ar	65.54	30	P	P	01 48 36.3	+0.7
	0.4nm,0.7s,baz=302,slow=6.6,SNR=8.7						
FINES	FINESS Array B	70.17	332	P	P	01 49 04.6	-0.2
	0.7nm,0.3s,baz=64,slow=6.2,SNR=7.2						
KBZ	Khabaz	71.73	311	P	P	01 49 14.6	+0.1
	2.5nm,0.8s,baz=24,slow=4.7,SNR=8.6						
KVAR	Kislovodsk Arr	71.73	311	P	P	01 49 14.3	-0.5
	3.3nm,0.6s,baz=226,slow=9.3,SNR=5.4						
KIV	Kislovodsk	71.74	311	*e*P	P	01 49 14.8	+0.1
	7.1nm,0.6s						
FFC	Flin Flon	75.41	32	*e*P	P	01 49 37.1	+1.1
	1.6nm,0.8s						
AKASG	Malin Array Be	75.43	322	P	P	01 49 35.7	-0.4
	1.4nm,0.5s,baz=48,slow=6.2,SNR=9.7						
KIEV	Kiev	75.44	322	*e*P	P	01 49 35.3	-0.9
HFS	Hagfors	75.51	336	P	P	01 49 36.7	+0.2
	1.1nm,0.6s,baz=72,slow=5.3,SNR=4.7						
NB2	NORSAR Subarra	75.64	337	P	P	01 49 36.2	-1.1
	comp=Z,0.9nm,0.6s,baz=41,slow=5.9						
NOA	NORSAR Array B	75.64	337	P	P	01 49 37.3	0.0
	comp=Z,1.4nm,0.8s,baz=40,slow=5.7,SNR=6.3						
NOA				LR	LR	02 25 41.6	
	comp=Z,16nm,20.6s,baz=25,slow=38						
NVAR	Mina Array Bea	76.38	53	P	P	01 49 44.1	+2.0
	comp=Z,0.4nm,0.6s,baz=319,slow=6.1,SNR=4.2						
PDAR	Pinedale Array	79.20	45	P	P	01 49 59.1	+1.4
	comp=Z,0.6nm,0.6s,baz=284,slow=2.4,SNR=7.2						
BRTR	Keskin Array B	79.70	312	P	P	01 50 00.5	+0.1
	comp=Z,0.9nm,0.9s,baz=262,slow=1.9,SNR=4.1						
GERES	GERESS Array B	83.98	328	P	P	01 50 22.6	-0.2
	comp=Z,0.2nm,0.3s,baz=35,slow=7.2,SNR=3.5						
TORD	Torodi Ar. Bea	118.25	314	PKP	PKPdf	01 56 39.8	-0.4
	comp=Z,0.3nm,0.5s,baz=46,slow=1.2,SNR=7.0						
SAML	Samuel	145.78	46	*e*PKPdf	PKPdf	01 57 32.0	+0.4
LPAZ	La Paz	147.93	61	PKPbc	PKPbc	01 57 38.0	-0.9
	comp=Z,1.3nm,0.8s,baz=322,slow=3.9,SNR=2.9						

ATH ***27*** *01:38:11.8, 36°.60N×25°.67E, h27km, ML3.5/14, Error ellipse: s-maj=1.1km s-min=0.7km az=281.0*
THE ***27*** *01:38:13.1, 36°.60N×25°.66E, h11km, ML3.6/21, Error ellipse: s-maj=0.7km s-min=0.4km az=245.0*
ISCJB ***27*** *01:38:13.2±0.3, 36°.57N±0°.02×25°.64E±0°.02, h21km±2km, mb3.7/10, MS2.8/1, Error ellipse: s-maj=2.7km s-min=2.4km az=166.2*
CSEM ***27*** *01:38:13.1±0.1, 36°.55N×25°.64E, h15km, ML3.5, Error ellipse: s-maj=3.3km s-min=2.9km az=173.0*
ISK ***27*** *01:38:13.0, 36°.53N×25°.69E, h8km, ML3.6*
IDC ***27*** *01:38:16.3±1.2, 36°.45N×25°.81E, h49km±19km, mb3.6/10, mb1 3.7/15, mb1mx3.5/44, mbtmp3.7/15, ML3.2/5, MS2.8/2, Ms1 2.8/2, ms1mx2.2/40, Error ellipse: s-maj=17.9km s-min=9.9km az=147.0*
HLW ***27*** *01:38:17.8, 36°.36N×26°.08E, h33km±22km, Ml3.4*
DDA ***27*** *01:38:46.6, 36°.43N×25°.36E, h11km, Md3.9*
ISC 27 01:38:12.7±0.8, 36°.59N±0°.02×25°.69E±0°.01, h16km±5km, n217, σ0§98/266, mb3.9/10, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THR2	Thira island,	0.25	235	P	Pg	01 38 18.3	+0.1
THR2	Thira island,	0.25	235	P	Pg	01 38 18.3	+0.1
CMBO	Columbo, Santo	0.26	242	P	Pg	01 38 18.2	-0.1
CMBO				S	Sg	01 38 22.7	+0.5
CMBO	Columbo, Santo	0.26	242	P	Pg	01 38 18.2	-0.1
CMBO				S	Sg	01 38 22.7	+0.5
CMBO	Columbo, Santo	0.26	242	P	Pg	01 38 18.2	-0.1
CMBO				S	Sg	01 38 22.0	-0.2
CMBO				AML	AML	01 38 23.6	
	comp=N,42013μm,0.5s						
CMBO				AML	AML	01 38 24.2	
	comp=E,21951μm,0.4s						
THR7	Fira-Santorini	0.27	231	P	Pg	01 38 18.7	+0.2
THR7	Fira-Santorini	0.27	231	P	Pg	01 38 18.7	+0.2
SANT	Santorini	0.29	220	P	Pg	01 38 18.8	0.0
SANT				S	Sb	01 38 23.6	-0.5
SANT	Santorini	0.29	220	P	Pg	01 38 19.0	+0.2
SANT				S	Sg	01 38 23.4	+0.3
SANT	Santorini	0.29	220	P	Pg	01 38 19.0	+0.2
SANT				S	Sg	01 38 23.4	+0.3
SANT				AML	AML	01 38 25.0	
	comp=N,14230μm,0.2s						
SANT				AML	AML	01 38 28.4	
	comp=E,30245μm,0.3s						
THT1	Athinios (Pele	0.29	226	P	Pg	01 38 18.8	-0.1
THT1				S	Sg	01 38 23.3	+0.2
THT1	Athinios (Pele	0.29	226	P	Pg	01 38 18.8	-0.1
THT1				S	Sg	01 38 23.3	+0.2
THR3	Thira Island,	0.30	232	P	Pg	01 38 19.0	+0.1
THR3	Thira Island,	0.30	232	P	Pg	01 38 19.0	+0.1
THR5	Thira Island,	0.33	238	*e*PG	Pg	01 38 19.5	0.0
THR5	Thira Island,	0.33	238	P	Pg	01 38 19.4	0.0
THR5	Thira Island,	0.33	238	P	Pg	01 38 19.4	0.0
THR6	Thira Island,	0.33	225	P	Pg	01 38 19.4	-0.2
THR6	Thira Island,	0.33	225	P	Pg	01 38 19.4	-0.2
APE	Apeiranthos	0.49	345	P	Pg	01 38 21.7	-0.8
APE				S	Sb	01 38 29.6	-0.5
APE	Apeiranthos	0.49	345	P	Pg	01 38 21.7	-0.8
APE				S	Sb	01 38 29.6	-0.5
APE	Apeiranthos	0.49	345	P	Pg	01 38 21.4	-1.1
APE				S	Sb	01 38 30.0	0.0
APE				AML	AML	01 38 32.7	
	comp=N,9157μm,0.1s						
APE				AML	AML	01 38 33.0	
	comp=E,13810μm,0.3s						
MHLO	Agia Marina, M	1.04	276	P	Pb	01 38 32.0	-0.3
MHLO				S	Sg	01 38 46.3	-0.1
MHLO	Agia Marina, M	1.04	276	P	Pb	01 38 32.0	-0.3
MHLO				S	Sb	01 38 45.6	-0.2
MHLO	Agia Marina, M	1.04	276	P	Pn	01 38 32.5	-0.1
MHLO				S	Sb	01 38 45.6	-0.2
MHLO				AML	AML	01 38 48.5	
	comp=E,19206μm,0.3s						
MHLO				AML	AML	01 38 50.0	
	comp=N,20121μm,0.4s						
SERI	Serifos	1.12	301	P	Pb	01 38 33.1	-0.6
SERI				S	Sb	01 38 47.3	-0.8
SERI	Serifos	1.12	301	P	Pb	01 38 33.1	-0.6
SERI				S	Sb	01 38 47.3	-0.8
NISR	Nisiros	1.16	89	P	Pg	01 38 34.3	-0.7
NISR	Nisiros	1.16	89	P	Pg	01 38 34.8	-0.2
NISR				S	Sg	01 38 50.2	+0.1
NISR	Nisiros	1.16	89	P	Pg	01 38 34.8	-0.2
NISR				S	Sg	01 38 50.2	+0.1
NISR				AML	AML	01 38 55.5	
	comp=N,5820μm,0.6s						
NISR				AML	AML	01 38 57.6	
	comp=E,11054μm,0.5s						
NIS1	Nisyros Isl.	1.20	89	*e*PN	Pg	01 38 36.5	+0.8
NIS1				*e*SN	Sg	01 38 53.3	+1.9
NIS1	Nisyros Isl.	1.20	89	P	Pg	01 38 35.2	-0.6
NIS1	Nisyros Isl.	1.20	89	P	Pg	01 38 35.2	-0.6
NIS1	Nisyros Isl.	1.20	89	*e*Pn	Pg	01 38 36.5	+0.8
NIS1				*e*Sn	Sg	01 38 53.3	+1.9
NIS1	Nisyros Isl.	1.20	89	P	Pg	01 38 35.7	-0.1
NPS	Neapolis	1.33	183	P	Pn	01 38 36.6	0.0
NPS				S	Sb	01 38 53.9	-0.1
NPS	Neapolis	1.33	183	P	Pn	01 38 36.7	+0.1
NPS				S	Sb	01 38 53.9	-0.1
NPS	Neapolis	1.33	183	P	Pn	01 38 36.7	+0.1
NPS				S	Sn	01 38 52.8	-1.1
NPS				AML	AML	01 38 58.4	
	comp=E,6204μm,0.4s						
NPS				AML	AML	01 38 58.5	
	comp=N,4424μm,0.3s						
BODT	Bodrum	1.38	70	*e*PN	Pg	01 38 38.8	-0.5
BODT				*e*SN	Sg	01 38 59.0	+1.7
BODT	Bodrum	1.38	70	P	Pn	01 38 37.0	-0.3
BODT				S	Sg	01 38 57.0	-0.3
BODT	Bodrum	1.38	70	P	Pn	01 38 37.0	-0.3
BODT	Bodrum	1.38	70	*e*Pn	Pg	01 38 38.8	-0.5
BODT				S	Sg	01 38 57.0	-0.3
BODT				*e*Sn	Sg	01 38 59.0	+1.7
LAST	Lasithi	1.44	187	P	Pn	01 38 37.4	-0.8
LAST				S	Sb	01 38 57.8	+0.6
LAST	Lasithi	1.44	187	P	Pn	01 38 37.4	-0.8
LAST				S	Sn	01 38 56.8	0.0
LAST	Lasithi	1.44	187	P	Pn	01 38 37.2	-1.0
SMG	Samos	1.44	39	P	Pn	01 38 37.2	-1.0
SMG				S	Sb	01 38 57.6	+0.3
SMG	Samos	1.44	39	P	Pn	01 38 37.2	-1.0
SMG				S	Sb	01 38 57.6	+0.3
SMG	Samos	1.44	39	P	Pn	01 38 37.1	-1.0
SMG				S	Sb	01 38 57.7	+0.4
SMG				AML	AML	01 39 02.9	
	comp=N,3084μm,0.4s						
SMG				AML	AML	01 39 05.0	
	comp=E,3526μm,0.4s						
IDI	Anoyia	1.45	207	P	Pn	01 38 37.8	-0.5
	comp=E,11nm,0.3s,baz=16,slow=9.1,SNR=108						
IDI				S	Sn	01 38 56.5	-0.7
	comp=E,70nm,0.3s,baz=336,slow=19,SNR=26						
IDI	Anoyia	1.45	207	P	Pn	01 38 37.6	-0.8
IDI				S	Sn	01 38 56.5	-0.7
IDI	Anoyia	1.45	207	P	Pn	01 38 37.5	-0.8
IDI				S	Sb	01 38 58.0	+0.3
IDI				AML	AML	01 39 02.1	
	comp=N,2002μm,0.5s						
IDI				AML	AML	01 39 03.1	
	comp=E,2613μm,0.3s						
BDRM	Kayabasi	1.48	71	P	Pn	01 38 38.5	-0.2
BDRM				S	Sg	01 39 01.1	+0.6
BDRM	Kayabasi	1.48	71	*i* P	Pn	01 38 38.5	-0.2
BDRM				*i* S	Sg	01 39 01.1	+0.6
ZKR	Zakros	1.53	164	P	Pb	01 38 40.0	-0.7
ZKR				S	Sb	01 39 00.0	+0.1
ZKR	Zakros	1.53	164	P	Pb	01 38 40.0	-0.7
ZKR				S	Sb	01 38 59.8	-0.2
ZKR	Zakros	1.53	164	P	Pb	01 38 40.4	-0.3
ZKR				S	Sb	01 38 59.8	-0.2
KARP	Karpathos	1.58	131	*e*PN	Pb	01 38 41.2	-0.4
KARP	Karpathos	1.58	131	P	Pn	01 38 40.4	+0.4
KARP				S	Sb	01 39 01.1	-0.3
KARP	Karpathos	1.58	131	P	Pn	01 38 40.5	+0.4
KARP	Karpathos	1.58	131	*e*Pn	Pb	01 38 41.2	-0.4
KARP				S	Sb	01 39 01.1	-0.3
KARP	Karpathos	1.58	131	P	Pn	01 38 40.5	+0.4
GCAM	G?zelcaml?	1.66	48	P	Pn	01 38 40.4	-0.7
GCAM	G?zelcaml?	1.66	48	*i* P	Pn	01 38 40.4	-0.7
GCAM				*i* S	Sg	01 39 08.2	+2.2
VAM	Vamos	1.69	226	P	Pn	01 38 41.5	-0.1
VAM				S	Sn	01 39 03.3	+0.4
VAM	Vamos	1.69	226	P	Pn	01 38 41.5	-0.1
VAM				S	Sn	01 39 02.9	0.0
SIVA	Sivas	1.73	205	P	Pn	01 38 41.9	0.0
SIVA				S	Sn	01 39 04.0	+0.3
SIVA	Sivas	1.73	205	P	Pn	01 38 42.0	0.0
SIVA				S	Sn	01 39 04.0	+0.3
SIVA	Sivas	1.73	205	P	Pn	01 38 42.0	0.0
DGB	˜zmir	1.74	33	*i* P	Pn	01 38 42.2	0.0
DGB				*i* S	Sg	01 39 09.0	+0.3
ZEY	˜zmir	1.77	21	*i* P	Pn	01 38 41.2	-1.4
ZEY				*i* S	Sg	01 39 10.0	+0.4
IMMV	Iera Moni Meta	1.79	231	P	Pn	01 38 42.8	-0.1
IMMV	Iera Moni Meta	1.79	231	P	Pn	01 38 42.8	-0.1
IMMV	Iera Moni Meta	1.79	231	P	Pn	01 38 43.7	+0.8
CHOS	Chios island	1.82	9	*e*PN	Pb	01 38 46.0	+0.5
CHOS	Chios island	1.82	9	P	Pn	01 38 42.5	-0.9
CHOS				S	Sn	01 39 06.3	+0.2
CHOS	Chios island	1.82	9	P	Pn	01 38 42.9	-0.4
CHOS	Chios island	1.82	9	*e*Pn	Pb	01 38 46.1	+0.5
CHOS				S	Sn	01 39 06.4	+0.3
CHOS	Chios island	1.82	9	P	Pn	01 38 42.9	-0.4
CHOS				S	Sn	01 39 06.4	+0.3
CHOS				AML	AML	01 39 18.2	
	comp=E,1596μm,0.6s						
CHOS				AML	AML	01 39 23.7	
	comp=N,1448μm,0.7s						
URLA	Izmir	1.91	22	P	Pn	01 38 43.5	-1.1
URLA	Izmir	1.91	22	*i* P	Pn	01 38 43.5	-1.1
URLA				*i* S	Sg	01 39 14.3	+0.3
VLY	Voula,Athens	1.97	310	P	Pn	01 38 45.2	-0.2
VLY				S	Sn	01 39 09.9	+0.1
VLY	Voula,Athens	1.97	310	P	Pn	01 38 45.2	-0.2
VLY				S	Sn	01 39 09.6	-0.2
VLY	Voula,Athens	1.97	310	P	Pn	01 38 44.8	-0.6
VLY				S	Sn	01 39 09.6	-0.2
VLY			

VLI AML AML 01 39 34.7
comp=N,513µm,0.9s

TURN Turunc 2.36 82 *i* P Pn 01 38 45.9 -4.8
TURN *i* S **Sn** **01 39 20.3 +1.0**
DALY Dalyan (Mu¨la 2.39 84 *e*PN **Pb** **01 38 53.7 -1.6**
DALY Dalyan (Mu¨la 2.39 84 *e*Pn **Pb** **01 38 53.7 -1.6**
LTK Loutraki 2.60 304 P **Pn** **01 38 53.9 -0.2**
LTK Loutraki 2.60 304 P **Pn** **01 38 53.9 -0.2**
LTK Loutraki 2.60 304 P **Pn** **01 38 54.9 +0.8**
SIGR SIGRI 2.62 3 P **Pn** **01 38 53.5 -0.8**
SIGR SIGRI 2.62 3 P **Pn** **01 38 53.5 -0.8**
SIGR SIGRI 2.62 3 P **Pn** **01 38 53.3 -1.1**
DKL Dikili 2.66 21 *e*PN **Pb** **01 38 58.1 -1.7**
DKL Dikili 2.66 21 *e*Pn **Pb** **01 38 58.1 -1.7**
PRK Paraskevi 2.69 10 P **Pn** **01 38 54.7 -0.6**
PRK Paraskevi 2.69 10 P **Pn** **01 38 54.7 -0.6**
FETY Fethiye 2.73 88 *e*PN **Pb** **01 38 58.4 -2.7**
FETY Fethiye 2.73 88 *e*Pn **Pb** **01 38 58.4 -2.7**
AYVA Ayvalık 2.83 16 P **Pn** **01 38 57.7 +0.6**
AYVA Ayvalik 2.83 16 *i* P **Pn** **01 38 57.7 +0.6**
AYVA *i* S **Sg** **01 39 45.9 +2.5**
AKS Akhisar 2.84 36 *e*PN **Pb** **01 38 59.8 -3.2**
AKS Akhisar 2.84 36 *e*Pn **Pb** **01 38 59.8 -3.2**
DNZL Cakiroluk 2.90 67 P **Pn** **01 39 00.1 +1.8**
DNZL Cakiroluk 2.90 67 *i* P **Pn** **01 39 00.1 +1.8**
DNZL *i* S **Sg** **01 39 49.2 +3.4**
LKR Lokris 2.96 315 P **Pn** **01 38 59.1 0.0**
LKR Lokris 2.96 315 P **Pn** **01 38 59.1 0.0**
LKR Lokris 2.96 315 P **Pn** **01 38 59.4 +0.4**
KULA Kula-Manisa 3.04 50 *e*PN **Pb** **01 39 03.6 -2.9**
KULA Kula-Manisa 3.04 50 *e*Pn **Pb** **01 39 03.6 -2.9**
ITM Ithomi 3.07 282 P **Pn** **01 39 02.0 +1.4**
ITM Ithomi 3.07 282 P **Pn** **01 39 02.0 +1.4**
DSF Desfina 3.10 307 P **Pn** **01 39 01.7 +0.6**
DSF Desfina 3.10 307 P **Pn** **01 39 01.7 +0.6**
GLHS Glhisar (BURDU 3.10 78 *e*PN **Pb** **01 39 04.7 -2.9**
GLHS Glhisar (BURDU 3.10 78 *e*Pn **Pb** **01 39 04.7 -2.9**
KSL Kastellorizon 3.17 97 P **Pn** **01 39 03.5 +1.6**
KSL Kastellorizon 3.17 97 P **Pn** **01 39 03.5 +1.6**
KLV Kalavryta, Ach 3.17 298 P **Pn** **01 39 02.8 +0.8**
KLV Kalavryta, Ach 3.17 298 P **Pn** **01 39 02.8 +0.8**
PYL PYLOS 3.19 277 P **Pn** **01 39 03.2 +1.1**
PYL PYLOS 3.19 277 P **Pn** **01 39 03.2 +1.1**
ELL Elmali 3.40 86 *e*PN Pn 01 39 08.2 +3.2
ELL Elmali 3.40 86 *e*Pn Pn 01 39 08.3 +3.2
BALB Balikesir 3.50 29 *e*PN Pb 01 39 10.7 -3.5
BALB Balikesir 3.50 29 *e*Pn Pb 01 39 10.7 -3.5
GADA Gvkgeada 3.60 3 *e*PN Pb 01 39 11.5 -4.4
GADA Gvkgeada 3.60 3 *e*Pn Pb 01 39 11.5 -4.4
ANX Ano Chora 3.60 305 P **Pn** **01 39 08.0 +0.1**
ANX Ano Chora 3.60 305 P **Pn** **01 39 08.0 +0.1**
ANX Ano Chora 3.60 305 P **Pn** **01 39 06.9 -1.0**
GELI Tayfur-Gelibol 3.85 9 *e*PN Pn 01 39 15.3 +4.0
GELI Tayfur-Gelibol 3.85 9 *e*Pn Pn 01 39 15.3 +4.0
LPK Lapseki 3.87 12 *e*PN Pn 01 39 15.1 +3.6
LPK Lapseki 3.87 12 *e*Pn Pn 01 39 15.1 +3.6
ANTB Antalya 4.00 84 *e*PN Pn 01 39 16.4 +3.2
ANTB Antalya 4.00 84 *e*Pn Pn 01 39 16.5 +3.2
KCTX Karacabey (Bur 4.22 29 *e*PN Pn 01 39 21.1 +4.7
KCTX Karacabey (Bur 4.22 29 *e*Pn Pn 01 39 21.1 +4.7
ALN Alexandroupoli 4.31 4 *e*PN Pn 01 39 21.3 +3.8
ALN Alexandroupoli 4.31 4 *e*Pn Pn 01 39 21.3 +3.8
ARMT Armutlu 4.68 31 *e*PN Pn 01 39 27.4 +4.7
ARMT Armutlu 4.68 31 *e*Pn Pn 01 39 27.4 +4.7
SLUM Salum 5.10 185 P **Pn** **01 39 28.9 +0.4**
baz=189
SLUM S **Sn** **01 40 21.9 -5.2**
baz=189
SLUM Salum 5.10 185 P **Pn** **01 39 28.9 +0.4**
GULT Gulveren 5.39 43 *e*PN Pn 01 39 37.2 +4.8
MATC Matruh 5.39 166 P **Pn** **01 39 32.0 -0.3**
baz=168
KIZT Kizilcal 5.41 63 *e*PN Pn 01 39 36.9 +4.1
KONT Konya--Tatoy 5.49 74 *e*PN Pn 01 39 38.4 +4.6
LEF Lefka 6.03 102 *e*PN Pn 01 39 44.9 +3.7
BRTR Keskin Array B 7.00 61 P **Pn** **01 39 55.6 +0.9**
comp=N,0.1nm,0.3s,baz=247,slow=17,SNR=5.0
SWA2 7.33 182 P **Pn** **01 40 00.2 +1.1**
baz=185
SWA2 S Sn 01 41 14.8 -7.1
baz=185
SWA2 7.33 182 P **Pn** **01 40 00.2 +1.1**
HNAT Natroun 8.07 148 P **Pn** **01 40 08.9 -0.4**
baz=149
HNAT Natroun 8.07 148 P **Pn** **01 40 08.9 -0.4**
GLL Jalalah 8.62 142 P **Pn** **01 40 16.1 -0.8**
baz=143
GLL Jalalah 8.62 142 P **Pn** **01 40 16.1 -0.8**
AWBH 8.68 161 P **Pn** **01 40 17.3 -0.3**
baz=162
AWBH 8.68 161 P **Pn** **01 40 17.3 -0.3**
RSH 8.73 128 P **Pn** **01 40 17.2 -1.1**
baz=128
RSH 8.73 128 P **Pn** **01 40 17.2 -1.1**
MMAI Mount Meron Ar 8.75 111 P **Pn** **01 40 17.5 -1.1**
comp=N,1.6nm,0.3s,baz=304,slow=12,SNR=12
MMAI S **Sn** **01 41 52.9 -4.0**
comp=N,2.4nm,0.3s,baz=304,slow=30,SNR=6.3
MLR Muntele Rosu 8.89 1 P Pn 01 40 25.9 +5.3
comp=N,0.0nm,0.3s,baz=267,slow=5.7,SNR=4.4
SUZ Suez 9.00 136 P **Pn** **01 40 21.4 -0.6**
baz=137
SUZ Suez 9.00 136 P **Pn** **01 40 21.4 -0.6**
ZAF Zafarana 9.29 140 P **Pn** **01 40 25.5 -0.4**
baz=140
ZAF Zafarana 9.29 140 P **Pn** **01 40 25.5 -0.4**
HNKL Nakhl 9.60 131 P **Pn** **01 40 29.5 -0.8**
baz=131
HNKL S Sn 01 42 05.6 -12
baz=131
HNKL Nakhl 9.60 131 P **Pn** **01 40 29.5 -0.8**
EIL Elat 10.38 129 P **Pn** **01 40 41.4 +0.4**
comp=N,0.7nm,0.3s,baz=355,slow=2.6,SNR=8.3
EIL S Sn 01 42 29.0 -8.0
comp=N,1.1nm,0.3s,baz=302,slow=9.5,SNR=8.4
TR2 Tor 2 10.62 138 P **Pn** **01 40 43.9 -0.4**
baz=138
TR2 Tor 2 10.62 138 P **Pn** **01 40 43.9 -0.4**
NUB 10.66 132 P **Pn** **01 40 44.5 -0.1**
baz=133
VRAC Vranov 14.33 335 LR LR 01 46 42.3
comp=N,35nm,20.9s,baz=287,slow=35
KVAR Kislovodsk Arr 14.90 55 P **Pn** **01 41 41.5 -1.3**
baz=225,slow=5.7,SNR=3.9
GERES GERESS Array B 15.06 328 P **P** **01 41 49.9 -0.2**
comp=N,0.1nm,0.3s,baz=141,slow=13,SNR=4.2
ESDC Sonseca Array 23.48 287 P **P** **01 43 21.5 -0.2**
comp=N,0.7nm,0.6s,baz=82,slow=10,SNR=6.3
HFS Hagfors 24.79 346 LR LR 01 53 27.8
comp=N,31nm,19.9s,baz=283,slow=36
FINES FINESS Array B 24.88 0 P **P** **01 43 34.6 +0.3**
comp=N,1.2nm,0.8s,baz=165,slow=12,SNR=3.1
GEYT Alibeck 25.78 77 P **P** **01 43 41.8 -1.0**
comp=N,1.5nm,0.6s,baz=299,slow=6.5,SNR=3.4
AKTO Aktyubinsk 26.97 49 P **P** **01 43 54.1 +0.7**
comp=N,0.4nm,0.5s,baz=256,slow=12,SNR=3.1
EKA Eskdalemuir Ar 27.14 323 P **P** **01 43 57.4 +2.5**
comp=N,1.5nm,0.6s,baz=119,slow=9.7,SNR=4.9
TORD Torodi Ar. Bea 31.75 229 P **P** **01 44 36.3 +0.2**
comp=N,0.9nm,0.4s,baz=31,slow=8.8,SNR=26
ARCES ARCESS Array B 33.00 360 P **P** **01 44 46.3 -0.3**
comp=N,2.4nm,1.0s,baz=162,slow=9.3,SNR=4.0
KURBB Kurchatov Arra 39.90 52 P **P** **01 45 46.3 +0.7**
comp=N,2.1nm,0.7s,baz=278,slow=8.7,SNR=25
ZALV Zalesovo Beam 43.71 47 P **P** **01 46 16.8 0.0**
comp=N,1.3nm,0.3s,baz=272,slow=8.2,SNR=2.8
YKA Yellowknife Ar 76.22 342 P **P** **01 49 58.7 -1.2**
comp=N,0.2nm,0.6s,baz=34,slow=5.5,SNR=3.5

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*ISCJB **27** 01:41:25.1±0.3, 30°.80N±0°.04×105°.66W±0°.02, h10km,*
Error ellipse: s-maj=5.1km s-min=2.7km az=4.9
*NEIC **27** 01:41:28.2±0.6, 30°.80N×105°.76W, h10km, ML3.6, Error*
ellipse: s-maj=9.5km s-min=5.2km az=169.0
*MEX **27** 01:41:29.2±0.3, 30°.89N×105°.64W, h8km±61km, MD4.1*
ISC 27 01:41:28.2±0.7, **30°.82N**±0°.04×**105°.71W**±0°.03, **h10**km, **n73,**
σ2°**65**/110, **Texas-Mexico border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MNTX	**Cornudas Mount**	**0.92**	**18**	P	**Pg**	**01 41 45.3**	**-0.6**
	baz=200						
MNTX				S	**Sg**	**01 41 58.7**	**+0.9**
	baz=200						
MNTX	**Cornudas Mount**	**0.92**	**18**	*e*Pg	**Pg**	**01 41 44.9**	**-1.0**
MNTX				*e*Sg	**Sg**	**01 41 58.5**	**+0.7**
CGIG		**2.00**	**257**	*e*P	**Pn**	**01 42 01.3**	**-1.0**
CGIG				*e*S	**Sn**	**01 42 26.3**	**-1.2**
CGIG		**2.00**	**257**	*e*P	**Pn**	**01 42 01.3**	**-1.0**
CGIG				*e*S	**Sn**	**01 42 26.3**	**-1.2**
121A	**Cookes Peak, D**	**2.45**	**315**	P	**Pn**	**01 42 08.4**	**-0.1**
	baz=135						
121A				S	**Sn**	**01 42 40.4**	**+1.7**
	baz=135						
121A	**Cookes Peak, D**	**2.45**	**315**	*e*Pn	**Pn**	**01 42 08.2**	**-0.3**
121A				*e*Sg	**Sg**	**01 42 46.6**	**-0.5**
Y22D	**IRIS PASSCAL I**	**3.40**	**343**	Sb	**Sg**	**01 43 16.2**	**-1.3**
	baz=163						
MSTX	**Muleshoe**	**4.00**	**38**	P	**Pn**	**01 42 30.0**	**+0.3**
	baz=219						
MSTX				Sb	**Sb**	**01 43 32.8**	**+5.3**
	baz=219						
MSTX	**Muleshoe**	**4.00**	**38**	*e*Pn	**Pn**	**01 42 31.3**	**+1.6**
MSTX				*e*Sg	**Sg**	**01 43 34.0**	**-2.8**
ANMO	**Albuquerque**	**4.16**	**352**	P	**Pn**	**01 42 32.9**	**+1.0**
	baz=172						
ANMO				Sb	**Sb**	**01 43 37.3**	**+5.3**
	baz=172						
ANMO	**Albuquerque**	**4.16**	**352**	*e*Pn	**Pn**	**01 42 33.6**	**+1.6**
ANMO				*e*Pb	**Pb**	**01 42 42.8**	**+1.1**
ANMO				*e*Pg	**Pg**	**01 42 46.9**	**-1.0**
ANMO				*e*Sg	**Sg**	**01 43 38.3**	**-3.5**
TUC	**Tucson**	**4.57**	**290**	*e*Pn	**Pn**	**01 42 37.0**	**-0.5**
TUC				*e*Pg	**Pg**	**01 42 53.0**	**-2.9**
TUC				*i* S	**Sn**	**01 43 29.8**	**-1.0**
TUC				*e*Sn	**Sn**	**01 43 30.8**	**-0.1**
TUC				*e*Sg	**Sg**	**01 43 51.1**	**-4.0**
HSIG		**4.89**	**250**	*i* P	**Pn**	**01 42 41.3**	**-0.5**
HSIG				*i* S	**Sn**	**01 43 38.8**	**+0.3**
HSIG		**4.89**	**250**	*i* P	**Pn**	**01 42 41.3**	**-0.5**
HSIG				*i* S	**Sn**	**01 43 38.8**	**+0.3**
JCT	**Junction City**	**5.11**	**92**	P	**Pn**	**01 42 44.1**	**-0.7**
	baz=275						
JCT				Sb	**Sb**	**01 44 04.4**	**+5.3**
	baz=275						
JCT	**Junction City**	**5.11**	**92**	*e*Pn	**Pn**	**01 42 45.4**	**+0.6**
JCT				*e*Pb	**Pb**	**01 42 58.3**	**+0.6**
JCT				*e*Pg	**Pg**	**01 43 03.6**	**-2.5**
JCT				*e*Sn	**Sn**	**01 43 44.3**	**+0.4**
JCT				*e*Sg	**Sb**	**01 44 05.8**	**+6.7**
AMTX	**Amarillo**	**5.28**	**39**	P	**Pn**	**01 42 48.5**	**+1.2**
	baz=221						
AMTX	**Amarillo**	**5.28**	**39**	*e*Pn	**Pn**	**01 42 48.8**	**+1.5**
AMTX				*e*Pb	**Pb**	**01 43 02.6**	**+1.8**
AMTX				*e*Pg	**Pg**	**01 43 09.2**	**-0.2**
AMTX				*e*Sg	**Sg**	**01 44 13.4**	**-4.5**
ABTX	**Abilene, Hawle**	**5.47**	**69**	P	**Pn**	**01 42 49.7**	**-0.2**
	baz=252						
ABTX	**Abilene, Hawle**	**5.47**	**69**	*e*Pn	**Pn**	**01 42 49.8**	**-0.1**
ABTX				*e*Pg	**Pg**	**01 43 09.0**	**-4.1**
ABTX				*e*Sg	**Sg**	**01 44 18.3**	**-5.8**
832A	**Faith Ranch, C**	**5.60**	**115**	P	**Pn**	**01 42 49.3**	**-2.4**
	baz=298						
433A	**Art**	**5.70**	**89**	P	**Pn**	**01 42 50.7**	**-2.2**
	baz=272						
333A	**Richland Sprin**	**5.79**	**83**	P	**Pn**	**01 42 51.9**	**-2.4**
	baz=267,SNR=11						
533A	**Kerrville**	**5.81**	**96**	P	**Pn**	**01 42 53.1**	**-1.5**
	baz=279						
633A	**Saathoff Ranch**	**5.82**	**102**	P	**Pn**	**01 42 51.5**	**-3.1**
	baz=285						
633A				Sb	**Sb**	**01 44 24.0**	**+4.3**
	baz=285						
233A	**Rising Star**	**5.95**	**77**	P	**Pn**	**01 42 54.9**	**-1.5**
	baz=260						
733A	**Divot King Ran**	**5.96**	**109**	P	**Pn**	**01 42 54.7**	**-1.9**
	baz=292						
133A	**Hamilton Ranch**	**6.06**	**71**	P	**Pn**	**01 42 56.3**	**-1.7**
	baz=255						
214A	**Organ Pipe Nat**	**6.17**	**282**	P	**Pn**	**01 42 57.3**	**-2.2**
	baz=99						
214A	**Organ Pipe Nat**	**6.17**	**282**	*e*Pn	**Pn**	**01 42 59.1**	**-0.4**
214A				*e*Pg	**Pg**	**01 43 24.2**	**-2.2**
214A				*e*Sg	**Sg**	**01 44 39.7**	**-6.7**
534A	**Blanco**	**6.30**	**95**	P	**Pn**	**01 42 58.9**	**-2.4**
	baz=279,SNR=11						
Z33A	**Whitaker Ranch**	**6.39**	**66**	P	**Pn**	**01 43 01.6**	**-0.9**
	baz=249						
T25A	**Trinidad**	**6.39**	**9**	Sb	**Sb**	**01 44 44.6**	**+8.4**
	baz=190						
434A	**Burnet**	**6.40**	**88**	P	**Pn**	**01 43 01.3**	**-1.4**
	baz=272						
334A	**Lometa**	**6.43**	**84**	P	**Pn**	**01 43 02.2**	**-0.8**
	baz=267						
X32A	**Elmer**	**6.50**	**55**	P	**Pn**	**01 43 03.8**	**-0.2**
	baz=238						
234A	**Clairette**	**6.58**	**78**	P	**Pn**	**01 43 04.0**	**-1.1**
	baz=262						
WUAZ	**Wupatki**	**6.66**	**316**	P	**Pn**	**01 43 06.0**	**-0.4**
	baz=134						
WUAZ	**Wupatki**	**6.66**	**316**	*e*Pn	**Pn**	**01 43 05.6**	**-0.8**
WUAZ				*e*Pg	**Pb**	**01 43 28.6**	**+4.3**
WUAZ				*e*Sg	**Sg**	**01 44 57.5**	**-4.7**
134A	**White-Moore Ra**	**6.74**	**73**	P	**Pn**	**01 43 06.4**	**-0.8**
	baz=257						
SDCO	**Great Sand Dun**	**6.91**	**1**	*e*Pn	**Pn**	**01 43 10.9**	**+1.1**
SDCO				*e*Pg	**Pg**	**01 43 40.2**	**-0.3**
SDCO				*e*Sg	**Sg**	**01 45 03.2**	**-6.8**
W32A	**Sentinel**	**6.92**	**50**	P	**Pn**	**01 43 09.4**	**-0.4**
	baz=234						
435B	**Jarrell**	**6.99**	**88**	P	**Pn**	**01 43 11.2**	**+0.5**
	baz=272						
WMOK	**Wichita Mounta**	**7.02**	**54**	P	**Pn**	**01 43 11.6**	**+0.5**
	baz=238						
WMOK	**Wichita Mounta**	**7.02**	**54**	*e*Pn	**Pn**	**01 43 12.0**	**+0.8**
WMOK				*e*Sg	**Sg**	**01 45 06.3**	**-7.3**
535A	**Dale**	**7.08**	**94**	P	**Pn**	**01 43 10.6**	**-1.2**
	baz=278						
X33A	**Lawton**	**7.12**	**57**	P	**Pn**	**01 43 10.8**	**-1.7**
	baz=240						
335A	**Moody**	**7.12**	**84**	P	**Pn**	**01 43 10.6**	**-1.9**
	baz=268						
WHTX	**Lake Whitney,**	**7.15**	**79**	P	**Pn**	**01 43 10.2**	**-2.7**
	baz=263						
WHTX	**Lake Whitney,**	**7.15**	**79**	*e*Pn	**Pn**	**01 43 13.6**	**+0.6**
WHTX				*e*Pg	Pg	01 43 40.0	-5.3
WHTX				*e*Sg	**Sg**	**01 45 15.3**	**-2.6**
135A	**Vickery Place,**	**7.29**	**74**	P	**Pn**	**01 43 12.7**	**-2.0**
	baz=258						
Y34A	**Reagan Ranch,**	**7.42**	**63**	P	**Pn**	**01 43 15.7**	**-0.8**
	baz=247						
W33A	**Caddo, Fort Co**	**7.46**	**53**	P	**Pn**	**01 43 15.8**	**-1.3**
	baz=237						
336A	**Riesel**	**7.63**	**84**	P	**Pn**	**01 43 18.4**	**-1.0**
	baz=268						
X34A	**Smith Ranch, M**	**7.63**	**58**	P	**Pn**	**01 43 18.6**	**-1.0**
	baz=242						
PDMCI	**Parker Dam,Lak**	**7.91**	**298**	P	**Pn**	**01 43 22.9**	**-0.4**
	baz=114						
V33A	**Lossen Ranch,**	**7.97**	**49**	P	**Pn**	**01 43 23.4**	**-0.7**
	baz=233						
W34A	**Bridge Creek,**	**7.99**	**54**	*e*Pg	Pb	01 43 53.4	+6.7
W34A				*e*Sg	**Sg**	**01 45 36.5**	**-8.0**
Y12C	**Blythe**	**8.01**	**294**	P	**Pn**	**01 43 26.6**	**+2.0**
	baz=109						
537A	**Green Hill Far**	**8.15**	**93**	P	**Pn**	**01 43 24.6**	**-2.0**
	baz=277						
X35A	**Drake**	**8.19**	**62**	P	**Pn**	**01 43 22.9**	**-4.2**
	baz=246						
V34A	**Guthrie**	**8.48**	**52**	*e*Pn	**Pn**	**01 43 29.9**	**-1.3**
V34A				*e*Lg	Lg	01 45 46.8	
IRM	**Iron Mountain**	**8.63**	**295**	P	**Pn**	**01 43 32.5**	**-0.8**
	baz=110						
ISCO	**Idaho Springs**	**8.96**	**0**	*e*Pn	**Pn**	**01 43 38.5**	**+0.6**
ISCO				*e*Lg	Lg	01 46 17.3	
BELC	**Belle Mtn. Jos**	**9.25**	**293**	P	**Pn**	**01 43 41.8**	**0.0**
	baz=108						
GMRC	**Granite Mounta**	**9.26**	**298**	P	**Pn**	**01 43 41.6**	**-0.2**
	baz=113						
CBKS	**Cedar Bluff**	**9.36**	**30**	*e*Pn	**Pn**	**01 43 43.3**	**+0.1**
CBKS				*e*Lg	Lg	01 46 24.0	
T36A	**Boggs Farm, Ca**	**10.26**	**50**	P	**Pn**	**01 43 53.8**	**-1.7**
	baz=236						
X39A	**Fountain Ranch**	**10.44**	**66**	P	**Pn**	**01 43 56.9**	**-1.1**
	baz=252						
V38A	**Canehill**	**10.71**	**59**	P	**Pn**	**01 44 00.1**	**-1.5**
	baz=245						
S36A	**Lake Cedric, C**	**10.83**	**48**	P	**Pn**	**01 44 02.1**	**-1.2**
	baz=234						
MIAR	**Mount Ida**	**10.88**	**67**	*e*Pn	**Pn**	**01 44 05.6**	**+1.6**
MIAR				*e*Lg	Lg	01 47 13.3	
S37A	**Fort Scott**	**11.35**	**50**	P	**Pn**	**01 44 08.9**	**-1.5**
	baz=236						

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*ISCJB **27** 01:49:06.8±0.6, 31°.14N±0°.04×105°.72W±0°.04, h10km,*
Error ellipse: s-maj=6.1km s-min=3.7km az=146.7
*NEIC **27** 01:49:08.9±1.0, 30°.98N×105°.78W, h10km, ML3.0, Error*
ellipse: s-maj=16.5km s-min=9.1km az=172.0
*MEX **27** 01:49:10.3±0.3, 31°.11N×105°.66W, h9km±91km, MD4.1*
ISC 27 01:49:08.0±0.8, **31°.03N**±0°.04×**105°.72W**±0°.03, **h10**km, **n19,**
σ2°**06**/45, **Texas-Mexico border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MNTX	**Cornudas Mount**	**0.72**	**23**	P	**Pn**	**01 49 25.6**	**+1.3**
	baz=206						
MNTX	**Cornudas Mount**	**0.72**	**23**	*e*Pg	**Pn**	**01 49 25.7**	**+1.3**
MNTX				*e*Sg	**Sn**	**01 49 39.6**	**+4.0**
CGIG		**2.06**	**252**	*i* P	**Pn**	**01 49 43.0**	**+0.2**
CGIG				*e*S	**Sn**	**01 50 08.4**	**-0.2**
CGIG		**2.06**	**252**	*i* P	**Pn**	**01 49 43.0**	**+0.2**
CGIG				*e*S	**Sn**	**01 50 08.4**	**-0.2**
121A	**Cookes Peak, D**	**2.31**	**311**	P	**Pb**	**01 49 48.8**	**-1.1**
	baz=132						
121A	**Cookes Peak, D**	**2.31**	**311**	*e*Pn	**Pb**	**01 49 48.8**	**-1.1**
121A				*e*Sn	**Sn**	**01 50 15.9**	**+1.1**
MSTX	**Muleshoe**	**3.84**	**40**	Pb	**Pg**	**01 50 20.5**	**-1.2**
	baz=221						
MSTX				Sb	**Sg**	**01 51 12.1**	**+0.6**
	baz=221						
MSTX	**Muleshoe**	**3.84**	**40**	*e*Pn	Pn	01 50 11.2	+3.9
MSTX				*e*Pg	**Pg**	**01 50 21.0**	**-0.7**
MSTX				*e*Sn	**Sb**	**01 50 58.5**	**-4.1**
MSTX				*e*Sg	**Sg**	**01 51 13.2**	**+1.6**
ANMO	**Albuquerque**	**3.95**	**351**	Pn	**Pn**	**01 50 08.4**	**-0.5**
ANMO				*e*Pg	**Pg**	**01 50 23.6**	**-0.2**
ANMO				*e*Sg	**Sg**	**01 51 15.6**	**+1.0**
TUC	**Tucson**	**4.50**	**288**	*e*Pn	**Pn**	**01 50 17.1**	**+0.7**
TUC				*i* S	**Sn**	**01 51 08.8**	**0.0**
TUC				*e*Sg	**Sg**	**01 51 29.6**	**-3.0**
HSIG		**4.96**	**247**	*i* P	**Pb**	**01 50 36.1**	**+1.1**
HSIG				*i* S	**Sn**	**01 51 21.1**	**+1.1**
HSIG		**4.96**	**247**	*i* P	**Pb**	**01 50 36.1**	**+1.1**
HSIG				*i* S	**Sn**	**01 51 21.1**	**+1.1**
JCT	**Junction City**	**5.12**	**95**	Pn	**Pn**	**01 50 27.2**	**+2.3**
JCT				*e*Pg	**Pg**	**01 50 44.3**	**-1.9**
JCT				*e*Sn	**Sn**	**01 51 29.0**	**+4.9**
JCT				*e*Sg	**Sg**	**01 51 48.2**	**-4.4**
AMTX	**Amarillo**	**5.12**	**40**	*e*Pg	**Pg**	**01 50 45.1**	**-1.1**
AMTX				*e*Sg	**Sg**	**01 51 53.8**	**+1.2**
ABTX	**Abilene, Hawle**	**5.41**	**71**	Pn	**Pn**	**01 50 28.2**	**-0.6**
ABTX				*e*Pg	**Pg**	**01 50 50.0**	**-1.7**
ABTX				*e*Sg	**Sg**	**01 51 59.4**	**-2.4**
214A	**Organ Pipe Nat**	**6.13**	**280**	*e*Pn	**Pn**	**01 50 38.2**	**-0.4**
214A				*e*Pg	**Pb**	**01 50 56.8**	**+2.0**
214A				*e*Sg	**Sg**	**01 52 20.7**	**-4.0**
SDCO	**Great Sand Dun**	**6.70**	**1**	*e*Pn	**Pn**	**01 50 46.7**	**-0.1**
SDCO				*e*Pg	**Pg**	**01 51 16.4**	**+0.1**
SDCO				*e*Sg	**Sg**	**01 52 46.1**	**+3.1**
WMOK	**Wichita Mounta**	**6.91**	**56**	*e*Pn	**Pn**	**01 50 51.5**	**+2.1**
WMOK				*e*Sg	**Sg**	**01 52 47.2**	**-2.5**
WHTX	**Lake Whitney,**	**7.12**	**80**	*e*Pn	**Pn**	**01 50 54.1**	**+1.8**
WHTX				*e*Pg	**Pg**	**01 51 21.2**	**-3.2**
WHTX				*e*Sg	**Sg**	**01 52 57.2**	**+0.6**

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*ISCJB **27** 01:50:24.8±0.5, 39°.09N±0°.04×29°.05E±0°.04, h4km±9km,*
Error ellipse: s-maj=6.3km s-min=4.4km az=154.9
*CSEM **27** 01:50:24.9±0.1, 39°.10N×29°.05E, h5km, MD2.7, Error*
ellipse: s-maj=2.7km s-min=2.5km az=117.0
*ISK **27** 01:50:24.2, 39°.04N×29°.18E, h10km, MD2.7*
*DDA **27** 01:50:24.7, 39°.06N×29°.05E, h7km, Md2.7*
ISC 27 01:50:24.6±0.9, **39°.09N**±0°.03×**29°.06E**±0°.03, **h14**km±9km,
n21, σ0°**33**/33, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**261**	P	**Pg**	**01 50 30.4**	**0.0**
DEMI				S	**Sg**	**01 50 34.2**	**-0.1**
DEMI	**Demirci**	**0.28**	**261**	*i* P	**Pg**	**01 50 30.4**	**0.0**
DEMI				*i* S	**Sg**	**01 50 34.2**	**-0.1**
GDZ	**Gediz**	**0.32**	**90**	P	**Pg**	**01 50 31.4**	**+0.1**
GDZ				S	**Sb**	**01 50 36.8**	**-0.6**
GDZ	**Gediz**	**0.32**	**90**	*i* P	**Pg**	**01 50 31.4**	**+0.1**
GDZ				*i* S	**Sb**	**01 50 36.8**	**-0.6**
TVSB	**Tavsanli**	**0.47**	**40**	*e*PG	**Pg**	**01 50 33.8**	**-0.2**
TVSB				*e*SG	**Sg**	**01 50 40.7**	**+0.3**
TVSB	**Tavsanli**	**0.47**	**40**	*e*Pg	**Pg**	**01 50 33.8**	**-0.2**
TVSB				*e*Sg	**Sg**	**01 50 40.7**	**+0.3**
KULA	**Kula-Manisa**	**0.65**	**209**	*e*PG	**Pg**	**01 50 37.5**	**+0.1**
KULA	**Kula-Manisa**	**0.65**	**209**	*e*Pg	**Pg**	**01 50 37.5**	**+0.1**
DURS	**Dursunbey**	**0.69**	**318**	P	**Pb**	**01 50 38.1**	**-0.3**
DURS	**Dursunbey**	**0.69**	**318**	*i* P	**Pb**	**01 50 38.1**	**-0.3**
MANT	**Manisa**	**0.72**	**214**	P	**Pg**	**01 50 38.5**	**-0.1**
MANT				S	**Sg**	**01 50 48.0**	**0.0**
MANT	**Manisa**	**0.72**	**214**	*i* P	**Pg**	**01 50 38.5**	**-0.1**
MANT				*i* S	**Sg**	**01 50 48.0**	**0.0**
KHAL	**Karahalli**	**0.79**	**155**	P	**Pn**	**01 50 41.4**	**-0.1**
KHAL				S	**Sb**	**01 50 51.3**	**+0.5**
KHAL	**Karahalli**	**0.79**	**155**	*i* P	**Pn**	**01 50 41.4**	**-0.1**
KHAL				*i* S	**Sb**	**01 50 51.3**	**+0.5**
IZI	**Iznik**	**1.29**	**14**	*e*PN	**Pg**	**01 50 49.2**	**-0.1**
IZI	**Iznik**	**1.29**	**14**	*e*Pn	**Pg**	**01 50 49.2**	**-0.1**
BALY	**Balya**	**1.29**	**301**	P	**Pg**	**01 50 49.3**	**-0.2**
BALY				S	**Sg**	**01 51 06.6**	**+0.3**
**BALY

KCTX	Karacabey (Bur	1.29	336	*e*PN	Pb	01 54 18.8	0.0
KCTX	Karacabey (Bur	1.29	336	*e*Pn	Pb	01 54 18.8	0.0
GONE	Gonen-Balikesi	1.42	313	*e*PN	Pb	01 54 21.2	+0.2
GONE	Gonen-Balikesi	1.42	313	*e*Pn	Pb	01 54 21.2	+0.2
ADVT	Abdulvahap	1.44	21	*e*PN	Pb	01 54 21.7	+0.4
ADVT	Abdulvahap	1.44	21	*e*Pn	Pb	01 54 21.7	+0.4
ARMT	Armutlu	1.48	354	*e*PN	Pb	01 54 22.0	0.0
ARMT	Armutlu	1.48	354	*e*Pn	Pb	01 54 22.0	0.0
EDC	Edincik	1.55	324	*e*PN	Pb	01 54 22.8	-0.5
EDC	Edincik	1.55	324	*e*Pn	Pb	01 54 22.8	-0.5
GULT	Gulveren	1.75	40	*e*PN	Pb	01 54 26.2	-0.5
GULT	Gulveren	1.75	40	*e*Pn	Pb	01 54 26.2	-0.5

ISCJB ***27*** *01:56:17.8±0.5, 39.°10N×0.°03×29.°10E±0.°04, h3km±10km, Error ellipse: s-maj=6.2km s-min=4.7km az=148.2*
CSEM ***27*** *01:56:17.9±0.1, 39.°10N×29.°10E, h5km, MD2.6, Error ellipse: s-maj=2.0km s-min=1.5km az=104.0*
ISK ***27*** *01:56:17.5, 39.°10N×29.°15E, h6km, MD2.8*
DDA ***27*** *01:56:17.9, 39.°09N×29.°09E, h7km, Md2.6*
ISC 27 01:56:18.0±0.9,**39.°10N**±0.°03×**29.°10E**±0.°03,**h11**km±10km, **n24**, σ0°**27**/34, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.30**	**93**	P	**Pg**	**01 56 24.2**	**+0.1**
GDZ				S	**Sg**	**01 56 28.6**	**+0.4**
GDZ	**Gediz**	**0.30**	**93**	*i* P	**Pg**	**01 56 24.2**	**+0.1**
GDZ				*i* S	**Sg**	**01 56 28.6**	**+0.4**
DEMI	**Demirci**	**0.30**	**259**	P	**Pg**	**01 56 24.2**	**0.0**
DEMI				S	**Sg**	**01 56 28.4**	**0.0**
DEMI	**Demirci**	**0.30**	**259**	*i* P	**Pg**	**01 56 24.2**	**0.0**
DEMI				*i* S	**Sg**	**01 56 28.4**	**0.0**
TVSB	**Tavsanli**	**0.45**	**39**	*e*PG	**Pg**	**01 56 26.6**	**-0.3**
TVSB				*e*SG	**Sg**	**01 56 32.1**	**-0.7**
TVSB	**Tavsanli**	**0.45**	**39**	*e*Pg	**Pg**	**01 56 26.6**	**-0.3**
TVSB				*e*Sg	**Sg**	**01 56 32.1**	**-0.7**
KULA	**Kula-Manisa**	**0.68**	**210**	*e*PG	**Pg**	**01 56 31.1**	**-0.2**
KULA	**Kula-Manisa**	**0.68**	**210**	*e*Pg	**Pg**	**01 56 31.1**	**-0.2**
DURS	**Dursunbey**	**0.69**	**316**	P	**Pg**	**01 56 31.2**	**-0.3**
DURS	**Dursunbey**	**0.69**	**316**	*i* P	**Pg**	**01 56 31.2**	**-0.3**
MANT	**Manisa**	**0.74**	**215**	P	**Pg**	**01 56 32.4**	**0.0**
MANT				S	**Sg**	**01 56 42.0**	**-0.2**
MANT	**Manisa**	**0.74**	**215**	*i* P	**Pg**	**01 56 32.4**	**0.0**
MANT				*i* S	**Sg**	**01 56 42.0**	**-0.2**
KHAL	**Karahalli**	**0.79**	**157**	P	**Pg**	**01 56 33.3**	**-0.1**
KHAL				S	**Sb**	**01 56 44.4**	**-0.3**
KHAL	**Karahalli**	**0.79**	**157**	*i* P	**Pg**	**01 56 33.3**	**-0.1**
KHAL				*i* S	**Sb**	**01 56 44.4**	**-0.3**
KHL	**Karahalli**	**0.85**	**157**	*e*PG	**Pg**	**01 56 34.3**	**-0.1**
KHL	**Karahalli**	**0.85**	**157**	*e*Pg	**Pg**	**01 56 34.3**	**-0.1**
IZI	**Iznik**	**1.27**	**13**	*e*PN	**Pg**	**01 56 42.4**	**0.0**
IZI	**Iznik**	**1.27**	**13**	*e*Pn	**Pg**	**01 56 42.4**	**0.0**
KCTX	**Karacabey (Bur**	**1.29**	**334**	*e*PN	**Pg**	**01 56 43.2**	**+0.3**
KCTX	**Karacabey (Bur**	**1.29**	**334**	*e*Pn	**Pg**	**01 56 43.2**	**+0.3**
ARMT	**Armutlu**	**1.47**	**353**	*e*PN	**Pb**	**01 56 45.6**	**+0.2**
ARMT	**Armutlu**	**1.47**	**353**	*e*Pn	**Pb**	**01 56 45.6**	**+0.2**
GULT	**Gulveren**	**1.72**	**39**	*e*PN	**Pn**	**01 56 48.1**	**+0.2**
GULT	**Gulveren**	**1.72**	**39**	*e*Pn	**Pn**	**01 56 48.1**	**+0.2**

MOS ***27*** *02:01:11.6±2.5, 49.°26N×157.°10E, h40km, mb4.2/1, Error ellipse: s-maj=59.3km s-min=9.5km az=84.0*
KRSC 27 02:01:11.7±1.4,**49.°26N**×**157.°10E**,**h40**km±26km,**ML4.1**,
East of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**1.56**	**336**	*e*P	Pn	02 01 37.4	+0.5
SKR				*e*S	Sn	02 01 56.8	+0.9
SKR	**Severo-Kuril's**	**1.56**	**336**	PN	Pn	02 01 37.4	+0.5
SKR				S	Sn	02 01 56.8	+0.9
PAU	**Pauzhetka**	**2.22**	**355**	*e*P	Pn	02 01 48.1	+2.2
PAU				*e*S	Sn	02 02 15.3	+3.2
PAU	**Pauzhetka**	**2.22**	**355**	PN	Pn	02 01 48.1	+2.2
PAU				S	Sn	02 02 15.3	+3.2
ASAK	**Asacha**	**3.17**	**9**	*e*P	Pn	02 02 03.2	+4.1
ASAK	**Asacha**	**3.17**	**9**	PN	Pn	02 02 03.2	+4.1
RUS	**Russkaya**	**3.31**	**15**	*e*P	Pn	02 02 04.8	+4.0
RUS				*e*S	Sn	02 02 44.4	+5.6
RUS	**Russkaya**	**3.31**	**15**	PN	Pn	02 02 04.8	+4.0
RUS				S	Sn	02 02 44.4	+5.6
UGLR	**Uglovaya**	**4.11**	**15**	*e*P	Pn	02 02 16.6	+4.7
UGLR	**Uglovaya**	**4.11**	**15**	PN	Pn	02 02 16.6	+4.7
AVH	**Avacha**	**4.14**	**14**	*e*P	Pn	02 02 17.2	+4.8
AVH	**Avacha**	**4.14**	**14**	PN	Pn	02 02 17.2	+4.8
SDLR	**Sedlovina**	**4.18**	**15**	*e*P	Pn	02 02 17.1	+4.1
SDLR	**Sedlovina**	**4.18**	**15**	PN	Pn	02 02 17.1	+4.1
KRER	**Koryakskii**	**4.18**	**14**	*e*P	Pn	02 02 17.6	+4.5
KRER	**Koryakskii**	**4.18**	**14**	PN	Pn	02 02 17.6	+4.5
MKZ	**Mys Kozlova**	**6.03**	**27**	*e*P	Pn	02 02 42.6	+4.4
MKZ	**Mys Kozlova**	**6.03**	**27**	PN	Pn	02 02 42.6	+4.4

ISK ***27*** *02:12:36.6, 39.°09N×29.°04E, h5km, MD2.6*
ISCJB ***27*** *02:12:37.6±0.5, 39.°11N±0.°03×29.°02E±0.°04, h6km±6km, Error ellipse: s-maj=6.2km s-min=4.6km az=138.6*
CSEM ***27*** *02:12:37.7±0.1, 39.°11N×29.°01E, h8km, MD2.5, Error ellipse: s-maj=3.7km s-min=2.8km az=111.0*
DDA ***27*** *02:12:37.8, 39.°10N×29.°03E, h7km, Md2.5*
ISC 27 02:12:37.1±0.9,**39.°09N**±0.°03×**29.°04E**±0.°03,**h15**km±9km, **n22**, σ0°**37**/32, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**259**	P	**Pb**	**02 12 43.3**	**-0.2**
DEMI				S	**Sg**	**02 12 46.6**	**0.0**
DEMI	**Demirci**	**0.26**	**259**	*i* P	**Pb**	**02 12 43.3**	**-0.2**
DEMI				*i* S	**Sg**	**02 12 46.6**	**0.0**
GDZ	**Gediz**	**0.34**	**90**	P	**Pb**	**02 12 45.1**	**+0.1**
GDZ				S	**Sb**	**02 12 50.2**	**-0.1**
GDZ	**Gediz**	**0.34**	**90**	*i* P	**Pb**	**02 12 45.1**	**+0.1**
GDZ				*i* S	**Sb**	**02 12 50.2**	**-0.1**
TVSB	**Tavsanli**	**0.48**	**42**	*e*PG	**Pg**	**02 12 46.9**	**+0.1**
TVSB				*e*SG	**Sg**	**02 12 53.1**	**-0.2**
TVSB	**Tavsanli**	**0.48**	**42**	*e*Pg	**Pg**	**02 12 46.9**	**+0.1**
TVSB				*e*Sg	**Sg**	**02 12 53.1**	**-0.2**
KULA	**Kula-Manisa**	**0.65**	**207**	*e*PG	**Pg**	**02 12 49.4**	**-0.5**
KULA	**Kula-Manisa**	**0.65**	**207**	*e*Pg	**Pg**	**02 12 49.4**	**-0.5**
DURS	**Dursunbey**	**0.67**	**319**	P	**Pb**	**02 12 51.0**	**+0.4**
DURS	**Dursunbey**	**0.67**	**319**	*i* P	**Pb**	**02 12 51.0**	**+0.4**
MANT	**Manisa**	**0.71**	**212**	P	**Pb**	**02 12 51.8**	**+0.5**
MANT				S	**Sb**	**02 13 01.0**	**+0.1**
MANT	**Manisa**	**0.71**	**212**	*i* P	**Pb**	**02 12 51.8**	**+0.5**
MANT				*i* S	**Sb**	**02 13 01.0**	**+0.1**
KHAL	**Karahalli**	**0.80**	**154**	P	**Pn**	**02 12 54.6**	**+0.7**
KHAL				S	**Sn**	**02 13 04.9**	**-0.8**
KHAL	**Karahalli**	**0.80**	**154**	*i* P	**Pn**	**02 12 54.6**	**+0.7**
KHAL				*i* S	**Sn**	**02 13 04.9**	**-0.8**
KCTX	**Karacabey (Bur**	**1.29**	**336**	*e*PN	**Pg**	**02 13 01.7**	**-0.2**
KCTX	**Karacabey (Bur**	**1.29**	**336**	*e*Pn	**Pg**	**02 13 01.7**	**-0.2**
IZI	**Iznik**	**1.29**	**15**	*e*PN	**Pg**	**02 13 01.9**	**0.0**
IZI	**Iznik**	**1.29**	**15**	*e*Pn	**Pg**	**02 13 02.0**	**0.0**
ARMT	**Armutlu**	**1.48**	**355**	*e*PN	**Pb**	**02 13 04.0**	**-0.3**
ARMT	**Armutlu**	**1.48**	**355**	*e*Pn	**Pb**	**02 13 04.0**	**-0.3**
GULT	**Gulveren**	**1.76**	**40**	*e*PN	**Pb**	**02 13 09.0**	**0.0**
GULT	**Gulveren**	**1.76**	**40**	*e*Pn	**Pb**	**02 13 09.0**	**0.0**

ISCJB ***27*** *02:15:04.5±0.5, 39.°09N±0.°04×29.°03E±0.°04, h9km, Error ellipse: s-maj=6.9km s-min=4.0km az=146.5*
CSEM ***27*** *02:15:04.6±0.1, 39.°12N×29.°02E, h2km, MD2.4, Error ellipse: s-maj=2.6km s-min=1.8km az=128.0*
ISK ***27*** *02:15:04.4, 39.°11N×29.°08E, h5km, MD2.7*
DDA ***27*** *02:15:04.2, 39.°09N×29.°03E, h7km, Md2.4*
ISC 27 02:15:04.9±1.0,**39.°11N**±0.°03×**29.°02E**±0.°03,**h9**km,**n20**, σ0°**41**/28, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**254**	P	**Pg**	**02 15 09.9**	**0.0**
DEMI				S	**Sg**	**02 15 13.4**	**0.0**
DEMI	**Demirci**	**0.25**	**254**	*i* P	**Pg**	**02 15 09.9**	**0.0**
DEMI				*i* S	**Sg**	**02 15 13.3**	**0.0**
GDZ	**Gediz**	**0.36**	**94**	P	**Pg**	**02 15 11.5**	**-0.5**
GDZ				S	**Sg**	**02 15 16.8**	**+0.1**
GDZ	**Gediz**	**0.36**	**94**	*i* P	**Pg**	**02 15 11.5**	**-0.5**
GDZ				*i* S	**Sg**	**02 15 16.8**	**+0.1**
TVSB	**Tavsanli**	**0.48**	**45**	*e*PG	**Pg**	**02 15 14.0**	**-0.3**
TVSB				*e*SG	**Sg**	**02 15 20.2**	**-0.4**
TVSB	**Tavsanli**	**0.48**	**45**	*e*Pg	**Pg**	**02 15 14.0**	**-0.3**
TVSB				*e*Sg	**Sg**	**02 15 20.2**	**-0.4**
DURS	**Dursunbey**	**0.65**	**319**	P	**Pg**	**02 15 16.5**	**-0.9**
DURS	**Dursunbey**	**0.65**	**319**	*i* P	**Pg**	**02 15 16.5**	**-0.9**
KULA	**Kula-Manisa**	**0.66**	**205**	*e*PG	**Pg**	**02 15 17.8**	**+0.1**
KULA	**Kula-Manisa**	**0.66**	**205**	*e*Pg	**Pg**	**02 15 17.8**	**+0.1**
MANT	**Manisa**	**0.72**	**210**	P	**Pg**	**02 15 18.5**	**-0.3**
MANT				S	**Sg**	**02 15 27.6**	**-0.6**
MANT	**Manisa**	**0.72**	**210**	*i* P	**Pg**	**02 15 18.5**	**-0.3**
MANT				*i* S	**Sg**	**02 15 27.6**	**-0.6**
KCTX	**Karacabey (Bur**	**1.26**	**336**	*e*PN	**Pg**	**02 15 29.3**	**+0.2**
KCTX	**Karacabey (Bur**	**1.26**	**336**	*e*Pn	**Pg**	**02 15 29.3**	**+0.2**
IZI	**Iznik**	**1.27**	**16**	*e*PN	**Pg**	**02 15 29.4**	**+0.1**
IZI	**Iznik**	**1.27**	**16**	*e*Pn	**Pg**	**02 15 29.4**	**+0.1**
ARMT	**Armutlu**	**1.46**	**355**	*e*PN	**Pb**	**02 15 32.1**	**-0.1**
ARMT	**Armutlu**	**1.46**	**355**	*e*Pn	**Pb**	**02 15 32.1**	**-0.1**
GULT	**Gulveren**	**1.75**	**41**	*e*PN	**Pn**	**02 15 36.1**	**+0.6**
GULT	**Gulveren**	**1.75**	**41**	*e*Pn	**Pn**	**02 15 36.1**	**+0.6**

ISCJB ***27*** *02:15:13.8±0.5, 6.°84N±0.°05×73.°07W±0.°05, h162km±5km, Error ellipse: s-maj=11.1km s-min=4.0km az=40.2*
FUNV ***27*** *02:15:14.2, 6.°71N×73.°17W, h164km, MW3.0*
RSNC ***27*** *02:15:16.4±0.9, 6.°78N×73.°09W, h148km±5km, ML3.0*
ISC 27 02:15:13.8±1.4,**6.°81N**±0.°05×**73.°08W**±0.°06,**h164**km±8km, **n28**, σ1°**12**/44, **1D, Northern Colombia**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BTLC	**Betulia, Santa**	**0.22**	**300**	*e*P	**Pn**	**02 15 36.3**	**+0.2**
BARC	**Barichara**	**0.24**	**206**	*i* P	**Pn**	**02 15 36.1**	**0.0**
BARC				*e*S	**Sn**	**02 15 51.5**	**-1.6**
BARC				*i*		02 15 54.1	
	comp=Z,168nm,0.4s						
GIRC	**Giron, Santand**	**0.29**	**337**	*e*P	**Pn**	**02 15 36.3**	**+0.2**
GIRC				*e*S	**Sn**	**02 15 51.7**	**-1.5**
PAMC	**Pamplona, Colo**	**0.65**	**35**	*e*P	**Pn**	**02 15 38.8**	**+0.8**
PAMC				*i*		02 15 39.2	
	comp=Z,64nm,0.2s						
PAMC				*e*S	**Sn**	**02 15 56.3**	**-0.3**
BRRC	**Barranca, Sant**	**0.70**	**295**	*e*P	**Pn**	**02 15 38.0**	**+0.3**
BRRC				*e*S	**Sn**	**02 15 55.3**	**-0.8**
BRRC				*i*		02 15 57.8	
	comp=Z,120nm,0.1s						
RUSC	**La Rusia**	**0.91**	**180**	*e*P	**Pn**	**02 15 39.9**	**+0.2**
RUSC				*e*S	**Sn**	**02 15 58.8**	**-0.9**
RUSC				*i*		02 15 59.9	
	comp=Z,41nm,0.1s						
CBRI	**Barrientos, No**	**0.94**	**17**	*e*P	**Pn**	**02 15 40.6**	**+1.0**
CBRI				*e*S	**Sn**	**02 15 58.7**	**-0.9**
CBRI				*i*		02 16 01.4	
	comp=Z,90nm,0.2s						
GRMC	**Gramalote, San**	**0.94**	**17**	*i* P	**Pn**	**02 15 41.9**	**+2.3**
GRMC				*e*S	**Sn**	**02 16 02.0**	**+2.5**
GRMC				*i*		02 16 02.6	
	comp=Z,100nm,0.4s						
CAPV	**Capacho**	**1.29**	**36**	*e*P	**Pn**	**02 15 44.0**	**+1.4**
CAPV				*e*S	**Sn**	**02 16 04.9**	**0.0**
NORC	**Norcasia**	**2.17**	**235**	*e*P	**Pn**	**02 15 51.9**	**+0.1**
NORC				*e*S	**Sn**	**02 16 20.3**	**-0.8**
NORC				*i*		02 16 24.0	
	comp=Z,15nm,0.3s						
ROSC	**El Rosal**	**2.31**	**212**	*e*P	**Pn**	**02 15 55.7**	**+1.9**
ROSC				*e*S	**Sn**	**02 16 25.2**	**+0.5**
ROSC				*i*		02 16 33.6	
	comp=Z,2μm,0.3s						
VIGV	**El Vigia**	**2.64**	**40**	*e*P	**Pn**	**02 15 58.6**	**+1.3**
VIGV				*e*S	**Sn**	**02 16 31.2**	**+0.2**
SOCV	**Socops**	**2.65**	**56**	*e*P	**Pn**	**02 15 58.5**	**+1.1**
SOCV				*e*S	**Sn**	**02 16 30.7**	**-0.4**
GUYC	**Guyana, Colomb**	**2.79**	**236**	*e*P	**Pn**	**02 16 01.2**	**+1.6**
DBBC	**Dabeiba**	**3.12**	**274**	*e*P	**Pn**	**02 16 04.0**	**+0.8**
TOLC	**Tolima**	**3.14**	**225**	*e*P	**Pn**	**02 16 05.0**	**+1.2**
PRAC	**Prado**	**3.56**	**210**	*e*P	**Pn**	**02 16 09.2**	**+0.4**
PRAC				*e*S	**Sn**	**02 16 51.6**	**-0.1**
PRAC				*i*		02 16 57.6	
	comp=Z,80nm,0.3s						
ELOV	**Elorza**	**3.57**	**87**	*e*P	**Pn**	**02 16 09.9**	**+1.0**
VIRV	**Villa del Rosa**	**3.73**	**10**	*e*P	**Pn**	**02 16 11.2**	**+0.2**
VIRV				*e*S	**Sn**	**02 16 53.9**	**-1.6**
QARV	**Quebrada Arrib**	**4.22**	**37**	*e*P	**Pn**	**02 16 19.0**	**+1.7**
QARV				*e*S	**Sn**	**02 17 05.4**	**-1.4**
CURV	**Curarigua**	**4.43**	**44**	*e*P	**Pn**	**02 16 20.5**	**+0.4**
CURV				*e*S	**Sn**	**02 17 10.3**	**-1.6**
TEPV	**Terepaima**	**4.96**	**51**	*e*P	**Pn**	**02 16 27.7**	**+0.8**
SIQV	**Siquisique**	**5.00**	**40**	*e*P	**Pn**	**02 16 27.1**	**-0.4**
BAUV	**El Baul**	**5.42**	**67**	*e*P	**Pn**	**02 16 32.4**	**-0.6**
MAPV	**Macapo**	**5.47**	**56**	*e*P	**Pn**	**02 16 34.4**	**+0.7**
MONV	**Montecano**	**5.96**	**31**	*e*P	**Pn**	**02 16 40.1**	**0.0**
TURV	**Turiamo**	**6.32**	**55**	*e*P	**Pn**	**02 16 45.2**	**+0.4**
CUPV	**Cepira**	**7.90**	**65**	*e*P	**Pn**	**02 17 04.5**	**-1.4**

ISK ***27*** *02:24:58.8, 39.°17N×29.°05E, h5km, MD2.7*
ISCJB ***27*** *02:24:59.2±0.5, 39.°12N±0.°03×29.°07E±0.°04, h11km±5km, Error ellipse: s-maj=5.9km s-min=4.9km az=140.0*
CSEM ***27*** *02:24:59.3±0.1, 39.°13N×29.°06E, h8km, MD2.5, Error ellipse: s-maj=2.6km s-min=2.2km az=98.0*
DDA ***27*** *02:24:59.0, 39.°14N×29.°06E, h7km, Md2.5*
ISC 27 02:24:59.0±0.9,**39.°12N**±0.°03×**29.°09E**±0.°03,**h13**km±10km, **n24**, σ0°**27**/34, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.30**	**256**	P	**Pg**	**02 25 05.3**	**+0.1**
DEMI				S	**Sg**	**02 25 09.4**	**0.0**
DEMI	**Demirci**	**0.30**	**256**	*i* P	**Pg**	**02 25 05.3**	**+0.1**
DEMI				*i* S	**Sg**	**02 25 09.4**	**0.0**
GDZ	**Gediz**	**0.30**	**95**	P	**Pb**	**02 25 06.1**	**-0.2**
GDZ				S	**Sb**	**02 25 10.9**	**-0.4**
GDZ	**Gediz**	**0.30**	**95**	*i* P	**Pb**	**02 25 06.1**	**-0.2**
GDZ				*i* S	**Sb**	**02 25 10.9**	**-0.4**
TVSB	**Tavsanli**	**0.44**	**41**	*e*PG	**Pg**	**02 25 08.0**	**+0.2**
TVSB				*e*SG	**Sg**	**02 25 13.8**	**+0.1**
TVSB	**Tavsanli**	**0.44**	**41**	*e*Pg	**Pg**	**02 25 08.0**	**+0.2**
TVSB				*e*Sg	**Sg**	**02 25 13.8**	**+0.1**
DURS	**Dursunbey**	**0.68**	**316**	P	**Pg**	**02 25 12.2**	**0.0**
DURS	**Dursunbey**	**0.68**	**316**	*i* P	**Pg**	**02 25 12.2**	**0.0**
KULA	**Kula-Manisa**	**0.69**	**209**	*e*PG	**Pb**	**02 25 12.7**	**-0.1**
KULA	**Kula-Manisa**	**0.69**	**209**	*e*Pg	**Pb**	**02 25 12.7**	**-0.1**
MANT	**Manisa**	**0.75**	**214**	P	**Pg**	**02 25 13.8**	**-0.2**
MANT				S	**Sg**	**02 25 23.0**	**-0.5**
MANT	**Manisa**	**0.75**	**214**	*i* P	**Pb**	**02 25 13.8**	**-0.2**
MANT				*i* S	**Sg**	**02 25 23.0**	**-0.5**
KHAL	**Karahalli**	**0.81**	**157**	P	**Pb**	**02 25 14.7**	**-0.2**
KHAL				S	**Sb**	**02 25 26.0**	**+0.3**
KHAL	**Karahalli**	**0.81**	**157**	*i* P	**Pb**	**02 25 14.7**	**-0.2**
KHAL				*i* S	**Sb**	**02 25 26.1**	**+0.3**
KHL	**Karahalli**	**0.86**	**157**	*e*PG	**Pn**	**02 25 17.2**	**+0.4**
KHL	**Karahalli**	**0.86**	**157**	*e*Pg	**Pn**	**02 25 17.2**	**+0.4**
KCTX	**Karacabey (Bur**	**1.28**	**334**	*e*PN	**Pn**	**02 25 22.6**	**+0.1**
KCTX	**Karacabey (Bur**	**1.28**	**334**	*e*Pn	**Pn**	**02 25 22.6**	**+0.1**
GONE	**Gonen-Balikesi**	**1.43**	**311**	*e*PN	**Pb**	**02 25 25.3**	**-0.1**
GONE	**Gonen-Balikesi**	**1.43**	**311**	*e*Pn	**Pb**	**02 25 25.3**	**-0.1**
ARMT	**Armutlu**	**1.46**	**353**	*e*PN	**Pb**	**02 25 26.1**	**+0.2**
ARMT	**Armutlu**	**1.46**	**353**	*e*Pn	**Pb**	**02 25 26.1**	**+0.2**
GULT	**Gulveren**	**1.71**	**39**	*e*PN	**Pb**	**02 25 29.8**	**-0.5**
GULT	**Gulveren**	**1.71**	**39**	*e*Pn	**Pb**	**02 25 29.8**	**-0.5**

ISK ***27*** *02:25:32.8, 39.°08N×29.°12E, h6km, MD2.8*
DDA ***27*** *02:25:32.8, 39.°09N×29.°04E, h7km, Md2.7*
ISCJB ***27*** *02:25:33.1±0.5, 39.°08N±0.°03×29.°06E±0.°03, h3km±8km, Error ellipse: s-maj=5.1km s-min=4.4km az=164.3*
CSEM ***27*** *02:25:33.4±0.1, 39.°07N×29.°08E, h5km, MD2.7, Error ellipse: s-maj=3.3km s-min=2.8km az=98.0*
ISC 27 02:25:33.3±1.0,**39.°07N**±0.°03×**29.°07E**±0.°02,**h7**km±11km, **n30**, σ0°**33**/42, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**266**	P	**Pg**	**02 25 38.6**	**-0.1**
DEMI				S	**Sg**	**02 25 42.3**	**-0.1**
DEMI	**Demirci**	**0.28**	**266**	*i* P	**Pg**	**02 25 38.6**	**-0.1**
DEMI				*i* S	**Sg**	**02 25 42.3**	**-0.1**
GDZ	**Gediz**	**0.32**	**86**	P	**Pg**	**02 25 39.8**	**+0.2**
GDZ				S	**Sg**	**02 25 44.7**	**+0.8**
GDZ	**Gediz**	**0.32**	**86**	*i* P	**Pg**	**02 25 39.8**	**+0.2**
GDZ				*i* S	**Sg**	**02 25 44.7**	**+0.8**
TVSB	**Tavsanli**	**0.49**	**38**	*e*PG	**Pg**	**02 25 42.5**	**-0.3**
TVSB				*e*SG	**Sg**	**02 25 48.8**	**-0.4**
TVSB	**Tavsanli**	**0.49**	**38**	*e*Pg	**Pg**	**02 25 42.5**	**-0.3**
TVSB				*e*Sg	**Sg**	**02 25 48.8**	**-0.4**
KULA	**Kula-Manisa**	**0.64**	**210**	*e*PG	**Pb**	**02 25 46.5**	**-0.2**
KULA	**Kula-Manisa**	**0.64**	**210**	*e*Pg	**Pb**	**02 25 46.5**	**-0.2**
MANT	**Manisa**	**0.70**	**215**	P	**Pg**	**02 25 47.0**	**+0.3**
MANT				S	**Sg**	**02 25 55.9**	**+0.1**
MANT	**Manisa**	**0.70**	**215**	*i* P	**Pg**	**02 25 47.0**	**+0.3**
MANT				*i* S	**Sg**	**02 25 55.9**	**+0.1**
DURS	**Dursunbey**	**0.71**	**319**	P	**Pb**	**02 25 48.5**	**+0.5**
DURS				S	**Sg**	**02 25 55.6**	**-0.5**
DURS	**Dursunbey**	**0.71**	**319**	*i* P	**Pb**	**02 25 48.5**	**+0.5**
DURS				*i* S	**Sg**	**02 25 55.6**	**-0.5**
KHAL	**Karahalli**	**0.77**	**154**	P	**Pb**	**02 25 48.9**	**-0.1**
KHAL				S	**Sb**	**02 25 59.7**	**-0.1**
KHAL	**Karahalli**	**0.77**	**154**	*i* P	**Pb**	**02 25 48.9**	**-0.1**
KHAL				*i* S	**Sb**	**02 25 59.7**	**-0.1**
KHL	**Karahalli**	**0.82**	**154**	*e*PG	**Pg**	**02 25 48.7**	**-0.3**
KHL	**Karahalli**	**0.82**	**154**	*e*Pg	**Pg**	**02 25 48.7**	**-0.3**
AKS	**Akhisar**	**1.00**	**260**	*e*PG	**Pb**	**02 25 52.8**	**-0.1**
AKS	**Akhisar**	**1.00**	**260**	*e*Pg	**Pb**	**02 25 52.8**	**-0.1**
KCTX	**Karacabey (Bur**	**1.32**	**336**	*e*PN	**Pn**	**02 25 58.2**	**0.0**
KCTX	**Karacabey (Bur**	**1.32**	**336**	*e*Pn	**Pn**	**02 25 58.2**	**0.0**
GONE	**Gonen-Balikesi**	**1.45**	**313**	*e*PN	**Pb**	**02 26 00.7**	**+0.1**
GONE	**Gonen-Balikesi**	**1.45**	**313**	*e*Pn	**Pb**	**02 26 00.7**	**+0.1**
ADVT	**Abdulvahap**	**1.46**	**20**	*e*PN	**Pn**	**02 26 00.1**	**0.0**
ADVT	**Abdulvahap**	**1.46**	**20**	*e*Pn	**Pn**	**02 26 00.1**	**0.0**
ARMT	**Armutlu**	**1.51**	**354**	*e*PN	**Pn**	**02 26 00.9**	**+0.2**
ARMT	**Armutlu**	**1.51**	**354**	*e*Pn	**Pn**	**02 26 00.9**	**+0.2**
EDC	**Edincik**	**1.58**	**324**	*e*PN	**Pn**	**02 26 02.3**	**+0.5**
EDC	**Edincik**	**1.58**	**324**	*e*Pn	**Pn**	**02 26 02.3**	**+0.5**
GULT	**Gulveren**	**1.76**	**39**	*e*PN	**Pn**	**02 26 04.1**	**-0.2**
GULT	**Gulveren**	**1.76**	**39**	*e*Pn	**Pn**	**02 26 04.1**	**-0.2**

NIED ***27*** *02:31:00, 36.°60N×142.°40E, h20km, Mw3.7 Best double couple: M0:3.74000×10^14 NP1:φ0=173.00000°, δ45.00000°, λ65.00000°. NP2:φ0=27.00000°, δ50.00000°, λ113.00000°.*
ISCJB ***27*** *02:31:01.9±0.5, 36.°57N±0.°04×142.°44E±0.°05, h15km, mb3.7/9, MS3.7/1, Error ellipse: s-maj=5.6km s-min=4.7km az=42.5*
IDC ***27*** *02:31:01.0±0.9, 36.°48N×142.°50E, h0km, mb3.6/8, mb1 3.9/12, mb1mx3.7/45, mbtmp3.8/12, ML3.9/4, MS3.2/2, Ms1 3.2/2, ms1mx2.5/42, Error ellipse: s-maj=23.1km s-min=19.3km az=108.0*
JMA ***27*** *02:31:04.1±0.2, 36.°57N×142.°40E, h67km, M3.5*
NEIC ***27*** *02:31:05.6±0.7, 36.°50N×142.°49E, h35km, mb4.0/1, Error ellipse: s-maj=14.0km s-min=11.1km az=111.0*
ISC 27 02:31:03.2±0.7,**36.°54N**±0.°05×**142.°43E**±0.°06,**h15**km,**n37**, σ1°**36**/42, **mb3.6/9, Off east of Honshu**

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

ISCJB 27 02:42:48.3±0.3,28.′36S±0.′03×69.′16W±0.′04,h111km±5km, mb3.7/4, Error ellipse: s-maj=5.2km s-min=4.3km az=3.3
SJA 27 02:42:49.6±0.8,28.′47S×68.′97W,h132km±4km,ML4.5, MW4.3
GUC 27 02:42:50.5±0.6,28.′31S×69.′52W,h124km±40km,ML4.6
IDC 27 02:42:53.9±8.2,27.′93S×68.′70W,h128km±54km,mb3.5/4, mb1 3.9/8,mb1mx3.6/24,mbtmp4.0/8, Error ellipse: s-maj=96.9km s-min=24.5km az=28.0

ISC 27 02:42:49.2±0.8,28.′33S±0.′04×69.′15W±0.′04,h105km±8km, n32,σ1§92/46,mb3.7/4,Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VCA	**Vinchina**	**0.92**	**116**	*eP*	**Pn**	**02 43 11.3**	**+2.0**
VCA				*i S*	**Sn**	**02 43 26.7**	**+2.1**
VCA				IAML		02 43 29.0	
	comp=Z,10μm,0.2s						
AGUA	**GUANDACOL**	**1.29**	**154**	*eP*	**Pn**	**02 43 14.6**	**+1.2**
AGUA				*i S*	**Sn**	**02 43 32.9**	**+1.3**
VACH	**Vallenar**	**1.44**	**260**	*i P*	**Pn**	**02 43 14.6**	**-0.4**
VACH				*i S*	**Sn**	**02 43 33.0**	**-1.6**
CPCH	**Copiapo**	**1.44**	**312**	*i P*	**Pn**	**02 43 15.2**	**+0.2**
CPCH				*i S*	**Sn**	**02 43 34.6**	**0.0**
LCO	**Las Campanas**	**1.52**	**243**	*eP*	**Pn**	**02 43 17.3**	**+1.0**
LCO				*eS*	**Sn**	**02 43 36.5**	**-0.2**
LCO				IAML		02 43 40.6	
	comp=N,11μm,0.2s						
LSCH	**La Serena**	**2.42**	**229**	*i P*	**Pn**	**02 43 27.4**	**+0.1**
LSCH				*i S*	**Sn**	**02 43 54.7**	**-1.9**
LSCH				IAML		02 43 57.4	
	comp=E,5μm,0.4s						
AMOG	**MOGNA**	**2.66**	**168**	*i P*	**Pn**	**02 43 30.9**	**+0.3**
AMOG				*eS*	**Sn**	**02 44 01.7**	**-0.8**
CYA	**Choya**	**2.95**	**93**	*i P*	**Pn**	**02 43 34.9**	**+0.5**
CYA				IAML		02 43 35.4	
	comp=Z,1μm,0.7s						
CYA				*eS*	**Sn**	**02 44 07.4**	**-1.9**
RTLL	**Cerro Villicun**	**3.05**	**169**	*i P*	**Pn**	**02 43 36.1**	**+0.4**
RTLL				*i S*	**Sn**	**02 44 10.0**	**-1.5**
SJA	**San Juan**	**3.23**	**171**	*eP*	**Pn**	**02 43 38.6**	**+0.5**
SJA				*eS*	**Sn**	**02 44 11.2**	**-4.7**
RTLS	**Leoncito**	**3.46**	**182**	*i P*	**Pn**	**02 43 42.2**	**+0.7**
RTLS				*i S*	**Sn**	**02 44 20.9**	**-0.9**
RTCV	**Cerro Valdivia**	**3.56**	**172**	*i P*	**Pn**	**02 43 42.9**	**+0.3**
RTCV				*eS*	**Sn**	**02 44 22.1**	**-1.8**
FSA	**Cafayete**	**3.58**	**53**	*eP*	**Pn**	**02 43 45.0**	**+1.9**
AHML	**Horco Molle**	**3.72**	**66**	*eP*	**Pn**	**02 43 45.2**	**+0.5**
AHML				*eS*	**Sn**	**02 44 27.1**	**-0.6**
AUSP	**Uspallata**	**3.89**	**183**	*i P*	**Pn**	**02 43 47.7**	**+0.6**
AUSP				*eS*	**Sn**	**02 44 30.8**	**-1.3**
ACAN	**Cantantal**	**4.28**	**157**	*i P*	**Pn**	**02 43 52.2**	**0.0**
ACAN				*eS*	**Sn**	**02 44 37.2**	**-4.0**
TCA	**Tanti**	**4.96**	**128**	*i P*	**Pn**	**02 43 59.8**	**-1.7**
TCA				IAML		02 45 22.1	
	comp=Z,201nm,0.6s						
AZAP	**Zapla**	**5.49**	**43**	*eP*	**Pn**	**02 44 10.6**	**+1.7**
PIL	**Pilar**	**5.65**	**127**	IAML		02 45 10.5	
	comp=Z,517nm,0.2s						
LVC	**Limon Verde**	**5.70**	**2**	P	**Pn**	**02 44 12.3**	**+0.5**
	comp=Z,811nm,0.3s,baz=147,slow=12,SNR=219						
LVC				S	**Sn**	**02 45 15.9**	**-0.2**
	comp=Z,383nm,0.3s,baz=198,slow=21,SNR=7.2						
HJA	**Humahuaca**	**6.11**	**34**	*eP*	**Pn**	**02 44 20.0**	**+2.5**
HJA				IAML		02 44 22.2	
	comp=Z,57nm,0.7s						
ALOL	**LOMAS DE OLMED**	**6.46**	**47**	*eP*	**Pn**	**02 44 22.7**	**+0.8**
YJA	**Yavi**	**6.95**	**29**	*eS*	**Sn**	**02 45 39.4**	**-7.3**
CPUP	**Villa Florida**	**10.70**	**82**	P	**Pn**	**02 45 16.9**	**-2.4**
	comp=Z,0.3nm,0.3s,baz=258,slow=11,SNR=6.3						
LPAZ	**La Paz**	**12.02**	**5**	P	**Pn**	**02 45 35.9**	**-1.7**
	comp=Z,0.4nm,0.3s,baz=194,slow=5.3,SNR=19						
SIV	**San Ignacio**	**14.37**	**33**	P	Pn	02 46 03.5	-4.3
	comp=Z,0.2nm,0.3s,baz=215,slow=1.3,SNR=5.7						
TXAR	**Lajitas Array**	**66.16**	**327**	P	**P**	**02 53 27.4**	**+1.8**
	comp=Z,0.6nm,0.7s,baz=153,slow=9.0,SNR=8.9						
TORD	**Torodi Ar. Bea**	**79.92**	**69**	P	**P**	**02 54 46.9**	**0.0**
	comp=Z,0.9nm,0.7s,baz=275,slow=5.9,SNR=9.2						
PDAR	**Pinedale Array**	**79.93**	**331**	P	**P**	**02 54 47.7**	**+1.1**
	comp=Z,0.8nm,0.8s,baz=134,slow=4.3,SNR=4.9						
YKA	**Yellowknife Ar**	**97.53**	**341**	P	**P**	**02 56 10.4**	**-0.4**
	comp=Z,0.3nm,0.8s,baz=138,slow=4.0,SNR=8.8						
ZALV	**Zalesovo Beam**	**148.10**	**29**	PKPbc	**PKPbc**	**03 02 22.2**	**0.0**
	comp=Z,1.3nm,0.3s,baz=306,slow=5.2,SNR=7.1						
MKAR	**Makanchi Array**	**151.04**	**43**	PKPbc	**PKPbc**	**03 02 29.8**	**+0.1**
	comp=Z,2.0nm,0.7s,baz=290,slow=1.5,SNR=14						

TRN 27 02:48:17.6,11.′82N×59.′32W,h32km,MD3.8
FUNV 27 02:48:21.8,11.′70N×59.′40W,h112km,MW3.0

ISC 27 02:48:16.6±2.2,11.′75N±0.′06×59.′2W±0.′1,h33km±4km,n25, σ1§76/40,1D,North Atlantic Ocean

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TOSP	**Speyside**	**1.35**	**251**	*eP*	**Pb**	**02 48 41.0**	**-0.4**
TOSP				*eS*	**Sb**	**02 48 58.1**	**-0.2**
BBGH	**Gun Hill**	**1.42**	**347**	*eP*	**Pb**	**02 48 42.2**	**-0.3**
BBGH				*eS*	**Sn**	**02 48 57.6**	**-0.1**
GRSS	**Sisters**	**2.39**	**283**	*eP*	**Pn**	**02 48 53.8**	**+0.4**
GRSS				*eS*	**Sn**	**02 49 21.9**	**+0.4**
TRN	**Trinidad (W)**	**2.39**	**243**	*eP*	**Pn**	**02 48 55.5**	**+2.0**
TRN				*eS*	**Sn**	**02 49 23.4**	**+1.8**
GRW	**Mount Saint Ca**	**2.41**	**280**	*eP*	**Pn**	**02 48 54.8**	**+1.0**
GRW				*eS*	**Sn**	**02 49 22.8**	**+0.6**
FCV	**Fort Charlotte**	**2.41**	**306**	*eP*	**Pn**	**02 48 54.2**	**+0.5**
FCV				*eS*	**Sn**	**02 49 23.0**	**+0.9**
SVB	**Belmont**	**2.48**	**308**	*eP*	**Pn**	**02 48 56.0**	**+1.3**
SVB				*eS*	**Sn**	**02 49 24.0**	**+0.1**
SVV	**Soufriere Volc**	**2.48**	**309**	*eP*	**Pn**	**02 48 55.0**	**+0.3**
SVV				*eS*	**Sn**	**02 49 23.6**	**-0.3**
MCLT	**Moule a Chique**	**2.56**	**320**	*eP*	**Pn**	**02 48 56.7**	**+0.8**
MCLT				*eS*	**Sn**	**02 49 25.5**	**-0.3**
GUIV	**Guiria**	**3.13**	**250**	*eP*	**Pn**	**02 49 06.3**	**+2.7**
GUIV				*eS*	**Sn**	**02 49 38.9**	**-0.9**
MVM	**Montagne Vaucl**	**3.22**	**330**	*eP*	**Pn**	**02 49 06.3**	**+1.4**
LPMF	**Morne Lapointe**	**3.27**	**329**	*eP*	**Pn**	**02 49 07.2**	**+1.5**
BIM	**Bigot**	**3.28**	**327**	*eP*	**Pn**	**02 49 06.8**	**+1.0**
BIM				*eS*	**Sn**	**02 49 40.8**	**-2.8**
TRMF	**Trois Ilets**	**3.28**	**328**	*eP*	**Pn**	**02 49 07.0**	**+1.2**
ZAM	**Aeronautique**	**3.30**	**328**	*ℓℓP*	**Pn**	**02 49 07.3**	**+1.3**
FDF	**Fort de France**	**3.50**	**328**	*eP*	**Pn**	**02 49 10.2**	**+1.4**
FDF				*eS*	**Sn**	**02 49 46.6**	**-2.6**
PML	**Morne Lenard**	**3.56**	**328**	*eP*	**Pn**	**02 49 11.3**	**+1.7**
GBMF	**Grand Be**	**3.56**	**328**	*eP*	**Pn**	**02 49 11.4**	**+1.7**
BAMF	**Morne Balai**	**3.57**	**329**	*eP*	**Pn**	**02 49 11.1**	**+1.4**
CXM	**Morne La Croix**	**3.58**	**329**	*eP*	**Pn**	**02 49 11.8**	**+1.8**
CXM				*eS*	**Sn**	**02 49 49.1**	**-2.1**
PCM	**Pelee Case Pet**	**3.60**	**328**	*eP*	**Pn**	**02 49 11.4**	**+1.3**
PCM	**Pelee Case Pet**	**3.60**	**328**	*eP*	**Pn**	**02 49 11.9**	**+1.7**
GUNV	**Guanoco**	**3.97**	**247**	*eP*	**Pn**	**02 49 17.7**	**+2.5**
GUNV				*eS*	**Sn**	**02 49 58.4**	**-2.2**
CRUV	**Carupano**	**4.07**	**255**	*eP*	**Pn**	**02 49 17.6**	**+1.1**
CRUV				*eS*	**Sn**	**02 50 00.0**	**-3.0**
GURV	**El Guri**	**5.49**	**224**	*eS*	**Sn**	**02 50 33.2**	**-4.9**

ISK 27 02:53:01.8,38.′95N×27.′95E,h6km,MD2.6
ISCJB 27 02:53:02.3±0.5,38.′94N±0.′03×27.′92E±0.′04,h7km±5km, Error ellipse: s-maj=6.3km s-min=4.6km az=37.4
CSEM 27 02:53:02.4±0.1,38.′94N×27.′90E,h8km,MD2.4, Error ellipse: s-maj=3.9km s-min=2.9km az=62.0
DDA 27 02:53:02.0,38.′93N×27.′90E,h13km,Md2.4

ISC 27 02:53:02.3±0.8,38.′93N±0.′03×27.′90E±0.′03,h13km±5km, n28,σ0§58/41,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKHS	**Akhisar**	**0.08**	**230**	P	**Pg**	**02 53 05.1**	**-0.1**
AKHS				S	**Sg**	**02 53 06.6**	**-0.5**
AKHS	**Akhisar**	**0.08**	**230**	*i P*	**Pg**	**02 53 05.1**	**-0.1**
AKHS				*i S*	**Sg**	**02 53 06.6**	**-0.5**
AKS	**Akhisar**	**0.08**	**230**	*ePG*	**Pg**	**02 53 05.2**	**0.0**
AKS	**Akhisar**	**0.08**	**230**	*ePg*	**Pg**	**02 53 05.2**	**0.0**
MANT	**Manisa**	**0.68**	**130**	P	**Pb**	**02 53 15.9**	**-0.3**
MANT				S	**Sb**	**02 53 25.1**	**-0.5**
MANT	**Manisa**	**0.68**	**130**	*i P*	**Pb**	**02 53 15.9**	**-0.3**
MANT				*i S*	**Sb**	**02 53 25.1**	**-0.5**
KULA	**Kula-Manisa**	**0.73**	**125**	*ePG*	**Pg**	**02 53 16.1**	**-0.4**
KULA				*eSG*	**Sg**	**02 53 26.1**	**0.0**
KULA	**Kula-Manisa**	**0.73**	**125**	*ePg*	**Pg**	**02 53 16.1**	**-0.4**
KULA				*eSg*	**Sg**	**02 53 26.1**	**0.0**
DKL	**Dikili**	**0.78**	**281**	*ePG*	**Pb**	**02 53 17.8**	**0.0**
DKL	**Dikili**	**0.78**	**281**	*ePg*	**Pb**	**02 53 17.8**	**0.0**
DURS	**Dursunbey**	**0.81**	**34**	P	**Pb**	**02 53 18.2**	**-0.1**
DURS	**Dursunbey**	**0.81**	**34**	*i P*	**Pb**	**02 53 18.2**	**-0.1**
DURS				*i S*	**Sn**	**02 53 31.8**	**+0.4**
BALY	**Balya**	**0.83**	**345**	P	**Pb**	**02 53 19.1**	**+0.4**
BALY				S	**Sg**	**02 53 28.9**	**-0.6**
BALY	**Balya**	**0.83**	**345**	*i P*	**Pb**	**02 53 19.1**	**+0.4**
BALY				*i S*	**Sg**	**02 53 28.9**	**-0.6**
AYDB	**Zeytinkoy-Aydi**	**0.98**	**180**	*ePG*	**Pg**	**02 53 21.0**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**0.98**	**180**	*ePg*	**Pg**	**02 53 21.0**	**-0.3**
AYVA	**Ayvalik**	**1.01**	**292**	P	**Pg**	**02 53 20.2**	**-1.6**
AYVA				S	**Sb**	**02 53 35.8**	**+1.0**
AYVA	**Ayvalik**	**1.01**	**292**	*i P*	**Pg**	**02 53 20.2**	**-1.6**
AYVA				*i S*	**Sb**	**02 53 35.8**	**+1.0**
AYDN	**Tasoluk**	**1.27**	**181**	P	**Pg**	**02 53 26.5**	**-0.2**
AYDN				S	**Sg**	**02 53 43.0**	**-0.3**
AYDN	**Tasoluk**	**1.27**	**181**	*i P*	**Pg**	**02 53 26.5**	**-0.2**
AYDN				*i S*	**Sg**	**02 53 43.0**	**-0.3**
KCTX	**Karacabey (Bur**	**1.38**	**15**	*ePN*	**Pn**	**02 53 27.7**	**+0.4**
KCTX	**Karacabey (Bur**	**1.38**	**15**	*ePn*	**Pn**	**02 53 27.7**	**+0.4**
EDC	**Edincik**	**1.41**	**359**	*ePN*	**Pn**	**02 53 28.3**	**+0.5**
EDC	**Edincik**	**1.41**	**359**	*ePn*	**Pn**	**02 53 28.3**	**+0.5**
CHOS	**Chios island**	**1.54**	**250**	*ePN*	**Pg**	**02 53 31.4**	**-0.5**
CHOS	**Chios island**	**1.54**	**250**	*ePn*	**Pg**	**02 53 31.4**	**-0.5**
ARMT	**Armutlu**	**1.79**	**24**	*ePN*	**Pn**	**02 53 33.6**	**+0.6**
ARMT	**Armutlu**	**1.79**	**24**	*ePn*	**Pn**	**02 53 33.6**	**+0.6**

ISCJB 27 02:54:23.7±0.5,0.′30N±0.′04×97.′15E±0.′05,h23km, mb4.1/14, Error ellipse: s-maj=7.5km s-min=4.5km az=147.4
NEIC 27 02:54:24.6±4.0,0.′30N×97.′12E,h15km±25km,mb4.2/6, Error ellipse: s-maj=12.8km s-min=6.8km az=54.0
DJA 27 02:54:26.1±1.6,0.′N±4.′×9.′7E±.′,h33km±21km,M4.1/8, mb4.3/1,MLv4.0/8
IDC 27 02:54:26.6±0.9,0.′23N×97.′05E,h28km±4km,mb3.9/9, mb1 3.9/11,mb1mx3.7/42,mbtmp4.0/11,ML3.9/2, Error ellipse: s-maj=33.0km s-min=14.9km az=61.0

ISC 27 02:54:25.3±0.6,0.′27N±0.′05×97.′14E±0.′07,h23km,n39, σ1§22/45,mb4.1/14,Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GSI	**Gunungsitoli**	**1.11**	**23**	P	**Pn**	**02 54 44.9**	**-0.6**
GSI				S	**Sb**	**02 54 58.0**	**-2.0**
GSI	**Gunungsitoli**	**1.11**	**23**	*ePn*	**Pn**	**02 54 44.8**	**-0.7**
MNSI	**Mandailing Nat**	**2.49**	**78**	P	**Pn**	**02 55 05.7**	**+1.2**
PSI	**Prapat**	**3.08**	**35**	Pn	**Pn**	**02 55 11.8**	**-0.9**
	3.0nm,0.3s,baz=185,slow=13,SNR=6.9						
KCSI	**Kotacane, Aceh**	**3.29**	**11**	P	**Pn**	**02 55 14.5**	**-1.0**
KCSI				S	**Sn**	**02 55 52.9**	**-1.0**
PPI	**Padang Panjang**	**3.33**	**103**	P	**Pn**	**02 55 15.9**	**-0.2**
PPI				S	**Sn**	**02 55 54.6**	**-0.4**
PDSI	**Padang**	**3.52**	**110**	P	**Pn**	**02 55 16.9**	**-1.8**
PDSI				S	**Sn**	**02 55 59.5**	**-0.1**
MLSI	**Meulaboh, Aceh**	**4.04**	**349**	P	**Pn**	**02 55 24.5**	**-1.3**
MLSI				S	**Sn**	**02 56 10.4**	**-2.0**
PPSI	**Pulau Pagai**	**4.16**	**136**	P	**Pn**	**02 55 26.9**	**-0.5**
PPSI				S	**Sn**	**02 56 12.3**	**-3.1**
LHMI	**Lhok Sumawe**	**4.93**	**358**	P	**Pn**	**02 55 36.9**	**-1.1**
RGRI	**Rengat**	**5.23**	**97**	P	**Pn**	**02 55 38.9**	**-3.2**
IPM	**Ipoh**	**5.70**	**43**	*ePn*	**Pn**	**02 55 49.4**	**+0.7**
	10nm,0.5s						
KULM	**Kulim**	**6.09**	**35**	*ePn*	**Pn**	**02 55 53.3**	**-0.7**
MNAI	**Manna**	**7.41**	**128**	P	**Pn**	**02 56 09.8**	**-2.3**
MNAI	**Manna**	**7.41**	**128**	*ePn*	**Pn**	**02 56 12.6**	**+0.4**
PALK	**Pallekele**	**17.81**	**293**	*ePn*	**Pn**	**02 58 32.1**	**+0.2**
CMAR	**Chiang Mai Arr**	**18.16**	**5**	P	**P**	**02 58 37.2**	**+1.0**
	0.4nm,0.3s,baz=196,slow=10,SNR=12						
CHTO	**Chiang Mai**	**18.51**	**5**	*eP*	**P**	**02 58 39.5**	**-0.7**
	3.5nm,0.8s						
KAPI	**Kappang**	**23.18**	**103**	*eP*	**P**	**02 59 31.1**	**+0.5**
	10nm,0.9s						
H08S2	**Diego Garcia H**	**25.81**	**252**	T	T	03 26 51.6	
	baz=72,slow=74,SNR=23						
H08S3	**Diego Garcia H**	**25.81**	**252**	T	T	03 26 53.4	
	baz=72,slow=74,SNR=28						
H08S1	**Diego Carcia H**	**25.82**	**252**	T	T	03 26 54.5	
	baz=72,slow=74,SNR=30						
H01W3	**Cape Leeuwin H**	**38.41**	**157**	T	T	03 42 31.2	
	baz=333,slow=76,SNR=31						
H01W2	**Cape Leeuwin H**	**38.43**	**157**	T	T	03 42 32.7	
	baz=333,slow=76,SNR=36						
H01W1	**Cape Leeuwin H**	**38.43**	**157**	T	T	03 42 37.9	
	baz=333,slow=76,SNR=33						
WRA	**Warramunga Arr**	**41.60**	**121**	P	**P**	**03 02 12.4**	**+0.5**
	1.7nm,0.7s,baz=298,slow=9.0,SNR=12						
WRAB	**Tennant Creek**	**41.61**	**121**	*eP*	**P**	**03 02 12.8**	**+0.8**
	2.4nm,0.6s						
ASAR	**Alice Springs**	**42.89**	**126**	P	**P**	**03 02 23.7**	**+1.3**
	1.4nm,0.9s,baz=310,slow=7.4,SNR=9.6						
TKM2	**Tokmak 2**	**46.65**	**338**	*eP*	**P**	**03 02 52.4**	**+0.1**
	1.1nm,0.3s						
AAK	**Ala-Archa**	**46.83**	**337**	*eP*	**P**	**03 02 54.1**	**+0.5**
	2.3nm,0.7s						
EKS2	**Erkin-Say**	**47.13**	**336**	*eP*	**P**	**03 02 55.0**	**-1.0**
	1.8nm,0.8s						
SONM	**Songino Array**	**48.05**	**8**	P	**P**	**03 03 03.8**	**+0.8**
	0.8nm,0.8s,baz=201,slow=7.8,SNR=5.2						
MKAR	**Makanchi Array**	**48.12**	**346**	P	**P**	**03 03 04.6**	**+1.1**
	1.8nm,0.5s,baz=160,slow=8.8,SNR=12						
MKAR				pP	**sP**	**03 03 13.4**	**0.0**
	1.7nm,0.5s,baz=173,slow=7.9,SNR=7.2						
STKA	**Stephens Creek**	**52.78**	**132**	P	**P**	**03 03 40.1**	**+1.2**
	1.4nm,0.5s,baz=304,slow=12,SNR=3.7						
STKA				pP	**sP**	**03 03 49.2**	**+0.3**
	3.3nm,0.6s,baz=316,slow=6.9,SNR=5.3						
USRK	**Ussuriysk Ar.**	**53.59**	**31**	P	**P**	**03 03 46.0**	**+1.4**
	2.6nm,0.8s,baz=224,slow=6.9,SNR=4.7						
USRK				pP	**sP**	**03 03 53.8**	**-0.9**
	2.1nm,0.8s,baz=259,slow=4.9,SNR=3.7						
ZALV	**Zalesovo Beam**	**54.46**	**351**	P	**P**	**03 03 51.8**	**+1.0**
	3.1nm,0.5s,baz=182,slow=6.9,SNR=6.6						
ZALV				pP	**sP**	**03 04 00.5**	**-0.3**
	3.4nm,0.4s,baz=174,slow=6.9,SNR=5.4						
ARCES	**ARCESS Array B**	**83.39**	**340**	P	**P**	**03 06 51.4**	**+1.0**
	0.5nm,0.5s,baz=96,slow=4.5,SNR=8.0						
ARCES				pP	**sP**	**03 06 59.9**	**-0.7**
	3.3nm,0.9s,baz=76,slow=6.4,SNR=2.5						
TORD	**Torodi Ar. Bea**	**95.25**	**283**	P	**P**	**03 07 46.4**	**-1.7**
	0.4nm,0.9s,baz=198,slow=7.7,SNR=4.6						
TXAR	**Lajitas Array**	**144.48**	**32**	PKP	**PKPdf**	**03 14 00.4**	**-0.4**
	0.4nm,0.5s,baz=180,slow=0.8,SNR=8.9						
TXAR				pPKP	**pPKPdf**	**03 14 08.6**	**0.0**
	0.4nm,0.5s,baz=211,slow=0.9,SNR=4.4						

ISK 27 02:55:00.9,36.′42N×28.′52E,h12km,MD2.8
CSEM 27 02:55:02.4±0.6,36.′51N×28.′60E,h10km,MD2.8, Error ellipse: s-maj=15.1km s-min=7.6km az=22.0
DDA 27 02:55:02.9,36.′66N×28.′66E,h7km,Md2.6
ISCJB 27 02:55:03.6±0.8,36.′53N±0.′06×28.′64E±0.′05,h32km±5km, Error ellipse: s-maj=10.7km s-min=6.0km az=27.8

ISC 27 02:55:02.0±1.2,36.′47N±0.′05×28.′60E±0.′03,h19km±3km, n21,σ0§88/31,Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DALY	**Dalyan (Mu¨la**	**0.35**	**7**	*ePG*	**Pb**	**02 55 10.2**	**+0.5**
DALY				*eSG*	**Sb**	**02 55 15.6**	**+0.7**
DALY	**Dalyan (Mu¨la**	**0.35**	**7**	*ePg*	**Pb**	**02 55 10.2**	**+0.5**
DALY				*eSg*	**Sb**	**02 55 15.6**	**+0.7**
TURN	**Turunc**	**0.40**	**360**	*i P*	**Pn**	**02 55 12.9**	**+0.1**
TURN				*i S*	**Sn**	**02 55 19.9**	**0.0**
FETY	**Fethiye**	**0.42**	**67**	*ePG*	**Pg**	**02 55 10.8**	**+0.1**
FETY	**Fethiye**	**0.42**	**67**	*ePg*	**Pg**	**02 55 10.8**	**+0.1**
YER	**Yerkesik**	**0.71**	**339**	*ePG*	**Pb**	**02 55 15.6**	**-0.3**
YER	**Yerkesik**	**0.71**	**339**	*ePg*	**Pb**	**02 55 15.6**	**-0.3**
AKAS	**Kas**	**0.84**	**106**	P	**Pg**	**02 55 19.4**	**+0.9**
AKAS				S	**Sn**	**02 55 32.0**	**+1.1**
AKAS	**Kas**	**0.84**	**106**	*i P*	**Pg**	**02 55 19.4**	**+0.9**
AKAS				*i S*	**Sn**	**02 55 32.0**	**+1.1**
GOLH	**Golhisar**	**1.08**	**45**	P	**Pb**	**02 55 20.8**	**-1.4**
GOLH				S	**Sb**	**02 55 34.5**	**-1.6**
GOLH	**Golhisar**	**1.08**	**45**	*i P*	**Pb**	**02 55 20.8**	**-1.4**
GOLH				*i S*	**Sb**	**02 55 34.5**	**-1.6**
ELL	**Elmali**	**1.09**	**75**	*ePN*	**Pg**	**02 55 23.7**	**+0.6**
ELL	**Elmali**	**1.09**	**75**	*ePn*	**Pg**	**02 55 23.7**	**+0.6**
BDRM	**Kayabasi**	**1.10**	**303**	P	**Pg**	**02 55 23.7**	**+0.3**
BDRM				S	**Sg**	**02 55 38.7**	**+0.8**
BDRM	**Kayabasi**	**1.10**	**303**	*i P*	**Pg**	**02 55 23.7**	**+0.3**
BDRM				*i S*	**Sg**	**02 55 38.7**	**+0.8**
BODT	**Bodrum**	**1.20**	**300**	*ePN*	**Pn**	**02 55 23.7**	**0.0**
BODT	**Bodrum**	**1.20**	**300**	*ePn*	**Pn**	**02 55 23.7**	**0.0**
AYDN	**Tasoluk**	**1.32**	**334**	*i P*	**Pb**	**02 55 26.1**	**-0.2**
AYDN				*i S*	**Sn**	**02 55 41.1**	**-1.6**
KARP	**Karpathos**	**1.49**	**232**	*ePN*	**Pn**	**02 55 26.7**	**-1.0**
AYDB	**Zeytinkoy-Aydi**	**1.58**	**339**	*ePN*	**Pn**	**02 55 29.4**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**1.58**	**339**	*ePn*	**Pn**	**02 55 29.4**	**+0.2**

IDC 27 02:56:54.3±1.9,56.′10S×28.′44W,h0km,mb3.9/2, mb1 4.0/2,mb1mx3.7/19,mbtmp3.9/2,Error ellipse: s-maj=77.3km s-min=45.4km az=6.0,South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LPAZ	**La Paz**	**49.84**	**307**	P	P	03 05 49.8	0.0
	1.0nm,0.7s,baz=180,slow=5.7,SNR=4.3						
TORD	**Torodi Ar. Bea**	**73.45**	**31**	P	P	03 08 28.3	0.0
	0.8nm,0.6s,baz=201,slow=5.3,SNR=12						
ILAR	**Eielson Array**	**149.62**	**312**	PKPbc	PKPbc	03 16 43.5	-0.8
	0.2nm,0.8s,baz=142,slow=2.3,SNR=6.6						
SONM	**Songino Array**	**151.43**	**88**	PKPbc	PKPbc	03 16 49.1	-0.1
	0.3nm,0.6s,baz=227,slow=3.6,SNR=2.9						

IDC 27 03:03:47.3±1.3,28.′52S×178.′17W,h153km±8km,mb3.4/4, mb1 3.6/4,mb1mx3.4/28,mbtmp3.8/4, Error ellipse: s-maj=38.6km s-min=27.1km az=24.0

ISC 27 03:03:46.5±1.7,28.′3S±0.′2×178.′1W±0.′3,h150km,n10, σ1§19/10,mb3.6/4,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**0.92**	**169**	P	**Pn**	**03 04 11.2**	**+0.6**
	120nm,0.3s,baz=84,slow=19,SNR=3.9						
RAO				S	**Sn**	**03 04 29.1**	**-0.1**
	1μm,0.3s,baz=95,slow=21,SNR=11						
URZ	**Urewera**	**10.66**	**201**	S	Sn	03 07 58.5	-15
	1.5nm,0.3s,baz=165,slow=20,SNR=5.1						
STKA	**Stephens Creek**	**34.89**	**254**	P	**P**	**03 10 24.2**	**+0.6**
	0.9nm,0.4s,baz=70,slow=13,SNR=3.2						
ASAR	**Alice Springs**	**43.15**	**265**	P	**P**	**03 11 32.0**	**-0.5**
	0.6nm,0.6s,baz=95,slow=8.1,SNR=9.7						
WRA	**Warramunga Arr**	**43.95**	**270**	P	**P**	**03 11 38.3**	**-0.6**
	1.1nm,0.6s,baz=108,slow=6.2,SNR=9.7						
VNDA	**Vanda**	**50.12**	**186**	P	**P**	**03 12 26.4**	**+0.4**
	0.6nm,0.7s,baz=344,slow=3.2,SNR=3.7						
AKASG	**Malin Array Be**	**149.59**	**325**	PKPbc	**PKPbc**	**03 23 18.6**	**+0.7**
	1.3nm,0.5s,baz=46,slow=2.9,SNR=8.0						
MMAI	**Mount Meron Ar**	**150.87**	**288**	PKPbc	**PKPbc**	**03 23 22.8**	**+1.1**
	1.6nm,0.6s,baz=82,slow=6.0,SNR=4.2						
BRTR	**Keskin Array B**	**151.48**	**302**	PKPbc	**PKPbc**	**03 23 22.8**	**-0.2**
	0.7nm,0.6s,baz=143,slow=6.3,SNR=5.4						
TORD	**Torodi Ar. Bea**	**164.88**	**179**	PKPab	**PKPab**	**03 24 27.4**	**-2.6**
	0.3nm,0.5s,baz=163,slow=2.5,SNR=9.3						

ISCJB 27 03:19:04.6±0.4,38.′16N±0.′03×75.′27E±0.′06,h100km, mb3.5/2, Error ellipse: s-maj=6.9km s-min=3.9km az=152.8
*BJI

1.0nm,0.4s,baz=101,slow=8.4,SNR=21
TORD Torodi Ar. Bea 168.93 189 PKPab PKPab 03 44 58.7 -0.4
0.6nm,0.8s,baz=190,slow=3.6,SNR=4.7

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*NIED **27** 03:34:00,37.°10N×140.°90E,h5km,Mw4.5 Best double couple: M0 5.39000×10^15 NP1:φs88.00000°,δ28.00000°, λ-60.00000°. NP2:φs235.00000°,δ66.00000°, λ-105.00000°.*
*ISCJB **27** 03:34:14.6±0.7,37.°08N±0.°03×140.°91E±0.°04,h12km±4km, mb4.4/72,MS3.7/17,Error ellipse: s-maj=5.7km s-min=4.1km az=136.9*
*IDC **27** 03:34:14.0±0.6,37.°09N×140.°87E,h0km,mb4.2/27, mb1 4.3/29,mb1mx4.2/58,mbtmp4.2/29,ML3.8/2,MS3.6/19, Ms1 3.6/19,ms1mx3.4/38,Error ellipse: s-maj=15.8km s-min=14.5km az=156.0*
*JMA **27** 03:34:15.3,37.°11N×140.°83E,h8km±1km,M4.7 Broadband fault plane solution: P waves. NP1: φs223.00000°,δ51.00000°,λ-101.00000°. NP2: φs60.00000°,δ41.00000°,λ-77.00000°. Principal axes: T Plg5.0000°, Azm321.0000°; N Plg9.0000°, Azm230.0000°; P Plg80.0000°, Azm80.0000°;*
JMA Felt IV J1.
*NEIC **27** 03:34:19.7±0.6,37.°04N×140.°87E,h38km±5km,mb4.7/33 Error ellipse: s-maj=6.0km s-min=4.8km az=125.0*
NEIC Recorded [4 JMA] in Fukushima.
ISC 27 03:34:16.2±0.9,37.°09N±0.°03×140.°83E±0.°04,h13km±5km, n152,σ1§62/154,mb4.5/75,MS3.7/18,11C-3D,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.03**	**301**	⇓P	**Pg**	**03 34 16.5**	**-2.1**
JFK	**Kawauchi**	**0.28**	**7**	⇑P	**Pg**	**03 34 20.4**	**-1.7**
JHO	**Hitachi**	**0.52**	**204**	⇑P	**Pg**	**03 34 25.5**	**-0.9**
JHO				S	**Sg**	**03 34 32.9**	**-0.4**
JFT	**Otama**	**0.58**	**318**	⇑P	**Pg**	**03 34 26.5**	**-1.1**
JSB	**Shiboa**	**0.74**	**261**	⇑P	**Pg**	**03 34 30.2**	**-0.3**
JMM	**Marumori**	**0.78**	**358**	⇑P	**Pg**	**03 34 29.4**	**-1.9**
JFY	**Yanaizu**	**0.95**	**290**	⇑P	**Pg**	**03 34 33.3**	**-1.3**
JFY				S	**Sg**	**03 34 46.0**	**-1.1**
MJAR	**Matsushiro Arr**	**2.17**	**256**	Pn	**Pn**	**03 34 53.2**	**+1.2**
84nm,0.3s,baz=72,slow=16,SNR=360							
MJAR				Sn	**Sb**	**03 35 21.0**	**-1.2**
85nm,0.3s,baz=118,slow=12,SNR=14							
MAJO	**Matsushiro**	**2.17**	**256**	*e*Pn	**Pb**	**03 34 53.8**	**-1.5**
MAJO				*e*Sn	**Sn**	**03 35 19.6**	**+0.7**
MAT	**Matsushiro**	**2.17**	**256**	P	**Pn**	**03 34 53.4**	**+1.3**
MAT				S	**Sb**	**03 35 23.4**	**+1.2**
MJB9	**Matsu-Tunnel**	**2.18**	**256**	*e*Pn	**Pb**	**03 34 53.8**	**-1.6**
INU	**Inuyama**	**3.54**	**242**	*e*Pn	**Pn**	**03 35 13.3**	**+2.5**
ERM	**Erimo**	**5.24**	**19**	*e*Pn	**Pn**	**03 35 36.2**	**+2.1**
ERM				*e*Sn	**Sn**	**03 36 35.6**	**+1.2**
ASAJ	**Asahikawa**	**7.15**	**10**	Pn	**Pn**	**03 35 59.9**	**-0.5**
0.9nm,0.3s,baz=191,slow=5.2,SNR=3.6							
ASAJ				Sn	**Sn**	**03 37 21.0**	**-0.4**
0.2nm,0.3s,baz=205,slow=14,SNR=2.2							
JNU	**Nakatsue**	**9.06**	**247**	Pn	**Pn**	**03 36 28.9**	**+2.3**
0.4nm,0.3s,baz=82,slow=9.0,SNR=4.8							
JNU				LR	LR	03 40 31.3	
comp=Z,168nm,18.4s,baz=118,slow=42							
JNU	**Nakatsue**	**9.06**	**247**	*e*Pn	**Pn**	**03 36 29.4**	**+2.7**
USRK	**Ussuriysk Ar.**	**9.78**	**319**	Pn	Pn	03 36 41.5	+5.2
0.2nm,0.3s,baz=131,slow=14,SNR=36							
USRK				LR	LR	03 40 06.3	
comp=Z,429nm,19.7s,baz=118,slow=36							
CBIJ	**Chichi jima**	**10.03**	**173**	*e*Pn	**Pn**	**03 36 39.2**	**-0.7**
CBIJ				Sn	Sn	03 38 22.5	-10
JCJ	**Chichijima**	**10.03**	**173**	Pn	**Pn**	**03 36 35.9**	**-4.0**
baz=276,slow=19							
JCJ				Sn	Sn	03 38 22.5	-10
3.2nm,0.3s,baz=190,slow=18,SNR=3.6							
KS01	**Wonju Array Si**	**10.32**	**276**	*e*Pn	Pn	03 36 49.6	+5.7
KS15	**Wonju Array Si**	**10.33**	**276**	*e*Pn	Pn	03 36 50.8	+6.9
MDJ	**Mudanjiang**	**11.35**	**315**	P	**Pn**	**03 37 02.0**	**+4.1**
MDJ				S	**Sn**	**03 39 07.5**	**+2.9**
MDJ				PcP	**PcP**	**03 42 51.0**	**-0.6**
MDJ				ScP	**ScP**	**03 46 18.5**	**-5.4**
MDJ				PcS	**PcS**	**03 46 25.3**	**0.0**
MDJ	**Mudanjiang**	**11.35**	**315**	ScS	ScS	03 49 54.5	-4.7
MDJ				pmax	pmax		
comp=Z,25nm,1.1s							
MDJ				pmax	pmax		
comp=Z,130nm,6.3s							
MDJ				LR	LR		
comp=N,310nm,13.4s							
MDJ				LR	LR		
comp=E,220nm,15.0s							
MDJ				LR	LR		
comp=Z,340nm,15.0s							
MDJ	**Mudanjiang**	**11.35**	**315**	*e*Pn	**Pn**	**03 37 02.4**	**+4.4**
comp=Z,49nm,1.2s							
CN2	**Changchun**	**13.49**	**305**	*e*P	**P**	**03 37 36.3**	**-0.1**
CN2				pmax	pmax		
comp=Z,20nm,0.7s							
KLR	**Kul'dur**	**13.81**	**334**	Pn	**P**	**03 37 37.2**	**-2.8**
comp=Z,0.1nm,0.3s,baz=144,slow=14,SNR=4.4							
KLR				LR	LR	03 42 43.4	
comp=Z,304nm,18.7s,baz=116,slow=37							
DL2	**Dalian**	**15.25**	**283**	P	**P**	**03 37 55.0**	**-1.0**
DL2				*e*S	**S**	**03 40 48.3**	**-8.2**
DL2				pmax	pmax		
comp=Z,24nm,0.9s							
DL2				pmax	pmax		
comp=Z,140nm,9.6s							
DL2				LR	LR		
comp=N,520nm,14.1s							
DL2				LR	LR		
comp=Z,400nm,9.4s							
NJ2	**Nanjing**	**18.77**	**261**	*e*P	**P**	**03 38 35.0**	**0.0**
NJ2				pmax	pmax		
comp=Z,17nm,0.5s							
BJI	**Beijing**	**19.49**	**286**	P	**P**	**03 38 41.8**	**-1.0**
BJI				S	**Sn**	**03 42 17.5**	**-5.0**
BJI				pmax	pmax		
comp=Z,8.0nm,1.3s							
BJI				LR	LR		
comp=N,110nm,5.9s							
BJI				LR	LR		
comp=E,310nm,5.5s							
PETK	**Petropavlovsk-**	**19.88**	**31**	LR	LR	03 47 21.3	
comp=E,88nm,18.6s,baz=225,slow=40							
HHC	**Hu-ho-hao-te**	**23.01**	**288**	*e*P	**P**	**03 39 22.8**	**+1.9**
HHC				S	**S**	**03 43 27.5**	**-3.7**
HHC				pmax	pmax		
comp=Z,21nm,0.8s							
HHC				pmax	pmax		
comp=Z,130nm,4.2s							
HHC				LR	LR		
comp=N,200nm,10.2s							
HHC				LR	LR		
comp=E,300nm,10.6s							
HHC				LR	LR		
comp=Z,340nm,11.3s							
XAN	**Xi'an**	**26.07**	**273**	P	**P**	**03 39 49.3**	**-0.1**
XAN				S	**S**	**03 44 18.0**	**-2.3**
XAN				pmax	pmax		
comp=Z,3.0nm,0.5s							
XAN				LR	LR		
comp=N,190nm,11.9s							
XAN				LR	LR		
comp=E,140nm,12.6s							
XAN				LR	LR		
comp=Z,200nm,6.3s							
ULN	**Ulaanbaatar**	**26.94**	**304**	*e*P	**P**	**03 39 57.3**	**0.0**
comp=Z,5.9nm,0.9s							
SONA1	**Songino Array**	**27.37**	**304**	*e*P	**P**	**03 40 00.6**	**-0.5**
SONM	**Songino Array**	**27.37**	**304**	P	**P**	**03 40 00.6**	**-0.6**
comp=Z,4.2nm,0.8s,baz=101,slow=8.6,SNR=19							
SONM				PcP	**PcP**	**03 43 20.2**	**+0.3**
comp=Z,0.6nm,0.5s,baz=92,slow=2.2,SNR=4.4							
SONM				LR	LR	03 50 52.3	
comp=Z,91nm,18.9s,baz=90,slow=36							
H11N2	**WAKE ISLAND Hy**	**28.58**	**120**	T	T	04 10 02.9	
baz=313,slow=75,SNR=601							
H11N1	**WAKE ISLAND Hy**	**28.58**	**120**	T	T	04 09 56.4	
baz=313,slow=75,SNR=729							
H11N3	**WAKE ISLAND Hy**	**28.59**	**120**	T	T	04 09 57.2	
baz=313,slow=75,SNR=489							
H11S1	**WAKE ISLAND Hy**	**29.28**	**122**	T	T	04 10 57.1	
baz=314,slow=75,SNR=470							
H11S3	**WAKE ISLAND Hy**	**29.28**	**122**	T	T	04 10 57.2	
baz=314,slow=75,SNR=426							
H11S2	**WAKE ISLAND Hy**	**29.30**	**122**	T	T	04 10 58.3	
baz=314,slow=75,SNR=340							
LZH	**Lanzhou**	**29.60**	**279**	*e*P	**P**	**03 40 25.8**	**+4.7**
LZH				pP	sP	03 40 38.0	+11
LZH				sP	pP	03 40 45.8	+21
LZH				pmax	pmax		
comp=Z,23nm,1.0s							
GYA	**Guiyang**	**30.77**	**260**	*e*P	**P**	**03 40 33.0**	**+1.5**
GYA				pmax	pmax		
comp=Z,10.0nm,0.8s							
CD2	**Chengdu**	**31.21**	**270**	P	**P**	**03 40 35.0**	**-0.3**
CD2				pmax	pmax		
comp=Z,18nm,0.6s							
GTA	**Gaotai**	**32.10**	**287**	*e*P	**P**	**03 40 44.0**	**+0.9**
GTA				pP	sP	03 40 58.0	+9.2
GTA				sP	pP	03 41 06.3	+19
GTA				pmax	pmax		
comp=Z,6.0nm,0.7s							
KMI	**Kunming**	**34.51**	**261**	P	**P**	**03 41 05.5**	**+1.1**
KMI				pmax	pmax		
comp=Z,17nm,0.8s							
KMI				pmax	pmax		
comp=Z,220nm,5.6s							
TIXI	**Tiksi**	**35.18**	**353**	P	**P**	**03 41 08.8**	**-0.6**
comp=Z,1.4nm,0.5s,baz=148,slow=9.0,SNR=4.4							
TIXI	**Tiksi**	**35.18**	**353**	*e*P	**P**	**03 41 08.8**	**-0.6**
comp=Z,1.6nm,0.6s							
WMQ	**Urumqi**	**40.40**	**297**	P	**P**	**03 41 58.0**	**+4.1**
WMQ				pP	sP	03 42 13.0	+13
WMQ				sP	pP	03 42 22.5	+25
WMQ				SS	SS	03 51 01.5	+0.9
WMQ				pmax	pmax		
comp=Z,7.0nm,0.6s							
WMQ				pmax	pmax		
comp=Z,32nm,3.6s							
WMQ				LR	LR		
comp=N,150nm,21.4s							
WMQ				LR	LR		
comp=E,94nm,31.8s							
WMQ				LR	LR		
comp=Z,27nm,26.6s							
CMAR	**Chiang Mai Arr**	**41.06**	**255**	LR	LR	04 00 33.4	
comp=Z,35nm,19.2s,baz=55,slow=38							
ZAA0	**Zalesovo Array**	**41.53**	**312**	*e*P	**P**	**03 42 02.9**	**-0.1**
ZALV	**Zalesovo Beam**	**41.53**	**312**	P	**P**	**03 42 03.4**	**+0.4**
comp=Z,2.9nm,0.4s,baz=106,slow=6.6,SNR=3.8							
ZALV				PcP	**PcP**	**03 44 00.8**	**+0.5**
comp=Z,1.5nm,0.5s,baz=110,slow=2.1,SNR=3.7							
ZALV				LR	LR	03 59 55.6	
comp=Z,86nm,18.3s,baz=48,slow=37							
NRIK	**Noril'sk**	**43.02**	**335**	LR	LR	04 01 10.3	
comp=Z,77nm,18.6s,baz=70,slow=38							
MK01	**Makanchi Array**	**43.69**	**302**	*e*P	**P**	**03 42 20.8**	**0.0**
MK31	**Makanchi Array**	**43.70**	**302**	*e*P	**P**	**03 42 21.3**	**+0.6**
MKAR	**Makanchi Array**	**43.70**	**302**	P	**P**	**03 42 21.0**	**+0.3**
comp=Z,0.9nm,0.6s,baz=88,slow=8.9,SNR=10							
MKAR				PcP	**PcP**	**03 44 08.2**	**+0.5**
comp=Z,0.8nm,0.8s,baz=86,slow=3.2,SNR=3.9							
MKAR				LR	LR	04 00 40.1	
comp=Z,67nm,18.9s,baz=82,slow=36							
MAKZ	**Makanchi**	**43.91**	**302**	*e*P	**P**	**03 42 23.1**	**+0.6**
comp=Z,4.7nm,1.3s							
KSM	**Kuning**	**45.25**	**226**	*e*P	**P**	**03 42 33.6**	**+0.2**
comp=Z,15nm,1.0s							
KURK	**Kurchatov**	**45.53**	**308**	*e*P	**P**	**03 42 34.9**	**-0.4**
comp=Z,25nm,1.1s							
KURBB	**Kurchatov Arra**	**45.60**	**308**	P	**P**	**03 42 35.5**	**-0.3**
comp=Z,5.5nm,0.6s,baz=85,slow=8.4,SNR=42							
KAPI	**Kappang**	**46.27**	**210**	LR	LR	03 59 25.3	
comp=Z,25nm,20.8s,baz=104,slow=33							
KAPI	**Kappang**	**46.27**	**210**	*e*P	**P**	**03 42 41.6**	**+0.2**
comp=Z,4.3nm,1.2s							
CAST	**Castle Rocks**	**47.44**	**34**	*e*P	**P**	**03 42 52.2**	**+2.0**
comp=Z,7.1nm,1.4s							
RND	**Reindeer**	**48.90**	**34**	*e*P	**P**	**03 43 01.7**	**+0.3**
comp=Z,26nm,2.0s							
MDM	**Murphy Dome**	**49.12**	**32**	*e*P	**P**	**03 43 05.0**	**+1.9**
comp=Z,5.0nm,1.1s							
TKM2	**Tokmak 2**	**49.20**	**298**	*e*P	**P**	**03 43 05.7**	**+1.5**
comp=Z,25nm,1.4s							
IL1	**Eielson Array**	**49.70**	**32**	*e*P	**P**	**03 43 07.1**	**-0.3**
ILAR	**Eielson Array**	**49.70**	**32**	P	**P**	**03 43 08.1**	**+0.6**
comp=Z,1.0nm,0.8s,baz=271,slow=6.1,SNR=12							
KSH	**Kashi**	**49.96**	**294**	*e*P	P	03 43 15.5	+5.5
KSH				*es*P	sP	03 43 38.3	+23
KSH				S	**S**	**03 50 21.0**	**+0.8**
KSH				ScS	**ScS**	**03 52 58.0**	**-3.3**
KSH				pmax	pmax		
comp=Z,64nm,4.5s							
AAK	**Ala-Archa**	**50.05**	**298**	P	**P**	**03 43 10.7**	**0.0**
comp=Z,1.3nm,0.4s,baz=82,slow=9.6,SNR=5.7							
AAK	**Ala-Archa**	**50.05**	**298**	*e*P	**P**	**03 43 12.3**	**+1.6**
comp=Z,1.1nm,1.5s							
BVAR	**Borovoye Array**	**50.19**	**312**	P	**P**	**03 43 11.3**	**-0.1**
comp=Z,3.8nm,0.8s,baz=79,slow=7.7,SNR=16							
BVAR				PcP	**PcP**	**03 44 29.6**	**-0.9**
comp=Z,1.7nm,0.6s,baz=72,slow=4.8,SNR=5.5							
DIV	**Divide**	**50.52**	**37**	*e*P	**P**	**03 43 14.2**	**+0.4**
comp=Z,2.9nm,0.6s							
EKS2	**Erkin-Say**	**50.55**	**298**	*e*P	**P**	**03 43 14.2**	**-0.2**
comp=Z,1.7nm,0.6s							
DOT	**Dot Lake**	**51.02**	**34**	*e*P	**P**	**03 43 17.6**	**+0.1**
comp=Z,11nm,1.2s							
ZRNK	**Zerenda**	**51.03**	**312**	*e*P	**P**	**03 43 17.6**	**-0.1**
comp=Z,11nm,1.1s							
PSI	**Prapat**	**51.42**	**239**	*e*P	**P**	**03 43 22.6**	**+1.4**
comp=Z,13nm,1.0s							
KKAR	**Karatay Array**	**52.69**	**300**	*e*P	**P**	**03 43 30.4**	**+0.1**
comp=Z,1.2nm,0.4s							
GSI	**Gunungsitoli**	**53.43**	**239**	*e*P	**P**	**03 43 35.8**	**-0.2**
comp=Z,36nm,0.8s							
ARU	**Arti**	**56.01**	**318**	P	**P**	**03 43 54.7**	**+0.5**
comp=Z,5.6nm,0.2s,baz=88,slow=6.8,SNR=7.4							
ARU	**Arti**	**56.01**	**318**	*e*P	**P**	**03 43 55.8**	**+1.6**
comp=Z,7.7nm,1.0s							
WRAB	**Tennant Creek**	**57.04**	**187**	*e*P	**P**	**03 44 00.8**	**-1.0**
comp=Z,7.2nm,0.9s							
WRA	**Warramunga Arr**	**57.05**	**187**	P	**P**	**03 44 01.1**	**-0.8**
comp=Z,4.8nm,0.6s,baz=3.4,slow=7.1,SNR=44							
ABKAR	**Akbulak array**	**57.55**	**310**	*e*P	**P**	**03 44 05.6**	**+0.3**
comp=Z,2.3nm,0.6s							
AKTO	**Aktyubinsk**	**58.29**	**312**	P	**P**	**03 44 10.3**	**-0.2**
comp=Z,3.0nm,1.0s,baz=63,slow=8.8,SNR=4.5							
SPITS	**Spitsbergen Ar**	**60.38**	**349**	P	**P**	**03 44 24.4**	**-0.1**
comp=Z,0.5nm,0.4s,baz=205,slow=6.2,SNR=6.5							
AS01	**Alice Springs**	**60.77**	**187**	*e*P	**P**	**03 44 27.4**	**-0.3**
ASAR	**Alice Springs**	**60.78**	**187**	P	**P**	**03 44 27.9**	**+0.1**
comp=Z,1.1nm,0.6s,baz=3.3,slow=7.7,SNR=6.6							
GEYT	**Alibek**	**63.40**	**299**	P	**P**	**03 44 46.4**	**+1.0**
comp=Z,2.1nm,0.5s,baz=270,slow=1.5,SNR=5.6							
ARCES	**ARCESS Array B**	**63.78**	**339**	P	**P**	**03 44 46.2**	**-1.2**
comp=Z,4.0nm,0.8s,baz=54,slow=11,SNR=6.0							
ARCES				LR	LR	04 15 25.9	
comp=Z,56nm,20.8s,baz=38,slow=39							
YKA	**Yellowknife Ar**	**64.00**	**30**	P	**P**	**03 44 47.9**	**-0.9**
comp=Z,0.3nm,0.7s,baz=303,slow=6.6,SNR=5.6							
FINES	**FINESS Array B**	**68.55**	**332**	P	**P**	**03 45 17.7**	**-0.3**
comp=Z,7.7nm,0.8s,baz=59,slow=7.4,SNR=20							
FINES				LR	LR	04 17 36.3	
comp=Z,120nm,18.0s,baz=38,slow=38							
KBZ	**Khabaz**	**70.51**	**310**	P	**P**	**03 45 30.6**	**+0.1**
comp=Z,3.5nm,0.8s,baz=189,slow=7.9,SNR=6.9							
KBZ				LR	LR	04 17 25.5	
comp=Z,54nm,19.2s,baz=46,slow=37							
KIV	**Kislovodsk**	**70.52**	**311**	*e*P	**P**	**03 45 31.7**	**+1.0**
comp=Z,17nm,1.1s							
SUMG	**Summit**	**70.63**	**360**	*e*P	**P**	**03 45 32.2**	**+1.0**
comp=Z,8.4nm,0.9s							
NB2	**NORSAR Subarra**	**73.96**	**337**	P	**P**	**03 45 51.0**	**+0.1**
comp=Z,5.6nm,1.1s,baz=39,slow=6.2							
NOA	**NORSAR Array B**	**73.96**	**337**	P	**P**	**03 45 51.5**	**+0.6**
comp=Z,3.6nm,0.9s,baz=39,slow=5.8,SNR=7.3							
NOA				LR	LR	04 21 34.7	
comp=Z,45nm,18.6s,baz=45,slow=38							
AKASG	**Malin Array Be**	**73.97**	**322**	P	**P**	**03 45 51.4**	**+0.3**
comp=Z,5.6nm,0.9s,baz=46,slow=6.5,SNR=17							
AKASG				LR	LR	04 21 16.3	
comp=Z,96nm,18.1s,baz=35,slow=38							
KIEV	**Kiev**	**73.98**	**322**	*e*P	**P**	**03 45 51.0**	**-0.1**
comp=Z,6.7nm,0.9s							
AK11	**Malin Array Si**	**74.01**	**322**	*e*P	**P**	**03 45 51.8**	**+0.4**
NVAR	**Mina Array Bea**	**75.33**	**53**	P	**P**	**03 45 59.5**	**+0.1**
comp=Z,0.5nm,0.6s,baz=303,slow=4.2,SNR=2.5							
SORM	**Soroca**	**76.05**	**320**	⇓*i*P	**P**	**03 46 03.3**	**+0.2**
R11A	**Troy Canyon, C**	**77.10**	**52**	*e*P	**P**	**03 46 10.2**	**+0.7**
comp=Z,2.0nm,1.1s							
KWP	**Kalwaria Pacla**	**77.81**	**324**	⇑*i*P	**P**	**03 46 14.6**	**+1.5**
PDAR	**Pinedale Array**	**77.96**	**45**	P	**P**	**03 46 15.3**	**+1.0**
comp=Z,0.4nm,0.6s,baz=289,slow=2.8,SNR=3.3							
BUR08	**Bucovina Ar. S**	**77.97**	**321**	*e*P	**P**	**03 46 14.8**	**+0.7**
BURAR	**Bucovina Array**	**77.98**	**321**	⇑*i*P	**P**	**03 46 15.3**	**+1.1**
TESR	**Tescani**	**77.99**	**320**	⇑*i*P	**P**	**03 46 15.1**	**+1.0**
VRI	**Vrincioaia**	**78.38**	**319**	⇑*i*P	P	03 46 22.8	+6.5
BRTR	**Keskin Array B**	**78.47**	**311**	P	**P**	**03 46 16.7**	**-0.4**
comp=Z,1.5nm,0.9s,baz=82,slow=2.7,SNR=7.4							
BRTR				LR	LR	04 27 20.1	
comp=Z,14nm,18.4s,baz=34,slow=41							
STHS	**Stebnicka Huta**	**78.65**	**325**	*e*P	**P**	**03 46 20.2**	**+2.5**
OJC	**Ojcow**	**78.73**	**326**	*e*P	**P**	**03 46 18.4**	**+0.3**
comp=Z,9.1nm,0.9s							
CRVS	**Cervenica-Dubn**	**78.91**	**324**	*e*P	**P**	**03 46 21.4**	**+2.3**
BR231	**Keskin MP Arra**	**78.91**	**312**	*e*P	**P**	**03 46 18.7**	**-0.8**
MORC	**Moravsky Berou**	**80.06**	**327**	⇓*i*P	**P**	**03 46 24.7**	**-0.7**
MORC	**Moravsky Berou**	**80.06**	**327**	*e*P	**P**	**03 46 26.9**	**+1.5**
comp=Z,21nm,0.9s							
DPC	**Dobruska-Polom**	**80.17**	**328**	*e*P	**P**	**03 46 26.6**	**+0.6**
KRLC	**Kraliky**	**80.17**	**327**	*e*P	**P**	**03 46 26.5**	**+0.5**
PSZ	**Piszkesteto**	**80.34**	**324**	*e*P	**P**	**03 46 27.7**	**+0.6**
comp=Z,3.4nm,0.9s							
VYHS	**Vyhne**	**80.42**	**325**	*e*P	**P**	**03 46 28.9**	**+1.6**
BRG	**Berggiesshubel**	**80.77**	**329**	*e*P	**P**	**03 46 29.9**	**+0.8**
comp=Z,7.1nm,1.1s							
CLL	**Collm**	**80.82**	**330**	*i* P	**P**	**03 46 29.7**	**+0.3**
comp=Z,11nm,1.0s							
CLL	**Collm**	**80.82**	**330**	*e*P	**P**	**03 46 29.8**	**+0.3**
comp=Z,8.7nm,0.9s							
GOPC	**GO Pecny, Ondr**	**81.15**	**328**	*e*P	**P**	**03 46 32.3**	**+1.1**
PRU	**Pruhonice**	**81.19**	**328**	*e*P	**P**	**03 46 32.4**	**+1.0**
MMAI	**Mount Meron Ar**	**81.55**	**305**	P	**P**	**03 46 33.2**	**-0.5**
comp=Z,1.4nm,0.6s,baz=52,slow=5.7,SNR=4.3							
NKC	**Novy Kostel**	**81.87**	**329**	*e*P	**P**	**03 46 35.5**	**+0.4**
ISCO	**Idaho Springs**	**82.15**	**45**	*e*P	**P**	**03 46 36.9**	**-0.2**
comp=Z,0.9nm,0.7s							
CONA	**Conrad Observa**	**82.18**	**326**	*i* P	**P**	**03 46 37.7**	**+0.9**
comp=Z,4.3nm,1.1s							
KHC	**Kasperske Hory**	**82.25**	**328**	*e*P	**P**	**03 46 37.5**	**+0.4**
KHC	**Kasperske Hory**	**82.25**	**328**	*e*P	**P**	**03 46 37.8**	**+0.7**
comp=Z,2.9nm,1.0s							
GERES	**GERESS Array B**	**82.42**	**328**	P	**P**	**03 46 38.3**	**+0.2**
comp=Z,1.4nm,0.7s,baz=46,slow=5.8,SNR=12							
GERES				LR	LR	04 27 10.7	
comp=Z,90nm,18.1s,baz=34,slow=38							
GEA0	**GERESS Array S**	**82.43**	**328**	*e*P	**P**	**03 46 37.5**	**-0.6**
ARSA	**Arzberg**	**82.84**	**326**	*i* P	**P**	**03 46 41.0**	**+0.8**
comp=Z,2.2nm,0.8s							
MOA	**Molln**	**82.94**	**327**	*i* PcP	P	03 46 46.9	+6.2
comp=Z,3.9nm,1.2s							
SOKA	**Soboth**	**83.49**	**326**	*i* P	**P**	**03 46 43.7**	**+0.1**
comp=Z,4.9nm,0.8s							
OBKA	**Obir**	**83.83**	**326**	*i* P	**P**	**03 46 44.0**	**-1.4**
comp=Z,2.2nm,0.9s							
KBA	**Koelnbreinsper**	**83.93**	**327**	*i* PcP	**P**	**03 46 47.5**	**+1.5**
comp=Z,2.0nm,0.8s							
EIL	**Elat**	**83.96**	**303**	P	**P**	**03 46 47.2**	**+1.0**
comp=Z,2.5nm,0.8s,baz=29,slow=7.5,SNR=3.5							
ABTA	**Abfaltersbach**	**84.55**	**327**	*i* P	**P**	**03 46 47.9**	**-1.2**
comp=Z,2.4nm,0.9s							
PDG	**Podgorica**	**84.63**	**321**	⇑*i*P	**P**	**03 46 50.0**	**+0.6**
RETA	**Reutte**	**84.71**	**329**	*i* P	**P**	**03 46 49.9**	**+0.1**
comp=Z,5.9nm,0.9s							
BFO	**Black Forest**	**85.03**	**330**	*e*P	**P**	**03 46 51.8**	**+0.5**
comp=Z,12nm,1.1s							
PPT	**Papeete**	**85.08**	**116**	LR	LR	04 16 20.8	
comp=Z,54nm,21.6s,baz=112,slow=30							
DAVA	**Damuels**	**85.24**	**329**	*i* PcP	**P**	**03 46 53.4**	**+0.8**
comp=Z,8.1nm,0.9s							
FUORN	**Ofenpass-Fuorn**	**85.61**	**328**	*e*P	**P**	**03 46 55.2**	**+0.6**
comp=Z,10.0nm,1.0s							
TXAR	**Lajitas Array**	**90.46**	**52**	P	**P**	**03 47 18.5**	**+0.6**
comp=Z,0.4nm,0.8s,baz=293,slow=2.0,SNR=4.4							
KEST	**Kesra**	**94.70**	**322**	LR	LR	04 34 04.8	
comp=Z,26nm,18.2s,baz=319,slow=38							
TORD	**Torodi Ar. Bea**	**116.96**	**314**	PKP	**PKPdf**	**03 53 00.2**	**-1.0**
comp=Z,0.4nm,0.9s,baz=24,slow=1.4,SNR=5.8							
SAML	**Samuel**	**144.53**	**44**	*e*PKPdf	**PKPdf**	**03 53 52.8**	**-0.1**
LPAZ	**La Paz**	**147.07**	**59**	PKPbc	**PKPdf**	**03 53 58.5**	**+0.6**
comp=Z,0.9nm,0.7s,baz=305,slow=1.4,SNR=3.9							
LCO	**Las Campanas**	**152.46**	**82**	*e*PKPbc	**PKPbc**	**03 54 12.5**	**-0.1**

IDC 27 03:36:34.9±13.0,33.°96S×54.°74E,h0km,mb3.6/2, mb1 3.9/2,mb1mx3.3/46,mbtmp3.6/2,Error ellipse: s-maj=693.2km s-min=62.8km az=40.0,Southwest Indian Ridge

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

WKZ	**Wanaka**	**1.21**	**252**	P*		**Pg**	**03 43 14.2 +0.3**
EAZ	**Earnscleugh**	**1.22**	**230**	⇑P*		**Pb**	**03 43 14.0 +0.3**
EAZ				S*		**Sg**	**03 43 30.0 +0.2**
EAZ				AML	AML		03 43 33.3
EAZ				AML	AML		03 43 34.6
EAZ				AML	AML		03 43 34.6
EAZ	**Earnscleugh**	**1.22**	**230**	P*		**Pb**	**03 43 14.0 +0.3**
EAZ				S*		**Sg**	**03 43 30.0 +0.2**
JCZ	**Jackson Bay**	**1.38**	**286**	PN		**Pb**	**03 43 17.0 +0.4**
JCZ				AML	AML		03 43 38.8
JCZ				AML	AML		03 43 39.5
JCZ	**Jackson Bay**	**1.38**	**286**	Pn		**Pb**	**03 43 17.0 +0.4**
WVZ	**Waitaha Valley**	**1.39**	**3**	⇑PN		**Pn**	**03 43 16.6 +0.5**
WVZ				AML	AML		03 43 37.0
WVZ				AML	AML		03 43 38.4
WVZ	**Waitaha Valley**	**1.39**	**3**	Pn		**Pn**	**03 43 16.6 +0.5**
OXZ	**Oxford**	**1.52**	**42**	PN		**Pn**	**03 43 17.8 -0.2**
OXZ	**Oxford**	**1.52**	**42**	Pn		**Pn**	**03 43 17.8 -0.2**
MQZ	**McQueen's Vall**	**1.64**	**63**	PN		**Pn**	**03 43 19.8 +0.2**
MQZ				AML	AML		03 43 51.8
MQZ				AML	AML		03 43 51.9
MQZ	**McQueen's Vall**	**1.64**	**63**	Pn		**Pn**	**03 43 19.8 +0.2**
TUZ	**Tuapeka**	**1.65**	**205**	⇑PN		**Pn**	**03 43 19.8 +0.1**
TUZ				AML	AML		03 43 51.6
TUZ				AML	AML		03 43 51.6
TUZ				AML	AML		03 43 53.0
TUZ				AML	AML		03 43 53.1
TUZ	**Tuapeka**	**1.65**	**205**	Pn		**Pn**	**03 43 19.8 +0.1**
CRLZ	**Canterbury Las**	**1.69**	**59**	AML	AML		03 43 46.9
CRLZ				AML	AML		03 43 50.3
INZ	**Inchbonnie**	**1.83**	**19**	⇓PN		**Pn**	**03 43 22.7 +0.5**
MLZ	**Mavora Lakes**	**2.00**	**242**	PN		**Pn**	**03 43 24.6 0.0**
MLZ				AML	AML		03 43 58.3
MLZ				AML	AML		03 44 00.5
MLZ	**Mavora Lakes**	**2.00**	**242**	Pn		**Pn**	**03 43 24.6 0.0**
LTZ	**Lake Taylor**	**2.06**	**36**	PN		**Pn**	**03 43 25.3 -0.1**
LTZ				AML	AML		03 44 02.0
LTZ				AML	AML		03 44 03.0
LTZ	**Lake Taylor**	**2.06**	**36**	Pn		**Pn**	**03 43 25.3 -0.1**
SYZ	**Scrubby Hill**	**2.33**	**206**	⇓PN		**Pn**	**03 43 29.0 +0.1**
SYZ				AML	AML		03 44 11.9
SYZ				AML	AML		03 44 15.4
SYZ				AML	AML		03 44 15.4
SYZ				AML	AML		03 44 19.1
SYZ	**Scrubby Hill**	**2.33**	**206**	Pn		**Pn**	**03 43 29.0 +0.1**
WHZ	**Wether Hill Ro**	**2.38**	**232**	⇑PN		**Pn**	**03 43 28.9 -0.8**
WHZ				AML	AML		03 44 12.2
WHZ				AML	AML		03 44 17.7
WHZ	**Wether Hill Ro**	**2.38**	**232**	Pn		**Pn**	**03 43 28.9 -0.8**
DCZ	**Deep Cove**	**2.66**	**247**	PN		**Pn**	**03 43 33.5 -0.1**
DCZ				AML	AML		03 44 19.2
DCZ				AML	AML		03 44 19.3
DCZ				AML	AML		03 44 19.7
DCZ				AML	AML		03 44 19.7
DCZ	**Deep Cove**	**2.66**	**247**	Pn		**Pn**	**03 43 33.5 -0.1**
KHZ	**Kahutara**	**2.94**	**47**	*e*Pn		**Pn**	**03 43 37.5 +0.1**
KHZ				*e*Sn		**Sn**	**03 44 11.6 -1.3**
APZ	**The Paps**	**3.01**	**217**	PN		**Pn**	**03 43 37.9 -0.5**
APZ				AML	AML		03 44 32.9
APZ				AML	AML		03 44 37.1
APZ	**The Paps**	**3.01**	**217**	Pn		**Pn**	**03 43 37.9 -0.5**
THZ	**Tophouse**	**3.17**	**32**	PN		**Pn**	**03 43 41.0 +0.4**
THZ				AML	AML		03 44 20.4
THZ				AML	AML		03 44 21.7
THZ	**Tophouse**	**3.17**	**32**	Pn		**Pn**	**03 43 41.0 +0.4**
PYZ	**Puysegur Point**	**3.27**	**237**	⇓PN		**Pn**	**03 43 41.3 -0.6**
PYZ	**Puysegur Point**	**3.27**	**237**	Pn		**Pn**	**03 43 41.3 -0.6**
QRZ	**Quartz Range**	**3.90**	**22**	PN		**Pn**	**03 43 50.3 -0.2**
QRZ				AML	AML		03 44 34.6
QRZ				AML	AML		03 44 34.6
QRZ				AML	AML		03 44 35.7
QRZ				AML	AML		03 44 41.0
QRZ	**Quartz Range**	**3.90**	**22**	Pn		**Pn**	**03 43 50.3 -0.2**
DUWZ	**D'Urville Isla**	**4.39**	**35**	PN		**Pn**	**03 43 58.3 +0.9**
DUWZ				AML	AML		03 44 52.8
DUWZ	**D'Urville Isla**	**4.39**	**35**	Pn		**Pn**	**03 43 58.3 +0.9**
ASAR	**Alice Springs**	**36.41**	**293**	P		**P**	**03 49 54.3 -1.1**
0.5nm,0.8s,baz=130,slow=5.9,SNR=4.5							
WRA	**Warramunga Arr**	**38.77**	**297**	P		**P**	**03 50 14.5 -0.9**
1.3nm,0.6s,baz=136,slow=7.7,SNR=37							
JAY	**Jayapura**	**49.43**	**319**	LR		LR	04 11 46.4
comp=Z,4.9nm,18.8s,baz=180,slow=35							
TORD	**Torodi Ar. Bea**	**147.39**	**200**	PKPbc		**PKPab**	**04 02 36.1 -0.7**
0.5nm,0.9s,baz=184,slow=6.3,SNR=4.6							
BRTR	**Keskin Array B**	**148.01**	**277**	PKPbc		**PKPbc**	**04 02 36.5 +0.4**
0.9nm,0.6s,baz=134,slow=4.7,SNR=6.3							
ARCES	**ARCESS Array B**	**149.32**	**337**	PKPbc		**PKPbc**	**04 02 39.1 +0.8**
1.3nm,0.8s,baz=113,slow=1.8,SNR=5.0							

DDA ***27*** *03:49:48.4, 37.°24N×36.°90E, h7km, Md2.8*
ISCJB ***27*** *03:49:49.2±0.6, 37.°21N±0.°05×36.°91E±0.°03, h4km±7km,*
Error ellipse: s-maj=8.6km s-min=4.2km az=170.1
ISK ***27*** *03:49:49.5, 37.°18N×36.°92E, h8km, MD2.7*
CSEM ***27*** *03:49:49.6±0.1, 37.°21N×36.°93E, h5km, MD2.8, Error ellipse: s-maj=4.9km s-min=2.6km az=161.0*
ISC 27 03:49:48.7±0.9,**37.°21N**±0.°04×**36.°90E**±0.°02,**h12**km±7km,
n22, σ0°**41**/33,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAMA	**Osmaniye**	**0.19**	**262**	*i* P		**Pg**	**03 49 52.7 -0.2**
KAMA				*i* S		**Sg**	**03 49 55.3 -0.4**
GAZ	**Gaziantep**	**0.25**	**99**	*e*PG		**Pb**	**03 49 55.0 -0.3**
GAZ				*e*SG		**Sg**	**03 49 58.1 +0.6**
GAZ	**Gaziantep**	**0.25**	**99**	*e*Pg		**Pb**	**03 49 55.0 -0.3**
GAZ				*e*Sg		**Sg**	**03 49 58.1 +0.6**
GZT	**Gaziantep**	**0.55**	**75**	*i* P		**Pg**	**03 49 59.5 +0.1**
CEYT	**Ceyhan**	**0.94**	**258**	*e*PG		**Pn**	**03 50 07.9 +0.1**
CEYT	**Ceyhan**	**0.94**	**258**	*e*Pg		**Pn**	**03 50 07.9 +0.1**
TAHT	**Tahtakopru-Hat**	**1.01**	**215**	*e*PG		**Pn**	**03 50 09.0 +0.2**
TAHT				*e*SG		**Sn**	**03 50 23.3 +0.3**
TAHT	**Tahtakopru-Hat**	**1.01**	**215**	*e*Pg		**Pn**	**03 50 09.0 +0.2**
TAHT				*e*Sg		**Sn**	**03 50 23.3 +0.3**
ATAB	**Bozova**	**1.14**	**77**	P		**Pb**	**03 50 10.2 -0.2**
ATAB				S		**Sn**	**03 50 25.9 -0.3**
ATAB	**Bozova**	**1.14**	**77**	*i* P		**Pb**	**03 50 10.2 -0.2**
ATAB				*i* S		**Sn**	**03 50 25.9 -0.3**
AKCD	**Akcadag**	**1.35**	**37**	P		**Pg**	**03 50 14.5 -0.2**
AKCD				S		**Sg**	**03 50 32.2 0.0**
AKCD	**Akcadag**	**1.35**	**37**	*i* P		**Pg**	**03 50 14.5 -0.2**
AKCD				*i* S		**Sg**	**03 50 32.2 0.0**
KRTS	**Karatas**	**1.38**	**243**	*e*PN		**Pg**	**03 50 15.6 +0.4**
KRTS	**Karatas**	**1.38**	**243**	*e*Pn		**Pg**	**03 50 15.6 +0.4**
SURC	**SANLIURFA_SURC**	**1.41**	**103**	P		**Pb**	**03 50 15.1 +0.1**
SURC				S		**Sg**	**03 50 33.3 -0.8**
SURC	**SANLIURFA_SURC**	**1.41**	**103**	*i* P		**Pb**	**03 50 15.1 +0.1**
SURC				*i* S		**Sg**	**03 50 33.3 -0.8**
DARE	**Darende-Malaty**	**1.43**	**19**	*e*PN		**Pg**	**03 50 16.9 +0.7**
DARE	**Darende-Malaty**	**1.43**	**19**	*e*Pn		**Pg**	**03 50 16.9 +0.7**
MERS	**Mersin**	**1.93**	**260**	*e*PN		**Pb**	**03 50 23.5 -0.4**
MERS	**Mersin**	**1.93**	**260**	*e*Pn		**Pb**	**03 50 23.5 -0.4**
NIG	**Nigde**	**2.02**	**297**	*e*PN		**Pb**	**03 50 25.4 -0.2**
NIG	**Nigde**	**2.02**	**297**	*e*Pn		**Pb**	**03 50 25.4 -0.2**

CSEM ***27*** *03:52:22.1, 37.°09N×36.°80E, h17km, MD2.8*
ISK ***27*** *03:52:22.1, 37.°09N×36.°80E, h17km, MD2.8*
ISCJB ***27*** *03:52:24.1±0.7, 37.°17N±0.°07×36.°79E±0.°04, h19km±6km,*
Error ellipse: s-maj=11.6km s-min=5.7km az=169.7
DDA ***27*** *03:52:25.1, 37.°25N×36.°88E, h7km, Md2.6*
ISC 27 03:52:23.5±1.1,**37.°17N**±0.°06×**36.°83E**±0.°03,**h19**km±3km,
n16, σ1°**09**/26,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAMA	**Osmaniye**	**0.13**	**278**	*i* P		**Pg**	**03 52 29.2 +1.4**
KAMA				*i* S		**Sg**	**03 52 32.0 +1.3**
HCB	**Kahramanmara¯**	**0.19**	**20**	*i* P		**Pg**	**03 52 27.7 -0.8**
HCB				*i* S		**Sg**	**03 52 29.3 -2.5**
GAZ	**Gaziantep**	**0.31**	**89**	*e*PG		**Pb**	**03 52 29.7 -0.7**
GAZ				*e*SG		**Sb**	**03 52 35.0 0.0**
GAZ	**Gaziantep**	**0.31**	**89**	*e*Pg		**Pb**	**03 52 29.7 -0.7**
GAZ				*e*Sg		**Sb**	**03 52 35.0 0.0**
GZT	**Gaziantep**	**0.62**	**72**	*i* P		**Pb**	**03 52 35.5 -0.1**
GZT				*i* S		**Sn**	**03 52 47.5 +0.7**
CEYT	**Ceyhan**	**0.88**	**260**	*e*PG		**Pb**	**03 52 39.0 -1.1**
CEYT	**Ceyhan**	**0.88**	**260**	*e*Pg		**Pb**	**03 52 39.0 -1.1**
ATAB	**Bozova**	**1.21**	**75**	P		**Pg**	**03 52 47.2 +0.3**
ATAB				S		**Sg**	**03 53 02.4 -0.4**
ATAB	**Bozova**	**1.21**	**75**	*i* P		**Pg**	**03 52 47.2 +0.3**
ATAB				*i* S		**Sg**	**03 53 02.4 -0.4**
AKCD	**Akcadag**	**1.42**	**37**	P		**Pg**	**03 52 50.9 -0.1**
AKCD				S		**Sn**	**03 53 08.5 +1.9**
AKCD	**Akcadag**	**1.42**	**37**	*i* P		**Pg**	**03 52 50.9 -0.1**
AKCD				*i* S		**Sn**	**03 53 08.5 +1.9**
SURC	**SANLIURFA_SURC**	**1.46**	**101**	*i* P		**Pg**	**03 52 52.2 +0.6**
SURC				*i* S		**Sg**	**03 53 09.3 -1.4**
DARE	**Darende-Malaty**	**1.49**	**20**	*e*PN		**Pn**	**03 52 50.0 +0.7**
DARE	**Darende-Malaty**	**1.49**	**20**	*e*Pn		**Pn**	**03 52 50.0 +0.7**
MERS	**Mersin**	**1.87**	**261**	*e*PN		**Pn**	**03 52 53.8 -0.7**
MERS	**Mersin**	**1.87**	**261**	*e*Pn		**Pn**	**03 52 53.8 -0.7**

ISCJB ***27*** *03:56:48.9±0.5, 39.°09N±0.°03×29.°12E±0.°04, h9km±5km,*
Error ellipse: s-maj=5.3km s-min=4.8km az=42.1
DDA ***27*** *03:56:48.9, 39.°08N×29.°11E, h7km, Md2.3*
ISK ***27*** *03:56:48.5, 39.°08N×29.°19E, h10km, MD2.7*
CSEM ***27*** *03:56:49.0±0.1, 39.°09N×29.°13E, h8km, MD2.3, Error ellipse: s-maj=2.2km s-min=1.7km az=105.0*
ISC 27 03:56:49.1±0.9,**39.°09N**±0.°02×**29.°13E**±0.°02,**h14**km±9km,
n26, σ0°**23**/38,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.28**	**91**	P		**Pg**	**03 56 55.1 +0.1**
GDZ				S		**Sg**	**03 56 59.2 +0.2**
GDZ	**Gediz**	**0.28**	**91**	*i* P		**Pg**	**03 56 55.1 +0.1**
GDZ				*i* S		**Sg**	**03 56 59.2 +0.2**
DEMI	**Demirci**	**0.32**	**261**	P		**Pg**	**03 56 55.7 -0.1**
DEMI				S		**Sg**	**03 57 00.2 -0.1**
DEMI	**Demirci**	**0.32**	**261**	*i* P		**Pg**	**03 56 55.7 -0.1**
DEMI				*i* S		**Sg**	**03 57 00.2 -0.1**
TVSB	**Tavsanli**	**0.44**	**36**	*e*PG		**Pg**	**03 56 57.8 -0.1**
TVSB				*e*SG		**Sg**	**03 57 03.4 -0.5**
TVSB	**Tavsanli**	**0.44**	**36**	*e*Pg		**Pg**	**03 56 57.8 -0.1**
TVSB				*e*Sg		**Sg**	**03 57 03.4 -0.5**
KULA	**Kula-Manisa**	**0.68**	**212**	*e*PG		**Pg**	**03 57 02.4 0.0**
KULA	**Kula-Manisa**	**0.68**	**212**	*e*Pg		**Pg**	**03 57 02.4 0.0**
DURS	**Dursunbey**	**0.72**	**315**	P		**Pg**	**03 57 02.9 -0.1**
DURS				S		**Sg**	**03 57 12.6 +0.1**
DURS	**Dursunbey**	**0.72**	**315**	*i* P		**Pg**	**03 57 02.9 -0.1**
DURS				*i* S		**Sg**	**03 57 12.6 +0.1**
MANT	**Manisa**	**0.75**	**217**	P		**Pg**	**03 57 03.5 -0.2**
MANT				S		**Sg**	**03 57 13.4 -0.2**
MANT	**Manisa**	**0.75**	**217**	*i* P		**Pg**	**03 57 03.5 -0.2**
MANT				*i* S		**Sg**	**03 57 13.4 -0.2**
KHAL	**Karahalli**	**0.78**	**158**	P		**Pg**	**03 57 04.1 -0.1**
KHAL				S		**Sg**	**03 57 14.3 -0.1**
KHAL	**Karahalli**	**0.78**	**158**	*i* P		**Pg**	**03 57 04.1 -0.1**
KHAL				*i* S		**Sg**	**03 57 14.3 -0.1**
ORLT	**Orhaneli**	**0.97**	**349**	*e*PG		**Pb**	**03 57 07.4 -0.3**
ORLT	**Orhaneli**	**0.97**	**349**	*e*Pg		**Pb**	**03 57 07.4 -0.3**
BALB	**Balikesir**	**1.11**	**300**	*e*PN		**Pg**	**03 57 10.9 +0.5**
BALB	**Balikesir**	**1.11**	**300**	*e*Pn		**Pg**	**03 57 11.0 +0.5**
IZI	**Iznik**	**1.27**	**12**	*e*PN		**Pn**	**03 57 12.7 +0.2**
IZI	**Iznik**	**1.27**	**12**	*e*Pn		**Pn**	**03 57 12.7 +0.2**
KCTX	**Karacabey (Bur**	**1.31**	**333**	*e*PN		**Pg**	**03 57 14.1 -0.3**
KCTX	**Karacabey (Bur**	**1.31**	**333**	*e*Pn		**Pg**	**03 57 14.1 -0.3**
ARMT	**Armutlu**	**1.48**	**352**	*e*PN		**Pb**	**03 57 16.7 +0.3**
ARMT	**Armutlu**	**1.48**	**352**	*e*Pn		**Pb**	**03 57 16.7 +0.3**
GULT	**Gulveren**	**1.71**	**38**	*e*PN		**Pn**	**03 57 18.6 0.0**
GULT	**Gulveren**	**1.71**	**38**	*e*Pn		**Pn**	**03 57 18.6 0.0**

ISCJB ***27*** *03:58:03.8±0.6, 8.°06S±0.°06×107.°32E±0.°04, h62km,*
mb3.8/7, Error ellipse: s-maj=10.1km s-min=3.9km
az=25.3
DJA ***27*** *03:58:03.2±0.5, 8.°S±3.°×10.°7E±.°, h16km±5km, M4.7/31,*
mb4.9/13, mB5.2/4, MLv4.6/31, Mw(mB)4.6/4
IDC ***27*** *03:58:11.5±2.3, 7.°83S×107.°48E, h115km±13km, mb3.5/7,*
mb1 3.6/7, mb1mx3.4/39, mbtmp3.8/7, Error ellipse:
s-maj=53.8km s-min=15.5km az=56.0
ISC 27 03:58:04.9±0.8,**8.°1S**±0.°1×**107.°32E**±0.°07,**h62**km,**n40,**
σ1°**35**/41,**mb3.8/7,Jawa**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CISI	**Cisompet, Garu**	**0.70**	**45**	P		**Pn**	**03 58 18.5 -0.8**
CISI				S		**Sn**	**03 58 28.5 -1.4**
CNJI	**Cibinong**	**0.77**	**346**	P		**Pn**	**03 58 19.3 -0.8**
CNJI				S		**Sn**	**03 58 30.0 -1.2**
CMJI	**Cimerak**	**1.15**	**76**	P		**Pn**	**03 58 24.3 -0.7**
CMJI				S		**Sn**	**03 58 38.7 -1.2**
LEM	**Lembang**	**1.26**	**14**	P		Pn	03 58 32.9 +6.3
488nm,0.3s,baz=360,slow=4.3,SNR=106							
LEM				S		Sn	03 58 50.3 +7.6
1μm,0.3s,baz=151,slow=23,SNR=26							
SKJI	**Sukabumi**	**1.29**	**324**	P		**Pn**	**03 58 26.7 -0.1**
CGJI	**Cibinong**	**2.16**	**312**	P		**Pn**	**03 58 38.0 -0.6**
SBJI	**Serang**	**2.26**	**328**	P		**Pn**	**03 58 41.4 +1.5**
SBJI				S		**Sn**	**03 59 09.2 +2.5**
UGM	**Wanagama**	**3.18**	**88**	P		**Pn**	**03 58 52.5 0.0**
SMRI	**Semarang**	**3.25**	**72**	P		**Pn**	**03 58 55.6 +2.1**
SMRI				S		Sn	03 59 35.9 +4.9
WOJI	**Wonogiri, Jawa**	**3.58**	**87**	P		**Pn**	**03 58 58.3 +0.4**
KASI	**Kota Agung**	**3.77**	**312**	P		**Pn**	**03 59 00.5 0.0**
PCJI	**Pacitan**	**3.82**	**92**	P		**Pn**	**03 59 01.7 +0.4**
PCJI				S		**Sn**	**03 59 43.0 -2.0**
UWJI	**Ujung Watu**	**3.95**	**66**	P		**Pn**	**03 59 05.1 +2.1**
KLI	**Kotabumi**	**4.01**	**322**	P		**Pn**	**03 59 06.3 +2.5**
NGJI	**Ngawi**	**4.16**	**81**	P		**Pn**	**03 59 08.1 +2.2**
LWLI	**Liwa**	**4.43**	**313**	P		**Pn**	**03 59 10.6 +0.9**
PWJI	**Pagerwojo**	**4.44**	**90**	P		**Pn**	**03 59 10.3 +0.5**
LHSI	**Lahat**	**5.65**	**318**	P		**Pn**	**03 59 27.3 +1.0**
62nm,1.1s,0.3nm							
MNAI	**Manna**	**5.68**	**310**	P		**Pn**	**03 59 26.7 -0.1**
133nm,0.9s,4μm0.7nm							
GMJI	**Gumukmas**	**6.07**	**92**	P		**Pn**	**03 59 33.3 +1.3**
60nm,1.1s,0.3nm							
JAGI	**Jajag, Banyuwa**	**6.78**	**94**	P		**Pn**	**03 59 43.3 +1.5**
70nm,0.9s,1μm0.3nm							
ABJI	**Asem Bagus**	**6.85**	**88**	P		**Pn**	**03 59 43.0 +0.2**
127nm,0.6s,2μm0.5nm							
SRBI	**Singaraja**	**7.82**	**91**	P		**Pn**	**03 59 57.9 +1.9**
45nm,0.6s,906nm0.2nm							
PPSI	**Pulau Pagai**	**8.98**	**305**	P		**Pn**	**04 00 09.3 -2.6**
123nm,0.6s							
RGRI	**Rengat**	**9.13**	**327**	P		**Pn**	**04 00 13.1 -0.9**
305nm,0.4s							
TWSI	**Taliwang, Sumb**	**9.48**	**95**	P		**Pn**	**04 00 19.8 +0.9**
20nm,0.6s							
PLAI	**Plampang**	**10.37**	**95**	P		**Pn**	**04 00 31.4 +0.4**
GSI	**Gunungsitoli**	**13.45**	**313**	P		Pn	04 01 04.9 -8.1
WRA	**Warramunga Arr**	**28.70**	**117**	P		**P**	**04 03 57.5 +1.1**
0.7nm,0.7s,baz=288,slow=10,SNR=5.4							
ASAR	**Alice Springs**	**29.83**	**124**	P		**P**	**04 04 07.8 +1.3**
0.5nm,0.7s,baz=280,slow=7.5,SNR=5.3							
H08S2	**Diego Garcia H**	**34.50**	**268**	T		T	04 41 56.3
baz=92,slow=76,SNR=34							
H08S3	**Diego Garcia H**	**34.51**	**268**	T		T	04 42 09.4
baz=92,slow=76,SNR=38							
H08S1	**Diego Garcia H**	**34.52**	**268**	T		T	04 41 47.8
baz=92,slow=76,SNR=8.0							
STKA	**Stephens Creek**	**39.70**	**131**	P		**P**	**04 05 33.0 +1.7**
3.9nm,0.5s,baz=308,slow=8.7,SNR=14							
SONM	**Songino Array**	**55.65**	**359**	P		**P**	**04 07 33.5 -1.2**
0.7nm,0.8s,baz=167,slow=7.0,SNR=4.2							
SONM				PcP		**PcP**	**04 08 34.2 +0.6**
0.7nm,0.5s,baz=174,slow=4.1,SNR=4.9							
MKAR	**Makanchi Array**	**58.98**	**340**	P		**P**	**04 07 57.9 -0.2**
0.5nm,0.5s,baz=131,slow=7.7,SNR=3.0							
KLR	**Kul'dur**	**60.93**	**18**	P		**P**	**04 08 09.7 -1.6**
0.9nm,0.5s,baz=270,slow=9.1,SNR=5.1							
BRTR	**Keskin Array B**	**82.76**	**312**	P		**P**	**04 10 22.1 -0.5**
0.5nm,0.7s,baz=112,slow=9.9,SNR=3.8							
YKA	**Yellowknife Ar**	**117.74**	**21**	PKP		**PKPdf**	**04 16 44.2 +0.4**
0.1nm,0.5s,baz=320,slow=1.2,SNR=3.8							
TXAR	**Lajitas Array**	**144.01**	**50**	PKP		**PKPdf**	**04 17 33.8 -0.5**
0.2nm,0.6s,baz=203,slow=1.3,SNR=4.3							

ISK ***27*** *04:02:17.6, 39.°07N×29.°24E, h26km, MD2.7*
ISCJB ***27*** *04:02:18.6±0.6, 39.°11N±0.°04×29.°12E±0.°05, h20km±7km,*
Error ellipse: s-maj=7.6km s-min=5.2km az=148.0
CSEM ***27*** *04:02:18.2±0.2, 39.°11N×29.°12E, h18km±1km, MD2.5,*
Error ellipse: s-maj=5.1km s-min=3.2km az=132.0
DDA ***27*** *04:02:18.7, 39.°12N×29.°08E, h7km, Md2.5*
ISC 27 04:02:17.9±1.1,**39.°12N**±0.°04×**29.°12E**±0.°03,**h11**km±10km,
n22, σ0°**49**/34,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.28**	**96**	P		**Pb**	**04 02 25.4 +0.4**
GDZ				S		**Sb**	**04 02 30.0 +0.2**
GDZ	**Gediz**	**0.28**	**96**	*i* P		**Pb**	**04 02 25.4 +0.4**
GDZ				*i* S		**Sb**	**04 02 29.9 +0.2**
DEMI	**Demirci**	**0.33**	**257**	P		**Pb**	**04 02 25.2 -0.5**
DEMI				S		**Sg**	**04 02 29.2 +0.4**
DEMI	**Demirci**	**0.33**	**257**	*i* P		**Pb**	**04 02 25.2 -0.5**
DEMI				*i* S		**Sg**	**04 02 29.2 +0.4**
TVSB	**Tavsanli**	**0.42**	**38**	*e*PG		**Pb**	**04 02 27.5 +0.1**
TVSB				*e*SG		**Sb**	**04 02 33.8 -0.1**
TVSB	**Tavsanli**	**0.42**	**38**	*e*Pg		**Pb**	**04 02 27.5 +0.1**
TVSB				*e*Sg		**Sb**	**04 02 33.8 -0.1**
DURS	**Dursunbey**	**0.70**	**314**	P		**Pg**	**04 02 31.4 0.0**
DURS				S		**Sb**	**04 02 41.9 +0.2**
DURS	**Dursunbey**	**0.70**	**314**	*i* P		**Pg**	**04 02 31.4 0.0**
DURS				*i* S		**Sb**	**04 02 41.9 +0.2**
KULA	**Kula-Manisa**	**0.70**	**211**	*e*PG		**Pb**	**04 02 32.2 0.0**
KULA	**Kula-Manisa**	**0.70**	**211**	*e*Pg		**Pb**	**04 02 32.2 0.0**
MANT	**Manisa**	**0.77**	**215**	P		**Pb**	**04 02 33.3 -0.1**
MANT				S		**Sg**	**04 02 42.7 0.0**
MANT	**Manisa**	**0.77**	**215**	*i* P		**Pb**	**04 02 33.3 -0.1**
MANT				*i* S		**Sg**	**04 02 42.7 0.0**
AKS	**Akhisar**	**1.05**	**257**	*e*PN		**Pg**	**04 02 38.0 0.0**
AKS	**Akhisar**	**1.05**	**257**	*e*Pn		**Pg**	**04 02 38.1 0.0**
BALB	**Balikesir**	**1.10**	**299**	*e*PN		**Pn**	**04 02 38.8 -0.3**
BALB				*e*SN		**Sn**	**04 02 55.2 +0.9**
BALB	**Balikesir**	**1.10**	**299**	*e*Pn		**Pn**	**04 02 38.8 -0.3**
BALB				*e*Sn		**Sn**	**04 02 55.2 +0.9**
KCTX	**Karacabey (Bur**	**1.29**	**333**	*e*PN		**Pn**	**04 02 41.6 -0.3**
KCTX	**Karacabey (Bur**	**1.29**	**333**	*e*Pn		**Pn**	**04 02 41.6 -0.3**
ARMT	**Armutlu**	**1.46**	**352**	*e*PN		**Pn**	**04 02 43.6 -0.6**
ARMT	**Armutlu**	**1.46**	**352**	*e*Pn		**Pn**	**04 02 43.6 -0.6**
GULT	**Gulveren**	**1.69**	**39**	*e*PN		**Pn**	**04 02 46.2 -1.3**
GULT	**Gulveren**	**1.69**	**39**	*e*Pn		**Pn**	**04 02 46.2 -1.3**

ISCJB ***27*** *04:04:26.2±0.8, 6.°2S±0.°2×150.°7E±0.°2, h48km, mb4.0/6,*
Error ellipse: s-maj=31.8km s-min=9.8km az=39.8
NEIC ***27*** *04:04:27.8±2.6, 6.°19S×150.°79E, h51km±23km, mb4.1/2,*
Error ellipse: s-maj=29.8km s-min=18.5km az=122.0
IDC ***27*** *04:04:27.1±5.8, 6.°08S×150.°65E, h41km±51km, mb3.9/6,*
mb1 4.1/7, mb1mx3.8/32, mbtmp4.1/7, ML1.7/1, Error
ellipse: s-maj=68.1km s-min=29.9km az=126.0
ISC 27 04:04:27.2±1.0,**6.°2S**±0.°2×**150.°8E**±0.°2,**h48**km,**n11,**
σ0°**87**/11,**mb4.0/7,New Britain region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**4.81**	**228**	P		**Pn**	**04 05 38.5 +1.3**
2.2nm,0.3s,baz=321,slow=16,SNR=2.3							
PMG				S		**Sn**	**04 06 30.6 -1.1**
5.2nm,0.3s,baz=310,slow=16,SNR=4.1							
CTAO	**Charters Tower**	**14.51**	**197**	*e*Pn		**Pn**	**04 07 48.9 -1.0**
WRAB	**Tennant Creek**	**21.02**	**228**	*e*P		**P**	**04 09 06.9 -0.2**
4.2nm,0.5s							
WRA	**Warramunga Arr**	**21.04**	**228**	P		**P**	**04 09 07.2 0.0**
2.9nm,0.5s,baz=53,slow=11,SNR=22							
ASAR	**Alice Springs**	**

JHO	**Hitachi**	**2.09 263**	P	Pn	04 32 53.8	+1.2
JMM	**Marumori**	**2.10 298**	P	Pn	04 32 54.1	+1.3
JMM			S	Sn	04 33 19.1	+1.4
JFT	**Otama**	**2.32 286**	P	Pn	04 32 57.9	+2.1
JFT			*e*S	Sn	04 33 24.7	+1.6
JOU	**Okura**	**2.44 307**	P	Pn	04 33 00.1	+2.5
JOU			*e*S	Sn	04 33 28.6	+2.4
JMK	**Ichinoseki**	**2.54 324**	P	Pn	04 33 00.4	+1.5
JMK			*e*S	Sn	04 33 29.5	+0.9
JYK	**Kaneyama**	**2.98 313**	P	Pn	04 33 06.8	+1.9
JAG	**Ashikaga**	**3.00 262**	P	Pn	04 33 06.9	+1.7
JAG			S	Sn	04 33 39.9	-0.1
JRY	**Ryogami san**	**3.53 257**	P	Pn	04 33 13.9	+1.4
JRY			*e*S	Sn	04 33 51.5	-1.5
JOD2	**Odawara 2**	**3.67 245**	*e*S	Sn	04 33 54.7	-1.8
JYN	**Shimob**	**3.98 251**	P	Pn	04 33 20.8	+2.1
JYN			*e*S	Sn	04 34 04.3	+0.3
MAT	**Matsushiro**	**3.98 266**	P	Pn	04 33 21.7	+3.0
MAT			S	Sn	04 34 05.4	+1.3

NIED ***27*** *04:44:00,37.°40N×141.°50E,h20km,Mw3.6 Best double couple: M₀3.18000×10¹⁴ NP1:φ₀=238.00000°,δ35.00000°, λ-37.00000°. NP2:φ₀=360.00000°,δ70.00000°, λ-119.00000°.*
ISCJB ***27*** *04:44:01.5±1.2,37.°34N±0.°04×141.°55E±0.°08,h24km±7km, mb3.7/8,Error ellipse: s-maj=10.3km s-min=6.1km az=11.1*
JMA ***27*** *04:44:03.2±0.1,37.°38N×141.°46E,h30km±2km,M3.6*
JMA Felt III J1.
IDC ***27*** *04:44:04.0±0.8,37.°32N×141.°44E,h29km±6km,mb3.5/8, mb1 3.7/9,mb1mx3.5/31,mbtmp3.6/9,ML3.0/1,Error ellipse: s-maj=22.6km s-min=19.6km az=84.0*
ISC 27 04:44:03.6±0.9,37.°37N±0.°05×141.°46E±0.°06,h27km±6km, n28,σ1°04/30,mb3.7/8,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.47**	**270**	P	**Pb**	**04 44 13.0**	**-0.4**
JFK				S	**Sb**	**04 44 19.4**	**-0.6**
ONAJ	**Iwakimizuishiy**	**0.59**	**243**	*e*S	**Sb**	**04 44 22.5**	**-1.0**
JMM	**Marumori**	**0.72**	**313**	P	**Pb**	**04 44 16.7**	**-0.9**
JMM				S	**Sb**	**04 44 26.2**	**-1.0**
JFT	**Otama**	**0.91**	**280**	P	**Pn**	**04 44 20.4**	**-0.1**
JFT				S	**Sn**	**04 44 32.3**	**-0.4**
JHO	**Hitachi**	**1.04**	**223**	P	**Pn**	**04 44 21.2**	**-1.1**
JHO				*e*S	**Sn**	**04 44 34.1**	**-1.8**
JIO	**Ouri**	**1.09**	**355**	P	**Pn**	**04 44 21.8**	**-1.2**
JIO				S	**Sn**	**04 44 34.9**	**-2.2**
JOU	**Okura**	**1.18**	**328**	P	**Pn**	**04 44 24.2**	**0.0**
JOU				S	**Sn**	**04 44 39.5**	**+0.1**
JYS	**Shirataka**	**1.39**	**308**	P	**Pb**	**04 44 28.3**	**-0.6**
JYS				*e*S	**Sn**	**04 44 45.5**	**+0.8**
JFY	**Yanaizu**	**1.40**	**272**	P	**Pn**	**04 44 27.9**	**+0.6**
MJAR	**Matsushiro Arr**	**2.73**	**253**	Pn	**Pn**	**04 44 46.2**	**+0.6**
	2.5nm,0.3s,baz=318,slow=25,SNR=8.8						
MAT	**Matsushiro**	**2.73**	**253**	P	**Pn**	**04 44 47.4**	**+1.8**
MAT				S	**Sn**	**04 45 16.0**	**-1.8**
USRK	**Ussuriysk Ar.**	**9.90**	**317**	Pn	Pn	04 46 31.1	+7.1
	0.2nm,0.3s,baz=110,slow=12,SNR=2.5						
SONM	**Songino Array**	**27.63**	**303**	P	**P**	**04 49 49.9**	**+1.1**
	0.4nm,0.5s,baz=98,slow=11,SNR=3.8						
H11N2	**WAKE ISLAND Hy 28.29**	**121**		T	T	05 19 23.9	
	baz=315,slow=75,SNR=118						
H11N1	**WAKE ISLAND Hy 28.30**	**121**		T	T	05 19 24.6	
	baz=315,slow=75,SNR=93						
H11N3	**WAKE ISLAND Hy 28.31**	**121**		T	T	05 19 25.3	
	baz=315,slow=75,SNR=96						
H11S1	**WAKE ISLAND Hy 29.01**	**123**		T	T	05 20 22.7	
	baz=316,slow=76,SNR=100						
H11S3	**WAKE ISLAND Hy 29.01**	**123**		T	T	05 20 20.2	
	baz=316,slow=76,SNR=77						
H11S2	**WAKE ISLAND Hy 29.03**	**123**		T	T	05 20 17.0	
	baz=316,slow=76,SNR=91						
ZALV	**Zalesovo Beam**	**41.72**	**312**	P	**P**	**04 51 50.2**	**+0.3**
	1.5nm,0.3s,baz=72,slow=9.3,SNR=2.5						
MKAR	**Makanchi Array**	**43.97**	**302**	P	**P**	**04 52 08.8**	**+0.5**
	0.8nm,0.7s,baz=91,slow=12,SNR=5.2						
ILAR	**Eielson Array**	**49.19**	**33**	pP	pP	04 52 57.9	+0.6
	0.5nm,0.7s,baz=264,slow=7.4,SNR=5.5						
WRA	**Warramunga Arr**	**57.40**	**188**	P	**P**	**04 53 49.4**	**-0.2**
	1.1nm,0.5s,baz=6.3,slow=7.5,SNR=25						
ASAR	**Alice Springs**	**61.12**	**188**	P	**P**	**04 54 15.2**	**-0.2**
	0.2nm,0.3s,baz=5.7,slow=10,SNR=3.4						
YKA	**Yellowknife Ar**	**63.50**	**30**	P	**P**	**04 54 31.8**	**+1.0**
	0.3nm,0.9s,baz=290,slow=5.9,SNR=3.0						
YKA				pP	**pP**	**04 54 40.1**	**+0.7**
	0.3nm,0.6s,baz=302,slow=6.4,SNR=5.5						
AKASG	**Malin Array Be**	**74.05**	**322**	P	**P**	**04 55 36.0**	**-0.8**
	0.3nm,0.4s,baz=48,slow=5.2,SNR=3.4						
TXAR	**Lajitas Array**	**89.89**	**52**	P	**P**	**04 57 01.4**	**+1.0**
	0.1nm,0.3s,baz=318,slow=3.9,SNR=2.5						
TXAR				pP	**pP**	**04 57 10.2**	**+1.0**
	0.3nm,0.6s,baz=312,slow=2.0,SNR=3.8						
LPAZ	**La Paz**	**146.49**	**59**	PKPbc	**PKPbc**	**05 03 42.8**	**-0.6**
	0.3nm,0.5s,baz=235,slow=2.5,SNR=2.7						
LPAZ				pPKPbc	pPKPbc	05 03 52.5	0.0
	0.4nm,0.5s,baz=11,slow=5.7,SNR=2.5						

NIED ***27*** *04:48:00,38.°50N×142.°30E,h20km,Mw3.8 Best double couple: M₀5.74000×10¹⁴ NP1:φ₀=104.00000°,δ12.00000°, λ-94.00000°. NP2:φ₀=288.00000°,δ78.00000°, λ-89.00000°.*
ISCJB ***27*** *04:48:54.2±1.3,38.°42N±0.°04×142.°27E±0.°07,h19km±8km, mb3.6/5,Error ellipse: s-maj=9.2km s-min=5.9km az=17.3*
JMA ***27*** *04:48:54.7±0.1,38.°46N×142.°27E,h26km±1km,M4.0*
IDC ***27*** *04:48:54.2±1.0,37.°99N×142.°65E,h0km,mb3.6/5, mb1 3.8/7,mb1mx3.6/33,mbtmp3.6/7,ML2.7/2,Error ellipse: s-maj=29.8km s-min=21.4km az=107.0*
ISC 27 04:48:53.9±3.0,38.°42N±0.°05×142.°22E±0.°08,h12km±17km, n26,σ1°04/25,mb3.7/5,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.69**	**273**	P	**Pb**	**04 49 08.5**	**+0.7**
JIO				S	**Sb**	**04 49 17.7**	**+0.5**
OFUJ	**Ofunato**	**0.79**	**327**	P	**Pb**	**04 49 09.3**	**-0.2**
JMK	**Ichinoseki**	**0.94**	**304**	P	**Pb**	**04 49 12.2**	**0.0**
JMK				S	**Sb**	**04 49 24.6**	**-0.1**
JOU	**Okura**	**1.22**	**268**	P	**Pb**	**04 49 17.1**	**+0.1**
JOU				S	**Sg**	**04 49 33.6**	**+0.3**
JMM	**Marumori**	**1.25**	**244**	P	**Pn**	**04 49 16.6**	**-0.6**
JMM				*e*S	**Sb**	**04 49 32.8**	**-0.8**
JOM	**Ohasama**	**1.27**	**326**	P	**Pn**	**04 49 17.0**	**-0.6**
JOM				S	**Sb**	**04 49 32.7**	**-1.5**
JYK	**Kaneyama**	**1.54**	**289**	P	**Pn**	**04 49 21.5**	**+0.3**
JYK				*e*S	**Sb**	**04 49 41.7**	**-0.1**
JTH	**Tanohata**	**1.54**	**350**	P	**Pn**	**04 49 20.1**	**-1.1**
JTH				*e*S	**Sn**	**04 49 39.6**	**-1.6**
JRG	**Rokugo**	**1.57**	**309**	P	**Pb**	**04 49 22.2**	**-0.8**
JRG				*e*S	**Sb**	**04 49 42.7**	**-0.1**
JFT	**Otama**	**1.74**	**239**	P	**Pn**	**04 49 24.2**	**+0.2**
JFT				*e*S	**Sn**	**04 49 45.5**	**-0.6**
JAH	**Hinai**	**2.15**	**326**	P	**Pn**	**04 49 30.5**	**+0.9**
JAH				*e*S	**Sn**	**04 49 56.9**	**+0.7**
MJAR	**Matsushiro Arr**	**3.70**	**241**	Pn	Pn	04 49 54.4	+3.4
	1.5nm,0.3s,baz=63,slow=11,SNR=16						
MAT	**Matsushiro**	**3.70**	**241**	P	Pn	04 49 54.8	+3.9
MAT				S	**Sb**	**04 50 41.6**	**-2.5**
ASAJ	**Asahikawa**	**5.70**	**3**	Pn	Pn	04 50 20.7	+2.4
	2.3nm,0.3s,baz=188,slow=17,SNR=5.6						
USRK	**Ussuriysk Ar.**	**9.62**	**310**	Pn	Pn	04 51 20.5	+8.4
	0.2nm,0.3s,baz=127,slow=14,SNR=3.7						
H11N2	**WAKE ISLAND Hy 28.35**	**124**		T	T	05 24 25.4	
	baz=316,slow=75,SNR=118						
H11N1	**WAKE ISLAND Hy 28.36**	**124**		T	T	05 24 39.3	
	baz=316,slow=75,SNR=96						
H11N3	**WAKE ISLAND Hy 28.37**	**124**		T	T	05 24 36.0	
	baz=316,slow=75,SNR=149						
H11S1	**WAKE ISLAND Hy 29.12**	**126**		T	T	05 25 27.2	
	baz=318,slow=76,SNR=40						
H11S3	**WAKE ISLAND Hy 29.12**	**126**		T	T	05 25 29.3	
	baz=318,slow=76,SNR=43						
H11S2	**WAKE ISLAND Hy 29.13**	**126**		T	T	05 25 33.8	
	baz=318,slow=76,SNR=36						
MKAR	**Makanchi Array**	**43.94**	**301**	P	P	04 57 06.8	+6.2
	0.8nm,0.7s,baz=89,slow=9.0,SNR=5.8						
ILAR	**Eielson Array**	**47.98**	**33**	P	**P**	**04 57 34.5**	**+2.2**

	0.3nm,0.8s,baz=272,slow=6.9,SNR=3.2					
WRA	**Warramunga Arr**	**58.52**	**189**	P	**P**	**04 58 49.5**	**-0.7**
	2.0nm,0.7s,baz=6.1,slow=7.0,SNR=17					
ASAR	**Alice Springs**	**62.25**	**189**	P	**P**	**04 59 15.4**	**-0.2**
	0.9nm,0.7s,baz=12,slow=6.6,SNR=8.2					
YKA	**Yellowknife Ar**	**62.29**	**31**	P	P	04 59 20.3	+4.9
	0.1nm,0.7s,baz=296,slow=5.8,SNR=3.7					

DDA ***27*** *04:50:09.9,39.°09N×29.°06E,h7km,Ml2.8*
ISK ***27*** *04:50:09.7,39.°08N×29.°04E,h4km,MD2.9*
CSEM ***27*** *04:50:10.3±0.1,39.°08N×29.°06E,h2km,ML2.8,Error ellipse: s-maj=1.5km s-min=1.4km az=141.0*
ISC 27 04:50:10.0±0.9,39.°08N±0.°02×29.°07E±0.°02,h14km±7km, n55,σ0°32/72,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**262**	P	**Pg**	**04 50 15.9**	**-0.1**
DEMI				S	**Sg**	**04 50 19.6**	**-0.3**
DEMI	**Demirci**	**0.28**	**262**	*i* P	**Pg**	**04 50 15.9**	**-0.1**
DEMI				*i* S	**Sg**	**04 50 19.6**	**-0.3**
GDZ	**Gediz**	**0.32**	**89**	P	**Pg**	**04 50 17.0**	**+0.3**
GDZ				S	**Sg**	**04 50 21.6**	**+0.3**
GDZ	**Gediz**	**0.32**	**89**	*i* P	**Pg**	**04 50 17.0**	**+0.3**
GDZ				*i* S	**Sg**	**04 50 21.6**	**+0.3**
TVSB	**Tavsanli**	**0.48**	**40**	*e*PG	**Pg**	**04 50 19.4**	**-0.1**
TVSB	**Tavsanli**	**0.48**	**40**	*e*Pg	**Pg**	**04 50 19.4**	**-0.1**
KULA	**Kula-Manisa**	**0.65**	**209**	*e*PG	**Pg**	**04 50 22.7**	**-0.1**
KULA	**Kula-Manisa**	**0.65**	**209**	*e*Pg	**Pg**	**04 50 22.7**	**-0.1**
DURS	**Dursunbey**	**0.69**	**318**	P	**Pb**	**04 50 24.4**	**+0.4**
DURS				S	**Sg**	**04 50 32.7**	**0.0**
DURS	**Dursunbey**	**0.69**	**318**	*i* P	**Pb**	**04 50 24.4**	**+0.4**
DURS				*i* S	**Sg**	**04 50 32.7**	**0.0**
MANT	**Manisa**	**0.71**	**214**	P	**Pg**	**04 50 24.0**	**0.0**
MANT				S	**Sg**	**04 50 33.2**	**-0.2**
MANT	**Manisa**	**0.71**	**214**	*i* P	**Pg**	**04 50 24.0**	**0.0**
MANT				*i* S	**Sg**	**04 50 33.2**	**-0.2**
KHAL	**Karahalli**	**0.79**	**155**	P	**Pb**	**04 50 26.1**	**+0.5**
KHAL				S	**Sb**	**04 50 36.0**	**-0.1**
KHAL	**Karahalli**	**0.79**	**155**	*i* P	**Pb**	**04 50 26.1**	**+0.5**
KHAL				*i* S	**Sb**	**04 50 36.0**	**-0.1**
KHL	**Karahalli**	**0.84**	**155**	*e*PG	**Pg**	**04 50 26.1**	**-0.2**
KHL	**Karahalli**	**0.84**	**155**	*e*Pg	**Pg**	**04 50 26.1**	**-0.2**
ORLT	**Orhaneli**	**0.97**	**352**	*e*PG	**Pb**	**04 50 28.5**	**-0.2**
ORLT	**Orhaneli**	**0.97**	**352**	*e*Pg	**Pb**	**04 50 28.5**	**-0.2**
AKHS	**Akhisar**	**1.00**	**259**	P	**Pn**	**04 50 29.8**	**+0.1**
AKHS				S	**Sb**	**04 50 42.1**	**0.0**
AKHS	**Akhisar**	**1.00**	**259**	*i* P	**Pn**	**04 50 29.8**	**+0.1**
AKHS				*i* S	**Sb**	**04 50 42.1**	**0.0**
AKS	**Akhisar**	**1.00**	**259**	*e*PG	**Pb**	**04 50 29.2**	**0.0**
AKS	**Akhisar**	**1.00**	**259**	*e*Pg	**Pb**	**04 50 29.2**	**0.0**
BALB	**Balikesir**	**1.07**	**301**	*e*PG	**Pn**	**04 50 30.6**	**-0.1**
BALB				*e*SG	**Sn**	**04 50 45.6**	**+0.2**
BALB	**Balikesir**	**1.07**	**301**	*e*Pg	**Pn**	**04 50 30.6**	**-0.1**
BALB				*e*Sg	**Sn**	**04 50 45.6**	**+0.2**
IGD	**Bursa**	**1.18**	**5**	*i* P	**Pn**	**04 50 31.5**	**-0.7**
IGD				*i* S	**Sg**	**04 50 48.4**	**+0.1**
CAVI	**Cavuskoy**	**1.27**	**28**	*e*PN	**Pg**	**04 50 34.7**	**+0.3**
CAVI	**Cavuskoy**	**1.27**	**28**	*e*Pn	**Pg**	**04 50 34.7**	**+0.3**
IZI	**Iznik**	**1.29**	**14**	*e*PN	**Pg**	**04 50 35.3**	**+0.4**
IZI	**Iznik**	**1.29**	**14**	*e*Pn	**Pg**	**04 50 35.3**	**+0.4**
MDNY	**Mudanya-Bursa**	**1.29**	**354**	*e*PN	**Pg**	**04 50 35.0**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.29**	**354**	*e*Pn	**Pg**	**04 50 35.0**	**+0.1**
BALY	**Balya**	**1.30**	**301**	P	**Pg**	**04 50 35.1**	**0.0**
BALY	**Balya**	**1.30**	**301**	*i* P	**Pg**	**04 50 35.1**	**0.0**
KCTX	**Karacabey (Bur**	**1.30**	**335**	*e*PN	**Pg**	**04 50 35.5**	**+0.4**
KCTX	**Karacabey (Bur**	**1.30**	**335**	*e*Pn	**Pg**	**04 50 35.5**	**+0.4**
BORA	**Eskisehir**	**1.33**	**53**	P	**Pg**	**04 50 35.5**	**-0.3**
BORA				S	**Sg**	**04 50 53.3**	**+0.2**
BORA	**Eskisehir**	**1.33**	**53**	*i* P	**Pg**	**04 50 35.5**	**-0.3**
BORA				*i* S	**Sg**	**04 50 53.3**	**+0.2**
GONE	**Gonen-Balikesi**	**1.44**	**312**	*e*PN	**Pb**	**04 50 37.1**	**+0.5**
GONE	**Gonen-Balikesi**	**1.44**	**312**	*e*Pn	**Pb**	**04 50 37.1**	**+0.5**
ADVT	**Abdulvahap**	**1.44**	**21**	*e*PN	**Pg**	**04 50 37.9**	**+0.1**
ADVT	**Abdulvahap**	**1.44**	**21**	*e*Pn	**Pg**	**04 50 37.9**	**+0.1**
ARMT	**Armutlu**	**1.49**	**354**	*e*PN	**Pg**	**04 50 38.1**	**-0.5**
ARMT	**Armutlu**	**1.49**	**354**	*e*Pn	**Pg**	**04 50 38.1**	**-0.5**
GPA	**Golpazari**	**1.54**	**38**	*e*PN	**Pb**	**04 50 38.9**	**+0.6**
GPA	**Golpazari**	**1.54**	**38**	*e*Pn	**Pb**	**04 50 38.9**	**+0.6**
EDC	**Edincik**	**1.57**	**324**	*e*PN	**Pb**	**04 50 38.9**	**+0.1**
EDC	**Edincik**	**1.57**	**324**	*e*Pn	**Pb**	**04 50 38.9**	**+0.1**
GULT	**Gulveren**	**1.75**	**39**	*e*PN	**Pb**	**04 50 42.4**	**+0.5**
GULT	**Gulveren**	**1.75**	**39**	*e*Pn	**Pb**	**04 50 42.4**	**+0.5**
SPNC	**Sapanca-Adapaz**	**1.86**	**30**	*e*PN	**Pb**	**04 50 43.5**	**-0.4**
SPNC	**Sapanca-Adapaz**	**1.86**	**30**	*e*Pn	**Pb**	**04 50 43.5**	**-0.4**
SVRH	**Sivrihisar-ESK**	**1.94**	**78**	*e*PN	**Pb**	**04 50 44.8**	**-0.4**
SVRH	**Sivrihisar-ESK**	**1.94**	**78**	*e*Pn	**Pb**	**04 50 44.8**	**-0.4**
ISK	**Istanbul-Kandi**	**1.98**	**360**	*e*PN	**Pb**	**04 50 45.3**	**-0.5**
ISK	**Istanbul-Kandi**	**1.98**	**360**	*e*Pn	**Pb**	**04 50 45.3**	**-0.5**

ISCJB ***27*** *05:01:44.5±0.5,39.°12N±0.°03×28.°99E±0.°04,h11km±5km, Error ellipse: s-maj=5.9km s-min=4.6km az=41.6*
CSEM ***27*** *05:01:44.5±0.1,39.°11N×28.°99E,h10km,MD2.3,Error ellipse: s-maj=2.3km s-min=1.6km az=106.0*
DDA ***27*** *05:01:44.5,39.°10N×28.°99E,h7km,Md2.3*
ISK ***27*** *05:01:44.2,39.°11N×29.°05E,h12km,MD2.7*
ISC 27 05:01:44.3±0.9,39.°11N±0.°02×29.°01E±0.°03,h13km±8km, n28,σ0°24/39,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.23**	**253**	P	**Pg**	**05 01 49.6**	**+0.2**
DEMI				S	**Sg**	**05 01 52.8**	**-0.1**
DEMI	**Demirci**	**0.23**	**253**	*i* P	**Pg**	**05 01 49.6**	**+0.2**
DEMI				*i* S	**Sg**	**05 01 52.8**	**-0.1**
GDZ	**Gediz**	**0.37**	**93**	P	**Pb**	**05 01 52.6**	**-0.2**
GDZ				S	**Sb**	**05 01 58.2**	**-0.4**
GDZ	**Gediz**	**0.37**	**93**	*i* P	**Pb**	**05 01 52.6**	**-0.2**
GDZ				*i* S	**Sb**	**05 01 58.2**	**-0.4**
TVSB	**Tavsanli**	**0.49**	**46**	*e*PG	**Pg**	**05 01 54.1**	**+0.1**
TVSB				*e*SG	**Sg**	**05 02 00.8**	**+0.2**
TVSB	**Tavsanli**	**0.49**	**46**	*e*Pg	**Pg**	**05 01 54.1**	**+0.1**
TVSB				*e*Sg	**Sg**	**05 02 00.8**	**+0.2**
DURS	**Dursunbey**	**0.64**	**320**	P	**Pg**	**05 01 56.7**	**-0.1**
DURS	**Dursunbey**	**0.64**	**320**	*i* P	**Pg**	**05 01 56.7**	**-0.1**
DURS				*i* S	**Sn**	**05 02 09.5**	**+0.3**
KULA	**Kula-Manisa**	**0.65**	**204**	*e*PG	**Pb**	**05 01 57.6**	**0.0**
KULA	**Kula-Manisa**	**0.65**	**204**	*e*Pg	**Pb**	**05 01 57.6**	**0.0**
MANT	**Manisa**	**0.71**	**210**	P	**Pb**	**05 01 58.5**	**-0.2**
MANT				S	**Sg**	**05 02 07.2**	**-0.4**
MANT	**Manisa**	**0.71**	**210**	*i* P	**Pb**	**05 01 58.5**	**-0.2**
MANT				*i* S	**Sg**	**05 02 07.2**	**-0.4**
KHAL	**Karahalli**	**0.83**	**153**	P	**Pg**	**05 02 00.4**	**0.0**
KHAL				S	**Sb**	**05 02 12.2**	**+0.4**
KHAL	**Karahalli**	**0.83**	**153**	*i* P	**Pg**	**05 02 00.4**	**0.0**
KHAL				*i* S	**Sb**	**05 02 12.2**	**+0.4**
ORLT	**Orhaneli**	**0.94**	**355**	*e*PG	**Pn**	**05 02 03.0**	**-0.2**
ORLT	**Orhaneli**	**0.94**	**355**	*e*Pg	**Pn**	**05 02 03.0**	**-0.2**
KCTX	**Karacabey (Bur**	**1.26**	**337**	*e*PN	**Pg**	**05 02 08.5**	**0.0**
KCTX	**Karacabey (Bur**	**1.26**	**337**	*e*Pn	**Pg**	**05 02 08.5**	**0.0**
CAVI	**Cavuskoy**	**1.27**	**30**	*e*PN	**Pg**	**05 02 08.5**	**-0.2**
CAVI	**Cavuskoy**	**1.27**	**30**	*e*Pn	**Pg**	**05 02 08.5**	**-0.2**
IZI	**Iznik**	**1.28**	**16**	*e*PN	**Pb**	**05 02 08.2**	**0.0**
IZI	**Iznik**	**1.28**	**16**	*e*Pn	**Pb**	**05 02 08.2**	**0.0**
ADVT	**Abdulvahap**	**1.44**	**23**	*e*PN	**Pb**	**05 02 10.7**	**-0.2**
ADVT	**Abdulvahap**	**1.44**	**23**	*e*Pn	**Pb**	**05 02 10.7**	**-0.2**
ARMT	**Armutlu**	**1.46**	**356**	*e*PN	**Pb**	**05 02 11.2**	**-0.1**
ARMT	**Armutlu**	**1.46**	**356**	*e*Pn	**Pb**	**05 02 11.2**	**-0.1**
GULT	**Gulveren**	**1.76**	**41**	*e*PN	**Pn**	**05 02 14.9**	**+0.4**
GULT	**Gulveren**	**1.76**	**41**	*e*Pn	**Pn**	**05 02 15.0**	**+0.4**

IDC ***27*** *05:05:41.7±0.6,6.°53S×147.°99E,h0km,mb4.5/18, mb1 4.6/20,mb1mx4.5/35,mbtmp4.5/20,ML4.2/1,MS4.4/4, Ms1 4.3/4,ms1mx3.7/34,Error ellipse: s-maj=27.4km s-min=12.3km az=89.0*
ISCJB ***27*** *05:05:47.3±0.3,6.°64S±0.°03×147.°94E±0.°05,h51km, mb4.7/57,MS4.3/7,Error ellipse: s-maj=7.3km s-min=4.5km az=10.1*
NEIC ***27*** *05:05:49.8±0.7,6.°63S×147.°91E,h58km±6km,mb4.7/36, Error ellipse: s-maj=6.4km s-min=4.7km az=94.0*
DJA ***27*** *05:05:55.2±1.2,7.°S±8.°×14.°8E±1.°1,h80km±8km,M4.8/14, mb4.6/14,mB5.6/3,MLv4.9/2,Mw(mB)5.1/3*
ISC 27 05:05:49.3±0.3,6.°64S±0.°05×148.°00E±0.°06,h51km,n129, σ1°46/130,mb4.7/56,MS4.3/8,New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.87**	**197**	Pn	**Pn**	**05 06 31.9**	**-0.7**
	59nm,0.3s,baz=62,slow=6.2,SNR=90						
PMG				Sn	**Sn**	**05 07 09.5**	**+3.6**
	31nm,0.3s,baz=21,slow=16,SNR=15						
MANU	**Manus Island**	**4.61**	**352**	*e*Pn	**Pn**	**05 06 57.0**	**+0.4**
RABL	**Rabaul**	**4.81**	**60**	*e*Pn	**Pn**	**05 07 01.4**	**+2.2**
JAY	**Jayapura**	**8.35**	**299**	Pn	**Pn**	**05 07 48.5**	**+0.7**
	0.1nm,0.3s,baz=90,slow=23,SNR=5.0						
JAY				LR	LR	05 11 49.8	
	comp=Z,104nm,19.0s,baz=168,slow=44						
JAY	**Jayapura**	**8.35**	**299**	P	**Pn**	**05 07 51.7**	**+3.8**
	46nm,0.9s						
COEN	**Coen**	**8.68**	**213**	*e*Pn	**Pn**	**05 07 51.5**	**-0.9**
COEN				*e*Sn	**Sn**	**05 09 27.5**	**-1.4**
GENI	**Genyem**	**8.78**	**297**	P	Pn	05 08 00.8	+7.0
CTAO	**Charters Tower**	**13.47**	**187**	*e*Pn	**Pn**	**05 08 58.0**	**+0.1**
FAKI	**Fak Fak**	**16.12**	**283**	*e*Pn	**Pn**	**05 09 33.0**	**+0.2**
	98nm,1.2s						
SWI	**Sorong**	**17.66**	**288**	P	**Pn**	**05 09 50.7**	**-1.2**
	59nm,1.1s,7μm						
MTN	**Manton Dam**	**17.72**	**248**	*e*Pn	**P**	**05 09 53.5**	**+0.5**
	67nm,1.4s						
WRAB	**Tennant Creek**	**18.71**	**224**	*e*P	**P**	**05 10 00.1**	**-3.7**
	36nm,1.1s						
WB2	**Warramunga Arr**	**18.72**	**224**	*e*P	**P**	**05 10 03.1**	**-0.8**
WRA	**Warramunga Arr**	**18.73**	**224**	P	**P**	**05 10 03.0**	**-1.0**
	0.8nm,0.3s,baz=53,slow=11,SNR=45						
EIDS	**Eidsvold**	**18.85**	**171**	*e*P	**P**	**05 10 05.3**	**0.0**
	50nm,1.8s						
GUMO	**Guam**	**20.34**	**351**	LR	LR	05 18 07.8	
	comp=Z,460nm,18.0s,baz=157,slow=37						
GUMO	**Guam**	**20.34**	**351**	*e*P	**P**	**05 10 21.6**	**0.0**
	254nm,1.1s						
AS01	**Alice Springs**	**21.65**	**217**	*e*P	**P**	**05 10 33.9**	**-1.8**
AS31	**Alice Springs**	**21.68**	**217**	*e*P	**P**	**05 10 34.9**	**-1.1**
	5.7nm,0.6s						
ASAR	**Alice Springs**	**21.68**	**217**	P	**P**	**05 10 34.5**	**-1.5**
	6.1nm,0.7s,baz=53,slow=9.4,SNR=49						
ASAR				LR	LR	05 19 31.6	
	comp=Z,879nm,19.4s,baz=45,slow=38						
SANI	**Sanana**	**22.41**	**281**	P	**P**	**05 10 50.5**	**+6.6**
DZM	**Mont Dzumac**	**23.50**	**133**	*e*P	**P**	**05 10 57.1**	**+2.1**
	46nm,1.1s						
DZM				*e*S	**S**	**05 15 05.2**	**0.0**
	214nm,23.9s						
DZM				*e*LR	LR	05 16 44.2	
	1μm,26.5s						
DZM	**Mont Dzumac**	**23.50**	**133**	*e*P	**P**	**05 10 53.8**	**-1.2**
	89nm,1.8s						
ARMA	**Armidale**	**23.89**	**172**	*e*P	**P**	**05 10 59.0**	**+0.5**
	24nm,1.0s						
FITZ	**Fitzroy Crossi**	**24.60**	**240**	*e*P	**P**	**05 11 03.7**	**-1.2**
	113nm,1.4s						
LUWI	**Luwuk**	**25.77**	**281**	P	**P**	**05 11 15.4**	**-0.3**
	158nm,1.1s,3μm						
LUWI	**Luwuk**	**25.77**	**281**	*e*P	**P**	**05 11 14.8**	**-0.9**
	116nm,0.9s						
STKA	**Stephens Creek**	**25.81**	**193**	P	**P**	**05 11 14.9**	**-0.9**
	4.1nm,0.6s,baz=355,slow=8.2,SNR=11						
STKA

WMQ	**Urumqi**	**73.93 319**	*e*P	**P**	**05 17 18.5**	**-0.9**
WMQ			pmax	pmax		
	comp=Z,3.0nm,0.8s					
WMQ			pmax	pmax		
	comp=Z,58nm,4.6s					
WMQ			LR	LR		
	comp=N,120nm,28.4s					
WMQ			LR	LR		
	comp=E,96nm,39.0s					
MK01	**Makanchi Array**	**78.61 320**	*e*P	**P**	**05 17 44.4**	**-1.5**
MK31	**Makanchi Array**	**78.62 320**	*e*P	**P**	**05 17 44.4**	**-1.5**
MKAR	**Makanchi Array**	**78.62 320**	P	**P**	**05 17 44.8**	**-1.1**
	comp=E,4.0nm,1.0s,baz=110,slow=5.8,SNR=12					
MKAR	**Makanchi Array**	**78.62 320**	*e*P	**P**	**05 17 45.2**	**-0.7**
MAKZ	**Makanchi**	**78.83 320**	*e*P	**P**	**05 17 45.9**	**-1.1**
	comp=E,6.6nm,1.0s					
TIXI	**Tiksi**	**79.15 354**	*e*P	**P**	**05 17 47.2**	**-1.0**
	comp=E,5.5nm,1.2s					
ZAA0	**Zalesovo Array**	**80.08 328**	*e*P	**P**	**05 17 51.5**	**-2.1**
ZALV	**Zalesovo Beam**	**80.08 328**	P	**P**	**05 17 51.9**	**-1.7**
	comp=E,2.0nm,0.5s,baz=111,slow=6.5,SNR=5.4					
KSH	**Kashi**	**80.55 312**	*e*P	**P**	**05 17 57.5**	**+0.9**
KSH			*es*P	sP	05 18 20.8	+3.8
KSH			*e*PP	**PP**	**05 21 04.0**	**+3.3**
KSH	**Kashi**	**80.55 312**	S	**S**	**05 27 58.8**	**-1.1**
KSH	**Kashi**	**80.55 312**	sS	sS	05 28 27.0	+2.4
KSH	**Kashi**	**80.55 312**	SS	SS	05 33 15.8	+2.4
KSH			pmax	pmax		
	comp=Z,120nm,4.4s					
KSH			LR	LR		
	comp=N,220nm,11.7s					
KSH			LR	LR		
	comp=E,150nm,10.9s					
KSH			LR	LR		
	comp=Z,110nm,13.2s					
TKM2	**Tokmak 2**	**81.80 315**	*e*P	**P**	**05 18 02.3**	**-1.0**
	comp=Z,3.2nm,0.8s					
KURK	**Kurchatov**	**82.32 323**	P	**P**	**05 18 04.3**	**-1.2**
KURBB	**Kurchatov Arra**	**82.34 323**	P	**P**	**05 18 04.3**	**-1.3**
	comp=Z,1.9nm,0.9s,baz=107,slow=4.7,SNR=7.7					
AAK	**Ala-Archa**	**82.50 314**	P	**P**	**05 18 06.0**	**-1.0**
	comp=Z,2.2nm,0.4s,baz=71,slow=1.0,SNR=9.5					
AAK	**Ala-Archa**	**82.50 314**	*e*P	**P**	**05 18 05.8**	**-1.2**
	comp=Z,2.7nm,0.6s					
EKS2	**Erkin-Say**	**83.01 314**	*e*P	**P**	**05 18 09.5**	**-0.1**
	comp=Z,5.3nm,0.8s					
QSPA	**South Pole Qui**	**83.33 180**	*e*P	**P**	**05 18 10.8**	**+0.1**
SML	**Sawmill**	**83.79 25**	*e*P	**P**	**05 18 12.1**	**-0.9**
	comp=Z,9.3nm,1.2s					
KKAR	**Karatay Array**	**85.45 314**	*e*P	**P**	**05 18 20.7**	**-1.1**
ILAR	**Eielson Array**	**85.68 23**	P	**P**	**05 18 20.0**	**-2.4**
	comp=Z,0.6nm,0.5s,baz=275,slow=5.1,SNR=8.2					
NRIK	**Noril'sk**	**86.19 342**	P	**P**	**05 18 24.2**	**-0.6**
	comp=Z,4.9nm,0.4s,baz=111,slow=5.9,SNR=4.2					
DOT	**Dot Lake**	**86.35 24**	*e*P	**P**	**05 18 25.3**	**-0.5**
	comp=Z,10nm,1.1s					
BVAR	**Borovoye Array**	**87.87 324**	P	**P**	**05 18 31.0**	**-2.3**
	comp=Z,5.1nm,0.8s,baz=104,slow=5.0,SNR=21					
EGAK	**Eagle**	**87.95 24**	*e*P	**P**	**05 18 33.2**	**-0.2**
	comp=Z,3.8nm,1.0s					
DAWY	**Dawson**	**88.43 25**	*e*P	**P**	**05 18 36.1**	**+0.3**
	comp=Z,7.6nm,1.3s					
ZRNK	**Zerenda**	**88.67 324**	*e*P	**P**	**05 18 34.8**	**-2.3**
	comp=Z,2.1nm,0.8s					
ABKAR	**Akbulak array**	**93.71 319**	*e*P	**P**	**05 18 58.6**	**-2.0**
BLN	**Blyn Mountain**	**94.23 42**	*e*P	**P**	**05 19 05.2**	**+2.1**
E09A	**Wood Farm, Sta**	**97.43 44**	*e*P	**P**	**05 19 16.8**	**-0.9**
	comp=Z,55nm,0.7s					
YKA	**Yellowknife Ar**	**99.27 28**	P	**Pdif**	**05 19 24.7**	**-0.8**
	comp=Z,0.3nm,0.9s,baz=275,slow=4.0,SNR=3.7					
YKA			PKKP	**PKKPbc**	**05 35 53.6**	**+1.4**
	comp=Z,0.3nm,0.9s,baz=89,slow=4.4,SNR=3.8					
TXAR	**Lajitas Array**	**109.20 61**	PKKPab	PKKPab	05 35 33.0	0.0
	comp=Z,0.3nm,0.8s,baz=112,slow=5.6,SNR=4.8					
FINES	**FINESS Array B**	**110.68 334**	PKiKP	**PKiKP**	**05 24 15.1**	**-1.1**
	comp=Z,1.6nm,0.7s,baz=203,slow=5.6,SNR=4.0					
WHAR	**Wooly Hollow**	**117.96 54**	*e*PKPdf	**PKPdf**	**05 24 28.6**	**-2.3**
PLCA	**Paso Flores**	**121.04 146**	PKP	**PKPdf**	**05 24 36.8**	**0.0**
	comp=Z,2.5nm,1.0s,baz=139,slow=1.5,SNR=3.0					
BRG	**Berggiesshubel**	**121.78 328**	*e*PKP	**PKPdf**	**05 24 38.1**	**+0.4**
	comp=Z,5.3nm,0.8s					
CLL	**Collm**	**122.03 328**	*e*PKiKP	**PKPdf**	**05 24 38.0**	**-0.2**
	comp=Z,5.0nm,0.7s					
CLL			*e*PP	**PP**	**05 26 15.0**	**+2.4**
CLL			LmV		06 21 00.0	
	comp=Z,100nm,18.3s					
KHC	**Kasperske Hory**	**122.91 326**	*e*PKPdf	**PKPdf**	**05 24 40.0**	**-0.1**
GEC2	**GERESS Array S**	**123.00 326**	*e*PKPdf	**PKPdf**	**05 24 40.5**	**+0.2**
GERES	**GERESS Array B**	**123.00 326**	PKP	**PKPdf**	**05 24 40.2**	**-0.1**
	comp=Z,1.7nm,0.6s,baz=48,slow=2.0,SNR=15					
GEA0	**GERESS Array S**	**123.00 326**	*e*PKPdf	**PKPdf**	**05 24 39.9**	**-0.4**
LPAZ	**La Paz**	**137.60 123**	PKP	**PKPdf**	**05 25 09.6**	**+0.1**
	comp=Z,1.0nm,0.7s,baz=281,slow=5.2,SNR=3.5					
HUMP	**Col San Antoni**	**145.09 68**	*e*PKPbc	**PKPab**	**05 25 21.9**	**+0.2**
SAML	**Samuel**	**145.27 116**	*e*PKPbc	**PKPbc**	**05 25 22.2**	**-0.1**
MTP	**Monte Pirata**	**145.38 68**	*e*PKPdf	**PKPab**	**05 25 24.6**	**+1.8**
STVI	**Saint Thomas**	**145.86 67**	*e*PKPdf	**PKPab**	**05 25 24.4**	**-0.1**
TOA0	**Torodi Ar. Sit**	**146.21 284**	*e*PKPdf	**PKPbc**	**05 25 24.8**	**-0.5**
TORD	**Torodi Ar. Bea**	**146.21 284**	PKPbc	**PKPbc**	**05 25 25.1**	**-0.1**
	comp=Z,8.0nm,0.6s,baz=77,slow=3.5,SNR=48					
SMRT	**St. Maarten**	**147.66 67**	*e*PKPbc	**PKPbc**	**05 25 29.1**	**-0.1**
SVB	**Belmont**	**150.47 75**	*e*PKPbc	**PKPbc**	**05 25 35.7**	**-0.7**
PTGA	**Pitinga**	**151.14 104**	*e*PKPbc	**PKPbc**	**05 25 39.4**	**+1.3**
KIC	**Kosan Boka**	**152.92 271**	*e*PKIKP	**PKPbc**	**05 25 42.5**	**+0.4**
	comp=Z,116nm,1.7s					
DBIC	**Dimbokro**	**153.04 272**	PKPbc	**PKPbc**	**05 25 43.0**	**+0.6**
	comp=Z,7.9nm,0.7s,baz=76,slow=3.4,SNR=11					
DBIC	**Dimbokro**	**153.04 272**	*e*PKPbc	**PKPbc**	**05 25 43.0**	**+0.6**
LIC	**Lamto**	**153.20 271**	*e*PKIKP	**PKPbc**	**05 25 42.8**	**+0.1**
	comp=Z,27nm,0.9s					
TIC	**Toumodi**	**153.20 272**	*e*PKIKP	**PKPbc**	**05 25 42.9**	**+0.2**

*IDC **27** 05:07:37.4± 1.3, 6°.77S× 148°.55E, h0km, mb4.1/8, mb1 4.2/9, mb1mx4.1/34, mbtmp4.1/9, ML4.1/1, MS4.0/2, Ms1 4.1/2, ms1mx3.5/28, Error ellipse: s-maj=57.4km s-min=18.2km az=92.0*
*ISCJB **27** 05:07:44.3± 0.7, 6°.60S± 0°.06× 148°.2E± 0°.1, h51km, mb4.3/14, MS4.1/2, Error ellipse: s-maj=18.0km s-min=9.1km az=179.6*
*NEIC **27** 05:07:48.4± 2.1, 6°.65S× 148°.13E, h74km± 17km, mb4.4/8, Error ellipse: s-maj=20.4km s-min=11.8km az=71.0*
ISC 27 05:07:45.6±0.8, **6°.55S**±0°.07×**148°.2E**±0°.2, **h51**km, **n26,**
σ1**^{S}69**/26, **mb4.1**/14, **1D, New Britain region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**3.02 200**		Pn	**Pn**	**05 08 30.4**	**-0.6**
	36nm,0.3s,baz=0.0,slow=2.0,SNR=4.6						
PMG				Sn	**Sn**	**05 09 09.3**	**+3.3**
	46nm,0.3s,baz=352,slow=20,SNR=3.8						
PMG	**Port Moresby**	**3.02 200**		*e*Pn	**Pn**	**05 08 32.2**	**+1.2**
PMG				*e*Sn	**Sn**	**05 09 09.1**	**+3.1**
CTAO	**Charters Tower**	**13.59 188**		*e*Pn	**Pn**	**05 10 56.3**	**+0.5**
FAKI	**Fak Fak**	**16.30 282**		*e*P	**P**	**05 11 33.2**	**-0.3**
	59nm,1.3s						
EIDS	**Eidsvold**	**18.91 172**		*e*P	**P**	**05 12 02.2**	**0.0**
	17nm,1.4s						
WRAB	**Tennant Creek**	**18.92 224**		*e*P	**Pn**	**05 12 04.2**	**+0.7**
	12nm,1.0s						
WRA	**Warramunga Arr**	**18.94 224**		P	**P**	**05 12 01.9**	**-0.6**
	0.6nm,0.3s,baz=52,slow=11,SNR=5.1						
ASAR	**Alice Springs**	**21.88 217**		P	**P**	**05 12 33.0**	**-1.4**
	2.9nm,0.7s,baz=46,slow=9.6,SNR=4.1						
ARMA	**Armidale**	**23.96 173**		*e*P	**P**	**05 12 56.6**	**+1.2**
	36nm,1.5s						
FITZ	**Fitzroy Crossi**	**24.82 240**		*e*P	**P**	**05 13 01.9**	**-1.4**
	7.7nm,0.4s						
STKA	**Stephens Creek**	**25.95 193**		P	**P**	**05 13 08.7**	**-4.6**
	3.7nm,0.8s,baz=23,slow=13,SNR=1.9						
MBWA	**Marble Bar**	**31.15 239**		*e*P	**P**	**05 13 58.4**	**-1.5**
	41nm,0.9s						
NWAO	**Narrogin (SRO)**	**38.94 224**		*e*P	**P**	**05 15 06.1**	**-0.8**
	85nm,1.2s						
AFI	**Afiamalu**	**40.01 104**		LR	LR	05 27 47.3	
	comp=Z,374nm,18.6s,baz=286,slow=30						
MJAR	**Matsushiro Arr**	**43.88 348**		P	**P**	**05 15 47.9**	**+0.7**
	2.9nm,0.7s,baz=183,slow=7.8,SNR=4.2						
USRK	**Ussuriysk Ar.**	**52.59 345**		P	**P**	**05 16 56.2**	**+2.0**
	1.7nm,0.8s,baz=160,slow=12,SNR=4.2						
SONM	**Songino Array**	**65.47 330**		P	**P**	**05 18 24.3**	**+0.7**
	2.3nm,1.1s,baz=147,slow=7.3,SNR=4.1						
VNDA	**Vanda**	**71.30 177**		P	**P**	**05 18 57.5**	**-1.9**
	2.1nm,0.9s,baz=337,slow=5.5,SNR=2.6						
MKAR	**Makanchi Array**	**78.68 320**		P	**P**	**05 19 43.0**	**+0.5**
	1.0nm,0.8s,baz=125,slow=7.6,SNR=3.1						
QSPA	**South Pole Qui**	**83.42 180**		*e*P	**P**	**05 20 08.8**	**+1.3**
ILAR	**Eielson Array**	**85.51 23**		LR	LR	05 59 01.3	
	comp=Z,45nm,18.8s,baz=278,slow=36						
KKAR	**Karatay Array**	**85.53 314**		*e*P	**P**	**05 20 18.8**	**+0.4**
	3.4nm,1.0s						
BVAR	**Borovoye Array**	**87.92 324**		P	**P**	**05 20 29.3**	**-0.5**
	1.8nm,0.9s,baz=101,slow=7.6,SNR=3.9						
SYO	**Syowa Base**	**90.49 200**		‖*e*P	**P**	**05 20 41.0**	**-0.6**
ABKAR	**Akbulak array**	**93.78 319**		*e*P	**P**	**05 20 56.1**	**-1.0**
	0.6nm,0.8s						
TORD	**Torodi Ar. Bea**	**146.39 284**		PKPbc	**PKPab**	**05 27 23.6**	**+0.7**
	2.1nm,0.7s,baz=68,slow=3.7,SNR=13						

*ISK **27** 05:13:57.6, 39°.10N× 29°.05E, h6km, MD2.7*
*ISCJB **27** 05:13:58.0± 0.5, 39°.09N± 0°.03× 29°.05E± 0°.04, h9km, Error ellipse: s-maj=5.2km s-min=3.8km az=142.9*
*DDA **27** 05:13:58.1, 39°.09N× 29°.05E, h7km, Md2.4*
*CSEM **27** 05:13:58.1± 0.1, 39°.08N× 29°.04E, h8km, MD2.4, Error ellipse: s-maj=2.4km s-min=1.9km az=108.0*
ISC 27 05:13:58.3±0.9, **39°.09N**±0°.02×**29°.05E**±0°.02, **h9**km, **n28,**
σ0**^{S}39**/36, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26 260**		P	**Pg**	**05 14 04.0**	**+0.4**
DEMI				S	**Sg**	**05 14 07.6**	**+0.5**
DEMI	**Demirci**	**0.26 260**		*i* P	**Pg**	**05 14 04.0**	**+0.4**
DEMI				*i* S	**Sg**	**05 14 07.6**	**+0.5**
GDZ	**Gediz**	**0.34 90**		P	**Pg**	**05 14 04.9**	**-0.1**
GDZ				S	**Sg**	**05 14 10.2**	**+0.7**
GDZ	**Gediz**	**0.34 90**		*i* P	**Pg**	**05 14 04.9**	**-0.1**
GDZ				*i* S	**Sg**	**05 14 10.2**	**+0.7**
TVSB	**Tavsanli**	**0.48 42**		*e*PG	**Pg**	**05 14 07.8**	**+0.1**
TVSB				*e*SG	**Sg**	**05 14 13.9**	**-0.2**
TVSB	**Tavsanli**	**0.48 42**		*e*Pg	**Pg**	**05 14 07.8**	**+0.1**
TVSB				*e*Sg	**Sg**	**05 14 13.9**	**-0.2**
KULA	**Kula-Manisa**	**0.65 208**		*e*PG	**Pg**	**05 14 10.6**	**-0.2**
KULA	**Kula-Manisa**	**0.65 208**		*e*Pg	**Pg**	**05 14 10.6**	**-0.2**
DURS	**Dursunbey**	**0.68 319**		P	**Pb**	**05 14 12.0**	**-0.3**
DURS	**Dursunbey**	**0.68 319**		*i* P	**Pb**	**05 14 12.0**	**-0.3**
MANT	**Manisa**	**0.71 213**		P	**Pg**	**05 14 11.9**	**-0.1**
MANT				S	**Sg**	**05 14 21.6**	**+0.3**
MANT	**Manisa**	**0.71 213**		*i* P	**Pg**	**05 14 11.9**	**-0.1**
MANT				*i* S	**Sg**	**05 14 21.6**	**+0.3**
KHAL	**Karahalli**	**0.80 154**		P	**Pb**	**05 14 13.9**	**-0.5**
KHAL	**Karahalli**	**0.80 154**		*i* P	**Pb**	**05 14 13.9**	**-0.5**
KHL	**Karahalli**	**0.85 154**		*e*PG	**Pg**	**05 14 14.3**	**-0.4**
KHL	**Karahalli**	**0.85 154**		*e*Pg	**Pg**	**05 14 14.3**	**-0.4**
ORLT	**Orhaneli**	**0.96 353**		*e*PG	**Pg**	**05 14 16.5**	**-0.3**
ORLT	**Orhaneli**	**0.96 353**		*e*Pg	**Pg**	**05 14 16.5**	**-0.3**
BALB	**Balikesir**	**1.06 302**		*e*PG	**Pg**	**05 14 17.9**	**-0.7**
BALB	**Balikesir**	**1.06 302**		*e*Pg	**Pg**	**05 14 17.9**	**-0.7**
CAVI	**Cavuskoy**	**1.27 29**		*e*PN	**Pb**	**05 14 22.1**	**-0.3**
CAVI	**Cavuskoy**	**1.27 29**		*e*Pn	**Pb**	**05 14 22.1**	**-0.3**
IZI	**Iznik**	**1.29 15**		*e*PN	**Pg**	**05 14 23.2**	**+0.2**
IZI	**Iznik**	**1.29 15**		*e*Pn	**Pg**	**05 14 23.2**	**+0.2**
KCTX	**Karacabey (Bur**	**1.29 336**		*e*PN	**Pg**	**05 14 22.7**	**-0.3**
ARMT	**Armutlu**	**1.48 355**		*e*PN	**Pn**	**05 14 25.3**	**+0.2**
GULT	**Gulveren**	**1.75 40**		*e*PN	**Pn**	**05 14 29.3**	**+0.3**
GULT	**Gulveren**	**1.75 40**		*e*Pn	**Pn**	**05 14 29.3**	**+0.3**

*IDC **27** 05:17:46.6± 0.6, 1°.23N× 128°.15E, h0km, mb4.6/16, mb1 4.7/17, mb1mx4.5/36, mbtmp4.5/17, ML3.9/1, MS3.7/9, Ms1 3.8/9, ms1mx3.5/33, Error ellipse: s-maj=24.0km s-min=12.9km az=69.0*
*ISCJB **27** 05:17:49.0± 0.2, 1°.22N± 0°.02× 128°.21E± 0°.03, h23km, mb4.9/91, MS3.9/15, Error ellipse: s-maj=3.8km s-min=3.1km az=165.6*
*DJA **27** 05:17:51.3± 0.6, 1°N± 3°× 12°.8E±°, h24km± 6km, M4.9/32, mb5.0/32, mB5.4/13, MLv4.9/13, Mw(mB)4.9/13*
*NEIC **27** 05:17:53.7± 0.9, 1°.18N× 128°.16E, h51km± 8km, mb4.9/58, Error ellipse: s-maj=6.5km s-min=4.3km az=47.0*
ISC 27 05:17:50.6±0.3, **1°.22N**±0°.04×**128°.16E**±0°.05, **h23**km, **n183,**
σ1**^{S}59**/197, **mb4.9**/91, **MS3.9**/17, **1D, Halmahera**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LBMI	**Labuha**	**1.96 200**		P	**Pn**	**05 18 22.7**	**+0.3**
LBMI				S	**Sn**	**05 18 47.2**	**+1.0**
SGSI	**Sangihe**	**3.60 313**		P	**Pn**	**05 18 46.7**	**+1.8**
SWI	**Sorong**	**3.73 124**		P	**Pn**	**05 18 46.5**	**-0.2**
SIJI	**Sorong**	**3.73 124**		Pn	**Pn**	**05 18 46.8**	**0.0**
	10nm,0.3s,baz=335,slow=17,SNR=2.8						
SANI	**Sanana**	**3.90 214**		P	**Pn**	**05 18 48.1**	**-1.1**
KMSI	**Cibinong**	**4.23 261**		P	**Pn**	**05 18 55.5**	**+1.9**
NLAI	**Namlea**	**4.55 193**		P	**Pn**	**05 18 58.5**	**+0.5**
MSAI	**Masohi**	**4.59 170**		P	**Pn**	**05 19 00.2**	**+1.5**
FAKI	**Fak Fak**	**5.79 135**		P	**Pn**	**05 19 15.1**	**-0.1**
	120nm,0.9s,0.4nm						
FAKI				S	**Sn**	**05 20 21.0**	**0.0**
	120nm,0.9s,0.4nm						
FAKI	**Fak Fak**	**5.79 135**		*e*Pn	**Pn**	**05 19 14.7**	**-0.5**
FAKI				*e*Sn	**Sn**	**05 20 23.8**	**+2.8**
LUWI	**Luwuk**	**5.83 247**		P	**Pn**	**05 19 19.4**	**+3.7**
	238nm,0.7s,3μm1.2nm						
LUWI	**Luwuk**	**5.83 247**		*e*Pn	**Pn**	**05 19 17.3**	**+1.5**
BNDI	**Bandanaira**	**5.96 163**		P	**Pn**	**05 19 18.1**	**+0.6**
	389nm,1.2s,1.5nm						
MRSI	**Marisa**	**6.26 263**		P	**Pn**	**05 19 25.3**	**+3.7**
	86nm,0.9s,5μm0.4nm						
DAV	**Davao City (W)**	**6.36 336**		LR	LR	05 22 22.5	
	comp=Z,1μm,18.1s,baz=338,slow=44						
CTBH	**Cotabato--PC H**	**7.13 327**		‖*i* P	**Pn**	**05 19 36.1**	**+2.5**
BUKP	**Musuan**	**7.30 335**		*e*P	**Pn**	**05 19 39.9**	**+3.9**
KDI	**Kendari**	**7.55 227**		P	**Pn**	**05 19 40.4**	**+1.0**
	141nm,0.8s,1μm0.4nm						
TTSI	**Tana Toraja**	**9.35 243**		P	**Pn**	**05 20 04.0**	**0.0**
	170nm,0.9s,1μm						
SPSI	**Sidrap Palu**	**9.84 238**		P	**Pn**	**05 20 11.8**	**+1.1**
	73nm,0.8s						
MYLDM	**Lahad Datu**	**10.42 292**		*e*Pn	**Pn**	**05 20 22.9**	**+4.3**
KAPI	**Kappang**	**10.43 234**		Pn	**Pn**	**05 20 20.1**	**+1.2**
	5.4nm,0.3s,baz=36,slow=12,SNR=6.7						
KAPI				Sn	**Sn**	**05 22 12.8**	**-2.4**
	baz=164,slow=20,SNR=2.3						
KAPI				LR	LR	05 25 23.8	
	comp=Z,509nm,19.5s,baz=105,slow=44						
KAPI	**Kappang**	**10.43 234**		*e*Pn	**Pn**	**05 20 20.5**	**+1.7**
KAPI				Sn	**Sn**	**05 22 12.8**	**-2.4**
WSI	**Waingapu**	**13.35 216**		P	Pn	05 20 52.2	-6.6
BBKI	**Banjar Baru**	**14.10 251**		P	**Pn**	**05 21 11.9**	**+2.8**
MTN	**Manton Dam**	**14.28 168**		*e*Pn	**Pn**	**05 21 13.3**	**+1.8**
TWSI	**Taliwang, Sumb**	**14.97 228**		P	**P**	**05 21 23.6**	**-2.6**
	36nm,1.1s						
SRBI	**Singaraja**	**15.87 234**		P	P	05 21 45.0	+8.7
SBUM	**Sibu**	**15.98 275**		*e*Pn	**Pn**	**05 21 35.8**	**+1.7**
	22nm,1.0s						
STKI	**Sintang**	**16.72 266**		P	**Pn**	**05 21 43.9**	**+0.4**
JAGI	**Jajag, Banyuwa**	**16.96 235**		P	**P**	**05 21 54.4**	**+6.1**
JAGI	**Jajag, Banyuwa**	**16.96 235**		*e*Pn	**Pn**	**05 21 47.2**	**+0.7**
	121nm,1.3s						
GMJI	**Gumukmas**	**17.44 237**		P	**P**	**05 21 54.6**	**+1.0**
	57nm,1.4s						
KSM	**Kuching**	**17.85 271**		*e*Pn	**Pn**	**05 21 57.6**	**0.0**
	34nm,1.1s						
PWJI	**Pagerwojo**	**18.71 240**		P	**Pn**	**05 22 09.5**	**+1.3**
	76nm,1.2s,1μm						
PCJI	**Pacitan**	**19.34 241**		P	**P**	**05 22 14.8**	**+0.2**
	110nm,1.4s						
FITZ	**Fitzroy Crossi**	**19.36 187**		*e*P	**P**	**05 22 13.7**	**-1.0**
	29nm,1.0s						
WOJI	**Wonogiri, Jawa**	**19.40 242**		P	**Pn**	**05 22 19.3**	**+2.9**
MANU	**Manus Island**	**19.48 100**		*e*P	**P**	**05 22 15.3**	**-0.7**
	93nm,1.7s						
SMRI	**Semarang**	**19.49 245**		P	**Pn**	**05 22 18.6**	**+1.0**
	110nm,1.1s,5μm						
SMRI	**Semarang**	**19.49 245**		*e*P	**Pn**	**05 22 18.0**	**+0.4**
	94nm,1.0s						
COEN	**Coen**	**21.18 136**		*e*P	**P**	**05 22 37.4**	**+2.8**
	26nm,0.9s						
PMG	**Port Moresby**	**21.67 120**		LR	LR	05 31 59.3	
	comp=Z,403nm,20.1s,baz=315,slow=39						
WRAB	**Tennant Creek**	**21.88 164**		*e*P	**P**	**05 22 41.3**	**-0.7**
	40nm,0.9s						
WRA	**Warramunga Arr**	**21.88 164**		P	**P**	**05 22 41.3**	**-0.8**
	24nm,0.7s,baz=343,slow=11,SNR=85						
WB2	**Warramunga Arr**	**21.89 164**		*e*P	**P**	**05 22 41.5**	**-0.6**
	37nm,0.8s						
LEM	**Lembang**	**22.00 248**		P	**P**	**05 22 47.5**	**+3.9**
	18nm,0.5s,baz=3.4,slow=11,SNR=4.4						
CISI	**Cisompet, Garu**	**22.08 246**		P	**P**	**05 22 44.2**	**-0.2**
	128nm,1.2s						
CISI	**Cisompet, Garu**	**22.08 246**		*e*P	**P**	**05 22 43.6**	**-0.7**
	88nm,0.9s						
PPBI	**Pangkal Pinang**	**22.27 261**		P	**P**	**05 22 45.6**	**-0.8**
CGJI	**Cibinong**	**23.73 251**		P	**P**	**05 22 59.8**	**-1.5**
	60nm,0.7s,1μm						
MYKOM	**Kota Tinggi**	**24.31 272**		*e*P	**P**	**05 23 06.8**	**+0.1**
	24nm,1.0s						
KASI	**Kota Agung**	**24.56 254**		P	**P**	**05 23 08.7**	**-0.3**
	92nm,1.0s,883nm						
LWLI	**Liwa**	**24.86 255**		P	**P**	**05 23 13.1**	**+1.3**
QIZ	**Qiongzhong**	**25.21 316**		P	**P**	**05 23 17.5**	**+2.7**
QIZ				S	**S**	**05 27 37.0**	**-2.2**
QIZ				pmax	pmax		
	comp=Z,190nm,6.3s						
QIZ				LR	LR		
	comp=E,220nm,13.3s						
QIZ				LR	LR		
	comp=Z,270nm,15.6s						
AS31	**Alice Springs**	**25.35 168**		*e*P	**P**	**05 23 16.1**	**+0.1**
	comp=Z,7.9nm,0.7s						
ASAR	**Alice Springs**	**25.36 168**		P	**P**	**05 23 17.2**	**+1.2**
	comp=Z,14nm,0.8s,baz=355,slow=15,SNR=40						
AS01	**Alice Springs**	**25.36 168**		*e*P	**P**	**05 23 15.2**	**-1.0**
MNAI	**Manna**	**25.79 257**		*e*P	**P**	**05 23 21.2**	**+1.1**
	comp=Z,109nm,1.0s						
MASI	**Maura Aman, Be**	**26.27 260**		P	**P**	**05 23 26.1**	**+1.6**
	comp=Z,116nm,1.1s,comp=Z,4μm						
UBPT	**Khong Chiam**	**26.40 303**		P	**P**	**05 23 26.5**	**+0.9**
	comp=Z,31nm,0.8s						
IPM	**Ipoh**	**27.29 277**		*e*P	**P**	**05 23 33.2**	**-0.5**
	comp=Z,21nm,1.1s						
CHBT	**CHBT**	**28.04 295**		P	**P**	**05 23 41.0**	**+0.6**
	comp=Z,75nm,1.0s						
SKNT	**Sakolnakorn**	**28.48 305**		P	**P**	**05 23 45.2**	**+0.9**
	comp=Z,50nm,1.0s,comp=Z,3μm						
PSI	**Prapat**	**29.26 274**		P	**P**	**05 23 50.7**	**-0.7**
	comp=Z,8.4nm,0.7s,baz=97,slow=7.4,SNR=9.1						
PSI	**Prapat**	**29.26 274**		*e*P	**P**	**05 23 49.9**	**-1.5**
	comp=Z,12nm,1.0s						
KCSI	**Kotacane, Aceh**	**30.45 275**		P	**P**	**05 24 00.5**	**-1.3**
	comp=Z,14nm,0.7s						
PBKT	**Sadao Pong**	**30.82 301**		P	**P**	**05 24 05.7**	**+0.7**
	comp=Z,9.0nm,1.3s						
UTTA	**Uttaradit**	**31.71 303**		P	**P**	**05 24 13.9**	**+1.0**
	comp=Z,4.0nm,1.1s,comp=Z,46nm						
JNU	**Nakatsue**	**31.84 4**		P	**P**	**05 24 13.2**	**-0.6**
	comp=Z,11nm,1.0s,baz=160,slow=5.6,SNR=3.6						
NJ2	**Nanjing**	**31.91 345**		*e*P	**P**	**05 24 15.5**	**+1.1**
NJ2				pmax	pmax		
	comp=Z,12nm,0.6s						
WHN	**Wuhan**	**31.98 337**		P	**P**	**05 24 17.3**	**+2.3**
NANT	**Nan**	**32.10 305**		P	**P**	**05 24 17.9**	**+1.6**
	comp=Z,6.4nm,1.0s,comp=Z,97nm						
GYA	**Guiyang**	**32.52 322**		*e*P	**P**	**05 24 22.8**	**+2.8**
GYA				pP	sP	05 24 36.3	+6.5
GYA				PP	**PP**	**05 25 33.0**	**-0.7**
GYA				PcP	**PcP**	**05 27 08.5**	**+1.8**
GYA				S	**S**	**05 29 34.3**	**+0.2**
GYA				sS	sS	05 29 57.0	+11

comp=Z,730nm,16.0s
H11S3 WAKE ISLAND Hy 41.51 63 T T 06 09 24.9
baz=249,slow=74,SNR=6.0
H11S2 WAKE ISLAND Hy 41.52 63 T T 06 09 27.4
baz=249,slow=74,SNR=4.7
H11S1 WAKE ISLAND Hy 41.52 63 T T 06 09 25.7
baz=249,slow=74,SNR=3.6
H11N1 WAKE ISLAND Hy 42.11 62 T T 06 10 08.2
baz=248,slow=75,SNR=9.7
H11N2 WAKE ISLAND Hy 42.12 62 T T 06 10 08.9
baz=248,slow=75,SNR=10
H11N3 WAKE ISLAND Hy 42.13 62 T T 06 10 08.0
baz=248,slow=75,SNR=8.5
HHC Hu-ho-hao-te 42.22 341 *e*P **P** **05 25 43.0 +1.0**
HHC pP sP 05 25 52.0 +0.1
HHC PP **PcP** **05 27 28.5 -7.4**
HHC S **S** **05 32 02.8 +1.6**
HHC pmax pmax
comp=Z,39nm,1.0s
HHC pmax pmax
comp=Z,130nm,5.6s
HHC LR LR
comp=N,860nm,15.0s
HHC LR LR
comp=E,980nm,14.8s
HHC LR LR
comp=Z,860nm,14.8s
SHL Shillong 42.52 308 *e*P **P** **05 25 45.0 +0.2**
USRK Ussurisk Ar. 42.94 4 P **P** **05 25 47.9 +0.3**
comp=Z,3.4nm,0.6s,baz=187,slow=8.4,SNR=10.0
MDJ Mudanjiang 43.24 1 P **P** **05 25 51.8 +1.7**
MDJ pP sP 05 26 04.5 +4.6
MDJ sP pP 05 26 11.0 +14
MDJ ScP **ScP** **05 31 25.8 -3.4**
MDJ PcS **PcS** **05 31 31.3 -0.1**
MDJ S **S** **05 32 17.5 +1.7**
MDJ sS sS 05 32 40.0 +13
MDJ pmax pmax
comp=Z,11nm,1.0s
MDJ pmax pmax
comp=Z,57nm,5.4s
MDJ LR LR
comp=N,110nm,12.2s
MDJ LR LR
comp=E,55nm,11.3s
MDJ LR LR
comp=Z,160nm,14.1s
MDJ Mudanjiang 43.24 1 *e*P **P** **05 25 50.1 0.0**
comp=Z,12nm,0.9s
LSA Lhasa 45.17 312 P **P** **05 26 07.5 +1.1**
LSA pmax pmax
comp=Z,12nm,0.9s
LSA Lhasa 45.17 312 *e*P **P** **05 26 08.5 +2.1**
comp=Z,18nm,0.9s
GTA Gaotai 45.97 329 *e*P **P** **05 26 13.3 +1.1**
GTA pP sP 05 26 25.5 +3.4
GTA sP pP 05 26 30.5 +11
GTA S **S** **05 32 54.5 -1.5**
GTA pmax pmax
comp=Z,6.0nm,1.1s
GTA pmax pmax
comp=Z,110nm,6.7s
GTA LR LR
comp=N,120nm,10.0s
GTA LR LR
comp=E,87nm,14.0s
GTA LR LR
comp=Z,96nm,8.8s
PALK Pallekele 47.68 279 LR LR 05 46 51.7
comp=Z,54nm,21.8s,baz=116,slow=37
KLR Kul'dur 47.93 3 LR LR 05 48 54.0
comp=Z,64nm,18.1s,baz=198,slow=39
GUN Gumba 48.36 307 *e*P **P** **05 26 31.9 +0.6**
comp=Z,77nm,0.7s
KKN Kakani 48.79 307 *e*P **P** **05 26 34.6 +0.2**
comp=Z,67nm,1.0s
DMN Daman 48.85 306 *e*P **P** **05 26 35.7 +0.7**
comp=Z,48nm,0.8s
GKN Gorkha 49.39 307 *e*P **P** **05 26 39.4 +0.4**
comp=Z,41nm,0.8s
ULN Ulaanbaatar 49.94 342 *e*P **P** **05 26 43.1 +0.3**
comp=Z,22nm,0.9s
SONM Songino Array 50.12 341 P **P** **05 26 44.3 +0.2**
comp=Z,6.5nm,0.7s,baz=156,slow=9.0,SNR=35
SONA1 Songino Array 50.13 341 *e*P **P** **05 26 44.3 +0.1**
KOLN Koldanda 50.13 306 *e*P **P** **05 26 45.5 +0.8**
comp=Z,133nm,0.6s
PYUN Piuthan 50.76 306 *e*P **P** **05 26 50.2 +0.8**
comp=Z,116nm,0.6s
WMQ Urumqi 55.59 325 P **P** **05 27 25.3 +0.7**
WMQ pP sP 05 27 40.5 +5.9
WMQ sP pP 05 27 51.0 +19
WMQ pmax pmax
comp=Z,9.0nm,0.8s
WMQ pmax pmax
comp=Z,83nm,5.2s
WMQ LR LR
comp=N,120nm,26.0s
WMQ LR LR
comp=E,98nm,34.8s
WMQ LR LR
comp=Z,41nm,24.0s
POO Poona 55.94 292 *e*x **P** **05 27 25.0 -2.5**
PETK Petropavlovsk- 57.23 21 P **P** **05 27 36.8 +0.8**
comp=Z,3.4nm,0.6s,baz=165,slow=3.6,SNR=5.5
LBZ Lake Benmore 58.81 146 *e*P **P** **05 27 47.4 +0.1**
comp=Z,107nm,1.7s
MK01 Makanchi Array 60.40 325 *e*P **P** **05 27 57.8 -0.4**
MK31 Makanchi Array 60.42 325 *e*P **P** **05 27 58.2 -0.1**
MKAR Makanchi Array 60.42 325 P **P** **05 27 58.1 -0.2**
comp=Z,5.7nm,0.5s,baz=118,slow=8.5,SNR=38
MKAR LR LR 05 52 58.6
comp=Z,54nm,21.9s,baz=120,slow=35
MAKZ Makanchi 60.61 325 *e*P **P** **05 27 59.3 -0.3**
comp=Z,14nm,1.0s
KSH Kashi 60.82 316 *e*P **P** **05 28 02.8 +1.5**
KSH *e*pP sP 05 28 15.3 +3.9
KSH *e*sP pP 05 28 20.5 +12
KSH *e*PP **PP** **05 30 18.3 +2.8**
KSH PcS **PcS** **05 32 48.0 +0.3**
KSH S **S** **05 36 13.5 -4.3**
KSH ScS SKKSac 05 37 46.5 -4.8
KSH pmax pmax
comp=Z,130nm,5.7s
KSH LR LR
comp=N,150nm,10.5s
KSH LR LR
comp=E,120nm,9.1s
KSH LR LR
comp=Z,130nm,7.5s
TKM2 Tokmak 2 62.57 319 *e*P **P** **05 28 13.1 0.0**
comp=Z,10nm,0.8s
AAK Ala-Archa 63.17 318 *e*P **P** **05 28 17.5 +0.4**
comp=Z,5.5nm,1.1s
ZAA0 Zalesovo Array 63.46 333 *e*P **P** **05 28 17.4 -1.1**
ZALV Zalesovo Beam 63.46 333 P **P** **05 28 17.4 -1.2**
comp=Z,2.0nm,0.5s,baz=134,slow=6.4,SNR=5.0
EKS2 Erkin-Say 63.66 318 *e*P **P** **05 28 20.8 +0.5**
comp=Z,9.4nm,0.8s
KBL Kabul 64.18 308 *e*P **P** **05 28 23.5 -0.5**
comp=Z,8.4nm,0.9s
KURK Kurchatov 64.61 328 *e*P **P** **05 28 25.8 -0.4**
comp=Z,21nm,0.8s
KKAR Karatay Array 66.03 317 *e*P **P** **05 28 35.3 -0.3**
TIXI Tiksi 70.33 0 *e*P **P** **05 29 00.7 -1.3**
comp=Z,18nm,1.4s
ZRNK Zerenda 70.92 327 *e*P **P** **05 29 04.7 -1.2**
comp=Z,6.9nm,0.7s
GEYT Alibeck 73.58 309 P **P** **05 29 22.1 -0.1**
comp=Z,1.6nm,0.3s,baz=219,slow=3.7,SNR=3.2
ABKAR Akbulak array 74.99 321 *e*P **P** **05 29 28.8 -1.4**
SDPT Sand Point 78.48 34 *e*P **P** **05 29 50.1 +0.4**
comp=Z,267nm,1.8s
VNDA Vanda 80.77 173 P **P** **05 30 01.3 -0.4**
comp=Z,5.1nm,1.0s,baz=318,slow=5.9,SNR=24
VNDA Vanda 80.77 173 *e*P **P** **05 30 00.9 -0.8**
comp=Z,4.3nm,0.8s
SBA Scott Base 81.67 172 *e*P **P** **05 30 07.0 +0.5**
comp=Z,48nm,2.0s
TT01 Tatalina 82.48 27 *e*P **P** **05 30 11.4 +0.4**
TTA Tatalina 82.49 27 *e*P **P** **05 30 12.1 +0.9**
comp=Z,15nm,1.4s
KDAK Kodiak Island 83.25 32 *e*P **P** **05 30 15.7 +0.6**
comp=Z,107nm,1.8s
RSO Redoubt South 83.56 29 *e*P **P** **05 30 16.9 -0.1**
SPU Mount Spurr 84.01 29 *e*P **P** **05 30 19.0 0.0**

PPLA Purkeypile 84.20 27 *e*P **P** **05 30 20.3 +0.2**
comp=Z,56nm,1.9s
CAST Castle Rocks 84.33 26 *e*P **P** **05 30 21.0 +0.4**
comp=Z,7.2nm,0.8s
BRLK Bradley Lake 84.39 30 *e*P **P** **05 30 21.3 +0.3**
comp=Z,23nm,1.2s
SUA Susitna One 84.68 28 *e*P **P** **05 30 21.9 -0.6**
comp=Z,21nm,0.8s
KTH Kantishna Hill 84.87 26 *e*P **P** **05 30 23.3 0.0**
comp=Z,14nm,1.3s
BPAW Bear Paw Mtn. 84.91 26 *e*P **P** **05 30 24.2 +0.7**
comp=Z,3.7nm,0.9s
RC01 Rabbit Creek A 85.11 29 *e*P **P** **05 30 24.6 0.0**
comp=Z,15nm,1.0s
TRF Thorofare Moun 85.14 26 *e*P **P** **05 30 24.4 -0.4**
comp=Z,6.1nm,1.0s
MLY Manley 85.14 25 *e*P **P** **05 30 24.5 -0.2**
comp=Z,20nm,1.9s
PMR Palmer 85.46 28 *e*P **P** **05 30 25.6 -0.6**
comp=Z,12nm,0.9s
COLD Coldfoot 85.64 23 *e*P **P** **05 30 27.3 +0.2**
comp=Z,3.7nm,0.8s
KBZ Khabaz 85.73 314 P **P** **05 30 24.9 -3.0**
comp=Z,1.0nm,0.5s,baz=180,slow=4.0,SNR=2.6
MCK McKinley 85.77 26 *e*P **P** **05 30 27.2 -0.6**
comp=Z,6.3nm,0.8s
RND Reindeer 85.77 27 *e*P **P** **05 30 27.1 -0.8**
comp=Z,9.7nm,1.1s
SML Sawmill 85.86 28 *e*P **P** **05 30 28.2 -0.1**
comp=Z,20nm,1.0s
WRH Wood River Hil 86.21 26 *e*P **P** **05 30 29.1 -0.8**
comp=Z,4.4nm,1.0s
SCM Sheep Creek Mo 86.34 28 *e*P **P** **05 30 31.5 +0.8**
comp=Z,21nm,1.0s
CCB Clear Creek Bu 86.35 25 *e*P **P** **05 30 29.9 -0.7**
comp=Z,3.2nm,0.9s
IL1 Eielson Array 86.75 25 *e*P **P** **05 30 30.3 -2.3**
ILAR Eielson Array 86.75 25 P **P** **05 30 30.8 -1.8**
comp=Z,0.8nm,0.7s,baz=237,slow=5.5,SNR=8.5
KLU Klutina 86.98 29 *e*P **P** **05 30 33.9 0.0**
comp=Z,21nm,1.4s
DIV Divide 87.04 29 *e*P **P** **05 30 35.0 +0.8**
comp=Z,10nm,0.9s
DOT Dot Lake 87.93 27 *e*P **P** **05 30 37.5 -0.8**
comp=Z,32nm,1.7s
EGAK Eagle 89.20 25 *e*P **P** **05 30 43.7 -0.6**
comp=Z,2.6nm,0.8s
DAWY Dawson 89.99 26 *e*P **P** **05 30 48.0 -0.1**
BRTR Keskin Array B 92.72 310 P **P** **05 30 59.8 -1.6**
comp=Z,0.4nm,0.5s,baz=126,slow=2.8,SNR=2.2
ARCES ARCESS Array B 93.28 340 P **P** **05 31 01.4 -1.8**
comp=Z,6.2nm,1.0s,baz=52,slow=6.5,SNR=5.5
YKA Yellowknife Ar 101.17 25 P **Pdif** **05 31 38.2 -0.7**
comp=Z,0.4nm,0.6s,baz=294,slow=4.4,SNR=7.3
TXAR Lajitas Array 121.96 54 PKP **PKPdf** **05 36 43.8 -0.2**
comp=Z,0.3nm,0.8s,baz=286,slow=3.3,SNR=2.8
JCT Junction City 124.56 51 *e*PKPdf **PKPdf** **05 36 48.7 -0.2**
TORD Torodi Ar. Bea 125.03 287 PKP **PKPdf** **05 36 48.2 -1.8**
comp=Z,0.3nm,0.6s,baz=165,slow=2.2,SNR=2.8

*CSEM **27** 05:33:51.1±0.2,39.°47N×28.°59E, h20km, MD2.3, Error ellipse: s-maj=5.6km s-min=3.5km az=89.0*
ISK 27 05:33:50.0,39.°47N×28.°59E, h15km, MD2.3, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BALB	**Balikesir**	**0.57**	**287**	*e*PG	Pb	05 34 01.8	0.0
BALB	**Balikesir**	**0.57**	**287**	*e*Pg	Pb	05 34 01.8	0.0
TVSB	**Tavsanli**	**0.67**	**92**	*e*PG	Pb	05 34 03.6	+0.1
TVSB	**Tavsanli**	**0.67**	**92**	*e*Pg	Pb	05 34 03.6	+0.1
KCTX	**Karacabey (Bur**	**0.81**	**347**	*e*PG	Pb	05 34 06.2	+0.3
KCTX	**Karacabey (Bur**	**0.81**	**347**	*e*Pg	Pb	05 34 06.2	+0.3
MDNY	**Mudanya-Bursa**	**0.92**	**14**	*e*PG	Pn	05 34 08.3	-0.1
MDNY	**Mudanya-Bursa**	**0.92**	**14**	*e*Pg	Pn	05 34 08.3	-0.1
KULA	**Kula-Manisa**	**0.96**	**177**	*e*PG	Pn	05 34 08.9	-0.1
KULA	**Kula-Manisa**	**0.96**	**177**	*e*Pg	Pn	05 34 08.9	-0.1
IZI	**Iznik**	**1.10**	**38**	*e*PN	Pg	05 34 11.5	+0.3
IZI	**Iznik**	**1.10**	**38**	*e*Pn	Pg	05 34 11.5	+0.3
ARMT	**Armutlu**	**1.11**	**11**	*e*PN	Pg	05 34 11.7	+0.2
ARMT	**Armutlu**	**1.11**	**11**	*e*Pn	Pg	05 34 11.7	+0.2
CAVI	**Cavuskoy**	**1.21**	**52**	*e*PN	Pb	05 34 12.9	+0.3
CAVI	**Cavuskoy**	**1.21**	**52**	*e*Pn	Pb	05 34 12.9	+0.3
ADVT	**Abdulvahap**	**1.30**	**42**	*e*PN	Pb	05 34 14.2	0.0
ADVT	**Abdulvahap**	**1.30**	**42**	*e*Pn	Pb	05 34 14.2	0.0
KHL	**Karahalli**	**1.36**	**147**	*e*PN	Pb	05 34 15.0	-0.2
KHL	**Karahalli**	**1.36**	**147**	*e*Pn	Pb	05 34 15.0	-0.2
HRT	**Hereke**	**1.58**	**31**	*e*PN	Pb	05 34 18.3	-0.7
HRT	**Hereke**	**1.58**	**31**	*e*Pn	Pb	05 34 18.3	-0.7
GULT	**Gulveren**	**1.76**	**56**	*e*PN	Pn	05 34 20.9	+0.8
GULT	**Gulveren**	**1.76**	**56**	*e*Pn	Pn	05 34 20.9	+0.8

*DDA **27** 05:33:57.1,39.°08N×29.°00E, h7km, Md2.3*
*ISK **27** 05:33:59.3,38.°89N×29.°00E, h5km, MD2.2*
*ISCJB **27** 05:34:00.8±0.5,38.°90N±0.°03×28.°95E±0.°05, h9km, Error ellipse: s-maj=5.9km s-min=4.3km az=10.2*
*CSEM **27** 05:34:00.6±0.2,38.°90N×28.°97E, h2km, MD2.2, Error ellipse: s-maj=5.2km s-min=3.9km az=111.0*
ISC 27 05:33:59.4±0.9,38.°91N±0.°02×28.°97E±0.°03, h9km, n32, σ1§05/39, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.23**	**304**	P	**Pg**	**05 34 02.0**	**-2.2**
DEMI				S	**Sg**	**05 34 05.3**	**-2.1**
DEMI	**Demirci**	**0.23**	**304**	*i* P	**Pg**	**05 34 02.0**	**-2.2**
DEMI				*i* S	**Sg**	**05 34 05.3**	**-2.1**
KULA	**Kula-Manisa**	**0.46**	**211**	*e*PG	**Pg**	**05 34 09.5**	**+1.0**
KULA				*e*SG	**Sb**	**05 34 17.0**	**+0.2**
KULA	**Kula-Manisa**	**0.46**	**211**	*e*Pg	**Pg**	**05 34 09.5**	**+1.0**
KULA				*e*Sg	**Sb**	**05 34 17.0**	**+0.2**
MANT	**Manisa**	**0.53**	**217**	P	**Pg**	**05 34 10.5**	**+0.8**
MANT	**Manisa**	**0.53**	**217**	*i* P	**Pg**	**05 34 10.5**	**+0.8**
TVSB	**Tavsanli**	**0.66**	**36**	*e*PG	**Pb**	**05 34 13.2**	**0.0**
TVSB				*e*SG	**Sb**	**05 34 23.4**	**+0.9**
TVSB	**Tavsanli**	**0.66**	**36**	*e*Pg	**Pb**	**05 34 13.2**	**0.0**
TVSB				*e*Sg	**Sb**	**05 34 23.4**	**+0.9**
TVSB	**Tavsanli**	**0.66**	**36**	*e*SG	**Pb**	**05 34 13.4**	**+0.3**
TVSB	**Tavsanli**	**0.66**	**36**	*e*Sg	**Pb**	**05 34 13.4**	**+0.3**
KHAL	**Karahalli**	**0.68**	**143**	P	**Pn**	**05 34 14.4**	**-0.9**
KHAL	**Karahalli**	**0.68**	**143**	*i* P	**Pn**	**05 34 14.4**	**-1.0**
KHAL				*i* S	**Sb**	**05 34 23.9**	**+0.8**
KHL	**Karahalli**	**0.73**	**143**	*e*PG	**Pb**	**05 34 13.9**	**-0.5**
KHL	**Karahalli**	**0.73**	**143**	*e*Pg	**Pb**	**05 34 13.9**	**-0.5**
AKS	**Akhisar**	**0.90**	**268**	*e*PG	**Pb**	**05 34 17.8**	**+0.6**
AKS	**Akhisar**	**0.90**	**268**	*e*Pg	**Pb**	**05 34 17.8**	**+0.6**
BALB	**Balikesir**	**1.11**	**311**	*e*PN	**Pn**	**05 34 22.3**	**+1.2**
BALB	**Balikesir**	**1.11**	**311**	*e*Pn	**Pn**	**05 34 22.3**	**+1.2**
KCTX	**Karacabey (Bur**	**1.43**	**341**	*e*PN	**Pg**	**05 34 28.2**	**+1.4**
KCTX	**Karacabey (Bur**	**1.43**	**341**	*e*Pn	**Pg**	**05 34 28.2**	**+1.4**
CAVI	**Cavuskoy**	**1.46**	**27**	*e*PN	**Pg**	**05 34 28.2**	**+0.9**
CAVI	**Cavuskoy**	**1.46**	**27**	*e*Pn	**Pg**	**05 34 28.2**	**+0.9**
IZI	**Iznik**	**1.48**	**15**	*e*PN	**Pg**	**05 34 28.5**	**+0.8**
IZI	**Iznik**	**1.48**	**15**	*e*Pn	**Pg**	**05 34 28.5**	**+0.8**
GONE	**Gonen-Balikesi**	**1.50**	**319**	*e*PN	**Pg**	**05 34 29.3**	**+1.1**
GONE	**Gonen-Balikesi**	**1.50**	**319**	*e*Pn	**Pg**	**05 34 29.3**	**+1.1**
ADVT	**Abdulvahap**	**1.63**	**21**	*e*PN	**Pg**	**05 34 30.7**	**0.0**
ADVT	**Abdulvahap**	**1.63**	**21**	*e*Pn	**Pg**	**05 34 30.7**	**0.0**
ARMT	**Armutlu**	**1.65**	**357**	*e*PN	**Pg**	**05 34 31.3**	**+0.2**
ARMT	**Armutlu**	**1.65**	**357**	*e*Pn	**Pg**	**05 34 31.3**	**+0.2**
GULT	**Gulveren**	**1.93**	**38**	*e*PN	**Pb**	**05 34 34.3**	**-0.5**
GULT	**Gulveren**	**1.93**	**38**	*e*Pn	**Pb**	**05 34 34.3**	**-0.5**

*BJI **27** 05:39:25.2,0.°96N×124.°07E, h285km, mb4.7/55, mB4.6/34*
*ISCJB **27** 05:39:29.5±0.2,1.°53N±0.°02×123.°97E±0.°02, h290km±2km, mb4.9/165, Error ellipse: s-maj=3.2km s-min=2.6km az=150.0*
*MOS **27** 05:39:30.0±1.0,1.°61N×123.°90E, h298km, mb5.0/41, Error ellipse: s-maj=10.9km s-min=5.2km az=120.9*
*GCMT **27** 05:39:30.6±0.3,1.°54N×124.°01E, h268km±2km, MWS.1/67, Moment Tensor Solution. s39,c43; s67,c84; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}-0.08±.21; $M_{\theta\theta}$0.74±.22; $M_{\phi\phi}$-0.65±.24; $M_{r\theta}$-0.49±.21; $M_{\theta\phi}$3.24±.14; $M_{\phi r}$-5.05±.21; Best double couple: $M_0$6.06000×10^{16} NP1:ϕ_s6.00000°,δ90.00000°,λ-123.00000°. NP2: ϕ_s275.00000°,δ33.00000°,λ-1.00000°. Principal axes: T 6.0380, Plg36.0000°, Azm125.0000°; N 0.0460, Plg33.0000°, Azm7.0000°; P -6.0830, Plg37.0000°, Azm247.0000°; nsta1 refers to body waves, cutoff=40s.*

nsta2 refers to surface waves, cutoff=50s.
*DJA **27** 05:39:30.8±0.2,1.°N±3.°×12.°4E±.°, h263km±2km, M5.0/57, mb5.3/57, mB5.5/44, MLv5.3/15, Mw(mB)4.9/44*
*NEIC **27** 05:39:30.6±0.4,1.°55N×123.°90E, h286km±4km, mb5.1/89, Error ellipse: s-maj=4.9km s-min=3.3km az=58.0*
*IDC **27** 05:39:31.1±0.7,1.°59N×123.°94E, h291km±6km, mb4.4/32, mb1 4.5/35, mb1mx4.4/43, mbtmp5.1/35, Error ellipse: s-maj=9.4km s-min=6.6km az=69.0*
*KLM **27** 05:39:33.4,1.°45N×123.°75E, h289km, mb5.3, MS6.1*
ISC 27 05:39:30.3±0.3,1.°50N±0.°03×123.°97E±0.°03, h284km±3km, h284km:pP-P, n465, σ1§55/539, mb5.0/166, 22C-11D, Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KMSI	**Cibinong**	**0.92**	**179**	P	**Pn**	**05 40 07.9**	**-0.6**
KMSI				S	**S**	**05 40 36.8**	**-2.1**
MRSI	**Marisa**	**2.27**	**243**	P	**Pn**	**05 40 17.9**	**0.0**
MRSI				S	**S**	**05 40 54.7**	**-1.1**
SGSI	**Sangihe**	**2.67**	**36**	P	**Pn**	**05 40 20.4**	**-1.2**
LUWI	**Luwuk**	**2.80**	**205**	P	**Pn**	**05 40 21.3**	**-1.6**
LUWI				S	**S**	**05 41 00.8**	**-4.0**
LUWI	**Luwuk**	**2.80**	**205**	*e*Pn	**Pn**	**05 40 21.4**	**-1.6**
LUWI				*e*S	**S**	**05 41 01.0**	**-3.8**
SANI	**Sanana**	**4.07**	**150**	P	**Pn**	**05 40 33.8**	**-2.6**
SANI				S	**S**	**05 41 21.5**	**-7.8**
LBMI	**Labuha**	**4.12**	**121**	P	**Pn**	**05 40 35.5**	**-1.5**
LBMI				S	**S**	**05 41 25.3**	**-5.1**
KDI	**Kendari**	**5.59**	**194**	P	**Pn**	**05 40 53.2**	**-1.0**
	39nm,0.7s,912nm0.3nm						
NLAI	**Namlea**	**5.65**	**146**	P	**Pn**	**05 40 54.6**	**-0.4**
	144nm,0.9s,11μm17nm						
NLAI				S	**S**	**05 41 59.2**	**-3.9**
	144nm,0.9s,11μm17nm						
CTBH	**Cotabato--PC H**	**5.69**	**3**	*i*P	**Pn**	**05 40 56.6**	**+1.2**
DAV	**Davao City (W)**	**5.76**	**16**	P	**Pn**	**05 40 56.1**	**-0.1**
	69nm,0.3s,baz=27,slow=2.3,SNR=3.8						
DAV				S	**S**	**05 42 05.2**	**-0.2**
	201nm,0.3s,baz=252,slow=20,SNR=3.3						
DAV	**Davao City (W)**	**5.76**	**16**	*e*Pn	**Pn**	**05 40 56.4**	**+0.1**
DAV				S	**S**	**05 42 05.2**	**-0.2**
DAV				*e*S	S	05 42 11.7	+6.3
MATI	**Mati**	**5.87**	**23**	*e*P	**Pn**	**05 40 55.7**	**-1.9**
MATI				*e*S	**S**	**05 42 06.0**	**-1.8**
TTSI	**Tana Toraja**	**6.13**	**223**	P	**Pn**	**05 41 01.3**	**+0.5**
	694nm,0.9s,5μm2.1nm						
IPIL	**Ipil**	**6.40**	**347**	*e*P	**Pn**	**05 41 04.5**	**+0.5**
BUKP	**Musuan**	**6.43**	**10**	*e*P	**Pn**	**05 41 05.5**	**+1.1**
BUKP				*e*S	**S**	**05 42 25.3**	**+5.1**
MYLDM	**Lahad Datu**	**6.57**	**304**	⇑P	**Pn**	**05 41 08.0**	**+1.8**
MYLDM	**Lahad Datu**	**6.57**	**304**	*e*Pn	**Pn**	**05 41 07.5**	**+1.4**
TSM	**Tawau**	**6.69**	**295**	⇑P	**Pn**	**05 41 08.6**	**+0.9**
SPSI	**Sidrap Palu**	**6.87**	**218**	P	**Pn**	**05 41 09.8**	**0.0**
	146nm,0.9s,0.5nm						
MSAI	**Masohi**	**6.91**	**134**	P	**Pn**	**05 41 11.6**	**+1.3**
	60nm,0.7s,1.1nm						
MSAI				S	**S**	**05 42 31.1**	**0.0**
	60nm,0.7s,1.1nm						
BKB	**Balikpapan**	**7.59**	**249**	P	**Pn**	**05 41 19.5**	**+0.8**
	503nm,0.9s,7μm1.6nm						
SWI	**Sorong**	**7.66**	**108**	P	**Pn**	**05 41 19.4**	**-0.1**
	214nm,1.3s,3μm0.7nm						
SIJI	**Sorong**	**7.67**	**108**	P	**Pn**	**05 41 19.6**	**0.0**
	baz=356,slow=14,SNR=4.2						
SIJI				S	**S**	**05 42 43.7**	**-4.4**
	13nm,0.3s,baz=198,slow=20,SNR=2.4						
KAPI	**Kappang**	**7.72**	**213**	P	**Pn**	**05 41 20.6**	**+0.2**
	21nm,0.3s,baz=28,slow=4.6,SNR=132						
KAPI				S	**S**	**05 42 47.6**	**-1.8**
	2.6nm,0.3s,baz=246,slow=20,SNR=3.8						
SDKM	**Sandakan**	**7.91**	**301**	⇓P	**Pn**	**05 41 23.4**	**+0.6**
BSSI	**Bau Bau, Buton**	**8.35**	**205**	P	**Pn**	**05 41 28.2**	**0.0**
	108nm,1.0s,2μm						
BNDI	**Bandanaira**	**8.43**	**135**	P	**Pn**	**05 41 29.4**	**+0.4**
	848nm,0.8s						
KKM	**Kota Kinabalu**	**8.96**	**300**	⇑P	**Pn**	**05 41 36.5**	**+0.8**
KKM	**Kota Kinabalu**	**8.96**	**300**	*e*Pn	**Pn**	**05 41 36.0**	**+0.2**
FAKI	**Fak Fak**	**9.37**	**118**	P	**Pn**	**05 41 40.5**	**-0.3**
	144nm,1.0s						
FAKI	**Fak Fak**	**9.37**	**118**	*e*Pn	**Pn**	**05 41 40.4**	**-0.3**
MTKI	**Muara Teweh, K**	**9.39**	**255**	P	**Pn**	**05 41 42.0**	**+0.9**
	282nm,0.9s,10μm						
RCP	**Roxas**	**10.07**	**353**	⇓*e*P	**Pn**	**05 41 49.7**	**+0.3**
MMRI	**Maumere**	**10.22**	**190**	P	**Pn**	**05 41 52.6**	**+1.3**
	114nm,0.9s						
MMRI	**Maumere**	**10.22**	**190**	*e*Pn	**Pn**	**05 41 52.7**	**+1.4**
BBKI	**Banjar Baru**	**10.37**	**242**	P	**Pn**	**05 41 54.1**	**+0.9**
	514nm,1.3s,7μm						
BTM	**Bintulu**	**11.01**	**279**	⇓P	**Pn**	**05 42 01.7**	**+0.6**
SOEI	**Soe**	**11.19**	**178**	P	**P**	**05 42 05.1**	**-1.1**
	398nm,1.4s,4μm						
SOEI	**Soe**	**11.19**	**178**	*e*Pn	**P**	**05 42 04.8**	**-1.4**
SBUM	**Sibu**	**11.78**	**275**	*e*Pn	**Pn**	**05 42 10.8**	**+0.3**
SAUI	**Saumlaki**	**11.93**	**142**	P	**Pn**	**05 42 12.3**	**0.0**
	1μm,0.6s						
SAUI	**Saumlaki**	**11.93**	**142**	*e*Pn	**Pn**	**05 42 12.7**	**+0.4**
PALU	**Palau**	**11.97**	**61**	P	**Pn**	**05 42 12.2**	**-0.6**
	baz=12,SNR=6.7						
PLAI	**Plampang**	**11.98**	**211**	P	**P**	**05 42 14.0**	**-0.9**
	441nm,0.8s,4μm						
TWSI	**Taliwang, Sumb**	**12.39**	**215**	P	**P**	**05 42 19.6**	**+0.2**
	281nm,1.1s,4μm						
STKI	**Sintang**	**12.57**	**264**	P	**Pn**	**05 42 20.1**	**-0.1**
	238nm,1.4s,11μm						
LQP	**Lukban**	**12.76**	**349**	⇑*e*P	**P**	**05 42 23.6**	**-0.1**
TGY	**Tagaytay City**	**12.87**	**347**	P	**P**	**05 42 24.5**	**-0.3**
	48nm,0.3s,baz=164,slow=4.0,SNR=12						
SRBI	**Singaraja**	**12.92**	**222**	P	**P**	**05 42 25.4**	**+0.1**
	430nm,1.0s,6μm						
DNP	**Denpasar**	**13.36**	**221**	P	**P**	**05 42 32.1**	**+1.9**
	898nm,1.0s						
ABJI	**Asem Bagus**	**13.40**	**226**	P	P	05 42 36.1	+5.4
KSM	**Kuching**	**13.66**	**270**	*e*Pn	**P**	**05 42 34.5**	**+1.0**
JAGI	**Jajag, Banyuwa**	**13.93**	**224**	P	**Pn**	**05 42 38.7**	**+2.1**
	339nm,0.9s,3μm						
JAGI	**Jajag, Banyuwa**	**13.93**	**224**	*e*Pn	**Pn**	**05 42 37.1**	**+0.5**
GRJI	**Gresik**	**14.19**	**234**	P	**Pn**	**05 42 40.5**	**+0.7**
	362nm,0.7s,3μm						
GMJI	**Gumukmas**	**14.30**	**227**	P	**Pn**	**05 42 41.8**	**+0.8**
	432nm,1.1s,3μm						
TBJI	**Tambak Boyo**	**14.65**	**236**	P	**Pn**	**05 42 46.0**	**+0.8**
	1μm,0.7s,12μm						
UWJI	**Ujung Watu**	**15.20**	**239**	P	**P**	**05 42 49.6**	**-0.9**
	291nm,0.8s						
NGJI	**Ngawi**	**15.28**	**235**	P	**P**	**05 42 52.0**	**+0.6**
	386nm,0.8s,3μm						
PWJI	**Pagerwojo**	**15.39**	**232**	P	**P**	**05 42 51.6**	**-1.0**
MTN	**Manton Dam**	**15.93**	**154**	P	**P**	**05 42 58.9**	**+0.4**
	baz=16,SNR=48						
MTN	**Manton Dam**	**15.93**	**154**	*e*P	**P**	**05 42 58.7**	**+0.2**
	276nm,0.5s						
SMRI	**Semarang**	**15.95**	**238**	P	**P**	**05 42 59.0**	**+0.2**
	397nm,0.9s,5μm						
SMRI	**Semarang**	**15.95**	**238**	*e*P	**P**	**05 42 59.0**	**+0.2**
	255nm,0.8s						
PCJI	**Pacitan**	**15.99**	**233**	P	**P**	**05 42 59.3**	**+0.2**
	331nm,0.9s,5μm						
UGM	**Wanagama**	**16.35**	**235**	P	**P**	**05 43 02.9**	**-0

158nm,1.2s,2μm
SKJI Sukabumi 19.32 244 P Pn 05 43 40.1 +0.2
185nm,1.0s
SBJI Serang 19.36 247 P Pn 05 43 40.6 +0.3
212nm,1.3s,7μm
TPRI Tanjung Pinang 19.45 269 P P 05 43 38.8 +2.3
136nm,1.2s,23μm
FITZ Fitzroy Crossi 19.55 175 P P 05 43 36.7 -0.9
baz=20,SNR=68
FITZ Fitzroy Crossi 19.55 175 *eP* **P 05 43 36.6 -0.9**
59nm,0.9s
CGJI Cibinong 19.95 246 P P 05 43 40.4 -1.4
519nm,0.6s,5μm
MYKOM Kota Tinggi 20.11 271 *eP* **P 05 43 43.4 -0.2**
191nm,0.9s
KLI Kotabumi 20.12 252 P P 05 43 45.9 +2.3
419nm,0.8s
KASI Kota Agung 20.66 250 P P 05 43 49.1 -0.1
469nm,1.0s,4μm
LHSI Lahat 21.11 255 P P 05 43 54.8 +1.2
352nm,0.6s,4μm
KTGM Kuala Trenggan 21.14 281 ⇓P **P 05 43 54.5 +0.6**
XMIS Christmas Isla 21.77 236 *eP* **P 05 43 57.7 -2.0**
172nm,1.4s
MNAI Manna 21.79 254 P P 05 44 01.8 +1.9
1μm,0.6s,12μm
MNAI Manna 21.79 254 *eP* **P 05 44 00.6 +0.6**
623nm,0.6s
TPUB Ta-pu 21.91 352 *eP* **P 05 44 02.2 +1.4**
69nm,1.0s
YULB Yu-li 21.91 353 *eP* **P 05 44 03.3 +2.4**
112nm,1.7s
QIZ Qiongzhong 22.25 322 P P 05 44 05.0 +1.0
QIZ S **S 05 47 51.0 +3.2**
QIZ pmax pmax
comp=Z,10.0nm,0.8s
QIZ pmax pmax
comp=Z,130nm,12.6s
QIZ Qiongzhong 22.25 322 *eP* **P 05 44 04.4 +0.5**
155nm,1.9s
NACB Ninganchiao 22.65 354 *eP* **P 05 44 08.1 +0.6**
59nm,1.4s
UBPT Khong Chiam 22.82 308 P P 05 44 10.2 +1.0
72nm,1.2s
MBWA Marble Bar 22.90 190 *eP* **P 05 44 10.1 +0.2**
54nm,0.6s
BKNI Bangkinang 22.96 267 P P 05 44 12.0 +1.5
324nm,1.1s,3μm
BKNI Bangkinang 22.96 267 *eP* **P 05 44 10.5 0.0**
434nm,1.2s
IPM Ipoh 23.10 278 *eP* **P 05 44 11.8 0.0**
158nm,1.3s
KULM Kulim 23.58 280 ⇓P **P 05 44 16.6 +0.4**
KULM Kulim 23.58 280 *eP* **P 05 44 16.4 +0.3**
40nm,0.9s
WRAB Tennant Creek 23.61 155*c iP* **P 05 44 16.1 -0.2**
WRAB pmax pmax
comp=Z,771nm,0.8s
WRAB Tennant Creek 23.61 155 *eP* **P 05 44 16.2 -0.2**
comp=Z,291nm,0.6s
WRA Warramunga Arr 23.61 155 P **P 05 44 16.6 +0.2**
comp=Z,242nm,0.6s,baz=336,slow=9.7,SNR=390
WRA S **S 05 48 06.7 -3.0**
comp=Z,20nm,1.1s,baz=336,slow=15,SNR=7.4
WRA ScP **ScP 05 51 04.7 +0.8**
comp=Z,6.3nm,0.8s,baz=343,slow=3.1,SNR=6.6
WB2 Warramunga Arr 23.62 155 *eP* **P 05 44 16.4 -0.1**
comp=Z,368nm,0.6s
PPI Padang Panjang 23.65 265 P P 05 44 17.4 +0.6
CHBT CHBT 24.18 299 P P 05 44 23.1 +1.6
comp=Z,88nm,0.9s,comp=Z,7μm
COEN Coen 24.46 130 P P 05 44 23.5 -0.6
baz=24,SNR=41
COEN Coen 24.46 130 *eP* **P 05 44 23.5 -0.6**
comp=Z,69nm,0.8s
SKNT Sakolnakorn 24.96 309 P P 05 44 28.9 +0.3
comp=Z,28nm,1.3s
TRTT Trang 24.99 285 P P 05 44 29.7 +0.8
comp=Z,91nm,0.8s,comp=Z,1μm
PSI Prapat 25.06 273 P P 05 44 30.0 +0.3
comp=Z,93nm,0.8s,baz=98,slow=6.9,SNR=81
PSI ScP **ScP 05 51 07.3 -0.9**
comp=Z,6.2nm,0.8s,baz=127,slow=5.1,SNR=5.4
PSI Prapat 25.06 273 *eP* **P 05 44 29.6 -0.1**
PSI pmax pmax
comp=Z,133nm,0.9s
PSI Prapat 25.06 273 *eP* **P 05 44 29.6 -0.1**
comp=Z,133nm,0.9s
PSI ScP **ScP 05 51 07.3 -0.9**
PMG Port Moresby 25.51 116 P **P 05 44 34.3 +0.8**
comp=Z,143nm,0.8s,baz=322,slow=4.8,SNR=22
PMG Port Moresby 25.51 116⇑*eP* **P 05 44 33.9 +0.4**
PMG pmax pmax
comp=Z,464nm,0.6s
PMG Port Moresby 25.51 116 *eP* **P 05 44 34.0 +0.4**
comp=Z,156nm,0.8s
KHON Khomkaen 25.52 306 P P 05 44 35.1 +1.5
comp=Z,47nm,0.8s,comp=Z,909nm
GIRL Giralia 25.81 201 P P 05 44 37.7 +1.6
baz=26,SNR=6.6
SURT Suratani 26.12 287 P P 05 44 40.3 +1.3
comp=Z,44nm,1.0s,comp=Z,390nm
GSI Gunungsitoli 26.39 270 *eP* **P 05 44 41.0 -0.5**
comp=Z,96nm,0.8s
WRKA Warakurna 26.71 171 P P 05 44 44.8 +0.6
baz=27,SNR=45
QIS Mount Isa 26.75 146 P P 05 44 45.1 +0.6
baz=27,SNR=122
AS31 Alice Springs 26.82 159 *eP* **P 05 44 45.4 +0.3**
comp=Z,21nm,0.6s
ASAR Alice Springs 26.82 159 P P 05 44 45.5 +0.4
comp=Z,57nm,0.7s,baz=338,slow=7.2,SNR=704
ASAR S **S 05 48 57.8 -2.4**
comp=Z,16nm,0.9s,baz=335,slow=16,SNR=10
ASAR ScP **ScP 05 51 13.3 +0.3**
comp=Z,3.7nm,0.8s,baz=340,slow=2.7,SNR=5.3
AS01 Alice Springs 26.83 159 *eP* **P 05 44 44.8 -0.4**
PBKT Sadao Pong 27.15 305 P P 05 44 48.6 +0.5
comp=Z,32nm,1.0s,comp=Z,2μm
LHMI Lhok Sumawe 27.23 278 *eP* **P 05 44 48.2 -0.7**
comp=Z,112nm,1.1s
SRDT SRDT 27.68 299 P P 05 44 54.6 +1.8
comp=Z,114nm,0.7s,comp=Z,6μm
UTTA Uttaradit 28.10 306 P P 05 44 57.4 +0.9
comp=Z,14nm,0.9s,comp=Z,112nm
KHLT Khaolaem Dam 28.33 299 P P 05 45 00.4 +1.8
comp=Z,17nm,0.8s
RABL Rabaul 28.74 101 *eP* **P 05 45 04.2 +2.0**
comp=Z,392nm,0.5s
LAMP Lampang 29.26 307 P P 05 45 08.4 +1.7
comp=Z,14nm,1.0s
CRAI Chiangrai 29.63 311 P P 05 45 10.8 +0.7
comp=Z,105nm,0.8s,comp=Z,8μm
CM01 Chiang Mai Arr 29.74 306 *eP* **P 05 45 11.4 +0.3**
CMAR Chiang Mai Arr 29.78 306 P P 05 45 12.1 +0.7
comp=Z,21nm,1.0s,baz=133,slow=7.6,SNR=81
CMAR PcP **PcP 05 48 08.3 +0.9**
comp=Z,9.0nm,0.8s,baz=167,slow=1.8,SNR=18
CMAR ScP **ScP 05 51 22.2 -0.1**
comp=Z,6.6nm,0.7s,baz=162,slow=2.7,SNR=16
GYA Guiyang 29.88 328 *eP* **P 05 45 13.8 +1.6**
GYA pP pP 05 46 09.0 +1.7
GYA PcP **PcP 05 48 10.8 +3.1**
GYA S **S 05 49 51.5 +3.3**
GYA sS sS 05 51 27.5 -0.5
GYA ScS **ScS 05 55 19.3 +0.6**
GYA pmax pmax
comp=Z,20nm,0.8s
GYA pmax pmax
comp=Z,120nm,5.4s
GYA LR LR
comp=Z,530nm,17.6s
GYA LR LR
comp=Z,490nm,18.2s
GYA LR LR
comp=Z,520nm,17.8s
CMMT Chiang Mai 29.96 307 P P 05 45 13.5 +0.6
comp=Z,61nm,1.0s,comp=Z,509nm
CHTO Chiang Mai 29.96 307 P P 05 45 13.5 +0.5
comp=Z,272nm,1.0s,comp=Z,2μm
CHTO Chiang Mai 29.96 307 *eP* **P 05 45 13.5 +0.5**
CHTO pmax pmax
comp=Z,54nm,0.9s
CHTO Chiang Mai 29.96 307 *eP* **P 05 45 13.5 +0.5**
comp=Z,54nm,0.9s
COCO West Island 30.19 242 *i* P **P 05 45 16.2 +1.2**
WHN Wuhan 30.29 343 P **P 05 45 17.0 +1.4**

MHMT Maesarieng 30.46 305 P **P 05 45 18.3 +1.0**
comp=Z,40nm,0.9s
CTAO Charters Tower 30.62 136 *eP* **P 05 45 19.9 +1.2**
CTAO pmax pmax
comp=Z,82nm,1.5s
CTAO Charters Tower 30.62 136 *eP* **P 05 45 19.9 +1.2**
comp=Z,82nm,1.5s
NJ2 Nanjing 30.77 351 *eP* **P 05 45 22.5 +2.7**
NJ2 pmax pmax
comp=Z,11nm,0.9s
CBIJ Chichi jima 30.87 33 *eP* **P 05 45 20.2 -0.6**
comp=Z,207nm,1.3s
JCJ Chichijima 30.87 33 P **P 05 45 20.0 -0.8**
comp=Z,78nm,0.6s,baz=135,slow=2.3,SNR=11
KMI Kunming 31.16 321 P **P 05 45 26.0 +2.3**
KMI S **S 05 50 09.5 +1.0**
KMI SS **SS 05 52 24.5 -5.3**
KMI pmax pmax
comp=Z,21nm,0.9s
KMI pmax pmax
comp=Z,130nm,4.8s
MORW Morawa 31.33 193 P **P 05 45 25.0 +0.2**
baz=31,SNR=14
ENH Enshi 31.75 336 *eP* **P 05 45 29.8 +1.3**
comp=Z,40nm,0.8s
JNU Nakatsue 32.12 11 P **P 05 45 30.2 -1.4**
comp=Z,4.2nm,0.6s,baz=162,slow=20,SNR=2.5
BLDU Ballidu 32.68 192 P **P 05 45 36.6 +0.1**
baz=33,SNR=45
KMBL Kambalda 32.75 183 P **P 05 45 37.4 +0.3**
baz=33,SNR=36
DGPR DIGLIPUR 32.84 292 *eP* **P 05 45 37.1 -0.9**
DGPR IAmb IAmb 05 45 42.2
comp=Z,23nm,0.9s
KLBR Kellerberrin 33.44 190 P **P 05 45 43.4 +0.4**
baz=34,SNR=43
NWAO Narrogin (SRO) 34.83 190 P **P 05 45 55.6 +0.7**
baz=35,SNR=19
NWAO Narrogin (SRO) 34.83 190 *eP* **P 05 45 55.6 +0.7**
NWAO pmax pmax
comp=Z,71nm,1.6s
NWAO Narrogin (SRO) 34.83 190 *eP* **P 05 45 55.6 +0.7**
comp=Z,72nm,1.6s
CD2 Chengdu 34.95 329 P **P 05 45 56.8 +0.7**
CD2 pP pP 05 46 51.8 -0.4
CD2 sP sP 05 47 23.8 -1.1
CD2 PcP **PcP 05 48 21.8 +0.1**
CD2 S **S 05 51 08.8 +2.4**
CD2 sS sS 05 52 48.3 +0.8
CD2 pmax pmax
comp=Z,60nm,1.0s
CD2 pmax pmax
comp=Z,110nm,3.8s
XAN Xi'an 35.30 338 P **P 05 45 59.5 +0.6**
XAN pmax pmax
comp=Z,29nm,0.5s
XAN pmax pmax
comp=Z,160nm,5.5s
BBOO Buckleboo 35.99 163 P **P 05 46 05.0 +0.3**
baz=36,SNR=68
BBOO Buckleboo 35.99 163 *eP* **P 05 46 05.1 +0.3**
comp=Z,59nm,0.8s
RKGY Rocky Gully 36.52 190 P **P 05 46 10.7 +1.6**
baz=37,SNR=12
RMQ Roma 36.70 141 P **P 05 46 11.4 +0.6**
baz=37,SNR=9.2
STKA Stephens Creek 37.17 155 P **P 05 46 15.6 +0.9**
comp=Z,67nm,0.5s,baz=326,slow=8.9,SNR=208
STKA PP **sP 05 47 42.2 -1.6**
comp=Z,24nm,0.8s,baz=327,slow=13,SNR=5.4
STKA Stephens Creek 37.17 155 P **P 05 46 15.4 +0.7**
baz=37,SNR=150
STKA Stephens Creek 37.17 155 *eP* **P 05 46 15.6 +0.9**
STKA pmax pmax
comp=Z,25nm,0.9s
STKA Stephens Creek 37.17 155 *eP* **P 05 46 15.6 +0.9**
comp=Z,25nm,0.9s
STKA PP **sP 05 47 42.2 -1.6**
MAJO Matsushiro 37.27 19 *eP* **P 05 46 15.1 -0.4**
MAJO pmax pmax
comp=Z,49nm,1.7s
MAJO Matsushiro 37.27 19 *eP* **P 05 46 15.1 -0.4**
comp=Z,49nm,1.7s
MAT Matsushiro 37.27 19 P **P 05 46 15.0 -0.5**
MJAR Matsushiro Arr 37.27 19 P **P 05 46 14.7 -0.8**
comp=Z,8.9nm,0.8s,baz=194,slow=9.2,SNR=20
MJAR ScP **ScP 05 51 47.6 -0.7**
comp=Z,6.1nm,0.9s,baz=202,slow=4.6,SNR=9.6
MJB9 Matsu-Tunnel 37.27 19 *eP* **P 05 46 15.7 +0.2**
comp=Z,14nm,1.8s
EIDS Eidsvold 37.45 137 P **P 05 46 16.9 -0.2**
baz=38,SNR=7.6
EIDS Eidsvold 37.45 137 *eP* **P 05 46 16.9 -0.2**
comp=Z,48nm,1.0s
HTT Hallett 37.50 159 P **P 05 46 18.4 +0.9**
baz=38,SNR=44
CMSA Cobar Meteorol 38.79 150 P **P 05 46 29.6 +1.5**
baz=39,SNR=93
BJI Beijing 39.01 350 P **P 05 46 30.3 +0.5**
BJI pmax pmax
comp=Z,12nm,0.8s
SHL Shillong 39.09 310 *eP* **P 05 46 30.5 -0.5**
LZH Lanzhou 39.14 334 ⇑P **P 05 46 33.3 +2.1**
LZH pP pP 05 47 33.5 +5.1
LZH sP sP 05 47 59.0 -1.8
LZH PP **PP 05 48 09.5 +1.7**
LZH PcP **PcP 05 48 35.5 +0.9**
LZH *e*S **S 05 52 14.8 +5.2**
LZH SS **SS 05 55 12.5 -3.1**
LZH pmax pmax
comp=Z,89nm,1.0s
LZH pmax pmax
comp=Z,190nm,6.6s
HHC Hu-ho-hao-te 40.75 346 *eP* **P 05 46 46.0 +1.8**
HHC pmax pmax
comp=Z,30nm,1.0s
HHC pmax pmax
comp=Z,120nm,5.4s
ARMA Armidale 41.26 143 P **P 05 46 50.1 +1.6**
baz=41,SNR=31
ARMA Armidale 41.26 143 *eP* **P 05 46 50.2 +1.7**
comp=Z,86nm,1.1s
ARPS Mount Arapiles 41.54 158 P **P 05 46 51.7 +1.1**
baz=42,SNR=60
LSA Lhasa 41.95 315 P **P 05 46 56.0 +1.5**
LSA pmax pmax
comp=Z,49nm,0.8s
LSA Lhasa 41.95 315 *eP* **P 05 46 56.0 +1.5**
LSA pmax pmax
comp=Z,38nm,0.8s
LSA Lhasa 41.95 315 *eP* **P 05 46 56.0 +1.5**
comp=Z,38nm,0.8s
CN2 Changchun 42.14 2 *eP* **P 05 46 56.8 +1.6**
YNG Young 42.36 149 P **P 05 46 59.2 +2.0**
baz=42,SNR=27
MGCD Mangrove Creek 42.98 146 P **P 05 47 04.8 +2.6**
baz=43,SNR=38
BOK Bokaro 43.01 304 *eP* **P 05 47 02.9 +0.3**
BOK IAmb IAmb 05 47 04.4
comp=Z,26nm,0.8s
USRK Ussuriysk Ar. 43.11 8 P **P 05 47 03.1 +0.2**
comp=Z,2.8nm,0.5s,baz=196,slow=7.6,SNR=12
USRK pP **pP 05 48 02.8 +1.5**
comp=Z,11nm,0.9s,baz=194,slow=8.6,SNR=6.5
USRK ScP **ScP 05 52 10.3 -0.7**
comp=Z,3.5nm,1.0s,baz=209,slow=3.5,SNR=6.6
MDJ Mudanjiang 43.22 6 P **P 05 47 06.5 +2.6**
MDJ pP pP 05 48 04.3 +2.1
MDJ sP sP 05 48 33.0 -1.3
MDJ PcP **PP 05 48 49.5 -1.4**
MDJ PP **PcP 05 48 53.8 +6.2**
MDJ S **S 05 53 14.0 +5.2**
MDJ pmax pmax
comp=Z,9.0nm,0.8s
MDJ pmax pmax
comp=Z,44nm,6.2s
CAN Canberra 43.47 150 *eP* **P 05 47 08.1 +2.0**
CAN pmax pmax
comp=Z,152nm,0.7s
CAN Canberra 43.47 150 *eP* **P 05 47 08.1 +2.0**
comp=Z,152nm,0.7s
PALK Pallekele 43.50 279 P **P 05 47 06.7 0.0**
comp=Z,25nm,0.7s,baz=116,slow=6.4,SNR=8.3
PALK Pallekele 43.50 279 *eP* **P 05 47 05.6 -1.0**
PALK pmax pmax
comp=Z,225nm,1.8s

PALK Pallekele 43.50 279 *eP* **P 05 47 05.6 -1.0**
comp=Z,225nm,1.8s
CNB Canberra Magne 43.65 149 P **P 05 47 09.1 +1.6**
baz=44,SNR=19
TOO Toolangi 43.69 155 P **P 05 47 10.0 +2.2**
baz=44,SNR=36
GTA Gaotai 43.69 333 P **P 05 47 08.0 +0.1**
GTA PcP **PcP 05 48 50.3 +0.8**
GTA S **S 05 53 17.0 +0.9**
GTA ScS **ScS 05 56 33.5 -2.5**
GTA pmax pmax
comp=Z,7.0nm,1.0s
GTA pmax pmax
comp=Z,150nm,5.9s
GTA LR LR
comp=Z,130nm,14.5s
GTA LR LR
comp=Z,110nm,13.3s
GTA LR LR
comp=Z,92nm,11.9s
MDRS Chennai 44.78 287 *eP* **P 05 47 17.2 +0.5**
GUN Gumba 44.90 309 *eP* **P 05 47 17.9 +0.1**
comp=Z,268nm,0.8s
MILA Mila 44.92 151 P **P 05 47 19.4 +1.9**
baz=45,SNR=6.4
KKN Kakani 45.30 309 *eP* **P 05 47 20.7 -0.2**
comp=Z,147nm,0.8s
DMN Daman 45.35 308 *eP* **P 05 47 21.1 -0.2**
comp=Z,300nm,1.0s
ASAJ Asahikawa 45.54 19 P **P 05 47 22.9 +0.7**
comp=Z,2.8nm,0.3s,baz=206,slow=7.9,SNR=4.3
ASAJ Asahikawa 45.54 19 *eP* **P 05 47 23.0 +0.8**
comp=Z,47nm,1.6s
GKN Gorkha 45.91 309 *eP* **P 05 47 25.8 +0.3**
comp=Z,241nm,0.9s
KOLN Koldanda 46.61 308 *eP* **P 05 47 31.2 +0.2**
comp=Z,476nm,0.8s
PYUN Piuthan 47.24 308 *eP* **P 05 47 36.2 +0.3**
comp=Z,772nm,0.9s
HYB Hyderabad 47.34 292 *eP* **P 05 47 35.6 -0.9**
DZM Mont Dzumac 47.61 122 *eP* **P 05 47 38.3 -0.3**
comp=Z,51nm,1.1s
HABR Khabarovsk 47.76 10 *eP* **P 05 47 36.9 -2.2**
HABR *e**PP **pP 05 48 35.7 -3.0**
HABR *e* 05 49 00.8
HABR *e*S **S 05 54 12.5 -0.8**
HABR *e**SS **sS 05 55 57.4 -1.7**
HABR *e* 05 56 59.8
HABR *e*SS **SS 05 57 46.2 +0.2**
HABR pmax pmax
comp=Z,13nm,0.9s
HABR pmax pmax
comp=Z,14nm,0.6s
HABR pmax pmax
comp=Z,5.0nm,0.6s
HABR pmax pmax
comp=E,10.0nm,0.8s
HABR MLR MLR
comp=Z,76nm,18.0s
NGP Nagpur 47.93 297 *eP* **P 05 47 40.7 -0.3**
KLR Kul'dur 48.01 7 P **P 05 47 40.4 -0.8**
comp=Z,4.0nm,0.6s,baz=209,slow=5.1,SNR=13
KLR pP **pP 05 48 42.3 +1.6**
comp=Z,6.0nm,1.0s,baz=203,slow=5.6,SNR=3.2
KLR Kul'dur 48.01 7⇑*iP* **P 05 47 40.9 -0.2**
ULN Ulaanbaatar 48.45 345*ceP* **P 05 47 44.4 -0.3**
ULN pmax pmax
comp=Z,16nm,1.7s
ULN Ulaanbaatar 48.45 345 *eP* **P 05 47 45.7 +1.0**
comp=Z,20nm,1.0s
SONM Songino Array 48.60 344 P **P 05 47 45.2 -0.5**
comp=Z,7.2nm,0.6s,baz=160,slow=8.7,SNR=36
SONM pP **pP 05 48 47.7 +2.2**
comp=Z,1.8nm,0.7s,baz=159,slow=8.7,SNR=2.4
SONM PcP **PcP 05 49 06.6 0.0**
comp=Z,5.1nm,0.8s,baz=176,slow=2.9,SNR=6.4
SONM ScP **ScP 05 52 33.1 -0.9**
comp=Z,3.5nm,0.8s,baz=167,slow=5.3,SNR=9.0
SONA1 Songino Array 48.61 344 *eP* **P 05 47 45.3 -0.6**
TAU Tasmania Unive 48.96 157 *eP* **P 05 47 50.4 +2.1**
TAU pmax pmax
comp=Z,219nm,1.9s
TAU Tasmania Unive 48.96 157 *eP* **P 05 47 50.4 +2.1**
comp=Z,219nm,1.9s
BHPL Bhopal 50.01 299 *eP* **P 05 47 56.1 -0.6**
POO Poona 51.95 292 *eP* **P 05 48 10.2 -1.0**
TLY Talaya 52.84 344 *eP* **P 05 48 17.2 +0.1**
TLY pmax pmax
comp=Z,6.0nm,0.7s
WMQ Urumqi 53.04 328⇑*iP* **P 05 48 20.5 +1.8**
WMQ pP pP 05 49 21.0 +1.4
WMQ sP sP 05 49 49.5 -1.5
WMQ S **S 05 55 22.5 -3.7**
WMQ pmax pmax
comp=Z,19nm,0.8s
WMQ pmax pmax
comp=Z,66nm,5.2s
WMQ LR LR
comp=Z,25nm,19.2s
SMLA Simla 53.12 309 *eP* **P 05 48 19.7 +0.3**
MOY Mondy 53.59 342 *eP* **P 05 48 22.6 0.0**
MOY pmax pmax
comp=Z,20nm,1.9s
DHRM DHARAMSHALA 54.25 309 *eP* **P 05 48 27.4 -0.5**
THN Thein Dam 54.78 309 *eP* **P 05 48 29.4 -1.9**
THN *ex* x 05 55 40.0
MSVF Nonsavu 56.56 112 *eP* **P 05 48 46.2 +1.9**
MSVF pmax pmax
comp=Z,71nm,1.4s
MSVF Nonsavu 56.56 112 *eP* **P 05 48 46.2 +1.9**
comp=Z,71nm,1.4s
PDGK Podgornoye 57.44 323 P **P 05 48 49.1 -0.7**
PDGK pmax pmax
comp=Z,29nm,0.8s
KSH Kashi 57.73 317 P **P 05 48 53.0 +0.9**
KSH *e*PcP **PcP 05 49 42.5 +0.9**
KSH *ep*P pP 05 49 56.3 +2.2
KSH *es*P sP 05 50 26.5 +1.2
KSH *e*PP **PP 05 51 06.5 +2.8**
KSH S **S 05 56 28.5 +0.1**
KSH sS sS 05 58 18.0 0.0
KSH pmax pmax
comp=Z,17nm,0.5s
KSH pmax pmax
comp=Z,97nm,5.5s
KSH LR LR
comp=Z,390nm,12.9s
KSH LR LR
comp=Z,210nm,8.7s
MK01 Makanchi Array 57.85 327 *eP* **P 05 48 52.0 -0.6**
MK31 Makanchi Array 57.87 327 *eP* **P 05 48 52.4 -0.5**
MK31 Makanchi Array 57.87 327 *eP* **P 05 48 52.4 -0.5**
MKAR Makanchi Array 57.87 327 P **P 05 48 52.3 -0.5**
comp=Z,7.9nm,0.4s,baz=123,slow=8.6,SNR=114
MKAR PcP **PcP 05 49 41.0 -0.8**
comp=Z,9.9nm,0.6s,baz=120,slow=4.0,SNR=12
MKAR ScP **ScP 05 53 12.6 -1.7**
comp=Z,5.4nm,0.8s,baz=128,slow=5.2,SNR=7.2
MAKZ Makanchi 58.04 327 *eP* **P 05 48 53.3 -0.7**
MAKZ pmax pmax
comp=Z,10.0nm,0.6s
MAKZ Makanchi 58.04 327 *eP* **P 05 48 53.3 -0.7**
comp=Z,10nm,0.6s
PEA0 Petropavlovsk- 58.53 23 *eP* **P 05 48 58.7 +1.4**
PETK Petropavlovsk- 58.53 23 P **P 05 48 58.6 +1.3**
comp=Z,3.3nm,0.6s,baz=233,slow=1.1,SNR=4.7
OUZ Omahuta 58.99 133 *eP* **P 05 49 03.1 +2.5**
comp=Z,272nm,2.0s
TKM2 Tokmak 2 59.64 320 *eP* **P 05 49 04.8 -0.5**
TKM2 pmax pmax
comp=Z,27nm,0.7s
TKM2 Tokmak 2 59.64 320 *eP* **P 05 49 04.8 -0.5**
comp=Z,27nm,0.7s
AAK Ala-Archa 60.20 320*d iP* **P 05 49 08.8 -0.3**
AAK pmax pmax
comp=Z,22nm,1.0s
AAK Ala-Archa 60.20 320 *eP* **P 05 49 09.4 +0.3**
comp=Z,16nm,0.8s
FRU Bishkek 60.22 320 *eP* **P 05 49 08.0 -1.0**
FRU pmax pmax
comp=Z,75nm,2.4s
DCZ Deep Cove 60.37 146 *eP* **P 05 49 11.4 +1.6**
comp=Z,80nm,1.3s
YAK Yakutsk 60.53 3 *i* P **P 05 49 10.2 -0.4**
YAK pmax pmax
comp=Z,74nm,0.8s

EKS2	Erkin-Say	60.68	319	eP	P	05 49 12.4	+0.1
EKS2				pmax	pmax		
comp=Z,21nm,0.7s							
EKS2	Erkin-Say	60.68	319	eP	P	05 49 12.4	+0.1
comp=Z,21nm,0.7s							
KBL	Kabul	60.73	309	eP	P	05 49 12.1	-0.7
KBL				pmax	pmax		
comp=Z,51nm,0.6s							
KBL	Kabul	60.73	309	eP	P	05 49 12.1	-0.7
comp=Z,51nm,0.6s							
FOZ	Fox Glacier	60.75	143	eP	P	05 49 13.5	+1.0
comp=Z,257nm,1.9s							
MLZ	Mavora Lakes	60.84	146	eP	P	05 49 14.1	+1.0
comp=Z,163nm,1.6s							
WKZ	Wanaka	61.03	145	eP	P	05 49 15.3	+0.9
comp=Z,106nm,1.5s							
WHZ	Wether Hill Ro	61.07	146	eP	P	05 49 15.7	+1.1
comp=Z,33nm,0.9s							
ZAA0	Zalesovo Array	61.36	335	eP	P	05 49 15.0	-1.4
ZALV	Zalesovo Beam	61.36	335	P	P	05 49 14.7	-1.7
comp=Z,11nm,0.9s,baz=120,slow=5.4,SNR=18							
ZALV				S	S	05 57 11.3	-2.7
comp=Z,0.6nm,0.3s,baz=126,slow=15,SNR=4.2							
MNAS	Manas	61.43	319	P	P	05 49 16.0	-1.3
MNAS				pmax	pmax		
comp=Z,31nm,0.8s							
LBZ	Lake Benmore	61.46	144	eP	P	05 49 18.7	+1.4
comp=Z,58nm,0.7s							
MA2	Magadan	61.54	15	eP	P	05 49 18.2	+0.7
MA2				pmax	pmax		
comp=Z,46nm,0.7s							
MA2	Magadan	61.54	15	eP	P	05 49 18.2	+0.7
comp=Z,46nm,0.7s							
RPZ	Rata Peaks	61.60	143	eP	P	05 49 19.9	+1.7
comp=Z,144nm,1.3s							
THZ	Tophouse	61.70	140	eP	P	05 49 20.5	+1.5
comp=Z,40nm,0.7s							
LTZ	Lake Taylor	61.84	141	eP	P	05 49 21.7	+1.9
comp=Z,134nm,1.7s							
OXZ	Oxford	61.99	142	eP	P	05 49 21.8	+1.1
comp=Z,36nm,0.8s							
ODZ	Otahua Downs	62.10	144	eP	P	05 49 22.3	+0.8
comp=Z,186nm,1.9s							
KURK	Kurchatov	62.18	329	P	P	05 49 19.7	-2.1
KURK				pmax	pmax		
comp=Z,45nm,0.5s							
KURK	Kurchatov	62.18	329	eP	P	05 49 20.7	-1.1
comp=Z,36nm,0.6s							
DZET	Dzherino	62.44	314	P	P	05 49 22.7	-1.3
DZET				pmax	pmax		
comp=Z,64nm,0.6s							
KHZ	Kahutara	62.45	141	eP	P	05 49 24.7	+0.9
comp=Z,34nm,0.8s							
MQZ	McQueen's Vall	62.57	142	eP	P	05 49 26.6	+2.1
comp=Z,124nm,1.7s							
SNZO	South Karori	62.65	139	eP	P	05 49 25.2	+0.2
comp=Z,102nm,0.9s							
NVS	Novosibirsk	62.65	335	eP	P	05 49 22.8	-2.1
NVS				pmax	pmax		
comp=N,9.0nm,1.0s							
NVS				pmax	pmax		
comp=E,12nm,1.0s							
NVS				pmax	pmax		
comp=Z,23nm,1.0s							
BKZ	Black Stump Fm	62.84	136	eP	P	05 49 27.7	+1.1
comp=Z,85nm,1.1s							
URZ	Urewera	62.87	135	P	P	05 49 27.1	+0.4
comp=Z,28nm,0.6s,baz=260,slow=4.6,SNR=11							
URZ	Urewera	62.87	135	eP	P	05 49 27.3	+0.6
comp=Z,84nm,1.3s							
KK31	Karatay Array	63.02	319	i P	P	05 49 26.8	-0.8
KK31				pmax	pmax		
comp=Z,21nm,1.0s							
KKAR	Karatay Array	63.02	319	eP	P	05 49 27.3	-0.3
KKAR	Karatay Array	63.02	319	eP	P	05 49 27.2	-0.3
RAO	Raoul Island	63.33	124	eP	P	05 49 31.2	+1.4
RAO				pmax	pmax		
comp=Z,560nm,0.9s							
RAO	Raoul Island	63.33	124	eP	P	05 49 31.2	+1.4
comp=Z,560nm,0.9s							
OTUK	Ortayu	64.27	324	P	P	05 49 34.6	-1.0
OTUK				pmax	pmax		
comp=Z,15nm,1.0s							
SEY	Seymchan	64.82	14	ceP	P	05 49 39.6	+0.8
WSAR	Wadi Sarin	66.80	295	P	P	05 49 49.4	-2.8
comp=Z,4.1nm,0.9s,baz=129,slow=5.1,SNR=4.1							
BRVK	Borovoye	67.78	328	eP	P	05 49 56.3	-1.4
BRVK				pmax	pmax		
comp=Z,18nm,0.9s							
BRVK	Borovoye	67.78	328	eP	P	05 49 56.3	-1.4
comp=Z,18nm,0.9s							
CHKZ	Chkalovo	67.92	329	P	P	05 49 57.0	-1.6
CHKZ				pmax	pmax		
comp=Z,13nm,1.0s							
ZRNK	Zerenda	68.41	328	P	P	05 49 59.2	-2.4
ZRNK	Zerenda	68.41	328	eP	P	05 50 00.6	-1.1
comp=Z,28nm,1.1s							
HATD	Hatta, Dubai	69.30	296	P	P	05 50 07.4	-0.3
ASHO	Ashiyiah	69.34	296	P	P	05 50 07.7	-0.2
FAQ	Al Faqa, Dubai	69.77	296	P	P	05 50 10.1	-0.4
TIXI	Tiksi	70.11	2	P	P	05 50 10.7	-1.0
comp=Z,12nm,0.4s,baz=190,slow=5.3,SNR=19							
TIXI	Tiksi	70.11	2	d i P	P	05 50 10.3	-1.3
TIXI				pmax	pmax		
comp=Z,18nm,0.8s							
TIXI	Tiksi	70.11	2	eP	P	05 50 10.8	-0.8
comp=Z,15nm,0.7s							
GEYT	Alibeck	70.17	310	P	P	05 50 12.6	-0.2
comp=Z,22nm,0.7s,baz=158,slow=4.3,SNR=23							
GEYT				pP	pP	05 51 21.5	+4.2
comp=Z,3.3nm,0.4s,baz=126,slow=7.5,SNR=2.0							
NRIK	Noril'sk	71.95	347	P	P	05 50 22.3	-0.3
comp=Z,9.3nm,0.5s,baz=146,slow=5.8,SNR=8.5							
AB31	Akbulak array	72.15	322	i P	P	05 50 22.7	-1.6
AB31				pmax	pmax		
comp=Z,10.0nm,0.8s							
ABKAR	Akbulak array	72.15	322	eP	P	05 50 23.1	-1.1
BILL	Bilibino	72.41	15	i P	P	05 50 35.6	+10
BILL				i		05 50 39.8	
BILL				i		05 53 11.7	
BILL				pmax	pmax		
comp=Z,1.0nm,0.8s							
AKTO	Aktyubinsk	73.71	323	P	P	05 50 31.7	-1.7
AKTO				pmax	pmax		
comp=Z,15nm,0.7s							
SVE	Sverdlovsk	74.43	329	eP	P	05 50 35.9	-1.5
SVE				pmax	pmax		
comp=Z,32nm,1.1s							
ARU	Arti	75.36	329	d i P	P	05 50 40.4	-2.3
ARU				*PP	pP	05 51 47.7	-0.6
ARU						05 53 32.4	
ARU				S	S	05 59 57.1	-1.3
ARU				SS	SS	06 04 49.9	-5.3
ARU				pmax	pmax		
comp=Z,20nm,1.0s							
ARU	Arti	75.36	329	eP	P	05 50 40.9	-1.7
comp=Z,18nm,1.0s							
OPO	Ambohidratompo	77.96	251	P	P	05 50 58.5	+0.3
comp=Z,37nm,0.7s,baz=62,slow=4.2,SNR=46							
CRZF	Crozet Islands	78.84	222	eP	P	05 51 01.9	-0.3
comp=Z,58nm,0.6s							
DAMY	Dhamar	79.54	284	eP	P	05 51 07.0	0.0
comp=Z,13nm,0.6s							
ATD	Arta Tunnel	81.00	281	P	P	05 51 13.8	-0.7
comp=Z,18nm,0.7s,baz=61,slow=5.8,SNR=7.6							
VNDA	Vanda	81.59	172	P	P	05 51 16.6	+0.4
comp=Z,4.6nm,0.8s,baz=301,slow=5.7,SNR=23							
VNDA	Vanda	81.59	172	eP	P	05 51 16.8	+0.6
VNDA				pmax	pmax		
comp=Z,6.0nm,1.0s							
VNDA	Vanda	81.59	172	eP	P	05 51 16.8	+0.6
comp=Z,6.4nm,1.0s							
ZEI	Tsey	81.69	313	eP	P	05 51 14.9	-2.8
ZEI				pmax	pmax		
comp=Z,35nm,0.8s							
KBZ	Khabaz	82.51	314	P	P	05 51 20.8	-0.7
comp=Z,6.5nm,0.8s,baz=108,slow=5.7,SNR=11							
GOF	Gofitskoye	82.53	315⇑	eP	P	05 51 20.5	-1.2
KIV	Kislovodsk	82.68	314	eP	P	05 51 21.7	-0.9
KIV				pmax	pmax		
comp=Z,9.0nm,0.5s							
KIV	Kislovodsk	82.68	314	eP	P	05 51 21.7	-0.9
comp=Z,9.4nm,0.5s							
VRH	Novokhopyorsk	83.97	321	eP	P	05 51 27.3	-1.5
VRH				pmax	pmax		
comp=Z,20nm,0.7s							
TT01	Tatalina	84.11	27	eP	P	05 51 31.4	+2.0
TTA	Tatalina	84.12	27	eP	P	05 51 30.7	+1.2
TTA				pmax	pmax		
comp=Z,11nm,1.3s							
TTA	Tatalina	84.12	27	eP	P	05 51 30.7	+1.2
comp=Z,11nm,1.3s							
SOC	Sochi	84.80	313	eP	P	05 51 30.2	-3.0
SOC				eS	SKSac	06 01 25.7	-4.4
SOC				eSS	SS	06 07 10.8	-5.4
SOC				pmax	pmax		
comp=Z,17nm,0.7s							
OHAK	Old Harbor	84.80	33	eP	P	05 51 34.0	+1.2
comp=Z,166nm,2.0s							
VSR	Storozhevoye	85.57	321	eP	P	05 51 34.9	-1.9
VSR				pmax	pmax		
comp=Z,20nm,0.8s							
LPSR	Galich'ya Gora	85.79	322	eP	P	05 51 36.0	-1.9
LPSR				pmax	pmax		
comp=Z,30nm,0.7s							
CAST	Castle Rocks	85.95	27	eP	P	05 51 38.6	+0.2
comp=Z,12nm,1.6s							
KLMR	Klimovskoe	85.98	331	eP	P	05 51 35.6	-3.0
KLMR				pmax	pmax		
comp=Z,14nm,0.6s							
SUA	Susitna One	86.43	29	eP	P	05 51 40.5	-0.4
comp=Z,17nm,1.3s							
BPAW	Bear Paw Mtn.	86.48	26	eP	P	05 51 41.5	+0.5
comp=Z,7.3nm,1.3s							
ANN	Anapa	86.49	315	eP	P	05 51 38.5	-2.9
ANN				pmax	pmax		
comp=Z,55nm,0.9s							
KMBO	Kilima Mbogo	86.75	269	P	P	05 51 44.4	+0.8
comp=Z,16nm,0.8s,baz=71,slow=7.4,SNR=26							
KMBO	Kilima Mbogo	86.75	269	eP	P	05 51 44.1	+0.4
KMBO				pmax	pmax		
comp=Z,24nm,1.0s							
KMBO	Kilima Mbogo	86.75	269	eP	P	05 51 44.1	+0.4
comp=Z,24nm,1.0s							
COLD	Coldfoot	87.00	23	eP	P	05 51 44.5	+1.0
comp=Z,4.5nm,0.9s							
OBN	Obninsk	87.29	325	i P	P	05 51 42.5	-2.5
OBN				pmax	pmax		
comp=Z,10.0nm,0.8s							
RND	Reindeer	87.40	27	eP	P	05 51 44.8	-0.7
RND				pmax	pmax		
comp=Z,8.0nm,1.2s							
RND	Reindeer	87.40	27	eP	P	05 51 44.8	-0.7
comp=Z,7.5nm,1.2s							
CCB	Clear Creek Bu	87.89	26	eP	P	05 51 46.2	-1.5
comp=Z,6.3nm,1.4s							
IL1	Eielson Array	88.28	25	eP	P	05 51 48.4	-1.1
ILAR	Eielson Array	88.28	25	P	P	05 51 48.0	-1.5
comp=Z,0.3nm,0.4s,baz=243,slow=4.5,SNR=7.2							
LVZ	Lovozero	88.36	338	eP	P	05 51 47.7	-2.2
LVZ				pmax	pmax		
comp=Z,109nm,2.0s							
LVZ	Lovozero	88.36	338	eP	P	05 51 47.7	-2.2
comp=Z,109nm,2.0s							
APA	Apatity	88.84	337⇑	i P	P	05 51 52.0	0.0
BR131	Keskin Array S	89.31	310	eP	P	05 51 54.4	-0.7
BRTR	Keskin Array B	89.31	310	P	P	05 51 53.1	-1.9
comp=Z,3.7nm,0.8s,baz=123,slow=4.6,SNR=9.7							
BRTR				PP	PP	05 55 25.8	-4.4
comp=Z,2.6nm,0.9s,baz=128,slow=8.0,SNR=4.2							
SYO	Syowa Base	89.37	201⇑	eP	P	05 51 53.5	-0.9
SYO	Syowa Base	89.37	201⇑	ePcP	PcP	05 51 56.2	+0.6
CSS	Mathiatis	89.67	305	eP	P	05 51 56.8	+0.1
comp=Z,6.0nm,1.1s							
MENT	Mentasta	89.73	27	eP	P	05 51 56.8	+0.4
comp=Z,3.0nm,0.9s							
BR231	Keskin MP Arra	89.97	310	eP	P	05 51 58.5	+0.4
QSPA	South Pole Qui	91.42	180	eP	P	05 52 05.5	+1.3
ARA0	ARCESS Array S	91.57	340	eP	P	05 52 02.8	-1.9
ARCES	ARCESS Array B	91.57	340	P	P	05 52 02.8	-1.9
comp=Z,6.4nm,0.7s,baz=86,slow=5.9,SNR=32							
ARE0	ARCESS Array S	91.57	340	eP	P	05 52 03.0	-1.8
comp=Z,76nm,1.7s							
AKASG	Malin Array Be	91.86	321	P	P	05 52 04.3	-2.2
comp=Z,1.3nm,0.4s,baz=72,slow=4.6,SNR=7.8							
KIEV	Kiev	91.87	321	i P	P	05 52 04.9	-1.6
KIEV				pmax	pmax		
comp=Z,8.0nm,1.4s							
SPB1	Spitsbergen Ar	92.11	349	eP	P	05 52 05.6	-1.5
SPA1	Spitsbergen Ar	92.11	349	eP	P	05 52 06.0	-1.1
SPB2	Spitsbergen Ar	92.11	349	eP	P	05 52 06.0	-1.1
SPA2	Spitsbergen Ar	92.11	349	eP	P	05 52 06.2	-0.8
SPB5	Spitsbergen Ar	92.11	349	eP	P	05 52 06.2	-0.9
SPA0	Spitsbergen Ar	92.11	349	eP	P	05 52 06.5	-0.6
SPITS	Spitsbergen Ar	92.11	349	P	P	05 52 05.8	-1.3
comp=Z,21nm,0.8s,baz=104,slow=8.7,SNR=38							
SPA3	Spitsbergen Ar	92.11	349	eP	P	05 52 06.2	-0.9
SPB3	Spitsbergen Ar	92.11	349	eP	P	05 52 06.3	-0.8
SPB4	Spitsbergen Ar	92.11	349	eP	P	05 52 06.3	-0.8
FIA1	FINESS Array S	92.47	332	eP	P	05 52 07.5	-1.5
comp=Z,74nm,2.0s							
FINES	FINESS Array B	92.47	332	P	P	05 52 07.1	-1.9
comp=Z,3.6nm,0.7s,baz=90,slow=7.6,SNR=9.7							
TESR	Tessari	93.97	317	i P	P	05 52 15.0	-1.2
VRI	Vrincioaia	93.98	316⇑	i P	P	05 52 15.4	-1.0
VRI	Vrincioaia	93.98	316⇑	P	P	05 52 15.4	-1.0
MLR	Muntele Rosu	94.57	316⇑	i P	P	05 52 18.0	-1.2
MLR	Muntele Rosu	94.57	316⇑	P	P	05 52 18.0	-1.2
BURAR	Bucovina Array	94.80	318⇑	i P	P	05 52 19.5	-0.6
BURAR	Bucovina Array	94.80	318⇑	P	P	05 52 19.6	-0.6
BUR08	Bucovina Ar. S	94.81	318	eP	P	05 52 19.2	-1.0
LAST	Lasithi	96.09	305⇑	i P	P	05 52 25.1	-1.2
LAST	Lasithi	96.09	305	eP	P	05 52 25.3	-1.0
comp=Z,13nm,0.9s							
UZH	Uzhgorod	96.59	319	d i P	P	05 52 27.1	-1.0
CRVS	Cervenica-Dubn	97.08	320	eP	P	05 52 29.8	-0.6
CRVS	Cervenica-Dubn	97.08	320	eP	P	05 52 29.8	-0.6
STHS	Stebnicka Huta	97.13	320	eP	P	05 52 30.6	0.0
STHS				pmax	pmax		
comp=Z,3.0nm,0.6s							
STHS	Stebnicka Huta	97.13	320	eP	P	05 52 30.6	0.0
LBTB	Lobatse	98.22	245	P	P	05 52 35.1	-1.0
comp=Z,2.8nm,0.9s,baz=135,slow=5.7,SNR=2.5							
NB2	NORSAR Subarra	99.52	333	P	Pdif	05 52 38.4	-2.6
comp=Z,1.7nm,0.7s,baz=71,slow=4.6							
NOA	NORSAR Array B	99.52	333	P	Pdif	05 52 38.7	-2.3
comp=Z,1.3nm,0.7s,baz=70,slow=4.5,SNR=4.8							
CLL	Collm	101.79	323	ePdif	Pdif	05 52 49.0	-2.2
CLL				ePP	PKiKP	05 57 10.0	-2.9
CLL	Collm	101.79	323	eP	Pdif	05 52 49.0	-2.2
GERES	GERESS Array B	102.08	321	PKiKP	PKiKP	05 57 12.3	-1.3
comp=Z,0.3nm,0.3s,baz=60,slow=6.0,SNR=5.7							
YKA	Yellowknife Ar	102.64	24	PKiKP	PKiKP	05 57 13.8	-0.3
comp=Z,0.3nm,0.6s,baz=316,slow=1.7,SNR=8.7							
YKA				PKKPbc	PKKPbc	06 08 51.9	-4.3
comp=Z,0.7nm,0.6s,baz=118,slow=2.9,SNR=17							
NVAR	Mina Array Bea	110.44	48	PKiKP	PKiKP	05 57 30.2	+0.6
comp=Z,0.4nm,0.6s,baz=260,slow=5.0,SNR=3.8							
NVAR				PKKPab	PKKPab	06 08 41.2	-1.4
comp=Z,0.3nm,0.5s,baz=112,slow=4.0,SNR=4.8							
PDAR	Pinedale Array	114.83	41	PKP	PKPdf	05 57 38.4	+0.5
comp=Z,0.2nm,0.5s,baz=335,slow=1.3,SNR=2.0							
PDAR				PKKPbc	PKKPbc	06 08 14.3	-2.9
comp=Z,0.3nm,0.6s,baz=90,slow=3.8,SNR=3.9							
PDAR				PKKPab	PKKPab	06 08 21.6	-1.6
comp=Z,1.6nm,0.9s,baz=106,slow=3.0,SNR=9.9							
O20A	White River Ci	116.93	43	ePKPdf	PKPdf	05 57 43.3	+1.3
PV10	Paradox Valley	117.17	45	ePKPdf	PKPdf	05 57 43.5	+0.9
PV01	Paradox Valley	117.61	45	ePKPdf	PKPdf	05 57 44.6	+1.2
TOA0	Torodi Ar. Sit	120.94	286	ePKPdf	PKPdf	05 57 49.3	-0.7
TOA0				ePKPdf	PKPdf	05 57 49.6	-0.4
TORD	Torodi Ar. Bea	120.94	286	PKP	PKPdf	05 57 49.3	-0.8
comp=Z,5.0nm,0.7s,baz=65,slow=1.9,SNR=30							
TORD				PKKPbc	PKKPab	06 07 55.9	-0.1
comp=Z,2.3nm,0.8s,baz=285,slow=3.9,SNR=12							
D37A	Cotton	122.01	29	P	PKPdf	05 57 50.9	-0.4
baz=316							
E36A	McGregor	122.06	30	P	PKPdf	05 57 51.5	+0.1
baz=315							
ECSD	EROS Data Cent	122.17	34	P	PKPdf	05 57 51.5	-0.2
baz=310							
ECSD	EROS Data Cent	122.17	34	ePKPdf	PKPdf	05 57 51.7	0.0
F36A	Milaca	122.39	30	P	PKPdf	05 57 51.7	-0.4
baz=314							
H35A	Sunnyside Ranc	122.50	32	P	PKPdf	05 57 52.6	+0.3
baz=312							
MNTX	Cornudas Mount	122.78	50	P	PKPdf	05 57 54.4	+1.2
baz=296							
MNTX	Cornudas Mount	122.78	50	ePKPdf	PKPdf	05 57 54.3	+1.1
SCHQ	Schefferville	123.15	7	PKP	PKPdf	05 57 52.8	-0.5
comp=Z,4.8nm,0.6s,baz=2.3,slow=0.9,SNR=14							
SCHQ	Schefferville	123.15	7	ePKPdf	PKPdf	05 57 53.1	-0.1
I36A	Fitzsimmons Fa	123.39	32	P	PKPdf	05 57 54.0	0.0
baz=313							
P32A	Huiting Farm,	123.51	39	P	PKPdf	05 57 54.5	+0.1
baz=306							
J36A	Seneca 1, Swea	123.68	33	P	PKPdf	05 57 55.1	+0.5
baz=312							
I37A	Lemond, Waseca	123.72	32	P	PKPdf	05 57 55.2	+0.6
baz=313							
O33A	Hebron	123.87	38	P	PKPdf	05 57 54.8	-0.3
baz=307							
K36A	Gilmore City	124.08	34	P	PKPdf	05 57 55.3	0.0
baz=312							
R32A	Long Quarter,	124.13	40	P	PKPdf	05 57 56.4	+0.7
baz=305							
COWI	Conover	124.33	27	ePKPdf	PKPdf	05 57 55.2	-0.5
K37A	Belmond	124.44	33	P	PKPdf	05 57 56.0	0.0
baz=312							
P34A	Walnut Farm, R	124.65	38	P	PKPdf	05 57 57.0	+0.4
baz=308							
M37A	Trindle Farm,	125.11	35	P	PKPdf	05 57 57.7	+0.4
baz=311							
TX31	Lajitas Ar. Si	125.13	52	ePKPdf	PKPdf	05 57 58.9	+1.0
TXAR	Lajitas Array	125.13	52	PKP	PKPdf	05 57 58.9	+1.0
comp=Z,0.6nm,0.7s,baz=287,slow=0.3,SNR=10.0							
TXAR				SKPbc	SKPbc	06 00 46.4	
comp=Z,1.5nm,0.9s,baz=191,slow=1.3,SNR=8.9							
TXAR				PKKP	PKKPdf	06 08 11.0	-8.6
comp=Z,0.4nm,0.6s,baz=80,slow=0.6,SNR=6.9							
Q35A	Mercer Eighty,	125.56	38	P	PKPdf	05 57 58.7	+0.4
baz=308							
M38A	Pleasantville	125.59	34	P	PKPdf	05 57 58.9	+0.6
baz=312							
WMOK	Wichita Mounta	126.14	44	ePKIKP	PKPdf	05 57 58.2	-1.4
WMOK	Wichita Mounta	126.14	44	ePKPdf	PKPdf	05 57 58.1	-1.4
R37A	Teagarden Farm	126.64	38	P	PKPdf	05 58 00.3	-0.1
baz=309							
Q38A	Cooks Store, C	126.96	37	P	PKPdf	05 58 01.3	+0.3
baz=310							
S37A	Fort Scott	126.98	38	P	PKPdf	05 58 01.4	+0.3
baz=309							
W35A	Tecumseh	127.21	42	P	PKPdf	05 58 02.3	+0.7
baz=305							
Q39A	Willow Grove F	127.28	36	P	PKPdf	05 58 01.6	0.0
baz=311							
JCT	Junction City	127.59	49	P	PKPdf	05 58 02.4	-0.1
baz=299							
JCT	Junction City	127.59	49	ePKIKP	PKPdf	05 58 03.4	+0.9
JCT	Junction City	127.59	49	ePKPdf	PKPdf	05 58 03.4	+0.9
T38A	Diamond	127.77	39	P	PKPdf	05 58 02.9	+0.3
baz=309							
333A	Richland Sprin	127.78	48	P	PKPdf	05 58 03.8	+1.0
baz=301							
S39A	Bolivar	127.95	38	P	PKPdf	05 58 02.8	-0.1
baz=310							
433A	Art	127.99	48	P	PKPdf	05 58 03.4	+0.1
baz=300							
U38A	Gravette	128.08	39	P	PKPdf	05 58 03.2	0.0
baz=308							
R40A	Maddies Statio	128.20	36	P	PKPdf	05 58 03.8	+0.5
baz=312							
KIC	Kosan Boka	128.21	279	ePKIKP	PKPdf	05 58 04.1	0.0
comp=Z,110nm,1.7s							
DBIC	Dimbokro	128.28	280	PKP	PKPdf	05 58 04.0	-0.1
comp=Z,4.4nm,0.7s,baz=196,slow=0.8,SNR=5.8							
Y36A	Durant	128.32	43	P	PKPdf	05 58 04.6	+0.9
baz=305							
V38A	Canehill	128.42	40	P	PKPdf	05 58 04.3	+0.4
baz=308							
TIC	Toumodi	128.45	280	ePKIKP	PKPdf	05 58 04.4	-0.1
832A	Faith Ranch, C	128.50	51	P	PKPdf	05 58 05.8	+1.6
baz=298							
LIC	Lamto	128.51	279	ePKIKP	PKPdf	05 58 04.5	-0.1
X39A	Fountain Ranch	129.43	41	P	PKPdf	05 58 06.5	+0.7
baz=307							
CMLA	Cha da Macela	131.81	327	i PKIKP	PKPdf	05 58 15.9	+5.6
WVL	Waterville	132.55	13	ePKPdf	PKPdf	05 58 11.6	+0.2
O56A	Blue Knob Stat	133.61	24	P	PKPdf	05 58 14.2	+0.6
baz=328							
Y47A	UCPARC, Winfie	133.79	37	P	PKPdf	05 58 14.7	+0.6
baz=313							
PLCA	Paso Flores	138.79	163	SKPbc	SKPbc	06 01 32.4	+1.4
comp=Z,2.8nm,0.7s,baz=178,slow=2.4,SNR=6.3							
ROC1	El Roble	145.67	157	ePKPdf	PKPab	05 58 38.7	+1.2
LCO	Las Campanas	149.27	154	ePKPbc	PKPbc	05 58 48.3	+1.7
LPAZ	La Paz	161.08	142	PKP	PKPdf	05 58 59.9	+1.3
comp=Z,1.1nm,0.8s,baz=215,slow=3.0,SNR=6.4							
LPAZ				PKPab	PKPab	05 59 45.4	+2.2
comp=Z,4.4nm,0.9s,baz=197,slow=5.1,SNR=12							
SAML	Samuel	169.73	136	ePKPab	PKPab	06 00 21.6	+0.9

ISCJB ***27*** *05:45:37.8±0.3,4°.57N±0°.04×96°.57E±0°.04,h150km, mb4.6/55, Error ellipse: s-maj=6.7km s-min=4.3km az=148.0*

IDC ***27*** *05:45:40.4±1.0,4°.67N×96°.79E,h165km±9km, mb4.0/19, mb1 4.1/20,mb1mx3.9/37,mbtmp4.5/20, Error ellipse: s-maj=20.1km s-min=8.2km az=49.0*

NEIC ***27*** *05:45:42.1±0.5,4°.61N×96°.76E,h179km±4km, mb4.8/27, Error ellipse: s-maj=8.0km s-min=4.8km az=60.0*

ISC 27 05:45:39.3±0.4,4°.69N±0°.05×96°.69E±0°.06,h150km,n113,
σ1§55/124,mb4.6/55,Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LHMI	Lhok Sumawe	0.60	25

comp=Z,10nm,0.3s
KOLN Koldanda 26.12 333 *e*P **P 05 50 59.8 +0.1**
comp=Z,24nm,0.7s
CD2 Chengdu 26.92 14 P **P 05 51 07.3 +0.7**
CD2 pmax pmax
comp=Z,9.0nm,0.7s
H08S2 Diego Garcia H 27.07 243 T T 06 18 06.5
baz=67,slow=76,SNR=46
H08S3 Diego Garcia H 27.07 243 T T 06 18 34.4
baz=67,slow=76,SNR=38
H08S1 Diego Carcia H 27.09 243 T T 06 18 07.1
baz=67,slow=76,SNR=48
ENH Enshi 28.17 24 *e*P **P 05 51 17.6 -0.2**
comp=Z,19nm,1.1s
XAN Xi'an 31.34 20 P **P 05 51 45.3 -0.4**
XAN pmax pmax
comp=Z,22nm,0.5s
LZH Lanzhou 31.93 11 *e*P **P 05 51 51.5 +0.5**
LZH pP pP 05 52 25.3 +2.3
LZH sP sP 05 52 43.3 +3.1
LZH pmax pmax
comp=Z,27nm,1.0s
LZH pmax pmax
comp=Z,170nm,4.4s
NJ2 Nanjing 34.24 35 *e*P **P 05 52 12.3 +1.4**
NJ2 pmax pmax
comp=Z,10.0nm,0.8s
GTA Gaotai 34.68 4 *e*P **P 05 52 13.5 -1.3**
GTA pP pP 05 52 51.0 +4.0
GTA sP sP 05 53 10.5 +6.3
GTA pmax pmax
comp=Z,9.0nm,0.7s
FITZ Fitzroy Crossi 36.44 129 *e*P **P 05 52 28.3 -1.6**
comp=Z,19nm,1.2s
HHC Hu-ho-hao-te 38.40 18 *e*P **P 05 52 48.0 +1.7**
HHC pmax pmax
comp=Z,33nm,0.9s
HHC pmax pmax
comp=Z,200nm,8.6s
BJT Baijiatuau 39.32 24 *e*P **P 05 52 55.4 +1.6**
comp=Z,19nm,0.6s
BJI Beijing 39.34 24 P **P 05 52 54.8 +0.9**
BJI pmax pmax
comp=Z,17nm,1.0s
KSH Kashi 39.42 334 P **P 05 52 53.5 -1.3**
KSH *e*pP pP 05 53 31.5 +3.9
KSH S S 05 58 37.5 -7.9
KSH PcS **PcS 05 58 50.5 +0.4**
KSH ScS **ScS 06 02 41.0 -6.2**
KSH pmax pmax
comp=Z,120nm,5.6s
KSH LR LR
comp=N,310nm,14.1s
KSH LR LR
comp=E,180nm,10.7s
KSH LR LR
comp=Z,140nm,9.3s
WMQ Urumqi 39.77 350 *e*P **P 05 52 59.0 +1.4**
WMQ pmax pmax
comp=Z,5.0nm,0.6s
WMQ pmax pmax
comp=Z,29nm,4.6s
WMQ LR LR
comp=Z,26nm,17.6s
WSAR Wadi Sarin 41.09 300 P **P 05 53 11.8 +3.1**
comp=Z,15nm,0.6s,baz=143,slow=4.8,SNR=8.3
NWAO Narrogin (SRO) 42.18 154 *e*P **P 05 53 18.4 +1.1**
comp=Z,35nm,1.4s
TKM2 Tokmak 2 42.43 337 *e*P **P 05 53 19.9 +0.5**
comp=Z,21nm,1.7s
JNU Nakatsue 42.60 44 *e*P **P 05 53 21.1 +0.3**
comp=Z,69nm,1.6s
AAK Ala-Archa 42.63 336 *e*P **P 05 53 23.1 +2.1**
comp=Z,5.0nm,0.4s
EKS2 Erkin-Say 42.95 335 *e*P **P 05 53 24.8 +1.3**
comp=Z,5.4nm,0.6s
MKAR Makanchi Array 43.76 346 P **P 05 53 29.4 -0.5**
comp=Z,8.5nm,0.6s,baz=160,slow=8.6,SNR=21
MKAR PcP **PcP 05 55 12.0 -1.9**
comp=Z,0.6nm,0.6s,baz=145,slow=5.3,SNR=2.0
MKAR Makanchi Array 43.76 346 *e*P **P 05 53 29.9 0.0**
MKAR PcP **PcP 05 55 12.0 -1.9**
SONM Songino Array 43.79 9 P **P 05 53 30.4 +0.2**
comp=Z,4.1nm,0.5s,baz=190,slow=9.3,SNR=20
SONM PcP **PcP 05 55 13.2 -0.9**
comp=Z,0.5nm,0.4s,baz=183,slow=2.5,SNR=4.1
SONA1 Songino Array 43.80 9 *e*P **P 05 53 30.4 0.0**
MAKZ Makanchi 43.85 345 *e*P **P 05 53 30.5 -0.1**
comp=Z,9.1nm,0.6s
WRA Warramunga Arr 44.36 125 P **P 05 53 33.9 -1.2**
comp=Z,12nm,0.6s,baz=303,slow=9.3,SNR=34
WRA ScP **ScP 05 58 51.2 -3.5**
comp=Z,3.0nm,0.7s,baz=317,slow=3.5,SNR=16
WRAB Tennant Creek 44.37 125 *e*P **P 05 53 34.3 -0.8**
comp=Z,16nm,0.6s
WB2 Warramunga Arr 44.37 125 *e*P **P 05 53 34.3 -0.8**
AS31 Alice Springs 45.94 129 *e*P **P 05 53 46.4 -1.1**
comp=Z,3.9nm,0.5s
ASAR Alice Springs 45.94 130 P **P 05 53 46.8 -0.7**
comp=Z,8.8nm,0.5s,baz=301,slow=7.9,SNR=50
ASAR ScP **ScP 05 58 58.0 -3.2**
comp=Z,1.9nm,0.8s,baz=305,slow=4.1,SNR=12
ASAR S **S 06 00 16.9 -4.1**
comp=Z,0.1nm,0.3s,baz=286,slow=14,SNR=4.0
AS01 Alice Springs 45.98 129 *e*P **P 05 53 47.0 -0.7**
GEYT Alibeck 48.25 319 P **P 05 54 06.1 +0.9**
comp=Z,2.2nm,0.4s,baz=116,slow=9.8,SNR=4.0
ZAA0 Zalesovo Array 50.06 351 *e*P **P 05 54 18.1 -0.5**
ZALV Zalesovo Beam 50.06 351 P **P 05 54 18.0 -0.6**
comp=Z,3.7nm,0.6s,baz=175,slow=7.9,SNR=8.0
BBOO Buckleboo 52.76 138 *e*P **P 05 54 38.0 -1.1**
comp=Z,57nm,1.7s
ZRNK Zerenda 53.23 339 *e*P **P 05 54 41.4 -0.7**
comp=Z,2.8nm,0.5s
KLR Kul'dur 53.41 28 P **P 05 54 43.8 +0.3**
comp=Z,2.6nm,0.9s,baz=219,slow=5.5,SNR=4.7
ABKAR Abkulak array 54.23 331 *e*P **P 05 54 49.5 0.0**
STKA Stephens Creek 56.09 134 P **P 05 55 02.6 -0.5**
comp=Z,3.3nm,0.6s,baz=316,slow=7.1,SNR=6.8
STKA Stephens Creek 56.09 134 *e*P **P 05 55 02.6 -0.5**
comp=Z,8.6nm,2.0s
KMBO Kilima Mbogo 59.66 266 P **P 05 55 29.1 +0.4**
comp=Z,0.6nm,0.3s,baz=51,slow=13,SNR=2.6
KBZ Khabaz 61.14 318 P **P 05 55 38.5 +0.7**
comp=Z,3.6nm,0.8s,baz=96,slow=3.5,SNR=4.4
BR131 Keskin Array S 66.42 311 *e*P **P 05 56 12.6 -0.2**
BRTR Keskin Array B 66.42 311 P **P 05 56 12.5 -0.2**
comp=Z,6.1nm,0.8s,baz=128,slow=7.2,SNR=15
BR231 Keskin MP Arra 67.09 311 *e*P P 05 56 13.3 -3.7
PEA0 Petropavlovsk- 69.14 34 *e*P **P 05 56 29.1 -0.2**
KARP Karpathos 70.66 306 *e*P **P 05 56 39.4 +0.4**
comp=Z,16nm,0.8s
LAST Lasithi 71.97 305 *e*P **P 05 56 47.8 +0.9**
comp=Z,53nm,1.7s
SANT Santorini 72.14 307 *e*P **P 05 56 47.8 -0.1**
comp=Z,28nm,0.7s
AKASG Malin Array Be 72.21 322 P **P 05 56 46.7 -1.2**
comp=Z,2.0nm,0.4s,baz=88,slow=5.9,SNR=8.7
IDI Anoyia 72.46 305 *e*P **P 05 56 50.4 +0.5**
comp=Z,17nm,0.7s
MLR Muntele Rosu 73.21 316 *e*P **P 05 56 54.9 +0.7**
comp=Z,12nm,1.0s
BUR08 Bucovina Ar. S 74.11 318 *e*P **P 05 57 00.2 +0.9**
AGG Agios Georgios 74.92 309 *e*P **P 05 57 02.5 -1.6**
comp=Z,135nm,1.7s
LVZ Lovozero 75.41 340 *e*P **P 05 57 05.2 -1.0**
comp=Z,53nm,1.6s
FIA1 FINESS Array S 76.69 332 *e*P **P 05 57 13.2 -0.4**
comp=Z,27nm,1.5s
FINES FINESS Array B 76.69 332 P **P 05 57 13.0 -0.6**
comp=Z,2.7nm,0.5s,baz=102,slow=5.6,SNR=12
CRVS Cervenica-Dubn 76.78 319 *e*P **P 05 57 15.8 +1.4**
STHS Stebnicka Huta 77.00 320 *e*P **P 05 57 16.6 +1.0**
KECS Kecovo 77.37 319 *e*P **P 05 57 18.4 +0.7**
VYHS Vyhne 78.46 318 *e*P **P 05 57 24.6 +0.9**
ARA0 ARCESS Array S 79.10 340 *e*P **P 05 57 26.5 -0.3**
ARCES ARCESS Array B 79.10 340 P **P 05 57 26.6 -0.2**
comp=Z,2.6nm,0.5s,baz=92,slow=5.2,SNR=34
ARE0 ARCESS Array S 79.10 340 *e*P **P 05 57 26.9 +0.1**
comp=Z,149nm,2.0s
KRLC Kraliky 79.95 320 *e*P **P 05 57 32.3 +0.5**
CUC Castrocucco 80.02 310 *e*P **P 05 57 32.7 +0.3**
comp=Z,5.1nm,0.8s
DPC Dobruska-Polom 80.26 320 *e*P **P 05 57 34.4 +0.9**
GEA0 GERESS Array S 81.88 319 *e*P **P 05 57 42.1 0.0**
GERES GERESS Array B 81.88 319 P **P 05 57 42.0 -0.1**
comp=Z,1.2nm,0.4s,baz=99,slow=8.2,SNR=9.6
KHC Kasperske Hory 81.97 319 *e*P **P 05 57 42.7 +0.2**
SPITS Spitsbergen Ar 83.46 348 P **P 05 57 48.6 -1.0**
comp=Z,3.6nm,0.7s,baz=113,slow=8.3,SNR=12
KEST Kesra 85.14 305 P **P 05 57 56.9 -2.2**
comp=Z,6.9nm,0.7s,baz=312,slow=5.6,SNR=6.5
VNDA Vanda 89.32 169 P **P 05 58 18.7 +0.6**
comp=Z,0.9nm,1.1s,baz=328,slow=3.2,SNR=2.1
TORD Torodi Ar. Bea 93.80 283 P **P 05 58 40.9 +0.7**
comp=Z,1.0nm,0.6s,baz=86,slow=4.1,SNR=3.7
NVAR Mina Array Bea 126.23 34 PKP **PKPdf 06 04 24.8 -0.1**
comp=Z,0.8nm,0.8s,baz=276,slow=5.7,SNR=4.1
PDAR Pinedale Array 127.11 24 PKP **PKPdf 06 04 24.6 -1.9**
comp=Z,0.2nm,0.5s,baz=174,slow=3.0,SNR=3.5
TXAR Lajitas Array 140.93 29 PKP **PKPdf 06 04 49.7 -2.8**
comp=Z,0.5nm,0.7s,baz=154,slow=1.6,SNR=5.5
SMRT St. Maarten 149.85 319 *e*PKPbc **PKPbc 06 05 12.6 -0.2**
GRTK Grand Turk 151.36 336 *e*PKPbc **PKPbc 06 05 15.4 -0.8**
MTP Monte Pirata 151.38 323 *e*PKPbc **PKPbc 06 05 15.9 -0.4**
CBYP Manovanas 151.43 323 *e*PKPbc **PKPbc 06 05 17.1 +0.6**
HUMP Col San Antoni 151.52 323 *e*PKPbc **PKPbc 06 05 16.3 -0.3**
LRS Lares 151.99 325 *e*PKPbc **PKPbc 06 05 17.3 -0.5**

IDC 27 05:51:42.9±7.4, 28°.73S×62°.74E, h0km, mb3.6/2, mb1 3.9/2, mb1mx3.5/30, mbtmp3.6/2, MS3.4/1, Ms1 3.4/1, ms1mx2.8/31, Error ellipse: s-maj=415.4km s-min=52.5km az=34.0, Southwest Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LBTB	**Lobatse**	**33.25**	**268**	LR	LR	06 08 02.1	
	comp=Z,77nm,21.8s,baz=118,slow=29						
ASAR	**Alice Springs**	**63.20**	**104**	P	P	06 02 13.6	+0.3
	0.5nm,0.7s,baz=243,slow=6.5,SNR=4.3						
WRA	**Warramunga Arr**	**64.98**	**100**	P	P	06 02 24.8	-0.3
	0.9nm,1.0s,baz=248,slow=6.1,SNR=5.8						
YKA	**Yellowknife Ar**	**146.19**	**358**	PKPbc	PKPdf	06 11 23.6	+0.2
	0.3nm,0.6s,baz=347,slow=3.4,SNR=9.0						

*ISCJB **27** 05:52:04.6±0.6, 50°.06N±0°.04×18°.41E±0°.03, h0km, Error ellipse: s-maj=5.5km s-min=2.8km az=5.4*
*IPEC **27** 05:52:05.6±0.2, 50°.07N×18°.47E, h2km±2km, ML1.8/3, Error ellipse: s-maj=2.1km s-min=1.1km az=160.0*
*CSEM **27** 05:52:05.6±0.2, 50°.05N×18°.43E, h1km, ML2.5/7, Error ellipse: s-maj=5.8km s-min=2.8km az=8.0*
*PRU **27** 05:52:06.9, 50°.02N×18°.37E, h0km*
ISC 27 05:52:05.7±0.8, 50°.05N±0°.04×18°.42E±0°.02, h0km, n36, σ0s83/54, 2C-2D, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAC	**Raciborz**	**0.15**	**284**	*e*Pg	**Pg**	**05 52 10.0**	**+1.5**
RAC				*e*Sg	**Sg**	**05 52 13.3**	**+2.9**
OKC	**Ostrava-Krasne**	**0.27**	**220**	*e*PG	**Pg**	**05 52 11.9**	**+1.0**
OKC				*e*SG	**Sg**	**05 52 14.9**	**+0.5**
	comp=Z,64nm,0.6s						
OKC	**Ostrava-Krasne**	**0.27**	**220**	Pg	**Pg**	**05 52 11.9**	**+1.0**
OKC				Sg	**Sg**	**05 52 14.9**	**+0.5**
	64nm,0.6s						
MORC	**Moravsky Berou**	**0.63**	**245**	⇑*i*P	Pn	05 52 27.5	+5.6
MORC	**Moravsky Berou**	**0.63**	**245**	⇑P	Pn	05 52 27.5	+5.6
MORC	**Moravsky Berou**	**0.63**	**245**	*e*Pg	**Pb**	**05 52 18.6**	**-0.9**
MORC				*e*Sg	**Sg**	**05 52 26.4**	**+0.6**
	20nm,0.3s						
OJC	**Ojcow**	**0.91**	**78**	*e*Pg	**Pg**	**05 52 22.4**	**-0.6**
OJC				*e*Sg	**Sg**	**05 52 34.6**	**-0.1**
OJC	**Ojcow**	**0.91**	**78**	*e*P	**Pg**	**05 52 22.4**	**-0.6**
OJC	**Ojcow**	**0.91**	**78**	*e*Pg	**Pg**	**05 52 22.4**	**-0.6**
OJC				*e*Sg	**Sg**	**05 52 34.6**	**-0.1**
KRLC	**Kraliky**	**1.05**	**272**	*e*PG	**Pg**	**05 52 25.4**	**-0.5**
KRLC				*e*SG	**Sg**	**05 52 38.8**	**-0.7**
KRLC	**Kraliky**	**1.05**	**272**	*e*P	**Pg**	**05 52 25.4**	**-0.5**
KRLC	**Kraliky**	**1.05**	**272**	Pg	**Pg**	**05 52 25.4**	**-0.5**
KRLC				Sg	**Sg**	**05 52 38.8**	**-0.7**
LANS	**Liptovska Anna**	**1.13**	**142**	*e*P	**Pb**	**05 52 27.7**	**-0.4**
LANS	**Liptovska Anna**	**1.13**	**142**	*e*Pg	**Pb**	**05 52 27.7**	**-0.4**
LANS				*e*Sg	**Sg**	**05 52 40.2**	**-1.7**
LANS	**Liptovska Anna**	**1.13**	**142**	*e*PG	**Pb**	**05 52 27.7**	**-0.4**
LANS				*e*SG	**Sg**	**05 52 40.2**	**-1.7**
NIE	**Niedzica**	**1.37**	**117**	*e*Pg	**Pb**	**05 52 32.3**	**0.0**
NIE				*e*Sg	**Sb**	**05 52 50.6**	**+0.2**
NIE	**Niedzica**	**1.37**	**117**	*e*P	**Pb**	**05 52 32.3**	**0.0**
NIE	**Niedzica**	**1.37**	**117**	*e*Pg	**Pb**	**05 52 32.3**	**0.0**
NIE				*e*Sg	**Sb**	**05 52 50.6**	**+0.2**
DPC	**Dobruska-Polom**	**1.38**	**284**	*e*PG	**Pg**	**05 52 31.8**	**-0.3**
DPC				*e*SG	**Sg**	**05 52 50.0**	**0.0**
	comp=Z,13nm,0.4s						
DPC	**Dobruska-Polom**	**1.38**	**284**	*e*P	**Pg**	**05 52 31.8**	**-0.3**
DPC	**Dobruska-Polom**	**1.38**	**284**	Pg	**Pg**	**05 52 31.8**	**-0.3**
DPC				Sg	**Sg**	**05 52 50.0**	**0.0**
	13nm,0.4s						
VRAC	**Vranov**	**1.40**	**239**	⇓*i*P	**Sg**	**05 52 50.7**	**+0.2**
VRAC	**Vranov**	**1.40**	**239**	⇓P	**Sg**	**05 52 50.7**	**+0.2**
VRAC	**Vranov**	**1.40**	**239**	*e*Pg	**Pg**	**05 52 32.2**	**-0.2**
VRAC				*e*Sg	**Sb**	**05 52 50.6**	**-0.4**
	10nm,0.2s						
VYHS	**Vyhne**	**1.58**	**170**	*e*P	**Pn**	**05 52 34.8**	**-0.1**
VYHS				pmax	pmax		
	comp=N,2.0nm,0.3s						
VYHS	**Vyhne**	**1.58**	**170**	*e*Pn	**Pn**	**05 52 34.8**	**-0.1**
VYHS				*e*Sn	**Sn**	**05 52 55.7**	**-0.4**
VYHS	**Vyhne**	**1.58**	**170**	*e*PN	**Pn**	**05 52 34.8**	**-0.1**
VYHS				*e*SN	**Sn**	**05 52 55.7**	**-0.4**
VYHS				*e*LG	Lg	05 52 58.1	
UPC	**Upice**	**1.61**	**288**	*e*SG	**Sb**	**05 52 57.4**	**+0.2**
	comp=N,5.4nm,0.2s						
UPC	**Upice**	**1.61**	**288**	Sg	**Sb**	**05 52 57.4**	**+0.2**
	comp=N,5.4nm,0.2s						
KRUC	**Moravsky**	**1.65**	**234**	*e*Pn	**Pn**	**05 52 35.9**	**+0.1**
KRUC				*e*Sg	**Sg**	**05 52 58.3**	**-0.2**
	comp=N,7.1nm,0.3s						
STHS	**Stebnicka Huta**	**1.94**	**108**	*e*Pn	**Pg**	**05 52 44.4**	**+1.6**
STHS				*e*Sn	**Sg**	**05 53 09.4**	**+1.4**
STHS	**Stebnicka Huta**	**1.94**	**108**	*e*PN	**Pg**	**05 52 44.4**	**+1.6**
STHS				*e*SN	**Sg**	**05 53 09.4**	**+1.4**
STHS				*e*LG	Lg	05 53 14.8	
PRU	**Pruhonice**	**2.50**	**270**	*e*SG	**Sb**	**05 53 23.5**	**+0.8**
PRU	**Pruhonice**	**2.50**	**270**	Sg	**Sb**	**05 53 23.5**	**+0.8**
KHC	**Kasperske Hory**	**3.28**	**256**	*e*SG	**Sg**	**05 53 50.5**	**-0.5**
	comp=N,3.5nm,0.5s						
KHC	**Kasperske Hory**	**3.28**	**256**	Sg	**Sg**	**05 53 50.5**	**-0.5**
	comp=N,3.5nm,0.5s						

*ISCJB **27** 06:08:02.4±0.6, 39°.08N±0°.04×29°.01E±0°.03, h0km±8km, Error ellipse: s-maj=6.4km s-min=4.2km az=165.3*
*DDA **27** 06:08:02.2, 39°.09N×29°.00E, h7km, Md2.6*
*ISK **27** 06:08:02.2, 39°.05N×29°.08E, h7km, MD2.3*
*CSEM **27** 06:08:02.5±0.1, 39°.08N×29°.01E, h2km, MD2.6, Error ellipse: s-maj=2.8km s-min=2.4km az=104.0*
ISC 27 06:08:02.6±1.0, 39°.03N±0°.02×28°.99E±0°.02, h7km±9km, n33, σ0s58/49, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.22**	**274**	P	**Pg**	**06 08 06.3**	**-0.7**
DEMI				S	**Sg**	**06 08 11.2**	**+1.2**
DEMI	**Demirci**	**0.22**	**274**	*i* P	**Pg**	**06 08 06.3**	**-0.7**
DEMI				*i* S	**Sg**	**06 08 11.2**	**+1.2**
GDZ	**Gediz**	**0.38**	**81**	P	**Pg**	**06 08 10.0**	**-0.1**
GDZ				S	**Sg**	**06 08 15.4**	**+0.2**
GDZ	**Gediz**	**0.38**	**81**	*i* P	**Pg**	**06 08 10.0**	**-0.1**
GDZ				*i* S	**Sg**	**06 08 15.4**	**+0.2**
TVSB	**Tavsanli**	**0.56**	**41**	*e*PG	**Pg**	**06 08 12.3**	**-1.1**
TVSB	**Tavsanli**	**0.56**	**41**	*e*Pg	**Pg**	**06 08 12.3**	**-1.1**
KULA	**Kula-Manisa**	**0.58**	**207**	*e*PG	**Pb**	**06 08 14.8**	**-0.3**
KULA				*e*SG	**Sb**	**06 08 23.7**	**+0.3**
KULA	**Kula-Manisa**	**0.58**	**207**	*e*Pg	**Pb**	**06 08 14.8**	**-0.3**
KULA				*e*Sg	**Sb**	**06 08 23.7**	**+0.3**
MANT	**Manisa**	**0.64**	**213**	P	**Pb**	**06 08 16.1**	**-0.1**
MANT				S	**Sb**	**06 08 25.0**	**-0.4**
MANT	**Manisa**	**0.64**	**213**	*i* P	**Pb**	**06 08 16.1**	**-0.1**
MANT				*i* S	**Sb**	**06 08 25.0**	**-0.4**
DURS	**Dursunbey**	**0.70**	**325**	P	**Pg**	**06 08 15.3**	**-0.8**
DURS	**Dursunbey**	**0.70**	**325**	*i* P	**Pg**	**06 08 15.3**	**-0.8**
KHAL	**Karahalli**	**0.76**	**149**	P	**Pn**	**06 08 19.1**	**-0.8**
KHAL				S	**Sb**	**06 08 29.1**	**+0.2**
KHAL	**Karahalli**	**0.76**	**149**	*i* P	**Pn**	**06 08 19.1**	**-0.8**
KHAL				*i* S	**Sb**	**06 08 29.1**	**+0.2**
KHL	**Karahalli**	**0.82**	**149**	*e*PG	**Pg**	**06 08 18.0**	**-0.3**
KHL	**Karahalli**	**0.82**	**149**	*e*Pg	**Pg**	**06 08 18.0**	**-0.3**
BALB	**Balikesir**	**1.06**	**306**	*e*PN	**Pn**	**06 08 23.8**	**0.0**
BALB				*e*SN	**Sn**	**06 08 39.3**	**+0.5**
BALB	**Balikesir**	**1.06**	**306**	*e*Pn	**Pn**	**06 08 23.8**	**0.0**
BALB				*e*Sn	**Sn**	**06 08 39.3**	**+0.5**
KCTX	**Karacabey (Bur**	**1.33**	**338**	*e*PN	**Pb**	**06 08 28.0**	**+0.1**
KCTX	**Karacabey (Bur**	**1.33**	**338**	*e*Pn	**Pb**	**06 08 28.0**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.34**	**356**	*e*PN	**Pn**	**06 08 27.7**	**0.0**
MDNY	**Mudanya-Bursa**	**1.34**	**356**	*e*Pn	**Pn**	**06 08 27.7**	**0.0**
CAVI	**Cavuskoy**	**1.34**	**29**	*e*PN	**Pn**	**06 08 27.2**	**-0.6**
CAVI				*e*SN	**Sb**	**06 08 45.4**	**-0.1**
CAVI	**Cavuskoy**	**1.34**	**29**	*e*Pn	**Pn**	**06 08 27.2**	**-0.6**
CAVI				*e*Sn	**Sb**	**06 08 45.4**	**-0.1**
BORA	**Eskisehir**	**1.41**	**53**	P	**Pn**	**06 08 28.6**	**-0.2**
BORA				S	**Sb**	**06 08 46.9**	**-0.7**
BORA	**Eskisehir**	**1.41**	**53**	*i* P	**Pn**	**06 08 28.6**	**-0.2**
BORA				*i* S	**Sb**	**06 08 46.9**	**-0.7**
GONE	**Gonen-Balikesi**	**1.43**	**316**	*e*PN	**Pb**	**06 08 29.6**	**0.0**
GONE	**Gonen-Balikesi**	**1.43**	**316**	*e*Pn	**Pb**	**06 08 29.6**	**0.0**
ESKT	**Eskisehir**	**1.52**	**71**	*i* P	**Pg**	**06 08 33.5**	**+1.8**
ARMT	**Armutlu**	**1.54**	**356**	*e*PN	**Pn**	**06 08 30.4**	**0.0**
ARMT	**Armutlu**	**1.54**	**356**	*e*Pn	**Pn**	**06 08 30.5**	**0.0**
GULT	**Gulveren**	**1.83**	**39**	*e*PN	**Pn**	**06 08 34.1**	**-0.4**
GULT	**Gulveren**	**1.83**	**39**	*e*Pn	**Pn**	**06 08 34.1**	**-0.4**

*IDC **27** 06:17:56.8±2.7, 31°.75S×69°.36W, h95km±30km, mb3.0/1, mb1 3.5/5, mb1mx3.3/25, mbtmp3.6/5, Error ellipse: s-maj=51.0km s-min=24.4km az=96.0*
*ISCJB **27** 06:17:57.8±0.5, 31°.71S±0°.03×69°.78W±0°.04, h119km±6km, mb3.1/1, Error ellipse: s-maj=5.5km s-min=3.9km az=29.7*
*SJA **27** 06:17:57.4±1.1, 31°.78S×69°.76W, h122km±6km, ML3.9, MW4.0*
*GUC **27** 06:17:59.6±0.5, 31°.72S×70°.11W, h128km±9km, ML4.1*
ISC 27 06:17:58.6±0.9, 31°.70S±0°.04×69°.77W±0°.04, h115km±8km, n29, σ1s19/45, 1D, San Juan Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AUSP	**Uspallata**	**0.61**	**148**	*i* P	**Pn**	**06 18 17.2**	**+0.1**
SJA	**San Juan**	**1.05**	**81**	*e*P	**Pn**	**06 18 21.3**	**+0.5**
SJA				*e*S	**Sn**	**06 18 38.3**	**+0.8**
SJA				IAML		06 18 39.7	
	comp=Z,3μm,0.2s						
RTCV	**Cerro Valdivia**	**1.06**	**99**	*i* P	**Pn**	**06 18 21.1**	**+0.2**
RTCV				*e*S	**Sn**	**06 18 37.6**	**-0.2**
RTLL	**Cerro Villicun**	**1.17**	**72**	*i* P	**Pn**	**06 18 22.3**	**+0.2**
RTLL				*e*S	**Sn**	**06 18 40.1**	**+0.3**
PEL	**Peldehue**	**1.63**	**208**	*i* P	**Pn**	**06 18 27.2**	**-0.1**
PEL				*i* S	**Sn**	**06 18 48.2**	**-1.0**
PEL				IAML		06 18 50.8	
	comp=E,1μm,0.3s						
ROCH	**El Roble**	**1.64**	**219**	*i* P	**Pn**	**06 18 27.3**	**-0.3**
ROCH				*i* S	**Sn**	**06 18 48.5**	**-1.2**
ROCH				IAML		06 18 51.7	
	comp=N,2μm,0.4s						
ROC1	**El Roble**	**1.65**	**219**	*e*P	**Pn**	**06 18 27.4**	**-0.4**
ROC1				*i* S	**Sn**	**06 18 49.0**	**-0.9**
TLL	**Tololo Astrono**	**1.77**	**330**	*i* P	**Pn**	**06 18 29.6**	**+0.4**
TLL				*i* S	**Sn**	**06 18 52.5**	**0.0**
TLL				IAML		06 18 54.9	
	comp=N,4μm,0.7s						
CLCH	**Cerro Calan**	**1.81**	**201**	*i* P	**Pn**	**06 18 29.9**	**+0.4**
CLCH				*i* S	**Sn**	**06 18 52.5**	**-0.5**
CLCH				IAML		06 18 56.5	
	comp=E,2μm,0.4s						
STL	**Santa Lucia**	**1.88**	**203**	*i* P	**Pn**	**06 18 30.4**	**0.0**
STL				*i* S	**Sn**	**06 18 54.2**	**-0.3**
FSR	**Penalolen**	**1.88**	**200**	*i* P	**Pn**	**06 18 30.6**	**+0.2**
FSR				*i* S	**Sn**	**06 18 54.2**	**-0.4**
SJCH	**San Jose de Ma**	**1.99**	**194**	*i* P	**Pn**	**06 18 32.5**	**+0.7**
SJCH				*i* S	**Sn**	**06 18 57.8**	**+0.6**
ANTU	**Antumapu**	**2.00**	**201**	*i* P	**Pn**	**06 18 32.1**	**+0.3**
ANTU				*i* S	**Sn**	**06 18 56.8**	**-0.4**
ANTU				IAML		06 18 59.0	
	comp=N,2μm,0.6s						
LSCH	**La Serena**	**2.19**	**324**	*i* P	**Pn**	**06 18 33.9**	**-0.4**
LSCH				*i* S	**Sn**	**06 18 59.8**	**-1.7**
LSCH				IAML		06 19 01.1	
	comp=N,2μm,0.7s						
ACAN	**Cantantal**	**2.27**	**105**	*i* P	**Pn**	**06 18 35.6**	**+0.4**
ACAN				*i* S	**Sn**	**06 19 02.9**	**-0.5**
AGUA	**GUANDACOL**	**2.47**	**27**	*e*P	**Pn**	**06 18 39.7**	**+1.7**
LCO	**Las Campanas**	**2.80**	**343**	⇓*i*P	**Pn**	**06 18 42.8**	**+0.3**
LCO				*e*S	**Sn**	**06 19 14.8**	**-1.3**
LCO				IAML		06 19 18.3	
	comp=E,835nm,0.3s						
VCA	**Vinchina**	**3.25**	**25**	*e*P	**Pn**	**06 18 49.5**	**+1.2**
VCA				*e*S	**Sn**	**06 19 29.0**	**+2.4**
VCA				IAML		06 19 32.4	
	comp=Z,528nm,0.3s						
MRA	**San Martin**	**3.52**	**103**	*i* P	**Pn**	**06 18 51.4**	**-0.3**
MRA				*e*S	Sn	06 19 50.0	+17
MRA				IAML		06 20 03.6	
	comp=Z,200nm,0.6s						
TCA	**Tanti**	**4.44**	**87**	*e*P	**Pn**	**06 19 03.4**	**-0.7**
TCA				*e*S	**Sn**	**06 19 52.6**	**-2.2**
TCA				IAML		06 20 13.1	
	comp=Z,106nm,0.4s						
CYA	**Choya**	**4.74**	**48**	*e*P	**Pn**	**06 19 06.9**	**-1.0**
CYA				*e*S	**Sn**	**06 19 57.8**	**-4.1**
CYA				IAML		06 20 01.9	
	comp=Z,125nm,0.3s						
AHML	**Horco Molle**	**6.25**	**39**	IAML		06 21 19.8	
	comp=Z,22nm,0.7s						
FSA	**Cafayete**	**6.49**	**32**	*e*P	**Pn**	**06 19 31.6**	**-0.2**
FSA				IAML		06 19 34.9	
	comp=Z,10nm,0.5s						
PLCA	**Paso Flores**	**9.03**	**184**	P	**Pn**	**06 20 04.2**	**-1.9**
	comp=Z,0.4nm,0.3s,baz=24,slow=10,SNR=14						
LVC	**Limon Verde**	**9.09**	**5**	P	**Pn**	**06 20 05.2**	**-2.1**
	comp=Z,19nm,0.3s,baz=135,slow=6.9,SNR=9.1						
CPUP	**Villa Florida**	**12.13**	**67**	P	Pn	06 20 42.6	-5.1
	comp=Z,0.1nm,0.3s,baz=209,slow=19,SNR=2.1						
LPAZ	**La Paz**	**15.42**	**6**	P	**Pn**	**06 21 30.7**	**+0.1**
	comp=Z,0.1nm,0.3s,baz=187,slow=8.9,SNR=7.4						
TXAR	**Lajitas Array**	**68.72**	**328**	P	**P**	**06 28 52.0**	**+1.9**
	comp=Z,0.2nm,0.6s,baz=141,sl

TVSB	**Tavsanli**	**0.41**	**41**	*e*Pg	**Pg**	**06 19 44.8**	**+0.1**
TVSB				*e*Sg	**Sg**	**06 19 51.3**	**+1.2**
DURS	**Dursunbey**	**0.68**	**313**	P	**Pb**	**06 19 50.2**	**-0.4**
DURS	**Dursunbey**	**0.68**	**313**	*i* P	**Pb**	**06 19 50.2**	**-0.4**
KULA	**Kula-Manisa**	**0.72**	**210**	*e*PG	**Pb**	**06 19 50.8**	**-0.4**
KULA	**Kula-Manisa**	**0.72**	**210**	*e*Pg	**Pb**	**06 19 50.8**	**-0.4**
MANT	**Manisa**	**0.78**	**214**	*i* P	**Pb**	**06 19 52.3**	**-0.1**
MANT				*i* S	**Sg**	**06 20 01.7**	**0.0**
MANT	**Manisa**	**0.78**	**214**	*i* P	**Pb**	**06 19 52.3**	**-0.1**
MANT				*i* S	**Sg**	**06 20 01.7**	**0.0**
KHL	**Karahalli**	**0.88**	**158**	*e*PG	**Pb**	**06 19 54.0**	**0.0**
KHL	**Karahalli**	**0.88**	**158**	*e*Pg	**Pb**	**06 19 54.0**	**0.0**
BALB	**Balikesir**	**1.08**	**298**	*e*PG	**Pn**	**06 19 57.5**	**-0.3**
BALB	**Balikesir**	**1.08**	**298**	*e*Pg	**Pn**	**06 19 57.5**	**-0.3**
CAVI	**Cavuskoy**	**1.20**	**28**	*e*PN	**Pb**	**06 19 59.2**	**-0.3**
CAVI	**Cavuskoy**	**1.20**	**28**	*e*Pn	**Pb**	**06 19 59.2**	**-0.3**
IZI	**Iznik**	**1.23**	**13**	*e*PN	**Pb**	**06 19 59.6**	**-0.4**
IZI	**Iznik**	**1.23**	**13**	*e*Pn	**Pb**	**06 19 59.6**	**-0.4**
MDNY	**Mudanya-Bursa**	**1.24**	**352**	*e*PN	**Pn**	**06 19 59.9**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.24**	**352**	*e*Pn	**Pn**	**06 19 59.9**	**-0.2**
KCTX	**Karacabey (Bur**	**1.27**	**333**	*e*PN	**Pb**	**06 20 00.6**	**-0.1**
KCTX	**Karacabey (Bur**	**1.27**	**333**	*e*Pn	**Pb**	**06 20 00.5**	**-0.1**
GONE	**Gonen-Balikesi**	**1.43**	**310**	*e*PN	**Pb**	**06 20 02.9**	**-0.4**
GONE	**Gonen-Balikesi**	**1.43**	**310**	*e*Pn	**Pb**	**06 20 02.9**	**-0.4**
ARMT	**Armutlu**	**1.44**	**352**	*e*PN	**Pn**	**06 20 02.6**	**-0.2**
ARMT	**Armutlu**	**1.44**	**352**	*e*Pn	**Pn**	**06 20 02.6**	**-0.2**

NIED ***27*** *06:27:00, 42.°60N×145.°50E, h32km, Mw3.6 Best double couple: M0:3.33000×10^14 NP1:φ=120.00000°, δ=51.00000°, λ=-48.00000°. NP2:φ=245.00000°, δ=55.00000°, λ=-130.00000°.*
IDC ***27*** *06:27:20.5±1.5, 42.°64N×145.°61E, h0km, mb3.4/5, mb1 3.7/7, mb1mx3.5/39, mbtmp3.4/7, ML3.6/2, MS2.4/1, Ms1 2.4/1, ms1mx2.2/27, Error ellipse: s-maj=40.0km s-min=20.9km az=0.0*
MOS ***27*** *06:27:22.6±1.1, 42.°53N×145.°54E, h27km, mb4.2/1, Error ellipse: s-maj=26.2km s-min=13.8km az=74.2*
ISCJB ***27*** *06:27:23.7±0.9, 42.°58N±0.°05×145.°57E±0.°05, h35km±9km, mb3.4/5, Error ellipse: s-maj=9.7km s-min=5.4km az=153.5*
JMA ***27*** *06:27:23.9±0.1, 42.°61N×145.°53E, h48km±2km, M3.8*
SKHL ***27*** *06:27:24.2±1.0, 42.°54N×145.°59E, h48km±4km, mb4.7/3*

ISC 27 06:27:23.5±1.1, 42.°61N±0.°08×145.°58E±0.°05, h20km±7km, n31, σ1°22/38, mb3.5/5, 3C-2D, Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAK	**Akkeshi**	**0.75**	**301**	P	**Pb**	**06 27 38.0**	**+0.1**
JAK				*e*S	**Sb**	**06 27 48.4**	**+0.7**
NEM2	**Nemuro 2**	**0.76**	**9**	P	**Pb**	**06 27 38.7**	**+0.6**
NEM2				*e*S	**Sn**	**06 27 49.6**	**-0.4**
JNK	**Nakash**	**1.16**	**327**	P	**Pn**	**06 27 43.4**	**-1.1**
JNK				*e*S	**Sb**	**06 27 57.6**	**-1.8**
JOB	**Onbets**	**1.32**	**283**	P	**Pn**	**06 27 45.8**	**-0.9**
JOB				*e*S	**Sn**	**06 28 01.8**	**-1.8**
JRA	**Rausu**	**1.37**	**346**	P	**Pn**	**06 27 46.9**	**-0.5**
JRA				*e*S	**Sn**	**06 28 04.1**	**-0.8**
YUK	**Yuzh-Kuril'sk**	**1.44**	**8***c*	*i*PN	**Pn**	**06 27 48.1**	**-0.2**
YUK				*i* S	**Sn**	**06 28 05.9**	**-0.7**
YUK				pmax	pmax		
	comp=Z,995nm,0.5s						
YUK				pmax	pmax		
	comp=E,389nm,0.3s						
YUK				pmax	pmax		
	comp=N,391nm,0.2s						
YUK				smax	smax		
	comp=E,2μm,0.4s						
YUK				smax	smax		
	comp=N,2μm,0.5s						
YUK	**Yuzh-Kuril'sk**	**1.44**	**8**⇑	*i*P	**Pn**	**06 27 48.1**	**-0.2**
YUK				AMB	AMB	06 27 49.4	
	comp=N,390nm,0.4s						
YUK				AMB	AMB	06 27 49.4	
	comp=N,1μm,0.4s						
YUK				*e*S	**Sn**	**06 28 05.9**	**-0.7**
YUK				A	A	06 28 10.4	
	comp=N,2μm,0.4s						
YUK				A	A	06 28 10.4	
	comp=N,2μm,0.4s						
JAR	**Ashorobuto**	**1.49**	**298**	P	**Pn**	**06 27 48.0**	**-1.1**
JAR				*e*S	**Sn**	**06 28 05.9**	**-2.1**
SHO	**Shikotan**	**1.56**	**36***d*	*i*PN	**Pn**	**06 27 49.8**	**-0.2**
SHO				*i* S	**Sn**	**06 28 08.4**	**-1.1**
SHO				pmax	pmax		
	comp=Z,94nm,0.3s						
SHO				pmax	pmax		
	comp=N,44nm,0.5s						
SHO				pmax	pmax		
	comp=E,60nm,0.4s						
SHO				smax	smax		
	comp=N,459nm,0.5s						
SHO				smax	smax		
	comp=E,567nm,0.5s						
SHO	**Shikotan**	**1.56**	**36**⇓	*i*P	**Pn**	**06 27 49.8**	**-0.2**
SHO				AMB	AMB	06 27 54.7	
	comp=E,40nm,0.3s						
SHO				AMB	AMB	06 27 54.7	
	comp=E,60nm,0.3s						
SHO				AMB	AMB	06 27 54.7	
	comp=E,90nm,0.3s						
SHO				*i* S	**Sn**	**06 28 08.4**	**-1.1**
SHO				A	A	06 28 13.7	
	comp=E,660nm,0.3s						
SHO				A	A	06 28 13.7	
	comp=E,500nm,0.3s						
MYR	**Moyori**	**1.73**	**260**	*e*P	**Pn**	**06 27 52.1**	**-0.2**
JKA	**Kamikawa-asahi**	**2.64**	**306**	*e*P	**Pn**	**06 28 06.2**	**+1.3**
JKA				*e*S	**Sn**	**06 28 38.8**	**+2.5**
ASAJ	**Asahikawa**	**2.64**	**306**	Pn	**Pn**	**06 28 06.2**	**+1.2**
	comp=E,13nm,0.3s,baz=136,slow=9.8,SNR=33						
ASAJ				Sn	**Sn**	**06 28 38.8**	**+2.5**
	comp=E,17nm,0.3s,baz=4.6,slow=26,SNR=21						
KUR	**Kuril'sk**	**3.10**	**31**⇑	*i*PN	**Pn**	**06 28 13.3**	**+2.1**
KUR				*i* S	**Sn**	**06 28 49.7**	**+2.1**
KUR				pmax	pmax		
	comp=Z,51nm,0.5s						
KUR				pmax	pmax		
	comp=E,19nm,0.2s						
KUR				pmax	pmax		
	comp=N,23nm,0.5s						
KUR				smax	smax		
	comp=E,106nm,0.5s						
KUR				smax	smax		
	comp=N,88nm,0.6s						
KUR	**Kuril'sk**	**3.10**	**31**	*e*P	**Pn**	**06 28 11.8**	**+0.6**
KUR				AMB	AMB	06 28 12.8	
	comp=N,20nm,0.4s						
KUR				AMB	AMB	06 28 12.8	
	comp=N,70nm,0.4s						
KUR				*i* S	**Sn**	**06 28 47.1**	**-0.5**
KUR				A	A	06 28 53.0	
	comp=N,90nm,0.5s						
KUR				A	A	06 28 53.0	
	comp=N,110nm,0.5s						
YSS	**Yuzh-Sakhalins**	**4.78**	**336**	*e*P	**Pn**	**06 28 36.0**	**+1.7**
MJAR	**Matsushiro Arr**	**8.31**	**226**	Pn	**Pn**	**06 29 23.6**	**+0.8**
	comp=N,0.2nm,0.3s,baz=32,slow=12,SNR=2.2						
KSRS	**Korea Array**	**14.47**	**255**	LR	LR	06 36 18.5	
	comp=N,15nm,18.5s,baz=85,slow=37						
H11N2	**WAKE ISLAND Hy**	**29.05**	**135**	T	T	07 04 24.1	
	baz=327,slow=76,SNR=58						
H11N1	**WAKE ISLAND Hy**	**29.06**	**135**	T	T	07 04 29.4	
	baz=327,slow=76,SNR=64						
H11N3	**WAKE ISLAND Hy**	**29.07**	**135**	T	T	07 04 30.9	
	baz=327,slow=76,SNR=37						
H11S1	**WAKE ISLAND Hy**	**29.97**	**137**	T	T	07 05 44.2	
	baz=329,slow=76,SNR=171						
H11S3	**WAKE ISLAND Hy**	**29.98**	**137**	T	T	07 05 42.0	
	baz=329,slow=76,SNR=99						
H11S2	**WAKE ISLAND Hy**	**29.99**	**137**	T	T	07 05 41.2	
	baz=329,slow=76,SNR=82						
ILAR	**Eielson Array**	**43.08**	**35**	P	**P**	**06 35 21.6**	**0.0**
	comp=N,0.2nm,0.4s,baz=268,slow=6.3,SNR=4.4						
MKAR	**Makanchi Array**	**44.10**	**298**	P	**P**	**06 35 30.1**	**0.0**
	comp=N,0.2nm,0.4s,baz=82,slow=9.3,SNR=3.4						
KURK	**Kurchatov**	**45.22**	**304**	P	**P**	**06 35 38.4**	**-0.5**
KURK	**Kurchatov**	**45.22**	**304**	*e*P	**P**	**06 35 38.4**	**-0.5**
KURBB	**Kurchatov Arra**	**45.30**	**304**	P	**P**	**06 35 38.4**	**-1.1**
	comp=N,0.3nm,0.3s,baz=70,slow=8.9,SNR=3.5						
NVAR	**Mina Array Bea**	**69.16**	**57**	P	**P**	**06 38 28.9**	**+0.2**
	comp=N,0.4nm,0.5s,baz=305,slow=8.6,SNR=2.6						
TXAR	**Lajitas Array**	**84.24**	**55**	P	**P**	**06 39 53.9**	**0.0**

comp=N,0.2nm,0.6s,baz=323,slow=1.4,SNR=3.4

MEX 27 06:27:50.4±0.4, 15.°73N×93.°07W, h114km±5km, MD3.7, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		**0.15**	**260**	*i* P	Pn	06 28 04.5	-1.5
PCIG				*e*S	Sn	06 28 16.3	-1.6
TGBT	**Tuxtla Gutierr**	**1.04**	**359**	*i* P	Pn	06 28 11.4	-0.9
TGBT				*i* S	Sn	06 28 26.8	-2.1
CCIG	**Comitan**	**1.05**	**58**	*i* P	Pn	06 28 11.6	-1.0
CCIG				*i* S	Sn	06 28 27.6	-1.8
THIG		**1.13**	**136**	*e*P	Pn	06 28 12.4	-0.8
THIG				*e*S	Sn	06 28 28.6	-1.9

ISCJB ***27*** *06:28:51.2±0.7, 35.°78N±0.°09×104.°1E±0.°1, h10km, mb3.7/7, Error ellipse: s-maj=18.8km s-min=7.6km az=144.2*
IDC ***27*** *06:28:51.3±0.9, 35.°73N×104.°35E, h0km, mb3.7/7, mb1 3.9/9, mb1mx3.6/43, mbtmp3.7/9, ML3.5/2, Error ellipse: s-maj=31.9km s-min=17.8km az=63.0*
BJI ***27*** *06:28:53.2, 35.°76N×103.°98E, h6km, ML3.7/13, Ms3.4/3, Ms7 3.4/3*

ISC 27 06:28:52.8±0.9, 35.°79N±0.°08×103.°9E±0.°1, h10km, n12, σ2°41/14, mb3.7/7, 1C, Gansu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LZH	**Lanzhou**	**0.30**	**349**⇑	*i*Pg	**Pg**	**06 28 58.0**	**-0.9**
LZH				Sg	**Sg**	**06 29 02.8**	**-0.2**
LZH				smax	smax		
	comp=N,5μm,0.8s						
LZH				smax	smax		
	comp=E,6μm,0.6s						
GTA	**Gaotai**	**4.86**	**319**	Pn	**Pn**	**06 30 09.0**	**+2.9**
GTA				Sg	**Sg**	**06 31 25.5**	**-3.4**
GTA				smax	smax		
	comp=N,30nm,1.1s						
GTA				smax	smax		
	comp=E,27nm,1.3s						
WMQ	**Urumqi**	**14.80**	**308**	*e*P	**Pn**	**06 32 19.0**	**-3.2**
CMAR	**Chiang Mai Arr**	**17.82**	**196**	P	**P**	**06 33 01.8**	**+0.2**
	0.1nm,0.3s,baz=4.2,slow=11,SNR=9.3						
MKAR	**Makanchi Array**	**19.55**	**311**	P	**Pn**	**06 33 23.7**	**+1.9**
	0.1nm,0.3s,baz=125,slow=10,SNR=5.3						
ZALV	**Zalesovo Beam**	**22.52**	**330**	P	**P**	**06 33 56.0**	**+3.6**
	0.9nm,0.3s,baz=148,slow=8.5,SNR=2.4						
KURBB	**Kurchatov Arra**	**23.55**	**317**	P	**P**	**06 34 05.4**	**+2.3**
	1.1nm,0.6s,baz=121,slow=9.6,SNR=9.6						
KLR	**Kul'dur**	**24.36**	**48**	P	**P**	**06 34 09.7**	**-1.1**
	0.4nm,0.4s,baz=190,slow=6.1,SNR=3.3						
ARCES	**ARCESS Array B**	**52.95**	**334**	P	**P**	**06 38 10.8**	**+1.9**
	5.0nm,1.1s,baz=80,slow=8.7,SNR=4.4						
WRA	**Warramunga Arr**	**62.48**	**148**	P	**P**	**06 39 14.8**	**-1.6**
	0.5nm,0.6s,baz=345,slow=6.9,SNR=6.5						
ASAR	**Alice Springs**	**65.59**	**150**	P	**P**	**06 39 35.8**	**-1.1**
	0.7nm,0.7s,baz=332,slow=6.9,SNR=7.0						
YKA	**Yellowknife Ar**	**77.27**	**17**	P	**P**	**06 40 45.6**	**-1.3**
	0.3nm,0.6s,baz=330,slow=5.1,SNR=7.4						

JMA 27 06:31:34.7±0.1, 36.°55N×141.°13E, h30km±1km, M3.1, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.46**	**278**	P	Pb	06 31 44.1	-0.3
JHO				S	Sb	06 31 50.8	-0.3
ONAJ	**Iwakimizuishiy**	**0.61**	**334**	P	Pb	06 31 46.6	-0.4
ONAJ				S	Sb	06 31 55.3	-0.1
JYT	**Yasato**	**0.82**	**247**	P	Pn	06 31 49.9	-0.3
JYT				S	Sb	06 32 01.1	-0.1
JFK	**Kawauchi**	**0.84**	**346**	P	Pn	06 31 50.1	-0.4
JFK				S	Sb	06 32 01.3	-0.5
JFT	**Otama**	**1.16**	**327**	P	Pb	06 31 55.9	-0.2
JFT				S	Sb	06 32 10.7	-0.1
JMM	**Marumori**	**1.34**	**349**	P	Pn	06 31 57.7	+0.3
JMM				S	Sn	06 32 14.5	+0.3
JAG	**Ashikaga**	**1.36**	**265**	P	Pn	06 31 58.0	+0.4
JAG				S	Sb	06 32 15.6	-0.9
MAT	**Matsushiro**	**2.35**	**271**	P	Pn	06 32 13.0	+1.7
MAT				S	Sb	06 32 43.7	-1.4

NIED ***27*** *06:32:00, 35.°80N×141.°00E, h8km, Mw3.5 Best double couple: M0:2.37000×10^14 NP1:φ=16.00000°, δ=52.00000°, λ=-40.00000°. NP2:φ=134.00000°, δ=59.00000°, λ=-134.00000°.*
ISCJB ***27*** *06:32:31.8±1.2, 35.°79N±0.°05×141.°01E±0.°08, h9km±7km, mb3.5/4, Error ellipse: s-maj=10.7km s-min=7.6km az=172.9*
IDC ***27*** *06:32:31.4±1.2, 35.°45N×140.°86E, h0km, mb3.4/4, mb1 3.7/5, mb1mx3.5/36, mbtmp3.4/5, ML3.0/1, Error ellipse: s-maj=30.6km s-min=27.8km az=116.0*
JMA ***27*** *06:32:32.3±0.1, 35.°78N×140.°97E, h11km±1km, M3.6*
JMA Felt I J1.

ISC 27 06:32:32.6±1.0, 35.°75N±0.°04×140.°88E±0.°08, h13km±5km, n18, σ0°90/16, mb3.5/4, 2C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.05**	**204**	⇑P	**Pg**	**06 32 35.2**	**+0.1**
CHOJ				S	**Sg**	**06 32 37.3**	**+0.5**
JCN	**Nagara**	**0.65**	**239**	⇑P	**Pn**	**06 32 47.1**	**-0.3**
JCN				*e*S	**Sn**	**06 32 58.1**	**+0.6**
JYT	**Yasato**	**0.73**	**311**	P	**Pg**	**06 32 46.8**	**-0.1**
JYT				S	**Sg**	**06 32 57.1**	**+0.6**
JHO	**Hitachi**	**0.90**	**344**	P	**Pb**	**06 32 48.9**	**-1.1**
JHO				S	**Sg**	**06 33 01.0**	**-0.7**
BSO3	**Boso 3**	**0.99**	**198**	P	**Pg**	**06 32 51.7**	**0.0**
BSO1	**Boso 1**	**1.10**	**176**	P	**Pb**	**06 32 52.0**	**-1.1**
MJAR	**Matsushiro Arr**	**2.31**	**291**	Pn	**Pb**	**06 33 13.4**	**-0.6**
	3.3nm,0.3s,baz=124,slow=17,SNR=4.8						
MAT	**Matsushiro**	**2.31**	**291**	P	**Pb**	**06 33 13.1**	**-0.9**
MAT				S	**Sn**	**06 33 38.3**	**-0.2**
H11N2	**WAKE ISLAND Hy**	**27.89**	**118**	T	T	07 07 18.1	
	baz=311,slow=75,SNR=7.6						
H11N1	**WAKE ISLAND Hy**	**27.90**	**118**	T	T	07 07 21.9	
	baz=311,slow=75,SNR=8.8						
H11N3	**WAKE ISLAND Hy**	**27.91**	**118**	T	T	07 07 20.8	
	baz=311,slow=75,SNR=11						
H11S3	**WAKE ISLAND Hy**	**28.55**	**120**	T	T	07 08 10.1	
	baz=312,slow=76,SNR=12						
H11S1	**WAKE ISLAND Hy**	**28.55**	**120**	T	T	07 08 08.8	
	baz=312,slow=76,SNR=12						
H11S2	**WAKE ISLAND Hy**	**28.57**	**120**	T	T	07 08 11.7	
	baz=312,slow=76,SNR=13						
MKAR	**Makanchi Array**	**44.45**	**303**	P	**P**	**06 40 44.2**	**+1.0**
	0.3nm,0.6s,baz=91,slow=12,SNR=3.2						
ILAR	**Eielson Array**	**50.81**	**32**	P	P	06 41 36.6	+4.3
	0.3nm,0.5s,baz=268,slow=6.0,SNR=4.1						
WRA	**Warramunga Arr**	**55.73**	**187**	P	**P**	**06 42 07.8**	**-1.1**
	0.8nm,0.9s,baz=4.6,slow=7.4,SNR=4.0						
YKA	**Yellowknife Ar**	**65.13**	**30**	P	**P**	**06 43 14.3**	**+1.6**
	0.3nm,0.7s,baz=303,slow=6.7,SNR=4.1						

ISCJB ***27*** *06:38:18.6±0.6, 39.°12N±0.°04×29.°03E±0.°04, h3km±7km, Error ellipse: s-maj=6.2km s-min=4.8km az=159.7*
DDA ***27*** *06:38:18.6, 39.°10N×29.°02E, h7km, Md2.6*
ISK ***27*** *06:38:18.1, 39.°04N×29.°16E, h12km, MD2.4*
CSEM ***27*** *06:38:18.7±0.1, 39.°13N×29.°03E, h2km, MD2.6, Error ellipse: s-maj=4.0km s-min=3.1km az=114.0*

ISC 27 06:38:18.9±0.9, 39.°10N±0.°02×29.°03E±0.°02, h12km±9km, n30, σ0°52/42, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**257**	P	**Pg**	**06 38 24.0**	**-0.2**
DEMI				S	**Sg**	**06 38 27.7**	**-0.1**
DEMI	**Demirci**	**0.25**	**257**	*i* P	**Pg**	**06 38 24.0**	**-0.2**
DEMI				*i* S	**Sg**	**06 38 27.7**	**-0.1**
GDZ	**Gediz**	**0.35**	**92**	P	**Pg**	**06 38 26.1**	**+0.2**
GDZ				S	**Sg**	**06 38 31.4**	**+0.7**
GDZ	**Gediz**	**0.35**	**92**	*i* P	**Pg**	**06 38 26.1**	**+0.2**
GDZ				*i* S	**Sg**	**06 38 31.4**	**+0.7**
TVSB	**Tavsanli**	**0.48**	**43**	*e*PG	**Pg**	**06 38 27.9**	**-0.5**
TVSB	**Tavsanli**	**0.48**	**43**	*e*Pg	**Pg**	**06 38 27.9**	**-0.5**
KULA	**Kula-Manisa**	**0.65**	**207**	*e*PG	**Pg**	**06 38 31.3**	**-0.2**
KULA				*e*SG	**Sb**	**06 38 40.8**	**-0.5**
KULA	**Kula-Manisa**	**0.65**	**207**	*e*Pg	**Pg**	**06 38 31.3**	**-0.2**
KULA				*e*Sg	**Sb**	**06 38 40.8**	**-0.5**
DURS	**Dursunbey**	**0.66**	**319**	P	**Pg**	**06 38 30.5**	**-1.3**
DURS	**Dursunbey**	**0.66**	**319**	*i* P	**Pg**	**06 38 30.5**	**-1.3**
MANT	**Manisa**	**0.71**	**212**	P	**Pg**	**06 38 32.7**	**0.0**
MANT				S	**Sg**	**06 38 42.0**	**-0.1**
MANT	**Manisa**	**0.71**	**212**	*i* P	**Pg**	**06 38 32.7**	**0.0**
MANT				*i* S	**Sg**	**06 38 42.0**	**-0.1**
KHAL	**Karahalli**	**0.81**	**154**	P	**Pn**	**06 38 36.0**	**-0.2**
KHAL				S	**Sb**	**06 38 45.9**	**0.0**
KHAL	**Karahalli**	**0.81**	**154**	*i* P	**Pn**	**06 38 36.0**	**-0.2**
KHAL				*i* S	**Sb**	**06 38 45.9**	**0.0**
BALB	**Balikesir**	**1.04**	**302**	*e*PN	**Pn**	**06 38 40.7**	**+1.4**
BALB	**Balikesir**	**1.04**	**302**	*e*Pn	**Pn**	**06 38 40.7**	**+1.4**
CAVI	**Cavuskoy**	**1.27**	**29**	*e*PN	**Pn**	**06 38 41.9**	**-0.5**
CAVI				*e*SN	**Sg**	**06 38 59.8**	**+0.1**
CAVI	**Cavuskoy**	**1.27**	**29**	*e*Pn	**Pn**	**06 38 41.9**	**-0.5**
CAVI				*e*Sn	**Sg**	**06 38 59.8**	**+0.1**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*PN	**Pg**	**06 38 43.8**	**+0.4**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*Pn	**Pg**	**06 38 43.8**	**+0.4**
IZI	**Iznik**	**1.28**	**15**	*e*PN	**Pn**	**06 38 42.8**	**+0.1**
IZI	**Iznik**	**1.28**	**15**	*e*Pn	**Pn**	**06 38 42.8**	**+0.1**
BORA	**Eskisehir**	**1.35**	**54**	P	**Pb**	**06 38 44.1**	**0.0**
BORA	**Eskisehir**	**1.35**	**54**	*i* P	**Pb**	**06 38 44.1**	**0.0**
GONE	**Gonen-Balikesi**	**1.41**	**313**	*e*PN	**Pg**	**06 38 45.9**	**0.0**
GONE	**Gonen-Balikesi**	**1.41**	**313**	*e*Pn	**Pg**	**06 38 45.9**	**0.0**
ARMT	**Armutlu**	**1.47**	**355**	*e*PN	**Pb**	**06 38 46.2**	**0.0**
ARMT	**Armutlu**	**1.47**	**355**	*e*Pn	**Pb**	**06 38 46.2**	**0.0**
GULT	**Gulveren**	**1.75**	**40**	*e*PN	**Pn**	**06 38 49.2**	**0.0**
GULT	**Gulveren**	**1.75**	**40**	*e*Pn	**Pn**	**06 38 49.2**	**0.0**

IDC ***27*** *06:39:57.2±1.0, 11.°88N×86.°96W, h0km, mb4.0/9, mb1 4.2/9, mb1mx3.9/34, mbtmp4.1/9, MS3.2/1, Ms1 3.2/1, ms1mx2.4/42, Error ellipse: s-maj=39.4km s-min=15.3km az=60.0*
ISCJB ***27*** *06:40:02.7±0.7, 11.°7N±0.°1×87.°1W±0.°1, h68km, mb4.0/15, Error ellipse: s-maj=22.7km s-min=6.8km az=44.9*
NEIC ***27*** *06:40:02.5±0.6, 11.°82N×86.°94W, h35km, mb4.0/6, Error ellipse: s-maj=24.8km s-min=10.2km az=57.0*

ISC 27 06:40:05.4±0.8, 11.°9N±0.°1×87.°1W±0.°1, h68km, n25, σ1°68/23, mb4.1/15, Near coast of Nicaragua

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CNCH	**Conchagua**	**1.59**	**333**	*e*P	**Pn**	**06 40 30.7**	**-0.9**
PACA	**Pacayal**	**2.01**	**323**	*e*P	**Pn**	**06 40 35.8**	**-1.5**
LFRS	**El Faro**	**2.61**	**313**	*e*P	**Pn**	**06 40 43.1**	**-2.3**
LFRS				*e*S	**Sn**	**06 41 14.9**	**-1.2**
CGA2	**Cerro Gallo 2**	**3.15**	**125**	*e*P	Pn	06 40 45.9	-6.9
CGA2				*e*S	Sn	06 41 19.5	-10
RBDL	**Robledal**	**3.39**	**312**	*e*P	**Pn**	**06 40 55.0**	**-1.1**
URSC	**Urasca**	**3.82**	**121**	*e*P	Pn	06 40 57.2	-4.7
LRAL	**Lakeview Retre**	**21.09**	**0**	*e*P	**P**	**06 44 46.9**	**+2.7**
	6.4nm,1.0s						
PCRV	**Puerto La Cruz**	**22.10**	**92**	P	**P**	**06 44 53.7**	**-1.6**
	8.0nm,0.6s,baz=230,slow=5.4,SNR=6.2						
TXAR	**Lajitas Array**	**23.26**	**321**	P	**P**	**06 45 07.9**	**+0.6**
	1.0nm,0.6s,baz=135,slow=10,SNR=15						
MIAR	**Mount Ida**	**23.35**	**346**	*e*P	**P**	**06 45 07.9**	**0.0**
	5.8nm,1.0s						
TKL	**Tuckaleechee C**	**23.89**	**7**	P	**P**	**06 45 13.8**	**+0.9**
	4.8nm,0.6s,baz=195,slow=9.3,SNR=8.1						
SAML	**Samuel**	**31.49**	**130**	*e*P	**P**	**06 46 18.2**	**-2.8**
	2.2nm,1.0s						
LPAZ	**La Paz**	**33.66**	**146**	P	**P**	**06 46 42.0**	**+1.4**
	0.8nm,0.3s,baz=298,slow=4.4,SNR=14						
PFO	**Pinyon Flats O**	**34.48**	**314**	LR	LR	07 02 36.6	
	comp=Z,33nm,19.0s,baz=127,slow=39						
PDAR	**Pinedale Array**	**36.47**	**332**	P	**P**	**06 47 04.7**	**+0.6**
	0.5nm,0.8s,baz=111,slow=8.1,SNR=4.4						
HWUT	**Hardware Ranch**	**36.57**	**329**	*e*P	**P**	**06 47 05.9**	**+1.0**
	2.1nm,0.7s						
SNOW	**Snow King Moun**	**37.56**	**331**	*e*P	**P**	**06 47 14.7**	**+1.3**
	2.1nm,0.7s						
SIV	**San Ignacio**	**37.78**	**136**	P	**P**	**06 47 13.5**	**-1.8**
	3.4nm,0.6s,baz=309,slow=13						
LVC	**Limon Verde**	**38.60**	**152**	P	**P**	**06 47 21.7**	**-0.8**
	13nm,0.9s,baz=296,slow=11,SNR=4.1						
HLID	**Hailey**	**39.44**	**328**	*e*P	**P**	**06 47 30.4**	**+1.3**
	2.4nm,1.0s						
SCHQ	**Schefferville**	**45.75**	**16**	P	**P**	**06 48 19.4**	**-0.4**
	1.2nm,0.5s,baz=230,slow=7.9,SNR=4.2						
YKA	**Yellowknife Ar**	**54.28**	**345**	P	**P**	**06 49 23.5**	**-0.7**
	0.6nm,0.7s,baz=140,slow=7.4,SNR=18						
WRAB	**Tennant Creek**	**139.43**	**253**	*e*PKPdf	**PKPdf**	**06 59 28.3**	**+2.4**
WRA	**Warramunga Arr**	**139.44**	**253**	PKP	**PKPdf**	**06 59 29.0**	**+3.1**
	0.5nm,0.6s,baz=89,slow=2.3,SNR=9.4						
CMAR	**Chiang Mai Arr**	**149.30**	**349**	PKPbc	**PKPbc**	**06 59 48.0**	**+0.7**
	0.8nm,0.4s,baz=355,slow

0.3nm,0.4s,baz=89,slow=9.4,SNR=6.7
WRA Warramunga Arr 53.25 185 P **P 06 54 33.4 -1.0**
0.3nm,0.3s,baz=360,slow=7.6,SNR=20
ASAR Alice Springs 56.98 185 P **P 06 55 01.2 +0.4**
0.2nm,0.5s,baz=14,slow=10,SNR=5.2
YKA Yellowknife Ar 68.04 29 P **P 06 56 16.4 +3.3**
0.1nm,0.5s,baz=306,slow=6.3,SNR=3.0
TXAR Lajitas Array 94.12 51 P **P 06 58 35.1 +4.0**
0.2nm,0.6s,baz=329,slow=2.8,SNR=4.5

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*KRSC **27** 07:04:54.0±2.5, 48°.53N×155°.68E, h31km±38km, ML4.7*
*ISCJB **27** 07:04:57.4±0.4, 48°.66N±0°.04×155°.26E±0°.07, h43km, mb4.0/17, MS3.3/9, Error ellipse: s-maj=8.5km s-min=2.9km az=43.6*
*SKHL **27** 07:04:57.3±0.3, 48°.55N×155°.46E, h58km±4km, mb4.8/11*
*MOS **27** 07:04:57.8±1.3, 48°.78N×155°.00E, h48km, mb4.1/11, Error ellipse: s-maj=11.9km s-min=4.8km az=67.5*
*IDC **27** 07:05:00.3±3.6, 48°.70N×155°.10E, h52km±33km, mb3.7/13, mb1 4.0/16, mb1mx3.7/52, mbtmp4.0/16, ML3.4/3, MS3.2/14, Ms1 3.2/14, ms1mx3.0/59, Error ellipse: s-maj=24.8km s-min=12.3km az=146.0*
ISC 27 07:04:58.2±0.6, 48°.56N±0°.06×155°.36E±0°.07, h43km, n113, σ1§82/121, mb4.0/17, MS3.4/9, 2C-4D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**2.18**	**13**	*e*P	**Pn**	**07 05 30.5**	**-1.4**
SKR				*e*S	**Sn**	**07 05 55.1**	**-2.5**
SKR	**Severo-Kuril's**	**2.18**	**13**	PN	**Pn**	**07 05 30.5**	**-1.4**
SKR				S	**Sn**	**07 05 55.1**	**-2.5**
SKR	**Severo-Kuril's**	**2.18**	**13**	*e*P	**Pn**	**07 05 30.0**	**-1.9**
SKR				AMB	AMB	07 05 37.4	
	380nm,0.5s						
SKR				*e*S	**Sn**	**07 05 54.5**	**-3.1**
SKR				A	A	07 06 00.1	
	1μm,0.5s						
PAU	**Pauzhetka**	**3.05**	**17**	*e*P	**Pn**	**07 05 43.3**	**-0.6**
PAU				*e*S	**Sn**	**07 06 19.4**	**+0.2**
PAU	**Pauzhetka**	**3.05**	**17**	PN	**Pn**	**07 05 43.3**	**-0.6**
PAU				S	**Sn**	**07 06 19.4**	**+0.2**
PAU	**Pauzhetka**	**3.05**	**17**	*e*P	**Pn**	**07 05 43.3**	**-0.6**
PAU				AMB	AMB	07 05 48.3	
	170nm,0.5s						
PAU				*e*S	**Sn**	**07 06 17.6**	**-1.6**
PAU				A	A	07 06 27.1	
	650nm,0.3s						
PAU				A	A	07 06 27.1	
	730nm,0.3s						
ASAK	**Asacha**	**4.15**	**22**	*e*P	**Pn**	**07 06 00.0**	**+0.9**
ASAK	**Asacha**	**4.15**	**22**	PN	**Pn**	**07 06 00.0**	**+0.9**
MTVR	**Mutnovka**	**4.32**	**24**	*e*P	**Pn**	**07 05 57.2**	**-4.2**
MTVR	**Mutnovka**	**4.32**	**24**	PN	**Pn**	**07 05 57.2**	**-4.2**
RUS	**Russkaya**	**4.37**	**26**	*e*P	**Pn**	**07 06 01.3**	**-0.6**
RUS				*e*S	**Sn**	**07 06 49.1**	**-2.4**
RUS	**Russkaya**	**4.37**	**26**	PN	**Pn**	**07 06 01.3**	**-0.6**
RUS				S	**Sn**	**07 06 49.1**	**-2.4**
RUS	**Russkaya**	**4.37**	**26**	*i* P	**Pn**	**07 06 01.3**	**-0.6**
KRMR	**Karymshinskiy**	**4.62**	**21**	*e*P	**Pn**	**07 06 07.1**	**+1.7**
KRMR	**Karymshinskiy**	**4.62**	**21**	PN	**Pn**	**07 06 07.1**	**+1.7**
PETK	**Petropavlovsk-**	**4.79**	**17**	P	**Pn**	**07 06 09.3**	**+1.6**
	6.1nm,0.3s,baz=184,slow=11,SNR=30						
PETK				S	Sn	07 07 10.2	+8.3
	baz=121,slow=14,SNR=2.4						
PETK				LR	LR	07 08 14.9	
	comp=Z,201nm,19.2s,baz=151,slow=41						
PET	**Petropavlovsk**	**4.93**	**24**	*e*P	**Pn**	**07 06 09.9**	**+0.2**
PET	**Petropavlovsk**	**4.93**	**24**	PN	**Pn**	**07 06 09.9**	**+0.2**
PET	**Petropavlovsk**	**4.93**	**24**	*e*P	**Pn**	**07 06 09.9**	**+0.2**
PET				AMB	AMB	07 06 11.1	
	30nm,0.5s						
PET				*i* S	**Sn**	**07 07 04.6**	**-0.7**
PET				A	A	07 07 18.2	
	110nm,0.5s						
PET				A	A	07 07 18.2	
	140nm,0.5s						
PET				AMS	AMS	07 08 13.0	
	100nm,14.0s						
UGLR	**Uglovaya**	**5.14**	**24**	*e*P	**Pn**	**07 06 13.6**	**+0.9**
UGLR	**Uglovaya**	**5.14**	**24**	PN	**Pn**	**07 06 13.6**	**+0.9**
KOK	**Koryaka**	**5.17**	**22**	*e*P	**Pn**	**07 06 14.0**	**+1.0**
KOK				*e*S	**Sn**	**07 07 13.1**	**+1.7**
KOK	**Koryaka**	**5.17**	**22**	PN	**Pn**	**07 06 14.0**	**+1.0**
KOK				S	**Sn**	**07 07 13.1**	**+1.7**
KOK	**Koryaka**	**5.17**	**22**	*e*P	**Pn**	**07 06 14.0**	**+1.0**
AVH	**Avacha**	**5.17**	**23**	*e*P	**Pn**	**07 06 14.3**	**+1.3**
AVH				*e*S	**Sn**	**07 07 14.0**	**+2.6**
AVH	**Avacha**	**5.17**	**23**	PN	**Pn**	**07 06 14.3**	**+1.3**
AVH				S	**Sn**	**07 07 14.0**	**+2.6**
AVH	**Avacha**	**5.17**	**23**	*i* P	**Pn**	**07 06 14.3**	**+1.3**
KRER	**Koryakskii**	**5.21**	**23**	*e*P	**Pn**	**07 06 14.7**	**+1.0**
KRER				*e*S	**Sn**	**07 07 12.9**	**+0.4**
KRER	**Koryakskii**	**5.21**	**23**	PN	**Pn**	**07 06 14.7**	**+1.0**
KRER				S	**Sn**	**07 07 12.9**	**+0.4**
SDLR	**Sedlovina**	**5.22**	**24**	*e*P	**Pn**	**07 06 14.4**	**+0.6**
SDLR	**Sedlovina**	**5.22**	**24**	PN	**Pn**	**07 06 14.4**	**+0.6**
KRX	**Arik**	**5.23**	**22**	*e*P	**Pn**	**07 06 15.1**	**+1.1**
KRX				*e*S	**Sn**	**07 07 13.3**	**+0.3**
KRX	**Arik**	**5.23**	**22**	PN	**Pn**	**07 06 15.1**	**+1.1**
KRX				S	**Sn**	**07 07 13.3**	**+0.3**
GNL	**Ganaly**	**5.39**	**17**	*e*P	**Pn**	**07 06 17.5**	**+1.4**
GNL	**Ganaly**	**5.39**	**17**	PN	**Pn**	**07 06 17.5**	**+1.4**
KUR	**Kuril'sk**	**6.12**	**240**	⇓*i*PN	**Pn**	**07 06 29.3**	**+3.3**
KUR				*i* S	**Sn**	**07 07 38.5**	**+3.8**
KUR				pmax	pmax		
	comp=Z,92nm,0.4s						
KUR				smax	smax		
	comp=E,50nm,0.2s						
KUR				smax	smax		
	comp=N,152nm,0.5s						
KUR	**Kuril'sk**	**6.12**	**240**	⇓*i*P	**Pn**	**07 06 29.3**	**+3.3**
KUR				AMB	AMB	07 06 36.1	
	comp=N,90nm,0.4s						
MKZ	**Mys Kozlova**	**7.19**	**31**	*e*P	**Pn**	**07 06 39.4**	**-1.3**
MKZ	**Mys Kozlova**	**7.19**	**31**	PN	**Pn**	**07 06 39.4**	**-1.3**
MKZ	**Mys Kozlova**	**7.19**	**31**	*e*P	**Pn**	**07 06 39.4**	**-1.3**
SHO	**Shikotan**	**7.55**	**235**	*c i*PN	**Pn**	**07 06 45.2**	**-0.5**
SHO				pmax	pmax		
	comp=Z,71nm,1.1s						
SHO	**Shikotan**	**7.55**	**235**	*e*P	**Pn**	**07 06 44.7**	**-1.0**
SHO				AMB	AMB	07 06 59.4	
	comp=Z,70nm,1.1s						
SHO				*i* S	**Sn**	**07 08 04.7**	**-5.2**
SHO				A	A	07 08 14.1	
	comp=Z,110nm,0.5s						
YUK	**Yuzh-Kuril'sk**	**7.99**	**239**	*e*PN	**Pn**	**07 06 50.3**	**-1.3**
YUK	**Yuzh-Kuril'sk**	**7.99**	**239**	*e*P	**Pn**	**07 06 50.3**	**-1.3**
YUK				AMB	AMB	07 06 57.4	
	comp=Z,220nm,0.5s						
TYV	**Tymovskoe**	**8.55**	**290**	*e*PN	**Pn**	**07 07 02.5**	**+3.2**
TYV				pmax	pmax		
	comp=Z,7.0nm,0.6s						
TYV				MLR	MLR		
	comp=Z,500nm,18.0s						
TYV	**Tymovskoe**	**8.55**	**290**	*e*P	**Pn**	**07 06 59.4**	**+0.1**
TYV				AMB	AMB	07 07 06.0	
	comp=Z,10.0nm,0.8s						
TYV				AMS	AMS	07 11 44.0	
	comp=Z,500nm,18.0s						
YSS	**Yuzh-Sakhalins**	**8.65**	**264**	⇑*e*PN	**Pn**	**07 06 59.0**	**-1.7**
YSS				*e*S	**Sn**	**07 08 38.6**	**+1.8**
YSS				pmax	pmax		
	comp=Z,10.0nm,0.9s						
YSS	**Yuzh-Sakhalins**	**8.65**	**264**	*e*P	**Pn**	**07 06 59.5**	**-1.2**
YSS				AMB	AMB	07 06 59.9	
	comp=Z,10.0nm,0.9s						
YSS				*e*S	**Sn**	**07 08 36.7**	**-0.1**
UGL	**Uglegorsk**	**8.79**	**278**	*e*PN	**Pn**	**07 06 59.8**	**-2.8**
UGL	**Uglegorsk**	**8.79**	**278**	*e*P	**Pn**	**07 07 05.3**	**+2.7**
UGL				AMB	AMB	07 07 06.0	
	comp=Z,70nm,0.4s						
JKA	**Kamikawa-asahi**	**9.88**	**248**	*e*P	**Pn**	**07 07 21.0**	**+3.4**
ASAJ	**Asahikawa**	**9.88**	**248**	P	**Pn**	**07 07 21.0**	**+3.4**
	comp=Z,6.5nm,0.3s,baz=77,slow=14,SNR=26						
ASAJ	**Asahikawa**	**9.88**	**248**	PN	**Pn**	**07 07 21.0**	**+3.4**
ASAJ				pmax	pmax		
	comp=Z,7.0nm,0.3s						
NKL	**Nikolayevsk**	**10.35**	**302**	*e*P	**Pn**	**07 07 26.8**	**+2.9**
NKL				*e*rx	rx	07 07 37.4	
ERM	**Erimo**	**10.80**	**237**	*e*PN	**Pn**	**07 07 29.8**	**-0.3**
ERM	**Erimo**	**10.80**	**237**	*e*P	**Pn**	**07 07 29.8**	**-0.3**
HABR	**Khabarovsk**	**13.47**	**277**	*e*PN	**Pn**	**07 08 03.8**	**-2.7**
HABR				pmax	pmax		
	comp=Z,13nm,1.3s						
HABR				pmax	pmax		
	comp=E,25nm,1.4s						
HABR				MLR	MLR		
	comp=Z,131nm,16.0s						
HABR	**Khabarovsk**	**13.47**	**277**	*e*P	**Pn**	**07 08 03.8**	**-2.7**
HABR				AMB	AMB	07 08 04.8	
	comp=Z,10.0nm,1.3s						
HABR				AMS	AMS	07 13 46.5	
	comp=Z,100nm,16.0s						
EKMR	**Ekimchan**	**14.85**	**296**	*e*P	**Pn**	**07 08 25.5**	**+0.4**
EKMR				AMB	AMB	07 08 32.6	
	comp=Z,20nm,0.5s						
KLR	**Kul'dur**	**15.54**	**281**	P	**P**	**07 08 36.9**	**-0.9**
	comp=Z,0.8nm,0.3s,baz=72,slow=9.4,SNR=19						
KLR				LR	LR	07 14 20.7	
	comp=Z,107nm,21.8s,baz=82,slow=36						
KLR	**Kul'dur**	**15.54**	**281**	*i* P	**P**	**07 08 36.0**	**-1.8**
KLR	**Kul'dur**	**15.54**	**281**	*i* P	**Pn**	**07 08 32.2**	**-1.9**
USRK	**Ussuriysk Ar.**	**16.69**	**264**	P	**P**	**07 08 50.2**	**-0.4**
	comp=Z,1.2nm,0.3s,baz=69,slow=13,SNR=20						
USRK				LR	LR	07 15 15.6	
	comp=Z,42nm,18.9s,baz=147,slow=37						
MJA0	**Matsu Arr-Jizo**	**17.37**	**233**	*e*P	**P**	**07 09 02.0**	**+3.8**
MJA0				pmax	pmax		
	comp=Z,1.0nm,0.3s						
MAJO	**Matsushiro**	**17.39**	**233**	*i* P	**P**	**07 09 00.1**	**+1.7**
MAJO				pmax	pmax		
	comp=Z,64nm,0.9s						
MJAR	**Matsushiro Arr**	**17.39**	**233**	P	**Pn**	**07 08 57.0**	**-0.5**
	comp=Z,0.2nm,0.3s,baz=33,slow=12,SNR=3.6						
MJAR				LR	LR	07 16 25.8	
	comp=Z,29nm,20.1s,baz=5.0,slow=40						
BMKR	**Bomnak**	**17.51**	**301**	*e*P	**P**	**07 08 59.4**	**-0.2**
KROS	**Kirovskiy**	**18.55**	**299**	*e*P	**Pn**	**07 09 11.6**	**0.0**
KROS				AMB	AMB	07 09 14.0	
	comp=Z,10.0nm,1.0s						
YAK	**Yakutsk**	**19.71**	**323**	LR	LR	07 16 36.4	
	comp=Z,72nm,19.4s,baz=105,slow=36						
YAK	**Yakutsk**	**19.71**	**323**	*i* P	**P**	**07 09 23.3**	**-0.3**
YAK	**Yakutsk**	**19.71**	**323**	*e*P	**P**	**07 09 23.3**	**-0.3**
CLNS	**Chul'man**	**20.09**	**306**	*e*P	**Pn**	**07 09 31.7**	**+1.7**
CLNS				pmax	pmax		
	comp=Z,16nm,1.0s						
CLNS				pmax	pmax		
	comp=E,13nm,1.0s						
CLNS				pmax	pmax		
	comp=N,14nm,1.0s						
BILL	**Bilibino**	**20.29**	**12**	*i* P	**P**	**07 09 28.9**	**-1.1**
BILL				*i*		07 13 47.4	
BILL				pmax	pmax		
	comp=Z,2.0nm,0.9s						
BILL	**Bilibino**	**20.29**	**12**	*e*P	**P**	**07 09 28.9**	**-1.1**
KSRS	**Korea Array**	**22.81**	**251**	P	**P**	**07 09 56.9**	**-0.3**
	comp=Z,4.1nm,0.6s,baz=51,slow=10,SNR=11						
JNU	**Nakatsue**	**23.96**	**239**	LR	LR	07 18 41.9	
	comp=Z,13nm,19.7s,baz=116,slow=34						
TIXI	**Tiksi**	**26.20**	**341**	LR	LR	07 21 56.7	
	comp=Z,44nm,18.5s,baz=103,slow=39						
TIXI	**Tiksi**	**26.20**	**341**	*i* P	**P**	**07 10 26.4**	**-1.9**
TIXI				pmax	pmax		
	comp=Z,2.0nm,0.8s						
TIXI	**Tiksi**	**26.20**	**341**	*e*P	**P**	**07 10 26.4**	**-1.9**
H11N2	**WAKE ISLAND Hy**	**30.23**	**158**	T	T	07 43 08.0	
	baz=344,slow=76,SNR=247						
H11N1	**WAKE ISLAND Hy**	**30.25**	**158**	T	T	07 43 04.8	
	baz=344,slow=76,SNR=394						
H11N3	**WAKE ISLAND Hy**	**30.25**	**158**	T	T	07 43 03.9	
	baz=344,slow=76,SNR=186						
H11S1	**WAKE ISLAND Hy**	**31.36**	**159**	T	T	07 44 33.0	
	baz=345,slow=76,SNR=2834						
H11S3	**WAKE ISLAND Hy**	**31.37**	**159**	T	T	07 44 27.1	
	baz=345,slow=76,SNR=3165						
H11S2	**WAKE ISLAND Hy**	**31.38**	**159**	T	T	07 44 30.4	
	baz=345,slow=76,SNR=2181						
SONM	**Songino Array**	**32.20**	**288**	LR	LR	07 25 31.3	
	comp=Z,76nm,19.2s,baz=69,slow=38						
ILAR	**Eielson Array**	**34.18**	**40**	P	**P**	**07 11 39.5**	**+0.5**
	comp=Z,0.6nm,0.8s,baz=244,slow=8.0,SNR=6.3						
ILAR	**Eielson Array**	**34.18**	**40**	*e*P	**P**	**07 11 38.6**	**-0.4**
ILAR				pmax	pmax		
	comp=Z,1.0nm,0.8s						
ILAR	**Eielson Array**	**34.18**	**40**	*e*P	**P**	**07 11 38.6**	**-0.4**
INK	**Inuvik**	**39.30**	**34**	P	**P**	**07 12 23.6**	**+1.2**
	comp=Z,1.3nm,0.6s,baz=8.1,slow=7.1,SNR=2.7						
ZALV	**Zalesovo Beam**	**42.80**	**305**	LR	LR	07 31 19.3	
	comp=Z,42nm,18.8s,baz=20,slow=37						
MKAR	**Makanchi Array**	**47.47**	**297**	P	**P**	**07 13 28.0**	**-0.5**
	comp=Z,0.6nm,0.5s,baz=69,slow=8.6,SNR=7.9						
MKAR				LR	LR	07 33 51.2	
	comp=Z,40nm,20.8s,baz=42,slow=37						
KURK	**Kurchatov**	**47.64**	**303**	P	**P**	**07 13 28.6**	**-1.1**
KURK				pmax	pmax		
	comp=Z,1.0nm,0.6s						
KURK	**Kurchatov**	**47.64**	**303**	*e*P	**P**	**07 13 28.6**	**-1.1**
KURBB	**Kurchatov Arra**	**47.73**	**303**	P	**P**	**07 13 28.6**	**-1.8**
	comp=Z,0.9nm,0.5s,baz=65,slow=8.3,SNR=7.5						
YKA	**Yellowknife Ar**	**48.56**	**38**	P	**P**	**07 13 37.5**	**+0.9**
	comp=Z,0.8nm,0.8s,baz=295,slow=7.2,SNR=9.5						
RES	**Resolute Bay**	**48.63**	**19**	LR	LR	07 37 07.1	
	comp=Z,28nm,18.2s,baz=40,slow=40						
BVAR	**Borovoye Array**	**50.89**	**309**	P	**P**	**07 13 54.0**	**-0.6**
	comp=Z,0.7nm,0.3s,baz=33,slow=7.2,SNR=5.3						
BVAR	**Borovoye Array**	**50.89**	**309**	P	**P**	**07 13 54.0**	**-0.6**
BVAR				pmax	pmax		
	comp=Z,1.0nm,0.4s						
CMAR	**Chiang Mai Arr**	**54.27**	**257**	P	**P**	**07 14 21.6**	**+1.6**
	comp=Z,1.4nm,0.3s,baz=35,slow=6.8,SNR=9.2						
CMAR	**Chiang Mai Arr**	**54.27**	**257**	*e*P	**P**	**07 14 22.3**	**+2.3**
CMAR				pmax	pmax		
	comp=Z,1.0nm,0.3s						
CMAR	**Chiang Mai Arr**	**54.27**	**257**	*e*P	**P**	**07 14 22.3**	**+2.3**
ARU	**Arti**	**54.70**	**317**	*d i*P	**P**	**07 14 21.0**	**-1.6**
ARU						07 16 20.5	
ARU				S	**S**	**07 21 58.8**	**-0.7**
ARU				SS	**SS**	**07 25 39.3**	**-2.8**
ARU				pmax	pmax		
	comp=Z,11nm,2.5s						
ARU	**Arti**	**54.70**	**317**	⇓*i*P	**P**	**07 14 21.0**	**-1.6**
YBH	**Yreka Blue Hor**	**55.56**	**64**	LR	LR	07 35 37.0	
	comp=Z,65nm,18.6s,baz=42,slow=33						
ARCES	**ARCESS Array B**	**56.63**	**341**	LR	LR	07 42 27.7	
	comp=Z,39nm,20.2s,baz=38,slow=40						
KLMR	**Klimovskoe**	**59.34**	**329**	*e*P	**P**	**07 14 52.0**	**-3.3**
KLMR				pmax	pmax		
	comp=Z,6.0nm,1.2s						
NVAR	**Mina Array Bea**	**60.26**	**65**	P	**P**	**07 15 04.7**	**+2.3**
	comp=Z,0.8nm,0.7s,baz=299,slow=7.9,SNR=5.4						
PDAR	**Pinedale Array**	**62.46**	**56**	P	**P**	**07 15 18.9**	**+1.8**
	comp=Z,1.8nm,0.9s,baz=303,slow=3.3,SNR=12						
BORG	**Borgarnes**	**67.00**	**358**	LR	LR	07 44 18.1	
	comp=Z,27nm,19.7s,baz=54,slow=35						
WRA	**Warramunga Arr**	**70.74**	**201**	P	**P**	**07 16 10.6**	**+0.9**
	comp=Z,2.3nm,1.0s,baz=16,slow=6.4,SNR=6.9						
ASAR	**Alice Springs**	**74.42**	**200**	P	**P**	**07 16 33.3**	**+1.7**
	comp=Z,0.9nm,0.7s,baz=14,slow=5.3,SNR=10						
TXAR	**Lajitas Array**	**75.29**	**62**	P	**P**	**07 16 38.4**	**+1.5**
	comp=Z,2.2nm,0.7s,baz=300,slow=4.6,SNR=33						

WEL 27 07:10:46.9±0.8, 37°.01S×177°.47E, h137km±5km, ML3.6/5, 10C, Error ellipse: s-maj=4.8km s-min=2.5km az=0.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HAZ	**Te Kaha**	**0.78**	**162**	⇑PN	Pn	07 11 08.4	-0.2
MXZ	**Matakaoa Point**	**0.86**	**130**	PN	Pn	07 11 09.6	+0.3
MXZ				AML	AML	07 11 30.3	
MXZ				AML	AML	07 11 31.9	
PKGZ	**Pakihiroa**	**1.00**	**151**	PN	Pn	07 11 10.5	0.0
WMGZ	**Waiomatatini S**	**1.10**	**137**	⇑PN	Pn	07 11 11.2	-0.1
WMGZ				SN	Sn	07 11 29.6	-0.4
OPRZ	**Ohinepanea**	**1.11**	**221**	PN	Pn	07 11 11.9	+0.4
PUZ	**Puketiti**	**1.23**	**150**	⇑PN	Pn	07 11 12.3	-0.4
PUZ				AML	AML	07 11 33.5	
TWGZ	**Tauwhareparae**	**1.23**	**161**	PN	Pn	07 11 13.1	+0.4
URZ	**Urewera**	**1.28**	**193**	⇑PN	Pn	07 11 13.3	+0.2
URZ				AML	AML	07 11 13.6	
URZ				AML	AML	07 11 34.0	
MWZ	**Matawai**	**1.32**	**178**	⇑PN	Pn	07 11 13.6	0.0
MWZ				AML	AML	07 11 14.6	
MWZ				AML	AML	07 11 40.1	
TKGZ	**Te Karaka**	**1.46**	**168**	⇑PN	Pn	07 11 14.9	0.0
RAGZ	**Rawiri**	**1.48**	**182**	PN	Pn	07 11 15.7	+0.3
MUGZ	**Murupara**	**1.57**	**201**	⇑PN	Pn	07 11 16.5	+0.3
CNGZ	**Carnagh Statio**	**1.58**	**159**	⇑PN	Pn	07 11 16.5	+0.2
RTZ	**Ruatahuna**	**1.65**	**194**	PN	Pn	07 11 16.9	-0.3
RIGZ	**Rimuhau**	**1.71**	**172**	⇑PN	Pn	07 11 17.6	-0.3
PRRZ	**Plateau Road**	**1.71**	**210**	PN	Pn	07 11 18.5	+0.6
SNGZ	**Shannon Statio**	**1.77**	**183**	PN	Pn	07 11 18.3	-0.3
RAHZ	**Arahi**	**1.93**	**189**	PN	Pn	07 11 20.4	0.0
PRGZ	**Paritu Road**	**1.94**	**171**	PN	Pn	07 11 19.9	-0.6
MRHZ	**Matea Rd**	**2.00**	**204**	PN	Pn	07 11 21.3	0.0
KNZ	**Kokohu**	**2.01**	**176**	⇑PN	Pn	07 11 20.7	-0.6
WHHZ	**Waihua**	**2.07**	**185**	PN	Pn	07 11 21.9	-0.2
NMHZ	**Naumai**	**2.15**	**194**	PN	Pn	07 11 23.3	+0.2
MHGZ	**Mahia Peninsul**	**2.17**	**171**	PN	Pn	07 11 22.7	-0.6
ARHZ	**Aropaoanui**	**2.28**	**189**	PN	Pn	07 11 24.2	-0.4
BKZ	**Black Stump Fm**	**2.29**	**199**	PN	Pn	07 11 24.3	-0.4
MCHZ	**McNeill Hill**	**2.51**	**194**	PN	Pn	07 11 27.1	-0.4
CKHZ	**Cape Kidnapper**	**2.66**	**187**	PN	Pn	07 11 28.3	-1.1
BHHZ	**Black Hill Sta**	**2.71**	**204**	PN	Pn	07 11 29.2	-0.9
WNVZ	**Wahianoa**	**2.75**	**212**	PN	Pn	07 11 30.6	0.0
MOVZ	**Moawhango**	**2.75**	**209**	PN	Pn	07 11 29.8	-0.8
KRHZ	**Kereru**	**2.77**	**198**	PN	Pn	07 11 29.3	-1.4
KAHZ	**Kahuranaki**	**2.82**	**189**	PN	Pn	07 11 30.2	-1.2
PXZ	**Pawanui**	**3.05**	**189**	PN	Pn	07 11 32.4	-1.9
PXZ				AML	AML	07 12 00.3	
PXZ				AML	AML	07 12 11.1	
PXZ				AML	AML	07 12 11.1	
PNHZ	**Pukenui**	**3.07**	**199**	PN	Pn	07 11 32.6	-2.0
TSZ	**Takapari Road**	**3.27**	**201**	PN	Pn	07 11 35.0	-2.2
PRWZ	**Pori Road**	**3.73**	**198**	PN	Pn	07 11 41.4	-1.8
OGWZ	**Otaki Gorge**	**4.20**	**205**	PN	Pn	07 11 46.5	-3.0
TCW	**Tory Channel**	**4.88**	**210**	PN	Pn	07 11 54.8	-3.5
MQZ	**McQueen's Vall**	**7.63**	**207**	PN	Pn	07 12 29.1	-6.2

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*IDC **27** 07:11:47.9±0.8, 0°.25N×97°.66E, h0km, mb4.4/16, mb1 4.4/18, mb1mx4.2/50, mbtmp4.3/18, ML4.2/2, MS3.5/8, Ms1 3.5/8, ms1mx3.2/46, Error ellipse: s-maj=24.8km s-min=14.5km az=51.0*
*ISCJB **27** 07:11:50.2±0.4, 0°.24N±0°.04×97°.65E±0°.05, h29km, mb4.5/30, MS3.6/5, Error ellipse: s-maj=8.9km s-min=4.4km az=143.8*
*DJA **27** 07:11:52.3±0.5, 0°.N±4°.×9°.8E±°, h10km, M4.9/15, mb4.9/7, mB5.6/5, MLv4.7/15, Mw(mB)5.2/5*
*NEIC **27** 07:11:53.1±1.1, 0°.28N×97°.69E, h35km±8km, mb4.6/16, Error ellipse: s-maj=13.2km s-min=4.9km az=57.0*
ISC 27 07:11:52.7±0.6, 0°.36N±0°.06×97°.71E±0°.08, h29km, n91, σ1§02/79, mb4.5/29, MS3.6/5, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GSI	**Gunungsitoli**	**0.95**	**352**	P	**Pn**	**07 12 10.5**	**+0.4**
GSI	**Gunungsitoli**	**0.95**	**352**	*e*Pn	**Pn**	**07 12 10.4**	**+0.3**
GSI				*e*Sn	Sb	07 12 31.5	+8.7
MNSI	**Mandailing Nat**	**1.92**	**77**	P	**Pn**	**07 12 23.9**	**+0.4**
PSI	**Prapat**	**2.72**	**27**	Pn	**Pn**	**07 12 33.3**	**-1.2**
	7.6nm,0.3s,baz=188,slow=11,SNR=39						
PSI				LR	LR	07 13 24.8	
	comp=Z,437nm,20.8s,baz=152,slow=35						
PSI	**Prapat**	**2.72**	**27**	*e*Pn	**Pn**	**07 12 34.3**	**-0.2**
PPI	**Padang Panjang**	**2.81**	**107**	P	**Pn**	**07 12 36.1**	**+0.5**
KCSI	**Kotacane, Aceh**	**3.15**	**1**	P	**Pn**	**07 12 40.4**	**+0.1**
TSI	**Tuntungan**	**3.24**	**15**	P	**Pn**	**07 12 42.8**	**+1.2**
BKNI	**Bangkinang**	**3.33**	**91**	P	**Pn**	**07 12 45.1**	**+2.2**
BKNI	**Bangkinang**	**3.33**	**91**	*e*Pn	**Pn**	**07 12 43.7**	**+0.8**
PPSI	**Pulau Pagai**	**3.86**	**143**	P	**Pn**	**07 12 52.4**	**+2.3**
SDSI	**Sungai Dareh**	**3.94**	**109**	P	Pn	07 12 56.4	+5.2
MLSI	**Meulaboh, Aceh**	**4.10**	**342**	P	**Pn**	**07 12 52.5**	**-0.9**
LHMI	**Lhok Sumawe**	**4.90**	**351**	P	**Pn**	**07 13 06.9**	**+2.5**
IPM	**Ipoh**	**5.27**	**39**	*e*Pn	**Pn**	**07 13 11.2**	**+1.7**
KULM	**Kulim**	**5.71**	**31**	*e*Pn	**Pn**	**07 13 16.6**	**+0.9**
MYKOM	**Kota Tinggi**	**6.30**	**77**	*e*Pn	**Pn**	**07 13 24.9**	**+1.2**
TPRI	**Tanjung Pinang**	**6.84**	**85**	P	**Pn**	**07 13 31.4**	**+0.3**
	62nm,0.4s,7μm						
MNAI	**Manna**	**7.03**	**132**	P	**Pn**	**07 13 34.1**	**+0.3**
	138nm,1.2s,4μm						
MNAI	**Manna**	**7.03**

TLY	Talaya	51.38	5	*e*P	P	07 20 56.1	+1.4
	4.1nm,0.7s						
STKA	Stephens Creek	52.42	132	P	P	07 21 03.2	+0.4
	0.5nm,0.3s,baz=309,slow=12,SNR=3.7						
STKA				LR	LR	07 45 08.9	
	comp=Z,83nm,20.9s,baz=212,slow=38						
KURBB	Kurchatov Arra	52.67	345	P	P	07 21 04.8	+0.6
	3.1nm,0.7s,baz=166,slow=7.1,SNR=28						
KURK	Kurchatov	52.73	345	P	P	07 21 04.8	+0.1
USRK	Ussuriysk Ar.	53.23	30	P	P	07 21 09.2	+0.6
	8.4nm,0.9s,baz=230,slow=5.4,SNR=12						
ZAA0	Zalesovo Array	54.47	351	*e*P	P	07 21 17.8	+0.4
ZALV	Zalesovo Beam	54.47	351	P	P	07 21 17.9	+0.6
	13nm,0.7s,baz=180,slow=6.4,SNR=27						
KLR	Kul'dur	56.78	26	P	P	07 21 34.5	+0.4
	3.8nm,0.5s,baz=241,slow=6.1,SNR=14						
BRVK	Borovoye	57.27	341	*e*P	P	07 21 36.8	-0.7
ZRNK	Zerenda	57.61	340	*e*P	P	07 21 39.9	-0.1
	2.6nm,0.9s						
ABKAR	Akbulak array	58.49	332	*e*P	P	07 21 45.9	-0.2
ARU	Arti	64.15	337	LR	LR	07 51 18.9	
	comp=Z,41nm,22.0s,baz=200,slow=37						
KBZ	Khabaz	65.04	319	P	P	07 22 30.9	+0.6
	1.5nm,0.8s,baz=141,slow=6.5,SNR=3.4						
BRTR	Keskin Array B	70.05	312	P	P	07 23 01.8	-0.5
	0.3nm,0.4s,baz=132,slow=8.5,SNR=2.5						
TIXI	Tiksi	73.92	10	*e*P	P	07 23 24.4	-0.3
	5.6nm,0.8s						
AKASG	Malin Array Be	76.23	322	P	P	07 23 37.1	-1.3
	0.2nm,0.2s,baz=90,slow=4.8,SNR=5.4						
GERES	GERESS Array B	85.78	319	P	P	07 24 29.9	+0.4
	0.2nm,0.4s,baz=45,slow=4.0,SNR=4.1						
TTA	Tatalina	97.05	26	*e*P	Pdif	07 25 22.5	+0.6
	18nm,1.9s						
H09N1	TRISTAN DA CUN	106.11	231	T	T	09 24 45.7	
	SNR=21						
NVAR	Mina Array Bea	129.16	37	PKP	PKPdf	07 31 00.2	+1.3
	0.2nm,0.4s,baz=297,slow=4.0,SNR=3.1						
DAC	Darwin (Calif)	130.98	38	*e*PKPdf	PKPdf	07 30 59.9	-2.5
WMOK	Wichita Mounta	141.83	22	*e*PKPdf	PKPdf	07 31 20.0	-2.3
TX31	Lajitas Ar. Si	144.10	33	*e*PKPdf	PKPab	07 31 24.7	+0.7
TXAR	Lajitas Array	144.11	33	PKP	PKPbc	07 31 25.4	+0.9
	0.3nm,0.6s,baz=235,slow=1.2,SNR=6.2						
WLAR	White Oak Lake	144.64	16	*e*PKPdf	PKPab	07 31 25.9	+0.2
HPIG		144.75	38	*e*PKPdf	PKPdf	07 31 27.8	-0.1

WEL 27 07:13:37.1±0.5, 37°73S×176°60E, h138km±3km, ML3.5/5, 3C-1D, Error ellipse: s-maj=3.7km s-min=3.6km az=0.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	Urewera	0.67	142	⇑PN	Pn	07 13 58.0	0.0
MUGZ	Murupara	0.76	170	PN	Pn	07 13 58.9	+0.3
MUGZ				SN	Sn	07 14 15.2	+0.1
RTZ	Ruatahuna	0.93	161	⇑PN	Pn	07 14 00.2	+0.1
HAZ	Te Kaha	0.94	92	SN	Sn	07 14 17.3	-0.3
MWZ	Matawai	0.95	129	PN	Pn	07 13 60.0	-0.3
RAGZ	Rawiri	1.00	140	PN	Pn	07 14 00.9	+0.1
MRHZ	Matea Rd	1.11	187	PN	Pn	07 14 01.9	+0.1
TWGZ	Tauwhareparae	1.18	112	PN	Pn	07 14 02.4	-0.1
PKGZ	Pakihiroa	1.18	98	PN	Pn	07 14 02.5	0.0
SNGZ	Shannon Statio	1.20	151	PN	Pn	07 14 02.9	+0.3
TKGZ	Te Karaka	1.21	126	PN	Pn	07 14 02.6	0.0
RAHZ	Arahi	1.24	162	PN	Pn	07 14 03.2	+0.2
RIGZ	Rimuhau	1.34	137	PN	Pn	07 14 04.0	0.0
NMHZ	Naumai	1.37	173	PN	Pn	07 14 05.0	+0.6
BKZ	Black Stump Fm	1.43	183	PN	Pn	07 14 04.7	-0.4
BKZ				AML	AML	07 14 26.4	
WMGZ	Waiomatatini S	1.44	94	PN	Pn	07 14 04.8	-0.3
CNGZ	Carnagh Statio	1.48	121	PN	Pn	07 14 05.6	+0.2
KNZ	Kokohu	1.54	147	PN	Pn	07 14 05.7	-0.5
ARHZ	Aropaoanui	1.56	168	PN	Pn	07 14 06.3	0.0
PRGZ	Paritu Road	1.56	140	PN	Pn	07 14 06.0	-0.4
MCHZ	McNeill Hill	1.71	177	PN	Pn	07 14 08.1	+0.1
MHGZ	Mahia Peninsul	1.75	144	PN	Pn	07 14 08.3	-0.2
BHHZ	Black Hill Sta	1.80	193	⇑PN	Pn	07 14 08.7	-0.5
KRHZ	Kereru	1.92	185	PN	Pn	07 14 09.7	-0.8
CKHZ	Cape Kidnapper	1.96	169	⇓PN	Pn	07 14 10.5	-0.4
KAHZ	Kahuranaki	2.07	174	PN	Pn	07 14 11.8	-0.6
PNHZ	Pukenui	2.20	188	PN	Pn	07 14 12.9	-1.0
PXZ	Pawanui	2.30	175	PN	Pn	07 14 13.9	-1.2
PXZ				AML	AML	07 14 45.1	
PXZ				AML	AML	07 14 45.1	
TSZ	Takapari Road	2.37	192	PN	Pn	07 14 14.8	-1.3
PRHZ	Porangahau	2.53	179	PN	Pn	07 14 16.6	-1.4
ANWZ	Angora Road	2.72	182	PN	Pn	07 14 18.9	-1.5
OGWZ	Otaki Gorge	3.27	199	PN	Pn	07 14 25.2	-2.3
KIW	Kapiti Island	3.39	202	AML	AML	07 15 06.0	
TMWZ	Te Maipa	3.41	189	PN	Pn	07 14 26.6	-2.7

GUC 27 07:15:08.1±0.4, 40°57S×72°17W, h21km±15km, ML3.5, 1C, Central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PUEL	Puelo Alto	1.10	185	*e*P	Pb	07 15 28.6	+0.2
VLCH	Valdivia	1.12	312	*e*P	Pb	07 15 29.2	+0.4
VLCH				*e*S	Sn	07 15 44.5	+1.1
VLCH				IAML		07 15 47.6	
	comp=E,2μm,0.4s						
PLCA	Paso Flores	1.24	98	⇑*i*P	Pb	07 15 31.2	+0.4
PLCA				*i*S	Sn	07 15 48.6	+2.2

IDC 27 07:23:29.8±7.0, 6°60S×149°73E, h77km±50km, mb3.3/1, mb1 3.8/3, ms1mx3.2/38, mbtmp3.9/3, ML4.1/1, MS1.9/1, Ms1 1.9/1, ms1mx1.9/11, Error ellipse: s-maj=110.5km s-min=45.9km az=125.0, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	Port Moresby	3.78	222	P	Pn	07 24 26.5	+0.9
	8.0nm,0.3s,baz=51,slow=6.4,SNR=13						
PMG				S	Sn	07 25 09.5	+0.6
	9.2nm,0.3s,baz=34,slow=18,SNR=8.7						
PMG				LR	LR	07 25 41.4	
	comp=Z,18nm,21.6s,baz=69,slow=35						
WRA	Warramunga Arr	19.98	227	P	P	07 27 54.9	-1.3
	0.6nm,0.3s,baz=52,slow=11,SNR=30						
ASAR	Alice Springs	22.79	220	P	P	07 28 26.2	0.0
	0.9nm,0.4s,baz=55,slow=9.0,SNR=15						
TORD	Torodi Ar. Bea	147.87	284	PKPbc	PKPbc	07 43 07.0	-0.2
	0.3nm,0.8s,baz=78,slow=3.1,SNR=3.4						

*IDC **27** 07:28:52.5±0.6, 25°47N×142°75E, h0km, mb4.0/22, mb1 4.2/22, mb1mx4.1/52, mbtmp4.0/22, MS3.3/4, Ms1 3.3/4, ms1mx2.8/43, Error ellipse: s-maj=21.6km s-min=13.8km az=79.0*

*ISCJB **27** 07:28:56.4±0.4, 25°40N±0°06×142°8E±0°1, h40km, mb4. 1/27, MS3.8/2, Error ellipse: s-maj=14.7km s-min=7.6km az=164.0*

*NEIC **27** 07:28:58.2±1.5, 25°48N×142°76E, h38km±13km, mb4.3/5, Error ellipse: s-maj=12.1km s-min=8.4km az=88.0*

ISC 27 07:28:58.3±0.6, 25°42N±0°09×142°8E±0°2, h40km, n40, σ0°98/35, mb4.1/27, Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	Chichi jima	1.75	343	*e*Pn	Pn	07 29 24.6	-1.6
CBIJ				*e*Sg	Sn	07 29 50.6	+3.4
JCJ	Chichijima	1.75	343	Pn	Pn	07 29 25.2	-1.0
	156nm,0.3s,baz=287,slow=23,SNR=171						
JCJ				Sn	Sn	07 29 48.0	+0.8
	baz=270,slow=20						
MJAR	Matsushiro Arr	11.75	342	LR	LR	07 36 00.6	
	comp=Z,50nm,20.1s,baz=185,slow=37						
GUMO	Guam	11.93	170	LR	LR	07 35 08.5	
	comp=Z,39nm,20.6s,baz=94,slow=31						
KSRS	Korea Array	17.41	317	P	P	07 32 59.2	+0.1
	0.1nm,0.3s,baz=137,slow=13,SNR=3.2						
KSAR	Wonju Array Be	17.43	317	P	P	07 32 59.1	-0.1
USRK	Ussuriysk Ar.	20.68	338	P	P	07 33 35.2	+0.4
	1.9nm,0.7s,baz=144,slow=7.1,SNR=5.9						
H11N3	WAKE ISLAND Hy	23.01	99	T	T	07 57 36.9	
	SNR=3.1						
H11S1	WAKE ISLAND Hy	23.23	102	T	T	07 57 54.1	
	baz=293,slow=74,SNR=3.9						
H11S2	WAKE ISLAND Hy	23.24	102	T	T	07 57 55.0	
	baz=37,slow=74,SNR=2.6						
KLR	Kul'dur	25.27	343	P	P	07 34 20.6	-0.1
	1.5nm,0.5s,baz=146,slow=8.0,SNR=8.2						
SIJI	Sorong	28.39	205	LR	LR	07 43 34.3	
	comp=Z,132nm,18.2s,baz=238,slow=31						
WRAB	Tennant Creek	45.81	191	*e*P	P	07 37 17.1	+0.7
	6.2nm,0.7s						
WRA	Warramunga Arr	45.82	191	P	P	07 37 17.4	+0.9
	3.5nm,0.6s,baz=10,slow=8.5,SNR=32						
ASAR	Alice Springs	49.54	191	P	P	07 37 45.6	+0.3
	0.7nm,0.6s,baz=16,slow=14,SNR=11						
MKAR	Makanchi Array	51.94	311	P	P	07 38 02.7	-0.5
	0.4nm,0.4s,baz=89,slow=11,SNR=9.0						
NRIK	Noril'sk	54.39	339	P	P	07 38 20.7	-0.1
	1.4nm,0.4s,baz=89,slow=11,SNR=2.5						
KURK	Kurchatov	54.52	315	*e*P	P	07 38 23.1	+1.0
	60nm,1.0s						
KURBB	Kurchatov Arra	54.58	315	P	P	07 38 21.8	-0.8
	1.8nm,0.5s,baz=91,slow=8.0,SNR=21						
STKA	Stephens Creek	56.98	181	P	P	07 38 40.1	+0.3
	1.2nm,0.8s,baz=321,slow=12,SNR=3.1						
BPAW	Bear Paw Mtn.	57.09	29	*e*P	P	07 38 40.8	+0.5
	0.4nm,1.1s						
TRF	Thorofare Moun	57.29	29	*e*P	P	07 38 41.3	-0.7
	3.9nm,1.0s						
ILAR	Eielson Array	58.94	28	P	P	07 38 52.4	-0.9
	1.0nm,0.7s,baz=257,slow=6.1,SNR=15						
BVAR	Borovoye Array	59.62	318	P	P	07 38 57.2	-0.9
	2.5nm,0.5s,baz=96,slow=6.9,SNR=8.9						
BRVK	Borovoye	59.68	318	*e*P	P	07 38 58.3	-0.3
	2.1nm,0.7s						
INK	Inuvik	64.34	24	P	P	07 39 28.7	-0.9
	1.9nm,0.8s,baz=114,slow=2.8,SNR=3.9						
ABKAR	Akbulak array	66.63	315	*e*P	P	07 39 43.7	-1.0
	0.9nm,0.6s						
AKTO	Aktyubinsk	67.59	316	P	P	07 39 49.6	-1.1
	0.4nm,0.3s,baz=96,slow=13,SNR=2.5						
YKA	Yellowknife Ar	73.38	28	P	P	07 40 25.4	-0.4
	1.1nm,0.7s,baz=293,slow=6.1,SNR=20						
RPZ	Rata Peaks	73.54	159	LR	LR	08 10 21.0	
	comp=Z,98nm,21.6s,baz=212,slow=34						
ARCES	ARCESS Array B	75.29	341	P	P	07 40 38.1	+1.3
	4.2nm,1.0s,baz=60,slow=7.2,SNR=6.3						
KBZ	Khabaz	79.52	313	P	P	07 41 01.9	+0.9
	1.8nm,0.7s,baz=72,slow=3.2,SNR=3.5						
FINES	FINESS Array B	79.67	334	P	P	07 41 01.0	-0.4
	1.5nm,0.4s,baz=71,slow=4.4,SNR=10						
NVAR	Mina Array Bea	81.16	52	P	P	07 41 10.8	+0.5
	0.7nm,0.6s,baz=295,slow=5.9,SNR=5.4						
AKASG	Malin Array Be	84.27	324	P	P	07 41 25.7	-0.1
	0.5nm,0.4s,baz=52,slow=5.2,SNR=3.0						
PDAR	Pinedale Array	85.05	45	P	P	07 41 29.8	-0.4
	0.3nm,0.5s,baz=90,slow=1.5,SNR=4.0						
HFS	Hagfors	85.16	337	P	P	07 41 29.1	-1.0
	0.9nm,0.5s,baz=72,slow=14,SNR=5.0						
NOA	NORSAR Array B	85.35	339	P	P	07 41 30.2	-0.9
	1.1nm,0.8s,baz=44,slow=4.8,SNR=3.4						
TXAR	Lajitas Array	96.19	54	P	P	07 42 23.3	+0.6
	0.6nm,1.0s,baz=238,slow=3.1,SNR=3.5						
LPAZ	La Paz	149.81	79	PKPbc	PKPbc	07 48 46.6	+1.0
	1.1nm,0.6s,baz=283,slow=3.2,SNR=7.1						

HLW 27 07:35:44.9, 30°96N×35°01E, h10km±14km, Ml2.6, Dead Sea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNKL	Nakhl	1.35	221	P	Pn	07 36 08.9	-0.9
	baz=222						
HNKL				AMP		07 36 00.0	
	comp=E,80μm,0.4s,logA/T=5.3,baz=222						
HNKL				S	Sb	07 36 26.7	-1.0
	baz=222						
HBST	Basata	1.75	188	P	Pn	07 36 14.6	-0.7
	baz=188						
NUB		1.95	189	P	Pn	07 36 17.6	-0.3
	baz=190						
SUZ	Suez	2.18	240	P	Pn	07 36 20.5	-0.8
	baz=240						
HDHB	Dhahab	2.25	189	P	Pn	07 36 21.4	-0.8
	baz=189						
ZAF	Zafarana	2.71	233	P	Pn	07 36 28.1	-0.3
	baz=233						
TR2	Tor 2	2.80	204	P	Pn	07 36 29.3	-0.3
	baz=204						
TR1	Tor 1	3.08	198	P	Pn	07 36 32.6	-0.9
	baz=198						

*MOS **27** 07:43:36.8±1.0, 39°17N×29°12E, h11km, mb4.5/30, Error ellipse: s-maj=5.9km s-min=3.7km az=87.1*

*IDC **27** 07:43:36.4±0.6, 39°09N×29°07E, h0km, mb4.1/21, mb1 4.2/30, mb1mx4.1/50, mbtmp4.2/30, ML3.8/9, MS3.6/18, Ms1 3.6/18, ms1mx3.5/35, Error ellipse: s-maj=13.4km s-min=9.8km az=13.0*

*HLW **27** 07:43:37.1, 39°21N×29°11E, h33km±20km, Ml3.9*

*DDA **27** 07:43:37.1, 39°14N×29°12E, h19km, Ml4.4*

*NEIC **27** 07:43:37.4, 39°11N×29°10E, h10km, mb4.4/23, ML4.5(THE), ML4.5(ISK), After ISK.*

*ISK **27** 07:43:37.7, 39°12N×29°04E, h9km, ML4.5*

*CSEM **27** 07:43:38.5±0.1, 39°11N×29°08E, h10km, mb4.4/29, Error ellipse: s-maj=2.0km s-min=1.8km az=60.0*

*ISCJB **27** 07:43:38.1±0.3, 39°14N±0°01×29°06E±0°01, h14km±2km, mb4.3/43, MS3.6/11, Error ellipse: s-maj=1.7km s-min=1.7km az=45.0*

*THE **27** 07:43:39.1, 39°12N×29°01E, h7km±2km, ML4.5/3, Error ellipse: s-maj=2.3km s-min=0.9km az=129.0*

*SOF **27** 07:43:47.3, 39°87N×28°57E, h2km, MD3.7*

ISC 27 07:43:38.0±0.9, 39°13N±0°01×29°09E±0°01, h9km±6km, n693, σ1°30/764, mb4.3/43, MS3.7/11, 50C-39D, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.30	254	P	Pg	07 43 44.1	+0.1
DEMI				S	Sg	07 43 48.5	+0.5
DEMI	Demirci	0.30	254	⇑*i*P	Pg	07 43 44.1	+0.1
DEMI				*i*S	Sg	07 43 48.5	+0.5
GDZ	Gediz	0.31	96	P	Pg	07 43 43.7	-0.6
GDZ				S	Sg	07 43 48.1	-0.3
GDZ	Gediz	0.31	96	⇑*i*P	Pg	07 43 43.6	-0.6
GDZ				*i*S	Sg	07 43 48.1	-0.3
TVSB	Tavsanli	0.44	42	PG	Pg	07 43 46.3	-0.3
TVSB	Tavsanli	0.44	42	*i*Pg	Pg	07 43 46.3	-0.3
DST	Dursunbey	0.60	323	PG	Pg	07 43 50.3	+0.6
DST	Dursunbey	0.60	323	*i*Pg	Pg	07 43 50.3	+0.6
DURS	Dursunbey	0.67	315	P	Pg	07 43 50.9	-0.1
DURS	Dursunbey	0.67	315	⇑*i*P	Pg	07 43 50.9	-0.1
DURS				*i*S	Sn	07 44 05.0	+0.4
KULA	Kula-Manisa	0.69	209	PG	Pg	07 43 51.0	-0.4
KULA				SG	Sg	07 44 01.0	+0.5
KULA	Kula-Manisa	0.69	209	P	Pg	07 43 50.9	-0.5
KULA				S	Sg	07 44 00.7	+0.2
KULA	Kula-Manisa	0.69	209	P	Pg	07 43 50.9	-0.5
KULA				S	Sg	07 44 00.7	+0.2
KULA				*i*Sg	Sg	07 44 01.0	+0.5
KULA	Kula-Manisa	0.69	209	P	Pg	07 43 50.9	-0.5
MANT	Manisa	0.76	213	P	Pg	07 43 52.0	-0.6
MANT				S	Sg	07 44 01.7	-0.8
MANT	Manisa	0.76	213	⇑*i*P	Pg	07 43 52.0	-0.6
MANT				*i*S	Sg	07 44 01.7	-0.8
KHAL	Karahalli	0.82	157	P	Pg	07 43 53.2	-0.6
KHAL				S	Sg	07 44 04.5	+0.1
KHAL	Karahalli	0.82	157	⇑*i*P	Pg	07 43 53.2	-0.6
KHAL				*i*S	Sg	07 44 04.5	+0.1
KHL	Karahalli	0.87	157	PG	Pg	07 43 54.4	-0.4
KHL	Karahalli	0.87	157	*i*Pg	Pg	07 43 54.4	-0.4
AKHS	Akhisar	1.02	256	P	Pg	07 43 57.6	-0.1
AKHS				S	Sb	07 44 11.8	+0.4
AKHS	Akhisar	1.02	256	⇑*i*P	Pg	07 43 57.6	-0.1
AKHS				*i*S	Sb	07 44 11.8	+0.4
AKS	Akhisar	1.02	257	PG	Pg	07 43 57.0	-0.7
AKS	Akhisar	1.02	257	*i*Pg	Pg	07 43 57.0	-0.7
BALB	Balikesir	1.07	299	PG	Pg	07 43 58.4	-0.1
BALB				SG	Sn	07 44 13.9	-0.3
BALB	Balikesir	1.07	299	*i*Pg	Pg	07 43 58.4	-0.1
BALB				*i*Sg	Sn	07 44 13.9	-0.3
IGD	Bursa	1.14	4	⇑*i*P	Pb	07 43 58.0	-2.0
IGD				*i*S	Sg	07 44 15.0	+0.2
IZI	Iznik	1.25	14	PN	Pn	07 44 01.4	-0.4
IZI				SN	Sn	07 44 20.1	+1.4
IZI	Iznik	1.25	14	*i*Pn	Pn	07 44 01.4	-0.4
IZI				*i*Sn	Sn	07 44 20.2	+1.4
MDNY	Mudanya-Bursa	1.25	353	PN	Pn	07 44 02.0	+0.2
MDNY	Mudanya-Bursa	1.25	353	*i*Pn	Pn	07 44 02.0	+0.2
KCTX	Karacabey (Bur	1.27	334	PN	Pn	07 44 02.0	0.0
KCTX	Karacabey (Bur	1.27	334	*i*Pn	Pn	07 44 02.0	0.0
BALY	Balya	1.29	299	P	Pn	07 44 02.4	0.0
BALY				S	Sn	07 44 21.5	+1.7
BALY	Balya	1.29	299	⇓*i*P	Pn	07 44 02.4	0.0
BALY				*i*S	Sn	07 44 21.5	+1.7
BORA	Eskisehir	1.30	54	P	Pn	07 44 01.5	-1.0
BORA				S	Sb	07 44 19.0	-0.5
BORA	Eskisehir	1.30	54	⇑*i*P	Pn	07 44 01.5	-1.0
BORA				*i*S	Sb	07 44 19.0	-0.5
GEMT	Gemlik	1.31	3	PN	Pb	07 44 03.3	+0.5
GEMT	Gemlik	1.31	3	*i*Pn	Pb	07 44 03.3	+0.5
DENT	Denizli	1.37	182	PN	Pn	07 44 03.0	-0.4
DENT	Denizli	1.37	182	*i*Pn	Pn	07 44 03.0	-0.4
ADVT	Abdulvahap	1.40	21	PN	Pn	07 44 04.0	+0.2
ADVT	Abdulvahap	1.40	21	*i*Pn	Pn	07 44 04.0	+0.2
ESKT	Eskisehir	1.42	73	*i*P	Pn	07 44 03.4	-0.8
SEYT	Eskypehyr	1.42	73	P	Pn	07 44 03.4	-0.8
DNZL	Cakiroluk	1.43	181	P	Pn	07 44 03.6	-0.8
DNZL				S	Sg	07 44 25.2	+1.0
DNZL	Cakiroluk	1.43	181	⇓*i*P	Pn	07 44 03.6	-0.8
DNZL				*i*S	Sg	07 44 25.2	+1.0
ARMT	Armutlu	1.45	353	PN	Pn	07 44 05.1	+0.6
ARMT				SN	Sb	07 44 24.7	+0.9
ARMT	Armutlu	1.45	353	*i*Pn	Pn	07 44 05.1	+0.6
ARMT				*i*Sn	Sb	07 44 24.7	+0.9
GPA	Golpazari	1.50	39	PN	Pn	07 44 05.1	-0.1
GPA	Golpazari	1.50	39	*i*Pn	Pn	07 44 05.1	-0.1
AYDB	Zeytinkoy-Aydi	1.50	219	PN	Pn	07 44 05.4	+0.1
AYDB	Zeytinkoy-Aydi	1.50	219	*i*Pn	Pn	07 44 05.4	+0.1
BOLV	Bolvadin	1.51	105	P	Pn	07 44 05.3	-0.1
BOLV				S	Sn	07 44 25.4	+0.1
BOLV	Bolvadin	1.51	105	⇓*i*P	Pn	07 44 05.3	-0.1
BOLV				*i*S	Sn	07 44 25.4	+0.1
EDC	Edincik	1.54	323	PN	Pn	07 44 05.8	+0.1
EDC	Edincik	1.54	323	*i*Pn	Pn	07 44 05.8	+0.1
KNL	Bal¨–kesir	1.66	314	*i*P	Pn	07 44 06.9	-0.5
KNL				*i*S	Sg	07 44 31.2	-0.3
DKL	Dikili	1.70	269	PN	Pn	07 44 07.9	+0.1
DKL	Dikili	1.70	269	*i*Pn	Pn	07 44 07.9	+0.1
GULT	Gulveren	1.71	40	PN	Pn	07 44 09.3	+1.2
GULT	Gulveren	1.71	40	*i*Pn	Pn	07 44 09.3	+1.2
ISP	Isparta	1.72	139	PN	Pn	07 44 08.2	-0.1
ISP	Isparta	1.72	139	⇓*i*P	Pn	07 44 07.7	-0.6
ISP				S	Sb	07 44 31.6	-0.1
ISP	Isparta	1.72	139	P	Pn	07 44 07.5	-0.8
ISP				S	Sn	07 44 30.5	+0.1
ISP	Isparta	1.72	139	*d*P	Pn	07 44 07.4	-0.8
ISP	Isparta	1.72	139	P	Pn	07 44 07.5	-0.8
ISP	Isparta	1.72	139	*i*Pn	Pn	07 44 08.2	-0.1
ISP				S	Sn	07 44 30.5	+0.1
ISP				*e*Sn	Sg	07 44 36.5	+3.2
ISP	Isparta	1.72	139	*e*Pn	Sg	07 44 07.7	-0.6
ISP				*e*Sn	Sg	07 44 36.5	+3.2
BUY	Buyukada	1.73	1	P	Pn	07 44 07.8	-0.5
BUY				S	Sn	07 44 30.4	0.0
BUY	Buyukada	1.73	1	⇑*i*P	Pn	07 44 07.8	-0.5
BUY				*i*S	Sn	07 44 30.4	0.0
AYDN	Tasoluk	1.74	213	P	Pn	07 44 07.9	-0.6
AYDN	Tasoluk	1.74	213	⇓*i*P	Pn	07 44 07.9	-0.6
AYDN				*i*S	Sg	07 44 34.1	+0.1
BAGO	Egridir - ISPA	1.75	130	⇓*i*P	Pn	07 44 08.2	-0.4
BAGO				*i*S	Sg	07 44 37.0	+2.6
HRT	Hereke	1.75	15	PN	Pn	07 44 08.9	+0.2
HRT	Hereke	1.75	15	*i*Pn	Pn	07 44 08.9	+0.2
SPNC	Sapanca-Adapaz	1.82	31	PN	Pn	07 44 10.6	+1.0
SPNC	Sapanca-Adapaz	1.82	31	*i*Pn	Pn	07 44 10.6	+1.0
AYVA	Ayvalik	1.87	276	P	Pn	07 44 11.1	+0.9
AYVA	Ayvalik	1.87	276	*i*P	Pn	07 44 11.1	+0.9
AYVA				*i*S	Sg	07 44 39.1	+0.9
MRMT	Marmara Adasi	1.87	323	PN	Pn	07 44 10.4	+0.1
MRMT	Marmara Adasi	1.87	323	*i*Pn	Pn	07 44 10.4	+0.1
KRBG	Karabiga-Canak	1.87	313	PN	Pn	07 44 10.7	+0.4
KRBG	Karabiga-Canak	1.87	313	*i*Pn	Pn	07 44 10.7	+0.4
SVRH	Sivrihisar-ESK	1.92	80	PN	Pn	07 44 12.4	+1.4
SVRH	Sivrihisar-ESK	1.92	80	*i*Pn	Pn	07 44 12.4	+1.4
GOLH	Golhisar	1.92	169	P	Pn	07 44 10.9	-0.1
GOLH	Golhisar	1.92	169	⇓*i*P	Pn	07 44 10.9	-0.1
GOLH				*i*S	Sg	07 44 42.4	+2.6
ISK	Istanbul-Kandi	1.94	359	PN	Pn	07 44 11.8	+0.6
ISK	Istanbul-Kandi	1.94	359	P	Pn	07 44 10.4	-0.8
ISK				S	Sn	07 44 35.5	-0.2
ISK	Istanbul-Kandi	1.94	359

EZN	Ezine	2.25 289	P	Pn	07 44 15.6	+0.2
EZN			S	Sn	07 44 42.6	-0.7
EZN	Ezine	2.25 289	ePn	Pn	07 44 15.6	+0.2
EZN			eSn	Sn	07 44 42.6	-0.7
CRLT	Corlu	2.25 333	PN	Pn	07 44 15.9	+0.4
CRLT	Corlu	2.25 333	i Pn	Pn	07 44 15.9	+0.4
SMG	Samos	2.26 232	P	Pn	07 44 15.1	-0.5
SMG	Samos	2.26 232	P	Pn	07 44 15.1	-0.5
SMG	Samos	2.26 232	P	Pn	07 44 15.1	-0.5
TURN	Turunc	2.28 190	i P	Pb	07 44 17.9	-1.4
TURN			i S	Sg	07 44 58.5	+7.2
DALY	Dalyan (Mu¨la	2.33 189	PN	Pn	07 44 17.7	+1.2
DALY	Dalyan (Mu¨la	2.33 189	i Pn	Pn	07 44 17.7	+1.2
KORT	Korkueli	2.34 154	P	Pn	07 44 17.2	+0.3
KORT	Korkueli	2.34 154	||iP	Pn	07 44 17.2	+0.3
KORT			i S	Sg	07 44 57.3	+3.9
GELI	Tayfur-Gelibol	2.38 303	PN	Pn	07 44 17.7	+0.4
GELI	Tayfur-Gelibol	2.38 303	i Pn	Pn	07 44 17.7	+0.4
CTYL	Yalikoy Yolu	2.43 346	PN	Pn	07 44 18.4	+0.5
CTYL	Yalikoy Yolu	2.43 346	i Pn	Pn	07 44 18.4	+0.5
BDRM	Kayabasi	2.43 213	P	Pn	07 44 17.6	-0.3
BDRM	Kayabasi	2.43 213	i P	Pn	07 44 17.6	-0.3
BDRM			i S	Sg	07 44 59.4	+3.3
KDHN	Kadinhani	2.44 103	P	Pn	07 44 18.2	0.0
KDHN	Kadinhani	2.44 103	i P	Pn	07 44 18.2	0.0
BOZC	Bozcaada	2.45 288	i P	Pn	07 44 18.6	+0.4
BOZC			i S	Sn	07 44 47.6	-0.8
ELL	Elmali	2.46 164	PN	Pn	07 44 19.6	+1.1
ELL	Elmali	2.46 164	i Pn	Pn	07 44 19.6	+1.1
CHOS	Chios island	2.48 254	PN	Pn	07 44 18.9	+0.2
CHOS	Chios island	2.48 254	P	Pn	07 44 18.2	-0.5
CHOS			S	Sn	07 44 48.2	-1.0
CHOS	Chios island	2.48 254	P	Pn	07 44 18.2	-0.5
CHOS	Chios island	2.48 254	i Pn	Pn	07 44 18.9	+0.2
CHOS			S	Sn	07 44 48.2	-1.0
CHOS	Chios island	2.48 254	P	Pn	07 44 18.2	-0.5
CHOS			S	Sn	07 44 48.2	-1.0
FETY	Fethiye	2.48 180	PN	Pn	07 44 19.5	+0.8
FETY	Fethiye	2.48 180	P	Pn	07 44 18.0	-0.7
FETY			S	Sn	07 44 50.0	+0.8
FETY	Fethiye	2.48 180	P	Pn	07 44 18.0	-0.7
FETY	Fethiye	2.48 180	i Pn	Pn	07 44 19.5	+0.8
FETY			S	Sn	07 44 50.0	+0.8
FETY	Fethiye	2.48 180	ePn	Pn	07 44 18.0	-0.7
FETY			eSn	Sn	07 44 50.0	+0.8
BODT	Bodrum	2.49 215	PN	Pn	07 44 19.4	+0.6
BODT	Bodrum	2.49 215	P	Pn	07 44 18.2	-0.6
BODT			S	Sn	07 44 48.7	-0.6
BODT	Bodrum	2.49 215	P	Pn	07 44 18.2	-0.6
BODT	Bodrum	2.49 215	i Pn	Pn	07 44 19.4	+0.6
BODT			S	Sn	07 44 48.7	-0.6
BODT	Bodrum	2.49 215	ePn	Pn	07 44 18.2	-0.6
BODT			eSn	Sn	07 44 48.7	-0.6
ERIK	Erikli-Kesan	2.51 309	PN	Pn	07 44 19.8	+0.8
ERIK	Erikli-Kesan	2.51 309	i Pn	Pn	07 44 19.8	+0.8
KESN	Edirne-Kesan	2.51 313	P	Pn	07 44 19.8	+0.4
KESN	Edirne-Kesan	2.51 313	i P	Pn	07 44 19.8	+0.4
ANTB	Antalya	2.54 150	PN	Pn	07 44 20.8	+1.3
ANTB	Antalya	2.54 150	i Pn	Pn	07 44 20.8	+1.3
GADA	Gvkgeada	2.68 294	PN	Pn	07 44 21.6	+0.2
GADA	Gvkgeada	2.68 294	P	Pn	07 44 21.6	+0.2
GADA			S	Sn	07 44 52.6	-1.4
GADA	Gvkgeada	2.68 294	P	Pn	07 44 21.6	+0.2
GADA			S	Sn	07 44 52.6	-1.4
GADA	Gvkgeada	2.68 294	ePn	Pn	07 44 21.6	+0.2
GADA			eSn	Sn	07 44 52.6	-1.4
LADK	Ladik-KONYA	2.73 109	PN	Pn	07 44 23.6	+1.5
LADK	Ladik-KONYA	2.73 109	i Pn	Pn	07 44 23.7	+1.5
ENEZ	Enez	2.77 306	PN	Pn	07 44 22.9	+0.3
ENEZ	Enez	2.77 306	P	Pn	07 44 22.2	-0.4
ENEZ			S	Sn	07 44 55.5	-0.7
ENEZ	Enez	2.77 306	P	Pn	07 44 22.2	-0.4
ENEZ	Enez	2.77 306	i Pn	Pn	07 44 22.9	+0.3
ENEZ			S	Sn	07 44 55.5	-0.7
PHSR	Pinarhisar	2.77 335	PN	Pn	07 44 23.3	+0.6
PHSR	Pinarhisar	2.77 335	i Pn	Pn	07 44 23.3	+0.6
KONT	Konya--Tatoy	2.83 114	PN	Pn	07 44 24.6	+1.2
KONT	Konya--Tatoy	2.83 114	i Pn	Pn	07 44 24.6	+1.2
KDZE	Karadeniz Ereo	2.83 39	PN	Pn	07 44 24.4	+0.9
KDZE	Karadeniz Ereo	2.83 39	i Pn	Pn	07 44 24.4	+0.9
BCAM	Yenicaga	2.84 53	P	Pn	07 44 24.3	+0.5
BCAM	Yenicaga	2.84 53	i P	Pn	07 44 24.3	+0.5
BCAM			i S	Sg	07 45 10.6	+1.1
KMER	Konya-Meram	2.91 117	P	Pn	07 44 25.6	+0.9
KMER	Konya-Meram	2.91 117	i P	Pn	07 44 25.6	+0.9
AKAS	Kas	2.92 172	P	Pn	07 44 25.8	+1.0
AKAS	Kas	2.92 172	i P	Pn	07 44 25.8	+1.0
ALN	Alexandroupoli	2.93 308	PN	Pn	07 44 25.0	+0.2
ALN	Alexandroupoli	2.93 308	P	Pn	07 44 24.6	-0.2
ALN			S	Sn	07 44 58.3	-1.8
ALN	Alexandroupoli	2.93 308	P	Pn	07 44 24.6	-0.2
ALN			S	Sn	07 44 58.3	-1.8
ALN	Alexandroupoli	2.93 308	P	Pn	07 44 24.6	-0.2
ALN	Alexandroupoli	2.93 308	i Pn	Pn	07 44 25.0	+0.2
ALN			S	Sn	07 44 58.3	-1.8
ALN	Alexandroupoli	2.93 308	P	Pn	07 44 24.6	-0.2
ALN			S	Sn	07 44 58.3	-1.8
NIS1	Nisyros Isl.	2.94 212	PN	Pn	07 44 25.6	+0.7
NIS1	Nisyros Isl.	2.94 212	P	Pn	07 44 24.6	-0.3
NIS1	Nisyros Isl.	2.94 212	P	Pn	07 44 24.6	-0.3
NIS1	Nisyros Isl.	2.94 212	i Pn	Pn	07 44 25.6	+0.7
NIS1	Nisyros Isl.	2.94 212	ePn	Pn	07 44 24.6	-0.3
BR231	Keskin MP Arra	2.94 75	ePn	Pg	07 44 33.5	-1.0
BR231	Keskin MP Arra	2.94 75	ePn	Pg	07 44 33.5	-1.0
LOD	Lodumlu	2.95 74	PN	Pn	07 44 26.8	+1.7
LOD	Lodumlu	2.95 74	i Pn	Pn	07 44 26.8	+1.7
ANTO	Ankara	2.96 74	eP	Pn	07 44 27.9	+2.6
ANTO	Ankara	2.96 74	eP	Pn	07 44 27.9	+2.6
ANTO	Ankara	2.96 74	ePn	Pn	07 44 27.9	+2.6
KKUL	Konya-Kulu	2.98 88	P	Pn	07 44 27.0	+1.4
KKUL	Konya-Kulu	2.98 88	i P	Pn	07 44 27.0	+1.4
KKUL			i S	Sg	07 45 15.1	+1.4
ARG	Arkhangelos	3.00 195	P	Pn	07 44 26.2	+0.4
ARG	Arkhangelos	3.00 195	P	Pn	07 44 26.2	+0.4
ARG	Arkhangelos	3.00 195	P	Pn	07 44 26.2	+0.4
ARG	Arkhangelos	3.00 195	P	Pn	07 44 26.2	+0.4
SMTH	Samothraki Isl	3.05 297	P	Pn	07 44 26.3	-0.2
SMTH	Samothraki Isl	3.05 297	P	Pn	07 44 26.3	-0.2
SMTH	Samothraki Isl	3.05 297	ePn	Pn	07 44 26.3	-0.2
AFSR	Af´ar-Bala (A	3.11 83	PN	Pn	07 44 28.9	+1.5
AFSR	Af´ar-Bala (A	3.11 83	i Pn	Pn	07 44 28.9	+1.5
BBAL	Bala	3.16 81	i P	Pg	07 44 39.3	+0.7
EDRB	Edirne	3.25 327	PN	Pn	07 44 29.9	+0.7
EDRB	Edirne	3.25 327	P	Pn	07 44 29.6	+0.3
EDRB	Edirne	3.25 327	P	Pn	07 44 29.6	+0.3
EDRB	Edirne	3.25 327	i Pn	Pn	07 44 29.9	+0.7
EDRB	Edirne	3.25 327	P	Pn	07 44 29.6	+0.3
APE	Apeiranthos	3.48 235	PN	Pn	07 44 33.5	+1.1
APE	Apeiranthos	3.48 235	||iP	Pn	07 44 33.0	+0.6
APE	Apeiranthos	3.48 235	P	Pn	07 44 31.9	-0.4
APE	Apeiranthos	3.48 235	i P	Pn	07 44 32.0	-0.4
APE	Apeiranthos	3.48 235	i P	Pn	07 44 32.0	-0.4
APE	Apeiranthos	3.48 235	i Pn	Pn	07 44 33.5	+1.1
APE			S	Sn	07 45 16.6	+2.9
SAFT	Safranbolu	3.48 51	PN	Pn	07 44 34.9	+2.6
SAFT	Safranbolu	3.48 51	i Pn	Pn	07 44 34.9	+2.6
SERE	Sereflikochisa	3.49 92	PN	Pn	07 44 33.6	+0.9
SERE	Sereflikochisa	3.49 92	i Pn	Pn	07 44 33.6	+0.9
BR131	Keskin Array S	3.58 79	ePn	Pn	07 44 34.5	+0.7
BR131	Keskin Array S	3.58 79	ePg	Pg	07 44 46.0	-0.6
BR131	Keskin Array S	3.58 79	ePn	Pn	07 44 34.5	+0.7
BR131			ePg	Pg	07 44 46.0	-0.6
BRTR	Keskin Array B	3.58 79	Pn	Pn	07 44 34.5	+0.7
	4.1nm,0.3s,baz=188,slow=28,SNR=102					
BRTR			Pg	Pg	07 44 44.8	-1.8
	9.7nm,0.3s,baz=256,slow=15,SNR=60					
BRTR			Sn	Sn	07 45 14.9	-1.4
	26nm,0.3s,baz=254,slow=23,SNR=15					
BRTR			Lg	Lg	07 45 33.1	
	9.2nm,0.3s,baz=256,slow=24,SNR=11					
BRTR			LR	LR	07 46 33.7	
	comp=Z,634nm,19.3s,baz=254,slow=49					
KDZ	Kurdzhali	3.77 313	i P	Pg	07 44 49.4	-0.9
CANT	Cankiri	3.79 66	PN	Pn	07 44 39.1	+2.4
GAZI	Gazipasa	3.86 137	P	Pn	07 44 37.6	0.0
GAZI	Gazipasa	3.86 137	i P	Pn	07 44 37.6	0.0
KARP	Karpathos	3.89 204	PN	Pn	07 44 38.5	+0.6
KARP	Karpathos	3.89 204	P	Pn	07 44 37.8	-0.2
KARP	Karpathos	3.89 204	P	Pn	07 44 37.8	-0.2
KARP	Karpathos	3.89 204	i Pn	Pn	07 44 38.6	+0.6
KARP	Karpathos	3.89 204	ePn	Pn	07 44 37.8	-0.2
SANT	Santorini	3.98 227	⇑iP	Pn	07 44 39.4	+0.2
SANT	Santorini	3.98 227	ePn	Pn	07 44 38.6	-0.6
SANT	Santorini	3.98 227	⇑iP	Pn	07 44 39.4	+0.2
SANT	Santorini	3.98 227	ePn	Pn	07 44 38.6	-0.6
AOS	Alonnisos	4.05 272	PN	Pn	07 44 41.3	+1.1
AOS	Alonnisos	4.05 272	i Pn	Pn	07 44 41.3	+1.1
GULA	Gulagac	4.10 99	PN	Pn	07 44 43.0	+2.0
GULA	Gulagac	4.10 99	i Pn	Pn	07 44 43.0	+2.0
RZN	Rozhen	4.21 309	i P	Pn	07 44 43.4	+0.9
TOS	Tosya	4.24 62	PN	Pn	07 44 45.4	+2.5
TOS	Tosya	4.24 62	i Pn	Pn	07 44 45.4	+2.5
PRD	Provadia	4.27 343	i Pg	Pb	07 44 54.9	+1.7
CORM	Corum	4.41 74	PN	Pn	07 44 47.8	+2.6
CORM	Corum	4.41 74	i Pn	Pn	07 44 47.8	+2.6
NIG	Nigde	4.44 101	PN	Pn	07 44 48.0	+2.1
NIG	Nigde	4.44 101	i Pn	Pn	07 44 48.0	+2.1
PSN	Preselentsi	4.60 352	i P	Pn	07 44 48.2	+0.4
ZKR	Zakros	4.61 211	P	Pn	07 44 48.7	+0.8
ZKR	Zakros	4.61 211	P	Pn	07 44 48.7	+0.8
ZKR	Zakros	4.61 211	ePn	Pn	07 44 48.7	+0.8
BZK	Bozkurt	4.70 51	PN	Pn	07 44 51.7	+2.6
BZK	Bozkurt	4.70 51	i Pn	Pn	07 44 51.7	+2.6
MANR	Mangalia	4.70 356	⇑iP	Pn	07 44 49.5	+0.3
MANR	Mangalia	4.70 356	⇑iP	Pn	07 44 49.5	+0.3
SZH	Strazhica	4.77 331	i P	Pn	07 44 50.4	+0.3
MMB	Musomiste	4.78 303	i P	Pn	07 44 51.3	+1.1
HORT	Hortiatis	4.84 290	PN	Pn	07 44 52.9	+1.8
HORT	Hortiatis	4.84 290	i Pn	Pn	07 44 52.9	+1.8
AKMC	Akamas	4.84 147	P	Pn	07 44 52.8	+1.7
MERS	Mersin	4.85 116	PN	Pn	07 44 53.8	+2.5
MERS	Mersin	4.85 116	i Pn	Pn	07 44 53.8	+2.5
ALFC	Alefka	4.85 142	P	Pn	07 44 52.2	+0.9
LAST	Lasithi	4.89 217	⇑iP	Pn	07 44 53.6	+1.8
LAST	Lasithi	4.89 217	P	Pn	07 44 52.5	+0.6
LAST	Lasithi	4.89 217	P	Pn	07 44 52.5	+0.6
LAST	Lasithi	4.89 217	ePn	Pn	07 44 53.7	+1.8
LAST			eSn	Sn	07 45 52.9	+4.2
LAST	Lasithi	4.89 217	ePn	Pn	07 44 53.7	+1.8
LAST			eSn	Sn	07 45 52.9	+4.2
BYBT	Boyabat	4.93 60	PN	Pn	07 44 55.2	+2.9
BYBT	Boyabat	4.93 60	i Pn	Pn	07 44 55.2	+2.9
LEF	Lefka	5.02 142	PN	Pn	07 44 54.8	+1.2
LEF	Lefka	5.02 142	i Pn	Pn	07 44 54.8	+1.2
MSAB	Monastry St. A	5.05 350	||iP	Pn	07 44 54.7	+0.8
MSAB	Monastry St. A	5.05 350	||iP	Pn	07 44 54.7	+0.8
IDI	Anoyia	5.09 222	Pn	Pn	07 44 55.3	+0.8
	1.7nm,0.3s,baz=54,slow=14,SNR=12					
IDI			LR	LR	07 46 48.5	
	comp=Z,647nm,21.8s,baz=80,slow=38					
IDI	Anoyia	5.09 222	⇑iP	Pn	07 44 55.8	+1.3
IDI	Anoyia	5.09 222	S	Sn	07 45 41.8	-12
IDI	Anoyia	5.09 222	ePn	Pn	07 44 55.5	+1.0
IDI	Anoyia	5.09 222	⇑iP	Pn	07 44 55.8	+1.3
IDI			eSn	Sn	07 45 45.0	-8.4
IDI	Anoyia	5.09 222	ePn	Pn	07 44 55.5	+1.0
IDI			eSn	Sn	07 45 45.0	-8.4
LFK	Lefkose	5.23 136	PN	Pn	07 44 59.0	+2.6
LFK	Lefkose	5.23 136	i Pn	Pn	07 44 59.0	+2.6
AGG	Agios Georgios	5.26 271	PN	Pn	07 44 58.7	+1.8
AGG	Agios Georgios	5.26 271	eP	Pn	07 44 57.5	+0.6
AGG	Agios Georgios	5.26 271	eP	Pn	07 44 57.5	+0.6
AGG	Agios Georgios	5.26 271	ePn	Pn	07 44 57.5	+0.6
BNN	Bunyan	5.27 91	PN	Pn	07 45 00.1	+2.9
BNN	Bunyan	5.27 91	i Pn	Pn	07 45 00.1	+2.9
SZAC	Souni	5.32 144	P	Pn	07 44 59.0	+1.4
KKB	Krupnik	5.33 303	i P	Pn	07 44 58.7	+0.8
SIVA	Sivas	5.34 221	⇑iP	Pn	07 45 00.3	+2.4
SIVA	Sivas	5.34 221	⇑iP	Pn	07 45 00.3	+2.4
DIKM	Dikmen	5.34 60	PN	Pn	07 45 01.1	+3.1
DIKM	Dikmen	5.34 60	i Pn	Pn	07 45 01.1	+3.1
TIRR	Tirgusor	5.35 355	⇑iP	Pn	07 44 58.6	+0.5
TIRR	Tirgusor	5.35 355	S	Sn	07 45 55.3	-4.5
TIRR	Tirgusor	5.35 355	eP	Pn	07 44 58.3	+0.2
TIRR	Tirgusor	5.35 355	eP	Pn	07 44 58.3	+0.2
TIRR	Tirgusor	5.35 355	ePn	Pn	07 44 58.3	+0.2
CSS	Mathiatis	5.37 139	P	Pn	07 45 00.5	+2.2
CSS	Mathiatis	5.37 139	ePn	Pn	07 45 00.2	+1.9
CSS	Mathiatis	5.37 139	ePn	Pn	07 45 00.2	+1.9
GRG	Griva	5.45 292	PN	Pn	07 45 01.6	+2.2
GRG	Griva	5.45 292	i Pn	Pn	07 45 01.6	+2.2
SNOP	Sinop	5.48 56	PN	Pn	07 45 02.9	+3.0
HARR	Harsova	5.63 352	⇑iP	Pn	07 45 02.8	+0.9
CEYT	Ceyhan	5.66 110	PN	Pn	07 45 06.0	+3.7
KVT	Kavak	5.68 68	PN	Pn	07 45 05.7	+3.0
MPEP	Malo Peshtene	5.84 318	i P	Pn	07 45 06.1	+1.3
SULR		5.94 340	||iP	Pg	07 45 29.7	-2.0
PGOR	Pogoanele	5.99 346	⇑iP	Pn	07 45 08.8	+2.0
TLCR		6.06 358	⇑iP	Pn	07 45 08.6	+0.8
CFR	Carcaliu	6.09 354	||iP	Pn	07 45 08.4	+0.2
FNA	Florina	6.15 288	PN	Pn	07 45 11.6	+2.5
FNA	Florina	6.15 288	i Pn	Pn	07 45 11.6	+2.5
SVSK	Karacayir	6.17 80	PN	Pn	07 45 12.7	+3.4
HUMR	Humele	6.21 332	⇑iP	Pn	07 45 10.9	+1.1
TAHT	Tahtakopru-Hat	6.26 114	PN	Pn	07 45 13.8	+3.2
ISR	Istrita	6.28 343	⇑iP	Pn	07 45 12.8	+1.9
SECR		6.32 340	⇑iP	Pn	07 45 13.2	+1.8
SEV	Sevastopol'	6.41 31	||iP	Pn	07 45 11.8	-0.7
SEV			eS	Sn	07 46 20.6	-5.1
SEV	Sevastopol'	6.41 31	i P	Pn	07 45 11.8	-0.7
GRER		6.44 347	||iP	Pn	07 45 14.7	+1.6
RSDY	Resadiye-TOKAT	6.48 76	PN	Pn	07 45 16.9	+3.3
YAL	Yalta	6.56 34	eP	Pn	07 45 15.2	+0.6
YAL			eS	Sn	07 46 25.8	-3.8
YAL	Yalta	6.56 34	eP	Pn	07 45 15.2	+0.6
DARE	Darende-Malaty	6.58 92	PN	Pn	07 45 17.6	+2.6
DARE	Darende-Malaty	6.58 92	i Pn	Pn	07 45 17.6	+2.6
GAZ	Gaziantep	6.69 104	PN	Pn	07 45 20.1	+3.5
MLR	Muntele Rosu	6.77 341	Pn	Pn	07 45 19.0	+1.2
	1.0nm,0.3s,baz=155,slow=4.4,SNR=41					
MLR			Sn	Sn	07 46 35.9	+0.8
	0.5nm,0.3s,baz=49,slow=20,SNR=2.4					
MLR	Muntele Rosu	6.77 341	⇑iP	Pn	07 45 19.1	+1.4
MTUR	Matau	6.79 335	||iP	Pn	07 45 19.0	+1.1
ODBI	Odobesti	6.80 348	⇑iP	Pn	07 45 19.7	+1.7
ALU	Alushta	6.82 34	eP	Pn	07 45 17.9	-0.4
ALU			eS	Sn	07 46 30.7	-5.3
ALU	Alushta	6.82 34	eP	Pn	07 45 17.9	-0.4
SIM	Simferopol'	6.92 31	deP	Pn	07 45 19.7	+0.1
SIM			i S	Sn	07 46 35.0	-3.4
SIM			pmax	pmax		
	comp=Z,88nm,0.8s					
SIM	Simferopol'	6.92 31	eP	Pn	07 45 19.7	+0.1
	comp=Z,88nm,0.8s					
PLOR	Plostina	6.96 346	||iP	Pn	07 45 21.4	+1.2
VRI	Vrincioaia	6.96 346	||iP	Pn	07 45 21.4	+1.2
VOIR		6.98 336	⇑iP	Pn	07 45 21.4	+0.9
SRE	Strehaia	7.06 323	||iP	Pn	07 45 22.2	+0.7
SUDU	Sudak	7.25 35	eP	Pn	07 45 24.5	+0.4
SUDU			eS	Sn	07 46 42.4	-4.1
SUDU	Sudak	7.25 35	eP	Pn	07 45 24.5	+0.4
DOPR	Dopca	7.36 339	⇑iP	Pn	07 45 26.9	+1.2
ILIC	ilic-Erzincan	7.36 84	PN	Pn	07 45 28.4	+2.6
ILIC	ilic-Erzincan	7.36 84	i Pn	Pn	07 45 28.4	+2.6
LEOM	Leova	7.37 355	PN	Pn	07 45 28.3	+2.5
LEOM	Leova	7.37 355	i Pn	Pn	07 45 28.3	+2.5
LOT	Lotru	7.45 330	||iP	Pn	07 45 29.0	+2.1
FEO	Feodosiya	7.53 36	eP	Pn	07 45 26.5	-1.4
FEO			eS	Sn	07 46 47.2	-6.1
FEO	Feodosiya	7.53 36	eP	Pn	07 45 26.5	-1.4
TESR	Tescani	7.60 347	||iP	Pn	07 45 29.1	+0.2
MILM	Milestii Mici	7.79 359	⇑iP	Pn	07 45 31.9	+0.3
MILM	Milestii Mici	7.79 359	⇑iP	Pn	07 45 31.9	+0.3
GZR	Gura Zlata	7.82 325	⇑iP	Pn	07 45 32.4	+0.4
GZR	Gura Zlata	7.82 325	⇑iP	Pn	07 45 32.4	+0.4
MDB	Medias	7.82 335	||iP	Pn	07 45 34.0	+2.0
MDB	Medias	7.82 335	||iP	Pn	07 45 34.0	+2.0
KIS	Kishinev	7.87 359	eP	Pn	07 45 33.0	+0.3
KIS			eS	Sn	07 47 04.0	+2.2
KIS			LRM	MLR	07 49 00.0	
	comp=Z,900nm,12.0s					
KIS	Kishinev	7.87 359	eP	Pn	07 45 33.0	+0.3
KIS			eS	Sn	07 47 04.0	+2.2
KIS			MLR	MLR		
	comp=Z,900nm,11.0s					
KIS			MLR	MLR		
	comp=N,1µm,10.0s					
KIS			MLR	MLR		
	comp=Z,900nm,12.0s					
KIS	Kishinev	7.87 359	eP	Pn	07 45 33.0	+0.3
KIS			eS	Sn	07 47 04.0	+2.2
	comp=Z,900nm,12.0s					
GRUS	Gruza	7.88 310	ePn	Pn	07 45 33.6	+0.8
MDVR	Moldovita	7.88 318	⇑iP	Pn	07 45 33.0	+0.2
MDVR	Moldovita	7.88 318	⇑iP	Pn	07 45 33.0	+0.2
MMAI	Mount Meron Ar	7.96 138	Pn	Pn	07 45 34.2	+0.3
	comp=Z,6.5nm,0.3s,baz=319,slow=14,SNR=17					
MMAI			Sn	Sn	07 47 01.7	-2.4
	comp=Z,3.8nm,0.3s,baz=315,slow=14,SNR=4.6					
MMAI			LR	LR	07 48 55.7	
	comp=Z,200nm,18.7s,baz=310,slow=40					
IVAS	Ivanjica	8.06 306	i Pn	Pn	07 45 36.2	+0.9
PDG	Podgorica	8.16 297	⇑iP	Pn	07 45 40.8	+4.2
SLUM	Salum	8.25 204	P	Pn	07 45 36.2	-1.6
	baz=204					
SLUM	Salum	8.25 204	P	Pn	07 45 36.2	-1.6
TRUS	Trudelj	8.25 311	ePn	Pn	07 45 39.0	+1.1
ANN	Anapa	8.41 45	eP	Pn	07 45 37.5	-2.6
ANN			eS	Sn	07 47 11.7	-3.4
ANN			pmax	pmax		
	comp=Z,29nm,1.2s					
DIVS	Divibare	8.43 309	ePn	Pn	07 45 40.6	+0.2
BZS	Buzias	8.52 322	||iP	Pn	07 45 42.0	+0.4
BZS	Buzias	8.52 322	||iP	Pn	07 45 42.0	+0.4
ARCR	ARCALIA	8.68 338	⇑iP	Pn	07 45 45.0	+1.3
ARCR	ARCALIA	8.68 338	⇑iP	Pn	07 45 45.0	+1.3
BURAR	Bucovina Array	8.94 343	||iP	Pn	07 45 49.1	+1.7
BURAR	Bucovina Array	8.94 343	||iP	Pn	07 45 49.1	+1.7
BUR08	Bucovina Ar. S	8.97 343	ePn	Pn	07 45 48.6	+0.7
BUR08	Bucovina Ar. S	8.97 343	ePn	Pn	07 45 48.6	+0.7
DRGR		8.97 331	||iP	Pn	07 45 48.5	+0.7
DRGR		8.97 331	||iP	Pn	07 45 48.5	+0.7
RSH		8.99 154	P	Pn	07 45 46.4	-1.6
	baz=154					
RSH		8.99 154	P	Pn	07 45 46.4	-1.6
SIRR	Siria	8.99 325	||iP	Pn	07 45 50.4	+2.4
SIRR	Siria	8.99 325	||iP	Pn	07 45 50.4	+2.4
SORM	Soroca	9.02 357	⇑iP	Pn	07 45 48.4	0.0
SORM	Soroca	9.02 357	⇑iP	Pn	07 45 48.4	0.0
SOC	Sochi	9.15 57	eP	Pn	07 45 53.0	+2.8
SOC			e		07 47 41.0	
SOC			MLR	MLR		
	comp=Z,745nm,13.0s					
FGSL	Fruska Gora	9.15 314	ePn	Pn	07 45 52.1	+1.9
ASF	Jabal al Asfar	9.40 135	Pn	Pn	07 45 55.8	+2.0
	comp=Z,0.5nm,0.3s,baz=260,slow=6.3,SNR=3.0					
TIP	Timpagrande	9.58 274	||iP	Pn	07 45 58.0	+1.8
TIP	Timpagrande	9.58 274	||iP	Pn	07 45 58.0	+1.8
TIP	Timpagrande	9.58 274	ePn	Pn	07 45 58.0	+1.8
HSAF	As Saff	9.70 167	P	Pn	07 45 56.8	-1.0
	baz=167					
HSAF	As Saff	9.70 167	P	Pn	07 45 56.8	-1.0
SUZ	Suez	9.76 160	P	Pn	07 45 57.4	-1.3
	baz=160					
SUZ	Suez	9.76 160	P	Pn	07 45 57.4	-1.3
GLL	Jalalah	9.77 166	P	Pn	07 45 57.5	-1.3
	baz=166					
GLL	Jalalah	9.77 166	P	Pn	07 45 57.5	-1.3
HNKL	Nakhl	10.02 155	P	Pn	07 46 00.5	-1.8
	baz=155					
HNKL			AMP		07 47 00.0	
	comp=E,20µm,0.9s,logA/T=4.3,baz=155					
HNKL			S	Sn	07 47 45.7	-9.0
	baz=155					
HNKL	Nakhl	10.02 155	P	Pn	07 46 00.4	-1.8
ZAF	Zafarana	10.23 163	P	Pn	07 46 03.9	-1.1
	baz=163					
ZAF	Zafarana	10.23 163	P	Pn	07 46 03.9	-1.1
CUC	Castrocucco	10.29 279

comp=Z,6.6nm,1.0s
MOA Molln 13.83 314 *i* P Pn 07 46 58.2 +4.0
comp=Z,14nm,1.5s
KBA Koelnbreinsper 13.96 310 *i* P P 07 47 00.9 -3.4
comp=Z,7.8nm,1.4s
VSR Storozhevoye 14.01 27 *e*P **Pn 07 46 55.7 -0.9**
VSR pmax pmax
comp=Z,10.0nm,0.6s
VSR Storozhevoye 14.01 27 *e*P **Pn 07 46 55.7 -0.9**
comp=Z,10.0nm,0.6s
TREC Trest 14.07 321 AMS AMS 07 53 50.0
comp=Z,500nm,11.5s
DPC Dobruska-Polom 14.41 325 *e*P **P 07 47 07.5 -1.6**
DPC Dobruska-Polom 14.41 325 *e*P **P 07 47 07.5 -1.6**
DPC Dobruska-Polom 14.41 325 *e*P **P 07 47 07.5 -1.6**
UPC Upice 14.66 325 AMS AMS 07 53 50.0
comp=Z,500nm,11.7s
GEA0 GERESS Array S 14.70 316 *e*Pn **Pn 07 47 08.1 +1.9**
GEA0 GERESS Array S 14.70 316 *e*Pn **Pn 07 47 08.1 +1.9**
GEC2 GERESS Array S 14.71 316 *e*P **Pn 07 47 07.9 +1.6**
GEC2 GERESS Array S 14.71 316 *e*Pn **Pn 07 47 07.9 +1.6**
GEC2 GERESS Array S 14.71 316 *e*Pn **Pn 07 47 07.9 +1.6**
GERES GERESS Array B 14.71 316 Pn **Pn 07 47 06.6 +0.4**
comp=Z,0.2nm,0.3s,baz=108,slow=16,SNR=6.6
GERES LR LR 07 53 13.9
comp=Z,151nm,20.1s,baz=124,slow=39
GOPC GO Pecny, Ondr 14.82 321 AMS AMS 07 53 50.0
comp=Z,600nm,14.9s
KHC Kasperske Hory 14.94 317 *e*P **P 07 47 12.9 -2.1**
KHC AMS AMS 07 53 30.0
comp=Z,400nm,9.0s
KHC Kasperske Hory 14.94 317 *e*P **Pn 07 47 11.3 +1.9**
KHC Kasperske Hory 14.94 317 *e*Pn **Pn 07 47 11.2 +1.9**
KHC Kasperske Hory 14.94 317 *e*Pn **Pn 07 47 11.2 +1.9**
VRH Novokhopyorsk 14.98 32 *e*P **Pn 07 47 08.6 -1.2**
VRH pmax pmax
comp=Z,20nm,1.1s
PRU Pruhonice 14.98 321 AMS AMS 07 54 00.0
comp=Z,600nm,8.5s
WTTA Wattenberg 15.08 308 *i* pP pP 07 47 19.8 +0.5
comp=Z,3.5nm,0.6s
LPSR Galich'ya Gora 15.10 24 *e*P **Pn 07 47 08.3 -3.1**
LPSR pmax pmax
comp=Z,10.0nm,0.7s
VSL Villasalto 15.26 278 *e*Pn **Pn 07 47 15.7 +2.0**
comp=Z,14nm,1.1s
VSL Villasalto 15.26 278 *e*Pn **Pn 07 47 15.7 +2.0**
comp=Z,14nm,1.1s
PVCC Panska Ves 15.33 323 AMS AMS 07 53 40.0
comp=Z,400nm,14.5s
MICGM Minsk 15.40 357 *e* Pn 07 47 10.0 -5.4
MNK Minsk 15.40 357 *e*P Pn 07 47 10.0 -5.4
MOTA Moosalm 15.44 308 *i* P **P 07 47 22.4 +1.7**
comp=Z,4.0nm,0.7s
MOTA Moosalm 15.44 308 P **P 07 47 22.5 +1.7**
comp=Z,4.0nm,0.7s
FETA Feichten 15.54 306 *i* P **P 07 47 21.6 -0.2**
comp=Z,24nm,1.1s
FETA Feichten 15.54 306 P **P 07 47 21.6 -0.2**
comp=Z,24nm,1.1s
RETA Reutte 15.71 308 *i* P **P 07 47 24.4 +0.7**
comp=Z,16nm,1.4s
RETA Reutte 15.71 308 P **P 07 47 24.4 +0.7**
comp=Z,16nm,1.4s
DAVOX Davos/Dischmat 15.98 305 Pn **Pn 07 47 23.2 0.0**
comp=Z,0.1nm,0.3s,baz=140,slow=17,SNR=2.1
KEST Kesra 16.04 264 Pn **Pn 07 47 23.7 -0.2**
comp=Z,0.2nm,0.3s,baz=275,slow=11,SNR=3.2
KEST LR LR 07 55 41.4
comp=Z,153nm,18.3s,baz=305,slow=45
KEST Kesra 16.04 264 *e*Pn **Pn 07 47 24.4 +0.5**
comp=Z,18nm,1.1s
KEST Kesra 16.04 264 *e*Pn **Pn 07 47 24.4 +0.5**
comp=Z,18nm,1.1s
DAVA Damuels 16.18 307 *i* P **P 07 47 28.5 -0.4**
comp=Z,9.9nm,0.7s
DAVA Damuels 16.18 307 P **P 07 47 28.5 -0.4**
comp=Z,9.9nm,0.7s
TUE Stuetta 16.22 303 *e*Pn **Pn 07 47 27.7 +1.5**
comp=Z,8.0nm,0.8s
TUE Stuetta 16.22 303 *e*Pn **Pn 07 47 27.7 +1.5**
comp=Z,8.0nm,0.8s
CLL Collm 16.59 322 *e*P **P 07 47 34.0 +0.7**
CLL *e* 07 47 38.0
CLL *e* 07 47 54.0
CLL Lmax 07 55 00.0
CLL Collm 16.59 322 *e*P **P 07 47 34.0 +0.7**
CLL Collm 16.59 322 *e*P **P 07 47 34.0 +0.7**
KLNR Kaliningrad 16.61 342 *c i*P **Pn 07 47 27.9 -3.0**
KLNR pmax pmax
comp=Z,88nm,0.6s
OBN Obninsk 16.77 15 *e*P **Pn 07 47 33.0 +0.1**
OBN pmax pmax
comp=Z,19nm,1.0s
OBN MLR MLR
comp=Z,195nm,19.0s
OBN Obninsk 16.77 15 *e*Pn **Pn 07 47 33.2 +0.3**
comp=Z,44nm,0.4s
OBN Obninsk 16.77 15 *e*Pn **Pn 07 47 33.2 +0.3**
comp=Z,44nm,0.4s
STU Stuttgart 17.22 311 *e*P **P 07 47 40.5 +0.2**
STU pmax pmax
comp=Z,76nm,0.2s
STU Stuttgart 17.22 311 *e*P **P 07 47 40.5 +0.2**
comp=Z,76nm,0.2s
STU Stuttgart 17.22 311 *e*P **P 07 47 40.5 +0.2**
comp=Z,76nm,0.2s
SENIN Lac Senin/Sane 17.53 301 *e*P **P 07 47 44.2 +0.3**
comp=Z,33nm,1.6s
SENIN Lac Senin/Sane 17.53 301 *e*P **P 07 47 44.2 +0.3**
comp=Z,33nm,1.6s
BFO Black Forest 17.55 308 *e*P **P 07 47 44.5 +0.5**
BFO pmax pmax
comp=Z,15nm,1.1s
BFO Black Forest 17.55 308 *e*P **P 07 47 44.5 +0.5**
comp=Z,15nm,1.1s
BFO Black Forest 17.55 308 *e*P **P 07 47 44.5 +0.5**
comp=Z,15nm,1.1s
MOS Moscow 17.57 16 *e*P **Pn 07 47 42.0 -1.0**
MOS pmax pmax
comp=Z,52nm,1.0s
MOS pmax pmax
comp=N,82nm,0.9s
WLF Walferdange 19.41 310 *e*P **Pn 07 48 05.8 +0.3**
WLF pmax pmax
comp=Z,22nm,0.3s
WLF Walferdange 19.41 310 *e*P **Pn 07 48 05.8 +0.3**
comp=Z,22nm,0.3s
WLF Walferdange 19.41 310 *e*P **Pn 07 48 05.8 +0.3**
comp=Z,22nm,0.3s
VSU Vasula 19.41 356 *c e*P **Pn 07 48 05.4 0.0**
VSU pmax pmax
comp=Z,47nm,0.7s
VSU Vasula 19.41 356 *e*P **Pn 07 48 05.4 0.0**
comp=Z,47nm,0.7s
MEM Membach 19.90 313 P **Pn 07 48 11.6 +0.3**
MEM Membach 19.90 313 P **Pn 07 48 11.5 +0.3**
BCLA Clavier 20.22 312 P Pn 07 48 15.0 -0.1
comp=Z,15nm,1.4s
BCLA Clavier 20.22 312 P Pn 07 48 14.9 -0.2
comp=Z,15nm,1.4s
DOU Dourbes 20.50 310 P **P 07 48 14.8 -1.5**
DOU Dourbes 20.50 310 P **P 07 48 14.7 -1.5**
FINES FINESS Array B 22.42 356 P **P 07 48 36.6 -0.2**
comp=Z,3.7nm,0.7s,baz=154,slow=11,SNR=4.1
FINES LR LR 07 58 18.2
comp=Z,239nm,18.2s,baz=182,slow=39
FIA1 FINESS Array S 22.42 356 *e*P **P 07 48 39.7 +2.9**
comp=Z,38nm,1.3s
FIA1 FINESS Array S 22.42 356 *e*P **P 07 48 39.7 +2.9**
comp=Z,38nm,1.3s
GEYT Alibeck 22.71 84 P **P 07 48 41.2 +1.1**
comp=Z,9.7nm,0.7s,baz=284,slow=12,SNR=17
KLMR Klimovskoe 22.71 13 *e*P **P 07 48 38.4 -1.4**
KLMR *e* 07 52 28.6
KLMR pmax pmax
comp=Z,20nm,0.9s
KLMR Klimovskoe 22.71 13 *e*P **P 07 48 38.4 -1.4**
comp=Z,20nm,0.9s
HFS Hagfors 23.16 340 P **P 07 48 45.6 +1.1**
comp=Z,14nm,1.1s,baz=171,slow=10,SNR=5.1
AKTK Aktyubinsk 23.29 51 P **P 07 48 45.2 -0.8**
comp=Z,10.0nm,1.0s
AKTO Aktyubinsk 23.29 51 P **P 07 48 45.2 -0.8**
comp=Z,8.8nm,1.0s,baz=262,slow=11,SNR=12
AKTO Aktyubinsk 23.29 51 P **P 07 48 45.2 -0.8**
AKTO pmax pmax
comp=Z,10.0nm,1.0s
ABKAR Akbulak array 24.18 55 *e*P **P 07 48 54.4 -0.2**
ABKAR Akbulak array 24.18 55 *e*P **P 07 48 54.4 -0.2**
NAO01 NORSAR Array S 24.52 338 *e*P **P 07 48 57.5 -0.1**
NAO01 NORSAR Array S 24.52 338 *e*P **P 07 48 57.5 -0.1**
NB2 NORSAR Subarra 24.59 339 P **P 07 48 57.6 -0.7**
comp=Z,7.3nm,1.0s,baz=147,slow=9.3
NB2 NORSAR Subarra 24.59 339 P **P 07 48 57.6 -0.7**
comp=Z,7.3nm,1.0s,SNR=6.3
NOA NORSAR Array B 24.59 339 P **P 07 48 58.1 -0.2**
comp=Z,4.6nm,1.1s,baz=143,slow=9.1,SNR=6.2
NOA LR LR 07 58 59.9
comp=Z,103nm,19.6s,baz=140,slow=38
NC303 NORSAR Array S 24.70 339 *e*P **P 07 49 01.0 +1.8**
NC303 NORSAR Array S 24.70 339 *e*P **P 07 49 01.0 +1.8**
NBO00 NORSAR Array S 24.71 339 *e*P **P 07 49 02.2 +2.9**
NBO00 NORSAR Array S 24.71 339 *e*P **P 07 49 02.2 +2.9**
ESDC Sonseca Array 25.47 282 P **P 07 49 06.5 0.0**
comp=Z,0.3nm,0.4s,baz=80,slow=12,SNR=4.5
DYA Yadsworthy 25.81 307 *e*P **P 07 49 11.1 +1.7**
comp=Z,110nm,1.6s
DYA Yadsworthy 25.81 307 *e*P **P 07 49 11.1 +1.7**
comp=Z,110nm,1.6s
TAM Tamanrasset 25.84 238 *e*P **P 07 49 11.9 +1.9**
TAM pmax pmax
comp=Z,10.0nm,1.2s
TAM Tamanrasset 25.84 238 *e*P **P 07 49 11.9 +1.9**
comp=Z,10nm,1.2s
TAM Tamanrasset 25.84 238 *e*P **P 07 49 11.9 +1.9**
comp=Z,10nm,1.2s
ARU Arti 26.01 39 P **P 07 49 10.9 -0.2**
comp=Z,7.0nm,0.2s,baz=252,slow=7.6,SNR=7.5
ARU Arti 26.01 39 *c i*P **P 07 49 11.2 +0.1**
ARU 07 49 47.7
ARU S **S 07 53 44.4 +2.7**
ARU SS **SnSn 07 54 40.8 +2.2**
ARU pmax pmax
comp=Z,25nm,1.7s
ARU Arti 26.01 39 *e*P **P 07 49 11.2 +0.1**
comp=Z,15nm,1.0s
ARU S **S 07 53 44.4 +2.7**
ARU Arti 26.01 39 *e*P **P 07 49 11.2 +0.1**
comp=Z,15nm,1.0s
EKA Eskdalemuir Ar 26.92 318 P **P 07 49 19.9 +0.6**
comp=Z,2.9nm,0.7s,baz=111,slow=12,SNR=5.4
SOKR Solikamsk 26.95 31 *e*P P 07 49 26.9 +7.4
SOKR pmax pmax
comp=Z,16nm,1.1s
ARCES ARCESS Array B 30.53 358 P **P 07 49 51.0 -0.4**
comp=Z,2.4nm,0.7s,baz=201,slow=6.5,SNR=4.4
ARCES ARCESS Array B 30.53 358 P **P 07 49 51.0 -0.4**
ARCES pmax pmax
comp=Z,2.0nm,0.7s
ARCES ARCESS Array B 30.53 358 P **P 07 49 51.0 -0.4**
comp=Z,2.0nm,0.7s
ZRNK Zerenda 30.53 50 *e*P **P 07 49 52.2 +0.7**
ZRNK pmax pmax
comp=Z,8.0nm,1.3s
ZRNK Zerenda 30.53 50 *e*P **P 07 49 52.2 +0.7**
comp=Z,8.3nm,1.3s
ZRNK Zerenda 30.53 50 *e*P **P 07 49 52.2 +0.7**
comp=Z,8.3nm,1.3s
KKAR Karatay Array 31.23 69 *e*P **P 07 49 58.1 +0.2**
KKAR Karatay Array 31.23 69 *e*P **P 07 49 58.1 +0.2**
KKAR Karatay Array 31.23 69 *e*P **P 07 49 58.1 +0.2**
BRVK Borovoye 31.31 50 *e*P **P 07 49 58.9 +0.5**
BRVK pmax pmax
comp=Z,3.0nm,0.9s
BRVK Borovoye 31.31 50 *e*P **P 07 49 58.9 +0.5**
comp=Z,3.0nm,0.9s
BRVK Borovoye 31.31 50 *e*P **P 07 49 58.9 +0.5**
comp=Z,3.2nm,0.9s
EKS2 Erkin-Say 33.67 69 *e*P **P 07 50 20.0 +0.7**
EKS2 pmax pmax
comp=Z,5.0nm,1.1s
EKS2 Erkin-Say 33.67 69 *e*P **P 07 50 20.0 +0.7**
comp=Z,5.2nm,1.1s
EKS2 Erkin-Say 33.67 69 *e*P **P 07 50 20.0 +0.7**
comp=Z,5.2nm,1.1s
AAK Ala-Archa 34.20 69 ¶ *e*P **P 07 50 24.5 +0.5**
AAK pmax pmax
comp=Z,10.0nm,0.9s
AAK Ala-Archa 34.20 69 *e*P **P 07 50 24.5 +0.5**
comp=Z,10.0nm,0.9s
AAK Ala-Archa 34.20 69 *e*P **P 07 50 25.1 +1.1**
comp=Z,3.9nm,0.9s
FRU Bishkek 34.25 69 *e*P **P 07 50 24.0 -0.3**
FRU pmax pmax
comp=Z,45nm,2.0s
FRU Bishkek 34.25 69 *e*P **P 07 50 24.0 -0.3**
comp=Z,45nm,2.0s
TKM2 Tokmak 2 34.95 68 *e*P **P 07 50 31.0 +0.5**
TKM2 pmax pmax
comp=Z,3.0nm,1.1s
TKM2 Tokmak 2 34.95 68 *e*P **P 07 50 31.0 +0.5**
comp=Z,2.7nm,1.1s
TKM2 Tokmak 2 34.95 68 *e*P **P 07 50 31.0 +0.5**
comp=Z,2.7nm,1.1s
TOA0 Torodi Ar. Sit 35.43 231 *e*P **P 07 50 34.8 +0.1**
TOA0 Torodi Ar. Sit 35.43 231 *e*P **P 07 50 34.8 +0.1**
TORD Torodi Ar. Bea 35.43 231 P **P 07 50 34.7 +0.1**
comp=Z,3.7nm,0.9s,baz=36,slow=8.9,SNR=16
TORD PcP **PcP 07 53 03.9 -0.5**
comp=Z,1.4nm,1.0s,baz=60,slow=2.0,SNR=3.7
TORD LR LR 08 05 22.0
comp=Z,75nm,21.1s,baz=110,slow=37
KURBB Kurchatov Arra 36.23 55 P **P 07 50 41.0 -0.1**
comp=Z,1.3nm,0.7s,baz=277,slow=8.8,SNR=12
KURK Kurchatov 36.29 55 *i*P **P 07 50 43.0 +1.4**
KURK Kurchatov 36.29 55 P **P 07 50 41.0 -0.6**
KURK Kurchatov 36.29 55 P **P 07 50 41.0 -0.6**
MAKZ Makanchi 38.82 61 *e*P **P 07 51 03.4 +0.2**
MAKZ pmax pmax
comp=Z,10.0nm,1.7s
MAKZ Makanchi 38.82 61 *e*P **P 07 51 03.4 +0.2**
comp=Z,9.7nm,1.7s
MAKZ Makanchi 38.82 61 *e*P **P 07 51 03.4 +0.2**
comp=Z,9.7nm,1.7s
MK31 Makanchi Array 39.04 61 *e*P **P 07 51 05.3 +0.3**
MK31 Makanchi Array 39.04 61 *e*P **P 07 51 05.3 +0.3**
MK31 Makanchi Array 39.04 61 *e*P **P 07 51 05.3 +0.3**
MKAR Makanchi Array 39.04 61 P **P 07 51 05.2 +0.2**
comp=Z,3.6nm,0.9s,baz=287,slow=6.2,SNR=16
MKAR PcP **PcP 07 53 13.7 -1.2**
comp=Z,0.6nm,0.8s,baz=268,slow=3.9,SNR=3.8
MK01 Makanchi Array 39.05 61 *e*P **P 07 51 04.8 -0.3**
MK01 Makanchi Array 39.05 61 *e*P **P 07 51 04.8 -0.3**
ZAA0 Zalesovo Array 40.02 49 *e*P **P 07 51 12.5 -0.6**
ZAA0 Zalesovo Array 40.02 49 *e*P **P 07 51 12.5 -0.6**
ZALV Zalesovo Beam 40.02 49 P **P 07 51 12.9 -0.2**
comp=Z,1.7nm,0.6s,baz=270,slow=8.9,SNR=5.8
ZALV LR LR 08 11 13.2
comp=Z,71nm,18.3s,baz=314,slow=41
NRIK Noril'sk 42.95 26 LR LR 08 09 43.4
comp=Z,67nm,20.5s,baz=286,slow=36
DBIC Dimbokro 44.48 232 LR LR 08 11 26.4
comp=Z,45nm,19.2s,baz=16,slow=38
LSA Lhasa 51.18 81 *e*P **P 07 52 42.7 +0.4**
LSA pmax pmax
comp=Z,5.0nm,0.4s
LSA Lhasa 51.18 81 *e*P **P 07 52 42.7 +0.4**
comp=Z,5.0nm,0.4s
LSA Lhasa 51.18 81 *e*P **P 07 52 42.7 +0.4**
comp=Z,5.0nm,0.4s
TLY Talaya 51.63 50 *e*P **P 07 52 46.2 +1.4**
TLY pmax pmax
comp=Z,7.0nm,1.2s
TLY Talaya 51.63 50 *e*P **P 07 52 46.0 +1.2**
comp=Z,19nm,1.7s
TLY Talaya 51.63 50 *e*P **P 07 52 46.0 +1.2**
comp=Z,19nm,1.7s
ZAK Zakamensk 51.80 52 *e*P **P 07 52 46.2 0.0**
ZAK pmax pmax
comp=Z,3.0nm,1.5s
ZAK Zakamensk 51.80 52 *e*P **P 07 52 46.2 0.0**
comp=Z,3.0nm,1.5s
SONM Songino Array 54.58 54 *e*P **P 07 53 06.9 +0.1**
comp=Z,2.0nm,0.8s,baz=283,slow=8.1,SNR=13
SONM LR LR 08 18 58.5
comp=Z,61nm,20.2s,baz=355,slow=39
SONA1 Songino Array 54.58 54 *e*P **P 07 53 06.5 -0.3**
SONA1 Songino Array 54.58 54 *e*P **P 07 53 06.5 -0.3**
ULN Ulaanbaatar 54.98 54 ¶ *i*P **P 07 53 09.2 -0.5**
ULN pmax pmax
comp=Z,8.0nm,1.7s
ULN Ulaanbaatar 54.98 54 *e*P **P 07 53 09.7 0.0**
comp=Z,3.3nm,0.8s
ULN Ulaanbaatar 54.98 54 *e*P **P 07 53 09.7 0.0**
comp=Z,3.3nm,0.8s
TIXI Tiksi 56.34 22 ‖ *e*P **P 07 53 18.2 -0.6**
TIXI pmax pmax
comp=Z,8.0nm,2.5s
TIXI Tiksi 56.34 22 *e*P **P 07 53 18.2 -0.6**
comp=Z,8.0nm,2.5s
SCHQ Schefferville 62.21 319 P **P 07 53 58.8 -1.0**
comp=Z,2.9nm,0.8s,baz=358,slow=3.1,SNR=5.5
CMAR Chiang Mai Arr 63.13 87 P **P 07 54 05.2 -1.1**
comp=Z,0.9nm,0.5s,baz=301,slow=7.9,SNR=7.3
CM01 Chiang Mai Arr 63.16 87 *e*P **P 07 54 05.1 -1.5**
CM01 Chiang Mai Arr 63.16 87 *e*P **P 07 54 05.1 -1.5**
BILL Bilibino 68.43 16 *e*P **P 07 54 38.0 -1.8**
BILL pmax pmax
comp=Z,3.0nm,1.2s
SEY Seymchan 68.69 24 *c e*P **P 07 54 40.7 -0.7**
SEY Seymchan 68.69 24 *e*P **P 07 54 40.7 -0.7**
USRK Ussuriysk Ar. 71.84 48 P **P 07 54 59.6 -1.5**
comp=Z,1.2nm,0.6s,baz=246,slow=9.6,SNR=5.0
PSI Prapat 72.64 101 *e*P **P 07 55 05.0 -1.5**
PSI pmax pmax
comp=Z,10.0nm,1.3s
PSI Prapat 72.64 101 *e*P **P 07 55 05.0 -1.5**
comp=Z,9.6nm,1.3s
KS01 Wonju Array Si 73.38 55 *e*P **P 07 55 09.6 -0.8**
KS01 Wonju Array Si 73.38 55 *e*P **P 07 55 09.6 -0.8**
KS15 Wonju Array Si 73.40 55 *e*P **P 07 55 10.2 -0.3**
KS15 Wonju Array Si 73.40 55 *e*P **P 07 55 10.2 -0.3**
KSAR Wonju Array Be 73.40 55 P **P 07 55 10.2 -0.3**
KSAR Wonju Array Be 73.40 55 P **P 07 55 10.1 -0.3**
KSAR Wonju Array Be 73.40 55 P **P 07 55 10.2 -0.3**
KSRS Korea Array 73.41 55 P **P 07 55 10.2 -0.4**
comp=Z,7.4nm,0.9s,baz=307,slow=5.2,SNR=21
YKA Yellowknife Ar 74.60 343 P **P 07 55 16.4 -0.7**
comp=Z,1.2nm,1.0s,baz=27,slow=6.1,SNR=12
YKB5 Yellowknife Ar 74.60 343 *e*P **P 07 55 16.1 -1.0**
YKB5 Yellowknife Ar 74.60 343 *e*P **P 07 55 16.1 -1.0**
ILAR Eielson Array 76.39 358 P **P 07 55 27.1 -0.2**
comp=Z,0.2nm,0.7s,baz=339,slow=4.8,SNR=3.9
FFC Flin Flon 77.56 333 *e*P **P 07 55 33.3 -0.8**
FFC pmax pmax
comp=Z,5.0nm,1.3s
FFC Flin Flon 77.56 333 *e*P **P 07 55 33.3 -0.8**
comp=Z,4.9nm,1.3s
FFC Flin Flon 77.56 333 *e*P **P 07 55 33.3 -0.8**
comp=Z,4.9nm,1.3s
PETK Petropavlovsk- 77.95 29 LR LR 08 33 08.0
comp=Z,66nm,18.6s,baz=291,slow=38
ULM Lac du Bonnet 78.71 328 LR LR 08 31 46.3
comp=Z,52nm,19.8s,baz=176,slow=37
MJAR Matsushiro Arr 80.37 51 P **P 07 55 48.9 -0.9**
comp=Z,2.8nm,0.8s,baz=307,slow=5.4,SNR=6.5
PBMO Poplar Bluff 86.16 316 *e*P **P 07 56 18.9 -0.8**
comp=Z,6.6nm,1.0s
PBMO Poplar Bluff 86.16 316 *e*P **P 07 56 18.9 -0.8**
comp=Z,6.6nm,1.0s
PDAR Pinedale Array 90.27 331 LR LR 08 38 39.4
comp=Z,31nm,18.7s,baz=20,slow=37
TXAR Lajitas Array 98.90 320 LR LR 08 42 06.7
comp=Z,27nm,19.6s,baz=0.0,slow=36
PFO Pinyon Flats O 100.89 331 *i* P **Pdif 07 57 32.2 +4.3**
QSPA South Pole Qui 128.97 180 *e*PKIKP **PKPdf 08 02 44.3 -0.9**
QSPA South Pole Qui 128.97 180 *e*PKPdf **PKPdf 08 02 44.3 -0.9**

ISK ***27*** *07:58:55.7, 39.°07N×29.°14E, h6km, MD2.8*
DDA ***27*** *07:58:55.8, 39.°12N×29.°11E, h7km, Md2.9*
CSEM ***27*** *07:58:56.1±0.1, 39.°09N×29.°12E, h2km, MD2.9, Error ellipse: s-maj=2.3km s-min=1.7km az=114.0*
ISC 27 07:58:56.5±1.0, 39.°09N±0.°02×29.°12E±0.°02, h8km±10km, n53, σ0.47/68, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.28**	**91**	P	**Pg**	**07 59 02.3**	**0.0**
GDZ				S	**Sg**	**07 59 06.5**	**+0.4**
GDZ	**Gediz**	**0.28**	**91**	*i* P	**Pg**	**07 59 02.3**	**0.0**
GDZ				*i* S	**Sg**	**07 59 06.5**	**+0.4**
DEMI	**Demirci**	**0.32**	**261**	P	**Pg**	**07 59 02.9**	**+0.1**
DEMI				S	**Sg**	**07 59 06.8**	**-0.2**
DEMI	**Demirci**	**0.32**	**261**	*i* P	**Pg**	**07 59 02.9**	**+0.1**
DEMI				*i* S	**Sg**	**07 59 06.8**	**-0.2**
TVSB	**Tavsanli**	**0.45**	**37**	*e*PG	**Pg**	**07 59 04.7**	**-0.6**
TVSB	**Tavsanli**	**0.45**	**37**	*e*Pg	**Pg**	**07 59 04.7**	**-0.6**
KULA	**Kula-Manisa**	**0.68**	**212**	PG	**Pg**	**07 59 09.1**	**-0.6**
KULA				SG	**Sg**	**07 59 18.5**	**0.0**
KULA	**Kula-Manisa**	**0.68**	**212**	*i* Pg	**Pg**	**07 59 09.1**	**-0.6**
KULA				*i* Sg	**Sg**	**07 59 18.5**	**0.0**
DURS	**Dursunbey**	**0.71**	**316**	P	**Pg**	**07 59 09.6**	**-0.6**
DURS	**Dursunbey**	**0.71**	**316**	*i* P	**Pg**	**07 59 09.7**	**-0.6**
MANT	**Manisa**	**0.74**	**216**	P	**Pg**	**07 59 10.7**	**-0.2**
MANT				S	**Sg**	**07 59 20.5**	**-0.1**
MANT	**Manisa**	**0.74**	**216**	*i* P	**Pg**	**07 59 10.7**	**-0.2**
MANT				*i* S	**Sg**	**07 59 20.5**	**-0.1**
KHAL	**Karahalli**	**0.78**	**158**	P	**Pg**	**07 59 11.5**	**-0.1**
KHAL				S	**Sg**	**07 59 22.2**	**+0.5**
KHAL	**Karahalli**	**0.78**	**158**	*i* P	**Pg**	**07 59 11.5**	**-0.1**
KHAL				*i* S	**Sg**	**07 59 22.2**	**+0.5**
KHL	**Karahalli**	**0.83**	**157**	*e*PG	**Pg**	**07 59 11.7**	**-0.9**
KHL	**Karahalli**	**0.83**	**157**	*e*Pg	**Pg**	**07 59 11.7**	**-0.9**
AKHS	**Akhisar**	**1.04**	**258**	P	**Pg**	**07 59 16.0**	**-0.4**
AKHS				S	**Sb**	**07 59 30.4**	**-0.1**
AKHS	**Akhisar**	**1.04**	**258**	*i* P	**Pg**	**07 59 16.1**	**-0.4**
AKHS				*i* S	**Sb**	**07 59 30.4**	**-0.1**
AKS	**Akhisar**	**1.04**	**259**	*e*PG	**Pg**	**07 59 16.3**	**-0.2**
AKS	**Akhisar**	**1.04**	**259**	*e*Pg	**Pg**	**07 59 16.3**	**-0.2**
BALB	**Balikesir**	**1.10**	**300**	*e*PN	**Pg**	**07 59 17.6**	**-0.1**
BALB				*e*SN	**Sn**	**07 59 33.8**	**+0.2**
BALB	**Balikesir**	**1.10**	**300**	*e*Pn	**Pg**	**07 59 17.6**	**-0.1**
IGD	**Bursa**	**1.17**	**3**	*i* P	**Pg**	**07 59 16.5**	**-2.5**
IGD				*i* S	**Sb**	**07 59 34.3**	**0.0**
CAVI	**Cavuskoy**	**1.24**	**27**	*e*PN	**Pn**	**07 59 20.3**	**+0.1**
CAVI	**Cavuskoy**	**1.24**	**27**	*e*Pn	**Pn**	**07 59 20.3**	**+0.1**
IZI	**Iznik**	**1.27**	**12**	*e*PN	**Pg**	**07 59 20.9**	**-0.1**
IZI	**Iznik**	**1.27**	**12**	*e*Pn	**Pg**	**07 59 20.9**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.29**	**352**	*e*PN	**Pb**	**07 59 21.0**	**0.0**
MDNY	**Mudanya-Bursa**	**1.29**	**352**	*e*Pn	**Pb**	**07 59 21.0**	**0.0**
KCTX	**Karacabey (Bur**	**1.31**	**334**	PN	**Pg**	**07 59 21.6**	**-0.1**
KCTX	**Karacabey (Bur**	**1.31**	**334**	*i* Pn	**Pg**	**07 59 21.6**	**-0.1**
DENT	**Denizli**	**1.34**	**183**	*e*PN	**Pn**	**07 59 21.0**	**-0.5**
DENT	**Denizli**	**1.34**	**183**	*e*Pn	**Pn**	**07 59 21.0**	**-0.5**
GEMT	**Gemlik**	**1.34**	**2**	*e*PN	**Pg**	**07 59 22.1**	**-0.2**
GEMT	**Gemlik**	**1.34**	**2**	*e*Pn	**Pg**	**07 59 22.1**	**-0.2**
ADVT	**Abdulvahap**	**1.42**	**20**	*e*PN	**Pn**	**07 59 22.6**	**0.0**
ADVT	**Abdulvahap**	**1.42**	**20**	*e*Pn	**Pn**	**07 59 22.6**	**0.0**
GONE	**Gonen-Balikesi**	**1.46**	**311**	*e*PN	**Pb**	**07 59 24.0**	**+0.1**
GONE	**Gonen-Balikesi**	**1.46**	**311**	*e*Pn	**Pb**	**07 59 24.0**	**+0.1**
ARMT	**Armutlu**	**1.48**	**352**	*e*PN	**Pb**	**07 59 24.4**	**0.0**
ARMT	**Armutlu**	**1.48**	**352**	*e*Pn	**Pb**	**07 59 24.4**	**0.0**
GPA	**Golpazari**	**1.51**	**37**	*e*PN	**Pn**	**07 59 23.8**	**0.0**
GPA	**Golpazari**	**1.51**	**37**	*e*Pn	**Pn**	**07 59 23.8**	**0.0**
EDC	**Edincik**	**1.58**	**323**	*e*PN	**Pn**	**07 59 25.3**	**+0.5**
EDC	**Edincik**	**1.58**	**323**	*e*Pn	**Pn**	**07 59 25.3**	**+0.5**
GULT	**Gulveren**	**1.72**	**38**	*e*PN	**Pn**	**07 59 26.9**	**+0.1**
GULT	**Gulveren**	**1.72**	**38**	*e*Pn	**Pn**	**07 59 26.9**	**+0.1**
AYDN	**Tasoluk**	**1.73**	**215**	P	**Pg**	**07 59 29.8**	**+0.1**
AYDN	**Tasoluk**	**1.73**	**215**	*i* P	**Pg**	**07 59 29.8**	**+0.1**
AYDN				*i* S	**Sg**	**07 59 52.8**	**+0.6**
HRT	**Hereke**	**1.78**	**14**	*e*PN	**Pn**	**07 59 28.2**	**+0.6**
HRT	**Hereke**	**1.78**	**14**	*e*Pn	**Pn**	**07 59 28.2**	**+0.6**
ISK	**Istanbul-Kandi**	**1.97**	**359**	*e*PN	**Pn**	**07 59 30.6**	**+0.4**
ISK	**Istanbul-Kandi**	**1.97**	**359**	*e*Pn	**Pn**	**07 59 30.6**	**+0.4**

DJA ***27*** *08:01:24.1±1.5, 0.°N±8.°×9.°7E±1.°3, h51km±9km, M3.7/8, MLv3.7/8*
IDC ***27*** *08:01:26.8±7.8, 0.°96N×98.°75E, h0km, mb3.4/3, mb1 3.6/3, mb1mx3.3/38, mbtmp3.4/3, Error ellipse: s-maj=411.1km s-min=30.8km az=55.0*
ISC 27 08:01:28.7±1.1, 0.°42N±0.°07×97.°97E±0.°10, h29km, n13, σ1.94/12, mb3.3/3, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PBSI	**Pulau Batu**	**0.56**	**146**	P	**Pb**	**08 01 41.2**	**+1.1**
PBSI				S	**Sn**	**08 01 52.1**	**+3.0**
GSI	**Gunungsitoli**	**0.97**	**336**	P	**Pn**	**08 01 45.0**	**-1.4**
GSI				S	**Sb**	**08 02 00.4**	**+1.0**
MNSI	**Mandailing Nat**	**1.66**	**77**	P	**Pb**	**08 01 59.7**	**+1.1**

PPI	Padang Panjang	2.58	110	P	Pn	08 02 07.9	-0.6
PDSI	Padang	2.82	118	P	Pn	08 02 08.0	-3.9
BKNI	Bangkinang	3.07	92	P	Pn	08 02 14.1	-1.3
KCSI	Kotacane, Aceh	3.09	356	P	Pn	08 02 14.3	-1.4
H08S2	Diego Garcia H	26.64	252	T	T	08 34 11.8	
	baz=74,slow=75,SNR=56						
H08S3	Diego Garcia H	26.64	252	T	T	08 34 11.4	
	baz=74,slow=75,SNR=57						
H08S1	Diego Carcia H	26.65	252	T	T	08 34 11.5	
	baz=74,slow=75,SNR=58						
WRA	Warramunga Arr	40.97	122	P	P	08 09 08.8	-0.6
	0.7nm,1.0s,baz=304,slow=8.7,SNR=4.8						
ASAR	Alice Springs	42.31	127	P	P	08 09 19.9	-0.4
	0.4nm,0.8s,baz=294,slow=7.8,SNR=4.7						
MKAR	Makanchi Array	48.19	346	P	P	08 10 06.4	-0.1
	0.3nm,0.5s,baz=169,slow=8.1,SNR=3.8						

*ISCJB **27** 08:03:28.1±0.5, 6°.21N±0°.08×94°.26E±0°.09, h64km, mb4.1/23, Error ellipse: s-maj=15.5km s-min=7.0km az=140.9*
*IDC **27** 08:03:32.9±3.4, 6°.31N×94°.56E, h92km±31km, mb3.8/15, mb1 3.9/17, mb1mx3.7/38, mbtmp4.1/17, Error ellipse: s-maj=29.1km s-min=13.7km az=59.0*
*NEIC **27** 08:03:33.5±1.0, 6°.27N×94°.54E, h101km±9km, mb4.1/8, Error ellipse: s-maj=14.4km s-min=6.5km az=68.0*
ISC 27 08:03:29.7±0.6, 6°.2N±0°.1×94°.3E±0°.1, h64km, n33, σ1°.03/30, mb4.1/23, Nicobar Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LHMI	Lhok Sumawe	2.82	109	ePn	Pn	08 04 13.8	+1.4
PSI	Prapat	5.72	126	P	Pn	08 04 54.2	+1.9
	6.2nm,0.3s,baz=301,slow=11,SNR=25						
GSI	Gunungsitoli	5.85	146	ePn	Pn	08 04 57.0	+3.0
KULM	Kulim	6.41	98	ePn	Pn	08 05 02.9	+1.4
CMAR	Chiang Mai Arr	13.03	20	P	Pn	08 06 32.8	+0.7
	0.6nm,0.3s,baz=209,slow=14,SNR=2.7						
FITZ	Fitzroy Crossi	39.24	129	eP	P	08 10 51.4	-0.9
	2.9nm,0.9s						
AAK	Ala-Archa	40.31	337	eP	P	08 11 02.6	+1.6
	3.2nm,1.0s						
MKAR	Makanchi Array	41.76	348	P	P	08 11 12.4	-0.3
	2.0nm,0.6s,baz=168,slow=8.0,SNR=19						
KKAR	Karatay Array	42.33	334	eP	P	08 11 18.1	+0.7
	0.7nm,0.4s						
SONM	Songino Array	42.78	12	P	P	08 11 20.5	-0.7
	1.5nm,0.7s,baz=196,slow=7.1,SNR=7.0						
ULN	Ulaanbaatar	42.95	13	eP	P	08 11 21.2	-1.3
	1.9nm,0.6s						
KSAR	Wonju Array Be	43.63	40	P	P	08 11 24.4	-3.6
KSRS	Korea Array	43.67	40	P	P	08 11 24.4	-3.8
	0.5nm,0.3s,baz=213,slow=10,SNR=4.1						
GEYT	Alibeck	45.55	319	P	P	08 11 44.4	+1.0
	1.7nm,0.4s,baz=129,slow=11,SNR=3.4						
KURBB	Kurchatov Arra	46.22	346	P	P	08 11 48.5	+0.2
	1.4nm,0.4s,baz=169,slow=6.5,SNR=26						
KURK	Kurchatov	46.28	346	P	P	08 11 48.5	-0.3
WRA	Warramunga Arr	47.19	124	P	P	08 11 55.6	-0.8
	0.8nm,0.5s,baz=307,slow=8.7,SNR=12						
WRAB	Tennant Creek	47.19	124	eP	P	08 11 56.0	-0.4
	2.3nm,0.7s						
ZALV	Zalesovo Beam	48.25	353	P	P	08 12 03.6	-0.4
	2.2nm,0.5s,baz=182,slow=8.2,SNR=5.3						
ASAR	Alice Springs	48.74	129	P	P	08 12 07.8	-0.5
	1.3nm,0.6s,baz=304,slow=7.5,SNR=8.9						
BRVK	Borovoye	50.69	342	eP	P	08 12 22.4	-0.2
	2.2nm,0.8s						
ABKAR	Akbulak array	51.78	332	eP	P	08 12 31.3	+0.4
	0.6nm,0.3s						
NRIK	Noril'sk	63.23	357	P	P	08 13 50.1	-0.9
	1.9nm,0.5s,baz=146,slow=5.8,SNR=3.8						
BRTR	Keskin Array B	63.64	311	P	P	08 13 54.1	-0.4
	0.8nm,0.6s,baz=98,slow=6.4,SNR=4.3						
TIXI	Tiksi	68.86	11	eP	P	08 14 25.3	-1.8
	5.1nm,0.6s						
CASY	Casey	73.24	173	eP	P	08 14 52.3	-1.3
FINES	FINESS Array B	74.27	332	P	P	08 14 59.4	-0.4
	1.7nm,0.4s,baz=93,slow=5.1,SNR=18						
ARCES	ARCESS Array B	76.90	340	P	P	08 15 14.8	+0.1
	4.3nm,1.0s,baz=87,slow=6.2,SNR=11						
GERES	GERESS Array B	79.17	318	P	P	08 15 28.7	+0.8
	2.6nm,0.8s,baz=87,slow=5.5,SNR=16						
TORD	Torodi Ar. Bea	91.11	283	P	P	08 16 30.0	+1.8
	0.4nm,0.6s,baz=92,slow=5.6,SNR=2.6						
VNDA	Vanda	91.25	168	P	P	08 16 26.7	-0.8
	0.6nm,0.9s,baz=254,slow=7.4,SNR=4.1						
PDAR	Pinedale Array	126.69	22	PKP	PKPdf	08 22 26.1	-0.5
	0.2nm,0.5s,baz=338,slow=1.9,SNR=2.8						
TXAR	Lajitas Array	140.70	25	PKhKP	PKPpre	08 22 45.9	
	0.1nm,0.3s,baz=188,slow=2.5,SNR=2.5						
TXAR				PKP	PKPdf	08 22 53.9	+0.8
	0.3nm,0.8s,baz=180,slow=0.2,SNR=3.4						

*ISCJB **27** 08:03:40.3±0.7, 18°.0S±0°.2×178°.5W±0°.2, h579km, mb3.8/10, Error ellipse: s-maj=34.3km s-min=15.6km az=145.1*
*IDC **27** 08:03:44.9±4.8, 17°.95S×178°.59W, h622km±59km, mb3.3/10, mb1 3.7/10, mb1mx3.4/28, mbtmp4.2/10, Error ellipse: s-maj=30.5km s-min=21.5km az=153.0*
ISC 27 08:03:41.3±0.8, 17°.9S±0°.2×178°.5W±0°.2, h579km, n12, σ0°.82/13, mb3.7/10, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	Stephens Creek	38.55	241	P	P	08 10 16.3	+0.9
	5.9nm,0.8s,baz=100,slow=12,SNR=12						
WRA	Warramunga Arr	44.53	260	P	P	08 11 02.5	-0.2
	3.1nm,0.6s,baz=96,slow=7.2,SNR=73						
ASAR	Alice Springs	44.69	254	P	P	08 11 04.0	+0.1
	16nm,0.6s,baz=88,slow=8.5,SNR=281						
ASAR				PcP	PcP	08 12 32.8	-1.0
	1.0nm,0.5s,baz=106,slow=3.9,SNR=6.8						
VNDA	Vanda	60.47	185	P	P	08 12 54.8	-0.6
	0.6nm,0.6s,baz=4.7,slow=8.0,SNR=5.8						
NVAR	Mina Array Bea	79.48	44	P	P	08 14 49.4	+0.6
	1.4nm,0.7s,baz=225,slow=8.4,SNR=11						
ILAR	Eielson Array	85.88	13	P	P	08 15 19.3	-0.7
	1.3nm,0.9s,baz=221,slow=4.8,SNR=9.8						
TXAR	Lajitas Array	86.07	58	P	P	08 15 23.2	+1.3
	1.4nm,0.8s,baz=222,slow=6.0,SNR=20						
PDAR	Pinedale Array	87.41	43	P	P	08 15 28.3	+0.3
	0.8nm,0.7s,baz=229,slow=3.1,SNR=9.0						
CMAR	Chiang Mai Arr	88.77	290	P	P	08 15 35.3	+0.7
	1.2nm,0.3s,baz=89,slow=1.9,SNR=4.3						
YKA	Yellowknife Ar	94.35	25	P	P	08 15 58.7	-0.5
	0.2nm,0.6s,baz=263,slow=4.6,SNR=3.6						
ARCES	ARCESS Array B	126.26	350	PKP	PKPdf	08 21 37.3	-0.8
	3.5nm,1.0s,baz=328,slow=1.4,SNR=2.7						
GERES	GERESS Array B	147.55	345	PKPbc	PKPbc	08 22 20.3	-0.9
	1.8nm,0.7s,baz=50,slow=6.3,SNR=10						

*NIED **27** 08:04:00, 37°.10N×140°.70E, h11km, Mw3.9 Best double couple: M0=7.51000×10^14 NP1:φs188.00000°, δ45.00000°, λ21.00000°. NP2:φs83.00000°, δ75.00000°, λ133.00000°.*
*ISCJB **27** 08:04:07.4±0.4, 37°.07N±0°.02×140°.73E±0°.04, h23km±2km, mb4.0/24, MS4.1/1, Error ellipse: s-maj=5.6km s-min=3.7km az=23.9*
*JMA **27** 08:04:08.1, 37°.07N×140°.65E, h15km±1km, M4.2 Broadband fault plane solution: P waves. NP1: φs=84.00000°, δ76.00000°, λ135.00000°. NP2: φs188.00000°, δ47.00000°, λ20.00000°. Principal axes: T Plg41.0000°, Azm36.0000°; N Plg44.0000°, Azm250.0000°; P Plg18.0000°, Azm142.0000°;*
JMA Felt IV J1.
*NEIC **27** 08:04:11.6±0.8, 37°.16N×140°.66E, h42km±7km, mb4.3/7 Error ellipse: s-maj=10.0km s-min=6.7km az=122.0*
NEIC Recorded [4 JMA] in Fukushima.
*IDC **27** 08:04:11.6±2.1, 37°.11N×140°.52E, h41km±19km, mb3.8/17, mb1 4.0/21, mb1mx3.9/40, mbtmp4.0/21, ML3.1/3, MS3.0/5, Ms1 3.0/5, ms1mx2.7/47, Error ellipse: s-maj=16.5km s-min=13.5km az=109.0*
ISC 27 08:04:07.8±0.8, 37°.07N±0°.03×140°.66E±0°.05, h15km±5km, n56, σ1°.34/60, mb4.0/24, 3C-4D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.11	74	⇓P	Pg	08 04 11.6	+0.3
ONAJ				S	Sg	08 04 14.1	+0.5
JFK	Kawauchi	0.34	30	⇑P	Pg	08 04 15.0	+0.1
JFK				S	Sg	08 04 19.9	+0.2
JHO	Hitachi	0.47	189	⇑P	Pg	08 04 17.0	-0.1
JHO				S	Sg	08 04 23.2	-0.1
JFT	Otama	0.52	330	⇓P	Pb	08 04 18.2	-0.4
JFT				S	Sb	08 04 25.1	-0.8
JSB	Shiboa	0.60	260	⇓P	Pb	08 04 20.1	+0.1
JSB				S	Sb	08 04 28.1	-0.2
JMM	Marumori	0.80	7	⇑P	Pg	08 04 22.7	-0.7
JMM				S	Sg	08 04 33.4	-0.5
JFY	Yanaizu	0.83	294	⇓P	Pb	08 04 23.6	-0.4
JFY				S	Sb	08 04 34.3	-0.7
MJAR	Matsushiro Arr	2.04	256	P	Pn	08 04 42.4	+0.8
	50nm,0.3s,baz=78,slow=16,SNR=58						
MJAR				S	Sb	08 05 09.6	0.0
	80nm,0.3s,baz=295,slow=6.3,SNR=18						
MJAR				LR	LR	08 05 51.2	
	comp=Z,158nm,19.6s,baz=90,slow=52						
MAJO	Matsushiro	2.04	256	ePn	Pb	08 04 43.4	-1.1
MAT	Matsushiro	2.04	256	P	Pb	08 04 43.0	-1.5
MAT				S	Sb	08 05 10.3	+0.6
JHJ	Hachijo jima 2	4.01	191	P	Pn	08 05 10.7	+2.1
	24nm,0.3s,baz=64,slow=17,SNR=4.4						
JHJ				S	Sn	08 05 54.6	-0.6
	39nm,0.3s,baz=73,slow=19,SNR=2.6						
JHJ2	Mitsune	4.01	190	ePn	Pn	08 05 11.8	+3.1
JHJ2				eSn	Sn	08 05 57.4	+2.0
ERM	Erimo	5.30	21	ePn	Pn	08 05 25.9	-0.5
	30nm,0.8s						
ERM				eSn	Sn	08 06 30.3	+3.2
ASAJ	Asahikawa	7.19	11	P	Pn	08 05 53.1	+0.8
	baz=126,slow=19						
ASAJ	Asahikawa	7.19	11	ePn	Pn	08 05 52.4	+0.1
	4.2nm,0.4s						
ASAJ				eSn	Sn	08 07 16.5	+2.8
JNU	Nakatsue	8.93	247	P	Pn	08 06 21.7	+5.4
	0.4nm,0.3s,baz=66,slow=20,SNR=4.5						
USRK	Ussuriysk Ar.	9.70	320	P	Pn	08 06 31.9	+5.3
	0.4nm,0.3s,baz=134,slow=12,SNR=18						
CBIJ	Chichi jima	10.03	172	P	Pn	08 06 28.3	-3.0
CBIJ				S	Sn	08 08 12.7	-11
JCJ	Chichijima	10.03	172	P	Pn	08 06 28.3	-3.0
	12nm,0.3s,baz=74,slow=13,SNR=14						
JCJ				S	Sn	08 08 12.7	-11
	2.9nm,0.3s,baz=270,slow=20,SNR=2.0						
JCJ				LR	LR	08 10 00.7	
	comp=Z,74nm,21.4s,baz=83,slow=35						
KSRS	Korea Array	10.16	276	P	Pn	08 06 36.9	+3.8
	0.2nm,0.3s,baz=171,slow=18,SNR=3.8						
KSRS				LR	LR	08 09 56.6	
	comp=Z,25nm,20.2s,baz=156,slow=34						
KSAR	Wonju Array Be	10.19	276	P	Pn	08 06 36.9	+3.4
KLR	Kul'dur	13.77	335	P	Pn	08 07 22.2	-0.1
	0.0nm,0.3s,baz=240,slow=20,SNR=1.9						
KLR				LR	LR	08 11 57.0	
	comp=Z,41nm,20.0s,baz=156,slow=34						
PETK	Petropavlovsk-	19.96	31	P	P	08 08 39.2	0.0
	0.1nm,0.3s,baz=232,slow=9.3,SNR=4.0						
PETK				LR	LR	08 15 52.9	
	comp=Z,35nm,20.0s,baz=256,slow=35						
SONM	Songino Array	27.27	304	P	P	08 09 51.4	-0.1
	2.0nm,0.7s,baz=100,slow=10,SNR=5.1						
H11N2	WAKE ISLAND Hy	28.69	120	T	T	08 39 58.4	
	baz=313,slow=75,SNR=1481						
H11N1	WAKE ISLAND Hy	28.69	120	T	T	08 39 57.2	
	baz=313,slow=75,SNR=1637						
H11N3	WAKE ISLAND Hy	28.70	120	T	T	08 39 59.7	
	baz=313,slow=75,SNR=1167						
H11S1	WAKE ISLAND Hy	29.39	122	T	T	08 40 48.9	
	baz=314,slow=75,SNR=4260						
H11S3	WAKE ISLAND Hy	29.39	122	T	T	08 40 48.8	
	baz=314,slow=75,SNR=2826						
H11S2	WAKE ISLAND Hy	29.40	122	T	T	08 40 50.0	
	baz=314,slow=75,SNR=1966						
CMAR	Chiang Mai Arr	40.92	255	P	P	08 11 48.5	-1.2
	0.7nm,0.4s,baz=57,slow=9.8,SNR=3.0						
ZALV	Zalesovo Beam	41.45	312	P	P	08 11 53.3	-0.3
	0.8nm,0.3s,baz=66,slow=7.1,SNR=3.0						
MKAR	Makanchi Array	43.59	302	P	P	08 12 11.2	0.0
	1.1nm,0.6s,baz=86,slow=9.8,SNR=8.6						
KURK	Kurchatov	45.44	308	eP	P	08 12 27.0	+1.2
	27nm,0.9s						
KURBB	Kurchatov Arra	45.50	308	P	P	08 12 25.7	-0.7
	1.6nm,0.5s,baz=83,slow=8.3,SNR=8.5						
TKM2	Tokmak 2	49.08	298	eP	P	08 12 54.6	-0.1
	1.0nm,0.5s						
ILAR	Eielson Array	49.78	32	P	P	08 12 60.0	+0.5
	1.7nm,0.9s,baz=270,slow=6.5,SNR=17						
DOT	Dot Lake	51.11	34	eP	P	08 13 09.4	-0.1
	3.1nm,0.8s						
WRAB	Tennant Creek	57.01	187	eP	P	08 13 52.8	-0.1
	3.0nm,0.8s						
WRA	Warramunga Arr	57.02	187	P	P	08 13 52.7	-0.2
	3.6nm,0.6s,baz=3.9,slow=7.3,SNR=22						
ABKAR	Akbulak array	57.45	310	eP	P	08 13 55.1	-0.8
	0.8nm,0.5s						
ASAR	Alice Springs	60.75	187	P	P	08 14 19.4	+0.6
	1.5nm,0.7s,baz=17,slow=6.3,SNR=12						
ARCES	ARCESS Array B	63.75	339	P	P	08 14 37.8	-0.7
	1.4nm,0.6s,baz=57,slow=8.8,SNR=9.3						
YKA	Yellowknife Ar	64.08	30	P	P	08 14 40.9	+0.3
	0.5nm,0.7s,baz=303,slow=8.6,SNR=9.3						
FINES	FINESS Array B	68.50	332	P	P	08 15 08.4	-0.7
	2.4nm,0.7s,baz=60,slow=5.5,SNR=5.6						
SUMG	Summit	70.65	360	eP	P	08 15 22.7	+0.1
	7.4nm,1.1s						
AKASG	Malin Array Be	73.90	322	P	P	08 15 41.0	-0.9
	0.5nm,0.5s,baz=50,slow=6.2,SNR=4.4						
NOA	NORSAR Array B	73.92	337	P	P	08 15 42.1	+0.2
	0.6nm,0.7s,baz=27,slow=9.4,SNR=3.3						
NVAR	Mina Array Bea	75.45	53	P	P	08 15 53.0	+1.6
	1.2nm,0.7s,baz=304,slow=5.8,SNR=9.3						
PDAR	Pinedale Array	78.07	45	P	P	08 16 06.0	-0.2
	0.6nm,0.7s,baz=264,slow=2.0,SNR=5.3						
GERES	GERESS Array B	82.36	328	P	P	08 16 27.7	-1.3
	0.4nm,0.4s,baz=39,slow=5.2,SNR=2.0						
ECSD	EROS Data Cent	84.26	38	eP	P	08 16 39.2	+0.4
	2.1nm,1.0s						
TXAR	Lajitas Array	90.57	52	P	P	08 17 10.6	+0.9
	0.4nm,0.7s,baz=310,slow=3.6,SNR=5.9						
KEST	Kesra	94.63	322	LR	LR	09 04 35.4	
	comp=Z,59nm,19.6s,baz=288,slow=38						
QSPA	South Pole Qui	126.81	180	ePKPdf	PKPdf	08 23 09.8	0.0
LPAZ	La Paz	147.19	59	PKPbc	PKPbc	08 23 51.1	-0.5
	1.8nm,0.7s,baz=338,slow=2.8,SNR=8.3						

*IDC **27** 08:13:02.0±0.8, 0°.28N×97°.63E, h0km, mb4.4/17, mb1 4.5/19, mb1mx4.3/42, mbtmp4.4/19, ML4.2/2, MS3.8/18, Ms1 3.8/18, ms1mx3.5/46, Error ellipse: s-maj=25.6km s-min=15.3km az=54.0*
*ISCJB **27** 08:13:04.4±0.3, 0°.27N±0°.04×97°.63E±0°.04, h29km, mb4.6/43, MS3.9/18, Error ellipse: s-maj=7.1km s-min=4.1km az=138.5*
*DJA **27** 08:13:05.9±0.9, 0°N±5°×97°8E±°, h34km±10km, M4.9/15, mB4.8/2, mb4.9/4, MLv4.9/15, Mw(mB)4.1/2*
*NEIC **27** 08:13:06.2±1.5, 0°.30N×97°.68E, h27km±9km, mb4.7/20, Error ellipse: s-maj=9.6km s-min=4.5km az=51.0*
*KLM **27** 08:13:10.3, 0°.35N×97°.83E, h59km, mb4.5, ML4.3, MS5.5*
ISC 27 08:13:05.8±0.5, 0°.16N±0°.05×97°.57E±0°.06, h29km, n132, σ1°.38/116, mb4.7/46, MS3.9/19, 3C-4D, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PBSI	Pulau Batu	0.74	107	P	Pb	08 13 20.0	-0.2
GSI	Gunungsitoli	1.14	0	P	Pn	08 13 24.4	-1.4
GSI	Gunungsitoli	1.14	0	ePg	Pn	08 13 24.4	-1.4
GSI				eSn	Sb	08 13 45.0	+3.7
MNSI	Mandailing Nat	2.11	73	P	Pn	08 13 37.9	-1.2
PPI	Padang Panjang	2.90	102	P	Pn	08 13 49.5	-0.5
PSI	Prapat	2.96	27	Pn	Pn	08 13 48.2	-2.7
	9.2nm,0.3s,baz=188,slow=9.9,SNR=43						
PSI				LR	LR	08 14 39.1	
	comp=Z,1μm,20.5s,baz=160,slow=36						
PSI	Prapat	2.96	27	ePn	Pn	08 13 47.9	-3.0
KCSI	Kotacane, Aceh	3.35	4	P	Pn	08 13 54.4	-1.8
TSI	Tuntungan	3.47	17	P	Pn	08 13 57.0	-0.8
BKNI	Bangkinang	3.48	87	P	Pn	08 13 57.7	-0.3
BKNI	Bangkinang	3.48	87	ePn	Pn	08 13 57.6	-0.3
PPSI	Pulau Pagai	3.79	140	P	Pn	08 14 02.1	-0.2
MLSI	Meulaboh, Aceh	4.24	344	P	Pn	08 14 07.2	-1.3
FRIM	Kepong	5.08	53	⇑P	Pn	08 14 19.8	-0.3
IPM	Ipoh	5.51	39	⇓P	Pn	08 14 26.2	+0.3
IPM	Ipoh	5.51	39	ePn	Pn	08 14 25.6	-0.4
KULM	Kulim	5.96	31	⇑P	Pn	08 14 31.5	-0.6
KULM	Kulim	5.96	31	ePn	Pn	08 14 29.9	-2.1
MYKOM	Kota Tinggi	6.49	75	⇓P	Pn	08 14 38.9	-0.5
MYKOM	Kota Tinggi	6.49	75	ePn	Pn	08 14 38.5	-0.9
MNAI	Manna	7.01	130	ePn	Pn	08 14 48.1	+1.5
MNAI				eSn	Sn	08 16 03.0	-2.4
LHSI	Lahat	7.15	124	P	Pn	08 14 49.3	+0.8
KTGM	Kuala Trenggan	7.57	47	⇓P	Pn	08 14 53.7	-0.5
SKLT	Songkhla	7.60	24	P	Pn	08 15 01.0	+6.3
	69nm,0.9s,644nm						
CMBY	CAMPBELL BAY	7.71	332	eP	Pn	08 14 55.9	-0.4
CMBY				IAmb	IAmb	08 14 57.5	
	comp=Z,48nm,0.5s						
TRTT	Trang	7.92	15	P	Pn	08 15 06.6	+7.6
	comp=Z,50nm,1.9s						
LEM	Lembang	12.20	125	LR	LR	08 21 28.1	
	comp=Z,437nm,19.6s,baz=314,slow=42						
DGPR	DIGLIPUR	13.73	341	eP	Pn	08 16 17.7	-0.8
DGPR				IAmb	IAmb	08 16 20.3	
	comp=Z,37nm,1.4s						
SBUM	Sibu	14.82	81	ePn	Pn	08 16 32.5	-1.0
PBKT	Sadao Pong	16.65	11	P	Pn	08 16 55.9	-1.3
	comp=Z,20nm,0.9s						
UTTA	Uttaradit	17.72	9	P	P	08 17 11.5	+0.3
	comp=Z,2.8nm,0.9s						
SKNT	Sakolnakorn	17.86	20	P	Pn	08 17 11.0	-1.3
	comp=Z,30nm,1.1s						
SKNT	Sakolnakorn	17.86	20	P	Pn	08 17 11.0	-1.3
	comp=Z,30nm,1.1s						
CM01	Chiang Mai Arr	18.20	4	ePn	Pn	08 17 14.5	-1.9
CM31	Chiang Mai Arr	18.23	4	ePn	Pn	08 17 14.7	-2.1
CMAR	Chiang Mai Arr	18.23	4	P	Pn	08 17 14.4	-2.5
	comp=Z,0.7nm,0.3s,baz=193,slow=12,SNR=28						
PALK	Pallekele	18.24	293	LR	LR	08 23 35.5	
	comp=Z,453nm,19.2s,baz=116,slow=35						
LAMP	Lampang	18.36	6	P	Pn	08 17 18.8	+0.4
	comp=Z,3.8nm,1.0s						
CMMT	Chiang Mai	18.59	4	P	P	08 17 19.4	-1.4
	comp=Z,15nm,0.9s						
CHTO	Chiang Mai	18.59	4	eP	P	08 17 19.1	-1.7
	comp=Z,12nm,1.0s						
KKM	Kota Kinabalu	19.51	72	⇓P	P	08 17 29.2	-1.9
KKM	Kota Kinabalu	19.51	72	eP	P	08 17 30.9	-0.2
	comp=Z,23nm,0.7s						
SDKM	Sandakan	20.34	74	⇑P	P	08 17 38.9	-1.1
QIZ	Qiongzhong	22.29	32	P	P	08 18 02.0	+1.1
QIZ				S	S	08 22 07.0	+2.3
QIZ				LR	LR		
	comp=E,580nm,13.2s						
QIZ				LR	LR		
	comp=Z,320nm,12.2s						
VIS	Vishakhapatnam	22.38	322	eP	P	08 17 60.0	-1.9
KMI	Kunming	25.32	11	P	P	08 18 32.0	+1.6
KMI				pmax	pmax		
	comp=Z,33nm,1.0s						
KMI				pmax	pmax		
	comp=Z,150nm,5.1s						
HYB	Hyderabad	25.38	313	eP	P	08 18 27.0	-3.9
SHL	Shillong	25.85	348	eP	P	08 18 34.4	-0.7
BOK	Bokaro	26.09	335	eP	P	08 18 34.6	-2.5
BOK				IAmb	IAmb	08 18 40.0	
	comp=Z,19nm,0.9s						
H08S2	Diego Garcia H	26.17	252	T	T	08 45 49.3	
	baz=73,slow=75,SNR=1893						
H08S3	Diego Garcia H	26.18	252	T	T	08 45 49.4	
	baz=73,slow=75,SNR=2030						
H08S1	Diego Carcia H	26.19	252	T	T	08 45 50.5	
	baz=73,slow=75,SNR=2396						
NGP	Nagpur	27.61	320	eP	P	08 18 50.1	-0.8
NGP				IAmb	IAmb	08 18 54.4	
	comp=Z,7.2nm,0.5s						
POO	Poona	29.59	309	ex	x	08 11 38.0	
LSA	Lhasa	30.01	349	eP	P	08 19 13.0	+0.4
	comp=Z,8.8nm,0.9s						
BHPL	Bhopal	30.16	321	eP	P	08 19 10.2	-3.4
CD2	Chengdu	31.14	10	P	P	08 19 22.8	+0.6
CD2				pmax	pmax		
	comp=Z,10.0nm,0.6s						
ENH	Enshi	32.02	20	eP	P	08 19 28.7	-1.2
	comp=Z,18nm,0.9s						
FITZ	Fitzroy Crossi	33.03	125	eP	P	08 19 38.7	-0.2
	comp=Z,31nm,1.8s						
WHN	Wuhan	34.17	26	eP	P	08 19 48.5	-0.1
YOJ	Yonaguni jima	34.51	44	eP	P	08 19 49.2	-2.4
	comp=Z,153nm,1.2s						
DDI	Dehra Dun	35.27	330	eP	P	08 19 56.8	-1.4
XAN	Xi'an	35.35	16	P	P	08 19 57.5	-1.3
XAN				PP	PP	08 21 33.8	+14
XAN				S	S	08 25 38.0	+6.5
XAN				SS	SnSn	08 27 56.0	+4.5
XAN				pmax	pmax		
	comp=Z,27nm,1.0s						
XAN				LR	LR		
	comp=N,450nm,15.7s						
XAN				LR	LR		
	comp=E,260nm,15.7s						
XAN				LR	LR		
	comp=Z,590nm,14.4s						
LZH	Lanzhou	36.22	9	eP	P	08 20 08.0	+1.6
LZH				pP	pP	08 20 12.5	-2.5
LZH				sP	sP	08 20 15.8	-2.7
LZH				pmax	pmax		
	comp=Z,14nm,1.0s						
SMLA	Simla	36.37	330	eP	P

TKM2	**Tokmak 2**	**46.91**	338	*e*P	**P**	**08 21 35.3**	**+1.3**
	comp=Z,5.1nm,1.0s						
AAK	**Ala-Archa**	**47.09**	337	LR	LR	08 43 59.3	
	comp=Z,110nm,20.0s,baz=152,slow=40						
EKS2	**Erkin-Say**	**47.41**	336	*e*P	**P**	**08 21 38.5**	**+0.8**
	comp=Z,3.8nm,0.9s						
SONM	**Songino Array**	**48.10**	8	P	**P**	**08 21 43.2**	**+0.2**
	comp=Z,10.0nm,0.9s,baz=190,slow=8.7,SNR=38						
SONM				PcP	**PcP**	**08 23 11.3**	**+0.9**
	comp=Z,1.2nm,0.5s,baz=195,slow=4.7,SNR=3.2						
SONM				LR	LR	08 44 17.7	
	comp=Z,296nm,19.9s,baz=188,slow=39						
SONA1	**Songino Array**	**48.12**	8	*e*P	**P**	**08 21 43.0**	**-0.1**
ULN	**Ulaanbaatar**	**48.23**	9	*e*P	**P**	**08 21 44.3**	**+0.2**
	comp=Z,6.4nm,0.9s						
MK01	**Makanchi Array**	**48.31**	346	*e*P	**P**	**08 21 44.8**	**+0.2**
MK31	**Makanchi Array**	**48.33**	346	*e*P	**P**	**08 21 45.5**	**+0.7**
MKAR	**Makanchi Array**	**48.33**	346	P	**P**	**08 21 45.4**	**+0.7**
	comp=Z,8.4nm,0.7s,baz=156,slow=7.9,SNR=61						
MKAR				LR	LR	08 45 27.5	
	comp=Z,51nm,19.5s,baz=152,slow=40						
MAKZ	**Makanchi**	**48.42**	346	*e*P	**P**	**08 21 45.6**	**+0.2**
	comp=Z,6.6nm,0.9s						
KKAR	**Karatay Array**	**49.15**	334	*e*P	**P**	**08 21 51.7**	**+0.7**
TLY	**Talaya**	**51.59**	5	*e*P	**P**	**08 22 10.5**	**+1.1**
	comp=Z,8.7nm,0.6s						
MJAR	**Matsushiro Arr**	**52.22**	42	P	**P**	**08 22 12.6**	**-1.7**
	comp=Z,1.5nm,0.8s,baz=236,slow=4.1,SNR=4.4						
MJAR				LR	LR	08 47 17.4	
	comp=Z,99nm,18.2s,baz=260,slow=40						
GEYT	**Alibeck**	**52.24**	321	P	**P**	**08 22 15.4**	**+0.9**
	comp=Z,1.7nm,0.4s,baz=104,slow=12,SNR=3.3						
STKA	**Stephens Creek**	**52.39**	132	P	**P**	**08 22 17.7**	**+2.0**
	comp=Z,0.4nm,0.4s,baz=315,slow=11,SNR=3.2						
HIA	**Hailar**	**52.51**	18	*e*P	**P**	**08 22 16.7**	**+0.5**
	comp=Z,10nm,0.5s						
KURK	**Kurchatov**	**52.89**	345	*e*P	**P**	**08 22 19.5**	**+0.5**
	comp=Z,16nm,1.2s						
USRK	**Ussuriysk Ar.**	**53.47**	30	P	**P**	**08 22 23.2**	**-0.2**
	comp=Z,7.9nm,0.8s,baz=228,slow=7.0,SNR=16						
ZAA0	**Zalesovo Array**	**54.64**	351	*e*P	**P**	**08 22 31.9**	**+0.2**
ZALV	**Zalesovo Beam**	**54.64**	351	P	**P**	**08 22 31.9**	**+0.2**
	comp=Z,14nm,0.5s,baz=183,slow=6.0,SNR=28						
ZALV				LR	LR	08 49 10.5	
	comp=Z,80nm,18.2s,baz=54,slow=40						
BRVK	**Borovoye**	**57.41**	341	*e*P	**P**	**08 22 51.6**	**+0.1**
	comp=Z,4.4nm,0.7s						
ZRNK	**Zerenda**	**57.75**	340	*e*P	**P**	**08 22 53.4**	**-0.6**
	comp=Z,3.2nm,0.8s						
ABKAR	**Abkulak array**	**58.60**	332	*e*P	**P**	**08 22 60.0**	**0.0**
YSS	**Yuzh-Sakhalins**	**61.00**	34	*e*P	**P**	**08 23 17.1**	**+0.5**
	comp=Z,19nm,0.8s						
KBZ	**Khabaz**	**65.09**	319	P	**P**	**08 23 44.2**	**+0.4**
	comp=Z,2.9nm,0.8s,baz=122,slow=9.0,SNR=5.8						
NRIK	**Noril'sk**	**69.39**	356	P	**P**	**08 24 09.9**	**-0.6**
	comp=Z,4.6nm,1.0s,baz=152,slow=4.2,SNR=6.1						
PETK	**Petropavlovsk-**	**72.40**	33	LR	LR	08 57 17.6	
	comp=Z,63nm,19.2s,baz=242,slow=37						
TIXI	**Tiksi**	**74.14**	10	P	**P**	**08 24 38.5**	**-0.6**
	comp=Z,8.1nm,0.8s,baz=199,slow=1.1,SNR=18						
TIXI	**Tiksi**	**74.14**	10	*e*P	**P**	**08 24 37.9**	**-1.2**
	comp=Z,6.8nm,0.7s						
BOSA	**Boshof**	**74.58**	240	LR	LR	08 53 06.1	
	comp=Z,86nm,21.7s,baz=98,slow=32						
AKASG	**Malin Array Be**	**76.30**	323	P	**P**	**08 24 51.1**	**-0.8**
	comp=Z,0.3nm,0.3s,baz=89,slow=4.7,SNR=4.6						
BUR08	**Bucovina Ar. S**	**78.06**	319	*e*P	**P**	**08 25 03.9**	**+1.8**
FIA1	**FINESS Array S**	**81.08**	333	*e*P	**P**	**08 25 18.8**	**+0.8**
FINES	**FINESS Array B**	**81.08**	333	P	**P**	**08 25 18.5**	**+0.5**
	comp=Z,3.0nm,0.9s,baz=347,slow=2.5,SNR=4.6						
FINES				LR	LR	09 04 01.0	
	comp=Z,64nm,20.8s,baz=54,slow=38						
BKZ	**Black Stump Fm**	**81.51**	130	*e*P	**P**	**08 25 22.6**	**+1.8**
	comp=Z,117nm,2.0s						
ARCES	**ARCESS Array B**	**83.63**	340	P	**P**	**08 25 31.9**	**+0.6**
	comp=Z,2.0nm,0.8s,baz=81,slow=3.8,SNR=6.4						
ARCES				LR	LR	09 06 14.6	
	comp=Z,51nm,19.2s,baz=110,slow=38						
GEA0	**GERESS Array S**	**85.83**	319	*e*P	**P**	**08 25 43.5**	**+0.7**
GERES	**GERESS Array B**	**85.83**	319	P	**P**	**08 25 43.1**	**+0.3**
	comp=Z,0.3nm,0.2s,baz=90,slow=4.1,SNR=5.1						
HFS	**Hagfors**	**86.80**	330	LR	LR	09 07 19.7	
	comp=Z,45nm,19.0s,baz=90,slow=38						
NOA	**NORSAR Array B**	**88.09**	331	LR	LR	09 09 08.5	
	comp=Z,41nm,20.8s,baz=130,slow=38						
TORD	**Torodi Ar. Bea**	**95.68**	283	LR	LR	09 08 00.2	
	comp=Z,38nm,19.6s,baz=255,slow=34						
NVAR	**Mina Array Bea**	**129.40**	37	PKP	**PKPdf**	**08 32 14.9**	**+2.5**
	comp=Z,0.3nm,0.7s,baz=312,slow=3.9,SNR=3.6						
PDAR	**Pinedale Array**	**130.81**	26	PKP	**PKPdf**	**08 32 15.1**	**+0.1**
	comp=Z,0.2nm,0.6s,baz=5.7,slow=1.8,SNR=2.5						
TX31	**Lajitas Ar. Si**	**144.35**	33	*e*PKPdf	PKPbc	08 32 38.9	+0.5
TXAR	**Lajitas Array**	**144.35**	33	PKP	PKPbc	08 32 38.8	+0.4
	comp=Z,0.6nm,0.7s,baz=278,slow=1.6,SNR=8.8						
CPUP	**Villa Florida**	**144.47**	221	PKP	**PKPdf**	**08 32 40.1**	**-0.1**
	comp=Z,4.7nm,0.8s,baz=43,slow=17,SNR=3.0						
KMSC	**Kings Mountain**	**144.87**	358	*e*PKPdf	**PKPab**	**08 32 39.2**	**-0.4**
WLAR	**White Oak Lake**	**144.87**	16	*e*PKPdf	**PKPdf**	**08 32 41.0**	**+0.3**
CCAR	**Cane Creek**	**144.99**	14	*e*PKPdf	**PKPdf**	**08 32 40.8**	**-0.1**

*ISK **27** 08:18:47.6, 39.05N×29.11E, h4km, MD3.0*
*ISCJB **27** 08:18:48.6±0.5, 39.05N±0.03×29.09E±0.03, h5km±6km, Error ellipse: s-maj=5.4km s-min=4.1km az=163.4*
*DDA **27** 08:18:48.1, 39.10N×29.07E, h7km, Md3.0*
*CSEM **27** 08:18:48.7±0.1, 39.05N×29.09E, h5km, MD3.0, Error ellipse: s-maj=2.7km s-min=2.1km az=103.0*
ISC 27 08:18:47.6±1.2, 39.00N±0.03×29.17E±0.03, h6km±11km, n64, σ0.60/78, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.26**	**70**	P	**Pb**	**08 18 55.0**	**+0.2**
GDZ				S	**Sb**	**08 18 59.6**	**+0.1**
GDZ	**Gediz**	**0.26**	**70**	*i* P	**Pb**	**08 18 55.0**	**+0.2**
GDZ				*i* S	**Sb**	**08 18 59.6**	**+0.1**
DEMI	**Demirci**	**0.35**	**277**	P	**Pg**	**08 18 54.7**	**+0.2**
DEMI				S	**Sg**	**08 18 58.7**	**-0.5**
DEMI	**Demirci**	**0.35**	**277**	*i* P	**Pg**	**08 18 54.6**	**+0.2**
DEMI				*i* S	**Sg**	**08 18 58.7**	**-0.5**
TVSB	**Tavsanli**	**0.50**	**27**	PG	**Pg**	**08 18 57.4**	**+0.1**
TVSB	**Tavsanli**	**0.50**	**27**	*i* Pg	**Pg**	**08 18 57.4**	**+0.1**
KULA	**Kula-Manisa**	**0.63**	**219**	PG	**Pb**	**08 19 01.2**	**+0.2**
KULA				SG	**Sb**	**08 19 10.4**	**+0.4**
KULA	**Kula-Manisa**	**0.63**	**219**	*i* Pg	**Pb**	**08 19 01.2**	**+0.2**
KULA				*i* Sg	**Sb**	**08 19 10.4**	**+0.4**
KHAL	**Karahalli**	**0.68**	**158**	P	**Pn**	**08 19 03.9**	**+0.1**
KHAL				S	**Sn**	**08 19 14.6**	**-0.2**
KHAL	**Karahalli**	**0.68**	**158**	*i* P	**Pn**	**08 19 03.9**	**+0.1**
KHAL				*i* S	**Sn**	**08 19 14.6**	**-0.2**
MANT	**Manisa**	**0.70**	**223**	P	**Pb**	**08 19 02.6**	**+0.4**
MANT				S	**Sb**	**08 19 12.0**	**-0.2**
MANT	**Manisa**	**0.70**	**223**	*i* P	**Pb**	**08 19 02.6**	**+0.4**
MANT				*i* S	**Sb**	**08 19 12.0**	**-0.2**
KHL	**Karahalli**	**0.73**	**158**	PG	**Pb**	**08 19 03.5**	**+0.7**
KHL				SG	**Sn**	**08 19 14.9**	**-1.1**
KHL	**Karahalli**	**0.73**	**158**	*i* Pg	**Pb**	**08 19 03.5**	**+0.7**
KHL				*i* Sg	**Sn**	**08 19 14.9**	**-1.1**
AKS	**Akhisar**	**1.06**	**264**	PG	**Pg**	**08 19 07.5**	**-0.5**
AKS	**Akhisar**	**1.06**	**264**	*i* Pg	**Pg**	**08 19 07.5**	**-0.5**
BALB	**Balikesir**	**1.19**	**303**	PN	**Pg**	**08 19 09.7**	**-0.6**
BALB				SN	**Sg**	**08 19 25.8**	**+0.1**
BALB	**Balikesir**	**1.19**	**303**	*i* Pn	**Pg**	**08 19 09.7**	**-0.6**
BALB				*i* Sn	**Sg**	**08 19 25.8**	**+0.1**
CAVI	**Cavuskoy**	**1.31**	**23**	PN	**Pn**	**08 19 12.9**	**+0.5**
CAVI	**Cavuskoy**	**1.31**	**23**	*i* Pn	**Pn**	**08 19 12.9**	**+0.5**
IZI	**Iznik**	**1.35**	**10**	PN	**Pn**	**08 19 13.6**	**+0.5**
IZI	**Iznik**	**1.35**	**10**	*i* Pn	**Pn**	**08 19 13.6**	**+0.5**
MDNY	**Mudanya-Bursa**	**1.38**	**351**	PN	**Pn**	**08 19 13.6**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.38**	**351**	*i* Pn	**Pn**	**08 19 13.6**	**+0.2**
KCTX	**Karacabey (Bur**	**1.41**	**334**	PN	**Pn**	**08 19 14.1**	**+0.3**
KCTX	**Karacabey (Bur**	**1.41**	**334**	*i* Pn	**Pn**	**08 19 14.1**	**+0.3**
GEMT	**Gemlik**	**1.43**	**1**	PN	**Pn**	**08 19 14.6**	**+0.5**
GEMT	**Gemlik**	**1.43**	**1**	*i* Pn	**Pn**	**08 19 14.6**	**+0.5**
AYDB	**Zeytinkoy-Aydi**	**1.45**	**224**	*e*PN	**Pg**	**08 19 15.1**	**-0.4**
AYDB	**Zeytinkoy-Aydi**	**1.45**	**224**	*e*Pn	**Pg**	**08 19 15.1**	**-0.4**
ADVT	**Abdulvahap**	**1.50**	**17**	PN	**Pb**	**08 19 15.8**	**+0.1**
ADVT	**Abdulvahap**	**1.50**	**17**	*i* Pn	**Pb**	**08 19 15.8**	**+0.1**
GONE	**Gonen-Balikesi**	**1.55**	**313**	*e*PN	**Pn**	**08 19 16.2**	**+0.5**
GONE	**Gonen-Balikesi**	**1.55**	**313**	*e*Pn	**Pn**	**08 19 16.2**	**+0.5**
GPA	**Golpazari**	**1.56**	**34**	*e*PN	**Pb**	**08 19 16.9**	**0.0**
GPA	**Golpazari**	**1.56**	**34**	*e*Pn	**Pb**	**08 19 16.9**	**0.0**
ARMT	**Armutlu**	**1.58**	**352**	*e*PN	**Pn**	**08 19 16.9**	**+0.8**
ARMT	**Armutlu**	**1.58**	**352**	*e*Pn	**Pn**	**08 19 16.9**	**+0.8**
EDC	**Edincik**	**1.68**	**324**	*e*PN	**Pn**	**08 19 17.8**	**+0.3**
EDC	**Edincik**	**1.68**	**324**	*e*Pn	**Pn**	**08 19 17.8**	**+0.3**
GULT	**Gulveren**	**1.77**	**36**	*e*PN	**Pb**	**08 19 20.0**	**-0.4**
GULT	**Gulveren**	**1.77**	**36**	*e*Pn	**Pb**	**08 19 20.0**	**-0.4**
HRT	**Hereke**	**1.86**	**12**	*e*PN	**Pb**	**08 19 21.4**	**-0.6**
HRT	**Hereke**	**1.86**	**12**	*e*Pn	**Pb**	**08 19 21.4**	**-0.6**
SVRH	**Sivrihisar-ESK**	**1.88**	**76**	*e*PN	**Pb**	**08 19 22.1**	**-0.3**
SVRH	**Sivrihisar-ESK**	**1.88**	**76**	*e*Pn	**Pb**	**08 19 22.1**	**-0.3**
MRMT	**Marmara Adasi**	**2.01**	**323**	*e*PN	**Pn**	**08 19 22.9**	**+0.8**
MRMT	**Marmara Adasi**	**2.01**	**323**	*e*Pn	**Pn**	**08 19 22.9**	**+0.8**
ISK	**Istanbul-Kandi**	**2.06**	**358**	PN	**Pn**	**08 19 23.4**	**+0.6**
ISK	**Istanbul-Kandi**	**2.06**	**358**	*i* Pn	**Pn**	**08 19 23.4**	**+0.6**
SILT	**Sile**	**2.18**	**9**	*e*PN	**Pn**	**08 19 25.4**	**+1.0**
SILT	**Sile**	**2.18**	**9**	*e*Pn	**Pn**	**08 19 25.4**	**+1.0**
BGKT	**Bogazkoy**	**2.20**	**352**	*e*PN	**Pn**	**08 19 25.1**	**+0.5**
BGKT	**Bogazkoy**	**2.20**	**352**	*e*Pn	**Pn**	**08 19 25.1**	**+0.5**
KLYT	**Kilyos**	**2.25**	**358**	*e*PN	**Pn**	**08 19 26.1**	**+0.8**
KLYT	**Kilyos**	**2.25**	**358**	*e*Pn	**Pn**	**08 19 26.1**	**+0.8**
RKY	**Sarkoy-Tekirda**	**2.28**	**318**	*e*PN	**Pn**	**08 19 26.1**	**+0.4**
RKY	**Sarkoy-Tekirda**	**2.28**	**318**	*e*Pn	**Pn**	**08 19 26.1**	**+0.4**
CTKS	**Kestanelik-??a**	**2.29**	**347**	*e*PN	**Pn**	**08 19 27.1**	**+1.3**
CTKS	**Kestanelik-??a**	**2.29**	**347**	*e*Pn	**Pn**	**08 19 27.1**	**+1.3**
LPK	**Lapseki**	**2.31**	**307**	*e*PN	**Pn**	**08 19 27.1**	**+1.0**
LPK	**Lapseki**	**2.31**	**307**	*e*Pn	**Pn**	**08 19 27.1**	**+1.0**
CTYL	**Yalikoy Yolu**	**2.56**	**345**	*e*PN	**Pn**	**08 19 30.9**	**+1.3**
CTYL	**Yalikoy Yolu**	**2.56**	**345**	*e*Pn	**Pn**	**08 19 30.9**	**+1.3**

*DJA **27** 08:20:43.8±1.0, 0.5S±7.9×9.7E±., h57km±24km, M4.1/6, MLv4.1/6*
*IDC **27** 08:20:44.9±1.9, 0.19N×97.66E, h0km, mb4.1/6, mb1 4.1/8, mb1mx3.7/53, mbtmp4.0/8, ML3.6/2, Error ellipse: s-maj=56.5km s-min=19.3km az=64.0*
*ISCJB **27** 08:20:45.9±1.0, 0.17N±0.09×97.50E±0.07, h25km, mb4.1/6, Error ellipse: s-maj=14.5km s-min=6.9km az=34.7*
ISC 27 08:20:48.4±1.2, 0.19N±0.09×97.65E±0.09, h25km, n19, σ1.47/17, mb4.1/6, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PBSI	**Pulau Batu**	**0.68**	**111**	P	**Pn**	**08 21 02.9**	**+0.5**
PBSI				S	**Sn**	**08 21 14.1**	**+1.9**
GSI	**Gunungsitoli**	**1.11**	**356**	P	**Pn**	**08 21 07.3**	**-1.1**
GSI				S	**Sn**	**08 21 26.3**	**+3.5**
MNSI	**Mandailing Nat**	**2.02**	**73**	P	**Pn**	**08 21 20.6**	**-0.3**
MNSI				S	**Sb**	**08 21 49.1**	**-0.1**
PPI	**Padang Panjang**	**2.82**	**103**	P	**Pn**	**08 21 29.5**	**-2.4**
PPI				S	**Sn**	**08 22 05.4**	**+0.2**
PSI	**Prapat**	**2.89**	**26**	Pn	**Pn**	**08 21 31.7**	**-1.3**
	3.6nm,0.3s,baz=173,slow=8.7,SNR=11						
KCSI	**Kotacane, Aceh**	**3.31**	**2**	P	**Pn**	**08 21 37.2**	**-1.5**
CMAR	**Chiang Mai Arr**	**18.20**	**4**	P	**Pn**	**08 24 58.0**	**-1.5**
	0.2nm,0.3s,baz=192,slow=11,SNR=5.8						
H08S2	**Diego Garcia H**	**26.26**	**252**	T	T	08 53 35.9	
	baz=73,slow=75,SNR=686						
H08S3	**Diego Garcia H**	**26.27**	**252**	T	T	08 53 33.3	
	baz=73,slow=75,SNR=709						
H08S1	**Diego Carcia H**	**26.28**	**252**	T	T	08 53 34.3	
	baz=73,slow=75,SNR=718						
H01W3	**Cape Leeuwin H**	**38.15**	**158**	T	T	09 08 47.8	
	baz=334,slow=76,SNR=11						
H01W2	**Cape Leeuwin H**	**38.16**	**158**	T	T	09 08 44.9	
	baz=334,slow=76,SNR=9.6						
H01W1	**Cape Leeuwin H**	**38.16**	**158**	T	T	09 08 48.6	
	baz=334,slow=76,SNR=11						
WRA	**Warramunga Arr**	**41.13**	**121**	P	**P**	**08 28 30.6**	**-0.2**
	1.2nm,0.5s,baz=304,slow=8.9,SNR=16						
ASAR	**Alice Springs**	**42.44**	**127**	P	**P**	**08 28 42.0**	**+0.5**
	1.1nm,0.6s,baz=297,slow=8.0,SNR=16						
KSRS	**Korea Array**	**46.43**	**34**	P	**P**	**08 29 12.9**	**-0.2**
	1.4nm,0.6s,baz=227,slow=8.4,SNR=6.4						
SONM	**Songino Array**	**48.06**	**8**	P	**P**	**08 29 26.4**	**+0.5**
	0.9nm,0.4s,baz=188,slow=9.8,SNR=5.5						
MKAR	**Makanchi Array**	**48.32**	**346**	P	**P**	**08 29 28.3**	**+0.5**
	1.3nm,0.6s,baz=151,slow=7.8,SNR=8.2						
ZALV	**Zalesovo Beam**	**54.62**	**351**	P	**P**	**08 30 15.0**	**+0.2**
	2.7nm,0.4s,baz=204,slow=5.1,SNR=3.1						

*ISCJB **27** 08:36:27.8±0.5, 37.03N±0.05×28.31E±0.04, h0km, Error ellipse: s-maj=7.9km s-min=3.2km az=28.5*
*ISK **27** 08:36:27.4, 37.06N×28.33E, h18km, MD2.6*
*DDA **27** 08:36:28.4, 36.98N×28.23E, h7km, Md2.7, Suspected Mining explosion.*
*CSEM **27** 08:36:28.1±0.3, 37.03N×28.31E, h1km, MD2.6, Error ellipse: s-maj=9.7km s-min=4.7km az=26.0, Suspected Mining explosion.*
ISC 27 08:36:27.2±0.9, 36.98N±0.04×28.31E±0.03, h0km, n15, σ0.64/26, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TURN	**Turunc**	**0.26**	**114**	*i* P	**Pg**	**08 36 32.6**	**+0.4**
TURN				*i* S	**Sg**	**08 36 36.2**	**+0.6**
DALY	**Dalyan (Mu¨la**	**0.32**	**120**	*e*PG	**Pb**	**08 36 35.3**	**-0.6**
DALY				*e*SG	**Sb**	**08 36 40.9**	**-0.8**
DALY	**Dalyan (Mu¨la**	**0.32**	**120**	*e*Pg	**Pb**	**08 36 35.3**	**-0.6**
DALY				*e*Sg	**Sb**	**08 36 40.9**	**-0.8**
BDRM	**Kayabasi**	**0.69**	**277**	P	**Pg**	**08 36 40.0**	**-0.5**
BDRM				S	**Sg**	**08 36 50.7**	**+1.2**
BDRM	**Kayabasi**	**0.69**	**277**	*i* P	**Pg**	**08 36 40.0**	**-0.5**
BDRM				*i* S	**Sg**	**08 36 50.7**	**+1.2**
FETY	**Fethiye**	**0.71**	**119**	*e*PG	**Pb**	**08 36 42.2**	**-0.3**
FETY				*e*SG	**Sb**	**08 36 53.0**	**+0.1**
FETY	**Fethiye**	**0.71**	**119**	*e*Pg	**Pb**	**08 36 42.2**	**-0.3**
FETY				*e*Sg	**Sb**	**08 36 53.0**	**+0.1**
AYDN	**Tasoluk**	**0.76**	**334**	P	**Pb**	**08 36 42.8**	**-0.6**
AYDN				S	**Sg**	**08 36 52.7**	**+1.0**
AYDN	**Tasoluk**	**0.76**	**334**	*i* P	**Pb**	**08 36 42.8**	**-0.6**
AYDN				*i* S	**Sg**	**08 36 52.7**	**+1.0**
BODT	**Bodrum**	**0.80**	**276**	*e*PG	**Pb**	**08 36 43.6**	**-0.4**
BODT				*e*SG	**Sb**	**08 36 55.6**	**+0.3**
BODT	**Bodrum**	**0.80**	**276**	*e*Pg	**Pb**	**08 36 43.6**	**-0.4**
BODT				*e*Sg	**Sb**	**08 36 55.7**	**+0.3**
GLHS	**Gihisar (BURDU**	**0.97**	**79**	*e*PG	**Pg**	**08 36 45.9**	**+0.1**
GLHS	**Gihisar (BURDU**	**0.97**	**79**	*e*Pg	**Pg**	**08 36 45.9**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**1.02**	**341**	*e*PG	**Pg**	**08 36 46.4**	**-0.4**
AYDB	**Zeytinkoy-Aydi**	**1.02**	**341**	*e*Pg	**Pg**	**08 36 46.4**	**-0.4**

IDC 27 08:43:22.6±1.8, 1.05N×126.43E, h0km, mb3.5/4, mb1 3.7/4, mb1mx3.4/39, mbtmp3.5/4, Error ellipse: s-maj=166.2km s-min=23.1km az=65.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**22.26**	**160**	P	P	08 48 20.4	-0.9
	0.5nm,0.4s,baz=339,slow=11,SNR=21						
ASAR	**Alice Springs**	**25.62**	**164**	P	P	08 48 54.2	+0.2
	0.5nm,0.3s,baz=345,slow=12,SNR=16						
STKA	**Stephens Creek**	**35.76**	**158**	P	P	08 50 23.9	+0.4
	0.7nm,0.4s,baz=350,slow=11,SNR=5.1						
MKAR	**Makanchi Array**	**59.59**	**326**	P	P	08 53 28.2	-0.1
	0.2nm,0.4s,baz=120,slow=5.7,SNR=2.4						

*ISCJB **27** 08:51:23.4±0.5, 50.21N±0.03×18.90E±0.03, h0km, Error ellipse: s-maj=4.9km s-min=2.6km az=12.2*
*WAR **27** 08:51:24.8, 50.21N×19.05E, h1km, Mw2.6*
*CSEM **27** 08:51:24.3±0.2, 50.22N×18.94E, h2km, ML2.8/4, Error ellipse: s-maj=5.1km s-min=2.8km az=10.0*
*PRU **27** 08:51:25.0, 50.21N×18.93E, h0km*
ISC 27 08:51:24.1±0.8, 50.18N±0.03×18.95E±0.02, h0km, n35, σ0.63/57, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHZP	**Chorzow**	**0.12**	**13**	*e*Pg	**Pg**	**08 51 26.6**	**+0.2**
CHZP	**Chorzow**	**0.12**	**13**	*e*Pg	**Pg**	**08 51 26.6**	**+0.2**
CHZP	**Chorzow**	**0.12**	**13**	*e*Pg	**Pg**	**08 51 26.6**	**+0.2**
OJC	**Ojcow**	**0.55**	**85**	*e*Pg	**Pg**	**08 51 33.9**	**-0.7**
OJC				*e*Sg	**Sg**	**08 51 41.1**	**-0.6**
OJC	**Ojcow**	**0.55**	**85**	*e*Pg	**Pg**	**08 51 33.9**	**-0.7**
OJC				*e*Sg	**Sg**	**08 51 41.1**	**-0.6**
OJC	**Ojcow**	**0.55**	**85**	*e*Pg	**Pg**	**08 51 33.9**	**-0.7**
OJC				*e*Sg	**Sg**	**08 51 41.1**	**-0.6**
OKC	**Ostrava-Krasne**	**0.62**	**237**	*e*PG	**Pb**	**08 51 37.3**	**-0.5**
OKC				*e*SG	**Sg**	**08 51 43.0**	**-1.0**
	comp=Z,31nm,0.4s						
OKC	**Ostrava-Krasne**	**0.62**	**237**	Pg	**Pb**	**08 51 37.3**	**-0.5**
OKC				Sg	**Sg**	**08 51 43.0**	**-1.0**
	31nm,0.4s						
MORC	**Moravsky Berou**	**0.99**	**247**	*e*Pg	**Pb**	**08 51 44.1**	**-0.1**
MORC				*e*Sg	**Sb**	**08 51 58.2**	**+0.3**
LANS	**Liptovska Anna**	**1.08**	**162**	*e*Pg	**Pb**	**08 51 46.1**	**+0.4**
LANS				*e*Sg	**Sb**	**08 52 00.7**	**+0.4**
LANS	**Liptovska Anna**	**1.08**	**162**	*e*PG	**Pb**	**08 51 46.1**	**+0.4**
LANS				*e*SG	**Sb**	**08 52 00.6**	**+0.3**
NIE	**Niedzica**	**1.16**	**130**	*e*Pg	**Pn**	**08 51 47.8**	**+0.2**
NIE				*e*Sg	**Sn**	**08 52 04.1**	**0.0**
NIE	**Niedzica**	**1.16**	**130**	*e*Pg	**Pn**	**08 51 47.8**	**+0.2**
NIE				*e*Sg	**Sn**	**08 52 04.1**	**0.0**
NIE	**Niedzica**	**1.16**	**130**	*e*Pg	**Pn**	**08 51 47.8**	**+0.2**
NIE				*e*Sg	**Sn**	**08 52 04.1**	**0.0**
KRLC	**Kraliky**	**1.40**	**267**	*e*PG	**Pg**	**08 51 50.6**	**-0.3**
KRLC	**Kraliky**	**1.40**	**267**	Pg	**Pg**	**08 51 50.6**	**-0.3**
STHS	**Stebnicka Huta**	**1.67**	**116**	*e*Pn	**Pb**	**08 51 55.8**	**+0.1**
STHS				*e*Sn	**Sb**	**08 52 17.4**	**+0.1**
STHS	**Stebnicka Huta**	**1.67**	**116**	*e*PN	**Pb**	**08 51 55.8**	**+0.1**
STHS				*e*SN	**Sb**	**08 52 17.4**	**+0.1**
STHS				*e*LG	Lg	08 52 29.4	
VYHS	**Vyhne**	**1.68**	**183**	*e*Pn	**Pn**	**08 51 55.4**	**+0.6**
VYHS				*e*Sn	**Sb**	**08 52 17.9**	**+0.2**
VYHS	**Vyhne**	**1.68**	**183**	*e*PN	**Pn**	**08 51 55.4**	**+0.6**
VYHS				*e*SN	**Sb**	**08 52 17.9**	**+0.2**
VYHS				*e*LG	Lg	08 52 20.2	
DPC	**Dobruska-Polom**	**1.70**	**277**	*e*PG	**Pn**	**08 51 55.1**	**+0.1**
DPC				*e*SG	**Sg**	**08 52 18.8**	**+0.2**
	comp=Z,41nm,0.6s						
DPC	**Dobruska-Polom**	**1.70**	**277**	Pg	**Pn**	**08 51 55.1**	**+0.1**
DPC				Sg	**Sg**	**08 52 18.8**	**+0.2**
	41nm,0.6s						
VRAC	**Vranov**	**1.76**	**241**	*e*Pn	**Pb**	**08 51 56.6**	**-0.7**
VRAC				*e*Sg	**Sg**	**08 52 20.6**	**0.0**
KSP	**Ksiaz**	**1.82**	**293**	*e*Pg	**Pg**	**08 51 59.2**	**+0.1**
KSP				*e*Sg	**Sg**	**08 52 23.4**	**+0.7**
KSP	**Ksiaz**	**1.82**	**293**	*e*Pg	**Pg**	**08 51 59.2**	**+0.1**
KSP				*e*Sg	**Sg**	**08 52 23.4**	**+0.7**
KSP	**Ksiaz**	**1.82**	**293**	*e*Pg	**Pg**	**08 51 59.2**	**+0.1**
KSP				*e*Sg	**Sg**	**08 52 23.4**	**+0.7**
UPC	**Upice**	**1.91**	**281**	*e*SG	**Sg**	**08 52 27.1**	**+1.6**
	comp=Z,11nm,0.4s						
UPC	**Upice**	**1.91**	**281**	Sg	**Sg**	**08 52 27.1**	**+1.6**
	11nm,0.4s						
KECS	**Kecovo**	**1.97**	**149**	*e*Pg	**Pg**	**08 52 02.4**	**+0.6**
KECS	**Kecovo**	**1.97**	**149**	*e*PG	**Pg**	**08 52 02.4**	**+0.6**
KECS				*e*LG	Lg	08 52 28.1	
PRU	**Pruhonice**	**2.85**	**268**	*e*SG	**Sg**	**08 52 54.2**	**-1.3**
	comp=Z,5.0nm,0.5s						
PRU	**Pruhonice**	**2.85**	**268**	Sg	**Sg**	**

RIGZ			SN	Sn	08 59 50.3	+0.5
MRHZ	**Matea Rd**	**1.28 199**	PN	Pn	08 59 31.5	+0.1
RAHZ	**Arahi**	**1.29 175**	PN	Pn	08 59 31.8	+0.3
CNGZ	**Carnagh Statio**	**1.31 131**	PN	Pn	08 59 31.5	-0.2
WHHZ	**Waihua**	**1.46 171**	PN	Pn	08 59 33.3	-0.2
NMHZ	**Naumai**	**1.47 184**	*e*PN	Pn	08 59 34.1	+0.4
PRGZ	**Paritu Road**	**1.49 151**	PN	Pn	08 59 33.6	-0.2
KNZ	**Kokohu**	**1.50 158**	PN	Pn	08 59 33.2	-0.8
MKAZ	**Moumakai**	**1.52 290**	⇓PN	Pn	08 59 34.6	+0.5
BKZ	**Black Stump Fm**	**1.58 193**	PN	Pn	08 59 34.6	-0.3
BKZ			AML	AML	08 59 59.9	
BKZ			AML	AML	09 00 00.5	
RITZ	**Rihia Road**	**1.60 212**	PN	Pn	08 59 36.0	+0.9
ARHZ	**Aropaoanui**	**1.63 179**	*e*PN	Pn	08 59 35.4	-0.1
MHGZ	**Mahia Peninsul**	**1.70 154**	PN	Pn	08 59 35.9	-0.3
KRVZ	**Karewarewa**	**1.79 215**	PN	Pn	08 59 38.5	+0.9
MCHZ	**McNeill Hill**	**1.82 186**	PN	Pn	08 59 38.2	+0.4
WTVZ	**West Tongariro**	**1.83 215**	PN	Pn	08 59 38.9	+0.9
OTVZ	**Oturere**	**1.84 213**	PN	Pn	08 59 39.1	+1.0
KWHZ	**Kaweka Forest**	**1.84 193**	*e*PN	Pn	08 59 37.8	-0.3
NGZ	**Ngauruhoe**	**1.88 214**	PN	Pn	08 59 39.5	+0.9
AWAZ	**Awhitu Peninsu**	**1.92 286**	PN	Pn	08 59 39.6	+0.6
TUVZ	**Tukino**	**1.93 211**	PN	Pn	08 59 39.8	+0.6
FWVZ	**Far West T-bar**	**1.96 214**	PN	Pn	08 59 40.3	+0.6
BHHZ	**Black Hill Sta**	**1.99 200**	PN	Pn	08 59 39.4	-0.5
TRVZ	**Turoa**	**2.00 213**	PN	Pn	08 59 40.6	+0.4
WNVZ	**Wahianoa**	**2.00 212**	⇑PN	Pn	08 59 40.5	+0.3
MOVZ	**Moawhango**	**2.01 208**	PN	Pn	08 59 39.9	-0.3
CKHZ	**Cape Kidnapper**	**2.03 177**	SN	Sn	09 00 04.4	-1.8
KRHZ	**Kereru**	**2.06 193**	PN	Pn	08 59 39.8	-1.0
PKVZ	**Pokaka**	**2.08 217**	PN	Pn	08 59 41.8	+0.7
MTVZ	**Mangateitei**	**2.10 213**	⇑PN	Pn	08 59 41.8	+0.4
KAHZ	**Kahuranaki**	**2.17 182**	PN	Pn	08 59 41.2	-0.9
VRZ	**Vera Road**	**2.28 228**	*e*PN	Pn	08 59 44.4	+0.9
PNHZ	**Pukenui**	**2.36 194**	PN	Pn	08 59 43.8	-0.7
PXZ	**Pawanui**	**2.40 182**	PN	Pn	08 59 43.3	-1.7
PXZ			SN	Sn	09 00 12.0	-2.5
TSZ	**Takapari Road**	**2.55 197**	PN	Pn	08 59 45.2	-1.8
WAZ	**Wanganui**	**2.62 215**	*e*PN	Pn	08 59 46.5	-1.4
PRHZ	**Porangahau**	**2.65 185**	PN	Pn	08 59 47.0	-1.2
ANWZ	**Angora Road**	**2.85 187**	*e*PN	Pn	08 59 49.2	-1.7
PRWZ	**Pori Road**	**3.02 194**	*e*PN	Pn	08 59 51.9	-1.2
MRZ	**Mangatainoka R**	**3.21 199**	PN	Pn	08 59 53.2	-2.4
MRZ			SN	Sn	09 00 29.4	-4.1
HOWZ	**Holdsworth Sta**	**3.45 198**	PN	Pn	08 59 56.0	-2.8
OGWZ	**Otaki Gorge**	**3.47 203**	PN	Pn	08 59 56.6	-2.4
TMWZ	**Te Maipa**	**3.57 193**	PN	Pn	08 59 57.7	-2.7
MTW	**Mount Morrison**	**3.70 197**	*e*PN	Pn	08 59 58.6	-3.5
CAW	**Cannon Point**	**3.77 202**	*e*PN	Pn	08 59 59.6	-3.4
TCW	**Tory Channel**	**4.13 209**	*e*PN	Pn	09 00 04.5	-3.4
PLWZ	**Palliser**	**4.15 198**	*e*PN	Pn	09 00 04.2	-3.9
TUWZ	**Tuamarina**	**4.45 211**	*e*PN	Pn	09 00 08.6	-3.5
QRZ	**Quartz Range**	**4.69 226**	*e*PN	Pn	09 00 12.8	-2.5

DJA 27 09:02:39.4±0.6, 8˚S±10˚×10˚9E±˚, h41km±10km, M3.8/9, MLv3.8/9, Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMJI	**Cimerak**	**0.57**	**318**	P	Pn	09 02 51.8	+0.6
CMJI				S	Sn	09 03 02.1	+2.6
CISI	**Cisompet, Garu**	**1.21**	**303**	P	Pn	09 03 00.0	+0.1
CNJI	**Cibinong**	**1.92**	**298**	P	Pn	09 03 09.5	-0.1
CNJI				S	Sn	09 03 32.2	-0.3
SMRI	**Semarang**	**1.96**	**54**	P	Sn	09 03 38.4	+4.8
PCJI	**Pacitan**	**2.31**	**90**	P	Pn	09 03 14.0	-1.0
SKJI	**Sukabumi**	**2.56**	**298**	P	Pn	09 03 19.4	+1.0
PWJI	**Pagerwojo**	**2.94**	**87**	P	Pn	09 03 23.6	0.0
CGJI	**Cibinong**	**3.50**	**297**	P	Pn	09 03 31.6	+0.2

*ISCJB **27** 09:03:14.6±0.8, 37˚.29N±0˚.04×28˚.38E±0˚.06, h0km, Error ellipse: s-maj=7.2km s-min=5.0km az=140.3*
*CSEM **27** 09:03:14.5±0.5, 37˚.28N×28˚.41E, h1km, MD2.6, Error ellipse: s-maj=12.5km s-min=8.3km az=41.0, Suspected Mining explosion.*
*ISK **27** 09:03:14.2, 37˚.22N×28˚.31E, h24km, MD2.6*
*DDA **27** 09:03:17.4, 37˚.25N×28˚.16E, h7km, Md2.6, Suspected Mining explosion.*

ISC 27 09:03:13.6±1.1, 37˚.37N±0˚.04×28˚.41E±0˚.04, h0km, n17, σ0s97/24, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.26**	**204**	*e*PG	**Pg**	**09 03 19.3**	**+0.8**
YER				*e*SG	**Sg**	**09 03 21.9**	**+0.1**
YER	**Yerkesik**	**0.26**	**204**	*e*Pg	**Pg**	**09 03 19.3**	**+0.8**
YER				*e*Sg	**Sg**	**09 03 21.9**	**+0.1**
AYDN	**Tasoluk**	**0.52**	**305**	P	**Pb**	**09 03 26.5**	**+0.9**
AYDN				S	**Sb**	**09 03 33.7**	**+0.1**
AYDN	**Tasoluk**	**0.52**	**305**	*i* P	**Pb**	**09 03 26.5**	**+0.9**
AYDN				*i* S	**Sb**	**09 03 33.7**	**+0.1**
TURN	**Turunc**	**0.52**	**163**	*i* P	**Pb**	**09 03 25.4**	**-0.2**
TURN				*i* S	**Sb**	**09 03 34.4**	**+0.8**
DALY	**Dalyan (Mu¨la**	**0.58**	**161**	*e*PG	**Pg**	**09 03 24.9**	**+0.1**
DALY	**Dalyan (Mu¨la**	**0.58**	**161**	*e*Pg	**Pg**	**09 03 24.9**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**0.71**	**324**	*e*PG	**Pb**	**09 03 30.4**	**+1.5**
AYDB	**Zeytinkoy-Aydi**	**0.71**	**324**	*e*Pg	**Pb**	**09 03 30.4**	**+1.5**
BDRM	**Kayabasi**	**0.83**	**249**	P	**Pg**	**09 03 28.8**	**-0.7**
BDRM				S	**Sg**	**09 03 38.5**	**-1.8**
BDRM	**Kayabasi**	**0.83**	**249**	*i* P	**Pg**	**09 03 28.8**	**-0.7**
BDRM				*i* S	**Sg**	**09 03 38.5**	**-1.8**
FETY	**Fethiye**	**0.91**	**144**	*e*PG	**Pg**	**09 03 30.9**	**-0.1**
FETY	**Fethiye**	**0.91**	**144**	*e*Pg	**Pg**	**09 03 30.9**	**-0.1**
BODT	**Bodrum**	**0.93**	**251**	*e*PG	**Pg**	**09 03 30.6**	**-0.9**
BODT	**Bodrum**	**0.93**	**251**	*e*Pg	**Pg**	**09 03 30.6**	**-0.9**
ELL	**Elmali**	**1.35**	**117**	*e*PN	**Pg**	**09 03 38.3**	**-1.1**
ELL	**Elmali**	**1.35**	**117**	*e*Pn	**Pg**	**09 03 38.3**	**-1.1**

*DDA **27** 09:04:18.7, 39˚.11N×29˚.06E, h19km, Md3.0*
*ISCJB **27** 09:04:19.3±0.4, 39˚.07N±0˚.02×29˚.06E±0˚.03, h5km±4km, Error ellipse: s-maj=4.0km s-min=3.7km az=154.2*
*CSEM **27** 09:04:19.5±0.1, 39˚.07N×29˚.07E, h5km, MD3.0, Error ellipse: s-maj=2.2km s-min=1.8km az=106.0*
*ISK **27** 09:04:19.0, 39˚.06N×29˚.11E, h6km, ML2.7*

ISC 27 09:04:19.6±0.9, 39˚.08N±0˚.02×29˚.06E±0˚.02, h10km±8km, n59, σ0s67/81, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**262**	P	**Pg**	**09 04 25.2**	**0.0**
DEMI				S	**Sg**	**09 04 29.1**	**+0.2**
DEMI	**Demirci**	**0.27**	**262**	*i* P	**Pg**	**09 04 25.2**	**0.0**
DEMI				*i* S	**Sg**	**09 04 29.1**	**+0.2**
GDZ	**Gediz**	**0.33**	**89**	P	**Pg**	**09 04 26.0**	**-0.2**
GDZ				S	**Sg**	**09 04 30.7**	**+0.1**
GDZ	**Gediz**	**0.33**	**89**	*i* P	**Pg**	**09 04 26.1**	**-0.2**
GDZ				*i* S	**Sg**	**09 04 30.7**	**+0.1**
TVSB	**Tavsanli**	**0.48**	**40**	*e*PG	**Pg**	**09 04 28.5**	**-0.5**
TVSB	**Tavsanli**	**0.48**	**40**	*e*Pg	**Pg**	**09 04 28.5**	**-0.5**
KULA	**Kula-Manisa**	**0.65**	**209**	*e*PG	**Pg**	**09 04 32.1**	**-0.1**
KULA	**Kula-Manisa**	**0.65**	**209**	*e*Pg	**Pg**	**09 04 32.1**	**-0.1**
DURS	**Dursunbey**	**0.69**	**319**	P	**Pg**	**09 04 33.0**	**0.0**
DURS				S	**Sb**	**09 04 43.3**	**-0.1**
DURS	**Dursunbey**	**0.69**	**319**	*i* P	**Pg**	**09 04 33.0**	**0.0**
DURS				*i* S	**Sb**	**09 04 43.4**	**-0.1**
MANT	**Manisa**	**0.71**	**214**	P	**Pg**	**09 04 33.1**	**-0.3**
MANT				S	**Sg**	**09 04 42.6**	**-0.1**
MANT	**Manisa**	**0.71**	**214**	*i* P	**Pg**	**09 04 33.1**	**-0.3**
MANT				*i* S	**Sg**	**09 04 42.6**	**-0.1**
KHAL	**Karahalli**	**0.79**	**155**	P	**Pb**	**09 04 35.7**	**+0.2**
KHAL				S	**Sb**	**09 04 45.6**	**-0.6**
KHAL	**Karahalli**	**0.79**	**155**	*i* P	**Pb**	**09 04 35.6**	**+0.2**
KHAL				*i* S	**Sb**	**09 04 45.6**	**-0.6**
KHL	**Karahalli**	**0.84**	**154**	*e*PG	**Pg**	**09 04 34.9**	**-0.9**
KHL	**Karahalli**	**0.84**	**154**	*e*Pg	**Pg**	**09 04 34.9**	**-0.9**
ORLT	**Orhaneli**	**0.97**	**352**	*e*PG	**Pg**	**09 04 37.6**	**-0.7**
ORLT				*e*SG	**Sn**	**09 04 52.9**	**-0.4**
ORLT	**Orhaneli**	**0.97**	**352**	*e*Pg	**Pg**	**09 04 37.6**	**-0.7**
ORLT				*e*Sg	**Sn**	**09 04 52.9**	**-0.4**
AKHS	**Akhisar**	**0.99**	**259**	P	**Pg**	**09 04 38.6**	**-0.1**
AKHS				S	**Sg**	**09 04 51.7**	**0.0**
AKHS	**Akhisar**	**0.99**	**259**	*i* P	**Pg**	**09 04 38.6**	**-0.1**
AKHS				*i* S	**Sg**	**09 04 51.7**	**0.0**
AKS	**Akhisar**	**0.99**	**259**	*e*PG	**Pb**	**09 04 38.9**	**0.0**
AKS	**Akhisar**	**0.99**	**259**	*e*Pg	**Pb**	**09 04 38.9**	**0.0**
BALB	**Balikesir**	**1.07**	**302**	*e*Pn	**Pn**	**09 04 40.7**	**0.0**
BALB	**Balikesir**	**1.07**	**302**	*e*Pn	**Pn**	**09 04 40.7**	**0.0**
IGD	**Bursa**	**1.19**	**5**	*i* P	**Pb**	**09 04 40.2**	**-2.0**
IGD				*i* S	**Sb**	**09 04 56.1**	**-1.6**
CAVI	**Cavuskoy**	**1.27**	**28**	*e*PN	**Pb**	**09 04 43.8**	**+0.1**
CAVI				*e*SN	**Sn**	**09 05 01.8**	**+1.1**
CAVI	**Cavuskoy**	**1.27**	**28**	*e*Pn	**Pb**	**09 04 43.8**	**+0.1**
CAVI				*e*Sn	**Sn**	**09 05 01.8**	**+1.1**
IZI	**Iznik**	**1.29**	**14**	*e*PN	**Pg**	**09 04 44.4**	**-0.1**
IZI	**Iznik**	**1.29**	**14**	*e*Pn	**Pg**	**09 04 44.4**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.29**	**354**	*e*PN	**Pb**	**09 04 44.2**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.29**	**354**	*e*Pn	**Pb**	**09 04 44.2**	**+0.2**
BALY	**Balya**	**1.30**	**301**	P	**Pn**	**09 04 43.8**	**-0.1**
BALY				S	**Sb**	**09 04 59.4**	**-1.5**
BALY	**Balya**	**1.30**	**301**	*i* P	**Pn**	**09 04 43.8**	**-0.1**
BALY				*i* S	**Sb**	**09 04 59.4**	**-1.5**
KCTX	**Karacabey (Bur**	**1.30**	**335**	*e*PN	**Pg**	**09 04 44.5**	**-0.1**
KCTX	**Karacabey (Bur**	**1.30**	**335**	*e*Pn	**Pg**	**09 04 44.5**	**-0.1**
GEMT	**Gemlik**	**1.35**	**4**	*e*PN	**Pb**	**09 04 45.3**	**+0.2**
GEMT	**Gemlik**	**1.35**	**4**	*e*Pn	**Pb**	**09 04 45.3**	**+0.2**
DNZL	**Cakiroluk**	**1.39**	**180**	P	**Pb**	**09 04 45.4**	**-0.4**
DNZL	**Cakiroluk**	**1.39**	**180**	*i* P	**Pb**	**09 04 45.4**	**-0.4**
DNZL				*i* S	**Sg**	**09 05 07.4**	**+3.0**
GONE	**Gonen-Balikesi**	**1.44**	**313**	*e*PN	**Pb**	**09 04 46.7**	**+0.2**
GONE	**Gonen-Balikesi**	**1.44**	**313**	*e*Pn	**Pb**	**09 04 46.7**	**+0.2**
ADVT	**Abdulvahap**	**1.45**	**21**	*e*PN	**Pb**	**09 04 46.7**	**0.0**
ADVT	**Abdulvahap**	**1.45**	**21**	*e*Pn	**Pb**	**09 04 46.7**	**0.0**
ARMT	**Armutlu**	**1.49**	**354**	*e*PN	**Pb**	**09 04 47.2**	**-0.1**
ARMT				*e*SN	**Sg**	**09 05 08.2**	**+0.6**
ARMT	**Armutlu**	**1.49**	**354**	*e*Pn	**Pb**	**09 04 47.3**	**-0.1**
ARMT				*e*Sn	**Sg**	**09 05 08.2**	**+0.6**
GPA	**Golpazari**	**1.54**	**38**	*e*PN	**Pb**	**09 04 48.1**	**-0.2**
GPA	**Golpazari**	**1.54**	**38**	*e*Pn	**Pb**	**09 04 48.1**	**-0.2**
EDC	**Edincik**	**1.56**	**324**	*e*PN	**Pb**	**09 04 48.8**	**+0.1**
EDC	**Edincik**	**1.56**	**324**	*e*Pn	**Pb**	**09 04 48.8**	**+0.1**
GULT	**Gulveren**	**1.75**	**39**	*e*PN	**Pn**	**09 04 50.5**	**+0.3**
GULT	**Gulveren**	**1.75**	**39**	*e*Pn	**Pn**	**09 04 50.5**	**+0.3**
HRT	**Hereke**	**1.80**	**15**	*e*PN	**Pn**	**09 04 51.5**	**+0.7**
HRT	**Hereke**	**1.80**	**15**	*e*Pn	**Pn**	**09 04 51.5**	**+0.7**
SPNC	**Sapanca-Adapaz**	**1.87**	**31**	*e*PN	**Pn**	**09 04 52.5**	**+0.8**
SPNC	**Sapanca-Adapaz**	**1.87**	**31**	*e*Pn	**Pn**	**09 04 52.5**	**+0.8**
SVRH	**Sivrihisar-ESK**	**1.94**	**78**	*e*PN	**Pn**	**09 04 52.9**	**+0.1**
SVRH	**Sivrihisar-ESK**	**1.94**	**78**	*e*Pn	**Pn**	**09 04 52.9**	**+0.1**
ISK	**Istanbul-Kandi**	**1.98**	**360**	*e*PN	**Pn**	**09 04 54.4**	**+1.2**
ISK	**Istanbul-Kandi**	**1.98**	**360**	*e*Pn	**Pn**	**09 04 54.4**	**+1.2**

*ISCJB **27** 09:12:33.7±0.5, 39˚.11N±0˚.03×29˚.12E±0˚.04, h1km±7km, Error ellipse: s-maj=5.2km s-min=4.5km az=159.1*
*ISK **27** 09:12:33.4, 39˚.10N×29˚.15E, h5km, MD2.0*
*CSEM **27** 09:12:33.9±0.1, 39˚.11N×29˚.13E, h5km, MD2.9, Error ellipse: s-maj=2.1km s-min=1.7km az=108.0*
*DDA **27** 09:12:33.8, 39˚.12N×29˚.12E, h7km, Md2.9*

ISC 27 09:12:34.0±0.9, 39˚.10N±0˚.02×29˚.12E±0˚.03, h13km±8km, n22, σ0s37/38, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.28**	**92**	P	**Pg**	**09 12 39.7**	**-0.2**
GDZ				S	**Sg**	**09 12 43.9**	**+0.1**
GDZ	**Gediz**	**0.28**	**92**	*i* P	**Pg**	**09 12 39.7**	**-0.2**
GDZ				*i* S	**Sg**	**09 12 43.9**	**+0.1**
DEMI	**Demirci**	**0.32**	**260**	P	**Pg**	**09 12 40.5**	**-0.1**
DEMI				S	**Sg**	**09 12 45.3**	**+0.3**
DEMI	**Demirci**	**0.32**	**260**	*i* P	**Pg**	**09 12 40.5**	**-0.1**
DEMI				*i* S	**Sg**	**09 12 45.3**	**+0.3**
TVSB	**Tavsanli**	**0.44**	**37**	*e*PG	**Pg**	**09 12 42.2**	**-0.5**
TVSB	**Tavsanli**	**0.44**	**37**	*e*Pg	**Pg**	**09 12 42.2**	**-0.5**
KULA	**Kula-Manisa**	**0.69**	**212**	*e*PG	**Pg**	**09 12 47.5**	**+0.2**
KULA	**Kula-Manisa**	**0.69**	**212**	*e*Pg	**Pg**	**09 12 47.5**	**+0.2**
DURS	**Dursunbey**	**0.71**	**315**	P	**Pg**	**09 12 47.4**	**-0.4**
DURS				S	**Sg**	**09 12 57.3**	**+0.1**
DURS	**Dursunbey**	**0.71**	**315**	*i* P	**Pg**	**09 12 47.4**	**-0.4**
DURS				*i* S	**Sg**	**09 12 57.3**	**+0.1**
MANT	**Manisa**	**0.75**	**216**	P	**Pg**	**09 12 48.5**	**-0.1**
MANT				S	**Sg**	**09 12 58.1**	**-0.4**
MANT	**Manisa**	**0.75**	**216**	*i* P	**Pg**	**09 12 48.5**	**-0.1**
MANT				*i* S	**Sg**	**09 12 58.1**	**-0.4**
KHAL	**Karahalli**	**0.78**	**158**	P	**Pb**	**09 12 49.6**	**+0.1**
KHAL				S	**Sb**	**09 13 00.1**	**0.0**
KHAL	**Karahalli**	**0.78**	**158**	*i* P	**Pb**	**09 12 49.6**	**+0.1**
KHAL				*i* S	**Sb**	**09 13 00.1**	**0.0**
ORLT	**Orhaneli**	**0.96**	**350**	*e*PG	**Pg**	**09 12 52.2**	**-0.4**
ORLT	**Orhaneli**	**0.96**	**350**	*e*Pg	**Pg**	**09 12 52.2**	**-0.4**
AKHS	**Akhisar**	**1.04**	**258**	P	**Pg**	**09 12 54.1**	**0.0**
AKHS				S	**Sn**	**09 13 08.7**	**-0.1**
AKHS	**Akhisar**	**1.04**	**258**	*i* P	**Pg**	**09 12 54.1**	**0.0**
AKHS				*i* S	**Sn**	**09 13 08.7**	**-0.1**
IZI	**Iznik**	**1.27**	**12**	*e*PN	**Pb**	**09 12 57.9**	**+0.1**
IZI				*e*SN	**Sg**	**09 13 16.0**	**+1.2**
IZI	**Iznik**	**1.27**	**12**	*e*Pn	**Pb**	**09 12 57.9**	**+0.1**
IZI				*e*Sn	**Sg**	**09 13 16.0**	**+1.2**
ARMT	**Armutlu**	**1.48**	**352**	*e*PN	**Pb**	**09 13 01.4**	**0.0**
ARMT				*e*SN	**Sg**	**09 13 21.9**	**+0.2**
ARMT	**Armutlu**	**1.48**	**352**	*e*Pn	**Pb**	**09 13 01.4**	**0.0**
ARMT				*e*Sn	**Sg**	**09 13 21.9**	**+0.2**

IDC 27 09:16:36.3±3.2, 53˚.55N×87˚.67E, h0km, mb1 3.4/2, mb1mx3.1/48, mbtmp3.4/2, ML3.0/2, Error ellipse: s-maj=33.7km s-min=17.5km az=86.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**1.74**	**284**	*i*		09 27 48.2	
	baz=99,slow=329,SNR=4.5						
ZALV	**Zalesovo Beam**	**1.74**	**284**	Pn	Pn	09 17 07.4	-0.4
	5.3nm,0.3s,baz=101,slow=14,SNR=32						
ZALV				Sn	Sb	09 17 31.2	-0.3
	4.6nm,0.3s,baz=104,slow=22,SNR=10						
KURBB	**Kurchatov Arra**	**6.35**	**246**	Pn	Pn	09 18 11.9	+0.8
	0.2nm,0.3s,baz=62,slow=14,SNR=13						
KURBB				Lg	Lg	09 19 56.6	
	0.1nm,0.3s,baz=63,slow=33,SNR=8.0						
MKAR	**Makanchi Array**	**7.59**	**209**	Pn	Pn	09 18 29.4	+1.3
	0.4nm,0.3s,baz=26,slow=13,SNR=5.2						
MKAR				Sn	Sn	09 19 53.8	-1.0
	0.3nm,0.3s,baz=33,slow=24,SNR=5.3						
MKAR				Lg	Lg	09 20 37.3	
	0.2nm,0.3s,baz=34,slow=29,SNR=6.8						

*ISK **27** 09:33:43.9, 39˚.12N×29˚.07E, h5km, ML2.4*
*ISCJB **27** 09:33:44.7±0.5, 39˚.10N±0˚.03×29˚.12E±0˚.03, h10km±5km, Error ellipse: s-maj=4.9km s-min=3.9km az=38.1*
*DDA **27** 09:33:44.3, 39˚.12N×29˚.08E, h7km, Md3.0*
*CSEM **27** 09:33:44.7±0.1, 39˚.11N×29˚.10E, h8km, MD3.0, Error ellipse: s-maj=2.1km s-min=1.8km az=123.0*

ISC 27 09:33:44.7±0.9, 39˚.11N±0˚.02×29˚.09E±0˚.02, h15km±7km, n26, σ0s27/43, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.30**	**258**	P	**Pg**	**09 33 51.1**	**+0.1**
DEMI				S	**Sg**	**09 33 55.4**	**+0.1**
DEMI	**Demirci**	**0.30**	**258**	*i* P	**Pg**	**09 33 51.1**	**+0.1**
DEMI				*i* S	**Sg**	**09 33 55.4**	**+0.1**
GDZ	**Gediz**	**0.30**	**94**	P	**Pg**	**09 33 51.2**	**+0.1**
GDZ				S	**Sg**	**09 33 55.5**	**0.0**
GDZ	**Gediz**	**0.30**	**94**	*i* P	**Pg**	**09 33 51.2**	**+0.1**
GDZ				*i* S	**Sg**	**09 33 55.5**	**0.0**
TVSB	**Tavsanli**	**0.45**	**40**	*e*PG	**Pg**	**09 33 53.5**	**0.0**
TVSB				*e*SG	**Sg**	**09 33 59.3**	**-0.4**
TVSB	**Tavsanli**	**0.45**	**40**	*e*Pg	**Pg**	**09 33 53.6**	**0.0**
TVSB				*e*Sg	**Sg**	**09 33 59.3**	**-0.4**
KULA	**Kula-Manisa**	**0.68**	**210**	*e*PG	**Pg**	**09 33 57.8**	**-0.2**
KULA				*e*SG	**Sg**	**09 34 07.0**	**0.0**
DURS	**Dursunbey**	**0.69**	**316**	P	**Pg**	**09 33 57.7**	**-0.4**
DURS	**Dursunbey**	**0.69**	**316**	*i* P	**Pg**	**09 33 57.7**	**-0.4**
DURS				*i* S	**Sn**	**09 34 11.2**	**+0.7**
MANT	**Manisa**	**0.74**	**214**	P	**Pb**	**09 33 59.4**	**-0.1**
MANT				S	**Sg**	**09 34 08.7**	**-0.4**
MANT	**Manisa**	**0.74**	**214**	*i* P	**Pb**	**09 33 59.4**	**-0.1**
MANT				*i* S	**Sg**	**09 34 08.7**	**-0.4**
KHAL	**Karahalli**	**0.80**	**157**	P	**Pb**	**09 34 00.4**	**+0.1**
KHAL				S	**Sb**	**09 34 11.0**	**0.0**
KHAL	**Karahalli**	**0.80**	**157**	*i* P	**Pb**	**09 34 00.5**	**+0.1**
KHAL				*i* S	**Sb**	**09 34 11.0**	**0.0**
AKHS	**Akhisar**	**1.02**	**257**	P	**Pn**	**09 34 04.6**	**+0.1**
AKHS				S	**Sn**	**09 34 18.7**	**+0.1**
AKHS	**Akhisar**	**1.02**	**257**	*i* P	**Pn**	**09 34 04.6**	**+0.1**
AKHS				*i* S	**Sn**	**09 34 18.7**	**+0.1**
IGD	**Bursa**	**1.16**	**4**	*i* P	**Pn**	**09 34 05.8**	**-0.6**
IGD				*i* S	**Sb**	**09 34 20.6**	**-0.6**
IZI	**Iznik**	**1.26**	**13**	*e*PN	**Pb**	**09 34 08.6**	**+0.4**
IZI	**Iznik**	**1.26**	**13**	*e*Pn	**Pb**	**09 34 08.6**	**+0.4**
MDNY	**Mudanya-Bursa**	**1.27**	**353**	*e*PN	**Pn**	**09 34 08.1**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.27**	**353**	*e*Pn	**Pn**	**09 34 08.1**	**+0.2**
KCTX	**Karacabey (Bur**	**1.29**	**334**	*e*PN	**Pb**	**09 34 08.6**	**0.0**
KCTX	**Karacabey (Bur**	**1.29**	**334**	*e*Pn	**Pb**	**09 34 08.6**	**0.0**
BALY	**Balya**	**1.30**	**299**	P	**Pg**	**09 34 09.9**	**+0.1**
BALY				S	**Sg**	**09 34 26.9**	**+0.1**
BALY	**Balya**	**1.30**	**299**	*i* P	**Pg**	**09 34 09.9**	**+0.1**
BALY				*i* S	**Sg**	**09 34 26.9**	**+0.1**
ARMT	**Armutlu**	**1.47**	**353**	*e*PN	**Pb**	**09 34 11.8**	**+0.1**
ARMT	**Armutlu**	**1.47**	**353**	*e*Pn	**Pb**	**09 34 11.8**	**+0.1**

*DDA **27** 09:40:21.8, 35˚.68N×31˚.42E, h15km, Md3.4*
*ISCJB **27** 09:40:22.2±1.5, 35˚.56N±0˚.04×31˚.35E±0˚.04, h7km±11km, Error ellipse: s-maj=6.3km s-min=5.0km az=34.4*
*CSEM **27** 09:40:23.6±0.2, 35˚.61N×31˚.34E, h10km, MD3.4, Error ellipse: s-maj=5.7km s-min=5.2km az=43.0*
*NIC **27** 09:40:23.8±0.3, 36˚.04N×31˚.65E, h10km, ML3.6*
*HLW **27** 09:40:31.0, 35˚.17N×31˚.06E, h33km±13km, Md3.4*

ISC 27 09:40:24.8±1.1, 35˚.65N±0˚.03×31˚.42E±0˚.03, h17km±9km, n39, σ1s51/60, Cyprus region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GAZI	**Gazipasa**	**0.94**	**51**	*i* P	**Pb**	**09 40 40.3**	**-2.2**
GAZI				*i* S	**Sb**	**09 40 51.6**	**-3.0**
AKMC	**Akamas**	**0.97**	**129**	P	**Pb**	**09 40 42.8**	**-0.3**
	baz=331						
AKMC	**Akamas**	**0.97**	**129**	P	**Pb**	**09 40 42.8**	**-0.3**
PPCY	**Paphos**	**1.08**	**135**	P	**Pg**	**09 40 46.4**	**+0.8**
	baz=333						
PPCY	**Paphos**	**1.08**	**135**	P	**Pg**	**09 40 46.4**	**+0.8**
ALFC	**Alefka**	**1.08**	**117**	P	**Pb**	**09 40 43.9**	**-1.2**
	baz=318						
ALFC				S	**Sg**	**09 41 00.3**	**+0.3**
ALFC	**Alefka**	**1.08**	**117**	P	**Pb**	**09 40 43.9**	**-1.2**
ALFC				S	**Sg**	**09 41 00.3**	**+0.3**
SZAC	**Souni**	**1.50**	**126**	P	**Pb**	**09 40 51.7**	**-0.4**
	baz=322						
SZAC	**Souni**	**1.50**	**126**	P	**Pb**	**09 40 51.7**	**-0.4**
ERMK	**Ermenek**	**1.56**	**50**	P	**Pn**	**09 40 50.9**	**-1.1**
ERMK				S	**Sg**	**09 41 15.2**	**-0.2**
ERMK	**Ermenek**	**1.56**	**50**	*i* P	**Pn**	**09 40 50.9**	**-1.1**

1.2nm,0.6s,baz=295,slow=8.1,SNR=16
KSAR Wonju Array Be 46.42 34 P **P 09 52 14.4 +0.1**
KSRS Korea Array 46.45 34 P **P 09 52 14.4 -0.2**
1.8nm,0.8s,baz=221,slow=8.6,SNR=8.9
SONM Songino Array 48.04 8 P **P 09 52 27.7 +0.6**
1.5nm,0.5s,baz=191,slow=9.6,SNR=12
MKAR Makanchi Array 48.28 346 P **P 09 52 29.8 +1.0**
1.5nm,0.6s,baz=161,slow=7.9,SNR=10
USRK Ussuriysk Ar. 53.42 30 P **P 09 53 07.5 0.0**
1.6nm,0.7s,baz=224,slow=5.3,SNR=4.3
ZALV Zalesovo Beam 54.58 351 P **P 09 53 16.4 +0.7**
5.6nm,0.6s,baz=179,slow=6.6,SNR=11
BVAR Borovoye Array 57.29 341 P **P 09 53 34.8 -0.4**
1.3nm,0.7s,baz=158,slow=12,SNR=6.6
ABKAR Akbulak array 58.55 332 *e*P **P 09 53 44.2 +0.1**
0.8nm,0.6s
MSVF Nonsavu 81.00 108 *e*P **P 09 56 02.0 -1.1**
7.1nm,1.0s
SBA Scott Base 85.90 169 *e*P **P 09 56 28.9 +1.9**
3.0nm,1.2s
TXAR Lajitas Array 144.29 33 PKP **PKPdf 10 03 23.7 -0.8**
0.1nm,0.6s,baz=281,slow=1.5,SNR=3.3

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*ISK **27** 09:51:26.7, 39.°07N×29.°10E, h6km, ML2.4*
*ISCJB **27** 09:51:27.4±0.5, 39.°08N±0.°03×29.°07E±0.°03, h4km±7km, Error ellipse: s-maj=5.7km s-min=3.7km az=150.9*
*CSEM **27** 09:51:27.6±0.1, 39.°09N×29.°08E, h5km, MD2.8, Error ellipse: s-maj=1.7km s-min=1.4km az=132.0*
*DDA **27** 09:51:27.6, 39.°07N×29.°07E, h10km, Md2.8*
ISC 27 09:51:27.5±0.9, 39.°08N±0.°02×29.°08E±0.°02, h13km±8km, n30, σ0.°34/49, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**262**	P	**Pg**	**09 51 33.5**	**0.0**
DEMI				S	**Sg**	**09 51 37.3**	**-0.1**
DEMI	**Demirci**	**0.28**	**262**	*i* P	**Pg**	**09 51 33.5**	**0.0**
DEMI				*i* S	**Sg**	**09 51 37.3**	**-0.1**
GDZ	**Gediz**	**0.31**	**89**	P	**Pg**	**09 51 34.1**	**+0.1**
GDZ				S	**Sg**	**09 51 38.9**	**+0.5**
GDZ	**Gediz**	**0.31**	**89**	*i* P	**Pg**	**09 51 34.1**	**+0.1**
GDZ				*i* S	**Sg**	**09 51 38.9**	**+0.5**
TVSB	**Tavsanli**	**0.47**	**39**	*e*PG	**Pg**	**09 51 36.6**	**-0.3**
TVSB				*e*SG	**Sg**	**09 51 42.6**	**-0.6**
TVSB	**Tavsanli**	**0.47**	**39**	*e*Pg	**Pg**	**09 51 36.6**	**-0.3**
TVSB				*e*Sg	**Sg**	**09 51 42.6**	**-0.6**
KULA	**Kula-Manisa**	**0.66**	**210**	*e*PG	**Pg**	**09 51 40.2**	**-0.1**
KULA				*e*SG	**Sg**	**09 51 48.9**	**0.0**
KULA	**Kula-Manisa**	**0.66**	**210**	*e*Pg	**Pg**	**09 51 40.2**	**-0.1**
KULA				*e*Sg	**Sg**	**09 51 48.9**	**0.0**
DURS	**Dursunbey**	**0.70**	**318**	P	**Pg**	**09 51 41.0**	**-0.1**
DURS	**Dursunbey**	**0.70**	**318**	*i* P	**Pg**	**09 51 41.0**	**-0.1**
DURS				*i* S	**Sn**	**09 51 55.5**	**+1.5**
MANT	**Manisa**	**0.72**	**215**	P	**Pg**	**09 51 41.4**	**-0.1**
MANT				S	**Sg**	**09 51 50.8**	**-0.1**
MANT	**Manisa**	**0.72**	**215**	*i* P	**Pg**	**09 51 41.4**	**-0.1**
MANT				*i* S	**Sg**	**09 51 50.8**	**-0.1**
KHAL	**Karahalli**	**0.78**	**155**	P	**Pb**	**09 51 43.3**	**+0.2**
KHAL				S	**Sb**	**09 51 53.3**	**-0.3**
KHAL	**Karahalli**	**0.78**	**155**	*i* P	**Pb**	**09 51 43.3**	**+0.2**
KHAL				*i* S	**Sb**	**09 51 53.3**	**-0.3**
AKHS	**Akhisar**	**1.01**	**259**	P	**Pn**	**09 51 47.2**	**-0.2**
AKHS				S	**Sg**	**09 52 00.5**	**+0.5**
AKHS	**Akhisar**	**1.01**	**259**	*i* P	**Pn**	**09 51 47.2**	**-0.2**
AKHS				*i* S	**Sg**	**09 52 00.5**	**+0.5**
AKS	**Akhisar**	**1.01**	**259**	*e*PG	**Pb**	**09 51 46.6**	**-0.2**
AKS				*e*SG	**Sn**	**09 52 01.2**	**-0.2**
AKS	**Akhisar**	**1.01**	**259**	*e*Pg	**Pb**	**09 51 46.6**	**-0.2**
AKS				*e*Sg	**Sn**	**09 52 01.2**	**-0.2**
CAVI	**Cavuskoy**	**1.26**	**28**	*e*PN	**Pg**	**09 51 51.7**	**-0.1**
CAVI	**Cavuskoy**	**1.26**	**28**	*e*Pn	**Pg**	**09 51 51.7**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.29**	**353**	*e*PN	**Pb**	**09 51 52.0**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.29**	**353**	*e*Pn	**Pb**	**09 51 52.0**	**+0.3**
KCTX	**Karacabey (Bur**	**1.30**	**335**	*e*PN	**Pg**	**09 51 52.6**	**0.0**
KCTX	**Karacabey (Bur**	**1.30**	**335**	*e*Pn	**Pg**	**09 51 52.6**	**0.0**
BALY	**Balya**	**1.31**	**301**	P	**Pg**	**09 51 52.8**	**+0.2**
BALY				S	**Sb**	**09 52 08.6**	**-0.1**
BALY	**Balya**	**1.31**	**301**	*i* P	**Pg**	**09 51 52.8**	**+0.2**
BALY				*i* S	**Sb**	**09 52 08.6**	**-0.1**
ADVT	**Abdulvahap**	**1.44**	**20**	*e*PN	**Pb**	**09 51 54.3**	**+0.1**
ADVT	**Abdulvahap**	**1.44**	**20**	*e*Pn	**Pb**	**09 51 54.3**	**+0.1**
ARMT	**Armutlu**	**1.49**	**354**	*e*PN	**Pb**	**09 51 55.0**	**-0.1**
ARMT	**Armutlu**	**1.49**	**354**	*e*Pn	**Pb**	**09 51 55.0**	**-0.1**

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*ISCJB **27** 10:00:52.1±1.4, 35.°59N±0.°06×141.°3E±0.°1, h33km, mb3.5/2, MS3.0/2, Error ellipse: s-maj=16.5km s-min=6.9km az=157.6*
*JMA **27** 10:00:54.5±0.1, 35.°55N×141.°03E, h38km±1km, M3.0*
*IDC **27** 10:00:58.5±6.6, 35.°49N×140.°83E, h67km±44km, mb3.1/2, mb1 3.3/4, mb1mx3.0/36, mbtmp3.4/4, ML3.0/2, MS2.9/5, Ms1 2.9/5, ms1mx2.7/18, Error ellipse: s-maj=90.2km s-min=17.4km az=78.0*
ISC 27 10:00:53.7±1.5, 35.°54N±0.°06×141.°1E±0.°1, h33km, n20, σ1.°18/15, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.28**	**307**	P	**Pn**	**10 01 01.5**	**+0.1**
CHOJ				*e*S	**Sb**	**10 01 06.5**	**+0.3**
JCN	**Nagara**	**0.77**	**261**	P	**Pb**	**10 01 08.7**	**0.0**
BSO4	**Boso 4**	**0.85**	**230**	P	**Pn**	**10 01 09.4**	**+0.1**
BSO1	**Boso 1**	**0.89**	**188**	P	**Pb**	**10 01 10.1**	**-0.3**
BSO1				*e*X		10 01 23.2	
BSO3	**Boso 3**	**0.89**	**215**	P	**Pn**	**10 01 09.9**	**+0.2**
JYT	**Yasato**	**1.02**	**312**	P	**Pn**	**10 01 11.6**	**-0.2**
JYT				*e*S	**Sn**	**10 01 24.2**	**-0.8**
MJAR	**Matsushiro Arr**	**2.57**	**294**	P	**Pn**	**10 01 34.2**	**+1.1**
3.3nm,0.3s,baz=103,slow=7.9,SNR=36							
MJAR				LR	LR	10 02 41.1	
comp=Z,86nm,21.8s,baz=100,slow=44							
MAT	**Matsushiro**	**2.57**	**294**	P	**Pn**	**10 01 35.3**	**+2.2**
MAT				S	**Sb**	**10 02 08.9**	**-1.5**
JHJ	**Hachijo jima 2**	**2.66**	**205**	P	**Pb**	**10 01 38.6**	**-2.0**
9.0nm,0.3s,baz=270,slow=20,SNR=3.6							
JHJ				S	**Sn**	**10 02 07.1**	**+1.8**
33nm,0.3s,baz=72,slow=20,SNR=4.5							
JCJ	**Chichijima**	**8.46**	**174**	LR	LR	10 06 01.7	
comp=Z,408nm,21.9s,baz=11,slow=36							
KSRS	**Korea Array**	**10.80**	**284**	LR	LR	10 07 45.7	
comp=Z,45nm,20.4s,baz=134,slow=38							
H11N2	**WAKE ISLAND Hy 27.62**	**118**		T	T	10 35 41.9	
baz=310,slow=75,SNR=20							
H11N1	**WAKE ISLAND Hy 27.62**	**118**		T	T	10 35 41.6	
baz=310,slow=75,SNR=15							
H11N3	**WAKE ISLAND Hy 27.63**	**118**		T	T	10 35 46.5	
baz=310,slow=75,SNR=16							
H11S3	**WAKE ISLAND Hy 28.27**	**120**		T	T	10 36 31.6	
baz=312,slow=75,SNR=40							
H11S1	**WAKE ISLAND Hy 28.27**	**120**		T	T	10 36 31.6	
baz=312,slow=75,SNR=36							
H11S2	**WAKE ISLAND Hy 28.29**	**120**		T	T	10 36 32.8	
baz=312,slow=75,SNR=38							
JAY	**Jayapura**	**37.86**	**181**	LR	LR	10 23 16.7	
comp=Z,14nm,19.4s,baz=345,slow=35							
MKAR	**Makanchi Array**	**44.73**	**303**	P	**P**	**10 09 03.9**	**+0.1**
0.2nm,0.3s,baz=79,slow=7.8,SNR=2.2							
MKAR				LR	LR	10 27 31.3	
comp=Z,24nm,18.7s,baz=30,slow=36							
WRA	**Warramunga Arr**	**55.55**	**188**	P	**P**	**10 10 26.1**	**+0.2**
0.5nm,0.9s,baz=6.7,slow=7.7,SNR=5.5							

IDC 27 10:09:03.3±1.2, 25.°40N×143.°00E, h0km, mb3.7/4, mb1 3.9/4, mb1mx3.5/41, mbtmp3.7/4, MS3.3/3, Ms1 3.4/3, ms1mx2.7/42, Error ellipse: s-maj=59.7km s-min=19.0km az=84.0, Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCJ	**Chichijima**	**1.84**	**337**	Pn	Pn	10 09 36.6	+0.4
63nm,0.3s,baz=280,slow=22,SNR=80							
JCJ				Sn	Sn	10 10 00.8	+0.6
70nm,0.3s,baz=280,slow=23,SNR=20							
PETK	**Petropavlovsk-**	**29.80**	**18**	LR	LR	10 31 53.6	
comp=Z,16nm,18.1s,baz=251,slow=46							
CMAR	**Chiang Mai Arr**	**41.30**	**269**	LR	LR	10 33 33.1	
comp=Z,36nm,19.1s,baz=133,slow=36							
WRA	**Warramunga Arr**	**45.85**	**191**	P	P	10 17 27.4	+0.1
0.8nm,0.4s,baz=8.8,slow=8.4,SNR=17							
ASAR	**Alice Springs**	**49.56**	**191**	P	P	10 17 55.7	-0.5
0.3nm,0.6s,baz=2.9,slow=5.3,SNR=4.8							
URZ	**Urewera**	**70.94**	**152**	LR	LR	10 44 47.4	
comp=Z,79nm,21.9s,baz=177,slow=30							
YKA	**Yellowknife Ar**	**73.28**	**28**	P	P	10 20 36.1	-0.1
0.2nm,0.7s,baz=288,slow=6.5,SNR=3.8							
FINES	**FINESS Array B**	**79.79**	**334**	P	P	10 21 13.2	+0.1
1.8nm,0.8s,baz=78,slow=6.4,SNR=5.7							

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*ISK **27** 10:09:54.3, 37.°25N×28.°26E, h16km, MD2.6*
*DDA **27** 10:09:54.6, 37.°17N×28.°23E, h7km, Md2.7*
*CSEM **27** 10:09:55.5±0.2, 37.°23N×28.°25E, h8km, MD2.6, Error ellipse: s-maj=7.2km s-min=4.3km az=47.0*
ISC 27 10:09:55.4±0.8, 37.°22N±0.°03×28.°24E±0.°03, h16km±5km, n19, σ1.°05/31, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.09**	**157**	*e*PG	**Pg**	**10 09 58.2**	**-0.7**
YER				*e*SG	**Sb**	**10 10 00.9**	**-0.3**
YER	**Yerkesik**	**0.09**	**157**	*e*Pg	**Pg**	**10 09 58.2**	**-0.7**
YER				*e*Sg	**Sb**	**10 10 00.9**	**-0.3**
AYDN	**Tasoluk**	**0.52**	**327**	P	**Pg**	**10 10 05.3**	**-0.6**
AYDN				S	**Sb**	**10 10 12.8**	**-0.8**
AYDN	**Tasoluk**	**0.52**	**327**	*i* P	**Pg**	**10 10 05.3**	**-0.6**
AYDN				*i* S	**Sb**	**10 10 12.8**	**-0.8**
DALY	**Dalyan (Mu¨la**	**0.52**	**140**	*e*PG	**Pg**	**10 10 05.3**	**-0.5**
DALY				*e*SG	**Sb**	**10 10 13.4**	**-0.1**
DALY	**Dalyan (Mu¨la**	**0.52**	**140**	*e*Pg	**Pg**	**10 10 05.3**	**-0.5**
DALY				*e*Sg	**Sb**	**10 10 13.4**	**-0.1**
BODT	**Bodrum**	**0.76**	**258**	*e*PG	**Pb**	**10 10 09.9**	**-0.3**
BODT	**Bodrum**	**0.76**	**258**	*e*Pg	**Pb**	**10 10 09.9**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**0.78**	**339**	*e*PG	**Pg**	**10 10 09.5**	**-1.1**
AYDB	**Zeytinkoy-Aydi**	**0.78**	**339**	*e*Pg	**Pg**	**10 10 09.5**	**-1.1**
DNZL	**Cakiroluk**	**0.80**	**54**	P	**Pn**	**10 10 11.1**	**-1.0**
DNZL	**Cakiroluk**	**0.80**	**54**	*i* P	**Pn**	**10 10 11.1**	**-1.0**
DNZL				*i* S	**Sn**	**10 10 26.7**	**+3.0**
FETY	**Fethiye**	**0.90**	**131**	*e*PG	**Pb**	**10 10 12.0**	**-0.5**
FETY	**Fethiye**	**0.90**	**131**	*e*Pg	**Pb**	**10 10 12.0**	**-0.5**
GCAM	**G?zelcaml?**	**0.93**	**301**	P	**Pn**	**10 10 14.8**	**+1.0**
GCAM				S	**Sn**	**10 10 26.4**	**-0.4**
GCAM	**G?zelcaml?**	**0.93**	**301**	*i* P	**Pn**	**10 10 14.8**	**+1.0**
GCAM				*i* S	**Sn**	**10 10 26.4**	**-0.4**
DGB	**¨zmir**	**1.36**	**308**	*i* P	**Pb**	**10 10 20.2**	**-0.2**
DGB				*i* S	**Sg**	**10 10 40.9**	**+1.6**
KHAL	**Karahalli**	**1.52**	**41**	P	**Pg**	**10 10 23.8**	**-0.8**
KHAL				S	**Sg**	**10 10 46.1**	**+1.7**
KHAL	**Karahalli**	**1.52**	**41**	*i* P	**Pg**	**10 10 23.8**	**-0.8**
KHAL				*i* S	**Sg**	**10 10 46.1**	**+1.7**

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*ISK **27** 10:17:10.2, 39.°07N×29.°15E, h14km, ML2.6*
*CSEM **27** 10:17:11.0±0.2, 39.°08N×29.°12E, h15km, ML2.6, Error ellipse: s-maj=5.1km s-min=3.3km az=84.0*
*DDA **27** 10:17:11.1, 39.°11N×29.°04E, h7km, Ml2.3*
ISC 27 10:17:10.8±1.1, 39.°08N±0.°03×29.°14E±0.°04, h13km±10km, n27, σ0.°36/38, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TVSB	**Tavsanli**	**0.44**	**35**	*e*PG	**Pb**	**10 17 20.4**	**-0.1**
TVSB				*e*SG	**Sg**	**10 17 26.1**	**+0.5**
TVSB	**Tavsanli**	**0.44**	**35**	*e*Pg	**Pb**	**10 17 20.5**	**-0.1**
TVSB				*e*Sg	**Sg**	**10 17 26.2**	**+0.5**
KULA	**Kula-Manisa**	**0.68**	**213**	*e*PG	**Pg**	**10 17 23.8**	**-0.2**
KULA	**Kula-Manisa**	**0.68**	**213**	*e*Pg	**Pg**	**10 17 23.8**	**-0.2**
DURS	**Dursunbey**	**0.73**	**315**	P	**Pb**	**10 17 25.5**	**+0.1**
DURS	**Dursunbey**	**0.73**	**315**	*i* P	**Pb**	**10 17 25.5**	**+0.1**
KHAL	**Karahalli**	**0.77**	**159**	P	**Pn**	**10 17 27.4**	**0.0**
KHAL				S	**Sb**	**10 17 37.2**	**+0.8**
KHAL	**Karahalli**	**0.77**	**159**	*i* P	**Pn**	**10 17 27.4**	**0.0**
KHAL				*i* S	**Sb**	**10 17 37.2**	**+0.8**
KHL	**Karahalli**	**0.82**	**158**	*e*PG	**Pg**	**10 17 26.1**	**-0.6**
KHL				*e*SG	**Sb**	**10 17 37.7**	**-0.1**
KHL	**Karahalli**	**0.82**	**158**	*e*Pg	**Pg**	**10 17 26.1**	**-0.6**
KHL				*e*Sg	**Sb**	**10 17 37.7**	**-0.1**
ORLT	**Orhaneli**	**0.98**	**349**	*e*PG	**Pb**	**10 17 29.6**	**0.0**
ORLT				*e*SG	**Sn**	**10 17 43.9**	**-0.1**
ORLT	**Orhaneli**	**0.98**	**349**	*e*Pg	**Pb**	**10 17 29.6**	**0.0**
ORLT				*e*Sg	**Sn**	**10 17 43.9**	**-0.1**
AKS	**Akhisar**	**1.05**	**259**	*e*PG	**Pb**	**10 17 30.8**	**-0.1**
AKS	**Akhisar**	**1.05**	**259**	*e*Pg	**Pb**	**10 17 30.8**	**-0.1**
IGD	**Bursa**	**1.18**	**2**	*i* P	**Pg**	**10 17 33.4**	**-0.1**
IGD				*i* S	**Sn**	**10 17 49.3**	**+0.4**
CAVI	**Cavuskoy**	**1.24**	**26**	*e*PN	**Pn**	**10 17 33.7**	**-0.2**
CAVI	**Cavuskoy**	**1.24**	**26**	*e*Pn	**Pn**	**10 17 33.7**	**-0.2**
IZI	**Iznik**	**1.28**	**12**	*e*PN	**Pn**	**10 17 33.7**	**-0.7**
IZI	**Iznik**	**1.28**	**12**	*e*Pn	**Pn**	**10 17 33.7**	**-0.7**
MDNY	**Mudanya-Bursa**	**1.30**	**351**	*e*PN	**Pn**	**10 17 34.6**	**0.0**
MDNY	**Mudanya-Bursa**	**1.30**	**351**	*e*Pn	**Pn**	**10 17 34.6**	**0.0**
BALY	**Balya**	**1.34**	**300**	*i* P	**Pb**	**10 17 36.0**	**+0.1**
BALY				S	**Sb**	**10 17 53.0**	**0.0**
BALY	**Balya**	**1.34**	**300**	*i* P	**Pb**	**10 17 36.0**	**+0.1**
BALY				*i* S	**Sb**	**10 17 53.0**	**0.0**
ADVT	**Abdulvahap**	**1.43**	**19**	*e*PN	**Pn**	**10 17 36.5**	**+0.2**
ADVT	**Abdulvahap**	**1.43**	**19**	*e*Pn	**Pn**	**10 17 36.6**	**+0.2**
ARMT	**Armutlu**	**1.50**	**352**	*e*PN	**Pb**	**10 17 38.2**	**-0.2**
ARMT	**Armutlu**	**1.50**	**352**	*e*Pn	**Pb**	**10 17 38.2**	**-0.2**

IDC 27 10:22:20.1±2.6, 14.°67S×75.°41W, h87km±18km, mb2.9/2, mb1 3.3/5, mb1mx3.2/27, mbtmp3.5/5, Error ellipse: s-maj=64.2km s-min=14.2km az=49.0, Near coast of Peru

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NNA	**Nana**	**3.00**	**332**	P	Pn	10 23 04.4	-1.3
7.9nm,0.3s,baz=149,slow=11,SNR=17							
NNA				S	Sn	10 23 41.6	+0.7
58nm,0.3s,baz=234,slow=17,SNR=10.0							
LPAZ	**La Paz**	**7.20**	**104**	P	Pn	10 24 04.2	+0.9
0.2nm,0.3s,baz=284,slow=6.4,SNR=16							
LVC	**Limon Verde**	**10.02**	**143**	P	Pn	10 24 41.3	-0.1
11nm,0.3s,baz=299,slow=13,SNR=3.4							
TXAR	**Lajitas Array**	**51.55**	**328**	P	P	10 31 17.8	+0.3
0.2nm,0.6s,baz=141,slow=9.2,SNR=2.7							
TORD	**Torodi Ar. Bea**	**81.17**	**74**	P	P	10 34 26.5	-0.3
0.2nm,0.5s,baz=240,slow=6.2,SNR=2.6							

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*NIED **27** 10:22:00, 40.°50N×142.°70E, h35km, Mw3.7 Best double couple: M0=4.46000×10^14 NP1:φs=198.00000°, δ21.00000°, λ75.00000°. NP2:φs=34.00000°, δ69.00000°, λ96.00000°.*
*JMA **27** 10:22:38.7±0.1, 40.°46N×142.°67E, h27km±2km, M3.8*
*IDC **27** 10:22:41.0±3.1, 40.°50N×142.°77E, h56km±24km, mb3.4/7, mb1 3.5/11, mb1mx3.3/39, mbtmp3.6/11, ML3.0/4, MS2.8/3, Ms1 2.8/3, ms1mx2.4/28, Error ellipse: s-maj=41.7km s-min=18.9km az=83.0*
ISC 27 10:22:38.0±2.0, 40.°42N±0.°06×142.°70E±0.°09, h26km±13km, n27, σ0.°74/24, mb3.7/7, 1C-6D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**0.80**	**234**	⇓P	**Pn**	**10 22 54.0**	**+0.4**
JTH				*e*S	**Sn**	**10 23 05.2**	**+0.5**
JANG	**Nango**	**0.91**	**268**	⇓P	**Pb**	**10 22 55.0**	**-0.1**
JANG				*e*S	**Sb**	**10 23 06.1**	**-0.7**
JKZ	**Kuzumaki**	**1.14**	**248**	⇓P	**Pb**	**10 22 58.7**	**-0.3**
JKZ				*e*S	**Sb**	**10 23 13.0**	**-0.4**
JTM	**Tenmabayashi**	**1.30**	**287**	⇓P	**Pn**	**10 23 00.9**	**+0.4**
JOM	**Ohasama**	**1.44**	**229**	⇑P	**Pb**	**10 23 04.1**	**0.0**
JOM				*e*S	**Sb**	**10 23 22.6**	**+0.6**
JOT	**Ohata**	**1.58**	**308**	⇓P	**Pn**	**10 23 04.7**	**+0.3**
JAH	**Hinai**	**1.60**	**262**	⇓P	**Pb**	**10 23 06.2**	**-0.6**
JAH				*e*S	**Sb**	**10 23 26.1**	**-0.5**
JEM	**Erimo**	**1.63**	**12**	P	**Pn**	**10 23 05.0**	**-0.1**
JNBK	**Urakawa-nobuka**	**1.86**	**1**	P	**Pn**	**10 23 08.8**	**+0.6**
ASAJ	**Asahikawa**	**3.70**	**359**	P	**Pn**	**10 23 34.4**	**+0.9**
3.0nm,0.3s,baz=215,slow=8.3,SNR=34							
MJAR	**Matsushiro Arr**	**5.23**	**224**	P	Pn	10 23 58.6	+4.0
0.5nm,0.3s,baz=30,slow=14,SNR=7.0							
MJAR				LR	LR	10 26 13.4	
comp=Z,39nm,19.3s,baz=135,slow=40							
USRK	**Ussuriysk Ar.**	**8.79**	**299**	P	**Pn**	**10 24 44.7**	**+1.3**
0.2nm,0.3s,baz=102,slow=14,SNR=2.5							
KLR	**Kul'dur**	**11.74**	**322**	P	**Pn**	**10 25 25.6**	**+1.9**
0.1nm,0.3s,baz=185,slow=11,SNR=3.1							
KLR				LR	LR	10 29 39.5	
comp=Z,46nm,18.4s,baz=171,slow=36							
JCJ	**Chichijima**	**13.29**	**182**	LR	LR	10 30 17.3	
comp=Z,71nm,21.7s,baz=192,slow=34							
SONM	**Songino Array**	**26.91**	**298**	P	**P**	**10 28 16.8**	**-0.2**
0.6nm,0.6s,baz=80,slow=10,SNR=3.0							
H11N2	**WAKE ISLAND Hy 29.22**	**128**		T	T	10 59 34.6	
baz=318,slow=75,SNR=32							
H11N1	**WAKE ISLAND Hy 29.23**	**128**		T	T	10 59 39.1	
baz=318,slow=75,SNR=46							
H11N3	**WAKE ISLAND Hy 29.23**	**128**		T	T	10 59 33.6	
baz=318,slow=75,SNR=31							
H11S1	**WAKE ISLAND Hy 30.04**	**130**		T	T	11 00 36.8	
baz=320,slow=76,SNR=6.7							
H11S3	**WAKE ISLAND Hy 30.04**	**130**		T	T	11 00 46.3	
baz=320,slow=76,SNR=7.7							
H11S2	**WAKE ISLAND Hy 30.06**	**130**		T	T	11 00 42.1	
baz=320,slow=76,SNR=6.7							
ZALV	**Zalesovo Beam**	**40.46**	**310**	P	**P**	**10 30 13.1**	**-1.0**
0.9nm,0.4s,baz=79,slow=39,SNR=3.0							
MKAR	**Makanchi Array**	**43.26**	**299**	P	**P**	**10 30 37.1**	**0.0**
0.8nm,0.6s,baz=81,slow=10,SNR=5.7							
WRA	**Warramunga Arr**	**60.55**	**189**	P	**P**	**10 32 46.1**	**0.0**
0.4nm,1.0s,baz=6.8,slow=7.0,SNR=5.3							
ASAR	**Alice Springs**	**64.28**	**189**	P	**P**	**10 33 10.9**	**-0.1**
0.4nm,1.0s,baz=6.1,slow=7.9,SNR=4.4							
FINES	**FINESS Array B**	**66.30**	**332**	P	**P**	**10 33 22.8**	**-0.8**
2.4nm,0.9s,baz=91,slow=8.3,SNR=3.3							
NOA	**NORSAR Array B**	**71.46**	**337**	P	**P**	**10 33 55.4**	**-0.4**
0.5nm,0.7s,baz=39,slow=5.7,SNR=3.3							

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*ISK **27** 10:26:13.9, 39.°17N×29.°02E, h7km, MD2.6*
*ISCJB **27** 10:26:14.4±0.7, 39.°14N±0.°04×29.°08E±0.°08, h9km, Error ellipse: s-maj=8.8km s-min=5.4km az=5.7*
*CSEM **27** 10:26:14.6±0.2, 39.°14N×29.°09E, h10km, MD2.6, Error ellipse: s-maj=7.8km s-min=5.0km az=93.0*
*DDA **27** 10:26:17.0, 39.°03N×29.°11E, h7km, Ml2.4*
ISC 27 10:26:14.6±0.9, 39.°12N±0.°03×29.°09E±0.°05, h9km, n18, σ0.°68/23, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TVSB	**Tavsanli**	**0.44**	**41**	*e*PG	**Pg**	**10 26 23.4**	**+0.2**
TVSB				*e*SG	**Sg**	**10 26 29.1**	**+0.1**
TVSB	**Tavsanli**	**0.44**	**41**	*e*Pg	**Pg**	**10 26 23.4**	**+0.2**
TVSB				*e*Sg	**Sg**	**10 26 29.1**	**+0.1**
DURS	**Dursunbey**	**0.68**	**316**	P	**Pb**	**10 26 28.9**	**+0.3**
DURS	**Dursunbey**	**0.68**	**316**	*i* P	**Pb**	**10 26 28.9**	**+0.3**
DURS				*i* S	**Sn**	**10 26 42.5**	**+1.3**
KULA	**Kula-Manisa**	**0.69**	**209**	*e*PG	**Pg**	**10 26 28.1**	**+0.2**
KULA	**Kula-Manisa**	**0.69**	**209**	*e*Pg	**Pg**	**10 26 28.1**	**+0.2**
KHAL	**Karahalli**	**0.81**	**157**	P	**Pb**	**10 26 31.1**	**+0.2**
KHAL				S	**Sb**	**10 26 41.7**	**-0.2**
KHAL	**Karahalli**	**0.81**	**157**	*i* P	**Pb**	**10 26 31.1**	**+0.2**
KHAL				*i* S	**Sb**	**10 26 41.7**	**-0.2**
CAVI	**Cavuskoy**	**1.23**	**28**	*e*PN	**Pn**	**10 26 37.4**	**-0.6**
CAVI	**Cavuskoy**	**1.23**	**28**	*e*Pn	**Pn**	**10 26 37.4**	**-0.6**
IZI	**Iznik**	**1.25**	**14**	*e*PN	**Pn**	**10 26 37.3**	**-1.0**
IZI	**Iznik**	**1.25**	**14**	*e*Pn	**Pn**	**10 26 37.3**	**-1.0**
KCTX	**Karacabey (Bur**	**1.28**	**334**	*e*PN	**Pn**	**10 26 37.4**	**-1.2**
KCTX	**Karacabey (Bur**	**1.28**	**334**	*e*Pn	**Pn**	**10 26 37.4**	**-1.2**
ADVT	**Abdulvahap**	**1.41**	**21**	*e*PN	**Pn**	**10 26 40.2**	**-0.2**
ADVT	**Abdulvahap**	**1.41**	**21**	*e*Pn	**Pn**	**10 26 40.2**	**-0.2**
ARMT	**Armutlu**	**1.46**	**353**	*e*PN	**Pn**	**10 26 40.3**	**-0.8**
ARMT	**Armutlu**	**1.46**	**353**	*e*Pn	**Pn**	**10 26 40.3**	**-0.8**

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*NIED **27** 10:30:00, 31.°10N×131.°50E, h20km, Mw4.0 Best double couple: M0=1.07000×10^15 NP1:φs=336.00000°, δ8.00000°, λ-127.00000°. NP2:φs=194.00000°, δ83.00000°, λ-85.00000°.*
*ISCJB **27** 10:30:38.9±0.8, 31.°13N±0.°03×131.°54E±0.°08, h52km±6km, mb3.6/6, MS3.2/6, Error ellipse: s-maj=11.5km s-min=5.0km az=15.8*
*JMA **27** 10:30:39.5±0.1, 31

IDC 27 10:39:41.7±0.7, 37.°86N×142.°79E, h0km, mb3.7/11, mb1 3.9/17, mb1mx3.8/40, mbtmp3.8/17, ML3.2/5, MS2.8/3, Ms1 2.8/3, ms1mx2.6/41, Error ellipse: s-maj=19.0km s-min=15.3km az=100.0
JMA 27 10:39:44.2±0.3, 37.°99N×142.°65E, h29km±4km, M4.0
ISC 27 10:39:43.5±0.7, 37.°90N±0.°05×142.°64E±0.°06, h14km, n36, σ1§55/34, mb3.7/11, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	1.16	299	P	Pb	10 40 04.3	-1.1
OFUJ	Ofunato	1.40	327	P	Pn	10 40 07.4	-1.3
OFUJ				eS	Sn	10 40 23.9	-3.1
JMM	Marumori	1.47	269	P	Pn	10 40 09.3	-0.2
JFK	Kawauchi	1.50	250	P	Pn	10 40 09.8	-0.3
JFK				eS	Sb	10 40 29.6	-0.6
JMK	Ichinoseki	1.53	314	P	Pn	10 40 08.8	-1.7
JOU	Okura	1.63	287	P	Pn	10 40 11.8	0.0
JFT	Otama	1.87	259	P	Pb	10 40 16.1	-1.4
JFT				eS	Sb	10 40 39.4	-1.3
JOM	Ohasama	1.89	326	P	Pn	10 40 15.6	+0.2
JYS	Shirataka	2.06	280	P	Pb	10 40 18.7	-2.0
MJAR	Matsushiro Arr	3.79	250	Pn	Pn	10 40 44.6	+3.0
	2.9nm,0.3s,baz=78,slow=16,SNR=22						
MJAR				Sn	Sb	10 41 35.5	-0.6
	2.7nm,0.3s,baz=84,slow=13,SNR=5.0						
MJAR				LR	LR	10 42 18.5	
	comp=Z,73nm,19.6s,baz=70,slow=41						
MAT	Matsushiro	3.79	250	P	Pn	10 40 44.9	+3.3
MAT				S	Sn	10 41 27.4	+1.4
JHJ	Hachijo jima 2	5.31	207	Pn	Pn	10 41 01.5	-1.0
	9.9nm,0.3s,baz=252,slow=20,SNR=3.4						
JHJ				Sn	Sn	10 42 01.6	-1.9
	22nm,0.3s,baz=73,slow=19,SNR=3.8						
ASAJ	Asahikawa	6.21	360	Pn	Pn	10 41 14.3	-0.4
	0.4nm,0.3s,baz=221,slow=9.0,SNR=4.7						
USRK	Ussuriysk Ar.	10.21	311	Pn	Pn	10 42 11.2	+1.6
	0.5nm,0.3s,baz=131,slow=14,SNR=11						
JNU	Nakatsue	10.71	247	Pn	Pn	10 42 13.8	-2.8
	0.3nm,0.3s,baz=256,slow=8.3,SNR=3.0						
JCJ	Chichijima	10.78	182	Pn	Pn	10 42 15.5	-2.1
	4.5nm,0.3s,baz=233,slow=20,SNR=4.9						
KSRS	Korea Array	11.68	272	Pn	Pn	10 42 30.6	+0.9
	0.3nm,0.3s,baz=84,slow=13,SNR=3.2						
KSRS				LR	LR	10 47 00.1	
	comp=Z,54nm,18.8s,baz=92,slow=37						
KLR	Kul'dur	13.79	329	LR	LR	10 47 57.5	
	comp=Z,69nm,19.9s,baz=158,slow=36						
H11N2	WAKE ISLAND Hy 27.78	124		T	T	11 14 42.6	
	baz=317,slow=75,SNR=102						
H11N1	WAKE ISLAND Hy 27.79	124		T	T	11 14 39.3	
	baz=317,slow=75,SNR=89						
H11N3	WAKE ISLAND Hy 27.80	124		T	T	11 14 39.4	
	baz=317,slow=75,SNR=67						
SONM	Songino Array	28.13	302	P	P	10 45 36.7	+1.5
	0.8nm,0.6s,baz=114,slow=10.0,SNR=3.5						
H11S1	WAKE ISLAND Hy 28.54	126		T	T	11 15 38.1	
	baz=318,slow=76,SNR=61						
H11S3	WAKE ISLAND Hy 28.54	126		T	T	11 15 31.2	
	baz=318,slow=76,SNR=81						
H11S2	WAKE ISLAND Hy 28.56	126		T	T	11 15 34.9	
	baz=318,slow=76,SNR=59						
ZALV	Zalesovo Beam	42.06	312	P	P	10 47 36.4	+1.8
	1.5nm,0.7s,baz=47,slow=6.3,SNR=3.4						
MKAR	Makanchi Array	44.49	302	P	P	10 47 55.8	+1.4
	1.1nm,0.7s,baz=87,slow=8.6,SNR=8.1						
KURBB	Kurchatov Array	46.24	307	P	P	10 48 08.2	+0.1
	1.1nm,0.4s,baz=83,slow=8.1,SNR=6.3						
ILAR	Eielson Array	48.24	33	P	P	10 48 23.6	+0.1
	0.2nm,0.5s,baz=275,slow=6.4,SNR=5.0						
BVAR	Borovoye Array	50.72	312	P	P	10 48 43.4	+0.9
	0.4nm,0.5s,baz=50,slow=4.5,SNR=2.3						
INK	Inuvik	53.17	28	P	P	10 49 01.1	+0.5
	0.8nm,0.8s,baz=143,slow=10,SNR=2.7						
WRA	Warramunga Arr	58.06	189	P	P	10 49 36.5	+0.2
	1.9nm,0.6s,baz=6.7,slow=7.1,SNR=26						
ASAR	Alice Springs	61.79	189	P	P	10 50 02.3	+0.5
	0.6nm,0.7s,baz=15,slow=6.9,SNR=8.5						
YKA	Yellowknife Ar	62.56	31	P	P	10 50 07.1	+0.5
	0.2nm,0.6s,baz=302,slow=6.1,SNR=3.5						
DZM	Mont Dzumac	63.72	155	LR	LR	11 16 14.8	
	comp=Z,277nm,20.1s,baz=44,slow=34						
TXAR	Lajitas Array	88.82	53	P	P	10 52 37.4	0.0
	0.1nm,0.6s,baz=264,slow=1.8,SNR=2.6						

ISK 27 10:42:53.4, 39.°02N×29.°01E, h11km, MD2.6
CSEM 27 10:42:55.5±0.2, 39.°12N×29.°04E, h10km, ML2.7, Error ellipse: s-maj=6.1km s-min=4.0km az=159.0
DDA 27 10:42:56.1, 39.°11N×29.°06E, h7km, Ml2.7
ISC 27 10:42:55.4±0.9, 39.°08N±0.°02×29.°05E±0.°02, h17km±8km, n43, σ0§87/60, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.26	261	P	Pb	10 43 01.8	+0.1
DEMI				S	Sb	10 43 05.8	-0.2
DEMI	Demirci	0.26	261	*i* P	Pb	10 43 01.8	+0.1
DEMI				*i* S	Sb	10 43 05.8	-0.2
GDZ	Gediz	0.34	89	P	Pg	10 43 02.9	+0.3
GDZ				S	Sg	10 43 07.9	+0.4
GDZ	Gediz	0.34	89	*i* P	Pg	10 43 02.9	+0.3
GDZ				*i* S	Sg	10 43 07.9	+0.4
TVSB	Tavsanli	0.49	41	*e*PG	Pg	10 43 04.7	-0.6
TVSB	Tavsanli	0.49	41	*e*Pg	Pg	10 43 04.7	-0.6
DURS	Dursunbey	0.68	319	P	Pg	10 43 09.1	+0.2
DURS	Dursunbey	0.68	319	*i* P	Pg	10 43 09.1	+0.2
MANT	Manisa	0.71	213	P	Pg	10 43 10.3	+1.0
MANT				S	Sg	10 43 20.4	+1.6
MANT	Manisa	0.71	213	*i* P	Pg	10 43 10.3	+1.0
MANT				*i* S	Sg	10 43 20.4	+1.6
KHL	Karahalli	0.84	154	*e*PG	Pb	10 43 09.3	-2.4
KHL	Karahalli	0.84	154	*e*Pg	Pb	10 43 09.3	-2.4
ORLT	Orhaneli	0.97	353	*e*PG	Pb	10 43 13.5	-0.3
ORLT	Orhaneli	0.97	353	*e*Pg	Pb	10 43 13.5	-0.3
AKHS	Akhisar	0.98	258	P	Pg	10 43 15.5	+0.9
AKHS				S	Sn	10 43 29.2	+1.2
AKHS	Akhisar	0.98	258	*i* P	Pg	10 43 15.5	+0.9
AKHS				*i* S	Sn	10 43 29.2	+1.2
AKS	Akhisar	0.99	258	*e*PG	Pb	10 43 12.0	-2.0
AKS				*e*SG	Sb	10 43 25.6	-1.1
AKS	Akhisar	0.99	258	*e*Pg	Pb	10 43 12.0	-2.0
AKS				*e*Sg	Sb	10 43 25.6	-1.1
BALB	Balikesir	1.06	302	*e*PG	Pb	10 43 14.6	-0.8
BALB				*e*SG	Sg	10 43 29.7	-0.3
BALB	Balikesir	1.06	302	*e*Pg	Pb	10 43 14.6	-0.8
BALB				*e*Sg	Sg	10 43 29.7	-0.3
IGD	Bursa	1.19	6	*i* P	Pb	10 43 17.5	+0.1
IGD				*i* S	Sg	10 43 33.2	-0.7
CAVI	Cavuskoy	1.27	28	*e*PN	Pb	10 43 18.8	-0.2
CAVI	Cavuskoy	1.27	28	*e*Pn	Pb	10 43 18.8	-0.2
BALY	Balya	1.29	301	P	Pg	10 43 20.8	+0.5
BALY				S	Sg	10 43 37.3	+0.1
BALY	Balya	1.29	301	*i* P	Pg	10 43 20.8	+0.5
BALY				*i* S	Sg	10 43 37.3	+0.1
MDNY	Mudanya-Bursa	1.29	354	*e*PN	Pn	10 43 18.6	-0.1
MDNY	Mudanya-Bursa	1.29	354	*e*Pn	Pn	10 43 18.6	-0.1
IZI	Iznik	1.29	14	*e*PN	Pb	10 43 19.2	-0.1
IZI	Iznik	1.29	14	*e*Pn	Pb	10 43 19.2	-0.1
KCTX	Karacabey (Bur	1.30	336	*e*PN	Pn	10 43 18.6	-0.2
KCTX	Karacabey (Bur	1.30	336	*e*Pn	Pn	10 43 18.6	-0.2
BORA	Eskisehir	1.35	53	P	Pb	10 43 20.8	+0.6
BORA				S	Sg	10 43 39.7	+0.7
BORA	Eskisehir	1.35	53	*i* P	Pb	10 43 20.8	+0.6
BORA				*i* S	Sg	10 43 39.6	+0.7
GONE	Gonen-Balikesi	1.43	313	*e*PN	Pn	10 43 19.9	-0.6
GONE	Gonen-Balikesi	1.43	313	*e*Pn	Pn	10 43 19.9	-0.6
ARMT	Armutlu	1.49	354	*e*PN	Pb	10 43 21.8	-0.8
ARMT	Armutlu	1.49	354	*e*Pn	Pb	10 43 21.8	-0.8
EDC	Edincik	1.56	324	*e*PN	Pn	10 43 22.1	-0.3
EDC	Edincik	1.56	324	*e*Pn	Pn	10 43 22.1	-0.3
GULT	Gulveren	1.76	39	*e*PN	Pn	10 43 25.6	+0.4
GULT	Gulveren	1.76	39	*e*Pn	Pn	10 43 25.6	+0.4
SVRH	Sivrihisar-ESK	1.95	79	*e*PN	Pn	10 43 28.0	+0.1
SVRH	Sivrihisar-ESK	1.95	79	*e*Pn	Pn	10 43 28.0	+0.1

IDC 27 10:58:55.4±1.2, 36.°15N×141.°65E, h0km, mb3.3/3, mb1 3.5/5, mb1mx3.3/37, mbtmp3.3/5, ML3.0/2, MS2.4/2, Ms1 2.4/2, ms1mx2.3/23, Error ellipse: s-maj=29.8km s-min=23.5km az=107.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	2.81	279	Pn	Pn	10 59 42.3	+0.7
	2.0nm,0.3s,baz=115,slow=8.7,SNR=17						
MJAR				Sn	Sn	11 00 14.5	-1.6
	2.3nm,0.3s,baz=134,slow=14,SNR=7.8						
MJAR				LR	LR	11 01 03.2	
	comp=Z,56nm,20.0s,baz=190,slow=46						
MAT	Matsushiro	2.81	279	P	Pn	10 59 42.5	+0.9
MAT				S	Sn	11 00 16.3	+0.1
ASAJ	Asahikawa	7.99	5	Pn	Pn	11 00 52.4	-0.4
	0.3nm,0.3s,baz=215,slow=12,SNR=3.1						
USRK	Ussuriysk Ar.	10.92	320	Pn	Pn	11 01 38.7	+5.9
	0.2nm,0.3s,baz=129,slow=12,SNR=4.5						
KSRS	Korea Array	11.09	281	LR	LR	11 05 49.9	
	comp=Z,27nm,20.2s,baz=205,slow=37						
H11N2	WAKE ISLAND Hy 27.54	120		T	T	11 34 04.5	
	baz=315						
H11N1	WAKE ISLAND Hy 27.54	120		T	T	11 33 59.2	
	baz=315						
H11N3	WAKE ISLAND Hy 27.55	120		T	T	11 34 08.6	
	baz=315						
H11S1	WAKE ISLAND Hy 28.22	122		T	T	11 34 53.2	
	baz=316,slow=74						
H11S3	WAKE ISLAND Hy 28.22	122		T	T	11 34 47.7	
	baz=316,slow=74						
H11S2	WAKE ISLAND Hy 28.24	122		T	T	11 34 49.2	
	baz=316						
ILAR	Eielson Array	50.14	32	P	P	11 07 52.1	-0.1
	0.3nm,0.9s,baz=263,slow=7.2,SNR=3.3						
WRA	Warramunga Arr	56.21	188	P	P	11 08 37.0	-0.3
	0.5nm,0.7s,baz=4.7,slow=7.3,SNR=6.4						
ASAR	Alice Springs	59.94	188	P	P	11 09 03.4	0.0
	0.3nm,0.9s,baz=358,slow=6.5,SNR=2.8						

IDC 27 11:03:02.0±9.0, 26.°50N×136.°98E, h119km±108km, mb3.0/3, mb1 3.2/4, mb1mx3.0/36, mbtmp3.6/4, ML3.4/1, Error ellipse: s-maj=81.3km s-min=24.4km az=65.0, West of Bonin Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCJ	Chichijima	4.69	82	P	Pn	11 04 10.4	-0.3
	1.8nm,0.3s,baz=275,slow=18,SNR=3.9						
JCJ				S	Sn	11 05 04.8	+0.6
	baz=287,slow=19						
WRA	Warramunga Arr	46.24	183	P	P	11 11 15.8	+0.5
	0.3nm,0.3s,baz=1.6,slow=7.6,SNR=12						
MKAR	Makanchi Array	47.28	310	P	P	11 11 23.2	-0.1
	0.2nm,0.3s,baz=97,slow=7.4,SNR=2.7						
ASAR	Alice Springs	49.96	184	P	P	11 11 43.1	-0.8
	0.2nm,0.5s,baz=3.3,slow=7.8,SNR=7.9						

ISK 27 11:08:42.5, 39.°09N×29.°00E, h18km, MD2.7
ISCJB 27 11:08:43.3±0.5, 39.°13N±0.°02×28.°98E±0.°03, h11km±4km, Error ellipse: s-maj=4.4km s-min=4.0km az=32.0
CSEM 27 11:08:43.3±0.1, 39.°12N×28.°99E, h15km, ML2.8, Error ellipse: s-maj=2.8km s-min=2.3km az=103.0
DDA 27 11:08:44.0, 39.°11N×28.°98E, h7km, Ml2.8
ISC 27 11:08:43.3±0.9, 39.°12N±0.°02×28.°98E±0.°02, h15km±8km, n42, σ0§41/62, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.22	250	P	Pb	11 08 48.9	-0.2
DEMI				S	Sg	11 08 52.2	+0.5
DEMI	Demirci	0.22	250	*i* P	Pb	11 08 48.9	-0.2
DEMI				*i* S	Sg	11 08 52.1	+0.5
GDZ	Gediz	0.39	94	P	Pb	11 08 52.2	+0.2
GDZ				S	Sb	11 08 57.9	0.0
GDZ	Gediz	0.39	94	*i* P	Pb	11 08 52.2	+0.2
GDZ				*i* S	Sb	11 08 57.9	0.0
KULA	Kula-Manisa	0.65	203	*e*PG	Pg	11 08 55.7	-0.4
KULA				*e*SG	Sg	11 09 04.5	-0.3
KULA	Kula-Manisa	0.65	203	*e*Pg	Pg	11 08 55.7	-0.4
KULA				*e*Sg	Sg	11 09 04.5	-0.3
MANT	Manisa	0.71	208	P	Pb	11 08 57.8	+0.3
MANT				S	Sg	11 09 06.7	+0.1
MANT	Manisa	0.71	208	*i* P	Pb	11 08 57.8	+0.3
MANT				*i* S	Sg	11 09 06.7	+0.1
KHAL	Karahalli	0.85	152	P	Pn	11 09 00.6	-0.2
KHAL				S	Sb	11 09 11.5	+0.5
KHAL	Karahalli	0.85	152	*i* P	Pn	11 09 00.6	-0.2
KHAL				*i* S	Sb	11 09 11.5	+0.5
KHL	Karahalli	0.90	152	*e*PG	Pg	11 09 00.2	-0.6
KHL	Karahalli	0.90	152	*e*Pg	Pg	11 09 00.2	-0.6
AKHS	Akhisar	0.94	256	P	Pn	11 09 02.2	+0.2
AKHS				S	Sn	11 09 15.2	0.0
AKHS	Akhisar	0.94	256	*i* P	Pn	11 09 02.2	+0.2
AKHS				*i* S	Sn	11 09 15.2	0.0
AKS	Akhisar	0.94	256	*e*PG	Pb	11 09 01.2	-0.1
AKS	Akhisar	0.94	256	*e*Pg	Pb	11 09 01.2	-0.1
BALB	Balikesir	1.00	302	*e*PG	Pg	11 09 02.5	-0.1
BALB				*e*SG	Sn	11 09 17.4	+0.8
BALB	Balikesir	1.00	302	*e*Pg	Pg	11 09 02.5	-0.1
BALB				*e*Sg	Sn	11 09 17.4	+0.8
IGD	Bursa	1.16	8	*i* P	Pg	11 09 05.2	-0.4
IGD				*i* S	Sn	11 09 20.4	-0.1
KCTX	Karacabey (Bur	1.24	337	*e*PN	Pb	11 09 06.3	-0.2
KCTX	Karacabey (Bur	1.24	337	*e*Pn	Pb	11 09 06.3	-0.2
MDNY	Mudanya-Bursa	1.25	357	*e*PN	Pb	11 09 06.4	-0.2
MDNY				*e*SN	Sg	11 09 23.3	-0.4
MDNY	Mudanya-Bursa	1.25	357	*e*Pn	Pb	11 09 06.4	-0.2
MDNY				*e*Sn	Sg	11 09 23.3	-0.4
CAVI	Cavuskoy	1.27	31	*e*PN	Pn	11 09 06.2	-0.3
CAVI				*e*SN	Sb	11 09 22.6	-0.5
CAVI	Cavuskoy	1.27	31	*e*Pn	Pn	11 09 06.2	-0.3
CAVI				*e*Sn	Sb	11 09 22.6	-0.5
IZI	Iznik	1.27	17	*e*PN	Pn	11 09 06.1	-0.6
IZI	Iznik	1.27	17	*e*Pn	Pn	11 09 06.1	-0.6
GEMT	Gemlik	1.32	7	*e*PN	Pn	11 09 07.1	-0.2
GEMT	Gemlik	1.32	7	*e*Pn	Pn	11 09 07.1	-0.2
GONE	Gonen-Balikesi	1.36	313	*e*PN	Pn	11 09 07.9	+0.1
GONE	Gonen-Balikesi	1.36	313	*e*Pn	Pn	11 09 07.9	+0.1
BORA	Eskisehir	1.37	56	*i* P	Pg	11 09 10.6	+1.0
BORA				*i* S	Sg	11 09 28.7	+1.2
ADVT	Abdulvahap	1.44	24	*e*PN	Pn	11 09 08.3	-0.5
ADVT	Abdulvahap	1.44	24	*e*Pn	Pn	11 09 08.3	-0.5
ARMT	Armutlu	1.45	356	*e*PN	Pn	11 09 08.8	-0.2
ARMT	Armutlu	1.45	356	*e*Pn	Pn	11 09 08.8	-0.2
EDC	Edincik	1.50	325	*e*PN	Pn	11 09 10.0	+0.3
EDC	Edincik	1.50	325	*e*Pn	Pn	11 09 10.0	+0.3
GULT	Gulveren	1.77	42	*e*PN	Pn	11 09 12.9	-0.5
GULT	Gulveren	1.77	42	*e*Pn	Pn	11 09 12.9	-0.5
ISK	Istanbul-Kandi	1.94	2	*e*PN	Pn	11 09 16.1	+0.3
ISK	Istanbul-Kandi	1.94	2	*e*Pn	Pn	11 09 16.1	+0.3

IDC 27 11:09:21.9±56.0, 16.°45S×177.°26W, h0km, mb4.1/3, mb1 4.3/3, mb1mx3.6/32, mbtmp4.1/3, MS4.4/1, Ms1 4.4/1, ms1mx2.8/29, Error ellipse: s-maj=1038.0km s-min=155.9km az=78.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	Raoul Island	12.76	183	LR	LR	11 15 39.4	
	comp=Z,2μm,20.7s,baz=157,slow=30						
STKA	Stephens Creek	40.30	240	P	P	11 17 02.1	+0.9
	1.1nm,0.5s,baz=83,slow=11,SNR=7.2						
WRA	Warramunga Arr	46.00	258	P	P	11 17 46.7	-0.7
	0.7nm,0.5s,baz=97,slow=7.5,SNR=21						
ASAR	Alice Springs	46.26	253	P	P	11 17 49.0	-0.5
	6.0nm,0.5s,baz=89,slow=7.9,SNR=196						

NIED 27 11:25:00.37, 37.°00N×140.°80E, h5km, Mw3.6 Best double couple: M0 2.51000×10^14 NP1:φs135.00000°, δ30.00000°, λ-175.00000°. NP2:φs40.00000°, δ87.00000°, λ-60.00000°.
IDC 27 11:25:07.5±1.7, 37.°22N×140.°73E, h0km, mb3.4/3, mb1 3.6/4, mb1mx3.3/43, mbtmp3.4/4, ML3.3/1, Error ellipse: s-maj=33.1km s-min=20.8km az=173.0
ISCJB 27 11:25:08.0±0.8, 36.°97N±0.°03×140.°91E±0.°07, h12km±4km, mb3.6/3, Error ellipse: s-maj=9.1km s-min=4.6km az=10.9
JMA 27 11:25:08.7, 36.°98N×140.°83E, h15km±1km, M3.6 Broadband fault plane solution: P waves. NP1: φs221.00000°, δ79.00000°, λ28.00000°. NP2: φs126.00000°, δ63.00000°, λ168.00000°. Principal axes: T Plg27.0000°, Azm87.0000°; N Plg60.0000°, Azm241.0000°; P Plg11.0000°, Azm351.0000°; JMA Felt III J1.
ISC 27 11:25:09.6±1.0, 37.°02N±0.°03×140.°67E±0.°06, h6km±9km, n20, σ1§04/23, mb3.5/3, 1C-5D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.14	51	⇓P	Pg	11 25 12.1	-0.3
ONAJ				S	Sg	11 25 14.5	+0.2
JFK	Kawauchi	0.39	25	⇓P	Pg	11 25 16.3	-0.8
JFK				*e*S	Sg	11 25 21.9	-0.3
JHO	Hitachi	0.41	191	⇓P	Pg	11 25 17.0	-0.6
JHO				S	Sg	11 25 22.8	-0.2
JFT	Otama	0.56	332	⇓P	Pb	11 25 21.7	-0.3
JFT				S	Sb	11 25 30.7	+0.4
JSB	Shiboa	0.60	266	⇑P	Pb	11 25 23.4	+0.9
JSB				*e*S	Sn	11 25 33.7	-1.1
JMM	Marumori	0.85	7	⇓P	Pg	11 25 25.0	-1.0
JMM				S	Sg	11 25 36.8	-0.3
JFY	Yanaizu	0.86	297	P	Pb	11 25 27.4	+0.4
JFY				S	Sn	11 25 40.3	-0.9
JYT	Yasato	0.87	206	P	Pg	11 25 25.4	-1.0
JYT				S	Sg	11 25 37.7	0.0
MJAR	Matsushiro Arr	2.03	257	Pn	Pn	11 25 45.5	+1.1
	11nm,0.3s,baz=81,slow=15,SNR=12						
MJAR				Lg	Lg	11 26 13.9	
	22nm,0.3s,baz=79,slow=31,SNR=11						
MAT	Matsushiro	2.03	257	P	Pb	11 25 46.5	-0.4
MAT				S	Sg	11 26 14.3	-0.5
USRK	Ussuriysk Ar.	9.74	320	Pn	Pn	11 27 33.0	+2.8
	0.0nm,0.3s,baz=131,slow=14,SNR=4.2						
H11N2	WAKE ISLAND Hy 28.66	120		T	T	12 00 53.0	
	baz=313,slow=75,SNR=111						
H11N1	WAKE ISLAND Hy 28.66	120		T	T	12 00 53.6	
	baz=313,slow=75,SNR=86						
H11N3	WAKE ISLAND Hy 28.67	120		T	T	12 00 54.3	
	baz=313,slow=75,SNR=88						
H11S1	WAKE ISLAND Hy 29.36	122		T	T	12 01 46.7	
	baz=314,slow=75,SNR=102						
H11S3	WAKE ISLAND Hy 29.36	122		T	T	12 01 44.3	
	baz=314,slow=75,SNR=119						
H11S2	WAKE ISLAND Hy 29.37	122		T	T	12 01 45.3	
	baz=314,slow=75,SNR=80						
KURBB	Kurchatov Arra	45.54	308	P	P	11 33 27.8	-2.1
	1.2nm,0.9s,baz=86,slow=9.0,SNR=8.3						
WRA	Warramunga Arr	56.97	187	P	P	11 34 55.8	-0.1
	0.4nm,0.8s,baz=3.1,slow=7.0,SNR=5.5						
ASAR	Alice Springs	60.69	187	P	P	11 35 22.0	+0.2
	0.2nm,0.6s,baz=18,slow=7.4,SNR=3.6						

NIED 27 11:32:00, 38.°40N×142.°10E, h35km, Mw3.4 Best double couple: M0 1.66000×10^14 NP1:φs130.00000°, δ42.00000°, λ-42.00000°. NP2:φs254.00000°, δ63.00000°, λ-124.00000°.
JMA 27 11:32:11.2±0.1, 38.°40N×142.°12E, h35km±1km, M3.7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.61	275	P	Pn	11 32 23.3	0.0
JIO				S	Sn	11 32 31.4	-0.5
OFUJ	Ofunato	0.77	333	P	Pn	11 32 25.5	0.0
JMK	Ichinoseki	0.89	308	P	Pn	11 32 27.6	+0.3
JMK				S	Sn	11 32 39.1	+0.1
JOU	Okura	1.15	269	P	Pn	11 32 31.5	+0.8
JOU				S	Sn	11 32 46.0	+0.8
JMM	Marumori	1.17	243	P	Pn	11 32 31.1	0.0
JMM				*e*S	Sn	11 32 45.1	-0.8
JOM	Ohasama	1.25	329	P	Pn	11 32 33.0	+0.8
JOM				S	Sn	11 32 48.9	+1.1
JFK	Kawauchi	1.43	224	P	Pn	11 32 34.0	-0.6
JFK				S	Sn	11 32 50.5	-1.7
JYK	Kaneyama	1.47	291	P	Pn	11 32 36.2	+1.0
JYK				*e*S	Sn	11 32 54.8	+1.5
JRG	Rokugo	1.53	311	P	Pn	11 32 37.3	+1.3
JRG				*e*S	Sn	11 32 56.6	+2.0

IDC 27 11:38:48.6±1.0, 37.°05N×143.°87E, h0km, mb3.5/5, mb1 3.7/8, mb1mx3.5/44, mbtmp3.5/8, ML3.4/3, Error ellipse: s-maj=27.3km s-min=22.1km az=104.0
ISCJB 27 11:38:51.3±0.9, 37.°2N±0.°1×143.°59E±0.°08, h33km, mb3.6/5, Error ellipse: s-maj=17.3km s-min=8.6km az=165.3
ISC 27 11:38:53.8±1.1, 37.°2N±0.°1×143.°65E±0.°10, h35km, n9, σ1§45/11, mb3.5/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	4.41	264	Pn	Pn	11 39 57.5	-0.7
	1.4nm,0.3s,baz=86,slow=16,SNR=21						
MJAR				Sn	Sn	11 40 47.3	-1.0
	0.6nm,0.3s,baz=78,slow=23,SNR=4.4						
MAT	Matsushiro	4.41	264	P	Pn	11 39 57.7	-0.5
MAT				S	Sn	11 40 46.8	-1.6
ASAJ	Asahikawa	7.01	354	Pn	Pn	11 40 32.2	-1.7
	0.7nm,0.3s,baz=194,slow=9.5,SNR=8.3						
KSRS	Korea Array	12.53	276	Pn	Pn	11 41 50.1	+0.5
	0.1nm,0.3s,baz=87,slow=13,SNR=5.3						
SONM	Songino Array	29.21	303	P	P	11 44 55.2	+3.0
	0.8nm,

KCTX	**Karacabey (Bur**	**1.26**	**335**	*e*Pn	**Pb**	**11 41 40.0**	**-0.1**
KCTX				*e*SN	**Sn**	**11 41 58.4**	**+1.6**
KCTX	**Karacabey (Bur**	**1.26**	**335**	*e*Pn	**Pb**	**11 41 40.0**	**-0.1**
KCTX				*e*Sn	**Sn**	**11 41 58.4**	**+1.6**
ARMT	**Armutlu**	**1.45**	**354**	*e*PN	**Pn**	**11 41 41.9**	**-0.6**
ARMT	**Armutlu**	**1.45**	**354**	*e*Pn	**Pn**	**11 41 41.9**	**-0.6**

*ISCJB **27** 11:52:23.9±0.7, 60°.88S±0°.09×25°.5W±0°.3, h10km, mb4.3/9, MS3.7/4, Error ellipse: s-maj=24.0km s-min=11.4km az=166.3*
*IDC **27** 11:52:24.4±0.8, 60°.69S×25°.98W, h0km, mb4.1/5, mb1 4.2/5, mb1mx3.9/19, mbtmp4.1/5, MS3.7/4, Ms1 3.6/4, ms1mx3.3/21, Error ellipse: s-maj=40.8km s-min=25.6km az=70.0*
*NEIC **27** 11:52:25.6±0.6, 60°.80S×25°.72W, h10km, mb4.9/4, Error ellipse: s-maj=25.6km s-min=14.7km az=73.0*
ISC 27 11:52:25.4±0.7, 60°.8S±0°.1×25°.8W±0°.2, h10km, n26, σ1§51/17, mb4.1/8, MS3.5/4, South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VNA1	**Neumayer–Stat**	**12.15**	**152**	P	**Pn**	**11 55 17.2**	**-1.1**
VNA3	**Neumayer Olymp**	**12.29**	**155**	P	**Pn**	**11 55 18.5**	**-1.7**
SNAA	**Sanae**	**14.15**	**150**	P	**Pn**	**11 55 43.6**	**-2.0**
SNAA	**Sanae**	**14.15**	**150**	*e*Pn	**Pn**	**11 55 43.4**	**-2.2**
	432nm,0.4s						
QSPA	**South Pole Qui**	**29.43**	**180**	*e*P	**P**	**11 58 30.0**	**+1.1**
	51nm,1.1s						
CPUP	**Villa Florida**	**40.59**	**314**	P	**P**	**12 00 02.5**	**-2.5**
	2.8nm,0.7s,baz=152,slow=8.4,SNR=3.9						
CPUP				LR	LR	12 17 22.2	
	comp=Z,75nm,18.2s,baz=204,slow=37						
VNDA	**Vanda**	**41.84**	**182**	P	**P**	**12 00 16.7**	**+2.0**
	1.5nm,0.9s,baz=177,slow=7.8,SNR=6.9						
VNDA				LR	LR	12 16 20.6	
	comp=Z,47nm,19.0s,baz=161,slow=34						
BOSA	**Boshof**	**46.65**	**70**	LR	LR	12 16 08.5	
	comp=Z,47nm,20.8s,baz=186,slow=30						
SHEL	**Horse Pasture**	**47.05**	**27**	*e*P	**P**	**12 00 58.0**	**+1.0**
	21nm,0.6s						
TSUM	**Tsumeb**	**51.54**	**56**	*e*P	**P**	**12 01 31.0**	**-0.5**
	1.7nm,0.7s						
H10S2	**ASCENSION HYDR**	**52.40**	**14**	T	T	12 58 36.0	
	baz=187,slow=75,SNR=15						
H10S3	**ASCENSION HYDR**	**52.40**	**14**	T	T	12 58 40.6	
	baz=187,slow=75,SNR=14						
H10S1	**ASCENSION HYDR**	**52.42**	**14**	T	T	12 58 47.8	
	baz=187,slow=75,SNR=17						
H10N1	**ASCENSION HYDR**	**53.52**	**14**	T	T	13 00 07.2	
	baz=175,slow=80,SNR=3.9						
H10N3	**ASCENSION HYDR**	**53.52**	**14**	T	T	13 00 10.0	
	baz=175,slow=80,SNR=16						
H10N2	**ASCENSION HYDR**	**53.53**	**14**	T	T	13 00 13.3	
	baz=175,slow=80,SNR=7.1						
LPAZ	**La Paz**	**53.79**	**307**	P	**P**	**12 01 48.0**	**-0.7**
	1.6nm,0.7s,baz=172,slow=6.7,SNR=4.6						
TORD	**Torodi Ar. Bea**	**76.89**	**27**	P	**P**	**12 04 18.2**	**+0.7**
	1.8nm,0.7s,baz=204,slow=6.5,SNR=13						
DGAR	**Diego Garcia**	**87.57**	**101**	*e*P	**P**	**12 05 13.7**	**+0.1**
RAR	**Rarotonga**	**90.25**	**222**	LR	LR	12 37 56.4	
	comp=Z,192nm,18.6s,baz=310,slow=30						
ASAR	**Alice Springs**	**94.22**	**161**	P	**P**	**12 05 44.2**	**-0.3**
	0.5nm,0.7s,baz=187,slow=4.2,SNR=9.8						
WRAB	**Tennant Creek**	**97.95**	**161**	*e*P	Pdif	12 06 01.6	0.0
	1.3nm,0.9s						
YKA	**Yellowknife Ar**	**140.12**	**314**	PKP	**PKPdf**	**12 11 53.5**	**+1.0**
	0.4nm,0.9s,baz=120,slow=2.4,SNR=3.1						
INK	**Inuvik**	**149.85**	**315**	PKPbc	**PKPbc**	**12 12 15.5**	**+1.7**
	3.9nm,1.0s,baz=138,slow=1.1,SNR=5.2						
SONM	**Songino Array**	**149.96**	**94**	PKPbc	**PKPbc**	**12 12 14.8**	**-0.2**
	1.2nm,0.7s,baz=219,slow=3.0,SNR=6.9						
ILAR	**Eielson Array**	**153.65**	**304**	PKPbc	**PKPbc**	**12 12 23.8**	**+1.0**
	1.9nm,1.1s,baz=106,slow=1.3,SNR=9.8						

*ISCJB **27** 12:00:21.5±0.4, 39°.66N±0°.02×27°.65E±0°.03, h6km±3km, Error ellipse: s-maj=3.7km s-min=3.4km az=11.9*
*DDA **27** 12:00:21.5, 39°.65N×27°.65E, h11km, Ml3.1*
*ISK **27** 12:00:21.3, 39°.65N×27°.67E, h8km, MD2.9*
*CSEM **27** 12:00:21.8±0.1, 39°.66N×27°.66E, h8km, ML3.1, Error ellipse: s-maj=1.7km s-min=1.6km az=135.0*
ISC 27 12:00:21.7±0.8, 39°.64N±0°.02×27°.66E±0°.02, h9km±6km, n79, σ0§37/94, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BALY	**Balya**	**0.11**	**341**	P	**Pg**	**12 00 24.3**	**-0.1**
BALY				S	**Sg**	**12 00 26.4**	**+0.1**
BALY	**Balya**	**0.11**	**341**	*i* P	**Pg**	**12 00 24.3**	**-0.1**
BALY				*i* S	**Sg**	**12 00 26.4**	**+0.1**
BALB	**Balikesir**	**0.17**	**90**	PG	**Pg**	**12 00 25.1**	**-0.2**
BALB				SG	**Sg**	**12 00 27.9**	**+0.2**
BALB	**Balikesir**	**0.17**	**90**	*i* Pg	**Pg**	**12 00 25.1**	**-0.2**
BALB				*i* Sg	**Sg**	**12 00 27.9**	**+0.2**
GONE	**Gonen-Balikesi**	**0.41**	**2**	*e*PG	**Pg**	**12 00 29.8**	**+0.1**
GONE	**Gonen-Balikesi**	**0.41**	**2**	*e*Pg	**Pg**	**12 00 29.8**	**+0.1**
DURS	**Dursunbey**	**0.63**	**93**	P	**Pg**	**12 00 34.0**	**+0.1**
DURS				S	**Sb**	**12 00 43.0**	**-0.8**
DURS	**Dursunbey**	**0.63**	**93**	*i* P	**Pg**	**12 00 34.0**	**+0.1**
DURS				*i* S	**Sb**	**12 00 43.0**	**-0.8**
EDC	**Edincik**	**0.72**	**12**	*e*PG	**Pg**	**12 00 35.5**	**-0.2**
EDC	**Edincik**	**0.72**	**12**	*e*Pg	**Pg**	**12 00 35.5**	**-0.2**
AKS	**Akhisar**	**0.77**	**171**	*e*PG	**Pb**	**12 00 36.9**	**-0.4**
AKS	**Akhisar**	**0.77**	**171**	*e*Pg	**Pb**	**12 00 36.9**	**-0.4**
AKHS	**Akhisar**	**0.77**	**171**	P	**Pb**	**12 00 37.1**	**-0.2**
AKHS				S	**Sb**	**12 00 48.0**	**+0.2**
AKHS	**Akhisar**	**0.77**	**171**	*i* P	**Pb**	**12 00 37.1**	**-0.2**
AKHS				*i* S	**Sb**	**12 00 48.0**	**+0.2**
KRBG	**Karabiga-Canak**	**0.80**	**340**	*e*PG	**Pg**	**12 00 37.1**	**-0.1**
KRBG	**Karabiga-Canak**	**0.80**	**340**	*e*Pg	**Pg**	**12 00 37.1**	**-0.1**
DKL	**Dikili**	**0.82**	**226**	*e*PG	**Pb**	**12 00 37.9**	**-0.2**
DKL	**Dikili**	**0.82**	**226**	*e*Pg	**Pb**	**12 00 37.9**	**-0.2**
KCTX	**Karacabey (Bur**	**0.82**	**40**	*e*PG	**Pg**	**12 00 36.9**	**-0.6**
KCTX				*e*SG	**Sg**	**12 00 48.5**	**+0.3**
KCTX	**Karacabey (Bur**	**0.82**	**40**	*e*Pg	**Pg**	**12 00 36.9**	**-0.6**
KCTX				*e*Sg	**Sg**	**12 00 48.5**	**+0.3**
AYVA	**Ayvalik**	**0.82**	**247**	P	**Pg**	**12 00 37.5**	**0.0**
AYVA				S	**Sb**	**12 00 49.2**	**-0.1**
AYVA	**Ayvalik**	**0.82**	**247**	*i* P	**Pg**	**12 00 37.5**	**0.0**
AYVA				*i* S	**Sb**	**12 00 49.2**	**-0.1**
MRMT	**Marmara Adasi**	**0.96**	**357**	*e*PG	**Pg**	**12 00 40.4**	**+0.1**
MRMT	**Marmara Adasi**	**0.96**	**357**	*e*Pg	**Pg**	**12 00 40.4**	**+0.1**
LPK	**Lapseki**	**1.01**	**317**	*e*PG	**Pg**	**12 00 40.8**	**-0.3**
LPK	**Lapseki**	**1.01**	**317**	*e*Pg	**Pg**	**12 00 40.8**	**-0.3**
DEMI	**Demirci**	**1.01**	**126**	P	**Pn**	**12 00 42.2**	**0.0**
DEMI				S	**Sn**	**12 00 57.2**	**+0.7**
DEMI	**Demirci**	**1.01**	**126**	*i* P	**Pn**	**12 00 42.2**	**0.0**
DEMI				*i* S	**Sn**	**12 00 57.2**	**+0.7**
ORLT	**Orhaneli**	**1.03**	**66**	*e*PG	**Pg**	**12 00 41.0**	**-0.6**
ORLT	**Orhaneli**	**1.03**	**66**	*e*Pg	**Pg**	**12 00 41.0**	**-0.6**
EZN	**Ezine**	**1.05**	**281**	*e*PG	**Pg**	**12 00 41.3**	**-0.6**
EZN	**Ezine**	**1.05**	**281**	*e*Pg	**Pg**	**12 00 41.3**	**-0.6**
RKY	**Sarkoy-Tekirda**	**1.11**	**341**	*e*PN	**Pg**	**12 00 42.7**	**-0.4**
RKY	**Sarkoy-Tekirda**	**1.11**	**341**	*e*Pn	**Pg**	**12 00 42.7**	**-0.4**
GELI	**Tayfur-Gelibol**	**1.19**	**310**	*e*PN	**Pb**	**12 00 44.2**	**-0.2**
GELI	**Tayfur-Gelibol**	**1.19**	**310**	*e*Pn	**Pb**	**12 00 44.2**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.19**	**52**	*e*PN	**Pb**	**12 00 44.0**	**-0.4**
MDNY	**Mudanya-Bursa**	**1.19**	**52**	*e*Pn	**Pb**	**12 00 44.0**	**-0.4**
BOZC	**Bozcaada**	**1.26**	**280**	*i* P	**Pn**	**12 00 44.8**	**-0.7**
BOZC				*i* S	**Sb**	**12 01 01.3**	**-0.6**
ARMT	**Armutlu**	**1.30**	**44**	*e*PN	**Pn**	**12 00 46.1**	**0.0**
ARMT	**Armutlu**	**1.30**	**44**	*e*Pn	**Pn**	**12 00 46.1**	**0.0**
MANT	**Manisa**	**1.34**	**148**	P	**Pb**	**12 00 47.2**	**0.0**
MANT	**Manisa**	**1.34**	**148**	*i* P	**Pb**	**12 00 47.2**	**0.0**
TKR	**Tekirdag**	**1.35**	**356**	*e*PN	**Pb**	**12 00 47.3**	**0.0**
TKR	**Tekirdag**	**1.35**	**356**	*e*Pn	**Pb**	**12 00 47.3**	**0.0**
ERIK	**Erikli-Kesan**	**1.36**	**320**	*e*PN	**Pb**	**12 00 47.1**	**-0.2**
ERIK	**Erikli-Kesan**	**1.36**	**320**	*e*Pn	**Pb**	**12 00 47.1**	**-0.2**
TVSB	**Tavsanli**	**1.40**	**97**	*e*PN	**Pn**	**12 00 47.6**	**0.0**
TVSB	**Tavsanli**	**1.40**	**97**	*e*Pn	**Pn**	**12 00 47.6**	**0.0**
GEMT	**Gemlik**	**1.42**	**55**	*e*PN	**Pn**	**12 00 47.8**	**+0.2**
GEMT	**Gemlik**	**1.42**	**55**	*e*Pn	**Pn**	**12 00 47.8**	**+0.2**
SIGR	**SIGRI**	**1.46**	**254**	*e*PN	**Pb**	**12 00 48.8**	**-0.3**
SIGR	**SIGRI**	**1.46**	**254**	*e*Pn	**Pb**	**12 00 48.8**	**-0.3**
GADA	**Gvkgeada**	**1.47**	**293**	*e*PN	**Pn**	**12 00 48.7**	**+0.4**
GADA	**Gvkgeada**	**1.47**	**293**	*e*Pn	**Pn**	**12 00 48.7**	**+0.4**
URLA	**Izmir**	**1.52**	**213**	P	**Pb**	**12 00 49.7**	**-0.5**
URLA	**Izmir**	**1.52**	**213**	*i* P	**Pb**	**12 00 49.7**	**-0.5**
ZEY	**˙zmir**	**1.67**	**213**	*i* P	**Pn**	**12 00 51.3**	**+0.3**
DGB	**˙zmir**	**1.70**	**201**	*i* P	**Pb**	**12 00 53.0**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**1.70**	**174**	*e*PN	**Pn**	**12 00 51.6**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**1.70**	**174**	*e*Pn	**Pn**	**12 00 51.6**	**-0.1**
CTKS	**Kestanelik-??a**	**1.72**	**22**	*e*PN	**Pn**	**12 00 52.4**	**+0.6**
CTKS	**Kestanelik-??a**	**1.72**	**22**	*e*Pn	**Pn**	**12 00 52.4**	**+0.6**
BGKT	**Bogazkoy**	**1.76**	**28**	*e*PN	**Pn**	**12 00 53.1**	**+0.8**
BGKT	**Bogazkoy**	**1.76**	**28**	*e*Pn	**Pn**	**12 00 53.1**	**+0.8**
ALN	**Alexandroupoli**	**1.76**	**316**	*e*PN	**Pn**	**12 00 52.7**	**+0.3**
ALN	**Alexandroupoli**	**1.76**	**316**	*e*Pn	**Pn**	**12 00 52.7**	**+0.3**
CAVI	**Cavuskoy**	**1.77**	**71**	*e*PN	**Pn**	**12 00 52.9**	**+0.4**
CAVI	**Cavuskoy**	**1.77**	**71**	*e*Pn	**Pn**	**12 00 52.9**	**+0.4**
CHOS	**Chios island**	**1.77**	**226**	*e*PN	**Pn**	**12 00 53.3**	**+0.7**
CHOS	**Chios island**	**1.77**	**226**	*e*Pn	**Pn**	**12 00 53.3**	**+0.7**
ADVT	**Abdulvahap**	**1.78**	**63**	*e*PN	**Pn**	**12 00 52.9**	**+0.2**
ADVT	**Abdulvahap**	**1.78**	**63**	*e*Pn	**Pn**	**12 00 52.9**	**+0.2**
ISK	**Istanbul-Kandi**	**1.78**	**36**	*e*PN	**Pn**	**12 00 53.1**	**+0.4**
ISK	**Istanbul-Kandi**	**1.78**	**36**	*e*Pn	**Pn**	**12 00 53.1**	**+0.4**
KLYT	**Kilyos**	**1.92**	**33**	*e*PN	**Pn**	**12 00 54.9**	**+0.3**
KLYT	**Kilyos**	**1.92**	**33**	*e*Pn	**Pn**	**12 00 54.9**	**+0.3**
HRT	**Hereke**	**1.94**	**52**	*e*PN	**Pn**	**12 00 55.1**	**+0.2**
HRT	**Hereke**	**1.94**	**52**	*e*Pn	**Pn**	**12 00 55.1**	**+0.2**

*IDC **27** 12:01:30.3±0.8, 39°.57N×75°.42E, h0km, mb3.9/14, mb1 4.1/20, mb1mx3.9/44, mbtmp4.0/20, ML3.7/6, MS3.2/9, Ms1 3.2/9, ms1mx3.0/38, Error ellipse: s-maj=15.8km s-min=13.2km az=76.0*
*MOS **27** 12:01:33.1±1.6, 39°.61N×75°.35E, h28km, mb4.2/12, Error ellipse: s-maj=11.4km s-min=5.4km az=98.3*
*KRNET **27** 12:01:33.8±0.1, 39°.81N×75°.47E, mb4.4*
*BJI **27** 12:01:34.5, 39°.78N×75°.38E, h10km, mb4.2/2, mB4.4/1, ML3.9/7*
*NNC **27** 12:01:34.8±0.8, 39°.78N×75°.28E, h0km, mb4.4, mpv4.2, Error ellipse: s-maj=7.4km s-min=3.9km az=143.0*
*NEIC **27** 12:01:35.6±0.6, 39°.60N×75°.37E, h35km, mb4.4/4, Error ellipse: s-maj=11.6km s-min=9.6km az=211.0*
*SOME **27** 12:01:35.3, 39°.85N×75°.38E, h5km, MS3.1*
ISC 27 12:01:32.7±1.1, 39°.80N±0°.03×75°.38E±0°.02, h1km±7km, n120, σ2§54/163, mb4.0/17, MS3.4/4, 55C-25D, Southern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSH	**Kashi**	**0.54**	**122**	Pg	**Pb**	**12 01 47.3**	**+2.3**
KSH				Sg	**Sb**	**12 01 56.0**	**+2.7**
KSH				smax	smax		
	comp=N,6μm,0.8s						
KSH				smax	smax		
	comp=E,3μm,0.7s						
NRN	**Naryn**	**1.70**	**16**	⇓*e*P	**Pn**	**12 02 05.5**	**+1.7**
	baz=13						
NRN				⇓*e*S	**Sg**	**12 02 28.1**	**+0.9**
	baz=13						
ARLS	**Aral**	**2.21**	**339**	⇓*e*P	**Pb**	**12 02 13.7**	**+0.2**
	baz=338						
ARLS				⇓*i*S	**Sb**	**12 02 43.5**	**+2.0**
	baz=338						
KZA	**Kyzart**	**2.28**	**357**	⇑*i*P	**Pb**	**12 02 15.6**	**+0.8**
	baz=356						
KZA				⇑*i*S	**Sg**	**12 02 46.7**	**+0.8**
	baz=356						
UCH	**Uchtor**	**2.51**	**345**	⇓*i*P	**Pb**	**12 02 19.0**	**+0.1**
	baz=344						
UCH				⇓*i*S	**Sg**	**12 02 53.8**	**+0.4**
	baz=344						
ULHL	**Ulahol**	**2.53**	**15**	⇑*i*P	**Pn**	**12 02 18.5**	**+3.4**
	baz=13						
ULHL				⇑*i*S	**Sb**	**12 02 51.7**	**+1.0**
	baz=13						
AML	**Almayashu**	**2.66**	**332**	⇑*i*P	**Pb**	**12 02 21.0**	**-0.3**
	baz=330						
AML				⇑*i*S	**Sb**	**12 02 57.3**	**+2.8**
	baz=330						
KDJ	**Kajisay**	**2.69**	**30**	⇑*e*P	**Pn**	**12 02 21.0**	**+3.6**
	baz=29						
KDJ				⇑*e*S	**Sb**	**12 02 54.7**	**-0.8**
	baz=29						
BOOM	**Boomskoye usch**	**2.72**	**9**	⇓*e*P	**Pn**	**12 02 21.1**	**+3.4**
	baz=7.0						
BOOM				⇓*i*S	**Sb**	**12 02 55.0**	**-1.1**
	baz=7.0						
KBK	**Karagaybulak**	**2.87**	**354**	⇑*i*P	**Pb**	**12 02 23.9**	**-0.9**
	baz=352						
KBK				⇑*i*S	**Sb**	**12 03 01.1**	**+0.6**
	baz=352						
AAK	**Ala-Archa**	**2.91**	**347**	Pn	**Pb**	**12 02 24.6**	**-0.8**
	29nm,0.3s,baz=151,slow=7.8,SNR=332						
AAK				Sn	**Sb**	**12 03 01.7**	**+0.2**
	39nm,0.3s,baz=26,slow=19,SNR=9.6						
AAK				LR	LR	12 03 50.0	
	comp=Z,425nm,20.9s,baz=102,slow=44						
AAK	**Ala-Archa**	**2.91**	**347**	⇑*i*P	**Pb**	**12 02 24.5**	**-1.0**
	baz=346						
AAK				⇑*i*S	**Sb**	**12 03 02.1**	**+0.5**
	baz=346						
AAK	**Ala-Archa**	**2.91**	**347**	⇑Pn	**Pn**	**12 02 22.7**	**+2.5**
	418nm,0.8s						
AAK				⇑Lg	Lg	12 03 06.8	
	1μm,1.4s						
AAK	**Ala-Archa**	**2.91**	**347**	PN	**Pb**	**12 02 24.4**	**-1.0**
AAK						12 03 01.8	
AAK				pmax	pmax		
	comp=Z,86nm,0.5s						
AAK				pmax	pmax		
	comp=N,1μm,1.4s						
AAK	**Ala-Archa**	**2.91**	**347**	*e*Pn	**Pb**	**12 02 24.6**	**-0.8**
AAK				*e*Sn	**Sb**	**12 03 04.3**	**+2.7**
FRU1	**Bishkek**	**3.06**	**350**	⇑*e*P	**Pn**	**12 02 26.3**	**+4.0**
	baz=348						
FRU1				⇑*i*S	**Sb**	**12 03 04.6**	**-1.2**
	baz=348						
FRU	**Bishkek**	**3.08**	**349**	⇑*i*PN	**Pb**	**12 02 28.0**	**-0.4**
FRU				*i*		12 02 32.0	
FRU				*e*S	**Sn**	**12 03 04.0**	**+3.9**
FRU				*e*		12 03 15.0	
FRU				pmax	pmax		
	comp=Z,480nm,1.4s						
FRU				smax	smax		
	comp=E,2μm,2.0s						
EKS2	**Erkin-Say**	**3.10**	**338**	⇑*i*P	**Pn**	**12 02 27.0**	**+4.1**
	baz=337						
EKS2				⇑*i*S	**Sb**	**12 03 07.4**	**+0.2**
	baz=337						
EKS2	**Erkin-Say**	**3.10**	**338**	*e*PN	**Pn**	**12 02 27.1**	**+4.1**
EKS2				*e*		12 03 12.4	
EKS2	**Erkin-Say**	**3.10**	**338**	*e*Pn	**Pn**	**12 02 27.1**	**+4.1**
EKS2				*e*Sn	**Sg**	**12 03 12.4**	**0.0**
TKM2	**Tokmak 2**	**3.12**	**3**	⇑*i*P	**Pn**	**12 02 26.9**	**+3.7**
	baz=2.0						
TKM2				⇑*i*S	**Sb**	**12 03 06.7**	**-1.0**
	baz=2.0						
TKM2	**Tokmak 2**	**3.12**	**3**	⇓Pn	**Pn**	**12 02 27.3**	**+4.1**
	comp=E,64nm,0.7s						
TKM2				⇓Pg	**Pb**	**12 02 31.9**	**+2.8**
	comp=E,72nm,0.4s						
TKM2				⇑Sn	**Sb**	**12 03 06.3**	**-1.5**
	comp=E,129nm,0.5s						
TKM2				⇓Lg	Lg	12 03 13.5	
	comp=E,543nm,0.7s						
TKM2	**Tokmak 2**	**3.12**	**3**	PN	**Pn**	**12 02 27.0**	**+3.7**
TKM2						12 02 31.8	
TKM2						12 03 06.2	
TKM2						12 03 13.4	
TKM2				pmax	pmax		
	comp=Z,64nm,0.7s						
TKM2				pmax	pmax		
	comp=Z,69nm,0.4s						
TKM2				smax	smax		
	comp=N,129nm,0.5s						
TKM2				pmax	pmax		
	comp=N,543nm,0.7s						
TKM2	**Tokmak 2**	**3.12**	**3**	*e*Pn	**Pn**	**12 02 27.4**	**+4.1**
TKM2				*e*Sn	**Sg**	**12 03 13.8**	**+0.8**
CHMS	**Chumysh**	**3.23**	**352**	⇑*i*P	**Pn**	**12 02 28.3**	**+3.7**
	baz=351						
CHMS				⇑*i*S	**Sb**	**12 03 09.3**	**-1.4**
	baz=351						
KST	**Kastek**	**3.27**	**7**	*e*P	**Pb**	**12 02 33.0**	**+1.4**
	comp=N,62nm,0.5s						
KST				⇓*i*S	**Sb**	**12 03 13.5**	**+1.6**
	comp=N,2μm,0.8s						
MRKS	**Merke**	**3.36**	**332**	*e*P	**Pb**	**12 02 36.5**	**+3.4**
	comp=N,197nm,0.5s						
MRKS				*e*S	**Sg**	**12 03 20.3**	**-0.4**
	comp=N,260nm,0.5s						
IZV	**Izvestkoviy**	**3.36**	**16**	*e*P	**Pb**	**12 02 36.0**	**+2.9**
	comp=N,397nm,0.6s						
IZV				*e*S	**Sg**	**12 03 19.6**	**-1.1**
	comp=N,626nm,0.9s						
ANVS	**Anan'yevo**	**3.44**	**29**	⇑*e*P	**Pn**	**12 02 30.3**	**+2.7**
	baz=28						
ANVS				⇑*e*S	**Sn**	**12 03 11.1**	**+2.0**
	baz=28						
TNSS	**Tian-Shan**	**3.44**	**19**	*e*P	**Pb**	**12 02 37.9**	**+3.1**
	comp=N,277nm,0.6s						
TNSS				⇑*i*S	**Sg**	**12 03 24.1**	**+0.7**
	comp=N,248nm,0.7s						
DGS	**Degeres**	**3.45**	**5**	*e*P	**Pb**	**12 02 38.2**	**+3.6**
	comp=N,145nm,0.7s						
DGS				*e*S	**Sg**	**12 03 23.3**	**-0.2**
	comp=N,442nm,0.7s						
MNAS	**Manas**	**3.45**	**322**	⇑*e*P	**Pn**	**12 02 31.8**	**+4.0**
	baz=321						
MNAS				⇑*e*S	**Sn**	**12 03 13.8**	**+4.4**
	baz=321						
MNAS	**Manas**	**3.45**	**322**	⇑Pn	**Pn**	**12 02 30.1**	**+2.3**
	comp=N,9.6nm,0.5s						
MNAS				⇑Pg	**Pb**	**12 02 37.4**	**+2.7**
	comp=N,110nm,0.7s						
MNAS				⇓Lg	Lg	12 03 23.4	
	comp=N,164nm,1.0s						
MNAS	**Manas**	**3.45**	**322**	PN	**Pn**	**12 02 30.0**	**+2.3**
MNAS						12 02 37.3	
MNAS						12 03 23.3	
MNAS				pmax	pmax		
	comp=Z,10.0nm,0.5s						
MNAS				pmax	pmax		
	comp=Z,110nm,0.7s						
MNAS				pmax	pmax		
	comp=N,165nm,1.0s						
PRZ	**Przheval'sk**	**3.52**	**39**	⇑*e*P	**Pn**	**12 02 31.4**	**+2.8**
	baz=39						
PRZ				⇑*e*S	**Sn**	**12 03 13.0**	**+2.1**
	baz=39						
BTK	**Batken**	**3.52**	**276**	⇓*e*P	**Pn**	**12 02 32.9**	**+4.3**
	baz=276						
BTK				⇓*e*S	**Sn**	**12 03 16.5**	**+5.6**
	baz=276						
MDOK	**Medeo**	**3.58**	**20**	*e*P	**Pb**	**12 02 39.7**	**+2.8**
	comp=N,134nm,0.7s						
MDOK				*e*S	**Sg**	**12 03 26.0**	**-1.9**
	comp=N,554nm,1.0s						
KNDC	**Almaty**	**3.61**	**19**	⇓Pn	**Pn**	**12 02 32.7**	**+2.8**
KNDC				⇓Pg	**Pb**	**12 02 40.8**	**+3.4**
KNDC				⇑Lg	Lg	12 03 28.9	
AAA	**Alma-Ata**	**3.66**	**18**	⇑*i*P	**Pb**	**12 02 40.6**	**+2.3**
	comp=N,196nm,0.6s						
AAA				*e*S	**Sg**	**12 03 28.4**	**-1.9**
	comp=N,1μm,0.7s						
AAA	**Alma-Ata**	**3.66**	**18**	*i* PN	**Pb**	**12 02 40.5**	**+2.3**
AAA				*i* S	**Sg**	**12 03 29.1**	**-1.2**
AAA				pmax	pmax		
	comp=Z,271nm,0.4s						
AAA				smax	smax		
	comp=E,1μm,0.5s						
KOTS	**Kotyrbulak**	**3.67**	**20**	*e*P	**Pb**	**12 02 41.9**	**+3.5**
KOTS				*e*S	**Sg**	**12 03 29.6**	**-0.9**
ZHN	**Zhinishke**	**4.07**	**33**	*e*P	**Pg**	**12 02 50.2**	**-0.5**
	comp=E,44nm,0.6s						
ZHN				⇓*i*S	**Sg**	**12 03 43.0**	**-0.5**
	comp=E,178nm,0.4s						
KUU	**Kurty**	**4.15**	**10**	⇓*i*P	**Pb**	**12 02 50.4**	**+3.9**
	comp=E,101nm,0.7s						
KUU				*e*S	**Sg**	**12 03 45.0**	**-1.0**
	comp=E,593nm,0.9s						
KURS	**Kuram**	**4.23**	**29**	*e*P	**Pb**	**12 02 51.7**	**+3.7**
KURS				*e*S	**Sg**	**12 03 46.4**	**-2.3**
CHKK	**Chushkaly**	**4.24**	**16**	⇑*i*P	**Pb**	**12 02 51.0**	**+2.9**
	comp=E,100nm,0.6s						
CHKK				⇑*i*S	**Sg**	**12 03 47.0**	**-1.9**
	comp=E,488nm,0.9s						
UZB	**Uzynbulak**	**4.32**	**38**	*e*P	**Pb**	**12 02 52.8**	**+3.3**
	comp=E,24nm,0.6s						
UZB				*e*S	**Sg**	**12 03 49.7**	**-1.7**
	comp=E,84nm,0.9s						
KPKS	**Kokpek**	**4.42**	**33**	*e*P	**Pb**	**12 02 54.2**	**+3.1**
	comp=E,83nm,0.6s						
KPKS				*e*S	**Sg**	**12 03 52.2**	**-2.4**
	comp=E,556nm,0.6s						
PDGK	**Podgornoye**	**4.68**	**40**	⇑*e*P	**Pn**	**12 02

MK31				⇑Lg		Lg		12 06 11.0	
	comp=N,6.1nm,0.7s,baz=215,slow=25,SNR=3.8								
MK31	**Makanchi Array**	**8.61**	**33**	*e*P		**Pn**		**12 03 40.8**	**+2.4**
MK31				pmax		pmax			
	comp=Z,5.0nm,0.7s								
MK31				pmax		pmax			
	comp=N,8.0nm,0.9s								
MKAR	**Makanchi Array**	**8.61**	**33**	Pn		**Pn**		**12 03 41.1**	**+2.7**
	comp=N,0.3nm,0.3s,baz=210,slow=13,SNR=12								
MKAR				Lg		Lg		12 05 58.4	
	comp=N,0.4nm,0.3s,baz=221,slow=24,SNR=3.2								
MKAR				LR		LR		12 06 19.3	
	comp=N,20nm,21.1s,baz=226,slow=33								
OTUK	**Ortayu**	**8.72**	**346**	⇑Pn		**Pn**		**12 03 41.0**	**+1.1**
	comp=N,6.6nm,1.4s								
OTUK				⇑Lg		Lg		12 06 12.3	
	comp=N,55nm,1.2s								
OTUK	**Ortayu**	**8.72**	**346**	P		**Pn**		**12 03 41.0**	**+1.1**
OTUK				pmax		pmax			
	comp=Z,7.0nm,1.4s								
OTUK				pmax		pmax			
	comp=N,55nm,1.2s								
WMQ	**Urumqi**	**10.03**	**62**	*e*P		**Pn**		**12 04 00.0**	**+2.1**
KURBB	**Kurchatov Arra**	**11.04**	**11**	Pn		**Pn**		**12 04 12.0**	**+0.3**
	comp=N,0.0nm,0.3s,baz=194,slow=12,SNR=3.7								
KURBB				Lg		Lg		12 07 18.8	
	comp=N,0.1nm,0.3s,baz=198,slow=28,SNR=8.4								
KURK	**Kurchatov**	**11.15**	**11**	⇑Pn		**Pn**		**12 04 17.5**	**+4.4**
	comp=N,6.9nm,0.9s								
KURK				⇑Lg		Lg		12 07 28.4	
	comp=N,109nm,0.9s								
KURK	**Kurchatov**	**11.15**	**11**	P		**Pn**		**12 04 14.5**	**+1.4**
KURK				pmax		pmax			
	comp=Z,7.0nm,0.9s								
KURK				pmax		pmax			
	comp=N,109nm,0.9s								
KURK	**Kurchatov**	**11.15**	**11**	*e*Pn		**Pn**		**12 04 14.2**	**+1.1**
KURK				Lg		Lg		12 07 18.8	
PYUN	**Piuthan**	**13.26**	**149**	*e*P		Pn		12 04 39.7	-2.6
	comp=N,16nm,0.4s								
GEYT	**Alibeck**	**13.59**	**268**	Pn		**Pn**		**12 04 44.4**	**-2.1**
	comp=N,2.0nm,0.3s,baz=72,slow=14,SNR=3.8								
GEYT				LR		LR		12 10 52.0	
	comp=N,48nm,19.1s,baz=0.0,slow=41								
BVA0	**Borovoye Array**	**13.66**	**347**	Pn		**Pn**		**12 04 51.1**	**+3.6**
	comp=N,8.2nm,0.9s,baz=159,slow=12,SNR=16								
BVA0				⇓Lg		Lg		12 08 48.9	
	comp=N,1.7nm,1.0s,baz=155,slow=25,SNR=4.5								
BVA0	**Borovoye Array**	**13.66**	**347**	*i* P		**Pn**		**12 04 47.3**	**-0.2**
BVA0				pmax		pmax			
	comp=Z,8.0nm,1.0s								
BVAR	**Borovoye Array**	**13.66**	**347**	Pn		**Pn**		**12 04 47.2**	**-0.3**
	comp=Z,0.3nm,0.3s,baz=159,slow=13,SNR=12								
BVAR				Lg		Lg		12 08 45.1	
	comp=Z,0.4nm,0.3s,baz=159,slow=25,SNR=8.5								
BRVK	**Borovoye**	**13.71**	**347**	P		**P**		**12 04 57.5**	**+0.4**
BRVK				pmax		pmax			
	comp=Z,15nm,1.0s								
KOLN	**Koldanda**	**13.80**	**148**	*e*P		Pn		12 04 47.1	-2.6
	comp=Z,26nm,0.8s								
ZRNK	**Zerenda**	**13.86**	**344**	⇑Pn		**Pn**		**12 04 52.8**	**+2.6**
	comp=Z,5.5nm,1.1s								
ZRNK				⇑Lg		Lg		12 08 54.3	
	comp=Z,35nm,1.2s								
ZRNK	**Zerenda**	**13.86**	**344**	P		**Pn**		**12 04 48.8**	**-1.4**
ZRNK				pmax		pmax			
	comp=Z,4.0nm,0.8s								
GKN	**Gorkha**	**14.04**	**144**	*e*P		Pn		12 04 48.7	-4.3
	comp=Z,28nm,0.4s								
AB31	**Akbulak array**	**14.49**	**316**	Pn		**Pn**		**12 04 58.0**	**-0.8**
	comp=Z,3.2nm,0.9s,baz=126,slow=12,SNR=22								
AB31	**Akbulak array**	**14.49**	**316**	*i* P		**Pn**		**12 04 57.0**	**-1.8**
AB31				pmax		pmax			
	comp=Z,3.0nm,0.9s								
ABKAR	**Akbulak array**	**14.49**	**316**	*e*Pn		**Pn**		**12 04 58.2**	**-0.5**
	comp=Z,2.7nm,0.6s								
ABKAR				*e*Sn		**Sn**		**12 07 45.9**	**+6.0**
KKN	**Kakani**	**14.52**	**143**	*e*P		Pn		12 04 55.3	-4.2
	comp=Z,26nm,0.5s								
DMN	**Daman**	**14.59**	**144**	*e*P		Pn		12 04 56.1	-4.5
	comp=Z,18nm,0.6s								
GUN	**Gumba**	**14.71**	**141**	*e*P		Pn		12 04 57.2	-5.0
	comp=Z,13nm,0.4s								
ZALV	**Zalesovo Beam**	**15.53**	**21**	Pn		**Pn**		**12 05 12.8**	**+0.1**
	comp=Z,0.2nm,0.3s,baz=200,slow=11,SNR=7.9								
ZALV				Lg		Lg		12 09 56.1	
	comp=Z,0.3nm,0.3s,baz=206,slow=20,SNR=4.1								
ZALV				LR		LR		12 11 36.0	
	comp=Z,66nm,21.3s,baz=70,slow=38								
NVS	**Novosibirsk**	**15.94**	**17**	*e*P		**P**		**12 05 28.4**	**+6.6**
NVS				pmax		pmax			
	comp=N,10.0nm,1.7s								
NVS				pmax		pmax			
	comp=E,16nm,1.7s								
NVS				pmax		pmax			
	comp=Z,16nm,1.7s								
AKTO	**Aktyubinsk**	**16.18**	**317**	Pn		**Pn**		**12 05 20.8**	**-0.4**
	comp=Z,0.2nm,0.3s,baz=113,slow=24,SNR=5.9								
AKTO				LR		LR		12 12 04.3	
	comp=Z,101nm,20.7s,baz=126,slow=39								
AKTO	**Aktyubinsk**	**16.18**	**317**	⇑Pn		**Pn**		**12 05 21.0**	**-0.2**
	comp=Z,1.7nm,0.6s								
ARU	**Arti**	**19.98**	**332**	P		**P**		**12 06 06.2**	**-0.1**
	comp=Z,4.2nm,0.2s,baz=85,slow=6.1,SNR=5.9								
SONM	**Songino Array**	**23.65**	**60**	P		**P**		**12 06 44.7**	**-0.9**
	comp=Z,0.7nm,0.6s,baz=257,slow=11,SNR=4.7								
ULN	**Ulaanbaatar**	**24.09**	**60**	*e*P		**P**		**12 06 49.2**	**-0.6**
ULN				pmax		pmax			
	comp=Z,1.0nm,0.3s								
ULN	**Ulaanbaatar**	**24.09**	**60**	*e*P		**P**		**12 06 49.2**	**-0.6**
	comp=Z,1.1nm,0.3s								
NRIK	**Noril'sk**	**30.30**	**9**	LR		LR		12 22 50.6	
	comp=Z,34nm,18.2s,baz=76,slow=42								
BRTR	**Keskin Array B**	**31.88**	**284**	P		**P**		**12 07 59.2**	**-0.4**
	comp=Z,1.4nm,0.6s,baz=96,slow=9.0,SNR=8.5								
FINES	**FINESS Array B**	**36.82**	**323**	P		**P**		**12 08 40.7**	**-1.2**
	comp=Z,1.9nm,0.7s,baz=107,slow=12,SNR=5.7								
FINES				LR		LR		12 24 29.0	
	comp=Z,86nm,18.4s,baz=200,slow=37								
ARCES	**ARCESS Array B**	**39.52**	**335**	P		**P**		**12 09 03.9**	**-0.7**
	comp=Z,3.5nm,0.5s,baz=110,slow=9.3,SNR=42								
ARCES				LR		LR		12 25 59.0	
	comp=Z,61nm,18.1s,baz=150,slow=37								
TIXI	**Tiksi**	**41.41**	**23**	*e*P		**P**		**12 09 19.3**	**-0.9**
TIXI				pmax		pmax			
	comp=Z,4.0nm,0.2s								
TIXI	**Tiksi**	**41.41**	**23**	*e*P		**P**		**12 09 19.3**	**-0.9**
	comp=Z,4.2nm,0.2s								
NOA	**NORSAR Array B**	**43.92**	**321**	P		**P**		**12 09 38.5**	**-2.2**
	comp=Z,1.5nm,0.8s,baz=131,slow=4.9,SNR=3.6								
NOA				LR		LR		12 29 01.1	
	comp=Z,37nm,18.2s,baz=70,slow=37								
GERES	**GERESS Array B**	**43.94**	**303**	P		**P**		**12 09 40.9**	**-0.2**
	comp=Z,0.5nm,0.5s,baz=62,slow=6.5,SNR=6.6								
ESDC	**Sonseca Array**	**58.98**	**298**	P		**P**		**12 11 32.4**	**-1.5**
	comp=Z,0.2nm,0.3s,baz=58,slow=7.4,SNR=7.1								
COLD	**Coldfoot**	**67.83**	**17**	*e*P		**P**		**12 12 30.8**	**-1.2**
	comp=Z,3.3nm,1.0s								
TORD	**Torodi Ar. Bea**	**69.21**	**270**	P		**P**		**12 12 39.0**	**-2.4**
	comp=Z,1.5nm,0.5s,baz=51,slow=5.6,SNR=11								
INK	**Inuvik**	**70.05**	**11**	P		**P**		**12 12 43.9**	**-1.8**
	comp=Z,1.6nm,0.6s,baz=354,slow=7.3,SNR=5.3								
INK	**Inuvik**	**70.05**	**11**	*e*P		**P**		**12 12 44.1**	**-1.6**
ILAR	**Eielson Array**	**70.62**	**18**	P		**P**		**12 12 46.8**	**-2.5**
	comp=Z,0.8nm,0.8s,baz=309,slow=3.6,SNR=10.0								
YKA	**Yellowknife Ar**	**77.73**	**5**	P		**P**		**12 13 28.9**	**-1.9**
	comp=Z,1.6nm,0.7s,baz=347,slow=5.6,SNR=23								
WRA	**Warramunga Arr**	**80.94**	**125**	P		**P**		**12 13 46.9**	**-2.0**
	comp=Z,0.5nm,1.0s,baz=318,slow=4.0,SNR=7.8								
WRAB	**Tennant Creek**	**80.94**	**125**	*e*P		P		12 13 45.6	-3.3
WRAB				pmax		pmax			
	comp=Z,6.0nm,1.2s								
WRAB	**Tennant Creek**	**80.94**	**125**	*e*P		P		12 13 45.5	-3.3
	comp=Z,5.6nm,1.2s								
ASAR	**Alice Springs**	**83.43**	**128**	P		P		12 13 59.0	-3.0
	comp=Z,0.3nm,0.8s,baz=324,slow=5.2,SNR=6.3								
ASAR	**Alice Springs**	**83.43**	**128**	P		P		12 13 59.0	-3.0

MEX 27 12:12:57.9±0.5, 18°.01N×99°.59W, h52km±3km, MD3.5, Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MEIG	**Mezcala**	**0.09**	**197**	*i* P	Pn	12 13 04.5	-1.5
MEIG				*i* S	Sn	12 13 10.2	-1.5
PLIG	**Platanillo**	**0.39**	**13**	*e*P	Pn	12 13 06.6	-1.6
PLIG				*e*S	Sn	12 13 13.7	-1.8
ARIG	**Puente Sto Nin**	**0.77**	**290**	*i* P	Pn	12 13 11.1	-1.5
ARIG				*e*S	Sn	12 13 21.6	-1.8
MAVM	**Malinalco, Edo**	**0.94**	**6**	*i* P	Pn	12 13 13.4	-1.8
MAVM				*i* S	Sn	12 13 26.2	-1.5
YAIG	**Yautepec**	**0.98**	**30**	*i* P	Pn	12 13 13.4	-2.2
YAIG				*i* S	Sn	12 13 27.0	-1.6
TLIG	**Tlapa**	**1.07**	**114**	*e*P	Pn	12 13 15.8	-1.0
TLIG				*i* S	Sn	12 13 28.4	-2.4
CAIG	**El Cayaco**	**1.16**	**214**	*e*P	Pn	12 13 16.2	-1.6
CAIG				*i* S	Sn	12 13 30.3	-2.2

*ISK **27** 12:15:29.1, 39°.64N×25°.62E, h3km, MD2.8*
*CSEM **27** 12:15:29.6±0.5, 39°.49N×26°.05E, h8km, ML2.6, Error ellipse: s-maj=11.4km s-min=6.1km az=67.0*
*ISCJB **27** 12:15:30.5±1.1, 39°.47N±0°.03×26°.12E±0°.07, h3km±7km, Error ellipse: s-maj=9.4km s-min=4.8km az=175.0*
*DDA **27** 12:15:33.0, 39°.41N×26°.33E, h7km, Ml2.6*
ISC 27 12:15:30.6±1.3, 39°.45N±0°.03×26°.12E±0°.05, h10km±10km, n24, σ1°.40/37, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BOZC	**Bozcaada**	**0.40**	**353**	*i* P	**Pn**	**12 15 42.4**	**0.0**
BOZC				*i* S	**Sb**	**12 15 49.5**	**+3.5**
AYVA	**Ayvalik**	**0.47**	**107**	P	**Pg**	**12 15 39.3**	**-0.4**
AYVA				S	**Sg**	**12 15 45.0**	**-0.8**
AYVA	**Ayvalik**	**0.47**	**107**	*i* P	**Pg**	**12 15 39.3**	**-0.4**
AYVA				*i* S	**Sg**	**12 15 45.0**	**-0.8**
GELI	**Tayfur-Gelibol**	**0.99**	**16**	*e*PG	**Pb**	**12 15 49.0**	**-0.9**
GELI				*e*SG	**Sn**	**12 16 03.8**	**-0.8**
GELI	**Tayfur-Gelibol**	**0.99**	**16**	*e*Pg	**Pb**	**12 15 49.0**	**-0.9**
GELI				*e*Sg	**Sn**	**12 16 03.8**	**-0.8**
URLA	**Izmir**	**1.15**	**161**	P	**Pg**	**12 15 53.3**	**+0.7**
URLA				S	**Sn**	**12 16 09.2**	**+0.7**
URLA	**Izmir**	**1.15**	**161**	*i* P	**Pg**	**12 15 53.3**	**+0.7**
URLA				*i* S	**Sn**	**12 16 09.2**	**+0.7**
BALY	**Balya**	**1.20**	**75**	P	**Pg**	**12 15 53.9**	**+0.3**
BALY				S	**Sb**	**12 16 09.4**	**+0.4**
BALY	**Balya**	**1.20**	**75**	*i* P	**Pg**	**12 15 53.9**	**+0.3**
BALY				*i* S	**Sb**	**12 16 09.4**	**+0.4**
ZEY	**¨zmir**	**1.24**	**166**	*i* P	**Pg**	**12 15 55.2**	**+0.7**
ZEY				*i* S	**Sn**	**12 16 10.7**	**0.0**
ERIK	**Erikli-Kesan**	**1.26**	**14**	*e*PN	**Pn**	**12 15 53.4**	**-0.9**
ERIK				*e*SN	**Sg**	**12 16 11.5**	**+0.3**
ERIK	**Erikli-Kesan**	**1.26**	**14**	*e*Pn	**Pn**	**12 15 53.4**	**-0.9**
ERIK				*e*Sn	**Sg**	**12 16 11.5**	**+0.3**
ENEZ	**Enez**	**1.29**	**1**	*e*PN	**Pn**	**12 15 52.3**	**-2.4**
ENEZ	**Enez**	**1.29**	**1**	*e*Pn	**Pn**	**12 15 52.3**	**-2.4**
GONE	**Gonen-Balikesi**	**1.35**	**63**	*e*PN	**Pg**	**12 15 59.7**	**+3.2**
GONE	**Gonen-Balikesi**	**1.35**	**63**	*e*Pn	**Pg**	**12 15 59.7**	**+3.2**
ALN	**Alexandroupoli**	**1.45**	**358**	*e*PN	**Pn**	**12 15 54.6**	**-2.3**
ALN	**Alexandroupoli**	**1.45**	**358**	*e*Pn	**Pn**	**12 15 54.6**	**-2.3**
MRMT	**Marmara Adasi**	**1.62**	**44**	*e*PN	**Pg**	**12 16 01.9**	**+0.2**
MRMT	**Marmara Adasi**	**1.62**	**44**	*e*Pn	**Pg**	**12 16 01.9**	**+0.2**
DURS	**Dursunbey**	**1.83**	**84**	*i* P	**Pb**	**12 16 05.0**	**+0.8**
DURS				*i* S	**Sn**	**12 16 25.3**	**-0.2**
KCTX	**Karacabey (Bur**	**1.91**	**64**	*e*PN	**Pg**	**12 16 07.4**	**+0.2**
KCTX	**Karacabey (Bur**	**1.91**	**64**	*e*Pn	**Pg**	**12 16 07.4**	**+0.2**
ARMT	**Armutlu**	**2.39**	**61**	*e*PN	**Pb**	**12 16 14.5**	**+0.9**

*SSS **27** 12:22:51.5, 12°.05N×89°.01W, h35km, MD3.9*
*CASC **27** 12:22:51.1±3.2, 12°.00N×88°.97W, h37km±22km, MD4.0*
*IDC **27** 12:23:03.3±9.6, 12°.71N×88°.61W, h103km±62km, mb3.3/6, mb1 3.7/7, mb1mx3.4/40, mbtmp3.6/7, MS3.0/2, Ms1 3.0/2, ms1mx2.6/16, Error ellipse: s-maj=79.2km s-min=44.7km az=178.0*
ISC 27 12:22:49.5±2.7, 12°.11N±0°.10×88°.8W±0°.1, h13km±14km, n29, σ1°.68/39, mb3.6/6, Off coast of central America

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LCY	**Lacayo**	**1.41**	**22**	*e*P	**Pg**	**12 23 16.8**	**+0.2**
VSM	**San Miguel**	**1.42**	**23**	*e*P	**Pg**	**12 23 17.2**	**+0.3**
PACA	**Pacayal**	**1.44**	**20**	*e*P	**Pg**	**12 23 17.1**	**-0.1**
BLLM	**Bellamira**	**1.45**	**24**	*e*P	**Pg**	**12 23 17.4**	**+0.1**
SNVI	**San Vicente**	**1.49**	**360**	*e*P	**Pg**	**12 23 18.2**	**0.0**
CNCH	**Conchagua**	**1.52**	**40**	*e*P	**Pb**	**12 23 18.5**	**+0.8**
LFRS	**El Faro**	**1.52**	**352**	*e*P	**Pn**	**12 23 17.0**	**+0.4**
COLS	**Colinas**	**1.61**	**344**	*e*P	**Pn**	**12 23 18.3**	**+0.5**
LFU	**La Fuente**	**1.65**	**351**	*e*P	**Pn**	**12 23 18.9**	**+0.6**
LFU				*e*S	**Sg**	**12 23 40.7**	**-1.9**
BOQS	**Boqueron**	**1.67**	**345**	*e*P	**Pn**	**12 23 19.2**	**+0.4**
BOQS				*e*S	**Sb**	**12 23 41.2**	**-0.1**
CAHU	**Cacacuatique**	**1.76**	**20**	*e*P	**Pb**	**12 23 22.3**	**+0.5**
SBLS	**San Blas**	**1.88**	**336**	*e*P	**Pn**	**12 23 21.9**	**+0.2**
MONT	**Ecomontaæa**	**1.90**	**336**	*e*P	**Pn**	**12 23 22.4**	**+0.4**
MONT				*e*S	**Sn**	**12 23 45.8**	**-0.2**
RTR	**El Retiro**	**1.94**	**336**	*e*P	**Pn**	**12 23 22.9**	**+0.5**
RTR				*e*S	**Sn**	**12 23 46.7**	**-0.1**
CUS1	**Cusmapa**	**2.09**	**329**	*e*P	**Pn**	**12 23 23.9**	**-0.5**
CUS1				*e*S	**Sn**	**12 23 49.5**	**-0.8**
RBDL	**Robledal**	**2.15**	**338**	*e*P	**Pn**	**12 23 26.3**	**+0.9**
RBDL				*e*S	**Sb**	**12 23 52.9**	**-2.4**
JCR	**Jicaral**	**4.30**	**121**	*e*P	**Pn**	**12 23 55.6**	**+0.8**
JCR				*e*S	**Sn**	**12 24 41.5**	**-3.3**
CGA2	**Cerro Gallo 2**	**4.77**	**115**	*e*P	**Pn**	**12 24 04.1**	**+2.7**
CGA2				*e*S	**Sn**	**12 24 59.5**	**+2.8**
QCR	**Quepos**	**5.31**	**120**	*e*P	**Pn**	**12 24 10.8**	**+2.2**
QCR				*e*S	**Sn**	**12 25 05.6**	**-4.2**
URSC	**Urasca**	**5.46**	**114**	*e*P	**Pn**	**12 24 14.7**	**+3.8**
TEIG	**Tepich**	**8.09**	**4**	P	**Pn**	**12 24 50.3**	**+3.5**
	0.7nm,0.3s,baz=270,slow=20,SNR=6.4						
TXAR	**Lajitas Array**	**22.00**	**323**	P	**P**	**12 27 44.3**	**+0.5**
	1.0nm,0.6s,baz=144,slow=10,SNR=16						
SJG	**San Juan**	**22.69**	**72**	LR	LR	12 38 09.7	
	comp=Z,33nm,18.1s,baz=188,slow=41						
TKL	**Tuckaleechee C**	**23.89**	**10**	P	**P**	**12 28 01.4**	**-1.6**
	5.7nm,0.7s,baz=180,slow=9.2,SNR=8.9						
TKL				LR	LR	12 37 15.8	
	comp=Z,36nm,18.5s,baz=218,slow=37						
PDAR	**Pinedale Array**	**35.44**	**333**	P	**P**	**12 29 47.2**	**+1.3**
	0.2nm,0.5s,baz=121,slow=12,SNR=2.3						
NVAR	**Mina Array Bea**	**37.08**	**320**	P	**P**	**12 30 01.6**	**+1.8**
	0.2nm,0.5s,baz=137,slow=8.6,SNR=3.3						
NVAR				PcP	**PcP**	**12 32 20.8**	**+0.3**
	0.6nm,0.7s,baz=108,slow=2.9,SNR=4.7						
YKA	**Yellowknife Ar**	**53.59**	**345**	P	**P**	**12 32 09.0**	**-1.1**
	1.1nm,0.8s,baz=143,slow=7.5,SNR=13						
YKA				PcP	**PcP**	**12 33 16.8**	**+0.2**
	0.1nm,0.5s,baz=149,slow=3.9,SNR=4.0						
ILAR	**Eielson Array**	**65.78**	**337**	P	**P**	**12 33 34.1**	**-0.1**
	0.7nm,0.9s,baz=145,slow=4.1,SNR=6.7						
CMAR	**Chiang Mai Arr**	**148.67**	**346**	PKPbc	**PKPbc**	**12 42 37.4**	**-0.2**
	0.8nm,0.4s,baz=347,slow=3.7,SNR=4.1						

*IDC **27** 12:31:05.1±0.7, 36°.83N×45°.21E, h0km, mb4.1/15, mb1 4.2/25, mb1mx4.0/55, mbtmp4.1/25, ML3.8/7, MS3.1/13, Ms1 3.1/13, ms1mx3.0/46, Error ellipse: s-maj=13.2km s-min=11.5km az=137.0*
*NSSC **27** 12:31:05.1±1.2, 36°.69N×45°.57E, h38km±999km, ML3.6*
*NEIC **27** 12:31:06.9, 37°.01N×45°.07E, h5km, mb4.1/3, MN4.2(TEH), After TEH.*
*ISK **27** 12:31:06.7, 37°.02N×45°.06E, h5km, MD4.1*
*TEH **27** 12:31:06.9, 37°.01N×45°.07E, h5km, ML4.2*
*MOS **27** 12:31:07.4±1.5, 36°.67N×45°.18E, h33km, mb4.3/18, Error ellipse: s-maj=10.7km s-min=6.0km az=89.1*
*THR **27** 12:31:08.5±0.3, 36°.98N×45°.31E, h18km±2km, ML4.1*
*CSEM **27** 12:31:08.2±0.1, 36°.99N×45°.13E, h15km, mb4.2/5, Error ellipse: s-maj=4.6km s-min=3.5km az=1.0*
*ISN **27** 12:31:09.6±0.8, 36°.47N×44°.56E, h0km±2km, ML4.2*
*AZER **27** 12:31:11.6±2.5, 36°.20N×45°.99E, h5km, Error ellipse: s-maj=27.2km s-min=18.2km az=107.0*
*DDA **27** 12:32:04.6, 37°.66N×45°.02E, h10km, Ml3.9*
ISC 27 12:31:06.5±1.0, 36°.91N±0°.02×45°.21E±0°.02, h12km±7km, n233, σ2°.35/274, mb4.1/24, MS3.1/9, 12C-15D, Iran-Iraq border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CUKT	**Cukurca**	**1.33**	**285**	*e*PN	**Pg**	**12 31 29.7**	**-2.3**
CUKT				*e*SN	**Sn**	**12 31 48.0**	**-0.6**
CUKT	**Cukurca**	**1.33**	**285**	*e*Pn	**Pg**	**12 31 29.7**	**-2.3**
CUKT				*e*Sn	**Sn**	**12 31 48.1**	**-0.6**
HKR	**Hakkari**	**1.35**	**300**	*e*PN	**Pg**	**12 31 30.1**	**-2.4**
HKR	**Hakkari**	**1.35**	**300**	*e*Pn	**Pg**	**12 31 30.1**	**-2.4**
HAKT	**HAKKARI**	**1.36**	**299**	P	**Pg**	**12 31 30.3**	**-2.4**
HAKT				S	**Sn**	**12 31 52.2**	**+2.4**
HAKT	**HAKKARI**	**1.36**	**299**	*i* P	**Pg**	**12 31 30.3**	**-2.4**
HAKT				*i* S	**Sn**	**12 31 52.2**	**+2.4**
ISHB	**Shabestar**	**1.41**	**13**	*e*Pg	**Pn**	**12 31 30.4**	**-1.8**
ISHB				*e*Sg	**Sg**	**12 31 48.7**	**-3.3**
ISHB				*e*AMB	AMB	12 31 54.0	
	comp=Z,36μm,0.2s						
ITBZ	**Tabriz**	**1.52**	**29**	*e*Pn	**Pn**	**12 31 32.6**	**-1.1**
ITBZ				*e*AMB	AMB	12 31 59.8	
	comp=Z,19μm,0.2s						
ITBZ	**Tabriz**	**1.52**	**29**	*e*Pn	**Pn**	**12 31 32.6**	**-1.1**
IBST	**Bostanabad**	**1.56**	**59**	*e*Pn	**Pn**	**12 31 33.5**	**-0.7**
IBST				*e*AMB	AMB	12 31 59.9	
	comp=Z,30μm,0.2s						
IBST	**Bostanabad**	**1.56**	**59**	*e*Pn	**Pn**	**12 31 33.5**	**-0.7**
IMRD	**Marand**	**1.84**	**12**	*e*Pn	**Pn**	**12 31 38.2**	**+0.1**
IMRD				*e*AMB	AMB	12 32 11.7	
	comp=Z,23μm,0.3s						
IMRD	**Marand**	**1.84**	**12**	*e*Pn	**Pn**	**12 31 38.2**	**+0.1**
IHRS	**Heris**	**2.02**	**45**	*e*Pn	**Pn**	**12 31 41.8**	**+1.1**
IHRS				*e*AMB	AMB	12 31 43.5	
	comp=Z,16μm,0.4s						
IHRS				*e*Sg	**Sg**	**12 32 10.2**	**-1.4**
IHRS	**Heris**	**2.02**	**45**	*e*Pn	**Pn**	**12 31 41.8**	**+1.1**
IHRS				*e*Sg	**Sg**	**12 32 10.2**	**-1.4**
ISRB	**Sarab**	**2.16**	**64**	*e*Pn	**Pn**	**12 31 44.2**	**+1.7**
ISRB				*e*AMB	AMB	12 31 48.1	
	comp=Z,16μm,0.2s						
ISRB	**Sarab**	**2.16**	**64**	*e*Pn	**Pn**	**12 31 44.2**	**+1.7**
TVAN	**Van**	**2.16**	**319**	P	**Pg**	**12 31 45.9**	**-2.0**
TVAN				S	**Sg**	**12 32 16.1**	**+0.1**
TVAN	**Van**	**2.16**	**319**	*i* P	**Pg**	**12 31 45.9**	**-2.0**
TVAN				*i* S	**Sg**	**12 32 16.1**	**+0.1**
GEVA	**Gevas**	**2.21**	**310**	P	**Pb**	**12 31 45.4**	**-1.1**
GEVA				S	**Sg**	**12 32 17.2**	**-0.4**
GEVA	**Gevas**	**2.21**	**310**	*i* P	**Pb**	**12 31 45.4**	**-1.1**
GEVA				*i* S	**Sg**	**12 32 17.2**	**-0.4**
VANB	**Van**	**2.22**	**320**	*e*PN	**Pn**	**12 31 43.8**	**+0.5**
VANB	**Van**	**2.22**	**320**	*e*Pn	**Pn**	**12 31 43.8**	**+0.5**
NAX	**Nakhchivan**	**2.27**	**6**	⇓S	**Sg**	**12 32 24.6**	**+5.0**
NAX	**Nakhchivan**	**2.27**	**6**	S	**Sg**	**12 32 24.6**	**+5.0**
SIRT	**Sirnak**	**2.29**	**286**	*e*PN	**Pn**	**12 31 45.5**	**+1.3**
SIRT	**Sirnak**	**2.29**	**286**	*e*Pn	**Pn**	**12 31 45.5**	**+1.3**
IDHR	**Dehrash**	**2.40**	**156**	*e*Pn	**Pn**	**12 31 48.4**	**+2.6**
IDHR	**Dehrash**	**2.40**	**156**	*e*Pn	**Pn**	**12 31 48.4**	**+2.6**
ILIN	**Lien**	**2.44**	**144**	*e*Pn	**Pn**	**12 31 49.4**	**+3.0**
ILIN				*e*AMB	AMB	12 32 31.9	
	comp=Z,22μm,0.5s						
ILIN	**Lien**	**2.44**	**144**	*e*Pn	**Pn**	**12 31 49.4**	**+3.0**
VMUR	**Van-Muradiye**	**2.45**	**329**	P	**Pb**	**12 31 49.1**	**-1.5**
VMUR	**Van-Muradiye**	**2.45**	**329**	*i* P	**Pb**	**12 31 49.1**	**-1.5**
MAKU	**Maku**	**2.48**	**350**	*e*Pn	**Pb**	**12 31 49.3**	**-1.8**
MAKU				*e*Sg	**Sg**	**12 32 24.5**	**-1.6**
MAKU	**Maku**	**2.48**	**350**	*e*Pn	**Pb**	**12 31 49.3**	**-1.8**
MAKU				*e*Sg	**Sg**	**12 32 24.5**	**-1.6**
SNGE	**Sanandaj**	**2.50**	**136**	*e*Pn	**Pb**	**12 31 50.7**	**-0.8**
SNGE				*

SNR=3.6
SAAT S **Sb** **12 33 03.4 +1.6**
ZRD Zardab 3.88 29 P **Pg** **12 32 18.9 -1.9**
SNR=3.1
ZRD Zardab 3.88 29 P **Pg** **12 32 18.9 -1.9**
SNR=3.1
DIY Diyarbakir 4.09 285 *e*Pn **Pn** **12 32 11.8 +2.9**
MNGR Mingechevir, A 4.13 20 P **Pg** **12 32 22.1 -3.4**
SNR=5.0
MNGR ⇑S **Sg** **12 33 16.9 -2.1**
MNGR Mingechevir, A 4.13 20 P **Pg** **12 32 22.1 -3.4**
SNR=5.0
MNGR S **Sg** **12 33 16.9 -2.1**
SFNV Sufian 4.13 265 *e*P **Pn** **12 32 10.2 +0.8**
SFNV *e*S **Sn** **12 32 57.4 -0.3**
SFNV AML AML 12 33 32.0
comp=Z,682nm,0.6s
SFNV Sufian 4.13 265 *e*P **Pn** **12 32 10.2 +0.8**
SFNV *e*S **Sn** **12 32 57.4 -0.3**
comp=Z,682nm,0.6s
BGOL Bingol 4.15 301 P **Pb** **12 32 20.3 +0.9**
BGOL Bingol 4.15 301 *i* P **Pb** **12 32 20.3 +0.9**
QZX Qazax, Azerbai 4.15 2 ⇓P **Pg** **12 32 23.9 -2.0**
SNR=18
QZX ⇓S **Sg** **12 33 26.2 +6.6**
QZX Qazax, Azerbai 4.15 2 P **Pg** **12 32 23.9 -2.0**
SNR=18
QZX S **Sg** **12 33 26.2 +6.6**
DYBB Diyarbakir 4.17 286 *e*PN **Pn** **12 32 11.8 +1.8**
KDMR Kurdemir 4.17 33 P **Pb** **12 32 21.4 +1.6**
SNR=5.7
KDMR Kurdemir 4.17 33 P **Pb** **12 32 21.4 +1.6**
SNR=5.7
DIYA Diyarbakir 4.18 286 P **Pb** **12 32 20.9 +0.9**
DIYA Diyarbakir 4.18 286 *i* P **Pb** **12 32 20.9 +0.9**
ALIB Äli-Bayra 4.26 43 P **Pg** **12 32 25.8 -2.3**
SNR=4.7
ALIB ⇓S **Sb** **12 33 11.5 -1.2**
ALIB Äli-Bayra 4.26 43 P **Pg** **12 32 25.8 -2.3**
SNR=4.7
ALIB S **Sb** **12 33 11.5 -1.2**
IML Ismayilli 4.52 30 P **Pb** **12 32 27.3 +1.5**
SNR=5.9
IML ⇑S **Sb** **12 33 24.1 +3.9**
IML Ismayilli 4.52 30 P **Pb** **12 32 27.3 +1.5**
SNR=5.9
IML S **Sb** **12 33 24.1 +3.9**
QBL Gabala 4.52 26 ⇑S **Sg** **12 33 26.0 -5.7**
QBL Gabala 4.52 26 S **Sg** **12 33 26.0 -5.7**
SEKA Sheki 4.56 19 P **Pb** **12 32 28.0 +1.5**
SNR=5.9
SEKA ⇓S **Sg** **12 33 30.2 -2.8**
SEKA Sheki 4.56 19 P **Pb** **12 32 28.0 +1.5**
SNR=5.9
SEKA S **Sg** **12 33 30.2 -2.8**
THKV Tehran--Karaj 4.68 101 *e*Pn **Pn** **12 32 19.8 +2.7**
THKV AML AML 12 33 47.1
comp=E,139nm,0.8s
THKV AML AML 12 33 50.8
comp=N,91nm,0.6s
THKV Tehran--Karaj 4.68 101 *e*Pn **Pn** **12 32 19.8 +2.7**
PQL Pirkuli 4.69 33 P **Pb** **12 32 29.0 +0.3**
SNR=3.6
PQL ⇓S **Sb** **12 33 28.4 +3.2**
PQL Pirkuli 4.69 33 P **Pb** **12 32 29.0 +0.3**
SNR=3.6
PQL S **Sb** **12 33 28.4 +3.2**
XNQ Khinaliq 4.83 27 ⇓P **Pb** **12 32 28.9 -2.3**
SNR=3.6
XNQ Khinaliq 4.83 27 P **Pb** **12 32 28.9 -2.3**
SNR=3.6
ZKTA Zakatala 4.85 13 P **Pg** **12 32 36.1 -3.2**
SNR=8.2
MNKR ALMNKUR 4.89 260 *e*P **Pn** **12 32 20.2 +0.4**
MNKR *e*S **Sn** **12 33 14.3 -2.0**
MNKR AML AML 12 34 06.3
comp=Z,606nm,0.5s
MNKR ALMNKUR 4.89 260 *e*P **Pn** **12 32 20.2 +0.4**
MNKR *e*S **Sn** **12 33 14.3 -2.0**
comp=Z,606nm,0.5s
ATGJ Altiaghaj 4.90 35 P **Pb** **12 32 34.0 +1.7**
SNR=4.2
ATGJ Altiaghaj 4.90 35 P **Pb** **12 32 34.0 +1.7**
SNR=4.2
SVRC Sivrice-ELAZID 4.91 289 *e*PN **Pn** **12 32 22.4 +2.1**
SVRC Sivrice-ELAZID 4.91 289 *e*Pn **Pn** **12 32 22.4 +2.1**
IR3 Iran Long-Peri 4.91 105 *e*Pn **Pn** **12 32 23.7 +3.5**
IR3 Iran Long-Peri 4.91 105 *e*Pn **Pn** **12 32 23.7 +3.5**
PTK Pertek 5.01 295 *e*PN **Pn** **12 32 23.6 +1.9**
PTK Pertek 5.01 295 *e*Pn **Pn** **12 32 23.6 +1.9**
SIZA Siyzn 5.06 33 ⇓P **Pb** **12 32 35.3 +0.4**
SNR=4.3
SIZA Siyzn 5.06 33 P **Pb** **12 32 35.3 +0.4**
SNR=4.3
QSAR Qusar 5.17 26 ⇑P **Pb** **12 32 33.7 -3.2**
RTB Rutbah 5.58 228 *e*Pn **Pn** **12 32 26.0 -3.4**
SNR=3.0
RTB *i* Sn Sn 12 33 19.0 -15
SNR=3.0
IVRN Varamin 5.62 108 *e*Pn **Pn** **12 32 31.8 +1.9**
IVRN *e*AMB AMB 12 33 01.2
comp=Z,943nm,0.6s
IVRN Varamin 5.62 108 *e*Pn **Pn** **12 32 31.8 +1.9**
IDMV Damavand 5.67 102 *e*Pn **Pn** **12 32 33.1 +2.3**
IDMV *e*AMB AMB 12 34 34.6
comp=Z,674nm,0.5s
IDMV Damavand 5.67 102 *e*Pn **Pn** **12 32 33.1 +2.3**
IPRN Peran 5.77 94 *e*Pn **Pn** **12 32 33.8 +1.7**
IPRN *e*AMB AMB 12 34 18.3
comp=Z,1µm,0.5s
NSR Nassriya 5.93 172 *e*Pn **Pn** **12 32 36.0 +1.8**
SNR=3.0
NSR *i* Sn **Sn** **12 33 36.0 -6.1**
SNR=3.0
ZEI Tsey 5.96 351 *e*P Pn 12 32 39.4 +4.7
ZEI pmax pmax
comp=Z,40nm,1.2s
IPIR Pirpir 6.29 130 *e*Pn **Pn** **12 32 42.2 +2.8**
IPIR *e*AMB AMB 12 34 04.0
comp=Z,552nm,0.2s
IPIR Pirpir 6.29 130 *e*Pn **Pn** **12 32 42.2 +2.8**
IKLH Kolahrood 6.33 123 *e*Pn **Pn** **12 32 44.4 +4.6**
IKLH *e*AMB AMB 12 33 04.3
comp=Z,1µm,0.6s
IKLH Kolahrood 6.33 123 *e*Pn **Pn** **12 32 44.4 +4.6**
NEY Neytrino 6.62 344 *i* P Pn 12 32 50.6 +6.9
NEY pmax pmax
comp=Z,15nm,1.7s
NEY Neytrino 6.62 344 *i* P Pn 12 32 50.6 +6.9
comp=Z,15nm,1.7s
NCK Nalchik 6.70 350⇓*e*P Pn 12 32 50.1 +5.5
NCK pmax pmax
comp=Z,10.0nm,0.6s
NCK Nalchik 6.70 350 *e*P Pn 12 32 50.1 +5.5
comp=Z,10.0nm,0.6s
IGLO Ghaloghah 6.94 91 *e*Pn **Pn** **12 32 50.4 +2.3**
IGLO *e*AMB AMB 12 34 59.2
comp=Z,603nm,0.4s
RABH Abou Rabah 6.97 252 *e*P **Pn** **12 32 48.9 +0.5**
RABH *e*S **Sn** **12 34 03.7 -4.0**
RABH AML AML 12 35 06.5
comp=N,61nm,0.7s
RABH AML AML 12 35 16.9
comp=E,59nm,0.6s
RABH Abou Rabah 6.97 252 *e*P **Pn** **12 32 48.9 +0.5**
RABH *e*S **Sn** **12 34 03.7 -4.0**
comp=E,59nm,0.6s
KBZ Khabaz 7.04 346 Pn **Pn** **12 32 53.6 +4.3**
comp=E,0.1nm,0.3s,baz=170,slow=9.9,SNR=11
IZEF Zefreh 7.08 122 *e*Pn **Pn** **12 32 54.4 +4.2**
IZEF *e*AMB AMB 12 34 58.8
comp=Z,306nm,0.4s
IZEF Zefreh 7.08 122 *e*Pn **Pn** **12 32 54.4 +4.2**
IANJ Anjilo 7.18 99 *e*AMB AMB 12 35 07.3
comp=Z,302nm,0.6s
KVAR Kislovodsk Arr 7.30 346 Pn Pn 12 32 58.9 +5.9
baz=252,slow=24,SNR=5.1
KVAR LR LR 12 36 09.6
comp=Z,68nm,20.7s,baz=138,slow=41
KIV Kislovodsk 7.30 345⇓*i*P Pn 12 32 59.8 +6.8
KIV pmax pmax
comp=Z,16nm,1.0s
KIV MLR MLR
comp=Z,72nm,15.0s
KIV Kislovodsk 7.30 345 *i* P Pn 12 32 59.8 +6.8
comp=Z,72nm,15.0s
ARNB Al Arnab 7.53 265 *e*P **Pn** **12 32 57.0 +0.9**
ARNB Al Arnab 7.53 265 *e*P **Pn** **12 32 57.0 +0.9**
HAWK Haweek 7.55 254 *e*P **Pn** **12 32 57.9 +1.4**
HAWK Haweek 7.55 254 *e*P **Pn** **12 32 57.9 +1.4**
ZALF Zalf 7.59 241 *e*P **Pn** **12 32 57.5 +0.5**
ZALF *e*S **Sn** **12 34 16.4 -6.6**
ZALF AML AML 12 35 22.2
comp=N,63nm,0.7s
ZALF AML AML 12 35 35.8
comp=E,42nm,0.8s
ZALF Zalf 7.59 241 *e*P **Pn** **12 32 57.5 +0.5**
ZALF *e*S **Sn** **12 34 16.4 -6.6**
comp=E,42nm,0.8s
IRAM Ramesheh 7.81 129 *e*Pn **Pn** **12 33 02.1 +1.9**
IRAM Ramesheh 7.81 129 *e*Pn **Pn** **12 33 02.1 +1.9**
SOC Sochi 7.88 329 *e*P **Pn** **12 33 04.3 +3.4**
SOC pmax pmax
comp=Z,10.0nm,0.3s
SOC MLR MLR
comp=Z,327nm,14.0s
SOC Sochi 7.88 329 *e*P **Pn** **12 33 04.3 +3.4**
comp=Z,327nm,14.0s
TOTH TOTAH 8.02 246 *e*P **Pn** **12 33 02.6 -0.2**
TOTH *e*S **Sn** **12 34 28.4 -5.1**
TOTH AML AML 12 35 34.8
comp=E,35nm,0.8s
TOTH AML AML 12 35 38.9
comp=N,48nm,0.7s
TOTH TOTAH 8.02 246 *e*P **Pn** **12 33 02.6 -0.2**
TOTH *e*S **Sn** **12 34 28.4 -5.1**
comp=N,48nm,0.7s
ASF Jabal al Asfar 8.33 238 Pn **Pn** **12 33 07.6 +0.5**
comp=N,0.3nm,0.3s,baz=33,slow=3.4,SNR=5.1
ASF Lg Lg 12 35 27.4
comp=N,0.9nm,0.3s,baz=14,slow=24,SNR=7.7
MMAI Mount Meron Ar 8.94 247 Pn **Pn** **12 33 16.9 +1.4**
comp=N,3.3nm,0.3s,baz=66,slow=12,SNR=8.3
MMAI Lg Lg 12 35 50.9
comp=N,1.2nm,0.3s,baz=103,slow=39,SNR=4.1
MMAI LR LR 12 37 03.2
comp=N,140nm,19.0s,baz=30,slow=40
KFJS 8.99 164 S **Sn** **12 34 51.3 -6.1**
KFJS P **Pn** **12 33 17.1 +0.9**
ASYS 9.40 185 S **Sn** **12 35 01.3 -6.3**
ASYS P **Pn** **12 33 21.2 -0.7**
BRTR Keskin Array B 9.52 291 Pn **Pn** **12 33 25.6 +2.1**
comp=N,0.1nm,0.3s,baz=119,slow=12,SNR=18
ANN Anapa 9.84 326 *e*P Pn 12 33 41.0 +13
ANN *e*S Sn 12 35 30.3 +12
ANN pmax pmax
comp=Z,26nm,0.9s
ANN Anapa 9.84 326 *e*P Pn 12 33 41.0 +13
comp=Z,26nm,0.9s
ANN *e*S Sn 12 35 30.3 +12
GEYT Alibeck 10.32 80 Pn **Pn** **12 33 34.9 +0.5**
comp=Z,1.1nm,0.3s,baz=288,slow=11,SNR=11
GEYT LR LR 12 38 43.3
comp=Z,42nm,21.1s,baz=260,slow=44
EIL Elat 11.21 233 Lg Lg 12 37 02.8
comp=Z,0.4nm,0.3s,baz=268,slow=17,SNR=4.3
ABKAR Abkulak array 16.34 36 *e*P **Pn** **12 34 54.3 -1.3**
comp=Z,3.2nm,0.8s
AKTO Aktyubinsk 16.36 30 Pn **Pn** **12 34 56.5 +0.7**
comp=Z,0.3nm,0.3s,baz=222,slow=12,SNR=21
WSAR Wadi Sarin 17.87 136 P **Pn** **12 35 13.2 -1.8**
comp=Z,1.3nm,0.3s,baz=346,slow=12,SNR=11
AKASG Malin Array Be 17.93 325 P **Pn** **12 35 15.4 0.0**
comp=Z,0.4nm,0.3s,baz=131,slow=12,SNR=2.9
KIEV Kiev 17.93 325⇑*e*P P 12 35 24.3 +8.2
KIEV pmax pmax
comp=Z,3.0nm,0.9s
KIEV Kiev 17.93 325 *e*P P 12 35 24.3 +8.2
comp=Z,3.0nm,0.9s
OBN Obninsk 19.15 345 *i* P **Pn** **12 35 35.3 +5.0**
OBN pmax pmax
comp=Z,6.0nm,0.7s
OBN MLR MLR
comp=Z,52nm,15.0s
KKAR Karatay Array 20.30 64 *e*P Pn 12 35 45.0 +0.8
KKAR Karatay Array 20.30 64 *e*P Pn 12 35 45.0 +0.8
KKAR Karatay Array 20.30 64 *e*P Pn 12 35 45.0 +0.8
ARU Arti 21.50 20 P **P** **12 35 55.0 +0.1**
comp=Z,5.1nm,0.6s,baz=196,slow=3.4,SNR=12
ARU Arti 21.50 20*c i*P **P** **12 35 54.8 -0.1**
ARU 12 36 12.1
ARU PPP PPP 12 36 20.6
ARU S **S** **12 39 47.0 -6.0**
ARU SS Sn 12 40 05.4 +4.3
ARU pmax pmax
comp=Z,11nm,1.0s
ARU Arti 21.50 20 *e*P **P** **12 35 55.3 +0.4**
ARU Arti 21.50 20 *e*P **P** **12 35 55.3 +0.4**
SVE Sverdlovsk 22.45 23 *e*P **P** **12 36 05.9 +0.8**
SVE Sverdlovsk 22.45 23 *e*P **P** **12 36 05.9 +0.8**
AAK Ala-Archa 23.16 67 *i* P **P** **12 36 11.0 -1.9**
AAK pmax pmax
comp=Z,17nm,1.1s
AAK Ala-Archa 23.16 67 *i* P **P** **12 36 11.0 -1.9**
comp=Z,17nm,1.1s
FRU Bishkek 23.26 66 *e*P **P** **12 36 16.0 +2.2**
FRU Bishkek 23.26 66 *e*P **P** **12 36 16.0 +2.2**
BRVK Borovoye 23.80 39*ce*P **P** **12 36 19.1 +0.1**
BRVK pmax pmax
comp=Z,7.0nm,0.9s
BRVK Borovoye 23.80 39 *e*P **P** **12 36 19.8 +0.8**
comp=Z,5.1nm,0.9s
BRVK Borovoye 23.80 39 *e*P **P** **12 36 19.8 +0.8**
comp=Z,5.1nm,0.9s
BVAR Borovoye Array 23.84 39 P **P** **12 36 20.2 +0.9**
comp=Z,5.2nm,0.9s,baz=225,slow=9.4,SNR=28
SOKR Solikamsk 23.91 15 *e*P **P** **12 36 20.5 +0.7**
SOKR pmax pmax
comp=Z,14nm,1.2s
KLMR Klimovskoe 24.24 353 P **P** **12 36 23.9 +0.9**
KLMR pmax pmax
comp=Z,3.0nm,0.8s
KLMR Klimovskoe 24.24 353 P **P** **12 36 23.9 +0.9**
comp=Z,3.0nm,0.8s
VSU Vasula 24.73 337*ce*P P 12 36 36.5 +9.0
VSU pmax pmax
comp=Z,76nm,1.3s
GERES GERESS Array B 25.80 308 P **P** **12 36 37.1 -0.3**
comp=Z,1.0nm,0.6s,baz=106,slow=9.8,SNR=8.4
GERES LR LR 12 50 04.9
comp=Z,20nm,18.1s,baz=93,slow=44
CLL Collm 26.98 312 *e*P P 12 36 58.0 +10
CLL *e* 12 37 12.0
CLL Collm 26.98 312 *e*P P 12 36 58.0 +10
FINES FINESS Array B 27.34 340 P **P** **12 36 52.6 +1.5**
comp=Z,1.9nm,0.9s,baz=134,slow=12,SNR=3.5
FINES LR LR 12 49 45.9
comp=Z,33nm,18.0s,baz=16,slow=41
KURBB Kurchatov Arra 27.43 49 P **P** **12 36 53.4 +1.5**
comp=Z,4.7nm,0.9s,baz=259,slow=9.3,SNR=22
KURBB PcP **PcP** **12 40 10.9 +0.5**
comp=Z,0.6nm,0.8s,baz=246,slow=3.0,SNR=4.4
KURK Kurchatov 27.51 49*ce*P **P** **12 36 54.7 +2.0**
KURK pmax pmax
comp=Z,11nm,1.7s
KURK Kurchatov 27.51 49 *e*P **P** **12 36 54.2 +1.5**
KURK Kurchatov 27.51 49 *e*P **P** **12 36 54.1 +1.5**
KURK PcP **PcP** **12 40 10.9 +0.3**
KEST Kesra 28.82 279 P **P** **12 37 05.5 +0.8**
comp=Z,4.2nm,0.9s,baz=339,slow=4.8,SNR=6.5
MKAR Makanchi Array 29.09 58 P **P** **12 37 08.1 +1.2**
comp=Z,2.1nm,0.7s,baz=273,slow=7.2,SNR=14
MKAR LR LR 12 51 27.5
comp=Z,46nm,19.6s,baz=250,slow=42
ZALV Zalesovo Beam 32.08 45 P **P** **12 37 33.8 +0.7**
comp=Z,0.7nm,0.4s,baz=278,slow=10,SNR=6.3
ZALV LR LR 12 51 52.0
comp=Z,23nm,18.9s,baz=206,slow=39
NOA NORSAR Array B 32.25 329 LR LR 12 51 33.5
comp=Z,27nm,18.3s,baz=290,slow=38
ARCES ARCESS Array B 34.40 348 P **P** **12 37 53.5 +0.3**
comp=Z,1.3nm,0.8s,baz=134,slow=11,SNR=5.0
KMBO Kilima Mbogo 38.56 193 LR LR 12 55 24.0
comp=Z,71nm,18.0s,baz=93,slow=38
PAB San Pablo 38.63 290 *e*P **P** **12 38 26.6 -3.1**
PAB pmax pmax
comp=Z,8.0nm,0.8s
PAB San Pablo 38.63 290 *e*P **P** **12 38 26.6 -3.1**
comp=Z,8.5nm,0.8s
PAB San Pablo 38.63 290 *e*P **P** **12 38 26.6 -3.1**
comp=Z,8.5nm,0.8s
NRIK Noril'sk 39.71 22 LR LR 12 58 41.6
comp=Z,56nm,20.0s,baz=154,slow=42
PALK Pallekele 43.73 124 LR LR 12 56 25.3
comp=Z,43nm,18.5s,baz=296,slow=35
TORD Torodi Ar. Bea 45.46 250 P **P** **12 39 26.1 +0.4**
comp=Z,1.2nm,0.8s,baz=40,slow=7.6,SNR=8.2
TORD PcP **PcP** **12 41 06.2 +1.6**
comp=Z,0.8nm,0.8s,baz=8.7,slow=2.3,SNR=4.2
ULN Ulaanbaatar 45.83 56⇓*e*P **P** **12 39 29.7 +1.3**
ULN pmax pmax
comp=Z,5.0nm,1.7s
ULN Ulaanbaatar 45.83 56 *e*P **P** **12 39 29.7 +1.3**
comp=Z,5.0nm,1.7s
CMAR Chiang Mai Arr 50.34 96 P **P** **12 40 04.2 +0.7**
comp=Z,1.4nm,0.7s,baz=301,slow=7.9,SNR=6.8
DBIC Dimbokro 54.55 249 P **P** **12 40 34.4 -0.3**
comp=Z,6.2nm,1.0s,baz=4.7,slow=9.4,SNR=5.0
DBIC LR LR 13 05 05.1
comp=Z,36nm,18.5s,baz=156,slow=37
DBIC Dimbokro 54.55 249 P **P** **12 40 34.4 -0.3**
DBIC pmax pmax
comp=Z,5.0nm,0.8s
DBIC MLR MLR
comp=Z,36nm,18.5s
BILL Bilibino 66.52 21 *e*P **P** **12 41 55.3 -0.4**
BILL *i* 12 42 28.8
BILL pmax pmax
comp=Z,2.0nm,1.0s
BILL Bilibino 66.52 21 *e*P **P** **12 41 55.3 -0.4**
comp=Z,2.0nm,1.0s
BILL Bilibino 66.52 21 *i* PcP **PcP** **12 42 28.8 +3.7**
BOSA Boshof 67.82 199 P **P** **12 42 05.8 +1.3**
comp=Z,4.2nm,0.7s,baz=358,slow=9.3,SNR=4.6
ILAR Eielson Array 78.21 5 P **P** **12 43 04.9 -0.6**
comp=Z,0.8nm,0.9s,baz=322,slow=4.0,SNR=8.4
YKA Yellowknife Ar 79.61 351 P **P** **12 43 12.5 -0.7**
comp=Z,0.5nm,0.8s,baz=12,slow=6.2,SNR=8.0

*IDC **27** 12:35:54.5±9.5, 7°.28S×129°.01E, h75km±95km, mb3.7/3, mb1 3.9/5, mb1mx3.4/38, mbtmp4.1/5, ML4.3/2, MS2.8/1, Ms1 2.8/1, ms1mx2.4/42, Error ellipse: s-maj=135.8km s-min=39.2km az=62.0*
*ISCJB **27** 12:35:58.0±0.5, 7°.57S±0°.04×128°.77E±0°.05, h131km, mb3.6/3, Error ellipse: s-maj=6.9km s-min=5.6km az=44.0*
*DJA **27** 12:35:59.7±0.4, 8°S±4°×12°9E±°, h140km±17km, M4.7/7, mb4.6/7, mB5.7/3, MLv4.7/5, Mw(mB)5.2/3*
ISC 27 12:35:59.3±0.8, 7°.53S±0°.06×128°.74E±0°.07, h131km, n14, σ1§51/16, mb3.7/3, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
SAUI	**Saumlaki**	**2.57**	**100**	P	**Pn**		**12 36 42.2**	**+1.7**
SAUI				S	**Sn**		**12 37 11.5**	**-0.6**
BNDI	**Bandanaira**	**3.20**	**21**	P	**Pn**		**12 36 49.5**	**+0.9**
SOEI	**Soe**	**4.95**	**243**	P	**Pn**		**12 37 12.6**	**+0.8**
49nm,0.9s,0.8nm								
SOEI				S	**Sn**		**12 38 06.2**	**-2.0**
49nm,0.9s,0.8nm								
FAKI	**Fak Fak**	**5.76**	**38**	P	**Pn**		**12 37 22.1**	**-0.5**
74nm,1.7s,0.3nm								
FAKI				S	**Sn**		**12 38 25.4**	**-2.2**
74nm,1.7s,0.3nm								
SIJI	**Sorong**	**7.08**	**21**	S	**Sn**		**12 38 59.3**	**-0.2**
21nm,0.3s,baz=1.1,slow=19,SNR=2.2								
WSI	**Waingapu**	**8.62**	**255**	P	**Pn**		**12 38 01.6**	**+0.5**
150nm,0.8s,9µm								
PLAI	**Plampang**	**10.93**	**262**	P	**Pn**		**12 38 31.3**	**-0.8**
26nm,1.3s								
BKB	**Balikpapan**	**13.35**	**297**	P	**Pn**		**12 39 05.4**	**+1.7**
WRA	**Warramunga Arr**	**13.48**	**157**	P	**Pn**		**12 39 03.1**	**-2.3**
2.5nm,0.3s,baz=341,slow=13,SNR=101								
WRA				S	Sn		12 41 23.1	-11
3.3nm,0.3s,baz=332,slow=22,SNR=7.6								
DAV	**Davao City (W)**	**14.84**	**348**	LR	LR		12 44 49.5	
comp=Z,40nm,21.0s,baz=308,slow=36								
ASAR	**Alice Springs**	**16.79**	**163**	P	**Pn**		**12 39 46.7**	**-0.1**
0.5nm,0.3s,baz=342,slow=11,SNR=46								
ASAR				S	Sn		12 42 44.9	-9.1
0.6nm,0.3s,baz=322,slow=23,SNR=4.2								
STKA	**Stephens Creek**	**27.02**	**155**	P	**P**		**12 41 31.3**	**+2.1**
0.6nm,0.3s,baz=323,slow=9.3,SNR=3.8								
MKAR	**Makanchi Array**	**67.99**	**328**	P	**P**		**12 46 45.4**	**+1.1**
0.6nm,0.5s,baz=124,slow=8.3,SNR=5.3								
ZALV	**Zalesovo Beam**	**71.51**	**334**	P	**P**		**12 47 06.3**	**+0.6**
0.5nm,0.3s,baz=130,slow=5.8,SNR=3.0								

*IDC **27** 12:47:19.5±0.8, 8°.69S×109°.63E, h0km, mb4.2/19, mb1 4.2/19, mb1mx4.1/47, mbtmp4.2/19, MS3.2/3, Ms1 3.2/3, ms1mx2.7/45, Error ellipse: s-maj=29.3km s-min=14.5km az=60.0*
*DJA **27** 12:47:21.8±0.3, 9°S±3°×11°0E±°, h10km, M4.4/20, mb4.5/2, MLv4.3/20*
*ISCJB **27** 12:47:24.0±0.7, 8°.81S±0°.06×109°.63E±0°.03, h49km±6km, mb4.2/22, MS2.9/1, Error ellipse: s-maj=10.4km s-min=4.5km az=12.3*
*NEIC **27** 12:47:24.6±0.5, 8°.79S×109°.59E, h35km, mb4.8/4, Error ellipse: s-maj=14.8km s-min=7.9km az=49.0*
ISC 27 12:47:24.8±0.6, 8°.87S±0°.08×109°.61E±0°.04, h38km±3km, n52, σ1§20/57, mb4.3/22, Jawa

Code	Station Name	Δ°	AZ°	Phase	ID Op	ID ISC	Time h m s	Res ISC
CMJI	**Cimerak**	**1.57**	**313**	P	**Pn**		**12 47 49.8**	**-0.3**
CMJI				S	**Sn**		**12 48 09.2**	**0.0**
WOJI	**Wonogiri, Jawa**	**1.66**	**52**	P	**Pn**		**12 47 50.8**	**-0.5**
WOJI				S	**Sn**		**12 48 10.8**	**-0.6**
PCJI	**Pacitan**	**1.69**	**67**	P	**Pn**		**12 47 50.2**	**-1.6**
PCJI				S	**Sn**		**12 48 09.5**	**-2.7**
SMRI	**Semarang**	**1.99**	**25**	P	**Pn**		**12 47 58.2**	**+2.3**
SMRI				S	**Sn**		**12 48 20.9**	**+1.3**
SMRI	**Semarang**	**1.99**	**25**	*e*Pn	**Pn**		**12 47 57.4**	**+1.5**
SMRI				*e*Sn	**Sn**		**12 48 19.1**	**-0.5**
CISI	**Cisompet, Garu**	**2.20**	**306**	P	**Pn**		**12 47 58.9**	**+0.1**
CISI				S	**Sn**		**12 48 24.1**	**-0.7**
CISI	**Cisompet, Garu**	**2.20**	**306**	*e*Pn	**Pn**		**12 47 58.6**	**-0.2**
CISI				*e*Sn	**Sn**		**12 48 23.4**	**-1.5**
PWJI	**Pagerwojo**	**2.33**	**69**	P	**Pn**		**12 47 59.8**	**-0.8**
PWJI				S	**Sn**		**12 48 26.1**	**-1.9**
NGJI	**Ngawi**	**2.37**	**51**	P	**Pn**		**12 48 04.0**	**+2.9**
NGJI				S	**Sn**		**12 48 31.6**	**+2.7**
LEM	**Lembang**	**2.83**	**316**	Pn	Pn		12 48 15.7	+8.1
48nm,0.3s,baz=80,slow=11,SNR=31								
LEM				Sn	Sn		12 48 50.1	+10
36nm,0.3s,baz=22,slow=23,SNR=6.4								
LEM				LR	LR		12 49 29.2	
comp=Z,391nm,18.0s,baz=86,slow=48								
LEM	**Lembang**	**2.83**	**316**	P	Pn		12 48 14.7	+7.1
CNJI	**Cibinong**	**2.90**	**302**	P	**Pn**		**12 48 08.4**	**0.0**
TBJI	**Tambak Boyo**	**3.02**	**48**	P	**Pn**		**12 48 10.9**	**+0.9**
SKJI	**Sukabumi**	**3.54**	**301**	P	**Pn**		**12 48 17.2**	**0.0**
GMJI	**Gumukmas**	**3.84**	**81**	P	**Pn**		**12 48 22.6**	**+1.2**
CGJI	**Cibinong**	**4.48**	**300**	P	**Pn**		**12 48 30.7**	**+0.6**
JAGI	**Jajag, Banyuwa**	**4.51**	**85**	P	**Pn**		**12 48 30.9**	**+0.3**
JAGI				S	**Sn**		**12 49 22.0**	**+0.1**
ABJI	**Asem Bagus**	**4.70**	**77**	P	**Pn**		**12 48 33.2**	**0.0**
SRBI	**Singaraja**	**5.60**	**82**	P	**Pn**		**12 48 46.3**	**+0.7**
36nm,1.0s,0.2nm								
PLAI	**Plampang**	**8.08**	**90**	P	**Pn**		**12 49 19.4**	**-0.2**
PSI	**Prapat**	**15.74**	**317**	LR	LR		12 57 39.2	
comp=Z,98nm,18.9s,baz=154,slow=40								
FITZ	**Fitzroy Crossi**	**18.08**	**122**	*e*P	**P**		**12 51 34.6**	**+1.4**
2.1nm,0.6s								
DAV	**Davao City (W)**	**22.45**	**46**	LR	LR		13 02 44.4	
comp=Z,48nm,20.2s,baz=116,slow=42								
WRA	**Warramunga Arr**	**26.32**	**117**	P	**P**		**12 52 57.9**	**+0.6**
2.5nm,0.8s,baz=290,slow=11,SNR=14								
WRA				PcP	**PcP**		**12 56 24.5**	**+1.7**
0.2nm,0.4s,baz=324,slow=1.6,SNR=5.8								
ASAR	**Alice Springs**	**27.51**	**125**	P	**P**		**12 53 08.4**	**+0.5**
1.7nm,0.7s,baz=300,slow=9.2,SNR=24								
ASAR				PcP	**PcP**		**12 56 27.4**	**+1.8**
0.2nm,0.6s,baz=293,slow=1.6,SNR=4.2								
H08S2	**Diego Garcia H**	**36.74**	**269**	T	T		13 32 56.2	
baz=94,slow=76,SNR=48								
H08S3	**Diego Garcia H**	**36.75**	**269**	T	T		13 32 56.9	
baz=94,slow=76,SNR=43								
H08S1	**Diego Carcia H**	**36.76**	**269**	T	T		13 32 57.8	
baz=94,slow=76,SNR=46								
PMG	**Port Moresby**	**37.07**	**94**	*e*P	**P**		**12 54 30.7**	**-0.9**
22nm,1.1s								
STKA	**Stephens Creek**	**37.48**	**132**	P	**P**		**12 54 36.1**	**+1.2**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JNU	**Nakatsue**	**46.41**	**25**	P	**P**	**12 55 45.6**	**-2.1**
	6.6nm,1.0s,baz=184,slow=11,SNR=3.7						
KSAR	**Wonju Array Be**	**49.15**	**19**	P	**P**	**12 56 08.7**	**-0.1**
KSRS	**Korea Array**	**49.17**	**19**	P	**P**	**12 56 08.7**	**-0.3**
	1.2nm,1.0s,baz=195,slow=9.0,SNR=4.4						
SONM	**Songino Array**	**56.52**	**357**	P	**P**	**12 57 03.3**	**0.0**
	0.5nm,0.5s,baz=169,slow=8.9,SNR=2.7						
USRK	**Ussuriysk Ar.**	**56.58**	**19**	P	**P**	**12 57 03.1**	**-0.4**
	1.0nm,0.4s,baz=253,slow=2.5,SNR=3.1						
MKAR	**Makanchi Array**	**60.53**	**339**	P	**P**	**12 57 30.6**	**-0.5**
	1.2nm,0.4s,baz=143,slow=7.5,SNR=13						
KLR	**Kul'dur**	**61.03**	**16**	P	**P**	**12 57 32.4**	**-1.9**
	1.2nm,0.6s,baz=172,slow=19,SNR=2.8						
ZALV	**Zalesovo Beam**	**66.00**	**344**	P	**P**	**12 58 05.8**	**-1.3**
	0.8nm,0.3s,baz=158,slow=5.0,SNR=5.5						
GEYT	**Alibeck**	**66.87**	**318**	P	**P**	**12 58 12.6**	**-0.6**
	3.0nm,0.8s,baz=186,slow=2.9,SNR=4.2						
BVAR	**Borovoye Array**	**70.10**	**336**	P	**P**	**12 58 32.8**	**-0.1**
	0.7nm,0.5s,baz=141,slow=9.6,SNR=4.2						
ABKAR	**Akbulak array**	**72.34**	**328**	*e*P	**P**	**12 58 46.6**	**+0.1**
	5.6nm,0.7s						
VNDA	**Vanda**	**73.67**	**170**	P	**P**	**12 58 55.1**	**+1.0**
	0.6nm,0.6s,baz=299,slow=9.0,SNR=3.7						
PETK	**Petropavlovsk-**	**74.00**	**28**	P	**P**	**12 58 56.2**	**-0.1**
	3.5nm,0.6s,baz=219,slow=1.4,SNR=11						
MA2	**Magadan**	**75.71**	**20**	P	**P**	**12 59 06.1**	**+0.1**
	1.8nm,0.5s,baz=236,slow=15,SNR=3.6						
AFI	**Afiamalu**	**76.94**	**102**	*e*P	**P**	**12 59 14.5**	**+0.5**
	26nm,0.8s						
SEY	**Seymchan**	**78.72**	**18**	P	**P**	**12 59 22.9**	**+0.1**
	1.1nm,0.5s,baz=129,slow=3.9,SNR=4.4						
TIXI	**Tiksi**	**81.36**	**6**	P	**P**	**12 59 36.0**	**-0.9**
	4.0nm,0.6s,baz=168,slow=3.1,SNR=11						
TIXI	**Tiksi**	**81.36**	**6**	*e*P	**P**	**12 59 35.9**	**-0.9**
	2.9nm,0.6s						
BRTR	**Keskin Array B**	**84.99**	**311**	P	**P**	**12 59 57.2**	**+0.7**
	1.8nm,0.8s,baz=140,slow=8.2,SNR=9.8						
ARCES	**ARCESS Array B**	**96.18**	**339**	P	**P**	**13 00 47.5**	**-0.8**
	2.6nm,1.0s,baz=115,slow=6.1,SNR=3.7						
LKWY	**Lake**	**130.41**	**37**	*e*Pdif	**Pdif**	**13 03 23.4**	**+1.8**
PDAR	**Pinedale Array**	**131.90**	**39**	PKP	**PKPdf**	**13 06 34.8**	**+0.2**
	0.1nm,0.4s,baz=316,slow=2.5,SNR=2.7						

NIED ***27*** *12:51:00,37.°60N×142.°10E,h8km,Mw3.9 Best double couple: M0=8.45000×10^14 NP1:φs=207.00000°,δ23.00000°, λ-78.00000°. NP2:φs=14.00000°,δ67.00000°,λ-95.00000°.*
ISCJB ***27*** *12:51:02.3±1.0,37.°62N±0.°03×142.°15E±0.°05,h15km±6km, mb3.9/19,MS4.6/1,Error ellipse: s-maj=7.0km s-min=4.8km az=20.3*
IDC ***27*** *12:51:02.1±0.7,37.°62N×142.°10E,h0km,mb3.8/14, mb1 3.9/18,mb1mx3.8/58,mbtmp3.8/18,ML3.3/3,MS3.0/2, Ms1 3.0/2,ms1mx2.5/54,Error ellipse: s-maj=20.3km s-min=14.8km az=114.0*
JMA ***27*** *12:51:03.3±0.1,37.°61N×142.°12E,h28km±3km,M4.0*
NEIC ***27*** *12:51:07.2±0.3,37.°62N×142.°07E,h35km,mb4.4/5,Error ellipse: s-maj=7.9km s-min=5.8km az=138.0*
ISC 27 12:51:03.2±3.2,37.°62N±0.°04×142.°08E±0.°05,h9km±20km, n49,σ1§35/56,mb4.0/19,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.99**	**256**	P	**Pb**	**12 51 21.6**	**-1.0**
JIO	**Ouri**	**1.01**	**326**	P	**Pb**	**12 51 22.0**	**-1.0**
JIO				*e*S	**Sb**	**12 51 35.2**	**-1.2**
JMM	**Marumori**	**1.05**	**284**	P	**Pb**	**12 51 22.5**	**-1.1**
JMM				*e*S	**Sb**	**12 51 36.2**	**-1.2**
ONAJ	**Iwakimizuishiy**	**1.14**	**243**	P	**Pb**	**12 51 23.7**	**-1.5**
ONAJ				*e*S	**Sb**	**12 51 38.5**	**-1.7**
JOU	**Okura**	**1.34**	**304**	P	**Pn**	**12 51 27.5**	**-0.7**
JOU				*e*S	**Sb**	**12 51 44.8**	**-1.1**
JFT	**Otama**	**1.39**	**266**	P	**Pn**	**12 51 28.4**	**-0.4**
JFT				*e*S	**Sn**	**12 51 46.2**	**-1.1**
JMK	**Ichinoseki**	**1.49**	**333**	P	**Pn**	**12 51 29.1**	**-1.1**
JMK				*e*S	**Sn**	**12 51 47.5**	**-2.4**
JYS	**Shirataka**	**1.70**	**291**	P	**Pn**	**12 51 32.8**	**-0.3**
JYS				*e*S	**Sb**	**12 51 55.4**	**-0.8**
JYK	**Kaneyama**	**1.87**	**314**	P	**Pn**	**12 51 34.9**	**-0.6**
JYK				*e*S	**Sn**	**12 51 58.7**	**-0.6**
JFY	**Yanaizu**	**1.90**	**264**	P	**Pn**	**12 51 35.9**	**0.0**
JFY				*e*S	**Sn**	**12 51 59.9**	**-0.1**
JOM	**Ohasama**	**1.95**	**342**	P	**Pn**	**12 51 35.7**	**-0.9**
JOM				*e*S	**Sn**	**12 51 59.3**	**-1.9**
JYA	**Atsumi**	**2.10**	**298**	P	**Pn**	**12 51 38.4**	**-0.3**
JRG	**Rokugo**	**2.10**	**328**	P	**Pn**	**12 51 38.3**	**-0.4**
MJAR	**Matsushiro Arr**	**3.28**	**252**	Pn	**Pn**	**12 51 55.4**	**+0.6**
	2.3nm,0.3s,baz=80,slow=15,SNR=15						
MJAR				Sn	**Sb**	**12 52 38.4**	**-3.2**
	3.4nm,0.3s,baz=48,slow=14,SNR=5.7						
MAJO	**Matsushiro**	**3.28**	**252**	*e*Pn	**Pn**	**12 51 55.9**	**+1.1**
MAJO				*e*Sn	**Sn**	**12 52 35.3**	**+1.3**
JHJ	**Hachijo jima 2**	**4.87**	**203**	Pn	**Pn**	**12 52 16.6**	**0.0**
	8.4nm,0.3s,baz=331,slow=13,SNR=2.4						
JHJ				Sn	**Sn**	**12 53 10.8**	**-2.4**
	11nm,0.3s,baz=113,slow=7.7,SNR=2.5						
ASAJ	**Asahikawa**	**6.50**	**3**	Pn	**Pn**	**12 52 38.6**	**-0.5**
	baz=225,slow=5.5						
ASAJ	**Asahikawa**	**6.50**	**3**	*e*Pn	**Pn**	**12 52 40.3**	**+1.2**
ASAJ				*e*Sn	**Sn**	**12 53 52.6**	**-0.8**
USRK	**Ussuriysk Ar.**	**10.07**	**314**	Pn	**Pn**	**12 53 32.1**	**+4.1**
	0.2nm,0.3s,baz=119,slow=12,SNR=5.0						
KSRS	**Korea Array**	**11.24**	**273**	Pn	**Pn**	**12 53 47.7**	**+3.6**
	0.1nm,0.3s,baz=76,slow=14,SNR=3.3						
KSRS				LR	LR	12 57 46.4	
	comp=Z,64nm,21.9s,baz=90,slow=36						
KSAR	**Wonju Array Be**	**11.27**	**273**	Pn	**Pn**	**12 53 47.7**	**+3.2**
KLR	**Kul'dur**	**13.80**	**330**	Pn	**Pn**	**12 54 20.4**	**+1.3**
	0.1nm,0.3s,baz=136,slow=15,SNR=2.9						
KLR				LR	LR	12 59 28.1	
	comp=Z,60nm,18.4s,baz=138,slow=37						
MA2	**Magadan**	**22.67**	**12**	P	**P**	**12 56 05.2**	**+0.5**
	4.7nm,0.8s,baz=212,slow=9.9,SNR=5.4						
SEY	**Seymchan**	**26.11**	**11**	P	**P**	**12 56 37.7**	**+0.5**
	1.2nm,0.3s,baz=215,slow=3.1,SNR=5.8						
SONM	**Songino Array**	**27.90**	**303**	P	**P**	**12 56 53.7**	**+0.1**
	1.8nm,0.7s,baz=100,slow=9.3,SNR=8.7						
ENH	**Enshi**	**27.91**	**265**	*e*P	**P**	**12 56 52.6**	**-1.2**
	4.2nm,0.3s						
H11N2	**WAKE ISLAND Hy**	**28.00**	**123**	T	T	13 26 03.4	
	baz=315,slow=75,SNR=314						
H11N1	**WAKE ISLAND Hy**	**28.01**	**123**	T	T	13 26 04.0	
	baz=315,slow=75,SNR=227						
H11N3	**WAKE ISLAND Hy**	**28.02**	**123**	T	T	13 26 06.3	
	baz=315,slow=75,SNR=196						
H11S1	**WAKE ISLAND Hy**	**28.75**	**125**	T	T	13 27 04.3	
	baz=317,slow=76,SNR=177						
H11S3	**WAKE ISLAND Hy**	**28.75**	**125**	T	T	13 27 03.5	
	baz=317,slow=76,SNR=197						
H11S2	**WAKE ISLAND Hy**	**28.76**	**125**	T	T	13 27 05.5	
	baz=317,slow=76,SNR=186						
ZALV	**Zalesovo Beam**	**41.91**	**312**	P	**P**	**12 58 53.9**	**0.0**
	2.2nm,0.7s,baz=94,slow=6.7,SNR=9.4						
CMAR	**Chiang Mai Arr**	**42.16**	**255**	P	**P**	**12 58 57.1**	**+0.8**
	0.4nm,0.5s,baz=34,slow=6.7,SNR=3.3						
MKAR	**Makanchi Array**	**44.26**	**302**	P	**P**	**12 59 13.2**	**+0.2**
	0.4nm,0.3s,baz=82,slow=10,SNR=4.6						
KURK	**Kurchatov**	**45.99**	**308**	*e*P	**P**	**12 59 26.3**	**-0.4**
	8.4nm,0.7s						
ILAR	**Eielson Array**	**48.72**	**33**	P	**P**	**12 59 47.5**	**-0.2**
	0.4nm,0.7s,baz=251,slow=5.6,SNR=4.6						
TKM2	**Tokmak 2**	**49.82**	**298**	*e*P	**P**	**12 59 57.2**	**+0.5**
	2.8nm,0.8s						
WRAB	**Tennant Creek**	**57.71**	**189**	*e*P	**P**	**13 00 54.4**	**0.0**
	2.5nm,0.8s						
WRA	**Warramunga Arr**	**57.72**	**189**	P	**P**	**13 00 54.1**	**-0.3**
	2.2nm,0.8s,baz=5.2,slow=7.1,SNR=12						
ABKAR	**Akbulak array**	**57.97**	**310**	*e*P	**P**	**13 00 55.4**	**-0.5**
	1.0nm,0.6s						
ASAR	**Alice Springs**	**61.44**	**189**	P	**P**	**13 01 20.5**	**+0.4**
	1.1nm,0.7s,baz=13,slow=6.4,SNR=8.9						
YKA	**Yellowknife Ar**	**63.03**	**30**	P	**P**	**13 01 30.5**	**+0.2**
	0.2nm,0.7s,baz=298,slow=5.6,SNR=3.7						
NOA	**NORSAR Array B**	**73.85**	**337**	P	**P**	**13 02 37.9**	**-0.2**
	0.5nm,0.6s,baz=40,slow=5.9,SNR=3.5						
NVAR	**Mina Array Bea**	**74.21**	**54**	P	**P**	**13 02 41.4**	**+0.6**
	0.4nm,0.9s,baz=292,slow=7.5,SNR=2.3						
PDAR	**Pinedale Array**	**76.88**	**46**	P	**P**	**13 02 56.2**	**+0.2**
	0.2nm,0.5s,baz=282,slow=6.3,SNR=3.0						
ASF	**Jabal al Asfar**	**81.62**	**304**	LR	LR	13 42 37.5	
	comp=Z,259nm,20.7s,slow=38						
TXAR	**Lajitas Array**	**89.34**	**53**	P	**P**	**13 04 00.9**	**+0.4**
	0.2nm,0.5s,baz=243,slow=2.5,SNR=3.5						
LPAZ	**La Paz**	**145.94**	**60**	PKPbc	**PKPdf**	**13 10 44.2**	**+0.4**
	1.4nm,0.9s,baz=13,slow=3.5,SNR=4.7						

ISCJB ***27*** *12:53:20.7±1.1,13.°7N±0.°2×144.°6E±0.°2,h129km,mb3.6/5, Error ellipse: s-maj=29.1km s-min=23.8km az=161.7*
IDC ***27*** *12:53:21.7±1.1,13.°73N×144.°64E,h119km±10km,mb3.4/5, mb1 3.5/5,mb1mx3.1/48,mbtmp3.8/5,Error ellipse: s-maj=52.6km s-min=25.2km az=73.0*
ISC 27 12:53:22.3±1.1,13.°7N±0.°2×144.°7E±0.°3,h129km,n9, σ0§87/8,mb3.6/5,Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**0.18**	**136**	P	**Pn**	**12 53 39.4**	**-0.6**
	655nm,0.3s,baz=332,slow=3.3,SNR=258						
GUMO				S	**Sn**	**12 53 52.5**	**-0.8**
	310nm,0.3s,baz=139,slow=20,SNR=37						
H11S3	**WAKE ISLAND Hy**	**21.61**	**74**	T	T	13 19 26.0	
	baz=261						
H11S1	**WAKE ISLAND Hy**	**21.62**	**74**	T	T	13 19 42.7	
	baz=261						
H11S2	**WAKE ISLAND Hy**	**21.62**	**74**	T	T	13 19 20.5	
	baz=261						
WRA	**Warramunga Arr**	**34.98**	**197**	P	**P**	**13 00 02.7**	**+0.3**
	1.3nm,0.7s,baz=19,slow=8.7,SNR=16						
ASAR	**Alice Springs**	**38.64**	**196**	P	**P**	**13 00 33.4**	**+0.1**
	0.3nm,0.6s,baz=17,slow=9.7,SNR=7.4						
DZM	**Mont Dzumac**	**41.45**	**149**	P	**P**	**13 00 57.5**	**+0.8**
	5.2nm,0.5s,baz=356,slow=4.4,SNR=5.3						
STKA	**Stephens Creek**	**45.44**	**184**	P	**P**	**13 01 27.8**	**-0.6**
	1.0nm,0.8s,baz=5.2,slow=11,SNR=4.2						
KURBB	**Kurchatov Arra**	**64.44**	**320**	P	**P**	**13 03 44.6**	**-0.3**
	0.2nm,0.5s,baz=99,slow=6.7,SNR=3.1						
KURBB				pP	**PcP**	**13 04 19.4**	**+1.2**
	1.0nm,0.8s,baz=103,slow=6.4,SNR=4.1						

NIED ***27*** *12:53:00,38.°10N×144.°50E,h5km,Mw4.0 Best double couple: M0=1.25000×10^15 NP1:φs=2.00000°,δ23.00000°, λ-46.00000°. NP2:φs=136.00000°,δ74.00000°, λ-106.00000°.*
IDC ***27*** *12:53:19.5±1.0,37.°92N×144.°85E,h0km,mb3.8/11, mb1 4.0/16,mb1mx3.8/60,mbtmp3.9/16,ML3.9/4,MS3.2/3, Ms1 3.2/3,ms1mx2.6/58,Error ellipse: s-maj=25.2km s-min=18.9km az=141.0*
NEIC ***27*** *12:53:21.5±0.5,38.°03N×144.°82E,h10km,mb4.1/6,Error ellipse: s-maj=10.8km s-min=7.5km az=137.0*
ISCJB ***27*** *12:53:22.3±1.5,38.°12N±0.°04×144.°59E±0.°04, h23km±11km,mb3.9/17,MS3.3/2,Error ellipse: s-maj=7.0km s-min=5.1km az=157.6*
JMA ***27*** *12:53:24.2±0.3,38.°11N×144.°53E,h42km,M4.2*
ISC 27 12:53:23.7±3.1,38.°14N±0.°05×144.°61E±0.°05,h24km±22km, n47,σ1§85/59,mb4.0/17,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.49**	**293**	P	**Pn**	**12 54 03.0**	**+0.3**
OFUJ				S	**Sn**	**12 54 31.9**	**-0.4**
JIO	**Ouri**	**2.59**	**278**	P	**Pn**	**12 54 04.2**	**+0.2**
JIO				S	**Sn**	**12 54 33.4**	**-1.2**
MIYJ	**Miyakonagasawa**	**2.61**	**304**	P	**Pn**	**12 54 04.7**	**+0.4**
MIYJ				S	**Sn**	**12 54 35.0**	**-0.2**
JMK	**Ichinoseki**	**2.78**	**288**	P	**Pn**	**12 54 07.8**	**+1.2**
JMK				S	**Sn**	**12 54 39.1**	**-0.3**
JOM	**Ohasama**	**2.92**	**298**	P	**Pn**	**12 54 09.5**	**+1.0**
JOM				*e*S	**Sn**	**12 54 42.6**	**-0.2**
JANG	**Nango**	**3.28**	**314**	P	**Pn**	**12 54 13.7**	**+0.2**
JANG				*e*S	**Sn**	**12 54 51.1**	**-0.7**
JYK	**Kaneyama**	**3.42**	**284**	P	**Pn**	**12 54 17.1**	**+1.6**
JYK				S	**Sn**	**12 54 55.8**	**+0.5**
JFT	**Otama**	**3.44**	**261**	P	**Pn**	**12 54 16.3**	**+0.6**
JFT				S	**Sn**	**12 54 54.6**	**-1.1**
ERM	**Erimo**	**4.03**	**344**	*e*Pn	**Pn**	**12 54 24.1**	**+0.3**
JOT	**Ohata**	**4.25**	**321**	P	**Pn**	**12 54 28.0**	**+1.2**
JOT				S	**Sn**	**12 55 13.6**	**-2.0**
BSO1	**Boso 1**	**4.55**	**221**	P	Pn	12 54 28.4	-2.0
JCH	**Churui**	**4.57**	**348**	P	**Pn**	**12 54 31.0**	**-0.3**
JCH				*e*S	**Sn**	**12 55 20.8**	**-2.8**
JKB	**Kayabe**	**4.64**	**325**	P	**Pn**	**12 54 33.1**	**+0.8**
JKB				*e*S	**Sn**	**12 55 23.5**	**-1.9**
JRY	**Ryogami san**	**5.03**	**247**	P	**Pn**	**12 54 36.7**	**-0.9**
JRY				*e*S	**Sn**	**12 55 30.7**	**-4.3**
JOD2	**Odawara 2**	**5.28**	**239**	P	Pn	12 54 39.6	-1.5
JOD2				*e*S	**Sn**	**12 55 35.7**	**-5.5**
NEM2	**Nemuro 2**	**5.29**	**9**	P	Pn	12 54 38.6	-2.5
NEM2				S	**Sn**	**12 55 36.1**	**-5.2**
MJAR	**Matsushiro Arr**	**5.34**	**255**	Pn	**Pn**	**12 54 42.7**	**+0.8**
	5.0nm,0.3s,baz=84,slow=15,SNR=11						
MJAR				Sn	**Sn**	**12 55 43.3**	**+0.6**
	1.2nm,0.3s,baz=87,slow=24,SNR=3.2						
MAJO	**Matsushiro**	**5.34**	**255**	*e*Pn	**Pn**	**12 54 43.2**	**+1.3**
MAJO				*e*Sn	**Sn**	**12 55 45.4**	**+2.6**
MAT	**Matsushiro**	**5.34**	**255**	P	**Pn**	**12 54 43.1**	**+1.2**
MAT				S	**Sn**	**12 55 43.2**	**+0.5**
ASAJ	**Asahikawa**	**6.16**	**346**	Pn	**Pn**	**12 54 53.7**	**+0.6**
	3.2nm,0.3s,baz=210,slow=18,SNR=15						
ASAJ				Sn	**Sn**	**12 56 01.2**	**-1.6**
	0.4nm,0.3s,baz=114,slow=20,SNR=1.6						
ASAJ	**Asahikawa**	**6.16**	**346**	*e*Pn	**Pn**	**12 54 53.7**	**+0.6**
ASAJ				*e*Sn	**Sn**	**12 56 06.2**	**+3.4**
JHJ	**Hachijo jima 2**	**6.37**	**220**	Pn	Pn	12 54 51.7	-4.2
	11nm,0.3s,baz=252,slow=20,SNR=2.7						
JHJ				Sn	Sn	12 55 60.0	-7.9
	11nm,0.3s,baz=35,slow=16,SNR=3.7						
YSS	**Yuzh-Sakhalins**	**8.92**	**352**	*e*Pn	**Pn**	**12 55 31.9**	**+1.1**
	8.7nm,0.8s						
USRK	**Ussuriysk Ar.**	**11.27**	**306**	Pn	**Pn**	**12 56 05.4**	**+2.3**
	0.3nm,0.3s,baz=119,slow=14,SNR=4.8						
JNU	**Nakatsue**	**12.24**	**250**	LR	LR	13 00 19.2	
	comp=Z,73nm,21.0s,baz=118,slow=34						
KSRS	**Korea Array**	**13.22**	**272**	Pn	**Pn**	**12 56 32.1**	**+2.3**
	0.2nm,0.3s,baz=86,slow=13,SNR=4.4						
KSAR	**Wonju Array Be**	**13.25**	**272**	Pn	**Pn**	**12 56 32.1**	**+1.9**
PET	**Petropavlovsk**	**17.79**	**29**	*e*Pn	**Pn**	**12 57 27.0**	**-2.4**
SEY	**Seymchan**	**25.27**	**8**	P	**P**	**12 58 49.1**	**+1.4**
	2.5nm,0.6s,baz=183,slow=7.7,SNR=6.1						
ZALV	**Zalesovo Beam**	**43.07**	**312**	P	**P**	**13 01 23.4**	**+2.0**
	0.7nm,0.5s,baz=100,slow=6.4,SNR=2.8						
CMAR	**Chiang Mai Arr**	**44.23**	**257**	LR	LR	13 20 29.8	
	comp=Z,17nm,18.1s,baz=50,slow=37						
MKAR	**Makanchi Array**	**45.69**	**302**	P	**P**	**13 01 44.1**	**+1.6**
	1.0nm,0.7s,baz=90,slow=8.4,SNR=4.7						
ILAR	**Eielson Array**	**47.20**	**33**	P	**P**	**13 01 53.5**	**-0.5**
	0.7nm,0.8s,baz=256,slow=6.6,SNR=5.7						
KURK	**Kurchatov**	**47.26**	**308**	*e*P	**P**	**13 01 56.1**	**+1.4**
	4.3nm,0.5s						
TKM2	**Tokmak 2**	**51.34**	**299**	*e*P	**P**	**13 02 28.4**	**+2.2**
	1.3nm,0.6s						
BVAR	**Borovoye Array**	**51.71**	**312**	P	**P**	**13 02 30.4**	**+1.8**
	0.6nm,0.4s,baz=81,slow=8.9,SNR=4.6						
WRAB	**Tennant Creek**	**58.56**	**191**	P	**P**	**13 03 16.4**	**-1.9**
	1.2nm,0.7s						
WRA	**Warramunga Arr**	**58.57**	**191**	P	**P**	**13 03 16.8**	**-1.6**
	0.4nm,0.6s,baz=13,slow=7.2,SNR=4.2						
ABKAR	**Akbulak array**	**59.16**	**311**	*e*P	**P**	**13 03 23.6**	**+1.3**
	0.5nm,0.4s						
YKA	**Yellowknife Ar**	**61.56**	**31**	P	**P**	**13 03 38.5**	**+0.1**
	0.2nm,0.6s,baz=287,slow=6.4,SNR=3.1						
FFC	**Flin Flon**	**71.39**	**34**	*e*P	**P**	**13 04 42.1**	**+0.7**
	1.2nm,0.6s						
KBZ	**Khabaz**	**72.09**	**312**	P	**P**	**13 04 48.1**	**+2.3**
	0.7nm,0.4s,baz=73,slow=4.9,SNR=4.7						
GNI	**Garni**	**73.06**	**308**	LR	LR	13 40 39.0	
	comp=Z,29nm,18.3s,baz=160,slow=39						
AKASG	**Malin Array Be**	**74.95**	**323**	P	**P**	**13 05 03.5**	**+1.0**
	0.7nm,0.5s,baz=40,slow=5.9,SNR=3.3						
PDAR	**Pinedale Array**	**75.07**	**47**	P	**P**	**13 05 04.1**	**+0.4**
	0.3nm,0.6s,baz=296,slow=3.7,SNR=4.3						
WUAZ	**Wupatki**	**78.47**	**54**	*e*P	**P**	**13 05 24.5**	**+1.6**
	0.6nm,0.2s						
EKA	**Eskdalemuir Ar**	**82.90**	**342**	P	**P**	**13 05 47.5**	**+1.5**
	0.2nm,0.2s,baz=21,slow=10,SNR=3.3						

NIED ***27*** *13:13:00,40.°20N×144.°30E,h5km,Mw4.1 Best double couple: M0=1.46000×10^15 NP1:φs=2.00000°,δ40.00000°, λ-83.00000°. NP2:φs=173.00000°,δ50.00000°, λ-96.00000°.*
IDC ***27*** *13:13:11.7±0.6,40.°04N×144.°47E,h0km,mb4.1/24, mb1 4.2/29,mb1mx4.1/57,mbtmp4.1/29,ML3.3/5,MS3.1/7, Ms1 3.2/7,ms1mx2.8/43,Error ellipse: s-maj=14.8km s-min=13.7km az=134.0*
MOS ***27*** *13:13:14.4±1.1,40.°13N×144.°43E,h31km,mb4.4/26,Error ellipse: s-maj=10.4km s-min=6.9km az=99.8*
JMA ***27*** *13:13:14.9±0.1,40.°19N×144.°32E,h40km,M4.4*
ISCJB ***27*** *13:13:15.4±0.4,40.°20N±0.°02×144.°33E±0.°04,h34km, mb4.1/35,MS3.3/5,Error ellipse: s-maj=4.3km s-min=3.0km az=29.7*
NEIC ***27*** *13:13:17.1±0.4,40.°11N×144.°33E,h35km,mb4.6/3,Error ellipse: s-maj=9.0km s-min=6.7km az=130.0*
ISC 27 13:13:16.8±0.5,40.°17N±0.°04×144.°42E±0.°05,h34km,n82, σ1§40/105,mb4.2/35,MS3.2/5,6C-3D,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.98**	**264**	P	**Pn**	**13 13 45.7**	**-2.1**
JTH				*e*S	**Sn**	**13 14 08.7**	**-2.7**
ERM	**Erimo**	**2.08**	**333**	*ce*P	**Pn**	**13 13 47.8**	**-1.4**
ERM				pmax	pmax		
	comp=Z,275nm,1.2s						
ERM	**Erimo**	**2.08**	**333**	*e*Pn	**Pn**	**13 13 48.1**	**-1.1**
ERM				*e*Sn	**Sn**	**13 14 11.8**	**-2.0**
JEM	**Erimo**	**2.08**	**333**	P	**Pn**	**13 13 47.9**	**-1.3**
JEM				*e*S	**Sn**	**13 14 12.3**	**-1.6**
MIYJ	**Miyakonagasawa**	**2.09**	**254**	P	**Pn**	**13 13 47.6**	**-1.7**
MIYJ				*e*S	**Sn**	**13 14 11.7**	**-2.4**
JANG	**Nango**	**2.23**	**276**	P	**Pn**	**13 13 49.7**	**-1.6**
JANG				*e*S	**Sn**	**13 14 14.8**	**-2.9**
JNBK	**Urakawa-nobuka**	**2.46**	**330**	P	**Pn**	**13 13 53.7**	**-0.7**
JNBK				*e*S	**Sn**	**13 14 22.6**	**-0.6**
JOM	**Ohasama**	**2.51**	**255**	P	**Pn**	**13 13 54.2**	**-0.9**
JOM				S	**Sn**	**13 14 23.2**	**-1.3**
JCH	**Churui**	**2.57**	**342**	P	**Pn**	**13 13 54.4**	**-1.6**
JCH				*e*S	**Sn**	**13 14 23.9**	**-2.1**
JMK	**Ichinoseki**	**2.76**	**245**	P	**Pn**	**13 13 57.1**	**-1.4**
JAK	**Akkeshi**	**2.83**	**4**	P	**Pn**	**13 13 58.1**	**-1.5**
JAK				S	**Sn**	**13 14 31.2**	**-1.3**
JOT	**Ohata**	**2.83**	**296**	P	**Pn**	**13 13 58.7**	**-0.9**
JOT				*e*S	**Sn**	**13 14 30.5**	**-2.0**
JKB	**Kayabe**	**3.08**	**305**	P	**Pn**	**13 14 02.2**	**-0.8**
JKB				*e*S	**Sn**	**13 14 37.3**	**-1.4**
JAR	**Ashorobuto**	**3.16**	**351**	P	**Pn**	**13 14 02.3**	**-1.8**
JAR				S	**Sn**	**13 14 38.4**	**-2.3**
JFR	**Furan**	**3.29**	**336**	P	**Pn**	**13 14 05.1**	**-0.8**
JFR				*e*S	**Sn**	**13 14 41.9**	**-1.9**
NEM2	**Nemuro 2**	**3.34**	**17**	P	**Pn**	**13 14 04.2**	**-2.4**
NEM2				S	**Sn**	**13 14 41.3**	**-3.8**
JYK	**Kaneyama**	**3.38**	**250**	P	**Pn**	**13 14 06.3**	**-0.8**
JYK				S	**Sn**	**13 14 44.9**	**-1.1**
JEW	**Eniwo**	**3.48**	**321**	P	**Pn**	**13 14 08.5**	**0.0**
JEW				S	**Sn**	**13 14 47.9**	**-0.5**
JTKR	**Abashiri--Toko**	**3.82**	**354**	P	**Pn**	**13 14 12.6**	**-0.5**
JTKR				S	**Sn**	**13 14 55.1**	**-1.7**
ASAJ	**Asahikawa**	**4.17**	**342**	*e*Pn	**Pn**	**13 14 16.5**	**-1.5**
ASAJ				*e*Sn	**Sn**	**13 15 06.7**	**+1.1**
JOSM	**Okushiri--Mats**	**4.20**	**299**	P	**Pn**	**13 14 17.6**	**-0.7**
JOSM				*e*S	**Sn**	**13 15 03.8**	**-2.3**
KUR	**Kuril'sk**	**5.66**	**26**	*d i*P	**Pn**	**13 14 36.7**	**-1.7**
KUR				*i* S	**Sn**	**13 15 37.9**	**-4.3**
KUR				pmax	pmax		
	comp=Z,25nm,0.5s						
KUR				smax	smax		
	comp=N,79nm,0.4s						
KUR				smax	smax		
	comp=N,41nm,0.5s						
MJAR	**Matsushiro Arr**	**6.08**	**235**	Pn	**Pn**	**13 14 43.8**	**-0.4**
	comp=N,3.1nm,0.3s,baz=47,slow=11,SNR=31						
MAJO	**Matsushiro**	**6.08**	**235**	*e*P	**Pn**	**13 14 43.2**	**-1.0**
MAJO				pmax	pmax		
	comp=Z,25nm,0.6s						
MAJO	**Matsushiro**	**6.08**	**235**	*e*Pn	**Pn**	**13 14 43.2**	**-1.0**
	comp=Z,25nm,0.6s						
MAT	**Matsushiro**	**6.08**	**235**	P	**Pn

ABKAR	**Akbulak array**	57.74	310	*e*P	**P**	13 23 02.8 -1.3
	comp=Z,1.4nm,0.6s					
AKTO	**Aktyubinsk**	58.35	311	P	**P**	13 23 08.8 +0.4
	comp=Z,1.6nm,0.8s,baz=70,slow=14,SNR=4.0					
YKA	**Yellowknife Ar**	59.91	32	P	**P**	13 23 18.9 0.0
	comp=Z,0.4nm,0.6s,baz=299,slow=6.5,SNR=4.7					
LVZ	**Lovozero**	60.22	336	*ce*P	**P**	13 23 21.2 +0.2
LVZ				pmax	pmax	
	comp=Z,17nm,1.7s					
WRA	**Warramunga Arr**	60.53	191	P	**P**	13 23 22.0 -1.6
	comp=Z,1.3nm,0.6s,baz=8.3,slow=6.9,SNR=23					
ASAR	**Alice Springs**	64.26	191	P	**P**	13 23 48.0 -0.5
	comp=Z,1.1nm,0.8s,baz=8.8,slow=5.6,SNR=16					
FINES	**FINESS Array B**	67.13	333	P	**P**	13 24 06.8 +0.2
	comp=Z,2.5nm,0.6s,baz=46,slow=8.5,SNR=11					
KIV	**Kislovodsk**	70.62	311	*e*P	**P**	13 24 30.7 +2.0
KIV				*i*		13 24 42.1
KIV				*i*		13 24 44.2
KIV				pmax	pmax	
	comp=Z,7.0nm,0.9s					
KBZ	**Khabaz**	70.63	311	P	**P**	13 24 30.6 +1.9
	comp=Z,2.8nm,0.8s,baz=55,slow=3.9,SNR=6.2					
NVAR	**Mina Array Bea**	71.25	55	P	**P**	13 24 33.9 +1.1
	comp=Z,0.8nm,0.7s,baz=288,slow=5.8,SNR=5.1					
STKA	**Stephens Creek**	71.73	183	P	**P**	13 24 34.7 -0.5
	comp=Z,0.9nm,0.7s,baz=331,slow=12,SNR=3.2					
NB2	**NORSAR Subarra**	72.18	338	P	**P**	13 24 38.4 +0.6
	comp=Z,2.0nm,0.6s,baz=39,slow=6.2					
NOA	**NORSAR Array B**	72.18	338	P	**P**	13 24 38.5 +0.6
	comp=Z,1.9nm,0.7s,baz=38,slow=6.0,SNR=5.4					
AKASG	**Malin Array Be**	73.24	323	P	**P**	13 24 44.8 +0.6
	comp=Z,2.7nm,0.6s,baz=44,slow=6.1,SNR=12					
PDAR	**Pinedale Array**	73.80	47	P	**P**	13 24 48.5 +0.5
	comp=Z,0.4nm,0.6s,baz=261,slow=3.3,SNR=5.3					
O20A	**White River Ci**	76.26	49	*e*P	**P**	13 25 03.6 +1.4
	comp=Z,4.6nm,0.6s					
BRTR	**Keskin Array B**	78.50	313	P	**P**	13 25 15.7 +1.0
	comp=Z,1.0nm,0.9s,baz=54,slow=6.3,SNR=4.3					
CLL	**Collm**	79.52	331	*e*P	**P**	13 25 20.0 +0.2
	comp=Z,5.0nm,0.9s					
CLL	**Collm**	79.52	331	*e*P	**P**	13 25 20.0 +0.2
CLL				pmax	pmax	
	comp=Z,5.0nm,0.9s					
TXAR	**Lajitas Array**	86.36	54	P	**P**	13 25 56.6 +0.8
	comp=Z,0.3nm,0.7s,baz=303,slow=4.0,SNR=5.1					
SIV	**San Ignacio**	147.26	50	PKPbc	**PKPbc**	13 32 57.4 +0.4
	comp=Z,1.4nm,0.6s,baz=294,slow=5.5,SNR=3.4					

ROM 27 13:13:35.3±0.1, 41°.63N×14°.35E, h13km±1km, Md1.5/3, Ml1.3/2, Error ellipse: s-maj=2.4km s-min=0.3km az=65.0, Southern Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIDA	**Miranda**	**0.08**	**281**	Pg	Pg	13 13 38.4	+0.3
MIDA				Sg	Sg	13 13 40.5	+0.4
	105nm,0.2s						
RNI2	**Rionero Sannit**	**0.17**	**297**	Pg	Pg	13 13 39.7	+0.4
RNI2				Sg	Sg	13 13 42.9	+0.8
	73nm,0.3s						
VAGA	**Valle Agricola**	**0.23**	**203**	Pg	Pg	13 13 40.8	+0.5
VAGA				Sg	Sb	13 13 44.6	-0.8
	42nm,0.6s						

JMA 27 13:13:58.4±0.1, 38°.33N×140°.70E, h12km±1km, M2.0, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JOU	**Okura**	**0.04**	**321**	P	Pg	13 14 00.7	0.0
JOU				S	Sg	13 14 02.2	-0.2
JMM	**Marumori**	**0.47**	**171**	P	Pg	13 14 07.3	-0.3

NIED ***27*** *13:18:00, 39°.80N×144°.30E, h5km, Mw3.9 Best double couple: M₀8.89000×10¹⁴ NP1:ϕs173.00000°, δ44.00000°, λ-106.00000°. NP2:ϕs14.00000°, δ49.00000°, λ-75.00000°.*
IDC ***27*** *13:18:55.1±0.7, 39°.58N×144°.49E, h0km, mb4.0/21, mb1 4.2/26, mb1mx4.0/55, mbtmp4.0/26, ML3.4/5, MS3.2/1, Ms1 3.2/1, ms1mx2.3/40, Error ellipse: s-maj=17.3km s-min=15.7km az=126.0*
NEIC ***27*** *13:18:56.9±0.4, 39°.65N×144°.45E, h10km, mb4.4/5, Error ellipse: s-maj=8.1km s-min=5.9km az=129.0*
ISCJB ***27*** *13:18:58.9±0.5, 39°.75N±0°.03×144°.33E±0°.05, h34km, mb4.1/24, Error ellipse: s-maj=6.1km s-min=3.4km az=31.5*
JMA ***27*** *13:18:58.6±0.1, 39°.76N×144°.34E, h45km, M4.1*

ISC 27 13:19:00.8±0.6, 39°.78N±0°.05×144°.35E±0°.06, h34km, n53, σ1§27/64, mb4.1/24, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.92**	**276**	P	**Pn**	13 19 29.7	-1.4
MIYJ	**Miyakonagasawa**	**1.96**	**265**	P	**Pn**	13 19 30.3	-1.4
JANG	**Nango**	**2.25**	**286**	P	**Pn**	13 19 34.4	-1.3
JANG				*e*S	**Sn**	13 20 01.0	-1.3
JOM	**Ohasama**	**2.38**	**264**	P	**Pn**	13 19 36.7	-0.7
ERM	**Erimo**	**2.41**	**338**	*e*Pn	**Pn**	13 19 37.2	-0.6
ERM				*e*Sn	**Sb**	13 20 07.5	-5.2
JMK	**Ichinoseki**	**2.56**	**252**	P	**Pn**	13 19 38.5	-1.4
JMK				*e*S	**Sn**	13 20 07.7	-2.2
JNBK	**Urakawa-nobuka**	**2.77**	**335**	P	**Pn**	13 19 42.6	-0.2
JNBK				*e*S	**Sn**	13 20 15.7	+0.6
JCH	**Churui**	**2.93**	**346**	P	**Pn**	13 19 44.3	-0.6
JCH				*e*S	**Sn**	13 20 18.6	-0.3
JOT	**Ohata**	**2.98**	**304**	P	**Pn**	13 19 45.6	0.0
JYK	**Kaneyama**	**3.21**	**256**	P	**Pn**	13 19 48.1	-0.7
JYK				*e*S	**Sn**	13 20 25.2	-0.7
JAK	**Akkeshi**	**3.22**	**5**	P	**Pn**	13 19 47.8	-1.2
JAK				*e*S	**Sn**	13 20 25.3	-0.9
JKB	**Kayabe**	**3.28**	**311**	P	**Pn**	13 19 49.8	0.0
JAR	**Ashorobuto**	**3.54**	**353**	P	**Pn**	13 19 52.0	-1.4
JAR				*e*S	**Sn**	13 20 32.0	-2.0
JFR	**Furan**	**3.63**	**339**	P	**Pn**	13 19 54.3	-0.3
JFR				*e*S	**Sn**	13 20 36.5	+0.3
NEM2	**Nemuro 2**	**3.73**	**16**	P	**Pn**	13 19 54.1	-1.9
NEM2				*e*S	**Sn**	13 20 35.4	-3.3
JEW	**Eniwo**	**3.76**	**325**	P	**Pn**	13 19 57.8	+1.5
JTKR	**Abashiri--Toko**	**4.20**	**356**	P	**Pn**	13 20 02.0	-0.4
JTKR				*e*S	**Sn**	13 20 49.2	-1.1
ASAJ	**Asahikawa**	**4.53**	**344**	Pn	**Pn**	13 20 07.2	+0.3
	2.9nm,0.3s,baz=202,slow=16,SNR=25						
MAJO	**Matsushiro**	**5.82**	**238**	*e*Pn	**Pn**	13 20 23.1	-1.6
MAJO				*e*Sn	**Sn**	13 21 30.2	-0.1
MAT	**Matsushiro**	**5.82**	**238**	P	**Pn**	13 20 24.2	-0.5
MAT				S	**Sn**	13 21 29.5	-0.8
MJAR	**Matsushiro Arr**	**5.82**	**238**	Pn	**Pn**	13 20 24.1	-0.6
	3.4nm,0.3s,baz=59,slow=10,SNR=28						
USRK	**Ussuriysk Ar.**	**10.20**	**300**	Pn	**Pn**	13 21 25.9	+1.1
	0.5nm,0.3s,baz=102,slow=14,SNR=14						
JNU	**Nakatsue**	**12.71**	**243**	LR	LR	13 26 41.6	
	comp=Z,122nm,21.1s,baz=312,slow=37						
KLR	**Kul'dur**	**13.03**	**321**	Pn	**Pn**	13 22 03.4	+0.1
	0.1nm,0.3s,baz=124,slow=13,SNR=7.1						
KSRS	**Korea Array**	**13.06**	**265**	Pn	**Pn**	13 22 05.0	+1.2
	0.2nm,0.3s,baz=94,slow=13,SNR=5.3						
KSAR	**Wonju Array Be**	**13.09**	**265**	Pn	**Pn**	13 22 05.0	+0.7
MA2	**Magadan**	**20.23**	**9**	P	Pn	13 23 34.0	-0.8
	7.1nm,0.6s,baz=213,slow=7.3,SNR=10						
MA2	**Magadan**	**20.23**	**9**	*e*P	Pn	13 23 33.8	-1.0
	32nm,0.9s						
SEY	**Seymchan**	**23.68**	**9**	P	**P**	13 24 09.8	+0.8
	5.5nm,0.9s,baz=198,slow=8.8,SNR=12						
ULN	**Ulaanbaatar**	**27.88**	**299**	*e*P	**P**	13 24 48.0	+0.5
	3.1nm,1.0s						
SONM	**Songino Array**	**28.32**	**299**	P	**P**	13 24 52.6	+1.3
	1.7nm,0.9s,baz=87,slow=7.2,SNR=7.1						
ZALV	**Zalesovo Beam**	**41.84**	**310**	P	**P**	13 26 47.7	+0.5
	1.6nm,0.6s,baz=88,slow=7.2,SNR=6.1						
ZALV				PcP	**PcP**	13 28 42.7	+0.1
	0.9nm,0.5s,baz=130,slow=4.5,SNR=4.1						
MKAR	**Makanchi Array**	**44.67**	**300**	P	**P**	13 27 10.8	+0.6
	1.8nm,0.7s,baz=85,slow=9.0,SNR=14						
ILAR	**Eielson Array**	**45.94**	**34**	P	**P**	13 27 20.0	0.0
	1.0nm,0.7s,baz=261,slow=7.4,SNR=5.0						
KURK	**Kurchatov**	**46.11**	**306**	*e*P	**P**	13 27 21.6	+0.1
	9.7nm,0.6s						
KURBB	**Kurchatov Arra**	**46.18**	**306**	P	**P**	13 27 22.9	+0.8
	5.3nm,0.6s,baz=80,slow=8.2,SNR=51						
TKM2	**Tokmak 2**	**50.39**	**297**	*e*P	**P**	13 27 54.6	-0.3
	4.5nm,1.0s						
BVAR	**Borovoye Array**	**50.47**	**311**	P	**P**	13 27 56.3	+1.2
	2.5nm,0.8s,baz=88,slow=11,SNR=10						
INK	**Inuvik**	**50.89**	**28**	P	**P**	13 27 59.0	+1.1
	1.5nm,0.7s,baz=350,slow=8.2,SNR=5.6						
ARU	**Arti**	**55.85**	**318**	P	**P**	13 28 36.0	+1.4
	1.2nm,0.3s,baz=74,slow=9.4,SNR=4.0						
ABKAR	**Akbulak array**	**57.95**	**310**	*e*P	**P**	13 28 49.0	-0.5
	1.7nm,0.6s						
AKTO	**Aktyubinsk**	**58.57**	**312**	P	**P**	13 28 54.5	+0.6
	1.6nm,0.3s,baz=70,slow=10,SNR=8.9						
WRA	**Warramunga Arr**	**60.14**	**191**	P	**P**	13 29 02.8	-2.2
	0.9nm,0.6s,baz=8.6,slow=6.9,SNR=10						
YKA	**Yellowknife Ar**	**60.27**	**32**	P	**P**	13 29 05.2	-0.2
	0.3nm,0.7s,baz=304,slow=6.6,SNR=3.7						
ASAR	**Alice Springs**	**63.87**	**191**	P	**P**	13 29 28.2	-1.7
	0.9nm,0.8s,baz=6.7,slow=4.9,SNR=6.3						
FINES	**FINESS Array B**	**67.45**	**333**	P	**P**	13 29 53.8	+1.1
	3.7nm,0.6s,baz=49,slow=8.8,SNR=14						
KBZ	**Khabaz**	**70.85**	**311**	P	**P**	13 30 14.5	+0.5
	1.4nm,0.5s,baz=74,slow=4.7,SNR=4.9						
NB2	**NORSAR Subarra**	**72.53**	**338**	P	**P**	13 30 24.6	+0.7
	comp=Z,1.2nm,0.7s,baz=38,slow=6.2						
NOA	**NORSAR Array B**	**72.53**	**338**	P	**P**	13 30 24.9	+1.0
	comp=Z,1.7nm,0.7s,baz=38,slow=5.9,SNR=7.3						
AKASG	**Malin Array Be**	**73.51**	**323**	P	**P**	13 30 30.4	+0.6
	comp=Z,1.3nm,0.5s,baz=42,slow=6.5,SNR=6.4						
PDAR	**Pinedale Array**	**74.11**	**47**	P	**P**	13 30 34.1	+0.4
	comp=Z,0.2nm,0.5s,baz=224,slow=3.9,SNR=3.5						
GERES	**GERESS Array B**	**81.56**	**330**	P	**P**	13 31 15.7	+0.7
	comp=Z,0.7nm,0.7s,baz=12,slow=6.8,SNR=4.4						
TXAR	**Lajitas Array**	**86.63**	**54**	P	**P**	13 31 41.4	+0.3
	comp=Z,0.5nm,0.9s,baz=294,slow=4.0,SNR=4.8						

RSPR 27 13:27:55.8, 19°.31N×68°.14W, h120km±9km, MD3.3/5, 5C-7D, North Atlantic Ocean

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DR12	**Loma Pena Alta**	**1.28**	**246**	⇑*e*P	Pn	13 28 19.9	-0.9
DR12				*e*S	Sn	13 28 39.9	+0.2
DR12	**Loma Pena Alta**	**1.28**	**246**	⇓*e*P	Pn	13 28 19.9	-0.8
AGPR	**Aguadilla, PR**	**1.29**	**131**	⇑*e*P	Pn	13 28 19.7	-1.1
LSP	**Las Mesas**	**1.51**	**138**	⇑*e*P	Pn	13 28 23.4	+0.1
LSP	**Las Mesas**	**1.51**	**138**	*e*S	Sn	13 28 43.7	-0.6
LSP	**Las Mesas**	**1.51**	**138**	⇓*e*P	Pn	13 28 23.4	0.0
LSP				*e*S	Sn	13 28 44.9	+0.6
AOPR	**Arecibo Observ**	**1.63**	**126**	⇓*e*P	Pn	13 28 23.9	-0.8
AOPR	**Arecibo Observ**	**1.63**	**126**	*e*S	Sn	13 28 47.0	+0.2
AOPR	**Arecibo Observ**	**1.63**	**126**	⇓*e*P	Pn	13 28 24.0	-0.7
AOPR				*e*S	Sn	13 28 46.9	+0.1
OBIP	**Obispado Ponce**	**1.93**	**131**	⇓*e*P	Pn	13 28 28.3	0.0
OBIP	**Obispado Ponce**	**1.93**	**131**	*e*S	Sn	13 28 53.4	+0.2
OBIP	**Obispado Ponce**	**1.93**	**131**	⇓*e*P	Pn	13 28 28.3	0.0
OBIP				*e*S	Sn	13 28 53.7	+0.5
CBYP	**Canovanas**	**2.40**	**115**	⇑*e*P	Pn	13 28 34.3	0.0
CBYP				*e*S	Sn	13 29 03.9	0.0
MTP	**Monte Pirata**	**2.74**	**116**	⇓*e*P	Pn	13 28 38.8	+0.2
MTP	**Monte Pirata**	**2.74**	**116**	⇓*e*P	Pn	13 28 38.7	+0.1
MTP				*e*S	Sn	13 29 11.8	+0.2

NIED ***27*** *13:33:00, 39°.60N×140°.70E, h5km, Mw4.2 Best double couple: M₀2.61000×10¹⁵ NP1:ϕs161.00000°, δ59.00000°, λ144.00000°. NP2:ϕs272.00000°, δ60.00000°, λ36.00000°.*
IDC ***27*** *13:33:35.0±0.5, 39°.60N×140°.56E, h0km, mb4.3/30, mb1 4.5/32, mb1mx4.4/48, mbtmp4.3/32, ML3.7/2, MS3.4/15, Ms1 3.4/15, ms1mx3.2/46, Error ellipse: s-maj=13.5km s-min=12.4km az=99.0*
JMA ***27*** *13:33:36.1, 39°.61N×140°.63E, h5km±1km, M4.6 Broadband fault plane solution: P waves. NP1: ϕs261.00000°, δ69.00000°, λ41.00000°. NP2: ϕs154.00000°, δ53.00000°, λ153.00000°. Principal axes: T Plg43.0000°, Azm124.0000°; N Plg45.0000°, Azm284.0000°; P Plg10.0000°, Azm24.0000°;*
JMA Felt IV J1.
ISCJB ***27*** *13:33:36.1±0.4, 39°.62N±0°.02×140°.65E±0°.02, h18km±3km, mb4.5/102, MS3.7/16 Error ellipse: s-maj=3.8km s-min=2.9km az=144.5*
MOS ***27*** *13:33:38.7±1.1, 39°.60N×140°.60E, h40km, mb4.8/42, Error ellipse: s-maj=7.7km s-min=5.3km az=97.2*
NEIC ***27*** *13:33:41.5±0.6, 39°.59N×140°.58E, h51km±5km, mb4.7/44, Error ellipse: s-maj=6.7km s-min=4.4km az=137.0*
NEIC Recorded [4 JMA] in Akita.

ISC 27 13:33:38.3±0.6, 39°.58N±0°.03×140°.69E±0°.03, h25km±3km, n234, σ1§95/266, mb4.6/103, MS3.6/16, 24C-15D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JRG	**Rokugo**	**0.18**	**193**	⇓P	**Pb**	13 33 40.6	-3.2
JRG				S	**Sb**	13 33 44.4	-3.0
JYW	**Yuwa**	**0.37**	**265**	⇓P	Pb	13 33 43.1	-3.3
JYW				S	**Sb**	13 33 48.8	-3.1
JOM	**Ohasama**	**0.48**	**102**	⇑P	**Pb**	13 33 46.0	-2.1
JOM				S	**Sb**	13 33 53.1	-1.7
JAH	**Hinai**	**0.61**	**356**	⇓P	**Pb**	13 33 47.2	-3.2
JAH				S	**Sb**	13 33 55.2	-3.5
JYK	**Kaneyama**	**0.70**	**201**	⇓P	**Pb**	13 33 49.5	-2.5
JYK				S	**Sb**	13 33 59.2	-2.1
JMK	**Ichinoseki**	**0.75**	**146**	⇑P	**Pn**	13 33 50.8	-2.5
JMK				S	**Sb**	13 34 01.4	-1.0
ERM	**Erimo**	**3.07**	**37**	*ce*P	**Pn**	13 34 27.1	+1.9
ERM				pmax	pmax		
	comp=Z,126nm,0.7s						
ERM	**Erimo**	**3.07**	**37**	*e*Pn	**Pn**	13 34 26.9	+1.7
ERM				*e*Sn	**Sn**	13 34 56.9	-4.3
MJB9	**Matsu-Tunnel**	**3.60**	**214**	*e*Pn	**Pn**	13 34 33.4	+0.8
MAJO	**Matsushiro**	**3.61**	**214**	*i* P	**Pn**	13 34 32.8	+0.2
MAJO	**Matsushiro**	**3.61**	**214**	*e*Pn	**Pn**	13 34 33.4	+0.8
MAJO				*e*Sn	**Sn**	13 35 14.5	+0.1
MJAR	**Matsushiro Arr**	**3.61**	**214**	Pn	**Pn**	13 34 33.5	+0.8
	comp=Z,6.9nm,0.3s,baz=29,slow=16,SNR=44						
MAT	**Matsushiro**	**3.61**	**214**	P	**Pn**	13 34 33.1	+0.5
MAT				S	**Sn**	13 35 18.6	+4.2
ASAJ	**Asahikawa**	**4.75**	**17**	Pn	**Pn**	13 34 50.5	+2.2
	comp=Z,3.1nm,0.3s,baz=222,slow=12,SNR=29						
ASAJ				Sn	**Sn**	13 35 44.3	+1.7
	comp=Z,2.7nm,0.3s,baz=200,slow=23,SNR=4.3						
ASAJ	**Asahikawa**	**4.75**	**17**	*e*Pn	**Pn**	13 34 50.4	+2.0
ASAJ				*e*Sn	**Sn**	13 35 43.8	+1.1
ASAJ				Sn	Sn	13 35 44.3	+1.7
INU	**Inuyama**	**5.13**	**216**	*e*Pn	**Pn**	13 34 55.7	+2.1
VLA	**Vladivostok**	**7.51**	**301**	⇑*i*P	**Pn**	13 35 26.4	+0.2
VLA				*i* S	**Sn**	13 36 49.7	-0.8
VLA				pmax	pmax		
	comp=Z,33nm,0.9s						
YSS	**Yuzh-Sakhalins**	**7.53**	**11**	⇑*i*P	**Pn**	13 35 29.9	+3.5
YSS				*e*S	**Sn**	13 36 54.8	+3.9
YSS				pmax	pmax		
	comp=Z,30nm,0.9s						
YSS				MLR	MLR		
	comp=Z,200nm,13.0s						
YSS				MLR	MLR		
	comp=N,200nm,14.0s						
YSS	**Yuzh-Sakhalins**	**7.53**	**11**	*e*Pn	**Pn**	13 35 28.7	+2.3
YSS				*e*Sn	**Sn**	13 36 52.3	+1.4
KUR	**Kuril'sk**	**7.75**	**41**	*e*P	**Pn**	13 35 30.1	+0.6
KUR				*e*S	**Sn**	13 36 55.8	-0.7
KUR				pmax	pmax		
	comp=N,22nm,0.7s						
KUR				pmax	pmax		
	comp=Z,42nm,0.7s						
KUR				smax	smax		
	comp=E,26nm,0.8s						
KUR				smax	smax		
	comp=E,20nm,0.7s						
USRK	**Ussuriysk Ar.**	**7.96**	**308**	Pn	**Pn**	13 35 31.2	-1.2
	comp=E,9.4nm,0.3s,baz=115,slow=15,SNR=71						
USRK				Sn	**Sn**	13 37 02.3	+0.7
	comp=E,0.8nm,0.3s,baz=116,slow=26,SNR=5.3						
MDJ	**Mudanjiang**	**9.66**	**305**	*e*Pn	**Pn**	13 35 55.6	-0.1
HABR	**Khabarovsk**	**9.77**	**337**	*e*P	**Pn**	13 35 56.1	-1.1
HABR				S	**Sn**	13 37 43.7	-2.3
HABR				pmax	pmax		
	comp=Z,10.0nm,1.1s						
HABR				pmax	pmax		
	comp=N,22nm,1.1s						
HABR				pmax	pmax		
	comp=E,20nm,1.1s						
HABR				MLR	MLR		
	comp=Z,143nm,11.0s						
JNU	**Nakatsue**	**10.20**	**234**	Pn	**Pn**	13 36 07.3	+4.2
	comp=Z,1.0nm,0.3s,baz=22,slow=7.2,SNR=12						
JNU				LR	LR	13 39 54.6	
	comp=Z,227nm,18.9s,baz=306,slow=38						
KSRS	**Korea Array**	**10.23**	**262**	Pn	**Pn**	13 36 06.5	+3.1
	comp=Z,6.1nm,0.3s,baz=74,slow=14,SNR=87						
KSRS				Sn	**Sn**	13 38 01.3	+4.0
	comp=Z,2.3nm,0.3s,baz=73,slow=24,SNR=11						
KSRS				LR	LR	13 39 48.0	
	comp=Z,145nm,18.6s,baz=76,slow=37						
KS01	**Wonju Array Si**	**10.24**	**262**	*e*Pn	**Pn**	13 36 05.5	+1.9
KS01				*e*Sn	**Sn**	13 38 00.0	+2.4
KS15	**Wonju Array Si**	**10.26**	**262**	*e*Pn	**Pn**	13 36 06.7	+2.8
KS15				*e*Sn	**Sn**	13 38 01.6	+3.5
KSAR	**Wonju Array Be**	**10.26**	**262**	P	**Pn**	13 36 06.6	+2.7
KSAR						13 38 01.3	
KSAR	**Wonju Array Be**	**10.26**	**262**	Pn	**Pn**	13 36 06.5	+2.7
KSAR				Sn	**Sn**	13 38 01.3	+3.2
TJN	**Taejon**	**10.99**	**257**	*i* P	**Pn**	13 36 15.9	+2.0
TYV	**Tymovskoe**	**11.37**	**6**	*e*P	**Pn**	13 36 21.2	+2.2
TYV				pmax	pmax		
	comp=Z,26nm,1.0s						
TYV				MLR	MLR		
	comp=N,800nm,15.0s						
TYV				MLR	MLR		
	comp=Z,900nm,15.0s						
KLR	**Kul'dur**	**11.57**	**329**	Pn	**Pn**	13 36 23.4	+1.7
	comp=Z,0.7nm,0.3s,baz=137,slow=12,SNR=26						
KLR				LR	LR	13 40 40.7	
	comp=Z,148nm,19.1s,baz=142,slow=37						
CN2	**Changchun**	**12.15**	**295**	*e*P	**Pn**	13 36 31.3	+1.6
CN2				pmax	pmax		
	comp=Z,10.0nm,1.3s						
CN2				LR	LR		
	comp=N,300nm,13.0s						
CN2				LR	LR		
	comp=E,200nm,13.0s						
CN2				LR	LR		
	comp=Z,400nm,14.0s						
JCJ	**Chichijima**	**12.51**	**174**	LR	LR	13 41 50.8	
	comp=Z,125nm,20.6s,baz=5.5,slow=40						
DL2	**Dalian**	**14.79**	**273**	P	**P**	13 37 15.3	+3.8
DL2				pmax	pmax		
	comp=Z,60nm,1.0s						
BJI	**Beijing**	**18.83**	**279**	P	**P**	13 37 53.0	-3.2
BJI				S	**Sn**	13 41 24.5	-2.2
BJI				pmax	pmax		
	comp=Z,7.0nm,0.8s						
BJI				LR	LR		
	comp=N,280nm,12.8s						
BJI				LR	LR		
	comp=E,130nm,5.4s						
BJI				LR	LR		
	comp=Z,110nm,16.2s						
TIA	**Tai'an**	**18.89**	**267**	⇑P	**Pn**	13 37 57.8	+0.3
TIA				pmax	pmax		
	comp=Z,30nm,1.1s						
NJ2	**Nanjing**	**19.21**	**254**	*e*P	**P**	13 38 00.5	+0.2
NJ2				pmax	pmax		
	comp=Z,9.0nm,0.7s						
MA2	**Magadan**	**21.01**	**14**	P	**P**	13 38 18.8	-0.9
	comp=Z,5.7nm,0.6s,baz=222,slow=12,SNR=9.8						
MA2				LR	LR	13 47 19.8	
	comp=Z,81nm,18.5s,baz=246,slow=39						
HHC	**Hu-ho-hao-te**	**22.24**	**283**	*e*P	**P**	13 38 35.5	+2.3
HHC				S	**S**	13 42 32.3	-4.4
HHC				pmax	pmax		
	comp=Z,22nm,0.9s						
HHC				pmax	pmax		
	comp=Z,82nm,4.1s						
HHC				LR	LR		
	comp=N,1μm,11.1s						
HHC				LR	LR		
	comp=E,1μm,11.6s						
HHC				LR	LR		
	comp=Z,1μm,12.7s						
YAK	**Yakutsk**	**23.47**	**347**	P	**P**	13 38 44.0	-1.6
	comp=Z,0.9nm,0.3s,baz=342,slow=23,SNR=7.3						
YAK				LR	LR	13 48 15.2	
	comp=Z,123nm,18.3s,baz=89,slow=38						
YAK	**Yakutsk**	**23.47**	**347**	*e*P	**P**	13 38 43.5	-2.1
YAK				*e**PP	**pP**	13 38 53.1	+0.4
YAK				*e*		13 42 32.9	
YAK				*e*S	**S**	13 42 59.5	+2.1
YAK				*e**SS	Sn	13 43 16.4	-1.3
YAK				*e*SS	**SnSn**	13 43 40.0	+6.0
YAK				*e*SSS	SSS	13 43 54.1	
YAK				*e*		13 49 56.0	
YAK				pmax	pmax		
	comp=E,5.0nm,1.2s						
YAK				pmax	pmax		
	comp=Z,27nm,1.2s						
YAK				pmax	pmax		
	comp=N,20nm,1.1s						
YAK				pmax	pmax		
	comp=Z,119nm,4.0s						
YAK				pmax	pmax		
	comp=E,49nm,2.8s						
YAK				pmax	pmax		
	comp=N,113nm,4.4s						
YAK				smax	smax		
	comp=E,82nm,2.2s						
YAK				smax	smax		
	comp=N,82nm,1.5s						
YAK	**Yakutsk**	**23.47**	**347**	P	**P**	13 38 44.0	-1.6
SEY	**Seymchan**	**24.43**	**13**	P	**P**	13 38 55.4	+0.7

comp=Z,180nm,5.7s
GTA LR LR
comp=N,110nm,10.2s
GTA LR LR
comp=E,190nm,13.3s
GTA LR LR
comp=Z,240nm,15.7s
BILL Bilibino 31.77 18 *i* P **P 13 40 01.3 +1.1**
BILL *i* 13 42 52.0
BILL *i* SS SS 13 46 52.6 -32
BILL pmax pmax
comp=Z,3.0nm,0.9s
BILL MLR MLR
comp=Z,71nm,14.0s
TIXI Tiksi 32.70 353 LR LR 13 53 12.2
comp=Z,32nm,20.3s,baz=179,slow=36
TIXI Tiksi 32.70 353 *ce*P **P 13 40 07.4 -0.8**
TIXI pmax pmax
comp=Z,4.0nm,1.2s
KMI Kunming 34.88 257 P P 13 40 23.3 -4.7
KMI pmax pmax
comp=Z,19nm,0.5s
KMI pmax pmax
comp=Z,220nm,6.5s
WMQ Urumqi 39.24 294 *e*P **P 13 41 06.3 +1.7**
WMQ pmax pmax
comp=Z,4.0nm,0.6s
WMQ pmax pmax
comp=Z,67nm,4.4s
CRAI Chiangrai 39.51 253 P **P 13 41 07.6 +0.5**
comp=Z,153nm,0.8s
ZAA0 Zalesovo Array 39.81 310 *e*P **P 13 41 07.9 -1.3**
ZAA0 *e*PcP **PcP 13 43 14.7 -0.2**
ZALV Zalesovo Beam 39.81 310 P **P 13 41 08.4 -0.7**
comp=Z,15nm,0.7s,baz=85,slow=7.9,SNR=42
ZALV PcP **PcP 13 43 14.9 +0.1**
comp=Z,3.0nm,0.4s,baz=103,slow=3.0,SNR=9.3
ZALV LR LR 13 58 05.3
comp=Z,65nm,19.3s,baz=72,slow=37
LOEI Loei 40.58 249 P **P 13 41 17.3 +1.3**
comp=Z,4.8nm,1.0s,comp=Z,720nm
NVS Novosibirsk 40.70 312 ⇑*i*P **P 13 41 17.5 +1.0**
NVS pmax pmax
comp=Z,16nm,1.0s
NVS pmax pmax
comp=N,12nm,1.2s
NRIK Noril'sk 40.73 334 LR LR 13 59 13.2
comp=N,102nm,18.5s,baz=114,slow=38
LAMP Lampang 41.12 251 P **P 13 41 23.0 +2.6**
comp=N,3.9nm,0.8s
CMMT Chiang Mai 41.44 252 P **P 13 41 24.9 +1.8**
comp=N,6.2nm,0.7s
CHTO Chiang Mai 41.44 252 P **P 13 41 25.0 +1.9**
comp=N,30nm,1.3s
CHTO Chiang Mai 41.44 252 P **P 13 41 20.5 -2.6**
CHTO pmax pmax
comp=Z,5.0nm,0.6s
CHTO Chiang Mai 41.44 252 P **P 13 41 20.5 -2.6**
comp=Z,4.5nm,0.6s
CMAR Chiang Mai Arr 41.67 252 P **P 13 41 24.6 -0.3**
comp=Z,1.4nm,0.6s,baz=48,slow=8.4,SNR=11
CMAR PcP **PcP 13 43 22.4 +1.0**
comp=Z,0.7nm,0.6s,baz=320,slow=1.0,SNR=4.3
CMAR LR LR 14 00 09.3
comp=Z,32nm,18.3s,baz=45,slow=38
CM01 Chiang Mai Arr 41.68 252 *e*P **P 13 41 25.0 0.0**
SUKH Sukhothai 41.78 250 P **P 13 41 30.3 +4.5**
comp=Z,2.2nm,0.9s
MK01 Makanchi Array 42.33 300 *e*P **P 13 41 28.7 -1.3**
MK31 Makanchi Array 42.33 300 *e*P **P 13 41 28.5 -1.6**
MK31 Makanchi Array 42.33 300 *e*P **P 13 41 28.5 -1.6**
MKAR Makanchi Array 42.33 300 P **P 13 41 29.1 -0.9**
comp=Z,1.3nm,0.6s,baz=83,slow=9.6,SNR=13
MKAR Makanchi Array 42.33 300 *e*P **P 13 41 28.5 -1.5**
MKAR Makanchi Array 42.33 300 *e*P **P 13 41 28.5 -1.5**
SRAK Srakaew 42.39 244 P **P 13 41 31.4 +0.6**
comp=Z,26nm,1.0s
MAKZ Makanchi 42.53 300 *e*P **P 13 41 29.8 -1.9**
MAKZ pmax pmax
comp=Z,5.0nm,1.1s
MAKZ Makanchi 42.53 300 *e*P **P 13 41 29.8 -1.9**
comp=Z,5.2nm,1.1s
KURK Kurchatov 43.95 306 *ce*P **P 13 41 41.9 -1.1**
KURK pmax pmax
comp=Z,28nm,0.7s
KURK Kurchatov 43.95 306 *e*P **P 13 41 41.4 -1.7**
comp=Z,30nm,0.7s
PHET Kaeng Krachan 44.84 245 P **P 13 41 53.5 +3.0**
comp=Z,5.4nm,0.7s
RSO Redoubt South 45.29 40 *e*P **P 13 41 55.2 +1.3**
PPLA Purkeypile 45.44 36 *e*P **P 13 41 53.8 -1.1**
comp=Z,36nm,1.6s
CAST Castle Rocks 45.47 36 *e*P **P 13 41 55.6 +0.6**
comp=Z,3.1nm,0.7s
SPU Mount Spurr 45.58 39 *e*P **P 13 41 56.3 +0.3**
KDAK Kodiak Island 45.62 44 *i* P **P 13 41 59.9 +3.7**
KTH Kantishna Hill 45.98 35 *e*P **P 13 41 59.6 +0.4**
comp=Z,11nm,1.0s
MLY Manley 46.02 33 *e*P **P 13 41 59.5 +0.1**
comp=Z,3.9nm,1.0s
SUA Susitna One 46.19 38 *e*P **P 13 42 03.1 +2.2**
comp=Z,11nm,1.0s
COLD Coldfoot 46.23 30 *e*P **P 13 42 01.1 +0.1**
comp=Z,4.1nm,1.1s
GUN Gumba 46.40 273 *e*P **P 13 42 03.0 -0.2**
comp=Z,54nm,0.8s
RC01 Rabbit Creek A 46.71 39 *e*P **P 13 42 01.1 -3.7**
comp=Z,7.8nm,0.8s
KKN Kakani 46.92 273 *e*P **P 13 42 07.3 +0.2**
comp=Z,47nm,0.8s
PMR Palmer 46.95 38 *e*P **P 13 42 05.5 -1.1**
PMR pmax pmax
comp=Z,7.0nm,1.0s
PMR Palmer 46.95 38 *e*P **P 13 42 05.5 -1.1**
comp=Z,6.9nm,1.0s
MDM Murphy Dome 47.09 33 *e*P **P 13 42 08.7 +0.9**
comp=Z,8.0nm,1.2s
DMN Daman 47.14 273 *e*P **P 13 42 09.2 +0.3**
comp=Z,17nm,0.8s
COLA College 47.26 33 *e*P **P 13 42 08.1 -0.9**
COLA pmax pmax
comp=Z,4.0nm,0.9s
COLA College 47.26 33 *e*P **P 13 42 08.1 -0.9**
comp=Z,4.5nm,0.9s
SML Sawmill 47.31 38 P **P 13 42 06.5 -3.0**
SML pmax pmax
comp=Z,7.0nm,0.8s
SML Sawmill 47.31 38 P **P 13 42 06.5 -3.0**
comp=Z,7.4nm,0.8s
GKN Gorkha 47.31 274 *e*P **P 13 42 09.7 -0.4**
comp=Z,43nm,0.9s
IL1 Eielson Array 47.67 34 *e*P **P 13 42 12.7 +0.4**
ILAR Eielson Array 47.67 34 P **P 13 42 13.3 +1.0**
comp=Z,3.0nm,0.9s,baz=269,slow=6.0,SNR=29
ILB Eielson Array 47.67 34 *e*P **P 13 42 12.6 +0.3**
SCM Sheep Creek Mo 47.78 38 *e*P **P 13 42 13.7 +0.5**
SCM pmax pmax
comp=Z,17nm,1.2s
SCM Sheep Creek Mo 47.78 38 *e*P **P 13 42 13.7 +0.5**
comp=Z,17nm,1.2s
TKM2 Tokmak 2 47.96 296 *e*P **P 13 42 13.4 -1.7**
TKM2 pmax pmax
comp=Z,23nm,0.7s
TKM2 Tokmak 2 47.96 296 *e*P **P 13 42 13.4 -1.7**
comp=Z,23nm,0.7s
FYU Fort Yukon 48.21 31 *e*P **P 13 42 18.9 +2.6**
comp=Z,53nm,1.8s
KOLN Koldanda 48.23 274 *e*P **P 13 42 18.0 +0.7**
comp=Z,15nm,0.5s
KAPI Kappang 48.39 208 *e*P **P 13 42 17.8 -0.6**
comp=Z,41nm,1.4s
BVAR Borovoye Array 48.47 311 P **P 13 42 18.6 +0.1**
comp=Z,4.3nm,0.5s,baz=80,slow=8.2,SNR=26
BVAR PcP **PcP 13 43 46.4 +2.0**
comp=Z,2.4nm,0.6s,baz=81,slow=4.7,SNR=5.2
KLU Klutina 48.49 38 *e*P **P 13 42 20.2 +1.5**
comp=Z,7.6nm,1.0s
BRVK Borovoye 48.52 311 *ce*P **P 13 42 17.2 -1.7**
BRVK pmax pmax
comp=Z,17nm,1.7s
BRVK Borovoye 48.52 311 P **P 13 42 15.1 -3.9**
comp=Z,14nm,1.2s
PYUN Piuthan 48.53 275 *e*P **P 13 42 19.9 +0.2**
comp=Z,82nm,0.9s
DIV Divide 48.62 38 *e*P **P 13 42 18.8 -0.9**
comp=Z,7.9nm,0.9s
FRU Bishkek 48.67 296 *e*P **P 13 42 20.0 -0.3**
FRU pmax pmax
comp=Z,35nm,1.6s
AAK Ala-Archa 48.82 296 *e*P **P 13 42 21.0 -0.6**
AAK pmax pmax
comp=Z,49nm,0.8s
AAK Ala-Archa 48.82 296 *e*P **P 13 42 21.0 -0.6**
comp=Z,49nm,0.8s
KSH Kashi 48.89 292 *e*P **P 13 42 26.8 +4.6**
KSH *e*sP sP 13 42 43.3 +10
KSH *e*PP **PP 13 44 20.8 +5.4**
KSH *e*ScP **ScP 13 47 38.5 -1.2**
KSH S **S 13 49 29.3 +4.9**
KSH pmax pmax
comp=Z,13nm,1.0s
KSH pmax pmax
comp=Z,83nm,4.5s
KSH LR LR
comp=N,570nm,12.6s
KSH LR LR
comp=E,430nm,14.0s
KSH LR LR
comp=Z,130nm,8.8s
DOT Dot Lake 49.03 35 *e*P **P 13 42 23.7 +1.0**
comp=Z,17nm,1.3s
BMRM Bremner River 49.20 38 *e*P **P 13 42 23.0 -1.1**
MENT Mentasta 49.29 36 *e*P **P 13 42 26.5 +1.7**
comp=Z,8.0nm,1.0s
ZRNK Zerenda 49.30 311 *e*P **P 13 42 24.8 -0.1**
ZRNK pmax pmax
comp=Z,14nm,0.7s
ZRNK Zerenda 49.30 311 *e*P **P 13 42 24.8 -0.1**
comp=Z,14nm,0.7s
EKS2 Erkin-Say 49.31 296 *e*P **P 13 42 24.5 -0.8**
EKS2 pmax pmax
comp=Z,9.0nm,0.7s
EKS2 Erkin-Say 49.31 296 *e*P **P 13 42 24.5 -0.8**
comp=Z,8.8nm,0.7s
EGAK Eagle 50.11 33 *e*P **P 13 42 33.8 +2.9**
comp=Z,19nm,1.9s
KKAR Karatay Array 51.39 298 *e*P **P 13 42 40.8 -0.1**
KKAR pmax pmax
comp=Z,18nm,1.1s
KKAR Karatay Array 51.39 298 *e*P **P 13 42 40.8 -0.1**
comp=Z,18nm,1.1s
INK Inuvik 52.40 28 P **P 13 42 49.2 +1.2**
comp=Z,4.1nm,0.8s,baz=287,slow=6.6,SNR=8.9
SVE Sverdlovsk 52.88 317 *e*P **P 13 42 52.0 +0.2**
SVE pmax pmax
comp=Z,34nm,1.1s
ARU Arti 54.10 317 P **P 13 43 00.5 -0.1**
comp=Z,8.8nm,0.6s,baz=68,slow=3.5,SNR=22
ARU LR LR 14 08 12.8
comp=Z,52nm,19.8s,baz=138,slow=38
ARU Arti 54.10 317 *c i*P **P 13 43 00.1 -0.6**
ARU *PP **sP 13 43 14.3 +2.9**
ARU 13 45 00.8
ARU S **S 13 50 34.3 -1.1**
ARU SS **SS 13 54 14.1 -2.4**
ARU pmax pmax
comp=Z,33nm,1.2s
ARU Arti 54.10 317 *e*P **P 13 42 59.4 -1.2**
comp=Z,21nm,0.9s
GSI Gunungsitoli 54.66 237 *e*P **P 13 43 05.1 -0.2**
comp=Z,43nm,1.4s
ABKAR Akbulak array 55.89 309 *e*P **P 13 43 12.6 -1.1**
KBL Kabul 56.01 289 *e*P **P 13 43 14.5 -0.6**
KBL pmax pmax
comp=Z,8.0nm,0.8s
KBL Kabul 56.01 289 *e*P **P 13 43 14.5 -0.6**
comp=Z,8.2nm,0.8s
AKTO Aktyubinsk 56.57 311 P **P 13 43 18.5 -0.1**
comp=Z,3.4nm,0.7s,baz=64,slow=14,SNR=9.9
WRA Warramunga Arr 59.50 187 P **P 13 43 39.1 -0.3**
comp=Z,11nm,0.8s,baz=4.4,slow=7.1,SNR=81
KLMR Klimovskoe 61.31 327 *e*P **P 13 43 49.9 -1.4**
KLMR *e*S **S 13 52 05.6 -4.2**
KLMR pmax pmax
comp=Z,13nm,1.2s
ARCES ARCESS Array B 61.42 339 P **P 13 43 52.8 +0.8**
comp=Z,1.8nm,0.8s,baz=69,slow=7.0,SNR=4.4
ARCES LR LR 14 14 24.6
comp=Z,34nm,18.2s,baz=58,slow=40
YKA Yellowknife Ar 61.91 31 P **P 13 43 56.1 +0.9**
comp=Z,1.0nm,0.6s,baz=301,slow=6.6,SNR=13
YKB5 Yellowknife Ar 61.91 31 *e*P **P 13 43 53.5 -1.8**
GEYT Alibeck 62.13 298 P **P 13 43 57.3 0.0**
comp=Z,6.3nm,0.8s,baz=29,slow=3.4,SNR=8.9
AS01 Alice Springs 63.23 187 *e*P **P 13 44 03.6 -0.9**
AS31 Alice Springs 63.23 187 *e*P **P 13 44 03.2 -1.3**
comp=Z,2.2nm,0.8s
ASAR Alice Springs 63.23 187 P **P 13 44 04.8 +0.2**
comp=Z,7.1nm,0.7s,baz=10,slow=5.8,SNR=95
OBN Obninsk 65.73 322 *i* P **P 13 44 20.5 0.0**
OBN pmax pmax
comp=Z,11nm,1.2s
FINES FINESS Array B 66.31 332 P **P 13 44 23.1 -1.1**
comp=Z,3.1nm,0.7s,baz=52,slow=7.5,SNR=7.3
FINES LR LR 14 15 17.5
comp=Z,55nm,18.2s,baz=227,slow=38
ZEI Tsey 68.76 308 *e*P **P 13 44 39.3 -1.0**
ZEI pmax pmax
comp=Z,19nm,1.1s
KIV Kislovodsk 68.83 310 *c i*P **P 13 44 41.3 +0.8**
KIV *i* 13 44 52.6
KIV *i* 13 45 02.8
KIV pmax pmax
comp=Z,42nm,1.2s
KIV Kislovodsk 68.83 310 *e*P **P 13 44 38.3 -2.2**
comp=Z,35nm,1.1s
KBZ Khabaz 68.83 310 P **P 13 44 40.5 +0.1**
comp=Z,5.4nm,0.9s,baz=79,slow=1.9,SNR=8.0
NEY Neytrino 69.21 309 *i* P **P 13 44 43.6 +0.6**
NEY pmax pmax
comp=Z,2.0nm,1.2s
GNI Garni 69.75 306 P **P 13 44 48.2 +1.8**
comp=Z,4.1nm,0.4s,baz=210,slow=7.8,SNR=4.3
STKA Stephens Creek 71.10 179 P **P 13 44 54.5 +0.2**
comp=Z,3.4nm,0.8s,baz=340,slow=5.6,SNR=8.2
HFS Hagfors 71.54 335 P **P 13 44 56.8 +0.1**
comp=Z,1.5nm,0.4s,baz=42,slow=4.6,SNR=10
NB2 NORSAR Subarra 71.63 337 P **P 13 44 56.8 -0.5**
comp=Z,3.6nm,0.8s,baz=39,slow=6.2
NOA NORSAR Array B 71.63 337 P **P 13 44 57.4 0.0**
comp=Z,1.2nm,0.8s,baz=52,slow=7.1,SNR=6.4
NOA LR LR 14 19 39.1
comp=Z,34nm,18.9s,baz=35,slow=39
FFC Flin Flon 71.88 33 *e*P **P 13 44 59.9 +1.0**
FFC pmax pmax
comp=Z,6.0nm,1.0s
FFC Flin Flon 71.88 33 *e*P **P 13 44 59.9 +1.0**
comp=Z,6.5nm,1.0s
AKASG Malin Array Be 71.95 322 P **P 13 44 58.6 -0.7**
comp=Z,1.0nm,0.5s,baz=44,slow=7.3,SNR=5.7
KIEV Kiev 71.96 322 *i* P **P 13 44 58.3 -1.1**
KIEV pmax pmax
comp=Z,6.0nm,1.0s
FCC Fort Churchill 71.99 27 *e*P **P 13 44 58.9 -0.5**
FCC pmax pmax
comp=Z,20nm,1.5s
FCC Fort Churchill 71.99 27 *e*P **P 13 44 58.9 -0.5**
comp=Z,20nm,1.5s
DLMT Dillon 72.94 45 *e*P **P 13 45 05.1 -0.6**
comp=Z,5.2nm,0.9s
NVAR Mina Array Bea 73.93 53 P **P 13 45 13.5 +1.9**
comp=Z,2.7nm,0.9s,baz=289,slow=5.7,SNR=15
IMW Indian Meadow 74.79 45 *e*P **P 13 45 17.9 +1.2**
comp=Z,3.7nm,0.8s
MOOW Moose Ponds 74.99 45 *e*P **P 13 45 18.2 +0.5**
comp=Z,5.0nm,1.2s
HWUT Hardware Ranch 75.93 47 *e*P **P 13 45 23.3 +0.2**
comp=Z,5.4nm,1.0s
BUR08 Bucovina Ar. S 75.96 321 *e*P **P 13 45 23.0 0.0**
BURAR Bucovina Array 75.97 321 ⇓*i*P **P 13 45 24.1 +1.0**
BURAR Bucovina Array 75.97 321 ⇓P **P 13 45 24.1 +1.0**
TESR Tescani 76.03 319 ⇑*i*P **P 13 45 25.8 +2.5**
DUG Dugway, Tooele 76.12 49 *e*P **P 13 45 21.1 -3.1**
DUG pmax pmax
comp=Z,4.0nm,0.9s
DUG Dugway, Tooele 76.12 49 *e*P **P 13 45 21.1 -3.1**
comp=Z,3.6nm,0.9s
BW06 Boulder Array 76.29 46 *e*P **P 13 45 25.5 +0.3**
comp=Z,3.2nm,0.8s
PDAR Pinedale Array 76.29 46 P **P 13 45 26.1 +0.9**
comp=Z,2.0nm,0.7s,baz=261,slow=2.6,SNR=18
VRI Vrincioaia 76.43 319 ⇑*i*P **P 13 45 29.0 +3.4**
VRI Vrincioaia 76.43 319 ⇑P **P 13 45 29.0 +3.4**
OJC Ojcow 76.62 325 *e*P **P 13 45 27.2 +0.6**
OJC pmax pmax
comp=Z,11nm,0.8s
OJC Ojcow 76.62 325 *e*P **P 13 45 27.1 +0.6**
comp=Z,10nm,0.8s
BRTR Keskin Array B 76.75 311 P **P 13 45 27.8 +0.1**
comp=Z,1.7nm,0.6s,baz=91,slow=4.9,SNR=12
CRVS Cervenica-Dubn 76.83 324 *e*P **P 13 45 29.5 +1.6**
CRVS Cervenica-Dubn 76.83 324 *e*P **P 13 45 29.5 +1.6**
IMU Iron Mountain 76.93 51 *e*P **P 13 45 30.2 +1.4**
DOPR Dopca 77.03 320 ⇓*i*P P 13 45 20.0 -9.1
MLR Muntele Rosu 77.09 319 ⇓*i*P **P 13 45 32.5 +3.0**
MLR Muntele Rosu 77.09 319 ⇓P **P 13 45 32.5 +3.0**
BR231 Keskin MP Arra 77.18 311 *e*P **P 13 45 28.5 -1.6**
VOIR 77.58 319 ⇑*i*P **P 13 45 34.2 +2.0**
VOIR 77.58 319 ⇑P **P 13 45 34.2 +2.0**
DRGR 77.77 322 ⇑*i*P **P 13 45 36.3 +3.1**
DRGR 77.77 322 ⇑P **P 13 45 36.3 +3.1**
MORC Moravsky Berou 77.93 326 ⇑*i*P **P 13 45 35.2 +1.2**
MORC Moravsky Berou 77.93 326 ⇑P **P 13 45 35.2 +1.2**
DPC Dobruska-Polom 78.01 327 *e*P **P 13 45 35.4 +1.0**
DPC Dobruska-Polom 78.01 327 *e*P **P 13 45 35.4 +1.0**
UPC Upice 78.02 328 *e*P **P 13 45 35.4 +1.0**
UPC Upice 78.02 328 *e*P **P 13 45 35.4 +1.0**
KRLC Kraliky 78.03 327 *e*P **P 13 45 35.1 +0.6**
KRLC Kraliky 78.03 327 *e*P **P 13 45 35.1 +0.6**
CLL Collm 78.61 330 ⇓*i*P **P 13 45 38.8 +1.1**
comp=Z,8.0nm,1.2s
CLL Collm 78.61 330 ⇓*i*P **P 13 45 38.8 +1.1**
CLL pmax pmax
comp=Z,8.0nm,1.2s
BZS Buzias 79.14 321 ⇓*i*P **P 13 45 43.0 +2.3**
BZS Buzias 79.14 321 ⇓P **P 13 45 43.0 +2.3**
ASF Jabal al Asfar 79.63 303 P **P 13 45 43.9 +0.2**
comp=Z,1.7nm,0.6s,baz=101,slow=6.2,SNR=3.2
MDVR Moldovita 79.70 321 ⇑*i*P P 13 45 49.0 +5.2
MMAI Mount Meron Ar 80.04 305 P **P 13 45 46.6 +0.7**
comp=Z,1.0nm,0.4s,baz=40,slow=6.6,SNR=4.4
KHC Kasperske Hory 80.09 328 *e*P **P 13 45 44.5 -1.3**
KHC Kasperske Hory 80.09 328 *e*P **P 13 45 44.5 -1.3**
GERES GERESS Array B 80.26 328 P **P 13 45 46.4 -0.5**
comp=Z,0.4nm,0.4s,baz=28,slow=6.0,SNR=7.1
SDCO Great Sand Dun 81.98 47 *e*P **P 13 45 55.9 -0.6**
comp=Z,4.0nm,1.3s
PDG Podgorica 82.64 320 ⇓*i*P **P 13 45 59.7 +0.3**
ANMO Albuquerque 83.38 50 *ce*P **P 13 46 04.8 +1.1**
ANMO pmax pmax
comp=Z,3.0nm,1.2s
LAST Lasithi 84.60 312 ⇓*i*P **P 13 46 09.6 -0.2**
TXAR Lajitas Array 89.01 52 P **P 13 46 32.5 +1.1**
comp=Z,1.2nm,0.8s,baz=303,slow=3.7,SNR=12
TORD Torodi Ar. Bea 115.13 315 PKP **PKPdf 13 52 18.9 +1.0**
comp=Z,0.2nm,0.4s,baz=33,slow=2.2,SNR=2.6
DBIC Dimbokro 124.04 317 PKP **PKPdf 13 52 36.4 +1.4**
comp=Z,5.3nm,0.9s,baz=7.3,slow=4.5,SNR=3.6
SNAA Sanae 143.00 198 PKP **PKPdf 13 53 05.6 -3.1**
VNA3 Neumayer Olymp 144.86 196 PKP **PKPab 13 53 11.1 0.0**
LPAZ La Paz 145.81 55 PKPbc **PKPab 13 53 17.0 +0.2**
comp=Z,2.6nm,0.7s,baz=347,slow=4.7,SNR=11
LPAZ La Paz 145.81 55 PKP2 **PKPab 13 53 17.0 +0.2**
LPAZ pmax pmax
comp=Z,3.0nm,0.7s

NIED ***27*** *13:44:00,40°.20N×144°.30E,h5km,Mw3.9 Best double couple: M₀7.61000×10¹⁴ NP1:φ₀=358.00000°, δ34.00000°, λ-93.00000°. NP2:φ₀=182.00000°, δ56.00000°, λ-88.00000°.*
IDC ***27*** *13:44:53.8±1.1,40°.09N×144°.49E,h0km,mb3.9/12, mb1 3.9/16,mb1mx3.7/45,mbtmp3.8/16,ML3.2/4,MS3.0/5, Ms1 3.0/5,ms1mx2.6/46,Error ellipse: s-maj=23.8km s-min=20.3km az=120.0*
ISCJB ***27*** *13:44:56.2±1.3,40°.20N±0°.03×144°.37E±0°.05, h28km±11km,mb3.9/15,MS3.2/1,Error ellipse: s-maj=6.7km s-min=3.7km az=30.3*
JMA ***27*** *13:44:56.9±0.2,40°.18N×144°.33E,h43km,M3.9*
NEIC ***27*** *13:44:59.2±0.8,40°.16N×144°.28E,h35km,mb4.2/3,Error ellipse: s-maj=16.5km s-min=9.9km az=115.0*
ISC 27 13:44:58.2±3.3, 40°.23N±0°.04×144°.31E±0°.05, h28km±24km, n42,σ1§43/56, mb3.9/15, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.90**	**262**	P	Pn	13 45 27.8	-0.8
JTH				*e*S	**Sn**	**13 45 50.9**	**-0.6**
ERM	**Erimo**	**1.98**	**334**	*e*Pn	Pn	13 45 29.6	-0.1
ERM				*e*Sn	**Sn**	**13 45 55.6**	**+1.9**
JEM	**Erimo**	**1.98**	**334**	P	**Pn**	**13 45 30.0**	**+0.2**
JEM				*e*S	**Sn**	**13 45 54.5**	**+0.8**
MIYJ	**Miyakonagasawa**	**2.02**	**252**	P	Pn	13 45 29.8	-0.5
MIYJ				*e*S	**Sn**	**13 45 53.8**	**-0.8**
JANG	**Nango**	**2.14**	**275**	P	Pn	13 45 31.7	-0.3
JANG				*e*S	**Sn**	**13 45 57.0**	**-0.5**
JNBK	**Urakawa-nobuka**	**2.36**	**331**	P	**Pn**	**13 45 35.8**	**+0.8**
JNBK				*e*S	**Sn**	**13 46 05.2**	**+2.3**
JOM	**Ohasama**	**2.44**	**253**	P	**Pn**	**13 45 36.1**	**0.0**
JOM				*e*S	**Sn**	**13 46 05.0**	**0.0**
JCH	**Churui**	**2.48**	**344**	P	**Pn**	**13 45 36.5**	**-0.2**
JCH				*e*S	**Sn**	**13 46 06.4**	**+0.3**
JMK	**Ichinoseki**	**2.71**	**243**	P	**Pn**	**13 45 39.1**	**-0.6**
JMK				S	**Sn**	**13 46 10.0**	**-1.5**
JOT	**Ohata**	**2.73**	**296**	P	**Pn**	**13 45 40.7**	**+0.7**
JOT				S	**Sn**	**13 46 12.9**	**+0.9**
JAK	**Akkeshi**	**2.78**	**6**	P	**Pn**	**13 45 40.0**	**-0.7**
JAK				*e*S	**Sn**	**13 46 12.0**	**-1.3**
JKB	**Kayabe**	**2.98**	**305**	P	**Pn**	**13 45 44.6**	**+1.2**
JKB				S	**Sn**	**13 46 19.2**	**+1.0**
JAR	**Ashorobuto**	**3.09**	**353**	P	Pn	13 45 44.3	-0.7
JAR				S	**Sn**	**13 46 20.2**	**-0.8**
JFR	**Furan**	**3.20**	**337**	P	**Pn**	**13 45 46.6**	**+0.1**
JFR				S	**Sn**	**13 46 23.8**	**+0.1**
NEM2	**Nemuro 2**	**3.31**	**18**	P	Pn	13 45 46.2	-1.8
NEM2				*e*S	**Sn**	**13 46 23.4**	**-3.0**
JYK	**Kaneyama**	**3.32**	**248**	P	**Pn**	**13 45 48.2**	**0.0**
JYK				S	**Sn**	**13 46 27.2**	**+0.5**
JEW	**Eniwo**	**3.37**	**322**	P	**Pn**	**13 45 50.6**	**+1.7**
JEW				*e*S	**Sn**	**13 46 30.3**	**+2.3**
JTKR	**Abashiri--Toko**	**3.75**	**356**	P	**Pn**	**13 45 54.4**	**+0.3**
JTKR				S	**Sn**	**13 46 37.2**	**0.0**
JRA	**Rausu**	**3.75**	**9**	P	**Pn**	**13 45 53.3**	**-0.8**
JRA				*e*S	**Sn**	**13 46 35.2**	**-2.1**
ASAJ	**Asahikawa**	**4.08**	**342**	Pn	**Pn**	**13 45 59.6**	**+0.9**
	2.9nm,0.3s,baz=200,slow=14,SNR=25						
ASAJ				Sn	**Sn**	**13 46 45.0**	**-0.5**
	3.0nm,0.3s,baz=38,slow=32,SNR=4.5						
ASAJ	**Asahikawa**	**4.08**	**342**	*e*Pn	**Pn**	**13 45 59.2**	**+0.5**
ASAJ				*e*Sn	**Sn**	**13 46 47.4**	**+1.8**
MAJO	**Matsushiro**	**6.04**	**234**	*e*Pn	Pn	13 46 23.9	-1.7
	8.8nm,0.6s						
MAJO				*e*Sn	**Sn**	**13 47 35.5**	**+1.7**
MJAR	**Matsushiro Arr**	**6.04**	**234**	Pn	**Pn**	**13 46 25.8**	**+0.1**
	0.9nm,0.3s,baz=52,slow=11,SNR=12						
MJAR				Sn	**Sn**	**13 47 38.9**	**+5.1**
	0.3nm,0.3s,baz=72,slow=19,SNR=2.5						
MJAR				LR	LR	13 49 01.2	
	comp=Z,114nm,18.0s,baz=45,slow=41						
USRK	**Ussuriysk Ar.**	**9.96**	**297**	Pn	**Pn**	**13 47 22.4**	**+3.1**
	0.5nm,0.3s,baz=97,slow=16,SNR=9.5						
KLR	**Kul'dur**	**12.66**	**319**	Pn	**Pn**	**13 47 57.0**	**+0.9**
	0.1nm,0.3s,baz=122,slow=14,SNR=6.2						
KLR				LR	LR	13 53 00.8	
	comp=Z,45nm,18.1s,baz=118,slow=38						
JNU	**Nakatsue**	**12.89**	**241**	LR	LR	13 53 56.6	
	comp=Z,44nm,18.2s,baz=120,slow=42						
KSRS	**Korea Array**	**13.07**	**263**	LR	LR	13 52 39.8	
	comp=Z,66nm,20.1s,baz=88,slow=35						
SEY	**Seymchan**	**23.24**	**9**	P	**P**	**13 50 03.7**	**+0.9**
	3.2nm,0.7s,baz=177,slow=6.7,SNR=9.4						
SONM	**Songino Array**	**28.07**	**298**	P	**P**	**13 50 48.7**	**+1.5**
	0.4nm,0.4s,baz=88,slow=11,SNR=4.0						
ZALV	**Zalesovo Beam**	**41.52**	**310**	P	**P**	**13 52 43.8**	**+1.1**
	1.2nm,0.5s,baz=91,slow=8.2,SNR=4.5						
ZALV				PcP	**PcP**	**13 54 40.9**	**+1.2**
	0.9nm,0.4s,baz=108,slow=1.8,SNR=3.2						
MKAR	**Makanchi Array**	**44.42**	**300**	P	**P**	**13 53 07.8**	**+1.6**
	0.9nm,0.5s,baz=83,slow=9.9,SNR=9.1						
MKAR				LR	LR	14 11 47.6	
	comp=Z,27nm,19.1s,baz=88,slow=36						
ILAR	**Eielson Array**	**45.58**	**34**	P	**P**	**13 53 16.0**	**+0.7**
	0.2nm,0.7s,baz=231,slow=6.9,SNR=3.3						
KURK	**Kurchatov**	**45.81**	**306**	*e*P	**P**	**13 53 17.2**	**0.0**
	5.0nm,0.7s						

KURBB	**Kurchatov Arra**	**45.89**	**306**	P	**P**	**13 53 19.2**	**+1.3**
	3.1nm,0.7s,baz=78,slow=8.4,SNR=26						
BVAR	**Borovoye Array**	**50.15**	**311**	P	**P**	**13 53 52.5**	**+1.8**
	0.9nm,0.4s,baz=69,slow=8.1,SNR=7.4						
TKM2	**Tokmak 2**	**50.15**	**297**	*e*P	P	13 53 48.9	-2.4
	0.9nm,0.4s						
INK	**Inuvik**	**50.51**	**29**	P	**P**	**13 53 53.9**	**+0.7**
	0.7nm,0.5s,baz=245,slow=2.9,SNR=4.1						
ABKAR	**Akbulak array**	**57.64**	**309**	*e*P	**P**	**13 54 46.6**	**+1.1**
	0.6nm,0.5s						
ASAR	**Alice Springs**	**64.30**	**191**	P	**P**	**13 55 29.9**	**-1.1**
	0.4nm,0.6s,baz=16,slow=5.5,SNR=7.1						
FINES	**FINESS Array B**	**67.03**	**333**	P	**P**	**13 55 49.2**	**+1.1**
	1.2nm,0.6s,baz=66,slow=4.8,SNR=5.6						
NOA	**NORSAR Array B**	**72.09**	**338**	P	**P**	**13 56 20.0**	**+0.5**
	0.7nm,0.8s,baz=39,slow=6.2,SNR=4.0						
AKASG	**Malin Array Be**	**73.13**	**323**	P	**P**	**13 56 26.9**	**+1.2**
	0.6nm,0.4s,baz=45,slow=5.8,SNR=5.4						

*NEIC **27** 13:46:17.8, 17°.34N×94°.45W, h208km, MD4.1(MEX), After MEX.*

MEX 27 13:46:17.8±0.8, 17°.34N×94°.45W, h208km±21km, MD4.1, Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		**2.01**	**144**	*e*P	Pn	13 46 56.1	-1.0
PCIG				*e*S	S	13 47 24.9	-2.3
PCIG		**2.01**	**144**	*e*P	Pn	13 46 56.1	-1.0
PCIG				*e*S	S	13 47 24.9	-2.3
VHO	**Vista Hermosa**	**2.20**	**263**	*e*P	Pn	13 46 58.0	-1.2
VHO				*e*S	S	13 47 30.1	-0.9
VHO	**Vista Hermosa**	**2.20**	**263**	*e*P	Pn	13 46 58.0	-1.2
VHO				*e*S	S	13 47 30.1	-0.9
HUIG	**Huatulco**	**2.23**	**226**	*e*P	Pn	13 46 57.3	-2.1
HUIG				*e*S	S	13 47 30.2	-1.2
HUIG	**Huatulco**	**2.23**	**226**	*e*P	Pn	13 46 57.3	-2.1
HUIG				*e*S	S	13 47 30.2	-1.2
TEIG	**Tepich**	**6.51**	**63**	*e*Pn	Pn	13 47 46.1	-5.7

IDC 27 13:47:13.8±1.6, 56°.20S×146°.68E, h0km, mb3.8/4, mb1 4.0/4, mb1mx3.9/20, mbtmp3.8/4, MS3.7/3, Ms1 3.7/3, ms1mx3.3/25, Error ellipse: s-maj=165.1km s-min=23.5km az=79.0, West of Macquarie Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VNDA	**Vanda**	**22.07**	**171**	P	P	13 52 09.3	-0.5
	2.2nm,0.9s,baz=336,slow=9.1,SNR=6.2						
STKA	**Stephens Creek**	**24.58**	**350**	P	P	13 52 35.8	+0.5
	1.7nm,0.9s,baz=154,slow=12,SNR=5.2						
URZ	**Urewera**	**27.04**	**61**	LR	LR	14 02 18.3	
	comp=Z,172nm,21.0s,baz=223,slow=34						
H01W1	**Cape Leeuwin H**	**30.73**	**300**	T	T	14 26 03.7	
	baz=143,slow=75,SNR=504						
H01W2	**Cape Leeuwin H**	**30.74**	**300**	T	T	14 26 06.8	
	baz=143,slow=75,SNR=557						
H01W3	**Cape Leeuwin H**	**30.75**	**300**	T	T	14 26 04.9	
	baz=143,slow=75,SNR=516						
ASAR	**Alice Springs**	**33.83**	**339**	P	P	13 53 57.6	-0.1
	0.7nm,0.5s,baz=162,slow=9.1,SNR=18						
ASAR				PcP	PcP	13 56 36.8	+0.1
	0.5nm,0.8s,baz=155,slow=3.9,SNR=8.5						
WRA	**Warramunga Arr**	**37.37**	**341**	P	P	13 54 27.1	-0.9
	2.1nm,0.6s,baz=165,slow=7.6,SNR=25						
WRA				PcP	PcP	13 56 46.5	-0.6
	0.3nm,0.5s,baz=152,slow=3.0,SNR=5.8						
HNR	**Honiara**	**47.80**	**18**	LR	LR	14 11 43.3	
	comp=Z,55nm,18.8s,baz=183,slow=31						
H08S2	**Diego Garcia H**	**74.90**	**279**	T	T	15 21 18.9	
	baz=147,slow=76,SNR=10						
H08S1	**Diego Carcia H**	**74.91**	**279**	T	T	15 21 18.4	
	baz=147,slow=76,SNR=6.6						
H08S3	**Diego Garcia H**	**74.92**	**279**	T	T	15 21 23.8	
	baz=147,slow=76,SNR=6.2						
H08N1	**Diego Carcia H**	**76.79**	**278**	T	T	15 23 48.8	
	baz=138,slow=75,SNR=54						
H08N3	**Diego Garcia H**	**76.80**	**278**	T	T	15 23 51.4	
	baz=138,slow=75,SNR=30						
H08N2	**Diego Garcia H**	**76.81**	**278**	T	T	15 23 50.5	
	baz=138,slow=75,SNR=48						
PALK	**Pallekele**	**83.03**	**294**	LR	LR	14 28 15.4	
	comp=Z,50nm,20.4s,baz=115,slow=30						
FINES	**FINESS Array B**	**149.77**	**305**	PKPbc	PKPbc	14 07 04.2	+0.1
	0.9nm,0.5s,baz=255,slow=3.7,SNR=6.2						
GERES	**GERESS Array B**	**150.96**	**275**	PKPbc	PKPbc	14 07 07.3	-0.2
	0.8nm,0.8s,baz=168,slow=2.6,SNR=4.8						
ARCES	**ARCESS Array B**	**151.41**	**321**	PKPbc	PKPbc	14 07 07.7	-0.1
	2.7nm,0.9s,baz=56,slow=3.1,SNR=15						

*MOS **27** 13:49:10.0±1.6, 54°.53N×110°.86E, h10km, mb4.5/1, Error ellipse: s-maj=11.0km s-min=6.2km az=69.0*
*IDC **27** 13:49:10.5±1.1, 54°.75N×110°.25E, h0km, mb3.6/4, mb1 3.7/8, mb1mx3.5/46, mbtmp3.6/8, ML3.5/3, Error ellipse: s-maj=29.4km s-min=18.0km az=130.0*
*BYKL **27** 13:49:12.1±0.2, 54°.57N×110°.79E, h11km±4km*

ISC 27 13:49:11.2±1.0, 54°.54N±0°.02×110°.83E±0°.02, h8km±7km, n66, σ2°35/109, mb3.4/5, 6C-6D, Lake Baykal region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YLYR	**Ulyunkhan**	**0.39**	**30**	⇓*i*Pg	**Pg**	**13 49 19.2**	**+0.5**
	333nm,0.2s						
YLYR				⇓*i*Pg	**Pg**	**13 49 19.2**	**+0.5**
	370nm,0.2s						
YLYR				⇓*i*Pg	**Pg**	**13 49 19.2**	**+0.5**
	592nm,0.2s						
YLYR				Pmax		13 49 19.3	
	629nm,0.2s						
YLYR				*e*Sg	**Sg**	**13 49 24.4**	**+0.6**
YLYR				Smax		13 49 24.5	
	5μm,0.3s						
YLYR	**Ulyunkhan**	**0.39**	**30**	⇓*i*PG	**Pg**	**13 49 19.2**	**+0.5**
YLYR				*e*		13 49 23.9	
YLYR				pmax	pmax		
	comp=Z,581nm,0.2s						
YLYR				smax	smax		
	comp=E,5μm,0.3s						
SYVR	**Suvo**	**1.01**	**209**	*e*Pg	**Pg**	**13 49 31.0**	**+0.4**
SYVR				*e*Pb	**Pn**	**13 49 33.1**	**+1.4**
SYVR				max		13 49 33.4	
	comp=E,286nm,0.6s						
SYVR				*e*		13 49 37.3	
SYVR				*e*Sg	**Sb**	**13 49 45.0**	**+0.6**
SYVR				Smax		13 49 50.0	
	comp=E,3μm,0.6s						
SYVR	**Suvo**	**1.01**	**209**	*e*PG	**Pb**	**13 49 31.4**	**+0.4**
SYVR				*e*		13 49 45.4	
SYVR				pmax	pmax		
	comp=Z,291nm,0.4s						
SYVR				smax	smax		
	comp=E,3μm,0.5s						
KMO	**Kumora**	**1.36**	**9**	⇑*i*Pg	**Pn**	**13 49 36.0**	**-0.5**
KMO				*e*		13 49 39.8	
KMO				max		13 49 43.4	
	comp=E,591nm,0.3s						
KMO				*e*Sg	**Sn**	**13 49 54.5**	**-0.3**
KMO				*e*		13 49 58.1	
KMO				max		13 49 58.5	
	comp=E,6μm,0.4s						
KMO	**Kumora**	**1.36**	**9**	⇑*i*PG	**Pn**	**13 49 36.0**	**-0.5**
KMO				*e*		13 49 54.4	
KMO				pmax	pmax		
	comp=Z,380nm,0.3s						
KMO				smax	smax		
	comp=E,7μm,1.0s						
NIZ	**Nizh Angarsk**	**1.44**	**330**	⇑*i*Pg	**Pn**	**13 49 37.6**	**+0.1**
NIZ				Pmax		13 49 38.1	
	comp=E,863nm,0.3s						
NIZ				*e*		13 49 43.9	
NIZ				*e*Sg	**Sb**	**13 49 56.8**	**+0.1**
NIZ				*e*Sb	**Sg**	**13 49 58.9**	**+1.5**
NIZ				max		13 49 59.8	
	comp=E,4μm,0.5s						
NIZ	**Nizh Angarsk**	**1.44**	**330**	*e*PG	**Pn**	**13 49 37.4**	**-0.1**
NIZ				*e*		13 49 56.6	
NIZ				pmax	pmax		
	comp=Z,645nm,0.3s						
NIZ				smax	smax		
	comp=N,4μm,0.4s						
YOA	**Uoyan**	**1.67**	**17**	*e*Pg	**Pb**	**13 49 42.2**	**0.0**
YOA				*e*		13 49 50.0	
YOA				max		13 49 53.1	
	comp=N,871nm,0.4s						
YOA				*e*Sg	**Sg**	**13 50 04.7**	**-0.2**
YOA				*e*		13 50 12.7	
YOA				max		13 50 16.9	
	comp=N,9μm,0.9s						
YOA	**Uoyan**	**1.67**	**17**	*e*PN	**Pb**	**13 49 41.9**	**-0.3**
YOA				*e*		13 50 05.2	
YOA				pmax	pmax		
	comp=Z,520nm,0.2s						
YOA				smax	smax		
	comp=N,9μm,0.5s						
UKT	**Uakit**	**1.87**	**58**	⇓*i*Pg	**Pb**	**13 49 45.0**	**-0.6**
UKT				Pmax		13 49 46.3	
	comp=N,274nm,0.4s						
UKT				*e*		13 49 50.4	
UKT				*e*Sg	**Sg**	**13 50 10.7**	**-0.5**
UKT				Smax		13 50 12.6	
	comp=N,3μm,0.4s						
UKT	**Uakit**	**1.87**	**58**	*e*PN	**Pb**	**13 49 45.3**	**-0.3**
OGRR	**Ongureny**	**2.11**	**246**	*e*Pg	**Pb**	**13 49 50.0**	**+0.4**
OGRR				*e*		13 49 51.2	
OGRR				max		13 49 55.5	
	comp=N,249nm,0.8s						
OGRR				*e*Sg	**Sg**	**13 50 18.0**	**-0.8**
OGRR				Smax		13 50 19.1	
	comp=N,1μm,0.8s						
OGRR				*e*		13 50 20.7	
OGRR	**Ongureny**	**2.11**	**246**	*e*PN	**Pn**	**13 49 48.3**	**+1.6**
OGRR				*e*		13 49 50.5	
OGRR				*e*		13 50 18.0	
OGRR				pmax	pmax		
	comp=Z,249nm,0.8s						
OGRR				smax	smax		
	comp=N,1μm,1.4s						
SVKR	**Severomuysk**	**2.22**	**44**	*e*Pn	**Pb**	**13 49 50.4**	**-1.1**
SVKR				*e*Pg	**Pg**	**13 49 52.0**	**-1.7**
SVKR				*e*		13 49 57.0	
SVKR				max		13 49 57.4	
	comp=N,891nm,0.4s						
SVKR				*e*Sg	**Sg**	**13 50 22.5**	**+0.1**
SVKR				Smax		13 50 24.2	
	comp=N,5μm,0.9s						
SVKR	**Severomuysk**	**2.22**	**44**	*e*PN	**Pg**	**13 49 54.6**	**+0.9**
SVKR				*e*		13 50 22.2	
SVKR				pmax	pmax		
	comp=Z,895nm,0.6s						
SVKR				smax	smax		
	comp=N,5μm,0.9s						
ZRHB	**Zarechye**	**2.96**	**229**	*e*Pn	**Pn**	**13 49 59.8**	**+1.3**
ZRHB				*e*Pg	**Pb**	**13 50 04.9**	**+0.7**
ZRHB				Pmax		13 50 12.4	
	comp=N,157nm,0.8s						
ZRHB				*e*Sg	**Sg**	**13 50 44.8**	**-1.5**
ZRHB				Smax		13 51 04.9	
	comp=N,1μm,1.1s						
CIT	**Chita**	**3.01**	**146**	*e*Pg	**Pb**	**13 50 06.1**	**+1.1**
CIT				*e*		13 50 25.7	
CIT				*e*Sg	**Sg**	**13 50 46.8**	**-1.0**
CIT				Smax		13 50 55.8	
	comp=N,2μm,0.4s						
CIT	**Chita**	**3.01**	**146**	*e*PN	**Pb**	**13 50 05.9**	**+0.9**
CIT				*e*		13 50 46.1	
CIT				pmax	pmax		
	comp=Z,176nm,0.4s						
CIT				smax	smax		
	comp=E,2μm,0.4s						
TRG	**Tyrgan**	**3.21**	**238**	⇓*i*Pn	**Pn**	**13 50 03.1**	**+1.2**
TRG				*e*Pg	**Pb**	**13 50 08.4**	**0.0**
TRG				*e*		13 50 18.2	
TRG				max		13 50 21.2	
	comp=E,51nm,0.3s						
TRG				*e*Sg	**Sb**	**13 50 50.6**	**+3.0**
TRG				Smax		13 50 53.7	
	comp=E,292nm,0.4s						
TRG	**Tyrgan**	**3.21**	**238**	*e*PN	**Pn**	**13 50 03.2**	**+1.3**
TRG				*e*		13 50 09.6	
TRG				*e*S	**Sn**	**13 50 40.6**	**+0.3**
TRG				*e*		13 50 49.8	
TRG				pmax	pmax		
	comp=Z,52nm,0.3s						
TRG				smax	smax		
	comp=N,294nm,0.4s						
UUDB	**Ulan-Yde**	**3.29**	**217**	*e*Pn	**Pn**	**13 50 04.5**	**+1.5**
UUDB				*e*Pg	**Pb**	**13 50 11.5**	**+1.8**
UUDB				Pmax		13 50 18.8	
	comp=N,109nm,0.5s						
UUDB				*e*		13 50 37.4	
UUDB				*e*Sg	**Sg**	**13 50 55.7**	**-1.0**
UUDB				Smax		13 51 04.3	
	comp=N,406nm,0.9s						
NLYR	**Nelyaty**	**3.39**	**53**	*e*PN	**Pn**	**13 50 05.4**	**+1.0**
NLYR				*e*		13 50 56.6	
NLYR				pmax	pmax		
	comp=Z,98nm,0.7s						
NLYR				smax	smax		
	comp=N,993nm,0.9s						
KAB	**Kabansk**	**3.54**	**227**	*e*Sg	**Sg**	**13 51 03.1**	**-1.6**
KAB				Smax		13 51 40.8	
	comp=N,1μm,0.9s						
BOD	**Bodaibo**	**3.73**	**27**	*e*Pn	**Pn**	**13 50 11.0**	**+2.0**
BOD				*e*Pg	**Pb**	**13 50 17.5**	**+0.2**
BOD				Pmax		13 50 28.7	
	comp=N,41nm,0.4s						
BOD				*e*		13 50 46.2	
BOD				*e*Sg	**Sb**	**13 51 06.1**	**+3.5**
BOD				Smax		13 51 09.7	
	comp=N,246nm,0.5s						
HRMR	**Khuramsha**	**3.74**	**220**	*e*Pn	**Pn**	**13 50 10.7**	**+1.5**
HRMR				*e*Pg	**Pb**	**13 50 19.3**	**+1.9**
HRMR				Pmax		13 50 27.3	
	comp=N,110nm,0.5s						
HRMR				*e*		13 50 47.5	
HRMR				*e*Sg	**Sg**	**13 51 09.3**	**-1.9**
HRMR				Smax		13 51 15.4	
	comp=N,996nm,0.7s						
HRMR				*e*		13 51 22.3	
LSTR	**Listvyanka**	**4.49**	**236**	*e*Pn	**Pn**	**13 50 20.5**	**+1.0**
LSTR				*e*		13 50 28.6	
LSTR				max		13 50 44.9	
	comp=N,20nm,0.7s						
LSTR				*e*		13 51 05.6	
LSTR				*e*Sg	**Sb**	**13 51 30.3**	**+5.8**
LSTR				Smax		13 51 35.4	
	comp=N,212nm,1.4s						
IRK	**Irkutsk**	**4.55**	**242**	*e*	**Pn**	**13 50 23.0**	**+2.7**
IRK				*e*		13 51 02.9	
IRK				*e*Sg	**Sg**	**13 51 33.0**	**-4.2**
IRK				Smax		13 51 52.1	
	comp=N,579nm,0.6s						
IRK	**Irkutsk**	**4.55**	**242**	*e*PN	**Pn**	**13 50 22.5**	**+2.2**
IRK				*e*		13 50 34.0	
IRK				*e*		13 51 31.2	
IRK				pmax	pmax		
	comp=Z,114nm,0.2s						
IRK				smax	smax		
	comp=E,550nm,0.4s						
CRS	**Chara**	**4.82**	**58**	*e*Pn	**Pn**	**13 50 25.0**	**+0.9**
CRS				*e*		13 50 30.2	
CRS				*e*Pg	**Pb**	**13 50 38.3**	**+2.4**
CRS				Pmax		13 50 38.7	
	comp=E,51nm,0.9s						
CRS				*e*Sg	**Sg**	**13 51 42.1**	**-3.8**
CRS				Smax		13 51 50.3	
	comp=E,375nm,1.6s						
CRS	**Chara**	**4.82**	**58**	*e*PN	**Pb**	**13 50 38.9**	**+3.0**
CRS				*e*		13 51 41.3	
CRS				pmax	pmax		
	comp=Z,66nm,1.0s						
CRS				smax	smax		
	comp=E,304nm,1.0s						
KPC	**Khapcheranga**	**4.94**	**168**	*e*Pn	**Pn**	**13 50 26.4**	**+0.7**
KPC				*e*		13 50 30.9	
KPC				Pg	**Pb**	**13 50 40.7**	**+2.8**
KPC				Pmax		13 50 50.9	
	comp=E,31nm,0.6s						
KPC				*e*Sg	**Sg**	**13 51 45.8**	**-3.9**
KPC				Smax		13 51 56.3	
	comp=E,443nm,1.1s						
KPC	**Khapcheranga**	**4.94**	**168**	*e*PN	**Pn**	**13 50 26.5**	**+0.7**
KPC				*e*		13 50 41.3	
KPC				*e*		13 51 46.6	
KPC				pmax	pmax		
	comp=Z,31nm,0.5s						
KPC				smax	smax		
	comp=E,452nm,1.1s						
TLY	**Talaya**	**5.19**	**239**	*e*Pn	**Pn**	**13 50 29.7**	**+0.7**
TLY				*e*		13 50 37.2	
TLY				Pg	**Pb**	**13 50 43.8**	**+1.7**
TLY				Pmax		13 50 57.5	
	comp=E,19nm,0.8s						
TLY				*e*Sg	**Sb**	**13 51 51.3**	**+6.7**
TLY				Smax		13 51 56.7	
	comp=E,147nm,1.0s						
TLY	**Talaya**	**5.19**	**239**	*c i*PN	**Pn**	**13 50 29.8**	**+0.7**
TLY				*e*		13 50 45.7	
TLY				*e*		13 51 51.6	
TLY				pmax	pmax		
	comp=Z,10.0nm,0.4s						
TUP	**Tupik**	**5.32**	**88**	⇑*i*Pn	**Pn**	**13 50 32.0**	**+1.1**
TUP				*e*		13 50 36.3	
TUP				Pg	**Pb**	**13 50 48.1**	**+3.7**
TUP				Pmax		13 50 56.3	
	comp=Z,30nm,0.6s						
TUP				*e*Sn	**Sn**	**13 51 31.9**	**-0.5**
TUP				*e*Sg	**Sg**	**13 51 58.3**	**-3.7**
TUP				Smax		13 52 03.4	
	comp=Z,918nm,0.8s						
TUP				*e*		13 52 06.0	
TUP	**Tupik**	**5.32**	**88**	*e*PN	**Pn**	**13 50 31.8**	**+0.9**
TUP				*e*		13 50 48.0	
TUP				*e*S	**Sn**	**13 51 32.5**	**+0.1**
TUP				*e*		13 51 57.4	
TUP				pmax	pmax		
	comp=Z,29nm,0.4s						
TUP				smax	smax		
	comp=N,918nm,0.8s						
ARS	**Arshan**	**5.69**	**246**	*e*Pn	**Pn**	**13 50 38.2**	**+2.2**
ARS				*e*		13 50 46.9	
ARS				Pg	**Pb**	**13 50 53.9**	**+2.6**
ARS				Pmax		13 51 09.4	
	comp=N,53nm,0.6s						
ARS				*e*		13 51 43.2	
ARS				*e*Sg	**Sb**	**13 52 06.7**	**+7.7**
ARS				Smax		13 52 12.7	
	comp=N,520nm,0.7s						
ARS	**Arshan**	**5.69**	**246**	*e*PN	**Pb**	**13 50 55.1**	**+4.4**
ZAK	**Zakamensk**	**6.21**	**231**	*e*	**Pg**	**13 51 06.0**	**-4.1**
ZAK				max		13 51 20.8	
	comp=N,8.0nm,0.5s						
ZAK				*e*		13 52 22.7	
ZAK				*e*Sg	**Sg**	**13 52 25.9**	**-4.7**
ZAK				Smax		13 52 30.4	
	comp=N,71nm,1.4s						
ZAK	**Zakamensk**	**6.21**	**231**	*e*Pn	**Pn**	**13 50 45.2**	**+2.0**
ZAK				*e*		13 52 26.9	
ZAK				pmax	pmax		
	comp=Z,8.0nm,0.5s						
ZAK				smax	smax		
	comp=E,72nm,1.4s						
MOY	**Mondy**	**6.58**	**248**	*e*Pn	**Pn**	**13 50 47.9**	**-0.4**
MOY				*e*		13 50 58.6	
MOY				max		13 51 21.8	
	comp=E,30nm,1.1s						
MOY				*e*Sn	**Sn**	**13 52 00.3**	**-3.3**
MOY				*e*Sg	**Sg**	**13 52 34.3**	**-8.1**
MOY				Smax		13 52 43.2	
	comp=E,288nm,1.1s						
MOY	**Mondy**	**6.58**	**248**	*e*PN	**Pn**	**13 50 48.4**	**+0.1**
MOY				*e*		13 51 09.4	
MOY				*e*S	**Sn**	**13 52 02.8**	**-0.8**
MOY				*e*		13 52 36.5	
MOY				pmax	pmax		
	comp=Z,31nm,1.0s						
MOY				smax	smax		
	comp=E,289nm,1.2s						
ORL	**Orlik**	**6.87**	**257**	⇑*i*Pn	**Pn**	**13 50 53.9**	**+1.7**
ORL				max		13 51 02.8	
	comp=E,51nm,1.0s						
ORL				*e*		13 52 10.5	
ORL				*e*Sg	Sg	13 52 42.9	-8.5
ORL				Smax		13 52 58.4	
	comp=E,201nm,1.4s						
ORL	**Orlik**	**6.87**	**257**	*e*PN	**Pn**	**13 50 53.9**	**+1.7**
ORL				*e*		13 51 15.5	
ORL				*e*S	**Sn**	**13 52 10.2**	**-0.3**
ORL				*e*		13 52 43.2	
ORL				pmax	pmax		
	comp=Z,51nm,1.0s						
ORL				smax	smax		
	comp=N,203nm,1.2s						
ULN	**Ulaanbaatar**	**7.09**	**201**	*e*	Sn	13 52 25.9	+10
ULN				*e*Sg	**Sg**	**13 52 52.6**	**-6.2**
ULN				*e*		13 52 55.7	
ULN	**Ulaanbaatar**	**7.09**	**201**	*e*PN	**Pn**	**13 50 56.7**	**+1.3**
SONM	**Songino Array**	**7.27**	**204**	Pn	**Pn**	**13 50 59.2**	**+1.4**
	comp=N,0.9nm,0.3s,baz=23,slow=12,SNR=8.3						
SONM				Pg	Pg	13 51 25.6	-4.7
	comp=N,1.0nm,0.3s,baz=14,slow=16,SNR=6.8						
SONM				Lg	Lg	13 53 00.9	
	comp=N,3.4nm,0.3s,baz=20,slow=27,SNR=6.6						
YAK	**Yakutsk**	**12.40**	**45**	Lg	Lg	13 55 39.0	
	comp=N,0.0nm,0.3s,baz=334,slow=23,SNR=1.4						
YAK	**Yakutsk**	**12.40**	**45**	*i* P	**Pn**	**13 52 09.7**	**+2.0**
YAK				pmax	pmax		
	comp=Z,3.0nm,0.8s						
KLR	**Kul'dur**	**13.95**	**104**	Pn	**P**	**13 52 35.3**	**-1.8**
	comp=Z,0.2nm,0.3s,baz=301,slow=16,SNR=5.6						
KLR				Lg	Lg	13 56 30.7	
	comp=Z,0.3nm,0.3s,baz=239,slow=16,SNR=4.7						
KLR	**Kul'dur**	**13.95**	**104**	*i* P	**Pn**	**13 52 30.4**	**+1.4**
ZALV	**Zalesovo Beam**	**15.19**	**278**	Lg	Lg	13 57 04.4	
	comp=Z,0.1nm,0.3s,baz=79,slow=24,SNR=4.0						
HABR	**Khabarovsk**	**16.21**	**102**	*e*P	**Pn**	**13 52 57.4**	**-1.7**
HABR				S	**Sn**	**13 55 57.7**	**-1.2**
HABR				pmax	pmax		
	comp=N,5.0nm,0.7s						
HABR				pmax	pmax		
	comp=Z,6.0nm,1.4s						
HABR				pmax	pmax		
	comp=E,15nm,1.4s						
HABR				MLR	MLR		
	comp=Z,23nm,14.0s						
USRK	**Ussuriysk Ar.**	**17.17**	**118**	Lg	Lg	13 58 20.6	
	comp=Z,0.4nm,0.3s,baz=326,slow=27,SNR=4.3						
TIXI	**Tiksi**	**18.85**	**18**	P	**P**	**13 53 30.0**	**-1.2**
	comp=Z,0.4nm,0.3s,baz=177,slow=15,SNR=4.0						
TIXI				Lg	Lg	13 58 59.5	
	comp=Z,0.3nm,0.3s,baz=178,slow=7.6,SNR=3.8						
TIXI	**Tiksi**	**18.85**	**18**	*i* P	**P**	**13 53 30.5**	**-0.7**
TIXI				pmax	pmax		
	comp=Z,5.0nm,2.0s						
KURK	**Kurchatov**	**19.82**	**272**	P	**P**	**13 53 40.7**	**-1.2**
KURBB	**Kurchatov Arra**	**19.91**	**272**	P	**P**	**13 53 40.6**	**-2.3**
	comp=Z,0.1nm,0.3s,baz=76,slow=8.7,SNR=7.1						
UGL	**Uglegorsk**	**19.97**	**93**	*e*P	**P**	**13 53 42.6**	**-0.9**
UGL				*e*S	**S**	**13 57 27.8**	**-0.2**
BVAR	**Borovoye Array**	**23.71**	**283**	P	**P**	**13 54 19.7**	**-3.6**
	comp=Z,0.4nm,0.4s,baz=60,slow=10,SNR=2.4						
BVAR	**Borovoye Array**	**23.71**	**283**	P	**P**	**13 54 19.7**	**-3.6**
BVAR				pmax	pmax		
	comp=Z,1.0nm,0.5s						
BRVK	**Borovoye**	**23.76**	**283**	*i* P	**P**	**13 54 24.3**	**+0.6**
BRVK				pmax	pmax		
	comp=Z,1.0nm,0.9s						
ILAR	**Eielson Array**	**47.07**	**35**	P	**P**	**13 57 44.1**	**+1.4**
	comp=Z,1.0nm,0.8s,baz=297,slow=6.0,SNR=12						
PDAR	**Pinedale Array**	**77.11**	**29**	P	**P**	**14 01 04.9**	**-0.2**
	comp=Z,0.1nm,0.3s,baz=352,slow=4.6,SNR=3.1						
TORD	**Torodi Ar. Bea**	**90.13**	**293**	P	**P**	**14 02 10.9**	**-1.1**
	comp=Z,0.3nm,0.6s,baz=47,slow=4.1,SNR=2.8						

*ISCJB **27** 13:51:26.6±0.5, 35°.00N×0°.03×139°.48E±0°.04, h32km±3km, mb3.6/6, Error ellipse: s-maj=6.2km s-min=5.0km az=161.8*
*JMA **27** 13:51:26.6, 35°.03N×139°.46E, h33km±1km, M3.4 Broadband fault plane solution: P waves. NP1: φs14.00000°, δ76.00000°, λ36.00000°. NP2:φs274.00000°, δ56.00000°, λ163.00000°. Principal axes: T Plg35.0000°, Azm239.0000°; N Plg52.0000°, Azm33.0000°; P Plg13.0000°, Azm140.

ISC 27 13:51:25.1±0.7, 34°.99N±0°.03×139°.47E±0°.04, h20km±3km, n19, σ0s76/30, mb3.6/6, 3C-6D, Near south coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIM2	**Oshima 3**	**0.28**	**187**	⇓P	**Pn**	**13 51 34.2**	**+0.1**
JIM2				S	**Sn**	**13 51 39.5**	**-0.1**
JYO	**Yokosk**	**0.28**	**34**	⇑P	**Pn**	**13 51 33.8**	**-0.3**
JYO				*e*S	**Sn**	**13 51 39.4**	**-0.3**
KTJJ	**Kamata 2**	**0.34**	**259**	⇓P	**Pn**	**13 51 34.7**	**-0.2**
KTJJ				S	**Sn**	**13 51 40.2**	**-1.0**
JOD2	**Odawara 2**	**0.41**	**311**	⇓P	**Pn**	**13 51 35.1**	**-0.9**
JOD2				S	**Sb**	**13 51 41.1**	**+1.6**
JIZS	**Izushimoda**	**0.56**	**241**	⇑P	**Pn**	**13 51 38.2**	**+0.3**
JIZS				S	**Sn**	**13 51 46.5**	**-0.1**
BSO3	**Boso 3**	**0.87**	**102**	⇓P	**Pn**	**13 51 42.7**	**+0.7**
BSO3				X		13 51 56.2	
JYN	**Shimob**	**0.91**	**304**	⇓P	**Pn**	**13 51 42.8**	**-0.1**
JYN				S	**Sn**	**13 51 54.8**	**-0.6**
SHZ3	**Shizuoka 3**	**1.04**	**274**	⇑P	**Pn**	**13 51 45.8**	**+1.2**
SHZ3				S	**Sn**	**13 51 59.7**	**+1.2**
JRY	**Ryogami san**	**1.12**	**336**	⇓P	**Pb**	**13 51 45.9**	**0.0**
JRY				S	**Sb**	**13 52 00.2**	**+0.1**
MJAR	**Matsushiro Arr**	**1.86**	**327**	P	**Pb**	**13 51 57.6**	**-0.8**
	20nm,0.3s,baz=110,slow=26,SNR=137						
MJAR				S	**Sb**	**13 52 20.6**	**-0.5**
	38nm,0.3s,baz=165,slow=25,SNR=20						
MAT	**Matsushiro**	**1.86**	**327**	P	**Pb**	**13 51 57.8**	**-0.6**
MAT				S	**Sb**	**13 52 21.3**	**+0.1**
JHJ	**Hachijo jima 2**	**1.89**	**172**	P	**Pb**	**13 51 58.4**	**-0.5**
	136nm,0.3s,baz=2.1,slow=2.1,SNR=22						
JHJ				S	**Sb**	**13 52 21.3**	**-0.6**
	110nm,0.3s,baz=125,slow=22,SNR=7.9						
KLR	**Kul'dur**	**15.32**	**341**	P	**P**	**13 55 03.9**	**-0.9**
	0.2nm,0.3s,baz=160,slow=18,SNR=5.6						
MA2	**Magadan**	**25.69**	**13**	P	**P**	**13 56 54.1**	**+0.6**
	1.0nm,0.4s,baz=223,slow=11,SNR=4.1						
MKAR	**Makanchi Array**	**43.90**	**304**	P	**P**	**13 59 30.6**	**+0.4**
	0.4nm,0.5s,baz=89,slow=9.8,SNR=4.3						
KURBB	**Kurchatov Arra**	**46.05**	**309**	P	**P**	**13 59 46.8**	**-0.4**
	0.4nm,0.6s,baz=86,slow=8.5,SNR=5.1						
ILAR	**Eielson Array**	**52.06**	**31**	P	**P**	**14 00 34.5**	**+1.5**
	0.3nm,0.8s,baz=279,slow=7.2,SNR=4.2						
WRA	**Warramunga Arr**	**54.85**	**186**	P	**P**	**14 00 53.1**	**-0.8**
	0.7nm,0.6s,baz=1.8,slow=7.7,SNR=16						
ASAR	**Alice Springs**	**58.58**	**186**	P	**P**	**14 01 19.9**	**-0.5**
	0.4nm,0.6s,baz=354,slow=5.4,SNR=9.7						

*IDC **27** 14:12:31.9±2.1, 34°.53N×138°.51E, h0km, mb3.5/3, mb1 3.7/3, mb1mx3.3/44, mbtmp3.5/3, ML2.5/1, Error ellipse: s-maj=90.5km s-min=25.4km az=79.0*
*ISCJB **27** 14:12:39.0±0.7, 35°.38N±0°.05×139°.3E±0°.1, h130km±5km, mb3.2/3, Error ellipse: s-maj=15.4km s-min=7.8km az=161.4*
*JMA **27** 14:12:40.4±0.2, 35°.39N×139°.30E, h119km±2km, M2.9*

ISC 27 14:12:40.2±1.2, 35°.38N±0°.06×139°.30E±0°.09, h123km±8km, n14, σ0s52/22, mb3.2/3, Near south coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JOD2	**Odawara 2**	**0.21**	**237**	P	**Pn**	**14 12 57.0**	**-0.3**
JOD2				S	**Sn**	**14 13 09.4**	**-0.7**
JYO	**Yokosk**	**0.34**	**117**	P	**Pn**	**14 12 58.0**	**+0.4**
JYN	**Shimob**	**0.63**	**281**	P	**Pn**	**14 12 59.6**	**+0.2**
JYN				S	**Sn**	**14 13 14.7**	**+0.8**
JIM2	**Oshima 3**	**0.67**	**171**	P	**Pn**	**14 12 59.3**	**-0.4**
JIM2				S	**Sn**	**14 13 14.1**	**-0.3**
JRY	**Ryogami san**	**0.71**	**333**	P	**Pn**	**14 13 00.5**	**+0.5**
JRY				S	**Sn**	**14 13 15.4**	**+0.3**
JIZS	**Izushimoda**	**0.74**	**208**	P	**Pn**	**14 13 00.3**	**+0.1**
JIZS				S	**Sn**	**14 13 15.7**	**+0.4**
JAG	**Ashikaga**	**1.05**	**7**	P	**Pn**	**14 13 03.0**	**0.0**
JAG				S	**Sn**	**14 13 19.8**	**-0.5**
MJAR	**Matsushiro Arr**	**1.46**	**323**	Pn	**Pn**	**14 13 06.9**	**-0.5**
	1.6nm,0.3s,baz=159,slow=11,SNR=5.2						
MJAR				Sn	**Sn**	**14 13 28.0**	**-0.1**
	3.9nm,0.3s,baz=176,slow=5.3,SNR=6.5						
MAT	**Matsushiro**	**1.46**	**323**	P	**Pn**	**14 13 07.7**	**+0.3**
MAT				S	**Sn**	**14 13 28.1**	**0.0**
MAT	**Matsushiro**	**1.46**	**323**	P	**Pn**	**14 13 07.7**	**+0.3**
MAT				*e*S	**Sn**	**14 13 27.7**	**-0.4**
BSO1	**Boso 1**	**1.56**	**117**	P	**Pn**	**14 13 08.3**	**+0.4**
MKAR	**Makanchi Array**	**43.57**	**303**	P	P	14 20 37.1	+5.3
	0.1nm,0.2s,baz=86,slow=8.3,SNR=1.3						
WRA	**Warramunga Arr**	**55.22**	**186**	P	**P**	**14 21 59.4**	**-1.0**
	0.5nm,0.4s,baz=1.6,slow=7.5,SNR=4.6						
ASAR	**Alice Springs**	**58.94**	**186**	P	**P**	**14 22 27.4**	**+0.9**
	0.2nm,0.8s,baz=7.6,slow=7.7,SNR=2.3						

*ISK **27** 14:16:29.4, 39°.09N×28°.98E, h7km, MD2.6*
*ISCJB **27** 14:16:30.2±0.4, 39°.12N±0°.03×29°.04E±0°.04, h9km, Error ellipse: s-maj=4.2km s-min=3.9km az=143.3*
*DDA **27** 14:16:30.7, 39°.10N×29°.07E, h7km, Md2.4*
*CSEM **27** 14:16:30.4±0.1, 39°.12N×29°.02E, h8km, MD2.4, Error ellipse: s-maj=2.9km s-min=2.7km az=79.0*

ISC 27 14:16:30.5±0.8, 39°.08N±0°.03×29°.02E±0°.02, h9km, n46, σ0s79/54, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**261**	P	**Pb**	**14 16 37.0**	**+1.5**
DEMI				S	**Sb**	**14 16 41.2**	**+2.4**
DEMI	**Demirci**	**0.24**	**261**	*i* P	**Pb**	**14 16 37.0**	**+1.5**
DEMI				*i* S	**Sb**	**14 16 41.2**	**+2.4**
GDZ	**Gediz**	**0.36**	**89**	P	**Pg**	**14 16 37.4**	**-0.2**
GDZ				S	**Sg**	**14 16 41.9**	**-0.5**
GDZ	**Gediz**	**0.36**	**89**	*i* P	**Pg**	**14 16 37.4**	**-0.2**
GDZ				*i* S	**Sg**	**14 16 41.9**	**-0.5**
TVSB	**Tavsanli**	**0.50**	**43**	*e*PG	**Pg**	**14 16 39.7**	**-0.6**
TVSB	**Tavsanli**	**0.50**	**43**	*e*Pg	**Pg**	**14 16 39.7**	**-0.6**
MANT	**Manisa**	**0.69**	**212**	P	**Pb**	**14 16 45.3**	**+0.4**
MANT				S	**Sb**	**14 16 54.9**	**+0.2**
MANT	**Manisa**	**0.69**	**212**	*i* P	**Pb**	**14 16 45.3**	**+0.4**
MANT				*i* S	**Sb**	**14 16 54.9**	**+0.2**
KHAL	**Karahalli**	**0.80**	**153**	P	**Pb**	**14 16 46.7**	**+0.1**
KHAL	**Karahalli**	**0.80**	**153**	*i* P	**Pb**	**14 16 46.7**	**+0.1**
KHL	**Karahalli**	**0.85**	**153**	*e*PG	**Pg**	**14 16 46.7**	**-0.2**
KHL				*e*SG	**Sb**	**14 16 59.4**	**+0.3**
KHL	**Karahalli**	**0.85**	**153**	*e*Pg	**Pg**	**14 16 46.7**	**-0.2**
KHL				*e*Sg	**Sb**	**14 16 59.4**	**+0.3**
AKS	**Akhisar**	**0.96**	**258**	*e*PG	**Pg**	**14 16 47.8**	**-1.3**
AKS	**Akhisar**	**0.96**	**258**	*e*Pg	**Pg**	**14 16 47.8**	**-1.3**
ORLT	**Orhaneli**	**0.97**	**354**	*e*PG	**Pg**	**14 16 48.3**	**-0.9**
ORLT	**Orhaneli**	**0.97**	**354**	*e*Pg	**Pg**	**14 16 48.3**	**-0.9**
BALB	**Balikesir**	**1.05**	**303**	*e*PG	**Pg**	**14 16 49.2**	**-1.4**
BALB	**Balikesir**	**1.05**	**303**	*e*Pg	**Pg**	**14 16 49.2**	**-1.4**
KCTX	**Karacabey (Bur**	**1.29**	**337**	*e*PN	**Pn**	**14 16 54.2**	**-0.6**
KCTX	**Karacabey (Bur**	**1.29**	**337**	*e*Pn	**Pn**	**14 16 54.2**	**-0.6**
MDNY	**Mudanya-Bursa**	**1.29**	**355**	*e*PN	**Pn**	**14 16 54.2**	**-0.5**
MDNY	**Mudanya-Bursa**	**1.29**	**355**	*e*Pn	**Pn**	**14 16 54.2**	**-0.5**
GEMT	**Gemlik**	**1.36**	**5**	*e*PN	**Pn**	**14 16 55.4**	**-0.3**
GEMT	**Gemlik**	**1.36**	**5**	*e*Pn	**Pn**	**14 16 55.4**	**-0.3**
GONE	**Gonen-Balikesi**	**1.41**	**313**	*e*PN	**Pn**	**14 16 55.8**	**-0.6**
GONE	**Gonen-Balikesi**	**1.41**	**313**	*e*Pn	**Pn**	**14 16 55.8**	**-0.6**
ADVT	**Abdulvahap**	**1.46**	**22**	*e*PN	**Pn**	**14 16 56.9**	**-0.1**
ADVT	**Abdulvahap**	**1.46**	**22**	*e*Pn	**Pn**	**14 16 56.9**	**-0.1**
ARMT	**Armutlu**	**1.49**	**355**	*e*PN	**Pn**	**14 16 57.3**	**-0.2**
ARMT	**Armutlu**	**1.49**	**355**	*e*Pn	**Pn**	**14 16 57.3**	**-0.2**
EDC	**Edincik**	**1.55**	**325**	*e*PN	**Pn**	**14 16 57.8**	**-0.5**
EDC	**Edincik**	**1.55**	**325**	*e*Pn	**Pn**	**14 16 57.8**	**-0.5**
GULT	**Gulveren**	**1.77**	**40**	*e*PN	**Pn**	**14 17 01.6**	**+0.2**
GULT	**Gulveren**	**1.77**	**40**	*e*Pn	**Pn**	**14 17 01.6**	**+0.2**
HRT	**Hereke**	**1.81**	**16**	*e*PN	**Pn**	**14 17 01.8**	**-0.1**
HRT	**Hereke**	**1.81**	**16**	*e*Pn	**Pn**	**14 17 01.8**	**-0.1**
KRBG	**Karabiga-Canak**	**1.87**	**315**	*e*PN	**Pn**	**14 17 02.2**	**-0.5**
KRBG	**Karabiga-Canak**	**1.87**	**315**	*e*Pn	**Pn**	**14 17 02.2**	**-0.5**
MRMT	**Marmara Adasi**	**1.88**	**325**	*e*PN	**Pn**	**14 17 02.5**	**-0.4**
MRMT	**Marmara Adasi**	**1.88**	**325**	*e*Pn	**Pn**	**14 17 02.5**	**-0.4**
RKY	**Sarkoy-Tekirda**	**2.14**	**319**	*e*PN	**Pn**	**14 17 06.2**	**-0.3**
RKY	**Sarkoy-Tekirda**	**2.14**	**319**	*e*Pn	**Pn**	**14 17 06.2**	**-0.3**
LPK	**Lapseki**	**2.17**	**307**	*e*PN	**Pn**	**14 17 06.4**	**-0.4**
LPK	**Lapseki**	**2.17**	**307**	*e*Pn	**Pn**	**14 17 06.4**	**-0.4**
EZN	**Ezine**	**2.22**	**290**	*e*PN	**Pn**	**14 17 07.0**	**-0.5**
EZN	**Ezine**	**2.22**	**290**	*e*Pn	**Pn**	**14 17 07.0**	**-0.5**

*ATH **27** 14:18:33.0, 37°.98N×21°.10E, h12km±3km, ML1.9/3, Error ellipse: s-maj=3.6km s-min=1.1km az=200.0*
*CSEM **27** 14:18:32.6±0.1, 38°.00N×21°.09E, h12km, ML1.9, Error ellipse: s-maj=3.1km s-min=2.9km az=155.0*

THE 27 14:18:33.0, 38°.00N×21°.10E, h15km±1km, ML2.0/10, Error ellipse: s-maj=1.3km s-min=0.6km az=298.0, Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VTN	**Vitineika**	**0.11**	**142**	P	Pg	14 18 35.3	-1.0
VTN				S	Sg	14 18 38.2	-0.3
VTN	**Vitineika**	**0.11**	**142**	P	Pg	14 18 35.3	-1.0
VTN				S	Sg	14 18 38.2	-0.3
KFL	**Anninata**	**0.27**	**294**	P	Pg	14 18 38.8	0.0
KFL				S	Sg	14 18 42.9	+0.2
KFL	**Anninata**	**0.27**	**294**	P	Pg	14 18 38.8	0.0
KFL				S	Sg	14 18 43.2	+0.5
KFL	**Anninata**	**0.27**	**294**	P	Pg	14 18 38.7	-0.1
KFL				S	Sg	14 18 43.2	+0.5
AXS	**Araxos**	**0.29**	**48**	P	Pg	14 18 39.0	-0.2
AXS				S	Sb	14 18 44.2	-0.4
AXS	**Araxos**	**0.29**	**48**	P	Pg	14 18 39.0	-0.2
AXS				S	Sb	14 18 44.4	-0.2
AXS	**Araxos**	**0.29**	**48**	P	Pg	14 18 38.9	-0.3
AXS				S	Sb	14 18 44.4	-0.2
RLS	**Riolos of Patr**	**0.29**	**79**	P	Pg	14 18 38.8	-0.4
RLS				S	Sb	14 18 44.1	-0.6
RLS	**Riolos of Patr**	**0.29**	**79**	P	Pg	14 18 38.8	-0.4
RLS				S	Sb	14 18 44.1	-0.6
RLS	**Riolos of Patr**	**0.29**	**79**	S	Sb	14 18 44.1	-0.5
RLS				AML	AML	14 18 44.4	
	comp=N,621μm,0.2s						
RLS				AML	AML	14 18 45.1	
	comp=E,551μm,0.2s						
ZKS	**Zakynthos**	**0.39**	**220**	P	Pg	14 18 40.3	-0.7
ZKS				S	Sb	14 18 47.4	-0.2
ZKS	**Zakynthos**	**0.39**	**220**	P	Pg	14 18 40.4	-0.6
ZKS				S	Sg	14 18 46.9	+0.5
ZKS	**Zakynthos**	**0.39**	**220**	P	Pg	14 18 40.4	-0.6
ZKS				S	Sg	14 18 46.9	+0.5
VLS	**Valsamata**	**0.44**	**294**	P	Pg	14 18 41.7	-0.1
VLS				S	Sb	14 18 48.9	0.0
VLS	**Valsamata**	**0.44**	**294**	P	Pg	14 18 41.7	-0.1
DRO	**Drossia**	**0.48**	**96**	P	Pg	14 18 42.0	-0.6
DRO				S	Sb	14 18 49.8	-0.4
DRO	**Drossia**	**0.48**	**96**	P	Pg	14 18 42.0	-0.6
DRO				S	Sb	14 18 50.5	+0.3
DRO	**Drossia**	**0.48**	**96**	P	Pg	14 18 41.8	-0.9
DRO				S	Sb	14 18 50.5	+0.3
DRO				AML	AML	14 18 53.0	
	comp=N,732μm,0.3s						
DRO				AML	AML	14 18 54.6	
	comp=E,641μm,0.3s						
PDO	**Prodromos**	**0.60**	**6**	P	Pg	14 18 43.1	-1.7
PDO				S	Sb	14 18 53.4	-0.1
PDO	**Prodromos**	**0.60**	**6**	P	Pg	14 18 43.1	-1.7
PDO				S	Sb	14 18 53.4	-0.1
AMT	**Artemida-Makis**	**0.67**	**134**	P	Pg	14 18 45.9	-0.2
AMT				S	Sb	14 18 55.6	0.0
AMT	**Artemida-Makis**	**0.67**	**134**	P	Pg	14 18 45.9	-0.2
AMT				S	Sb	14 18 55.6	0.0
AMT	**Artemida-Makis**	**0.67**	**134**	P	Pg	14 18 46.0	-0.1
AMT				S	Sb	14 18 56.5	+1.0
AMT				AML	AML	14 19 00.9	
	comp=E,205μm,0.5s						
AMT				AML	AML	14 19 02.4	
	comp=N,163μm,0.4s						
PVO	**Paravola**	**0.70**	**28**	P	Pg	14 18 45.9	-0.8
PVO				S	Sb	14 18 57.0	+0.6
PVO	**Paravola**	**0.70**	**28**	P	Pg	14 18 45.9	-0.8
PVO				S	Sb	14 18 57.0	+0.6
PVO	**Paravola**	**0.70**	**28**	P	Pn	14 18 47.8	-0.6
LAKA	**Lakka**	**0.73**	**71**	P	Pg	14 18 47.0	-0.3
LAKA				S	Sb	14 18 58.2	+0.9
LAKA	**Lakka**	**0.73**	**71**	P	Pg	14 18 47.0	-0.3
LAKA	**Lakka**	**0.73**	**71**	S	Sb	14 18 58.2	+0.9
LAKA	**Lakka**	**0.73**	**71**	P	Pb	14 18 47.4	0.0
KLV	**Kalavryta, Ach**	**0.83**	**87**	P	Pg	14 18 48.7	-0.4
KLV	**Kalavryta, Ach**	**0.83**	**87**	P	Pg	14 18 48.7	-0.4
KLV	**Kalavryta, Ach**	**0.83**	**87**	P	Pg	14 18 47.9	-1.3
SERG	**Sergoula**	**0.86**	**61**	P	Pb	14 18 49.0	-0.6
SERG	**Sergoula**	**0.86**	**61**	P	Pb	14 18 49.0	-0.6
ANX	**Ano Chora**	**0.88**	**47**	P	Pg	14 18 50.0	0.0
ANX				S	Sb	14 19 01.7	+0.2
ANX	**Ano Chora**	**0.88**	**47**	P	Pg	14 18 50.0	0.0
ANX				S	Sb	14 19 01.7	+0.2
ITM	**Ithomi**	**1.05**	**141**	P	Pb	14 18 52.3	-0.6
ITM				S	Sn	14 19 07.5	-0.1
ITM	**Ithomi**	**1.05**	**141**	P	Pb	14 18 52.3	-0.6
ITM	**Ithomi**	**1.05**	**141**	S	Sn	14 19 07.5	-0.1
DSL	**Palaion Diasel**	**1.13**	**360**	P	Pb	14 18 54.2	-0.1
DSL	**Palaion Diasel**	**1.13**	**360**	P	Pb	14 18 54.2	-0.1

*MOS **27** 14:19:19.5±1.2, 5°.97N×126°.09E, h40km, mb5.1/44, Error ellipse: s-maj=11.3km s-min=5.5km az=108.9*
*MAN **27** 14:19:21, 5°.86N×126°.30E, h68km, mb5.6, ML4.6, MS5.0*
MAN INTENSITY III - MALITA DAVAO DEL SUR; INTENSITY II - GENERAL SANTOS CITY; KIDAPAWAN CITY.
*ISCJB **27** 14:19:23.4±0.3, 5°.96N±0°.02×126°.25E±0°.03, h74km±3km, mb4.8/146, Error ellipse: s-maj=4.5km s-min=3.0km az=175.1*
*KLM **27** 14:19:25.0, 6°.16N×126°.24E, h68km, mb5.0, MS5.7*
*GCMT **27** 14:19:24.8±0.2, 5°.94N×126°.31E, h48km±1km, MW5.1/75, Moment Tensor Solution. s67,c87; s75,c116; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}4.17±.14; $M_{\theta\theta}$0.43±.10; $M_{\phi\phi}$-4.60±.11; $M_{r\theta}$1.75±.09; $M_{\phi\theta}$-0.91±.10; $M_{\theta r}$0.52±.13; Best double couple: $M_0$4.84900×10^{16} NP1:ϕ_s170.00000°, δ43.00000°, λ59.00000°. Principal axes: T 4.8630, Plg69.0000°, Azm357.0000°; N -0.0310, Plg21.0000°, Azm194.0000°; P -4.8350, Plg5.0000°, Azm102.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **27** 14:19:24.8±0.9, 5°.98N×126°.12E, h73km±8km, mb5.0/54 Error ellipse: s-maj=7.3km s-min=4.8km az=87.0*
NEIC Felt [II PIVS] at General Santos and Kidapawan.
*IDC **27** 14:19:25.4±1.0, 5°.92N×126°.08E, h74km±7km, mb4.4/30, mb1 4.5/31, mb1mx4.4/45, mbtmp4.7/31, MS3.9/30, Ms1 3.9/30, ms1mx3.8/46, Error ellipse: s-maj=14.6km s-min=8.6km az=77.0*
*DJA **27** 14:19:25.4±0.4, 6°.N±3°.×12°.6E±°, h53km±3km, M5.0/70, mb5.1/70, mB5.4/32, MLv5.5/5, Mw(mB)4.8/32, Mwp5.9/1*

ISC 27 14:19:25.0±0.5, 5°.93N±0°.03×126°.19E±0°.04, h71km±4km, n478, σ1s75/514, mb4.8/146, 42C-15D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MATI	**Mati**	**1.01**	**4**	*e*P	**Pn**	**14 19 41.1**	**-2.6**
MATI				*e*S	**Sn**	**14 19 56.0**	**-1.6**
DAV	**Davao City (W)**	**1.28**	**332**	P	**Pn**	**14 19 45.9**	**-1.3**
	858nm,0.3s,baz=224,slow=3.9,SNR=24						
DAV				S	**Sn**	**14 20 04.5**	**+0.6**
	1μm,0.3s,baz=48,slow=23,SNR=13						
DAV				LR	LR	14 20 24.3	
	comp=Z,7μm,20.7s,baz=112,slow=47						
BUKP	**Musuan**	**2.24**	**330**	*e*P	**Pn**	**14 19 58.9**	**-1.0**
BUKP				*e*S	**Sn**	**14 20 27.2**	**+0.6**
CTBH	**Cotabato--PC H**	**2.32**	**304**	⇑*e*P	**Pn**	**14 19 60.0**	**-1.0**
SGSI	**Sangihe**	**2.32**	**196**	P	**Pn**	**14 20 00.9**	**-0.2**
SGSI				S	**Sn**	**14 20 31.0**	**+2.4**
PAGZ	**Pagadian**	**3.38**	**305**	*e*P	**Pn**	**14 20 14.8**	**-0.6**
IPIL	**Ipil**	**4.04**	**297**	*e*P	**Pn**	**14 20 24.0**	**-0.4**
IPIL				*e*S	**Sn**	**14 21 16.4**	**+5.9**
TBP	**Tagbilaran**	**4.39**	**329**	⇑*e*P	**Pn**	**14 20 34.4**	**+1.1**
LLP	**Lapu-Lapu**	**4.88**	**333**	*e*P	**Pn**	**14 20 36.5**	**+0.6**
LLP				*e*S	**Sn**	**14 21 38.7**	**+7.5**
OCLP	**Ormoc**	**5.32**	**343**	*e*P	**Pn**	**14 20 43.8**	**+1.7**
PLP	**Palo**	**5.34**	**347**	⇓*e*P	**Pn**	**14 20 41.8**	**-0.5**
PLP				*e*S	**Sn**	**14 21 47.4**	**+5.0**
BESP	**Borongan**	**5.69**	**353**	*e*P	**Pn**	**14 20 50.0**	**+3.0**
GUIM	**Jordan**	**5.87**	**323**	*e*P	**Pn**	**14 20 49.8**	**+0.4**
RCP	**Roxas**	**6.55**	**329**	⇑*e*P	**Pn**	**14 20 59.1**	**+0.3**
LBMI	**Labuha**	**6.65**	**169**	P	**Pn**	**14 20 59.4**	**-0.8**
	319nm,0.8s,4μm2.3nm						
LBMI				S	**Sn**	**14 22 18.0**	**+3.4**
	319nm,0.8s,4μm2.3nm						
MRSI	**Marisa**	**6.88**	**218**	P	**Pn**	**14 21 02.4**	**-0.8**
	565nm,0.7s,5μm2.2nm						
CUYO	**Cuyo Island**	**7.08**	**314**	*e*P	**Pn**	**14 21 06.3**	**+0.4**
MYLDM	**Lahad Datu**	**7.69**	**265**	⇓P	**Pn**	**14 21 15.1**	**+0.7**
MYLDM	**Lahad Datu**	**7.69**	**265**	*e*Pn	**Pn**	**14 21 14.9**	**+0.6**
SANI	**Sanana**	**7.93**	**181**	P	**Pn**	**14 21 17.5**	**-0.1**
	148nm,0.6s,4μm						
SANI				S	Sn	14 22 36.0	-10
	148nm,0.6s,4μm						
SJMP	**San Jose**	**8.19**	**323**	*e*P	**Pn**	**14 21 21.9**	**+0.7**
SWI	**Sorong**	**8.44**	**143**	P	**Pn**	**14 21 24.8**	**+0.2**
	113nm,0.8s,1μm						
BUSP	**Coron**	**8.45**	**316**	*e*P	**Pn**	**14 21 24.4**	**-0.3**
ENPP	**El Nido**	**8.50**	**309**	*e*P	**Pn**	**14 21 25.7**	**+0.3**
SDKM	**Sandakan**	**8.95**	**269**	⇑P	**Pn**	**14 21 32.3**	**+0.6**
NLAI	**Namlea**	**9.15**	**174**	P	**Pn**	**14 21 37.2**	**+2.8**
	181nm,0.6s,3μm						
NLAI				S	**Sn**	**14 23 10.3**	**-5.5**
	181nm,0.6s,3μm						
PCI	**Palu**	**9.29**	**223**	P	**Pn**	**14 21 37.4**	**+1.1**
	71nm,0.7s,820nm						
PCI				S	**Sn**	**14 23 14.0**	**-5.2**
	71nm,0.7s,820nm						
LQP	**Lukban**	**9.33**	**331**	⇑*e*P	Pn	14 21 44.9	+7.9
KDM	**Kudat**	**9.35**	**277**	⇑P	**Pn**	**14 21 37.1**	**+0.1**
KKM	**Kota Kinabalu**	**9.92**	**271**	⇑P	**Pn**	**14 21 45.1**	**+0.1**
KDI	**Kendari**	**10.45**	**200**	P	**Pn**	**14 21 54.0**	**+2.0**
	72nm,1.1s,934nm						
KDI				S	**Sn**	**14 23 47.3**	**-0.2**
	72nm,1.1s,934nm						
FAKI	**Fak Fak**	**10.67**	**145**	P	**Pn**	**14 21 55.1**	**0.0**
TTSI	**Tana Toraja**	**10.95**	**216**	P	**Pn**	**14 22 01.2**	**+2.3**
	123nm,0.8s,1μm						
BKB	**Balikpapan**	**11.71**	**233**	P	**Pn**	**14 22 08.4**	**-0.9**
	171nm,1.0s						
SPSI	**Sidrap Palu**	**11.73**	**213**	P	**Pn**	**14 22 13.2**	**+3.6**
	46nm,0.7s,777nm						
CAUP	**Cauayan**	**11.75**	**339**	*e*P	**Pn**	**14 22 08.8**	**-1.0**
KAPI	**Kappang**	**12.63**	**211**	P	**Pn**	**14 22 20.8**	**-1.0**
	2.2nm,0.3s,baz=129,slow=4.8,SNR=9.6						
KAPI				LR	LR	14 28 15.5	
	comp=Z,299nm,18.4s,baz=52,slow=42						
KAPI	**Kappang**	**12.63**	**211**	*e*Pn	**Pn**	**14 22 20.9**	**-0.9**
BTM	**Bintulu**	**13.34**	**259**	⇑P	**Pn**	**14 22 33.0**	**+1.6**
SBUM	**Sibu**	**14.35**	**257**	⇑P	**Pn**	**14 22 45.7**	**+0.9**
SBUM	**Sibu**	**14.35**	**257**	*e*Pn	**Pn**	**14 22 45.9**	**+1.2**
BBKI	**Banjar Baru**	**14.68**	**231**	P	**P**	**14 22 52.3**	**-1.1**
	166nm,0.9s,2μm						
SOEI	**Soe**	**15.70**	**187**	P	**P**	**14 23 07.5**	**+2.6**
SOEI	**Soe**	**15.70**	**187**	*e*P	**P**	**14 23 03.9**	**-1.0**
	105nm,0.8s						
STKI	**Sintang**	**15.80**	**249**	P	**P**	**14 23 08.5**	**+2.6**
	43nm,1.8s,13μm						
GENI	**Genyem**	**16.33**	**121**	P	**P**	**14 23 17.4**	**+5.7**
KSM	**Kuching**	**16.45**	**255**	⇓P	**P**	**14 23 13.3**	**+0.2**
KSM	**Kuching**	**16.45**	**255**	Pn	**P**	**14 23 14.2**	**+1.1**
	46nm,1.0s						
JAY	**Jayapura**	**16.75**	**120**	LR	LR	14 30 00.2	
	comp=Z,23nm,19.2s,baz=344,slow=38						
JAY	**Jayapura**	**16.75**	**120**	P	**Pn**	**14 23 15.4**	**+0.1**
PLAI	**Plampang**	**16.89**	**210**	P	**P**	**14 23 21.6**	**+3.7**
	163nm,0.8s,1μm						
TWSI	**Taliwang, Sumb**	**17.27**	**213**	P	**Pn**	**14 23 21.6**	**-0.1**
	65nm,0.8s,2μm						
JAGI	**Jajag, Banyuwa**	**18.67**	**220**	*e*P	**Pn**	**14 23 39.8**	**+1.2**
	66nm,1.0s						
MTN	**Manton Dam**	**19.29**	**165**	*e*P	**P**	**14 23 43.0**	**-1.3**
	44nm,0.8s						
NGJI	**Ngawi**	**19.76**	**228**	P	**Pn**	**14 23 56.2**	**+4.7**
PWJI	**Pagerwojo**	**19.95**	**226**	P	**Pn**	**14 23 56.7**	**+2.9**
	38nm,1.6s

PHET	**Kaeng Krachan**	**27.08 287**	P	**P**	**14 25 03.3**	**+2.0**
	comp=Z,10nm,0.9s,comp=Z,105nm					
PSI	**Prapat**	**27.36 265**	P	**P**	**14 25 04.0**	**0.0**
	comp=Z,23nm,0.9s,baz=82,slow=3.9,SNR=22					
PSI	**Prapat**	**27.36 265**	*e*P	**P**	**14 25 04.2**	**+0.2**
PSI			pmax	pmax		
	comp=Z,26nm,0.9s					
PSI	**Prapat**	**27.36 265**	*e*P	**P**	**14 25 04.2**	**+0.2**
	comp=Z,26nm,0.9s					
JNU	**Nakatsue**	**27.41 9**	P	**P**	**14 25 02.9**	**-1.2**
	comp=Z,17nm,0.9s,baz=189,slow=3.9,SNR=8.7					
JNU			LR	LR	14 34 46.4	
	comp=Z,124nm,20.9s,baz=128,slow=34					
JNU	**Nakatsue**	**27.41 9**	*e*P	**P**	**14 25 01.0**	**-3.1**
	comp=Z,22nm,0.9s					
GYA	**Guiyang**	**27.64 320**	*e*P	**P**	**14 25 07.8**	**+1.5**
GYA			pP	pP	14 25 23.8	+0.8
GYA			PP	**PnPn**	**14 25 58.0**	**+2.5**
GYA			PcP	**PcP**	**14 28 23.3**	**+1.0**
GYA			S	**S**	**14 29 42.5**	**-0.8**
GYA			sS	sS	14 30 12.5	+0.4
GYA			ScP	**ScP**	**14 31 56.8**	**-0.2**
GYA	**Guiyang**	**27.64 320**	ScS	ScS	14 35 47.0	-2.2
GYA			pmax	pmax		
	comp=Z,20nm,0.8s					
GYA			pmax	pmax		
	comp=Z,120nm,5.4s					
GYA			LR	LR		
	comp=N,520nm,17.8s					
GYA			LR	LR		
	comp=E,480nm,18.2s					
GYA			LR	LR		
	comp=Z,510nm,17.9s					
MBWA	**Marble Bar**	**27.65 193**	*e*P	**P**	**14 25 04.9**	**-1.5**
	comp=Z,183nm,1.3s					
SRDT	**SRDT**	**27.90 290**	P	**P**	**14 25 10.1**	**+1.5**
	comp=Z,43nm,1.0s					
NANT	**Nan**	**27.94 300**	P	**P**	**14 25 10.0**	**+1.1**
	comp=Z,3.4nm,0.7s					
KCSI	**Kotacane, Aceh**	**28.42 266**	P	**P**	**14 25 14.1**	**+0.8**
	comp=Z,59nm,0.9s,comp=Z,3μm					
KHLT	**Khaolaem Dam**	**28.51 290**	P	**P**	**14 25 16.8**	**+2.7**
	comp=Z,7.9nm,0.9s					
CRAI	**Chiangrai**	**28.82 302**	P	**P**	**14 25 17.4**	**+0.6**
	comp=Z,54nm,1.0s					
ENH	**Enshi**	**28.87 329**	*e*P	**P**	**14 25 16.2**	**-1.0**
	comp=Z,50nm,0.8s					
GSI	**Gunungsitoli**	**28.91 262**	P	**P**	**14 25 16.9**	**-0.8**
	comp=Z,151nm,0.9s					
GSI	**Gunungsitoli**	**28.91 262**	*e*P	**P**	**14 25 15.8**	**-1.9**
	comp=Z,128nm,0.9s					
GSI			*e*PcP	**PcP**	**14 28 25.1**	**-0.5**
CM01	**Chiang Mai Arr**	**29.31 297**	*e*P	**P**	**14 25 18.1**	**-3.1**
CMAR	**Chiang Mai Arr**	**29.34 298**	P	**P**	**14 25 21.9**	**+0.4**
	comp=Z,3.0nm,0.7s,baz=122,slow=7.8,SNR=19					
CMAR			PcP	**PcP**	**14 28 27.5**	**+1.0**
	comp=Z,2.7nm,0.7s,baz=142,slow=1.5,SNR=8.6					
CMAR			ScP	**ScP**	**14 32 04.0**	**+1.6**
	comp=Z,1.6nm,0.9s,baz=136,slow=1.6,SNR=7.5					
CMMT	**Chiang Mai**	**29.47 298**	P	**P**	**14 25 23.4**	**+0.8**
	comp=Z,6.7nm,0.8s					
CHTO	**Chiang Mai**	**29.47 298**	P	**P**	**14 25 23.5**	**+0.9**
	comp=Z,44nm,1.0s					
KMI	**Kunming**	**29.48 313**	P	P	14 25 31.0	+8.2
KMI			S	**S**	**14 30 18.8**	**+6.3**
KMI			pmax	pmax		
	comp=Z,220nm,5.4s					
KMI			LR	LR		
	comp=N,390nm,13.5s					
KMI			LR	LR		
	comp=E,420nm,12.6s					
KMI			LR	LR		
	comp=Z,540nm,19.2s					
MLSI	**Meulaboh, Aceh**	**29.71 268**	P	**P**	**14 25 26.1**	**+1.4**
	comp=Z,65nm,0.9s					
JHJ	**Hachijo jima 2**	**29.87 23**	LR	LR	14 35 38.9	
	comp=Z,219nm,21.8s,baz=318,slow=32					
MHMT	**Maesarieng**	**30.14 296**	P	**P**	**14 25 29.9**	**+1.4**
	comp=Z,12nm,0.7s					
AS31	**Alice Springs**	**30.36 166**	*e*P	**P**	**14 25 30.1**	**-0.3**
	comp=Z,4.3nm,0.6s					
ASAR	**Alice Springs**	**30.36 166**	P	**P**	**14 25 30.2**	**-0.2**
	comp=Z,11nm,0.6s,baz=345,slow=7.1,SNR=202					
ASAR			ScP	**ScP**	**14 32 07.7**	**+2.1**
	comp=Z,1.3nm,0.9s,baz=344,slow=3.0,SNR=5.4					
ASAR			P3KPbc		14 57 21.9	
	comp=Z,1.0nm,1.2s,baz=167,slow=3.8,SNR=5.8					
AS01	**Alice Springs**	**30.37 166**	*e*P	**P**	**14 25 30.1**	**-0.4**
TIA	**Tai'an**	**31.27 346**	||P	**P**	**14 25 39.5**	**+1.3**
TIA			pmax	pmax		
	comp=Z,30nm,1.0s					
KS15	**Wonju Array Si**	**31.41 3**	*e*P	**P**	**14 25 38.6**	**-0.8**
KSAR	**Wonju Array Be**	**31.41 3**	P	**P**	**14 25 39.9**	**+0.5**
KSAR					14 28 32.7	
KSAR	**Wonju Array Be**	**31.41 3**	P	**P**	**14 25 39.9**	**+0.5**
KSAR			PcP	**PcP**	**14 28 32.6**	**+1.1**
KSRS	**Korea Array**	**31.42 3**	P	**P**	**14 25 39.9**	**+0.4**
	comp=Z,4.0nm,0.5s,baz=185,slow=9.9,SNR=21					
KSRS			PcP	**PcP**	**14 28 32.6**	**+1.1**
	comp=Z,4.5nm,0.7s,baz=182,slow=2.3,SNR=17					
KS01	**Wonju Array Si**	**31.44 3**	*e*P	**P**	**14 25 40.8**	**+1.1**
XAN	**Xi'an**	**32.23 332**	P	**P**	**14 25 45.5**	**-1.2**
XAN			S	**S**	**14 30 47.8**	**-7.2**
XAN			pmax	pmax		
	comp=Z,71nm,0.8s					
XAN			pmax	pmax		
	comp=Z,170nm,5.1s					
XAN			LR	LR		
	comp=N,470nm,31.1s					
XAN			LR	LR		
	comp=E,330nm,29.2s					
XAN			LR	LR		
	comp=Z,480nm,24.9s					
MJAR	**Matsushiro Arr**	**32.40 18**	P	**P**	**14 25 45.8**	**-2.3**
	comp=Z,1.3nm,0.5s,baz=196,slow=8.4,SNR=6.5					
MJAR			PcP	**PcP**	**14 28 35.2**	**+0.9**
	comp=Z,6.4nm,0.7s,baz=179,slow=2.9,SNR=15					
MAJO	**Matsushiro**	**32.40 18**	*i* P	**P**	**14 25 46.7**	**-1.5**
CTAO	**Charters Tower**	**32.52 143**	*e*P	**P**	**14 25 49.5**	**0.0**
CTAO			*e*		14 28 34.7	
CTAO			pmax	pmax		
	comp=Z,17nm,1.0s					
CTAO	**Charters Tower**	**32.52 143**	*e*P	**P**	**14 25 49.5**	**0.0**
	comp=Z,17nm,1.0s					
CTAO			*e*PcP	**PcP**	**14 28 34.7**	**-0.3**
CD2	**Chengdu**	**32.57 322**	P	**P**	**14 25 48.5**	**-1.3**
CD2			pP	pP	14 26 05.5	-1.2
CD2			sP	sP	14 26 14.0	-1.0
CD2			PP	**PP**	**14 27 03.5**	**-1.1**
CD2			S	**S**	**14 30 59.8**	**-0.6**
CD2			sS	sS	14 31 29.3	-0.1
CD2			SS	**SS**	**14 33 23.0**	**-0.1**
CD2			pmax	pmax		
	comp=Z,40nm,0.7s					
CD2			pmax	pmax		
	comp=Z,170nm,5.9s					
CD2			LR	LR		
	comp=N,610nm,10.8s					
CD2			LR	LR		
	comp=Z,520nm,13.2s					
BJT	**Baijiatuau**	**35.12 347**	*e*P	**P**	**14 26 11.2**	**-0.5**
BJT			pmax	pmax		
	comp=Z,35nm,0.7s					
BJT	**Baijiatuau**	**35.12 347**	*e*P	**P**	**14 26 11.2**	**-0.5**
	comp=Z,35nm,0.7s					
BJI	**Beijing**	**35.14 347**	P	**P**	**14 26 12.0**	**+0.2**
BJI			S	**S**	**14 31 41.3**	**+1.6**
BJI			pmax	pmax		
	comp=Z,12nm,1.1s					
BJI			pmax	pmax		
	comp=Z,220nm,3.8s					
BJI			LR	LR		
	comp=N,290nm,5.3s					
BJI			LR	LR		
	comp=E,160nm,4.8s					
SNY	**Shenyang**	**35.82 357**	||P	**P**	**14 26 19.0**	**+1.3**
SNY			pP	**pP**	**14 26 34.5**	**-0.3**
SNY			sP	**sP**	**14 26 41.8**	**-1.2**
SNY			S	**S**	**14 31 55.5**	**+5.3**
SNY			pmax	pmax		
	comp=Z,41nm,1.1s					
SNY			pmax	pmax		
	comp=Z,400nm,4.5s					
SNY			LR	LR		
	comp=N,240nm,20.9s					
SNY			LR	LR		
	comp=E,240nm,16.0s					
SNY			LR	LR		
	comp=Z,370nm,18.9s					
LZH	**Lanzhou**	**36.35 329**	*e*P	**P**	**14 26 27.0**	**+4.5**
LZH			pP	pP	14 26 41.5	+1.9
LZH			sP	sP	14 26 49.0	+1.2
LZH			PP	**PnPn**	**14 27 48.3**	**+1.6**
LZH			*e*S	**S**	**14 32 06.0**	**+7.2**
LZH			sS	sS	14 32 34.3	+6.3
LZH			SS	**SnSn**	**14 34 30.8**	**-2.0**
LZH			pmax	pmax		
	comp=Z,54nm,1.2s					
LZH			pmax	pmax		
	comp=Z,170nm,4.2s					
LZH			LR	LR		
	comp=N,690nm,13.4s					
LZH			LR	LR		
	comp=E,820nm,15.0s					
LZH			LR	LR		
	comp=Z,940nm,16.8s					
HHC	**Hu-ho-hao-te**	**37.16 342**	*e*P	**P**	**14 26 31.5**	**+2.3**
HHC			S	**S**	**14 32 12.5**	**+1.7**
HHC			sS	sS	14 32 48.8	+8.7
HHC	**Hu-ho-hao-te**	**37.16 342**	ScS	ScS	14 36 38.3	+1.3
HHC			pmax	pmax		
	comp=Z,63nm,1.0s					
HHC			pmax	pmax		
	comp=Z,210nm,5.6s					
HHC			LR	LR		
	comp=N,970nm,14.6s					
HHC			LR	LR		
	comp=E,1μm,14.3s					
HHC			LR	LR		
	comp=Z,1μm,14.0s					
CN2	**Changchun**	**37.73 359**	*e*P	**P**	**14 26 34.0**	**+0.1**
CN2			pmax	pmax		
	comp=Z,10.0nm,0.8s					
USRK	**Ussuriysk Ar.**	**38.46 7**	P	**P**	**14 26 40.0**	**0.0**
	comp=Z,9.2nm,0.7s,baz=189,slow=7.9,SNR=20					
USRK			PcP	**PcP**	**14 28 52.3**	**+0.4**
	comp=Z,2.4nm,0.5s,baz=176,slow=1.2,SNR=5.3					
MDJ	**Mudanjiang**	**38.65 4**	P	**P**	**14 26 41.5**	**-0.1**
MDJ			pP	pP	14 26 59.0	+0.2
MDJ			sP	sP	14 27 07.3	+0.3
MDJ			PP	**PP**	**14 28 12.0**	**+0.6**
MDJ			PcP	**PcP**	**14 28 53.3**	**+0.8**
MDJ			S	**S**	**14 32 34.0**	**+0.9**
MDJ			PcS	**PcS**	**14 32 41.5**	**-0.3**
MDJ			sS	sS	14 33 04.0	+1.5
MDJ			pmax	pmax		
	comp=Z,24nm,0.9s					
MDJ			pmax	pmax		
	comp=Z,61nm,5.8s					
MDJ			LR	LR		
	comp=N,92nm,5.3s					
MDJ			LR	LR		
	comp=E,49nm,5.6s					
MDJ			LR	LR		
	comp=Z,230nm,13.6s					
MDJ	**Mudanjiang**	**38.65 4**	*e*P	**P**	**14 26 41.7**	**+0.1**
	comp=Z,22nm,0.9s					
NWAO	**Narrogin (SRO)**	**39.57 192**	*e*P	**P**	**14 26 49.1**	**-0.3**
NWAO			pmax	pmax		
	comp=Z,21nm,0.9s					
NWAO	**Narrogin (SRO)**	**39.57 192**	*e*P	**P**	**14 26 49.1**	**-0.3**
	comp=Z,21nm,0.9s					
BBOO	**Buckleboo**	**39.65 167**	*e*P	**P**	**14 26 49.6**	**-0.5**
	comp=Z,46nm,0.7s					
STKA	**Stephens Creek**	**40.36 160**	P	**P**	**14 26 56.5**	**+0.5**
	comp=Z,13nm,0.5s,baz=340,slow=8.3,SNR=53					
STKA			LR	LR	14 46 51.9	
	comp=Z,125nm,18.4s,baz=325,slow=41					
STKA	**Stephens Creek**	**40.36 160**	*e*P	**P**	**14 26 56.0**	**0.0**
STKA			pmax	pmax		
	comp=Z,6.0nm,0.9s					
STKA	**Stephens Creek**	**40.36 160**	*e*P	**P**	**14 26 56.0**	**0.0**
	comp=Z,5.8nm,0.9s					
ASAJ	**Asahikawa**	**40.67 18**	P	**P**	**14 26 58.6**	**+0.2**
	comp=Z,7.5nm,0.7s,baz=230,slow=8.8,SNR=17					
ASAJ	**Asahikawa**	**40.67 18**	*e*P	**P**	**14 26 57.5**	**-1.0**
	comp=Z,17nm,1.2s					
GTA	**Gaotai**	**40.95 328**	*e*P	**P**	**14 27 01.3**	**+0.3**
GTA			pP	pP	14 27 19.8	+1.5
GTA			sP	sP	14 27 29.0	+2.5
GTA			PcP	**PcP**	**14 29 00.5**	**+0.3**
GTA			S	**S**	**14 33 08.8**	**+0.9**
GTA			sS	sS	14 33 40.5	+3.0
GTA			SS	**SS**	**14 36 06.8**	**-5.4**
GTA			pmax	pmax		
	comp=Z,5.0nm,0.9s					
GTA			pmax	pmax		
	comp=Z,110nm,5.7s					
GTA			LR	LR		
	comp=N,190nm,15.9s					
GTA			LR	LR		
	comp=E,230nm,17.3s					
GTA			LR	LR		
	comp=Z,270nm,15.4s					
H11S3	**WAKE ISLAND Hy 41.40 69**		T	T	15 11 00.7	
	baz=258,slow=75,SNR=76					
H11S1	**WAKE ISLAND Hy 41.41 69**		T	T	15 11 03.1	
	baz=258,slow=75,SNR=54					
H11S2	**WAKE ISLAND Hy 41.41 69**		T	T	15 11 06.2	
	baz=258,slow=75,SNR=105					
H11N1	**WAKE ISLAND Hy 41.85 67**		T	T	15 11 46.8	
H11N2	**WAKE ISLAND Hy 41.87 67**		T	T	15 11 42.7	
	SNR=20					
H11N3	**WAKE ISLAND Hy 41.87 67**		T	T	15 11 46.8	
HABR	**Khabarovsk**	**43.06 9**	*ce*P	P	14 27 32.3	+14
HABR			*e**SP	sP	14 27 40.7	-2.7
HABR			*e*		14 28 56.0	
HABR			*e*		14 29 04.3	
HABR			*e*PPP	PPP	14 29 30.8	
HABR			*e*S	**S**	**14 33 35.7**	**-2.8**
HABR			*e*SS	**SS**	**14 36 51.3**	**-1.9**
HABR			*e*		14 37 08.6	
HABR			*e*SSS	SSS	14 37 30.0	
HABR			pmax	pmax		
	comp=N,18nm,1.5s					
HABR			pmax	pmax		
	comp=E,19nm,1.5s					
HABR			pmax	pmax		
	comp=Z,47nm,1.5s					
HABR			MLR	MLR		
	comp=Z,109nm,20.0s					
KLR	**Kul'dur**	**43.41 5**	P	**P**	**14 27 20.1**	**-0.5**
	comp=Z,7.1nm,0.6s,baz=201,slow=4.4,SNR=30					
KLR			PcP	**PcP**	**14 29 08.5**	**+0.6**
	comp=Z,9.4nm,0.8s,baz=223,slow=3.7,SNR=6.2					
KLR	**Kul'dur**	**43.41 5**	*i* P	**P**	**14 27 19.6**	**-1.0**
HIA	**Hailar**	**43.53 354**	*e*P	**P**	**14 27 20.5**	**-1.2**
HIA			pmax	pmax		
	comp=Z,9.0nm,0.7s					
HIA	**Hailar**	**43.53 354**	*e*P	**P**	**14 27 20.4**	**-1.2**
	comp=Z,9.3nm,0.7s					
ARMA	**Armidale**	**43.59 147**	*e*P	**P**	**14 27 23.1**	**+0.5**
	comp=Z,25nm,1.0s					
GUN	**Gumba**	**44.02 305**	*e*P	**P**	**14 27 25.5**	**-0.8**
	comp=Z,20nm,0.4s					
KKN	**Kakani**	**44.47 304**	*e*P	**P**	**14 27 27.8**	**-2.0**
	comp=Z,12nm,0.7s					
DMN	**Daman**	**44.55 304**	*e*P	**P**	**14 27 30.5**	**+0.1**
	comp=Z,14nm,0.7s					
ULN	**Ulaanbaatar**	**44.88 342**	*ce*P	**P**	**14 27 32.0**	**-0.6**
ULN			pmax	pmax		
	comp=Z,20nm,0.8s					
ULN	**Ulaanbaatar**	**44.88 342**	*e*P	**P**	**14 27 31.5**	**-1.1**
	comp=Z,16nm,0.8s					
SONM	**Songino Array**	**45.06 341**	P	**P**	**14 27 33.6**	**-0.4**
	comp=Z,5.7nm,0.8s,baz=152,slow=7.3,SNR=17					
SONM			PcP	**PcP**	**14 29 14.2**	**+0.4**
	comp=Z,4.6nm,0.7s,baz=164,slow=3.8,SNR=7.2					
SONM			LR	LR	14 48 39.2	
	comp=Z,200nm,18.9s,baz=158,slow=39					
SONA1	**Songino Array**	**45.06 341**	*e*P	**P**	**14 27 33.3**	**-0.8**
GKN	**Gorkha**	**45.08 304**	*e*P	**P**	**14 27 34.3**	**-0.2**
	comp=Z,11nm,0.5s					
KOLN	**Koldanda**	**45.85 303**	*e*P	**P**	**14 27 41.2**	**+0.5**
	comp=Z,46nm,0.7s					
PYUN	**Piuthan**	**46.47 303**	*e*P	**P**	**14 27 46.1**	**+0.5**
	comp=Z,33nm,0.6s					
TYV	**Tymovskoe**	**46.85 14**	*e*P	**P**	**14 27 50.0**	**+2.1**
TYV			pmax	pmax		
	comp=Z,9.0nm,0.8s					
DZM	**Mont Dzumac**	**48.25 127**	P	**P**	**14 28 00.1**	**+0.7**
	comp=Z,12nm,0.7s,baz=264,slow=8.0,SNR=15					
DZM	**Mont Dzumac**	**48.25 127**	*e*P	**P**	**14 27 54.9**	**-4.4**
	comp=Z,130nm,2.0s					
ZAK	**Zakamensk**	**48.28 340**	*e*P	**P**	**14 28 00.8**	**+1.6**
ZAK			*e*		14 29 24.6	
ZAK			pmax	pmax		
	comp=Z,4.0nm,0.8s					
ZAK			pmax	pmax		
	comp=Z,3.0nm,1.0s					
TLY	**Talaya**	**49.29 342**	*e*P	**P**	**14 28 07.4**	**+0.7**
TLY			*e*S	**S**	**14 35 09.0**	**+1.3**
TLY			pmax	pmax		
	comp=Z,18nm,0.9s					
TLY			MLR	MLR		
	comp=Z,168nm,20.0s					
TLY	**Talaya**	**49.29 342**	*e*P	**P**	**14 28 05.1**	**-1.6**
	comp=Z,16nm,0.8s					
MOY	**Mondy**	**50.15 340**	*e*P	**P**	**14 28 16.2**	**+2.8**
MOY			pmax	pmax		
	comp=Z,28nm,2.5s					
WMQ	**Urumqi**	**50.63 324**	*e*P	**P**	**14 28 16.5**	**-0.6**
WMQ			S	**S**	**14 35 27.5**	**+0.7**
WMQ	**Urumqi**	**50.63 324**	SS	**SS**	**14 38 59.0**	**-2.9**
WMQ			pmax	pmax		
	comp=Z,5.0nm,0.6s					
WMQ			pmax	pmax		
	comp=Z,34nm,4.8s					
WMQ			LR	LR		
	comp=N,150nm,17.4s					
WMQ			LR	LR		
	comp=E,130nm,24.6s					
WMQ			LR	LR		
	comp=Z,140nm,31.8s					
BOD	**Bodaibo**	**52.63 352**	*e*P	**P**	**14 28 30.4**	**-1.2**
BOD			pmax	pmax		
	comp=Z,9.0nm,1.0s					
PEA0	**Petropavlovsk-**	**53.62 23**	*e*P	**P**	**14 28 39.4**	**+0.4**
PETK	**Petropavlovsk-**	**53.62 23**	P	**P**	**14 28 39.0**	**0.0**
	comp=Z,13nm,1.0s,baz=181,slow=2.1,SNR=15					
PETK			LR	LR	14 52 47.8	
	comp=Z,43nm,18.7s,baz=220,slow=37					
PET	**Petropavlovsk**	**53.93 24**	||*e*P	**P**	**14 28 41.8**	**+0.5**
PET			pmax	pmax		
	comp=Z,18nm,1.0s					
PDGK	**Podgornoye**	**55.39 320**	P	**P**	**14 28 52.1**	**+0.1**
PDGK			pmax	pmax		
	comp=Z,6.0nm,0.6s					
MK01	**Makanchi Array**	**55.44 325**	*e*P	**P**	**14 28 51.0**	**-1.4**
MK31	**Makanchi Array**	**55.46 325**	P	**P**	**14 28 52.2**	**-0.3**
MK31			pmax	pmax		
	comp=Z,4.0nm,0.5s					
MK31	**Makanchi Array**	**55.46 325**	*e*P	**P**	**14 28 51.6**	**-0.9**
MKAR	**Makanchi Array**	**55.46 325**	P	**P**	**14 28 51.5**	**-1.0**
	comp=Z,1.5nm,0.4s,baz=116,slow=7.1,SNR=26					
MKAR			PcP	**PcP**	**14 29 51.2**	**-0.8**
	comp=Z,6.7nm,0.7s,baz=129,slow=3.0,SNR=5.8					
MKAR			ScP	**ScP**	**14 33 45.3**	**+0.5**
	comp=Z,0.8nm,0.7s,baz=114,slow=4.7,SNR=5.0					
MKAR			LR	LR	14 55 24.2	
	comp=Z,147nm,18.8s,baz=116,slow=39					
MAKZ	**Makanchi**	**55.65 325**	P	**P**	**14 28 52.7**	**-1.2**
MAKZ			pmax	pmax		
	comp=Z,6.0nm,0.6s					
MAKZ	**Makanchi**	**55.65 325**	*e*P	**P**	**14 28 51.5**	**-2.3**
	comp=Z,8.6nm,0.6s					
YAK	**Yakutsk**	**56.04 2**	P	**P**	**14 28 56.7**	**+0.4**
	comp=Z,1.2nm,0.3s,baz=358,slow=19,SNR=6.7					
YAK	**Yakutsk**	**56.04 2**	*e*P	**P**	**14 28 57.2**	**+0.9**
YAK			pmax	pmax		
	comp=Z,33nm,0.9s					
YAK			pmax	pmax		
	comp=N,11nm,1.2s					
KSH	**Kashi**	**56.12 314**	*e*P	**P**	**14 28 58.5**	**+1.0**
KSH			*ep*P	pP	14 29 17.8	+2.1
KSH			*es*P	sP	14 29 26.8	+3.2
KSH			*e*PcP	**PcP**	**14 29 55.8**	**+1.0**
KSH			*e*PP	**PP**	**14 31 05.5**	**+2.2**
KSH			S	**S**	**14 36 39.0**	**-2.5**
KSH			pmax	pmax		
	comp=Z,120nm,4.7s					
KSH			LR	LR		
	comp=N,570nm,13.3s					
KSH			LR	LR		
	comp=E,240nm,13.6s					
KSH			LR	LR		
	comp=Z,190nm,6.1s					
MSVF	**Nonsavu**	**56.33 116**	*e*P	**P**	**14 29 00.6**	**+1.4**
MSVF			pmax	pmax		
	comp=Z,25nm,1.1s					
MSVF	**Nonsavu**	**56.33 116**	*e*P	**P**	**14 29 00.6**	**+1.4**
	comp=Z,25nm,1.1s					
MA2	**Magadan**	**56.72 15**	*e*P	**P**	**14 28 59.4**	**-1.8**
MA2			pmax	pmax		
	comp=Z,21nm,0.6s					
MA2	**Magadan**	**56.72 15**	*e*P	**P**	**14 28 59.4**	**-1.8**
	comp=Z,21nm,0.6s					
TKM2	**Tokmak 2**	**57.76 318**	P	**P**	**14 29 09.1**	**0.0**
TKM2			pmax	pmax		
	comp=Z,3.0nm,0.8s					
TKM2	**Tokmak 2**	**57.76 318**	*e*P	**P**	**14 29 05.6**	**-3.6**
	comp=Z,6.9nm,1.1s					
AAK	**Ala-Archa**	**58.38 317**	LR	LR	14 57 22.3	
	comp=Z,143nm,21.9s,baz=88,slow=39					
AAK	**Ala-Archa**	**58.38 317**	||*i* P	**P**	**14 29 12.9**	**-0.6**
AAK			pmax	pmax		
	comp=Z,13nm,1.7s					
ZAA0	**Zalesovo Array**	**58.40 333**	*e*P	**P**	**14 29 12.1**	**-1.0**
ZALV	**Zalesovo Beam**	**58.40 333**	P	**P**	**14 29 12.1**	**-1.1**
	comp=Z,6.3nm,0.6s,baz=122,slow=6.3,SNR=27					
ZALV			LR	LR	14 55 15.8	
	comp=Z,172nm,21.6s,baz=70,slow=37					
EKS2	**Erkin-Say**	**58.88 317**	*e*P	**P**	**14 29 12.6**	**-4.2**
EKS2			pmax	pmax		
	comp=Z,5.0nm,0.8s					
EKS2	**Erkin-Say**	**58.88 317**	*e*P	**P**	**14 29 12.6**	**-4.2**
	comp=Z,4.8nm,0.8s					
KURBB	**Kurchatov Arra**	**59.61 327**	PKPPKP	**P'P'df**	**14 58 55.5**	**+4.8**
	comp=Z,0.5nm,0.9s,baz=286,slow=3.2,SNR=4.0					
KURK	**Kurchatov**	**59.61 327**	*e*P	**P**	**14 29 19.1**	**-2.5**
KURK			pmax	pmax		
	comp=Z,16nm,0.6s					
KURK	**Kurchatov**	**59.61 327**	*e*P	**P**	**14 29 19.1**	**-2.5**
	comp=Z,16nm,0.6s					
KURK			P'P'	**P'P'df**	**14 58 55.5**	**+4.8**
MNAS	**Manas**	**59.68 316**	P	**P**	**14 29 20.2**	**-2.2**
MNAS			pmax	pmax		
	comp=Z,4.0nm,0.9s					
SEY	**Seymchan**	**60.03 13**	*ce*P	**P**	**14 29 24.8**	**+0.6**
KK31	**Karatay Array**	**61.27 316**	*i* P	**P**	**14 29 32.1**	**-1.0**
KK31			pmax	pmax		
	comp=Z,4.0nm,0.8s					
KKAR	**Karatay Array**	**61.27 316**	*e*P	**P**	**14 29 32.3**	**-0.8**
KKAR	**Karatay Array**	**61.27 316**	*e*P	**P**	**14 29 32.3**	**-0.8**
OTUK	**Ortayu**	**62.06 322**	P	**P**	**14 29 37.4**	**-0.9**
OTUK			pmax	pmax		
	comp=Z,3.0nm,0.6s					
AFI	**Afiamalu**	**64.63 108**	LR	LR	14 54 55.1	
	comp=Z,59nm,18.9s,baz=344,slow=33					
BVA0	**Borovoye Array**	**65.20 327**	*i* P	**P**	**14 30 00.7**	**+1.9**
BVA0			pmax	pmax		
	comp=Z,16nm,1.2s					
BRVK	**Borovoye**	**65.27 327**	*ce*P	**P**	**14 29 57.7**	**-1.6**
BRVK			pmax	pmax		
	comp=Z,9.0nm,0.8s					
BRVK			pmax	pmax		
	comp=Z,34nm,1.3s					
BRVK	**Borovoye**	**65.27 327**	*e*P	**P**	**14 29 58.0**	**-1.3**
	comp=Z,12nm,0.9s					
CHKZ	**Chkalovo**	**65.35 327**	P	**P**	**14 29 58.3**	**-1.5**
CHKZ			pmax	pmax		
	comp=Z,13nm,1.5s					
TIXI	**Tiksi**	**65.67 1**	P	**P**	**14 30 01.7**	**+0.2**
	comp=Z,18nm,0.6s,baz=182,slow=3.4,SNR=55					
TIXI	**Tiksi**	**65.67 1**	*ce*P	**P**	**14 30 00.5**	**-1.0**
TIXI			pmax	pmax		
	comp=Z,28nm,0.8s					
TIXI	**Tiksi**	**65.67 1**	*e*P	**P**	**14 30 01.2**	**-0.3**
	comp=Z,22nm,0.8s					
ZRNK	**Zerenda**	**65.93 326**	P	**P**	**14 30 02.2**	**-1.4**
ZRNK			pmax	pmax

BILL Bilibino 67.58 15 *eP* **P 14 30 12.7 -1.1**
comp=Z,5.2nm,0.6s
NRIK Noril'sk 68.18 346 P **P 14 30 17.5 0.0**
comp=Z,10nm,0.8s,baz=126,slow=5.3,SNR=16
NRIK LR LR 15 02 35.9
comp=Z,55nm,18.2s,baz=118,slow=38
GEYT Alibeck 69.11 308 P **P 14 30 22.8 -1.2**
comp=Z,7.4nm,1.0s,baz=155,slow=4.9,SNR=9.6
GEYT LR LR 15 05 40.1
comp=Z,92nm,19.8s,baz=150,slow=40
AB31 Akbulak array 70.12 320 *i* P **P 14 30 28.4 -1.5**
AB31 pmax pmax
comp=Z,5.0nm,0.7s
ABKAR Akbulak array 70.12 320 *eP* **P 14 30 28.0 -1.9**
AKTO Aktyubinsk 71.61 321 LR LR 15 05 09.6
comp=Z,158nm,19.6s,baz=106,slow=38
AKTO Aktyubinsk 71.61 321 P **P 14 30 37.1 -1.9**
AKTO pmax pmax
comp=Z,7.0nm,0.7s
SVE Sverdlovsk 71.82 328 *eP* **P 14 30 41.9 +1.9**
SVE pmax pmax
comp=Z,26nm,1.3s
ARU Arti 72.80 327 LR LR 15 06 44.4
comp=Z,56nm,19.4s,baz=98,slow=39
ARU Arti 72.80 327 *c i P* **P 14 30 44.1 -1.8**
ARU *PP **PcP 14 31 03.1 +0.3**
ARU 14 33 22.3
ARU S **S 14 40 04.6 -1.6**
ARU pmax pmax
comp=Z,8.0nm,1.0s
ARU Arti 72.80 327 *eP* **P 14 30 41.3 -4.6**
comp=Z,8.9nm,0.6s
TT01 Tatalina 79.19 27 *eP* **P 14 31 22.9 +0.8**
TTA Tatalina 79.20 27 *eP* **P 14 31 23.5 +1.2**
TTA Tatalina 79.20 27 *eP* **P 14 31 23.5 +1.2**
GNI Garni 79.67 310 LR LR 15 11 57.4
comp=Z,33nm,21.5s,baz=90,slow=40
KDAK Kodiak Island 80.33 32 *i P* **P 14 31 28.9 +0.5**
ZEI Tsey 80.34 312 *eP* **P 14 31 27.0 -2.1**
ZEI pmax pmax
comp=Z,19nm,0.9s
RSO Redoubt South 80.46 30 *eP* **P 14 31 28.4 -0.9**
SPU Mount Spurr 80.86 29 *eP* **P 14 31 30.8 -0.4**
PPLA Purkeypile 80.94 27 *eP* **P 14 31 31.1 -0.6**
comp=Z,10nm,0.6s
CAST Castle Rocks 81.03 27 *eP* **P 14 31 32.3 +0.3**
comp=Z,18nm,0.7s
KBZ Khabaz 81.09 313 P **P 14 31 31.4 -1.3**
comp=Z,1.5nm,0.6s,baz=143,slow=9.9,SNR=3.6
KBZ LR LR 15 14 16.6
comp=Z,50nm,18.1s,baz=70,slow=41
NEY Neytrino 81.21 313 *eP* **P 14 31 33.3 -0.4**
NEY pmax pmax
comp=Z,2.0nm,2.0s
KVAR Kislovodsk Arr 81.23 313 LR LR 15 11 55.0
comp=Z,40nm,19.5s,slow=39
KIV Kislovodsk 81.24 313 *i P* **P 14 31 33.7 0.0**
KIV pmax pmax
comp=Z,3.0nm,0.5s
KIV MLR MLR
comp=Z,92nm,22.0s
BRLK Bradley Lake 81.35 31 *eP* **P 14 31 33.3 -0.5**
comp=Z,23nm,1.0s
SUA Susitna One 81.51 29 *eP* **P 14 31 34.7 -0.1**
comp=Z,39nm,0.8s
OPO Ambohidratompo 81.51 250 P **P 14 31 34.7 -1.0**
comp=Z,1.5nm,0.6s,baz=96,slow=7.2,SNR=2.6
MLY Manley 81.73 25 *eP* **P 14 31 36.2 +0.4**
TRF Thorofare Moun 81.83 27 *eP* **P 14 31 35.0 -1.5**
comp=Z,25nm,0.9s
VRH Novokhopyorsk 81.95 321 *eP* **P 14 31 34.4 -2.7**
VRH pmax pmax
comp=Z,10.0nm,0.7s
SEW Seward 82.08 30 *eP* **P 14 31 34.6 -3.0**
comp=Z,26nm,1.3s
COLD Coldfoot 82.09 23 P **P 14 31 35.7 -1.8**
MCK McKinley 82.45 27 *eP* **P 14 31 36.5 -3.0**
MCK pmax pmax
comp=Z,56nm,1.1s
MCK McKinley 82.45 27 *eP* **P 14 31 36.5 -3.0**
comp=Z,56nm,1.1s
RND Reindeer 82.48 27 *eP* **P 14 31 39.5 -0.2**
RND pmax pmax
comp=Z,15nm,0.8s
RND Reindeer 82.48 27 *eP* **P 14 31 39.5 -0.2**
comp=Z,15nm,0.8s
SML Sawmill 82.67 29 *eP* **P 14 31 38.4 -2.3**
SML pmax pmax
comp=Z,11nm,1.1s
SML Sawmill 82.67 29 *eP* **P 14 31 38.4 -2.3**
comp=Z,11nm,1.1s
MDM Murphy Dome 82.79 25 *eP* **P 14 31 39.9 -1.4**
comp=Z,9.5nm,0.8s
WRH Wood River Hil 82.84 26 *eP* **P 14 31 40.9 -0.6**
comp=Z,15nm,1.0s
COLA College 82.95 25 *i P* **P 14 31 41.9 -0.1**
COLA pmax pmax
comp=Z,9.0nm,0.8s
CCB Clear Creek Bu 82.97 26 *eP* **P 14 31 41.7 -0.4**
SCM Sheep Creek Mo 83.15 28 *eP* **P 14 31 43.3 0.0**
SCM Sheep Creek Mo 83.15 28 *eP* **P 14 31 43.3 0.0**
KLMR Klimovskoe 83.24 331 *eP* **P 14 31 41.2 -2.4**
KLMR *e* 14 34 54.0
KLMR pmax pmax
comp=Z,12nm,0.8s
ILAR Eielson Array 83.36 26 P **P 14 31 43.1 -1.1**
comp=Z,3.9nm,0.5s,baz=252,slow=5.1,SNR=83
ILAR PKKPbc **PKKPbc 14 50 03.1 -3.0**
comp=Z,0.2nm,0.4s,baz=77,slow=1.5,SNR=4.2
ILAR LR LR 15 07 40.8
comp=Z,61nm,20.7s,baz=253,slow=35
ILB Eielson Array 83.36 26 *eP* **P 14 31 43.0 -1.2**
IL1 Eielson Array 83.36 26 *eP* **P 14 31 42.3 -1.9**
VSR Storozhevoye 83.55 321 *eP* **P 14 31 43.0 -2.4**
VSR pmax pmax
comp=Z,10.0nm,1.1s
LPSR Galich'ya Gora 83.67 322 *eP* **P 14 31 44.0 -2.0**
LPSR pmax pmax
comp=Z,8.0nm,0.7s
KLU Klutina 83.83 29 *eP* **P 14 31 47.4 +0.7**
TMCR Tamitsa 83.90 334 *eP* **P 14 31 49.0 +2.1**
TMCR pmax pmax
comp=Z,38nm,0.9s
PAX Paxson 84.01 27 P **P 14 31 46.4 -1.2**
PAX pmax pmax
comp=Z,19nm,1.4s
PAX Paxson 84.01 27 P **P 14 31 46.4 -1.2**
comp=Z,19nm,1.4s
FYU Fort Yukon 84.04 24 *eP* **P 14 31 47.6 0.0**
MOS Moscow 84.33 325 *eP* P 14 31 54.2 +4.9
DOT Dot Lake 84.62 27 *eP* **P 14 31 49.5 -1.2**
comp=Z,18nm,0.9s
MENT Mentasta 84.81 27 *eP* **P 14 31 51.8 +0.1**
OBN Obninsk 84.96 325 *i P* **P 14 31 51.3 -1.2**
OBN *i* S **S 14 42 13.3 -2.4**
OBN pmax pmax
comp=Z,20nm,1.2s
OBN MLR MLR
comp=Z,70nm,19.0s
BALM Baldy 85.57 29 *eP* **P 14 31 56.9 +1.4**
BALM Baldy 85.57 29 *eP* **P 14 31 56.9 +1.4**
VNDA Vanda 85.66 173 P **P 14 31 55.7 +0.2**
comp=Z,2.6nm,0.6s,baz=321,slow=6.2,SNR=22
VNDA LR LR 15 09 19.0
comp=Z,100nm,21.7s,baz=344,slow=35
EGAK Eagle 85.82 25 P **P 14 31 53.6 -2.9**
comp=Z,6.0nm,0.6s
PPT Papeete 86.30 108 LR LR 15 05 07.4
comp=Z,51nm,20.6s,baz=340,slow=32
PPT2 Papeete2 86.30 108 *eS* S 14 42 41.6 +11
comp=Z,96nm,27.0s
PPT2 *e*SS **SS 14 48 19.1 +7.6**
comp=Z,89nm,30.5s
PPT2 Papeete2 86.30 108 *e*LR LR 14 59 27.1
comp=Z,302nm,28.0s
TBI Tubuai 87.16 114 *eS* S 14 42 49.1 +11
comp=Z,257nm,27.5s
TBI *e*SS **SS 14 48 23.8 +0.1**
comp=Z,114nm,32.8s
TBI Tubuai 87.16 114 *e*LR LR 14 59 58.9
comp=Z,251nm,26.8s
ARA0 ARCESS Array S 88.21 340 *eP* **P 14 32 06.8 -1.2**
ARCES ARCESS Array B 88.21 340 P **P 14 32 06.8 -1.3**
comp=Z,6.2nm,0.6s,baz=86,slow=6.2,SNR=42
ARCES LR LR 15 16 59.4
comp=Z,71nm,18.2s,baz=76,slow=39

BRTR Keskin Array B 88.21 310 P **P 14 32 06.8 -2.2**
comp=Z,3.9nm,0.9s,baz=114,slow=4.3,SNR=16
BRTR LR LR 15 18 31.0
comp=Z,34nm,18.7s,baz=80,slow=40
SPA0 Spitsbergen Ar 88.23 349 *eP* **P 14 32 08.1 0.0**
INK Inuvik 88.33 21 P **P 14 32 08.4 -0.2**
comp=Z,5.8nm,0.7s,baz=234,slow=5.3,SNR=14
INK Inuvik 88.33 21 *eP* **P 14 32 04.5 -4.1**
INK Inuvik 88.33 21 *eP* **P 14 32 04.5 -4.1**
KMBO Kilima Mbogo 89.06 269 LR LR 15 10 42.3
comp=Z,34nm,19.6s,baz=96,slow=35
FIA1 FINESS Array S 89.65 332 *eP* **P 14 32 13.7 -1.3**
FINES FINESS Array B 89.65 332 P **P 14 32 13.6 -1.4**
comp=Z,5.5nm,0.6s,baz=64,slow=4.9,SNR=35
FINES LR LR 15 16 38.4
comp=Z,166nm,19.1s,baz=44,slow=38
AKASG Malin Array Be 89.86 321 P **P 14 32 13.9 -2.2**
comp=Z,1.1nm,0.5s,baz=68,slow=4.8,SNR=4.2
KIEV Kiev 89.87 321 ⇓ *eP* **P 14 32 14.2 -2.0**
KIEV pmax pmax
comp=Z,6.0nm,1.2s
AK11 Malin Array Si 89.90 321 *eP* **P 14 32 14.8 -1.5**
CFR Carcaliu 91.49 316 ⇑ *iP* **P 14 32 23.7 -0.2**
CFR Carcaliu 91.49 316 ⇑ *P* **P 14 32 23.7 -0.2**
MSAB Monastry St. A 91.90 314 ⇓ *iP* **P 14 32 28.2 +2.4**
TESR Tescani 92.27 317 ⇑ *iP* **P 14 32 25.5 -2.0**
VRI Vrincioaia 92.34 316 ⇑ *iP* **P 14 32 27.1 -0.7**
VRI Vrincioaia 92.34 316 ⇑ *P* **P 14 32 27.1 -0.7**
PLOR Plostina 92.40 316 ⇑ *iP* **P 14 32 27.1 -1.0**
PLOR Plostina 92.40 316 ⇑ *P* **P 14 32 27.1 -1.0**
MLR Muntele Rosu 92.95 316 ⇓ *iP* **P 14 32 29.7 -1.1**
MLR Muntele Rosu 92.95 316 ⇓ *P* **P 14 32 29.7 -1.1**
MLR Muntele Rosu 92.95 316 *eP* **P 14 32 29.5 -1.3**
SECR 92.96 316 ⇑ *iP* **P 14 32 30.7 0.0**
BURAR Bucovina Array 93.01 318 ⇑ *iP* **P 14 32 31.1 +0.1**
BURAR Bucovina Array 93.01 318 ⇑ *P* **P 14 32 31.1 +0.1**
BUR08 Bucovina Ar. S 93.02 318 *eP* **P 14 32 30.8 -0.3**
DOPR Dopca 93.24 317 ⇑ *iP* P 14 32 38.7 +6.7
DOPR Dopca 93.24 317 ⇑ *iP* P 14 32 38.7 +6.7
SYO Syowa Base 94.27 201 ⇑ *eP* **P 14 32 34.8 -1.3**
UZH Uzhgorod 94.69 320 *eP* **P 14 32 41.3 +2.8**
DRGR 94.86 318 ⇑ *iP* **P 14 32 38.4 -1.1**
DRGR 94.86 318 ⇑ *P* **P 14 32 38.4 -1.1**
DAG Danmarks Havn 95.02 352 ⇑ *iP* **P 14 32 38.8 -0.7**
comp=Z,19nm,0.8s
DAG Danmarks Havn 95.02 352 ⇑ *iP* **P 14 32 38.8 -0.7**
DAG pmax pmax
comp=Z,14nm,0.8s
CRVS Cervenica-Dubn 95.15 320 *e* **P 14 32 44.6 +3.9**
GZR Gura Zlata 95.15 317 ⇑ *iP* P 14 32 35.4 -5.4
GZR Gura Zlata 95.15 317 ⇑ *P* P 14 32 35.4 -5.4
LAST Lasithi 95.31 306 ⇓ *iP* **P 14 32 40.2 -1.6**
QSPA South Pole Qui 95.82 180 *eP* **P 14 32 44.5 +1.1**
BZS Buzias 95.89 317 ⇑ *iP* **P 14 32 42.6 -1.5**
BZS Buzias 95.89 317 ⇑ *P* **P 14 32 42.6 -1.5**
NB2 NORSAR Subarra 96.59 334 P **P 14 32 44.7 -2.3**
comp=Z,1.2nm,0.6s,baz=66,slow=4.6
NOA NORSAR Array B 96.59 334 P **P 14 32 45.0 -2.0**
comp=Z,2.6nm,0.8s,baz=66,slow=4.6,SNR=6.8
NOA LR LR 15 20 14.0
comp=Z,118nm,21.4s,baz=65,slow=38
NOA NORSAR Array B 96.59 334 P **P 14 32 45.0 -2.0**
YKW3 Yellowknife Ar 97.69 24 *eP* Pdif 14 32 52.1 +0.2
YKA Yellowknife Ar 97.73 24 P **P 14 32 52.0 0.0**
comp=Z,2.8nm,0.7s,baz=300,slow=4.6,SNR=27
YKA PKiKP **PKiKP 14 37 26.1 +0.4**
comp=Z,0.5nm,0.6s,baz=301,slow=1.8,SNR=4.8
YKA PKKPbc **PKKPbc 14 49 25.8 -3.9**
comp=Z,1.0nm,0.6s,baz=120,slow=2.4,SNR=9.5
YKB5 Yellowknife Ar 97.73 24 *eP* **P 14 32 51.6 -0.4**
LSZ Lusaka 99.23 256 LR LR 15 10 43.9
comp=Z,101nm,21.0s,baz=96,slow=31
GERES GERESS Array B 100.04 322 P **Pdif 14 33 02.6 -0.2**
comp=Z,0.2nm,0.3s,baz=56,slow=5.2,SNR=3.6
GERES LR LR 15 22 14.4
comp=Z,45nm,19.5s,baz=60,slow=38
SUMG Summit 101.02 355 *i P* **Pdif 14 33 06.9 -0.2**
SUMG Summit 101.02 355 *i P* **Pdif 14 33 06.9 -0.2**
NVAR Mina Array Bea 105.84 47 PKiKP **PKiKP 14 37 43.1 +1.7**
comp=Z,0.5nm,0.6s,baz=259,slow=1.0,SNR=4.2
NVAR PKKPbc **PKKPbc 14 49 04.6 -1.1**
comp=Z,0.6nm,0.8s,baz=116,slow=3.4,SNR=4.2
PDAR Pinedale Array 110.05 40 PKiKP **PKiKP 14 37 51.0 +1.8**
comp=Z,0.3nm,0.5s,baz=114,slow=5.4,SNR=4.3
PDAR PKKPbc **PKKPbc 14 48 49.5 -3.1**
comp=Z,0.3nm,0.5s,baz=103,slow=3.2,SNR=3.6
ULM Lac du Bonnet 113.29 28 PKiKP **PKiKP 14 37 54.6 -0.1**
comp=Z,2.4nm,0.5s,baz=143,slow=2.1,SNR=3.5
C31A Landman Farms, 114.04 31 P PKPdf 14 37 56.4 +0.1
baz=311
A33A Warroad 114.43 29 P PKPdf 14 37 56.9 -0.1
baz=314
G30A Faulkton 115.00 34 P PKPdf 14 37 58.2 -0.1
baz=309
B34A Aery, Baudette 115.09 29 P **PKPdf 14 37 58.3 0.0**
baz=314
D34A Park Rapids 115.79 30 P **PKPdf 14 37 59.8 +0.1**
baz=313
D35A Remer 116.36 30 P **PKPdf 14 38 00.3 -0.5**
baz=314
E36A McGregor 117.15 30 P **PKPdf 14 38 02.2 -0.1**
baz=315
K32A Verdigre 117.20 35 P **PKPdf 14 38 02.4 -0.1**
baz=309
ECSD EROS Data Cent 117.28 34 P **PKPdf 14 38 02.7 0.0**
baz=311
J33A Davis 117.35 34 P **PKPdf 14 38 02.7 -0.1**
baz=310
F36A Milaca 117.47 30 P **PKPdf 14 38 03.0 0.0**
baz=314
H35A Sunnyside Ranc 117.60 32 P **PKPdf 14 38 03.6 +0.4**
baz=313
C39A Grand Marais 117.67 27 P **PKPdf 14 38 02.8 -0.5**
baz=318
BGNE Belgrade 117.88 36 P **PKPdf 14 38 04.1 +0.2**
baz=308
L33A Hoskins 117.92 35 P **PKPdf 14 38 02.1 -1.8**
baz=310
MNTX Cornudas Mount 118.25 49 P **PKPdf 14 38 05.8 +0.9**
baz=298
O32A Brockman Farm, 118.50 38 P **PKPdf 14 38 05.1 0.0**
baz=308
L34A Svendsen Farm, 118.56 35 P **PKPdf 14 38 04.8 -0.4**
baz=310
J36A Seneca 1, Swea 118.79 33 P **PKPdf 14 38 05.9 +0.3**
baz=313
L35A Bielow Farm, R 118.93 34 P **PKPdf 14 38 05.2 -0.7**
baz=311
O33A Hebron 119.04 37 P **PKPdf 14 38 06.1 -0.1**
baz=308
Q32A Meitler Ranch, 119.10 39 P **PKPdf 14 38 06.0 -0.4**
baz=307
K36A Gilmore City 119.19 33 P **PKPdf 14 38 06.7 +0.3**
baz=312
J37A Redenius Farm, 119.22 32 P **PKPdf 14 38 06.5 0.0**
baz=313
M35A Neola 119.27 35 P **PKPdf 14 38 06.7 +0.1**
baz=311
R32A Long Quarter, 119.34 39 P **PKPdf 14 38 07.8 +0.9**
baz=307
I38A Scanlan Farm, 119.35 31 P **PKPdf 14 38 06.8 +0.1**
baz=315
P33A Williams Farm, 119.36 38 P **PKPdf 14 38 06.9 +0.1**
baz=308
K37A Belmond 119.55 33 P **PKPdf 14 38 06.9 -0.2**
baz=313
J38A Wedel Dairy, R 119.78 32 P **PKPdf 14 38 07.0 -0.5**
baz=314
M37A Trindle Farm, 120.24 34 P **PKPdf 14 38 08.2 -0.2**
baz=312
TXAR Lajitas Array 120.66 51 PKP **PKPdf 14 38 10.6 +0.9**
comp=Z,1.9nm,0.6s,baz=235,slow=0.7,SNR=19
TXAR PKKPbc **PKKPbc 14 48 14.1 -1.2**
comp=Z,0.2nm,0.7s,baz=131,slow=5.7,SNR=4.1
Q35A Mercer Eighty, 120.73 38 P **PKPdf 14 38 09.2 -0.2**
baz=309
Q36A Arnold C. Orve 121.01 37 P **PKPdf 14 38 09.7 -0.3**
baz=310
S35A Otter Creek Ra 121.29 39 P **PKPdf 14 38 11.0 +0.4**
baz=308
R36A Gordon, Harris 121.39 38 P **PKPdf 14 38 10.8 +0.1**
baz=309
WMOK Wichita Mounta 121.43 43 P **PKPdf 14 38 11.4 +0.4**
baz=305
T35A Sooner Cattle 121.64 40 P **PKPdf 14 38 11.5 +0.3**
baz=308

TORD Torodi Ar. Bea 121.70 289 PKP **PKPdf 14 38 11.1 -0.8**
comp=Z,12nm,0.7s,baz=70,slow=1.6,SNR=69
P38A Dawn 121.72 35 P **PKPdf 14 38 11.2 -0.1**
baz=312
R37A Teagarden Farm 121.81 37 P **PKPdf 14 38 11.2 -0.3**
baz=310
O39A Kirksville 121.86 34 P **PKPdf 14 38 11.5 -0.1**
baz=313
T36A Boggs Farm, Ca 121.95 39 P **PKPdf 14 38 11.9 0.0**
baz=308
Q38A Cooks Store, C 122.11 36 P **PKPdf 14 38 11.4 -0.7**
baz=312
S37A Fort Scott 122.16 38 P **PKPdf 14 38 12.2 -0.1**
baz=310
P39B Salisbury 122.26 35 P **PKPdf 14 38 12.2 -0.1**
baz=313
Q39A Willow Grove F 122.43 36 P **PKPdf 14 38 12.5 -0.2**
baz=312
R38A Fenwick Farm, 122.44 37 P **PKPdf 14 38 11.9 -0.8**
baz=311
W35A Tecumseh 122.46 42 P **PKPdf 14 38 13.4 +0.5**
baz=307
T37A Cheneyville 18 122.51 39 P **PKPdf 14 38 13.0 +0.1**
baz=309
Y34A Reagan Ranch, 122.57 43 P **PKPdf 14 38 13.6 +0.5**
baz=305
P40A Paris 122.63 35 P **PKPdf 14 38 12.9 -0.1**
baz=313
S38A Stockton 122.80 37 P **PKPdf 14 38 13.5 0.0**
baz=311
X35A Drake 122.84 42 P **PKPdf 14 38 14.0 +0.4**
baz=306
T38A Diamond 122.95 38 P **PKPdf 14 38 13.9 +0.2**
baz=310
JCT Junction City 123.02 48 P **PKPdf 14 38 14.6 +0.5**
baz=302
Y35A Marietta 123.08 43 P **PKPdf 14 38 14.5 +0.4**
baz=306
S39A Bolivar 123.12 37 P **PKPdf 14 38 13.9 -0.2**
baz=311
V37A Hulbert 123.14 40 P **PKPdf 14 38 14.4 +0.2**
baz=309
X36A Centrahoma 123.15 42 P **PKPdf 14 38 14.6 +0.3**
baz=307
333A Richland Sprin 123.17 46 P **PKPdf 14 38 14.7 +0.3**
baz=303
R40A Maddies Statio 123.34 36 P **PKPdf 14 38 14.5 0.0**
baz=312
433A Art 123.39 47 P **PKPdf 14 38 15.3 +0.5**
baz=302
234A Clairette 123.40 45 P **PKPdf 14 38 15.2 +0.4**
baz=304
W37B Quinton 123.41 41 P **PKPdf 14 38 14.9 +0.2**
baz=308
HDIL Hopedale 123.42 32 P **PKPdf 14 38 14.5 0.0**
baz=316
T39A Clever 123.52 38 P **PKPdf 14 38 15.0 +0.1**
baz=311
Y36A Durant 123.59 42 P **PKPdf 14 38 15.7 +0.6**
baz=306
V38A Canehill 123.62 39 P **PKPdf 14 38 15.0 -0.1**
baz=309
S40A Lebanon 123.67 37 P **PKPdf 14 38 15.0 -0.1**
baz=312
334A Lometa 123.70 46 P **PKPdf 14 38 15.6 +0.2**
baz=303
X37A Clayton 123.79 41 P **PKPdf 14 38 15.9 +0.5**
baz=308
T40A Mansfield 123.95 37 P **PKPdf 14 38 15.6 -0.1**
baz=312
434A Burnet 123.96 47 P **PKPdf 14 38 15.9 0.0**
baz=303
W38A Poteau 124.05 40 P **PKPdf 14 38 16.5 +0.6**
baz=309
X38A Whitesboro 124.09 41 P **PKPdf 14 38 16.6 +0.6**
baz=308
V39A Pettigrew 124.11 39 P **PKPdf 14 38 15.9 -0.3**
baz=310
534A Blanco 124.23 48 P **PKPdf 14 38 16.9 +0.4**
baz=302
U40A Yellville 124.27 38 P **PKPdf 14 38 16.2 -0.1**
baz=311
Q43A New Douglas 124.35 34 P **PKPdf 14 38 16.7 +0.3**
baz=315
833A Chaparral WMA, 124.43 50 P **PKPdf 14 38 17.9 +1.0**
baz=301
W39A Magazine 124.44 40 P **PKPdf 14 38 17.0 +0.3**
baz=309
T41A Mountain View 124.48 37 P **PKPdf 14 38 17.0 +0.3**
baz=312
V40A Witts Springs 124.65 38 P **PKPdf 14 38 17.1 0.0**
baz=311
X39A Fountain Ranch 124.65 40 P **PKPdf 14 38 18.1 +1.0**
baz=309
SFIN Lafayette 124.68 31 P **PKPdf 14 38 17.2 +0.2**
baz=319
MIAR Mount Ida 124.98 40 P **PKPdf 14 38 18.3 +0.5**
baz=309
V41A Mountainview 125.07 38 P **PKPdf 14 38 17.7 -0.2**
baz=311
S43A Fulton Ridge, 125.10 35 P **PKPdf 14 38 17.7 -0.1**
baz=314
138A Matatall Enter 125.13 43 P **PKPdf 14 38 17.5 -0.6**
baz=307
R44A Waltonville 125.18 34 P **PKPdf 14 38 18.4 +0.5**
baz=316
V42A Cord 125.53 38 P **PKPdf 14 38 19.0 +0.3**
baz=312
M54A Oil Creek Stat 127.20 24 P **PKPdf 14 38 21.9 +0.1**
baz=327
O56A Blue Knob Stat 128.69 24 P **PKPdf 14 38 25.6 +0.9**
baz=328
Y47A UCPARC, Winfie 128.95 37 P **PKPdf 14 38 25.8 +0.4**
baz=314
N59A State Game Lan 129.21 21 P **PKPdf 14 38 26.5 +0.8**
baz=332
KIC Kosan Boka 129.52 283 *e*PKP1 **PKPdf 14 38 26.9 0.0**
comp=Z,69nm,1.3s
DBIC Dimbokro 129.57 284 PKP **PKPdf 14 38 26.6 -0.4**
comp=Z,6.2nm,0.7s,baz=177,slow=2.3,SNR=7.4
TIC Toumodi 129.73 284 *e*PKP1 **PKPdf 14 38 27.1 -0.2**
LIC Lamto 129.83 283 *e*PKP1 **PKPdf 14 38 26.1 -1.4**
TRQA Tornquist 147.17 168 *e*PKPbc **PKPbc 14 39 00.9 +0.3**
ROC1 El Roble 148.68 151 *eP* **PKPbc 14 39 05.8 +0.6**
SDDR Presa de Saban 149.85 34 *e*PKPbc **PKPbc 14 39 07.7 -0.5**
BCIP Isla Barro Col 150.04 60 *e*PKPbc **PKPbc 14 39 08.9 +0.2**
AUSP Uspallata 150.07 153 *eP* **PKPbc 14 39 09.9 +1.3**
RTLS Leoncito 150.46 153 *eP* **PKPbc 14 39 10.8 +1.2**
MRA San Martin 151.40 159 *eP* **PKPbc 14 39 12.3 +0.7**
AMOG MOGNA 151.56 153 *eP* **PKPbc 14 39 12.8 +0.8**
LCO Las Campanas 152.03 147 *e*PKPbc **PKPbc 14 39 14.2 +0.9**
AGUA GUANDACOL 152.78 151 *eP* **PKPbc 14 39 15.5 +0.8**
TCA Tanti 152.78 160 *eP* **PKPbc 14 39 15.1 +0.4**
ROSC El Rosal 156.90 63 PKP **PKPdf 14 39 15.2 +1.2**
comp=Z,8.9nm,0.7s,baz=2.8,slow=23,SNR=4.5
CPUP Villa Florida 159.44 171 PKP **PKPdf 14 39 16.4 +0.2**
comp=Z,3.5nm,0.9s,baz=222,slow=3.2,SNR=4.9
CPUP PKPab **PKPab 14 39 54.0 0.0**
comp=Z,4.9nm,0.9s,baz=221,slow=5.6,SNR=5.9
LPAZ La Paz 162.60 127 PKP **PKPdf 14 39 21.9 +1.3**
comp=Z,3.2nm,0.8s,baz=327,slow=3.0,SNR=13
LPAZ PKPab **PKPab 14 40 11.2 +2.2**
comp=Z,2.0nm,0.8s,baz=121,slow=2.1,SNR=4.7
LPAZ La Paz 162.60 127 PKIKP **PKPdf 14 39 22.0 +1.3**

ISCJB ***27*** *14:25:43.6±0.5, 39°.09N±0°.03×29°.04E±0°.03, h1km±6km,*
Error ellipse: s-maj=4.5km s-min=3.8km az=154.8
ISK ***27*** *14:25:43.4, 39°.08N×29°.06E, h5km, ML3.1*
DDA ***27*** *14:25:43.7, 39°.11N×29°.05E, h7km, Md2.7*
CSEM ***27*** *14:25:44.0±0.1, 39°.09N×29°.05E, h2km, MD2.7, Error*
ellipse: s-maj=1.7km s-min=1.5km az=125.0
ISC 27 14:25:44.2±1.1, 39°.10N±0°.02×29°.05E±0°.02, h2km±14km,
n53, σ0.937/67, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.34**	**91**	P	**Pg**	**14 25 50.6**	**-0.1**
GDZ				S	**Sg**	**14 25 55.4**	**+0.3**
GDZ	**Gediz**	**0.34**	**91**	*i P*	**Pg**	**14 25 50.6**	**-0.1**
GDZ				*i* S	**Sg**	**14 25 55.4**	**+0.3**
TVSB	**Tavsanli**	**0.48**	**42**	PG	**Pg**	**14 25 52.9**	**-0.4**
TVSB				SG	**Sg**	**14 26 00.1**	**+0.5**
KULA	**Kula-Manisa**	**0.66**	**208**	PG	**Pg**	**14 25 56.5**	**-0.2**
KULA				SG	**Sg**	**14 26 05.0**	**-0.2**
KULA	**Kula-Manisa**	**0.66**	**208**	*i* Pg	**Pg**	**14 25 56.5**	**-0.2**

KULA			*i* Sg		**Sg**	**14 26 05.0**	**-0.2**
DURS	**Dursunbey**	**0.67**	**319**	P	**Pg**	**14 25 57.3**	**+0.2**
DURS	**Dursunbey**	**0.67**	**319**	*i* P	**Pg**	**14 25 57.3**	**+0.2**
MANT	**Manisa**	**0.72**	**212**	P	**Pg**	**14 25 57.4**	**-0.5**
MANT				S	**Sg**	**14 26 07.4**	**+0.2**
MANT	**Manisa**	**0.72**	**212**	*i* P	**Pg**	**14 25 57.4**	**-0.5**
MANT				*i* S	**Sg**	**14 26 07.4**	**+0.2**
KHAL	**Karahalli**	**0.81**	**154**	P	**Pg**	**14 25 59.8**	**+0.2**
KHAL				S	**Sg**	**14 26 09.9**	**-0.1**
KHAL	**Karahalli**	**0.81**	**154**	*i* P	**Pg**	**14 25 59.8**	**+0.2**
KHAL				*i* S	**Sg**	**14 26 09.9**	**-0.1**
KHL	**Karahalli**	**0.86**	**154**	*e*PG	**Pg**	**14 26 00.5**	**-0.1**
ORLT	**Orhaneli**	**0.95**	**353**	*e*PG	**Pg**	**14 26 01.9**	**-0.6**
ORLT	**Orhaneli**	**0.95**	**353**	*e*Pg	**Pg**	**14 26 01.9**	**-0.6**
AKHS	**Akhisar**	**0.99**	**258**	P	**Pg**	**14 26 02.8**	**-0.3**
AKHS				S	**Sg**	**14 26 16.3**	**+0.5**
AKHS	**Akhisar**	**0.99**	**258**	*i* P	**Pg**	**14 26 02.8**	**-0.3**
AKHS				*i* S	**Sg**	**14 26 16.3**	**+0.5**
AKS	**Akhisar**	**0.99**	**258**	*e*PG	**Pg**	**14 26 02.7**	**-0.4**
AKS	**Akhisar**	**0.99**	**258**	*e*Pg	**Pg**	**14 26 02.7**	**-0.4**
BALB	**Balikesir**	**1.05**	**301**	*e*PG	**Pg**	**14 26 04.5**	**+0.1**
BALB				*e*SG	**Sb**	**14 26 19.5**	**+0.1**
BALB	**Balikesir**	**1.05**	**301**	*e*Pg	**Pg**	**14 26 04.5**	**+0.1**
BALB				*e*Sg	**Sb**	**14 26 19.5**	**+0.1**
IGD	**Bursa**	**1.17**	**6**	*i* P	**Pg**	**14 26 04.9**	**-1.7**
IGD				*i* S	**Sg**	**14 26 21.9**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.28**	**354**	*e*PN	**Pg**	**14 26 08.3**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.28**	**354**	*e*Pn	**Pg**	**14 26 08.3**	**-0.3**
BALY	**Balya**	**1.28**	**301**	P	**Pg**	**14 26 08.3**	**-0.4**
BALY	**Balya**	**1.28**	**301**	*i* P	**Pg**	**14 26 08.3**	**-0.4**
IZI	**Iznik**	**1.28**	**15**	*e*PN	**Pg**	**14 26 08.8**	**0.0**
IZI	**Iznik**	**1.28**	**15**	*e*Pn	**Pg**	**14 26 08.8**	**0.0**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*PN	**Pg**	**14 26 08.9**	**+0.1**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*Pn	**Pg**	**14 26 08.9**	**+0.1**
GEMT	**Gemlik**	**1.34**	**5**	*e*PN	**Pb**	**14 26 10.1**	**+0.1**
GEMT	**Gemlik**	**1.34**	**5**	*e*Pn	**Pb**	**14 26 10.1**	**+0.1**
GONE	**Gonen-Balikesi**	**1.42**	**312**	*e*PN	**Pn**	**14 26 10.9**	**0.0**
GONE	**Gonen-Balikesi**	**1.42**	**312**	*e*Pn	**Pn**	**14 26 10.9**	**0.0**
ADVT	**Abdulvahap**	**1.44**	**22**	*e*PN	**Pn**	**14 26 11.1**	**-0.1**
ADVT	**Abdulvahap**	**1.44**	**22**	*e*Pn	**Pn**	**14 26 11.1**	**-0.1**
ARMT	**Armutlu**	**1.47**	**354**	*e*PN	**Pn**	**14 26 11.6**	**-0.2**
ARMT	**Armutlu**	**1.47**	**354**	*e*Pn	**Pn**	**14 26 11.6**	**-0.2**
GPA	**Golpazari**	**1.54**	**39**	*e*PN	**Pn**	**14 26 12.9**	**+0.2**
GPA	**Golpazari**	**1.54**	**39**	*e*Pn	**Pn**	**14 26 12.9**	**+0.2**
EDC	**Edincik**	**1.55**	**324**	*e*PN	**Pn**	**14 26 12.9**	**+0.2**
EDC	**Edincik**	**1.55**	**324**	*e*Pn	**Pn**	**14 26 12.9**	**+0.2**
GULT	**Gulveren**	**1.75**	**40**	*e*PN	**Pn**	**14 26 15.9**	**+0.3**
GULT	**Gulveren**	**1.75**	**40**	*e*Pn	**Pn**	**14 26 15.9**	**+0.3**
HRT	**Hereke**	**1.79**	**15**	*e*PN	**Pn**	**14 26 15.9**	**-0.2**
HRT	**Hereke**	**1.79**	**15**	*e*Pn	**Pn**	**14 26 15.9**	**-0.2**
SPNC	**Sapanca-Adapaz**	**1.86**	**31**	*e*PN	**Pn**	**14 26 16.3**	**-0.7**
SPNC	**Sapanca-Adapaz**	**1.86**	**31**	*e*Pn	**Pn**	**14 26 16.3**	**-0.7**
SVRH	**Sivrihisar-ESK**	**1.95**	**79**	*e*PN	**Pn**	**14 26 18.4**	**0.0**
SVRH	**Sivrihisar-ESK**	**1.95**	**79**	*e*Pn	**Pn**	**14 26 18.4**	**0.0**
ISK	**Istanbul-Kandi**	**1.97**	**0**	*e*PN	**Pn**	**14 26 18.6**	**+0.1**
ISK	**Istanbul-Kandi**	**1.97**	**0**	*e*Pn	**Pn**	**14 26 18.6**	**+0.1**
SILT	**Sile**	**2.10**	**12**	*e*PN	**Pn**	**14 26 20.4**	**0.0**
SILT	**Sile**	**2.10**	**12**	*e*Pn	**Pn**	**14 26 20.4**	**0.0**

BEO ***27*** *14:31:26.9±0.9, 44°.09N×19°.16E, h1km, M1.5/6, Mining explosion.*

CSEM 27 14:31:27.8±0.4, 44°.09N×19°.16E, h1km, ML1.6, 1D, Error ellipse: s-maj=7.2km s-min=6.3km az=58.0, Mining explosion., Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HAPS	**Han Pijesak,BI**	**0.15**	**267**	⇓*i*Pg	Pg	14 31 30.8	+0.1
HAPS				*e*Sg	Sg	14 31 34.5	+1.8
BBLS	**Lazići**	**0.29**	**142**	*e*Pg	Pg	14 31 33.4	+0.1
BBLS				*e*Sg	Sg	14 31 38.7	+1.6
BBLS	**Lazići**	**0.29**	**142**	*e*Pg	Pg	14 31 33.4	+0.1
BBLS				*e*Sg	Sg	14 31 38.7	+1.6
TEKS	**Tekeris**	**0.53**	**30**	*e*Pg	Pg	14 31 38.6	+0.7
TEKS				*e*Sg	Sg	14 31 45.1	+0.4
TEKS	**Tekeris**	**0.53**	**30**	*e*Pg	Pg	14 31 38.1	+0.2
TEKS				*e*Sg	Sg	14 31 45.1	+0.4
DIVS	**Divibare**	**0.60**	**89**	*e*Pg	Pg	14 31 38.9	-0.4
DIVS	**Divibare**	**0.60**	**89**	*e*Pg	Pg	14 31 38.9	-0.4
DIVS				*e*Sg	Sg	14 31 47.6	+0.5
IVAS	**Ivanjica**	**0.89**	**125**	*e*Pg	Pg	14 31 43.7	-1.1
IVAS				*e*Sg	Sg	14 31 57.1	+0.9
IVAS	**Ivanjica**	**0.89**	**125**	*e*Pg	Pg	14 31 43.7	-1.1
IVAS				*e*Sg	Sg	14 31 57.1	+0.9
TRUS	**Trudelj**	**0.91**	**81**	*e*Pg	Pb	14 31 46.8	+0.5
TRUS				*e*Sg	Sn	14 32 00.4	-1.0
TRUS	**Trudelj**	**0.91**	**81**	*e*Pg	Pb	14 31 46.8	+0.5
TRUS				*e*Sg	Sn	14 32 00.4	-1.0
GRUS	**Gruza**	**1.14**	**100**	*e*Pg	Pb	14 31 50.5	+0.2
GRUS				*e*Sg	Sn	14 32 09.3	+2.1
GRUS	**Gruza**	**1.14**	**100**	*e*Pg	Pb	14 31 50.5	+0.2
GRUS				*e*Sg	Sn	14 32 09.3	+2.1
FGSL	**Fruska Gora**	**1.16**	**23**	*e*Pg	Pb	14 31 50.4	-0.3
FGSL				*e*Sg	Sb	14 32 06.5	+0.3
FRGS	**Fruska Gora**	**1.16**	**23**	*e*Pg	Pb	14 31 50.4	-0.3
FRGS				*e*Sg	Sb	14 32 06.5	+0.2

NIED ***27*** *14:39:00, 36°.40N×141°.20E, h32km, Mw4.2 Best double couple: M0=2.08000×10^15 NP1:φs=44.00000°, δ=10.00000°, λ=-81.00000°. NP2:φs=215.00000°, δ=80.00000°, λ=-92.00000°.*

ISCJB ***27*** *14:39:26.0±0.8, 36°.43N±0°.03×141°.22E±0°.04, h33km±5km, mb4.4/46, MS3.9/1, Error ellipse: s-maj=5.5km s-min=4.1km az=39.0*

MOS ***27*** *14:39:26.5±1.3, 36°.45N×141°.20E, h37km, mb4.5/30, Error ellipse: s-maj=10.6km s-min=6.8km az=98.4*

JMA ***27*** *14:39:27.3±0.1, 36°.43N×141°.12E, h46km±2km, M4.3*

JMA Felt II J1.

NEIC ***27*** *14:39:28.0±0.3, 36°.43N×141°.18E, h35km, mb4.6/17, Error ellipse: s-maj=8.2km s-min=6.3km az=146.0*

NEIC Recorded [2 JMA] in Ibaraki and Tochigi.

IDC ***27*** *14:39:30.7±1.8, 36°.32N×141°.10E, h59km±17km, mb3.9/23, mb1 4.0/27, mb1mx3.9/54, mbtmp4.2/27, MS3.6/2, Ms1 3.6/2, ms1mx3.0/34, Error ellipse: s-maj=14.6km s-min=8.9km az=70.0*

ISC 27 14:39:25.2±0.5, 36°.37N±0°.04×141°.29E±0°.05, h17km±3km, n118, σ1§99/129, mb4.5/46, 7C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.63**	**293**	P	**Pb**	**14 39 37.9**	**+0.2**
JHO				S	**Sg**	**14 39 45.1**	**-0.9**
ONAJ	**Iwakimizuishiy**	**0.83**	**332**	P	**Pb**	**14 39 40.7**	**-0.5**
ONAJ				S	**Sb**	**14 39 50.1**	**-2.0**
JYT	**Yasato**	**0.90**	**261**	P	**Pb**	**14 39 42.0**	**-0.3**
JYT				S	**Sb**	**14 39 52.0**	**-1.9**
JFK	**Kawauchi**	**1.05**	**342**	P	**Pb**	**14 39 43.9**	**-1.0**
JFK				S	**Sb**	**14 39 55.6**	**-2.8**
JFT	**Otama**	**1.38**	**327**	P	**Pn**	**14 39 49.6**	**-0.1**
JFT				S	**Sn**	**14 40 05.3**	**-2.2**
JAG	**Ashikaga**	**1.48**	**273**	P	**Pn**	**14 39 50.1**	**-1.0**
JAG				S	**Sn**	**14 40 07.2**	**-2.9**
MJAR	**Matsushiro Arr**	**2.49**	**275**	P	**Pn**	**14 40 05.0**	**0.0**
MJAR	48nm,0.3s,baz=93,slow=9.4,SNR=436			S	**Sn**	**14 40 34.5**	**-0.4**
MAJO	**Matsushiro**	**2.49**	**275**	*c*P	**Pn**	**14 40 05.4**	**+0.5**
MAJO	**Matsushiro**	**2.49**	**275**	*e*Pn	**Pn**	**14 40 05.5**	**+0.5**
MAJO				*e*Sn	**Sn**	**14 40 30.9**	**-4.1**
MAT	**Matsushiro**	**2.49**	**275**	P	**Pn**	**14 40 05.1**	**+0.1**
MAT				S	**Sn**	**14 40 35.5**	**+0.5**
MJB9	**Matsu-Tunnel**	**2.49**	**275**	*e*Pn	**Pn**	**14 40 05.6**	**+0.6**
JHJ2	**Mitsune**	**3.47**	**201**	*e*Pn	**Pn**	**14 40 19.6**	**+1.2**
JHJ2				*e*Sn	**Sn**	**14 40 55.9**	**-3.2**
JHJ	**Hachijo jima 2**	**3.47**	**201**	P	**Pn**	**14 40 21.4**	**+2.9**
JHJ	52nm,0.3s,baz=69,slow=22,SNR=13			S	**Sn**	**14 41 00.1**	**+0.9**
INU	**Inuyama**	**3.62**	**255**	*e*Pn	**Pn**	**14 40 22.4**	**+2.0**
ERM	**Erimo**	**5.82**	**14**	*i* P	**Pn**	**14 40 50.2**	**-0.4**
ERM	**Erimo**	**5.82**	**14**	*e*Pn	**Pn**	**14 40 50.3**	**-0.4**
ERM				*e*Sn	**Sn**	**14 41 56.0**	**-1.0**
ASAJ	**Asahikawa**	**7.80**	**7**	P	**Pn**	**14 41 17.7**	**-0.2**
ASAJ	2.4nm,0.3s,baz=221,slow=12,SNR=32			S	**Sn**	**14 42 45.1**	**-0.7**

2011 MAY

	1.2nm,0.3s,baz=302,slow=30,SNR=3.7						
ASAJ	**Asahikawa**	**7.80**	**7**	*e*Pn	**Pn**	**14 41 15.8**	**-2.1**
ASAJ				S	**Sn**	**14 42 45.1**	**-0.7**
ASAJ				*e*Sn	**Sn**	**14 42 45.4**	**-0.4**
JNU	**Nakatsue**	**9.16**	**252**	P	Pn	14 41 40.6	+4.0
JNU	0.5nm,0.3s,baz=144,slow=2.4,SNR=6.2			LR	LR	14 45 35.8	
	comp=Z,239nm,18.2s,baz=122,slow=41						
CBIJ	**Chichi jima**	**9.28**	**175**	P	**Pn**	**14 41 37.6**	**-0.6**
CBIJ				S	**Sn**	**14 43 15.6**	**-6.6**
JCJ	**Chichijima**	**9.28**	**175**	P	**Pn**	**14 41 37.6**	**-0.6**
JCJ	11nm,0.3s,baz=279,slow=19,SNR=5.4			S	**Sn**	**14 43 15.6**	**-6.6**
	12nm,0.3s,baz=211,slow=23,SNR=6.1						
KUR	**Kuril'sk**	**10.16**	**27**	*e*P	**Pn**	**14 41 48.0**	**-2.1**
KUR				*e*S	**Sn**	**14 43 35.8**	**-7.8**
KUR				pmax	pmax		
	comp=Z,9.0nm,0.7s						
KUR				smax	smax		
	comp=N,13nm,0.5s						
KUR				smax	smax		
	comp=E,7.0nm,0.5s						
USRK	**Ussuriysk Ar.**	**10.56**	**321**	P	Pn	14 42 00.1	+4.4
	comp=E,1.2nm,0.3s,baz=139,slow=12,SNR=32						
YSS	**Yuzh-Sakhalins**	**10.63**	**5**	*e*P	**Pn**	**14 41 57.1**	**+0.5**
YSS	**Yuzh-Sakhalins**	**10.63**	**5**	*e*Pn	**Pn**	**14 41 57.1**	**+0.5**
KSRS	**Korea Array**	**10.76**	**280**	P	Pn	14 42 02.3	+3.9
	comp=E,0.5nm,0.3s,baz=94,slow=14,SNR=42						
KS01	**Wonju Array Si**	**10.78**	**280**	*e*Pn	**Pn**	**14 41 57.0**	**-1.8**
KS15	**Wonju Array Si**	**10.79**	**280**	*e*Pn	**Pn**	**14 41 57.4**	**-1.4**
CN2	**Changchun**	**14.20**	**306**	*e*P	**Pn**	**14 42 41.3**	**-4.2**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.8s						
TYV	**Tymovskoe**	**14.52**	**3**	*e*P	**Pn**	**14 42 50.5**	**+0.7**
KLR	**Kul'dur**	**14.62**	**335**	P	**Pn**	**14 42 49.5**	**-1.6**
	comp=Z,0.1nm,0.3s,baz=162,slow=9.6,SNR=3.8						
KLR	**Kul'dur**	**14.62**	**335**	*i* P	**Pn**	**14 42 49.9**	**-1.2**
NJ2	**Nanjing**	**19.04**	**263**	*e*P	**P**	**14 43 45.0**	**-1.4**
NJ2				pmax	pmax		
	comp=Z,9.0nm,0.6s						
HHC	**Hu-ho-hao-te**	**23.59**	**290**	*e*P	**P**	**14 44 33.0**	**-2.2**
HHC				pmax	pmax		
	comp=Z,27nm,0.8s						
HHC				pmax	pmax		
	comp=Z,130nm,4.3s						
YAK	**Yakutsk**	**26.69**	**348**	*e*P	**P**	**14 45 01.9**	**-1.2**
YAK				pmax	pmax		
	comp=Z,13nm,1.2s						
SEY	**Seymchan**	**27.46**	**11**	P	**P**	**14 45 12.7**	**+2.7**
	comp=Z,2.0nm,0.8s,baz=254,slow=0.4,SNR=6.6						
ULN	**Ulaanbaatar**	**27.65**	**305**	*c*e*P	**P**	**14 45 12.9**	**+0.8**
ULN				pmax	pmax		
	comp=Z,12nm,1.2s						
ULN	**Ulaanbaatar**	**27.65**	**305**	*e*P	**P**	**14 45 09.3**	**-2.8**
	comp=Z,5.8nm,0.6s						
H11N2	**WAKE ISLAND Hy**	**27.90**	**120**	T	T	15 15 21.7	
	baz=312,slow=75,SNR=37						
H11N1	**WAKE ISLAND Hy**	**27.91**	**120**	T	T	15 15 22.1	
	baz=312,slow=75,SNR=36						
H11N3	**WAKE ISLAND Hy**	**27.92**	**120**	T	T	15 15 23.0	
	baz=312,slow=75,SNR=32						
SONA1	**Songino Array**	**28.07**	**305**	*e*P	**P**	**14 45 14.3**	**-1.6**
SONM	**Songino Array**	**28.08**	**305**	P	**P**	**14 45 14.6**	**-1.3**
	comp=Z,6.3nm,0.5s,baz=98,slow=8.7,SNR=29						
H11S1	**WAKE ISLAND Hy**	**28.59**	**122**	T	T	15 16 03.9	
	SNR=201						
H11S3	**WAKE ISLAND Hy**	**28.59**	**122**	T	T	15 15 24.8	
	baz=312,slow=74,SNR=114						
H11S2	**WAKE ISLAND Hy**	**28.61**	**122**	T	T	15 15 55.1	
	baz=257,slow=74,SNR=105						
LZH	**Lanzhou**	**30.09**	**281**	*e*P	**P**	**14 45 34.0**	**+0.1**
LZH				pP	sP	14 45 41.3	+0.1
LZH				sP	pP	14 45 45.0	+5.9
LZH				pmax	pmax		
	comp=Z,14nm,1.0s						
CD2	**Chengdu**	**31.58**	**271**	P	**P**	**14 45 45.0**	**-2.0**
CD2				pmax	pmax		
	comp=Z,10.0nm,0.6s						
KMI	**Kunming**	**34.77**	**262**	P	**P**	**14 46 15.0**	**-0.1**
KMI				pmax	pmax		
	comp=Z,20nm,0.5s						
KMI				pmax	pmax		
	comp=Z,240nm,5.7s						
TIXI	**Tiksi**	**35.94**	**353**	P	**P**	**14 46 25.0**	**+0.7**
	comp=Z,2.2nm,0.7s,baz=150,slow=6.9,SNR=4.2						
TIXI	**Tiksi**	**35.94**	**353**	*e*P	**P**	**14 46 25.1**	**+0.9**
	comp=Z,2.1nm,0.7s						
WMQ	**Urumqi**	**41.05**	**297**	*e*P	P	14 47 11.5	+3.7
WMQ				pmax	pmax		
	comp=Z,7.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,110nm,9.8s						
WMQ				LR	LR		
	comp=N,31nm,19.6s						
WMQ				LR	LR		
	comp=E,18nm,27.6s						
WMQ				LR	LR		
	comp=Z,20nm,27.6s						
ZAA0	**Zalesovo Array**	**42.29**	**313**	*e*P	**P**	**14 47 16.6**	**-1.0**
ZALV	**Zalesovo Beam**	**42.29**	**313**	P	**P**	**14 47 16.7**	**-0.9**
	comp=Z,3.2nm,0.5s,baz=99,slow=7.0,SNR=11						
ZALV				PcP	**PcP**	**14 49 10.9**	**-0.2**
	comp=Z,0.4nm,0.4s,baz=94,slow=4.3,SNR=2.4						
MK01	**Makanchi Array**	**44.38**	**303**	*e*P	**P**	**14 47 33.6**	**-1.1**
MKAR	**Makanchi Array**	**44.39**	**303**	P	**P**	**14 47 33.8**	**-1.0**
	comp=Z,0.9nm,0.5s,baz=81,slow=9.9,SNR=8.1						
MAKZ	**Makanchi**	**44.60**	**303**	*e*P	**P**	**14 47 35.7**	**-0.7**
MAKZ				pmax	pmax		
	comp=Z,4.0nm,1.3s						
MAKZ	**Makanchi**	**44.60**	**303**	*e*P	**P**	**14 47 35.7**	**-0.7**
	comp=Z,4.0nm,1.3s						
KURK	**Kurchatov**	**46.26**	**309**	*c*e*P	**P**	**14 47 48.4**	**-1.1**
KURK				pmax	pmax		
	comp=Z,5.0nm,1.0s						
KURK	**Kurchatov**	**46.26**	**309**	*e*P	**P**	**14 47 46.0**	**-3.5**
	comp=Z,6.2nm,0.7s						
KURBB	**Kurchatov Arra**	**46.33**	**308**	P	**P**	**14 47 48.8**	**-1.2**
	comp=Z,3.8nm,0.6s,baz=82,slow=7.7,SNR=39						
KDAK	**Kodiak Island**	**47.66**	**42**	*c*e*P	**P**	**14 48 00.9**	**+0.6**
MDM	**Murphy Dome**	**49.53**	**32**	*e*P	**P**	**14 48 15.6**	**+0.9**
	comp=Z,5.5nm,0.8s						
SML	**Sawmill**	**49.59**	**36**	*e*P	**P**	**14 48 15.0**	**-0.1**
SML				pmax	pmax		
	comp=Z,2.0nm,0.8s						
SML	**Sawmill**	**49.59**	**36**	*e*P	**P**	**14 48 15.0**	**-0.1**
	comp=Z,2.4nm,0.8s						
TKM2	**Tokmak 2**	**49.86**	**299**	*e*P	**P**	**14 48 13.8**	**-3.9**
TKM2				pmax	pmax		
	comp=Z,4.0nm,0.8s						
TKM2	**Tokmak 2**	**49.86**	**299**	*e*P	**P**	**14 48 13.8**	**-3.9**
	comp=Z,4.4nm,0.8s						
SCM	**Sheep Creek Mo**	**50.06**	**36**	*e*P	**P**	**14 48 19.9**	**+1.1**
SCM				pmax	pmax		
	comp=Z,14nm,0.8s						
SCM	**Sheep Creek Mo**	**50.06**	**36**	*e*P	**P**	**14 48 19.9**	**+1.1**
	comp=Z,14nm,0.8s						
IL1	**Eielson Array**	**50.11**	**32**	*e*P	**P**	**14 48 19.0**	**0.0**
ILAR	**Eielson Array**	**50.11**	**32**	P	**P**	**14 48 19.6**	**+0.6**
	comp=Z,2.4nm,0.7s,baz=270,slow=6.3,SNR=40						
ILAR	**Eielson Array**	**50.11**	**32**	P	**P**	**14 48 19.6**	**+0.6**
ILAR				pmax	pmax		
	comp=Z,3.0nm,0.7s						
ILB	**Eielson Array**	**50.11**	**32**	*e*P	**P**	**14 48 18.9**	**-0.2**
AAK	**Ala-Archa**	**50.72**	**299**	P	**P**	**14 48 25.2**	**+1.1**
	comp=Z,2.8nm,0.5s,baz=74,slow=2.8,SNR=8.2						
AAK	**Ala-Archa**	**50.72**	**299**	*i* P	**P**	**14 48 24.8**	**+0.6**
AAK				pmax	pmax		
	comp=Z,6.0nm,0.6s						
KLU	**Klutina**	**50.76**	**36**	*e*P	**P**	**14 48 24.3**	**+0.3**
	comp=Z,6.6nm,0.6s						
BVAR	**Borovoye Array**	**50.95**	**313**	P	**P**	**14 48 24.3**	**-1.2**
	comp=Z,1.2nm,0.7s,baz=69,slow=8.1,SNR=7.9						
BVAR				PcP	**PcP**	**14 49 40.8**	**-0.9**
	comp=Z,0.6nm,0.6s,baz=49,slow=6.6,SNR=2.5						
BRVK	**Borovoye**	**51.00**	**313**	*c*e*P	**P**	**14 48 24.2**	**-1.7**
BRVK				pmax	pmax		
	comp=Z,2.0nm,1.0s						
DOT	**Dot Lake**	**51.41**	**33**	*e*P	**P**	**14 48 26.6**	**-2.3**
	comp=Z,33nm,1.8s						
ZRNK	**Zerenda**	**51.78**	**313**	*e*P	**P**	**14 48 31.1**	**-0.6**
ZRNK				pmax	pmax		
	comp=Z,4.0nm,0.8s						
ZRNK	**Zerenda**	**51.78**	**313**	*e*P	**P**	**14 48 31.1**	**-0.6**
	comp=Z,4.4nm,0.8s						
EGAK	**Eagle**	**52.55**	**32**	*e*P	**P**	**14 48 35.7**	**-1.6**
GSI	**Gunungsitoli**	**53.38**	**239**	*e*P	**P**	**14 48 44.0**	**-0.1**
	comp=Z,12nm,0.8s						
INK	**Inuvik**	**55.02**	**27**	P	**P**	**14 48 56.5**	**+1.2**
	comp=Z,1.6nm,0.6s,baz=343,slow=8.1,SNR=4.3						
WRA	**Warramunga Arr**	**56.39**	**188**	P	**P**	**14 49 05.0**	**-0.6**
	comp=Z,4.1nm,0.6s,baz=5.3,slow=7.5,SNR=70						
ARU	**Arti**	**56.79**	**319**	P	**P**	**14 49 07.5**	**-0.6**
	comp=Z,2.1nm,0.4s,baz=97,slow=3.4,SNR=5.1						
ARU	**Arti**	**56.79**	**319**	*c i* P	**P**	**14 49 06.0**	**-2.2**
ARU						14 51 13.1	
ARU				S	**S**	**14 56 55.6**	**-4.7**
ARU				SS	**SS**	**15 00 40.5**	**-7.3**
ARU				pmax	pmax		
	comp=Z,9.0nm,1.7s						
ARU	**Arti**	**56.79**	**319**	*e*P	**P**	**14 49 07.0**	**-1.2**
	comp=Z,3.8nm,0.6s						
ABKAR	**Akbulak array**	**58.29**	**310**	*e*P	**P**	**14 49 17.9**	**-0.9**
AS01	**Alice Springs**	**60.11**	**188**	*e*P	**P**	**14 49 31.3**	**-0.4**
ASAR	**Alice Springs**	**60.12**	**188**	P	**P**	**14 49 31.4**	**-0.3**
	comp=Z,2.1nm,0.7s,baz=11,slow=5.6,SNR=23						
YKA	**Yellowknife Ar**	**64.43**	**30**	P	**P**	**14 50 00.4**	**+0.3**
	comp=Z,0.7nm,0.7s,baz=302,slow=6.8,SNR=8.0						
ARCES	**ARCESS Array B**	**64.58**	**339**	P	**P**	**14 50 01.1**	**0.0**
	comp=Z,1.1nm,0.7s,baz=52,slow=7.9,SNR=5.5						
STKA	**Stephens Creek**	**67.89**	**180**	P	**P**	**14 50 22.4**	**-0.2**
	comp=Z,3.3nm,0.7s,baz=348,slow=7.7,SNR=10						
FINES	**FINESS Array B**	**69.35**	**332**	P	**P**	**14 50 31.0**	**-0.5**
	comp=Z,1.7nm,0.8s,baz=50,slow=9.3,SNR=3.2						
FINES	**FINESS Array B**	**69.35**	**332**	P	**P**	**14 50 31.0**	**-0.5**
FINES				pmax	pmax		
	comp=Z,2.0nm,0.8s						
FFC	**Flin Flon**	**74.32**	**33**	*e*P	**P**	**14 51 02.0**	**+0.6**
FFC				pmax	pmax		
	comp=Z,7.0nm,1.3s						
FFC	**Flin Flon**	**74.32**	**33**	*e*P	**P**	**14 51 02.0**	**+0.6**
	comp=Z,7.0nm,1.3s						
NB2	**NORSAR Subarra**	**74.76**	**337**	P	**P**	**14 51 04.2**	**+0.2**
	comp=Z,1.2nm,0.6s,baz=41,slow=5.9						
NOA	**NORSAR Array B**	**74.76**	**337**	P	**P**	**14 51 05.2**	**+1.3**
	comp=Z,0.8nm,0.8s,baz=38,slow=5.9,SNR=3.2						
AKASG	**Malin Array Be**	**74.76**	**322**	P	**P**	**14 51 05.1**	**+1.1**
	comp=Z,0.7nm,0.4s,baz=44,slow=5.7,SNR=5.2						
NV01	**Mina Array Sit**	**75.47**	**53**	*e*P	**P**	**14 51 09.8**	**+1.2**
NVAR	**Mina Array Bea**	**75.47**	**53**	P	**P**	**14 51 10.1**	**+1.4**
	comp=Z,1.2nm,0.7s,baz=298,slow=6.0,SNR=8.8						
TPNV	**Topopah Spring**	**77.65**	**53**	*e*P	**P**	**14 51 22.3**	**+1.3**
TPNV				pmax	pmax		
	comp=Z,5.0nm,1.3s						
TPNV	**Topopah Spring**	**77.65**	**53**	*e*P	**P**	**14 51 22.2**	**+1.3**
	comp=Z,4.7nm,1.3s						
BW06	**Boulder Array**	**78.20**	**45**	*e*P	**P**	**14 51 24.4**	**+0.3**
PDAR	**Pinedale Array**	**78.20**	**45**	P	**P**	**14 51 24.6**	**+0.5**
	comp=Z,0.7nm,0.6s,baz=281,slow=1.7,SNR=8.4						
MTPU	**Mount Pierson**	**79.57**	**50**	*e*P	**P**	**14 51 33.8**	**+2.0**
	comp=Z,21nm,2.0s						
SRU	**San Rafael Swe**	**79.92**	**49**	*e*P	**P**	**14 51 34.8**	**+1.3**
SRU				pmax	pmax		
	comp=Z,4.0nm,0.7s						
SRU	**San Rafael Swe**	**79.92**	**49**	*e*P	**P**	**14 51 34.8**	**+1.3**
	comp=Z,3.7nm,0.7s						
PV05	**Paradox Valley**	**81.44**	**49**	*e*P	**P**	**14 51 38.2**	**-3.5**
GERES	**GERESS Array B**	**83.22**	**328**	P	**P**	**14 51 52.3**	**+1.7**
	comp=Z,0.2nm,0.3s,baz=62,slow=9.0,SNR=3.7						
PPT	**Papeete**	**84.43**	**116**	LR	LR	15 22 52.0	
	comp=Z,53nm,21.9s,baz=352,slow=31			

comp=Z,697nm,0.1s
IMRD eSg Sb 15 02 46.3 +1.6
IMRD Marand 1.68 16 ePn Pb 15 02 22.2 -0.7
IMRD eSg Sb 15 02 46.3 +1.6
IHRS Heris 1.95 51 ePn Pb 15 02 26.7 -0.9
IHRS eAMB AMB 15 02 28.0
comp=Z,435nm,0.2s
IHRS Heris 1.95 51 ePn Pb 15 02 26.7 -0.9
ISRB Sarab 2.15 69 ePn Pn 15 02 28.1 -0.2
ISRB eAMB AMB 15 02 29.9
comp=Z,457nm,0.1s
ISRB eSg Sb 15 02 59.7 +1.4
ISRB Sarab 2.15 69 ePn Pn 15 02 28.1 -0.2
ISRB eSg Sb 15 02 59.7 +1.4
SIRT Sirnak 2.18 282 ePG Pg 15 02 32.1 -0.7

NIED ***27*** *15:02:00,35°.90N×141°.10E,h11km,Mw3.9 Best double couple: M0 8.09000×10^14 NP1:φs 11.00000°,δ32.00000°, λ-113.00000°. NP2:φs 218.00000°,δ61.00000°, λ-76.00000°.*
IDC ***27*** *15:02:46.5±0.6,35°.80N×140°.86E,h0km,mb3.9/17, mb1 4.1/21,mb1mx3.9/39,mbtmp4.0/21,ML4.0/4,MS2.8/3, Ms1 2.8/3,ms1mx2.4/44,Error ellipse: s-maj=17.7km s-min=12.3km az=93.0*
ISCJB ***27*** *15:02:48.4±0.6,35°.84N±0°.03×140°.89E±0°.06,h24km±4km, mb3.9/20,MS2.6/1,Error ellipse: s-maj=8.9km s-min=5.5km az=164.3*
JMA ***27*** *15:02:48.2±0.1,35°.89N×140°.97E,h18km±1km,M4.2 Broadband fault plane solution: P waves. NP1: φs 243.00000°,δ60.00000°,λ-97.00000°. NP2:φs 76.00000°, δ30.00000°,λ-79.00000°. Principal axes: T Plg15.0000°, Azm338.0000°; N Plg6.0000°, Azm246.0000°; P Plg74.0000°, Azm136.0000°;*
JMA Felt I J1.
NEIC ***27*** *15:02:51.2±0.5,35°.79N×140°.80E,h35km,mb4.4/3 Error ellipse: s-maj=11.7km s-min=9.6km az=76.0*
NEIC Recorded [1 JMA] in Chiba, Ibaraki and Tochigi.

ISC 27 15:02:48.1±1.4,35°.90N±0°.04×140°.95E±0°.06,h13km±9km, n42,σ1°51/40,mb4.0/20,4C,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.21**	**201**	⇑P	**Pg**	**15 02 53.2**	**+0.5**
CHOJ				eS	**Sb**	**15 02 56.8**	**-0.8**
JYT	**Yasato**	**0.70**	**298**	⇑P	**Pg**	**15 03 01.6**	**-0.1**
JYT				S	**Sb**	**15 03 11.0**	**-0.7**
JHO	**Hitachi**	**0.78**	**337**	⇑P	**Pg**	**15 03 02.7**	**-0.5**
JHO				S	**Sb**	**15 03 13.9**	**-0.1**
BSO3	**Boso 3**	**1.15**	**198**	⇑P	**Pn**	**15 03 09.2**	**-0.5**
MJAR	**Matsushiro Arr**	**2.31**	**287**	Pn	**Pn**	**15 03 25.5**	**-0.5**
	42nm,0.3s,baz=93,slow=8.7,SNR=361						
MJAR				LR	LR	15 04 15.3	
	comp=Z,64nm,19.9s,baz=95,slow=40						
MAJO	**Matsushiro**	**2.31**	**287**	ePn	**Pn**	**15 03 25.9**	**0.0**
MAT	**Matsushiro**	**2.31**	**287**	P	**Pn**	**15 03 25.7**	**-0.2**
MAT				eS	**Sn**	**15 03 53.1**	**-1.2**
JHJ	**Hachijo jima 2**	**2.94**	**200**	Pn	**Pn**	**15 03 33.8**	**-0.7**
	12nm,0.3s,baz=27,slow=15,SNR=1.2						
JHJ				Sn	**Sn**	**15 04 08.1**	**-1.6**
	34nm,0.3s,baz=80,slow=22,SNR=3.3						
ASAJ	**Asahikawa**	**8.30**	**8**	Pn	**Pn**	**15 04 47.5**	**-0.7**
	1.7nm,0.3s,baz=215,slow=13,SNR=13						
ASAJ				Sn	**Sn**	**15 06 18.0**	**-3.8**
	0.3nm,0.3s,baz=264,slow=23,SNR=1.8						
ASAJ	**Asahikawa**	**8.30**	**8**	Pn	**Pn**	**15 04 47.5**	**-0.7**
	0.8nm,0.6s						
ASAJ				Sn	**Sn**	**15 06 18.0**	**-3.8**
JNU	**Nakatsue**	**8.76**	**254**	LR	LR	15 08 38.0	
	comp=Z,137nm,18.3s,baz=120,slow=41						
CBIJ	**Chichi jima**	**8.84**	**173**	Pn	**Pn**	**15 04 53.1**	**-2.5**
JCJ	**Chichijima**	**8.84**	**173**	Pn	**Pn**	**15 04 53.1**	**-2.5**
	15nm,0.3s,baz=312,slow=23,SNR=13						
USRK	**Ussuriysk Ar.**	**10.76**	**323**	Pn	Pn	15 05 26.8	+5.0
	0.3nm,0.3s,baz=127,slow=14,SNR=6.4						
GUMO	**Guam**	**22.49**	**170**	LR	LR	15 14 47.7	
	comp=Z,24nm,20.4s,baz=90,slow=32						
MA2	**Magadan**	**24.54**	**12**	P	**P**	**15 08 08.3**	**+1.0**
	2.4nm,0.6s,baz=83,slow=8.1,SNR=2.6						
H11N2	**WAKE ISLAND Hy**	**27.91**	**118**	T	T	15 37 44.7	
	baz=311,slow=75,SNR=219						
H11N1	**WAKE ISLAND Hy**	**27.92**	**118**	T	T	15 37 43.1	
	baz=311,slow=75,SNR=261						
H11N3	**WAKE ISLAND Hy**	**27.93**	**118**	T	T	15 37 42.4	
	baz=311,slow=75,SNR=260						
SEY	**Seymchan**	**27.97**	**11**	P	**P**	**15 08 40.8**	**+2.6**
	0.7nm,0.5s,baz=180,slow=20,SNR=2.6						
SONM	**Songino Array**	**28.13**	**306**	P	**P**	**15 08 39.3**	**-0.6**
	0.9nm,0.6s,baz=105,slow=9.1,SNR=4.2						
H11S1	**WAKE ISLAND Hy**	**28.58**	**120**	T	T	15 38 29.5	
	baz=313,slow=76,SNR=220						
H11S3	**WAKE ISLAND Hy**	**28.58**	**121**	T	T	15 38 29.1	
	baz=313,slow=76,SNR=216						
H11S2	**WAKE ISLAND Hy**	**28.59**	**121**	T	T	15 38 30.3	
	baz=313,slow=76,SNR=201						
TIXI	**Tiksi**	**36.37**	**354**	P	**P**	**15 09 53.3**	**+1.7**
	1.0nm,0.4s,baz=139,slow=6.9,SNR=3.8						
ZALV	**Zalesovo Beam**	**42.41**	**313**	P	**P**	**15 10 42.2**	**0.0**
	1.1nm,0.4s,baz=105,slow=5.1,SNR=7.2						
MKAR	**Makanchi Array**	**44.42**	**303**	P	**P**	**15 10 58.6**	**+0.1**
	2.8nm,0.8s,baz=90,slow=11,SNR=14						
KURK	**Kurchatov**	**46.35**	**309**	eP	**P**	**15 11 11.8**	**-1.9**
	14nm,0.8s						
KURBB	**Kurchatov Arra**	**46.41**	**309**	P	**P**	**15 11 14.2**	**0.0**
	3.5nm,0.8s,baz=83,slow=7.7,SNR=21						
TKM2	**Tokmak 2**	**49.85**	**299**	eP	**P**	**15 11 44.1**	**+2.9**
	1.8nm,0.6s						
ILAR	**Eielson Array**	**50.65**	**32**	P	**P**	**15 11 47.4**	**+0.6**
	0.4nm,0.7s,baz=265,slow=5.4,SNR=10						
WRA	**Warramunga Arr**	**55.89**	**188**	P	**P**	**15 12 24.6**	**-1.1**
	1.9nm,0.9s,baz=5.8,slow=7.4,SNR=20						
ABKAR	**Akbulak array**	**58.39**	**311**	eP	**P**	**15 12 42.3**	**-0.9**
	1.1nm,0.4s						
ASAR	**Alice Springs**	**59.62**	**187**	P	**P**	**15 12 51.9**	**+0.1**
	1.2nm,0.8s,baz=14,slow=8.6,SNR=15						
YKA	**Yellowknife Ar**	**64.97**	**30**	P	**P**	**15 13 28.4**	**+1.1**
	0.5nm,0.7s,baz=300,slow=6.1,SNR=2.5						
STKA	**Stephens Creek**	**67.42**	**179**	P	**P**	**15 13 43.0**	**-0.2**
	1.7nm,0.8s,baz=294,slow=7.0,SNR=4.9						
FINES	**FINESS Array B**	**69.64**	**332**	P	**P**	**15 13 58.6**	**+1.8**
	1.8nm,0.7s,baz=52,slow=12,SNR=5.8						
AKASG	**Malin Array Be**	**74.97**	**322**	P	**P**	**15 14 28.9**	**0.0**
	0.4nm,0.4s,baz=44,slow=5.7,SNR=4.2						
NVAR	**Mina Array Bea**	**75.97**	**53**	P	**P**	**15 14 36.4**	**+1.2**
	0.4nm,0.6s,baz=297,slow=8.0,SNR=3.3						
PDAR	**Pinedale Array**	**78.73**	**45**	P	**P**	**15 14 51.3**	**+0.7**
	0.3nm,0.5s,baz=262,slow=5.4,SNR=3.7						
TXAR	**Lajitas Array**	**91.11**	**52**	P	**P**	**15 15 53.9**	**+0.9**
	0.2nm,0.6s,baz=270,slow=2.7,SNR=3.0						
LPAZ	**La Paz**	**147.58**	**61**	PKPbc	**PKPbc**	**15 22 34.2**	**+0.8**
	1.6nm,0.7s,baz=298,slow=2.4,SNR=7.4						

MAN 27 15:05:28,8°.40N×123°.42E,h11km,mb3.8,ML2.6,MS2.2, 1C,Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PAGZ	**Pagadian**	**0.55**	**184**	eP	Pb	15 05 40.1	+0.5
PAGZ				eS	Sn	15 05 50.5	-0.4
IPIL	**Ipil**	**1.03**	**234**	eP	Pn	15 05 48.5	+0.1
IPIL				eS	Sn	15 06 03.8	+0.9
TBP	**Tagbilaran**	**1.36**	**19**	⇑eP	Pn	15 05 52.7	-0.3

IDC 27 15:27:11.6±5.3,6°.32S×149°.21E,h58km±50km,mb3.4/4, mb1 3.7/6,mb1mx3.4/28,mbtmp3.8/6,ML3.9/1,MS2.7/1, Ms1 2.7/1,ms1mx2.3/25,Error ellipse: s-maj=76.5km s-min=27.1km az=111.0,New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**3.68**	**213**	P	Pn	15 28 05.9	-0.2
	9.9nm,0.3s,baz=359,slow=4.1,SNR=18						
PMG				S	Sn	15 28 49.5	+1.2
	16nm,0.3s,baz=10,slow=20,SNR=10						
PMG				LR	LR	15 29 44.9	
	comp=Z,120nm,21.8s,baz=80,slow=42						
WRA	**Warramunga Arr**	**19.80**	**225**	P	P	15 31 36.5	-1.0
	0.4nm,0.3s,baz=50,slow=11,SNR=22						
ASAR	**Alice Springs**	**22.68**	**219**	P	P	15 32 07.7	-0.8
	0.6nm,0.5s,baz=57,slow=9.4,SNR=24						
STKA	**Stephens Creek**	**26.41**	**195**	P	P	15 32 43.0	+0.1
	1.4nm,1.0s,baz=58,slow=13,SNR=3.4						
PETK	**Petropavlovsk-**	**59.64**	**6**	P	P	15 37 10.5	+0.9
	1.8nm,0.6s,baz=150,slow=6.4,SNR=6.6						
ILAR	**Eielson Array**	**84.92**	**23**	P	P	15 39 39.6	-0.4
	0.4nm,0.7s,baz=232,slow=4.2,SNR=4.5						

IDC 27 15:28:35.2±5.9,16°.03N×87°.99W,h0km,mb3.5/2, mb1 4.0/4,mb1mx3.6/34,mbtmp3.6/4,ML3.7/2,MS3.1/2, Ms1 3.1/2,ms1mx2.7/22,Error ellipse: s-maj=102.7km s-min=54.8km az=116.0,North of Honduras

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TEIG	**Tepich**	**4.18**	**356**	Pn	Pn	15 29 40.7	+0.4
	5.9nm,0.3s,baz=269,slow=24,SNR=34						
TEIG				Sn	Sn	15 30 29.9	0.0
	20nm,0.3s,baz=359,slow=18,SNR=7.2						
TXAR	**Lajitas Array**	**19.58**	**315**	P	P	15 33 05.1	+0.1
	0.0nm,0.3s,baz=134,slow=11,SNR=12						
TKL	**Tuckaleechee C**	**19.91**	**10**	LR	LR	15 40 33.3	
	comp=Z,56nm,21.1s,baz=282,slow=36						
LPIG	**La Paz**	**22.43**	**295**	LR	LR	15 42 14.9	
	comp=Z,50nm,20.7s,baz=154,slow=36						
NVAR	**Mina Array Bea**	**34.73**	**316**	P	P	15 35 27.1	-0.3
	0.6nm,0.6s,baz=125,slow=7.8,SNR=4.4						
YKA	**Yellowknife Ar**	**50.05**	**344**	P	P	15 37 31.4	+0.1
	0.5nm,0.6s,baz=138,slow=7.3,SNR=4.2						

ISCJB ***27*** *15:35:04.6±0.5,39°.12N±0°.03×29°.13E±0°.04,h11km±5km, Error ellipse: s-maj=6.0km s-min=4.8km az=42.7*
CSEM ***27*** *15:35:04.7±0.1,39°.12N×29°.12E,h10km,MD2.6,Error ellipse: s-maj=3.2km s-min=2.4km az=105.0*
ISK ***27*** *15:35:04.3,39°.16N×29°.12E,h8km,MD2.7*
DDA ***27*** *15:35:04.8,39°.08N×29°.13E,h7km,Md2.6*

ISC 27 15:35:04.3±1.0,39°.13N±0°.03×29°.09E±0°.03,h8km±11km, n24,σ0°.39/35,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.30**	**254**	P	**Pb**	**15 35 11.9**	**-0.1**
DEMI				S	**Sb**	**15 35 16.1**	**-1.0**
DEMI	**Demirci**	**0.30**	**254**	*i* P	**Pb**	**15 35 11.9**	**-0.1**
DEMI				*i* S	**Sb**	**15 35 16.1**	**-1.0**
GDZ	**Gediz**	**0.31**	**97**	P	**Pg**	**15 35 10.8**	**+0.3**
GDZ				S	**Sg**	**15 35 14.6**	**0.0**
GDZ	**Gediz**	**0.31**	**97**	*i* P	**Pg**	**15 35 10.8**	**+0.3**
GDZ				*i* S	**Sg**	**15 35 14.6**	**0.0**
TVSB	**Tavsanli**	**0.43**	**42**	ePG	**Pg**	**15 35 12.9**	**+0.1**
TVSB				eSG	**Sg**	**15 35 18.2**	**-0.3**
TVSB	**Tavsanli**	**0.43**	**42**	ePg	**Pg**	**15 35 12.9**	**+0.1**
TVSB				eSg	**Sg**	**15 35 18.2**	**-0.3**
DURS	**Dursunbey**	**0.67**	**315**	P	**Pb**	**15 35 18.7**	**+0.4**
DURS	**Dursunbey**	**0.67**	**315**	*i* P	**Pb**	**15 35 18.7**	**+0.4**
DURS				*i* S	**Sn**	**15 35 31.9**	**+1.0**
KULA	**Kula-Manisa**	**0.70**	**209**	ePG	**Pb**	**15 35 18.8**	**+0.1**
KULA	**Kula-Manisa**	**0.70**	**209**	ePg	**Pb**	**15 35 18.8**	**+0.1**
MANT	**Manisa**	**0.76**	**213**	P	**Pg**	**15 35 19.0**	**+0.1**
MANT				S	**Sg**	**15 35 29.2**	**+0.4**
MANT	**Manisa**	**0.76**	**213**	*i* P	**Pg**	**15 35 19.0**	**+0.1**
MANT				*i* S	**Sg**	**15 35 29.2**	**+0.4**
KHAL	**Karahalli**	**0.82**	**157**	P	**Pb**	**15 35 20.7**	**-0.2**
KHAL				S	**Sg**	**15 35 30.5**	**-0.3**
KHAL	**Karahalli**	**0.82**	**157**	*i* P	**Pb**	**15 35 20.7**	**-0.2**
KHAL				*i* S	**Sg**	**15 35 30.5**	**-0.3**
KHL	**Karahalli**	**0.87**	**157**	ePG	**Pb**	**15 35 21.9**	**+0.2**
KHL	**Karahalli**	**0.87**	**157**	ePg	**Pb**	**15 35 21.9**	**+0.2**
IZI	**Iznik**	**1.24**	**14**	ePN	**Pb**	**15 35 27.9**	**-0.2**
IZI	**Iznik**	**1.24**	**14**	ePn	**Pb**	**15 35 27.9**	**-0.2**
KCTX	**Karacabey (Bur**	**1.27**	**334**	ePN	**Pn**	**15 35 28.2**	**-0.2**
KCTX	**Karacabey (Bur**	**1.27**	**334**	ePn	**Pn**	**15 35 28.2**	**-0.2**
ARMT	**Armutlu**	**1.45**	**353**	ePN	**Pb**	**15 35 31.3**	**-0.2**
ARMT	**Armutlu**	**1.45**	**353**	ePn	**Pb**	**15 35 31.3**	**-0.2**
GULT	**Gulveren**	**1.71**	**40**	ePN	**Pn**	**15 35 34.7**	**+0.3**
GULT	**Gulveren**	**1.71**	**40**	ePn	**Pn**	**15 35 34.7**	**+0.3**

ISK ***27*** *15:37:06.0,35°.22N×27°.35E,h52km,MD3.3*
ATH ***27*** *15:37:07.1,35°.44N×27°.71E,h30km±1km,ML2.4/4,Error ellipse: s-maj=4.1km s-min=1.2km az=334.0*
ISCJB ***27*** *15:37:09.1±0.9,35°.48N±0°.06×27°.68E±0°.04,h28km±6km, Error ellipse: s-maj=11.5km s-min=4.0km az=157.5*
CSEM ***27*** *15:37:10.4±0.5,35°.60N×27°.53E,h15km,MD3.3,Error ellipse: s-maj=14.4km s-min=5.0km az=144.0*

ISC 27 15:37:08.7±1.3,35°.47N±0°.06×27°.65E±0°.04,h18km±3km, n38,σ0°.80/40,Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KARP	**Karpathos**	**0.41**	**281**	ePG	**Pg**	**15 37 16.6**	**-0.5**
KARP				eSG	**Sb**	**15 37 23.8**	**+0.4**
KARP	**Karpathos**	**0.41**	**281**	P	**Pg**	**15 37 16.3**	**-0.8**
KARP	**Karpathos**	**0.41**	**281**	ePg	**Pg**	**15 37 16.7**	**-0.5**
KARP				S	**Sb**	**15 37 23.8**	**+0.4**
KARP	**Karpathos**	**0.41**	**281**	P	**Pg**	**15 37 16.3**	**-0.8**
KARP				S	**Sb**	**15 37 23.8**	**+0.4**
KARP				AML	AML	15 37 24.1	
	comp=E,1363μm,0.3s						
KARP				AML	AML	15 37 24.2	
	comp=N,2536μm,0.4s						
ARG	**Arkhangelos**	**0.84**	**27**	P	**Pg**	**15 37 25.4**	**+0.3**
ARG				S	**Sg**	**15 37 36.8**	**+0.6**
NIS1	**Nisyros Isl.**	**1.19**	**341**	P	**Pn**	**15 37 30.0**	**-0.5**
NIS1	**Nisyros Isl.**	**1.19**	**341**	P	**Pn**	**15 37 30.0**	**-0.5**
NISR	**Nisiros**	**1.21**	**340**	P	**Pg**	**15 37 32.4**	**+0.2**
NISR	**Nisiros**	**1.21**	**340**	P	**Pg**	**15 37 32.4**	**+0.2**
ZKR	**Zakros**	**1.23**	**254**	P	Pn	15 37 29.2	-1.7
ZKR				S	**Sg**	**15 37 48.7**	**+0.2**
ZKR	**Zakros**	**1.23**	**254**	P	Pn	15 37 29.2	-1.7
ZKR				S	**Sg**	**15 37 48.7**	**+0.2**
ZKR				AML	AML	15 37 55.1	
	comp=N,281μm,0.5s						
ZKR				AML	AML	15 37 56.1	
	comp=E,319μm,0.4s						
DALY	**Dalyan (Mu¨la**	**1.57**	**31**	ePN	**Pb**	**15 37 37.0**	**-0.2**
DALY	**Dalyan (Mu¨la**	**1.57**	**31**	ePn	**Pb**	**15 37 37.0**	**-0.2**
TURN	**Turunc**	**1.60**	**29**	*i* P	Pn	15 37 33.6	-2.4
TURN				*i* S	Sn	15 37 51.9	-4.2
BODT	**Bodrum**	**1.61**	**350**	ePN	**Pn**	**15 37 36.4**	**+0.1**
BODT	**Bodrum**	**1.61**	**350**	ePn	**Pn**	**15 37 36.4**	**+0.1**
FETY	**Fethiye**	**1.64**	**45**	ePN	**Pb**	**15 37 38.3**	**-0.1**
FETY				eSN	**Sg**	**15 38 02.4**	**+0.7**
FETY	**Fethiye**	**1.64**	**45**	ePn	**Pb**	**15 37 38.3**	**-0.1**
NPS	**Neapolis**	**1.68**	**263**	P	**Pb**	**15 37 39.2**	**+0.1**
NPS				S	**Sn**	**15 37 57.8**	**-0.4**
NPS	**Neapolis**	**1.68**	**263**	P	**Pb**	**15 37 39.2**	**+0.1**
NPS				S	**Sn**	**15 37 57.8**	**-0.4**
NPS				AML	AML	15 38 10.6	
	comp=E,176μm,0.8s						
NPS				AML	AML	15 38 13.7	
	comp=N,151μm,0.5s						
KSL	**Kastellorizon**	**1.71**	**66**	P	Pn	15 37 36.1	-1.5
KSL	**Kastellorizon**	**1.71**	**66**	P	Pn	15 37 36.1	-1.5
KSL				S	**Sn**	**15 37 56.2**	**-2.7**
YER	**Yerkesik**	**1.74**	**17**	ePN	**Pn**	**15 37 39.2**	**+1.2**
YER	**Yerkesik**	**1.74**	**17**	ePn	**Pn**	**15 37 39.2**	**+1.2**
AKAS	**Kas**	**1.76**	**64**	P	Pn	15 37 36.8	-1.6
AKAS				S	**Sn**	**15 37 59.8**	**-0.6**
AKAS	**Kas**	**1.76**	**64**	*i* P	Pn	15 37 36.8	-1.6
AKAS				*i* S	**Sn**	**15 37 59.8**	**-0.6**
LAST	**Lasithi**	**1.80**	**261**	P	**Pn**	**15 37 39.3**	**+0.3**
LAST				S	**Sn**	**15 38 02.4**	**+1.0**
LAST	**Lasithi**	**1.80**	**261**	P	**Pn**	**15 37 39.3**	**+0.3**
IDI	**Anoyia**	**2.26**	**266**	P	Pn	15 37 47.1	+1.9
IDI				S	**Sn**	**15 38 13.3**	**+0.6**
IDI	**Anoyia**	**2.26**	**266**	P	Pn	15 37 47.1	+1.9
IDI				S	**Sn**	**15 38 13.3**	**+0.6**
IDI				AML	AML	15 38 19.4	
	comp=E,52μm,0.4s						
IDI				AML	AML	15 38 22.9	
	comp=N,54μm,0.7s						
SMG	**Samos**	**2.33**	**344**	P	Pn	15 37 44.9	-1.2
SMG	**Samos**	**2.33**	**344**	P	Pn	15 37 44.9	-1.2
APE	**Apeiranthos**	**2.34**	**314**	ePN	Pn	15 37 43.9	-2.4
APE	**Apeiranthos**	**2.34**	**314**	ePn	Pn	15 37 43.9	-2.4
APE	**Apeiranthos**	**2.34**	**314**	P	Pn	15 37 45.7	-0.6
APE				S	**Sn**	**15 38 13.2**	**-1.4**
APE	**Apeiranthos**	**2.34**	**314**	P	Pn	15 37 45.7	-0.6
APE				S	**Sn**	**15 38 13.2**	**-1.4**
AYDB	**Zeytinkoy-Aydi**	**2.48**	**4**	ePN	**Pn**	**15 37 49.1**	**+0.9**
AYDB	**Zeytinkoy-Aydi**	**2.48**	**4**	ePn	**Pn**	**15 37 49.2**	**+0.9**

ISK ***27*** *15:45:24.9,37°.87N×27°.01E,h11km,MD2.8*
DDA ***27*** *15:45:24.9,37°.84N×26°.92E,h7km,Md2.8*
ISCJB ***27*** *15:45:25.1±0.5,37°.88N±0°.03×26°.98E±0°.05,h11km±5km, Error ellipse: s-maj=7.3km s-min=3.8km az=139.3*
CSEM ***27*** *15:45:25.2±0.1,37°.88N×26°.97E,h12km,MD2.8,Error ellipse: s-maj=2.5km s-min=1.9km az=57.0*

ISC 27 15:45:24.9±1.0,37°.87N±0°.03×26°.97E±0°.03,h13km±9km, n22,σ0°.31/36,Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DGB	**¨zmir**	**0.19**	**339**	*i* P	**Pg**	**15 45 29.5**	**+0.2**
DGB				*i* S	**Sg**	**15 45 32.0**	**-0.2**
GCAM	**G?zelcaml?**	**0.27**	**129**	P	**Pb**	**15 45 31.3**	**-0.3**
GCAM				S	**Sb**	**15 45 35.7**	**-0.4**
GCAM	**G?zelcaml?**	**0.27**	**129**	*i* P	**Pb**	**15 45 31.3**	**-0.3**
GCAM				*i* S	**Sb**	**15 45 35.7**	**-0.4**
ZEY	**¨zmir**	**0.52**	**315**	*i* P	**Pg**	**15 45 35.1**	**0.0**
ZEY				*i* S	**Sb**	**15 45 43.0**	**-0.5**
URLA	**Izmir**	**0.57**	**329**	P	**Pg**	**15 45 36.1**	**0.0**
URLA				S	**Sb**	**15 45 44.5**	**-0.4**
URLA	**Izmir**	**0.57**	**329**	*i* P	**Pg**	**15 45 36.1**	**0.0**
URLA				*i* S	**Sb**	**15 45 44.5**	**-0.4**
AYDB	**Zeytinkoy-Aydi**	**0.73**	**84**	ePG	**Pb**	**15 45 39.7**	**+0.1**
AYDB				eSG	**Sg**	**15 45 48.7**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**0.73**	**84**	ePg	**Pb**	**15 45 39.7**	**+0.1**
AYDB				eSg	**Sg**	**15 45 48.7**	**-0.1**
AYDN	**Tasoluk**	**0.75**	**106**	P	**Pb**	**15 45 40.2**	**+0.3**
AYDN				S	**Sb**	**15 45 49.9**	**-0.1**
AYDN	**Tasoluk**	**0.75**	**106**	*i* P	**Pb**	**15 45 40.2**	**+0.3**
AYDN				*i* S	**Sb**	**15 45 49.9**	**-0.1**
BODT	**Bodrum**	**0.85**	**161**	ePG	**Pb**	**15 45 41.5**	**-0.1**
BODT				eSG	**Sb**	**15 45 53.7**	**+0.7**
BODT	**Bodrum**	**0.85**	**161**	ePg	**Pb**	**15 45 41.5**	**-0.1**
BODT				eSg	**Sb**	**15 45 53.7**	**+0.7**
BDRM	**Kayabasi**	**0.89**	**155**	P	**Pg**	**15 45 41.9**	**-0.2**
BDRM				S	**Sb**	**15 45 54.2**	**+0.2**
BDRM	**Kayabasi**	**0.89**	**155**	*i* P	**Pg**	**15 45 41.9**	**-0.2**
BDRM				*i* S	**Sb**	**15 45 54.2**	**+0.2**
AKS	**Akhisar**	**1.20**	**33**	ePN	**Pb**	**15 45 47.8**	**+0.2**
AKS	**Akhisar**	**1.20**	**33**	ePn	**Pb**	**15 45 47.8**	**+0.2**
YER	**Yerkesik**	**1.28**	**125**	ePN	**Pg**	**15 45 49.2**	**-0.3**
YER	**Yerkesik**	**1.28**	**125**	ePn	**Pg**	**15 45 49.2**	**-0.3**
APE	**Apeiranthos**	**1.40**	**236**	ePN	**Pb**	**15 45 51.0**	**+0.1**
APE	**Apeiranthos**	**1.40**	**236**	ePn	**Pb**	**15 45 51.0**	**+0.1**
KULA	**Kula-Manisa**	**1.48**	**64**	ePN	**Pn**	**15 45 51.6**	**+0.2**
KULA	**Kula-Manisa**	**1.48**	**64**	ePn	**Pn**	**15 45 51.6**	**+0.2**

CSEM ***27*** *16:02:38.1,37°.03N×45°.05E,h10km,ML2.7*
TEH ***27*** *16:02:38.1,37°.03N×45°.05E,h10km,ML2.7*
ISCJB ***27*** *16:02:40.1±1.2,37°.16N±0°.07×45°.22E±0°.06,h12km,Error ellipse: s-maj=10.9km s-min=5.8km az=161.8*

ISC 27 16:02:38.9±1.9,37°.0N±0°.1×45°.15E±0°.06,h12km,n9, σ0°.91/14,Northwestern Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HAKT	**HAKKARI**	**1.26**	**295**	*i* P	**Pn**	**16 03 01.7**	**-0.8**
HAKT				*i* S	**Sn**	**16 03 20.9**	**+1.4**
ISHB	**Shabestar**	**1.29**	**17**	eAMB	AMB	16 03 02.9	
	comp=Z,2μm,0.1s						
ISHB				ePg	**Pn**	**16 03 02.0**	**-1.0**
ITBZ	**Tabriz**	**1.43**	**33**	eAMB	AMB	16 03 08.8	
	comp=Z,869nm,0.1s						
ITBZ				ePn	**Pn**	**16 03 04.2**	**-0.6**
ITBZ				eSg	**Sb**	**16 03 24.3**	**+0.5**
IBST	**Bostanabad**	**1.54**	**64**	eAMB	AMB	16 03 05.3	
	comp=Z,1μm,0.1s						
IBST				ePn	**Pn**	**16 03 04.9**	**-1.4**
IMRD	**Marand**	**1.72**	**15**	eAMB	AMB	16 03 16.5	
	comp=Z,844nm,0.1s						
IMRD				ePn	**Pn**	**16 03 09.0**	**+0.1**
IMRD				eSg	**Sb**	**16 03 33.2**	**+0.9**
IHRS	**Heris**	**1.97**	**49**	ePn	**Pb**	**16 03 14.4**	**-0.4**
IHRS				eAMB	AMB	16 03 15.1	
	comp=Z,531nm,0.1s						
IHRS				eSg	**Sg**	**16 03 41.8**	**-0.4**
IHRS	**Heris**	**1.97**	**49**	ePn	**Pb**	**16 03 14.4**	**-0.4**
IHRS				eSg	**Sg**	**16 03 41.8**	**-0.4**
ISRB	**Sarab**	**2.15**	**68**	ePn	**Pn**	**16 03 15.6**	**+0.8**
ISRB				eAMB	AMB	16 03 17.6	
	comp=Z,491nm,0.1s						
ISRB	**Sarab**	**2.15**	**68**	ePn	**Pn**	**16 03 15.6**	**+0.8**

ISCJB ***27*** *16:02:41.8±0.3,24°.52N±0°.

TWT S **Sn** **16 03 06.9 +0.1**
baz=243
ESF Shoufeng Towns 0.68 203 *eP* **Pn** **16 02 57.7 +0.6**
baz=206
TWS1 Kuangyinshan 0.69 331⇑*iP* **Pn** **16 02 57.1 -0.3**
baz=333
TWS1 *i* S **Sn** **16 03 08.2 +0.1**
baz=333
NCU National Centr 0.73 311⇑*iP* **Pn** **16 02 57.4 -0.3**
baz=304
NCU *e*S **Sn** **16 03 08.4 -0.4**
baz=304
NSTT Nanjuang 0.73 281⇑*iP* **Pn** **16 02 57.4 -0.3**
baz=282
NSTT S **Sn** **16 03 08.4 -0.6**
baz=282
ESL Shilin 0.75 206 ⇑P **Pn** **16 02 56.6 -1.4**
baz=203
ESL *e*S **Sn** **16 03 07.5 -1.8**
baz=203
TWY Chenhua 0.80 347 *eP* **Pn** **16 02 58.5 0.0**
baz=340
TWY *e*S **Sn** **16 03 09.9 -0.3**
baz=340
HSN Hsinchu 0.81 292⇑*iP* **Pn** **16 02 58.2 -0.5**
baz=307
HSN S **Sn** **16 03 09.7 -0.8**
baz=307
TEGC Jichi Village 0.82 197 *eP* **Pn** **16 02 58.6 -0.1**
baz=203
TWQ1 Liyutan 0.94 261⇑*iP* **Pn** **16 03 00.1 -0.2**
baz=262
TWQ1 S **Sn** **16 03 12.9 -0.5**
baz=262
NSY Sanyi 0.94 265⇑*iP* **Pn** **16 03 00.3 -0.1**
baz=266
NSY S **Sn** **16 03 13.7 +0.2**
baz=266
SMLT Sun Moon Lake 1.02 233⇑*iP* **Pn** **16 03 01.9 +0.5**
baz=230
SMLT S **Sn** **16 03 16.4 +1.1**
baz=230
TYC Yuchr 1.04 236⇑*iP* **Pn** **16 03 01.8 +0.3**
baz=232
TYC S **Sn** **16 03 16.1 +0.6**
baz=232
JYNG Yonagunijimaku 1.05 92 P **Pn** **16 03 01.6 -0.1**
JYNG *e*S **Sn** **16 03 15.6 -0.2**
EHY Hungye 1.07 204 *eP* **Pn** **16 03 00.9 -1.1**
baz=201
EHY *e*S **Sn** **16 03 14.7 -1.7**
baz=201
TCU Taichung 1.08 251 *eP* **Pn** **16 03 01.8 -0.2**
baz=262
TCU *e*S **Sn** **16 03 16.0 -0.4**
baz=262
YOJ Yonaguni jima 1.11 92 P **Pn** **16 03 02.2 -0.2**
YOJ S **Sn** **16 03 17.1 -0.1**
YOJ Yonaguni jima 1.11 92 *eP* **Pn** **16 03 02.5 +0.1**
baz=83
YOJ *e*S **Sn** **16 03 17.1 -0.1**
baz=83
PCYT Pengchaiyu 1.16 13 *eP* **Pn** **16 03 03.4 +0.4**
baz=14
PCYT *e*S **Sn** **16 03 19.1 +0.8**
baz=14
WNT Mingjian 1.19 239 P **Pn** **16 03 03.4 0.0**
baz=251
WNT S **Sn** **16 03 19.5 +0.6**
baz=251
TWF1 Yuli 1.23 202 *eP* **Pn** **16 03 02.2 -1.8**
baz=199
TWF1 *e*S **Sn** **16 03 18.3 -1.6**
baz=199
YUS Yu-Shan 1.26 218 ⇑P **Pn** **16 03 05.2 +0.3**
baz=211
YUS S **Sn** **16 03 22.0 +0.6**
baz=211
ALS Alishan 1.33 223 ⇑P **Pn** **16 03 06.3 +0.6**
baz=235
ALS *e*S **Sn** **16 03 24.6 +1.8**
baz=235
CHN5 Tsauling 1.36 229 ⇑P **Pn** **16 03 05.9 +0.2**
baz=240
CHN5 *e*S **Sn** **16 03 24.1 +1.0**
baz=240
WGK Gukeng 1.38 235 ⇑P **Pn** **16 03 06.4 +0.4**
baz=247
WGK S **Sn** **16 03 24.6 +1.1**
baz=247
CHKT Chengkung 1.44 196 *eP* **Pn** **16 03 06.3 -0.5**
baz=199
CHKT *e*S **Sn** **16 03 24.8 -0.2**
baz=199
ELDTW Lidau 1.48 209 *eP* **Pn** **16 03 06.6 -0.8**
baz=199
ELDTW *e*S **Sn** **16 03 25.6 -0.5**
baz=199
WTCT Ta-ch'eng 1.52 246 ⇑P **Pn** **16 03 07.2 -0.6**
baz=255
WTCT S **Sn** **16 03 26.1 -0.6**
baz=255
CHN2 Minshiung 1.54 232 *eP* **Pn** **16 03 08.2 +0.1**
baz=244
CHN2 *e*S **Sn** **16 03 28.4 +1.1**
baz=244
CHN4 Tsaushan 1.58 224 P **Pn** **16 03 09.3 +0.6**
baz=226
CHN4 *e*S **Sn** **16 03 30.8 +2.4**
baz=226
CHY Chiayi 1.60 232 ⇑P **Pn** **16 03 09.1 +0.2**
baz=244
CHY *e*S **Sn** **16 03 29.4 +0.8**
baz=244
STYT Tauyuan 1.63 216 ⇑P **Pn** **16 03 10.2 +0.8**
baz=208
STYT *e*S **Sn** **16 03 31.2 +1.7**
baz=208
WTP Ta-pu 1.65 221⇓*iP* **Pn** **16 03 10.0 +0.4**
baz=234
WTP *e*S **Sn** **16 03 31.7 +1.8**
baz=234
WSF Szhu 1.67 240 P **Pn** **16 03 09.5 -0.3**
baz=241
WSF *e*S **Sn** **16 03 30.1 -0.2**
baz=241
TWK Hsinying 1.71 225 *eP* **Pn** **16 03 10.3 -0.1**
baz=239
TWK *e*S **Sn** **16 03 33.4 +2.0**
baz=239
CHN1 Nanshi 1.75 222⇓P **Pn** **16 03 11.2 +0.3**
baz=235
CHN1 *e*S **Sn** **16 03 33.4 +1.2**
baz=235
IRIF Iriomote-Funau 1.77 95 P **Pn** **16 03 10.7 -0.5**
IRIF S **Sn** **16 03 32.1 -0.7**
SGST Jiashian 1.79 218 ⇑P **Pn** **16 03 11.9 +0.4**
baz=232
SGST *e*S **Sn** **16 03 34.3 +1.0**
baz=232
TWG Pinlang 1.79 202 *eP* **Pn** **16 03 10.8 -0.7**
baz=190
TWG *e*S **Sn** **16 03 30.8 -2.6**
baz=190
CHN8 Yiju 1.85 232 *eP* **Pn** **16 03 12.1 -0.1**
baz=234
CHN8 *e*S **Sn** **16 03 35.4 +0.8**
baz=234
HATJ Hateruma jima 1.89 103 S **Sn** **16 03 36.2 +0.6**
CHN3 Shinhua 1.93 223 *eP* **Pn** **16 03 14.9 +1.6**
baz=237
CHN3 *e*S **Sn** **16 03 39.1 +2.5**
baz=237
SCLT Jiali 1.97 228 *eP* **Pn** **16 03 13.5 -0.3**
baz=231
SCLT *e*S **Sn** **16 03 38.4 +0.9**
baz=231
JKRS Kuro-shima 2.04 97 P **Pn** **16 03 15.1 +0.3**
JKRS *e*S **Sn** **16 03 39.1 -0.1**
ECL Taimali 2.04 202 *eP* **Pn** **16 03 14.4 -0.4**
baz=194
ECL *e*S **Sn** **16 03 36.8 -2.5**
baz=194
TWM1 Shoushan 2.09 217 *eP* **Pn** **16 03 16.4 +0.9**
baz=227
SGLT Jiouru 2.13 214 *eP* **Pn** **16 03 15.1 -0.9**
baz=229
SGLT *e*S **Sn** **16 03 45.7 +4.3**
baz=229
JIJ Ishigaki jima 2.15 93 P **Pn** **16 03 15.9 -0.3**
JIJ S **Sn** **16 03 40.3 -1.6**
PNG Penghu 2.25 246 *eP* **Pn** **16 03 15.8 -1.7**
baz=249
PNG *e*S **Sn** **16 03 41.9 -2.4**
baz=249
EAST Anshuo 2.27 203 *eP* **Pn** **16 03 19.2 +1.1**
baz=190
EAST *e*S **Sn** **16 03 46.2 +1.1**
baz=190
JISG Ishigakijimahi 2.29 87 P **Pn** **16 03 17.9 -0.3**
JISG S **Sn** **16 03 44.2 -1.3**
SCZT Fangliau 2.37 207 *eP* **Pn** **16 03 20.1 +0.8**
baz=208
SCZT *e*S **Sn** **16 03 49.0 +1.6**
baz=208
JTJ Tarama 2.65 86 P **Pn** **16 03 23.5 +0.4**
JTJ *e*S **Sn** **16 03 54.8 +0.6**
KNM Kinmen 3.06 269 *eP* **Pn** **16 03 28.8 +0.1**
baz=269
JIRB Irabujima 3.09 83 P **Pn** **16 03 29.3 +0.2**
JIRB *e*S **Sn** **16 04 05.1 +0.2**
JIKM Ikemajima 3.17 82 P **Pn** **16 03 31.5 +1.3**
JIKM *e*S **Sn** **16 04 08.1 +1.3**
JKE Kume jima 2 4.87 67 P **Pn** **16 03 54.5 +1.1**
JAGN Aguni-jima 5.34 66 P **Pn** **16 04 00.4 +0.5**
JNTH Nagotoyohara 5.98 69 P **Pn** **16 04 08.0 -0.5**
JIH Iheya 6.11 64 P **Pn** **16 04 10.2 -0.2**
JOW Kunigami 6.29 67 P **Pn** **16 04 11.9 -1.0**
JOW Kunigami 6.29 67 *eP* **Pn** **16 04 12.1 -0.8**
baz=66
JOKE Okinoerabujima 6.74 63 P **Pn** **16 04 17.8 -1.1**
JTK Tokunoshima 7.22 61 P **Pn** **16 04 24.1 -1.4**
JAMN Amaminishikomi 7.60 59 P **Pn** **16 04 28.9 -1.8**

IDC 27 16:09:54.5±1.7, 0°.53N×123°.86E, h0km, mb3.7/4, mb1 3.9/5, mb1mx3.5/39, mbtmp3.7/5, ML3.2/1, Error ellipse: s-maj=57.4km s-min=26.8km az=63.0, Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAPI	**Kappang**	**6.86**	**217**	Pn	Pn	16 11 37.2	+0.8
	0.5nm,0.3s,baz=59,slow=18,SNR=1.4						
KAPI				Sn	Sn	16 12 48.0	-7.4
	0.3nm,0.3s,baz=289,slow=23,SNR=1.2						
WRA	**Warramunga Arr**	**22.79**	**154**	P	P	16 14 59.5	+0.6
	2.6nm,0.5s,baz=330,slow=10,SNR=20						
ASAR	**Alice Springs**	**25.95**	**159**	P	P	16 15 28.4	-0.5
	0.6nm,0.7s,baz=332,slow=9.3,SNR=5.4						
STKA	**Stephens Creek**	**36.34**	**154**	P	P	16 16 59.7	-0.6
	2.5nm,1.1s,baz=328,slow=8.6,SNR=1.9						
MKAR	**Makanchi Array**	**58.62**	**328**	P	P	16 19 53.6	+0.1
	0.2nm,0.3s,baz=115,slow=8.7,SNR=2.6						

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*ISCJB **27** 16:19:08.7±0.5, 39°.09N±0°.04×29°.00E±0°.04, h9km, Error ellipse: s-maj=6.1km s-min=3.9km az=146.1*
*DDA **27** 16:19:08.4, 39°.07N×28°.99E, h7km, Md2.6*
*ISK **27** 16:19:08.4, 39°.09N×29°.06E, h6km, MD2.7*
*CSEM **27** 16:19:08.8±0.1, 39°.09N×29°.01E, h5km, MD2.6, Error ellipse: s-maj=2.6km s-min=1.9km az=128.0*
ISC 27 16:19:09.0±0.9, 39°.10N±0°.03×29°.00E±0°.03, h9km, n26, σ0°36/34, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.23**	**256**	P	**Pg**	**16 19 13.5**	**-0.2**
DEMI				S	**Sg**	**16 19 16.7**	**-0.2**
DEMI	**Demirci**	**0.23**	**256**	*i* P	**Pg**	**16 19 13.5**	**-0.2**
DEMI				*i* S	**Sg**	**16 19 16.7**	**-0.2**
GDZ	**Gediz**	**0.37**	**91**	P	**Pg**	**16 19 16.1**	**-0.3**
GDZ				S	**Sg**	**16 19 22.1**	**+0.7**
GDZ	**Gediz**	**0.37**	**91**	*i* P	**Pg**	**16 19 16.1**	**-0.3**
GDZ				*i* S	**Sg**	**16 19 22.1**	**+0.7**
TVSB	**Tavsanli**	**0.50**	**45**	*e*PG	**Pg**	**16 19 18.3**	**-0.5**
TVSB				*e*SG	**Sg**	**16 19 25.0**	**-0.4**
TVSB	**Tavsanli**	**0.50**	**45**	*e*Pg	**Pg**	**16 19 18.3**	**-0.5**
TVSB				*e*Sg	**Sg**	**16 19 25.0**	**-0.4**
KULA	**Kula-Manisa**	**0.64**	**205**	*e*PG	**Pg**	**16 19 21.4**	**0.0**
KULA	**Kula-Manisa**	**0.64**	**205**	*e*Pg	**Pg**	**16 19 21.4**	**0.0**
DURS	**Dursunbey**	**0.65**	**321**	P	**Pg**	**16 19 21.2**	**-0.4**
DURS	**Dursunbey**	**0.65**	**321**	*i* P	**Pg**	**16 19 21.2**	**-0.4**
MANT	**Manisa**	**0.70**	**210**	P	**Pg**	**16 19 22.4**	**-0.1**
MANT				S	**Sg**	**16 19 31.1**	**-0.6**
MANT	**Manisa**	**0.70**	**210**	*i* P	**Pg**	**16 19 22.4**	**-0.1**
MANT				*i* S	**Sg**	**16 19 31.1**	**-0.6**
ORLT	**Orhaneli**	**0.95**	**355**	*e*PG	**Pg**	**16 19 27.2**	**-0.1**
ORLT	**Orhaneli**	**0.95**	**355**	*e*Pg	**Pg**	**16 19 27.2**	**-0.1**
BALB	**Balikesir**	**1.02**	**302**	*e*PG	**Pb**	**16 19 29.3**	**+0.4**
BALB	**Balikesir**	**1.02**	**302**	*e*Pg	**Pb**	**16 19 29.3**	**+0.4**
KCTX	**Karacabey (Bur**	**1.27**	**337**	*e*PN	**Pg**	**16 19 33.6**	**+0.3**
KCTX	**Karacabey (Bur**	**1.27**	**337**	*e*Pn	**Pg**	**16 19 33.6**	**+0.3**
IZI	**Iznik**	**1.29**	**16**	*e*PN	**Pn**	**16 19 33.5**	**+0.2**
IZI	**Iznik**	**1.29**	**16**	*e*Pn	**Pn**	**16 19 33.5**	**+0.2**
ADVT	**Abdulvahap**	**1.45**	**23**	*e*PN	**Pn**	**16 19 35.7**	**+0.3**
ADVT	**Abdulvahap**	**1.45**	**23**	*e*Pn	**Pn**	**16 19 35.7**	**+0.3**
ARMT	**Armutlu**	**1.47**	**356**	*e*PN	**Pb**	**16 19 36.3**	**-0.2**
ARMT	**Armutlu**	**1.47**	**356**	*e*Pn	**Pb**	**16 19 36.3**	**-0.2**
GULT	**Gulveren**	**1.77**	**41**	*e*PN	**Pn**	**16 19 40.0**	**+0.1**
GULT	**Gulveren**	**1.77**	**41**	*e*Pn	**Pn**	**16 19 40.1**	**+0.1**

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*NIED **27** 16:25:00, 37°.90N×143°.90E, h35km, Mw3.9 Best double couple: M0=7.74000×10^14 NP1:φ=24.00000°, δ=20.00000°, λ=-58.00000°. NP2:φ=170.00000°, δ=73.00000°, λ=-101.00000°.*
*IDC **27** 16:25:03.4±0.7, 37°.63N×144°.25E, h0km, mb3.9/14, mb1 4.1/21, mb1mx3.9/48, mbtmp4.0/21, ML3.6/7, MS3.0/4, Ms1 3.0/4, ms1mx2.6/45, Error ellipse: s-maj=16.9km s-min=14.5km az=128.0*
*JMA **27** 16:25:06.4±0.1, 37°.91N×143°.93E, h12km, M4.2*
*ISCJB **27** 16:25:07.0±0.5, 37°.80N±0°.04×144°.03E±0°.04, h33km, mb3.9/16, MS3.5/1, Error ellipse: s-maj=5.7km s-min=5.0km az=165.1*
*NEIC **27** 16:25:08.7±0.5, 37°.68N×144°.15E, h35km, mb4.3/2, Error ellipse: s-maj=10.5km s-min=8.1km az=138.0*
ISC 27 16:25:09.3±0.8, 37°.82N±0°.06×144°.06E±0°.07, h35km, n45, σ1°23/51, mb4.0/16, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.23**	**287**	P	**Pn**	**16 25 42.2**	**-1.5**
JIO				S	**Sn**	**16 26 08.9**	**-1.1**
OFUJ	**Ofunato**	**2.26**	**305**	P	**Pn**	**16 25 42.6**	**-1.5**
JMK	**Ichinoseki**	**2.50**	**298**	P	**Pn**	**16 25 46.3**	**-1.2**
JOM	**Ohasama**	**2.72**	**308**	P	**Pn**	**16 25 49.5**	**-1.0**
JOM				S	**Sn**	**16 26 21.4**	**-0.8**
JOU	**Okura**	**2.73**	**282**	P	**Pn**	**16 25 49.8**	**-0.9**
JFT	**Otama**	**2.97**	**265**	P	**Pn**	**16 25 53.2**	**-0.7**
JFT				S	**Sn**	**16 26 27.2**	**-1.2**
JYK	**Kaneyama**	**3.11**	**292**	P	**Pn**	**16 25 55.1**	**-0.7**
JYK				S	**Sn**	**16 26 30.4**	**-1.3**
JRG	**Rokugo**	**3.11**	**301**	P	**Pn**	**16 25 55.1**	**-0.8**
JANG	**Nango**	**3.23**	**323**	S	**Sn**	**16 26 32.3**	**-2.4**
JAH	**Hinai**	**3.56**	**313**	P	**Pn**	**16 26 01.6**	**-0.5**
JAH				S	**Sn**	**16 26 42.5**	**-0.4**
JTM	**Tenmabayashi**	**3.76**	**323**	P	**Pn**	**16 26 04.0**	**-0.8**
JTM				S	**Sn**	**16 26 45.6**	**-2.2**
JKB	**Kayabe**	**4.68**	**331**	P	**Pn**	**16 26 17.1**	**-0.3**
MJAR	**Matsushiro Arr**	**4.84**	**256**	Pn	**Pn**	**16 26 19.2**	**-0.5**
	11nm,0.3s,baz=84,slow=14,SNR=103						
MJAR				Sn	**Sn**	**16 27 12.1**	**-2.5**
	baz=93,slow=24,SNR=2.3						
MAJO	**Matsushiro**	**4.84**	**256**	*e*Pn	**Pn**	**16 26 18.8**	**-0.9**
MAJO				*e*Sn	**Sn**	**16 27 16.0**	**+1.4**
MAT	**Matsushiro**	**4.84**	**256**	P	**Pn**	**16 26 19.3**	**-0.4**
MAT				*e*S	**Sn**	**16 27 14.4**	**-0.2**
JHJ	**Hachijo jima 2**	**5.85**	**218**	Pn	Pn	16 26 30.1	-3.4
	19nm,0.3s,baz=14,slow=22,SNR=1.3						
JHJ				Sn	Sn	16 27 30.4	-8.9
	15nm,0.3s,baz=58,slow=21,SNR=1.6						
ASAJ	**Asahikawa**	**6.38**	**350**	Pn	**Pn**	**16 26 40.0**	**-0.9**
	2.2nm,0.3s,baz=194,slow=13,SNR=21						
ASAJ				Sn	**Sn**	**16 27 51.5**	**-0.9**
ASAJ	**Asahikawa**	**6.38**	**350**	Pn	**Pn**	**16 26 40.0**	**-0.9**
	0.9nm,0.8s						
ASAJ				Sn	**Sn**	**16 27 51.5**	**-0.9**
USRK	**Ussuriysk Ar.**	**11.12**	**309**	Pn	**Pn**	**16 27 45.9**	**+0.2**
	0.4nm,0.3s,baz=104,slow=13,SNR=13						
JNU	**Nakatsue**	**11.72**	**250**	Pn	**Pn**	**16 27 52.5**	**-1.5**
	0.2nm,0.3s,baz=111,slow=6.3,SNR=3.8						
JNU				LR	LR	16 32 44.4	
	comp=Z,39nm,19.4s,baz=118,slow=39						
KSRS	**Korea Array**	**12.80**	**273**	Pn	**Pn**	**16 28 10.3**	**+1.6**
	0.2nm,0.3s,baz=85,slow=14,SNR=22						
KSRS				LR	LR	16 32 33.3	
	comp=Z,53nm,18.5s,baz=75,slow=35						
KSAR	**Wonju Array Be**	**12.83**	**273**	Pn	**Pn**	**16 28 10.3**	**+1.1**
KLR	**Kul'dur**	**14.46**	**326**	Pn	**Pn**	**16 28 31.6**	**+0.3**
	0.1nm,0.3s,baz=162,slow=7.5,SNR=3.5						
KLR				LR	LR	16 35 14.9	
	comp=Z,32nm,18.6s,baz=160,slow=42						
SEY	**Seymchan**	**25.65**	**9**	P	**P**	**16 30 35.3**	**-0.1**
	1.8nm,0.6s,baz=213,slow=2.7,SNR=8.1						
H11N2	**WAKE ISLAND Hy**	**26.82**	**126**	T	T	16 58 40.8	
	baz=315,slow=75,SNR=11						
H11N1	**WAKE ISLAND Hy**	**26.83**	**126**	T	T	16 58 29.1	
H11N3	**WAKE ISLAND Hy**	**26.84**	**126**	T	T	16 58 32.8	
	baz=319,slow=75,SNR=11						
SONM	**Songino Array**	**29.12**	**302**	P	**P**	**16 31 09.3**	**+2.5**
	1.0nm,0.6s,baz=93,slow=9.3,SNR=4.7						
ZALV	**Zalesovo Beam**	**42.95**	**312**	P	**P**	**16 33 05.3**	**+0.7**
	0.5nm,0.4s,baz=88,slow=7.8,SNR=2.6						
CMAR	**Chiang Mai Arr**	**43.73**	**257**	P	**P**	**16 33 11.8**	**+0.4**
	0.7nm,0.7s,baz=43,slow=7.7,SNR=7.3						
MKAR	**Makanchi Array**	**45.49**	**302**	P	**P**	**16 33 25.9**	**+0.8**
	0.7nm,0.7s,baz=83,slow=9.7,SNR=9.5						
KURK	**Kurchatov**	**47.11**	**308**	P	**P**	**16 33 38.8**	**+1.1**
KURBB	**Kurchatov Arra**	**47.18**	**308**	P	**P**	**16 33 38.8**	**+0.5**
	1.2nm,0.6s,baz=82,slow=7.9,SNR=12						
ILAR	**Eielson Array**	**47.70**	**33**	P	**P**	**16 33 41.6**	**-0.5**
	2.0nm,0.7s,baz=263,slow=6.6,SNR=26						
TKM2	**Tokmak 2**	**51.10**	**299**	*e*P	**P**	**16 34 09.3**	**+0.6**
	3.3nm,0.8s						
BVAR	**Borovoye Array**	**51.60**	**312**	P	**P**	**16 34 13.1**	**+1.2**
	0.4nm,0.6s,baz=97,slow=12,SNR=2.8						
WRAB	**Tennant Creek**	**58.17**	**191**	*e*P	**P**	**16 34 57.8**	**-2.0**
	1.7nm,0.6s						
WRA	**Warramunga Arr**	**58.18**	**191**	P	**P**	**16 34 57.5**	**-2.3**
	4.7nm,0.7s,baz=12,slow=7.4,SNR=42						
ABKAR	**Akbulak array**	**59.04**	**311**	*e*P	**P**	**16 35 06.5**	**+0.9**
AKTO	**Aktyubinsk**	**59.71**	**312**	P	**P**	**16 35 11.5**	**+1.3**
	1.3nm,0.9s,baz=72,slow=19,SNR=2.9						
ASAR	**Alice Springs**	**61.90**	**191**	P	**P**	**16 35 23.4**	**-1.9**
	1.3nm,0.8s,baz=5.8,slow=7.1,SNR=25						
YKA	**Yellowknife Ar**	**62.06**	**31**	P	**P**	**16 35 26.7**	**+0.8**
	0.3nm,0.5s,baz=300,slow=6.5,SNR=4.3						
GEYT	**Alibeck**	**65.28**	**300**	LR	LR	17 05 09.8	
	comp=Z,28nm,20.0s,baz=245,slow=37						
NVAR	**Mina Array Bea**	**72.82**	**55**	P	**P**	**16 36 34.8**	**+0.1**
	1.3nm,0.7s,baz=292,slow=6.5,SNR=10.0						
PDAR	**Pinedale Array**	**75.60**	**47**	P	**P**	**16 36 50.5**	**-0.4**
	0.6nm,0.6s,baz=247,slow=2.4,SNR=5.2						

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*ISCJB **27** 16:27:36.3±0.5, 39°.09N±0°.03×29°.03E±0°.04, h5km±7km, Error ellipse: s-maj=5.9km s-min=4.6km az=38.9*
*DDA **27** 16:27:36.4, 39°.10N×29°.03E, h7km, Md2.9*
*ISK **27** 16:27:36.2, 39°.08N×29°.10E, h9km, MD2.8*
*CSEM **27** 16:27:36.5±0.1, 39°.10N×29°.05E, h5km, MD2.9, Error ellipse: s-maj=2.7km s-min=2.2km az=109.0*
ISC 27 16:27:36.5±0.9, 39°.09N±0°.02×29°.04E±0°.03, h12km±10km, n33, σ0°36/42, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**260**	P	**Pg**	**16 27 41.8**	**-0.1**
DEMI	**Demirci**	**0.25**	**260**	*i* P	**Pg**	**16 27 41.8**	**-0.1**
GDZ	**Gediz**	**0.34**	**89**	P	**Pg**	**16 27 43.6**	**+0.1**
GDZ				S	**Sg**	**16 27 48.7**	**+0.5**
GDZ	**Gediz**	**0.34**	**89**	*i* P	**Pg**	**16 27 43.6**	**+0.1**
GDZ				*i* S	**Sg**	**16 27 48.7**	**+0.5**
TVSB	**Tavsanli**	**0.49**	**42**	*e*PG	**Pg**	**16 27 45.6**	**-0.6**
TVSB				*e*SG	**Sg**	**16 27 52.6**	**-0.1**
TVSB	**Tavsanli**	**0.49**	**42**	*e*Pg	**Pg**	**16 27 45.6**	**-0.6**
TVSB				*e*Sg	**Sg**	**16 27 52.6**	**-0.1**
KULA	**Kula-Manisa**	**0.64**	**207**	*e*PG	**Pb**	**16 27 49.5**	**-0.2**
KULA	**Kula-Manisa**	**0.64**	**207**	*e*Pg	**Pb**	**16 27 49.5**	**-0.2**
DURS	**Dursunbey**	**0.68**	**320**	P	**Pg**	**16 27 49.2**	**-0.4**
DURS	**Dursunbey**	**0.68**	**320**	*i* P	**Pg**	**16 27 49.2**	**-0.4**
MANT	**Manisa**	**0.70**	**212**	P	**Pg**	**16 27 50.1**	**-0.1**
MANT				S	**Sg**	**16 27 59.0**	**-0.5**
MANT	**Manisa**	**0.70**	**212**	*i* P	**Pg**	**16 27 50.1**	**-0.1**
MANT				*i* S	**Sg**	**16 27 59.0**	**-0.5**
KHAL	**Karahalli**	**0.80**	**153**	P	**Pb**	**16 27 52.3**	**-0.1**
KHAL				S	**Sb**	**16 28 03.2**	**0.0**
KHAL	**Karahalli**	**0.80**	**153**	*i* P	**Pb**	**16 27 52.3**	**-0.1**
KHAL				*i* S	**Sb**	**16 28 03.2**	**0.0**
ORLT	**Orhaneli**	**0.96**	**354**	*e*PG	**Pb**	**16 27 55.3**	**0.0**
ORLT	**Orhaneli**	**0.96**	**354**	*e*Pg	**Pb**	**16 27 55.3**	**0.0**
AKS	**Akhisar**	**0.98**	**258**	*e*PG	**Pn**	**16 27 56.3**	**+0.2**
AKS	**Akhisar**	**0.98**	**258**	*e*Pg	**Pn**	**16 27 56.3**	**+0.2**
BALB	**Balikesir**	**1.05**	**302**	*e*PN	**Pn**	**16 27 57.6**	**+0.4**
BALB	**Balikesir**	**1.05**	**302**	*e*Pn	**Pn**	**16 27 57.6**	**+0.4**
IGD	**Bursa**	**1.18**	**6**	*i* P	**Pb**	**16 27 57.7**	**-1.2**
IGD				*i* S	**Sb**	**16 28 14.0**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.29**	**355**	*e*PN	**Pb**	**16 28 01.0**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.29**	**355**	*e*Pn	**Pb**	**16 28 01.0**	**+0.3**
KCTX	**Karacabey (Bur**	**1.29**	**336**	*e*PN	**Pg**	**16 28 01.5**	**+0.2**
KCTX	**Karacabey (Bur**	**1.29**	**336**	*e*Pn	**Pg**	**16 28 01.5**	**+0.2**
IZI	**Iznik**	**1.29**	**15**	*e*PN	**Pb**	**16 28 00.7**	**-0.2**
IZI	**Iznik**	**1.29**	**15**	*e*Pn	**Pb**	**16 28 00.7**	**-0.2**
GONE	**Gonen-Balikesi**	**1.42**	**313**	*e*PN	**Pb**	**16 28 03.3**	**+0.4**
GONE	**Gonen-Balikesi**	**1.42**	**313**	*e*Pn	**Pb**	**16 28 03.3**	**+0.4**
ARMT	**Armutlu**	**1.48**	**355**	*e*PN	**Pb**	**16 28 03.9**	**-0.2**
ARMT	**Armutlu**	**1.48**	**355**	*e*Pn	**Pb**	**16 28 03.9**	**-0.2**
GULT	**Gulveren**	**1.76**	**40**	*e*PN	**Pn**	**16 28 07.2**	**+0.2**
GULT	**Gulveren**	**1.76**	**40**	*e*Pn	**Pn**	**16 28 07.2**	**+0.2**

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*ISCJB **27** 16:38:23.5±0.4, 39°.10N±0°.03×29°.06E±0°.03, h5km±5km, Error ellipse: s-maj=5.2km s-min=3.5km az=152.8*
*CSEM **27** 16:38:23.7±0.1, 39°.10N×29°.06E, h6km, MD3.0, Error ellipse: s-maj=1.6km s-min=1.3km az=160.0*
*ISK **27** 16:38:23.3, 39°.10N×29°.11E, h8km, MD2.8*
*DDA **27** 16:38:23.6, 39°.08N×29°.05E, h12km, Md3.0*
ISC 27 16:38:23.8±0.9, 39°.10N±0°.02×29°.06E±0°.02, h11km±8km, n53, σ0°33/68, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**257**	P	**Pg**	**16 38 29.5**	**0.0**
DEMI				S	**Sg**	**16 38 33.3**	**+0.1**
DEMI	**Demirci**	**0.27**	**257**	*i* P	**Pg**	**16 38 29.5**	**0.0**
DEMI				*i* S	**Sg**	**16 38 33.3**	**+0.1**
GDZ	**Gediz**	**0.33**	**92**	P	**Pg**	**16 38 30.6**	**+0.1**
GDZ				S	**Sg**	**16 38 35.5**	**+0.5**
GDZ	**Gediz**	**0.33**	**92**	*i* P	**Pg**	**16 38 30.6**	**+0.1**
GDZ				*i* S	**Sg**	**16 38 35.5**	**+0.5**
TVSB	**Tavsanli**	**0.47**	**42**	PG	**Pg**	**16 38 32.8**	**-0.3**
TVSB				SG	**Sg**	**16 38 38.8**	**-0.5**
TVSB	**Tavsanli**	**0.47**	**42**	*i* Pg	**Pg**	**16 38 32.8**	**-0.3**
TVSB				*i* Sg	**Sg**	**16 38 38.8**	**-0.5**
KULA	**Kula-Manisa**	**0.67**	**208**	PG	**Pg**	**16 38 36.7**	**0.0**
KULA	**Kula-Manisa**	**0.67**	**208**	*i* Pg	**Pg**	**16 38 36.7**	**0.0**
DURS	**Dursunbey**	**0.67**	**318**	P	**Pg**	**16 38 36.4**	**-0.5**
DURS	**Dursunbey**	**0.67**	**318**	*i* P	**Pg**	**16 38 36.4**	**-0.5**
MANT	**Manisa**	**0.73**	**213**	P	**Pg**	**16 38 37.6**	**-0.3**
MANT				S	**Sg**	**16 38 47.2**	**-0.3**
MANT	**Manisa**	**0.73**	**213**	*i* P	**Pg**	**16 38 37.6**	**-0.3**
MANT				*i* S	**Sg**	**16 38 47.2**	**-0.3**
KHAL	**Karahalli**	**0.81**	**155**	P	**Pb**	**16 38 39.8**	**-0.1**
KHAL				S	**Sg**	**16 38 50.0**	**0.0**
KHAL	**Karahalli**	**0.81**	**155**	*i* P	**Pb**	**16 38 39.8**	**-0.1**
KHAL				*i* S	**Sg**	**16 38 50.0**	**0.

MDNY	Mudanya-Bursa	1.27	354	*e*Pn	Pb	16 38 48.0	+0.2
IZI	Iznik	1.27	14	*e*PN	Pg	16 38 48.2	-0.1
IZI	Iznik	1.27	14	*e*Pn	Pg	16 38 48.2	-0.1
KCTX	Karacabey (Bur	1.28	335	*e*PN	Pg	16 38 48.5	0.0
KCTX	Karacabey (Bur	1.28	335	*e*Pn	Pg	16 38 48.5	0.0
BALY	Balya	1.28	300	P	Pn	16 38 47.9	+0.1
BALY	Balya	1.28	300	*i* P	Pn	16 38 47.9	+0.1
BORA	Eskisehir	1.33	54	P	Pn	16 38 48.7	+0.3
BORA				S	Sn	16 39 06.4	+0.2
BORA	Eskisehir	1.33	54	*i* P	Pn	16 38 48.7	+0.3
BORA				*i* S	Sn	16 39 06.4	+0.2
GEMT	Gemlik	1.33	4	*e*PN	Pb	16 38 49.0	+0.1
GEMT	Gemlik	1.33	4	*e*Pn	Pb	16 38 49.0	+0.1
GONE	Gonen-Balikesi	1.42	312	*e*PN	Pb	16 38 50.3	0.0
GONE	Gonen-Balikesi	1.42	312	*e*Pn	Pb	16 38 50.3	0.0
ADVT	Abdulvahap	1.43	21	*e*PN	Pb	16 38 50.3	-0.2
ADVT	Abdulvahap	1.43	21	*e*Pn	Pb	16 38 50.3	-0.2
ARMT	Armutlu	1.47	354	*e*PN	Pn	16 38 50.3	0.0
ARMT	Armutlu	1.47	354	*e*Pn	Pn	16 38 50.3	0.0
GPA	Golpazari	1.53	39	*e*PN	Pn	16 38 51.6	+0.5
GPA	Golpazari	1.53	39	*e*Pn	Pn	16 38 51.6	+0.5
EDC	Edincik	1.55	324	*e*PN	Pb	16 38 52.4	-0.1
EDC	Edincik	1.55	324	*e*Pn	Pb	16 38 52.4	-0.1
GULT	Gulveren	1.74	40	*e*PN	Pn	16 38 54.2	+0.1
GULT	Gulveren	1.74	40	*e*Pn	Pn	16 38 54.2	+0.1
HRT	Hereke	1.78	15	*e*PN	Pn	16 38 55.0	+0.4
HRT	Hereke	1.78	15	*e*Pn	Pn	16 38 55.0	+0.4
SVRH	Sivrihisar-ESK	1.94	79	*e*PN	Pn	16 38 56.8	-0.1
SVRH	Sivrihisar-ESK	1.94	79	*e*Pn	Pn	16 38 56.8	-0.1

IDC 27 16:39:25.1±2.8, 34°.88N×140°.22E, h0km, mb3.6/2, mb1 3.9/2, mb1mx3.3/45, mbtmp3.6/2, ML2.1/1, MS1.8/1, Ms1 1.8/1, ms1mx1.8/45, Error ellipse: s-maj=86.4km s-min=31.9km az=66.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	2.33	316	Pn	Pn	16 40 04.3	-0.5
	0.5nm,0.3s,baz=136,slow=18,SNR=4.1						
MJAR				LR	LR	16 41 03.4	
	comp=Z,21nm,20.9s,baz=90,slow=43						
H11N2	WAKE ISLAND Hy 27.98	116		T	T	17 15 11.4	
	baz=316,slow=75,SNR=12						
H11N1	WAKE ISLAND Hy 27.99	116		T	T	17 15 14.5	
	baz=316,slow=75,SNR=7.1						
H11N3	WAKE ISLAND Hy 28.00	116		T	T	17 14 57.7	
	baz=316,slow=75,SNR=4.7						
H11S3	WAKE ISLAND Hy 28.60	118		T	T	17 16 10.7	
	baz=316,slow=74,SNR=4.4						
H11S2	WAKE ISLAND Hy 28.62	118		T	T	17 16 14.7	
	baz=253,slow=74,SNR=3.1						
WRA	Warramunga Arr	54.80	187	P	P	16 48 56.9	0.0
	1.0nm,0.8s,baz=11,slow=7.5,SNR=5.4						
ASAR	Alice Springs	58.53	187	P	P	16 49 23.3	-0.1
	0.4nm,0.8s,baz=8.6,slow=5.2,SNR=5.6						

*ISCJB **27** 16:47:27.8±0.5, 39°.10N±0°.04×29°.01E±0°.04, h9km, Error ellipse: s-maj=6.1km s-min=3.7km az=162.1*
*ISK **27** 16:47:27.5, 39°.12N×29°.04E, h8km, MD2.7*
*CSEM **27** 16:47:27.9±0.1, 39°.12N×29°.02E, h5km, MD2.7, Error ellipse: s-maj=1.9km s-min=1.5km az=160.0*
*DDA **27** 16:47:27.5, 39°.10N×29°.01E, h7km, Md2.7*

ISC 27 16:47:28.0±0.9, 39°.11N±0°.03×29°.01E±0°.02, h9km, n34, σ0°20/42, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.24	253	P	Pg	16 47 32.7	-0.2
DEMI				S	Sg	16 47 36.3	+0.1
DEMI	Demirci	0.24	253	*i* P	Pg	16 47 32.7	-0.2
DEMI				*i* S	Sg	16 47 36.3	+0.1
GDZ	Gediz	0.37	94	P	Pg	16 47 35.3	0.0
GDZ				S	Sg	16 47 40.5	+0.3
GDZ	Gediz	0.37	94	*i* P	Pg	16 47 35.3	0.0
GDZ				*i* S	Sg	16 47 40.5	+0.3
TVSB	Tavsanli	0.49	46	*e*PG	Pg	16 47 37.4	-0.1
TVSB				*e*SG	Sg	16 47 43.6	-0.3
TVSB	Tavsanli	0.49	46	*e*Pg	Pg	16 47 37.4	-0.1
TVSB				*e*Sg	Sg	16 47 43.6	-0.3
DURS	Dursunbey	0.64	320	P	Pg	16 47 40.3	-0.1
DURS	Dursunbey	0.64	320	*i* P	Pg	16 47 40.3	-0.1
KULA	Kula-Manisa	0.66	205	*e*PG	Pg	16 47 40.9	+0.2
KULA	Kula-Manisa	0.66	205	*e*Pg	Pg	16 47 40.9	+0.2
KHL	Karahalli	0.89	153	*e*PG	Pg	16 47 44.7	-0.3
KHL	Karahalli	0.89	153	*e*Pg	Pg	16 47 44.7	-0.3
AKS	Akhisar	0.96	256	*e*PG	Pb	16 47 46.8	-0.1
AKS	Akhisar	0.96	256	*e*Pg	Pb	16 47 46.8	-0.1
BALB	Balikesir	1.02	301	*e*PG	Pg	16 47 47.8	+0.1
BALB	Balikesir	1.02	301	*e*Pg	Pg	16 47 47.8	+0.1
KCTX	Karacabey (Bur	1.26	337	*e*PN	Pn	16 47 51.8	0.0
KCTX	Karacabey (Bur	1.26	337	*e*Pn	Pn	16 47 51.8	0.0
MDNY	Mudanya-Bursa	1.26	356	*e*PN	Pb	16 47 52.0	+0.1
MDNY	Mudanya-Bursa	1.26	356	*e*Pn	Pb	16 47 52.0	+0.1
IZI	Iznik	1.27	16	*e*PN	Pn	16 47 52.1	+0.1
IZI	Iznik	1.27	16	*e*Pn	Pn	16 47 52.2	+0.1
BORA	Eskisehir	1.35	55	P	Pn	16 47 53.1	-0.1
BORA				S	Sg	16 48 12.0	+0.4
BORA	Eskisehir	1.35	55	*i* P	Pn	16 47 53.1	-0.1
BORA				*i* S	Sg	16 48 12.0	+0.4
GONE	Gonen-Balikesi	1.38	313	*e*PN	Pb	16 47 53.9	-0.2
GONE	Gonen-Balikesi	1.38	313	*e*Pn	Pb	16 47 53.9	-0.2
ADVT	Abdulvahap	1.43	23	*e*PN	Pn	16 47 54.2	0.0
ADVT	Abdulvahap	1.43	23	*e*Pn	Pn	16 47 54.2	0.0
ARMT	Armutlu	1.46	356	*e*PN	Pn	16 47 54.7	+0.1
ARMT	Armutlu	1.46	356	*e*Pn	Pn	16 47 54.7	+0.1
EDC	Edincik	1.52	325	*e*PN	Pb	16 47 56.1	-0.2
EDC	Edincik	1.52	325	*e*Pn	Pb	16 47 56.1	-0.2
GULT	Gulveren	1.76	41	*e*PN	Pn	16 47 59.0	+0.3
GULT	Gulveren	1.76	41	*e*Pn	Pn	16 47 59.0	+0.3

*ISCJB **27** 16:56:41.0±0.6, 7°.31N±0°.04×80°.46W±0°.06, h8km, mb4.1/11, MS3.3/8, Error ellipse: s-maj=8.2km s-min=6.2km az=162.2*
*IDC **27** 16:56:42.5±1.0, 7°.44N×80°.63W, h0km, mb4.0/9, mb1 4.3/14, mb1mx4.1/34, mbtmp4.2/14, ML4.1/4, MS3.4/12, Ms1 3.4/12, ms1mx3.2/37, Error ellipse: s-maj=32.1km s-min=17.5km az=42.0*
*NEIC **27** 16:56:46.7±0.7, 7°.53N×80°.52W, h35km, mb4.9/2, Error ellipse: s-maj=12.4km s-min=9.0km az=71.0*
NEIC Felt at Las Tablas and Tonosi.

ISC 27 16:56:42.8±0.7, 7°.31N±0°.06×80°.41W±0°.08, h8km, n55, σ1§81/49, mb4.2/11, MS3.3/8, Panama

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BCIP	Isla Barro Col	1.93	17	*e*Pn	Pn	16 57 15.2	-0.7
BCIP				*e*Sg	Sb	16 57 42.4	-0.1
BCIP	Isla Barro Col	1.93	17	*e*P	Pn	16 57 15.4	-0.6
SOLC	Bahia Solano	3.17	110	*e*P	Pn	16 57 30.8	-2.2
CAPC	Capurgana	3.30	66	*e*P	Pn	16 57 37.5	+2.6
DBBC	Dabeiba	4.17	94	*e*P	Pn	16 57 47.1	+0.1
MALC	Bahia Malaga	4.48	137	*e*P	Pn	16 57 49.9	-1.2
MOTC	Monteria, Cord	4.92	72	*e*P	Pn	16 57 58.4	+1.3
HELC	Santa Helena	4.97	103	*e*P	Pn	16 57 58.4	+0.2
GUYC	Guyana, Colomb	5.40	112	*e*P	Pn	16 58 01.2	-3.0
TOLC	Tolima	5.74	118	*e*P	Pn	16 58 09.1	+0.5
NORC	Norcasia	5.77	107	*e*P	Pn	16 58 09.7	+0.8
SJCC	San Jacinto, C	5.77	63	*e*P	Pn	16 58 11.4	+2.5
POPC	Popayan, Colom	6.02	142	*e*P	Pn	16 58 12.0	-0.5
ROSC	El Rosal	6.53	112	Pn	Pn	16 58 24.1	+4.4
	1.8nm,0.3s,baz=10,slow=5.9,SNR=6.6						
PRAC	Prado	6.55	123	*e*P	Pn	16 58 19.3	-0.3
BRRC	Barranca, Sant	6.65	91	*e*P	Pn	16 58 21.0	+0.1
OCAC	Ocana	7.08	82	*e*P	Pn	16 58 28.9	+1.9
BTLC	Betulia, Santa	7.10	93	*e*P	Pn	16 58 28.6	+1.3
BARC	Barichara	7.21	95	*e*P	Pn	16 58 29.5	+0.7
OTAV	Otavalo	7.29	164	Pn	Pn	16 58 29.4	-0.8
	11nm,0.9s						
RUSC	La Rusia	7.41	101	*e*P	Pn	16 58 31.8	0.0
GRMC	Gramalote, San	7.55	86	*e*P	Pn	16 58 35.2	+1.7
CBRI	Barrientos, No	7.56	86	*e*P	Pn	16 58 35.7	+2.2
SJAC	San Juan de Ar	7.58	122	*e*P	Pn	16 58 35.2	+1.4
PAMC	Pamplona, Colo	7.65	89	*e*P	Pn	16 58 36.3	+1.3
URIC	Uribia, Colomb	9.38	62	*e*P	Pn	16 58 59.5	+1.1
SDV	Santo Domingo	9.80	80	Pn	Pn	16 59 06.3	+1.9
	6.5nm,0.3s,baz=251,slow=11,SNR=10.0						
SDV				Sn	Sn	17 00 51.4	-3.5
	2.8nm,0.3s,baz=15,slow=13,SNR=2.7						
SDV	Santo Domingo	9.80	80	*e*Pn	Pn	16 59 04.8	+0.4
	21nm,0.4s						
SDV				*e*Sn	Sn	17 00 51.8	-3.1
SDV	Santo Domingo	9.80	80	*e*P	Pn	16 59 06.3	+1.9
ATAH	Atahualpa	14.49	172	Pn	Pn	17 00 10.9	+2.1
	0.5nm,0.3s,baz=355,slow=18,SNR=2.5						
ATAH				LR	LR	17 06 15.1	
	comp=Z,54nm,18.9s,baz=0.1,slow=39						
SDDR	Presa de Saban	14.60	37	*e*Pn	Pn	17 00 09.4	-0.5
	20nm,0.6s						
TEIG	Tepich	14.94	330	LR	LR	17 05 59.9	
	comp=Z,121nm,18.0s,baz=144,slow=38						
PCRV	Puerto La Cruz	15.85	79	Pn	P	17 00 29.7	-0.6
	1.1nm,0.3s,baz=233,slow=6.6,SNR=2.8						
PCRV				LR	LR	17 08 45.5	
	comp=Z,210nm,18.8s,baz=283,slow=45						
NNA	Nana	19.50	169	P	Pn	17 01 13.3	+1.4
	1.5nm,0.3s,baz=321,slow=7.5,SNR=3.7						
NNA				LR	LR	17 08 15.8	
	comp=Z,150nm,20.7s,baz=330,slow=35						
PTGA	Pitinga	21.90	111	P	P	17 01 38.7	+2.1
	9.5nm,0.9s,baz=293,slow=12,SNR=9.2						
PTGA				LR	LR	17 10 25.1	
	comp=Z,79nm,19.7s,baz=251,slow=37						
SAML	Samuel	23.57	133	*e*P	P	17 01 52.8	-1.3
	7.1nm,0.7s						
LPAZ	La Paz	26.41	153	LR	LR	17 14 37.7	
	comp=Z,91nm,19.5s,baz=308,slow=40						
TKL	Tuckaleechee C	28.38	354	LR	LR	17 13 42.0	
	comp=Z,94nm,19.8s,baz=196,slow=36						
BLA	Blacksburg	29.77	360	P	P	17 02 46.7	-3.3
	64nm,0.6s						
TXAR	Lajitas Array	30.98	318	P	P	17 02 60.0	-1.0
	0.1nm,0.4s,baz=131,slow=9.7,SNR=3.2						
TXAR				LR	LR	17 15 58.5	
	comp=Z,35nm,20.5s,baz=0.0,slow=38						
PDAR	Pinedale Array	43.66	329	LR	LR	17 24 41.2	
	comp=Z,47nm,20.9s,baz=112,slow=39						
ULM	Lac du Bonnet	44.71	346	P	P	17 04 54.5	-1.9
	3.4nm,0.5s,baz=147,slow=7.4,SNR=4.5						
ULM				LR	LR	17 24 54.8	
	comp=Z,26nm,18.4s,baz=356,slow=38						
NVAR	Mina Array Bea	46.13	318	LR	LR	17 28 27.5	
	comp=Z,35nm,20.4s,baz=124,slow=42						
YKA	Yellowknife Ar	60.47	343	P	P	17 06 51.1	-1.8
	3.0nm,0.7s,baz=134,slow=7.1,SNR=47						
ILAR	Eielson Array	73.51	336	P	P	17 08 16.1	+0.2
	1.2nm,0.9s,baz=112,slow=4.6,SNR=10						
ILAR				LR	LR	17 44 25.6	
	comp=Z,31nm,18.1s,baz=94,slow=39						
ESDC	Sonseca Array	74.94	51	P	P	17 08 26.6	+1.8
	0.6nm,0.6s,baz=277,slow=5.8,SNR=4.8						
NOA	NORSAR Array B	84.45	29	P	P	17 09 18.3	+2.3
	0.8nm,0.7s,baz=275,slow=5.0,SNR=3.0						
HFS	Hagfors	85.76	30	P	P	17 09 23.9	+1.3
	1.5nm,0.7s,baz=250,slow=8.6,SNR=2.9						
GERES	GERESS Array B	87.25	41	P	P	17 09 32.7	+2.4
	0.3nm,0.5s,baz=226,slow=15,SNR=3.4						
ASAR	Alice Springs	143.29	240	PKhKP	PKPpre	17 16 14.1	
	1.0nm,0.7s,baz=115,slow=3.6,SNR=16						
WRA	Warramunga Arr	144.06	246	PKhKP	PKPpre	17 16 16.5	
	5.2nm,0.7s,baz=101,slow=3.4,SNR=32						
H01W1	Cape Leeuwin H	149.45	204	T	T	20 04 20.0	
	baz=149,slow=76,SNR=25						
H01W2	Cape Leeuwin H	149.46	204	T	T	20 04 20.6	
	baz=149,slow=76,SNR=23						
H01W3	Cape Leeuwin H	149.47	204	T	T	20 04 21.5	
	baz=149,slow=76,SNR=27						
CMAR	Chiang Mai Arr	154.39	1	PKP	PKPdf	17 16 38.0	+1.3
	0.2nm,0.4s,baz=331,slow=3.4,SNR=2.8						
CMAR				PKPbc	PKPbc	17 16 45.0	0.0
	0.4nm,0.6s,baz=330,slow=2.9,SNR=5.2						

*DDA **27** 16:56:57.8, 39°.13N×29°.02E, h7km, Md3.0*
*ISCJB **27** 16:56:58.1±0.5, 39°.11N±0°.03×29°.02E±0°.03, h2km±7km, Error ellipse: s-maj=5.3km s-min=4.3km az=160.2*
*CSEM **27** 16:56:58.3±0.1, 39°.12N×29°.02E, h2km, MD3.0, Error ellipse: s-maj=2.2km s-min=1.9km az=100.0*
*ISK **27** 16:56:58.0, 39°.10N×29°.06E, h7km, MD2.8*

ISC 27 16:56:58.5±1.0, 39°.11N±0°.02×29°.02E±0°.02, h5km±13km, n48, σ0°29/58, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.25	254	P	Pg	16 57 03.4	0.0
DEMI				S	Sg	16 57 06.8	+0.2
DEMI	Demirci	0.25	254	*i* P	Pg	16 57 03.4	0.0
DEMI				*i* S	Sg	16 57 06.8	+0.2
GDZ	Gediz	0.36	94	P	Pg	16 57 05.5	0.0
GDZ				S	Sg	16 57 10.5	+0.3
GDZ	Gediz	0.36	94	*i* P	Pg	16 57 05.5	0.0
GDZ				*i* S	Sg	16 57 10.5	+0.3
TVSB	Tavsanli	0.48	45	*e*PG	Pg	16 57 07.5	-0.3
TVSB				*e*SG	Sg	16 57 13.9	-0.2
TVSB	Tavsanli	0.48	45	*e*Pg	Pg	16 57 07.5	-0.3
TVSB				*e*Sg	Sg	16 57 13.9	-0.2
DURS	Dursunbey	0.65	319	P	Pg	16 57 10.4	-0.5
DURS	Dursunbey	0.65	319	*i* P	Pg	16 57 10.4	-0.5
KULA	Kula-Manisa	0.66	205	*e*PG	Pg	16 57 11.2	0.0
KULA	Kula-Manisa	0.66	205	*e*Pg	Pg	16 57 11.2	0.0
MANT	Manisa	0.72	210	P	Pg	16 57 11.9	-0.4
MANT				S	Sg	16 57 21.1	-0.5
MANT	Manisa	0.72	210	*i* P	Pg	16 57 11.9	-0.4
MANT				*i* S	Sg	16 57 21.1	-0.5
KHAL	Karahalli	0.83	153	P	Pb	16 57 15.5	+0.1
KHAL				S	Sg	16 57 25.3	+0.2
KHAL	Karahalli	0.83	153	*i* P	Pb	16 57 15.5	+0.1
KHAL				*i* S	Sg	16 57 25.3	+0.2
KHL	Karahalli	0.88	153	*e*PG	Pg	16 57 15.2	-0.2
KHL	Karahalli	0.88	153	*e*Pg	Pg	16 57 15.2	-0.2
ORLT	Orhaneli	0.94	354	*e*PG	Pg	16 57 16.5	0.0
ORLT	Orhaneli	0.94	354	*e*Pg	Pg	16 57 16.5	0.0
AKS	Akhisar	0.97	257	*e*PG	Pg	16 57 17.1	0.0
AKS	Akhisar	0.97	257	*e*Pg	Pg	16 57 17.1	0.0
BALB	Balikesir	1.03	301	*e*PG	Pb	16 57 19.1	+0.3
BALB	Balikesir	1.03	301	*e*Pg	Pb	16 57 19.1	+0.3
MDNY	Mudanya-Bursa	1.26	355	*e*PN	Pn	16 57 22.9	+0.1
MDNY	Mudanya-Bursa	1.26	355	*e*Pn	Pn	16 57 22.9	+0.1
KCTX	Karacabey (Bur	1.26	336	*e*PN	Pg	16 57 22.6	-0.1
KCTX	Karacabey (Bur	1.26	336	*e*Pn	Pg	16 57 22.6	-0.1
IZI	Iznik	1.27	16	*e*PN	Pn	16 57 23.3	+0.2
IZI	Iznik	1.27	16	*e*Pn	Pn	16 57 23.3	+0.2
GEMT	Gemlik	1.33	6	*e*PN	Pn	16 57 23.7	0.0
GEMT	Gemlik	1.33	6	*e*Pn	Pn	16 57 23.7	0.0
GONE	Gonen-Balikesi	1.39	313	*e*PN	Pb	16 57 24.8	-0.2
GONE	Gonen-Balikesi	1.39	313	*e*Pn	Pb	16 57 24.8	-0.2
ADVT	Abdulvahap	1.43	22	*e*PN	Pn	16 57 25.1	-0.1
ADVT	Abdulvahap	1.43	22	*e*Pn	Pn	16 57 25.1	-0.1
ARMT	Armutlu	1.46	355	*e*PN	Pn	16 57 25.3	-0.3
ARMT	Armutlu	1.46	355	*e*Pn	Pn	16 57 25.3	-0.3
EDC	Edincik	1.52	324	*e*PN	Pn	16 57 26.6	+0.2
EDC	Edincik	1.52	324	*e*Pn	Pn	16 57 26.6	+0.2
GPA	Golpazari	1.54	40	*e*PN	Pn	16 57 26.6	-0.1
GPA	Golpazari	1.54	40	*e*Pn	Pn	16 57 26.6	-0.1
GULT	Gulveren	1.75	41	*e*PN	Pn	16 57 29.4	-0.2
GULT	Gulveren	1.75	41	*e*Pn	Pn	16 57 29.4	-0.2
HRT	Hereke	1.78	16	*e*PN	Pn	16 57 30.7	+0.7
HRT	Hereke	1.78	16	*e*Pn	Pn	16 57 30.7	+0.7
ISK	Istanbul-Kandi	1.95	1	*e*PN	Pn	16 57 32.9	+0.6
ISK	Istanbul-Kandi	1.95	1	*e*Pn	Pn	16 57 32.9	+0.6
SVRH	Sivrihisar-ESK	1.97	79	*e*PN	Pn	16 57 32.5	-0.2
SVRH	Sivrihisar-ESK	1.97	79	*e*Pn	Pn	16 57 32.5	-0.2

MEX 27 17:15:21.3±0.5, 16°.09N×98°.99W, h16km±40km, MD3.9, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PNIG	Pinotepa	0.88	70	*e*P	Pb	17 15 34.9	-3.4
PNIG				*e*S	Sb	17 15 45.8	-4.1
ACX	Acapulco	1.14	313	*e*P	Pn	17 15 34.5	-8.2
ACX				*e*S	Sb	17 15 48.4	-8.8
TLIG	Tlapa	1.52	15	*e*P	Pn	17 15 44.4	-3.6
TLIG				*i* S	Sn	17 16 02.4	-5.2
CAIG	El Cayaco	1.55	308	*e*P	Pn	17 15 44.9	-3.4
CAIG				*e*S	Sn	17 16 02.9	-5.3
PLIG	Platanillo	2.34	348	*e*P	Pn	17 15 56.3	-3.0
PLIG				*e*S	Sn	17 16 23.2	-4.6
VHO	Vista Hermosa	2.38	65	*e*P	Pn	17 15 57.4	-2.4
VHO				*e*S	Sn	17 16 24.1	-4.7
ARIG	Puente Sto Nin	2.54	329	*e*P	Pn	17 15 59.3	-2.6
ARIG				*i* S	Sn	17 16 27.8	-4.7
YAIG	Yautepec	2.76	358	*i* P	Pn	17 16 02.4	-2.7
YAIG				*i* S	Sn	17 16 34.8	-3.4
HUIG	Huatulco	2.79	96	*i* P	Pn	17 16 02.0	-3.3
HUIG				*e*S	Sn	17 16 34.9	-3.8
PPM	Popocatepetl	2.98	7	*e*P	Pn	17 16 05.4	-3.1
PPM				*i* S	Sn	17 16 40.3	-3.9

*SKHL **27** 17:22:36.0±1.2, 45°.17N×150°.15E, h59km±5km, mb4.7/3*
*JMA **27** 17:22:39.0±0.6, 44°.97N×149°.78E, h118km, M3.5*

ISC 27 17:22:35.5±3.9, 44°.95N±0°.09×150°.2E±0°.2, h51km, n31, σ1§81/41, 2C-1D, East of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUR	Kuril'sk	1.65	281	⇑*i* P	Pn	17 23 01.8	-0.2
KUR				AMB	AMB	17 23 02.9	
	150nm,0.2s						
KUR				*i* S	Sn	17 23 21.9	-0.1
KUR				A	A	17 23 23.2	
	290nm,0.4s						
KUR				A	A	17 23 23.2	
	2μm,0.4s						
SHO	Shikotan	2.62	247	⇑*i* P	Pn	17 23 17.1	+1.8
SHO				AMB	AMB	17 23 27.2	
	40nm,0.2s						
SHO				*i* S	Sn	17 23 47.9	+2.1
SHO				A	A	17 23 55.6	
	300nm,0.3s						
SHO				A	A	17 23 55.6	
	150nm,0.3s						
YUK	Yuzh-Kuril'sk	3.21	255	⇓*i* P	Pn	17 23 25.7	+2.3
YUK				AMB	AMB	17 23 27.3	
	60nm,0.4s						
YUK				AMB	AMB	17 23 27.3	
	300nm,0.4s						
YUK				AMB	AMB	17 23 27.3	
	140nm,0.4s						
YUK				*e*S	Sn	17 24 03.5	+3.2
YUK				A	A	17 24 13.0	
	140nm,0.4s						
YUK				A	A	17 24 13.0	
	270nm,0.4s						
NEM2	Nemuro 2	3.55	245	P	Pn	17 23 29.9	+1.8
NEM2				*e*S	Sn	17 24 09.4	+0.6
JRA	Rausu	3.75	256	P	Pn	17 23 33.3	+2.6
JNK	Nakash	4.14	253	P	Pn	17 23 38.2	+2.1
JAK	Akkeshi	4.40	246	P	Pn	17 23 41.2	+1.5
JTKR	Abashiri--Toko	4.58	260	P	Pn	17 23 43.4	+1.2
JAR	Ashorobuto	4.89	252	P	Pn	17 23 48.6	+2.2
JOB	Onbets	5.01	248	P	Pn	17 23 49.8	+1.8
HRK	Horoka	5.27	256	*e*P	Pn	17 23 54.0	+2.3
JSE	Soyaes	5.38	273	P	Pn	17 23 53.4	+0.3
JKK2	Kamakawa 2	5.42	261	P	Pn	17 23 55.3	+1.6
JCH	Churui	5.45	247	P	Pn	17 23 55.2	+1.1
JCH				*e*S	Sn	17 24 54.7	-0.7
ASAJ	Asahikawa	5.47	264	P	Pn	17 23 55.7	+1.3
YSS	Yuzh-Sakhalins	5.54	294	*e*P	Pn	17 23 55.7	+0.4
MYR	Moyori	5.66	244	*e*P	Pn	17 23 58.4	+1.5
MYR				*e*S	Sn	17 25 00.2	-0.3
JFR	Furan	5.74	254	P	Pn	17 24 00.2	+2.1
JWK2	Keihoku	5.86	276	P	Pn	17 24 00.9	+1.3
JEM	Erimo	5.88	242	*e*S	Sn	17 25 04.8	-1.2
JNBK	Urakawa-nobuka	6.00	246	P	Pn	17 24 02.1	+0.4
JNBK				*e*S	Sn	17 25 07.7	-1.3
JBT2	Biratori 2	6.04	252	P	Pn	17 24 03.2	+1.0
JNB	Noboribetsu	7.06	253	P	Pn	17 24 16.4	+0.2
JKB	Kayabe	7.32	248	P	Pn	17 24 19.7	0.0
JKB				*e*S	Sn	17 25 37.8	-3.5
JYM2	Yakumo 2	7.66	252	P	Pn	17 24 24.5	+0.2
TYV	Tymovskoe	7.77	322	*e*P	Pn	17 24 25.2	-0.6
JANG	Nango	7.84	237	P	Pn	17 24 26.4	-0.5
JANG				*e*S	Sn	17 25 49.6	-4.6
JTM	Tenmabayashi	7.87	241	P	Pn	17 24 27.6	+0.4
JTM				*e*S	Sn	17 25 51.4	-3.4
JSR	Shiriuchi	7.89	248	P	Pn	17 24 27.2	-0.3
JOSM	Okushiri--Mats	8.28	253	P	Pn	17 24

GVD	**Gavdhos**	**1.05 151**	*e*Pg		**Pb**	**17 24 50.5**	**-0.2**
MHLO	**Agia Marina, M**	**1.19 39**	P		**Pn**	**17 24 52.4**	**-0.5**
MHLO			S		**Sn**	**17 25 08.6**	**-0.2**
MHLO	**Agia Marina, M**	**1.19 39**	P		**Pn**	**17 24 52.4**	**-0.5**
MHLO			S		**Sb**	**17 25 08.1**	**-0.2**
MHLO	**Agia Marina, M**	**1.19 39**	P		**Pn**	**17 24 52.2**	**-0.7**
MHLO			S		**Sb**	**17 25 08.1**	**-0.2**
MHLO			AML		AML	17 25 13.7	
MHLO			AML		AML	17 25 14.1	
IDI	**Anoyia**	**1.25 112**	Pn		**Pn**	**17 24 53.8**	**-0.1**
	comp=E,465nm,0.3s,baz=313,slow=15,SNR=1475						
IDI			Sn		**Sb**	**17 25 09.4**	**-0.7**
	comp=E,2μm,0.3s,baz=266,slow=20,SNR=12						
IDI	**Anoyia**	**1.25 112**	P		**Pn**	**17 24 53.2**	**-0.6**
IDI			S		**Sn**	**17 25 10.3**	**-0.1**
IDI	**Anoyia**	**1.25 112**	*e*Pn		**Pb**	**17 24 54.0**	**-0.2**
IDI			*e*Sn		**Sb**	**17 25 08.8**	**-1.3**
IDI			S		**Sn**	**17 25 10.3**	**-0.1**
IDI	**Anoyia**	**1.25 112**	P		**Pb**	**17 24 54.2**	**0.0**
IDI			S		**Sn**	**17 25 10.4**	**0.0**
IDI			AML		AML	17 25 15.5	
	comp=E,45042μm,0.7s						
IDI			AML		AML	17 25 16.1	
	comp=N,58794μm,0.5s						
IDI	**Anoyia**	**1.25 112**	*e*Pn		**Pb**	**17 24 54.0**	**-0.2**
IDI			*e*Sn		**Sb**	**17 25 08.8**	**-1.3**
SIVA	**Sivas**	**1.32 124**	⇑*i*P		**Pn**	**17 24 54.6**	**-0.2**
SIVA	**Sivas**	**1.32 124**	P		**Pn**	**17 24 54.6**	**-0.2**
SIVA			S		**Sg**	**17 25 13.5**	**-0.1**
SIVA	**Sivas**	**1.32 124**	P		**Pn**	**17 24 54.1**	**-0.7**
SIVA			S		**Sn**	**17 25 12.4**	**+0.3**
SIVA	**Sivas**	**1.32 124**	P		**Pn**	**17 24 54.1**	**-0.7**
SIVA			S		**Sn**	**17 25 12.4**	**+0.3**
SIVA			AML		AML	17 25 17.4	
	comp=N,89154μm,0.7s						
SIVA			AML		AML	17 25 26.6	
SIVA	**Sivas**	**1.32 124**	P		**Pn**	**17 24 54.6**	**-0.2**
SIVA			S		**Sg**	**17 25 13.5**	**-0.1**
IACM	**Heraklion**	**1.38 109**	P		**Pb**	**17 24 56.0**	**-0.4**
IACM			S		**Sg**	**17 25 14.6**	**-0.9**
IACM	**Heraklion**	**1.38 109**	P		**Pb**	**17 24 56.0**	**-0.4**
IACM			S		**Sb**	**17 25 14.4**	**+0.6**
IACM	**Heraklion**	**1.38 109**	P		**Pb**	**17 24 56.3**	**-0.1**
IACM			S		**Sb**	**17 25 14.4**	**+0.6**
KRND	**KRANIDI**	**1.64 351**	P		**Pn**	**17 24 59.4**	**+0.3**
KRND			S		**Sb**	**17 25 21.8**	**+0.7**
KRND	**KRANIDI**	**1.64 351**	P		**Pn**	**17 24 59.4**	**+0.3**
KRND			S		**Sb**	**17 25 21.2**	**+0.1**
KRND	**KRANIDI**	**1.64 351**	P		**Pn**	**17 24 59.2**	**+0.1**
KRND			S		**Sb**	**17 25 21.2**	**+0.1**
THR5	**Thira Island,**	**1.65 66**	*e*PN		**Pn**	**17 24 59.8**	**+0.5**
THR5	**Thira Island,**	**1.65 66**	P		**Pn**	**17 24 59.6**	**+0.3**
THR5	**Thira Island,**	**1.65 66**	P		**Pn**	**17 24 59.6**	**+0.3**
THR6	**Thira Island,**	**1.67 69**	P		**Pn**	**17 24 59.7**	**+0.2**
THR6	**Thira Island,**	**1.67 69**	P		**Pn**	**17 24 59.7**	**+0.2**
THR6	**Thira Island,**	**1.67 69**	*e*Pn		**Pn**	**17 24 59.7**	**+0.2**
THR3	**Thira Island,**	**1.69 67**	P		**Pn**	**17 24 59.8**	**0.0**
THR3	**Thira Island,**	**1.69 67**	P		**Pn**	**17 24 59.8**	**0.0**
THR3	**Thira Island,**	**1.69 67**	*e*Pn		**Pn**	**17 24 59.8**	**0.0**
THT1	**Athinios (Pele**	**1.70 68**	P		**Pn**	**17 25 00.0**	**0.0**
THT1	**Athinios (Pele**	**1.70 68**	P		**Pn**	**17 25 00.0**	**0.0**
CMBO	**Columbo, Santo**	**1.72 65**	P		**Pn**	**17 25 00.4**	**+0.2**
CMBO			S		**Sb**	**17 25 23.6**	**+0.1**
CMBO	**Columbo, Santo**	**1.72 65**	P		**Pn**	**17 25 00.3**	**+0.1**
CMBO			S		**Sb**	**17 25 23.6**	**+0.1**
CMBO	**Columbo, Santo**	**1.72 65**	P		**Pn**	**17 25 00.3**	**+0.1**
SANT	**Santorini**	**1.72 69**	⇑*i*P		**Pn**	**17 25 00.3**	**0.0**
SANT	**Santorini**	**1.72 69**	S		**Sg**	**17 25 26.5**	**+0.2**
SANT	**Santorini**	**1.72 69**	P		**Pn**	**17 25 00.3**	**0.0**
SANT	**Santorini**	**1.72 69**	P		**Pn**	**17 25 00.3**	**0.0**
SANT			*e*Sn		**Sg**	**17 25 26.2**	**-0.1**
SANT	**Santorini**	**1.72 69**	P		**Pn**	**17 25 00.0**	**-0.3**
SANT	**Santorini**	**1.72 69**	*e*Pn		**Pn**	**17 25 00.1**	**-0.1**
SANT			*e*Sn		**Sg**	**17 25 26.2**	**-0.1**
LAST	**Lasithi**	**1.75 110**	⇓*i*P		**Pn**	**17 25 01.4**	**+0.7**
LAST	**Lasithi**	**1.75 110**	S		**Sg**	**17 25 25.6**	**-1.5**
LAST	**Lasithi**	**1.75 110**	P		**Pn**	**17 25 01.1**	**+0.5**
LAST			S		**Sb**	**17 25 23.9**	**-0.5**
LAST	**Lasithi**	**1.75 110**	P		**Pn**	**17 25 01.1**	**+0.5**
LAST			S		**Sb**	**17 25 23.9**	**-0.5**
LAST	**Lasithi**	**1.75 110**	P		**Pn**	**17 25 01.1**	**+0.5**
LAST	**Lasithi**	**1.75 110**	*e*Pn		**Pn**	**17 25 01.3**	**+0.7**
LAST			S		**Sb**	**17 25 23.9**	**-0.5**
DID	**Didima**	**1.75 354**	P		**Pn**	**17 25 00.9**	**+0.2**
DID			S		**Sb**	**17 25 25.4**	**+1.0**
DID	**Didima**	**1.75 354**	P		**Pn**	**17 25 00.9**	**+0.2**
DID			S		**Sn**	**17 25 23.1**	**+0.4**
DID	**Didima**	**1.75 354**	P		**Pn**	**17 25 00.9**	**+0.2**
DID			S		**Sn**	**17 25 23.1**	**+0.4**
DID			AML		AML	17 25 35.4	
	comp=E,19008μm,0.4s						
DID			AML		AML	17 25 37.0	
	comp=N,14412μm,0.5s						
DID	**Didima**	**1.75 354**	*e*Pn		**Pn**	**17 25 00.9**	**+0.2**
DID			S		**Sb**	**17 25 25.4**	**+1.0**
PYL	**PYLOS**	**1.80 309**	P		**Pb**	**17 25 03.1**	**-0.3**
PYL			S		**Sg**	**17 25 27.7**	**-1.0**
PYL	**PYLOS**	**1.80 309**	P		**Pb**	**17 25 03.1**	**-0.3**
PYL			S		**Sg**	**17 25 27.5**	**-1.2**
PYL	**PYLOS**	**1.80 309**	P		**Pb**	**17 25 03.1**	**-0.3**
PYL			S		**Sg**	**17 25 27.6**	**-1.2**
PYL			AML		AML	17 25 38.4	
	comp=N,10363μm,0.8s						
PYL			AML		AML	17 25 39.1	
	comp=E,11198μm,0.6s						
PYL	**PYLOS**	**1.80 309**	*e*Pn		**Pb**	**17 25 03.1**	**-0.3**
PYL			S		**Sg**	**17 25 27.7**	**-1.0**
NPS	**Neapolis**	**1.82 105**	P		**Pn**	**17 25 01.8**	**+0.2**
NPS			S		**Sb**	**17 25 26.1**	**-0.3**
NPS	**Neapolis**	**1.82 105**	P		**Pn**	**17 25 01.8**	**+0.2**
NPS			S		**Sb**	**17 25 26.1**	**-0.3**
NPS	**Neapolis**	**1.82 105**	P		**Pn**	**17 25 01.8**	**+0.2**
NPS			S		**Sb**	**17 25 26.1**	**-0.3**
NPS	**Neapolis**	**1.82 105**	P		**Pn**	**17 25 01.8**	**+0.2**
NPS	**Neapolis**	**1.82 105**	P		**Pn**	**17 25 01.8**	**+0.2**
NPS			S		**Sb**	**17 25 26.1**	**-0.3**
VLX	**Vlachokerasia**	**1.83 332**	P		**Pb**	**17 25 03.5**	**-0.6**
VLX			S		**Sb**	**17 25 27.3**	**+0.5**
VLX	**Vlachokerasia**	**1.83 332**	P		**Pb**	**17 25 03.2**	**-0.8**
VLX			S		**Sb**	**17 25 27.3**	**+0.5**
VLX	**Vlachokerasia**	**1.83 332**	P		**Pb**	**17 25 03.2**	**-0.8**
VLX			S		**Sb**	**17 25 28.3**	**+1.5**
VLX			AML		AML	17 25 36.9	
	comp=E,17746μm,0.5s						
VLX			AML		AML	17 25 45.6	
	comp=N,12409μm,0.8s						
VLX	**Vlachokerasia**	**1.83 332**	*e*Pn		**Pb**	**17 25 03.5**	**-0.6**
VLX			S		**Sb**	**17 25 27.3**	**+0.5**
ITM	**Ithomi**	**1.88 319**	P		**Pb**	**17 25 03.9**	**-1.0**
ITM			S		**Sb**	**17 25 27.3**	**-1.0**
ITM	**Ithomi**	**1.88 319**	P		**Pb**	**17 25 03.9**	**-1.0**
ITM			S		**Sb**	**17 25 27.3**	**-1.0**
ITM			AML		AML	17 25 46.2	
	comp=N,7345μm,0.6s						
ITM			AML		AML	17 25 46.8	
	comp=E,4450μm,0.5s						
VLY	**Voula,Athens**	**2.10 7**	P		**Pn**	**17 25 05.7**	**+0.2**
VLY			S		**Sn**	**17 25 32.9**	**+1.6**
VLY	**Voula,Athens**	**2.10 7**	P		**Pn**	**17 25 05.7**	**+0.2**
VLY			S		**Sn**	**17 25 32.9**	**+1.6**
VLY	**Voula,Athens**	**2.10 7**	*e*Pn		**Pn**	**17 25 05.7**	**+0.2**
VLY			S		**Sn**	**17 25 32.9**	**+1.6**
APE	**Apeiranthos**	**2.11 51**	*e*PN		**Pn**	**17 25 07.0**	**+1.4**
APE			*e*SN		**Sb**	**17 25 34.8**	**0.0**
APE	**Apeiranthos**	**2.11 51**	⇑*i*P		**Pn**	**17 25 05.4**	**-0.2**
APE	**Apeiranthos**	**2.11 51**	S		**Sg**	**17 25 37.0**	**-1.8**
APE	**Apeiranthos**	**2.11 51**	P		**Pn**	**17 25 05.3**	**-0.3**
APE			S		**Sb**	**17 25 33.2**	**-1.6**
APE	**Apeiranthos**	**2.11 51**	*e*P		**Pn**	**17 25 05.3**	**-0.3**
APE			S		**Sb**	**17 25 33.2**	**-1.6**
APE	**Apeiranthos**	**2.11 51**	P		**Pn**	**17 25 06.2**	**+0.6**
APE	**Apeiranthos**	**2.11 51**	*e*Pn		**Pn**	**17 25 07.0**	**+1.4**
APE			S		**Sn**	**17 25 31.8**	**+0.2**
APE			*e*Sn		**Sb**	**17 25 34.8**	**0.0**
APE	**Apeiranthos**	**2.11 51**	P		**Pn**	**17 25 06.2**	**+0.6**
APE			S		**Sn**	**17 25 31.8**	**+0.2**
APE			AML		AML	17 25 40.9	
	comp=E,20309μm,0.5s						
APE			AML		AML	17 25 41.4	
	comp=N,15936μm,0.3s						
APE	**Apeiranthos**	**2.11 51**	*e*Pn		**Pn**	**17 25 05.3**	**-0.3**
APE			S		**Sb**	**17 25 33.2**	**-1.6**
ATH	**Athens Observa**	**2.21 5**	P		**Pn**	**17 25 07.5**	**+0.5**
ATH	**Athens Observa**	**2.21 5**	P		**Pn**	**17 25 07.5**	**+0.5**
ATH	**Athens Observa**	**2.21 5**	P		**Pn**	**17 25 07.5**	**+0.5**
ATH	**Athens Observa**	**2.21 5**	P		**Pn**	**17 25 07.5**	**+0.5**
AMT	**Artemida-Makis**	**2.26 322**	P		**Pn**	**17 25 08.8**	**+1.1**
AMT	**Artemida-Makis**	**2.26 322**	P		**Pn**	**17 25 08.8**	**+1.1**
LTK	**Loutraki**	**2.29 350**	P		**Pn**	**17 25 08.7**	**+0.6**
LTK			S		**Sb**	**17 25 39.3**	**-0.7**
LTK	**Loutraki**	**2.29 350**	P		**Pn**	**17 25 08.7**	**+0.6**
LTK			S		**Sb**	**17 25 39.3**	**-0.7**
LTK	**Loutraki**	**2.29 350**	P		**Pn**	**17 25 08.5**	**+0.4**
LTK	**Loutraki**	**2.29 350**	*e*Pn		**Pn**	**17 25 08.7**	**+0.6**
LTK			S		**Sb**	**17 25 39.3**	**-0.7**
PTL	**Penteli**	**2.30 8**	P		**Pn**	**17 25 08.7**	**+0.4**
PTL	**Penteli**	**2.30 8**	P		**Pn**	**17 25 08.7**	**+0.4**
PTL	**Penteli**	**2.30 8**	P		**Pn**	**17 25 08.1**	**-0.2**
PTL	**Penteli**	**2.30 8**	*e*Pn		**Pn**	**17 25 08.7**	**+0.4**
ZKR	**Zakros**	**2.33 105**	P		**Pn**	**17 25 09.6**	**+0.9**
ZKR			S		**Sb**	**17 25 39.1**	**-2.1**
ZKR	**Zakros**	**2.33 105**	P		**Pn**	**17 25 09.6**	**+0.9**
ZKR			S		**Sb**	**17 25 39.1**	**-2.1**
ZKR	**Zakros**	**2.33 105**	P		**Pn**	**17 25 09.8**	**+1.1**
ZKR	**Zakros**	**2.33 105**	*e*Pn		**Pn**	**17 25 09.6**	**+0.9**
ZKR			S		**Sb**	**17 25 39.1**	**-2.1**
KLV	**Kalavryta, Ach**	**2.51 335**	P		**Pn**	**17 25 12.2**	**+1.1**
KLV			S		**Sn**	**17 25 44.0**	**+2.5**
KLV	**Kalavryta, Ach**	**2.51 335**	P		**Pn**	**17 25 12.0**	**+0.8**
KLV			S		**Sn**	**17 25 44.0**	**+2.5**
KLV	**Kalavryta, Ach**	**2.51 335**	P		**Pn**	**17 25 12.0**	**+0.8**
KLV	**Kalavryta, Ach**	**2.51 335**	*e*Pn		**Pn**	**17 25 12.2**	**+1.1**
KLV			S		**Sn**	**17 25 44.0**	**+2.5**
DRO	**Drossia**	**2.60 328**	P		**Pb**	**17 25 14.9**	**-2.3**
DRO			S		**Sb**	**17 25 47.0**	**-1.9**
DRO	**Drossia**	**2.60 328**	P		**Pb**	**17 25 14.9**	**-2.3**
DRO			S		**Sb**	**17 25 47.0**	**-1.9**
LAKA	**Lakka**	**2.75 335**	P		**Pn**	**17 25 16.2**	**+1.8**
LAKA	**Lakka**	**2.75 335**	P		**Pn**	**17 25 16.2**	**+1.8**
LAKA	**Lakka**	**2.75 335**	*e*Pn		**Pn**	**17 25 16.2**	**+1.8**
DSF	**Desfina**	**2.75 344**	P		**Pn**	**17 25 15.3**	**+0.9**
DSF			S		**Sn**	**17 25 50.0**	**+2.6**
DSF	**Desfina**	**2.75 344**	P		**Pn**	**17 25 15.3**	**+0.9**
DSF			S		**Sn**	**17 25 50.0**	**+2.6**
DSF	**Desfina**	**2.75 344**	P		**Pn**	**17 25 15.3**	**+0.9**
DSF	**Desfina**	**2.75 344**	*e*Pn		**Pn**	**17 25 15.3**	**+0.9**
DSF			S		**Sn**	**17 25 50.0**	**+2.6**
SERG	**Sergoula**	**2.88 337**	P		**Pn**	**17 25 18.1**	**+1.9**
SERG	**Sergoula**	**2.88 337**	P		**Pn**	**17 25 18.1**	**+1.9**
ZKS	**Zakynthos**	**2.89 313**	P		**Pn**	**17 25 17.7**	**+1.3**
ZKS	**Zakynthos**	**2.89 313**	P		**Pn**	**17 25 17.7**	**+1.3**
ZKS	**Zakynthos**	**2.89 313**	P		**Pn**	**17 25 17.8**	**+1.4**
AXS	**Araxos**	**2.95 326**	P		**Pn**	**17 25 18.8**	**+1.7**
AXS	**Araxos**	**2.95 326**	P		**Pn**	**17 25 18.8**	**+1.7**
KARP	**Karpathos**	**3.01 93**	*e*PN		**Pn**	**17 25 18.2**	**+0.2**
KARP	**Karpathos**	**3.01 93**	P		**Pn**	**17 25 17.9**	**-0.2**
KARP			S		**Sn**	**17 25 55.5**	**+1.7**
KARP	**Karpathos**	**3.01 93**	*e*Pn		**Pn**	**17 25 17.8**	**-0.2**
KARP			S		**Sn**	**17 25 55.5**	**+1.7**
KARP	**Karpathos**	**3.01 93**	P		**Pn**	**17 25 18.5**	**+0.5**
KARP	**Karpathos**	**3.01 93**	*e*Pn		**Pn**	**17 25 17.8**	**-0.2**
KARP			S		**Sn**	**17 25 55.5**	**+1.7**
NISR	**Nisiros**	**3.08 73**	P		**Pn**	**17 25 19.8**	**+0.9**
NISR	**Nisiros**	**3.08 73**	P		**Pn**	**17 25 19.8**	**+0.9**
NISR	**Nisiros**	**3.08 73**	*e*Pn		**Pn**	**17 25 19.8**	**+0.9**
ANX	**Ano Chora**	**3.08 337**	P		**Pn**	**17 25 20.4**	**+1.3**
ANX	**Ano Chora**	**3.08 337**	P		**Pn**	**17 25 20.4**	**+1.3**
NIS1	**Nisyros Isl.**	**3.11 73**	*e*PN		**Pn**	**17 25 20.3**	**+0.9**
NIS1	**Nisyros Isl.**	**3.11 73**	P		**Pn**	**17 25 20.5**	**+1.1**
NIS1	**Nisyros Isl.**	**3.11 73**	*e*Pn		**Pn**	**17 25 20.3**	**+0.9**
NIS1	**Nisyros Isl.**	**3.11 73**	*e*Pn		**Pn**	**17 25 20.5**	**+1.1**
SMIA	**Simia**	**3.12 356**	P		**Pn**	**17 25 20.4**	**+1.0**
SMIA	**Simia**	**3.12 356**	P		**Pn**	**17 25 20.4**	**+1.0**
KFL	**Anninata**	**3.18 318**	P		**Pn**	**17 25 22.6**	**+2.3**
KFL	**Anninata**	**3.18 318**	P		**Pn**	**17 25 22.6**	**+2.3**
SMG	**Samos**	**3.33 53**	P		**Pn**	**17 25 22.3**	**0.0**
SMG	**Samos**	**3.33 53**	P		**Pn**	**17 25 22.3**	**0.0**
SMG	**Samos**	**3.33 53**	P		**Pn**	**17 25 22.3**	**0.0**
CHOS	**Chios island**	**3.33 38**	*e*PN		**Pn**	**17 25 23.2**	**+0.7**
CHOS	**Chios island**	**3.33 38**	P		**Pn**	**17 25 22.4**	**-0.1**
CHOS	**Chios island**	**3.33 38**	P		**Pn**	**17 25 22.4**	**-0.1**
CHOS	**Chios island**	**3.33 38**	*e*Pn		**Pn**	**17 25 23.2**	**+0.7**
CHOS	**Chios island**	**3.33 38**	P		**Pn**	**17 25 22.4**	**-0.1**
VLS	**Valsamata**	**3.33 317**	P		**Pn**	**17 25 24.1**	**+1.6**
VLS	**Valsamata**	**3.33 317**	P		**Pn**	**17 25 24.1**	**+1.6**
VLS	**Valsamata**	**3.33 317**	P		**Pn**	**17 25 24.1**	**+1.6**
VLS	**Valsamata**	**3.33 317**	P		**Pn**	**17 25 24.1**	**+1.6**
BODT	**Bodrum**	**3.36 66**	*e*PN		**Pn**	**17 25 23.7**	**+1.0**
BODT	**Bodrum**	**3.36 66**	*e*Pn		**Pn**	**17 25 23.7**	**+1.0**
AGG	**Agios Georgios**	**3.38 345**	*e*PN		**Pn**	**17 25 23.2**	**+0.2**
AGG	**Agios Georgios**	**3.38 345**	P		**Pn**	**17 25 24.4**	**+1.4**
AGG	**Agios Georgios**	**3.38 345**	*e*P		**Pn**	**17 25 24.4**	**+1.4**
AGG	**Agios Georgios**	**3.38 345**	*e*Pn		**Pn**	**17 25 23.2**	**+0.2**
AGG	**Agios Georgios**	**3.38 345**	P		**Pn**	**17 25 24.4**	**+1.4**
AGG	**Agios Georgios**	**3.38 345**	*e*Pn		**Pn**	**17 25 24.4**	**+1.4**
AOS	**Alonnisos**	**3.42 5**	*e*PN		**Pn**	**17 25 24.4**	**+0.9**
AOS	**Alonnisos**	**3.42 5**	P		**Pn**	**17 25 23.9**	**+0.4**
AOS	**Alonnisos**	**3.42 5**	P		**Pn**	**17 25 23.9**	**+0.4**
AOS	**Alonnisos**	**3.42 5**	*e*Pn		**Pn**	**17 25 24.4**	**+0.9**
AOS	**Alonnisos**	**3.42 5**	*e*Pn		**Pn**	**17 25 23.9**	**+0.4**
BDRM	**Kayabasi**	**3.46 67**	P		**Pn**	**17 25 22.5**	**-1.6**
BDRM	**Kayabasi**	**3.46 67**	*i*P		**Pn**	**17 25 22.5**	**-1.6**
NEO	**Neokhori**	**3.54 357**	P		**Pn**	**17 25 26.1**	**+0.8**
NEO	**Neokhori**	**3.54 357**	P		**Pn**	**17 25 26.1**	**+0.8**
NEO	**Neokhori**	**3.54 357**	P		**Pn**	**17 25 26.1**	**+0.8**
DGB	**¯zmir**	**3.56 49**	*i*P		**Pn**	**17 25 25.1**	**-0.4**
DGB			*i*S		**Sb**	**17 26 15.7**	**-0.9**
GCAM	**G?zelcaml?**	**3.59 56**	P		**Pn**	**17 25 23.8**	**-2.1**
GCAM	**G?zelcaml?**	**3.59 56**	*i*P		**Pn**	**17 25 23.8**	**-2.1**
XOR	**Xorichti**	**3.60 357**	P		**Pn**	**17 25 27.0**	**+0.9**
XOR	**Xorichti**	**3.60 357**	P		**Pn**	**17 25 27.0**	**+0.9**
XOR	**Xorichti**	**3.60 357**	P		**Pn**	**17 25 27.0**	**+0.9**
LTBQ	**Tobruq**	**3.72 174**	*i*P		**Pn**	**17 25 29.0**	**+1.3**
	SNR=23						
ARG	**Arkhangelos**	**3.80 82**	P		**Pn**	**17 25 30.0**	**+1.2**
ARG	**Arkhangelos**	**3.80 82**	P		**Pn**	**17 25 30.0**	**+1.2**
ARG	**Arkhangelos**	**3.80 82**	P		**Pn**	**17 25 30.0**	**+1.2**
ARG	**Arkhangelos**	**3.80 82**	P		**Pn**	**17 25 30.0**	**+1.2**
SIGR	**SIGRI**	**3.93 28**	*e*PN		**Pn**	**17 25 32.0**	**+1.4**
SIGR	**SIGRI**	**3.93 28**	P		**Pn**	**17 25 30.6**	**0.0**
SIGR	**SIGRI**	**3.93 28**	P		**Pn**	**17 25 30.6**	**0.0**
SIGR	**SIGRI**	**3.93 28**	*e*Pn		**Pn**	**17 25 32.0**	**+1.4**
SIGR	**SIGRI**	**3.93 28**	*e*Pn		**Pn**	**17 25 30.6**	**0.0**
AYDN	**Tasoluk**	**4.01 61**	P		**Pn**	**17 25 27.7**	**-4.2**
AYDN	**Tasoluk**	**4.01 61**	*i*P		**Pn**	**17 25 27.7**	**-4.2**
AYDN			*i*S		**Sg**	**17 26 43.1**	**+3.3**
YER	**Yerkesik**	**4.11 69**	*e*PN		**Pn**	**17 25 35.6**	**+2.4**
YER	**Yerkesik**	**4.11 69**	*e*Pn		**Pn**	**17 25 35.6**	**+2.4**
PRK	**Paraskevi**	**4.13 32**	P		**Pn**	**17 25 33.1**	**-0.2**
PRK	**Paraskevi**	**4.13 32**	P		**Pn**	**17 25 33.1**	**-0.2**
PRK	**Paraskevi**	**4.13 32**	P		**Pn**	**17 25 33.1**	**-0.2**
PRK	**Paraskevi**	**4.13 32**	P		**Pn**	**17 25 33.1**	**-0.2**
AYDB	**Zeytinkoy-Aydi**	**4.16 57**	*e*PN		**Pn**	**17 25 36.0**	**+2.1**
AYDB	**Zeytinkoy-Aydi**	**4.16 57**	*e*Pn		**Pn**	**17 25 36.0**	**+2.1**
DKL	**Dikili**	**4.29 39**	*e*PN		**Pn**	**17 25 37.8**	**+2.3**
DKL	**Dikili**	**4.29 39**	*e*Pn		**Pn**	**17 25 37.8**	**+2.3**
DALY	**Dalyan (Mu¯la**	**4.32 74**	*e*PN		**Pn**	**17 25 38.5**	**+2.6**
DALY	**Dalyan (Mu¯la**	**4.32 74**	*e*Pn		**Pn**	**17 25 38.5**	**+2.6**
LIT	**Litokhoron**	**4.40 350**	P		**Pn**	**17 25 38.3**	**+1.2**
LIT	**Litokhoron**	**4.40 350**	*e*P		**Pn**	**17 25 38.3**	**+1.2**
LIT	**Litokhoron**	**4.40 350**	P		**Pn**	**17 25 38.3**	**+1.2**
LIT	**Litokhoron**	**4.40 350**	*e*Pn		**Pn**	**17 25 38.3**	**+1.2**
SLUM	**Salum**	**4.50 161**	P		**Pn**	**17 25 37.8**	**-0.7**
SLUM			S		**Sn**	**17 26 26.6**	**-3.9**
OUR	**Ouranopolis**	**4.58 5**	*e*PN		**Pn**	**17 25 40.6**	**+1.1**
OUR	**Ouranopolis**	**4.58 5**	*e*Pn		**Pn**	**17 25 40.6**	**+1.1**
FETY	**Fethiye**	**4.62 78**	*e*PN		**Pn**	**17 25 42.3**	**+2.2**
FETY	**Fethiye**	**4.62 78**	*e*Pn		**Pn**	**17 25 42.3**	**+2.2**
EZN	**Ezine**	**4.64 28**	*e*PN		**Pn**	**17 25 42.6**	**+2.2**
EZN	**Ezine**	**4.64 28**	*e*Pn		**Pn**	**17 25 42.6**	**+2.2**
AKS	**Akhisar**	**4.65 47**	*e*PN		**Pn**	**17 25 43.3**	**+2.8**
AKS	**Akhisar**	**4.65 47**	*e*Pn		**Pn**	**17 25 43.3**	**+2.8**
GADA	**Gvkgeada**	**4.82 23**	*e*PN		**Pn**	**17 25 44.8**	**+2.0**
GADA	**Gvkgeada**	**4.82 23**	*e*Pn		**Pn**	**17 25 44.8**	**+2.0**
HORT	**Hortiatis**	**4.83 357**	*e*PN		**Pn**	**17 25 44.3**	**+1.2**
HORT	**Hortiatis**	**4.83 357**	*e*Pn		**Pn**	**17 25 44.3**	**+1.2**
DNZL	**Cakiroluk**	**4.87 65**	P		**Pn**	**17 25 47.1**	**+3.4**
DNZL	**Cakiroluk**	**4.87 65**	*i*P		**Pn**	**17 25 47.1**	**+3.4**
DENT	**Denizli**	**4.89 64**	*e*PN		**Pn**	**17 25 46.1**	**+2.3**
DENT	**Denizli**	**4.89 64**	*e*Pn		**Pn**	**17 25 46.1**	**+2.3**
AKAS	**Kas**	**4.99 83**	P		**Pn**	**17 25 46.9**	**+1.5**
AKAS			S		**Sn**	**17 26 43.1**	**+0.2**
AKAS	**Kas**	**4.99 83**	*i*P		**Pn**	**17 25 46.9**	**+1.5**
AKAS			*i*S		**Sn**	**17 26 43.1**	**+0.2**
GLHS	**Glhisar (BURDU**	**5.05 72**	*e*PN		**Pn**	**17 25 48.6**	**+2.5**
GLHS	**Glhisar (BURDU**	**5.05 72**	*e*Pn		**Pn**	**17 25 48.6**	**+2.5**
GOLH	**Golhisar**	**5.12 72**	*i*P		Pn	17 25 52.3	+5.2
BALY	**Balya**	**5.15 38**	P		Pn	17 25 52.3	+4.8
BALY	**Balya**	**5.15 38**	*i*P		Pn	17 25 52.3	+4.9
GELI	**Tayfur-Gelibol**	**5.20 26**	*e*PN		**Pn**	**17 25 49.8**	**+1.8**
GELI	**Tayfur-Gelibol**	**5.20 26**	*e*Pn		**Pn**	**17 25 49.8**	**+1.8**
BALB	**Balikesir**	**5.21 41**	*e*PN		**Pn**	**17 25 50.8**	**+2.6**
BALB	**Balikesir**	**5.21 41**	*e*Pn		**Pn**	**17 25 50.8**	**+2.6**
GRG	**Griva**	**5.25 351**	*e*PN		**Pn**	**17 25 50.2**	**+1.4**
GRG	**Griva**	**5.25 351**	*e*Pn		**Pn**	**17 25 50.2**	**+1.4**
LPK	**Lapseki**	**5.28 28**	*e*PN		**Pn**	**17 25 50.9**	**+1.7**
LPK	**Lapseki**	**5.28 28**	*e*Pn		**Pn**	**17 25 50.9**	**+1.7**
ELL	**Elmali**	**5.29 77**	*e*PN		**Pn**	**17 25 51.8**	**+2.4**
ELL	**Elmali**	**5.29 77**	*e*Pn		**Pn**	**17 25 51.8**	**+2.4**
ENEZ	**Enez**	**5.39 22**	*e*PN		**Pn**	**17 25 53.2**	**+2.5**
ENEZ	**Enez**	**5.39 22**	*e*Pn		**Pn**	**17 25 53.2**	**+2.5**
ERIK	**Erikli-Kesan**	**5.45 25**	*e*PN		**Pn**	**17 25 53.1**	**+1.6**
ERIK	**Erikli-Kesan**	**5.45 25**	*e*Pn		**Pn**	**17 25 53.1**	**+1.6**
KHL	**Karahalli**	**5.47 60**	*e*PN		**Pn**	**17 25 54.9**	**+3.1**
ALN	**Alexandroupoli**	**5.51 21**	*e*PN		**Pn**	**17 25

CSS	Mathiatis	8.09	93	ePn	Pn	17 26 26.5	-1.4
CSS				eSn	Sn	17 27 44.1	-15
PLE	Pljevlja	8.19	339 ⇓	iPn	Pn	17 26 30.2	+1.0
PLE				eSn	Sn	17 27 58.3	-3.1
PLE	Pljevlja	8.19	339 ⇓	iPn	Pn	17 26 30.2	+1.0
UPM	Unac-Piva	8.22	336 ⇑	iPn	Pn	17 26 31.3	+1.6
UPM				eSn	Sn	17 27 59.1	-3.3
UPM	Unac-Piva	8.22	336 ⇑	iPn	Pn	17 26 31.3	+1.6
BR231	Keskin MP Arra	8.41	58	ePn	Pn	17 26 33.9	+1.6
BR231	Keskin MP Arra	8.41	58	ePn	Pn	17 26 33.9	+1.6
ANTO	Ankara	8.44	58	eP	Pn	17 26 35.3	+2.7
ANTO	Ankara	8.44	58	ePn	Pn	17 26 35.3	+2.7
ANTO	Ankara	8.44	58	ePn	Pn	17 26 35.3	+2.7
CLTB	Caltabellotta	8.44	285	ePn	Pn	17 26 36.0	+3.4
CLTB	Caltabellotta	8.44	285	ePn	Pn	17 26 36.0	+3.4
HMYD	Mayadein	8.57	132	P	Pn	17 26 33.1	-1.3
HNAT	Natroun	8.58	133	P	Pn	17 26 33.1	-1.4
BBLS	Lazići	8.67	340	ePn	Pn	17 26 35.0	-0.8
DIVS	Divibare	8.74	343	ePn	Pn	17 26 36.8	+0.1
AYT	Al 'Ayyat	8.85	131	P	Pn	17 26 36.7	-1.5
MSAB	Monastry St. A	8.96	21 ⇓	iP	Pn	17 26 41.4	+1.8
BR101	Keskin Array S	8.97	61	ePn	Pn	17 26 43.5	+3.6
BR101	Keskin Array S	8.97	61	ePn	Pn	17 26 43.5	+3.6
BR131	Keskin Array S	8.97	61	ePn	Pn	17 26 43.4	+3.5
BR131	Keskin Array S	8.97	61	ePn	Pn	17 26 43.4	+3.5
BRTR	Keskin Array B	8.97	61	Pn	Pn	17 26 43.5	+3.5
	comp=N,2.1nm,0.3s,baz=240,slow=14,SNR=45						
HAPS	Han Pijesak,BI	9.01	339	ePn	Pn	17 26 39.1	-1.3
HSAF	As Saff	9.16	130	P	Pn	17 26 40.8	-1.7
LJFR	Jufra	9.27	226	i P	Pn	17 26 42.3	-1.7
	SNR=22						
TEKS	Tekeris	9.28	342	ePn	Pn	17 26 43.9	-0.1
GLL	Jalalah	9.28	129	P	Pn	17 26 42.6	-1.6
TIRR	Tirgusor	9.47	22 ⇑	iP	Pn	17 26 48.5	+1.9
TIRR	Tirgusor	9.47	22	eP	Pn	17 26 46.3	-0.3
TIRR	Tirgusor	9.47	22	eP	Pn	17 26 46.3	-0.3
TIRR	Tirgusor	9.47	22	ePn	Pn	17 26 46.3	-0.3
HARR	Harsova	9.54	20 ⇓	iP	Pn	17 26 51.1	+3.5
ISR	Istrita	9.63	13 ⇑	iP	Pn	17 26 51.7	+2.8
ARR	Arges	9.63	5 ⇑	iP	Pn	17 26 51.3	+2.4
NBNS	Bani Suef	9.72	135	P	Pn	17 26 48.9	-1.3
VOIR		9.74	7 ⇓	iP	Pn	17 26 52.6	+2.2
RSH		9.82	116	P	Pn	17 26 49.8	-1.7
SUZ	Suez	9.84	124	P	Pn	17 26 50.1	-1.7
DOB	Doboj	9.85	337	ePn	Pn	17 26 50.3	-1.5
MLR	Muntele Rosu	9.89	10	Pn	Pn	17 26 55.2	+2.6
	comp=N,0.1nm,0.3s,baz=185,slow=7.7,SNR=14						
MLR	Muntele Rosu	9.89	10 ⇓	iP	Pn	17 26 55.7	+3.1
MLR	Muntele Rosu	9.89	10	ePn	Pn	17 26 55.6	+3.0
MLR	Muntele Rosu	9.89	10	ePn	Pn	17 26 55.6	+3.0
BZS	Buzias	9.94	352 ⇓	iP	Pn	17 26 53.9	+0.8
OFRI	'Ofer	10.04	105	Pn	Pn	17 26 53.4	-1.1
OFRI	'Ofer	10.04	105	Pn	Pn	17 26 53.4	-1.1
CFR	Carcaliu	10.05	19 ⇓	iP	Pn	17 26 56.8	+2.3
BLY	Banja Luka	10.18	334 ⇑	iP	Pn	17 26 56.7	+0.4
BLY	Banja Luka	10.18	334	S	Sn	17 28 43.9	-6.2
BLY	Banja Luka	10.18	334	ePn	Pn	17 26 56.4	+0.1
AQU	L'Aquila	10.22	313	eP	Pn	17 27 03.4	+6.4
AQU	L'Aquila	10.22	313	ePn	Pn	17 27 03.3	+6.3
AQU	L'Aquila	10.22	313	ePn	Pn	17 27 03.4	+6.3
SLTI	Sal'it	10.22	107	Pn	Pn	17 26 56.0	-1.0
SLTI	Sal'it	10.22	107	Pn	Pn	17 26 56.0	-1.0
MMA0B	Mount Meron ar	10.23	102	Pn	Pn	17 26 55.4	-1.8
MMA0B	Mount Meron ar	10.23	102	Pn	Pn	17 26 55.4	-1.8
MMAI	Mount Meron Ar	10.23	102	Pn	Pn	17 26 55.5	-1.8
	comp=N,4.5nm,0.3s,baz=310,slow=12,SNR=28						
MMAI				Sn	Sn	17 28 47.9	-3.8
	comp=N,19nm,0.3s,baz=307,slow=29,SNR=10.0						
DOPR	Dopca	10.29	8 ⇑	iP	Pn	17 27 00.6	+2.6
HWQ	Hawqa	10.34	95	eP	Pn	17 26 56.8	-1.9
KZIT	Kziot	10.34	115	Pn	Pn	17 26 57.8	-0.8
KZIT				Sn	Sn	17 28 49.8	-4.5
KZIT	Kziot	10.34	115	Pn	Pn	17 26 57.8	-0.8
KSDI	Kefar Szold	10.38	101	Pn	Pn	17 26 57.2	-2.0
KSDI	Kefar Szold	10.38	101	Pn	Pn	17 26 57.2	-2.0
VRI	Vrincioaia	10.39	13 ⇓	iP	Pn	17 27 01.8	+2.6
AMAZ	Amatzia	10.43	111	Pn	Pn	17 26 58.8	-1.0
AMAZ	Amatzia	10.43	111	Pn	Pn	17 26 58.8	-1.0
RCY	Rachaya	10.44	99	eP	Pn	17 26 57.1	-2.9
MMLI	Mount Malkishu	10.45	105	Pn	Pn	17 26 59.0	-1.1
MMLI				Sn	Sn	17 28 51.3	-5.6
MMLI	Mount Malkishu	10.45	105	Pn	Pn	17 26 59.0	-1.1
BRBR	Barbar	10.55	99	eP	Pn	17 27 02.3	+0.6
BRBR				eS	Sn	17 28 44.5	-15
BRBR				AML	AML	17 28 58.9	
	comp=N,133nm,0.6s						
BRBR				AML	AML	17 29 03.9	
	comp=E,45nm,0.5s						
BRBR	Barbar	10.55	99	eP	Pn	17 27 02.3	+0.6
BRBR				eS	Sn	17 28 44.5	-15
	comp=E,45nm,0.5s						
KSHT	Keshet	10.57	102	Pn	Pn	17 27 01.2	-0.6
KSHT	Keshet	10.57	102	Pn	Pn	17 27 01.2	-0.6
HNKL	Nakhl	10.58	120	P	Pn	17 27 00.7	-1.2
HMDT	Nahal Hemdat	10.60	106	Pn	Pn	17 27 01.1	-1.1
HMDT				Sn	Sn	17 28 55.6	-5.0
HMDT	Nahal Hemdat	10.60	106	Pn	Pn	17 27 01.1	-1.1
HAWK	Haweek	10.66	93	eP	Pn	17 27 01.2	-1.9
HAWK				eS	Sn	17 28 42.8	-19
HAWK				AML	AML	17 29 02.1	
	comp=N,90nm,0.6s						
HAWK				AML	AML	17 29 03.1	
	comp=E,61nm,0.6s						
HAWK	Haweek	10.66	93	eP	Pn	17 27 01.2	-1.9
HAWK				eS	Sn	17 28 42.8	-19
	comp=E,61nm,0.6s						
DSI	Dead Sea	10.77	109	Pn	Pn	17 27 02.5	-2.0
DSI	Dead Sea	10.77	109	Pn	Pn	17 27 02.5	-2.0
QASN	Qassioun	10.78	98	eP	Pn	17 27 05.1	+0.4
QASN				eS	Sn	17 28 49.4	-16
QASN				AML	AML	17 29 09.2	
	comp=E,76nm,0.6s						
QASN				AML	AML	17 29 13.3	
	comp=N,230nm,0.6s						
QASN	Qassioun	10.78	98	eP	Pn	17 27 05.1	+0.4
QASN				eS	Sn	17 28 49.4	-16
	comp=N,230nm,0.6s						
TCHB	Talchebab	10.80	103	eP	Pn	17 27 07.3	+2.4
TCHB				eS	Sn	17 28 51.6	-14
TCHB				AML	AML	17 29 07.3	
	comp=E,151nm,0.5s						
TCHB				AML	AML	17 29 16.7	
	comp=N,80nm,0.7s						
TCHB	Talchebab	10.80	103	eP	Pn	17 27 07.3	+2.4
TCHB				eS	Sn	17 28 51.6	-14
	comp=N,81nm,0.7s						
MARH	Ras Al Marh	10.82	95	eP	Pn	17 27 04.3	-1.2
MARH				eS	Sn	17 28 48.2	-18
MARH				AML	AML	17 29 07.3	
	comp=E,80nm,0.5s						
MARH				AML	AML	17 29 19.8	
	comp=N,82nm,0.5s						
MARH	Ras Al Marh	10.82	95	eP	Pn	17 27 04.3	-1.2
MARH				eS	Sn	17 28 48.2	-18
	comp=N,82nm,0.5s						
MZDA	Masada	10.87	111	Pn	Pn	17 27 04.7	-1.1
MZDA				Sn	Sn	17 29 01.5	-5.6
MZDA	Masada	10.87	111	Pn	Pn	17 27 04.7	-1.1
NVLJ	Novalja	10.97	326	Sn	Sn	17 29 03.7	-5.8
KRMI	Paran Flat	11.00	118	Pn	Pn	17 27 07.2	-0.5
KRMI	Paran Flat	11.00	118	Pn	Pn	17 27 07.2	-0.5
DRGR		11.03	357 ⇓	iP	Pn	17 27 10.4	+2.3
PRNI	Paran	11.08	116	Pn	Pn	17 27 07.5	-1.2
PRNI				Sn	Sn	17 29 06.2	-6.1
PRNI	Paran	11.08	116	Pn	Pn	17 27 07.5	-1.2
ZFRI	Zfri	11.10	115	Pn	Pn	17 27 06.9	-2.1
ZFRI	Zfri	11.10	115	Pn	Pn	17 27 06.9	-2.1
HRFI	Mount Harif	11.27	117	Pn	Pn	17 27 10.1	-1.3
HRFI	Mount Harif	11.27	117	Pn	Pn	17 27 10.1	-1.3
MBRI	Mt Berech	11.32	119	Pn	Pn	17 27 11.1	-1.0
MBRI	Mt Berech	11.32	119	Pn	Pn	17 27 11.1	-1.0
TR2	Tor 2	11.38	127	P	Pn	17 27 11.6	-1.3
SALA	Sala	11.39	102	eP	Pn	17 27 13.9	+0.7
SALA				eS	Sn	17 29 04.6	-16
SALA				AML	AML	17 29 21.2	
	comp=N,53nm,0.5s						
SALA				AML	AML	17 29 32.8	
	comp=E,4.4nm,0.5s						
SALA	Sala	11.39	102	eP	Pn	17 27 13.9	+0.7
SALA				eS	Sn	17 29 04.6	-16
	comp=E,4.0nm,0.5s						
EIL	Elat	11.41	119	Pn	Pn	17 27 12.4	-1.0
	comp=E,5.4nm,0.3s,baz=310,slow=6.6,SNR=35						
EIL				Sn	Sn	17 29 13.6	-7.0
	comp=E,2.7nm,0.3s,baz=305,slow=20,SNR=4.8						
KEST	Kesra	11.48	274	Pn	Pn	17 27 16.6	+2.3
	comp=E,0.3nm,0.3s,baz=146,slow=6.0,SNR=7.1						
KEST				Sn	Sn	17 29 15.9	-6.4
	comp=E,0.3nm,0.3s,baz=34,slow=22,SNR=3.7						
KEST				LR	LR	17 32 31.4	
	comp=E,93nm,19.9s,baz=342,slow=42						
KEST	Kesra	11.48	274	ePn	Pn	17 27 16.7	+2.4
ASF	Jabal al Asfar	11.71	104	Pn	Pn	17 27 17.8	+0.4
	comp=E,1.8nm,0.3s,baz=240,slow=4.3,SNR=15						
ASF				Sn	Sn	17 29 22.9	-5.0
	comp=E,0.7nm,0.3s,baz=144,slow=8.5,SNR=3.0						
CRES	Cresnjev	11.73	331 ⇑	iPn	Pn	17 27 16.7	-1.0
HDHB	Dhahab	11.76	124	P	Pn	17 27 17.1	-0.9
VSL	Villasalto	11.78	293	ePn	Pn	17 27 13.9	-4.4
VSL	Villasalto	11.78	293	ePn	Pn	17 27 13.9	-4.4
TR1	Tor 1	11.79	128	P	Pn	17 27 17.2	-1.3
ZALF	Zalf	11.80	100	eP	Pn	17 27 20.5	+1.8
ZALF				eS	Sn	17 29 14.5	-16
ZALF				AML	AML	17 29 39.3	
	comp=E,21nm,0.7s						
ZALF				AML	AML	17 30 02.4	
	comp=N,29nm,0.6s						
ZALF	Zalf	11.80	100	eP	Pn	17 27 20.5	+1.8
ZALF				eS	Sn	17 29 14.5	-16
	comp=N,29nm,0.6s						
BURAR	Bucovina Array	11.91	6 ⇑	iP	Pn	17 27 22.8	+2.7
KIS	Kishinev	11.91	18	eP	Pn	17 27 24.0	+3.9
KIS				LRM	MLR	17 32 28.0	
	comp=N,500nm,12.0s						
KIS	Kishinev	11.91	18	eP	Pn	17 27 24.0	+3.9
KIS				MLR	MLR		
	comp=Z,500nm,10.0s						
KIS				MLR	MLR		
	comp=E,500nm,11.0s						
KIS				MLR	MLR		
	comp=Z,500nm,12.0s						
BUR08	Bucovina Ar. S	11.94	6	ePn	Pn	17 27 19.3	-1.2
BUR08	Bucovina Ar. S	11.94	6	ePn	Pn	17 27 19.3	-1.2
SH2	Sharm el Sheik	11.96	128	P	Pn	17 27 19.7	-1.1
CEY	Cerknica	12.09	328	ePn	Pn	17 27 21.4	-1.1
HHRG	Al Ghardaqah	12.11	132	P	Pn	17 27 22.6	-0.3
SIM	Simferopol'	12.24	38	eP	Pn	17 27 20.0	-4.5
SIM				eS	Sn	17 29 41.3	+0.7
SIM				pmax	pmax		
	comp=Z,11nm,0.7s						
VNDS	Vrh nad Dolski	12.26	330	ePn	Pn	17 27 23.1	-1.8
VNDS				eSn	Sn	17 29 32.6	-8.7
LJU	Ljubljana	12.29	329	ePn	Pn	17 27 24.2	-1.0
PSZ	Piszkesteto	12.43	349 ⇑	iP	Pn	17 27 26.8	-0.4
PSZ	Piszkesteto	12.43	349	ePKKPdf	Pn	17 27 33.2	+6.0
PSZ	Piszkesteto	12.43	349	eP	Pn	17 27 24.5	-2.7
PSZ	Piszkesteto	12.43	349	ePn	Pn	17 27 24.5	-2.7
PSZ	Piszkesteto	12.43	349 ⇑	iP	Pn	17 27 26.8	-0.4
PSZ	Piszkesteto	12.43	349	ePn	Pn	17 27 24.4	-2.7
SOKA	Soboth	12.61	332	i Pn	Pn	17 27 29.6	0.0
	comp=Z,9.1nm,0.4s,SNR=11						
SOKA	Soboth	12.61	332	Pn	Pn	17 27 29.6	0.0
	comp=Z,9.1nm,0.4s,SNR=11						
OBKA	Obir	12.66	331	ePn	Pn	17 27 29.9	-0.4
	comp=Z,4.1nm,0.4s						
OBKA	Obir	12.66	331	Pn	Pn	17 27 29.9	-0.4
	comp=Z,4.1nm,0.4s						
UZH	Uzhgorod	12.89	356	eP	P	17 27 42.7	-1.4
KECS	Kecovo	12.90	351	eP	Pn	17 27 36.3	+2.8
KECS	Kecovo	12.90	351	eP	Pn	17 27 36.3	+2.8
KECS	Kecovo	12.90	351	ePN	Pn	17 27 36.3	+2.8
ARSA	Arzberg	12.92	335	ePn	Pn	17 27 33.3	-0.6
	comp=Z,8.9nm,0.6s						
ARSA	Arzberg	12.92	335	Pn	Pn	17 27 33.3	-0.6
	comp=Z,8.9nm,0.6s						
VYHS	Vyhne	13.17	346	eP	P	17 27 42.7	-4.6
VYHS	Vyhne	13.17	346	ePN	P	17 27 42.7	-4.6
CRVS	Cervenica-Dubn	13.21	354	eP	Pn	17 27 40.0	+2.2
CRVS	Cervenica-Dubn	13.21	354	eP	Pn	17 27 40.0	+2.2
CRVS	Cervenica-Dubn	13.21	354	ePN	Pn	17 27 40.0	+2.2
LANS	Liptovska Anna	13.70	349	e	P	17 27 54.6	+1.5
STHS	Stebnicka Huta	13.74	354	eP	P	17 27 56.2	+2.6
STHS	Stebnicka Huta	13.74	354	e	P	17 27 56.2	+2.6
NIE	Niedzica	13.84	351	eP	P	17 27 53.3	-1.4
NIE	Niedzica	13.84	351	eP	P	17 27 53.3	-1.4
NIE	Niedzica	13.84	351	eP	P	17 27 53.3	-1.4
MOA	Molln	13.88	333	i Pn	Pn	17 27 47.4	+0.5
	comp=Z,14nm,0.7s						
MOA	Molln	13.88	333	Pn	Pn	17 27 47.4	+0.5
	comp=Z,14nm,0.7s						
ANN	Anapa	13.95	45	eP	Pn	17 27 49.9	+2.1
ANN				eS	Sn	17 30 32.9	+11
ANN				pmax	pmax		
	comp=Z,31nm,1.0s						
VRAC	Vranov	14.44	342	Pn	P	17 28 00.4	-1.0
	comp=Z,2.1nm,0.3s,baz=139,slow=9.2,SNR=26						
VRAC				LR	LR	17 34 46.5	
	comp=Z,291nm,20.1s,baz=167,slow=43						
VRAC	Vranov	14.44	342 ⇓	iP	Pn	17 27 55.7	+1.0
CKHR	Kef el Ahmar	14.56	276	P	P	17 28 02.5	-0.5
WATA	Walderalm	14.57	326	i Pn	Pn	17 27 57.8	+1.2
	comp=Z,17nm,0.6s						
WATA	Walderalm	14.57	326	Pn	Pn	17 27 57.8	+1.2
	comp=Z,17nm,0.6s						
OKC	Ostrava-Krasne	14.59	346	eP	P	17 28 04.8	+1.8
OKC				ex	x	17 28 09.4	
OKC				AMS	AMS	17 34 50.0	
	comp=Z,500nm,13.5s						
OKC	Ostrava-Krasne	14.59	346	eP	P	17 28 04.8	+1.8
OKC				MLR	MLR		
	comp=Z,500nm,13.5s						
OKC	Ostrava-Krasne	14.59	346	eP	P	17 28 04.8	+1.8
	comp=Z,500nm,13.5s						
MORC	Moravsky Berou	14.66	345 ⇓	iP	P	17 28 02.0	-1.8
MORC	Moravsky Berou	14.66	345	eP	Pn	17 28 00.3	+2.7
MORC	Moravsky Berou	14.66	345	ePn	Pn	17 28 00.3	+2.7
MORC	Moravsky Berou	14.66	345 ⇓	iP	P	17 28 02.0	-1.8
MORC	Moravsky Berou	14.66	345	ePn	Pn	17 28 00.3	+2.7
FUORN	Ofenpass-Fuorn	14.69	322	ePn	Pn	17 28 00.0	+1.7
FUORN	Ofenpass-Fuorn	14.69	322	ePn	Pn	17 27 60.0	+1.7
OJC	Ojcow	14.69	351	eP	Pn	17 27 57.4	-0.6
OJC	Ojcow	14.69	351	ePn	Pn	17 27 57.4	-0.6
OJC	Ojcow	14.69	351	ePn	Pn	17 27 57.4	-0.6
SOC	Sochi	14.73	53	eP	Pn	17 28 00.1	+1.5
SOC				e		17 30 47.4	
SOC				pmax	pmax		
	comp=Z,8.0nm,0.4s						
SOC				MLR	MLR		
	comp=Z,50nm,7.0s						
TREC	Trest	14.73	339	eP	P	17 28 02.1	-2.5
TREC				ex	x	17 28 06.3	
TREC	Trest	14.73	339	eP	P	17 28 02.1	-2.5
MOTA	Moosalm	14.80	325	ePn	Pn	17 28 00.7	+1.1
	comp=Z,8.9nm,0.6s,SNR=6.4						
MOTA	Moosalm	14.80	325	Pn	Pn	17 28 00.7	+1.1
	comp=Z,8.9nm,0.6s,SNR=6.4						
GEA0	GERESS Array S	14.91	334	ePn	Pn	17 28 01.8	+0.7
GEA0	GERESS Array S	14.91	334	ePn	Pn	17 28 01.8	+0.7
GEC2	GERESS Array S	14.92	334	eP	Pn	17 28 02.0	+0.8
GEC2	GERESS Array S	14.92	334	ePn	Pn	17 28 02.0	+0.8
GEC2	GERESS Array S	14.92	334	ePn	Pn	17 28 02.0	+0.8
GERES	GERESS Array B	14.92	334	Pn	Pn	17 28 02.5	+1.3
	comp=Z,0.4nm,0.3s,baz=152,slow=12,SNR=20						
GERES				ScP	ScP	17 36 45.4	+1.7
	comp=Z,0.1nm,0.3s,baz=300,slow=6.0,SNR=3.6						
DAVOX	Davos/Dischmat	14.99	321	Pn	P	17 28 08.7	+1.0
	comp=Z,0.7nm,0.3s,baz=164,slow=12,SNR=8.4						
DAVOX				Sn	Sn	17 30 42.6	-5.5
	comp=Z,0.2nm,0.3s,baz=150,slow=14,SNR=4.1						
DAVOX				LR	LR	17 35 17.7	
	comp=Z,141nm,18.1s,baz=89,slow=43						
TUE	Stuetta	15.07	320	ePn	Pn	17 28 03.8	+0.5
	comp=Z,24nm,1.0s						
TUE	Stuetta	15.07	320	ePn	Pn	17 28 03.9	+0.5
	comp=Z,24nm,1.0s						
KRLC	Kraliky	15.11	343	eP	P	17 28 10.4	+1.6
KRLC	Kraliky	15.11	343	eP	P	17 28 10.4	+1.6
KRLC	Kraliky	15.11	343	eP	P	17 28 10.4	+1.6
KHC	Kasperske Hory	15.20	335	eP	Pn	17 28 05.7	+0.8
KHC				ex	x	17 28 11.8	
KHC				AMS	AMS	17 35 10.0	
	comp=Z,300nm,10.3s						
KHC	Kasperske Hory	15.20	335	eP	Pn	17 28 05.3	+0.4
KHC				pmax	pmax		
	comp=Z,11nm,0.8s						
KHC	Kasperske Hory	15.20	335	ePn	Pn	17 28 05.3	+0.4
	comp=Z,11nm,0.8s						
KHC	Kasperske Hory	15.20	335	ePn	Pn	17 28 05.3	+0.4
	comp=Z,11nm,0.8s						
DAVA	Damuels	15.34	323	ePn	P	17 28 09.8	-1.7
	comp=Z,3.3nm,0.3s,SNR=5.2						
DAVA	Damuels	15.34	323	Pn	P	17 28 09.8	-1.7
	comp=Z,3.3nm,0.3s,SNR=5.2						
AK11	Malin Array Si	15.47	14	ePn	Pn	17 28 07.0	-1.3
AK11	Malin Array Si	15.47	14	ePn	Pn	17 28 07.0	-1.3
DPC	Dobruska-Polom	15.47	343	eP	P	17 28 12.8	-0.1
DPC				AMS	AMS	17 35 30.0	
	comp=Z,400nm,10.8s						
DPC	Dobruska-Polom	15.47	343	eP	P	17 28 12.8	-0.1
DPC				MLR	MLR		
	comp=Z,400nm,10.8s						
DPC	Dobruska-Polom	15.47	343	eP	P	17 28 12.8	-0.1
	comp=Z,400nm,10.8s						
KIEV	Kiev	15.49	14 c	iP	Pn	17 28 08.9	+0.3
KIEV				pmax	pmax		
	comp=Z,18nm,1.2s						
KIEV	Kiev	15.49	14	ePn	Pn	17 28 08.6	0.0
	comp=Z,86nm,1.7s						
KIEV	Kiev	15.49	14	ePn	Pn	17 28 08.6	0.0
	comp=Z,86nm,1.7s						
GOPC	GO Pecny, Ondr	15.49	339	eP	P	17 28 12.0	-1.1
GOPC				ex	x	17 28 14.3	
GOPC	GO Pecny, Ondr	15.49	339	eP	P	17 28 12.0	-1.1
GOPC	GO Pecny, Ondr	15.49	339	eP	P	17 28 12.0	-1.1
AKASG	Malin Array Be	15.50	14	Pn	Pn	17 28 08.9	+0.2
	comp=Z,4.4nm,0.3s,baz=204,slow=12,SNR=13						
AKASG				PcP	PcP	17 33 11.6	+0.6
	comp=Z,1.2nm,0.3s,baz=226,slow=0.8,SNR=6.7						
AKASG				ScP	ScP	17 36 44.5	0.0
	baz=221,slow=1.3,SNR=5.6						
AKBB	Malin Array Si	15.50	14	eP	Pn	17 28 07.8	-0.9
AKBB				pmax	pmax		
	comp=Z,92nm,1.7s						
AKBB	Malin Array Si	15.50	14	ePn	Pn	17 28 07.8	-0.9
	comp=Z,92nm,1.7s						
AKBB	Malin Array Si	15.50	14	ePn	Pn	17 28 07.8	-0.9
	comp=Z,92nm,1.7s						
PRU	Pruhonice	15.63	338	eP	P	17 28 15.5	+0.9
PRU				ex	x	17 28 19.0	
PRU				AMS	AMS	17 35 20.0	
	comp=Z,300nm,10.4s						
PRU	Pruhonice	15.63	338	eP	P	17 28 15.5	+0.9
PRU				MLR	MLR		
	comp=Z,300nm,10.4s						
PRU	Pruhonice	15.63	338	eP	P	17 28 15.5	+0.9
	comp=Z,300nm,10.4s						
UPC	Upice	15.70	342	eP	P	17 28 16.7	+1.4
UPC				AMS	AMS	17 35 40.0	
	comp=Z,400nm,14.1s						
UPC	Upice	15.70	342	eP	P	17 28 16.7	+1.4
UPC				MLR	MLR		
	comp=Z,400nm,14.1s						
UPC	Upice	15.70	342	eP	P	17 28 16.7	+1.4
	comp=Z,400nm,14.1s						
BNI	Bardonecchia	15.78	311	eP	Pn	17 28 08.4	-4.1
BNI				pmax	pmax		
	comp=Z,55nm,2.0s						
BNI	Bardonecchia	15.78	311	ePn	Pn	17 28 08.4	-4.1
	comp=Z,55nm,2.0s						
BNI	Bardonecchia	15.78	311	ePn	Pn	17 28 08.4	-4.1
	comp=Z,55nm,2.0s						
KSP	Ksiaz	15.94	343	eP	P	17 28 19.6	+1.6
KSP	Ksiaz	15.94	343	eP	P	17 28 19.6	+1.6
KSP	Ksiaz	15.94	343	eP	P	17 28 19.6	+1.6
SENIN	Lac Senin/Sane	16.12	316	ePn	Pn	17 28 18.3	+1.3
	comp=Z,13nm,0.8s						
SENIN	Lac Senin/Sane	16.12	316	ePn	Pn	17 28 18.3	+1.3
	comp=Z,13nm,0.8s						
NKC	Novy Kostel	16.53	334	AMS	AMS	17 36 00.0	
	comp=Z,400nm,12.1s						
BRG	Berggiesshubel	16.59	338	eP	P	17 28 25.6	+0.4
	comp=Z,19nm,1.0s						
BRG	Berggiesshubel	16.59	338	eP	P	17 28 25.6	+0.4
BRG				pmax	pmax		
	comp=Z,19nm,1.0s						
BRG	Berggiesshubel	16.59	338	eP	P	17 28 25.6	+0.4
	comp=Z,19nm,1.0s						
NEY	Neytrino	16.61	57	i P	Pn	17 28 24.3	+1.1
NEY	Neytrino	16.61	57	i P	P

GNI Garni 17.33 69 *e*Pn **Pn 17 28 31.4 -0.9**
comp=Z,46nm,1.0s
GNI Garni 17.33 69 P **P 17 28 34.6 +1.0**
GNI Garni 17.33 69 *e*Pn **Pn 17 28 31.4 -0.9**
comp=Z,46nm,1.0s
ECH Echery 17.33 321 *e*P **Pn 17 28 32.5 +0.4**
ECH Echery 17.33 321 *e*P **Pn 17 28 32.5 +0.4**
LANF Langenberg 17.51 324 *e*P **Pn 17 28 34.4 0.0**
LANF Langenberg 17.51 324 *e*P **Pn 17 28 34.4 0.0**
GOF Gofitskoye 17.52 52⇑ *e*P **P 17 28 37.0 +1.4**
GOF Gofitskoye 17.52 52 *e*P **P 17 28 37.0 +1.4**
TBLG Delisi 17.61 64 P **P 17 28 40.4 +3.8**
TBLG Delisi 17.61 64 *e*P **P 17 28 40.3 +3.8**
KTD Kalmit 17.62 325 *e*P **Pn 17 28 35.5 -0.2**
LBL Lubilhac 18.02 308 *e*P **P 17 28 44.4 +3.3**
PLDF La Plantade 18.10 310 *e*P **P 17 28 44.8 +2.8**
PLDF La Plantade 18.10 310 *e*P **P 17 28 44.8 +2.8**
RUP Ruppelstein 18.36 324 *e*P **P 17 28 44.2 -0.7**
PYM Petit Puy Mans 18.39 309 *e*P **Pn 17 28 48.3 +3.1**
PYM Petit Puy Mans 18.39 309 *e*P **Pn 17 28 48.3 +3.1**
AGO Saint Agoulin 18.44 310 *e*P **Pn 17 28 48.6 +2.8**
AGO Saint Agoulin 18.44 310 *e*P **Pn 17 28 48.6 +2.8**
WLF Walferdange 18.77 323 *e*P **Pn 17 28 50.2 +0.4**
WLF pmax pmax
comp=Z,30nm,0.9s
WLF Walferdange 18.77 323 *e*P **Pn 17 28 50.2 +0.4**
comp=Z,30nm,0.9s
WLF Walferdange 18.77 323 *e*P **Pn 17 28 50.2 +0.4**
comp=Z,30nm,0.9s
KLNR Kaliningrad 18.98 354⇑ *e*P **Pn 17 28 53.9 +1.8**
KLNR pmax pmax
comp=Z,34nm,0.7s
KLNR Kaliningrad 18.98 354 *e*P **Pn 17 28 53.9 +1.8**
comp=Z,34nm,0.7s
VSR Storozhevoye 19.12 31 *e*P **P 17 28 52.8 -0.3**
VSR pmax pmax
comp=Z,10.0nm,0.6s
VSR Storozhevoye 19.12 31 *e*P **P 17 28 52.8 -0.3**
comp=Z,10.0nm,0.6s
MEM Membach 19.48 325 P **Pn 17 28 59.0 +0.7**
comp=Z,16nm,0.9s
HGN Heimansgroeve 19.62 325 *e*P **Pn 17 29 00.9 +1.0**
BCLA Clavier 19.68 324 P **Pn 17 29 00.6 -0.1**
DOU Dourbes 19.82 322 P **Pn 17 29 02.1 -0.2**
comp=Z,24nm,1.2s
LPSR Galich'ya Gora 20.08 28 *e*P **P 17 29 04.1 +0.6**
LPSR pmax pmax
comp=Z,20nm,0.8s
LPSR Galich'ya Gora 20.08 28 *e*P **P 17 29 04.1 +0.6**
comp=Z,20nm,0.8s
WTSB Winterswijk 20.09 329 *e*P Pn 17 29 05.0 -0.5
WTSB Winterswijk 20.09 329 *e*P Pn 17 29 05.0 -0.5
BSD Bornholm Skovb 20.23 346 *i*P **P 17 29 03.9 -1.2**
BSD Bornholm Skovb 20.23 346 *e*P **P 17 29 03.9 -1.2**
BSD Bornholm Skovb 20.23 346 *e*P **P 17 29 03.9 -1.2**
SNF Seneffe 20.24 323 P Pn 17 29 07.1 -0.2
VRH Novokhopyorsk 20.25 35 *e*P **P 17 29 04.5 -0.8**
VRH pmax pmax
comp=Z,40nm,1.4s
VRH Novokhopyorsk 20.25 35 *e*P **P 17 29 04.5 -0.8**
comp=Z,40nm,1.4s
TAM Tamanrasset 20.26 235 *e*P **P 17 29 06.0 +0.1**
TAM pmax pmax
comp=Z,11nm,0.7s
TAM Tamanrasset 20.26 235 *e*P **P 17 29 06.0 +0.1**
comp=Z,11nm,0.7s
TAM Tamanrasset 20.26 235 *e*P **P 17 29 06.0 +0.1**
comp=Z,11nm,0.7s
OBN Obninsk 21.35 21 P **P 17 29 19.5 +2.2**
comp=Z,22nm,0.4s,baz=198,slow=10,SNR=6.2
OBN Obninsk 21.35 21 *e*P **P 17 29 19.3 +2.1**
OBN pmax pmax
comp=Z,69nm,1.6s
OBN MLR MLR
comp=Z,75nm,18.0s
OBN Obninsk 21.35 21 *e*P **P 17 29 19.3 +2.1**
comp=Z,75nm,18.0s
OBN Obninsk 21.35 21 *e*P **P 17 29 15.4 -1.9**
comp=Z,31nm,0.4s
SLIT Slitere, Latvi 21.89 358 *e*P **P 17 29 23.9 +1.0**
SNR=33
ES19 SONSECA Array 21.97 289 *e*P **P 17 29 23.8 -0.3**
ES19 SONSECA Array 21.97 289 *e*P **P 17 29 23.8 -0.3**
ESDC Sonseca Array 22.02 288 P **P 17 29 24.4 -0.2**
comp=Z,2.8nm,0.6s,baz=88,slow=10,SNR=14
ESLA Sonseca Array 22.02 288 *e*P **P 17 29 23.5 -1.1**
comp=Z,16nm,1.1s
ESLA Sonseca Array 22.02 288 *e*P **P 17 29 23.5 -1.1**
comp=Z,16nm,1.1s
MOS Moscow 22.20 21 *e*P **P 17 29 29.0 +2.6**
MOS *e* 17 29 57.9
MOS pmax pmax
comp=Z,65nm,0.7s
MOS Moscow 22.20 21 *e*P **P 17 29 29.0 +2.6**
comp=Z,65nm,0.7s
PAB San Pablo 22.31 288 *e*P **P 17 29 28.4 +0.6**
PAB pmax pmax
comp=Z,21nm,1.1s
PAB San Pablo 22.31 288 *e*P **P 17 29 28.4 +0.6**
comp=Z,21nm,1.1s
PAB San Pablo 22.31 288 *e*P **P 17 29 28.4 +0.6**
comp=Z,21nm,1.1s
MUD Monsted U'grnd 22.86 339 *i*P **P 17 29 33.3 0.0**
comp=Z,35nm,0.8s
MUD Monsted U'grnd 22.86 339 *e*P **P 17 29 33.3 0.0**
MUD pmax pmax
comp=Z,35nm,0.8s
MUD Monsted U'grnd 22.86 339 *e*P **P 17 29 33.3 0.0**
comp=Z,35nm,0.8s
MDT Midelt 23.36 271 P **P 17 29 40.0 +1.1**
comp=Z,6.4nm,0.8s,baz=79,slow=15,SNR=9.1
MDT LR LR 17 40 40.4
comp=Z,88nm,20.3s,baz=142,slow=42
MDT Midelt 23.36 271 *e*P **P 17 29 40.0 +1.1**
PBRG Braganca 24.23 294 *e*P **P 17 29 47.3 +0.2**
PBRG *es*P **sP 17 29 53.3 -0.4**
MVO Moncorvo 24.41 292 *e*P **P 17 29 49.0 +0.3**
comp=Z,46nm,1.7s
MVO *es*P **sP 17 29 55.4 0.0**
PBAR Barrancos 24.44 285 *e*P **P 17 29 49.1 +0.1**
comp=Z,48nm,1.6s
PBAR *es*P **sP 17 29 55.9 +0.3**
MEF Metsahovi 24.48 1 *e*P **P 17 29 49.1 +0.1**
SNR=28
HOMB Homborsund 24.61 341 *e*P **P 17 29 50.0 -0.2**
HOMB Homborsund 24.61 341 *e*P **P 17 29 50.0 -0.2**
SNR=50
SNART Snartemo 25.02 340 *e*P **P 17 29 55.1 +1.2**
SNART IAmb IAmb 17 29 57.3
comp=Z,17nm,1.0s
SNART Snartemo 25.02 340 *e*P **P 17 29 55.2 +1.2**
SNR=41
PVAQ Vaqueiros 25.04 283 *e*P **P 17 29 54.7 +0.3**
PVAQ *es*P **sP 17 30 03.5 +2.5**
HFS Hagfors 25.19 348 P **P 17 29 55.2 -0.3**
comp=Z,22nm,0.5s,baz=153,slow=10.0,SNR=124
PBDV Barranco-do-Ve 25.23 283 *e*P **P 17 29 56.4 +0.3**
RAF Rauma 25.30 358 *e*P **P 17 29 55.5 -0.9**
SNR=28
MESJ Messejana 25.40 284 *e*P **P 17 29 58.1 +0.5**
KONO Kongsberg 25.55 344 *e*P **P 17 29 57.8 -0.9**
KONO pmax pmax
comp=Z,50nm,1.5s
KONO Kongsberg 25.55 344 *e*P **P 17 29 57.8 -0.9**
comp=Z,50nm,1.5s
KONO Kongsberg 25.55 344 *e*P **P 17 29 57.8 -0.9**
comp=Z,50nm,1.5s
FIA0 FINESS Array S 25.75 3 *e*P **P 17 30 00.5 -0.1**
FIA0 *e* 17 33 30.1
FIA0 FINESS Array S 25.75 3 *e*P **P 17 30 00.5 -0.1**
FIA0 FINESS Array S 25.75 3 *e*P **P 17 30 00.5 -0.1**
FIA0 *e*PcP **PcP 17 33 30.1 +0.1**
FIA0 *e*ScP **ScP 17 37 09.7 +0.8**
FINES FINESS Array B 25.75 3 P **P 17 30 00.5 -0.1**
comp=Z,4.2nm,0.6s,baz=170,slow=9.6,SNR=18
FINES PcP **PcP 17 33 30.1 +0.1**
comp=Z,2.4nm,0.5s,baz=193,slow=1.5,SNR=5.1
FINES ScP **ScP 17 37 09.7 +0.8**
comp=Z,1.6nm,0.8s,baz=142,slow=7.2,SNR=3.9
FINES LR LR 17 41 17.7
comp=Z,166nm,18.6s,baz=206,slow=39
FIA1 FINESS Array S 25.75 3 *e*P **P 17 29 59.5 -1.1**
FIA1 FINESS Array S 25.75 3 *e*P **P 17 29 59.5 -1.1**
STAV Stavanger 25.95 339 *e*P **P 17 30 03.8 +1.4**
STAV IAmb IAmb 17 30 05.2
comp=Z,27nm,0.8s
NC602 NORSAR Array S 26.14 347 *e*P **P 17 30 03.4 -0.6**
NC602 NORSAR Array S 26.14 347 *e*P **P 17 30 03.4 -0.6**
BLS5 Blasjo 26.15 340 *e*P **P 17 30 05.8 +1.6**
BLS5 IAmb IAmb 17 30 06.4
comp=Z,16nm,0.7s
NAO01 NORSAR Array S 26.36 346 *e*P **P 17 30 05.9 -0.2**
NAO01 NORSAR Array S 26.36 346 *e*P **P 17 30 05.9 -0.2**
NC405 NORSAR Array S 26.45 347 *e*P **P 17 30 06.2 -0.8**
NC405 NORSAR Array S 26.45 347 *e*P **P 17 30 06.2 -0.8**
NB201 NORSAR Array S 26.47 347 *e*P **P 17 30 06.9 -0.2**
NB201 NORSAR Array S 26.47 347 *e*P **P 17 30 06.9 -0.2**
NB2 NORSAR Subarra 26.48 347 P **P 17 30 06.7 -0.5**
comp=Z,6.9nm,0.5s,baz=156,slow=9.3
NB2 NORSAR Subarra 26.48 347 P **P 17 30 06.7 -0.5**
comp=Z,6.9nm,0.5s,baz=156,slow=9.3
NB2 NORSAR Subarra 26.48 347 P **P 17 30 06.7 -0.5**
comp=Z,6.9nm,0.5s,SNR=6.5
NB200 NORSAR Array S 26.48 347 *e*P **P 17 30 06.9 -0.3**
NB200 NORSAR Array S 26.48 347 *e*P **P 17 30 06.9 -0.3**
NOA NORSAR Array B 26.48 347 P **P 17 30 06.9 -0.3**
comp=Z,4.3nm,0.6s,baz=153,slow=9.3,SNR=39
NOA LR LR 17 42 10.1
comp=Z,110nm,19.9s,baz=155,slow=40
NOA NORSAR Array B 26.48 347 P **P 17 30 06.9 -0.3**
NOA pmax pmax
comp=Z,10.0nm,0.6s
NOA MLR MLR
comp=Z,110nm,19.9s
NBO00 NORSAR Array S 26.55 346 *e*P **P 17 30 07.9 0.0**
NBO00 NORSAR Array S 26.55 346 *e*P **P 17 30 07.9 0.0**
NBO02 NORSAR Array S 26.55 346 *e*P **P 17 30 07.6 -0.2**
NBO02 NORSAR Array S 26.55 346 *e*P **P 17 30 07.6 -0.2**
NC303 NORSAR Array S 26.62 347 *e*P **P 17 30 07.8 -0.6**
NC303 NORSAR Array S 26.62 347 *e*P **P 17 30 07.8 -0.6**
EKA Eskdalemuir Ar 26.76 325 P **P 17 30 09.8 +0.1**
comp=Z,38nm,0.6s,baz=125,slow=8.9,SNR=103
EKA PcP **PcP 17 33 33.3 +0.8**
comp=Z,1.2nm,0.7s,baz=107,slow=2.4,SNR=2.7
ESK Eskdalemuir 26.77 325 *e*P **P 17 30 10.5 +0.7**
ESK pmax pmax
comp=Z,38nm,0.6s
ESK Eskdalemuir 26.77 325 *e*P **P 17 30 10.5 +0.7**
comp=Z,38nm,0.6s
ESK Eskdalemuir 26.77 325 *e*P **P 17 30 10.5 +0.7**
comp=Z,38nm,0.6s
NC204 NORSAR Array S 26.78 346 *e*P **P 17 30 09.7 -0.3**
NC204 NORSAR Array S 26.78 346 *e*P **P 17 30 09.7 -0.3**
KLMR Klimovskoe 27.13 17 *e*P **P 17 30 08.8 -4.2**
KLMR *e* 17 33 32.2
KLMR *e*S **S 17 34 46.8 -3.7**
KLMR pmax pmax
comp=Z,13nm,0.6s
KLMR Klimovskoe 27.13 17 *e*PcP **PcP 17 33 32.2 -1.0**
HYA Hoyanger 27.70 342 *e*P **P 17 30 18.3 +0.2**
HYA IAmb IAmb 17 30 20.1
comp=Z,19nm,0.8s
GEYT Alibeck 27.72 75 P **P 17 30 19.2 +0.7**
comp=Z,4.9nm,0.6s,baz=282,slow=7.4,SNR=14
AKTK Aktyubinsk 28.87 49 P **P 17 30 28.3 -0.4**
comp=Z,41nm,19.8s
AKTO Aktyubinsk 28.87 49 P **P 17 30 28.3 -0.4**
comp=Z,3.8nm,0.5s,baz=267,slow=8.6,SNR=15
AKTO LR LR 17 44 21.5
comp=Z,41nm,19.8s,baz=257,slow=41
NSS Namsos 29.63 350 *e*P **P 17 30 35.5 +0.3**
NSS IAmb IAmb 17 30 35.8
comp=Z,12nm,0.7s
NAZ Nazwa, Dubai 29.65 102 *i*P **P 17 30 37.7 +1.8**
SNR=6.0
NAZ Nazwa, Dubai 29.65 102 P **P 17 30 37.7 +1.8**
SNR=6.0
AB31 Akbulak array 29.76 52 *e*P **P 17 30 36.2 -0.4**
AB31 pmax pmax
comp=Z,1.0nm,0.4s
AB31 Akbulak array 29.76 52 *e*P **P 17 30 36.2 -0.4**
comp=Z,1.0nm,0.4s
ABKAR Akbulak array 29.76 52 *e*P **P 17 30 36.2 -0.4**
ABKAR Akbulak array 29.76 52 *e*P **P 17 30 36.2 -0.4**
TOA1 Torodi Ar. Sit 29.86 227 *e*P **P 17 30 38.1 +0.4**
comp=Z,30nm,0.8s
TOA1 Torodi Ar. Sit 29.86 227 *e*P **P 17 30 38.1 +0.4**
comp=Z,30nm,0.8s
TOA0 Torodi Ar. Sit 29.86 227 *e*P **P 17 30 37.6 -0.2**
TOA0 Torodi Ar. Sit 29.86 227 *e*P **P 17 30 37.6 -0.2**
TORD Torodi Ar. Bea 29.86 227 P **P 17 30 38.1 +0.3**
comp=Z,28nm,0.7s,baz=35,slow=9.0,SNR=189
HATD Hatta, Dubai 30.11 102 *i*P **P 17 30 41.0 +1.1**
SNR=6.0
HATD Hatta, Dubai 30.11 102 P **P 17 30 41.0 +1.1**
SNR=6.0
UOSS Minazif 30.11 102 *e*P **P 17 30 40.1 +0.2**
comp=Z,1.4nm,1.0s
UOSS Minazif 30.11 102 *e*P **P 17 30 40.1 +0.2**
comp=Z,1.4nm,1.0s
ASHO Ashiyiah 30.11 102 P **P 17 30 41.0 +1.0**
ASHO Ashiyiah 30.11 102 P **P 17 30 41.0 +1.0**
FURI Furi 30.13 149 *e*P **P 17 30 40.9 +0.4**
comp=Z,30nm,0.4s
FURI Furi 30.13 149 *e*P **P 17 30 40.9 +0.4**
comp=Z,30nm,0.4s
STOK Stokkvaagen 31.22 352 *e*P **P 17 30 49.7 +0.5**
ARU Arti 31.40 38 P **P 17 30 50.9 -0.1**
comp=Z,4.5nm,0.3s,baz=253,slow=5.2,SNR=11
ARU ScP **ScP 17 37 27.3 +0.7**
comp=Z,1.8nm,0.7s,baz=344,slow=5.2,SNR=3.8
ARU Arti 31.40 38 *d i*P **P 17 30 50.0 -1.0**
ARU 17 31 52.3
ARU 17 33 42.8
ARU S **S 17 35 59.1 +1.3**
ARU SS **SnSn 17 37 38.0 -3.8**
ARU pmax pmax
comp=Z,16nm,1.7s
ARU Arti 31.40 38 *e*P **P 17 30 50.0 -1.0**
comp=Z,6.7nm,0.7s
ARU Arti 31.40 38 PcP **PcP 17 33 42.8 -1.4**
ARU ScP **ScP 17 37 27.3 +0.7**
ARU Arti 31.40 38 *e*P **P 17 30 50.0 -1.0**
comp=Z,6.7nm,0.7s
ARU ScP **ScP 17 37 27.3 +0.7**
SOKR Solikamsk 32.15 32 *e*P **P 17 30 58.5 +1.0**
SOKR pmax pmax
comp=Z,25nm,0.8s
SVE Sverdlovsk 32.61 38 *e*P **P 17 31 02.1 +0.5**
SVE pmax pmax
comp=Z,22nm,0.6s
SVE Sverdlovsk 32.61 38 *e*P **P 17 31 02.1 +0.5**
comp=Z,22nm,0.6s
LVZ Lovozero 32.80 8 *e*P **P 17 31 03.3 +0.1**
LVZ pmax pmax
comp=Z,16nm,1.1s
LVZ Lovozero 32.80 8 *e*P **P 17 31 03.3 +0.1**
comp=Z,16nm,1.1s
LVZ Lovozero 32.80 8 *e*P **P 17 31 03.3 +0.1**
comp=Z,16nm,1.1s
KTK1 Kautokeino 33.30 360 *e*P **P 17 31 07.4 -0.1**
KTK1 IAmb IAmb 17 31 15.4
comp=Z,31nm,1.4s
ARA0 ARCESS Array S 33.84 1 *e*P **P 17 31 11.5 -0.7**
ARA0 ARCESS Array S 33.84 1 *e*P **P 17 31 11.5 -0.7**
ARA0 *e*PcP **PcP 17 33 50.5 -0.3**
ARCES ARCESS Array B 33.84 1 P **P 17 31 11.6 -0.7**
comp=Z,7.5nm,0.7s,baz=179,slow=9.1,SNR=31
ARCES PcP **PcP 17 33 50.5 -0.3**
comp=Z,1.3nm,0.5s,baz=167,slow=1.8,SNR=4.0
ARCES LR LR 17 47 20.7
comp=Z,51nm,18.0s,baz=200,slow=40
ARE0 ARCESS Array S 33.84 1 *e*P **P 17 31 11.8 -0.4**
ZRNK Zerenda 36.10 47 *e*P **P 17 31 31.4 -0.5**
ZRNK pmax pmax
comp=Z,28nm,0.6s
ZRNK Zerenda 36.10 47 *e*P **P 17 31 31.4 -0.5**
comp=Z,28nm,0.6s
ZRNK Zerenda 36.10 47 *e*P **P 17 31 31.4 -0.5**
comp=Z,28nm,0.6s
KK31 Karatay Array 36.67 64 *i*P **P 17 31 37.4 +0.5**
KK31 pmax pmax
comp=Z,3.0nm,0.6s
KK31 Karatay Array 36.67 64 *i*P **P 17 31 37.4 +0.5**
comp=Z,3.0nm,0.6s
KKAR Karatay Array 36.67 64 *e*P **P 17 31 37.1 +0.2**
KKAR Karatay Array 36.67 64 *e*P **P 17 31 37.1 +0.2**
KKAR Karatay Array 36.67 64 *e*P **P 17 31 37.1 +0.2**
BRVK Borovoye 36.88 47 *d i*P **P 17 31 38.5 0.0**
BRVK pmax pmax
comp=Z,11nm,0.6s
BRVK Borovoye 36.88 47 *e*P **P 17 31 38.9 +0.4**
comp=Z,14nm,0.7s
BRVK Borovoye 36.88 47 *e*P **P 17 31 38.9 +0.4**
comp=Z,14nm,0.7s
BVA0 Borovoye Array 36.94 47 *i*P **P 17 31 38.8 -0.2**
BVA0 pmax pmax
comp=Z,8.0nm,0.7s
BVA0 Borovoye Array 36.94 47 *i*P **P 17 31 38.8 -0.2**
comp=Z,8.0nm,0.7s
KBL Kabul 37.02 78 *e*P **P 17 31 39.7 -0.5**
KBL pmax pmax
comp=Z,7.0nm,1.0s
KBL Kabul 37.02 78 *e*P **P 17 31 39.7 -0.5**
comp=Z,6.6nm,1.0s
KBL Kabul 37.02 78 *e*P **P 17 31 39.7 -0.5**
comp=Z,6.6nm,1.0s
CHKZ Chkalovo 37.17 46 P **P 17 31 41.2 +0.2**
CHKZ pmax pmax
comp=Z,20nm,0.5s
CHKZ Chkalovo 37.17 46 P **P 17 31 41.2 +0.2**
comp=Z,20nm,0.5s
VOSK Vostochnaya 37.25 48 *e*P **P 17 31 41.8 +0.1**
VOSK pmax pmax
comp=Z,14nm,0.6s
VOSK Vostochnaya 37.25 48 *e*P **P 17 31 41.8 +0.1**
comp=Z,14nm,0.6s
VOSK Vostochnaya 37.25 48 *e*P **P 17 31 41.8 +0.1**
comp=Z,14nm,0.6s
OTUK Ortayu 37.78 55 P **P 17 31 46.1 -0.1**
OTUK Ortayu 37.78 55 P **P 17 31 46.1 -0.1**
MNAS Manas 38.19 65 P **P 17 31 50.6 +0.7**
MNAS pmax pmax
comp=Z,4.0nm,1.3s
MNAS Manas 38.19 65 P **P 17 31 50.6 +0.7**
comp=Z,4.0nm,1.3s
DBIC Dimbokro 38.90 229 P **P 17 31 56.0 +0.1**
comp=Z,9.4nm,0.5s,baz=14,slow=9.7,SNR=14
DBIC Dimbokro 38.90 229 *e*P **P 17 31 55.9 0.0**
comp=Z,87nm,1.9s
DBIC Dimbokro 38.90 229 *e*P **P 17 31 55.9 0.0**
comp=Z,87nm,1.9s
EKS2 Erkin-Say 39.10 64 *e*P **P 17 31 57.7 +0.1**
EKS2 pmax pmax
comp=Z,7.0nm,0.7s
EKS2 Erkin-Say 39.10 64 *e*P **P 17 31 57.7 +0.1**
comp=Z,6.6nm,0.7s
EKS2 Erkin-Say 39.10 64 *e*P **P 17 31 57.7 +0.1**
comp=Z,6.6nm,0.7s
AAK Ala-Archa 39.63 64⇓ *i*P **P 17 32 02.6 +0.6**
AAK pmax pmax
comp=Z,14nm,1.3s
AAK Ala-Archa 39.63 64 *e*P **P 17 32 02.6 +0.6**
comp=Z,6.3nm,0.9s
AAK Ala-Archa 39.63 64 *e*P **P 17 32 02.6 +0.6**
comp=Z,6.3nm,0.9s
FRU Bishkek 39.69 64 *e*P **P 17 32 03.0 +0.6**
FRU pmax pmax
comp=Z,45nm,2.1s
FRU Bishkek 39.69 64 *e*P **P 17 32 03.0 +0.6**
comp=Z,45nm,2.1s
TKM2 Tokmak 2 40.40 63 P **P 17 32 10.9 +2.5**
TKM2 pmax pmax
comp=Z,2.0nm,0.6s
TKM2 Tokmak 2 40.40 63 *e*P **P 17 32 07.5 -0.9**
comp=Z,14nm,1.6s
TKM2 Tokmak 2 40.40 63 *e*P **P 17 32 07.5 -0.9**
comp=Z,14nm,1.6s
KURK Kurchatov 41.87 51 P **P 17 32 19.6 -0.6**
KURK pmax pmax
comp=Z,40nm,0.9s
KURK Kurchatov 41.87 51 *e*P **P 17 32 19.9 -0.3**
comp=Z,17nm,0.9s
KURK Kurchatov 41.87 51 *e*P **P 17 32 19.9 -0.3**
comp=Z,17nm,0.9s
SCO Scoresbysund 42.28 339 *i*P **P 17 32 24.9 +1.7**
comp=Z,14nm,0.7s
SCO Scoresbysund 42.28 339 *i*P **P 17 32 24.9 +1.7**
SCO pmax pmax
comp=Z,14nm,0.7s
SCO Scoresbysund 42.28 339 *i*P **P 17 32 24.9 +1.7**
comp=Z,14nm,0.7s
SPA0 Spitsbergen Ar 42.63 358 *e*P **P 17 32 25.7 -0.3**
SPA0 Spitsbergen Ar 42.63 358 *e*P **P 17 32 25.7 -0.3**
PDGK Podgornoye 43.15 62 P **P 17 32 31.0 +0.4**
PDGK pmax pmax
comp=Z,3.0nm,0.5s
PDGK Podgornoye 43.15 62 P **P 17 32 31.0 +0.4**
comp=Z,3.0nm,0.5s
KBS Kingsbay 43.53 357 *e*P **P 17 32 33.8 +0.5**
KBS pmax pmax
comp=Z,35nm,1.1s
KBS Kingsbay 43.53 357 *e*P **P 17 32 33.8 +0.5**
comp=Z,35nm,1.1s
KBS Kingsbay 43.53 357 *e*P **P 17 32 33.8 +0.5**
comp=Z,35nm,1.1s
MAKZ Makanchi 44.38 57 P **P 17 32 40.4 -0.2**
MAKZ pmax pmax
comp=Z,6.0nm,0.6s
MAKZ Makanchi 44.38 57 *e*P **P 17 32 40.4 -0.2**
comp=Z,6.9nm,0.5s
MAKZ Makanchi 44.38 57 *e*P **P 17 32 40.4 -0.2**
comp=Z,6.9nm,0.5s
MK31 Makanchi Array 44.59 57 *e*P **P 17 32 42.2 -0.1**
MK31 pmax pmax
comp=Z,10.0nm,0.5s
MK31 Makanchi Array 44.59 57 *e*P **P 17 32 42.2 -0.1**
comp=Z,10.0nm,0.5s
MK31 Makanchi Array 44.59 57 *e*P **P 17 32 41.9 -0.5**
MK32 Makanchi Array 44.59 57 *e*P **P 17 32 41.8 -0.5**
MK32 Makanchi Array 44.59 57 *e*P **P 17 32 41.8 -0.5**
MK32 *e*PcP **PcP 17 34 25.2 +0.2**
MK32 *e*ScP **ScP 17 38 17.2 +0.5**
MKAR Makanchi Array 44.59 57 P **P 17 32 41.8 -0.5**
comp=Z,19nm,0.6s,baz=277,slow=7.3,SNR=247
MKAR PcP **PcP 17 34 25.2 +0.2**
comp=Z,4.2nm,0.6s,baz=258,slow=3.2,SNR=4.0
MKAR ScP **ScP 17 38 17.2 +0.5**
comp=Z,1.0nm,0.7s,baz=289,slow=3.7,SNR=5.2
MK01 Makanchi Array 44.60 57 *e*P **P 17 32 41.3 -1.1**
MK01 Makanchi Array 44.60 57 *e*P **P 17 32 41.4 -1.1**
MK01 *e*PcP **PcP 17 34 25.5 +0.4**
NVS Novosibirsk 44.64 45⇑ *i*P **P 17 32 43.6 +1.1**
NVS *e* 17 34 32.8
NVS *i*S **S 17 39 15.0 -2.9**
NVS pmax pmax
comp=Z,34nm,0.5s
NVS pmax pmax
comp=N,9.0nm,0.6s
NVS pmax pmax
comp=E,19nm,0.6s
NVS smax smax
comp=N,8.0nm,1.5s
NVS smax smax
comp=E,10.0nm,2.0s
NVS Novosibirsk 44.64 45 *i*P **P 17 32 43.6 +1.1**
comp=E,34nm,0.5s
DAG Danmarks Havn 45.16 347 *i*P **P 17 32 46.5 +0.2**
comp=E,1.8nm,0.5s
DAG Danmarks Havn 45.16 347 *i*P **P 17 32 46.5 +0.2**
DAG pmax pmax
comp=Z,1.0nm,0.5s
NDI New Delhi 45.54 83 *e*P P 17 32 44.0 -6.0
ZAA0 Zalesovo Array 45.59 47 *e*P **P 17 32 48.9 -1.1**
ZAA0 Zalesovo Array 45.59 47 *e*P **P 17 32 48.9 -1.1**
ZAA0 *e*PcP **PcP 17 34 31.9 +3.6**
ZAA1 Zalesovo Array 45.59 47 *e*P **P 17 32 49.7 -0.3**
ZAA1 Zalesovo Array 45.59 47 *e*P **P 17 32 49.7 -0.3**
ZALV Zalesovo Beam 45.59 47 P **P 17 32 49.7 -0.3**
comp=Z,36nm,0.4s,baz=265,slow=9.8,SNR=154
NRIK Noril'sk 47.92 25 P **P 17 33 08.2 +0.2**
comp=Z,5.1nm,0.6s,baz=250,slow=5.2,SNR=3.8
NRIK ScP **ScP 17 38 30.9 +0.9**
comp=Z,2.8nm,0.4s,baz=88,slow=6.3,SNR=3.7
SUMG Summit 47.92 339 *i*P **P 17 33 08.4 -0.1**
comp=Z,6.5nm,0.7s
SUMG Summit 47.92 339 *e*P **P 17 33 08.8 +0.2**
SUMG pmax pmax
comp=Z,11nm,1.0s
SUMG Summit 47.92 339 *e*P **P 17 33 08.8 +0.2**
comp=Z,11nm,1.0s
SUMG Summit 47.92 339 *e*P **P 17 33 08.8 +0.2**
comp=Z,11nm,1.0s
WMQ Urumqi 48.89 60 *e*P **P 17 33 17.0 +0.9**
WMQ pmax pmax
comp=Z,6.0nm,0.6s

WMQ pmax pmax
comp=Z,66nm,4.6s
WMQ LR LR
comp=N,22nm,37.2s
WMQ LR LR
comp=Z,15nm,39.8s
PYUN Piuthan 50.42 81 *eP* **P 17 33 28.8 +0.7**
comp=Z,94nm,0.6s
KOLN Koldanda 51.05 81 *eP* **P 17 33 33.3 +0.5**
comp=Z,22nm,0.4s
GKN Gorkha 51.79 80 *eP* **P 17 33 38.5 +0.2**
comp=Z,71nm,0.6s
DMN Daman 52.33 81 *eP* **P 17 33 42.9 +0.5**
comp=Z,85nm,0.7s
KKN Kakani 52.39 80 *eP* **P 17 33 43.0 +0.1**
comp=Z,38nm,0.5s
GUN Gumba 52.82 80 *eP* **P 17 33 46.5 +0.3**
comp=Z,65nm,0.4s
TSUM Tsumeb 54.95 187 *eP* **P 17 34 00.7 -0.7**
comp=Z,26nm,1.8s
TSUM Tsumeb 54.95 187 *eP* **P 17 34 00.7 -0.7**
comp=Z,26nm,1.8s
MOY Mondy 55.62 47 *eP* **P 17 34 06.7 +0.7**
MOY pmax pmax
comp=Z,12nm,1.6s
MOY Mondy 55.62 47 *eP* **P 17 34 06.7 +0.7**
comp=Z,12nm,1.6s
LSA Lhasa 56.25 75 P **P 17 34 11.8 +0.5**
LSA pmax pmax
comp=Z,22nm,0.7s
LSA Lhasa 56.25 75 *eP* **P 17 34 11.7 +0.5**
LSA pmax pmax
comp=Z,13nm,0.7s
LSA Lhasa 56.25 75 *eP* **P 17 34 11.7 +0.5**
comp=Z,13nm,0.7s
LSA Lhasa 56.25 75 *eP* **P 17 34 11.7 +0.4**
comp=Z,13nm,0.7s
TLY Talaya 57.20 47 *eP* **P 17 34 17.6 +0.5**
TLY pmax pmax
comp=Z,8.0nm,1.1s
TLY Talaya 57.20 47 *eP* **P 17 34 17.2 +0.1**
comp=Z,5.9nm,0.9s
TLY Talaya 57.20 47 *eP* **P 17 34 17.2 +0.1**
comp=Z,5.9nm,0.9s
ZAK Zakamensk 57.38 48 *eP* **P 17 34 17.6 -0.9**
ZAK pmax pmax
comp=Z,7.0nm,1.0s
ZAK Zakamensk 57.38 48 *eP* **P 17 34 17.6 -0.9**
comp=Z,7.0nm,1.0s
GTA Gaotai 58.89 62 *eP* **P 17 34 29.5 +0.2**
GTA pP pP 17 34 33.8 -0.5
GTA sP sP 17 34 37.0 +0.9
GTA pmax pmax
comp=Z,9.0nm,0.7s
SONA0 Songino Array 60.17 50 *eP* **P 17 34 38.1 +0.2**
comp=Z,12nm,1.1s
SONA0 Songino Array 60.17 50 *eP* **P 17 34 38.1 +0.2**
comp=Z,12nm,1.1s
SONA0 *e*PcP **PcP 17 35 24.6 +1.1**
SONM Songino Array 60.17 50 P **P 17 34 38.1 +0.2**
comp=Z,5.9nm,0.6s,baz=285,slow=7.6,SNR=21
SONM PcP **PcP 17 35 24.6 +1.1**
comp=Z,2.7nm,0.8s,baz=234,slow=4.0,SNR=3.7
SONA1 Songino Array 60.17 50 *eP* **P 17 34 37.3 -0.7**
SONA1 Songino Array 60.17 50 *eP* **P 17 34 37.3 -0.7**
ULN Ulaanbaatar 60.57 50 *ceP* **P 17 34 39.9 -0.8**
ULN pmax pmax
comp=Z,15nm,1.2s
ULN Ulaanbaatar 60.57 50 *eP* **P 17 34 40.1 -0.6**
comp=Z,8.8nm,0.7s
ULN Ulaanbaatar 60.57 50 *eP* **P 17 34 40.1 -0.6**
comp=Z,8.8nm,0.7s
BOD Bodaibo 60.82 38 *eP* **P 17 34 39.4 -2.7**
BOD pmax pmax
comp=Z,10.0nm,0.8s
TIXI Tiksi 61.08 20 *ceP* **P 17 34 42.6 -1.0**
TIXI pmax pmax
comp=Z,4.0nm,0.9s
TIXI Tiksi 61.08 20 *eP* **P 17 34 43.0 -0.6**
comp=Z,3.6nm,0.8s
TIXI Tiksi 61.08 20 *eP* **P 17 34 43.0 -0.6**
comp=Z,3.6nm,0.8s
SCHQ Schefferville 61.83 319 P **P 17 34 48.6 -0.4**
comp=Z,8.7nm,0.6s,baz=52,slow=5.2,SNR=7.4
SCHQ Schefferville 61.83 319 *eP* **P 17 34 49.0 0.0**
comp=Z,10.0nm,0.7s
SCHQ Schefferville 61.83 319 *eP* **P 17 34 49.0 0.0**
comp=Z,10.0nm,0.7s
BOSA Boshof 64.06 178 P **P 17 35 04.7 +0.6**
comp=Z,10nm,0.9s,baz=359,slow=7.1,SNR=13
BOSA LR LR 18 06 53.4
comp=Z,70nm,19.2s,baz=289,slow=40
CD2 Chengdu 65.46 69 P **P 17 35 11.5 -1.9**
CD2 pmax pmax
comp=Z,1.0nm,0.5s
YAK Yakutsk 66.04 30 P **P 17 35 15.2 -1.3**
comp=Z,0.8nm,0.4s,baz=129,slow=20,SNR=4.4
YAK Yakutsk 66.04 30 *eP* **P 17 35 14.1 -2.4**
YAK pmax pmax
comp=Z,10.0nm,0.9s
HHC Hu-ho-hao-te 66.44 56 *eP* **P 17 35 20.3 +0.7**
HHC pmax pmax
comp=Z,27nm,1.2s
HHC pmax pmax
comp=Z,130nm,6.3s
HIA Hailar 67.58 45 *eP* **P 17 35 26.5 -0.1**
HIA pmax pmax
comp=Z,11nm,0.8s
HIA Hailar 67.58 45 *eP* **P 17 35 26.5 -0.1**
comp=Z,11nm,0.8s
HIA Hailar 67.58 45 *eP* **P 17 35 26.5 -0.1**
comp=Z,11nm,0.8s
CHTO Chiang Mai 67.68 82 P **P 17 35 28.9 +1.2**
comp=Z,46nm,1.2s
CHTO Chiang Mai 67.68 82 *eP* **P 17 35 27.2 -0.5**
CHTO pmax pmax
comp=Z,20nm,1.4s
CHTO Chiang Mai 67.68 82 *eP* **P 17 35 27.2 -0.5**
comp=Z,20nm,1.4s
CHTO Chiang Mai 67.68 82 *eP* **P 17 35 27.2 -0.5**
comp=Z,20nm,1.4s
CMMT Chiang Mai 67.68 82 P **P 17 35 28.9 +1.2**
comp=Z,10nm,1.2s
CM31 Chiang Mai Arr 67.87 83 *eP* **P 17 35 28.8 -0.1**
CM31 Chiang Mai Arr 67.87 83 *eP* **P 17 35 28.8 -0.1**
CMAR Chiang Mai Arr 67.87 83 P **P 17 35 28.9 +0.1**
comp=Z,4.2nm,0.7s,baz=302,slow=7.5,SNR=40
CMAR LR LR 18 07 54.2
comp=Z,47nm,21.6s,baz=14,slow=38
CMAR Chiang Mai Arr 67.87 83 P **P 17 35 29.0 +0.1**
CMAR pmax pmax
comp=Z,4.0nm,0.7s
CMAR MLR MLR
comp=Z,47nm,21.6s
CMAR Chiang Mai Arr 67.87 83 P **P 17 35 29.0 +0.1**
comp=Z,47nm,21.6s
CM01 Chiang Mai Arr 67.90 83 *eP* **P 17 35 29.0 -0.1**
CM01 Chiang Mai Arr 67.90 83 *eP* **P 17 35 29.0 -0.1**
CRAI Chiangrai 68.09 80 P **P 17 35 30.6 +0.3**
comp=Z,80nm,0.7s
LAMP Lampang 68.39 82 P **P 17 35 32.8 +0.7**
comp=Z,7.3nm,0.7s
SUKH Sukhothai 68.94 83 P **P 17 35 36.3 +0.8**
comp=Z,4.8nm,0.7s,comp=Z,56nm
UTTA Uttaradit 69.54 82 P **P 17 35 39.8 +0.5**
comp=Z,2.4nm,1.5s
GYA Guiyang 69.86 71 *eP* **P 17 35 42.0 +0.7**
GYA pmax pmax
comp=Z,10.0nm,1.0s
BJT Baijiatuau 69.92 55 *eP* **P 17 35 40.9 -0.4**
BJT pmax pmax
comp=Z,6.0nm,0.6s
BJT Baijiatuau 69.92 55 *eP* **P 17 35 40.9 -0.4**
comp=Z,6.4nm,0.6s
BJT Baijiatuau 69.92 55 *eP* **P 17 35 40.9 -0.4**
comp=Z,6.4nm,0.6s
BCX Boston College 70.02 308 *eP* **P 17 35 42.5 +0.6**
comp=Z,109nm,1.5s
BCX Boston College 70.02 308 *eP* **P 17 35 42.5 +0.6**
comp=Z,109nm,1.5s
ENH Enshi 70.08 67 *eP* **P 17 35 42.0 -0.5**
comp=Z,11nm,0.9s
ENH Enshi 70.08 67 *eP* **P 17 35 42.0 -0.5**
comp=Z,11nm,0.9s
WES Weston 70.10 308 *eP* **P 17 35 43.9 +1.6**
WES pmax pmax
comp=Z,22nm,0.9s
WES Weston 70.10 308 *eP* **P 17 35 43.9 +1.6**
comp=Z,22nm,0.9s
WES Weston 70.10 308 *eP* **P 17 35 43.9 +1.6**
comp=Z,22nm,0.9s
HRV Adam Dziewonsk 70.19 308 *eP* **P 17 35 43.9 +1.0**
HRV pmax pmax
comp=Z,68nm,1.8s
HRV Adam Dziewonsk 70.19 308 *eP* **P 17 35 43.9 +1.0**
comp=Z,68nm,1.8s
HRV Adam Dziewonsk 70.19 308 *eP* **P 17 35 43.9 +1.0**
comp=Z,68nm,1.8s
SRDT SRDT 70.20 86 P P 17 35 49.8 +6.4
comp=Z,33nm,1.4s
LOEI Loei 70.24 82 P P 17 35 53.5 +10
comp=Z,71nm,1.0s,comp=Z,4μm
FRNY Flat Rock 70.26 311 *eP* **P 17 35 44.4 +1.1**
comp=Z,7.7nm,0.7s
FRNY Flat Rock 70.26 311 *eP* **P 17 35 44.4 +1.1**
comp=Z,7.7nm,0.7s
PBKT Sadao Pong 70.50 83 P P 17 35 50.3 +5.1
comp=Z,12nm,0.8s
LONY Lake Ozonia 70.98 312 *eP* **P 17 35 48.5 +0.7**
LONY Lake Ozonia 70.98 312 *eP* **P 17 35 48.5 +0.7**
ACCN Adirondack Com 71.06 310 *eP* **P 17 35 50.2 +1.9**
comp=Z,15nm,0.9s
ACCN Adirondack Com 71.06 310 *eP* **P 17 35 50.2 +1.9**
comp=Z,15nm,0.9s
PHET Kaeng Krachan 71.40 87 P **P 17 35 53.1 +2.4**
comp=Z,5.3nm,0.8s
NONG Nongkai 71.46 81 P **P 17 35 55.1 +4.1**
comp=Z,42nm,1.2s
KHON Khomkaen 72.12 83 P **P 17 35 55.6 +0.6**
comp=Z,7.1nm,0.7s
FCC Fort Churchill 72.51 331 *eP* **P 17 35 57.6 +1.0**
FCC pmax pmax
comp=Z,5.0nm,0.9s
FCC Fort Churchill 72.51 331 *eP* **P 17 35 57.6 +1.0**
comp=Z,4.6nm,0.9s
FCC Fort Churchill 72.51 331 *eP* **P 17 35 57.6 +1.0**
comp=Z,4.6nm,0.9s
TIA Tai'an 72.52 58 ||P **P 17 35 57.0 -0.2**
TIA pmax pmax
comp=Z,10.0nm,0.8s
SKNT Sakolnakorn 72.71 81 P **P 17 36 00.3 +1.7**
comp=Z,23nm,1.2s
SRAK Srakaew 72.76 85 P **P 17 36 02.4 +3.6**
comp=Z,31nm,0.8s
BILL Bilibino 72.81 14 *d iP* **P 17 35 58.0 -0.3**
BILL pmax pmax
comp=Z,18nm,1.2s
BILL Bilibino 72.81 14 *eP* **P 17 35 58.2 -0.1**
comp=Z,18nm,1.2s
BILL Bilibino 72.81 14 *eP* **P 17 35 58.2 -0.1**
comp=Z,18nm,1.2s
PANO Nakornpanom 73.13 81 P P 17 36 06.2 +5.2
comp=Z,33nm,0.7s
BINY Binghamton 73.14 310 *eP* **P 17 36 03.2 +2.5**
comp=Z,12nm,0.8s
BINY Binghamton 73.14 310 *eP* **P 17 36 03.2 +2.5**
comp=Z,12nm,0.8s
SEY Seymchan 73.52 22 P **P 17 36 02.3 -0.2**
comp=Z,3.9nm,0.8s,baz=352,slow=6.8,SNR=15
SEY Seymchan 73.52 22 *ceP* **P 17 36 01.8 -0.7**
SEY Seymchan 73.52 22 *eP* **P 17 36 01.8 -0.7**
SADO Sadowa 73.63 314 *eP* **P 17 36 04.4 +0.9**
comp=Z,12nm,0.9s
SADO Sadowa 73.63 314 *eP* **P 17 36 04.4 +0.9**
comp=Z,12nm,0.9s
MMNY Mt. Morris Dam 74.03 311 *eP* **P 17 36 06.5 +0.6**
MMNY Mt. Morris Dam 74.03 311 *eP* **P 17 36 06.5 +0.6**
KLR Kul'dur 74.20 40 P **P 17 36 06.6 -0.2**
comp=Z,5.0nm,0.6s,baz=307,slow=6.6,SNR=18
KLR Kul'dur 74.20 40 ||*iP* **P 17 36 06.3 -0.5**
KLR Kul'dur 74.20 40 *i P* **P 17 36 06.3 -0.5**
BUF Buffalo 74.49 312 *eP* **P 17 36 08.1 -0.5**
BUF Buffalo 74.49 312 *eP* **P 17 36 08.2 -0.5**
INK Inuvik 74.82 351 *eP* **P 17 36 09.6 -0.4**
INK pmax pmax
comp=Z,4.0nm,0.6s
INK Inuvik 74.82 351 *eP* **P 17 36 09.6 -0.4**
comp=Z,4.0nm,0.6s
INK Inuvik 74.82 351 *eP* **P 17 36 09.6 -0.4**
comp=Z,4.0nm,0.6s
MA2 Magadan 75.52 25 P **P 17 36 14.7 +0.5**
comp=Z,22nm,1.1s,baz=336,slow=8.1,SNR=12
YKW3 Yellowknife Ar 76.39 341 *eP* **P 17 36 19.1 0.0**
comp=Z,13nm,1.3s
YKW3 Yellowknife Ar 76.39 341 *eP* **P 17 36 19.1 0.0**
comp=Z,13nm,1.3s
YKA Yellowknife Ar 76.44 341 P **P 17 36 19.6 +0.2**
comp=Z,3.7nm,0.7s,baz=32,slow=5.6,SNR=51
YKB5 Yellowknife Ar 76.44 341 *eP* **P 17 36 19.4 0.0**
YKB5 Yellowknife Ar 76.44 341 *eP* **P 17 36 19.4 0.0**
KULM Kulim 76.53 93 *eP* **P 17 36 20.1 -0.6**
comp=Z,9.9nm,0.8s
KULM Kulim 76.53 93 *eP* **P 17 36 20.1 -0.6**
comp=Z,9.9nm,0.8s
PSI Prapat 76.57 96 *eP* **P 17 36 20.5 -0.6**
PSI pmax pmax
comp=Z,13nm,1.1s
PSI Prapat 76.57 96 *eP* **P 17 36 20.5 -0.6**
comp=Z,13nm,1.1s
USRK Ussuriysk Ar. 77.38 44 P **P 17 36 24.5 -0.6**
comp=Z,9.6nm,0.7s,baz=299,slow=4.4,SNR=22
COWI Conover 78.44 319 *eP* **P 17 36 32.5 +1.5**
COWI Conover 78.44 319 *eP* **P 17 36 32.5 +1.5**
FFC Flin Flon 78.44 331 *eP* **P 17 36 31.3 +0.5**
FFC pmax pmax
comp=Z,12nm,0.9s
FFC Flin Flon 78.44 331 *eP* **P 17 36 31.2 +0.5**
comp=Z,12nm,0.9s
FFC Flin Flon 78.44 331 *eP* **P 17 36 31.2 +0.5**
comp=Z,12nm,0.9s
KS01 Wonju Array Si 78.97 52 *eP* **P 17 36 33.9 -0.1**
KS01 Wonju Array Si 78.97 52 *eP* **P 17 36 33.9 -0.1**
KS15 Wonju Array Si 78.98 52 *eP* **P 17 36 33.6 -0.5**
KS15 Wonju Array Si 78.98 52 *eP* **P 17 36 33.6 -0.5**
KSAR Wonju Array Be 78.98 52 P **P 17 36 34.2 +0.1**
KSAR Wonju Array Be 78.98 52 P **P 17 36 34.2 +0.1**
KSAR Wonju Array Be 78.98 52 P **P 17 36 34.1 +0.1**
KSRS Korea Array 79.00 52 P **P 17 36 34.1 0.0**
comp=Z,7.9nm,0.6s,baz=310,slow=4.8,SNR=48
KSRS LR LR 18 19 07.7
comp=Z,35nm,20.0s,baz=188,slow=42
ULM Lac du Bonnet 79.03 325 P **P 17 36 34.8 +0.7**
comp=Z,6.6nm,0.6s,baz=76,slow=7.4,SNR=3.9
MDM Murphy Dome 79.40 356 *eP* **P 17 36 36.8 +0.9**
comp=Z,7.9nm,0.9s
MDM Murphy Dome 79.40 356 *eP* **P 17 36 36.8 +0.9**
comp=Z,7.9nm,0.9s
MLY Manley 79.43 358 *eP* **P 17 36 37.1 +1.0**
comp=Z,6.8nm,1.0s
MLY Manley 79.43 358 *eP* **P 17 36 37.1 +1.0**
comp=Z,6.8nm,1.0s
IL1 Eielson Array 79.51 356 *eP* **P 17 36 36.7 +0.3**
IL1 Eielson Array 79.51 356 *eP* **P 17 36 36.7 +0.3**
ILAR Eielson Array 79.51 356 P **P 17 36 37.0 +0.5**
comp=Z,1.7nm,0.8s,baz=355,slow=3.8,SNR=16
ILB Eielson Array 79.51 356 *eP* **P 17 36 36.7 +0.3**
ILB Eielson Array 79.51 356 *eP* **P 17 36 36.7 +0.3**
DAWY Dawson 79.58 352 *eP* **P 17 36 37.7 +0.8**
comp=Z,6.9nm,0.8s
DAWY Dawson 79.58 352 *eP* **P 17 36 37.7 +0.8**
comp=Z,6.9nm,0.8s
PPI Padang Panjang 79.67 98 P P 17 36 45.8 +7.7
CCB Clear Creek Bu 79.68 356 *eP* **P 17 36 37.2 -0.2**
comp=Z,2.8nm,0.8s
CCB Clear Creek Bu 79.68 356 *eP* **P 17 36 37.1 -0.2**
comp=Z,2.8nm,0.8s
HDA Harding Lake 79.87 356 *eP* **P 17 36 38.5 0.0**
comp=Z,8.7nm,1.1s
HDA Harding Lake 79.87 356 *eP* **P 17 36 38.5 0.0**
comp=Z,8.7nm,1.1s
WRH Wood River Hil 79.87 356 *eP* **P 17 36 38.6 +0.2**
comp=Z,7.7nm,0.8s
WRH Wood River Hil 79.87 356 *eP* **P 17 36 38.6 +0.2**
comp=Z,7.7nm,0.8s
PDSI Padang 79.99 98 P P 17 36 44.9 +5.0
BPAW Bear Paw Mtn. 80.37 358 *eP* **P 17 36 41.2 0.0**
comp=Z,7.4nm,0.8s
BPAW Bear Paw Mtn. 80.37 358 *eP* **P 17 36 41.2 0.0**
comp=Z,7.4nm,0.8s
DOT Dot Lake 80.42 354 *eP* **P 17 36 42.2 +0.7**
comp=Z,18nm,0.7s
DOT Dot Lake 80.42 354 *eP* **P 17 36 42.2 +0.7**
comp=Z,18nm,0.7s
RND Reindeer 80.98 357 *eP* **P 17 36 43.8 -0.7**
RND pmax pmax
comp=Z,5.0nm,0.8s
RND Reindeer 80.98 357 *eP* **P 17 36 43.8 -0.7**
comp=Z,5.2nm,0.8s
RND Reindeer 80.98 357 *eP* **P 17 36 43.8 -0.7**
comp=Z,5.2nm,0.8s
TRF Thorofare Moun 81.00 357 *eP* **P 17 36 45.0 +0.3**
comp=Z,6.3nm,0.8s
TRF Thorofare Moun 81.00 357 *eP* **P 17 36 45.0 +0.3**
comp=Z,6.3nm,0.8s
MENT Mentasta 81.10 354 *eP* **P 17 36 46.7 +1.6**
comp=Z,5.8nm,0.8s
MENT Mentasta 81.10 354 *eP* **P 17 36 46.7 +1.6**
comp=Z,5.8nm,0.8s
YSS Yuzh-Sakhalins 81.29 37 ||*iP* **P 17 36 46.0 -0.3**
YSS *e* 17 36 50.8
YSS pmax pmax
comp=Z,20nm,0.8s
YSS Yuzh-Sakhalins 81.29 37 *eP* **P 17 36 46.5 +0.2**
comp=Z,30nm,1.0s
YSS Yuzh-Sakhalins 81.29 37 *eP* **P 17 36 46.5 +0.2**
comp=Z,30nm,1.0s
TTA Tatalina 81.64 360 *eP* **P 17 36 49.1 +1.1**
TTA pmax pmax
comp=Z,3.0nm,0.8s
TTA Tatalina 81.64 360 *eP* **P 17 36 49.1 +1.1**
comp=Z,2.9nm,0.8s
TTA Tatalina 81.64 360 *eP* **P 17 36 49.1 +1.1**
comp=Z,2.9nm,0.8s
TT01 Tatalina 81.67 360 *eP* **P 17 36 49.5 +1.4**
TT01 Tatalina 81.67 360 *eP* **P 17 36 49.5 +1.4**
SUA Susitna One 83.00 357 *eP* **P 17 36 56.0 +0.8**
SUA Susitna One 83.00 357 *eP* **P 17 36 56.0 +0.8**
ASAJ Asahikawa 83.19 39 P **P 17 36 56.6 +0.3**
comp=Z,6.3nm,0.6s,baz=303,slow=5.5,SNR=14
ASAJ Asahikawa 83.19 39 *eP* **P 17 36 56.1 -0.3**
comp=Z,14nm,1.2s
ASAJ Asahikawa 83.19 39 *eP* **P 17 36 56.1 -0.3**
comp=Z,14nm,1.2s
SPU Mount Spurr 83.33 358 *eP* **P 17 36 56.3 -0.5**
SPU Mount Spurr 83.33 358 *eP* **P 17 36 56.3 -0.5**
RC01 Rabbit Creek A 83.33 357 *eP* **P 17 36 56.6 -0.2**
comp=Z,11nm,0.6s
RC01 Rabbit Creek A 83.33 357 *eP* **P 17 36 56.6 -0.2**
comp=Z,11nm,0.6s
ECSD EROS Data Cent 83.95 321 *eP* **P 17 37 01.0 +0.6**
comp=Z,11nm,0.7s
ECSD EROS Data Cent 83.95 321 *eP* **P 17 37 01.0 +0.6**
comp=Z,11nm,0.7s
WVT Waverly 84.12 311 *eP* **P 17 37 01.5 +0.2**
WVT pmax pmax
comp=Z,27nm,1.8s
WVT Waverly 84.12 311 *eP* **P 17 37 01.5 +0.2**
comp=Z,27nm,1.8s
WVT Waverly 84.12 311 *eP* **P 17 37 01.5 +0.2**
comp=Z,27nm,1.8s
LHSI Lahat 84.17 99 P **P 17 37 02.2 +0.4**
MAT Matsushiro 85.93 47 P **P 17 37 10.4 0.0**
MJAR Matsushiro Arr 85.94 47 P **P 17 37 10.4 0.0**
comp=Z,5.7nm,0.7s,baz=326,slow=4.1,SNR=19
KDAK Kodiak Island 86.75 358 *i P* **P 17 37 14.9 +1.0**
JTMT Jette 88.68 333 *eP* **P 17 37 24.5 +0.9**
JTMT Jette 88.68 333 *eP* **P 17 37 24.5 +0.9**
SWMT Swartz Lake 88.77 333 *eP* **P 17 37 24.8 +0.8**
SWMT Swartz Lake 88.77 333 *eP* **P 17 37 24.8 +0.8**
NEW Newport 89.25 335 *eP* **P 17 37 26.7 +0.5**
NEW pmax pmax
comp=Z,12nm,0.6s
NEW Newport 89.25 335 *eP* **P 17 37 26.7 +0.5**
comp=Z,12nm,0.6s
NEW Newport 89.25 335 *eP* **P 17 37 26.7 +0.5**
comp=Z,12nm,0.6s
MOOW Moose Ponds 90.58 329 *eP* **P 17 37 33.2 +0.5**
comp=Z,2.7nm,0.7s
MOOW Moose Ponds 90.58 329 *eP* **P 17 37 33.2 +0.5**
comp=Z,2.7nm,0.7s
N23A Red Feather La 90.69 324 *eP* **P 17 37 33.9 +0.6**
comp=Z,9.9nm,0.9s
N23A Red Feather La 90.69 324 *eP* **P 17 37 33.9 +0.6**
comp=Z,9.9nm,0.9s
BW06 Boulder Array 90.86 327 *eP* **P 17 37 33.4 -0.7**
BW06 Boulder Array 90.86 327 *eP* **P 17 37 33.4 -0.7**
PD31 Pinedale Array 90.86 327 *eP* **P 17 37 33.3 -0.8**
PD31 Pinedale Array 90.86 327 *eP* **P 17 37 33.3 -0.8**
PDAR Pinedale Array 90.86 327 P **P 17 37 34.0 -0.1**
comp=Z,1.6nm,0.9s,baz=57,slow=5.5,SNR=8.5
PDAR LR LR 18 18 23.1
comp=Z,28nm,21.5s,baz=18,slow=36
PDAR Pinedale Array 90.86 327 P **P 17 37 34.0 -0.1**
WMOK Wichita Mounta 91.57 316 *eP* **P 17 37 39.1 +1.9**
WMOK pmax pmax
comp=Z,7.0nm,1.1s
WMOK Wichita Mounta 91.57 316 *eP* **P 17 37 39.1 +1.9**
comp=Z,7.2nm,1.1s
WMOK Wichita Mounta 91.57 316 *eP* **P 17 37 39.1 +1.9**
comp=Z,7.2nm,1.1s
HWUT Hardware Ranch 92.67 328 *eP* **P 17 37 42.6 +0.2**
comp=Z,4.9nm,0.8s
HWUT Hardware Ranch 92.67 328 *eP* **P 17 37 42.6 +0.2**
comp=Z,5.0nm,0.8s
NV01 Mina Array Sit 98.14 331 *eP* Pdif 17 38 07.5 0.0
NV01 Mina Array Sit 98.14 331 *eP* **P 17 38 07.5 0.0**
NVAR Mina Array Bea 98.14 331 P Pdif 17 38 08.7 +1.2
comp=Z,0.6nm,0.6s,baz=28,slow=2.3,SNR=3.4
LTX Lajitas 98.34 315 *eP* Pdif 17 38 09.1 +0.7
LTX Lajitas 98.34 315 *eP* Pdif 17 38 09.1 +0.7
LTX Lajitas 98.34 315 *eP* Pdif 17 38 09.1 +0.7
TXAR Lajitas Array 98.35 315 P Pdif 17 38 09.1 +0.7
comp=Z,0.5nm,0.8s,baz=64,slow=5.7,SNR=4.2
PFO Pinyon Flats O 101.47 327 *i P* **Pdif 17 38 30.7 +8.5**
WR1 Warramunga Arr 118.02 95 *e*PKIKP **PKPdf 17 43 16.8 -0.6**
WR1 Warramunga Arr 118.02 95 *e*PKPdf **PKPdf 17 43 16.8 -0.6**
WRA Warramunga Arr 118.02 95 PKP **PKPdf 17 43 16.8 -0.6**
comp=Z,0.8nm,0.7s,baz=316,slow=1.4,SNR=11
AS31 Alice Springs 119.51 99 *e*PKIKP **PKPdf 17 43 19.5 -0.7**
AS31 Alice Springs 119.51 99 *e*PKPdf **PKPdf 17 43 19.5 -0.7**
ASAR Alice Springs 119.51 99 PKP **PKPdf 17 43 19.8 -0.5**
comp=Z,0.9nm,0.7s,baz=304,slow=1.0,SNR=20
AS01 Alice Springs 119.55 99 *e*PKIKP **PKPdf 17 43 19.8 -0.5**
AS01 Alice Springs 119.55 99 *e*PKPdf **PKPdf 17 43 19.8 -0.5**
QSPA South Pole Qui 125.62 180 *e*PKIKP **PKPdf 17 43 30.3 -0.3**
QSPA South Pole Qui 125.62 180 *e*PKPdf **PKPdf 17 43 30.3 -0.3**
STKA Stephens Creek 129.19 105 PKP **PKPdf 17 43 38.6 +0.2**
comp=Z,1.4nm,0.8s,baz=255,slow=3.7,SNR=3.5
STKA Stephens Creek 129.19 105 *e*PKIKP **PKPdf 17 43 39.0 +0.5**
STKA Stephens Creek 129.19 105 *e*PKIKP **PKPdf 17 43 39.0 +0.5**
STKA Stephens Creek 129.19 105 *e*PKPdf **PKPdf 17 43 39.0 +0.5**
DZM Mont Dzumac 145.05 77 *e*PKPbc **PKPab 17 44 07.7 +0.2**
DZM Mont Dzumac 145.05 77 *e*PKPbc **PKPab 17 44 07.7 +0.2**

MAN 27 17:31:09, 16°.67N×122°.59E, h4km, mb4.7, ML3.6, MS3.6, 1D, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CAUP	**Cauayan**	**0.78**	**290**	*e*P	Pb	17 31 24.7	-0.4
CAUP				*e*S	Sn	17 31 39.5	+0.6
BALP	**Baler**	**1.34**	**227**	*e*P	Pn	17 31 34.5	0.0
BALP				*e*S	Sn	17 31 53.9	+1.1
SGCP	**Mt. Cagua**	**1.65**	**342**	*e*P	Pb	17 31 40.0	0.0
SGCP				*e*S	Sn	17 31 58.9	-1.5
APYP	**Conner**	**1.75**	**313**	*e*P	Pn	17 31 40.5	+0.4
APYP				*e*S	Sg	17 32 04.6	-0.6
PCPH	**Palayan**	**1.81**	**233**	||*e*P	Pb	17 31 41.9	-0.8
PCPH				*e*S	Sg	17 32 06.6	-0.5
POLP	**Polilio Island**	**2.03**	**198**	*e*P	Pb	17 31 45.7	-0.8
POLP				*e*S	Sn	17 32 10.6	+0.8
ABRA	**Dolores**	**2.04**	**299**	*e*P	Pn	17 31 44.2	+0.1
ABRA				*e*S	Sb	17 32 11.5	-0.8
SCZP	**Santa Cruz**	**2.72**	**251**	*e*P	Pb	17 31 55.9	-2.4
SCZP				*e*S	Sg	17 32 37.4	+1.0

IDC 27 17:32:35.8±4.1, 35°.27N×142°.25E, h0km, mb3.4/4, mb1 3.5/5, mb1mx3.3/46, mbtmp3.3/5, ML3.1/1, Error ellipse: s-maj=129.7km s-min=26.3km az=59.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**3.52**	**292**	Pn	Pn	17 33 30.7	-1.0
	1.7nm,0.3s,baz=89,slow=15,SNR=14						
SONM	**Songino Array**	**29.35**	**306**	P	P	17 38 40.3	-0.1

0.3nm,0.3s,baz=66,slow=11,SNR=2.6
MKAR Makanchi Array 45.64 304 P P 17 40 58.3 +0.3
0.1nm,0.2s,baz=92,slow=7.6,SNR=2.2
WRA Warramunga Arr 55.42 189 P P 17 42 12.1 +0.1
0.3nm,0.7s,baz=8.9,slow=7.1,SNR=2.0
ASAR Alice Springs 59.15 189 P P 17 42 38.1 -0.2
0.2nm,0.8s,baz=3.4,slow=6.6,SNR=1.9

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*CSEM **27** 17:45:17.3±0.3, 43.°42N×17.°31E, h2km, ML2.6, Error ellipse: s-maj=5.6km s-min=3.4km az=55.0*
*PDG **27** 17:45:19.7±0.3, 43.°37N×17.°43E, h6km, ML2.6/12, Error ellipse: s-maj=0.7km s-min=1.2km az=0.0*
*BEO **27** 17:45:19.1±0.6, 43.°39N×17.°37E, h0km, M2.4/7*
ISC 27 17:45:17.2±1.2, 43.°43N±0.°02×17.°31E±0.°03, h0km±10km, n46, σ0°76/91, 6C-11D, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BRY	**Bratogost**	**1.04**	**120**	⇓*i*Pg	**Pg**	**17 45 36.5**	**-0.6**
BRY				*e*Sg	**Sb**	**17 45 51.9**	**-0.4**
BRY	**Bratogost**	**1.04**	**120**	⇓*i*Pg	**Pg**	**17 45 36.5**	**-0.6**
BRY				*e*Sg	**Sg**	**17 45 51.0**	**+0.4**
TREB	**Trebinje**	**1.04**	**132**	*e*Pg	**Pg**	**17 45 36.3**	**-0.8**
TREB				*e*Sg	**Sg**	**17 45 50.8**	**+0.2**
UPM	**Unac-Piva**	**1.19**	**100**	⇓*i*Pg	**Pg**	**17 45 40.0**	**+0.1**
UPM				*e*Sg	**Sb**	**17 45 56.8**	**+0.2**
UPM	**Unac-Piva**	**1.19**	**100**	⇓*i*Pg	**Pg**	**17 45 40.0**	**+0.1**
UPM				*e*Sg	**Sb**	**17 45 56.0**	**-0.6**
HCY	**Herceg Novi**	**1.31**	**138**	⇓*i*Pg	**Pg**	**17 45 41.6**	**-0.6**
HCY				*e*Sg	**Sn**	**17 46 01.1**	**+0.3**
HCY	**Herceg Novi**	**1.31**	**138**	⇓*i*Pg	**Pg**	**17 45 41.6**	**-0.6**
HCY				*e*Sg	**Sg**	**17 45 59.2**	**0.0**
BLY	**Banja Luka**	**1.33**	**356**	*e*Pg	**Pb**	**17 45 43.8**	**+0.9**
BLY	**Banja Luka**	**1.33**	**356**	*e*Pg	**Pg**	**17 45 42.0**	**-0.6**
BLY				*e*Sg	**Sg**	**17 45 59.9**	**+0.1**
HAPS	**Han Pijesak,BI**	**1.36**	**60**	*e*Pg	**Pg**	**17 45 42.3**	**-0.9**
HAPS				*e*Sg	**Sg**	**17 46 01.2**	**+0.3**
NKME	**Niksic**	**1.37**	**118**	⇓*i*Pg	**Pn**	**17 45 42.9**	**-0.7**
NKME				*e*Sg	**Sn**	**17 46 03.4**	**+1.0**
NKME	**Niksic**	**1.37**	**118**	⇓*i*Pg	**Pn**	**17 45 42.9**	**-0.7**
NKME				*e*Sg	**Sn**	**17 46 03.4**	**+1.0**
NKY	**Niksic**	**1.38**	**116**	*e*Pg	**Pn**	**17 45 43.5**	**-0.2**
NKY				*e*Sg	**Sn**	**17 46 03.3**	**+0.7**
NKY	**Niksic**	**1.38**	**116**	*e*Pg	**Pn**	**17 45 43.5**	**-0.2**
NKY				*e*Sg	**Sn**	**17 46 03.3**	**+0.7**
DOB	**Doboj**	**1.43**	**23**	*e*Sg	**Sg**	**17 46 03.1**	**+0.1**
CEME	**Cevo**	**1.47**	**126**	*e*Pg	**Pn**	**17 45 44.6**	**-0.3**
CEME				*e*Sg	**Sn**	**17 46 06.8**	**+1.9**
CEME	**Cevo**	**1.47**	**126**	*e*Pg	**Pn**	**17 45 44.6**	**-0.3**
PLE	**Pljevlja**	**1.52**	**93**	⇓*i*Pg	**Pb**	**17 45 46.1**	**-0.2**
PLE				*e*Sg	**Sg**	**17 46 08.0**	**+2.0**
PLE	**Pljevlja**	**1.52**	**93**	⇓*i*Pg	**Pb**	**17 45 46.1**	**-0.2**
PLE				*e*Sg	**Sg**	**17 46 08.0**	**+2.0**
BBLS	**Lazići**	**1.58**	**73**	*e*Pg	**Pn**	**17 45 46.5**	**-0.1**
BBLS				*e*Sg	**Sn**	**17 46 06.9**	**-0.8**
BBLS	**Lazići**	**1.58**	**73**	*e*Pn	**Pn**	**17 45 46.4**	**-0.1**
BBLS				*e*Sg	**Sn**	**17 46 06.9**	**-0.8**
BBLS				*e*Sn	**Sb**	**17 46 07.5**	**-0.4**
BUM	**Brajici-Budva**	**1.62**	**133**	⇑*i*Pg	**Pb**	**17 45 47.5**	**-0.4**
BUM				*e*Sg	**Sg**	**17 46 10.8**	**+1.7**
BUM	**Brajici-Budva**	**1.62**	**133**	⇑*i*Pg	**Pb**	**17 45 47.5**	**-0.4**
BUM				*e*Sg	**Sg**	**17 46 10.8**	**+1.7**
PDG	**Podgorica**	**1.74**	**124**	*e*Pn	**Pb**	**17 45 49.4**	**-0.5**
PDG				*e*Sg	**Sg**	**17 46 13.4**	**+0.3**
PDG	**Podgorica**	**1.74**	**124**	*e*Pn	**Pb**	**17 45 49.4**	**-0.5**
PDG				*e*Sn	**Sn**	**17 46 11.3**	**-0.1**
PDG				*e*Sg	**Sg**	**17 46 13.4**	**+0.3**
TTG	**Podgorica**	**1.74**	**124**	⇓*i*Pn	**Pb**	**17 45 50.0**	**+0.1**
TTG				*e*Sn	**Sg**	**17 46 14.1**	**+1.0**
DRME	**Dracevica, Mon**	**1.85**	**131**	⇑*i*Pn	**Pb**	**17 45 51.8**	**-0.1**
DRME				*e*Sn	**Sg**	**17 46 17.1**	**+0.4**
DRME	**Dracevica, Mon**	**1.85**	**131**	*e*Pn	**Pn**	**17 45 49.9**	**-0.2**
DRME				*e*Sn	**Sn**	**17 46 14.1**	**-0.1**
TEKS	**Tekeris**	**1.96**	**54**	*e*Pn	**Pg**	**17 45 54.3**	**-0.4**
TEKS				*e*Sg	**Sg**	**17 46 21.5**	**+1.5**
TEKS	**Tekeris**	**1.96**	**54**	*e*Pn	**Pn**	**17 45 51.0**	**-0.6**
TEKS				*e*Sn	**Sn**	**17 46 16.6**	**-0.3**
TEKS				*e*Sg	**Sg**	**17 46 21.5**	**+1.5**
BEY	**Berane**	**1.97**	**105**	*e*Pn	**Pb**	**17 45 53.5**	**-0.4**
IVA	**Berane**	**1.97**	**105**	*e*Pn	**Pb**	**17 45 53.5**	**-0.4**
IVA				*e*Sn	**Sb**	**17 46 19.5**	**+0.5**
ULC	**Ulcinj**	**2.04**	**135**	⇑*i*Pn	**Pb**	**17 45 54.4**	**-0.7**
ULC				*e*Sn	**Sg**	**17 46 22.0**	**-0.7**
ULC	**Ulcinj**	**2.04**	**135**	⇑*i*Pn	**Pb**	**17 45 54.4**	**-0.7**
DIVS	**Divibare**	**2.06**	**70**	*e*Pn	**Pn**	**17 45 52.9**	**-0.1**
DIVS				*e*Sg	**Sg**	**17 46 24.2**	**+1.0**
DIVS	**Divibare**	**2.06**	**70**	*e*Pn	**Pn**	**17 45 52.6**	**-0.4**
DIVS				*e*Sn	**Sn**	**17 46 18.8**	**-0.6**
DIVS				*e*Sg	**Sg**	**17 46 24.2**	**+1.0**
IVAS	**Ivanjica**	**2.07**	**85**	*e*Pn	**Pn**	**17 45 54.4**	**+1.1**
IVAS				*e*Sg	**Sg**	**17 46 23.5**	**-0.3**
IVAS	**Ivanjica**	**2.07**	**85**	*e*Pn	**Pn**	**17 45 54.4**	**+1.1**
IVAS				*e*Sg	**Sg**	**17 46 23.5**	**-0.3**
NVLJ	**Novalja**	**2.10**	**304**	*e*Pn	**Pg**	**17 45 57.5**	**+0.2**
NVLJ				*e*Sn	**Sg**	**17 46 25.0**	**+0.5**
PVY	**Plav**	**2.11**	**112**	⇑*i*Pn	**Pb**	**17 45 56.0**	**-0.4**
PVY				*e*Sn	**Sb**	**17 46 23.1**	**-0.1**
GRUS	**Gruza**	**2.52**	**78**	*e*Pn	**Pb**	**17 46 02.0**	**-1.2**
GRUS				*e*Sg	**Sg**	**17 46 38.3**	**+0.4**
GRUS	**Gruza**	**2.52**	**78**	*e*Pn	**Pb**	**17 46 02.0**	**-1.2**
GRUS				*e*Sg	**Sg**	**17 46 38.3**	**+0.4**
CRES	**Cresnjev**	**2.74**	**332**	*e*Pn	**Pn**	**17 46 02.5**	**+0.1**
CRES				*e*Sn	**Sn**	**17 46 35.8**	**-0.4**
CEY	**Cerknica**	**3.10**	**319**	*e*Pn	**Pn**	**17 46 07.7**	**+0.4**
CEY				*e*Sn	**Sn**	**17 46 44.3**	**-0.7**
BARS	**Barje**	**3.35**	**99**	*e*Pn	**Pn**	**17 46 12.0**	**+1.2**
BARS				*e*Sn	**Sn**	**17 46 51.7**	**+0.4**
BARS	**Barje**	**3.35**	**99**	*e*Pn	**Pn**	**17 46 12.0**	**+1.2**
BARS				*e*Sn	**Sn**	**17 46 51.7**	**+0.4**

KRSC 27 17:46:12.6±0.8, 50.°93N×159.°96E, h40km±22km, ML3.6, East of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RUS	**Russkaya**	**1.76**	**330**	*e*P	Pn	17 46 43.0	+2.5
RUS				*e*S	Sn	17 47 04.9	+3.2
MTVR	**Mutnovka**	**1.91**	**325**	*e*S	Sn	17 47 08.7	+3.0
ASAK	**Asacha**	**1.94**	**319**	*e*P	Pn	17 46 45.7	+2.5
PAU	**Pauzhetka**	**2.05**	**286**	*e*S	Sn	17 47 11.1	+2.1
KRMR	**Karymshinskiy**	**2.22**	**330**	*e*P	Pn	17 46 49.6	+2.7
KRMR				*e*S	Sn	17 47 16.2	+3.2
DALK	**Dalny**	**2.24**	**341**	*e*S	Sn	17 47 16.3	+2.9
PET	**Petropavlovsk**	**2.25**	**339**	*e*P	Pn	17 46 49.7	+2.4
PET				*e*S	Sn	17 47 16.4	+2.6
NLC	**Nalytchevo**	**2.28**	**351**	*e*P	Pn	17 46 50.1	+2.4
NLC				*e*S	Sn	17 47 17.2	+2.7
UGLR	**Uglovaya**	**2.39**	**343**	*e*P	Pn	17 46 52.1	+2.7
SDLR	**Sedlovina**	**2.45**	**345**	*e*P	Pn	17 46 52.2	+2.1
SKR	**Severo-Kuril's**	**2.45**	**266**	*e*P	Pn	17 46 53.0	+3.0
SKR				*e*S	Sn	17 47 21.6	+2.9
AVH	**Avacha**	**2.46**	**343**	*e*P	Pn	17 46 52.9	+2.6
KRER	**Koryakskii**	**2.50**	**343**	*e*P	Pn	17 46 53.6	+2.7
KRX	**Arik**	**2.57**	**342**	*e*P	Pn	17 46 54.7	+2.9
GNL	**Ganaly**	**3.04**	**337**	*e*P	Pn	17 47 01.9	+3.7
GNL				*e*S	Sn	17 47 38.2	+4.8

MEX 27 17:55:56.2±0.4, 15.°58N×94.°48W, h22km±36km, MD3.7, Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		**1.22**	**84**	*e*P	Pn	17 56 15.1	-2.7
PCIG				*e*S	Sn	17 56 29.5	-4.2
HUIG	**Huatulco**	**1.58**	**277**	*i*P	Pn	17 56 19.5	-3.4
HUIG				*e*S	Sn	17 56 39.0	-3.7
CCIG	**Comitan**	**2.36**	**73**	*e*P	Pn	17 56 31.6	-2.1
VHO	**Vista Hermosa**	**2.62**	**305**	*e*P	Pn	17 56 35.0	-2.5
VHO				*e*S	Sn	17 57 05.5	-3.2

IDC 27 18:01:19.1±6.5, 17.°71S×174.°57W, h247km±31km, mb2.8/3, mb1 3.1/4, mb1mx3.0/23, mbtmp3.5/4, Error ellipse: s-maj=216.4km s-min=26.7km az=139.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**4.64**	**36**	P	Pn	18 02 31.8	+1.3
	3.7nm,0.3s,baz=160,slow=1.8,SNR=7.6						
AFI				S	S	18 03 27.0	-0.3
	8.3nm,0.3s,baz=262,slow=22,SNR=7.8						
WRA	**Warramunga Arr**	**48.26**	**259**	P	P	18 09 35.8	-0.1
	0.4nm,1.1s,baz=98,slow=8.2,SNR=3.1						
ASAR	**Alice Springs**	**48.36**	**254**	P	P	18 09 36.4	-0.2
	0.3nm,0.5s,baz=93,slow=8.5,SNR=15						
ILAR	**Eielson Array**	**84.92**	**12**	P	P	18 13 26.0	+0.1
	0.2nm,0.3s,baz=210,slow=4.8,SNR=5.4						

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*ISCJB **27** 18:23:26.5±0.5, 39.°11N±0.°03×29.°13E±0.°04, h5km±6km, Error ellipse: s-maj=5.5km s-min=4.6km az=161.2*
*DDA **27** 18:23:26.2, 39.°11N×29.°11E, h7km, Md2.9*
*ISK **27** 18:23:26.2, 39.°10N×29.°20E, h9km, MD2.8*
*CSEM **27** 18:23:26.6±0.1, 39.°12N×29.°14E, h5km, MD2.9, Error ellipse: s-maj=2.1km s-min=1.9km az=99.0*
ISC 27 18:23:26.8±0.9, 39.°12N±0.°03×29.°13E±0.°02, h10km±9km, n37, σ0°38/49, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.28**	**97**	P	**Pg**	**18 23 32.6**	**+0.1**
GDZ				S	**Sg**	**18 23 36.6**	**+0.4**
GDZ	**Gediz**	**0.28**	**97**	*i*P	**Pg**	**18 23 32.6**	**+0.1**
GDZ				*i*S	**Sg**	**18 23 36.6**	**+0.4**
DEMI	**Demirci**	**0.33**	**256**	P	**Pg**	**18 23 33.4**	**-0.1**
DEMI				S	**Sg**	**18 23 37.8**	**-0.1**
DEMI	**Demirci**	**0.33**	**256**	*i*P	**Pg**	**18 23 33.4**	**-0.1**
DEMI				*i*S	**Sg**	**18 23 37.8**	**-0.1**
TVSB	**Tavsanli**	**0.42**	**38**	*e*PG	**Pg**	**18 23 34.9**	**-0.1**
TVSB				*e*SG	**Sg**	**18 23 40.6**	**0.0**
TVSB	**Tavsanli**	**0.42**	**38**	*e*Pg	**Pg**	**18 23 34.9**	**-0.1**
TVSB				*e*Sg	**Sg**	**18 23 40.6**	**0.0**
DURS	**Dursunbey**	**0.70**	**314**	P	**Pg**	**18 23 39.7**	**-0.7**
DURS	**Dursunbey**	**0.70**	**314**	*i*P	**Pg**	**18 23 39.7**	**-0.7**
DURS				*i*S	**Sn**	**18 23 54.0**	**+0.3**
KULA	**Kula-Manisa**	**0.71**	**211**	*e*PG	**Pg**	**18 23 40.4**	**-0.1**
KULA	**Kula-Manisa**	**0.71**	**211**	*e*Pg	**Pg**	**18 23 40.4**	**-0.1**
KHAL	**Karahalli**	**0.80**	**159**	P	**Pg**	**18 23 42.0**	**-0.3**
KHAL				S	**Sg**	**18 23 52.9**	**+0.1**
KHAL	**Karahalli**	**0.80**	**159**	*i*P	**Pg**	**18 23 42.0**	**-0.3**
KHAL				*i*S	**Sg**	**18 23 52.9**	**+0.1**
KHL	**Karahalli**	**0.85**	**159**	*e*PG	**Pg**	**18 23 42.4**	**-0.9**
KHL	**Karahalli**	**0.85**	**159**	*e*Pg	**Pg**	**18 23 42.4**	**-0.9**
BALB	**Balikesir**	**1.10**	**299**	*e*PN	**Pn**	**18 23 48.8**	**+0.6**
BALB	**Balikesir**	**1.10**	**299**	*e*Pn	**Pn**	**18 23 48.8**	**+0.6**
IGD	**Bursa**	**1.14**	**3**	*i*P	**Pb**	**18 23 47.5**	**-1.2**
IGD				*i*S	**Sg**	**18 24 03.8**	**+0.2**
IZI	**Iznik**	**1.24**	**12**	*e*PN	**Pn**	**18 23 50.4**	**+0.1**
IZI	**Iznik**	**1.24**	**12**	*e*Pn	**Pn**	**18 23 50.4**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.26**	**351**	*e*PN	**Pn**	**18 23 50.3**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.26**	**351**	*e*Pn	**Pn**	**18 23 50.3**	**-0.2**
BORA	**Eskisehir**	**1.27**	**53**	P	**Pn**	**18 23 50.9**	**+0.1**
BORA				S	**Sb**	**18 24 07.6**	**+0.1**
BORA	**Eskisehir**	**1.27**	**53**	*i*P	**Pn**	**18 23 50.9**	**+0.1**
BORA				*i*S	**Sb**	**18 24 07.6**	**+0.1**
KCTX	**Karacabey (Bur**	**1.29**	**333**	*e*PN	**Pg**	**18 23 51.6**	**0.0**
KCTX	**Karacabey (Bur**	**1.29**	**333**	*e*Pn	**Pg**	**18 23 51.6**	**0.0**
ADVT	**Abdulvahap**	**1.39**	**20**	*e*PN	**Pn**	**18 23 52.7**	**+0.4**
ADVT	**Abdulvahap**	**1.39**	**20**	*e*Pn	**Pn**	**18 23 52.7**	**+0.4**
GONE	**Gonen-Balikesi**	**1.45**	**310**	*e*PN	**Pb**	**18 23 54.0**	**+0.1**
GONE	**Gonen-Balikesi**	**1.45**	**310**	*e*Pn	**Pb**	**18 23 54.0**	**+0.1**
ARMT	**Armutlu**	**1.46**	**352**	*e*PN	**Pb**	**18 23 53.8**	**-0.2**
ARMT	**Armutlu**	**1.46**	**352**	*e*Pn	**Pb**	**18 23 53.8**	**-0.2**
EDC	**Edincik**	**1.57**	**322**	*e*PN	**Pb**	**18 23 55.8**	**-0.1**
EDC	**Edincik**	**1.57**	**322**	*e*Pn	**Pb**	**18 23 55.8**	**-0.1**
GULT	**Gulveren**	**1.69**	**39**	*e*PN	**Pn**	**18 23 56.7**	**+0.2**
GULT	**Gulveren**	**1.69**	**39**	*e*Pn	**Pn**	**18 23 56.7**	**+0.2**
HRT	**Hereke**	**1.75**	**14**	*e*PN	**Pn**	**18 23 57.8**	**+0.5**
HRT	**Hereke**	**1.75**	**14**	*e*Pn	**Pn**	**18 23 57.8**	**+0.5**

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*KRNET **27** 18:24:22.0±0.1, 42.°86N×76.°78E, h15km, mb2.6*
*NNC **27** 18:24:22.5±0.6, 42.°88N×76.°76E, h0km±3km, mb3.2, mpv2.8, Error ellipse: s-maj=7.4km s-min=1.8km az=160.0*
*SOME **27** 18:24:23.6, 42.°92N×76.°78E, h10km*
ISC 27 18:24:22.4±1.0, 42.°86N±0.°02×76.°79E±0.°01, h5km±9km, n47, σ0°70/89, 31C-23D, Lake Issyk-Kul region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TNSS	**Tian-Shan**	**0.21**	**31**	*e*P	**Pg**	**18 24 27.2**	**+0.5**
	353nm,0.1s						
TNSS				*e*S	**Sg**	**18 24 29.8**	**+0.2**
	2μm,0.2s						
IZV	**Izvestkoviy**	**0.22**	**323**	*e*P	**Pg**	**18 24 27.1**	**+0.4**
	151nm,0.1s						
IZV				*e*S	**Sg**	**18 24 29.8**	**+0.2**
	1μm,0.2s						
MDOK	**Medeo**	**0.36**	**32**	⇑*i*P	**Pg**	**18 24 29.3**	**-0.1**
	175nm,0.6s						
MDOK				*e*S	**Sg**	**18 24 33.5**	**-0.6**
	806nm,0.5s						
KNDC	**Almaty**	**0.38**	**20**	⇑P	**Pg**	**18 24 30.0**	**+0.3**
KNDC				⇓S	**Sg**	**18 24 35.8**	**+1.1**
MTBS	**Maitube**	**0.38**	**315**	*e*P	Pn	18 24 39.9	+5.2
MTBS				*e*S	Sb	18 24 45.2	+7.3
AAA	**Alma-Ata**	**0.43**	**15**	*e*P	**Pg**	**18 24 29.9**	**-0.8**
	878nm,0.1s						
AAA				*e*S	**Sg**	**18 24 34.5**	**-1.8**
	798nm,0.2s						
KOTS	**Kotyrbulak**	**0.44**	**32**	*e*P	**Pg**	**18 24 31.3**	**+0.4**
KOTS				*e*S	**Sg**	**18 24 37.0**	**+0.3**
KST	**Kastek**	**0.64**	**287**	⇑*i*P	**Pg**	**18 24 34.6**	**0.0**
	25nm,0.5s						
KST				*e*S	**Sg**	**18 24 42.8**	**-0.1**
	147nm,0.5s						
ANVS	**Anan'yevo**	**0.65**	**97**	⇑*i*P	**Pg**	**18 24 34.6**	**-0.3**
	baz=96						
ANVS				⇑*i*S	**Sg**	**18 24 43.6**	**+0.3**
	baz=96						
BOOM	**Boomskoye usch**	**0.73**	**240**	⇓*i*P	**Pg**	**18 24 36.2**	**-0.2**
	baz=240						
BOOM				⇓*e*S	**Sg**	**18 24 46.0**	**+0.1**
	baz=240						
ULHL	**Ulahol**	**0.74**	**214**	⇓*i*P	**Pg**	**18 24 36.5**	**-0.1**
	baz=213						
ULHL				⇓*i*S	**Sg**	**18 24 46.6**	**+0.5**
	baz=213						
KDJ	**Kajisay**	**0.79**	**158**	⇑*e*P	**Pg**	**18 24 37.6**	**+0.1**
	baz=157						
KDJ				⇑*e*S	**Sg**	**18 24 48.3**	**+0.7**
	baz=157						
DGS	**Degeres**	**0.84**	**297**	*e*P	**Pg**	**18 24 38.5**	**-0.1**
	29nm,0.4s						
DGS				*e*S	**Sg**	**18 24 49.3**	**-0.1**
	136nm,0.6s						
TKM2	**Tokmak 2**	**0.88**	**274**	⇓*i*P	**Pg**	**18 24 38.8**	**-0.5**
	baz=275						
TKM2				⇓*i*S	**Sg**	**18 24 51.0**	**+0.2**
	baz=275						
TKM2	**Tokmak 2**	**0.88**	**274**	⇑P	**Pg**	**18 24 38.8**	**-0.5**
	6.9nm,0.4s						
TKM2				⇓S	**Sg**	**18 24 51.2**	**+0.4**
	55nm,0.5s						
CHKK	**Chushkaly**	**1.02**	**8**	*e*P	**Pg**	**18 24 41.4**	**-0.6**
	77nm,0.2s						
CHKK				*e*S	**Sg**	**18 24 54.3**	**-1.0**
	177nm,0.2s						
KUU	**Kurty**	**1.08**	**342**	⇓*i*P	**Pg**	**18 24 42.4**	**-0.8**
	27nm,0.3s						
KUU				*e*S	**Sg**	**18 24 56.6**	**-0.6**
	97nm,0.3s						
KURS	**Kuram**	**1.19**	**58**	*e*P	**Pg**	**18 24 44.9**	**-0.2**
KURS				*e*S	**Sg**	**18 25 00.4**	**-0.2**
SATY	**Saty**	**1.20**	**80**	*e*P	**Pg**	**18 24 44.9**	**-0.5**
	64nm,0.1s						
SATY				*e*S	**Sg**	**18 25 00.5**	**-0.5**
	404nm,0.1s						
ZHN	**Zhinishke**	**1.24**	**75**	*e*P	**Pg**	**18 24 45.4**	**-0.9**
	60nm,0.1s						
ZHN				*e*S	**Sg**	**18 25 01.5**	**-0.9**
	548nm,0.2s						
PRZ	**Przheval'sk**	**1.24**	**107**	⇓*e*P	**Pn**	**18 24 46.6**	**-0.1**
	baz=107						
PRZ				⇓*i*S	**Sn**	**18 25 03.9**	**0.0**
	baz=107						
KBK	**Karagaybulak**	**1.37**	**262**	⇑*i*P	**Pn**	**18 24 48.3**	**-0.2**
	baz=262						
KBK				⇑*i*S	**Sb**	**18 25 06.7**	**0.0**
	baz=262						
KZA	**Kyzart**	**1.38**	**236**	⇑*i*P	**Pn**	**18 24 48.5**	**-0.3**
	baz=236						
KZA				⇑*i*S	**Sb**	**18 25 07.1**	**-0.1**
	baz=236						
CHMS	**Chumysh**	**1.51**	**276**	⇓*i*P	**Pn**	**18 24 50.0**	**-0.1**
	baz=276						
CHMS				⇓*i*S	**Sn**	**18 25 10.0**	**-0.2**
	baz=276						
KPKS	**Kokpek**	**1.51**	**66**	*e*P	**Pn**	**18 24 50.0**	**-0.3**
	121nm,0.2s						
KPKS				*e*S	**Sn**	**18 25 09.1**	**-1.3**
	519nm,0.3s						
NRN	**Naryn**	**1.54**	**203**	⇓*e*P	**Pg**	**18 24 51.8**	**-0.2**
	baz=203						
NRN				⇓*e*S	**Sg**	**18 25 12.8**	**+0.8**
	baz=203						
ARXS	**Arharly**	**1.55**	**29**	*e*P	**Pn**	**18 24 51.0**	**+0.2**
	12nm,0.1s						
ARXS				*e*S	**Sn**	**18 25 10.9**	**-0.4**
	110nm,0.4s						
FRU1	**Bishkek**	**1.59**	**269**	⇓*e*P	**Pb**	**18 24 52.1**	**-0.3**
	baz=269						
FRU1				⇓*i*S	**Sg**	**18 25 13.4**	**-0.1**
	baz=269						
UZB	**Uzynbulak**	**1.66**	**79**	*e*P	**Pn**	**18 24 52.5**	**+0.1**
	40nm,0.4s						
UZB				*e*S	**Sn**	**18 25 13.7**	**-0.5**
	98nm,0.1s						
MNBS	**Baschi**	**1.69**	**43**	*e*P	**Pb**	**18 24 53.6**	**-0.5**
	20nm,0.1s						
MNBS				*e*S	**Sb**	**18 25 15.4**	**-0.3**
	124nm,0.3s						
AAK	**Ala-Archa**	**1.71**	**263**	⇑*i*P	**Pb**	**18 24 53.8**	**-0.6**
	baz=263						
AAK				⇑*i*S	**Sb**	**18 25 16.1**	**-0.2**
	baz=263						
AAK	**Ala-Archa**	**1.71**	**263**	⇓P	**Pb**	**18 24 53.7**	**-0.6**
	4.9nm,0.3s						
AAK				⇑S	**Sb**	**18 25 16.6**	**+0.3**
	12nm,0.3s						
USP	**Ospenovka**	**1.73**	**284**	⇑*i*P	**Pb**	**18 24 53.9**	**-0.8**
	baz=285						
USP				⇑*i*S	**Sb**	**18 25 16.6**	**-0.2**
	baz=285						
UCH	**Uchtor**	**1.80**	**250**	⇑*i*P	**Pb**	**18 24 55.5**	**-0.6**
	baz=250						
UCH				⇑*i*S	**Sb**	**18 25 19.2**	**0.0**
	baz=250						
PDGK	**Podgornoye**	**2.03**	**76**	⇑*e*P	**Pb**	**18 24 58.9**	**-0.8**
	baz=76						
PDGK				⇑*i*S	**Sb**	**18 25 25.3**	**+0.1**
	baz=76						
PDGK	**Podgornoye**	**2.03**	**76**	⇓Pn	**Pb**	**18 24 58.9**	**-0.8**
	12nm,0.3s						
PDGK				⇓Sn	**Sb**	**18 25 25.3**	**+0.1**
	28nm,0.5s						
ARLS	**Aral**	**2.08**	**242**	⇑*i*P	**Pb**	**18 24 59.9**	**-0.9**
	baz=242						
ARLS				⇑*e*S	**Sb**	**18 25 27.8**	**+0.7**
	baz=242						
SHLS	**Shalkode**	**2.29**	**82**	*e*P	**Pb**	**18 25 04.6**	**+0.3**
	70nm,0.5s						
SHLS				*e*S	**Sg**	**18 25 34.6**	**-1.2**
	95nm,0.5s						
TDK	**Taldyqorghan**	**2.44**	**28**	*e*P	**Pb**	**18 25 06.4**	**-0.4**
	13nm,0.3s						
TDK				*e*S	**Sb**	**18 25 37.5**	**+0.3**
	124nm,0.3s						
DJR	**Jarkent**	**2.63**	**55**	*e*P	**Pb**	**18 25 10.1**	**+0.1**
	19nm,0.3s						
DJR				*e*S	**Sb**	**18 25 43.7**	**+1.1**
	128nm,0.4s						
MRKS	**Merke**	**2.63**	**269**	*e*P	**Pb**	**18 25 10.8**	**+0.8**
	12nm,0.5s						
MRKS				*e*S	**Sg**	**18 25 44.8**	**-2.0**
	34nm,0.6s						
KAPS	**Kapalarasan**	**3.05**	**36**	*e*P	**Pb**	**18 25 17.3**	**+0.1**
	5.8nm,0.5s						
KAPS				*e*S	**Sb**	**18 25 55.7**	**+1.0**
	104nm,0.4s						
MNAS	**Manas**	**3.19**	**265**	⇑Pg	**Pb**	**18 25 19.0**	**-0.6**
	0.9nm,0.5s						
MNAS				⇓Lg	Lg	18 26 02.8	
	3.2nm,0.4s						
KK31	**Karatay Array**	**4.62**	**275**	⇑Pg	**Pb**	**18 25 45.8**	**+2.0**
	0.5nm,0.3s,baz=94,slow=15,SNR=5.3						
KK31		

CBX				*e*S	**Sb**	**18 29 22.5**	**+0.6**
CBX				⇓*e*		18 29 23.8	
CBX				AML	AML	18 29 23.8	
	comp=N,220nm,0.5s						
ECNX	**Esteban Cantu**	**1.30**	**249**	*e*P	**Pn**	**18 29 05.8**	**+0.2**
113A	**Mohawk Valley,**	**1.35**	**62**	*e*Pn	**Pn**	**18 29 04.8**	**-1.4**
113A				*e*Sn	**Sb**	**18 29 21.4**	**-2.5**
BAR	**Barrett**	**1.38**	**294**	*e*Pn	**Pn**	**18 29 06.3**	**-0.4**
BAR				*e*Sn	**Sb**	**18 29 24.2**	**-0.7**
Y12C	**Blythe**	**1.70**	**19**	*e*Pn	Pn	18 29 06.3	-4.8
PFO	**Pinyon Flats O**	**1.83**	**324**	*e*Pn	**Pn**	**18 29 11.7**	**-1.2**
Y14A	**Wickenburg**	**2.56**	**45**	*e*Pn	**Pn**	**18 29 27.0**	**+4.0**
W13A	**Hualapai Mount**	**3.15**	**20**	*e*Pn	**Pb**	**18 29 39.1**	**+1.4**
W13A				*e*Sn	**Sb**	**18 30 17.0**	**+1.0**

IDC ***27*** *18:33:18.2±1.8, 37°.09N×138°.75E, h0km, mb3.4/2, mb1 3.6/3, mb1mx3.1/57, mbtmp3.5/3, ML2.8/1, MS2.7/2, Ms1 2.7/2, ms1mx2.4/32, Error ellipse: s-maj=13.6km s-min=12.8km az=154.0*
ISCJB ***27*** *18:33:19.8±0.5, 37°.05N±0°.03×138°.70E±0°.04, h29km±5km, mb3.5/2, Error ellipse: s-maj=5.9km s-min=4.9km az=41.0*
JMA ***27*** *18:33:20.5, 37°.04N×138°.71E, h8km±2km, M3.2 Broadband fault plane solution: P waves. NP1: φs82.00000°, δ86.00000°, λ146.00000°. NP2: φs175.00000°, δ57.00000°, λ5.00000°. Principal axes: T Plg26.0000°, Azm33.0000°; N Plg56.0000°, Azm256.0000°; P Plg20.0000°, Azm133.0000°;*
JMA Felt III J1.

ISC 27 18:33:19.9±1.0, 37°.03N±0°.03×138°.73E±0°.03, h13km±9km, n15, σ0§45/22, 3C-3D, Near west coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHK	**Hiroka**	**0.32**	**46**	⇑P	**Pg**	**18 33 26.5**	**0.0**
JHK				S	**Sg**	**18 33 31.1**	**+0.2**
JJN	**Nakama**	**0.46**	**280**	⇓P	**Pg**	**18 33 29.0**	**-0.1**
JJN				S	**Sg**	**18 33 35.6**	**+0.4**
JGK	**Kuni**	**0.47**	**189**	P	**Pb**	**18 33 30.1**	**0.0**
JGK				S	**Sb**	**18 33 37.0**	**+0.1**
JKT	**Katashina**	**0.49**	**122**	⇓P	**Pb**	**18 33 30.3**	**-0.1**
JKT				S	**Sb**	**18 33 37.9**	**+0.4**
JIZZ	**Izumozaki**	**0.51**	**358**	⇑P	**Pb**	**18 33 30.6**	**-0.1**
JIZZ				*e*S	**Sb**	**18 33 38.7**	**+0.7**
MAT	**Matsushiro**	**0.64**	**221**	P	**Pg**	**18 33 32.2**	**-0.2**
MAT				S	**Sg**	**18 33 40.9**	**+0.1**
MAT	**Matsushiro**	**0.64**	**221**	P	**Pg**	**18 33 32.2**	**-0.2**
MAT				S	**Sg**	**18 33 41.0**	**+0.1**
MJAR	**Matsushiro Arr**	**0.64**	**221**	Pg	**Pg**	**18 33 32.3**	**-0.1**
	51nm,0.3s,baz=34,slow=18,SNR=455						
MJAR				Lg	Lg	18 33 40.9	
	67nm,0.3s,baz=36,slow=32,SNR=26						
MJAR				LR	LR	18 34 03.6	
	comp=Z,65nm,20.8s,baz=35,slow=65						
JAG	**Ashikaga**	**0.83**	**136**	⇓P	**Pn**	**18 33 36.8**	**-0.6**
JAG				S	**Sb**	**18 33 48.4**	**+1.0**
JFY	**Yanaizu**	**0.87**	**64**	⇑P	**Pg**	**18 33 36.6**	**-0.1**
JFY				S	**Sb**	**18 33 48.4**	**+0.1**
JNU	**Nakatsue**	**7.52**	**241**	LR	LR	18 38 44.8	
	comp=Z,39nm,18.6s,baz=136,slow=43						
ASAJ	**Asahikawa**	**7.67**	**21**	Pn	**Pn**	**18 35 10.6**	**-0.7**
	0.2nm,0.3s,baz=230,slow=7.9,SNR=2.1						
KSRS	**Korea Array**	**8.63**	**276**	LR	LR	18 38 35.4	
	comp=Z,61nm,18.4s,baz=136,slow=37						
WRA	**Warramunga Arr**	**56.81**	**185**	P	**P**	**18 43 03.7**	**-0.3**
	0.7nm,0.8s,baz=1.1,slow=7.3,SNR=3.4						
ASAR	**Alice Springs**	**60.54**	**185**	P	**P**	**18 43 30.7**	**+0.8**
	0.1nm,0.5s,baz=19,slow=7.9,SNR=1.9						

IDC ***27*** *18:33:26.9±1.0, 13°.89N×93°.05E, h0km, mb3.7/8, mb1 3.8/9, mb1mx3.5/60, mbtmp3.6/9, ML3.4/1, Error ellipse: s-maj=32.7km s-min=19.7km az=53.0*
ISCJB ***27*** *18:33:30.0±0.8, 14°.0N±0°.1×93°.26E±0°.10, h32km, mb3.7/8, Error ellipse: s-maj=17.5km s-min=11.4km az=149.0*

ISC 27 18:33:31.9±1.0, 14°.0N±0°.1×93°.2E±0°.1, h32km, n9, σ0§78/10, mb3.6/8, Andaman Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**7.09**	**50**	Pn	**Pn**	**18 35 14.2**	**+0.6**
	0.2nm,0.3s,baz=241,slow=15,SNR=6.8						
CMAR				Sn	**Sn**	**18 36 31.9**	**-1.3**
	0.7nm,0.3s,baz=239,slow=27,SNR=5.9						
MKAR	**Makanchi Array**	**33.96**	**347**	P	**P**	**18 40 12.4**	**0.0**
	0.5nm,0.8s,baz=156,slow=9.3,SNR=5.0						
SONM	**Songino Array**	**35.49**	**15**	P	**P**	**18 40 27.0**	**+1.2**
	0.7nm,0.8s,baz=205,slow=6.4,SNR=3.4						
ZALV	**Zalesovo Beam**	**40.41**	**352**	P	**P**	**18 41 06.8**	**-0.2**
	0.5nm,0.4s,baz=163,slow=11,SNR=4.7						
WRA	**Warramunga Arr**	**52.69**	**129**	P	**P**	**18 42 43.2**	**-0.5**
	0.6nm,0.7s,baz=293,slow=9.3,SNR=5.3						
ASAR	**Alice Springs**	**54.64**	**133**	P	**P**	**18 42 58.3**	**+0.3**
	0.5nm,0.5s,baz=308,slow=6.9,SNR=19						
BRTR	**Keskin Array B**	**57.84**	**308**	P	**P**	**18 43 20.2**	**-0.6**
	0.6nm,0.7s,baz=120,slow=7.3,SNR=4.2						
GERES	**GERESS Array B**	**72.70**	**317**	P	**P**	**18 44 56.6**	**-0.3**
	0.4nm,0.7s,baz=70,slow=8.5,SNR=3.3						
TORD	**Torodi Ar. Bea**	**88.30**	**283**	P	**P**	**18 46 21.1**	**0.0**
	1.0nm,0.9s,baz=136,slow=3.6,SNR=3.9						

ISCJB ***27*** *18:37:38.2±0.4, 32°.18N±0°.02×115°.14W±0°.02, h9km±3km, Error ellipse: s-maj=2.9km s-min=2.6km az=158.6*
ECX ***27*** *18:37:40.9±0.9, 32°.14N×115°.20W, h7km, MD3.8, ML4.0*
MEX ***27*** *18:37:41.6±0.7, 32°.19N×115°.12W, h10km±76km, MD4.3*
NEIC ***27*** *18:37:41.0, 32°.15N×115°.22W, h7km, ML3.8(PAS), ML4.0(ECX), After ECX.*

ISC 27 18:37:39.3±1.0, 32°.14N±0°.02×115°.20W±0°.02, h6km±6km, n92, σ1§71/134, 2C-6D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MBIG	**Mexicali**	**0.27**	**1**	*i* P	**Pg**	**18 37 46.1**	**+1.6**
MBIG				*e*S	**Sg**	**18 37 48.6**	**+0.5**
MBIG	**Mexicali**	**0.27**	**1**	⇓*e*P	**Pg**	**18 37 46.2**	**+1.6**
CPBX	**Cerro Prieto**	**0.29**	**343**	*e*Pg	**Pg**	**18 37 46.3**	**+1.2**
CPBX				*e*Sg	**Sg**	**18 37 49.7**	**+0.8**
CPBX	**Cerro Prieto**	**0.29**	**343**	*e*P	**Pg**	**18 37 46.2**	**+1.2**
CPBX				⇑*e*		18 37 53.2	
CPBX				AML	AML	18 37 53.2	
	comp=N,55μm,0.5s						
EMSC	**East Mesa**	**0.62**	**17**	⇓*i*P	**Pg**	**18 37 52.0**	**+0.7**
SGL	**Mount Signal**	**0.67**	**319**	*i* P	**Pg**	**18 37 52.5**	**+0.3**
ECBX	**El Chinero**	**0.68**	**169**	⇓*e*P	**Pg**	**18 37 52.7**	**+0.4**
ECBX				*e*S	**Sg**	**18 38 02.0**	**+0.8**
YMD	**Yuma Desert**	**0.69**	**53**	⇓*i*P	**Pg**	**18 37 52.8**	**+0.2**
DREC	**Desert Rsrch C**	**0.69**	**343**	*e*P	**Pg**	**18 37 53.5**	**+0.8**
COA	**Coachella**	**0.72**	**5**	⇓*i*P	**Pg**	**18 37 53.3**	**+0.1**
WESC	**Westside Schoo**	**0.76**	**324**	*e*P	**Pg**	**18 37 54.3**	**+0.3**
YUH	**Yuha Desert**	**0.79**	**310**	⇓*i*P	**Pg**	**18 37 54.6**	**0.0**
RMX	**La Rumorosa**	**0.87**	**302**	*e*P	**Pg**	**18 37 55.8**	**-0.3**
RMX				*e*S	**Sg**	**18 38 08.0**	**+0.6**
IKP	**In-Ko-Pah, Jac**	**0.92**	**304**	P	**Pg**	**18 37 56.8**	**-0.2**
	baz=124,SNR=166						
IKP				S	**Sg**	**18 38 09.0**	**+0.1**
	baz=124						
IKP	**In-Ko-Pah, Jac**	**0.92**	**304**	*e*P	**Pg**	**18 37 56.9**	**-0.2**
SWSC	**Sam W. Stewart**	**0.95**	**328**	P	**Pg**	**18 37 56.4**	**-1.1**
	baz=148,SNR=62						
SWSC				S	**Sg**	**18 38 08.9**	**-0.9**
	baz=148						
GLA	**Glamis**	**0.96**	**19**	P	**Pg**	**18 37 56.6**	**-1.2**
	baz=200,SNR=183						
GLA				S	**Sg**	**18 38 09.5**	**-0.8**
	baz=200						
GLA	**Glamis**	**0.96**	**19**	*e*Pg	**Pg**	**18 37 56.6**	**-1.2**
GLA				*e*Sg	**Sg**	**18 38 09.1**	**-1.2**
ZAX	**El Zacaton**	**1.11**	**236**	*e*P	**Pg**	**18 37 60.0**	**-0.6**
ZAX				*e*S	**Sg**	**18 38 14.9**	**+0.1**
SPIG	**San Pedro Mart**	**1.11**	**192**	*e*P	**Pg**	**18 38 00.5**	**-0.3**
SPIG				*e*S	**Sg**	**18 38 15.6**	**+0.4**
SPIG	**San Pedro Mart**	**1.11**	**192**	*e*P	**Pg**	**18 38 00.4**	**-0.3**
SPIG				*e*S	**Sg**	**18 38 15.9**	**+0.7**
SPX	**San Pedro Mart**	**1.11**	**192**	*e*P	**Pg**	**18 38 00.5**	**-0.2**
SPX				*e*S	**Sg**	**18 38 16.0**	**+0.8**
SPX				⇑*e*		18 38 17.6	
SPX				AML	AML	18 38 17.6	
	comp=E,2μm,0.3s						
CBX	**Cerro Bola**	**1.25**	**278**	*e*P	**Pb**	**18 38 02.3**	**-1.0**
CBX				*e*S	**Sg**	**18 38 18.4**	**-1.1**
CBX	**Cerro Bola**	**1.25**	**278**	*e*P	**Pb**	**18 38 02.4**	**-1.0**
CBX				*e*S	**Sg**	**18 38 19.1**	**-0.5**
CBX				AML	AML	18 38 23.1	
	comp=E,4μm,0.3s						
CBX				*e*		18 38 23.1	
MONP2	**Monument Peak**	**1.27**	**306**	P	**Pn**	**18 38 01.9**	**-1.9**
	baz=126,SNR=118						
MONP2				S	**Sg**	**18 38 18.6**	**-1.7**
	baz=126						
TJIG	**Tijuana**	**1.28**	**284**	*e*P	**Pn**	**18 38 03.4**	**-0.4**
TJIG				*e*S	**Sb**	**18 38 19.4**	**-1.1**
ECNX	**Esteban Cantu**	**1.28**	**248**	*e*P	**Pn**	**18 38 02.8**	**-1.0**
BAR	**Barrett**	**1.35**	**294**	*e*Pn	**Pn**	**18 38 03.6**	**-1.1**
BAR				*e*Sn	**Sb**	**18 38 20.7**	**-1.9**
BAR	**Barrett**	**1.35**	**294**	*e*P	**Pn**	**18 38 03.7**	**-1.1**
PBX	**Punta Banda**	**1.35**	**253**	*e*P	**Pn**	**18 38 03.8**	**-1.0**
113A	**Mohawk Valley,**	**1.36**	**62**	*e*Pn	**Pn**	**18 38 02.9**	**-2.0**
113A				*e*Sn	**Sb**	**18 38 19.9**	**-3.0**
BC3	**Big Chuckawall**	**1.52**	**352**	P	**Pn**	**18 38 04.9**	**-2.2**
	baz=173,SNR=77						
Y12C	**Blythe**	**1.70**	**19**	P	**Pn**	**18 38 07.5**	**-2.0**
	baz=200,SNR=48						
Y12C	**Blythe**	**1.70**	**19**	*e*Pn	**Pn**	**18 38 07.7**	**-1.8**
Y12C				*e*Sn	**Sn**	**18 38 30.5**	**-1.1**
109C	**Camp Elliot, M**	**1.77**	**295**	P	**Pn**	**18 38 08.8**	**-1.6**
	baz=114,SNR=42						
109C				S	**Sn**	**18 38 31.8**	**-1.5**
	baz=114						
TPFO	**Pinon Flats**	**1.80**	**325**	P	**Pn**	**18 38 08.9**	**-2.1**
	baz=144,SNR=17						
PFO	**Pinyon Flats O**	**1.81**	**325**	*e*Pn	**Pn**	**18 38 08.8**	**-2.2**
PFO				*e*Sn	**Sn**	**18 38 30.4**	**-4.0**
BELC	**Belle Mtn. Jos**	**1.97**	**340**	P	**Pn**	**18 38 11.3**	**-2.1**
	baz=160						
IRM	**Iron Mountain**	**2.01**	**1**	P	**Pn**	**18 38 11.9**	**-1.9**
	baz=182						
214A	**Organ Pipe Nat**	**2.04**	**95**	P	**Pn**	**18 38 12.1**	**-2.0**
	baz=276,SNR=26						
214A				Sb	**Sb**	**18 38 43.0**	**+0.7**
	baz=276						
MURC	**Murrieta**	**2.22**	**311**	P	**Pn**	**18 38 15.0**	**-1.7**
	baz=131,SNR=18						
PDMCI	**Parker Dam,Lak**	**2.33**	**22**	P	**Pn**	**18 38 16.6**	**-1.6**
	baz=203						
Y14A	**Wickenburg**	**2.57**	**45**	*e*Pn	**Pn**	**18 38 20.9**	**-0.6**
GMRC	**Granite Mounta**	**2.67**	**352**	P	**Pn**	**18 38 20.9**	**-1.9**
	baz=172,SNR=13						
NEE2	**Needles Airpor**	**2.67**	**10**	P	**Pn**	**18 38 21.0**	**-1.7**
	baz=191						
LDFC	**Landfair**	**2.93**	**1**	*e*Pn	**Pn**	**18 38 24.5**	**-2.0**
BFSC	**Mount Baldy Ra**	**2.94**	**316**	Sb	**Sb**	**18 39 09.6**	**+1.3**
	baz=135						
CIS	**Catalina Islan**	**2.98**	**296**	Sb	**Sb**	**18 39 11.0**	**+1.4**
	baz=114						
FMP	**Fort Macarthur**	**3.04**	**302**	S	**Sn**	**18 39 03.3**	**-1.2**
	baz=120						
RRX	**Edison Barstow**	**3.11**	**332**	P	**Pn**	**18 38 27.9**	**-1.0**
	baz=151						
W13A	**Hualapai Mount**	**3.15**	**20**	*e*Pn	**Pn**	**18 38 28.5**	**-1.1**
W13A				*e*Sn	**Sb**	**18 39 14.0**	**-0.5**
MWC	**Mount Wilson**	**3.17**	**312**	*e*Pn	**Pn**	**18 38 29.1**	**-0.8**
MWC				*e*Sg	**Sb**	**18 39 16.9**	**+1.8**
PASC	**Pasadena Art C**	**3.22**	**310**	*e*Pn	**Pn**	**18 38 27.3**	**-3.1**
PASC				*e*Sg	**Sb**	**18 39 18.4**	**+2.0**
DECC	**Green Verdugo**	**3.37**	**310**	Sb	**Sb**	**18 39 22.2**	**+1.6**
	baz=128						
GSC	**Goldstone, Bar**	**3.42**	**337**	*e*Pn	**Pn**	**18 38 32.8**	**-0.5**
GSC				*e*Pg	**Pg**	**18 38 45.1**	**+0.2**
OSI	**Osito Audit: C**	**3.84**	**311**	Sb	**Sb**	**18 39 35.7**	**+1.3**
	baz=129						
OSI	**Osito Audit: C**	**3.84**	**311**	*e*Pn	Pn	18 38 33.6	-5.4
OSI				*e*Sg	**Sb**	**18 39 36.4**	**+2.1**
X16A	**Lo Mia Camp, P**	**3.88**	**53**	*e*Pn	**Pn**	**18 38 39.4**	**-0.3**
X16A				*e*Sg	**Sg**	**18 39 41.5**	**-2.6**
SHPR	**Sheep Range**	**4.35**	**0**	*e*Pn	**Pn**	**18 38 46.1**	**0.0**
ISA	**Isabella, Lake**	**4.44**	**323**	*e*Pn	**Pn**	**18 38 46.8**	**-0.5**
ISA				*e*Pg	**Pg**	**18 39 03.9**	**-0.5**
ISA				*e*Sg	**Sg**	**18 39 59.6**	**-2.4**
DAC	**Darwin (Calif)**	**4.58**	**335**	*e*Pn	**Pn**	**18 38 47.9**	**-1.3**
DAC				*e*Pg	**Pg**	**18 39 06.7**	**-0.3**
WUAZ	**Wupatki**	**4.63**	**42**	*e*Pn	**Pn**	**18 38 50.6**	**+0.6**
WUAZ				*e*Pg	**Pg**	**18 39 07.8**	**-0.3**
WUAZ				*e*Sg	**Sg**	**18 40 07.8**	**-0.4**
TPNV	**Topopah Spring**	**4.87**	**350**	*e*Pn	**Pn**	**18 38 53.2**	**-0.1**
TPNV				*e*Pg	**Pg**	**18 39 13.6**	**+0.9**
TPNV				*e*Lg	Lg	18 40 24.1	
U15A	**North Rim**	**4.91**	**29**	*e*Pn	**Pn**	**18 38 54.3**	**+0.4**
U15A				*e*Sg	**Sg**	**18 40 16.9**	**-0.1**
X18A	**Snowflake**	**5.00**	**60**	*e*Pn	**Pn**	**18 38 54.6**	**-0.4**
319A	**Douglas**	**5.10**	**97**	*e*Pn	**Pn**	**18 38 57.2**	**+0.9**
319A				*e*Pg	**Pg**	**18 39 19.5**	**+2.4**
319A				*e*Sg	**Sg**	**18 40 19.0**	**-4.1**
LCMT	**Little Creek M**	**5.12**	**18**	*e*Pn	**Pn**	**18 38 57.0**	**+0.3**
KNB	**Kanab**	**5.25**	**21**	*e*Pn	**Pn**	**18 38 58.9**	**+0.5**
W18A	**Petrified Fore**	**5.44**	**55**	*e*Pn	**Pn**	**18 39 01.7**	**+0.6**
W18A				*e*Sg	**Sg**	**18 40 33.4**	**-0.6**
CCUT	**Cedar City**	**5.61**	**15**	*e*Pn	**Pn**	**18 39 04.0**	**+0.6**
CCUT				*e*Sg	**Sg**	**18 40 37.5**	**-1.8**
PKCU	**Pink Cliffs**	**5.80**	**23**	*e*Pn	**Pn**	**18 39 06.5**	**+0.4**
PKCU				*e*Sg	**Sb**	**18 40 37.4**	**+6.5**
R11A	**Troy Canyon, C**	**6.20**	**357**	*e*Pn	**Pn**	**18 39 12.0**	**+0.4**
R11A				*e*Pg	**Pg**	**18 39 36.0**	**-2.1**
MTPU	**Mount Pierson**	**6.38**	**22**	*e*Pn	**Pn**	**18 39 15.9**	**+1.7**
MTPU				*e*ScP	**ScP**	**18 49 43.4**	**-1.0**
PSUT	**Pine Spring**	**6.47**	**9**	*e*Pn	**Pn**	**18 39 15.5**	**+0.3**
NV01	**Mina Array Sit**	**6.77**	**339**	*e*Pg	**Pg**	**18 39 49.8**	**+0.9**
MSU	**Marysvale**	**6.82**	**20**	*e*Pn	**Pn**	**18 39 17.6**	**-2.5**
SAO	**San Andreas Ge**	**6.92**	**314**	*e*Pg	**Pg**	**18 39 49.7**	**-2.1**
BNM	**Barren Site**	**7.46**	**72**	*e*Pn	**Pn**	**18 39 27.3**	**-1.6**
Q16A	**Castle Valley**	**7.52**	**25**	*e*Pn	**Pn**	**18 39 28.0**	**-1.6**
PV05	**Paradox Valley**	**7.75**	**38**	*e*Pn	**Pn**	**18 39 32.4**	**-0.4**
ANMO	**Albuquerque**	**7.82**	**67**	*e*Pn	**Pn**	**18 39 32.3**	**-1.4**
ANMO				*e*Pg	**Pg**	**18 40 10.9**	**+1.9**
N16A	**Rees Ranch, Co**	**9.24**	**18**	*e*Sn	**Sn**	**18 41 33.1**	**-4.5**
PTU	**Portage**	**10.04**	**12**	*e*Sn	**Sn**	**18 41 59.3**	**+2.1**
PTU				*e*Lg	Lg	18 43 08.1	
T25A	**Trinidad**	**10.19**	**58**	*e*Pn	**Pn**	**18 40 05.2**	**-1.1**
TX31	**Lajitas Ar. Si**	**10.31**	**103**	*e*Pn	**Pn**	**18 40 09.6**	**+1.7**
REDW	**Red Top Meadow**	**11.72**	**16**	*e*Pn	**Pn**	**18 40 27.6**	**+0.4**
GCMT	**Greycliff**	**14.29**	**16**	*e*Pn	**Pn**	**18 41 05.8**	**+3.6**
SEPW	**September Lobe**	**15.04**	**341**	*e*Sn	**Sn**	**18 44 05.4**	**+6.0**
CDMR	**Cedar Moraine**	**16.06**	**344**	*e*Sn	**Sn**	**18 44 24.6**	**+0.7**
EGMT	**Eagleton**	**16.39**	**13**	*e*Sn	**S**	**18 44 49.5**	**+4.7**
EGMT				*e*ScP	**ScP**	**18 49 58.1**	**+0.5**
MIAR	**Mount Ida**	**18.23**	**77**	*e*ScP	**ScP**	**18 50 02.6**	**+1.0**
JSC	**Jenkinsville**	**28.40**	**76**	*e*PP	PP	18 44 42.0	+3.4

SKO ***27*** *18:39:04.9, 41°.78N×22°.91E, h2km*

BEO 27 18:39:05.1±0.4, 41°.80N×22°.83E, h0km, M1.4/4, 1C, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VAY	**Valandovo**	**0.52**	**202**	*i* P	Pg	18 39 14.9	-0.1
VAY				*i* Sg	Sg	18 39 21.7	0.0
VAY				*e*Lg	Lg	18 39 21.8	
	comp=E,43nm,0.5s						
VAY				*e*Lg	Lg	18 39 21.8	
	comp=N,26nm,0.4s						
VAY	**Valandovo**	**0.52**	**202**	*e*Pg	Pg	18 39 14.7	-0.3
VAY				*e*Sg	Sg	18 39 21.4	-0.3
BARS	**Barje**	**1.26**	**324**	*e*Pg	Pg	18 39 27.9	-1.4
BARS				*e*Sg	Sg	18 39 45.1	-0.6
PLD	**Plovdiv**	**1.43**	**77**	*e*Sg	Sg	18 39 50.4	-0.6
ZAPS	**Zavoj**	**1.48**	**354**	*e*Pg	Pn	18 39 31.8	-1.2
ZAPS				*e*Sg	Sg	18 39 51.9	-0.8

ISCJB ***27*** *18:43:13.4±0.7, 32°.15N±0°.02×115°.11W±0°.03, h13km±5km, Error ellipse: s-maj=4.7km s-min=4.0km az=22.5*
NEIC ***27*** *18:43:15.3, 32°.13N×115°.18W, h8km, ML2.7(PAS), ML2.9(ECX), After ECX.*
ECX ***27*** *18:43:15.3±0.6, 32°.13N×115°.18W, h8km, MD2.8, ML2.9*

ISC 27 18:43:13.8±1.0, 32°.12N±0°.02×115°.16W±0°.03, h13km±9km, n25, σ1§29/37, 2C-5D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CPBX	**Cerro Prieto**	**0.32**	**338**	*e*P	**Pg**	**18 43 20.7**	**+0.4**
CPBX				*e*S	**Sg**	**18 43 25.9**	**+1.2**
CPBX				⇓*e*		18 43 29.2	
CPBX				AML	AML	18 43 29.2	
	comp=N,4μm,0.2s						
EMSC	**East Mesa**	**0.63**	**14**	⇓*i*P	**Pg**	**18 43 26.4**	**+0.2**
ECBX	**El Chinero**	**0.66**	**172**	*e*P	**Pg**	**18 43 26.8**	**+0.2**
ECBX				*e*S	**Sg**	**18 43 36.1**	**+0.9**
ECBX				⇓*e*		18 43 37.5	
ECBX				AML	AML	18 43 37.5	
	comp=E,701nm,0.3s						
SGL	**Mount Signal**	**0.71**	**318**	⇑*i*P	**Pg**	**18 43 27.5**	**-0.1**
COA	**Coachella**	**0.74**	**3**	⇓*i*P	**Pg**	**18 43 28.4**	**+0.2**
YUH	**Yuha Desert**	**0.83**	**309**	⇑*i*P	**Pg**	**18 43 29.3**	**-0.6**
RMX	**La Rumorosa**	**0.91**	**302**	*e*P	**Pg**	**18 43 30.4**	**-1.2**
RMX				*e*S	**Sg**	**18 43 43.3**	**-0.2**
IKP	**In-Ko-Pah, Jac**	**0.96**	**304**	*e*P	**Pg**	**18 43 31.7**	**-0.7**
GLA	**Glamis**	**0.97**	**17**	*e*Pg	**Pg**	**18 43 30.9**	**-1.7**
GLA				*e*Pn	**Pb**	**18 43 31.2**	**-1.4**
GLA				*e*Sg	**Sg**	**18 43 42.8**	**-2.4**
SPIG	**San Pedro Mart**	**1.10**	**194**	*e*P	**Pg**	**18 43 34.6**	**-0.6**
SPIG				*e*S	**Sg**	**18 43 49.3**	**-0.3**
SPX	**San Pedro Mart**	**1.10**	**194**	*e*P	**Pg**	**18 43 34.7**	**-0.4**
SPX				*e*S	**Sg**	**18 43 49.8**	**+0.2**
ZAX	**El Zacaton**	**1.12**	**238**	*e*P	**Pg**	**18 43 34.5**	**-1.0**
ZAX				*e*S	**Sg**	**18 43 50.2**	**0.0**
CBX	**Cerro Bola**	**1.29**	**279**	*e*P	**Pn**	**18 43 36.9**	**-0.9**
CBX				*e*S	**Sb**	**18 43 54.4**	**-0.2**
CBX				AML	AML	18 43 55.7	
	comp=N,278nm,0.3s						
CBX				⇓*e*		18 43 55.7	
ECNX	**Esteban Cantu**	**1.31**	**250**	*e*P	**Pn**	**18 43 38.0**	**0.0**
113A	**Mohawk Valley,**	**1.34**	**61**	*e*Pn	**Pn**	**18 43 37.2**	**-1.2**
113A				*e*Sn	**Sb**	**18 43 53.8**	**-2.3**
BAR	**Barrett**	**1.39**	**294**	*e*Pn	**Pn**	**18 43 38.2**	**-0.8**
BAR				*e*Sn	**Sb**	**18 43 56.6**	**-0.9**
Y12C	**Blythe**	**1.71**	**18**	*e*Pn	**Pn**	**18 43 45.3**	**+1.9**
PFO	**Pinyon Flats O**	**1.84**	**324**	*e*Pn	**Pn**	**18 43 43.5**	**-1.8**
PFO				*e*Sn	**Sn**	**18 44 10.6**	**+1.9**
Y14A	**Wickenburg**	**2.56**	**44**	*e*Pn	**Pn**	**18 43 53.6**	**-1.6**
W13A	**Hualapai Mount**	**3.15**	**19**	*e*Pn	**Pb**	**18 44 10.0**	**0.0**
X16A	**Lo Mia Camp, P**	**3.87**	**53**	*e*Pn	**Pn**	**18 44 13.0**	**-0.2**
X16A				*e*Lg	Lg	18 45 19.7	
WUAZ	**Wupatki**	**4.63**	**42**	*e*Pn	**Pn**	**18 44 25.3**	**+1.6**
CRGC	**Crocker Grade**	**4.91**	**311**	*e*Sg	**Sb**	**18 45 39.7**	**+0.7**
X18A	**Snowflake**	**4.98**	**60**	*e*Pn	**Pn**	**18 44 29.1**	**+0.6**
LCMT	**Little Creek M**	**5.13**	**17**	*e*Pg	**Pb**	**18 44 47.0**	**+3.5**

NIED ***27*** *18:45:00, 39°.00N×144°.50E, h5km, Mw3.8 Best double couple: M0:4.95000×10^14 NP1:φs6.00000°, δ21.00000°, λ-81.00000°. NP2:φs177.00000°, δ69.00000°, λ-93.00000°.*
IDC ***27*** *18:45:27.9±1.4, 38°.81N×144°.70E, h0km, mb3.7/6, mb1 3.9/10, mb1mx3.5/59, mbtmp3.8/10, ML3.4/3, MS3.5/1, Ms1 3.5/1, ms1mx2.5/36, Error ellipse: s-maj=34.0km s-min=21.8km az=153.0*
ISCJB ***27*** *18:45:30.1±0.7, 39°.05N±0°.05×144°.55E±0°.06, h19km, mb3.7/6, MS3.5/1, Error ellipse: s-maj=8.4km s-min=5.5km az=44.0*
JMA ***27*** *18:45:31.6±0.3, 38°.97N×144°.53E, h48km, M3.9*

ISC 27 18:45:31.3±1.1, 38°.99N±0°.07×144°.58E±0°.08, h19km, n28, σ1§72/32, mb3.8/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**2.22**	**286**	P	**Pn**	**18 46 06.7**	**-0.4**
MIYJ				*e*S	**Sn**	**18 46 32.4**	**-1.7**
OFUJ	**Ofunato**	**2.27**	**273**	P	**Pn**	**18 46 07.1**	**-0.7**
OFUJ

KCTX	Karacabey (Bur	1.30	336	*e*PN	Pg	18 47 35.8	-0.5
GEMT	Gemlik	1.36	4	*e*PN	Pg	18 47 37.1	-0.2
GONE	Gonen-Balikesi	1.43	313	*e*PN	Pg	18 47 38.7	-0.1
ADVT	Abdulvahap	1.45	21	*e*PN	Pn	18 47 38.2	-0.1
ADVT	Abdulvahap	1.45	21	*e*Pn	Pn	18 47 38.2	-0.1
AYDB	Zeytinkoy-Aydi	1.46	219	*e*PN	Pn	18 47 38.6	+0.1
AYDB	Zeytinkoy-Aydi	1.46	219	*e*Pn	Pn	18 47 38.6	+0.1
ARMT	Armutlu	1.49	354	*e*PN	Pn	18 47 39.0	+0.1
ARMT	Armutlu	1.49	354	*e*Pn	Pn	18 47 39.0	+0.1
EDC	Edincik	1.56	324	*e*PN	Pb	18 47 40.5	-0.3
EDC	Edincik	1.56	324	*e*Pn	Pb	18 47 40.5	-0.3
ISP	Isparta	1.70	137	*e*PN	Pn	18 47 41.6	-0.3
ISP	Isparta	1.70	137	*e*Pn	Pn	18 47 41.6	-0.3
GULT	Gulveren	1.75	39	*e*PN	Pn	18 47 42.5	-0.1
GULT	Gulveren	1.75	39	*e*Pn	Pn	18 47 42.5	-0.1
SVRH	Sivrihisar-ESK	1.95	78	*e*PN	Pn	18 47 45.0	-0.2
ISK	Istanbul-Kandi	1.98	0	*e*PN	Pn	18 47 46.1	+0.4
ISK	Istanbul-Kandi	1.98	0	*e*Pn	Pn	18 47 46.1	+0.4
BGKT	Bogazkoy	2.11	354	*e*PN	Pn	18 47 48.0	+0.6
BGKT	Bogazkoy	2.11	354	*e*Pn	Pn	18 47 48.0	+0.6
RKY	Sarkoy-Tekirda	2.16	319	*e*PN	Pn	18 47 49.0	+0.8
RKY	Sarkoy-Tekirda	2.16	319	*e*Pn	Pn	18 47 49.0	+0.8
KLYT	Kilyos	2.17	360	*e*PN	Pn	18 47 48.8	+0.6
KLYT	Kilyos	2.17	360	*e*Pn	Pn	18 47 48.8	+0.6
CTKS	Kestanelik-??a	2.19	349	*e*PN	Pn	18 47 50.0	+1.5
CTKS	Kestanelik-??a	2.19	349	*e*Pn	Pn	18 47 50.0	+1.5
KIZT	Kizilcal	2.21	94	*e*PN	Pn	18 47 48.6	-0.3
CTYL	Yalikoy Yolu	2.46	346	*e*PN	Pn	18 47 53.5	+1.3
CTYL	Yalikoy Yolu	2.46	346	*e*Pn	Pn	18 47 53.5	+1.3

BJI ***27*** *18:47:17.8, 4˚.60S×144˚.55E, h139km, mb4.9/65, mB5.1/39*
MOS ***27*** *18:47:20.6±0.9, 4˚.33S×144˚.02E, h129km, mb4.9/44, Error ellipse: s-maj=9.6km s-min=5.6km az=106.7*
ISCJB ***27*** *18:47:21.3±0.6, 4˚.34S±0˚.02×144˚.05E±0˚.03, h135km±5km, mb4.9/143, Error ellipse: s-maj=4.5km s-min=3.7km az=171.2*
NEIC ***27*** *18:47:22.9±0.1, 4˚.35S×143˚.99E, mb5.0/68, Error ellipse: s-maj=4.2km s-min=3.3km az=96.0*
GCMT ***27*** *18:47:22.9±0.1, 4˚.45S×144˚.03E, h139km, MW5.3/123, Moment Tensor Solution. s98,c157; s123,c220; Duration: 1ŝ1 Moment tensor: Scale 10^17^Nm; M_{rr}0.68±.02; $M_{\theta\theta}$0.06±.02; $M_{\phi\phi}$-0.73±.02; $M_{r\theta}$-0.31±.01; $M_{\theta\phi}$-0.14±.02; $M_{\phi r}$0.94±.01; Best double couple: $M_0$1.22800×10^17^ NP1:ϕ_s348.00000°, δ73.00000°, λ75.00000°. NP2:ϕ_s210.00000°, δ22.00000°, λ130.00000°. Principal axes: T 1.2480, Plg59.0000°, Azm237.0000°; N -0.0400, Plg14.0000°, Azm352.0000°; P -1.2080, Plg27.0000°, Azm89.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
IDC ***27*** *18:47:22.7±0.6, 4˚.46S×144˚.00E, h138km±5km, mb4.5/25, mb1 4.6/27, mb1mx4.5/35, mbtmp4.9/27, MS4.0/15, Ms1 4.0/15, ms1mx3.8/30 Error ellipse: s-maj=10.1km s-min=6.6km az=85.0*
DJA ***27*** *18:47:24.8±0.4, 4˚.5±3˚×14˚.4E±˚, h138km±4km, M5.3/56, mb5.2/56, mB5.7/39, MLv5.5/3, Mw(mB)5.2/39, Mwp5.6/1*
ISC 27 18:47:22.3±0.3, 4˚.40S±0˚.03×144˚.07E±0˚.04, h135km±2km, h135km:pP-P,n348,σ1ŝ39/443, mb4.9/141, 12C-8D, Near north coast of New Guinea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAY	**Jayapura**	**3.85**	**299**	P	**Pn**	**18 48 19.6**	**-0.7**
	8.7nm,0.3s,baz=101,slow=20,SNR=132						
JAY				S	**Sn**	**18 49 03.9**	**-1.3**
	2.2nm,0.3s,baz=272,slow=23,SNR=6.0						
JAY	**Jayapura**	**3.85**	**299**	P	**Pn**	**18 48 19.5**	**-0.7**
MANU	**Manus Island**	**4.04**	**55**	*e*Pn	**Pn**	**18 48 25.2**	**+2.4**
GENI	**Genyem**	**4.29**	**295**	P	**Pn**	**18 48 25.7**	**-0.4**
PMG	**Port Moresby**	**5.84**	**148**	P	**Pn**	**18 48 47.0**	**+0.2**
	66nm,0.3s,baz=9.3,slow=4.7,SNR=223						
PMG				S	**Sn**	**18 49 49.7**	**-3.0**
	199nm,0.3s,baz=318,slow=20,SNR=15						
PMG				LR	LR	18 51 31.5	
	comp=Z,4μm,19.3s,baz=334,slow=43						
PMG	**Port Moresby**	**5.84**	**148**	*ce*P	**Pn**	**18 48 46.5**	**-0.3**
PMG				pmax	pmax		
	comp=Z,4μm,1.2s						
PMG	**Port Moresby**	**5.84**	**148**	*e*Pn	**Pn**	**18 48 46.6**	**-0.1**
PMG				S	**Sn**	**18 49 49.7**	**-3.0**
RABL	**Rabaul**	**8.07**	**89**	*e*Pn	**Pn**	**18 49 17.6**	**+0.8**
COEN	**Coen**	**9.53**	**185**	P	**Pn**	**18 49 38.0**	**+1.6**
	baz=9.6,SNR=24						
COEN	**Coen**	**9.53**	**185**	*e*Pn	**Pn**	**18 49 40.1**	**+3.6**
RKPI	**Ransiki, Papua**	**10.29**	**286**	P	**Pn**	**18 49 47.1**	**+0.5**
FAKI	**Fak Fak**	**11.89**	**277**	P	**Pn**	**18 50 05.8**	**-2.0**
	comp=Z,105nm,1.1s,comp=Z,1μm						
FAKI	**Fak Fak**	**11.89**	**277**	*e*Pn	**Pn**	**18 50 05.8**	**-2.0**
SWI	**Sorong**	**13.27**	**285**	P	**Pn**	**18 50 25.8**	**+0.1**
	comp=Z,165nm,0.7s,comp=Z,2μm						
KDU	**Kakadu**	**14.11**	**234**	P	**Pn**	**18 50 36.8**	**+0.5**
	baz=14,SNR=43						
MSAI	**Masohi**	**15.14**	**273**	P	**Pn**	**18 50 49.8**	**+0.4**
MTN	**Manton Dam**	**15.29**	**236**	P	**Pn**	**18 50 50.5**	**-0.7**
	baz=15,SNR=57						
MTN	**Manton Dam**	**15.29**	**236**	*e*Pn	**Pn**	**18 50 51.5**	**+0.4**
	comp=Z,902nm,1.5s						
CTAO	**Charters Tower**	**15.73**	**172**	*e*P	**P**	**18 50 58.3**	**+0.4**
CTAO				pmax	pmax		
	comp=Z,104nm,0.8s						
CTAO	**Charters Tower**	**15.73**	**172**	*e*Pn	**P**	**18 50 58.3**	**+0.4**
	comp=Z,104nm,0.8s						
HNR	**Honiara**	**16.53**	**108**	P	**Pn**	**18 51 06.2**	**-0.3**
	comp=Z,18nm,0.3s,baz=186,slow=1.9,SNR=27						
HNR	**Honiara**	**16.53**	**108**	*e*Pn	**Pn**	**18 51 06.0**	**-0.5**
	comp=Z,602nm,1.3s						
QIS	**Mount Isa**	**16.63**	**195**	P	**P**	**18 51 07.8**	**0.0**
	baz=17,SNR=128						
LBMI	**Labuha**	**16.97**	**282**	P	**Pn**	**18 51 13.1**	**+1.3**
	comp=Z,140nm,1.2s,comp=Z,4μm						
PATS	**Pohnpei**	**18.08**	**52**	P	**Pn**	**18 51 24.9**	**-0.2**
	baz=18,SNR=6.8						
PATS	**Pohnpei**	**18.08**	**52**	*e*P	**Pn**	**18 51 26.0**	**+1.0**
	comp=Z,1μm,1.7s						
WRAB	**Tennant Creek**	**18.11**	**211**	*c i*P	**P**	**18 51 24.6**	**+0.6**
WRAB				pmax	pmax		
	comp=Z,3μm,1.2s						
WRAB	**Tennant Creek**	**18.11**	**211**	*e*P	**P**	**18 51 24.3**	**+0.3**
	comp=Z,2μm,1.6s						
WB2	**Warramunga Arr**	**18.12**	**211**	*e*P	**P**	**18 51 24.5**	**+0.4**
	comp=Z,2μm,1.4s						
WR1	**Warramunga Arr**	**18.12**	**211**	*e*P	**P**	**18 51 24.6**	**+0.5**
	comp=Z,2μm,1.4s						
WR1				*e*S	**S**	**18 54 41.2**	**-3.8**
WRA	**Warramunga Arr**	**18.12**	**211**	P	**P**	**18 51 24.6**	**+0.4**
	comp=Z,43nm,0.3s,baz=40,slow=10.0,SNR=481						
WRA				S	**S**	**18 54 41.2**	**-3.8**
	baz=30,slow=22,SNR=15						
WRA				LR	LR	18 59 49.2	
	comp=Z,2μm,19.0s,baz=25,slow=41						
SANI	**Sanana**	**18.20**	**277**	P	**Pn**	**18 51 29.7**	**+3.1**
	comp=Z,85nm,0.7s,comp=Z,2μmcomp=Z,7μm						
SOEI	**Soe**	**20.35**	**254**	P	**P**	**18 51 49.7**	**+1.2**
	comp=Z,393nm,0.9s,comp=Z,7μm						
SOEI	**Soe**	**20.35**	**254**	*e*P	**P**	**18 51 48.8**	**+0.3**
	comp=Z,294nm,0.8s						
SOEI				*e*S	**S**	**18 55 27.9**	**-1.6**
KDI	**Kendari**	**21.40**	**270**	P	**P**	**18 51 58.9**	**-0.7**
	comp=Z,66nm,2.0s,comp=Z,2μm						
AS01	**Alice Springs**	**21.50**	**206**	*e*P	**P**	**18 52 00.2**	**-0.4**
AS31	**Alice Springs**	**21.52**	**206**	*e*P	**P**	**18 52 01.2**	**+0.4**
	comp=Z,96nm,1.3s						
AS31				*e*S	**S**	**18 55 50.2**	**-1.1**
ASAR	**Alice Springs**	**21.52**	**206**	P	**P**	**18 52 01.3**	**+0.5**
	comp=Z,77nm,0.5s,baz=29,slow=13,SNR=1306						
ASAR				S	**S**	**18 55 50.5**	**-0.8**
	comp=Z,68nm,1.1s,baz=24,slow=19,SNR=15						
ASAR				LR	LR	19 01 47.0	
	comp=Z,1μm,19.6s,baz=28,slow=40						
EIDS	**Eidsvold**	**21.91**	**163**	P	**P**	**18 52 06.9**	**+2.0**
	baz=22,SNR=31						
EIDS	**Eidsvold**	**21.91**	**163**	*e*P	**P**	**18 52 06.8**	**+2.0**
	comp=Z,266nm,1.5s						
RMQ	**Roma**	**22.41**	**169**	P	**P**	**18 52 12.4**	**+2.4**
	baz=23,SNR=13						
FITZ	**Fitzroy Crossi**	**22.59**	**232**	P	**P**	**18 52 10.7**	**-1.0**
	baz=23,SNR=927						
FITZ	**Fitzroy Crossi**	**22.59**	**232**	*e*P	**P**	**18 52 10.6**	**-1.2**
	comp=Z,506nm,0.6s						
MRSI	**Marisa**	**22.64**	**282**	P	**P**	**18 52 11.8**	**-0.5**
	comp=Z,103nm,0.7s,comp=Z,2μm						
CTBH	**Cotabato--PC H**	**22.91**	**300**	⇑*i*P	**P**	**18 52 14.0**	**-0.8**
BSSI	**Bau Bau, Buton**	**23.54**	**265**	P	**P**	**18 52 21.8**	**+1.1**
	comp=Z,159nm,1.4s,comp=Z,8μm						
BASI	**Baing, Sumba**	**24.00**	**255**	P	**P**	**18 52 25.6**	**+0.8**
	comp=Z,2μm,1.3s,comp=Z,18μm						
WSI	**Waingapu**	**24.16**	**256**	P	**P**	**18 52 26.9**	**+0.7**
	comp=Z,446nm,0.9s,comp=Z,6μm						
TTSI	**Tana Toraja**	**24.24**	**272**	P	**P**	**18 52 29.3**	**+2.3**
	comp=Z,84nm,1.8s,comp=Z,4μm						
SPSI	**Sidrap Palu**	**24.24**	**270**	P	**P**	**18 52 27.3**	**+0.3**
	comp=Z,55nm,0.8s,comp=Z,2μm						
KAPI	**Kappang**	**24.24**	**268**	P	**P**	**18 52 27.2**	**+0.2**
	comp=Z,32nm,0.7s,baz=118,slow=6.0,SNR=17						
KAPI	**Kappang**	**24.24**	**268**	*e*P	**P**	**18 52 26.2**	**-0.8**
	comp=Z,330nm,2.0s						
PCI	**Palu**	**24.45**	**277**	P	**P**	**18 52 30.9**	**+1.9**
	comp=Z,100nm,1.2s,comp=Z,5μm						
WRKA	**Warakurna**	**25.51**	**215**	P	**P**	**18 52 39.0**	**+0.6**
	baz=26,SNR=327						
PLAI	**Plampang**	**26.48**	**259**	P	**P**	**18 52 46.0**	**-1.3**
	comp=Z,50nm,1.1s,comp=Z,990nm						
ARMA	**Armidale**	**26.84**	**165**	P	**P**	**18 52 52.5**	**+2.1**
	baz=27,SNR=7.9						
ARMA	**Armidale**	**26.84**	**165**	*e*P	**P**	**18 52 52.6**	**+2.1**
	comp=Z,24nm,0.9s						
CMSA	**Cobar Meteorol**	**27.03**	**177**	P	**P**	**18 52 53.7**	**+1.7**
	baz=27,SNR=41						
STKA	**Stephens Creek**	**27.43**	**185**	P	**P**	**18 52 56.5**	**+1.0**
	comp=Z,66nm,0.7s,baz=356,slow=8.4,SNR=244						
STKA				LR	LR	19 05 51.2	
	comp=Z,983nm,18.4s,baz=9.2,slow=40						
STKA	**Stephens Creek**	**27.43**	**185**	P	**P**	**18 52 56.5**	**+1.0**
	baz=28,SNR=149						
STKA	**Stephens Creek**	**27.43**	**185**	*e*P	**P**	**18 52 56.1**	**+0.6**
	comp=Z,15nm,0.8s						
DZM	**Mont Dzumac**	**27.90**	**131**	*e*P	**P**	**18 52 59.2**	**-0.7**
	comp=Z,108nm,1.5s						
DZM				*e*S	**S**	**18 57 37.3**	**+3.4**
	comp=Z,244nm,27.4s						
DZM				*e*LQ	LQ	18 59 11.1	
	comp=Z,1μm,26.9s						
DZM				*e*LR	LR	19 00 23.8	
	comp=Z,2μm,26.5s						
DZM	**Mont Dzumac**	**27.90**	**131**	P	**P**	**18 53 00.8**	**+0.9**
	comp=Z,16nm,0.7s,baz=259,slow=10,SNR=15						
DZM	**Mont Dzumac**	**27.90**	**131**	*e*P	**P**	**18 52 59.2**	**-0.7**
	comp=Z,57nm,1.2s						
MBWA	**Marble Bar**	**28.92**	**233**	*e*P	**P**	**18 53 09.1**	**+0.2**
	comp=Z,173nm,1.4s						
BBOO	**Buckleboo**	**29.24**	**194**	P	**P**	**18 53 12.6**	**+1.0**
	baz=29,SNR=28						
BBOO	**Buckleboo**	**29.24**	**194**	*e*P	**P**	**18 53 12.0**	**+0.4**
	comp=Z,208nm,1.2s						
HTT	**Hallett**	**29.28**	**189**	P	**P**	**18 53 13.0**	**+1.0**
	baz=29,SNR=74						
YNG	**Young**	**30.01**	**173**	P	**P**	**18 53 20.4**	**+1.9**
	baz=30,SNR=11						
CAN	**Canberra**	**31.10**	**172**	*e*P	**P**	**18 53 29.3**	**+1.3**
CAN				pmax	pmax		
	comp=Z,57nm,1.4s						
CAN	**Canberra**	**31.10**	**172**	*e*P	**P**	**18 53 29.3**	**+1.3**
	comp=Z,57nm,1.4s						
CBIJ	**Chichi jima**	**31.37**	**357**	*e*P	**P**	**18 53 28.5**	**-1.9**
	comp=Z,227nm,1.4s						
JCJ	**Chichijima**	**31.37**	**357**	P	**P**	**18 53 28.8**	**-1.6**
	comp=Z,35nm,0.4s,baz=263,slow=13,SNR=6.1						
ARPS	**Mount Arapiles**	**32.28**	**183**	P	**P**	**18 53 40.3**	**+2.1**
	baz=32,SNR=41						
TOO	**Toolangi**	**33.04**	**178**	P	**P**	**18 53 47.4**	**+2.4**
	baz=33,SNR=7.6						
KMBL	**Kambalda**	**33.98**	**215**	P	**P**	**18 53 53.7**	**+0.6**
	baz=34,SNR=70						
GIRL	**Giralia**	**34.08**	**235**	P	**P**	**18 53 55.5**	**+1.3**
	baz=34,SNR=9.6						
MSVF	**Nonsavu**	**35.80**	**114**	⇑*e*P	**P**	**18 54 09.7**	**+0.7**
MSVF				pmax	pmax		
	comp=Z,29nm,1.3s						
TPUB	**Ta-pu**	**35.80**	**321**	*e*P	**P**	**18 54 08.2**	**-0.8**
	comp=Z,38nm,0.8s						
NACB	**Ninganchiao**	**35.86**	**323**	*e*P	**P**	**18 54 08.3**	**-1.1**
	comp=Z,81nm,1.0s						
MORW	**Morawa**	**36.16**	**224**	P	**P**	**18 54 12.3**	**+0.4**
	baz=36,SNR=47						
CISI	**Cisompet, Garu**	**36.19**	**263**	P	**P**	**18 54 11.8**	**-0.6**
	comp=Z,90nm,1.4s,comp=Z,1μm						
CISI	**Cisompet, Garu**	**36.19**	**263**	*e*P	**P**	**18 54 10.2**	**-2.2**
	comp=Z,74nm,0.9s						
LEM	**Lembang**	**36.35**	**264**	P	P	18 54 21.0	+7.1
	comp=Z,311nm,1.9s						
YHNB	**Yeheng**	**36.37**	**324**	*e*P	**P**	**18 54 14.6**	**+0.8**
	comp=Z,431nm,2.0s						
KLBR	**Kellerberrin**	**36.63**	**219**	P	**P**	**18 54 16.1**	**+0.2**
	baz=37,SNR=63						
BLDU	**Ballidu**	**36.67**	**222**	P	**P**	**18 54 16.6**	**+0.4**
	baz=37,SNR=96						
NWAO	**Narrogin (SRO)**	**37.86**	**218**	P	**P**	**18 54 26.9**	**+0.7**
	baz=38,SNR=14						
NWAO	**Narrogin (SRO)**	**37.86**	**218**	*e*P	**P**	**18 54 26.7**	**+0.5**
NWAO				pmax	pmax		
	comp=Z,285nm,1.8s						
NWAO	**Narrogin (SRO)**	**37.86**	**218**	*e*P	**P**	**18 54 26.7**	**+0.5**
	comp=Z,285nm,1.8s						
NWAO				*e*PP	**PP**	**18 55 51.1**	**-4.4**
PPBI	**Pangkal Pinang**	**37.93**	**272**	P	**P**	**18 54 28.2**	**+1.1**
	comp=Z,24nm,1.6s						
MOO	**Moorlands**	**37.98**	**176**	P	**P**	**18 54 29.7**	**+2.6**
	baz=38,SNR=4.4						
RKGY	**Rocky Gully**	**39.17**	**216**	P	**P**	**18 54 38.6**	**+1.4**
	baz=39,SNR=8.0						
JNU	**Nakatsue**	**39.36**	**342**	P	**P**	**18 54 38.5**	**-0.3**
	comp=Z,12nm,0.7s,baz=138,slow=2.9,SNR=18						
JNU	**Nakatsue**	**39.36**	**342**	*e*P	**P**	**18 54 38.2**	**-0.5**
	comp=Z,19nm,0.8s						
KASI	**Kota Agung**	**39.44**	**267**	P	**P**	**18 54 37.8**	**-1.8**
	comp=Z,94nm,0.9s,comp=Z,828nm						
QIZ	**Qiongzhong**	**40.96**	**306**	P	**P**	**18 54 52.5**	**+0.4**
QIZ				sP	**sP**	**18 55 37.0**	**-0.4**
QIZ				S	**S**	**19 00 53.0**	**-1.3**
QIZ				pmax	pmax		
	comp=Z,22nm,1.8s						
QIZ				pmax	pmax		
	comp=Z,130nm,6.3s						
OUZ	**Omahuta**	**41.05**	**142**	*e*P	**P**	**18 54 54.2**	**+1.6**
	comp=Z,186nm,1.8s						
MJAR	**Matsushiro Arr**	**41.10**	**353**	P	**P**	**18 54 52.0**	**-1.0**
	comp=Z,5.1nm,1.0s,baz=182,slow=9.5,SNR=9.6						
MAJO	**Matsushiro**	**41.10**	**353**	*e*P	**P**	**18 54 51.6**	**-1.4**
MAJO				pmax	pmax		
	comp=Z,28nm,1.3s						
MAJO	**Matsushiro**	**41.10**	**353**	*e*P	**P**	**18 54 51.6**	**-1.4**
	comp=Z,28nm,1.3s						
MJB9	**Matsu-Tunnel**	**41.10**	**353**	*e*P	**P**	**18 54 51.6**	**-1.5**
	comp=Z,6.9nm,1.3s						
MASI	**Maura Aman, Be**	**41.76**	**270**	P	**P**	**18 54 59.1**	**+0.3**
	comp=Z,125nm,0.7s,comp=Z,6μm						
NJ2	**Nanjing**	**43.47**	**328**	*e*P	**P**	**18 55 12.3**	**+0.1**
NJ2				pmax	pmax		
	comp=Z,18nm,1.1s						
TJN	**Taejon**	**43.48**	**340**	*ce*P	**P**	**18 55 13.3**	**+1.1**
PDSI	**Padang**	**43.69**	**273**	P	**P**	**18 55 12.9**	**-1.5**
	comp=Z,62nm,0.9s,comp=Z,4μm						
PPI	**Padang Panjang**	**43.80**	**274**	P	**P**	**18 55 14.3**	**-0.9**
	comp=Z,131nm,0.8s,comp=Z,917nm						
KSRS	**Korea Array**	**44.28**	**342**	P	**P**	**18 55 18.9**	**+0.4**
	comp=Z,18nm,0.8s,baz=159,slow=9.4,SNR=85						
KSRS				PcP	**PcP**	**18 57 01.2**	**+0.6**
	comp=Z,3.4nm,0.8s,baz=171,slow=4.1,SNR=6.6						
KSRS				ScP	**ScP**	**19 00 39.6**	**-0.6**
	comp=Z,0.4nm,0.4s,baz=150,slow=5.3,SNR=4.2						
KSRS				LR	LR	19 11 48.9	
	comp=Z,78nm,20.1s,baz=150,slow=33						
KS15	**Wonju Array Si**	**44.28**	**341**	*e*P	**P**	**18 55 19.1**	**+0.5**
KS15				*e*PcP	**PcP**	**18 57 01.2**	**+0.5**
KS15				*e*ScP	**ScP**	**19 00 39.6**	**-0.6**
KSAR	**Wonju Array Be**	**44.28**	**341**	P	**P**	**18 55 19.0**	**+0.4**
KSAR						18 57 01.2	
KSAR	**Wonju Array Be**	**44.28**	**341**	P	**P**	**18 55 18.9**	**+0.4**
KSAR				PcP	**PcP**	**18 57 01.2**	**+0.5**
KSAR				ScP	**ScP**	**19 00 39.6**	**-0.6**
KS01	**Wonju Array Si**	**44.31**	**341**	*e*P	**P**	**18 55 18.5**	**-0.3**
KS01				*e*PcP	**PcP**	**18 57 00.6**	**-0.2**
AFI	**Afiamalu**	**44.53**	**105**	LR	LR	19 11 34.0	
	comp=Z,189nm,20.3s,baz=280,slow=33						
INCN	**Inchon**	**44.72**	**340**	*e*P	**P**	**18 55 23.0**	**+0.8**
	comp=Z,35nm,0.8s						
MNSI	**Mandailing Nat**	**44.75**	**276**	P	**P**	**18 55 22.7**	**-0.1**
	comp=Z,34nm,0.8s						
WHN	**Wuhan**	**44.89**	**323**	⇓P	**P**	**18 55 25.5**	**+1.9**
WHN				S	S	19 02 01.5	+10
WHN				pmax	pmax		
	comp=Z,58nm,0.9s						
SKNT	**Sakolnakorn**	**44.94**	**299**	P	**P**	**18 55 24.4**	**+0.2**
	comp=Z,60nm,0.7s						
URZ	**Urewera**	**45.17**	**143**	P	**P**	**18 55 28.0**	**+2.3**
	comp=Z,9.5nm,0.5s,baz=257,slow=5.4,SNR=13						
URZ				LR	LR	19 15 17.3	
	comp=Z,185nm,18.5s,baz=325,slow=37						
BKZ	**Black Stump Fm**	**45.39**	**144**	*e*P	**P**	**18 55 29.4**	**+1.9**
	comp=Z,46nm,0.8s						
PSI	**Prapat**	**45.68**	**278**	*e*P	**P**	**18 55 29.1**	**-1.1**
PSI				*e**PP	**pP**	**18 55 59.7**	**-1.1**
PSI				pmax	pmax		
	comp=Z,33nm,0.9s						
PSI	**Prapat**	**45.68**	**278**	*e*P	**P**	**18 55 29.1**	**-1.1**
	comp=Z,33nm,0.9s						
PSI				*e*pP	**pP**	**18 55 59.7**	**-1.1**
RPZ	**Rata Peaks**	**45.83**	**153**	LR	LR	19 12 05.2	
	comp=Z,195nm,21.7s,baz=335,slow=32						
RPZ	**Rata Peaks**	**45.83**	**153**	*e*P	**P**	**18 55 31.4**	**+0.6**
	comp=Z,62nm,1.0s						
NONG	**Nongkai**	**46.12**	**300**	P	**P**	**18 55 33.5**	**+0.1**
	comp=Z,44nm,1.2s						
GSI	**Gunungsitoli**	**46.80**	**276**	P	**P**	**18 55 37.9**	**-1.0**
	comp=Z,50nm,0.8s						
GSI	**Gunungsitoli**	**46.80**	**276**	*e*P	**P**	**18 55 37.1**	**-1.8**
	comp=Z,35nm,0.8s						
COCO	**West Island**	**47.32**	**258**	*i* P	**P**	**18 55 45.9**	**+3.1**
PBKT	**Sadao Pong**	**47.42**	**297**	P	**P**	**18 55 46.1**	**+2.5**
	comp=Z,28nm,0.9s						
GYA	**Guiyang**	**47.45**	**312**	*e*P	**P**	**18 55 45.3**	**+1.4**
GYA				pP	pP	18 56 17.5	+2.8
GYA				sP	sP	18 56 33.0	+3.3
GYA				PcP	**PcP**	**18 57 12.5**	**+0.3**
GYA				PP	**PP**	**18 57 37.3**	**+0.8**
GYA				ScP	**ScP**	**19 00 53.0**	**-1.0**
GYA				S	**S**	**19 02 27.8**	**-0.6**
GYA				sS	sS	19 03 24.5	+2.7
GYA				pmax	pmax		
	comp=Z,20nm,1.0s						
GYA				pmax	pmax		
	comp=Z,120nm,6.2s						
LOEI	**Loei**	**47.53**	**298**	P	**P**	**18 55 42.2**	**-2.3**
	comp=Z,16nm,1.0s						
TIA	**Tai'an**	**47.63**	**330**	⇑P	**P**	**18 55 44.5**	**-0.4**
TIA				pmax	pmax		
	comp=Z,20nm,1.5s						
ENH	**Enshi**	**47.79**	**318**	*e*P	**P**	**18 55 46.2**	**-0.1**
	comp=Z,26nm,1.1s						
ENH				*e*pP	**pP**	**18 56 19.5**	**+2.4**
UTTA	**Uttaradit**	**48.24**	**298**	P	**P**	**18 55 50.8**	**+0.9**
	comp=Z,5.2nm,0.9s,comp=Z,56nm						
MLSI	**Meulaboh, Aceh**	**48.39**	**280**	P	**P**	**18 55 53.8**	**+2.6**
	comp=Z,91nm,1.1s						
NANT	**Nan**	**48.53**	**300**	P	**P**	**18 55 53.1**	**+0.9**
	comp=Z,8.8nm,0.8s						
LAMP	**Lampang**	**49.35**	**299**	P	**P**	**18 56 00.2**	**+1.8**
	comp=Z,5.5nm,0.7s						
CRAI	**Chiangrai**	**49.40**	**301**	P	**P**	**18 55 59.7**	**+0.9**
	comp=Z,145nm,1.5s						
KUR	**Kuril'sk**	**49.53**	**4**	*e*P	P	18 56 06.8	+7.5
KUR				pmax	pmax		
	comp=Z,8.0nm,0.6s						
USRK	**Ussuriysk Ar.**	**49.59**	**349**	P	**P**	**18 55 59.9**	**+0.2**
	comp=Z,13nm,0.8s,baz=170,slow=8.8,SNR=26						
USRK				LR	LR	19 12 44.7	
	comp=Z,105nm,20.9s,baz=152,slow=31						
SNY	**Shenyang**	**49.66**	**340**	⇓P	**P**	**18 56 01.0**	**+0.7**
SNY				pP	**pP**	**18 56 30.8**	**-0.5**
SNY				sP	**sP**	**18 56 45.8**	**-0.5**
SNY				pmax	pmax		
	comp=Z,27nm,0.6s						
KMI	**Kunming**	**49.72**	**308**	P	**P**	**18 56 03.0**	**+1.6**
KMI				pmax	pmax		
	comp=Z,34nm,0.5s						
KMI				pmax	pmax		
	comp=Z,190nm,4.2s						
CM01	**Chiang Mai Arr**	**49.90**	**298**	*e*P	**P**	**18 56 03.2**	**+0.6**
CM31	**Chiang Mai Arr**	**49.93**	**298**	*e*P	**P**	**18

TYV	Tymovskoe	55.06	359	eP	P	18 56 41.2	+1.2
TYV				pmax	pmax		
	comp=Z,22nm,1.0s						
LZH	Lanzhou	55.12	320	⇓P	P	18 56 42.5	+1.6
LZH				pP	pP	18 57 14.0	+1.4
LZH				sP	sP	18 57 31.8	+4.4
LZH				eS	S	19 04 15.5	+1.9
LZH				sS	sS	19 05 14.0	+5.8
LZH				SS	SS	19 07 56.0	-3.7
LZH				pmax	pmax		
	comp=Z,69nm,1.2s						
LZH				pmax	pmax		
	comp=Z,330nm,4.2s						
HIA	Hailar	57.49	341	eP	P	18 56 57.2	-0.1
HIA				pmax	pmax		
	comp=Z,22nm,1.0s						
HIA	Hailar	57.49	341	eP	P	18 56 57.2	-0.1
	comp=Z,22nm,1.0s						
PEA0	Petropavlovsk-	58.44	10	eP	P	18 57 04.0	+0.2
PETK	Petropavlovsk-	58.44	10	P	P	18 57 04.4	+0.5
	comp=Z,9.0nm,0.6s,baz=158,slow=6.4,SNR=14						
PETK				pP	pP	18 57 38.8	+2.9
	comp=Z,6.9nm,0.7s,baz=164,slow=6.4,SNR=3.9						
PETK				LR	LR	19 22 44.1	
	comp=Z,39nm,19.3s,baz=188,slow=36						
PETK	Petropavlovsk-	58.44	10	P	P	18 57 04.4	+0.5
PETK				*PP	pP	18 57 38.8	+2.9
PETK				pmax	pmax		
	comp=Z,10.0nm,0.6s						
PETK				pmax	pmax		
	comp=Z,7.0nm,0.7s						
PETK				MLR	MLR		
	comp=Z,39nm,19.3s						
PEA1	Petropavlovsk-	58.45	10	eP	P	18 57 04.4	+0.5
PEA1				epP	pP	18 57 38.8	+2.9
PET	Petropavlovsk	58.53	10	eP	P	18 57 04.6	+0.2
PET				e*PP	pP	18 57 37.2	+0.8
PET				eS	S	19 04 57.2	-0.2
PET				MLR	MLR		
	comp=Z,100nm,17.0s						
PET				MLR	MLR		
	comp=Z,100nm,16.0s						
SHL	Shillong	58.71	303	eP	P	18 57 07.0	+0.5
GTA	Gaotai	59.67	321	eP	P	18 57 13.5	+0.7
GTA				pP	pP	18 57 46.0	+1.1
GTA				sP	sP	18 58 02.5	+2.9
GTA				pmax	pmax		
	comp=Z,15nm,0.9s						
LSA	Lhasa	60.96	307	eP	P	18 57 22.9	+0.7
LSA				pmax	pmax		
	comp=Z,8.0nm,0.8s						
LSA	Lhasa	60.96	307	eP	P	18 57 22.9	+0.7
	comp=Z,7.7nm,0.8s						
ULN	Ulaanbaatar	61.34	332	c iP	P	18 57 24.6	+0.7
ULN				pmax	pmax		
	comp=Z,9.0nm,0.7s						
ULN	Ulaanbaatar	61.34	332	eP	P	18 57 24.0	0.0
	comp=Z,8.4nm,0.7s						
ULN				epP	PcP	18 58 00.9	-4.1
SONA0	Songino Array	61.62	332	eP	P	18 57 26.3	+0.5
	comp=Z,6.6nm,0.9s						
SONA0				epP	PcP	18 58 02.3	-3.8
SONM	Songino Array	61.62	332	P	P	18 57 26.3	+0.5
	comp=Z,3.5nm,0.6s,baz=154,slow=7.0,SNR=25						
SONM				pP	PcP	18 58 02.3	-3.8
	comp=Z,1.8nm,0.8s,baz=156,slow=10,SNR=2.1						
SONM				LR	LR	19 23 30.5	
	comp=Z,53nm,21.9s,baz=135,slow=35						
SONM	Songino Array	61.62	332	P	P	18 57 26.3	+0.5
SONM				*PP	PcP	18 58 02.3	-3.8
SONM				pmax	pmax		
	comp=Z,5.0nm,0.8s						
SONM				pmax	pmax		
	comp=Z,2.0nm,0.8s						
SONM				MLR	MLR		
	comp=Z,53nm,21.9s						
SONA1	Songino Array	61.62	332	eP	P	18 57 26.0	+0.2
CIT	Chita	61.91	339	eP	P	18 57 28.3	+0.7
CIT				e		18 57 59.8	
CIT				e		18 58 14.6	
CIT				pmax	pmax		
	comp=Z,51nm,1.9s						
KIP	Kipapa	62.24	63	ceP	P	18 57 33.3	+3.0
KIP				pmax	pmax		
	comp=Z,1μm,2.5s						
MA2	Magadan	64.00	4	P	P	18 57 41.1	-0.1
	comp=Z,8.2nm,0.8s,baz=178,slow=4.3,SNR=12						
GUN	Gumba	64.56	304	eP	P	18 57 46.3	+0.4
	comp=Z,58nm,0.7s						
ZAK	Zakamensk	64.87	332	eP	P	18 57 45.8	-1.3
ZAK				e		18 58 13.1	
ZAK				pmax	pmax		
	comp=Z,24nm,0.9s						
ZAK				pmax	pmax		
	comp=Z,10.0nm,1.1s						
KKN	Kakani	65.02	303	eP	P	18 57 49.1	+0.4
	comp=Z,56nm,0.8s						
DMN	Daman	65.10	303	eP	P	18 57 49.9	+0.6
	comp=Z,73nm,0.8s						
TLY	Talaya	65.61	334	eP	P	18 57 52.7	+0.9
TLY				eS	S	19 06 34.3	+7.7
TLY				pmax	pmax		
	comp=Z,15nm,1.1s						
TLY				MLR	MLR		
	comp=Z,66nm,15.0s						
TLY	Talaya	65.61	334	eP	P	18 57 52.1	+0.3
	comp=Z,11nm,0.9s						
GKN	Gorkha	65.62	303	eP	P	18 57 52.9	+0.4
	comp=Z,71nm,0.8s						
CASY	Casey	66.05	194	eP	P	18 57 54.2	0.0
	comp=Z,122nm,1.5s						
PPT2	Papeete2	66.15	107	eS	S	19 06 28.5	-5.9
	comp=Z,139nm,26.8s						
PPT2	Papeete2	66.15	107	eLR	LR	19 18 10.5	
	comp=Z,139nm,23.0s						
KOLN	Koldanda	66.42	303	eP	P	18 57 57.9	+0.2
	comp=Z,48nm,0.7s						
BOD	Bodaibo	66.59	343	eP	P	18 57 57.2	-0.6
BOD				pmax	pmax		
	comp=Z,10.0nm,1.1s						
TBI	Tubuai	66.67	113	eS	S	19 06 37.5	-2.9
	comp=Z,118nm,30.2s						
TBI	Tubuai	66.67	113	eLR	LR	19 18 14.3	
	comp=Z,278nm,39.5s						
MOY	Mondy	66.80	332	eP	P	18 58 00.4	+0.9
MOY				pmax	pmax		
	comp=Z,41nm,2.7s						
PYUN	Piuthan	67.03	303	eP	P	18 58 01.6	0.0
	comp=Z,72nm,0.8s						
YAK	Yakutsk	67.17	353	i P	P	18 58 01.8	+0.4
YAK				pmax	pmax		
	comp=Z,20nm,1.7s						
SEY	Seymchan	67.45	4	P	P	18 58 03.4	+0.2
	comp=Z,4.9nm,0.9s,baz=183,slow=6.7,SNR=10						
SEY	Seymchan	67.45	4	⇑iP	P	18 58 02.5	-0.7
WMQ	Urumqi	69.69	320	⇓iP	P	18 58 18.5	+0.8
WMQ				pP	pP	18 58 54.3	+3.6
WMQ				S	S	19 07 18.0	+2.3
WMQ				sS	sS	19 08 16.5	+3.9
WMQ				pmax	pmax		
	comp=Z,17nm,1.0s						
WMQ				pmax	pmax		
	comp=Z,97nm,3.6s						
WMQ				LR	LR		
	comp=Z,26nm,22.6s						
WMQ				LR	LR		
	comp=Z,17nm,21.2s						
WMQ				LR	LR		
	comp=Z,34nm,21.2s						
MIR	Mirnyy	71.29	199	i P	P	18 58 28.0	+1.2
MIR				pmax	pmax		
	comp=Z,12nm,1.2s						
VNDA	Vanda	73.68	176	P	P	18 58 41.7	+0.9
	comp=Z,19nm,0.8s,baz=329,slow=6.5,SNR=108						
VNDA				LR	LR	19 28 51.2	
	comp=Z,114nm,19.9s,baz=348,slow=34						
VNDA	Vanda	73.68	176	eP	P	18 58 41.4	+0.6
	comp=Z,22nm,0.8s						
BILL	Bilibino	73.94	9	i P	P	18 58 42.3	-0.1
BILL				pmax	pmax		
	comp=Z,5.0nm,1.2s						
SBA	Scott Base	74.37	175	eP	P	18 58 46.5	+1.7
SBA				pmax	pmax		
	comp=Z,101nm,1.8s						
SBA	Scott Base	74.37	175	eP	P	18 58 46.5	+1.7
	comp=Z,100nm,1.8s						
MK01	Makanchi Array	74.41	321	eP	P	18 58 45.4	-0.3
MK31	Makanchi Array	74.42	321	eP	P	18 58 45.9	+0.2
MK31	Makanchi Array	74.42	321	eP	P	18 58 45.9	+0.2
MK32	Makanchi Array	74.42	321	eP	P	18 58 46.0	+0.2
MK32				epP	pP	18 59 21.2	+2.1
MKAR	Makanchi Array	74.42	321	P	P	18 58 46.0	+0.2
	comp=Z,17nm,0.8s,baz=106,slow=7.2,SNR=123						
MKAR				pP	pP	18 59 21.2	+2.1
	comp=Z,3.0nm,0.7s,baz=100,slow=6.7,SNR=2.2						
MKAR	Makanchi Array	74.42	321	P	P	18 58 46.0	+0.2
MKAR				*PP	pP	18 59 21.2	+2.1
MKAR				pmax	pmax		
	comp=Z,18nm,0.8s						
MKAR				pmax	pmax		
	comp=Z,3.0nm,0.7s						
MAKZ	Makanchi	74.63	321	eP	P	18 58 46.6	-0.3
MAKZ				pmax	pmax		
	comp=Z,30nm,1.0s						
MAKZ	Makanchi	74.63	321	eP	P	18 58 46.6	-0.3
	comp=Z,30nm,1.0s						
ZAA0	Zalesovo Array	76.12	328	eP	P	18 58 54.1	-1.1
ZALV	Zalesovo Beam	76.12	328	P	P	18 58 55.0	-0.3
	comp=Z,16nm,0.6s,baz=115,slow=5.3,SNR=76						
ZALV				pP	pP	18 59 29.6	+0.9
	comp=Z,5.0nm,0.8s,baz=107,slow=5.4,SNR=3.1						
ZALV				LR	LR	19 31 48.1	
	comp=Z,98nm,21.2s,baz=68,slow=35						
ZAA1	Zalesovo Array	76.13	328	eP	P	18 58 55.0	-0.3
ZAA1				epP	pP	18 59 29.6	+0.9
KSH	Kashi	76.15	312	P	P	18 58 57.5	+1.6
KSH				ePcP	PcP	18 59 09.0	+1.6
KSH				epP	pP	18 59 32.5	+3.1
KSH				esP	sP	18 59 47.8	+4.0
KSH				ePP	PP	19 01 52.5	+3.7
KSH				S	S	19 08 28.5	-0.6
KSH				ScS	SKKSac	19 08 55.0	-0.2
KSH				SS	SS	19 13 27.3	+1.7
KSH				pmax	pmax		
	comp=Z,9.0nm,1.2s						
KSH				pmax	pmax		
	comp=Z,68nm,3.1s						
KSH				LR	LR		
	comp=Z,62nm,7.1s						
KSH				LR	LR		
	comp=Z,86nm,5.0s						
KSH				LR	LR		
	comp=Z,130nm,7.5s						
TIXI	Tiksi	76.56	355	P	P	18 58 56.9	-0.4
	comp=Z,1.8nm,0.5s,baz=217,slow=1.9,SNR=8.3						
TIXI	Tiksi	76.56	355	c iP	P	18 58 55.9	-1.4
TIXI				pmax	pmax		
	comp=Z,6.0nm,1.7s						
TIXI	Tiksi	76.56	355	eP	P	18 58 56.1	-1.2
	comp=Z,2.6nm,0.8s						
NVS	Novosibirsk	77.36	329	⇓iP	P	18 59 02.6	+0.5
NVS				i		18 59 38.9	
NVS				pmax	pmax		
	comp=Z,45nm,1.1s						
NVS				pmax	pmax		
	comp=N,18nm,1.3s						
NVS				pmax	pmax		
	comp=E,24nm,1.1s						
TKM2	Tokmak 2	77.47	316	eP	P	18 59 03.3	0.0
TKM2				pmax	pmax		
	comp=Z,10.0nm,0.6s						
TKM2	Tokmak 2	77.47	316	eP	P	18 59 03.3	0.0
	comp=Z,10nm,0.6s						
FRU	Bishkek	78.13	315	eP	P	18 59 06.5	-0.2
FRU				pmax	pmax		
	comp=Z,80nm,2.4s						
AAK	Ala-Archa	78.16	315	eP	P	18 59 07.1	0.0
AAK				pmax	pmax		
	comp=Z,8.0nm,0.8s						
AAK	Ala-Archa	78.16	315	eP	P	18 59 07.1	0.0
	comp=Z,8.5nm,0.8s						
KURK	Kurchatov	78.20	324	P	P	18 59 06.7	-0.2
KURK				pmax	pmax		
	comp=Z,9.0nm,0.9s						
KURK	Kurchatov	78.20	324	eP	P	18 59 06.5	-0.3
	comp=Z,16nm,0.9s						
KURBB	Kurchatov Arra	78.22	324	P	P	18 59 06.7	-0.3
	comp=Z,9.4nm,0.9s,baz=111,slow=5.0,SNR=79						
EKS2	Erkin-Say	78.67	315	eP	P	18 59 10.2	+0.3
EKS2				e*PP	pP	18 59 44.0	+0.5
EKS2				pmax	pmax		
	comp=Z,14nm,0.8s						
EKS2	Erkin-Say	78.67	315	eP	P	18 59 10.2	+0.3
	comp=Z,14nm,0.8s						
EKS2				epP	pP	18 59 44.0	+0.5
KDAK	Kodiak Island	79.91	29	i P	P	18 59 17.4	+1.4
KBL	Kabul	80.24	306	eP	P	18 59 17.7	-0.9
KBL				pmax	pmax		
	comp=Z,8.0nm,0.6s						
KBL	Kabul	80.24	306	eP	P	18 59 17.7	-0.9
	comp=Z,8.1nm,0.6s						
TT01	Tatalina	80.73	24	eP	P	18 59 21.6	+1.3
TT01				epP	pP	18 59 55.4	+1.1
TTA	Tatalina	80.75	24	eP	P	18 59 21.5	+0.9
TTA				e*PP	pP	18 59 55.7	+1.3
TTA	Tatalina	80.75	24	eP	P	18 59 21.4	+0.9
TTA				epP	pP	18 59 55.7	+1.3
RSO	Redoubt South	80.98	27	eP	P	18 59 23.6	+1.5
KKAR	Karatay Array	81.10	315	eP	P	18 59 22.5	-0.3
KKAR	Karatay Array	81.10	315	eP	P	18 59 22.4	-0.3
PPLA	Purkeypile	82.29	24	eP	P	18 59 28.8	0.0
PPLA				epP	pP	19 00 02.9	+0.2
SUA	Susitna One	82.30	26	eP	P	18 59 28.8	0.0
	comp=Z,8.2nm,0.8s						
CAST	Castle Rocks	82.56	24	eP	P	18 59 29.7	-0.2
CAST				epP	pP	19 00 04.8	+0.9
RC01	Rabbit Creek A	82.59	27	eP	P	18 59 29.6	-0.6
	comp=Z,21nm,1.1s						
RC01				epP	pP	19 00 04.2	+0.1
NRIK	Noril'sk	82.88	343	P	P	18 59 31.5	0.0
	comp=Z,5.4nm,0.4s,baz=132,slow=5.0,SNR=18						
NRIK				LR	LR	19 37 31.6	
	comp=Z,45nm,19.0s,baz=117,slow=36						
PMR	Palmer	83.06	26	eP	P	18 59 32.1	-0.4
PMR				e*PP	pP	19 00 07.0	+0.5
PMR	Palmer	83.06	26	eP	P	18 59 32.1	-0.4
PMR				epP	pP	19 00 07.0	+0.5
KTH	Kantishna Hill	83.08	24	eP	P	18 59 31.9	-0.8
	comp=Z,14nm,1.0s						
BPAW	Bear Paw Mtn.	83.29	24	eP	P	18 59 33.0	-0.7
BPAW				epP	pP	19 00 08.0	+0.3
TRF	Thorofare Moun	83.30	24	eP	P	18 59 33.5	-0.5
	comp=Z,7.7nm,1.0s						
VOSK	Vostochnaya	83.35	324	eP	P	18 59 33.5	-0.8
VOSK				pmax	pmax		
	comp=Z,22nm,0.8s						
VOSK	Vostochnaya	83.35	324	eP	P	18 59 33.5	-0.8
	comp=Z,22nm,0.8s						
SML	Sawmill	83.49	26	eP	P	18 59 34.9	0.0
SML				e*PP	pP	19 00 09.9	+1.0
SML				pmax	pmax		
	comp=Z,16nm,0.7s						
SML	Sawmill	83.49	26	eP	P	18 59 34.9	0.0
	comp=Z,16nm,0.7s						
SML				epP	pP	19 00 09.9	+1.0
MLY	Manley	83.77	23	eP	P	18 59 36.6	+0.4
MLY				epP	pP	19 00 11.0	+0.8
BVAR	Borovoye Array	83.78	324	P	P	18 59 36.5	+0.1
	comp=Z,48nm,0.8s,baz=103,slow=6.4,SNR=234						
BVAR	Borovoye Array	83.78	324	P	P	18 59 36.5	+0.1
BVAR				pmax	pmax		
	comp=Z,49nm,0.8s						
BRVK	Borovoye	83.85	324	ceP	P	18 59 35.9	-0.9
BRVK				pmax	pmax		
	comp=Z,38nm,0.8s						
BRVK	Borovoye	83.85	324	eP	P	18 59 36.6	-0.2
	comp=Z,37nm,0.9s						
RND	Reindeer	83.88	25	eP	P	18 59 36.0	-0.8
RND				e*PP	pP	19 00 11.4	+0.5
RND				pmax	pmax		
	comp=Z,21nm,0.8s						
RND	Reindeer	83.88	25	eP	P	18 59 36.0	-0.8
	comp=Z,21nm,0.8s						
RND				epP	pP	19 00 11.4	+0.5
SCM	Sheep Creek Mo	83.95	26	eP	P	18 59 37.8	+0.6
SCM				e*PP	pP	19 00 12.2	+0.9
SCM				pmax	pmax		
	comp=Z,15nm,0.8s						
SCM	Sheep Creek Mo	83.95	26	eP	P	18 59 37.8	+0.6
	comp=Z,15nm,0.8s						
SCM				epP	pP	19 00 12.2	+0.9
MCK	McKinley	83.97	24	eP	P	18 59 36.9	-0.3
MCK				e*PP	pP	19 00 11.8	+0.5
MCK	McKinley	83.97	24	eP	P	18 59 36.9	-0.3
MCK				epP	pP	19 00 11.8	+0.5
DIV	Divide	84.40	27	eP	P	18 59 39.5	0.0
	comp=Z,12nm,0.7s						
DIV				epP	pP	19 00 14.9	+1.3
KLU	Klutina	84.46	27	eP	P	18 59 40.7	+0.9
	comp=Z,21nm,1.3s						
ZRNK	Zerenda	84.56	324	eP	P	18 59 39.8	-0.6
ZRNK				pmax	pmax		
	comp=Z,14nm,0.7s						
ZRNK	Zerenda	84.56	324	eP	P	18 59 39.8	-0.6
	comp=Z,14nm,0.7s						
WRH	Wood River Hil	84.59	24	eP	P	18 59 39.6	-0.7
WRH				epP	pP	19 00 14.3	-0.2
CCB	Clear Creek Bu	84.77	24	eP	P	18 59 40.1	-1.1
	comp=Z,12nm,0.8s						
CCB				epP	pP	19 00 15.6	+0.2
COLA	College	84.84	23	i P	P	18 59 37.7	-3.8
COLD	Coldfoot	84.88	21	eP	P	18 59 42.6	+0.9
	comp=Z,8.7nm,0.9s						
COLD				epP	pP	19 00 17.7	+1.8
BMRM	Bremner River	84.89	28	eP	P	18 59 42.6	+0.6
BMRM				epP	pP	19 00 17.1	+1.0
HDA	Harding Lake	85.03	24	eP	P	18 59 42.0	-0.5
	comp=Z,26nm,1.7s						
PAX	Paxson	85.15	26	eP	P	18 59 43.9	+0.6
PAX				e*PP	pP	19 00 17.5	+0.1
PAX	Paxson	85.15	26	eP	P	18 59 43.9	+0.6
PAX				epP	pP	19 00 17.5	+0.1
IL1	Eielson Array	85.19	24	eP	P	18 59 41.8	-1.5
ILAR	Eielson Array	85.19	24	P	P	18 59 42.1	-1.1
	comp=Z,7.5nm,0.7s,baz=255,slow=5.1,SNR=72						
ILAR				pP	pP	19 00 16.8	-0.6
	comp=Z,5.0nm,0.8s,baz=258,slow=5.3,SNR=5.6						
ILAR				PKKPbc	PKKPbc	19 17 49.5	-2.4
	comp=Z,0.8nm,0.7s,baz=4.9,slow=0.6,SNR=8.7						
ILAR				LR	LR	19 33 20.8	
	comp=Z,46nm,20.9s,baz=246,slow=32						
ILB	Eielson Array	85.19	24	eP	P	18 59 42.2	-1.1
ILB				epP	pP	19 00 16.4	-1.0
MRIV	Mauritius Mete	85.28	250	eP	P	18 59 45.4	+0.7
CRQM	Cirque	85.50	28	eP	P	18 59 46.4	+1.3
	comp=Z,20nm,1.1s						
MENT	Mentasta	85.90	26	eP	P	18 59 47.2	+0.3
	comp=Z,8.5nm,0.6s						
BALM	Baldy	85.96	28	eP	P	18 59 48.0	+0.7
BALM				pmax	pmax		
	comp=Z,13nm,1.1s						
BALM	Baldy	85.96	28	eP	P	18 59 48.0	+0.7
	comp=Z,13nm,1.1s						
DOT	Dot Lake	85.97	25	eP	P	18 59 47.1	-0.1
	comp=Z,28nm,0.8s						
DOT				epP	pP	19 00 22.3	+0.9
FYU	Fort Yukon	86.45	22	eP	P	18 59 50.5	+1.1
FYU				epP	pP	19 00 24.9	+1.2
EGAK	Eagle	87.52	24	eP	P	18 59 55.2	+0.5
	comp=Z,54nm,2.0s						
DAWY	Dawson	88.08	25	eP	P	18 59 58.1	+0.7
DAWY				epP	pP	19 00 33.1	+1.4
ABKAR	Akbulak array	89.47	319	eP	P	19 00 03.0	-1.2
GEYT	Alibeck	89.49	308	P	P	19 00 04.3	-0.3
	comp=Z,3.4nm,0.7s,baz=132,slow=2.2,SNR=10						
SYO	Syowa Base	91.07	200	⇓eP	P	19 00 10.4	-0.8
SYO	Syowa Base	91.07	200	⇓i PcP	P	19 00 11.2	0.0
ARU	Arti	91.15	326	d iP	P	19 00 10.7	-1.1
ARU				*PP	pP	19 00 44.7	-1.6
ARU						19 03 50.1	
ARU				S	SKSac	19 10 30.4	-0.9
ARU				SS	SS	19 17 01.1	-4.7
ARU				pmax	pmax		
	comp=Z,7.0nm,0.8s						
ARU	Arti	91.15	326	eP	P	19 00 10.0	-1.8
	comp=Z,8.4nm,1.0s						
INK	Inuvik	91.25	22	eP	P	19 00 11.0	-1.0
INK				pmax	pmax		
	comp=Z,7.0nm,1.3s						
INK	Inuvik	91.25	22	eP	P	19 00 11.0	-1.0
	comp=Z,7.4nm,1.3s						
NV01	Mina Array Sit	98.69	52	eP	P	19 00 46.9	0.0
NVAR	Mina Array Bea	98.69	52	P	Pdif	19 00 47.3	+0.3
	comp=Z,0.4nm,0.6s,baz=278,slow=10,SNR=4.0						
YKA	Yellowknife Ar	99.12	27	P	Pdif	19 00 47.8	-0.2
	comp=Z,0.6nm,0.8s,baz=277,slow=5.0,SNR=7.3						
YKA				pP	pP	19 01 22.4	-0.2
	comp=Z,0.5nm,0.8s,baz=278,slow=5.1,SNR=3.3						
YKA				PKKPbc	PKKPbc	19 17 13.0	-2.7
	comp=Z,1.4nm,0.6s,baz=99,slow=2.7,SNR=23						
YKB5	Yellowknife Ar	99.12	27	eP	Pdif	19 00 47.7	-0.3
YKB5				epP	pP	19 01 22.4	-0.2
YKB5				ePKKPbc	PKKPbc	19 17 12.3	-3.3
KLMR	Klimovskoe	100.90	331	eP	Pdif	19 00 52.8	-3.2
KLMR				pmax	pmax		
	comp=Z,4.0nm,1.0s						
SNAA	Sanae	101.06	190	eP	Pdif	19 00 57.3	+0.7
SNAA				e		19 05 05.0	
SNAA	Sanae	101.06	190	ePdif	Pdif	19 00 57.3	+0.7
SNAA				ePP	PP	19 05 05.0	-1.2
ARA0	ARCESS Array S	103.83	341	ePdif	Pdif	19 01 08.0	-0.9
ARCES	ARCESS Array B	103.83	341	Pdiff	Pdif	19 01 08.0	-0.9
	comp=Z,4.3nm,0.8s,baz=61,slow=8.5,SNR=8.9						
ARCES	ARCESS Array B	103.83	341	P	Pdif	19 01 08.0	-0.9
ARCES				pmax	pmax		
	comp=Z,4.0nm,0.8s						
EGMT	Eagleton	104.06	42	ePKKPbc	PKKPbc	19 16 50.2	-11
EGMT				ePKKPdf	PKKPdf	19 17 05.8	-3.8
MSTX	Muleshoe	111.61	55	ePP	PP	19 06 28.2	+3.1
JCT	Junction City	114.68	59	ePKKPab	PKKPab	19 16 32.9	+0.9
DPC	Dobruska-Polom	116.72	325	ePKP	PKPdf	19 05 51.2	+0.4
DPC	Dobruska-Polom	116.72	325	ePKIKP	PKPdf	19 05 51.2	+0.4
BRG	Berggiesshubel	117.79	327	ePKP	PKPdf	19 05 53.5	+0.7
	comp=Z,1.7nm,0.6s						
BRG	Berggiesshubel	117.79	327	ePKIKP	PKPdf	19 05 53.5	+0.7
BRG				pmax	pmax		
	comp=Z,2.0nm,0.6s						
PRU	Pruhonice	117.90	326	ePKP	PKPdf	19 05 51.7	-1.3
PRU	Pruhonice	117.90	326	ePKIKP	PKPdf	19 05 51.7	-1.3
CLL	Collm	118.07	328	ePKiKP	PKiKP	19 05 54.0	+0.7
	comp=Z,5.0nm,1.0s						
CLL	Collm	118.07	328	ePKIKP	PKiKP	19 05 54.0	+0.7
CLL				pmax	pmax		
	comp=Z,5.0nm,1.0s						
KHC	Kasperske Hory	118.87	325	ePKP	PKPdf	19 05 54.6	-0.4
KHC	Kasperske Hory	118.87	325	ePKIKP	PKPdf	19 05 54.6	-0.4
KHC	Kasperske Hory	118.87	325	ePKPdf	PKPdf	19 05 54.6	-0.4
MIAR	Mount Ida	118.91	53	ePKIKP	PKPdf	19 05 56.7	+1.2
MIAR	Mount Ida	118.91	53	ePKPdf	PKPdf	19 05 56.7	+1.2
GERES	GERESS Array B	118.94	325	PKP	PKPdf	19 05 55.2	0.0
	comp=Z,2.4nm,0.8s,baz=70,slow=1.6,SNR=20						
GEA0	GERESS Array S	118.94	325	ePKPdf	PKPdf	19 05 54.7	-0.5
PLCA	Paso Flores	125.03	148	PKP	PKPdf	19 06 07.9	+0.7
	comp=Z,5.6nm,0.6s,baz=256,slow=2.2,SNR=24						
PLCA	Paso Flores	125.03	148	ePKPdf	PKPdf	19 06 08.4	+1.2
KEST	Kesra	127.97	313	PKP	PKPdf	19 06 13.3	+0.4
	comp=Z,2.0nm,0.6s,baz=316,slow=4.8,SNR=3.6						
TOA0	Torodi Ar. Sit	141.86

SAML	**Samuel**	**149.76**	**116**	*e*PKPdf	**PKPdf**	**19 06 53.0**	**+0.4**
SAML				*e*PKPbc	**PKPbc**	**19 06 57.9**	**+0.3**
SPB	**Sao Paulo**	**150.00**	**159**	*e*PKPbc	**PKPbc**	**19 06 58.5**	**+0.7**
SMRT	**St. Maarten**	**150.18**	**61**	*e*PKPbc	**PKPbc**	**19 06 57.6**	**-0.8**

*ISCJB **27** 18:57:11.5±0.7,21.°10S±0.°03×69.°07W±0.°06,h122km±7km, mb3.8/1,Error ellipse: s-maj=9.1km s-min=5.4km az=166.2*
*GUC **27** 18:57:12.3±0.4,21.°08S×69.°12W,h112km±2km,ML4.2*
ISC 27 18:57:12.3±1.0,21.°10S±0.°04×69.°07W±0.°06,h115km±8km, n17,σ0.°71/27,1C,Northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB01	**IPOC Station P**	**0.40**	**277**	*e*P	**Pn**	**18 57 28.9**	**-0.4**
PB01				*e*S	**Sn**	**18 57 41.5**	**-0.6**
PB01				IAML		18 57 42.5	
	comp=E,15μm,0.4s						
PB09	**IPOC Station P**	**0.72**	**193⇑**	*e*P	**Pn**	**18 57 31.6**	**0.0**
PB09				*e*S	**Sn**	**18 57 46.3**	**+0.2**
PB09				IAML		18 57 47.9	
	comp=E,9μm,0.2s						
PB08	**IPOC Station P**	**0.95**	**355**	*e*P	**Pn**	**18 57 34.2**	**+0.2**
PB08				*e*S	**Sn**	**18 57 50.5**	**+0.2**
PB08				IAML		18 57 51.6	
	comp=E,7μm,0.3s						
PB07	**IPOC Station P**	**0.99**	**230**	*e*P	**Pn**	**18 57 34.2**	**+0.1**
PB07				*e*S	**Sn**	**18 57 50.6**	**+0.1**
PB11	**IPOC Station P**	**1.44**	**337**	*e*P	**Pn**	**18 57 38.9**	**0.0**
PB11				*e*S	**Sn**	**18 57 58.9**	**-0.2**
PB04	**IPOC Station P**	**1.59**	**219**	*e*P	**Pn**	**18 57 41.0**	**+0.3**
PB04				*e*S	**Sn**	**18 58 02.7**	**+0.3**
PB06	**IPOC Station P**	**1.67**	**196**	*e*P	**Pn**	**18 57 42.1**	**+0.4**
PB06				*e*S	**Sn**	**18 58 03.8**	**-0.3**
PB06				IAML		18 58 04.7	
	comp=N,2μm,0.4s						
PSGC	**Pisagua**	**1.79**	**326**	*e*P	**Pn**	**18 57 43.0**	**-0.1**
PSGC				*e*S	**Sn**	**18 58 06.2**	**-0.3**
MNMC	**Minye Minye**	**2.02**	**346**	*e*P	**Pn**	**18 57 46.3**	**+0.2**
MNMC				*e*S	**Sn**	**18 58 12.1**	**+0.3**
MNMC				IAML		18 58 16.0	
	comp=N,2μm,0.2s						
YJA	**Yavi**	**3.47**	**109**	*e*P	**Pn**	**18 58 06.0**	**+0.8**
	baz=298,slow=7.9						
YJA				*e*S	**Sn**	**18 58 47.1**	**+1.2**
HJA	**Humahuaca**	**3.99**	**122**	*e*P	**Pn**	**18 58 13.2**	**+1.3**
HJA				IAML		18 58 14.9	
	comp=Z,41nm,0.3s						
AZAP	**Zapla**	**4.83**	**131**	*e*P	**Pn**	**18 58 23.2**	**0.0**
ASTB	**Santa Barbara**	**5.12**	**125**	*e*P	**Pn**	**18 58 26.5**	**-0.5**
ALOL	**LOMAS DE OLMED**	**5.42**	**121**	*e*P	**Pn**	**18 58 29.7**	**-1.3**
ALOL				*e*S	**Sn**	**18 59 30.6**	**-1.7**
TORD	**Torodi Ar. Bea**	**77.36**	**70**	P	**P**	**19 08 54.2**	**-0.7**
	comp=Z,1.2nm,0.6s,baz=252,slow=4.8,SNR=1.6						
YKA	**Yellowknife Ar**	**90.76**	**341**	P	pP	19 10 32.9	+1.1
	comp=Z,0.3nm,0.8s,baz=132,slow=4.3,SNR=2.3						
MKAR	**Makanchi Array**	**145.39**	**35**	PKPbc	**PKPab**	**19 16 38.2**	**+1.1**
	comp=Z,0.6nm,0.8s,baz=311,slow=3.1,SNR=4.1						

KRSC 27 18:59:38.8±0.8,55.°16N×162.°31E,h76km±23km,ML3.7, Near east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KBG	**Krutoberegovo**	**1.12**	**11**	*e*P	Pn	19 00 00.4	+1.3
KBG				*e*S	Sn	19 00 16.0	+1.8
KZV	**Kizimen**	**1.16**	**269**	*e*P	Pn	19 00 00.7	+1.0
ZLN	**Zelenaya**	**1.21**	**316**	*e*P	Pn	19 00 02.0	+1.7
ZLN				*e*S	Sn	19 00 18.6	+2.1
TUMR	**Tumrok**	**1.25**	**277**	*e*P	Pn	19 00 02.3	+1.5
TUMR				*e*S	Sn	19 00 17.9	+0.7
BZMR	**Bezymyannaya**	**1.29**	**308**	*e*P	Pn	19 00 02.2	+0.8
LGNR	**Loginova**	**1.31**	**316**	*e*P	Pn	19 00 03.5	+1.8
LGNR				*e*S	Sn	19 00 20.6	+1.7
CIRR	**Tsirk**	**1.31**	**318**	*e*P	Pn	19 00 03.1	+1.5
CIRR				*e*S	Sn	19 00 20.6	+1.9
KMNR	**Kamenistaya**	**1.32**	**298**	*e*P	Pn	19 00 03.3	+1.5
KMNR				*e*S	Sn	19 00 20.6	+1.6
KIRR	**Kirishev**	**1.37**	**306**	*e*P	Pn	19 00 04.4	+2.0
KPT	**Kopyto**	**1.44**	**305**	*e*P	Pn	19 00 04.8	+1.6
KRSR	**Krestovskiy**	**1.45**	**318**	*e*P	Pn	19 00 04.3	+0.9
KRSR				*e*S	Sn	19 00 22.8	+0.9
KLY	**Klyuchi**	**1.49**	**322**	*e*P	Pn	19 00 04.5	+0.7
KLY				*e*S	Sn	19 00 22.4	-0.2
SMKR	**Semkarok**	**1.51**	**342**	*e*P	Pn	19 00 05.9	+1.8
SMKR				*e*S	Sn	19 00 25.3	+2.2
BDR	**Baidarnaya**	**1.54**	**337**	*i* P	Pn	19 00 06.6	+2.0
BDR				*e*S	Sn	19 00 26.7	+2.6
SRKR	**Sorokina**	**1.63**	**337**	*e*P	Pn	19 00 07.8	+2.1
SRKR				*e*S	Sn	19 00 28.4	+2.3
KOZ	**Kozyrevsk**	**1.65**	**304**	*e*P	Pn	19 00 07.5	+1.6
KOZ				*e*S	Sn	19 00 29.1	+2.6
KII	**Karymskiy**	**2.01**	**237**	*e*P	Pn	19 00 12.9	+2.2
BKI	**Bering**	**2.10**	**87**	*e*P	Pn	19 00 13.8	+1.9
BKI				*e*S	Sn	19 00 37.7	+0.6
ESO	**Esso**	**2.19**	**292**	*e*P	Pn	19 00 14.4	+1.3
ESO				*e*S	Sn	19 00 39.4	+0.1
NLC	**Nalytchevo**	**2.65**	**222**	*e*P	Pn	19 00 21.0	+1.8
NLC				*e*S	Sn	19 00 51.9	+1.7
SDLR	**Sedlovina**	**2.75**	**228**	*e*P	Pn	19 00 23.1	+2.3
SDLR				*e*S	Sn	19 00 55.7	+2.6
KRER	**Koryakskii**	**2.79**	**230**	*e*P	Pn	19 00 24.2	+2.8
KRER				*e*S	Sn	19 00 58.2	+4.0
SMAR	**Somma**	**2.80**	**229**	*e*P	Pn	19 00 23.6	+2.1
KRX	**Arik**	**2.80**	**232**	*e*P	Pn	19 00 24.0	+2.5
AVH	**Avacha**	**2.83**	**229**	*e*P	Pn	19 00 24.6	+2.8
AVH				*e*S	Sn	19 00 58.4	+3.6
UGLR	**Uglovaya**	**2.83**	**228**	*e*P	Pn	19 00 24.3	+2.5
UGLR				*e*S	Sn	19 00 57.2	+2.3
KOK	**Koryaka**	**2.85**	**231**	*e*P	Pn	19 00 24.8	+2.7
GNL	**Ganaly**	**2.94**	**242**	*e*P	Pn	19 00 26.0	+2.6
DALK	**Dalny**	**2.99**	**226**	*e*P	Pn	19 00 25.9	+2.1
DALK				*e*S	Sn	19 01 00.6	+2.1
PET	**Petropavlovsk**	**3.03**	**227**	*e*P	Pn	19 00 27.1	+2.6
PET				*e*S	Sn	19 01 01.8	+2.1
KRMR	**Karymshinskiy**	**3.39**	**228**	*e*P	Pn	19 00 31.9	+2.5
KRMR				*e*S	Sn	19 01 11.4	+3.0
RUS	**Russkaya**	**3.54**	**221**	*e*P	Pn	19 00 34.0	+2.7
RUS				*e*S	Sn	19 01 13.9	+2.0
MTVR	**Mutnovka**	**3.63**	**224**	*e*P	Pn	19 00 36.5	+3.8
MTVR				*e*S	Sn	19 01 15.8	+1.4
ASAK	**Asacha**	**3.82**	**225**	*e*P	Pn	19 00 39.0	+3.8

IDC 27 19:02:23.7±5.0,6.°88S×129.°62E,h145km±57km,mb3.3/2, mb1 3.4/5,mb1mx3.1/30,mbtmp3.8/5,Error ellipse: s-maj=104.9km s-min=20.2km az=75.0,Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SIJI	**Sorong**	**6.20**	**15**	P	Pn	19 03 53.4	+0.3
	11nm,0.3s,baz=2.6,slow=12,SNR=1.5						
SIJI				S	Sn	19 04 58.4	-4.5
	8.4nm,0.3s,baz=165,slow=1.2,SNR=3.5						
WRA	**Warramunga Arr**	**13.77**	**161**	P	Pn	19 05 31.1	-1.8
	0.3nm,0.3s,baz=344,slow=13,SNR=13						
WRA				S	Sn	19 07 58.0	-7.4
	0.3nm,0.3s,baz=331,slow=22,SNR=6.5						
ASAR	**Alice Springs**	**17.19**	**167**	P	Pn	19 06 16.0	+0.7
	0.3nm,0.3s,baz=344,slow=9.6,SNR=36						
ASAR				S	S	19 09 20.0	-6.4
	0.0nm,0.3s,baz=349,slow=24,SNR=3.1						
STKA	**Stephens Creek**	**27.26**	**157**	P	P	19 07 54.5	+0.1
	3.1nm,1.2s,baz=339,slow=8.6,SNR=3.7						
MKAR	**Makanchi Array**	**67.92**	**327**	P	P	19 13 06.6	-0.2
	0.1nm,0.4s,baz=130,slow=8.3,SNR=4.4						

WEL 27 19:04:41.0±0.5,36.°03S×178.°36E,h219km±6km,ML3.7/11, Error ellipse: s-maj=9.3km s-min=7.3km az=90.0,Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MXZ	**Matakaoa Point**	**1.53**	**181**	AML	AML	19 05 18.0	
WMGZ	**Waiomatatini S**	**1.79**	**178**	PN	Pn	19 05 18.9	+0.1
PKGZ	**Pakihiroa**	**1.87**	**187**	PN	Pn	19 05 19.7	0.0
PKGZ				SN	S	19 05 49.0	-0.9
PUZ	**Puketiti**	**2.04**	**182**	PN	Pn	19 05 21.3	0.0
PUZ				SN	S	19 05 52.1	-0.6
TWGZ	**Tauwhareparae**	**2.17**	**188**	PN	Pn	19 05 23.0	+0.4
MWZ	**Matawai**	**2.39**	**196**	PN	Pn	19 05 25.3	+0.4
MWZ				AML	AML	19 06 18.8	
MWZ				AML	AML	19 06 23.7	
URZ	**Urewera**	**2.44**	**204**	PN	Pn	19 05 25.0	-0.3
TKGZ	**Te Karaka**	**2.44**	**189**	PN	Pn	19 05 25.4	+0.1
RIGZ	**Rimuhau**	**2.71**	**190**	PN	Pn	19 05 27.7	-0.7
MUGZ	**Murupara**	**2.75**	**207**	PN	Pn	19 05 28.6	-0.2
MHGZ	**Mahia Peninsul**	**3.14**	**186**	PN	Pn	19 05 33.6	+0.5
NMHZ	**Naumai**	**3.30**	**201**	PN	Pn	19 05 35.4	+0.4
ARHZ	**Aropaoanui**	**3.40**	**198**	PN	Pn	19 05 36.3	+0.1
BKZ	**Black Stump Fm**	**3.46**	**205**	PN	Pn	19 05 37.2	+0.2
KRHZ	**Kereru**	**3.94**	**203**	PN	Pn	19 05 42.2	-0.4
KAHZ	**Kahuranaki**	**3.94**	**197**	PN	Pn	19 05 42.5	-0.1
PXZ	**Pawanui**	**4.17**	**196**	PN	Pn	19 05 44.6	-0.8
PNHZ	**Pukenui**	**4.24**	**203**	PN	Pn	19 05 45.3	-1.0
TSZ	**Takapari Road**	**4.45**	**204**	AML	AML	19 05 49.2	
MTW	**Mount Morrison**	**5.59**	**203**	AML	AML	19 06 04.0	
CAW	**Cannon Point**	**5.69**	**206**	AML	AML	19 06 02.1	
MSWZ	**Moikau Station**	**5.90**	**203**	AML	AML	19 06 07.5	
TCW	**Tory Channel**	**6.08**	**210**	AML	AML	19 07 19.2	

*ISCJB **27** 19:13:59.5±0.3,32.°15N±0.°02×115.°17W±0.°02,h25km±3km, Error ellipse: s-maj=3.1km s-min=3.0km az=23.9*
*ECX **27** 19:14:00.7±0.7,32.°13N×115.°18W,h6km,MD3.7,ML3.9*
*NEIC **27** 19:14:00.8,32.°14N×115.°21W,h6km,ML3.6(PAS), ML3.9(ECX),After ECX.*
*MEX **27** 19:14:01.5±0.7,32.°19N×115.°11W,h12km±86km,MD4.3*
ISC 27 19:13:59.5±1.0,32.°14N±0.°02×115.°18W±0.°02,h18km±5km, n73,σ1.°14/102,1C-7D,California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MBIG	**Mexicali**	**0.27**	**357**	*e*P	**Pb**	**19 14 05.9**	**+0.2**
MBIG				*i* S	**Sg**	**19 14 08.6**	**-1.1**
MBIG	**Mexicali**	**0.27**	**357**	*e*P	**Pb**	**19 14 06.0**	**+0.2**
CPBX	**Cerro Prieto**	**0.30**	**340**	*e*Sg	**Sg**	**19 14 09.5**	**-0.9**
CPBX	**Cerro Prieto**	**0.30**	**340**	*e*P	**Pb**	**19 14 06.4**	**0.0**
CPBX				*e*S	**Sb**	**19 14 11.0**	**+0.1**
CPBX				AML	AML	19 14 15.5	
	comp=E,53μm,0.3s						
CPBX				⇑*e*		19 14 15.5	
EMSC	**East Mesa**	**0.62**	**16**	⇓*i*P	**Pg**	**19 14 11.9**	**+0.1**
ECBX	**El Chinero**	**0.67**	**170**	*e*P	**Pb**	**19 14 12.5**	**-0.2**
ECBX				*e*S	**Sg**	**19 14 21.4**	**-0.3**
ECBX				⇓*e*		19 14 23.4	
ECBX				AML	AML	19 14 23.4	
	comp=E,5μm,0.3s						
SGL	**Mount Signal**	**0.69**	**318**	⇓*i*P	**Pb**	**19 14 12.7**	**-0.2**
COA	**Coachella**	**0.73**	**4**	⇓*i*P	**Pb**	**19 14 13.3**	**-0.3**
WESC	**Westside Schoo**	**0.77**	**323**	*e*P	**Pb**	**19 14 14.3**	**-0.2**
YUH	**Yuha Desert**	**0.81**	**309**	⇓*i*P	**Pb**	**19 14 14.6**	**-0.4**
RMX	**La Rumorosa**	**0.89**	**302**	*e*P	**Pb**	**19 14 15.8**	**-0.7**
RMX				*e*S	**Sb**	**19 14 27.7**	**-0.4**
IKP	**In-Ko-Pah, Jac**	**0.94**	**303**	P	**Pb**	**19 14 17.2**	**-0.1**
	baz=124,SNR=95						
IKP				S	**Sb**	**19 14 29.4**	**0.0**
	baz=124						
IKP	**In-Ko-Pah, Jac**	**0.94**	**303**	*e*P	**Pb**	**19 14 16.9**	**-0.4**
SWSC	**Sam W. Stewart**	**0.96**	**327**	P	**Pb**	**19 14 16.4**	**-1.2**
	baz=148,SNR=43						
SWSC				S	**Sb**	**19 14 29.8**	**-0.1**
	baz=148						
GLA	**Glamis**	**0.96**	**18**	P	**Pb**	**19 14 16.6**	**-1.1**
	baz=200,SNR=150						
GLA				S	**Sb**	**19 14 29.2**	**-0.8**
	baz=200						
GLA	**Glamis**	**0.96**	**18**	*e*Pg	**Pb**	**19 14 16.6**	**-1.1**
GLA				*e*Sg	**Sb**	**19 14 29.0**	**-1.1**
SPIG	**San Pedro Mart**	**1.11**	**193**	*e*P	**Pb**	**19 14 20.2**	**-0.2**
SPIG				*e*S	**Sb**	**19 14 34.4**	**-0.3**
SPIG	**San Pedro Mart**	**1.11**	**193**	*e*Pn	**Pb**	**19 14 20.2**	**-0.2**
SPIG				*e*Sn	**Sb**	**19 14 34.4**	**-0.3**
SPIG	**San Pedro Mart**	**1.11**	**193**	*e*P	**Pb**	**19 14 20.2**	**-0.2**
SPIG				*e*S	**Sn**	**19 14 35.2**	**-0.4**
SPX	**San Pedro Mart**	**1.11**	**192**	*e*Pn	**Pb**	**19 14 20.2**	**-0.2**
SPX				*e*Sn	**Sb**	**19 14 34.8**	**0.0**
SPX	**San Pedro Mart**	**1.11**	**192**	*e*P	**Pb**	**19 14 20.3**	**-0.2**
SPX				*e*S	**Sn**	**19 14 35.0**	**-0.6**
ZAX	**El Zacaton**	**1.12**	**236**	*e*P	**Pn**	**19 14 19.7**	**-0.6**
ZAX				*e*S	**Sn**	**19 14 35.1**	**-0.2**
ZAX				⇓*e*		19 14 38.5	
ZAX				AML	AML	19 14 38.5	
	comp=E,3μm,0.7s						
CBX	**Cerro Bola**	**1.27**	**278**	*e*P	**Pn**	**19 14 22.3**	**-0.1**
CBX				*e*S	**Sb**	**19 14 38.1**	**-0.9**
CBX	**Cerro Bola**	**1.27**	**278**	*e*Pn	**Pn**	**19 14 22.3**	**-0.1**
CBX				*e*Sn	**Sb**	**19 14 38.1**	**-0.9**
CBX	**Cerro Bola**	**1.27**	**278**	*e*P	**Pn**	**19 14 22.4**	**-0.1**
CBX				*e*S	**Sn**	**19 14 39.6**	**+0.5**
CBX				⇓*e*		19 14 41.2	
CBX				AML	AML	19 14 41.2	
	comp=N,2μm,0.6s						
MONP2	**Monument Peak**	**1.29**	**306**	P	**Pn**	**19 14 22.0**	**-0.8**
	baz=126,SNR=100						
MONP2				S	**Sb**	**19 14 39.0**	**-0.8**
	baz=126						
ECNX	**Esteban Cantu**	**1.29**	**249**	*e*P	**Pn**	**19 14 22.6**	**-0.2**
TJIG	**Tijuana**	**1.30**	**284**	*e*P	**Pn**	**19 14 22.5**	**-0.2**
TJIG				*e*S	**Sn**	**19 14 38.7**	**-0.9**
TJIG	**Tijuana**	**1.30**	**284**	*e*P	**Pn**	**19 14 22.5**	**-0.2**
113A	**Mohawk Valley,**	**1.35**	**62**	*e*Pn	**Pn**	**19 14 22.6**	**-1.0**
113A				*e*Sn	**Sn**	**19 14 39.7**	**-1.4**
PBX	**Punta Banda**	**1.37**	**254**	*e*P	**Pn**	**19 14 24.0**	**+0.2**
BAR	**Barrett**	**1.37**	**294**	*e*Pn	**Pn**	**19 14 23.7**	**-0.1**
BAR				*e*Sn	**Sn**	**19 14 40.3**	**-1.2**
BAR	**Barrett**	**1.37**	**294**	*e*P	**Pn**	**19 14 23.7**	**-0.1**
BC3	**Big Chuckawall**	**1.53**	**352**	P	**Pn**	**19 14 25.0**	**-1.1**
	baz=172,SNR=36						
BC3				S	**Sn**	**19 14 43.2**	**-2.4**
	baz=172						
Y12C	**Blythe**	**1.70**	**19**	P	**Pn**	**19 14 27.3**	**-1.0**
	baz=200,SNR=19						
Y12C	**Blythe**	**1.70**	**19**	*e*Pn	**Pn**	**19 14 27.9**	**-0.5**
Y12C				*e*Sn	**Sb**	**19 14 50.7**	**-0.7**
109C	**Camp Elliot, M**	**1.79**	**295**	P	**Pn**	**19 14 29.4**	**0.0**
	baz=115						
109C				S	**Sn**	**19 14 51.8**	**+0.1**
	baz=115						
TPFO	**Pinon Flats**	**1.81**	**324**	P	**Pn**	**19 14 28.9**	**-1.1**
	baz=144,SNR=16						
PFO	**Pinyon Flats O**	**1.82**	**324**	*e*Pn	**Pn**	**19 14 28.9**	**-1.2**
BELC	**Belle Mtn. Jos**	**1.98**	**340**	P	**Pn**	**19 14 31.1**	**-1.2**
	baz=160						
IRM	**Iron Mountain**	**2.02**	**1**	P	**Pn**	**19 14 31.6**	**-1.0**
	baz=182,SNR=83						
214A	**Organ Pipe Nat**	**2.02**	**94**	P	**Pn**	**19 14 31.7**	**-1.0**
	baz=276,SNR=50						
214A				Sb	**Sb**	**19 15 01.7**	**+1.1**
	baz=276						
MURC	**Murrieta**	**2.23**	**311**	P	**Pn**	**19 14 35.2**	**-0.5**
	baz=131,SNR=9.8						
MURC				Sb	**Sb**	**19 15 08.4**	**+1.6**
	baz=131						
PDMCI	**Parker Dam,Lak**	**2.33**	**22**	S	**Sn**	**19 15 03.9**	**-1.3**
	baz=203						
Y14A	**Wickenburg**	**2.56**	**45**	*e*Pn	**Pn**	**19 14 40.6**	**+0.4**
Y14A				*e*Pg	**Pg**	**19 14 49.0**	**+0.3**
GMRC	**Granite Mounta**	**2.67**	**352**	P	**Pn**	**19 14 41.0**	**-0.8**
	baz=172,SNR=14						
LDFC	**Landfair**	**2.93**	**1**	*e*Pn	**Pg**	**19 14 56.4**	**+0.6**
SSK	**Sunset Peak**	**2.95**	**315**	*e*Pn	**Pb**	**19 14 53.4**	**+1.7**
FMP	**Fort Macarthur**	**3.05**	**302**	Sb	**Sb**	**19 15 31.6**	**+1.5**
	baz=120						
W13A	**Hualapai Mount**	**3.15**	**20**	*e*Pn	**Pn**	**19 14 48.5**	**+0.1**
W13A				*e*Pg	**Pb**	**19 14 57.0**	**+1.9**
MWC	**Mount Wilson**	**3.18**	**312**	*e*Pn	**Pn**	**19 14 48.3**	**-0.6**
MWC				*e*Pg	**Pb**	**19 14 56.7**	**+1.0**
GSC	**Goldstone, Bar**	**3.43**	**337**	*e*Pn	**Pn**	**19 14 52.7**	**+0.5**
GSC				*e*Pg	**Pg**	**19 15 07.0**	**+1.7**
TUC	**Tucson**	**3.73**	**86**	P	**Pn**	**19 14 55.1**	**-1.3**
	baz=268						
TUC	**Tucson**	**3.73**	**86**	*e*Pn	**Pn**	**19 14 55.2**	**-1.2**
X16A	**Lo Mia Camp, P**	**3.87**	**53**	*e*Pn	**Pn**	**19 14 59.1**	**+0.7**
WSHM	**Spangler Hills**	**3.95**	**332**	*e*Pg	**Pg**	**19 15 15.1**	**-0.1**
SHPR	**Sheep Range**	**4.36**	**0**	*e*Pn	**Pn**	**19 15 06.9**	**+1.9**
WUAZ	**Wupatki**	**4.63**	**42**	*e*Pn	**Pn**	**19 15 09.5**	**+0.8**
TPNV	**Topopah Spring**	**4.88**	**350**	*e*Pn	**Pn**	**19 15 12.1**	**0.0**
U15A	**North Rim**	**4.90**	**28**	*e*Pn	**Pn**	**19 15 13.6**	**+1.0**
X18A	**Snowflake**	**4.99**	**60**	*e*Pn	**Pn**	**19 15 13.9**	**+0.2**
319A	**Douglas**	**5.08**	**97**	*e*Pn	**Pn**	**19 15 14.2**	**-0.8**
LCMT	**Little Creek M**	**5.12**	**18**	*e*Pn	**Pn**	**19 15 16.9**	**+1.4**
KNB	**Kanab**	**5.24**	**21**	*e*Pn	**Pn**	**19 15 19.2**	**+2.0**
W18A	**Petrified Fore**	**5.43**	**55**	*e*Pn	**Pn**	**19 15 21.6**	**+1.8**
CCUT	**Cedar City**	**5.60**	**15**	*e*Pn	**Pn**	**19 15 24.2**	**+2.0**
PKCU	**Pink Cliffs**	**5.80**	**23**	*e*Pn	**Pn**	**19 15 25.2**	**+0.3**
MTPU	**Mount Pierson**	**6.38**	**22**	*e*Pn	**Pn**	**19 15 35.6**	**+2.6**
MVCO	**Mesa Verde**	**7.48**	**46**	*e*Pn	**Pn**	**19 15 50.4**	**+2.5**
NSHM	**Saint Helena R**	**8.79**	**318**	*e*Sn	**Sn**	**19 17 39.1**	**-5.3**
GDL2	**Guadalupe Moun**	**9.17**	**87**	*e*Pn	Pn	19 16 07.2	-3.8
ALVY	**Alvey**	**13.34**	**335**	*e*Pn	**Pn**	**19 17 11.1**	**+3.1**
SVTR	**Two Rivers Sch**	**16.14**	**344**	*e*Pn	**P**	**19 17 48.2**	**-0.3**

MAN 27 19:15:43,13.°60N×120.°55E,h84km,mb3.7,ML2.4,MS1.9, 1C-1D,Mindoro

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LUBP	**Lubang**	**0.33**	**294**	*e*P	Pn	19 15 57.8	+1.9
LUBP				*e*S	Sn	19 16 09.3	+3.8
PGP	**Puerto Galera**	**0.40**	**104⇑**	*e*P	Pn	19 15 57.8	+1.4
PGP				*i* S	Sn	19 16 09.9	+3.5
TGY	**Tagaytay City**	**0.62**	**37**	⇓*i*P	Pn	19 16 01.4	+3.1
TGY				*i* S	Sn	19 16 11.6	+1.9
SJMP	**San Jose**	**1.26**	**154**	*e*P	Pn	19 16 06.9	+1.4
SJMP				*e*S	Sn	19 16 25.1	+2.7
BUSP	**Coron**	**1.62**	**192**	*e*P	Pn	19 16 11.2	+1.1
ENPP	**El Nido**	**2.62**	**205**	*e*P	Pn	19 16 24.7	+1.3

JMA 27 19:17:14.7±0.2,37.°87N×144.°15E,h41km,M3.5,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.28**	**286**	P	Pn	19 17 51.2	+1.3
JIO				S	Sn	19 18 18.2	+1.5
OFUJ	**Ofunato**	**2.29**	**303**	P	Pn	19 17 51.4	+1.4
OFUJ				S	Sn	19 18 18.9	+1.9
JMK	**Ichinoseki**	**2.54**	**296**	P	Pn	19 17 55.2	+1.8
JMK				S	Sn	19 18 25.5	+2.4
JOM	**Ohasama**	**2.75**	**306**	P	Pn	19 17 58.5	+2.2
JOM				S	Sn	19 18 29.5	+1.2
JOU	**Okura**	**2.79**	**281**	P	Pn	19 17 59.2	+2.3
JOU				S	Sn	19 18 32.3	+2.9
JFT	**Otama**	**3.04**	**265**	P	Pn	19 18 01.2	+0.8
JFT				S	Sn	19 18 38.1	+2.5
JRG	**Rokugo**	**3.15**	**300**	P	Pn	19 18 04.0	+2.3
JRG				S	Sn	19 18 41.0	+2.9
JYK	**Kaneyama**	**3.16**	**291**	P	Pn	19 18 03.2	+1.3
JYK				S	Sn	19 18 41.2	+2.9
JANG	**Nango**	**3.23**	**321**	P	Pn	19 18 04.3	+1.4
JANG				S	Sn	19 18 41.0	+0.8
JAH	**Hinai**	**3.58**	**311**	*e*S	Sn	19 18 51.1	+2.3
JRY	**Ryogami san**	**4.59**	**248**	P	Pn	19 18 22.7	+1.1

*ISCJB **27** 19:18:56.3±0.4,32.°19N±0.°02×115.°18W±0.°03,h24km±4km, Error ellipse: s-maj=4.4km s-min=3.8km az=35.2*
*ECX **27** 19:18:58.1±0.6,32.°14N×115.°25W,h6km,MD2.9,ML3.1*
*NEIC **27** 19:18:58.1,32.°14N×115.°25W,h6km,ML3.1(ECX), ML3.1(PAS),After ECX.*
*MEX **27** 19:18:58.9±0.4,32.°22N×115.°17W,h10km±39km,MD3.8*
ISC 27 19:18:56.5±1.0,32.°14N±0.°02×115.°25W±0.°03,h16km±7km, n35,σ1.°27/39,1C-1D,California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MBIG	**Mexicali**	**0.28**	**10**	*e*P	**Pg**	**19 19 02.7**	**+0.2**
MBIG				*e*S	**Sg**	**19 19 05.2**	**-1.4**
MBIG	**Mexicali**	**0.28**	**10**	*e*P	**Pg**	**19 19 02.8**	**+0.3**
CPBX	**Cerro Prieto**	**0.28**	**351**	*e*Sg	**Sg**	**19 19 05.3**	**-1.6**
CPBX	**Cerro Prieto**	**0.28**	**351**	*e*P	**Pg**	**19 19 03.2**	**+0.6**
CPBX				*e*S	**Sg**	**19 19 08.0**	**+1.1**
CPBX				AML	AML	19 19 10.9	
	comp=N,6μm,0.2s						
CPBX				⇓*e*	

MANT				S	Sg	19 20 41.9	+0.2
MANT	**Manisa**	**0.71**	**211**	*i* P	**Pn**	19 20 32.9	-0.4
MANT				*i* S	**Sg**	19 20 41.9	+0.2
KHAL	**Karahalli**	**0.82**	**153**	P	**Pg**	19 20 34.3	+0.1
KHAL				S	**Sn**	19 20 46.2	-0.1
KHAL	**Karahalli**	**0.82**	**153**	*i* P	**Pg**	19 20 34.3	+0.1
KHAL				*i* S	**Sn**	19 20 46.2	-0.1
BALB	**Balikesir**	**1.03**	**302**	*e*PG	**Pg**	19 20 38.5	+0.3
BALB	**Balikesir**	**1.03**	**302**	*e*Pg	**Pg**	19 20 38.5	+0.3
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*PN	**Pg**	19 20 42.6	-0.1
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*Pn	**Pg**	19 20 42.6	-0.1
MDNY	**Mudanya-Bursa**	**1.27**	**355**	*e*PN	**Pg**	19 20 42.6	-0.1
MDNY	**Mudanya-Bursa**	**1.27**	**355**	*e*Pn	**Pg**	19 20 42.6	-0.1
IZI	**Iznik**	**1.28**	**16**	*e*PN	**Pg**	19 20 43.2	+0.2
IZI	**Iznik**	**1.28**	**16**	*e*Pn	**Pg**	19 20 43.2	+0.2
BORA	**Eskisehir**	**1.35**	**54**	P	**Pb**	19 20 42.8	-0.1
BORA				S	**Sg**	19 21 02.7	+0.6
BORA	**Eskisehir**	**1.35**	**54**	*i* P	**Pb**	19 20 42.8	-0.1
BORA				*i* S	**Sg**	19 21 02.7	+0.6
ARMT	**Armutlu**	**1.47**	**355**	*e*PN	**Pb**	19 20 45.5	+0.7
ARMT	**Armutlu**	**1.47**	**355**	*e*Pn	**Pb**	19 20 45.5	+0.7
GULT	**Gulveren**	**1.76**	**40**	*e*PN	**Pb**	19 20 49.8	0.0
GULT	**Gulveren**	**1.76**	**40**	*e*Pn	**Pb**	19 20 49.8	0.0

MAN 27 19:29:54.6±19N×123°72E, h31km, mb4.7, ML3.6, MS3.6, 1C, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CTBH	**Cotabato--PC H**	**1.15**	**27**	⇑*i* P	Pn	19 30 13.7	-0.3
CTBH				*i* S	Sn	19 30 28.4	-0.3
PAGZ	**Pagadian**	**1.69**	**348**	*e*P	Pn	19 30 22.0	+0.6
PAGZ				*e*S	Sn	19 30 42.6	+0.6
IPIL	**Ipil**	**1.96**	**324**	*e*P	Pn	19 30 26.5	+1.4
IPIL				*e*S	Sn	19 30 49.7	+1.0
BUKP	**Musuan**	**2.14**	**38**	*e*P	Pn	19 30 28.9	+1.2
BUKP				*e*S	Sn	19 30 55.2	+1.9
MATI	**Mati**	**2.63**	**73**	*e*P	Pn	19 30 36.8	+2.5

*ISCJB **27** 19:34:57.2±0.5, 39°.08N±0°.04×29°.04E±0°.04, h9km, Error ellipse: s-maj=5.7km s-min=3.9km az=146.8*
*CSEM **27** 19:34:57.2±0.1, 39°.10N×29°.04E, h5km, MD2.5, Error ellipse: s-maj=3.0km s-min=2.4km az=117.0*
*ISK **27** 19:34:57.1, 39°.08N×29°.12E, h12km, MD2.7*
*DDA **27** 19:34:57.2, 39°.09N×29°.02E, h7km, Md2.5*
ISC 27 19:34:57.2±0.9, 39°.09N±0°.03×29°.05E±0°.02, h9km, n28, σ0s44/36, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**260**	P	**Pg**	**19 35 02.3**	**-0.3**
DEMI				S	**Sg**	**19 35 06.1**	**0.0**
DEMI	**Demirci**	**0.26**	**260**	*i* P	**Pg**	**19 35 02.3**	**-0.3**
DEMI				*i* S	**Sg**	**19 35 06.1**	**0.0**
GDZ	**Gediz**	**0.34**	**90**	P	**Pb**	**19 35 04.7**	**-0.8**
GDZ				S	**Sg**	**19 35 09.6**	**+1.2**
GDZ	**Gediz**	**0.34**	**90**	*i* P	**Pb**	**19 35 04.7**	**-0.8**
GDZ				*i* S	**Sg**	**19 35 09.6**	**+1.2**
TVSB	**Tavsanli**	**0.48**	**41**	*e*PG	**Pg**	**19 35 06.6**	**-0.1**
TVSB				*e*SG	**Sg**	**19 35 13.2**	**+0.1**
TVSB	**Tavsanli**	**0.48**	**41**	*e*Pg	**Pg**	**19 35 06.6**	**-0.1**
TVSB				*e*Sg	**Sg**	**19 35 13.2**	**+0.1**
KULA	**Kula-Manisa**	**0.65**	**208**	*e*PG	**Pb**	**19 35 10.4**	**-0.4**
KULA	**Kula-Manisa**	**0.65**	**208**	*e*Pg	**Pb**	**19 35 10.4**	**-0.4**
DURS	**Dursunbey**	**0.68**	**319**	P	**Pg**	**19 35 10.1**	**-0.3**
DURS	**Dursunbey**	**0.68**	**319**	*i* P	**Pg**	**19 35 10.1**	**-0.3**
MANT	**Manisa**	**0.71**	**213**	P	**Pg**	**19 35 11.2**	**+0.3**
MANT				S	**Sg**	**19 35 20.2**	**0.0**
MANT	**Manisa**	**0.71**	**213**	*i* P	**Pg**	**19 35 11.2**	**+0.3**
MANT				*i* S	**Sg**	**19 35 20.2**	**0.0**
KHL	**Karahalli**	**0.85**	**154**	*e*PG	**Pg**	**19 35 13.4**	**-0.1**
KHL	**Karahalli**	**0.85**	**154**	*e*Pg	**Pg**	**19 35 13.4**	**-0.1**
BALB	**Balikesir**	**1.06**	**302**	*e*PN	**Pn**	**19 35 19.0**	**+0.7**
BALB	**Balikesir**	**1.06**	**302**	*e*Pn	**Pn**	**19 35 19.0**	**+0.7**
MDNY	**Mudanya-Bursa**	**1.29**	**354**	*e*PN	**Pb**	**19 35 21.6**	**0.0**
MDNY	**Mudanya-Bursa**	**1.29**	**354**	*e*Pn	**Pb**	**19 35 21.6**	**0.0**
IZI	**Iznik**	**1.29**	**15**	*e*PN	**Pn**	**19 35 21.3**	**-0.2**
IZI	**Iznik**	**1.29**	**15**	*e*Pn	**Pn**	**19 35 21.3**	**-0.2**
KCTX	**Karacabey (Bur**	**1.29**	**336**	*e*PN	**Pg**	**19 35 22.1**	**+0.1**
KCTX	**Karacabey (Bur**	**1.29**	**336**	*e*Pn	**Pg**	**19 35 22.1**	**+0.1**
GONE	**Gonen-Balikesi**	**1.42**	**313**	*e*PN	**Pg**	**19 35 24.2**	**-0.3**
GONE	**Gonen-Balikesi**	**1.42**	**313**	*e*Pn	**Pg**	**19 35 24.2**	**-0.3**
ARMT	**Armutlu**	**1.48**	**354**	*e*PN	**Pn**	**19 35 24.5**	**+0.4**
ARMT	**Armutlu**	**1.48**	**354**	*e*Pn	**Pn**	**19 35 24.5**	**+0.4**
GULT	**Gulveren**	**1.75**	**40**	*e*PN	**Pn**	**19 35 27.8**	**-0.1**
GULT	**Gulveren**	**1.75**	**40**	*e*Pn	**Pn**	**19 35 27.8**	**-0.1**

*ISCJB **27** 19:37:14.4±0.5, 39°.09N±0°.03×29°.04E±0°.04, h9km±5km, Error ellipse: s-maj=5.8km s-min=4.3km az=152.2*
*CSEM **27** 19:37:14.6±0.1, 39°.09N×29°.05E, h10km, MD2.8, Error ellipse: s-maj=2.4km s-min=1.9km az=123.0*
*ISK **27** 19:37:14.3, 39°.11N×29°.06E, h11km, MD2.8*
*DDA **27** 19:37:14.4, 39°.07N×29°.03E, h7km, Md2.8*
ISC 27 19:37:14.0±1.0, 39°.05N±0°.04×29°.07E±0°.03, h11km±9km, n36, σ0s26/46, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**268**	P	**Pg**	**19 37 19.7**	**+0.1**
DEMI				S	**Sg**	**19 37 23.1**	**-0.3**
DEMI	**Demirci**	**0.28**	**268**	*i* P	**Pg**	**19 37 19.7**	**+0.1**
DEMI				*i* S	**Sg**	**19 37 23.1**	**-0.3**
GDZ	**Gediz**	**0.32**	**83**	P	**Pb**	**19 37 21.7**	**-0.2**
GDZ				S	**Sb**	**19 37 26.8**	**-0.4**
GDZ	**Gediz**	**0.32**	**83**	*i* P	**Pb**	**19 37 21.7**	**-0.2**
GDZ				*i* S	**Sb**	**19 37 26.8**	**-0.4**
TVSB	**Tavsanli**	**0.50**	**37**	*e*PG	**Pg**	**19 37 23.9**	**+0.2**
TVSB				*e*SG	**Sg**	**19 37 30.5**	**+0.1**
TVSB	**Tavsanli**	**0.50**	**37**	*e*Pg	**Pg**	**19 37 23.9**	**+0.2**
TVSB				*e*Sg	**Sg**	**19 37 30.5**	**+0.1**
KULA	**Kula-Manisa**	**0.62**	**211**	*e*PG	**Pb**	**19 37 27.4**	**+0.4**
KULA	**Kula-Manisa**	**0.62**	**211**	*e*Pg	**Pb**	**19 37 27.4**	**+0.4**
MANT	**Manisa**	**0.69**	**216**	P	**Pb**	**19 37 28.2**	**+0.1**
MANT				S	**Sb**	**19 37 37.4**	**-0.4**
MANT	**Manisa**	**0.69**	**216**	*i* P	**Pb**	**19 37 28.2**	**+0.1**
MANT				*i* S	**Sb**	**19 37 37.4**	**-0.4**
KHL	**Karahalli**	**0.81**	**154**	*e*PG	**Pn**	**19 37 31.6**	**+0.1**
KHL	**Karahalli**	**0.81**	**154**	*e*Pg	**Pn**	**19 37 31.6**	**+0.1**
AKS	**Akhisar**	**0.99**	**260**	*e*PG	**Pn**	**19 37 34.2**	**+0.2**
AKS	**Akhisar**	**0.99**	**260**	*e*Pg	**Pn**	**19 37 34.2**	**+0.2**
ORLT	**Orhaneli**	**1.00**	**352**	*e*PG	**Pg**	**19 37 33.1**	**-0.1**
ORLT	**Orhaneli**	**1.00**	**352**	*e*Pg	**Pg**	**19 37 33.1**	**-0.1**
BALB	**Balikesir**	**1.09**	**303**	*e*PG	**Pg**	**19 37 34.9**	**-0.1**
BALB				*e*SG	**Sn**	**19 37 50.3**	**-0.1**
BALB	**Balikesir**	**1.09**	**303**	*e*Pg	**Pg**	**19 37 34.9**	**-0.1**
BALB				*e*Sg	**Sn**	**19 37 50.3**	**-0.1**
IZI	**Iznik**	**1.32**	**14**	*e*PN	**Pn**	**19 37 38.7**	**+0.2**
IZI	**Iznik**	**1.32**	**14**	*e*Pn	**Pn**	**19 37 38.7**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.32**	**354**	*e*PN	**Pn**	**19 37 38.7**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.32**	**354**	*e*Pn	**Pn**	**19 37 38.7**	**+0.3**
KCTX	**Karacabey (Bur**	**1.33**	**336**	*e*PN	**Pn**	**19 37 38.9**	**+0.3**
KCTX	**Karacabey (Bur**	**1.33**	**336**	*e*Pn	**Pn**	**19 37 38.9**	**+0.3**
GEMT	**Gemlik**	**1.38**	**4**	*e*PN	**Pn**	**19 37 39.5**	**+0.2**
GEMT	**Gemlik**	**1.38**	**4**	*e*Pn	**Pn**	**19 37 39.5**	**+0.2**
GONE	**Gonen-Balikesi**	**1.46**	**313**	*e*PN	**Pn**	**19 37 40.5**	**+0.3**
GONE	**Gonen-Balikesi**	**1.46**	**313**	*e*Pn	**Pn**	**19 37 40.6**	**+0.3**
ADVT	**Abdulvahap**	**1.47**	**20**	*e*PN	**Pn**	**19 37 40.7**	**+0.2**
ADVT	**Abdulvahap**	**1.47**	**20**	*e*Pn	**Pn**	**19 37 40.7**	**+0.2**
ARMT	**Armutlu**	**1.52**	**354**	*e*PN	**Pn**	**19 37 41.3**	**+0.1**
ARMT	**Armutlu**	**1.52**	**354**	*e*Pn	**Pn**	**19 37 41.3**	**+0.1**
EDC	**Edincik**	**1.59**	**325**	*e*PN	**Pn**	**19 37 42.5**	**+0.3**
EDC	**Edincik**	**1.59**	**325**	*e*Pn	**Pn**	**19 37 42.5**	**+0.3**
GULT	**Gulveren**	**1.77**	**39**	*e*PN	**Pn**	**19 37 45.2**	**+0.5**
GULT	**Gulveren**	**1.77**	**39**	*e*Pn	**Pn**	**19 37 45.2**	**+0.5**

DJA 27 19:44:40.0±1.1, 1°S±7°×12°0E±1°1, h53km±7km, M3.7/6, MLv3.7/6, Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCI	**Palu**	**0.16**	**135**	P	Pn	19 44 49.0	+0.5
PCI				S	Sn	19 44 57.1	+2.6
TTSI	**Tana Toraja**	**2.24**	**177**	P	Pn	19 45 14.1	-0.6
TTSI				S	Sn	19 45 40.3	-0.9
MRSI	**Marisa**	**2.55**	**60**	P	Pn	19 45 19.5	+0.5
MRSI				S	Sn	19 45 50.1	+1.3
SPSI	**Sidrap Palu**	**3.15**	**179**	P	Pn	19 45 27.5	+0.3
SPSI				S	Sn	19 46 07.6	+4.0

*NEIC **27** 19:45:22.8, 16°.30N×99°.37W, h16km, MD4.0(MEX), After MEX.*
MEX 27 19:45:22.8±0.6, 16°.30N×99°.37W, h16km±8km, MD4.0, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ACX	**Acapulco**	**0.73**	**320**	*e*P	Pg	19 45 30.5	-6.7
ACX				*e*S	Sg	19 45 39.6	-7.3
ACX	**Acapulco**	**0.73**	**320**	*e*P	Pg	19 45 30.5	-6.7
ACX				*e*S	Sg	19 45 39.6	-7.3
ACP2	**Acapulco**	**0.75**	**319**	*e*P	Pb	19 45 34.7	-2.8
ACP2				*e*S	Sg	19 45 44.0	-3.5
CAIG	**El Cayaco**	**1.13**	**311**	*e*P	Pn	19 45 40.6	-3.4
CAIG				*e*S	Sb	19 45 54.3	-4.2
CAIG	**El Cayaco**	**1.13**	**311**	*e*P	Pn	19 45 40.6	-3.4
CAIG				*e*S	Sb	19 45 54.3	-4.2
PNIG	**Pinotepa**	**1.20**	**86**	*e*P	Pn	19 45 41.5	-3.4
PNIG				*e*S	Sb	19 45 55.2	-5.1
PNIG	**Pinotepa**	**1.20**	**86**	*e*P	Pn	19 45 41.5	-3.4
PNIG				*e*S	Sb	19 45 55.2	-5.1
TLIG	**Tlapa**	**1.47**	**31**	*e*P	Pn	19 45 45.1	-3.6
TLIG				*e*S	Sn	19 46 02.8	-4.9
MEIG	**Mezcala**	**1.63**	**352**	*e*P	Pn	19 45 47.7	-3.2
MEIG				*e*S	Sn	19 46 06.7	-4.9
MEIG	**Mezcala**	**1.63**	**352**	*e*P	Pn	19 45 47.7	-3.2
MEIG				*e*S	Sn	19 46 06.7	-4.9
PLIG	**Platanillo**	**2.08**	**357**	*e*P	Pn	19 45 54.3	-2.8
PLIG				*e*S	Sn	19 46 19.1	-3.6
PLIG	**Platanillo**	**2.08**	**357**	*e*P	Pn	19 45 54.3	-2.8
PLIG				*e*S	Sn	19 46 19.1	-3.6
ARIG	**Puente Sto Nin**	**2.18**	**335**	*e*P	Pn	19 45 55.8	-2.6
ARIG				*i* S	Sn	19 46 20.7	-4.3
ZIIG	**Zihuatanejo**	**2.39**	**303**	*e*P	Pn	19 45 58.5	-2.7
ZIIG	**Zihuatanejo**	**2.39**	**303**	*e*P	Pn	19 45 58.5	-2.7
YAIG	**Yautepec**	**2.56**	**6**	*e*P	Pn	19 46 00.7	-3.1
YAIG				*i* S	Sn	19 46 31.3	-3.4
YAIG	**Yautepec**	**2.56**	**6**	*e*P	Pn	19 46 00.7	-3.1
YAIG				*i* S	Sn	19 46 31.3	-3.4
VHO	**Vista Hermosa**	**2.64**	**73**	*e*P	Pn	19 46 01.3	-3.6
VHO				*i* S	Sn	19 46 34.2	-2.5
VHO	**Vista Hermosa**	**2.64**	**73**	*e*P	Pn	19 46 01.3	-3.6
VHO				*i* S	Sn	19 46 34.2	-2.5

*ISCJB **27** 19:45:48.8±0.2, 38°.41N±0°.02×118°.68W±0°.02, h10km, mb4.3/5, MS3.6/2, Error ellipse: s-maj=2.7km s-min=2.3km az=135.6*
*NEIC **27** 19:45:48.5, 38°.44N×118°.73W, h3km, MW3.8, ML4.2(REN), Moment Tensor Solution. s18 Moment tensor: Scale 10^{14}Nm; M_{rr}=6.31; $M_{\theta\theta}$1.13; $M_{\phi\phi}$5.18; $M_{r\theta}$0.00; $M_{\theta\phi}$2.42; $M_{\phi r}$0.00; Best double couple: M_0=6.30000×10^{14} NP1: ϕ_s=205.00000°, δ45.00000°, λ-90.00000°. NP2: ϕ_s=25.00000°, δ45.00000°, λ-90.00000°. Principal axes: T 6.3100, Plg0.0000°, Azm115.0000°; N 0.0000, Plg0.0000°, Azm205.0000°; P -6.3100, Plg90.0000°, Azm0.0000°; After REN.*
NEIC Felt [III] at Hawthorne.
*IDC **27** 19:45:48.9±0.9, 38°.42N×118°.75W, h0km, mb3.8/3, mb1 3.9/7, mb1mx3.6/46, mbtmp3.6/7, ML3.9/4, MS3.3/6, Ms1 3.3/6, ms1mx2.8/49 Error ellipse: s-maj=13.7km s-min=5.9km az=11.0*
ISC 27 19:45:48.9±0.5, 38°.40N±0°.02×118°.67W±0°.02, h10km, n130, σ1s98/146, mb3.8/5, California-Nevada border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NV01	**Mina Array Sit**	**0.29**	**85**	*e*Pg	**Pg**	**19 45 54.5**	**-0.2**
NV01				*e*Sg	**Sg**	**19 45 59.5**	**+0.8**
NVAR	**Mina Array Bea**	**0.29**	**85**	Pg	**Pg**	**19 45 54.8**	**+0.1**
	3μm,0.3s,baz=265,slow=20						
NVAR				Lg	Lg	19 45 59.8	
	7μm,0.3s,baz=299,slow=34,SNR=91						
NVAR				LR	LR	19 46 24.9	
	comp=Z,2μm,18.6s,baz=16,slow=76						
NV11	**Mina Array Sit**	**0.40**	**86**	*e*Pg	**Pb**	**19 45 57.1**	**-1.2**
NV11				*e*Sg	**Sb**	**19 46 03.2**	**-1.3**
WAKR	**Walker**	**0.61**	**280**	*e*Pg	**Pg**	**19 45 59.5**	**-1.4**
WAKR				*e*Sg	**Sg**	**19 46 06.9**	**-2.0**
MLAC	**Mammoth, Mammo**	**0.78**	**190**	P	**Pb**	**19 46 03.9**	**-0.9**
	baz=7.8						
MLAC				S	**Sb**	**19 46 15.1**	**-0.4**
	baz=7.8						
MTUM	**Tungsten Hills**	**1.05**	**176**	*e*Pg	**Pn**	**19 46 08.9**	**-1.0**
TIN	**Tinemaha, Big**	**1.39**	**165**	P	**Pg**	**19 46 15.3**	**-0.3**
	baz=345						
TIN				S	**Sg**	**19 46 34.9**	**+1.2**
	baz=345						
CMB	**Columbia Colle**	**1.40**	**255**	*e*Pg	**Pb**	**19 46 13.7**	**-1.6**
CMB				*e*Sn	**Sb**	**19 46 30.7**	**-2.5**
PAHR	**Pah Rah Range**	**1.42**	**337**	*e*Pn	**Pn**	**19 46 13.9**	**-1.0**
PAHR				*e*Sn	**Sb**	**19 46 33.1**	**-0.6**
GRAC	**Grapevine Rang**	**1.74**	**143**	P	**Pb**	**19 46 20.5**	**-0.5**
	baz=324						
AFDM	**Forest Hills D**	**1.89**	**287**	*e*Pn	**Pn**	**19 46 21.0**	**-0.2**
RCTC	**Rector, Farmer**	**2.15**	**193**	P	**Pb**	**19 46 26.0**	**-1.8**
	baz=11						
DAC	**Darwin (Calif)**	**2.29**	**158**	*e*Pn	**Pb**	**19 46 27.8**	**-2.6**
BMN	**Battle Mountai**	**2.31**	**28**	*e*Pn	**Pn**	**19 46 26.3**	**-0.9**
OHCM	**Honcut**	**2.39**	**294**	*e*Pn	**Pb**	**19 46 30.5**	**-1.4**
TPNV	**Topopah Spring**	**2.41**	**126**	P	**Pn**	**19 46 29.2**	**+0.8**
	baz=308						
TPNV	**Topopah Spring**	**2.41**	**126**	*e*Pn	**Pn**	**19 46 29.5**	**+1.0**
FURC	**Furnace Creek,**	**2.41**	**143**	P	**Pb**	**19 46 29.5**	**-2.8**
	baz=324						
FURC				Sb	**Sg**	**19 47 06.5**	**+0.3**
	baz=324						
R11A	**Troy Canyon, C**	**2.42**	**90**	P	**Pn**	**19 46 28.6**	**-0.1**
	baz=273						
R11A				Sb	**Sg**	**19 47 06.0**	**-0.8**
	baz=273						
R11A	**Troy Canyon, C**	**2.42**	**90**	*e*Pn	**Pn**	**19 46 28.4**	**-0.3**
ORV	**Oroville**	**2.49**	**298**	*e*Pn	**Pn**	**19 46 29.5**	**0.0**
MPMC	**Manual Prospec**	**2.52**	**158**	P	**Pn**	**19 46 31.1**	**+0.9**
	baz=338						
MPMC				Sb	**Sg**	**19 47 09.3**	**-0.6**
	baz=338						
VES	**Vestal, Richgr**	**2.58**	**188**	P	**Pb**	**19 46 32.7**	**-2.5**
	baz=6.7						
VES				Sb	**Sg**	**19 47 11.0**	**-0.8**
	baz=6.7						
ISA	**Isabella, Lake**	**2.74**	**177**	Pb	**Pg**	**19 46 38.6**	**-2.8**
	baz=356						
ISA				Sb	**Sg**	**19 47 15.2**	**-1.7**
	baz=356						
ISA	**Isabella, Lake**	**2.74**	**177**	*e*Pn	**Pn**	**19 46 34.1**	**+1.1**
SAO	**San Andreas Ge**	**2.75**	**234**	*e*Pn	**Pn**	**19 46 33.6**	**+0.5**
LRMC	**Laurel Mtn Rad**	**3.02**	**165**	Pg	**Pg**	**19 46 46.8**	**0.0**
	baz=345						
SHOC	**Shoshone, Teco**	**3.15**	**142**	Pg	**Pg**	**19 46 49.3**	**+0.1**
	baz=324						
SMMC	**Simmler**	**3.26**	**199**	P	**Pn**	**19 46 41.6**	**+1.4**
	baz=18						
ARVC	**Arvin**	**3.27**	**182**	Pg	**Pg**	**19 46 51.5**	**-0.2**
	baz=1.8						
ARVC				Sb	**Sg**	**19 47 30.6**	**-3.5**
	baz=1.8						
MCCM	**Marconi Confer**	**3.33**	**267**	*e*Pn	**Pn**	**19 46 41.0**	**+0.1**
SHPR	**Sheep Range**	**3.37**	**123**	*e*Pn	**Pn**	**19 46 43.0**	**+1.2**
GSC	**Goldstone, Bar**	**3.44**	**154**	Pg	**Pg**	**19 46 54.8**	**0.0**
	baz=335						
GSC	**Goldstone, Bar**	**3.44**	**154**	*e*Pn	**Pn**	**19 46 44.0**	**+1.4**
HOPS	**Hopland Field**	**3.50**	**281**	*e*Pn	**Pn**	**19 46 44.3**	**+0.9**
ELK	**Elko**	**3.53**	**47**	*e*Pn	**Pn**	**19 46 44.0**	**0.0**
EDW2	**Edwards Air Fo**	**3.56**	**171**	Pb	**Pb**	**19 46 52.5**	**+0.6**
	baz=351						
EDW2				Sb	**Sg**	**19 47 40.1**	**-3.1**
	baz=351						
PKM	**Mcpherson Peak**	**3.63**	**195**	P	**Pn**	**19 46 46.3**	**+1.0**
	baz=14						
TUQ	**Turquoise Moun**	**3.69**	**143**	P	**Pn**	**19 46 47.6**	**+1.5**
	baz=324						
WDC	**Whiskeytown Da**	**3.70**	**307**	*e*Pn	**Pn**	**19 46 46.9**	**+0.7**
MOD	**Modoc Plateau**	**3.71**	**341**	*e*Pn	**Pn**	**19 46 48.3**	**+1.9**
RRX	**Edison Barstow**	**3.77**	**159**	Pg	**Pg**	**19 47 01.0**	**-0.1**
	baz=340						
PSUT	**Pine Spring**	**3.78**	**87**	*e*Pn	**Pn**	**19 46 49.2**	**+1.8**
PSUT				*e*Sg	**Sg**	**19 47 46.4**	**-3.9**
OSI	**Osito Audit: C**	**3.78**	**181**	Pb	**Pb**	**19 46 56.9**	**+1.1**
	baz=0.3						
WVOR	**Wild Horse Val**	**4.03**	**0**	*e*Pn	**Pn**	**19 46 52.2**	**+1.5**
WVOR				*e*Sg	**Sg**	**19 47 53.8**	**-4.3**
N02D	**Trinity Center**	**4.04**	**311**	P	**Pn**	**19 46 51.0**	**+0.1**
	baz=128						
N02D				Sb	**Sb**	**19 47 52.1**	**+3.1**
	baz=128						
GATR	**Gnd/Air Tx Cnt**	**4.12**	**202**	*e*Pg	**Pb**	**19 47 00.3**	**-1.2**
M04C	**Macdoel**	**4.16**	**325**	P	**Pn**	**19 46 54.4**	**+1.8**
	baz=143,SNR=34						
MWC	**Mount Wilson**	**4.20**	**173**	*e*Pn	**Pn**	**19 46 56.1**	**+2.9**
MWC				*e*Pg	**Pg**	**19 47 06.8**	**-2.5**
MWC				*e*Sg	**Sg**	**19 48 01.8**	**-2.1**
PASC	**Pasadena Art C**	**4.24**	**175**	*e*Pn	Pn	19 46 57.4	+3.8
PASC				*e*Sg	**Sg**	**19 48 01.4**	**-3.8**
CCUT	**Cedar City**	**4.28**	**100**	*e*Pn	**Pn**	**19 46 55.4**	**+1.1**
FSU	**Fish Springs**	**4.31**	**71**	*e*Pn	**Pn**	**19 46 55.6**	**+0.9**
KMRM	**Mail Ridge**	**4.31**	**296**	*e*Pn	**Pn**	**19 46 55.5**	**+0.9**
BBRC	**Big Bear Solar**	**4.37**	**161**	Pg	**Pg**	**19 47 12.9**	**+0.3**
	baz=342						
M02C	**Callahan**	**4.39**	**314**	P	**Pn**	**19 46 56.6**	**+1.0**
	baz=131,SNR=7.7						
LCMT	**Little Creek M**	**4.52**	**106**	*e*Pn	**Pn**	**19 46 58.9**	**+1.4**
YBH	**Yreka Blue Hor**	**4.55**	**318**	Pn	**Pn**	**19 46 59.8**	**+2.0**
	1.4nm,0.3s,baz=146,slow=8.1,SNR=28						
YBH				LR	LR	19 48 58.6	
	comp=Z,562nm,18.9s,baz=170,slow=42						
K05A	**Summer Lake**	**4.64**	**339**	*e*Pn	**Pn**	**19 47 02.1**	**+2.9**
K04D	**Chiloquin, OR**	**4.83**	**332**	P	**Pn**	**19 47 02.0**	**+0.3**
	baz=150,SNR=9.6						
KNB	**Kanab**	**4.84**	**105**	*e*Pn	**Pn**	**19 47 03.5**	**+1.5**
NEE2	**Needles Airpor**	**4.88**	**137**	Pg	**Pg**	**19 47 21.8**	**-0.5**
	baz=320						
DUG	**Dugway, Tooele**	**4.88**	**67**	P	**Pn**	**19 47 03.6**	**+1.1**
	baz=251						
DUG	**Dugway, Tooele**	**4.88**	**67**	*e*Pn	**Pn**	**19 47 03.9**	**+1.4**
BELC	**Belle Mtn. Jos**	**4.89**	**153**	P	**Pn**	**19 47 04.3**	**+1.6**
	baz=335						
BGU	**Big Grassy Mou**	**5.03**	**58**	*e*Pn	**Pn**	**19 47 04.9**	**+0.4**
W13A	**Hualapai Mount**	**5.06**	**129**	*e*Pn	**Pn**	**19 47 05.6**	**+0.5**
MSU	**Marysvale**	**5.09**	**87**	*e*Pn	**Pn**	**19 47 08.8**	**+3.2**
PFO	**Pinyon Flats O**	**5.11**	**159**	Pn	**Pn**	**19 47 07.3**	**+1.7**
	0.8nm,0.3s,baz=339,slow=15,SNR=2.9						
PFO				LR	LR	19 48 32.1	
	comp=Z,48nm,20.8s,baz=328,slow=32						
PFO				Lg	Lg	19 48 32.8	
	1.1nm,0.3s,baz=37,slow=20,SNR=2.5						
PFO	**Pinyon Flats O**	**5.11**	**159**	*e*Pn	**Pn**	**19 47 06.8**	**+1.3**
PFO				*e*Lg	Lg	19 48 32.8	
TPFO	**Pinon Flats**	**5.11**	**159**	Pg	**Pg**	**19 47 25.9**	**-0.9**
	baz=340						
PKCU	**Pink Cliffs**	**5.12**	**99**	*e*Pn	**Pn**	**19 47 05.6**	**-0.3**
PKCU				*e*Pg	**Pg**	**19 47 24.7**	**-2.2**
MTPU	**Mount Pierson**	**5.12**	**92**	*e*Pn	**Pn**	**19 47 08.0**	**+2.0**
J05D	**Fort Rock, OR**	**5.25**	**339**	P	**Pn**	**19 47 09.1**	**+1.5**
	baz=158,SNR=13						
L02D	**Cave Junction,**	**5.32**	**316**	P	**Pn**	**19 47 11.4**	**+3.0**
	baz=133,SNR=12						
HUMO	**Hull Mountain**	**5.32**	**323**	*e*Pn	**Pn**	**19 47 11.2**	**+2.8**
BC3	**Big Chuckawall**	**5.41**	**150**	P	**Pn**	**19 47 12.7**	**+3.0**
	baz=332						
U15A	**North Rim**	**5.

DCZ	**Deep Cove**	**1.17**	**38**	AML	AML	19 54 07.9	
DCZ				AML	AML	19 54 07.9	
DCZ				AML	AML	19 54 08.7	
DCZ				AML	AML	19 54 08.8	
APZ	**The Paps**	**1.36**	**110**	PN	Pn	19 53 57.9	-1.0
APZ				SN	Sb	19 54 16.1	-0.7
APZ				AML	AML	19 54 16.9	
WHZ	**Wether Hill Ro**	**1.36**	**69**	⇑PN	Pn	19 53 57.4	-1.5
WHZ				AML	AML	19 54 14.8	
WHZ				AML	AML	19 54 15.1	
MLZ	**Mavora Lakes**	**1.73**	**54**	PN	Pn	19 54 03.1	-0.8
MLZ				AML	AML	19 54 29.2	
MLZ				AML	AML	19 54 32.1	
SYZ	**Scrubby Hill**	**2.09**	**95**	PN	Pn	19 54 08.3	-0.5
SYZ				AML	AML	19 54 36.6	
SYZ				AML	AML	19 54 36.6	
SYZ				AML	AML	19 54 37.4	
SYZ				AML	AML	19 54 37.5	
TUZ	**Tuapeka**	**2.47**	**81**	PN	Pn	19 54 12.9	-1.2
TUZ				AML	AML	19 54 49.0	
TUZ				AML	AML	19 54 49.0	
TUZ				AML	AML	19 54 50.5	
TUZ				AML	AML	19 54 54.0	
EAZ	**Earnscleugh**	**2.51**	**64**	PN	Pn	19 54 14.2	-0.5
EAZ				AML	AML	19 54 47.7	
EAZ				AML	AML	19 54 48.0	
EAZ				AML	AML	19 54 50.5	
EAZ				AML	AML	19 54 58.4	
WKZ	**Wanaka**	**2.56**	**54**	PN	Pn	19 54 16.2	+0.8
WKZ				AML	AML	19 54 52.8	
WKZ				AML	AML	19 54 55.9	
WKZ				AML	AML	19 54 56.5	
JCZ	**Jackson Bay**	**2.98**	**40**	PN	Pn	19 54 20.6	-0.7
JCZ				AML	AML	19 55 10.1	
JCZ				AML	AML	19 55 10.4	
ODZ	**Otahua Downs**	**3.44**	**69**	AML	AML	19 53 37.9	
ODZ				AML	AML	19 53 37.9	
LBZ	**Lake Benmore**	**3.49**	**56**	PN	Pn	19 54 26.6	-1.6
LBZ				AML	AML	19 58 17.8	
FOZ	**Fox Glacier**	**3.87**	**44**	PN	Pn	19 54 32.9	-0.5
RPZ	**Rata Peaks**	**4.40**	**54**	AML	AML	19 54 51.6	
RPZ				AML	AML	19 56 03.5	

*ISCJB **27** 19:54:47.5±0.8, 40°.64N×0°.04×42°.66E±0°.04, h10km±6km, Error ellipse: s-maj=7.8km s-min=4.8km az=20.5*
*CSEM **27** 19:54:47.2±0.2, 40°.62N×42°.65E, h10km, MD2.9, Error ellipse: s-maj=5.1km s-min=3.2km az=19.0*
*DDA **27** 19:54:47.2, 40°.64N×42°.66E, h7km, Md2.9*
ISC 27 19:54:47.4±1.1, 40°.63N±0°.03×42°.65E±0°.03, h15km±10km, n15, σ0°52/27, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SENK	**Senkaya-Erzuru**	**0.24**	**254**	*e*PG	**Pg**	**19 54 52.6**	**-0.3**
SENK				*e*SG	**Sg**	**19 54 56.9**	**+0.4**
SENK	**Senkaya-Erzuru**	**0.24**	**254**	*e*Pg	**Pg**	**19 54 52.6**	**-0.3**
KARS	**Kars**	**0.32**	**90**	*e*PG	**Pg**	**19 54 54.4**	**+0.2**
KARS	**Kars**	**0.32**	**90**	*e*Pg	**Pg**	**19 54 54.4**	**+0.2**
DAGI	**Agillar**	**0.72**	**309**	*i* P	**Pg**	**19 55 01.2**	**-0.2**
DAGI				*i* S	**Sb**	**19 55 11.7**	**+0.3**
EAK	**Akyaka**	**0.73**	**85**	P	**Pg**	**19 55 00.9**	**-0.7**
EAK				S	**Sb**	**19 55 12.0**	**+0.3**
EAK	**Akyaka**	**0.73**	**85**	*i* P	**Pg**	**19 55 00.9**	**-0.7**
EAK				*i* S	**Sb**	**19 55 12.0**	**+0.3**
DDEM	**Demirkent**	**0.73**	**291**	P	**Pg**	**19 55 01.4**	**-0.3**
DDEM				S	**Sg**	**19 55 10.9**	**-0.6**
DDEM	**Demirkent**	**0.73**	**291**	*i* P	**Pg**	**19 55 01.4**	**-0.3**
DDEM				*i* S	**Sg**	**19 55 10.9**	**-0.6**
EATA	**Eleskirt**	**0.78**	**189**	P	**Pg**	**19 55 01.9**	**-0.7**
EATA				S	**Sb**	**19 55 14.2**	**+1.0**
EATA	**Eleskirt**	**0.78**	**189**	*i* P	**Pg**	**19 55 01.9**	**-0.7**
EATA				*i* S	**Sb**	**19 55 14.2**	**+1.0**
ARTV	**Artvin**	**0.78**	**316**	P	**Pg**	**19 55 02.7**	**0.0**
ARTV				S	**Sb**	**19 55 13.8**	**+0.5**
ARTV	**Artvin**	**0.78**	**316**	*i* P	**Pg**	**19 55 02.6**	**0.0**
ARTV				*i* S	**Sb**	**19 55 13.8**	**+0.5**
DBAD	**Bademkaya**	**0.82**	**298**	P	**Pg**	**19 55 02.9**	**-0.5**
DBAD				S	**Sg**	**19 55 14.4**	**+0.1**
DBAD	**Bademkaya**	**0.82**	**298**	*i* P	**Pg**	**19 55 02.9**	**-0.5**
DBAD				*i* S	**Sg**	**19 55 14.3**	**+0.1**

*ISCJB **27** 20:01:32.8±0.8, 6°.51S±0°.08×105°.07E±0°.07, h79km±5km, mb3.8/12, Error ellipse: s-maj=17.2km s-min=4.8km az=41.4*
*IDC **27** 20:01:32.9±11.0, 6°.47S×104°.87E, h62km±102km, mb3.6/12, mb1 3.7/12, mb1mx3.4/54, mbtmp3.9/12, Error ellipse: s-maj=89.2km s-min=16.9km az=56.0*
*DJA **27** 20:01:34.1±0.6, 7°S±4°×10°5E±°, h38km±5km, M4.2/13, mb4.4/1, MLv4.1/11, MLv4.1/13*
ISC 27 20:01:33.0±1.3, 6°.56S±0°.09×105°.01E±0°.08, h63km±10km, n29, σ1°17/34, mb3.9/12, Sunda Strait

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CGJI	**Cibinong**	**0.68**	**94**	P	**Pn**	**20 01 46.5**	**-0.6**
CGJI				S	**Sn**	**20 01 57.1**	**-0.4**
KASI	**Kota Agung**	**1.15**	**334**	P	**Pn**	**20 01 53.2**	**+0.1**
KASI				S	**Sn**	**20 02 08.5**	**+0.4**
SBJI	**Serang**	**1.19**	**69**	P	**Pn**	**20 01 53.0**	**-0.7**
SBJI				S	**Sn**	**20 02 09.2**	**+0.1**
BLSI	**Bandar Lampung**	**1.21**	**11**	P	**Pn**	**20 01 54.3**	**+0.4**
BLSI				S	**Sn**	**20 02 09.3**	**-0.2**
SKJI	**Sukabumi**	**1.59**	**106**	P	**Pn**	**20 01 59.6**	**+0.6**
LWLI	**Liwa**	**1.80**	**328**	P	**Pn**	**20 02 03.6**	**+1.6**
LWLI				S	**Sn**	**20 02 25.6**	**+1.7**
CBJI	**Citeko**	**1.83**	**86**	P	**Pn**	**20 02 05.3**	**+3.1**
CNJI	**Cibinong**	**2.23**	**110**	P	**Pn**	**20 02 07.8**	**+0.2**
CNJI				S	**Sn**	**20 02 33.8**	**-0.3**
LEM	**Lembang**	**2.60**	**96**	P	Pn	20 02 21.1	+8.3
LEM	baz=300,slow=20			S	Sn	20 02 54.1	+11
	18nm,0.3s,baz=337,slow=23,SNR=4.3						
LEM	**Lembang**	**2.60**	**96**	P	Pn	20 02 20.2	+7.4
CISI	**Cisompet, Garu**	**2.95**	**110**	P	**Pn**	**20 02 18.6**	**+1.1**
CISI				S	**Sn**	**20 02 52.4**	**+0.5**
CMJI	**Cimerak**	**3.62**	**110**	P	**Pn**	**20 02 27.8**	**+1.2**
CMJI				S	**Sn**	**20 03 07.5**	**-0.6**
PPBI	**Pangkal Pinang**	**4.51**	**14**	P	**Pn**	**20 02 40.8**	**+2.0**
PCJI	**Pacitan**	**6.33**	**105**	P	**Pn**	**20 03 05.5**	**+1.8**
CMAR	**Chiang Mai Arr**	**25.57**	**347**	P	**P**	**20 06 56.1**	**-0.2**
	0.3nm,0.5s,baz=181,slow=9.0,SNR=3.7						
H01W3	**Cape Leeuwin H**	**29.41**	**165**	T	T	20 37 59.7	
	baz=344,slow=76,SNR=12						
H01W1	**Cape Leeuwin H**	**29.43**	**165**	T	T	20 38 00.7	
	baz=344,slow=76,SNR=11						
H01W2	**Cape Leeuwin H**	**29.43**	**165**	T	T	20 37 59.5	
	baz=344,slow=76,SNR=10						
ASAR	**Alice Springs**	**32.55**	**125**	P	**P**	**20 07 59.3**	**+0.8**
	1.2nm,0.6s,baz=308,slow=7.5,SNR=8.9						
ASAR				PcP	**PcP**	**20 10 44.6**	**+0.6**
	0.2nm,0.4s,baz=318,slow=1.2,SNR=3.1						
STKA	**Stephens Creek**	**42.40**	**131**	P	**P**	**20 09 23.2**	**+1.6**
	0.9nm,0.5s,baz=311,slow=8.3,SNR=8.6						
SONM	**Songino Array**	**54.17**	**1**	P	**P**	**20 10 51.9**	**-0.1**
	0.3nm,0.5s,baz=170,slow=7.5,SNR=3.4						
SONM				PcP	**PcP**	**20 11 55.5**	**-0.4**
	0.3nm,0.5s,baz=183,slow=3.1,SNR=3.2						
MKAR	**Makanchi Array**	**56.83**	**342**	P	**P**	**20 11 09.9**	**-1.1**
	0.6nm,0.3s,baz=155,slow=8.6,SNR=16						
KURBB	**Kurchatov Arra**	**61.38**	**341**	P	**P**	**20 11 41.4**	**-1.0**
	0.2nm,0.4s,baz=154,slow=6.4,SNR=3.1						
ZALV	**Zalesovo Beam**	**62.64**	**347**	P	**P**	**20 11 48.7**	**-2.0**
	0.8nm,0.3s,baz=149,slow=6.1,SNR=5.3						
BVAR	**Borovoye Array**	**66.21**	**338**	P	**P**	**20 12 12.7**	**-1.4**
	0.2nm,0.3s,baz=134,slow=6.4,SNR=4.2						
ARU	**Arti**	**73.39**	**335**	P	**P**	**20 12 57.6**	**-0.5**
	1.0nm,0.4s,baz=102,slow=19,SNR=2.8						
BRTR	**Keskin Array B**	**80.07**	**312**	P	**P**	**20 13 35.7**	**-0.7**
	0.6nm,0.6s,baz=138,slow=5.0,SNR=4.4						
FINES	**FINESS Array B**	**90.45**	**332**	P	**P**	**20 14 27.0**	**-0.5**
	3.0nm,1.1s,baz=92,slow=4.3,SNR=2.6						
ARCES	**ARCESS Array B**	**92.44**	**340**	P	**P**	**20 14 35.6**	**-1.0**
	1.0nm,0.7s,baz=72,slow=4.0,SNR=4.2						

NNC 27 20:03:41.3±1.8, 36°.31N×70°.45E, h144km±23km, mb2.9, mpv3.6, 2C-8D, Error ellipse: s-maj=18.3km s-min=12.9km az=137.0, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**2.80**	**333**	⇑P	Pn	20 04 25.4	-0.5
	5.8nm,0.4s						
DZET				⇓S	Sn	20 05 01.3	+0.8
	201nm,0.5s						
MNAS	**Manas**	**6.37**	**14**	⇓P	Pn	20 05 13.6	+0.7
	3.7nm,0.6s						
MNAS				⇓S	Sn	20 06 24.2	-0.4
	14nm,0.7s						
KK31	**Karatay Array**	**6.79**	**0**	⇓P	Pn	20 05 19.0	+0.6
	2.3nm,0.3s,baz=179,slow=13,SNR=68						
KK31				⇓S	Sn	20 06 35.0	+0.6
	1.6nm,0.3s,baz=188,slow=17,SNR=4.2						
AAK	**Ala-Archa**	**7.05**	**25**	⇓P	Pn	20 05 22.2	+0.2
	1.7nm,0.5s						
AAK				⇓S	Sn	20 06 42.1	+1.1
	7.5nm,0.7s						
AB31	**Akbulak array**	**15.04**	**333**	⇑P	Pn	20 07 07.1	+0.9
	2.6nm,0.5s,baz=153,slow=13,SNR=49						
AB31				⇓S	Sn	20 09 52.4	-0.7
	0.5nm,0.4s,baz=154,slow=23,SNR=4.5						

IDC 27 20:04:15.5±2.4, 6°.11S×127°.93E, h421km±31km, mb3.1/5, mb1 3.3/8, mb1mx3.0/40, mbtmp4.0/8, Error ellipse: s-maj=45.2km s-min=10.5km az=71.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SIJI	**Sorong**	**6.18**	**33**	P	P	20 05 52.7	+2.1
	3.7nm,0.3s,baz=177,slow=20,SNR=2.3						
SIJI				S	S	20 07 06.6	-1.9
	baz=198,slow=0.5,SNR=1.6						
WRA	**Warramunga Arr**	**15.10**	**156**	P	P	20 07 29.0	+0.5
	0.9nm,0.3s,baz=337,slow=12,SNR=76						
WRA				S	S	20 10 07.1	-1.0
	0.5nm,0.3s,baz=333,slow=17,SNR=13						
ASAR	**Alice Springs**	**18.38**	**162**	P	P	20 08 03.6	+0.3
	0.7nm,0.3s,baz=338,slow=12,SNR=24						
ASAR				S	S	20 11 10.9	+0.3
	0.2nm,0.3s,baz=336,slow=18,SNR=12						
CMAR	**Chiang Mai Arr**	**37.59**	**311**	P	P	20 10 51.2	-1.3
	0.5nm,0.8s,baz=143,slow=6.8,SNR=4.6						
SONM	**Songino Array**	**56.97**	**343**	P	P	20 13 20.2	+1.0
	0.4nm,0.5s,baz=163,slow=7.7,SNR=4.0						
MKAR	**Makanchi Array**	**66.36**	**328**	P	P	20 14 21.2	+0.2
	0.9nm,0.4s,baz=121,slow=7.9,SNR=19						
ZALV	**Zalesovo Beam**	**69.89**	**335**	P	P	20 14 41.9	-0.5
	0.5nm,0.3s,baz=168,slow=6.1,SNR=3.7						
KURBB	**Kurchatov Arra**	**70.68**	**329**	P	P	20 14 47.3	+0.1
	1.1nm,0.5s,baz=128,slow=5.1,SNR=12						

*ISK **27** 20:05:42.7, 39°.08N×29°.09E, h6km, MD2.7*
*ISCJB **27** 20:05:43.0±0.6, 39°.07N±0°.05×29°.06E±0°.06, h9km, Error ellipse: s-maj=7.9km s-min=4.7km az=135.9*
*DDA **27** 20:05:43.1, 39°.08N×29°.07E, h7km, Md2.5*
*CSEM **27** 20:05:43.1±0.1, 39°.07N×29°.07E, h5km, MD2.7, Error ellipse: s-maj=2.2km s-min=1.4km az=125.0*
ISC 27 20:05:43.4±1.0, 39°.08N±0°.03×29°.06E±0°.03, h9km, n16, σ0°31/22, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.33**	**88**	P	**Pg**	**20 05 49.7**	**-0.3**
GDZ				S	**Sg**	**20 05 54.7**	**+0.4**
GDZ	**Gediz**	**0.33**	**88**	*i* P	**Pg**	**20 05 49.7**	**-0.3**
GDZ				*i* S	**Sg**	**20 05 54.6**	**+0.4**
TVSB	**Tavsanli**	**0.48**	**40**	*e*PG	**Pg**	**20 05 52.3**	**-0.6**
TVSB				*e*SG	**Sg**	**20 05 59.3**	**+0.1**
TVSB	**Tavsanli**	**0.48**	**40**	*e*Pg	**Pg**	**20 05 52.3**	**-0.6**
TVSB				*e*Sg	**Sg**	**20 05 59.3**	**+0.1**
KULA	**Kula-Manisa**	**0.65**	**209**	*e*PG	**Pg**	**20 05 55.7**	**-0.2**
KULA	**Kula-Manisa**	**0.65**	**209**	*e*Pg	**Pg**	**20 05 55.7**	**-0.2**
DURS	**Dursunbey**	**0.69**	**319**	P	**Pg**	**20 05 56.7**	**-0.2**
DURS	**Dursunbey**	**0.69**	**319**	*i* P	**Pg**	**20 05 56.7**	**-0.2**
MANT	**Manisa**	**0.71**	**214**	P	**Pg**	**20 05 56.9**	**-0.2**
MANT				S	**Sg**	**20 06 06.1**	**-0.2**
MANT	**Manisa**	**0.71**	**214**	*i* P	**Pg**	**20 05 56.9**	**-0.2**
MANT				*i* S	**Sg**	**20 06 06.1**	**-0.2**
KCTX	**Karacabey (Bur**	**1.30**	**336**	*e*PN	**Pb**	**20 06 08.1**	**-0.1**
KCTX	**Karacabey (Bur**	**1.30**	**336**	*e*Pn	**Pb**	**20 06 08.1**	**-0.1**
ARMT	**Armutlu**	**1.49**	**354**	*e*PN	**Pn**	**20 06 10.9**	**+0.4**
ARMT	**Armutlu**	**1.49**	**354**	*e*Pn	**Pn**	**20 06 10.9**	**+0.4**
GULT	**Gulveren**	**1.76**	**39**	*e*PN	**Pn**	**20 06 14.3**	**+0.2**
GULT	**Gulveren**	**1.76**	**39**	*e*Pn	**Pn**	**20 06 14.3**	**+0.2**

*DDA **27** 20:09:03.6, 39°.12N×29°.02E, h7km, Md2.9*
*ISK **27** 20:09:03.7, 39°.10N×29°.09E, h9km, MD2.8*
*ISCJB **27** 20:09:04.1±0.4, 39°.11N±0°.03×29°.03E±0°.04, h9km, Error ellipse: s-maj=4.5km s-min=3.9km az=154.8*
*CSEM **27** 20:09:04.1±0.1, 39°.12N×29°.04E, h5km, MD2.9, Error ellipse: s-maj=2.3km s-min=2.1km az=84.0*
ISC 27 20:09:04.2±0.9, 39°.12N±0°.02×29°.03E±0°.02, h9km, n34, σ0°31/42, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**253**	P	**Pg**	**20 09 09.4**	**+0.1**
DEMI				S	**Sg**	**20 09 12.9**	**+0.1**
DEMI	**Demirci**	**0.25**	**253**	*i* P	**Pg**	**20 09 09.4**	**+0.1**
DEMI				*i* S	**Sg**	**20 09 12.9**	**+0.1**
GDZ	**Gediz**	**0.35**	**95**	P	**Pg**	**20 09 11.5**	**+0.3**
GDZ				S	**Sg**	**20 09 16.5**	**+0.6**
GDZ	**Gediz**	**0.35**	**95**	*i* P	**Pg**	**20 09 11.5**	**+0.3**
GDZ				*i* S	**Sg**	**20 09 16.5**	**+0.6**
TVSB	**Tavsanli**	**0.47**	**45**	*e*PG	**Pg**	**20 09 13.3**	**-0.1**
TVSB				*e*SG	**Sg**	**20 09 19.4**	**-0.2**
TVSB	**Tavsanli**	**0.47**	**45**	*e*Pg	**Pg**	**20 09 13.3**	**-0.1**
TVSB				*e*Sg	**Sg**	**20 09 19.4**	**-0.2**
DURS	**Dursunbey**	**0.65**	**318**	P	**Pg**	**20 09 16.4**	**-0.3**
DURS	**Dursunbey**	**0.65**	**318**	*i* P	**Pg**	**20 09 16.4**	**-0.3**
KULA	**Kula-Manisa**	**0.67**	**206**	*e*PG	**Pg**	**20 09 17.2**	**+0.1**
KULA	**Kula-Manisa**	**0.67**	**206**	*e*Pg	**Pg**	**20 09 17.2**	**+0.1**
MANT	**Manisa**	**0.73**	**210**	S	**Sg**	**20 09 27.4**	**-0.3**
MANT	**Manisa**	**0.73**	**210**	*i* S	Sg	20 09 18.2	-10
MANT				*i* S	**Sg**	**20 09 27.4**	**-0.3**
KHAL	**Karahalli**	**0.83**	**154**	P	**Pb**	**20 09 20.7**	**-0.1**
KHAL				S	**Sg**	**20 09 31.4**	**+0.4**
KHAL	**Karahalli**	**0.83**	**154**	*i* P	**Pb**	**20 09 20.7**	**-0.1**
KHAL				*i* S	**Sg**	**20 09 31.4**	**+0.4**
KHL	**Karahalli**	**0.88**	**154**	*e*PG	**Pg**	**20 09 20.4**	**-0.7**
KHL	**Karahalli**	**0.88**	**154**	*e*Pg	**Pg**	**20 09 20.5**	**-0.7**
AKS	**Akhisar**	**0.98**	**256**	*e*PG	**Pb**	**20 09 23.7**	**+0.4**
AKS	**Akhisar**	**0.98**	**256**	*e*Pg	**Pb**	**20 09 23.7**	**+0.4**
BALB	**Balikesir**	**1.03**	**301**	*e*PN	**Pn**	**20 09 24.9**	**+0.1**
BALB	**Balikesir**	**1.03**	**301**	*e*Pn	**Pn**	**20 09 24.9**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.25**	**355**	*e*PN	**Pb**	**20 09 28.1**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.25**	**355**	*e*Pn	**Pb**	**20 09 28.1**	**+0.1**
KCTX	**Karacabey (Bur**	**1.26**	**336**	*e*PN	**Pg**	**20 09 28.6**	**+0.3**
KCTX	**Karacabey (Bur**	**1.26**	**336**	*e*Pn	**Pg**	**20 09 28.6**	**+0.3**
IZI	**Iznik**	**1.26**	**16**	*e*PN	**Pb**	**20 09 28.3**	**+0.1**
IZI	**Iznik**	**1.26**	**16**	*e*Pn	**Pb**	**20 09 28.3**	**+0.1**
GONE	**Gonen-Balikesi**	**1.39**	**312**	*e*PN	**Pg**	**20 09 30.7**	**-0.2**
GONE	**Gonen-Balikesi**	**1.39**	**312**	*e*Pn	**Pg**	**20 09 30.7**	**-0.2**
ARMT	**Armutlu**	**1.45**	**355**	*e*PN	**Pb**	**20 09 31.2**	**-0.2**
ARMT	**Armutlu**	**1.45**	**355**	*e*Pn	**Pb**	**20 09 31.2**	**-0.2**
EDC	**Edincik**	**1.52**	**324**	*e*PN	**Pb**	**20 09 32.2**	**-0.3**
EDC	**Edincik**	**1.52**	**324**	*e*Pn	**Pb**	**20 09 32.2**	**-0.3**
GULT	**Gulveren**	**1.74**	**41**	*e*PN	**Pn**	**20 09 34.6**	**-0.1**
GULT	**Gulveren**	**1.74**	**41**	*e*Pn	**Pn**	**20 09 34.6**	**-0.1**

*ISCJB **27** 20:18:16.3±0.6, 39°.08N±0°.03×29°.13E±0°.04, h9km±6km, Error ellipse: s-maj=6.1km s-min=5.1km az=143.5*
*DDA **27** 20:18:16.4, 39°.06N×29°.12E, h7km, Md2.7*
*CSEM **27** 20:18:16.4±0.1, 39°.09N×29°.13E, h8km, MD2.7, Error ellipse: s-maj=2.4km s-min=1.9km az=109.0*
*ISK **27** 20:18:17.5, 39°.20N×29°.14E, h8km, MD2.7*
ISC 27 20:18:16.1±1.0, 39°.10N±0°.03×29°.13E±0°.03, h16km±11km, n22, σ0°38/32, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.27**	**92**	P	**Pg**	**20 18 22.3**	**+0.1**
GDZ				S	**Sg**	**20 18 26.4**	**+0.1**
GDZ	**Gediz**	**0.27**	**92**	*i* P	**Pg**	**20 18 22.3**	**+0.1**
GDZ				*i* S	**Sg**	**20 18 26.4**	**+0.1**
DEMI	**Demirci**	**0.33**	**261**	P	**Pg**	**20 18 23.0**	**0.0**
DEMI				S	**Sg**	**20 18 27.4**	**-0.3**
DEMI	**Demirci**	**0.33**	**261**	*i* P	**Pg**	**20 18 23.0**	**0.0**
DEMI				*i* S	**Sg**	**20 18 27.4**	**-0.3**
TVSB	**Tavsanli**	**0.44**	**36**	*e*PG	**Pg**	**20 18 25.0**	**0.0**
TVSB				*e*SG	**Sg**	**20 18 30.4**	**-0.6**
TVSB	**Tavsanli**	**0.44**	**36**	*e*Pg	**Pg**	**20 18 25.0**	**0.0**
TVSB				*e*Sg	**Sg**	**20 18 30.4**	**-0.6**
DURS	**Dursunbey**	**0.71**	**315**	P	**Pb**	**20 18 30.9**	**+0.6**
DURS	**Dursunbey**	**0.71**	**315**	*i* P	**Pb**	**20 18 30.9**	**+0.6**
MANT	**Manisa**	**0.75**	**217**	P	**Pg**	**20 18 30.9**	**0.0**
MANT				S	**Sg**	**20 18 40.3**	**-0.6**
MANT	**Manisa**	**0.75**	**217**	*i* P	**Pg**	**20 18 30.9**	**0.0**
MANT				*i* S	**Sg**	**20 18 40.3**	**-0.6**
KHAL	**Karahalli**	**0.78**	**159**	P	**Pb**	**20 18 31.7**	**+0.3**
KHAL				S	**Sg**	**20 18 41.2**	**-0.5**
KHAL	**Karahalli**	**0.78**	**159**	*i* P	**Pb**	**20 18 31.7**	**+0.3**
KHAL				*i* S	**Sg**	**20 18 41.2**	**-0.5**
IZI	**Iznik**	**1.27**	**12**	*e*PN	**Pb**	**20 18 40.2**	**+0.5**
IZI	**Iznik**	**1.27**	**12**	*e*Pn	**Pb**	**20 18 40.2**	**+0.5**
MDNY	**Mudanya-Bursa**	**1.28**	**352**	*e*PN	**Pg**	**20 18 40.6**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.28**	**352**	*e*Pn	**Pg**	**20 18 40.6**	**-0.3**
KCTX	**Karacabey (Bur**	**1.31**	**333**	*e*PN	**Pg**	**20 18 41.4**	**0.0**
KCTX	**Karacabey (Bur**	**1.31**	**333**	*e*Pn	**Pg**	**20 18 41.4**	**0.0**
ARMT	**Armutlu**	**1.48**	**352**	*e*PN	**Pb**	**20 18 43.7**	**+0.4**
ARMT	**Armutlu**	**1.48**	**352**	*e*Pn	**Pb**	**20 18 43.7**	**+0.4**
GULT	**Gulveren**	**1.71**	**38**	*e*PN	**Pb**	**20 18 47.2**	**0.0**
GULT	**Gulveren**	**1.71**	**38**	*e*Pn	**Pb**	**20 18 47.2**	**0.0**

KRSC 27 20:20:56.4±0.5, 50°.22N×156°.99E, h30km±8km, ML3.5, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**0.73**	**310**	*e*P	Pn	20 21 10.6	0.0
SKR				*e*S	Sn	20 21 20.5	-0.2
PAU	**Pauzhetka**	**1.26**	**355**	*e*S	Sb	20 21 36.0	+0.7
ASAK	**Asacha**	**2.24**	**14**	*e*P	Pb	20 21 34.2	-2.1
RUS	**Russkaya**	**2.42**	**23**	*e*P	Pn	20 21 36.4	+2.5
RUS				*e*S	Sb	20 22 05.5	-3.0
UGLR	**Uglovaya**	**3.21**	**20**	*e*P	Pn	20 21 48.2	+3.4
AVH	**Avacha**	**3.24**	**19**	*e*P	Pn	20 21 49.0	+3.7
KRER	**Koryakskii**	**3.28**	**19**	*e*P	Pn	20 21 49.3	+3.4
SDLR	**Sedlovina**	**3.29**	**20**	*e*P	Pn	20 21 49.2	+3.3
KRX	**Arik**	**3.31**	**18**	*e*P	Pn	20 21 49.7	+3.4
GNL	**Ganaly**	**3.53**	**9**	*e*P	Pn	20 21 53.2	+3.9

*ISK **27** 20:25:36.9, 39°.17N×29°.06E, h6km, MD2.5*
*ISCJB **27** 20:25:37.3±0.6, 39°.11N±0°.04×29°.13E±0°.05, h13km±6km, Error ellipse: s-maj=7.7km s-min=5.2km az=139.9*
*CSEM **27** 20:25:37.2±0.1, 39°.11N×29°.13E, h10km, MD2.6, Error ellipse: s-maj=4.2km s-min=2.9km az=127.0*
*DDA **27** 20:25:37.7, 39°.09N×29°.13E, h7km, Md2.6*
ISC 27 20:25:36.8±1.1, 39°.10N±0°.03×29°.12E±0°.03, h18km±3km, n18, σ0°34/28, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.28**	**92**	P	**Pb**	**20 25 43.5**	**+0.3**
GDZ				S	**Sg**	**20 25 47.8**	**-0.4**
GDZ	**Gediz**	**0.28**	**92**	*i* P	**Pb**	**20 25 43.5**	**+0.3**
GDZ				*i* S	**Sg**	**20 25 47.8**	**+0.4**
DEMI	**Demirci**	**0.32**	**260**	P	**Pb**	**20 25 44.3**	**+0.3**
DEMI				S	**Sb**	**20 25 48.8**	**-0.1**
DEMI	**Demirci**	**0.32**	**260**	*i* P	**Pb**	**20 25 44.3**	**+0.3**
DEMI				*i* S	**Sb**	**20 25 48.8**	**-0.1**
TVSB	**Tavsanli**	**0.44**	**37**	*e*PG	**Pg**	**20 25 46.0**	**+0.2**
TVSB				*e*SG	**Sg**	**20 25 51.5**	**-0.4**
TVSB	**Tavsanli**	**0.44**	**37**	*e*Pg	**Pg**	**20 25 46.0**	**+0.2**
TVSB				*e*Sg	**Sg**	**20 25 51.5**	**-0.4**
KULA	**Kula-Manisa**	**0.69**	**212**	*e*PG	**Pn**	**20 25 51.2**	**-0.4**
KULA	**Kula-Manisa**	**0.69**	**212**	*e*Pg	**Pn**	**20 25 51.2**	**-0.4**
DURS	**Dursunbey**	**0.71**	**315**	P	**Pn**	**20 25 51.8**	**-0.2**
DURS				S	**Sg**	**20 26 01.0**	**+0.7**
DURS	**Dursunbey**	**0.71**	**315**	*i* P	**Pn**	**20 25 51.8**	**-0.2**
DURS				*i* S	**Sg**	**20 26 01.0**	**+0.7**
MANT	**Manisa**

PSI pmax pmax
comp=Z,12nm,1.1s
PSI Prapat 35.87 67 *eP* **P 20 34 37.5 -0.6**
comp=Z,12nm,1.1s
MATP Matopo 36.98 253 P **P 20 34 48.0 +0.5**
comp=Z,18nm,1.2s,baz=64,slow=9.4,SNR=7.5
MATP LR LR 20 47 31.4
comp=Z,278nm,19.5s,baz=79,slow=32
LSZ Lusaka 37.05 261 P **P 20 34 48.8 +0.6**
comp=Z,40nm,1.2s,baz=95,slow=8.3,SNR=23
LSZ Lusaka 37.05 261 *eP* **P 20 34 48.6 +0.4**
LSZ pmax pmax
comp=Z,109nm,1.4s
LSZ Lusaka 37.05 261 *eP* **P 20 34 48.6 +0.4**
comp=Z,109nm,1.4s
IPM Ipoh 38.49 66 *eP* **P 20 35 00.5 +0.3**
comp=Z,28nm,1.5s
KULM Kulim 38.53 64 *eP* **P 20 35 00.5 -0.1**
comp=Z,25nm,1.2s
MYKOM Kota Tinggi 39.95 71 *eP* **P 20 35 12.0 -0.4**
comp=Z,18nm,1.2s
LBTB Lobatse 40.27 246 P **P 20 35 15.6 +0.5**
comp=Z,19nm,1.1s,baz=101,slow=8.7,SNR=8.6
LBTB Lobatse 40.27 246 *eP* **P 20 35 15.1 0.0**
LBTB pmax pmax
comp=Z,30nm,1.2s
LBTB Lobatse 40.27 246 *eP* **P 20 35 15.1 0.0**
comp=Z,30nm,1.2s
CISI Cisompet, Garu 41.13 87 *eP* **P 20 35 22.7 +0.4**
comp=Z,90nm,1.7s
BOSA Boshof 41.31 241 P **P 20 35 23.6 -0.1**
comp=Z,22nm,1.2s,baz=71,slow=6.5,SNR=9.0
BOSA LR LR 20 51 08.6
comp=Z,1μm,18.4s,baz=75,slow=34
KHLT Khaolaem Dam 42.07 50 P **P 20 35 32.7 +2.9**
comp=Z,12nm,1.1s
SRDT SRDT 42.19 51 P **P 20 35 34.8 +4.0**
comp=Z,42nm,1.9s
KOLN Koldanda 43.62 22 *eP* **P 20 35 43.7 +1.3**
comp=Z,72nm,1.6s
PYUN Piuthan 43.69 22 *eP* **P 20 35 44.2 +1.1**
comp=Z,89nm,1.1s
MHMT Maesarieng 43.78 46 P P 20 35 51.6 +8.0
DMN Daman 44.05 24 *eP* **P 20 35 47.7 +1.7**
comp=Z,98nm,1.4s
GKN Gorkha 44.22 23 *eP* **P 20 35 48.6 +1.4**
comp=Z,72nm,1.1s
KKN Kakani 44.28 24 *eP* **P 20 35 49.1 +1.3**
comp=Z,91nm,1.4s
GUN Gumba 44.63 25 *eP* **P 20 35 52.1 +1.3**
comp=Z,174nm,1.6s
CM01 Chiang Mai Arr 44.67 47 *eP* **P 20 35 51.3 +0.5**
CM31 Chiang Mai Arr 44.68 47 *eP* **P 20 35 51.0 +0.1**
CMAR Chiang Mai Arr 44.68 47 P **P 20 35 50.8 -0.1**
comp=Z,3.5nm,1.1s,baz=240,slow=7.4,SNR=16
CMAR Chiang Mai Arr 44.68 47 *i P* **P 20 35 51.9 +1.0**
CMAR pmax pmax
comp=Z,2.0nm,0.9s
CHTO Chiang Mai 44.91 46 P **P 20 35 54.4 +1.6**
comp=Z,44nm,1.9s
CHTO Chiang Mai 44.91 46 *eP* **P 20 35 52.7 -0.1**
CHTO pmax pmax
comp=Z,28nm,1.6s
CHTO Chiang Mai 44.91 46 *eP* **P 20 35 52.7 -0.1**
comp=Z,28nm,1.6s
CMMT Chiang Mai 44.92 46 P **P 20 35 54.4 +1.6**
comp=Z,9.8nm,1.9s
PBKT Sadao Pong 44.96 51 P **P 20 35 54.6 +1.5**
comp=Z,18nm,1.3s
UTTA Uttaradit 45.38 49 P **P 20 35 58.5 +2.0**
comp=Z,5.6nm,1.0s,comp=Z,56nm
SHL Shillong 45.50 33 *eP* **P 20 36 00.0 +2.5**
LOEI Loei 45.76 50 P **P 20 36 02.6 +3.1**
comp=Z,66nm,1.5s
KSM Kuching 45.88 75 *eP* **P 20 36 01.6 +1.1**
comp=Z,17nm,1.3s
SUR Sutherland 45.95 237 P **P 20 36 02.1 +1.0**
comp=Z,1.3nm,1.1s,baz=177,slow=5.4,SNR=4.0
SUR Sutherland 45.95 237 *eP* **P 20 36 01.9 +0.8**
comp=Z,39nm,1.4s
CRAI Chiangrai 46.86 46 P **P 20 36 10.3 +2.2**
comp=Z,45nm,1.8s
KBL Kabul 47.09 3 *eP* **P 20 36 10.6 +0.7**
KBL pmax pmax
comp=Z,31nm,1.4s
KBL Kabul 47.09 3 *eP* **P 20 36 10.6 +0.7**
comp=Z,31nm,1.4s
TSUM Tsumeb 47.17 256 *eP* **P 20 36 11.3 +0.5**
comp=Z,12nm,1.3s
SKNT Sakolnakorn 47.50 52 P **P 20 36 15.1 +1.9**
comp=Z,28nm,1.7s
NONG Nongkai 47.51 51 P **P 20 36 14.1 +0.9**
comp=Z,46nm,1.0s
UBPT Khong Chiam 47.71 55 P **P 20 36 16.2 +1.4**
comp=Z,20nm,1.4s
SBUM Sibu 48.00 75 *eP* **P 20 36 17.9 +0.8**
comp=Z,27nm,1.7s
PANO Nakornpanom 48.09 53 P **P 20 36 19.0 +1.3**
comp=Z,70nm,1.2s,comp=Z,5μm
H01W3 Cape Leeuwin H 48.44 125 T T 21 28 09.2
baz=285,slow=75,SNR=36
H01W2 Cape Leeuwin H 48.44 126 T T 21 28 08.7
baz=285,slow=75,SNR=44
H01W1 Cape Leeuwin H 48.46 126 T T 21 28 09.2
baz=285,slow=75,SNR=41
LSA Lhasa 48.52 29 P **P 20 36 21.8 +0.4**
LSA pmax pmax
comp=Z,16nm,2.8s
LSA Lhasa 48.52 29 *eP* **P 20 36 22.4 +1.0**
LSA pmax pmax
comp=Z,45nm,1.7s
LSA Lhasa 48.52 29 *eP* **P 20 36 22.4 +1.0**
comp=Z,45nm,1.7s
NWAO Narrogin (SRO) 50.51 122 *eP* **P 20 36 36.2 0.0**
NWAO Narrogin (SRO) 50.51 122 *eP* **P 20 36 36.1 0.0**
GEYT Alibeck 50.98 352 P **P 20 36 39.6 +0.1**
comp=Z,1.6nm,1.0s,baz=160,slow=4.7,SNR=5.7
MBWA Marble Bar 51.58 107 *eP* **P 20 36 43.1 -1.2**
comp=Z,39nm,1.6s
KMI Kunming 51.74 43 P **P 20 36 49.3 +3.6**
KMI S **S 20 44 08.8 +0.9**
KMI pmax pmax
comp=Z,20nm,0.5s
KMI pmax pmax
comp=Z,240nm,5.0s
KMI LR LR
comp=Z,220nm,14.7s
KMI LR LR
comp=Z,370nm,19.3s
KMI LR LR
comp=Z,380nm,23.2s
KSH Kashi 52.76 9 P **P 20 36 50.0 -2.8**
KSH *e*pP pP 20 36 54.3 -1.7
KSH *e*sP sP 20 36 57.0 -0.2
KSH *e*PcP **PcP 20 38 01.3 -1.1**
KSH PcS **PcS 20 41 57.8 -3.2**
KSH S S 20 44 12.5 -8.6
KSH ScS **ScS 20 46 36.0 -7.0**
KSH pmax pmax
comp=Z,44nm,1.3s
KSH LR LR
comp=Z,290nm,14.0s
KSH LR LR
comp=Z,190nm,12.0s
KSH LR LR
comp=Z,600nm,19.9s
KKM Kota Kinabalu 52.98 72 *eP* **P 20 36 53.6 -1.2**
comp=Z,49nm,1.3s
QIZ Qiongzhong 53.25 54 P **P 20 36 56.8 +0.1**
QIZ S **S 20 44 29.0 +0.7**
QIZ pmax pmax
comp=Z,100nm,6.9s
QIZ LR LR
comp=Z,320nm,14.8s
QIZ LR LR
comp=Z,280nm,26.4s
KAPI Kappang 53.26 87 *eP* **P 20 36 56.3 -0.6**
comp=Z,16nm,1.1s
MYLDM Lahad Datu 54.81 74 *eP* **P 20 37 08.2 0.0**
comp=Z,77nm,1.7s
MNAS Manas 55.25 6 *i P* **P 20 37 10.7 -0.3**
MNAS pmax pmax
comp=Z,13nm,1.1s
GYA Guiyang 55.28 45 P **P 20 37 14.0 +2.5**
GYA PP **PP 20 39 20.5 +5.2**
GYA ScP **ScP 20 42 11.8 +0.4**
GYA S **S 20 44 56.8 +1.1**
GYA SS **SS 20 48 41.0 +0.6**
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,120nm,6.0s
GYA LR LR
comp=Z,480nm,19.8s
GYA LR LR
comp=Z,440nm,20.2s
GYA LR LR
comp=Z,460nm,19.9s
EKS2 Erkin-Say 55.55 7 *eP* **P 20 37 13.2 0.0**
EKS2 pmax pmax
comp=Z,20nm,1.3s
EKS2 Erkin-Say 55.55 7 *eP* **P 20 37 13.2 0.0**
comp=Z,20nm,1.3s
AAK Ala-Archa 55.61 7 *i P* **P 20 37 12.9 -0.7**
AAK pmax pmax
comp=Z,44nm,1.6s
AAK Ala-Archa 55.61 7 *eP* **P 20 37 13.5 -0.1**
comp=Z,34nm,1.8s
KK31 Karatay Array 55.70 4 *i P* **P 20 37 14.0 -0.1**
KK31 pmax pmax
comp=Z,1.0nm,0.9s
KKAR Karatay Array 55.70 4 *eP* **P 20 37 14.2 +0.1**
KKAR Karatay Array 55.70 4 *eP* **P 20 37 14.2 +0.1**
FRU Bishkek 55.82 7 *eP* **P 20 37 14.0 -1.0**
FRU pmax pmax
comp=Z,65nm,2.4s
TKM2 Tokmak 2 56.04 8 *i P* **P 20 37 15.3 -1.5**
TKM2 pmax pmax
comp=Z,13nm,1.0s
TKM2 Tokmak 2 56.04 8 *eP* **P 20 37 15.2 -1.5**
comp=Z,37nm,1.6s
GNI Garni 56.31 340 P **P 20 37 19.9 +1.2**
comp=Z,1.6nm,0.3s,baz=180,slow=20,SNR=9.1
GNI Garni 56.31 340 *eP* **P 20 37 19.9 +1.2**
GNI pmax pmax
comp=Z,40nm,1.4s
GNI Garni 56.31 340 *eP* **P 20 37 19.9 +1.2**
comp=Z,40nm,1.4s
CD2 Chengdu 56.37 39 P **P 20 37 19.3 +0.1**
CD2 pmax pmax
comp=Z,40nm,1.3s
SOEI Soe 56.82 93 *eP* **P 20 37 23.3 +0.5**
comp=Z,84nm,1.4s
CSS Mathiatis 56.83 328 *eP* **P 20 37 21.9 -0.4**
comp=Z,4.3nm,1.4s
PDGK Podgornoye 57.08 11 *i P* **P 20 37 23.5 -0.3**
PDGK pmax pmax
comp=Z,14nm,1.0s
FITZ Fitzroy Crossi 57.23 103 *eP* **P 20 37 26.1 +0.5**
comp=Z,18nm,1.3s
SYO Syowa Base 58.77 191 ⇓*eP* **P 20 37 34.0 -1.4**
SYO Syowa Base 58.77 191 ⇓*ep*P pP 20 37 40.0 +1.3
SYO Syowa Base 58.77 191 ⇓*e*PcP **PcP 20 38 26.8 +1.8**
ZEI Tsey 58.96 341 *eP* **P 20 37 35.5 -1.9**
ZEI pmax pmax
comp=Z,30nm,1.4s
WMQ Urumqi 59.57 18 P **P 20 37 42.3 +0.9**
WMQ pP sP 20 37 48.5 +2.7
WMQ sP pP 20 37 52.3 +7.7
WMQ S **S 20 45 45.3 -6.2**
WMQ pmax pmax
comp=Z,16nm,1.4s
WMQ pmax pmax
comp=Z,68nm,3.6s
WMQ LR LR
comp=Z,450nm,20.4s
WMQ LR LR
comp=Z,220nm,24.2s
WMQ LR LR
comp=Z,390nm,20.4s
ENH Enshi 59.62 43 *eP* **P 20 37 41.3 -0.7**
comp=Z,18nm,0.9s
NCK Nalchik 59.69 341 *i P* **P 20 37 40.4 -1.8**
NCK pmax pmax
comp=Z,3.0nm,1.0s
LZH Lanzhou 60.11 35 *eP* **P 20 37 47.0 +1.6**
LZH pP sP 20 37 52.3 +2.5
LZH sP pP 20 37 54.8 +6.2
LZH pmax pmax
comp=Z,12nm,1.0s
KBZ Khabaz 60.13 341 P **P 20 37 45.7 +0.6**
comp=Z,0.6nm,0.6s,baz=219,slow=4.9,SNR=4.0
KVAR Kislovodsk Arr 60.39 341 P **P 20 37 47.5 +0.4**
comp=Z,3.2nm,1.1s,baz=175,slow=12,SNR=3.8
KIV Kislovodsk 60.40 341 *i P* **P 20 37 47.4 +0.3**
KIV *i* 20 39 58.7
KIV *i* SS SS 20 49 51.1 -9.2
KIV pmax pmax
comp=Z,6.0nm,1.4s
KIV MLR MLR
comp=Z,110nm,18.0s
KIV Kislovodsk 60.40 341 *eP* **P 20 37 46.9 -0.2**
comp=Z,16nm,1.4s
BR101 Keskin Array S 60.41 331 *eP* **P 20 37 47.0 -0.3**
BR131 Keskin Array S 60.41 331 *eP* **P 20 37 46.9 -0.3**
BRTR Keskin Array B 60.41 331 P **P 20 37 47.0 -0.3**
comp=Z,3.9nm,1.2s,baz=163,slow=5.0,SNR=12
BRTR Keskin Array B 60.41 331 *c i P* **P 20 37 48.0 +0.7**
BRTR pmax pmax
comp=Z,5.0nm,1.2s
BRTR Keskin Array B 60.41 331 P **P 20 37 47.0 -0.3**
GTA Gaotai 60.54 29 *eP* **P 20 37 48.5 +0.3**
GTA pP sP 20 37 53.0 +0.3
GTA sP pP 20 37 55.8 +4.3
GTA S **S 20 46 03.5 -0.7**
GTA SS **SS 20 50 02.5 -0.3**
GTA pmax pmax
comp=Z,12nm,1.3s
GTA pmax pmax
comp=Z,86nm,5.9s
GTA LR LR
comp=Z,280nm,19.2s
GTA LR LR
comp=Z,230nm,14.7s
GTA LR LR
comp=Z,340nm,15.9s
KARP Karpathos 60.65 324 *eP* **P 20 37 49.9 +0.9**
comp=Z,10nm,1.0s
BR231 Keskin MP Arra 60.90 331 *eP* **P 20 37 48.2 -2.5**
MAKZ Makanchi 60.92 12 *eP* **P 20 37 49.8 -0.7**
MAKZ pmax pmax
comp=Z,28nm,1.5s
MAKZ Makanchi 60.92 12 *eP* **P 20 37 49.8 -0.7**
comp=Z,28nm,1.5s
OTUK Ortayu 60.95 5 *i P* **P 20 37 49.7 -1.0**
OTUK pmax pmax
comp=Z,20nm,1.5s
MK01 Makanchi Array 60.95 13 *eP* **P 20 37 49.6 -1.1**
MK31 Makanchi Array 60.97 12 *eP* **P 20 37 49.8 -1.1**
MK31 Makanchi Array 60.97 12 *eP* **P 20 37 49.8 -1.1**
MK32 Makanchi Array 60.97 12 *eP* **P 20 37 50.0 -0.8**
MKAR Makanchi Array 60.97 12 P **P 20 37 50.0 -0.8**
comp=Z,5.1nm,1.0s,baz=195,slow=7.0,SNR=33
MKAR Makanchi Array 60.97 12 *ceP* **P 20 37 50.4 -0.5**
MKAR pmax pmax
comp=Z,5.0nm,1.0s
MKAR Makanchi Array 60.97 12 *eP* **P 20 37 49.9 -1.0**
CASY Casey 61.10 161 *eP* **P 20 37 51.4 -0.1**
comp=Z,17nm,1.4s
GOF Gofitskoye 61.27 341 ⇑*eP* **P 20 37 52.8 -0.1**
LAST Lasithi 61.37 322 ⇓*iP* **P 20 37 55.5 +1.6**
LAST Lasithi 61.37 322 *eP* **P 20 37 54.5 +0.6**
comp=Z,33nm,1.2s
XAN Xi'an 61.69 40 P **P 20 37 55.5 -0.5**
XAN pmax pmax
comp=Z,15nm,1.4s
XAN LR LR
comp=Z,300nm,9.0s
XAN LR LR
comp=Z,250nm,8.7s
XAN LR LR
comp=Z,480nm,24.8s
IDI Anoyia 61.81 322 ⇑*iP* **P 20 37 58.4 +1.6**
IDI Anoyia 61.81 322 *eP* **P 20 37 57.3 +0.5**
comp=Z,71nm,1.4s
AB31 Akbulak array 61.98 355 *i P* **P 20 37 56.6 -1.0**
AB31 pmax pmax
comp=Z,26nm,1.4s
ABKAR Akbulak array 61.98 355 *eP* **P 20 37 56.5 -1.1**
ANN Anapa 62.98 337 *eP* **P 20 38 06.2 +1.9**
ANN pmax pmax
comp=Z,22nm,1.0s
WHN Wuhan 63.12 46 P **P 20 38 06.5 +0.9**
AKTO Aktyubinsk 63.32 354 P **P 20 38 05.4 -1.2**
comp=Z,6.7nm,1.1s,baz=168,slow=6.7,SNR=21
AKTO Aktyubinsk 63.32 354 *i* P **P 20 38 05.3 -1.3**
AKTO pmax pmax
comp=Z,30nm,1.5s
KURBB Kurchatov Arra 63.99 9 P **P 20 38 10.3 -0.7**
comp=Z,3.0nm,0.8s,baz=208,slow=7.0,SNR=29
KURK Kurchatov 64.09 9 ⇓*iP* **P 20 38 09.2 -2.4**
KURK pmax pmax
comp=Z,24nm,1.3s
KURK Kurchatov 64.09 9 *eP* **P 20 38 10.3 -1.3**
ASAR Alice Springs 64.62 110 P **P 20 38 15.1 -0.8**
comp=Z,2.5nm,0.7s,baz=272,slow=6.1,SNR=30
AS31 Alice Springs 64.62 110 *eP* **P 20 38 14.8 -1.0**
comp=Z,6.9nm,1.5s
AS01 Alice Springs 64.66 110 *eP* **P 20 38 15.1 -1.0**
WRA Warramunga Arr 65.30 106 P **P 20 38 19.9 -0.4**
comp=Z,6.6nm,1.0s,baz=266,slow=6.3,SNR=22
WR1 Warramunga Arr 65.30 106 *eP* **P 20 38 19.9 -0.4**
comp=Z,56nm,1.5s
WB2 Warramunga Arr 65.31 106 *eP* **P 20 38 19.9 -0.5**
comp=Z,59nm,1.5s
WRAB Tennant Creek 65.31 106 *ceP* **P 20 38 19.8 -0.5**
WRAB pmax pmax
comp=Z,91nm,1.4s
WRAB Tennant Creek 65.31 106 *eP* **P 20 38 20.2 -0.1**
comp=Z,46nm,1.4s
VOSK Vostochnaya 65.32 3 *eP* **P 20 38 17.7 -1.9**
VOSK pmax pmax
comp=Z,31nm,1.9s
VOSK Vostochnaya 65.32 3 *eP* **P 20 38 17.6 -1.9**
comp=Z,30nm,1.9s
ZRNK Zerenda 65.46 2 *i P* **P 20 38 18.1 -2.4**
ZRNK pmax pmax
comp=Z,14nm,1.1s
ZRNK Zerenda 65.46 2 *eP* **P 20 38 19.8 -0.8**
comp=Z,32nm,1.6s
BVAR Borovoye Array 65.59 3 P **P 20 38 20.8 -0.6**
comp=Z,2.1nm,0.7s,baz=154,slow=7.6,SNR=17
BRVK Borovoye 65.62 3 ⇑*iP* **P 20 38 20.4 -1.1**
BRVK pmax pmax
comp=Z,16nm,1.1s
BRVK Borovoye 65.62 3 *eP* **P 20 38 21.0 -0.5**
comp=Z,11nm,1.2s
AGG Agios Georgios 65.83 324 *eP* **P 20 38 22.5 -0.8**
AGG pmax pmax
comp=Z,62nm,1.4s
AGG Agios Georgios 65.83 324 *eP* **P 20 38 22.4 -0.8**
comp=Z,62nm,1.4s
BBOO Buckleboo 66.25 120 *eP* **P 20 38 25.3 -0.9**
comp=Z,44nm,1.5s
CHKZ Chkalovo 66.25 3 *i P* **P 20 38 23.9 -1.6**
CHKZ pmax pmax
comp=Z,20nm,1.5s
TIRR Tirgusor 66.53 331 ⇑*iP* P 20 38 22.2 -5.3
TIRR Tirgusor 66.53 331 ⇑*iP* P 20 38 22.2 -5.3
NJ2 Nanjing 67.15 47 *eP* **P 20 38 33.5 +1.7**
NJ2 pmax pmax
comp=Z,10.0nm,1.0s
NJ2 LR LR
comp=Z,490nm,22.7s
NJ2 LR LR
comp=Z,270nm,24.1s
NJ2 LR LR
comp=Z,590nm,21.6s
CFR Carcaliu 67.20 332 ⇑*iP* **P 20 38 31.7 -0.1**
CFR Carcaliu 67.20 332 ⇑*iP* **P 20 38 31.7 -0.1**
HHC Hu-ho-hao-te 67.77 36 *eP* **P 20 38 37.0 +1.3**
HHC S **S 20 47 36.3 +2.6**
HHC pmax pmax
comp=Z,28nm,1.2s
HHC pmax pmax
comp=Z,220nm,7.6s
HHC LR LR
comp=Z,390nm,17.7s
HHC LR LR
comp=Z,440nm,17.6s
HHC LR LR
comp=Z,490nm,17.1s
ZAA0 Zalesovo Array 68.27 12 *eP* **P 20 38 37.2 -1.1**
ZALV Zalesovo Beam 68.27 12 P **P 20 38 36.9 -1.4**
comp=Z,2.3nm,0.6s,baz=212,slow=5.7,SNR=23
ZAA1 Zalesovo Array 68.28 12 *eP* **P 20 38 36.9 -1.5**
TIA Tai'an 68.30 42 ⇑*iP* **P 20 38 39.5 +0.5**
TIA pmax pmax
comp=Z,20nm,1.7s
VRI Vrincioaia 68.37 331 ⇓*iP* **P 20 38 40.3 +1.1**
VRI Vrincioaia 68.37 331 ⇓*iP* **P 20 38 40.4 +1.2**
PLOR Plostina 68.40 331 ⇑*iP* **P 20 38 40.5 +1.1**
PLOR Plostina 68.40 331 ⇑*iP* **P 20 38 40.5 +1.1**
MLR Muntele Rosu 68.46 331 ⇓*iP* **P 20 38 39.0 -1.0**
MLR Muntele Rosu 68.46 331 ⇓*iP* **P 20 38 39.0 -1.0**
MLR Muntele Rosu 68.46 331 *eP* **P 20 38 40.4 +0.4**
comp=Z,26nm,1.6s
NVS Novosibirsk 68.83 10 ⇓*iP* **P 20 38 42.0 +0.2**
NVS pmax pmax
comp=Z,40nm,1.9s
NVS pmax pmax
comp=N,26nm,1.7s
NVS pmax pmax
comp=E,17nm,1.4s
VOIR 68.86 330 ⇓*iP* **P 20 38 42.6 +0.3**
VOIR 68.86 330 ⇓*iP* **P 20 38 42.6 +0.3**
TESR Tescani 68.89 332 ⇑*iP* **P 20 38 43.7 +1.3**
TOA0 Torodi Ar. Sit 69.04 290 *eP* **P 20 38 43.6 -0.4**
TORD Torodi Ar. Bea 69.04 290 P **P 20 38 43.3 -0.6**
comp=E,10nm,1.2s,baz=124,slow=3.3,SNR=25
TOA1 Torodi Ar. Sit 69.04 290 *eP* **P 20 38 43.4 -0.7**
comp=E,26nm,1.4s
DOPR Dopca 69.08 331 ⇑*iP* **P 20 38 44.3 +0.7**
TAM Tamanrasset 69.21 300 *eP* **P 20 38 45.8 +0.7**
TAM pmax pmax
comp=Z,22nm,1.6s
TAM Tamanrasset 69.21 300 *eP* **P 20 38 45.8 +0.7**
comp=Z,22nm,1.6s
ARU Arti 69.21 355 P **P 20 38 43.9 -0.3**
comp=Z,0.6nm,0.3s,baz=169,slow=3.5,SNR=11
ARU Arti 69.21 355 *d iP* **P 20 38 43.5 -0.7**
ARU S **S 20 47 50.9 +0.8**
ARU SS **SS 20 52 13.1 -3.9**
ARU pmax pmax
comp=Z,24nm,1.7s
ARU Arti 69.21 355 *eP* **P 20 38 43.4 -0.7**
comp=Z,33nm,1.6s
SVE Sverdlovsk 69.47 357 *eP* **P 20 38 45.2 -0.6**
SVE pmax pmax
comp=Z,29nm,1.6s
LOT Lotru 69.49 329 ⇑*iP* **P 20 38 45.8 -0.5**
PDG Podgorica 69.83 325 ⇑*iP* **P 20 38 49.3 +1.0**
GZR Gura Zlata 69.95 329 ⇓*iP* **P 20 38 49.8 +0.7**
GZR Gura Zlata 69.95 329 ⇓*iP* **P 20 38 49.8 +0.7**
BJI Beijing 69.97 39 P **P 20 38 49.8 +0.6**
BJI PP **PP 20 41 23.5 -0.8**
BJI S **S 20 48 00.5 +0.9**
BJI pmax pmax
comp=Z,9.0nm,1.2s
BJI pmax pmax
comp=Z,190nm,6.5s
BJI LR LR
comp=Z,250nm,6.9s
BJI LR LR
comp=Z,150nm,20.4s
SONA0 Songino Array 70.06 27 *eP* **P 20 38 50.1 +0.3**
comp=Z,36nm,1.6s
SONM Songino Array 70.06 27 P **P 20 38 50.1 +0.3**
comp=Z,3.6nm,1.0s,baz=218,slow=4.8,SNR=31
SONM PKP2bc 21 06 50.4
comp=Z,4.5nm,1.3s,baz=100,slow=1.0,SNR=12
SONA1 Songino Array 70.07 27 *eP* **P 20 38 50.1 +0.2**
BURAR Bucovina Array 70.36 332 ⇓*iP* P 20 39 00.4 +8.8
BURAR Bucovina Array 70.36 332 ⇓*iP* P 20 39 00.4 +8.8
ULN Ulaanbaatar 70.38 28 ⇑*eP* **P 20 38 52.0 +0.2**
ULN pmax pmax
comp=Z,19nm,1.7s
ULN Ulaanbaatar 70.38 28 *eP* **P 20 38 50.5 -1.3**
comp=Z,40nm,1.9s
ZAK Zakamensk 70.68 24 *eP* **P 20 38 50.7 -2.8**
ZAK pmax pmax
comp=Z,7.0nm,1.5s
BZS Buzias 70.69 328 ⇓*iP* **P 20 38 58.1 +4.6**
BZS Buzias 70.69 328 ⇓*iP* **P 20 38 58.1 +4.6**
DRGR 70.96 330 ⇓*iP* **P 20 38 59.9 +4.6**
DRGR 70.96 330 ⇓*iP* **P 20 38 59.9 +4.6**
STKA Stephens Creek 70.97 119 P **P 20 38 55.1 -0.5**

comp=Z,4.5nm,1.1s,baz=265,slow=11,SNR=4.4
STKA Stephens Creek 70.97 119 *e*P **P 20 38 55.0 -0.6**
STKA pmax pmax
comp=Z,3.0nm,1.3s
STKA Stephens Creek 70.97 119 *e*P **P 20 38 55.0 -0.6**
comp=Z,2.7nm,1.3s
AKASG Malin Array Be 70.99 336 P **P 20 38 54.6 -0.6**
comp=Z,0.7nm,0.6s,baz=138,slow=4.8,SNR=9.6
AKASG Malin Array Be 70.99 336*c*e**P 20 38 54.2 -1.0**
AKASG pmax pmax
comp=Z,1.0nm,0.6s
AKBB Malin Array Si 70.99 336 *e*P **P 20 38 54.2 -1.0**
AKBB pmax pmax
comp=Z,7.0nm,0.6s
AKBB Malin Array Si 70.99 336 *e*P **P 20 38 54.2 -1.0**
comp=Z,6.5nm,0.6s
KIEV Kiev 70.99 336⇑*e*P **P 20 38 54.5 -0.7**
KIEV pmax pmax
comp=Z,16nm,1.6s
SNAA Sanae 71.48 198 *i*P **P 20 38 58.1 0.0**
SNAA pmax pmax
comp=Z,827nm,1.2s
SNAA Sanae 71.48 198 *e*P **P 20 38 57.9 -0.1**
comp=Z,13nm,1.1s
TLY Talaya 71.84 23 *e*P **P 20 39 01.7 +1.3**
TLY *e* 20 39 12.2
TLY *e*S **S 20 48 25.7 +4.7**
TLY *e* 20 49 04.0
TLY pmax pmax
comp=Z,30nm,2.1s
TLY MLR MLR
comp=Z,217nm,19.0s
TLY Talaya 71.84 23 *e*P **P 20 39 01.1 +0.7**
comp=Z,38nm,1.7s
OBN Obninsk 72.10 343 *e*P **P 20 39 01.1 -0.7**
OBN *i* 20 41 41.5
OBN pmax pmax
comp=Z,12nm,1.3s
OBN MLR MLR
comp=Z,83nm,18.0s
KEST Kesra 72.23 314 P **P 20 39 03.4 +0.3**
comp=Z,1.6nm,0.8s,baz=93,slow=7.1,SNR=5.6
KEST Kesra 72.23 314 *e*P **P 20 39 04.4 +1.3**
comp=Z,44nm,1.9s
MOS Moscow 72.34 343 *e*P **P 20 39 02.4 -0.8**
MOS pmax pmax
comp=Z,65nm,1.5s
IRK Irkutsk 72.53 23 *e*P **P 20 39 04.1 -0.4**
IRK pmax pmax
comp=Z,47nm,1.9s
CRVS Cervenica-Dubn 73.04 331 *e*P **P 20 39 08.0 +0.4**
CRVS Cervenica-Dubn 73.04 331 *e*P **P 20 39 08.0 +0.4**
CRVS *e* 20 40 17.9
KECS Kecovo 73.22 330 *e*P **P 20 39 09.1 +0.4**
KECS pmax pmax
comp=Z,4.0nm,1.3s
KECS Kecovo 73.22 330 *e*P **P 20 39 09.1 +0.4**
DBIC Dimbokro 73.30 281 P **P 20 39 10.2 +0.4**
comp=Z,16nm,1.2s,baz=113,slow=9.7,SNR=2.7
DBIC Dimbokro 73.30 281 *e*P **P 20 39 09.6 -0.2**
DBIC pmax pmax
comp=Z,33nm,1.4s
DBIC Dimbokro 73.30 281 *e*P **P 20 39 09.6 -0.2**
comp=Z,33nm,1.4s
VYHS Vyhne 74.04 329 *e*P **P 20 39 13.2 -0.3**
VYHS pmax pmax
comp=Z,12nm,1.6s
VYHS Vyhne 74.04 329 *e*P **P 20 39 13.2 -0.3**
VYHS *e* 20 40 23.0
LANS Liptovska Anna 74.17 330 *e*P **P 20 39 14.7 +0.4**
LANS Liptovska Anna 74.17 330 *e*P **P 20 39 14.7 +0.4**
LANS *e* 20 40 24.9
SOKA Soboth 74.86 326 *e*P **P 20 39 18.7 +0.4**
comp=Z,12nm,1.5s
ARSA Arzberg 74.95 327 *e*P **P 20 39 19.1 +0.3**
comp=Z,14nm,1.5s
OBKA Obir 75.02 326 *e*P **P 20 39 19.9 +0.5**
comp=Z,7.8nm,1.0s
MORC Moravsky Berou 75.52 330 *e*P **P 20 39 21.9 -0.2**
MORC pmax pmax
comp=Z,70nm,1.6s
MORC Moravsky Berou 75.52 330 *e*P **P 20 39 21.9 -0.2**
comp=Z,70nm,1.6s
MYKA Terra Mystica 75.59 326 *i*P **P 20 39 22.6 0.0**
comp=Z,11nm,1.2s
SNY Shenyang 75.59 40 ⇑P **P 20 39 22.0 -0.6**
SNY pmax pmax
comp=Z,19nm,1.6s
SNY pmax pmax
comp=Z,170nm,4.3s
SNY LR LR
comp=Z,300nm,16.5s
SNY LR LR
comp=Z,210nm,14.4s
SNY LR LR
comp=Z,460nm,19.8s
VRAC Vranov 75.69 329 P **P 20 39 22.8 -0.3**
comp=Z,0.6nm,0.4s,baz=143,slow=7.3,SNR=6.5
MOA Molln 75.99 327 *e*P **P 20 39 24.8 0.0**
comp=Z,22nm,1.6s
TREC Trest 76.24 328 *e*P **P 20 39 26.7 +0.5**
TREC Trest 76.24 328 *e*P **P 20 39 26.7 +0.5**
CIT Chita 76.28 28 *e*P **P 20 39 26.1 -0.3**
CIT *e* 20 39 44.0
CIT pmax pmax
comp=Z,41nm,1.7s
KS15 Wonju Array Si 76.28 46 *e*P **P 20 39 26.8 +0.2**
KSAR Wonju Array Be 76.28 46 P **P 20 39 26.7 +0.1**
KSAR Wonju Array Be 76.28 46 P **P 20 39 26.7 +0.1**
ABTA Abfaltersbach 76.28 325 *i*P **P 20 39 26.8 +0.2**
comp=Z,24nm,1.6s
KS01 Wonju Array Si 76.31 46 *e*P **P 20 39 26.1 -0.7**
KSRS Korea Array 76.31 46 P **P 20 39 26.7 -0.1**
comp=Z,5.2nm,1.1s,baz=244,slow=5.9,SNR=22
KLMR Klimovskoe 76.39 347 *e*P **P 20 39 23.3 -3.4**
KLMR pmax pmax
comp=Z,42nm,1.5s
CTAO Charters Tower 76.40 108 *e*P **P 20 39 28.6 +0.8**
CTAO Charters Tower 76.40 108 *e*P **P 20 39 28.6 +0.8**
DPC Dobruska-Polom 76.49 330 *e*P **P 20 39 28.4 +0.8**
DPC *e*pP **sP 20 39 34.3 +2.2**
DPC Dobruska-Polom 76.49 330 *e*P **P 20 39 28.4 +0.8**
DPC *e* 20 39 34.3
JNU Nakatsue 76.55 51 P **P 20 39 28.2 -0.1**
comp=Z,10nm,1.0s,baz=216,slow=11,SNR=4.0
JNU Nakatsue 76.55 51 *e*P **P 20 39 28.8 +0.5**
comp=Z,32nm,1.3s
KSP Ksiaz 76.82 330 *e*P **P 20 39 30.7 +1.3**
KSP Ksiaz 76.82 330 *e*P **P 20 39 30.7 +1.3**
GEA0 GERESS Array S 76.89 327 *e*P **P 20 39 29.1 -0.8**
GERES GERESS Array B 76.89 327 P **P 20 39 29.1 -0.9**
comp=Z,0.8nm,0.9s,baz=27,slow=3.3,SNR=5.8
GOPC GO Pecny, Ondr 76.99 329 *e*P **P 20 39 30.6 +0.2**
GOPC GO Pecny, Ondr 76.99 329 *e*P **P 20 39 30.6 +0.2**
WTTA Wattenberg 77.07 325 *i*P **P 20 39 30.7 -0.4**
comp=Z,7.1nm,0.8s
KHC Kasperske Hory 77.13 328 *e*P **P 20 39 30.3 -0.9**
KHC Kasperske Hory 77.13 328 *e*P **P 20 39 30.3 -0.9**
KHC Kasperske Hory 77.13 328 *e*P **P 20 39 30.5 -0.8**
WATA Walderalm 77.15 325 *e*P **P 20 39 30.9 -0.7**
comp=Z,12nm,1.1s
PRU Pruhonice 77.16 329 *e*P **P 20 39 30.8 -0.5**
PRU *e*pP **PcP 20 39 39.5 -2.6**
PRU Pruhonice 77.16 329 *e*P **P 20 39 30.8 -0.5**
PRU *e* 20 39 39.5
MOTA Moosalm 77.42 325 *i*P **P 20 39 32.7 -0.4**
comp=Z,3.6nm,0.8s
FETA Feichten 77.44 325 *i*P **P 20 39 33.0 -0.2**
comp=Z,12nm,1.8s
PVCC Panska Ves 77.48 329 *e*P **P 20 39 34.3 +1.2**
PVCC Panska Ves 77.48 329 *e*P **P 20 39 34.3 +1.2**
RETA Reutte 77.69 325 *e*P **P 20 39 34.2 -0.3**
comp=Z,9.4nm,1.8s
CN2 Changchun 77.80 39 *e*P **P 20 39 32.0 -3.0**
CN2 pmax pmax
comp=Z,10.0nm,0.8s
BRG Berggiesshubel 78.00 329 *e*P **P 20 39 36.8 +0.8**
comp=Z,22nm,1.6s
BRG *e* 20 40 46.6
comp=Z,19nm,1.5s
BRG Berggiesshubel 78.00 329 *e*P **P 20 39 36.8 +0.8**
BRG pmax pmax
comp=Z,22nm,1.6s
BRG pmax pmax
comp=Z,19nm,1.5s

DAVA Damuels 78.07 325 *i*P **P 20 39 36.2 -0.5**
NKC Novy Kostel 78.38 328 *e*P **P 20 39 39.4 +1.2**
NKC Novy Kostel 78.38 328 *e*P **P 20 39 39.4 +1.2**
CLL Collm 78.74 329 *e*P **P 20 39 40.0 -0.1**
comp=Z,20nm,1.6s
CLL *i* 20 40 19.9
CLL Collm 78.74 329 *e*P **P 20 39 40.0 -0.1**
CLL pmax pmax
comp=Z,20nm,1.6s
CLL Collm 78.74 329 *e*P **P 20 39 40.0 -0.1**
comp=Z,39nm,2.0s
VNDA Vanda 78.85 167 P **P 20 39 40.0 -0.4**
comp=Z,9.0nm,1.4s,baz=278,slow=4.2,SNR=7.5
VNDA Vanda 78.85 167 *e*P **P 20 39 40.3 -0.1**
VNDA pmax pmax
comp=Z,18nm,1.5s
VNDA Vanda 78.85 167 *e*P **P 20 39 40.3 -0.1**
comp=Z,18nm,1.5s
SENIN Lac Senin/Sane 79.06 323 *e*P **P 20 39 41.5 -0.8**
comp=Z,52nm,1.9s
BFO Black Forest 79.52 325 *i*P **P 20 39 46.3 +1.8**
SBA Scott Base 79.82 168 *e*P **P 20 39 46.3 +0.6**
SBA pmax pmax
comp=Z,49nm,1.9s
SBA Scott Base 79.82 168 *e*P **P 20 39 46.3 +0.6**
comp=Z,49nm,1.9s
SSB Saint Sauveur 80.18 321 *e*P **P 20 39 47.9 -0.3**
SSB pmax pmax
comp=Z,21nm,1.5s
SSB Saint Sauveur 80.18 321 *e*P **P 20 39 47.9 -0.3**
comp=Z,21nm,1.5s
FINES FINESS Array B 80.46 342 *i*P **P 20 39 52.5 +3.3**
FINES pmax pmax
comp=Z,1.0nm,0.7s
MDJ Mudanjiang 80.79 40 P **P 20 39 51.5 +0.1**
MDJ pP pP 20 39 54.5 -0.2
MDJ sP sP 20 39 56.0 +0.1
MDJ PcP **PcP 20 39 57.8 -0.2**
MDJ PP **PP 20 42 54.0 -1.8**
MDJ S **S 20 49 59.0 -0.6**
MDJ pmax pmax
comp=Z,7.0nm,1.1s
MDJ pmax pmax
comp=Z,45nm,4.0s
MDJ LR LR
comp=Z,110nm,8.6s
MDJ LR LR
comp=Z,200nm,15.3s
MDJ LR LR
comp=Z,250nm,14.7s
USRK Ussuriysk Ar. 82.13 41 P **P 20 39 57.6 -0.9**
comp=Z,2.1nm,0.7s,baz=276,slow=3.5,SNR=8.4
NRIK Noril'sk 83.23 7 P **P 20 40 03.8 +0.1**
comp=Z,1.7nm,0.5s,baz=184,slow=3.8,SNR=10
ES19 SONSECA Array 83.38 313 *e*P **P 20 40 05.3 +0.1**
ESDC Sonseca Array 83.41 313 P **P 20 40 05.4 0.0**
comp=Z,2.2nm,0.8s,baz=104,slow=4.8,SNR=16
ESLA Sonseca Array 83.41 313 *e*P **P 20 40 06.0 +0.6**
comp=Z,39nm,1.6s
MJB9 Matsu-Tunnel 83.43 50 *e*P **P 20 40 05.5 0.0**
comp=Z,14nm,1.7s
MAJO Matsushiro 83.43 50 *e*P **P 20 40 05.7 +0.2**
MAJO pmax pmax
comp=Z,51nm,1.7s
MAJO Matsushiro 83.43 50 *e*P **P 20 40 05.7 +0.2**
comp=Z,50nm,1.7s
MAT Matsushiro 83.43 50 P **P 20 40 05.7 +0.2**
MJAR Matsushiro Arr 83.43 50 P **P 20 40 05.7 +0.2**
comp=Z,5.4nm,0.9s,baz=240,slow=5.2,SNR=16
PAB San Pablo 83.64 313 *e*P **P 20 40 06.9 +0.3**
PAB pmax pmax
comp=Z,32nm,1.4s
PAB San Pablo 83.64 313 *e*P **P 20 40 06.9 +0.3**
comp=Z,32nm,1.4s
KLR Kul'dur 84.23 37 P **P 20 40 08.6 -0.7**
comp=Z,1.5nm,0.8s,baz=239,slow=6.5,SNR=6.3
NB200 NORSAR Array S 85.40 336 *e*P **P 20 40 15.2 +0.3**
NOA NORSAR Array B 85.40 336 P **P 20 40 15.2 +0.3**
comp=Z,4.5nm,1.2s,baz=118,slow=5.1,SNR=2.8
TIXI Tiksi 93.75 16*c*e**P 20 40 53.6 -0.5**
TIXI pmax pmax
comp=Z,20nm,1.7s
TIXI Tiksi 93.75 16 *e*P **P 20 40 52.9 -1.2**
comp=Z,18nm,1.4s
IL1 Eielson Array 123.22 16 *e*PKPdf **PKPdf 20 46 32.1 -2.1**
ILAR Eielson Array 123.22 16 PKP **PKPdf 20 46 32.5 -1.7**
comp=Z,0.4nm,0.6s,baz=334,slow=2.7,SNR=5.6
ILB Eielson Array 123.22 16 *e*PKPdf **PKPdf 20 46 32.2 -2.0**
LPAZ La Paz 126.52 239 PKP **PKPdf 20 46 42.5 -0.2**
comp=Z,4.7nm,1.1s,baz=194,slow=4.2,SNR=7.1
LPAZ La Paz 126.52 239 *e*PKIKP **PKPdf 20 46 41.4 -1.3**
LPAZ La Paz 126.52 239 *e*PKPdf **PKPdf 20 46 41.4 -1.3**
YKA Yellowknife Ar 130.32 1 PKP **PKPdf 20 46 47.1 -0.7**
comp=Z,0.9nm,0.8s,baz=1.8,slow=2.3,SNR=9.5
YKA SKP **SKPdf 20 50 23.4 +0.1**
comp=Z,0.2nm,0.6s,baz=342,slow=5.7,SNR=4.4
YKB5 Yellowknife Ar 130.32 1 *e*PKPpre PKPpre 20 46 29.5
YKB5 *e*PKPdf **PKPdf 20 46 44.5 -3.3**
BINY Binghamton 136.08 319 *e*PKPpre PKPpre 20 46 49.1
I38A Scanlan Farm, 143.82 334 P PKPbc 20 47 10.8 -0.1
baz=37
F33A 5 Mile Ranch, 143.86 339 P PKPbc 20 47 11.0 +0.1
baz=30
B05A Bryant 143.90 10 P PKPbc 20 47 11.3 +0.4
baz=346
TZTN Tazewell 144.04 316 *e*PKPdf **PKPab 20 47 10.8 -0.5**
I37A Lemond, Waseca 144.30 335 P PKPbc 20 47 12.4 +0.1
baz=35
H35A Sunnyside Ranc 144.31 337 P PKPbc 20 47 12.3 0.0
baz=33
NEW Newport 144.47 4 PKP PKPbc 20 47 13.4 +0.6
comp=Z,1.3nm,0.4s,baz=19,slow=7.3,SNR=4.3
D26A Manning 144.53 347 P **PKPdf 20 47 14.6 +0.2**
baz=19
TKL Tuckaleechee C 144.68 315 PKP **PKPab 20 47 13.5 -0.2**
comp=Z,7.4nm,1.0s,baz=98,slow=4.3,SNR=7.9
TKL Tuckaleechee C 144.68 315 *e*PKIKP **PKPab 20 47 12.8 -0.9**
TKL Tuckaleechee C 144.68 315 *e*PKPdf **PKPab 20 47 12.8 -0.9**
WCI Wyandotte Cave 144.82 321 *e*PKIKP **PKPab 20 47 12.8 -1.3**
WCI Wyandotte Cave 144.82 321 *e*PKPdf **PKPab 20 47 12.8 -1.3**
J37A Redenius Farm, 144.93 334 P **PKPab 20 47 14.0 -0.3**
baz=36
D05A Enumclaw 144.96 10 *e*PKPdf PKPbc 20 47 14.5 +0.2
F29A Eureka 144.98 343 P **PKPab 20 47 14.8 +0.4**
baz=24
HDIL Hopedale 144.99 327 P **PKPdf 20 47 15.1 -0.2**
baz=44
HDIL Hopedale 144.99 327 *e*PKPbc **PKPdf 20 47 15.2 -0.2**
YBMT Yellow Bay 144.99 0 *e*PKPbc **PKPbc 20 47 14.2 -0.4**
BSMT Bassoo Peak 144.99 1 *e*PKPbc **PKPbc 20 47 14.1 -0.6**
H33A Prehn Over Nor 145.03 339 P **PKPab 20 47 14.9 +0.3**
baz=30
E26A Carlson Angus 145.07 346 P **PKPab 20 47 15.1 +0.3**
baz=19
JTMT Jette 145.10 1 *e*PKPbc **PKPbc 20 47 14.3 -0.6**
E25A Miller Ranch, 145.25 348 P **PKPdf 20 47 15.7 0.0**
baz=18
J36A Seneca 1, Swea 145.25 335 P **PKPbc 20 47 15.5 +0.1**
baz=34
CPCT Cooper Cave 145.31 316 *e*PKPbc **PKPbc 20 47 15.7 -0.1**
SWMT Swartz Lake 145.34 0 *e*PKPbc **PKPbc 20 47 15.1 -0.6**
K37A Belmond 145.41 334 P **PKPbc 20 47 15.7 -0.2**
baz=36
G30A Faulkton 145.42 342 P **PKPbc 20 47 16.0 +0.1**
baz=25
H32A Carlson Farm, 145.42 339 P **PKPab 20 47 16.3 +0.2**
baz=29
OLIL Olney 145.57 323 *e*PKPdf **PKPdf 20 47 16.1 -0.4**
LAO LASA Array 145.58 351 P **PKPbc 20 47 16.6 +0.1**
baz=13
LAO LASA Array 145.58 351 *e*PKPdf **PKPab 20 47 17.7 +1.0**
I33A Coleman 145.60 338 P **PKPbc 20 47 16.5 0.0**
baz=30
L38A Oak Wood Farm, 145.61 332 P **PKPdf 20 47 16.4 0.0**
baz=38
GOGA Godfrey 145.62 312 *e*PKIKP **PKPab 20 47 17.5 +0.3**
GOGA Godfrey 145.62 312 *e*PKPdf **PKPab 20 47 17.5 +0.3**
ECSD EROS Data Cent 145.80 338 P **PKPdf 20 47 16.7 0.0**
baz=30
ECSD EROS Data Cent 145.80 338 *e*PKPdf **PKPbc 20 47 17.3 +0.1**
CHMT Chamberlain Mo 145.93 359 *e*PKPdf **PKPdf 20 47 17.3 +0.2**
MSO Missoula 146.02 0 P **PKPbc 20 47 17.9 0.0**
baz=360
MSO Missoula 146.02 0 *e*PKPdf **PKPbc 20 47 17.6 -0.3**
O40A La Belle 146.65 329 P **PKPdf 20 47 18.7 +0.5**
baz=41

Q42A Golden Eagle 146.83 326 P **PKPbc 20 47 19.6 -0.8**
baz=44
H26A Fairpoint 146.89 346 P **PKPbc 20 47 19.8 -0.7**
baz=20
LRM Limekiln Ridge 147.01 358 *e*PKPdf **PKPbc 20 47 20.9 -0.1**
WVT Waverly 147.09 319 *e*PKP2 **PKPdf 20 47 19.7 +0.6**
WVT Waverly 147.09 319 *e*PKPdf **PKPdf 20 47 19.7 +0.6**
J30A Dallas 147.15 341 P **PKPbc 20 47 20.4 -0.8**
baz=26
BOZ Bozeman (W) 147.16 357 P **PKPdf 20 47 20.0 +0.9**
baz=3.6
P40A Paris 147.18 328 P **PKPdf 20 47 20.1 +1.0**
baz=41
DLMT Dillon 147.47 359 *e*PKPbc **PKPbc 20 47 22.4 +0.3**
RLMT Red Lodge 147.51 354 *e*PKPbc **PKPbc 20 47 22.2 -0.1**
Q40A Laux Farm, Aux 147.59 328 P **PKPdf 20 47 20.8 +1.0**
baz=42
RSSD Black Hills 147.65 347 P **PKPdf 20 47 20.9 +0.9**
baz=18
RSSD Black Hills 147.65 347 *e*PKP2 **PKPdf 20 47 20.3 +0.2**
RSSD Black Hills 147.65 347 *e*PKPdf **PKPdf 20 47 20.3 +0.2**
RSSD *e*PKPbc **PKPbc 20 47 23.0 +0.2**
I25A Rochford 147.68 347 P **PKPdf 20 47 20.8 +0.7**
baz=18
P38A Dawn 147.85 330 P **PKPdf 20 47 21.0 +0.8**
baz=39
PLAL Pickwick Lake 147.95 318 *e*PKPdf **PKPdf 20 47 17.7 -2.9**
PLAL *e*PKPbc **PKPbc 20 47 22.2 -1.3**
MCMT McKenzie Canyo 148.01 359 *e*PKPbc **PKPbc 20 47 24.3 +0.5**
PBMO Poplar Bluff 148.25 323 *e*PKPbc **PKPbc 20 47 24.3 0.0**
H17A Grant Village 148.34 356 P **PKPab 20 47 26.3 -1.4**
baz=5.7
Q38A Cooks Store, C 148.40 329 P **PKPbc 20 47 24.7 +0.1**
baz=40
FLWY Flagg Ranch 148.66 356 *e*PKPbc **PKPbc 20 47 26.7 +1.2**
T41A Mountain View 148.84 325 P **PKPbc 20 47 26.3 +0.5**
baz=45
S40A Lebanon 148.84 326 P **PKPbc 20 47 24.8 -1.1**
baz=43
MOOW Moose Ponds 149.00 356 *e*PKPdf **PKPdf 20 47 21.3 -1.0**
MOOW *e*PKPbc **PKPbc 20 47 26.8 +0.5**
LOHW Long Hollow 149.12 356 *e*PKPdf **PKPdf 20 47 21.1 -1.5**
LOHW *e*PKPbc **PKPbc 20 47 27.0 +0.4**
FXWY Fox Creek 149.13 356 *e*PKPdf **PKPdf 20 47 21.6 -0.9**
FXWY *e*PKPbc **PKPbc 20 47 27.1 +0.4**
HUMO Hull Mountain 149.17 13 *e*PKPbc **PKPbc 20 47 27.3 +0.8**
TPAW Teton Pass 149.27 356 *e*PKPdf **PKPdf 20 47 23.7 +0.9**
TPAW *e*PKPbc **PKiKP 20 47 28.0 -0.3**
HLID Hailey 149.28 1 P **PKPbc 20 47 26.7 -0.3**
baz=359
HLID Hailey 149.28 1 *e*PKPbc **PKPbc 20 47 27.5 +0.5**
O33A Hebron 149.30 335 P **PKPbc 20 47 26.5 -0.4**
baz=32
MFID Camas Ranch 149.38 3 *e*PKPdf **PKPdf 20 47 22.9 +0.1**
MFID *e*PKPbc **PKPbc 20 47 27.5 +0.3**
REDW Red Top Meadow 149.39 356 *e*PKPdf **PKPdf 20 47 21.8 -1.2**
REDW *e*PKPbc **PKPbc 20 47 27.7 +0.3**
O32A Brockman Farm, 149.42 336 P **PKPbc 20 47 26.8 -0.4**
baz=30
147A Livingston 149.43 315 P **PKPbc 20 47 27.5 +0.1**
baz=55
R37A Teagarden Farm 149.50 330 P **PKPbc 20 47 26.7 -0.8**
baz=38
K22A Casper 149.56 350 P **PKPbc 20 47 27.0 -0.7**
baz=14
K22A Casper 149.56 350 *e*PKPdf **PKPdf 20 47 22.0 -1.1**
K22A *e*PKPbc **PKPbc 20 47 27.0 -0.7**
S38A Stockton 149.56 328 P **PKPbc 20 47 27.1 -0.6**
baz=40
Z46A Louisville 149.59 316 P **PKPbc 20 47 28.1 +0.2**
baz=54
BW06 Boulder Array 149.87 354 P **PKPbc 20 47 28.4 -0.2**
baz=8.0
BW06 Boulder Array 149.87 354 *e*PKPdf **PKPdf 20 47 22.0 -1.8**
BW06 *e*PKPdf **PKPdf 20 47 22.4 -1.4**
BW06 *e*PKPbc **PKPbc 20 47 27.9 -0.7**
BW06 *e*PKPbc **PKPbc 20 47 28.3 -0.2**
PD31 Pinedale Array 149.87 354 *e*PKPdf **PKPdf 20 47 23.6 -0.1**
PD31 *e*PKPbc **PKPbc 20 47 28.2 -0.4**
PDAR Pinedale Array 149.87 354 PKP **PKPdf 20 47 22.5 -1.3**
comp=Z,0.8nm,0.6s,baz=288,slow=0.9,SNR=7.1
PDAR PKPbc **PKPbc 20 47 28.0 -0.5**
comp=Z,2.4nm,0.6s,baz=49,slow=2.7,SNR=25
S37A Fort Scott 149.93 329 P **PKPbc 20 47 27.9 -0.7**
baz=39
U40A Yellville 149.94 325 P **PKPbc 20 47 28.2 -0.4**
baz=44
V41A Mountainview 149.95 323 P **PKPbc 20 47 28.1 -0.6**
baz=46
M04C Macdoel 150.20 12 P **PKPbc 20 47 29.2 0.0**
baz=344
T38A Diamond 150.22 328 P **PKPbc 20 47 29.4 +0.1**
baz=40
U39A Green Forest 150.27 326 P **PKPbc 20 47 29.2 -0.2**
baz=43
MOD Modoc Plateau 150.38 10 *e*PKPbc **PKPbc 20 47 29.1 -0.6**
T37A Cheneyville 18 150.47 329 P **PKPbc 20 47 29.6 -0.2**
baz=39
HHAR Hobbs 150.59 326 *e*PKPbc **PKPbc 20 47 29.2 -1.0**
R34A Isabella, Hill 150.64 333 P **PKPbc 20 47 30.6 +0.4**
baz=34
U38A Gravette 150.71 327 P **PKPbc 20 47 30.3 -0.2**
baz=41
S35A Otter Creek Ra 150.72 331 P **PKPbc 20 47 30.2 -0.3**
baz=36
V39A Pettigrew 150.75 325 P **PKPbc 20 47 30.6 0.0**
baz=43
R33A Olander Ranch, 150.96 334 P **PKPbc 20 47 30.7 -0.3**
baz=33
T36A Boggs Farm, Ca 151.00 330 P **PKPbc 20 47 31.4 +0.3**
baz=38
HVU Hansel Valley 151.06 359 *e*PKIKP **PKPbc 20 47 31.4 +0.1**
HVU Hansel Valley 151.06 359 *e*PKPbc **PKPbc 20 47 31.4 +0.1**
N23A Red Feather La 151.14 348 P **PKPbc 20 47 31.8 +0.1**
baz=16
N23A Red Feather La 151.14 348 *e*PKPdf **PKPdf 20 47 23.6 -2.3**
N23A *e*PKPbc **PKPbc 20 47 31.6 0.0**
V38A Canehill 151.16 326 P **PKPbc 20 47 30.5 -1.0**
baz=42
HWUT Hardware Ranch 151.18 357 *e*PKPdf **PKPdf 20 47 24.2 -1.6**
HWUT *e*PKPbc **PKPbc 20 47 31.9 +0.3**
W39A Magazine 151.30 325 P **PKPbc 20 47 31.9 +0.1**
baz=44
T35A Sooner Cattle 151.42 330 P **PKPbc 20 47 32.2 +0.1**
baz=37
SPUT South Promonto 151.52 358 *e*PKPdf **PKPdf 20 47 25.1 -1.2**
SPUT *e*PKPbc **PKiKP 20 47 33.0 +0.1**
MIAR Mount Ida 151.64 323 P **PKPbc 20 47 33.0 +0.3**
baz=45
MIAR Mount Ida 151.64 323 *e*PKIKP **PKPdf 20 47 28.1 +1.7**
MIAR Mount Ida 151.64 323 *e*PKPdf **PKPdf 20 47 28.1 +1.7**
T34A McClaskey Farm 151.66 331 P **PKPbc 20 47 32.9 +0.2**
baz=36
W38A Poteau 151.80 325 P **PKPbc 20 47 33.4 +0.4**
baz=42
BGU Big Grassy Mou 151.92 359 *e*PKPdf **PKPdf 20 47 25.0 -1.8**
BGU *e*PKPbc **PKPbc 20 47 33.2 -0.1**
X39A Fountain Ranch 151.98 324 P **PKPbc 20 47 33.9 +0.4**
baz=44
KSCO Kaye Shedlock' 152.06 341 *e*PKPdf **PKPdf 20 47 26.7 -0.4**
KSCO *e*PKPbc **PKiKP 20 47 34.1 +0.1**
ELK Elko 152.07 3 *e*PKIKP **PKPdf 20 47 25.6 -1.6**
ELK Elko 152.07 3 *e*PKPdf **PKPdf 20 47 25.6 -1.6**
ELK *e*PKPbc **PKiKP 20 47 34.4 +0.3**
X38A Whitesboro 152.27 325 P **PKPbc 20 47 34.1 0.0**
baz=42
DUG Dugway, Tooele 152.64 359 P **PKPbc 20 47 34.3 -0.7**
baz=1.8
DUG Dugway, Tooele 152.64 359 *e*PKIKP **PKPbc 20 47 35.0 +0.1**
DUG Dugway, Tooele 152.64 359 *e*PKPbc **PKPbc 20 47 35.0 +0.1**
P18A Preston Nutter 153.05 354 *e*PKPdf **PKPdf 20 47 27.4 -1.4**
P18A *e*PKPbc **PKPbc 20 47 36.0 -0.1**
NVAR Mina Array Bea 154.09 8 PKPbc **PKPbc 20 47 39.5 +1.3**
comp=Z,1.1nm,0.7s,baz=354,slow=2.7,SNR=1.5
NV01 Mina Array Sit 154.09 8 *e*PKPbc **PKPbc 20 47 38.9 +0.7**
NV01 *e*PKPab **PKPab 20 47 51.1 -0.5**
WMOK Wichita Mounta 154.27 331 *e*PKIKP **PKPbc 20 47 38.0 -0.5**
WMOK *e* 20 47 52.0
WMOK Wichita Mounta 154.27 331 *e*PKPbc **PKPbc 20 47 38.0 -0.5**
WMOK *e*PKPab **PKPab 20 47 52.0 -0.3**
S22A 4UR Ranch, Cre 154.36 347 *e*pPKPdf **pPKPdf 20 47 34.9 +0.8**
S22A *e*PKPab **PKPab 20 47 50.6 -2.3**
PV05 Paradox Valley 154.44 352 *e*PKPdf **PKPdf 20 47 26.5 -4.2**
PV05 *e*PKPbc **PKiKP 20 47 39.4 +0.3**

PV05				*e*PKPab	**PKPab**	20 47 51.1	-2.0
R11A	**Troy Canyon, C**	154.44	3	*e*PKPab	**PKPab**	20 47 52.8	-0.2
ANMO	**Albuquerque**	156.94	345	*e*PKIKP	**PKPdf**	20 47 33.9	-0.2
ANMO	**Albuquerque**	156.94	345	*e*PKPdf	**PKPdf**	20 47 33.9	-0.2
ANMO				*e*PKPab	**PKPab**	20 48 04.5	+0.6
LTX	**Lajitas**	161.05	332	*e*PKP2	**PKPab**	20 48 21.4	-0.3
LTX	**Lajitas**	161.05	332	*e*PKPab	**PKPab**	20 48 21.4	-0.3
TX31	**Lajitas Ar. Si**	161.05	332	*e*PKPdf	PKPpre	20 47 31.9	
TX31				*e*PKPdf	**PKPdf**	20 47 37.8	-1.1
TX31				*e*PKPab	**PKPab**	20 48 21.2	-0.5
TX31				*e*PKPab	**PKPab**	20 48 21.4	-0.4
TXAR	**Lajitas Array**	161.05	332	PKPab	**PKPab**	20 48 21.4	-0.3
	comp=Z,3.6nm,1.2s,baz=126,slow=6.4,SNR=8.2						

ISCJB ***27*** *20:28:45.1±0.2, 12°.72S±0°.05×66°.39E±0°.04, h10km, mb4.7/90, MS4.6/1, Error ellipse: s-maj=7.3km s-min=5.7km az=170.2*
IDC ***27*** *20:28:45.6±0.5, 12°.70S×66°.41E, h0km, mb4.3/34, mb1 4.3/35, mb1mx4.2/62, mbtmp4.3/35, Error ellipse: s-maj=15.4km s-min=12.3km az=159.0*
NEIC ***27*** *20:28:46.9±0.2, 12°.74S×66°.35E, h10km, mb5.0/55, Error ellipse: s-maj=6.6km s-min=5.0km az=171.0*
ISC 27 20:28:46.6±0.3, 12°.84S±0°.07×66°.36E±0°.06, h10km, n181, σ1°.09/173, mb4.9/90, 2C-1D, Mid-Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08N3	**Diego Garcia H**	7.91	36	T	T	20 38 44.3	
baz=215							
H08N1	**Diego Garcia H**	7.93	36	T	T	20 38 45.5	
baz=215							
H08N2	**Diego Garcia H**	7.93	36	T	T	20 38 46.1	
baz=215							
H08S1	**Diego Garcia H**	7.93	50	T	T	20 38 45.3	
baz=230,slow=76,SNR=2.6							
H08S2	**Diego Garcia H**	7.95	50	T	T	20 38 43.7	
baz=230,slow=76,SNR=2.3							
H08S3	**Diego Garcia H**	7.95	50	T	T	20 38 42.0	
baz=230,slow=76,SNR=2799							
DGAR	**Diego Garcia**	8.07	49	*e*Pn	**Pn**	20 30 43.6	-0.3
MRIV	**Mauritius Mete**	11.27	228	*e*Pn	**Pn**	20 31 24.6	-3.2
RER	**Riviere de l'E**	13.08	229	*e*Pn	**Pn**	20 31 49.4	-3.3
OPO	**Ambohidratompo**	19.30	250	P	**Pn**	20 33 14.0	+0.9
baz=70,slow=14,SNR=2.4							
KMBO	**Kilima Mbogo**	31.09	290	P	**P**	20 35 07.0	+1.2
0.9nm,0.3s,baz=94,slow=11,SNR=4.3							
KMBO	**Kilima Mbogo**	31.09	290	*e*P	**P**	20 35 04.2	-1.6
19nm,1.4s							
GSI	**Gunungsitoli**	34.02	68	*e*P	**P**	20 35 32.8	+1.7
49nm,1.3s							
FURI	**Furi**	34.96	307	*e*P	**P**	20 35 40.5	+0.9
52nm,1.5s							
LHMI	**Lhok Sumawe**	35.30	61	*e*P	**P**	20 35 40.8	-1.3
73nm,1.2s							
MATP	**Matopo**	36.98	253	P	**P**	20 35 58.6	+1.9
11nm,1.1s,baz=107,slow=5.5,SNR=4.1							
LSZ	**Lusaka**	37.07	262	P	**P**	20 35 59.4	+1.9
26nm,1.2s,baz=90,slow=7.6,SNR=6.1							
LSZ	**Lusaka**	37.07	262	*e*P	**P**	20 35 58.5	+1.0
43nm,1.1s							
IPM	**Ipoh**	38.50	66	*e*P	**P**	20 36 08.2	-1.3
46nm,1.9s							
KULM	**Kulim**	38.55	64	*e*P	**P**	20 36 12.3	+2.5
45nm,1.7s							
LBTB	**Lobatse**	40.26	246	P	**P**	20 36 25.9	+1.8
8.2nm,0.9s,baz=96,slow=8.4,SNR=4.8							
LBTB	**Lobatse**	40.26	246	*e*P	**P**	20 36 24.4	+0.3
20nm,0.9s							
BOSA	**Boshof**	41.29	241	P	**P**	20 36 34.0	+1.4
15nm,1.2s,baz=68,slow=6.8,SNR=4.3							
BOSA	**Boshof**	41.29	241	*e*P	**P**	20 36 32.1	-0.5
39nm,1.4s							
CM01	**Chiang Mai Arr**	44.71	47	*e*P	**P**	20 37 00.6	+0.3
CM31	**Chiang Mai Arr**	44.73	47	*e*P	**P**	20 37 00.7	+0.3
CM31				*e*PcP	**PcP**	20 38 42.9	+0.1
CMAR	**Chiang Mai Arr**	44.73	47	P	**P**	20 37 01.6	+1.2
1.6nm,0.9s,baz=238,slow=8.6,SNR=4.3							
CMAR				PcP	**PcP**	20 38 42.9	+0.1
0.5nm,0.6s,baz=235,slow=3.2,SNR=3.7							
CHTO	**Chiang Mai**	44.96	46	*e*P	**P**	20 37 01.2	-1.1
7.1nm,1.1s							
SUR	**Sutherland**	45.92	237	P	**P**	20 37 12.2	+2.2
1.3nm,1.1s,baz=45,slow=1.4,SNR=2.7							
JAGI	**Jajag, Banyuwa**	47.12	90	*e*P	**P**	20 37 20.1	+0.6
37nm,0.9s							
TSUM	**Tsumeb**	47.18	256	*e*P	**P**	20 37 19.7	-0.3
23nm,1.6s							
KBL	**Kabul**	47.19	3	*e*P	**P**	20 37 20.2	+0.3
17nm,1.2s							
H01W3	**Cape Leeuwin H**	48.35	125	T	T	21 29 16.8	
baz=283,slow=74,SNR=3.3							
H01W2	**Cape Leeuwin H**	48.35	125	T	T	21 29 16.8	
baz=283							
H01W1	**Cape Leeuwin H**	48.37	125	T	T	21 29 18.7	
baz=283,slow=74,SNR=2.6							
LSA	**Lhasa**	48.59	29	*e*P	**P**	20 37 28.9	-2.2
20nm,1.5s							
KKM	**Kota Kinabalu**	52.97	72	*e*P	**P**	20 38 03.6	-0.4
51nm,1.3s							
KAPI	**Kappang**	53.24	87	*e*P	**P**	20 38 05.7	-0.2
32nm,1.5s							
EKS2	**Erkin-Say**	55.65	7	*e*P	**P**	20 38 23.2	+0.2
11nm,1.0s							
AAK	**Ala-Archa**	55.71	7	*e*P	**P**	20 38 23.2	-0.3
11nm,1.2s							
KKAR	**Karatay Array**	55.80	4	*e*P	**P**	20 38 23.8	-0.1
TKM2	**Tokmak 2**	56.13	8	*e*P	**P**	20 38 25.3	-1.3
14nm,1.1s							
GNI	**Garni**	56.42	340	P	**P**	20 38 29.4	+0.8
1.9nm,0.4s,baz=206,slow=7.8,SNR=3.6							
GNI	**Garni**	56.42	340	*e*P	**P**	20 38 29.1	+0.5
35nm,1.3s							
SYO	**Syowa Base**	58.68	191	⇓*i*P	**P**	20 38 44.2	+0.3
SYO	**Syowa Base**	58.68	191	⇑*e*pP	pP	20 38 50.3	+3.2
ENH	**Enshi**	59.67	43	*e*P	**P**	20 38 51.2	-0.3
14nm,1.0s							
KIV	**Kislovodsk**	60.51	341	*e*P	**P**	20 38 56.8	-0.2
13nm,1.3s							
BRTR	**Keskin Array B**	60.51	331	P	**P**	20 38 57.1	0.0
1.3nm,1.0s,baz=134,slow=6.2,SNR=2.6							
BR101	**Keskin Array S**	60.51	331	*e*P	**P**	20 38 57.1	0.0
BR131	**Keskin Array S**	60.51	331	*e*P	**P**	20 38 56.6	-0.5
KARP	**Karpathos**	60.75	324	*e*P	**P**	20 38 55.9	-2.9
12nm,1.1s							
CASY	**Casey**	60.99	161	*e*P	**P**	20 39 00.6	+0.7
8.0nm,1.1s							
CASY				*e*PP	PP	20 41 05.0	-9.1
BR231	**Keskin MP Arra**	61.01	331	*e*P	**P**	20 38 56.4	-4.1
MAKZ	**Makanchi**	61.01	12	*e*P	**P**	20 38 59.6	-0.6
9.7nm,1.0s							
MK01	**Makanchi Array**	61.04	12	*e*P	**P**	20 38 59.4	-1.1
MK31	**Makanchi Array**	61.06	12	*e*P	**P**	20 38 60.0	-0.7
MK32	**Makanchi Array**	61.06	12	*e*P	**P**	20 38 59.8	-0.8
MK32				*e*PcP	**PcP**	20 39 43.1	-0.5
MKAR	**Makanchi Array**	61.06	12	P	**P**	20 38 59.8	-0.8
2.3nm,0.7s,baz=212,slow=9.2,SNR=8.9							
MKAR				PcP	**PcP**	20 39 43.1	-0.5
1.1nm,0.8s,baz=198,slow=4.2,SNR=1.6							
LAST	**Lasithi**	61.47	322	*e*P	**P**	20 39 01.9	-1.9
26nm,1.2s							
LAST				*e*PP	PP	20 41 10.1	-9.1
IDI	**Anoyia**	61.91	322	*e*P	**P**	20 39 07.5	+0.9
26nm,1.1s							
ABKAR	**Akbulak array**	62.09	355	*e*P	**P**	20 39 06.3	-1.1
AKTO	**Aktyubinsk**	63.43	354	P	**P**	20 39 15.7	-0.7
4.1nm,0.9s,baz=167,slow=6.2,SNR=5.5							
KURBB	**Kurchatov Arra**	64.09	9	P	**P**	20 39 20.6	-0.1
3.2nm,0.6s,baz=210,slow=7.0,SNR=17							
KURK	**Kurchatov**	64.19	9	*e*P	**P**	20 39 19.7	-1.7
12nm,1.1s							
ASAR	**Alice Springs**	64.55	110	P	**P**	20 39 25.2	+0.7
2.6nm,0.6s,baz=274,slow=5.9,SNR=15							
AS31	**Alice Springs**	64.56	110	*e*P	**P**	20 39 21.8	-2.7
1.2nm,0.5s							
AS01	**Alice Springs**	64.60	110	*e*P	**P**	20 39 25.0	+0.2
WR1	**Warramunga Arr**	65.24	106	*e*P	**P**	20 39 30.1	+1.1
25nm,1.4s							
WRA	**Warramunga Arr**	65.24	106	P	**P**	20 39 30.1	+1.1
3.0nm,1.0s,baz=252,slow=6.2,SNR=12							
WB2	**Warramunga Arr**	65.25	106	*e*P	**P**	20 39 29.4	+0.4
40nm,1.6s							
WRAB	**Tennant Creek**	65.25	106	*e*P	**P**	20 39 30.4	+1.3
32nm,1.4s							
VOSK	**Vostochnaya**	65.42	3	*e*P	**P**	20 39 28.3	-1.1
8.1nm,1.1s							
ZRNK	**Zerenda**	65.57	2	*e*P	**P**	20 39 29.9	-0.4
7.1nm,0.9s							
BVAR	**Borovoye Array**	65.69	3	P	**P**	20 39 31.0	-0.1
2.9nm,0.7s,baz=157,slow=7.9,SNR=8.1							
BRVK	**Borovoye**	65.72	3	*e*P	**P**	20 39 30.7	-0.6
11nm,1.1s							
AGG	**Agios Georgios**	65.94	324	*e*P	**P**	20 39 31.7	-1.4
74nm,1.3s							
BBOO	**Buckleboo**	66.17	120	*e*P	**P**	20 39 32.8	-2.0
14nm,1.0s							
YOJ	**Yonaguni jima**	66.57	56	*e*P	**P**	20 39 37.5	+0.2
791nm,1.6s							
TIRR	**Tirgusor**	66.63	331	*e*P	**P**	20 39 36.1	-1.2
55nm,1.7s							
HHC	**Hu-ho-hao-te**	67.83	36	*e*P	**P**	20 39 47.3	+2.1
HHC				S	**S**	20 48 47.3	+3.7
HHC				pmax	pmax		
comp=Z,30nm,1.4s							
HHC				pmax	pmax		
comp=Z,220nm,7.1s							
HHC				LR	LR		
comp=N,240nm,17.2s							
HHC				LR	LR		
comp=E,300nm,18.6s							
HHC				LR	LR		
comp=Z,220nm,17.2s							
ZAA0	**Zalesovo Array**	68.37	12	*e*P	**P**	20 39 46.9	-1.2
ZALV	**Zalesovo Beam**	68.37	12	P	**P**	20 39 47.5	-0.7
comp=Z,3.7nm,0.8s,baz=216,slow=5.3,SNR=5.8							
ZAA1	**Zalesovo Array**	68.37	12	*e*P	**P**	20 39 47.5	-0.7
MLR	**Muntele Rosu**	68.57	331	*e*P	**P**	20 39 50.0	+0.2
comp=Z,34nm,1.7s							
TIR	**Tirane**	68.89	324	*e*P	**P**	20 39 48.6	-3.0
comp=Z,40nm,1.4s							
TOA0	**Torodi Ar. Sit**	69.10	290	*e*P	**P**	20 39 53.6	+0.1
TORD	**Torodi Ar. Bea**	69.10	290	P	**P**	20 39 53.4	-0.1
comp=Z,4.2nm,1.1s,baz=106,slow=3.2,SNR=6.5							
TOA1	**Torodi Ar. Sit**	69.11	290	*e*P	**P**	20 39 53.4	-0.2
comp=Z,28nm,1.5s							
TAM	**Tamanrasset**	69.29	301	*e*P	**P**	20 39 55.5	+0.8
comp=Z,11nm,1.3s							
ARU	**Arti**	69.32	355	P	**P**	20 39 54.4	+0.4
comp=Z,1.0nm,0.4s,baz=154,slow=4.9,SNR=4.3							
ARU	**Arti**	69.32	355	*e*P	**P**	20 39 54.4	+0.4
comp=Z,20nm,1.5s							
BJT	**Baijiatuau**	70.01	39	*e*P	**P**	20 39 58.9	+0.2
comp=Z,16nm,1.3s							
SONA0	**Songino Array**	70.13	27	*e*P	**P**	20 40 00.1	+0.7
comp=Z,20nm,1.4s							
SONM	**Songino Array**	70.13	27	P	**P**	20 40 00.1	+0.7
comp=Z,2.2nm,0.8s,baz=221,slow=6.3,SNR=6.1							
SONA1	**Songino Array**	70.14	27	*e*P	**P**	20 39 58.0	-1.4
ULN	**Ulaanbaatar**	70.45	28	*e*P	**P**	20 40 02.2	+0.8
comp=Z,32nm,1.8s							
BUR08	**Bucovina Ar. S**	70.50	332	*e*P	**P**	20 40 02.8	+1.2
STKA	**Stephens Creek**	70.89	119	P	**P**	20 40 04.7	+0.4
comp=Z,1.4nm,0.6s,baz=286,slow=2.9,SNR=4.8							
STKA	**Stephens Creek**	70.89	119	*e*P	**P**	20 40 05.1	+0.8
comp=Z,3.8nm,1.6s							
AKASG	**Malin Array Be**	71.09	336	P	**P**	20 40 04.6	-0.4
comp=Z,0.2nm,0.3s,baz=134,slow=4.8,SNR=4.9							
AKBB	**Malin Array Si**	71.09	336	*e*P	**P**	20 40 04.2	-0.7
comp=Z,7.7nm,0.8s							
KIEV	**Kiev**	71.10	336	*e*P	**P**	20 40 04.4	-0.6
comp=Z,19nm,1.6s							
AK11	**Malin Array Si**	71.10	336	*e*P	**P**	20 40 04.0	-1.0
SNAA	**Sanae**	71.39	198	*e*P	**P**	20 40 07.0	+0.4
comp=Z,11nm,1.0s							
TLY	**Talaya**	71.92	23	*e*P	**P**	20 40 11.1	+1.0
comp=Z,14nm,1.3s							
OBN	**Obninsk**	72.21	343	*e*P	**P**	20 40 12.3	+0.7
comp=Z,59nm,1.8s							
DBIC	**Dimbokro**	73.35	281	P	**P**	20 40 19.7	+0.4
comp=Z,11nm,1.2s,baz=123,slow=3.9,SNR=3.1							
DBIC	**Dimbokro**	73.35	281	*e*P	**P**	20 40 19.9	+0.7
comp=Z,49nm,1.5s							
STHS	**Stebnicka Huta**	73.61	331	*e*	P	20 40 27.2	+7.1
SOKA	**Soboth**	74.96	326	*e*P	**P**	20 40 28.6	+0.4
comp=Z,6.9nm,1.1s							
ARSA	**Arzberg**	75.05	327	*i* P	**P**	20 40 29.5	+0.9
comp=Z,9.5nm,1.1s							
VRAC	**Vranov**	75.80	329	P	**P**	20 40 32.7	-0.1
comp=Z,0.7nm,0.4s,baz=164,slow=3.7,SNR=3.8							
MOA	**Molln**	76.09	327	*e*P	**P**	20 40 35.2	+0.7
comp=Z,13nm,1.2s							
KSAR	**Wonju Array Be**	76.33	46	P	**P**	20 40 36.5	+0.4
KS01	**Wonju Array Si**	76.35	46	*e*P	**P**	20 40 36.2	+0.1
KSRS	**Korea Array**	76.36	46	P	**P**	20 40 36.5	+0.2
comp=Z,2.5nm,0.9s,baz=244,slow=6.0,SNR=4.6							
ABTA	**Abfaltersbach**	76.39	325	*e*P	**P**	20 40 36.4	+0.1
comp=Z,15nm,1.2s							
JNU	**Nakatsue**	76.59	51	P	**P**	20 40 38.2	+0.5
comp=Z,7.4nm,0.9s,baz=284,slow=4.2,SNR=3.2							
JNU	**Nakatsue**	76.59	51	*e*P	**P**	20 40 37.3	-0.4
comp=Z,20nm,1.1s							
GERES	**GERESS Array B**	77.00	327	P	**P**	20 40 39.6	-0.1
comp=Z,0.4nm,0.6s,baz=96,slow=7.2,SNR=2.8							
KHC	**Kasperske Hory**	77.23	328	*e*P	**P**	20 40 40.6	-0.4
WATA	**Walderalm**	77.25	325	*i* P	**P**	20 40 42.0	+0.7
comp=Z,12nm,1.2s							
PVCC	**Panska Ves**	77.58	329	*e*P	**P**	20 40 43.7	+0.9
RETA	**Reutte**	77.79	325	*e*P	**P**	20 40 44.3	+0.1
comp=Z,14nm,1.4s							
DAVA	**Damuels**	78.17	325	*i* P	**P**	20 40 46.5	+0.1
comp=Z,8.8nm,0.9s							
VNDA	**Vanda**	78.74	167	P	**P**	20 40 49.9	+1.0
comp=Z,1.6nm,0.9s,baz=316,slow=7.0,SNR=3.3							
CLL	**Collm**	78.84	329	⇑*i* P	**P**	20 40 50.8	+1.0
comp=Z,20nm,1.5s							
FIA0	**FINESS Array S**	80.57	342	*e*P	**P**	20 40 59.3	+0.4
FINES	**FINESS Array B**	80.57	342	P	**P**	20 40 59.3	+0.4
comp=Z,1.1nm,0.8s,baz=130,slow=3.0,SNR=4.2							
USRK	**Ussuriysk Ar.**	82.19	41	P	**P**	20 41 07.5	-0.4
comp=Z,1.5nm,0.5s,baz=249,slow=6.0,SNR=3.4							
NRIK	**Noril'sk**	83.33	7	P	**P**	20 41 12.1	-1.2
comp=Z,2.4nm,0.4s,baz=201,slow=6.2,SNR=3.9							
ES19	**SONSECA Array**	83.47	313	*e*P	**P**	20 41 14.7	-0.1
MJAR	**Matsushiro Arr**	83.47	50	P	**P**	20 41 14.1	-0.8
comp=Z,4.4nm,0.9s,baz=242,slow=5.9,SNR=5.6							
ESDC	**Sonseca Array**	83.51	313	P	**P**	20 41 14.4	-0.5
comp=Z,1.3nm,0.6s,baz=106,slow=4.1,SNR=8.4							
KLR	**Kul'dur**	84.30	37	P	**P**	20 41 18.2	-0.5
comp=Z,0.6nm,0.5s,baz=258,slow=5.9,SNR=2.6							
ARA0	**ARCESS Array S**	86.98	347	*e*P	**P**	20 41 32.1	+0.5
ARCES	**ARCESS Array B**	86.98	347	P	**P**	20 41 32.1	+0.5
comp=Z,2.0nm,0.8s,baz=134,slow=6.9,SNR=5.2							
TIXI	**Tiksi**	93.84	16	*e*P	**P**	20 42 02.0	-1.6
comp=Z,11nm,1.3s							
ILAR	**Eielson Array**	123.31	16	PKP	**PKPdf**	20 47 41.5	-2.0
comp=Z,0.4nm,0.7s,baz=305,slow=3.2,SNR=3.4							
ILB	**Eielson Array**	123.31	16	*e*PKPdf	**PKPdf**	20 47 41.5	-2.0
LPAZ	**La Paz**	126.50	238	PKP	**PKPdf**	20 47 51.5	-0.3
comp=Z,2.2nm,0.9s,baz=81,slow=9.4,SNR=5.5							
YKA	**Yellowknife Ar**	130.42	1	PKP	**PKPdf**	20 47 56.8	-0.3
comp=Z,0.6nm,0.6s,baz=347,slow=2.0,SNR=8.6							
YKB5	**Yellowknife Ar**	130.42	1	*e*PKPdf	**PKPdf**	20 47 55.8	-1.3
I37A	**Lemond, Waseca**	144.40	335	P	PKPbc	20 48 22.1	+0.3
baz=35							
TKL	**Tuckaleechee C**	144.78	315	PKP	PKPbc	20 48 23.8	+0.5
comp=Z,4.3nm,0.8s,baz=67,slow=9.5,SNR=3.5							
TKL	**Tuckaleechee C**	144.78	315	*e*PKPdf	**PKPab**	20 48 23.1	-0.1
H34A	**Spellman Lake,**	144.80	338	P	**PKPab**	20 48 22.7	-0.2
baz=31							
J37A	**Redenius Farm,**	145.04	334	P	**PKPab**	20 48 23.7	-0.2
baz=36							
BSMT	**Bassoo Peak**	145.09	1	*e*PKPbc	**PKPab**	20 48 24.4	+0.3
H33A	**Prehn Over Nor**	145.13	339	P	**PKPbc**	20 48 24.3	+0.2
baz=30							
E26A	**Carlson Angus**	145.18	346	P	**PKPdf**	20 48 25.1	+0.4
baz=19							
K38A	**Parkersburg**	145.23	333	P	**PKPdf**	20 48 25.8	+0.9
baz=37							
E25A	**Miller Ranch,**	145.35	348	P	**PKPdf**	20 48 25.8	+0.7
baz=18							
J36A	**Seneca 1, Swea**	145.36	335	P	**PKPdf**	20 48 25.3	+0.2
baz=34							
G30A	**Faulkton**	145.53	342	P	**PKPbc**	20 48 25.2	-0.2
baz=25							
H32A	**Carlson Farm,**	145.53	339	P	**PKPab**	20 48 26.5	+0.9
baz=29							
OLIL	**Olney**	145.68	323	*e*PKPdf	**PKPdf**	20 48 26.0	+0.2
LAO	**LASA Array**	145.69	351	P	**PKPab**	20 48 27.3	+1.1
baz=13							
ECSD	**EROS Data Cent**	145.91	338	P	**PKPbc**	20 48 26.9	+0.3
baz=30							
ECSD	**EROS Data Cent**	145.91	338	*e*PKPdf	**PKPdf**	20 48 26.6	+0.5
CHMT	**Chamberlain Mo**	146.04	360	*e*PKPdf	**PKPbc**	20 48 27.2	+0.1
MSO	**Missoula**	146.12	0	P	**PKPbc**	20 48 27.6	+0.3
baz=360							
O40A	**La Belle**	146.75	329	P	**PKPdf**	20 48 27.6	+0.1
baz=41							
J30A	**Dallas**	147.26	341	P	**PKPdf**	20 48 28.9	+0.5
baz=26							
P40A	**Paris**	147.28	328	P	**PKPbc**	20 48 30.6	-0.1
baz=41							
Q40A	**Laux Farm, Aux**	147.69	328	P	**PKPbc**	20 48 32.1	+0.2
baz=42							
RSSD	**Black Hills**	147.76	347	P	**PKPbc**	20 48 32.2	0.0
baz=18							
RSSD	**Black Hills**	147.76	347	*e*PKPdf	**PKPdf**	20 48 30.6	+1.2
I25A	**Rochford**	147.79	347	P	**PKPbc**	20 48 32.2	0.0
baz=18							
LRAL	**Lakeview Retre**	148.44	314	*e*PKPbc	**PKPbc**	20 48 35.1	+1.0
BW06	**Boulder Array**	149.98	354	*e*PKPbc	**PKPbc**	20 48 38.0	0.0
PD31	**Pinedale Array**	149.98	354	*e*PKPbc	**PKPbc**	20 48 38.0	0.0
PDAR	**Pinedale Array**	149.98	354	PKPbc	**PKPbc**	20 48 38.4	+0.4
comp=Z,2.6nm,0.5s,baz=95,slow=2.8,SNR=16							
T37A	**Cheneyville 18**	150.58	329	P	**PKPbc**	20 48 39.3	0.0
baz=39							
N23A	**Red Feather La**	151.25	348	P	**PKPbc**	20 48 41.7	+0.6
baz=16							
HWUT	**Hardware Ranch**	151.29	357	*e*PKPbc	**PKPbc**	20 48 41.6	+0.6
NV01	**Mina Array Sit**	154.18	8	*e*PKPbc	**PKPbc**	20 48 48.0	+0.4
NVAR	**Mina Array Bea**	154.18	8	PKPbc	**PKPbc**	20 48 48.9	+1.3
comp=Z,1.1nm,0.5s,baz=339,slow=2.2,SNR=3.8							
LTX	**Lajitas**	161.15	332	*e*PKPab	**PKPab**	20 49 31.5	+0.2
TXAR	**Lajitas Array**	161.15	332	PKPab	**PKPab**	20 49 31.5	+0.2
comp=Z,1.1nm,0.9s,baz=116,slow=2.9,SNR=4.5							

JMA 27 20:29:57.5, 36°.72N×140°.61E, h8km, M2.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	0.11	197	P	Pg	20 30 00.2	+0.1
JHO				S	Sg	20 30 01.9	0.0
JYT	**Yasato**	0.59	214	P	Pg	20 30 08.9	-0.1
MAT	**Matsushiro**	1.94	265	P	Pn	20 30 31.5	+0.7
MAT				S	Sb	20 30 57.3	-0.2

JMA 27 20:32:04.3, 36°.73N×140°.60E, h8km±1km, M2.7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	0.12	192	P	Pg	20 32 07.0	0.0
JHO				S	Sg	20 32 08.8	-0.1
ONAJ	**Iwakimizuishiy**	0.40	23	P	Pg	20 32 12.3	+0.1
JYT	**Yasato**	0.60	213	P	Pg	20 32 15.7	-0.2
MAT	**Matsushiro**	1.93	265	P	Pn	20 32 38.1	+0.6
MAT				S	Sb	20 33 03.9	-0.2

IDC 27 20:32:15.8±8.8, 6°.62S×146°.21E, h0km, mb3.2/2, mb1 3.4/4, mb1mx3.2/38, mbtmp3.2/4, ML3.1/1, Error ellipse: s-maj=123.7km s-min=46.1km az=32.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	2.92	161	Pn	Pn	20 33 02.9	-0.6

NIED ***27*** *20:41:00, 39.°70N×144.°30E, h5km, Mw3.5 Best double couple: M1.95000×1014 NP1:φ=197.00000°, δ41.00000°, λ-91.00000°. NP2:φ=19.00000°, δ49.00000°, λ-89.00000°.*
IDC ***27*** *20:41:44.3±1.4, 39.°56N×144.°57E, h0km, mb3.5/5, mb1 3.6/7, mb1mx3.4/33, mbtmp3.5/7, ML3.3/2, Error ellipse: s-maj=34.2km s-min=23.9km az=98.0*
ISCJB ***27*** *20:41:47.6±0.8, 39.°76N±0.°05×144.°30E±0.°06, h23km, mb3.4/5, Error ellipse: s-maj=8.3km s-min=5.2km az=42.9*
JMA ***27*** *20:41:48.6±0.2, 39.°74N×144.°28E, h40km, M3.5*
ISC 27 20:41:48.4±1.1, 39.°69N±0.°06×144.°35E±0.°08, h23km, n21, σ1§37/32, mb3.5/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.93**	**278**	P	**Pn**	**20 42 19.1**	**-0.7**
JTH				S	**Sn**	**20 42 41.9**	**-1.5**
MIYJ	**Miyakonagasawa**	**1.96**	**268**	P	**Pn**	**20 42 19.8**	**-0.4**
MIYJ				S	**Sn**	**20 42 42.7**	**-1.3**
JANG	**Nango**	**2.28**	**288**	P	**Pn**	**20 42 23.8**	**-0.9**
JOM	**Ohasama**	**2.37**	**266**	P	**Pn**	**20 42 26.0**	**+0.1**
JOM				S	**Sn**	**20 42 53.5**	**-0.8**
JMK	**Ichinoseki**	**2.54**	**254**	P	**Pn**	**20 42 27.9**	**-0.2**
JMK				S	**Sn**	**20 42 56.8**	**-1.5**
JTM	**Tenmabayashi**	**2.74**	**295**	P	**Pn**	**20 42 31.4**	**+0.4**
JTM				*e*S	**Sn**	**20 43 01.8**	**-1.6**
JNBK	**Urakawa-nobuka**	**2.86**	**335**	P	**Pn**	**20 42 32.2**	**-0.3**
JNBK				*e*S	**Sn**	**20 43 05.3**	**-0.9**
JRG	**Rokugo**	**2.89**	**265**	P	**Pn**	**20 42 33.4**	**+0.4**
JAH	**Hinai**	**2.90**	**281**	P	**Pn**	**20 42 33.8**	**+0.7**
JAH				S	**Sn**	**20 43 06.8**	**-0.5**
JCH	**Churui**	**3.02**	**346**	P	**Pn**	**20 42 33.8**	**-0.9**
JCH				S	**Sn**	**20 43 06.9**	**-3.3**
JOT	**Ohata**	**3.03**	**305**	P	**Pn**	**20 42 35.0**	**+0.1**
JOT				S	**Sn**	**20 43 09.2**	**-1.3**
JOU	**Okura**	**3.16**	**246**	P	**Pn**	**20 42 36.4**	**-0.3**
JYK	**Kaneyama**	**3.19**	**257**	P	**Pn**	**20 42 37.4**	**+0.3**
JYK				S	**Sn**	**20 43 14.8**	**+0.3**
JAR	**Ashorobuto**	**3.63**	**353**	P	**Pn**	**20 42 41.5**	**-1.7**
ASAJ	**Asahikawa**	**4.62**	**344**	Pn	**Pn**	**20 42 57.4**	**+0.7**
	1.1nm,0.3s,baz=153,slow=0.3,SNR=11						
ASAJ				Sn	**Sn**	**20 43 53.8**	**+4.3**
	0.4nm,0.3s,baz=157,slow=15,SNR=2.7						
MJAR	**Matsushiro Arr**	**5.77**	**239**	Pn	**Pn**	**20 43 13.4**	**+0.8**
	0.9nm,0.3s,baz=58,slow=11,SNR=8.3						
SONM	**Songino Array**	**28.36**	**299**	P	**P**	**20 47 42.3**	**+1.5**
	0.4nm,0.8s,baz=111,slow=8.1,SNR=3.7						
MKAR	**Makanchi Array**	**44.72**	**300**	P	**P**	**20 50 00.4**	**+0.8**
	0.3nm,0.4s,baz=82,slow=9.1,SNR=3.7						
ILAR	**Eielson Array**	**46.01**	**34**	P	**P**	**20 50 09.7**	**0.0**
	0.1nm,0.5s,baz=266,slow=6.9,SNR=4.7						
WRA	**Warramunga Arr**	**60.05**	**191**	P	**P**	**20 51 51.8**	**-1.7**
	0.2nm,0.6s,baz=9.1,slow=7.0,SNR=4.6						
FINES	**FINESS Array B**	**67.53**	**333**	P	**P**	**20 52 42.9**	**+0.6**
	1.0nm,0.6s,baz=35,slow=7.0,SNR=6.8						

JMA 27 20:48:06.7, 36.°95N×140.°67E, h6km±1km, M2.8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.18**	**34**	P	Pg	20 48 10.5	+0.1
ONAJ				S	Sg	20 48 13.2	+0.3
JHO	**Hitachi**	**0.35**	**194**	P	Pg	20 48 13.5	0.0
JHO				S	Sg	20 48 18.4	+0.4
JFK	**Kawauchi**	**0.45**	**21**	P	Pg	20 48 15.2	-0.2
JFK				S	Sg	20 48 21.5	+0.3
JFT	**Otama**	**0.63**	**335**	P	Pg	20 48 18.9	+0.1
JFT				S	Sg	20 48 27.4	+0.5
MAT	**Matsushiro**	**2.02**	**259**	P	Pn	20 48 42.0	+0.7
MAT				S	Sb	20 49 09.3	+0.1

IDC ***27*** *20:50:31.1±1.1, 37.°67N×144.°49E, h0km, mb3.5/6, mb1 3.7/9, mb1mx3.5/44, mbtmp3.5/9, ML3.4/3, Error ellipse: s-maj=29.0km s-min=20.5km az=98.0*
ISCJB ***27*** *20:50:33.8±0.9, 37.°7N±0.°1×144.°3E±0.°1, h33km, mb3.5/6, Error ellipse: s-maj=16.3km s-min=9.6km az=148.9*
ISC 27 20:50:36.2±1.2, 37.°7N±0.°1×144.°4E±0.°1, h35km, n16, σ1§52/11, mb3.4/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**5.05**	**259**	Pn	**Pn**	**20 51 48.0**	**-1.5**
	3.1nm,0.3s,baz=85,slow=15,SNR=22						
MAT	**Matsushiro**	**5.06**	**259**	P	**Pn**	**20 51 48.5**	**-1.0**
MAT				*e*S	**Sn**	**20 52 45.7**	**-1.0**
ASAJ	**Asahikawa**	**6.59**	**349**	Pn	**Pn**	**20 52 08.8**	**-1.7**
	0.8nm,0.3s,baz=204,slow=18,SNR=5.9						
KSRS	**Korea Array**	**13.06**	**274**	Pn	**Pn**	**20 53 40.1**	**+0.9**
	0.1nm,0.3s,baz=83,slow=14,SNR=5.1						
SEY	**Seymchan**	**25.77**	**8**	P	**P**	**20 56 04.4**	**+1.1**
	0.5nm,0.6s,baz=141,slow=6.5,SNR=3.7						
H11N2	**WAKE ISLAND Hy**	**26.52**	**126**	T	T	21 23 47.0	
	baz=312,slow=75,SNR=4.8						
H11N1	**WAKE ISLAND Hy**	**26.53**	**126**	T	T	21 23 47.6	
	baz=312,slow=75,SNR=6.6						
H11N3	**WAKE ISLAND Hy**	**26.54**	**126**	T	T	21 23 48.7	
	baz=312,slow=75,SNR=6.4						
H11S1	**WAKE ISLAND Hy**	**27.30**	**128**	T	T	21 24 39.9	
	baz=314,slow=76,SNR=13						
H11S3	**WAKE ISLAND Hy**	**27.30**	**128**	T	T	21 24 40.6	
	baz=314,slow=76,SNR=11						
H11S2	**WAKE ISLAND Hy**	**27.32**	**128**	T	T	21 24 39.9	
	baz=314,slow=76,SNR=10						
SONM	**Songino Array**	**29.42**	**302**	P	**P**	**20 56 38.8**	**+2.4**
	0.2nm,0.6s,baz=91,slow=8.6,SNR=3.0						
MKAR	**Makanchi Array**	**45.78**	**302**	P	**P**	**20 58 53.4**	**-0.9**
	0.2nm,0.4s,baz=80,slow=9.5,SNR=3.6						
ILAR	**Eielson Array**	**47.70**	**33**	P	**P**	**20 59 07.5**	**-1.4**
	0.4nm,0.8s,baz=274,slow=7.4,SNR=4.6						
WRA	**Warramunga Arr**	**58.07**	**191**	P	**P**	**21 00 26.2**	**+0.4**
	1.7nm,0.8s,baz=12,slow=7.2,SNR=10						
ASAR	**Alice Springs**	**61.79**	**191**	P	**P**	**21 00 52.1**	**+0.7**
	0.2nm,0.5s,baz=6.4,slow=6.7,SNR=4.6						

DJA ***27*** *21:01:13.5±0.7, 7.°S±6.°×10.°3E±.°, h10km, M4.5/15, mB5.2/2, mB5.3/1, mb4.8/5, MLv4.4/7, MLv4.5/15, Mw(mB)4.7/1, Mw(mB)4.6/2*
IDC ***27*** *21:01:16.1±1.0, 7.°01S×103.°32E, h0km, mb4.1/14, mb1 4.1/14, mb1mx4.0/46, mbtmp4.1/14, MS3.1/3, Ms1 3.1/3, ms1mx2.7/37, Error ellipse: s-maj=39.8km s-min=14.7km az=54.0*
ISCJB ***27*** *21:01:18.6±0.3, 7.°05S±0.°04×103.°37E±0.°04, h33km, mb4.8/52, MS4.0/3, Error ellipse: s-maj=6.9km s-min=4.2km az=43.0*
BJI ***27*** *21:01:20.7, 7.°10S×103.°40E, h35km, mb4.6/31, mB5.1/23, Ms4.7/13, Ms7 4.4/9*
NEIC ***27*** *21:01:20.8±0.3, 7.°10S×103.°41E, h35km, mb5.0/26, Error ellipse: s-maj=9.1km s-min=4.4km az=52.0*
ISC 27 21:01:19.3±1.7, 7.°15S±0.°06×103.°32E±0.°07, h25km±11km, n111, σ1§69/113, mb4.7/52, MS4.3/3, Southwest of Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KASI	**Kota Agung**	**2.00**	**36**	P	**Pn**	**21 01 49.1**	**-2.4**
KASI				S	**Sn**	**21 02 10.4**	**-5.3**
LWLI	**Liwa**	**2.25**	**19**	P	**Pn**	**21 01 52.6**	**-2.4**
CGJI	**Cibinong**	**2.42**	**77**	P	**Pn**	**21 01 55.8**	**-1.5**
BLSI	**Bandar Lampung**	**2.61**	**47**	P	**Pn**	**21 01 58.9**	**-1.0**
SBJI	**Serang**	**2.98**	**70**	P	**Pn**	**21 02 04.7**	**-0.2**
SKJI	**Sukabumi**	**3.22**	**88**	P	**Pn**	**21 02 08.2**	**-0.1**
LHSI	**Lahat**	**3.31**	**4**	P	**Pn**	**21 02 07.0**	**-2.6**
CBJI	**Citeko**	**3.58**	**78**	P	**Pn**	**21 02 13.8**	**+0.5**
CNJI	**Cibinong**	**3.78**	**93**	P	**Pn**	**21 02 14.5**	**-1.6**
XMIS	**Christmas Isla**	**4.03**	**145**	*e*Pn	**Pn**	**21 02 16.7**	**-2.8**
MASI	**Maura Aman, Be**	**4.13**	**345**	P	**Pn**	**21 02 17.5**	**-3.4**
LEM	**Lembang**	**4.28**	**86**	Pn	Pb	21 02 29.2	-4.7
	11nm,0.3s,baz=331,slow=19,SNR=13						
LEM				LR	LR	21 03 37.2	
	comp=Z,137nm,18.6s,baz=253,slow=33						
LEM	**Lembang**	**4.28**	**86**	P	**Pn**	**21 02 24.9**	**+1.9**
CISI	**Cisompet, Garu**	**4.48**	**95**	P	**Pn**	**21 02 25.2**	**-0.5**
CISI	**Cisompet, Garu**	**4.48**	**95**	*e*Pn	**Pn**	**21 02 24.6**	**-1.0**
CMJI	**Cimerak**	**5.12**	**97**	P	**Pn**	**21 02 33.1**	**-1.4**
	100nm,1.0s,0.4nm						
PCJI	**Pacitan**	**7.86**	**98**	P	**Pn**	**21 03 11.9**	**-0.2**
	73nm,1.1s						
PWJI	**Pagerwojo**	**8.46**	**96**	P	**Pn**	**21 03 20.4**	**+0.1**
MNSI	**Mandailing Nat**	**8.73**	**335**	P	Pn	21 03 17.0	-7.1
	23nm,0.4s,900nm						
MYKOM	**Kota Tinggi**	**8.90**	**3**	*e*Pn	**Pn**	**21 03 25.7**	**-0.7**
GSI	**Gunungsitoli**	**10.17**	**325**	*e*Pn	**Pn**	**21 03 43.6**	**-0.2**
JAGI	**Jajag, Banyuwa**	**10.81**	**98**	*e*Pn	**Pn**	**21 03 52.3**	**-0.4**
PSI	**Prapat**	**10.82**	**336**	*e*Pn	**Pn**	**21 03 50.7**	**-2.1**
KULM	**Kulim**	**12.64**	**348**	*e*Pn	**Pn**	**21 04 16.8**	**-0.9**
KAPI	**Kappang**	**16.48**	**84**	LR	LR	21 11 09.0	
	comp=Z,74nm,21.2s,baz=78,slow=36						
SOEI	**Soe**	**20.88**	**99**	*e*P	**P**	**21 05 59.6**	**-0.4**
	54nm,0.9s						
CM01	**Chiang Mai Arr**	**25.77**	**350**	*e*P	**P**	**21 06 47.6**	**-0.8**
CM31	**Chiang Mai Arr**	**25.81**	**350**	*e*P	**P**	**21 06 49.1**	**+0.4**
CMAR	**Chiang Mai Arr**	**25.81**	**350**	P	**P**	**21 06 47.6**	**-1.1**
	2.0nm,0.6s,baz=181,slow=9.6,SNR=17						
CHTO	**Chiang Mai**	**26.16**	**351**	*e*P	**P**	**21 06 51.1**	**-0.8**
	4.7nm,0.7s						
SAUI	**Saumlaki**	**27.75**	**94**	*e*P	**P**	**21 07 06.0**	**-0.3**
	372nm,0.9s						
MTN	**Manton Dam**	**27.95**	**104**	P	**P**	**21 07 12.6**	**+4.5**
	baz=27,SNR=3.8						
NWAO	**Narrogin (SRO)**	**28.72**	**155**	*e*P	**P**	**21 07 15.2**	**+0.5**
	49nm,1.7s						
H01W3	**Cape Leeuwin H**	**29.34**	**162**	T	T	21 38 09.6	
	baz=338,slow=76,SNR=28						
H01W2	**Cape Leeuwin H**	**29.35**	**162**	T	T	21 38 10.7	
	baz=338,slow=76,SNR=29						
H01W1	**Cape Leeuwin H**	**29.35**	**162**	T	T	21 38 10.8	
	baz=338,slow=76,SNR=32						
H08S2	**Diego Garcia H**	**30.57**	**267**	T	T	21 39 38.4	
	baz=90,slow=75,SNR=160						
H08S3	**Diego Garcia H**	**30.58**	**267**	T	T	21 39 36.1	
	baz=90,slow=75,SNR=174						
H08S1	**Diego Carcia H**	**30.59**	**267**	T	T	21 39 40.1	
	baz=90,slow=75,SNR=161						
KMI	**Kunming**	**32.09**	**359**	P	**P**	**21 07 49.0**	**+4.2**
KMI				pmax	pmax		
	comp=Z,13nm,0.7s						
KMI				pmax	pmax		
	comp=Z,190nm,5.2s						
H08N1	**Diego Carcia H**	**32.09**	**269**	T	T	21 41 58.3	
	baz=138,slow=74,SNR=9.7						
H08N2	**Diego Garcia H**	**32.10**	**269**	T	T	21 41 58.8	
	baz=138,slow=74,SNR=9.5						
H08N3	**Diego Carcia H**	**32.11**	**269**	T	T	21 42 00.7	
	baz=138,slow=74,SNR=8.0						
WB9	**Warramunga Arr**	**32.64**	**116**	P	**P**	**21 07 50.9**	**+1.3**
	baz=32						
WRA	**Warramunga Arr**	**32.65**	**116**	P	**P**	**21 07 50.5**	**+0.8**
	2.6nm,0.6s,baz=287,slow=12,SNR=15						
WRA				PcP	**PcP**	**21 10 34.3**	**-1.2**
	0.6nm,1.1s,baz=275,slow=2.3,SNR=4.8						
WB2	**Warramunga Arr**	**32.66**	**116**	*e*P	**P**	**21 07 48.2**	**-1.5**
	23nm,1.7s						
GYA	**Guiyang**	**33.57**	**5**	*e*P	**P**	**21 08 01.0**	**+3.4**
GYA				pP	sP	21 08 11.3	+3.3
GYA				PP	**PP**	**21 09 15.5**	**+1.6**
GYA				PcP	**PcP**	**21 10 40.0**	**+2.0**
GYA				S	**S**	**21 13 20.8**	**+2.1**
GYA				sS	sS	21 13 38.3	+7.4
GYA				ScP	**ScP**	**21 14 21.0**	**-0.2**
GYA				ScS	**ScS**	**21 18 20.5**	**-2.1**
GYA				pmax	pmax		
	comp=Z,20nm,0.8s						
GYA				pmax	pmax		
	comp=Z,120nm,5.5s						
GYA				LR	LR		
	comp=N,520nm,17.6s						
GYA				LR	LR		
	comp=E,480nm,18.0s						
GYA				LR	LR		
	comp=Z,510nm,17.8s						
ASAR	**Alice Springs**	**33.63**	**123**	P	**P**	**21 07 59.1**	**+1.0**
	1.1nm,0.6s,baz=305,slow=8.0,SNR=13						
ASAR				PcP	**PcP**	**21 10 39.2**	**+1.0**
	0.2nm,0.4s,baz=298,slow=2.4,SNR=5.9						
AS31	**Alice Springs**	**33.63**	**123**	*e*P	**P**	**21 07 58.0**	**-0.2**
	0.7nm,0.7s						
AS01	**Alice Springs**	**33.67**	**123**	*e*P	**P**	**21 07 58.0**	**-0.6**
TWG	**Pinlang**	**34.49**	**30**	*e*P	**P**	**21 08 05.2**	**-0.3**
	335nm,0.8s						
TPUB	**Ta-pu**	**34.68**	**29**	*e*P	**P**	**21 08 06.1**	**-1.1**
	86nm,1.4s						
SSLB	**Suanglung**	**35.25**	**29**	*e*P	**P**	**21 08 11.6**	**-0.5**
	138nm,1.9s						
NACB	**Ninganchiao**	**35.88**	**29**	*e*P	**P**	**21 08 16.5**	**-1.0**
	234nm,1.7s						
YOJ	**Yonaguni jima**	**36.83**	**31**	*e*P	**P**	**21 08 24.6**	**-1.0**
	998nm,1.9s						
QIS	**Mount Isa**	**37.56**	**115**	P	**P**	**21 08 33.4**	**+1.5**
	baz=36						
CD2	**Chengdu**	**37.85**	**1**	P	**P**	**21 08 35.3**	**+1.1**
CD2				pmax	pmax		
	comp=Z,20nm,0.8s						
NJ2	**Nanjing**	**41.71**	**20**	*e*P	**P**	**21 09 07.0**	**+0.7**
NJ2				pmax	pmax		
	comp=Z,10.0nm,0.9s						
LZH	**Lanzhou**	**43.01**	**1**	*e*P	**P**	**21 09 20.8**	**+3.8**
LZH				pP	sP	21 09 28.5	+1.0
LZH				sP	pP	21 09 32.0	+7.5
LZH				pmax	pmax		
	comp=Z,17nm,1.0s						
STKA	**Stephens Creek**	**43.30**	**130**	P	**P**	**21 09 20.9**	**+1.6**
	4.2nm,0.7s,baz=310,slow=8.3,SNR=14						
STKA	**Stephens Creek**	**43.30**	**130**	P	**P**	**21 09 21.4**	**+2.0**
	baz=42,SNR=10						
STKA	**Stephens Creek**	**43.30**	**130**	*e*P	**P**	**21 09 19.1**	**-0.2**
	6.1nm,1.8s						
MANU	**Manus Island**	**44.18**	**86**	*e*P	**P**	**21 09 24.7**	**-1.9**
	14nm,0.9s						
GUMO	**Guam**	**46.11**	**63**	*e*P	**P**	**21 09 40.5**	**-1.5**
	265nm,1.3s						
CMSA	**Cobar Meteorol**	**46.34**	**127**	P	**P**	**21 09 46.1**	**+2.6**
	baz=45,SNR=5.9						
JNU	**Nakatsue**	**47.86**	**32**	*e*P	**P**	**21 09 55.3**	**0.0**
	29nm,1.5s						
HHC	**Hu-ho-hao-te**	**48.37**	**8**	*e*P	**P**	**21 10 02.3**	**+3.1**
HHC				S	**S**	**21 17 03.5**	**+5.3**
HHC				pmax	pmax		
	comp=Z,30nm,1.0s						
HHC				pmax	pmax		
	comp=Z,220nm,6.4s						
HHC				LR	LR		
	comp=N,200nm,15.6s						
HHC				LR	LR		
	comp=E,200nm,15.7s						
EIDS	**Eidsvold**	**48.99**	**117**	*e*P	**P**	**21 10 04.0**	**-0.2**
	14nm,1.3s						
KSAR	**Wonju Array Be**	**49.95**	**26**	P	**P**	**21 10 11.7**	**+0.4**
KSRS	**Korea Array**	**49.98**	**26**	P	**P**	**21 10 11.7**	**+0.2**
	0.4nm,0.4s,baz=228,slow=9.2,SNR=3.9						
KS01	**Wonju Array Si**	**49.98**	**26**	*e*P	**P**	**21 10 11.6**	**+0.1**
PAF	**Port-aux-Franc**	**50.42**	**208**	*e*P	**P**	**21 10 14.8**	**+0.1**
	379nm,1.7s						
CBIJ	**Chichi jima**	**50.75**	**46**	*e*P	**P**	**21 10 17.4**	**-0.1**
	292nm,1.5s						
ARMA	**Armidale**	**50.77**	**124**	*e*P	**P**	**21 10 18.1**	**+0.3**
	37nm,1.5s						
WMQ	**Urumqi**	**52.67**	**346**	*e*P	**P**	**21 10 32.0**	**+0.3**
WMQ				pmax	pmax		
	comp=Z,8.0nm,0.8s						
WMQ				pmax	pmax		
	comp=Z,54nm,5.4s						
INU	**Inuyama**	**52.87**	**35**	*e*P	**P**	**21 10 34.0**	**+0.8**
	31nm,1.4s						
KSH	**Kashi**	**52.88**	**334**	*e*P	**P**	**21 10 32.5**	**-0.9**
KSH				*es*P	sP	21 10 46.3	+2.3
KSH				*e*PcP	**PcP**	**21 11 42.5**	**+0.2**
KSH				*e*PP	**PP**	**21 12 32.0**	**-1.2**
KSH				*e*ScP	**ScP**	**21 15 36.8**	**-1.6**
KSH				PcS	**PcS**	**21 15 38.0**	**-3.1**
KSH				S	S	21 17 53.8	-7.3
KSH				ScS	**ScS**	**21 20 15.5**	**-6.3**
KSH				pmax	pmax		
	comp=Z,110nm,4.5s						
KSH				LR	LR		
	comp=N,120nm,6.5s						
KSH				LR	LR		
	comp=E,87nm,6.1s						
KSH				LR	LR		
	comp=Z,160nm,5.5s						
JHJ2	**Mitsune**	**52.97**	**39**	*e*P	**P**	**21 10 34.1**	**+0.2**
	972nm,1.7s						
MAJO	**Matsushiro**	**54.40**	**35**	*e*P	**P**	**21 10 44.4**	**0.0**
	39nm,1.9s						
MJB9	**Matsu-Tunnel**	**54.40**	**35**	*e*P	**P**	**21 10 45.0**	**+0.6**
	6.8nm,1.6s						
CN2	**Changchun**	**54.53**	**20**	*e*P	**P**	**21 10 44.0**	**-1.2**
CN2				pmax	pmax		
	comp=Z,10.0nm,1.0s						
SONM	**Songino Array**	**54.82**	**3**	P	**P**	**21 10 47.3**	**-0.1**
	1.8nm,0.8s,baz=177,slow=8.6,SNR=11						
SONA1	**Songino Array**	**54.83**	**3**	*e*P	**P**	**21 10 47.2**	**-0.3**
ULN	**Ulaanbaatar**	**54.88**	**3**	*e*P	**P**	**21 10 48.3**	**+0.5**
	2.1nm,0.7s						
TKM2	**Tokmak 2**	**55.85**	**336**	*e*P	**P**	**21 10 55.3**	**+0.3**
	5.3nm,0.9s						
HNR	**Honiara**	**56.03**	**97**	*e*P	**P**	**21 10 55.5**	**-1.2**
	108nm,1.3s						
AAK	**Ala-Archa**	**56.08**	**335**	*e*P	**P**	**21 10 56.3**	**-0.3**
	1.7nm,0.8s						
EKS2	**Erkin-Say**	**56.41**	**334**	*e*P	**P**	**21 10 59.5**	**+0.6**
	3.6nm,0.8s						
MK01	**Makanchi Array**	**56.85**	**343**	*e*P	**P**	**21 11 01.4**	**-0.4**
MK31	**Makanchi Array**	**56.87**	**343**	*e*P	**P**	**21 11 02.1**	**+0.1**
MKAR	**Makanchi Array**	**56.87**	**343**	P	**P**	**21 11 01.9**	**-0.1**
	1.8nm,0.6s,baz=146,slow=8.3,SNR=23						
MKAR	**Makanchi Array**	**56.87**	**343**	*e*P	**P**	**21 11 02.1**	**+0.1**
MAKZ	**Makanchi**	**56.98**	**343**	*e*P	**P**	**21 11 03.0**	**+0.3**
	3.2nm,1.2s						
LHI	**Lord Howe Isla**	**57.22**	**123**	*e*P	**P**	**21 11 04.5**	**-0.3**
	95nm,1.3s						
USRK	**Ussuriysk Ar.**	**57.30**	**24**	P	**P**	**21 11 04.5**	**-0.5**
	1.7nm,0.7s,baz=216,slow=4.4,SNR=3.8						
KKAR	**Karatay Array**	**58.22**	**332**	*e*P	**P**	**21 11 11.8**	**+0.3**
TLY	**Talaya**	**58.60**	**0**	*e*P	**P**	**21 11 12.0**	**-2.0**
	4.5nm,0.6s						
KLR	**Kul'dur**	**61.40**	**21**	P	**P**	**21 11 31.8**	**-1.5**
	0.4nm,0.4s,baz=248,slow=19,SNR=4.0						
KURBB	**Kurchatov Arra**	**61.41**	**342**	P	**P**	**21 11 33.1**	**-0.2**
	1.8nm,0.8s,baz=160,slow=6.2,SNR=6.5						
KURK	**Kurchatov**	**61.47**	**342**	*e*P	**P**	**21 11 33.5**	**-0.2**
	5.8nm,0.9s						
ZAA0	**Zalesovo Array**	**62.84**	**348**	*e*P	**P**	**21 11 42.6**	**-0.2**
ZALV	**Zalesovo Beam**	**62.84**	**348**	P	**P**	**21 11 42.2**	**-0.6**
	2.6nm,0.5s,baz=167,slow=4.4,SNR=15						
ZALV				LR	LR	21 42 59.2	
	comp=Z,26nm,19.9s,baz=58,slow=40						
BVAR	**Borovoye Array**	**66.14**	**339**	P	**P**	**21 12 04.0**	**-0.5**
	1.2nm,0.6s,baz=147,slow=8.5,SNR=7.2						
ABKAR	**Akbulak array**	**67.72**	**331**	*e*P	**P**	**21 12 14.7**	**+0.1**
BRTR	**Keskin Array B**	**79.22**	**313**	P	**P**	**21 13 23.3**	**+0.5**
	0.9nm,0.8s,baz=138,slow=6.1,SNR=5.3						
BUR08	**Bucovina Ar. S**	**87.31**	**319**	*e*P	**P**	**21 14 06.4**	**+2.2**
FINES	**FINESS Array B**	**90.18**	**332**	P	**P**	**21 14 17.9**	**+0.6**
	0.6nm,0.7s,baz=168,slow=1.3,SNR=3.0						
KMRM	**Mail Ridge**	**126.69**	**44**	*e*PKPdf	**PKPdf**	**21 20 22.1**	**+1.0**
TX31	**Lajitas Ar. Si**	**146.35**	**46**	*e*PKPdf	**PKPab**	**21 20 60.0**	**+0.3**
TXAR	**Lajitas Array**	**146.35**	**46**	PKPbc	**PKPab**	**21 20 00.0**	**+0.4**
	1.1nm,0.6s,baz=278,slow=1.7,SNR=13						
WVT	**Waverly**	**149.41**	**18**	*e*PKPbc	**PKPbc**	**21 21 07.2**	**+0.5**

ISK ***27*** *21:07:24.9, 39.°11N×29.°12E, h5km, MD2.8*
ISCJB ***27*** *21:07:25.4±0.6, 39.°15N±0.°05×29.°08E±0.°04, h0km±8km, Error ellipse: s-maj=8.1km s-min=4.3km az=164.2*
DDA ***27*** *21:07:25.3, 39.°13N×29.°09E, h7km, Md3.0*
CSEM ***27*** *21:07:25.5±0.1, 39.°12N×29.°09E, h4km±1km, MD3.0, Error ellipse: s-maj=3.2km s-min=1.8km az=159.0*
ISC 27 21:07:25.7±1.0, 39.°14N±0.°03×29.°09E±0.°02, h5km±13km, n43, σ0§42/52, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.30**	**252**	P	**Pg**	**21 07 31.8**	**+0.1**
DEMI				S	**Sg**	**21 07 36.0**	**+0.3**
DEMI	**Demirci**	**0.30**	**252**	*i* P	**Pg**	**21 07 31.8**	**+0.1**
DEMI				*i* S	**Sg**	**21 07 36.0**	**+0.3**
GDZ	**Gediz**	**0.31**	**99**	P	**Pg**	**21 07 31.7**	**-0.1**
GDZ				S	**Sg**	**21 07 36.1**	**+0.2**
GDZ	**Gediz**	**0.31**	**99**	*i* P	**Pg**	**21 07 31.7**	**-0.1**
GDZ				*i* S	**Sg**	**21 07 36.1**	**+0.2**
TVSB	**Tavsanli**	**0.42**	**43**	*e*PG	**Pg**	**21 07 34.0**	**0.0**
TVSB				*e*SG	**Sg**	**21 07 39.6**	**+0.1**
TVSB	**Tavsanli**	**0.42**	**43**	*e*Pg	**Pg**	**21 07 34.0**	**0.0**
TVSB				*e*Sg	**Sg**	**21 07 39.6**	**+0.1**
DURS	**Dursunbey**	**0.66**	**314**	P	**Pg**	**21 07 38.2**	**-0.3**
DURS	**Dursunbey**	**0.66**	**314**	*i* P	**Pg**	**21 07 38.2**	**-0.3**
KULA	**Kula-Manisa**	**0.71**	**208**	*e*PG	**Pg**	**21 07 38.5**	**-0.8**
KULA	**Kula-Manisa**	**0.71**	**208**	*e*Pg	**Pg**	**21 07 38.5**	**-0.8**
ORLT	**Orhaneli**	**0.92**	**351**	*e*PG	**Pg**	**21 07 43.6**	**+0.2**
ORLT	**Orhaneli**	**0.92**	**351**	*e*Pg	**Pg**	**21 07 43.6**	**+0.2**
AKS	**Akhisar**	**1.03**	**256**	*e*PG	**Pg**	**21 07 45.

ILAR	Eielson Array	46.98	33	P	P	21 17 11.4	-0.1
	0.2nm,0.7s,baz=268,slow=4.3,SNR=5.5						
WRA	Warramunga Arr	59.32	190	P	P	21 18 40.1	-2.7
	0.5nm,0.5s,baz=8.6,slow=6.9,SNR=11						

*IDC **27** 21:18:33.9±1.1, 10.7°N×126.0°E, h0km, mb3.8/9, mb1 3.9/9, mb1mx3.7/36, mbtmp3.8/9, Error ellipse: s-maj=149.3km s-min=16.2km az=68.0*
*ISCJB **27** 21:18:38.4±0.5, 9.23°N±0.07°×122.88°E±0.08, h18km, mb4.1/26, Error ellipse: s-maj=12.0km s-min=8.5km az=31.1*
*MAN **27** 21:18:39, 10.97°N×126.34°E, h32km, mb4.9, ML3.8, MS3.9*
*NEIC **27** 21:18:42.3±0.5, 9.21°N×122.84°E, h35km, mb4.4/17, Error ellipse: s-maj=18.1km s-min=12.2km az=81.0*
ISC 27 21:18:40.0±0.5, 9.24°N±0.07°×122.88°E±0.08, h18km, n41, σ1§62/43, mb4.3/26, 1D, Negros

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LLP	Lapu-Lapu	1.51	45	eP	Pg	21 19 16.4	+7.3
LLP				eS	Sn	21 19 24.2	-1.1
BUKP	Musuan	2.54	122	eP	Pg	21 19 30.1	+1.3
KSM	Kuching	14.70	239	Pn	Pn	21 22 09.1	+1.9
ENH	Enshi	24.38	331	eP	P	21 23 57.8	+0.5
	2.6nm,0.5s						
INCN	Inchon	28.32	6	eP	P	21 24 33.6	+0.8
	12nm,0.4s						
WRA	Warramunga Arr	31.12	159	P	P	21 24 57.1	-0.6
	0.5nm,0.8s,baz=345,slow=9.1,SNR=6.5						
WRA				PcP	PcP	21 27 50.7	-2.3
	0.3nm,0.8s,baz=329,slow=2.9,SNR=3.9						
WRA	Warramunga Arr	31.12	159	P	P	21 24 57.1	-0.6
WRA				PcP	PcP	21 27 50.7	-2.3
ASAR	Alice Springs	34.44	162	P	P	21 25 28.4	+1.7
	0.4nm,0.3s,baz=343,slow=7.3,SNR=10						
ASAR				PcP	PcP	21 28 00.0	-2.1
	0.2nm,0.4s,baz=322,slow=2.8,SNR=3.3						
ASAR	Alice Springs	34.44	162	P	P	21 25 28.4	+1.7
ASAR				PcP	PcP	21 28 00.0	-2.1
ULN	Ulaanbaatar	40.76	344	eP	P	21 26 20.0	-0.1
	0.8nm,0.5s						
SONM	Songino Array	40.91	343	P	P	21 26 16.0	-5.4
	0.3nm,0.5s,baz=166,slow=8.9,SNR=3.7						
YSS	Yuzh-Sakhalins	41.22	21	eP	P	21 26 24.4	+0.8
	4.1nm,0.6s						
STKA	Stephens Creek	44.63	157	P	P	21 26 50.4	-1.2
	0.9nm,0.5s,baz=327,slow=6.1,SNR=3.8						
STKA	Stephens Creek	44.63	157	P	P	21 26 50.4	-1.2
TLY	Talaya	45.16	343	eP	P	21 26 56.9	+1.4
	3.1nm,0.6s						
MKAR	Makanchi Array	50.88	325	P	P	21 27 42.3	+2.4
	0.7nm,0.6s,baz=118,slow=8.1,SNR=12						
MKAR	Makanchi Array	50.88	325	P	P	21 27 42.3	+2.4
PET	Petropavlovsk	52.34	26	eP	P	21 27 52.0	+1.3
	3.6nm,0.4s						
ZALV	Zalesovo Beam	53.98	333	P	P	21 27 59.8	-2.9
	0.5nm,0.3s,baz=118,slow=12,SNR=2.8						
ZALV	Zalesovo Beam	53.98	333	P	P	21 27 59.8	-2.9
EKS2	Erkin-Say	54.24	317	eP	P	21 28 04.9	-0.1
	0.3nm,0.4s						
KURK	Kurchatov	55.07	327	eP	P	21 28 10.8	+0.1
	2.1nm,0.6s						
BVAR	Borovoye Array	60.65	327	P	P	21 28 50.3	+0.5
	0.3nm,0.6s,baz=98,slow=11,SNR=4.0						
BVAR	Borovoye Array	60.65	327	P	P	21 28 50.3	+0.5
BRVK	Borovoye	60.72	327	eP	P	21 28 50.4	0.0
	0.5nm,0.4s						
BILL	Bilibino	65.31	17	eP	P	21 29 22.3	+1.7
	1.5nm,0.6s						
ARU	Arti	68.27	327	eP	P	21 29 38.8	-0.8
	1.4nm,0.6s						
OBN	Obninsk	80.38	324	eP	P	21 30 49.4	-0.8
	5.1nm,0.4s						
MCK	McKinley	80.98	27	eP	P	21 30 54.5	+1.2
	1.8nm,0.3s						
COLA	College	81.39	26	eP	P	21 30 55.8	+0.4
	2.2nm,0.5s						
ARCES	ARCESS Array B	83.98	339	P	P	21 31 03.1	-5.8
	1.4nm,0.8s,baz=67,slow=6.9,SNR=3.7						
FINES	FINESS Array B	85.20	331	P	P	21 31 12.2	-2.9
	1.8nm,0.9s,baz=124,slow=5.5,SNR=3.9						
FINES	FINESS Array B	85.20	331	P	P	21 31 12.2	-2.9
INK	Inuvik	86.45	21	eP	P	21 31 21.8	+0.6
	0.6nm,0.6s						
RES	Resolute Bay	93.07	9	eP	P	21 31 52.4	+0.2
	2.6nm,0.6s						
SYO	Syowa Base	96.16	201⇓	eP	P	21 32 06.5	+0.2
STU	Stuttgart	98.21	322	P	P	21 32 13.0	-3.2
	7.1nm,0.7s						
FFC	Flin Flon	106.02	25	ePKP	PKiKP	21 37 02.0	-0.9
HWUT	Hardware Ranch	108.96	40	ePKP	PKiKP	21 37 08.0	-1.1
PLCA	Paso Flores	146.45	161	PKPbc	PKPdf	21 38 18.9	-0.2
	0.7nm,0.6s,baz=270,slow=5.1,SNR=4.4						
PLCA	Paso Flores	146.45	161	PKPbc	PKPdf	21 38 18.9	-0.2

*ISCJB **27** 21:24:32.6±0.6, 41.82°N±0.03°×15.82°E±0.05, h28km±3km, Error ellipse: s-maj=6.4km s-min=4.8km az=45.0*
*ROM **27** 21:24:32.3±0.2, 41.79°N×15.85°E, h29km±1km, Ml2.3/11, Error ellipse: s-maj=3.1km s-min=2.2km az=50.0*
*CSEM **27** 21:24:33.1±0.2, 41.77°N×15.81°E, h27km±1km, ML3.2/9, Error ellipse: s-maj=6.2km s-min=4.0km az=29.0*
ISC 27 21:24:32.7±1.0, 41.79°N±0.04°×15.83°E±0.03, h28km±4km, n48, σ0§61/70, 4C, Southern Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SGRT	San Giovanni R	0.07	239	⇑iPg	Pb	21 24 37.9	+0.2
SGRT				Sg	Sb	21 24 41.0	-0.1
	1μm,0.2s						
SGRT	San Giovanni R	0.07	239	⇑iPg	Pb	21 24 37.9	+0.2
SGRT				Sg	Sb	21 24 41.0	-0.1
	1μm,0.2s						
MSAG	Monte S. Angel	0.10	141	⇑iPg	Pb	21 24 38.0	+0.1
MSAG				Sg	Sb	21 24 41.3	-0.1
	2μm,0.2s						
MSAG	Monte S. Angel	0.10	141	⇑iPg	Pb	21 24 38.0	+0.1
MSAG				Sg	Sb	21 24 41.3	-0.1
	2μm,0.2s						
MS1	Monte Sant'Ang	0.12	135	iPg	Pb	21 24 38.2	+0.2
MS1				Sg	Sb	21 24 41.8	+0.2
MOCO	Biccari - m.te	0.65	230	Pg	Pn	21 24 46.1	-0.1
CIGN	Sant'Elia a Pi	0.70	259	Pg	Pn	21 24 47.1	+0.3
CIGN	Sant'Elia a Pi	0.70	259	Pg	Pn	21 24 47.1	+0.3
SGTA	Sant Agata di	0.74	208	Pg	Pn	21 24 47.3	-0.1
SGTA				Sg	Sb	21 24 56.9	0.0
	100nm,0.6s						
SGTA	Sant Agata di	0.74	208	Pg	Pn	21 24 47.3	-0.1
SGTA				Sg	Sb	21 24 56.9	0.0
	100nm,0.6s						
MRVN	Minervino Murg	0.78	159	Pg	Pb	21 24 47.2	-0.5
MRVN				Sg	Sn	21 24 58.4	-0.3
	100nm,0.4s						
MRVN	Minervino Murg	0.78	159	Pg	Pb	21 24 47.2	-0.5
MRVN				Sg	Sn	21 24 58.4	-0.3
	100nm,0.4s						
CDT	Castel del Mon	0.79	154	iPg	Pb	21 24 47.1	-0.7
CDT				Sg	Sb	21 24 57.9	-0.2
VULT	Monte Vulture	0.85	191	Pg	Pb	21 24 49.1	+0.2
VULT				Sg	Sn	21 25 00.6	+0.1
	201nm,0.2s						
VULT	Monte Vulture	0.85	191	Pg	Pb	21 24 49.1	+0.2
VULT				Sg	Sn	21 25 00.6	+0.1
	201nm,0.2s						
PALZ	Palazzo San Ge	0.85	173	Pg	Pn	21 24 48.5	-0.4
PALZ				Sg	Sn	21 25 00.5	+0.1
	97nm,0.5s						
PALZ	Palazzo San Ge	0.85	173	Pg	Pn	21 24 48.5	-0.4
PALZ				Sg	Sn	21 25 00.5	+0.1
	97nm,0.5s						
SACR	S. Croce Del S	0.93	245	Pg	Pb	21 24 50.2	0.0
SACR	S. Croce Del S	0.93	245	Pg	Pb	21 24 50.2	0.0
SNAL	S. Angelo Dei	0.98	208	Pg	Pn	21 24 50.3	-0.4
SNAL	S. Angelo Dei	0.98	208	Pg	Pn	21 24 50.3	-0.4
ACER	Acerenza	1.01	175	Pg	Pb	21 24 51.7	+0.1
ACER				Sg	Sb	21 25 05.7	+1.3
	186nm,0.4s						
ACER	Acerenza	1.01	175	Pg	Pb	21 24 51.7	+0.1
ACER				Sg	Sb	21 25 05.7	+1.3
	186nm,0.4s						
BAI	Bari	1.05	130	ePg	Pb	21 24 53.1	+0.9
BAI				Sg	Sb	21 25 06.7	+1.2
AMUR	Altamura	1.06	146	Pg	Pn	21 24 51.1	-0.6
AMUR				Sg	Sb	21 25 06.8	+0.9
	50nm,0.3s						
AMUR	Altamura	1.06	146	Pg	Pn	21 24 51.1	-0.6
AMUR				Sg	Sb	21 25 06.8	+0.9
	50nm,0.3s						
PTRJ	Pietraroja	1.06	247	Pg	Pn	21 24 51.7	-0.1
PTRJ	Pietraroja	1.06	247	Pg	Pn	21 24 51.7	-0.1
MRLC	Muro Lucano	1.06	194	Pg	Pb	21 24 52.4	-0.1
MRLC				Sg	Sb	21 25 07.4	+1.3
	41nm,0.3s						
MRLC	Muro Lucano	1.06	194	Pg	Pb	21 24 52.4	-0.1
MRLC				Sg	Sb	21 25 07.4	+1.3
	41nm,0.3s						
MCRV	Calabrutti - M	1.12	206	Pg	Pn	21 24 51.7	-1.0
	48nm,0.6s						
MCRV	Calabrutti - M	1.12	206	Pg	Pn	21 24 51.7	-1.0
	48nm,0.6s						
SG1	Sgolgore (BA)	1.15	146	ePg	Pb	21 24 54.2	+0.3
SG1				Sg	Sb	21 25 09.6	+1.2
VAGA	Valle Agricola	1.25	253	Pg	Pb	21 24 55.5	-0.2
VAGA	Valle Agricola	1.25	253	Pg	Pb	21 24 55.5	-0.2
CDRU	Civita di Ruta	1.36	197	Pg	Pn	21 24 54.9	-1.0
	18nm,0.3s						
CDRU	Civita di Ruta	1.36	197	Pg	Pn	21 24 54.9	-1.0
	18nm,0.3s						
NOCI	Noci	1.37	137	Pg	Pn	21 24 55.6	-0.4
	78nm,0.2s						
NOCI	Noci	1.37	137	Pg	Pn	21 24 55.6	-0.4
	78nm,0.2s						
INTR	Introdacqua	1.45	279	Pg	Pb	21 24 58.5	-0.6
INTR	Introdacqua	1.45	279	Pg	Pb	21 24 58.5	-0.6
MTSN	Montesano sull	1.52	182	Pg	Pn	21 24 57.3	-0.9
MTSN	Montesano sull	1.52	182	Pg	Pn	21 24 57.3	-0.9
MGR	Morigerati	1.67	187	Pg	Pn	21 24 59.5	-0.5
	7.0nm,0.3s						
MGR	Morigerati	1.67	187	Pg	Pn	21 24 59.5	-0.5
	7.0nm,0.3s						
TAR1	Taranto	1.68	138	ePn	Pb	21 25 01.6	-1.3
NVLJ	Novalja	2.86	346	Sn	Sn	21 25 50.2	+0.3
NVLJ	Novalja	2.86	346	Sn	Sn	21 25 50.1	+0.3

*ISCJB **27** 21:38:53.9±0.7, 13.0°N±0.1°×143.31°E±0.10, h200km, mb3.6/10, Error ellipse: s-maj=17.1km s-min=13.0km az=162.2*
*IDC **27** 21:38:56.3±0.7, 13.03°N×143.73°E, h222km±9km, mb3.5/10, mb1 3.6/10, mb1mx3.3/42, mbtmp4.0/10, Error ellipse: s-maj=25.9km s-min=14.3km az=94.0*
ISC 27 21:38:55.1±0.8, 13.0°N±0.2°×143.4°E±0.1, h200km, n11, σ1§16/13, mb3.8/10, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	Guam	1.54	69	P	Pn	21 39 30.7	+1.4
	56nm,0.3s,baz=266,slow=16,SNR=50						
GUMO				S	Sn	21 39 56.2	+0.5
	87nm,0.3s,baz=233,slow=5.5,SNR=14						
WRA	Warramunga Arr	33.96	195	P	P	21 45 19.5	-0.4
	0.8nm,0.7s,baz=17,slow=9.5,SNR=9.4						
ASAR	Alice Springs	37.64	194	P	P	21 45 51.1	0.0
	0.3nm,0.7s,baz=17,slow=12,SNR=6.7						
CMAR	Chiang Mai Arr	43.03	283	P	P	21 46 36.5	+1.0
	1.8nm,0.6s,baz=80,slow=6.7,SNR=18						
SONM	Songino Array	46.36	326	P	P	21 47 02.3	+0.8
	0.7nm,0.5s,baz=144,slow=7.8,SNR=6.3						
MKAR	Makanchi Array	60.89	316	P	P	21 48 47.6	+0.8
	1.2nm,0.6s,baz=93,slow=8.6,SNR=16						
ZALV	Zalesovo Beam	61.23	325	P	P	21 48 49.1	+0.2
	0.8nm,0.4s,baz=115,slow=8.3,SNR=4.1						
ZALV				PcP	PcP	21 49 28.4	-1.1
	0.5nm,0.4s,baz=120,slow=4.0,SNR=2.6						
BVAR	Borovoye Array	69.47	322	P	P	21 49 42.1	+0.4
	4.1nm,0.4s,baz=107,slow=7.9,SNR=32						
ILAR	Eielson Array	69.68	25	P	P	21 49 40.6	-2.2
	0.2nm,0.6s,baz=243,slow=5.9,SNR=2.8						
ARCES	ARCESS Array B	87.16	342	P	P	21 51 18.1	-0.2
	6.0nm,1.2s,baz=52,slow=5.8,SNR=4.9						
FINES	FINESS Array B	91.05	335	P	P	21 51 35.0	-1.5
	1.7nm,0.6s,baz=74,slow=4.6,SNR=12						

IDC 27 21:47:05.4±8.8, 24.71°S×179.87°E, h578km±111km, mb3.0/3, mb1 3.4/4, mb1mx2.9/35, mbtmp4.1/4, Error ellipse: s-maj=84.6km s-min=30.9km az=11.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	Urewera	13.72	189	P	P	21 50 01.0	-0.5
	4.0nm,0.3s,baz=8.5,slow=1.0,SNR=15						
URZ				S	S	21 52 25.0	-0.9
	0.1nm,0.3s,baz=18,slow=16,SNR=1.8						
ASAR	Alice Springs	41.80	262	P	P	21 54 05.8	+0.2
	0.4nm,0.3s,baz=97,slow=7.1,SNR=4.5						
WRA	Warramunga Arr	42.24	267	P	P	21 54 09.1	-0.1
	1.1nm,0.3s,baz=97,slow=8.3,SNR=13						
TXAR	Lajitas Array	90.95	58	P	P	21 59 09.4	+0.7
	0.4nm,0.7s,baz=215,slow=6.1,SNR=3.7						
HFS	Hagfors	143.31	348	PKP	PKPab	22 05 32.1	-0.2
	0.9nm,0.4s,baz=48,slow=2.1,SNR=9.2						

IDC 27 21:47:07.4±1.3, 3.75°S×141.30°E, h118km±15km, mb3.7/2, mb1 4.1/4, mb1mx3.2/37, mbtmp4.3/4, Error ellipse: s-maj=37.6km s-min=18.5km az=83.0, New Guinea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAY	Jayapura	1.36	334	P	Pn	21 47 34.0	+0.8
	3.3nm,0.3s,baz=103,slow=21,SNR=131						
JAY				S	Sn	21 47 52.6	-0.1
	12nm,0.3s,baz=90,slow=20,SNR=34						
PMG	Port Moresby	8.09	134	P	Pn	21 49 01.9	-0.2
	2.8nm,0.3s,baz=355,slow=3.2,SNR=7.7						
PMG				S	Sn	21 50 23.7	-8.3
	baz=301,slow=19,SNR=2.2						
WRA	Warramunga Arr	17.47	202	P	P	21 51 03.1	-0.1
	2.0nm,0.3s,baz=24,slow=12,SNR=65						
ASAR	Alice Springs	21.05	199	P	P	21 51 41.8	-0.3
	6.4nm,0.6s,baz=31,slow=10,SNR=82						
ILAR	Eielson Array	85.71	24	P	P	21 59 32.4	-0.5
	0.8nm,0.7s,baz=266,slow=4.4,SNR=6.5						
LPAZ	La Paz	144.74	125	PKP	PKPdf	22 06 32.5	+0.4
	1.0nm,0.6s,baz=271,slow=3.8,SNR=7.1						

*ISCJB **27** 21:53:38.7±0.5, 38.88°N±0.03°×27.17°E±0.05, h12km, Error ellipse: s-maj=5.7km s-min=4.4km az=19.2*
*CSEM **27** 21:53:39.4±0.1, 38.89°N×27.15°E, h20km, MD2.7, Error ellipse: s-maj=1.9km s-min=1.7km az=160.0*
*ISK **27** 21:53:39.0, 38.90°N×27.14°E, h21km, MD2.7*
*DDA **27** 21:53:41.0, 38.70°N×27.20°E, h7km, Md2.8*
ISC 27 21:53:37.7±0.9, 38.88°N±0.03°×27.18°E±0.03, h12km, n24, σ0§67/30, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DKL	Dikili	0.29	312	ePG	Pb	21 53 45.4	+0.6
DKL				eSG	Sb	21 53 49.8	+0.2
DKL	Dikili	0.29	312	ePg	Pb	21 53 45.4	+0.6
DKL				eSg	Sb	21 53 49.8	+0.2
AKS	Akhisar	0.49	90	ePG	Pn	21 53 50.0	-0.6
AKS	Akhisar	0.49	90	ePg	Pn	21 53 50.0	-0.6
URLA	Izmir	0.69	222	P	Pn	21 53 52.9	-0.5
URLA				S	Sb	21 54 01.4	+0.1
URLA	Izmir	0.69	222	iP	Pn	21 53 52.9	-0.5
URLA				iS	Sb	21 54 01.4	+0.1
ZEY	˜zmir	0.83	220	iP	Pn	21 53 54.7	-0.5
ZEY				iS	Sn	21 54 06.0	-1.4
DGB	˜zmir	0.86	196	iP	Pb	21 53 54.3	-0.2
DGB				iS	Sb	21 54 05.9	0.0
BALB	Balikesir	0.93	35	ePG	Pn	21 53 57.3	+0.7
BALB	Balikesir	0.93	35	ePg	Pn	21 53 57.3	+0.7
CHOS	Chios island	1.01	241	ePG	Pn	21 53 58.1	+0.4
CHOS	Chios island	1.01	241	ePg	Pn	21 53 58.1	+0.4
SIGR	SIGRI	1.08	288	ePG	Pn	21 53 59.5	+0.8
SIGR	SIGRI	1.08	288	ePg	Pn	21 53 59.5	+0.8
AYDB	Zeytinkoy-Aydi	1.09	149	ePN	Pn	21 53 60.0	+1.1
AYDB	Zeytinkoy-Aydi	1.09	149	ePn	Pn	21 54 00.0	+1.1
EZN	Ezine	1.15	325	ePN	Pg	21 53 59.7	-0.2
EZN	Ezine	1.15	325	ePn	Pg	21 53 59.7	-0.2
KULA	Kula-Manisa	1.22	107	ePN	Pg	21 54 01.8	+0.7
KULA	Kula-Manisa	1.22	107	ePn	Pg	21 54 01.8	+0.7
GELI	Tayfur-Gelibol	1.61	340	ePN	Pb	21 54 06.8	-0.5
GELI	Tayfur-Gelibol	1.61	340	ePn	Pb	21 54 06.8	-0.5
KCTX	Karacabey (Bur	1.66	33	ePN	Pb	21 54 07.4	-0.7
KCTX	Karacabey (Bur	1.66	33	ePn	Pb	21 54 07.4	-0.7

IDC 27 21:55:10.0±5.2, 39.13°N×110.60°E, h0km, mb3.4/3, mb1 3.7/4, mb1mx3.3/52, mbtmp3.5/4, ML2.9/1, Error ellipse: s-maj=109.6km s-min=24.1km az=85.0, Western Nei Mongol

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SONM	Songino Array	9.22	342	Pn	Pn	21 57 23.8	-0.5
	0.1nm,0.3s,baz=156,slow=13,SNR=17						
SONM				Lg	Lg	22 00 01.4	
	0.1nm,0.3s,baz=165,slow=30,SNR=5.1						
MKAR	Makanchi Array	22.00	300	P	P	22 00 06.5	+0.8
	0.8nm,0.7s,baz=96,slow=12,SNR=6.6						
CMAR	Chiang Mai Arr	22.95	209	P	P	22 00 15.7	-0.3
	1.8nm,0.7s,baz=15,slow=9.6,SNR=16						
KURBB	Kurchatov Arra	25.26	308	P	P	22 00 37.7	0.0
	0.6nm,0.7s,baz=108,slow=10.0,SNR=6.2						

*NEIC **27** 22:07:48.0, 14.59°S×76.61°W, h28km, mb4.1/8, ML4.2(ARE), After ARE.*
NEIC Felt [III] at Ica.
*IDC **27** 22:07:56.3±3.9, 14.24°S×76.07°W, h35km±31km, mb3.4/6, mb1 3.7/9, mb1mx3.6/37, mbtmp3.7/9, ML3.7/3, MS3.4/3, Ms1 3.5/3, ms1mx3.0/16, Error ellipse: s-maj=35.4km s-min=19.1km az=55.0*
ISC 27 22:07:53.1±0.8, 14.11°S±0.09°×76.4°W±0.1, h30km, n30, σ2§17/21, mb4.1/13, Near coast of Peru

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NNA	Nana	2.16	348	Pn	Pb	22 08 32.1	+0.6
	25nm,0.3s,baz=158,slow=11,SNR=23						
NNA				Lg	Lg	22 09 09.3	
	129nm,0.3s,baz=218,slow=18,SNR=8.2						
NNA	Nana	2.16	348	ePn	Pb	22 08 29.4	-2.1
NNA				eSn	Sb	22 08 59.3	+1.4
ATAH	Atahualpa	7.21	344	Pn	Pn	22 09 44.5	+7.7
	0.8nm,0.3s,baz=186,slow=9.2,SNR=7.0						
LPAZ	La Paz	8.25	106	Pn	Pn	22 09 53.2	+1.9
	0.8nm,0.3s,baz=262,slow=8.4,SNR=15						
LPAZ				LR	LR	22 13 14.2	
	comp=Z,197nm,18.7s,baz=67,slow=40						
LVC	Limon Verde	11.03	141	Pn	Pn	22 10 28.6	-0.6
	59nm,0.3s,baz=319,slow=9.5,SNR=15						
LVC				Sn	Sn	22 12 22.4	-9.4
	5.5nm,0.3s,baz=56,slow=18,SNR=2.9						
LVC	Limon Verde	11.03	141	ePn	Pn	22 10 21.1	-8.1
	6.4nm,0.6s						
LVC				eSn	Sn	22 12 18.7	-13
SIV	San Ignacio	14.90	99	Pn	Pn	22 11 20.9	-0.9
	0.5nm,0.3s,baz=291,slow=12,SNR=4.3						
SIV				LR	LR	22 17 26.3	
	comp=Z,230nm,20.9s,baz=332,slow=39						
LCO	Las Campanas	15.74	161	ePn	Pn	22 11 23.3	-10
	4.9nm,0.7s						
PTGA	Pitinga	20.98	52	P	P	22 12 34.3	+0.2
	2.6nm,0.7s,baz=254,slow=15,SNR=4.5						
CPUP	Villa Florida	21.58	127	P	P	22 12 39.1	-1.3
	2.9nm,0.9s,baz=305,slow=7.7,SNR=3.5						
PCRV	Puerto La Cruz	26.79	26	LR	LR	22 25 48.1	
	comp=Z,90nm,19.7s,baz=44,slow=40						
TEIG	Tepich	36.07	341	eP	P	22 14 50.8	-1.4
	4.7nm,1.0s						
DWPF	Disney Wildern	42.25	353	eP	P	22 15 42.8	-0.9
	27nm,0.5s						
OXF	Oxford	49.91	346	eP	P	22 16 42.0	-2.0
	9.0nm,0.4s						
TXAR	Lajitas Array	50.59	329	P	P	22 16 53.1	+3.7
	0.4nm,0.9s,baz=153,slow=10,SNR=2.2						
ACSO	Alum Creek Sta	54.41	354	eP	P	22 17 14.9	-2.4
	10.0nm,1.5s						
ANMO	Albuquerque	56.52	330	eP	P	22 17 30.6	-2.3
	0.6nm,0.8s						
RSSD	Black Hills	63.20	338	eP	P	22 18 16.5	-2.2
	0.4nm,0.4s						
HWUT	Hardware Ranch	64.25	331	eP	P	22 18 23.7	-2.0
	0.8nm,0.5s						
HLID	Hailey	67.10	331	eP	P	22 18 41.5	-2.4
	1.0nm,0.6s						
TORD	Torodi Ar. Bea	81.92	74	P	P	22 20 12.0	+1.6
	2.2nm,0.8s,baz=262,slow=5.0,SNR=11						
YKA	Yellowknife Ar	81.99	343	P	P	22 20 12.8	+3.0
	0.1nm,0.5s,baz=152,slow=5.4,SNR=2.8						
VNDA	Vanda	82.80	191	P	P	22 20 15.9	+2.0
	0.5nm,0.6s,baz=135,slow=10.0,SNR=5.8						
H11N3	WAKE ISLAND Hyl	19.48	285	T	T	00 37 30.2	
	baz=96,slow=74,SNR=39						
H11N2	WAKE ISLAND Hyl	19.49	285	T	T	00 37 29.6	
	baz=96,slow=74,SNR=51						
H11N1	WAKE ISLAND Hyl	19.50	285	T	T	00 37 29.1	
	baz=96,slow=74,SNR=14						
H11S2	WAKE ISLAND Hyl	19.55	283	T	T	00 37 34.8	
	baz=97,slow=75,SNR=16						
H11S1	WAKE ISLAND Hyl	19.56	283	T	T	00 37 35.1	
	baz=97,slow=75,SNR=14						
H11S3	WAKE ISLAND Hyl	19.57	283	T	T	00 37 35.9	
	baz=97,slow=75,SNR=16						
SONM	Songino Array	146.29	357	PKPbc	PKPab	22 27 34.8	+3.0
	0.2nm,0.3s,baz=0.0,slow=0.4,SNR=2.8						

*ISCJB **27** 22:10:59.5±0.5, 39.09°N±0.03°×29.05°E±0.04, h6km±7km, Error ellipse: s-maj=5.7km s-min=4.4km az=144.8*
*CSEM **27** 22:10:59.7±0.1, 39.09°N×29.06°E, h8km, MD2.8, Error ellipse: s-maj=3.1km s-min=2.3km az=107.0*
*ISK **27** 22:10:59.1, 39.08°N×29.11°E, h9km, MD2.7*
*DDA **27** 22:10:59.2, 39.09°N×29.05°E, h7km, Md2.8*
ISC 27 22:10:59.7±0.9, 39.08°N±0.03°×29.06°E±0.03, h12km±9km, n30, σ0§31/40, Turkey

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λ-28.00000°.

JMA 27 22:11:02.9±0.2,**37°.44N**×**142°.38E**,**h16**km±4km,**M3.6**,**Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.20**	**267**	P	Pn	22 11 24.9	-0.2
JFK				eS	Sb	22 11 40.5	-0.1
JIO	**Ouri**	**1.30**	**321**	P	Pn	22 11 26.3	-0.1
JIO				eS	Sb	22 11 42.4	-1.0
ONAJ	**Iwakimizuishiy**	**1.31**	**255**	P	Pn	22 11 26.4	-0.1
JMM	**Marumori**	**1.33**	**289**	P	Pn	22 11 26.6	-0.2
JMM				eS	Sn	22 11 43.9	-0.3
JFT	**Otama**	**1.63**	**273**	P	Pb	22 11 31.8	-0.8
JOU	**Okura**	**1.64**	**305**	P	Pn	22 11 31.8	+0.7
JOU				eS	Sb	22 11 52.8	-0.5
JYS	**Shirataka**	**1.99**	**294**	S	Sb	22 12 03.1	-0.2
JFY	**Yanaizu**	**2.13**	**270**	P	Pn	22 11 39.3	+1.5
JFY				eS	Sb	22 12 06.7	-0.6
JYK	**Kaneyama**	**2.17**	**313**	P	Pn	22 11 39.6	+1.2
MAT	**Matsushiro**	**3.46**	**256**	P	Pn	22 11 58.9	+2.8
MAT				eS	Sn	22 12 40.9	+4.1

ISCJB ***27*** *22:22:14.8±0.5,39°.12N±0°.03×28°.99E±0°.03,h6km±6km, Error ellipse: s-maj=6.0km s-min=3.8km az=155.9*
DDA ***27*** *22:22:14.3,39°.15N×28°.99E,h6km,Md2.8*
ISK ***27*** *22:22:14.7,39°.14N×29°.00E,h5km,MD2.9*
CSEM ***27*** *22:22:15.0±0.1,39°.12N×28°.99E,h5km,MD2.8, Error ellipse: s-maj=2.0km s-min=1.6km az=146.0*

ISC 27 22:22:15.2±1.0,**39°.14N**±0°.03×**28°.99E**±0°.02,**h6**km±12km, **n43**,σ0°**46**/56,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.23**	**245**	P	Pg	22 22 20.0	+0.2
DEMI				S	Sg	22 22 23.4	+0.5
DEMI	**Demirci**	**0.23**	**245**	*i* P	Pg	22 22 20.0	+0.2
DEMI				*i* S	Sg	22 22 23.4	+0.5
GDZ	**Gediz**	**0.39**	**97**	P	Pg	22 22 22.7	-0.1
GDZ				S	Sg	22 22 28.0	+0.1
GDZ	**Gediz**	**0.39**	**97**	*i* P	Pg	22 22 22.7	-0.1
GDZ				*i* S	Sg	22 22 27.9	+0.1
TVSB	**Tavsanli**	**0.48**	**50**	PG	Pg	22 22 24.4	-0.1
TVSB				SG	Sg	22 22 30.9	+0.1
TVSB	**Tavsanli**	**0.48**	**50**	*i* Pg	Pg	22 22 24.4	-0.1
TVSB				*i* Sg	Sg	22 22 30.9	+0.1
KULA	**Kula-Manisa**	**0.68**	**202**	*e*PG	Pg	22 22 27.9	-0.3
KULA	**Kula-Manisa**	**0.68**	**202**	*e*Pg	Pg	22 22 27.9	-0.3
MANT	**Manisa**	**0.73**	**207**	P	Pg	22 22 28.9	-0.4
MANT				S	Sg	22 22 37.5	-1.2
MANT	**Manisa**	**0.73**	**207**	*i* P	Pg	22 22 28.9	-0.4
MANT				*i* S	Sg	22 22 37.5	-1.2
KHL	**Karahalli**	**0.92**	**153**	*e*PG	Pg	22 22 33.0	+0.2
KHL	**Karahalli**	**0.92**	**153**	*e*Pg	Pg	22 22 33.0	+0.2
AKHS	**Akhisar**	**0.95**	**254**	P	Pg	22 22 33.1	-0.4
AKHS				S	Sg	22 22 45.5	-0.3
AKHS	**Akhisar**	**0.95**	**254**	*i* P	Pg	22 22 33.1	-0.4
AKHS				*i* S	Sg	22 22 45.5	-0.3
AKS	**Akhisar**	**0.95**	**254**	*e*PG	Pg	22 22 33.3	-0.2
AKS	**Akhisar**	**0.95**	**254**	*e*Pg	Pg	22 22 33.3	-0.2
BALB	**Balikesir**	**0.99**	**301**	*e*PG	Pg	22 22 34.1	-0.2
BALB				*e*SG	Sb	22 22 48.6	+0.4
BALB	**Balikesir**	**0.99**	**301**	*e*Pg	Pg	22 22 34.1	-0.2
BALB				*e*Sg	Sb	22 22 48.6	+0.4
IGD	**Bursa**	**1.14**	**8**	*i* P	Pg	22 22 35.4	-1.6
IGD				*i* S	Sg	22 22 50.9	-0.9
BALY	**Balya**	**1.22**	**300**	P	Pg	22 22 38.1	-0.5
BALY	**Balya**	**1.22**	**300**	*i* P	Pg	22 22 38.1	-0.5
KCTX	**Karacabey (Bur**	**1.23**	**337**	*e*PN	Pb	22 22 38.9	+0.1
KCTX	**Karacabey (Bur**	**1.23**	**337**	*e*Pn	Pb	22 22 38.9	+0.1
MDNY	**Mudanya-Bursa**	**1.23**	**356**	*e*PN	Pg	22 22 38.5	-0.2
MDNY	**Mudanya-Bursa**	**1.23**	**356**	*e*Pn	Pg	22 22 38.6	-0.2
IZI	**Iznik**	**1.25**	**17**	*e*PN	Pb	22 22 39.4	+0.1
IZI	**Iznik**	**1.25**	**17**	*e*Pn	Pb	22 22 39.4	+0.1
GONE	**Gonen-Balikesi**	**1.35**	**312**	*e*PN	Pg	22 22 41.0	-0.2
GONE	**Gonen-Balikesi**	**1.35**	**312**	*e*Pn	Pg	22 22 41.0	-0.2
ADVT	**Abdulvahap**	**1.42**	**24**	*e*PN	Pg	22 22 42.3	-0.1
ADVT	**Abdulvahap**	**1.42**	**24**	*e*Pn	Pg	22 22 42.3	-0.1
ARMT	**Armutlu**	**1.43**	**356**	*e*PN	Pn	22 22 41.9	+0.2
ARMT	**Armutlu**	**1.43**	**356**	*e*Pn	Pn	22 22 41.9	+0.2
EDC	**Edincik**	**1.48**	**325**	*e*PN	Pn	22 22 42.8	+0.3
EDC	**Edincik**	**1.48**	**325**	*e*Pn	Pn	22 22 42.8	+0.3
GULT	**Gulveren**	**1.75**	**42**	*e*PN	Pn	22 22 46.8	+0.6
GULT	**Gulveren**	**1.75**	**42**	*e*Pn	Pn	22 22 46.8	+0.6
HRT	**Hereke**	**1.76**	**17**	*e*PN	Pn	22 22 46.5	+0.2
HRT	**Hereke**	**1.76**	**17**	*e*Pn	Pn	22 22 46.5	+0.2
ISK	**Istanbul-Kandi**	**1.92**	**2**	*e*PN	Pn	22 22 49.1	+0.6
ISK	**Istanbul-Kandi**	**1.92**	**2**	*e*Pn	Pn	22 22 49.1	+0.6
SVRH	**Sivrihisar-ESK**	**1.99**	**80**	*e*PN	Pn	22 22 49.1	-0.4
SVRH	**Sivrihisar-ESK**	**1.99**	**80**	*e*Pn	Pn	22 22 49.1	-0.4

ISK ***27*** *22:34:26.3,39°.15N×28°.92E,h6km,MD2.4*
CSEM ***27*** *22:34:26.9±0.3,39°.11N×29°.02E,h12km,MD2.6, Error ellipse: s-maj=9.1km s-min=5.0km az=128.0*
ISCJB ***27*** *22:34:27.1±0.6,39°.10N±0°.04×29°.02E±0°.05,h13km±6km, Error ellipse: s-maj=8.9km s-min=4.7km az=139.0*
DDA ***27*** *22:34:27.5,39°.08N×29°.03E,h7km,Md2.6*

ISC 27 22:34:26.5±1.0,**39°.10N**±0°.04×**29°.04E**±0°.04,**h16**km±9km, **n14**,σ0°**50**/24,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**258**	P	Pb	22 34 33.0	+0.1
DEMI				S	Sg	22 34 36.4	+0.4
DEMI	**Demirci**	**0.26**	**258**	*i* P	Pb	22 34 33.0	+0.1
DEMI				*i* S	Sg	22 34 36.4	+0.4
GDZ	**Gediz**	**0.34**	**91**	P	Pg	22 34 33.3	-0.4
GDZ				S	Sb	22 34 40.3	+0.5
GDZ	**Gediz**	**0.34**	**91**	*i* P	Pg	22 34 33.4	-0.4
GDZ				*i* S	Sb	22 34 40.3	+0.5
TVSB	**Tavsanli**	**0.48**	**43**	*e*PG	Pb	22 34 36.8	0.0
TVSB				*e*SG	Sb	22 34 44.3	+0.6
TVSB	**Tavsanli**	**0.48**	**43**	*e*Pg	Pb	22 34 36.8	0.0
TVSB				*e*Sg	Sb	22 34 44.3	+0.6
KULA	**Kula-Manisa**	**0.65**	**207**	*e*PG	Pb	22 34 40.2	+0.6
KULA				*e*SG	Sb	22 34 48.6	+0.1
KULA	**Kula-Manisa**	**0.65**	**207**	*e*Pg	Pb	22 34 40.2	+0.6
KULA				*e*Sg	Sb	22 34 48.6	+0.1
MANT	**Manisa**	**0.71**	**212**	P	Pb	22 34 41.0	+0.3
MANT				S	Sb	22 34 50.8	+0.4
MANT	**Manisa**	**0.71**	**212**	*i* P	Pb	22 34 41.0	+0.3
MANT				*i* S	Sb	22 34 50.8	+0.4
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*PN	Pn	22 34 49.1	-0.7
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*Pn	Pn	22 34 49.1	-0.7
ARMT	**Armutlu**	**1.47**	**355**	*e*PN	Pb	22 34 54.2	+0.6
ARMT	**Armutlu**	**1.47**	**355**	*e*Pn	Pb	22 34 54.2	+0.6

ISK ***27*** *22:43:25.8,39°.06N×29°.13E,h6km,MD2.7*
ISCJB ***27*** *22:43:26.2±0.6,39°.06N±0°.05×29°.08E±0°.05,h9km, Error ellipse: s-maj=7.4km s-min=4.0km az=146.4*
CSEM ***27*** *22:43:26.2±0.1,39°.07N×29°.08E,h5km,MD2.4, Error ellipse: s-maj=2.9km s-min=1.5km az=130.0*
DDA ***27*** *22:43:26.1,39°.07N×29°.06E,h7km,Md2.4*

ISC 27 22:43:26.1±0.9,**39°.07N**±0°.04×**29°.09E**±0°.03,**h9**km,**n18**, σ0°**44**/26,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.29**	**265**	P	Pg	22 43 32.0	0.0
DEMI				S	Sg	22 43 35.8	-0.1
DEMI	**Demirci**	**0.29**	**265**	*i* P	Pg	22 43 32.0	0.0
DEMI				*i* S	Sg	22 43 35.8	-0.1
GDZ	**Gediz**	**0.31**	**86**	P	Pg	22 43 32.7	+0.4
GDZ				S	Sb	22 43 37.8	-1.3
GDZ	**Gediz**	**0.31**	**86**	*i* P	Pg	22 43 32.7	+0.4
GDZ				*i* S	Sb	22 43 37.8	-1.3
TVSB	**Tavsanli**	**0.48**	**37**	*e*PG	Pg	22 43 35.5	0.0
TVSB				*e*SG	Sg	22 43 42.0	+0.2
TVSB	**Tavsanli**	**0.48**	**37**	*e*Pg	Pg	22 43 35.5	0.0
TVSB				*e*Sg	Sg	22 43 42.0	+0.2
KULA	**Kula-Manisa**	**0.65**	**211**	*e*PG	Pg	22 43 38.9	+0.3
KULA	**Kula-Manisa**	**0.65**	**211**	*e*Pg	Pg	22 43 38.9	+0.3
MANT	**Manisa**	**0.71**	**216**	P	Pg	22 43 39.9	0.0
MANT				S	Sg	22 43 49.2	0.0
MANT	**Manisa**	**0.71**	**216**	*i* P	Pg	22 43 39.9	0.0
MANT				*i* S	Sg	22 43 49.1	0.0
MDNY	**Mudanya-Bursa**	**1.31**	**353**	*e*PN	Pg	22 43 51.3	+0.1
MDNY	**Mudanya-Bursa**	**1.31**	**353**	*e*Pn	Pg	22 43 51.3	+0.1
KCTX	**Karacabey (Bur**	**1.32**	**335**	*e*PN	Pb	22 43 51.5	+0.4
KCTX	**Karacabey (Bur**	**1.32**	**335**	*e*Pn	Pb	22 43 51.5	+0.4
ARMT	**Armutlu**	**1.50**	**353**	*e*PN	Pb	22 43 54.2	-0.1
ARMT	**Armutlu**	**1.50**	**353**	*e*Pn	Pb	22 43 54.2	-0.1
GPA	**Golpazari**	**1.54**	**37**	*e*PN	Pn	22 43 54.2	+0.4
GPA	**Golpazari**	**1.54**	**37**	*e*Pn	Pn	22 43 54.2	+0.4

BJI ***27*** *22:46:43.6,25°.05N×98°.65E,h10km,ML3.5/8*

ISC 27 22:46:40.3±1.6,**25°.1N**±0°.1×**98°.4E**±0°.1,**h10**km,**n8**,σ0°**76**/7, **Myanmar-China border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KMI	**Kunming**	**3.94**	**88**	Pg	Pb	22 47 49.5	-0.4
KMI				Sg	Sb	22 48 38.3	+0.6
KMI				smax	smax		
	comp=N,100nm,1.0s						
KMI				smax	smax		
	comp=E,100nm,0.9s						
CHTO	**Chiang Mai**	**6.24**	**175**	P	Pb	22 48 37.1	+8.1
CMMT	**Chiang Mai**	**6.24**	**175**	P	Pb	22 48 37.1	+8.1
LAMP	**Lampang**	**6.61**	**170**	P	Pg	22 48 45.7	-1.1
MHMT	**Maesariang**	**6.86**	**184**	P	Pg	22 48 52.1	+0.4
UTTA	**Uttaradit**	**7.55**	**164**	P	Pg	22 49 05.5	+0.6
SUKH	**Sukhothai**	**7.63**	**171**	P	Pg	22 49 06.6	+0.2
WMQ	**Urumqi**	**20.66**	**338**	*e*P	P	22 51 20.3	+0.1

ISCJB ***27*** *22:47:07.7±1.3,28°.34S±0°.04×70°.24W±0°.10, h101km±13km, Error ellipse: s-maj=14.4km s-min=7.2km az=179.7*
SJA ***27*** *22:47:07.7±0.6,28°.40S×70°.03W,h164km±8km,ML2.9, MW3.1*
GUC ***27*** *22:47:07.3±0.9,28°.40S×70°.01W,h85km±23km,ML2.8*

ISC 27 22:47:07.3±2.1,**28°.32S**±0°.05×**70°.31W**±0°.08, **h107**km±18km,**n10**,σ1°**33**/18,**1C-2D,Central Chile**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VACH	**Vallenar**	**0.47**	**237**	⇑*i*P	Pn	22 47 24.1	+0.4
VACH				*i* S	Sn	22 47 35.6	-0.5
LCO	**Las Campanas**	**0.77**	**207**	⇓*i*P	Pn	22 47 26.3	-0.1
LCO				*i* S	Sn	22 47 40.2	-0.5
LCO				IAML		22 47 40.8	
	comp=N,322nm,0.3s						
CPCH	**Copiapo**	**0.96**	**358**	⇓*i*P	Pn	22 47 28.0	0.0
CPCH				*i* S	Sn	22 47 43.3	-0.2
CDCH	**Caldera**	**1.33**	**340**	*e*P	Pn	22 47 33.0	+1.0
TLL	**Tololo Astrono**	**1.89**	**193**	*e*P	Pn	22 47 39.2	+0.1
TLL				*i* S	Sn	22 48 02.6	-0.7
TLL				IAML		22 48 04.6	
	comp=N,139nm,0.2s						
VCA	**Vinchina**	**1.90**	**103**	*e*P	Pn	22 47 40.6	+1.5
VCA				*e*S	Sn	22 48 05.0	+1.8
VCA				IAML		22 48 07.2	
	comp=Z,83nm,0.2s						
AMOG	**MOGNA**	**3.05**	**149**	*e*P	Pn	22 47 54.5	+0.5
AMOG				*e*S	Sn	22 48 29.6	-0.4
RTLL	**Cerro Villicun**	**3.40**	**152**	*e*P	Pn	22 47 59.3	+0.7
RTLL				*e*S	Sn	22 48 37.5	-0.7
RTLS	**Leoncito**	**3.58**	**166**	*e*P	Pn	22 48 02.6	+1.4
CYA	**Choya**	**3.97**	**93**	*e*P	Pn	22 48 06.1	-0.2
CYA				*e*S	Sn	22 48 48.3	-3.7

IDC 27 22:52:22.9±2.2,**7°.91S**×**129°.60E**,**h0**km,**mb3.4**/1, **mb1 3.4**/3,**mb1mx3.2**/40,**mbtmp3.2**/3,**ML3.2**/2,**Error ellipse: s-maj=132.0km s-min=32.7km az=67.0**,**Banda Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**12.82**	**160**	Pn	Pn	22 55 26.2	-0.4
	0.1nm,0.3s,baz=341,slow=14,SNR=7.6						
WRA				Sn	Sn	22 57 41.6	-8.4
	0.7nm,0.3s,baz=340,slow=24,SNR=12						
ASAR	**Alice Springs**	**16.20**	**166**	Pn	Pn	22 56 12.7	+0.5
	0.1nm,0.3s,baz=352,slow=12,SNR=3.8						
ASAR				Sn	Sn	22 59 07.8	-4.9
	0.1nm,0.3s,baz=355,slow=29,SNR=3.4						
MKAR	**Makanchi Array**	**68.77**	**327**	P	P	23 03 28.9	0.0
	0.2nm,0.3s,baz=121,slow=7.8,SNR=4.8						

ISCJB ***27*** *22:59:05.3±0.5,39°.10N±0°.03×29°.12E±0°.04,h4km±7km, Error ellipse: s-maj=6.0km s-min=4.2km az=139.4*
CSEM ***27*** *22:59:05.6±0.1,39°.09N×29°.13E,h5km,MD2.9, Error ellipse: s-maj=2.5km s-min=1.8km az=102.0*
ISK ***27*** *22:59:05.2,39°.10N×29°.17E,h6km,MD2.8*
DDA ***27*** *22:59:05.0,39°.12N×29°.09E,h7km,Md2.9*

ISC 27 22:59:05.7±0.9,**39°.10N**±0°.02×**29°.12E**±0°.02,**h11**km±10km, **n39**,σ0°**41**/50,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.28**	**92**	P	Pg	22 59 11.6	+0.2
GDZ				S	Sg	22 59 15.7	+0.4
GDZ	**Gediz**	**0.28**	**92**	*i* P	Pg	22 59 11.6	+0.2
GDZ				*i* S	Sg	22 59 15.7	+0.4
DEMI	**Demirci**	**0.32**	**260**	P	Pg	22 59 12.0	-0.2
DEMI				S	Sg	22 59 16.6	+0.1
DEMI	**Demirci**	**0.32**	**260**	*i* P	Pg	22 59 12.0	-0.2
DEMI				*i* S	Sg	22 59 16.6	+0.1
TVSB	**Tavsanli**	**0.44**	**37**	*e*PG	Pg	22 59 14.1	-0.3
TVSB				*e*SG	Sg	22 59 19.6	-0.6
TVSB	**Tavsanli**	**0.44**	**37**	*e*Pg	Pg	22 59 14.1	-0.3
TVSB				*e*Sg	Sg	22 59 19.6	-0.6
KULA	**Kula-Manisa**	**0.69**	**212**	*e*PG	Pg	22 59 19.0	0.0
KULA	**Kula-Manisa**	**0.69**	**212**	*e*Pg	Pg	22 59 19.0	0.0
MANT	**Manisa**	**0.75**	**216**	P	Pg	22 59 20.0	-0.2
MANT				S	Sg	22 59 29.6	-0.4
MANT	**Manisa**	**0.75**	**216**	*i* P	Pg	22 59 20.0	-0.2
MANT				*i* S	Sg	22 59 29.6	-0.4
KHAL	**Karahalli**	**0.78**	**158**	P	Pg	22 59 20.9	+0.1
KHAL				S	Sg	22 59 31.0	-0.1
KHAL	**Karahalli**	**0.78**	**158**	*i* P	Pg	22 59 20.9	+0.1
KHAL				*i* S	Sg	22 59 31.0	-0.1
KHL	**Karahalli**	**0.84**	**158**	*e*PG	Pg	22 59 21.5	-0.3
KHL	**Karahalli**	**0.84**	**158**	*e*Pg	Pg	22 59 21.5	-0.3
ORLT	**Orhaneli**	**0.96**	**350**	*e*PG	Pg	22 59 23.9	-0.3
ORLT	**Orhaneli**	**0.96**	**350**	*e*Pg	Pg	22 59 23.9	-0.3
AKS	**Akhisar**	**1.04**	**258**	*e*PN	Pn	22 59 26.3	0.0
AKS	**Akhisar**	**1.04**	**258**	*e*Pn	Pn	22 59 26.3	0.0
BALB	**Balikesir**	**1.10**	**300**	*e*PN	Pn	22 59 27.3	+0.2
BALB	**Balikesir**	**1.10**	**300**	*e*Pn	Pn	22 59 27.3	+0.2
IGD	**Bursa**	**1.17**	**3**	*i* P	Pb	22 59 26.2	-1.7
IGD				*i* S	Sb	22 59 42.7	-0.3
IZI	**Iznik**	**1.27**	**12**	*e*PN	Pn	22 59 29.7	+0.3
IZI	**Iznik**	**1.27**	**12**	*e*Pn	Pn	22 59 29.7	+0.3
MDNY	**Mudanya-Bursa**	**1.28**	**352**	*e*PN	Pg	22 59 30.6	+0.3
MDNY	**Mudanya-Bursa**	**1.28**	**352**	*e*Pn	Pg	22 59 30.6	+0.3
KCTX	**Karacabey (Bur**	**1.31**	**333**	*e*PN	Pb	22 59 30.5	+0.2
KCTX	**Karacabey (Bur**	**1.31**	**333**	*e*Pn	Pb	22 59 30.5	+0.2
ADVT	**Abdulvahap**	**1.42**	**19**	*e*PN	Pn	22 59 31.8	+0.4
ADVT	**Abdulvahap**	**1.42**	**19**	*e*Pn	Pn	22 59 31.8	+0.4
GONE	**Gonen-Balikesi**	**1.46**	**311**	*e*PN	Pb	22 59 33.1	+0.3
GONE	**Gonen-Balikesi**	**1.46**	**311**	*e*Pn	Pb	22 59 33.2	+0.3
ARMT	**Armutlu**	**1.48**	**352**	*e*PN	Pb	22 59 33.4	+0.2
ARMT	**Armutlu**	**1.48**	**352**	*e*Pn	Pb	22 59 33.4	+0.2
EDC	**Edincik**	**1.58**	**323**	*e*PN	Pb	22 59 35.2	+0.3
EDC	**Edincik**	**1.58**	**323**	*e*Pn	Pb	22 59 35.2	+0.3
GULT	**Gulveren**	**1.71**	**38**	*e*PN	Pn	22 59 35.8	+0.2
GULT	**Gulveren**	**1.71**	**38**	*e*Pn	Pn	22 59 35.8	+0.2
ISK	**Istanbul-Kandi**	**1.96**	**359**	*e*PN	Pn	22 59 39.8	+0.8
ISK	**Istanbul-Kandi**	**1.96**	**359**	*e*Pn	Pn	22 59 39.8	+0.8

IDC 27 22:59:42.8±6.9,**28°.70S**×**177°.87W**,**h29**km±51km,**mb3.4**/2, **mb1 3.6**/2,**mb1mx3.3**/34,**mbtmp3.5**/2,**Error ellipse: s-maj=27.8km s-min=20.0km az=54.0**,**Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**0.55**	**184**	Pn	Pn	22 59 54.5	-0.2
	326nm,0.3s,baz=6.2,slow=18,SNR=30						
RAO				Sn	Sn	23 00 03.3	+0.3
	660nm,0.3s,baz=2.7,slow=24,SNR=14						
RAO				LR	LR	23 00 22.1	
	comp=Z,100nm,22.0s,baz=162,slow=72						
ASAR	**Alice Springs**	**43.34**	**265**	P	P	23 07 41.9	-0.8
	0.3nm,0.6s,baz=92,slow=6.7,SNR=3.7						
WRA	**Warramunga Arr**	**44.17**	**270**	P	P	23 07 50.0	+0.6
	0.4nm,0.4s,baz=111,slow=7.7,SNR=6.4						
FINES	**FINESS Array B**	**143.59**	**341**	PKP	PKPbc	23 19 12.6	+1.0
	1.1nm,0.8s,baz=28,slow=3.6,SNR=5.6						

ISCJB ***27*** *23:01:52.1±1.2,34°.22N±0°.07×26°.29E±0°.07,h25km, Error ellipse: s-maj=10.2km s-min=8.0km az=164.2*
ATH ***27*** *23:01:52.2,34°.28N×26°.25E,h31km±2km,ML2.5/1, Error ellipse: s-maj=3.7km s-min=1.5km az=347.0*
CSEM ***27*** *23:01:52.0±0.4,34°.25N×26°.28E,h15km,ML2.5, Error ellipse: s-maj=9.1km s-min=6.0km az=164.0*

ISC 27 23:01:51.3±1.9,**34°.2N**±0°.1×**26°.34E**±0°.04,**h25**km,**n20**, σ1°**30**/28,**Crete**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZKR	**Zakros**	**0.90**	**354**	P	Pn	23 02 08.1	-0.3
ZKR				S	Sn	23 02 21.1	+0.4
ZKR	**Zakros**	**0.90**	**354**	P	Pn	23 02 08.1	-0.3
ZKR				S	Sn	23 02 21.1	+0.4
ZKR				AML	AML	23 02 30.6	
	comp=E,635μm,0.5s						
ZKR				AML	AML	23 02 33.0	
	comp=N,592μm,0.7s						
LAST	**Lasithi**	**1.18**	**323**	P	Pb	23 02 12.7	-0.3
LAST				S	Sb	23 02 28.1	+0.2
LAST	**Lasithi**	**1.18**	**323**	P	Pb	23 02 12.7	-0.3
NPS	**Neapolis**	**1.20**	**330**	P	Pb	23 02 13.5	+0.1
NPS				S	Sn	23 02 27.5	-0.6
NPS	**Neapolis**	**1.20**	**330**	P	Pb	23 02 13.5	+0.1
NPS				S	Sn	23 02 27.5	-0.6
KARP	**Karpathos**	**1.49**	**27**	P	Pb	23 02 18.8	+0.5
KARP				S	Sb	23 02 36.9	0.0
KARP	**Karpathos**	**1.49**	**27**	P	Pb	23 02 18.8	+0.5
KARP				S	Sb	23 02 36.9	0.0
SIVA	**Sivas**	**1.49**	**303**	P	Pb	23 02 18.2	-0.1
SIVA	**Sivas**	**1.49**	**303**	P	Pb	23 02 18.2	-0.1
IDI	**Anoyia**	**1.60**	**312**	P	Pb	23 02 19.1	-1.1
IDI	**Anoyia**	**1.60**	**312**	P	Pb	23 02 19.1	-1.1
GVD	**Gavdhos**	**1.96**	**289**	P	Pn	23 02 23.1	+0.2
GVD	**Gavdhos**	**1.96**	**289**	P	Pn	23 02 23.1	+0.2
IMMV	**Iera Moni Meta**	**2.30**	**303**	P	Pn	23 02 28.4	+0.8
IMMV	**Iera Moni Meta**	**2.30**	**303**	P	Pn	23 02 28.4	+0.8
ANKY	**Antikythira Is**	**2.99**	**304**	P	Pn	23 02 38.8	+1.8
ANKY	**Antikythira Is**	**2.99**	**304**	P	Pn	23 02 38.9	+1.8
AKAS	**Kas**	**3.35**	**52**	P	Pn	23 02 43.9	+1.8
AKAS	**Kas**	**3.35**	**52**	*i* P	Pn	23 02 43.9	+1.8
AKAS				*i* S	Sn	23 03 16.3	-4.9

NIED ***27*** *23:01:00,39°.80N×142°.10E,h47km,Mw4.5 Best double couple: M0=5.92000×10^15 NP1:φ0=159.00000°,δ26.00000°, λ43.00000°. NP2:φ0=30.00000°,δ73.00000°,λ110.00000°.*
MOS ***27*** *23:01:50.4±0.9,39°.77N×141°.95E,h33km,mb5.0/60, Error ellipse: s-maj=7.5km s-min=4.3km az=107.4*
JMA ***27*** *23:01:53.7,39°.80N×142°.14E,h47km±1km,M4.5*
JMA Felt III J1.
ISCJB ***27*** *23:01:53.4±0.3,39°.81N±0°.02×142°.04E±0°.03,h57km±2km, mb4.8/142,MS3.6/23, Error ellipse: s-maj=4.3km s-min=3.2km az=32.4*
IDC ***27*** *23:01:54.8±1.4,39°.80N×142°.09E,h59km±12km,mb4.2/26, mb1 4.3/33,mb1mx4.2/48,mbtmp4.5/33,MS3.5/26, Ms1 3.5/26,ms1mx3.4/40, Error ellipse: s-maj=14.0km s-min=8.8km az=103.0*
NEIC ***27*** *23:01:56.0±0.4,39°.82N×142°.00E,h68km±3km,mb4.8/77, Error ellipse: s-maj=3.9km s-min=2.7km az=132.0*
NEIC Recorded [3 JMA] in Iwate.

ISC 27 23:01:54.1±0.5,**39°.81N**±0°.03×**142°.07E**±0°.04,**h51**km±3km, **n371**,σ1°**12**/387,**mb4.8**/142,**MS3.7**/23,**45C-17D,Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**0.20**	**310**	P	Pn	23 02 02.3	-0.3
JTH				S	Sn	23 02 08.2	-0.5
MIYJ	**Miyakonagasawa**	**0.30**	**219**	P	Pn	23 02 02.8	-0.6
MIYJ				S	Sn	23 02 09.2	-0.8
JKZ	**Kuzumaki**	**0.59**	**287**	P	Pn	23 02 07.0	+0.4
JKZ				S	Sn	23 02 16.1	+0.5
JOM	**Ohasama**	**0.69**	**241**	P	Pn	23 02 07.8	+0.1
JOM				S	Sn	23 02 17.9	+0

comp=Z,257nm,18.5s,baz=126,slow=37
KLR Kul'dur 11.94 325⇓ *e*P **Pn 23 04 41.6 +0.1**
CBIJ Chichi jima 12.68 180 *e*Pn **Pn 23 04 53.8 +2.1**
CBIJ S Sn 23 06 57.6 -14
JCJ Chichijima 12.68 180 P **Pn 23 04 52.5 +0.8**
baz=294,slow=20
JCJ S Sn 23 06 57.6 -14
comp=Z,6.7nm,0.3s,baz=287,slow=19,SNR=4.2
JCJ LR LR 23 11 39.9
comp=Z,36nm,20.4s,slow=46
DL2 Dalian 15.84 273 P **P 23 05 37.3 +0.8**
PETK Petropavlovsk- 17.06 34 LR LR 23 12 23.3
comp=Z,74nm,20.4s,baz=216,slow=37
HIA Hailar 18.45 308 *e*P **P 23 06 03.8 -1.6**
HIA pmax pmax
comp=Z,9.0nm,0.6s
HIA Hailar 18.45 308 *e*P **P 23 06 03.8 -1.6**
comp=Z,9.4nm,0.6s
BJI Beijing 19.84 279 P **P 23 06 19.0 -1.6**
BJT Baijiatuau 19.85 279 *e*P **P 23 06 19.3 -1.4**
BJT pmax pmax
comp=Z,20nm,0.8s
BJT Baijiatuau 19.85 279 *e*P **P 23 06 19.3 -1.4**
comp=Z,20nm,0.8s
TIA Tai'an 19.96 268 ⇑P **P 23 06 21.5 -0.4**
NJ2 Nanjing 20.29 255 *e*P Pn 23 06 27.5 -0.4
CLNS Chul'man 20.41 332 *e*P **P 23 06 25.6 -1.0**
CLNS pmax pmax
comp=Z,18nm,1.1s
MA2 Magadan 20.54 13 P **P 23 06 28.0 +0.1**
comp=Z,9.0nm,0.4s,baz=220,slow=8.7,SNR=21
MA2 LR LR 23 15 05.9
comp=Z,66nm,19.4s,baz=262,slow=38
MA2 Magadan 20.54 13 P **P 23 06 28.0 +0.1**
MA2 pmax pmax
comp=Z,9.0nm,0.4s
MA2 MLR MLR
comp=Z,66nm,19.4s
HHC Hu-ho-hao-te 23.23 282 *e*P **P 23 06 56.8 0.0**
HHC S **S 23 11 05.8 +0.9**
NACB Ninganchiao 23.25 234 *e*P **P 23 06 55.9 -1.1**
comp=Z,47nm,1.0s
YAK Yakutsk 23.50 345 P **P 23 06 57.6 -1.4**
comp=Z,3.6nm,0.4s,baz=137,slow=19,SNR=8.3
YAK LR LR 23 16 35.4
comp=Z,74nm,18.8s,baz=107,slow=38
YAK Yakutsk 23.50 345 *e*P **P 23 06 57.0 -2.0**
YAK *e**PP **pP 23 07 09.6 -1.9**
YAK *e* 23 07 25.9
YAK *e* 23 10 43.2
YAK *e*S **S 23 11 06.5 -2.1**
YAK *e*SS **SnSn 23 11 52.9 +4.2**
YAK *e* 23 18 00.3
YAK pmax pmax
comp=Z,47nm,0.9s
YAK pmax pmax
comp=N,28nm,1.0s
YAK pmax pmax
comp=E,10.0nm,1.2s
YAK pmax pmax
comp=Z,160nm,6.4s
YAK pmax pmax
comp=E,26nm,2.1s
YAK smax smax
comp=N,13nm,1.1s
YAK smax smax
comp=E,17nm,1.0s
YAK Yakutsk 23.50 345 *e*P **P 23 06 58.0 -0.9**
comp=E,72nm,0.8s
SEY Seymchan 23.97 12 P **P 23 07 03.5 +0.1**
comp=E,30nm,1.0s,baz=199,slow=7.4,SNR=39
SEY Seymchan 23.97 12 *ce*P **P 23 07 02.6 -0.8**
YULB Yu-li 24.01 233 *e*P **P 23 07 04.2 +0.1**
comp=E,101nm,1.7s
TPUB Ta-pu 24.49 234 *e*P **P 23 07 08.4 -0.1**
comp=E,165nm,1.6s
TWG Pinlang 24.57 233 *e*P **P 23 07 09.1 -0.1**
comp=E,223nm,1.0s
SMY Shemya 25.40 49 *e*P **P 23 07 16.2 -0.2**
SMY pmax pmax
comp=Z,67nm,1.0s
SMY Shemya 25.40 49 *e*P **P 23 07 16.2 -0.2**
comp=Z,67nm,1.0s
GUMO Guam 26.23 174 LR LR 23 16 53.1
comp=Z,37nm,21.6s,baz=70,slow=34
GUMO Guam 26.23 174 *e*P **P 23 07 25.3 +1.0**
GUMO pmax pmax
comp=Z,234nm,1.3s
GUMO Guam 26.23 174 *e*P **P 23 07 25.2 +1.0**
comp=Z,234nm,1.3s
ULN Ulaanbaatar 26.33 299 *ce*P **P 23 07 23.9 -1.2**
ULN pmax pmax
comp=Z,11nm,1.2s
ULN Ulaanbaatar 26.33 299 *e*P **P 23 07 24.8 -0.3**
comp=Z,5.8nm,0.8s
SONA1 Songino Array 26.76 299 *e*P **P 23 07 28.9 -0.2**
SONM Songino Array 26.77 299 P **P 23 07 28.8 -0.3**
comp=Z,3.0nm,0.5s,baz=98,slow=8.7,SNR=32
SONM PcP **PcP 23 10 50.3 -0.6**
comp=Z,1.0nm,0.9s,baz=85,slow=4.6,SNR=3.3
SONM LR LR 23 18 38.7
comp=Z,197nm,18.4s,baz=83,slow=38
XAN Xi'an 27.02 268 *e*P **P 23 07 31.0 -0.3**
ENH Enshi 28.19 260 *e*P **P 23 07 41.2 -0.6**
comp=Z,16nm,0.7s
TLY Talaya 28.98 307 *e*P **P 23 07 46.4 -2.3**
TLY pmax pmax
comp=Z,11nm,1.0s
TLY MLR MLR
comp=Z,112nm,17.0s
TLY Talaya 28.98 307 *e*P **P 23 07 49.0 +0.3**
comp=Z,8.6nm,0.9s
ZAK Zakamensk 29.04 304 *e*P **P 23 07 48.8 -0.5**
ZAK pmax pmax
comp=Z,12nm,1.0s
H11N2 WAKE ISLAND Hy 29.24 126 T T 23 38 26.4
baz=318,slow=75,SNR=6129
H11N1 WAKE ISLAND Hy 29.25 126 T T 23 38 27.5
baz=318,slow=75,SNR=5437
H11N3 WAKE ISLAND Hy 29.26 126 T T 23 38 26.4
baz=318,slow=75,SNR=8852
H11S1 WAKE ISLAND Hy 30.05 128 T T 23 39 27.9
baz=320,slow=76,SNR=327
H11S3 WAKE ISLAND Hy 30.05 128 T T 23 39 26.5
baz=320,slow=76,SNR=294
H11S2 WAKE ISLAND Hy 30.06 128 T T 23 39 26.5
baz=320,slow=76,SNR=339
LZH Lanzhou 30.22 275 *e*P **P 23 08 00.0 +0.1**
LZH pP pP 23 08 14.0 +0.9
LZH sP sP 23 08 21.0 +1.8
BILL Bilibino 31.23 17 *i*P P 23 08 04.8 -3.4
BILL *i* 23 11 02.7
BILL pmax pmax
comp=Z,3.0nm,0.9s
BILL Bilibino 31.23 17 *e*P **P 23 08 08.8 +0.6**
comp=Z,15nm,1.6s
CD2 Chengdu 32.28 266 P **P 23 08 16.5 -1.5**
GYA Guiyang 32.28 257 *e*P **P 23 08 19.8 +1.7**
GYA pP sP 23 08 35.5 -1.9
GYA PP **PP 23 09 29.5 -2.2**
GYA PcP **PcP 23 11 07.0 +1.7**
GYA S **S 23 13 27.3 -0.9**
GYA sS sS 23 13 55.5 +5.0
GYA ScP **ScP 23 14 43.5 -1.1**
GYA Guiyang 32.28 257 ScS ScS 23 18 41.0 -3.0
GTA Gaotai 32.34 283 *e*P **P 23 08 19.8 +1.3**
GTA pP pP 23 08 33.8 +2.1
GTA sP sP 23 08 41.3 +3.5
GTA PcP **PcP 23 11 02.5 -2.8**
GTA S **S 23 13 29.3 +0.5**
GTA sS sS 23 13 55.5 +4.3
GTA SS **SnSn 23 15 27.8 +3.2**
TIXI Tiksi 32.61 352⇓ *i*P **P 23 08 19.6 -0.7**
TIXI pmax pmax
comp=Z,6.0nm,0.8s
TIXI Tiksi 32.61 352 *e*P **P 23 08 19.7 -0.6**
comp=Z,5.2nm,0.7s
MIDW Midway 35.28 96 *e*P **P 23 08 44.4 +0.5**
comp=Z,66nm,0.9s
KMI Kunming 35.96 258 P **P 23 08 50.0 -0.1**
GAMB Gambell 36.10 33 *e*P **P 23 08 51.9 +1.4**
comp=Z,33nm,1.1s
UNV Unalaska Valle 37.04 50 *e*P **P 23 08 59.1 +0.4**
comp=Z,41nm,0.8s
AKUT Akutan 37.47 50 *e*P **P 23 09 03.0 +0.7**
comp=Z,50nm,0.6s

KWAJ Kwajalein Atol 38.39 137 *e*P **P 23 09 11.2 +0.7**
KWAJ pmax pmax
comp=Z,364nm,1.5s
KWAJ Kwajalein Atol 38.39 137 *e*P **P 23 09 11.2 +0.7**
comp=Z,364nm,1.5s
NONG Nongkai 39.95 249 P **P 23 09 24.0 +0.5**
comp=Z,80nm,0.7s
WMQ Urumqi 40.11 294 P **P 23 09 25.5 +0.8**
WMQ pP pP 23 09 32.5 -5.7
WMQ sP sP 23 09 43.5 -0.7
WMQ ScS ScS 23 19 16.5 -10
ZAA0 Zalesovo Array 40.48 310 *e*P **P 23 09 27.3 -0.1**
ZALV Zalesovo Beam 40.48 310 P **P 23 09 27.6 +0.1**
comp=Z,7.1nm,0.4s,baz=92,slow=7.8,SNR=43
ZALV PcP **PcP 23 11 29.1 -0.1**
comp=Z,3.8nm,0.5s,baz=97,slow=2.8,SNR=6.7
ZALV LR LR 23 27 04.0
comp=Z,119nm,18.5s,baz=68,slow=37
SDPT Sand Point 40.52 48 *e*P **P 23 09 28.4 +0.5**
comp=Z,186nm,1.7s
CRAI Chiangrai 40.59 254 P **P 23 09 29.5 +0.6**
comp=Z,299nm,1.1s,comp=Z,42μm
NRIK Noril'sk 40.98 334 P **P 23 09 31.1 -0.4**
comp=Z,3.3nm,0.7s,baz=106,slow=18,SNR=6.9
NRIK LR LR 23 27 23.5
comp=Z,151nm,20.7s,baz=110,slow=37
NVS Novosibirsk 41.34 311⇓ *i*P **P 23 09 35.0 +0.4**
NVS *i* 23 09 47.0
NVS pmax pmax
comp=E,7.0nm,1.0s
NVS pmax pmax
comp=Z,11nm,1.0s
CHGN Chignik 41.65 46 *e*P **P 23 09 37.6 +0.5**
LOEI Loei 41.66 250 P **P 23 09 35.3 -2.3**
comp=Z,7.7nm,0.8s,comp=Z,6μm
MANU Manus Island 41.93 172 *e*P **P 23 09 41.9 +2.1**
comp=Z,28nm,1.2s
UTTA Uttaradit 42.02 251 P **P 23 09 42.0 +1.4**
comp=Z,2.4nm,0.7s
PBKT Sadao Pong 42.49 249 P **P 23 09 46.2 +1.9**
comp=Z,14nm,1.1s
CMMT Chiang Mai 42.52 253 P **P 23 09 45.2 +0.5**
comp=Z,11nm,0.8s
CHTO Chiang Mai 42.53 253 P **P 23 09 45.3 +0.6**
comp=Z,49nm,0.9s
CHTO Chiang Mai 42.53 253 *e*P **P 23 09 45.3 +0.6**
CHTO pmax pmax
comp=Z,7.0nm,0.8s
CHTO Chiang Mai 42.53 253 *e*P **P 23 09 45.3 +0.6**
comp=Z,7.4nm,0.8s
LSA Lhasa 42.53 273 P **P 23 09 46.3 +1.0**
LSA Lhasa 42.53 273 *e*P **P 23 09 46.2 +1.0**
LSA pmax pmax
comp=Z,9.0nm,0.6s
LSA Lhasa 42.53 273 *e*P **P 23 09 46.2 +1.0**
comp=Z,9.1nm,0.6s
CM31 Chiang Mai Arr 42.75 253 *e*P **P 23 09 46.0 -0.5**
CMAR Chiang Mai Arr 42.75 253 P **P 23 09 47.0 +0.5**
comp=Z,2.7nm,0.8s,baz=44,slow=6.7,SNR=20
CMAR PcP **PcP 23 11 37.5 +0.2**
comp=Z,1.7nm,0.8s,baz=15,slow=3.0,SNR=6.7
CMAR LR LR 23 29 11.1
comp=Z,37nm,18.3s,baz=50,slow=38
CM01 Chiang Mai Arr 42.76 253 *e*P **P 23 09 46.2 -0.3**
TT01 Tatalina 42.86 36 *e*P **P 23 09 48.2 +1.3**
TTA Tatalina 42.87 36 *e*P **P 23 09 48.4 +1.4**
TTA pmax pmax
comp=Z,16nm,2.0s
TTA Tatalina 42.87 36 *e*P **P 23 09 48.4 +1.4**
comp=Z,16nm,2.0s
SVW2 Sparrevohn 43.03 39 *e*P **P 23 09 49.4 +1.1**
comp=Z,18nm,1.8s
MK01 Makanchi Array 43.13 300 *e*P **P 23 09 49.4 0.0**
MK31 Makanchi Array 43.13 300 *i*P **P 23 09 49.0 -0.3**
MK31 pmax pmax
comp=Z,20nm,0.9s
MK31 Makanchi Array 43.13 300 *e*P **P 23 09 49.5 +0.2**
MKAR Makanchi Array 43.13 300 P **P 23 09 49.5 +0.1**
comp=Z,13nm,0.7s,baz=84,slow=9.7,SNR=129
MKAR PcP **PcP 23 11 37.7 -0.5**
comp=Z,1.8nm,0.7s,baz=74,slow=5.2,SNR=2.9
MKAR ScP **ScP 23 15 24.2 -0.8**
comp=Z,0.2nm,0.3s,baz=70,slow=4.7,SNR=3.4
MKAR LR LR 23 28 27.4
comp=Z,89nm,20.6s,baz=70,slow=37
MAKZ Makanchi 43.34 300 *i*P **P 23 09 50.5 -0.5**
MAKZ pmax pmax
comp=Z,13nm,0.8s
MAKZ Makanchi 43.34 300 *e*P **P 23 09 51.2 +0.2**
comp=Z,13nm,0.8s
SRAK Srakaew 43.45 245 P **P 23 09 49.8 -2.3**
comp=Z,57nm,0.9s,comp=Z,510nm
FAKI Fak Fak 43.47 194 *e*P **P 23 09 52.1 -0.1**
comp=Z,21nm,1.2s
MHMT Maesarieng 43.67 253 P P 23 09 58.1 +4.2
comp=Z,7.0nm,0.7s
PPLA Purkeypile 44.62 36 *e*P **P 23 10 02.1 +1.0**
CAST Castle Rocks 44.66 36 *e*P **P 23 10 01.7 +0.3**
comp=Z,4.5nm,0.8s
KURK Kurchatov 44.67 306 *ci*P **P 23 10 01.3 -0.2**
KURK pmax pmax
comp=Z,34nm,1.0s
KURK Kurchatov 44.67 306 *e*P **P 23 10 01.5 0.0**
comp=Z,40nm,1.1s
KDAK Kodiak Island 44.72 44 *i*P **P 23 10 02.2 +0.4**
KDAK Kodiak Island 44.72 44 *e*P **P 23 10 02.8 +1.0**
comp=Z,30nm,1.5s
SPU Mount Spurr 44.73 39 *e*P **P 23 10 02.7 +0.7**
BPAW Bear Paw Mtn. 45.14 35 *e*P **P 23 10 05.7 +0.5**
comp=Z,4.6nm,1.1s
KTH Kantishna Hill 45.18 36 *e*P **P 23 10 07.0 +1.5**
comp=Z,6.9nm,0.9s
MLY Manley 45.24 33 *e*P **P 23 10 05.9 -0.1**
comp=Z,3.2nm,0.8s
SUA Susitna One 45.35 38 *e*P **P 23 10 08.3 +1.4**
comp=Z,7.3nm,0.9s
BRLK Bradley Lake 45.41 41 *e*P **P 23 10 08.2 +0.8**
comp=Z,51nm,1.9s
TRF Thorofare Moun 45.47 36 *e*P **P 23 10 09.6 +1.7**
comp=Z,19nm,1.7s
COLD Coldfoot 45.49 30 *e*P **P 23 10 08.6 +0.8**
BWN Browne 45.80 35 *e*P **P 23 10 11.1 +0.8**
comp=Z,48nm,1.0s
PHET Kaeng Krachan 45.90 246 P **P 23 10 13.0 +1.3**
comp=Z,11nm,0.8s,comp=Z,105nm
PDGK Podgornoye 45.98 296 *i*P **P 23 10 11.2 -0.8**
PDGK pmax pmax
comp=Z,8.0nm,0.8s
SBUM Sibu 46.01 224 *e*P **P 23 10 11.6 -0.9**
comp=Z,12nm,1.3s
MCK McKinley 46.06 35 *e*P **P 23 10 13.6 +1.2**
MCK pmax pmax
comp=Z,21nm,1.9s
MCK McKinley 46.06 35 *e*P **P 23 10 13.6 +1.2**
comp=Z,21nm,1.9s
SEW Seward 46.10 40 *e*P **P 23 10 14.5 +1.9**
comp=Z,15nm,0.8s
PMR Palmer 46.11 38 *e*P **P 23 10 13.9 +1.1**
PMR pmax pmax
comp=Z,16nm,1.6s
PMR Palmer 46.11 38 *e*P **P 23 10 13.9 +1.1**
comp=Z,16nm,1.6s
RND Reindeer 46.11 36 *e*P **P 23 10 13.6 +0.7**
RND pmax pmax
comp=Z,19nm,1.8s
RND Reindeer 46.11 36 *e*P **P 23 10 13.6 +0.7**
comp=Z,19nm,1.8s
MDM Murphy Dome 46.31 34 *e*P **P 23 10 15.7 +1.4**
comp=Z,4.6nm,0.9s
WRH Wood River Hil 46.39 34 *e*P **P 23 10 17.0 +2.0**
comp=Z,18nm,1.9s
SML Sawmill 46.47 38 *e*P **P 23 10 16.5 +0.8**
SML pmax pmax
comp=Z,17nm,1.2s
SML Sawmill 46.47 38 *e*P **P 23 10 16.5 +0.8**
comp=Z,17nm,1.2s
CCB Clear Creek Bu 46.51 34 *e*P **P 23 10 16.5 +0.7**
comp=Z,5.5nm,1.4s
IL1 Eielson Array 46.89 34 *e*P **P 23 10 18.6 -0.2**
ILAR Eielson Array 46.89 34 P **P 23 10 18.8 -0.1**
comp=Z,3.3nm,0.7s,baz=268,slow=6.2,SNR=43
ILB Eielson Array 46.89 34 *e*P **P 23 10 19.3 +0.4**
SCM Sheep Creek Mo 46.94 38 *e*P **P 23 10 20.2 +0.8**
SCM pmax pmax
comp=Z,58nm,2.0s
SCM Sheep Creek Mo 46.94 38 *e*P **P 23 10 20.2 +0.8**
comp=Z,58nm,2.0s

GUN Gumba 47.45 273 *e*P **P 23 10 24.6 +0.5**
comp=Z,126nm,0.7s
FYU Fort Yukon 47.46 31 *e*P **P 23 10 24.1 +0.9**
comp=Z,6.0nm,0.9s
KLU Klutina 47.65 38 *e*P P 23 10 22.0 -3.0
comp=Z,7.7nm,1.1s
MID Middleton Isla 47.75 41 *e*P **P 23 10 26.1 +0.6**
MID pmax pmax
comp=Z,179nm,1.0s
MID Middleton Isla 47.75 41 *e*P **P 23 10 26.1 +0.6**
comp=Z,179nm,1.0s
DIV Divide 47.77 39 *e*P **P 23 10 27.0 +1.1**
comp=Z,7.7nm,1.1s
KSM Kuching 47.85 225 *e*P **P 23 10 26.9 0.0**
comp=Z,11nm,1.0s
EYAK Cordova Ski Ar 47.87 39 *e*P **P 23 10 27.7 +1.3**
comp=Z,28nm,1.3s
KKN Kakani 47.97 274 *e*P **P 23 10 28.4 +0.4**
comp=Z,51nm,0.6s
DMN Daman 48.19 274 *e*P **P 23 10 30.3 +0.5**
comp=Z,32nm,0.8s
DOT Dot Lake 48.23 35 *e*P **P 23 10 29.6 +0.3**
comp=Z,24nm,1.6s
GKN Gorkha 48.36 274 *e*P **P 23 10 30.9 0.0**
comp=Z,25nm,0.4s
TKM2 Tokmak 2 48.81 296 *i*P **P 23 10 33.1 -1.2**
TKM2 pmax pmax
comp=Z,21nm,0.9s
TKM2 Tokmak 2 48.81 296 *e*P **P 23 10 34.2 -0.1**
comp=Z,20nm,0.8s
KAPI Kappang 49.12 210 P **P 23 10 37.4 +0.9**
comp=Z,4.0nm,0.5s,baz=48,slow=6.6,SNR=4.5
BRVK Borovoye 49.17 311⇑ *e*P **P 23 10 36.7 +0.1**
BRVK pmax pmax
comp=Z,10.0nm,1.2s
BRVK Borovoye 49.17 311 *e*P **P 23 10 36.4 -0.3**
comp=Z,6.6nm,0.9s
KOLN Koldanda 49.27 275 *e*P **P 23 10 38.4 +0.4**
comp=Z,26nm,0.6s
EGAK Eagle 49.33 33 *e*P **P 23 10 39.1 +1.5**
comp=Z,5.5nm,0.9s
FRU Bishkek 49.51 297 *e*P **P 23 10 39.0 -0.4**
PYUN Piuthan 49.57 275 *e*P **P 23 10 40.7 +0.4**
comp=Z,29nm,0.5s
AAK Ala-Archa 49.67 297 *i*P **P 23 10 38.9 -1.9**
AAK pmax pmax
comp=Z,11nm,0.7s
AAK Ala-Archa 49.67 297 *e*P **P 23 10 41.0 +0.2**
comp=Z,6.7nm,1.0s
KSH Kashi 49.79 292 P P 23 10 46.0 +4.3
KSH *e*pP sP 23 11 02.5 +1.0
KSH *e*sP pP 23 11 09.5 +14
KSH PcS **PcS 23 16 02.8 +3.9**
KSH S **S 23 17 51.0 +3.5**
KSH ScS **ScS 23 20 28.5 -0.2**
ZRNK Zerenda 49.95 311 *i*P **P 23 10 41.9 -0.6**
ZRNK pmax pmax
comp=Z,11nm,0.8s
ZRNK Zerenda 49.95 311 *e*P **P 23 10 42.5 -0.1**
comp=Z,12nm,0.8s
EKS2 Erkin-Say 50.15 297 *e*P **P 23 10 44.6 +0.2**
EKS2 pmax pmax
comp=Z,8.0nm,0.8s
EKS2 Erkin-Say 50.15 297 *e*P **P 23 10 44.6 +0.2**
comp=Z,8.1nm,0.8s
MNAS Manas 51.09 297 *i*P **P 23 10 50.9 -0.6**
MNAS pmax pmax
comp=Z,23nm,0.8s
KK31 Karatay Array 52.22 298 *i*P **P 23 10 59.0 -0.7**
KK31 pmax pmax
comp=Z,10.0nm,0.9s
KKAR Karatay Array 52.22 298 *e*P **P 23 10 59.6 -0.1**
KKAR Karatay Array 52.22 298 *e*P **P 23 10 59.6 -0.1**
SVE Sverdlovsk 53.43 317⇓ *e*P **P 23 11 08.7 +0.3**
SVE pmax pmax
comp=Z,41nm,0.8s
ARU Arti 54.65 317 *ci*P **P 23 11 17.3 +0.1**
ARU *PP **pP 23 11 34.2 +2.9**
ARU 23 13 18.2
ARU S **S 23 18 54.8 +1.6**
ARU SS **SS 23 22 32.0 -3.9**
ARU pmax pmax
comp=Z,44nm,1.0s
ARU MLR MLR
comp=Z,148nm,18.0s
ARU Arti 54.65 317 *e*P **P 23 11 17.4 +0.1**
comp=Z,33nm,0.8s
DZET Dzherino 55.14 294 *i*P **P 23 11 20.8 -0.5**
DZET pmax pmax
comp=Z,23nm,0.9s
AB31 Akbulak array 56.57 309 *i*P **P 23 11 30.8 -0.4**
AB31 pmax pmax
comp=Z,12nm,0.5s
ABKAR Akbulak array 56.57 309 *e*P **P 23 11 31.2 0.0**
KBL Kabul 56.94 290 *e*P **P 23 11 33.7 -0.6**
KBL pmax pmax
comp=Z,17nm,0.9s
KBL Kabul 56.94 290 *e*P **P 23 11 33.7 -0.6**
comp=Z,17nm,0.9s
AKTO Aktyubinsk 57.23 311 *i*P **P 23 11 35.0 -0.9**
AKTO pmax pmax
comp=Z,10.0nm,0.7s
WRAB Tennant Creek 59.87 188 *ce*P **P 23 11 52.8 -1.6**
WRAB pmax pmax
comp=Z,45nm,2.5s
WB2 Warramunga Arr 59.88 188 *e*P **P 23 11 53.8 -0.7**
comp=Z,7.0nm,0.8s
WRA Warramunga Arr 59.88 188 P **P 23 11 53.5 -1.1**
comp=Z,6.4nm,0.6s,baz=7.1,slow=6.9,SNR=79
TMCR Tamitsa 60.57 331 *e*P **P 23 11 58.6 -0.1**
TMCR pmax pmax
comp=Z,19nm,0.9s
YKA Yellowknife Ar 61.16 31 P **P 23 12 02.8 0.0**
comp=Z,1.2nm,0.6s,baz=300,slow=6.4,SNR=20
ARCES ARCESS Array B 61.59 339 P **P 23 12 05.5 -0.1**
comp=Z,1.7nm,0.5s,baz=55,slow=8.6,SNR=16
ARCES LR LR 23 41 15.5
comp=Z,43nm,20.9s,baz=54,slow=38
KLMR Klimovskoe 61.70 327 *e*P **P 23 12 05.1 -1.4**
KLMR *e**SP **pP 23 12 18.3 -2.4**
KLMR *e* 23 14 22.3
KLMR pmax pmax
comp=Z,15nm,1.0s
GEYT Alibeck 62.96 298 P **P 23 12 15.3 -0.1**
comp=Z,7.1nm,0.7s,baz=29,slow=3.4,SNR=20
DAG Danmarks Havn 63.06 355⇑ *i*P **P 23 12 14.9 -0.4**
comp=Z,5.2nm,0.8s
DAG Danmarks Havn 63.06 355⇑ *i*P **P 23 12 14.9 -0.4**
DAG pmax pmax
comp=Z,4.0nm,0.8s
AS01 Alice Springs 63.60 188 *e*P **P 23 12 18.7 -0.8**
AS31 Alice Springs 63.60 188 *e*P **P 23 12 19.0 -0.5**
comp=Z,1.6nm,0.5s
ASAR Alice Springs 63.60 188 P **P 23 12 19.1 -0.5**
comp=Z,2.5nm,0.5s,baz=12,slow=11,SNR=49
ASAR LR LR 23 39 08.7
comp=Z,32nm,21.2s,baz=82,slow=35
ASAR Alice Springs 63.60 188 P **P 23 12 19.1 -0.5**
ASAR pmax pmax
comp=Z,4.0nm,0.6s
ASAR MLR MLR
comp=Z,32nm,21.2s
VRH Novokhopyorsk 65.88 317 *e*P **P 23 12 33.3 -0.8**
VRH pmax pmax
comp=Z,20nm,0.7s
OBN Obninsk 66.19 323 *di*P **P 23 12 35.7 -0.3**
OBN *i* 23 15 02.9
OBN pmax pmax
comp=Z,19nm,0.9s
OBN MLR MLR
comp=Z,68nm,15.0s
OBN Obninsk 66.19 323 *e*P **P 23 12 36.1 0.0**
comp=Z,25nm,0.9s
LPSR Galich'ya Gora 66.51 320 *e*P **P 23 12 37.2 -1.0**
LPSR pmax pmax
comp=Z,20nm,0.8s
FIA1 FINESS Array S 66.60 332 *e*P **P 23 12 38.5 -0.1**
FINES FINESS Array B 66.61 332 P **P 23 12 38.4 -0.2**
comp=Z,11nm,0.7s,baz=36,slow=10,SNR=50
FINES LR LR 23 43 29.0
comp=Z,115nm,19.8s,baz=56,slow=37
VSR Storozhevoye 67.19 318 *e*P **P 23 12 41.8 -0.7**
VSR pmax pmax
comp=Z,10.0nm,0.6s
SUMG Summit 67.91 0 *i*P **P 23 12 47.8 +0.6**
comp=Z,9.0nm,0.8s

SUMG Summit 67.91 0 *i* P **P 23 12 47.8 +0.6**
SUMG pmax pmax
comp=Z,9.0nm,0.8s
SUMG Summit 67.91 0 *e*P **P 23 12 47.8 +0.6**
comp=Z,6.4nm,0.8s
VSU Vasula 68.33 329 *ce*P **P 23 12 48.9 -0.6**
VSU pmax pmax
comp=Z,57nm,1.7s
GOF Gofitskoye 68.64 311⇑ *i*P **P 23 12 52.1 +0.4**
GOF pmax pmax
comp=Z,43nm,0.8s
NCK Nalchik 69.22 310⇑ *e*P **P 23 12 55.6 +0.2**
NCK pmax pmax
comp=Z,14nm,0.8s
GUDG Gudauri 69.29 308 P **P 23 12 57.6 +1.5**
ZEI Tsey 69.45 309 *e*P **P 23 12 54.3 -2.8**
ZEI pmax pmax
comp=Z,21nm,0.9s
KIV Kislovodsk 69.49 310 *c i*P **P 23 12 57.6 +0.5**
KIV *i* 23 13 07.4
KIV pmax pmax
comp=Z,55nm,1.0s
KIV MLR MLR
comp=Z,32nm,15.0s
KIV Kislovodsk 69.49 310 *e*P **P 23 12 57.8 +0.6**
comp=Z,43nm,0.9s
KBZ Khabaz 69.50 310 P **P 23 12 57.5 +0.5**
comp=Z,14nm,0.9s,baz=63,slow=4.0,SNR=30
KBZ LR LR 23 44 49.1
comp=Z,34nm,18.6s,baz=66,slow=37
ONI Oni 69.83 309 P **P 23 13 00.4 +1.1**
ONI Oni 69.83 309 *e*P **P 23 13 00.3 +1.1**
NEY Neytrino 69.88 310 *i* P **P 23 13 00.3 +0.6**
NEY pmax pmax
comp=Z,2.0nm,0.8s
GNI Garni 70.47 306 *ce*P **P 23 13 04.4 +1.1**
GNI pmax pmax
comp=Z,35nm,1.4s
AKH Akhalkalaki 70.50 308⇓ *i*P **P 23 13 03.2 -0.3**
BGD Bogdanovka 70.52 308 P **P 23 13 04.8 +1.1**
CHVG Ch'k'valeri 70.57 310⇑ *i*P **P 23 13 04.3 +0.6**
CHVG Ch'k'valeri 70.57 310 P **P 23 13 01.7 -2.0**
FCC Fort Churchill 71.30 27 *e*P **P 23 13 07.7 0.0**
FCC pmax pmax
comp=Z,7.0nm,1.2s
FCC Fort Churchill 71.30 27 *e*P **P 23 13 07.7 0.0**
comp=Z,7.1nm,1.2s
STKA Stephens Creek 71.33 180 P **P 23 13 07.9 -0.2**
comp=Z,1.7nm,0.8s,baz=338,slow=12,SNR=3.7
SOC Sochi 71.44 312 *e*P **P 23 13 07.6 -1.3**
SOC *e* 23 15 44.6
SOC *e*PPP PPP 23 17 30.3
SOC *e*S **S 23 22 17.6 -5.7**
SOC *e*SS **SS 23 26 58.7 +0.8**
SOC pmax pmax
comp=Z,11nm,0.6s
NC405 NORSAR Array S 71.62 337 *e*P **P 23 13 09.9 +0.1**
NC204 NORSAR Array S 71.78 338 *e*P **P 23 13 10.8 0.0**
NB201 NORSAR Array S 71.80 337 *e*P **P 23 13 10.8 0.0**
NB2 NORSAR Subarra 71.83 337 P **P 23 13 10.9 -0.1**
comp=Z,3.8nm,0.5s,baz=37,slow=6.5
NOA NORSAR Array B 71.83 337 P **P 23 13 10.8 -0.1**
comp=Z,5.8nm,0.7s,baz=38,slow=6.1,SNR=26
NOA LR LR 23 49 52.0
comp=Z,41nm,18.0s,baz=45,slow=40
NBO02 NORSAR Array S 71.93 337 *e*P **P 23 13 11.4 -0.2**
BOZ Bozeman (W) 72.37 45 *e*P **P 23 13 15.9 +1.2**
BOZ pmax pmax
comp=Z,3.0nm,1.0s
BOZ Bozeman (W) 72.37 45 *e*P **P 23 13 15.9 +1.2**
comp=Z,2.8nm,1.0s
AKASG Malin Array Be 72.42 322 P **P 23 13 14.4 -0.2**
comp=Z,10nm,0.5s,baz=44,slow=6.2,SNR=39
AKASG LR LR 23 48 29.0
comp=Z,46nm,19.4s,baz=40,slow=39
AKASG Malin Array Be 72.42 322 *ce*P **P 23 13 14.3 -0.4**
AKASG pmax pmax
comp=Z,11nm,0.5s
KIEV Kiev 72.44 322⇑ *i*P **P 23 13 14.5 -0.3**
KIEV pmax pmax
comp=Z,16nm,1.0s
KIEV Kiev 72.44 322 *e*P **P 23 13 14.4 -0.3**
comp=Z,16nm,1.0s
AK11 Malin Array Si 72.47 322 *e*P **P 23 13 14.8 -0.2**
NVAR Mina Array Bea 72.93 54 P **P 23 13 19.1 +0.9**
comp=Z,0.3nm,0.3s,baz=315,slow=8.9,SNR=3.8
BW06 Boulder Array 75.37 46 *e*P **P 23 13 32.4 +0.1**
PD31 Pinedale Array 75.37 46 *e*P **P 23 13 33.0 +0.6**
PDAR Pinedale Array 75.37 46 P **P 23 13 32.7 +0.3**
comp=Z,1.8nm,0.6s,baz=253,slow=2.2,SNR=21
LVV L'vov 75.44 324 *e*P **P 23 13 32.7 +0.4**
PRAR RASCA 76.15 321⇑ *i*P **P 23 13 36.6 +0.2**
KWP Kalwaria Pacla 76.18 324 *e*P **P 23 13 37.3 +0.7**
KWP Kalwaria Pacla 76.18 324⇓ *i*P **P 23 13 37.6 +1.0**
KWP Kalwaria Pacla 76.18 324 *e*P **P 23 13 37.3 +0.7**
TLCR 76.36 318⇓ *i*P **P 23 13 38.1 +0.5**
BUR08 Bucovina Ar. S 76.44 322 *e*P **P 23 13 38.6 +0.4**
BURAR Bucovina Array 76.46 322⇑ *i*P **P 23 13 38.7 +0.4**
TESR Tescani 76.54 320⇑ *i*P **P 23 13 38.9 +0.3**
CFR Carcaliu 76.71 318⇓ *i*P **P 23 13 40.0 +0.4**
VRI Vrincioaia 76.95 320⇑ *i*P **P 23 13 41.4 +0.4**
STHS Stebnicka Huta 76.99 325 *e*P **P 23 13 41.9 +0.7**
STHS pmax pmax
comp=Z,4.0nm,0.7s
STHS Stebnicka Huta 76.99 325 *e*P **P 23 13 41.9 +0.7**
PLOR Plostina 77.00 320⇑ *i*P **P 23 13 41.5 +0.2**
OJC Ojcow 77.02 326 *e*P **P 23 13 42.1 +0.8**
OJC Ojcow 77.02 326 *e*P **P 23 13 41.9 +0.6**
OJC pmax pmax
comp=Z,21nm,1.1s
OJC Ojcow 77.02 326 *e*P **P 23 13 41.9 +0.6**
comp=Z,21nm,1.1s
TIRR Tirgusor 77.07 318⇓ *i*P **P 23 13 42.2 +0.6**
ARCR ARCALIA 77.25 322⇑ *i*P **P 23 13 43.9 +1.3**
CRVS Cervenica-Dubn 77.27 324 *e*P **P 23 13 42.9 +0.2**
CRVS *e* 23 13 47.2
CRVS Cervenica-Dubn 77.27 324 *e*P **P 23 13 42.9 +0.2**
CRVS *e* 23 13 47.2
BR131 Keskin Array S 77.40 311 *e*P **P 23 13 44.2 +0.4**
BRTR Keskin Array B 77.40 311 P **P 23 13 44.0 +0.2**
comp=Z,1.1nm,0.5s,baz=117,slow=3.3,SNR=10
BRTR LR LR 23 52 25.4
comp=Z,20nm,18.3s,baz=34,slow=39
DOPR Dopca 77.54 320⇓ *i*P **P 23 13 45.6 +1.3**
ISR Istrita 77.56 319⇓ *i*P **P 23 13 45.8 +1.3**
MLR Muntele Rosu 77.60 320⇑ *i*P **P 23 13 45.2 +0.4**
MLR Muntele Rosu 77.60 320 *e*P **P 23 13 45.4 +0.6**
MLR pmax pmax
comp=Z,13nm,1.3s
MLR Muntele Rosu 77.60 320 *e*P **P 23 13 45.4 +0.6**
comp=Z,13nm,1.3s
MSAB Monastry St. A 77.63 318⇓ *i*P **P 23 13 45.7 +0.9**
BR231 Keskin MP Arra 77.82 312 *e*P **P 23 13 44.3 -1.8**
KSP Ksiaz 78.02 328 *e*P **P 23 13 47.4 +0.6**
KSP Ksiaz 78.02 328 *e*P **P 23 13 47.4 +0.6**
OKC Ostrava-Krasne 78.02 327⇑ *e*P **P 23 13 47.5 +0.7**
OKC Ostrava-Krasne 78.02 327 *e*P **P 23 13 47.5 +0.7**
SULR 78.02 319⇓ *i*P **P 23 13 47.8 +0.9**
VOIR 78.08 320⇓ *i*P **P 23 13 48.1 +0.7**
RAO Raoul Island 78.14 145 *e*P **P 23 13 48.3 +0.7**
RAO pmax pmax
comp=Z,82nm,0.2s
RAO Raoul Island 78.14 145 *e*P **P 23 13 48.3 +0.7**
comp=Z,82nm,0.2s
DRGR 78.24 322⇑ *i*P **P 23 13 48.9 +0.7**
MORC Moravsky Berou 78.32 327⇑ *i*P **P 23 13 49.2 +0.6**
MORC Moravsky Berou 78.32 327 *e*P **P 23 13 49.2 +0.6**
MORC pmax pmax
comp=Z,36nm,0.9s
MORC Moravsky Berou 78.32 327 *e*P **P 23 13 49.2 +0.6**
comp=Z,36nm,0.9s
ARR Arges 78.34 320⇑ *i*P **P 23 13 50.1 +1.3**
DPC Dobruska-Polom 78.38 328 *e*P **P 23 13 49.9 +1.0**
DPC *e*PCP **PcP 23 13 57.7 -0.4**
DPC Dobruska-Polom 78.38 328 *e*P **P 23 13 49.9 +1.0**
DPC *e* 23 13 57.7
UPC Upice 78.39 328⇑ *e*P **P 23 13 49.8 +0.9**
UPC Upice 78.39 328 *e*P **P 23 13 49.8 +0.9**
KRLC Kraliky 78.41 328⇑ *e*P **P 23 13 49.7 +0.6**
KRLC Kraliky 78.41 328 *e*P **P 23 13 49.7 +0.6**
PSZ Piszkesteto 78.70 325⇑ *i*P **P 23 13 51.2 +0.4**
PSZ Piszkesteto 78.70 325 *e*P **P 23 13 51.4 +0.7**
PSZ pmax pmax
comp=Z,6.0nm,0.8s
PSZ Piszkesteto 78.70 325 *e*P **P 23 13 51.4 +0.7**
comp=Z,6.3nm,0.8s
LOT Lotru 78.70 321⇓ *i*P **P 23 13 50.1 -0.8**
HUMR Humele 78.77 320⇑ *i*P **P 23 13 49.5 -1.6**
BRG Berggiesshubel 78.93 329 *e*P **P 23 13 51.9 +0.1**
comp=Z,5.6nm,0.9s
BRG Berggiesshubel 78.93 329 *e*P **P 23 13 51.9 +0.1**
BRG pmax pmax
comp=Z,6.0nm,1.0s
CLL Collm 78.95 330⇑ *i*P **P 23 13 51.9 0.0**
comp=Z,8.0nm,0.9s
CLL *e* 23 14 00.0
CLL Collm 78.95 330⇑ *i*P **P 23 13 51.9 0.0**
CLL *e* 23 14 00.0
CLL pmax pmax
comp=Z,8.0nm,0.9s
CLL Collm 78.95 330 *e*P **P 23 13 51.5 -0.5**
comp=Z,8.9nm,0.9s
PVCC Panska Ves 78.95 329⇑ *e*P **P 23 13 53.0 +1.0**
PVCC Panska Ves 78.95 329 *e*P **P 23 13 53.0 +1.0**
VRAC Vranov 79.07 327⇑ *i*P **P 23 13 53.6 +0.9**
GZR Gura Zlata 79.22 321⇓ *i*P **P 23 13 53.8 +0.1**
GOPC GO Pecny, Ondr 79.34 328 *e*P **P 23 13 54.8 +0.6**
GOPC GO Pecny, Ondr 79.34 328 *e*P **P 23 13 54.8 +0.6**
PRU Pruhonice 79.39 329⇑ *e*P **P 23 13 54.8 +0.4**
PRU Pruhonice 79.39 329 *e*P **P 23 13 54.8 +0.4**
TREC Trest 79.54 328⇑ *e*P **P 23 13 55.6 +0.3**
TREC Trest 79.54 328 *e*P **P 23 13 55.6 +0.3**
BZS Buzias 79.61 322⇑ *i*P **P 23 13 55.8 +0.1**
NKC Novy Kostel 80.02 330⇑ *e*P **P 23 13 58.5 +0.7**
NKC Novy Kostel 80.02 330 *e*P **P 23 13 58.5 +0.7**
S22A 4UR Ranch, Cre 80.28 49 *e*P **P 23 13 59.4 -0.5**
comp=Z,12nm,1.1s
KHC Kasperske Hory 80.45 329⇑ *e*P **P 23 14 00.8 +0.6**
KHC *e*PCP **PcP 23 14 09.1 +2.0**
KHC *e*pP **sP 23 14 19.2 -1.5**
KHC Kasperske Hory 80.45 329 *e*P **P 23 14 00.8 +0.6**
KHC *e* 23 14 09.1
KHC *e* 23 14 19.2
KHC Kasperske Hory 80.45 329 *e*P **P 23 14 00.7 +0.5**
comp=Z,3.7nm,0.9s
GERES GERESS Array B 80.62 328 P **P 23 14 01.2 0.0**
comp=Z,1.6nm,0.5s,baz=28,slow=6.0,SNR=18
GERES LR LR 23 52 12.2
comp=Z,82nm,18.1s,baz=314,slow=37
GEA0 GERESS Array S 80.63 328 *e*P **P 23 14 01.1 -0.2**
RAR Rarotonga 81.39 127 LR LR 23 42 50.3
comp=Z,52nm,20.6s,baz=288,slow=30
ECSD EROS Data Cent 81.43 39 *e*P **P 23 14 05.3 -0.2**
comp=Z,2.7nm,0.8s
SOKA Soboth 81.78 326 *i* P **P 23 14 07.4 0.0**
comp=Z,13nm,1.1s
OBKA Obir 82.12 326 *i* P **P 23 14 08.9 -0.2**
comp=Z,4.8nm,0.7s
MYKA Terra Mystica 82.41 327 *i* P **P 23 14 10.2 -0.4**
comp=Z,3.7nm,0.5s
ANMO Albuquerque 82.42 50 *ce*P **P 23 14 11.9 +0.8**
ANMO pmax pmax
comp=Z,6.0nm,2.5s
MOTA Moosalm 82.87 329 *i* P **P 23 14 13.2 0.0**
comp=Z,6.5nm,0.8s
RETA Reutte 82.89 329 *i* P **P 23 14 12.9 -0.2**
comp=Z,9.1nm,1.0s
PDG Podgorica 83.13 321⇑ *i*P **P 23 14 14.5 +0.2**
BFO Black Forest 83.13 331 *i* P **P 23 14 15.1 +0.8**
DAVA Damuels 83.40 329 *i* P **P 23 14 15.9 0.0**
comp=Z,7.8nm,0.8s
FUORN Ofenpass-Fuorn 83.79 329 *e*P **P 23 14 18.8 +0.8**
comp=Z,15nm,0.8s
PPT Papeete 85.43 117 LR LR 23 43 25.8
comp=Z,36nm,21.4s,baz=184,slow=29
TXAR Lajitas Array 88.03 53 P **P 23 14 39.2 +0.1**
comp=Z,0.5nm,0.6s,baz=292,slow=3.5,SNR=6.2
ESDC Sonseca Array 95.02 334 P **P 23 15 10.7 -0.6**
comp=Z,0.5nm,0.6s,baz=17,slow=4.4,SNR=6.4
ESDC LR LR 00 03 10.5
comp=Z,38nm,19.3s,baz=345,slow=39
TORD Torodi Ar. Bea 115.71 316 PKP **PKPdf 23 20 30.4 -0.7**
comp=Z,0.5nm,0.8s,baz=352,slow=2.0,SNR=3.5
SNAA Sanae 143.55 198 PKP PKPab 23 21 18.3 -0.1
SNAA Sanae 143.55 198 *e*PKIKP PKPab 23 21 18.5 +0.1
SNAA Sanae 143.55 198 *e*PKPdf PKPab 23 21 18.5 +0.2
LPAZ La Paz 144.80 57 PKP **PKPab 23 21 25.2 -0.1**
comp=Z,1.0nm,0.5s,baz=45,slow=7.5,SNR=7.8
VNA3 Neumayer Olymp 145.37 196 PKP **PKPdf 23 21 24.2 -0.7**

IDC 27 23:08:57.7±8.6, 36°.44N×143°.44E, h0km, mb3.5/2, mb1 3.6/3, mb1mx3.3/39, mbtmp3.4/3, ML3.1/1, Error ellipse: s-maj=189.6km s-min=45.8km az=33.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**4.22**	**273**	Pn	Pn	23 10 02.8	-0.4
	1.1nm,0.3s,baz=90,slow=15,SNR=6.8						
WRA	**Warramunga Arr**	**56.73**	**190**	P	P	23 18 42.6	-0.7
	0.3nm,0.4s,baz=8.2,slow=7.1,SNR=6.7						
ASAR	**Alice Springs**	**60.46**	**190**	P	P	23 19 09.7	+0.5
	0.1nm,0.3s,baz=6.7,slow=7.3,SNR=3.4						

*IDC **27** 23:09:57.6±4.0, 9°.88S×107°.69E, h0km, mb3.7/4, mb1 3.8/4, mb1mx3.4/35, mbtmp3.7/4, Error ellipse: s-maj=196.3km s-min=25.9km az=54.0*
*DJA **27** 23:09:57.9±0.5, 10°.S±5°×10°.8E±°, h10km, M4.2/13, mb4.3/2, MLv4.1/13*
*ISCJB **27** 23:09:58.8±1.1, 9°.76S±0°.09×107°.79E±0°.09, h23km, mb3.6/4, Error ellipse: s-maj=16.7km s-min=7.7km az=44.9*

ISC 27 23:10:00.8±1.2, 9°.8S±0°.1×107°.71E±0°.10, h23km, n14, σ0s99/14, mb3.7/4, South of Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMJI	**Cimerak**	**2.10**	**20**	P	**Pn**	23 10 33.6	-0.9
CISI	**Cisompet, Garu**	**2.19**	**3**	P	**Pn**	23 10 34.9	-1.0
CNJI	**Cibinong**	**2.50**	**347**	P	**Pn**	23 10 39.8	-0.3
CNJI				S	**Sn**	23 11 10.1	+0.1
LEM	**Lembang**	**2.92**	**358**	P	**Pb**	23 10 52.1	-0.2
SKJI	**Sukabumi**	**2.97**	**337**	P	**Pn**	23 10 45.7	-0.8
CGJI	**Cibinong**	**3.71**	**327**	P	**Pn**	23 10 55.1	-1.7
PCJI	**Pacitan**	**3.76**	**66**	P	Pn	23 10 54.1	-3.3
PWJI	**Pagerwojo**	**4.40**	**67**	P	**Pn**	23 11 05.3	-0.9
GMJI	**Gumukmas**	**5.85**	**76**	P	**Pn**	23 11 25.9	-0.3
	25nm,1.0s,0.1nm						
JAGI	**Jajag, Banyuwa**	**6.49**	**79**	P	**Pn**	23 11 33.8	-1.1
ASAR	**Alice Springs**	**28.57**	**122**	P	**P**	23 15 55.6	+0.3
	0.3nm,0.5s,baz=294,slow=9.7,SNR=4.1						
STKA	**Stephens Creek**	**38.30**	**130**	P	**P**	23 17 19.0	-0.8
	0.5nm,0.5s,baz=282,slow=9.1,SNR=3.1						
SONM	**Songino Array**	**57.35**	**359**	P	**P**	23 19 48.1	+0.9
	0.5nm,0.6s,baz=174,slow=6.9,SNR=3.6						
MKAR	**Makanchi Array**	**60.71**	**340**	P	**P**	23 20 11.7	+1.3
	0.4nm,0.4s,baz=147,slow=7.9,SNR=5.3						

*NEIC **27** 23:17:24.3, 34°.23N×117°.05W, h2km, ML3.8(PAS), After PAS.*
NEIC Felt [III] at Running Springs and [II] at Angelus Oaks, Big Bear City, Big Bear Lake, Cedar Glen, Highland, Lake Arrowhead, Redlands, Riverside and San Bernardino. Also felt at Camarillo, Colton, Crestline, Irvine, Joshua Tree, Loma Linda, Mentone, Palm Springs, Temecula and Yucaipa.
*IDC **27** 23:17:30.1±3.5, 34°.37N×116°.75W, h20km±18km, mb3.2/2, mb1 3.6/5, mb1mx3.4/33, mbtmp3.2/5, ML3.1/2, MS3.0/3, Ms1 3.0/3, ms1mx2.7/9, Error ellipse: s-maj=40.0km s-min=14.9km az=46.0*

ISC 27 23:17:24.5±0.9, 34°.22N±0°.02×117°.03W±0°.02, h8km±6km, n96, σ1s39/125, Southern California

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BBRC	**Big Bear Solar**	**0.09**	**66**	P	**Pg**	23 17 27.1	+0.1
	baz=249,SNR=1000						
BBRC				S	**Sg**	23 17 29.1	+0.2
	baz=249						
BFSC	**Mount Baldy Ra**	**0.53**	**272**	P	**Pg**	23 17 34.4	-0.3
	baz=92,SNR=1000						
BFSC				S	**Sg**	23 17 41.2	-0.5
	baz=92						
SSK	**Sunset Peak**	**0.55**	**269**	*e*Pg	**Pg**	23 17 35.0	-0.2
MURC	**Murrieta**	**0.64**	**193**	P	**Pg**	23 17 36.6	-0.2
	baz=11,SNR=240						
MURC				S	**Sg**	23 17 45.1	0.0
	baz=11						
RRX	**Edison Barstow**	**0.65**	**2**	P	**Pg**	23 17 37.2	+0.1
	baz=184,SNR=53						
RRX				S	**Sb**	23 17 46.5	-0.9
	baz=184						
PFO	**Pinyon Flats O**	**0.77**	**142**	*e*Pg	**Pg**	23 17 39.4	0.0
TPFO	**Pinon Flats**	**0.78**	**142**	P	**Pg**	23 17 39.5	0.0
	baz=321,SNR=461						
TPFO				S	**Sg**	23 17 50.1	+0.5
	baz=321						
HEC	**Hector,Ludlow**	**0.83**	**43**	P	**Pg**	23 17 40.8	+0.3
	baz=224,SNR=900						
HEC				S	**Sb**	23 17 52.6	+0.1
	baz=224						
MWC	**Mount Wilson**	**0.86**	**270**	*e*Pg	**Pg**	23 17 40.4	-0.6
BELC	**Belle Mtn. Jos**	**0.88**	**104**	P	**Pb**	23 17 41.8	-0.3
	baz=284,SNR=749						
BELC				S	**Sb**	23 17 53.9	-0.1
	baz=284						
PASC	**Pasadena Art C**	**0.96**	**267**	*e*Pg	**Pg**	23 17 42.1	-0.9
EDW2	**Edwards Air Fo**	**1.03**	**310**	P	**Pg**	23 17 43.6	-0.8
	baz=130,SNR=754						
EDW2				S	**Sg**	23 17 57.3	-0.5
	baz=130						
DECC	**Green Verdugo**	**1.08**	**272**	P	**Pg**	23 17 44.5	-0.8
	baz=91,SNR=104						
GSC	**Goldstone, Bar**	**1.09**	**9**	P	**Pg**	23 17 45.1	-0.3
	baz=191,SNR=459						
GSC				S	**Sb**	23 18 00.2	+0.1
	baz=191						
GSC	**Goldstone, Bar**	**1.09**	**9**	*e*Pn	**Pg**	23 17 45.2	-0.3
FMP	**Fort Macarthur**	**1.17**	**245**	P	**Pb**	23 17 45.8	-1.2
	baz=63,SNR=7.9						
FMP				S	**Sb**	23 18 01.4	-0.8
	baz=63						
GMRC	**Granite Mounta**	**1.26**	**63**	P	**Pn**	23 17 48.2	-0.3
	baz=244,SNR=1000						
GMRC				S	**Sn**	23 18 05.5	-0.1
	baz=244						
109C	**Camp Elliot, M**	**1.33**	**183**	P	**Pn**	23 17 48.4	-1.0
	baz=1.9,SNR=62						
109C				S	**Sb**	23 18 05.6	-1.3
	baz=1.9						
LRMC	**Laurel Mtn Rad**	**1.36**	**337**	P	**Pn**	23 17 49.7	-0.3
	baz=157,SNR=70						
LRMC				S	**Sg**	23 18 08.6	+0.1
	baz=157						
CIS	**Catalina Islan**	**1.42**	**235**	P	**Pn**	23 17 50.2	-0.4
	baz=54,SNR=45						
CIS				S	**Sn**	23 18 08.7	-0.7
	baz=54						
MONP2	**Monument Peak**	**1.42**	**159**	P	**Pn**	23 17 50.9	+0.1
	baz=339,SNR=226						
MONP2				S	**Sb**	23 18 09.8	+0.1
	baz=339						
BC3	**Big Chuckawall**	**1.42**	**113**	P	**Pn**	23 17 50.7	0.0
	baz=294,SNR=128						
BC3				S	**Sg**	23 18 10.0	-0.3
	baz=294						
WSHM	**Spangler Hills**	**1.43**	**344**	*e*Pn	**Pb**	23 17 51.0	-0.4
OSI	**Osito Audit: C**	**1.46**	**286**	P	**Pn**	23 17 51.2	+0.1
	baz=105,SNR=132						
OSI	**Osito Audit: C**	**1.46**	**286**	*e*Pn	**Pb**	23 17 51.4	-0.4
TUQ	**Turquoise Moun**	**1.51**	**37**	P	**Pn**	23 17 51.7	-0.2
	baz=218,SNR=120						
IRM	**Iron Mountain**	**1.56**	**92**	P	**Pn**	23 17 52.4	-0.1
	baz=273,SNR=360						
BAR	**Barrett**	**1.57**	**169**	*e*Pn	**Pn**	23 17 52.4	-0.2
SWSC	**Sam W. Stewart**	**1.64**	**141**	P	**Pn**	23 17 53.1	-0.4
	baz=321,SNR=135						
BLG	**Laguna Peak, P**	**1.70**	**267**	P	**Pn**	23 17 54.1	-0.3
	baz=86,SNR=22						
ARVC	**Arvin**	**1.74**	**302**	P	**Pn**	23 17 54.9	-0.1
	baz=121,SNR=157						
ARVC				Sb	**Sg**	23 18 20.0	-0.4
	baz=121						
IKP	**In-Ko-Pah, Jac**	**1.75**	**154**	P	**Pn**	23 17 55.3	+0.2
	baz=334,SNR=80						
IKP				Sb	**Sg**	23 18 20.1	-0.6
	baz=334						
SHOC	**Shoshone, Teco**	**1.78**	**20**	P	**Pn**	23 17 55.7	+0.1
	baz=201,SNR=436						
SHOC				Sb	**Sg**	23 18 22.2	+0.4
	baz=201						
LDFC	**Landfair**	**1.79**	**61**	*e*Pn	**Pg**	23 17 58.5	-0.4
ISA	**Isabella, Lake**	**1.86**	**321**	P	**Pn**	23 17 56.6	-0.1
	baz=141,SNR=201						
ISA	**Isabella, Lake**	**1.86**	**321**	*e*Pn	**Pn**	23 17 56.8	0.0
MPMC	**Manual Prospec**	**1.87**	**348**	P	**Pn**	23 17 57.0	+0.1
	baz=169,SNR=308						
MPMC				Sb	**Sg**	23 18 24.4	-0.2
	baz=169						
NEE2	**Needles Airpor**	**2.06**	**74**	Pb	**Pb**	23 18 02.7	+0.6
	baz=255,SNR=27						
NEE2				Sb	**Sg**	23 18 30.0	-0.7
	baz=255						
DAC	**Darwin (Calif)**	**2.10**	**347**	*e*Pn	**Pn**	23 18 00.8	+0.6
DAC				*i* Pg	**Pg**	23 18 04.3	-0.5
DAC				*e*Sg	**Sg**	23 18 32.4	+0.3
Y12C	**Blythe**	**2.13**	**102**	P	**Pn**	23 18 00.4	0.0
	baz=283,SNR=99						
Y12C				S	**Sn**	23 18 26.6	-0.3
	baz=283						
Y12C	**Blythe**	**2.13**	**102**	*e*Pn	**Pn**	23 18 00.3	-0.1
GLA	**Glamis**	**2.17**	**122**	P	**Pn**	23 18 01.1	+0.1
	baz=303,SNR=12						
GLA	**Glamis**	**2.17**	**122**	*e*Pn	**Pn**	23 18 01.5	+0.5
FURC	**Furnace Creek,**	**2.24**	**3**	Pg	**Pg**	23 18 07.6	+0.1
	baz=184						
VES	**Vestal, Richgr**	**2.34**	**314**	P	**Pn**	23 18 03.4	+0.3
	baz=134,SNR=74						
PDMCI	**Parker Dam,Lak**	**2.39**	**87**	P	**Pn**	23 18 04.5	+0.6
	baz=269,SNR=41						
PKM	**Mcpherson Peak**	**2.40**	**287**	P	**Pn**	23 18 05.0	+0.8
	baz=106,SNR=79						
W13A	**Hualapai Mount**	**2.73**	**70**	*e*Pn	**Pn**	23 18 09.0	+0.2
SHPR	**Sheep Range**	**2.74**	**33**	*e*Pn	**Pn**	23 18 09.8	+0.9
GRAC	**Grapevine Rang**	**2.78**	**354**	Pg	**Pg**	23 18 17.2	-0.6
	baz=175,SNR=19						
TPNV	**Topopah Spring**	**2.79**	**13**	P	**Pn**	23 18 10.4	+0.8
	baz=194,SNR=29						
TPNV	**Topopah Spring**	**2.79**	**13**	*e*Pn	**Pn**	23 18 10.5	+0.8
TIN	**Tinemaha, Big**	**2.99**	**341**	Pg	**Pg**	23 18 21.2	-0.6
	baz=161,SNR=11						
113A	**Mohawk Valley,**	**3.08**	**117**	*e*Pn	**Pn**	23 18 12.8	-0.7
Y14A	**Wickenburg**	**3.35**	**94**	*e*Pn	**Pn**	23 18 17.8	+0.6
LCMT	**Little Creek M**	**4.15**	**47**	*e*Pn	**Pn**	23 18 30.0	+1.7
214A	**Organ Pipe Nat**	**4.20**	**121**	*e*Pn	**Pn**	23 18 29.4	+0.5
214A				*e*Pg	**Pg**	23 18 45.2	+0.3
214A				*e*Sn	**Sn**	23 19 19.5	+1.5
214A				*e*Sg	**Sg**	23 19 39.6	+0.2
R11A	**Troy Canyon, C**	**4.28**	**15**	*e*Pg	**Pg**	23 18 45.0	-1.5
NV11	**Mina Array Sit**	**4.30**	**348**	*e*Pn	**Pn**	23 18 32.9	+2.6
NV01	**Mina Array Sit**	**4.32**	**347**	*e*Pn	**Pn**	23 18 33.4	+2.7
NVAR	**Mina Array Bea**	**4.32**	**347**	Pn	**Pn**	23 18 33.2	+2.5
	0.5nm,0.3s,baz=164,slow=14,SNR=12						
NVAR				Pg	**Pg**	23 18 45.6	-1.7
	7.5nm,0.3s,baz=162,slow=15,SNR=50						
NVAR				Lg	Lg	23 19 43.2	
	baz=162,slow=30,SNR=2.3						
NVAR				LR	LR	23 20 28.2	
	comp=Z,221nm,18.4s,baz=224,slow=42						
SAO	**San Andreas Ge**	**4.41**	**306**	*e*Pn	**Pn**	23 18 32.3	+0.6
KNB	**Kanab**	**4.41**	**50**	*e*Pn	**Pn**	23 18 33.4	+1.5
U15A	**North Rim**	**4.45**	**59**	*e*Pn	**Pn**	23 18 34.2	+1.7
CCUT	**Cedar City**	**4.46**	**41**	*e*Pn	**Pn**	23 18 34.7	+2.2
X16A	**Lo Mia Camp, P**	**4.62**	**86**	*e*Pn	**Pn**	23 18 36.4	+1.6
CMB	**Columbia Colle**	**4.68**	**325**	*e*Pn	**Pn**	23 18 37.1	+1.7
WUAZ	**Wupatki**	**4.82**	**73**	*e*Pn	**Pn**	23 18 37.3	-0.2
WUAZ				*e*Sg	**Sg**	23 19 59.2	-0.1
PSUT	**Pine Spring**	**5.00**	**30**	*e*Pg	**Pg**	23 18 58.6	-1.8
TUC	**Tucson**	**5.56**	**108**	*e*Pn	**Pn**	23 18 51.3	+3.6
AFDM	**Forest Hills D**	**5.68**	**327**	*

NLU	**North Lily Min**	**6.95**	**33**	*e*Pg	**Pg**	**23 19 37.2**	**-0.4**
NLU				*e*Sn	**Sn**	**23 20 26.3**	**+0.1**
ELU	**Electric Lake**	**7.14**	**39**	*e*Pn	**Pn**	**23 19 07.2**	**-2.3**
BGU	**Big Grassy Mou**	**7.40**	**24**	*e*Pg	**Pg**	**23 19 45.1**	**-1.1**
PV05	**Paradox Valley**	**7.47**	**57**	*e*Pg	**Pg**	**23 19 44.1**	**-3.5**
PV10	**Paradox Valley**	**7.66**	**55**	*e*Sg	**Sg**	**23 21 26.9**	**-3.5**
JLU	**Jordanelle**	**7.76**	**33**	*e*Pg	**Pg**	**23 19 53.6**	**+0.5**
PV04	**Paradox Valley**	**7.76**	**55**	*e*Pn	**Pn**	**23 19 19.2**	**+1.3**
PV04				*e*Sg	**Sg**	**23 21 31.4**	**-2.2**
PV01	**Paradox Valley**	**7.87**	**58**	*e*Pn	**Pn**	**23 19 18.8**	**-0.7**
PV01				*e*Pg	**Pg**	**23 19 50.6**	**-4.6**
PV01				*e*Sg	**Sg**	**23 21 32.9**	**-4.2**
121A	**Cookes Peak, D**	**7.91**	**100**	*e*Pn	**Pn**	**23 19 21.6**	**+1.6**
SPUT	**South Promonto**	**7.95**	**26**	*e*Pg	**Pg**	**23 19 57.4**	**+0.8**
YBH	**Yreka Blue Hor**	**8.73**	**331**	LR	LR	23 22 43.3	
	comp=Z,50nm,21.9s,baz=176,slow=36						
BW06	**Boulder Array**	**10.34**	**32**	*e*Pn	Pn	23 19 58.1	+4.9
PDAR	**Pinedale Array**	**10.34**	**32**	Pn	**Pn**	**23 19 57.5**	**+4.3**
	baz=202,slow=12,SNR=4.9						
TXAR	**Lajitas Array**	**12.36**	**110**	Pn	**Pn**	**23 20 24.2**	**+3.3**
	0.0nm,0.3s,baz=294,slow=13,SNR=2.3						
ULM	**Lac du Bonnet**	**22.28**	**38**	LR	LR	23 32 06.3	
	comp=Z,56nm,19.4s,baz=125,slow=40						
YKA	**Yellowknife Ar**	**28.33**	**2**	P	**P**	**23 23 20.3**	**+1.8**
	0.2nm,0.6s,baz=180,slow=9.1,SNR=3.7						
ILAR	**Eielson Array**	**35.53**	**338**	P	P	23 24 26.2	+4.7
	0.1nm,0.5s,baz=152,slow=7.4,SNR=4.7						

MEX 27 23:52:44.8±0.5, 16°.18N×97°.16W, h15km±5km, MD3.6, Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PANG	**Puerto Angel**	**0.84**	**128**	*i* P	Pb	23 52 42.0	-19
PANG				*i* S	Sg	23 52 53.0	-19
PNIG	**Pinotepa**	**0.95**	**283**	*i* P	Pb	23 52 59.8	-3.2
PNIG				*i* S	Sb	23 53 11.6	-3.9
OXBJ	**Oaxaca**	**0.97**	**25**	*i* P	Pb	23 53 00.3	-3.3
OXBJ				*i* S	Sb	23 53 11.6	-4.7
VHO	**Vista Hermosa**	**0.98**	**25**	*e*P	Pb	23 53 00.6	-3.0
VHO				*i* S	Sb	23 53 12.2	-4.2
HUIG	**Huatulco**	**1.09**	**112**	*e*P	Pb	23 53 02.0	-3.4
HUIG				*i* S	Sb	23 53 14.7	-4.8
TLIG	**Tlapa**	**1.92**	**316**	*i* P	Pn	23 53 14.0	-3.1
TLIG				*i* S	Sn	23 53 37.2	-3.9

*ISCJB **28** 00:01:33.7±0.6, 39°.07N±0°.05×29°.06E±0°.05, h9km, Error ellipse: s-maj=7.3km s-min=4.2km az=149.0*
*CSEM **28** 00:01:33.7±0.1, 39°.08N×29°.06E, h5km, MD2.5, Error ellipse: s-maj=4.0km s-min=2.6km az=130.0*
*DDA **28** 00:01:33.6, 39°.04N×29°.06E, h7km, Md2.5*
*ISK **28** 00:01:34.8, 39°.22N×29°.08E, h5km, MD2.6*
ISC 28 00:01:33.9±1.0, 39°.08N±0°.03×29°.06E±0°.03, h9km, n16, σ0°31/24, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**262**	P	**Pg**	**00 01 39.5**	**+0.2**
DEMI				S	**Sg**	**00 01 43.3**	**+0.3**
DEMI	**Demirci**	**0.27**	**262**	*i* P	**Pg**	**00 01 39.5**	**+0.2**
DEMI				*i* S	**Sg**	**00 01 43.3**	**+0.3**
GDZ	**Gediz**	**0.33**	**89**	P	**Pg**	**00 01 40.2**	**-0.3**
GDZ				S	**Sg**	**00 01 45.6**	**+0.7**
GDZ	**Gediz**	**0.33**	**89**	*i* P	**Pg**	**00 01 40.2**	**-0.3**
GDZ				*i* S	**Sg**	**00 01 45.6**	**+0.7**
TVSB	**Tavsanli**	**0.48**	**40**	*e*PG	**Pg**	**00 01 43.4**	**+0.1**
TVSB				*e*SG	**Sg**	**00 01 49.6**	**-0.1**
TVSB	**Tavsanli**	**0.48**	**40**	*e*Pg	**Pg**	**00 01 43.4**	**+0.1**
TVSB				*e*Sg	**Sg**	**00 01 49.6**	**-0.1**
MANT	**Manisa**	**0.71**	**214**	P	**Pg**	**00 01 47.5**	**-0.1**
MANT				S	**Sg**	**00 01 56.6**	**-0.3**
MANT	**Manisa**	**0.71**	**214**	*i* P	**Pg**	**00 01 47.5**	**-0.1**
MANT				*i* S	**Sg**	**00 01 56.6**	**-0.3**
ORLT	**Orhaneli**	**0.97**	**353**	*e*PG	**Pg**	**00 01 52.3**	**-0.3**
ORLT	**Orhaneli**	**0.97**	**353**	*e*Pg	**Pg**	**00 01 52.3**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.29**	**354**	*e*PN	**Pn**	**00 01 57.9**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.29**	**354**	*e*Pn	**Pn**	**00 01 57.9**	**-0.2**
KCTX	**Karacabey (Bur**	**1.30**	**336**	*e*PN	**Pg**	**00 01 58.7**	**-0.1**
KCTX	**Karacabey (Bur**	**1.30**	**336**	*e*Pn	**Pg**	**00 01 58.7**	**-0.1**
ARMT	**Armutlu**	**1.49**	**354**	*e*PN	**Pb**	**00 02 01.9**	**+0.2**
ARMT	**Armutlu**	**1.49**	**354**	*e*Pn	**Pb**	**00 02 01.9**	**+0.2**

*ISCJB **28** 00:03:02.7±0.9, 6°.13N±0°.06×126°.8E±0°.1, h119km±7km, mb3.9/11, Error ellipse: s-maj=17.6km s-min=10.5km az=175.7*
*MAN **28** 00:03:02, 6°.32N×127°.03E, h108km, mb4.7, ML3.6, MS3.6*
*IDC **28** 00:03:04.3±2.0, 6°.15N×126°.78E, h118km±16km, mb3.6/11, mb1 3.7/12, mb1mx3.5/42, mbtmp4.0/12, Error ellipse: s-maj=42.0km s-min=13.8km az=70.0*
ISC 28 00:03:03.0±1.3, 6°.15N±0°.07×126°.9E±0°.1, h109km±9km, n21, σ1°43/28, mb3.9/11, 2C-2D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MATI	**Mati**	**1.00**	**323**	*e*P	**Pn**	**00 03 24.0**	**-0.1**
MATI				*e*S	**Sn**	**00 03 40.4**	**+0.3**
DAV	**Davao City (W)**	**1.57**	**306**	P	**Pn**	**00 03 30.4**	**-0.2**
	50nm,0.3s,baz=218,slow=8.1,SNR=3.4						
DAV				S	**Sn**	**00 03 52.7**	**+1.1**
	81nm,0.3s,baz=52,slow=8.9,SNR=5.7						
DMPH	**Davao City--Mi**	**1.64**	**305⇑**	*e*P	**Pn**	**00 03 31.3**	**-0.1**
DMPH				*e*S	**Sn**	**00 03 57.0**	**+3.9**
GSPH	**General Santos**	**1.91**	**268⇑**	*i*P	**Pn**	**00 03 34.4**	**-0.4**
GSPH				*i* S	**Sn**	**00 03 57.5**	**-1.7**
BIPH	**Bislig**	**2.09**	**346⇓**	*e*P	**Pn**	**00 03 37.3**	**+0.3**
BIPH				*i* S	**Sn**	**00 03 59.1**	**-4.0**
BUKP	**Musuan**	**2.48**	**314**	*e*P	**Pn**	**00 03 43.1**	**+0.9**
BUKP				*e*S	**Sn**	**00 04 13.0**	**+0.6**
CTBH	**Cotabato--PC H**	**2.81**	**292**	⇓*i*P	**Sn**	**00 04 18.6**	**-1.4**
CGP	**Cagayan de Oro**	**3.15**	**317**	*e*S	**Sn**	**00 04 26.4**	**-1.5**
KAPI	**Kappang**	**13.16**	**213**	P	**Pn**	**00 06 05.0**	**-0.8**
	0.7nm,0.3s,baz=14,slow=7.6,SNR=5.2						
WRA	**Warramunga Arr**	**26.95**	**164**	P	**P**	**00 08 35.6**	**+1.3**
	0.6nm,0.4s,baz=345,slow=10,SNR=7.1						
ASAR	**Alice Springs**	**30.42**	**167**	P	**P**	**00 09 06.1**	**+0.9**
	0.4nm,0.3s,baz=341,slow=7.3,SNR=9.7						
SONM	**Songino Array**	**45.07**	**341**	P	**P**	**00 11 09.6**	**+1.4**
	0.6nm,0.6s,baz=159,slow=6.4,SNR=3.5						
MKAR	**Makanchi Array**	**55.67**	**324**	P	**P**	**00 12 28.4**	**+0.5**
	3.8nm,0.4s,baz=116,slow=7.6,SNR=68						
MKAR				PcP	**PcP**	**00 13 25.7**	**-0.4**
	0.7nm,0.6s,baz=121,slow=4.4,SNR=4.1						
ZALV	**Zalesovo Beam**	**58.52**	**332**	P	**P**	**00 12 47.6**	**-0.2**
	1.1nm,0.3s,baz=132,slow=8.0,SNR=4.5						
NRIK	**Noril'sk**	**68.13**	**346**	P	**P**	**00 13 50.2**	**-0.7**
	1.4nm,0.5s,baz=135,slow=4.5,SNR=5.3						
GEYT	**Alibeck**	**69.51**	**308**	P	**P**	**00 14 00.8**	**+0.7**
	0.7nm,0.6s,baz=163,slow=11,SNR=4.4						
ILAR	**Eielson Array**	**82.88**	**26**	P	**P**	**00 15 15.9**	**+0.7**
	0.2nm,0.5s,baz=260,slow=4.5,SNR=2.7						
ARCES	**ARCESS Array B**	**88.24**	**340**	P	**P**	**00 15 41.1**	**-0.6**
	1.7nm,1.0s,baz=79,slow=6.3,SNR=8.2						
BRTR	**Keskin Array B**	**88.59**	**310**	P	**P**	**00 15 43.4**	**-0.7**
	1.0nm,1.0s,baz=94,slow=3.7,SNR=4.3						
FINES	**FINESS Array B**	**89.78**	**332**	P	**P**	**00 15 48.3**	**-0.7**
	1.0nm,0.6s,baz=62,slow=4.5,SNR=4.3						
TORD	**Torodi Ar. Bea**	**122.27**	**290**	PKP	**PKPdf**	**00 21 45.5**	**-0.6**
	0.7nm,1.0s,baz=14,slow=1.2,SNR=4.5						

*NIED **28** 00:10:00, 38°.80N×144°.00E, h5km, Mw4.4 Best double couple: M0=5.08000×10^15 NP1:φs=9.00000°, δ32.00000°, λ-72.00000°. NP2:φs=168.00000°, δ60.00000°, λ-101.00000°.*
*JMA **28** 00:10:05.2±0.1, 38°.75N×144°.01E, h44km, M4.5*
*ISCJB **28** 00:10:05.8±0.2, 38°.76N±0°.03×143°.95E±0°.02, h29km, mb4.7/115, MS3.6/20, Error ellipse: s-maj=3.7km s-min=2.3km az=163.7*
*MOS **28** 00:10:05.4±0.9, 38°.73N×143°.97E, h27km, mb4.7/45, Error ellipse: s-maj=7.5km s-min=5.4km az=100.3*
*NEIC **28** 00:10:06.8±1.0, 38°.67N×144°.03E, h27km±7km, mb4.7/60, Error ellipse: s-maj=4.0km s-min=2.6km az=135.0*
*IDC **28** 00:10:07.1±4.7, 38°.68N×143°.99E, h29km±33km, mb4.1/24, mb1 4.3/31, mb1mx4.2/47, mbtmp4.3/31, ML3.9/6, MS3.5/22, Ms1 3.6/22, ms1mx3.4/49, Error ellipse: s-maj=15.0km s-min=11.9km az=114.0*
ISC 28 00:10:07.5±0.4, 38°.76N±0°.04×144°.11E±0°.04, h32km±2km,

h32km:pP-P, n305, σ1°55/351, mb4.7/115, MS3.6/22, 26C-12D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**1.93**	**280**	P	**Pn**	**00 10 35.6**	**-2.4**
OFUJ				S	**Sn**	**00 10 57.4**	**-3.8**
MIYJ	**Miyakonagasawa**	**1.96**	**295**	P	**Pn**	**00 10 35.8**	**-2.6**
MIYJ				S	**Sn**	**00 10 58.2**	**-3.7**
JMK	**Ichinoseki**	**2.26**	**276**	P	**Pn**	**00 10 40.5**	**-2.1**
JMK				S	**Sn**	**00 11 06.5**	**-2.9**
JOM	**Ohasama**	**2.30**	**289**	P	**Pn**	**00 10 41.1**	**-2.1**
JOM				S	**Sn**	**00 11 07.7**	**-2.7**
JANG	**Nango**	**2.57**	**310**	P	**Pn**	**00 10 44.0**	**-2.9**
JOU	**Okura**	**2.73**	**263**	P	**Pn**	**00 10 46.8**	**-2.2**
JOU				S	**Sn**	**00 11 17.8**	**-3.1**
JRG	**Rokugo**	**2.78**	**284**	P	**Pn**	**00 10 48.0**	**-1.7**
JRG				*e*S	**Sn**	**00 11 20.2**	**-1.9**
JYK	**Kaneyama**	**2.93**	**274**	P	**Pn**	**00 10 50.1**	**-1.7**
JYK				*e*S	**Sn**	**00 11 23.7**	**-2.2**
JAH	**Hinai**	**3.04**	**299**	P	**Pn**	**00 10 51.6**	**-1.7**
JAH				*e*S	**Sn**	**00 11 26.1**	**-2.5**
JTM	**Tenmabayashi**	**3.10**	**312**	P	**Pn**	**00 10 51.6**	**-2.5**
JTM				S	**Sn**	**00 11 25.9**	**-4.1**
JFT	**Otama**	**3.22**	**249**	P	**Pn**	**00 10 54.0**	**-1.8**
JFT				*e*S	**Sn**	**00 11 29.6**	**-3.4**
ERM	**Erimo**	**3.33**	**348**	*ce*P	**Pn**	**00 10 57.1**	**-0.2**
ERM				pmax	pmax		
	comp=Z,50nm,1.0s						
ERM	**Erimo**	**3.33**	**348**	*e*Pn	**Pn**	**00 10 57.4**	**+0.1**
JOT	**Ohata**	**3.52**	**319**	P	**Pn**	**00 10 58.1**	**-1.8**
JOT				*e*S	**Sn**	**00 11 36.3**	**-4.0**
JNBK	**Urakawa-nobuka**	**3.67**	**344**	P	**Pn**	**00 11 00.3**	**-1.6**
JNBK				*e*S	**Sn**	**00 11 41.6**	**-2.4**
JAW	**Awa shima**	**3.82**	**267**	P	**Pn**	**00 11 02.5**	**-1.5**
JNS	**Sasagawa**	**3.88**	**258**	P	**Pn**	**00 11 03.1**	**-1.8**
JNS				*e*S	**Sn**	**00 11 47.0**	**-2.4**
JCH	**Churui**	**3.89**	**352**	P	**Pn**	**00 11 03.0**	**-2.0**
JCH				*e*S	**Sn**	**00 11 44.2**	**-5.4**
JKB	**Kayabe**	**3.91**	**324**	P	**Pn**	**00 11 04.1**	**-1.1**
JKB				*e*S	**Sn**	**00 11 45.6**	**-4.4**
NEM2	**Nemuro 2**	**4.77**	**15**	P	**Pn**	**00 11 13.4**	**-3.6**
NEM2				S	**Sn**	**00 12 04.9**	**-6.2**
JOSM	**Okushiri--Mats**	**4.85**	**315**	P	**Pn**	**00 11 16.4**	**-1.7**
JRY	**Ryogami san**	**4.97**	**238**	P	**Pn**	**00 11 17.3**	**-2.5**
MJAR	**Matsushiro Arr**	**5.18**	**247**	Pn	**Pn**	**00 11 21.2**	**-1.5**
	comp=Z,22nm,0.3s,baz=61,slow=11,SNR=101						
MJAR				LR	LR	00 13 39.9	
	comp=Z,699nm,19.3s,baz=80,slow=42						
MAJO	**Matsushiro**	**5.18**	**247**	*e*P	**Pn**	**00 11 21.9**	**-0.8**
MAJO	**Matsushiro**	**5.18**	**247**	*e*Pn	**Pn**	**00 11 21.8**	**-0.8**
MAT	**Matsushiro**	**5.18**	**247**	P	**Pn**	**00 11 21.8**	**-0.9**
MAT				S	**Sn**	**00 12 21.4**	**+0.1**
MJB9	**Matsu-Tunnel**	**5.18**	**247**	*e*Pn	**Pn**	**00 11 21.9**	**-0.8**
ASAJ	**Asahikawa**	**5.47**	**349**	*e*Pn	**Pn**	**00 11 25.9**	**-0.8**
INU	**Inuyama**	**6.61**	**241**	*e*Pn	**Pn**	**00 11 40.6**	**-1.8**
JHJ2	**Mitsune**	**6.62**	**213**	*e*Pn	**Pn**	**00 11 39.8**	**-2.7**
JHJ	**Hachijo jima 2**	**6.63**	**213**	Pn	**Pn**	**00 11 39.8**	**-2.9**
	comp=Z,55nm,0.3s,baz=318,slow=21,SNR=13						
JHJ				Sn	Sn	00 12 46.8	-10
	comp=Z,32nm,0.3s,baz=107,slow=20,SNR=3.9						
KUR	**Kuril'sk**	**7.05**	**22**	*c i*P	**Pn**	**00 11 44.3**	**-4.0**
KUR				*e*S	**Sn**	**00 13 03.3**	**-4.0**
KUR				pmax	pmax		
	comp=N,35nm,0.5s						
KUR				pmax	pmax		
	comp=Z,58nm,0.5s						
KUR				smax	smax		
	comp=N,56nm,0.5s						
KUR				smax	smax		
	comp=E,106nm,0.5s						
YSS	**Yuzh-Sakhalins**	**8.25**	**354⇑**	*e*P	**Pn**	**00 12 04.3**	**-0.5**
YSS				*e*S	**Sn**	**00 13 35.5**	**-1.4**
YSS				MLR	MLR		
	comp=Z,400nm,12.0s						
YSS	**Yuzh-Sakhalins**	**8.25**	**354**	*e*Pn	**Pn**	**00 12 06.0**	**+1.2**
VLA	**Vladivostok**	**10.22**	**299**	*α i*P	**Pn**	**00 12 35.0**	**+3.2**
VLA				*e*S	**Sn**	**00 14 29.0**	**+3.8**
VLA				pmax	pmax		
	comp=Z,38nm,1.0s						
USRK	**Ussuriysk Ar.**	**10.59**	**305**	Pn	**Pn**	**00 12 36.0**	**-0.8**
	comp=Z,0.6nm,0.3s,baz=112,slow=13,SNR=12						
USRK				LR	LR	00 16 29.9	
	comp=Z,275nm,18.8s,baz=116,slow=36						
CBIJ	**Chichi jima**	**11.74**	**188**	*e*Pn	**Pn**	**00 12 50.4**	**-2.4**
JNU	**Nakatsue**	**12.10**	**246**	Pn	**Pn**	**00 12 55.0**	**-2.6**
	comp=Z,0.5nm,0.3s,baz=38,slow=12,SNR=6.4						
JNU				LR	LR	00 17 51.9	
	comp=Z,518nm,20.4s,baz=66,slow=39						
JNU	**Nakatsue**	**12.10**	**246**	*e*Pn	**Pn**	**00 12 55.2**	**-2.4**
TYV	**Tymovskoe**	**12.15**	**356**	*e*P	**Pn**	**00 12 56.2**	**-1.9**
TYV				pmax	pmax		
	comp=Z,11nm,0.8s						
TYV				MLR	MLR		
	comp=N,500nm,18.0s						
TYV				MLR	MLR		
	comp=Z,500nm,18.0s						
MDJ	**Mudanjiang**	**12.32**	**303**	P	**Pn**	**00 13 02.3**	**+1.7**
MDJ				S	**Sn**	**00 15 22.0**	**+5.3**
MDJ				ScP	**ScP**	**00 22 14.0**	**+2.7**
MDJ				pmax	pmax		
	comp=Z,33nm,1.0s						
MDJ				pmax	pmax		
	comp=Z,68nm,4.7s						
MDJ				LR	LR		
	comp=N,330nm,18.2s						
MDJ				LR	LR		
	comp=E,340nm,18.2s						
MDJ				LR	LR		
	comp=Z,310nm,19.9s						
MDJ	**Mudanjiang**	**12.32**	**303**	*e*Pn	**Pn**	**00 13 00.8**	**+0.2**
	comp=Z,28nm,0.8s						
KSRS	**Korea Array**	**12.82**	**269**	Pn	**Pn**	**00 13 07.3**	**-0.1**
	comp=Z,0.5nm,0.3s,baz=76,slow=13,SNR=19						
KSRS				LR	LR	00 17 36.7	
	comp=Z,370nm,19.6s,baz=62,slow=35						
KS01	**Wonju Array Si**	**12.84**	**269**	*e*Pn	**Pn**	**00 13 07.8**	**+0.1**
KS15	**Wonju Array Si**	**12.85**	**269**	*e*Pn	**Pn**	**00 13 07.4**	**-0.4**
KSAR	**Wonju Array Be**	**12.85**	**269**	P	**Pn**	**00 13 07.3**	**-0.5**
KSAR	**Wonju Array Be**	**12.85**	**269**	Pn	**Pn**	**00 13 07.3**	**-0.5**
TJN	**Taejon**	**13.49**	**265**	*i* P	**Pn**	**00 13 16.0**	**-0.6**
KLR	**Kul'dur**	**13.72**	**324**	Pn	**Pn**	**00 13 19.0**	**-0.6**
	comp=Z,0.2nm,0.3s,baz=122,slow=13,SNR=5.8						
KLR				LR	LR	00 19 13.5	
	comp=Z,126nm,19.0s,baz=120,slow=40						
CN2	**Changchun**	**14.90**	**296**	*e*P	**Pn**	**00 13 35.3**	**-0.4**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.6s						
PEA0	**Petropavlovsk-**	**17.14**	**29**	*e*Pn	**P**	**00 14 06.2**	**+0.4**
PETK	**Petropavlovsk-**	**17.14**	**29**	P	**P**	**00 14 05.6**	**-0.2**
	comp=Z,0.3nm,0.3s,baz=182,slow=13,SNR=5.1						
PETK				LR	LR	00 22 56.3	
	comp=Z,90nm,18.1s,baz=219,slow=45						
PET	**Petropavlovsk**	**17.44**	**30**	*e*P	**P**	**00 14 08.8**	**-0.3**
PET				pmax	pmax		
	comp=Z,22nm,0.9s						
PET	**Petropavlovsk**	**17.44**	**30**	*e*Pn	**P**	**00 14 08.8**	**-0.3**
	comp=Z,22nm,0.9s						
DL2	**Dalian**	**17.51**	**278**	P	**Pn**	**00 14 08.8**	**-0.3**
DL2				S	**Sn**	**00 17 17.5**	**-5.5**
DL2				pmax	pmax		
	comp=Z,22nm,0.5s						
DL2				LR	LR		
	comp=E,440nm,13.9s						
DL2				LR	LR		
	comp=Z,570nm,14.1s						
MA2	**Magadan**	**21.27**	**9**	P	**P**	**00 14 51.3**	**+0.5**
	comp=Z,4.6nm,0.5s,baz=211,slow=9.1,SNR=5.2						
MA2				LR	LR	00 25 21.4	
	comp=Z,98nm,18.0s,baz=208,slow=43						
BJI	**Beijing**	**21.59**	**282**	P	**P**	**00 14 53.0**	**-1.4**
BJI				S	**S**	**00 18 52.5**	**+0.6**
BJI				pmax	pmax		
	comp=Z,10.0nm,0.8s						
BJI				LR	LR		
	comp=N,150nm,7.0s						
BJI				LR	LR		
	comp=E,420nm,15.9s						
BJT	**Baijiatuau**	**21.60**	**282**	*e*P	**P**	**00 14 54.2**	**-0.3**
BJT				pmax	pmax		
	comp=Z,20nm,0.7s						
BJT	**Baijiatuau**	**21.60**	**282**	*e*P	**P**	**00 14 54.2**	**-0.3**
	comp=Z,20nm,0.7s						
CLNS	**Chul'man**	**22.09**	**331**	*e*P	**P**	**00 14 59.1**	**-0.5**
CLNS				pmax	pmax		
	comp=N,6.0nm,0.9s						
CLNS				pmax	pmax		
	comp=Z,12nm,1.0s						
CLNS				pmax	pmax		
	comp=E,6.0nm,1.0s						
YOJ	**Yonaguni jima**	**22.86**	**238**	*e*P	**P**	**00 15 06.1**	**-2.0**
YOJ				pmax	pmax		
	comp=Z,960nm,1.7s						
YOJ	**Yonaguni jima**	**22.86**	**238**	*e*P	**P**	**00 15 06.1**	**-2.0**
	comp=Z,960nm,1.7s						
NACB	**Ninganchiao**	**24.00**	**239**	*e*P	**P**	**00 15 19.6**	**+0.4**
	comp=Z,64nm,0.9s						
SSLB	**Suanglung**	**24.69**	**240**	*e*P	**P**	**00 15 24.8**	**-0.8**
	comp=Z,194nm,1.9s						
SEY	**Seymchan**	**24.72**	**9**	P	**P**	**00 15 26.9**	**+1.5**
	comp=Z,16nm,0.8s,baz=192,slow=7.5,SNR=48						
SEY	**Seymchan**	**24.72**	**9**	*ce*P	**P**	**00 15 26.1**	**+0.6**
YULB	**Yu-li**	**24.73**	**238**	*e*P	**P**	**00 15 24.7**	**-1.3**
	comp=Z,146nm,1.9s						
YAK	**Yakutsk**	**24.93**	**344**	LR	LR	00 26 35.4	
	comp=Z,101nm,19.0s,baz=131,slow=40						
YAK	**Yakutsk**	**24.93**	**344**	*e*P	**sP**	**00 15 39.3**	**-1.3**
YAK				pmax	pmax		
	comp=Z,14nm,0.9s						
YAK				pmax	pmax		
	comp=N,6.0nm,1.1s						
SMY	**Shemya**	**24.94**	**46**	*e*P	**P**	**00 15 29.0**	**+1.4**
SMY				pmax	pmax		
	comp=Z,317nm,1.8s						
SMY	**Shemya**	**24.94**	**46**	*e*P	**P**	**00 15 29.0**	**+1.4**
	comp=Z,317nm,1.8s						
HHC	**Hu-ho-hao-te**	**25.01**	**285**	*e*P	**P**	**00 15 29.5**	**+1.0**
HHC				S	**S**	**00 19 48.8**	**-1.7**
HHC				pmax	pmax		
	comp=Z,17nm,0.9s						
HHC				pmax	pmax		
	comp=Z,180nm,4.2s						
HHC				LR	LR		
	comp=N,710nm,11.9s						
HHC				LR	LR		
	comp=E,810nm,13.1s						
HHC				LR	LR		
	comp=Z,810nm,12.6s						
GUMO	**Guam**	**25.08**	**178**	LR	LR	00 24 04.3	
	comp=Z,60nm,20.2s,baz=100,slow=34						
GUMO	**Guam**	**25.08**	**178**	*e*P	**P**	**00 15 27.8**	**-1.3**
GUMO				pmax	pmax		
	comp=Z,703nm,1.8s						
GUMO	**Guam**	**25.08**	**178**	*e*P	**P**	**00 15 27.8**	**-1.3**
	comp=Z,702nm,1.8s						
TPUB	**Ta-pu**	**25.24**	**239**	*e*P	**P**	**00 15 29.9**	**-0.6**
	comp=Z,108nm,1.5s						
TWG	**Pinlang**	**25.27**	**238**	*e*P	**P**	**00 15 30.8**	**-0.1**
	comp=Z,704nm,1.7s						
WHN	**Wuhan**	**25.73**	**261**	⇓P	P	00 15 47.3	+12
ULN	**Ulaanbaatar**	**28.23**	**301**	*ce*P	**P**	**00 15 56.8**	**-0.6**
ULN				pmax	pmax		
	comp=Z,13nm,2.5s						
ULN	**Ulaanbaatar**	**28.23**	**301**	*e*P	**P**	**00 15 58.1**	**+0.6**
	comp=Z,5.8nm,0.8s						
XAN	**Xi'an**	**28.60**	**271**	P	P	00 16 13.5	+13
XAN				pmax	pmax		
	comp=Z,13nm,0.9s						
SONA1	**Songino Array**	**28.66**	**301**	*e*P	**P**	**00 16 01.8**	**+0.5**
SONM	**Songino Array**	**28.66**	**301**	P	**P**	**00 16 01.6**	**+0.3**
	comp=Z,1.3nm,0.5s,baz=89,slow=7.8,SNR=8.5						
SONM				LR	LR	00 26 57.7	
	comp=Z,152nm,21.5s,baz=102,slow=35						
ENH	**Enshi**	**29.62**	**264**	*e*P	**P**	**00 16 09.8**	**0.0**
	comp=Z,13nm,0.5s						
ZAK	**Zakamensk**	**30.94**	**306**	*e*P	**P**	**00 16 18.8**	**-2.6**
ZAK				pmax	pmax		
	comp=Z,4.0nm,1.3s						
BILL	**Biiibino**	**31.78**	**16**	*d i*P	**P**	**00 16 28.6**	**+0.1**
BILL				*i* *PP	**pP**	**00 16 34.3**	**-3.5**
BILL				*i* *SP	**sP**	**00 16 42.3**	**+0.5**
BILL				pmax	pmax		
	comp=Z,22nm,1.0s						
BILL	**Biiibino**	**31.78**	**16**	*e*P	**P**	**00 16 28.9**	**+0.5**
	comp=Z,18nm,0.9s						
LZH	**Lanzhou**	**31.91**	**278**	*e*P	**P**	**00 16 34.0**	**+3.9**
LZH				pP	pP	00 16 41.3	+1.8
LZH				sP	sP	00 16 44.8	+1.4
LZH				pmax	pmax		
	comp=Z,14nm,1.0s						
GYA	**Guiyang**	**33.62**	**260**	*e*P	**P**	**00 16 45.5**	**+0.4**
GYA				pP	pP	00 16 53.3	-1.2
GYA				PP	**PnPn**	**00 17 58.8**	**+1.6**
GYA				PcP	**PcP**	**00 19 26.0**	**+1.1**
GYA				S	**S**	**00 22 04.5**	**-1.3**
GYA				sS	sS	00 22 19.5	-1.8
GYA				ScP	**ScP**	**00 23 07.8**	**+0.8**
GY

ZALV Zalesovo Beam 42.36 311 P **P 00 17 57.8 -0.5**
comp=Z,1.4nm,0.6s,baz=88,slow=7.7,SNR=6.3
ZALV PcP **PcP 00 19 50.5 -0.8**
comp=Z,4.3nm,0.7s,baz=89,slow=4.1,SNR=5.6
ZALV LR LR 00 35 33.2
comp=Z,47nm,19.6s,baz=70,slow=36
NRIK Noril'sk 42.62 334 P **P 00 17 59.8 -0.5**
comp=Z,1.2nm,0.5s,baz=114,slow=14,SNR=4.6
NRIK LR LR 00 37 13.1
comp=Z,58nm,19.3s,baz=121,slow=38
TT01 Tatalina 42.78 36 *e*P **P 00 18 02.6 +1.0**
TTA Tatalina 42.79 36 *e*P **P 00 18 03.5 +1.7**
TTA pmax pmax
comp=Z,5.0nm,1.0s
TTA Tatalina 42.79 36 *e*P **P 00 18 03.5 +1.7**
comp=Z,4.5nm,1.0s
LOEI Loei 42.82 253 P **P 00 18 00.1 -2.4**
comp=Z,48nm,0.7s
SVW2 Sparrevohn 42.85 38 *e*P **P 00 18 03.5 +1.2**
comp=Z,3.9nm,1.0s
FAKI Fak Fak 42.89 198 *e*P **P 00 18 02.9 -0.1**
comp=Z,27nm,1.2s
UTTA Uttaradit 43.21 254 P P 00 18 10.5 +4.9
comp=Z,3.4nm,0.9s
CHTO Chiang Mai 43.78 256 *e*P **P 00 18 10.6 +0.4**
CHTO pmax pmax
comp=Z,8.0nm,1.0s
CHTO Chiang Mai 43.78 256 *e*P **P 00 18 10.6 +0.4**
comp=Z,7.8nm,1.0s
CMAR Chiang Mai Arr 43.99 256 P **P 00 18 11.3 -0.6**
comp=Z,1.0nm,0.5s,baz=34,slow=9.1,SNR=6.7
CMAR PcP **PcP 00 19 57.9 +0.6**
comp=Z,0.8nm,0.5s,baz=20,slow=2.2,SNR=4.2
CMAR LR LR 00 38 34.9
comp=Z,43nm,18.7s,baz=40,slow=39
CM01 Chiang Mai Arr 44.00 256 *e*P **P 00 18 12.4 +0.4**
OHAK Old Harbor 44.04 44 *e*P **P 00 18 13.5 +1.7**
comp=Z,35nm,1.5s
RSO Redoubt South 44.23 39 *e*P **P 00 18 14.8 +1.2**
KDAK Kodiak Island 44.39 43 *i* P **P 00 18 15.2 +0.6**
KDAK Kodiak Island 44.39 43 *e*P **P 00 18 15.9 +1.3**
comp=Z,29nm,1.4s
PPLA Purkeypile 44.53 36 *e*P **P 00 18 16.9 +1.0**
comp=Z,23nm,1.4s
SPU Mount Spurr 44.57 38 *e*P **P 00 18 17.0 +0.9**
CAST Castle Rocks 44.60 35 *e*P **P 00 18 18.2 +1.9**
comp=Z,4.5nm,0.9s
HOM Homer 44.80 40 *e*P **P 00 18 18.8 +0.9**
comp=Z,255nm,0.2s
MK01 Makanchi Array 45.03 301 *e*P **P 00 18 19.5 -0.5**
MK31 Makanchi Array 45.03 301 *e*P **P 00 18 19.9 -0.1**
MK31 Makanchi Array 45.03 301 *e*P **P 00 18 19.9 -0.1**
MKAR Makanchi Array 45.03 301 P **P 00 18 19.9 -0.1**
comp=Z,2.3nm,0.7s,baz=84,slow=9.6,SNR=22
MKAR PcP **PcP 00 20 00.8 +0.3**
comp=Z,1.7nm,0.8s,baz=73,slow=5.0,SNR=3.0
MKAR LR LR 00 37 41.5
comp=Z,98nm,20.6s,baz=72,slow=37
BPAW Bear Paw Mtn. 45.11 34 *e*P **P 00 18 21.9 +1.5**
comp=Z,4.9nm,1.1s
KTH Kantishna Hill 45.12 35 *e*P **P 00 18 21.4 +0.9**
comp=Z,12nm,1.2s
BRLK Bradley Lake 45.18 40 *e*P **P 00 18 22.1 +1.2**
comp=Z,46nm,1.8s
SUA Susitna One 45.20 38 *e*P **P 00 18 22.4 +1.2**
comp=Z,7.1nm,0.9s
MAKZ Makanchi 45.24 301 *e*P **P 00 18 21.6 0.0**
MAKZ pmax pmax
comp=Z,10.0nm,1.1s
MAKZ Makanchi 45.24 301 *e*P **P 00 18 21.6 0.0**
comp=Z,9.9nm,1.1s
MLY Manley 45.25 33 *e*P **P 00 18 23.1 +1.6**
comp=Z,6.3nm,0.8s
TRF Thorofare Moun 45.41 35 *e*P **P 00 18 24.2 +1.4**
comp=Z,15nm,1.6s
COLD Coldfoot 45.61 30 *e*P **P 00 18 25.7 +1.5**
comp=Z,4.5nm,1.0s
TARA Tarawa 45.61 138 *e*P **P 00 18 24.1 -0.7**
comp=Z,136nm,1.4s
BWN Browne 45.78 34 *e*P **P 00 18 27.4 +1.8**
comp=Z,20nm,1.0s
SEW Seward 45.88 40 *e*P **P 00 18 28.9 +2.5**
comp=Z,14nm,1.0s
JOHN Johnston Islan 45.94 105 *e*P **P 00 18 27.8 +0.4**
comp=Z,371nm,1.3s
PMR Palmer 45.97 38 *e*P **P 00 18 27.7 +0.6**
PMR pmax pmax
comp=Z,6.0nm,0.8s
PMR Palmer 45.97 38 *e*P **P 00 18 27.7 +0.6**
comp=Z,5.8nm,0.8s
MCK McKinley 46.01 35 *e*P **P 00 18 28.7 +1.2**
MCK pmax pmax
comp=Z,21nm,1.7s
MCK McKinley 46.01 35 *e*P **P 00 18 28.7 +1.2**
comp=Z,21nm,1.7s
RND Reindeer 46.05 35 *e*P **P 00 18 28.5 +0.7**
RND pmax pmax
comp=Z,6.0nm,1.0s
RND Reindeer 46.05 35 *e*P **P 00 18 28.5 +0.7**
comp=Z,5.7nm,1.0s
MDM Murphy Dome 46.32 33 *e*P **P 00 18 31.1 +1.3**
comp=Z,8.5nm,0.8s
WRH Wood River Hil 46.38 34 *e*P **P 00 18 31.2 +0.9**
comp=Z,3.7nm,0.7s
SBUM Sibu 46.39 227 *e*P **P 00 18 30.7 -0.2**
comp=Z,27nm,1.5s
KURK Kurchatov 46.57 307 *e*P **P 00 18 31.5 -0.5**
KURK pmax pmax
comp=Z,8.0nm,0.7s
KURK Kurchatov 46.57 307 *e*P **P 00 18 31.5 -0.5**
comp=Z,7.9nm,0.7s
IL1 Eielson Array 46.89 33 *e*P **P 00 18 34.4 +0.1**
ILAR Eielson Array 46.89 33 P **P 00 18 34.9 +0.6**
comp=Z,5.2nm,0.7s,baz=262,slow=6.7,SNR=65
ILB Eielson Array 46.89 33 *e*P **P 00 18 34.9 +0.6**
FYU Fort Yukon 47.55 31 *e*P **P 00 18 41.8 +2.4**
comp=Z,38nm,1.8s
DOT Dot Lake 48.18 35 *e*P **P 00 18 44.7 +0.2**
comp=Z,14nm,1.2s
GUN Gumba 49.11 276 *e*P **P 00 18 52.6 +0.2**
EGAK Eagle 49.34 33 *e*P **P 00 18 53.9 +0.6**
KKN Kakani 49.63 276 *e*P **P 00 18 56.1 -0.1**
comp=Z,18nm,0.7s
DMN Daman 49.85 276 *e*P **P 00 18 58.7 +0.7**
comp=Z,4.3nm,0.4s
GKN Gorkha 50.03 276 *e*P **P 00 18 58.9 -0.3**
comp=Z,16nm,0.8s
TKM2 Tokmak 2 50.70 298 *e*P **P 00 19 04.8 +0.7**
TKM2 pmax pmax
comp=Z,18nm,0.8s
TKM2 Tokmak 2 50.70 298 *e*P **P 00 19 04.8 +0.7**
comp=Z,18nm,0.8s
KOLN Koldanda 50.95 277 *e*P **P 00 19 07.1 +0.9**
comp=Z,5.5nm,0.4s
BRVK Borovoye 51.06 312 *ce*P **P 00 19 06.0 -0.4**
BRVK pmax pmax
comp=Z,5.0nm,1.7s
BRVK Borovoye 51.06 312 *e*P **P 00 19 06.2 -0.1**
comp=Z,4.0nm,0.8s
PYUN Piuthan 51.26 277 *e*P **P 00 19 09.1 +0.6**
comp=Z,8.9nm,0.4s
AAK Ala-Archa 51.56 298 *i* P **P 00 19 08.2 -2.3**
AAK pmax pmax
comp=Z,11nm,2.8s
KSH Kashi 51.66 294 *e*P **P 00 19 14.5 +3.2**
KSH *es*P sP 00 19 25.0 +0.2
KSH PcS **PcS 00 24 24.0 +1.3**
KSH S **S 00 26 33.5 +3.1**
KSH ScS **ScS 00 28 59.5 +0.3**
KSH pmax pmax
comp=Z,81nm,6.5s
KSH LR LR
comp=N,100nm,8.3s
KSH LR LR
comp=E,110nm,5.7s
KSH LR LR
comp=Z,97nm,8.5s
ZRNK Zerenda 51.83 312 *e*P **P 00 19 12.5 +0.3**
ZRNK pmax pmax
comp=Z,5.0nm,0.6s
ZRNK Zerenda 51.83 312 *e*P **P 00 19 12.5 +0.3**
comp=Z,5.2nm,0.6s
INK Inuvik 51.88 28 P **P 00 19 13.3 +1.0**
comp=Z,5.8nm,0.6s,baz=300,slow=5.1,SNR=14
INK Inuvik 51.88 28 *e*P **P 00 19 13.7 +1.4**
INK pmax pmax
comp=Z,6.0nm,0.7s

INK Inuvik 51.88 28 *e*P **P 00 19 13.7 +1.4**
comp=Z,6.3nm,0.7s
EKS2 Erkin-Say 52.04 298 *e*P **P 00 19 14.6 +0.5**
EKS2 pmax pmax
comp=Z,5.0nm,1.0s
EKS2 Erkin-Say 52.04 298 *e*P **P 00 19 14.6 +0.5**
comp=Z,5.2nm,1.0s
KKAR Karatay Array 54.11 300 *e*P **P 00 19 29.3 +0.1**
KKAR *e* 00 19 38.5
KKAR pmax pmax
comp=Z,1.0nm,0.5s
KKAR Karatay Array 54.11 300 *e*P **P 00 19 29.3 +0.1**
comp=Z,0.7nm,0.5s
KKAR *e* 00 19 38.5
SVE Sverdlovsk 55.27 318 *e*P **P 00 19 38.2 +0.9**
SVE pmax pmax
comp=Z,15nm,0.8s
ARU Arti 56.49 318 *d i*P **P 00 19 46.1 +0.1**
ARU 00 20 40.9
ARU 00 21 48.7
ARU S **S 00 27 37.9 +3.0**
ARU pmax pmax
comp=Z,9.0nm,0.7s
ARU Arti 56.49 318 *e*P **P 00 19 46.1 +0.1**
comp=Z,8.7nm,0.7s
ABKAR Akbulak array 58.46 310 *e*P **P 00 20 00.0 0.0**
WRAB Tennant Creek 59.09 191 *ce*P **P 00 20 02.6 -2.1**
WRAB pmax pmax
comp=Z,44nm,2.5s
WB2 Warramunga Arr 59.10 191 *e*P **P 00 20 03.5 -1.2**
comp=Z,8.8nm,0.8s
WRA Warramunga Arr 59.10 191 P **P 00 20 03.2 -1.5**
comp=Z,5.7nm,0.8s,baz=12,slow=7.4,SNR=30
AKTO Aktyubinsk 59.11 312 LR LR 00 46 51.0
comp=Z,29nm,18.4s,slow=37
YKA Yellowknife Ar 61.24 31 P **P 00 20 19.3 +0.4**
comp=Z,0.9nm,0.8s,baz=298,slow=6.5,SNR=12
YKB5 Yellowknife Ar 61.24 31 *e*P **P 00 20 19.4 +0.5**
TMCR Tamitsa 62.25 332 *e*P **P 00 20 25.5 -0.2**
TMCR pmax pmax
comp=Z,15nm,0.9s
AS01 Alice Springs 62.82 190 *e*P **P 00 20 28.7 -1.2**
ASAR Alice Springs 62.83 191 P **P 00 20 29.3 -0.7**
comp=Z,2.0nm,0.8s,baz=12,slow=7.2,SNR=17
ARCES ARCESS Array B 63.13 340 P **P 00 20 30.9 -0.5**
comp=Z,1.4nm,0.7s,baz=51,slow=9.6,SNR=8.8
ARCES ARCESS Array B 63.13 340 P **P 00 20 31.0 -0.5**
ARCES pmax pmax
comp=Z,2.0nm,0.8s
KLMR Klimovskoe 63.43 328 *e*P **P 00 20 32.5 -1.1**
KLMR *e**SP **pP 00 20 44.7 +1.2**
KLMR pmax pmax
comp=Z,6.0nm,0.8s
DZM Mont Dzumac 64.03 157 P **P 00 20 38.4 +0.4**
comp=Z,5.7nm,0.9s,baz=69,slow=11,SNR=3.5
GEYT Alibeck 64.86 299 P **P 00 20 42.5 -0.9**
comp=Z,2.1nm,0.8s,baz=329,slow=1.7,SNR=5.0
GEYT LR LR 00 50 41.7
comp=Z,33nm,18.4s,baz=185,slow=38
MOS Moscow 67.12 324 *e*P **sP 00 21 14.5 +3.1**
MOS pmax pmax
comp=Z,30nm,1.2s
OBN Obninsk 67.98 324⇓ *e*P **P 00 21 03.0 0.0**
OBN *i* 00 21 13.5
OBN *e* 00 23 33.5
OBN pmax pmax
comp=Z,15nm,1.1s
OBN MLR MLR
comp=Z,63nm,15.0s
FINES FINESS Array B 68.27 333 P **P 00 21 04.8 0.0**
comp=Z,5.1nm,0.8s,baz=42,slow=6.1,SNR=17
FINES LR LR 00 55 03.5
comp=Z,57nm,18.3s,baz=59,slow=40
VSU Vasula 70.03 330 *ce*P **P 00 21 15.6 -0.1**
VSU pmax pmax
comp=Z,99nm,2.5s
STKA Stephens Creek 70.31 182 LR LR 00 55 01.1
comp=Z,32nm,18.9s,baz=201,slow=38
FFC Flin Flon 71.09 34 *e*P **P 00 21 22.8 +0.5**
FFC pmax pmax
comp=Z,5.0nm,0.8s
FFC Flin Flon 71.09 34 *e*P **P 00 21 22.8 +0.5**
comp=Z,4.9nm,0.8s
NCK Nalchik 71.11 311 *i* P **P 00 21 22.9 +0.3**
NCK pmax pmax
comp=Z,10.0nm,1.2s
ZEI Tsey 71.34 310 *e*P **P 00 21 22.7 -1.5**
ZEI pmax pmax
comp=Z,6.0nm,0.5s
KIV Kislovodsk 71.37 312⇓ *e*P **P 00 21 24.9 +0.6**
KIV *e**PP **pP 00 21 35.7 +1.4**
KIV *i* *SP **sP 00 21 37.9 -0.2**
KIV *i* 00 21 47.5
KIV pmax pmax
comp=Z,21nm,1.0s
KIV Kislovodsk 71.37 312 *e*P **P 00 21 25.1 +0.8**
comp=Z,16nm,0.9s
KBZ Khabaz 71.38 311 P **P 00 21 25.2 +1.0**
comp=Z,8.1nm,0.9s,baz=58,slow=6.4,SNR=16
NV01 Mina Array Sit 72.25 55 *e*P **P 00 21 30.9 +1.1**
NVAR Mina Array Bea 72.25 55 P **P 00 21 31.4 +1.6**
comp=Z,1.7nm,0.7s,baz=287,slow=7.3,SNR=9.3
NVAR LR LR 00 51 57.3
comp=Z,44nm,19.4s,baz=256,slow=35
GNI Garni 72.37 307 *ce*P **P 00 21 31.3 +0.9**
GNI pmax pmax
comp=Z,21nm,1.2s
AKH Akhalkalaki 72.39 309⇑ *i*P **P 00 21 32.0 +1.5**
NACGM Naroch 72.44 327 *e* **P 00 21 30.0 -0.3**
CHVG Ch'k'valeri 72.46 311⇑ *i*P **P 00 21 31.7 +1.0**
WSAR Wadi Sarin 72.46 286 LR LR 00 56 35.6
comp=Z,28nm,18.6s,slow=38
NC405 NORSAR Array S 73.20 338 *e*P **P 00 21 35.1 +0.4**
NC204 NORSAR Array S 73.34 338 *e*P **P 00 21 36.1 +0.4**
NB2 NORSAR Subarra 73.40 338 P sP 00 21 48.1 -1.8
comp=Z,2.6nm,0.7s,baz=36,slow=6.2
NOA NORSAR Array B 73.40 338 P **P 00 21 36.1 +0.2**
comp=Z,5.5nm,0.8s,baz=38,slow=5.8,SNR=22
NOA LR LR 00 58 21.6
comp=Z,21nm,18.8s,baz=35,slow=39
NOA NORSAR Array B 73.40 338 P **P 00 21 36.2 +0.2**
NOA pmax pmax
comp=Z,5.0nm,0.8s
NOA MLR MLR
comp=Z,21nm,18.8s
NBO02 NORSAR Array S 73.50 338 *e*P **P 00 21 36.4 -0.2**
DAC Darwin (Calif) 73.97 56 *e*P **P 00 21 40.6 +0.6**
DAC *e* 00 21 56.4
DAC Darwin (Calif) 73.97 56 *e*P **P 00 21 40.6 +0.6**
DAC *e*PcP **PcP 00 21 56.4 +1.2**
R11A Troy Canyon, C 74.02 54 *e*P **P 00 21 41.6 +1.4**
comp=Z,3.2nm,0.8s
AKASG Malin Array Be 74.22 323 P **P 00 21 40.5 -0.4**
comp=Z,4.6nm,0.7s,baz=43,slow=6.1,SNR=18
AKASG Malin Array Be 74.22 323 P **P 00 21 40.5 -0.4**
AKASG pmax pmax
comp=Z,4.0nm,0.6s
KIEV Kiev 74.23 323⇑ *e*P **P 00 21 41.0 +0.1**
KIEV pmax pmax
comp=Z,8.0nm,1.0s
KIEV Kiev 74.23 323 *e*P **P 00 21 40.4 -0.6**
comp=Z,9.5nm,1.0s
TPNV Topopah Spring 74.44 55 *e*P **P 00 21 44.2 +1.5**
TPNV pmax pmax
comp=Z,19nm,0.6s
TPNV Topopah Spring 74.44 55 *e*P **P 00 21 44.2 +1.5**
comp=Z,19nm,0.6s
DUG Dugway, Tooele 74.62 51 *e*P **P 00 21 45.3 +1.7**
DUG pmax pmax
comp=Z,9.0nm,1.5s
DUG Dugway, Tooele 74.62 51 *e*P **P 00 21 45.3 +1.7**
comp=Z,9.2nm,1.5s
PASC Pasadena Art C 74.83 58 *e*P **P 00 21 43.7 -1.1**
comp=Z,111nm,1.0s
PDAR Pinedale Array 74.94 47 P **P 00 21 46.1 +0.6**
comp=Z,0.7nm,0.7s,baz=267,slow=2.5,SNR=6.6
SORM Soroca 76.39 322⇓ *i*P **P 00 21 53.0 -0.4**
SRU San Rafael Swe 76.67 50 *e*P **P 00 21 56.9 +1.4**
SRU pmax pmax
comp=Z,3.0nm,0.7s
SRU San Rafael Swe 76.67 50 *e*P **P 00 21 56.9 +1.4**
comp=Z,3.3nm,0.7s
Y12C Blythe 77.50 57 *e*P **P 00 21 59.1 -0.9**
comp=Z,52nm,0.9s
KWP Kalwaria Pacla 77.95 325 *e*P **P 00 22 03.4 +1.2**
KWP Kalwaria Pacla 77.95 325⇓ *i*P **P 00 22 03.0 +0.8**

KWP Kalwaria Pacla 77.95 325 *e*P **P 00 22 03.4 +1.2**
BUR08 Bucovina Ar. S 78.24 323 *e*P **P 00 22 04.7 +0.7**
BURAR Bucovina Array 78.26 323⇑ *i*P **P 00 22 04.6 +0.6**
TESR Tescani 78.35 321⇑ *i*P **P 00 22 04.6 +0.1**
CFR Carcaliu 78.55 320⇓ *i*P **P 00 22 05.6 +0.1**
KOLS Kolonicke sedl 78.65 325 *e*P **P 00 22 06.7 +0.6**
KOLS *e* 00 22 18.9
KOLS pmax pmax
comp=Z,3.0nm,1.0s
KOLS Kolonicke sedl 78.65 325 *e*P **P 00 22 06.6 +0.5**
KOLS *e* 00 22 18.9
STHS Stebnicka Huta 78.75 326 *e*P **P 00 22 07.7 +1.1**
STHS pmax pmax
comp=Z,3.0nm,1.1s
STHS Stebnicka Huta 78.75 326 *e*P **P 00 22 07.7 +1.1**
VRI Vrincioaia 78.77 321⇑ *i*P **P 00 22 07.7 +0.9**
OJC Ojcow 78.77 327 *e*P **P 00 22 07.2 +0.5**
OJC Ojcow 78.77 327 *e*P **P 00 22 07.6 +0.9**
OJC *e**PP **sP 00 22 19.3 -1.3**
OJC Ojcow 78.77 327 *e*P **P 00 22 07.6 +0.9**
OJC *ep*P **sP 00 22 19.3 -1.3**
PLOR Plostina 78.82 321⇑ *i*P **P 00 22 08.1 +1.0**
CRVS Cervenica-Dubn 79.04 326 *e*P **P 00 22 09.0 +0.8**
CRVS Cervenica-Dubn 79.04 326 *e*P **P 00 22 09.0 +0.8**
NIE Niedzica 79.16 326 *e*P **P 00 22 09.9 +1.0**
NIE Niedzica 79.16 326 *e*P **P 00 22 09.9 +1.0**
BRTR Keskin Array B 79.28 313 P **P 00 22 09.6 -0.3**
comp=Z,0.7nm,0.7s,baz=83,slow=5.1,SNR=5.4
BRTR Keskin Array B 79.28 313 *i* P **P 00 22 10.3 +0.4**
BRTR pmax pmax
comp=Z,1.0nm,0.7s
DOPR Dopca 79.35 322⇑ *i*P **P 00 22 11.2 +1.2**
MLR Muntele Rosu 79.42 321⇑ *i*P **P 00 22 11.0 +0.5**
MSAB Monastry St. A 79.46 319⇑ *i*P **P 00 22 11.5 +0.9**
BR231 Keskin MP Arra 79.70 313 *e*P **P 00 22 10.3 -1.7**
LANS Liptovska Anna 79.72 327 *e*P **P 00 22 13.7 +1.8**
LANS *e* 00 22 25.9
LANS Liptovska Anna 79.72 327 *e*P **P 00 22 13.7 +1.8**
LANS *e* 00 22 25.9
KSP Ksiaz 79.73 329 *e*P **P 00 22 12.5 +0.6**
KSP Ksiaz 79.73 329 *e*P **P 00 22 12.5 +0.6**
OKC Ostrava-Krasne 79.75 328 *e*P **P 00 22 13.6 +1.5**
OKC *es*P **sP 00 22 25.3 -0.7**
OKC Ostrava-Krasne 79.75 328 *e*P **P 00 22 13.6 +1.5**
OKC *e* 00 22 25.3
VOIR 79.90 321⇑ *i*P **P 00 22 14.1 +1.1**
DRGR 80.03 323⇑ *i*P **P 00 22 13.8 +0.1**
DPC Dobruska-Polom 80.11 329 *e*P **P 00 22 14.7 +0.7**
DPC *es*P **sP 00 22 27.6 -0.3**
DPC Dobruska-Polom 80.11 329 *e*P **P 00 22 14.7 +0.7**
DPC *e* 00 22 27.6
KRLC Kraliky 80.13 329 *e*P **P 00 22 14.7 +0.5**
KRLC *es*P **sP 00 22 27.5 -0.6**
KRLC Kraliky 80.13 329 *e*P **P 00 22 14.7 +0.5**
KRLC *e* 00 22 27.5
ARR Arges 80.15 321⇑ *i*P **P 00 22 15.9 +1.5**
BRG Berggiesshubel 80.63 331 *e*P **P 00 22 17.5 +0.8**
comp=Z,3.3nm,1.0s
BRG *e* 00 22 30.2
comp=Z,6.3nm,1.2s
BRG Berggiesshubel 80.63 331 *e*P **P 00 22 17.5 +0.8**
BRG *e* 00 22 30.2
BRG pmax pmax
comp=Z,3.0nm,1.0s
BRG pmax pmax
comp=Z,6.0nm,1.3s
CLL Collm 80.64 331 *e*P **P 00 22 16.0 -0.8**
comp=Z,4.0nm,1.0s
CLL *i* 00 22 28.9
comp=Z,9.0nm,1.0s
CLL *e* 00 22 38.0
CLL Collm 80.64 331 *e*P **P 00 22 16.0 -0.8**
CLL *i* 00 22 28.9
CLL pmax pmax
comp=Z,4.0nm,1.0s
PVCC Panska Ves 80.66 330 *e*P **P 00 22 17.4 +0.5**
PVCC *es*P **sP 00 22 30.2 -0.7**
PVCC Panska Ves 80.66 330 *e*P **P 00 22 17.4 +0.5**
PVCC *e* 00 22 30.2
VRAC Vranov 80.81 328⇑ *i*P **P 00 22 18.8 +1.0**
GZR Gura Zlata 81.03 322⇑ *i*P **P 00 22 19.4 +0.3**
PRU Pruhonice 81.10 330 *e*P **P 00 22 19.4 +0.1**
PRU *es*P **sP 00 22 33.1 -0.1**
PRU Pruhonice 81.10 330 *e*P **P 00 22 19.4 +0.1**
PRU *e* 00 22 33.1
ECSD EROS Data Cent 81.24 40 *e*P **P 00 22 20.6 +0.5**
comp=Z,3.3nm,0.9s
TREC Trest 81.27 329 *e*P **P 00 22 21.1 +0.9**
TREC *es*P **sP 00 22 33.5 -0.7**
TREC Trest 81.27 329 *e*P **P 00 22 21.1 +0.9**
TREC *e* 00 22 33.5
ANMO Albuquerque 81.85 51 *e*P **P 00 22 25.3 +1.5**
ANMO pmax pmax
comp=Z,2.0nm,1.0s
ANMO Albuquerque 81.85 51 *e*P **P 00 22 25.3 +1.5**
comp=Z,2.1nm,1.0s
KHC Kasperske Hory 82.16 330 *e*P **P 00 22 24.8 -0.2**
KHC *es*P **sP 00 22 37.8 -1.1**
KHC Kasperske Hory 82.16 330 *e*P **P 00 22 24.8 -0.2**
KHC *e* 00 22 37.8
GERES GERESS Array B 82.34 329 P **P 00 22 25.7 -0.3**
comp=Z,0.3nm,0.5s,baz=49,slow=4.3,SNR=4.4
GERES GERESS Array B 82.34 329 P **P 00 22 25.7 -0.3**
GERES pmax pmax
comp=Z,1.0nm,0.6s
PPT Papeete 83.54 118 LR LR 01 00 32.7
comp=Z,70nm,18.9s,baz=8.5,slow=36
MNTX Cornudas Mount 84.69 53 *e*P **P 00 22 39.4 +1.1**
comp=Z,5.5nm,1.1s
BFO Black Forest 84.81 332 *i* P **P 00 22 41.5 +2.9**
PDG Podgorica 84.93 322⇓ *i*P **P 00 22 39.3 +0.1**
FUORN Ofenpass-Fuorn 85.50 330 *e*P **P 00 22 43.0 +0.6**
comp=Z,6.3nm,0.8s
TX31 Lajitas Ar. Si 87.38 54 *e*P **P 00 22 52.5 +0.8**
TXAR Lajitas Array 87.38 54 P **P 00 22 52.4 +0.7**
comp=Z,1.0nm,0.6s,baz=300,slow=3.2,SNR=17
TORD Torodi Ar. Bea 117.56 318 PKP **PKPdf 00 28 49.7 -0.8**
comp=Z,0.4nm,0.6s,baz=28,slow=1.9,SNR=7.9
SNAA Sanae 143.01 197 PKP PKPbc 00 29 33.9 +0.3
LPAZ La Paz 143.99 61 PKP PKPbc 00 29 39.2 +0.5
comp=Z,2.0nm,0.9s,baz=30,slow=4.0,SNR=6.5
VNA3 Neumayer Olymp 144.77 194 PKP **PKPab 00 29 38.1 -0.7**
VNA1 Neumayer--Stat 144.96 196 PKP **PKPab 00 29 39.3 -0.1**

DJA 28 00:10:16.7±1.1, 6°S±5°×10°4E±°, h10km, M3.8/6, MLv3.8/6, Southwest of Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KASI	**Kota Agung**	**1.17**	**38**	P	Pb	00 10 37.0	-2.0
LWLI	**Liwa**	**1.45**	**11**	P	Pn	00 10 41.9	-1.2
LWLI				S	Sn	00 11 01.2	-1.1
CGJI	**Cibinong**	**1.92**	**95**	P	Pn	00 10 48.5	-0.9
CGJI				S	Sn	00 11 14.5	+0.9
LHSI	**Lahat**	**2.62**	**355**	P	Pn	00 10 59.2	+0.1
CBJI	**Citeko**	**3.06**	**90**	P	Pn	00 11 05.8	+0.6
CNJI	**Cibinong**	**3.44**	**105**	P	Pn	00 11 10.6	+0.2

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*ISK **28** 00:15:32.9, 39°.12N×29°.05E, h10km, MD2.6*
*ISCJB **28** 00:15:33.1±0.5, 39°.11N±0°.03×29°.04E±0°.04, h10km±6km, Error ellipse: s-maj=5.5km s-min=4.7km az=165.6*
*CSEM **28** 00:15:33.2±0.1, 39°.10N×29°.04E, h10km, MD2.6, Error ellipse: s-maj=1.9km s-min=1.5km az=99.0*
*DDA **28** 00:15:33.1, 39°.07N×29°.05E, h7km, Md2.6*
ISC 28 00:15:33.3±0.9, 39°.10N±0°.03×29°.05E±0°.02, h12km±9km, n22, σ0s23/34, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**259**	P	**Pg**	**00 15 38.9**	**0.0**
DEMI				S	**Sg**	**00 15 42.7**	**+0.1**
DEMI	**Demirci**	**0.27**	**259**	*i* P	**Pg**	**00 15 38.9**	**0.0**
DEMI				*i* S	**Sg**	**00 15 42.7**	**+0.1**
GDZ	**Gediz**	**0.33**	**91**	P	**Pg**	**00 15 40.2**	**+0.1**
GDZ				S	**Sg**	**00 15 44.8**	**+0.1**
GDZ	**Gediz**	**0.33**	**91**	*i* P	**Pg**	**00 15 40.2**	**+0.1**
GDZ				*i* S	**Sg**	**00 15 44.8**	**+0.1**
TVSB	**Tavsanli**	**0.48**	**42**	*e*PG	**Pg**	**00 15 42.7**	**0.0**
TVSB				*e*SG	**Sg**	**00 15 48.6**	**-0.5**
TVSB	**Tavsanli**	**0.48**	**42**	*e*Pg	**Pg**	**00 15 42.7**	**0.0**

TVSB				*e*Sg	Sg	00 15 48.6	-0.5
KULA	**Kula-Manisa**	**0.66**	**208**	*e*PG	Pg	00 15 46.3	+0.2
KULA	**Kula-Manisa**	**0.66**	**208**	*e*Pg	Pg	00 15 46.3	+0.2
MANT	**Manisa**	**0.72**	**213**	P	Pg	00 15 46.9	-0.4
MANT				S	Sg	00 15 56.2	-0.5
MANT	**Manisa**	**0.72**	**213**	*i* P	Pg	00 15 46.9	-0.4
MANT				*i* S	Sg	00 15 56.2	-0.5
KHAL	**Karahalli**	**0.80**	**154**	P	Pb	00 15 49.4	+0.2
KHAL				S	Sb	00 16 00.1	0.0
KHAL	**Karahalli**	**0.80**	**154**	*i* P	Pb	00 15 49.4	+0.2
KHAL				*i* S	Sb	00 16 00.1	0.0
ORLT	**Orhaneli**	**0.96**	**353**	*e*PG	Pg	00 15 51.7	-0.1
ORLT	**Orhaneli**	**0.96**	**353**	*e*Pg	Pg	00 15 51.7	-0.1
BALB	**Balikesir**	**1.06**	**301**	*e*PG	Pb	00 15 53.6	0.0
BALB				*e*SG	Sg	00 16 07.8	+0.3
BALB	**Balikesir**	**1.06**	**301**	*e*Pg	Pb	00 15 53.6	0.0
BALB				*e*Sg	Sg	00 16 07.8	+0.3
MDNY	**Mudanya-Bursa**	**1.28**	**354**	*e*PN	Pn	00 15 57.0	0.0
MDNY	**Mudanya-Bursa**	**1.28**	**354**	*e*Pn	Pn	00 15 57.0	0.0
KCTX	**Karacabey (Bur**	**1.29**	**336**	*e*PN	Pn	00 15 57.2	+0.1
KCTX	**Karacabey (Bur**	**1.29**	**336**	*e*Pn	Pn	00 15 57.2	+0.1
ARMT	**Armutlu**	**1.48**	**354**	*e*PN	Pn	00 15 59.9	+0.1
ARMT	**Armutlu**	**1.48**	**354**	*e*Pn	Pn	00 15 59.9	+0.1

IDC ***28*** *00:18:00.1±2.1, 0°.63N×97°.39E, h0km, mb3.7/4, mb1 3.9/5, mb1mx3.5/33, mbtmp3.8/5, ML4.5/1, Error ellipse: s-maj=52.5km s-min=27.2km az=61.0*
ISCJB ***28*** *00:18:02.7±0.6, 0°.72N±0°.05×97°.33E±0°.06, h29km, mb4.1/8, Error ellipse: s-maj=9.0km s-min=6.3km az=156.3*
DJA ***28*** *00:18:04.0±1.0, 1°.N±4°×.9°.7E±°, h26km±6km, M3.4/5, MLv3.4/5*
NEIC ***28*** *00:18:05.2±1.1, 0°.68N×97°.47E, h33km±8km, mb4.4/5, Error ellipse: s-maj=8.9km s-min=7.3km az=81.0*
ISC 28 00:18:04.8±0.8, 0.74N±0°.06×97.49E±0°.08, h29km, n25, σ0§85/22, mb4.2/8, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GSI	**Gunungsitoli**	**0.56**	**9**	P	**Pn**	00 18 18.1	+1.2
GSI				S	**Sb**	00 18 22.9	-1.2
GSI	**Gunungsitoli**	**0.56**	**9**	*e*Pb	Pn	00 18 17.9	+1.0
PBSI	**Pulau Batu**	**1.12**	**135**	P	**Pb**	00 18 25.0	-0.5
PBSI				S	**Sb**	00 18 40.5	+0.8
MNSI	**Mandailing Nat**	**2.09**	**89**	P	**Pb**	00 18 40.5	-1.5
MNSI				S	**Sb**	00 19 08.1	+0.5
PSI	**Prapat**	**2.50**	**35**	Pn	**Pn**	00 18 43.0	-0.6
	0.7nm,0.3s,baz=218,slow=12,SNR=2.4						
KULM	**Kulim**	**5.51**	**35**	*e*Pn	**Pn**	00 19 25.7	+0.8
KSM	**Kuching**	**12.84**	**87**	*e*Pn	**Pn**	00 21 06.2	+0.8
COCO	**West Island**	**12.86**	**183**	*e*Pn	**Pn**	00 21 04.7	-1.1
CMAR	**Chiang Mai Arr**	**17.66**	**5**	P	**P**	00 22 10.0	+0.4
	0.6nm,0.3s,baz=195,slow=12,SNR=5.4						
PALK	**Pallekele**	**17.95**	**292**	*e*Pn	**P**	00 22 12.7	-0.2
	9.8nm,0.8s						
H08S2	**Diego Garcia H**	**26.29**	**251**	T	T	00 50 30.6	
	baz=72,slow=76,SNR=69						
H08S3	**Diego Garcia H**	**26.29**	**251**	T	T	00 50 30.9	
	baz=72,slow=76,SNR=67						
H08S1	**Diego Carcia H**	**26.30**	**251**	T	T	00 50 32.0	
	baz=72,slow=76,SNR=81						
H01W3	**Cape Leeuwin H**	**38.71**	**158**	T	T	01 06 38.4	
	baz=333,slow=76,SNR=11						
H01W2	**Cape Leeuwin H**	**38.73**	**158**	T	T	01 06 39.4	
	baz=333,slow=76,SNR=12						
H01W1	**Cape Leeuwin H**	**38.73**	**158**	T	T	01 06 39.5	
	baz=333,slow=76,SNR=11						
WRA	**Warramunga Arr**	**41.55**	**122**	P	**P**	00 25 49.8	-0.4
	0.4nm,0.8s,baz=305,slow=8.7,SNR=3.2						
KSAR	**Wonju Array Be**	**46.03**	**34**	P	**P**	00 26 26.9	+1.0
KSRS	**Korea Array**	**46.06**	**34**	P	**P**	00 26 26.9	+0.8
	0.4nm,0.3s,baz=224,slow=8.8,SNR=4.1						
ULN	**Ulaanbaatar**	**47.67**	**9**	*e*P	**P**	00 26 39.0	+0.3
	1.8nm,0.4s						
MKAR	**Makanchi Array**	**47.76**	**346**	P	**P**	00 26 40.2	+0.9
	0.6nm,0.5s,baz=164,slow=7.8,SNR=8.8						
PMG	**Port Moresby**	**50.47**	**103**	*e*P	**P**	00 27 00.5	0.0
	5.8nm,0.7s						
TLY	**Talaya**	**51.02**	**5**	*e*P	**P**	00 27 04.3	+0.2
	3.0nm,0.8s						
MAJO	**Matsushiro**	**51.83**	**42**	*e*P	**P**	00 27 10.6	+0.1
	1.9nm,0.3s						
ZALV	**Zalesovo Beam**	**54.05**	**351**	P	**P**	00 27 25.5	-1.0
	0.9nm,0.5s,baz=166,slow=5.5,SNR=4.2						

ISCJB ***28*** *00:21:25.0±0.4, 34°.22N±0°.02×117°.06W±0°.02, h3km±4km, Error ellipse: s-maj=3.3km s-min=2.9km az=157.9*
NEIC ***28*** *00:21:26.0, 34°.23N×117°.05W, h2km, ML2.7(PAS), After PAS.*
NEIC Felt at Chatsworth, Highland, Redlands and Running Springs.
ISC 28 00:21:25.9±1.0, 34°.21N±0°.02×117.05W±0°.02, h7km±9km, n30, σ0§56/47, 1C-4D, Southern California

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BBRC	**Big Bear Solar**	**0.12**	**65**	P	**Pg**	00 21 28.4	-0.3
	baz=250,SNR=52						
BBRC				S	**Sg**	00 21 30.3	-0.4
	baz=250						
BFSC	**Mount Baldy Ra**	**0.50**	**273**	P	**Pg**	00 21 35.6	0.0
	baz=91,SNR=16						
BFSC				S	**Sg**	00 21 42.6	+0.4
	baz=91						
BACC	**Bachelor Mtn.**	**0.60**	**179**	P	**Pg**	00 21 37.5	+0.1
MURC	**Murrieta**	**0.62**	**191**	P	**Pg**	00 21 37.7	-0.1
	baz=11,SNR=7.8						
MURC				S	**Sg**	00 21 46.6	+0.6
	baz=11						
RRX	**Edison Barstow**	**0.67**	**4**	P	**Pg**	00 21 38.4	-0.3
	baz=184						
RRX				S	**Sg**	00 21 47.5	+0.1
	baz=184						
PFO	**Pinyon Flats O**	**0.78**	**140**	P	**Pg**	00 21 40.6	-0.1
	baz=322						
PFO				S	**Sg**	00 21 51.2	+0.3
	baz=322						
PFO	**Pinyon Flats O**	**0.78**	**140**	*e*Pg	**Pg**	00 21 40.7	-0.1
TPFO	**Pinon Flats**	**0.78**	**140**	P	**Pg**	00 21 40.7	-0.2
	baz=322,SNR=10						
TPFO				S	**Sg**	00 21 51.5	+0.4
	baz=322						
BZNA	**Buzz No.'s Pla**	**0.79**	**156**	⇓P	**Pg**	00 21 41.1	+0.1
FRD	**Ford Ranch, An**	**0.81**	**152**	⇓P	**Pg**	00 21 41.5	+0.1
FRD				S	**Sg**	00 21 52.5	+0.6
HEC	**Hector,Ludlow**	**0.86**	**44**	P	**Pg**	00 21 42.0	-0.3
	baz=224,SNR=9.3						
HEC				S	**Sg**	00 21 53.6	+0.1
	baz=224						
LRRC	**Littlerock Res**	**0.86**	**292**	⇑P	**Pg**	00 21 42.2	-0.3
BELC	**Belle Mtn. Jos**	**0.90**	**103**	P	**Pg**	00 21 43.1	-0.1
	baz=285,SNR=14						
EDW2	**Edwards Air Fo**	**1.02**	**311**	P	**Pg**	00 21 44.8	-0.8
	baz=130,SNR=8.4						
EDW2				S	**Sg**	00 21 58.4	-0.5
	baz=130						
DECC	**Green Verdugo**	**1.06**	**273**	P	**Pg**	00 21 45.7	-0.6
	baz=91,SNR=5.7						
DECC				S	**Sg**	00 21 60.0	-0.1
	baz=91						
GSC	**Goldstone, Bar**	**1.11**	**11**	P	**Pg**	00 21 46.5	-0.7
	baz=190						
GSC				S	**Sg**	00 22 01.2	-0.4
	baz=190						
GSC	**Goldstone, Bar**	**1.11**	**11**	⇓P	**Pg**	00 21 46.5	-0.7
GSC				S	**Sg**	00 22 01.4	-0.2
GMRC	**Granite Mounta**	**1.29**	**63**	Pg	**Pg**	00 21 50.1	-0.5
	baz=244,SNR=7.6						
GMRC				S	**Sg**	00 22 06.9	-0.3
	baz=244						
109C	**Camp Elliot, M**	**1.32**	**182**	P	**Pg**	00 21 49.7	-1.5
	baz=2.1						
109C				S	**Sg**	00 22 06.7	-1.6
	baz=2.1						
CIS	**Catalina Islan**	**1.39**	**235**	Sb	**Sg**	00 22 10.1	-0.5
	baz=54						
MONP2	**Monument Peak**	**1.42**	**158**	Pb	**Pn**	00 21 51.8	-0.4
	baz=339,SNR=5.6						
MONP2				Sb	**Sg**	00 22 10.9	-0.5
	baz=339						
OSI	**Osito Audit: C**	**1.44**	**287**	Pg	**Pn**	00 21 53.1	+0.7
	baz=105						
BC3	**Big Chuckawall**	**1.44**	**112**	Pb	**Pn**	00 21 51.9	-0.5
	baz=294,SNR=6.2						
BC3				Sb	**Sg**	00 22 11.9	-0.3
	baz=294						
TUQ	**Turquoise Moun**	**1.54**	**37**	Pg	**Pn**	00 21 54.5	+0.7
	baz=218						
BAR	**Barrett**	**1.56**	**168**	*e*P	**Pn**	00 21 53.9	-0.1
	43nm,0.6s						
BAR	**Barrett**	**1.56**	**168**	⇓P	**Pn**	00 21 54.3	+0.3
BAR				S	**Sn**	00 22 14.0	-0.5
IRM	**Iron Mountain**	**1.58**	**91**	Pg	**Pb**	00 21 55.6	+0.1
	baz=273						
IKP	**In-Ko-Pah, Jac**	**1.75**	**153**	Pg	**Pb**	00 21 58.8	+0.5
	baz=334						
ISA	**Isabella, Lake**	**1.86**	**322**	Pg	**Pb**	00 22 01.0	+0.8
	baz=140						
Y12C	**Blythe**	**2.15**	**102**	Pg	**Pb**	00 22 06.2	+1.1
	baz=284,SNR=6.0						

ISK ***28*** *00:25:26.6, 39°.07N×29°.11E, h17km, MD2.7*
ISCJB ***28*** *00:25:27.0±0.5, 39°.10N±0°.03×29°.02E±0°.04, h8km±5km, Error ellipse: s-maj=5.8km s-min=4.6km az=137.2*
CSEM ***28*** *00:25:27.0±0.1, 39°.12N×29°.01E, h8km, MD2.9, Error ellipse: s-maj=2.2km s-min=1.7km az=107.0*
DDA ***28*** *00:25:27.2, 39°.08N×29°.02E, h7km, Md2.9*
ISC 28 00:25:26.7±0.9, 39.07N±0°.04×29.06E±0°.03, h14km±9km, n22, σ0§27/34, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**265**	P	**Pg**	00 25 32.6	+0.1
DEMI				S	**Sg**	00 25 36.0	-0.4
DEMI	**Demirci**	**0.27**	**265**	*i* P	**Pg**	00 25 32.6	+0.1
DEMI				*i* S	**Sg**	00 25 36.0	-0.4
GDZ	**Gediz**	**0.33**	**86**	P	**Pb**	00 25 34.4	0.0
GDZ				S	**Sb**	00 25 39.7	+0.1
GDZ	**Gediz**	**0.33**	**86**	*i* P	**Pb**	00 25 34.4	0.0
GDZ				*i* S	**Sb**	00 25 39.7	+0.1
TVSB	**Tavsanli**	**0.49**	**39**	*e*PG	**Pg**	00 25 36.5	0.0
TVSB				*e*SG	**Sg**	00 25 43.3	+0.2
TVSB	**Tavsanli**	**0.49**	**39**	*e*Pg	**Pg**	00 25 36.5	0.0
TVSB				*e*Sg	**Sg**	00 25 43.3	+0.2
KULA	**Kula-Manisa**	**0.63**	**210**	*e*PG	**Pb**	00 25 40.0	+0.4
KULA	**Kula-Manisa**	**0.63**	**210**	*e*Pg	**Pb**	00 25 40.0	+0.4
MANT	**Manisa**	**0.70**	**215**	P	**Pb**	00 25 41.0	+0.2
MANT				S	**Sb**	00 25 50.0	-0.4
MANT	**Manisa**	**0.70**	**215**	*i* P	**Pb**	00 25 41.0	+0.2
MANT				*i* S	**Sb**	00 25 50.0	-0.4
KHAL	**Karahalli**	**0.77**	**154**	P	**Pn**	00 25 43.7	+0.4
KHAL				S	**Sn**	00 25 54.3	-0.5
KHAL	**Karahalli**	**0.77**	**154**	*i* P	**Pn**	00 25 43.7	+0.4
KHAL				*i* S	**Sn**	00 25 54.3	-0.5
BALB	**Balikesir**	**1.08**	**302**	*e*PN	**Pn**	00 25 47.8	+0.3
BALB	**Balikesir**	**1.08**	**302**	*e*Pn	**Pn**	00 25 47.8	+0.3
IZI	**Iznik**	**1.31**	**14**	*e*PN	**Pn**	00 25 50.7	0.0
IZI	**Iznik**	**1.31**	**14**	*e*Pn	**Pn**	00 25 50.7	0.0
MDNY	**Mudanya-Bursa**	**1.31**	**354**	*e*PN	**Pn**	00 25 50.7	+0.1
MDNY	**Mudanya-Bursa**	**1.31**	**354**	*e*Pn	**Pn**	00 25 50.7	+0.1
KCTX	**Karacabey (Bur**	**1.32**	**336**	*e*PN	**Pn**	00 25 51.0	+0.2
KCTX				*e*SN	**Sg**	00 26 09.2	0.0
KCTX	**Karacabey (Bur**	**1.32**	**336**	*e*Pn	**Pn**	00 25 51.0	+0.2
KCTX				*e*Sn	**Sg**	00 26 09.2	0.0
ARMT	**Armutlu**	**1.51**	**354**	*e*PN	**Pn**	00 25 53.5	+0.1
ARMT	**Armutlu**	**1.51**	**354**	*e*Pn	**Pn**	00 25 53.5	+0.1

CSEM ***28*** *00:33:56.8, 41°.60N×15°.74E, h10km, MD2.3/7*
ROM 28 00:33:56.8±0.2, 41°.60N×15°.74E, h10km±7km, Md2.3/7, MI1.7/5, 2D, Error ellipse: s-maj=7.1km s-min=2.4km az=178.0, Southern Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SGRT	**San Giovanni R**	**0.16**	**1**	⇓*i*Pg	Pg	00 34 00.7	+0.4
SGRT				Sg	Sg	00 34 03.9	+1.1
SGRT	**San Giovanni R**	**0.16**	**1**	⇓*i*Pg	Pg	00 34 00.7	+0.4
SGRT				Sg	Sg	00 34 03.9	+1.1
MSAG	**Monte S. Angel**	**0.17**	**48**	Pg	Pg	00 34 01.0	+0.4
MSAG				Sg	Sg	00 34 04.5	+1.3
MSAG	**Monte S. Angel**	**0.17**	**48**	Pg	Pg	00 34 01.0	+0.4
MSAG				Sg	Sg	00 34 04.5	+1.3
MRVN	**Minervino Murg**	**0.64**	**147**	Pg	Pg	00 34 08.7	-0.4
MRVN				Sg	Sg	00 34 17.8	+0.3
MRVN	**Minervino Murg**	**0.64**	**147**	Pg	Pg	00 34 08.7	-0.4
MRVN				Sg	Sg	00 34 17.8	+0.3
VULT	**Monte Vulture**	**0.65**	**188**	Pg	Pg	00 34 09.8	+0.4
VULT	**Monte Vulture**	**0.65**	**188**	Pg	Pg	00 34 09.8	+0.4
MRLC	**Muro Lucano**	**0.86**	**193**	Pg	Pg	00 34 13.5	+0.1
	13nm,0.4s						
MRLC	**Muro Lucano**	**0.86**	**193**	Pg	Pg	00 34 13.5	+0.1
	13nm,0.4s						
MCRV	**Calabrutti - M**	**0.92**	**208**	Pg	Pg	00 34 14.1	-0.4
	14nm,0.2s						
MCRV	**Calabrutti - M**	**0.92**	**208**	Pg	Pg	00 34 14.1	-0.4
	14nm,0.2s						
AMUR	**Altamura**	**0.95**	**136**	Pg	Pg	00 34 14.7	-0.4
AMUR				Sg	Sg	00 34 27.2	-0.2
AMUR	**Altamura**	**0.95**	**136**	Pg	Pg	00 34 14.7	-0.4
AMUR				Sg	Sg	00 34 27.2	-0.2
MATE	**Matera**	**1.20**	**142**	Pg	Pb	00 34 19.4	-0.1
MATE				Sg	Sg	00 34 35.5	+0.2
	11nm,0.3s						
MATE	**Matera**	**1.20**	**142**	Pg	Pb	00 34 19.4	-0.1
MATE				Sg	Sg	00 34 35.5	+0.2
	11nm,0.3s						
LTRZ	**Laterza**	**1.29**	**140**	Pg	Pn	00 34 20.8	0.0
	9.0nm,0.2s						
LTRZ	**Laterza**	**1.29**	**140**	Pg	Pn	00 34 20.8	0.0
	9.0nm,0.2s						
NOCI	**Noci**	**1.29**	**129**	Pg	Pb	00 34 21.1	0.0
NOCI				Sg	Sb	00 34 37.8	+0.1
	12nm,0.2s						
NOCI	**Noci**	**1.29**	**129**	Pg	Pb	00 34 21.1	0.0
NOCI				Sg	Sb	00 34 37.8	+0.1
	12nm,0.2s						

ISCJB ***28*** *00:46:03.8±0.5, 39°.13N±0°.03×29°.09E±0°.04, h5km±6km, Error ellipse: s-maj=5.5km s-min=4.3km az=151.9*
ISK ***28*** *00:46:03.7, 39°.14N×29°.09E, h6km, MD2.9*
DDA ***28*** *00:46:03.5, 39°.12N×29°.08E, h7km, Md2.8*
CSEM ***28*** *00:46:04.1±0.1, 39°.13N×29°.09E, h5km, MD2.8, Error ellipse: s-maj=2.2km s-min=1.8km az=113.0*
ISC 28 00:46:03.6±0.9, 39.12N±0°.02×29.13E±0°.03, h16km±9km, n45, σ0§53/56, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.28**	**96**	P	**Pb**	00 46 10.3	-0.1
GDZ				S	**Sb**	00 46 14.8	-0.1
GDZ	**Gediz**	**0.28**	**96**	*i* P	**Pb**	00 46 10.3	-0.1
GDZ				*i* S	**Sb**	00 46 14.8	-0.1
DEMI	**Demirci**	**0.33**	**257**	P	**Pg**	00 46 10.7	+0.1
DEMI				S	**Sg**	00 46 14.9	-0.4
DEMI	**Demirci**	**0.33**	**257**	*i* P	**Pg**	00 46 10.7	+0.1
DEMI				*i* S	**Sg**	00 46 14.9	-0.4
TVSB	**Tavsanli**	**0.42**	**38**	*e*PG	**Pg**	00 46 12.4	+0.1
TVSB				*e*SG	**Sg**	00 46 18.1	0.0
TVSB	**Tavsanli**	**0.42**	**38**	*e*Pg	**Pg**	00 46 12.4	+0.1
TVSB				*e*Sg	**Sg**	00 46 18.1	0.0
KULA	**Kula-Manisa**	**0.70**	**211**	*e*PG	**Pb**	00 46 17.9	+0.3
KULA	**Kula-Manisa**	**0.70**	**211**	*e*Pg	**Pb**	00 46 17.9	+0.3
MANT	**Manisa**	**0.77**	**215**	P	**Pb**	00 46 18.8	+0.1
MANT				S	**Sg**	00 46 28.6	-0.2
MANT	**Manisa**	**0.77**	**215**	*i* P	**Pb**	00 46 18.8	+0.1
MANT				*i* S	**Sg**	00 46 28.6	-0.2
KHAL	**Karahalli**	**0.80**	**159**	P	**Pn**	00 46 20.2	-0.2
KHAL				S	**Sb**	00 46 30.0	+0.2
KHAL	**Karahalli**	**0.80**	**159**	*i* P	**Pn**	00 46 20.2	-0.2
KHAL				*i* S	**Sb**	00 46 30.0	+0.2
KHL	**Karahalli**	**0.85**	**158**	*e*PG	**Pn**	00 46 21.1	+0.1
KHL	**Karahalli**	**0.85**	**158**	*e*Pg	**Pn**	00 46 21.1	+0.1
AKS	**Akhisar**	**1.05**	**257**	*e*PG	**Pb**	00 46 23.3	-0.2
AKS	**Akhisar**	**1.05**	**257**	*e*Pg	**Pb**	00 46 23.3	-0.2
BALB	**Balikesir**	**1.10**	**299**	*e*PG	**Pb**	00 46 24.7	+0.5
BALB	**Balikesir**	**1.10**	**299**	*e*Pg	**Pb**	00 46 24.7	+0.5
IGD	**Bursa**	**1.15**	**3**	*i* P	**Pn**	00 46 23.2	-1.8
IGD				*i* S	**Sb**	00 46 38.3	-1.5
CAVI	**Cavuskoy**	**1.22**	**27**	*e*PN	**Pg**	00 46 27.9	+0.7
CAVI	**Cavuskoy**	**1.22**	**27**	*e*Pn	**Pg**	00 46 27.9	+0.7
IZI	**Iznik**	**1.25**	**12**	*e*PN	**Pg**	00 46 28.3	+0.6
IZI	**Iznik**	**1.25**	**12**	*e*Pn	**Pg**	00 46 28.3	+0.6
MDNY	**Mudanya-Bursa**	**1.26**	**352**	*e*PN	**Pb**	00 46 27.6	+0.5
MDNY	**Mudanya-Bursa**	**1.26**	**352**	*e*Pn	**Pb**	00 46 27.6	+0.5
KCTX	**Karacabey (Bur**	**1.29**	**333**	*e*PN	**Pn**	00 46 27.8	+0.8
KCTX	**Karacabey (Bur**	**1.29**	**333**	*e*Pn	**Pn**	00 46 27.8	+0.8
GEMT	**Gemlik**	**1.32**	**2**	*e*PN	**Pb**	00 46 28.5	+0.5
GEMT	**Gemlik**	**1.32**	**2**	*e*Pn	**Pb**	00 46 28.5	+0.5
ADVT	**Abdulvahap**	**1.40**	**20**	*e*PN	**Pg**	00 46 30.4	-0.1
ADVT	**Abdulvahap**	**1.40**	**20**	*e*Pn	**Pg**	00 46 30.4	-0.1
GONE	**Gonen-Balikesi**	**1.45**	**310**	*e*PN	**Pb**	00 46 30.4	+0.2
GONE	**Gonen-Balikesi**	**1.45**	**310**	*e*Pn	**Pb**	00 46 30.4	+0.2
ARMT	**Armutlu**	**1.46**	**352**	*e*PN	**Pb**	00 46 31.1	+0.7
ARMT	**Armutlu**	**1.46**	**352**	*e*Pn	**Pb**	00 46 31.1	+0.7
GPA	**Golpazari**	**1.48**	**38**	*e*PN	**Pb**	00 46 31.1	+0.2
GPA	**Golpazari**	**1.48**	**38**	*e*Pn	**Pb**	00 46 31.1	+0.2
EDC	**Edincik**	**1.57**	**322**	*e*PN	**Pb**	00 46 32.8	+0.6
EDC	**Edincik**	**1.57**	**322**	*e*Pn	**Pb**	00 46 32.8	+0.6
GULT	**Gulveren**	**1.69**	**39**	*e*PN	**Pb**	00 46 35.2	+0.7
GULT	**Gulveren**	**1.69**	**39**	*e*Pn	**Pb**	00 46 35.2	+0.7
SVRH	**Sivrihisar-ESK**	**1.89**	**79**	*e*PN	**Pb**	00 46 38.0	+0.2
SVRH	**Sivrihisar-ESK**	**1.89**	**79**	*e*Pn	**Pb**	00 46 38.0	+0.2
ISK	**Istanbul-Kandi**	**1.95**	**359**	*e*PN	**Pb**	00 46 38.0	-0.7
ISK	**Istanbul-Kandi**	**1.95**	**359**	*e*Pn	**Pb**	00 46 38.0	-0.7

NIED ***28*** *00:52:00, 38°.20N×142°.20E, h5km, Mw3.3 Best double couple: M0:8.76000×10^13 NP1:φs:180.00000°, δ48.00000°, λ-64.00000°. NP2:φs:324.00000°, δ48.00000°, λ-116.00000°.*
JMA 28 00:52:35.0±0.2, 38°.19N×142°.15E, h13km±1km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.68**	**293**	P	Pg	00 52 48.2	-0.1
JIO				*e*S	Sg	00 52 56.8	-0.5
OFUJ	**Ofunato**	**0.96**	**337**	P	Pb	00 52 52.9	-0.7
JMK	**Ichinoseki**	**1.05**	**317**	P	Pb	00 52 54.9	-0.2
JMK				S	Sb	00 53 08.6	-0.2
JMM	**Marumori**	**1.12**	**254**	P	Pb	00 52 55.5	-0.7
JMM				S	Sb	00 53 10.3	-0.4
JOU	**Okura**	**1.18**	**279**	P	Pn	00 52 57.2	-0.1
JOU				S	Sn	00 53 13.4	+0.2
JFK	**Kawauchi**	**1.30**	**231**	P	Pn	00 52 57.9	-1.0
JOM	**Ohasama**	**1.45**	**333**	P	Pn	00 53 00.8	-0.1
JOM				S	Sn	00 53 19.4	-0.3

IDC ***28*** *00:57:13.3±0.5, 25°.48N×142°.87E, h0km, mb4.2/28, mb1 4.4/30, mb1mx4.3/50, mbtmp4.2/30, ML3.6/1, MS3.3/4, Ms1 3.4/4, ms1mx2.9/39, Error ellipse: s-maj=17.2km s-min=12.4km az=87.0*
ISCJB ***28*** *00:57:17.9±0.2, 25°.51N±0°.03×142°.59E±0°.04, h38km, mb4.6/80, MS3.7/6, Error ellipse: s-maj=5.5km s-min=4.7km az=25.6*
NEIC ***28*** *00:57:19.3±0.2, 25°.51N×142°.60E, h35km, mb4.8/44, Error ellipse: s-maj=4.8km s-min=3.9km az=115.0*
ISC 28 00:57:20.0±0.4, 25°.49N±0°.05×142°.63E±0°.06, h38km, n126, σ1§62/135, mb4.6/80, MS3.7/7, 1C, Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**1.65**	**346**	*e*Pn	**Pn**	00 57 45.3	-1.1
CBIJ				Sn	**Sn**	00 58 10.6	+4.3
JCJ	**Chichijima**	**1.65**	**346**	Pn	**Pn**	00 57 46.5	+0.2
	96nm,0.3s,baz=180,slow=5.5,SNR=49						
JCJ				Sn	**Sn**	00 58 10.6	+4.3
	81nm,0.3s,baz=276,slow=22,SNR=4.6						
JHJ2	**Mitsune**	**7.98**	**343**	*e*Pn	**Pn**	00 59 12.2	-1.2
JHJ	**Hachijo jima 2**	**8.00**	**343**	LR	LR	01 02 05.4	
	comp=Z,181nm,19.6s,baz=280,slow=36						
MJAR	**Matsushiro Arr**	**11.65**	**342**	Pn	**Pn**	01 00 02.5	-1.1
	0.4nm,0.3s,baz=125,slow=4.5,SNR=4.4						
MJAR				Sn	**Sn**	01 02 05.9	-6.4
	0.7nm,0.3s,baz=82,slow=28,SNR=4.3						
MJAR				LR	LR	01 04 49.1	
	comp=Z,146nm,18.2s,baz=180,slow=39						
MAJO	**Matsushiro**	**11.65**	**342**	*e*Pn	**Pn**	01 00 02.2	-1.4
MJB9	**Matsu-Tunnel**	**11.65**	**342**	*e*Pn	**Pn**	01 00 01.8	-1.9
JOW	**Kunigami**	**12.97**	**279**	*e*Pn	**Pn**	01 00 20.4	-1.2
KSRS	**Korea Array**	**17.28**	**317**	P	**P**	01 01 20.2	+0.8
	baz=129,slow=12,SNR=8.3						
KS15	**Wonju

GYA			sS	sS	01 09 08.0	-6.5
GYA			ScP	**ScP**	**01 10 15.0**	**+1.1**
GYA			SS	**SnSn**	**01 10 47.3**	**-3.0**
GYA			pmax	pmax		
	comp=Z,10.0nm,0.8s					
GYA			pmax	pmax		
	comp=Z,110nm,5.4s					
GYA			LR	LR		
	comp=N,500nm,17.9s					
GYA			LR	LR		
	comp=E,480nm,18.2s					
GYA			LR	LR		
	comp=Z,470nm,18.0s					
CD2	**Chengdu**	**34.56 288**	P	**P**	**01 04 03.3**	**-1.8**
CD2			pmax	pmax		
	comp=Z,30nm,0.8s					
LZH	**Lanzhou**	**34.75 297**	*e*P	**P**	**01 04 08.5**	**+1.6**
LZH			pP	pP	01 04 15.8	-1.8
LZH			sP	sP	01 04 19.3	-2.9
LZH			pmax	pmax		
	comp=Z,19nm,1.0s					
SAUI	**Saumlaki**	**35.05 200**	*e*P	**P**	**01 04 09.4**	**0.0**
	comp=Z,423nm,0.8s					
MIDW	**Midway**	**35.68 77**	*e*P	**P**	**01 04 14.6**	**-0.1**
	comp=Z,63nm,0.9s					
ULN	**Ulaanbaatar**	**35.77 318**	*e*P	**P**	**01 04 14.8**	**-0.6**
	comp=Z,6.3nm,1.2s					
KMI	**Kunming**	**35.97 278**	P	**P**	**01 04 18.0**	**+0.5**
KMI			pmax	pmax		
	comp=Z,20nm,0.5s					
KMI			pmax	pmax		
	comp=Z,87nm,4.7s					
SMY	**Shemya**	**36.04 33**	*e*P	**P**	**01 04 18.0**	**+0.6**
	comp=Z,454nm,2.0s					
SONA1	**Songino Array**	**36.16 318**	*e*P	**P**	**01 04 17.2**	**-1.5**
SONM	**Songino Array**	**36.16 318**	P	**P**	**01 04 17.7**	**-1.0**
	comp=Z,1.2nm,0.8s,baz=122,slow=7.7,SNR=5.8					
KAPI	**Kappang**	**37.60 219**	P	**P**	**01 04 31.6**	**+0.5**
	comp=Z,1.6nm,0.3s,baz=236,slow=17,SNR=2.4					
SEY	**Seymchan**	**37.99 7**	P	**P**	**01 04 32.9**	**-1.1**
	comp=Z,2.0nm,0.7s,baz=174,slow=6.7,SNR=6.1					
KSM	**Kuching**	**39.25 238**	*e*P	**P**	**01 04 44.9**	**-0.2**
	comp=Z,30nm,1.5s					
CHTO	**Chiang Mai**	**40.87 270**	*e*P	**P**	**01 04 58.4**	**-0.1**
	comp=Z,8.7nm,1.4s					
CMAR	**Chiang Mai Arr**	**40.98 269**	P	**P**	**01 05 00.6**	**+1.2**
	comp=Z,1.5nm,0.6s,baz=58,slow=7.3,SNR=7.8					
CMAR			LR	LR	01 21 43.2	
	comp=Z,26nm,18.4s,baz=95,slow=36					
MYKOM	**Kota Tinggi**	**44.16 244**	*e*P	**P**	**01 05 25.6**	**+0.4**
	comp=Z,12nm,1.1s					
KULM	**Kulim**	**44.91 251**	*e*P	**P**	**01 05 30.7**	**-0.6**
	comp=Z,41nm,1.7s					
BILL	**Bilibino**	**44.93 12**	*e*P	**P**	**01 05 31.9**	**+1.3**
	comp=Z,8.9nm,1.1s					
IPM	**Ipoh**	**45.02 249**	*e*P	**P**	**01 05 31.7**	**-0.5**
	comp=Z,10nm,1.1s					
NIKH	**Nikolski High**	**45.34 40**	*e*P	**P**	**01 05 34.6**	**+0.5**
	comp=Z,88nm,1.6s					
SHL	**Shillong**	**45.56 282**	*e*P	**P**	**01 05 38.0**	**+1.5**
WRAB	**Tennant Creek**	**45.87 191**	*e*P	**P**	**01 05 38.6**	**0.0**
	comp=Z,25nm,1.2s					
WB2	**Warramunga Arr**	**45.88 191**	*e*P	**P**	**01 05 38.7**	**0.0**
	comp=Z,12nm,0.7s					
WRA	**Warramunga Arr**	**45.88 191**	P	**P**	**01 05 37.5**	**-1.3**
	comp=Z,9.0nm,0.7s,baz=11,slow=8.5,SNR=36					
FITZ	**Fitzroy Crossi**	**46.38 203**	*e*P	**P**	**01 05 43.0**	**+0.3**
	comp=Z,20nm,1.5s					
TIXI	**Tiksi**	**46.84 354**	*e*P	**P**	**01 05 46.0**	**+0.4**
	comp=Z,2.8nm,0.9s					
CISI	**Cisompet, Garu**	**47.18 231**	*e*P	**P**	**01 05 48.1**	**-1.0**
	comp=Z,58nm,1.4s					
WMQ	**Urumqi**	**47.85 307**	*e*P	**P**	**01 05 55.3**	**+1.2**
WMQ			pmax	pmax		
	comp=Z,5.0nm,0.6s					
WMQ			pmax	pmax		
	comp=Z,66nm,4.4s					
WMQ			LR	LR		
	comp=E,14nm,26.6s					
WMQ			LR	LR		
	comp=Z,15nm,22.0s					
AS01	**Alice Springs**	**49.59 190**	*e*P	**P**	**01 06 07.7**	**+0.2**
AS31	**Alice Springs**	**49.59 191**	*e*P	**P**	**01 06 08.0**	**+0.4**
	comp=Z,1.0nm,0.7s					
ASAR	**Alice Springs**	**49.59 191**	P	**P**	**01 06 08.0**	**+0.4**
	comp=Z,0.9nm,0.6s,baz=14,slow=9.4,SNR=14					
GSI	**Gunungsitoli**	**49.62 248**	*e*P	**P**	**01 06 07.4**	**-0.5**
	comp=Z,14nm,1.0s					
TNA	**Tin City**	**50.67 24**	*e*P	**P**	**01 06 15.4**	**+0.2**
	comp=Z,28nm,1.1s					
ZAA0	**Zalesovo Array**	**50.96 320**	*e*P	**P**	**01 06 16.9**	**-0.7**
ZALV	**Zalesovo Beam**	**50.96 320**	P	**P**	**01 06 17.1**	**-0.5**
	comp=Z,0.8nm,0.4s,baz=100,slow=6.5,SNR=4.5					
ZALV			PcP	**PcP**	**01 07 32.6**	**-0.8**
	comp=Z,2.2nm,0.7s,baz=108,slow=4.8,SNR=7.0					
MK01	**Makanchi Array**	**51.80 311**	*e*P	**P**	**01 06 23.5**	**-0.6**
MK31	**Makanchi Array**	**51.81 311**	*e*P	**P**	**01 06 24.0**	**-0.1**
MKAR	**Makanchi Array**	**51.81 311**	P	**P**	**01 06 23.9**	**-0.2**
	comp=Z,1.0nm,0.7s,baz=84,slow=8.9,SNR=8.6					
MKAR			PcP	**PcP**	**01 07 36.2**	**-0.6**
	comp=Z,1.3nm,0.8s,baz=87,slow=6.2,SNR=3.6					
MAKZ	**Makanchi**	**52.03 311**	*e*P	**P**	**01 06 25.2**	**-0.5**
	comp=Z,12nm,1.6s					
OPA	**Opana**	**54.15 81**	*e*P	**P**	**01 06 41.5**	**-0.2**
	comp=Z,153nm,1.2s					
NRIK	**Noril'sk**	**54.28 339**	P	**P**	**01 06 41.9**	**0.0**
	comp=Z,4.9nm,0.7s,baz=105,slow=11,SNR=7.7					
KURK	**Kurchatov**	**54.40 315**	*e*P	**P**	**01 06 42.0**	**-1.0**
	comp=Z,10nm,1.1s					
SVW2	**Sparrevohn**	**54.43 32**	*e*P	**P**	**01 06 43.4**	**+0.2**
	comp=Z,5.0nm,1.0s					
TT01	**Tatalina**	**54.62 30**	*e*P	**P**	**01 06 43.9**	**-0.6**
CAST	**Castle Rocks**	**56.48 29**	*e*P	**P**	**01 06 57.7**	**-0.1**
	comp=Z,5.9nm,1.0s					
KSH	**Kashi**	**56.75 302**	*e*P	**P**	**01 07 04.8**	**+4.5**
KSH			*e*sP	sP	01 07 15.8	-0.3
KSH			*e*PP	**PP**	**01 09 13.3**	**+6.7**
KSH			*e*ScP	**ScP**	**01 11 56.0**	**+3.4**
KSH			PcS	**PcS**	**01 11 58.8**	**+1.9**
KSH			S	**S**	**01 14 56.0**	**+5.2**
KSH			pmax	pmax		
	comp=Z,120nm,5.2s					
KSH			LR	LR		
	comp=N,110nm,11.9s					
KSH			LR	LR		
	comp=E,78nm,9.8s					
KSH			LR	LR		
	comp=Z,160nm,7.4s					
STKA	**Stephens Creek**	**57.06 181**	P	**P**	**01 07 01.4**	**-0.7**
	comp=Z,1.8nm,0.8s,baz=314,slow=15,SNR=3.3					
TRF	**Thorofare Moun**	**57.28 29**	*e*P	**P**	**01 07 03.1**	**-0.6**
	comp=Z,8.0nm,1.1s					
PMR	**Palmer**	**57.58 32**	*e*P	**P**	**01 07 05.9**	**+0.4**
	comp=Z,4.7nm,0.8s					
RND	**Reindeer**	**57.91 30**	*e*P	**P**	**01 07 07.3**	**-0.7**
	comp=Z,4.7nm,0.8s					
SCM	**Sheep Creek Mo**	**58.45 32**	*e*P	**P**	**01 07 11.5**	**-0.3**
	comp=Z,12nm,1.0s					
ILAR	**Eielson Array**	**58.92 28**	P	**P**	**01 07 12.9**	**-2.0**
	comp=Z,2.1nm,0.7s,baz=262,slow=5.9,SNR=18					
ILB	**Eielson Array**	**58.92 28**	*e*P	**P**	**01 07 13.4**	**-1.6**
IL1	**Eielson Array**	**58.93 28**	*e*P	**P**	**01 07 12.8**	**-2.2**
BRVK	**Borovoye**	**59.56 318**	*e*P	**P**	**01 07 19.1**	**-0.4**
	comp=Z,9.7nm,0.9s					
DOT	**Dot Lake**	**60.07 30**	*e*P	**P**	**01 07 22.5**	**-0.5**
	comp=Z,7.8nm,0.8s					
ZRNK	**Zerenda**	**60.34 318**	*e*P	**P**	**01 07 24.1**	**-0.8**
	comp=Z,6.1nm,0.9s					
KKAR	**Karatay Array**	**60.35 307**	*e*P	**P**	**01 07 25.2**	**0.0**
DAWY	**Dawson**	**62.15 29**	*e*P	**P**	**01 07 39.0**	**+1.9**
	comp=Z,2.2nm,0.8s					
KBL	**Kabul**	**63.11 297**	*e*P	**P**	**01 07 44.7**	**+0.5**
	comp=Z,6.5nm,0.8s					
INK	**Inuvik**	**64.32 24**	P	**P**	**01 07 50.3**	**-0.9**
	comp=Z,2.8nm,0.7s,baz=294,slow=7.6,SNR=5.7					
ARU	**Arti**	**65.94 323**	*e*P	**P**	**01 08 00.5**	**-1.4**
	comp=Z,8.9nm,0.8s					
ABKAR	**Akbulak array**	**66.50 315**	*e*P	**P**	**01 08 04.9**	**-0.8**
AKTO	**Aktyubinsk**	**67.46 316**	P	**P**	**01 08 11.2**	**-0.6**
	comp=Z,2.4nm,0.7s,baz=98,slow=7.6,SNR=14					
GEYT	**Alibeck**	**70.71 303**	P	**P**	**01 08 32.2**	**0.0**
	comp=Z,1.9nm,0.8s,baz=35,slow=3.6,SNR=5.7					
YKA	**Yellowknife Ar**	**73.36 28**	P	**P**	**01 08 46.3**	**-1.2**
	comp=Z,1.5nm,0.7s,baz=291,slow=5.9,SNR=19					
YKB5	**Yellowknife Ar**	**73.36 28**	*e*P	**P**	**01 08 48.3**	**+0.8**
ARCES	**ARCESS Array B**	**75.18 341**	P	**P**	**01 08 58.0**	**-0.1**
	comp=Z,3.7nm,0.8s,baz=63,slow=8.7,SNR=9.3					
NEW	**Newport**	**77.81 42**	*e*P	**P**	**01 09 14.7**	**+1.2**
	comp=Z,3.9nm,0.8s					
KBZ	**Khabaz**	**79.39 313**	P	**P**	**01 09 22.7**	**+0.6**
	comp=Z,2.3nm,0.7s,baz=146,slow=4.0,SNR=3.7					
FINES	**FINESS Array B**	**79.56 334**	P	**P**	**01 09 22.3**	**-0.4**
	comp=Z,5.7nm,0.6s,baz=70,slow=4.9,SNR=11					
CMB	**Columbia Colle**	**79.87 53**	*e*P	**P**	**01 09 25.9**	**+0.9**
	comp=Z,3.8nm,0.8s					
NV01	**Mina Array Sit**	**81.19 52**	*e*P	**P**	**01 09 33.3**	**+1.1**
NVAR	**Mina Array Bea**	**81.19 52**	P	**P**	**01 09 31.4**	**-0.9**
	comp=Z,1.9nm,0.7s,baz=286,slow=6.1,SNR=7.3					
RLMT	**Red Lodge**	**84.06 43**	*e*P	**P**	**01 09 47.3**	**+0.3**
	comp=Z,4.5nm,0.6s					
AKASG	**Malin Array Be**	**84.14 324**	P	**P**	**01 09 46.0**	**-1.0**
	comp=Z,1.6nm,0.5s,baz=51,slow=5.3,SNR=9.7					
AK11	**Malin Array Si**	**84.19 324**	*e*P	**P**	**01 09 46.5**	**-0.7**
PDAR	**Pinedale Array**	**85.06 45**	P	**P**	**01 09 50.5**	**-1.6**
	comp=Z,0.2nm,0.4s,baz=11,slow=1.5,SNR=4.5					
NOA	**NORSAR Array B**	**85.24 339**	P	**P**	**01 09 51.3**	**-1.2**
	comp=Z,2.3nm,0.8s,baz=45,slow=4.8,SNR=4.1					
SRU	**San Rafael Swe**	**86.26 48**	*e*P	**P**	**01 09 59.3**	**+1.1**
	comp=Z,6.8nm,0.9s					
U15A	**North Rim**	**86.36 51**	*e*P	**P**	**01 10 03.0**	**+4.2**
BRTR	**Keskin Array B**	**87.39 313**	P	**P**	**01 10 02.6**	**-0.9**
	comp=Z,0.8nm,0.7s,baz=118,slow=3.1,SNR=4.5					
BR231	**Keskin MP Arra**	**87.89 314**	*e*P	**P**	**01 10 03.4**	**-2.5**
X18A	**Snowflake**	**88.96 52**	*e*P	**P**	**01 10 08.9**	**-2.3**
VRAC	**Vranov**	**91.40 328**	P	**P**	**01 10 21.3**	**-0.7**
	comp=Z,1.3nm,0.5s,baz=114,slow=5.3,SNR=3.1					
GERES	**GERESS Array B**	**93.09 329**	P	**P**	**01 10 29.9**	**0.0**
	comp=Z,1.1nm,0.7s,baz=72,slow=4.3,SNR=3.7					
GERES			LR	LR	01 55 27.5	
	comp=Z,18nm,18.4s,baz=304,slow=38					
TXAR	**Lajitas Array**	**96.23 54**	P	**P**	**01 10 44.0**	**-0.8**
	comp=Z,0.7nm,0.9s,baz=316,slow=3.5,SNR=6.9					
TORD	**Torodi Ar. Bea**	**125.93 311**	PKP	**PKPdf**	**01 16 17.9**	**-0.8**
	comp=Z,0.8nm,1.0s,baz=255,slow=2.8,SNR=3.7					
PLCA	**Paso Flores**	**148.54 127**	PKPbc	**PKPbc**	**01 17 01.4**	**-1.5**
	comp=Z,2.8nm,0.7s,baz=276,slow=2.8,SNR=8.9					
LPAZ	**La Paz**	**149.90 78**	PKPbc	**PKPdf**	**01 17 04.7**	**+1.9**
	comp=Z,3.3nm,0.7s,baz=249,slow=7.1,SNR=16					

TIR ***28*** *01:03:48.9±0.8, 39°.15N×20°.42E, h20km±5km, ML4.0*
HLW ***28*** *01:03:48.4, 39°.57N×21°.10E, h33km±24km, Ml4.4*
ISCJB ***28*** *01:03:50.2±0.4, 39°.30N±0°.01×20°.39E±0°.01, h9km±2km, mb4.4/63, MS3.4/12, Error ellipse: s-maj=2.0km s-min=1.4km az=135.4*
PDG ***28*** *01:03:51.0±1.0, 39°.29N×20°.51E, h6km±1km, MD4.2/1, ML4.1/13, Error ellipse: s-maj=0.8km s-min=0.8km az=90.0*
MOS ***28*** *01:03:51.8±1.2, 39°.32N×20°.43E, h30km, mb4.6/40, Error ellipse: s-maj=5.0km s-min=3.1km az=75.8*
ATH ***28*** *01:03:51.9, 39°.28N×20°.54E, h21km, ML4.1/38, Error ellipse: s-maj=1.0km s-min=0.5km az=282.0*
CSEM ***28*** *01:03:51.1±0.1, 39°.23N×20°.41E, h10km, mb4.4/26, Mw4.2, Error ellipse: s-maj=3.2km s-min=2.0km az=52.0*
NEIC ***28*** *01:03:52.0, 39°.26N×20°.52E, h1km, mb4.5/37, MW4.4, ML4.2(THE), Moment Tensor Solution. s26 Moment tensor: Scale 1015Nm; Mrr2.91; Mθθ-0.13; Mφφ-2.78; Mrθ1.63; Mθφ2.43; Mφr-1.82; Best double couple: Mo4.50000×1015 NP1:φs343.00000°, δ29.00000°, λ110.00000°. NP2:φs140.00000°, δ63.00000°, λ79.00000°. Principal axes: T 3.7200, Plg70.0000°, Azm26.0000°; N 1.2400, Plg10.0000°, Azm145.0000°; P -4.9500, Plg17.0000°, Azm238.0000°; After THE.*
THE ***28*** *01:03:52.0, 39°.26N×20°.52E, h1km, ML4.2/51 Error ellipse: s-maj=0.5km s-min=0.2km az=269.0*
IDC ***28*** *01:03:54.9±1.4, 39°.34N×20°.56E, h40km±12km, mb4.0/21, mb1 4.2/34, mb1mx4.1/52, mbtmp4.2/34, ML4.0/10, MS3.3/21, Ms1 3.3/21, ms1mx3.2/53, Error ellipse: s-maj=13.4km s-min=10.0km az=171.0*

ISC 28 01:03:51.0±0.9, 39°.26N±0°.01×20°.47E±0°.02, h13km±5km, n706, σ1§77/937, mb4.5/63, MS3.4/12, 70C-41D, Greece-Albania border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IGT	**Igoumenitsa**	**0.30**	**339**	P	**Pb**	**01 03 58.1**	**-0.1**
IGT				S	**Sb**	**01 04 03.0**	**-0.1**
IGT	**Igoumenitsa**	**0.30**	**339**	P	**Pb**	**01 03 57.7**	**-0.5**
IGT	**Igoumenitsa**	**0.30**	**339**	P	**Pb**	**01 03 57.7**	**-0.5**
IGT				S	**Sb**	**01 04 03.0**	**-0.1**
IGT	**Igoumenitsa**	**0.30**	**339**	P	**Pb**	**01 03 58.0**	**-0.3**
IGT				S	**Sb**	**01 04 04.1**	**+1.0**
IGT				AML	AML	01 04 08.0	
	comp=N,79771μm,0.5s						
IGT				AML	AML	01 04 09.7	
	comp=E,89719μm,0.5s						
IGT	**Igoumenitsa**	**0.30**	**339**	P	**Pb**	**01 03 57.7**	**-0.5**
SGD	**Sagiada**	**0.40**	**333**	P	**Pb**	**01 04 00.1**	**+0.1**
SGD				S	**Sb**	**01 04 06.5**	**+0.5**
SGD	**Sagiada**	**0.40**	**333**	P	**Pb**	**01 04 00.4**	**+0.4**
SGD				S	**Sb**	**01 04 06.5**	**+0.5**
SGD	**Sagiada**	**0.40**	**333**	P	**Pb**	**01 04 00.4**	**+0.4**
SGD				S	**Sb**	**01 04 08.0**	**+1.9**
SGD				AML	AML	01 04 12.5	
	comp=N,40877μm,0.4s						
SGD				AML	AML	01 04 13.1	
	comp=E,49599μm,0.7s						
JAN	**Janina**	**0.50**	**36**	P	**Pg**	**01 04 00.8**	**0.0**
JAN				S	**Sg**	**01 04 07.1**	**-0.3**
JAN	**Janina**	**0.50**	**36**	P	**Pg**	**01 03 59.9**	**-0.9**
JAN	**Janina**	**0.50**	**36**	P	**Pg**	**01 04 00.8**	**0.0**
JAN				S	**Sb**	**01 04 08.8**	**0.0**
JAN	**Janina**	**0.50**	**36**	AML	AML	01 04 08.4	
JAN	**Janina**	**0.50**	**36**	P	**Pg**	**01 03 59.9**	**-0.9**
DSL	**Palaion Diasel**	**0.50**	**104**	P	**Pg**	**01 04 00.7**	**-0.1**
DSL				S	**Sg**	**01 04 07.3**	**-0.2**
DSL	**Palaion Diasel**	**0.50**	**104**	P	**Pg**	**01 04 00.7**	**-0.1**
DSL				S	**Sg**	**01 04 07.4**	**-0.1**
DSL	**Palaion Diasel**	**0.50**	**104**	P	**Pg**	**01 04 00.1**	**-0.8**
DSL				S	**Sg**	**01 04 07.5**	**-0.1**
DSL				AML	AML	01 04 10.5	
	comp=E,79369μm,0.4s						
DSL				AML	AML	01 04 11.9	
	comp=N,97169μm,0.7s						
DSL	**Palaion Diasel**	**0.50**	**104**	P	**Pg**	**01 03 59.4**	**-1.4**
KEK	**Kerkira**	**0.69**	**311**	P	**Pb**	**01 04 05.3**	**+0.3**
KEK				S	**Sb**	**01 04 15.8**	**+1.4**
KEK	**Kerkira**	**0.69**	**311**	P	**Pb**	**01 04 04.7**	**-0.3**
KEK				S	**Sn**	**01 04 16.4**	**-0.7**
KEK	**Kerkira**	**0.69**	**311**	P	**Pb**	**01 04 05.3**	**+0.3**
KEK				S	**Sn**	**01 04 18.1**	**+1.0**
PDO	**Prodromos**	**0.86**	**140**	P	**Pb**	**01 04 07.5**	**-0.2**
PDO				S	**Sb**	**01 04 20.3**	**+1.2**
PDO	**Prodromos**	**0.86**	**140**	P	**Pb**	**01 04 07.5**	**-0.2**
PDO				S	**Sb**	**01 04 20.3**	**+1.2**
PDO	**Prodromos**	**0.86**	**140**	P	**Pg**	**01 04 06.3**	**-1.3**
PDO				S	**Sb**	**01 04 20.9**	**+1.7**
PDO				AML	AML	01 04 26.9	
	comp=N,32967μm,0.7s						
PDO				AML	AML	01 04 27.0	
	comp=E,27374μm,0.6s						
KPRO	**Kipourio**	**0.98**	**44**	P	**Pb**	**01 04 10.1**	**+0.2**
KPRO				S	**Sb**	**01 04 23.7**	**+0.9**
KPRO	**Kipourio**	**0.98**	**44**	P	**Pb**	**01 04 10.1**	**+0.2**
KPRO				S	**Sb**	**01 04 23.7**	**+0.9**
KPRO	**Kipourio**	**0.98**	**44**	P	**Pg**	**01 04 09.4**	**-0.6**
KPRO				S	**Sb**	**01 04 23.4**	**+0.7**
KPRO				AML	AML	01 04 30.5	
	comp=N,23860μm,0.7s						
KPRO				AML	AML	01 04 32.0	
	comp=E,25442μm,0.6s						
PVO	**Paravola**	**1.04**	**127**	P	**Pb**	**01 04 10.8**	**0.0**
PVO				S	**Sb**	**01 04 25.7**	**+1.3**
PVO	**Paravola**	**1.04**	**127**	P	**Pb**	**01 04 10.8**	**0.0**
PVO				S	**Sb**	**01 04 25.7**	**+1.3**
PVO	**Paravola**	**1.04**	**127**	P	**Pn**	**01 04 12.4**	**+1.1**
PVO				S	**Sb**	**01 04 25.7**	**+1.3**
PVO				AML	AML	01 04 30.8	
	comp=E,26102μm,0.5s						
PVO				AML	AML	01 04 35.7	
	comp=N,17913μm,1.1s						
PENT	**Pentalofos**	**1.07**	**28**	P	**Pb**	**01 04 11.5**	**0.0**
PENT				S	**Sn**	**01 04 27.0**	**+0.4**
PENT	**Pentalofos**	**1.07**	**28**	P	**Pb**	**01 04 11.5**	**0.0**
PENT				S	**Sn**	**01 04 27.0**	**+0.4**
PENT	**Pentalofos**	**1.07**	**28**	P	**Pb**	**01 04 11.8**	**+0.4**
PENT				S	**Sg**	**01 04 25.2**	**-0.4**
PENT				AML	AML	01 04 32.4	
	comp=E,7971μm,0.6s						
PENT				AML	AML	01 04 40.0	
	comp=N,10130μm,0.7s						
VLS	**Valsamata**	**1.08**	**175**	P	**Pn**	**01 04 11.9**	**+0.1**
VLS				S	**Sn**	**01 04 28.4**	**+1.7**
VLS	**Valsamata**	**1.08**	**175**	P	**Pg**	**01 04 10.6**	**-1.2**
VLS				S	**Sn**	**01 04 28.1**	**+1.4**
VLS	**Valsamata**	**1.08**	**175**	P	**Pn**	**01 04 11.9**	**+0.1**
VLS				S	**Sn**	**01 04 28.4**	**+1.7**
VLS	**Valsamata**	**1.08**	**175**	P	**Pg**	**01 04 10.6**	**-1.2**
VLS				S	**Sn**	**01 04 28.1**	**+1.4**
EVR	**Evrytania**	**1.09**	**108**	P	**Pb**	**01 04 11.8**	**0.0**
EVR				S	**Sb**	**01 04 27.5**	**+1.5**
EVR	**Evrytania**	**1.09**	**108**	P	**Pb**	**01 04 11.8**	**0.0**
EVR				S	**Sb**	**01 04 27.5**	**+1.5**
EVR	**Evrytania**	**1.09**	**108**	P	**Pg**	**01 04 11.7**	**-0.4**
EVR				S	**Sn**	**01 04 28.3**	**+1.2**
EVR				AML	AML	01 04 32.4	
	comp=N,23156μm,0.5s						
EVR	**Evrytania**	**1.09**	**108**	P	**Pg**	**01 04 10.9**	**-1.2**
EVR				S	**Sb**	**01 04 26.9**	**+0.9**
KFL	**Anninata**	**1.17**	**168**	P	**Pn**	**01 04 13.7**	**+0.6**
KFL				S	**Sn**	**01 04 30.9**	**+2.0**
KFL	**Anninata**	**1.17**	**168**	P	**Pn**	**01 04 13.7**	**+0.6**
KFL				S	**Sn**	**01 04 30.9**	**+2.0**
KFL	**Anninata**	**1.17**	**168**	P	**Pb**	**01 04 13.2**	**+0.1**
KFL				S	**Sn**	**01 04 33.0**	**+4.1**
THL	**Klokotos Trika**	**1.23**	**75**	P	**Pg**	**01 04 14.3**	**-0.4**
THL				S	**Sn**	**01 04 32.2**	**+1.8**
THL	**Klokotos Trika**	**1.23**	**75**	P	**Pg**	**01 04 14.3**	**-0.4**
THL				S	**Sn**	**01 04 32.2**	**+1.8**
NEST	**Nestorio**	**1.24**	**21**	P	**Pn**	**01 04 15.0**	**+0.9**
NEST				S	**Sn**	**01 04 32.9**	**+2.1**
NEST	**Nestorio**	**1.24**	**21**	P	**Pn**	**01 04 15.0**	**+0.9**
NEST				S	**Sn**	**01 04 32.9**	**+2.1**
NEST	**Nestorio**	**1.24**	**21**	P	**Pn**	**01 04 15.7**	**+1.5**
NEST				S	**Sg**	**01 04 29.9**	**-1.1**
NEST				AML	AML	01 04 38.8	
	comp=E,17167μm,0.8s						
NEST				AML	AML	01 04 40.3	
	comp=N,16358μm,0.5s						
AXS	**Araxos**	**1.27**	**146**	P	**Pb**	**01 04 15.2**	**+0.4**
AXS				S	**Sn**	**01 04 33.4**	**+2.1**
AXS	**Araxos**	**1.27**	**146**	P	**Pb**	**01 04 15.2**	**+0.4**
AXS				S	**Sn**	**01 04 33.4**	**+2.1**
AXS	**Araxos**	**1.27**	**146**	P	**Pb**	**01 04 14.9**	**+0.1**
ANX	**Ano Chora**	**1.31**	**120**	P	**Pb**	**01 04 15.9**	**+0.4**
ANX				S	**Sn**	**01 04 34.4**	**+2.0**
ANX	**Ano Chora**	**1.31**	**120**	P	**Pb**	**01 04 15.9**	**+0.4**
ANX				S	**Sn**	**01 04 34.4**	**+2.0**
EFP	**Efpalio**	**1.39**	**126**	P	**Pg**	**01 04 17.4**	**-0.3**
EFP				S	**Sn**	**01 04 36.8**	**+2.5**
EFP	**Efpalio**	**1.39**	**126**	P	**Pg**	**01 04 17.4**	**-0.3**
EFP				S	**Sn**	**01 04 36.8**	**+2.5**
EFP	**Efpalio**	**1.39**	**126**	P	**Pg**	**01 04 17.4**	**-0.3**
UPR	**University Cam**	**1.41**	**133**	P	**Pg**	**01 04 17.9**	**-0.2**
UPR				S	**Sn**	**01 04 37.4**	**+2.6**
UPR	**University Cam**	**1.41**	**133**	P	**Pg**	**01 04 17.9**	**-0.2**
UPR				S	**Sn**	**01 04 37.4**	**+2.6**
UPR	**University Cam**	**1.41**	**133**	P	**Pg**	**01 04 18.9**	**+0.8**
RLS	**Riolos of Patr**	**1.43**	**147**	P	**Pg**	**01 04 18.0**	**-0.4**
RLS				S	**Sg**	**01 04 38.3**	**+1.4**
RLS	**Riolos of Patr**	**1.43**	**147**	P	**Pg**	**01 04 18.0**	**-0.4**
RLS				S	**Sg**	**01 04 38.3**	**+1.4**
RLS	**Riolos of Patr**	**1.43**	**147**	S	**Sg**	**01 04 38.6**	**+1.7**
RLS				AML	AML	01 04 43.7	
	comp=N,8926μm,0.9s						
RLS				AML	AML	01 04 45.0	
	comp=E,9667μm,0.8s						
RLS	**Riolos of Patr**	**1.43**	**147**	P	**Pn**	**01 04 16.7**	**+0.1**
RLS				S	**Sg**	**01 04 38.1**	**+1.2**
VTN	**Vitineika**	**1.45**	**157**	P	**Pg**	**01 04 21.2**	**+2.4**
VTN	**Vitineika**	**1.45**	**157**	P	**Pg**	**01 04 21.2**	**+2.4**
KZN	**Kozani**	**1.45**	**43**	P	**Pb**	**01 04 18.1**	**+0.2**
KZN				S	**Sg**	**01 04 38.7**	**+1.0**
KZN	**Kozani**	**1.45**	**43**	P	**Pn**	**01 04 17.3**	**+0.3**
KZN				S	**Sg**	**01 04 39.1**	**+1.4**
KZN	**Kozani**	**1.45**	**43**	P	**Pb**	**01 04 18.1**	**+0.2**
KZN				S	**Sg**	**01 04 38.7**	**+1.0**
KZN	**Kozani**	**1.45**	**43**	P	**Pn**	**01 04 17.3**	**+0.3**
KZN				S	**Sg**	**01 04 39.1**	**+1.4**
AGG	**Agios Georgios**	**1.46**	**99**	P	**Pg**	**01 04 18.5**	**-0.6**
AGG				S	**Sg**	**01 04 38.9**	**+0.8**
AGG	**Agios Georgios**	**1.46**	**99**	*e*P	**Pn**	**01 04 16.9**	**-0.2**
AGG				S	**Sn**	**01 04 37.5**	**+1.3**
AGG	**Agios Georgios**	**1.46**	**99**	*e*Pn	**Pn**	**01 04 16.9**	**-0.2**
**

comp=E,7051µm,0.8s
KLV Kalavryta, Ach 1.79 132 P Pn 01 04 22.4 +0.8
KLV S Sb 01 04 47.2 +1.3
DSF Desfina 1.81 117 P Pn 01 04 23.0 +1.1
DSF S Sb 01 04 47.6 +0.9
DSF Desfina 1.81 117 P Pn 01 04 23.0 +1.1
DSF S Sb 01 04 47.6 +0.9
DSF Desfina 1.81 117 P Pb 01 04 24.1 +0.1
DSF AML AML 01 04 54.6
comp=N,4964µm,0.9s
DSF AML AML 01 04 57.5
comp=E,4503µm,0.8s
DSF Desfina 1.81 117 P Pb 01 04 23.7 -0.3
DSF S Sb 01 04 47.6 +0.9
OHR Ohrid 1.87 8 *i* Pn **Pg 01 04 26.0 -0.9**
OHR *i* Sn Sg 01 04 53.1 +1.9
OHR Ohrid 1.87 8 *i* Pn **Pg 01 04 26.0 -0.9**
BIA Bitola 1.88 20 *i* Pn **Pg 01 04 26.9 -0.2**
BIA *i* Sn Sg 01 04 53.5 +2.1
BIA Bitola 1.88 20 P **Pb 01 04 25.3 +0.1**
BIA Bitola 1.88 20 *i* Pn **Pg 01 04 26.8 -0.2**
BIA S Sg 01 04 53.4 +1.9
BIA Bitola 1.88 20 P **Pb 01 04 25.3 +0.1**
BIA S Sg 01 04 53.4 +1.9
FYTO Fytoko, Volos 1.92 85 P **Pn 01 04 24.8 +1.4**
FYTO S Sg 01 04 50.5 +0.8
FYTO Fytoko, Volos 1.92 85 P **Pn 01 04 24.8 +1.4**
FYTO S Sb 01 04 50.5 +0.8
FYTO Fytoko, Volos 1.92 85 P **Pn 01 04 24.6 +1.2**
FYTO S Sb 01 04 50.2 +0.5
AMT Artemida-Makis 1.98 150 P **Pn 01 04 25.7 +1.6**
AMT S Sb 01 04 52.1 +0.8
AMT Artemida-Makis 1.98 150 P **Pn 01 04 25.7 +1.6**
AMT S Sb 01 04 52.1 +0.8
AMT Artemida-Makis 1.98 150 P **Pn 01 04 25.8 +1.6**
AMT AML AML 01 05 06.1
comp=N,11472µm,1.0s
AMT AML AML 01 05 21.3
comp=E,8056µm,0.9s
LKR Lokris 2.06 106 P **Pn 01 04 26.5 +1.2**
LKR S Sb 01 04 53.5 -0.3
LKR Lokris 2.06 106 P **Pn 01 04 26.5 +1.2**
LKR S Sb 01 04 53.5 -0.3
LKR Lokris 2.06 106 P **Pb 01 04 28.1 -0.2**
LKR AML AML 01 05 05.2
comp=E,2388µm,0.9s
LKR AML AML 01 05 06.7
comp=N,2583µm,0.5s
LKR Lokris 2.06 106 P **Pn 01 04 26.9 +1.6**
LKR S Sb 01 04 53.5 -0.3
XOR Xorichti 2.11 86 P **Pn 01 04 27.4 +1.4**
XOR S Sb 01 04 55.1 -0.2
XOR Xorichti 2.11 86 P **Pn 01 04 27.4 +1.4**
XOR S Sb 01 04 55.1 -0.2
XOR Xorichti 2.11 86 P **Pn 01 04 27.7 +1.6**
XOR S Sn 01 04 54.5 +2.3
NEO Neokhori 2.14 88 P **Pn 01 04 27.9 +1.5**
NEO S Sb 01 04 55.7 -0.3
NEO Neokhori 2.14 88 P **Pn 01 04 28.3 +1.9**
NEO S Sn 01 04 54.4 +1.6
NEO Neokhori 2.14 88 P **Pn 01 04 28.3 +1.9**
NEO S Sn 01 04 55.1 +2.3
NEO AML AML 01 05 04.8
comp=E,5785µm,0.6s
NEO AML AML 01 05 05.4
comp=N,7345µm,0.7s
NEO Neokhori 2.14 88 P **Pn 01 04 28.1 +1.7**
NEO S Sn 01 04 54.4 +1.6
TIR Tirane 2.14 348 *i* PN **Pb 01 04 28.6 -1.0**
TIR *i* SN Sg 01 04 59.1 -0.7
TIR Tirane 2.14 348 ⇑*iP* **Pb 01 04 28.8 -0.9**
TIR Tirane 2.14 348 *eP* **Pb 01 04 28.7 -0.9**
TIR Tirane 2.14 348 *i* Pn **Pb 01 04 28.6 -1.0**
SNR=63
TIR S Sg 01 04 57.8 -2.0
TIR Tirane 2.14 348 *e*Pn **Pb 01 04 28.7 -0.9**
SMIA Simia 2.16 99 P **Pn 01 04 28.3 +1.5**
SMIA S Sb 01 04 56.3 -0.4
SMIA Simia 2.16 99 P **Pn 01 04 28.3 +1.5**
SMIA S Sb 01 04 56.3 -0.4
SMIA Simia 2.16 99 P **Pn 01 04 28.2 +1.5**
SMIA AML AML 01 05 06.0
comp=N,13136µm,1.0s
SMIA AML AML 01 05 10.1
comp=E,11865µm,1.2s
TRIP Tripoli 2.23 140 P **Pb 01 04 31.5 +0.3**
TRIP Tripoli 2.23 140 P **Pb 01 04 31.4 +0.3**
TRIP AML AML 01 05 10.3
comp=E,6758µm,0.9s
TRIP AML AML 01 05 11.9
comp=N,3597µm,0.9s
GRG Griva 2.25 40 P **Pn 01 04 29.4 +1.5**
GRG S Sn 01 04 58.3 +2.6
GRG Griva 2.25 40 P **Pn 01 04 29.5 +1.5**
GRG S Sn 01 04 58.3 +2.6
GRG Griva 2.25 40 P **Pn 01 04 29.4 +1.5**
GRG S Sn 01 04 58.3 +2.6
GRG Griva 2.25 40 P **Pn 01 04 29.1 +1.1**
GRG AML AML 01 05 09.3
comp=E,2335µm,1.2s
GRG AML AML 01 05 11.5
comp=N,4843µm,1.5s
GRG Griva 2.25 40 P **Pn 01 04 29.5 +1.5**
GRG S Sn 01 04 58.3 +2.6
LTK Loutraki 2.31 121 P **Pn 01 04 30.4 +1.7**
LTK S Sb 01 05 00.3 -0.6
LTK Loutraki 2.31 121 P **Pn 01 04 29.5 +0.8**
LTK S Sb 01 05 00.3 -0.6
LTK Loutraki 2.31 121 P **Pn 01 04 29.5 +0.8**
LTK AML AML 01 05 13.9
comp=E,3852µm,1.4s
LTK AML AML 01 05 18.4
comp=N,2437µm,1.2s
LTK Loutraki 2.31 121 P **Pn 01 04 30.1 +1.4**
THE Thessaloniki 2.36 54 P **Pn 01 04 30.9 +1.5**
THE S Sn 01 05 01.1 +2.9
THE Thessaloniki 2.36 54 P **Pn 01 04 30.5 +1.1**
THE Thessaloniki 2.36 54 P **Pn 01 04 30.5 +1.1**
THE S Sn 01 05 01.1 +2.9
THE Thessaloniki 2.36 54 P **Pn 01 04 30.5 +1.1**
ITM Ithomi 2.37 151 P **Pn 01 04 31.5 +2.0**
ITM S Sb 01 05 01.6 -1.0
ITM Ithomi 2.37 151 P **Pb 01 04 32.4 -1.1**
ITM S Sb 01 05 01.6 -1.0
ITM Ithomi 2.37 151 P **Pb 01 04 32.4 -1.1**
ITM AML AML 01 05 25.2
comp=E,4579µm,1.1s
ITM AML AML 01 05 27.1
comp=N,3887µm,1.5s
ITM Ithomi 2.37 151 P **Pb 01 04 32.0 -1.5**
VLX Vlachokerasia 2.41 141 P **Pn 01 04 31.7 +1.5**
VLX S Sb 01 05 03.0 -0.8
VLX Vlachokerasia 2.41 141 P **Pn 01 04 31.7 +1.5**
VLX S Sb 01 05 03.0 -0.8
VLX Vlachokerasia 2.41 141 P **Pb 01 04 33.6 -0.6**
VLX AML AML 01 05 21.6
comp=N,5120µm,0.8s
VLX AML AML 01 05 30.0
comp=E,4787µm,0.8s
VLX Vlachokerasia 2.41 141 P **Pb 01 04 33.0 -1.2**
HORT Hortiatis 2.42 56 P **Pn 01 04 31.7 +1.3**
HORT S Sn 01 05 03.1 +3.1
HORT Hortiatis 2.42 56 P **Pn 01 04 31.7 +1.3**
HORT S Sn 01 05 03.1 +3.1
HORT Hortiatis 2.42 56 P **Pb 01 04 33.2 -1.3**
HORT AML AML 01 05 09.8
comp=E,1286µm,0.9s
HORT AML AML 01 05 17.9
comp=N,1442µm,1.2s
HORT Hortiatis 2.42 56 P **Pn 01 04 31.4 +1.0**
PLG Polygyros 2.55 63 P **Pn 01 04 33.6 +1.6**
PLG S Sn 01 05 05.6 +2.7
PLG Polygyros 2.55 63 P **Pn 01 04 32.8 +0.8**
PLG Polygyros 2.55 63 P **Pn 01 04 33.6 +1.6**
PLG S Sn 01 05 05.6 +2.7
PLG Polygyros 2.55 63 P **Pn 01 04 34.3 +2.2**
PLG S Sn 01 05 05.1 +2.2
PLG AML AML 01 05 08.8
comp=N,2030µm,0.6s
PLG AML AML 01 05 22.2
comp=E,1451µm,1.1s
PLG Polygyros 2.55 63 P **Pn 01 04 32.8 +0.8**

PYL PYLOS 2.56 157 P **Pn 01 04 33.9 +1.7**
PYL S Sb 01 05 06.8 -1.3
PYL PYLOS 2.56 157 P **Pn 01 04 33.9 +1.7**
PYL S Sb 01 05 06.8 -1.3
PYL PYLOS 2.56 157 P **Pn 01 04 34.1 +1.9**
PYL S Sn 01 05 04.1 +0.9
PYL AML AML 01 05 24.2
comp=N,1567µm,0.6s
PYL AML AML 01 05 32.5
comp=E,1773µm,0.9s
PYL PYLOS 2.56 157 P **Pn 01 04 33.7 +1.5**
PAIG Paliouri 2.57 74 P **Pn 01 04 33.6 +1.3**
PAIG S Sn 01 05 05.8 +2.5
PAIG Paliouri 2.57 74 P **Pn 01 04 32.3 0.0**
PAIG Paliouri 2.57 74 P **Pn 01 04 33.6 +1.3**
PAIG S Sn 01 05 05.8 +2.5
PAIG Paliouri 2.57 74 P **Pn 01 04 32.3 0.0**
VAY Valandovo 2.61 37 P **Pn 01 04 34.5 +1.6**
VAY S Sn 01 05 07.7 +3.2
VAY Valandovo 2.61 37 *i* Pn **Pn 01 04 34.5 +1.6**
VAY *i* Sn Sb 01 05 08.8 -0.9
VAY Valandovo 2.61 37 P **Pn 01 04 34.5 +1.6**
VAY Valandovo 2.61 37 P **Pn 01 04 34.5 +1.6**
VAY S Sn 01 05 07.7 +3.2
VAY *i* Sn Sb 01 05 08.7 -0.9
VAY Valandovo 2.61 37 P **Pn 01 04 34.5 +1.6**
AOS Alonnisos 2.65 91 P **Pn 01 04 34.5 +1.1**
AOS S Sn 01 05 07.9 +2.5
AOS Alonnisos 2.65 91 P **Pn 01 04 34.5 +1.1**
AOS S Sn 01 05 07.9 +2.5
AOS Alonnisos 2.65 91 P **Pn 01 04 33.3 -0.1**
AOS AML AML 01 05 24.1
comp=N,4033µm,1.8s
AOS AML AML 01 05 26.6
comp=E,3043µm,1.6s
AOS Alonnisos 2.65 91 P **Pn 01 04 34.3 +0.9**
SOH Sokhos 2.71 54 P **Pn 01 04 36.0 +1.8**
SOH S Sn 01 05 10.2 +3.3
SOH Sokhos 2.71 54 P **Pn 01 04 36.1 +1.8**
SOH Sokhos 2.71 54 P **Pn 01 04 36.0 +1.8**
SOH S Sn 01 05 10.2 +3.3
SOH Sokhos 2.71 54 P **Pn 01 04 36.1 +1.8**
TAR1 Taranto 2.76 298 *e*Pn **Pn 01 04 36.6 +1.7**
DID Didima 2.79 128 P **Pn 01 04 37.0 +1.7**
DID Didima 2.79 128 P **Pn 01 04 37.0 +1.7**
DID Didima 2.79 128 P **Pn 01 04 36.0 +0.7**
DID Didima 2.79 128 P **Pn 01 04 36.8 +1.5**
SKO Skopje 2.81 15 P **Pn 01 04 37.8 +2.1**
SKO Skopje 2.81 15 *i* Pn **Pn 01 04 37.8 +2.1**
SKO Skopje 2.81 15 P **Pn 01 04 37.8 +2.1**
SKO Skopje 2.81 15 P **Pn 01 04 37.8 +2.1**
SKO Skopje 2.81 15 P **Pn 01 04 37.8 +2.1**
KRND KRANIDI 2.82 131 P **Pn 01 04 37.6 +1.9**
KRND S Sn 01 05 12.6 +3.1
KRND KRANIDI 2.82 131 P **Pn 01 04 37.6 +1.9**
KRND S Sn 01 05 12.6 +3.1
KRND KRANIDI 2.82 131 P **Pn 01 04 35.9 +0.3**
KRND AML AML 01 05 27.3
comp=N,2915µm,0.9s
KRND AML AML 01 05 33.7
comp=E,2316µm,0.7s
ATH Athens Observa 2.85 116 P **Pn 01 04 37.7 +1.6**
ATH S Sn 01 05 13.3 +3.1
ATH Athens Observa 2.85 116 P **Pn 01 04 37.7 +1.6**
ATH S Sn 01 05 13.3 +3.1
ATH Athens Observa 2.85 116 P **Pn 01 04 37.7 +1.6**
ATH S Sn 01 05 13.3 +3.1
ATH Athens Observa 2.85 116 P **Pn 01 04 37.7 +1.6**
ATH S Sn 01 05 13.3 +3.1
ULC Ulcinj 2.86 341 ⇓*i*Pn **Pn 01 04 37.8 +1.4**
ULC *e*Sn Sb 01 05 14.4 -2.5
ULC Ulcinj 2.86 341 ⇓*i*Pn **Pn 01 04 37.8 +1.4**
ULC *e*Sn Sb 01 05 14.4 -2.5
TIP Timpagrande 2.89 270 ⇓*iP* **Pn 01 04 38.5 +1.8**
TIP Timpagrande 2.89 270 S **Sn 01 05 08.8 -2.5**
TIP Timpagrande 2.89 270 P **Pn 01 04 38.7 +2.0**
TIP S Sb 01 05 15.9 -1.7
TIP Timpagrande 2.89 270 P **Pn 01 04 38.7 +2.0**
TIP Timpagrande 2.89 270 *e*Pn **Pn 01 04 38.9 +2.2**
TIP S Sb 01 05 15.9 -1.7
TIP Timpagrande 2.89 270 *e*Pn **Pn 01 04 38.9 +2.2**
TIP S Sn 01 05 13.8 +2.5
OUR Ouranopolis 2.91 67 P **Pn 01 04 38.6 +1.6**
OUR S Sn 01 05 14.7 +2.9
OUR Ouranopolis 2.91 67 P **Pn 01 04 38.6 +1.6**
OUR S Sn 01 05 13.8 +2.0
OUR Ouranopolis 2.91 67 P **Pn 01 04 38.6 +1.6**
OUR S Sn 01 05 14.7 +2.9
OUR Ouranopolis 2.91 67 P **Pn 01 04 38.6 +1.6**
OUR S Sn 01 05 13.8 +2.0
PTL Penteli 2.92 113 P **Pn 01 04 38.8 +1.7**
PTL S Sn 01 05 15.3 +3.3
PTL Penteli 2.92 113 P **Pn 01 04 38.8 +1.7**
PTL S Sn 01 05 15.3 +3.3
PTL Penteli 2.92 113 P **Pn 01 04 37.8 +0.7**
PTL S Sn 01 05 11.8 -0.2
PTL AML AML 01 05 33.1
comp=N,2158µm,1.0s
PTL AML AML 01 05 35.1
comp=E,2024µm,0.8s
PTL Penteli 2.92 113 P **Pn 01 04 38.8 +1.7**
PTL S Sn 01 05 15.3 +3.3
VLY Voula,Athens 2.96 117 P **Pn 01 04 39.2 +1.6**
VLY S Sn 01 05 15.9 +2.9
VLY Voula,Athens 2.96 117 P **Pn 01 04 39.2 +1.6**
VLY S Sn 01 05 15.9 +2.9
VLY Voula,Athens 2.96 117 P **Pn 01 04 38.4 +0.8**
VLY AML AML 01 05 39.5
comp=N,2065µm,0.9s
VLY AML AML 01 05 40.4
comp=E,1674µm,0.8s
VLY Voula,Athens 2.96 117 P **Pn 01 04 38.8 +1.2**
VLY S Sn 01 05 15.9 +2.9
SRS Serrai 3.03 51 P **Pn 01 04 40.3 +1.7**
SRS S Sn 01 05 17.8 +3.0
SRS Serrai 3.03 51 P **Pn 01 04 40.0 +1.4**
SRS S Sn 01 05 17.8 +3.0
SRS Serrai 3.03 51 P **Pn 01 04 40.3 +1.7**
SRS S Sn 01 05 17.8 +3.0
SRS Serrai 3.03 51 P **Pn 01 04 40.0 +1.4**
SRS S Sn 01 05 17.8 +3.0
DRME Dracevica, Mon 3.09 342 ⇑*iPn* **Pn 01 04 41.1 +1.7**
DRME *e*Sn Sn 01 05 20.0 +3.8
DRME Dracevica, Mon 3.09 342 ⇑*iPn* **Pn 01 04 40.9 +1.5**
DRME *e*Sn Sn 01 05 20.0 +3.8
VLI Veliai 3.19 142 P **Pn 01 04 43.0 +2.1**
VLI S Sn 01 05 22.5 +3.7
VLI Veliai 3.19 142 P **Pn 01 04 43.0 +2.1**
VLI S Sn 01 05 22.5 +3.7
VLI Veliai 3.19 142 P **Pn 01 04 42.2 +1.3**
VLI AML AML 01 05 42.6
comp=N,1361µm,1.3s
VLI AML AML 01 05 47.3
comp=E,2064µm,1.4s
VLI Veliai 3.19 142 P **Pn 01 04 42.8 +1.9**
VLI S Sn 01 05 22.5 +3.7
MATE Matera 3.21 297 ⇑*iP* **Pn 01 04 41.8 +0.7**
MATE Matera 3.21 297 ⇑*iP* **Pn 01 04 41.8 +0.7**
MATE S Sn 01 05 19.7 +0.4
BUM Brajici-Budva 3.27 339 ⇑*iPn* **Pn 01 04 43.1 +1.1**
BUM *e*Sn Sn 01 05 23.9 +3.1
BUM Brajici-Budva 3.27 339 ⇑*iPn* **Pn 01 04 43.1 +1.1**
BUM *e*Sn Sn 01 05 23.9 +3.1
PDG Podgorica 3.30 344 ⇑*iP* **Pn 01 04 43.6 +1.2**
PDG Podgorica 3.30 344 ⇑*iPn* **Pn 01 04 43.6 +1.2**
PDG *e*Sn Sn 01 05 25.0 +3.5
TTG Podgorica 3.30 344 ⇑*iPn* **Pn 01 04 43.8 +1.3**
TTG *e*Sn Sn 01 05 25.0 +3.5
TTG Podgorica 3.30 344 P **Pn 01 04 43.7 +1.3**
TTG S Sn 01 05 24.2 +2.7
TTG Podgorica 3.30 344 P **Pn 01 04 43.7 +1.3**
TTG S Sn 01 05 24.2 +2.7
TTG Podgorica 3.30 344 P **Pn 01 04 43.7 +1.3**
TTG S Sn 01 05 24.2 +2.7
SG1 Sgolgore (BA) 3.31 300 *e*Pn **Pn 01 04 44.2 +1.6**
BAI Bari 3.32 305 *e*Pn **Pn 01 04 44.1 +1.6**
NVR Nevrokopi 3.33 50 P **Pn 01 04 44.4 +1.6**
NVR S Sn 01 05 25.1 +2.8
NVR Nevrokopi 3.33 50 P **Pn 01 04 44.4 +1.6**
NVR S Sn 01 05 24.1 +1.8

NVR Nevrokopi 3.33 50 P **Pn 01 04 44.3 +1.5**
PVY Plav 3.36 354 ⇑*iPn* **Pn 01 04 45.7 +2.4**
PVY *e*Sn Sn 01 05 26.3 +3.2
PVY Plav 3.36 354 ⇑*iPn* **Pn 01 04 45.7 +2.4**
PVY *e*Sn Sn 01 05 26.3 +3.2
CEME Cevo 3.49 341 ⇑*iPn* **Pn 01 04 46.1 +1.0**
CEME *e*Sn Sn 01 05 29.1 +2.8
CEME Cevo 3.49 341 ⇑*iPn* **Pn 01 04 46.1 +1.0**
CEME *e*Sn Sn 01 05 29.1 +2.8
HCY Herceg Novi 3.52 335 ⇓*iPn* **Pn 01 04 46.2 +0.8**
HCY *e*Sn Sn 01 05 29.7 +2.7
HCY Herceg Novi 3.52 335 ⇑*iPn* **Pn 01 04 45.9 +0.5**
HCY *e*Sn Sn 01 05 29.7 +2.7
KAVA Kavala 3.55 59 P **Pn 01 04 45.1 -0.7**
KAVA S Sn 01 05 30.0 +2.3
KAVA Kavala 3.55 59 P **Pn 01 04 45.1 -0.7**
KAVA Kavala 3.55 59 P **Pn 01 04 46.6 +0.8**
KAVA S Sn 01 05 30.0 +2.3
BEY Berane 3.64 353 ⇓*iPn* **Pn 01 04 49.4 +2.3**
BEY *e*Sn Sn 01 05 33.0 +3.0
IVA Berane 3.64 353 ⇓*iPn* **Pn 01 04 49.4 +2.3**
IVA *e*Sn Sn 01 05 33.0 +3.0
CUC Castrocucco 3.67 283 *e*Pn **Pn 01 04 50.5 +3.0**
CUC Castrocucco 3.67 283 *e*Pn **Pn 01 04 50.5 +3.0**
NKME Niksic 3.69 342 *e*Pn **Pn 01 04 48.9 +1.1**
NKME *e*Sn Sn 01 05 34.7 +3.5
NKME Niksic 3.69 342 *e*Pn **Pn 01 04 48.9 +1.1**
NKME *e*Sn Sn 01 05 34.7 +3.5
LIA Limnos Island 3.70 79 P **Pn 01 04 49.8 +2.0**
LIA Limnos Island 3.70 79 P **Pn 01 04 48.6 +0.8**
CDT Castel del Mon 3.70 301 *e*Pn **Pn 01 04 49.6 +1.7**
BARS Barje 3.70 15 ⇑*iPn* **Pn 01 04 49.5 +1.6**
CEL Celeste 3.71 256 *e*Pn **Pn 01 04 49.6 +1.5**
CEL Celeste 3.71 256 *e*Pn **Pn 01 04 49.6 +1.5**
CEL *e*Sn Sn 01 05 33.6 +1.8
NKY Niksic 3.73 343 ⇓*iPn* **Pn 01 04 49.4 +1.1**
NKY *e*Sn Sn 01 05 35.0 +2.9
NKY Niksic 3.73 343 ⇓*iPn* **Pn 01 04 49.4 +1.1**
NKY *e*Sn Sn 01 05 35.0 +2.9
TREB Trebinje 3.81 336 *e*Pn **Pn 01 04 49.8 +0.4**
BRY Bratogost 3.92 339 ⇓*iPn* **Pn 01 04 51.9 +0.8**
BRY *e*Sn Sn 01 05 39.7 +2.6
BRY Bratogost 3.92 339 ⇑*iPn* **Pn 01 04 51.4 +0.3**
BRY *e*Sn Sn 01 05 39.7 +2.6
ANKY Antikythira Is 4.06 146 P **Pn 01 04 55.2 +2.4**
ANKY S Sn 01 05 44.6 +4.4
ANKY Antikythira Is 4.06 146 P **Pn 01 04 55.2 +2.4**
ANKY S Sn 01 05 44.6 +4.4
ANKY Antikythira Is 4.06 146 P **Pn 01 04 54.7 +1.9**
ANKY AML AML 01 05 44.4
comp=N,1405µm,0.7s
ANKY AML AML 01 05 46.5
comp=E,959µm,0.7s
ANKY Antikythira Is 4.06 146 P **Pn 01 04 55.1 +2.3**
ANKY S Sn 01 05 43.2 +3.0
SMTH Samothraki Isl 4.08 71 P **Pn 01 04 52.9 -0.1**
SMTH S Sn 01 05 42.4 +1.8
SMTH Samothraki Isl 4.08 71 P **Pn 01 04 52.9 -0.1**
SMTH S Sn 01 05 42.4 +1.8
SMTH AML AML 01 05 49.1
comp=E,170µm,1.1s
SMTH AML AML 01 05 57.8
comp=N,155µm,1.5s
UPM Unac-Piva 4.12 344 *e*Pn **Pn 01 04 55.5 +1.7**
UPM *e*Sn Sn 01 05 44.8 +2.9
UPM Unac-Piva 4.12 344 *e*Pn **Pn 01 04 55.0 +1.2**
UPM *e*Sn Sn 01 05 44.8 +2.9
PLE Pljevlja 4.15 349 ⇑*iPn* **Pn 01 04 55.9 +1.7**
PLE *e*Sn Sn 01 05 45.5 +2.9
PLE Pljevlja 4.15 349 ⇑*iPn* **Pn 01 04 55.9 +1.7**
PLE *e*Sn Sn 01 05 45.5 +2.9
MS1 Monte Sant'Ang 4.23 307 *e*Pn **Pn 01 04 57.5 +2.3**
BOVS Bovan 4.47 12 ⇑*iPn* **Pn 01 04 59.6 +1.1**
PRK Paraskevi 4.50 88 P **Pn 01 05 00.8 +1.9**
PRK Paraskevi 4.50 88 P **Pn 01 05 01.5 +2.6**
PRK Paraskevi 4.50 88 P **Pn 01 05 01.4 +2.6**
PRK Paraskevi 4.50 88 P **Pn 01 05 00.8 +1.9**
APE Apeiranthos 4.54 117 ⇓*iP* **Pn 01 04 59.2 -0.3**
APE Apeiranthos 4.54 117 *i P* **Pn 01 05 00.8 +1.3**
APE Apeiranthos 4.54 117 *i P* **Pn 01 05 00.8 +1.3**
APE S Sn 01 05 54.8 +2.6
APE Apeiranthos 4.54 117 P **Pn 01 05 03.6 +4.1**
APE S Sn 01 05 54.8 +2.6
APE AML AML 01 06 12.0
comp=N,286µm,0.8s
APE AML AML 01 06 22.6
comp=E,230µm,0.8s
ALN Alexandroupoli 4.58 67 P **Pn 01 05 01.1 +1.2**
ALN S Sn 01 05 57.5 +4.6
ALN Alexandroupoli 4.58 67 P **Pn 01 05 01.1 +1.2**
ALN S Sn 01 05 57.5 +4.6
ALN Alexandroupoli 4.58 67 P **Pn 01 05 01.1 +1.2**
ALN S Sn 01 05 57.5 +4.6
GRUS Gruza 4.63 2 ⇑*iPn* **Pn 01 05 01.7 +1.0**
BBLS Lazići 4.68 350 ⇑*iPn* **Pn 01 05 02.1 +0.8**
DIVS Divibare 4.85 356 ⇑*iPn* **Pn 01 05 04.4 +0.6**
SANT Santorini 4.89 125 ⇑*iP* **Pn 01 05 01.9 -2.3**
SANT Santorini 4.89 125 ⇑*iP* **Pn 01 05 01.9 -2.3**
SANT Santorini 4.89 125 *e*Pn **Pn 01 05 04.9 +0.7**
SANT Santorini 4.89 125 *e*Pn **Pn 01 05 04.9 +0.7**
HAPS Han Pijesak,BI 4.96 347 ⇑*iPn* **Pn 01 05 05.1 -0.2**
TRUS Trudelj 4.96 359 ⇑*iPn* **Pn 01 05 06.0 +0.8**
VAE Valguarnera 5.08 251 Pn **Pn 01 05 10.3 +3.4**
comp=E,0.5nm,0.3s,baz=121,slow=8.1,SNR=4.6
VAE Sn **Sn 01 06 10.8 +5.4**
comp=E,6.2nm,0.3s,baz=226,slow=4.1,SNR=6.4
VAE LR LR 01 07 26.0
comp=E,218nm,18.4s,baz=70,slow=40
KUBS Kucevo 5.23 9 *i* Pn **Pn 01 05 07.9 -1.0**
IDI Anoyia 5.30 137 Pn **Pn 01 05 10.1 +0.2**
comp=E,2.2nm,0.3s,baz=256,slow=11,SNR=35
IDI Sn **Sn 01 06 07.3 -3.6**
comp=E,3.4nm,0.3s,baz=49,slow=15,SNR=3.5
IDI Anoyia 5.30 137 ⇓*iP* **Pn 01 05 09.0 -0.9**
IDI Anoyia 5.30 137 S **Sn 01 06 08.0 -2.8**
IDI Anoyia 5.30 137 ⇓*iP* **Pn 01 05 09.0 -0.9**
IDI Anoyia 5.30 137 *e*Pn **Pn 01 05 10.0 +0.1**
IDI Sn **Sn 01 06 07.3 -3.6**
IDI S **Sn 01 06 08.0 -2.8**
TEKS Tekeris 5.34 353 *e*Pn **Pn 01 05 10.9 +0.5**
SIVA Sivas 5.47 139 ⇑*iP* **Pn 01 05 09.7 -2.4**
MDVR Moldovita 5.60 9 ⇑*iP* **Pn 01 05 15.1 +1.1**
MDVR Moldovita 5.60 9 ⇑*iP* **Pn 01 05 15.1 +1.1**
LAST Lasithi 5.71 134 ⇑*iP* **Pn 01 05 14.9 -0.7**
LAST Lasithi 5.71 134 ⇑*iP* **Pn 01 05 14.9 -0.7**
LAST S **Sn 01 06 18.9 -2.2**
LAST Lasithi 5.71 134 *e*Pn **Pn 01 05 16.1 +0.5**
DOB Doboj 5.75 343 *e*Pn **Pn 01 05 15.2 -0.8**
SRE Strehaia 5.77 20 ⇑*iP* **Pn 01 05 19.2 +2.9**
SRE Strehaia 5.77 20 ⇑*iP* **Pn 01 05 19.2 +2.9**
WDD Wied Dalam 5.81 236 *e*Pn **Pn 01 05 17.1 +0.3**
WDD *e*Sn **Sn 01 06 23.2 -0.1**
FGSL Fruska Gora 5.92 355 ⇑*iPn* **Pn 01 05 18.7 +0.4**
CLTB Caltabellotta 5.94 256 *e*Pn **Pn 01 05 21.7 +3.0**
BLY Banja Luka 6.01 337 ⇑*iP* **Pn 01 05 20.4 +0.8**
BLY Banja Luka 6.01 337 ⇑*iP* **Pn 01 05 20.4 +0.8**
AQU L'Aquila 6.19 302 *e*P **Pn 01 05 25.2 +3.1**
AQU L'Aquila 6.19 302 *e*Pn **Pn 01 05 25.2 +3.1**
HUMR Humele 6.25 31 ⇑*iP* **Pn 01 05 24.2 +1.3**
HUMR Humele 6.25 31 ⇑*iP* **Pn 01 05 24.2 +1.3**
GZR Gura Zlata 6.37 15 ⇓*iP* **Pn 01 05 26.2 +1.7**
GZR Gura Zlata 6.37 15 ⇓*iP* **Pn 01 05 26.2 +1.7**
BZS Buzias 6.41 7 ⇑*iP* **Pn 01 05 25.9 +0.8**
BZS Buzias 6.41 7 ⇑*iP* **Pn 01 05 25.9 +0.8**
KARP Karpathos 6.48 123 *e*Pn **Pn 01 05 28.1 +1.9**
ARR Arges 6.84 25 ⇑*iP* **Pn 01 05 33.8 +2.7**
ARR Arges 6.84 25 ⇑*iP* **Pn 01 05 33.8 +2.7**
SULR 6.92 37 ⇓*iP* **Pn 01 05 35.1 +3.0**
SULR 6.92 37 ⇓*iP* **Pn 01 05 35.1 +3.0**
VOIR 7.05 27 ⇓*iP* **Pn 01 05 36.1 +2.2**
VOIR 7.05 27 ⇓*iP* **Pn 01 05 36.1 +2.2**
MSAB Monastry St. A 7.32 46 ⇑*iP* **Pn 01 05 39.7 +2.1**
MSAB Monastry St. A 7.32 46 ⇑*iP* **Pn 01 05 39.7 +2.1**
BOJS Bojanci 7.34 330 *i* Pn **Pn 01 05 38.5 +0.7**
BOJS *i* Sn **Sn 01 06 58.6 -2.4**
BOJS Bojanci 7.34 330 *i* Pn **Pn 01 05 38.5 +0.7**
BOJS *i* Sn **Sn 01 06 58.6 -2.4**
ISR Istrita 7.39 36 ⇑*iP* **Pn 01 05 41.2 +2.6**
ISR Istrita 7.39 36 ⇑*iP* **Pn 01 05 41.2 +2.6**
MLR Muntele Rosu 7.43 31 Pn **Pn 01 05 42.1 +2.9**

MLR LR LR 01 08 47.9
comp=E,70nm,21.2s,baz=202,slow=40
MLR Muntele Rosu 7.43 31⇑ *i*P Pn 01 05 42.1 +2.9
MLR Muntele Rosu 7.43 31 *e*Pn Pn 01 05 40.1 +0.9
CRES Cresnjev 7.54 332⇑ *i*Pn Pn 01 05 40.7 +0.2
DOPR Dopca 7.62 27⇓ *i*P Pn 01 05 44.3 +2.6
DOPR Dopca 7.62 27⇓ *i*P Pn 01 05 44.3 +2.6
DRGR 7.71 12⇑ *i*P Pn 01 05 45.0 +2.0
DRGR 7.71 12⇑ *i*P Pn 01 05 45.0 +2.0
LTBQ Tobruq 7.71 158 *i* P Pn 01 05 43.6 +0.6
SNR=34
VISS Visnje 7.75 329 *i* Pn Pn 01 05 44.5 +1.0
VISS *i* Sn Sn 01 07 09.9 -1.2
VISS Visnje 7.75 329 *i* Pn Pn 01 05 44.5 +1.0
VISS *i* Sn Sn 01 07 09.9 -1.2
HARR Harsova 7.77 43⇓ *i*P Pn 01 05 45.9 +2.2
HARR Harsova 7.77 43⇓ *i*P Pn 01 05 45.9 +2.2
GRER 7.79 36⇓ *i*P Pn 01 05 46.6 +2.6
GRER 7.79 36⇓ *i*P Pn 01 05 46.6 +2.6
CJR Cluj-Napoca 7.80 16⇓ *i*P Pn 01 05 46.0 +1.8
CJR Cluj-Napoca 7.80 16⇓ *i*P Pn 01 05 46.0 +1.8
KSL Kastellorizon 7.86 110 P Pn 01 05 49.3 +4.4
KSL Kastellorizon 7.86 110 P Pn 01 05 49.4 +4.4
CEY Cerknica 7.87 327⇑ *i*Pn Pn 01 05 45.3 +0.2
TIRR Tirgusor 7.88 46⇑ *i*P Pn 01 05 47.0 +1.8
TIRR Tirgusor 7.88 46 *e*P Pn 01 05 43.9 -1.3
TIRR Tirgusor 7.88 46⇑ *i*P Pn 01 05 47.0 +1.8
TIRR Tirgusor 7.88 46 *e*Pn Pn 01 05 43.9 -1.3
PLOR Plostina 8.01 33⇓ *i*P Pn 01 05 50.0 +2.9
PLOR Plostina 8.01 33⇓ *i*P Pn 01 05 50.0 +2.9
VRI Vrincioaia 8.06 33⇑ *i*P Pn 01 05 50.8 +3.1
VRI Vrincioaia 8.06 33⇑ *i*P Pn 01 05 50.8 +3.1
LJU Ljubljana 8.07 329⇑ *i*Pn Pn 01 05 48.1 +0.2
TRI Trieste 8.13 325 *e*P Pn 01 05 48.8 +0.1
TRI Trieste 8.13 325 *e*P Pn 01 05 48.8 +0.1
TRI Trieste 8.13 325 *e*Pn Pn 01 05 48.8 +0.1
JAVS Javornik 8.14 327 *i* Pn Pn 01 05 49.7 +0.7
JAVS *i* Sn Sn 01 07 18.9 -2.0
JAVS Javornik 8.14 327 *i* Pn Pn 01 05 49.7 +0.7
JAVS *i* Sn Sn 01 07 18.9 -2.0
CFR Carcaliu 8.21 41⇓ *i*P Pn 01 05 52.3 +2.6
CFR Carcaliu 8.21 41⇓ *i*P Pn 01 05 52.3 +2.6
LMSR Misrath 8.23 214 *i* P Pn 01 05 48.9 -1.1
SNR=34
SOKA Soboth 8.42 334 *i* Pn Pn 01 05 52.4 -0.3
comp=E,16nm,0.6s,SNR=32
SOKA *e*Sn Sn 01 07 24.8 -2.9
comp=E,8.5nm,0.4s
SOKA Soboth 8.42 334 Pn Pn 01 05 52.4 -0.3
comp=E,16nm,0.6s,SNR=32
OBKA Obir 8.45 331 *i* Pn Pn 01 05 54.0 +0.8
comp=E,16nm,0.5s
OBKA *i* Sn Sn 01 07 27.4 -1.0
comp=E,42nm,0.7s
OBKA Obir 8.45 331 Pn Pn 01 05 54.0 +0.8
comp=E,16nm,0.5s
OBKA Sn Sn 01 07 27.4 -1.0
comp=E,42nm,0.7s
TESR Tescani 8.55 30⇑ *i*P Pn 01 05 57.3 +2.9
TESR Tescani 8.55 30⇑ *i*P Pn 01 05 57.3 +2.9
SLUM Salum 8.66 152 P Pn 01 05 53.6 -2.3
baz=156
SLUM AMP 01 07 00.0
comp=E,80µm,0.8s,logA/T=5.0,baz=156
SLUM S Sn 01 07 24.5 -8.9
baz=156
SLUM Salum 8.66 152 P Pn 01 05 53.6 -2.3
SLUM S Sn 01 07 24.5 -8.9
PSZ Piszkesteto 8.67 357⇓ *i*P Pn 01 05 57.2 +1.1
PSZ Piszkesteto 8.67 357 *e*Pn Pn 01 05 56.8 +0.7
PSZ Piszkesteto 8.67 357 *e*P Pn 01 05 57.0 +0.9
PSZ Piszkesteto 8.67 357 *e*P Pn 01 05 57.0 +0.9
PSZ Piszkesteto 8.67 357 *e*Pn Pn 01 05 57.0 +0.9
LSRT Sirt 8.73 202 *i* P Pn 01 05 56.9 0.0
SNR=34
ARSA Arzberg 8.77 337 *i* Pn Pn 01 05 57.1 -0.3
comp=E,2.8nm,0.4s
ARSA Arzberg 8.77 337 Pn Pn 01 05 57.1 -0.3
comp=E,2.8nm,0.4s
MYKA Terra Mystica 8.91 328 *i* Pn Pn 01 05 59.9 +0.5
comp=E,2.9nm,0.3s
MYKA Terra Mystica 8.91 328 Pn Pn 01 05 59.9 +0.5
comp=E,2.9nm,0.3s
BURAR Bucovina Array 9.04 21⇓ *i*P Pn 01 06 04.4 +3.2
BURAR Bucovina Array 9.04 21⇓ *i*P Pn 01 06 04.4 +3.2
BUR08 Bucovina Ar. S 9.06 21 *e*Pn Pn 01 06 03.6 +2.0
KECS Kecovo 9.23 0 *e*P Pn 01 06 05.3 +1.6
KECS Kecovo 9.23 0 *e*P Pn 01 06 05.3 +1.6
KECS Kecovo 9.23 0 *e*PN Pn 01 06 05.3 +1.6
GHAR Gharyan 9.31 222 *i* P Pn 01 06 04.4 -0.6
SNR=34
UZH Uzhgorod 9.46 7 *e*P Pn 01 06 07.8 +0.9
UZH *e*S Sn 01 07 53.6 +0.5
UZH MLR MLR
comp=Z,570nm,10.0s
UZH Uzhgorod 9.46 7 *e*P Pn 01 06 07.8 +0.9
UZH *e*S Sn 01 07 53.6 +0.5
comp=Z,570nm,10.0s
ABTA Abfaltersbach 9.49 325 *e*Pn Pn 01 06 07.8 +0.5
comp=Z,5.7nm,0.6s
ABTA *e*Sn Sn 01 07 50.5 -3.3
comp=Z,20nm,0.8s
ABTA Abfaltersbach 9.49 325 Pn Pn 01 06 07.8 +0.5
comp=Z,5.7nm,0.6s
ABTA Sn Sn 01 07 50.5 -3.3
comp=Z,20nm,0.8s
KEST Kesra 9.52 252 Pn Pn 01 06 11.4 +3.6
comp=Z,0.3nm,0.3s,baz=31,slow=4.5,SNR=11
KEST Sn Sn 01 07 55.5 +0.9
comp=Z,0.1nm,0.3s,baz=27,slow=18,SNR=3.2
KEST LR LR 01 10 46.4
comp=Z,183nm,21.2s,baz=358,slow=43
KEST Kesra 9.52 252 *e*Pn Pn 01 06 10.4 +2.7
KEST Sn Sn 01 07 55.5 +0.9
CRVS Cervenica-Dubn 9.67 4 *e*P Pn 01 06 11.3 +1.5
CRVS Cervenica-Dubn 9.67 4 *e*P Pn 01 06 11.3 +1.5
CRVS Cervenica-Dubn 9.67 4 *e*PN Pn 01 06 11.3 +1.5
MOA Molln 9.70 334 *e*Pn Pn 01 06 10.8 +0.7
comp=Z,9.5nm,0.5s,SNR=21
MOA *e*Sn Sn 01 07 56.1 -2.8
comp=Z,5.3nm,0.5s
MOA Molln 9.70 334 Pn Pn 01 06 10.9 +0.7
comp=Z,9.5nm,0.5s,SNR=21
MILM Milestii Mici 9.79 36⇓ *i*P Pn 01 06 13.5 +2.2
MILM Milestii Mici 9.79 36⇓ *i*P Pn 01 06 13.5 +2.2
KIS Kishinev 9.85 36 *e*P Pn 01 06 14.0 +1.8
KIS *e*S Sn 01 08 04.0 +1.4
KIS LRM MLR 01 10 57.0
comp=Z,900nm,12.0s
KIS Kishinev 9.85 36 *e*P Pn 01 06 14.0 +1.8
KIS *e*S Sn 01 08 04.0 +1.4
KIS MLR MLR
comp=Z,1µm,12.0s
KIS MLR MLR
comp=E,500nm,10.0s
KIS MLR MLR
comp=Z,900nm,12.0s
KIS Kishinev 9.85 36 *e*P Pn 01 06 14.0 +1.8
KIS *e*S Sn 01 08 04.0 +1.4
comp=Z,900nm,12.0s
NIE Niedzica 10.16 359 *e*P Pn 01 06 19.1 +2.6
NIE Niedzica 10.16 359 *e*P Pn 01 06 19.1 +2.6
NIE Niedzica 10.16 359 *e*P Pn 01 06 19.1 +2.6
STHS Stebnicka Huta 10.18 3 *e*P Pn 01 06 20.4 +3.7
STHS Stebnicka Huta 10.18 3 *e*P Pn 01 06 20.4 +3.7
STHS Stebnicka Huta 10.18 3 *e*PN Pn 01 06 20.4 +3.7
BR131 Keskin Array S 10.19 83 *e*Pn Pn 01 06 17.6 +0.5
BRTR Keskin Array B 10.19 83 Pn Pn 01 06 20.3 +3.2
comp=Z,0.4nm,0.3s,baz=266,slow=11,SNR=16
BRTR LR LR 01 10 30.8
comp=Z,76nm,18.0s,baz=258,slow=39
BRTR Keskin Array B 10.19 83 *ce*P Pn 01 06 20.8 +3.7
BRTR pmax pmax
comp=Z,3.0nm,0.6s
VRAC Vranov 10.43 346 Pn Pn 01 06 19.0 -1.1
comp=Z,0.2nm,0.3s,baz=182,slow=14,SNR=5.0
VRAC Vranov 10.43 346⇓ *i*P Pn 01 06 21.4 +1.3
VRAC Vranov 10.43 346 P Pn 01 06 19.0 -1.1
VRAC Vranov 10.43 346 P Pn 01 06 19.0 -1.1
VRAC Vranov 10.43 346 *e*Pn Pn 01 06 20.9 +0.8
FUORN Ofenpass-Fuorn 10.49 318 *e*Pn Pn 01 06 25.4 +4.1
KWP Kalwaria Pacla 10.50 8 *e*P Pn 01 06 24.5 +3.4
KWP Kalwaria Pacla 10.50 8 *e*P Pn 01 06 24.5 +3.4
KWP Kalwaria Pacla 10.50 8 *e*P Pn 01 06 24.5 +3.4

MOTA Moosalm 10.58 323 *i* Pn Pn 01 06 24.0 +1.7
comp=Z,29nm,0.9s,SNR=21
MOTA Moosalm 10.58 323 Pn Pn 01 06 24.0 +1.7
comp=Z,29nm,0.9s,SNR=21
TREC Trest 10.65 342 AMS AMS 01 11 00.0
comp=Z,600nm,11.4s
OKC Ostrava-Krasne 10.71 352 *i* P Pn 01 06 25.1 +1.1
OKC *ex* x 01 06 34.0
OKC AMS AMS 01 11 00.0
comp=Z,400nm,11.6s
OKC Ostrava-Krasne 10.71 352 *i* P Pn 01 06 25.1 +1.1
OKC MLR MLR
comp=Z,400nm,11.6s
OKC Ostrava-Krasne 10.71 352 *i* P Pn 01 06 25.1 +1.1
comp=Z,400nm,11.6s
MORC Moravsky Berou 10.72 350⇓ *i*P Pn 01 06 25.3 +1.1
MORC Moravsky Berou 10.72 350 *e*P Pn 01 06 25.3 +1.1
MORC Moravsky Berou 10.72 350 *e*P Pn 01 06 25.3 +1.1
MORC Moravsky Berou 10.72 350 *e*Pn Pn 01 06 25.7 +1.5
MORC Moravsky Berou 10.72 350 *e*Pn Pn 01 06 25.3 +1.1
GEA0 GERESS Array S 10.74 335 *e*Pn Pn 01 06 23.8 -0.7
GEC2 GERESS Array S 10.75 335 *e*P Pn 01 06 24.6 -0.1
GEC2 GERESS Array S 10.75 335 *e*P Pn 01 06 24.6 -0.1
GEC2 GERESS Array S 10.75 335 *e*Pn Pn 01 06 24.6 -0.1
GERES GERESS Array B 10.75 335 Pn Pn 01 06 24.5 -0.1
comp=Z,1.1nm,0.3s,baz=156,slow=14,SNR=31
DAVOX Davos/Dischmat 10.80 318 Pn Pn 01 06 26.7 +1.4
comp=Z,1.0nm,0.3s,baz=203,slow=13,SNR=14
DAVOX Sn Sn 01 08 25.8 -0.3
comp=Z,0.6nm,0.3s,baz=12,slow=19,SNR=4.1
DAVOX LR LR 01 12 35.7
comp=Z,40nm,20.6s,baz=90,slow=48
SWA2 10.80 156 P Pn 01 06 23.4 -1.9
baz=159
SWA2 AMP 01 08 00.0
comp=E,100µm,0.5s,logA/T=5.3,baz=159
SWA2 S Sn 01 08 16.7 -9.4
baz=159
SWA2 10.80 156 P Pn 01 06 23.4 -1.9
SWA2 S Sn 01 08 16.7 -9.4
LJFR Jufra 10.84 202 *i* P Pn 01 06 22.9 -2.9
SNR=34
RETA Reutte 10.84 323 *e*Pn Pn 01 06 27.2 +1.4
comp=E,5.8nm,0.5s,SNR=4.6
RETA Reutte 10.84 323 Pn Pn 01 06 27.2 +1.4
comp=E,5.8nm,0.5s,SNR=4.6
LVV L'vov 10.86 12 *e*P Pn 01 06 26.9 +0.8
LVV *e*S Sn 01 08 32.3 +4.9
LVV MLR MLR
comp=N,170nm,11.0s
LVV MLR MLR
comp=E,120nm,11.0s
LVV MLR MLR
comp=Z,160nm,11.0s
LVV L'vov 10.86 12 *e*P Pn 01 06 26.9 +0.8
OJC Ojcow 10.97 358 *e*P Pn 01 06 28.4 +0.8
OJC Ojcow 10.97 358 *e*P Pn 01 06 28.4 +0.8
OJC Ojcow 10.97 358 *e*Pn Pn 01 06 28.4 +0.8
KHC Kasperske Hory 11.04 336 *e*P Pn 01 06 27.9 -0.6
KHC *ex* x 01 06 33.8
KHC *ex* x 01 08 46.0
KHC AMS AMS 01 11 40.0
comp=Z,600nm,10.5s
KHC Kasperske Hory 11.04 336 *e*P Pn 01 06 27.9 -0.6
KHC MLR MLR
comp=Z,600nm,10.5s
KHC Kasperske Hory 11.04 336 *e*P Pn 01 06 27.9 -0.6
comp=Z,600nm,10.5s
KHC Kasperske Hory 11.04 336 *e*Pn Pn 01 06 27.6 -0.9
CSS Mathiatis 11.12 109 *e*Pn Pn 01 06 29.7 0.0
GOPC GO Pecny, Ondr 11.40 341 AMS AMS 01 11 30.0
comp=Z,400nm,12.1s
DPC Dobruska-Polom 11.48 347 *e*P Pn 01 06 35.1 +0.6
DPC AMS AMS 01 11 40.0
comp=Z,900nm,12.2s
DPC Dobruska-Polom 11.48 347 *e*P Pn 01 06 35.1 +0.6
DPC MLR MLR
comp=Z,900nm,12.2s
DPC Dobruska-Polom 11.48 347 *e*P Pn 01 06 35.1 +0.6
comp=Z,900nm,12.2s
PRU Pruhonice 11.53 341 *e*P Pn 01 06 31.5 -3.7
PRU *ex* x 01 06 36.8
PRU AMS AMS 01 12 00.0
comp=Z,600nm,10.9s
PRU Pruhonice 11.53 341 *e*P Pn 01 06 31.5 -3.7
PRU MLR MLR
comp=Z,600nm,10.9s
SIM Simferopol' 11.62 56 *ce*P Pn 01 06 40.1 +3.7
SIM *e*S Sn 01 08 51.0 +5.1
SIM pmax pmax
comp=Z,13nm,0.4s
SIM Simferopol' 11.62 56 *e*P Pn 01 06 40.1 +3.7
comp=Z,13nm,0.4s
UPC Upice 11.69 346 AMS AMS 01 11 50.0
comp=Z,700nm,11.2s
SENIN Lac Senin/Sane 11.99 311 *e*Pn Pn 01 06 43.6 +1.8
SENIN *e*Sn Sn 01 08 52.1 -3.3
PVCC Panska Ves 12.02 342 AMS AMS 01 11 50.0
comp=Z,400nm,9.6s
NKC Novy Kostel 12.36 335 AMS AMS 01 12 30.0
comp=Z,600nm,9.4s
STU Stuttgart 12.49 323 *e*P Pn 01 06 47.8 -0.6
STU Stuttgart 12.49 323 *e*P Pn 01 06 47.8 -0.6
STU Stuttgart 12.49 323 *e*Pn Pn 01 06 47.8 -0.6
BRG Berggiesshubel 12.49 341 *e*PKP Pn 01 06 48.7 +0.3
comp=Z,6.2nm,1.4s
BRG *e* 01 07 01.7
comp=Z,7.2nm,1.4s
BRG Berggiesshubel 12.49 341 *e*P Pn 01 06 48.7 +0.3
BRG pmax pmax
comp=Z,6.0nm,1.4s
BRG pmax pmax
comp=Z,7.0nm,1.4s
BRG Berggiesshubel 12.49 341 *e*P Pn 01 06 48.7 +0.3
comp=Z,7.0nm,1.4s
BFO Black Forest 12.61 320 *e*P Pn 01 06 49.7 -0.2
BFO Black Forest 12.61 320 *e*P Pn 01 06 49.7 -0.2
BFO Black Forest 12.61 320 *e*Pn Pn 01 06 49.7 -0.2
HNAT Natroun 12.73 136 P Pn 01 06 47.7 -4.0
baz=139
HNAT Natroun 12.73 136 P Pn 01 06 47.7 -4.0
LGHD Ghdames 12.93 228 *i* P Pn 01 06 50.9 -3.6
SNR=34
KIEV Kiev 12.99 25⇑ *e*P Pn 01 06 56.5 +1.4
KIEV pmax pmax
comp=Z,8.0nm,1.5s
KIEV Kiev 12.99 25 *e*P Pn 01 06 56.5 +1.4
comp=Z,8.0nm,1.5s
KIEV Kiev 12.99 25 *e*Pn Pn 01 06 54.5 -0.7
AKASG Malin Array Be 13.00 25 Pn Pn 01 06 56.6 +1.3
comp=Z,0.9nm,0.3s,baz=210,slow=12,SNR=7.9
AKASG LR LR 01 12 37.9
comp=Z,201nm,18.9s,baz=215,slow=41
AKBB Malin Array Si 13.00 25 *e*P Pn 01 06 53.9 -1.4
AKBB Malin Array Si 13.00 25 *e*Pn Pn 01 06 53.9 -1.4
CLL Collm 13.14 339 *e*P Pn 01 06 51.0 -6.2
CLL *i* 01 07 09.2
comp=Z,16nm,1.2s
CLL *e* 01 07 14.0
CLL Lmax 01 13 00.0
CLL Collm 13.14 339 *e*P Pn 01 06 59.0 +1.8
CLL Collm 13.14 339 *e*P Pn 01 06 59.0 +1.8
CLL Collm 13.14 339 *e*Pn Pn 01 06 59.0 +1.8
MMAI Mount Meron Ar 13.57 113 Pn Pn 01 06 57.3 -6.0
comp=Z,0.1nm,0.3s,baz=302,slow=15,SNR=3.1
MMAI LR LR 01 13 06.1
comp=Z,80nm,18.1s,baz=305,slow=41
RSH 13.63 123 P Pn 01 06 59.5 -4.4
baz=126
RSH 13.63 123 P Pn 01 06 59.6 -4.4
ANN Anapa 13.76 61 *e*P Pn 01 07 02.1 -3.6
ANN *e*S Sn 01 09 34.5 -3.8
ANN pmax pmax
comp=Z,17nm,0.9s
LUMB Murzuk 13.93 202 *i* P Pn 01 07 03.2 -5.0
SNR=34
HNKL Nakhl 14.49 126 P Pn 01 07 11.6 -4.1
baz=128
HNKL Nakhl 14.49 126 P Pn 01 07 11.6 -4.1
MEM Membach 15.26 323 P Pn 01 07 26.6 +0.6
comp=Z,11nm,2.2s
EIL Elat 15.28 124 Pn Pn 01 07 22.9 -3.5
comp=Z,0.2nm,0.3s,baz=302,slow=13,SNR=4.5
EIL Sn Sn 01 10 06.8 -8.7
comp=Z,0.5nm,0.3s,baz=32,slow=19,SNR=4.0

DOU Dourbes 15.62 319 P Pn 01 07 33.0 +2.3
DOU Dourbes 15.62 319 P Pn 01 07 32.9 +2.3
MICGM Minsk 16.06 16 *e* Pn 01 07 32.0 -4.3
MNK Minsk 16.06 16 *e*P Pn 01 07 32.0 -4.3
NACGM Naroch 16.22 13 *e* Pn 01 07 40.0 +1.6
IDID Didziasalis 16.61 13 *e*P Pn 01 07 44.9 +1.6
IDID IAmb IAmb 01 07 45.7
comp=Z,7.5nm,1.0s
IDID Didziasalis 16.61 13 *e*P Pn 01 07 44.9 +1.6
SNR=40
ISAL Salakas 16.76 11 *e*P Pn 01 07 46.6 +1.4
ISAL IAmb IAmb 01 07 47.7
comp=Z,15nm,0.9s
ISAL Salakas 16.76 11 *e*P Pn 01 07 46.6 +1.4
SNR=35
IZAR Zarasai 16.95 11 *e*P Pn 01 07 48.8 +1.2
IZAR IAmb IAmb 01 07 50.0
comp=Z,10.0nm,0.8s
IZAR Zarasai 16.95 11 *e*P Pn 01 07 48.8 +1.2
SNR=35
NEY Neytrino 17.19 69⇓ *e*P P 01 07 53.1 +0.6
NEY pmax pmax
comp=Z,3.0nm,1.0s
NEY Neytrino 17.19 69 *e*P P 01 07 53.1 +0.6
comp=Z,3.0nm,1.0s
KIV Kislovodsk 17.25 67⇓ *i*P Pn 01 07 52.9 +1.3
KIV pmax pmax
comp=Z,18nm,1.2s
KIV MLR MLR
comp=Z,36nm,16.0s
KIV Kislovodsk 17.25 67 *i* P Pn 01 07 52.9 +1.3
comp=Z,36nm,16.0s
KIV Kislovodsk 17.25 67 *e*Pn Pn 01 07 50.9 -0.7
comp=Z,16nm,1.1s
KVAR Kislovodsk Arr 17.25 67 P Pn 01 07 52.4 +0.7
baz=125,slow=2.4,SNR=11
KVAR LR LR 01 17 30.7
comp=Z,44nm,18.3s,baz=234,slow=48
KBZ Khabaz 17.37 68 P P 01 07 54.4 +0.1
comp=Z,0.3nm,0.3s,baz=276,slow=9.6,SNR=12
GOF Gofitskoye 17.69 64 *ce*P Pn 01 07 57.8 +0.9
VSR Storozhevoye 17.73 41 *e*P Pn 01 07 55.1 -2.2
VSR pmax pmax
comp=Z,10.0nm,1.9s
VSR MLR MLR
comp=Z,330nm,14.0s
NCK Nalchik 17.85 69 *i* P P 01 08 00.1 +0.5
NCK pmax pmax
comp=Z,6.0nm,0.4s
NCK Nalchik 17.85 69 *i* P P 01 08 00.1 +0.5
comp=Z,6.0nm,0.4s
ZEI Tsey 18.01 71 *e*P Pn 01 08 00.9 -0.3
ZEI pmax pmax
comp=Z,8.0nm,0.4s
ZEI Tsey 18.01 71 *e*P Pn 01 08 00.9 -0.3
comp=Z,8.0nm,0.4s
GNI Garni 18.69 80 P Pn 01 08 10.4 +1.0
comp=Z,0.2nm,0.3s,baz=262,slow=0.5,SNR=8.3
GNI LR LR 01 15 22.8
comp=Z,37nm,20.1s,baz=262,slow=37
GNI Garni 18.69 80 *ce*P P 01 08 09.1 +0.1
GNI pmax pmax
comp=Z,88nm,1.7s
GNI Garni 18.69 80 *e*P P 01 08 09.1 +0.1
comp=Z,88nm,1.7s
GNI Garni 18.69 80 *e*P P 01 08 09.2 +0.1
comp=Z,21nm,1.1s
ES19 SONSECA Array 18.81 279 *e*P Pn 01 08 13.8 +3.0
ESDC Sonseca Array 18.86 279 P Pn 01 08 13.3 +1.9
comp=Z,0.2nm,0.3s,baz=73,slow=11,SNR=15
VRH Novokhopyorsk 19.07 44 *e*P P 01 08 13.5 +0.6
VRH pmax pmax
comp=Z,10.0nm,1.5s
VRH MLR MLR
comp=Z,220nm,10.0s
VRH Novokhopyorsk 19.07 44 *e*P P 01 08 13.5 +0.6
comp=Z,220nm,10.0s
PAB San Pablo 19.17 279 *e*P Pn 01 08 16.7 +1.5
PAB pmax pmax
comp=Z,11nm,1.0s
PAB San Pablo 19.17 279 *e*P Pn 01 08 16.7 +1.5
comp=Z,11nm,1.0s
OBN Obninsk 19.19 29 P P 01 08 14.0 -0.3
comp=Z,2.3nm,0.3s,baz=232,slow=19,SNR=4.6
OBN LR LR 01 16 55.7
comp=Z,140nm,18.0s,baz=262,slow=41
OBN Obninsk 19.19 29⇑ *e*P P 01 08 13.1 -1.1
OBN *e*S S 01 11 52.8 +1.5
OBN pmax pmax
comp=Z,26nm,1.6s
OBN MLR MLR
comp=Z,231nm,16.0s
OBN Obninsk 19.19 29 *e*P P 01 08 13.1 -1.1
comp=Z,26nm,1.6s
OBN *e*S S 01 11 52.8 +1.5
comp=Z,231nm,16.0s
OBN Obninsk 19.19 29 *e*P P 01 08 12.5 -1.8
comp=Z,45nm,1.4s
VSU Vasula 19.64 10 *ce*P P 01 08 18.3 -0.8
VSU pmax pmax
comp=Z,104nm,1.2s
VSU Vasula 19.64 10 *e*P P 01 08 18.3 -0.8
comp=Z,104nm,1.2s
MOS Moscow 20.06 29 *e*P P 01 08 24.5 +0.8
MOS pmax pmax
comp=Z,55nm,1.2s
MOS Moscow 20.06 29 *e*P P 01 08 24.5 +0.8
comp=Z,55nm,1.2s
DYA Yadsworthy 20.50 311 *e*P Pn 01 08 31.0 +0.2
comp=Z,49nm,1.2s
TAM Tamanrasset 20.77 222 *e*P Pn 01 08 34.9 +0.6
TAM pmax pmax
comp=Z,11nm,1.1s
TAM Tamanrasset 20.77 222 *e*P Pn 01 08 34.9 +0.6
comp=Z,11nm,1.1s
MVO Moncorvo 21.06 284 *e*P P 01 08 36.2 +1.4
MDT Midelt 21.24 260 P P 01 08 38.6 +1.7
comp=Z,1.3nm,0.5s,baz=69,slow=7.6,SNR=3.5
HFS Hagfors 21.33 351 P P 01 08 36.8 -0.6
comp=Z,5.1nm,0.5s,baz=163,slow=11,SNR=28
HFS LR LR 01 18 20.7
comp=Z,85nm,20.1s,baz=166,slow=41
PBAR Barrancos 21.47 276 *e*P P 01 08 40.1 +1.0
comp=Z,73nm,1.6s
KONO Kongsberg 21.55 345 *e*P P 01 08 38.6 -1.2
KONO pmax pmax
comp=Z,17nm,0.8s
KONO Kongsberg 21.55 345 *e*P P 01 08 38.6 -1.2
comp=Z,17nm,0.8s
KONO Kongsberg 21.55 345 *e*P P 01 08 38.6 -1.2
comp=Z,17nm,0.8s
PBEJ Beja 22.14 276 *e*P P 01 08 47.3 +1.0
comp=Z,38nm,1.6s
NC602 NORSAR Array S 22.22 348 *e*P P 01 08 46.5 -0.5
NAO01 NORSAR Array S 22.43 348 *e*P P 01 08 49.1 -0.1
MESJ Messejana 22.45 276 *e*P P 01 08 51.2 +1.5
comp=Z,58nm,2.1s
FINES FINESS Array B 22.48 7 P P 01 08 47.8 -2.0
comp=Z,8.1nm,0.7s,baz=170,slow=8.4,SNR=25
FINES LR LR 01 18 25.4
comp=Z,142nm,18.2s,baz=198,slow=39
FINES FINESS Array B 22.48 7 *i* P P 01 08 49.0 -0.8
FINES pmax pmax
comp=Z,8.0nm,0.7s
FINES FINESS Array B 22.48 7 *i* P P 01 08 49.0 -0.8
comp=Z,8.0nm,0.7s
FIA1 FINESS Array S 22.48 7 *e*P P 01 08 50.1 +0.3
comp=Z,17nm,0.9s
EKA Eskdalemuir Ar 22.54 323 P P 01 08 50.9 +0.5
comp=Z,18nm,0.8s,baz=121,slow=11,SNR=28
EKA Eskdalemuir Ar 22.54 323 P P 01 08 50.9 +0.5
EKA pmax pmax
comp=Z,20nm,0.8s
EKA Eskdalemuir Ar 22.54 323 P P 01 08 50.9 +0.5
comp=Z,20nm,0.8s
ESK Eskdalemuir 22.55 323 *e*P P 01 08 50.3 -0.2
ESK pmax pmax
comp=Z,31nm,0.9s
ESK Eskdalemuir 22.55 323 *e*P P 01 08 50.3 -0.2
comp=Z,31nm,0.9s
ESK Eskdalemuir 22.55 323 *e*P P 01 08 50.3 -0.2
comp=Z,31nm,0.9s
NC405 NORSAR Array S 22.55 349 *e*P P 01 08 50.1 -0.5
NB201 NORSAR Array S 22.55 348 *e*P P 01 08 50.6 +0.1
NB2 NORSAR Subarra 22.56 348 P P 01 08 49.6 -1.0
comp=Z,8.0nm,0.8s,baz=160,slow=11
NB2 NORSAR Subarra 22.56 348 P P 01 08 49.6 -1.0

comp=Z,8.0nm,0.8s,SNR=0.7
NOA NORSAR Array B 22.56 348 P P 01 08 49.7 -0.9
comp=Z,7.9nm,0.7s,baz=165,slow=10,SNR=18
NOA LR LR 01 17 49.8
comp=Z,33nm,21.9s,baz=140,slow=37
NOA NORSAR Array B 22.56 348 P P 01 08 49.7 -0.9
NOA pmax pmax
comp=Z,10.0nm,0.9s
NOA MLR MLR
comp=Z,33nm,21.9s
NBO00 NORSAR Array S 22.62 348 *e*P **P 01 08 51.4 +0.1**
NBO02 NORSAR Array S 22.62 348 *e*P **P 01 08 50.9 -0.4**
PNCL Nicolau / Gran 22.63 276 *e*P **P 01 08 53.0 +1.4**
comp=Z,50nm,1.8s
NC303 NORSAR Array S 22.71 349 *e*P **P 01 08 51.6 -0.6**
NC204 NORSAR Array S 22.85 348 *e*P **P 01 08 53.9 +0.1**
KLMR Klimovskoe 24.66 23 *e*P **P 01 09 08.2 -2.9**
KLMR pmax pmax
comp=Z,11nm,1.0s
AKTK Aktyubinsk 28.57 55 P **P 01 09 45.6 -0.9**
comp=Z,42nm,18.9s
AKTO Aktyubinsk 28.57 55 P **P 01 09 45.6 -0.9**
comp=Z,2.6nm,0.5s,baz=254,slow=8.6,SNR=6.6
AKTO LR LR 01 22 49.9
comp=Z,42nm,18.9s,baz=337,slow=40
GEYT Alibeck 29.32 81 P **P 01 09 52.9 -0.4**
comp=Z,6.2nm,1.0s,baz=278,slow=11,SNR=12
ARU Arti 30.29 43*c i*P **P 01 10 00.1 -1.5**
ARU 01 10 56.0
ARU 01 13 04.0
ARU S **S 01 15 00.7 -0.3**
ARU pmax pmax
comp=Z,14nm,1.2s
ARU Arti 30.29 43 *i*P **P 01 10 00.1 -1.5**
comp=Z,14nm,1.2s
ARU S **S 01 15 00.7 -0.3**
ARU Arti 30.29 43 *e*P **P 01 10 00.6 -1.0**
comp=Z,11nm,1.1s
ARCES ARCESS Array B 30.46 3 P **P 01 10 01.9 -1.1**
comp=Z,2.3nm,0.7s,baz=186,slow=10,SNR=13
ARCES LR LR 01 24 41.1
comp=Z,69nm,19.0s,baz=184,slow=41
TOA0 Torodi Ar. Sit 30.85 218 *e*P **P 01 10 08.8 +1.8**
comp=Z,8.2nm,0.9s
TORD Torodi Ar. Bea 30.85 218 P **P 01 10 08.4 +1.5**
comp=Z,5.4nm,0.8s,baz=30,slow=9.3,SNR=20
TORD LR LR 01 24 04.0
comp=Z,52nm,20.1s,baz=40,slow=39
SVE Sverdlovsk 31.50 43 ⇓*i*P **P 01 10 12.0 -0.3**
SVE pmax pmax
comp=Z,21nm,0.8s
SVE Sverdlovsk 31.50 43 *i*P **P 01 10 12.0 -0.3**
comp=Z,21nm,0.8s
ZRNK Zerenda 35.62 51 *e*P **P 01 10 47.7 -0.6**
ZRNK pmax pmax
comp=Z,9.0nm,1.1s
ZRNK Zerenda 35.62 51 *e*P **P 01 10 47.7 -0.6**
comp=Z,9.0nm,1.1s
ZRNK Zerenda 35.62 51 *e*P **P 01 10 47.7 -0.6**
comp=Z,9.1nm,1.1s
BRVK Borovoye 36.40 51*ce*P **P 01 10 53.7 -1.2**
BRVK pmax pmax
comp=Z,19nm,1.7s
BRVK Borovoye 36.40 51 *e*P **P 01 10 53.7 -1.2**
comp=Z,19nm,1.7s
BRVK Borovoye 36.40 51 *e*P **P 01 10 54.5 -0.4**
comp=Z,8.6nm,0.8s
KKAR Karatay Array 37.41 68 *e*P **P 01 11 03.3 -0.3**
KKAR pmax pmax
comp=Z,4.0nm,0.6s
KKAR Karatay Array 37.41 68 *e*P **P 01 11 03.3 -0.3**
comp=Z,4.0nm,0.6s
KKAR Karatay Array 37.41 68 *e*P **P 01 11 03.2 -0.3**
comp=Z,3.7nm,0.6s
DBIC Dimbokro 39.66 222 LR LR 01 29 10.7
comp=Z,96nm,18.5s,baz=9.0,slow=38
EKS2 Erkin-Say 39.85 67 *e*P **P 01 11 23.8 -0.4**
EKS2 pmax pmax
comp=Z,10.0nm,0.8s
EKS2 Erkin-Say 39.85 67 *e*P **P 01 11 23.8 -0.4**
comp=Z,10.0nm,0.8s
EKS2 Erkin-Say 39.85 67 *e*P **P 01 11 23.8 -0.4**
comp=Z,9.6nm,0.8s
AAK Ala-Archa 40.37 67 *i*P **P 01 11 27.3 -1.3**
AAK pmax pmax
comp=Z,18nm,1.6s
AAK Ala-Archa 40.37 67 *i*P **P 01 11 27.3 -1.3**
comp=Z,18nm,1.6s
AAK Ala-Archa 40.37 67 *e*P **P 01 11 28.4 -0.2**
comp=Z,13nm,1.6s
FRU Bishkek 40.41 67 *e*P **P 01 11 28.0 -0.8**
FRU Bishkek 40.41 67 *e*P **P 01 11 28.0 -0.8**
TKM2 Tokmak 2 41.08 66 *e*P **P 01 11 34.2 -0.4**
TKM2 Tokmak 2 41.08 66 *e*P **P 01 11 34.2 -0.4**
TKM2 Tokmak 2 41.08 66 *e*P **P 01 11 34.2 -0.4**
KURK Kurchatov 41.67 54 *e*P **P 01 11 37.9 -1.1**
KURK pmax pmax
comp=Z,14nm,1.3s
KURK Kurchatov 41.67 54 *e*P **P 01 11 37.9 -1.1**
comp=Z,14nm,1.3s
KURK Kurchatov 41.67 54 *e*P **P 01 11 37.9 -1.1**
comp=Z,14nm,1.3s
KSH Kashi 42.30 71 *e*P **P 01 11 43.5 -1.0**
KSH *e*ScP **ScP 01 17 30.3 +2.0**
KSH PcS **PcS 01 17 30.5 +0.5**
KSH S **S 01 18 01.5 -3.6**
KSH Kashi 42.30 71 ScS ScS 01 21 46.5 +0.1
NVS Novosibirsk 43.98 48 ⇓*i*P **P 01 11 57.6 0.0**
NVS pmax pmax
comp=E,10.0nm,1.6s
NVS pmax pmax
comp=Z,22nm,1.6s
NVS Novosibirsk 43.98 48 *i*P **P 01 11 57.6 0.0**
MAKZ Makanchi 44.56 59 *e*P **P 01 12 01.6 -0.9**
MAKZ pmax pmax
comp=Z,4.0nm,0.8s
MAKZ Makanchi 44.56 59 *e*P **P 01 12 01.6 -0.9**
comp=Z,4.0nm,0.8s
MAKZ Makanchi 44.56 59 *e*P **P 01 12 01.6 -0.9**
comp=Z,3.6nm,0.8s
MK31 Makanchi Array 44.78 59 *e*P **P 01 12 03.1 -1.1**
MK31 Makanchi Array 44.78 59 *e*P **P 01 12 03.1 -1.1**
MK31 Makanchi Array 44.78 59 *e*P **P 01 12 03.1 -1.1**
MKAR Makanchi Array 44.78 59 P **P 01 12 03.0 -1.2**
comp=Z,7.2nm,0.7s,baz=278,slow=6.7,SNR=39
MKAR LR LR 01 33 21.9
comp=Z,42nm,18.7s,baz=294,slow=40
MKAR Makanchi Array 44.78 59 *e*P **P 01 12 03.1 -1.1**
MK01 Makanchi Array 44.79 59 *e*P **P 01 12 03.0 -1.3**
ZAA0 Zalesovo Array 45.01 49 *e*P **P 01 12 04.7 -1.2**
ZALV Zalesovo Beam 45.01 49 P **P 01 12 04.6 -1.3**
comp=Z,7.6nm,0.5s,baz=276,slow=9.1,SNR=29
ZALV LR LR 01 32 39.4
comp=Z,30nm,20.1s,baz=72,slow=38
NRIK Noril'sk 45.85 27 P **P 01 12 13.8 +1.4**
comp=Z,13nm,1.0s,baz=255,slow=6.3,SNR=16
WMQ Urumqi 49.28 62 *e*P **P 01 12 41.8 +2.4**
TLY Talaya 56.59 48 *e*P **P 01 13 34.1 +0.9**
TLY pmax pmax
comp=Z,4.0nm,1.0s
TLY MLR MLR
comp=Z,79nm,14.0s
TLY Talaya 56.59 48 *e*P **P 01 13 34.1 +0.9**
comp=Z,79nm,14.0s
ZAK Zakamensk 56.88 49 *e*P **P 01 13 34.5 -0.9**
ZAK pmax pmax
comp=Z,2.0nm,0.9s
ZAK Zakamensk 56.88 49 *e*P **P 01 13 34.5 -0.9**
comp=Z,2.0nm,0.9s
SCHQ Schefferville 57.65 317 P **P 01 13 40.8 +0.2**
comp=Z,2.6nm,0.8s,baz=82,slow=4.9,SNR=5.7
SONA1 Songino Array 59.81 51 *e*P **P 01 13 54.8 -1.2**
SONM Songino Array 59.81 51 P **P 01 13 55.2 -0.7**
comp=Z,1.4nm,0.7s,baz=267,slow=5.6,SNR=12
SONM Songino Array 59.81 51 P **P 01 13 55.2 -0.7**
SONM pmax pmax
comp=Z,2.0nm,0.8s
SONM Songino Array 59.81 51 P **P 01 13 55.2 -0.7**
comp=Z,2.0nm,0.8s
ULN Ulaanbaatar 60.19 51*ce*P P 01 13 54.3 -4.3
ULN pmax pmax
comp=Z,8.0nm,1.7s
ULN Ulaanbaatar 60.19 51 *e*P **P 01 13 58.1 -0.5**
comp=Z,3.6nm,0.9s
CD2 Chengdu 66.41 69 P **P 01 14 38.3 -1.7**
HHC Hu-ho-hao-te 66.46 56 *e*P **P 01 14 39.5 -0.7**

BOSA Boshof 67.67 175 LR LR 01 47 02.2
comp=Z,54nm,18.7s,baz=42,slow=38
FCC Fort Churchill 68.30 329 *e*P **P 01 14 51.9 +0.5**
FCC pmax pmax
comp=Z,3.0nm,1.1s
FCC Fort Churchill 68.30 329 *e*P **P 01 14 51.9 +0.5**
comp=Z,3.0nm,1.1s
FCC Fort Churchill 68.30 329 *e*P **P 01 14 51.9 +0.5**
comp=Z,3.5nm,1.1s
CMAR Chiang Mai Arr 69.78 82 P **P 01 14 59.2 -2.0**
comp=Z,0.8nm,0.3s,baz=303,slow=9.8,SNR=4.7
CMAR Chiang Mai Arr 69.78 82 *i*P **P 01 15 00.9 -0.3**
CMAR pmax pmax
comp=Z,1.0nm,0.3s
CMAR Chiang Mai Arr 69.78 82 *i*P **P 01 15 00.9 -0.3**
comp=Z,1.0nm,0.3s
BILL Bilibino 69.98 13 ⇓*i*P **P 01 14 58.3 -3.3**
BILL *e* 01 15 05.6
BILL *e* 01 15 22.6
BILL pmax pmax
comp=Z,6.0nm,1.9s
YKA Yellowknife Ar 72.37 340 P **P 01 15 16.6 +0.4**
comp=Z,2.0nm,0.9s,baz=38,slow=5.8,SNR=20
YKA Yellowknife Ar 72.37 340 P **P 01 15 16.6 +0.4**
YKA pmax pmax
comp=Z,3.0nm,1.0s
YKB5 Yellowknife Ar 72.37 340 *e*P **P 01 15 16.7 +0.5**
KLR Kul'dur 73.07 40 P **P 01 15 21.6 +1.0**
comp=Z,0.9nm,0.5s,baz=306,slow=6.5,SNR=4.6
MA2 Magadan 73.33 24 LR LR 01 51 43.8
comp=Z,39nm,19.3s,baz=302,slow=39
COLD Coldfoot 73.61 356 *e*P **P 01 15 24.7 +1.2**
comp=Z,2.6nm,1.0s
FFC Flin Flon 74.24 329 *e*P **P 01 15 27.9 +0.5**
FFC pmax pmax
comp=Z,3.0nm,0.8s
FFC Flin Flon 74.24 329 *e*P **P 01 15 27.9 +0.5**
comp=Z,2.7nm,0.8s
DAWY Dawson 75.79 351 *e*P **P 01 15 37.6 +1.4**
comp=Z,4.7nm,0.7s
MLY Manley 75.82 356 *e*P **P 01 15 37.8 +1.4**
comp=Z,3.3nm,1.0s
ILAR Eielson Array 75.83 354 P **P 01 15 37.3 +0.9**
comp=Z,1.5nm,1.1s,baz=0.9,slow=5.9,SNR=9.7
WRH Wood River Hil 76.22 355 *e*P **P 01 15 39.3 +0.7**
comp=Z,4.1nm,0.9s
USRK Ussuriysk Ar. 76.52 43 P **P 01 15 39.6 -1.1**
comp=Z,1.2nm,0.6s,baz=310,slow=5.1,SNR=5.2
DOT Dot Lake 76.70 353 *e*P **P 01 15 42.0 +0.6**
comp=Z,8.8nm,0.9s
BPAW Bear Paw Mtn. 76.76 356 *e*P **P 01 15 41.3 -0.5**
comp=Z,2.4nm,0.8s
MCK McKinley 77.01 355 *e*P **P 01 15 42.9 -0.2**
MCK pmax pmax
comp=Z,2.0nm,0.6s
MCK McKinley 77.01 355 *e*P **P 01 15 42.9 -0.2**
comp=Z,2.5nm,0.6s
CAST Castle Rocks 77.50 357 *e*P **P 01 15 47.2 +1.4**
comp=Z,3.0nm,1.0s
PPLA Purkeypile 78.02 357 *e*P **P 01 15 49.1 +0.2**
comp=Z,3.7nm,0.8s
LRAL Lakeview Retre 81.60 306 *e*P **P 01 16 09.7 +1.0**
comp=Z,8.1nm,1.0s
WHAR Wooly Hollow 83.30 311 *e*P **P 01 16 19.7 +2.2**
comp=Z,8.1nm,1.1s
MAJO Matsushiro 85.26 46 *e*P **P 01 16 27.5 0.0**
MAJO pmax pmax
comp=Z,4.0nm,0.7s
MAJO Matsushiro 85.26 46 *e*P **P 01 16 27.5 0.0**
comp=Z,4.3nm,0.7s
MJAR Matsushiro Arr 85.26 46 P **P 01 16 26.4 -1.1**
comp=Z,2.0nm,0.8s,baz=310,slow=4.9,SNR=5.5
N23A Red Feather La 86.47 322 *e*P **P 01 16 36.8 +3.0**
comp=Z,14nm,1.8s
PDAR Pinedale Array 86.64 326 P **P 01 16 34.9 +0.3**
comp=Z,0.5nm,0.7s,baz=62,slow=7.0,SNR=4.6
HWUT Hardware Ranch 88.45 326 *e*P **P 01 16 44.2 +1.0**
comp=Z,3.7nm,0.8s
SRU San Rafael Swe 90.02 324 *e*P **P 01 16 51.6 +1.0**
comp=Z,4.6nm,1.0s
SAML Samuel 90.72 259 *e*P **P 01 16 55.4 +1.5**
comp=Z,4.7nm,1.0s
TX31 Lajitas Ar. Si 94.20 314 *e*P **P 01 17 11.5 +1.5**
TXAR Lajitas Array 94.20 314 P **P 01 17 11.2 +1.2**
comp=Z,1.3nm,0.8s,baz=76,slow=4.3,SNR=14
WRA Warramunga Arr 120.61 92 PKP **PKPdf 01 22 41.1 -1.7**
comp=Z,0.6nm,0.8s,baz=290,slow=1.7,SNR=3.6
ASAR Alice Springs 122.32 95 PKP **PKPdf 01 22 44.9 -1.2**
comp=Z,0.6nm,0.8s,baz=330,slow=2.0,SNR=6.3

*ISCJB **28** 01:03:56.8±0.5, 39°.16N±0°.04×29°.10E±0°.04, h13km±5km,*
Error ellipse: s-maj=6.6km s-min=4.9km az=151.3
*ISK **28** 01:03:56.6, 39°.18N×29°.11E, h12km, MD2.7*
*CSEM **28** 01:03:56.8±0.1, 39°.15N×29°.12E, h13km±1km, MD2.7,*
Error ellipse: s-maj=3.6km s-min=2.2km az=142.0
*DDA **28** 01:03:57.1, 39°.13N×29°.11E, h7km, Md2.7*
ISC 28 01:03:57.0±0.9, 39°.14N±0°.03×29°.12E±0°.03, h15km±9km, n20, σ0°36/30, Turkey

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.29**	**101**	P			**Pg**	01 04 03.4	+0.2
GDZ				S			**Sg**	01 04 07.7	+0.2
GDZ	**Gediz**	**0.29**	**101**	*i*P			**Pg**	01 04 03.4	+0.2
GDZ				*i*S			**Sg**	01 04 07.7	+0.2
DEMI	**Demirci**	**0.33**	**252**	P			**Pg**	01 04 03.6	-0.2
DEMI				S			**Sg**	01 04 08.4	-0.1
DEMI	**Demirci**	**0.33**	**252**	*i*P			**Pg**	01 04 03.6	-0.2
DEMI				*i*S			**Sg**	01 04 08.4	-0.1
TVSB	**Tavsanli**	**0.41**	**41**	*e*PG			**Pg**	01 04 05.1	-0.2
TVSB				*e*SG			**Sg**	01 04 10.3	-0.6
TVSB	**Tavsanli**	**0.41**	**41**	*e*Pg			**Pg**	01 04 05.1	-0.2
TVSB				*e*Sg			**Sg**	01 04 10.3	-0.6
KULA	**Kula-Manisa**	**0.72**	**210**	*e*PG			**Pb**	01 04 11.6	+0.3
KULA	**Kula-Manisa**	**0.72**	**210**	*e*Pg			**Pb**	01 04 11.6	+0.3
MANT	**Manisa**	**0.78**	**214**	P			**Pg**	01 04 12.1	-0.2
MANT				S			**Sg**	01 04 22.0	-0.6
MANT	**Manisa**	**0.78**	**214**	*i*P			**Pg**	01 04 12.1	-0.2
MANT				*i*S			**Sg**	01 04 22.1	-0.6
BALB	**Balikesir**	**1.08**	**298**	*e*PG			**Pn**	01 04 17.4	-0.1
BALB				*e*SG			**Sg**	01 04 32.5	+0.7
BALB	**Balikesir**	**1.08**	**298**	*e*Pg			**Pn**	01 04 17.4	-0.1
BALB				*e*Sg			**Sg**	01 04 32.6	+0.7
MDNY	**Mudanya-Bursa**	**1.24**	**352**	*e*PN			**Pn**	01 04 19.7	0.0
MDNY	**Mudanya-Bursa**	**1.24**	**352**	*e*Pn			**Pn**	01 04 19.7	0.0
KCTX	**Karacabey (Bur**	**1.26**	**333**	*e*PN			**Pb**	01 04 20.5	0.0
KCTX	**Karacabey (Bur**	**1.26**	**333**	*e*Pn			**Pb**	01 04 20.5	0.0
GEMT	**Gemlik**	**1.29**	**3**	*e*PN			**Pn**	01 04 20.1	-0.3
GEMT	**Gemlik**	**1.29**	**3**	*e*Pn			**Pn**	01 04 20.1	-0.3
ARMT	**Armutlu**	**1.43**	**352**	*e*PN			**Pn**	01 04 22.6	+0.2
ARMT	**Armutlu**	**1.43**	**352**	*e*Pn			**Pn**	01 04 22.6	+0.2

*NIED **28** 01:08:00, 39°.60N×142°.70E, h14km, Mw4.0 Best double couple: M0 1.28000×10^15 NP1:φs 103.00000°, δ45.00000°, λ-21.00000°. NP2:φs 208.00000°, δ76.00000°, λ-133.00000°.*
*JMA **28** 01:08:10.8±0.1, 39°.56N×142°.70E, h25km±1km, M4.2*
JMA Felt I J1.
*NEIC **28** 01:08:16.9±2.6, 39°.83N×142°.35E, h35km, mb4.2/5, Error ellipse: s-maj=55.7km s-min=14.1km az=120.0*
NEIC Recorded [1 JMA] in Aomori and Iwate.
*IDC **28** 01:08:17.4±2.1, 39°.58N×142°.56E, h66km±18km, mb3.5/17, mb1 3.7/23, mb1mx3.6/43, mbtmp3.9/23, MS3.2/8, Ms1 3.2/8, ms1mx2.8/38, Error ellipse: s-maj=18.8km s-min=14.3km az=105.0*
ISC 28 01:08:11.3±1.8, 39°.59N±0°.05×142°.61E±0°.06, h13km±10km, n55, σ1°85/54, mb4.1/23, MS3.4/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**0.61**	**269**	P			**Pb**	01 08 23.7	-0.2
MIYJ				S			**Sb**	01 08 32.8	+0.4
JTH	**Tanohata**	**0.67**	**301**	P			**Pb**	01 08 24.9	0.0
JTH				S			**Sn**	01 08 34.9	-2.0
OFUJ	**Ofunato**	**0.89**	**235**	P			**Pg**	01 08 27.7	-0.9
JOM	**Ohasama**	**1.03**	**264**	P			**Pg**	01 08 30.5	-0.6
JOM				S			**Sn**	01 08 45.0	-0.7
JKZ	**Kuzumaki**	**1.06**	**292**	P			**Pg**	01 08 31.2	-0.6
JKZ				S			**Sn**	01 08 46.2	-0.4

JANG Nango 1.15 313 P **Pb 01 08 31.7 -1.3**
JMK Ichinoseki 1.25 240 P **Pn 01 08 33.7 -0.9**
JMK S **Sb 01 08 50.2 -0.7**
JIO Ouri 1.50 221 P **Pn 01 08 36.8 -1.2**
JIO S **Sn 01 08 56.2 -1.2**
JRG Rokugo 1.54 263 P **Pb 01 08 39.1 -0.6**
JRG S **Sg 01 09 00.5 -0.5**
JAH Hinai 1.63 292 P **Pb 01 08 40.5 -0.8**
JAH S **Sg 01 09 02.6 -1.2**
ERM Erimo 2.46 10 *e*Pn **Pn 01 08 51.5 +0.4**
ASAJ Asahikawa 4.52 360 P **Pn 01 09 22.8 +3.4**
18nm,0.3s,baz=219,slow=12,SNR=21
MAJO Matsushiro 4.62 230 *e*Pn **Pn 01 09 24.3 +3.5**
MAJO Matsushiro 4.62 230 *e*ScP **Pn 01 09 24.6 +3.7**
MAT Matsushiro 4.62 230 P **Pn 01 09 24.0 +3.1**
MAT *e*S **Sn 01 10 19.2 +4.8**
MJAR Matsushiro Arr 4.62 230 P **Pn 01 09 23.0 +2.2**
3.5nm,0.3s,baz=41,slow=11,SNR=61
MJB9 Matsu-Tunnel 4.62 230 *e*ScP **Pn 01 09 24.6 +3.7**
JHJ Hachijo jima 2 6.85 200 LR LR 01 12 54.0
comp=Z,95nm,20.1s,baz=89,slow=41
USRK Ussuriysk Ar. 9.16 304 P **Pn 01 10 26.7 +3.6**
1.3nm,0.3s,baz=116,slow=14,SNR=25
USRK LR LR 01 13 52.0
comp=Z,168nm,18.4s,baz=117,slow=37
JNU Nakatsue 11.45 239 P **Pn 01 10 58.3 +3.7**
0.2nm,0.3s,baz=157,slow=14,SNR=2.2
JNU LR LR 01 15 31.5
comp=Z,121nm,18.9s,baz=303,slow=38
KSRS Korea Array 11.70 264 P Pn 01 11 03.0 +5.0
0.4nm,0.3s,baz=90,slow=16,SNR=3.7
KLR Kul'dur 12.36 325 P **Pn 01 11 10.9 +4.0**
0.1nm,0.3s,baz=122,slow=13,SNR=4.1
KLR LR LR 01 15 55.1
comp=Z,92nm,18.9s,baz=104,slow=37
PETK Petropavlovsk- 17.02 32 LR LR 01 18 07.1
comp=Z,34nm,20.3s,baz=173,slow=35
SEY Seymchan 24.10 11 P **P 01 13 25.9 -0.5**
6.0nm,1.0s,baz=196,slow=8.1,SNR=9.5
H11N2 WAKE ISLAND Hy 28.78 126 T T 01 44 24.4
baz=319,slow=75,SNR=437
H11N1 WAKE ISLAND Hy 28.79 126 T T 01 44 14.8
baz=319,slow=75,SNR=467
H11N3 WAKE ISLAND Hy 28.80 126 T T 01 44 21.0
baz=319,slow=75,SNR=503
H11S1 WAKE ISLAND Hy 29.58 128 T T 01 45 16.4
baz=321,slow=76,SNR=56
H11S3 WAKE ISLAND Hy 29.58 128 T T 01 45 18.3
baz=321,slow=76,SNR=47
H11S2 WAKE ISLAND Hy 29.60 128 T T 01 45 15.1
baz=321,slow=76,SNR=60
ZALV Zalesovo Beam 40.94 310 P **P 01 15 53.4 +0.2**
2.8nm,0.4s,baz=94,slow=8.1,SNR=12
CMAR Chiang Mai Arr 43.09 254 LR LR 01 33 27.7
comp=Z,13nm,19.7s,baz=200,slow=35
MKAR Makanchi Array 43.61 300 P **P 01 16 15.1 -0.1**
2.0nm,0.6s,baz=83,slow=11,SNR=12
KURK Kurchatov 45.14 306 *e*P **P 01 16 26.8 -0.5**
14nm,0.5s
ILAR Eielson Array 46.84 34 P **P 01 16 40.6 +0.1**
0.7nm,0.6s,baz=264,slow=5.9,SNR=9.0
TKM2 Tokmak 2 49.28 297 *e*P **P 01 17 00.3 +0.3**
1.2nm,0.6s
BRVK Borovoye 49.63 311 *e*P **P 01 17 02.4 +0.2**
1.7nm,0.7s
EKS2 Erkin-Say 50.62 297 *e*P **P 01 17 10.3 +0.2**
KKAR Karatay Array 52.69 299 *e*P **P 01 17 24.2 -1.2**
1.9nm,0.7s
ARU Arti 55.09 318 *e*P **P 01 17 44.8 +2.1**
1.6nm,0.4s
ABKAR Akbulak array 57.03 309 *e*P **P 01 17 56.4 -0.3**
2.0nm,0.5s
AKTO Aktyubinsk 57.69 311 P **P 01 17 59.1 -2.2**
0.4nm,0.3s,baz=90,slow=11,SNR=3.6
WRA Warramunga Arr 59.73 189 P **P 01 18 13.8 -1.9**
0.6nm,0.8s,baz=7.2,slow=7.1,SNR=3.9
YKA Yellowknife Ar 61.13 31 P **P 01 18 24.0 -0.9**
0.3nm,0.5s,baz=302,slow=6.4,SNR=4.6
ASAR Alice Springs 63.45 189 P **P 01 18 40.8 -0.1**
0.3nm,0.7s,baz=9.8,slow=6.8,SNR=3.3
FINES FINESS Array B 66.99 332 P **P 01 19 02.5 -0.9**
1.7nm,0.6s,baz=35,slow=7.0,SNR=11
FINES LR LR 01 52 40.9
comp=Z,50nm,19.2s,baz=24,slow=40
KBZ Khabaz 69.96 310 P **P 01 19 21.6 -0.7**
1.1nm,0.6s,baz=21,slow=8.6,SNR=2.8
HFS Hagfors 72.14 336 P **P 01 19 34.8 -0.5**
1.6nm,0.6s,baz=69,slow=8.1,SNR=7.8
NB2 NORSAR Subarra 72.19 337 P **P 01 19 35.2 -0.4**
comp=Z,2.5nm,1.0s,baz=39,slow=6.2
NOA NORSAR Array B 72.19 337 P **P 01 19 35.0 -0.6**
comp=Z,0.7nm,0.6s,baz=39,slow=6.0,SNR=5.7
NOA LR LR 01 55 15.6
comp=Z,18nm,18.5s,baz=40,slow=39
AKASG Malin Array Be 72.85 322 P **P 01 19 39.3 -0.3**
comp=Z,0.9nm,0.4s,baz=45,slow=6.3,SNR=8.0
PDAR Pinedale Array 75.21 46 P **P 01 19 54.3 +0.4**
comp=Z,0.3nm,0.8s,baz=312,slow=6.4,SNR=3.1
BRTR Keskin Array B 77.86 312 P **P 01 20 08.7 -0.1**
comp=Z,0.5nm,0.7s,baz=104,slow=4.2,SNR=3.2
GERES GERESS Array B 81.03 329 P **P 01 20 23.5 -2.4**
comp=Z,0.3nm,0.4s,baz=34,slow=5.0,SNR=3.6
TXAR Lajitas Array 87.83 53 P **P 01 21 00.6 -0.1**
comp=Z,0.1nm,0.4s,baz=273,slow=4.8,SNR=5.0

IDC 28 01:21:30.4±5.1, 4°.24S×131°.64E, h0km, mb3.5/1, mb1 3.9/3, mb1mx3.5/26, mbtmp3.7/3, ML3.8/2, Error ellipse: s-maj=358.3km s-min=30.8km az=73.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**15.83**	**171**	Pn			Pn	01 25 12.6	-2.2
WRA					Sn		Sn	01 28 03.5	-7.6
ASAR	**Alice Springs**	**19.44**	**174**	P			Pn	01 25 59.5	-0.2
ASAR					S		Sn	01 29 30.7	-7.8
MKAR	**Makanchi Array**	**66.86**	**325**	P			P	01 32 24.2	0.0

*NIED **28** 01:39:00, 34°.90N×142°.80E, h5km, Mw3.8 Best double couple: M0 6.08000×10^14 NP1:φs 10.00000°, δ23.00000°, λ-99.00000°. NP2:φs 201.00000°, δ68.00000°, λ-86.00000°.*
*IDC **28** 01:39:15.0±0.7, 34°.77N×143°.05E, h0km, mb3.8/11, mb1 4.0/15, mb1mx3.8/39, mbtmp3.8/15, ML4.1/4, MS2.7/4, Ms1 2.7/4, ms1mx2.4/54, Error ellipse: s-maj=20.1km s-min=16.1km az=109.0*
*ISCJB **28** 01:39:17.4±0.5, 34°.74N±0°.05×142°.81E±0°.04, h33km, mb3.8/14, MS2.9/1, Error ellipse: s-maj=6.8km s-min=4.8km az=17.6*
*JMA **28** 01:39:18.3±0.4, 34°.85N×142°.77E, h64km, M3.9*
*NEIC **28** 01:39:19.6±0.6, 34°.88N×142°.90E, h35km, mb4.3/2, Error ellipse: s-maj=13.3km s-min=11.6km az=94.0*
ISC 28 01:39:19.5±0.6, 34°.74N±0°.06×142°.84E±0°.07, h35km, n43, σ1°65/41, mb3.8/14, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**1.53**	**267**	P			**Pn**	01 39 43.1	-0.8
BSO1				*e*S			**Sn**	01 40 02.6	+0.3
CHOJ	**Chosi**	**1.88**	**301**	P			**Pn**	01 39 47.6	-1.6
CHOJ				*e*S			**Sn**	01 40 09.2	-2.4
BSO3	**Boso 3**	**1.92**	**272**	P			**Pn**	01 39 49.1	-0.3
BSO3				S			**Sn**	01 40 11.6	-0.5
BSO4	**Boso 4**	**2.07**	**278**	P			**Pn**	01 39 51.6	-0.1
BSO4				*e*S			**Sn**	01 40 14.3	-1.9
JCN	**Nagara**	**2.26**	**288**	P			**Pn**	01 39 53.6	-0.8
JYT	**Yasato**	**2.62**	**305**	P			**Pn**	01 39 56.7	-2.6
JYT				*e*S			**Sn**	01 40 27.3	-2.5
JIM2	**Oshima 3**	**2.80**	**270**	P			**Pn**	01 40 00.2	-1.7
JIM2				*e*S			**Sn**	01 40 31.7	-2.8
JHJ	**Hachijo jima 2**	**3.01**	**238**	Pn			**Pn**	01 40 04.3	-0.4
JHJ					Sn		**Sn**	01 40 37.5	-2.1
MJAR	**Matsushiro Arr**	**4.17**	**297**	Pn			**Pn**	01 40 19.7	-1.0
MJAR					Sn		**Sn**	01 41 09.7	+1.4

3.1nm,0.3s,baz=289,slow=20,SNR=5.3
MJAR LR LR 01 42 27.4
comp=Z,84nm,18.4s,baz=195,slow=45
MAJO Matsushiro 4.17 297 *e*Pn **Pn 01 40 19.5 -1.3**
MAT Matsushiro 4.17 297 P **Pn 01 40 19.6 -1.1**
MAT S **Sn 01 41 07.1 -1.2**
ERM Erimo 7.26 2 *e*Pn Pn 01 40 58.3 -4.8
CBIJ Chichi jima 7.64 184 *e*Pn **Pn 01 41 07.2 -1.2**
CBIJ Sn **Sn 01 42 30.2 -3.6**
JCJ Chichijima 7.64 184 Pn **Pn 01 41 06.8 -1.6**
8.0nm,0.3s,baz=285,slow=20,SNR=4.6
JCJ Sn **Sn 01 42 30.2 -3.6**
17nm,0.3s,baz=290,slow=23,SNR=6.5
ASAJ Asahikawa 9.36 359 Pn Pn 01 41 28.2 -3.7
1.7nm,0.3s,baz=215,slow=11,SNR=5.7
JNU Nakatsue 10.07 264 LR LR 01 46 18.6
comp=Z,35nm,18.6s,baz=120,slow=41
JNU Nakatsue 10.07 264 *e*Pn **Pn 01 41 43.1 +1.5**
KSRS Korea Array 12.36 287 Pn **Pn 01 42 14.2 +1.2**
0.3nm,0.3s,baz=85,slow=14,SNR=3.3
KSRS LR LR 01 46 34.0
comp=Z,45nm,21.6s,baz=136,slow=35
KSAR Wonju Array Be 12.39 287 Pn **Pn 01 42 14.2 +0.8**
USRK Ussuriysk Ar. 12.61 322 Pn P 01 42 21.7 -5.6
0.1nm,0.3s,baz=122,slow=14,SNR=4.4
H11N2 WAKE ISLAND Hy 26.01 119 T T 02 12 02.9
baz=311,slow=75,SNR=5.5
H11N1 WAKE ISLAND Hy 26.02 119 T T 02 12 05.5
baz=311,slow=75,SNR=5.6
H11N3 WAKE ISLAND Hy 26.03 119 T T 02 12 09.5
baz=311,slow=75,SNR=6.2
H11S3 WAKE ISLAND Hy 26.67 121 T T 02 12 55.7
baz=312,slow=75,SNR=5.3
H11S1 WAKE ISLAND Hy 26.67 121 T T 02 12 48.2
baz=312,slow=75,SNR=5.1
H11S2 WAKE ISLAND Hy 26.68 121 T T 02 12 59.3
baz=312,slow=75,SNR=4.8
SEY Seymchan 28.84 9 P **P 01 45 13.9 -0.3**
1.1nm,0.5s,baz=196,slow=2.1,SNR=4.7
SONM Songino Array 30.05 307 P **P 01 45 27.2 +1.9**
0.4nm,0.6s,baz=116,slow=9.8,SNR=3.0
ZALV Zalesovo Beam 44.32 314 P P 01 47 29.9 +4.0
1.0nm,0.5s,baz=100,slow=7.3,SNR=2.2
MKAR Makanchi Array 46.34 304 P P 01 47 45.2 +3.2
0.7nm,0.7s,baz=88,slow=8.6,SNR=6.0
ILAR Eielson Array 50.83 31 P **P 01 48 14.4 -1.8**
0.3nm,0.8s,baz=261,slow=5.3,SNR=4.7
WRAB Tennant Creek 54.97 190 *e*P **P 01 48 48.4 +1.1**
1.3nm,0.4s
WRA Warramunga Arr 54.98 190 P **P 01 48 48.4 +1.1**
4.1nm,0.7s,baz=8.6,slow=7.4,SNR=26
ASAR Alice Springs 58.70 190 P **P 01 49 15.1 +1.3**
1.4nm,0.7s,baz=17,slow=11,SNR=18
ARU Arti 58.84 320 *e*P **P 01 49 13.1 -1.2**
0.8nm,0.4s
YKA Yellowknife Ar 65.21 30 P **P 01 49 56.7 -0.2**
0.3nm,0.8s,baz=310,slow=6.5,SNR=4.3
NVAR Mina Array Bea 75.43 53 P **P 01 51 01.2 +1.0**
1.3nm,0.7s,baz=289,slow=6.6,SNR=8.4
NOA NORSAR Array B 76.74 338 P **P 01 51 07.5 +0.6**
0.7nm,0.7s,baz=40,slow=5.7,SNR=3.0
PDAR Pinedale Array 78.44 46 P **P 01 51 16.8 -0.3**
0.2nm,0.3s,baz=258,slow=4.4,SNR=4.0
BRTR Keskin Array B 81.24 313 P **P 01 51 34.5 +2.3**
0.6nm,0.9s,baz=256,slow=2.0,SNR=3.7
MLR Muntele Rosu 81.88 321 LR LR 02 31 37.2
comp=Z,5.1nm,18.0s,baz=314,slow=38
SAML Samuel 144.97 49 *e*PKPdf **PKPdf 01 58 53.3 -0.3**
LPAZ La Paz 146.75 64 PKPbc **PKPbc 01 58 59.5 +0.4**
0.8nm,0.7s,baz=210,slow=1.4,SNR=3.7

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*ISCJB **28** 01:41:05.0±0.4, 39.°08N±0.°03×29.°03E±0.°04, h9km, Error ellipse: s-maj=4.9km s-min=3.8km az=25.1*
*ISK **28** 01:41:04.6, 39.°11N×29.°06E, h8km, MD2.9*
*DDA **28** 01:41:04.8, 39.°09N×29.°03E, h7km, Md2.9*
*CSEM **28** 01:41:05.0±0.1, 39.°11N×29.°05E, h5km, MD2.9, Error ellipse: s-maj=1.6km s-min=1.4km az=51.0*
ISC 28 01:41:05.1±0.8,**39.°11N**±0.°03×**29.°02E**±0.°02,**h9**km,**n44,**
σ0§**54**/51,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**255**	S	**Sg**	**01 41 13.9**	**+0.4**
DEMI	**Demirci**	**0.25**	**255**	*i* S	**Sg**	**01 41 10.3**	**-3.2**
DEMI				*i* S	**Sg**	**01 41 13.8**	**+0.4**
GDZ	**Gediz**	**0.36**	**93**	P	**Pg**	**01 41 12.0**	**-0.2**
GDZ				S	**Sg**	**01 41 17.3**	**+0.4**
GDZ	**Gediz**	**0.36**	**93**	*i* P	**Pg**	**01 41 12.0**	**-0.2**
GDZ				*i* S	**Sg**	**01 41 17.3**	**+0.4**
TVSB	**Tavsanli**	**0.48**	**45**	*e*PG	**Pg**	**01 41 14.1**	**-0.4**
TVSB	**Tavsanli**	**0.48**	**45**	*e*Pg	**Pg**	**01 41 14.1**	**-0.4**
KULA	**Kula-Manisa**	**0.66**	**206**	*e*PG	**Pg**	**01 41 17.9**	**+0.1**
KULA	**Kula-Manisa**	**0.66**	**206**	*e*Pg	**Pg**	**01 41 17.9**	**+0.1**
KHAL	**Karahalli**	**0.82**	**153**	P	**Pg**	**01 41 20.7**	**-0.2**
KHAL				S	**Sg**	**01 41 31.5**	**-0.1**
KHAL	**Karahalli**	**0.82**	**153**	*i* P	**Pg**	**01 41 20.7**	**-0.2**
KHAL				*i* S	**Sg**	**01 41 31.5**	**-0.1**
KHL	**Karahalli**	**0.88**	**153**	*e*PG	**Pg**	**01 41 21.7**	**-0.2**
KHL	**Karahalli**	**0.88**	**153**	*e*Pg	**Pg**	**01 41 21.7**	**-0.2**
AKS	**Akhisar**	**0.97**	**257**	*e*PG	**Pb**	**01 41 24.3**	**+0.2**
AKS	**Akhisar**	**0.97**	**257**	*e*Pg	**Pb**	**01 41 24.3**	**+0.2**
BALB	**Balikesir**	**1.03**	**301**	*e*PG	**Pg**	**01 41 25.1**	**+0.2**
BALB				*e*SG	**Sn**	**01 41 40.4**	**+0.1**
BALB	**Balikesir**	**1.03**	**301**	*e*Pg	**Pg**	**01 41 25.1**	**+0.2**
BALB				*e*Sg	**Sn**	**01 41 40.4**	**+0.1**
BALY	**Balya**	**1.26**	**301**	P	**Pb**	**01 41 29.0**	**0.0**
BALY	**Balya**	**1.26**	**301**	*i* P	**Pb**	**01 41 29.1**	**0.0**
MDNY	**Mudanya-Bursa**	**1.26**	**355**	*e*PN	**Pb**	**01 41 29.2**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.26**	**355**	*e*Pn	**Pb**	**01 41 29.2**	**+0.1**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*PN	**Pb**	**01 41 29.3**	**+0.2**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*Pn	**Pb**	**01 41 29.3**	**+0.2**
IZI	**Iznik**	**1.27**	**16**	*e*PN	**Pb**	**01 41 29.4**	**+0.2**
IZI	**Iznik**	**1.27**	**16**	*e*Pn	**Pb**	**01 41 29.5**	**+0.2**
GEMT	**Gemlik**	**1.33**	**5**	*e*PN	**Pn**	**01 41 30.0**	**+0.1**
GEMT	**Gemlik**	**1.33**	**5**	*e*Pn	**Pn**	**01 41 30.0**	**+0.1**
GONE	**Gonen-Balikesi**	**1.40**	**313**	*e*PN	**Pg**	**01 41 31.7**	**-0.1**
GONE	**Gonen-Balikesi**	**1.40**	**313**	*e*Pn	**Pg**	**01 41 31.7**	**-0.1**
ADVT	**Abdulvahap**	**1.43**	**22**	*e*PN	**Pn**	**01 41 31.4**	**+0.2**
ADVT	**Abdulvahap**	**1.43**	**22**	*e*Pn	**Pn**	**01 41 31.4**	**+0.2**
ARMT	**Armutlu**	**1.46**	**355**	*e*PN	**Pb**	**01 41 32.2**	**-0.2**
ARMT	**Armutlu**	**1.46**	**355**	*e*Pn	**Pb**	**01 41 32.2**	**-0.2**
EDC	**Edincik**	**1.53**	**324**	*e*PN	**Pb**	**01 41 33.2**	**-0.3**
EDC	**Edincik**	**1.53**	**324**	*e*Pn	**Pb**	**01 41 33.2**	**-0.3**
GPA	**Golpazari**	**1.54**	**40**	*e*PN	**Pb**	**01 41 33.5**	**-0.3**
GPA	**Golpazari**	**1.54**	**40**	*e*Pn	**Pb**	**01 41 33.5**	**-0.3**
GULT	**Gulveren**	**1.75**	**41**	*e*PN	**Pn**	**01 41 35.9**	**+0.2**
GULT	**Gulveren**	**1.75**	**41**	*e*Pn	**Pn**	**01 41 35.9**	**+0.2**
HRT	**Hereke**	**1.78**	**16**	*e*PN	**Pn**	**01 41 36.5**	**+0.4**
HRT	**Hereke**	**1.78**	**16**	*e*Pn	**Pn**	**01 41 36.5**	**+0.4**
ISK	**Istanbul-Kandi**	**1.96**	**1**	*e*PN	**Pn**	**01 41 39.1**	**+0.7**
ISK	**Istanbul-Kandi**	**1.96**	**1**	*e*Pn	**Pn**	**01 41 39.1**	**+0.7**
SVRH	**Sivrihisar-ESK**	**1.97**	**79**	*e*PN	**Pn**	**01 41 38.8**	**+0.1**
SVRH	**Sivrihisar-ESK**	**1.97**	**79**	*e*Pn	**Pn**	**01 41 38.8**	**+0.1**

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*ISCJB **28** 01:43:20.7±0.7, 39.°13N±0.°05×29.°12E±0.°05, h9km, Error ellipse: s-maj=7.4km s-min=4.8km az=160.7*
*DDA **28** 01:43:20.3, 39.°11N×29.°11E, h7km, Md2.4*
*CSEM **28** 01:43:20.8±0.2, 39.°15N×29.°12E, h5km, MD2.7, Error ellipse: s-maj=4.4km s-min=3.4km az=131.0*
*ISK **28** 01:43:20.5, 39.°17N×29.°12E, h5km, MD2.7*
ISC 28 01:43:20.6±0.9,**39.°16N**±0.°05×**29.°06E**±0.°03,**h9**km,**n22,**
σ1§**12**/28,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.29**	**246**	P	**Pg**	**01 43 23.3**	**-3.1**
DEMI				S	**Sg**	**01 43 31.4**	**+1.2**
DEMI	**Demirci**	**0.29**	**246**	*i* P	**Pg**	**01 43 23.3**	**-3.1**
DEMI				*i* S	**Sg**	**01 43 31.4**	**+1.2**
GDZ	**Gediz**	**0.34**	**102**	P	**Pg**	**01 43 26.6**	**-0.8**
GDZ				S	**Sg**	**01 43 30.5**	**-1.4**
GDZ	**Gediz**	**0.34**	**102**	*i* P	**Pg**	**01 43 26.6**	**-0.8**
GDZ				*i* S	**Sg**	**01 43 30.5**	**-1.4**
TVSB	**Tavsanli**	**0.43**	**47**	*e*PG	**Pg**	**01 43 29.0**	**0.0**
TVSB				*e*SG	**Sg**	**01 43 34.4**	**-0.3**
TVSB	**Tavsanli**	**0.43**	**47**	*e*Pg	**Pg**	**01 43 29.0**	**0.0**
TVSB				*e*Sg	**Sg**	**01 43 34.4**	**-0.3**
KULA	**Kula-Manisa**	**0.71**	**206**	*e*PG	**Pg**	**01 43 35.2**	**+0.8**
KULA	**Kula-Manisa**	**0.71**	**206**	*e*Pg	**Pg**	**01 43 35.2**	**+0.8**
MDNY	**Mudanya-Bursa**	**1.22**	**354**	*e*PN	**Pn**	**01 43 44.1**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.22**	**354**	*e*Pn	**Pn**	**01 43 44.1**	**+0.3**
IZI	**Iznik**	**1.22**	**15**	*e*PN	**Pb**	**01 43 43.8**	**-0.1**
IZI	**Iznik**	**1.22**	**15**	*e*Pn	**Pb**	**01 43 43.8**	**-0.1**
KCTX	**Karacabey (Bur**	**1.23**	**334**	*e*PN	**Pn**	**01 43 44.9**	**+0.9**
KCTX	**Karacabey (Bur**	**1.23**	**334**	*e*Pn	**Pn**	**01 43 44.9**	**+0.9**
ADVT	**Abdulvahap**	**1.38**	**22**	*e*PN	**Pb**	**01 43 47.0**	**+0.5**
ADVT	**Abdulvahap**	**1.38**	**22**	*e*Pn	**Pb**	**01 43 47.0**	**+0.5**
ARMT	**Armutlu**	**1.41**	**354**	*e*PN	**Pb**	**01 43 47.6**	**+0.4**
ARMT	**Armutlu**	**1.41**	**354**	*e*Pn	**Pb**	**01 43 47.6**	**+0.4**
EDC	**Edincik**	**1.50**	**323**	*e*PN	**Pb**	**01 43 49.2**	**+0.6**
EDC	**Edincik**	**1.50**	**323**	*e*Pn	**Pb**	**01 43 49.2**	**+0.6**
GULT	**Gulveren**	**1.70**	**41**	*e*PN	**Pn**	**01 43 50.8**	**+0.3**
GULT	**Gulveren**	**1.70**	**41**	*e*Pn	**Pn**	**01 43 50.8**	**+0.3**

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*IDC **28** 01:45:10.6±0.9, 27.°37N×143.°49E, h0km, mb3.7/10, mb1 3.9/13, mb1mx3.8/37, mbtmp3.7/13, ML3.5/3, Error ellipse: s-maj=20.7km s-min=19.1km az=155.0*
*ISCJB **28** 01:45:13.7±0.8, 27.°3N±0.°1×143.°5E±0.°1, h33km, mb3.7/10, Error ellipse: s-maj=17.2km s-min=14.9km az=165.0*
ISC 28 01:45:15.8±0.9,**27.°4N**±0.°1×**143.°4E**±0.°1,**h35**km,**n15,**
σ0§**83**/15,**mb3.8**/10,**Bonin Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCJ	**Chichijima**	**1.09**	**253**	Pn	**Pn**	**01 45 34.0**	**-0.6**
158nm,0.3s,baz=92,slow=20,SNR=74							
MJAR	**Matsushiro Arr**	**10.09**	**336**	Pn	**Pn**	**01 47 36.5**	**-1.7**
1.1nm,0.3s,baz=164,slow=12,SNR=9.8							
KSRS	**Korea Array**	**16.40**	**311**	Pn	**P**	**01 49 05.9**	**+0.1**
0.4nm,0.3s,baz=121,slow=12,SNR=4.1							
USRK	**Ussuriysk Ar.**	**19.08**	**334**	P	**Pn**	**01 49 36.2**	**0.0**
0.2nm,0.3s,baz=161,slow=13,SNR=6.2							
KLR	**Kul'dur**	**23.55**	**341**	P	**P**	**01 50 23.3**	**+0.4**
1.0nm,0.5s,baz=193,slow=4.2,SNR=5.5							
SONM	**Songino Array**	**35.21**	**315**	P	**P**	**01 52 07.9**	**+1.1**
0.6nm,0.6s,baz=122,slow=6.8,SNR=4.1							
WRA	**Warramunga Arr**	**47.89**	**191**	P	**P**	**01 53 50.1**	**-0.5**
1.3nm,0.4s,baz=14,slow=8.7,SNR=23							
ZALV	**Zalesovo Beam**	**49.93**	**319**	P	**P**	**01 54 06.8**	**+0.9**
0.5nm,0.4s,baz=107,slow=9.7,SNR=2.8							
MKAR	**Makanchi Array**	**51.07**	**309**	P	**P**	**01 54 15.7**	**+0.9**
0.4nm,0.3s,baz=85,slow=10.0,SNR=4.5							
ILAR	**Eielson Array**	**56.93**	**29**	P	**P**	**01 54 56.9**	**-0.3**
0.3nm,0.3s,baz=267,slow=6.1,SNR=7.4							
YKA	**Yellowknife Ar**	**71.36**	**29**	P	**P**	**01 56 31.8**	**0.0**
0.2nm,0.4s,baz=295,slow=6.0,SNR=5.3							
FINES	**FINESS Array B**	**78.11**	**334**	P	**P**	**01 57 11.4**	**+0.4**
1.1nm,0.8s,baz=88,slow=4.6,SNR=6.1							
NVAR	**Mina Array Bea**	**79.50**	**52**	P	**P**	**01 57 18.5**	**-0.8**
0.7nm,0.7s,baz=282,slow=7.1,SNR=4.5							
PDAR	**Pinedale Array**	**83.25**	**45**	P	**P**	**01 57 39.4**	**+0.2**
0.2nm,0.5s,baz=313,slow=3.2,SNR=2.2							
LPAZ	**La Paz**	**148.84**	**76**	PKPbc	**PKPbc**	**02 05 02.0**	**+0.8**
0.4nm,0.5s,baz=204,slow=3.8,SNR=5.4							

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*NIED **28** 01:57:00, 35.°70N×141.°00E, h8km, Mw4.3 Best double couple: M0:3.66000×10^15 NP1:φ0=358.00000°, δ39.00000°, λ-78.00000°. NP2:φ0=162.00000°, δ52.00000°, λ-100.00000°.*
*ISCJB **28** 01:57:17.1±1.0, 35.°72N±0.°03×141.°12E±0.°04, h6km±6km, mb4.2/35, MS3.3/6, Error ellipse: s-maj=6.4km s-min=5.0km az=154.2*
*IDC **28** 01:57:18.2±0.6, 35.°66N×140.°88E, h0km, mb4.0/19, mb1 4.2/23, mb1mx4.1/46, mbtmp4.1/23, ML4.1/4, MS3.3/10, Ms1 3.3/10, ms1mx3.0/50, Error ellipse: s-maj=18.9km s-min=13.5km az=88.0*
*NEIC **28** 01:57:19.5±2.7, 35.°69N×141.°00E, h9km±17km, mb4.5/16, Error ellipse: s-maj=8.3km s-min=7.1km az=111.0*
NEIC Recorded [3 JMA] in Chiba and Ibaraki.
*JMA **28** 01:57:19.9±0.2, 35.°71N×140.°95E, h11km±1km, M4.4*
JMA Felt III J1.
ISC 28 01:57:19.5±1.1,**35.°69N**±0.°04×**140.°98E**±0.°06,**h9**km±6km,
n71,σ1§**07**/66,**mb4.2**/36,**MS3.4**/6,**3C-2D,Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.10**	**275**	⇑P	**Pg**	**01 57 22.2**	**+0.2**
CHOJ				S	**Sg**	**01 57 24.0**	**+0.3**
JCN	**Nagara**	**0.69**	**247**	⇑P	**Pb**	**01 57 33.8**	**+0.1**
JYT	**Yasato**	**0.83**	**310**	⇑P	**Pg**	**01 57 35.0**	**-0.5**
JYT				S	**Sg**	**01 57 45.8**	**-0.5**
BSO4	**Boso 4**	**0.88**	**217**	P	**Pb**	**01 57 37.0**	**+0.2**
BSO3	**Boso 3**	**0.97**	**203**	⇓P	**Pb**	**01 57 38.2**	**-0.1**
JHO	**Hitachi**	**0.97**	**340**	⇓P	**Pg**	**01 57 37.3**	**-0.9**
JHO				S	**Sg**	**01 57 50.0**	**-0.9**
BSO1	**Boso 1**	**1.04**	**180**	P	**Pg**	**01 57 38.3**	**-1.1**
MJAR	**Matsushiro Arr**	**2.40**	**291**	Pn	**Pn**	**01 57 58.1**	**-0.9**
22nm,0.3s,baz=93,slow=8.7,SNR=145							
MJAR				Sn	**Sb**	**01 58 31.3**	**-1.2**
32nm,0.3s,baz=217,slow=27,SNR=7.0							
MAJO	**Matsushiro**	**2.40**	**291**	*e*Pn	**Pn**	**01 57 58.2**	**-0.8**
MAT	**Matsushiro**	**2.40**	**291**	P	**Pn**	**01 57 58.4**	**-0.6**
MAT				S	**Sb**	**01 58 30.7**	**-1.8**
JHJ	**Hachijo jima 2**	**2.75**	**201**	Pn	**Pn**	**01 58 03.4**	**-0.5**
27nm,0.3s,baz=155,slow=23,SNR=7.5							
JHJ				Sn	**Sb**	**01 58 41.4**	**-1.3**
55nm,0.3s,baz=69,slow=20,SNR=5.5							
ERM	**Erimo**	**6.54**	**14**	*e*Pn	**Pn**	**01 58 54.6**	**-1.2**
21nm,0.6s							
ASAJ	**Asahikawa**	**8.50**	**8**	Pn	**Pn**	**01 59 21.1**	**-1.7**
3.5nm,0.3s,baz=201,slow=14,SNR=7.3							
ASAJ	**Asahikawa**	**8.50**	**8**	*e*Pn	**Pn**	**01 59 21.3**	**-1.5**
7.2nm,0.8s							
CBIJ	**Chichi jima**	**8.63**	**173**	*e*Pn	**Pn**	**01 59 24.9**	**+0.2**
JCJ	**Chichijima**	**8.63**	**173**	Pn	**Pn**	**01 59 24.4**	**-0.3**
9.0nm,0.3s,baz=309,slow=21,SNR=4.3							
JCJ				LR	LR	02 03 01.4	
comp=Z,156nm,18.4s,baz=5.0,slow=40							
JNU	**Nakatsue**	**8.73**	**256**	Pn	Pn	01 59 30.9	+4.9
0.5nm,0.3s,baz=101,slow=8.2,SNR=5.3							
JNU				LR	LR	02 03 15.6	
comp=Z,329nm,20.6s,baz=110,slow=41							
KSRS	**Korea Array**	**10.65**	**283**	Pn	Pn	01 59 55.6	+3.5
0.3nm,0.3s,baz=97,slow=14,SNR=6.7							
KSRS				LR	LR	02 03 18.7	
comp=Z,150nm,20.0s,baz=90,slow=34							
KSAR	**Wonju Array Be**	**10.68**	**283**	Pn	**Pn**	**01 59 55.6**	**+3.1**
USRK	**Ussuriysk Ar.**	**10.94**	**324**	Pn	**Pn**	**01 59 58.0**	**+1.9**
0.1nm,0.3s,baz=121,slow=12,SNR=6.7							
YSS	**Yuzh-Sakhalins**	**11.33**	**6**	*e*Pn	**Pn**	**02 00 00.7**	**-0.8**
29nm,0.8s							
KLR	**Kul'dur**	**15.13**	**336**	Pn	**P**	**02 00 56.3**	**-2.2**
0.1nm,0.3s,baz=132,slow=15,SNR=3.0							
KLR				LR	LR	02 06 22.7	
comp=Z,87nm,19.8s,baz=94,slow=36							
PETK	**Petropavlovsk-**	**21.02**	**29**	P	**P**	**02 02 07.0**	**+3.7**
9.3nm,0.9s,baz=208,slow=9.2,SNR=6.4							
PETK				LR	LR	02 09 38.3	
comp=Z,46nm,21.7s,baz=224,slow=35							
MA2	**Magadan**	**24.73**	**12**	P	**P**	**02 02 42.2**	**+1.2**
7.8nm,0.7s,baz=228,slow=7.2,SNR=6.2							
MA2				LR	LR	02 11 37.1	
comp=Z,37nm,20.5s,baz=139,slow=35							
ENH	**Enshi**	**26.89**	**267**	*e*P	**P**	**02 02 59.6**	**-1.3**
7.9nm,0.3s							
H11N2	**WAKE ISLAND Hy**	**27.80**	**118**	T	T	02 32 02.2	
baz=311,slow=75,SNR=488							
H11N1	**WAKE ISLAND Hy**	**27.80**	**118**	T	T	02 32 02.9	
baz=311,slow=75,SNR=351							
H11N3	**WAKE ISLAND Hy**	**27.82**	**118**	T	T	02 32 03.7	
baz=311,slow=75,SNR=541							
ULN	**Ulaanbaatar**	**27.84**	**306**	*e*P	**P**	**02 03 09.5**	**+0.1**
1.4nm,0.6s							
SEY	**Seymchan**	**28.17**	**11**	P	**P**	**02 03 12.3**	**+0.4**
1.6nm,0.6s,baz=214,slow=8.5,SNR=4.5							
SONM	**Songino Array**	**28.27**	**306**	P	**P**	**02 03 13.2**	**+0.1**
1.1nm,0.7s,baz=108,slow=10.0,SNR=5.1							
H11S1	**WAKE ISLAND Hy**	**28.46**	**120**	T	T	02 32 54.7	
baz=312,slow=76,SNR=1147							
H11S3	**WAKE ISLAND Hy**	**28.46**	**120**	T	T	02 32 54.7	
baz=312,slow=76,SNR=722							
H11S2	**WAKE ISLAND Hy**	**28.48**	**120**	T	T	02 32 55.9	
baz=312,slow=76,SNR=709							
BILL	**Bilibino**	**35.41**	**16**	*e*P	**P**	**02 04 15.5**	**+0.1**
8.8nm,1.0s							
CMAR	**Chiang Mai Arr**	**40.83**	**256**	LR	LR	02 23 30.0	
comp=Z,35nm,18.6s,baz=50,slow=39							
ZALV	**Zalesovo Beam**	**42.57**	**313**	P	**P**	**02 05 14.9**	**-0.6**
1.3nm,0.5s,baz=85,slow=5.9,SNR=5.8							
NRIK	**Noril'sk**	**44.34**	**336**	LR	LR	02 27 21.8	
comp=Z,63nm,18.3s,baz=250,slow=41							
MKAR	**Makanchi Array**	**44.54**	**303**	P	**P**	**02 05 31.9**	**+0.3**
2.3nm,0.8s,baz=91,slow=8.8,SNR=13							
KURK	**Kurchatov**	**46.49**	**309**	*e*P	**P**	**02 05 46.2**	**-0.7**
7.3nm,0.6s							
TKM2	**Tokmak 2**	**49.97**	**299**	*e*P	**P**	**02 06 14.5**	**+0.4**
16nm,1.4s							
ILAR	**Eielson Array**	**50.81**	**32**	P	**P**	**02 06 20.7**	**+0.8**
1.1nm,0.7s,baz=270,slow=6.1,SNR=14							
AAK	**Ala-Archa**	**50.83**	**299**	*e*P	**P**	**02 06 21.3**	**+0.7**
1.3nm,0.5s							
BRVK	**Borovoye**	**51.28**	**313**	*e*P	**P**	**02 06 23.8**	**+0.2**
4.2nm,0.8s							
DOT	**Dot Lake**	**52.12**	**33**	*e*P	**P**	**02 06 30.1**	**+0.4**
3.9nm,0.7s							
KKAR	**Karatay Array**	**53.50**	**301**	*e*P	**P**	**02 06 40.6**	**+0.4**
1.1nm,0.6s							
WRAB	**Tennant Creek**	**55.68**	**188**	*e*P	**P**	**02 06 56.2**	**+0.1**
3.3nm,0.5s							
WRA	**Warramunga Arr**	**55.69**	**188**	P	**P**	**02 06 55.3**	**-0.9**
2.9nm,0.7s,baz=5.6,slow=7.7,SNR=21							
ARU	**Arti**	**57.13**	**319**	LR	LR	02 34 39.7	
comp=Z,44nm,18.5s,baz=31,slow=39							
ARU	**Arti**	**57.13**	**319**	*e*P	**P**	**02 07 06.1**	**0.0**
7.4nm,0.9s							
ABKAR	**Akbulak array**	**58.54**	**311**	*e*P	**P**	**02 07 15.5**	**-0.6**
2.0nm,0.6s							
ASAR	**Alice Springs**	**59.42**	**188**	P	**P**	**02 07 22.0**	**-0.5**
0.4nm,0.5s,baz=18,slow=11,SNR=5.2							
ARCES	**ARCESS Array B**	**65.12**	**340**	P	**P**	**02 08 01.0**	**+0.8**
1.5nm,0.7s,baz=35,slow=10.0,SNR=3.2							
YKA	**Yellowknife Ar**	**65.14**	**30**	P	**P**	**02 08 00.7**	**+0.4**
0.6nm,0.7s,baz=299,slow=6.6,SNR=5.3							
STKA	**Stephens Creek**	**67.22**	**179**	P	**P**	**02 08 14.6**	**+0.6**
0.8nm,0.5s,baz=345,slow=12,SNR=3.5							
FINES	**FINESS Array B**	**69.83**	**332**	P	**P**	**02 08 29.4**	**-0.7**
2.0nm,0.8s,baz=46,slow=5.5,SNR=6.4							
KBZ	**Khabaz**	**71.51**	**311**	P	**P**	**02 08 40.7**	**+0.1**
3.3nm,0.9s,baz=129,slow=3.0,SNR=6.3							
SUMG	**Summit**	**72.02**	**360**	*e*P	**P**	**02 08 44.4**	**+0.7**
3.2nm,0.7s							
FFC	**Flin Flon**	**75.02**	**32**	*e*P	**P**	**02 09 00.7**	**-0.5**
3.4nm,0.9s							
AKASG	**Malin Array Be**	**75.14**	**322**	P	**P**	**02 09 01.2**	**-0.7**
0.9nm,0.5s,baz=47,slow=6.9,SNR=6.6							
NB2	**NORSAR Subarra**	**75.28**	**337**	P	**P**	**02 09 02.6**	**0.0**
comp=Z,1.9nm,0.7s,baz=41,slow=5.9							
NOA	**NORSAR Array B**	**75.28**	**337**	P	**P**	**02 09 02.7**	**0.0**
comp=Z,1.5nm,0.8s,baz=39,slow=5.8,SNR=5.4							
PDAR	**Pinedale Array**	**78.86**	**45**	P	**P**	**02 09 24.1**	**+0.7**
comp=Z,0.3nm,0.6s,baz=250,slow=2.3,SNR=4.9							
BRTR	**Keskin Array B**	**79.47**	**312**	P	**P**	**02 09 27.1**	**+0.5**
comp=Z,1.3nm,1.0s,baz=106,slow=4.7,SNR=6.5							
PSZ	**Piszkesteto**	**81.54**	**324**	*e*P	**P**	**02 09 37.7**	**+0.2**
comp=Z,4.6nm,0.9s							
GERES	**GERESS Array B**	**83.66**	**328**	P	**P**	**02 09 48.5**	**-0.1**
comp=Z,0.4nm,0.7s,baz=57,slow=4.9,SNR=4.4							
SDCO	**Great Sand Dun**	**84.46**	**47**	*e*P	**P**	**02 09 50.6**	**-2.5**
comp=Z,0.8nm,0.4s							
TXAR	**Lajitas Array**	**91.22**	**52**	P	**P**	**02 10 26.5**	**+1.0**
comp=Z,0.5nm,0.7s,baz=298,slow=4.5,SNR=6.8							
TXAR				LR	LR	02 48 08.0	
comp=Z,22nm,19.6s,baz=0.0,slow=33							
TORD	**Torodi Ar. Bea**	**118.02**	**314**	PKP	**PKPdf**	**02 16 06.3**	**-1.0**
comp=Z,0.3nm,0.8s,baz=96,slow=1.4,SNR=2.9							
SAML	**Samuel**	**145.44**	**45

*CSEM **28** 02:08:51.4±0.1, 39.°10N×29.°04E, h8km, MD2.6, Error ellipse: s-maj=2.5km s-min=2.2km az=65.0*

ISC 28 02:08:51.1±0.9, **39.°10N**±0.°02×**29.°05E**±0.°02, **h13**km±8km, **n26**, σ0$22/36, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**257**	P	**Pg**	**02 08 56.6**	**-0.1**
DEMI				S	**Sg**	**02 09 00.4**	**0.0**
DEMI	**Demirci**	**0.26**	**257**	*i* P	**Pg**	**02 08 56.6**	**-0.1**
DEMI				*i* S	**Sg**	**02 09 00.4**	**0.0**
GDZ	**Gediz**	**0.34**	**92**	P	**Pg**	**02 08 58.1**	**+0.1**
GDZ				S	**Sg**	**02 09 03.0**	**+0.3**
GDZ	**Gediz**	**0.34**	**92**	*i* P	**Pg**	**02 08 58.1**	**+0.1**
GDZ				*i* S	**Sg**	**02 09 03.0**	**+0.3**
TVSB	**Tavsanli**	**0.47**	**43**	*e*PG	**Pg**	**02 09 00.6**	**+0.1**
TVSB				*e*SG	**Sg**	**02 09 07.0**	**+0.2**
TVSB	**Tavsanli**	**0.47**	**43**	*e*Pg	**Pg**	**02 09 00.6**	**+0.1**
TVSB				*e*Sg	**Sg**	**02 09 07.0**	**+0.2**
KULA	**Kula-Manisa**	**0.66**	**207**	*e*PG	**Pg**	**02 09 03.9**	**-0.1**
KULA	**Kula-Manisa**	**0.66**	**207**	*e*Pg	**Pg**	**02 09 03.9**	**-0.1**
KHAL	**Karahalli**	**0.81**	**154**	P	**Pb**	**02 09 07.1**	**0.0**
KHAL				S	**Sg**	**02 09 17.4**	**0.0**
KHAL	**Karahalli**	**0.81**	**154**	*i* P	**Pb**	**02 09 07.1**	**0.0**
KHAL				*i* S	**Sg**	**02 09 17.4**	**0.0**
KHL	**Karahalli**	**0.86**	**154**	*e*PG	**Pn**	**02 09 09.0**	**-0.1**
KHL	**Karahalli**	**0.86**	**154**	*e*Pg	**Pn**	**02 09 09.0**	**-0.1**
BALB	**Balikesir**	**1.05**	**301**	*e*PG	**Pn**	**02 09 11.6**	**0.0**
BALB				*e*SG	**Sn**	**02 09 26.4**	**+0.3**
BALB	**Balikesir**	**1.05**	**301**	*e*Pg	**Pn**	**02 09 11.6**	**0.0**
BALB				*e*Sg	**Sn**	**02 09 26.4**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.27**	**354**	*e*PN	**Pg**	**02 09 15.5**	**0.0**
MDNY	**Mudanya-Bursa**	**1.27**	**354**	*e*Pn	**Pg**	**02 09 15.5**	**0.0**
IZI	**Iznik**	**1.28**	**15**	*e*PN	**Pg**	**02 09 15.6**	**-0.1**
IZI	**Iznik**	**1.28**	**15**	*e*Pn	**Pg**	**02 09 15.6**	**-0.1**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*PN	**Pg**	**02 09 15.8**	**+0.2**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*Pn	**Pg**	**02 09 15.9**	**+0.2**
GONE	**Gonen-Balikesi**	**1.41**	**312**	*e*PN	**Pb**	**02 09 17.4**	**+0.1**
GONE	**Gonen-Balikesi**	**1.41**	**312**	*e*Pn	**Pb**	**02 09 17.4**	**+0.1**
ARMT	**Armutlu**	**1.47**	**354**	*e*PN	**Pb**	**02 09 18.0**	**-0.3**
ARMT	**Armutlu**	**1.47**	**354**	*e*Pn	**Pb**	**02 09 18.0**	**-0.3**
GULT	**Gulveren**	**1.75**	**40**	*e*PN	**Pb**	**02 09 22.4**	**-0.6**
GULT	**Gulveren**	**1.75**	**40**	*e*Pn	**Pb**	**02 09 22.5**	**-0.6**

JMA 28 02:13:10.5, 36.°72N×140.°61E, h7km**, M1.1, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.11**	**197**	P	Pg	02 13 13.1	+0.1
JHO				S	Sg	02 13 15.0	+0.3
JYT	**Yasato**	**0.59**	**214**	P	Pg	02 13 21.8	-0.2
JYT				S	Sg	02 13 30.0	+0.3

*NIED **28** 02:13:00, 36.°50N×140.°60E, h59km, Mw4.3 Best double couple: M0=3.71000×10^15^ NP1:φ=174.00000°, δ=21.00000°, λ=62.00000°. NP2:φ=23.00000°, δ=71.00000°, λ=100.00000°.*
*MOS **28** 02:13:57.6±1.0, 36.°53N×140.°62E, h50km, mb4.8/59, Error ellipse: s-maj=9.5km s-min=5.3km az=113.2*
*ISCJB **28** 02:13:58.9±0.4, 36.°48N±0.°03×140.°62E±0.°04, h62km±2km, mb4.5/91, Error ellipse: s-maj=6.2km s-min=4.0km az=32.7*
*JMA **28** 02:13:59.8±0.1, 36.°46N×140.°60E, h56km±1km, M4.4 Broadband fault plane solution: P waves. NP1: φ=13.00000°, δ=65.00000°, λ=88.00000°. NP2:φ=197.00000°, δ=25.00000°, λ=94.00000°. Principal axes: T Plg70.0000°, Azm279.0000°; N Plg2.0000°, Azm13.0000°; P Plg20.0000°, Azm104.0000°;*
JMA Felt III J1.
*NEIC **28** 02:14:00.5±0.6, 36.°49N×140.°53E, h59km±4km, mb4.7/30 Error ellipse: s-maj=6.0km s-min=4.7km az=133.0*
NEIC Recorded [3 JMA] in Fukushima, Ibaraki and Tochigi.
*IDC **28** 02:14:02.2±1.5, 36.°40N×140.°46E, h77km±13km, mb4.1/35, mb1 4.2/39, mb1mx4.1/60, mbtmp4.4/39, MS3.1/12, Ms1 3.1/12, ms1mx2.9/41, Error ellipse: s-maj=14.0km s-min=9.3km az=82.0*

ISC 28 02:13:59.5±0.5, **36.°45N**±0.°04×**140.°67E**±0.°04, **h54**km±3km, **n248**, σ1$47/266, **mb4.5**/91, **MS3.1**/11, **24C-17D, Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.18**	**334**	⇑P	**Pn**	**02 14 08.6**	**+0.5**
JHO				S	**Sn**	**02 14 14.5**	**+0.2**
JYT	**Yasato**	**0.44**	**240**	⇓P	**Pn**	**02 14 10.6**	**+0.3**
JYT				S	**Sn**	**02 14 17.9**	**-0.1**
ONAJ	**Iwakimizuishiy**	**0.66**	**9**	⇑P	**Pn**	**02 14 12.9**	**0.0**
ONAJ				S	**Sn**	**02 14 22.3**	**-0.4**
JFK	**Kawauchi**	**0.93**	**10**	⇑P	**Pn**	**02 14 16.2**	**-0.2**
JFK				S	**Sn**	**02 14 28.7**	**-0.2**
JAG	**Ashikaga**	**0.98**	**269**	⇓P	**Pn**	**02 14 17.1**	**+0.1**
JAG				S	**Sn**	**02 14 29.1**	**-0.8**
JFT	**Otama**	**1.10**	**346**	⇓P	**Pn**	**02 14 18.9**	**+0.3**
JFT				S	**Sn**	**02 14 32.8**	**0.0**
JKT	**Katashina**	**1.18**	**286**	⇓P	**Pn**	**02 14 20.0**	**+0.2**
JKT				S	**Sn**	**02 14 34.9**	**0.0**
JFY	**Yanaizu**	**1.23**	**321**	⇓P	**Pn**	**02 14 20.7**	**+0.3**
JRY	**Ryogami san**	**1.49**	**254**	⇓P	**Pn**	**02 14 24.0**	**+0.1**
MJAR	**Matsushiro Arr**	**1.98**	**273**	P	**Pn**	**02 14 31.0**	**+0.4**
	214nm,0.3s,baz=95,slow=9.2,SNR=945						
MJAR				S	**Sn**	**02 14 45.7**	**-8.6**
	266nm,0.3s,baz=94,slow=25,SNR=33						
MJAR				LR	LR	02 15 14.8	
	comp=Z,492nm,21.9s,baz=110,slow=41						
MAJO	**Matsushiro**	**1.98**	**273**	*i* P	**Pn**	**02 14 31.4**	**+0.8**
MAJO	**Matsushiro**	**1.98**	**273**	*e*Pn	**Pn**	**02 14 31.4**	**+0.8**
MAJO				*e*Sn	**Sn**	**02 14 46.1**	**-8.2**
MAT	**Matsushiro**	**1.98**	**273**	P	**Pn**	**02 14 31.0**	**+0.4**
MAT				S	**Sn**	**02 14 59.0**	**+4.7**
MJB9	**Matsu-Tunnel**	**1.98**	**273**	*e*Pn	**Pn**	**02 14 31.4**	**+0.7**
INU	**Inuyama**	**3.16**	**251**	*e*Pn	**Pn**	**02 14 48.1**	**+1.4**
JHJ	**Hachijo jima 2**	**3.40**	**193**	P	**Pn**	**02 14 51.6**	**+1.6**
	32nm,0.3s,baz=307,slow=21,SNR=15						
JHJ				S	**Sn**	**02 15 30.1**	**+1.0**
	77nm,0.3s,baz=245,slow=21,SNR=3.9						
JHJ2	**Mitsune**	**3.40**	**192**	*e*Pn	**Pn**	**02 14 51.0**	**+0.9**
ERM	**Erimo**	**5.88**	**18**	*e*P	**Pn**	**02 15 23.2**	**-0.8**
ERM				*e*		02 16 28.2	
ERM	**Erimo**	**5.88**	**18**	*e*Pn	**Pn**	**02 15 23.2**	**-0.8**
ERM				*e*Sn	**Sn**	**02 16 28.1**	**-1.9**
ASAJ	**Asahikawa**	**7.80**	**10**	P	**Pn**	**02 15 48.8**	**-1.4**
	baz=257,slow=4.3						
ASAJ				S	**Sn**	**02 17 17.1**	**0.0**
	3.3nm,0.3s,baz=338,slow=12,SNR=3.9						
JNU	**Nakatsue**	**8.71**	**250**	P	**Pn**	**02 16 04.5**	**+1.8**
	0.8nm,0.3s,baz=103,slow=4.0,SNR=5.7						
JNU				LR	LR	02 20 01.0	
	comp=Z,80nm,21.2s,baz=110,slow=42						
JNU	**Nakatsue**	**8.71**	**250**	*e*Pn	**Pn**	**02 16 02.5**	**-0.3**
	7.5nm,0.8s						
CBIJ	**Chichi jima**	**9.41**	**172**	P	**Pn**	**02 16 09.2**	**-3.2**
CBIJ				S	Sn	02 17 46.5	-10
JCJ	**Chichijima**	**9.41**	**172**	P	**Pn**	**02 16 09.2**	**-3.2**
	11nm,0.3s,baz=273,slow=23,SNR=4.6						
JCJ				S	Sn	02 17 46.5	-10
	baz=180,slow=20						
USRK	**Ussuriysk Ar.**	**10.18**	**322**	P	**Pn**	**02 16 25.7**	**+2.8**
	1.2nm,0.3s,baz=128,slow=15,SNR=29						
USRK				LR	LR	02 20 13.7	
	comp=Z,81nm,19.6s,baz=126,slow=37						
KSRS	**Korea Array**	**10.25**	**279**	P	**Pn**	**02 16 27.6**	**+3.9**
	0.9nm,0.3s,baz=95,slow=14,SNR=34						
KSRS				LR	LR	02 20 00.9	
	comp=Z,172nm,21.8s,baz=94,slow=35						
KS01	**Wonju Array Si**	**10.27**	**280**	*e*Pn	**Pn**	**02 16 22.0**	**-2.1**
KSAR	**Wonju Array Be**	**10.28**	**279**	P	**Pn**	**02 16 27.7**	**+3.5**
KSAR	**Wonju Array Be**	**10.28**	**279**	P	**Pn**	**02 16 27.6**	**+3.5**
KUR	**Kuril'sk**	**10.33**	**30**	P	**Pn**	**02 16 23.3**	**-1.5**
KUR				*e*S	**Sn**	**02 18 12.8**	**-6.2**
KUR				pmax	pmax		
	comp=Z,11nm,0.4s						
KUR				smax	smax		
	comp=E,38nm,0.6s						
TJN	**Taejon**	**10.72**	**274**	*i* P	**Pn**	**02 16 27.1**	**-3.1**
MDJ	**Mudanjiang**	**11.72**	**318**	P	**Pn**	**02 16 40.8**	**-3.0**
MDJ				pmax	pmax		
	comp=Z,4.0nm,1.0s						
MDJ				pmax	pmax		
	comp=Z,51nm,5.1s						
MDJ	**Mudanjiang**	**11.72**	**318**	*e*P	**Pn**	**02 16 39.8**	**-4.0**
	comp=Z,8.7nm,0.6s						
CN2	**Changchun**	**13.75**	**307**	*e*P	**Pn**	**02 17 10.8**	**-0.8**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
KLR	**Kul'dur**	**14.34**	**336**	P	**Pn**	**02 17 20.9**	**+1.5**
	comp=Z,0.4nm,0.3s,baz=117,slow=14,SNR=7.5						
KLR				LR	LR	02 22 34.8	
	comp=Z,53nm,21.3s,baz=124,slow=36						
TYV	**Tymovskoe**	**14.48**	**5**	*e*P	**Pn**	**02 17 20.0**	**-1.2**
TYV				pmax	pmax		
	comp=Z,22nm,0.8s						
TIA	**Tai'an**	**18.96**	**276**	⇓P	**P**	**02 18 15.0**	**-1.3**
TIA				pmax	pmax		
	comp=Z,20nm,1.0s						
YHNB	**Yeheng**	**20.30**	**240**	*e*P	**P**	**02 18 31.3**	**+0.3**
	comp=Z,35nm,1.0s						
PETK	**Petropavlovsk-**	**20.49**	**30**	LR	LR	02 26 04.8	
	comp=Z,27nm,21.2s,baz=232,slow=35						
HHC	**Hu-ho-hao-te**	**23.10**	**290**	*e*P	**P**	**02 18 59.5**	**-1.2**
HHC				pmax	pmax		
	comp=Z,31nm,0.9s						
HHC				pmax	pmax		
	comp=Z,280nm,4.2s						
MA2	**Magadan**	**24.05**	**13**	P	**P**	**02 19 11.1**	**+1.8**
	comp=Z,7.1nm,0.7s,baz=233,slow=6.8,SNR=5.0						
MA2				LR	LR	02 29 05.7	
	comp=Z,26nm,18.3s,baz=130,slow=37						
XAN	**Xi'an**	**25.98**	**274**	P	**P**	**02 19 26.5**	**-0.7**
XAN				pmax	pmax		
	comp=Z,10.0nm,0.4s						
YAK	**Yakutsk**	**26.51**	**348**	LR	LR	02 29 02.7	
	comp=Z,56nm,18.2s,baz=286,slow=34						
YAK	**Yakutsk**	**26.51**	**348**	*e*P	**P**	**02 19 30.1**	**-1.5**
YAK				pmax	pmax		
	comp=Z,20nm,1.0s						
YAK				pmax	pmax		
	comp=N,7.0nm,1.1s						
ENH	**Enshi**	**26.69**	**266**	*e*P	**P**	**02 19 32.1**	**-1.4**
	comp=N,20nm,0.6s						
ULN	**Ulaanbaatar**	**27.19**	**305**	*ce*P	**P**	**02 19 36.9**	**-1.2**
ULN				pmax	pmax		
	comp=Z,3.0nm,0.6s						
ULN	**Ulaanbaatar**	**27.19**	**305**	*e*P	**P**	**02 19 36.8**	**-1.2**
	comp=Z,3.9nm,0.6s						
SEY	**Seymchan**	**27.48**	**12**	P	**P**	**02 19 43.5**	**+3.2**
	comp=Z,1.6nm,0.3s,baz=194,slow=6.7,SNR=14						
SEY	**Seymchan**	**27.48**	**12**	⇑*e*P	**P**	**02 19 43.2**	**+2.9**
SONA1	**Songino Array**	**27.62**	**305**	*e*P	**P**	**02 19 41.0**	**-0.9**
SONM	**Songino Array**	**27.62**	**305**	P	**P**	**02 19 41.2**	**-0.7**
	comp=Z,5.1nm,0.5s,baz=106,slow=9.1,SNR=26						
SONM				LR	LR	02 30 10.7	
	comp=Z,72nm,19.6s,baz=90,slow=35						
H11N2	**WAKE ISLAND Hy**	**28.38**	**119**	T	T	02 49 54.7	
	baz=313,slow=75,SNR=62						
H11N1	**WAKE ISLAND Hy**	**28.39**	**119**	T	T	02 49 54.7	
	baz=313,slow=75,SNR=82						
H11N3	**WAKE ISLAND Hy**	**28.40**	**119**	T	T	02 49 56.1	
	baz=313,slow=75,SNR=66						
H11S1	**WAKE ISLAND Hy**	**29.06**	**121**	T	T	02 50 41.9	
	baz=314,slow=76,SNR=107						
H11S3	**WAKE ISLAND Hy**	**29.06**	**121**	T	T	02 50 45.5	
	baz=314,slow=76,SNR=90						
H11S2	**WAKE ISLAND Hy**	**29.08**	**121**	T	T	02 50 47.7	
	baz=314,slow=76,SNR=6.8						
LZH	**Lanzhou**	**29.58**	**280**	*e*P	**P**	**02 20 03.0**	**+3.6**
LZH				pP	pP	02 20 11.3	-1.7
LZH				sP	sP	02 20 15.3	-4.1
LZH				pmax	pmax		
	comp=Z,11nm,1.0s						
TLY	**Talaya**	**30.27**	**312**	*e*P	**P**	**02 20 05.0**	**-0.2**
TLY				pmax	pmax		
	comp=Z,3.0nm,0.7s						
GYA	**Guiyang**	**30.53**	**261**	*e*P	**P**	**02 20 08.5**	**+0.6**
GYA				pP	pP	02 20 19.3	-2.2
GYA				PP	**PnPn**	**02 21 09.0**	**+0.4**
GYA				PcP	**PcP**	**02 23 07.5**	**+1.7**
GYA				S	**S**	**02 25 06.5**	**+0.6**
GYA				sS	sS	02 25 23.3	-5.6
GYA				SS	**SnSn**	**02 26 47.0**	**+0.6**
GYA				ScP	**ScP**	**02 26 47.8**	**+4.1**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
GYA				pmax	pmax		
	comp=Z,110nm,5.4s						
GYA				LR	LR		
	comp=N,510nm,17.6s						
GYA				LR	LR		
	comp=E,470nm,18.0s						
GYA				LR	LR		
	comp=Z,460nm,17.8s						
CD2	**Chengdu**	**31.08**	**271**	P	**P**	**02 20 11.5**	**-1.1**
CD2				pmax	pmax		
	comp=Z,20nm,0.5s						
GTA	**Gaotai**	**32.16**	**288**	*e*P	**P**	**02 20 21.5**	**-0.7**
GTA				pP	pP	02 20 30.5	-5.3
GTA				sP	sP	02 20 34.8	-7.4
GTA				pmax	pmax		
	comp=Z,5.0nm,0.6s						
KMI	**Kunming**	**34.28**	**262**	P	**P**	**02 20 43.5**	**+2.6**
KMI				pmax	pmax		
	comp=Z,18nm,0.5s						
KMI				pmax	pmax		
	comp=Z,200nm,6.7s						
BILL	**Bilibino**	**34.76**	**17**	⇓*e*P	**P**	**02 20 44.2**	**0.0**
BILL				*PP	**pP**	**02 21 00.0**	**+2.1**
BILL				*SP	**sP**	**02 21 06.0**	**+1.7**
BILL				pmax	pmax		
	comp=Z,4.0nm,1.4s						
TIXI	**Tiksi**	**35.80**	**354**	P	**P**	**02 20 52.5**	**-0.6**
	comp=Z,7.2nm,0.5s,baz=145,slow=5.8,SNR=22						
TIXI	**Tiksi**	**35.80**	**354**	*c i*P	**P**	**02 20 52.3**	**-0.8**
TIXI				pmax	pmax		
	comp=Z,9.0nm,0.8s						
TIXI	**Tiksi**	**35.80**	**354**	*e*P	**P**	**02 20 52.5**	**-0.6**
	comp=Z,8.6nm,0.6s						
WMQ	**Urumqi**	**40.57**	**297**	P	**P**	**02 21 34.0**	**+0.3**
WMQ				pmax	pmax		
	comp=Z,6.0nm,1.0s						
WMQ				pmax	pmax		
	comp=Z,65nm,4.6s						
WMQ				LR	LR		
	comp=E,14nm,22.6s						
WMQ				LR	LR		
	comp=Z,22nm,24.4s						
CMAR	**Chiang Mai Arr**	**40.77**	**255**	P	**P**	**02 21 33.5**	**-2.0**
	comp=Z,1.2nm,0.3s,baz=54,slow=8.2,SNR=4.4						
CMAR				LR	LR	02 38 38.6	
	comp=Z,27nm,18.9s,baz=70,slow=36						
ZAA0	**Zalesovo Array**	**41.87**	**313**	*e*P	**P**	**02 21 43.7**	**-0.4**
ZALV	**Zalesovo Beam**	**41.87**	**313**	P	**P**	**02 21 43.5**	**-0.5**
	comp=Z,16nm,0.5s,baz=93,slow=6.9,SNR=46						
NVS	**Novosibirsk**	**42.81**	**314**	⇓*i*P	**P**	**02 21 51.7**	**0.0**
NVS				pmax	pmax		
	comp=Z,15nm,0.9s						
NVS				pmax	pmax		
	comp=E,18nm,1.0s						
NRIK	**Noril'sk**	**43.55**	**336**	P	**P**	**02 21 56.4**	**-1.1**
	comp=E,3.4nm,0.5s,baz=128,slow=8.8,SNR=4.4						
MK01	**Makanchi Array**	**43.92**	**302**	*e*P	**P**	**02 22 00.2**	**-0.6**
MK31	**Makanchi Array**	**43.92**	**303**	*i* P	**P**	**02 22 00.7**	**-0.2**
MK31				pmax	pmax		
	comp=Z,7.0nm,0.7s						
MK31	**Makanchi Array**	**43.92**	**303**	*e*P	**P**	**02 22 00.9**	**+0.1**
MKAR	**Makanchi Array**	**43.92**	**303**	P	**P**	**02 22 00.9**	**0.0**
	comp=Z,6.7nm,0.7s,baz=90,slow=9.9,SNR=41						
MKAR				LR	LR	02 42 34.9	
	comp=Z,13nm,20.4s,baz=30,slow=39						
MKAR	**Makanchi Array**	**43.92**	**303**	P	**P**	**02 22 00.9**	**0.0**
MKAR				pmax	pmax		
	comp=Z,9.0nm,0.8s						
MKAR				MLR	MLR		
	comp=Z,13nm,20.4s						
MAKZ	**Makanchi**	**44.13**	**303**	P	**P**	**02 22 02.2**	**-0.4**
MAKZ				pmax	pmax		
	comp=Z,7.0nm,0.8s						
MAKZ	**Makanchi**	**44.13**	**303**	*e*P	**P**	**02 22 02.6**	**+0.1**
	comp=Z,10nm,1.0s						
KURK	**Kurchatov**	**45.82**	**308**	*e*P	**P**	**02 22 14.6**	**-1.2**
KURK				pmax	pmax		
	comp=Z,17nm,0.6s						
KURK	**Kurchatov**	**45.82**	**308**	*e*P	**P**	**02 22 14.6**	**-1.2**
	comp=Z,17nm,0.6s						
PDGK	**Podgornoye**	**46.52**	**298**	P	**P**	**02 22 21.3**	**-0.1**
PDGK				pmax	pmax		
	comp=Z,12nm,0.6s						
GUN	**Gumba**	**46.62**	**276**	*e*P	**P**	**02 22 22.7**	**-0.1**
	comp=Z,25nm,0.5s						
KKN	**Kakani**	**47.15**	**276**	*e*P	**P**	**02 22 26.0**	**-0.8**
	comp=Z,10.0nm,0.3s						
DMN	**Daman**	**47.36**	**276**	*e*P	**P**	**02 22 28.0**	**-0.6**
GKN	**Gorkha**	**47.57**	**277**	*e*P	**P**	**02 22 29.9**	**-0.2**
	comp=Z,52nm,0.7s						
KOLN	**Koldanda**	**48.50**	**277**	*e*P	**P**	**02 22 37.1**	**-0.2**
	comp=Z,7.7nm,0.4s						
PYUN	**Piuthan**	**48.85**	**278**	*e*P	**P**	**02 22 39.8**	**-0.2**
	comp=Z,40nm,0.6s						
TKM2	**Tokmak 2**	**49.38**	**299**	P	**P**	**02 22 44.1**	**+0.3**
TKM2				pmax	pmax		
	comp=Z,4.0nm,0.6s						
TKM2	**Tokmak 2**	**49.38**	**299**	*e*P	**P**	**02 22 43.8**	**-0.1**
	comp=Z,5.0nm,0.6s						
KSH	**Kashi**	**50.10**	**294**	*e*P	**P**	**02 22 53.0**	**+3.8**
KSH				*ep*P	pP	02 23 03.3	-0.3
KSH				S	**S**	**02 30 01.5**	**+4.7**
KSH				ScS	**ScS**	**02 32 37.3**	**+1.5**
KSH	**Kashi**	**50.10**	**294**	SS	**SS**	**02 33 32.3**	**+2.1**
KSH				pmax	pmax		
	comp=Z,160nm,5.2s						
KSH				LR	LR		
	comp=N,380nm,9.5s						
KSH				LR	LR		
	comp=E,290nm,9.0s						
AAK	**Ala-Archa**	**50.24**	**299**	*i* P	**P**	**02 22 49.8**	**-0.5**
AAK				pmax	pmax		
	comp=Z,6.0nm,0.7s						
AAK	**Ala-Archa**	**50.24**	**299**	*e*P	**P**	**02 22 49.1**	**-1.2**
	comp=Z,2.2nm,0.6s						
CHKZ	**Chkalovo**	**50.27**	**313**	P	**P**	**02 22 49.3**	**-0.8**
CHKZ				pmax	pmax		
	comp=Z,6.0nm,0.5s						
OTUK	**Ortayu**	**50.28**	**306**	P	**P**	**02 22 50.0**	**-0.4**
OTUK				pmax	pmax		
	comp=Z,8.0nm,0.9s						
IL1	**Eielson Array**	**50.31**	**32**	*e*P	**P**	**02 22 50.8**	**+0.5**
ILAR	**Eielson Array**	**50.31**	**32**	P	**P**	**02 22 50.9**	**+0.6**
	comp=Z,2.1nm,0.6s,baz=269,slow=6.3,SNR=30						
ILB	**Eielson Array**	**50.31**	**32**	*e*P	**P**	**02 22 51.0**	**+0.6**
BVA0	**Borovoye Array**	**50.52**	**313**	*i* P	**P**	**02 22 50.3**	**-1.8**
BVA0				pmax	pmax		
	comp=Z,2.0nm,0.5s						
BRVK	**Borovoye**	**50.58**	**313**	*ce*P	**P**	**02 22 52.1**	**-0.4**
BRVK				pmax	pmax		
	comp=Z,5.0nm,1.1s						
BRVK	**Borovoye**	**50.58**	**313**	*e*P	**P**	**02 22 52.1**	**-0.4**
	comp=Z,2.7nm,0.8s						
EKS2	**Erkin-Say**	**50.74**	**299**	*e*P	**P**	**02 22 53.8**	**-0.2**
EKS2				pmax	pmax		
	comp=Z,2.0nm,0.7s						
EKS2	**Erkin-Say**	**50.74**	**299**	*e*P	**P**	**02 22 53.8**	**-0.2**
	comp=Z,2.0nm,0.7s						
ZRNK	**Zerenda**	**51.36**	**313**	P	**P**	**02 22 57.5**	**-0.9**
ZRNK				pmax	pmax		
	comp=Z,4.0nm,0.6s						
ZRNK	**Zerenda**	**51.36**	**313**	*e*P	**P**	**02 22 58.0**	**-0.3**
	comp=Z,5.0nm,0.5s						
DOT	**Dot Lake**	**51.62**	**33**	*e*P	**P**	**02 23 00.2**	**0.0**
	comp=Z,5.5nm,0.8s						
MNAS	**Manas**	**51.69**	**299**	P	**P**	**02 23 00.8**	**-0.4**
MNAS				pmax	pmax		
	comp=Z,3.0nm,0.8s						
KK31	**Karatay Array**	**52.90**	**300**	*e*P	**P**	**02 23 09.3**	**-0.7**
KK31				pmax	pmax		
	comp=Z,1.0nm,0.6s						
KKAR	**Karatay Array**	**52.90**	**300**	*e*P	**P**	**02 23 09.8**	**-0.2**
KKAR				pmax	pmax		
	comp=Z,2.0nm,0.5s						
KKAR	**Karatay Array**	**52.90**	**300**	*e*P	**P**	**02 23 09.8**	**-0.2**
	comp=Z,1.7nm,0.5s						
GSI	**Gunungsitoli**	**52.98**	**239**	*e*P	**P**	**02 23 11.2**	**+0.3**
	comp=Z,28nm,0.5s						
INK	**Inuvik**	**55.18**	**27**	P	**P**	**02 23 27.4**	**+1.2**
	comp=Z,1.3nm,0.5s,baz=284,slow=8.8,SNR=3.1						
SVE	**Sverdlovsk**	**55.19**	**319**	*e*P	**P**	**02 23 26.6**	**+0.2**
SVE				pmax	pmax		
	comp=Z,8.0nm,1.0s						
DZET	**Dzherino**	**55.56**	**296**	P	**P**	**02 23 28.9**	**-0.6**
DZET				pmax	pmax		
	comp=Z,12nm,0.4s						
WRAB	**Tennant Creek**	**56.39**	**187**	*e*P	**P**	**02 23 34.8**	**-0.6**
WRAB				pmax	pmax		
	comp=Z,3.0nm,0.5s						
WRAB	**Tennant Creek**	**56.39**	**187**	*e*P	**P**	**02 23 34.8**	**-0.6**
	comp=Z,2.7nm,0.5s						
ARU	**Arti**	**56.40**	**319**	P	**P**	**02 23 34.5**	**-0.5**
	comp=Z,5.4nm,0.4s,baz=71,slow=4.7,SNR=17						
ARU	**Arti**	**56.40**	**319**	*c i*P	**P**	**02 23 34.4**	**-0.7**
ARU						02 24 30.6	
ARU						02 25 36.6	
ARU				S	**S**	**02 31 21.5**	**-0.1**
ARU				SS	**SS**	**02 35 07.5**	**-1.2**
ARU				pmax	pmax		
	comp=Z,10.0nm,0.7s						
ARU	**Arti**	**56.40**	**319**	*e*P	**P**	**02 23 34.6**	**-0.5**
	comp=Z,12nm,0.9s						
WRA	**Warramunga Arr**	**56.40**	**187**	P	**P**	**02 23 35.1**	**-0.4**
	comp=Z,4.0nm,0.6s,baz=2.4,slow=7.6,SNR=80						
AB31	**Akbulak array**	**57.86**	**310**	P	**P**	**02 23 44.3**	**-1.2**
AB31				pmax	pmax		
	comp=Z,6.0nm,0.7s						
ABKAR	**Akbulak array**	**57.86**	**310**	*e*P	**P**	**02 23 44.9**	**-0.6**
AKTO	**Aktyubinsk**	**58.62**	**312**	P	**P**	**02 23 49.3**	**-1.5**
AKTO				pmax	pm

comp=Z,9.4nm,1.0s
GNI Garni 71.57 307 *ceP* **P 02 25 15.7 +0.5**
GNI pmax pmax
comp=Z,24nm,1.2s
NC405 NORSAR Array S 74.28 337 *eP* **P 02 25 30.7 +0.1**
HFS Hagfors 74.37 335 P **P 02 25 30.8 -0.3**
comp=Z,2.5nm,0.4s,baz=52,slow=5.2,SNR=41
AKASG Malin Array Be 74.39 322 P **P 02 25 30.8 -0.7**
comp=Z,6.5nm,0.5s,baz=46,slow=6.2,SNR=33
AKASG LR LR 02 58 47.1
comp=Z,38nm,20.2s,baz=15,slow=36
KIEV Kiev 74.40 322 *i P* **P 02 25 30.0 -1.5**
KIEV pmax pmax
comp=Z,10.0nm,0.8s
KIEV Kiev 74.40 322 *eP* **P 02 25 30.2 -1.2**
comp=Z,9.8nm,0.8s
AK11 Malin Array Si 74.43 322 *eP* **P 02 25 31.1 -0.6**
NC204 NORSAR Array S 74.45 337 *eP* **P 02 25 31.7 0.0**
NB201 NORSAR Array S 74.46 337 *eP* **P 02 25 31.9 +0.2**
NB2 NORSAR Subarra 74.49 337 P **P 02 25 31.6 -0.3**
comp=Z,9.5nm,0.8s,baz=40,slow=6.2
NOA NORSAR Array B 74.49 337 P **P 02 25 31.7 -0.2**
comp=Z,7.0nm,0.8s,baz=39,slow=5.8,SNR=30
NBO02 NORSAR Array S 74.59 337 *eP* **P 02 25 32.3 -0.2**
NBO00 NORSAR Array S 74.63 337 *eP* **P 02 25 33.1 +0.4**
LRM Limekiln Ridge 74.98 44 *eP* **P 02 25 36.5 +1.2**
BOZ Bozeman (W) 75.55 44 *eP* **P 02 25 40.0 +1.6**
BOZ pmax pmax
comp=Z,2.0nm,0.8s
BOZ Bozeman (W) 75.55 44 *eP* **P 02 25 40.0 +1.6**
comp=Z,1.9nm,0.8s
NVAR Mina Array Bea 75.82 53 P **P 02 25 41.8 +1.6**
comp=Z,0.5nm,0.4s,baz=299,slow=6.1,SNR=5.5
SORM Soroca 76.46 320 ⇑ *iP* **P 02 25 42.2 -1.1**
GCMT Greycliff 76.54 43 *eP* **P 02 25 47.5 +3.4**
R11A Troy Canyon, C 77.59 51 *eP* **P 02 25 50.9 +0.8**
comp=Z,0.8nm,0.7s
KWP Kalwaria Pacla 78.25 324 *eP* **P 02 25 52.2 -1.2**
KWP Kalwaria Pacla 78.25 324 ⇓ *iP* **P 02 25 54.1 +0.7**
KWP Kalwaria Pacla 78.25 324 *eP* **P 02 25 52.2 -1.2**
BUR08 Bucovina Ar. S 78.38 321 *eP* **P 02 25 54.6 +0.3**
BURAR Bucovina Array 78.39 321 ⇓ *iP* **P 02 25 54.5 +0.2**
TESR Tescani 78.39 320 ⇑ *iP* **P 02 25 53.9 -0.3**
CFR Carcaliu 78.48 318 ⇑ *iP* **P 02 25 54.4 -0.3**
PDAR Pinedale Array 78.50 45 P **P 02 25 56.0 +0.8**
comp=Z,0.4nm,0.6s,baz=141,slow=0.9,SNR=5.7
VRI Vrincioaia 78.78 319 ⇑ *iP* **P 02 25 56.6 +0.2**
BR131 Keskin Array S 78.79 311 *eP* **P 02 25 56.6 -0.1**
BRTR Keskin Array B 78.79 311 P **P 02 25 56.2 -0.4**
comp=Z,2.8nm,0.8s,baz=112,slow=4.3,SNR=17
BRTR Keskin Array B 78.79 311 *ceP* **P 02 25 56.2 -0.4**
BRTR pmax pmax
comp=Z,2.0nm,0.6s
PLOR Plostina 78.83 319 ⇓ *iP* **P 02 25 56.4 -0.3**
STHS Stebnicka Huta 79.09 325 *eP* **P 02 25 59.2 +1.2**
STHS pmax pmax
comp=Z,3.0nm,0.8s
STHS Stebnicka Huta 79.09 325 *eP* **P 02 25 59.2 +1.2**
ARCR ARCALIA 79.18 321 ⇑ *iP* **P 02 25 59.2 +0.7**
OJC Ojcow 79.19 326 *eP* **P 02 25 58.9 +0.5**
OJC Ojcow 79.19 326 *eP* **P 02 25 59.0 +0.5**
OJC pmax pmax
comp=Z,10.0nm,1.1s
OJC Ojcow 79.19 326 *eP* **P 02 25 59.0 +0.5**
comp=Z,9.7nm,1.1s
BR231 Keskin MP Arra 79.23 312 *eP* **P 02 25 57.4 -1.7**
CRVS Cervenica-Dubn 79.34 324 *eP* **P 02 25 59.6 +0.2**
CRVS Cervenica-Dubn 79.34 324 *eP* **P 02 25 59.6 +0.2**
MSAB Monastry St. A 79.36 317 ⇓ *iP* **P 02 25 59.7 +0.2**
DOPR Dopca 79.41 320 ⇑ *iP* **P 02 26 00.5 +0.7**
MLR Muntele Rosu 79.44 319 P **P 02 25 59.8 -0.3**
comp=Z,0.2nm,0.4s,baz=343,slow=12,SNR=5.3
MLR Muntele Rosu 79.44 319 ⇑ *iP* **P 02 25 59.4 -0.7**
NIE Niedzica 79.53 325 *eP* **P 02 26 00.9 +0.6**
NIE Niedzica 79.53 325 *eP* **P 02 26 01.0 +0.6**
VOIR 79.94 320 ⇓ *iP* **P 02 26 02.3 -0.5**
LANS Liptovska Anna 80.10 325 *eP* **P 02 26 04.5 +1.0**
LANS Liptovska Anna 80.10 325 *eP* **P 02 26 04.5 +1.0**
KECS Kecovo 80.10 324 *eP* **P 02 26 02.8 -0.7**
KECS Kecovo 80.10 324 *eP* **P 02 26 02.8 -0.7**
OKC Ostrava-Krasne 80.20 326 *eP* P 02 26 09.4 +5.4
ARR Arges 80.21 320 ⇑ *iP* **P 02 26 04.5 +0.3**
DRGR 80.21 322 ⇑ *iP* **P 02 26 04.1 -0.1**
SRU San Rafael Swe 80.25 48 *eP* **P 02 26 06.1 +1.4**
SRU pmax pmax
comp=Z,2.0nm,0.7s
SRU San Rafael Swe 80.25 48 *eP* **P 02 26 06.1 +1.4**
comp=Z,2.3nm,0.7s
KSP Ksiaz 80.28 328 *eP* **P 02 26 04.6 +0.2**
KSP Ksiaz 80.28 328 *eP* **P 02 26 04.6 +0.2**
MORC Moravsky Berou 80.52 327 ⇑ *iP* **P 02 26 05.9 +0.2**
MORC Moravsky Berou 80.52 327 *eP* **P 02 26 05.9 +0.2**
MORC pmax pmax
comp=Z,29nm,1.2s
MORC Moravsky Berou 80.52 327 *eP* **P 02 26 05.9 +0.2**
comp=Z,29nm,1.2s
DPC Dobruska-Polom 80.63 328 *eP* **P 02 26 06.8 +0.5**
DPC Dobruska-Polom 80.63 328 *eP* **P 02 26 06.8 +0.5**
KRLC Kraliky 80.63 327 *eP* **P 02 26 06.7 +0.3**
KRLC Kraliky 80.63 327 *eP* **P 02 26 06.7 +0.3**
PSZ Piszkesteto 80.78 324 *eP* **P 02 26 07.9 +0.7**
PSZ pmax pmax
comp=Z,6.0nm,0.9s
PSZ Piszkesteto 80.78 324 *eP* **P 02 26 07.9 +0.7**
comp=Z,6.2nm,0.9s
GZR Gura Zlata 81.14 321 ⇑ *iP* **P 02 26 08.3 -0.9**
PVCC Panska Ves 81.25 329 *eP* **P 02 26 09.9 +0.4**
PVCC Panska Ves 81.25 329 *eP* **P 02 26 09.9 +0.4**
BRG Berggiesshubel 81.25 329 *eP* **P 02 26 09.5 0.0**
comp=Z,4.5nm,0.7s
BRG Berggiesshubel 81.25 329 *eP* **P 02 26 09.5 0.0**
BRG pmax pmax
comp=Z,5.0nm,0.7s
VRAC Vranov 81.28 327 P **P 02 26 10.2 +0.4**
comp=Z,1.4nm,0.4s,baz=71,slow=2.9,SNR=3.8
VRAC Vranov 81.28 327 ⇓ *iP* **P 02 26 09.9 +0.1**
VRAC Vranov 81.28 327 P **P 02 26 10.2 +0.4**
VRAC pmax pmax
comp=Z,4.0nm,0.4s
CLL Collm 81.30 330 *eP* **P 02 26 09.0 -0.8**
comp=Z,9.0nm,0.6s
CLL Collm 81.30 330 *eP* **P 02 26 09.0 -0.8**
CLL pmax pmax
comp=Z,9.0nm,0.6s
GOPC GO Pecny, Ondr 81.61 328 *eP* **P 02 26 12.0 +0.5**
GOPC GO Pecny, Ondr 81.61 328 *eP* **P 02 26 12.0 +0.5**
PRU Pruhonice 81.66 328 *eP* **P 02 26 12.0 +0.2**
PRU Pruhonice 81.66 328 *eP* **P 02 26 12.0 +0.2**
TREC Trest 81.78 327 *eP* **P 02 26 12.7 +0.3**
TREC Trest 81.78 327 *eP* **P 02 26 12.7 +0.3**
KHC Kasperske Hory 82.72 328 *eP* **P 02 26 17.1 -0.3**
KHC Kasperske Hory 82.72 328 *eP* **P 02 26 17.4 0.0**
KHC pmax pmax
comp=Z,3.0nm,1.1s
KHC Kasperske Hory 82.72 328 *eP* **P 02 26 17.4 0.0**
comp=Z,2.7nm,1.1s
GERES GERESS Array B 82.89 328 P **P 02 26 18.1 -0.2**
comp=Z,1.8nm,0.4s,baz=40,slow=6.3,SNR=24
GEA0 GERESS Array S 82.89 328 *eP* **P 02 26 17.8 -0.5**
EKA Eskdalemuir Ar 83.48 340 P **P 02 26 21.2 +0.1**
comp=Z,0.7nm,0.5s,baz=42,slow=4.4,SNR=7.9
EKA Eskdalemuir Ar 83.48 340 P **P 02 26 21.2 +0.1**
EKA pmax pmax
comp=Z,2.0nm,0.6s
BFO Black Forest 85.52 330 *ceP* **P 02 26 31.7 +0.1**
BFO Black Forest 85.52 330 *eP* **P 02 26 31.3 -0.3**
comp=Z,5.7nm,0.7s
FUORN Ofenpass-Fuorn 86.08 328 *eP* **P 02 26 34.8 +0.1**
comp=Z,7.0nm,0.9s
DAVOX Davos/Dischmat 86.11 329 P **P 02 26 35.0 +0.2**
comp=Z,1.0nm,0.4s,baz=44,slow=6.0,SNR=3.7
TXAR Lajitas Array 90.95 52 P **P 02 26 58.6 +0.7**
comp=Z,0.5nm,0.7s,baz=303,slow=3.1,SNR=9.3
KEST Kesra 95.12 322 P **P 02 27 16.3 -0.7**
comp=Z,1.4nm,0.8s,baz=1.3,slow=3.0,SNR=6.7
TORD Torodi Ar. Bea 117.31 314 PKP **PKPdf 02 32 38.4 -1.0**
comp=Z,0.2nm,0.5s,baz=22,slow=1.1,SNR=7.5
MATP Matopo 119.38 265 PKP **PKPdf 02 32 42.8 -0.5**
comp=Z,1.2nm,0.8s,baz=184,slow=6.2,SNR=4.1
LPAZ La Paz 147.51 59 PKPbc **PKPbc 02 33 39.1 +0.3**
comp=Z,0.9nm,0.5s,baz=282,slow=1.5,SNR=6.5

*IDC **28** 02:19:43.8±0.9, 36°.15S×52°.52E, h0km, mb4.0/5,*
mb1 4.2/5, mb1mx3.7/47, mbtmp4.0/5, MS3.6/9, Ms1 3.6/9, ms1mx3.3/34, Error ellipse: s-maj=52.5km s-min=21.5km az=12.0
*ISCJB **28** 02:19:44.6±0.7, 36°.1S±0°.2×52°.5E±0°.1, h18km, mb4.0/6, MS3.6/8, Error ellipse: s-maj=28.7km s-min=16.7km az=10.3*
*NEIC **28** 02:19:45.3±0.5, 36°.09S×52°.46E, h10km, mb4.0/1, Error ellipse: s-maj=20.6km s-min=12.9km az=187.0*
ISC 28 02:19:46.7±0.8, 36°.1S±0°.2×52°.5E±0°.2, h18km, n25, σ0s83/14, mb4.0/6, MS3.6/8, Southwest Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OPO	**Ambohidratompo**	**18.08**	**344**	LR	LR	02 28 57.2	
	comp=Z,158nm,20.6s,baz=179,slow=30						
BOSA	**Boshof**	**24.11**	**280**	P	**P**	**02 25 00.5**	**-1.1**
	2.8nm,0.9s,baz=90,slow=14,SNR=2.5						
BOSA				LR	LR	02 32 32.9	
	comp=Z,40nm,20.8s,baz=156,slow=32						
LBTB	**Lobatse**	**25.56**	**288**	LR	LR	02 33 50.7	
	comp=Z,121nm,18.4s,baz=142,slow=33						
MATP	**Matopo**	**26.15**	**300**	LR	LR	02 34 03.4	
	comp=Z,157nm,19.7s,baz=130,slow=33						
H08S1	**Diego Garcia H**	**33.72**	**38**	T	T	03 02 25.6	
	baz=211						
H08S2	**Diego Garcia H**	**33.73**	**38**	T	T	03 02 33.0	
	baz=211						
H08S3	**Diego Garcia H**	**33.74**	**38**	T	T	03 02 25.5	
	baz=211						
TSUM	**Tsumeb**	**34.95**	**289**	*eP*	**P**	**02 26 37.2**	**-0.7**
	2.1nm,0.9s						
SNAA	**Sanae**	**45.37**	**201**	*eP*	**P**	**02 28 03.7**	**0.0**
H01W2	**Cape Leeuwin H**	**49.46**	**108**	T	T	03 21 24.0	
	baz=250						
H01W3	**Cape Leeuwin H**	**49.47**	**108**	T	T	03 21 37.8	
	baz=250,slow=74						
H01W1	**Cape Leeuwin H**	**49.48**	**108**	T	T	03 21 60.0	
	baz=250,slow=74						
VNDA	**Vanda**	**59.06**	**166**	LR	LR	02 52 12.9	
	comp=Z,46nm,19.7s,baz=248,slow=33						
DBIC	**Dimbokro**	**68.49**	**296**	LR	LR	02 57 41.2	
	comp=Z,36nm,19.6s,baz=116,slow=33						
TORD	**Torodi Ar. Bea**	**68.51**	**306**	P	**P**	**02 30 48.7**	**+0.5**
	2.2nm,1.0s,baz=118,slow=4.7,SNR=7.5						
TORD				LR	LR	03 00 49.8	
	comp=Z,48nm,18.0s,baz=215,slow=36						
ASAR	**Alice Springs**	**69.84**	**105**	P	**P**	**02 30 56.2**	**-0.4**
	0.9nm,0.8s,baz=234,slow=6.0,SNR=8.3						
CMAR	**Chiang Mai Arr**	**69.84**	**47**	P	**P**	**02 30 56.5**	**+0.1**
	1.2nm,0.3s,baz=225,slow=8.8,SNR=3.8						
STKA	**Stephens Creek**	**71.42**	**116**	LR	LR	02 54 29.1	
	comp=Z,52nm,20.2s,baz=205,slow=29						
WRA	**Warramunga Arr**	**72.15**	**102**	P	**P**	**02 31 10.1**	**-0.5**
	1.5nm,1.0s,baz=225,slow=4.6,SNR=6.1						
DZM	**Mont Dzumac**	**94.94**	**122**	LR	LR	03 04 57.8	
	comp=Z,180nm,21.2s,baz=37,slow=29						
FCC	**Fort Churchill**	**148.52**	**327**	*e*PKPbc	**PKPbc**	**02 39 31.3**	**-0.3**
ILAR	**Eielson Array**	**149.05**	**16**	PKPbc	**PKPbc**	**02 39 32.4**	**-0.4**
	1.9nm,1.0s,baz=314,slow=3.1,SNR=14						
YKA	**Yellowknife Ar**	**152.39**	**347**	PKPbc	**PKPbc**	**02 39 40.5**	**-0.2**
	0.5nm,0.8s,baz=25,slow=2.1,SNR=5.8						
YKA				PKPab	**PKPab**	**02 39 50.5**	**-0.3**
	1.5nm,1.1s,baz=13,slow=3.5,SNR=7.1						
ULM	**Lac du Bonnet**	**153.17**	**312**	PKPbc	**PKPbc**	**02 39 43.2**	**+0.4**
	1.8nm,0.5s,baz=162,slow=3.2,SNR=1.9						
ULM				PKPab	**PKPab**	**02 39 56.3**	**+1.7**
	2.6nm,0.5s,baz=225,slow=4.2,SNR=3.0						
TXAR	**Lajitas Array**	**158.84**	**258**	PKPab	**PKPab**	**02 40 21.0**	**+1.3**
	0.2nm,0.7s,baz=104,slow=5.3,SNR=3.5						

*ISCJB **28** 02:28:01.4±0.5, 39°.13N±0°.03×29°.04E±0°.04, h9km, Error ellipse: s-maj=5.2km s-min=4.4km az=137.9*
*DDA **28** 02:28:01.6, 39°.09N×29°.06E, h7km, Md2.6*
*ISK **28** 02:28:01.0, 39°.18N×28°.99E, h5km, MD2.7*
*CSEM **28** 02:28:01.5±0.2, 39°.13N×29°.02E, h10km, MD2.6, Error ellipse: s-maj=6.3km s-min=4.6km az=94.0*
ISC 28 02:28:01.4±0.9, 39°.13N±0°.03×29°.05E±0°.03, h9km, n24, σ0s45/32, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**251**	P	**Pg**	**02 28 07.4**	**+0.4**
DEMI				S	**Sg**	**02 28 11.1**	**+0.4**
DEMI	**Demirci**	**0.28**	**251**	*i P*	**Pg**	**02 28 07.4**	**+0.4**
DEMI				*i* S	**Sg**	**02 28 11.1**	**+0.4**
GDZ	**Gediz**	**0.34**	**97**	P	**Pg**	**02 28 08.6**	**+0.4**
GDZ				S	**Sg**	**02 28 13.2**	**+0.5**
GDZ	**Gediz**	**0.34**	**97**	*i P*	**Pg**	**02 28 08.6**	**+0.4**
GDZ				*i* S	**Sg**	**02 28 13.2**	**+0.5**
TVSB	**Tavsanli**	**0.45**	**45**	*e*Pg	**Pg**	**02 28 10.5**	**+0.3**
TVSB				*e*Sg	**Sg**	**02 28 16.8**	**+0.6**
TVSB	**Tavsanli**	**0.45**	**45**	*e*Pg	**Pg**	**02 28 10.5**	**+0.3**
TVSB				*e*Sg	**Sg**	**02 28 16.8**	**+0.6**
KULA	**Kula-Manisa**	**0.69**	**206**	*e*PG	**Pg**	**02 28 14.8**	**+0.1**
KULA	**Kula-Manisa**	**0.69**	**206**	*e*Pg	**Pg**	**02 28 14.8**	**+0.1**
KHAL	**Karahalli**	**0.83**	**155**	P	**Pg**	**02 28 17.1**	**-0.4**
KHAL				S	**Sg**	**02 28 28.3**	**-0.1**
KHAL	**Karahalli**	**0.83**	**155**	*i P*	**Pg**	**02 28 17.1**	**-0.4**
KHAL				*i* S	**Sg**	**02 28 28.3**	**-0.1**
KHL	**Karahalli**	**0.89**	**155**	*e*PG	**Pn**	**02 28 20.2**	**0.0**
KHL	**Karahalli**	**0.89**	**155**	*e*Pg	**Pn**	**02 28 20.2**	**0.0**
MDNY	**Mudanya-Bursa**	**1.24**	**354**	*e*PN	**Pn**	**02 28 24.1**	**-0.9**
MDNY	**Mudanya-Bursa**	**1.24**	**354**	*e*Pn	**Pn**	**02 28 24.1**	**-0.9**
IZI	**Iznik**	**1.25**	**15**	*e*PN	**Pn**	**02 28 24.4**	**-0.7**
IZI	**Iznik**	**1.25**	**15**	*e*Pn	**Pn**	**02 28 24.4**	**-0.7**
KCTX	**Karacabey (Bur**	**1.25**	**335**	*e*PN	**Pn**	**02 28 24.9**	**-0.3**
KCTX	**Karacabey (Bur**	**1.25**	**335**	*e*Pn	**Pn**	**02 28 24.9**	**-0.3**
ADVT	**Abdulvahap**	**1.40**	**22**	*e*PN	**Pg**	**02 28 28.2**	**-0.2**
ADVT	**Abdulvahap**	**1.40**	**22**	*e*Pn	**Pg**	**02 28 28.2**	**-0.2**
ARMT	**Armutlu**	**1.44**	**354**	*e*PN	**Pn**	**02 28 27.5**	**-0.2**
ARMT	**Armutlu**	**1.44**	**354**	*e*Pn	**Pn**	**02 28 27.5**	**-0.2**
GULT	**Gulveren**	**1.72**	**41**	*e*PN	**Pb**	**02 28 33.3**	**0.0**
GULT	**Gulveren**	**1.72**	**41**	*e*Pn	**Pb**	**02 28 33.3**	**0.0**

*ISCJB **28** 02:47:40.9±0.4, 40°.72N±0°.03×29°.22E±0°.04, h11km, Error ellipse: s-maj=4.6km s-min=3.9km az=168.6*
*DDA **28** 02:47:40.8, 40°.74N×29°.23E, h7km, Md2.7*
*ISK **28** 02:47:40.9, 40°.72N×29°.20E, h6km, MD2.6*
*CSEM **28** 02:47:41.3±0.1, 40°.72N×29°.21E, h8km, MD2.6, Error ellipse: s-maj=2.0km s-min=1.8km az=23.0*
ISC 28 02:47:40.9±0.9, 40°.72N±0°.02×29°.21E±0°.02, h11km, n43, σ0s48/47, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BUY	**Buyukada**	**0.15**	**332**	S	**Sg**	**02 47 47.1**	**+0.4**
BUY	**Buyukada**	**0.15**	**332**	*i* S	**Sg**	**02 47 44.8**	**-2.0**
BUY				*i* S	**Sg**	**02 47 47.1**	**+0.4**
GEMT	**Gemlik**	**0.29**	**183**	PG	**Pg**	**02 47 46.7**	**0.0**
GEMT	**Gemlik**	**0.29**	**183**	*i* Pg	**Pg**	**02 47 46.7**	**0.0**
ARMT	**Armutlu**	**0.31**	**240**	*e*PG	**Pg**	**02 47 47.4**	**+0.3**
ARMT	**Armutlu**	**0.31**	**240**	*e*Pg	**Pg**	**02 47 47.4**	**+0.3**
ISK	**Istanbul-Kandi**	**0.36**	**342**	*e*PG	**Pg**	**02 47 48.6**	**+0.5**
ISK	**Istanbul-Kandi**	**0.36**	**342**	*e*Pg	**Pg**	**02 47 48.6**	**+0.5**
HRT	**Hereke**	**0.36**	**74**	*e*PG	**Pg**	**02 47 48.3**	**+0.1**
HRT	**Hereke**	**0.36**	**74**	*e*Pg	**Pg**	**02 47 48.3**	**+0.1**
MDNY	**Mudanya-Bursa**	**0.43**	**215**	*e*PG	**Pg**	**02 47 49.8**	**+0.4**
MDNY				*e*SG	**Sb**	**02 47 56.4**	**-0.6**
MDNY	**Mudanya-Bursa**	**0.43**	**215**	*e*Pg	**Pg**	**02 47 49.8**	**+0.4**
MDNY				*e*Sg	**Sb**	**02 47 56.4**	**-0.6**
IZI	**Iznik**	**0.43**	**152**	*e*PG	**Pg**	**02 47 49.7**	**+0.3**
IZI	**Iznik**	**0.43**	**152**	*e*Pg	**Pg**	**02 47 49.7**	**+0.3**
IGD	**Bursa**	**0.46**	**181**	*i P*	**Pg**	**02 47 49.0**	**-0.8**
IGD				*i* S	**Sg**	**02 47 55.1**	**-0.8**
ADVT	**Abdulvahap**	**0.50**	**125**	*e*PG	**Pg**	**02 47 50.6**	**0.0**
ADVT	**Abdulvahap**	**0.50**	**125**	*e*Pg	**Pg**	**02 47 50.6**	**0.0**
SILT	**Sile**	**0.54**	**37**	*e*PG	**Pb**	**02 47 52.4**	**-0.1**
SILT	**Sile**	**0.54**	**37**	*e*Pg	**Pb**	**02 47 52.4**	**-0.1**
KLYT	**Kilyos**	**0.55**	**347**	*e*PG	**Pg**	**02 47 51.8**	**+0.3**
KLYT	**Kilyos**	**0.55**	**347**	*e*Pg	**Pg**	**02 47 51.8**	**+0.3**
BGKT	**Bogazkoy**	**0.56**	**324**	*e*PG	**Pg**	**02 47 51.8**	**-0.1**
BGKT	**Bogazkoy**	**0.56**	**324**	*e*Pg	**Pg**	**02 47 51.8**	**-0.1**
KCTX	**Karacabey (Bur**	**0.79**	**235**	*e*PG	**Pb**	**02 47 56.9**	**+0.2**
KCTX	**Karacabey (Bur**	**0.79**	**235**	*e*Pg	**Pb**	**02 47 56.9**	**+0.2**
SPNC	**Sapanca-Adapaz**	**0.84**	**92**	*e*PG	**Pb**	**02 47 57.7**	**+0.2**
SPNC	**Sapanca-Adapaz**	**0.84**	**92**	*e*Pg	**Pb**	**02 47 57.7**	**+0.2**
GPA	**Golpazari**	**0.94**	**117**	*e*PG	**Pb**	**02 47 59.8**	**+0.5**
GPA	**Golpazari**	**0.94**	**117**	*e*Pg	**Pb**	**02 47 59.8**	**+0.5**
CTYL	**Yalikoy Yolu**	**1.02**	**318**	*e*PG	**Pg**	**02 48 00.6**	**0.0**
CTYL	**Yalikoy Yolu**	**1.02**	**318**	*e*Pg	**Pg**	**02 48 00.6**	**0.0**
GULT	**Gulveren**	**1.04**	**106**	*e*PG	**Pn**	**02 48 01.7**	**+0.2**
GULT	**Gulveren**	**1.04**	**106**	*e*Pg	**Pn**	**02 48 01.7**	**+0.2**
EDC	**Edincik**	**1.09**	**250**	*e*PN	**Pg**	**02 48 02.2**	**+0.3**
EDC	**Edincik**	**1.09**	**250**	*e*Pn	**Pg**	**02 48 02.2**	**+0.3**
MRMT	**Marmara Adasi**	**1.23**	**265**	*e*PN	**Pg**	**02 48 05.1**	**+0.5**
MRMT	**Marmara Adasi**	**1.23**	**265**	*e*Pn	**Pg**	**02 48 05.1**	**+0.5**
TVSB	**Tavsanli**	**1.28**	**171**	*e*PN	**Pg**	**02 48 06.2**	**+0.6**
TVSB	**Tavsanli**	**1.28**	**171**	*e*Pn	**Pg**	**02 48 06.2**	**+0.6**
TKR	**Tekirdag**	**1.30**	**282**	*e*PN	**Pg**	**02 48 06.2**	**+0.4**
TKR	**Tekirdag**	**1.30**	**282**	*e*Pn	**Pg**	**02 48 06.2**	**+0.4**
RKY	**Sarkoy-Tekirda**	**1.54**	**269**	*e*PN	**Pb**	**02 48 09.6**	**+0.1**
RKY	**Sarkoy-Tekirda**	**1.54**	**269**	*e*Pn	**Pb**	**02 48 09.6**	**+0.1**

*DDA **28** 02:51:41.3, 39°.62N×27°.74E, h7km, Md2.9*
*ISK **28** 02:51:41.4, 39°.61N×27°.77E, h7km, MD2.9*
*CSEM **28** 02:51:41.9±0.1, 39°.61N×27°.80E, h5km, MD2.9, Error ellipse: s-maj=2.3km s-min=2.1km az=56.0*
*IASPEI **28** 02:51:42.1±0.9, 39°.61N±0°.02×27°.78E±0°.02, h9km±7km, Error ellipse: s-maj=3.6km s-min=2.9km az=67.0, GT5 selection from ISC bulletin GT5 identified by Bond˙jr and McLaughlin (2009) selection criteria Bond˙jr and McLaughlin, A new ground truth data set for seismic studies, Seism. Res. Let., 80, 465-472, 2009*
*THE **28** 02:51:43.4, 39°.55N×27°.75E, h2km, ML2.4/2, Error ellipse: s-maj=0.9km s-min=0.4km az=95.0*
ISC 28 02:51:42.0±0.9, 39°.61N±0°.02×27°.77E±0°.02, h9km±7km, n86, σ0s55/120, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BALB	**Balikesir**	**0.09**	**72**	*e*PG	**Pg**	**02 51 44.5**	**+0.2**
BALB	**Balikesir**	**0.09**	**72**	*e*Pg	**Pg**	**02 51 44.5**	**+0.2**
GONE	**Gonen-Balikesi**	**0.44**	**351**	*e*PG	**Pg**	**02 51 50.3**	**-0.3**
GONE	**Gonen-Balikesi**	**0.44**	**351**	*e*Pg	**Pg**	**02 51 50.3**	**-0.3**
AKS	**Akhisar**	**0.73**	**178**	*e*PG	**Pg**	**02 51 56.1**	**-0.1**
AKS	**Akhisar**	**0.73**	**178**	*e*Pg	**Pg**	**02 51 56.1**	**-0.1**
AKHS	**Akhisar**	**0.73**	**178**	P	**Pg**	**02 51 55.7**	**-0.5**
AKHS				S	**Sg**	**02 52 06.0**	**+0.2**
AKHS	**Akhisar**	**0.73**	**178**	*i P*	**Pg**	**02 51 55.7**	**-0.5**
AKHS				*i* S	**Sg**	**02 52 06.0**	**+0.2**
EDC	**Edincik**	**0.73**	**5**	*e*PG	**Pg**	**02 51 56.3**	**+0.1**
EDC				*e*SG	**Sg**	**02 52 05.9**	**+0.1**
EDC	**Edincik**	**0.73**	**5**	*e*Pg	**Pg**	**02 51 56.3**	**+0.1**
EDC				*e*Sg	**Sg**	**02 52 05.9**	**+0.1**
KCTX	**Karacabey (Bur**	**0.79**	**34**	*e*PG	**Pg**	**02 51 57.0**	**-0.3**
KCTX	**Karacabey (Bur**	**0.79**	**34**	*e*Pg	**Pg**	**02 51 57.0**	**-0.3**
KRBG	**Karabiga-Canak**	**0.86**	**335**	*e*PG	**Pg**	**02 51 58.5**	**-0.1**
KRBG	**Karabiga-Canak**	**0.86**	**335**	*e*Pg	**Pg**	**02 51 58.5**	**-0.1**
DKL	**Dikili**	**0.86**	**231**	*e*PG	**Pg**	**02 51 58.0**	**-0.6**
DKL	**Dikili**	**0.86**	**231**	*e*Pg	**Pg**	**02 51 58.0**	**-0.6**
DEMI	**Demirci**	**0.93**	**128**	P	**Pg**	**02 51 59.4**	**-0.5**
DEMI				S	**Sg**	**02 52 11.3**	**-0.6**
DEMI	**Demirci**	**0.93**	**128**	*i P*	**Pg**	**02 51 59.4**	**-0.5**
DEMI				*i* S	**Sg**	**02 52 11.3**	**-0.6**
MRMT	**Marmara Adasi**	**1.00**	**352**	*e*PG	**Pg**	**02 52 00.9**	**-0.3**
MRMT	**Marmara Adasi**	**1.00**	**352**	*e*Pg	**Pg**	**02 52 00.9**	**-0.3**
LPK	**Lapseki**	**1.09**	**315**	*e*PN	**Pg**	**02 52 02.8**	**-0.1**
LPK	**Lapseki**	**1.09**	**315**	*e*Pn	**Pg**	**02 52 02.8**	**-0.1**
EZN	**Ezine**	**1.14**	**281**	*e*PN	**Pb**	**02 52 03.5**	**-0.3**
EZN	**Ezine**	**1.14**	**281**	P	**Pn**	**02 52 04.4**	**+0.4**
EZN				S	**Sn**	**02 52 21.1**	**+1.4**
EZN	**Ezine**	**1.14**	**281**	*e*Pn	**Pb**	**02 52 03.5**	**-0.3**
EZN	**Ezine**	**1.14**	**281**	P	**Pn**	**02 52 04.4**	**+0.4**
EZN				S	**Sn**	**02 52 21.1**	**+1.4**
MDNY	**Mudanya-Bursa**	**1.14**	**48**	*e*PN	**Pb**	**02 52 03.5**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.14**	**48**	*e*Pn	**Pb**	**02 52 03.6**	**-0.3**
RKY	**Sarkoy-Tekirda**	**1.17**	**337**	*e*PN	**Pb**	**02 52 03.8**	**-0.5**
RKY	**Sarkoy-Tekirda**	**1.17**	**337**	*e*Pn	**Pb**	**02 52 03.8**	**-0.5**
PRK	**Paraskevi**	**1.22**	**253**	P	**Pb**	**02 52 05.2**	**0.0**
PRK				S	**Sn**	**02 52 22.5**	**+0.7**
PRK	**Paraskevi**	**1.22**	**253**	P	**Pb**	**02 52 05.2**	**0.0**
PRK				S	**Sn**	**02 52 22.5**	**+0.7**
ARMT	**Armutlu**	**1.27**	**41**	*e*PN	**Pb**	**02 52 06.2**	**+0.2**
ARMT	**Armutlu**	**1.27**	**41**	*e*Pn	**Pb**	**02 52 06.2**	**+0.2**
GELI	**Tayfur-Gelibol**	**1.27**	**309**	*e*PN	**Pb**	**02 52 06.2**	**+0.2**
GELI	**Tayfur-Gelibol**	**1.27**	**309**	*e*Pn	**Pb**	**02 52 06.2**	**+0.2**
KULA	**Kula-Manis

*ISK **28** 03:06:02.6, 39°08′N×29°08′E, h5km, MD2.7*
*DDA **28** 03:06:02.3, 39°09′N×29°00′E, h7km, Md2.7*
ISC 28 03:06:03.2±0.9, 39°08′N±0°03×29°02′E±0°03, h9km, n30, σ0°58/36, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.23**	**262**	P	**Pg**	**03 06 07.4**	**-0.7**
DEMI				S	**Sg**	**03 06 10.8**	**-0.5**
DEMI	**Demirci**	**0.23**	**262**	*i* P	**Pg**	**03 06 07.4**	**-0.7**
DEMI				*i* S	**Sg**	**03 06 10.8**	**-0.5**
GDZ	**Gediz**	**0.36**	**88**	P	**Pg**	**03 06 10.1**	**-0.3**
GDZ				S	**Sb**	**03 06 19.2**	**+1.4**
GDZ	**Gediz**	**0.36**	**88**	*i* P	**Pg**	**03 06 10.1**	**-0.3**
GDZ				*i* S	**Sb**	**03 06 19.2**	**+1.4**
TVSB	**Tavsanli**	**0.51**	**43**	*e*PG	**Pg**	**03 06 12.5**	**-0.7**
TVSB				*e*SG	**Sg**	**03 06 18.9**	**-1.0**
TVSB	**Tavsanli**	**0.51**	**43**	*e*Pg	**Pg**	**03 06 12.5**	**-0.7**
TVSB				*e*Sg	**Sg**	**03 06 18.9**	**-1.0**
KULA	**Kula-Manisa**	**0.63**	**206**	*e*PG	**Pg**	**03 06 15.1**	**-0.3**
KULA	**Kula-Manisa**	**0.63**	**206**	*e*Pg	**Pg**	**03 06 15.1**	**-0.3**
KHAL	**Karahalli**	**0.80**	**152**	P	**Pg**	**03 06 18.1**	**-0.5**
KHAL	**Karahalli**	**0.80**	**152**	*i* P	**Pg**	**03 06 18.1**	**-0.5**
KHL	**Karahalli**	**0.85**	**152**	*e*PG	**Pg**	**03 06 19.7**	**+0.1**
KHL	**Karahalli**	**0.85**	**152**	*e*Pg	**Pg**	**03 06 19.7**	**+0.1**
BALB	**Balikesir**	**1.04**	**303**	*e*PN	**Pn**	**03 06 24.0**	**-0.1**
BALB	**Balikesir**	**1.04**	**303**	*e*Pn	**Pn**	**03 06 24.0**	**-0.1**
KCTX	**Karacabey (Bur**	**1.29**	**337**	*e*PN	**Pg**	**03 06 28.0**	**0.0**
KCTX	**Karacabey (Bur**	**1.29**	**337**	*e*Pn	**Pg**	**03 06 28.0**	**0.0**
MDNY	**Mudanya-Bursa**	**1.29**	**356**	*e*PN	**Pg**	**03 06 28.2**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.29**	**356**	*e*Pn	**Pg**	**03 06 28.2**	**+0.1**
IZI	**Iznik**	**1.31**	**16**	*e*PN	**Pn**	**03 06 27.4**	**-0.4**
IZI	**Iznik**	**1.31**	**16**	*e*Pn	**Pn**	**03 06 27.4**	**-0.4**
GONE	**Gonen-Balikesi**	**1.41**	**314**	*e*PN	**Pb**	**03 06 30.1**	**+0.3**
GONE	**Gonen-Balikesi**	**1.41**	**314**	*e*Pn	**Pb**	**03 06 30.1**	**+0.3**
ARMT	**Armutlu**	**1.49**	**356**	*e*PN	**Pb**	**03 06 30.9**	**-0.2**
ARMT	**Armutlu**	**1.49**	**356**	*e*Pn	**Pb**	**03 06 30.9**	**-0.2**
EDC	**Edincik**	**1.55**	**325**	*e*PN	**Pn**	**03 06 31.4**	**+0.4**
EDC	**Edincik**	**1.55**	**325**	*e*Pn	**Pn**	**03 06 31.4**	**+0.4**
GULT	**Gulveren**	**1.78**	**40**	*e*PN	**Pn**	**03 06 34.9**	**+0.6**
GULT	**Gulveren**	**1.78**	**40**	*e*Pn	**Pn**	**03 06 34.9**	**+0.6**
SVRH	**Sivrihisar-ESK**	**1.98**	**78**	*e*PN	**Pn**	**03 06 36.7**	**-0.3**
SVRH	**Sivrihisar-ESK**	**1.98**	**78**	*e*Pn	**Pn**	**03 06 36.7**	**-0.3**

*IDC **28** 03:07:01.3±17.0, 52°52′N×170°76′W, h0km, mb3.1/3, mb1 3.5/4, mb1mx3.2/48, mbtmp3.0/4, ML3.1/1, Error ellipse: s-maj=332.9km s-min=50.2km az=86.0*
*NEIC **28** 03:07:09.6, 52°66′N×169°42′W, h11km, ML3.2(AEIC), After AEIC.*
ISC 28 03:07:10.0±1.7, 52°9′N±0°1×169°56′W±0°07, h14km±11km, n27, σ1°00/28, mb3.1/3, Fox Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NIKH	**Nikolski High**	**0.45**	**74**	P	**Pg**	**03 07 19.1**	**+0.2**
NIKH				S	**Sb**	**03 07 26.2**	**-0.1**
OKWE	**Okmok W'ng Wal**	**1.01**	**52**	P	**Pb**	**03 07 29.9**	**+0.5**
OKWE				S	**Sn**	**03 07 45.2**	**+1.3**
OKAK	**Okmok**	**1.03**	**44**	P	**Pb**	**03 07 28.3**	**-1.3**
OKAK				S	**Sb**	**03 07 41.7**	**-1.3**
OKER	**Okmok East Rim**	**1.09**	**56**	P	**Pb**	**03 07 31.1**	**+0.4**
OKER				S	**Sn**	**03 07 48.4**	**+2.4**
MSOM	**Makushin Julie**	**1.84**	**57**	P	**Pn**	**03 07 40.8**	**-0.4**
MGOD	**Makushin Gods**	**1.87**	**59**	P	**Pn**	**03 07 42.0**	**+0.3**
MSW	**Makushin Switc**	**1.98**	**56**	P	**Pn**	**03 07 44.1**	**+1.0**
MSW				S	**Sn**	**03 08 09.3**	**+1.6**
MTBL	**Makushin Table**	**2.06**	**56**	P	**Pn**	**03 07 44.8**	**+0.5**
UNV	**Unalaska Valle**	**2.09**	**60**	P	**Pn**	**03 07 44.1**	**-0.5**
UNV				S	**Sn**	**03 08 09.9**	**-0.5**
AKRB	**Akutan Reef Bi**	**2.45**	**57**	P	**Pn**	**03 07 51.2**	**+1.6**
ZRO	**Akutan Zero**	**2.48**	**59**	P	**Pn**	**03 07 51.0**	**+1.0**
AKUT	**Akutan**	**2.60**	**59**	*e*Pn	**Pn**	**03 07 52.1**	**+0.4**
AKUT				*e*Sn	**Sn**	**03 08 23.9**	**+0.8**
KOSE	**Korovin Southe**	**2.78**	**261**	P	**Pn**	**03 07 54.8**	**+0.5**
KOFP	**Korovin Flat P**	**2.83**	**260**	P	**Pn**	**03 07 55.4**	**+0.6**
KOWE	**Korovin West**	**2.90**	**262**	P	**Pn**	**03 07 57.1**	**+1.3**
GSMY	**Great Sitkin M**	**4.05**	**261**	P	**Pn**	**03 08 12.2**	**+0.5**
GSTD	**Great Sitkin T**	**4.10**	**261**	P	**Pn**	**03 08 12.5**	**+0.1**
ILAR	**Eielson Array**	**16.62**	**35**	Pn	**Pn**	**03 11 02.5**	**+0.2**
	0.0nm,0.3s,baz=222,slow=12,SNR=3.0						
YKA	**Yellowknife Ar**	**30.01**	**49**	P	**P**	**03 13 17.4**	**-0.5**
	0.1nm,0.3s,baz=276,slow=7.1,SNR=4.2						
H11N2	**WAKE ISLAND Hy**	**37.76**	**218**	T	T	03 54 46.4	
	baz=24,slow=76,SNR=22						
H11N3	**WAKE ISLAND Hy**	**37.77**	**218**	T	T	03 54 43.6	
	baz=24,slow=76,SNR=34						
H11N1	**WAKE ISLAND Hy**	**37.78**	**218**	T	T	03 54 38.6	
	baz=24,slow=76,SNR=21						
H11S1	**WAKE ISLAND Hy**	**38.95**	**217**	T	T	03 55 49.0	
	baz=23,slow=76,SNR=174						
H11S2	**WAKE ISLAND Hy**	**38.97**	**217**	T	T	03 55 50.2	
	baz=23,slow=76,SNR=118						
H11S3	**WAKE ISLAND Hy**	**38.97**	**217**	T	T	03 55 50.3	
	baz=23,slow=76,SNR=82						
PDAR	**Pinedale Array**	**40.43**	**80**	P	**P**	**03 14 47.4**	**-0.6**
	0.1nm,0.5s,baz=282,slow=4.3,SNR=2.7						
TXAR	**Lajitas Array**	**52.86**	**89**	P	**P**	**03 16 24.5**	**-0.8**
	0.5nm,0.7s,baz=294,slow=4.8,SNR=7.3						

*ISCJB **28** 03:11:51.6±0.6, 39°11′N±0°04×29°08′E±0°04, h9km, Error ellipse: s-maj=5.7km s-min=4.8km az=158.7*
*DDA **28** 03:11:51.7, 39°17′N×29°07′E, h7km, Md2.8*
*ISK **28** 03:11:51.1, 39°11′N×29°11′E, h6km, MD2.8*
*CSEM **28** 03:11:51.6±0.1, 39°11′N×29°07′E, h5km, MD2.8, Error ellipse: s-maj=2.8km s-min=2.6km az=109.0*
ISC 28 03:11:51.1±0.9, 39°10′N±0°03×29°08′E±0°03, h9km, n27, σ0°90/33, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.29**	**258**	S	**Sg**	**03 12 01.6**	**+0.9**
DEMI	**Demirci**	**0.29**	**258**	*i* S	**Sg**	**03 11 57.2**	**-3.5**
DEMI				*i* S	**Sg**	**03 12 01.6**	**+0.9**
GDZ	**Gediz**	**0.31**	**92**	P	**Pb**	**03 11 58.4**	**-0.6**
GDZ				S	**Sb**	**03 12 03.1**	**-1.1**
GDZ	**Gediz**	**0.31**	**92**	*i* P	**Pb**	**03 11 58.4**	**-0.6**
GDZ				*i* S	**Sb**	**03 12 03.1**	**-1.1**
TVSB	**Tavsanli**	**0.46**	**40**	*e*PG	**Pg**	**03 12 00.4**	**+0.4**
TVSB				*e*SG	**Sg**	**03 12 06.4**	**+0.3**
TVSB	**Tavsanli**	**0.46**	**40**	*e*Pg	**Pg**	**03 12 00.4**	**+0.4**
TVSB				*e*Sg	**Sg**	**03 12 06.4**	**+0.3**
KULA	**Kula-Manisa**	**0.67**	**209**	*e*PG	**Pg**	**03 12 04.3**	**+0.3**
KULA	**Kula-Manisa**	**0.67**	**209**	*e*Pg	**Pg**	**03 12 04.3**	**+0.3**
KHL	**Karahalli**	**0.85**	**156**	*e*PG	**Pb**	**03 12 08.4**	**+0.3**
KHL	**Karahalli**	**0.85**	**156**	*e*Pg	**Pb**	**03 12 08.4**	**+0.3**
BALB	**Balikesir**	**1.07**	**300**	*e*PN	**Pn**	**03 12 12.6**	**+0.3**
BALB	**Balikesir**	**1.07**	**300**	*e*Pn	**Pn**	**03 12 12.6**	**+0.3**
IGD	**Bursa**	**1.17**	**5**	*i* P	**Pb**	**03 12 11.6**	**-1.8**
IGD				*i* S	**Sb**	**03 12 28.0**	**-0.6**
CAVI	**Cavuskoy**	**1.25**	**28**	*e*PN	**Pg**	**03 12 15.2**	**+0.2**
CAVI	**Cavuskoy**	**1.25**	**28**	*e*Pn	**Pg**	**03 12 15.3**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.27**	**353**	*e*PN	**Pg**	**03 12 16.0**	**+0.5**
MDNY	**Mudanya-Bursa**	**1.27**	**353**	*e*Pn	**Pg**	**03 12 16.0**	**+0.5**
KCTX	**Karacabey (Bur**	**1.29**	**335**	*e*PN	**Pg**	**03 12 16.3**	**+0.5**
KCTX	**Karacabey (Bur**	**1.29**	**335**	*e*Pn	**Pg**	**03 12 16.3**	**+0.5**
GONE	**Gonen-Balikesi**	**1.43**	**312**	*e*PN	**Pg**	**03 12 18.7**	**+0.2**
GONE	**Gonen-Balikesi**	**1.43**	**312**	*e*Pn	**Pg**	**03 12 18.7**	**+0.2**
ARMT	**Armutlu**	**1.47**	**354**	*e*PN	**Pb**	**03 12 18.7**	**+0.1**
ARMT	**Armutlu**	**1.47**	**354**	*e*Pn	**Pb**	**03 12 18.7**	**+0.1**
EDC	**Edincik**	**1.56**	**323**	*e*PN	**Pb**	**03 12 20.3**	**+0.2**
EDC	**Edincik**	**1.56**	**323**	*e*Pn	**Pb**	**03 12 20.3**	**+0.2**
GULT	**Gulveren**	**1.73**	**39**	*e*PN	**Pn**	**03 12 22.2**	**+0.9**
GULT	**Gulveren**	**1.73**	**39**	*e*Pn	**Pn**	**03 12 22.3**	**+0.9**

*ISK **28** 03:28:18.9, 39°07′N×29°17′E, h15km, MD2.7*
*ISCJB **28** 03:28:19.5±0.5, 39°13′N±0°04×29°03′E±0°04, h9km, Error ellipse: s-maj=5.6km s-min=4.5km az=147.3*
*CSEM **28** 03:28:19.5±0.2, 39°14′N×29°03′E, h8km, MD2.4, Error ellipse: s-maj=4.4km s-min=3.5km az=104.0*
*DDA **28** 03:28:19.6, 39°07′N×29°02′E, h7km, Md2.4*
ISC 28 03:28:19.0±0.8, 39°11′N±0°03×29°06′E±0°03, h9km, n20, σ0°37/28, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**257**	P	**Pg**	**03 28 25.0**	**+0.4**
DEMI				S	**Sg**	**03 28 28.3**	**0.0**
DEMI	**Demirci**	**0.28**	**257**	*i* P	**Pg**	**03 28 25.0**	**+0.4**
DEMI				*i* S	**Sg**	**03 28 28.3**	**0.0**
GDZ	**Gediz**	**0.33**	**93**	P	**Pb**	**03 28 26.9**	**-0.2**
GDZ				S	**Sb**	**03 28 32.2**	**-0.3**
GDZ	**Gediz**	**0.33**	**93**	*i* P	**Pb**	**03 28 26.9**	**-0.2**
GDZ				*i* S	**Sb**	**03 28 32.2**	**-0.3**
TVSB	**Tavsanli**	**0.46**	**42**	*e*PG	**Pg**	**03 28 28.2**	**+0.1**
TVSB				*e*SG	**Sg**	**03 28 35.0**	**+0.8**
TVSB	**Tavsanli**	**0.46**	**42**	*e*Pg	**Pg**	**03 28 28.2**	**+0.1**
TVSB				*e*Sg	**Sg**	**03 28 35.0**	**+0.8**
KULA	**Kula-Manisa**	**0.67**	**208**	*e*PG	**Pb**	**03 28 32.6**	**-0.3**
KULA	**Kula-Manisa**	**0.67**	**208**	*e*Pg	**Pb**	**03 28 32.6**	**-0.3**
KHAL	**Karahalli**	**0.81**	**155**	P	**Pn**	**03 28 36.4**	**-0.3**
KHAL				S	**Sb**	**03 28 46.7**	**+0.4**
KHAL	**Karahalli**	**0.81**	**155**	*i* P	**Pn**	**03 28 36.4**	**-0.3**
KHAL				*i* S	**Sb**	**03 28 46.7**	**+0.4**
MDNY	**Mudanya-Bursa**	**1.27**	**354**	*e*PN	**Pg**	**03 28 43.4**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.27**	**354**	*e*Pn	**Pg**	**03 28 43.4**	**+0.1**
IZI	**Iznik**	**1.27**	**14**	*e*PN	**Pn**	**03 28 42.8**	**-0.2**
IZI	**Iznik**	**1.27**	**14**	*e*Pn	**Pn**	**03 28 42.8**	**-0.2**
KCTX	**Karacabey (Bur**	**1.28**	**335**	*e*PN	**Pg**	**03 28 43.9**	**+0.3**
KCTX	**Karacabey (Bur**	**1.28**	**335**	*e*Pn	**Pg**	**03 28 43.9**	**+0.3**
ARMT	**Armutlu**	**1.47**	**354**	*e*PN	**Pb**	**03 28 46.2**	**-0.3**
ARMT	**Armutlu**	**1.47**	**354**	*e*Pn	**Pb**	**03 28 46.2**	**-0.3**
GULT	**Gulveren**	**1.73**	**40**	*e*PN	**Pn**	**03 28 49.0**	**-0.4**
GULT	**Gulveren**	**1.73**	**40**	*e*Pn	**Pn**	**03 28 49.0**	**-0.4**

*ISCJB **28** 03:33:18.6±0.5, 39°12′N±0°03×29°00′E±0°04, h9km, Error ellipse: s-maj=5.0km s-min=4.4km az=155.1*
*CSEM **28** 03:33:18.7±0.1, 39°13′N×28°98′E, h5km, MD2.7, Error ellipse: s-maj=1.8km s-min=1.5km az=77.0*
*ISK **28** 03:33:18.3, 39°14′N×29°01′E, h5km, MD2.7*
*DDA **28** 03:33:18.2, 39°15′N×28°98′E, h7km, Md2.7*
ISC 28 03:33:18.9±0.9, 39°13′N±0°03×28°99′E±0°03, h9km, n24, σ0°28/32, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.23**	**247**	P	**Pg**	**03 33 23.7**	**+0.1**
DEMI				S	**Sg**	**03 33 26.9**	**+0.1**
DEMI	**Demirci**	**0.23**	**247**	*i* P	**Pg**	**03 33 23.7**	**+0.1**
DEMI				*i* S	**Sg**	**03 33 26.9**	**+0.1**
GDZ	**Gediz**	**0.39**	**97**	P	**Pg**	**03 33 26.5**	**0.0**
GDZ				S	**Sg**	**03 33 31.8**	**+0.2**
GDZ	**Gediz**	**0.39**	**97**	*i* P	**Pg**	**03 33 26.4**	**0.0**
GDZ				*i* S	**Sg**	**03 33 31.8**	**+0.2**
TVSB	**Tavsanli**	**0.48**	**49**	*e*PG	**Pg**	**03 33 28.2**	**-0.1**
TVSB				*e*SG	**Sg**	**03 33 34.5**	**-0.2**
TVSB	**Tavsanli**	**0.48**	**49**	*e*Pg	**Pg**	**03 33 28.2**	**-0.1**
TVSB				*e*Sg	**Sg**	**03 33 34.5**	**-0.2**
KULA	**Kula-Manisa**	**0.67**	**203**	*e*PG	**Pg**	**03 33 31.7**	**-0.1**
KULA	**Kula-Manisa**	**0.67**	**203**	*e*Pg	**Pg**	**03 33 31.7**	**-0.1**
KHAL	**Karahalli**	**0.86**	**153**	P	**Pg**	**03 33 35.4**	**0.0**
KHAL				S	**Sg**	**03 33 45.9**	**-0.7**
KHAL	**Karahalli**	**0.86**	**153**	*i* P	**Pg**	**03 33 35.4**	**0.0**
KHAL				*i* S	**Sg**	**03 33 45.9**	**-0.7**
KHL	**Karahalli**	**0.91**	**152**	*e*PG	**Pg**	**03 33 36.4**	**0.0**
KHL	**Karahalli**	**0.91**	**152**	*e*Pg	**Pg**	**03 33 36.4**	**0.0**
BALB	**Balikesir**	**1.00**	**301**	*e*PG	**Pg**	**03 33 37.7**	**-0.3**
BALB	**Balikesir**	**1.00**	**301**	*e*Pg	**Pg**	**03 33 37.7**	**-0.3**
KCTX	**Karacabey (Bur**	**1.23**	**337**	*e*PN	**Pn**	**03 33 42.3**	**0.0**
KCTX	**Karacabey (Bur**	**1.23**	**337**	*e*Pn	**Pn**	**03 33 42.3**	**0.0**
MDNY	**Mudanya-Bursa**	**1.24**	**356**	*e*PN	**Pn**	**03 33 42.6**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.24**	**356**	*e*Pn	**Pn**	**03 33 42.6**	**+0.3**
IZI	**Iznik**	**1.26**	**17**	*e*PN	**Pn**	**03 33 42.6**	**-0.1**
IZI	**Iznik**	**1.26**	**17**	*e*Pn	**Pn**	**03 33 42.6**	**-0.1**
ADVT	**Abdulvahap**	**1.42**	**24**	*e*PN	**Pn**	**03 33 45.5**	**+0.6**
ADVT	**Abdulvahap**	**1.42**	**24**	*e*Pn	**Pn**	**03 33 45.5**	**+0.6**
ARMT	**Armutlu**	**1.43**	**356**	*e*PN	**Pb**	**03 33 45.8**	**0.0**
ARMT	**Armutlu**	**1.43**	**356**	*e*Pn	**Pb**	**03 33 45.8**	**0.0**

*ISCJB **28** 03:47:09.5±0.5, 39°10′N±0°04×29°12′E±0°04, h9km, Error ellipse: s-maj=5.6km s-min=4.3km az=153.5*
*CSEM **28** 03:47:09.6±0.1, 39°11′N×29°12′E, h7km, MD2.7, Error ellipse: s-maj=1.9km s-min=1.4km az=144.0*
*ISK **28** 03:47:09.2, 39°13′N×29°12′E, h5km, MD2.7*
*DDA **28** 03:47:09.1, 39°11′N×29°11′E, h7km, Md2.7*
ISC 28 03:47:09.8±1.0, 39°11′N±0°03×29°12′E±0°03, h9km, n20, σ0°30/28, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.28**	**94**	P	**Pg**	**03 47 15.6**	**+0.1**
GDZ				S	**Sg**	**03 47 19.8**	**+0.4**
GDZ	**Gediz**	**0.28**	**94**	*i* P	**Pg**	**03 47 15.6**	**+0.1**
GDZ				*i* S	**Sg**	**03 47 19.8**	**+0.4**
DEMI	**Demirci**	**0.32**	**258**	P	**Pg**	**03 47 16.1**	**0.0**
DEMI				S	**Sg**	**03 47 20.5**	**+0.1**
DEMI	**Demirci**	**0.32**	**258**	*i* P	**Pg**	**03 47 16.1**	**0.0**
DEMI				*i* S	**Sg**	**03 47 20.5**	**+0.1**
TVSB	**Tavsanli**	**0.43**	**38**	*e*PG	**Pg**	**03 47 18.3**	**0.0**
TVSB				*e*SG	**Sg**	**03 47 23.5**	**-0.5**
TVSB	**Tavsanli**	**0.43**	**38**	*e*Pg	**Pg**	**03 47 18.3**	**0.0**
TVSB				*e*Sg	**Sg**	**03 47 23.5**	**-0.5**
KULA	**Kula-Manisa**	**0.69**	**211**	*e*PG	**Pg**	**03 47 23.1**	**0.0**
KULA	**Kula-Manisa**	**0.69**	**211**	*e*Pg	**Pg**	**03 47 23.1**	**0.0**
KHAL	**Karahalli**	**0.79**	**158**	P	**Pg**	**03 47 25.0**	**0.0**
KHAL				S	**Sg**	**03 47 34.8**	**-0.6**
KHAL	**Karahalli**	**0.79**	**158**	*i* P	**Pg**	**03 47 25.1**	**0.0**
KHAL				*i* S	**Sg**	**03 47 34.8**	**-0.6**
AKS	**Akhisar**	**1.04**	**258**	*e*PG	**Pg**	**03 47 29.7**	**0.0**
AKS	**Akhisar**	**1.04**	**258**	*e*Pg	**Pg**	**03 47 29.7**	**0.0**
IZI	**Iznik**	**1.26**	**13**	*e*PN	**Pn**	**03 47 33.3**	**-0.3**
IZI	**Iznik**	**1.26**	**13**	*e*Pn	**Pn**	**03 47 33.3**	**-0.3**
KCTX	**Karacabey (Bur**	**1.30**	**333**	*e*PN	**Pn**	**03 47 34.3**	**+0.2**
KCTX	**Karacabey (Bur**	**1.30**	**333**	*e*Pn	**Pn**	**03 47 34.3**	**+0.2**
ARMT	**Armutlu**	**1.47**	**352**	*e*PN	**Pn**	**03 47 36.7**	**+0.2**
ARMT	**Armutlu**	**1.47**	**352**	*e*Pn	**Pn**	**03 47 36.7**	**+0.2**
GULT	**Gulveren**	**1.71**	**39**	*e*PN	**Pn**	**03 47 40.1**	**+0.3**
GULT	**Gulveren**	**1.71**	**39**	*e*Pn	**Pn**	**03 47 40.1**	**+0.3**

*ISCJB **28** 04:36:18.6±0.7, 39°12′N±0°04×29°07′E±0°04, h4km±8km, Error ellipse: s-maj=7.8km s-min=5.0km az=152.6*
*ISK **28** 04:36:18.7, 39°12′N×29°11′E, h6km, MD2.8*
*DDA **28** 04:36:18.5, 39°10′N×29°06′E, h7km, Md2.8*
*CSEM **28** 04:36:19.0±0.1, 39°13′N×29°07′E, h5km, MD2.8, Error ellipse: s-maj=3.7km s-min=2.8km az=159.0*
ISC 28 04:36:18.8±1.0, 39°12′N±0°03×29°10′E±0°03, h14km±9km, n39, σ0°41/47, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.30**	**96**	P	**Pb**	**04 36 25.6**	**-0.4**
GDZ				S	**Sg**	**04 36 29.8**	**+0.4**
GDZ	**Gediz**	**0.30**	**96**	*i* P	**Pb**	**04 36 25.6**	**-0.4**
GDZ				*i* S	**Sg**	**04 36 29.8**	**+0.4**
TVSB	**Tavsanli**	**0.43**	**41**	*e*PG	**Pg**	**04 36 27.7**	**+0.2**
TVSB				*e*SG	**Sg**	**04 36 33.3**	**-0.1**
KULA	**Kula-Manisa**	**0.70**	**210**	*e*PG	**Pb**	**04 36 32.6**	**-0.2**
KULA	**Kula-Manisa**	**0.70**	**210**	*e*Pg	**Pb**	**04 36 32.6**	**-0.2**
KHAL	**Karahalli**	**0.81**	**158**	S	**Sb**	**04 36 45.2**	**-0.4**
KHAL	**Karahalli**	**0.81**	**158**	*i* S	Sg	04 36 34.1	-11
KHAL				*i* S	**Sb**	**04 36 45.1**	**-0.4**
KHL	**Karahalli**	**0.86**	**157**	*e*PG	**Pb**	**04 36 35.6**	**-0.1**
AKS	**Akhisar**	**1.03**	**257**	*e*PG	**Pn**	**04 36 38.8**	**0.0**
AKS	**Akhisar**	**1.03**	**257**	*e*Pg	**Pn**	**04 36 38.8**	**0.0**
BALB	**Balikesir**	**1.08**	**299**	*e*PN	**Pg**	**04 36 39.8**	**+0.2**
BALB				*e*SN	**Sn**	**04 36 55.3**	**+1.2**
BALB	**Balikesir**	**1.08**	**299**	*e*Pn	**Pg**	**04 36 39.8**	**+0.2**
BALB				*e*Sn	**Sn**	**04 36 55.3**	**+1.2**
IGD	**Bursa**	**1.14**	**4**	*i* P	**Pb**	**04 36 40.0**	**-0.3**
IGD				*i* S	**Sb**	**04 36 55.0**	**0.0**
CAVI	**Cavuskoy**	**1.22**	**28**	*e*PN	**Pg**	**04 36 42.3**	**-0.1**
CAVI	**Cavuskoy**	**1.22**	**28**	*e*Pn	**Pg**	**04 36 42.3**	**-0.1**
IZI	**Iznik**	**1.25**	**13**	*e*PN	**Pg**	**04 36 42.9**	**0.0**
IZI	**Iznik**	**1.25**	**13**	*e*Pn	**Pg**	**04 36 42.9**	**0.0**
MDNY	**Mudanya-Bursa**	**1.26**	**352**	*e*PN	**Pg**	**04 36 43.3**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.26**	**352**	*e*Pn	**Pg**	**04 36 43.3**	**+0.3**
KCTX	**Karacabey (Bur**	**1.28**	**334**	*e*PN	**Pg**	**04 36 43.7**	**+0.3**
KCTX	**Karacabey (Bur**	**1.28**	**334**	*e*Pn	**Pg**	**04 36 43.7**	**+0.3**
BORA	**Eskisehir**	**1.29**	**54**	P	**Pg**	**04 36 43.7**	**0.0**
BORA				S	**Sg**	**04 37 00.8**	**+0.2**
BORA	**Eskisehir**	**1.29**	**54**	*i* P	**Pg**	**04 36 43.7**	**0.0**
BORA				*i* S	**Sg**	**04 37 00.8**	**+0.2**
BALY	**Balya**	**1.30**	**299**	P	**Pn**	**04 36 42.1**	**-0.5**
BALY	**Balya**	**1.30**	**299**	*i* P	**Pn**	**04 36 42.1**	**-0.5**
ADVT	**Abdulvahap**	**1.40**	**20**	*e*PN	**Pg**	**04 36 45.5**	**-0.2**
ADVT	**Abdulvahap**	**1.40**	**20**	*e*Pn	**Pg**	**04 36 45.6**	**-0.2**
GONE	**Gonen-Balikesi**	**1.43**	**311**	*e*PN	**Pg**	**04 36 46.0**	**-0.4**
GONE	**Gonen-Balikesi**	**1.43**	**311**	*e*Pn	**Pg**	**04 36 46.0**	**-0.4**
ARMT	**Armutlu**	**1.45**	**353**	*e*PN	**Pg**	**04 36 46.4**	**-0.4**
ARMT	**Armutlu**	**1.45**	**353**	*e*Pn	**Pg**	**04 36 46.4**	**-0.4**
GPA	**Golpazari**	**1.49**	**38**	*e*PN	**Pb**	**04 36 46.4**	**+0.1**
GPA	**Golpazari**	**1.49**	**38**	*e*Pn	**Pb**	**04 36 46.4**	**+0.1**
EDC	**Edincik**	**1.55**	**322**	*e*PN	**Pg**	**04 36 47.8**	**-0.8**
EDC	**Edincik**	**1.55**	**322**	*e*Pn	**Pg**	**04 36 47.8**	**-0.8**
GULT	**Gulveren**	**1.70**	**39**	*e*PN	**Pb**	**04 36 49.6**	**-0.3**
GULT	**Gulveren**	**1.70**	**39**	*e*Pn	**Pb**	**04 36 49.6**	**-0.3**
HRT	**Hereke**	**1.75**	**14**	*e*PN	**Pb**	**04 36 50.4**	**-0.3**
HRT	**Hereke**	**1.75**	**14**	*e*Pn	**Pb**	**04 36 50.4**	**-0.3**

IDC 28 04:39:55.3±1.4, 37°64N×144°36E, h0km, mb3.5/3, mb1 3.8/4, mb1mx3.4/35, mbtmp3.5/4, ML3.5/1, Error ellipse: s-maj=52.1km s-min=27.5km az=122.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**5.04**	**259**	Pn	Pn	04 41 11.8	-0.3
	2.0nm,0.3s,baz=71,slow=10.0,SNR=15						
MAT	**Matsushiro**	**5.04**	**259**	P	Pn	04 41 11.8	-0.3
ILAR	**Eielson Array**	**47.72**	**33**	P	P	04 48 33.4	-0.1
	0.5nm,0.7s,baz=256,slow=6.6,SNR=7.0						
WRA	**Warramunga Arr**	**58.05**	**191**	P	P	04 49 50.0	-0.2
	0.9nm,1.0s,baz=9.2,slow=6.9,SNR=5.6						
ASAR	**Alice Springs**	**61.77**	**191**	P	P	04 50 15.7	0.0
	0.3nm,0.8s,baz=9.2,slow=8.6,SNR=3.3						

*ISCJB **28** 04:48:30.3±1.1, 37°69N±0°05×144°08E±0°08, h33km, mb3.5/3, Error ellipse: s-maj=9.8km s-min=7.0km az=160.0*
*JMA **28** 04:48:31.0±0.2, 37°76N×144°05E, h44km, M3.5*
*IDC **28** 04:48:32.5±1.2, 36°92N×143°96E, h0km, mb3.4/3, mb1 3.7/4, mb1mx3.4/39, mbtmp3.4/4, ML3.1/1, Error ellipse: s-maj=37.5km s-min=26.2km az=127.0*
ISC 28 04:48:31.9±1.8, 37°72N±0°06×144°1E±0°1, h35km, n14, σ0°95/21, mb3.6/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.

H11S1	WAKE ISLAND Hy 28.36 122			T	T	05 34 53.4	
	baz=314,slow=75,SNR=35						
H11S3	WAKE ISLAND Hy 28.36 122			T	T	05 34 53.3	
	baz=314,slow=75,SNR=36						
H11S2	WAKE ISLAND Hy 28.37 122			T	T	05 34 55.4	
	baz=314,slow=75,SNR=18						
MKAR	Makanchi Array	44.62	303	P	P	05 07 45.5	+3.0
	0.2nm,0.2s,baz=87,slow=10,SNR=2.9						
ILAR	Eielson Array	50.03	32	P	P	05 08 24.2	-0.1
	0.7nm,0.8s,baz=265,slow=6.1,SNR=9.4						
EKS2	Erkin-Say	51.45	299	*e*P	P	05 08 36.1	+0.6
	0.9nm,0.5s						
WRA	Warramunga Arr	56.37	188	P	P	05 09 09.6	-1.8
	0.5nm,0.3s,baz=6.4,slow=7.8,SNR=7.0						
ARU	Arti	56.99	319	*e*P	P	05 09 15.9	+0.4
	1.7nm,0.6s						
ASAR	Alice Springs	60.09	188	P	P	05 09 37.8	+0.4
	0.1nm,0.4s,baz=11,slow=8.6,SNR=3.1						
YKA	Yellowknife Ar	64.36	30	P	P	05 10 05.6	+0.1
	0.4nm,0.7s,baz=305,slow=6.9,SNR=6.7						
FINES	FINESS Array B	69.52	332	P	P	05 10 37.9	-0.4
	1.4nm,0.9s,baz=46,slow=6.6,SNR=3.3						
NOA	NORSAR Array B	74.90	337	P	P	05 11 11.0	+0.3
	0.8nm,0.8s,baz=40,slow=5.7,SNR=3.4						
AKASG	Malin Array Be	74.95	322	P	P	05 11 10.8	-0.2
	0.8nm,0.5s,baz=47,slow=7.6,SNR=4.4						
NVAR	Mina Array Bea	75.31	53	P	P	05 11 14.2	+0.6
	0.3nm,0.6s,baz=299,slow=5.6,SNR=3.1						
PDAR	Pinedale Array	78.07	45	P	P	05 11 29.2	0.0
	0.3nm,0.5s,baz=29,slow=2.1,SNR=3.0						
TXAR	Lajitas Array	90.45	52	P	P	05 12 32.5	+0.4
	0.3nm,0.8s,baz=267,slow=3.3,SNR=3.3						
LPAZ	La Paz	146.93	61	PKPbc	PKPdf	05 19 11.2	-0.7
	0.3nm,0.3s,baz=307,slow=5.1,SNR=4.6						

*IDC **28** 05:10:05.7±8.8, 36°.28N×143°.49E, h0km, mb3.6/2, mb1 3.7/3, mb1mx3.3/35, mbtmp3.4/3, ML2.9/1, Error ellipse: s-maj=195.2km s-min=44.8km az=34.0*
*ISCJB **28** 05:10:07.8±1.1, 36°.48N±0.06×143°.31E±0°.10, h29km, mb3.6/2, Error ellipse: s-maj=12.1km s-min=7.5km az=157.1*
*JMA **28** 05:10:09.9±0.3, 36°.48N×143°.19E, h72km, M3.2*
ISC 28 05:10:09.2±1.6, 36°.48N±0°.07×143°.38E±0°.1, h29km, n13, σ0°87/17, Off east of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	2.10	288	S	Sn	05 11 07.0	-0.6
JFK	Kawauchi	2.13	295	P	Pn	05 10 42.9	0.0
JFK				S	Sn	05 11 07.7	-0.7
JHO	Hitachi	2.20	274	P	Pn	05 10 44.0	+0.2
BSO1	Boso 1	2.62	227	P	Pn	05 10 49.4	+0.3
JMK	Ichinoseki	2.96	327	P	Pn	05 10 54.5	+0.2
JMK				S	Sn	05 11 28.0	-0.9
JAG	Ashikaga	3.09	270	P	Pn	05 10 56.7	+0.6
JYK	Kaneyama	3.37	317	P	Pn	05 11 00.6	+0.8
JYK				*e*S	Sn	05 11 39.6	+0.8
JRY	Ryogami san	3.58	264	P	Pn	05 11 03.1	+0.3
JRY				S	Sn	05 11 42.7	-1.4
JOD2	Odawara 2	3.62	252	P	Pn	05 11 04.4	+1.0
JYN	Shimob	3.97	257	P	Pn	05 11 09.5	+1.3
MJAR	Matsushiro Arr	4.09	272	Pn	Pn	05 11 11.5	+1.6
	0.6nm,0.3s,baz=91,slow=15,SNR=4.8						
WRA	Warramunga Arr	56.75	190	P	P	05 19 50.0	-0.5
	0.5nm,0.5s,baz=7.8,slow=7.3,SNR=10						
ASAR	Alice Springs	60.48	190	P	P	05 20 16.3	-0.1
	0.3nm,0.7s,baz=13,slow=10.0,SNR=4.7						

*ISK **28** 05:13:53.8, 39°.16N×29°.18E, h7km, MD2.5*
*DDA **28** 05:13:53.9, 39°.11N×29°.16E, h7km, Ml2.1*
*ISCJB **28** 05:13:54.0±0.8, 39°.13N±0°.04×29°.14E±0°.07, h9km, Error ellipse: s-maj=7.9km s-min=5.1km az=15.3*
*CSEM **28** 05:13:54.2±0.1, 39°.14N×29°.17E, h8km, ML2.1, Error ellipse: s-maj=4.6km s-min=2.4km az=106.0*
ISC 28 05:13:53.9±1.0, 39°.15N±0°.03×29°.11E±0°.05, h9km, n16, σ0°30/24, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	Gediz	0.29	101	P	Pg	05 13 59.5	-0.3
GDZ				S	Sg	05 14 03.5	-0.1
GDZ	Gediz	0.29	101	*i* P	Pg	05 13 59.5	-0.3
GDZ				*i* S	Sg	05 14 03.5	-0.1
TVSB	Tavsanli	0.41	42	*e*PG	Pg	05 14 01.5	-0.3
TVSB				*e*SG	Sg	05 14 07.0	-0.2
TVSB	Tavsanli	0.41	42	*e*Pg	Pg	05 14 01.5	-0.3
TVSB				*e*Sg	Sg	05 14 07.0	-0.2
KULA	Kula-Manisa	0.72	209	*e*PG	Pb	05 14 08.9	+0.2
KULA	Kula-Manisa	0.72	209	*e*Pg	Pb	05 14 08.9	+0.2
KHAL	Karahalli	0.83	159	P	Pg	05 14 09.8	0.0
KHAL				S	Sg	05 14 20.1	-0.6
KHAL	Karahalli	0.83	159	*i* P	Pg	05 14 09.8	0.0
KHAL				*i* S	Sg	05 14 20.1	-0.6
IZI	Iznik	1.22	13	*e*PN	Pg	05 14 17.2	-0.1
IZI	Iznik	1.22	13	*e*Pn	Pg	05 14 17.2	-0.1
BORA	Eskisehir	1.27	54	P	Pb	05 14 18.1	+0.1
BORA				S	Sn	05 14 35.2	+0.1
BORA	Eskisehir	1.27	54	*i* P	Pb	05 14 18.1	+0.1
BORA				*i* S	Sn	05 14 35.2	+0.1
ARMT	Armutlu	1.43	352	*e*PN	Pg	05 14 20.9	-0.4
ARMT	Armutlu	1.43	352	*e*Pn	Pg	05 14 20.9	-0.4
GULT	Gulveren	1.68	40	*e*PN	Pn	05 14 23.8	+0.3
GULT	Gulveren	1.68	40	*e*Pn	Pn	05 14 23.8	+0.3

NNC 28 05:13:59.6±5.0, 37°.19N×71°.64E, h0km, mb3.5, mpv3.2, 3C-3D, Error ellipse: s-maj=40.2km s-min=20.7km az=160.0, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	Dzherino	2.75	307	⇑Pn	Pn	05 14 44.3	-0.7
	17nm,0.3s						
DZET				⇓Sn	Sn	05 15 20.4	+1.5
	148nm,0.5s						
MNAS	Manas	5.34	7	⇓Pn	Pn	05 15 21.1	+0.5
	0.7nm,0.4s						
MNAS				⇑Sn	Sn	05 16 24.4	+1.6
	2.5nm,0.4s						
KK31	Karatay Array	5.97	352	⇑Pn	Pn	05 15 30.1	+0.9
	0.2nm,0.3s,baz=178,slow=14						
KK31				⇓Sn	Sn	05 16 37.9	-0.4
	0.8nm,0.3s,baz=176,slow=20,SNR=8.7						

*ISCJB **28** 05:16:44.7±1.0, 37°.65N±0°.05×144°.09E±0°.08, h33km, mb3.8/3, Error ellipse: s-maj=9.2km s-min=6.8km az=172.6*
*JMA **28** 05:16:46.4±0.2, 37°.80N×143°.99E, h31km, M3.4*
*IDC **28** 05:16:47.6±2.7, 36°.84N×143°.97E, h0km, mb3.7/3, mb1 3.8/4, mb1mx3.4/38, mbtmp3.6/4, ML2.9/1, Error ellipse: s-maj=75.4km s-min=30.0km az=59.0*
ISC 28 05:16:46.0±1.4, 37°.71N±0°.05×144°.16E±0°.09, h35km, n13, σ1°22/18, mb3.7/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	2.39	306	P	Pn	05 17 22.5	-0.1
OFUJ				S	Sn	05 17 49.0	-1.6
JMK	Ichinoseki	2.62	299	P	Pn	05 17 26.1	+0.3
JMK				S	Sn	05 17 55.4	-1.0
JOM	Ohasama	2.85	309	P	Pn	05 17 29.5	+0.5
JFT	Otama	3.04	267	*e*S	Sn	05 18 06.4	-0.4
JYK	Kaneyama	3.22	293	P	Pn	05 17 35.0	+0.9
JYK				*e*S	Sn	05 18 11.8	+0.6
BSO1	Boso 1	3.99	221	P	Pn	05 17 43.8	-0.4
BSO1				*e*S	Sn	05 18 28.9	-0.6
JRY	Ryogami san	4.54	250	P	Pn	05 17 52.2	-0.1
JRY				*e*S	Sn	05 18 41.3	-2.6
JKB	Kayabe	4.81	331	P	Pn	05 17 57.3	+1.4
MJAR	Matsushiro Arr	4.90	258	Pn	Pn	05 17 58.7	+1.6
	0.6nm,0.3s,baz=80,slow=14,SNR=7.8						
JCH	Churui	4.93	353	P	Pn	05 17 57.6	0.0
JCH				S	Sn	05 18 51.2	-2.2
KURBB	Kurchatov Arra	47.31	308	P	P	05 25 25.9	+10
	0.4nm,0.5s,baz=79,slow=8.1,SNR=3.8						
WRA	Warramunga Arr	58.09	191	P	P	05 26 36.5	+0.6
	1.1nm,0.7s,baz=12,slow=7.4,SNR=11						
ASAR	Alice Springs	61.81	191	P	P	05 27 02.1	+0.7
	0.5nm,0.8s,baz=359,slow=6.5,SNR=4.4						

*ISCJB **28** 05:24:48.7±0.4, 45°.49S±0°.04×167°.16E±0°.05, h84km±4km, mb4.2/5, Error ellipse: s-maj=8.2km s-min=4.4km az=145.4*
*IDC **28** 05:24:50.8±7.2, 45°.39S×167°.20E, h79km±70km, mb3.3/3, mb1 3.5/3, mb1mx3.4/18, mbtmp3.6/3, ML4.8/1, MS3.1/1, Ms1 3.1/1, ms1mx2.6/11, Error ellipse: s-maj=73.3km s-min=26.1km az=16.0*
*WEL **28** 05:24:50.4±0.2, 45°.56S×167°.01E, h65km±1km, ML4.5/19, Error ellipse: s-maj=2.7km s-min=1.6km az=90.0*
WEL Felt between Otago, Southland and Fiordland, maximum reported intensity MM 4.
*NEIC **28** 05:24:50.6, 45°.58S×167°.04E, h64km, mb4.7/2, ML4.6(WEL), After WEL.*
NEIC Felt at Te Anau.
ISC 28 05:24:49.8±0.7, 45°.51S±0°.05×167°.09E±0°.05, h74km±6km, n61, σ1°37/84, mb3.7/5, 4C-3D, South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DCZ	Deep Cove	0.07	45	PN	Pn	05 24 59.6	-0.8
DCZ				SN	Sn	05 25 06.9	-1.3
DCZ				AML	AML	05 25 07.8	
DCZ	Deep Cove	0.07	45	*e*Pn	Pn	05 24 59.7	-0.8
DCZ				*e*Sn	Sn	05 25 07.7	-0.5
PYZ	Puysegur Point	0.71	203	⇑PN	Pn	05 25 04.2	-0.9
PYZ				SN	Sn	05 25 15.1	-1.3
PYZ	Puysegur Point	0.71	203	*e*Pn	Pn	05 25 04.2	-0.9
PYZ				*e*Sn	Sn	05 25 15.6	-0.8
WHZ	Wether Hill Ro	0.71	122	*e*Pn	Pn	05 25 05.3	+0.1
WHZ				*e*Sn	Sn	05 25 16.4	-0.1
MLZ	Mavora Lakes	0.74	79	PN	Pn	05 25 06.1	+0.6
MLZ				SN	Sn	05 25 18.3	+1.2
MLZ				AML	AML	05 25 19.2	
MLZ	Mavora Lakes	0.74	79	*e*Pn	Pn	05 25 06.2	+0.8
MLZ				*e*Sn	Sn	05 25 17.5	+0.4
MSZ	Milford Sound	1.03	36	PN	Pn	05 25 09.9	+1.0
MSZ				SN	Sn	05 25 24.4	+1.3
MSZ				AML	AML	05 25 25.1	
APZ	The Paps	1.46	155	PN	Pn	05 25 14.1	-0.3
APZ				AML	AML	05 25 32.7	
APZ				AML	AML	05 25 32.8	
WKZ	Wanaka	1.53	64	⇓PN	Pn	05 25 16.7	+1.4
WKZ				AML	AML	05 25 37.1	
WKZ				AML	AML	05 25 38.4	
WKZ	Wanaka	1.53	64	*e*Pn	Pn	05 25 17.0	+1.7
WKZ				*e*Sn	Sn	05 25 36.1	+1.6
EAZ	Earnscleugh	1.59	81	PN	Pn	05 25 17.2	+1.1
EAZ				AML	AML	05 25 37.9	
EAZ				AML	AML	05 25 38.2	
SYZ	Scrubby Hill	1.76	126	PN	Pn	05 25 18.3	+0.1
SYZ				AML	AML	05 25 40.1	
SYZ				AML	AML	05 25 42.6	
TUZ	Tuapeka	1.84	105	PN	Pn	05 25 19.7	+0.3
TUZ				AML	AML	05 25 45.2	
TUZ				AML	AML	05 25 45.2	
TUZ				AML	AML	05 25 45.4	
TUZ				AML	AML	05 25 45.4	
JCZ	Jackson Bay	1.88	41	PN	Pn	05 25 20.8	+0.7
JCZ				AML	AML	05 25 50.3	
JCZ				AML	AML	05 25 52.2	
LBZ	Lake Benmore	2.47	64	PN	Pn	05 25 28.0	0.0
LBZ				SN	Sn	05 25 57.1	-0.1
LBZ				AML	AML	05 25 57.3	
LBZ				AML	AML	05 25 57.3	
LBZ				AML	AML	05 25 59.5	
LBZ	Lake Benmore	2.47	64	*e*Pn	Pn	05 25 28.3	+0.4
LBZ				*e*Sn	Sn	05 25 56.3	-0.8
HHSZ	Highcliff Hill	2.49	100	⇑PN	Pn	05 25 28.6	+0.5
ODZ	Otahua Downs	2.56	81	PN	Pn	05 25 28.6	-0.4
ODZ				AML	AML	05 25 58.7	
ODZ				AML	AML	05 25 59.4	
ODZ	Otahua Downs	2.56	81	*e*Pn	Pn	05 25 28.9	-0.1
ODZ				*e*Sn	Sn	05 25 57.7	-1.4
FOZ	Fox Glacier	2.78	46	⇓PN	Pn	05 25 32.1	0.0
FOZ				AML	AML	05 26 07.0	
FOZ				AML	AML	05 26 07.0	
FOZ				AML	AML	05 26 27.8	
FOZ				AML	AML	05 26 27.9	
FOZ	Fox Glacier	2.78	46	*e*Pn	Pn	05 25 32.3	+0.3
RPZ	Rata Peaks	3.36	59	P	Pn	05 25 39.3	-0.7
	96nm,0.3s,baz=209,slow=4.0,SNR=282						
RPZ				S	Sn	05 26 17.0	-1.6
	144nm,0.3s,baz=343,slow=20,SNR=24						
RPZ				LR	LR	05 27 07.6	
	comp=Z,315nm,20.2s,baz=232,slow=42						
RPZ	Rata Peaks	3.36	59	⇑PN	Pn	05 25 39.3	-0.7
RPZ				SN	Sn	05 26 15.8	-2.8
RPZ				AML	AML	05 26 19.8	
RPZ	Rata Peaks	3.36	59	*e*Pn	Pn	05 25 39.2	-0.7
RPZ				*e*Sn	Sn	05 26 18.6	-0.1
WVZ	Waitaha Valley	3.58	48	PN	Pn	05 25 42.0	-0.9
WVZ				AML	AML	05 26 26.5	
WVZ				AML	AML	05 26 30.7	
OXZ	Oxford	4.17	60	PN	Pn	05 25 49.3	-1.6
OXZ	Oxford	4.17	60	*e*Pn	Pn	05 25 49.5	-1.5
OXZ				*e*Sn	Sn	05 26 35.8	-2.7
INZ	Inchbonnie	4.20	50	⇓PN	Pn	05 25 50.5	-0.8
MQZ	McQueen's Vall	4.37	68	PN	Pn	05 25 52.3	-1.3
MQZ				AML	AML	05 26 41.4	
MQZ				AML	AML	05 26 41.9	
MQZ	McQueen's Vall	4.37	68	*e*Pn	Pn	05 25 52.6	-1.0
MQZ				*e*Sn	Sn	05 26 40.6	-2.6
CRLZ	Canterbury Las	4.41	66	*e*Pn	Pn	05 25 53.2	-1.0
CRLZ				*e*Sn	Sn	05 26 42.8	-1.4
LTZ	Lake Taylor	4.62	56	PN	Pn	05 25 55.7	-1.6
LTZ				AML	AML	05 26 47.2	
LTZ				AML	AML	05 26 49.8	
LTZ	Lake Taylor	4.62	56	*e*Pn	Pn	05 25 56.0	-1.2
DSZ	Denniston Nort	5.09	44	PN	Pn	05 26 02.0	-1.6
DSZ				AML	AML	05 27 01.2	
DSZ				AML	AML	05 27 04.8	
KHZ	Kahutara	5.59	59	PN	Pn	05 26 09.6	-0.8
KHZ	Kahutara	5.59	59	*e*Pn	Pn	05 26 09.6	-0.8
KHZ				*e*Sn	Sn	05 27 10.6	-2.6
THZ	Tophouse	5.65	50	⇑PN	Pn	05 26 09.4	-1.8
THZ				AML	AML	05 27 12.4	
THZ				AML	AML	05 27 17.4	
THZ	Tophouse	5.65	50	*e*Pn	Pn	05 26 09.2	-2.0
THZ				*e*Sn	Sn	05 27 12.9	-1.8
QRZ	Quartz Range	6.15	42	PN	Pn	05 26 17.5	-0.5
QRZ				AML	AML	05 27 26.1	
QRZ				AML	AML	05 27 26.2	
NNZ	Nelson	6.28	49	PN	Pn	05 26 20.1	+0.3
DUWZ	D'Urville Isla	6.87	49	PN	Pn	05 26 29.1	+1.2
SNZO	South Karori	6.96	56	*e*Pn	Pn	05 26 29.2	+0.2
SNZO				*e*Sn	Sn	05 27 43.7	-3.0
CAW	Cannon Point	7.30	56	PN	Pn	05 26 33.4	-0.3
KIW	Kapiti Island	7.37	54	PN	Pn	05 26 34.5	-0.1
BFZ	Birch Farm	8.26	57	*e*Pn	Pn	05 26 46.3	-0.6
BFZ				*e*Sn	Sn	05 28 17.8	-0.7
HIZ	Hauiti	9.07	42	PN	Pn	05 26 57.2	-0.8
HIZ	Hauiti	9.07	42	*e*Pn	Pn	05 26 57.8	-0.1
HIZ				*e*Sn	Sn	05 28 40.3	+1.9
BKZ	Black Stump Fm	9.42	51	*e*Pn	Pn	05 27 03.9	+1.2
OUZ	Omahuta	11.41	28	*e*Pn	Pn	05 27 30.3	+0.5
TAU	Tasmania Unive	14.41	273	*e*Pn	Pn	05 28 09.0	-1.0
CAN	Canberra	17.09	300	*e*Pn	P	05 28 45.0	+0.4
	59nm,1.9s						
STKA	Stephens Creek	23.98	296	P	P	05 29 59.9	+2.4
	1.1nm,0.3s,baz=104,slow=8.1,SNR=5.0						
ASAR	Alice Springs	34.57	298	P	P	05 31 31.4	-0.1
	0.5nm,0.8s,baz=151,slow=8.6,SNR=4.3						
WRA	Warramunga Arr	37.11	303	P	P	05 31 52.8	-0.5
	0.3nm,0.5s,baz=137,slow=8.1,SNR=7.6						
QSPA	South Pole Qui	44.61	180	*e*P	P	05 32 56.1	+1.6
SOEI	Soe	51.09	301	*e*P	P	05 33 44.1	-1.0
SNAA	Sanae	62.90	184	*e*P	P	05 35 08.0	+0.2
	9.3nm,0.7s						
HHC	Hu-ho-hao-te	99.28	321	*e*P	Pdif	05 38 29.0	+5.7
HHC				pmax	pmax		
	comp=Z,19nm,1.3s						
HHC				pmax	pmax		
	comp=Z,160nm,7.0s						
TORD	Torodi Ar. Bea	145.44	206	PKPbc	PKPdf	05 44 19.3	-0.3
	comp=Z,2.3nm,0.6s,baz=151,slow=2.5,SNR=21						
BRTR	Keskin Array B	145.64	277	PKPbc	PKPab	05 44 20.1	-0.1
	comp=Z,0.4nm,0.6s,baz=114,slow=3.6,SNR=2.6						

*DDA **28** 05:30:36.6, 38°.96N×33°.42E, h18km, Ml3.4*
*ISK **28** 05:30:36.5, 38°.95N×33°.37E, h8km, ML3.6*
*CSEM **28** 05:30:37.0±0.1, 38°.95N×33°.37E, h2km, ML3.6, Error ellipse: s-maj=3.4km s-min=3.1km az=4.0*
ISC 28 05:30:37.1±0.8, 38°.97N±0°.02×33°.38E±0°.02, h11km±7km, n74, σ1°30/112, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SERE	Sereflikochisa	0.15	101	*e*PG	Pg	05 30 41.0	+0.3
SERE				*e*SG	Sg	05 30 42.8	-0.4
SERE	Sereflikochisa	0.15	101	*e*Pg	Pg	05 30 41.0	+0.3
SERE				*e*Sg	Sg	05 30 42.8	-0.4
KKUL	Konya-Kulu	0.41	299	P	Pb	05 30 45.8	-0.7
KKUL				S	Sb	05 30 52.8	+0.1
KKUL	Konya-Kulu	0.41	299	*i* P	Pb	05 30 45.8	-0.7
KKUL				*i* S	Sb	05 30 52.8	+0.1
AKSY	AKSARAY - Alti	0.44	137	P	Pg	05 30 45.1	-0.7
AKSY				S	Sg	05 30 51.5	-0.2
AKSY	AKSARAY - Alti	0.44	137	*i* P	Pg	05 30 45.1	-0.7
AKSY				*i* S	Sg	05 30 51.5	-0.2
KAMT	Kaman	0.47	33	*e*PG	Pg	05 30 46.2	-0.3
KAMT	Kaman	0.47	33	*e*Pg	Pg	05 30 46.2	-0.3
AFSR	Af¯ar-Bala (A	0.53	333	*e*PG	Pg	05 30 47.5	0.0
AFSR				*e*SG	Sb	05 30 55.7	-0.5
AFSR	Af¯ar-Bala (A	0.53	333	*e*Pg	Pg	05 30 47.5	0.0
AFSR				*e*Sg	Sb	05 30 55.7	-0.5
CHBY	Cihanbeyli	0.55	224	*e*PG	Pg	05 30 47.2	-0.6
CHBY	Cihanbeyli	0.55	224	*e*Pg	Pg	05 30 47.2	-0.6
BBAL	Bala	0.60	341	P	Pb	05 30 49.6	-0.2
BBAL				S	Sb	05 30 59.0	+0.7
BBAL	Bala	0.60	341	*i* P	Pb	05 30 49.6	-0.2
BBAL				*i* S	Sb	05 30 59.0	+0.7
CDAG	Cicekdag	1.01	50	P	Pg	05 30 55.3	-1.3
CDAG				S	Sg	05 31 09.7	0.0
CDAG	Cicekdag	1.01	50	*i* P	Pg	05 30 55.3	-1.3
CDAG				*i* S	Sg	05 31 09.7	0.0
LOD	Lodumlu	1.03	333	*e*PG	Pb	05 30 57.0	0.0
LOD	Lodumlu	1.03	333	*e*Pg	Pb	05 30 57.0	0.0
KDHN	Kadinhani	1.08	246	P	Pb	05 30 57.5	-0.5
KDHN				S	Sb	05 31 11.5	-0.6
KDHN	Kadinhani	1.08	246	*i* P	Pb	05 30 57.5	-0.5
KDHN				*i* S	Sb	05 31 11.5	-0.6
LADK	Ladik-KONYA	1.11	226	*e*PN	Pg	05 30 57.5	-1.0
LADK	Ladik-KONYA	1.11	226	*e*Pn	Pg	05 30 57.5	-1.0
AVNS	Nevsehir-Avano	1.16	98	P	Pg	05 30 58.1	-1.4
AVNS				S	Sb	05 31 14.4	+0.1
AVNS	Nevsehir-Avano	1.16	98	*i* P	Pg	05 30 58.1	-1.4
AVNS				*i* S	Sb	05 31 14.4	+0.1
KIZT	Kizilcal	1.17	266	*e*PN	Pn	05 30 59.1	-0.4
KIZT	Kizilcal	1.17	266	*e*Pn	Pn	05 30 59.1	-0.4
NIG	Nigde	1.29	131	*e*PN	Pg	05 31 01.7	-0.3
NIG	Nigde	1.29	131	*e*Pn	Pg	05 31 01.7	-0.3
KONT	Konya--Tatoy	1.30	218	*e*PN	Pb	05 31 00.9	-0.7
KONT	Konya--Tatoy	1.30	218	*e*Pn	Pb	05 31 00.9	-0.7
KMER	Konya-Meram	1.44	214	P	Pg	05 31 03.8	-1.0
KMER				S	Sg	05 31 24.1	+0.5
KMER	Konya-Meram	1.44	214	*i* P	Pg	05 31 03.8	-1.0
KMER				*i* S	Sg	05 31 24.1	+0.5
ELDT	Eldivan	1.52	1	P	Pb	05 31 05.3	0.0
ELDT				S	Sg	05 31 27.0	+1.1
ELDT	Eldivan	1.52	1	*i* P	Pb	05 31 05.3	0.0
ELDT				*i* S	Sg	05 31 27.0	+1.1
SVRH	Sivrihisar-ESK	1.52	289	*e*PN	Pb	05 31 04.9	-0.4
SVRH	Sivrihisar-ESK	1.52	289	*e*Pn	Pb	05 31 04.9	-0.4
CORM	Corum	1.54	38	*e*PN	Pb	05 31 05.5	-0.3
CORM	Corum	1.54	38	*e*Pn	Pb	05 31 05.5	-0.3
CANT	Cankiri	1.64	6	*e*PN	Pn	05 31 06.2	+0.2
KERG	Konya-Eregli	1.66	159	P	Pb	05 31 07.3	-0.6
KERG	Konya-Eregli	1.66	159	*i* P	Pb	05 31 07.3	-0.6
COAL	Corum-Alaca	1.78	44	P	Pb	05 31 09.5	-0.4
COAL				S	Sg	05 31 35.1	+0.6
COAL	Corum-Alaca	1.78	44	*i* P	Pb	05 31 09.5	-0.4
COAL				*i* S	Sg	05 31 35.1	+0.6
BOLV	Bolvadin	1.91	263	P	Pb	05 31 11.4	-0.7
BOLV				S	Sg	05 31 37.9	-0.8
BOLV	Bolvadin	1.91	263	*i* P	Pb	05 31 11.4	-0.7
BOLV				*i* S	Sg	05 31 37.9	-0.8
BNN	Bunyan	1.93	93	*e*PN	Pn	05 31 10.7	+0.7
BNN	Bunyan	1.93	93	*e*Pn	Pn	05 31 10.7	+0.7
GULE	Gulek	2.02	146	P	Pb	05 31 14.0	+0.1
GULE				S	Sg	05 31 48.0	+6.1
GULE	Gulek	2.02	146	*i* P	Pb	05 31 14.0	+0.1
GULE				*i* S	Sg	05 31 48.0	+6.1
ESKT	Eskisehir	2.04	286	*i* P	Pb	05 31 13.2	-1.0
SEYT	Eskypehyr	2.04	286	P	Pb	05 31 13.2	-1.0
ILGA	Ilgaz	2.09	7	P	Pb	05 31 13.9	-1.3
ILGA				S	Sb	05 31 41.7	+0.4
ILGA	Ilgaz	2.09	7	*i* P	Pb	05 31 13.9	-1.3
ILGA				*i* S	Sb	05 31 41.6	+0.4
BCAM	Yenicaga	2.10	332	P	Pn	05 31 13.1	+0.8
BCAM				S	Sb	05 31 40.7	-0.6
BCAM	Yenicaga	2.10	332	*i* P	Pn	05 31 13.1	+0.8
BCAM				*i* S	Sb	05 31 40.7	-0.6
AKO	Adana	2.22	132	*i* P	Pg	05 31 18.1	-1.6

AKS	**Akhisar**	**0.98**	**257**	*e*Pg	**Pb**	**05 39 36.7**	**+0.1**
BALB	**Balikesir**	**1.04**	**301**	*e*PN	**Pn**	**05 39 38.2**	**0.0**
BALB	**Balikesir**	**1.04**	**301**	*e*Pn	**Pn**	**05 39 38.3**	**0.0**
IGD	**Bursa**	**1.16**	**6**	*i* P	**Pg**	**05 39 38.7**	**-0.6**
IGD				*i* S	**Sb**	**05 39 54.8**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.26**	**355**	*e*PN	**Pg**	**05 39 41.8**	**+0.6**
MDNY	**Mudanya-Bursa**	**1.26**	**355**	*e*Pn	**Pg**	**05 39 41.8**	**+0.6**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*PN	**Pg**	**05 39 42.1**	**+0.8**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*Pn	**Pg**	**05 39 42.2**	**+0.8**
IZI	**Iznik**	**1.27**	**15**	*e*PN	**Pb**	**05 39 41.4**	**-0.1**
IZI	**Iznik**	**1.27**	**15**	*e*Pn	**Pb**	**05 39 41.4**	**-0.1**
GEMT	**Gemlik**	**1.33**	**5**	*e*PN	**Pg**	**05 39 42.5**	**0.0**
GEMT	**Gemlik**	**1.33**	**5**	*e*Pn	**Pg**	**05 39 42.5**	**0.0**
BORA	**Eskisehir**	**1.34**	**54**	P	**Pn**	**05 39 42.0**	**-0.4**
BORA				S	**Sn**	**05 40 00.9**	**+0.2**
BORA	**Eskisehir**	**1.34**	**54**	*i* P	**Pn**	**05 39 42.0**	**-0.4**
BORA				*i* S	**Sn**	**05 40 00.9**	**+0.2**
GONE	**Gonen-Balikesi**	**1.41**	**312**	*e*PN	**Pg**	**05 39 44.0**	**+0.1**
GONE	**Gonen-Balikesi**	**1.41**	**312**	*e*Pn	**Pg**	**05 39 44.0**	**+0.1**
ADVT	**Abdulvahap**	**1.43**	**22**	*e*PN	**Pb**	**05 39 43.6**	**-0.5**
ADVT	**Abdulvahap**	**1.43**	**22**	*e*Pn	**Pb**	**05 39 43.6**	**-0.5**
ARMT	**Armutlu**	**1.46**	**355**	*e*PN	**Pb**	**05 39 44.5**	**-0.2**
ARMT	**Armutlu**	**1.46**	**355**	*e*Pn	**Pb**	**05 39 44.5**	**-0.2**
ESKT	**Eskisehir**	**1.46**	**73**	*i* P	**Pn**	**05 39 44.0**	**-0.2**
ESKT				*i* S	**Sg**	**05 40 03.5**	**-0.5**
SEYT	**Eskypehyr**	**1.46**	**73**	P	**Pn**	**05 39 44.0**	**-0.2**
SEYT				S	**Sg**	**05 40 03.5**	**-0.5**
GPA	**Golpazari**	**1.53**	**39**	*e*PN	**Pn**	**05 39 44.7**	**-0.4**
GPA	**Golpazari**	**1.53**	**39**	*e*Pn	**Pn**	**05 39 44.7**	**-0.4**
GULT	**Gulveren**	**1.74**	**40**	*e*PN	**Pn**	**05 39 47.6**	**-0.3**
GULT	**Gulveren**	**1.74**	**40**	*e*Pn	**Pn**	**05 39 47.7**	**-0.3**

ISCJB ***28*** *05:40:18.8±0.5, 39°.11N±0°.03×29°.06E±0°.03, h2km±6km, Error ellipse: s-maj=5.3km s-min=3.6km az=175.5*
ISK ***28*** *05:40:18.9, 39°.13N×29°.07E, h5km, ML2.5*
DDA ***28*** *05:40:18.3, 39°.11N×29°.06E, h7km, Ml3.0*
CSEM ***28*** *05:40:19.1±0.1, 39°.12N×29°.06E, h2km, ML3.0, Error ellipse: s-maj=1.6km s-min=1.3km az=171.0*

ISC 28 05:40:19.0±0.9, 39°.11N±0°.02×29°.07E±0°.02, h11km±8km, n43, σ0s34/60, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**257**	P	**Pg**	**05 40 24.4**	**-0.3**
DEMI				S	**Sg**	**05 40 28.4**	**-0.1**
DEMI	**Demirci**	**0.28**	**257**	*i* P	**Pg**	**05 40 24.4**	**-0.3**
DEMI				*i* S	**Sg**	**05 40 28.4**	**-0.1**
GDZ	**Gediz**	**0.32**	**93**	P	**Pg**	**05 40 25.6**	**+0.1**
GDZ				S	**Sg**	**05 40 30.4**	**+0.5**
GDZ	**Gediz**	**0.32**	**93**	*i* P	**Pg**	**05 40 25.6**	**+0.1**
GDZ				*i* S	**Sg**	**05 40 30.4**	**+0.5**
TVSB	**Tavsanli**	**0.46**	**42**	*e*PG	**Pg**	**05 40 27.8**	**-0.2**
TVSB				*e*SG	**Sg**	**05 40 34.1**	**-0.1**
TVSB	**Tavsanli**	**0.46**	**42**	*e*Pg	**Pg**	**05 40 27.8**	**-0.2**
TVSB				*e*Sg	**Sg**	**05 40 34.1**	**-0.1**
KHAL	**Karahalli**	**0.81**	**155**	P	**Pb**	**05 40 35.3**	**+0.2**
KHAL				S	**Sg**	**05 40 45.2**	**+0.1**
KHAL	**Karahalli**	**0.81**	**155**	*i* P	**Pb**	**05 40 35.3**	**+0.2**
KHAL				*i* S	**Sg**	**05 40 45.2**	**+0.1**
KHL	**Karahalli**	**0.86**	**155**	*e*PG	**Pb**	**05 40 36.1**	**+0.2**
KHL	**Karahalli**	**0.86**	**155**	*e*Pg	**Pb**	**05 40 36.1**	**+0.2**
AKHS	**Akhisar**	**1.00**	**257**	P	**Pg**	**05 40 38.1**	**-0.1**
AKHS				S	**Sb**	**05 40 51.6**	**+0.1**
AKHS	**Akhisar**	**1.00**	**257**	*i* P	**Pg**	**05 40 38.1**	**-0.1**
AKHS				*i* S	**Sb**	**05 40 51.6**	**+0.1**
AKS	**Akhisar**	**1.00**	**257**	*e*PG	**Pb**	**05 40 38.4**	**+0.1**
AKS	**Akhisar**	**1.00**	**257**	*e*Pg	**Pb**	**05 40 38.4**	**+0.1**
BALB	**Balikesir**	**1.06**	**300**	*e*PG	**Pb**	**05 40 39.5**	**+0.1**
BALB				*e*SG	**Sn**	**05 40 54.4**	**-0.2**
BALB	**Balikesir**	**1.06**	**300**	*e*Pg	**Pb**	**05 40 39.5**	**+0.1**
BALB				*e*Sg	**Sn**	**05 40 54.4**	**-0.2**
IGD	**Bursa**	**1.16**	**5**	*i* P	**Pb**	**05 40 40.0**	**-1.1**
IGD				*i* S	**Sg**	**05 40 56.4**	**0.0**
IZI	**Iznik**	**1.27**	**14**	*e*PN	**Pg**	**05 40 43.4**	**+0.1**
IZI	**Iznik**	**1.27**	**14**	*e*Pn	**Pg**	**05 40 43.4**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.27**	**354**	*e*PN	**Pg**	**05 40 43.4**	**0.0**
MDNY	**Mudanya-Bursa**	**1.27**	**354**	*e*Pn	**Pg**	**05 40 43.4**	**0.0**
KCTX	**Karacabey (Bur**	**1.28**	**335**	*e*PN	**Pg**	**05 40 43.6**	**0.0**
KCTX	**Karacabey (Bur**	**1.28**	**335**	*e*Pn	**Pg**	**05 40 43.6**	**0.0**
BORA	**Eskisehir**	**1.32**	**54**	P	**Pn**	**05 40 43.5**	**0.0**
BORA				S	**Sg**	**05 41 02.3**	**+0.7**
BORA	**Eskisehir**	**1.32**	**54**	*i* P	**Pn**	**05 40 43.5**	**0.0**
BORA				*i* S	**Sg**	**05 41 02.3**	**+0.7**
GEMT	**Gemlik**	**1.33**	**4**	*e*PN	**Pg**	**05 40 44.6**	**+0.1**
GEMT	**Gemlik**	**1.33**	**4**	*e*Pn	**Pg**	**05 40 44.6**	**+0.1**
GONE	**Gonen-Balikesi**	**1.42**	**312**	*e*PN	**Pb**	**05 40 45.9**	**+0.4**
GONE	**Gonen-Balikesi**	**1.42**	**312**	*e*Pn	**Pb**	**05 40 45.9**	**+0.4**
ADVT	**Abdulvahap**	**1.42**	**21**	*e*PN	**Pb**	**05 40 45.9**	**+0.4**
ADVT	**Abdulvahap**	**1.42**	**21**	*e*Pn	**Pb**	**05 40 45.9**	**+0.4**
ESKT	**Eskisehir**	**1.44**	**73**	*i* P	**Pb**	**05 40 45.9**	**0.0**
ESKT				*i* S	**Sg**	**05 41 05.2**	**-0.2**
SEYT	**Eskypehyr**	**1.44**	**73**	P	**Pb**	**05 40 45.9**	**0.0**
SEYT				S	**Sg**	**05 41 05.2**	**-0.2**
ARMT	**Armutlu**	**1.47**	**354**	*e*PN	**Pb**	**05 40 46.5**	**+0.2**
ARMT	**Armutlu**	**1.47**	**354**	*e*Pn	**Pb**	**05 40 46.5**	**+0.2**
GPA	**Golpazari**	**1.52**	**39**	*e*PN	**Pb**	**05 40 47.4**	**+0.2**
GPA	**Golpazari**	**1.52**	**39**	*e*Pn	**Pb**	**05 40 47.4**	**+0.2**
EDC	**Edincik**	**1.55**	**324**	*e*PN	**Pb**	**05 40 47.7**	**0.0**
EDC	**Edincik**	**1.55**	**324**	*e*Pn	**Pb**	**05 40 47.7**	**0.0**
GULT	**Gulveren**	**1.73**	**40**	*e*PN	**Pb**	**05 40 50.4**	**-0.5**
GULT	**Gulveren**	**1.73**	**40**	*e*Pn	**Pb**	**05 40 50.4**	**-0.5**
SVRH	**Sivrihisar-ESK**	**1.94**	**79**	*e*PN	**Pb**	**05 40 53.4**	**-0.9**
SVRH	**Sivrihisar-ESK**	**1.94**	**79**	*e*Pn	**Pb**	**05 40 53.4**	**-0.9**

KRSC 28 05:44:42.2±0.4, 55°.19N×160°.42E, h0km±1km, ML3.9, Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TUMD	**Tumrok D**	**0.02**	**326**	*e*P	Pg	05 44 42.8	+0.2
TUMD				*e*S	Sg	05 44 43.7	+0.8
KZV	**Kizimen**	**0.10**	**225**	*e*P	Pg	05 44 44.0	-0.1
TUMR	**Tumrok**	**0.19**	**302**	*e*P	Pg	05 44 46.3	+0.6
KMNR	**Kamenistaya**	**0.58**	**350**	*e*P	Pg	05 44 54.1	+0.8
KMNR				*e*S	Sb	05 45 03.7	-0.5
BZMR	**Bezymyannaya**	**0.75**	**3**	*e*P	Pg	05 44 57.1	+0.5
BZMR				*e*S	Sb	05 45 10.0	+0.9
KIRR	**Kirishev**	**0.77**	**357**	*e*P	Pg	05 44 57.3	+0.4
KIRR				*e*S	Sb	05 45 09.8	+0.2
KPT	**Kopyto**	**0.79**	**352**	*e*P	Pg	05 44 57.9	+0.6
KPT				*e*S	Sb	05 45 10.1	-0.1
ZLN	**Zelenaya**	**0.86**	**14**	*e*P	Pb	05 44 59.5	-0.6
ZLN				*e*S	Sn	05 45 13.9	-1.1
LGNR	**Loginova**	**0.91**	**9**	*e*P	Pb	05 45 00.8	-0.2
LGNR				*e*S	Sn	05 45 16.8	+0.3
KOZ	**Kozyrevsk**	**0.93**	**341**	*e*P	Pb	05 45 01.5	+0.3
KOZ				*e*S	Sn	05 45 19.6	+3.1
CIRR	**Tsirk**	**0.95**	**11**	*e*P	Pb	05 45 01.3	-0.3
CIRR				S	Sn	05 45 17.2	-0.1
MKZ	**Mys Kozlova**	**0.98**	**129**	*e*P	Pg	05 45 00.9	-0.1
MKZ				*e*S	Sb	05 45 15.5	0.0
KRSR	**Krestovskiy**	**1.04**	**4**	*e*P	Pg	05 45 01.2	-0.8
KLY	**Klyuchi**	**1.14**	**6**	*e*P	Pg	05 45 03.7	-0.3
KLY				*e*S	Sn	05 45 23.0	+1.4
ESO	**Esso**	**1.23**	**308**	*e*P	Pg	05 45 04.4	-1.3
ESO				*e*S	Sb	05 45 23.1	+0.5
BDR	**Baidarnaya**	**1.46**	**17**	*e*P	Pn	05 45 09.9	+0.1
BDR				*e*S	Sn	05 45 32.6	+3.0
SMKR	**Semkarok**	**1.52**	**22**	*e*P	Pb	05 45 11.0	-0.3
SMKR				*e*S	Sn	05 45 34.4	+3.2
SRKR	**Sorokina**	**1.53**	**16**	*e*P	Pn	05 45 10.8	0.0
SRKR				*e*S	Sn	05 45 34.2	+2.7
GNL	**Ganaly**	**2.08**	**225**	*e*P	Pn	05 45 18.5	+0.1
KRX	**Arik**	**2.10**	**210**	*e*P	Pn	05 45 19.8	+1.1
SDLR	**Sedlovina**	**2.11**	**206**	*e*P	Pn	05 45 19.5	+0.7
KRER	**Koryakskii**	**2.12**	**208**	*e*P	Pn	05 45 20.0	+0.9
SMAR	**Somma**	**2.15**	**207**	P	Pn	05 45 20.5	+1.1
AVH	**Avacha**	**2.16**	**208**	*e*P	Pb	05 45 21.0	-1.2
KOK	**Koryaka**	**2.17**	**210**	*e*P	Pb	05 45 22.9	+0.6
UGLR	**Uglovaya**	**2.19**	**206**	*e*P	Pn	05 45 20.9	+1.0
PET	**Petropavlovsk**	**2.40**	**206**	P	Pb	05 45 26.4	+0.2
PET				*e*S	Sg	05 46 00.5	+1.2
RUS	**Russkaya**	**2.98**	**203**	*e*P	Pb	05 45 33.9	-2.2
RUS				*e*S	Sb	05 46 12.4	-0.6

DDA ***28*** *05:47:16.7, 39°.12N×29°.04E, h23km, Ml4.7*

HLW ***28*** *05:47:16.8, 39°.21N×28°.95E, h33km±22km, Ml4.4*
IDC ***28*** *05:47:16.0±0.4, 39°.08N×29°.08E, h0km, mb4.5/30, mb1 4.6/42, mb1mx4.5/52, mbtmp4.5/42, ML4.0/11, MS4.2/38, Ms1 4.2/38, ms1mx4.1/55, Error ellipse: s-maj=10.0km s-min=8.8km az=169.0*
ISCJB ***28*** *05:47:17.9±0.2, 39°.095N±0°.010×29°.03E±0°.01, h20km±2km, mb4.8/149, MS4.2/39, Error ellipse: s-maj=1.7km s-min=1.4km az=32.0*
NEIC ***28*** *05:47:17.0, 39°.12N×29°.05E, h9km, mb4.9/96, MW4.8, ML5.0(ISK), Moment Tensor Solution. s18 Moment tensor: Scale 10^16 Nm; Mrr=1.57; Mθθ=1.95; Mφφ=-0.38; Mrθ=0.40; Mθφ=-1.27; Mφr=0.21; Best double couple: M0=2.20000×10^16 NP1:φs=296.00000°, δ51.00000°, λ=-86.00000°. NP2:φs=111.00000°, δ39.00000°, λ=-94.00000°. Principal axes: T 2.5600, Plg6.0000°, Azm24.0000°; N -0.9300, Plg3.0000°, Azm114.0000°; P -1.6200, Plg83.0000°, Azm228.0000°; After ISK.*
NEIC Felt [IV] at Bursa and [II] at Simav. Also felt at Istanbul, Izmir, Kocaeli and Mudanya.
PDG ***28*** *05:47:17.6±0.5, 39°.13N×29°.03E, h15km, ML4.7/13 Error ellipse: s-maj=0.4km s-min=0.5km az=0.0*
ISK ***28*** *05:47:17.0, 39°.11N×29°.02E, h8km, ML5.0*
GCMT ***28*** *05:47:17.0±0.2, 39°.09N×29°.04E, h14km, MW5.1/92, Moment Tensor Solution. s48,c60; s92,c144; Duration: 0 Moment tensor: Scale 10^16 Nm; Mrr=4.36±.20; Mθθ=3.68±.14; Mφφ=0.67±.13; Mrθ=-1.07±.25; Mθφ=-2.03±.09; Mφr=-1.06±.32; Best double couple: M0=4.78400×10^16 NP1:φs=100.00000°, δ51.00000°, λ=113.00000°. NP2: φs=314.00000°, δ45.00000°, λ=-65.00000°. Principal axes: T 4.7300, Plg3.0000°, Azm206.0000°; N 0.1060, Plg18.0000°, Azm115.0000°; P -4.8380, Plg72.0000°, Azm306.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
MOS ***28*** *05:47:17.3±0.9, 39°.14N×29°.07E, h14km, mb5.1/61, MS4.2/34 Error ellipse: s-maj=4.2km s-min=3.2km az=89.3*
CSEM ***28*** *05:47:18.1±0.0, 39°.11N×29°.04E, h10km, mb5.0/99, Mw5.0, Error ellipse: s-maj=1.6km s-min=1.4km az=27.0*
THE ***28*** *05:47:18.8, 39°.10N×28°.97E, h1km±2km, Error ellipse: s-maj=2.8km s-min=0.5km az=63.0*
NIC ***28*** *05:47:21.5±0.2, 39°.05N×29°.02E, h25km, mb5.0, ML4.7*
GII ***28*** *05:47:22.3±0.0, 38°.94N×29°.11E, h28km, mb4.3/1, MD4.2/1*

ISC 28 05:47:18.4±0.7, 39°.13N±0°.01×29°.00E±0°.01, h13km±4km, n1262, σ1s54/1396, mb4.9/149, MS4.3/40, 88C-59D, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.23**	**248**	P	**Pg**	**05 47 22.8**	**-0.7**
DEMI				S	**Sg**	**05 47 26.5**	**-0.5**
DEMI	**Demirci**	**0.23**	**248**	⇑*i*P	**Pg**	**05 47 22.8**	**-0.7**
DEMI				*i* S	**Sg**	**05 47 26.4**	**-0.5**
GDZ	**Gediz**	**0.38**	**96**	P	**Pg**	**05 47 24.5**	**-1.6**
GDZ				S	**Sg**	**05 47 29.7**	**-1.7**
GDZ	**Gediz**	**0.38**	**96**	⇑*i*P	**Pg**	**05 47 24.5**	**-1.6**
GDZ				*i* S	**Sg**	**05 47 29.7**	**-1.7**
TVSB	**Tavsanli**	**0.48**	**49**	*e*PG	**Pg**	**05 47 26.6**	**-1.3**
TVSB	**Tavsanli**	**0.48**	**49**	*e*Pg	**Pg**	**05 47 26.7**	**-1.3**
KULA	**Kula-Manisa**	**0.67**	**203**	*e*PG	**Pg**	**05 47 30.2**	**-1.3**
KULA	**Kula-Manisa**	**0.67**	**203**	P	**Pg**	**05 47 30.4**	**-1.1**
KULA				S	**Sg**	**05 47 40.2**	**-0.2**
KULA	**Kula-Manisa**	**0.67**	**203**	*e*Pg	**Pg**	**05 47 30.2**	**-1.3**
KULA				S	**Sg**	**05 47 40.2**	**-0.2**
KULA	**Kula-Manisa**	**0.67**	**203**	P	**Pg**	**05 47 30.2**	**-1.3**
KHAL	**Karahalli**	**0.85**	**153**	P	**Pg**	**05 47 33.4**	**-1.6**
KHAL				S	**Sg**	**05 47 44.3**	**-1.9**
KHAL	**Karahalli**	**0.85**	**153**	⇑*i*P	**Pg**	**05 47 33.4**	**-1.6**
KHAL				*i* S	**Sg**	**05 47 44.4**	**-1.9**
KHL	**Karahalli**	**0.91**	**153**	*e*PG	**Pb**	**05 47 34.3**	**-1.8**
KHL	**Karahalli**	**0.91**	**153**	*e*Pg	**Pb**	**05 47 34.3**	**-1.8**
AKHS	**Akhisar**	**0.95**	**255**	P	**Pb**	**05 47 36.4**	**-0.4**
AKHS				S	**Sb**	**05 47 49.7**	**+0.3**
AKHS	**Akhisar**	**0.95**	**255**	⇑*i*P	**Pb**	**05 47 36.4**	**-0.4**
AKHS				*i* S	**Sb**	**05 47 49.7**	**+0.3**
AKS	**Akhisar**	**0.95**	**255**	*e*PG	**Pb**	**05 47 36.1**	**-0.7**
AKS	**Akhisar**	**0.95**	**255**	*e*Pg	**Pb**	**05 47 36.1**	**-0.7**
BALB	**Balikesir**	**1.00**	**301**	*e*PG	**Pb**	**05 47 37.1**	**-0.5**
BALB				*e*SG	**Sn**	**05 47 51.8**	**-0.3**
BALB	**Balikesir**	**1.00**	**301**	*e*Pg	**Pb**	**05 47 37.1**	**-0.5**
BALB				*e*Sg	**Sn**	**05 47 51.8**	**-0.3**
IGD	**Bursa**	**1.14**	**8**	⇑*i*P	**Pb**	**05 47 37.9**	**-2.1**
IGD				*i* S	**Sn**	**05 47 55.1**	**-0.4**
BALY	**Balya**	**1.23**	**300**	P	**Pn**	**05 47 41.4**	**+0.1**
BALY				S	**Sg**	**05 48 00.0**	**+2.0**
BALY	**Balya**	**1.23**	**300**	⇑*i*P	**Pn**	**05 47 41.4**	**+0.1**
BALY				*i* S	**Sg**	**05 47 60.0**	**+2.0**
KCTX	**Karacabey (Bur**	**1.23**	**337**	*e*PN	**Pb**	**05 47 41.4**	**-0.2**
KCTX	**Karacabey (Bur**	**1.23**	**337**	*e*Pn	**Pb**	**05 47 41.4**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.24**	**356**	*e*PN	**Pb**	**05 47 41.4**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.24**	**356**	*e*Pn	**Pb**	**05 47 41.4**	**-0.2**
IZI	**Iznik**	**1.26**	**17**	*e*PN	**Pn**	**05 47 41.5**	**-0.3**
IZI	**Iznik**	**1.26**	**17**	*e*Pn	**Pn**	**05 47 41.5**	**-0.3**
GEMT	**Gemlik**	**1.31**	**6**	*e*PN	**Pn**	**05 47 42.3**	**-0.1**
GEMT	**Gemlik**	**1.31**	**6**	*e*Pn	**Pn**	**05 47 42.3**	**-0.1**
BORA	**Eskisehir**	**1.35**	**56**	P	**Pn**	**05 47 42.0**	**-1.1**
BORA				S	**Sg**	**05 48 00.8**	**-1.2**
BORA	**Eskisehir**	**1.35**	**56**	⇑*i*P	**Pn**	**05 47 42.0**	**-1.1**
BORA				*i* S	**Sg**	**05 48 00.8**	**-1.2**
GONE	**Gonen-Balikesi**	**1.36**	**312**	*e*PN	**Pn**	**05 47 43.2**	**+0.2**
GONE	**Gonen-Balikesi**	**1.36**	**312**	*e*Pn	**Pn**	**05 47 43.3**	**+0.2**
DENT	**Denizli**	**1.38**	**179**	*e*PN	**Pn**	**05 47 42.4**	**-0.9**
DENT	**Denizli**	**1.38**	**179**	*e*Pn	**Pn**	**05 47 42.4**	**-0.9**
ADVT	**Abdulvahap**	**1.42**	**24**	*e*PN	**Pn**	**05 47 43.8**	**-0.1**
ADVT	**Abdulvahap**	**1.42**	**24**	*e*Pn	**Pn**	**05 47 43.8**	**-0.1**
ARMT	**Armutlu**	**1.44**	**356**	*e*PN	**Pn**	**05 47 44.2**	**0.0**
ARMT	**Armutlu**	**1.44**	**356**	*e*Pn	**Pn**	**05 47 44.2**	**0.0**
DNZL	**Cakiroluk**	**1.44**	**178**	P	**Pn**	**05 47 43.5**	**-0.9**
DNZL				S	**Sg**	**05 48 07.0**	**+2.1**
DNZL	**Cakiroluk**	**1.44**	**178**	⇓*i*P	**Pn**	**05 47 43.5**	**-0.9**
DNZL				*i* S	**Sg**	**05 48 07.0**	**+2.1**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**217**	*e*PN	**Pn**	**05 47 44.4**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**217**	*e*Pn	**Pn**	**05 47 44.4**	**-0.3**
ESKT	**Eskisehir**	**1.49**	**74**	⇑*i*P	**Pn**	**05 47 44.0**	**-1.0**
SEYT	**Eskypehyr**	**1.49**	**74**	P	**Pn**	**05 47 44.0**	**-1.0**
EDC	**Edincik**	**1.49**	**325**	*e*PN	**Pn**	**05 47 45.1**	**+0.2**
EDC	**Edincik**	**1.49**	**325**	*e*Pn	**Pn**	**05 47 45.1**	**+0.2**
GPA	**Golpazari**	**1.54**	**41**	*e*PN	**Pn**	**05 47 45.4**	**-0.2**
GPA	**Golpazari**	**1.54**	**41**	*e*Pn	**Pn**	**05 47 45.4**	**-0.2**
BOLV	**Bolvadin**	**1.58**	**105**	P	**Pn**	**05 47 46.1**	**-0.1**
BOLV				S	**Sb**	**05 48 07.4**	**-0.1**
BOLV	**Bolvadin**	**1.58**	**105**	⇓*i*P	**Pn**	**05 47 46.1**	**-0.1**
BOLV				*i* S	**Sb**	**05 48 07.4**	**-0.1**
KNL	**Bal¨–kesir**	**1.60**	**316**	⇓*i*P	**Pn**	**05 47 45.7**	**-0.8**
KNL				*i* S	**Sb**	**05 48 08.4**	**+0.4**
DKL	**Dikili**	**1.63**	**268**	*e*PN	**Pn**	**05 47 46.9**	**+0.2**
DKL	**Dikili**	**1.63**	**268**	*e*Pn	**Pn**	**05 47 46.9**	**+0.2**
AYDN	**Tasoluk**	**1.71**	**211**	P	**Pn**	**05 47 47.5**	**-0.5**
AYDN				S	**Sg**	**05 48 13.3**	**-0.2**
AYDN	**Tasoluk**	**1.71**	**211**	⇓*i*P	**Pn**	**05 47 47.5**	**-0.5**
AYDN				*i* S	**Sg**	**05 48 13.3**	**-0.2**
BUY	**Buyukada**	**1.72**	**3**	P	**Pn**	**05 47 47.7**	**-0.3**
BUY				S	**Sb**	**05 48 10.6**	**-0.8**
BUY	**Buyukada**	**1.72**	**3**	⇑*i*P	**Pn**	**05 47 47.7**	**-0.3**
BUY				*i* S	**Sb**	**05 48 10.6**	**-0.8**
GULT	**Gulveren**	**1.75**	**42**	*e*PN	**Pn**	**05 47 48.4**	**-0.1**
GULT	**Gulveren**	**1.75**	**42**	*e*Pn	**Pn**	**05 47 48.4**	**-0.1**
HRT	**Hereke**	**1.76**	**17**	*e*PN	**Pn**	**05 47 48.7**	**0.0**
HRT	**Hereke**	**1.76**	**17**	*e*Pn	**Pn**	**05 47 48.7**	**0.0**
ISP	**Isparta**	**1.77**	**137**	*e*PN	**Pn**	**05 47 48.3**	**-0.6**
ISP	**Isparta**	**1.77**	**137**	⇑*i*P	**Pn**	**05 47 47.6**	**-1.3**
ISP	**Isparta**	**1.77**	**137**	P	**Pn**	**05 47 48.3**	**-0.6**
ISP	**Isparta**	**1.77**	**137**	Pn	**Pn**	**05 47 47.4**	**-1.5**
ISP	**Isparta**	**1.77**	**137**	*e*P	**Pn**	**05 47 47.8**	**-1.1**
ISP				*e*		05 48 14.9	
ISP	**Isparta**	**1.77**	**137**	*e*Pn	**Pn**	**05 47 47.8**	**-1.1**
ISP	**Isparta**	**1.77**	**137**	P	**Pn**	**05 47 48.3**	**-0.6**
ISP				*e*S	**Sg**	**05 48 14.9**	**-0.6**
ISP	**Isparta**	**1.77**	**137**	*e*Pn	**Pn**	**05 47 47.8**	**-1.1**
ISP				*e*Sn	**Sg**	**05 48 14.9**	**-0.6**
AYVA	**Ayvalik**	**1.80**	**276**	P	**Pn**	**05 47 49.3**	**+0.2**
AYVA				S	**Sg**	**05 48 16.2**	**-0.1**
AYVA	**Ayvalik**	**1.80**	**276**	⇓*i*P	**Pn**	**05 47 49.4**	**+0.2**
AYVA				*i* S	**Sg**	**05 48 16.2**	**-0.1**
BAGO	**Egridir - ISPA**	**1.81**	**128**	⇓*i*P	**Pn**	**05 47 48.7**	**-0.6**
BAGO				*i* S	**Sg**	**05 48 18.8**	**+2.2**
KRBG	**Karabiga-Canak**	**1.82**	**314**	*e*PN	**Pn**	**05 47 49.8**	**+0.5**
KRBG	**Karabiga-Canak**	**1.82**	**314**	*e*Pn	**Pn**	**05 47 49.8**	**+0.5**
MRMT	**Marmara Adasi**	**1.82**	**324**	*e*PN	**Pn**	**05 47 49.8**	**+0.3**
MRMT	**Marmara Adasi**	**1.82**	**324**	*e*Pn	**Pn**	**05 47 49.8**	**+0.3**
SPNC	**Sapanca-Adapaz**	**1.85**	**33**	*e*PN	**Pn**	**05 47 49.8**	**0.0**
SPNC	**Sapanca-Adapaz**	**1.85**	**33**	*e*Pn	**Pn**	**05 47 49.8**	**0.0**
ISK	**Istanbul-Kandi**	**1.93**	**1**	*e*PN	**Pn**	**05 47 51.4**	**+0.5**
ISK	**Istanbul-Kandi**	**1.93**	**1**	P	**Pn**	**05 47 51.3**	**+0.4**
ISK	**Istanbul-Kandi**	**1.93**	**1**	P	**Pb**	**05 47 53.2**	**-0.3**
ISK	**Istanbul-Kandi**	**1.93**	**1**	*e*Pn	**Pn**	**05 47 51.4**	**+0.5**
ISK	**Istanbul-Kandi**	**1.93**	**1**	P	**Pb**	**05 47 53.2**	**-0.3**
GOLH	**Golhisar**	**1.94**	**167**	P	**Pn**	**05 47 51.1**	**-0.1**
GOLH				S	**Sg**	**05 48 24.9**	**+3.9**
GOLH	**Golhisar**	**1.94**	**167**	⇓*i*P	**Pn**	**05 47 51.1**	**-0.1**
GOLH				*i* S	**Sg**	**05 48 24.9**	**+3.9**
DGB	**¯zmir**	**1.98**	**238**	⇓*i*P	**Pn**	**05 47 50.8**	**-0.7**
DGB				*i* S	**Sb**	**05 48 19.6**	**+0.9**
SVRH	**Sivrihisar-ESK**	**1.99**	**80**	*e*PN	**Pn**	**05 47 51.4**	**-0.4**
SVRH	**Sivrihisar-ESK**	**1.99**	**80**	*e*Pn	**Pn**	**05 47 51.4**	**-0.4**
GCAM	**G?zelcaml?**	**1.99**	**225**	P	**Pn**	**05 47 50.8**	**-0.9**
GCAM				S	**Sg**	**05 48 22.5**	**+0.1**
GCAM	**G?zelcaml?**	**1.99**	**225**	⇓*i*P	**Pn**	**05 47 50.8**	**-0.9**
GCAM				*i* S	**Sg**	**05 48 22.5**	**+0.1**
GLHS	**Gihisar (BURDU**	**2.01**	**168**	*e*PN	**Pn**	**05 47 51.8**	**-0.4**
GLHS	**Gihisar (BURDU**	**2.01**	**168**	*e*Pn	**Pn**	**05 47 51.8**	**-0.4**
URLA	**Izmir**	**2.03**	**248**	P	**Pn**	**05 47 51.6**	**-0.7**
URLA				S	**Sg**	**05 48 23.2**	**-0.5**
URLA	**Izmir**	**2.03**	**248**	⇓*i*P	**Pn**	**05 47 51.6**	**-0.7**
URLA				*i* S	**Sg**	**05 48 23.2**	**-0.5**
BGKT	**Bogazkoy**	**2.05**	**355**	*e*PN	**Pn**	**05 47 52.2**	**-0

KONT	Konya--Tatoy	2.89	113	ePN	Pn	05 48 04.3	+0.1
KONT	Konya--Tatoy	2.89	113	ePn	Pn	05 48 04.3	+0.1
BCAM	Yenicaga	2.90	54	P	Pn	05 48 04.1	-0.2
BCAM				S	Sg	05 48 56.8	+5.3
BCAM	Yenicaga	2.90	54	⇑iP	Pn	05 48 04.1	-0.2
BCAM				iS	Sg	05 48 56.8	+5.3
NIS1	Nisyros Isl.	2.91	210	ePN	Pn	05 48 04.7	+0.3
NIS1	Nisyros Isl.	2.91	210	P	Pn	05 48 04.4	0.0
NIS1	Nisyros Isl.	2.91	210	P	Pn	05 48 04.4	0.0
NIS1	Nisyros Isl.	2.91	210	ePn	Pn	05 48 04.7	+0.3
NISR	Nisiros	2.92	211	P	Pn	05 48 04.6	+0.1
NISR	Nisiros	2.92	211	P	Pn	05 48 04.6	+0.1
AKAS	Kas	2.94	170	P	Pn	05 48 05.5	+0.6
AKAS				S	Sg	05 48 53.1	+0.4
AKAS	Kas	2.94	170	⇓iP	Pn	05 48 05.5	+0.6
AKAS				iS	Sg	05 48 53.1	+0.4
KMER	Konya-Meram	2.98	116	P	Pn	05 48 06.0	+0.6
KMER				S	Sg	05 48 57.5	+3.4
KMER	Konya-Meram	2.98	116	⇓iP	Pn	05 48 06.0	+0.6
KMER				iS	Sg	05 48 57.5	+3.4
SMTH	Samothraki Isl	2.98	298	P	Pn	05 48 06.0	+0.6
SMTH	Samothraki Isl	2.98	298	P	Pn	05 48 06.0	+0.6
SMTH	Samothraki Isl	2.98	298	P	Pn	05 48 06.0	+0.6
ARG	Arkhangelos	2.99	194	P	Pn	05 48 05.9	+0.4
ARG	Arkhangelos	2.99	194	P	Pn	05 48 06.5	+1.0
ARG	Arkhangelos	2.99	194	P	Pn	05 48 05.9	+0.4
ARG	Arkhangelos	2.99	194	P	Pn	05 48 06.5	+1.0
BR231	Keskin MP Arra	3.01	75	ePn	Pn	05 48 07.3	+1.4
BR231	Keskin MP Arra	3.01	75	ePn	Pn	05 48 07.3	+1.4
BR231				ePg	Pg	05 48 15.3	-0.9
LOD	Lodumlu	3.01	74	ePN	Pn	05 48 06.3	+0.4
LOD	Lodumlu	3.01	74	ePn	Pn	05 48 06.3	+0.4
KSL	Kastellorizon	3.01	171	P	Pn	05 48 06.5	+0.7
KSL	Kastellorizon	3.01	171	P	Pn	05 48 06.6	+0.7
ANTO	Ankara	3.03	75	eP	Pn	05 48 06.4	+0.3
ANTO	Ankara	3.03	75	ePn	Pn	05 48 06.4	+0.3
ANTO				eSg	Sg	05 48 59.3	+3.6
ANTO	Ankara	3.03	75	ePn	Pn	05 48 06.4	+0.3
ANTO				eSg	Sg	05 48 59.4	+3.6
LIA	Limnos Island	3.05	286	P	Pn	05 48 06.9	+0.7
LIA	Limnos Island	3.05	286	P	Pn	05 48 06.9	+0.7
LIA	Limnos Island	3.05	286	P	Pn	05 48 06.9	+0.7
KKUL	Konya-Kulu	3.05	88	P	Pn	05 48 08.6	+2.2
KKUL				S	Sg	05 48 56.6	+0.2
KKUL	Konya-Kulu	3.05	88	⇑iP	Pn	05 48 08.6	+2.2
KKUL				iS	Sg	05 48 56.6	+0.2
CHBY	Cihanbeyli	3.09	99	ePN	Pn	05 48 07.1	+0.1
CHBY	Cihanbeyli	3.09	99	ePn	Pn	05 48 07.1	+0.1
AFSR	Af´ar-Bala (A	3.18	83	ePN	Pn	05 48 08.5	+0.3
AFSR	Af´ar-Bala (A	3.18	83	ePn	Pn	05 48 08.5	+0.3
EDRB	Edirne	3.21	328	ePN	Pn	05 48 09.6	+1.1
EDRB	Edirne	3.21	328	P	Pn	05 48 09.1	+0.6
EDRB	Edirne	3.21	328	P	Pn	05 48 09.1	+0.6
EDRB	Edirne	3.21	328	ePn	Pn	05 48 09.6	+1.1
EDRB	Edirne	3.21	328	P	Pn	05 48 09.1	+0.6
BBAL	Bala	3.23	81	P	Pn	05 48 08.9	0.0
BBAL				S	Sg	05 49 01.9	-0.2
BBAL	Bala	3.23	81	⇑iP	Pn	05 48 08.9	0.0
BBAL				iS	Sg	05 49 01.9	-0.2
APE	Apeiranthos	3.42	234	⇑iP	Pn	05 48 11.3	-0.2
APE	Apeiranthos	3.42	234	P	Pn	05 48 11.6	+0.1
APE	Apeiranthos	3.42	234	⇑eP	Pn	05 48 11.2	-0.2
APE	Apeiranthos	3.42	234	P	Pn	05 48 11.6	+0.1
APE	Apeiranthos	3.42	234	P	Pn	05 48 11.3	-0.2
SAFT	Safranbolu	3.52	52	ePN	Pn	05 48 13.6	+0.8
SAFT	Safranbolu	3.52	52	ePn	Pn	05 48 13.6	+0.8
BTIN	Bart´–n	3.53	44	P	Pn	05 48 12.6	-0.3
BTIN				S	Sg	05 49 13.4	+1.7
BTIN	Bart´–n	3.53	44	⇑iP	Pn	05 48 12.6	-0.3
BTIN				iS	Sg	05 49 13.4	+1.7
SERE	Sereflikochisa	3.56	92	ePN	Pn	05 48 13.9	+0.4
SERE	Sereflikochisa	3.56	92	ePn	Pn	05 48 13.9	+0.4
BR131	Keskin Array S	3.64	79	ePn	Pn	05 48 14.8	+0.2
BR131	Keskin Array S	3.64	79	ePn	Pn	05 48 14.8	+0.2
BRTR	Keskin Array B	3.64	79	Pn	Pn	05 48 14.6	-0.1
	11nm,0.3s,baz=254,slow=13,SNR=167						
BRTR				LR	LR	05 50 13.4	
	comp=Z,3μm,20.8s,baz=264,slow=50						
KAMT	Kaman	3.67	85	ePN	Pn	05 48 15.5	+0.5
KAMT	Kaman	3.67	85	ePn	Pn	05 48 15.5	+0.5
ELDT	Eldivan	3.67	67	P	Pn	05 48 14.8	-0.2
ELDT				S	Sg	05 49 13.0	-3.4
ELDT	Eldivan	3.67	67	⇑iP	Pn	05 48 14.8	-0.2
ELDT				iS	Sg	05 49 13.0	-3.4
AKSY	AKSARAY - Alti	3.75	96	P	Pn	05 48 16.9	+0.9
AKSY				S	Sg	05 49 17.1	-1.7
AKSY	AKSARAY - Alti	3.75	96	⇑iP	Pn	05 48 16.9	+0.9
AKSY				iS	Sg	05 49 17.1	-1.7
CANT	Cankiri	3.85	66	ePN	Pn	05 48 18.1	+0.8
KARP	Karpathos	3.87	203	P	Pn	05 48 17.9	+0.3
KARP	Karpathos	3.87	203	ePn	Pn	05 48 15.3	-2.3
KARP	Karpathos	3.87	203	P	Pn	05 48 17.9	+0.3
KARP	Karpathos	3.87	203	ePn	Pn	05 48 15.3	-2.3
KAVA	Kavala	3.91	300	P	Pn	05 48 18.8	+0.6
KAVA	Kavala	3.91	300	P	Pn	05 48 18.8	+0.6
KAVA	Kavala	3.91	300	P	Pn	05 48 18.7	+0.6
GAZI	Gazipasa	3.91	137	P	Pn	05 48 17.5	-0.7
GAZI				S	Sg	05 49 28.2	+4.1
GAZI	Gazipasa	3.91	137	⇓iP	Pn	05 48 17.5	-0.7
GAZI				iS	Sg	05 49 28.2	+4.1
SANT	Santorini	3.93	227	⇑iP	Pn	05 48 17.0	-1.5
SANT	Santorini	3.93	227	ePn	Pn	05 48 17.6	-0.8
SANT	Santorini	3.93	227	ePn	Pn	05 48 17.6	-0.8
THR3	Thira Island,	3.94	227	P	Pn	05 48 18.9	+0.4
THR3	Thira Island,	3.94	227	P	Pn	05 48 18.9	+0.4
THR3	Thira Island,	3.94	227	P	Pn	05 48 18.6	+0.1
THR5	Thira Island,	3.96	228	P	Pn	05 48 18.9	0.0
THR5	Thira Island,	3.96	228	P	Pn	05 48 18.9	0.0
ERMK	Ermenek	3.97	128	P	Pn	05 48 20.1	+0.9
ERMK				S	Sg	05 49 28.3	+2.3
ERMK	Ermenek	3.97	128	iP	Pn	05 48 20.1	+0.9
ERMK				iS	Sg	05 49 28.3	+2.3
THR6	Thira Island,	3.98	227	P	Pn	05 48 19.6	+0.6
THR6	Thira Island,	3.98	227	P	Pn	05 48 18.7	-0.3
THR6	Thira Island,	3.98	227	P	Pn	05 48 18.7	-0.3
AOS	Alonnisos	3.98	272	P	Pn	05 48 19.7	+0.6
AOS	Alonnisos	3.98	272	P	Pn	05 48 19.7	+0.6
AOS	Alonnisos	3.98	272	P	Pn	05 48 20.1	+1.0
OUR	Ouranopolis	4.05	289	P	Pn	05 48 20.5	+0.4
OUR	Ouranopolis	4.05	289	P	Pn	05 48 20.4	+0.4
OUR	Ouranopolis	4.05	289	P	Pn	05 48 20.5	+0.4
OUR	Ouranopolis	4.05	289	P	Pn	05 48 20.4	+0.4
ILGA	Ilgaz	4.10	61	P	Pn	05 48 21.2	+0.3
ILGA				S	Sg	05 49 33.3	+3.3
ILGA	Ilgaz	4.10	61	iP	Pn	05 48 21.2	+0.3
ILGA				iS	Sg	05 49 33.3	+3.3
PAIG	Paliouri	4.19	283	P	Pn	05 48 22.4	+0.5
PAIG	Paliouri	4.19	283	P	Pn	05 48 22.8	+0.9
PAIG	Paliouri	4.19	283	P	Pn	05 48 22.8	+0.9
PAIG	Paliouri	4.19	283	P	Pn	05 48 22.8	+0.9
CDAG	Cicekdag	4.20	82	P	Pn	05 48 23.1	+0.9
CDAG				S	Sg	05 49 41.5	+8.4
CDAG	Cicekdag	4.20	82	iP	Pn	05 48 23.1	+0.9
CDAG				iS	Sg	05 49 41.5	+8.4
VLY	Voula,Athens	4.28	254	P	Pn	05 48 23.7	+0.5
VLY	Voula,Athens	4.28	254	P	Pn	05 48 23.7	+0.5
VLY	Voula,Athens	4.28	254	P	Pn	05 48 23.9	+0.7
KERG	Konya-Eregli	4.39	111	P	Pn	05 48 25.0	+0.2
KERG				S	Sg	05 49 45.3	+6.0
KERG	Konya-Eregli	4.39	111	⇓iP	Pn	05 48 25.0	+0.2
KERG				iS	Sg	05 49 45.3	+6.0
PLG	Polygyros	4.45	288	P	Pn	05 48 26.1	+0.5
PLG	Polygyros	4.45	288	P	Pn	05 48 26.3	+0.7
PLG	Polygyros	4.45	288	P	Pn	05 48 26.3	+0.7
PLG	Polygyros	4.45	288	P	Pn	05 48 26.3	+0.7
NVR	Nevrokopi	4.51	301	P	Pn	05 48 27.1	+0.7
NVR	Nevrokopi	4.51	301	P	Pn	05 48 27.1	+0.7
NVR	Nevrokopi	4.51	301	P	Pn	05 48 27.1	+0.7
SMIA	Simia	4.51	269	P	Pn	05 48 27.3	+0.8
SMIA	Simia	4.51	269	P	Pn	05 48 27.3	+0.8
ZKR	Zakros	4.58	210	P	Pn	05 48 28.4	+1.0
ZKR	Zakros	4.58	210	P	Pn	05 48 28.4	+1.0
ZKR	Zakros	4.58	210	P	Pn	05 48 29.7	+2.3
SRS	Serrai	4.59	297	P	Pn	05 48 28.0	+0.6
SRS	Serrai	4.59	297	P	Pn	05 48 28.1	+0.6
SRS	Serrai	4.59	297	P	Pn	05 48 28.1	+0.6
SRS	Serrai	4.59	297	P	Pn	05 48 28.1	+0.6
MANR	Mangalia	4.69	356	⇑iP	Pn	05 48 29.4	+0.6
NPS	Neapolis	4.71	216	P	Pn	05 48 29.8	+0.6
NPS	Neapolis	4.71	216	P	Pn	05 48 31.0	+1.8
NPS	Neapolis	4.71	216	P	Pn	05 48 29.8	+0.6
NPS	Neapolis	4.71	216	P	Pn	05 48 31.0	+1.8
COAL	Corum-Alaca	4.75	74	P	Pn	05 48 29.9	+0.1
COAL				S	Sg	05 49 55.4	+4.3
COAL	Corum-Alaca	4.75	74	⇑iP	Pn	05 48 29.9	+0.1
COAL				iS	Sg	05 49 55.4	+4.3
LTK	Loutraki	4.85	259	P	Pn	05 48 31.6	+0.5
LTK	Loutraki	4.85	259	P	Pn	05 48 31.6	+0.5
LTK	Loutraki	4.85	259	P	Pn	05 48 31.5	+0.5
LAST	Lasithi	4.86	216	⇑iP	Pn	05 48 33.2	+1.9
LAST	Lasithi	4.86	216	P	Pn	05 48 31.8	+0.5
LAST	Lasithi	4.86	216	P	Pn	05 48 31.8	+0.5
LAST	Lasithi	4.86	216	ePn	Pn	05 48 32.7	+1.4
LAST	Lasithi	4.86	216	ePn	Pn	05 48 32.7	+1.4
AKMC	Akamas	4.89	146	P	Pn	05 48 32.3	+0.7
	baz=327						
AKMC	Akamas	4.89	146	P	Pn	05 48 32.3	+0.7
ALFC	Alefka	4.90	143	P	Pn	05 48 32.2	+0.4
	baz=324						
ALFC				S	Sn	05 49 28.6	+0.2
ALFC	Alefka	4.90	143	P	Pn	05 48 32.2	+0.4
ALFC				S	Sn	05 49 28.6	+0.2
PPCY	Paphos	5.02	147	P	Pn	05 48 34.3	+1.0
	baz=328						
PPCY	Paphos	5.02	147	P	Pn	05 48 34.3	+1.0
MSAB	Monastry St. A	5.03	350	⇑iP	Pn	05 48 33.8	+0.3
IDI	Anoyia	5.05	222	Pn	Pn	05 48 32.6	-1.2
	8.7nm,0.3s,baz=55,slow=15,SNR=23						
IDI	Anoyia	5.05	222	⇓iP	Pn	05 48 32.8	-1.0
IDI	Anoyia	5.05	222	P	Pn	05 48 34.1	+0.3
IDI	Anoyia	5.05	222	P	Pn	05 48 34.1	+0.3
BOYT	Boyabat	5.06	61	P	Pn	05 48 34.8	+0.8
BOYT	Boyabat	5.06	61	iP	Pn	05 48 34.8	+0.8
DSF	Desfina	5.11	264	P	Pn	05 48 35.5	+0.9
DSF	Desfina	5.11	264	P	Pn	05 48 34.3	-0.3
DSF	Desfina	5.11	264	P	Pn	05 48 34.3	-0.3
LIT	Litokhoron	5.12	283	P	Pn	05 48 35.8	+1.1
LIT	Litokhoron	5.12	283	P	Pn	05 48 36.3	+1.6
LIT	Litokhoron	5.12	283	P	Pn	05 48 35.8	+1.1
LIT	Litokhoron	5.12	283	P	Pn	05 48 36.3	+1.6
AGG	Agios Georgios	5.19	271	P	Pn	05 48 36.9	+1.2
AGG	Agios Georgios	5.19	271	eP	Pn	05 48 35.9	+0.2
AGG	Agios Georgios	5.19	271	eP	Pn	05 48 35.9	+0.2
AGG	Agios Georgios	5.19	271	ePn	Pn	05 48 35.9	+0.2
MAMC	Mammari	5.20	138	P	Pn	05 48 36.8	+1.0
	baz=320						
MAMC	Mammari	5.20	138	P	Pn	05 48 36.8	+1.0
CVDA	Cernavoda	5.25	352	⇓iP	Pn	05 48 38.2	+1.7
ZIMR		5.28	330	⇓iP	Pn	05 48 38.5	+1.6
SIVA	Sivas	5.30	220	P	Pn	05 48 38.2	+1.0
SIVA	Sivas	5.30	220	P	Pn	05 48 38.2	+1.0
TIRR	Tirgusor	5.34	356	⇑iP	Pn	05 48 38.1	+0.4
TIRR	Tirgusor	5.34	356	eP	Pn	05 48 37.9	+0.2
TIRR	Tirgusor	5.34	356	ePn	Pn	05 48 37.9	+0.2
TIRR	Tirgusor	5.34	356	ePn	Pn	05 48 37.9	+0.2
VLI	Veliai	5.36	245	P	Pn	05 48 38.4	+0.3
VLI	Veliai	5.36	245	P	Pn	05 48 38.4	+0.3
VLI	Veliai	5.36	245	P	Pn	05 48 38.2	+0.1
SZAC	Souni	5.36	143	P	Pn	05 48 39.1	+0.9
	baz=325						
SZAC	Souni	5.36	143	P	Pn	05 48 39.1	+0.9
GRG	Griva	5.38	292	P	Pn	05 48 39.3	+1.0
GRG	Griva	5.38	292	P	Pn	05 48 40.1	+1.8
GRG	Griva	5.38	292	P	Pn	05 48 39.3	+1.0
GRG	Griva	5.38	292	P	Pn	05 48 40.1	+1.8
VAY	Valandovo	5.38	296	ePn	Pn	05 48 39.6	+1.2
VAY	Valandovo	5.38	296	iPn	Pn	05 48 39.5	+1.2
CSS	Mathiatis	5.42	139	P	Pn	05 48 40.0	+1.1
CSS	Mathiatis	5.42	139	Pn	Pn	05 48 38.1	-0.8
CSS	Mathiatis	5.42	139	Pn	Pn	05 48 38.1	-0.8
CSS	Mathiatis	5.42	139	P	Pn	05 48 40.0	+1.1
CSS	Mathiatis	5.42	139	ePn	Pn	05 48 38.5	-0.4
THL	Klokotos Trika	5.43	277	P	Pn	05 48 40.3	+1.3
THL	Klokotos Trika	5.43	277	P	Pn	05 48 40.3	+1.3
SERG	Sergoula	5.47	265	P	Pn	05 48 40.5	+0.9
SERG	Sergoula	5.47	265	P	Pn	05 48 40.5	+0.9
KLV	Kalavryta, Ach	5.47	261	P	Pn	05 48 40.3	+0.6
KLV	Kalavryta, Ach	5.47	261	P	Pn	05 48 40.3	+0.6
KLV	Kalavryta, Ach	5.47	261	P	Pn	05 48 40.7	+1.0
VLX	Vlachokerasia	5.50	253	P	Pn	05 48 40.9	+0.9
VLX	Vlachokerasia	5.50	253	P	Pn	05 48 40.9	+0.9
VLX	Vlachokerasia	5.50	253	P	Pn	05 48 41.5	+1.5
ANX	Ano Chora	5.55	267	P	Pn	05 48 41.9	+1.2
ANX	Ano Chora	5.55	267	P	Pn	05 48 41.9	+1.2
LAKA	Lakka	5.56	263	P	Pn	05 48 42.0	+1.1
LAKA	Lakka	5.56	263	P	Pn	05 48 42.0	+1.1
LAKA	Lakka	5.56	263	P	Pn	05 48 42.5	+1.6
HARR	Harsova	5.61	352	⇑iP	Pn	05 48 41.6	+0.1
PVO	Paravola	5.85	267	P	Pn	05 48 45.9	+1.1
PVO	Paravola	5.85	267	P	Pn	05 48 45.9	+1.1
ITM	Ithomi	5.90	253	P	Pn	05 48 49.4	+3.9
ITM	Ithomi	5.90	253	P	Pn	05 48 49.4	+3.9
TLCR		6.05	359	⇑iP	Pn	05 48 48.4	+0.9
CFR	Carcaliu	6.08	354	⇑iP	Pn	05 48 47.8	0.0
FNA	Florina	6.08	288	P	Pn	05 48 49.9	+1.9
FNA	Florina	6.08	288	P	Pn	05 48 49.9	+1.9
FNA	Florina	6.08	288	P	Pn	05 48 49.9	+1.9
DSL	Palaion Diasel	6.14	272	P	Pn	05 48 51.7	+2.9
DSL	Palaion Diasel	6.14	272	P	Pn	05 48 51.7	+2.9
PYL	PYLOS	6.15	251	P	Pn	05 48 51.0	+2.1
PYL	PYLOS	6.15	251	P	Pn	05 48 51.0	+2.1
HUMR	Humele	6.17	332	⇓iP	Pn	05 48 50.9	+1.8
BIA	Bitola	6.18	290	iPn	Pn	05 48 51.0	+1.7
BIA	Bitola	6.18	290	iPn	Pn	05 48 50.5	+1.2
ISR	Istrita	6.25	344	⇓iP	Pn	05 48 52.5	+2.1
SECR		6.29	341	⇓iP	Pn	05 48 53.3	+2.5
JAN	Janina	6.33	277	P	Pn	05 48 57.0	+5.6
JAN	Janina	6.33	277	P	Pn	05 48 57.0	+5.6
JAN	Janina	6.33	277	P	Pn	05 48 57.0	+5.6
GIUM	Giurgiulesti	6.38	355	⇓iP	Pn	05 48 53.7	+1.7
SKO	Skopje	6.42	299	ePn	Pn	05 48 53.9	+1.3
SKO	Skopje	6.42	299	ePn	Pn	05 48 51.8	-0.8
GRER		6.42	347	⇑iP	Pn	05 48 55.0	+2.4
SEV	Sevastopol'	6.43	31	⇑eP	Pn	05 48 52.0	-0.8
SEV				eS	Sn	05 50 01.9	-4.1
SEV	Sevastopol'	6.43	31	eP	Pn	05 48 52.0	-0.8
SEV				eS	Sn	05 50 01.9	-4.1
OHR	Ohrid	6.58	290	ePn	Pn	05 48 53.7	-1.2
OHR	Ohrid	6.58	290	ePn	Pn	05 48 53.6	-1.4
YAL	Yalta	6.59	34	⇑iP	Pn	05 48 54.9	0.0
YAL				eS	Sn	05 50 06.6	-3.3
YAL	Yalta	6.59	34	iP	Pn	05 48 54.9	0.0
YAL				eS	Sn	05 50 06.6	-3.3
IGT	Igoumenitsa	6.73	276	P	Pn	05 49 00.4	+3.5
IGT	Igoumenitsa	6.73	276	P	Pn	05 49 00.4	+3.5
IGT	Igoumenitsa	6.73	276	P	Pn	05 49 00.4	+3.5
MLR	Muntele Rosu	6.74	341	Pn	Pn	05 48 58.8	+1.6
	1.3nm,0.3s,baz=161,slow=1.4,SNR=57						
MLR				LR	LR	05 51 46.1	
	comp=Z,276nm,20.0s,baz=60,slow=40						
MLR	Muntele Rosu	6.74	341	⇑iP	Pn	05 48 58.9	+1.7
MLR	Muntele Rosu	6.74	341	ePn	Pn	05 48 58.5	+1.3
MLR	Muntele Rosu	6.74	341	ePn	Pn	05 48 58.5	+1.3
MTUR	Matau	6.75	336	⇑iP	Pn	05 48 58.8	+1.5
ODBI	Odobesti	6.78	348	⇓iP	Pn	05 48 59.6	+2.1
ALU	Alushta	6.86	34	eP	Pn	05 48 57.9	-0.7
ALU				eS	Sn	05 50 13.4	-3.0
ALU	Alushta	6.86	34	eP	Pn	05 48 57.9	-0.7
ALU				eS	Sn	05 50 13.4	-3.0
WRDH	Warideh	6.93	119	eP	Pn	05 48 55.9	-3.8
PLOR	Plostina	6.93	346	⇑iP	Pn	05 49 01.5	+1.8
VRI	Vrincioaia	6.94	347	⇑iP	Pn	05 49 00.9	+1.2
VOIR		6.95	336	⇓iP	Pn	05 49 00.9	+1.0
SIM	Simferopol'	6.95	32	ceP	Pn	05 49 00.1	+0.2
SIM				S	Sn	05 50 16.0	-2.7
SIM				pmax	pmax		
	comp=Z,410nm,0.3s						
SIM				smax	smax		
	comp=E,595nm,0.8s						
SIM				smax	smax		
	comp=N,190nm,0.8s						
SIM	Simferopol'	6.95	32	eP	Pn	05 49 00.1	+0.2
	comp=N,410nm,0.3s						
SIM				S	Sn	05 50 16.0	-2.7
	comp=N,190nm,0.8s						
SRE	Strehaia	7.01	324	⇓iP	Pn	05 49 00.9	+0.2
ARR	Arges	7.02	334	⇑iP	Pn	05 49 02.5	+1.6
SUDU	Sudak	7.28	36	⇑eP	Pn	05 49 04.0	-0.4
SUDU				eS	Sn	05 50 24.2	-2.7
SUDU	Sudak	7.28	36	eP	Pn	05 49 04.0	-0.4
SUDU				eS	Sn	05 50 24.2	-2.7
TIR	Tirane	7.33	290	⇑iP	Pn	05 49 05.1	0.0
TIR	Tirane	7.33	290	eP	Pn	05 49 09.2	+4.1
TIR	Tirane	7.33	290	eP	Pn	05 49 09.2	+4.1
TIR	Tirane	7.33	290	ePn	Pn	05 49 09.2	+4.1
DOPR	Dopca	7.33	340	⇑iP	Pn	05 49 06.6	+1.5
LEOM	Leova	7.36	356	⇑iP	Pn	05 49 07.1	+1.7
HWQ	Hawqa	7.39	129	eP	Pn	05 49 06.3	+0.2
LOT	Lotru	7.40	330	⇑iP	Pn	05 49 08.1	+1.9
FEO	Feodosiya	7.56	37	eP	Pn	05 49 09.9	+1.7
FEO				eS	Sn	05 50 35.0	+1.2
FEO	Feodosiya	7.56	37	eP	Pn	05 49 09.9	+1.7
FEO				eS	Sn	05 50 35.0	+1.2
TESR	Tescani	7.57	348	⇑iP	Pn	05 49 09.1	+0.7
PVY	Plav	7.67	300	ePn	Pn	05 49 11.4	+1.5
PVY				eSn	Sn	05 50 36.0	-0.7
GZR	Gura Zlata	7.77	326	⇓iP	Pn	05 49 11.8	+0.6
MDB	Medias	7.79	336	⇓iP	Pn	05 49 13.7	+2.4
MDVR	Moldovita	7.83	318	⇓iP	Pn	05 49 12.1	+0.1
BEY	Berane	7.83	301	⇓iPn	Pn	05 49 14.3	+2.2
BEY				eSn	Sn	05 50 39.9	-0.7
IVA	Berane	7.83	301	⇓iPn	Pn	05 49 14.3	+2.2
IVA				eSn	Sn	05 50 39.9	-0.7
KIS	Kishinev	7.86	359	⇑iP	Pn	05 49 13.0	+0.6
	comp=N,400nm,1.0s						
KIS				eS	Sn	05 50 44.0	+2.8
KIS				iLi		05 51 20.0	
KIS				iLQ	LQ	05 51 48.0	
KIS				LRM	MLR	05 52 46.0	
	comp=N,2μm,10.0s						
KIS	Kishinev	7.86	359α	iP	Pn	05 49 13.0	+0.6
KIS				eS	Sn	05 50 44.0	+2.8
KIS				pmax	pmax		
	comp=Z,400nm,1.0s						
KIS				pmax	pmax		
	comp=Z,400nm,1.0s						
KIS				MLR	MLR		
	comp=Z,2μm,8.0s						
KIS				MLR	MLR		
	comp=Z,2μm,10.0s						
KIS	Kishinev	7.86	359	iP	Pn	05 49 13.0	+0.6
	comp=Z,2μm,8.0s						
KIS				eS	Sn	05 50 44.0	+2.8
	comp=Z,2μm,10.0s						
RCY	Rachaya	7.88	133	eP	Pn	05 49 12.3	-0.5
MARH	Ras Al´Marh	7.89	128	eP	Pn	05 49 12.7	-0.4
ULC	Ulcinj	7.94	294	ePn	Pn	05 49 15.6	+2.0
ULC				eSn	Sn	05 50 42.9	-0.4
ULC	Ulcinj	7.94	294	ePn	Pn	05 49 15.6	+2.0
ULC				eSn	Sn	05 50 42.9	-0.4
BRBR	Barbar	8.01	133	eP	Pn	05 49 13.7	-1.0
KSDI	Kefar Szold	8.01	136	Pn	Pn	05 49 14.0	-0.4
KSDI	Kefar Szold	8.01	136	Pn	Pn	05 49 14.0	-0.4
MMA0B	Mount Meron ar	8.01	138	Pn	Pn	05 49 14.1	-0.4
MMA0B	Mount Meron ar	8.01	138	Pn	Pn	05 49 14.1	-0.4
MMAI	Mount Meron Ar	8.01	138	Pn	Pn	05 49 14.2	-0.4
	comp=Z,36nm,0.3s,baz=326,slow=13,SNR=75						

SOC Sochi 9.20 58 *eP* **Pn 05 49 32.1 +1.3**
comp=Z,23nm,0.6s
SOC *eS* **Sn 05 51 15.4 +1.2**
comp=Z,2μm,12.0s
SFNV Sufian 9.21 104 *eP* **Pn 05 49 29.8 -1.1**
KZIT Kziot 9.32 150 Pn **Pn 05 49 32.3 -0.2**
KZIT Kziot 9.32 150 Pn **Pn 05 49 32.3 -0.2**
MZDA Masada 9.38 144 Pn **Pn 05 49 32.7 -0.5**
MZDA Masada 9.38 144 Pn **Pn 05 49 32.7 -0.5**
BMR Baia Mare 9.43 337⇓ *iP* **Pn 05 49 36.2 +2.4**
ASF Jabal al Asfar 9.46 135 Pn **Pn 05 49 36.7 +2.3**
comp=Z,1.1nm,0.3s,baz=245,slow=4.1,SNR=16
ASF LR LR 05 54 11.9
comp=Z,752nm,18.6s,baz=286,slow=44
TIP Timpagrande 9.51 274⇑ *iP* **Pn 05 49 34.9 -0.1**
TIP Timpagrande 9.51 274 *ePn* **Pn 05 49 36.5 +1.4**
TIP Timpagrande 9.51 274 *ePn* **Pn 05 49 36.5 +1.4**
MATE Matera 9.57 283⇑ *iP* **Pn 05 49 36.1 +0.3**
HNAT Natroun 9.57 171 P **Pn 05 49 34.4 -1.5**
baz=171
HNAT Natroun 9.57 171 P **Pn 05 49 34.4 -1.5**
HSAF As Saff 9.72 167 P **Pn 05 49 36.4 -1.6**
baz=166
HSAF As Saff 9.72 167 P **Pn 05 49 36.4 -1.6**
GLL Jalalah 9.79 166 P **Pn 05 49 37.1 -1.8**
baz=165
GLL Jalalah 9.79 166 P **Pn 05 49 37.1 -1.8**
SUZ Suez 9.79 160 P **Pn 05 49 37.4 -1.6**
baz=160
SUZ Suez 9.79 160 P **Pn 05 49 37.4 -1.6**
PRNI Paran 10.05 149 Pn **Pn 05 49 42.1 -0.4**
PRNI Sn **Sn 05 51 32.6 -2.6**
PRNI Paran 10.05 149 Pn **Pn 05 49 42.1 -0.4**
PRNI Sn **Sn 05 51 32.6 -2.6**
HNKL Nakhl 10.06 154 P **Pn 05 49 41.0 -1.5**
baz=154
HNKL Nakhl 10.06 154 P **Pn 05 49 41.1 -1.5**
CUC Castrocucco 10.21 279 *ePn* **Pn 05 49 46.6 +1.9**
CUC Castrocucco 10.21 279 *ePn* **Pn 05 49 46.6 +1.9**
SWA2 10.29 198 P **Pn 05 49 43.8 -1.9**
baz=198
SWA2 AMP 05 51 00.0
comp=E,80μm,0.5s,logA/T=5.2,baz=198
SWA2 S Sn 05 51 31.1 -10
baz=198
SWA2 10.29 198 P **Pn 05 49 43.8 -1.9**
SWA2 S Sn 05 51 31.1 -10
HRFI Mount Harif 10.35 149 Pn **Pn 05 49 45.8 -0.7**
HRFI Mount Harif 10.35 149 Pn **Pn 05 49 45.8 -0.7**
MBRI Mt Berech 10.52 151 Pn **Pn 05 49 48.5 -0.4**
MBRI Mt Berech 10.52 151 Pn **Pn 05 49 48.5 -0.4**
CHVG Ch'k'valeri 10.53 66⇑ *iP* **Pn 05 49 51.6 +2.6**
EIL Elat 10.64 151 Pn **Pn 05 49 48.1 -2.4**
comp=E,3.6nm,0.3s,baz=310,slow=6.2,SNR=22
EIL Sn **Sn 05 51 46.8 -2.7**
comp=E,2.6nm,0.3s,baz=67,slow=15,SNR=6.9
UZH Uzhgorod 10.65 335 *eP* **Pn 05 49 54.4 +3.8**
UZH *eS* **Sn 05 51 54.6 +5.0**
UZH MLR MLR
comp=N,4μm,8.0s
UZH MLR MLR
comp=E,3μm,8.0s
UZH MLR MLR
comp=Z,3μm,8.0s
UZH Uzhgorod 10.65 335 *eP* **Pn 05 49 54.4 +3.8**
UZH *eS* **Sn 05 51 54.6 +5.0**
LJBD Adjabya 10.91 224 *iP* **Pn 05 49 53.4 -0.9**
SNR=22
PSZ Piszkesteto 10.98 326 *eP* **Pn 05 49 57.9 +2.7**
PSZ Piszkesteto 10.98 326 *ePn* **Pn 05 49 57.9 +2.7**
PSZ Piszkesteto 10.98 326 *ePn* **Pn 05 49 57.9 +2.7**
NEY Neytrino 11.13 64⇑ *eP* **Pn 05 50 01.4 +4.1**
NEY Neytrino 11.13 64 *eP* **Pn 05 50 01.4 +4.1**
CRVS Cervenica-Dubn 11.16 333 *eP* Pn 05 50 02.7 +5.1
CRVS Cervenica-Dubn 11.16 333 *eP* Pn 05 50 02.7 +5.1
CRVS Cervenica-Dubn 11.16 333 *ePN* Pn 05 50 02.7 +5.1
CRVS Cervenica-Dubn 11.16 333 *eSG* 05 53 13.1
KECS Kecovo 11.18 329 *eP* **Pn 05 50 01.0 +3.2**
KECS Kecovo 11.18 329 *eP* **Pn 05 50 01.0 +3.2**
KECS Kecovo 11.18 329 *ePN* **Pn 05 50 01.0 +3.2**
LVV L'vov 11.25 343 *eP* **Pn 05 50 00.0 +1.2**
LVV *eS* **Sn 05 52 08.0 +3.6**
LVV MLR MLR
comp=Z,1μm,11.0s
LVV L'vov 11.25 343 *eP* **Pn 05 50 00.0 +1.2**
comp=Z,1μm,11.0s
LVV *eS* **Sn 05 52 08.0 +3.6**
GRB Gharib 11.28 163 P **Pn 05 49 58.2 -1.1**
baz=162
GRB Gharib 11.28 163 P **Pn 05 49 58.2 -1.1**
AKH Akhalkalaki 11.31 74⇑ *iP* **Pn 05 50 01.6 +1.8**
AKH Akhalkalaki 11.31 74 P **Pn 05 50 04.0 +4.2**
AKH Akhalkalaki 11.31 74 *eP* **Pn 05 50 04.0 +4.2**
AKH Akhalkalaki 11.31 74 *eP* **Pn 05 50 04.0 +4.2**
KIV Kislovodsk 11.33 60⇓ *eP* **Pn 05 50 02.8 +2.8**
KIV *eS* **Sn 05 52 04.1 -2.4**
KIV MLR MLR
comp=Z,2μm,16.0s
KIV Kislovodsk 11.33 60 *eP* **Pn 05 50 02.8 +2.8**
KIV *eS* **Sn 05 52 04.1 -2.4**
comp=Z,2μm,16.0s
KIV Kislovodsk 11.33 60 *ePn* **Pn 05 50 02.9 +2.8**
KVAR Kislovodsk Arr 11.34 60 Pn **Pn 05 50 00.5 +0.4**
baz=114,slow=10.0,SNR=8.1
KVAR LR LR 05 55 37.4
comp=Z,2μm,18.6s,baz=236,slow=44
HDHB Dhahab 11.38 154 P **Pn 05 49 59.8 -0.8**
baz=154
HDHB Dhahab 11.38 154 P **Pn 05 49 59.8 -0.8**
KBZ Khabaz 11.40 62 Pn **Pn 05 50 02.0 +1.2**
comp=Z,0.2nm,0.3s,baz=255,slow=9.9,SNR=16
KBZ LR LR 05 55 29.6
comp=Z,2μm,18.3s,baz=258,slow=43
KBZ Khabaz 11.40 62 P **Pn 05 50 02.0 +1.2**
KBZ MLR MLR
comp=Z,2μm,18.3s
KBZ Khabaz 11.40 62 Pn **Pn 05 50 02.0 +1.2**
KWP Kalwaria Pacla 11.41 339 *eP* **Pn 05 50 03.4 +2.4**
KWP Kalwaria Pacla 11.41 339 *eP* **Pn 05 50 03.4 +2.4**
KWP Kalwaria Pacla 11.41 339 *eP* **Pn 05 50 03.4 +2.4**
ONI Oni 11.48 68 P **Pn 05 50 05.6 +3.6**
ONI Oni 11.48 68 *eP* **Pn 05 50 05.6 +3.6**
ONI Oni 11.48 68 *eP* **Pn 05 50 05.6 +3.6**
AK11 Malin Array Si 11.55 1 *ePn* **Pn 05 50 01.5 -1.3**
AK11 Malin Array Si 11.55 1 *ePn* **Pn 05 50 01.4 -1.3**
KIEV Kiev 11.56 1⇑ *eP* **Pn 05 50 02.6 -0.4**
KIEV Kiev 11.56 1 *ePn* **Pn 05 50 02.7 -0.4**
KIEV Kiev 11.56 1 *ePn* **Pn 05 50 02.7 -0.4**
AKASG Malin Array Be 11.57 1 Pn **Pn 05 50 01.3 -1.8**
comp=Z,2.8nm,0.3s,baz=181,slow=12,SNR=14
AKASG Sn **Sn 05 52 17.5 +5.5**
comp=Z,4.5nm,0.3s,baz=182,slow=26,SNR=6.3
AKASG LR LR 05 54 34.1
comp=Z,772nm,21.6s,baz=175,slow=38
AKASG Malin Array Be 11.57 1 *iP* **Pn 05 50 01.2 -1.9**
AKASG pmax pmax
comp=Z,6.0nm,0.7s
AKBB Malin Array Si 11.57 1 *eP* **Pn 05 50 02.5 -0.6**
AKBB Malin Array Si 11.57 1 *ePn* **Pn 05 50 02.5 -0.6**
AKBB Malin Array Si 11.57 1 *ePn* **Pn 05 50 02.5 -0.6**
VAE Valguarnera 11.58 266 Pn **Pn 05 50 04.8 +1.4**
comp=Z,0.7nm,0.3s,baz=127,slow=5.1,SNR=2.9
STHS Stebnicka Huta 11.68 334 *eP* Pn 05 50 11.2 +6.5
STHS Stebnicka Huta 11.68 334 *eP* Pn 05 50 11.2 +6.5
STHS Stebnicka Huta 11.68 334 *ePN* Pn 05 50 11.2 +6.5
ZEI Tsey 11.85 67 *eP* **Pn 05 50 09.1 +1.9**
ZEI *eS* **Sn 05 52 25.1 +5.8**
ZEI pmax pmax
comp=Z,94nm,1.1s
ZEI MLR MLR
comp=Z,1μm,8.0s
ZEI Tsey 11.85 67 *eP* **Pn 05 50 09.1 +1.9**
comp=Z,94nm,1.1s
WDD Wied Dalam 11.95 259 *ePn* **Pn 05 50 09.8 +1.4**
WDD Wied Dalam 11.95 259 *ePn* **Pn 05 50 09.8 +1.4**
GOF Gofitskoye 11.99 56⇑ *eP* **Pn 05 50 12.2 +3.3**
GOF pmax pmax
comp=Z,37nm,1.0s
GOF Gofitskoye 11.99 56 *eP* **Pn 05 50 12.2 +3.3**
comp=Z,37nm,1.0s
NIE Niedzica 12.01 332 *eP* **Pn 05 50 12.4 +3.1**
NIE Niedzica 12.01 332 *eP* **Pn 05 50 12.4 +3.1**
NIE Niedzica 12.01 332 *eP* **Pn 05 50 12.4 +3.1**

LANS Liptovska Anna 12.12 329 *eP* P 05 50 17.8 -5.6
LANS Liptovska Anna 12.12 329 *eP* P 05 50 17.8 -5.6
LANS Liptovska Anna 12.12 329 *ePN* P 05 50 17.8 -5.6
GNI Garni 12.19 80 Pn Pn 05 50 17.0 +5.3
comp=Z,0.4nm,0.3s,baz=305,slow=5.7,SNR=17
GNI LR LR 05 54 55.6
comp=Z,2μm,20.1s,baz=275,slow=38
GNI Garni 12.19 80⇓ *eP* Pn 05 50 16.7 +4.9
GNI Garni 12.19 80 *eP* Pn 05 50 16.7 +4.9
GUDG Gudauri 12.20 69 P **P 05 50 20.4 -4.1**
TBLG Delisi 12.28 73 P Pn 05 50 18.3 +5.4
TBLG Delisi 12.28 73 *eP* Pn 05 50 18.2 +5.3
TBLG Delisi 12.28 73 *eP* Pn 05 50 18.2 +5.3
CLTB Caltabellotta 12.49 268 *ePn* **Pn 05 50 14.8 -1.0**
CLTB Caltabellotta 12.49 268 *ePn* **Pn 05 50 14.8 -1.0**
ARSA Arzberg 12.73 314 *iP* **Pn 05 50 22.4 +3.3**
comp=Z,10nm,1.0s
OJC Ojcow 12.86 333 *eP* **P 05 50 33.2 +1.6**
OJC Ojcow 12.86 333 *eP* **Pn 05 50 22.4 +1.6**
OJC Ojcow 12.86 333 *ePn* **Pn 05 50 22.4 +1.6**
OJC Ojcow 12.86 333 *ePn* **Pn 05 50 22.4 +1.6**
OBKA Obir 12.90 310 *iP* **Pn 05 50 24.6 +3.1**
comp=Z,13nm,0.9s
OKC Ostrava-Krasne 13.19 328 AMS AMS 05 56 30.0
comp=Z,3μm,11.1s
MORC Moravsky Berou 13.40 326 *eP* **Pn 05 50 28.6 +0.3**
MORC Moravsky Berou 13.40 326 *ePn* **Pn 05 50 28.6 +0.3**
MORC Moravsky Berou 13.40 326 *ePn* **Pn 05 50 28.6 +0.3**
VRAC Vranov 13.49 323 Pn **Pn 05 50 31.1 +1.7**
comp=Z,0.5nm,0.3s,baz=139,slow=12,SNR=4.9
VRAC LR LR 05 56 08.5
comp=Z,510nm,19.6s,baz=140,slow=39
MYKA Terra Mystica 13.51 309 *iP* **Pn 05 50 32.5 +2.8**
comp=Z,10nm,0.9s
MOA Molln 13.77 314 *iP* **Pn 05 50 35.0 +1.7**
comp=Z,11nm,1.2s
KRLC Kraliky 13.96 326 *eP* **P 05 50 40.5 -3.4**
KRLC *ex* x 05 50 46.9
KRLC Kraliky 13.96 326 *eP* **P 05 50 40.5 -3.4**
KRLC Kraliky 13.96 326 *eP* **P 05 50 40.5 -3.4**
TREC Trest 14.02 321 AMS AMS 05 56 40.0
comp=Z,1μm,15.1s
VSR Storozhevoye 14.03 27 *eP* **Pn 05 50 35.4 -1.4**
VSR pmax pmax
comp=Z,20nm,0.6s
VSR MLR MLR
comp=Z,720nm,18.0s
VSR Storozhevoye 14.03 27 *eP* **Pn 05 50 35.4 -1.4**
comp=Z,720nm,18.0s
ABTA Abfaltersbach 14.26 308 *iP* **P 05 50 49.6 +2.4**
comp=Z,13nm,1.0s
DPC Dobruska-Polom 14.36 325 *eP* **Pn 05 50 42.9 +1.6**
DPC *ep*P **P 05 50 52.3 +4.0**
DPC AMS AMS 05 57 10.0
comp=Z,2μm,15.8s
DPC Dobruska-Polom 14.36 325 *eP* **Pn 05 50 42.9 +1.6**
DPC MLR MLR
comp=Z,2μm,15.8s
DPC Dobruska-Polom 14.36 325 *eP* **Pn 05 50 42.9 +1.6**
comp=Z,2μm,15.8s
UPC Upice 14.61 325 AMS AMS 05 56 40.0
comp=Z,1μm,14.2s
GEA0 GERESS Array S 14.65 316 *ePn* **Pn 05 50 46.1 +0.8**
GEA0 GERESS Array S 14.65 316 *ePn* **Pn 05 50 46.1 +0.8**
GEC2 GERESS Array S 14.65 316 *eP* **Pn 05 50 46.9 +1.5**
GEC2 GERESS Array S 14.65 316 *ePn* **Pn 05 50 46.9 +1.5**
GEC2 GERESS Array S 14.65 316 *ePn* **Pn 05 50 46.9 +1.5**
GERES GERESS Array B 14.65 316 Pn **Pn 05 50 45.5 +0.2**
comp=Z,0.1nm,0.3s,baz=121,slow=16,SNR=9.9
GHAR Gharyan 14.70 246 *iP* **Pn 05 50 46.0 0.0**
SNR=45
GOPC GO Pecny, Ondr 14.77 321 AMS AMS 05 57 30.0
comp=Z,2μm,12.9s
LJFR Jufra 14.79 231 *iP* **Pn 05 50 46.3 -1.0**
SNR=45
KHC Kasperske Hory 14.89 317 *eP* **Pn 05 50 48.8 +0.3**
KHC *ep*P **P 05 50 56.1 +1.9**
KHC AMS AMS 05 57 00.0
comp=Z,1μm,9.8s
KHC Kasperske Hory 14.89 317 *eP* **Pn 05 50 48.8 +0.3**
KHC MLR MLR
comp=Z,1μm,9.8s
KHC Kasperske Hory 14.89 317 *eP* **Pn 05 50 48.8 +0.3**
comp=Z,1μm,9.8s
KHC Kasperske Hory 14.89 317 *ePn* **Pn 05 50 49.7 +1.2**
KHC Kasperske Hory 14.89 317 *ePn* **Pn 05 50 49.6 +1.2**
PRU Pruhonice 14.94 321 AMS AMS 05 57 30.0
comp=Z,2μm,15.1s
VRH Novokhopyorsk 15.01 32 *eP* **Pn 05 50 48.5 -1.6**
VRH pmax pmax
comp=Z,30nm,0.8s
VRH MLR MLR
comp=Z,200nm,11.0s
VRH Novokhopyorsk 15.01 32 *eP* **Pn 05 50 48.5 -1.6**
comp=Z,200nm,11.0s
LPSR Galich'ya Gora 15.12 24 *eP* **Pn 05 50 49.0 -2.5**
LPSR pmax pmax
comp=Z,50nm,1.8s
LPSR MLR MLR
comp=Z,560nm,19.0s
LPSR Galich'ya Gora 15.12 24 *eP* **Pn 05 50 49.0 -2.5**
comp=Z,560nm,19.0s
VSL Villasalto 15.19 278 *ePn* **Pn 05 50 53.0 +0.4**
comp=Z,20nm,0.8s
VSL Villasalto 15.19 278 *ePn* **Pn 05 50 53.0 +0.4**
comp=Z,20nm,0.8s
PVCC Panska Ves 15.28 323 AMS AMS 05 57 20.0
comp=Z,2μm,11.8s
MOTA Moosalm 15.38 308 *iP* **P 05 51 00.3 +0.4**
comp=Z,14nm,0.8s
MICGM Minsk 15.39 358 *eP* **Pn 05 50 56.0 +0.9**
MICGM *eS* **Sn 05 53 48.0 +2.6**
MICGM *eLR* LR 05 55 10.0
MNK Minsk 15.39 358 *eP* **Pn 05 50 56.0 +0.9**
MNK *eS* **Sn 05 53 48.0 +2.6**
MNK Minsk 15.39 358 *eP* **Pn 05 50 56.0 +0.9**
MNK *eS* **Sn 05 53 48.0 +2.6**
FETA Feichten 15.48 307 *iP* **P 05 51 00.6 -0.3**
comp=Z,36nm,1.2s,SNR=5.0
FUORN Ofenpass-Fuorn 15.62 305 *ePn* **Pn 05 50 59.9 +1.6**
comp=Z,30nm,1.3s
FUORN Ofenpass-Fuorn 15.62 305 *ePn* **Pn 05 50 59.9 +1.6**
comp=Z,30nm,1.3s
RETA Reutte 15.65 308 *iP* **P 05 51 04.6 +1.8**
comp=Z,30nm,1.5s
BRG Berggiesshubel 15.81 323 *eP* **P 05 51 05.4 +1.0**
comp=Z,12nm,1.3s
BRG S **Sn 05 54 01.0 +5.5**
comp=N,2μm,11.6s
comp=E,828nm,12.3s
comp=Z,2μm,11.3s
BRG Berggiesshubel 15.81 323 *eP* **P 05 51 05.4 +1.0**
BRG S **Sn 05 54 01.0 +5.5**
BRG pmax pmax
comp=Z,12nm,1.3s
BRG MLR MLR
comp=N,2μm,11.6s
BRG MLR MLR
comp=E,828nm,12.3s
BRG MLR MLR
comp=Z,2μm,11.3s
BRG Berggiesshubel 15.81 323 *eP* **P 05 51 05.4 +1.0**
comp=Z,12nm,1.3s
BRG S **Sn 05 54 01.0 +5.5**
comp=Z,2μm,11.3s
NACGM Naroch 15.85 355 *eP* **Pn 05 50 58.0 -3.0**
NACGM *eS* **Sn 05 53 54.0 -2.4**
NACGM *eLQ* LQ 05 55 26.0
NACGM *eLR* LR 05 56 44.0
DAVOX Davos/Dischmat 15.92 305 Pn **P 05 51 08.3 +2.5**
comp=Z,0.6nm,0.3s,baz=117,slow=12,SNR=14
KEST Kesra 15.97 264 Pn **Pn 05 51 04.5 +1.6**
comp=Z,0.6nm,0.3s,baz=348,slow=3.8,SNR=14
KEST LR LR 05 58 01.2
comp=Z,364nm,18.2s,baz=22,slow=40
KEST Kesra 15.97 264 *ePn* **P 05 51 05.3 -1.1**
comp=Z,42nm,1.1s
KEST Kesra 15.97 264 *ePn* **P 05 51 05.3 -1.1**
comp=Z,42nm,1.1s
DAVA Damuels 16.11 307 *iP* **P 05 51 10.2 +2.2**
comp=Z,35nm,1.1s,SNR=9.4
NKC Novy Kostel 16.14 319 AMS AMS 05 58 30.0
comp=Z,2μm,10.3s
TUE Stuetta 16.15 303 *ePn* **Pn 05 51 05.9 +0.7**
comp=Z,25nm,0.9s
TUE Stuetta 16.15 303 *ePn* **Pn 05 51 06.0 +0.7**
comp=Z,25nm,0.9s
IDID Didziasalis 16.26 355 *eP* **Pn 05 51 07.5 +1.2**
IDID IAmb IAmb 05 51 12.8
comp=Z,18nm,0.9s
IDID Didziasalis 16.26 355 *eP* **Pn 05 51 07.5 +1.2**
SNR=40
CLL Collm 16.54 323 *eP* **Pn 05 51 07.0 -2.9**
CLL *e* 05 51 13.0
comp=Z,37nm,1.9s
CLL *i* 05 51 22.3
comp=Z,41nm,1.8s
CLL *i* 05 51 41.0
CLL *eS* **Sn 05 54 08.0 -5.3**
CLL *eSS* **S 05 54 24.0 -1.0**
CLL Lmax 05 58 00.0
CLL Collm 16.54 323 *eP* **Pn 05 51 07.0 -2.9**
CLL *eS* **Sn 05 54 08.0 -5.3**
ISAL Salakas 16.56 354 *eP* **Pn 05 51 10.8 +0.7**
ISAL IAmb IAmb 05 51 21.0
comp=Z,15nm,0.8s
ISAL Salakas 16.56 354 *eP* **Pn 05 51 10.8 +0.7**
SNR=35
IZAR Zarasai 16.73 355 *eP* **Pn 05 51 12.8 +0.6**
IZAR IAmb IAmb 05 51 22.2
comp=Z,17nm,0.9s
IZAR Zarasai 16.73 355 *eP* **Pn 05 51 12.8 +0.6**
SNR=35
OBN Obninsk 16.78 15⇓ *eP* **P 05 51 14.5 -0.6**
OBN *i* S **Sn 05 54 19.8 +0.8**
OBN pmax pmax
comp=Z,77nm,1.4s
OBN MLR MLR
comp=Z,1μm,19.0s
OBN Obninsk 16.78 15 *ePn* **Pn 05 51 12.9 0.0**
comp=Z,43nm,0.7s
OBN Obninsk 16.78 15 *eP* **P 05 51 14.5 -0.6**
comp=Z,1μm,19.0s
OBN Obninsk 16.78 15 *ePn* **Pn 05 51 12.9 0.0**
comp=Z,43nm,0.7s
SPAK Spaichingen-Ko 17.12 308⇑ *eP* **P 05 51 20.9 +1.9**
STU Stuttgart 17.16 311 *eP* **P 05 51 19.9 +0.5**
STU pmax pmax
comp=Z,79nm,1.7s
STU Stuttgart 17.16 311 *eP* **P 05 51 19.9 +0.5**
comp=Z,79nm,1.7s
STU Stuttgart 17.16 311 *eP* **P 05 51 19.9 +0.5**
comp=Z,79nm,1.7s
CMAH Djebel Manchou 17.21 268 P **P 05 51 21.8 +1.7**
CMAH Djebel Manchou 17.21 268 P **P 05 51 21.8 +1.7**
ABSA Djebel Ababsia 17.26 267 P **P 05 51 21.4 +0.7**
ABSA Djebel Ababsia 17.26 267 P **P 05 51 21.4 +0.7**
SENIN Lac Senin/Sane 17.46 301 *ePn* **P 05 51 23.9 +0.9**
comp=Z,31nm,1.1s
SENIN Lac Senin/Sane 17.46 301 *ePn* **P 05 51 23.9 +0.9**
comp=Z,31nm,1.1s
BFO Black Forest 17.49 308 *eP* **P 05 51 24.7 +1.6**
BFO pmax pmax
comp=Z,42nm,1.4s
BFO Black Forest 17.49 308 *ePn* **P 05 51 24.7 +1.6**
comp=Z,42nm,1.4s
BFO Black Forest 17.49 308 *ePn* **P 05 51 24.7 +1.6**
comp=Z,42nm,1.4s
FELD Feldberg im Sc 17.52 307⇑ *eP* **P 05 51 23.0 -0.4**
MOS Moscow 17.59 16 *eP* **Pn 05 51 18.5 -4.5**
MOS *eS* **Sn 05 54 33.7 -4.8**
MOS pmax pmax
comp=Z,194nm,1.5s
MOS pmax pmax
comp=Z,400nm,2.3s
MOS MLR MLR
comp=Z,1μm,19.0s
MOS Moscow 17.59 16 *eP* **Pn 05 51 18.5 -4.5**
comp=Z,400nm,2.3s
MOS *eS* **Sn 05 54 33.7 -4.8**
comp=Z,1μm,19.0s
CAEH 'Ain El Ouahch 17.62 269 P **P 05 51 27.7 +3.2**
CAEH 'Ain El Ouahch 17.62 269 P **P 05 51 27.7 +3.2**
BBS Basel-Blauen 17.68 305⇑ *eP* **P 05 51 25.2 +0.1**
TOD Tromm 17.78 313⇑ *eP* **P 05 51 27.6 +1.4**
CKFL Kef-Lekhel 17.82 268 P **Pn 05 51 26.0 -0.1**
CKFL Kef-Lekhel 17.82 268 P **Pn 05 51 26.0 -0.1**
CASM Ain Smara 18.03 268 P **P 05 51 30.8 +1.6**
CASM Ain Smara 18.03 268 P **P 05 51 30.8 +1.6**
MOF Molkenrain 18.05 306 *eP* **Pn 05 51 28.2 -0.7**
MOF Molkenrain 18.05 306 *eP* **Pn 05 51 28.2 -0.7**
LOMF Lomont 18.08 304⇑ *eP* **P 05 51 30.4 +0.8**
LOMF Lomont 18.08 304⇑ *eP* **P 05 51 30.4 +0.8**
LANF Langenberg 18.08 310⇑ *eP* **P 05 51 31.2 +1.7**
LANF Langenberg 18.08 310⇑ *eP* **P 05 51 31.2 +1.7**
CTEI Djebel Teioual 18.15 267 P **P 05 51 32.8 +2.2**
CTEI Djebel Teioual 18.15 267 P **P 05 51 32.8 +2.2**
ECH Echery 18.17 307 *eP* **P 05 51 31.9 +1.4**
ECH Echery 18.17 307 *eP* **P 05 51 31.9 +1.4**
DFRA Djebel Bou Aff 18.43 269 P **Pn 05 51 34.9 +1.2**
DFRA Djebel Bou Aff 18.43 269 P **Pn 05 51 34.9 +1.2**
LGHD Ghdames 18.46 246 *iP* **Pn 05 51 35.2 +1.2**
SNR=41
BSD Bornholm Skovb 18.58 334 *iP* **Pn 05 51 37.2 +2.0**
BSD Bornholm Skovb 18.58 334 *iP* **Pn 05 51 37.2 +2.0**
BSD Bornholm Skovb 18.58 334 *iP* **Pn 05 51 37.2 +2.0**
SET Setif 18.90 268 P **Pn 05 51 45.0 +5.7**
SET Setif 18.90 268 P **Pn 05 51 45.0 +5.7**
SSB Saint Sauveur 19.09 297 *eP* **Pn 05 51 41.2 -0.3**
SSB pmax pmax
comp=Z,17nm,0.9s
SSB Saint Sauveur 19.09 297 *eP* **Pn 05 51 41.2 -0.3**
comp=Z,17nm,0.9s
SSB Saint Sauveur 19.09 297 *eP* **Pn 05 51 41.2 -0.3**
comp=Z,17nm,0.9s
WLF Walferdange 19.35 310 P **Pn 05 51 45.0 +0.5**
WLF Walferdange 19.35 310 *eP* **Pn 05 51 44.9 +0.4**
WLF pmax pmax
comp=Z,12nm,0.8s
WLF Walferdange 19.35 310 *eP* **Pn 05 51 44.9 +0.4**
comp=Z,12nm,0.8s
WLF Walferdange 19.35 310 *eP* **Pn 05 51 44.9 +0.4**
comp=Z,12nm,0.8s
VSU Vasula 19.40 356⇓ *eP* **Pn 05 51 45.2 +0.2**
VSU pmax pmax
comp=Z,124nm,1.1s
VSU MLR MLR
comp=Z,2μm,17.0s
VSU Vasula 19.40 356 *eP* **Pn 05 51 45.2 +0.2**
comp=Z,2μm,17.0s
MEM Membach 19.84 313 P **Pn 05 51 50.7 +0.3**
comp=Z,21nm,1.2s
COP Copenhagen 19.91 332 *iP* **P 05 51 48.9 -0.5**
COP *eS* **S 05 55 31.2 -1.8**
COP Copenhagen 19.91 332 *eP* **P 05 51 48.9 -0.5**
COP *eS* **S 05 55 31.2 -1.8**
COP Copenhagen 19.91 332 *eP* **P 05 51 48.9 -0.5**
LBL Lubilhac 19.98 296 *eP* Pn 05 51 52.0 -0.2
LBL Lubilhac 19.98 296 *eP* Pn 05 51 52.0 -0.2
BEBN Eben Emael 20.11 313 P Pn 05 51 54.1 +0.6
BCLA Clavier 20.16 312 P Pn 05 51 54.0 -0.1
comp=Z,26nm,1.4s
AGO Saint Agoulin 20.20 298 *eP* Pn 05 51 54.3 -0.5
AGO Saint Agoulin 20.20 298 *eP* Pn 05 51 54.3 -0.5
PYM Petit Puy Mans 20.23 297 *eP* Pn 05 51 54.8 -0.4
PYM Petit Puy Mans 20.23 297 *eP* Pn 05 51 54.8 -0.4
DOU Dourbes 20.44 310 P Pn 05 51 56.4 -1.1
FRNF Fournols 20.49 296⇑ *eP* Pn 05 51 58.3 +0.2
FRNF Fournols 20.49 296⇑ *eP* Pn 05 51 58.3 +0.2
SNF Seneffe 20.79 311 P Pn 05 52 00.3 -1.2
EMHD Djebel Mahouad 20.80 270 P Pn 05 52 00.8 -1.1
EMHD Djebel Mahouad 20.80 270 P Pn 05 52 00.8 -1.1
MUD Monsted U'grnd 21.72 329 *iP* **P 05 52 09.8 +0.8**
comp=Z,27nm,0.9s
MUD Monsted U'grnd 21.72 329 *iP* **P 05 52 09.8 +0.8**
MUD pmax pmax
comp=Z,27nm,0.9s
MUD Monsted U'grnd 21.72 329 *iP* **P 05 52 09.8 +0.8**
comp=Z,27nm,0.9s
RESF Ens 21.90 289 *eP* **P 05 52 12.1 +0.8**
RESF Ens 21.90 289 *eP* **P 05 52 12.1 +0.8**
VIEF Viey 22.13 289 *eP* **P 05 52 15.0 +1.3**
VIEF Viey 22.13 289 *eP* **P 05 52 15.0 +1.3**
EANR 'Ain N'Sour 22.31 271 P **P 05 52 17.0 +1.3**
EANR 'Ain N'Sour 22.31 271 P **P 05 52 17.0 +1.3**
ETRT Tiaret 22.32 269 P **P 05 52 16.0 +0.1**
ETRT Tiaret 22.32 269 P **P 05 52 16.0 +0.1**
FINES FINESS Array B 22.41 356 P **P 05 52 17.7 +1.3**
comp=Z,4.6nm,0.6s,baz=154,slow=9.2,SNR=16
FINES LR LR 06 01 35.6

comp=Z,915nm,18.9s,baz=173,slow=38
FIA1 FINESS Array S 22.41 356 *e*P **P 05 52 17.9 +1.5**
comp=Z,58nm,1.4s
FIA1 FINESS Array S 22.41 356 *e*P **P 05 52 17.9 +1.5**
comp=Z,58nm,1.4s
ATE Arette 22.66 290 *e*P **P 05 52 21.1 +1.8**
ATE Arette 22.66 290 *e*P **P 05 52 21.1 +1.8**
KLMR Klimovskoe 22.71 13*d i*P **P 05 52 19.8 +0.2**
KLMR pmax pmax
comp=Z,105nm,1.2s
KLMR Klimovskoe 22.71 13 *i*P **P 05 52 19.8 +0.2**
comp=Z,105nm,1.2s
GEYT Alibeck 22.77 84 P **P 05 52 21.1 +0.6**
comp=Z,67nm,0.9s,baz=293,slow=9.5,SNR=39
GEYT LR LR 06 02 07.4
comp=Z,438nm,21.5s,baz=275,slow=39
HFS Hagfors 23.13 340 P **P 05 52 25.2 +1.3**
comp=Z,6.9nm,0.7s,baz=140,slow=9.4,SNR=14
HFS LR LR 06 01 44.3
comp=Z,779nm,20.9s,baz=150,slow=37
AKTK Aktyubinsk 23.34 52 P **P 05 52 26.5 +0.3**
comp=Z,27nm,1.0s
AKTO Aktyubinsk 23.34 52 P **P 05 52 26.4 +0.2**
comp=Z,27nm,1.0s,baz=248,slow=11,SNR=39
AKTO LR LR 06 05 40.3
comp=Z,620nm,18.0s,baz=246,slow=47
NC602 NORSAR Array S 24.21 339 *e*P **P 05 52 35.2 +0.7**
NC602 NORSAR Array S 24.21 339 *e*P **P 05 52 35.2 +0.7**
AB31 Akbulak array 24.23 55 *i*P **P 05 52 34.8 0.0**
AB31 pmax pmax
comp=Z,11nm,0.8s
AB31 Akbulak array 24.23 55 *i*P **P 05 52 34.8 0.0**
comp=Z,11nm,0.8s
ABKAR Akbulak array 24.23 55 *e*P **P 05 52 34.7 -0.1**
ABKAR Akbulak array 24.23 55 *e*P **P 05 52 34.7 -0.1**
NC405 NORSAR Array S 24.48 340 *e*P **P 05 52 36.9 0.0**
NC405 NORSAR Array S 24.48 340 *e*P **P 05 52 36.9 0.0**
NAO01 NORSAR Array S 24.49 338 *e*P **P 05 52 37.6 +0.6**
NAO01 NORSAR Array S 24.49 338 *e*P **P 05 52 37.6 +0.6**
NB201 NORSAR Array S 24.54 339 *e*P **P 05 52 37.7 +0.2**
NB201 NORSAR Array S 24.54 339 *e*P **P 05 52 37.7 +0.2**
NB2 NORSAR Subarra 24.56 339 P **P 05 52 37.4 -0.3**
comp=Z,17nm,0.9s,baz=142,slow=9.3
NB2 NORSAR Subarra 24.56 339 P **P 05 52 37.4 -0.3**
comp=Z,17nm,0.9s,SNR=0.9
NOA NORSAR Array B 24.56 339 P **P 05 52 37.7 +0.1**
comp=Z,9.9nm,0.8s,baz=143,slow=9.2,SNR=22
NOA PcP **PcP 05 56 14.3 -1.0**
comp=Z,0.5nm,0.7s,baz=148,slow=2.1,SNR=2.8
NOA LR LR 06 02 47.0
comp=Z,445nm,18.5s,baz=160,slow=38
NBO02 NORSAR Array S 24.66 339 *e*P **P 05 52 39.0 +0.4**
NBO02 NORSAR Array S 24.66 339 *e*P **P 05 52 39.0 +0.4**
NC303 NORSAR Array S 24.67 339 *e*P **P 05 52 38.7 +0.1**
NC303 NORSAR Array S 24.67 339 *e*P **P 05 52 38.7 +0.1**
NBO00 NORSAR Array S 24.67 339 *e*P **P 05 52 39.2 +0.5**
NBO00 NORSAR Array S 24.67 339 *e*P **P 05 52 39.2 +0.5**
CWF Charnwood Fore 24.86 313 *e*P **P 05 52 41.4 +1.0**
comp=Z,79nm,1.7s
CWF Charnwood Fore 24.86 313 *e*P **P 05 52 41.4 +1.0**
comp=Z,79nm,1.7s
NC204 NORSAR Array S 24.88 339 *e*P **P 05 52 42.7 +2.1**
NC204 NORSAR Array S 24.88 339 *e*P **P 05 52 42.6 +2.1**
ES19 SONSECA Array 25.34 282 *e*P **P 05 52 44.9 -0.1**
ES19 SONSECA Array 25.34 282 *e*P **P 05 52 44.9 -0.1**
ESDC Sonseca Array 25.40 282 P **P 05 52 45.6 +0.1**
comp=Z,3.4nm,0.7s,baz=72,slow=10.0,SNR=26
ESDC LR LR 06 03 35.6
comp=Z,273nm,18.6s,baz=85,slow=38
ESLA Sonseca Array 25.40 282 *e*P **P 05 52 45.3 -0.2**
comp=Z,20nm,1.4s
ESLA Sonseca Array 25.40 282 *e*P **P 05 52 45.3 -0.2**
comp=Z,20nm,1.4s
TMCR Tamitsa 25.64 9 *e*P **P 05 52 48.5 +1.2**
TMCR pmax pmax
comp=Z,60nm,1.0s
TMCR Tamitsa 25.64 9 *e*P **P 05 52 48.5 +1.2**
comp=Z,60nm,1.0s
PAB San Pablo 25.71 282 *e*P **P 05 52 50.9 +2.5**
PAB pmax pmax
comp=Z,27nm,1.5s
PAB San Pablo 25.71 282 *e*P **P 05 52 50.9 +2.5**
comp=Z,27nm,1.5s
PAB San Pablo 25.71 282 *e*P **P 05 52 50.9 +2.5**
comp=Z,27nm,1.5s
TAM Tamanrasset 25.78 238 *e*P **P 05 52 50.8 +1.6**
TAM pmax pmax
comp=Z,66nm,1.9s
TAM Tamanrasset 25.78 238 *e*P **P 05 52 50.8 +1.6**
comp=Z,66nm,1.9s
TAM Tamanrasset 25.78 238 *e*P **P 05 52 50.8 +1.6**
comp=Z,66nm,1.9s
ARU Arti 26.04 39 P **P 05 52 52.5 +1.4**
comp=Z,29nm,0.7s,baz=239,slow=6.5,SNR=29
ARU LR LR 06 05 01.7
comp=Z,588nm,18.6s,baz=246,slow=41
ARU Arti 26.04 39*c i*P **P 05 52 52.5 +1.4**
ARU 05 53 28.6
ARU PPP PPP 05 53 41.4
ARU 05 56 15.9
ARU S **S 05 57 25.0 +3.5**
ARU SS **SnSn 05 58 23.8 +4.7**
ARU pmax pmax
comp=Z,145nm,1.7s
ARU MLR MLR
comp=Z,615nm,19.0s
ARU Arti 26.04 39 *i*P **P 05 52 52.5 +1.4**
comp=Z,145nm,1.7s
ARU S **S 05 57 25.0 +3.5**
ARU Arti 26.04 39 *e*P **P 05 52 52.2 +1.1**
comp=Z,350nm,1.8s
EKA Eskdalemuir Ar 26.86 318 P **P 05 53 00.8 +2.3**
comp=Z,7.2nm,0.5s,baz=114,slow=12,SNR=57
UOSS Minazif 26.93 114 *e*P **P 05 53 01.5 +2.1**
comp=Z,9.3nm,1.8s
UOSS Minazif 26.93 114 *e*P **P 05 53 01.5 +2.1**
comp=Z,9.3nm,1.8s
SOKR Solikamsk 26.98 32 *e*P **P 05 52 59.3 -0.2**
SOKR pmax pmax
comp=Z,10.0nm,0.8s
PBRG Braganca 27.20 287 *e*P **P 05 53 01.6 -0.2**
SVE Sverdlovsk 27.24 39 *e*P **P 05 53 03.7 +1.8**
SVE *e*S **S 05 57 38.8 -1.7**
SVE pmax pmax
comp=Z,58nm,1.6s
SVE Sverdlovsk 27.24 39 *e*P **P 05 53 03.7 +1.8**
comp=Z,58nm,1.6s
SVE *e*S **S 05 57 38.8 -1.7**
MVO Moncorvo 27.49 286 *e*P **P 05 53 04.6 +0.2**
MVO *e*LR LR 06 01 16.0
comp=Z,272nm,16.0s
MDT Midelt 27.81 267 P **P 05 53 08.7 +1.3**
comp=Z,3.3nm,0.8s,baz=96,slow=10,SNR=7.7
DAMY Dhamar 27.97 147 *e*P **P 05 53 11.0 +1.9**
comp=Z,41nm,1.0s
DAMY Dhamar 27.97 147 *e*P **P 05 53 11.0 +1.9**
comp=Z,41nm,1.0s
PCBR Castelo Branco 28.04 283 *e*P **P 05 53 10.0 +0.8**
comp=Z,28nm,1.9s
PBAR Barrancos 28.05 280 *e*LR LR 06 01 32.3
comp=Z,505nm,20.0s
PVIS Viseu 28.20 285 *e*P **P 05 53 10.5 -0.3**
PGAV Gavieira, Arco 28.31 288 *e*P **P 05 53 12.0 +0.2**
PGAV *e*LR LR 06 02 15.9
comp=Z,418nm,20.0s
APA Apatity 28.59 4⇑ *i*P **P 05 53 15.0 +1.1**
APA MLR MLR
comp=Z,900nm,15.0s
APA Apatity 28.59 4 *i*P **P 05 53 15.0 +1.1**
comp=Z,900nm,15.0s
PBDV Barranco-do-Ve 28.96 278 *e*LR LR 06 01 32.1
comp=Z,145nm,16.0s
LVZ Lovozero 28.99 4⇑ *e*P **P 05 53 18.5 +1.1**
LVZ pmax pmax
comp=Z,38nm,2.5s
LVZ MLR MLR
comp=Z,627nm,15.0s
LVZ Lovozero 28.99 4 *e*P **P 05 53 18.5 +1.1**
comp=Z,627nm,15.0s
MORF Marmelete 29.50 278 *e*LR LR 06 00 48.1
comp=Z,223nm,16.0s
WSAR Wadi Sarin 29.72 113 P **P 05 53 26.0 +1.7**
comp=Z,9.0nm,0.9s,baz=317,slow=12,SNR=4.7
ARA0 ARCESS Array S 30.52 358 *e*P **P 05 53 31.7 +0.8**
ARA0 ARCESS Array S 30.52 358 *e*P **P 05 53 31.7 +0.8**
ARCES ARCESS Array B 30.52 358 P **P 05 53 31.8 +0.8**
comp=Z,5.7nm,0.8s,baz=163,slow=8.9,SNR=15
ARCES LR LR 06 06 18.0
comp=Z,595nm,20.3s,baz=168,slow=37
ZRNK Zerenda 30.58 50 P **P 05 53 31.4 -0.3**
ZRNK pmax pmax
comp=Z,27nm,1.2s
ZRNK Zerenda 30.58 50 P **P 05 53 31.4 -0.3**
comp=Z,27nm,1.2s
ZRNK Zerenda 30.58 50 *e*P **P 05 53 32.6 +0.9**
comp=Z,17nm,0.9s
KK31 Karatay Array 31.30 69 *i*P **P 05 53 38.4 +0.3**
KK31 pmax pmax
comp=Z,24nm,1.1s
KK31 Karatay Array 31.30 69 *i*P **P 05 53 38.4 +0.3**
comp=Z,24nm,1.1s
KKAR Karatay Array 31.30 69 *e*P **P 05 53 38.6 +0.5**
KKAR Karatay Array 31.30 69 *e*P **P 05 53 38.6 +0.5**
KKAR Karatay Array 31.30 69 *e*P **P 05 53 38.6 +0.5**
FURI Furi 31.33 161 *e*P **P 05 53 42.1 +3.2**
comp=Z,160nm,2.0s
KBL Kabul 32.19 86 *e*P **P 05 53 47.1 +0.8**
KBL pmax pmax
comp=Z,20nm,1.3s
KBL Kabul 32.19 86 *e*P **P 05 53 47.1 +0.8**
comp=Z,20nm,1.3s
KBL Kabul 32.19 86 *e*P **P 05 53 47.0 +0.8**
comp=Z,20nm,1.3s
OTUK Ortayu 32.26 59 P **P 05 53 47.2 +0.6**
OTUK pmax pmax
comp=Z,32nm,1.1s
OTUK Ortayu 32.26 59 P **P 05 53 47.2 +0.6**
comp=Z,32nm,1.1s
EKS2 Erkin-Say 33.73 69 *e*P **P 05 54 00.8 +1.2**
EKS2 pmax pmax
comp=Z,27nm,1.1s
EKS2 Erkin-Say 33.73 69 *e*P **P 05 54 00.8 +1.2**
comp=Z,27nm,1.1s
EKS2 Erkin-Say 33.73 69 *e*P **P 05 54 00.8 +1.2**
comp=Z,27nm,1.1s
AAK Ala-Archa 34.26 69⇓ *e*P **P 05 54 04.9 +0.7**
AAK pmax pmax
comp=Z,68nm,0.9s
AAK MLR MLR
comp=Z,964nm,17.0s
AAK Ala-Archa 34.26 69 *e*P **P 05 54 04.9 +0.7**
comp=Z,964nm,17.0s
AAK Ala-Archa 34.26 69 *e*P **P 05 54 05.5 +1.3**
comp=Z,27nm,0.9s
FRU Bishkek 34.32 69 *i*P **P 05 54 05.5 +1.0**
FRU pmax pmax
comp=Z,175nm,1.6s
FRU Bishkek 34.32 69 *i*P **P 05 54 05.5 +1.0**
comp=Z,175nm,1.6s
TKM2 Tokmak 2 35.01 68 P **P 05 54 11.1 +0.3**
TKM2 pmax pmax
comp=Z,12nm,0.9s
TKM2 Tokmak 2 35.01 68 P **P 05 54 11.1 +0.3**
comp=Z,12nm,0.9s
TKM2 Tokmak 2 35.01 68 *e*P **P 05 54 11.3 +0.6**
comp=Z,12nm,0.9s
TORD Torodi Ar. Bea 35.38 230 P **P 05 54 13.9 0.0**
comp=Z,6.0nm,0.6s,baz=38,slow=8.5,SNR=64
TORD PcP **PcP 05 56 43.3 -0.6**
comp=Z,1.6nm,0.7s,baz=22,slow=3.3,SNR=5.6
TORD LR LR 06 09 02.0
comp=Z,253nm,21.8s,baz=35,slow=37
KSH Kashi 36.02 74 *e*P **P 05 54 18.8 -0.5**
KSH *e*pP sP 05 54 26.0 +0.9
KSH *e*sP pP 05 54 29.5 +6.0
KSH *e*PP **PnPn 05 55 39.5 -0.6**
KSH S **S 05 59 52.0 -5.9**
KSH SS **SnSn 06 02 12.8 -9.4**
KSH pmax pmax
comp=Z,27nm,1.3s
KSH pmax pmax
comp=Z,180nm,4.3s
KSH LR LR
comp=N,440nm,11.5s
KSH LR LR
comp=E,290nm,13.4s
KSH LR LR
comp=Z,280nm,11.1s
KURK Kurchatov 36.34 55 *e*P **P 05 54 23.0 +1.2**
KURK pmax pmax
comp=Z,49nm,1.5s
KURK Kurchatov 36.34 55 *e*P **P 05 54 23.0 +1.2**
comp=Z,49nm,1.5s
KURK Kurchatov 36.34 55 *e*P **P 05 54 23.0 +1.2**
comp=Z,49nm,1.5s
PDGK Podgornoye 37.73 67 P **P 05 54 34.1 +0.4**
PDGK pmax pmax
comp=Z,35nm,1.0s
PDGK Podgornoye 37.73 67 P **P 05 54 34.1 +0.4**
comp=Z,35nm,1.0s
BORG Borgarnes 38.66 328 LR LR 06 12 04.7
comp=Z,454nm,18.6s,baz=131,slow=38
MAKZ Makanchi 38.88 61 *e*P **P 05 54 43.8 +0.4**
MAKZ pmax pmax
comp=Z,61nm,1.9s
MAKZ Makanchi 38.88 61 *e*P **P 05 54 43.8 +0.4**
comp=Z,61nm,1.9s
MAKZ Makanchi 38.88 61 *e*P **P 05 54 43.8 +0.4**
comp=Z,61nm,1.9s
MK31 Makanchi Array 39.09 61 P **P 05 54 45.0 -0.2**
MK31 pmax pmax
comp=Z,13nm,0.8s
MK31 Makanchi Array 39.09 61 P **P 05 54 45.0 -0.2**
comp=Z,13nm,0.8s
MK31 Makanchi Array 39.09 61 *e*P **P 05 54 45.5 +0.3**
MKAR Makanchi Array 39.09 61 P **P 05 54 45.4 +0.2**
comp=Z,8.3nm,0.7s,baz=281,slow=7.2,SNR=78
MKAR LR LR 06 14 38.5
comp=Z,321nm,18.5s,baz=278,slow=42
MKAR Makanchi Array 39.09 61 *e*P **P 05 54 45.5 +0.3**
MK01 Makanchi Array 39.10 61 *e*P **P 05 54 45.2 -0.1**
MK01 Makanchi Array 39.10 61 *e*P **P 05 54 45.2 -0.1**
NVS Novosibirsk 39.14 48⇓ *i*P **P 05 54 46.7 +1.4**
NVS *e* 05 56 14.5
NVS pmax pmax
comp=Z,49nm,1.2s
NVS pmax pmax
comp=N,16nm,1.4s
NVS pmax pmax
comp=E,20nm,1.2s
NVS Novosibirsk 39.14 48 *i*P **P 05 54 46.7 +1.4**
comp=E,16nm,1.4s
ZAA0 Zalesovo Array 40.07 49 *e*P **P 05 54 53.0 -0.2**
ZAA0 Zalesovo Array 40.07 49 *e*P **P 05 54 53.0 -0.2**
ZALV Zalesovo Beam 40.07 49 P **P 05 54 52.9 -0.2**
comp=E,12nm,0.8s,baz=268,slow=9.0,SNR=31
ZALV LR LR 06 15 03.8
comp=E,271nm,20.1s,baz=261,slow=42
KMBO Kilima Mbogo 40.78 167 P **P 05 54 59.2 -0.5**
comp=E,0.7nm,0.2s,baz=356,slow=12,SNR=3.8
DAG Danmarks Havn 42.92 346 *i*P **P 05 55 19.0 +2.8**
DAG Danmarks Havn 42.92 346 *e*P **P 05 55 19.0 +2.8**
NRIK Noril'sk 42.98 26 LR LR 06 16 34.5
comp=E,335nm,18.9s,baz=274,slow=41
WMQ Urumqi 43.43 64 P **P 05 55 22.3 +1.4**
WMQ pP sP 05 55 28.0 +1.3
WMQ sP pP 05 55 33.5 +8.4
WMQ S **S 06 01 48.5 -0.3**
WMQ sS sS 06 02 01.0 +5.3
WMQ ScS **ScS 06 05 18.3 -2.2**
WMQ pmax pmax
comp=Z,10.0nm,1.0s
WMQ pmax pmax
comp=Z,41nm,3.6s
WMQ LR LR
comp=N,260nm,22.4s
WMQ LR LR
comp=E,340nm,19.0s
WMQ LR LR
comp=Z,230nm,20.6s
DBIC Dimbokro 44.43 232 P **P 05 55 27.3 -1.8**
comp=Z,5.4nm,0.6s,baz=20,slow=8.8,SNR=12
DBIC PcP **PcP 05 57 12.6 -0.1**
comp=Z,6.9nm,0.9s,baz=360,slow=1.4,SNR=3.2
DBIC LR LR 06 16 45.1
comp=Z,111nm,19.6s,baz=17,slow=40
TIC Toumodi 44.55 232 *e*P **P 05 55 29.4 -0.7**
KIC Kosan Boka 44.60 232 *e*P **P 05 55 30.0 -0.5**
comp=Z,134nm,1.6s
LIC Lamto 44.88 232 *e*P **P 05 55 32.4 -0.3**
comp=Z,22nm,0.7s
PYUN Piuthan 45.70 87 *e*P **P 05 55 39.2 -0.2**
comp=Z,99nm,0.9s
KOLN Koldanda 46.33 87 *e*P **P 05 55 44.0 -0.4**
comp=Z,70nm,0.9s
SUMG Summit 46.43 337 *i*P **P 05 55 46.0 +1.2**
comp=Z,7.3nm,0.7s
SUMG Summit 46.43 337 *i*P **P 05 55 46.0 +1.2**
SUMG pmax pmax
comp=Z,7.0nm,0.7s
SUMG Summit 46.43 337 *e*P **P 05 55 46.0 +1.2**
comp=Z,19nm,1.3s
SUMG Summit 46.43 337 *e*P **P 05 55 46.0 +1.2**
comp=Z,19nm,1.3s
GKN Gorkha 47.02 86 *e*P **P 05 55 49.1 -0.6**
comp=Z,85nm,1.1s
DMN Daman 47.58 86 *e*P **P 05 55 53.8 -0.4**
comp=Z,76nm,1.1s
GUN Gumba 48.03 86 *e*P **P 05 55 56.9 -0.9**
comp=Z,107nm,1.4s
MOY Mondy 50.10 51 *e*P **P 05 56 16.0 +3.0**
MOY Mondy 50.10 51 *e*P **P 05 56 16.0 +3.0**
LSA Lhasa 51.25 81 *e*P **P 05 56 22.5 +0.1**
LSA pmax pmax
comp=Z,19nm,1.3s
LSA Lhasa 51.25 81 *e*P **P 05 56 22.5 +0.1**
comp=Z,19nm,1.3s
LSA Lhasa 51.25 81 *e*P **P 05 56 22.5 +0.1**
comp=Z,19nm,1.3s
TLY Talaya 51.68 50 *e*P **P 05 56 25.8 +1.0**
TLY *e* 05 58 17.6
TLY *e*S **S 06 03 53.9 +8.2**
TLY *e* 06 07 25.9
TLY pmax pmax
comp=Z,22nm,1.4s
TLY MLR MLR
comp=Z,281nm,21.0s
TLY Talaya 51.68 50 *e*P **P 05 56 25.8 +1.0**
comp=Z,22nm,1.4s
TLY Talaya 51.68 50 *e*P **P 05 56 25.5 +0.7**
comp=Z,16nm,1.0s
ZAK Zakamensk 51.85 52 *e*P **P 05 56 25.8 -0.4**
ZAK pmax pmax
comp=Z,14nm,1.2s
ZAK Zakamensk 51.85 52 *e*P **P 05 56 25.8 -0.4**
comp=Z,14nm,1.2s
IRK Irkutsk 51.88 49 *e*P **P 05 56 25.9 -0.4**
IRK pmax pmax
comp=Z,40nm,2.0s
IRK Irkutsk 51.88 49 *e*P **P 05 56 25.9 -0.4**
comp=Z,40nm,2.0s
GTA Gaotai 53.46 66 *e*P **P 05 56 38.5 +0.2**
GTA pP sP 05 56 45.8 +1.6
GTA sP pP 05 56 49.0 +6.4
GTA pmax pmax
comp=Z,5.0nm,0.6s
SHL Shillong 53.85 85 *ex* **P 05 56 39.0 -2.4**
SONM Songino Array 54.63 54 P **P 05 56 46.2 -0.6**
comp=Z,9.6nm,0.9s,baz=292,slow=8.1,SNR=22
SONM PcP **PcP 05 57 50.0 +0.4**
comp=Z,0.5nm,0.5s,baz=286,slow=5.4,SNR=4.1
SONM LR LR 06 23 10.3
comp=Z,376nm,18.1s,baz=284,slow=39
SONA1 Songino Array 54.63 54 *e*P **P 05 56 46.8 0.0**
SONA1 Songino Array 54.63 54 *e*P **P 05 56 46.8 0.0**
ULN Ulaanbaatar 55.03 54⇑ *i*P **P 05 56 50.1 +0.4**
ULN pmax pmax
comp=Z,37nm,1.7s
ULN Ulaanbaatar 55.03 54 *i*P **P 05 56 50.1 +0.4**
comp=Z,37nm,1.7s
ULN Ulaanbaatar 55.03 54 *e*P **P 05 56 49.9 +0.2**
comp=Z,17nm,1.0s
TIXI Tiksi 56.36 22⇑ *i*P **P 05 56 59.0 +0.4**
TIXI MLR MLR
comp=Z,254nm,19.0s
TIXI Tiksi 56.36 22 *i*P **P 05 56 59.0 +0.4**
comp=Z,254nm,19.0s
TIXI Tiksi 56.36 22 *e*P **P 05 56 58.5 -0.1**
comp=Z,25nm,1.9s
LZH Lanzhou 57.77 68 *e*P **P 05 57 12.0 +2.6**
LZH pP sP 05 57 20.5 +5.2
LZH sP pP 05 57 24.5 +11
LZH pmax pmax
comp=Z,23nm,1.0s
LZH pmax pmax
comp=Z,140nm,4.5s
CD2 Chengdu 60.20 73 P **P 05 57 24.5 -1.7**
CD2 pmax pmax
comp=Z,30nm,0.8s
YAK Yakutsk 60.90 32 LR LR 06 27 48.3
comp=Z,350nm,18.6s,baz=272,slow=40
HHC Hu-ho-hao-te 60.93 59⇑ P **P 05 57 32.3 +1.2**
HHC S **S 06 05 46.8 -2.1**
HHC SKS SKKSac 06 07 17.5 -4.4
HHC pmax pmax
comp=Z,30nm,1.2s
HHC pmax pmax
comp=Z,240nm,6.8s
HHC LR LR
comp=N,280nm,16.4s
HHC LR LR
comp=E,300nm,16.9s
HHC LR LR
comp=Z,300nm,17.0s
HIA Hailar 62.08 48 *e*P **P 05 57 39.2 +0.6**
HIA pmax pmax
comp=Z,22nm,1.2s
HIA Hailar 62.08 48 *e*P **P 05 57 39.2 +0.6**
comp=Z,22nm,1.2s
HIA Hailar 62.08 48 *e*P **P 05 57 39.2 +0.6**
comp=Z,22nm,1.2s
SCHQ Schefferville 62.16 319 P **P 05 57 38.4 -0.7**
comp=Z,10.0nm,0.6s,baz=61,slow=5.3,SNR=30
SCHQ LR LR 06 25 25.9
comp=Z,168nm,18.7s,baz=18,slow=37
SCHQ Schefferville 62.16 319 *e*P **P 05 57 38.4 -0.7**
comp=Z,21nm,1.1s
SCHQ Schefferville 62.16 319 *e*P **P 05 57 38.4 -0.7**
comp=Z,21nm,1.1s
XAN Xi'an 62.41 67 P **P 05 57 43.0 +1.9**
XAN pmax pmax
comp=Z,20nm,1.3s
KMI Kunming 62.44 79 P **P 05 57 42.5 +0.9**
KMI pmax pmax
comp=Z,15nm,0.5s
KMI pmax pmax
comp=Z,180nm,4.6s
CHTO Chiang Mai 62.99 87 *e*P **P 05 57 45.0 -0.2**
CHTO pmax pmax
comp=Z,5.0nm,0.8s
CHTO Chiang Mai 62.99 87 *e*P **P 05 57 45.0 -0.2**
comp=Z,4.9nm,0.8s
CHTO Chiang Mai 62.99 87 *e*P **P 05 57 45.0 -0.2**
comp=Z,4.9nm,0.8s
CM31 Chiang Mai Arr 63.20 87 *e*P **P 05 57 45.0 -1.5**
CM31 Chiang Mai Arr 63.20 87 *e*P **P 05 57 45.0 -1.5**
CMAR Chiang Mai Arr 63.20 87 P **P 05 57 45.1 -1.3**
comp=Z,3.6nm,0.7s,baz=303,slow=8.2,SNR=19
CMAR LR LR 06 30 09.0
comp=Z,116nm,19.8s,baz=309,slow=41
CMAR Chiang Mai Arr 63.20 87 *i*P **P 05 57 47.9 +1.4**
CMAR pmax pmax
comp=Z,4.0nm,0.6s
CM01 Chiang Mai Arr 63.23 87 *e*P **P 05 57 45.8 -0.9**
CM01 Chiang Mai Arr 63.23 87 *e*P **P 05 57 45.8 -0.9**
BJI Beijing 64.39 58 P **P 05 57 54.5 +0.4**
BJI PP **PP 06 00 15.8 +0.4**
BJI S **S 06 06 29.8 -2.3**
BJI Beijing 64.39 58 SS SS 06 10 41.0 -0.6
BJI pmax pmax
comp=Z,5.0nm,0.8s
BJI AMB AMB
comp=Z,230nm,7.9s
BJI LR LR
comp=N,470nm,10.7s
BJI LR LR
comp=Z,240nm,25.8s
BJT Baijiatuau 64.40 58 *e*P **P 05 57 54.6 +0.5**
BJT pmax pmax
comp=Z,26nm,1.0s
BJT Baijiatuau 64.40 58 *e*P **P 05 57 54.6 +0.5**
comp=Z,26nm,1.0s
BJT Baijiatuau 64.40 58 *e*P **P 05 57 54.6 +0.5**
comp=Z,26nm,1.0s
GYA Guiyang 64.69 76 *e*P **P 05 57 57.3 +0.9**
GYA pmax pmax
comp=Z,10.0nm,1.0s
ENH Enshi 64.76 71 *e*P **P 05 57 57.3 +0.6**

comp=Z,16nm,0.8s
ENH Enshi 64.76 71 *e*P **P 05 57 57.3 +0.6**
comp=Z,16nm,0.8s
TIA Tai'an 67.03 61 ||P **P 05 58 10.8 -0.4**
TIA pmax pmax
comp=Z,30nm,1.0s
BOSA Boshof 67.49 184 P **P 05 58 14.9 +0.9**
comp=Z,3.0nm,0.6s,baz=330,slow=5.6,SNR=10.0
BOSA LR LR 06 29 26.3
comp=Z,127nm,18.0s,baz=11,slow=38
WHN Wuhan 68.15 68 ||P **P 05 58 19.5 +1.2**
CN2 Changchun 68.27 51 *e*P **P 05 58 19.0 +0.2**
CN2 pmax pmax
comp=Z,10.0nm,0.8s
BILL Bilibino 68.44 16||*e*P **P 05 58 19.8 +0.3**
BILL *i* 05 58 22.1
BILL pmax pmax
comp=Z,25nm,1.7s
BILL Bilibino 68.44 16 *e*P **P 05 58 19.8 +0.3**
comp=Z,25nm,1.7s
BILL Bilibino 68.44 16 *e*P **P 05 58 19.5 0.0**
comp=Z,48nm,1.8s
SEY Seymchan 68.71 24 P **P 05 58 21.5 +0.2**
comp=Z,2.3nm,0.5s,baz=322,slow=4.0,SNR=9.3
SEY Seymchan 68.71 24||*e*P **P 05 58 21.8 +0.6**
SEY Seymchan 68.71 24 *e*P **P 05 58 21.8 +0.6**
KLR Kul'dur 68.77 43 LR LR 06 31 11.4
comp=Z,221nm,20.2s,baz=306,slow=38
KLR Kul'dur 68.77 43||*e*P **P 05 58 21.3 -0.6**
KLR Kul'dur 68.77 43 *e*P **P 05 58 21.3 -0.6**
MDJ Mudanjiang 70.25 48 P **P 05 58 31.5 +0.4**
MDJ pmax pmax
comp=Z,5.0nm,0.6s
MDJ pmax pmax
comp=Z,85nm,3.4s
MA2 Magadan 70.57 27 P **P 05 58 33.1 +0.3**
comp=Z,4.1nm,0.6s,baz=293,slow=3.4,SNR=4.3
FRNY Flat Rock 71.27 313 *e*P **P 05 58 37.9 +0.6**
comp=Z,7.1nm,0.9s
FRNY Flat Rock 71.27 313 *e*P **P 05 58 37.9 +0.6**
comp=Z,7.1nm,0.9s
QIZ Qiongzhong 71.29 80 P **P 05 58 39.5 +1.7**
QIZ S S 06 07 45.0 -10
QIZ LR LR
comp=Z,280nm,11.2s
MDV Middlebury 71.53 312 *e*P **P 05 58 40.1 +1.2**
MDV Middlebury 71.53 312 *e*P **P 05 58 40.1 +1.2**
USRK Ussuriysk Ar. 71.89 48 P **P 05 58 40.5 -0.5**
comp=Z,2.5nm,0.6s,baz=294,slow=6.1,SNR=10
USRK LR LR 06 34 31.9
comp=Z,192nm,18.8s,baz=307,slow=40
LONY Lake Ozonia 71.97 313 *e*P **P 05 58 42.3 +0.7**
comp=Z,8.9nm,0.9s
LONY Lake Ozonia 71.97 313 *e*P **P 05 58 42.3 +0.7**
comp=Z,8.9nm,0.9s
INCN Inchon 72.62 56 *e*P **P 05 58 45.4 -0.2**
comp=Z,123nm,1.8s
INCN Inchon 72.62 56 *e*P **P 05 58 45.4 -0.2**
comp=Z,123nm,1.8s
PSI Prapat 72.72 101 *e*P **P 05 58 44.9 -1.7**
PSI pmax pmax
comp=Z,23nm,0.9s
PSI Prapat 72.72 101 *e*P **P 05 58 44.9 -1.7**
comp=Z,22nm,0.9s
KS01 Wonju Array Si 73.43 55 *e*P **P 05 58 49.7 -0.6**
KS01 Wonju Array Si 73.43 55 *e*P **P 05 58 49.7 -0.6**
KS15 Wonju Array Si 73.45 55 *e*P **P 05 58 50.5 0.0**
KS15 Wonju Array Si 73.45 55 *e*P **P 05 58 50.5 0.0**
KSAR Wonju Array Be 73.45 55 P **P 05 58 50.1 -0.3**
KSAR Wonju Array Be 73.45 55 P **P 05 58 50.1 -0.3**
KSAR Wonju Array Be 73.45 55 P **P 05 58 50.1 -0.3**
KSRS Korea Array 73.47 55 P **P 05 58 50.1 -0.4**
comp=Z,22nm,0.8s,baz=305,slow=5.2,SNR=47
KSRS LR LR 06 34 51.8
comp=Z,402nm,18.4s,baz=309,slow=39
TJN Taejon 73.75 56||*i*P **P 05 58 51.8 -0.4**
TJN Taejon 73.75 56 *i*P **P 05 58 51.8 -0.4**
COLD Coldfoot 73.96 360 *e*P **P 05 58 53.7 +0.7**
comp=Z,12nm,1.5s
COLD Coldfoot 73.96 360 *e*P **P 05 58 53.6 +0.7**
comp=Z,12nm,1.5s
SADO Sadowa 74.41 315 *e*P **P 05 58 56.1 +0.1**
comp=Z,8.2nm,0.9s
SADO Sadowa 74.41 315 *e*P **P 05 58 56.1 +0.1**
comp=Z,8.2nm,0.9s
YKW3 Yellowknife Ar 74.51 343 *e*P **P 05 58 55.5 -0.7**
comp=Z,4.8nm,1.1s
YKW3 Yellowknife Ar 74.51 343 *e*P **P 05 58 55.5 -0.7**
comp=Z,4.8nm,1.1s
KSPA Keystone Colle 74.53 311 *e*P **P 05 58 54.7 -2.0**
comp=Z,20nm,1.2s
KSPA Keystone Colle 74.53 311 *e*P **P 05 58 54.7 -2.0**
comp=Z,20nm,1.2s
FYU Fort Yukon 74.54 358 *e*P **P 05 58 57.0 +0.7**
comp=Z,26nm,1.6s
FYU Fort Yukon 74.54 358 *e*P **P 05 58 57.0 +0.7**
comp=Z,26nm,1.6s
YKA Yellowknife Ar 74.57 343 P **P 05 58 55.8 -0.7**
comp=Z,2.0nm,1.0s,baz=28,slow=5.6,SNR=16
YKA LR LR 06 32 52.6
comp=Z,11nm,18.2s,baz=0.0,slow=37
YKB5 Yellowknife Ar 74.57 343 *e*P **P 05 58 55.9 -0.6**
YKB5 Yellowknife Ar 74.57 343 *e*P **P 05 58 55.9 -0.6**
N59A State Game Lan 74.94 311 P **P 05 58 59.6 +0.5**
baz=51
MVL Millersville 75.86 310 *e*P **P 05 59 05.2 +0.8**
comp=Z,10nm,1.0s
MVL Millersville 75.86 310 *e*P **P 05 59 05.2 +0.8**
comp=Z,10nm,1.0s
EGAK Eagle 76.14 356 *e*P **P 05 59 06.8 +1.3**
comp=Z,3.7nm,0.8s
EGAK Eagle 76.14 356 *e*P **P 05 59 06.8 +1.3**
comp=Z,3.7nm,0.8s
MDM Murphy Dome 76.22 359 *e*P **P 05 59 06.8 +0.7**
comp=Z,54nm,2.0s
MDM Murphy Dome 76.22 359 *e*P **P 05 59 06.8 +0.7**
comp=Z,54nm,2.0s
COLA College 76.30 359||*e*P **P 05 59 08.0 +1.6**
COLA pmax pmax
comp=Z,10.0nm,1.5s
COLA College 76.30 359 *e*P **P 05 59 08.0 +1.6**
comp=Z,10.0nm,1.5s
COLA College 76.30 359 *e*P **P 05 59 06.9 +0.5**
SSPA Standing Stone 76.36 311 *e*P **P 05 59 07.8 +0.6**
comp=Z,11nm,1.0s
SSPA Standing Stone 76.36 311 *e*P **P 05 59 07.8 +0.6**
comp=Z,11nm,1.0s
IL1 Eielson Array 76.38 358 *e*P **P 05 59 07.0 +0.1**
IL1 Eielson Array 76.38 358 *e*P **P 05 59 07.0 +0.1**
ILAR Eielson Array 76.38 358 P **P 05 59 07.2 +0.3**
comp=Z,0.5nm,0.6s,baz=347,slow=4.2,SNR=5.7
ILAR LR LR 06 32 38.6
comp=Z,63nm,21.7s,baz=358,slow=36
SDMD Soldier's Deli 76.52 310 *e*P **P 05 59 08.8 +0.6**
comp=Z,10nm,1.3s
SDMD Soldier's Deli 76.52 310 *e*P **P 05 59 08.8 +0.6**
comp=Z,10nm,1.3s
CCB Clear Creek Bu 76.53 359 *e*P **P 05 59 09.4 +1.7**
comp=Z,17nm,1.6s
CCB Clear Creek Bu 76.53 359 *e*P **P 05 59 09.4 +1.7**
comp=Z,17nm,1.6s
WRH Wood River Hil 76.71 359 *e*P **P 05 59 08.9 +0.1**
comp=Z,6.0nm,0.9s
WRH Wood River Hil 76.71 359 *e*P **P 05 59 08.9 +0.1**
comp=Z,6.0nm,0.9s
M54A Oil Creek Stat 76.81 313 P **P 05 59 10.0 +0.1**
baz=49
O56A Blue Knob Stat 76.99 312 P **P 05 59 10.9 0.0**
baz=49
BPAW Bear Paw Mtn. 77.11 360 *e*P **P 05 59 10.3 -0.8**
comp=Z,2.5nm,1.5s
BPAW Bear Paw Mtn. 77.11 360 *e*P **P 05 59 10.3 -0.8**
comp=Z,2.5nm,1.5s
N54A Moraine State 77.36 313 P **P 05 59 13.2 +0.3**
baz=49
DOT Dot Lake 77.41 357 *e*P **P 05 59 13.1 +0.3**
comp=Z,17nm,1.1s
DOT Dot Lake 77.41 357 *e*P **P 05 59 13.1 +0.3**
comp=Z,17nm,1.1s
MCK McKinley 77.46 359 *e*P **P 05 59 12.9 -0.2**
MCK pmax pmax
comp=Z,9.0nm,1.2s
MCK McKinley 77.46 359 *e*P **P 05 59 12.9 -0.2**
comp=Z,9.4nm,1.2s
MCK McKinley 77.46 359 *e*P **P 05 59 12.9 -0.2**
comp=Z,9.4nm,1.2s
FFC Flin Flon 77.52 333 *e*P **P 05 59 13.3 -0.2**
FFC pmax pmax
comp=Z,9.0nm,1.1s
FFC Flin Flon 77.52 333 *e*P **P 05 59 13.3 -0.2**
comp=Z,8.9nm,1.1s
FFC Flin Flon 77.52 333 *e*P **P 05 59 13.3 -0.2**
comp=Z,8.9nm,1.1s
ASAJ Asahikawa 77.78 42 P **P 05 59 14.7 -0.5**
comp=Z,3.1nm,0.4s,baz=312,slow=12
JKA Kamikawa-asahi 77.78 42 P **P 05 59 14.7 -0.4**
comp=Z,3.0nm,0.4s
CAST Castle Rocks 77.79 0 *e*P **P 05 59 15.4 +0.5**
comp=Z,13nm,1.4s
CAST Castle Rocks 77.79 0 *e*P **P 05 59 15.4 +0.5**
comp=Z,13nm,1.4s
PETK Petropavlovsk- 77.98 29 LR LR 06 38 12.7
comp=Z,219nm,19.3s,baz=313,slow=39
JNU Nakatsue 78.03 57 *e*P **P 05 59 17.2 +0.4**
comp=Z,44nm,1.1s
JNU Nakatsue 78.03 57 *e*P **P 05 59 17.2 +0.4**
comp=Z,44nm,1.1s
MCWV Mont Chateau 78.13 312 *e*P **P 05 59 17.9 +0.7**
comp=Z,8.8nm,1.1s
MCWV Mont Chateau 78.13 312 *e*P **P 05 59 17.9 +0.7**
comp=Z,8.8nm,1.1s
TTA Tatalina 78.20 2 *e*P **P 05 59 17.7 +0.4**
TTA pmax pmax
comp=Z,14nm,1.5s
TTA Tatalina 78.20 2 *e*P **P 05 59 17.7 +0.4**
comp=Z,14nm,1.5s
TTA Tatalina 78.20 2 *e*P **P 05 59 17.7 +0.4**
comp=Z,14nm,1.5s
TT01 Tatalina 78.23 2 *e*P **P 05 59 18.0 +0.7**
TT01 Tatalina 78.23 2 *e*P **P 05 59 18.0 +0.7**
ULM Lac du Bonnet 78.67 328 P **P 05 59 20.9 +1.0**
comp=Z,4.7nm,0.9s,baz=57,slow=2.8,SNR=3.5
ULM LR LR 06 36 23.1
comp=Z,163nm,18.1s,baz=34,slow=37
C36A Pine Crest Far 79.22 324 P **P 05 59 22.6 -0.5**
baz=42
SCM Sheep Creek Mo 79.34 358 *e*P **P 05 59 23.6 +0.1**
SCM pmax pmax
comp=Z,53nm,1.8s
SCM Sheep Creek Mo 79.34 358 *e*P **P 05 59 23.6 +0.1**
comp=Z,53nm,1.8s
SCM Sheep Creek Mo 79.34 358 *e*P **P 05 59 23.6 +0.1**
comp=Z,53nm,1.8s
B34A Aery, Baudette 79.48 326 P **P 05 59 24.1 -0.4**
baz=41
ACSO Alum Creek Sta 79.54 314 *e*P **P 05 59 24.8 -0.1**
comp=Z,9.3nm,0.8s
ACSO Alum Creek Sta 79.54 314 *e*P **P 05 59 24.8 -0.1**
comp=Z,9.3nm,0.8s
A32A Rocking H Ranc 79.95 327 P **P 05 59 26.6 -0.4**
baz=40
E36A McGregor 80.33 324 P **P 05 59 28.8 -0.3**
baz=42
B32A Ashes, Strandq 80.36 327 P **P 05 59 28.7 -0.6**
baz=40
MJAR Matsushiro Arr 80.42 50 P **P 05 59 28.6 -1.1**
comp=Z,7.0nm,1.1s,baz=309,slow=5.1,SNR=16
MJAR LR LR 06 38 32.7
comp=Z,148nm,20.9s,baz=270,slow=38
F36A Milaca 80.94 323 P **P 05 59 31.6 -0.8**
baz=42
KMSC Kings Mountain 82.03 309 P **P 05 59 38.1 -0.2**
baz=47
KMSC Kings Mountain 82.03 309 *e*P **P 05 59 37.6 -0.7**
comp=Z,8.4nm,1.0s
KMSC Kings Mountain 82.03 309 *e*P **P 05 59 37.6 -0.7**
comp=Z,8.4nm,1.0s
BLO Bloomington 82.24 315 *e*P **P 05 59 39.1 -0.3**
BLO pmax pmax
comp=Z,8.0nm,0.6s
BLO Bloomington 82.24 315 *e*P **P 05 59 39.1 -0.3**
comp=Z,7.6nm,0.6s
BLO Bloomington 82.24 315 *e*P **P 05 59 39.1 -0.3**
comp=Z,7.6nm,0.6s
HUMP Col San Antoni 82.41 287 *e*P **P 05 59 41.1 +0.6**
comp=Z,63nm,1.9s
HUMP Col San Antoni 82.41 287 *e*P **P 05 59 41.1 +0.6**
comp=Z,63nm,1.9s
H35A Sunnyside Ranc 82.42 323 P **P 05 59 39.5 -0.7**
baz=40
WCI Wyandotte Cave 82.78 314 *e*P **P 05 59 42.0 -0.2**
WCI pmax pmax
comp=Z,9.0nm,1.0s
WCI Wyandotte Cave 82.78 314 *e*P **P 05 59 42.0 -0.2**
comp=Z,8.5nm,1.0s
WCI Wyandotte Cave 82.78 314 *e*P **P 05 59 42.0 -0.2**
comp=Z,8.5nm,1.0s
TKL Tuckaleechee C 83.13 311 *e*P **P 05 59 44.3 +0.2**
TKL pmax pmax
comp=Z,9.0nm,0.9s
TKL Tuckaleechee C 83.13 311 *e*P **P 05 59 44.3 +0.2**
comp=Z,9.0nm,0.9s
TKL Tuckaleechee C 83.13 311 *e*P **P 05 59 44.3 +0.2**
comp=Z,9.0nm,0.9s
SBUM Sibu 83.20 92 *e*P **P 05 59 44.8 +0.1**
comp=Z,14nm,1.1s
SBUM Sibu 83.20 92 *e*P **P 05 59 44.8 +0.1**
comp=Z,14nm,1.1s
CPCT Cooper Cave 83.71 311 *e*P **P 05 59 47.7 +0.6**
comp=Z,7.6nm,1.0s
CPCT Cooper Cave 83.71 311 *e*P **P 05 59 47.7 +0.6**
comp=Z,7.6nm,1.0s
ECSD EROS Data Cent 83.99 324 P **P 05 59 47.4 -0.9**
baz=39
ECSD EROS Data Cent 83.99 324 *e*P **P 05 59 48.0 -0.4**
comp=Z,15nm,2.0s
ECSD EROS Data Cent 83.99 324 *e*P **P 05 59 48.0 -0.4**
comp=Z,15nm,2.0s
G30A Faulkton 84.03 326 P **P 05 59 48.0 -0.5**
baz=38
R44A Waltonville 84.30 316 P **P 05 59 49.2 -0.8**
baz=44
O40A La Belle 84.41 319 P **P 05 59 49.5 -1.0**
baz=42
GOGA Godfrey 84.49 309 *e*P **P 05 59 51.7 +0.6**
GOGA pmax pmax
comp=Z,12nm,1.3s
GOGA Godfrey 84.49 309 *e*P **P 05 59 51.7 +0.6**
comp=Z,12nm,1.3s
GOGA Godfrey 84.49 309 *e*P **P 05 59 51.6 +0.6**
comp=Z,12nm,1.3s
SLM Saint Louis 84.64 317 *e*P **P 05 59 51.5 -0.2**
SLM pmax pmax
comp=Z,21nm,0.6s
SLM Saint Louis 84.64 317 *e*P **P 05 59 51.5 -0.2**
comp=Z,21nm,0.6s
SLM Saint Louis 84.64 317 *e*P **P 05 59 51.5 -0.2**
comp=Z,21nm,0.6s
P39B Salisbury 85.33 319 P **P 05 59 54.6 -0.6**
baz=41
S43A Fulton Ridge, 85.33 316 P **P 05 59 54.9 -0.3**
baz=43
Q40A Laux Farm, Aux 85.35 318 P **P 05 59 54.7 -0.6**
baz=42
Q39A Willow Grove F 85.78 319 P **P 05 59 56.9 -0.5**
baz=41
PARMO Parma 85.82 315 *e*P **P 05 59 57.3 -0.3**
PARMO Parma 85.82 315 *e*P **P 05 59 57.4 -0.3**
SDDR Presa de Saban 85.88 291 *e*P **P 05 59 58.9 +0.6**
comp=Z,13nm,0.8s
SDDR Presa de Saban 85.88 291 *e*P **P 05 59 58.9 +0.6**
comp=Z,13nm,0.8s
R40A Maddies Statio 85.97 318 P **P 05 59 57.9 -0.5**
baz=42
H26A Fairpoint 85.99 328 P **P 05 59 57.5 -0.9**
baz=35
PLAL Pickwick Lake 86.09 313 *e*P **P 05 59 58.0 -1.0**
comp=Z,14nm,1.1s
PLAL Pickwick Lake 86.09 313 *e*P **P 05 59 58.0 -1.0**
comp=Z,14nm,1.1s
PBMO Poplar Bluff 86.11 315 *e*P **P 05 59 58.9 -0.1**
comp=Z,17nm,1.0s
PBMO Poplar Bluff 86.11 315 *e*P **P 05 59 58.9 -0.1**
comp=Z,17nm,1.0s
CISI Cisompet, Garu 86.14 103 *e*P **P 05 59 57.6 -1.9**
comp=Z,108nm,1.6s
CISI Cisompet, Garu 86.14 103 *e*P **P 05 59 57.6 -1.9**
comp=Z,108nm,1.6s
Q38A Cooks Store, C 86.17 319 P **P 05 59 58.5 -0.9**
baz=41
K30A Basset 86.18 325 P **P 05 59 59.1 -0.3**
baz=37
R39A Chumby, Stover 86.36 318 P **P 05 59 59.3 -1.0**
baz=41
GNAR Gosnell 86.47 315 *e*P **P 06 00 00.9 0.0**
GNAR Gosnell 86.47 315 *e*P **P 06 00 00.9 0.0**
S40A Lebanon 86.61 317 P **P 06 00 01.0 -0.6**
baz=42
T41A Mountain View 86.63 316 P **P 06 00 01.3 -0.4**
baz=42
LRAL Lakeview Retre 86.86 311 *e*P **P 06 00 02.2 -0.7**
comp=Z,9.9nm,1.0s
LRAL Lakeview Retre 86.86 311 *e*P **P 06 00 02.2 -0.7**
comp=Z,9.9nm,1.0s
R38A Fenwick Farm, 86.90 319 P **P 06 00 02.1 -0.9**
baz=41
T40A Mansfield 86.95 317 P **P 06 00 02.5 -0.8**
baz=42
S39A Bolivar 86.97 318 P **P 06 00 02.2 -1.1**
baz=41
HBAR Harrisburg 87.13 315 *e*P **P 06 00 04.8 +0.7**
HBAR Harrisburg 87.13 315 *e*P **P 06 00 04.8 +0.7**
S38A Stockton 87.32 318 P **P 06 00 03.9 -1.1**
baz=41
P34A Walnut Farm, R 87.33 321 P **P 06 00 04.7 -0.3**
baz=39
Y46A Houston 87.33 313 P **P 06 00 03.8 -1.3**
baz=43
V42A Cord 87.34 315 P **P 06 00 03.6 -1.6**
baz=42
Y45A Yeager Farm, C 87.74 313 P **P 06 00 05.9 -1.1**
baz=43
RLMT Red Lodge 88.11 332 *e*P **P 06 00 09.6 +0.7**
comp=Z,25nm,1.8s
RLMT Red Lodge 88.11 332 *e*P **P 06 00 09.6 +0.7**
comp=Z,25nm,1.8s
T37A Cheneyville 18 88.23 318 P **P 06 00 08.2 -1.2**
baz=40
Q33A Connelly Farm, 88.24 321 P **P 06 00 08.6 -0.8**
baz=38
W41B Gary Mavity, V 88.28 316 P **P 06 00 08.7 -0.9**
baz=42
BOZ Bozeman (W) 88.50 334 *e*P **P 06 00 10.6 -0.1**
BOZ pmax pmax
comp=Z,10.0nm,1.6s
BOZ Bozeman (W) 88.50 334 *e*P **P 06 00 10.6 -0.1**
comp=Z,9.8nm,1.6s
BOZ Bozeman (W) 88.50 334 *e*P **P 06 00 10.6 -0.1**
comp=Z,9.8nm,1.6s
R34A Isabella, Hill 88.50 321 P **P 06 00 09.4 -1.3**
baz=39
YMR Madison River 89.11 333 *e*P **P 06 00 13.0 -0.7**
comp=Z,8.8nm,1.3s
YMR Madison River 89.11 333 *e*P **P 06 00 13.0 -0.7**
comp=Z,8.8nm,1.3s
H17A Grant Village 89.21 332 *e*P **P 06 00 14.9 +0.7**
comp=Z,3.8nm,0.9s
H17A Grant Village 89.21 332 *e*P **P 06 00 14.9 +0.7**
comp=Z,3.8nm,0.9s
CBKS Cedar Bluff 89.30 322 *e*P **P 06 00 14.7 +0.3**
CBKS pmax pmax
comp=Z,10.0nm,0.6s
CBKS Cedar Bluff 89.30 322 *e*P **P 06 00 14.7 +0.3**
comp=Z,9.9nm,0.6s
CBKS Cedar Bluff 89.30 322 *e*P **P 06 00 14.7 +0.3**
comp=Z,9.9nm,0.6s
Y41A Eaglette Beard 89.44 315 P **P 06 00 14.8 -0.3**
baz=41
MIAR Mount Ida 89.47 316 P **P 06 00 14.6 -0.7**
baz=41
MIAR Mount Ida 89.47 316 *e*P **P 06 00 14.6 -0.7**
MIAR pmax pmax
comp=Z,11nm,1.5s
MIAR Mount Ida 89.47 316 *e*P **P 06 00 14.6 -0.7**
comp=Z,11nm,1.5s
MIAR Mount Ida 89.47 316 *e*P **P 06 00 14.6 -0.7**
comp=Z,11nm,1.5s
FLWY Flagg Ranch 89.52 332 *e*P **P 06 00 15.7 +0.1**
comp=Z,22nm,1.5s
FLWY Flagg Ranch 89.52 332 *e*P **P 06 00 15.7 +0.1**
comp=Z,22nm,1.5s
TUL1 Leonard 89.61 318 *e*P **P 06 00 15.0 -0.9**
comp=Z,19nm,1.6s
TUL1 Leonard 89.61 318 *e*P **P 06 00 15.0 -0.9**
comp=Z,19nm,1.6s
PTGA Pitinga 89.65 269 *e*P **P 06 00 17.1 +0.8**
comp=Z,25nm,1.9s
PTGA Pitinga 89.65 269 *e*P **P 06 00 17.1 +0.8**
comp=Z,25nm,1.9s
MOOW Moose Ponds 89.83 332 *e*P **P 06 00 17.1 +0.1**
comp=Z,16nm,1.9s
MOOW Moose Ponds 89.83 332 *e*P **P 06 00 17.1 +0.1**
comp=Z,16nm,1.9s
BW06 Boulder Array 90.23 331 *e*P **P 06 00 18.0 -1.0**
comp=Z,2.5nm,1.2s
BW06 Boulder Array 90.23 331 *e*P **P 06 00 18.0 -1.0**
comp=Z,2.5nm,1.2s
PDAR Pinedale Array 90.23 331 P **P 06 00 17.4 -1.5**
comp=Z,0.3nm,0.6s,baz=57,slow=5.5,SNR=4.2
PDAR LR LR 06 42 01.9
comp=Z,133nm,20.4s,baz=38,slow=36
X37A Clayton 90.40 317 P **P 06 00 18.3 -1.3**
baz=40
KSCO Kaye Shedlock' 90.48 324 *e*P **P 06 00 20.8 +0.7**
comp=Z,29nm,1.4s
KSCO Kaye Shedlock' 90.48 324 *e*P **P 06 00 20.8 +0.7**
comp=Z,29nm,1.4s
HWUT Hardware Ranch 91.98 332 *e*P **P 06 00 26.8 -0.3**
comp=Z,23nm,1.8s
HWUT Hardware Ranch 91.98 332 *e*P **P 06 00 26.8 -0.3**
comp=Z,23nm,1.8s
WMOK Wichita Mounta 92.05 319 *e*P **P 06 00 26.8 -0.5**
WMOK pmax pmax
comp=Z,6.0nm,1.2s
WMOK Wichita Mounta 92.05 319 *e*P **P 06 00 26.8 -0.5**
comp=Z,5.8nm,1.2s
WMOK Wichita Mounta 92.05 319 *e*P **P 06 00 26.8 -0.5**
comp=Z,5.8nm,1.2s
SDCO Great Sand Dun 92.81 326 *e*P **P 06 00 30.6 -0.5**
comp=Z,4.2nm,1.4s
SDCO Great Sand Dun 92.81 326 *e*P **P 06 00 30.6 -0.5**
comp=Z,4.2nm,1.4s
JLU Jordanelle 92.81 331 *e*P **P 06 00 31.4 +0.4**
comp=Z,4.1nm,0.4s
JLU Jordanelle 92.81 331 *e*P **P 06 00 31.4 +0.4**
comp=Z,4.1nm,0.4s
T25A Trinidad 92.82 324 *e*P **P 06 00 31.2 +0.2**
comp=Z,6.5nm,1.3s
T25A Trinidad 92.82 324 *e*P **P 06 00 31.2 +0.2**
comp=Z,6.5nm,1.3s
WVOR Wild Horse Val 93.66 337 *e*P **P 06 00 35.1 +0.4**
WVOR pmax pmax
comp=Z,15nm,1.4s
WVOR Wild Horse Val 93.66 337 *e*P **P 06 00 35.1 +0.4**
comp=Z,15nm,1.4s
WVOR Wild Horse Val 93.66 337 *e*P **P 06 00 35.1 +0.4**
comp=Z,15nm,1.4s
NVAR Mina Array Bea 97.18 335 LR LR 06 47 11.8
comp=Z,159nm,18.9s,baz=62,slow=37
TX31 Lajitas Ar. Si 98.85 319 *e*P **P 06 00 57.3 -1.2**
TX31 Lajitas Ar. Si 98.85 319 *e*P **P 06 00 57.3 -1.2**
TXAR Lajitas Array 98.85 319 P **P 06 00 57.6 -0.9**
comp=Z,0.9nm,1.0s,baz=70,slow=4.1,SNR=7.1
TXAR LR LR 06 46 38.5
comp=Z,100nm,19.8s,baz=0.0,slow=36
WRA Warramunga Arr 114.00 97 PKIKP **PKiKP 06 05 55.4 -2.1**
comp=Z,0.3nm,0.8s,baz=286,slow=3.7,SNR=3.0
ASAR Alice Springs 115.75 100 PKP **PKPdf 06 05 59.2 -1.5**
comp=Z,0.8nm,0.7s,baz=299,slow=1.6,SNR=9.7
ASAR PKKPbc **PKKPbc 06 16 32.6 +0.9**
comp=Z,0.8nm,0.6s,baz=124,slow=3.9,SNR=17
ASAR Alice Springs 115.75 100 PKIKP **PKPdf 06 05 59.3 -1.5**
ASAR pmax pmax
comp=Z,1.0nm,0.7s
ASAR pmax pmax
comp=Z,1.0nm,0.6s
AS01 Alice Springs 115.78 100 *e*PKIKP **PKPdf 06 05 59.0 -1.8**
AS01 Alice Springs 115.78 100 *e*PKPdf **PKPdf 06 05 59.0 -1.8**
ROC1 El Roble 117.01 248 *e*PKIKP **PKPdf 06 06 04.6 +1.4**
ROC1 El Roble 117.01 248 *e*PKPdf **PKPdf 06 06 04.6 +1.4**
STKA Stephens Creek 125.78 105 PKP **PKPdf 06 06 18.7 -1.0**
comp=Z,1.6nm,0.8s,baz=335,slow=4.4,SNR=5.5
STKA Stephens Creek 125.78 105 *e*PKIKP **PKPdf 06 06 19.5 -0.3**
STKA Stephens Creek 125.78 105 *e*PKIKP **PKPdf 06 06 19.5 -0.3**
STKA Stephens Creek 125.78 105 *e*PKPdf **PKPdf 06 06 19.5 -0.3**
QSPA South Pole Qui 128.98 180 *e*PKIKP **PKPdf 06 06 23.7 -1.1**
QSPA South Pole Qui 128.98 180 *e*PKPdf **PKPdf 06 06 23.7 -1.1**
MSVF Nonsavu 145.69 60 *e*PKIKP **PKPdf 06 06 56.4 -0.6**
MSVF Nonsavu 145.69 60 *e*PKIKP **PKPdf 06 06 56.4 -0.6**
MSVF Nonsavu 145.69 60 *e*PKPdf **PKPdf 06 06 56.4 -0.6**

*IDC **28** 05:48:42.5±5.3, 35°.56S×178°.52E, h169km±39km, mb4.0/2, mb1 4.2/3, mb1mx3.6/29, mbtmp4.4/3, Error ellipse: s-maj=60.0km s-min=31.1km az=40.0*
*NEIC **28** 05:48:45.6, 35°.89S×178°.48E, h209km, MG4.4(WEL), After WEL.*
*WEL **28** 05:48:46.5±0.6, 35°.89S×178°.23E, h203km±4km, ML4.4/8, Error ellipse: s-maj=7.0km s-min=6.9km az=0.0*

ISC 28 05:48:48.4±1.4,**36°.1S**±0°.1×**178°.1E**±0°.1,**h200**km,**n108,**
σ**1**º**23**/112,**2C-3D, Off east coast of North Island**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MXZ	**Matakaoa Point**	**1.52**	**173**	PN	**Pn**	**05 49 21.8**	**-0.4**
MXZ				SN	**Sn**	**05 49 49.9**	**+1.1**
MXZ				AML	AML	05 49 56.6	
MXZ	**Matakaoa Point**	**1.52**	**173**	Pn	**Pn**	**05 49 21.8**	**-0.4**
MXZ				Sn	**Sn**	**05 49 49.9**	**+1.1**
HAZ	**Te Kaha**	**1.72**	**187**	PN	**Pn**	**05 49 24.1**	**+0.1**
HAZ				SN	**Sn**	**05 49 53.4**	**+1.5**
WMGZ	**Waiomatatini S**	**1.79**	**171**	⇓PN	**Pn**	**05 49 24.9**	**+0.2**
WMGZ	**Waiomatatini S**	**1.79**	**171**	Pn	**Pn**	**05 49 24.9**	**+0.2**
PKGZ	**Pakihiroa**	**1.84**	**180**	PN	Pn	**05 49 25.4**	**+0.1**
PUZ	**Puketiti**	**2.02**	**176**	PN	**Pn**	**05 49 27.3**	**+0.2**
PUZ				SN	**Sn**	**05 49 58.1**	**+0.6**
PUZ	**Puketiti**	**2.02**	**176**	Pn	**Pn**	**05 49 27.3**	**+0.2**
TWGZ	**Tauwhareparae**	**2.12**	**182**	PN	**Pn**	**05 49 28.9**	**+0.7**
TWGZ	**Tauwhareparae**	**2.12**	**182**	Pn	**Pn**	**05 49 28.9**	**+0.7**
MWZ	**Matawai**	**2.32**	**190**	⇓PN	**Pn**	**05 49 31.1**	**+0.8**
MWZ				AML	AML	05 50 12.9	
MWZ				AML	AML	05 50 22.0	
MWZ				AML	AML	05 50 22.0	
MWZ	**Matawai**	**2.32**	**190**	Pn	**Pn**	**05 49 31.1**	**+0.8**
URZ	**Urewera**	**2.33**	**199**	P	**Pn**	**05 49 31.1**	**+0.7**
9.8nm,0.3s,baz=259,slow=3.5,SNR=47							
URZ				S	**Sn**	**05 50 06.4**	**+3.1**
15nm,0.3s,baz=113,slow=24,SNR=13							
URZ	**Urewera**	**2.33**	**199**	PN	**Pn**	**05 49 31.1**	**+0.7**
URZ				AML	AML	05 50 14.6	
URZ				AML	AML	05 50 15.8	
TKGZ	**Te Karaka**	**2.39**	**184**	⇓PN	**Pn**	**05 49 31.4**	**+0.4**
TKGZ	**Te Karaka**	**2.39**	**184**	Pn	**Pn**	**05 49 31.4**	**+0.4**
CNGZ	**Carnagh Statio**	**2.43**	**177**	PN	**Pn**	**05 49 31.9**	**+0.4**
CNGZ	**Carnagh Statio**	**2.43**	**177**	Pn	**Pn**	**05 49 31.9**	**+0.4**
RAGZ	**Rawiri**	**2.50**	**192**	PN	**Pn**	**05 49 33.3**	**+1.0**
RAGZ	**Rawiri**	**2.50**	**192**	Pn	**Pn**	**05 49 33.3**	**+1.0**
MUGZ	**Murupara**	**2.63**	**203**	PN	**Pn**	**05 49 34.7**	**+1.0**
RIGZ	**Rimuhau**	**2.66**	**185**	PN	**Pn**	**05 49 34.3**	**+0.2**
PRRZ	**Plateau Road**	**2.79**	**208**	PN	**Pn**	**05 49 37.2**	**+1.7**
PRRZ	**Plateau Road**	**2.79**	**208**	Pn	**Pn**	**05 49 37.2**	**+1.7**
PRGZ	**Paritu Road**	**2.87**	**183**	PN	**Pn**	**05 49 36.7**	**+0.2**
PRGZ	**Paritu Road**	**2.87**	**183**	Pn	**Pn**	**05 49 36.8**	**+0.2**
RAHZ	**Arahi**	**2.97**	**195**	PN	**Pn**	**05 49 38.2**	**+0.6**
RAHZ	**Arahi**	**2.97**	**195**	Pn	**Pn**	**05 49 38.2**	**+0.6**
KNZ	**Kokohu**	**2.98**	**186**	PN	**Pn**	**05 49 37.5**	**-0.2**
KNZ				AML	AML	05 50 20.7	
KNZ				AML	AML	05 50 20.7	
KNZ	**Kokohu**	**2.98**	**186**	Pn	**Pn**	**05 49 37.5**	**-0.2**
MRHZ	**Matea Rd**	**3.07**	**205**	PN	**Pn**	**05 49 39.5**	**+0.6**
WHHZ	**Waihua**	**3.09**	**192**	PN	**Pn**	**05 49 39.8**	**+0.7**
MHGZ	**Mahia Peninsul**	**3.10**	**182**	PN	**Pn**	**05 49 39.3**	**+0.1**
MHGZ	**Mahia Peninsul**	**3.10**	**182**	Pn	**Pn**	**05 49 39.3**	**+0.1**
NMHZ	**Naumai**	**3.20**	**198**	⇑PN	**Pn**	**05 49 41.5**	**+1.0**
NMHZ	**Naumai**	**3.20**	**198**	Pn	**Pn**	**05 49 41.5**	**+1.0**
ARHZ	**Aropaoanui**	**3.32**	**194**	PN	**Pn**	**05 49 42.3**	**+0.5**
ARHZ	**Aropaoanui**	**3.32**	**194**	Pn	**Pn**	**05 49 42.3**	**+0.5**
KWHZ	**Kiweka Forest**	**3.61**	**201**	PN	**Pn**	**05 49 46.0**	**+0.6**
CKHZ	**Cape Kidnapper**	**3.69**	**192**	PN	**Pn**	**05 49 46.2**	**0.0**
CKHZ	**Cape Kidnapper**	**3.69**	**192**	Pn	**Pn**	**05 49 46.2**	**0.0**
BHHZ	**Black Hill Sta**	**3.78**	**204**	PN	**Pn**	**05 49 47.6**	**+0.2**
BHHZ	**Black Hill Sta**	**3.78**	**204**	Pn	**Pn**	**05 49 47.6**	**+0.2**
MOVZ	**Moawhango**	**3.82**	**208**	PN	**Pn**	**05 49 48.0**	**+0.1**
MOVZ	**Moawhango**	**3.82**	**208**	Pn	**Pn**	**05 49 48.0**	**+0.1**
KAHZ	**Kahuranaki**	**3.85**	**194**	PN	**Pn**	**05 49 48.3**	**0.0**
KAHZ	**Kahuranaki**	**3.85**	**194**	Pn	**Pn**	**05 49 48.3**	**0.0**
MTVZ	**Mangateitei**	**3.91**	**211**	Pn	**Pn**	**05 49 50.5**	**+1.4**
PXZ	**Pawanui**	**4.09**	**193**	PN	**Pn**	**05 49 50.0**	**-1.2**
PXZ				AML	AML	05 50 45.1	
PXZ				AML	AML	05 50 46.5	
PNHZ	**Pukenui**	**4.13**	**200**	⇑PN	**Pn**	**05 49 51.5**	**-0.3**
PNHZ	**Pukenui**	**4.13**	**200**	Pn	**Pn**	**05 49 51.5**	**-0.3**
TSZ	**Takapari Road**	**4.33**	**202**	PN	**Pn**	**05 49 53.8**	**-0.5**
PRHZ	**Porangahau**	**4.36**	**195**	PN	**Pn**	**05 49 54.0**	**-0.6**
PRHZ	**Porangahau**	**4.36**	**195**	Pn	**Pn**	**05 49 54.0**	**-0.6**
DVHZ	**Dannevirke**	**4.50**	**199**	PN	**Pn**	**05 49 55.5**	**-0.9**
DVHZ	**Dannevirke**	**4.50**	**199**	Pn	**Pn**	**05 49 55.5**	**-0.9**
ANWZ	**Angora Road**	**4.58**	**195**	PN	**Pn**	**05 49 56.7**	**-0.6**
POWZ	**Post Office Ro**	**4.70**	**202**	PN	**Pn**	**05 49 59.0**	**+0.2**
POWZ	**Post Office Ro**	**4.70**	**202**	Pn	**Pn**	**05 49 59.0**	**+0.2**
PRWZ	**Pori Road**	**4.79**	**199**	PN	**Pn**	**05 50 00.4**	**+0.4**
PRWZ	**Pori Road**	**4.79**	**199**	Pn	**Pn**	**05 50 00.4**	**+0.4**
HOWZ	**Holdsworth Sta**	**5.24**	**202**	PN	**Pn**	**05 50 04.2**	**-1.6**
HOWZ	**Holdsworth Sta**	**5.24**	**202**	Pn	**Pn**	**05 50 04.2**	**-1.6**
OGWZ	**Otaki Gorge**	**5.28**	**205**	PN	**Pn**	**05 50 05.2**	**-1.0**
OGWZ	**Otaki Gorge**	**5.28**	**205**	Pn	**Pn**	**05 50 05.2**	**-1.0**
TMWZ	**Te Maipa**	**5.33**	**198**	PN	**Pn**	**05 50 05.7**	**-1.3**
TMWZ	**Te Maipa**	**5.33**	**198**	Pn	**Pn**	**05 50 05.7**	**-1.3**
KIW	**Kapiti Island**	**5.41**	**206**	PN	**Pn**	**05 50 06.7**	**-1.2**
KIW	**Kapiti Island**	**5.41**	**206**	Pn	**Pn**	**05 50 06.8**	**-1.2**
MTW	**Mount Morrison**	**5.48**	**201**	PN	**Pn**	**05 50 07.3**	**-1.6**
MTW	**Mount Morrison**	**5.48**	**201**	Pn	**Pn**	**05 50 07.3**	**-1.6**
CAW	**Cannon Point**	**5.57**	**204**	PN	**Pn**	**05 50 08.4**	**-1.6**
CAW				AML	AML	05 51 19.8	
CAW	**Cannon Point**	**5.57**	**204**	Pn	**Pn**	**05 50 08.4**	**-1.6**
TRWZ	**Traveller**	**5.66**	**198**	PN	**Pn**	**05 50 09.5**	**-1.6**
TRWZ	**Traveller**	**5.66**	**198**	Pn	**Pn**	**05 50 09.5**	**-1.6**
PAWZ	**Paruwai Farm**	**5.71**	**200**	PN	**Pn**	**05 50 10.0**	**-1.9**
PAWZ				AML	AML	05 51 18.5	
PAWZ	**Paruwai Farm**	**5.71**	**200**	Pn	**Pn**	**05 50 10.0**	**-1.9**
DUWZ	**D'Urville Isla**	**5.75**	**213**	PN	**Pn**	**05 50 11.0**	**-1.4**
DUWZ	**D'Urville Isla**	**5.75**	**213**	Pn	**Pn**	**05 50 11.0**	**-1.4**
MSWZ	**Moikau Station**	**5.79**	**201**	Pn	**Pn**	**05 50 11.3**	**-1.6**
WEL	**Wellington**	**5.83**	**205**	PN	**Pn**	**05 50 10.7**	**-2.6**
WEL	**Wellington**	**5.83**	**205**	Pn	**Pn**	**05 50 10.7**	**-2.6**
BHW	**Baring Head**	**5.91**	**204**	PN	**Pn**	**05 50 12.2**	**-2.1**
BHW	**Baring Head**	**5.91**	**204**	Pn	**Pn**	**05 50 12.2**	**-2.1**
PLWZ	**Palliser**	**5.93**	**201**	PN	**Pn**	**05 50 12.7**	**-2.0**
PLWZ	**Palliser**	**5.93**	**201**	Pn	**Pn**	**05 50 12.7**	**-2.0**
TCW	**Tory Channel**	**5.95**	**209**	PN	**Pn**	**05 50 13.0**	**-1.9**
TCW				AML	AML	05 51 25.6	
TCW				AML	AML	05 51 27.0	
TCW	**Tory Channel**	**5.95**	**209**	Pn	**Pn**	**05 50 13.0**	**-1.9**
TUWZ	**Tuamarina**	**6.26**	**210**	PN	**Pn**	**05 50 17.3**	**-1.7**
TUWZ	**Tuamarina**	**6.26**	**210**	Pn	**Pn**	**05 50 17.3**	**-1.7**
BSWZ	**Blackbirch Sta**	**6.53**	**209**	*e*PN	**Pn**	**05 50 21.3**	**-1.2**
BSWZ	**Blackbirch Sta**	**6.53**	**209**	*e*Pn	**Pn**	**05 50 21.3**	**-1.2**
THZ	**Tophouse**	**6.98**	**214**	PN	**Pn**	**05 50 27.2**	**-1.1**
THZ	**Tophouse**	**6.98**	**214**	Pn	**Pn**	**05 50 27.2**	**-1.1**
KHZ	**Kahutara**	**7.26**	**208**	PN	**Pn**	**05 50 30.2**	**-1.7**
KHZ	**Kahutara**	**7.26**	**208**	Pn	**Pn**	**05 50 30.2**	**-1.7**
DSZ	**Denniston Nort**	**7.49**	**219**	PN	**Pn**	**05 50 35.3**	**+0.3**
DSZ	**Denniston Nort**	**7.49**	**219**	Pn	**Pn**	**05 50 35.3**	**+0.3**
LTZ	**Lake Taylor**	**8.08**	**212**	PN	**Pn**	**05 50 40.6**	**-2.0**
LTZ	**Lake Taylor**	**8.08**	**212**	Pn	**Pn**	**05 50 40.6**	**-2.0**
INZ	**Inchbonnie**	**8.41**	**216**	PN	**Pn**	**05 50 45.5**	**-1.3**
OXZ	**Oxford**	**8.62**	**211**	PN	**Pn**	**05 50 46.7**	**-2.9**
OXZ	**Oxford**	**8.62**	**211**	Pn	**Pn**	**05 50 46.8**	**-2.9**
MQZ	**McQueen's Vall**	**8.70**	**207**	Pn	Pn	05 50 41.0	-10
ASAR	**Alice Springs**	**39.92**	**276**	P	**P**	**05 56 03.0**	**-0.2**
3.5nm,0.7s,baz=115,slow=7.7,SNR=48							
WRA	**Warramunga Arr**	**41.44**	**281**	P	**P**	**05 56 14.8**	**-0.8**
6.0nm,0.5s,baz=118,slow=7.7,SNR=57							
FINES	**FINESS Array B**	**149.05**	**334**	PKPbc	**PKPdf**	**06 08 08.2**	**+0.6**
0.3nm,0.4s,baz=46,slow=5.5,SNR=4.0							
TORD	**Torodi Ar. Bea**	**156.96**	**189**	PKPab	**PKPab**	**06 08 51.0**	**-0.4**
0.4nm,0.6s,baz=191,slow=2.9,SNR=3.8							

*DDA **28** 05:50:22.7, 39°.09N×29°.04E, h7km, Ml3.2*
*CSEM **28** 05:50:23.4±0.1, 39°.11N×29°.06E, h5km, ML3.2, Error ellipse: s-maj=2.8km s-min=2.4km az=5.0*
*ISK **28** 05:50:23.1, 39°.11N×29°.10E, h9km, MD2.1*

ISC 28 05:50:23.3±1.0,**39°.11N**±0°.02×**29°.05E**±0°.02,**h5**km±10km,
n36,σ0º**28/50,Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**255**	P	**Pg**	**05 50 28.2**	**-0.3**
DEMI				S	**Sg**	**05 50 31.8**	**-0.3**
DEMI	**Demirci**	**0.27**	**255**	*i* P	**Pg**	**05 50 28.2**	**-0.3**
DEMI				*i* S	**Sg**	**05 50 31.8**	**-0.3**
GDZ	**Gediz**	**0.34**	**94**	P	**Pg**	**05 50 30.2**	**+0.2**
GDZ				S	**Sg**	**05 50 34.9**	**+0.5**
GDZ	**Gediz**	**0.34**	**94**	*i* P	**Pg**	**05 50 30.2**	**+0.2**
GDZ				*i* S	**Sg**	**05 50 34.9**	**+0.5**
TVSB	**Tavsanli**	**0.47**	**43**	*e*PG	**Pg**	**05 50 32.1**	**-0.2**
TVSB				*e*SG	**Sg**	**05 50 38.8**	**+0.3**
TVSB	**Tavsanli**	**0.47**	**43**	*e*Pg	**Pg**	**05 50 32.2**	**-0.2**
TVSB				*e*Sg	**Sg**	**05 50 38.8**	**+0.3**
KHAL	**Karahalli**	**0.82**	**155**	P	**Pb**	**05 50 39.8**	**-0.3**
KHAL				S	**Sn**	**05 50 53.7**	**-0.5**
KHAL	**Karahalli**	**0.82**	**155**	*i* P	**Pb**	**05 50 39.8**	**-0.3**
KHAL				*i* S	**Sn**	**05 50 53.6**	**-0.5**
KHL	**Karahalli**	**0.87**	**155**	*e*PG	**Pg**	**05 50 40.0**	**0.0**
KHL	**Karahalli**	**0.87**	**155**	*e*Pg	**Pg**	**05 50 40.0**	**0.0**
AKHS	**Akhisar**	**0.99**	**257**	P	**Pg**	**05 50 42.2**	**-0.1**
AKHS				S	**Sg**	**05 50 55.3**	**+0.2**
AKHS	**Akhisar**	**0.99**	**257**	*i* P	**Pg**	**05 50 42.2**	**-0.1**
AKHS				*i* S	**Sg**	**05 50 55.3**	**+0.2**
AKS	**Akhisar**	**0.99**	**257**	*e*PG	**Pb**	**05 50 43.2**	**+0.2**
AKS	**Akhisar**	**0.99**	**257**	*e*Pg	**Pb**	**05 50 43.2**	**+0.2**
BALB	**Balikesir**	**1.05**	**301**	*e*PG	**Pb**	**05 50 44.2**	**+0.3**
BALB	**Balikesir**	**1.05**	**301**	*e*Pg	**Pb**	**05 50 44.2**	**+0.3**
IGD	**Bursa**	**1.16**	**6**	*i* P	**Pg**	**05 50 45.0**	**-0.5**
IGD				*i* S	**Sg**	**05 51 00.3**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.26**	**354**	*e*PN	**Pb**	**05 50 47.5**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.26**	**354**	*e*Pn	**Pb**	**05 50 47.5**	**-0.1**
IZI	**Iznik**	**1.27**	**15**	*e*PN	**Pg**	**05 50 47.4**	**-0.3**
IZI	**Iznik**	**1.27**	**15**	*e*Pn	**Pg**	**05 50 47.4**	**-0.3**
KCTX	**Karacabey (Bur**	**1.27**	**335**	*e*PN	**Pb**	**05 50 47.8**	**0.0**
KCTX	**Karacabey (Bur**	**1.27**	**335**	*e*Pn	**Pb**	**05 50 47.8**	**0.0**
BALY	**Balya**	**1.27**	**300**	P	**Pb**	**05 50 47.9**	**+0.1**
BALY				S	**Sn**	**05 51 05.7**	**+0.4**
BALY	**Balya**	**1.27**	**300**	*i* P	**Pb**	**05 50 47.9**	**+0.1**
BALY				*i* S	**Sn**	**05 51 05.7**	**+0.4**
GEMT	**Gemlik**	**1.33**	**5**	*e*PN	**Pn**	**05 50 48.2**	**-0.3**
GEMT	**Gemlik**	**1.33**	**5**	*e*Pn	**Pn**	**05 50 48.2**	**-0.3**
BORA	**Eskisehir**	**1.33**	**54**	*i* P	**Pg**	**05 50 48.5**	**-0.4**
BORA				*i* S	**Sn**	**05 51 06.9**	**0.0**
GONE	**Gonen-Balikesi**	**1.41**	**312**	*e*PN	**Pn**	**05 50 49.9**	**+0.3**
GONE	**Gonen-Balikesi**	**1.41**	**312**	*e*Pn	**Pn**	**05 50 49.9**	**+0.3**
ARMT	**Armutlu**	**1.46**	**354**	*e*PN	**Pn**	**05 50 50.3**	**-0.1**
ARMT	**Armutlu**	**1.46**	**354**	*e*Pn	**Pn**	**05 50 50.3**	**-0.1**
BNT	**Bandirma**	**1.52**	**325**	*e*PN	**Pn**	**05 50 51.5**	**+0.3**
BNT	**Bandirma**	**1.52**	**325**	*e*Pn	**Pn**	**05 50 51.5**	**+0.3**
EDC	**Edincik**	**1.54**	**324**	*e*PN	**Pn**	**05 50 51.5**	**+0.1**
EDC	**Edincik**	**1.54**	**324**	*e*Pn	**Pn**	**05 50 51.5**	**+0.1**

*CSEM **28** 05:51:42.5±0.1, 39°.10N×29°.06E, h2km, ML3.4, Error ellipse: s-maj=2.8km s-min=2.3km az=20.0*
*ISK **28** 05:51:42.1, 39°.09N×29°.05E, h5km, ML3.0*
*DDA **28** 05:51:42.0, 39°.11N×29°.04E, h7km, Ml3.4*

ISC 28 05:51:41.8±1.2,**39°.06N**±0°.02×**29°.03E**±0°.02,**h1**km±13km,
n51,σ0º**63/70,Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**266**	P	**Pg**	**05 51 45.4**	**-1.1**
DEMI				S	**Sg**	**05 51 51.3**	**+1.7**
DEMI	**Demirci**	**0.24**	**266**	*i* P	**Pg**	**05 51 45.4**	**-1.1**
DEMI				*i* S	**Sg**	**05 51 51.3**	**+1.7**
GDZ	**Gediz**	**0.36**	**85**	P	**Pg**	**05 51 47.4**	**-1.2**
GDZ				S	**Sg**	**05 51 54.0**	**+0.7**
GDZ	**Gediz**	**0.36**	**85**	*i* P	**Pg**	**05 51 47.4**	**-1.2**
GDZ				*i* S	**Sg**	**05 51 54.0**	**+0.7**
TVSB	**Tavsanli**	**0.52**	**41**	*e*PG	**Pg**	**05 51 51.2**	**-0.5**
TVSB	**Tavsanli**	**0.52**	**41**	*e*Pg	**Pg**	**05 51 51.2**	**-0.5**
KHAL	**Karahalli**	**0.78**	**152**	P	**Pb**	**05 51 58.0**	**-0.3**
KHAL				S	**Sb**	**05 52 08.5**	**-0.9**
KHAL	**Karahalli**	**0.78**	**152**	*i* P	**Pb**	**05 51 58.0**	**-0.3**
KHAL				*i* S	**Sb**	**05 52 08.5**	**-0.9**
KHL	**Karahalli**	**0.83**	**152**	*e*PG	**Pb**	**05 51 59.1**	**-0.1**
KHL				*e*SG	**Sb**	**05 52 10.8**	**-0.1**
KHL	**Karahalli**	**0.83**	**152**	*e*Pg	**Pb**	**05 51 59.1**	**-0.1**
KHL				*e*Sg	**Sb**	**05 52 10.8**	**-0.1**
AKHS	**Akhisar**	**0.96**	**260**	P	**Pb**	**05 52 01.2**	**-0.1**
AKHS				S	**Sb**	**05 52 15.2**	**+0.6**
AKHS	**Akhisar**	**0.96**	**260**	*i* P	**Pb**	**05 52 01.2**	**-0.1**
AKHS				*i* S	**Sb**	**05 52 15.2**	**+0.6**
AKS	**Akhisar**	**0.96**	**260**	*e*PG	**Pn**	**05 52 01.8**	**-0.8**
AKS	**Akhisar**	**0.96**	**260**	*e*Pg	**Pn**	**05 52 01.8**	**-0.8**
BALB	**Balikesir**	**1.06**	**303**	*e*PG	**Pb**	**05 52 02.6**	**-0.4**
BALB				*e*SG	**Sb**	**05 52 17.6**	**+0.2**
BALB	**Balikesir**	**1.06**	**303**	*e*Pg	**Pb**	**05 52 02.6**	**-0.4**
BALB				*e*Sg	**Sb**	**05 52 17.6**	**+0.2**
IGD	**Bursa**	**1.21**	**6**	*i* P	**Pg**	**05 52 03.6**	**-1.4**
IGD				*i* S	**Sg**	**05 52 20.5**	**-0.2**
BALY	**Balya**	**1.28**	**302**	P	**Pg**	**05 52 06.3**	**-0.1**
BALY				S	**Sb**	**05 52 24.0**	**+0.1**
BALY	**Balya**	**1.28**	**302**	*i* P	**Pg**	**05 52 06.3**	**-0.1**
BALY				*i* S	**Sb**	**05 52 24.0**	**+0.1**
KCTX	**Karacabey (Bur**	**1.31**	**337**	*e*PN	**Pn**	**05 52 07.4**	**0.0**
KCTX	**Karacabey (Bur**	**1.31**	**337**	*e*Pn	**Pn**	**05 52 07.4**	**0.0**
MDNY	**Mudanya-Bursa**	**1.31**	**355**	*e*PN	**Pb**	**05 52 07.1**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.31**	**355**	*e*Pn	**Pb**	**05 52 07.1**	**-0.2**
IZI	**Iznik**	**1.32**	**15**	*e*PN	**Pg**	**05 52 07.1**	**0.0**
IZI	**Iznik**	**1.32**	**15**	*e*Pn	**Pg**	**05 52 07.1**	**0.0**
BORA	**Eskisehir**	**1.38**	**53**	P	**Pg**	**05 52 07.1**	**-1.1**
BORA				S	**Sg**	**05 52 26.3**	**+0.3**
BORA	**Eskisehir**	**1.38**	**53**	*i* P	**Pg**	**05 52 07.1**	**-1.1**
BORA				*i* S	**Sg**	**05 52 26.3**	**+0.3**
GEMT	**Gemlik**	**1.38**	**5**	*e*PN	**Pg**	**05 52 08.1**	**-0.2**
GEMT	**Gemlik**	**1.38**	**5**	*e*Pn	**Pg**	**05 52 08.1**	**-0.2**
GONE	**Gonen-Balikesi**	**1.43**	**314**	*e*PN	**Pg**	**05 52 08.9**	**-0.3**
GONE	**Gonen-Balikesi**	**1.43**	**314**	*e*Pn	**Pg**	**05 52 08.9**	**-0.3**
ADVT	**Abdulvahap**	**1.48**	**22**	*e*PN	**Pn**	**05 52 09.5**	**-0.1**
ADVT	**Abdulvahap**	**1.48**	**22**	*e*Pn	**Pn**	**05 52 09.5**	**-0.1**
ARMT	**Armutlu**	**1.51**	**355**	*e*PN	**Pn**	**05 52 10.1**	**0.0**
ARMT	**Armutlu**	**1.51**	**355**	*e*Pn	**Pn**	**05 52 10.1**	**0.0**
BOLV	**Bolvadin**	**1.54**	**102**	P	**Pg**	**05 52 12.2**	**+0.9**
BOLV				S	**Sb**	**05 52 32.3**	**+1.0**
BOLV	**Bolvadin**	**1.54**	**102**	*i* P	**Pg**	**05 52 12.2**	**+0.9**
BOLV				*i* S	**Sb**	**05 52 32.4**	**+1.0**
BNT	**Bandirma**	**1.55**	**327**	*e*PN	**Pb**	**05 52 11.1**	**-0.3**
BNT	**Bandirma**	**1.55**	**327**	*e*Pn	**Pb**	**05 52 11.1**	**-0.3**
EDC	**Edincik**	**1.57**	**325**	*e*PN	**Pb**	**05 52 11.1**	**-0.5**
EDC	**Edincik**	**1.57**	**325**	*e*Pn	**Pb**	**05 52 11.1**	**-0.5**
GULT	**Gulveren**	**1.79**	**39**	*e*PN	**Pn**	**05 52 14.0**	**0.0**
GULT	**Gulveren**	**1.79**	**39**	*e*Pn	**Pn**	**05 52 14.0**	**0.0**
SPNC	**Sapanca-Adapaz**	**1.90**	**31**	*e*PN	**Pn**	**05 52 15.6**	**+0.2**
SPNC	**Sapanca-Adapaz**	**1.90**	**31**	*e*Pn	**Pn**	**05 52 15.6**	**+0.2**
SVRH	**Sivrihisar-ESK**	**1.98**	**78**	*e*PN	**Pn**	**05 52 16.6**	**0.0**
SVRH	**Sivrihisar-ESK**	**1.98**	**78**	*e*Pn	**Pn**	**05 52 16.6**	**0.0**
ISK	**Istanbul-Kandi**	**2.00**	**1**	*e*PN	**Pn**	**05 52 17.2**	**+0.3**
ISK	**Istanbul-Kandi**	**2.00**	**1**	*e*Pn	**Pn**	**05 52 17.2**	**+0.3**
SILT	**Sile**	**2.14**	**13**	*e*PN	**Pn**	**05 52 18.8**	**+0.1**
SILT	**Sile**	**2.14**	**13**	*e*Pn	**Pn**	**05 52 18.8**	**+0.1**

DDA 28 05:52:35.3, 39°.11N×29°.03E, h7km, Ml3.0, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**254**	*i* P	Pg	05 52 40.7	+0.5
DEMI				*i* S	Sg	05 52 44.2	+0.6
GDZ	**Gediz**	**0.35**	**93**	*i* P	Pg	05 52 42.4	+0.2
GDZ				*i* S	Sg	05 52 47.5	+0.7
KHAL	**Karahalli**	**0.82**	**154**	*i* P	Pb	05 52 51.6	-0.4
KHAL				*i* S	Sg	05 53 02.3	+0.5

*CSEM **28** 05:53:10.8, 39°.05N×28°.98E, h7km, ML2.6*

ISK 28 05:53:10.8, 39°.05N×28°.98E, h7km, ML2.6, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TVSB	**Tavsanli**	**0.55**	**43**	*e*PG	Pg	05 53 21.9	+0.5
TVSB	**Tavsanli**	**0.55**	**43**	*e*Pg	Pg	05 53 21.9	+0.5
KHL	**Karahalli**	**0.84**	**149**	*e*PG	Pb	05 53 27.7	-0.1
KHL				*e*SG	Sb	05 53 39.1	-0.1
KHL	**Karahalli**	**0.84**	**149**	*e*Pg	Pb	05 53 27.7	-0.1
KHL				*e*Sg	Sb	05 53 39.2	-0.1
AKS	**Akhisar**	**0.93**	**260**	*e*PG	Pb	05 53 29.0	-0.1
AKS	**Akhisar**	**0.93**	**260**	*e*Pg	Pb	05 53 29.0	-0.2
BALB	**Balikesir**	**1.04**	**305**	*e*PG	Pb	05 53 31.1	0.0
BALB	**Balikesir**	**1.04**	**305**	*e*Pg	Pb	05 53 31.1	0.0
KCTX	**Karacabey (Bur**	**1.31**	**339**	*e*PN	Pg	05 53 35.9	0.0
KCTX	**Karacabey (Bur**	**1.31**	**339**	*e*Pn	Pg	05 53 35.9	0.0
MDNY	**Mudanya-Bursa**	**1.32**	**357**	*e*PN	Pg	05 53 36.1	-0.1
MDNY	**Mudanya-Bursa**	**1.32**	**357**	*e*Pn	Pg	05 53 36.1	-0.1
IZI	**Iznik**	**1.34**	**16**	*e*PN	Pg	05 53 36.8	+0.2
IZI	**Iznik**	**1.34**	**16**	*e*Pn	Pg	05 53 36.8	+0.2
GEMT	**Gemlik**	**1.40**	**7**	*e*PN	Pg	05 53 37.4	-0.2
GEMT	**Gemlik**	**1.40**	**7**	*e*Pn	Pg	05 53 37.4	-0.2
GONE	**Gonen-Balikesi**	**1.41**	**315**	*e*PN	Pb	05 53 37.6	+0.1
GONE	**Gonen-Balikesi**	**1.41**	**315**	*e*Pn	Pb	05 53 37.6	+0.1
ADVT	**Abdulvahap**	**1.50**	**23**	*e*PN	Pb	05 53 39.0	0.0
ADVT	**Abdulvahap**	**1.50**	**23**	*e*Pn	Pb	05 53 39.0	0.0
ARMT	**Armutlu**	**1.52**	**357**	*e*PN	Pb	05 53 39.1	-0.3
ARMT	**Armutlu**	**1.52**	**357**	*e*Pn	Pb	05 53 39.1	-0.2
EDC	**Edincik**	**1.56**	**327**	*e*PN	Pb	05 53 39.6	-0.3
EDC	**Edincik**	**1.56**	**327**	*e*Pn	Pb	05 53 39.6	-0.3
GULT	**Gulveren**	**1.82**	**40**	*e*PN	Pb	05 53 43.6	-0.8
GULT	**Gulveren**	**1.82**	**40**	*e*Pn	Pb	05 53 43.7	-0.8

*ISK **28** 06:09:03.6, 39°.06N×29°.07E, h6km, MD2.4*
*ISCJB **28** 06:09:04.3±0.6, 39°.09N±0°.04×29°.05E±0°.03, h1km±8km, Error ellipse: s-maj=6.4km s-min=3.7km az=160.8*
*CSEM **28** 06:09:04.6±0.1, 39°.09N×29

mb4.0/11, MS3.3/1, Error ellipse: s-maj=14.0km s-min=6.7km az=23.5
NEIC ***28*** *06:22:12.6±0.4, 10°.77N×91°.77E, h35km, mb4.6/2, Error ellipse: s-maj=11.1km s-min=9.0km az=56.0*
ISC 28 06:22:12.3±0.8, 10°.9N±0°.1×91°.49E±0°.08, h35km, n28, σ3§21/30, mb4.0/11, Andaman Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHLP	**Challavanipeta**	**10.44**	**317**	*e*Pn	**Pn**	**06 24 41.0**	**+1.5**
CHLP				Sn	**Sn**	**06 26 30.0**	**-5.2**
PSI	**Prapat**	**10.91**	**137**	LR	LR	06 28 17.4	
	comp=Z,162nm,19.9s,baz=298,slow=35						
PALK	**Pallekele**	**11.24**	**252**	*e*Pn	**Pn**	**06 24 53.8**	**+3.2**
PVM	**Polavaram**	**11.46**	**305**	*e*P	**Pn**	**06 24 52.8**	**-0.7**
PVM				*e*Pn	Pn	06 24 56.7	+3.2
PVM				Sn	**Sn**	**06 26 56.2**	**-4.3**
SKHT	**Srikalahasti**	**11.85**	**285**	*e*P	**Pn**	**06 24 58.0**	**-0.9**
SKHT				*e*Pn	**Pn**	**06 25 02.9**	**+4.0**
SKHT				Sn	**Sn**	**06 27 05.5**	**-4.5**
ADKI	**Addanki**	**12.24**	**295**	*e*Pn	**Pn**	**06 25 06.3**	**+2.2**
ADKI				Sn	Sn	06 27 13.4	-6.0
RCLA	**Racherla**	**13.02**	**292**	*e*Pn	**Pn**	**06 25 18.1**	**+3.3**
RCLA				Sn	Sn	06 27 32.7	-5.8
NJS	**Nagarjunasagar**	**13.10**	**297**	*e*Pn	**Pn**	**06 25 18.6**	**+2.6**
NJS				Sn	**Sn**	**06 27 36.5**	**-4.1**
SRLM	**Srisailam**	**13.29**	**294**	Sn	**Sn**	**06 27 40.2**	**-5.2**
HYBB	**Hyderabad (bro**	**14.12**	**299**	*e*Pn	**P**	**06 25 34.6**	**-2.5**
HYBB				Sn	**Sn**	**06 28 12.0**	**+6.5**
RPR	**Rampur**	**14.19**	**305**	*e*P	Pn	06 25 26.2	-4.7
RPR				*e*Pn	P	06 25 33.5	-4.3
RPR				Sn	**Sn**	**06 28 03.8**	**-3.3**
KLRI	**Killari**	**16.08**	**298**	*e*Pn	**Pn**	**06 25 57.7**	**+1.8**
KLRI				Sn	**Sn**	**06 28 57.7**	**+4.5**
ENH	**Enshi**	**25.54**	**38**	*e*P	**P**	**06 27 37.0**	**-0.8**
	8.6nm,0.4s						
H08S3	**Diego Garcia H**	**26.39**	**227**	T	T	06 55 24.4	
	baz=46,slow=75,SNR=17						
H08S2	**Diego Garcia H**	**26.39**	**227**	T	T	06 55 15.8	
	baz=46,slow=75,SNR=21						
H08S1	**Diego Garcia H**	**26.40**	**227**	T	T	06 55 21.1	
	baz=46,slow=75,SNR=23						
TGY	**Tagaytay City**	**28.92**	**81**	LR	LR	06 39 28.6	
	comp=Z,91nm,21.9s,baz=181,slow=36						
MKAR	**Makanchi Array**	**36.62**	**349**	P	**P**	**06 29 17.4**	**+2.2**
	0.8nm,0.5s,baz=171,slow=8.6,SNR=9.5						
SONM	**Songino Array**	**38.90**	**16**	P	**P**	**06 29 35.1**	**+0.5**
	0.8nm,0.5s,baz=198,slow=9.3,SNR=4.7						
KURBB	**Kurchatov Arra**	**41.02**	**347**	P	**P**	**06 29 53.8**	**+1.7**
	0.2nm,0.3s,baz=166,slow=7.1,SNR=4.4						
KURK	**Kurchatov**	**41.09**	**348**	P	**P**	**06 29 53.8**	**+1.2**
ZALV	**Zalesovo Beam**	**43.27**	**354**	P	**P**	**06 30 12.2**	**+2.0**
	0.6nm,0.4s,baz=143,slow=12,SNR=4.0						
WRA	**Warramunga Arr**	**52.14**	**126**	P	**P**	**06 31 17.4**	**-2.2**
	0.8nm,0.6s,baz=308,slow=8.3,SNR=15						
WRAB	**Tennant Creek**	**52.14**	**126**	*e*P	**P**	**06 31 17.7**	**-1.9**
	3.4nm,0.7s						
ASAR	**Alice Springs**	**53.85**	**130**	P	**P**	**06 31 30.6**	**-1.6**
	2.3nm,0.7s,baz=306,slow=6.8,SNR=30						
STKA	**Stephens Creek**	**64.07**	**133**	P	**P**	**06 32 41.9**	**-1.1**
	0.8nm,0.3s,baz=312,slow=16,SNR=3.8						
FINES	**FINESS Array B**	**68.84**	**332**	P	**P**	**06 33 15.1**	**+2.2**
	1.6nm,0.8s,baz=110,slow=7.6,SNR=3.6						
ARCES	**ARCESS Array B**	**71.56**	**340**	P	**P**	**06 33 31.3**	**+1.8**
	1.1nm,0.7s,baz=85,slow=6.6,SNR=3.6						

IDC ***28*** *06:24:52.0±2.1, 36°.93N×141°.12E, h0km, mb3.5/2, mb1 3.6/3, mb1mx3.3/34, mbtmp3.4/3, ML3.0/1, MS2.3/1, Ms1 2.3/1, ms1mx2.1/38, Error ellipse: s-maj=26.3km s-min=21.5km az=17.0*
JMA ***28*** *06:24:52.5±0.1, 36°.74N×141°.15E, h27km±1km, M3.1*
ISC 28 06:24:51.7±2.6, 36°.71N±0°.07×141°.2E±0°.1, h25km±14km, n17, σ0§65/18, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.50**	**322**	P	**Pb**	**06 25 01.8**	**-0.1**
ONAJ				S	**Sb**	**06 25 09.1**	**+0.2**
JHO	**Hitachi**	**0.50**	**259**	P	**Pb**	**06 25 02.1**	**+0.1**
JHO				S	**Sb**	**06 25 09.1**	**+0.2**
JFK	**Kawauchi**	**0.70**	**340**	P	**Pb**	**06 25 05.0**	**-0.3**
JFK				S	**Sb**	**06 25 14.4**	**-0.2**
JYT	**Yasato**	**0.93**	**239**	P	**Pn**	**06 25 09.3**	**+0.2**
JYT				S	**Sb**	**06 25 21.7**	**+0.6**
JFT	**Otama**	**1.05**	**320**	P	**Pn**	**06 25 11.0**	**+0.2**
JFT				S	**Sb**	**06 25 24.9**	**+0.2**
JMM	**Marumori**	**1.20**	**345**	P	**Pn**	**06 25 12.7**	**-0.1**
JMM				S	**Sn**	**06 25 28.1**	**-0.1**
JFY	**Yanaizu**	**1.37**	**301**	P	**Pb**	**06 25 16.6**	**-0.1**
JFY				S	**Sb**	**06 25 34.3**	**+0.5**
MJAR	**Matsushiro Arr**	**2.40**	**267**	Pn	**Pb**	**06 25 32.5**	**-1.6**
	4.1nm,0.3s,baz=83,slow=29,SNR=25						
MJAR				Pg	Pn	06 25 36.3	+7.0
	4.2nm,0.3s,baz=84,slow=17,SNR=25						
MJAR				Lg	Lg	06 26 05.7	
	4.8nm,0.3s,baz=83,slow=30,SNR=6.0						
MJAR				LR	LR	06 26 42.8	
	comp=Z,55nm,18.3s,baz=285,slow=47						
MAT	**Matsushiro**	**2.40**	**267**	P	**Pb**	**06 25 32.9**	**-1.3**
MAT				S	**Sb**	**06 26 03.8**	**+0.5**
SONM	**Songino Array**	**27.81**	**305**	P	**P**	**06 30 39.4**	**+0.6**
	0.4nm,0.5s,baz=101,slow=7.8,SNR=2.9						
H11N2	**WAKE ISLAND Hy**	**28.14**	**120**	T	T	07 00 09.8	
	baz=313,slow=75,SNR=68						
H11N1	**WAKE ISLAND Hy**	**28.15**	**120**	T	T	07 00 09.7	
	baz=313,slow=75,SNR=56						
H11N3	**WAKE ISLAND Hy**	**28.16**	**120**	T	T	07 00 10.4	
	baz=313,slow=75,SNR=46						
H11S1	**WAKE ISLAND Hy**	**28.84**	**122**	T	T	07 01 01.3	
	baz=315,slow=76,SNR=32						
H11S3	**WAKE ISLAND Hy**	**28.84**	**122**	T	T	07 01 00.4	
	baz=315,slow=76,SNR=42						
H11S2	**WAKE ISLAND Hy**	**28.86**	**122**	T	T	07 01 01.5	
	baz=315,slow=76,SNR=30						
WRA	**Warramunga Arr**	**56.71**	**188**	P	P	06 34 39.9	+6.7
	0.3nm,0.5s,baz=4.7,slow=7.2,SNR=4.7						

ISK ***28*** *06:26:43.9, 39°.12N×29°.07E, h6km, ML2.7*
CSEM ***28*** *06:26:44.5±0.1, 39°.15N×29°.04E, h2km, ML2.6, Error ellipse: s-maj=3.1km s-min=2.5km az=146.0*
DDA ***28*** *06:26:44.3, 39°.11N×29°.05E, h7km, ML2.6*
ISC 28 06:26:44.2±0.9, 39°.11N±0°.02×29°.04E±0°.02, h16km±7km, n39, σ0§38/56, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**255**	P	**Pg**	**06 26 50.2**	**+0.2**
DEMI				S	**Sg**	**06 26 53.9**	**0.0**
DEMI	**Demirci**	**0.26**	**255**	*i* P	**Pg**	**06 26 50.2**	**+0.2**
DEMI				*i* S	**Sg**	**06 26 53.9**	**0.0**
GDZ	**Gediz**	**0.34**	**94**	P	**Pg**	**06 26 51.5**	**+0.1**
GDZ				S	**Sg**	**06 26 56.2**	**-0.2**
GDZ	**Gediz**	**0.34**	**94**	*i* P	**Pg**	**06 26 51.5**	**+0.1**
GDZ				*i* S	**Sg**	**06 26 56.2**	**-0.2**
TVSB	**Tavsanli**	**0.47**	**44**	*e*PG	**Pg**	**06 26 53.5**	**-0.1**
TVSB				*e*SG	**Sg**	**06 26 59.4**	**-0.7**
TVSB	**Tavsanli**	**0.47**	**44**	*e*Pg	**Pg**	**06 26 53.5**	**-0.1**
TVSB				*e*Sg	**Sg**	**06 26 59.4**	**-0.7**
KHAL	**Karahalli**	**0.82**	**154**	P	**Pn**	**06 27 01.5**	**+0.3**
KHAL				S	**Sg**	**06 27 11.2**	**+0.1**
KHAL	**Karahalli**	**0.82**	**154**	*i* P	**Pn**	**06 27 01.5**	**+0.3**
KHAL				*i* S	**Sg**	**06 27 11.2**	**+0.1**
KHL	**Karahalli**	**0.87**	**154**	*e*PG	**Pb**	**06 27 00.8**	**-0.2**
KHL	**Karahalli**	**0.87**	**154**	*e*Pg	**Pb**	**06 27 00.8**	**-0.2**
ORLT	**Orhaneli**	**0.94**	**353**	*e*PG	**Pb**	**06 27 01.4**	**-0.7**
ORLT	**Orhaneli**	**0.94**	**353**	*e*Pg	**Pb**	**06 27 01.4**	**-0.7**
AKHS	**Akhisar**	**0.98**	**257**	P	**Pb**	**06 27 02.6**	**-0.2**
AKHS				S	**Sn**	**06 27 17.0**	**+0.1**
AKHS	**Akhisar**	**0.98**	**257**	*i* P	**Pb**	**06 27 02.6**	**-0.2**
AKHS				*i* S	**Sn**	**06 27 16.9**	**+0.1**
AKS	**Akhisar**	**0.98**	**257**	*e*PG	**Pn**	**06 27 03.5**	**+0.2**
AKS	**Akhisar**	**0.98**	**257**	*e*Pg	**Pn**	**06 27 03.5**	**+0.2**
BALB	**Balikesir**	**1.04**	**301**	*e*PG	**Pg**	**06 27 04.7**	**+0.3**
BALB	**Balikesir**	**1.04**	**301**	*e*Pg	**Pg**	**06 27 04.7**	**+0.3**
IGD	**Bursa**	**1.16**	**6**	*i* P	**Pg**	**06 27 06.3**	**-0.2**
IGD				*i* S	**Sg**	**06 27 22.8**	**+1.1**
MDNY	**Mudanya-Bursa**	**1.26**	**355**	*e*PN	**Pg**	**06 27 08.2**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.26**	**355**	*e*Pn	**Pg**	**06 27 08.2**	**-0.3**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*PN	**Pg**	**06 27 08.2**	**-0.4**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*Pn	**Pg**	**06 27 08.2**	**-0.4**
IZI	**Iznik**	**1.27**	**15**	*e*PN	**Pg**	**06 27 09.0**	**+0.4**
IZI	**Iznik**	**1.27**	**15**	*e*Pn	**Pg**	**06 27 09.0**	**+0.4**
BORA	**Eskisehir**	**1.34**	**55**	P	**Pg**	**06 27 09.6**	**-0.3**
BORA				S	**Sb**	**06 27 26.0**	**+0.2**
BORA	**Eskisehir**	**1.34**	**55**	*i* P	**Pg**	**06 27 09.6**	**-0.3**
BORA				*i* S	**Sb**	**06 27 26.0**	**+0.2**
ADVT	**Abdulvahap**	**1.43**	**22**	*e*PN	**Pb**	**06 27 10.5**	**+0.2**
ADVT	**Abdulvahap**	**1.43**	**22**	*e*Pn	**Pb**	**06 27 10.5**	**+0.2**
ARMT	**Armutlu**	**1.46**	**355**	*e*PN	**Pg**	**06 27 12.1**	**-0.2**
ARMT	**Armutlu**	**1.46**	**355**	*e*Pn	**Pg**	**06 27 12.1**	**-0.2**
ESKT	**Eskisehir**	**1.46**	**73**	*i* P	**Pg**	**06 27 12.0**	**-0.3**
ESKT				*i* S	**Sg**	**06 27 31.7**	**+0.3**
SEYT	**Eskypehyr**	**1.46**	**73**	P	**Pg**	**06 27 12.0**	**-0.3**
SEYT				S	**Sg**	**06 27 31.7**	**+0.3**
GPA	**Golpazari**	**1.53**	**39**	*e*PN	**Pb**	**06 27 12.0**	**-0.1**
GPA	**Golpazari**	**1.53**	**39**	*e*Pn	**Pb**	**06 27 12.0**	**-0.1**
AYDN	**Tasoluk**	**1.71**	**213**	P	**Pg**	**06 27 17.0**	**-0.1**
AYDN				S	**Sg**	**06 27 38.5**	**-0.9**
AYDN	**Tasoluk**	**1.71**	**213**	*i* P	**Pg**	**06 27 17.1**	**-0.1**
AYDN				*i* S	**Sg**	**06 27 38.5**	**-0.9**
GULT	**Gulveren**	**1.74**	**40**	*e*PN	**Pb**	**06 27 15.7**	**-0.1**
GULT	**Gulveren**	**1.74**	**40**	*e*Pn	**Pb**	**06 27 15.7**	**-0.1**

KRSC 28 06:30:46.1±1.4, 55°.02N×159°.00E, h272km±13km, ML3.7, Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ESO	**Esso**	**0.93**	**349**	P	Pn	06 31 23.1	+0.1
KMNR	**Kamenistaya**	**1.02**	**43**	*e*P	Pn	06 31 25.1	+1.5
KPT	**Kopyto**	**1.18**	**36**	*e*P	Pn	06 31 25.2	+0.8
KIRR	**Kirishev**	**1.21**	**39**	*e*P	Pn	06 31 25.4	+0.7
ZLN	**Zelenaya**	**1.44**	**45**	*e*P	Pn	06 31 27.7	+1.7
GNL	**Ganaly**	**1.46**	**206**	*e*P	Pn	06 31 26.5	+0.1
GNL				*e*S	S	06 31 58.5	+0.3
KRSR	**Krestovskiy**	**1.50**	**36**	*e*P	Pn	06 31 27.4	+0.9
KLY	**Klyuchi**	**1.60**	**35**	*e*P	Pn	06 31 27.9	+0.8
MKZ	**Mys Kozlova**	**1.65**	**105**	*e*P	Pn	06 31 27.0	-0.4
MKZ				*e*S	S	06 31 59.2	-1.0
KRX	**Arik**	**1.67**	**187**	*e*P	Pn	06 31 30.0	+2.1
KRER	**Koryakskii**	**1.72**	**185**	*e*P	Pn	06 31 29.3	+0.9
SDLR	**Sedlovina**	**1.74**	**182**	*e*P	Pn	06 31 29.2	+0.8
AVH	**Avacha**	**1.76**	**185**	*e*P	Pn	06 31 29.8	+1.3
UGLR	**Uglovaya**	**1.81**	**183**	*e*P	Pn	06 31 29.6	+0.6
BDR	**Baidarnaya**	**1.99**	**38**	*e*P	Pn	06 31 31.9	+1.6
BDR				*e*S	S	06 32 06.4	+1.0
SRKR	**Sorokina**	**2.05**	**36**	*e*P	Pn	06 31 32.2	+1.5
SMKR	**Semkarok**	**2.10**	**41**	*e*P	Pn	06 31 32.4	+1.2
SMKR				*e*S	S	06 32 07.5	+0.5
KBG	**Krutoberegovo**	**2.44**	**58**	*e*P	Pn	06 31 34.4	+0.2
KBG				*e*S	S	06 32 12.2	-0.2
RUS	**Russkaya**	**2.60**	**187**	*e*S	S	06 32 13.9	-1.6
BKI	**Bering**	**4.01**	**84**	*e*P	Pn	06 31 52.2	+1.4
BKI				*e*S	S	06 32 43.3	+0.8

ISK ***28*** *06:31:57.8, 39°.13N×29°.01E, h4km, ML2.2*
ISCJB ***28*** *06:31:58.4±0.5, 39°.11N±0°.04×29°.03E±0°.04, h9km, Error ellipse: s-maj=5.1km s-min=4.6km az=169.0*
DDA ***28*** *06:31:58.4, 39°.08N×29°.04E, h7km, Ml2.5*
CSEM ***28*** *06:31:58.4±0.2, 39°.12N×29°.02E, h5km, ML2.5, Error ellipse: s-maj=4.3km s-min=3.2km az=68.0*
ISC 28 06:31:58.5±0.9, 39°.12N±0°.03×29°.03E±0°.03, h9km, n22, σ0§40/30, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**253**	P	**Pg**	**06 32 04.0**	**+0.2**
DEMI				S	**Sg**	**06 32 07.6**	**+0.3**
DEMI	**Demirci**	**0.26**	**253**	*i* P	**Pg**	**06 32 04.0**	**+0.2**
DEMI				*i* S	**Sg**	**06 32 07.5**	**+0.3**
GDZ	**Gediz**	**0.35**	**95**	P	**Pg**	**06 32 05.4**	**-0.1**
GDZ				S	**Sg**	**06 32 10.5**	**+0.3**
GDZ	**Gediz**	**0.35**	**95**	*i* P	**Pg**	**06 32 05.4**	**-0.1**
GDZ				*i* S	**Sg**	**06 32 10.5**	**+0.3**
TVSB	**Tavsanli**	**0.47**	**45**	*e*PG	**Pg**	**06 32 07.7**	**0.0**
TVSB				*e*SG	**Sg**	**06 32 14.8**	**+0.9**
TVSB	**Tavsanli**	**0.47**	**45**	*e*Pg	**Pg**	**06 32 07.7**	**0.0**
TVSB				*e*Sg	**Sg**	**06 32 14.8**	**+0.9**
KHAL	**Karahalli**	**0.83**	**154**	P	**Pg**	**06 32 14.4**	**-0.1**
KHAL				S	**Sg**	**06 32 25.3**	**0.0**
KHAL	**Karahalli**	**0.83**	**154**	*i* P	**Pg**	**06 32 14.4**	**-0.1**
KHAL				*i* S	**Sg**	**06 32 25.3**	**0.0**
KHL	**Karahalli**	**0.88**	**154**	*e*PG	**Pg**	**06 32 15.3**	**-0.1**
KHL	**Karahalli**	**0.88**	**154**	*e*Pg	**Pg**	**06 32 15.4**	**-0.1**
ORLT	**Orhaneli**	**0.93**	**354**	*e*PG	**Pg**	**06 32 15.6**	**-0.9**
ORLT	**Orhaneli**	**0.93**	**354**	*e*Pg	**Pg**	**06 32 15.6**	**-0.9**
KCTX	**Karacabey (Bur**	**1.26**	**336**	*e*PN	**Pn**	**06 32 21.9**	**-0.4**
KCTX	**Karacabey (Bur**	**1.26**	**336**	*e*Pn	**Pn**	**06 32 21.9**	**-0.4**
IZI	**Iznik**	**1.26**	**15**	*e*PN	**Pg**	**06 32 23.1**	**+0.3**
IZI	**Iznik**	**1.26**	**15**	*e*Pn	**Pg**	**06 32 23.1**	**+0.3**
GONE	**Gonen-Balikesi**	**1.39**	**312**	*e*PN	**Pb**	**06 32 24.8**	**+0.1**
GONE	**Gonen-Balikesi**	**1.39**	**312**	*e*Pn	**Pb**	**06 32 24.8**	**+0.1**
ARMT	**Armutlu**	**1.45**	**355**	*e*PN	**Pn**	**06 32 25.1**	**+0.1**
ARMT	**Armutlu**	**1.45**	**355**	*e*Pn	**Pn**	**06 32 25.1**	**+0.1**
GULT	**Gulveren**	**1.74**	**41**	*e*PN	**Pb**	**06 32 30.5**	**-0.2**
GULT	**Gulveren**	**1.74**	**41**	*e*Pn	**Pb**	**06 32 30.5**	**-0.2**

ISCJB ***28*** *06:37:45.4±1.6, 36°.72N±0°.04×141°.20E±0°.08, h12km±7km, mb3.3/2, Error ellipse: s-maj=11.2km s-min=5.7km az=15.5*
JMA ***28*** *06:37:46.4±0.1, 36°.74N×141°.16E, h26km±1km, M3.0*
IDC ***28*** *06:37:49.2±2.0, 36°.50N×141°.01E, h0km, mb3.3/2, mb1 3.5/3, mb1mx3.2/41, mbtmp3.3/3, ML3.1/1, Error ellipse: s-maj=30.6km s-min=20.1km az=21.0*
ISC 28 06:37:45.4±2.0, 36°.76N±0°.05×141°.10E±0°.09, h0km±12km, n17, σ0§71/19, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.42**	**325**	P	**Pb**	**06 37 55.8**	**+0.1**
ONAJ				S	**Sb**	**06 38 03.0**	**+0.4**
JHO	**Hitachi**	**0.45**	**251**	P	**Pb**	**06 37 56.1**	**-0.1**
JHO				*e*S	**Sb**	**06 38 03.6**	**+0.2**
JFK	**Kawauchi**	**0.63**	**344**	P	**Pb**	**06 37 59.0**	**-0.3**
JFK				S	**Sb**	**06 38 08.5**	**-0.3**
JYT	**Yasato**	**0.90**	**234**	P	**Pb**	**06 38 03.5**	**-0.3**
JYT				S	**Sg**	**06 38 15.3**	**+1.0**
JFT	**Otama**	**0.97**	**322**	P	**Pb**	**06 38 05.5**	**+0.4**
JFT				S	**Sb**	**06 38 19.1**	**+0.6**
JMM	**Marumori**	**1.13**	**348**	P	**Pg**	**06 38 06.7**	**-0.4**
JMM				S	**Sg**	**06 38 22.1**	**+0.3**
JFY	**Yanaizu**	**1.29**	**301**	P	**Pb**	**06 38 10.8**	**+0.3**
JFY				S	**Sn**	**06 38 28.4**	**-0.2**
JAG	**Ashikaga**	**1.36**	**256**	P	**Pn**	**06 38 10.2**	**-1.4**
JAG				*e*S	**Sg**	**06 38 29.0**	**-0.2**
MJAR	**Matsushiro Arr**	**2.33**	**266**	Pn	**Pb**	**06 38 27.1**	**-1.2**
	4.9nm,0.3s,baz=85,slow=14,SNR=20						
MJAR				Pg	**Pg**	**06 38 30.7**	**+0.6**
	4.9nm,0.3s,baz=85,slow=17,SNR=30						
MJAR				Lg	Lg	06 38 59.0	
	4.1nm,0.3s,baz=87,slow=30,SNR=6.8						
H11N2	**WAKE ISLAND Hy**	**28.23**	**120**	T	T	07 13 03.4	
	baz=313,slow=75,SNR=249						
H11N1	**WAKE ISLAND Hy**	**28.23**	**120**	T	T	07 13 04.4	
	baz=313,slow=75,SNR=239						
H11N3	**WAKE ISLAND Hy**	**28.25**	**120**	T	T	07 13 05.8	
	baz=313,slow=75,SNR=191						
H11S1	**WAKE ISLAND Hy**	**28.93**	**122**	T	T	07 13 56.6	
	baz=315,slow=75,SNR=98						
H11S3	**WAKE ISLAND Hy**	**28.93**	**122**	T	T	07 13 56.7	
	baz=315,slow=75,SNR=136						
H11S2	**WAKE ISLAND Hy**	**28.94**	**122**	T	T	07 13 57.8	
	baz=315,slow=75,SNR=96						
MKAR	**Makanchi Array**	**44.05**	**302**	P	P	06 46 00.1	+5.3
	0.2nm,0.5s,baz=81,slow=9.3,SNR=2.5						
WRA	**Warramunga Arr**	**56.75**	**188**	P	**P**	**06 47 32.2**	**+1.1**
	0.3nm,0.6s,baz=4.8,slow=7.4,SNR=5.1						

IDC ***28*** *06:42:00.8±0.7, 19°.93S×168°.56E, h0km, mb4.4/15, mb1 4.6/16, mb1mx4.6/22, mbtmp4.5/16, ML3.9/1, MS4.2/18, Ms1 4.2/18, ms1mx4.0/38, Error ellipse: s-maj=21.3km s-min=18.4km az=117.0*
BJI ***28*** *06:42:01.3, 19°.81S×168°.86E, h10km, mb4.9/28, mB5.2/17, Ms5.2/11, Ms7 4.9/11*
ISCJB ***28*** *06:42:03.4±0.2, 20°.01S±0°.05×168°.59E±0°.04, h25km, mb4.9/71, MS4.3/23, Error ellipse: s-maj=7.5km s-min=4.9km az=143.6*
MOS ***28*** *06:42:04.7±1.2, 20°.00S×168°.48E, h33km, mb5.2/29, Error ellipse: s-maj=11.4km s-min=9.5km az=151.5*
GCMT ***28*** *06:42:06.6±0.2, 20°.17S×168°.41E, h20km, MW5.1/88, Moment Tensor Solution. s55,c71; s88,c127; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}4.48±.19; $M_{\theta\theta}$-1.01±.13; $M_{\phi\phi}$-3.47±.13; $M_{r\theta}$1.54±.26; $M_{\theta\phi}$1.59±.08; $M_{\phi r}$-3.03±.24; Best double couple: $M_0$5.53200×10^{16} NP1:ϕ_s153.00000°, δ64.00000°, λ90.00000°. NP2: ϕ_s334.00000°, δ26.00000°, λ91.00000°. Principal axes: T 5.6470, Plg71.0000°, Azm63.0000°; N -0.2300, Plg0.0000°, Azm154.0000°; P -5.4170, Plg19.0000°, Azm244.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
NEIC ***28*** *06:42:06.6±1.2, 20°.06S×168°.53E, h38km±10km, mb5.1/47 Error ellipse: s-maj=8.9km s-min=5.8km az=163.0*
ISC 28 06:42:05.3±0.3, 20°.11S±0°.06×168°.51E±0°.06, h25km, n223, σ1§76/214, mb5.0/71, MS4.3/23, 7C-8D, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.74**	**224**	*e*Pn	**Pn**	**06 42 44.4**	**-3.4**
	143nm,0.3s						
DZM	**Mont Dzumac**	**2.74**	**224**	Pn	**Pn**	**06 42 45.5**	**-2.3**
	5.9nm,0.3s,baz=102,slow=9.1,SNR=89						
DZM				Sn	**Sn**	**06 43 17.7**	**-2.5**
	63nm,0.3s,baz=76,slow=21,SNR=7.5						
DZM	**Mont Dzumac**	**2.74**	**224**	*e*Pn	**Pn**	**06 42 44.2**	**-3.6**
DZM				Sn	**Sn**	**06 43 17.7**	**-2.5**
MSVF	**Nonsavu**	**9.33**	**77**	*e*P	Pn	06 44 22.2	+3.8
MSVF	**Nonsavu**	**9.33**	**77**	*e*Pn	Pn	06 44 22.2	+3.8
EIDS	**Eidsvold**	**16.90**	**249**	P	**P**	**06 46 05.1**	**+3.1**
	baz=17,SNR=4.8						
EIDS	**Eidsvold**	**16.90**	**249**	*e*Pn	**Pn**	**06 46 01.4**	**+1.2**
	45nm,1.2s						
ARMA	**Armidale**	**18.37**	**233**	P	**Pn**	**06 46 21.8**	**+3.3**
	baz=18,SNR=12						
ARMA	**Armidale**	**18.37**	**233**	*e*P	**Pn**	**06 46 19.3**	**+0.7**
	32nm,0.9s						
HIZ	**Hauiti**	**19.14**	**165**	*e*P	**P**	**06 46 26.5**	**-0.2**
	204nm,1.3s						
RMQ	**Roma**	**19.21**	**247**	P	**Pn**	**06 46 31.0**	**+2.4**
	baz=19,SNR=27						
URZ	**Urewera**	**19.56**	**159**	P	**Pn**	**06 46 33.5**	**+0.9**
	0.3nm,0.3s,baz=0.7,slow=5.1,SNR=4.4						
URZ				LR	LR	06 53 31.6	
	comp=Z,1μm,18.5s,baz=350,slow=35						
URZ	**Urewera**	**19.56**	**159**	*e*P	**Pn**	**06 46 32.7**	**+0.1**
	85nm,1.2s						
AFI	**Afiamalu**	**19.82**	**75**	LR	LR	06 52 37.7	
	comp=Z,1μm,18.5s,baz=256,slow=32						
CTA	**Charters Tower**	**20.90**	**266**	P	**P**	**06 46 48.9**	**+2.8**
	baz=21						
CTAO	**Charters Tower**	**20.90**	**266**	*e*P	**P**	**06 46 46.1**	**+0.1**
CTAO				pmax	pmax		
	comp=Z,68nm,1.1s						
CTAO	**Charters Tower**	**20.90**	**266**	*e*P	**P**	**06 46 46.1**	**+0.1**
	comp=Z,68nm,1.1s						
CNB	**Canberra Magne**	**22.67**	**224**	P	**P**	**06 47 07.8**	**+2.8**
	baz=23,SNR=43						
YNG	**Young**	**22.74**	**227**	P	**P**	**06 47 07.7**	**+2.1**
	baz=23,SNR=22						
CAN	**Canberra**	**22.91**	**225**	P	**P**	**06 47 10.3**	**+2.9**
	baz=23						
CAN	**Canberra**	**22.91**	**225**	*e*P	**P**	**06 47 09.5**	**+2.0**
CAN				pmax	pmax		
	comp=Z,59nm,0.9s						
CAN	**Canberra**	**22.91**	**225**	*e*P	**P**	**06 47 09.5**	**+2.0**
	comp=Z,59nm,0.9s						
PMG	**Port Moresby**	**23.20**	**294**	P	**P**	**06 47 10.1**	**-0.4**
	comp=Z,32nm,0.8s,baz=77,slow=5.0,SNR=4.8

comp=Z,138nm,0.8s
DAV Davao City (W) 50.13 298 LR LR 07 13 46.7
comp=Z,77nm,18.3s,baz=163,slow=38
GIRL Giralia 50.38 257 P **P** **06 51 02.4 +1.7**
baz=50,SNR=3.8
JCJ Chichijima 53.42 331 LR LR 07 10 57.5
comp=Z,113nm,19.6s,baz=154,slow=33
VNDA Vanda 57.54 182 P **P** **06 51 51.9 -0.3**
comp=Z,3.5nm,1.0s,baz=4.0,slow=5.6,SNR=6.4
VNDA Vanda 57.54 182 *e*P **P** **06 51 52.5 +0.3**
VNDA pmax pmax
comp=Z,10.0nm,1.3s
VNDA Vanda 57.54 182 *e*P **P** **06 51 52.5 +0.3**
comp=Z,10.0nm,1.3s
SBA Scott Base 57.79 180 *e*P **P** **06 51 54.7 +0.8**
SBA pmax pmax
comp=Z,24nm,1.1s
SBA Scott Base 57.79 180 *e*P **P** **06 51 54.7 +0.8**
comp=Z,24nm,1.1s
LEM Lembang 60.38 274 LR LR 07 19 31.2
comp=Z,250nm,18.4s,baz=142,slow=37
MJAR Matsushiro Arr 63.21 333 P **P** **06 52 30.5 -1.0**
comp=Z,0.8nm,0.6s,baz=152,slow=11,SNR=3.9
MJAR LR LR 07 20 12.0
comp=Z,56nm,18.9s,baz=110,slow=36
JNU Nakatsue 63.98 325 LR LR 07 18 02.5
comp=Z,70nm,18.9s,baz=119,slow=34
TJN Taejon 68.33 325 ‖ *i*P **P** **06 53 04.9 +0.4**
KSRS Korea Array 68.84 326 P **P** **06 53 05.2 -2.4**
comp=Z,1.0nm,0.4s,baz=140,slow=6.5,SNR=7.5
KSAR Wonju Array Be 68.86 326 P **P** **06 53 05.3 -2.4**
KSAR Wonju Array Be 68.86 326 P **P** **06 53 05.2 -2.4**
KS01 Wonju Array Si 68.88 326 *e*P **P** **06 53 07.6 -0.2**
QIZ Qiongzhong 69.42 300 P **P** **06 53 12.3 +0.7**
QIZ S **S** **07 02 19.3 +1.6**
QSPA South Pole Qui 69.94 180 *e*P **P** **06 53 14.2 -0.1**
USRK Ussuriysk Ar. 72.20 333 P **P** **06 53 27.2 -0.8**
comp=Z,1.5nm,0.7s,baz=98,slow=7.9,SNR=7.2
USRK LR LR 07 23 02.7
comp=Z,125nm,19.9s,baz=144,slow=34
SKNT Sakolnakorn 73.29 296 P **P** **06 53 36.0 +0.9**
comp=Z,18nm,0.9s
PET Petropavlovsk 73.33 354 ‖ *e*P **P** **06 53 33.3 -1.2**
PET pmax pmax
comp=Z,20nm,1.2s
PEA0 Petropavlovsk- 73.52 353 *e*P **P** **06 53 35.0 -0.6**
PEA0B Petropavlovsk- 73.52 353 *e*P **P** **06 53 36.0 +0.4**
comp=Z,57nm,1.4s
PETK Petropavlovsk- 73.52 353 P **P** **06 53 34.1 -1.5**
comp=Z,13nm,1.0s,baz=116,slow=5.1,SNR=10
MDJ Mudanjiang 73.57 332 P **P** **06 53 36.0 -0.1**
MDJ pP pP 06 53 38.8 -5.3
MDJ pmax pmax
comp=Z,8.0nm,1.1s
MDJ LR LR
comp=Z,63nm,20.4s
MDJ LR LR
comp=Z,75nm,17.3s
MDJ Mudanjiang 73.57 332 *e*P **P** **06 53 35.6 -0.5**
comp=Z,25nm,1.4s
CN2 Changchun 74.85 329 *e*P **P** **06 53 44.0 +0.4**
CN2 *e*sP pP 06 53 51.0 -0.6
CN2 *e*S **S** **07 03 19.0 -0.1**
CN2 pmax pmax
comp=Z,10.0nm,0.7s
CN2 pmax pmax
comp=Z,200nm,6.0s
CN2 LR LR
comp=Z,1μm,17.0s
CN2 LR LR
comp=Z,800nm,17.0s
CN2 LR LR
comp=Z,1μm,18.0s
NIKH Nikolski High 75.39 14 *e*P **P** **06 53 44.9 -1.6**
comp=Z,25nm,0.8s
GYA Guiyang 75.76 305 P **P** **06 53 51.5 +2.1**
GYA PP **PP** **06 56 43.3 +3.6**
GYA S **S** **07 03 33.8 +3.7**
GYA SKS **SKSac** **07 03 57.0 -1.5**
GYA SS **SS** **07 08 27.5 +4.8**
GYA pmax pmax
comp=Z,20nm,1.0s
GYA pmax pmax
comp=Z,120nm,6.2s
GYA LR LR
comp=Z,540nm,20.6s
GYA LR LR
comp=Z,500nm,21.0s
GYA LR LR
comp=Z,510nm,20.8s
KLR Kul'dur 76.39 336 ‖ *e*P **P** **06 53 52.1 -0.2**
BJI Beijing 77.19 321 P **P** **06 53 57.0 0.0**
BJI pmax pmax
comp=Z,8.0nm,1.0s
LAMP Lampang 77.68 295 P P 06 54 05.2 +4.9
comp=Z,4.8nm,0.9s
KMI Kunming 78.16 302 P **P** **06 54 04.8 +1.7**
KMI pmax pmax
comp=Z,18nm,0.5s
KMI pmax pmax
comp=Z,80nm,6.0s
CM01 Chiang Mai Arr 78.21 295 *e*P **P** **06 54 04.2 +1.0**
CM31 Chiang Mai Arr 78.24 295 *e*P **P** **06 54 03.7 +0.3**
CMAR Chiang Mai Arr 78.24 295 P **P** **06 54 03.1 -0.3**
comp=Z,4.8nm,0.8s,baz=133,slow=4.6,SNR=12
CMAR LR LR 07 30 41.8
comp=Z,29nm,18.1s,baz=136,slow=37
CMAR Chiang Mai Arr 78.24 295 *c*e**P** **06 54 04.8 +1.4**
CMAR pmax pmax
comp=Z,5.0nm,0.8s
CMMT Chiang Mai 78.39 295 P **P** **06 54 08.6 +4.4**
comp=Z,9.7nm,1.0s,comp=Z,608nm
CHTO Chiang Mai 78.40 295 P **P** **06 54 08.7 +4.5**
comp=Z,82nm,0.9s
CHTO Chiang Mai 78.40 295 *e*P **P** **06 54 03.5 -0.8**
CHTO pmax pmax
comp=Z,8.0nm,1.0s
CHTO Chiang Mai 78.40 295 *e*P **P** **06 54 03.5 -0.8**
comp=Z,8.4nm,1.0s
CD2 Chengdu 80.23 308 P **P** **06 54 13.5 -0.5**
CD2 pmax pmax
comp=Z,26nm,0.6s
HHC Hu-ho-hao-te 80.44 320 *e*P **P** **06 54 15.0 0.0**
HHC S **S** **07 04 21.5 +1.6**
HHC SS **SS** **07 09 35.3 +2.6**
HHC pmax pmax
comp=Z,30nm,1.3s
HHC pmax pmax
comp=Z,170nm,7.9s
HHC LR LR
comp=Z,310nm,17.7s
HHC LR LR
comp=Z,340nm,17.4s
HHC LR LR
comp=Z,310nm,17.4s
LZH Lanzhou 82.81 312 *e*P **P** **06 54 26.5 -1.2**
LZH pP PcP 06 54 30.5 -2.0
LZH sP pP 06 54 33.0 -2.8
LZH pmax pmax
comp=Z,12nm,1.0s
OHAK Old Harbor 83.41 20 *e*P **P** **06 54 28.9 -1.1**
comp=Z,34nm,1.4s
SEY Seymchan 83.74 353 P **P** **06 54 30.4 -1.3**
comp=Z,1.2nm,0.7s,baz=59,slow=4.6,SNR=5.7
SEY Seymchan 83.74 353 ‖ *e*P **P** **06 54 30.9 -0.8**
SYO Syowa Base 83.91 196 ‖ *e*P **P** **06 54 31.0 -1.6**
SYO Syowa Base 83.91 196 ‖ *e*PcP **PcP** **06 54 38.4 +1.8**
ULN Ulaanbaatar 87.16 324 *c i*P **P** **06 54 49.3 0.0**
ULN pmax pmax
comp=Z,21nm,1.2s
ULN Ulaanbaatar 87.16 324 *e*P **P** **06 54 48.9 -0.4**
comp=Z,20nm,1.2s
GTA Gaotai 87.23 314 *e*P **P** **06 54 50.8 +1.0**
GTA pP pP 06 54 55.3 -2.7
GTA sP sP 06 54 58.8 -2.1
GTA pmax pmax
comp=Z,4.0nm,1.1s
YAK Yakutsk 87.50 343 *e*P **P** **06 54 49.4 -0.9**
YAK pmax pmax
comp=Z,15nm,1.5s
SONM Songino Array 87.51 323 P **P** **06 54 50.2 -0.8**
comp=Z,6.4nm,1.0s,baz=136,slow=5.1,SNR=26
SONA1 Songino Array 87.51 323 *e*P **P** **06 54 50.7 -0.3**
BILL Bilibino 87.91 359 ‖ *e*P **P** **06 54 51.4 -0.8**
BILL *e* 06 54 58.3
BILL Bilibino 87.91 359 *e*P **P** **06 54 51.0 -1.2**
comp=Z,18nm,1.3s
ORV Oroville 88.18 47 *e*P **P** **06 54 52.7 -1.5**
ORV pmax pmax
comp=Z,12nm,1.4s
ORV Oroville 88.18 47 *e*P **P** **06 54 52.6 -1.5**
comp=Z,12nm,1.4s
MWC Mount Wilson 88.24 53 *e*P **P** **06 54 53.1 -1.8**
MWC pmax pmax
comp=Z,29nm,1.4s
MWC Mount Wilson 88.24 53 *e*P **P** **06 54 53.1 -1.8**
comp=Z,29nm,1.4s
CMB Columbia Colle 88.25 48 *e*P **P** **06 54 52.7 -1.9**
CMB pmax pmax
comp=Z,12nm,1.5s
CMB Columbia Colle 88.25 48 *e*P **P** **06 54 52.7 -1.9**
comp=Z,12nm,1.5s
AFDM Forest Hills D 88.26 47 *e*P **P** **06 54 53.1 -1.5**
comp=Z,13nm,1.4s
SNAA Sanae 88.26 183 *e*P **P** **06 54 53.1 -1.1**
SNAA pmax pmax
comp=Z,15nm,1.3s
SNAA Sanae 88.26 183 *e*P **P** **06 54 53.1 -1.1**
comp=Z,15nm,1.3s
YBH Yreka Blue Hor 88.40 44 *e*P **P** **06 54 54.8 -0.5**
YBH pmax pmax
comp=Z,32nm,1.9s
YBH Yreka Blue Hor 88.40 44 *e*P **P** **06 54 54.8 -0.5**
comp=Z,32nm,1.9s
VNA3 Neumayer Olymp 88.88 181 P **P** **06 54 59.1 +2.1**
WAKR Walker 89.12 48 *e*P **P** **06 54 58.6 -0.3**
VNA1 Neumayer--Stat 89.45 181 P **P** **06 54 59.5 -0.2**
DAC Darwin (Calif) 89.47 51 *e*P **P** **06 54 59.5 -1.1**
DAC pmax pmax
comp=Z,12nm,1.4s
DAC Darwin (Calif) 89.47 51 *e*P **P** **06 54 59.5 -1.1**
comp=Z,12nm,1.4s
PAHR Pah Rah Range 89.70 47 *e*P **P** **06 55 00.1 -1.4**
comp=Z,12nm,1.3s
NV01 Mina Array Sit 89.89 49 *e*P **P** **06 55 01.1 -1.5**
NVAR Mina Array Bea 89.89 49 P **P** **06 55 01.6 -1.0**
comp=Z,1.5nm,0.9s,baz=228,slow=7.3,SNR=7.4
NVAR LR LR 07 27 56.4
comp=Z,237nm,20.2s,baz=262,slow=31
NV11 Mina Array Sit 90.00 49 *e*P **P** **06 55 02.1 -0.9**
comp=Z,26nm,1.8s
MOD Modoc Plateau 90.07 45 *e*P **P** **06 55 02.1 -1.1**
comp=Z,19nm,1.5s
GLA Glamis 90.20 55 *e*P **P** **06 55 03.6 -0.3**
GLA pmax pmax
comp=Z,12nm,0.9s
GLA Glamis 90.20 55 *e*P **P** **06 55 03.5 -0.3**
comp=Z,12nm,0.9s
ZAK Zakamensk 90.61 324 *e*P **P** **06 55 02.5 -2.9**
ZAK pmax pmax
comp=Z,7.0nm,1.5s
TPNV Topopah Spring 90.73 51 *e*P **P** **06 55 03.3 -3.1**
TPNV pmax pmax
comp=Z,13nm,1.4s
TPNV Topopah Spring 90.73 51 *e*P **P** **06 55 03.3 -3.1**
comp=Z,13nm,1.4s
LDFC Landfair 90.81 53 *e*P **P** **06 55 05.8 -1.0**
comp=Z,23nm,0.4s
COLA College 91.07 17 ‖ *e*P **P** **06 55 08.6 +1.5**
TLY Talaya 91.09 326 *e*P **P** **06 55 07.9 +0.3**
TLY pmax pmax
comp=Z,9.0nm,1.0s
TLY MLR MLR
comp=Z,68nm,15.0s
IL1 Eielson Array 91.27 18 *e*P **P** **06 55 07.5 -0.6**
ILAR Eielson Array 91.27 18 P P **06 55 06.0 -2.0**
comp=Z,1.9nm,1.0s,baz=234,slow=6.3,SNR=4.9
SHPR Sheep Range 91.35 52 *e*P **P** **06 55 09.3 0.0**
comp=Z,24nm,1.9s
WVOR Wild Horse Val 91.41 45 *e*P **P** **06 55 07.9 -1.5**
WVOR pmax pmax
comp=Z,31nm,2.0s
WVOR Wild Horse Val 91.41 45 *e*P **P** **06 55 07.9 -1.5**
comp=Z,31nm,2.0s
D05A Enumclaw 91.46 40 *e*P **P** **06 55 09.2 -0.2**
comp=Z,59nm,1.5s
BMN Battle Mountai 91.51 47 *e*P **P** **06 55 08.5 -1.5**
BMN pmax pmax
comp=Z,8.0nm,1.2s
BMN Battle Mountai 91.51 47 *e*P **P** **06 55 08.5 -1.5**
comp=Z,7.9nm,1.2s
LCMT Little Creek M 92.96 52 *e*P **P** **06 55 15.6 -1.1**
comp=Z,9.3nm,1.7s
TUC Tucson 93.05 57 *e*P **P** **06 55 16.7 -0.5**
TUC pmax pmax
comp=Z,6.0nm,1.4s
TUC Tucson 93.05 57 *e*P **P** **06 55 16.7 -0.5**
comp=Z,6.0nm,1.4s
CCUT Cedar City 93.08 51 *e*P **P** **06 55 16.3 -1.1**
comp=Z,15nm,1.9s
DLBC Dease Lake 93.13 28 *e*P **P** **06 55 15.8 -1.0**
comp=Z,6.6nm,1.1s
KNB Kanab 93.27 52 *e*P **P** **06 55 16.8 -1.5**
KNB pmax pmax
comp=Z,7.0nm,1.3s
KNB Kanab 93.27 52 *e*P **P** **06 55 16.8 -1.5**
comp=Z,6.6nm,1.3s
X16A Lo Mia Camp, P 93.33 55 *e*P **P** **06 55 17.1 -1.4**
comp=Z,5.8nm,1.4s
TIXI Tiksi 95.45 348 ‖ *e*P **P** **06 55 25.6 -1.6**
TIXI pmax pmax
comp=Z,3.0nm,1.8s
WMQ Urumqi 97.32 314 *e*P Pdif 06 55 37.3 +0.8
PDAR Pinedale Array 97.71 47 LR LR 07 34 26.3
comp=Z,92nm,19.0s,baz=274,slow=32
TXAR Lajitas Array 97.78 62 P **P** **06 55 37.7 -1.2**
comp=Z,0.2nm,0.7s,baz=230,slow=6.8,SNR=2.9
TXAR LR LR 07 32 53.1
comp=Z,124nm,19.2s,baz=0.0,slow=31
YKA Yellowknife Ar 101.76 28 P **Pdif** **06 55 54.8 -0.8**
comp=Z,0.2nm,0.8s,baz=247,slow=4.6,SNR=3.6
MKAR Makanchi Array 101.88 316 P **Pdif** **06 55 54.7 -1.9**
comp=Z,0.2nm,0.5s,baz=101,slow=6.0,SNR=2.5
MKAR Makanchi Array 101.88 316 *i* P **Pdif** **06 56 02.4 +5.8**
KLMR Klimovskoe 125.98 332 *e*PKIKP **PKPdf** **07 01 01.2 -3.5**
KLMR pmax pmax
comp=Z,9.0nm,1.4s
GNI Garni 128.31 306 ‖ *i*PKIKP **PKPdf** **07 01 09.5 -0.6**
KIV Kislovodsk 129.32 311 *c i*PKIKP **PKPdf** **07 01 12.2 +0.4**
KIV *e* 07 01 16.9
KIV *i*S SS 07 20 36.2 -4.9
KIV pmax pmax
comp=Z,4μm,0.7s
NEY Neytrino 129.42 310 *i* PKIKP **PKPdf** **07 01 14.0 +1.9**
BRTR Keskin Array B 136.80 307 PKP **PKPdf** **07 01 26.8 +0.8**
comp=Z,0.8nm,1.0s,baz=132,slow=4.1,SNR=4.2
BRTR Keskin Array B 136.80 307 *c i*PKIKP **PKPdf** **07 01 27.3 +1.3**
BRTR pmax pmax
comp=Z,1.0nm,1.0s
KRLC Kraliky 142.63 330 *e*PKP **PKPdf** **07 01 42.0 +5.8**
KRLC Kraliky 142.63 330 *e*PKIKP **PKPdf** **07 01 42.0 +5.8**
DPC Dobruska-Polom 142.66 330 *e*PKP **PKPdf** **07 01 36.3 +0.1**
DPC Dobruska-Polom 142.66 330 *e*PKIKP **PKPdf** **07 01 36.3 +0.1**
UPC Upice 142.69 331 AMS AMS 08 06 20.0
comp=Z,200nm,19.3s
BRG Berggiesshubel 143.34 333 *e*P **PKPdf** **07 01 36.2 -1.1**
comp=Z,11nm,1.5s
BRG *e* 07 01 43.3
comp=Z,13nm,1.7s
BRG Berggiesshubel 143.34 333 *e*PKIKP **PKPdf** **07 01 36.2 -1.1**
BRG *e* 07 01 43.3
BRG pmax pmax
comp=Z,11nm,1.5s
BRG pmax pmax
comp=Z,13nm,1.7s
CLL Collm 143.41 334 *e*PKPdf PKPbc 07 01 34.0 -0.6
comp=Z,7.0nm,1.3s
CLL *e*PKiKP **PKiKP** **07 01 39.0 -1.8**
CLL *e* 07 05 21.0
CLL Collm 143.41 334 *e*PKIKP PKPbc 07 01 34.0 -0.6
CLL pmax pmax
comp=Z,7.0nm,1.3s
NKC Novy Kostel 144.46 333 *e*PKP **PKPdf** **07 01 38.5 -0.8**
NKC *e*x x 07 01 46.4
NKC Novy Kostel 144.46 333 *e*PKIKP **PKPdf** **07 01 38.5 -0.8**
NKC *e* 07 01 46.4
NKC *e* 07 01 46.5
KHC Kasperske Hory 144.78 331 *e*PKP PKPbc 07 01 38.8 -0.2
KHC *e*pPKP pPKPdf 07 01 46.2 -2.2
KHC AMS AMS 08 11 30.0
comp=Z,200nm,21.9s
KHC Kasperske Hory 144.78 331 *e*PKIKP PKPbc 07 01 38.8 -0.2
KHC *e* 07 01 46.2
KHC MLR MLR
comp=Z,200nm,21.9s
KHC Kasperske Hory 144.78 331 *e*PKPdf PKPbc 07 01 39.0 0.0
GEC2 GERESS Array S 144.93 331 *e*PKIKP PKPbc 07 01 39.5 0.0
GEC2 GERESS Array S 144.93 331 *e*PKPdf PKPbc 07 01 39.5 0.0
GERES GERESS Array B 144.93 331 PKP **PKPab** **07 01 39.2 -0.2**
comp=Z,2.0nm,0.8s,baz=22,slow=4.3,SNR=14
GEA0 GERESS Array S 144.93 331 *e*PKPdf **PKPab** **07 01 38.8 -0.7**
ARSA Arzberg 145.15 327 *e*PKPdf **PKPbc** **07 01 39.5 -0.7**
comp=Z,19nm,1.4s
AGG Agios Georgios 145.34 310 *e*PKIKP **PKPbc** **07 01 39.6 -1.5**
AGG Agios Georgios 145.34 310 *e*PKPbc **PKPbc** **07 01 39.6 -1.5**
MOA Molln 145.37 329 *i* PKPdf **PKPdf** **07 01 40.7 -0.3**
comp=Z,24nm,1.1s
TIR Tirane 146.02 316 *e*PKP2 **PKPbc** **07 01 42.8 -0.3**
TIR Tirane 146.02 316 *e*PKPdf **PKPbc** **07 01 42.8 -0.3**
KBA Koelnbreinsper 146.35 329 *e*PKPab **PKPdf** **07 01 42.9 0.0**
comp=Z,10nm,1.2s
CWF Charnwood Fore 146.49 349 *e*PKPdf **PKPdf** **07 01 42.7 0.0**
BEBN Eben Emael 146.51 340 PKPbc **PKPbc** **07 01 44.4 +0.2**
MEM Membach 146.57 340 PKPbc **PKPbc** **07 01 43.5 -0.9**
STU Stuttgart 146.93 335 *e*PKP2 **PKPbc** **07 01 45.4 -0.1**
STU Stuttgart 146.93 335 *e*PKPbc **PKPbc** **07 01 45.4 -0.1**
BCLA Clavier 146.96 340 PKPbc **PKPab** **07 01 46.0 -1.0**
MOTA Moosalm 147.21 331 *e*PKPbc **PKPbc** **07 01 45.3 -1.3**
comp=Z,11nm,1.1s
RETA Reutte 147.26 332 *e*PKPdf **PKPdf** **07 01 42.7 -1.6**
comp=Z,18nm,1.8s
WLF Walferdange 147.33 339 PKPbc **PKPbc** **07 01 47.2 +0.6**
WLF Walferdange 147.33 339 *e*PKP2 **PKPbc** **07 01 46.9 +0.3**
WLF Walferdange 147.33 339 *e*PKPbc **PKPbc** **07 01 46.9 +0.3**
DOU Dourbes 147.47 341 PKPbc **PKPbc** **07 01 46.5 -0.4**
FETA Feichten 147.62 331 *e*PKPbc **PKPbc** **07 01 46.5 -1.2**
comp=Z,22nm,1.1s
BFO Black Forest 147.63 335 *e*PKP2 **PKPbc** **07 01 46.8 -0.7**
BFO Black Forest 147.63 335 *e*PKPdf **PKPbc** **07 01 46.8 -0.7**
DAVA Damuels 147.80 332 *i* PKPdf **PKPdf** **07 01 42.8 -2.5**
comp=Z,14nm,1.3s
FUORN Ofenpass-Fuorn 148.14 331 *e*PKPbc **PKPbc** **07 01 48.9 -0.3**
TUE Stuetta 148.66 332 *e*PKPbc **PKPbc** **07 01 50.2 -0.4**
TIP Timpagrande 149.15 314 *e*PKPbc **PKPbc** **07 01 51.5 -0.3**
CEL Celeste 150.20 313 *e*PKPbc **PKPbc** **07 01 54.8 +0.3**
ES19 SONSECA Array 159.42 343 *e*PKPab **PKPab** **07 02 39.0 -0.5**

ISK ***28*** *06:43:45.7, 39.°14N×29.°02E, h5km, ML2.5*
DDA ***28*** *06:43:45.7, 39.°09N×29.°06E, h7km, Ml2.7*
CSEM ***28*** *06:43:46.2±0.1, 39.°12N×29.°05E, h5km, ML2.7, Error ellipse: s-maj=3.3km s-min=2.7km az=170.0*
ISC 28 06:43:46.1±1.0,**39.°11N**±0.°02×**29.°05E**±0.°02,**h7**km±9km,
n39,σ0°**45**/56,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**255**	P	**Pg**	**06 43 51.3**	**0.0**
DEMI				S	**Sg**	**06 43 54.9**	**0.0**
DEMI	**Demirci**	**0.27**	**255**	*i* P	**Pg**	**06 43 51.3**	**0.0**
DEMI				*i* S	**Sg**	**06 43 54.9**	**0.0**
GDZ	**Gediz**	**0.34**	**94**	P	**Pg**	**06 43 52.7**	**-0.1**
GDZ				S	**Sg**	**06 43 57.8**	**+0.5**
GDZ	**Gediz**	**0.34**	**94**	*i* P	**Pg**	**06 43 52.7**	**-0.1**
GDZ				*i* S	**Sg**	**06 43 57.8**	**+0.5**
TVSB	**Tavsanli**	**0.47**	**44**	*e*PG	**Pg**	**06 43 55.2**	**+0.1**
TVSB				*e*SG	**Sg**	**06 44 02.0**	**+0.7**
TVSB	**Tavsanli**	**0.47**	**44**	*e*Pg	**Pg**	**06 43 55.2**	**+0.1**
TVSB				*e*Sg	**Sg**	**06 44 02.0**	**+0.7**
KHAL	**Karahalli**	**0.82**	**155**	P	**Pg**	**06 44 01.8**	**0.0**
KHAL				S	**Sg**	**06 44 12.3**	**-0.2**
KHAL	**Karahalli**	**0.82**	**155**	*i* P	**Pg**	**06 44 01.8**	**0.0**
KHAL				*i* S	**Sg**	**06 44 12.3**	**-0.2**
KHL	**Karahalli**	**0.87**	**155**	*e*PG	**Pb**	**06 44 03.5**	**-0.2**
KHL	**Karahalli**	**0.87**	**155**	*e*Pg	**Pb**	**06 44 03.5**	**-0.2**
ORLT	**Orhaneli**	**0.94**	**353**	*e*PG	**Pg**	**06 44 04.0**	**-0.1**
ORLT	**Orhaneli**	**0.94**	**353**	*e*Pg	**Pg**	**06 44 04.0**	**-0.1**
AKHS	**Akhisar**	**0.99**	**257**	P	**Pb**	**06 44 05.7**	**+0.1**
AKHS				S	**Sb**	**06 44 18.9**	**+0.1**
AKHS	**Akhisar**	**0.99**	**257**	*i* P	**Pb**	**06 44 05.7**	**+0.1**
AKHS				*i* S	**Sb**	**06 44 18.9**	**+0.1**
AKS	**Akhisar**	**0.99**	**257**	*e*PG	**Pb**	**06 44 05.5**	**-0.1**
AKS				*e*SG	**Sg**	**06 44 18.1**	**+0.3**
AKS	**Akhisar**	**0.99**	**257**	*e*Pg	**Pb**	**06 44 05.5**	**-0.1**
AKS				*e*Sg	**Sg**	**06 44 18.2**	**+0.3**
BALB	**Balikesir**	**1.04**	**301**	*e*PG	**Pg**	**06 44 05.7**	**-0.5**
BALB	**Balikesir**	**1.04**	**301**	*e*Pg	**Pg**	**06 44 05.7**	**-0.5**
IGD	**Bursa**	**1.16**	**6**	*i* P	**Pg**	**06 44 07.7**	**-0.6**
IGD				*i* S	**Sn**	**06 44 24.5**	**-0.3**
IZI	**Iznik**	**1.27**	**15**	*e*PN	**Pn**	**06 44 09.5**	**-0.8**
IZI	**Iznik**	**1.27**	**15**	*e*Pn	**Pn**	**06 44 09.5**	**-0.8**
KCTX	**Karacabey (Bur**	**1.27**	**335**	*e*PN	**Pn**	**06 44 09.7**	**-0.6**
KCTX	**Karacabey (Bur**	**1.27**	**335**	*e*Pn	**Pn**	**06 44 09.7**	**-0.6**
BALY	**Balya**	**1.27**	**300**	P	**Pg**	**06 44 10.7**	**+0.3**
BALY				S	**Sn**	**06 44 29.0**	**+1.3**
BALY	**Balya**	**1.27**	**300**	*i* P	**Pg**	**06 44 10.7**	**+0.3**
BALY				*i* S	**Sn**	**06 44 29.0**	**+1.3**
BORA	**Eskisehir**	**1.33**	**54**	P	**Pg**	**06 44 12.1**	**+0.5**
BORA				S	**Sn**	**06 44 29.6**	**+0.3**
BORA	**Eskisehir**	**1.33**	**54**	*i* P	**Pg**	**06 44 12.1**	**+0.5**
BORA				*i* S	**Sn**	**06 44 29.6**	**+0.3**
GONE	**Gonen-Balikesi**	**1.41**	**312**	*e*PN	**Pn**	**06 44 11.8**	**-0.3**
GONE	**Gonen-Balikesi**	**1.41**	**312**	*e*Pn	**Pn**	**06 44 11.8**	**-0.3**
ADVT	**Abdulvahap**	**1.42**	**22**	*e*PN	**Pb**	**06 44 12.8**	**-0.2**
ADVT	**Abdulvahap**	**1.42**	**22**	*e*Pn	**Pb**	**06 44 12.8**	**-0.2**
ARMT	**Armutlu**	**1.46**	**354**	*e*PN	**Pb**	**06 44 13.2**	**-0.3**
ARMT	**Armutlu**	**1.46**	**354**	*e*Pn	**Pb**	**06 44 13.3**	**-0.3**
GPA	**Golpazari**	**1.53**	**39**	*e*PN	**Pg**	**06 44 15.0**	**-0.4**
GPA	**Golpazari**	**1.53**	**39**	*e*Pn	**Pg**	**06 44 15.0**	**-0.4**
EDC	**Edincik**	**1.53**	**324**	*e*PN	**Pb**	**06 44 14.8**	**0.0**
EDC	**Edincik**	**1.53**	**324**	*e*Pn	**Pb**	**06 44 14.8**	**0.0**
GULT	**Gulveren**	**1.74**	**40**	*e*PN	**Pn**	**06 44 16.4**	**-0.4**
GULT	**Gulveren**	**1.74**	**40**	*e*Pn	**Pn**	**06 44 16.4**	**-0.4**

ISCJB ***28*** *06:56:39.0±0.5, 38.°94N±0.°03×33.°38E±0.°03, h2km±5km, Error ellipse: s-maj=4.6km s-min=3.6km az=171.1*
DDA ***28*** *06:56:38.4, 38.°97N×33.°42E, h1km, Ml3.1*
ISK ***28*** *06:56:38.5, 38.°96N×33.°38E, h6km, ML2.6*
CSEM ***28*** *06:56:38.9±0.2, 38.°94N×33.°38E, h5km, ML2.6, Error ellipse: s-maj=3.9km s-min=3.1km az=167.0*
ISC 28 06:56:39.1±0.9,**38.°96N**±0.°02×**33.°40E**±0.°02,**h11**km±6km,
n40,σ0°**46**/59,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SERE	**Sereflikochisa**	**0.13**	**94**	*e*PG	**Pg**	**06 56 42.1**	**-0.2**
SERE				*e*SG	**Sg**	**06 56 44.7**	**+0.1**
SERE	**Sereflikochisa**	**0.13**	**94**	*e*Pg	**Pg**	**06 56 42.1**	**-0.2**
SERE				*e*Sg	**Sg**	**06 56 44.7**	**+0.1**
AKSY	**AKSARAY - Alti**	**0.42**	**137**	P	**Pg**	**06 56 47.2**	**-0.1**
AKSY				S	**Sg**	**06 56 53.3**	**+0.5**
AKSY	**AKSARAY - Alti**	**0.42**	**137**	*i* P	**Pg**	**06 56 47.2**	**-0.1**
AKSY				*i* S	**Sg**	**06 56 53.3**	**+0.5**
KKUL	**Konya-Kulu**	**0.43**	**300**	P	**Pg**	**06 56 47.7**	**+0.1**
KKUL				S	**Sb**	**06 56 54.9**	**-0.5**
KKUL	**Konya-Kulu**	**0.43**	**300**	*i* P	**Pg**	**06 56 47.7**	**+0.1**
KKUL				*i* S	**Sb**	**06 56 54.9**	**-0.5**
KAMT	**Kaman**	**0.48**	**30**	*e*PG	**Pg**	**06 56 48.3**	**-0.2**
KAMT	**Kaman**	**0.48**	**30**	*e*Pg	**Pg**	**06 56 48.3**	**-0.2**
CHBY	**Cihanbeyli**	**0.55**	**227**	*e*PG	**Pg**	**06 56 49.4**	**-0.3**
CHBY				*e*SG	**Sg**	**06 56 57.4**	**+0.5**
CHBY	**Cihanbeyli**	**0.55**	**227**	*e*Pg	**Pg**	**06 56 49.4**	**-0.3**
CHBY				*e*Sg	**Sg**	**06 56 57.4**	**+0.5**
AFSR	**Af¨ar-Bala (A**	**0.55**	**333**	*e*PG	**Pg**	**06 56 49.5**	**-0.4**
AFSR	**Af¨ar-Bala (A**	**0.55**	**333**	*e*Pg	**Pg**	**06 56 49.5**	**-0.4**
CDAG	**Cicekdag**	**1.01**	**48**	P	**Pg**	**06 56 57.5**	**-1.0**
CDAG				S	**Sb**	**06 57 12.2**	**+0.2**
CDAG	**Cicekdag**	**1.01**	**48**	*i* P	**Pg**	**06 56 57.5**	**-1.0**
CDAG				*i* S	**Sb**	**06 57 12.2**	**+0.2**
LOD	**Lodumlu**	**1.05**	**332**	*e*PG	**Pg**	**06 56 59.0**	**-0.4**
LOD	**Lodumlu**	**1.05**	**332**	*e*Pg	**Pg**	**06 56 59.0**	**-0.4**
KDHN	**Kadinhani**	**1.09**	**247**	P	**Pg**	**06 56 59.6**	**-0.5**
KDHN				S	**Sn**	**06 57 15.4**	**-0.2**
KDHN	**Kadinhani**	**1.09**	**247**	*i* P	**Pg**	**06 56 59.6**	**-0.5**
KDHN				*i* S	**Sn**	**06 57 15.4**	**-0.2**
LADK	**Ladik-KONYA**	**1.11**	**227**	*e*PN	**Pg**	**06 57 00.0**	**-0.4**
LADK	**Ladik-KONYA**	**1.11**	**227**	*e*Pn	**Pg**	**06 57 00.0**	**-0.4**
AVNS	**Nevsehir-Avano**	**1.14**	**97**	P	**Pb**	**06 57 00.4**	**-0.5**
AVNS				S	**Sn**	**06 57 17.0**	**+0.2**
AVNS	**Nevsehir-Avano**	**1.14**	**97**	*i* P	**Pb**	**06 57 00.4**	**-0.5**
AVNS				*i* S	**Sn**	**06 57 17.0**	**+0.2**

KIZT	Kizilcal	1.19	267	*e*PN	Pb	06 57 01.2	-0.5
KIZT	Kizilcal	1.19	267	*e*Pn	Pb	06 57 01.2	-0.5
NIG	Nigde	1.27	131	*e*PN	Pg	06 57 03.6	+0.1
NIG	Nigde	1.27	131	*e*Pn	Pg	06 57 03.6	+0.1
KONT	Konya--Tatoy	1.30	219	*e*PN	Pb	06 57 03.5	+0.1
KONT	Konya--Tatoy	1.30	219	*e*Pn	Pb	06 57 03.6	+0.1
ELDT	Eldivan	1.53	1	P	Pb	06 57 07.7	+0.1
ELDT				S	Sg	06 57 29.0	+0.6
ELDT	Eldivan	1.53	1	*i* P	Pb	06 57 07.7	+0.1
ELDT				*i* S	Sg	06 57 29.0	+0.6
SVRH	Sivrihisar-ESK	1.54	289	*e*PN	Pn	06 57 07.0	+0.4
SVRH	Sivrihisar-ESK	1.54	289	*e*Pn	Pn	06 57 07.0	+0.4
CORM	Corum	1.55	38	*e*PN	Pn	06 57 07.4	+0.7
CORM	Corum	1.55	38	*e*Pn	Pn	06 57 07.4	+0.7
KERG	Konya-Eregli	1.64	159	P	Pn	06 57 08.2	+0.2
KERG	Konya-Eregli	1.64	159	*i* P	Pn	06 57 08.2	+0.2
COAL	Corum-Alaca	1.79	43	P	Pb	06 57 12.0	+0.1
COAL				S	Sg	06 57 37.0	+0.5
COAL	Corum-Alaca	1.79	43	*i* P	Pb	06 57 12.0	+0.1
COAL				*i* S	Sg	06 57 37.0	+0.5
CUSAR	Sarkisla-SIVAS	2.26	77	P	Pb	06 57 18.9	-1.1
CUSAR	Sarkisla-SIVAS	2.26	77	*i* P	Pb	06 57 18.9	-1.1
CUSAR				*i* S	Sg	06 57 51.8	+0.1

MEX 28 07:00:02.2±0.6, 16°.30N×98°.03W, h3km±4km, MD3.8, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PNIG	Pinotepa	0.13	317	*i* P	Pg	07 00 04.3	-0.6
PNIG				*e*S	Sg	07 00 07.0	+0.4
TLIG	Tlapa	1.36	338	*e*P	Pn	07 00 24.1	-4.1
TLIG				*e*S	Sg	07 00 42.0	-3.9
VHO	Vista Hermosa	1.47	58	*e*P	Pn	07 00 26.0	-3.7
VHO				*i* S	Sg	07 00 44.7	-4.7
HUIG	Huatulco	1.92	106	*e*P	Pn	07 00 32.6	-3.3
HUIG				*i* S	Sn	07 00 55.5	-5.0
TPIG	Tehuac#an	2.21	17	*i* P	Pn	07 00 37.4	-2.5
TPIG				*e*S	Sn	07 01 03.8	-4.0
CAIG	El Cayaco	2.27	290	*e*P	Pn	07 00 37.5	-3.1
CAIG				*i* S	Sn	07 01 04.9	-4.1
YAIG	Yautepec	2.74	339	*e*P	Pn	07 00 44.7	-2.5
YAIG				*i* S	Sn	07 01 16.1	-4.8

ISCJB 28 07:03:06.0±0.6, 39°.12N±0°.04×29°.01E±0°.03, h1km±7km, Error ellipse: s-maj=6.1km s-min=4.3km az=175.5
CSEM 28 07:03:06.5±0.1, 39°.12N×29°.03E, h5km, ML2.8, Error ellipse: s-maj=2.5km s-min=1.9km az=169.0
ISK 28 07:03:06.0, 39°.11N×29°.06E, h5km, ML2.6
DDA 28 07:03:06.0, 39°.13N×29°.03E, h7km, Ml2.8
ISC 28 07:03:06.5±1.0, 39°.11N±0°.03×29°.03E±0°.03, h11km±11km, n37, σ0°29/50, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	Gediz	0.35	94	P	Pg	07 03 13.5	-0.1
GDZ				S	Sg	07 03 18.6	+0.3
GDZ	Gediz	0.35	94	*i* P	Pg	07 03 13.5	-0.1
GDZ				*i* S	Sg	07 03 18.6	+0.3
TVSB	Tavsanli	0.47	44	*e*PG	Pg	07 03 15.6	-0.3
TVSB				*e*SG	Sg	07 03 22.2	0.0
TVSB	Tavsanli	0.47	44	*e*Pg	Pg	07 03 15.6	-0.3
TVSB				*e*Sg	Sg	07 03 22.2	0.0
KHL	Karahalli	0.88	154	*e*PG	Pb	07 03 23.6	-0.1
KHL				*e*SG	Sb	07 03 35.2	-0.3
KHL	Karahalli	0.88	154	*e*Pg	Pb	07 03 23.6	-0.1
KHL				*e*Sg	Sb	07 03 35.2	-0.3
ORLT	Orhaneli	0.94	354	*e*PG	Pg	07 03 24.2	-0.4
ORLT	Orhaneli	0.94	354	*e*Pg	Pg	07 03 24.2	-0.4
AKHS	Akhisar	0.98	257	P	Pg	07 03 25.2	-0.2
AKHS				S	Sb	07 03 38.7	+0.3
AKHS	Akhisar	0.98	257	*i* P	Pg	07 03 25.2	-0.2
AKHS				*i* S	Sb	07 03 38.6	+0.3
AKS	Akhisar	0.98	257	*e*PG	Pg	07 03 25.1	-0.3
AKS	Akhisar	0.98	257	*e*Pg	Pg	07 03 25.1	-0.3
BALB	Balikesir	1.04	301	*e*PG	Pn	07 03 26.9	0.0
BALB	Balikesir	1.04	301	*e*Pg	Pn	07 03 26.9	0.0
IGD	Bursa	1.16	6	*i* P	Pb	07 03 27.6	-0.9
IGD				*i* S	Sb	07 03 43.3	-0.3
CAVI	Cavuskoy	1.26	30	*e*PN	Pn	07 03 30.0	0.0
CAVI	Cavuskoy	1.26	30	*e*Pn	Pn	07 03 30.0	0.0
MDNY	Mudanya-Bursa	1.26	355	*e*PN	Pg	07 03 30.9	+0.1
MDNY	Mudanya-Bursa	1.26	355	*e*Pn	Pg	07 03 30.9	+0.1
KCTX	Karacabey (Bur	1.27	336	*e*PN	Pb	07 03 30.4	0.0
KCTX	Karacabey (Bur	1.27	336	*e*Pn	Pb	07 03 30.4	0.0
IZI	Iznik	1.27	15	*e*PN	Pg	07 03 31.1	+0.2
IZI	Iznik	1.27	15	*e*Pn	Pg	07 03 31.1	+0.2
BORA	Eskisehir	1.34	55	P	Pb	07 03 31.9	+0.2
BORA				S	Sg	07 03 50.1	+0.4
BORA	Eskisehir	1.34	55	*i* P	Pb	07 03 31.9	+0.2
BORA				*i* S	Sg	07 03 50.1	+0.4
ADVT	Abdulvahap	1.43	22	*e*PN	Pb	07 03 33.2	+0.1
ADVT	Abdulvahap	1.43	22	*e*Pn	Pb	07 03 33.2	+0.1
ARMT	Armutlu	1.46	355	*e*PN	Pn	07 03 33.2	+0.4
ARMT	Armutlu	1.46	355	*e*Pn	Pn	07 03 33.2	+0.4
ESKT	Eskisehir	1.47	73	*i* P	Pn	07 03 33.2	+0.2
ESKT				*i* S	Sg	07 03 53.9	+0.1
SEYT	Eskypehyr	1.47	73	P	Pn	07 03 33.2	+0.2
SEYT				S	Sg	07 03 53.9	+0.2
EDC	Edincik	1.53	324	*e*PN	Pb	07 03 34.9	+0.1
EDC	Edincik	1.53	324	*e*Pn	Pb	07 03 34.9	+0.1
GPA	Golpazari	1.53	40	*e*PN	Pb	07 03 34.6	-0.4
GPA	Golpazari	1.53	40	*e*Pn	Pb	07 03 34.6	-0.4
GULT	Gulveren	1.75	40	*e*PN	Pb	07 03 38.1	-0.5
GULT	Gulveren	1.75	40	*e*Pn	Pb	07 03 38.1	-0.5

IDC 28 07:04:58.2±0.7, 36°.28N×141°.84E, h0km, mb3.7/12, mb1 3.9/16, mb1mx3.8/58, mbtmp3.7/16, ML3.4/4, MS2.2/1, Ms1 2.2/1, ms1mx2.1/56, Error ellipse: s-maj=19.8km s-min=16.7km az=118.0
ISCJB 28 07:04:59.4±0.5, 36°.30N±0°.04×141°.81E±0°.05, h19km, mb3.7/12, Error ellipse: s-maj=6.2km s-min=5.2km az=39.5
NIED 28 07:05:00, 36°.30N×141°.70E, h8km, Mw4.0 Best double couple: M0 9.62000×10^14 NP1:φ=222.00000°, δ60.00000°, λ-154.00000°. NP2:φ=118.00000°, δ68.00000°, λ-33.00000°.
JMA 28 07:05:00.8±0.2, 36°.32N×141°.73E, h32km, M3.9
ISC 28 07:05:00.9±0.6, 36°.29N±0°.04×141°.67E±0°.05, h19km, n34, σ1°23/31, mb3.8/12, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	0.88	228	P	Pg	07 05 17.8	-0.3
CHOJ				S	Sn	07 05 30.6	+0.1
JHO	Hitachi	0.94	290	P	Pn	07 05 18.3	-0.8
ONAJ	Iwakimizuishiy	1.07	319	P	Pb	07 05 20.0	-0.8
JFK	Kawauchi	1.25	329	P	Pb	07 05 22.4	-1.4
JFT	Otama	1.62	319	P	Pb	07 05 29.0	-1.2
JMM	Marumori	1.72	336	P	Pb	07 05 29.6	-2.3
BSO1	Boso 1	1.73	199	P	Pb	07 05 30.3	-1.4
BSO3	Boso 3	1.76	213	P	Pb	07 05 31.2	-1.2
JKT	Katashina	2.01	284	P	Pb	07 05 34.6	-2.2
JKT				*e*S	Sn	07 05 59.0	+0.6
MJAR	Matsushiro Arr	2.80	276	Pn	Pn	07 05 45.2	+0.5
MJAR	5.0nm,0.3s,baz=115,slow=8.8,SNR=27			Sn	Sn	07 06 20.1	+2.1
MJAR	6.5nm,0.3s,baz=105,slow=9.2,SNR=8.3			LR	LR	07 06 32.0	
MAT	comp=Z,39nm,19.9s,baz=90,slow=32 Matsushiro	2.80	276	P	Pn	07 05 46.2	+1.5
MAT				*e*S	Sb	07 06 21.9	-2.4
JHJ	Hachijo jima 2	3.53	207	Pn	Pn	07 05 54.6	0.0
JHJ	42nm,0.3s,baz=76,slow=14,SNR=8.8			Sn	Sn	07 06 36.0	+0.2
ASAJ	15nm,0.3s,baz=74,slow=3.4,SNR=2.4 Asahikawa	7.85	5	Pn	Pn	07 06 53.7	-0.2
USRK	0.5nm,0.3s,baz=184,slow=19,SNR=2.5 Ussuriysk Ar.	10.81	320	Pn	Pn	07 07 41.5	+6.9
KSRS	0.1nm,0.3s,baz=124,slow=12,SNR=2.4 Korea Array	11.07	280	Pn	Pn	07 07 41.8	+3.6
H11N2	0.1nm,0.3s,baz=97,slow=14,SNR=2.3 WAKE ISLAND Hy 27.60	120		T	T	07 39 35.0	
H11N1	baz=312,slow=75,SNR=25 WAKE ISLAND Hy 27.60	120		T	T	07 39 36.1	
H11N3	baz=312,slow=75,SNR=23 WAKE ISLAND Hy 27.61	120		T	T	07 39 34.3	
H11S1	baz=312,slow=75,SNR=22 WAKE ISLAND Hy 28.29	122		T	T	07 40 26.0	
H11S3	baz=314,slow=76,SNR=7.1 WAKE ISLAND Hy 28.29	122		T	T	07 40 26.3	
H11S2	baz=314,slow=76,SNR=52 WAKE ISLAND Hy 28.30	122		T	T	07 40 35.7	
SONM	baz=314,slow=76,SNR=33 Songino Array	28.37	305	P	P	07 10 55.0	+1.1
ZALV	0.3nm,0.4s,baz=109,slow=9.1,SNR=3.6 Zalesovo Beam	42.57	313	P	P	07 12 56.8	+1.5
ILAR	0.8nm,0.4s,baz=73,slow=5.0,SNR=2.8 Eielson Array	50.01	32	P	P	07 13 54.1	+0.5
WRA	1.0nm,0.8s,baz=268,slow=6.2,SNR=12 Warramunga Arr	56.36	188	P	P	07 14 40.8	0.0
ASAR	0.3nm,0.5s,baz=0.3,slow=7.7,SNR=4.0 Alice Springs	60.08	188	P	P	07 15 07.5	+0.7
NVAR	0.6nm,1.0s,baz=15,slow=7.7,SNR=3.6 Mina Array Bea	75.27	53	P	P	07 16 43.6	+0.7
PDAR	1.3nm,1.0s,baz=302,slow=3.7,SNR=3.5 Pinedale Array	78.04	45	P	P	07 16 57.9	-0.6
TXAR	0.1nm,0.3s,baz=258,slow=5.9,SNR=3.7 Lajitas Array	90.41	53	P	P	07 18 00.9	-0.5
LPAZ	0.5nm,0.9s,baz=306,slow=3.6,SNR=6.2 La Paz	146.88	61	PKPbc	PKPab	07 24 43.0	-1.5
	0.7nm,0.8s,baz=306,slow=4.7,SNR=3.7						

DDA 28 07:06:59.7, 39°.10N×29°.05E, h7km, Ml3.5
ISK 28 07:06:59.6, 39°.10N×29°.07E, h6km, ML3.2
CSEM 28 07:07:00.3±0.1, 39°.11N×29°.07E, h2km, ML3.5, Error ellipse: s-maj=1.9km s-min=1.7km az=153.0
ISC 28 07:07:00.4±1.1, 39°.12N±0°.02×29°.07E±0°.02, h3km±9km, n62, σ0°73/95, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.28	255	P	Pg	07 07 05.6	-0.3
DEMI				S	Sg	07 07 09.4	-0.2
DEMI	Demirci	0.28	255	*i* P	Pg	07 07 05.6	-0.3
DEMI				*i* S	Sg	07 07 09.4	-0.2
GDZ	Gediz	0.32	95	P	Pg	07 07 06.8	+0.1
GDZ				S	Sg	07 07 11.4	+0.4
GDZ	Gediz	0.32	95	*i* P	Pg	07 07 06.8	+0.1
GDZ				*i* S	Sg	07 07 11.4	+0.4
TVSB	Tavsanli	0.45	43	PG	Pg	07 07 09.2	0.0
TVSB				*e*SG	Sg	07 07 15.5	+0.4
TVSB	Tavsanli	0.45	43	*i* Pg	Pg	07 07 09.2	0.0
TVSB				*e*Sg	Sg	07 07 15.5	+0.4
KHAL	Karahalli	0.81	156	P	Pg	07 07 15.6	-0.5
KHAL				S	Sg	07 07 26.2	-0.4
KHAL	Karahalli	0.81	156	*i* P	Pg	07 07 15.6	-0.5
KHAL				*i* S	Sg	07 07 26.2	-0.4
KHL	Karahalli	0.87	156	*e*PG	Pg	07 07 16.7	-0.4
KHL				*e*SG	Sg	07 07 28.3	0.0
KHL	Karahalli	0.87	156	*e*Pg	Pg	07 07 16.7	-0.4
KHL				*e*Sg	Sg	07 07 28.3	0.0
ORLT	Orhaneli	0.94	352	*e*PG	Pg	07 07 18.4	0.0
ORLT	Orhaneli	0.94	352	*e*Pg	Pg	07 07 18.4	0.0
AKHS	Akhisar	1.00	257	P	Pg	07 07 19.4	-0.3
AKHS				S	Sg	07 07 32.8	+0.1
AKHS	Akhisar	1.00	257	*i* P	Pg	07 07 19.4	-0.3
AKHS				*i* S	Sg	07 07 32.8	+0.1
AKS	Akhisar	1.00	257	*e*PG	Pg	07 07 19.9	+0.2
AKS				*e*SG	Sg	07 07 32.6	-0.1
AKS	Akhisar	1.00	257	*e*Pg	Pg	07 07 19.9	+0.2
AKS				*e*Sg	Sg	07 07 32.6	-0.1
BALB	Balikesir	1.06	300	*e*PG	Pb	07 07 21.3	-0.1
BALB				*e*SG	Sg	07 07 35.0	+0.6
BALB	Balikesir	1.06	300	*e*Pg	Pb	07 07 21.3	-0.1
BALB				*e*Sg	Sg	07 07 35.0	+0.6
IGD	Bursa	1.15	5	*i* P	Pg	07 07 21.3	-1.2
IGD				*i* S	Sb	07 07 38.2	-0.2
IZI	Iznik	1.26	14	*e*PN	Pg	07 07 24.2	-0.4
IZI	Iznik	1.26	14	*e*Pn	Pg	07 07 24.2	-0.4
MDNY	Mudanya-Bursa	1.26	354	*e*PN	Pn	07 07 25.0	+0.1
MDNY	Mudanya-Bursa	1.26	354	*e*Pn	Pn	07 07 25.0	+0.1
KCTX	Karacabey (Bur	1.27	335	*e*PN	Pg	07 07 24.2	-0.6
KCTX	Karacabey (Bur	1.27	335	*e*Pn	Pg	07 07 24.2	-0.6
BALY	Balya	1.28	300	P	Pg	07 07 24.9	-0.1
BALY				S	Sb	07 07 42.1	0.0
BALY	Balya	1.28	300	*i* P	Pg	07 07 24.9	-0.1
BALY				*i* S	Sb	07 07 42.1	0.0
BORA	Eskisehir	1.32	54	P	Pg	07 07 24.9	-0.8
BORA				S	Sn	07 07 43.7	-0.3
BORA	Eskisehir	1.32	54	*i* P	Pg	07 07 24.9	-0.8
BORA				*i* S	Sn	07 07 43.7	-0.3
GEMT	Gemlik	1.32	4	*e*PN	Pg	07 07 25.7	-0.1
GEMT	Gemlik	1.32	4	*e*Pn	Pg	07 07 25.7	-0.1
DENT	Denizli	1.36	181	*e*PN	Pn	07 07 24.8	-1.5
ADVT	Abdulvahap	1.41	21	*e*PN	Pn	07 07 26.2	-0.8
ADVT	Abdulvahap	1.41	21	*e*Pn	Pn	07 07 26.3	-0.8
DNZL	Cakiroluk	1.42	181	P	Pn	07 07 26.9	-0.5
DNZL	Cakiroluk	1.42	181	*i* P	Pn	07 07 26.9	-0.5
DNZL				*i* S	Sn	07 07 48.4	+1.7
ESKT	Eskisehir	1.44	73	*i* P	Pb	07 07 27.9	-0.1
ESKT				*i* S	Sn	07 07 47.3	+0.2
SEYT	Eskypehyr	1.44	73	P	Pb	07 07 27.9	-0.1
SEYT				S	Sn	07 07 47.3	+0.2
ARMT	Armutlu	1.46	354	*e*PN	Pn	07 07 27.4	-0.3
ARMT	Armutlu	1.46	354	*e*Pn	Pn	07 07 27.4	-0.3
GPA	Golpazari	1.52	39	*e*PN	Pn	07 07 28.7	+0.2
GPA	Golpazari	1.52	39	*e*Pn	Pn	07 07 28.7	+0.2
BNT	Bandirma	1.52	325	*e*PN	Pn	07 07 28.7	+0.1
BNT	Bandirma	1.52	325	*e*Pn	Pn	07 07 28.7	+0.1
EDC	Edincik	1.54	323	*e*PN	Pn	07 07 28.9	+0.1
EDC	Edincik	1.54	323	*e*Pn	Pn	07 07 28.9	+0.1
KNL	Bal¨–kesir	1.66	315	*i* P	Pn	07 07 30.8	+0.4
KNL				*i* S	Sb	07 07 52.8	0.0
GULT	Gulveren	1.73	40	*e*PN	Pn	07 07 31.6	+0.1
GULT	Gulveren	1.73	40	*e*Pn	Pn	07 07 31.6	+0.1
AYDN	Tasoluk	1.73	213	P	Pb	07 07 32.3	-0.5
AYDN				S	Sb	07 07 54.6	-0.3
AYDN	Tasoluk	1.73	213	*i* P	Pb	07 07 32.3	-0.5
AYDN				*i* S	Sb	07 07 54.6	-0.3
BAGO	Egridir - ISPA	1.76	129	*i* P	Pn	07 07 31.6	-0.3
BAGO				*i* S	Sb	07 07 55.4	-0.5
GOLH	Golhisar	1.92	168	P	Pb	07 07 35.9	-0.2
GOLH	Golhisar	1.92	168	*i* P	Pb	07 07 35.9	-0.2
GOLH				*i* S	Sg	07 08 07.6	+5.6
SVRH	Sivrihisar-ESK	1.94	79	*e*PN	Pn	07 07 34.1	-0.2
SVRH	Sivrihisar-ESK	1.94	79	*e*Pn	Pn	07 07 34.1	-0.2
ISK	Istanbul-Kandi	1.95	360	*e*PN	Pn	07 07 35.0	+0.6
ISK	Istanbul-Kandi	1.95	360	*e*Pn	Pn	07 07 35.0	+0.6
DGB	˜zmir	2.01	239	*i* P	Pg	07 07 38.9	-0.1
DGB				*i* S	Sb	07 08 03.7	+0.6
KAND	Kocaeli-Kandir	2.16	23	*i* P	Pb	07 07 40.6	+0.5
KAND				*i* S	Sn	07 08 04.5	0.0
SAHE	Sakarya_HENDEK	2.21	38	P	Pn	07 07 37.7	-0.4
SAHE				S	Sn	07 08 05.8	-0.2
SAHE	Sakarya_HENDEK	2.21	38	*i* P	Pn	07 07 37.6	-0.4
SAHE				*i* S	Sn	07 08 05.8	-0.2

BJI 28 07:10:04.7, 40°.70N×81°.42E, h10km, mb4.3/8, mB4.4/6, ML4.3/10, Ms4.0/2, Ms7 3.7/2
IDC 28 07:10:04.7±0.7, 40°.58N×81°.37E, h0km, mb3.9/11, mb1 4.0/18, mb1mx3.8/54, mbtmp3.9/18, ML3.6/7, MS3.2/8, Ms1 3.2/8, ms1mx2.9/65, Error ellipse: s-maj=16.2km s-min=12.2km az=38.0
MOS 28 07:10:08.8±1.3, 40°.83N×81°.56E, h31km, mb4.1/7, Error ellipse: s-maj=12.6km s-min=7.5km az=114.6
SOME 28 07:10:08.4, 41°.15N×81°.63E, h15km, MS3.8
NNC 28 07:10:09.3±1.9, 40°.91N×81°.52E, h0km, mb4.3, mpv3.9, Error ellipse: s-maj=16.2km s-min=10.4km az=138.0
ISC 28 07:10:09.1±0.5, 40°.82N±0°.04×81°.51E±0°.04, h17km, n74, σ2°31/82, mb3.9/12, MS3.4/3, 11C-17D, Southern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHLS	Shalkode	2.63	333	*e*P	Pg	07 10 58.1	-1.5
SHLS	190nm,0.3s						
SHLS	1μm,0.5s			*e*S	Sg	07 11 34.0	+0.3
PDGK	Podgornoye	2.92	330	⇓Pn	Pn	07 10 56.8	+2.0
PDGK	5.7nm,0.4s			⇑Pg	Pb	07 11 02.0	+1.2
PDGK	71nm,0.5s			⇑Lg	Lg	07 11 41.4	
PDGK	530nm,0.6s						
PDGK	Podgornoye	2.92	330	P	Pn	07 10 56.7	+2.0
PDGK	comp=Z,6.0nm,0.4s			pmax	pmax		
PDGK	comp=Z,110nm,0.7s			pmax	pmax		
PDGK	comp=N,558nm,0.6s			pmax	pmax		
UZB	Uzynbulak	2.97	322	*e*P	Pb	07 10 59.1	-2.6
UZB	comp=N,57nm,0.6s			*e*S	Sb	07 11 36.0	-1.8
SATY	comp=N,310nm,0.7s Saty	3.22	315	*e*P	Pb	07 11 02.9	-3.0
SATY	comp=N,21nm,0.1s			*e*S	Sb	07 11 42.1	-2.7
ZHN	comp=N,273nm,0.3s Zhinishke	3.28	317	*e*P	Pn	07 11 02.0	+2.2
ZHN	comp=N,50nm,0.2s			*e*S	Sn	07 11 40.3	+1.9
KPKS	comp=N,548nm,0.3s Kokpek	3.38	323	*e*P	Pb	07 11 06.8	-1.8
KPKS	comp=N,54nm,0.2s			*e*S	Sb	07 11 48.4	-1.0
KURS	comp=N,650nm,0.4s Kuram	3.64	318	*e*P	Pb	07 11 14.4	+1.3
KURS	comp=N,54nm,0.7s			*e*S	Sg	07 12 01.5	-4.5
DJR	comp=N,267nm,0.8s Jarkent	3.73	341	*e*P	Pb	07 11 11.8	-2.8
DJR	comp=N,20nm,0.5s			*e*S	Sb	07 11 57.5	-2.1
TNSS	comp=N,209nm,0.7s Tian-Shan	4.06	305	*e*P	Pb	07 11 22.8	+2.4
TNSS	comp=N,129nm,0.5s			*e*S	Sg	07 12 16.0	-3.6
MDOK	comp=N,154nm,0.7s Medeo	4.07	307	⇓*i*P	Pb	07 11 22.4	+2.1
MDOK	comp=N,154nm,0.8s			⇑*i*S	Sg	07 12 15.8	-3.9
KOTS	comp=N,521nm,0.6s Kotyrbulak	4.07	308	*e*P	Pb	07 11 23.4	+3.1
KOTS				*e*S	Sg	07 12 17.4	-2.2
KNDC	Almaty	4.15	307	⇓Pn	Pn	07 11 13.7	+2.0
KNDC	comp=N,46nm,0.4s			⇓Pg	Pg	07 11 27.4	-1.1
KNDC	comp=N,1.0nm,0.2s			⇓Lg	Lg	07 12 18.8	
KNDC	comp=N,337nm,0.7s						
AAA	Alma-Ata	4.19	307	*e*P	Pb	07 11 24.9	+2.5
AAA	comp=N,250nm,0.5s			*e*S	Sg	07 12 19.9	-3.6
AAA	comp=N,547nm,1.0s						
AAA	Alma-Ata	4.19	307	*e*P	Pb	07 11 25.2	+2.9
AAA	comp=Z,250nm,0.5s			pmax	pmax		
IZV	Izvestkoviy	4.27	303	*e*P	Pb	07 11 25.9	+2.1
IZV	comp=Z,109nm,0.6s			*e*S	Sg	07 12 21.8	-4.4
ARXS	comp=Z,383nm,0.5s Arharly	4.35	323	*e*P	Pb	07 11 28.2	+3.2
ARXS	comp=Z,44nm,0.6s			*e*S	Sg	07 12 25.6	-3.0
KSH	comp=Z,220nm,0.7s Kashi	4.43	255	Pn	Pb	07 11 21.3	-5.3
KSH				Sn	Sb	07 12 18.5	-1.3
KSH				smax	smax		
KSH	comp=Z,520nm,0.8s			smax	smax		
MTBS	comp=Z,730nm,0.8s Maitube	4.43	303	*e*P	Pg	07 11 34.0	0.0
MTBS	comp=Z,60nm,0.8s			*e*S	Sg	07 12 35.2	+3.8
CHKK	comp=Z,114nm,0.4s Chushkaly	4.52	314	*e*P	Pb	07 11 31.0	+3.0
CHKK	comp=Z,55nm,0.6s			*e*S	Sg	07 12 30.3	-3.9
KST	comp=Z,259nm,0.5s Kastek	4.69	300	*e*P	Pn	07 11 22.9	+3.7
KST	comp=Z,23nm,0.3s			*e*S	Sn	07 12 16.7	+3.3
KAPS	comp=Z,132nm,0.7s Kapalarasan	4.73	341	*e*P	Pn	07 11 24.6	+4.9
KAPS	comp=Z,9.1nm,0.5s			*e*S	Sn	07 12 19.0	+4.8
TKM2	comp=Z,62nm,0.4s Tokmak 2	4.89	297	⇑Pn	Pn	07 11 23.0	+1.0
TKM2	comp=Z,30nm,0.4s			⇓Lg	Lg	07 12 40.9	
TKM2	comp=Z,109nm,0.6s						
TKM2	Tokmak 2	4.89	297	P	Pn	07 11 22.7	+0.7
TKM2	comp=Z,30nm,0.4s			pmax	pmax		
TKM2	comp=N,190nm,0.9s			pmax	pmax		
KUU	Kurty	4.91	310	*e*P	Pb	07 11 36.7	+2.1
KUU	comp=N,50nm,0.7s			*e*S	Sg	07 12 40.4	-6.2
WMQ	comp=N,197nm,0.8s Urumqi	5.48	55	Pn	Pn	07 11 32.5	+2.5
WMQ				smax	smax		
WMQ	comp=N,210nm,0.4s			smax	smax		
WMQ	comp=N,220nm,0.5s						
FRU	Bishkek	5.53	294	*e*P	Pb	07 11 48.0	+2.9
FRU				*e*		07 12 42.0	
FRU				pmax	pmax		
FRU	comp=Z,120nm,1.9s			smax	smax		
AAK	comp=E,450nm,2.0s Ala-Archa	5.55	291	Pn	Pn	07 11 31.2	+0.1
AAK	comp=E,2.1nm,0.3s,baz=81,slow=9.5,SNR=8.8			Pg	Pb	07 11 45.9	+0.3
AAK	comp=E,3.3nm,0.3s,baz=102,slow=8.5,SNR=12			Lg	Lg	07 13 00.4	
AAK	comp=E,2.7nm,0.3s,baz=264,slow=19,SNR=3.8			LR	LR	07 13 48.3	
AAK	comp=E,118nm,20.2s,baz=109,slow=40						
AAK	Ala-Archa	5.55	291	⇓Pn	Pn	07 11 32.5	+1.4
AAK	comp=E,2.8nm,0.3s			⇑Pg	Pb	07 11 47.7	+2.1
AAK	comp=E,33nm,0.8s			⇑Lg	Lg	07 13 09.9	
AAK	comp=E,94nm,0.8s						
AAK	Ala-Archa	5.55	291	P	Pn	07 11 32.4	+1.4
AAK	comp=Z,3.0nm,0.4s			pmax	pmax		
AAK	comp=Z,63nm,1.2s			pmax	pmax		
AAK	comp=N,

comp=N,0.5nm,0.3s
KK31 ⇓Pg 07 12 39.7
comp=N,6.9nm,0.7s
KK31 ⇓Lg Lg 07 14 37.5
comp=N,20nm,0.8s,baz=95,slow=25,SNR=4.7
KK31 Karatay Array 8.51 289 P Pn 07 12 14.6 +3.2
KK31 pmax pmax
comp=Z,7.0nm,0.7s
KK31 pmax pmax
comp=N,22nm,0.8s
CHCP Chirah Chowk 9.70 225 P **Pn 07 12 25.9 -2.0**
OTUK Ortayu 9.89 322 ⇓Pn **Pn 07 12 29.2 -1.3**
comp=N,7.1nm,1.1s
OTUK ⇑Sn **Sn 07 14 22.7 +1.6**
comp=N,4.9nm,0.6s
OTUK ⇓Lg Lg 07 15 19.7
comp=N,56nm,1.1s
KURBB Kurchatov Arra 10.02 349 Pn **Pn 07 12 33.3 +1.1**
comp=N,0.0nm,0.3s,baz=174,slow=12,SNR=6.3
KURK Kurchatov 10.10 349 ⇓Lg Lg 07 15 25.4
comp=N,124nm,1.1s
KURK Kurchatov 10.10 349 P **Pn 07 12 33.3 +0.1**
CEP Cherat 10.35 231 P **Pn 07 12 33.9 -2.9**
CEP S Sn 07 14 24.0 -8.4
THW Thamme Wali 11.19 227 P Pn 07 12 43.8 -4.5
ZALV Zalesovo Beam 13.32 9 Pn **Pn 07 13 16.7 -0.6**
comp=N,0.3nm,0.3s,baz=185,slow=16,SNR=3.8
ZALV Lg Lg 07 17 16.5
baz=198,slow=23,SNR=3.8
ZALV LR LR 07 18 46.7
comp=N,62nm,18.8s,baz=252,slow=38
LSA Lhasa 13.59 142 P **P 07 13 32.0 +1.5**
LSA pmax pmax
comp=Z,8.0nm,0.5s
GTA Gaotai 14.09 90 *e*P Pn 07 13 20.5 -7.4
GTA pP P 07 13 24.8 -11
GTA sP 07 13 28.0
GTA pmax pmax
comp=Z,4.0nm,0.6s
BVAR Borovoye Array 14.36 332 Pn **Pn 07 13 30.1 -1.3**
comp=Z,0.5nm,0.3s,baz=153,slow=13,SNR=3.8
AB31 Akbulak array 17.37 306 *e*P **Pn 07 14 09.1 -1.5**
AB31 pmax pmax
comp=Z,2.0nm,0.6s
ZAK Zakamensk 17.93 50 *e*P **Pn 07 14 14.7 -2.9**
ZAK pmax pmax
comp=Z,3.0nm,1.5s
GEYT Alibeck 18.30 269 P **Pn 07 14 18.3 -3.8**
comp=Z,0.3nm,0.3s,baz=96,slow=6.1,SNR=7.3
GEYT LR LR 07 22 48.4
comp=Z,114nm,18.2s,baz=200,slow=42
TLY Talaya 18.70 47 *e*P Pn 07 14 36.2 +9.4
TLY pmax pmax
comp=Z,1.0nm,0.8s
TLY MLR MLR
comp=Z,89nm,17.0s
AKTO Aktyubinsk 18.96 308 P **P 07 14 28.1 -1.2**
comp=Z,0.2nm,0.3s,baz=95,slow=12,SNR=14
AKTO LR LR 07 22 39.4
comp=Z,70nm,21.8s,baz=122,slow=40
SONM Songino Array 19.09 60 P **P 07 14 31.1 +0.2**
comp=Z,0.3nm,0.3s,baz=252,slow=12,SNR=8.4
SONM Songino Array 19.09 60 *e*P Pn 07 14 36.5 +4.8
ULN Ulaanbaatar 19.53 60*ce*P **Pn 07 14 38.1 +1.1**
ULN pmax pmax
comp=Z,4.0nm,0.6s
ARU Arti 21.61 324*c i*P **P 07 14 57.8 -0.2**
ARU 07 15 19.9
ARU S **S 07 18 53.4 -3.2**
ARU SS **SnSn 07 19 20.7 +0.1**
ARU pmax pmax
comp=Z,12nm,1.7s
WSAR Wadi Sarin 26.02 235 LR LR 07 27 03.7
comp=Z,54nm,20.3s,baz=62,slow=40
CMAR Chiang Mai Arr 26.85 141 P **P 07 15 45.8 -3.0**
comp=Z,1.8nm,0.3s,baz=165,slow=11,SNR=3.3
CMAR Chiang Mai Arr 26.85 141 *e*P **P 07 15 53.5 +4.7**
CMAR pmax pmax
comp=Z,2.0nm,0.4s
KSRS Korea Array 35.84 80 LR LR 07 33 47.6
comp=Z,60nm,18.7s,baz=140,slow=40
KLR Kul'dur 35.91 59 P **P 07 17 08.1 -0.2**
comp=Z,0.5nm,0.4s,baz=279,slow=14,SNR=2.9
BRTR Keskin Array B 36.18 284 P P 07 17 06.8 -4.0
comp=Z,1.2nm,0.7s,baz=70,slow=8.3,SNR=5.3
BRTR Keskin Array B 36.18 284 *e*P **P 07 17 10.4 -0.4**
BRTR pmax pmax
comp=Z,1.0nm,0.4s
ARCES ARCESS Array B 40.64 333 P **P 07 17 48.1 +0.3**
comp=Z,0.6nm,0.4s,baz=97,slow=8.7,SNR=8.6
NOA NORSAR Array B 46.10 321 P **P 07 18 32.1 +0.1**
comp=Z,1.1nm,0.8s,baz=84,slow=7.8,SNR=2.8
GERES GERESS Array B 47.29 304 P **P 07 18 41.5 -0.1**
comp=Z,0.4nm,0.4s,baz=68,slow=8.9,SNR=4.4
DAVOX Davos/Dischmat 50.40 302 LR LR 07 42 53.5
comp=Z,56nm,18.3s,baz=80,slow=39
TORD Torodi Ar. Bea 73.86 274 P **P 07 21 40.5 -2.7**
comp=Z,2.3nm,0.7s,baz=48,slow=5.3,SNR=13
YKA Yellowknife Ar 76.22 8 P **P 07 21 55.7 -0.4**
comp=Z,0.3nm,0.5s,baz=340,slow=5.9,SNR=6.5
WRA Warramunga Arr 77.84 130 P **P 07 22 04.1 -1.7**
comp=Z,0.5nm,0.9s,baz=330,slow=5.7,SNR=5.9
WRA Warramunga Arr 77.84 130 *e*P **P 07 22 05.5 -0.2**
WRA pmax pmax
comp=Z,2.0nm,0.9s
ASAR Alice Springs 80.52 133 P **P 07 22 18.6 -1.7**
comp=Z,0.6nm,0.7s,baz=330,slow=5.4,SNR=7.1
DBIC Dimbokro 82.94 273 P **P 07 22 31.8 -1.5**
comp=Z,5.2nm,0.9s,baz=354,slow=7.6,SNR=3.5

*ISK **28** 07:21:56.9, 39°.11N×29°.06E, h5km, ML2.8*
*ISCJB **28** 07:21:57.0±0.6, 39°.10N±0°.04×29°.04E±0°.03, h1km±7km, Error ellipse: s-maj=6.0km s-min=3.5km az=176.2*
*CSEM **28** 07:21:57.4±0.1, 39°.10N×29°.05E, h5km, ML3.2, Error ellipse: s-maj=2.1km s-min=1.6km az=174.0*
*DDA **28** 07:21:57.0, 39°.09N×29°.05E, h8km, Ml3.2*
ISC 28 07:21:57.5±1.1, 39°.12N±0°.02×29°.05E±0°.02, h4km±10km, n52, σ0°36/70, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**254**	P	**Pg**	**07 22 02.2**	**-0.6**
DEMI				S	**Sg**	**07 22 06.4**	**+0.1**
DEMI	**Demirci**	**0.27**	**254**	*i* P	**Pg**	**07 22 02.2**	**-0.6**
DEMI				*i* S	**Sg**	**07 22 06.4**	**+0.1**
GDZ	**Gediz**	**0.34**	**94**	P	**Pg**	**07 22 04.2**	**0.0**
GDZ				S	**Sg**	**07 22 09.0**	**+0.4**
GDZ	**Gediz**	**0.34**	**94**	*i* P	**Pg**	**07 22 04.2**	**0.0**
GDZ				*i* S	**Sg**	**07 22 09.0**	**+0.4**
TVSB	**Tavsanli**	**0.46**	**44**	PG	**Pg**	**07 22 06.5**	**0.0**
TVSB				*e*SG	**Sg**	**07 22 13.1**	**+0.6**
TVSB	**Tavsanli**	**0.46**	**44**	*i* Pg	**Pg**	**07 22 06.5**	**0.0**
TVSB				*e*Sg	**Sg**	**07 22 13.1**	**+0.6**
KHAL	**Karahalli**	**0.82**	**155**	P	**Pg**	**07 22 13.4**	**+0.1**
KHAL				S	**Sg**	**07 22 23.9**	**-0.1**
KHAL	**Karahalli**	**0.82**	**155**	*i* P	**Pg**	**07 22 13.4**	**+0.1**
KHAL				*i* S	**Sg**	**07 22 23.9**	**-0.1**
KHL	**Karahalli**	**0.88**	**155**	*e*PG	**Pg**	**07 22 13.6**	**-0.7**
KHL	**Karahalli**	**0.88**	**155**	*e*Pg	**Pg**	**07 22 13.6**	**-0.7**
AKHS	**Akhisar**	**0.99**	**257**	P	**Pg**	**07 22 16.4**	**-0.1**
AKHS				S	**Sg**	**07 22 30.1**	**+0.8**
AKHS	**Akhisar**	**0.99**	**257**	*i* P	**Pg**	**07 22 16.4**	**-0.1**
AKHS				*i* S	**Sg**	**07 22 30.1**	**+0.8**
AKS	**Akhisar**	**0.99**	**257**	*e*PG	**Pg**	**07 22 16.6**	**+0.1**
AKS	**Akhisar**	**0.99**	**257**	*e*Pg	**Pg**	**07 22 16.6**	**+0.1**
BALB	**Balikesir**	**1.04**	**300**	*e*PG	**Pg**	**07 22 17.4**	**-0.2**
BALB	**Balikesir**	**1.04**	**300**	*e*Pg	**Pg**	**07 22 17.4**	**-0.2**
IGD	**Bursa**	**1.15**	**6**	*i* P	**Pg**	**07 22 18.7**	**-1.0**
IGD				*i* S	**Sb**	**07 22 35.5**	**+0.1**
CAVI	**Cavuskoy**	**1.25**	**29**	*e*PN	**Pg**	**07 22 21.2**	**-0.3**
CAVI	**Cavuskoy**	**1.25**	**29**	*e*Pn	**Pg**	**07 22 21.2**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.26**	**354**	*e*PN	**Pb**	**07 22 21.8**	**0.0**
MDNY	**Mudanya-Bursa**	**1.26**	**354**	*e*Pn	**Pb**	**07 22 21.8**	**0.0**
IZI	**Iznik**	**1.26**	**15**	*e*PN	**Pg**	**07 22 21.5**	**-0.3**
IZI	**Iznik**	**1.26**	**15**	*e*Pn	**Pg**	**07 22 21.5**	**-0.3**
KCTX	**Karacabey (Bur**	**1.27**	**335**	*e*PN	**Pg**	**07 22 21.2**	**-0.6**
KCTX	**Karacabey (Bur**	**1.27**	**335**	*e*Pn	**Pg**	**07 22 21.2**	**-0.6**
BALY	**Balya**	**1.27**	**300**	P	**Pg**	**07 22 21.9**	**0.0**
BALY				S	**Sn**	**07 22 39.7**	**+0.1**
BALY	**Balya**	**1.27**	**300**	*i* P	**Pg**	**07 22 21.9**	**0.0**
BALY				*i* S	**Sn**	**07 22 39.7**	**+0.1**
GEMT	**Gemlik**	**1.32**	**5**	*e*PN	**Pg**	**07 22 22.6**	**-0.3**
GEMT	**Gemlik**	**1.32**	**5**	*e*Pn	**Pg**	**07 22 22.6**	**-0.3**
BORA	**Eskisehir**	**1.33**	**55**	P	**Pg**	**07 22 22.4**	**-0.7**
BORA				S	**Sn**	**07 22 41.0**	**-0.2**
BORA	**Eskisehir**	**1.33**	**55**	*i* P	**Pg**	**07 22 22.4**	**-0.7**
BORA				*i* S	**Sn**	**07 22 41.0**	**-0.2**
GONE	**Gonen-Balikesi**	**1.40**	**312**	*e*PN	**Pn**	**07 22 23.5**	**-0.4**
GONE	**Gonen-Balikesi**	**1.40**	**312**	*e*Pn	**Pn**	**07 22 23.5**	**-0.4**
ADVT	**Abdulvahap**	**1.42**	**22**	*e*PN	**Pn**	**07 22 23.8**	**-0.3**
ADVT	**Abdulvahap**	**1.42**	**22**	*e*Pn	**Pn**	**07 22 23.8**	**-0.3**
ARMT	**Armutlu**	**1.46**	**354**	*e*PN	**Pn**	**07 22 24.7**	**0.0**
ARMT	**Armutlu**	**1.46**	**354**	*e*Pn	**Pn**	**07 22 24.7**	**0.0**
ESKT	**Eskisehir**	**1.46**	**73**	*i* P	**Pn**	**07 22 24.6**	**-0.1**
ESKT				*i* S	**Sn**	**07 22 44.5**	**+0.2**
SEYT	**Eskypehyr**	**1.46**	**73**	P	**Pn**	**07 22 24.6**	**-0.1**
SEYT				S	**Sn**	**07 22 44.5**	**+0.2**
GPA	**Golpazari**	**1.52**	**39**	*e*PN	**Pn**	**07 22 25.2**	**-0.4**
GPA	**Golpazari**	**1.52**	**39**	*e*Pn	**Pn**	**07 22 25.2**	**-0.4**
EDC	**Edincik**	**1.53**	**324**	*e*PN	**Pn**	**07 22 25.8**	**+0.2**
EDC	**Edincik**	**1.53**	**324**	*e*Pn	**Pn**	**07 22 25.8**	**+0.2**
GULT	**Gulveren**	**1.73**	**40**	*e*PN	**Pn**	**07 22 28.7**	**+0.2**
GULT	**Gulveren**	**1.73**	**40**	*e*Pn	**Pn**	**07 22 28.7**	**+0.2**
ISK	**Istanbul-Kandi**	**1.95**	**0**	*e*PN	**Pn**	**07 22 31.6**	**+0.2**
ISK	**Istanbul-Kandi**	**1.95**	**0**	*e*Pn	**Pn**	**07 22 31.6**	**+0.2**
SVRH	**Sivrihisar-ESK**	**1.95**	**79**	*e*PN	**Pn**	**07 22 31.6**	**+0.1**
SVRH	**Sivrihisar-ESK**	**1.95**	**79**	*e*Pn	**Pn**	**07 22 31.6**	**+0.1**
KAND	**Kocaeli-Kandir**	**2.16**	**24**	*i* P	**Pg**	**07 22 38.4**	**-0.6**
KAND				*i* S	**Sg**	**07 23 07.2**	**+0.2**
SAHE	**Sakarya_HENDEK**	**2.22**	**38**	P	**Pn**	**07 22 35.4**	**+0.2**
SAHE	**Sakarya_HENDEK**	**2.22**	**38**	*i* P	**Pn**	**07 22 35.4**	**+0.2**

*TIR **28** 07:27:48.9, 39°.66N×19°.83E, h8km, ML3.7*
*IDC **28** 07:27:51.1±0.8, 39°.33N×20°.66E, h0km, mb4.2/15, mb1 4.1/25, mb1mx4.0/50, mbtmp4.0/25, ML3.7/10, MS2.3/1, Ms1 2.3/1, ms1mx2.0/65, Error ellipse: s-maj=14.8km s-min=12.5km az=178.0*
*ISCJB **28** 07:27:51.7±0.4, 39°.27N±0°.01×20°.43E±0°.02, h3km±2km, mb4.2/22, Error ellipse: s-maj=2.2km s-min=1.4km az=143.9*
*ATH **28** 07:27:52.5, 39°.25N×20°.54E, h18km±1km, ML3.9/5, Error ellipse: s-maj=1.2km s-min=0.8km az=25.0*
*PDG **28** 07:27:52.8±0.6, 39°.29N×20°.50E, h7km±1km, ML3.9/12, Error ellipse: s-maj=0.6km s-min=0.9km az=0.0*
*BEO **28** 07:27:52.7±0.8, 39°.25N×20°.37E, h1km±7km, M3.8/1*
*CSEM **28** 07:27:52.7±0.1, 39°.26N×20°.48E, h2km, mb4.2/11, Error ellipse: s-maj=2.3km s-min=1.4km az=50.0*
*NEIC **28** 07:27:52.5, 39°.25N×20°.54E, h18km, mb4.1/5, ML3.8(THE), ML3.9(ATH), After ATH.*
*THE **28** 07:27:53.4, 39°.25N×20°.54E, h0km, ML3.8/52, Error ellipse: s-maj=0.6km s-min=0.2km az=267.0*
*MOS **28** 07:27:55.3±1.2, 39°.42N×20°.59E, h35km, mb4.3/15, Error ellipse: s-maj=8.8km s-min=6.0km az=83.1*
*SOF **28** 07:28:06.5, 39°.90N×21°.27E, h110km, MD3.4*
ISC 28 07:27:52.7±1.0, 39°.27N±0°.01×20°.52E±0°.02, h10km±6km, n384, σ1°49/564, mb4.1/22, 45C-31D, Greece-Albania border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IGT	**Igoumenitsa**	**0.30**	**332**	P	**Pb**	**07 27 59.6**	**-0.6**
IGT				S	**Sb**	**07 28 04.3**	**-0.9**
IGT	**Igoumenitsa**	**0.30**	**332**	P	**Pb**	**07 27 59.6**	**-0.6**
IGT				S	**Sb**	**07 28 04.0**	**-1.1**
IGT	**Igoumenitsa**	**0.30**	**332**	P	**Pb**	**07 27 59.9**	**-0.3**
IGT				S	**Sb**	**07 28 04.0**	**-1.1**
IGT				AML	AML	07 28 09.6	
	comp=E,41385μm,0.4s						
IGT				AML	AML	07 28 10.0	
	comp=N,37730μm,0.5s						
SGD	**Sagiada**	**0.40**	**328**	P	**Pb**	**07 28 01.7**	**-0.3**
SGD				S	**Sb**	**07 28 08.4**	**+0.2**
SGD	**Sagiada**	**0.40**	**328**	P	**Pb**	**07 28 01.7**	**-0.3**
SGD				S	**Sb**	**07 28 08.7**	**+0.5**
SGD	**Sagiada**	**0.40**	**328**	P	**Pb**	**07 28 02.8**	**+0.8**
SGD				S	**Sb**	**07 28 08.7**	**+0.5**
JAN	**Janina**	**0.46**	**34**	P	**Pg**	**07 28 02.0**	**+0.2**
JAN				S	**Sb**	**07 28 09.6**	**-0.4**
JAN	**Janina**	**0.46**	**34**	P	**Pg**	**07 28 02.0**	**+0.2**
JAN				S	**Sb**	**07 28 09.6**	**-0.4**
JAN	**Janina**	**0.46**	**34**	S	**Sb**	**07 28 09.7**	**-0.4**
JAN				AML	AML	07 28 09.8	
DSL	**Palaion Diasel**	**0.47**	**107**	P	**Pg**	**07 28 01.5**	**-0.4**
DSL				S	**Sg**	**07 28 08.4**	**+0.2**
DSL	**Palaion Diasel**	**0.47**	**107**	P	**Pg**	**07 28 01.5**	**-0.4**
DSL				S	**Sb**	**07 28 09.9**	**-0.4**
DSL	**Palaion Diasel**	**0.47**	**107**	P	**Pg**	**07 28 00.4**	**-1.6**
DSL				S	**Sb**	**07 28 09.9**	**-0.4**
DSL				AML	AML	07 28 11.9	
	comp=E,51337μm,0.5s						
DSL				AML	AML	07 28 13.0	
	comp=N,42316μm,0.6s						
KEK	**Kerkira**	**0.71**	**309**	P	**Pb**	**07 28 07.0**	**-0.2**
KEK				S	**Sb**	**07 28 18.3**	**+1.3**
KEK	**Kerkira**	**0.71**	**309**	P	**Pb**	**07 28 07.0**	**-0.2**
KEK				S	**Sg**	**07 28 15.7**	**0.0**
PDO	**Prodromos**	**0.85**	**142**	P	**Pg**	**07 28 09.1**	**0.0**
PDO				S	**Sb**	**07 28 21.1**	**0.0**
PDO	**Prodromos**	**0.85**	**142**	P	**Pg**	**07 28 09.1**	**0.0**
PDO				S	**Sb**	**07 28 21.1**	**0.0**
PDO	**Prodromos**	**0.85**	**142**	P	**Pg**	**07 28 08.2**	**-0.9**
PDO				S	**Sb**	**07 28 22.3**	**+1.2**
PDO				AML	AML	07 28 26.0	
	comp=N,17523μm,0.5s						
PDO				AML	AML	07 28 28.4	
	comp=E,16035μm,0.5s						
KPRO	**Kipourio**	**0.95**	**44**	P	**Pb**	**07 28 11.4**	**+0.1**
KPRO				S	**Sn**	**07 28 25.1**	**-0.7**
KPRO	**Kipourio**	**0.95**	**44**	P	**Pb**	**07 28 11.4**	**+0.1**
KPRO				S	**Sn**	**07 28 25.1**	**-0.7**
KPRO	**Kipourio**	**0.95**	**44**	P	**Pg**	**07 28 09.4**	**-1.5**
PVO	**Paravola**	**1.02**	**129**	P	**Pg**	**07 28 12.0**	**-0.4**
PVO				S	**Sn**	**07 28 27.0**	**-0.6**
PVO	**Paravola**	**1.02**	**129**	P	**Pb**	**07 28 12.8**	**+0.2**
PVO				S	**Sn**	**07 28 27.0**	**-0.6**
PVO	**Paravola**	**1.02**	**129**	P	**Pb**	**07 28 12.8**	**+0.2**
PENT	**Pentalofos**	**1.04**	**27**	P	**Pb**	**07 28 13.1**	**+0.2**
PENT				S	**Sn**	**07 28 28.2**	**0.0**
PENT	**Pentalofos**	**1.04**	**27**	P	**Pb**	**07 28 13.1**	**+0.2**
PENT				S	**Sn**	**07 28 28.2**	**0.0**
PENT	**Pentalofos**	**1.04**	**27**	P	**Pg**	**07 28 11.9**	**-0.8**
EVR	**Evrytania**	**1.07**	**109**	P	**Pg**	**07 28 12.8**	**-0.5**
EVR				S	**Sn**	**07 28 28.3**	**-0.6**
EVR	**Evrytania**	**1.07**	**109**	P	**Pg**	**07 28 12.8**	**-0.5**
EVR				S	**Sn**	**07 28 28.3**	**-0.6**
EVR	**Evrytania**	**1.07**	**109**	P	**Pg**	**07 28 12.6**	**-0.7**
EVR				AML	AML	07 28 33.8	
	comp=N,11316μm,0.5s						
VLS	**Valsamata**	**1.09**	**177**	P	**Pg**	**07 28 13.6**	**-0.2**
VLS				S	**Sn**	**07 28 29.0**	**-0.4**
VLS	**Valsamata**	**1.09**	**177**	P	**Pg**	**07 28 13.5**	**-0.2**
VLS				S	**Sg**	**07 28 27.8**	**-0.2**
KFL	**Anninata**	**1.18**	**169**	P	**Pb**	**07 28 15.2**	**0.0**
KFL				S	**Sn**	**07 28 32.6**	**+1.1**
KFL	**Anninata**	**1.18**	**169**	P	**Pb**	**07 28 15.2**	**0.0**
KFL				S	**Sn**	**07 28 32.6**	**+1.1**
KFL	**Anninata**	**1.18**	**169**	P	**Pb**	**07 28 13.6**	**-1.6**
THL	**Klokotos Trika**	**1.20**	**75**	P	**Pg**	**07 28 15.8**	**+0.1**
THL				S	**Sn**	**07 28 33.0**	**+1.1**
THL	**Klokotos Trika**	**1.20**	**75**	P	**Pg**	**07 28 15.8**	**+0.1**
THL				S	**Sn**	**07 28 33.0**	**+1.1**
NEST	**Nestorio**	**1.21**	**20**	P	**Pg**	**07 28 16.1**	**+0.1**
NEST				S	**Sn**	**07 28 34.7**	**+2.2**
NEST	**Nestorio**	**1.21**	**20**	P	**Pg**	**07 28 16.1**	**+0.1**
NEST				S	**Sn**	**07 28 34.7**	**+2.2**
NEST	**Nestorio**	**1.21**	**20**	P	**Pb**	**07 28 15.5**	**-0.4**
AXS	**Araxos**	**1.27**	**148**	P	**Pg**	**07 28 17.0**	**-0.1**
AXS				S	**Sn**	**07 28 34.9**	**+1.3**
AXS	**Araxos**	**1.27**	**148**	P	**Pg**	**07 28 17.0**	**-0.1**
AXS				S	**Sn**	**07 28 34.9**	**+1.3**
AXS	**Araxos**	**1.27**	**148**	P	**Pn**	**07 28 14.2**	**-2.3**
ANX	**Ano Chora**	**1.29**	**121**	P	**Pn**	**07 28 16.8**	**-0.1**
ANX				S	**Sn**	**07 28 36.2**	**+1.9**
ANX	**Ano Chora**	**1.29**	**121**	P	**Pn**	**07 28 16.8**	**-0.1**
ANX				S	**Sn**	**07 28 36.2**	**+1.9**
EFP	**Efpalio**	**1.38**	**127**	P	**Pb**	**07 28 18.4**	**-0.1**
EFP				S	**Sg**	**07 28 38.8**	**+1.8**
EFP	**Efpalio**	**1.38**	**127**	P	**Pb**	**07 28 18.5**	**-0.1**
EFP				S	**Sg**	**07 28 38.8**	**+1.8**
EFP	**Efpalio**	**1.38**	**127**	P	**Pb**	**07 28 18.5**	**-0.1**
UPR	**University Cam**	**1.40**	**134**	P	**Pb**	**07 28 18.8**	**-0.2**
UPR				S	**Sg**	**07 28 39.1**	**+1.3**
UPR	**University Cam**	**1.40**	**134**	P	**Pb**	**07 28 18.8**	**-0.2**
UPR				S	**Sg**	**07 28 39.1**	**+1.3**
KZN	**Kozani**	**1.42**	**43**	P	**Pg**	**07 28 19.6**	**-0.3**
KZN				S	**Sg**	**07 28 40.0**	**+1.7**
KZN	**Kozani**	**1.42**	**43**	P	**Pg**	**07 28 19.6**	**-0.3**
KZN				S	**Sg**	**07 28 40.0**	**+1.7**
RLS	**Riolos of Patr**	**1.42**	**148**	P	**Pn**	**07 28 19.1**	**+0.4**
RLS				S	**Sg**	**07 28 39.9**	**+1.4**
RLS	**Riolos of Patr**	**1.42**	**148**	P	**Pn**	**07 28 19.1**	**+0.4**
RLS				S	**Sg**	**07 28 39.9**	**+1.4**
AGG	**Agios Georgios**	**1.43**	**99**	P	**Pb**	**07 28 19.3**	**-0.3**
AGG				S	**Sg**	**07 28 40.2**	**+1.4**
AGG	**Agios Georgios**	**1.43**	**99**	P	**Pb**	**07 28 19.3**	**-0.3**
AGG				S	**Sg**	**07 28 40.2**	**+1.4**
AGG	**Agios Georgios**	**1.43**	**99**	P	**Pn**	**07 28 18.7**	**-0.1**
SERG	**Sergoula**	**1.48**	**125**	P	**Pb**	**07 28 20.2**	**-0.1**
SERG				S	**Sg**	**07 28 41.1**	**+0.8**
SERG	**Sergoula**	**1.48**	**125**	P	**Pb**	**07 28 20.2**	**-0.1**
SERG				S	**Sg**	**07 28 41.1**	**+0.8**
LAKA	**Lakka**	**1.54**	**132**	P	**Pb**	**07 28 21.1**	**-0.3**
LAKA				S	**Sg**	**07 28 42.7**	**+0.5**
LAKA	**Lakka**	**1.54**	**132**	P	**Pb**	**07 28 21.1**	**-0.3**
LAKA				S	**Sg**	**07 28 42.7**	**+0.5**
ZKS	**Zakynthos**	**1.59**	**172**	P	**Pn**	**07 28 21.5**	**+0.5**
ZKS				S	**Sg**	**07 28 43.4**	**-0.4**
ZKS	**Zakynthos**	**1.59**	**172**	P	**Pn**	**07 28 21.5**	**+0.5**
ZKS				S	**Sg**	**07 28 43.4**	**-0.4**
ZKS	**Zakynthos**	**1.59**	**172**	P	**Pn**	**07 28 20.4**	**-0.5**
DRO	**Drossia**	**1.62**	**144**	P	**Pn**	**07 28 21.5**	**+0.1**
DRO				S	**Sg**	**07 28 44.2**	**-0.5**
DRO	**Drossia**	**1.62**	**144**	P	**Pn**	**07 28 21.5**	**+0.1**
DRO				S	**Sg**	**07 28 44.2**	**-0.5**
DRO	**Drossia**	**1.62**	**144**	P	**Pn**	**07 28 20.7**	**-0.6**
FNA	**Florina**	**1.65**	**23**	P	**Pb**	**07 28 23.1**	**-0.2**
FNA				S	**Sg**	**07 28 46.3**	**+0.6**
FNA	**Florina**	**1.65**	**23**	P	**Pb**	**07 28 23.1**	**-0.2**
FNA				S	**Sg**	**07 28 46.3**	**+0.6**
LIT	**Litokhoron**	**1.73**	**61**	P	**Pb**	**07 28 24.2**	**-0.5**
LIT				S	**Sg**	**07 28 47.7**	**-0.8**
LIT	**Litokhoron**	**1.73**	**61**	P	**Pb**	**07 28 24.2**	**-0.5**
LIT				S	**Sg**	**07 28 47.7**	**-0.8**
LIT	**Litokhoron**	**1.73**	**61**	P	**Pb**	**07 28 24.2**	**-0.5**
KLV	**Kalavryta, Ach**	**1.77**	**133**	P	**Pn**	**07 28 24.4**	**+0.8**
KLV				S	**Sg**	**07 28 48.9**	**-0.8**
KLV	**Kalavryta, Ach**	**1.77**	**133**	P	**Pn**	**07 28 24.4**	**+0.8**
KLV				S	**Sg**	**07 28 48.9**	**-0.8**
KLV	**Kalavryta, Ach**	**1.77**	**133**	P	**Pn**	**07 28 24.4**	**+0.8**
DSF	**Desfina**	**1.79**	**118**	P	**Pb**	**07 28 24.8**	**-0.9**
DSF				S	**Sb**	**07 28 49.1**	**+0.9**
DSF	**Desfina**	**1.79**	**118**	P	**Pb**	**07 28 24.8**	**-0.9**
DSF				S	**Sb**	**07 28 49.1**	**+0.9**
DSF	**Desfina**	**1.79**	**118**	P	**Pg**	**07 28 26.6**	**-0.5**
OHR	**Ohrid**	**1.85**	**7**	*i* Pn	**Pg**	**07 28 27.6**	**-0.7**
OHR				*e*Sn	**Sg**	**07 28 54.2**	**+1.9**
OHR	**Ohrid**	**1.85**	**7**	*i* Pn	**Pg**	**07 28 27.5**	**-0.7**
OHR				*e*Sn	**Sg**	**07 28 54.1**	**+1.9**
BIA	**Bitola**	**1.85**	**19**	*e*Pn	**Pg**	**07 28 28.4**	**+0.1**
BIA	**Bitola**	**1.85**	**19**	*e*Pn	**Pg**	**07 28 28.3**	**+0.1**
FYTO	**Fytoko, Volos**	**1.89**	**85**	P	**Pb**	**07 28 26.4**	**-0.9**
FYTO				S	**Pb**	**07 28 51.3**	**+0.4**
FYTO	**Fytoko, Volos**	**1.89**	**85**	P	**Pb**	**07 28 26.4**	**-0.9**
FYTO				S	**Sb**	**07 28 51.3**	**+0.4**
AMT	**Artemida-Makis**	**1.97**	**151**	P	**Pn**	**07 28 26.8**	**+0.5**
AMT				S	**Sb**	**07 28 53.6**	**+0.1**
AMT	**Artemida-Makis**	**1.97**	**151**	P	**Pn**	**07 28 26.8**	**+0.5**
AMT				S	**Sb**	**07 28 53.6**	**+0.1**
LKR	**Lokris**	**2.03**	**107**	P	**Pn**	**07 28 28.3**	**+1.2**
LKR				S	**Sb**	**07 28 54.9**	**-0.3**
LKR	**Lokris**	**2.03**	**107**	P	**Pn**	**07 28 28.3**	**+1.2**
LKR				S	**Sb**	**07 28 54.9**	**-0.3**
LKR	**Lokris**	**2.03**	**107**	P	**Pb**	**07 28 28.8**	**-1.0**
XOR	**Xorichti**	**2.08**	**87**	P	**Pn**	**07 28 29.0**	**+1.3**
XOR				S	**Sb**	**07 28 55.8**	**-0.7**
XOR	**Xorichti**	**2.08**	**87**	P	**Pn**	**07 28 29.0**	**+1.3**
XOR				S	**Sb**	**07 28 55.8**	**-0.7**
XOR	**Xorichti**	**2.08**	**87**	P	**Pb**	**07 28 29.8**	**-0.8**
NEO	**Neokhori**	**2.10**	**88**	P	**Pn**	**07 28 29.3**	**+1.2**
NEO				S	**Sb**	**07 28 56.7**	**-0.5**
NEO	**Neokhori**	**2.10**	**88**	P	**Pn**	**07 28 29.3**	**+1.2**
NEO				S	**Sb**	**07 28 56.7**	**-0.5**
NEO	**Neokhori**	**2.10**	**88**	P	**Pn**	**07 28 29.7**	**-1.3**
TIR	**Tirane**	**2.13**	**347**	*i* PN	**Pb**	**07 28 31.2**	**-0.3**
TIR	**Tirane**	**2.13**	**347**	⇓*i* P	**Pb**	**07 28 30.7**	**-0.7**
TIR	**Tirane**	**2.13**	**347**	*e*Pg	**Pb**	**07 28 30.9**	**-0.6**
TIR				*e*Sn	**Sb**	**07 28 57.0**	**-1.0**
TIR	**Tirane**	**2.13**	**347**	*e*P	**Pb**	**07 28 30.8**	**-0.7**
TIR	**Tirane**	**2.13**	**347**	*e*P	**Pb**	**07 28 30.8**	**-0.7**
TIR				*e*S

DID			S	Sn	07 29 13.3	+2.5
DID	**Didima**	2.77 129	P	Pn	07 28 37.5	+0.2
TAR1	**Taranto**	2.78 298	*e*Pn	Pn	07 28 38.4	+1.0
SKO	**Skopje**	2.79 14	P	Pn	07 28 38.9	+1.4
SKO			S	Sb	07 29 15.4	-1.5
SKO	**Skopje**	2.79 14	*e*Pn	Pn	07 28 39.5	+2.1
SKO	**Skopje**	2.79 14	P	Pn	07 28 38.9	+1.4
SKO	**Skopje**	2.79 14	*e*Pn	Pn	07 28 39.5	+2.1
SKO			S	Sb	07 29 15.4	-1.5
KRND	**KRANIDI**	2.80 131	P	Pn	07 28 38.6	+1.0
KRND			S	Sn	07 29 14.3	+2.8
KRND	**KRANIDI**	2.80 131	P	Pn	07 28 38.7	+1.1
KRND			S	Sn	07 29 14.3	+2.8
KRND	**KRANIDI**	2.80 131	P	Pn	07 28 38.7	+1.1
ATH	**Athens Observa**	2.82 116	P	Pn	07 28 38.1	+0.2
ULC	**Ulcinj**	2.86 341	⇓*i*Pn	Pn	07 28 39.2	+0.8
ULC			*e*Sn	Sn	07 29 15.8	+2.9
ULC	**Ulcinj**	2.86 341	⇓*i*Pn	Pn	07 28 39.2	+0.8
ULC			*e*Sn	Sn	07 29 15.8	+2.9
OUR	**Ouranopolis**	2.87 67	P	Pn	07 28 40.2	+1.6
OUR			S	Sb	07 29 16.2	-3.1
OUR	**Ouranopolis**	2.87 67	P	Pn	07 28 40.2	+1.6
OUR			S	Sb	07 29 16.2	-3.1
OUR	**Ouranopolis**	2.87 67	P	Pn	07 28 40.4	+1.7
PTL	**Penteli**	2.89 114	P	Pn	07 28 40.4	+1.5
PTL			S	Sn	07 29 15.9	+2.1
PTL	**Penteli**	2.89 114	P	Pn	07 28 40.4	+1.5
PTL			S	Sn	07 29 15.9	+2.1
PTL	**Penteli**	2.89 114	P	Pb	07 28 42.2	-2.3
TIP	**Timpagrande**	2.92 269	⇓*i*P	Pn	07 28 40.7	+1.4
TIP	**Timpagrande**	2.92 269	P	Pn	07 28 40.1	+0.8
TIP	**Timpagrande**	2.92 269	*e*Pn	Pn	07 28 40.4	+1.1
TIP			*e*Sn	Sn	07 29 13.5	-1.0
TIP	**Timpagrande**	2.92 269	P	Pn	07 28 40.1	+0.8
TIP	**Timpagrande**	2.92 269	*e*Pn	Pn	07 28 40.4	+1.1
TIP			*e*Sn	Sn	07 29 13.5	-1.0
VLY	**Voula,Athens**	2.94 118	P	Pn	07 28 40.9	+1.4
VLY			S	Sn	07 29 17.0	+2.2
VLY	**Voula,Athens**	2.94 118	P	Pn	07 28 40.9	+1.4
VLY			S	Sn	07 29 17.0	+2.2
VLY	**Voula,Athens**	2.94 118	P	Pn	07 28 40.5	+1.0
SRS	**Serrai**	2.99 51	P	Pn	07 28 41.5	+1.2
SRS			S	Sb	07 29 19.7	-3.1
SRS	**Serrai**	2.99 51	P	Pn	07 28 41.5	+1.2
SRS			S	Sb	07 29 19.7	-3.1
SRS	**Serrai**	2.99 51	P	Pn	07 28 41.3	+1.0
NOCI	**Noci**	3.05 301	P	Pn	07 28 42.0	+0.9
NOCI	**Noci**	3.05 301	P	Pn	07 28 42.0	+0.9
DRME	**Dracevica, Mon**	3.08 341	⇓*i*Pn	Pn	07 28 43.0	+1.5
DRME			*e*Sn	Sb	07 29 21.9	-3.4
DRME	**Dracevica, Mon**	3.08 341	⇓*i*Pn	Pn	07 28 43.0	+1.5
DRME			*e*Sn	Sb	07 29 21.9	-3.4
VLI	**Veliai**	3.19 142	P	Pn	07 28 44.5	+1.6
VLI			S	Sn	07 29 24.4	+3.4
VLI	**Veliai**	3.19 142	P	Pn	07 28 44.5	+1.6
VLI			S	Sn	07 29 24.4	+3.4
MATE	**Matera**	3.23 296	⇑*i*P	Pn	07 28 45.7	+2.1
MATE	**Matera**	3.23 296	⇑*i*P	Pn	07 28 45.7	+2.1
KKB	**Krupnik**	3.25 36	*i* P	Pn	07 28 45.7	+1.9
BUM	**Brajici-Budva**	3.27 338	⇓*i*Pn	Pn	07 28 45.0	+0.9
BUM			*e*Sn	Sn	07 29 26.1	+3.0
BUM	**Brajici-Budva**	3.27 338	⇓*i*Pn	Pn	07 28 45.0	+0.9
BUM			*e*Sn	Sn	07 29 26.1	+3.0
NVR	**Nevrokopi**	3.29 50	P	Pn	07 28 45.8	+1.3
NVR			S	Sn	07 29 26.6	+2.9
NVR	**Nevrokopi**	3.29 50	P	Pn	07 28 45.8	+1.3
NVR			S	Sn	07 29 26.6	+2.9
PDG	**Podgorica**	3.30 344	⇓*i*P	Pn	07 28 45.5	+1.1
PDG	**Podgorica**	3.30 344	⇑*i*Pn	Pn	07 28 45.6	+1.1
PDG			*e*Sn	Sn	07 29 24.7	+1.0
PDG	**Podgorica**	3.30 344	⇓*i*P	Pn	07 28 45.5	+1.1
PDG			*e*Sn	Sn	07 29 24.7	+1.0
TTG	**Podgorica**	3.30 344	⇑*i*Pn	Pn	07 28 45.7	+1.3
TTG			*e*Sn	Sn	07 29 26.9	+3.2
BAI	**Bari**	3.33 305	*i* Pn	Pn	07 28 47.3	+2.4
SG1	**Sgolgore (BA)**	3.33 299	*i* Pn	Pn	07 28 46.3	+1.3
PVY	**Plav**	3.34 353	⇑*i*Pn	Pn	07 28 47.0	+1.8
PVY			*e*Sn	Sn	07 29 28.1	+3.0
PVY	**Plav**	3.34 353	⇑*i*Pn	Pn	07 28 47.0	+1.8
PVY			*e*Sn	Sn	07 29 28.1	+3.0
MMB	**Musomiste**	3.37 46	*i* P	Pn	07 28 47.5	+2.0
CEME	**Cevo**	3.49 340	⇑*i*Pn	Pn	07 28 47.9	+0.8
CEME			*e*Sn	Sn	07 29 31.3	+2.8
CEME	**Cevo**	3.49 340	⇑*i*Pn	Pn	07 28 47.9	+0.8
CEME			*e*Sn	Sn	07 29 31.3	+2.8
KAVA	**Kavala**	3.52 59	P	Pn	07 28 48.8	+1.4
KAVA	**Kavala**	3.52 59	P	Pn	07 28 48.8	+1.4
KAVA	**Kavala**	3.52 59	P	Pn	07 28 47.8	+0.3
HCY	**Herceg Novi**	3.52 335	⇓*i*Pn	Pn	07 28 47.9	+0.3
HCY			*e*Sn	Sn	07 29 31.9	+2.6
HCY	**Herceg Novi**	3.52 335	⇓*i*Pn	Pn	07 28 47.9	+0.3
HCY			*e*Sn	Sn	07 29 31.9	+2.6
BEY	**Berane**	3.63 353	⇓*i*Pn	Pn	07 28 51.3	+2.2
BEY			*e*Sn	Sn	07 29 34.6	+2.6
IVA	**Berane**	3.63 353	⇓*i*Pn	Pn	07 28 51.3	+2.2
IVA			*e*Sn	Sn	07 29 34.6	+2.6
LIA	**Limnos Island**	3.66 79	P	Pn	07 28 48.7	-0.7
BARS	**Barje**	3.67 15	⇑*i*Pn	Pn	07 28 51.2	+1.5
BARS			*e*Sn	Sn	07 29 35.6	+2.5
BARS	**Barje**	3.67 15	⇑*i*Pn	Pn	07 28 51.2	+1.5
BARS			*e*Sn	Sn	07 29 35.6	+2.5
NKME	**Niksic**	3.69 342	⇓*i*Pn	Pn	07 28 51.0	+1.2
NKME			*e*Sn	Sn	07 29 35.6	+2.2
NKME	**Niksic**	3.69 342	⇓*i*Pn	Pn	07 28 51.0	+1.2
NKME			*e*Sn	Sn	07 29 35.6	+2.2
CUC	**Castrocucco**	3.70 283	*e*Pn	Pn	07 28 52.3	+2.3
CUC	**Castrocucco**	3.70 283	P	Pn	07 28 53.1	+3.1
CUC	**Castrocucco**	3.70 283	P	Pn	07 28 53.1	+3.1
CUC	**Castrocucco**	3.70 283	*e*Pn	Pn	07 28 52.3	+2.3
CDT	**Castel del Mon**	3.72 300	*i* Pn	Pn	07 28 51.4	+1.1
NKY	**Niksic**	3.72 342	⇓*i*Pn	Pn	07 28 51.4	+1.0
NKY			*e*Sn	Sn	07 29 37.0	+2.7
NKY	**Niksic**	3.72 342	⇓*i*Pn	Pn	07 28 51.4	+1.0
NKY			*e*Sn	Sn	07 29 37.0	+2.7
CEL	**Celeste**	3.75 256	*e*Pn	Pn	07 28 51.5	+0.8
CEL			*e*Sn	Sn	07 29 36.0	+1.0
CEL	**Celeste**	3.75 256	*e*Pn	Pn	07 28 51.5	+0.8
CEL			*e*Sn	Sn	07 29 36.0	+1.0
TREB	**Trebinje**	3.81 335	*e*Pn	Pn	07 28 51.6	+0.1
BRY	**Bratogost**	3.92 338	⇑*i*Pn	Pn	07 28 53.9	+0.7
BRY			*e*Sn	Sn	07 29 40.9	+1.6
BRY	**Bratogost**	3.92 338	⇑*i*Pn	Pn	07 28 53.9	+0.7
BRY			*e*Sn	Sn	07 29 40.9	+1.6
SMTH	**Samothraki Isl**	4.04 71	P	Pn	07 28 56.6	+1.9
SMTH			S	Sn	07 29 45.6	+3.5
SMTH	**Samothraki Isl**	4.04 71	P	Pn	07 28 56.6	+1.9
SMTH			S	Sn	07 29 45.6	+3.5
ANKY	**Antikythira Is**	4.06 146	P	Pn	07 28 57.3	+2.4
ANKY	**Antikythira Is**	4.06 146	P	Pn	07 28 57.3	+2.4
UPM	**Unac-Piva**	4.11 343	⇓*i*Pn	Pn	07 28 57.2	+1.4
UPM			*e*Sn	Sn	07 29 45.6	+1.5
UPM	**Unac-Piva**	4.11 343	⇓*i*Pn	Pn	07 28 57.2	+1.4
UPM			*e*Sn	Sn	07 29 45.6	+1.5
PLE	**Pljevlja**	4.14 349	⇑*i*Pn	Pn	07 28 58.1	+1.9
PLE			*e*Sn	Sn	07 29 47.2	+2.5
PLE	**Pljevlja**	4.14 349	⇑*i*Pn	Pn	07 28 58.1	+1.9
PLE			*e*Sn	Sn	07 29 47.2	+2.5
MS1	**Monte Sant'Ang**	4.25 306	*i* Pn	Pn	07 28 59.4	+1.8
PLD	**Plovdiv**	4.26 47	*i* P	Pn	07 29 00.2	+2.5
ZAPS	**Zavoj**	4.30 21	⇑*i*Pn	Pn	07 29 00.4	+2.1
IVAS	**Ivanjica**	4.31 356	*e*Pn	Pn	07 28 59.3	+0.9
IVAS	**Ivanjica**	4.31 356	*e*Pn	Pn	07 28 59.3	+0.9
KDZ	**Kurdzhali**	4.43 56	P	Pn	07 29 01.2	+1.2
BOVS	**Bovan**	4.45 11	⇑*i*Pn	Pn	07 29 01.3	+1.0
BOVS	**Bovan**	4.45 11	⇑*i*Pn	Pn	07 29 01.3	+1.0
APE	**Apeiranthos**	4.52 118	⇑*e*P	Pn	07 29 04.1	+2.7
APE	**Apeiranthos**	4.52 118	P	Pn	07 29 02.3	+0.9
APE	**Apeiranthos**	4.52 118	P	Pn	07 29 02.3	+0.9
GRUS	**Gruza**	4.62 2	⇑*i*Pn	Pn	07 29 03.5	+0.9
GRUS			*e*Sn	Sn	07 29 56.1	-0.1
GRUS	**Gruza**	4.62 2	⇑*i*Pn	Pn	07 29 03.5	+0.9
GRUS			*e*Sn	Sn	07 29 56.1	-0.1
BBLS	**Lazići**	4.67 350	*e*Pn	Pn	07 29 03.8	+0.5
BBLS			*e*Sn	Sn	07 29 56.2	-1.4
BBLS	**Lazići**	4.67 350	*e*Pn	Pn	07 29 03.8	+0.5
BBLS			*e*Sn	Sn	07 29 56.2	-1.4
MPEP	**Malo Peshtene**	4.75 30	*i* P	Pn	07 29 07.5	+3.1
DIVS	**Divibare**	4.84 356	⇑*i*Pn	Pn	07 29 06.3	+0.6
DIVS			*e*Sn	Sn	07 30 02.3	+0.5
DIVS	**Divibare**	4.84 356	⇑*i*Pn	Pn	07 29 06.3	+0.6
DIVS			*e*Sn	Sn	07 30 02.3	+0.5
HAPS	**Han Pijesak,BI**	4.95 347	*e*Pn	Pn	07 29 07.1	-0.2
VAE	**Valguarnera**	5.12 251	Pn	Pn	07 29 13.0	+3.5
	comp=N,1.2nm,0.3s,baz=117,slow=2.3,SNR=2.8					
VAE			Sn	Sn	07 30 12.5	+3.8
	comp=N,3.0nm,0.3s,baz=122,slow=4.5,SNR=3.9					
KUBS	**Kucevo**	5.21 9	*e*Pn	Pn	07 29 10.7	0.0
KUBS	**Kucevo**	5.21 9	*e*Pn	Pn	07 29 10.7	0.0
IDI	**Anoyia**	5.29 137	Pn	Pn	07 29 11.3	-0.6
	comp=N,0.9nm,0.3s,baz=275,slow=11,SNR=11					
IDI			Sn	Sn	07 30 08.5	-4.5
	comp=N,2.5nm,0.3s,baz=104,slow=19,SNR=3.2					
TEKS	**Tekeris**	5.32 352	*e*Pn	Pn	07 29 12.9	+0.6
TEKS			*e*Sn	Sn	07 30 12.7	-1.0
TEKS	**Tekeris**	5.32 352	*e*Pn	Pn	07 29 12.9	+0.6
TEKS			*e*Sn	Sn	07 30 12.7	-1.0
LAST	**Lasithi**	5.70 134	⇑*i*P	Pn	07 29 18.4	+0.8
LAST	**Lasithi**	5.70 134	⇑*i*P	Pn	07 29 18.4	+0.8
FGSL	**Fruska Gora**	5.90 355	⇓*i*Pn	Pn	07 29 20.6	+0.3
FRGS	**Fruska Gora**	5.91 355	⇓*i*Pn	Pn	07 29 20.6	+0.3
FRGS			*e*Sn	Sn	07 30 26.3	-1.7
BLY	**Banja Luka**	6.01 337	⇓*i*P	Pn	07 29 22.5	+0.8
BLY	**Banja Luka**	6.01 337	*e*Pn	Pn	07 29 22.4	+0.8
BLY			*e*Sn	Sn	07 30 29.4	-1.1
BLY	**Banja Luka**	6.01 337	⇓*i*P	Pn	07 29 22.5	+0.8
BLY			*e*Sn	Sn	07 30 29.4	-1.1
AQU	**L'Aquila**	6.21 302	*e*P	Pn	07 29 26.8	+2.3
AQU			pmax	pmax		
	comp=Z,33nm,0.8s					
AQU	**L'Aquila**	6.21 302	*e*P	Pn	07 29 26.8	+2.3
	comp=Z,33nm,0.8s					
AQU	**L'Aquila**	6.21 302	*e*Pn	Pn	07 29 26.8	+2.3
	comp=Z,33nm,0.8s					
GZR	**Gura Zlata**	6.34 15	⇑*i*P	Pn	07 29 28.3	+2.0
GZR	**Gura Zlata**	6.34 15	⇑*i*P	Pn	07 29 28.3	+2.0
BZS	**Buzias**	6.39 7	⇑*i*P	Pn	07 29 28.3	+1.3
BZS	**Buzias**	6.39 7	⇑*i*P	Pn	07 29 28.4	+1.3
LOT	**Lotru**	6.62 20	⇑*i*P	Pn	07 29 31.8	+1.5
LOT	**Lotru**	6.62 20	⇑*i*P	Pn	07 29 31.8	+1.5
NVLJ	**Novalja**	6.76 323	*e*Pn	Pn	07 29 32.5	+0.6
NVLJ			Sn	Sn	07 30 46.4	-2.5
NVLJ	**Novalja**	6.76 323	*e*Pn	Pn	07 29 32.5	+0.6
ARR	**Arges**	6.81 25	⇑*i*P	Pn	07 29 34.1	+1.3
ARR	**Arges**	6.81 25	⇑*i*P	Pn	07 29 34.1	+1.3
VOIR		7.01 27	⇑*i*P	Pn	07 29 37.1	+1.5
VOIR		7.01 27	⇑*i*P	Pn	07 29 37.1	+1.5
BOJS	**Bojanci**	7.34 330	*i* Pn	Pn	07 29 40.4	+0.4
BOJS			*i* Sn	Sn	07 31 00.2	-3.2
BOJS	**Bojanci**	7.34 330	Pn	Pn	07 29 40.4	+0.4
MLR	**Muntele Rosu**	7.40 31	Pn	Pn	07 29 42.2	+1.3
	comp=Z,0.3nm,0.3s,baz=237,slow=3.4,SNR=14					
MLR			LR	LR	07 32 48.9	
	comp=Z,24nm,21.1s,baz=168,slow=41					
MLR	**Muntele Rosu**	7.40 31	⇑*i*P	Pn	07 29 43.2	+2.3
CRES	**Cresnjev**	7.54 332	⇑*i*Pn	Pn	07 29 42.6	-0.1
VISS	**Visnje**	7.75 329	*i* Pn	Pn	07 29 46.0	+0.3
VISS			*i* Sn	Sn	07 31 10.2	-3.3
VISS	**Visnje**	7.75 329	*i* Pn	Pn	07 29 46.0	+0.3
CEY	**Cerknica**	7.87 327	*e*Pn	Pn	07 29 47.8	+0.5
PLOR	**Plostina**	7.98 33	⇑*i*P	Pn	07 29 51.9	+3.1
PLOR	**Plostina**	7.98 33	⇑*i*P	Pn	07 29 51.9	+3.1
VRI	**Vrincioaia**	8.03 33	⇑*i*P	Pn	07 29 52.0	+2.6
VRI	**Vrincioaia**	8.03 33	⇑*i*P	Pn	07 29 52.0	+2.6
JAVS	**Javornik**	8.15 326	*i* Pn	Pn	07 29 51.2	+0.1
JAVS			*i* Sn	Sn	07 31 20.3	-3.1
JAVS	**Javornik**	8.15 326	*i* Pn	Pn	07 29 51.2	+0.1
SOKA	**Soboth**	8.42 333	*i* Pn	Pn	07 29 54.7	-0.2
	comp=Z,8.1nm,0.3s					
SOKA	**Soboth**	8.42 333	Pn	Pn	07 29 54.7	-0.2
	comp=Z,8.1nm,0.3s					
OBKA	**Obir**	8.45 331	*i* Pn	Pn	07 29 55.9	+0.6
	comp=Z,9.3nm,0.4s					
OBKA			*e*Sn	Sn	07 31 29.0	-1.8
	comp=Z,14nm,0.6s					
OBKA	**Obir**	8.45 331	Pn	Pn	07 29 55.9	+0.6
	comp=Z,9.3nm,0.4s					
VSL	**Villasalto**	8.63 275	*e*Pn	Pn	07 29 58.4	+0.7
VSL	**Villasalto**	8.63 275	*e*Pn	Pn	07 29 58.4	+0.7
PSZ	**Piszkesteto**	8.65 357	*e*P	Pn	07 29 58.9	+0.8
PSZ			pmax	pmax		
	comp=Z,7.0nm,0.6s					
PSZ	**Piszkesteto**	8.65 357	*e*P	Pn	07 29 58.9	+0.8
	comp=Z,7.0nm,0.6s					
PSZ	**Piszkesteto**	8.65 357	*e*Pn	Pn	07 29 58.9	+0.8
	comp=Z,7.1nm,0.6s					
ARSA	**Arzberg**	8.76 337	*i* Pn	Pn	07 29 59.4	-0.1
	comp=Z,2.1nm,0.2s					
ARSA	**Arzberg**	8.76 337	Pn	Pn	07 29 59.4	-0.1
	comp=Z,2.1nm,0.2s					
BURAR	**Bucovina Array**	9.01 21	⇓*i*P	Pn	07 30 05.7	+2.7
BURAR	**Bucovina Array**	9.01 21	⇓*i*P	Pn	07 30 05.7	+2.7
KECS	**Kecovo**	9.21 360	*e*P	Pn	07 30 07.2	+1.6
KECS	**Kecovo**	9.21 360	*e*P	Pn	07 30 07.2	+1.6
KECS	**Kecovo**	9.21 360	*e*PN	Pn	07 30 07.2	+1.6
KBA	**Koelnbreinsper**	9.39 328	*i* Pn	Pn	07 30 08.9	+0.6
	comp=Z,2.3nm,0.3s					
KBA			*e*Sn	Sn	07 31 52.9	-1.1
	comp=Z,5.0nm,0.5s					
KBA	**Koelnbreinsper**	9.39 328	Pn	Pn	07 30 08.9	+0.6
	comp=Z,2.3nm,0.3s					
KBA			Sn	Sn	07 31 52.9	-1.1
	comp=Z,5.0nm,0.5s					
ABTA	**Abfaltersbach**	9.49 325	*i* Pn	Pn	07 30 09.5	0.0
	comp=Z,0.7nm,0.2s					
ABTA			*e*Sn	Sn	07 31 52.8	-3.5
	comp=Z,5.9nm,0.4s					
ABTA	**Abfaltersbach**	9.49 325	Pn	Pn	07 30 09.5	0.0
	comp=Z,0.7nm,0.2s					
KEST	**Kesra**	9.55 252	Pn	Pn	07 30 13.3	+2.9
	comp=Z,0.2nm,0.3s,baz=56,slow=11,SNR=4.0					
CRVS	**Cervenica-Dubn**	9.65 4	*e*P	Pn	07 30 12.7	+1.0
CRVS	**Cervenica-Dubn**	9.65 4	*e*P	Pn	07 30 12.7	+1.0
CRVS	**Cervenica-Dubn**	9.65 4	*e*PN	Pn	07 30 12.7	+1.0
MOA	**Molln**	9.70 334	*i* Pn	Pn	07 30 12.6	+0.3
	comp=Z,6.1nm,0.5s					
MOA	**Molln**	9.70 334	Pn	Pn	07 30 12.6	+0.3
	comp=Z,6.1nm,0.5s					
BRTR	**Keskin Array B**	10.16 83	Pn	Pn	07 30 19.4	+0.6
	comp=Z,0.1nm,0.3s,baz=260,slow=8.6,SNR=2.7					
MOTA	**Moosalm**	10.58 323	*i* Pn	Pn	07 30 25.6	+1.0
	comp=Z,7.0nm,0.4s					
MOTA			*i* Sn	Sn	07 32 19.3	-3.9
	comp=Z,4.5nm,0.4s					
MOTA	**Moosalm**	10.58 323	Pn	Pn	07 30 25.6	+1.0
	comp=Z,7.0nm,0.4s					
GERES	**GERESS Array B**	10.75 335	Pn	Pn	07 30 26.3	-0.4
	comp=Z,0.9nm,0.3s,baz=156,slow=14,SNR=20					
DAVOX	**Davos/Dischmat**	10.80 317	Pn	Pn	07 30 29.9	+2.3
	comp=Z,0.8nm,0.3s,baz=135,slow=19,SNR=5.6					
KHC	**Kasperske Hory**	11.04 336	*e*P	Pn	07 30 30.3	-0.3
KHC	**Kasperske Hory**	11.04 336	*e*P	Pn	07 30 30.3	-0.3
KHC	**Kasperske Hory**	11.04 336	*e*P	Pn	07 30 30.3	-0.3
DPC	**Dobruska-Polom**	11.47 346	AMS	AMS	07 35 40.0	
	comp=Z,200nm,12.9s					
UPC	**Upice**	11.68 346	AMS	AMS	07 36 00.0	
	comp=Z,200nm,10.3s					
KIEV	**Kiev**	12.96 25	⇑*e*P	Pn	07 31 01.4	+4.5
CLL	**Collm**	13.13 339	*e*(P)	Pn	07 30 56.0	-3.3
CLL	**Collm**	13.13 339	*e*P	Pn	07 30 56.0	-3.3
ANN	**Anapa**	13.73 61	*e*P	Pn	07 31 06.5	-0.8
ANN			*e*S	Sn	07 33 41.6	+1.8
ANN			pmax	pmax		
	comp=Z,22nm,0.9s					
ANN	**Anapa**	13.73 61	*e*P	Pn	07 31 06.5	-0.8
	comp=Z,22nm,0.9s					
ANN			*e*S	Sn	07 33 41.6	+1.8
EIL	**Elat**	15.26 124	Pn	Pn	07 31 27.3	-1.0
	comp=Z,0.2nm,0.3s,baz=347,slow=13,SNR=2.6					
NEY	**Neytrino**	17.15 69	⇓*e*P	P	07 31 57.1	+2.8
NEY			pmax	pmax		
	comp=Z,1.0nm,0.8s					
NEY	**Neytrino**	17.15 69	*e*P	P	07 31 57.1	+2.8
	comp=Z,1.0nm,0.8s					
KIV	**Kislovodsk**	17.21 67	⇑*e*P	P	07 31 55.6	+0.7
KIV			pmax	pmax		
	comp=Z,5.0nm,0.5s					
KIV	**Kislovodsk**	17.21 67	*e*P	P	07 31 55.6	+0.7
	comp=Z,5.0nm,0.5s					
KBZ	**Khabaz**	17.33 68	P	Pn	07 31 53.6	-1.0
	comp=Z,0.2nm,0.3s,baz=246,slow=11,SNR=5.1					
ZEI	**Tsey**	17.98 71	*e*P	Pn	07 32 02.4	-0.5
ZEI			pmax	pmax		
	comp=Z,2.0nm,0.3s					
GNI	**Garni**	18.65 80	⇓*e*P	Pn	07 32 12.8	+1.6
GNI			pmax	pmax		
	comp=Z,18nm,0.7s					
GNI	**Garni**	18.65 80	*e*P	Pn	07 32 12.8	+1.6
	comp=Z,18nm,0.7s					
ESDC	**Sonseca Array**	18.89 279	P	Pn	07 32 15.2	+1.2
	comp=Z,0.2nm,0.3s,baz=75,slow=11,SNR=9.8					
OBN	**Obninsk**	19.16 29	⇓*e*P	Pn	07 32 18.2	+1.2
OBN			pmax	pmax		
	comp=Z,12nm,0.5s					
OBN			MLR	MLR		
	comp=Z,56nm,17.0s					
OBN	**Obninsk**	19.16 29	*e*P	Pn	07 32 18.2	+1.2
	comp=Z,56nm,17.0s					
VSU	**Vasula**	19.62 10	⇓*e*P	P	07 32 21.1	0.0
VSU			pmax	pmax		
	comp=Z,33nm,0.8s					
VSU	**Vasula**	19.62 10	*e*P	P	07 32 21.1	0.0
	comp=Z,33nm,0.8s					
HFS	**Hagfors**	21.32 351	P	P	07 32 39.3	-0.3
	comp=Z,2.5nm,0.5s,baz=162,slow=10,SNR=16					
FINES	**FINESS Array B**	22.46 7	P	P	07 32 51.5	-0.3
	comp=Z,2.6nm,0.4s,baz=179,slow=11,SNR=15					
FINES	**FINESS Array B**	22.46 7	*e*P	P	07 32 50.7	-1.1
FINES			pmax	pmax		
	comp=Z,3.0nm,0.4s					
EKA	**Eskdalemuir Ar**	22.54 323	P	P	07 32 52.7	0.0
	comp=Z,9.5nm,0.8s,baz=118,slow=10,SNR=13					
NB2	**NORSAR Subarra**	22.55 348	P	P	07 32 51.7	-1.0
	comp=Z,3.5nm,0.8s,baz=153,slow=10					
NB2	**NORSAR Subarra**	22.55 348	P	P	07 32 51.7	-1.0
	comp=Z,3.5nm,0.8s,SNR=6.4					
NOA	**NORSAR Array B**	22.55 348	P	P	07 32 51.8	-1.0
	comp=Z,3.8nm,0.8s,baz=167,slow=10,SNR=9.5					
NOA	**NORSAR Array B**	22.55 348	*e*P	P	07 32 55.1	+2.3
NOA			pmax	pmax		
	comp=Z,4.0nm,0.8s					
NOA	**NORSAR Array B**	22.55 348	*e*P	P	07 32 55.1	+2.3
	comp=Z,4.0nm,0.8s					
ESK	**Eskdalemuir**	22.55 323	*e*P	P	07 32 52.6	-0.2
ESK			pmax	pmax		
	comp=Z,8.0nm,0.6s					
ESK	**Eskdalemuir**	22.55 323	*e*P	P	07 32 52.6	-0.2
	comp=Z,7.6nm,0.6s					
ESK	**Eskdalemuir**	22.55 323	*e*P	P	07 32 52.6	-0.2
	comp=Z,7.6nm,0.6s					
KLMR	**Klimovskoe**	24.63 22	*e*P	P	07 33 14.7	+1.6
KLMR			pmax	pmax		
	comp=Z,7.0nm,1.0s					
KLMR	**Klimovskoe**	24.63 22	*e*P	P	07 33 14.7	+1.6
	comp=Z,7.0nm,1.0s					
AKTO	**Aktyubinsk**	28.54 55	P	P	07 33 47.4	-1.0
	comp=Z,1.2nm,0.4s,baz=263,slow=6.8,SNR=4.0					
GEYT	**Alibeck**	29.28 81	P

ORLT	Orhaneli	0.95 350	*e*Pg		Pg	07 35 49.9	-0.8
AKHS	Akhisar	1.04 257	P		Pg	07 35 52.0	-0.5
AKHS			S		Sg	07 36 05.9	-0.1
AKHS	Akhisar	1.04 257	*i* P		Pg	07 35 52.0	-0.5
AKHS			*i* S		Sg	07 36 05.9	-0.1
AKS	Akhisar	1.04 257	*e*PG		Pg	07 35 52.0	-0.5
AKS	Akhisar	1.04 257	*e*Pg		Pg	07 35 52.0	-0.5
BALB	Balikesir	1.09 299	*e*PN		Pg	07 35 53.0	-0.5
BALB	Balikesir	1.09 299	*e*Pn		Pg	07 35 53.0	-0.5
IGD	Bursa	1.15 3	*i* P		Pg	07 35 52.3	-2.3
IGD			*i* S		Sb	07 36 09.7	-0.4
IZI	Iznik	1.25 13	*e*PN		Pg	07 35 55.9	-0.7
IZI	Iznik	1.25 13	*e*Pn		Pg	07 35 55.9	-0.7
MDNY	Mudanya-Bursa	1.27 352	*e*PN		Pn	07 35 55.7	-1.2
MDNY	Mudanya-Bursa	1.27 352	*e*Pn		Pn	07 35 55.7	-1.2
BORA	Eskisehir	1.29 53	P		Pn	07 35 55.6	-1.6
BORA			S		Sb	07 36 13.5	-0.6
BORA	Eskisehir	1.29 53	*i* P		Pn	07 35 55.6	-1.6
BORA			*i* S		Sb	07 36 13.5	-0.6
KCTX	Karacabey (Bur	1.29 333	*e*PN		Pn	07 35 56.6	-0.6
KCTX	Karacabey (Bur	1.29 333	*e*Pn		Pn	07 35 56.6	-0.6
BALY	Balya	1.32 299	P		Pn	07 35 56.5	-1.1
BALY			S		Sn	07 36 15.4	-0.2
BALY	Balya	1.32 299	*i* P		Pn	07 35 56.5	-1.1
BALY			*i* S		Sn	07 36 15.4	-0.2
GEMT	Gemlik	1.32 2	*e*PN		Pn	07 35 56.7	-0.9
GEMT	Gemlik	1.32 2	*e*Pn		Pn	07 35 56.7	-0.9
ADVT	Abdulvahap	1.40 20	*e*PN		Pn	07 35 57.8	-0.9
ADVT	Abdulvahap	1.40 20	*e*Pn		Pn	07 35 57.8	-0.9
ESKT	Eskisehir	1.41 73	*i* P		Pn	07 35 57.8	-1.1
SEYT	Eskypehyr	1.41 73	P		Pn	07 35 57.8	-1.0
DNZL	Cakiroluk	1.42 182	P		Pn	07 35 58.0	-1.1
DNZL			S		Sn	07 36 19.4	+1.1
DNZL	Cakiroluk	1.42 182	*i* P		Pn	07 35 58.0	-1.1
DNZL			*i* S		Sn	07 36 19.4	+1.1
ARMT	Armutlu	1.46 352	*e*PN		Pn	07 35 58.4	-1.2
ARMT	Armutlu	1.46 352	*e*Pn		Pn	07 35 58.4	-1.2
GPA	Golpazari	1.49 38	*e*PN		Pn	07 35 59.3	-0.7
GPA	Golpazari	1.49 38	*e*Pn		Pn	07 35 59.3	-0.7
AYDB	Zeytinkoy-Aydi	1.51 220	*e*PN		Pn	07 35 59.4	-0.9
AYDB	Zeytinkoy-Aydi	1.51 220	*e*Pn		Pn	07 35 59.4	-0.9
EDC	Edincik	1.56 322	*e*PN		Pn	07 36 00.1	-0.9
EDC	Edincik	1.56 322	*e*Pn		Pn	07 36 00.1	-0.9
KNL	Bal¯–kesir	1.69 314	*i* P		Pn	07 36 00.8	-1.8
KNL			*i* S		Sb	07 36 25.3	-0.2
ISP	Isparta	1.70 139	*e*PN		Pn	07 36 01.4	-1.5
ISP	Isparta	1.70 139	⇑*i* P		Pg	07 36 05.1	+0.1
ISP	Isparta	1.70 139	P		Pn	07 36 00.4	-2.5
ISP			S		Sn	07 36 23.4	-1.6
ISP	Isparta	1.70 139	‖*e*P		Pn	07 36 01.7	-1.2
ISP	Isparta	1.70 139	*e*Pn		Pn	07 36 01.4	-1.5
ISP	Isparta	1.70 139	*e*P		Pn	07 36 01.7	-1.2
ISP			S		Sn	07 36 23.4	-1.6
GULT	Gulveren	1.70 39	*e*PN		Pn	07 36 02.2	-0.7
GULT	Gulveren	1.70 39	*e*Pn		Pn	07 36 02.2	-0.7
DKL	Dikili	1.72 269	*e*PN		Pn	07 36 02.2	-0.9
DKL	Dikili	1.72 269	*e*Pn		Pn	07 36 02.2	-0.9
BAGO	Egridir - ISPA	1.73 130	*i* P		Pn	07 36 02.5	-0.7
BAGO			*i* S		Sg	07 36 31.1	+3.1
BUY	Buyukada	1.74 0	P		Pn	07 36 02.0	-1.3
BUY			S		Sn	07 36 25.2	-0.6
BUY	Buyukada	1.74 0	*i* P		Pn	07 36 02.0	-1.3
BUY			*i* S		Sn	07 36 25.2	-0.6
AYDN	Tasoluk	1.75 214	P		Pn	07 36 02.5	-1.0
AYDN	Tasoluk	1.75 214	*i* P		Pn	07 36 02.5	-1.0
AYDN			*i* S		Sg	07 36 29.3	+0.7
SPNC	Sapanca-Adapaz	1.82 30	*e*PN		Pn	07 36 03.9	-0.5
SPNC	Sapanca-Adapaz	1.82 30	*e*Pn		Pn	07 36 03.9	-0.5
MRMT	Marmara Adasi	1.89 322	*e*PN		Pn	07 36 04.6	-0.9
MRMT	Marmara Adasi	1.89 322	*e*Pn		Pn	07 36 04.6	-0.9
AYVA	Ayvalik	1.89 277	P		Pn	07 36 04.6	-0.8
AYVA	Ayvalik	1.89 277	*i* P		Pn	07 36 04.6	-0.8
AYVA			*i* S		Sg	07 36 33.7	+0.3
KRBG	Karabiga-Canak	1.90 313	*e*PN		Pn	07 36 05.2	-0.3
KRBG	Karabiga-Canak	1.90 313	*e*Pn		Pn	07 36 05.2	-0.3
SVRH	Sivrihisar-ESK	1.90 79	*e*PN		Pn	07 36 04.8	-0.8
SVRH	Sivrihisar-ESK	1.90 79	*e*Pn		Pn	07 36 04.8	-0.8
GOLH	Golhisar	1.91 169	P		Pn	07 36 05.3	-0.4
GOLH	Golhisar	1.91 169	*i* P		Pn	07 36 05.3	-0.4
GOLH			*i* S		Sg	07 36 36.4	+2.6
ISK	Istanbul-Kandi	1.95 359	*e*PN		Pn	07 36 05.9	-0.4
ISK	Istanbul-Kandi	1.95 359	P		Pn	07 36 05.1	-1.1
ISK			S		Sn	07 36 30.8	-0.3
ISK	Istanbul-Kandi	1.95 359	P		Pn	07 36 05.8	-0.4
ISK	Istanbul-Kandi	1.95 359	*e*Pn		Pn	07 36 05.9	-0.4
ISK			S		Sn	07 36 30.8	-0.3
BCK	Bucak	2.02 144	*e*PN		Pn	07 36 06.3	-0.9
BCK	Bucak	2.02 144	P		Pn	07 36 06.9	-0.3
BCK	Bucak	2.02 144	*e*Pn		Pn	07 36 06.3	-0.9
BCK	Bucak	2.02 144	P		Pn	07 36 06.9	-0.3
GCAM	G?zelcaml?	2.04 227	*i* P		Pb	07 36 09.8	-0.3
GCAM			*i* S		Sg	07 36 37.6	-0.5
DGB	¯zmir	2.04 240	*i* P		Pn	07 36 06.1	-1.5
DGB			*i* S		Sg	07 36 36.8	-1.5
BTAS	Taskesti	2.06 44	P		Pn	07 36 07.1	-0.7
BTAS			S		Sn	07 36 34.1	+0.3
BTAS	Taskesti	2.06 44	*i* P		Pn	07 36 07.1	-0.7
BTAS			*i* S		Sn	07 36 34.1	+0.3
SILT	Sile	2.08 11	*e*PN		Pn	07 36 07.6	-0.4
SILT	Sile	2.08 11	*e*Pn		Pn	07 36 07.6	-0.4
YER	Yerkesik	2.08 199	*e*PN		Pn	07 36 06.9	-1.2
YER	Yerkesik	2.08 199	P		Pn	07 36 07.1	-1.0
YER			S		Sn	07 36 32.7	-1.7
YER	Yerkesik	2.08 199	P		Pn	07 36 07.6	-0.5
YER	Yerkesik	2.08 199	*e*Pn		Pn	07 36 06.9	-1.2
YER	Yerkesik	2.08 199	P		Pn	07 36 07.6	-0.5
YER			S		Sn	07 36 32.7	-1.7
BGKT	Bogazkoy	2.08 353	*e*PN		Pn	07 36 06.7	-1.4
BGKT	Bogazkoy	2.08 353	*e*Pn		Pn	07 36 06.7	-1.4
URLA	Izmir	2.11 250	*i* P		Pb	07 36 11.1	-0.1
URLA			*i* S		Sb	07 36 38.0	+0.3
KAND	Kocaeli-Kandir	2.14 22	P		Pn	07 36 08.0	-0.9
KAND			S		Sn	07 36 34.5	-1.4
KAND	Kocaeli-Kandir	2.14 22	*i* P		Pn	07 36 08.0	-0.9
KAND			*i* S		Sn	07 36 34.5	-1.4
SART	Tekirdag	2.17 317	*i* P		Pn	07 36 05.5	-3.7
CTKS	Kestanelik-??a	2.17 348	*e*PN		Pn	07 36 08.9	-0.3
CTKS	Kestanelik-??a	2.17 348	*e*Pn		Pn	07 36 08.9	-0.3
SAHE	Sakarya_HENDEK	2.19 37	P		Pn	07 36 08.6	-1.0
SAHE			S		Sn	07 36 37.2	+0.1
SAHE	Sakarya_HENDEK	2.19 37	*i* P		Pn	07 36 08.6	-1.0
SAHE			*i* S		Sn	07 36 37.2	+0.1
LPK	Lapseki	2.21 305	*e*PN		Pn	07 36 09.9	+0.2
LPK	Lapseki	2.21 305	*e*Pn		Pn	07 36 10.0	+0.2
PRK	Paraskevi	2.21 274	P		Pn	07 36 09.1	-0.8
PRK			S		Sn	07 36 37.0	-0.6
PRK	Paraskevi	2.21 274	P		Pn	07 36 09.2	-0.7
PRK	Paraskevi	2.21 274	P		Pn	07 36 09.2	-0.7
PRK			S		Sn	07 36 37.0	-0.6
ZEY	¯zmir	2.22 248	*i* P		Pb	07 36 12.9	-0.3
ZEY			*i* S		Sn	07 36 37.3	-0.5
TURN	Turunc	2.27 190	*i* P		Pg	07 36 14.7	-1.4
EZN	Ezine	2.27 289	*e*PN		Pn	07 36 10.5	-0.2
EZN	Ezine	2.27 289	P		Pn	07 36 09.8	-0.9
EZN			S		Sn	07 36 38.9	-0.1
EZN	Ezine	2.27 289	P		Pn	07 36 10.0	-0.7
EZN	Ezine	2.27 289	P		Pn	07 36 10.0	-0.7
EZN	Ezine	2.27 289	*e*Pn		Pn	07 36 10.5	-0.2
EZN			S		Sn	07 36 38.9	-0.1
SMG	Samos	2.27 233	P		Pn	07 36 09.9	-0.8
SMG			S		Sn	07 36 37.4	-1.7
SMG	Samos	2.27 233	P		Pn	07 36 09.9	-0.8
SMG			S		Sn	07 36 37.4	-1.7
KORT	Korkueli	2.32 155	P		Pn	07 36 11.4	-0.1
KORT	Korkueli	2.32 155	*i* P		Pn	07 36 11.4	-0.1
KORT			*i* S		Sg	07 36 51.6	+4.5
GELI	Tayfur-Gelibol	2.41 303	*e*PN		Pn	07 36 11.9	-0.6
GELI	Tayfur-Gelibol	2.41 303	*e*Pn		Pn	07 36 11.9	-0.6
KDHN	Kadinhani	2.42 103	P		Pn	07 36 12.5	-0.3
KDHN	Kadinhani	2.42 103	*i* P		Pn	07 36 12.5	-0.3
BDRM	Kayabasi	2.43 213	P		Pn	07 36 14.0	+1.1
BDRM	Kayabasi	2.43 213	*i* P		Pn	07 36 14.0	+1.1
CTYL	Yalikoy Yolu	2.44 345	*e*PN		Pn	07 36 13.0	0.0
CTYL	Yalikoy Yolu	2.44 345	*e*Pn		Pn	07 36 13.0	0.0
ELL	Elmali	2.44 165	P		Pn	07 36 13.0	-0.1
ELL	Elmali	2.44 165	P		Pn	07 36 13.0	-0.1
FETY	Fethiye	2.47 181	P		Pn	07 36 12.3	-1.2
FETY			S		Sn	07 36 43.1	-0.9
FETY	Fethiye	2.47 181	P		Pn	07 36 12.3	-1.2
FETY			S		Sn	07 36 43.1	-0.9
BOZC	Bozcaada	2.48 288	*i* P		Pn	07 36 12.9	-0.6
BODT	Bodrum	2.49 215	P		Pn	07 36 12.4	-1.3
BODT			S		Sn	07 36 43.0	-1.5
BODT	Bodrum	2.49 215	P		Pn	07 36 12.4	-1.3
BODT			S		Sn	07 36 43.0	-1.5
CHOS	Chios island	2.50 254	P		Pn	07 36 13.0	-0.9
CHOS			S		Sn	07 36 44.2	-0.6
CHOS	Chios island	2.50 254	P		Pn	07 36 13.0	-0.9
CHOS			S		Sn	07 36 44.2	-0.6
KESN	Edirne-Kesan	2.54 313	P		Pn	07 36 13.9	-0.7
KESN	Edirne-Kesan	2.54 313	*i* P		Pn	07 36 13.9	-0.7
SIGR	SIGRI	2.54 273	P		Pn	07 36 13.6	-0.7
SIGR			S		Sn	07 36 45.3	-0.2
SIGR	SIGRI	2.54 273	P		Pn	07 36 13.6	-0.7
SIGR			S		Sn	07 36 45.3	-0.2
LADK	Ladik-KONYA	2.70 109	*e*PN		Pn	07 36 16.6	-0.1
LADK	Ladik-KONYA	2.70 109	*e*Pn		Pn	07 36 16.6	-0.1
GADA	Gvkgeada	2.71 294	P		Pn	07 36 15.8	-0.8
GADA			S		Sn	07 36 49.7	0.0
GADA	Gvkgeada	2.71 294	P		Pn	07 36 15.8	-0.8
GADA			S		Sn	07 36 49.7	0.0
KDZE	Karadeniz Ereo	2.83 38	*e*PN		Pn	07 36 18.0	-0.4
KDZE	Karadeniz Ereo	2.83 38	*e*Pn		Pn	07 36 18.0	-0.4
BCAM	Yenicaga	2.83 52	P		Pn	07 36 18.8	+0.3
BCAM	Yenicaga	2.83 52	*i* P		Pn	07 36 18.8	+0.3
BCAM			*i* S		Sg	07 37 01.9	-1.6
KMER	Konya-Meram	2.88 117	P		Pn	07 36 20.8	+1.6
KMER	Konya-Meram	2.88 117	*i* P		Pn	07 36 20.8	+1.6
AKAS	Kas	2.90 172	P		Pn	07 36 20.3	+0.8
AKAS	Kas	2.90 172	*i* P		Pn	07 36 20.3	+0.8
LOD	Lodumlu	2.93 73	*e*PN		Pn	07 36 19.6	-0.1
LOD	Lodumlu	2.93 73	*e*Pn		Pn	07 36 19.7	-0.1
ALN	Alexandroupoli	2.96 308	P		Pn	07 36 19.5	-0.5
ALN			S		Sn	07 36 56.2	+0.3
ALN	Alexandroupoli	2.96 308	P		Pn	07 36 19.3	-0.7
ALN	Alexandroupoli	2.96 308	P		Pn	07 36 19.3	-0.7
ALN			S		Sn	07 36 56.2	+0.3
KKUL	Konya-Kulu	2.96 88	*i* P		Pg	07 36 29.1	0.0
SMTH	Samothraki Isl	3.08 297	P		Pn	07 36 21.2	-0.5
SMTH			S		Sn	07 36 59.1	+0.2
SMTH	Samothraki Isl	3.08 297	P		Pn	07 36 21.2	-0.5
SMTH			S		Sn	07 36 59.1	+0.2
BBAL	Bala	3.14 81	*i* P		Pg	07 36 32.1	-0.5
LIA	Limnos Island	3.14 286	P		Pn	07 36 21.9	-0.7
LIA			S		Sn	07 37 00.2	-0.2
LIA	Limnos Island	3.14 286	P		Pn	07 36 21.9	-0.7
LIA			S		Sn	07 37 00.2	-0.2
EDRB	Edirne	3.27 327	P		Pn	07 36 23.7	-0.8
EDRB			S		Sn	07 37 03.2	-0.6
EDRB	Edirne	3.27 327	P		Pn	07 36 23.7	-0.8
EDRB			S		Sn	07 37 03.2	-0.6
APE	Apeiranthos	3.49 235	P		Pn	07 36 28.0	+0.6
APE	Apeiranthos	3.49 235	P		Pn	07 36 28.0	+0.6
BRTR	Keskin Array B	3.56 79	Pn		Pn	07 36 28.6	+0.2
	1.2nm,0.3s,baz=253,slow=14,SNR=24						
BRTR			Pg		Pg	07 36 40.1	-0.6
	4.0nm,0.3s,baz=265,slow=15,SNR=37						
BRTR			Lg		Lg	07 37 25.2	
	3.5nm,0.3s,baz=274,slow=24,SNR=8.6						
BRTR	Keskin Array B	3.56 79	*i* P		Pn	07 36 28.3	-0.2
BRTR			pmax		pmax		
	comp=Z,6.0nm,0.5s						
BRTR	Keskin Array B	3.56 79	*i* P		Pn	07 36 28.3	-0.2
	comp=Z,6.0nm,0.5s						
ELDT	Eldivan	3.59 66	P		Pn	07 36 28.7	-0.3
ELDT	Eldivan	3.59 66	*i* P		Pn	07 36 28.7	-0.3
AKSY	AKSARAY - Alti	3.66 96	*i* P		Pg	07 36 42.6	+0.1
KAVA	Kavala	4.00 300	P		Pn	07 36 33.8	-0.6
KAVA			S		Sn	07 37 21.3	-0.4
KAVA	Kavala	4.00 300	P		Pn	07 36 33.8	-0.6
KAVA			S		Sn	07 37 21.3	-0.4
OUR	Ouranopolis	4.14 289	P		Pn	07 36 35.8	-0.6
OUR	Ouranopolis	4.14 289	P		Pn	07 36 35.8	-0.6
PAIG	Paliouri	4.28 283	P		Pn	07 36 38.4	+0.1
PAIG	Paliouri	4.28 283	P		Pn	07 36 38.4	+0.1
PLD	Plovdiv	4.50 313	P		Pn	07 36 40.9	-0.3
PLD	Plovdiv	4.50 313	P		Pn	07 36 40.9	-0.3
PLG	Polygyros	4.55 288	P		Pn	07 36 41.3	-0.7
PLG	Polygyros	4.55 288	P		Pn	07 36 41.3	-0.7
LAST	Lasithi	4.90 217	⇑*i* P		Pn	07 36 48.8	+1.9
LAST	Lasithi	4.90 217	⇑*i* P		Pn	07 36 48.8	+1.9
IDI	Anoyia	5.09 223	Pn		Pn	07 36 47.3	-2.2
	comp=Z,0.9nm,0.3s,baz=70,slow=17,SNR=6.7						
AGG	Agios Georgios	5.28 271	P		Pn	07 36 51.6	-0.5
AGG	Agios Georgios	5.28 271	P		Pn	07 36 51.6	-0.5
TIRR	Tirgusor	5.37 355	‖*i* P		Pn	07 36 52.6	-0.6
TIRR	Tirgusor	5.37 355	P		Pn	07 36 56.0	+2.8
TIRR	Tirgusor	5.37 355	‖*i* P		Pn	07 36 52.6	-0.6
HARR	Harsova	5.64 351	‖*i* P		Pn	07 36 57.8	+0.8
HARR	Harsova	5.64 351	P		Pn	07 36 57.7	+0.8
HARR	Harsova	5.64 351	P		Pn	07 36 57.7	+0.8
TLCR		6.07 358	⇑*i* P		Pn	07 37 03.4	+0.5
TLCR		6.07 358	P		Pn	07 37 03.3	+0.4
TLCR		6.07 358	P		Pn	07 37 03.3	+0.4
CFR	Carcaliu	6.10 353	‖*i* P		Pn	07 37 03.8	+0.4
CFR	Carcaliu	6.10 353	P		Pn	07 37 03.7	+0.4
CFR	Carcaliu	6.10 353	P		Pn	07 37 03.7	+0.4
FNA	Florina	6.18 288	P		Pn	07 37 04.7	+0.3
FNA	Florina	6.18 288	P		Pn	07 37 04.7	+0.3
SEV	Sevastopol'	6.40 31	*e*P		Pn	07 37 05.6	-1.8
SEV			*e*S		Sn	07 38 15.0	-5.8
SEV	Sevastopol'	6.40 31	*e*P		Pn	07 37 05.6	-1.8
SEV			*e*S		Sn	07 38 15.0	-5.8
YAL	Yalta	6.56 33	*e*P		Pn	07 37 08.7	-0.8
YAL			*e*S		Sn	07 38 20.0	-4.6
YAL	Yalta	6.56 33	*e*P		Pn	07 37 08.7	-0.8
YAL			*e*S		Sn	07 38 20.0	-4.6
MLR	Muntele Rosu	6.79 341	Pn		Pn	07 37 16.0	+3.1
	comp=Z,0.2nm,0.3s,baz=139,slow=5.5,SNR=13						
MLR	Muntele Rosu	6.79 341	‖*i* P		Pn	07 37 13.6	+0.7
MLR	Muntele Rosu	6.79 341	P		Pn	07 37 16.0	+3.1
MLR	Muntele Rosu	6.79 341	‖*i* P		Pn	07 37 13.6	+0.7
MTUR	Matau	6.81 335	⇑*i* P		Pn	07 37 13.9	+0.8
MTUR	Matau	6.81 335	P		Pn	07 37 13.9	+0.8
MTUR	Matau	6.81 335	P		Pn	07 37 13.9	+0.8
SIM	Simferopol'	6.92 31	*e*P		Pn	07 37 14.0	-0.5
SIM			*e*S		Sn	07 38 28.0	-5.5
SIM			pmax		pmax		
	comp=Z,88nm,0.4s						
SIM			smax		smax		
	comp=Z,57nm,0.4s						
SIM			smax		smax		
	comp=N,73nm,0.3s						
SIM	Simferopol'	6.92 31	*e*P		Pn	07 37 14.0	-0.5
	comp=N,88nm,0.4s						
SIM			*e*S		Sn	07 38 28.0	-5.5
	comp=N,73nm,0.3s						
PLOR	Plostina	6.98 346	⇑*i* P		Pn	07 37 16.0	+0.7
PLOR	Plostina	6.98 346	P		Pn	07 37 16.0	+0.7
PLOR	Plostina	6.98 346	P		Pn	07 37 16.0	+0.7
VRI	Vrincioaia	6.98 346	‖*i* P		Pn	07 37 16.2	+0.9
VRI	Vrincioaia	6.98 346	‖*i* P		Pn	07 37 16.2	+0.9
VOIR		7.00 336	⇑*i* P		Pn	07 37 17.3	+1.6
VOIR		7.00 336	P		Pn	07 37 17.3	+1.6
VOIR		7.00 336	P		Pn	07 37 17.3	+1.6
BOVS	Bovan	7.17 311	*e*Pn		Pn	07 37 18.4	+0.4
SUDU	Sudak	7.25 35	*e*P		Pn	07 37 18.2	-0.8
SUDU			*e*			07 38 33.8	
SUDU	Sudak	7.25 35	*e*P		Pn	07 37 18.2	-0.8
SUDU			*e*S		Sn	07 38 33.8	-7.8
LOT	Lotru	7.47 330	⇑*i* P		Pn	07 37 23.8	+1.7
LOT	Lotru	7.47 330	⇑*i* P		Pn	07 37 23.8	+1.7
KUBS	Kucevo	7.68 316	*i* Pn		Pn	07 37 22.4	-2.5
GZR	Gura Zlata	7.84 325	⇑*i* P		Pn	07 37 27.0	-0.2
GZR	Gura Zlata	7.84 325	⇑*i* P		Pn	07 37 27.0	-0.2
GRUS	Gruza	7.90 310	‖*i* Pn		Pn	07 37 27.2	-0.8
MMAI	Mount Meron Ar	7.93 138	Pn		Pn	07 36 28.6	-1.7
	comp=N,2.3nm,0.3s,baz=313,slow=12,SNR=10						
MMAI			LR		LR	07 41 00.7	
	comp=N,38nm,18.1s,baz=290,slow=42						
IVAS	Ivanjica	8.08 306	*i* Pn		Pn	07 37 30.4	-0.1
PDG	Podgorica	8.18 297	‖*i* P		Pn	07 37 34.3	+2.5
ANN	Anapa	8.40 45	*e*P		Pn	07 37 34.3	-0.6
ANN			*e*S		Sn	07 39 10.3	+0.2
ANN			pmax		pmax		
	comp=Z,13nm,0.8s						
ANN	Anapa	8.40 45	*e*P		Pn	07 37 34.3	-0.6
	comp=Z,13nm,0.8s						
ANN			*e*S		Sn	07 39 10.3	+0.2
DIVS	Divibare	8.46 309	*e*Pn		Pn	07 37 35.1	-0.6
BURAR	Bucovina Array	8.96 343	‖*i* P		Pn	07 37 43.7	+1.1
BURAR	Bucovina Array	8.96 343	P		Pn	07 37 43.7	+1.1
BURAR	Bucovina Array	8.96 343	‖*i* P		Pn	07 37 43.7	+1.1
NEY	Neytrino	11.05 64	⇑*e*P		Pn	07 38 14.6	+3.2
NEY	Neytrino	11.05 64	*e*P		Pn	07 38 14.6	+3.2
KIV	Kislovodsk	11.26 60	⇑*e*P		Pn	07 38 14.2	+0.1
KIV			pmax		pmax		
	comp=Z,5.0nm,0.8s						
KIV			MLR		MLR		
	comp=Z,56nm,16.0s						
KIV	Kislovodsk	11.26 60	*e*P		Pn	07 38 14.2	+0.1
	comp=Z,56nm,16.0s						
KVAR	Kislovodsk Arr	11.27 60	LR		LR	07 44 23.4	
	comp=Z,47nm,19.1s,baz=160,slow=47						
AKASG	Malin Array Be	11.59 0	Pn		Pn	07 38 22.0	+3.5
	comp=Z,0.5nm,0.3s,baz=191,slow=14,SNR=3.4						
AKASG			Sn		Sn	07 40 30.0	+1.9
	comp=Z,1.0nm,0.3s,baz=182,slow=25,SNR=5.5						
DAVOX	Davos/Dischmat	16.01 305	Pn		P	07 39 21.7	-0.4
	comp=Z,0.2nm,0.3s,baz=131,slow=4.7,SNR=3.5						
OBN	Obninsk	16.77 15	‖*e*P		P	07 39 31.7	+1.5
OBN			pmax		pmax		
	comp=Z,6.0nm,1.0s						
OBN			MLR		MLR		
	comp=Z,31nm,15.0s						
OBN	Obninsk	16.77 15	*e*P		P	07 39 31.7	+1.5
	comp=Z,31nm,15.0s						
BFO	Black Forest	17.58 308	*i* P		P	07 39 43.0	+3.8
BFO	Black Forest	17.58 308	*i* P		P	07 39 43.0	+3.8
FINES	FINESS Array B	22.44 356	P		P	07 40 35.0	+3.1
	comp=Z,3.9nm,1.0s,baz=183,slow=15,SNR=3.9						
FINES	FINESS Array B	22.44 356	P		P	07 40 35.0	+3.1
FINES			pmax		pmax		
	comp=Z,3.0nm,0.9s						
KLMR	Klimovskoe	22.71 13	*e*P		P	07 40 35.3	+0.5
KLMR			pmax		pmax		
	comp=Z,5.0nm,1.0s						
KLMR	Klimovskoe	22.71 13	*e*P		P	07 40 35.3	+0.5
	comp=Z,5.0nm,1.0s						
AKTK	Aktyubinsk	23.28 51	P		P	07 40 41.1	+0.2
AKTO	Aktyubinsk	23.28 51	P		P	07 40 41.1	+0.2
	comp=Z,1.2nm,0.6s,baz=276,slow=18,SNR=3.7						
NOA	NORSAR Array B	24.61 339	P		P	07 40 53.7	+0.3
	comp=Z,0.8nm,0.8s,baz=142,slow=9.7,SNR=3.4						
NOA	NORSAR Array B	24.61 339	*e*P		P	07 40 56.1	+2.7
TAM	Tamanrasset	25.85 238	P		P	07 41 04.0	-1.1
TAM	Tamanrasset	25.85 238	P		P	07 41 04.0	-1.1
TORD	Torodi Ar. Bea	35.44 231	P		P	07 42 27.6	-2.1
	comp=Z,0.5nm,0.6s,baz=43,slow=8.7,SNR=4.2						
MKAR	Makanchi Array	39.02 61	P		P	07 43 01.9	+2.0
	comp=Z,0.8nm,0.9s,baz=286,slow=4.5,SNR=5.4						

IDC ***28*** *07:49:34.7±1.4, 16°.18N×149°.39E, h0km, mb3.7/8, mb1 3.9/8, mb1mx3.6/46, mbtmp3.7/8, MS4.1/1, Ms1 4.1/1, ms1mx2.5/49, Error ellipse: s-maj=39.6km s-min=24.4km az=92.0*

ISCJB ***28*** *07:49:38.2±1.4, 16°.2N±0°.1×149°.3E±0°.3, h33km, mb3.7/8, MS4.0/1, Error ellipse: s-maj=37.6km s-min=20.9km az=1.3*

ISC 28 07:49:40.1±1.5, 16°.2N±0°.2×149°.3E±0°.3, h35km, n9, σ1º02/8, mb3.7/8, Mariana Islands region

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

SONM	Songino Array	29.18 302	P		P	07 56 48.0	+1.1
	0.5nm,0.5s,baz=107,slow=9.6,SNR=3.9						
MKAR	Makanchi Array	45.55 302	P		P	07 59 06.5	+1.4
	1.3nm,0.7s,baz=82,slow=8.7,SNR=9.2						
KURK	Kurchatov	47.17 308	*eP*		P	07 59 18.6	+0.9
ILAR	Eielson Array	47.78 33	P		P	07 59 22.9	+0.5
	0.5nm,0.8s,baz=260,slow=7.0,SNR=7.9						
TKM2	Tokmak 2	51.16 299	*eP*		P	07 59 50.7	+2.1
	2.5nm,0.9s						
TKM2			*e*			08 00 00.5	
WRAB	Tennant Creek	58.07 191	*eP*		P	08 00 38.3	-0.3
	8.2nm,1.0s						
WRA	Warramunga Arr	58.08 191	P		P	08 00 38.2	-0.5
	4.9nm,0.7s,baz=12,slow=7.3,SNR=37						
ABKAR	Akbulak array	59.10 311	*eP*		P	08 00 46.5	+0.9
	4.4nm,1.1s						
ASAR	Alice Springs	61.80 191	P		P	08 01 03.1	-1.1
	1.5nm,0.8s,baz=11,slow=8.0,SNR=14						
YKA	Yellowknife Ar	62.15 31	P		P	08 01 06.4	+0.3
	0.2nm,0.7s,baz=301,slow=5.9,SNR=3.8						
AKASG	Malin Array Be	75.03 323	P		P	08 02 27.1	+0.5
	0.7nm,0.5s,baz=45,slow=5.8,SNR=4.1						

NIED ***28*** *08:04:00,37.°80N×144.°00E,h5km,Mw4.2 Best double couple: M₀2.03000×10¹⁵ NP1:φs7.00000°,δ25.00000°, λ-90.00000°. NP2:φs187.00000°,δ65.00000°, λ-90.00000°.*
IDC ***28*** *08:04:32.6±0.6,37.°64N×144.°16E,h0km,mb4.1/19, mb1 4.3/24,mb1mx4.1/52,mbtmp4.1/24,ML3.7/4,MS3.1/10, Ms1 3.1/10,ms1mx2.9/52,Error ellipse: s-maj=16.6km s-min=14.0km az=141.0*
NEIC ***28*** *08:04:33.8±2.2,37.°68N×144.°17E,h5km±14km,mb4.8/23, Error ellipse: s-maj=6.1km s-min=4.0km az=119.0*
ISCJB ***28*** *08:04:34.1±1.3,37.°69N±0.°03×144.°05E±0.°03,h18km±9km, mb4.5/48,MS3.1/6,Error ellipse: s-maj=5.2km s-min=4.3km az=145.9*
JMA ***28*** *08:04:36.6±0.2,37.°84N×143.°99E,h35km,M4.6*
ISC 28 08:04:36.6±3.9,37.°74N±0.°04×144.°10E±0.°06,h23km±27km, n99,σ1°72/110,mb4.4/48,MS3.0/6,1C,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	2.28 289		P	Pn	08 05 11.7	-1.2
JIO				S	Sn	08 05 37.5	-2.8
OFUJ	Ofunato	2.33 306		P	Pn	08 05 12.2	-1.4
OFUJ				S	Sn	08 05 38.8	-2.7
JMK	Ichinoseki	2.56 299		P	Pn	08 05 15.9	-0.9
JMK				S	Sn	08 05 44.8	-2.4
JOM	Ohasama	2.79 309		P	Pn	08 05 19.3	-0.7
JOM				S	Sn	08 05 50.9	-2.1
JFT	Otama	2.99 267		P	Pn	08 05 23.1	+0.4
JFT				S	Sn	08 05 56.5	-1.4
JYK	Kaneyama	3.16 293		P	Pn	08 05 24.8	-0.3
JYK				S	Sn	08 06 01.1	-1.0
JANG	Nango	3.31 323		P	Pn	08 05 25.6	-1.4
JANG				*e*S	Sn	08 06 02.2	-3.4
BSO1	Boso 1	3.98 220		P	Pn	08 05 33.9	-1.9
BSO1				S	Sn	08 06 19.4	-2.1
ERM	Erimo	4.33 351		*e*Pn	Pn	08 05 39.5	-1.5
ERM				*e*Sn	Sn	08 06 26.1	-4.7
JOT	Ohata	4.33 328		P	Pn	08 05 41.1	0.0
JRY	Ryogami san	4.50 249		P	Pn	08 05 42.3	-1.2
JRY				S	Sn	08 06 31.1	-4.1
JOD2	Odawara 2	4.73 240		P	Pn	08 05 44.9	-1.7
JOD2				S	Sn	08 06 36.2	-4.6
JKB	Kayabe	4.76 331		P	Pn	08 05 46.7	-0.3
JKB				S	Sn	08 06 39.1	-2.4
MJAR	Matsushiro Arr	4.85 257		Pn	Pn	08 05 48.1	-0.2
	7.6nm,0.3s,baz=71,slow=10,SNR=74						
MJAR				Sn	Sn	08 06 44.6	+0.8
	8.4nm,0.3s,baz=90,slow=26,SNR=4.9						
MJAR				LR	LR	08 07 50.3	
	comp=Z,270nm,21.7s,baz=90,slow=41						
MAJO	Matsushiro	4.85 258		*e*Pn	Pn	08 05 49.2	+0.8
MAJO				*e*Sn	Sn	08 06 39.8	-4.1
MAT	Matsushiro	4.85 258		P	Pn	08 05 48.6	+0.3
MAT				S	Sn	08 06 44.0	+0.2
MJB9	Matsu-Tunnel	4.86 258		*e*Pn	Pn	08 05 49.2	+0.9
JCH	Churui	4.90 354		P	Pn	08 05 46.9	-2.0
JCH				S	Sn	08 06 37.9	-6.9
JHJ2	Mitsune	5.79 218		*e*Pn	Pn	08 06 00.3	-0.8
JHJ	Hachijo jima 2	5.80 219		Pn	Pn	08 05 58.4	-2.9
	15nm,0.3s,baz=152,slow=23,SNR=10						
JHJ				Sn	Sn	08 07 00.6	-6.5
	45nm,0.3s,baz=131,slow=20,SNR=4.1						
INU	Inuyama	6.18 249		*e*Pn	Pn	08 06 06.6	+0.1
INU				*e*Sn	Sn	08 07 15.5	-0.9
ASAJ	Asahikawa	6.47 350		*e*Pn	Pn	08 06 09.3	-1.1
USRK	Ussuriysk Ar.	11.19 309		Pn	Pn	08 07 16.3	+1.1
	0.2nm,0.3s,baz=115,slow=14,SNR=8.3						
USRK				LR	LR	08 11 19.6	
	comp=Z,70nm,21.3s,baz=153,slow=36						
KSRS	Korea Array	12.83 274		Pn	Pn	08 07 38.8	+1.1
	0.2nm,0.3s,baz=88,slow=13,SNR=16						
KSRS				LR	LR	08 12 07.9	
	comp=Z,123nm,18.8s,baz=69,slow=35						
KSAR	Wonju Array Be	12.86 274		Pn	Pn	08 07 38.8	+0.7
MDJ	Mudanjiang	12.89 307		P	Pn	08 07 39.5	+1.0
MDJ				S	Sn	08 09 59.0	-2.2
MDJ				pmax	pmax		
	comp=Z,11nm,1.0s						
MDJ				pmax	pmax		
	comp=Z,56nm,4.8s						
MDJ				LR	LR		
	comp=N,93nm,6.0s						
MDJ				LR	LR		
	comp=E,110nm,6.2s						
MDJ				LR	LR		
	comp=Z,140nm,6.7s						
KLR	Kul'dur	14.54 326		Pn	Pn	08 08 00.9	0.0
	comp=Z,0.1nm,0.3s,baz=137,slow=9.2,SNR=4.5						
KLR				LR	LR	08 13 17.3	
	comp=Z,48nm,21.0s,baz=128,slow=36						
CN2	Changchun	15.36 299		*e*P	Pn	08 08 14.0	+2.1
CN2				pmax	pmax		
	comp=Z,10.0nm,0.6s						
PETK	Petropavlovsk-	18.04 27		LR	LR	08 17 38.5	
	comp=Z,20nm,18.4s,baz=192,slow=43						
MA2	Magadan	22.27 9		LR	LR	08 18 26.7	
	comp=Z,34nm,20.2s,baz=7.0,slow=37						
HHC	Hu-ho-hao-te	25.29 287		*e*P	P	08 10 03.0	+1.6
HHC				pmax	pmax		
	comp=Z,28nm,0.8s						
HHC				pmax	pmax		
	comp=Z,150nm,4.5s						
WHN	Wuhan	25.57 263		⇑P	P	08 10 15.0	+11
SEY	Seymchan	25.73 9		P	P	08 10 04.2	-0.8
	comp=Z,3.5nm,0.7s,baz=175,slow=6.9,SNR=14						
YAK	Yakutsk	25.90 344		LR	LR	08 20 18.8	
	comp=Z,33nm,18.4s,baz=246,slow=36						
H11N2	WAKE ISLAND Hy	26.75 126		T	T	08 38 10.0	
	baz=317,slow=76,SNR=23						
H11N1	WAKE ISLAND Hy	26.76 126		T	T	08 38 13.7	
	baz=317,slow=76,SNR=13						
H11N3	WAKE ISLAND Hy	26.77 126		T	T	08 38 08.1	
	baz=317,slow=76,SNR=16						
SONA1	Songino Array	29.18 302		*e*P	P	08 10 37.2	+0.8
SONM	Songino Array	29.19 302		P	P	08 10 37.1	+0.7
	comp=Z,0.7nm,0.6s,baz=98,slow=8.2,SNR=4.9						
SONM				LR	LR	08 22 14.9	
	comp=Z,57nm,20.9s,baz=84,slow=36						
GYA	Guiyang	33.44 261		*e*P	P	08 11 14.5	+0.5
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
CD2	Chengdu	33.80 271		P	P	08 11 16.5	-0.6
CD2				pmax	pmax		
	comp=Z,20nm,0.5s						
GTA	Gaotai	34.40 287		*e*P	P	08 11 25.0	+2.7
GTA				pP	sP	08 11 34.0	+2.1
GTA				sP	pP	08 11 38.0	+8.9
GTA				pmax	pmax		
	comp=Z,3.0nm,0.7s						
KMI	Kunming	37.17 262		P	P	08 11 48.5	+2.2
KMI				pmax	pmax		
	comp=Z,12nm,0.5s						
KMI				pmax	pmax		
	comp=Z,440nm,6.8s						
WMQ	Urumqi	42.43 297		*e*P	P	08 12 29.5	-0.1
WMQ				pmax	pmax		
	comp=Z,5.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,100nm,5.0s						
WMQ				LR	LR		
	comp=Z,16nm,24.6s						
ZALV	Zalesovo Beam	43.02 312		P	P	08 12 34.8	+0.6
	comp=Z,1.0nm,0.5s,baz=86,slow=5.9,SNR=3.2						
ZALV				PcP	PcP	08 14 23.0	-1.1
	comp=Z,0.9nm,0.4s,baz=78,slow=3.6,SNR=3.7						
NRIK	Noril'sk	43.53 335		LR	LR	08 32 57.6	
	comp=Z,40nm,18.8s,baz=108,slow=39						
CMAR	Chiang Mai Arr	43.74 257		P	P	08 12 39.4	-1.0
	comp=Z,1.4nm,0.6s,baz=49,slow=6.7,SNR=6.6						
OHAK	Old Harbor	44.78 43		*e*P	P	08 12 48.0	-0.3
	comp=Z,10nm,1.0s						
KDAK	Kodiak Island	45.14 42		*e*P	P	08 12 51.0	-0.1
	comp=Z,44nm,1.5s						
CAST	Castle Rocks	45.44 35		*e*P	P	08 12 55.0	+1.6
	comp=Z,9.7nm,0.5s						
MK01	Makanchi Array	45.55 302		*e*P	P	08 12 55.0	+0.4
MKAR	Makanchi Array	45.55 302		P	P	08 12 55.1	+0.5
	comp=Z,2.1nm,0.7s,baz=85,slow=9.4,SNR=15						
MAKZ	Makanchi	45.76 302		*e*P	P	08 12 56.9	+0.7
	comp=Z,3.1nm,1.0s						
COLD	Coldfoot	46.49 29		*e*P	P	08 13 02.6	+0.9
	comp=Z,6.6nm,1.7s						
MDM	Murphy Dome	47.18 32		*e*P	P	08 13 08.2	+1.1
	comp=Z,30nm,0.6s						
KURK	Kurchatov	47.18 308		P	P	08 13 08.0	+0.7
WRH	Wood River Hil	47.23 33		*e*P	P	08 13 08.3	+0.8
	comp=Z,25nm,0.6s						
KURBB	Kurchatov Arra	47.25 308		P	P	08 13 08.0	+0.2
	comp=Z,3.1nm,0.5s,baz=82,slow=8.0,SNR=27						
SCM	Sheep Creek Mo	47.63 37		*e*P	P	08 13 11.6	+0.9
	comp=Z,6.9nm,0.6s						
IL1	Eielson Array	47.75 33		*e*P	P	08 13 11.6	+0.1
ILAR	Eielson Array	47.75 33		P	P	08 13 11.6	+0.1
	comp=Z,1.6nm,0.6s,baz=262,slow=6.3,SNR=22						
ILB	Eielson Array	47.75 33		*e*P	P	08 13 11.6	+0.1
EGAK	Eagle	50.20 33		*e*P	P	08 13 30.9	+0.7
	comp=Z,2.8nm,0.8s						
DAWY	Dawson	51.04 33		*e*P	P	08 13 37.1	+0.3
	comp=Z,13nm,1.9s						
TKM2	Tokmak 2	51.17 299		*e*P	P	08 13 39.5	+1.3
	comp=Z,6.5nm,0.9s						
COEN	Coen	51.43 181		*e*P	P	08 13 39.8	-0.2
	comp=Z,39nm,1.5s						
MTN	Manton Dam	51.77 196		*e*P	P	08 13 41.5	-1.1
	comp=Z,44nm,1.5s						
ZRNK	Zerenda	52.50 313		*e*P	P	08 13 48.7	+1.0
	comp=Z,3.8nm,1.1s						
ARU	Arti	57.24 319		LR	LR	08 40 32.5	
	comp=Z,51nm,19.4s,baz=94,slow=38						
ARU	Arti	57.24 319		*e*P	P	08 14 22.4	+0.5
	comp=Z,4.8nm,0.7s						
WRAB	Tennant Creek	58.09 191		*e*P	P	08 14 27.0	-1.2
	comp=Z,11nm,0.8s						
WB2	Warramunga Arr	58.10 191		*e*P	P	08 14 27.4	-1.0
	comp=Z,12nm,0.7s						
WRA	Warramunga Arr	58.11 191		P	P	08 14 27.1	-1.3
	comp=Z,9.6nm,0.7s,baz=12,slow=7.3,SNR=96						
FITZ	Fitzroy Crossi	58.20 201		*e*P	P	08 14 28.7	-0.3
	comp=Z,9.8nm,1.3s						
ABKAR	Akbulak array	59.11 311		*e*P	P	08 14 35.3	+0.2
AS01	Alice Springs	61.82 191		*e*P	P	08 14 52.8	-1.0
AS31	Alice Springs	61.83 191		*e*P	P	08 14 53.2	-0.7
	comp=Z,1.0nm,0.6s						
ASAR	Alice Springs	61.83 191		P	P	08 14 52.9	-1.0
	comp=Z,2.2nm,0.7s,baz=15,slow=9.8,SNR=34						
YKA	Yellowknife Ar	62.11 31		P	P	08 14 55.3	0.0
	comp=Z,0.4nm,0.6s,baz=299,slow=6.5,SNR=9.6						
GEYT	Alibeck	65.35 300		P	P	08 15 17.2	0.0
	comp=Z,1.3nm,0.5s,baz=64,slow=3.4,SNR=2.6						
HAWA	Hanford	67.73 48		*e*P	P	08 15 30.5	-1.7
FIA1	FINESS Array S	69.17 333		*e*P	P	08 15 41.8	+0.9
FINES	FINESS Array B	69.17 333		P	P	08 15 41.4	+0.5
	comp=Z,2.0nm,0.7s,baz=60,slow=9.1,SNR=7.1						
KBZ	Khabaz	72.05 312		P	P	08 15 59.5	+0.8
	comp=Z,1.6nm,0.5s,baz=22,slow=5.5,SNR=5.7						
FCC	Fort Churchill	72.40 28		*e*P	P	08 16 00.4	-0.2
	comp=Z,8.1nm,1.4s						
BOZ	Bozeman (W)	72.70 45		*e*P	P	08 16 03.8	+0.9
	comp=Z,13nm,2.0s						
NV01	Mina Array Sit	72.85 55		*e*P	P	08 16 04.7	+0.8
NVAR	Mina Array Bea	72.85 55		P	P	08 16 05.0	+1.1
	comp=Z,1.1nm,0.7s,baz=293,slow=6.8,SNR=7.1						
NB2	NORSAR Subarra	74.34 338		P	P	08 16 11.8	-0.3
	comp=Z,0.8nm,0.6s,baz=38,slow=5.9						
NOA	NORSAR Array B	74.34 338		P	P	08 16 12.1	0.0
	comp=Z,1.0nm,0.7s,baz=38,slow=5.8,SNR=4.1						
R11A	Troy Canyon, C	74.64 53		*e*P	P	08 16 13.8	-0.6
	comp=Z,4.7nm,1.5s						
AKASG	Malin Array Be	75.03 323		P	P	08 16 15.7	-0.5
	comp=Z,1.2nm,0.5s,baz=44,slow=6.1,SNR=6.5						
BW06	Boulder Array	75.64 47		*e*P	P	08 16 19.9	-0.2
PDAR	Pinedale Array	75.64 47		P	P	08 16 19.7	-0.5
	comp=Z,0.5nm,0.6s,baz=304,slow=1.3,SNR=7.9						
GERES	GERESS Array B	83.21 330		P	P	08 17 01.4	+0.3
	comp=Z,1.0nm,0.3s,baz=46,slow=7.7,SNR=13						
GEA0	GERESS Array S	83.22 330		*e*P	P	08 17 01.6	+0.4
FUORN	Ofenpass-Fuorn	86.38 330		*e*P	P	08 17 18.2	+0.9
	comp=Z,30nm,1.8s						
TXAR	Lajitas Array	87.99 54		P	P	08 17 25.2	0.0
	comp=Z,0.2nm,0.6s,baz=299,slow=2.6,SNR=3.7						
LPAZ	La Paz	144.49 62		*e*PKPdf	PKPdf	08 24 12.2	-0.1

ISCJB ***28*** *08:17:00.2±0.7,33.°14N±0.°03×140.°80E±0.°05,h55km±5km, mb4.4/35,MS3.3/9,Error ellipse: s-maj=7.4km s-min=5.4km az=23.1*
NEIC ***28*** *08:17:00.3±1.2,33.°08N×140.°95E,h39km±10km,mb4.7/12, Error ellipse: s-maj=11.5km s-min=10.5km az=78.0*
NIED ***28*** *08:17:00,33.°20N×140.°80E,h59km,Mw4.3 Best double couple: M₀2.82000×10¹⁵ NP1:φs210.00000°,δ47.00000°, λ134.00000°. NP2:φs335.00000°,δ58.00000°,λ53.00000°.*
JMA ***28*** *08:17:01.4±0.1,33.°23N×140.°77E,h52km±4km,M4.4*
IDC ***28*** *08:17:02.2±1.3,33.°09N×140.°63E,h58km±10km,mb3.7/17, mb1 3.9/21,mb1mx3.8/52,mbtmp4.0/21,MS3.2/12, Ms1 3.2/12,ms1mx3.0/50,Error ellipse: s-maj=18.5km s-min=10.7km az=80.0*
ISC 28 08:17:00.2±0.6,33.°12N±0.°06×140.°87E±0.°07,h38km±2km, n81,σ1°22/89,mb4.3/35,MS3.3/9,Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHJ2	Mitsune	0.89 270		P	Pn	08 17 17.0	+0.8
JHJ2				S	Sn	08 17 27.6	-0.2
JHJ2	Mitsune	0.89 270		*e*Pn	Pn	08 17 17.1	+1.0
JHCJ	Hachijojimakas	0.91 267		P	Pn	08 17 17.1	+0.7
JHCJ				S	Sn	08 17 27.6	-0.7
JHJ	Hachijo jima 2	0.92 270		P	Pn	08 17 17.1	+0.5
	1μm,0.3s,baz=324,slow=20,SNR=660						
JHJ				S	Sn	08 17 27.7	-0.8
	2μm,0.3s,baz=66,slow=19,SNR=43						
JHJ				LR	LR	08 17 45.4	
	comp=Z,710nm,21.3s,baz=229,slow=63						
BSO1	Boso 1	1.53 3		P	Pn	08 17 25.0	+0.5
BSO2	Boso 2	1.63 357		S	Sn	08 17 46.5	+0.8
BSO3	Boso 3	1.70 350		P	Pn	08 17 27.4	-0.3
BSO3				S	Sn	08 17 47.7	+0.2
JKO	Kozu shima	1.80 307		P	Pn	08 17 29.3	+0.6
JKO				S	Sn	08 17 49.3	-0.9
BSO4	Boso 4	1.92 347		P	Pn	08 17 30.8	+0.6
BSO4				S	Sn	08 17 52.6	-0.4
JIM2	Oshima 3	1.99 323		P	Pn	08 17 31.3	-0.1
JIZS	Izushimoda	2.30 314		P	Pn	08 17 36.2	+0.6
JIZS				S	Sn	08 18 01.1	-1.5
JOD2	Odawara 2	2.60 326		P	Pn	08 17 40.1	+0.4
JOD2				*e*S	Sn	08 18 08.6	-1.5
TK02	Tokai 2	2.73 288		P	Pn	08 17 43.0	+1.7
TK02				S	Sn	08 18 13.5	+0.6
TK04	Tokai 4	2.80 298		P	Pn	08 17 44.0	+1.7
TK04				S	Sn	08 18 14.5	-0.3
INU	Inuyama	3.89 306		*e*Pn	Pn	08 17 59.2	+1.8
MJAR	Matsushiro Arr	4.06 328		P	Pn	08 18 01.5	+1.7
	14nm,0.3s,baz=147,slow=11,SNR=95						
MJAR				S	Sn	08 18 45.4	-0.6
	12nm,0.3s,baz=205,slow=24,SNR=9.0						
MJAR				LR	LR	08 19 43.3	
	comp=Z,164nm,19.9s,baz=155,slow=41						
MAJO	Matsushiro	4.06 328		*e*Pn	Pn	08 18 01.7	+1.9
MAT	Matsushiro	4.06 328		P	Pn	08 18 02.1	+2.3
MAT				S	Sn	08 18 43.4	-2.6
MJB9	Matsu-Tunnel	4.06 328		*e*Pn	Pn	08 18 02.6	+2.8
JNU	Nakatsue	8.38 273		P	Pn	08 18 59.5	+0.3
	1.5nm,0.3s,baz=144,slow=2.3,SNR=11						
ERM	Erimo	9.06 11		*e*Pn	Pn	08 19 07.9	-0.4
ASAJ	Asahikawa	11.06 6		*e*Pn	Pn	08 19 34.0	-1.7
KSRS	Korea Array	11.43 296		P	Pn	08 19 42.4	+1.6
	0.2nm,0.3s,baz=113,slow=14,SNR=16						
KSRS				LR	LR	08 23 43.2	
	comp=Z,112nm,19.7s,baz=96,slow=36						
MDJ	Mudanjiang	14.44 326		P	Pn	08 20 22.0	+0.2
MDJ				pmax	pmax		
	comp=Z,6.0nm,0.6s						
MDJ				pmax	pmax		
	comp=Z,200nm,5.7s						
CN2	Changchun	16.09 316		*e*P	Pn	08 20 44.0	+0.5
CN2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
KLR	Kul'dur	17.48 340		P	Pn	08 21 00.1	-0.7
	comp=Z,0.1nm,0.3s,baz=159,slow=9.3,SNR=4.3						
KLR				LR	LR	08 27 43.2	
	comp=Z,34nm,20.8s,baz=139,slow=37						
GUMO	Guam	19.78 168		LR	LR	08 27 29.3	
	comp=Z,41nm,18.3s,baz=20,slow=32						
PETK	Petropavlovsk-	23.34 26		LR	LR	08 34 27.0	
	comp=Z,19nm,18.4s,baz=198,slow=44						
HHC	Hu-ho-hao-te	24.57 297		*e*P	P	08 22 17.0	+0.4
HHC				pmax	pmax		
	comp=Z,31nm,0.8s						
HHC				pmax	pmax		
	comp=Z,280nm,4.2s						
ULN	Ulaanbaatar	29.36 310		*e*P	P	08 23 01.1	+1.5
	comp=Z,3.9nm,1.0s						
SONA1	Songino Array	29.78 310		*e*P	P	08 23 04.5	+1.1
SONM	Songino Array	29.78 310		P	P	08 23 03.3	0.0
	comp=Z,2.1nm,1.0s,baz=115,slow=8.8,SNR=9.2						
SONM				LR	LR	08 35 13.5	
	comp=Z,59nm,20.7s,baz=79,slow=37						
YAK	Yakutsk	29.81 349		LR	LR	08 34 47.5	
	comp=Z,56nm,19.6s,baz=60,slow=36						
LZH	Lanzhou	30.51 286		*e*P	P	08 23 13.3	+3.4
LZH				pP	pP	08 23 23.5	+2.9
LZH				sP	sP	08 23 29.8	+4.6
LZH				pmax	pmax		
	comp=Z,16nm,1.0s						
CD2	Chengdu	31.45 276		P	P	08 23 17.3	-0.8
CD2				pmax	pmax		
	comp=Z,46nm,0.8s						
TLY	Talaya	32.69 316		*e*P	P	08 23 30.2	+1.4
	comp=Z,5.0nm,1.1s						
KMI	Kunming	34.11 267		P	P	08 23 41.3	-0.3
KMI				pmax	pmax		
	comp=Z,20nm,0.5s						
KMI				pmax	pmax		
	comp=Z,270nm,5.7s						
KWAJ	Kwajalein Atol	34.57 128		*e*P	P	08 23 44.9	-0.5
	comp=Z,142nm,1.1s						
WMQ	Urumqi	42.33 301		*e*P	P	08 24 50.3	-0.1
WMQ				pmax	pmax		
	comp=Z,6.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,96nm,5.6s						
WMQ				LR	LR		
	comp=Z,11nm,12.6s						
ZAA0	Zalesovo Array	44.30 315		*e*P	P	08 25 06.1	0.0
ZALV	Zalesovo Beam	44.30 315		P	P	08 25 06.4	+0.3
	comp=Z,1.0nm,0.6s,baz=116,slow=6.9,SNR=4.8						
ZALV				LR	LR	08 44 24.8	
	comp=Z,34nm,18.3s,baz=262,slow=37						
MK01	Makanchi Array	45.91 305		*e*P	P	08 25 18.6	-0.4
MK31	Makanchi Array	45.92 305		*e*P	P	08 25 19.0	-0.1
MKAR	Makanchi Array	45.92 305		P	P	08 25 19.2	+0.1
	comp=Z,1.7nm,0.7s,baz=90,slow=10,SNR=12						
MAKZ	Makanchi	46.13 305		*e*P	P	08 25 21.1	+0.3
	comp=Z,2.6nm,0.9s						
KURK	Kurchatov	48.08 311		*e*P	P	08 25 39.4	+3.6
	comp=Z,3.7nm,0.7s						
KURBB	Kurchatov Arra	48.14 311		P	P	08 25 34.9	-1.4
	comp=Z,1.3nm,0.5s,baz=90,slow=7.7,SNR=19						
KSH	Kashi	51.68 297		*e*P	P	08 26 07.5	+3.9
KSH				*e*sP	sP	08 26 24.5	+5.3
KSH				*e*PcP	PcP	08 27 19.5	+2.8
KSH				PcS	PcS	08 31 16.0	+1.2
KSH				S	S	08 33 26.0	+3.5
KSH				pmax	pmax		
	comp=Z,83nm,5.2s						
KSH				LR	LR		
	comp=N,170nm,9.3s						
KSH				LR	LR		
	comp=E,180nm,6.0s						
KSH				LR	LR		
	comp=Z,130nm,7.4s						
SML	Sawmill	52.43 34		*e*P	P	08 26 10.7	+2.1
	comp=Z,13nm,0.8s						
ILAR	Eielson Array	53.05 31		P	P	08 26 14.3	+1.1
	comp=Z,0.6nm,0.7s,baz=263,slow=5.8,SNR=7.1						
WRAB	Tennant Creek	53.12 188		*e*P	P	08 26 13.7	-0.4
	comp=Z,19nm,0.5s						
WB2	Warramunga Arr	53.13 188		*e*P	P	08 26 13.8	-0.3
	comp=Z,19nm,0.6s						
WRA	Warramunga Arr	53.13 188		P	P	08 26 13.7	-0.5
	comp=Z,22nm,0.5s,baz=4.4,slow=7.5,SNR=435						
RAGM	Ragged Mountai	54.29 36		*e*P	P	08 26 22.6	+0.3
	comp=Z,31nm,1.3s						
KKAR	Karatay Array	54.77 302		*e*P	P	08 26 26.2	+0.1
AS01	Alice Springs	56.85 188		*e*P	P	08 26 40.6	-0.5
AS31	Alice Springs	56.86 188		*e*P	P	08 26 40.9	-0.2
	comp=Z,5.6nm,0.6s						
ASAR	Alice Springs	56.86 188		P	P	08 26 40.9	-0.3
	comp=Z,8.5nm,0.8s,baz=3.3,slow=6.5,SNR=148						
ABKAR	Akbulak array	60.16 312		*e*P	P	08 27 02.8	-1.1
STKA	Stephens Creek	64.65 179		P	P	08 27 32.7	-1.2
	comp=Z,3.3nm,0.8s,baz=346,slow=7.3,SNR=12						
STKA	Stephens Creek	64.65 179		*e*P	P	08 27 34.5	+0.5
	comp=Z,4.1nm,1.8s						
YKA	Yellowknife Ar	67.42 29		P	P

TPIG	Tehuac#an	2.51 350	*e*P	Pn	08 26 44.5	-2.3
TPIG			*i* S	Sn	08 27 14.2	-2.7
PCIG		3.54 93	*e*P	Pn	08 26 58.7	-2.0
PCIG			*i* S	Sn	08 27 39.1	-2.9
YAIG	Yautepec	3.58 325	*i* P	Pn	08 26 58.6	-2.9
YAIG			*i* S	Sn	08 27 39.4	-3.8

*IDC **28** 08:35:27.2±0.9, 53°.66N×88°.03E, h0km, mb3.4/4, mb1 3.8/9, mb1mx3.5/56, mbtmp3.7/9, ML3.8/4, Error ellipse: s-maj=12.8km s-min=10.1km az=162.0*
*ISCJB **28** 08:35:29.6±0.7, 53°.67N±0°.07×87°.8E±0°.1, h33km, mb3.5/4, Error ellipse: s-maj=10.8km s-min=8.5km az=161.6*
ISC 28 08:35:32.0±0.8, 53°.69N±0°.09×87°.90E±0°.08, h35km, n10, σ0s82/12, mb3.4/4, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZALV	**Zalesovo Beam**	**1.84**	**279**	Pn	**Pn**	**08 36 01.3**	**+0.1**
	23nm,0.3s,baz=107,slow=15,SNR=254						
ZALV				Lg	Lg	08 36 27.3	
	23nm,0.3s,baz=103,slow=25,SNR=20						
KURBB	**Kurchatov Arra**	**6.53**	**246**	Pn	**Pn**	**08 37 05.9**	**+0.4**
	1.7nm,0.3s,baz=62,slow=14,SNR=176						
KURBB				Lg	Lg	08 38 54.2	
	0.3nm,0.3s,baz=62,slow=33,SNR=7.9						
MKAR	**Makanchi Array**	**7.78**	**210**	Pn	**Pn**	**08 37 23.4**	**+0.7**
	1.7nm,0.3s,baz=30,slow=12,SNR=49						
MKAR				Sn	**Sn**	**08 38 50.5**	**+1.0**
	0.5nm,0.3s,baz=36,slow=22,SNR=5.4						
MKAR				Lg	Lg	08 39 33.1	
	0.7nm,0.3s,baz=44,slow=30,SNR=8.2						
BVAR	**Borovoye Array**	**10.49**	**273**	Pn	**Pn**	**08 37 58.6**	**-1.1**
	2.2nm,0.3s,baz=75,slow=14,SNR=28						
BVAR				Sn	**Sn**	**08 39 55.1**	**-0.8**
	1.3nm,0.3s,baz=76,slow=25,SNR=8.1						
SONM	**Songino Array**	**13.08**	**109**	Pn	**Pn**	**08 38 34.5**	**-0.8**
	baz=302,slow=8.3,SNR=6.7						
SONM				Lg	Lg	08 42 18.6	
	baz=294,slow=29,SNR=7.4						
AKTO	**Aktyubinsk**	**18.59**	**272**	P	**P**	**08 39 45.7**	**-0.2**
	0.1nm,0.3s,baz=89,slow=14,SNR=2.8						
ILAR	**Eielson Array**	**54.59**	**25**	P	**P**	**08 44 57.4**	**+1.1**
	0.2nm,0.6s,baz=330,slow=5.2,SNR=3.5						
ESDC	**Sonseca Array**	**60.24**	**297**	P	**P**	**08 45 37.0**	**+0.4**
	1.0nm,0.6s,baz=43,slow=7.0,SNR=6.0						
YKA	**Yellowknife Ar**	**62.81**	**12**	P	**P**	**08 45 53.8**	**+0.4**
	0.1nm,0.6s,baz=339,slow=7.8,SNR=3.6						
WRA	**Warramunga Arr**	**83.51**	**137**	P	**P**	**08 47 55.4**	**-0.6**
	0.4nm,0.9s,baz=340,slow=5.8,SNR=4.3						

*NIED **28** 08:36:00, 36°.80N×141°.70E, h35km, Mw3.8 Best double couple: M0=6.63000×10^14 NP1:φs=221.00000°, δ23.00000°, λ106.00000°. NP2:φs=23.00000°, δ68.00000°, λ83.00000°.*
*IDC **28** 08:36:07.4±1.6, 36°.73N×141°.99E, h0km, mb3.8/6, mb1 3.7/11, mb1mx3.5/56, mbtmp3.8/11, ML3.5/3, MS2.9/5, Ms1 2.9/5, ms1mx2.6/48, Error ellipse: s-maj=32.4km s-min=22.3km az=84.0*
*ISCJB **28** 08:36:08.4±0.6, 36°.70N±0°.03×142°.03E±0°.06, h19km, mb3.9/10, MS3.2/2, Error ellipse: s-maj=7.5km s-min=4.7km az=15.0*
*NEIC **28** 08:36:10.6±2.6, 36°.68N×141°.96E, h20km±19km, mb4.3/4, Error ellipse: s-maj=14.4km s-min=8.9km az=108.0*
*JMA **28** 08:36:13.2±0.3, 36°.77N×141°.66E, h52km±4km, MJ3.7*
ISC 28 08:36:11.1±0.9, 36°.76N±0°.05×141°.79E±0°.07, h19km, n38, σ1s32/32, mb3.9/10, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.87**	**294**	P	**Pg**	**08 36 27.8**	**-0.3**
JFK	**Kawauchi**	**0.95**	**310**	P	**Pg**	**08 36 29.0**	**-0.7**
JHO	**Hitachi**	**0.99**	**262**	P	**Pb**	**08 36 29.3**	**-0.4**
JMM	**Marumori**	**1.36**	**325**	P	**Pb**	**08 36 35.2**	**-0.8**
JFT	**Otama**	**1.39**	**304**	P	**Pb**	**08 36 36.4**	**-0.1**
JFY	**Yanaizu**	**1.79**	**292**	P	**Pb**	**08 36 42.0**	**-1.3**
JOU	**Okura**	**1.84**	**331**	P	**Pb**	**08 36 43.0**	**-1.1**
JOU				*e*S	**Sn**	**08 37 05.1**	**+0.7**
JAG	**Ashikaga**	**1.91**	**261**	P	**Pn**	**08 36 43.0**	**+0.4**
JYS	**Shirataka**	**2.01**	**317**	P	**Pb**	**08 36 45.6**	**-1.4**
MJAR	**Matsushiro Arr**	**2.89**	**267**	Pn	**Pn**	**08 36 56.7**	**+0.6**
	17nm,0.3s,baz=331,slow=13,SNR=86						
MJAR				Sn	**Sn**	**08 37 33.5**	**+3.1**
	3.8nm,0.3s,baz=81,slow=39,SNR=7.0						
MJAR				LR	LR	08 38 30.3	
	comp=Z,72nm,21.1s,baz=205,slow=47						
MAJO	**Matsushiro**	**2.89**	**267**	*e*Pn	**Pn**	**08 36 58.1**	**+2.0**
MAT	**Matsushiro**	**2.89**	**267**	P	**Pn**	**08 36 58.1**	**+2.0**
MAT				S	**Sb**	**08 37 34.6**	**-2.4**
JHJ2	**Mitsune**	**3.98**	**205**	*e*Pn	**Pn**	**08 37 09.3**	**-1.7**
JHJ2				*e*Sn	**Sn**	**08 37 59.4**	**+2.2**
JHJ	**Hachijo jima 2**	**3.98**	**205**	Pn	**Pn**	**08 37 12.4**	**+1.2**
	17nm,0.3s,baz=314,slow=23,SNR=17						
JHJ				Sn	**Sn**	**08 37 55.7**	**-1.7**
	26nm,0.3s,baz=75,slow=22,SNR=6.3						
ERM	**Erimo**	**5.36**	**11**	*e*Pn	**Pn**	**08 37 29.9**	**0.0**
ERM				*e*Sn	**Sn**	**08 38 32.4**	**+1.3**
ASAJ	**Asahikawa**	**7.38**	**5**	Pn	**Pn**	**08 37 58.2**	**+0.5**
	0.4nm,0.3s,baz=45,slow=19,SNR=3.1						
USRK	**Ussuriysk Ar.**	**10.53**	**318**	Pn	Pn	08 38 43.0	+2.1
	0.1nm,0.3s,baz=121,slow=15,SNR=2.4						
KSRS	**Korea Array**	**11.10**	**278**	Pn	Pn	08 38 51.7	+2.9
	baz=85,slow=14,SNR=3.1						
KSRS				LR	LR	08 42 41.7	
	comp=Z,71nm,18.9s,baz=150,slow=35						
KSAR	**Wonju Array Be**	**11.13**	**278**	Pn	Pn	08 38 51.6	+2.5
KLR	**Kul'dur**	**14.45**	**333**	LR	LR	08 44 54.6	
	comp=Z,45nm,19.3s,baz=137,slow=36						
H11N2	**WAKE ISLAND Hy**	**27.75**	**121**	T	T	09 11 13.1	
	baz=313,slow=75,SNR=27						
H11N1	**WAKE ISLAND Hy**	**27.75**	**121**	T	T	09 11 17.0	
	baz=313,slow=75,SNR=28						
H11N3	**WAKE ISLAND Hy**	**27.76**	**121**	T	T	09 11 17.7	
	baz=313,slow=75,SNR=24						
SONM	**Songino Array**	**28.19**	**304**	P	**P**	**08 42 02.9**	**+0.4**
	1.6nm,0.7s,baz=106,slow=8.6,SNR=7.6						
H11S1	**WAKE ISLAND Hy**	**28.45**	**123**	T	T	09 12 13.1	
	baz=315,slow=76,SNR=20						
H11S3	**WAKE ISLAND Hy**	**28.45**	**123**	T	T	09 12 12.6	
	baz=315,slow=76,SNR=16						
H11S2	**WAKE ISLAND Hy**	**28.47**	**123**	T	T	09 12 09.1	
	baz=315,slow=76,SNR=16						
TGY	**Tagaytay City**	**29.26**	**225**	LR	LR	08 53 37.7	
	comp=Z,55nm,18.9s,baz=348,slow=36						
ZALV	**Zalesovo Beam**	**42.33**	**313**	P	**P**	**08 44 04.6**	**+1.1**
	0.7nm,0.4s,baz=85,slow=6.2,SNR=2.8						
MKAR	**Makanchi Array**	**44.52**	**302**	P	**P**	**08 44 20.2**	**-1.2**
	0.8nm,0.9s,baz=77,slow=7.6,SNR=3.2						
KURK	**Kurchatov**	**46.34**	**308**	*e*P	**P**	**08 44 36.4**	**+0.7**
	6.3nm,0.5s						
KURBB	**Kurchatov Arra**	**46.41**	**308**	P	**P**	**08 44 35.9**	**-0.3**
	0.8nm,0.6s,baz=81,slow=7.5,SNR=6.0						
TKM2	**Tokmak 2**	**50.03**	**299**	*e*P	**P**	**08 45 05.2**	**+0.6**
	2.5nm,1.0s						
ARU	**Arti**	**56.77**	**319**	LR	LR	09 13 54.0	
	comp=Z,17nm,20.0s,baz=353,slow=40						
WRAB	**Tennant Creek**	**56.82**	**188**	*e*P	**P**	**08 45 54.6**	**+0.4**
	3.8nm,1.1s						
WRA	**Warramunga Arr**	**56.83**	**188**	P	**P**	**08 45 53.2**	**-1.1**
	0.2nm,0.5s,baz=6.1,slow=7.1,SNR=4.5						
ABKAR	**Akbulak array**	**58.35**	**310**	*e*P	**P**	**08 46 05.0**	**+0.2**
	0.7nm,0.6s						
AKASG	**Malin Array Be**	**74.70**	**322**	P	**P**	**08 47 49.6**	**+0.4**
	0.6nm,0.4s,baz=45,slow=5.8,SNR=4.4						

IDC 28 09:15:12.9±1.8, 1°.34N×126°.62E, h0km, mb3.9/4, mb1 4.1/4, mb1mx3.7/36, mbtmp4.0/4, MS3.7/1, Ms1 3.7/1, ms1mx2.5/50, Error ellipse: s-maj=157.2km s-min=22.5km az=65.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**22.47**	**161**	P	P	09 20 14.5	+0.5
	3.9nm,0.4s,baz=340,slow=11,SNR=60						
ASAR	**Alice Springs**	**25.85**	**165**	P	P	09 20 46.5	+0.1
	0.4nm,0.3s,baz=342,slow=7.5,SNR=12						
STKA	**Stephens Creek**	**35.96**	**158**	P	P	09 22 14.8	-0.7
	1.8nm,0.8s,baz=343,slow=10,SNR=6.0						
MKAR	**Makanchi Array**	**59.45**	**326**	P	P	09 25 17.7	0.0
	0.7nm,0.4s,baz=120,slow=8.4,SNR=9.9						
RPZ	**Rata Peaks**	**59.90**	**144**	LR	LR	09 54 18.4	
	comp=Z,62nm,18.2s,baz=236,slow=39						

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BUC 28 09:20:25.3±0.4, 45°.06N×28°.24E, h2km, MD2.1/2, 8C, Error ellipse: s-maj=4.7km s-min=3.4km az=72.0, Ukraine-Moldova-Southwestern Russia region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CFR	**Carcaliu**	**0.14**	**327**	⇑*i*P	Pg	09 20 28.0	0.0
CFR				S	Sg	09 20 30.4	+0.6
CFR	**Carcaliu**	**0.14**	**327**	⇑*i*P	Pg	09 20 28.0	0.0
CFR				*i* S	Sg	09 20 30.4	+0.6
TLCR		**0.42**	**73**	⇑*i*P	Pg	09 20 34.1	+0.7
TLCR		**0.42**	**73**	S	Sg	09 20 40.3	+1.4
TLCR		**0.42**	**73**	⇑*i*P	Pg	09 20 34.1	+0.7
TLCR				*i* S	Sg	09 20 40.3	+1.4
HARR	**Harsova**	**0.43**	**211**	⇑*i*P	Pg	09 20 34.5	+0.9
HARR	**Harsova**	**0.43**	**211**	⇑*i*P	Pg	09 20 34.5	+0.9
TIRR	**Tirgusor**	**0.62**	**168**	⇑*i*P	Pg	09 20 37.5	+0.4
TIRR	**Tirgusor**	**0.62**	**168**	⇑*i*P	Pg	09 20 37.5	+0.4
TIRR				*i* S	Sg	09 20 46.3	+1.2

*ISCJB **28** 09:21:08.4±0.6, 39°.07N±0°.04×29°.06E±0°.03, h1km±9km, Error ellipse: s-maj=6.6km s-min=4.2km az=165.0*
*ISK **28** 09:21:08.0, 39°.05N×29°.09E, h5km, ML2.4*
*CSEM **28** 09:21:08.7±0.1, 39°.08N×29°.06E, h2km, ML2.7, Error ellipse: s-maj=2.7km s-min=2.0km az=144.0*
*DDA **28** 09:21:08.4, 39°.08N×29°.05E, h7km, Ml2.7*
ISC 28 09:21:08.7±1.0, 39°.05N±0°.03×29°.08E±0°.02, h8km±11km, n34, σ0s58/46, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**268**	P	**Pg**	**09 21 14.1**	**-0.2**
DEMI				S	**Sg**	**09 21 17.9**	**-0.2**
DEMI	**Demirci**	**0.28**	**268**	*i* P	**Pg**	**09 21 14.1**	**-0.2**
DEMI				*i* S	**Sg**	**09 21 17.9**	**-0.2**
GDZ	**Gediz**	**0.32**	**83**	P	**Pg**	**09 21 15.2**	**+0.2**
GDZ				S	**Sg**	**09 21 20.1**	**+0.8**
GDZ	**Gediz**	**0.32**	**83**	*i* P	**Pg**	**09 21 15.2**	**+0.2**
GDZ				*i* S	**Sg**	**09 21 20.1**	**+0.8**
TVSB	**Tavsanli**	**0.50**	**37**	*e*Pg	**Pg**	**09 21 17.7**	**-0.7**
TVSB	**Tavsanli**	**0.50**	**37**	*e*Pg	**Pg**	**09 21 17.7**	**-0.7**
KULA	**Kula-Manisa**	**0.63**	**211**	*e*PG	**Pg**	**09 21 21.1**	**+0.2**
KULA				*e*SG	**Sg**	**09 21 29.5**	**+0.4**
KULA	**Kula-Manisa**	**0.63**	**211**	*e*Pg	**Pg**	**09 21 21.1**	**+0.2**
KULA				*e*Sg	**Sg**	**09 21 29.5**	**+0.4**
KHAL	**Karahalli**	**0.75**	**154**	*i* P	**Pg**	**09 21 20.8**	**-2.5**
KHAL				*i* S	**Sb**	**09 21 34.6**	**0.0**
AKHS	**Akhisar**	**1.00**	**260**	P	**Pg**	**09 21 27.9**	**-0.1**
AKHS				S	**Sb**	**09 21 41.7**	**+0.1**
AKHS	**Akhisar**	**1.00**	**260**	*i* P	**Pg**	**09 21 27.9**	**-0.1**
AKHS				*i* S	**Sb**	**09 21 41.7**	**+0.1**
AKS	**Akhisar**	**1.00**	**260**	*e*PG	**Pg**	**09 21 27.6**	**-0.3**
AKS	**Akhisar**	**1.00**	**260**	*e*Pg	**Pg**	**09 21 27.7**	**-0.3**
ORLT	**Orhaneli**	**1.00**	**352**	*e*PG	**Pg**	**09 21 27.6**	**-0.4**
ORLT	**Orhaneli**	**1.00**	**352**	*e*Pg	**Pg**	**09 21 27.6**	**-0.4**
BALB	**Balikesir**	**1.10**	**303**	*e*PN	**Pg**	**09 21 29.5**	**-0.3**
BALB	**Balikesir**	**1.10**	**303**	*e*Pn	**Pg**	**09 21 29.5**	**-0.3**
IGD	**Bursa**	**1.21**	**4**	*i* P	**Pn**	**09 21 32.6**	**+0.6**
IGD				*i* S	**Sg**	**09 21 46.7**	**-1.1**
IZI	**Iznik**	**1.32**	**13**	*e*PN	**Pn**	**09 21 33.8**	**+0.3**
IZI	**Iznik**	**1.32**	**13**	*e*Pn	**Pn**	**09 21 33.8**	**+0.3**
BALY	**Balya**	**1.32**	**302**	P	**Pn**	**09 21 33.4**	**-0.1**
BALY				S	**Sg**	**09 21 51.2**	**-0.1**
BALY	**Balya**	**1.32**	**302**	*i* P	**Pn**	**09 21 33.4**	**-0.1**
BALY				*i* S	**Sg**	**09 21 51.2**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.32**	**354**	*e*PN	**Pn**	**09 21 33.7**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.32**	**354**	*e*Pn	**Pn**	**09 21 33.7**	**+0.2**
KCTX	**Karacabey (Bur**	**1.33**	**336**	*e*PN	**Pn**	**09 21 33.9**	**+0.2**
KCTX	**Karacabey (Bur**	**1.33**	**336**	*e*Pn	**Pn**	**09 21 33.9**	**+0.2**
GONE	**Gonen-Balikesi**	**1.46**	**313**	*e*PN	**Pn**	**09 21 35.9**	**+0.4**
GONE	**Gonen-Balikesi**	**1.46**	**313**	*e*Pn	**Pn**	**09 21 35.9**	**+0.4**
ARMT	**Armutlu**	**1.52**	**354**	*e*PN	**Pn**	**09 21 36.8**	**+0.6**
ARMT	**Armutlu**	**1.52**	**354**	*e*Pn	**Pn**	**09 21 36.8**	**+0.6**
EDC	**Edincik**	**1.60**	**324**	*e*PN	**Pn**	**09 21 37.8**	**+0.5**
EDC	**Edincik**	**1.60**	**324**	*e*Pn	**Pn**	**09 21 37.8**	**+0.5**
GULT	**Gulveren**	**1.77**	**38**	*e*PN	**Pn**	**09 21 40.3**	**+0.6**
GULT	**Gulveren**	**1.77**	**38**	*e*Pn	**Pn**	**09 21 40.3**	**+0.6**

*IDC **28** 09:28:14.6±2.8, 38°.96N×28°.83E, h0km, mb3.6/3, mb1 3.4/5, mb1mx3.2/42, mbtmp3.4/5, ML3.5/2, MS2.9/3, Ms1 2.9/3, ms1mx2.5/40, Error ellipse: s-maj=43.9km s-min=22.9km az=21.0*
*DDA **28** 09:28:17.5, 39°.11N×29°.03E, h14km, Ml3.6*
*ISK **28** 09:28:17.2, 39°.11N×29°.04E, h5km, ML3.8*
*CSEM **28** 09:28:17.7±0.1, 39°.09N×29°.03E, h2km, ML3.6, Error ellipse: s-maj=2.1km s-min=1.8km az=93.0*
*ISCJB **28** 09:28:17.4±0.4, 39°.09N±0°.01×29°.02E±0°.02, h4km±3km, mb3.5/3, MS2.8/3, Error ellipse: s-maj=2.9km s-min=2.5km az=177.8*
*THE **28** 09:28:19.4, 39°.04N×28°.95E, h1km, ML3.4/8, Error ellipse: s-maj=0.9km s-min=0.5km az=70.0*
ISC 28 09:28:17.6±1.1, 39°.09N±0°.02×29°.04E±0°.02, h5km±8km, n159, σ0s80/196, mb3.4/3, MS2.6/3, 13C-2D, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**259**	P	**Pg**	**09 28 22.7**	**+0.2**
DEMI	**Demirci**	**0.25**	**259**	*i* P	**Pg**	**09 28 22.7**	**+0.2**
GDZ	**Gediz**	**0.35**	**90**	P	**Pg**	**09 28 24.9**	**+0.6**
GDZ	**Gediz**	**0.35**	**90**	*i* P	**Pg**	**09 28 24.9**	**+0.6**
TVSB	**Tavsanli**	**0.49**	**43**	PG	**Pg**	**09 28 27.0**	**0.0**
TVSB				*e*SG	**Sg**	**09 28 33.6**	**+0.3**
TVSB	**Tavsanli**	**0.49**	**43**	*i* Pg	**Pg**	**09 28 27.0**	**0.0**
TVSB				*e*Sg	**Sg**	**09 28 33.6**	**+0.3**
KULA	**Kula-Manisa**	**0.65**	**207**	PG	**Pg**	**09 28 30.2**	**+0.2**
KULA	**Kula-Manisa**	**0.65**	**207**	P	**Pg**	**09 28 30.4**	**+0.4**
KULA				S	**Sg**	**09 28 38.7**	**+0.3**
KULA	**Kula-Manisa**	**0.65**	**207**	*i* Pg	**Pg**	**09 28 30.2**	**+0.2**
KULA				S	**Sg**	**09 28 38.7**	**+0.3**
KHAL	**Karahalli**	**0.80**	**154**	P	**Pb**	**09 28 33.5**	**-0.6**
KHAL	**Karahalli**	**0.80**	**154**	*i* P	**Pb**	**09 28 33.5**	**-0.6**
KHL	**Karahalli**	**0.86**	**153**	*e*PG	**Pb**	**09 28 34.4**	**-0.6**
KHL	**Karahalli**	**0.86**	**153**	*e*Pg	**Pb**	**09 28 34.4**	**-0.6**
ORLT	**Orhaneli**	**0.96**	**354**	*e*PG	**Pg**	**09 28 35.4**	**-0.6**
ORLT	**Orhaneli**	**0.96**	**354**	*e*Pg	**Pg**	**09 28 35.4**	**-0.6**
AKHS	**Akhisar**	**0.98**	**258**	P	**Pb**	**09 28 36.5**	**-0.5**
AKHS	**Akhisar**	**0.98**	**258**	*i* P	**Pb**	**09 28 36.5**	**-0.5**
AKS	**Akhisar**	**0.98**	**258**	*e*PG	**Pb**	**09 28 36.6**	**-0.4**
AKS	**Akhisar**	**0.98**	**258**	*e*Pg	**Pb**	**09 28 36.6**	**-0.4**
BALB	**Balikesir**	**1.05**	**302**	*e*PG	**Pb**	**09 28 37.9**	**-0.3**
BALB				*e*SG	**Sb**	**09 28 52.4**	**+0.1**
BALB	**Balikesir**	**1.05**	**302**	*e*Pg	**Pb**	**09 28 37.9**	**-0.3**
BALB				*e*Sg	**Sb**	**09 28 52.4**	**+0.1**
IGD	**Bursa**	**1.18**	**6**	*i* P	**Pg**	**09 28 38.4**	**-1.8**
BALY	**Balya**	**1.27**	**301**	P	**Pg**	**09 28 41.5**	**-0.5**
BALY	**Balya**	**1.27**	**301**	*i* P	**Pg**	**09 28 41.5**	**-0.5**
MDNY	**Mudanya-Bursa**	**1.28**	**355**	*e*PN	**Pg**	**09 28 41.8**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.28**	**355**	*e*Pn	**Pg**	**09 28 41.8**	**-0.3**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*PN	**Pg**	**09 28 41.6**	**-0.6**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*Pn	**Pg**	**09 28 41.6**	**-0.6**
IZI	**Iznik**	**1.29**	**15**	*e*PN	**Pg**	**09 28 42.2**	**-0.1**
IZI	**Iznik**	**1.29**	**15**	*e*Pn	**Pg**	**09 28 42.2**	**-0.1**
DENT	**Denizli**	**1.34**	**180**	*e*PN	**Pb**	**09 28 43.0**	**-0.1**
DENT	**Denizli**	**1.34**	**180**	*e*Pn	**Pb**	**09 28 43.0**	**-0.1**
GEMT	**Gemlik**	**1.35**	**5**	*e*PN	**Pg**	**09 28 43.1**	**-0.3**
GEMT	**Gemlik**	**1.35**	**5**	*e*Pn	**Pg**	**09 28 43.1**	**-0.3**
BORA	**Eskisehir**	**1.35**	**54**	P	**Pg**	**09 28 42.8**	**-0.7**
BORA	**Eskisehir**	**1.35**	**54**	*i* P	**Pg**	**09 28 42.8**	**-0.7**
DNZL	**Cakiroluk**	**1.40**	**180**	P	**Pg**	**09 28 43.7**	**-0.7**
DNZL	**Cakiroluk**	**1.40**	**180**	*i* P	**Pg**	**09 28 43.7**	**-0.7**
GONE	**Gonen-Balikesi**	**1.41**	**313**	*e*PN	**Pn**	**09 28 43.4**	**-0.6**
GONE	**Gonen-Balikesi**	**1.41**	**313**	*e*Pn	**Pn**	**09 28 43.4**	**-0.6**
ADVT	**Abdulvahap**	**1.44**	**22**	*e*PN	**Pn**	**09 28 44.7**	**+0.3**
ADVT	**Abdulvahap**	**1.44**	**22**	*e*Pn	**Pn**	**09 28 44.7**	**+0.3**
ESKT	**Eskisehir**	**1.47**	**73**	*i* P	**Pn**	**09 28 45.0**	**+0.1**
SEYT	**Eskypehyr**	**1.47**	**73**	P	**Pn**	**09 28 45.0**	**+0.1**
ARMT	**Armutlu**	**1.48**	**355**	*e*PN	**Pn**	**09 28 44.7**	**-0.2**
ARMT	**Armutlu**	**1.48**	**355**	*e*Pn	**Pn**	**09 28 44.7**	**-0.2**
BOLV	**Bolvadin**	**1.54**	**103**	P	**Pb**	**09 28 46.7**	**0.0**
BOLV	**Bolvadin**	**1.54**	**103**	*i* P	**Pb**	**09 28 46.7**	**0.0**
EDC	**Edincik**	**1.54**	**325**	*e*PN	**Pn**	**09 28 45.9**	**+0.1**
EDC	**Edincik**	**1.54**	**325**	*e*Pn	**Pn**	**09 28 45.9**	**+0.1**
GPA	**Golpazari**	**1.55**	**39**	*e*PN	**Pn**	**09 28 45.9**	**0.0**
GPA	**Golpazari**	**1.55**	**39**	*e*Pn	**Pn**	**09 28 45.9**	**0.0**
KNL	**Bal¨–kesir**	**1.66**	**316**	*i* P	**Pn**	**09 28 47.5**	**+0.2**
AYDN	**Tasoluk**	**1.69**	**213**	P	**Pn**	**09 28 47.6**	**-0.3**

AYDN	**Tasoluk**	**1.69**	**213**	*i* P	**Pn**	**09 28 47.6**	**-0.3**
ISP	**Isparta**	**1.72**	**137**	⇑*i*P	**Pg**	**09 28 50.7**	**+0.1**
ISP	**Isparta**	**1.72**	**137**	P	**Pn**	**09 28 48.9**	**+0.6**
ISP				S	**Sn**	**09 29 11.4**	**+0.6**
ISP	**Isparta**	**1.72**	**137**	P	**Pn**	**09 28 48.9**	**+0.6**
ISP				S	**Sn**	**09 29 11.4**	**+0.6**
GULT	**Gulveren**	**1.76**	**40**	*e*PN	**Pn**	**09 28 48.9**	**+0.1**
GULT	**Gulveren**	**1.76**	**40**	*e*Pn	**Pn**	**09 28 48.9**	**+0.1**
BUY	**Buyukada**	**1.76**	**2**	P	**Pn**	**09 28 48.1**	**-0.6**
BUY	**Buyukada**	**1.76**	**2**	*i* P	**Pn**	**09 28 48.1**	**-0.6**
BAGO	**Egridir - ISPA**	**1.76**	**128**	*i* P	**Pg**	**09 28 51.7**	**+0.4**
HRT	**Hereke**	**1.79**	**15**	*e*PN	**Pn**	**09 28 49.8**	**+0.5**
HRT	**Hereke**	**1.79**	**15**	*e*Pn	**Pn**	**09 28 49.8**	**+0.5**
AYVA	**Ayvalik**	**1.84**	**277**	P	**Pb**	**09 28 51.1**	**-0.5**
AYVA	**Ayvalik**	**1.84**	**277**	*i* P	**Pb**	**09 28 51.1**	**-0.5**
SPNC	**Sapanca-Adapaz**	**1.87**	**31**	*e*PN	**Pn**	**09 28 50.7**	**+0.4**
SPNC	**Sapanca-Adapaz**	**1.87**	**31**	*e*Pn	**Pn**	**09 28 50.7**	**+0.4**
GOLH	**Golhisar**	**1.90**	**167**	P	**Pn**	**09 28 51.3**	**+0.5**
GOLH	**Golhisar**	**1.90**	**167**	*i* P	**Pn**	**09 28 51.3**	**+0.5**
SVRH	**Sivrihisar-ESK**	**1.96**	**79**	*e*PN	**Pn**	**09 28 52.4**	**+0.8**
SVRH	**Sivrihisar-ESK**	**1.96**	**79**	*e*Pn	**Pn**	**09 28 52.4**	**+0.8**
ISK	**Istanbul-Kandi**	**1.97**	**0**	*e*PN	**Pn**	**09 28 52.4**	**+0.7**
ISK	**Istanbul-Kandi**	**1.97**	**0**	P	**Pb**	**09 28 53.4**	**-0.6**
ISK				S	**Sb**	**09 29 19.4**	**+0.6**
ISK	**Istanbul-Kandi**	**1.97**	**0**	*e*Pn	**Pn**	**09 28 52.4**	**+0.7**
ISK	**Istanbul-Kandi**	**1.97**	**0**	P	**Pb**	**09 28 53.4**	**-0.6**
ISK				S	**Sb**	**09 29 19.4**	**+0.6**
DGB	**¨zmir**	**1.98**	**239**	*i* P	**Pn**	**09 28 52.8**	**+1.0**
GCAM	**G?zelcaml?**	**1.98**	**226**	*i* P	**Pg**	**09 28 55.1**	**-0.5**
YER	**Yerkesik**	**2.04**	**197**	P	**Pn**	**09 28 53.0**	**+0.3**
YER				S	**Sn**	**09 29 18.6**	**0.0**
YER	**Yerkesik**	**2.04**	**197**	P	**Pn**	**09 28 53.0**	**+0.3**
YER				S	**Sn**	**09 29 18.6**	**0.0**
URLA	**Izmir**	**2.04**	**250**	*i* P	**Pg**	**09 28 57.9**	**+1.2**
SILT	**Sile**	**2.11**	**13**	*e*PN	**Pn**	**09 28 53.9**	**+0.3**
SILT	**Sile**	**2.11**	**13**	*e*Pn	**Pn**	**09 28 53.9**	**+0.3**
BTAS	**Taskesti**	**2.11**	**45**	P	**Pb**	**09 28 56.1**	**-0.3**
BTAS	**Taskesti**	**2.11**	**45**	*i* P	**Pb**	**09 28 56.1**	**-0.3**
SART	**Tekirdag**	**2.14**	**319**	P	**Pb**	**09 28 56.0**	**-0.9**
SART	**Tekirdag**	**2.14**	**319**	*i* P	**Pb**	**09 28 56.0**	**-0.9**
PRK	**Paraskevi**	**2.15**	**275**	P	**Pn**	**09 28 54.6**	**+0.4**
PRK				S	**Sn**	**09 29 21.4**	**+0.1**
PRK

JMM	Marumori	0.88 271	P	Pb	09 31 02.0	-0.5
JFK	Kawauchi	0.95 240	P	Pb	09 31 03.0	-0.7
JFK			S	Sb	09 31 15.4	-0.5
JOU	Okura	1.11 298	P	Pb	09 31 06.3	0.0
JOU			S	Sn	09 31 20.6	+0.2
JMK	Ichinoseki	1.23 334	P	Pn	09 31 07.5	+0.1
JMK			S	Sn	09 31 22.8	-0.5
JFT	Otama	1.29 256	P	Pb	09 31 09.2	-0.2
JFT			S	Sb	09 31 25.7	+0.1
JYS	Shirataka	1.50 285	P	Pb	09 31 12.7	-0.3
JYS			S	Sb	09 31 32.8	+1.1
JYK	Kaneyama	1.62 312	P	Pn	09 31 13.4	+0.5
JOM	Ohasama	1.69 344	P	Pn	09 31 14.0	+0.2
JOM			S	Sn	09 31 35.6	+0.9

IDC 28 09:38:22.4±53.0, 25°21'S×176°58'W, h0km, mb3.9/3, mb1 4.0/3, mb1mx3.6/30, mbtmp3.9/3, Error ellipse: s-maj=985.6km s-min=167.7km az=90.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	Stephens Creek	37.16	250	P	P	09 45 35.1	-0.1
	1.0nm,0.8s,baz=98,slow=11,SNR=5.8						
ASAR	Alice Springs	44.90	261	P	P	09 46 39.0	-0.2
	1.0nm,0.5s,baz=104,slow=7.8,SNR=24						
WRA	Warramunga Arr	45.43	266	P	P	09 46 43.3	-0.1
	1.2nm,0.7s,baz=104,slow=8.2,SNR=11						

NIED ***28*** *09:42:00, 36°70'N×141°80'E, h35km, Mw4.4 Best double couple: M=4.03000×10^15 NP1:φ=195.00000°, δ=21.00000°, λ=82.00000°. NP2:φ=23.00000°, δ=69.00000°, λ=93.00000°.*
ISCJB ***28*** *09:42:06.7±0.9, 36°71'N±0°03'×141°93'E±0°07, h34km±7km, mb4.0/22, MS3.3/8, Error ellipse: s-maj=9.1km s-min=5.6km az=14.1*
JMA ***28*** *09:42:07.1±0.3, 36°75'N×141°85'E, h49km, M4.0*
NEIC ***28*** *09:42:10.7±0.8, 36°74'N×141°76'E, h47km±6km, mb4.2/5, Error ellipse: s-maj=9.5km s-min=6.5km az=111.0*
IDC ***28*** *09:42:10.3±2.0, 36°70'N×141°84'E, h47km±17km, mb3.7/17, mb1 3.9/22, mb1mx3.8/50, mbtmp4.0/22, ML3.8/4, MS3.4/13, Ms1 3.4/13, ms1mx3.1/67, Error ellipse: s-maj=16.9km s-min=14.4km az=118.0*

ISC 28 09:42:06.2±3.3, 36°73'N±0°05'×141°92'E±0°07, h16km±20km, n56, σ1°25/52, mb4.0/22, MS3.5/8, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.97	293	P	Pb	09 42 23.4	-1.3
JFK	Kawauchi	1.05	307	P	Pb	09 42 24.7	-1.3
JHO	Hitachi	1.10	264	P	Pb	09 42 25.0	-1.7
JHO				eS	Sb	09 42 39.7	-1.1
JMM	Marumori	1.45	322	P	Pn	09 42 30.9	-0.8
JMM				eS	Sn	09 42 47.9	-2.4
JFT	Otama	1.49	302	P	Pn	09 42 32.1	-0.2
JIO	Ouri	1.78	345	P	Pn	09 42 35.7	-0.5
JIO				S	Sn	09 42 56.6	-1.9
JFY	Yanaizu	1.90	291	P	Pn	09 42 37.7	-0.2
JFY				eS	Sn	09 43 02.2	+0.7
JOU	Okura	1.91	329	P	Pn	09 42 38.6	+0.5
JAG	Ashikaga	2.01	262	P	Pn	09 42 38.6	-0.8
MJAR	Matsushiro Arr	2.99	267	P	Pn	09 42 52.8	-0.2
	29nm,0.3s,baz=331,slow=13,SNR=178						
MJAR				S	Sn	09 43 28.5	0.0
	9.2nm,0.3s,baz=76,slow=16,SNR=9.7						
MJAR				LR	LR	09 44 16.0	
	comp=Z,801nm,18.3s,baz=95,slow=43						
MAJO	Matsushiro	3.00	267	ePn	Pn	09 42 53.8	+0.8
MAT	Matsushiro	3.00	267	P	Pn	09 42 53.7	+0.7
MAT				S	Sn	09 43 29.7	+1.1
JHJ2	Mitsune	4.01	206	ePn	Pn	09 43 09.8	+2.9
JHJ2				eSn	Sn	09 43 52.8	-0.7
JHJ	Hachijo jima 2	4.01	207	P	Pn	09 43 07.5	+0.5
	20nm,0.3s,baz=313,slow=21,SNR=14						
JHJ				S	Sn	09 43 50.6	-3.0
	28nm,0.3s,baz=68,slow=23,SNR=6.1						
ASAJ	Asahikawa	7.39	4	P	Pn	09 43 55.8	+2.4
	1.1nm,0.3s,baz=205,slow=6.0,SNR=7.5						
ASAJ				S	Sn	09 45 15.2	-1.7
	1.0nm,0.3s,baz=326,slow=7.3,SNR=3.7						
JNU	Nakatsue	9.76	252	LR	LR	09 48 56.0	
	comp=Z,259nm,18.1s,baz=302,slow=42						
USRK	Ussuriysk Ar.	10.62	318	P	Pn	09 44 40.3	+2.8
	0.3nm,0.3s,baz=139,slow=13,SNR=17						
USRK				LR	LR	09 48 34.9	
	comp=Z,325nm,18.3s,baz=129,slow=36						
KSRS	Korea Array	11.21	278	P	Pn	09 44 48.0	+2.4
	0.3nm,0.3s,baz=92,slow=12,SNR=10						
KSRS				LR	LR	09 48 56.1	
	comp=Z,288nm,18.9s,baz=94,slow=36						
KSAR	Wonju Array Be	11.24	278	P	Pn	09 44 48.0	+1.9
JOW	Kunigami	15.22	233	ePn	Pn	09 45 40.9	+0.5
PETK	Petropavlovsk-	19.75	29	LR	LR	09 54 21.3	
	comp=Z,37nm,21.4s,baz=216,slow=37						
MA2	Magadan	23.57	11	LR	LR	09 56 14.9	
	comp=Z,26nm,20.1s,baz=3.0,slow=36						
YAK	Yakutsk	26.45	347	LR	LR	09 59 51.8	
	comp=Z,36nm,18.1s,baz=57,slow=40						
SEY	Seymchan	27.01	11	P	P	09 47 47.6	+0.5
	2.3nm,0.8s,baz=185,slow=5.2,SNR=7.0						
H11N2	WAKE ISLAND Hy	27.64	121	T	T	10 17 10.2	
	baz=313,slow=75,SNR=66						
H11N1	WAKE ISLAND Hy	27.65	121	T	T	10 17 12.7	
	baz=313,slow=75,SNR=79						
H11N3	WAKE ISLAND Hy	27.66	121	T	T	10 17 11.5	
	baz=313,slow=75,SNR=72						
ENH	Enshi	27.72	266	eP	P	09 47 52.8	-1.1
	8.3nm,0.9s						
ULN	Ulaanbaatar	27.86	305	eP	P	09 47 54.2	-0.9
	5.2nm,0.9s						
SONM	Songino Array	28.29	304	P	P	09 47 58.0	-0.9
	5.4nm,0.9s,baz=106,slow=9.2,SNR=25						
SONM				LR	LR	09 58 55.4	
	comp=Z,81nm,19.2s,baz=108,slow=36						
H11S1	WAKE ISLAND Hy	28.35	123	T	T	10 18 05.7	
	SNR=52						
H11S3	WAKE ISLAND Hy	28.35	123	T	T	10 19 03.1	
	baz=310,slow=74,SNR=59						
H11S2	WAKE ISLAND Hy	28.37	123	T	T	10 19 06.3	
	baz=259,slow=74,SNR=41						
CMAR	Chiang Mai Arr	41.82	256	P	P	09 49 55.9	+0.6
	0.6nm,0.3s,baz=79,slow=4.7,SNR=4.1						
ZALV	Zalesovo Beam	42.42	313	P	P	09 49 60.0	+0.2
	2.6nm,0.6s,baz=88,slow=6.9,SNR=11						
ZALV				LR	LR	10 08 24.7	
	comp=Z,74nm,18.5s,baz=70,slow=37						
NRIK	Noril'sk	43.71	335	LR	LR	10 09 44.8	
	comp=Z,59nm,19.5s,baz=120,slow=38						
MKAR	Makanchi Array	44.62	302	P	P	09 50 17.4	-0.3
	2.4nm,0.8s,baz=88,slow=9.8,SNR=19						
MKAR				LR	LR	10 09 02.5	
	comp=Z,68nm,21.2s,baz=90,slow=36						
KURK	Kurchatov	46.44	308	P	P	09 50 31.6	-0.3
KURBB	Kurchatov Arra	46.51	308	P	P	09 50 31.6	-0.9
	3.5nm,0.8s,baz=81,slow=7.4,SNR=29						
ILAR	Eielson Array	49.53	32	P	P	09 50 57.5	+1.8
	0.6nm,0.8s,baz=274,slow=7.3,SNR=6.5						
TKM2	Tokmak 2	50.13	299	eP	P	09 51 01.5	+0.6
	2.9nm,0.8s						
BVAR	Borovoye Array	51.08	313	P	P	09 51 07.7	+0.1
	0.6nm,0.5s,baz=106,slow=9.4,SNR=3.8						
KKAR	Karatay Array	53.63	300	eP	P	09 51 26.3	-0.4
	0.8nm,0.3s						
LEM	Lembang	53.94	224	LR	LR	10 14 28.5	
	comp=Z,34nm,20.4s,slow=36						
WRA	Warramunga Arr	56.82	189	P	P	09 51 49.6	-0.2
	1.2nm,1.0s,baz=6.9,slow=7.3,SNR=6.3						
ABKAR	Akbulak array	58.45	310	eP	P	09 52 00.7	-0.3
	0.6nm,0.4s						
ASAR	Alice Springs	60.55	188	P	P	09 52 15.5	-0.3
	0.4nm,0.9s,baz=8.9,slow=6.6,SNR=3.2						
YKA	Yellowknife Ar	63.86	30	P	P	09 52 37.8	+0.3
	0.3nm,0.9s,baz=307,slow=5.2,SNR=4.7						
ARCES	ARCESS Array B	64.42	340	LR	LR	10 24 43.5	
	comp=Z,45nm,18.6s,baz=58,slow=40						
FINES	FINESS Array B	69.27	332	P	P	09 53 11.8	-0.3
	3.8nm,0.9s,baz=26,slow=9.3,SNR=6.6						
KBZ	Khabaz	71.41	311	P	P	09 53 25.2	-0.2
	0.7nm,0.3s,baz=76,slow=6.5,SNR=5.0						
NB2	NORSAR Subarra	74.62	338	P	P	09 53 44.7	+0.4
	comp=Z,0.9nm,0.7s,baz=37,slow=5.9						
NOA	NORSAR Array B	74.62	338	P	P	09 53 44.7	+0.4
	comp=Z,1.4nm,0.8s,baz=38,slow=5.8,SNR=4.0						
AKASG	Malin Array Be	74.78	323	P	P	09 53 45.4	+0.1
	comp=Z,0.6nm,0.3s,baz=46,slow=5.8,SNR=8.4						
BRTR	Keskin Array B	79.36	312	P	P	09 54 12.0	+0.6
	comp=Z,1.0nm,0.8s,baz=134,slow=3.6,SNR=4.6						
GERES	GERESS Array B	83.18	328	P	P	09 54 31.4	-0.2
	comp=Z,0.3nm,0.3s,baz=46,slow=3.9,SNR=5.6						

DDA ***28*** *09:47:15.6, 39°13'N×29°03'E, h7km, Ml2.5*
ISK ***28*** *09:47:15.4, 39°09'N×29°08'E, h5km, ML2.1*
CSEM ***28*** *09:47:16.2±0.1, 39°12'N×29°03'E, h4km±1km, ML2.5, Error ellipse: s-maj=2.2km s-min=1.5km az=140.0*

ISC 28 09:47:15.7±0.9, 39°12'N±0°03'×29°03'E±0°03, h17km±7km, n22, σ0°25/35, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.25	253	P	Pg	09 47 21.5	0.0
DEMI				S	Sg	09 47 25.4	0.0
DEMI	Demirci	0.25	253	iP	Pg	09 47 21.5	0.0
DEMI				iS	Sg	09 47 25.4	0.0
GDZ	Gediz	0.35	94	P	Pg	09 47 23.3	+0.2
GDZ				S	Sg	09 47 28.4	+0.1
GDZ	Gediz	0.35	94	iP	Pg	09 47 23.3	+0.2
GDZ				iS	Sg	09 47 28.4	+0.1
TVSB	Tavsanli	0.47	45	ePG	Pg	09 47 25.2	-0.1
TVSB				eSG	Sg	09 47 31.2	-0.5
TVSB	Tavsanli	0.47	45	ePg	Pg	09 47 25.2	-0.1
TVSB				eSg	Sg	09 47 31.2	-0.5
KULA	Kula-Manisa	0.67	206	ePG	Pb	09 47 28.9	0.0
KULA				eSG	Sg	09 47 37.8	+0.1
KULA	Kula-Manisa	0.67	206	ePg	Pb	09 47 28.9	0.0
KULA				eSg	Sg	09 47 37.8	+0.1
KHAL	Karahalli	0.83	154	P	Pn	09 47 32.4	-0.3
KHAL				S	Sg	09 47 43.1	+0.2
KHAL	Karahalli	0.83	154	iP	Pn	09 47 32.4	-0.3
KHAL				iS	Sg	09 47 43.1	+0.2
KHL	Karahalli	0.88	154	ePG	Pb	09 47 32.5	-0.1
IGD	Bursa	1.15	7	iP	Pn	09 47 37.1	0.0
IGD				iS	Sn	09 47 52.4	0.0
IZI	Iznik	1.27	16	ePN	Pg	09 47 40.5	+0.3
IZI	Iznik	1.27	16	ePn	Pg	09 47 40.5	+0.3
BORA	Eskisehir	1.34	55	P	Pg	09 47 41.5	-0.1
BORA				S	Sg	09 47 59.6	+0.5
BORA	Eskisehir	1.34	55	iP	Pg	09 47 41.5	-0.1
BORA				iS	Sg	09 47 59.6	+0.5
GONE	Gonen-Balikesi	1.39	312	ePN	Pg	09 47 42.8	+0.2
GONE	Gonen-Balikesi	1.39	312	ePn	Pg	09 47 42.8	+0.2
ARMT	Armutlu	1.45	355	ePN	Pg	09 47 43.5	-0.2
ARMT	Armutlu	1.45	355	ePn	Pg	09 47 43.5	-0.2
GULT	Gulveren	1.74	41	ePN	Pb	09 47 47.3	0.0
GULT	Gulveren	1.74	41	ePn	Pb	09 47 47.3	0.0

DDA ***28*** *09:55:47.6, 39°14N×29°11E, h5km, Ml3.7*
ISK ***28*** *09:55:47.3, 39°11N×29°13E, h6km, ML3.3*
CSEM ***28*** *09:55:47.8±0.1, 39°12N×29°11E, h2km, ML3.7, Error ellipse: s-maj=2.6km s-min=2.2km az=118.0*

ISC 28 09:55:48.0±1.0, 39°13'N±0°02'×29°11'E±0°02, h7km±10km, n99, σ0°67/129, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	Gediz	0.29	98	P	Pg	09 55 53.6	-0.3
GDZ				S	Sg	09 55 57.7	-0.2
GDZ	Gediz	0.29	98	iP	Pg	09 55 53.6	-0.3
GDZ				iS	Sg	09 55 57.7	-0.2
DEMI	Demirci	0.32	254	P	Pg	09 55 54.5	+0.2
DEMI				S	Sg	09 55 58.8	+0.4
DEMI	Demirci	0.32	254	iP	Pg	09 55 54.5	+0.2
DEMI				iS	Sg	09 55 58.8	+0.4
TVSB	Tavsanli	0.42	41	PG	Pg	09 55 56.2	-0.1
TVSB				eSG	Sg	09 56 02.1	+0.2
TVSB	Tavsanli	0.42	41	iPg	Pg	09 55 56.2	-0.1
TVSB				eSg	Sg	09 56 02.1	+0.2
KULA	Kula-Manisa	0.71	210	PG	Pg	09 56 01.2	-0.4
KULA				eSG	Sg	09 56 10.6	-0.2
KULA	Kula-Manisa	0.71	210	iPg	Pg	09 56 01.2	-0.4
KULA				eSg	Sg	09 56 10.6	-0.2
KHAL	Karahalli	0.82	158	P	Pg	09 56 03.3	-0.5
KHAL				S	Sg	09 56 13.4	-0.9
KHAL	Karahalli	0.82	158	iP	Pg	09 56 03.3	-0.5
KHAL				iS	Sg	09 56 13.4	-0.9
KHL	Karahalli	0.87	158	PG	Pg	09 56 04.1	-0.6
KHL	Karahalli	0.87	158	iPg	Pg	09 56 04.1	-0.6
ORLT	Orhaneli	0.93	350	ePG	Pg	09 56 06.1	+0.2
ORLT	Orhaneli	0.93	350	ePg	Pg	09 56 06.1	+0.2
AKHS	Akhisar	1.04	256	P	Pg	09 56 08.0	0.0
AKHS				S	Sb	09 56 22.3	+0.2
AKHS	Akhisar	1.04	256	iP	Pg	09 56 08.0	0.0
AKHS				iS	Sb	09 56 22.3	+0.2
AKS	Akhisar	1.04	256	ePG	Pb	09 56 08.3	0.0
AKS	Akhisar	1.04	256	ePg	Pb	09 56 08.3	0.0
BALB	Balikesir	1.08	299	ePN	Pn	09 56 09.4	-0.1
BALB	Balikesir	1.08	299	ePn	Pn	09 56 09.4	-0.1
IGD	Bursa	1.14	4	iP	Pg	09 56 08.5	-1.4
IGD				iS	Sn	09 56 25.7	-0.5
CAVI	Cavuskoy	1.21	28	ePN	Pg	09 56 10.9	-0.4
CAVI	Cavuskoy	1.21	28	ePn	Pg	09 56 10.9	-0.4
IZI	Iznik	1.24	13	ePN	Pb	09 56 11.4	-0.3
IZI	Iznik	1.24	13	ePn	Pb	09 56 11.5	-0.3
MDNY	Mudanya-Bursa	1.25	352	ePN	Pg	09 56 12.1	+0.1
MDNY	Mudanya-Bursa	1.25	352	ePn	Pg	09 56 12.1	+0.1
KCTX	Karacabey (Bur	1.27	333	ePN	Pn	09 56 12.0	-0.3
KCTX	Karacabey (Bur	1.27	333	ePn	Pn	09 56 12.0	-0.3
BORA	Eskisehir	1.28	54	P	Pn	09 56 11.8	-0.7
BORA				S	Sb	09 56 29.3	0.0
BORA	Eskisehir	1.28	54	iP	Pn	09 56 11.8	-0.7
BORA				iS	Sb	09 56 29.3	0.0
BALY	Balya	1.30	298	P	Pb	09 56 12.9	0.0
BALY	Balya	1.30	298	iP	Pb	09 56 12.9	0.0
GEMT	Gemlik	1.30	3	ePN	Pb	09 56 12.9	0.0
GEMT	Gemlik	1.30	3	ePn	Pb	09 56 12.9	0.0
DENT	Denizli	1.38	182	ePN	Pn	09 56 12.9	-0.8
DENT	Denizli	1.38	182	ePn	Pn	09 56 12.9	-0.8
ADVT	Abdulvahap	1.39	20	ePN	Pg	09 56 14.7	0.0
ADVT	Abdulvahap	1.39	20	ePn	Pg	09 56 14.7	0.0
ESKT	Eskisehir	1.41	73	iP	Pn	09 56 14.4	+0.2
ESKT				iS	Sb	09 56 32.5	-0.4
SEYT	Eskypehyr	1.41	73	P	Pn	09 56 14.4	+0.2
SEYT				S	Sb	09 56 32.5	-0.4
DNZL	Cakiroluk	1.44	182	P	Pb	09 56 15.4	+0.1
DNZL	Cakiroluk	1.44	182	iP	Pb	09 56 15.4	+0.1
DNZL				iS	Sg	09 56 35.8	+1.5
ARMT	Armutlu	1.45	353	ePN	Pn	09 56 14.3	-0.4
ARMT	Armutlu	1.45	353	ePn	Pn	09 56 14.3	-0.4
GPA	Golpazari	1.48	38	ePN	Pb	09 56 15.8	-0.1
GPA	Golpazari	1.48	38	ePn	Pb	09 56 15.9	-0.1
BOLV	Bolvadin	1.50	105	P	Pg	09 56 17.0	+0.3
BOLV				S	Sg	09 56 37.4	+1.2
BOLV	Bolvadin	1.50	105	iP	Pg	09 56 17.0	+0.3
BOLV				iS	Sg	09 56 37.4	+1.2
AYDB	Zeytinkoy-Aydi	1.52	219	ePN	Pb	09 56 16.4	-0.2
AYDB	Zeytinkoy-Aydi	1.52	219	ePn	Pb	09 56 16.4	-0.2
EDC	Edincik	1.55	322	ePN	Pn	09 56 16.4	+0.4
EDC	Edincik	1.55	322	ePn	Pn	09 56 16.4	+0.4
KNL	Bal¨–kesir	1.67	314	iP	Pb	09 56 18.7	-0.4
KNL				iS	Sg	09 56 41.9	+0.2
GULT	Gulveren	1.69	39	ePN	Pn	09 56 17.9	-0.2
GULT	Gulveren	1.69	39	ePn	Pn	09 56 17.9	-0.2
DKL	Dikili	1.71	269	ePN	Pn	09 56 18.5	+0.2
DKL	Dikili	1.71	269	ePn	Pn	09 56 18.5	+0.2
ISP	Isparta	1.71	139	ePN	Pn	09 56 18.2	-0.2
ISP	Isparta	1.71	139	ePn	Pn	09 56 18.2	-0.2
BUY	Buyukada	1.72	0	P	Pn	09 56 18.1	-0.3
BUY				S	Sg	09 56 43.0	-0.3
BUY	Buyukada	1.72	0	iP	Pn	09 56 18.1	-0.3
BUY				iS	Sg	09 56 43.0	-0.3
BAGO	Egridir - ISPA	1.74	130	iP	Pb	09 56 19.8	-0.6
BAGO				iS	Sg	09 56 47.4	+3.4
HRT	Hereke	1.75	14	ePN	Pn	09 56 19.5	+0.7
HRT	Hereke	1.75	14	ePn	Pn	09 56 19.5	+0.7
AYDN	Tasoluk	1.75	214	P	Pn	09 56 18.5	-0.4
AYDN				S	Sg	09 56 44.2	-0.2
AYDN	Tasoluk	1.75	214	iP	Pn	09 56 18.5	-0.4
AYDN				iS	Sg	09 56 44.2	-0.2
SPNC	Sapanca-Adapaz	1.81	30	ePN	Pb	09 56 20.6	-0.9
SPNC	Sapanca-Adapaz	1.81	30	ePn	Pb	09 56 20.6	-0.9
MRMT	Marmara Adasi	1.88	322	ePN	Pb	09 56 21.8	-0.9
MRMT	Marmara Adasi	1.88	322	ePn	Pb	09 56 21.8	-0.9
AYVA	Ayvalik	1.88	276	P	Pg	09 56 23.7	-0.5
AYVA	Ayvalik	1.88	276	iP	Pg	09 56 23.7	-0.5
AYVA				iS	Sg	09 56 48.9	+0.3
ISK	Istanbul-Kandi	1.93	359	ePN	Pb	09 56 22.9	-0.7
ISK	Istanbul-Kandi	1.93	359	ePn	Pb	09 56 22.9	-0.7
DGB	˜zmir	2.05	239	iP	Pg	09 56 26.4	-0.8
DGB				iS	Sg	09 56 54.9	+1.1
BTAS	Taskesti	2.05	45	iP	Pg	09 56 26.9	-0.5
BTAS				iS	Sg	09 56 54.8	+0.9
SILT	Sile	2.06	11	ePN	Pn	09 56 24.1	+1.0
SILT	Sile	2.06	11	ePn	Pn	09 56 24.1	+1.0
BGKT	Bogazkoy	2.06	353	ePN	Pn	09 56 23.2	+0.1
BGKT	Bogazkoy	2.06	353	ePn	Pn	09 56 23.2	+0.1
URLA	Izmir	2.11	249	iP	Pg	09 56 29.0	+0.6
KLYT	Kilyos	2.12	359	ePN	Pn	09 56 24.7	+0.8
KLYT	Kilyos	2.12	359	ePn	Pn	09 56 24.7	+0.8
KAND	Kocaeli-Kandir	2.13	23	P	Pn	09 56 23.8	-0.2
KAND	Kocaeli-Kandir	2.13	23	iP	Pn	09 56 23.8	-0.2
KAND				iS	Sg	09 56 56.4	-0.1
RKY	Sarkoy-Tekirda	2.15	317	ePN	Pn	09 56 25.0	+0.6
RKY	Sarkoy-Tekirda	2.15	317	ePn	Pn	09 56 25.0	+0.6
CTKS	Kestanelik-??a	2.15	348	ePN	Pn	09 56 24.7	+0.4
CTKS	Kestanelik-??a	2.15	348	ePn	Pn	09 56 24.7	+0.4
KIZT	Kizilcal	2.18	96	ePN	Pn	09 56 25.6	+0.8
KIZT	Kizilcal	2.18	96	ePn	Pn	09 56 25.6	+0.8
SAHE	Sakarya_HENDEK	2.18	37	P	Pn	09 56 25.3	+0.5
SAHE	Sakarya_HENDEK	2.18	37	iP	Pn	09 56 25.3	+0.5
ZEY	˜zmir	2.22	247	iP	Pb	09 56 29.2	+0.7
CTYL	Yalikoy Yolu	2.42	345	ePN	Pn	09 56 29.0	+1.0
CTYL	Yalikoy Yolu	2.42	345	ePn	Pn	09 56 29.0	+1.0
BCAM	Yenicaga	2.83	53	P	Pn	09 56 36.0	+2.2
BCAM	Yenicaga	2.83	53	iP	Pn	09 56 36.0	+2.2

IDC 28 09:58:53.2±1.4, 38°90N×143°11E, h0km, mb3.3/2, mb1 3.6/5, mb1mx3.3/63, mbtmp3.4/5, ML3.2/2, Error ellipse: s-maj=42.1km s-min=23.9km az=121.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	4.54	240	Pn	Pn	10 00 01.7	-1.5
	1.5nm,0.3s,baz=44,slow=11,SNR=52						
MAT	Matsushiro	4.54	240	P	Pn	10 00 02.6	-0.6
MAT				eS	Sn	10 00 57.6	+0.9
ASAJ	Asahikawa	5.23	356	Pn	Pn	10 00 12.0	-0.6
	0.6nm,0.3s,baz=231,slow=6.5,SNR=5.4						
KSRS	Korea Array	12.04	268	Pn	Pn	10 01 48.1	+2.1
	baz=81,slow=12,SNR=3.7						
ILAR	Eielson Array	47.21	33	P	P	10 07 27.4	0.0
	0.2nm,0.6s,baz=252,slow=4.6,SNR=3.7						
WRA	Warramunga Arr	59.10	190	P	P	10 08 55.4	0.0
	0.3nm,0.6s,baz=6.1,slow=6.7,SNR=4.4						

ISCJB ***28*** *10:01:09.2±0.6, 23°97N±0°02×122°30E±0°01, h9km±4km, mb3.7/10, MS3.0/1, Error ellipse: s-maj=2.9km s-min=2.0km az=157.6*
JMA ***28*** *10:01:09.4±0.1, 23°96N×122°27E, h18km±3km, M3.6*
TAP ***28*** *10:01:10.1, 24°04N×122°28E, h21km, ML3.9, C*
IDC ***28*** *10:01:20.0±6.5, 24°06N×121°99E, h114km±64km, mb3.3/9, mb1 3.4/10, mb1mx3.2/64, mbtmp3.6/10, MS3.2/1, Ms1 3.2/1, ms1mx2.5/37, Error ellipse: s-maj=34.8km s-min=13.7km az=56.0*

ISC 28 10:01:08.0±1.0, 23°95N±0°02×122°31E±0°02, h14km±7km, n80, σ0°95/133, mb3.7/10, 5C-7D, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HWA	Hwalien	0.65	272	P	Pn	10 01 22.5	-0.3
	baz=249						
TWD	Chiawan	0.67	281	⇓iP	Pn	10 01 22.4	-0.6
	baz=274						
TWD				S	Sb	10 01 31.5	+0.9
	baz=274						
ENA	Nanau	0.70	312	⇑iP	Pb	10 01 22.3	+0.2
	baz=318						
JYNG	Yonagunijimaku	0.76	49	P	Pn	10 01 24.3	-0.1
JYNG				S	Sb	10 01 34.0	+0.6
TWC	Suao	0.78	327	⇑iP	Pg	10 01 23.2	0.0
	baz=334						
TWC				eS	Sg	10 01 31.4	-2.0
	baz=334						
ESL	Shilin	0.81	261	eP	Pn	10 01 24.6	-0.6
	baz=244						
ESL				eS	Sb	10 01 35.0	+0.1
	baz=244						
YOJ	Yonaguni jima	0.82	51	P	Pn	10 01 25.2	+0.1
YOJ				S	Sn	10 01 37.3	+0.2
ILA	Ilan	0.96	328	eP	Pn	10 01 27.0	-0.1
	baz=326						
ILA				eS	Sg	10 01 39.2	+0.1
	baz=326

*IDC **28** 10:01:53.8±0.5, 36°.23N×142°.14E, h0km, mb4.3/38, mb1 4.4/44, mb1mx4.3/70, mbtmp4.3/44, ML3.9/4, MS3.5/16, Ms1 3.6/16, ms1mx3.3/57, Error ellipse: s-maj=13.9km s-min=11.6km az=118.0*
*JMA **28** 10:01:56.7±0.2, 36°.31N×142°.16E, h73km, M4.2*
*NEIC **28** 10:01:57.8±1.2, 36°.31N×142°.14E, h24km±8km, mb4.7/13, Error ellipse: s-maj=5.2km s-min=4.0km az=123.0*
*MOS **28** 10:02:00.4±0.9, 36°.69N×141°.99E, h39km, mb4.8/37, Error ellipse: s-maj=8.6km s-min=5.4km az=110.9*

ISC 28 10:01:57.6±0.5, 36°.33N±0°.04×142°.23E±0°.06, h23km±2km, h22km:pP-P, n191, σ1§43/205, mb4.6/68, MS3.9/17, 9C-7D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.27**	**241**	P		**Pn**	**10 02 18.3**	**-1.7**
CHOJ				*e*S		**Sn**	**10 02 35.1**	**-1.3**
JHO	**Hitachi**	**1.37**	**282**	P		**Pn**	**10 02 19.4**	**-1.9**
ONAJ	**Iwakimizuishiy**	**1.39**	**304**	P		**Pn**	**10 02 19.9**	**-1.7**
JFK	**Kawauchi**	**1.50**	**314**	P		**Pn**	**10 02 21.4**	**-1.8**
JFK				*e*S		**Sn**	**10 02 40.3**	**-1.9**
JYT	**Yasato**	**1.65**	**267**	P		**Pn**	**10 02 23.2**	**-2.0**
JMM	**Marumori**	**1.92**	**324**	P		**Pn**	**10 02 27.3**	**-1.6**
JFT	**Otama**	**1.93**	**309**	P		**Pn**	**10 02 28.5**	**-0.5**
JFT				S		**Sn**	**10 02 52.4**	**-0.2**
BSO1	**Boso 1**	**1.96**	**212**	P		**Pn**	**10 02 27.4**	**-1.5**
BSO1				S		**Sn**	**10 02 51.6**	**-0.9**
BSO3	**Boso 3**	**2.07**	**223**	P		**Pn**	**10 02 29.2**	**-1.5**
BSO3				*e*S		**Sn**	**10 02 55.8**	**+0.1**
JAG	**Ashikaga**	**2.24**	**273**	P		**Pn**	**10 02 31.8**	**-1.6**
MJAR	**Matsushiro Arr**	**3.25**	**275**	Pn		**Pn**	**10 02 46.1**	**-1.1**
	37nm,0.3s,baz=112,slow=8.8,SNR=232							
MJAR				LR		LR	10 03 54.8	
	comp=Z,286nm,21.1s,baz=100,slow=38							
MAJO	**Matsushiro**	**3.25**	**275**	*e*P		**Pn**	**10 02 46.9**	**-0.4**
MAJO	**Matsushiro**	**3.25**	**275**	*e*Pn		**Pn**	**10 02 47.2**	**-0.1**
MAT	**Matsushiro**	**3.25**	**275**	P		**Pn**	**10 02 46.9**	**-0.4**
MAT				S		**Sn**	**10 03 27.0**	**+1.7**
MJB9	**Matsu-Tunnel**	**3.25**	**275**	*e*Pn		**Pn**	**10 02 47.2**	**-0.1**
JHJ2	**Mitsune**	**3.77**	**212**	*e*Pn		**Pn**	**10 02 53.1**	**-1.3**
JHJ	**Hachijo jima 2**	**3.78**	**213**	Pn		**Pn**	**10 02 52.0**	**-2.5**
	257nm,0.3s,baz=74,slow=7.6,SNR=57							
JHJ				Sn		**Sn**	**10 03 35.1**	**-3.2**
	220nm,0.3s,baz=48,slow=22,SNR=11							
INU	**Inuyama**	**4.35**	**259**	*e*Pn		**Pn**	**10 03 02.2**	**-0.1**
ERM	**Erimo**	**5.72**	**7**	‖*e*P		**Pn**	**10 03 19.1**	**-2.1**
ERM	**Erimo**	**5.72**	**7**	*e*Pn		**Pn**	**10 03 21.6**	**+0.4**
ERM				*e*Sn		**Sn**	**10 04 25.4**	**-0.7**
ASAJ	**Asahikawa**	**7.79**	**2**	Pn		**Pn**	**10 03 47.4**	**-2.1**
	4.9nm,0.3s,baz=208,slow=8.6,SNR=21							
ASAJ				Sn		**Sn**	**10 05 15.9**	**-1.0**
	3.1nm,0.3s,baz=97,slow=30,SNR=8.7							
ASAJ	**Asahikawa**	**7.79**	**2**	*e*Pn		**Pn**	**10 03 47.5**	**-1.9**
ASAJ				*e*Sn		**Sn**	**10 05 13.5**	**-3.4**
CBIJ	**Chichi jima**	**9.20**	**180**	*e*Pn		**Pn**	**10 04 08.2**	**-0.8**
CBIJ				Sn		Sn	10 05 43.2	-8.7
JCJ	**Chichijima**	**9.20**	**180**	Pn		**Pn**	**10 04 04.9**	**-4.1**
	7.2nm,0.3s,baz=285,slow=23,SNR=2.2							
JCJ				Sn		Sn	10 05 43.2	-8.7
	25nm,0.3s,baz=278,slow=22,SNR=5.3							
KUR	**Kuril'sk**	**9.87**	**24**	P		**Pn**	**10 04 18.0**	**0.0**
KUR				*e*S		**Sn**	**10 06 00.0**	**-8.0**
KUR				pmax		pmax		
	comp=Z,13nm,0.4s							
KUR				smax		smax		
	comp=N,20nm,0.4s							
KUR				smax		smax		
	comp=E,34nm,0.4s							
JNU	**Nakatsue**	**9.88**	**254**	Pn		**Pn**	**10 04 17.1**	**-1.1**
	comp=E,0.5nm,0.3s,baz=90,slow=2.8,SNR=3.5							
JNU				LR		LR	10 08 20.8	
	comp=E,326nm,19.0s,baz=108,slow=40							
JNU	**Nakatsue**	**9.88**	**254**	*e*Pn		**Pn**	**10 04 18.5**	**+0.2**
VLA	**Vladivostok**	**10.46**	**314**	‖*e*P		Pn	10 04 32.4	+6.3
VLA				pmax		pmax		
	comp=Z,35nm,0.7s							
YSS	**Yuzh-Sakhalins**	**10.62**	**2**	*e*P		**Pn**	**10 04 28.9**	**+0.5**
YSS	**Yuzh-Sakhalins**	**10.62**	**2**	*e*Pn		**Pn**	**10 04 28.9**	**+0.5**
USRK	**Ussuriysk Ar.**	**11.09**	**318**	Pn		**Pn**	**10 04 35.4**	**+0.7**
	comp=Z,0.4nm,0.3s,baz=132,slow=12,SNR=9.7							
USRK				LR		LR	10 08 42.2	
	comp=Z,308nm,19.9s,baz=116,slow=37							
KSRS	**Korea Array**	**11.52**	**280**	Pn		**Pn**	**10 04 42.1**	**+1.5**
	comp=Z,0.4nm,0.3s,baz=93,slow=13,SNR=22							
KSRS				LR		LR	10 09 08.9	
	comp=Z,367nm,18.8s,baz=74,slow=38							
KS01	**Wonju Array Si**	**11.54**	**280**	*e*Pn		**Pn**	**10 04 39.8**	**-1.1**
KS15	**Wonju Array Si**	**11.54**	**280**	*e*Pn		**Pn**	**10 04 39.4**	**-1.6**
KSAR	**Wonju Array Be**	**11.54**	**280**	P		**Pn**	**10 04 42.1**	**+1.1**
KSAR	**Wonju Array Be**	**11.54**	**280**	Pn		**Pn**	**10 04 42.1**	**+1.1**
TJN	**Taejon**	**11.99**	**275**	‖*e*P		**Pn**	**10 04 48.6**	**+1.5**
MDJ	**Mudanjiang**	**12.68**	**315**	P		**Pn**	**10 04 56.5**	**0.0**
MDJ				pmax		pmax		
	comp=Z,5.0nm,1.0s							
MDJ				pmax		pmax		
	comp=Z,140nm,5.1s							
HABR	**Khabarovsk**	**13.24**	**339**	*e*P		**Pn**	**10 05 02.7**	**-1.3**
HABR				*e*S		**Sn**	**10 07 29.7**	**-0.7**
HABR				pmax		pmax		
	comp=Z,10.0nm,1.3s							
HABR				pmax		pmax		
	comp=N,10.0nm,1.3s							
HABR				pmax		pmax		
	comp=E,6.0nm,1.3s							
HABR				MLR		MLR		
	comp=Z,200nm,12.0s							
TYV	**Tymovskoe**	**14.53**	**1**	*e*P		**Pn**	**10 05 23.5**	**+1.8**
TYV				pmax		pmax		
	comp=Z,10.0nm,0.6s							
CN2	**Changchun**	**14.85**	**305**	*e*P		**Pn**	**10 05 27.3**	**+1.3**
CN2				pmax		pmax		
	comp=Z,10.0nm,0.5s							
KLR	**Kul'dur**	**15.00**	**333**	Pn		**Pn**	**10 05 26.4**	**-1.7**
	comp=Z,0.3nm,0.3s,baz=134,slow=9.9,SNR=5.6							
KLR				LR		LR	10 11 09.4	
	comp=Z,134nm,20.6s,baz=130,slow=37							
PETK	**Petropavlovsk-**	**19.98**	**28**	P		**Pn**	**10 06 30.8**	**+0.8**
	comp=Z,4.2nm,0.9s,baz=178,slow=11,SNR=3.7							
BJI	**Beijing**	**20.79**	**288**	P		**P**	**10 06 35.5**	**-1.6**
BJI				pmax		pmax		
	comp=Z,8.0nm,0.9s							
GUMO	**Guam**	**22.77**	**173**	LR		LR	10 23 03.1	
	comp=Z,22nm,18.0s,baz=15,slow=56							
CLNS	**Chul'man**	**23.59**	**336**	*e*P		**P**	**10 07 04.6**	**-2.0**
CLNS				pmax		pmax		
	comp=N,12nm,1.2s							
CLNS				pmax		pmax		
	comp=Z,20nm,0.8s							
CLNS				pmax		pmax		
	comp=E,5.0nm,1.0s							
MA2	**Magadan**	**23.91**	**11**	P		**P**	**10 07 09.9**	**+0.3**
	comp=E,6.6nm,0.8s,baz=212,slow=6.2,SNR=4.1							
MA2				LR		LR	10 17 25.7	
	comp=E,74nm,19.1s,baz=183,slow=39							
WHN	**Wuhan**	**23.93**	**264**	‖P		**P**	**10 07 08.5**	**-1.4**
WHN				pP		**sP**	**10 07 18.5**	**-1.0**
HHC	**Hu-ho-hao-te**	**24.32**	**290**	*e*P		**P**	**10 07 13.5**	**-0.2**
HHC				pmax		pmax		
	comp=Z,28nm,0.9s							
HHC				pmax		pmax		
	comp=Z,240nm,4.5s							
YAK	**Yakutsk**	**26.90**	**347**	P		**P**	**10 07 36.2**	**-0.5**
	comp=Z,1.6nm,0.3s,baz=341,slow=22,SNR=5.5							
YAK	**Yakutsk**	**26.90**	**347**	*e*P		**P**	**10 07 36.1**	**-0.5**
YAK				*e*			10 07 46.7	
YAK				pmax		pmax		
	comp=Z,22nm,1.0s							
YAK				pmax		pmax		
	comp=N,12nm,1.1s							
YAK				pmax		pmax		
	comp=E,6.0nm,1.2s							
YAK	**Yakutsk**	**26.90**	**347**	*e*P		**P**	**10 07 36.1**	**-0.5**
	comp=E,57nm,1.1s							
H11N2	**WAKE ISLAND Hy**	**27.22**	**121**	T		T	10 36 12.7	
	baz=312,slow=75,SNR=50							
H11N1	**WAKE ISLAND Hy**	**27.23**	**121**	T		T	10 36 13.1	
	baz=312,slow=75,SNR=3.3							
H11N3	**WAKE ISLAND Hy**	**27.24**	**121**	T		T	10 36 17.7	
	baz=312,slow=75,SNR=48							
XAN	**Xi'an**	**27.25**	**275**	P		**P**	**10 07 38.5**	**-1.6**
SEY	**Seymchan**	**27.36**	**10**	P		**P**	**10 07 42.1**	**+1.3**
	comp=E,2.0nm,0.7s,baz=184,slow=10.0,SNR=7.8							
SEY	**Seymchan**	**27.36**	**10**	‖*e*P		**P**	**10 07 42.8**	**+2.1**
H11S1	**WAKE ISLAND Hy**	**27.92**	**123**	T		T	10 37 07.3	
	baz=314,slow=76,SNR=18							
H11S3	**WAKE ISLAND Hy**	**27.93**	**123**	T		T	10 37 02.7	
	baz=314,slow=76,SNR=19							
ENH	**Enshi**	**27.94**	**267**	*e*P		**P**	**10 07 44.9**	**-1.4**
	comp=E,54nm,0.8s							
H11S2	**WAKE ISLAND Hy**	**27.94**	**123**	T		T	10 37 13.9	
	baz=314,slow=76,SNR=18							
ULN	**Ulaanbaatar**	**28.30**	**305**	*c i*P		**P**	**10 07 49.4**	**-0.1**
ULN				pmax		pmax		
	comp=Z,19nm,1.0s							
ULN	**Ulaanbaatar**	**28.30**	**305**	*e*P		**P**	**10 07 48.4**	**-1.1**
	comp=Z,15nm,0.9s							
SONA1	**Songino Array**	**28.72**	**305**	*e*P		**P**	**10 07 53.3**	**0.0**
SONM	**Songino Array**	**28.73**	**305**	P		**P**	**10 07 53.0**	**-0.3**
	comp=Z,18nm,0.9s,baz=104,slow=9.3,SNR=52							
LZH	**Lanzhou**	**30.84**	**281**	*e*P		**P**	**10 08 12.0**	**-0.2**
LZH				pP		sP	10 08 22.3	+0.5
LZH				sP		pP	10 08 26.0	+7.0
LZH				pmax		pmax		
	comp=Z,20nm,1.0s							
ZAK	**Zakamensk**	**31.22**	**309**	*e*P		**P**	**10 08 14.9**	**-0.4**
ZAK				pmax		pmax		
	comp=Z,11nm,1.1s							
TLY	**Talaya**	**31.29**	**312**	*e*P		**P**	**10 08 16.8**	**+1.0**
TLY				pmax		pmax		
	comp=Z,9.0nm,0.6s							
TLY				MLR		MLR		
	comp=Z,235nm,15.0s							
GYA	**Guiyang**	**31.76**	**262**	*e*P		**P**	**10 08 20.5**	**+0.2**
GYA				pmax		pmax		
	comp=Z,10.0nm,0.9s							
CD2	**Chengdu**	**32.34**	**272**	P		**P**	**10 08 23.5**	**-1.8**
CD2				pmax		pmax		
	comp=Z,17nm,0.6s							
DAV	**Davao City (W)**	**32.86**	**212**	LR		LR	10 19 57.4	
	comp=Z,51nm,21.8s,baz=168,slow=33							
QIZ	**Qiongzhong**	**33.25**	**248**	P		**P**	**10 08 33.0**	**-0.3**
QIZ				S		**S**	**10 13 53.3**	**+1.0**
QIZ				LR		LR		
	comp=Z,66nm,18.6s							
GTA	**Gaotai**	**33.40**	**288**	*e*P		**P**	**10 08 34.8**	**+0.2**
GTA				pP		sP	10 08 44.3	+0.1
GTA				sP		pP	10 08 48.5	+7.1
GTA				pmax		pmax		
	comp=Z,33nm,0.7s							
BILL	**Bilibino**	**34.52**	**16**	‖*e*P		**P**	**10 08 44.0**	**+0.2**
BILL				*e*			10 08 53.6	
BILL				*e*			10 09 04.5	
BILL				pmax		pmax		
	comp=Z,4.0nm,1.7s							
BILL				MLR		MLR		
	comp=Z,77nm,19.0s							
BILL	**Bilibino**	**34.52**	**16**	*e*P		**P**	**10 08 44.3**	**+0.5**
	comp=Z,10nm,1.3s							
TIXI	**Tiksi**	**36.07**	**353**	P		**P**	**10 08 56.6**	**-0.5**
	comp=Z,0.9nm,0.3s,baz=162,slow=6.4,SNR=2.7							
TIXI	**Tiksi**	**36.07**	**353**	‖*i*P		**P**	**10 08 56.8**	**-0.2**
TIXI				pmax		pmax		
	comp=Z,2.0nm,1.0s							
NONG	**Nongkai**	**38.91**	**253**	P		**P**	**10 09 21.7**	**0.0**
	comp=Z,21nm,1.2s							
LAMP	**Lampang**	**41.39**	**256**	P		**P**	**10 09 38.8**	**-3.5**
WMQ	**Urumqi**	**41.75**	**298**	P		**P**	**10 09 45.5**	**+0.5**
ZAA0	**Zalesovo Array**	**42.88**	**313**	*e*P		**P**	**10 09 53.4**	**-0.6**
ZALV	**Zalesovo Beam**	**42.88**	**313**	P		**P**	**10 09 53.8**	**-0.2**
	comp=Z,5.5nm,0.7s,baz=89,slow=7.0,SNR=13							
ZALV	**Zalesovo Beam**	**42.88**	**313**	*i* P		**P**	**10 09 54.0**	**0.0**
ZALV				pmax		pmax		
	comp=Z,6.0nm,0.7s							
NVS	**Novosibirsk**	**43.80**	**314**	*e*P		**P**	**10 10 00.5**	**-0.9**
NRIK	**Noril'sk**	**44.18**	**335**	P		**P**	**10 10 04.9**	**+0.6**
	comp=Z,2.2nm,0.5s,baz=100,slow=7.0,SNR=3.1							
MK01	**Makanchi Array**	**45.05**	**303**	*e*P		**P**	**10 10 11.2**	**-0.4**
MK31	**Makanchi Array**	**45.05**	**303**	*e*P		**P**	**10 10 11.6**	**0.0**
MK31	**Makanchi Array**	**45.05**	**303**	*e*P		**P**	**10 10 11.6**	**0.0**
MKAR	**Makanchi Array**	**45.05**	**303**	P		**P**	**10 10 11.2**	**-0.4**
	comp=Z,10nm,0.6s,baz=86,slow=9.7,SNR=33							
MKAR				LR		LR	10 29 16.8	
	comp=Z,73nm,19.6s,baz=97,slow=36							
MKAR	**Makanchi Array**	**45.05**	**303**	*e*P		**P**	**10 10 11.6**	**0.0**
MAKZ	**Makanchi**	**45.26**	**303**	*e*P		**P**	**10 10 13.3**	**0.0**
MAKZ				pmax		pmax		
	comp=Z,13nm,0.7s							
MAKZ	**Makanchi**	**45.26**	**303**	*e*P		**P**	**10 10 13.3**	**0.0**
	comp=Z,13nm,0.7s							
KURK	**Kurchatov**	**46.88**	**309**	P		**P**	**10 10 25.8**	**-0.1**
KURK				pmax		pmax		
	comp=Z,8.0nm,0.5s							
KURK	**Kurchatov**	**46.88**	**309**	*e*P		**P**	**10 10 25.1**	**-0.8**
	comp=Z,17nm,0.7s							
KURBB	**Kurchatov Arra**	**46.95**	**309**	P		**P**	**10 10 25.8**	**-0.7**
	comp=Z,8.2nm,0.5s,baz=84,slow=8.4,SNR=30							
MDM	**Murphy Dome**	**49.17**	**32**	*e*P		**P**	**10 10 44.7**	**+1.2**
	comp=Z,4.4nm,0.9s							
ILAR	**Eielson Array**	**49.74**	**32**	P		**P**	**10 10 48.2**	**+0.4**
	comp=Z,0.8nm,0.8s,baz=268,slow=6.2,SNR=10							
TKM2	**Tokmak 2**	**50.55**	**299**	*e*P		**P**	**10 10 52.6**	**-1.9**
TKM2				pmax		pmax		
	comp=Z,52nm,1.6s							
TKM2	**Tokmak 2**	**50.55**	**299**	*e*P		**P**	**10 10 52.6**	**-1.9**
	comp=Z,52nm,1.6s							
FRU	**Bishkek**	**51.26**	**299**	*e*P		**P**	**10 11 03.0**	**+3.4**
KSH	**Kashi**	**51.30**	**295**	*e*P		P	10 11 06.0	+5.9
KSH				*e*pP		sP	10 11 16.0	+6.1
KSH				*e*sP		pP	10 11 20.0	+13
KSH				*e*PcP		**PcP**	**10 12 19.5**	**+4.6**
KSH				PcS		**PcS**	**10 16 16.3**	**+3.6**
KSH				S		**S**	**10 18 23.0**	**+5.1**
KSH				ScS		**ScS**	**10 20 50.8**	**+1.5**
KSH				pmax		pmax		
	comp=Z,180nm,5.5s							
KSH				LR		LR		
	comp=N,350nm,9.4s							
KSH				LR		LR		
	comp=E,390nm,15.5s							
KSH				LR		LR		
	comp=Z,190nm,7.0s							
AAK	**Ala-Archa**	**51.41**	**299**	P		**P**	**10 11 00.4**	**-0.5**
	comp=Z,4.0nm,0.4s,baz=83,slow=8.4,SNR=7.7							
AAK	**Ala-Archa**	**51.41**	**299**	‖*e*P		**P**	**10 11 00.9**	**0.0**
AAK				pmax		pmax		
	comp=Z,11nm,1.3s							
AAK	**Ala-Archa**	**51.41**	**299**	*e*P		**P**	**10 11 00.2**	**-0.6**
	comp=Z,9.9nm,1.1s							
BVAR	**Borovoye Array**	**51.53**	**313**	P		**P**	**10 11 01.0**	**-0.5**
	comp=Z,3.5nm,0.8s,baz=84,slow=7.6,SNR=9.1							
BVAR	**Borovoye Array**	**51.53**	**313**	P		**P**	**10 11 01.0**	**-0.5**
BVAR				pmax		pmax		
	comp=Z,4.0nm,0.8s							
EKS2	**Erkin-Say**	**51.90**	**299**	*e*P		**P**	**10 11 04.2**	**-0.4**
EKS2				pmax		pmax		
	comp=Z,5.0nm,0.9s							
EKS2	**Erkin-Say**	**51.90**	**299**	*e*P		**P**	**10 11 04.2**	**-0.4**
	comp=Z,5.1nm,0.9s							
PSI	**Prapat**	**52.01**	**240**	P		**P**	**10 11 04.9**	**-0.7**
	comp=Z,2.9nm,0.6s,baz=349,slow=5.2,SNR=2.8							
ZRNK	**Zerenda**	**52.37**	**313**	*e*P		**P**	**10 11 07.5**	**-0.2**
ZRNK				pmax		pmax		
	comp=Z,10.0nm,0.9s							
ZRNK	**Zerenda**	**52.37**	**313**	*e*P		**P**	**10 11 07.5**	**-0.2**
	comp=Z,10.0nm,0.9s							
LEM	**Lembang**	**53.82**	**224**	P		**P**	**10 11 23.4**	**+4.4**
	comp=Z,14nm,0.3s,baz=146,slow=23,SNR=2.8							
KKAR	**Karatay Array**	**54.05**	**301**	*e*P		**P**	**10 11 20.2**	**-0.1**
KKAR	**Karatay Array**	**54.05**	**301**	*e*P		**P**	**10 11 20.2**	**-0.1**
INK	**Inuvik**	**54.72**	**27**	P		**P**	**10 11 25.4**	**+0.7**
	comp=Z,2.1nm,0.7s,baz=349,slow=2.7,SNR=3.1							
WRAB	**Tennant Creek**	**56.45**	**189**	‖*e*P		**P**	**10 11 36.2**	**-1.4**
WRAB				pmax		pmax		
	comp=Z,44nm,2.5s							
WB2	**Warramunga Arr**	**56.46**	**189**	*e*P		**P**	**10 11 37.8**	**+0.1**
	comp=Z,23nm,1.6s							
WRA	**Warramunga Arr**	**56.46**	**189**	P		**P**	**10 11 36.7**	**-1.0**
	comp=Z,1.4nm,0.5s,baz=6.4,slow=7.3,SNR=17							
WRA	**Warramunga Arr**	**56.46**	**189**	*i* P		**P**	**10 11 36.2**	**-1.5**
WRA				pmax		pmax		
	comp=Z,1.0nm,0.5s							
ARU	**Arti**	**57.32**	**319**	P		**P**	**10 11 42.9**	**-0.6**
	comp=Z,3.4nm,0.4s,baz=70,slow=4.4,SNR=12							
ARU	**Arti**	**57.32**	**319**	*c i*P		**P**	**10 11 43.1**	**-0.4**
ARU				S		**S**	**10 19 38.9**	**+0.6**
ARU				SS		**SS**	**10 23 22.5**	**-4.7**
ARU				pmax		pmax		
	comp=Z,22nm,1.7s							
ARU	**Arti**	**57.32**	**319**	*e*P		**P**	**10 11 42.8**	**-0.6**
ARU				*e*pP		**sP**	**10 11 52.7**	**-0.6**

*NIED **28** 10:01:00, 36°.30N×142°.20E, h11km, Mw4.4 Best double couple: M=4.77000×10^15 NP1:φ=188.00000°, δ=24.00000°, λ=80.00000°. NP2:φ=20.00000°, δ=66.00000°, λ=95.00000°.*
*ISCJB **28** 10:01:53.4±1.1, 36°.30N±0°.03×142°.24E±0°.04, h8km±7km, mb4.5/68, MS3.7/16, Error ellipse: s-maj=5.3km s-min=3.8km az=32.2*

ABKAR	**Akbulak array**	**58.90**	**311**	*e*P	**P**	**10 11 54.0**	**-0.6**
AKTO	**Aktyubinsk**	**59.64**	**312**	P	**P**	**10 11 59.2**	**-0.5**
	comp=Z,5.5nm,0.9s,baz=69,slow=11,SNR=12						
AS01	**Alice Springs**	**60.18**	**189**	*e*P	**P**	**10 12 03.0**	**-0.7**
AS31	**Alice Springs**	**60.18**	**189**	*e*P	**P**	**10 12 03.4**	**-0.3**
	comp=Z,1.3nm,0.6s						
ASAR	**Alice Springs**	**60.19**	**189**	P	**P**	**10 12 02.4**	**-1.3**
	comp=Z,1.1nm,0.7s,baz=16,slow=8.1,SNR=17						
TMCR	**Tamitsa**	**63.68**	**332**	*e*P	**P**	**10 12 27.0**	**+0.3**
YKA	**Yellowknife Ar**	**64.09**	**30**	P	**P**	**10 12 29.7**	**+0.3**
	comp=Z,1.0nm,0.7s,baz=303,slow=6.8,SNR=18						
KLMR	**Klimovskoe**	**64.70**	**328**	*e*P	**P**	**10 12 31.0**	**-2.5**
KLMR				*e**PP	**sP**	**10 12 43.6**	**+0.2**
KLMR				pmax	pmax		
	comp=Z,5.0nm,0.8s						
GEYT	**Alibeck**	**64.75**	**300**	P	**P**	**10 12 33.9**	**-0.4**
	comp=Z,3.3nm,0.7s,baz=15,slow=1.7,SNR=5.1						
ARCES	**ARCESS Array B**	**64.89**	**340**	P	**P**	**10 12 35.0**	**+0.4**
	comp=Z,2.1nm,0.9s,baz=33,slow=9.3,SNR=5.8						
ARCES				LR	LR	10 46 13.2	
	comp=Z,76nm,18.9s,baz=54,slow=41						
ARCES	**ARCESS Array B**	**64.89**	**340**	P	**P**	**10 12 35.0**	**+0.4**
ARCES				pmax	pmax		
	comp=Z,3.0nm,0.8s						
DAG	**Danmarks Havn**	**66.53**	**355**	*i* P	**P**	**10 12 44.9**	**-0.2**
DAG				*i*		10 12 55.1	
DAG	**Danmarks Havn**	**66.53**	**355**	*i* P	**P**	**10 12 44.9**	**-0.2**
DAG				*i*		10 12 55.1	
OBN	**Obninsk**	**69.05**	**324⇑**	*e*P	**P**	**10 13 02.0**	**+0.8**
OBN				pmax	pmax		
	comp=Z,26nm,1.4s						
OBN				MLR	MLR		
	comp=Z,91nm,15.0s						
FIA1	**FINESS Array S**	**69.74**	**333**	*e*P	**P**	**10 13 05.0**	**-0.4**
FINES	**FINESS Array B**	**69.74**	**333**	P	**P**	**10 13 05.2**	**-0.2**
	comp=Z,4.3nm,0.7s,baz=29,slow=9.4,SNR=11						
FINES	**FINESS Array B**	**69.74**	**333**	*i* P	**P**	**10 13 05.5**	**+0.1**
FINES				pmax	pmax		
	comp=Z,4.0nm,0.7s						
SUMG	**Summit**	**71.39**	**0**	*i* P	**P**	**10 13 16.6**	**+0.8**
SUMG				*i*		10 13 27.1	
SUMG	**Summit**	**71.39**	**0**	*e*P	**P**	**10 13 16.0**	**+0.2**
SUMG				pmax	pmax		
	comp=Z,8.0nm,0.9s						
SUMG	**Summit**	**71.39**	**0**	*e*P	**P**	**10 13 16.0**	**+0.2**
	comp=Z,7.9nm,0.9s						
WSAR	**Wadi Sarin**	**71.69**	**286**	P	**P**	**10 13 18.3**	**+0.3**
	comp=Z,3.8nm,0.7s,baz=60,slow=12,SNR=3.2						
WSAR				LR	LR	10 50 30.2	
	comp=Z,34nm,18.7s,slow=41						
ZEI	**Tsey**	**71.75**	**310**	*e*P	**P**	**10 13 16.0**	**-2.3**
ZEI				pmax	pmax		
	comp=Z,10.0nm,0.6s						
KVAR	**Kislovodsk Arr**	**71.86**	**311**	P	**P**	**10 13 19.1**	**+0.3**
	comp=Z,5.1nm,0.4s,baz=278,slow=9.8,SNR=8.2						
KBZ	**Khabaz**	**71.86**	**311**	P	**P**	**10 13 19.1**	**+0.5**
	comp=Z,6.4nm,0.9s,baz=42,slow=3.2,SNR=14						
KIV	**Kislovodsk**	**71.86**	**311**	*d i*P	**P**	**10 13 19.8**	**+1.0**
KIV				*e*		10 13 31.3	
KIV				*e*		10 13 35.6	
KIV				pmax	pmax		
	comp=Z,18nm,1.2s						
NEY	**Neytrino**	**72.23**	**311⇓**	*e*P	**P**	**10 13 22.2**	**+1.1**
NEY				pmax	pmax		
	comp=Z,1.0nm,0.8s						
LRM	**Limekiln Ridge**	**74.19**	**45**	*e*P	**P**	**10 13 33.8**	**+1.0**
BOZ	**Bozeman (W)**	**74.76**	**44**	*e*P	**P**	**10 13 36.3**	**+0.4**
BOZ				pmax	pmax		
	comp=Z,3.0nm,0.9s						
BOZ	**Bozeman (W)**	**74.76**	**44**	*e*P	**P**	**10 13 36.3**	**+0.4**
	comp=Z,3.4nm,0.9s						
NVAR	**Mina Array Bea**	**74.88**	**53**	P	**P**	**10 13 38.1**	**+1.3**
	comp=Z,0.9nm,0.7s,baz=291,slow=7.0,SNR=4.9						
HFS	**Hagfors**	**75.00**	**336**	P	**P**	**10 13 37.0**	**+0.2**
	comp=Z,5.1nm,0.9s,baz=108,slow=0.5,SNR=5.6						
HFS				LR	LR	10 49 32.7	
	comp=Z,130nm,19.1s,baz=32,slow=38						
NC204	**NORSAR Array S**	**75.04**	**338**	*e*P	**P**	**10 13 37.7**	**+0.5**
NB2	**NORSAR Subarra**	**75.09**	**338**	P	**P**	**10 13 37.4**	**0.0**
	comp=Z,7.9nm,0.9s,baz=39,slow=6.2						
NOA	**NORSAR Array B**	**75.09**	**338**	P	**P**	**10 13 37.3**	**-0.1**
	comp=Z,3.9nm,0.8s,baz=39,slow=5.8,SNR=12						
AKASG	**Malin Array Be**	**75.26**	**323**	P	**P**	**10 13 37.0**	**-1.4**
	comp=Z,2.4nm,0.5s,baz=46,slow=6.2,SNR=14						
AKASG	**Malin Array Be**	**75.26**	**323**	*i* P	**P**	**10 13 38.0**	**-0.5**
AKASG				pmax	pmax		
	comp=Z,3.0nm,0.5s						
KIEV	**Kiev**	**75.27**	**323⇑**	*i*P	**P**	**10 13 37.9**	**-0.6**
KIEV				pmax	pmax		
	comp=Z,7.0nm,1.4s						
KIEV	**Kiev**	**75.27**	**323**	*e*P	**P**	**10 13 37.7**	**-0.8**
	comp=Z,4.6nm,0.7s						
BW06	**Boulder Array**	**77.69**	**46**	*e*P	**P**	**10 13 53.2**	**+0.4**
PDAR	**Pinedale Array**	**77.69**	**46**	P	**P**	**10 13 53.5**	**+0.7**
	comp=Z,0.6nm,0.5s,baz=241,slow=1.1,SNR=9.0						
BUR08	**Bucovina Ar. S**	**79.26**	**322**	*e*P	**P**	**10 14 00.1**	**-1.0**
BUR08				*e*pP	**sP**	**10 14 10.8**	**-0.4**
SRU	**San Rafael Swe**	**79.38**	**49**	*e*P	**P**	**10 14 02.7**	**+0.6**
SRU				*e**PP	**sP**	**10 14 13.1**	**+1.0**
SRU	**San Rafael Swe**	**79.38**	**49**	*e*P	**P**	**10 14 02.7**	**+0.6**
SRU				*e*pP	**sP**	**10 14 13.1**	**+1.0**
BRTR	**Keskin Array B**	**79.81**	**312**	P	**P**	**10 14 04.6**	**+0.3**
	comp=Z,2.5nm,1.0s,baz=116,slow=4.3,SNR=9.7						
BRTR	**Keskin Array B**	**79.81**	**312**	*i* P	**P**	**10 14 04.9**	**+0.6**
BRTR				pmax	pmax		
	comp=Z,2.0nm,0.8s						
BR231	**Keskin MP Arra**	**80.25**	**313**	*e*P	**P**	**10 14 05.5**	**-1.2**
MLR	**Muntele Rosu**	**80.35**	**320**	P	**P**	**10 14 07.4**	**+0.3**
	comp=Z,0.2nm,0.4s,baz=360,slow=14,SNR=2.2						
MLR				LR	LR	10 52 01.9	
	comp=Z,14nm,18.9s,baz=42,slow=37						
DPC	**Dobruska-Polom**	**81.40**	**328**	*e*P	**P**	**10 14 13.3**	**+0.8**
DPC				*e*x	x	10 14 27.4	
DPC	**Dobruska-Polom**	**81.40**	**328**	*e*P	**P**	**10 14 13.3**	**+0.8**
DPC				*e*		10 14 27.4	
KRLC	**Kraliky**	**81.41**	**328**	*e*P	**P**	**10 14 13.0**	**+0.4**
KRLC				*e*P	**P**	**10 14 13.0**	**+0.4**
KRLC	**Kraliky**	**81.41**	**328**	*e*P	**P**	**10 14 13.0**	**+0.4**
CLL	**Collm**	**82.03**	**331**	*e*P	**P**	**10 14 15.0**	**-0.8**
	comp=Z,8.0nm,1.2s						
CLL				*e*		10 14 28.0	
CLL	**Collm**	**82.03**	**331**	*e*P	**P**	**10 14 15.0**	**-0.8**
CLL				*e*		10 14 28.0	
CLL				pmax	pmax		
	comp=Z,8.0nm,1.2s						
CLL	**Collm**	**82.03**	**331**	*e*P	**P**	**10 14 14.8**	**-1.0**
CLL				*e*pP	**sP**	**10 14 27.8**	**+1.9**
VRAC	**Vranov**	**82.07**	**328**	P	**P**	**10 14 16.7**	**+0.7**
	comp=Z,1.6nm,0.4s,baz=45,slow=2.3,SNR=3.3						
VRAC				LR	LR	10 55 00.5	
	comp=Z,77nm,18.0s,baz=54,slow=39						
VRAC	**Vranov**	**82.07**	**328**	P	**P**	**10 14 16.7**	**+0.7**
VRAC				pmax	pmax		
	comp=Z,1.0nm,0.3s						
VRAC				MLR	MLR		
	comp=Z,77nm,18.0s						
ASF	**Jabal al Asfar**	**82.45**	**304**	P	**P**	**10 14 19.2**	**+0.8**
	comp=Z,1.1nm,0.5s,baz=358,slow=17,SNR=2.5						
MMAI	**Mount Meron Ar**	**82.91**	**306**	P	**P**	**10 14 21.4**	**+0.6**
	comp=Z,1.3nm,0.7s,baz=28,slow=6.5,SNR=4.3						
PMOR	**Pomariorio Ree**	**83.29**	**114**	*e*T	T	11 46 10.1	
	comp=Z,2.4nm,0.2s						
KHC	**Kasperske Hory**	**83.49**	**329**	*e*P	**P**	**10 14 23.4**	**0.0**
KHC				*es*P	**sP**	**10 14 35.6**	**+2.1**
KHC				AMS	AMS	10 57 20.0	
	comp=Z,100nm,14.9s						
KHC	**Kasperske Hory**	**83.49**	**329**	*e*P	**P**	**10 14 23.4**	**0.0**
KHC				*e*		10 14 35.6	
KHC				MLR	MLR		
	comp=Z,100nm,14.9s						
GERES	**GERESS Array B**	**83.66**	**329**	P	**P**	**10 14 23.8**	**-0.6**
	comp=Z,0.7nm,0.5s,baz=30,slow=6.2,SNR=7.0						
GERES				LR	LR	10 53 25.2	
	comp=Z,51nm,20.4s,baz=12,slow=37						
PPT2	**Papeete2**	**83.74**	**117**	*e*LR	LR	10 40 43.1	
	comp=Z,65nm,23.2s						
DAVOX	**Davos/Dischmat**	**86.87**	**329**	LR	LR	10 56 49.6	
	comp=Z,41nm,18.2s,baz=76,slow=38						
TBI	**Tubuai**	**87.60**	**121**	*e*LR	LR	10 42 33.2	
	comp=Z,57nm,27.0s						
TX31	**Lajitas Ar. Si**	**90.03**	**53**	*e*P	**P**	**10 14 56.4**	**+0.6**
TXAR	**Lajitas Array**	**90.03**	**53**	P	**P**	**10 14 56.6**	**+0.8**
	comp=Z,0.4nm,0.7s,baz=297,slow=3.3,SNR=8.3						
LPAZ	**La Paz**	**146.47**	**61**	PKPbc	**PKPbc**	**10 21 38.3**	**+0.2**
	comp=Z,0.7nm,0.6s,baz=326,slow=2.1,SNR=5.3						

IDC 28 10:03:31.5±2.9, 54°.18N×87°.30E, h0km, mb1 3.2/2, mb1mx3.0/66, mbtmp3.2/2, ML2.7/2, Error ellipse: s-maj=23.5km s-min=17.3km az=58.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**1.48**	**262**	*i*		10 12 46.6	
	baz=80,slow=327,SNR=2.4						
ZALV	**Zalesovo Beam**	**1.48**	**262**	Pg	Pn	10 03 57.7	-1.7
	4.1nm,0.3s,baz=79,slow=16,SNR=29						
ZALV				Lg	Lg	10 04 18.7	
	1.8nm,0.3s,baz=74,slow=25,SNR=9.1						
ZALV				Rg	Rg	10 04 25.9	
	23nm,0.6s,baz=85,slow=24,SNR=13						
KURBB	**Kurchatov Arra**	**6.44**	**240**	Pn	Pn	10 05 08.5	+1.0
	0.1nm,0.3s,baz=56,slow=14,SNR=18						
KURBB				Sn	Sn	10 06 20.6	-1.0
	0.0nm,0.3s,baz=52,slow=22,SNR=3.7						
KURBB				Lg	Lg	10 06 57.5	
	0.0nm,0.3s,baz=61,slow=32,SNR=7.3						
MKAR	**Makanchi Array**	**8.05**	**205**	Pn	Pn	10 05 30.8	+1.1
	0.1nm,0.3s,baz=12,slow=12,SNR=4.0						
MKAR				Sn	Sn	10 07 00.0	-1.3
	0.1nm,0.3s,baz=16,slow=32,SNR=4.3						
MKAR				Lg	Lg	10 07 49.1	
	0.2nm,0.3s,baz=29,slow=27,SNR=7.5						
BVAR	**Borovoye Array**	**10.12**	**270**	Sn	Sn	10 07 45.9	-6.2
	baz=75,slow=23,SNR=5.2						

*ISK **28** 10:05:27.4, 39°.09N×29°.06E, h8km, ML2.6*
*CSEM **28** 10:05:28.2±0.1, 39°.10N×29°.03E, h5km, ML2.7, Error ellipse: s-maj=3.6km s-min=3.2km az=149.0*
*DDA **28** 10:05:28.5, 39°.07N×29°.05E, h7km, Ml2.7*
ISC 28 10:05:28.3±0.9, 39°.08N±0°.02×29°.04E±0°.02, h11km±8km, n43, σ0s67/60, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**262**	P	**Pg**	**10 05 33.9**	**+0.2**
DEMI				S	**Sg**	**10 05 37.4**	**+0.2**
DEMI	**Demirci**	**0.26**	**262**	*i* P	**Pg**	**10 05 33.9**	**+0.2**
DEMI				*i* S	**Sg**	**10 05 37.4**	**+0.2**
GDZ	**Gediz**	**0.34**	**88**	P	**Pg**	**10 05 35.3**	**+0.1**
GDZ				S	**Sg**	**10 05 40.1**	**+0.2**
GDZ	**Gediz**	**0.34**	**88**	*i* P	**Pg**	**10 05 35.4**	**+0.1**
GDZ				*i* S	**Sg**	**10 05 40.1**	**+0.2**
TVSB	**Tavsanli**	**0.49**	**41**	*e*PG	**Pg**	**10 05 37.3**	**-0.7**
TVSB				*e*SG	**Sg**	**10 05 44.1**	**-0.4**
TVSB	**Tavsanli**	**0.49**	**41**	*e*Pg	**Pg**	**10 05 37.3**	**-0.7**
TVSB				*e*Sg	**Sg**	**10 05 44.2**	**-0.4**
KULA	**Kula-Manisa**	**0.64**	**208**	*e*PG	**Pg**	**10 05 40.7**	**0.0**
KULA				*e*SG	**Sg**	**10 05 48.9**	**-0.2**
KULA	**Kula-Manisa**	**0.64**	**208**	*e*Pg	**Pg**	**10 05 40.7**	**0.0**
KULA				*e*Sg	**Sg**	**10 05 48.9**	**-0.2**
KHAL	**Karahalli**	**0.79**	**153**	P	**Pb**	**10 05 44.0**	**-0.1**
KHAL				S	**Sb**	**10 05 54.8**	**0.0**
KHAL	**Karahalli**	**0.79**	**153**	*i* P	**Pb**	**10 05 44.0**	**-0.1**
KHAL				*i* S	**Sb**	**10 05 54.8**	**0.0**
KHL	**Karahalli**	**0.84**	**153**	*e*PG	**Pg**	**10 05 44.4**	**-0.2**
KHL	**Karahalli**	**0.84**	**153**	*e*Pg	**Pg**	**10 05 44.4**	**-0.2**
ORLT	**Orhaneli**	**0.97**	**353**	*e*PG	**Pb**	**10 05 46.2**	**-1.0**
ORLT	**Orhaneli**	**0.97**	**353**	*e*Pg	**Pb**	**10 05 46.2**	**-1.0**
AKHS	**Akhisar**	**0.98**	**259**	P	**Pb**	**10 05 46.2**	**-1.1**
AKHS				S	**Sn**	**10 06 01.6**	**-0.1**
AKHS	**Akhisar**	**0.98**	**259**	*i* P	**Pb**	**10 05 46.1**	**-1.1**
AKHS				*i* S	**Sn**	**10 06 01.6**	**-0.1**
AKS	**Akhisar**	**0.98**	**259**	*e*PG	**Pb**	**10 05 47.2**	**-0.1**
AKS	**Akhisar**	**0.98**	**259**	*e*Pg	**Pb**	**10 05 47.2**	**-0.1**
BALB	**Balikesir**	**1.06**	**302**	*e*PG	**Pb**	**10 05 48.2**	**-0.4**
BALB	**Balikesir**	**1.06**	**302**	*e*Pg	**Pb**	**10 05 48.2**	**-0.4**
IGD	**Bursa**	**1.19**	**6**	*i* P	**Pn**	**10 05 50.2**	**-0.7**
IGD				*i* S	**Sg**	**10 06 07.1**	**+0.4**
BALY	**Balya**	**1.28**	**301**	P	**Pg**	**10 05 53.5**	**+0.5**
BALY	**Balya**	**1.28**	**301**	*i* P	**Pg**	**10 05 53.5**	**+0.5**
BALY				*i* S	**Sg**	**10 06 11.8**	**+2.1**
MDNY	**Mudanya-Bursa**	**1.29**	**355**	*e*PN	**Pn**	**10 05 51.9**	**-0.4**
MDNY	**Mudanya-Bursa**	**1.29**	**355**	*e*Pn	**Pn**	**10 05 51.9**	**-0.4**
KCTX	**Karacabey (Bur**	**1.30**	**336**	*e*PN	**Pb**	**10 05 52.6**	**-0.1**
KCTX	**Karacabey (Bur**	**1.30**	**336**	*e*Pn	**Pb**	**10 05 52.6**	**-0.1**
IZI	**Iznik**	**1.30**	**15**	*e*PN	**Pn**	**10 05 52.0**	**-0.4**
IZI	**Iznik**	**1.30**	**15**	*e*Pn	**Pn**	**10 05 52.0**	**-0.4**
BORA	**Eskisehir**	**1.35**	**53**	P	**Pg**	**10 05 54.5**	**+0.2**
BORA				S	**Sg**	**10 06 12.3**	**+0.4**
BORA	**Eskisehir**	**1.35**	**53**	*i* P	**Pg**	**10 05 54.5**	**+0.2**
BORA				*i* S	**Sg**	**10 06 12.3**	**+0.4**
GONE	**Gonen-Balikesi**	**1.43**	**313**	*e*PN	**Pb**	**10 05 54.5**	**-0.3**
GONE	**Gonen-Balikesi**	**1.43**	**313**	*e*Pn	**Pb**	**10 05 54.5**	**-0.3**
ADVT	**Abdulvahap**	**1.46**	**21**	*e*PN	**Pb**	**10 05 54.9**	**-0.5**
ADVT	**Abdulvahap**	**1.46**	**21**	*e*Pn	**Pb**	**10 05 54.9**	**-0.5**
ESKT	**Eskisehir**	**1.47**	**72**	*i* P	**Pg**	**10 05 57.6**	**+1.0**
ESKT				*i* S	**Sg**	**10 06 18.7**	**+3.0**
SEYT	**Eskypehyr**	**1.47**	**72**	P	**Pg**	**10 05 57.6**	**+1.0**
ARMT	**Armutlu**	**1.49**	**355**	*e*PN	**Pn**	**10 05 55.2**	**+0.2**
ARMT	**Armutlu**	**1.49**	**355**	*e*Pn	**Pn**	**10 05 55.2**	**+0.2**
EDC	**Edincik**	**1.56**	**325**	*e*PN	**Pn**	**10 05 56.0**	**+0.1**
EDC	**Edincik**	**1.56**	**325**	*e*Pn	**Pn**	**10 05 56.0**	**+0.1**
GULT	**Gulveren**	**1.77**	**40**	*e*PN	**Pn**	**10 05 58.7**	**-0.1**
GULT	**Gulveren**	**1.77**	**40**	*e*Pn	**Pn**	**10 05 58.7**	**-0.1**

*ISK **28** 10:07:01.5, 39°.12N×29°.10E, h6km, ML2.4*
*ISCJB **28** 10:07:02.1±0.5, 39°.11N±0°.03×29°.11E±0°.03, h5km±6km, Error ellipse: s-maj=5.3km s-min=3.9km az=154.5*
*CSEM **28** 10:07:02.3±0.1, 39°.12N×29°.11E, h8km, ML2.6, Error ellipse: s-maj=2.5km s-min=2.2km az=113.0*
*DDA **28** 10:07:02.2, 39°.10N×29°.13E, h7km, Ml2.6*
ISC 28 10:07:02.4±0.9, 39°.12N±0°.02×29°.11E±0°.02, h11km±9km, n41, σ0s33/56, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.29**	**95**	P	**Pg**	**10 07 08.3**	**-0.1**
GDZ				S	**Sg**	**10 07 12.4**	**0.0**
GDZ	**Gediz**	**0.29**	**95**	*i* P	**Pg**	**10 07 08.3**	**-0.1**
GDZ				*i* S	**Sg**	**10 07 12.4**	**0.0**
DEMI	**Demirci**	**0.32**	**257**	P	**Pg**	**10 07 09.1**	**+0.3**
DEMI				S	**Sg**	**10 07 13.5**	**+0.4**
DEMI	**Demirci**	**0.32**	**257**	*i* P	**Pg**	**10 07 09.1**	**+0.3**
DEMI				*i* S	**Sg**	**10 07 13.5**	**+0.4**
TVSB	**Tavsanli**	**0.43**	**39**	*e*PG	**Pg**	**10 07 10.7**	**-0.3**
TVSB				*e*SG	**Sg**	**10 07 16.6**	**-0.2**
TVSB	**Tavsanli**	**0.43**	**39**	*e*Pg	**Pg**	**10 07 10.7**	**-0.3**
TVSB				*e*Sg	**Sg**	**10 07 16.6**	**-0.2**
KULA	**Kula-Manisa**	**0.69**	**210**	*e*PG	**Pg**	**10 07 15.5**	**-0.4**
KULA				*e*SG	**Sg**	**10 07 25.1**	**+0.1**
KULA	**Kula-Manisa**	**0.69**	**210**	*e*Pg	**Pg**	**10 07 15.5**	**-0.4**
KULA				*e*Sg	**Sg**	**10 07 25.1**	**+0.1**
KHAL	**Karahalli**	**0.80**	**158**	P	**Pg**	**10 07 18.0**	**0.0**
KHAL				S	**Sg**	**10 07 28.3**	**-0.1**
KHAL	**Karahalli**	**0.80**	**158**	*i* P	**Pg**	**10 07 18.0**	**0.0**
KHAL				*i* S	**Sg**	**10 07 28.3**	**-0.1**
KHL	**Karahalli**	**0.85**	**158**	*e*PG	**Pb**	**10 07 19.2**	**-0.1**
KHL	**Karahalli**	**0.85**	**158**	*e*Pg	**Pb**	**10 07 19.2**	**-0.1**
ORLT	**Orhaneli**	**0.94**	**350**	*e*PG	**Pg**	**10 07 20.4**	**-0.3**
ORLT	**Orhaneli**	**0.94**	**350**	*e*Pg	**Pg**	**10 07 20.4**	**-0.3**
AKS	**Akhisar**	**1.04**	**257**	*e*PG	**Pg**	**10 07 22.0**	**-0.4**
AKS	**Akhisar**	**1.04**	**257**	*e*Pg	**Pg**	**10 07 22.0**	**-0.4**
BALB	**Balikesir**	**1.09**	**299**	*e*PN	**Pg**	**10 07 23.2**	**-0.2**
BALB	**Balikesir**	**1.09**	**299**	*e*Pn	**Pg**	**10 07 23.2**	**-0.2**
IGD	**Bursa**	**1.15**	**3**	*i* P	**Pb**	**10 07 24.3**	**0.0**
IGD				*i* S	**Sn**	**10 07 40.6**	**+0.4**
IZI	**Iznik**	**1.25**	**13**	*e*PN	**Pn**	**10 07 25.1**	**-0.8**
IZI	**Iznik**	**1.25**	**13**	*e*Pn	**Pn**	**10 07 25.1**	**-0.8**
MDNY	**Mudanya-Bursa**	**1.27**	**352**	*e*PN	**Pn**	**10 07 26.0**	**0.0**
MDNY	**Mudanya-Bursa**	**1.27**	**352**	*e*Pn	**Pn**	**10 07 26.0**	**0.0**
KCTX	**Karacabey (Bur**	**1.29**	**333**	*e*PN	**Pn**	**10 07 26.3**	**-0.1**
KCTX	**Karacabey (Bur**	**1.29**	**333**	*e*Pn	**Pn**	**10 07 26.3**	**-0.1**
BORA	**Eskisehir**	**1.29**	**53**	P	**Pg**	**10 07 27.2**	**0.0**
BORA				S	**Sg**	**10 07 44.3**	**+0.3**
BORA	**Eskisehir**	**1.29**	**53**	*i* P	**Pg**	**10 07 27.2**	**0.0**
BORA				*i* S	**Sg**	**10 07 44.3**	**+0.3**
BALY	**Balya**	**1.31**	**299**	P	**Pg**	**10 07 28.0**	**+0.3**
BALY				S	**Sg**	**10 07 44.4**	**-0.3**
BALY	**Balya**	**1.31**	**299**	*i* P	**Pg**	**10 07 28.0**	**+0.3**
BALY				*i* S	**Sg**	**10 07 44.4**	**-0.3**
ADVT	**Abdulvahap**	**1.40**	**20**	*e*PN	**Pb**	**10 07 28.6**	**0.0**
ADVT	**Abdulvahap**	**1.40**	**20**	*e*Pn	**Pb**	**10 07 28.6**	**0.0**
GONE	**Gonen-Balikesi**	**1.44**	**311**	*e*PN	**Pn**	**10 07 28.3**	**-0.1**
GONE	**Gonen-Balikesi**	**1.44**	**311**	*e*Pn	**Pn**	**10 07 28.3**	**-0.1**
ARMT	**Armutlu**	**1.46**	**353**	*e*PN	**Pb**	**10 07 29.5**	**-0.1**
ARMT	**Armutlu**	**1.46**	**353**	*e*Pn	**Pb**	**10 07 29.5**	**-0.1**
EDC	**Edincik**	**1.56**	**322**	*e*PN	**Pn**	**10 07 30.1**	**0.0**
EDC	**Edincik**	**1.56**	**322**	*e*Pn	**Pn**	**10 07 30.1**	**0.0**
GULT	**Gulveren**	**1.70**	**39**	*e*PN	**Pn**	**10 07 32.5**	**+0.4**
GULT	**Gulveren**	**1.70**	**39**	*e*Pn	**Pn**	**10 07 32.5**	**+0.4**
HRT	**Hereke**	**1.76**	**14**	*e*PN	**Pn**	**10 07 33.7**	**+0.8**
HRT	**Hereke**	**1.76**	**14**	*e*Pn	**Pn**	**10 07 33.7**	**+0.8**

*BJI **28** 10:07:39.1, 24°.71N×97°.93E, h10km, ML3.4/6*
*IDC **28** 10:07:44.3±4.8, 24°.52N×97°.99E, h33km±41km, mb3.1/4, mb1 3.4/5, mb1mx3.1/68, mbtmp3.4/5, ML4.3/1, MS2.8/1, Ms1 3.0/1, ms1mx2.5/28, Error ellipse: s-maj=48.0km s-min=19.0km az=69.0*
ISC 28 10:07:39.6±1.1, 24°.48N±0°.07×97°.4E±0°.1, h10km, n14, σ2s20/14, mb3.4/4, Myanmar-China border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KMI	**Kunming**	**4.90**	**81**	Pg	**Pn**	**10 08 54.0**	**+0.5**
KMI				smax	smax		
	comp=N,13nm,0.7s						
CRAI	**Chiangrai**	**5.05**	**146**	P	**Pb**	**10 09 10.5**	**+2.4**
	122nm,0.5s						
SHL	**Shillong**	**5.12**	**283**	*ex*	Pn	10 09 04.5	+8.0
PAYA	**Payao**	**5.59**	**155**	P	**Pg**	**10 09 24.8**	**-1.9**
	13nm,1.0s						
CHTO	**Chiang Mai**	**5.82**	**165**	P	**Pg**	**10 09 29.3**	**-1.9**
	134nm,0.8s						
CMMT	**Chiang Mai**	**5.83**	**165**	P	**Pg**	**10 09 29.2**	**-2.0**
	21nm,0.8s,864nm						
CMAR	**Chiang Mai Arr**	**6.17**	**166**	Pn	**Pn**	**10 09 12.8**	**+2.1**
	1.9nm,0.3s,baz=346,slow=13,SNR=9.9						
CMAR				Pg	**Pg**	**10 09 36.0**	**-1.8**
	1.1nm,0.3s,baz=348,slow=17,SNR=19						
CMAR				Lg	Lg	10 11 00.2	
	1.8nm,0.3s,baz=348,slow=30,SNR=9.9						
CMAR				LR	LR	10 12 09.9	
	comp=Z,84nm,18.0s,baz=345,slow=44						
UTTA	**Uttaradit**	**7.33**	**156**	P	**Pn**	**10 09 29.1**	**+2.4**
	2.7nm,0.7s						
PBKT	**Sadao Pong**	**8.55**	**156**	P	**Pn**	**10 09 42.7**	**-0.8**
WMQ	**Urumqi**	**20.86**	**340**	*e*P	**P**	**10 12 18.8**	**-2.9**
SONM	**Songino Array**	**24.37**	**15**	P	**P**	**10 12 59.5**	**+1.5**
	0.4nm,0.5s,baz=191,slow=6.6,SNR=2.8						
MKAR	**Makanchi Array**	**25.33**	**335**	P	**P**	**10 13 09.1**	**+2.5**
	0.5nm,0.5s,baz=142,slow=9.5,SNR=2.4						
WRA	**Warramunga Arr**	**56.95**	**138**	P	**P**	**10 17 23.4**	**-2.0**
	0.3nm,0.7s,baz=326,slow=7.6,SNR=4.8						
ASAR	**Alice Springs**	**59.54**	**141**	P	**P**	**10 17 42.5**	**-1.0**
	0.3nm,0.9s,baz=317,slow=7.1,SNR=2.9						

*ISK **28** 10:14:19.5, 39°.14N×28°.97E, h9km, ML2.3*
*ISCJB **28** 10:14:20.4±0.5, 39°.11N±0°.03×29°.03E±0°.04, h10km±5km, Error ellipse: s-maj=6.4km s-min=4.8km az=44.7*
*CSEM **28** 10:14:20.3±0.1, 39°.12N×29°.00E, h10km, ML2.7,

baz=149,slow=76,SNR=17
H11N3 WAKE ISLAND Hy 40.54 330 T T 11 13 14.3
baz=150,slow=76,SNR=27
H11N1 WAKE ISLAND Hy 40.55 330 T T 11 13 13.3
baz=150,slow=76,SNR=25
H11N2 WAKE ISLAND Hy 40.56 330 T T 11 13 19.4
baz=150,slow=76,SNR=26
STKA Stephens Creek 43.93 241 P **P 10 30 29.8 -1.6**
3.8nm,0.9s,baz=89,slow=11,SNR=9.5
WRAB Tennant Creek 49.91 257 P **P 10 31 17.1 -1.2**
19nm,1.8s
WRA Warramunga Arr 49.92 257 P **P 10 31 16.4 -2.0**
0.8nm,0.3s,baz=95,slow=6.7,SNR=28
WRA PcP **PcP 10 32 38.9 +0.3**
0.4nm,0.6s,baz=90,slow=3.5,SNR=3.0
ASAR Alice Springs 50.13 252 P **P 10 31 17.9 -2.1**
4.8nm,0.6s,baz=90,slow=8.0,SNR=71
ASAR LR LR 10 51 37.4
comp=Z,107nm,18.5s,baz=104,slow=35
GUMO Guam 50.84 303 LR LR 10 50 01.8
comp=Z,36nm,18.8s,baz=120,slow=33
VNDA Vanda 62.80 186 P **P 10 32 50.5 +1.2**
0.8nm,1.0s,baz=21,slow=7.3,SNR=2.6
MBWA Marble Bar 63.40 254 *e*P **P 10 32 54.1 -0.2**
5.7nm,0.5s
MJAR Matsushiro Arr 69.54 320 LR LR 10 58 42.1
comp=Z,34nm,21.9s,baz=165,slow=31
JNU Nakatsue 72.37 313 LR LR 11 01 46.6
comp=Z,143nm,18.4s,baz=126,slow=33
NVAR Mina Array Bea 74.63 42 P **P 10 34 05.9 +2.1**
1.5nm,0.7s,baz=230,slow=10,SNR=6.3
KSRS Korea Array 76.74 316 LR LR 11 03 19.3
comp=Z,18nm,20.5s,baz=185,slow=32
LEM Lembang 77.81 266 LR LR 11 07 59.1
comp=Z,34nm,18.2s,baz=39,slow=35
TXAR Lajitas Array 80.77 56 P **P 10 34 40.0 +1.9**
0.5nm,0.8s,baz=220,slow=8.2,SNR=4.6
PDAR Pinedale Array 82.57 42 P **P 10 34 48.8 +1.2**
1.6nm,0.8s,baz=205,slow=3.8,SNR=13
SMCO Snowmass 82.57 46 *e*P **P 10 34 49.6 +1.8**
1.1nm,0.7s
ILAR Eielson Array 82.99 11 P **P 10 34 49.6 +0.7**
1.1nm,0.6s,baz=234,slow=6.3,SNR=17
PMSA Palmer Station 83.54 156 LR LR 11 04 03.3
comp=Z,429nm,19.3s,baz=76,slow=30
YAK Yakutsk 89.75 337 LR LR 11 07 41.2
comp=Z,27nm,21.6s,baz=197,slow=30
YKA Yellowknife Ar 90.56 23 P **P 10 35 27.3 +1.5**
0.2nm,0.7s,baz=243,slow=5.4,SNR=3.9
CMAR Chiang Mai Arr 93.01 288 P **P 10 35 38.1 -0.1**
0.5nm,0.3s,baz=117,slow=2.2,SNR=4.1
CMAR LR LR 11 16 47.7
comp=Z,12nm,18.6s,baz=350,slow=35
ARCES ARCESS Array B 125.23 352 PKP **PKPdf 10 41 24.8 +0.6**
1.5nm,0.7s,baz=356,slow=3.6,SNR=6.5
KMBO Kilima Mbogo 145.47 243 PKPbc **PKPab 10 42 05.2 +1.3**
0.7nm,0.5s,baz=172,slow=4.2,SNR=3.4
VRAC Vranov 145.84 349 PKPbc **PKPab 10 42 04.8 +0.9**
1.6nm,0.6s,baz=85,slow=10,SNR=2.7
MLR Muntele Rosu 146.51 335 PKPbc **PKPab 10 42 07.3 +0.6**
0.6nm,0.5s,baz=211,slow=5.2,SNR=4.8
BRTR Keskin Array B 146.76 321 PKPbc **PKPab 10 42 07.8 0.0**
3.8nm,0.8s,baz=128,slow=2.6,SNR=9.9
GERES GERESS Array B 146.77 352 PKPbc **PKPab 10 42 07.2 -0.3**
1.1nm,0.7s,baz=26,slow=3.4,SNR=9.4
MMAI Mount Meron Ar 149.11 308 PKPbc **PKPbc 10 42 13.9 +0.9**
0.9nm,0.5s,baz=357,slow=3.7,SNR=3.5
DAVOX Davos/Dischmat 149.21 356 PKPbc **PKPbc 10 42 14.2 +1.2**
3.2nm,0.6s,baz=349,slow=23,SNR=5.7

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*DDA **28** 10:23:12.7,39.12N×29.02E,h10km,MI3.5*
*ISK **28** 10:23:12.4,39.10N×29.03E,h5km,ML3.5*
*ISCJB **28** 10:23:13.1±0.4,39.11N±0.02×29.01E±0.02,h2km±3km, Error ellipse: s-maj=2.6km s-min=2.3km az=160.1*
*THE **28** 10:23:13.2,39.04N×29.11E,h4km±1km,ML3.3/6,Error ellipse: s-maj=1.7km s-min=0.6km az=127.0*
*CSEM **28** 10:23:13.4±0.1,39.09N×29.01E,h2km,ML3.5,Error ellipse: s-maj=2.4km s-min=2.3km az=111.0*

ISC 28 10:23:13.1±0.9,39.10N±0.01×29.04E±0.01,h9km±8km, n154,σ1§06/216,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**258**	P	**Pg**	**10 23 18.4**	**+0.1**
DEMI				S	**Sg**	**10 23 22.0**	**+0.3**
DEMI	**Demirci**	**0.25**	**258**	*i* P	**Pg**	**10 23 18.4**	**+0.1**
DEMI				*i* S	**Sg**	**10 23 22.0**	**+0.3**
GDZ	**Gediz**	**0.35**	**91**	P	**Pg**	**10 23 20.0**	**0.0**
GDZ				S	**Sg**	**10 23 25.0**	**+0.3**
GDZ	**Gediz**	**0.35**	**91**	*i* P	**Pg**	**10 23 20.0**	**0.0**
GDZ				*i* S	**Sg**	**10 23 25.0**	**+0.3**
TVSB	**Tavsanli**	**0.48**	**43**	*e*PG	**Pg**	**10 23 22.4**	**-0.2**
TVSB	**Tavsanli**	**0.48**	**43**	*e*Pg	**Pg**	**10 23 22.4**	**-0.2**
KULA	**Kula-Manisa**	**0.65**	**207**	*e*PG	**Pg**	**10 23 25.5**	**-0.2**
KULA	**Kula-Manisa**	**0.65**	**207**	P	**Pg**	**10 23 25.7**	**0.0**
KULA				S	**Sg**	**10 23 34.0**	**-0.2**
KULA	**Kula-Manisa**	**0.65**	**207**	*e*Pg	**Pg**	**10 23 25.5**	**-0.2**
KULA	**Kula-Manisa**	**0.65**	**207**	P	**Pg**	**10 23 25.7**	**0.0**
KULA				S	**Sg**	**10 23 34.0**	**-0.2**
KHAL	**Karahalli**	**0.81**	**154**	P	**Pg**	**10 23 28.6**	**-0.1**
KHAL				S	**Sb**	**10 23 40.3**	**-0.2**
KHAL	**Karahalli**	**0.81**	**154**	*i* P	**Pg**	**10 23 28.6**	**-0.1**
KHAL				*i* S	**Sb**	**10 23 40.3**	**-0.2**
KHL	**Karahalli**	**0.86**	**154**	*e*PG	**Pb**	**10 23 30.6**	**+0.3**
KHL	**Karahalli**	**0.86**	**154**	*e*Pg	**Pb**	**10 23 30.6**	**+0.3**
ORLT	**Orhaneli**	**0.95**	**354**	*e*PG	**Pg**	**10 23 31.4**	**-0.1**
ORLT	**Orhaneli**	**0.95**	**354**	*e*Pg	**Pg**	**10 23 31.4**	**-0.1**
AKHS	**Akhisar**	**0.98**	**257**	P	**Pb**	**10 23 32.1**	**-0.1**
AKHS				S	**Sb**	**10 23 45.5**	**+0.3**
AKHS	**Akhisar**	**0.98**	**257**	*i* P	**Pb**	**10 23 32.1**	**-0.1**
AKHS				*i* S	**Sb**	**10 23 45.5**	**+0.3**
AKS	**Akhisar**	**0.98**	**258**	*e*PG	**Pb**	**10 23 32.2**	**-0.1**
AKS	**Akhisar**	**0.98**	**258**	*e*Pg	**Pb**	**10 23 32.2**	**-0.1**
BALB	**Balikesir**	**1.05**	**302**	*e*PG	**Pn**	**10 23 33.8**	**-0.2**
BALB				*e*SG	**Sn**	**10 23 48.8**	**+0.1**
BALB	**Balikesir**	**1.05**	**302**	*e*Pg	**Pn**	**10 23 33.8**	**-0.2**
BALB				*e*Sg	**Sn**	**10 23 48.8**	**+0.1**
IGD	**Bursa**	**1.17**	**6**	*i* P	**Pb**	**10 23 34.6**	**-0.9**
IGD				*i* S	**Sn**	**10 23 51.6**	**-0.3**
BALY	**Balya**	**1.27**	**301**	P	**Pn**	**10 23 35.0**	**-2.1**
BALY				S	**Sb**	**10 23 53.0**	**-0.8**
BALY	**Balya**	**1.27**	**301**	*i* P	**Pn**	**10 23 35.0**	**-2.1**
BALY				*i* S	**Sb**	**10 23 53.0**	**-0.8**
MDNY	**Mudanya-Bursa**	**1.28**	**355**	*e*PN	**Pg**	**10 23 38.1**	**+0.5**
MDNY	**Mudanya-Bursa**	**1.28**	**355**	*e*Pn	**Pg**	**10 23 38.1**	**+0.5**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*PN	**Pg**	**10 23 37.3**	**-0.4**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*Pn	**Pg**	**10 23 37.3**	**-0.4**
IZI	**Iznik**	**1.28**	**15**	*e*PN	**Pg**	**10 23 38.1**	**+0.3**
IZI	**Iznik**	**1.28**	**15**	*e*Pn	**Pg**	**10 23 38.1**	**+0.3**
DENT	**Denizli**	**1.34**	**180**	*e*PN	**Pg**	**10 23 38.8**	**-0.1**
DENT	**Denizli**	**1.34**	**180**	*e*Pn	**Pg**	**10 23 38.8**	**-0.1**
GEMT	**Gemlik**	**1.34**	**5**	*e*PN	**Pg**	**10 23 38.7**	**-0.2**
GEMT	**Gemlik**	**1.34**	**5**	*e*Pn	**Pg**	**10 23 38.7**	**-0.2**
BORA	**Eskisehir**	**1.35**	**54**	P	**Pn**	**10 23 38.2**	**0.0**
BORA				S	**Sg**	**10 23 57.4**	**+0.9**
BORA	**Eskisehir**	**1.35**	**54**	*i* P	**Pn**	**10 23 38.2**	**0.0**
BORA				*i* S	**Sg**	**10 23 57.4**	**+0.9**
DNZL	**Cakiroluk**	**1.41**	**180**	P	**Pn**	**10 23 39.3**	**+0.2**
DNZL				S	**Sg**	**10 24 01.2**	**+2.9**
DNZL	**Cakiroluk**	**1.41**	**180**	*i* P	**Pn**	**10 23 39.3**	**+0.2**
DNZL				*i* S	**Sg**	**10 24 01.2**	**+2.9**
GONE	**Gonen-Balikesi**	**1.41**	**313**	*e*PN	**Pb**	**10 23 39.5**	**-0.1**
GONE	**Gonen-Balikesi**	**1.41**	**313**	*e*Pn	**Pb**	**10 23 39.5**	**-0.1**
ADVT	**Abdulvahap**	**1.44**	**22**	*e*PN	**Pb**	**10 23 40.3**	**+0.1**
ADVT	**Abdulvahap**	**1.44**	**22**	*e*Pn	**Pb**	**10 23 40.3**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**1.46**	**218**	*e*PN	**Pb**	**10 23 40.7**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**1.46**	**218**	*e*Pn	**Pb**	**10 23 40.7**	**+0.2**
ESKT	**Eskisehir**	**1.47**	**73**	*i* S	**Sg**	**10 24 02.4**	**+2.0**
SEYT	**Eskypehyr**	**1.47**	**73**	S	**Sg**	**10 24 02.4**	**+2.0**
ARMT	**Armutlu**	**1.47**	**355**	*e*PN	**Pb**	**10 23 40.5**	**-0.2**
ARMT	**Armutlu**	**1.47**	**355**	*e*Pn	**Pb**	**10 23 40.5**	**-0.2**
EDC	**Edincik**	**1.54**	**324**	*e*PN	**Pb**	**10 23 42.0**	**+0.1**
EDC	**Edincik**	**1.54**	**324**	*e*Pn	**Pb**	**10 23 42.0**	**+0.1**
BOLV	**Bolvadin**	**1.54**	**104**	P	**Pg**	**10 23 42.5**	**-0.2**
BOLV				S	**Sg**	**10 24 03.0**	**+0.3**
BOLV	**Bolvadin**	**1.54**	**104**	*i* P	**Pg**	**10 23 42.5**	**-0.2**
BOLV				*i* S	**Sg**	**10 24 03.0**	**+0.3**
GPA	**Golpazari**	**1.54**	**39**	*e*PN	**Pg**	**10 23 42.3**	**-0.5**
GPA	**Golpazari**	**1.54**	**39**	*e*Pn	**Pg**	**10 23 42.3**	**-0.5**
KNL	**Bal¨–kesir**	**1.65**	**316**	*i* P	**Pb**	**10 23 43.2**	**-0.5**
KNL				*i* S	**Sg**	**10 24 06.2**	**0.0**
DKL	**Dikili**	**1.66**	**270**	*e*PN	**Pb**	**10 23 43.7**	**-0.1**
DKL	**Dikili**	**1.66**	**270**	*e*Pn	**Pb**	**10 23 43.7**	**-0.1**
AYDN	**Tasoluk**	**1.70**	**213**	P	**Pb**	**10 23 44.5**	**0.0**
AYDN				S	**Sg**	**10 24 06.9**	**-0.8**
AYDN	**Tasoluk**	**1.70**	**213**	*i* P	**Pb**	**10 23 44.5**	**0.0**
AYDN				*i* S	**Sg**	**10 24 06.9**	**-0.8**
ISP	**Isparta**	**1.73**	**137**	*e*PN	**Pb**	**10 23 44.8**	**-0.3**
ISP	**Isparta**	**1.73**	**137**	P	**Pn**	**10 23 41.0**	**-2.5**
ISP				S	**Sn**	**10 24 02.5**	**-3.2**
ISP	**Isparta**	**1.73**	**137**	P	**Pn**	**10 23 41.0**	**-2.5**
ISP	**Isparta**	**1.73**	**137**	*e*Pn	**Pb**	**10 23 44.8**	**-0.3**
ISP				S	**Sn**	**10 24 02.5**	**-3.2**
BUY	**Buyukada**	**1.75**	**2**	P	**Pn**	**10 23 44.0**	**+0.3**
BUY				S	**Sn**	**10 24 06.0**	**-0.2**
BUY	**Buyukada**	**1.75**	**2**	*i* P	**Pn**	**10 23 44.0**	**+0.3**
BUY				*i* S	**Sn**	**10 24 06.0**	**-0.2**
GULT	**Gulveren**	**1.75**	**40**	*e*PN	**Pb**	**10 23 45.3**	**-0.3**
GULT	**Gulveren**	**1.75**	**40**	*e*Pn	**Pb**	**10 23 45.3**	**-0.3**
BAGO	**Egridir - ISPA**	**1.76**	**128**	*i* P	**Pn**	**10 23 44.1**	**+0.2**
BAGO				*i* S	**Sg**	**10 24 11.5**	**+1.7**
HRT	**Hereke**	**1.79**	**16**	*e*PN	**Pb**	**10 23 45.7**	**-0.4**
HRT	**Hereke**	**1.79**	**16**	*e*Pn	**Pb**	**10 23 45.7**	**-0.4**
AYVA	**Ayvalik**	**1.83**	**277**	P	**Pn**	**10 23 45.0**	**+0.2**
AYVA				S	**Sg**	**10 24 12.3**	**+0.2**
AYVA	**Ayvalik**	**1.83**	**277**	*i* P	**Pn**	**10 23 45.0**	**+0.2**
AYVA				*i* S	**Sg**	**10 24 12.3**	**+0.2**
KRBG	**Karabiga-Canak**	**1.86**	**315**	*e*PN	**Pb**	**10 23 46.9**	**-0.4**
KRBG	**Karabiga-Canak**	**1.86**	**315**	*e*Pn	**Pb**	**10 23 46.9**	**-0.4**
SPNC	**Sapanca-Adapaz**	**1.86**	**31**	*e*PN	**Pb**	**10 23 46.9**	**-0.5**
SPNC	**Sapanca-Adapaz**	**1.86**	**31**	*e*Pn	**Pb**	**10 23 46.9**	**-0.5**
MRMT	**Marmara Adasi**	**1.87**	**324**	*e*PN	**Pb**	**10 23 47.1**	**-0.3**
MRMT	**Marmara Adasi**	**1.87**	**324**	*e*Pn	**Pb**	**10 23 47.2**	**-0.3**
GOLH	**Golhisar**	**1.90**	**167**	P	**Pb**	**10 23 47.1**	**-1.0**
GOLH				S	**Sg**	**10 24 16.7**	**+2.4**
GOLH	**Golhisar**	**1.90**	**167**	*i* P	**Pb**	**10 23 47.1**	**-1.0**
GOLH				*i* S	**Sg**	**10 24 16.7**	**+2.4**
SVRH	**Sivrihisar-ESK**	**1.96**	**79**	*e*PN	**Pb**	**10 23 48.3**	**-0.8**
SVRH	**Sivrihisar-ESK**	**1.96**	**79**	*e*Pn	**Pb**	**10 23 48.3**	**-0.8**
ISK	**Istanbul-Kandi**	**1.97**	**1**	*e*PN	**Pb**	**10 23 48.3**	**-0.8**
ISK	**Istanbul-Kandi**	**1.97**	**1**	P	**Pn**	**10 23 46.5**	**-0.1**
ISK				S	**Sb**	**10 24 12.5**	**-1.2**
ISK	**Istanbul-Kandi**	**1.97**	**1**	P	**Pn**	**10 23 46.5**	**-0.1**
ISK	**Istanbul-Kandi**	**1.97**	**1**	*e*Pn	**Pb**	**10 23 48.3**	**-0.8**
ISK				S	**Sb**	**10 24 12.5**	**-1.2**
GLHS	**Gihisar (BURDU**	**1.97**	**169**	*e*PN	**Pb**	**10 23 48.6**	**-0.7**
GLHS	**Gihisar (BURDU**	**1.97**	**169**	*e*Pn	**Pb**	**10 23 48.6**	**-0.7**
DGB	**¨zmir**	**1.98**	**239**	*i* P	**Pb**	**10 23 49.9**	**+0.5**
DGB				*i* S	**Sg**	**10 24 15.8**	**-1.1**
URLA	**Izmir**	**2.04**	**250**	P	**Pg**	**10 23 53.2**	**+0.9**
URLA				S	**Sg**	**10 24 18.1**	**-0.7**
URLA	**Izmir**	**2.04**	**250**	*i* P	**Pg**	**10 23 53.2**	**+0.9**
URLA				*i* S	**Sg**	**10 24 18.1**	**-0.7**
YER	**Yerkesik**	**2.05**	**197**	*e*PN	**Pb**	**10 23 49.7**	**-0.8**
YER	**Yerkesik**	**2.05**	**197**	P	**Pn**	**10 23 47.0**	**-0.8**
YER				S	**Sn**	**10 24 12.2**	**-1.3**
YER	**Yerkesik**	**2.05**	**197**	P	**Pn**	**10 23 47.0**	**-0.8**
YER	**Yerkesik**	**2.05**	**197**	*e*Pn	**Pb**	**10 23 49.7**	**-0.8**
YER				S	**Sn**	**10 24 12.2**	**-1.3**
BGKT	**Bogazkoy**	**2.09**	**355**	*e*PN	**Pb**	**10 23 50.0**	**-1.2**
BGKT	**Bogazkoy**	**2.09**	**355**	*e*Pn	**Pb**	**10 23 50.1**	**-1.2**
SILT	**Sile**	**2.11**	**13**	*e*PN	**Pb**	**10 23 50.2**	**-1.3**
SILT	**Sile**	**2.11**	**13**	*e*Pn	**Pb**	**10 23 50.2**	**-1.3**
BTAS	**Taskesti**	**2.11**	**45**	P	**Pb**	**10 23 52.4**	**+0.8**
BTAS				S	**Sb**	**10 24 17.1**	**-0.9**
BTAS	**Taskesti**	**2.11**	**45**	*i* P	**Pb**	**10 23 52.4**	**+0.8**
BTAS				*i* S	**Sb**	**10 24 17.1**	**-0.9**
RKY	**Sarkoy-Tekirda**	**2.14**	**319**	*e*PN	**Pb**	**10 23 50.9**	**-1.2**
RKY	**Sarkoy-Tekirda**	**2.14**	**319**	*e*Pn	**Pb**	**10 23 50.9**	**-1.2**
PRK	**Paraskevi**	**2.15**	**275**	P	**Pn**	**10 23 49.3**	**+0.1**
PRK				S	**Sb**	**10 24 17.9**	**-1.2**
PRK	**Paraskevi**	**2.15**	**275**	P	**Pn**	**10 23 49.3**	**+0.1**
PRK				S	**Sb**	**10 24 17.9**	**-1.2**
KLYT	**Kilyos**	**2.15**	**0**	*e*PN	**Pb**	**10 23 50.9**	**-1.4**
KLYT	**Kilyos**	**2.15**	**0**	*e*Pn	**Pb**	**10 23 50.9**	**-1.4**
LPK	**Lapseki**	**2.17**	**307**	*e*PN	**Pb**	**10 23 51.3**	**-1.2**
LPK	**Lapseki**	**2.17**	**307**	*e*Pn	**Pb**	**10 23 51.3**	**-1.2**
CTKS	**Kestanelik-??a**	**2.17**	**349**	*e*PN	**Pb**	**10 23 51.4**	**-1.3**
CTKS	**Kestanelik-??a**	**2.17**	**349**	*e*Pn	**Pb**	**10 23 51.4**	**-1.3**
KAND	**Kocaeli-Kandir**	**2.18**	**24**	P	**Pn**	**10 23 49.2**	**-0.4**
KAND				S	**Sn**	**10 24 16.7**	**-0.1**
KAND	**Kocaeli-Kandir**	**2.18**	**24**	*i* P	**Pn**	**10 23 49.2**	**-0.4**
KAND				*i* S	**Sn**	**10 24 16.7**	**-0.1**
SMG	**Samos**	**2.21**	**232**	P	**Pn**	**10 23 49.9**	**-0.2**
SMG				S	**Sn**	**10 24 17.8**	**+0.2**
SMG	**Samos**	**2.21**	**232**	P	**Pn**	**10 23 49.9**	**-0.2**
SMG				S	**Sn**	**10 24 17.8**	**+0.2**
EZN	**Ezine**	**2.22**	**290**	*e*PN	**Pb**	**10 23 52.1**	**-1.3**
EZN	**Ezine**	**2.22**	**290**	*e*Pn	**Pb**	**10 23 52.1**	**-1.3**
KIZT	**Kizilcal**	**2.23**	**95**	*e*PN	**Pb**	**10 23 52.4**	**-1.3**
KIZT	**Kizilcal**	**2.23**	**95**	*e*Pn	**Pb**	**10 23 52.4**	**-1.3**
SUTC	**Sutluce-Ispart**	**2.24**	**136**	*e*PN	**Pb**	**10 23 52.5**	**-1.3**
SUTC	**Sutluce-Ispart**	**2.24**	**136**	*e*Pn	**Pb**	**10 23 52.5**	**-1.3**
SAHE	**Sakarya_HENDEK**	**2.24**	**38**	P	**Pn**	**10 23 50.5**	**0.0**
SAHE	**Sakarya_HENDEK**	**2.24**	**38**	*i* P	**Pn**	**10 23 50.5**	**0.0**
GELI	**Tayfur-Gelibol**	**2.36**	**304**	*e*PN	**Pb**	**10 23 54.1**	**-1.8**
GELI	**Tayfur-Gelibol**	**2.36**	**304**	*e*Pn	**Pb**	**10 23 54.1**	**-1.8**
BDRM	**Kayabasi**	**2.38**	**212**	P	**Pb**	**10 23 55.7**	**-0.6**
BDRM	**Kayabasi**	**2.38**	**212**	*i* P	**Pb**	**10 23 55.7**	**-0.6**
CHOS	**Chios island**	**2.44**	**254**	P	**Pn**	**10 23 53.7**	**+0.5**
CHOS				S	**Sn**	**10 24 24.4**	**+1.3**
CHOS	**Chios island**	**2.44**	**254**	P	**Pn**	**10 23 53.7**	**+0.5**
CHOS				S	**Sn**	**10 24 24.4**	**+1.3**
CTYL	**Yalikoy Yolu**	**2.44**	**347**	*e*PN	**Pb**	**10 23 55.2**	**-2.0**
CTYL	**Yalikoy Yolu**	**2.44**	**347**	*e*Pn	**Pb**	**10 23 55.2**	**-2.0**
BODT	**Bodrum**	**2.44**	**214**	P	**Pn**	**10 23 52.7**	**-0.5**
BODT				S	**Sn**	**10 24 23.1**	**-0.2**
BODT	**Bodrum**	**2.44**	**214**	P	**Pn**	**10 23 52.7**	**-0.5**
BODT				S	**Sn**	**10 24 23.1**	**-0.2**
SIGR	**SIGRI**	**2.48**	**274**	P	**Pn**	**10 23 54.2**	**+0.6**
SIGR				S	**Sn**	**10 24 25.6**	**+1.6**
SIGR	**SIGRI**	**2.48**	**274**	P	**Pn**	**10 23 54.2**	**+0.6**
SIGR				S	**Sn**	**10 24 25.6**	**+1.6**
ERIK	**Erikli-Kesan**	**2.50**	**310**	*e*PN	**Pb**	**10 23 56.0**	**-2.1**
ERIK	**Erikli-Kesan**	**2.50**	**310**	*e*Pn	**Pb**	**10 23 56.0**	**-2.1**
GADA	**Gvkgeada**	**2.66**	**295**	P	**Pn**	**10 23 56.5**	**+0.4**
GADA				S	**Sn**	**10 24 30.3**	**+1.9**
GADA	**Gvkgeada**	**2.66**	**295**	P	**Pn**	**10 23 56.5**	**+0.4**
GADA				S	**Sn**	**10 24 30.3**	**+1.9**
ENEZ	**Enez**	**2.75**	**307**	P	**Pn**	**10 23 58.2**	**+0.7**
ENEZ				S	**Sn**	**10 24 32.4**	**+1.5**
ENEZ	**Enez**	**2.75**	**307**	P	**Pn**	**10 23 58.2**	**+0.7**
ENEZ				S	**Sn**	**10 24 32.4**	**+1.5**
LADK	**Ladik-KONYA**	**2.76**	**108**	*e*PN	**Pn**	**10 23 59.7**	**+2.1**
LADK	**Ladik-KONYA**	**2.76**	**108**	*e*Pn	**Pn**	**10 23 59.7**	**+2.1**
KDZE	**Karadeniz Ereo**	**2.88**	**39**	*e*PN	**Pn**	**10 24 01.3**	**+2.1**
KDZE	**Karadeniz Ereo**	**2.88**	**39**	*e*Pn	**Pn**	**10 24 01.3**	**+2.1**
AKAS	**Kas**	**2.90**	**171**	P	**Pn**	**10 24 01.1**	**+1.6**
AKAS	**Kas**	**2.90**	**171**	*i* P	**Pn**	**10 24 01.1**	**+1.6**
ALN	**Alexandroupoli**	**2.92**	**309**	P	**Pn**	**10 24 00.2**	**+0.5**
ALN				S	**Sn**	**10 24 36.5**	**+1.6**
ALN	**Alexandroupoli**	**2.92**	**309**	P	**Pn**	**10 24 00.2**	**+0.5**
ALN				S	**Sn**	**10 24 36.5**	**+1.6**
LOD	**Lodumlu**	**2.99**	**73**	*e*PN	**Pn**	**10 24 03.0**	**+2.1**
LOD	**Lodumlu**	**2.99**	**73**	*e*Pn	**Pn**	**10 24 03.0**	**+2.1**
SMTH	**Samothraki Isl**	**3.03**	**298**	P	**Pn**	**10 24 02.0**	**+0.7**
SMTH				S	**Sn**	**10 24 39.9**	**+2.2**
SMTH	**Samothraki Isl**	**3.03**	**298**	P	**Pn**	**10 24 02.0**	**+0.7**
SMTH				S	**Sn**	**10 24 39.9**	**+2.2**

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*ISCJB **28** 10:34:53.0±0.8,33.01S±0.06×139.3E±0.1,h10km,Error ellipse: s-maj=13.2km s-min=7.8km az=162.1*
*AUST **28** 10:34:55.7±0.0,33.28S×139.35E,h10km,Error ellipse: s-maj=0.2km s-min=0.1km az=350.0*
*IDC **28** 10:35:00.2±5.0,32.56S×139.31E,h0km,mb1 3.8/3, mb1mx3.5/35,mbtmp3.6/3,ML3.6/3,Error ellipse: s-maj=56.3km s-min=19.2km az=11.0*

ISC 28 10:34:54.2±1.0,33.09S±0.06×139.23E±0.06,h10km,n11, σ1§36/13,Near coast of South Australia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HTT	**Hallett**	**0.43**	**217**	P	**Pb**	**10 35 03.5**	**-0.4**
	baz=0.4						
STKA	**Stephens Creek**	**2.34**	**60**	Pn	**Pb**	**10 35 35.6**	**-0.8**
	10nm,0.3s,baz=236,slow=15,SNR=121						
STKA				Lg	Lg	10 36 06.0	
	11nm,0.3s,baz=252,slow=20,SNR=5.8						
STKA				Rg	Rg	10 36 17.4	
	75nm,0.3s,baz=318,slow=12,SNR=5.7						
STKA	**Stephens Creek**	**2.34**	**60**	P	**Pb**	**10 35 35.5**	**-0.8**
	baz=2.4						
BBOO	**Buckleboo**	**2.68**	**275**	P	**Pb**	**10 35 41.4**	**-0.8**
	baz=2.8						
ARPS	**Mount Arapiles**	**4.25**	**150**	P	**Pn**	**10 35 58.6**	**-0.4**
	baz=4.0						
CMSA	**Cobar Meteorol**	**5.69**	**76**	P	**Pn**	**10 36 19.4**	**+0.6**
	baz=5.6						
ASAR	**Alice Springs**	**10.49**	**332**	Pn	**Pn**	**10 37 26.9**	**+2.2**
	0.4nm,0.3s,baz=148,slow=13,SNR=28						
ASAR				Sn	**Sn**	**10 39 20.6**	**-1.8**
	0.6nm,0.3s,baz=155,slow=22,SNR=9.3						
WRKA	**Warakurna**	**12.47**	**307**	P	**Pn**	**10 37 52.9**	**+1.0**
	baz=13,SNR=4.3						
WC3	**Warramunga Arr**	**13.78**	**340**	P	**Pn**	**10 38 11.7**	**+2.0**
	baz=14						
WB2	**Warramunga Arr**	**13.80**	**340**	P	**Pn**	**10 38 11.1**	**+1.2**
	baz=14						
WRA	**Warramunga Arr**	**13.80**	**340**	Pn	**Pn**	**10 38 09.6**	**-0.4**
	0.4nm,0.3s,baz=154,slow=13,SNR=25						
WRA				Sn	**Sn**	**10 40 42.4**	**-1.0**
	0.2nm,0.3s,baz=160,slow=22,SNR=6.1						

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*ISCJB **28** 10:41:28.7±1.0,30.29S±0.07×177.8W±0.2,h35km, mb4.5/9,Error ellipse: s-maj=21.4km s-min=9.4km az=11.1*
*IDC **28** 10:41:32.5±1.9,30.11S×177.87W,h58km±16km,mb4.0/5, mb1 4.1/5,mb1mx3.7/27,mbtmp4.2/5,MS3.1/1,Ms1 3.1/1, ms1mx2.6/32,Error ellipse: s-maj=29.8km s-min=22.7km az=116.0*
*NEIC **28** 10:41:32.7±1.3,30.06S×177.76W,h64km±9km,mb4.6/4, Error ellipse: s-maj=19.3km s-min=11.8km az=127.0*

ISC 28 10:41:29.4±0.9,30.21S±0.08×177.5W±0.1,h35km,n24, σ1§43/23,mb4.5/9,Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.02**	**340**	P	**Pn**	**10 41 48.3**	**+1.1**
	139nm,0.3s,baz=64,slow=12,SNR=14						
RAO				LR	LR	10 41 48.8	
	comp=Z,108nm,19.3s,baz=44,slow=19						
RAO				S	**Sn**	**10 42 01.5**	**+1.2**
	1μm,0.3s,baz=11,slow=23,SNR=22						
RAO	**Raoul Island**	**1.02**	**340**	P	**Pn**	**10 41 48.3**	**+1.1**
RAO				*e*Sn	**Sn**	**10 41 59.9**	**-0.4**
RAO				S	**Sn**	**10 42 01.5**	**+1.2**
OUZ	**Omahuta**	**8.99**	**234**	*e*Pn	**Pn**	**10 43 39.0**	**+2.3**
DZM	**Mont Dzumac**	**16.51**	**296**	LR	LR	10 50 05.7	
	comp=Z,70nm,19.8s,baz=105,slow=32						
ARMA	**Armidale**	**26.59**	**262**	*e*P	**P**	**10 47 04.8**	**+0.2**
	19nm,1.5s						
CTAO	**Charters Tower**	**34.18**	**279**	*e*P	**P**	**10 48 11.2**	**-0.4**
	28nm,0.4s						
STKA	**Stephens Creek**	**34.92**	**257**	P	**P**	**10

Ms1 3.3/1, ms1mx2.5/24, Error ellipse: s-maj=20.7km s-min=13.6km az=59.0
ISC 28 11:05:25.6±0.6, **7°23S**±0°.08×**143°86E**±0°.09, **h30**km, **n16**, σ1$22/18, **mb3.8/8, Near south coast of New Guinea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**3.91**	**124**	**P**	**Pn**	**11 06 24.5**	**+0.8**
	5.0nm,0.3s,baz=352,slow=8.9,SNR=14						
PMG				S	**Sn**	**11 07 09.6**	**+0.9**
	22nm,0.3s,baz=204,slow=22,SNR=17						
JAY	**Jayapura**	**5.64**	**326**	P	**Pn**	**11 06 50.5**	**+2.9**
	0.1nm,0.3s,baz=85,slow=23,SNR=2.3						
WRA	**Warramunga Arr**	**15.65**	**215**	P	**Pn**	**11 09 05.8**	**+1.5**
	0.2nm,0.3s,baz=32,slow=11,SNR=9.5						
WRA				S	**Sn**	**11 11 57.3**	**+0.4**
	0.1nm,0.3s,baz=24,slow=21,SNR=3.4						
ASAR	**Alice Springs**	**18.93**	**209**	P	**P**	**11 09 43.1**	**-1.2**
	0.5nm,0.3s,baz=41,slow=8.8,SNR=61						
ASAR				LR	LR	11 17 24.7	
	comp=Z,100nm,20.2s,baz=156,slow=38						
STKA	**Stephens Creek**	**24.61**	**185**	P	**P**	**11 10 42.9**	**-0.6**
	0.9nm,0.7s,baz=12,slow=6.1,SNR=4.1						
MJAR	**Matsushiro Arr**	**43.86**	**353**	P	**P**	**11 13 28.1**	**-1.3**
	0.3nm,0.5s,baz=176,slow=9.0,SNR=4.6						
KSRS	**Korea Array**	**46.88**	**343**	P	**P**	**11 13 53.0**	**-0.2**
	0.4nm,0.7s,baz=161,slow=7.1,SNR=4.2						
CMAR	**Chiang Mai Arr**	**51.13**	**301**	P	**P**	**11 14 26.0**	**-0.2**
	0.6nm,0.3s,baz=127,slow=5.9,SNR=5.4						
SEY	**Seymchan**	**70.26**	**4**	P	**P**	**11 16 35.6**	**0.0**
	0.5nm,0.5s,baz=169,slow=16,SNR=3.1						
VNDA	**Vanda**	**70.89**	**176**	P	**P**	**11 16 39.1**	**-0.3**
	0.5nm,0.6s,baz=339,slow=11,SNR=3.2						
MKAR	**Makanchi Array**	**76.49**	**322**	P	**P**	**11 17 12.1**	**-0.7**
	1.1nm,0.8s,baz=109,slow=6.9,SNR=6.8						
BVAR	**Borovoye Array**	**85.94**	**325**	P	**P**	**11 18 01.1**	**-1.7**
	0.5nm,0.7s,baz=108,slow=4.7,SNR=3.3						
LPAZ	**La Paz**	**140.65**	**127**	PKP	**PKPdf**	**11 24 53.0**	**-1.2**
	1.1nm,0.5s,baz=238,slow=8.5,SNR=4.2						
TORD	**Torodi Ar. Bea**	**142.33**	**282**	PKP	**PKPdf**	**11 24 56.7**	**+0.3**
	0.3nm,0.7s,baz=78,slow=2.6,SNR=2.4						
DBIC	**Dimbokro**	**148.95**	**271**	PKPbc	**PKPbc**	**11 25 11.3**	**-0.5**
	4.8nm,0.9s,baz=268,slow=2.5,SNR=3.6						
BDFB	**Brasilia**	**154.41**	**153**	PKPbc	**PKPbc**	**11 25 25.6**	**+1.2**
	1μm,0.3s,SNR=2.5						

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*ISCJB **28** 11:06:41.9±0.6, 39°.12N±0°.03×29°.03E±0°.04, h7km±6km, Error ellipse: s-maj=6.9km s-min=4.6km az=135.4*
*ISK **28** 11:06:41.1, 39°.08N×29°.10E, h12km, MD2.6*
*CSEM **28** 11:06:41.8±0.2, 39°.11N×29°.02E, h10km, ML2.2, Error ellipse: s-maj=6.2km s-min=4.1km az=113.0*
*DDA **28** 11:06:42.1, 39°.14N×29°.03E, h7km, Ml2.2*
ISC 28 11:06:41.7±0.9, **39°.07N**±0°.03×**29°.07E**±0°.03, **h14**km±9km, **n20**, σ0$39/32, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**264**	P	**Pg**	**11 06 47.8**	**+0.2**
DEMI				S	**Sg**	**11 06 51.4**	**-0.2**
DEMI	**Demirci**	**0.28**	**264**	*i* P	**Pg**	**11 06 47.8**	**+0.2**
DEMI				*i* S	**Sg**	**11 06 51.4**	**-0.2**
GDZ	**Gediz**	**0.32**	**87**	P	**Pb**	**11 06 49.5**	**+0.2**
GDZ				S	**Sb**	**11 06 54.5**	**0.0**
GDZ	**Gediz**	**0.32**	**87**	*i* P	**Pb**	**11 06 49.5**	**+0.2**
GDZ				*i* S	**Sb**	**11 06 54.5**	**0.0**
TVSB	**Tavsanli**	**0.48**	**39**	*e*PG	**Pg**	**11 06 51.2**	**-0.2**
TVSB				*e*SG	**Sg**	**11 06 57.4**	**-0.5**
TVSB	**Tavsanli**	**0.48**	**39**	*e*Pg	**Pg**	**11 06 51.2**	**-0.2**
TVSB				*e*Sg	**Sg**	**11 06 57.4**	**-0.5**
KULA	**Kula-Manisa**	**0.64**	**210**	*e*PG	**Pb**	**11 06 54.8**	**0.0**
KULA				*e*SG	**Sb**	**11 07 04.0**	**+0.3**
KULA	**Kula-Manisa**	**0.64**	**210**	*e*Pg	**Pb**	**11 06 54.8**	**0.0**
KULA				*e*Sg	**Sb**	**11 07 04.0**	**+0.3**
KHAL	**Karahalli**	**0.78**	**155**	P	**Pn**	**11 06 58.9**	**+0.5**
KHAL				S	**Sn**	**11 07 09.4**	**-0.4**
KHAL	**Karahalli**	**0.78**	**155**	*i* P	**Pn**	**11 06 58.9**	**+0.5**
KHAL				*i* S	**Sn**	**11 07 09.4**	**-0.4**
KHL	**Karahalli**	**0.83**	**154**	*e*PG	**Pg**	**11 06 57.2**	**-0.6**
KHL	**Karahalli**	**0.83**	**154**	*e*Pg	**Pg**	**11 06 57.2**	**-0.6**
CAVI	**Cavuskoy**	**1.28**	**28**	*e*PN	**Pn**	**11 07 05.1**	**-0.1**
CAVI	**Cavuskoy**	**1.28**	**28**	*e*Pn	**Pn**	**11 07 05.1**	**-0.1**
IZI	**Iznik**	**1.30**	**14**	*e*PN	**Pn**	**11 07 05.4**	**-0.2**
IZI	**Iznik**	**1.30**	**14**	*e*Pn	**Pn**	**11 07 05.4**	**-0.2**
BORA	**Eskisehir**	**1.34**	**53**	P	**Pg**	**11 07 07.6**	**+0.1**
BORA				S	**Sg**	**11 07 25.9**	**+0.9**
BORA	**Eskisehir**	**1.34**	**53**	*i* P	**Pg**	**11 07 07.6**	**+0.1**
BORA				*i* S	**Sg**	**11 07 25.9**	**+0.9**
ARMT	**Armutlu**	**1.50**	**354**	*e*PN	**Pn**	**11 07 08.1**	**-0.2**
ARMT	**Armutlu**	**1.50**	**354**	*e*Pn	**Pn**	**11 07 08.1**	**-0.2**

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*DHMR **28** 11:11:09.5±1.3, 13°.10N×41°.74E, h30km±12km, ML3.9*
*IDC **28** 11:11:10.8±10.0, 13°.11N×41°.22E, h0km, mb3.7/4, mb1 3.8/5, mb1mx3.4/48, mbtmp3.8/5, ML3.9/1, MS3.3/2, Ms1 3.3/2, ms1mx2.6/42, Error ellipse: s-maj=247.4km s-min=25.9km az=66.0*
ISC 28 11:11:16.7±1.5, **13°33N**±0°.06×**42°15E**±0°.09, **h10**km, **n11**, σ1$20/13, **mb3.9/4, Ethiopia**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ATD	**Arta Tunnel**	**1.92**	**159**	**Pn**	**Pn**	**11 11 48.5**	**-0.9**
	35nm,0.3s,baz=95,slow=15,SNR=24						
ATD				Sn	**Sg**	**11 12 19.6**	**+1.2**
	53nm,0.3s,baz=273,slow=24,SNR=10						
TRBA	**At Turbah**	**1.92**	**93**	*i* P	**Pn**	**11 11 48.9**	**-0.7**
TRBA				*i* S	**Sg**	**11 12 19.1**	**+0.6**
DHBB	**Dhamar BB**	**2.50**	**60**	*i* P	**Pn**	**11 11 58.1**	**+0.4**
DHBB				AML	AML	11 12 11.9	
	comp=Z,824nm,0.5s						
DHBB				*i* S	**Sb**	**11 12 34.5**	**+1.6**
HAJJ	**Hajjah**	**2.74**	**31**	*i* P	**Pn**	**11 11 59.6**	**-1.3**
HAJJ				*i* S	**Sb**	**11 12 40.0**	**+0.2**
BDHA	**Al Bayda'**	**3.39**	**79**	*i* P	**Pn**	**11 12 08.8**	**-1.0**
BDHA				*i* S	**Sb**	**11 12 56.1**	**-2.2**
BDHA				AML	AML	11 13 15.3	
	comp=N,370nm,0.5s						
WSAR	**Wadi Sarin**	**18.48**	**55**	LR	LR	11 23 49.0	
	comp=N,63nm,19.4s,baz=232,slow=39						
MKAR	**Makanchi Array**	**47.34**	**37**	P	**P**	**11 19 51.1**	**+0.4**
	comp=N,0.9nm,0.6s,baz=231,slow=6,SNR=8.4						
KURBB	**Kurchatov Arra**	**47.49**	**31**	P	**P**	**11 19 52.5**	**+0.8**
	comp=N,0.2nm,0.3s,baz=232,slow=7.9,SNR=4.8						
ZALV	**Zalesovo Beam**	**52.57**	**30**	P	**P**	**11 20 30.2**	**-0.1**
	comp=N,0.6nm,0.4s,baz=226,slow=7.8,SNR=4.3						
SONM	**Songino Array**	**62.98**	**43**	P	P	11 21 45.9	+2.0
	comp=N,0.6nm,0.7s,baz=251,slow=9.0,SNR=3.0						
KSRS	**Korea Array**	**78.71**	**54**	LR	LR	12 02 08.9	
	comp=N,24nm,19.3s,baz=185,slow=38						

IDC 28 11:17:27.6±7.3, **36°92N**×**144°00E**, **h0**km, **mb3.5**/2, **mb1 3.7**/3, **mb1mx3.3**/37, **mbtmp3.4**/3, **ML3.2**/1, **Error ellipse: s-maj=152.7km s-min=36.7km az=21.0, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**4.67**	**267**	Pn	Pn	11 18 38.8	-0.5
	1.0nm,0.3s,baz=82,slow=15,SNR=14						
MJAR				Sn	Sn	11 19 34.8	+0.6
	baz=88,slow=11,SNR=3.6						
WRA	**Warramunga Arr**	**57.28**	**191**	P	P	11 27 16.9	-0.2
	1.0nm,0.8s,baz=8.8,slow=7.1,SNR=7.8						
ASAR	**Alice Springs**	**61.01**	**191**	P	P	11 27 43.0	+0.1
	0.2nm,0.9s,baz=12,slow=7.5,SNR=4.4						

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*DDA **28** 11:21:13.8, 39°.10N×29°.06E, h14km, Ml3.6*
*ISK **28** 11:21:13.6, 39°.12N×29°.07E, h8km, ML3.5*
*CSEM **28** 11:21:14.1±0.1, 39°.13N×29°.06E, h5km, ML3.6, Error ellipse: s-maj=1.9km s-min=1.8km az=109.0*
ISC 28 11:21:14.5±1.0, **39°.14N**±0°.02×**29°.06E**±0°.02, **h6**km±9km, **n93**, σ0$90/122, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**251**	P	**Pg**	**11 21 19.9**	**-0.1**
DEMI				S	**Sg**	**11 21 23.7**	**0.0**
DEMI	**Demirci**	**0.28**	**251**	*i* P	**Pg**	**11 21 19.9**	**-0.1**
DEMI				*i* S	**Sg**	**11 21 23.7**	**0.0**
GDZ	**Gediz**	**0.34**	**98**	P	**Pg**	**11 21 21.1**	**0.0**
GDZ				S	**Sg**	**11 21 25.9**	**+0.4**
GDZ	**Gediz**	**0.34**	**98**	*i* P	**Pg**	**11 21 21.1**	**0.0**
GDZ				*i* S	**Sg**	**11 21 25.9**	**+0.4**
TVSB	**Tavsanli**	**0.45**	**45**	PG	**Pg**	**11 21 23.0**	**-0.1**
TVSB				*e*SG	**Sg**	**11 21 29.5**	**+0.5**
TVSB	**Tavsanli**	**0.45**	**45**	*i* Pg	**Pg**	**11 21 23.0**	**-0.1**
TVSB				*e*Sg	**Sg**	**11 21 29.5**	**+0.5**
KULA	**Kula-Manisa**	**0.69**	**207**	*e*PG	**Pg**	**11 21 26.5**	**-1.3**
KULA	**Kula-Manisa**	**0.69**	**207**	*e*Pg	**Pg**	**11 21 26.5**	**-1.3**
KHAL	**Karahalli**	**0.84**	**156**	P	**Pg**	**11 21 30.3**	**-0.2**
KHAL				S	**Sg**	**11 21 40.7**	**-0.7**
KHAL	**Karahalli**	**0.84**	**156**	*i* P	**Pg**	**11 21 30.3**	**-0.2**
KHAL				*i* S	**Sg**	**11 21 40.7**	**-0.7**
KHL	**Karahalli**	**0.89**	**156**	*e*PG	**Pg**	**11 21 30.8**	**-0.8**
KHL	**Karahalli**	**0.89**	**156**	*e*Pg	**Pg**	**11 21 30.8**	**-0.8**
ORLT	**Orhaneli**	**0.92**	**352**	*e*PG	**Pg**	**11 21 31.2**	**-0.9**
ORLT	**Orhaneli**	**0.92**	**352**	*e*Pg	**Pg**	**11 21 31.2**	**-0.9**
AKHS	**Akhisar**	**1.00**	**256**	P	**Pg**	**11 21 33.3**	**-0.4**
AKHS				S	**Sg**	**11 21 46.8**	**+0.2**
AKHS	**Akhisar**	**1.00**	**256**	*i* P	**Pg**	**11 21 33.3**	**-0.4**
AKHS				*i* S	**Sg**	**11 21 46.8**	**+0.2**
AKS	**Akhisar**	**1.00**	**256**	*e*PG	**Pg**	**11 21 33.7**	**0.0**
AKS	**Akhisar**	**1.00**	**256**	*e*Pg	**Pg**	**11 21 33.7**	**0.0**
BALB	**Balikesir**	**1.04**	**299**	*e*PG	**Pg**	**11 21 34.4**	**-0.1**
BALB	**Balikesir**	**1.04**	**299**	*e*Pg	**Pg**	**11 21 34.4**	**-0.1**
IGD	**Bursa**	**1.13**	**6**	*i* P	**Pg**	**11 21 35.1**	**-1.1**
IGD				*i* S	**Sn**	**11 21 53.0**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.24**	**354**	*e*PN	**Pn**	**11 21 38.0**	**-0.4**
MDNY	**Mudanya-Bursa**	**1.24**	**354**	*e*Pn	**Pn**	**11 21 38.0**	**-0.4**
IZI	**Iznik**	**1.24**	**15**	*e*PN	**Pb**	**11 21 38.1**	**-0.3**
IZI	**Iznik**	**1.24**	**15**	*e*Pn	**Pb**	**11 21 38.1**	**-0.3**
KCTX	**Karacabey (Bur**	**1.25**	**335**	*e*PN	**Pn**	**11 21 38.4**	**-0.2**
KCTX	**Karacabey (Bur**	**1.25**	**335**	*e*Pn	**Pn**	**11 21 38.4**	**-0.2**
BALY	**Balya**	**1.27**	**299**	P	**Pn**	**11 21 38.5**	**-0.3**
BALY	**Balya**	**1.27**	**299**	*i* P	**Pn**	**11 21 38.5**	**-0.3**
BALY				*i* S	**Sn**	**11 21 57.4**	**+1.3**
GEMT	**Gemlik**	**1.30**	**5**	*e*PN	**Pn**	**11 21 38.8**	**-0.4**
GEMT	**Gemlik**	**1.30**	**5**	*e*Pn	**Pn**	**11 21 38.8**	**-0.4**
BORA	**Eskisehir**	**1.31**	**55**	P	**Pn**	**11 21 38.3**	**-1.2**
BORA				S	**Sn**	**11 21 57.5**	**+0.1**
BORA	**Eskisehir**	**1.31**	**55**	*i* P	**Pn**	**11 21 38.3**	**-1.2**
BORA				*i* S	**Sn**	**11 21 57.5**	**+0.1**
DENT	**Denizli**	**1.38**	**181**	*e*PN	**Pn**	**11 21 39.8**	**-0.5**
DENT	**Denizli**	**1.38**	**181**	*e*Pn	**Pn**	**11 21 39.8**	**-0.5**
ADVT	**Abdulvahap**	**1.40**	**22**	*e*PN	**Pn**	**11 21 40.5**	**-0.1**
ADVT	**Abdulvahap**	**1.40**	**22**	*e*Pn	**Pn**	**11 21 40.5**	**-0.1**
ARMT	**Armutlu**	**1.44**	**354**	*e*PN	**Pn**	**11 21 40.6**	**-0.5**
ARMT	**Armutlu**	**1.44**	**354**	*e*Pn	**Pn**	**11 21 40.6**	**-0.5**
DNZL	**Cakiroluk**	**1.44**	**180**	P	**Pn**	**11 21 40.2**	**-1.1**
DNZL	**Cakiroluk**	**1.44**	**180**	*i* P	**Pn**	**11 21 40.2**	**-1.1**
DNZL				*i* S	**Sg**	**11 22 02.3**	**+1.4**
ESKT	**Eskisehir**	**1.44**	**74**	*i* P	**Pn**	**11 21 41.1**	**-0.2**
ESKT				*i* S	**Sb**	**11 21 59.8**	**-0.7**
SEYT	**Eskypehyr**	**1.44**	**74**	P	**Pn**	**11 21 41.1**	**-0.2**
SEYT				S	**Sb**	**11 21 59.8**	**-0.7**
AYDB	**Zeytinkoy-Aydi**	**1.50**	**218**	*e*PN	**Pn**	**11 21 41.5**	**-0.5**
AYDB	**Zeytinkoy-Aydi**	**1.50**	**218**	*e*Pn	**Pn**	**11 21 41.5**	**-0.5**
GPA	**Golpazari**	**1.50**	**40**	*e*PN	**Pn**	**11 21 41.7**	**-0.3**
GPA	**Golpazari**	**1.50**	**40**	*e*Pn	**Pn**	**11 21 41.7**	**-0.3**
EDC	**Edincik**	**1.52**	**323**	*e*PN	**Pn**	**11 21 42.2**	**0.0**
EDC	**Edincik**	**1.52**	**323**	*e*Pn	**Pn**	**11 21 42.2**	**0.0**
BOLV	**Bolvadin**	**1.54**	**105**	P	**Pb**	**11 21 43.1**	**-0.3**
BOLV				S	**Sg**	**11 22 04.4**	**+0.6**
BOLV	**Bolvadin**	**1.54**	**105**	*i* P	**Pb**	**11 21 43.1**	**-0.3**
BOLV				*i* S	**Sg**	**11 22 04.4**	**+0.6**
KNL	**Bal¯–kesir**	**1.64**	**314**	*i* P	**Pb**	**11 21 44.7**	**-0.4**
KNL				*i* S	**Sg**	**11 22 07.4**	**+0.3**
DKL	**Dikili**	**1.67**	**268**	*e*PN	**Pn**	**11 21 43.6**	**-0.7**
DKL	**Dikili**	**1.67**	**268**	*e*Pn	**Pn**	**11 21 43.6**	**-0.7**
BUY	**Buyukada**	**1.72**	**2**	P	**Pn**	**11 21 44.3**	**-0.6**
BUY	**Buyukada**	**1.72**	**2**	*i* P	**Pn**	**11 21 44.3**	**-0.6**
BUY				*i* S	**Sg**	**11 22 11.0**	**+1.4**
GULT	**Gulveren**	**1.72**	**41**	*e*PN	**Pn**	**11 21 45.0**	**0.0**
GULT	**Gulveren**	**1.72**	**41**	*e*Pn	**Pn**	**11 21 45.0**	**0.0**
AYDN	**Tasoluk**	**1.74**	**212**	P	**Pn**	**11 21 45.8**	**+0.5**
AYDN				S	**Sg**	**11 22 09.9**	**-0.4**
AYDN	**Tasoluk**	**1.74**	**212**	*i* P	**Pn**	**11 21 45.8**	**+0.5**
AYDN				*i* S	**Sg**	**11 22 09.9**	**-0.4**
ISP	**Isparta**	**1.75**	**138**	*e*PN	**Pn**	**11 21 44.1**	**-1.3**
ISP	**Isparta**	**1.75**	**138**	*e*Pn	**Pn**	**11 21 44.1**	**-1.3**
HRT	**Hereke**	**1.75**	**15**	*e*PN	**Pn**	**11 21 45.2**	**-0.2**
HRT	**Hereke**	**1.75**	**15**	*e*Pn	**Pn**	**11 21 45.2**	**-0.2**
BAGO	**Egridir - ISPA**	**1.78**	**130**	*i* P	**Pn**	**11 21 45.2**	**-0.6**
BAGO				*i* S	**Sg**	**11 22 14.5**	**+2.9**
AYVA	**Ayvalik**	**1.84**	**276**	*i* P	**Pg**	**11 21 51.8**	**+1.9**
AYVA				*i* S	**Sg**	**11 22 14.4**	**+0.6**
MRMT	**Marmara Adasi**	**1.85**	**323**	*e*PN	**Pn**	**11 21 47.1**	**+0.3**
MRMT	**Marmara Adasi**	**1.85**	**323**	*e*Pn	**Pn**	**11 21 47.1**	**+0.3**
ISK	**Istanbul-Kandi**	**1.93**	**0**	*e*PN	**Pn**	**11 21 48.1**	**+0.3**
ISK	**Istanbul-Kandi**	**1.93**	**0**	*e*Pn	**Pn**	**11 21 48.1**	**+0.3**
GOLH	**Golhisar**	**1.94**	**168**	P	**Pn**	**11 21 47.6**	**-0.4**
GOLH	**Golhisar**	**1.94**	**168**	*i* P	**Pn**	**11 21 47.6**	**-0.4**
GOLH				*i* S	**Sg**	**11 22 20.2**	**+3.5**
SVRH	**Sivrihisar-ESK**	**1.94**	**80**	*e*PN	**Pn**	**11 21 47.7**	**-0.4**
SVRH	**Sivrihisar-ESK**	**1.94**	**80**	*e*Pn	**Pn**	**11 21 47.7**	**-0.4**
DGB	**˜zmir**	**2.02**	**238**	*i* P	**Pb**	**11 21 51.6**	**0.0**
DGB				*i* S	**Sg**	**11 22 18.7**	**-0.6**
GCAM	**G?zelcaml?**	**2.02**	**226**	*i* P	**Pg**	**11 21 53.0**	**-0.3**
URLA	**Izmir**	**2.07**	**249**	*i* P	**Pg**	**11 21 53.7**	**-0.5**
URLA				*i* S	**Sg**	**11 22 21.8**	**+0.7**
RKY	**Sarkoy-Tekirda**	**2.12**	**318**	*e*PN	**Pn**	**11 21 51.1**	**+0.6**
RKY	**Sarkoy-Tekirda**	**2.12**	**318**	*e*Pn	**Pn**	**11 21 51.1**	**+0.6**
SART	**Tekirdag**	**2.12**	**318**	*i* P	**Pg**	**11 21 55.3**	**+0.3**
SART				*i* S	**Sg**	**11 22 23.1**	**+0.5**
CTKS	**Kestanelik-??a**	**2.14**	**349**	*e*PN	**Pn**	**11 21 50.1**	**-0.6**
CTKS	**Kestanelik-??a**	**2.14**	**349**	*e*Pn	**Pn**	**11 21 50.1**	**-0.6**
KAND	**Kocaeli-Kandir**	**2.14**	**24**	P	**Pn**	**11 21 50.2**	**-0.6**
KAND	**Kocaeli-Kandir**	**2.14**	**24**	*i* P	**Pn**	**11 21 50.2**	**-0.6**
SAHE	**Sakarya_HENDEK**	**2.20**	**38**	P	**Pn**	**11 21 51.1**	**-0.5**
SAHE	**Sakarya_HENDEK**	**2.20**	**38**	*i* P	**Pn**	**11 21 51.1**	**-0.5**
KIZT	**Kizilcal**	**2.22**	**96**	*e*PN	**Pn**	**11 21 51.7**	**-0.2**
KIZT	**Kizilcal**	**2.22**	**96**	*e*Pn	**Pn**	**11 21 51.7**	**-0.2**
KORT	**Korkueli**	**2.36**	**154**	P	**Pn**	**11 21 53.9**	**0.0**
KORT	**Korkueli**	**2.36**	**154**	*i* P	**Pn**	**11 21 53.9**	**0.0**
KORT				*i* S	**Sg**	**11 22 36.2**	**+5.8**
CTYL	**Yalikoy Yolu**	**2.41**	**346**	*e*PN	**Pn**	**11 21 54.7**	**+0.3**
CTYL	**Yalikoy Yolu**	**2.41**	**346**	*e*Pn	**Pn**	**11 21 54.7**	**+0.3**
BDRM	**Kayabasi**	**2.43**	**212**	*i* P	Pn	11 21 49.6	-5.1

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*NIED **28** 11:25:00, 37°.90N×144°.40E, h8km, Mw3.6 Best double couple: M0:8.46000×10^14 NP1:φ=31.00000°, δ=31.00000°, λ=-99.00000°. NP2:φ=221.00000°, δ=59.00000°, λ=-85.00000°.*
*IDC **28** 11:25:13.2±1.2, 37°.77N×144°.72E, h0km, mb3.3/3, mb1 3.6/6, mb1mx3.4/35, mbtmp3.5/6, ML3.5/3, MS2.6/1, Ms1 2.6/1, ms1mx2.2/25, Error ellipse: s-maj=41.6km s-min=22.0km az=112.0*
*ISCJB **28** 11:25:16.0±0.7, 37°.91N±0°.05×144°.60E±0°.05, h33km, mb3.4/3, Error ellipse: s-maj=6.7km s-min=6.2km az=5.6*
*JMA **28** 11:25:18.0±0.2, 37°.92N×144°.38E, h27km, M3.9*
ISC 28 11:25:17.9±1.2, **37°92N**×**144°55E**±0°.09, **h35**km, **n24**, σ2$02/37, **mb3.5**/3, **Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.54**	**298**	P	**Pn**	**11 25 57.0**	**+0.4**
OFUJ				*e*S	**Sn**	**11 26 26.6**	**+0.3**
JIO	**Ouri**	**2.58**	**283**	S	**Sn**	**11 26 26.6**	**-0.6**
JMK	**Ichinoseki**	**2.81**	**293**	P	**Pn**	**11 26 01.4**	**+1.1**
JOM	**Ohasama**	**2.98**	**302**	P	**Pn**	**11 26 03.9**	**+1.2**
JOM				*e*S	**Sn**	**11 26 38.6**	**+1.4**
JOU	**Okura**	**3.09**	**280**	P	**Pn**	**11 26 05.2**	**+0.9**
JOU				*e*S	**Sn**	**11 26 40.4**	**+0.4**
JFT	**Otama**	**3.36**	**264**	P	**Pn**	**11 26 09.8**	**+1.9**
JFT				*e*S	**Sn**	**11 26 46.3**	**-0.3**
JRG	**Rokugo**	**3.40**	**297**	P	**Pn**	**11 26 10.6**	**+2.1**
JRG				*e*S	**Sn**	**11 26 48.4**	**+0.8**
JANG	**Nango**	**3.40**	**317**	P	**Pn**	**11 26 09.8**	**+1.3**
JYK	**Kaneyama**	**3.44**	**288**	P	**Pn**	**11 26 10.6**	**+1.6**
JYK				S	**Sn**	**11 26 49.4**	**+0.9**
JTM	**Tenmabayashi**	**3.93**	**318**	P	**Pn**	**11 26 17.9**	**+2.1**
JTM				*e*S	**Sn**	**11 27 00.0**	**-0.7**
JOT	**Ohata**	**4.39**	**323**	P	**Pn**	**11 26 24.2**	**+2.2**
JCH	**Churui**	**4.78**	**349**	P	**Pn**	**11 26 27.4**	**0.0**
JCH				*e*S	**Sn**	**11 27 19.0**	**-2.5**
JKB	**Kayabe**	**4.80**	**327**	P	**Pn**	**11 26 29.3**	**+1.7**
JKB				S	**Sn**	**11 27 21.1**	**-0.9**
JRY	**Ryogami san**	**4.90**	**249**	P	**Pn**	**11 26 28.7**	**-0.4**
JRY				*e*S	**Sn**	**11 27 21.3**	**-3.3**
MJAR	**Matsushiro Arr**	**5.24**	**257**	Pn	**Pn**	**11 26 35.0**	**+1.2**
	0.8nm,0.3s,baz=68,slow=10.0,SNR=10						
NEM2	**Nemuro 2**	**5.52**	**9**	P	**Pn**	**11 26 35.2**	**-2.3**
NEM2				*e*S	**Sn**	**11 27 34.3**	**-5.4**
JOSM	**Okushiri--Mats**	**5.70**	**318**	P	**Pn**	**11 26 41.8**	**+1.8**
JOSM				S	**Sn**	**11 27 43.0**	**-1.1**
JTKR	**Abashiri--Toko**	**6.07**	**356**	P	**Pn**	**11 26 44.6**	**-0.5**
JTKR				*e*S	**Sn**	**11 27 49.5**	**-3.7**
JHJ	**Hachijo jima 2**	**6.16**	**220**	Pn	**Pn**	**11 26 45.1**	**-1.3**
	6.5nm,0.3s,baz=81,slow=22,SNR=3.3						
JHJ				Sn	**Sn**	**11 27 50.3**	**-5.4**
	8.2nm,0.3s,baz=69,slow=23,SNR=5.3						
ASAJ	**Asahikawa**	**6.37**	**347**	Pn	**Pn**	**11 26 50.0**	**+0.8**
	0.9nm,0.3s,baz=175,slow=13,SNR=11						
KSRS	**Korea Array**	**13.18**	**273**	LR	LR	11 32 35.7	
	comp=Z,24nm,19.8s,baz=180,slow=33						
WRA	**Warramunga Arr**	**58.35**	**191**	P	**P**	**11 35 08.7**	**-0.9**
	0.3nm,0.5s,baz=11,slow=7.2,SNR=6.7						
YKA	**Yellowknife Ar**	**61.78**	**31**	P	**P**	**11 35 33.8**	**+1.2**
	0.1nm,0.7s,baz=300,slow=5.7,SNR=2.6						
ASAR	**Alice Springs**	**62.07**	**191**	P	**P**	**11 35 35.0**	**0.0**
	0.4nm,0.9s,baz=4.7,slow=6.0,SNR=3.9						

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*NIED **28** 11:55:00, 38°.70N×142°.40E, h41km, Mw3.9 Best double couple: M0:8.78000×10^14 NP1:φ=148.00000°, δ=39.00000°, λ=75.00000°. NP2:φ=347.00000°, δ=53.00000°, λ=102.00000°.*
*ISCJB **28** 11:55:12.8±0.5, 38°.69N±0°.04×142°.51E±0°.05, h24km, mb3.8/15, MS3.6/1, Error ellipse: s-maj=6.0km s-min=5.0km az=162.7*
*JMA **28** 11:55:14.8±0.1, 38°.70N×142°.40E, h34km±2km, M3.9*
JMA Felt II J1.
*IDC **28** 11:55:16.1±0.7, 38°.62N×142°.29E, h37km±6km, mb3.7/15, mb1 3.9/19, mb1mx3.7/36, mbtmp3.9/19, ML3.3/3, MS3.1/4, Ms1 3.1/4, ms1mx2.6/45, Error ellipse: s-maj=19.0km s-min=12.8km az=103.0*
ISC 28 11:55:14.5±0.6, **38°67N**±0°.05×**142°43E**±0°.06, **h24**km, **n40**, σ1$28/42, **mb3.9**/15, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.72**	**305**	P	**Pb**	**11 55 28.2**	**-0.3**
OFUJ				S	**Sb**	**11 55 37.4**	**-0.6**
JIO	**Ouri**	**0.87**	**256**	P	**Pb**	**11 55 30.5**	**-0.5**
JIO				S	**Sb**	**11 55 41.4**	**-0.8**
JMK	**Ichinoseki**	**0.99**	**287**	P	**Pn

AKHS	**Akhisar**	**0.97 258**	*i* P		**Pn**	**11 56 33.5**	**+0.1**
AKHS			*i* S		**Sb**	**11 56 45.7**	**+0.1**
AKS	**Akhisar**	**0.97 258**	*e*PG		**Pg**	**11 56 31.9**	**+0.1**
AKS			*e*SG		**Sb**	**11 56 45.5**	**-0.1**
AKS	**Akhisar**	**0.97 258**	*e*Pg		**Pg**	**11 56 31.9**	**+0.1**
AKS			*e*Sg		**Sb**	**11 56 45.5**	**-0.1**
BALB	**Balikesir**	**1.04 302**	*e*PG		**Pg**	**11 56 33.5**	**+0.3**
BALB			*e*SG		**Sn**	**11 56 48.8**	**-0.5**
BALB	**Balikesir**	**1.04 302**	*e*Pg		**Pg**	**11 56 33.5**	**+0.3**
BALB			*e*Sg		**Sn**	**11 56 48.8**	**-0.5**
IGD	**Bursa**	**1.17 6**	*i* P		**Pb**	**11 56 35.4**	**-0.5**
IGD			*i* S		**Sn**	**11 56 51.9**	**-0.7**
BALY	**Balya**	**1.27 301**	P		**Pg**	**11 56 38.1**	**+0.6**
BALY			S		**Sn**	**11 56 56.3**	**+1.4**
BALY	**Balya**	**1.27 301**	*i* P		**Pg**	**11 56 38.1**	**+0.6**
BALY			*i* S		**Sn**	**11 56 56.4**	**+1.4**
CAVI	**Cavuskoy**	**1.27 29**	*e*PN		**Pn**	**11 56 37.2**	**-0.4**
CAVI	**Cavuskoy**	**1.27 29**	*e*Pn		**Pn**	**11 56 37.2**	**-0.4**
KCTX	**Karacabey (Bur**	**1.28 336**	*e*PN		**Pn**	**11 56 37.5**	**-0.2**
KCTX	**Karacabey (Bur**	**1.28 336**	*e*Pn		**Pn**	**11 56 37.5**	**-0.2**
IZI	**Iznik**	**1.29 15**	*e*PN		**Pg**	**11 56 37.9**	**+0.1**
IZI	**Iznik**	**1.29 15**	*e*Pn		**Pg**	**11 56 37.9**	**+0.1**
BORA	**Eskisehir**	**1.35 54**	P		**Pn**	**11 56 38.3**	**-0.4**
BORA			S		**Sg**	**11 56 57.6**	**+1.0**
BORA	**Eskisehir**	**1.35 54**	*i* P		**Pn**	**11 56 38.3**	**-0.4**
BORA			*i* S		**Sg**	**11 56 57.6**	**+1.0**
GONE	**Gonen-Balikesi**	**1.41 313**	*e*PN		**Pn**	**11 56 39.1**	**-0.3**
GONE	**Gonen-Balikesi**	**1.41 313**	*e*Pn		**Pn**	**11 56 39.1**	**-0.3**
ARMT	**Armutlu**	**1.47 355**	*e*PN		**Pb**	**11 56 40.6**	**-0.5**
ARMT	**Armutlu**	**1.47 355**	*e*Pn		**Pb**	**11 56 40.6**	**-0.5**
ESKT	**Eskisehir**	**1.47 73**	*i* P		**Pg**	**11 56 42.4**	**+1.0**
ESKT			*i* S		**Sg**	**11 57 01.1**	**+0.5**
SEYT	**Eskypehyr**	**1.47 73**	P		**Pg**	**11 56 42.4**	**+1.0**
SEYT			S		**Sg**	**11 57 01.1**	**+0.5**
GULT	**Gulveren**	**1.76 40**	*e*PN		**Pn**	**11 56 44.2**	**-0.1**
GULT	**Gulveren**	**1.76 40**	*e*Pn		**Pn**	**11 56 44.2**	**-0.1**

CSEM ***28*** *11:58:42.6±0.3, 38°.27N×37°.56E, h2km, ML2.6, Error ellipse: s-maj=7.6km s-min=5.3km az=107.0*
ISK ***28*** *11:58:43.3, 38°.31N×37°.57E, h8km, MD2.9*
ISCJB ***28*** *11:58:44.4±0.8, 38°.37N±0°.03×37°.61E±0°.05, h4km±7km, Error ellipse: s-maj=6.7km s-min=5.7km az=169.0*
DDA ***28*** *11:58:44.1, 38°.36N×37°.63E, h7km, Ml2.6*
ISC 28 11:58:44.0±0.9,**38°.36N**±0°.03×**37°.62E**±0°.03,**h11**km±8km, **n19,** σ1°**14**/27, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DARE	**Darende-Malaty**	**0.23**	**334**	*e*PG	**Pg**	**11 58 48.5**	**-0.5**
DARE				*e*SG	**Sg**	**11 58 53.7**	**+1.4**
DARE	**Darende-Malaty**	**0.23**	**334**	*e*Pg	**Pg**	**11 58 48.5**	**-0.5**
DARE				*e*Sg	**Sg**	**11 58 53.7**	**+1.4**
AKCD	**Akcadag**	**0.25**	**105**	P	**Pg**	**11 58 48.5**	**-0.7**
AKCD				S	**Sg**	**11 58 53.9**	**+1.1**
AKCD	**Akcadag**	**0.25**	**105**	*i* P	**Pg**	**11 58 48.5**	**-0.7**
AKCD				*i* S	**Sg**	**11 58 53.9**	**+1.1**
CUKAN	**kangal_SIVAS**	**0.96**	**353**	*i* P	**Pn**	**11 59 02.9**	**-0.7**
GZT	**Gaziantep**	**1.00**	**182**	*i* P	**Pn**	**11 59 04.6**	**+0.3**
GZT				*i* S	**Sn**	**11 59 20.3**	**+1.8**
KEMA	**Kemaliye**	**1.14 37**		P	**Pb**	**11 59 04.6**	**-1.2**
KEMA				S	**Sn**	**11 59 23.4**	**+1.7**
KEMA	**Kemaliye**	**1.14 37**		*i* P	**Pb**	**11 59 04.6**	**-1.2**
KEMA				*i* S	**Sn**	**11 59 23.4**	**+1.7**
GAZ	**Gaziantep**	**1.23**	**195**	*e*PN	**Pn**	**11 59 06.3**	**-1.0**
GAZ	**Gaziantep**	**1.23**	**195**	*e*Pn	**Pn**	**11 59 06.3**	**-1.0**
SVRC	**Sivrice-ELAZID**	**1.33**	**89**	*e*PN	**Pg**	**11 59 09.2**	**-0.4**
SVRC	**Sivrice-ELAZID**	**1.33**	**89**	*e*Pn	**Pg**	**11 59 09.2**	**-0.4**
KAMA	**Osmaniye**	**1.39**	**213**	*i* P	**Pg**	**11 59 09.9**	**-0.9**
KAMA				*i* S	**Sg**	**11 59 30.5**	**+1.6**
BNN	**Bunyan**	**1.47**	**290**	*e*PN	**Pb**	**11 59 10.6**	**-0.9**
BNN	**Bunyan**	**1.47**	**290**	*e*Pn	**Pb**	**11 59 10.6**	**-0.9**
PTK	**Pertek**	**1.49**	**69**	*e*PN	**Pg**	**11 59 12.0**	**-0.6**
PTK	**Pertek**	**1.49**	**69**	*e*Pn	**Pg**	**11 59 12.0**	**-0.6**
SVSK	**Karacayir**	**1.63**	**343**	*e*PN	**Pb**	**11 59 13.3**	**-0.8**
SVSK	**Karacayir**	**1.63**	**343**	*e*Pn	**Pb**	**11 59 13.3**	**-0.8**

WEL 28 12:05:20.4±0.1,**43°.54S**×**172°.70E, h10**km, **ML3.6**/18, **7C-1D, Error ellipse: s-maj=0.7km s-min=0.4km az=90.0, South Island**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRLZ	**Canterbury Las**	**0.07**	**236**	⇑PG	Pg	12 05 22.6	0.0
CRLZ				SG	Sg	12 05 24.1	0.0
CRLZ				AML	AML	12 05 24.3	
CRLZ				AML	AML	12 05 24.3	
CRLZ				AML	AML	12 05 24.3	
MQZ	**McQueen's Vall**	**0.17**	**191**	⇑PG	Pg	12 05 24.3	+0.2
MQZ				SG	Sg	12 05 27.0	+0.3
MQZ				AML	AML	12 05 27.3	
OXZ	**Oxford**	**0.53**	**294**	⇑P*	Pg	12 05 30.6	0.0
LTZ	**Lake Taylor**	**0.82**	**337**	⇑P*	Pg	12 05 36.5	+0.3
LTZ				AML	AML	12 05 48.5	
LTZ				AML	AML	12 05 49.2	
RPZ	**Rata Peaks**	**1.21**	**261**	⇓P*	Pb	12 05 42.2	-1.2
RPZ				AML	AML	12 06 01.6	
RPZ				AML	AML	12 06 07.3	
KHZ	**Kahutara**	**1.28 29**		⇑P*	Pn	12 05 42.9	-1.5
WVZ	**Waitaha Valley**	**1.50**	**287**	PN	Pn	12 05 47.4	0.0
WVZ				AML	AML	12 06 12.7	
WVZ				AML	AML	12 06 16.4	
THZ	**Tophouse**	**1.78 5**		⇑PN	Pn	12 05 50.0	-1.3
THZ				AML	AML	12 06 22.0	
THZ				AML	AML	12 06 26.2	
DSZ	**Denniston Nort**	**1.91**	**340**	PN	Pn	12 05 52.3	-0.7
DSZ				AML	AML	12 06 19.6	
DSZ				AML	AML	12 06 19.6	
DSZ				AML	AML	12 06 24.5	
DSZ				AML	AML	12 06 24.6	
LBZ	**Lake Benmore**	**2.00**	**244**	PN	Pn	12 05 53.5	-0.8
LBZ				AML	AML	12 06 29.7	
LBZ				AML	AML	12 06 29.7	
LBZ				AML	AML	12 06 30.8	
BSWZ	**Blackbirch Sta**	**2.02 26**		PN	Pn	12 05 53.3	-1.1
FOZ	**Fox Glacier**	**2.10**	**269**	PN	Pn	12 05 56.0	+0.4
FOZ				AML	AML	12 06 22.0	
FOZ				AML	AML	12 06 22.5	
FOZ				AML	AML	12 06 40.4	
ODZ	**Otahua Downs**	**2.11**	**224**	AML	AML	12 06 28.6	
ODZ				AML	AML	12 06 31.0	
NNZ	**Nelson**	**2.38 13**		PN	Pn	12 05 58.5	-0.9
NNZ				AML	AML	12 11 12.7	
NNZ				AML	AML	12 11 12.7	
QRZ	**Quartz Range**	**2.71**	**357**	PN	Pn	12 06 02.9	-1.1
QRZ				AML	AML	12 06 12.9	
QRZ				AML	AML	12 06 12.9	
QRZ				AML	AML	12 06 54.2	
QRZ				AML	AML	12 06 54.3	
PLWZ	**Palliser**	**2.73 45**		PN	Pn	12 06 02.3	-2.0
JCZ	**Jackson Bay**	**2.88**	**258**	PN	Pn	12 06 05.9	-0.6
JCZ				AML	AML	12 07 04.1	
WKZ	**Wanaka**	**2.94**	**243**	PN	Pn	12 06 06.1	-1.2
EAZ	**Earnscleugh**	**2.96**	**234**	⇑PN	Pn	12 06 06.4	-1.1
EAZ				AML	AML	12 06 56.9	
EAZ				AML	AML	12 06 58.0	
EAZ				AML	AML	12 06 58.0	
EAZ				AML	AML	12 07 07.0	
CAW	**Cannon Point**	**3.00 37**		PN	Pn	12 06 05.8	-2.2
CAW				AML	AML	12 06 44.4	
MTW	**Mount Morrison**	**3.16 42**		PN	Pn	12 06 07.8	-2.4
TUZ	**Tuapeka**	**3.26**	**221**	PN	Pn	12 06 10.4	-1.1
TUZ				AML	AML	12 07 08.8	
TUZ				AML	AML	12 07 16.1	
OGWZ	**Otaki Gorge**	**3.28 35**		PN	Pn	12 06 10.4	-1.5
MRZ	**Mangatainoka R**	**3.59 38**		PN	Pn	12 06 13.9	-2.2
MSZ	**Milford Sound**	**3.62**	**250**	PN	Pn	12 06 15.2	-1.3
MSZ				AML	AML	12 07 24.7	
MSZ				AML	AML	12 07 24.8	
MLZ	**Mavora Lakes**	**3.75**	**239**	PN	Pn	12 06 17.1	-1.3
SYZ	**Scrubby Hill**	**3.92**	**219**	AML	AML	12 07 33.7	

IDC 28 12:12:27.2±8.9,**16°.92S**×**178°.94E, h0**km, **mb3.9**/4, **mb1 4.1**/4, **mb1mx3.7**/31, **mbtmp3.9**/4, **Error ellipse: s-maj=206.5km s-min=39.8km az=32.0, Fiji Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**36.92 239**		P	P	12 19 37.7	-0.3
	1.5nm,0.8s,baz=99,slow=14,SNR=3.5						
WRA	**Warramunga Arr**	**42.33 259**		P	P	12 20 23.5	+0.2
	0.4nm,0.4s,baz=91,slow=7.9,SNR=27						
ASAR	**Alice Springs**	**42.63 253**		P	P	12 20 25.4	-0.4
	2.9nm,0.5s,baz=88,slow=8.7,SNR=91						
VNDA	**Vanda**	**61.22 184**		P	P	12 22 43.5	0.0
	0.5nm,0.4s,baz=12,slow=12,SNR=13						

ISK ***28*** *12:13:37.6, 39°.15N×29°.04E, h5km, ML2.5*
ISCJB ***28*** *12:13:38.1±0.5, 39°.14N±0°.03×29°.08E±0°.04, h7km±6km, Error ellipse: s-maj=5.9km s-min=5.0km az=24.2*
DDA ***28*** *12:13:38.1, 39°.15N×29°.09E, h7km, Ml2.5*
CSEM ***28*** *12:13:38.1±0.1, 39°.14N×29°.07E, h8km, ML2.5, Error ellipse: s-maj=3.5km s-min=2.3km az=98.0*
ISC 28 12:13:37.9±1.0,**39°.14N**±0°.03×**29°.07E**±0°.04,**h17**km±12km, **n24,** σ0°**35**/32, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.29 250**		P	**Pb**	**12 13 44.8**	**+0.1**
DEMI				S	**Sb**	**12 13 49.1**	**-0.2**
DEMI	**Demirci**	**0.29 250**		*i* P	**Pb**	**12 13 44.8**	**+0.1**
DEMI				*i* S	**Sb**	**12 13 49.1**	**-0.2**
GDZ	**Gediz**	**0.33 99**		P	**Pg**	**12 13 44.8**	**0.0**
GDZ				S	**Sg**	**12 13 49.4**	**-0.2**
GDZ	**Gediz**	**0.33 99**		*i* P	**Pg**	**12 13 44.8**	**0.0**
GDZ				*i* S	**Sg**	**12 13 49.4**	**-0.2**
TVSB	**Tavsanli**	**0.43 45**		*e*PG	**Pg**	**12 13 46.7**	**0.0**
TVSB				*e*SG	**Sg**	**12 13 52.4**	**-0.2**
KULA	**Kula-Manisa**	**0.70 207**		*e*PG	**Pg**	**12 13 51.5**	**-0.2**
KULA	**Kula-Manisa**	**0.70 207**		*e*Pg	**Pg**	**12 13 51.5**	**-0.2**
KHAL	**Karahalli**	**0.84 157**		P	**Pg**	**12 13 54.2**	**0.0**
KHAL				S	**Sg**	**12 14 05.4**	**+0.1**
KHAL	**Karahalli**	**0.84 157**		*i* P	**Pg**	**12 13 54.2**	**0.0**
KHAL				*i* S	**Sg**	**12 14 05.4**	**+0.1**
KHL	**Karahalli**	**0.89 156**		*e*PG	**Pg**	**12 13 55.5**	**+0.3**
KHL	**Karahalli**	**0.89 156**		*e*Pg	**Pg**	**12 13 55.5**	**+0.3**
ORLT	**Orhaneli**	**0.91 352**		*e*PG	**Pb**	**12 13 55.1**	**-0.2**
ORLT	**Orhaneli**	**0.91 352**		*e*Pg	**Pb**	**12 13 55.1**	**-0.2**
IGD	**Bursa**	**1.12 5**		*i* P	**Pn**	**12 13 58.8**	**0.0**
IGD				*i* S	**Sg**	**12 14 15.8**	**+1.5**
CAVI	**Cavuskoy**	**1.22 29**		*e*PN	**Pg**	**12 14 01.3**	**0.0**
CAVI	**Cavuskoy**	**1.22 29**		*e*Pn	**Pg**	**12 14 01.3**	**0.0**
IZI	**Iznik**	**1.23 14**		*e*PN	**Pg**	**12 14 01.5**	**-0.2**
IZI	**Iznik**	**1.23 14**		*e*Pn	**Pg**	**12 14 01.5**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.23**	**353**	*e*PN	**Pg**	**12 14 01.4**	**-0.3**
ADVT	**Abdulvahap**	**1.39 22**		*e*PN	**Pg**	**12 14 04.2**	**-0.4**
ADVT	**Abdulvahap**	**1.39 22**		*e*Pn	**Pg**	**12 14 04.2**	**-0.4**
ARMT	**Armutlu**	**1.43**	**354**	*e*PN	**Pb**	**12 14 04.6**	**+0.5**
GULT	**Gulveren**	**1.70 40**		*e*PN	**Pb**	**12 14 08.8**	**0.0**
GULT	**Gulveren**	**1.70 40**		*e*Pn	**Pb**	**12 14 08.8**	**0.0**

ISCJB ***28*** *12:26:25.3±1.1, 24°.03N±0°.02×122°.39E±0°.02, h13km±8km, Error ellipse: s-maj=4.2km s-min=2.5km az=166.3*
JMA ***28*** *12:26:25.7±0.1, 24°.00N×122°.38E, h28km±3km*
TAP ***28*** *12:26:26.2, 24°.09N×122°.32E, h17km, ML3.1, D*
ISC 28 12:26:25.2±1.2,**24°.04N**±0°.03×**122°.37E**±0°.02,**h18**km±3km, **n33,** σ0°**50**/62, **Taiwan region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JYNG	**Yonagunijimaku**	**0.67 52**		P	**Pg**	**12 26 38.7**	**+0.3**
JYNG				*e*S	**Sb**	**12 26 47.3**	**+0.2**
ENA	**Nanau**	**0.69 304**		P	**Pb**	**12 26 38.6**	**0.0**
	baz=302						
ENA				*e*S	**Sb**	**12 26 47.3**	**-0.4**
	baz=302						
TWD	**Chiawan**	**0.70 273**		*e*P	**Pg**	**12 26 39.1**	**0.0**
	baz=269						
TWD				*e*S	**Sn**	**12 26 49.5**	**-1.1**
	baz=269						
YOJ	**Yonaguni jima**	**0.72 55**		P	**Pg**	**12 26 39.6**	**+0.2**
YOJ				*e*S	**Sg**	**12 26 49.8**	**+0.8**
TWC	**Suao**	**0.73 320**		*e*P	**Pb**	**12 26 39.2**	**-0.3**
	baz=320						
TWC				*e*S	**Sb**	**12 26 48.5**	**-0.7**
	baz=320						
ESL	**Shilin**	**0.88 255**		*e*P	**Pb**	**12 26 42.1**	**+0.1**
	baz=251						
ESL				*e*S	**Sn**	**12 26 55.0**	**-0.1**
	baz=251						
TWE	**Neicheng**	**0.93 317**		*e*P	**Pn**	**12 26 43.5**	**+0.2**
	baz=317						
TWE				*e*S	**Sg**	**12 26 55.7**	**+0.1**
	baz=317						
ENTT	**Nioudou**	**0.94 309**		P	**Pn**	**12 26 43.5**	**-0.1**
	baz=308						
ENTT				*e*S	**Sg**	**12 26 55.8**	**-0.2**
	baz=308						
NNS	**Nan Shan**	**0.99 294**		P	**Pn**	**12 26 44.3**	**0.0**
	baz=292						
NNS				*e*S	**Sn**	**12 26 57.9**	**0.0**
	baz=292						
WHF	**Hehuan Shan**	**1.01 276**		*e*S	**Sg**	**12 26 58.3**	**0.0**
	baz=273						
TWT	**Tachien**	**1.11 281**		*e*P	**Pg**	**12 26 46.8**	**0.0**
	baz=278						
TWT				*e*S	**Sg**	**12 27 01.3**	**0.0**
	baz=278						
NSK	**Sanguang**	**1.11 305**		*e*P	**Pb**	**12 26 46.1**	**+0.1**
	baz=303						
NSK				*e*S	**Sn**	**12 27 00.5**	**-0.4**
	baz=303						
NWF	**Wu-fen Shan**	**1.15 333**		*e*P	**Pn**	**12 26 46.2**	**-0.3**
	baz=333						
NWF				*e*S	**Sn**	**12 27 01.8**	**0.0**
	baz=333						
WDT	**Danda**	**1.16 256**		*e*P	**Pn**	**12 26 46.7**	**-0.2**
	baz=252						
WDT				*e*S	**Sb**	**12 27 02.0**	**+0.1**
	baz=252						
TWA	**Mucha**	**1.17 323**		*e*S	**Sg**	**12 27 02.9**	**-0.5**
	baz=323						
TWF1	**Yuli**	**1.20 235**		*e*P	**Pn**	**12 26 47.2**	**+0.1**
	baz=231						
TWF1				*e*S	**Sn**	**12 27 03.2**	**+0.4**
	baz=231						
IRIF	**Iriomote-Funau**	**1.28 77**		P	**Pn**	**12 26 48.2**	**+0.1**
IRIF				*e*S	**Sn**	**12 27 04.1**	**-0.7**
HATJ	**Hateruma jima**	**1.32 89**		*e*S	**Sn**	**12 27 04.6**	**-1.1**
SMLT	**Sun Moon Lake**	**1.35 264**		*e*P	**Pb**	**12 26 50.0**	**0.0**
	baz=260						
SMLT				*e*S	**Sb**	**12 27 07.5**	**+0.4**
	baz=260						
NSTT	**Nanjuang**	**1.38 295**		*e*P	**Pb**	**12 26 51.0**	**+0.6**
	baz=294						
NSTT				*e*S	**Sb**	**12 27 08.2**	**+0.5**
	baz=294						
TYC	**Yuchr**	**1.39 265**		*e*P	**Pn**	**12 26 49.8**	**+0.2**
	baz=262						
TYC				*e*S	**Sg**	**12 27 09.6**	**-0.5**
	baz=262						
YUS	**Yu-Shan**	**1.41 247**		*e*P	**Pb**	**12 26 51.2**	**0.0**
	baz=244						
YUS				*e*S	**Sn**	**12 27 08.7**	**0.0**
	baz=244						
TWQ1	**Liyutan**	**1.49 282**		*e*P	**Pb**	**12 26 52.9**	**+0.6**
	baz=280						
TWQ1				*e*S	**Sb**	**12 27 11.4**	**+0.6**
	baz=280						
ELDTW	**Lidau**	**1.50 236**		*e*P	**Pn**	**12 26 51.1**	**-0.2**
	baz=232						
ELDTW				*e*S	**Sn**	**12 27 09.5**	**-1.0**
	baz=232						
JKRS	**Kuro-shima**	**1.51 82**		P	**Pb**	**12 26 52.6**	**-0.1**
JKRS				*e*S	**Sb**	**12 27 11.6**	**0.0**
ALS	**Alishan**	**1.52 250**		*e*P	**Pb**	**12 26 53.2**	**0.0**
	baz=247						
ALS				*e*S	**Sb**	**12 27 12.3**	**+0.1**
	baz=247						
CHN5	**Tsauling**	**1.61 254**		*e*P	**Pb**	**12 26 54.5**	**+0.1**
	baz=252						
CHN5				*e*S	**Sb**	**12 27 15.2**	**+0.8**
	baz=252						
TWG	**Pinlang**	**1.70 225**		*e*S	**Sn**	**12 27 15.2**	**-0.1**
	baz=222						
STYT	**Tauyuan**	**1.72 240**		*e*P	**Pb**	**12 26 55.4**	**-0.9**
	baz=237						
STYT				*e*S	**Sn**	**12 27 16.3**	**+0.6**
	baz=237						
CHN4	**Tsaushan**	**1.77 247**		*e*P	**Pb**	**12 26 56.1**	**-0.9**
	baz=245						
CHN4				*e*S	**Sb**	**12 27 20.2**	**+1.3**
	baz=245						
WTP	**Ta-pu**	**1.79 244**		*e*P	**Pb**	**12 26 57.2**	**-0.3**
	baz=241						
WTP				*e*S	**Sb**	**12 27 20.9**	**+1.2**
	baz=241						
JISG	**Ishigakijimahi**	**1.85 73**		P	**Pn**	**12 26 56.6**	**+0.5**
JISG				*e*S	**Sn**	**12 27 18.9**	**-0.1**
CHN1	**Nanshi**	**1.89 243**		*e*P	**Pb**	**12 26 58.8**	**-0.4**
	baz=241						
CHN1				*e*S	**Sb**	**12 27 22.1**	**-0.4**
	baz=241						

ISK ***28*** *12:27:13.4, 39°.10N×29°.04E, h6km, ML2.5*
CSEM ***28*** *12:27:14.4±0.2, 39°.11N×29°.04E, h5km, ML2.9, Error ellipse: s-maj=3.9km s-min=3.5km az=147.0*
DDA ***28*** *12:27:14.3, 39°.09N×29°.05E, h7km, Ml2.9*
ISC 28 12:27:14.4±0.9,**39°.10N**±0°.02×**29°.03E**±0°.02,**h11**km±8km, **n39,** σ0°**82**/55, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25 258**		P	**Pg**	**12 27 19.8**	**+0.2**
DEMI				S	**Sg**	**12 27 23.4**	**+0.3**
DEMI	**Demirci**	**0.25 258**		*i* P	**Pg**	**12 27 19.8**	**+0.2**
DEMI				*i* S	**Sg**	**12 27 23.4**	**+0.3**
GDZ	**Gediz**	**0.35 91**		P	**Pg**	**12 27 21.3**	**-0.1**
GDZ				S	**Sg**	**12 27 26.4**	**+0.3**
GDZ	**Gediz**	**0.35 91**		*i* P	**Pg**	**12 27 21.3**	**-0.1**
GDZ				*i* S	**Sg**	**12 27 26.4**	**+0.3**
TVSB	**Tavsanli**	**0.49 43**		PG	**Pg**	**12 27 23.5**	**-0.4**
TVSB				*e*SG	**Sg**	**12 27 29.9**	**-0.5**
TVSB	**Tavsanli**	**0.49 43**		*i* Pg	**Pg**	**12 27 23.5**	**-0.4**
TVSB				*e*Sg	**Sg**	**12 27 29.9**	**-0.5**
KULA	**Kula-Manisa**	**0.65 207**		PG	**Pg**	**12 27 26.6**	**-0.4**
KULA				*e*SG	**Sg**	**12 27 35.3**	**-0.2**
KULA	**Kula-Manisa**	**0.65 207**		*i* Pg	**Pg**	**12 27 26.6**	**-0.4**
KULA				*e*Sg	**Sg**	**12 27 35.3**	**-0.2**
KHAL	**Karahalli**	**0.81 154**		P	**Pb**	**12 27 30.3**	**-0.2**
KHAL				S	**Sb**	**12 27 41.2**	**-0.3**
KHAL	**Karahalli**	**0.81 154**		*i* P	**Pb**	**12 27 30.3**	**-0.2**
KHAL				*i* S	**Sb**	**12 27 41.2**	**-0.3**
KHL	**Karahalli**	**0.86 153**		*e*PG	**Pb**	**12 27 31.2**	**-0.2**
KHL	**Karahalli**	**0.86 153**		*e*Pg	**Pb**	**12 27 31.2**	**-0.2**
ORLT	**Orhaneli**	**0.96 354**		*e*PG	**Pg**	**12 27 31.8**	**-1.0**
ORLT	**Orhaneli**	**0.96 354**		*e*Pg	**Pg**	**12 27 31.8**	**-1.0**
AKHS	**Akhisar**	**0.97 258**		P	**Pn**	**12 27 34.6**	**+0.5**
AKHS				S	**Sn**	**12 27 47.5**	**-0.4**
AKHS	**Akhisar**	**0.97 258**		*i* P	**Pn**	**12 27 34.6**	**+0.5**
AKHS				*i* S	**Sn**	**12 27 47.5**	**-0.4**
AKS	**Akhisar**	**0.97 258**		*e*PG	**Pb**	**12 27 32.4**	**-0.9**
AKS	**Akhisar**	**0.97 258**		*e*Pg	**Pb**	**12 27 32.4**	**-0.9**
BALB	**Balikesir**	**1.05 302**		*e*PG	**Pb**	**12 27 34.5**	**-0.1**
BALB	**Balikesir**	**1.05 302**		*e*Pg	**Pb**	**12 27 34.5**	**-0.1**
IGD	**Bursa**	**1.18 6**		*i* P	**Pb**	**12 27 36.4**	**-0.3**
IGD				*i* S	**Sn**	**12 27 52.9**	**+0.1**
CAVI	**Cavuskoy**	**1.27 29**		*e*PN	**Pb**	**12 27 38.0**	**-0.4**
CAVI	**Cavuskoy**	**1.27 29**		*e*Pn	**Pb**	**12 27 38.0**	**-0.4**
BALY	**Balya**	**1.27 301**		P	**Pg**	**12 27 39.3**	**+0.5**
BALY				S	**Sg**	**12 27 57.2**	**+1.8**
BALY	**Balya**	**1.27 301**		*i* P	**Pg**	**12 27 39.3**	**+0.5**
BALY				*i* S	**Sg**	**12 27 57.1**	**+1.8**
MDNY	**Mudanya-Bursa**	**1.28 355**		*e*PN	**Pb**	**12 27 38.2**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.28 355**		*e*Pn	**Pb**	**12 27 38.3**	**-0.2**
IZI	**Iznik**	**1.29 15**		*e*PN	**Pg**	**12 27 39.1**	**0.0**
IZI	**Iznik**	**1.29 15**		*e*Pn	**Pg**	**12 27 39.1**	**0.0**
GONE	**Gonen-Balikesi**	**1.41 313**		*e*PN	**Pb**	**12 27 40.6**	**-0.1**
GONE	**Gonen-Balikesi**	**1.41 313**		*e*Pn	**Pb**	**12 27 40.6**	**-0.1**
ADVT	**Abdulvahap**	**1.44 22**		*e*PN	**Pn**	**12 27 40.0**	**-0.5**
ADVT	**Abdulvahap**	**1.44 22**		*e*Pn	**Pn**	**12 27 40.0**	**-0.5**
ESKT	**Eskisehir**	**1.47 73**		*i* P	**Pg**	**12 27 43.6**	**+0.9**
ESKT				*i* S	**Sg**	**12 28 05.7**	**+3.9**
SEYT	**Eskypehyr**	**1.47 73**		P	**Pg**	**12 27 43.6**	**+0.9**
ARMT	**Armutlu**	**1.48 355**		*e*PN	**Pb**	**12 27 41.2**	**-0.7**
ARMT	**Armutlu**	**1.48 355**		*e*Pn	**Pb**	**12 27 41.2**	**-0.7**
GULT	**Gulveren**	**1.76 40**		*e*PN	**Pb**	**12 27 45.9**	**-0.8**
GULT	**Gulveren**	**1.76 40**		*e*Pn	**Pb**	**12 27 45.9**	**-0.8**

NIED ***28*** *12:28:00, 35°.90N×139°.90E, h62km, Mw3.7 Best double couple: M0=3.95000×10^14 NP1:φs=349.00000°, δ60.00000°, λ154.00000°. NP2:φs=93.00000°, δ68.00000°, λ33.00000°.*
ISCJB ***28*** *12:28:26.6±0.5, 35°.87N±0°.03×139°.94E±0°.06, h76km±3km, mb4.0/9, Error ellipse: s-maj=8.1km s-min=5.0km az=161.9*
IDC ***28*** *12:28:27.3±

1.6nm,0.8s,baz=66,slow=6.8,SNR=2.3

IDC 28 12:39:31.2±2.1,54°.26N×86°.02E,h0km,mb1 3.3/3, mb1mx3.0/48,mbtmp3.3/3,ML3.1/3,Error ellipse: s-maj=16.8km s-min=11.0km az=55.0,Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**0.77**	**247**	*i*		12 45 00.0	
	baz=66,slow=321,SNR=2.0						
ZALV	**Zalesovo Beam**	**0.78**	**247**	Pg	Pg	12 39 44.5	-1.5
	2.0nm,0.3s,baz=63,slow=17,SNR=15						
ZALV				Lg	Lg	12 39 57.4	
	6.1nm,0.3s,baz=64,slow=27,SNR=26						
ZALV				Rg	Rg	12 40 03.6	
	26nm,0.8s,baz=68,slow=29,SNR=22						
KURBB	**Kurchatov Arra**	**5.85**	**235**	Pn	Pn	12 41 00.2	+1.1
	0.2nm,0.3s,baz=52,slow=14,SNR=16						
KURBB				Lg	Lg	12 42 36.8	
	0.0nm,0.3s,baz=54,slow=31,SNR=3.3						
MKAR	**Makanchi Array**	**7.84**	**199**	Pn	Pn	12 41 27.2	+0.8
	0.6nm,0.3s,baz=22,slow=13,SNR=16						
MKAR				Sn	Sn	12 42 58.2	+2.3
	0.2nm,0.3s,baz=30,slow=30,SNR=5.2						
MKAR				Lg	Lg	12 43 39.0	
	0.2nm,0.3s,baz=22,slow=29,SNR=5.4						
BVAR	**Borovoye Array**	**9.37**	**269**	Pn	Pn	12 41 46.9	-0.4
	0.2nm,0.3s,baz=67,slow=16,SNR=3.6						

IDC 28 12:41:23.5±3.2,48°.40S×122°.25E,h0km,mb3.5/3, mb1 3.7/3,mb1mx3.5/25,mbtmp3.5/3,MS3.6/5,Ms1 3.6/5, ms1mx3.3/14,Error ellipse: s-maj=83.4km s-min=46.3km az=166.0,Western Indian-Antarctic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H01W1	**Cape Leeuwin H**	**14.78**	**333**	T	T	13 01 26.9	
	baz=157,slow=75,SNR=58						
H01W2	**Cape Leeuwin H**	**14.78**	**333**	T	T	13 01 26.8	
	baz=157,slow=68,SNR=68						
H01W3	**Cape Leeuwin H**	**14.79**	**333**	T	T	13 01 19.4	
	baz=157,slow=75,SNR=75						
STKA	**Stephens Creek**	**22.06**	**49**	P	P	12 46 19.2	-0.6
	0.8nm,0.7s,baz=176,slow=15,SNR=2.1						
STKA				LR	LR	12 54 22.3	
	comp=Z,70nm,18.7s,baz=206,slow=35						
ASAR	**Alice Springs**	**26.36**	**25**	P	P	12 47 02.0	+0.7
	0.6nm,0.8s,baz=198,slow=9.7,SNR=6.5						
VNDA	**Vanda**	**32.92**	**165**	LR	LR	12 59 26.1	
	comp=Z,276nm,19.5s,baz=197,slow=33						
KAPI	**Kappang**	**43.28**	**356**	LR	LR	13 07 39.1	
	comp=Z,40nm,19.6s,baz=243,slow=36						
PMG	**Port Moresby**	**44.16**	**37**	LR	LR	13 08 51.9	
	comp=Z,44nm,18.7s,baz=239,slow=37						
PSI	**Prapat**	**54.90**	**331**	LR	LR	13 10 17.8	
	comp=Z,73nm,19.1s,baz=329,slow=32						
CMAR	**Chiang Mai Arr**	**69.74**	**336**	P	P	12 52 35.0	-0.2
	0.4nm,0.5s,baz=166,slow=8.4,SNR=2.6						
YKA	**Yellowknife Ar**	**146.05**	**44**	PKPbc	PKPdf	13 01 03.4	+0.2
	0.5nm,0.8s,baz=266,slow=3.2,SNR=11						

*ISK **28** 12:52:19.7,39°.11N×29°.04E,h5km,ML2.4*
*CSEM **28** 12:52:20.5±0.1,39°.12N×29°.04E,h5km,ML2.8,Error ellipse: s-maj=2.6km s-min=2.4km az=156.0*
*DDA **28** 12:52:20.5,39°.09N×29°.05E,h7km,Ml2.8*
ISC 28 12:52:20.2±0.9,39°.08N±0°.03×29°.06E±0°.02,h17km±7km, n39,σ0°44/56,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**262**	P	**Pg**	**12 52 26.2**	**0.0**
DEMI				S	**Sg**	**12 52 30.0**	**-0.3**
DEMI	**Demirci**	**0.27**	**262**	*i* P	**Pg**	**12 52 26.2**	**0.0**
DEMI				*i* S	**Sg**	**12 52 30.0**	**-0.3**
GDZ	**Gediz**	**0.32**	**88**	P	**Pg**	**12 52 27.4**	**+0.3**
GDZ				S	**Sg**	**12 52 32.2**	**+0.4**
GDZ	**Gediz**	**0.32**	**88**	*i* P	**Pg**	**12 52 27.4**	**+0.3**
GDZ				*i* S	**Sg**	**12 52 32.2**	**+0.4**
TVSB	**Tavsanli**	**0.48**	**40**	PG	**Pg**	**12 52 29.7**	**-0.2**
TVSB				*e*SG	**Sg**	**12 52 35.6**	**-0.8**
TVSB	**Tavsanli**	**0.48**	**40**	*i* Pg	**Pg**	**12 52 29.7**	**-0.2**
TVSB				*e*Sg	**Sg**	**12 52 35.6**	**-0.8**
KULA	**Kula-Manisa**	**0.65**	**209**	PG	**Pb**	**12 52 33.2**	**+0.1**
KULA				*e*SG	**Sb**	**12 52 41.8**	**-0.1**
KULA	**Kula-Manisa**	**0.65**	**209**	*i* Pg	**Pb**	**12 52 33.2**	**+0.1**
KULA				*e*Sg	**Sb**	**12 52 41.8**	**-0.1**
KHAL	**Karahalli**	**0.78**	**155**	P	**Pn**	**12 52 36.7**	**+0.1**
KHAL				S	**Sn**	**12 52 47.1**	**-0.9**
KHAL	**Karahalli**	**0.78**	**155**	*i* P	**Pn**	**12 52 36.7**	**+0.1**
KHAL				*i* S	**Sn**	**12 52 47.1**	**-0.9**
KHL	**Karahalli**	**0.84**	**154**	*e*PG	**Pn**	**12 52 37.2**	**-0.1**
KHL	**Karahalli**	**0.84**	**154**	*e*Pg	**Pn**	**12 52 37.2**	**-0.1**
ORLT	**Orhaneli**	**0.97**	**352**	*e*PG	**Pb**	**12 52 37.9**	**-0.8**
ORLT	**Orhaneli**	**0.97**	**352**	*e*Pg	**Pb**	**12 52 37.9**	**-0.8**
AKHS	**Akhisar**	**0.99**	**259**	P	**Pg**	**12 52 39.9**	**+0.4**
AKHS				S	**Sn**	**12 52 53.3**	**+0.2**
AKHS	**Akhisar**	**0.99**	**259**	*i* P	**Pg**	**12 52 39.9**	**+0.4**
AKHS				*i* S	**Sn**	**12 52 53.3**	**+0.2**
AKS	**Akhisar**	**1.00**	**259**	*e*PG	**Pb**	**12 52 39.0**	**-0.1**
AKS	**Akhisar**	**1.00**	**259**	*e*Pg	**Pb**	**12 52 39.0**	**-0.1**
BALB	**Balikesir**	**1.07**	**302**	*e*PG	**Pb**	**12 52 40.1**	**-0.3**
BALB	**Balikesir**	**1.07**	**302**	*e*Pg	**Pb**	**12 52 40.1**	**-0.3**
IGD	**Bursa**	**1.19**	**5**	*i* P	**Pn**	**12 52 41.9**	**-0.1**
IGD				*i* S	**Sg**	**12 52 59.3**	**+0.6**
IZI	**Iznik**	**1.29**	**14**	*e*PN	**Pb**	**12 52 44.7**	**+0.5**
IZI	**Iznik**	**1.29**	**14**	*e*Pn	**Pb**	**12 52 44.7**	**+0.5**
MDNY	**Mudanya-Bursa**	**1.29**	**354**	*e*PN	**Pn**	**12 52 43.5**	**0.0**
MDNY	**Mudanya-Bursa**	**1.29**	**354**	*e*Pn	**Pn**	**12 52 43.5**	**0.0**
BALY	**Balya**	**1.30**	**301**	P	**Pg**	**12 52 45.1**	**-0.1**
BALY				S	**Sg**	**12 53 03.1**	**+0.9**
BALY	**Balya**	**1.30**	**301**	*i* P	**Pg**	**12 52 45.1**	**-0.1**
BALY				*i* S	**Sg**	**12 53 03.1**	**+0.9**
KCTX	**Karacabey (Bur**	**1.30**	**335**	*e*PN	**Pb**	**12 52 44.4**	**+0.1**
KCTX	**Karacabey (Bur**	**1.30**	**335**	*e*Pn	**Pb**	**12 52 44.4**	**+0.1**
GONE	**Gonen-Balikesi**	**1.44**	**313**	*e*PN	**Pb**	**12 52 46.7**	**+0.2**
GONE	**Gonen-Balikesi**	**1.44**	**313**	*e*Pn	**Pb**	**12 52 46.7**	**+0.2**
ADVT	**Abdulvahap**	**1.45**	**21**	*e*PN	**Pb**	**12 52 47.0**	**+0.3**
ADVT	**Abdulvahap**	**1.45**	**21**	*e*Pn	**Pb**	**12 52 47.0**	**+0.3**
ESKT	**Eskisehir**	**1.45**	**72**	*i* P	**Pg**	**12 52 48.3**	**+0.1**
ESKT				*i* S	**Sg**	**12 53 07.9**	**+0.7**
SEYT	**Eskypehyr**	**1.45**	**72**	P	**Pg**	**12 52 48.3**	**+0.1**
SEYT				S	**Sg**	**12 53 07.9**	**+0.7**
ARMT	**Armutlu**	**1.49**	**354**	*e*PN	**Pb**	**12 52 47.9**	**+0.4**
ARMT	**Armutlu**	**1.49**	**354**	*e*Pn	**Pb**	**12 52 47.9**	**+0.4**
GULT	**Gulveren**	**1.75**	**39**	*e*PN	**Pb**	**12 52 52.1**	**+0.1**
GULT	**Gulveren**	**1.75**	**39**	*e*Pn	**Pb**	**12 52 52.1**	**+0.1**

*IDC **28** 13:00:22.0±0.8,13°.59N×93°.00E,h0km,mb4.0/14, mb1 4.1/15,mb1mx3.8/48,mbtmp4.0/15,ML4.0/1,MS3.4/3, Ms1 3.4/3,ms1mx2.9/40,Error ellipse: s-maj=30.3km s-min=14.7km az=58.0*
*BKK **28** 13:00:40.0±3.6,14°.13N×99°.4E±3°.0,h10km,M4.2/11, mb4.3/10,mB3.9/2,MLv4.1/11,Mw(mB)2.9/2*
ISC 28 13:00:24.9±0.7,13°.66N±0°.08×93°.07E±0°.07,h10km,n35, σ1°75/27,mb4.0/14,MS3.4/3,Andaman Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KHLT	**Khaolaem Dam**	**5.47**	**77**	P	**Pn**	**13 01 49.4**	**+2.9**
SRDT	**SRDT**	**5.92**	**83**	P	**Pn**	**13 01 55.9**	**+3.3**
	137nm,0.8s,0.4nm						
PHET	**Kaeng Krachan**	**6.43**	**96**	P	Pn	13 02 05.1	+5.4
	15nm,0.8s,147nm0.0nm						
SUKH	**Sukhothai**	**7.38**	**58**	P	**Pn**	**13 02 15.1**	**+2.4**
	4.6nm,0.8s,56nm0.0nm						
CMAR	**Chiang Mai Arr**	**7.39**	**49**	Pn	**Pn**	**13 02 13.8**	**+0.9**
	0.6nm,0.3s,baz=236,slow=15,SNR=16						
CMAR				Sn	**Sn**	**13 03 35.4**	**-1.6**
	0.5nm,0.3s,baz=242,slow=24,SNR=4.3						
CHTO	**Chiang Mai**	**7.62**	**47**	P	Pn	13 02 22.4	+6.3
	69nm,0.9s,0.4nm						
CMMT	**Chiang Mai**	**7.63**	**47**	P	Pn	13 02 22.3	+6.2
	15nm,0.9s,0.1nm						
LAMP	**Lampang**	**7.95**	**52**	P	Pb	13 02 34.1	-8.7
CHAI	**Chaiyaphum**	**8.91**	**74**	P	Pn	13 02 42.3	+8.5
	3.8nm,0.8s,0.0nm						
CRAI	**Chiangrai**	**9.57**	**46**	P	Pn	13 02 51.3	+8.5

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PALK	**Pallekele**	**13.71**	**244**	Pn	**Pn**	**13 03 41.4**	**+1.9**
	1.0nm,0.3s,baz=113,slow=4.0,SNR=4.1						
PALK				Sn	Sn	13 05 57.0	-15
	1.2nm,0.3s,baz=116,slow=16,SNR=4.2						
GUN	**Gumba**	**15.69**	**336**	*e*P	**P**	**13 04 10.7**	**+0.2**
	5.7nm,0.4s						
DMN	**Daman**	**15.75**	**333**	*e*P	**Pn**	**13 04 08.9**	**+1.8**
	8.0nm,0.5s						
KKN	**Kakani**	**15.83**	**334**	*e*P	**Pn**	**13 04 10.7**	**+2.6**
	3.4nm,0.2s						
GKN	**Gorkha**	**16.29**	**332**	*e*P	**Pn**	**13 04 16.1**	**+2.0**
	7.2nm,0.3s						
KOLN	**Koldanda**	**16.59**	**329**	*e*P	**P**	**13 04 20.4**	**0.0**
	10nm,0.5s						
PYUN	**Piuthan**	**17.17**	**328**	*e*P	**P**	**13 04 29.5**	**+2.7**
	4.1nm,0.4s						
LEM	**Lembang**	**24.96**	**144**	LR	LR	13 17 29.7	
	comp=Z,124nm,18.0s,baz=284,slow=41						
H08S3	**Diego Garcia H**	**29.41**	**225**	T	T	13 36 16.3	
	baz=43,slow=76,SNR=5.7						
H08S2	**Diego Garcia H**	**29.41**	**225**	T	T	13 36 14.0	
	baz=43,slow=76,SNR=9.8						
H08S1	**Diego Carcia H**	**29.43**	**225**	T	T	13 36 23.1	
	baz=43,slow=76,SNR=6.2						
MKAR	**Makanchi Array**	**34.25**	**347**	P	**P**	**13 07 10.2**	**-0.8**
	0.6nm,0.8s,baz=142,slow=7.3,SNR=5.8						
SONM	**Songino Array**	**35.84**	**15**	P	**P**	**13 07 23.7**	**-1.1**
	1.0nm,0.8s,baz=208,slow=12,SNR=3.1						
KURBB	**Kurchatov Arra**	**38.72**	**345**	P	**P**	**13 07 48.1**	**-0.9**
	0.8nm,0.2s,baz=158,slow=7.8,SNR=12						
KSRS	**Korea Array**	**39.02**	**46**	P	**P**	**13 07 51.0**	**-0.8**
	0.5nm,0.3s,baz=246,slow=9.0,SNR=4.3						
KSRS				LR	LR	13 26 50.8	
	comp=Z,39nm,19.9s,baz=190,slow=41						
ZALV	**Zalesovo Beam**	**40.72**	**353**	P	**P**	**13 08 04.6**	**-1.0**
	0.8nm,0.5s,baz=183,slow=9.7,SNR=3.5						
ZALV				LR	LR	13 27 03.7	
	comp=Z,45nm,18.9s,baz=254,slow=39						
WRA	**Warramunga Arr**	**52.57**	**129**	P	**P**	**13 09 37.6**	**-1.4**
	3.1nm,0.5s,baz=302,slow=10,SNR=82						
WRA				PcP	**PcP**	**13 10 48.2**	**-1.2**
	1.4nm,0.6s,baz=316,slow=3.2,SNR=13						
ASAR	**Alice Springs**	**54.50**	**133**	P	P	13 09 51.7	-1.5
	3.3nm,0.6s,baz=309,slow=6.9,SNR=114						
ASAR				PcP	**PcP**	**13 10 55.5**	**-1.2**
	0.5nm,0.5s,baz=314,slow=3.7,SNR=4.2						
BRTR	**Keskin Array B**	**57.95**	**308**	P	**P**	**13 10 17.3**	**-0.6**
	1.4nm,0.7s,baz=116,slow=8.0,SNR=6.8						
TIXI	**Tiksi**	**61.82**	**12**	P	**P**	**13 10 42.7**	**-1.0**
	1.9nm,0.6s,baz=247,slow=15,SNR=2.7						
STKA	**Stephens Creek**	**64.89**	**135**	P	**P**	**13 11 03.4**	**-1.2**
	1.4nm,0.7s,baz=303,slow=5.4,SNR=6.7						
FINES	**FINESS Array B**	**67.15**	**331**	P	**P**	**13 11 17.1**	**-1.6**
	0.5nm,0.5s,baz=94,slow=4.5,SNR=3.4						
ARCES	**ARCESS Array B**	**69.51**	**340**	P	**P**	**13 11 31.6**	**-1.7**
	2.5nm,0.9s,baz=83,slow=8.3,SNR=4.0						
GERES	**GERESS Array B**	**72.86**	**317**	P	**P**	**13 11 52.9**	**-1.3**
	0.2nm,0.3s,baz=67,slow=10.0,SNR=3.0						
ILAR	**Eielson Array**	**89.81**	**22**	P	**P**	**13 13 22.7**	**-0.9**
	0.3nm,0.7s,baz=303,slow=4.2,SNR=4.2						

*CSEM **28** 13:01:18.9±0.5,34°.59N×36°.64E,h12km,ML2.9,Error ellipse: s-maj=10.1km s-min=7.8km az=57.0*
*NSSC **28** 13:01:18.5±3.0,34°.58N×36°.62E,h5km±18km,ML2.2*
*GRAL **28** 13:01:20.6±0.3,34°.41N×36°.78E,h4km±3km,MD2.9*
ISC 28 13:01:17.6±1.5,34°.59N±0°.03×36°.69E±0°.04,h9km±13km, n21,σ0°62/32,Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FKH	**Fakeheh**	**0.42**	**213**	*e*P	**Pb**	**13 01 26.9**	**-0.4**
FKH	**Fakeheh**	**0.42**	**213**	*e*P	**Pb**	**13 01 26.9**	**-0.4**
BIDA	**Albida**	**0.52**	**324**	*i* P	**Pg**	**13 01 27.6**	**0.0**
BIDA				*e*S	**Sb**	**13 01 37.0**	**+0.4**
BIDA				AML	AML	13 01 40.8	
	comp=Z,347nm,0.4s						
BIDA	**Albida**	**0.52**	**324**	*i* P	**Pg**	**13 01 27.6**	**0.0**
BIDA				*e*S	**Sb**	**13 01 37.0**	**+0.4**
MARH	**Ras Al Marh**	**0.59**	**197**	*i* P	**Pg**	**13 01 28.8**	**-0.3**
MARH				AML	AML	13 01 39.1	
	comp=Z,126nm,0.3s						
MARH	**Ras Al Marh**	**0.59**	**197**	*i* P	**Pg**	**13 01 28.8**	**-0.3**
ROOS	**tl_alroos**	**0.65**	**130**	*i* P	**Pn**	**13 01 33.1**	**-0.1**
ROOS				AML	AML	13 01 54.5	
	comp=Z,212nm,0.5s						
ROOS	**tl_alroos**	**0.65**	**130**	*i* P	**Pn**	**13 01 33.1**	**-0.1**
HWQ	**Hawqa**	**0.69**	**243**	*e*P	**Pn**	**13 01 33.2**	**-0.5**
HWQ				*e*S	**Sb**	**13 01 42.5**	**+0.9**
HWQ	**Hawqa**	**0.69**	**243**	*e*P	**Pn**	**13 01 33.2**	**-0.5**
HWQ				*e*S	**Sb**	**13 01 42.5**	**+0.9**
BHL	**Bhannes**	**1.10**	**231**	*e*P	**Pn**	**13 01 39.5**	**+0.2**
BHL	**Bhannes**	**1.10**	**231**	*e*P	**Pn**	**13 01 39.5**	**+0.2**
DQRL	**Deir Qamar**	**1.28**	**227**	*e*P	**Pg**	**13 01 42.3**	**+0.1**
DQRL				*e*S	**Sb**	**13 01 58.3**	**-0.3**
DQRL	**Deir Qamar**	**1.28**	**227**	*e*P	**Pg**	**13 01 42.3**	**+0.1**
DQRL				*e*S	**Sb**	**13 01 58.3**	**-0.3**
RCY	**Rachaya**	**1.30**	**213**	*e*P	**Pn**	**13 01 41.9**	**-0.3**
RCY				*e*S	**Sb**	**13 01 57.7**	**-1.6**
BRBR	**Barbar**	**1.33**	**208**	*i* P	**Pg**	**13 01 44.6**	**+1.5**
BRBR				AML	AML	13 02 11.4	
	comp=Z,40nm,0.7s						
BRBR	**Barbar**	**1.33**	**208**	*i* P	**Pg**	**13 01 44.6**	**+1.5**
ZALF	**Zalf**	**1.75**	**162**	*i* P	**Pb**	**13 01 49.9**	**-0.1**
ZALF				*e*S	**Sb**	**13 02 11.9**	**-0.2**
ZALF				AML	AML	13 02 13.4	
	comp=Z,26nm,0.6s						
ZALF	**Zalf**	**1.75**	**162**	*i* P	**Pb**	**13 01 49.9**	**-0.1**
ZALF				*e*S	**Sb**	**13 02 11.9**	**-0.2**
SALA	**Sala**	**1.88**	**179**	*i* P	**Pn**	**13 01 50.4**	**+0.3**
SALA				*e*S	**Sn**	**13 02 14.1**	**0.0**
SALA				AML	AML	13 02 15.1	
	comp=Z,60nm,0.6s						
SALA	**Sala**	**1.88**	**179**	*i* P	**Pn**	**13 01 50.4**	**+0.3**
SALA				*e*S	**Sn**	**13 02 14.1**	**0.0**

*ISCJB **28** 13:01:25.9±0.5,39°.96N±0°.02×39°.17E±0°.04,h9km±5km, Error ellipse: s-maj=4.8km s-min=4.0km az=171.5*
*ISK **28** 13:01:25.7,39°.98N×39°.23E,h20km,MD2.8*
*CSEM **28** 13:01:25.9±0.2,39°.96N×39°.16E,h12km,ML2.6,Error ellipse: s-maj=5.3km s-min=4.2km az=129.0*
*DDA **28** 13:01:26.2,39°.93N×39°.13E,h7km,Ml2.6*
ISC 28 13:01:26.0±0.9,39°.96N±0°.02×39°.15E±0°.02,h14km±7km, n37,σ1°00/57,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KELT	**Kelkit**	**0.21**	**23**	P	**Pg**	**13 01 31.1**	**+0.3**
KELT				S	**Sg**	**13 01 34.5**	**+0.4**
KELT	**Kelkit**	**0.21**	**23**	*i* P	**Pg**	**13 01 31.1**	**+0.3**
KELT				*i* S	**Sg**	**13 01 34.5**	**+0.4**
GUMT	**Gumushane**	**0.56**	**26**	*e*PG	**Pg**	**13 01 37.0**	**-0.1**
GUMT				*e*SG	**Sg**	**13 01 44.3**	**-0.3**
GUMT	**Gumushane**	**0.56**	**26**	*e*Pg	**Pg**	**13 01 37.0**	**-0.1**
GUMT				*e*Sg	**Sg**	**13 01 44.3**	**-0.3**
ERZN	**Erzincan**	**0.57**	**130**	*e*PG	**Pg**	**13 01 36.5**	**-0.9**
ERZN				*e*SG	**Sg**	**13 01 45.2**	**+0.2**
REFA	**Refahiye_ERZ¯**	**0.64**	**208**	*i* P	Pg	13 01 32.4	-6.1
REFA				*i* S	Sg	13 01 37.0	-10
ILIC	**ilic-Erzincan**	**0.68**	**222**	*e*PG	**Pn**	**13 01 40.8**	**-0.5**
ILIC	**ilic-Erzincan**	**0.68**	**222**	*e*Pg	**Pn**	**13 01 40.8**	**-0.5**
SUSE	**Susehri**	**0.77**	**289**	P	**Pg**	**13 01 41.1**	**0.0**
SUSE				S	**Sb**	**13 01 52.3**	**+0.5**
SUSE	**Susehri**	**0.77**	**289**	*i* P	**Pg**	**13 01 41.1**	**0.0**
SUSE				*i* S	**Sb**	**13 01 52.3**	**+0.5**
KEMA	**Kemaliye**	**0.86**	**217**	P	**Pg**	**13 01 41.9**	**-0.8**
KEMA				S	**Sg**	**13 01 53.8**	**-0.1**
KEMA	**Kemaliye**	**0.86**	**217**	*i* P	**Pg**	**13 01 41.9**	**-0.8**
KEMA				*i* S	**Sg**	**13 01 53.8**	**-0.1**
BAYT	**Ayd¯–ntepe-Bay**	**0.87**	**60**	*e*PG	**Pg**	**13 01 42.0**	**-1.0**
BAYT				*e*SG	**Sg**	**13 01 53.9**	**-0.6**
BAYT	**Ayd¯–ntepe-Bay**	**0.87**	**60**	*e*Pg	**Pg**	**13 01 42.0**	**-1.0**
BAYT				*e*Sg	**Sg**	**13 01 53.9**	**-0.6**
TNCL	**Tunceli-Merkez**	**0.90**	**160**	P	**Pb**	**13 01 43.8**	**+0.4**
TNCL				S	**Sg**	**13 01 55.0**	**-0.1**
TNCL	**Tunceli-Merkez**	**0.90**	**160**	*i* P	**Pb**	**13 01 43.8**	**+0.4**
TNCL				*i* S	**Sg**	**13 01 55.0**	**-0.1**
ESPY	**Espiye-Giresun**	**1.01**	**341**	*e*PG	**Pg**	**13 01 45.1**	**-0.5**
ESPY	**Espiye-Giresun**	**1.01**	**341**	*e*Pg	**Pg**	**13 01 45.1**	**-0.5**
KOPT	**Kop Dagi**	**1.03**	**86**	P	**Pn**	**13 01 47.1**	**+0.7**
KOPT	**Kop Dagi**	**1.03**	**86**	*i* P	**Pn**	**13 01 47.1**	**+0.7**
KOPT				*i* S	**Sn**	**13 02 04.5**	**+3.7**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CUZAR	**Zara_SIVAS**	**1.06**	**267**	P	**Pb**	**13 01 44.6**	**-1.8**
CUZAR				S	**Sn**	**13 02 01.6**	**+0.2**
CUZAR	**Zara_SIVAS**	**1.06**	**267**	*i* P	**Pb**	**13 01 44.6**	**-1.8**
CUZAR				*i* S	**Sn**	**13 02 01.6**	**+0.2**
PTK	**Pertek**	**1.08**	**170**	*e*PN	**Pb**	**13 01 46.3**	**-0.4**
PTK	**Pertek**	**1.08**	**170**	*e*Pn	**Pb**	**13 01 46.3**	**-0.4**
MACK	**Trabzon**	**1.09**	**25**	P	**Pn**	**13 01 48.6**	**+1.6**
MACK				S	**Sn**	**13 02 01.7**	**-0.2**
MACK	**Trabzon**	**1.09**	**25**	*i* P	**Pn**	**13 01 48.6**	**+1.6**
MACK				*i* S	**Sn**	**13 02 01.7**	**-0.2**
KTUT	**Trabzon**	**1.13**	**24**	*e*PN	**Pb**	**13 01 46.0**	**-1.4**
KTUT	**Trabzon**	**1.13**	**24**	*e*Pn	**Pb**	**13 01 46.0**	**-1.4**
GRSN	**GIRESUNGRSN**	**1.18**	**325**	P	**Pb**	**13 01 48.0**	**-0.2**
GRSN				S	**Sb**	**13 02 02.1**	**-1.2**
GRSN	**GIRESUNGRSN**	**1.18**	**325**	*i* P	**Pb**	**13 01 48.0**	**-0.2**
GRSN				*i* S	**Sb**	**13 02 02.1**	**-1.2**
YEDI	**Yedisu-Bingol**	**1.19**	**115**	*e*PN	**Pb**	**13 01 47.7**	**-0.8**
YEDI	**Yedisu-Bingol**	**1.19**	**115**	*e*Pn	**Pb**	**13 01 47.7**	**-0.8**
CUKAN	**kangal_SIVAS**	**1.45**	**244**	*i* P	**Pb**	**13 01 53.0**	**0.0**
CUKAN				*i* S	**Sg**	**13 02 15.9**	**+3.0**
SVSK	**Karacayir**	**1.66**	**269**	*e*PN	**Pb**	**13 01 55.7**	**-0.6**
SVSK	**Karacayir**	**1.66**	**269**	*e*Pn	**Pb**	**13 01 55.7**	**-0.6**
DARE	**Darende-Malaty**	**1.90**	**224**	*e*PN	**Pn**	**13 01 58.6**	**+0.5**
DARE	**Darende-Malaty**	**1.90**	**224**	*e*Pn	**Pn**	**13 01 58.6**	**+0.5**

*ISK **28** 13:02:53.8,39°.08N×29°.12E,h15km,ML2.4*
*ISCJB **28** 13:02:54.4±0.5,39°.11N±0°.03×29°.02E±0°.03,h2km±7km, Error ellipse: s-maj=5.9km s-min=3.8km az=168.8*
*DDA **28** 13:02:54.5,39°.11N×29°.04E,h7km,Ml2.8*
*CSEM **28** 13:02:54.6±0.1,39°.11N×29°.04E,h8km,ML2.8,Error ellipse: s-maj=3.7km s-min=3.2km az=152.0*
ISC 28 13:02:54.1±0.9,39°.07N±0°.03×29°.07E±0°.02,h11km±9km, n33,σ0°48/48,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**265**	P	**Pg**	**13 02 59.8**	**0.0**
DEMI				S	**Sg**	**13 03 03.1**	**-0.5**
DEMI	**Demirci**	**0.28**	**265**	*i* P	**Pg**	**13 02 59.8**	**0.0**
DEMI				*i* S	**Sg**	**13 03 03.1**	**-0.5**
GDZ	**Gediz**	**0.32**	**86**	P	**Pb**	**13 03 01.8**	**-0.1**
GDZ				S	**Sb**	**13 03 07.1**	**-0.1**
GDZ	**Gediz**	**0.32**	**86**	*i* P	**Pb**	**13 03 01.8**	**-0.1**
GDZ				*i* S	**Sb**	**13 03 07.0**	**-0.1**
TVSB	**Tavsanli**	**0.49**	**39**	*e*PG	**Pg**	**13 03 03.4**	**-0.3**
TVSB				*e*SG	**Sg**	**13 03 10.2**	**0.0**
TVSB	**Tavsanli**	**0.49**	**39**	*e*Pg	**Pg**	**13 03 03.4**	**-0.3**
TVSB				*e*Sg	**Sg**	**13 03 10.2**	**0.0**
KULA	**Kula-Manisa**	**0.64**	**210**	*e*PG	**Pb**	**13 03 07.2**	**-0.1**
KULA	**Kula-Manisa**	**0.64**	**210**	*e*Pg	**Pb**	**13 03 07.2**	**-0.1**
KHAL	**Karahalli**	**0.77**	**154**	P	**Pn**	**13 03 21.8**	**-0.2**
KHAL				S	**Sn**	**13 03 21.8**	**-0.9**
KHAL	**Karahalli**	**0.77**	**154**	*i* P	**Pn**	**13 03 10.8**	**-0.2**
KHAL				*i* S	**Sn**	**13 03 21.8**	**-0.9**
KHL	**Karahalli**	**0.82**	**154**	*e*PG	**Pg**	**13 03 10.2**	**+0.1**
KHL	**Karahalli**	**0.82**	**154**	*e*Pg	**Pg**	**13 03 10.2**	**+0.1**
ORLT	**Orhaneli**	**0.99**	**352**	*e*PG	**Pg**	**13 03 13.2**	**+0.1**
ORLT	**Orhaneli**	**0.99**	**352**	*e*Pg	**Pg**	**13 03 13.2**	**+0.1**
AKHS	**Akhisar**	**1.00**	**259**	P

AKS	Akhisar	0.97	255	*e*Pg	Pg	13 17 49.7	-0.4
BALB	Balikesir	1.01	300	*e*PG	Pg	13 17 50.7	-0.1
BALB				*e*SG	Sb	13 18 05.3	+0.4
BALB	Balikesir	1.01	300	*e*Pg	Pg	13 17 50.7	-0.1
BALB				*e*Sg	Sb	13 18 05.3	+0.4
IGD	Bursa	1.13	7	*i* P	Pg	13 17 51.9	-1.3
IGD				*i* S	Sn	13 18 09.4	-0.2
MDNY	Mudanya-Bursa	1.23	355	*e*PN	Pg	13 17 54.4	-0.7
MDNY	Mudanya-Bursa	1.23	355	*e*Pn	Pg	13 17 54.4	-0.7
KCTX	Karacabey (Bur	1.24	336	*e*PN	Pg	13 17 54.7	-0.4
KCTX	Karacabey (Bur	1.24	336	*e*Pn	Pg	13 17 54.7	-0.4
BALY	Balya	1.24	300	P	Pn	13 17 55.5	+0.2
BALY				S	Sb	13 18 12.0	+0.6
BALY	Balya	1.24	300	*i* P	Pn	13 17 55.5	+0.2
BALY				*i* S	Sb	13 18 12.0	+0.6
IZI	Iznik	1.25	16	*e*PN	Pg	13 17 55.0	-0.3
IZI	Iznik	1.25	16	*e*Pn	Pg	13 17 55.0	-0.3
GEMT	Gemlik	1.30	6	*e*PN	Pn	13 17 56.2	+0.1
GEMT	Gemlik	1.30	6	*e*Pn	Pn	13 17 56.2	+0.1
BORA	Eskisehir	1.34	56	P	Pb	13 17 57.1	+0.2
BORA				S	Sn	13 18 14.9	+0.1
BORA	Eskisehir	1.34	56	*i* P	Pb	13 17 57.1	+0.2
BORA				*i* S	Sn	13 18 14.8	+0.1
GONE	Gonen-Balikesi	1.37	312	*e*PN	Pn	13 17 57.2	+0.2
GONE	Gonen-Balikesi	1.37	312	*e*Pn	Pn	13 17 57.2	+0.2
ADVT	Abdulvahap	1.41	23	*e*PN	Pn	13 17 57.5	0.0
ADVT	Abdulvahap	1.41	23	*e*Pn	Pn	13 17 57.5	0.0
ARMT	Armutlu	1.43	355	*e*PN	Pn	13 17 57.4	-0.5
ARMT	Armutlu	1.43	355	*e*Pn	Pn	13 17 57.4	-0.5
ESKT	Eskisehir	1.47	74	*i* P	Pb	13 17 59.2	0.0
ESKT				*i* S	Sb	13 18 17.7	-0.5
SEYT	Eskypehyr	1.47	74	P	Pb	13 17 59.2	0.0
SEYT				S	Sb	13 18 17.7	-0.5
EDC	Edincik	1.50	324	*e*PN	Pn	13 17 59.1	+0.3
EDC	Edincik	1.50	324	*e*Pn	Pn	13 17 59.1	+0.3
GPA	Golpazari	1.52	41	*e*PN	Pn	13 17 59.6	+0.5
GPA	Golpazari	1.52	41	*e*Pn	Pn	13 17 59.6	+0.5
AYDN	Tasoluk	1.72	212	P	Pg	13 18 04.0	-0.5
AYDN				S	Sg	13 18 27.1	+0.3
AYDN	Tasoluk	1.72	212	*i* P	Pg	13 18 04.0	-0.5
AYDN				*i* S	Sg	13 18 27.1	+0.3
GULT	Gulveren	1.73	41	*e*PN	Pn	13 18 02.6	+0.5
GULT	Gulveren	1.73	41	*e*Pn	Pn	13 18 02.6	+0.5
HRT	Hereke	1.75	16	*e*PN	Pn	13 18 02.5	+0.1
HRT	Hereke	1.75	16	*e*Pn	Pn	13 18 02.5	+0.1
ISK	Istanbul-Kandi	1.93	1	*e*PN	Pn	13 18 05.3	+0.7
ISK	Istanbul-Kandi	1.93	1	*e*Pn	Pn	13 18 05.3	+0.7
SVRH	Sivrihisar-ESK	1.97	80	*e*PN	Pn	13 18 05.8	+0.4
SVRH	Sivrihisar-ESK	1.97	80	*e*Pn	Pn	13 18 05.8	+0.4

*ISK **28** 13:26:00.9, 39°.12N×29°.05E, h8km, ML3.2*
*DDA **28** 13:26:01.0, 39°.11N×29°.02E, h8km, Ml3.5*
*CSEM **28** 13:26:01.4±0.1, 39°.12N×29°.02E, h5km, ML3.5, Error ellipse: s-maj=2.0km s-min=1.9km az=117.0*
ISC 28 13:26:01.4±0.9, 39°.13N±0°.02×29°.02E±0°.02, h9km±8km, n75, σ0s54/104, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.25	250	P	Pg	13 26 06.5	0.0
DEMI				S	Sg	13 26 10.0	+0.1
DEMI	Demirci	0.25	250	*i* P	Pg	13 26 06.5	0.0
DEMI				*i* S	Sg	13 26 10.0	+0.1
GDZ	Gediz	0.36	96	P	Pg	13 26 08.4	-0.3
GDZ				S	Sg	13 26 13.6	+0.1
GDZ	Gediz	0.36	96	*i* P	Pg	13 26 08.4	-0.3
GDZ				*i* S	Sg	13 26 13.6	+0.1
TVSB	Tavsanli	0.47	47	*e*PG	Pg	13 26 10.4	-0.2
TVSB				*e*SG	Sg	13 26 17.0	+0.1
TVSB	Tavsanli	0.47	47	*e*Pg	Pg	13 26 10.4	-0.2
TVSB				*e*Sg	Sg	13 26 17.0	+0.1
KULA	Kula-Manisa	0.67	204	*e*PG	Pg	13 26 13.9	-0.5
KULA	Kula-Manisa	0.67	204	*e*Pg	Pg	13 26 13.9	-0.5
KHAL	Karahalli	0.84	154	P	Pg	13 26 17.5	-0.2
KHAL				S	Sg	13 26 28.6	0.0
KHAL	Karahalli	0.84	154	*i* P	Pg	13 26 17.4	-0.2
KHAL				*i* S	Sg	13 26 28.6	0.0
KHL	Karahalli	0.90	154	*e*PG	Pg	13 26 18.6	-0.1
KHL	Karahalli	0.90	154	*e*Pg	Pg	13 26 18.6	-0.1
ORLT	Orhaneli	0.92	354	*e*PG	Pg	13 26 19.4	+0.2
ORLT	Orhaneli	0.92	354	*e*Pg	Pg	13 26 19.4	+0.2
AKHS	Akhisar	0.97	255	P	Pg	13 26 19.8	-0.3
AKHS				S	Sb	13 26 33.5	+0.1
AKHS	Akhisar	0.97	255	*i* P	Pg	13 26 19.8	-0.3
AKHS				*i* S	Sb	13 26 33.5	+0.1
AKS	Akhisar	0.97	255	*e*PG	Pg	13 26 20.0	-0.1
AKS	Akhisar	0.97	255	*e*Pg	Pg	13 26 20.0	-0.1
BALB	Balikesir	1.02	300	*e*PG	Pn	13 26 21.7	-0.2
BALB				*e*SG	Sn	13 26 36.3	-0.1
BALB	Balikesir	1.02	300	*e*Pg	Pn	13 26 21.7	-0.2
BALB				*e*Sg	Sn	13 26 36.3	-0.1
IGD	Bursa	1.14	7	*i* P	Pb	13 26 21.8	-1.6
IGD				*i* S	Sn	13 26 39.3	-0.2
BALY	Balya	1.24	300	P	Pb	13 26 25.2	+0.1
BALY				S	Sg	13 26 41.7	+0.3
BALY	Balya	1.24	300	*i* P	Pb	13 26 25.2	+0.1
BALY				*i* S	Sg	13 26 41.7	+0.3
MDNY	Mudanya-Bursa	1.24	355	*e*PN	Pn	13 26 24.8	-0.2
MDNY	Mudanya-Bursa	1.24	355	*e*Pn	Pn	13 26 24.8	-0.2
KCTX	Karacabey (Bur	1.24	336	*e*PN	Pb	13 26 25.2	+0.1
KCTX	Karacabey (Bur	1.24	336	*e*Pn	Pb	13 26 25.2	+0.1
IZI	Iznik	1.26	16	*e*PN	Pn	13 26 25.2	-0.1
IZI	Iznik	1.26	16	*e*Pn	Pn	13 26 25.2	-0.1
GEMT	Gemlik	1.31	6	*e*PN	Pg	13 26 26.5	-0.1
GEMT	Gemlik	1.31	6	*e*Pn	Pg	13 26 26.5	-0.1
BORA	Eskisehir	1.34	56	P	Pn	13 26 26.2	-0.3
BORA				S	Sg	13 26 45.3	+0.7
BORA	Eskisehir	1.34	56	*i* P	Pn	13 26 26.2	-0.3
BORA				*i* S	Sg	13 26 45.3	+0.7
DENT	Denizli	1.37	179	*e*PN	Pn	13 26 26.9	0.0
DENT	Denizli	1.37	179	*e*Pn	Pn	13 26 26.9	0.0
GONE	Gonen-Balikesi	1.38	312	*e*PN	Pb	13 26 27.5	+0.1
GONE	Gonen-Balikesi	1.38	312	*e*Pn	Pb	13 26 27.5	+0.1
ADVT	Abdulvahap	1.42	23	*e*PN	Pb	13 26 27.9	-0.1
ADVT	Abdulvahap	1.42	23	*e*Pn	Pb	13 26 27.9	-0.1
DNZL	Cakiroluk	1.44	179	P	Pb	13 26 28.2	-0.3
DNZL				S	Sg	13 26 47.5	-0.2
DNZL	Cakiroluk	1.44	179	*i* P	Pb	13 26 28.2	-0.3
DNZL				*i* S	Sg	13 26 47.5	-0.2
ARMT	Armutlu	1.44	355	*e*PN	Pn	13 26 28.0	+0.2
ARMT	Armutlu	1.44	355	*e*Pn	Pn	13 26 28.0	+0.2
ESKT	Eskisehir	1.48	74	*i* P	Pn	13 26 28.3	-0.1
ESKT				*i* S	Sg	13 26 49.3	+0.4
SEYT	Eskypehyr	1.48	74	P	Pn	13 26 28.3	0.0
SEYT				S	Sg	13 26 49.3	+0.4
EDC	Edincik	1.51	324	*e*PN	Pb	13 26 29.6	0.0
EDC	Edincik	1.51	324	*e*Pn	Pb	13 26 29.6	0.0
GPA	Golpazari	1.53	40	*e*PN	Pb	13 26 30.0	0.0
GPA	Golpazari	1.53	40	*e*Pn	Pb	13 26 30.0	0.0
BOLV	Bolvadin	1.56	105	P	Pb	13 26 30.7	+0.1
BOLV				S	Sg	13 26 52.9	+1.2
BOLV	Bolvadin	1.56	105	*i* P	Pb	13 26 30.7	+0.1
BOLV				*i* S	Sg	13 26 52.9	+1.2
KNL	Bal¯–kesir	1.62	315	*i* P	Pb	13 26 31.0	-0.5
KNL				*i* S	Sg	13 26 53.8	+0.3
AYDN	Tasoluk	1.72	212	P	Pn	13 26 31.3	-0.3
AYDN	Tasoluk	1.72	212	*i* P	Pn	13 26 31.3	-0.3
AYDN				*i* S	Sg	13 26 57.5	+0.9
BUY	Buyukada	1.72	3	P	Pg	13 26 34.5	0.0
BUY				S	Sb	13 26 55.0	-0.1
BUY	Buyukada	1.72	3	*i* P	Pg	13 26 34.5	0.0
BUY				*i* S	Sb	13 26 55.0	-0.1
GULT	Gulveren	1.74	41	*e*PN	Pn	13 26 32.3	+0.3
GULT	Gulveren	1.74	41	*e*Pn	Pn	13 26 32.3	+0.3
HRT	Hereke	1.76	16	*e*PN	Pn	13 26 32.9	+0.7
HRT	Hereke	1.76	16	*e*Pn	Pn	13 26 32.9	+0.7
SPNC	Sapanca-Adapaz	1.84	32	*e*PN	Pn	13 26 34.0	+0.7
SPNC	Sapanca-Adapaz	1.84	32	*e*Pn	Pn	13 26 34.0	+0.7
ISK	Istanbul-Kandi	1.94	1	*e*PN	Pn	13 26 34.8	+0.3
ISK	Istanbul-Kandi	1.94	1	*e*Pn	Pn	13 26 34.8	+0.3
GOLH	Golhisar	1.94	167	P	Pn	13 26 35.1	+0.4
GOLH	Golhisar	1.94	167	*i* P	Pn	13 26 35.1	+0.4
GOLH				*i* S	Sg	13 27 06.5	+2.8
SVRH	Sivrihisar-ESK	1.97	80	*e*PN	Pn	13 26 34.8	-0.3
SVRH	Sivrihisar-ESK	1.97	80	*e*Pn	Pn	13 26 34.8	-0.3
URLA	Izmir	2.04	249	*i* P	Pg	13 26 39.7	-0.9
URLA				*i* S	Sg	13 27 08.2	+1.1
SILT	Sile	2.08	13	*e*PN	Pn	13 26 36.5	0.0
SILT	Sile	2.08	13	*e*Pn	Pn	13 26 36.5	0.0
KAND	Kocaeli-Kandir	2.16	24	P	Pn	13 26 38.4	+0.8
KAND	Kocaeli-Kandir	2.16	24	*i* P	Pn	13 26 38.4	+0.8
SAHE	Sakarya_HENDEK	2.23	39	P	Pb	13 26 40.4	-1.5
SAHE	Sakarya_HENDEK	2.23	39	*i* P	Pb	13 26 40.4	-1.5

PGC 28 13:27:55.0±0.0, 59°.42N×135°.82W, h3km, ML2.2/6, 47km Wnw of Haines, Ak Southeastern Alaska, Southeastern Alaska

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLBC	Pleasant Camp	0.28	278	P	Pg	13 27 59.9	-0.5
PLBC				S	Sg	13 28 03.8	-0.3
WHY	Whitehorse	1.33	20	Pn	Pg	13 28 18.8	-1.8
WHY				Sn	Sg	13 28 36.2	-1.6
YUK7	Dusty Glacier	1.61	315	Pn	Pn	13 28 23.8	-0.9
HYT	Haines Junctio	1.65	330	Pn	Pn	13 28 24.0	-0.9
HYT				Sn	Sn	13 28 46.1	-0.6
YUK6	Outpost Mounta	1.99	321	Pg	Pb	13 28 31.6	-0.4
YUK5	Granite Creek	2.00	330	Pn	Pn	13 28 29.3	-0.5
YUK5				Sn	Sn	13 28 55.0	-0.4
DLBC	Dease Lake	3.16	106	Pn	Pn	13 28 45.5	-0.2
DLBC				Sg	Sb	13 29 32.1	+1.3

*KRSC **28** 13:33:03.1±1.5, 51°.28N×151°.98E, h548km±39km, ML4.5*
*ISCJB **28** 13:33:05.0±0.2, 51°.69N±0°.04×151°.10E±0°.05, h472km, mb3.5/24, Error ellipse: s-maj=6.3km s-min=3.4km az=149.0*
*MOS **28** 13:33:04.6±0.9, 51°.35N×151°.82E, h537km, mb4.0/7, Error ellipse: s-maj=12.0km s-min=6.0km az=61.5*
*SKHL **28** 13:33:05.3±0.5, 51°.56N×151°.39E, h513km±6km, mb4.7/5, msh4.5/3*
*IDC **28** 13:33:06.3±0.8, 51°.66N×151°.41E, h499km±10km, mb3.0/20, mb1 3.1/27, mb1mx3.0/49, mbtmp3.9/27, Error ellipse: s-maj=12.6km s-min=9.1km az=139.0*
ISC 28 13:33:04.7±0.5, 51°.63N±0°.06×151°.38E±0°.05, h472km, n137, σ2s62/162, mb3.5/24, 15C-5D, Sea of Okhotsk

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	Severo-Kuril's	3.13	106	*e*P	P	13 34 16.4	+2.1
SKR	Severo-Kuril's	3.13	106	⇑*i*P	P	13 34 16.7	+2.4
SKR				*e*S	S	13 35 17.2	+6.2
SKR	Severo-Kuril's	3.13	106	⇑*i*P	P	13 34 16.9	+2.6
SKR				AMB	AMB	13 34 17.8	
	60nm,0.5s						
SKR				AMB	AMB	13 34 17.9	
	200nm,2.0s						
SKR				*e*S	S	13 35 13.0	+2.0
SKR				A	A	13 35 17.5	
	200nm,2.0s						
SKR				A	A	13 35 23.8	
	60nm,0.3s						
PAU	Pauzhetka	3.39	91	*e*P	P	13 34 19.2	+2.9
PAU	Pauzhetka	3.39	91	P	P	13 34 19.2	+2.9
PAU	Pauzhetka	3.39	91	*e*P	P	13 34 19.2	+2.9
ASAK	Asacha	4.10	77	*e*P	P	13 34 26.6	+4.5
ASAK	Asacha	4.10	77	P	P	13 34 26.6	+4.5
PETK	Petropavlovsk-	4.15	67	P	P	13 34 25.0	+2.6
	1.0nm,0.3s,baz=98,slow=2.6,SNR=25						
PETK				S	S	13 35 30.7	+4.9
	baz=126,slow=20,SNR=4.7						
KRMR	Karymshinskiy	4.32	71	*e*P	P	13 34 26.8	+2.9
KRMR	Karymshinskiy	4.32	71	P	P	13 34 26.8	+2.9
RUS	Russkaya	4.48	77	*e*P	P	13 34 26.5	+1.2
RUS				*e*S	S	13 35 31.3	+0.3
RUS	Russkaya	4.48	77	P	P	13 34 26.5	+1.2
RUS				S	S	13 35 31.3	+0.3
RUS	Russkaya	4.48	77	*e*P	P	13 34 26.5	+1.2
GNL	Ganaly	4.50	60	*e*P	P	13 34 29.0	+3.4
GNL	Ganaly	4.50	60	P	P	13 34 29.0	+3.4
PET	Petropavlovsk	4.67	70	*e*P	P	13 34 30.3	+3.3
PET				*e*S	S	13 35 37.7	+3.4
PET	Petropavlovsk	4.67	70	⇑*i*P	P	13 34 30.4	+3.4
PET				*e*S	S	13 35 36.5	+2.2
PET				pmax	pmax		
	comp=Z,7.0nm,0.5s						
PET				smax	smax		
	comp=N,46nm,0.6s						
PET				smax	smax		
	comp=E,49nm,0.5s						
PET	Petropavlovsk	4.67	70	⇑*i*P	P	13 34 30.4	+3.4
PET				AMB	AMB	13 34 30.9	
	comp=E,10.0nm,0.2s						
PET				AMB	AMB	13 34 37.7	
	comp=E,200nm,5.0s						
PET				*i* S	S	13 35 36.3	+2.0
PET				A	A	13 35 39.1	
	comp=E,100nm,2.5s						
PET				A	A	13 35 39.1	
	comp=E,200nm,2.5s						
PET				A	A	13 35 40.8	
	comp=E,40nm,0.5s						
PET				A	A	13 35 40.8	
	comp=E,50nm,0.5s						
KRX	Arik	4.77	66	*e*P	P	13 34 30.9	+2.9
KRX	Arik	4.77	66	P	P	13 34 30.9	+2.9
AVH	Avacha	4.79	67	*e*P	P	13 34 32.1	+3.9
AVH	Avacha	4.79	67	P	P	13 34 32.1	+3.9
AVH	Avacha	4.79	67	*e*P	P	13 34 32.1	+3.9
KRER	Koryakskii	4.81	67	*e*P	P	13 34 31.7	+3.2
KRER				*e*S	S	13 35 40.4	+3.5
KRER	Koryakskii	4.81	67	P	P	13 34 31.7	+3.2
KRER				S	S	13 35 40.4	+3.5
UGLR	Uglovaya	4.82	68	*e*P	P	13 34 32.5	+4.0
UGLR				*e*S	S	13 35 41.6	+4.6
UGLR	Uglovaya	4.82	68	P	P	13 34 32.5	+4.0
UGLR				S	S	13 35 41.6	+4.6
SMAR	Somma	4.83	67	*e*P	P	13 34 31.8	+3.1
SMAR	Somma	4.83	67	P	P	13 34 31.8	+3.1
SDLR	Sedlovina	4.88	67	*e*P	P	13 34 31.6	+2.6
SDLR	Sedlovina	4.88	67	P	P	13 34 31.6	+2.6
OKH	Okha	5.50	294	*e*P	P	13 34 36.8	+2.1
OKH				AMB	AMB	13 34 41.0	
	comp=E,500nm,3.0s						
TYV	Tymovskoe	5.53	265	⇓*i*P	P	13 34 41.0	+5.8
TYV				AMB	AMB	13 34 41.8	
	comp=E,10.0nm,0.7s						
ESO	Esso	6.11	42	*e*P	P	13 34 44.4	+3.6
ESO	Esso	6.11	42	P	P	13 34 44.4	+3.6
UGL	Uglegorsk	6.49	250	*e*P	P	13 34 47.6	+2.9
UGL				*e*S	S	13 36 11.6	+5.1
UGL	Uglegorsk	6.49	250	⇑*i*P	P	13 34 48.8	+4.1
UGL				AMB	AMB	13 34 49.5	
	comp=E,60nm,0.7s						
KMNR	Kamenistaya	6.69	48	*e*P	P	13 34 50.5	+3.8
KMNR	Kamenistaya	6.69	48	P	P	13 34 50.5	+3.8
KOZ	Kozyrevsk	6.70	45	*e*P	P	13 34 49.9	+3.2
KOZ	Kozyrevsk	6.70	45	P	P	13 34 49.9	+3.2
KOZ	Kozyrevsk	6.70	45	*e*P	P	13 34 49.9	+3.2
KPT	Kopyto	6.80	47	*e*P	P	13 34 50.6	+2.8
KPT	Kopyto	6.80	47	P	P	13 34 50.6	+2.8
KUR	Kuril'sk	6.81	201	⇑*i*P	P	13 34 49.6	+1.6
KUR				*e*S	S	13 36 22.7	+10
KUR	Kuril'sk	6.81	201	*i* P	P	13 34 48.7	+0.7
KUR				AMB	AMB	13 34 55.7	
	comp=E,300nm,2.0s						
KUR				*e*S	S	13 36 11.3	-1.4
KUR				A	A	13 36 15.7	
	comp=E,60nm,1.0s						
KUR				A	A	13 36 15.7	
	comp=E,50nm,1.0s						
MKZ	Mys Kozlova	6.89	61	*e*P	P	13 34 48.6	0.0
MKZ				*e*S	S	13 36 09.6	-4.3
MKZ	Mys Kozlova	6.89	61	P	P	13 34 48.6	0.0
MKZ				S	S	13 36 09.6	-4.3
MKZ	Mys Kozlova	6.89	61	*e*P	P	13 34 48.6	0.0
BZMR	Bezymyannaya	6.91	48	*e*P	P	13 34 52.1	+3.1
BZMR	Bezymyannaya	6.91	48	P	P	13 34 52.1	+3.1
LGNR	Loginova	7.08	47	*e*P	P	13 34 53.9	+3.0
LGNR	Loginova	7.08	47	P	P	13 34 53.9	+3.0
ZLN	Zelenaya	7.10	48	*e*P	P	13 34 54.7	+3.8
ZLN	Zelenaya	7.10	48	P	P	13 34 54.7	+3.8
KRSR	Krestovskiy	7.11	46	*e*P	P	13 34 53.3	+2.3
KRSR	Krestovskiy	7.11	46	P	P	13 34 53.3	+2.3
CIRR	Tsirk	7.13	47	*e*P	P	13 34 54.5	+3.3
CIRR	Tsirk	7.13	47	P	P	13 34 54.5	+3.3
KLY	Klyuchi	7.20	46	*e*P	P	13 34 55.5	+3.7
KLY	Klyuchi	7.20	46	P	P	13 34 55.5	+3.7
YSS	Yuzh-Sakhalins	7.33	234	*i* P	P	13 34 57.5	+4.2
YSS	Yuzh-Sakhalins	7.33	234	*e*P	P	13 34 53.6	+0.3
YSS				*e*S	S	13 36 20.1	-2.3
BDR	Baidarnaya	7.60	46	*e*P	P	13 34 59.3	+3.2
BDR	Baidarnaya	7.60	46	P	P	13 34 59.3	+3.2
SRKR	Sorokina	7.64	45	*e*P	P	13 34 58.8	+2.3
SRKR	Sorokina	7.64	45	P	P	13 34 58.8	+2.3
SMKR	Semkarok	7.73	46	*e*P	P	13 35 00.0	+2.6
SMKR				*e*S	S	13 36 29.5	-0.6
SMKR	Semkarok	7.73	46	P	P	13 35 00.0	+2.6
SMKR				S	S	13 36 29.5	-0.6
MA2	Magadan	7.97	358	P	P	13 35 02.1	+2.2
	comp=E,0.4nm,0.3s,baz=156,slow=5.7,SNR=5.5						
KBG	Krutoberegovo	8.13	51	*e*P	P	13 35 02.5	+1.0
KBG				*e*S	S	13 36 33.6	-4.0
KBG	Krutoberegovo	8.13	51	P	P	13 35 02.5	+1.0
KBG				S	S	13 36 33.6	-4.0
KBG	Krutoberegovo	8.13	51	*e*P	P	13 35 02.5	+1.0
SHO	Shikotan	8.34	203	*c i*P	P	13 35 02.8	-1.3
SHO				*i* S	S	13 36 35.9	-6.2
SHO				pmax	pmax		
	comp=Z,40nm,0.3s						
SHO	Shikotan	8.34	203	*e*P	P	13 35 03.6	-0.5
SHO				AMB	AMB	13 35 04.2	
	comp=Z,40nm,0.3s						
SHO				AMB	AMB	13 35 08.6	
	comp=Z,200nm,2.5s						
SHO				*i* S	S	13 36 37.1	-5.0
SHO				A	A	13 36 41.2	
	comp=Z,500nm,3.0s						
SHO				A	A	13 36 41.2	
	comp=Z,400nm,3.0s						
YUK	Yuzh-Kuril'sk	8.45	208	*e*P	P	13 35 07.1	+1.8
YUK				pmax	pmax		
	comp=N,30nm,0.3s						
YUK				pmax	pmax		
	comp=Z,38nm,0.3s						
YUK	Yuzh-Kuril'sk	8.45	208	*e*P	P	13 35 05.3	0.0
YUK				AMB	AMB	13 35 08.1	
	comp=Z,30nm,0.3s						
YUK				AMB	AMB	13 35 08.1	
	comp=Z,40nm,0.3s						
PALN	Palana	8.93	30	*e*P	P	13 35 12.4	+2.4
PALN	Palana	8.93	30	P	P	13 35 12.4	+2.4
BKI	Bering	9.42	62	*e*P	P	13 35 18.5	+3.2
BKI				*e*S	S	13 37 00.2	-2.6
BKI	Bering	9.42	62	P	P	13 35 18.5	+3.2
BKI				S	S	13 37 00.2	-2.6
JKA	Kamikawa-asahi	9.55	222	*e*P	P	13 35 19.7	+2.7
ASAJ	Asahikawa	9.55	222	P	P	13 35 19.6	+2.6
	comp=Z,0.6nm,0.3s,baz=20,slow=1.8,SNR=7.7						
OSSR	Ossora	10.10	36	*e*P	P	13 35 24.8	+2.2
OSSR	Ossora	10.10	36	P	P	13 35 24.8	+2.2
HABR	Khabarovsk	10.96	260	*e*P	P	13 35 33.8	+1.7
HABR				*e*S	S	13 37 36.4	+2.8
HABR				pmax	pmax		
	comp=N,8.0nm,0.7s						
HABR				pmax	pmax		
	comp=E,2.0nm,0.7s						
HABR				pmax	pmax		
	comp=Z,5.0nm,0.7s						
HABR				MLR	MLR		
	comp=Z,21nm,14.0s						
HABR	Khabarovsk	10.96	260	*e*P	P	13 35 33.8	+1.7
HABR				AMB	AMB	13 35 34.2	
	comp=Z,10.0nm,0.7s						
HABR				AMS	AMS	13 40 29.0	
	comp=Z,20nm,14.0s						
ERM	Erimo	11.14	214	⇑*e*P	P	13 35 33.9	-0.2
ERM	Erimo	11.14	214	⇑*e*P	P	13 35 33.9	-0.2
SEY	Seymchan	11.35	2	P	P	13 35 38.4	+2.4
	comp=Z,0.3nm,0.3s,baz=178,slow=8.8,SNR=18						
SEY	Seymchan	11.35	2	⇑*e*P	P	13 35 38.8	+2.8
SEY	Seymchan	11.35	2	⇑*e*P	P	13 35 38.8	+2.8
EKMR	Ekimchan	11.37	285	*e*P	P	13 35 38.7	+2.3
KLR	Kul'dur	12.74	267	P	P	13 35 53.7	+2.5
	comp=Z,0.2nm,0.3s,baz=152,slow=17,SNR=2.9						
KMSK	Kamenskaya	13.49	31	*e*P	P	13 35 59.2	+0.3
KMSK	Kamenskaya	13.49	31	P	P	13 35 59.2	+0.3
YAK	Yakutsk	15.71	320	P	P	13 36 22.9	+0.5
	comp=Z,0.0nm,0.3s,baz=270,slow=20,SNR=2.7						
YAK	Yakutsk	15.71	320	⇑*e*P	P	13 36 23.2	+0.7
YAK				pmax	pmax		
	comp=Z,7.0nm,0.6s						
YAK	Yakutsk	15.71	320	⇑*e*P	P	13 36 23.2	+0.7
MJA0	Matsu Arr-Jizo	17.75	217	*e*P	P	13 36 44.5	+0.5
MJA0				pmax	pmax		
	comp=Z,1.0nm,0.3s						
MJAR	Matsushiro Arr	17.76	217	P	P	13 36 44.3	+0.2
	comp=Z,0.

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSWZ	**Blackbirch Sta**	**0.16**	**335**	⇑P*	Pg	13 35 10.8	-0.8
BSWZ				S*	Sg	13 35 13.5	-0.7
BSWZ				AML	AML	13 35 14.4	
CMWZ	**Cape Campbell**	**0.21**	**59**	⇑P*	Pb	13 35 13.0	0.0
CMWZ				S*	Sb	13 35 16.8	0.0
CMWZ				AML	AML	13 35 22.4	
TUWZ	**Tuamarina**	**0.43**	**358**	⇑P*	Pg	13 35 15.9	-0.2
TUWZ				AML	AML	13 35 22.7	
TUWZ				AML	AML	13 35 23.0	
TCW	**Tory Channel**	**0.69**	**20**	⇑P*	Pg	13 35 20.4	-0.5
TCW				AML	AML	13 35 33.5	
TCW				AML	AML	13 35 35.4	
NNZ	**Nelson**	**0.78**	**325**	P*	Pg	13 35 21.6	-1.0
NNZ				S*	Sg	13 35 32.2	-0.6
NNZ				AML	AML	13 35 33.1	
NNZ				AML	AML	13 35 35.0	
NNZ				AML	AML	13 35 35.1	
THZ	**Tophouse**	**0.80**	**277**	⇓P*	Pg	13 35 21.9	-1.1
THZ				AML	AML	13 35 22.1	
THZ				AML	AML	13 35 32.7	
BHW	**Baring Head**	**0.81**	**57**	P*	Pn	13 35 23.9	-0.4
BHW				AML	AML	13 35 38.3	
BHW				AML	AML	13 35 38.5	
WEL	**Wellington**	**0.83**	**47**	⇑P*	Pg	13 35 23.9	+0.3
WEL				AML	AML	13 35 39.2	
WEL				AML	AML	13 35 39.2	
PLWZ	**Palliser**	**1.01**	**74**	P*	Pb	13 35 26.2	-0.4
DUWZ	**D'Urville Isla**	**1.06**	**358**	P*	Pb	13 35 26.6	-0.9
DUWZ				AML	AML	13 35 43.0	
DUWZ				AML	AML	13 35 43.8	
MSWZ	**Moikau Station**	**1.06**	**66**	⇓P*	Pb	13 35 27.3	-0.3
MSWZ				AML	AML	13 35 45.5	
MSWZ				AML	AML	13 35 47.9	
CAW	**Cannon Point**	**1.12**	**48**	P*	Pn	13 35 28.5	0.0
CAW				AML	AML	13 35 46.2	
CAW				AML	AML	13 35 46.5	
PAWZ	**Paruwai Farm**	**1.19**	**67**	P*	Pn	13 35 28.8	-0.8
PAWZ				AML	AML	13 35 52.5	
PAWZ				AML	AML	13 35 52.8	
KIW	**Kapiti Island**	**1.22**	**36**	⇑P*	Pn	13 35 29.8	-0.2
KIW				AML	AML	13 35 50.2	
KIW				AML	AML	13 35 51.2	
MTW	**Mount Morrison**	**1.35**	**59**	⇑P*	Pn	13 35 30.9	-0.8
MTW				AML	AML	13 35 56.4	
MTW				AML	AML	13 35 56.8	
TRWZ	**Traveller**	**1.37**	**71**	P*	Pn	13 35 30.9	-1.1
TRWZ				AML	AML	13 36 03.0	
TRWZ				AML	AML	13 36 06.0	
OGWZ	**Otaki Gorge**	**1.38**	**41**	⇑P*	Pn	13 35 32.2	+0.1
QRZ	**Quartz Range**	**1.50**	**313**	⇓PN	Pn	13 35 34.1	+0.4
QRZ				AML	AML	13 35 55.6	
QRZ				AML	AML	13 35 55.6	
QRZ				AML	AML	13 35 56.4	
QRZ				AML	AML	13 35 56.4	
HOWZ	**Holdsworth Sta**	**1.51**	**51**	PN	Pn	13 35 33.4	-0.5
LTZ	**Lake Taylor**	**1.56**	**233**	PN	Pn	13 35 34.1	-0.6
LTZ				AML	AML	13 35 59.6	
LTZ				AML	AML	13 36 04.3	
DSZ	**Denniston Nort**	**1.62**	**273**	⇓PN	Pb	13 35 36.4	-0.7
DSZ				AML	AML	13 36 00.7	
DSZ				AML	AML	13 36 04.7	
TMWZ	**Te Maipa**	**1.63**	**63**	PN	Pn	13 35 34.4	-1.2
MRZ	**Mangatainoka R**	**1.71**	**46**	⇑PN	Pn	13 35 36.1	-0.5
PRWZ	**Pori Road**	**2.00**	**50**	PN	Pn	13 35 39.8	-0.8
POWZ	**Post Office Ro**	**2.00**	**43**	PN	Pn	13 35 40.2	-0.5
OXZ	**Oxford**	**2.04**	**224**	PN	Pn	13 35 39.8	-1.9
INZ	**Inchbonnie**	**2.06**	**244**	⇓PN	Pn	13 35 41.4	-0.1
BFZ	**Birch Farm**	**2.08**	**56**	PN	Pn	13 35 40.6	-1.1
BFZ				AML	AML	13 36 24.3	
BFZ				AML	AML	13 36 25.9	
MQZ	**McQueen's Vall**	**2.08**	**207**	⇓PN	Pn	13 35 39.2	-2.6
MQZ				AML	AML	13 36 06.5	
WAZ	**Wanganui**	**2.24**	**21**	PN	Pb	13 35 46.4	-1.2
WAZ				AML	AML	13 36 25.4	
WAZ				AML	AML	13 36 34.5	
DVHZ	**Dannevirke**	**2.28**	**48**	PN	Pn	13 35 43.1	-1.4
NEZ	**North Egmont**	**2.59**	**2**	PN	Pb	13 35 51.4	-2.1
DREZ	**Durham Road**	**2.67**	**4**	PN	Pb	13 35 52.7	-2.3
WVZ	**Waitaha Valley**	**2.68**	**242**	AML	AML	13 36 35.0	
MTVZ	**Mangateitei**	**2.72**	**25**	AML	AML	13 36 40.2	
MTVZ				AML	AML	13 36 48.5	
PKVZ	**Pokaka**	**2.77**	**23**	PN	Pn	13 35 52.8	+1.4
PKVZ				AML	AML	13 36 55.0	
VRZ	**Vera Road**	**2.80**	**13**	AML	AML	13 36 40.3	
VRZ				AML	AML	13 36 51.7	
MOVZ	**Moawhango**	**2.80**	**30**	AML	AML	13 36 42.6	
MOVZ				AML	AML	13 36 45.9	
WNVZ	**Wahianoa**	**2.82**	**27**	PN	Pn	13 35 53.8	+1.7
TRVZ	**Turoa**	**2.83**	**26**	PN	Pb	13 35 56.1	-1.7
TRVZ				AML	AML	13 36 47.5	
TRVZ				AML	AML	13 36 57.4	
RPZ	**Rata Peaks**	**2.83**	**228**	AML	AML	13 36 36.0	
WHVZ	**Whangaehu Hut**	**2.85**	**26**	PN	Pb	13 35 56.1	-2.1
FWVZ	**Far West T-bar**	**2.87**	**25**	AML	AML	13 36 04.4	
FWVZ				AML	AML	13 36 48.5	
KRHZ	**Kereru**	**2.87**	**40**	PN	Pn	13 35 51.3	-1.3
TUVZ	**Tukino**	**2.89**	**27**	PN	Pn	13 35 53.8	+0.8
TUVZ				AML	AML	13 36 51.5	
NGZ	**Ngauruhoe**	**2.96**	**25**	AML	AML	13 36 59.6	
NGZ				AML	AML	13 37 02.4	
TWVZ	**Taurewa**	**3.00**	**22**	PN	Pb	13 36 00.4	-0.3
WTVZ	**West Tongariro**	**3.01**	**25**	PN	Pb	13 35 58.8	-1.9
WTVZ				AML	AML	13 36 48.1	
WTVZ				AML	AML	13 36 51.0	
KRVZ	**Karewarewa**	**3.04**	**25**	AML	AML	13 36 05.1	
RITZ	**Rihia Road**	**3.22**	**27**	PN	Pb	13 36 03.2	-1.1
RATZ	**Rangitukua**	**3.29**	**25**	PN	Pb	13 36 04.5	-1.1
RATZ				AML	AML	13 37 17.9	
RATZ				AML	AML	13 37 19.4	
BKZ	**Black Stump Fm**	**3.31**	**36**	AML	AML	13 37 05.6	
BKZ				AML	AML	13 37 11.0	
HIZ	**Hauiti**	**3.41**	**12**	PN	Pn	13 36 02.0	+1.9
HIZ				AML	AML	13 37 04.2	
HIZ				AML	AML	13 37 05.6	
WATZ	**Wairara**	**3.42**	**24**	PN	Pb	13 36 08.4	+0.6
ODZ	**Otahua Downs**	**4.00**	**216**	PN	Pn	13 36 05.8	-2.3

*ISCJB **28** 13:35:50.7±0.6, 72°.69N±0°.05×67°.4W±0°.1, h10km, Error ellipse: s-maj=8.3km s-min=5.4km az=147.2*
*OTT **28** 13:35:57.1±0.4, 72°.55N×67°.08W, h18km, ML3.1/8, Baffin Bay Seismic Zone. 240km northeast from Clyde River, Nu*
ISC 28 13:35:53.0±0.9, 72°.60N±0°.06×67°.30W±0°.07, h10km, n16, σ2§63/21, Baffin Bay

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CLRN	**Clyde River**	**2.17**	**192**	PN	**Pn**	**13 36 33.0**	**+3.8**
CLRN				SN	**Sn**	**13 36 56.5**	**+0.3**
CLRN				Trac		13 36 58.2	
	comp=Z,34nm,0.1s						
KULLO	**Kullorsuaq**	**3.48**	**50**	*i* P	**Pn**	**13 36 50.0**	**+2.9**
KULLO				*i*		13 36 53.6	
KULLO	**Kullorsuaq**	**3.48**	**50**	PN	**Pn**	**13 36 49.5**	**+2.4**
KULLO				SN	**Sn**	**13 37 26.7**	**-1.6**
KULLO				Trac		13 37 28.7	
	comp=Z,6.2nm,0.1s						
GIFN	**Gifford Fjord,**	**5.30**	**247**	PN	**Pn**	**13 37 16.3**	**+4.2**
GIFN				mb		13 37 18.2	
	comp=Z,1.3nm,0.1s						
GIFN				SN	**Sn**	**13 38 12.7**	**-0.4**
GIFN				Trac		13 38 35.9	
	comp=Z,4.6nm,0.2s						
ILON	**Igloolik, Nuna**	**5.74**	**243**	PN	**Pn**	**13 37 22.2**	**+4.1**
ILON				mb		13 37 24.5	
	comp=Z,2.3nm,0.1s						
ILON				Trac		13 38 29.4	
	comp=Z,1.1nm,0.1s						
RES	**Resolute Bay**	**8.02**	**298**	SN	**Sn**	**13 39 19.1**	**-0.8**
SUMG	**Summit**	**8.60**	**76**	*i* P	**Pn**	**13 37 59.4**	**+1.7**
SUMG				*e*S	Sn	13 39 26.9	-7.9
KUGN	**Kugaaruk Camp,**	**8.86**	**251**	PN	**Pn**	**13 38 03.0**	**+2.1**
KUGN				mb		13 38 03.6	
	comp=Z,1.7nm,0.1s						
KUGN				SN	**Sn**	**13 39 36.3**	**-4.2**
KUGN				Trac		13 39 38.8	
	comp=Z,1.4nm,0.1s						
FRB	**Frobisher Bay**	**8.91**	**184**	PN	**Pn**	**13 38 02.7**	**+1.2**
FRB				SN	**Sn**	**13 39 37.0**	**-4.7**
FRB				Trac		13 39 39.9	
	comp=Z,4.3nm,0.3s						
SMLN	**Simpson Lake,**	**9.08**	**256**	PN	**Pn**	**13 38 06.2**	**+2.3**
SMLN				mb		13 38 10.5	
	comp=Z,2.3nm,0.3s						
SMLN				SN	Sn	13 39 40.3	-5.7
SMLN				Trac		13 39 49.4	
	comp=Z,1.7nm,0.2s						
BULN	**Bullion Camp,**	**10.89**	**248**	PN	**Pn**	**13 38 30.2**	**+1.5**
BULN				mb		13 38 32.7	
	comp=Z,2.2nm,0.3s						
BULN				SN	Sn	13 40 22.7	-7.7
BULN				Trac		13 40 29.7	
	comp=Z,0.5nm,0.1s						
SEDN	**First Sedna Si**	**12.86**	**235**	PN	**Pn**	**13 38 56.4**	**+0.7**
SEDN				mb		13 38 58.9	
	comp=Z,4.8nm,0.5s						
SEDN				SN	Sn	13 41 09.8	-8.8
MCMN	**McManaman Lake**	**13.09**	**237**	PN	**Pn**	**13 38 59.3**	**+0.6**
MCMN				SN	Sn	13 41 13.3	-11
DAG	**Danmarks Havn**	**13.14**	**49**	*i* P	**Pn**	**13 38 58.6**	**-0.7**
DAG				*i* S	Sn	13 41 12.1	-13
YBKN	**Baker Lake, Hu**	**13.26**	**246**	PN	**Pn**	**13 39 01.1**	**+0.2**
INUQ	**Inukjuak**	**14.85**	**203**	PN	**Pn**	**13 39 22.7**	**-0.1**
INUQ				mb		13 39 24.2	
	comp=Z,3.4nm,0.3s						
INUQ				SN	Sn	13 41 53.3	-14

*ISCJB **28** 13:43:59.9±0.2, 63°.40N±0°.02×151°.24W±0°.04, h10km, mb4.2/25, MS3.5/2, Error ellipse: s-maj=2.8km s-min=2.7km az=179.8*
*NEIC **28** 13:44:00.3, 63°.40N×151°.32W, h13km, mb4.4/7, MW3.8, ML4.0(AEIC), Moment Tensor Solution. s47 Moment tensor: Scale 10^{14}Nm; M_{rr}4.39; $M_{\theta\theta}$-4.40; $M_{\phi\phi}$0.01; $M_{r\theta}$-0.99; $M_{\theta\phi}$-2.82; $M_{\phi r}$-3.68; Best double couple: $M_0$6.50000×10^{14} NP1:ϕ_s90.00000°, δ39.00000°, λ136.00000°. NP2:ϕ_s217.00000°, δ64.00000°, λ60.00000°. Principal axes: T 6.5100, Plg59.0000°, Azm84.0000°; N -0.1000, Plg27.0000°, Azm231.0000°; P -6.4200, Plg14.0000°, Azm329.0000°; After AEIC.*
*IDC **28** 13:44:01.3±0.6, 63°.33N×150°.97W, h0km, mb4.0/16, mb1 4.1/21, mb1mx3.9/61, mbtmp4.0/21, ML3.6/5, MS3.0/3, Ms1 3.0/3, ms1mx2.6/47 Error ellipse: s-maj=12.8km s-min=9.5km az=175.0*
ISC 28 13:44:01.4±0.4, 63°.40N±0°.03×151°.26W±0°.03, h10km, n117, σ1§53/125, mb4.2/25, Central Alaska

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KTH	**Kantishna Hill**	**0.22**	**43**	P	**Pg**	**13 44 05.8**	**-0.2**
KTH				S	**Sg**	**13 44 09.4**	**+0.3**
CAST	**Castle Rocks**	**0.37**	**274**	*e*Pg	**Pg**	**13 44 07.2**	**-1.6**
TRF	**Thorofare Moun**	**0.44**	**82**	P	**Pg**	**13 44 09.5**	**-0.5**
TRF				S	**Sg**	**13 44 16.2**	**+0.3**
PPLA	**Purkeypile**	**0.66**	**221**	P	**Pg**	**13 44 12.0**	**-2.1**
CHUM	**Lake Minchumin**	**0.68**	**316**	P	**Pb**	**13 44 13.5**	**-1.8**
CHUM				S	**Sb**	**13 44 22.6**	**-2.2**
BPAW	**Bear Paw Mtn.**	**0.72**	**10**	*e*Pg	**Pb**	**13 44 14.3**	**-1.7**
HUR	**Hurricane**	**0.84**	**119**	P	**Pg**	**13 44 16.4**	**-1.3**
RND	**Reindeer**	**1.08**	**88**	*e*Pg	**Pg**	**13 44 20.7**	**-1.5**
CUT	**Chulitna**	**1.09**	**155**	P	**Pb**	**13 44 20.9**	**-1.4**
MCK	**McKinley**	**1.09**	**71**	P	**Pb**	**13 44 21.0**	**-1.4**
BWN	**Browne**	**1.11**	**45**	*e*Pg	**Pn**	**13 44 22.3**	**-0.8**
SKT	**Skwentna**	**1.43**	**185**	P	**Pn**	**13 44 26.2**	**-1.2**
SKT				S	**Sn**	**13 44 43.9**	**-2.3**
MLY	**Manley**	**1.66**	**8**	*e*Pn	**Pn**	**13 44 29.3**	**-1.3**
WRH	**Wood River Hil**	**1.77**	**51**	*e*Pn	**Pn**	**13 44 30.1**	**-1.9**
STLK	**Strandline Lak**	**1.92**	**188**	P	**Pn**	**13 44 33.1**	**-1.1**
SUA	**Susitna One**	**1.95**	**173**	*e*Pn	**Pn**	**13 44 34.0**	**-0.7**
CCB	**Clear Creek Bu**	**1.97**	**49**	*e*Pn	**Pn**	**13 44 33.1**	**-1.7**
MDM	**Murphy Dome**	**2.05**	**39**	*e*Pn	**Pn**	**13 44 34.2**	**-1.8**
PMR	**Palmer**	**2.06**	**150**	P	**Pn**	**13 44 35.1**	**-0.9**
SML	**Sawmill**	**2.09**	**138**	*e*Pn	**Pn**	**13 44 35.8**	**-0.7**
COLA	**College**	**2.10**	**44**	P	**Pn**	**13 44 34.8**	**-1.8**
HDA	**Harding Lake**	**2.16**	**60**	*e*Pn	**Pn**	**13 44 35.7**	**-1.7**
TTA	**Tatalina**	**2.21**	**260**	*e*Pn	**Pn**	**13 44 35.9**	**-2.2**
TT01	**Tatalina**	**2.22**	**259**	*e*Pn	**Pn**	**13 44 36.0**	**-2.2**
SPU	**Mount Spurr**	**2.25**	**190**	*e*Pn	**Pn**	**13 44 37.8**	**-0.9**
CKL	**Chakachamna La**	**2.26**	**193**	P	**Pn**	**13 44 38.2**	**-0.7**
PS08	**TAPS Pump Stn8**	**2.27**	**58**	P	**Pn**	**13 44 37.2**	**-1.8**
ILAR	**Eielson Array**	**2.36**	**52**	Pn	**Pn**	**13 44 38.5**	**-1.8**
	3.5nm,0.3s,baz=234,slow=14,SNR=218						
ILAR				Pg	**Pb**	**13 44 43.4**	**-0.6**
	22nm,0.3s,baz=235,slow=17,SNR=90						
ILAR				LR	LR	13 45 13.7	
	comp=Z,134nm,18.1s,baz=128,slow=31						
ILAR				Lg	Lg	13 45 15.1	
	180nm,0.3s,baz=229,slow=30,SNR=21						
ILB	**Eielson Array**	**2.36**	**52**	*e*Pn	**Pn**	**13 44 38.7**	**-1.6**
IL1	**Eielson Array**	**2.37**	**52**	*e*Pn	**Pn**	**13 44 39.0**	**-1.3**
SCM	**Sheep Creek Mo**	**2.40**	**129**	*e*Pn	**Pn**	**13 44 40.2**	**-0.6**
RC01	**Rabbit Creek A**	**2.42**	**162**	*e*Pn	**Pn**	**13 44 40.9**	**-0.1**
PS10	**TAPS Pump St10**	**2.47**	**87**	P	**Pn**	**13 44 41.5**	**-0.2**
PS06	**TAPS Pump Stn6**	**2.56**	**14**	P	**Pn**	**13 44 41.8**	**-1.1**
PAX	**Paxson**	**2.66**	**97**	*e*Pn	**Pn**	**13 44 44.0**	**-0.3**
IM3	**Indian Mountai**	**2.81**	**339**	P	**Pn**	**13 44 45.2**	**-1.2**
SLKM	**Skilak Lake**	**2.94**	**170**	P	**Pn**	**13 44 47.9**	**-0.3**
RSO	**Redoubt South**	**3.03**	**194**	*e*Pn	**Pn**	**13 44 50.6**	**+1.1**
SVW2	**Sparrevohn**	**3.07**	**223**	*e*Pn	**Pn**	**13 44 50.6**	**+0.7**
KLU	**Klutina**	**3.13**	**125**	*e*Pn	**Pn**	**13 44 51.6**	**+0.8**
DOT	**Dot Lake**	**3.23**	**82**	*e*Pn	**Pn**	**13 44 50.9**	**-1.3**
VLZ	**Valdez**	**3.23**	**132**	P	**Pn**	**13 44 52.5**	**+0.3**
SEW	**Seward**	**3.41**	**165**	Pn	**Pn**	**13 44 54.5**	**-0.1**
DIV	**Divide**	**3.43**	**129**	*e*Pn	**Pn**	**13 44 54.0**	**-0.9**
DIV				*e*Sn	**Sn**	**13 45 35.2**	**-0.3**
PS05	**TAPS Pump Stn5**	**3.44**	**4**	P	**Pn**	**13 44 54.5**	**-0.5**
MENT	**Mentasta**	**3.45**	**94**	P	**Pn**	**13 44 56.2**	**+1.0**
BRLK	**Bradley Lake**	**3.65**	**177**	*e*Pn	**Pn**	**13 44 58.6**	**+0.7**
EYAK	**Cordova Ski Ar**	**3.86**	**135**	*e*Pn	**Pn**	**13 45 01.3**	**+0.5**
COLD	**Coldfoot**	**3.87**	**6**	P	**Pn**	**13 45 00.5**	**-0.5**
BMRM	**Bremner River**	**3.96**	**125**	*e*Pn	**Pn**	**13 45 01.8**	**-0.4**
FYU	**Fort Yukon**	**4.08**	**36**	*e*Pn	**Pn**	**13 45 02.8**	**-1.0**
VRDI	**Verde Repeater**	**4.24**	**117**	P	**Pn**	**13 45 06.8**	**+0.6**
BCA3	**Beaver Creek A**	**4.30**	**90**	P	**Pn**	**13 45 05.8**	**-1.0**
MCARA	**McCarthy VSAT**	**4.33**	**114**	P	**Pn**	**13 45 08.6**	**+1.4**
RAGM	**Ragged Mountai**	**4.33**	**131**	*e*Pn	**Pn**	**13 45 08.2**	**+0.8**
CDD	**Cape Douglas**	**4.63**	**196**	P	**Pn**	**13 45 11.7**	**+0.4**
EGAK	**Eagle**	**4.64**	**68**	P	**Pn**	**13 45 10.3**	**-1.2**
BALM	**Baldy**	**4.79**	**116**	*e*Pn	**Pn**	**13 45 13.4**	**-0.3**
KIAG	**Kiagna River**	**4.85**	**117**	P	**Pn**	**13 45 14.5**	**-0.1**
BVCY	**Beaver Creek**	**4.86**	**97**	P	**Pn**	**13 45 14.5**	**+0.1**
BM3	**Burnt Mountain**	**4.90**	**32**	P	**Pn**	**13 45 13.5**	**-1.6**
BARN	**Barnard Glacie**	**5.06**	**113**	P	**Pn**	**13 45 18.9**	**+1.4**
KAHC	**Katmai Hardscr**	**5.10**	**203**	P	**Pn**	**13 45 18.3**	**+0.4**
BARK	**Barkley Ridge**	**5.12**	**122**	P	**Pn**	**13 45 18.7**	**+0.6**
BAGL	**Bagley Icefiel**	**5.22**	**120**	P	**Pn**	**13 45 19.9**	**+0.5**
DAWY	**Dawson**	**5.31**	**77**	P	**Pn**	**13 45 19.3**	**-1.5**
LOGN	**Logan Glacier**	**5.46**	**114**	P	**Pn**	**13 45 23.8**	**+0.9**
TABL	**Table Mountain**	**5.62**	**117**	P	**Pn**	**13 45 24.7**	**-0.4**
KDAK	**Kodiak Island**	**5.67**	**187**	*e*Pn	**Pn**	**13 45 23.8**	**-1.8**
KDAK				*e*Sn	**Sn**	**13 46 29.3**	**-1.4**
OHAK	**Old Harbor**	**6.28**	**190**	*e*Pn	**Pn**	**13 45 33.6**	**-0.3**
HYT	**Haines Junctio**	**6.95**	**106**	P	**Pn**	**13 45 44.1**	**+0.9**
TNA	**Tin City**	**7.52**	**294**	P	**Pn**	**13 45 50.3**	**-0.6**
DHAK	**Deception Hill**	**7.62**	**119**	P	**Pn**	**13 45 52.7**	**+0.3**
WHY	**Whitehorse**	**8.17**	**102**	P	**Pn**	**13 45 60.0**	**0.0**
SKAG	**Skagway**	**8.58**	**110**	*e*Pn	**Pn**	**13 46 03.3**	**-2.3**
INK	**Inuvik**	**8.76**	**48**	Pn	**Pn**	**13 46 07.5**	**-0.4**
	1.2nm,0.3s,baz=229,slow=16,SNR=17						
INK				Sn	**Sn**	**13 47 42.9**	**-3.6**
	0.4nm,0.3s,baz=353,slow=5.2,SNR=3.3						
INK				Lg	Lg	13 48 36.9	
	0.4nm,0.3s,baz=193,slow=14,SNR=2.9						
INK	**Inuvik**	**8.76**	**48**	*e*Pn	**Pn**	**13 46 05.6**	**-2.3**
DLBC	**Dease Lake**	**11.43**	**106**	Pn	**Pn**	**13 46 44.0**	**-0.6**
	0.2nm,0.3s,baz=265,slow=11,SNR=2.9						
DLBC				Lg	Lg	13 50 02.3	
	0.4nm,0.3s,baz=180,slow=18,SNR=4.3						
DLBC				LR	LR	13 51 23.1	
	comp=Z,145nm,19.6s,baz=358,slow=39						
WRAK	**Wrangell Islan**	**11.75**	**118**	*e*Pn	**Pn**	**13 46 49.0**	**+0.1**
YKW3	**Yellowknife Ar**	**16.53**	**76**	*e*Pn	**Pn**	**13 47 52.4**	**-0.6**
	6.5nm,0.8s						
YKA	**Yellowknife Ar**	**16.55**	**77**	Pn	**Pn**	**13 47 51.4**	**-1.9**
	0.3nm,0.3s,baz=293,slow=11,SNR=12						
YKB5	**Yellowknife Ar**	**16.55**	**77**	*e*Pn	**P**	**13 47 54.7**	**-1.2**
BBB	**Bella Bella**	**16.56**	**122**	Pn	**P**	**13 47 56.2**	**+0.3**
	0.4nm,0.3s,baz=330,slow=15,SNR=4.3						
MA2	**Magadan**	**27.11**	**289**	P	**P**	**13 49 47.0**	**+3.0**
	5.6nm,1.0s,baz=39,slow=13,SNR=2.7						
TIXI	**Tiksi**	**29.31**	**320**	LR	LR	14 01 37.8	
	comp=Z,39nm,19.9s,baz=58,slow=36						
BW06	**Boulder Array**	**31.61**	**111**	*e*P	**P**	**13 50 23.9**	**-0.5**
PD31	**Pinedale Array**	**31.61**	**111**	*e*P	**P**	**13 50 25.2**	**+0.9**
PDAR	**Pinedale Array**	**31.61**	**111**	P	**P**	**13 50 23.9**	**-0.5**
	1.0nm,0.7s,baz=317,slow=6.1,SNR=11						
NVAR	**Mina Array Bea**	**31.85**	**126**	P	**P**	**13 50 27.3**	**+0.8**
	0.2nm,0.3s,baz=323,slow=11,SNR=3.2						
LRV	**Little Rabbit**	**32.69**	**131**	*e*P	**P**	**13 50 31.9**	**-1.7**
SRU	**San Rafael Swe**	**34.27**	**116**	*e*P	**P**	**13 50 48.7**	**+1.2**
	4.3nm,1.3s						
FRB	**Frobisher Bay**	**34.40**	**51**	P	**P**	**13 50 47.3**	**-0.8**
	5.3nm,0.8s,baz=305,slow=8.9,SNR=5.2						
EYMN	**Ely**	**35.57**	**87**	*e*P	**P**	**13 50 58.5**	**+0.1**
	11nm,0.8s						
SMCO	**Snowmass**	**35.67**	**111**	*e*P	**P**	**13 51 01.6**	**+1.7**
	11nm,0.8s						
ANMO	**Albuquerque**	**39.50**	**114**	P	**P**	**13 51 33.0**	**+1.0**
	0.6nm,0.5s,baz=311,slow=11,SNR=2.9						
WMOK	**Wichita Mounta**	**42.92**	**106**	*e*P	**P**	**13 51 59.7**	**-0.2**
	3.3nm,1.1s						
HHAR	**Hobbs**	**43.74**	**100**	*e*P	**P**	**13 52 02.6**	**-4.0**
	4.1nm,0.6s						
TX31	**Lajitas Ar. Si**	**45.54**	**115**	*e*P	**P**	**13 52 21.1**	**-0.1**
TXAR	**Lajitas Array**	**45.54**	**115**	P	**P**	**13 52 21.2**	**+0.1**
	1.5nm,0.7s,baz=329,slow=6.4,SNR=19						
TXAR				PcP	**PcP**	**13 53 59.0**	**-0.7**
	0.6nm,0.8s,baz=282,slow=1.8,SNR=4.4						
JCT	**Junction City**	**46.14**	**111**	*e*P	**P**	**13 52 23.2**	**-2.6**
	7.9nm,0.9s						
ARCES	**ARCESS Array B**	**47.33**	**2**	P	**P**	**13 52 36.4**	**+1.8**
	2.8nm,0.9s,baz=346,slow=8.7,SNR=4.1						
KSRS	**Korea Array**	**53.28**	**281**	P	**P**	**13 53 22.3**	**+2.3**
	1.5nm,0.7s,baz=18,slow=7.0,SNR=4.1						
KSAR	**Wonju Array Be**	**53.31**	**281**	P	**P**	**13 53 22.3**	**+2.1**
ZALV	**Zalesovo Beam**	**55.13**	**323**	P	**P**	**13 53 35.3**	**+2.1**
	0.5nm,0.4s,baz=39,slow=4.5,SNR=4.5						
FINES	**FINESS Array B**	**55.46**	**2**	P	**P**	**13 53 37.9**	**+2.4**
	1.3nm,0.7s,baz=352,slow=5.8,SNR=3.8						
HHC	**Hu-ho-hao-te**	**57.38**	**297**	*e*P	**P**	**13 53 51.0**	**+1.4**
HHC				pmax	pmax		
	comp=Z,12nm,1.1s						
HHC				pmax	pmax		
	comp=Z,59nm,6.6s						
ARU	**Arti**	**58.30**	**341**	P	**P**	**13 53 57.1**	**+1.4**
	comp=Z,2.5nm,0.5s,baz=12,slow=2.6,SNR=5.6						
KURK	**Kurchatov**	**59.68**	**326**	P	**P**	**13 54 08.4**	**+3.0**
KURBB	**Kurchatov Arra**	**59.79**	**326**	P	**P**	**13 54 08.4**	**+2.3**
	comp=Z,0.5nm,0.6s,baz=26,slow=7.0,SNR=6.7						
WMQ	**Urumqi**	**63.38**	**316**	P	**P**	**13 54 30.8**	**+0.2**
WMQ				pP	sP	13 54 34.8	-0.2
WMQ				sP	pP	13 54 41.0	+7.2
WMQ				S	**S**	**14 02 57.0**	**-5.8**
WMQ	**Urumqi**	**63.38**	**316**	SS	SS	14 07 13.0	+4.5
WMQ				pmax	pmax		
	comp=Z,19nm,1.6s						
WMQ				pmax	pmax		
	comp=Z,160nm,3.6s						
WMQ				LR	LR		
	comp=N,210nm,16.2s						
WMQ				LR	LR		
	comp=E,210nm,10.0s						
WMQ				LR	LR		
	comp=Z,57nm,13.6s						
AKTO	**Aktyubinsk**	**64.20**	**340**	P	**P**	**13 54 38.6**	**+2.8**
	comp=Z,1.8nm,0.7s,baz=51,slow=7.8,SNR=5.1						
ABKAR	**Akbulak array**	**65.03**	**338**	*e*P	**P**	**13 54 40.0**	**-1.1**
AKASG	**Malin Array Be**	**66.25**	**360**	P	**P**

mb1 4.9/43, mb1mx4.8/48, mbtmp4.8/43, ML4.2/4, MS4.3/34, Ms1 4.3/34, ms1mx4.2/44, Error ellipse: s-maj=12.4km s-min=10.7km az=111.0

JMA ***28*** *13:46:04.7±0.2, 36°.30N×142°.13E, h77km±5km, M5.0*

JMA Felt I J1.

BJI ***28*** *13:46:05.8, 36°.46N×141°.89E, h31km, mb5.1/76, mB5.4/53, Ms5.0/65, Ms7 4.8/63*

ISCJB ***28*** *13:46:05.3±0.7, 36°.33N±0°.02×142°.07E±0°.02, h27km±4km, mb5.1/226, MS4.6/66, Error ellipse: s-maj=3.4km s-min=2.5km az=142.7*

GCMT ***28*** *13:46:07.9±0.3, 36°.27N×142°.32E, h25km±1km, MW5.0/80, Moment Tensor Solution. s38,c43; s80,c119; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr2.88±.18; Mθθ-0.74±.11; Mφφ-2.15±.11; Mrθ1.05±.22; Mrφ-0.83±.06; Mθφ2.73±.21; Best double couple: M0 3.98600×10^16 NP1:φs22.00000°, δ69.00000°, λ88.00000°. NP2: φs207.00000°, δ21.00000°, λ94.00000°. Principal axes: T 4.1600, Plg66.0000°, Azm289.0000°; N -0.3550, Plg2.0000°, Azm23.0000°; P -3.8110, Plg24.0000°, Azm113.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

NEIC ***28*** *13:46:07.9±0.1, 36°.29N×142°.02E, h35km, mb5.0/125 Error ellipse: s-maj=4.0km s-min=2.6km az=156.0*

NEIC Felt at Ichinoseki and Kagawa. Recorded [1 JMA] in Chiba, Ibaraki and Saitama.

MOS ***28*** *13:46:08.1±0.8, 36°.66N×142°.00E, h37km, mb5.4/81, MS4.6/29, Error ellipse: s-maj=6.4km s-min=3.9km az=109.5*

ISC 28 13:46:06.9±0.4, 36°.32N±0°.03×142°.16E±0°.04, h32km±2km, h31km:pP-P, n644, σ1s47/689, mb5.1/229, MS4.7/66, 58C-36D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.22**	**240**	⇑P		**Pn**	**13 46 26.3**	**-1.4**
JHO	**Hitachi**	**1.31**	**283**	⇑P		**Pn**	**13 46 27.3**	**-1.7**
JHO				*e*S		**Sn**	**13 46 44.2**	**-1.2**
ONAJ	**Iwakimizuishiy**	**1.34**	**306**	⇑P		**Pn**	**13 46 27.9**	**-1.6**
JFK	**Kawauchi**	**1.47**	**316**	⇑P		**Pn**	**13 46 29.5**	**-1.7**
JFK				*e*S		**Sn**	**13 46 49.1**	**-0.2**
JFT	**Otama**	**1.89**	**310**	⇑P		**Pn**	**13 46 36.4**	**-0.5**
JFT				S		**Sn**	**13 47 00.6**	**+0.9**
JMM	**Marumori**	**1.89**	**325**	⇑P		**Pn**	**13 46 35.3**	**-1.7**
JMM				*e*S		**Sn**	**13 46 59.0**	**-0.7**
JSB	**Shiboa**	**1.91**	**291**	P		**Pn**	**13 46 36.8**	**-0.5**
JSB				S		**Sb**	**13 47 04.8**	**+0.2**
BSO1	**Boso 1**	**1.92**	**210**	P		**Pn**	**13 46 35.7**	**-1.1**
BSO2	**Boso 2**	**1.93**	**217**	S		**Sn**	**13 47 02.4**	**+2.0**
BSO4	**Boso 4**	**1.98**	**229**	S		**Sn**	**13 47 03.8**	**+1.9**
BSO3	**Boso 3**	**2.02**	**222**	P		**Pn**	**13 46 37.4**	**-1.1**
JAG	**Ashikaga**	**2.18**	**274**	⇑P		**Pn**	**13 46 39.6**	**-1.4**
JFY	**Yanaizu**	**2.25**	**300**	P		**Pn**	**13 46 41.3**	**-0.6**
JKT	**Katashina**	**2.38**	**282**	P		**Pn**	**13 46 43.4**	**-0.4**
JRY	**Ryogami san**	**2.65**	**264**	P		**Pn**	**13 46 46.1**	**-1.3**
JHK	**Hiroka**	**2.69**	**291**	P		**Pn**	**13 46 47.7**	**-0.2**
JHK				S		**Sb**	**13 47 27.6**	**+0.8**
JOD2	**Odawara 2**	**2.71**	**248**	P		**Pn**	**13 46 47.2**	**-1.0**
JNS	**Sasagawa**	**2.72**	**304**	P		**Pn**	**13 46 48.6**	**+0.2**
JIM2	**Oshima 3**	**2.73**	**235**	S		**Sn**	**13 47 19.0**	**-1.6**
JMK	**Ichinoseki**	**2.73**	**345**	P		**Pn**	**13 46 47.0**	**-1.5**
AJI	**Ajiro2**	**2.80**	**244**	P		**Pn**	**13 46 48.2**	**-1.2**
JGK	**Kuni**	**2.84**	**276**	P		**Pn**	**13 46 49.7**	**-0.4**
JYK	**Kaneyama**	**2.96**	**332**	P		**Pn**	**13 46 50.7**	**-1.0**
JIZZ	**Izumozaki**	**3.02**	**295**	P		**Pn**	**13 46 53.1**	**+0.7**
JYN	**Shimob**	**3.04**	**256**	P		**Pn**	**13 46 52.3**	**-0.6**
JYN				*e*S		**Sn**	**13 47 27.5**	**-0.7**
JIZS	**Izushimoda**	**3.11**	**240**	S		**Sn**	**13 47 31.6**	**+1.8**
JAW	**Awa shima**	**3.15**	**314**	P		**Pn**	**13 46 53.7**	**-0.6**
MJAR	**Matsushiro Arr**	**3.19**	**275**	Pn		**Pn**	**13 46 54.8**	**-0.1**
	50nm,0.3s,baz=96,slow=9.0,SNR=946							
MJAR				LR		LR	13 48 24.2	
	comp=Z,5μm,18.7s,baz=115,slow=45							
MAJO	**Matsushiro**	**3.19**	**275**	*c iP*		**Pn**	**13 46 54.9**	**0.0**
MAJO	**Matsushiro**	**3.19**	**275**	*e*Pn		**Pn**	**13 46 55.2**	**+0.3**
MAJO				*e*Sn		**Sn**	**13 47 30.5**	**-1.4**
MAT	**Matsushiro**	**3.19**	**275**	P		**Pn**	**13 46 55.1**	**+0.2**
MAT				*e*S		**Sn**	**13 47 33.6**	**+1.7**
MAT	**Matsushiro**	**3.19**	**275**	P		**Pn**	**13 46 54.9**	**0.0**
MJB9	**Matsu-Tunnel**	**3.19**	**275**	*e*Pn		**Pn**	**13 46 55.3**	**+0.4**
JKO	**Kozu shima**	**3.26**	**230**	S		**Sn**	**13 47 34.3**	**+0.9**
JNG	**Nsakai**	**3.27**	**273**	P		**Pn**	**13 46 56.1**	**0.0**
JNT	**Takato**	**3.28**	**263**	P		**Pn**	**13 46 56.7**	**+0.5**
JJN	**Nakama**	**3.30**	**285**	P		**Pn**	**13 46 57.1**	**+0.7**
SHZ3	**Shizuoka 3**	**3.44**	**250**	P		**Pn**	**13 46 58.4**	**0.0**
JSD	**Sado**	**3.55**	**300**	P		**Pn**	**13 46 58.8**	**-1.0**
JNY	**Yasuok**	**3.62**	**256**	P		**Pn**	**13 47 01.3**	**+0.5**
JHJ2	**Mitsune**	**3.73**	**212**	S		**Sn**	**13 47 43.5**	**-1.6**
JHJ2	**Mitsune**	**3.73**	**212**	*e*Pn		**Pn**	**13 46 57.8**	**-4.5**
JHJ2				*e*Sn		**Sn**	**13 47 44.4**	**-0.8**
JHJ	**Hachijo jima 2**	**3.74**	**212**	Pn		**Pn**	**13 47 00.5**	**-1.9**
	160nm,0.3s,baz=92,slow=22,SNR=34							
JHJ				Sn		**Sn**	**13 47 41.8**	**-3.6**
	194nm,0.3s,baz=56,slow=22,SNR=12							
JTT	**Ttatey**	**3.90**	**276**	P		**Pn**	**13 47 05.8**	**+1.3**
JGN	**Niukaw**	**3.91**	**270**	P		**Pn**	**13 47 05.6**	**+0.8**
JGF	**Kuroka**	**3.96**	**261**	P		**Pn**	**13 47 06.2**	**+0.8**
JSZ	**Suzu**	**4.00**	**288**	P		**Pn**	**13 47 05.8**	**-0.2**
INU	**Inuyama**	**4.28**	**258**	*e*Pn		**Pn**	**13 47 10.4**	**+0.6**
JJH	**Hakui**	**4.37**	**280**	P		**Pn**	**13 47 11.6**	**+0.7**
JHG	**Hegura jima**	**4.46**	**292**	P		**Pn**	**13 47 12.7**	**+0.5**
JKN2	**Miekihoku**	**5.24**	**248**	P		**Pn**	**13 47 22.8**	**-0.2**
ERM	**Erimo**	**5.75**	**7**	*c iP*		**Pn**	**13 47 27.5**	**-2.4**
ERM				pmax		pmax		
	comp=Z,70nm,1.0s							
ERM	**Erimo**	**5.75**	**7**	*e*Pn		Pn	13 47 25.0	-4.9
ERM				*e*Sn		**Sn**	**13 48 34.3**	**-0.4**
ASAJ	**Asahikawa**	**7.80**	**2**	Pn		**Pn**	**13 47 57.0**	**-1.1**
	baz=208,slow=11							
ASAJ				Sn		**Sn**	**13 49 23.3**	**-2.0**
	comp=Z,2.8nm,0.3s,baz=53,slow=20,SNR=3.6							
ASAJ	**Asahikawa**	**7.80**	**2**	*e*Pn		**Pn**	**13 47 56.2**	**-1.9**
ASAJ				*e*Sn		**Sn**	**13 49 22.4**	**-2.9**
ASAJ				Sn		**Sn**	**13 49 23.3**	**-2.0**
YUK	**Yuzh-Kuril'sk**	**8.21**	**19**	⇑*e*P		**Pn**	**13 48 02.4**	**-1.4**
CBIJ	**Chichi jima**	**9.19**	**180**	*e*Pn		**Pn**	**13 48 12.8**	**-4.4**
CBIJ				Sn		Sn	13 49 48.3	-11
JCJ	**Chichijima**	**9.19**	**180**	Pn		**Pn**	**13 48 13.5**	**-3.8**
	baz=292,slow=19							
JCJ				Sn		Sn	13 49 48.3	-11
	comp=Z,38nm,0.3s,baz=229,slow=19,SNR=5.5							
JCJ				LR		LR	13 54 11.5	
	comp=Z,262nm,19.9s,baz=11,slow=54							
JNU	**Nakatsue**	**9.81**	**254**	Pn		**Pn**	**13 48 26.2**	**+0.4**
	comp=Z,1.3nm,0.3s,baz=74,slow=8.7,SNR=12							
JNU				LR		LR	13 52 28.4	
	comp=Z,3μm,19.4s,baz=72,slow=39							
JNU	**Nakatsue**	**9.81**	**254**	*e*Pn		**Pn**	**13 48 24.6**	**-1.2**
KUR	**Kuril'sk**	**9.90**	**24**	*e*P		**Pn**	**13 48 25.7**	**-1.2**
KUR				*e*S		**Sn**	**13 50 09.7**	**-7.2**
KUR				pmax		pmax		
	comp=Z,35nm,0.7s							
KUR				smax		smax		
	comp=N,24nm,0.7s							
KUR				smax		smax		
	comp=E,34nm,0.7s							
VLA	**Vladivostok**	**10.42**	**314**	⇓*e*P		**Pn**	**13 48 35.4**	**+1.4**
YSS	**Yuzh-Sakhalins**	**10.64**	**2**	⇑*e*P		**Pn**	**13 48 34.9**	**-2.1**
YSS				*e*S		**Sn**	**13 50 29.0**	**-5.9**
YSS				pmax		pmax		
	comp=Z,20nm,0.9s							
YSS				MLR		MLR		
	comp=N,3μm,14.0s							
YSS				MLR		MLR		
	comp=Z,2μm,14.0s							
YSS				MLR		MLR		
	comp=E,4μm,17.0s							
YSS	**Yuzh-Sakhalins**	**10.64**	**2**	*e*Pn		**Pn**	**13 48 35.0**	**-2.1**
USRK	**Ussuriysk Ar.**	**11.05**	**319**	Pn		**Pn**	**13 48 43.1**	**+0.4**
	comp=E,0.3nm,0.3s,baz=135,slow=13,SNR=29							
USRK				LR		LR	13 52 59.4	
	comp=E,2μm,18.3s,baz=121,slow=38							
KSRS	**Korea Array**	**11.46**	**280**	Pn		**Pn**	**13 48 50.8**	**+2.6**
	comp=E,0.6nm,0.3s,baz=96,slow=13,SNR=93							
KSRS				LR		LR	13 53 16.3	
	comp=E,3μm,18.5s,baz=72,slow=38							
KS01	**Wonju Array Si**	**11.48**	**280**	*e*Pn		**Pn**	**13 48 49.5**	**+1.0**
KS15	**Wonju Array Si**	**11.49**	**280**	*e*Pn		**Pn**	**13 48 50.5**	**+1.9**
KSAR	**Wonju Array Be**	**11.49**	**280**	P		**Pn**	**13 48 50.8**	**+2.2**
KSAR	**Wonju Array Be**	**11.49**	**280**	Pn		**Pn**	**13 48 50.8**	**+2.2**
TJN	**Taejon**	**11.93**	**275**	*c iP*		**Pn**	**13 48 56.4**	**+1.7**
INCN	**Inchon**	**12.48**	**280**	*e*Pn		**Pn**	**13 49 00.2**	**-2.1**
	comp=E,25nm,0.8s							
MDJ	**Mudanjiang**	**12.65**	**315**	P		**Pn**	**13 49 04.8**	**+0.3**
MDJ				ScP		**ScP**	**13 58 12.8**	**+1.3**
MDJ				PcS		**PcS**	**13 58 15.5**	**+0.5**
MDJ				pmax		pmax		
	comp=E,10.0nm,1.0s							
MDJ				pmax		pmax		
	comp=E,41nm,3.5s							
MDJ				LR		LR		
	comp=E,2μm,19.8s							
MDJ				LR		LR		
	comp=E,1μm,19.8s							
MDJ				LR		LR		
	comp=E,2μm,18.1s							
MDJ	**Mudanjiang**	**12.65**	**315**	*e*Pn		**Pn**	**13 49 03.8**	**-0.7**
	comp=E,51nm,1.0s							
HABR	**Khabarovsk**	**13.23**	**339**	*e*P		**Pn**	**13 49 10.0**	**-2.3**
HABR				*e*S		**Sn**	**13 51 35.9**	**-2.3**
HABR				pmax		pmax		
	comp=E,23nm,1.3s							
HABR				pmax		pmax		
	comp=N,17nm,1.3s							
HABR				pmax		pmax		
	comp=Z,48nm,1.3s							
HABR				MLR		MLR		
	comp=Z,2μm,15.0s							
TYV	**Tymovskoe**	**14.55**	**1**	*e*P		**Pn**	**13 49 29.5**	**-0.8**
TYV				pmax		pmax		
	comp=Z,500nm,5.0s							
TYV				pmax		pmax		
	comp=E,44nm,1.0s							
TYV				pmax		pmax		
	comp=Z,70nm,1.0s							
TYV				MLR		MLR		
	comp=E,2μm,16.0s							
TYV				MLR		MLR		
	comp=Z,2μm,15.0s							
CN2	**Changchun**	**14.80**	**305**	*e*P		**Pn**	**13 49 32.0**	**-1.8**
CN2				*e*pP		P	13 49 39.0	-0.4
CN2				*e*S		**Sn**	**13 52 14.5**	**-2.2**
CN2				pmax		pmax		
	comp=E,10.0nm,0.8s							
CN2				pmax		pmax		
	comp=Z,200nm,4.0s							
CN2				LR		LR		
	comp=Z,2μm,12.0s							
CN2				LR		LR		
	comp=Z,2μm,12.0s							
KLR	**Kul'dur**	**14.98**	**333**	Pn		**Pn**	**13 49 34.4**	**-1.8**
	comp=Z,0.2nm,0.3s,baz=124,slow=13,SNR=11							
KLR				LR		LR	13 55 17.6	
	comp=Z,1μm,20.1s,baz=143,slow=37							
SNY	**Shenyang**	**15.43**	**297**	⇑P		**Pn**	**13 49 39.8**	**-2.4**
SNY				pmax		pmax		
	comp=Z,32nm,1.3s							
SNY				pmax		pmax		
	comp=Z,560nm,4.4s							
SNY				LR		LR		
	comp=Z,4μm,13.4s							
SNY				LR		LR		
	comp=Z,4μm,15.7s							
SNY				LR		LR		
	comp=Z,5μm,16.3s							
DL2	**Dalian**	**16.47**	**285**	P		**Pn**	**13 49 55.0**	**-0.5**
DL2				pmax		pmax		
	comp=Z,65nm,0.9s							
DL2				pmax		pmax		
	comp=Z,690nm,10.4s							
DL2				LR		LR		
	comp=Z,2μm,10.7s							
DL2				LR		LR		
	comp=Z,4μm,15.3s							
DL2				LR		LR		
	comp=Z,4μm,14.8s							
NKL	**Nikolayevsk**	**16.86**	**357**	*e*P		**Pn**	**13 50 00.5**	**+0.2**
NKL				MLR		MLR		
	comp=E,800nm,16.0s							
NKL				MLR		MLR		
	comp=Z,2μm,16.0s							
SSE	**Sheshan**	**18.20**	**259**	P		**P**	**13 50 18.3**	**+1.3**
SSE				S		**Sn**	**13 53 38.8**	**-0.4**
SSE				pmax		pmax		
	comp=Z,42nm,0.7s							
SSE				pmax		pmax		
	comp=Z,720nm,5.3s							
SSE				LR		LR		
	comp=Z,880nm,18.6s							
SSE				LR		LR		
	comp=Z,710nm,18.8s							
SSE				LR		LR		
	comp=Z,730nm,13.1s							
NJ2	**Nanjing**	**19.73**	**264**	*e*P		**P**	**13 50 34.5**	**+0.7**
NJ2				LR		LR		
	comp=Z,3μm,11.9s							
NJ2				LR		LR		
	comp=Z,3μm,11.9s							
NJ2				LR		LR		
	comp=Z,3μm,13.0s							
PEA0	**Petropavlovsk-**	**20.02**	**28**	*e*P		**P**	**13 50 37.0**	**+0.1**
PEA0B	**Petropavlovsk-**	**20.02**	**28**	*e*P		Pn	13 50 39.4	+0.6
	comp=Z,56nm,1.1s							
PETK	**Petropavlovsk-**	**20.02**	**28**	P		**P**	**13 50 37.0**	**+0.1**
	comp=Z,11nm,1.0s,baz=251,slow=4.4,SNR=9.5							
TIA	**Tai'an**	**20.17**	**277**	⇓P		**P**	**13 50 36.5**	**-2.2**
TIA				pmax		pmax		
	comp=Z,40nm,1.3s							
PET	**Petropavlovsk**	**20.33**	**30**	*e*P		**P**	**13 50 40.4**	**+0.2**
PET				*e*S		**S**	**13 54 23.1**	**-3.2**
PET				pmax		pmax		
	comp=Z,22nm,0.9s							
PET				pmax		pmax		
	comp=Z,400nm,11.3s							
PET	**Petropavlovsk**	**20.33**	**30**	*e*P		**P**	**13 50 40.8**	**+0.6**
	comp=Z,93nm,1.2s							
BJI	**Beijing**	**20.73**	**288**	P		**P**	**13 50 43.0**	**-1.7**
BJI				S		**S**	**13 54 34.8**	**+0.3**
BJI				pmax		pmax		
	comp=Z,39nm,1.3s							
BJI				LR		LR		
	comp=Z,1μm,11.1s							
BJI				LR		LR		
	comp=Z,2μm,16.0s							
BJI				LR		LR		
	comp=Z,810nm,16.0s							
BJT	**Baijiatuau**	**20.74**	**288**	*e*P		**P**	**13 50 41.9**	**-2.9**
BJT				pmax		pmax		
	comp=Z,36nm,0.8s							
BJT	**Baijiatuau**	**20.74**	**288**	*e*P		**P**	**13 50 41.9**	**-2.9**
	comp=Z,36nm,0.8s							
HIA	**Hailar**	**20.83**	**315**	*e*P		**P**	**13 50 41.6**	**-4.2**
HIA				pmax		pmax		
	comp=Z,40nm,1.0s							
HIA	**Hailar**	**20.83**	**315**	*e*P		**P**	**13 50 41.6**	**-4.2**
	comp=Z,40nm,1.0s							
SSLB	**Suanglung**	**22.14**	**242**	*e*P		**P**	**13 50 54.8**	**-5.2**
	comp=Z,46nm,1.1s							
TWG	**Pinlang**	**22.68**	**239**	*e*P		**P**	**13 51 03.7**	**-2.0**
	comp=Z,309nm,1.1s							
TPUB	**Ta-pu**	**22.68**	**241**	*e*P		**P**	**13 51 01.9**	**-3.8**
	comp=Z,44nm,0.7s							
GUMO	**Guam**	**22.76**	**173**	LR		LR	14 02 45.1	
	comp=Z,129nm,19.4s,baz=7.0,slow=44							
CLNS	**Chul'man**	**23.58**	**336**	*e*P		**P**	**13 51 13.1**	**-1.5**
CLNS				*e*pP		**pP**	**13 51 24.3**	**+0.9**
CLNS				*e*			13 55 04.5	
CLNS				*e*S		**S**	**13 55 22.3**	**-4.3**
CLNS				*e*SS		**SnSn**	**13 56 17.8**	**+13**
CLNS				pmax		pmax		
	comp=N,64nm,1.2s							
CLNS				pmax		pmax		
	comp=Z,99nm,0.9s							
CLNS				pmax		pmax		
	comp=E,33nm,1.0s							
CLNS				pmax		pmax		
	comp=Z,55nm,0.9s							
CLNS				pmax		pmax		
	comp=N,55nm,1.0s							
CLNS				pmax		pmax		
	comp=E,29nm,0.8s							
CLNS				smax		smax		
	comp=E,320nm,11.9s							
CLNS				smax		smax		
	comp=N,543nm,11.7s							
CLNS				MLR		MLR		
	comp=Z,2μm,13.0s							
CLNS				MLR		MLR		
	comp=N,2μm,12.0s							
CLNS				MLR		MLR		
	comp=E,571nm,12.0s							
WHN	**Wuhan**	**23.86**	**264**	⇓*i*P		**P**	**13 51 16.5**	**-0.9**
WHN				pP		**pP**	**13 51 26.5**	**+0.1**
MA2	**Magadan**	**23.94**	**11**	P		**P**	**13 51 17.7**	**-0.2**
	comp=E,17nm,0.9s,baz=192,slow=6.3,SNR=8.7							
MA2				LR		LR	14 01 42.7	
	comp=E,454nm,18.6s,baz=214,slow=39							
MA2	**Magadan**	**23.94**	**11**	*e*P		**P**	**13 51 15.4**	**-2.4**
	comp=E,206nm,1.1s							
HHC	**Hu-ho-hao-te**	**24.27**	**290**	*e*P		**P**	**13 51 21.8**	**+0.5**
HHC				S		**S**	**13 55 38.0**	**-0.1**
HHC				pmax		pmax		
	comp=E,63nm,0.9s							
HHC				pmax		pmax		
	comp=E,250nm,4.0s							
HHC				LR		LR		
	comp=E,1μm,11.7s							
HHC				LR		LR		
	comp=E,1μm,12.3s							
HHC				LR		LR		
	comp=E,1μm,11.8s							
BTO	**Baotou**	**25.44**	**290**	*e*P		**P**	**13 51 28.0**	**-3.9**
BTO				pmax		pmax		
	comp=E,19nm,1.0s							
CIT	**Chita**	**25.61**	**317**	*e*P		**P**	**13 51 32.7**	**-0.5**
CIT				*e*			13 51 43.0	
CIT				*e*			13 51 50.6	
CIT				pmax		pmax		
	comp=Z,292nm,1.8s							
YAK	**Yakutsk**	**26.90**	**347**	P		**P**	**13 51 44.2**	**-0.4**
	comp=Z,4.6nm,0.9s,baz=336,slow=23,SNR=28							
YAK				LR		LR	14 03 01.1	
	comp=Z,1μm,18.1s,baz=158,slow=38							
YAK	**Yakutsk**	**26.90**	**347**	*c iP*		**P**	**13 51 44.3**	**-0.4**
YAK				*e**PP		**pP**	**13 51 54.0**	**+0.2**
YAK				*e*PPP		PPP	13 52 32.1	
YAK				*e*			13 55 09.6	
YAK				*e*S		**S**	**13 56 13.8**	**-5.4**
YAK				*e*SSS		SSS	13 57 31.4	
YAK				pmax		pmax		
	comp=Z,79nm,1.0s							
YAK				pmax		pmax		
	comp=N,49nm,1.2s							
YAK				pmax		pmax		
	comp=E,21nm,1.3s							
YAK				pmax		pmax		
	comp=Z,341nm,4.3s							
YAK				pmax		pmax		
	comp=N,172nm,3.5s							
YAK				pmax		pmax		
	comp=E,141nm,4.2s							
YAK				smax		smax		
	comp=N,61nm,1.9s							
YAK				smax		smax		
	comp=E,101nm,2.0s							
YAK				MLR		MLR		
	comp=Z,2μm,13.0s							
YAK				MLR		MLR		
	comp=N,2μm,15.0s							
YAK				MLR		MLR		
	comp=E,634nm,13.0s							
YAK	**Yakutsk**	**26.90**	**347**	*e*P		**P**	**13 51 44.4**	**-0.3**
	comp=E,281nm,1.1s							
XAN	**Xi'an**	**27.19**	**275**	P		**P**	**13 51 46.8**	**-0.9**
XAN				pmax		pmax		
	comp=E,60nm,1.1s							
XAN				LR		LR		
	comp=E,900nm,13.5s							
XAN				LR		LR		
	comp=E,1μm,13.0s							
XAN				LR		LR		
	comp=E,1μm,16.5s							
H11N2	**WAKE ISLAND Hy**	**27.27**	**121**	T		T	14 20 19.5	
	baz=313,slow=75,SNR=23							
H11N1	**WAKE ISLAND Hy**	**27.28**	**121**	T		T	14 20 14.2	
	baz=313,slow=75,SNR=37							
H11N3	**WAKE ISLAND Hy**	**27.29**	**121**	T		T	14 20 28.7	
	baz=313,slow=75,SNR=22							
SEY	**Seymchan**	**27.39**	**10**	P		**P**	**13 51 48.8**	**-0.2**
	comp=E,8.8nm,0.9s,baz=188,slow=7.7,SNR=22							
SEY	**Seymchan**	**27.39**	**10**	⇓*i*P		**P**	**13 51 50.2**	**+1.2**
ENH	**Enshi**	**27.88**	**267**	*e*P		**P**	**13 51 52.7**	**-1.2**
	comp=E,288nm,0.9s							
H11S1	**WAKE ISLAND Hy**	**27.97**	**123**	T		T	14 21 23.5	
	baz=314,slow=75,SNR=28							
H11S3	**WAKE ISLAND Hy**	**27.97**	**123**	T		T	14 21 09.5	
	baz=314,slow=75,SNR=25							
H11S2	**WAKE ISLAND Hy**	**27.99**	**123**	T		T	14 21 10.7	
	baz=314,slow=75,SNR=26							
ULN	**Ulaanbaatar**	**28.25**	**305**	*c iP*		**P**	**13 51 57.4**	**+0.2**
ULN				pmax		pmax		
	comp=Z,84nm,1.0s							
ULN	**Ulaanbaatar**	**28.25**	**305**	*e*P		**P**	**13 51 56.7**	**-0.5**
	comp=Z,64nm,0.9s							
SONA1	**Songino Array**	**28.68**	**305**	*e*P		**P**	**13 52 01.1**	**+0.1**
SONM	**Songino Array**	**28.68**	**305**	P		**P**	**13 52 01.3**	**+0.3**
	comp=Z,62nm,0.9s,baz=105,slow=8.7,SNR=264							
SONM	**Songino Array**	**28.68**	**305**	P		**P**	**13 52 01.3**	**+0.3**
SONM				pmax		pmax		
	comp=Z,63nm,0.9s							
TGY	**Tagaytay City**	**29.16**	**226**	P		**P**	**13 52 04.5**	**-0.8**
	comp=Z,227nm,0.4s,baz=348,slow=9.0,SNR=3.8							
TGY				LR		LR	14 03 25.5	
	comp=Z,175nm,18.9s,baz=352,slow=36							
LZH	**Lanzhou**	**30.78**	**281**	⇑P		**P**	**13 52 19.5**	**-0.2**
LZH				pP		pP	13 52 30.3	+1.4
LZH				sP		sP	13 52 35.0	+2.3
LZH				PP		**PnPn**	**13 53 21.0**	**+0.7**
LZH				*e*S		**S**	**13 57 19.5**	**-1.6**
LZH				sS		sS	13 57 34.5	-1.8
LZH				SS		**ScP**	**13 58 55.0**	**-1.9**
LZH				pmax		pmax		
	comp=Z,86nm,1.1s							
LZH				pmax		pmax		
	comp=Z,510nm,5.5s							
LZH				LR		LR		
	comp=Z,5μm,18.7s							
LZH				LR		LR		
	comp=Z,3μm,16.8s							
LZH				LR		LR		
	comp=Z,6μm,19.1s							
IRK	**Irkutsk**	**31.02**	**313**	*e*P		**P**	**13 52 21.0**	**-0.5**
IRK				pmax		pmax		
	comp=Z,62nm,1.8s							
ZAK	**Zakamensk**	**31.18**	**309**	*e*P		**P**	**13 52 23.1**	**+0.1**
ZAK				pmax		pmax		
	comp=Z,59nm,1.2s							
TLY	**Talaya**	**31.25**	**312**	P		**P**	**13 52 24.4**	**+0.9**
	comp=Z,42nm,1.1s,baz=120,slow=5.7,SNR=55							
TLY				LR		LR	14 05 48.4	
	comp=Z,1μm,18.6s,baz=103,slow=38							
TLY	**Talaya**	**31.25**	**312**	*c iP*		**P**	**13 52 23.6**	**+0.1**
TLY				*e

comp=Z,580nm,6.0s
CD2 LR LR
comp=Z,3μm,7.1s
CD2 LR LR
comp=Z,2μm,15.7s
DAV Davao City (W) 32.82 211 LR LR 14 04 27.7
comp=Z,269nm,21.2s,baz=49,slow=34
MOY Mondy 32.86 311 *e*P **P 13 52 38.0 +0.3**
MOY pmax pmax
comp=Z,50nm,1.4s
QIZ Qiongzhong 33.19 247 P **P 13 52 41.3 +0.5**
QIZ S **S 13 57 57.3 -1.3**
QIZ pmax pmax
comp=Z,10.0nm,1.3s
QIZ LR LR
comp=Z,860nm,13.6s
QIZ LR LR
comp=Z,740nm,16.4s
GTA Gaotai 33.35 288 *e*P **P 13 52 42.5 +0.3**
GTA pP pP 13 52 51.8 +0.4
GTA sP sP 13 52 56.0 +0.8
GTA PcP **PcP 13 55 24.5 +1.0**
GTA S **S 13 58 01.0 0.0**
GTA sS sS 13 58 18.8 +2.6
GTA pmax pmax
comp=Z,120nm,0.9s
GTA pmax pmax
comp=Z,680nm,5.7s
GTA LR LR
comp=Z,920nm,15.4s
GTA LR LR
comp=Z,910nm,16.6s
GTA LR LR
comp=Z,820nm,15.2s
BILL Bilibino 34.55 16*de*P **P 13 52 52.4 +0.3**
BILL *i* *SP **pP 13 53 02.3 +1.0**
BILL *e* 13 53 10.4
BILL *i* S **S 13 58 17.4 -1.3**
BILL pmax pmax
comp=Z,10.0nm,1.1s
BILL MLR MLR
comp=Z,506nm,18.0s
BILL Bilibino 34.55 16 *e*P **P 13 52 52.3 +0.3**
comp=Z,34nm,1.2s
KMI Kunming 35.45 263 P **P 13 52 59.8 -0.8**
KMI pP pP 13 53 09.5 -0.4
KMI sP sP 13 53 13.8 +0.1
KMI S **S 13 58 33.0 -0.9**
KMI pmax pmax
comp=Z,64nm,1.1s
KMI pmax pmax
comp=Z,620nm,5.9s
KMI LR LR
comp=Z,1μm,6.9s
KMI LR LR
comp=Z,1μm,10.2s
KMI LR LR
comp=Z,1μm,15.1s
TIXI Tiksi 36.07 353 P **P 13 53 04.0 -1.1**
comp=Z,3.5nm,0.8s,baz=130,slow=10,SNR=6.9
TIXI Tiksi 36.07 353*c i*P **P 13 53 04.5 -0.6**
TIXI pmax pmax
comp=Z,8.0nm,1.0s
TIXI MLR MLR
comp=Z,1μm,16.0s
TIXI Tiksi 36.07 353 *e*P **P 13 53 04.2 -0.9**
comp=Z,13nm,1.0s
MYLDM Lahad Datu 37.84 221 *e*P **P 13 53 21.7 +1.0**
comp=Z,52nm,1.2s
SDKM Sandakan 38.16 223 ⇑P **P 13 53 23.6 +0.1**
PANO Nakornpanom 38.27 250 P **P 13 53 25.2 +0.8**
comp=Z,24nm,1.6s
SWI Sorong 38.35 198 P **P 13 53 26.3 +1.3**
UBPT Khong Chiam 38.78 247 P **P 13 53 29.0 +0.3**
comp=Z,54nm,1.1s
SKNT Sakolnakorn 38.86 251 P **P 13 53 29.4 +0.1**
comp=Z,54nm,1.3s,comp=Z,2μm
TSM Tawau 38.92 221 ⇓P **P 13 53 29.7 -0.2**
CRAI Chiangrai 39.80 258 P **P 13 53 37.3 +0.1**
comp=Z,352nm,1.1s
WAMI Wamena 40.12 185 P **P 13 53 43.1 +3.3**
KHON Khomkaen 40.12 251 P **P 13 53 40.0 +0.1**
comp=Z,18nm,1.2s,comp=Z,544nm
MRSI Marisa 40.29 212 P **P 13 53 42.2 +1.0**
comp=Z,133nm,1.3s,comp=Z,2μm
SANI Sanana 41.04 205 P **P 13 53 51.1 +3.7**
UTTA Uttaradit 41.05 254 P **P 13 53 47.6 +0.1**
comp=Z,16nm,1.0s,comp=Z,142nm
LAMP Lampang 41.32 256 P **P 13 53 50.0 +0.2**
comp=Z,17nm,1.0s
PBKT Sadao Pong 41.41 253 P **P 13 53 50.4 0.0**
comp=Z,65nm,1.2s
WMQ Urumqi 41.70 298 P P 13 53 47.0 -5.7
WMQ sP sP 13 54 04.5 -1.3
WMQ S **S 14 00 08.5 +1.0**
WMQ sS sS 14 00 18.5 -4.4
WMQ ScS **ScS 14 03 47.5 -6.0**
WMQ LR LR
comp=Z,800nm,18.4s
WMQ LR LR
comp=Z,560nm,18.4s
WMQ LR LR
comp=Z,240nm,19.6s
CMMT Chiang Mai 41.70 257 P **P 13 53 52.7 -0.2**
comp=Z,40nm,1.2s
CHTO Chiang Mai 41.70 257 P **P 13 53 52.7 -0.2**
comp=Z,177nm,1.2s
CHTO Chiang Mai 41.70 257 *e*P **P 13 53 52.7 -0.2**
CHTO pmax pmax
comp=Z,43nm,1.0s
CHTO Chiang Mai 41.70 257 *e*P **P 13 53 52.6 -0.2**
comp=Z,43nm,1.0s
CM31 Chiang Mai Arr 41.90 257 *e*P **P 13 53 55.1 +0.6**
CMAR Chiang Mai Arr 41.90 257 P **P 13 53 54.5 0.0**
comp=Z,8.6nm,0.8s,baz=47,slow=6.3,SNR=66
CMAR LR LR 14 13 43.7
comp=Z,419nm,18.1s,baz=62,slow=40
SUKH Sukhothai 41.91 255 P **P 13 53 55.0 +0.4**
comp=Z,15nm,0.9s,comp=Z,122nm
SRAK Srakaew 42.15 249 P **P 13 53 53.3 -3.2**
comp=Z,96nm,1.3s,comp=Z,973nm
PCI Palu 42.45 214 P **P 13 53 59.9 +0.9**
comp=Z,78nm,1.4s,comp=Z,810nm
BTM Bintulu 42.48 226 ⇓P **P 13 53 59.5 +0.3**
CHBT CHBT 42.73 247 P **P 13 54 01.6 +0.3**
comp=Z,64nm,1.3s,comp=Z,3μm
ZAA0 Zalesovo Array 42.84 313 *e*P **P 13 54 01.5 -0.2**
ZALV Zalesovo Beam 42.84 313 P **P 13 54 01.9 +0.2**
comp=Z,21nm,0.8s,baz=91,slow=6.2,SNR=66
ZALV PcP **PcP 13 55 52.1 -0.2**
comp=Z,5.5nm,0.9s,baz=96,slow=2.9,SNR=2.4
ZALV LR LR 14 12 48.1
comp=Z,841nm,18.5s,baz=70,slow=37
LSA Lhasa 42.87 276 P **P 13 54 03.5 +0.7**
LSA pmax pmax
comp=Z,36nm,1.2s
LSA Lhasa 42.87 276 *e*P **P 13 54 03.6 +0.7**
LSA pmax pmax
comp=Z,38nm,0.9s
LSA Lhasa 42.87 276 *e*P **P 13 54 03.6 +0.7**
comp=Z,38nm,0.9s
SBUM Sibu 43.59 226 *e*P **P 13 54 07.1 -1.1**
comp=Z,53nm,1.2s
NVS Novosibirsk 43.77 314⇑*i*P **P 13 54 09.2 0.0**
NVS *e*S **S 14 00 36.2 -1.2**
NVS pmax pmax
comp=Z,52nm,1.3s
NVS pmax pmax
comp=N,13nm,1.2s
NVS pmax pmax
comp=E,45nm,1.4s
NVS smax smax
comp=E,25nm,2.0s
SRDT SRDT 44.16 252 P **P 13 54 13.5 +0.7**
comp=E,94nm,1.4s
NRIK Noril'sk 44.17 335 P **P 13 54 12.2 -0.1**
comp=E,7.2nm,0.6s,baz=113,slow=6.4,SNR=14
NRIK LR LR 14 14 08.5
comp=E,758nm,18.7s,baz=100,slow=38
KHLT Khaolaem Dam 44.30 253 P **P 13 54 15.2 +1.3**
comp=E,13nm,1.5s
TTSI Tana Toraja 44.36 213 P **P 13 54 15.7 +1.3**
PHET Kaeng Krachan 44.66 250 P **P 13 54 17.7 +0.9**
comp=E,19nm,0.7s,comp=E,173nm
MTKI Muara Teweh, K 44.91 220 P **P 13 54 19.9 +1.2**
comp=E,69nm,0.7s,comp=E,7μm

MK01 Makanchi Array 45.00 303 *e*P **P 13 54 19.5 +0.2**
MK31 Makanchi Array 45.01 303 *i* P **P 13 54 19.2 -0.1**
MK31 pmax pmax
comp=Z,62nm,0.9s
MK31 Makanchi Array 45.01 303 *e*P **P 13 54 19.2 -0.1**
MKAR Makanchi Array 45.01 303 P **P 13 54 19.3 0.0**
comp=Z,46nm,0.9s,baz=87,slow=9.8,SNR=101
MKAR Makanchi Array 45.01 303 P **P 13 54 19.3 0.0**
MKAR pmax pmax
comp=Z,45nm,0.9s
MKAR Makanchi Array 45.01 303 *e*P **P 13 54 18.8 -0.5**
SPSI Sidrap Palu 45.21 212 P **P 13 54 24.4 +3.3**
MAKZ Makanchi 45.22 303 *e*P **P 13 54 20.9 0.0**
MAKZ pmax pmax
comp=Z,69nm,0.9s
MAKZ Makanchi 45.22 303 *e*P **P 13 54 20.9 0.0**
comp=Z,69nm,0.9s
KSM Kuching 45.50 228 ⇑P **P 13 54 24.0 +0.6**
KSM Kuching 45.50 228 *e*P **P 13 54 23.5 +0.1**
comp=Z,216nm,2.0s
STKI Sintang 45.95 225 P **P 13 54 28.6 +1.6**
comp=Z,61nm,1.2s
KAPI Kappang 46.16 212 LR LR 14 12 44.2
comp=Z,86nm,21.8s,baz=29,slow=35
KAPI Kappang 46.16 212 *e*P **P 13 54 27.0 -1.6**
comp=Z,50nm,1.1s
KURK Kurchatov 46.84 309 P **P 13 54 33.4 -0.2**
KURK pmax pmax
comp=Z,181nm,1.0s
KURK Kurchatov 46.84 309 *e*P **P 13 54 33.5 -0.2**
comp=Z,69nm,0.9s
OHAK Old Harbor 46.88 42 *e*P **P 13 54 33.1 -0.7**
comp=Z,8.5nm,0.8s
KURBB Kurchatov Arra 46.91 309 P **P 13 54 33.9 -0.3**
comp=Z,43nm,0.9s,baz=84,slow=8.3,SNR=214
BBKI Banjar Baru 47.08 219 P **P 13 54 36.5 +0.6**
comp=Z,79nm,1.0s,comp=Z,1μm
RSO Redoubt South 47.10 38 *e*P **P 13 54 39.4 +3.6**
KDAK Kodiak Island 47.24 42 *e*P **P 13 54 36.3 -0.3**
KDAK pmax pmax
comp=Z,22nm,0.9s
KDAK Kodiak Island 47.24 42 *e*P **P 13 54 36.3 -0.3**
comp=Z,22nm,0.9s
PPLA Purkeypile 47.42 35 *e*P **P 13 54 39.6 +1.5**
comp=Z,17nm,1.1s
SPU Mount Spurr 47.45 37 *e*P **P 13 54 39.4 +1.1**
CAST Castle Rocks 47.49 34 *e*P **P 13 54 39.7 +1.1**
comp=Z,57nm,2.0s
PDGK Podgornoye 47.64 299 P **P 13 54 40.0 +0.1**
PDGK pmax pmax
comp=Z,168nm,1.2s
GUN Gumba 47.83 277 *e*P **P 13 54 41.8 -0.2**
comp=Z,158nm,1.0s
SURT Suratani 47.83 246 P **P 13 54 43.0 +1.3**
comp=Z,18nm,1.4s
TRTT Trang 47.92 244 P **P 13 54 43.4 +1.0**
comp=Z,28nm,1.1s
BPAW Bear Paw Mtn. 48.00 33 *e*P **P 13 54 43.7 +1.2**
comp=Z,10nm,1.2s
KTH Kantishna Hill 48.01 34 *e*P **P 13 54 43.8 +1.1**
comp=Z,21nm,1.0s
SUA Susitna One 48.08 36 *e*P **P 13 54 45.8 +2.6**
comp=Z,18nm,1.0s
MLY Manley 48.14 32 *e*P **P 13 54 45.1 +1.4**
comp=Z,20nm,1.0s
TRF Thorofare Moun 48.29 34 *e*P **P 13 54 47.1 +2.2**
comp=Z,9.2nm,1.0s
KKN Kakani 48.36 277 *e*P **P 13 54 46.0 0.0**
comp=Z,52nm,0.8s
HNR Honiara 48.49 156 LR LR 14 12 27.8
comp=Z,287nm,22.0s,baz=336,slow=33
DMN Daman 48.57 277 *e*P **P 13 54 47.7 0.0**
comp=Z,113nm,1.5s
GKN Gorkha 48.78 277 *e*P **P 13 54 49.0 -0.2**
comp=Z,260nm,1.2s
SOEI Soe 48.82 204 P **P 13 54 50.9 +1.5**
comp=Z,130nm,1.0s,comp=Z,1μm
SOEI Soe 48.82 204 *e*P **P 13 54 50.6 +1.2**
comp=Z,178nm,1.2s
PMR Palmer 48.85 36 *e*P **P 13 54 49.1 +0.1**
PMR pmax pmax
comp=Z,11nm,1.0s
PMR Palmer 48.85 36 *e*P **P 13 54 49.1 +0.1**
comp=Z,12nm,1.0s
PKDT Phuket 48.87 246 P **P 13 54 51.0 +1.2**
comp=Z,85nm,1.0s
MCK McKinley 48.90 33 *e*P **P 13 54 52.1 +2.6**
MCK pmax pmax
comp=Z,13nm,1.0s
MCK McKinley 48.90 33 *e*P **P 13 54 52.0 +2.6**
comp=Z,13nm,1.0s
RND Reindeer 48.94 34 *e*P **P 13 54 50.5 +0.7**
RND pmax pmax
comp=Z,20nm,1.0s
RND Reindeer 48.94 34 *e*P **P 13 54 50.5 +0.7**
comp=Z,20nm,1.0s
KULM Kulim 48.98 241 ⇓P **P 13 54 51.1 +0.5**
KULM Kulim 48.98 241 *e*P **P 13 54 50.8 +0.1**
comp=Z,42nm,1.3s
MDM Murphy Dome 49.21 32 *e*P **P 13 54 53.1 +1.3**
comp=Z,27nm,1.0s
SML Sawmill 49.22 36 *e*P **P 13 54 53.3 +1.4**
SML pmax pmax
comp=Z,19nm,1.0s
SML Sawmill 49.22 36 *e*P **P 13 54 53.3 +1.4**
comp=Z,18nm,1.0s
WRH Wood River Hil 49.27 32 *e*P **P 13 54 53.2 +1.0**
WRH *ep*P **pP 13 54 59.0 -2.6**
MYKOM Kota Tinggi 49.32 235 ⇓P **P 13 54 54.0 +0.8**
COLA College 49.37 32⇑*e*P **P 13 54 54.1 +1.2**
COLA pmax pmax
comp=Z,5.0nm,1.0s
COLA College 49.37 32 *e*P **P 13 54 54.8 +1.9**
comp=Z,18nm,1.1s
TPRI Tanjung Pinang 49.54 233 P **P 13 54 56.4 +1.6**
comp=Z,47nm,0.5s,comp=Z,41μm
KOLN Koldanda 49.71 278 *e*P **P 13 54 56.4 0.0**
comp=Z,72nm,1.2s
ILAR Eielson Array 49.78 32 P **P 13 54 56.3 +0.2**
comp=Z,2.8nm,0.7s,baz=265,slow=6.5,SNR=38
ILAR LR LR 14 17 16.0
comp=Z,116nm,20.7s,baz=272,slow=38
ILB Eielson Array 49.78 32 *e*P **P 13 54 56.3 +0.2**
IL1 Eielson Array 49.78 32 *e*P **P 13 54 55.7 -0.4**
MTN Manton Dam 49.99 194 *e*P **P 13 54 58.5 +0.3**
comp=Z,146nm,1.8s
COEN Coen 50.01 179 *e*P **P 13 54 59.2 +0.9**
comp=Z,36nm,1.3s
COEN *ep*P **pP 13 55 08.9 +1.0**
PYUN Piuthan 50.06 278 *e*P **P 13 54 59.2 +0.2**
comp=Z,305nm,1.0s
KLU Klutina 50.39 36 *e*P **P 13 55 01.9 +1.0**
comp=Z,16nm,1.2s
PLAI Plampang 50.42 212 P **P 13 55 03.2 +1.7**
comp=Z,56nm,1.1s,comp=Z,704nm
DIV Divide 50.49 37 *e*P **P 13 55 04.8 +3.1**
comp=Z,50nm,1.4s
TKM2 Tokmak 2 50.50 299 P **P 13 55 02.7 +0.6**
TKM2 pmax pmax
comp=Z,122nm,1.5s
TKM2 Tokmak 2 50.50 299 *e*P **P 13 55 01.8 -0.4**
comp=Z,117nm,1.3s
TWSI Taliwang, Sumb 50.73 213 P **P 13 55 04.6 +0.8**
comp=Z,38nm,1.0s
PPBI Pangkal Pinang 50.90 229 P **P 13 55 05.9 +0.8**
comp=Z,29nm,1.2s,comp=Z,3μm
DOT Dot Lake 51.07 33 *e*P **P 13 55 06.6 +0.7**
comp=Z,18nm,0.9s
FRU Bishkek 51.21 299⇑*e*P **P 13 55 08.0 +0.7**
FRU pmax pmax
comp=Z,110nm,1.5s
KSH Kashi 51.24 295 *e*P **P 13 55 11.8 +4.1**
KSH *ep*P sP 13 55 21.5 +0.5
KSH *es*P pP 13 55 25.5 +8.3
KSH *e*PP **PP 13 57 09.8 +5.3**
KSH S **S 14 02 27.0 +2.6**
KSH ScS **ScS 14 04 57.0 +1.0**
KSH pmax pmax
comp=Z,32nm,1.2s
KSH pmax pmax
comp=Z,180nm,6.9s
KSH LR LR
comp=Z,1μm,16.2s
KSH LR LR
comp=Z,1μm,18.5s
KSH LR LR
comp=Z,2μm,16.9s

MENT Mentasta 51.29 34 *e*P P 13 55 13.1 +5.5
comp=Z,19nm,1.3s
OTUK Ortayu 51.33 307 P **P 13 55 07.4 -0.7**
OTUK pmax pmax
comp=Z,60nm,1.2s
AAK Ala-Archa 51.36 299 P **P 13 55 08.8 +0.3**
comp=Z,24nm,0.9s,baz=82,slow=6.4,SNR=19
AAK Ala-Archa 51.36 299*c i*P **P 13 55 08.9 +0.3**
AAK pmax pmax
comp=Z,41nm,1.2s
AAK Ala-Archa 51.36 299 *e*P **P 13 55 09.0 +0.5**
comp=Z,30nm,0.9s
BVA0 Borovoye Array 51.50 313 P **P 13 55 09.0 -0.2**
BVA0 pmax pmax
comp=Z,54nm,2.0s
BVAR Borovoye Array 51.50 313 P **P 13 55 09.3 +0.1**
comp=Z,16nm,1.0s,baz=79,slow=7.7,SNR=35
EKS2 Erkin-Say 51.85 299 *e*P **P 13 55 12.6 +0.4**
EKS2 pmax pmax
comp=Z,20nm,0.9s
EKS2 Erkin-Say 51.85 299 *e*P **P 13 55 12.6 +0.4**
comp=Z,20nm,0.9s
PSI Prapat 51.95 240 *e*P **P 13 55 13.2 0.0**
PSI *e**PP **pP 13 55 22.7 0.0**
PSI Prapat 51.95 240 *e*P **P 13 55 13.2 0.0**
PSI *ep*P **pP 13 55 22.7 0.0**
ZRNK Zerenda 52.33 313 P **P 13 55 15.2 -0.2**
ZRNK pmax pmax
comp=Z,64nm,1.4s
ZRNK Zerenda 52.33 313 *e*P **P 13 55 15.7 +0.3**
comp=Z,88nm,1.4s
PWJI Pagerwojo 52.52 219 P **P 13 55 15.9 -1.3**
PPI Padang Panjang 53.29 236 P **P 13 55 24.3 +1.4**
comp=Z,18nm,0.4s
LEM Lembang 53.77 224 P P 13 55 32.0 +5.4
KLI Kotabumi 53.80 228 P **P 13 55 27.0 +0.3**
comp=Z,112nm,1.2s,comp=Z,2μm
LHSI Lahat 53.81 231 P **P 13 55 27.3 +0.6**
comp=Z,71nm,1.0s
GSI Gunungsitoli 53.95 240 P **P 13 55 28.1 +0.3**
comp=Z,102nm,1.3s
GSI Gunungsitoli 53.95 240 *e*P **P 13 55 27.7 -0.1**
comp=Z,59nm,0.8s
KK31 Karatay Array 54.00 301 *i* P **P 13 55 27.2 -0.7**
KK31 pmax pmax
comp=Z,39nm,1.1s
KKAR Karatay Array 54.00 301 *e*P **P 13 55 28.2 +0.3**
KKAR Karatay Array 54.00 301 *e*P **P 13 55 28.2 +0.3**
THN Thein Dam 54.00 287 *e*P P 13 55 19.0 -9.0
NDI New Delhi 54.40 282 *e*P P 13 55 23.0 -8.0
KASI Kota Agung 54.54 228 P **P 13 55 33.0 +0.9**
comp=Z,37nm,0.9s
INK Inuvik 54.76 27 *e*P **P 13 55 34.4 +1.5**
INK *e**PP **pP 13 55 43.4 +0.9**
INK Inuvik 54.76 27 *e*P **P 13 55 34.4 +1.5**
INK *ep*P **pP 13 55 43.4 +0.9**
SVE Sverdlovsk 56.08 319*d i*P **P 13 55 43.1 +0.5**
SVE pmax pmax
comp=Z,61nm,1.3s
SVE MLR MLR
comp=Z,886nm,17.0s
FITZ Fitzroy Crossi 56.33 199 *e*P **P 13 55 45.1 +0.4**
comp=Z,38nm,1.4s
WRAB Tennant Creek 56.43 189*ce*P **P 13 55 44.6 -0.9**
WRAB pmax pmax
comp=Z,97nm,1.5s
WRAB Tennant Creek 56.43 189 *e*P **P 13 55 44.9 -0.6**
comp=Z,53nm,1.4s
WB2 Warramunga Arr 56.44 189 *e*P **P 13 55 44.8 -0.8**
comp=Z,76nm,1.6s
WRA Warramunga Arr 56.44 189 P **P 13 55 44.6 -0.9**
comp=Z,17nm,1.1s,baz=7.9,slow=7.4,SNR=51
WRA Warramunga Arr 56.44 189 *i* P **P 13 55 44.5 -1.1**
WRA pmax pmax
comp=Z,17nm,1.1s
SOKR Solikamsk 57.26 323 *e*P **P 13 55 50.0 -0.9**
SOKR pmax pmax
comp=Z,23nm,0.9s
SOKR MLR MLR
comp=Z,614nm,17.0s
ARU Arti 57.29 319 P **P 13 55 51.4 +0.1**
comp=Z,21nm,0.9s,baz=74,slow=4.9,SNR=46
ARU Arti 57.29 319*c i*P **P 13 55 51.3 0.0**
ARU *PP **pP 13 56 00.8 -0.1**
ARU 13 56 45.1
ARU 13 57 58.6
ARU PPP PPP 13 59 19.8
ARU S **S 14 03 46.7 +1.6**
ARU SS **SS 14 07 30.4 -3.7**
ARU pmax pmax
comp=Z,96nm,1.7s
ARU MLR MLR
comp=Z,766nm,21.0s
ARU Arti 57.29 319 *e*P **P 13 55 51.4 +0.1**
comp=Z,51nm,1.0s
KBL Kabul 58.23 292 *e*P **P 13 55 58.5 0.0**
KBL pmax pmax
comp=Z,18nm,0.8s
KBL Kabul 58.23 292 *e*P **P 13 55 58.5 0.0**
comp=Z,18nm,0.8s
HYB Hyderabad 58.78 269 *i* P **P 13 56 02.0 -0.3**
AB31 Akbulak array 58.86 311 P **P 13 56 01.6 -0.7**
AB31 pmax pmax
comp=Z,21nm,0.8s
ABKAR Akbulak array 58.86 311 *e*P **P 13 56 02.1 -0.2**
AKTO Aktyubinsk 59.60 312 P **P 13 56 07.3 -0.2**
comp=Z,23nm,0.9s,baz=80,slow=6.7,SNR=28
AS01 Alice Springs 60.16 189 *e*P **P 13 56 10.8 -0.7**
AS31 Alice Springs 60.16 189 *e*P **P 13 56 11.2 -0.4**
comp=Z,3.3nm,0.6s
ASAR Alice Springs 60.16 189 P **P 13 56 10.9 -0.7**
comp=Z,3.4nm,0.7s,baz=17,slow=8.8,SNR=69
ASAR LR LR 14 21 23.9
comp=Z,121nm,20.0s,baz=7.5,slow=35
MBWA Marble Bar 60.97 204 *e*P **P 13 56 16.1 -0.9**
comp=Z,52nm,0.8s
SPITS Spitsbergen Ar 61.34 349 P **P 13 56 18.7 -0.2**
comp=Z,8.3nm,1.0s,baz=104,slow=17,SNR=3.5
SPITS Spitsbergen Ar 61.34 349 P **P 13 56 18.7 -0.2**
SPITS pmax pmax
comp=Z,9.0nm,0.9s
KBS Kingsbay 61.46 350⇑*e*P **P 13 56 21.8 +2.1**
KBS pmax pmax
comp=Z,130nm,1.7s
DZM Mont Dzumac 62.45 155 *e*LR LR 14 15 01.0
comp=Z,436nm,21.1s
LVZ Lovozero 63.01 336⇑*e*P **P 13 56 31.0 +0.8**
LVZ pmax pmax
comp=Z,51nm,2.5s
LVZ Lovozero 63.01 336 *e*P **P 13 56 31.1 +0.8**
comp=Z,49nm,1.3s
TMCR Tamitsa 63.66 332 *e*P **P 13 56 34.8 +0.2**
TMCR pmax pmax
comp=Z,91nm,1.1s
YKW3 Yellowknife Ar 64.09 30 *e*P **P 13 56 37.7 +0.3**
comp=Z,40nm,1.8s
YKA Yellowknife Ar 64.13 30 P **P 13 56 38.1 +0.4**
comp=Z,3.6nm,0.7s,baz=302,slow=6.8,SNR=60
YKA LR LR 14 29 04.5
comp=Z,7.9nm,18.3s,baz=0.0,slow=40
YKB5 Yellowknife Ar 64.13 30 *e*P **P 13 56 37.2 -0.5**
KLMR Klimovskoe 64.68 328 *e*P **P 13 56 38.5 -2.8**
KLMR *e* 13 59 00.8
KLMR pmax pmax
comp=Z,36nm,1.1s
GEYT Alibeck 64.70 300 P **P 13 56 42.0 0.0**
comp=Z,13nm,0.9s,baz=52,slow=2.6,SNR=24
GEYT PP **PP 13 59 03.9 -0.3**
comp=Z,8.5nm,1.3s,baz=45,slow=4.3,SNR=2.4
ARA0 ARCESS Array S 64.88 340 *e*P **P 13 56 43.0 +0.4**
ARA0 *ep*P **pP 13 56 53.7 +1.4**
ARCES ARCESS Array B 64.88 340 P **P 13 56 43.1 +0.6**
comp=Z,7.8nm,0.9s,baz=46,slow=8.7,SNR=8.5
ARCES LR LR 14 28 12.4
comp=Z,285nm,20.3s,baz=34,slow=39
DAG Danmarks Havn 66.54 355⇑*i*P **P 13 56 53.2 +0.1**
comp=Z,12nm,1.0s
DAG Danmarks Havn 66.54 355⇑*i*P **P 13 56 53.2 +0.1**
DAG pmax pmax
comp=Z,12nm,1.0s
STKA Stephens Creek 67.84 181 P **P 13 57 00.8 -1.0**
comp=Z,1.3nm,0.8s,baz=344,slow=12,SNR=4.7
STKA Stephens Creek 67.84 181 P **P 13 57 00.8 -1.0**
STKA *ep*P **pP 13 57 09.7 -1.9**
MOS Moscow 68.18 324 *e*P **P 13 57 03.7 -0.1**
MOS *e* 13 57 25.2

MOS pmax pmax
comp=Z,75nm,1.2s
MOS pmax pmax
comp=Z,100nm,1.4s
MOS MLR MLR
comp=Z,600nm,17.0s
VRH Novokhopyorsk 68.51 318 *e*P **P 13 57 05.4 -0.5**
VRH *e**PP **pP 13 57 15.1 -0.7**
VRH pmax pmax
comp=Z,50nm,1.0s
VRH MLR MLR
comp=Z,930nm,15.0s
OBN Obninsk 69.03 324 P **P 13 57 09.4 +0.3**
comp=Z,18nm,0.5s,baz=80,slow=18,SNR=11
OBN Obninsk 69.03 324⇑*i*P **P 13 57 09.2 +0.1**
OBN *i* 13 57 21.2
OBN *e* 13 59 42.3
OBN *i* S **S 14 06 12.3 +0.7**
OBN pmax pmax
comp=Z,60nm,1.1s
OBN MLR MLR
comp=Z,627nm,15.0s
LPSR Galich'ya Gora 69.23 321 *e*P **P 13 57 10.6 +0.2**
LPSR *e**PP **pP 13 57 21.5 +1.3**
LPSR pmax pmax
comp=Z,40nm,0.9s
LPSR MLR MLR
comp=Z,790nm,17.0s
FIA1 FINESS Array S 69.72 333 *e*P **P 13 57 13.5 +0.2**
FINES FINESS Array B 69.73 333 P **P 13 57 13.2 0.0**
comp=Z,20nm,0.9s,baz=54,slow=9.7,SNR=34
FINES PP **PP 13 59 47.3 +0.2**
comp=Z,3.3nm,0.8s,baz=82,slow=13,SNR=2.4
FINES LR LR 14 33 10.7
comp=Z,349nm,18.5s,baz=358,slow=40
FINES FINESS Array B 69.73 333 *i* P **P 13 57 13.8 +0.5**
FINES pmax pmax
comp=Z,21nm,0.9s
VSR Storozhevoye 69.86 319 *e*P **P 13 57 14.1 -0.2**
VSR *e**PP **pP 13 57 24.2 0.0**
VSR pmax pmax
comp=Z,50nm,1.0s
VSR MLR MLR
comp=Z,770nm,15.0s
M02C Callahan 70.39 53 P **P 13 57 19.0 +1.1**
baz=302
J05D Fort Rock, OR 70.43 50 P **P 13 57 18.9 +0.7**
baz=302
M04C Macdoel 70.84 52 P **P 13 57 21.6 +1.0**
baz=302
K05A Summer Lake 70.94 51 *e*P **P 13 57 23.2 +1.9**
comp=Z,35nm,1.2s
VSU Vasula 71.37 330*c i*P **P 13 57 23.7 +0.3**
VSU pmax pmax
comp=Z,135nm,1.1s
SUMG Summit 71.40 0 *i* P **P 13 57 25.3 +1.5**
comp=Z,26nm,1.0s
SUMG *i* 13 57 36.7
SUMG Summit 71.40 0 *i* P **P 13 57 25.3 +1.5**
SUMG *i* 13 57 36.7
SUMG pmax pmax
comp=Z,26nm,1.0s
SUMG Summit 71.40 0 *e*P **P 13 57 25.3 +1.5**
comp=Z,26nm,1.0s
NCK Nalchik 71.52 311⇓*e*P **P 13 57 25.4 +0.8**
NCK pmax pmax
comp=Z,8.0nm,0.3s
O03D Paynes Creek 71.65 53 P **P 13 57 26.3 +0.8**
baz=302
ZEI Tsey 71.72 310 *e*P **P 13 57 22.2 -3.8**
ZEI *e* 13 57 35.3
ZEI pmax pmax
comp=Z,48nm,1.3s
KVAR Kislovodsk Arr 71.82 311 P **P 13 57 26.6 +0.1**
comp=Z,49nm,1.1s,baz=215,slow=7.4,SNR=36
KBZ Khabaz 71.82 311 P **P 13 57 26.9 +0.5**
comp=Z,26nm,0.9s,baz=52,slow=2.8,SNR=48
KBZ LR LR 14 33 31.9
comp=Z,390nm,18.6s,baz=41,slow=40
KIV Kislovodsk 71.83 311*c i*P **P 13 57 26.9 +0.4**
KIV *i* *SP **pP 13 57 36.8 +0.4**
KIV *e*S **S 14 06 50.1 +5.1**
KIV pmax pmax
comp=Z,75nm,1.0s
KIV MLR MLR
comp=Z,215nm,18.0s
KIV Kislovodsk 71.83 311 *e*P **P 13 57 27.6 +1.0**
comp=Z,57nm,0.9s
NEY Neytrino 72.19 311⇓*i*P **P 13 57 30.4 +1.6**
NEY pmax pmax
comp=Z,2.0nm,0.8s
SWMT Swartz Lake 72.40 44 *e*P **P 13 57 31.5 +1.6**
WVOR Wild Horse Val 72.50 50 *e*P **P 13 57 32.0 +1.4**
WVOR pmax pmax
comp=Z,20nm,1.7s
WVOR Wild Horse Val 72.50 50 *e*P **P 13 57 32.0 +1.4**
comp=Z,20nm,1.7s
UOSS Minazif 72.60 288 *e*P **P 13 57 31.8 +0.4**
comp=Z,1.6nm,0.8s
GNI Garni 72.61 307 P **P 13 57 32.9 +1.5**
comp=Z,8.3nm,0.6s,baz=184,slow=8.5,SNR=9.2
GNI Garni 72.61 307*c i*P **P 13 57 32.3 +0.9**
GNI pmax pmax
comp=Z,97nm,1.2s
GNI Garni 72.61 307 *e*P **P 13 57 33.5 +2.1**
comp=Z,37nm,1.3s
AKH Akhalkalaki 72.72 309⇑*i*P **P 13 57 33.3 +1.3**
NWAO Narrogin (SRO) 72.72 202 *e*P **P 13 57 31.9 +0.3**
NWAO pmax pmax
comp=Z,65nm,1.8s
NWAO Narrogin (SRO) 72.72 202 *e*P **P 13 57 31.9 +0.3**
comp=Z,65nm,1.8s
MSO Missoula 72.82 44 P **P 13 57 33.0 +0.6**
baz=305
MSO Missoula 72.82 44 *e*P **P 13 57 33.2 +0.7**
comp=Z,10nm,1.3s
IZAR Zarasai 73.33 328 *e*P **P 13 57 36.2 +1.1**
IZAR IAmb IAmb 13 57 37.3
comp=Z,15nm,0.9s
IDID Didziasalis 73.40 327 *e*P **P 13 57 36.5 +0.9**
IDID IAmb IAmb 13 57 37.7
comp=Z,13nm,1.0s
MICGM Minsk 73.42 326 *e*P **P 13 57 36.0 +0.3**
MICGM *e*LR LR 14 32 20.0
MNK Minsk 73.42 326 *e*P **P 13 57 36.0 +0.3**
ISAL Salakas 73.50 328 *e*P **P 13 57 37.2 +1.1**
ISAL IAmb IAmb 13 57 38.5
comp=Z,28nm,1.0s
PAHR Pah Rah Range 73.53 53 *e*P **P 13 57 37.9 +1.1**
comp=Z,8.4nm,1.1s
NACGM Naroch 73.65 327 *e* **P 13 57 37.0 0.0**
NACGM *e*LQ LQ 14 30 40.0
NACGM *e*LR LR 14 32 43.0
MFID Camas Ranch 73.66 48 *e*P P 13 57 43.3 +5.8
comp=Z,7.6nm,1.1s
CMB Columbia Colle 73.80 55 *e*P **P 13 57 39.5 +1.2**
CMB pmax pmax
comp=Z,13nm,1.3s
CMB Columbia Colle 73.80 55 *e*P **P 13 57 39.5 +1.2**
comp=Z,13nm,1.3s
SOC Sochi 73.82 312*c i*P **P 13 57 37.7 -0.5**
SOC *e* 14 00 20.1
SOC *e*S **S 14 07 11.5 +4.0**
SOC pmax pmax
comp=Z,26nm,0.9s
SOC MLR MLR
comp=Z,420nm,18.0s
HRY Holter Researc 74.07 43 *e*P **P 13 57 41.4 +1.6**
LRM Limekiln Ridge 74.24 44 *e*P **P 13 57 42.2 +1.2**
FCC Fort Churchill 74.38 27 *e*P **P 13 57 41.9 +0.8**
FCC Fort Churchill 74.38 27 *e*P **P 13 57 41.9 +0.8**
HLID Hailey 74.42 47 *e*P **P 13 57 43.9 +1.9**
comp=Z,7.5nm,1.1s
DLMT Dillon 74.43 45 *e*P **P 13 57 43.6 +1.6**
comp=Z,21nm,1.1s
ANN Anapa 74.46 314 *e*P **P 13 57 39.6 -2.3**
ANN *e**PP **pP 13 57 49.5 -2.3**
ANN *e* 13 57 54.2
ANN *e* 14 00 28.9
ANN *e*S **S 14 07 11.5 -3.0**
ANN *e*SSS SSS 14 15 18.2
ANN pmax pmax
comp=Z,42nm,1.2s
BMN Battle Mountai 74.50 51 *e*P **P 13 57 44.0 +1.5**
BMN pmax pmax
comp=Z,16nm,1.3s
BMN Battle Mountai 74.50 51 *e*P **P 13 57 44.0 +1.5**
comp=Z,16nm,1.3s
BOZ Bozeman (W) 74.81 44 P **P 13 57 45.3 +1.1**
baz=307
BOZ Bozeman (W) 74.81 44 *e*P **P 13 57 45.1 +0.9**
BOZ pmax pmax
comp=Z,9.0nm,0.8s
BOZ Bozeman (W) 74.81 44 *e*P **P 13 57 45.1 +0.9**
comp=Z,8.6nm,0.8s
NC405 NORSAR Array S 74.87 337 *e*P **P 13 57 44.9 +0.9**
NC303 NORSAR Array S 74.89 338 *e*P **P 13 57 45.0 +0.9**
NV01 Mina Array Sit 74.94 53 *e*P **P 13 57 46.0 +0.8**
NVAR Mina Array Bea 74.94 53 P **P 13 57 46.1 +1.0**
comp=Z,4.3nm,0.7s,baz=294,slow=6.5,SNR=32
NVAR LR LR 14 27 06.8
comp=Z,93nm,18.6s,baz=300,slow=33
NC204 NORSAR Array S 75.03 338 *e*P **P 13 57 45.9 +0.9**
NV11 Mina Array Sit 75.03 53 *e*P **P 13 57 46.4 +0.8**
comp=Z,14nm,1.3s
NB201 NORSAR Array S 75.05 338 *e*P **P 13 57 45.9 +0.8**
NB2 NORSAR Subarra 75.08 338 P **P 13 57 45.6 +0.3**
comp=Z,21nm,0.9s,baz=40,slow=5.9
NB2 NORSAR Subarra 75.08 338 P **P 13 57 45.6 +0.3**
baz=40,slow=5.9
NOA NORSAR Array B 75.08 338 P **P 13 57 45.7 +0.3**
comp=Z,16nm,0.9s,baz=39,slow=5.7,SNR=34
NOA PP **PP 14 00 32.8 -0.1**
comp=Z,1.1nm,0.8s,baz=44,slow=8.3,SNR=2.9
NOA LR LR 14 34 33.8
comp=Z,388nm,18.9s,baz=25,slow=39
NBO02 NORSAR Array S 75.18 338 *e*P **P 13 57 46.2 +0.4**
NBO00 NORSAR Array S 75.22 338 *e*P **P 13 57 47.2 +1.2**
AKASG Malin Array Be 75.23 323 P **P 13 57 46.1 -0.1**
comp=Z,18nm,1.0s,baz=46,slow=6.1,SNR=50
AKASG LR LR 14 34 01.1
comp=Z,749nm,18.5s,baz=50,slow=38
KIEV Kiev 75.24 323*c i*P **P 13 57 46.3 -0.1**
KIEV Kiev 75.24 323 *e*P **P 13 57 46.2 -0.1**
comp=Z,21nm,0.9s
RAO Raoul Island 75.25 145 LR LR 14 24 23.1
comp=Z,143nm,19.9s,baz=336,slow=31
AK11 Malin Array Si 75.27 323 *e*P **P 13 57 46.3 -0.2**
NAO01 NORSAR Array S 75.33 338 *e*P **P 13 57 47.7 +1.0**
SUW Suwalki 75.81 328 *e*P **P 13 57 50.1 +0.6**
SUW Suwalki 75.81 328 *e*P **P 13 57 50.1 +0.6**
H17A Grant Village 76.16 45 P **P 13 57 54.8 +2.8**
baz=308
H17A Grant Village 76.16 45 *e*P **P 13 57 55.2 +3.2**
comp=Z,19nm,1.0s
IMW Indian Meadow 76.25 45 *e*P **P 13 57 54.6 +2.0**
comp=Z,10nm,0.9s
SIM Simferopol' 76.26 316 *e*P **P 13 57 52.2 -0.1**
SIM pmax pmax
comp=Z,22nm,0.7s
SIM MLR MLR
comp=Z,260nm,17.0s
FLWY Flagg Ranch 76.28 45 *e*P **P 13 57 55.5 +2.8**
comp=Z,23nm,1.3s
GRAC Grapevine Rang 76.37 54 P **P 13 57 54.7 +1.6**
baz=305
HVU Hansel Valley 76.45 48 *e*P **P 13 57 55.3 +1.6**
HVU pmax pmax
comp=Z,10.0nm,1.0s
HVU Hansel Valley 76.45 48 *e*P **P 13 57 55.3 +1.6**
comp=Z,10nm,1.0s
RLMT Red Lodge 76.45 44 P **P 13 57 55.2 +1.5**
baz=308
RLMT Red Lodge 76.45 44 *e*P **P 13 57 55.1 +1.5**
comp=Z,13nm,1.3s
MOOW Moose Ponds 76.45 45 *e*P **P 13 57 55.5 +1.7**
comp=Z,13nm,1.3s
TPAW Teton Pass 76.49 46 *e*P **P 13 57 55.6 +1.5**
comp=Z,10nm,1.0s
SFJD Kangerlussuaq 76.55 5 *i* P **P 13 57 54.8 +1.4**
SFJD Kangerlussuaq 76.55 5 *e*P **P 13 57 54.9 +1.4**
SFJD pmax pmax
comp=Z,25nm,1.0s
SFJD Kangerlussuaq 76.55 5 *e*P **P 13 57 54.9 +1.4**
comp=Z,25nm,1.0s
LOHW Long Hollow 76.62 45 *e*P **P 13 57 56.4 +1.7**
comp=Z,5.9nm,1.0s
REDW Red Top Meadow 76.63 46 *e*P **P 13 57 56.9 +2.2**
comp=Z,7.4nm,1.0s
DAC Darwin (Calif) 76.63 55 *e*P **P 13 57 55.7 +0.9**
DAC pmax pmax
comp=Z,13nm,1.5s
DAC Darwin (Calif) 76.63 55 *e*P **P 13 57 55.7 +0.9**
comp=Z,13nm,1.5s
R11A Troy Canyon, C 76.73 52 P **P 13 57 56.3 +1.0**
baz=306
R11A Troy Canyon, C 76.73 52 *e*P **P 13 57 56.1 +0.8**
comp=Z,11nm,1.1s
MPMC Manual Prospec 76.83 55 P **P 13 57 56.2 +0.3**
baz=306
FURC Furnace Creek, 77.00 54 P **P 13 57 58.0 +1.4**
baz=306
TPNV Topopah Spring 77.12 54 P **P 13 57 58.5 +1.0**
baz=306
TPNV Topopah Spring 77.12 54 *e*P **P 13 57 58.6 +1.0**
TPNV pmax pmax
comp=Z,15nm,1.2s
TPNV Topopah Spring 77.12 54 *e*P **P 13 57 58.6 +1.0**
comp=Z,15nm,1.2s
LAO LASA Array 77.13 41 P **P 13 57 58.6 +1.4**
baz=310
EDW2 Edwards Air Fo 77.17 56 P **P 13 57 59.0 +1.3**
baz=306
HWUT Hardware Ranch 77.28 48 *e*P **P 13 57 59.9 +1.5**
comp=Z,43nm,1.8s
SORM Soroca 77.32 321⇑*i*P **P 13 57 57.9 -0.3**
SORM Soroca 77.32 321⇑P **P 13 57 57.9 -0.3**
DUG Dugway, Tooele 77.37 49 P **P 13 58 00.1 +1.3**
baz=307
DUG Dugway, Tooele 77.37 49 *e*P **P 13 58 00.3 +1.4**
DUG pmax pmax
comp=Z,9.0nm,0.9s
DUG Dugway, Tooele 77.37 49 *e*P **P 13 58 00.3 +1.4**
comp=Z,9.3nm,0.9s
TCUT Toone Canyon 77.67 48 *e*P **P 13 58 02.5 +1.9**
comp=Z,14nm,0.8s
BW06 Boulder Array 77.74 46 P **P 13 58 01.8 +0.8**
baz=308
BW06 Boulder Array 77.74 46 *e*P **P 13 58 01.7 +0.8**
PD31 Pinedale Array 77.74 46 *e*P **P 13 58 01.7 +0.7**
PDAR Pinedale Array 77.74 46 P **P 13 58 01.3 +0.3**
comp=Z,1.9nm,0.6s,baz=257,slow=1.9,SNR=26
PDAR LR LR 14 28 25.8
comp=Z,57nm,21.6s,baz=346,slow=33
KIS Kishinev 77.83 320 *e*P **P 13 58 01.0 0.0**
KIS LRM MLR 14 35 20.0
comp=Z,900nm,16.0s
KIS Kishinev 77.83 320 *e*P **P 13 58 01.0 0.0**
KIS *e* 13 58 12.0
KIS *e* 14 08 20.0
KIS *e* 14 08 52.0
KIS MLR MLR
comp=Z,1μm,15.0s
KIS MLR MLR
comp=N,300nm,16.0s
KIS MLR MLR
comp=E,1μm,15.0s
KIS MLR MLR
comp=Z,900nm,16.0s
JLU Jordanelle 77.95 48 *e*P **P 13 58 04.2 +2.0**
comp=Z,5.8nm,0.9s
NLU North Lily Min 77.97 49 *e*P **P 13 58 02.4 +0.2**
comp=Z,50nm,1.0s
SHPR Sheep Range 78.09 53 *e*P **P 13 58 04.4 +1.5**
comp=Z,14nm,1.4s
LVV L'vov 78.31 324 *e*P **P 13 58 02.5 -1.2**
LVV MLR MLR
comp=N,300nm,17.0s
LVV MLR MLR
comp=E,200nm,17.0s
LVV MLR MLR
comp=Z,500nm,17.0s
BSD Bornholm Skovb 78.36 332 *i* P **P 13 58 04.2 +0.4**
comp=Z,57nm,1.2s
BSD Bornholm Skovb 78.36 332 *e*P **P 13 58 04.2 +0.4**
BSD pmax pmax
comp=Z,57nm,1.2s
BEL Belsk 78.37 327 *e*P **P 13 58 05.1 +1.1**
BEL Belsk 78.37 327 *e*P **P 13 58 05.1 +1.1**
CCUT Cedar City 78.62 52 *e*P **P 13 58 07.5 +1.5**
comp=Z,8.4nm,1.1s
TMUT Trail Mountain 78.90 49 *e*P **P 13 58 10.2 +2.6**
comp=Z,8.1nm,1.0s
LCMT Little Creek M 79.02 52 *e*P **P 13 58 09.5 +1.5**
comp=Z,9.5nm,1.0s
KWP Kalwaria Pacla 79.06 325 *e*P **P 13 58 08.7 +0.9**
KWP Kalwaria Pacla 79.06 325⇓*i*P **P 13 58 09.0 +1.2**
KWP Kalwaria Pacla 79.06 325⇓P **P 13 58 09.0 +1.2**
P17A Butcher Ranch, 79.08 49 *e*P **P 13 58 10.0 +1.6**
comp=Z,16nm,1.0s
Q16A Castle Valley 79.16 50 *e*P **P 13 58 10.4 +1.5**
comp=Z,19nm,1.2s
BUR08 Bucovina Ar. S 79.23 322 *e*P **P 13 58 09.9 +1.0**
BURAR Bucovina Array 79.24 322⇑*i*P **P 13 58 09.3 +0.3**
BURAR Bucovina Array 79.24 322⇑P **P 13 58 09.3 +0.3**
TESR Tescani 79.27 321⇓*i*P **P 13 58 09.7 +0.7**
P18A Preston Nutter 79.28 49 *e*P **P 13 58 11.4 +1.7**
comp=Z,10nm,0.9s
KNB Kanab 79.29 52 *e*P **P 13 58 11.4 +1.8**
KNB pmax pmax
comp=Z,22nm,1.2s
KNB Kanab 79.29 52 *e*P **P 13 58 11.4 +1.8**
comp=Z,22nm,1.2s
CFR Carcaliu 79.38 319⇓*i*P **P 13 58 10.2 +0.6**
CFR Carcaliu 79.38 319⇓P **P 13 58 10.2 +0.6**
SRU San Rafael Swe 79.43 49 *e*P **P 13 58 11.5 +1.2**
SRU pmax pmax
comp=Z,16nm,0.8s
SRU San Rafael Swe 79.43 49 *e*P **P 13 58 11.5 +1.2**
comp=Z,16nm,0.8s
VRI Vrincioaia 79.66 320⇑*i*P **P 13 58 11.2 0.0**
VRI Vrincioaia 79.66 320⇑P **P 13 58 11.2 0.0**
PLOR Plostina 79.71 320⇓*i*P **P 13 58 12.7 +1.2**
PLOR Plostina 79.71 320⇓P **P 13 58 12.7 +1.2**
ULM Lac du Bonnet 79.77 34 P **P 13 58 11.6 -0.1**
comp=Z,1.8nm,0.4s,baz=274,slow=2.1,SNR=2.9
ULM LR LR 14 38 16.5
comp=Z,64nm,18.9s,baz=328,slow=39
BR131 Keskin Array S 79.77 312 *e*P **P 13 58 12.8 +0.7**
BRTR Keskin Array B 79.77 312 P **P 13 58 12.3 +0.2**
comp=Z,11nm,1.0s,baz=108,slow=4.0,SNR=43
BRTR PP **PP 14 01 14.8 +1.9**
comp=Z,1.5nm,0.9s,baz=46,slow=6.2,SNR=3.8
BRTR LR LR 14 39 35.7
comp=Z,150nm,18.7s,baz=37,slow=40
BRTR Keskin Array B 79.77 312 *i* P **P 13 58 12.8 +0.7**
BRTR pmax pmax
comp=Z,12nm,1.0s
HARR Harsova 79.81 319⇓*i*P **P 13 58 13.6 +1.6**
HARR Harsova 79.81 319⇓P **P 13 58 13.6 +1.6**
STHS Stebnicka Huta 79.89 325 *e*P **P 13 58 10.6 -1.8**
STHS *e* 13 58 27.5
STHS pmax pmax
comp=Z,14nm,1.0s
STHS Stebnicka Huta 79.89 325 *e*P **P 13 58 10.6 -1.8**
STHS *e* 13 58 27.5
UZH Uzhgorod 79.95 324 *e*P **P 13 58 09.4 -3.3**
UZH *e* 13 58 22.2
RSSD Black Hills 79.97 42 P **P 13 58 13.4 +0.3**
baz=312
RSSD Black Hills 79.97 42 *e*P P 13 58 18.4 +5.3
RSSD pmax pmax
comp=Z,5.0nm,0.8s
RSSD Black Hills 79.97 42 *e*P P 13 58 18.4 +5.3
comp=Z,4.9nm,0.8s
OJC Ojcow 79.97 327 *e*P **P 13 58 13.2 +0.5**
OJC Ojcow 79.97 327 *e*P **P 13 58 13.4 +0.6**
OJC pmax pmax
comp=Z,28nm,1.1s
OJC Ojcow 79.97 327 *e*P **P 13 58 13.4 +0.6**
comp=Z,28nm,1.1s
U15A North Rim 79.98 52 *e*P **P 13 58 15.0 +1.6**
CRVS Cervenica-Dubn 80.15 325 *e*P **P 13 58 14.5 +0.7**
CRVS Cervenica-Dubn 80.15 325 *e*P **P 13 58 14.5 +0.7**
O20A White River Ci 80.16 47 P **P 13 58 15.1 +0.8**
baz=310
O20A White River Ci 80.16 47 *e*P **P 13 58 15.5 +1.2**
comp=Z,14nm,1.0s
ANTO Ankara 80.19 313 *e*P **P 13 58 15.5 +1.3**
ANTO pmax pmax
comp=Z,26nm,1.0s
ANTO Ankara 80.19 313 *e*P **P 13 58 15.5 +1.3**
comp=Z,26nm,1.0s
I25A Rochford 80.20 42 P **P 13 58 14.9 +0.6**
baz=312
BR231 Keskin MP Arra 80.22 313 *e*P **P 13 58 13.5 -0.9**
B31A Greenbush Farm 80.26 36 P **P 13 58 14.8 +0.5**
baz=315
MSAB Monastry St. A 80.27 318⇑*i*P **P 13 58 16.0 +1.6**
D29A Pettibone, Tap 80.27 38 P **P 13 58 15.0 +0.5**
baz=314
DOPR Dopca 80.28 321⇓*i*P **P 13 58 16.5 +2.0**
MLR Muntele Rosu 80.32 320⇓*i*P **P 13 58 16.1 +1.2**
MLR Muntele Rosu 80.32 320⇓P **P 13 58 16.1 +1.2**
MLR Muntele Rosu 80.32 320 *e*P **P 13 58 15.9 +1.0**
comp=Z,15nm,1.3s
NIE Niedzica 80.32 326 *e*P **P 13 58 15.8 +1.1**
NIE Niedzica 80.32 326 *e*P **P 13 58 15.8 +1.1**
C31A Landman Farms, 80.66 36 P **P 13 58 16.9 +0.4**
baz=315
CJR Cluj-Napoca 80.67 322⇓*i*P P 13 58 23.3 +6.7
CJR Cluj-Napoca 80.67 322⇓P P 13 58 23.3 +6.7
PV10 Paradox Valley 80.80 49 *e*P **P 13 58 19.5 +1.7**
VOIR 80.81 321⇓*i*P pP 13 58 27.2 -0.3
VOIR 80.81 321⇓P pP 13 58 27.2 -0.3
PV04 Paradox Valley 80.87 49 *e*P **P 13 58 18.9 +0.8**
LANS Liptovska Anna 80.89 326 *e*P **P 13 58 19.2 +1.4**
LANS *e* 13 58 32.5
LANS Liptovska Anna 80.89 326 *e*P **P 13 58 19.2 +1.4**
LANS *e* 13 58 32.5
KECS Kecovo 80.91 325 *e*P **P 13 58 16.5 -1.3**
KECS pmax pmax
comp=Z,4.0nm,1.2s
KECS Kecovo 80.91 325 *e*P **P 13 58 16.5 -1.3**
A33A Warroad 80.94 34 P **P 13 58 18.0 0.0**
baz=316
PV05 Paradox Valley 80.95 49 *e*P **P 13 58 16.0 -2.6**
MTUR Matau 80.95 320⇑*i*P P 13 58 25.4 +7.1
MTUR Matau 80.95 320⇑P P 13 58 25.4 +7.1
OKC Ostrava-Krasne 80.97 327 *e*P **P 13 58 19.0 +0.8**
OKC *e*pP **sP 13 58 30.7 -1.1**
OKC AMS AMS 14 38 50.0
comp=Z,600nm,15.8s
OKC Ostrava-Krasne 80.97 327 *e*P **P 13 58 19.0 +0.8**
OKC *e* 13 58 30.7
OKC MLR MLR
comp=Z,600nm,15.8s
N23A Red Feather La 81.02 45 P **P 13 58 20.0 +1.1**
baz=311
N23A Red Feather La 81.02 45 *e*P **P 13 58 20.4 +1.5**
comp=Z,17nm,1.0s
KSP Ksiaz 81.02 329 *e*P **P 13 58 19.3 +0.9**
KSP Ksiaz 81.02 329 *e*P **P 13 58 19.3 +0.9**
Y14A Wickenburg 81.04 54 *e*P **P 13 58 20.1 +1.1**
DRGR 81.05 323⇓*i*P **P 13 58 19.6 +0.9**
DRGR 81.05 323⇓P **P 13 58 19.6 +0.9**
ARR Arges 81.08 321⇓*i*P **P 13 58 20.4 +1.5**
MORC Moravsky Berou 81.28 327⇑*i*P **P 13 58 19.1 -0.8**
MORC Moravsky Berou 81.28 327⇑P **P 13 58 19.2 -0.7**
MORC Moravsky Berou 81.28 327 *e*P **P 13 58 20.4 +0.5**
comp=Z,64nm,1.1s
DPC Dobruska-Polom 81.38 328 *e*P **P 13 58 21.2 +0.8**
DPC *e*pP **pP 13 58 31.5 +1.1**
DPC AMS AMS 14 39 00.0
comp=Z,600nm,16.2s
DPC Dobruska-Polom 81.38 328 *e*P **P 13 58 21.2 +0.8**
DPC *e* 13 58 31.5
DPC MLR MLR
comp=Z,600nm,16.2s
KRLC Kraliky 81.39 328 *e*P **P 13 58 20.9 +0.5**
KRLC Kraliky 81.39 328 *e*P **P 13 58 20.9 +0.5**
UPC Upice 81.39 329 *e*P **P 13 58 21.4 +1.0**
UPC *e*x x 13 58 35.3
UPC AMS AMS 14 39 00.0
comp=Z,900nm,14.2s
UPC Upice 81.39 329 *e*P **P 13 58 21.4 +1.0**
UPC *e* 13 58 35.3
UPC MLR MLR
comp=Z,900nm,14.2s
LOT Lotru 81.46 321⇑*i*P **P 13 58 22.1 +1.1**
E31A Nome 81.46 37 P **P 13 58 21.1 +0.3**
baz=315
PSZ Piszkesteto 81.59 325⇓*i*P **P 13 58 22.7 +1.2**
PSZ Piszkesteto 81.59 325⇓P **P 13 58 22.7 +1.2**
PSZ Piszkesteto 81.59 325 *e*P **P 13 58 22.3 +0.7**
DEV Deva 81.59 322⇑*i*P pP 13 58 34.1 +2.6

DEV	**Deva**	**81.59**	**322**	⇑P	pP		13 58 34.1 +2.6
X16A	**Lo Mia Camp, P**	**81.77**	**53**	*e*P	**P**		**13 58 24.5 +1.6**
	comp=Z,14nm,1.4s						
MVCO	**Mesa Verde**	**81.87**	**50**	P	**P**		**13 58 24.5 +1.1**
	baz=310						
MVCO	**Mesa Verde**	**81.87**	**50**	*e*P	**P**		**13 58 24.6 +1.1**
	comp=Z,9.9nm,1.0s						
ISCO	**Idaho Springs**	**81.92**	**46**	P	**P**		**13 58 24.3 +0.6**
	baz=311						
ISCO	**Idaho Springs**	**81.92**	**46**	*e*P	**P**		**13 58 25.1 +1.3**
ISCO				pmax	pmax		
	comp=Z,7.0nm,1.0s						
ISCO	**Idaho Springs**	**81.92**	**46**	*e*P	**P**		**13 58 25.1 +1.3**
	comp=Z,6.9nm,1.0s						
BRG	**Berggiesshubel**	**81.97**	**330**	*e*P	**P**		**13 58 24.0 +0.6**
	comp=Z,11nm,1.1s						
BRG				*e*			13 58 35.3
	comp=Z,18nm,1.5s						
BRG				*e*			13 58 47.8
	comp=Z,11nm,1.4s						
	comp=N,448nm,14.7s						
	comp=E,464nm,15.6s						
	comp=Z,772nm,14.4s						
BRG	**Berggiesshubel**	**81.97**	**330**	*e*P	**P**		**13 58 24.0 +0.6**
BRG				*e*			13 58 35.3
BRG				pmax	pmax		
	comp=Z,11nm,1.1s						
BRG				pmax	pmax		
	comp=Z,18nm,1.5s						
BRG				pmax	pmax		
	comp=Z,11nm,1.4s						
BRG				MLR	MLR		
	comp=N,448nm,14.7s						
BRG				MLR	MLR		
	comp=E,464nm,15.6s						
BRG				MLR	MLR		
	comp=Z,772nm,14.4s						
PVCC	**Panska Ves**	**81.98**	**329**	*e*P	**P**		**13 58 24.5 +1.0**
PVCC				AMS	AMS		14 38 20.0
	comp=Z,600nm,14.7s						
PVCC	**Panska Ves**	**81.98**	**329**	*e*P	**P**		**13 58 24.5 +1.0**
PVCC				MLR	MLR		
	comp=Z,600nm,14.7s						
CLL	**Collm**	**82.01**	**331**	⇑*i*P	**P**		**13 58 23.5 -0.1**
	comp=Z,22nm,1.2s						
CLL				*i*			13 58 28.0
CLL				*e*			13 58 33.0
CLL				*e*			13 58 35.0
	comp=Z,24nm,1.2s						
CLL				*e*PP	**PP**		**14 01 29.0 -1.8**
CLL				*e*S	**S**		**14 08 35.0 -0.5**
CLL				*e*(SS)			14 15 06.0
CLL	**Collm**	**82.01**	**331**	⇑*i*P	**P**		**13 58 23.5 -0.1**
CLL				*e*			13 58 35.0
CLL				*e*S	**S**		**14 08 35.0 -0.5**
CLL				pmax	pmax		
	comp=Z,22nm,1.2s						
CLL	**Collm**	**82.01**	**331**	*e*P	**P**		**13 58 23.6 -0.1**
	comp=Z,20nm,1.1s						
VRAC	**Vranov**	**82.05**	**327**	⇓*i*P	**P**		**13 58 25.2 +1.3**
VRAC	**Vranov**	**82.05**	**327**	⇓P	**P**		**13 58 25.2 +1.3**
B35A	**Bob, Littlefor**	**82.11**	**34**	P	**P**		**13 58 24.6 +0.3**
	baz=318						
GOPC	**GO Pecny, Ondr**	**82.36**	**329**	*e*P	**P**		**13 58 26.1 +0.6**
GOPC				AMS	AMS		14 39 30.0
	comp=Z,700nm,14.3s						
GOPC	**GO Pecny, Ondr**	**82.36**	**329**	*e*P	**P**		**13 58 26.1 +0.6**
GOPC				MLR	MLR		
	comp=Z,700nm,14.3s						
D34A	**Park Rapids**	**82.37**	**35**	P	**P**		**13 58 26.1 +0.5**
	baz=317						
PRU	**Pruhonice**	**82.40**	**329**	*e*P	**P**		**13 58 26.3 +0.6**
PRU				*e*pP	**sP**		**13 58 38.5 -0.9**
PRU				AMS	AMS		14 39 30.0
	comp=Z,700nm,12.8s						
PRU	**Pruhonice**	**82.40**	**329**	*e*P	**P**		**13 58 26.3 +0.6**
PRU				*e*			13 58 38.5
PRU				MLR	MLR		
	comp=Z,700nm,12.8s						
C35A	**Jirik Farms, M**	**82.49**	**34**	P	**P**		**13 58 26.5 +0.3**
	baz=318						
TREC	**Trest**	**82.53**	**328**	*e*P	**P**		**13 58 27.3 +0.9**
TREC				AMS	AMS		14 38 30.0
	comp=Z,600nm,16.5s						
TREC	**Trest**	**82.53**	**328**	*e*P	**P**		**13 58 27.3 +0.9**
TREC				MLR	MLR		
	comp=Z,600nm,16.5s						
S22A	**4UR Ranch, Cre**	**82.54**	**48**	P	**P**		**13 58 27.8 +0.8**
	baz=311						
S22A	**4UR Ranch, Cre**	**82.54**	**48**	*e*P	**P**		**13 58 28.8 +1.7**
	comp=Z,6.6nm,1.0s						
F33A	**5 Mile Ranch,**	**82.75**	**37**	P	**P**		**13 58 27.9 +0.3**
	baz=316						
MDVR	**Moldovita**	**82.96**	**322**	⇑*i*P	**P**		**13 58 29.0 +0.2**
NKC	**Novy Kostel**	**83.07**	**330**	AMS	AMS		14 38 50.0
	comp=Z,700nm,14.8s						
G33A	**Ortonville**	**83.14**	**37**	P	**P**		**13 58 30.2 +0.6**
	baz=316						
PMOR	**Pomariorio Ree**	**83.34**	**114**	*e*T	T		15 30 03.3
	comp=Z,2.0nm,0.2s						
H33A	**Prehn Over Nor**	**83.36**	**38**	P	**P**		**13 58 31.5 +0.7**
	baz=316						
KHC	**Kasperske Hory**	**83.47**	**329**	*e*P	**P**		**13 58 31.6 +0.3**
KHC				*e*pP	**pP**		**13 58 42.0 +0.7**
KHC				*e*PP	**PP**		**14 01 43.0 +0.1**
KHC				AMS	AMS		14 40 20.0
	comp=Z,700nm,13.8s						
KHC	**Kasperske Hory**	**83.47**	**329**	*e*P	**P**		**13 58 31.6 +0.3**
KHC				*e*			13 58 42.0
KHC				*e*			14 01 43.0
KHC				MLR	MLR		
	comp=Z,700nm,13.8s						
KHC	**Kasperske Hory**	**83.47**	**329**	*e*P	**P**		**13 58 31.0 -0.3**
	comp=Z,5.2nm,1.0s						
TUC	**Tucson**	**83.51**	**55**	P	**P**		**13 58 32.2 +0.3**
	baz=309						
GEC2	**GERESS Array S**	**83.63**	**329**	*e*P	**P**		**13 58 32.6 +0.4**
GEC2				pmax	pmax		
	comp=Z,13nm,1.4s						
GEC2	**GERESS Array S**	**83.63**	**329**	*e*P	**P**		**13 58 32.6 +0.4**
	comp=Z,13nm,1.4s						
GERES	**GERESS Array B**	**83.63**	**329**	P	**P**		**13 58 32.3 +0.1**
	comp=Z,2.6nm,0.8s,baz=40,slow=5.2,SNR=22						
GERES				PP	**PP**		**14 01 44.6 +0.3**
	comp=Z,0.2nm,0.3s,baz=37,slow=9.9,SNR=3.5						
GERES				LR	LR		14 38 09.0
	comp=Z,334nm,20.4s,baz=17,slow=37						
GEA0	**GERESS Array S**	**83.64**	**329**	*e*P	**P**		**13 58 32.0 -0.2**
C38A	**Sawbill Land.**	**83.69**	**33**	P	**P**		**13 58 32.6 +0.2**
	baz=319						
PPT2	**Papeete2**	**83.79**	**117**	*e*LR	LR		14 24 44.1
	comp=Z,281nm,21.2s,baz=315						
ECSD	**EROS Data Cent**	**84.11**	**39**	P	**P**		**13 58 34.7 0.0**
	baz=316						
ECSD	**EROS Data Cent**	**84.11**	**39**	*e*P	**P**		**13 58 35.0 +0.3**
	comp=Z,8.2nm,1.0s						
H35A	**Sunnyside Ranc**	**84.29**	**37**	P	**P**		**13 58 36.3 +0.8**
	baz=317						
T25A	**Trinidad**	**84.39**	**47**	P	**P**		**13 58 37.4 +0.9**
	baz=312						
T25A	**Trinidad**	**84.39**	**47**	*e*P	**P**		**13 58 37.7 +1.3**
	comp=Z,9.0nm,0.9s						
ANMO	**Albuquerque**	**84.59**	**50**	P	**P**		**13 58 38.8 +1.3**
	baz=311						
ANMO	**Albuquerque**	**84.59**	**50**	⇑*e*P	**P**		**13 58 38.7 +1.3**
ANMO				pmax	pmax		
	comp=Z,4.0nm,1.2s						
ANMO	**Albuquerque**	**84.59**	**50**	*e*P	**P**		**13 58 38.8 +1.3**
	comp=Z,12nm,1.2s						
H36A	**Jessenland, He**	**84.81**	**37**	P	**P**		**13 58 39.0 +0.8**
	baz=318						
319A	**Douglas**	**85.09**	**54**	*e*P	**P**		**13 58 41.6 +1.6**
MEM	**Membach**	**85.22**	**334**	P	**P**		**13 58 40.2 +0.2**
121A	**Cookes Peak, D**	**85.32**	**53**	*e*P	**P**		**13 58 41.5 +0.4**
	comp=Z,12nm,1.0s						
I37A	**Lemond, Waseca**	**85.49**	**37**	P	**P**		**13 58 42.5 +1.0**
	baz=318						
STU	**Stuttgart**	**85.52**	**331**	*e*P	**P**		**13 58 41.8 +0.2**
STU				pmax	pmax		
	comp=Z,31nm,1.1s						
STU	**Stuttgart**	**85.52**	**331**	*e*P	**P**		**13 58 41.8 +0.2**
	comp=Z,31nm,1.1s						
BCLA	**Clavier**	**85.63**	**334**	P	**P**		**13 58 42.5 +0.4**
	comp=Z,22nm,2.0s						
SCHQ	**Schefferville**	**85.86**	**16**	LR	LR		14 40 16.6
	comp=Z,164nm,19.5s,baz=308,slow=38						
PDG	**Podgorica**	**85.89**	**321**	⇑*i*P	**P**		**13 58 44.2 +0.6**
SNF	**Seneffe**	**85.91**	**335**	P	**P**		**13 58 43.8 +0.4**
J37A	**Redenius Farm,**	**85.94**	**37**	P	**P**		**13 58 44.3 +0.5**
	baz=318						
WLF	**Walferdange**	**85.95**	**333**	P	**P**		**13 58 44.7 +1.0**
DOU	**Dourbes**	**86.15**	**334**	P	**P**		**13 58 45.0 +0.3**
BFO	**Black Forest**	**86.22**	**331**	*e*P	**P**		**13 58 45.4 +0.3**
BFO				pmax	pmax		
	comp=Z,30nm,1.3s						
BFO	**Black Forest**	**86.22**	**331**	*e*P	**P**		**13 58 45.4 +0.3**
	comp=Z,30nm,1.3s						
K37A	**Belmond**	**86.30**	**38**	P	**P**		**13 58 46.1 +0.5**
	baz=318						
O34A	**Beatrice**	**86.62**	**41**	P	**P**		**13 58 47.8 +0.5**
	baz=316						
P34A	**Walnut Farm, R**	**87.01**	**42**	P	**P**		**13 58 49.0 -0.2**
	baz=316						
N37A	**Lee Faris, Mou**	**87.50**	**39**	P	**P**		**13 58 52.1 +0.6**
	baz=318						
O36A	**Bolckow**	**87.57**	**40**	P	**P**		**13 58 52.5 +0.7**
	baz=317						
TBI	**Tubuai**	**87.65**	**121**	*e*LR	LR		14 26 37.7
	comp=Z,331nm,26.5s						
TBI	**Tubuai**	**87.65**	**121**	*e*T	T		15 35 30.7
	comp=Z,2.8nm,0.3s						
MATE	**Matera**	**88.50**	**322**	⇓*i*P	**P**		**13 58 56.1 -0.1**
TIP	**Timpagrande**	**89.58**	**321**	⇑*i*P	**P**		**13 59 00.7 -0.7**
R39A	**Chumby, Stover**	**89.92**	**40**	P	**P**		**13 59 03.0 +0.1**
	baz=319						
TX31	**Lajitas Ar. Si**	**90.08**	**53**	*e*P	**P**		**13 59 05.2 +1.2**
TXAR	**Lajitas Array**	**90.08**	**53**	P	**P**		**13 59 04.7 +0.7**
	comp=Z,1.9nm,0.7s,baz=302,slow=3.3,SNR=27						
TXAR				LR	LR		14 39 49.6
	comp=Z,128nm,18.0s,baz=0.0,slow=36						
W35A	**Tecumseh**	**90.15**	**45**	P	**P**		**13 59 04.6 +0.5**
	baz=316						
T38A	**Diamond**	**90.20**	**42**	P	**P**		**13 59 04.6 +0.3**
	baz=318						
V36A	**Jenks**	**90.22**	**44**	P	**P**		**13 59 05.0 +0.6**
	baz=317						
S39A	**Bolivar**	**90.24**	**41**	P	**P**		**13 59 04.8 +0.4**
	baz=318						
U38A	**Gravette**	**90.59**	**42**	P	**P**		**13 59 06.5 +0.4**
	baz=318						
U40A	**Yellville**	**91.48**	**41**	P	**P**		**13 59 10.9 +0.6**
	baz=319						
X39A	**Fountain Ranch**	**92.17**	**43**	P	**P**		**13 59 14.3 +0.8**
	baz=318						
W40A	**Ferguson Farm,**	**92.23**	**42**	P	**P**		**13 59 14.0 +0.3**
	baz=319						
V41A	**Mountainview**	**92.28**	**41**	P	**P**		**13 59 14.2 +0.2**
	baz=319						
MIAR	**Mount Ida**	**92.44**	**43**	P	**P**		**13 59 15.7 +1.0**
	baz=318						
X201	**Greenbrier Sit**	**92.54**	**42**	*e*P	**P**		**13 59 17.3 +2.2**
	comp=Z,10nm,1.1s						
WHAR	**Wooly Hollow**	**92.58**	**42**	*e*P	**P**		**13 59 16.3 +1.0**
	comp=Z,9.2nm,0.9s						
KEST	**Kesra**	**95.95**	**323**	LR	LR		14 48 29.4
	comp=Z,310nm,19.4s,baz=340,slow=39						
RKT	**Rikitea**	**97.93**	**113**	*e*LR	LR		14 31 32.4
	comp=Z,284nm,24.2s						
ESDC	**Sonseca Array**	**98.19**	**334**	PP	PP		14 03 38.5 -1.0
	comp=Z,0.1nm,0.3s,baz=22,slow=8.4,SNR=4.8						
ESDC				LR	LR		14 48 50.0
	comp=Z,273nm,19.9s,baz=0.0,slow=38						
TORD	**Torodi Ar. Bea**	**118.26**	**315**	PP	PP		14 06 04.8 -1.7
	comp=Z,2.7nm,1.0s,baz=32,slow=5.9,SNR=7.1						
LPAZ	**La Paz**	**146.53**	**61**	PKPbc	**PKPbc**		**14 05 46.2 0.0**
	comp=Z,1.9nm,0.7s,baz=337,slow=2.0,SNR=11						

*IDC **28** 13:54:08.8±1.7,37°.08N×140°.84E,h0km,mb3.8/4,*
mb1 3.9/6,mb1mx3.5/53,mbtmp3.8/6,ML3.3/2,Error
ellipse: s-maj=36.1km s-min=22.6km az=61.0
*ISCJB **28** 13:54:10.6±0.6,37°.03N±0°.03×140°.78E±0°.05,h16km±5km,*
mb3.8/4,Error ellipse: s-maj=7.2km s-min=5.1km az=14.3
*JMA **28** 13:54:11.2,37°.03N×140°.68E,h9km±1km,M3.6*
Broadband fault plane solution: P waves. NP1:
φs285.00000°,δ59.00000°,λ-100.00000°. NP2:
φs125.00000°,δ33.00000°,λ-73.00000°. Principal axes:
T Plg13.0000°, Azm23.0000°; N Plg9.0000°,
Azm291.0000°; P Plg74.0000°, Azm168.0000°;
JMA Felt II J1.

ISC 28 13:54:11.2±0.9,37°.04N±0°.03×140°.68E±0°.04,h10km±7km,
n20,σ0s71/24,mb3.8/4,6C,Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.11**	**57**	⇑P	**Pg**	**13 54 13.9**	**0.0**
ONAJ				S	**Sg**	**13 54 15.8**	**-0.1**
JFK	**Kawauchi**	**0.36**	**25**	⇑P	**Pg**	**13 54 18.3**	**0.0**
JFK				S	**Sg**	**13 54 23.4**	**+0.3**
JHO	**Hitachi**	**0.44**	**192**	⇑P	**Pg**	**13 54 19.4**	**-0.3**
JHO				S	**Sg**	**13 54 25.4**	**-0.1**
JFT	**Otama**	**0.55**	**330**	⇑P	**Pg**	**13 54 22.1**	**+0.2**
JFT				S	**Sg**	**13 54 29.8**	**+0.6**
JSB	**Shiboa**	**0.61**	**264**	⇑P	**Pb**	**13 54 23.8**	**-0.3**
JSB				S	**Sb**	**13 54 32.3**	**-0.5**
JMM	**Marumori**	**0.83**	**6**	⇑P	**Pg**	**13 54 26.6**	**-0.6**
JMM				S	**Sg**	**13 54 38.0**	**0.0**
JFY	**Yanaizu**	**0.86**	**295**	P	**Pg**	**13 54 27.8**	**0.0**
JFY				S	**Sg**	**13 54 38.9**	**-0.1**
MJAR	**Matsushiro Arr**	**2.05**	**257**	Pn	**Pn**	**13 54 46.7**	**+0.9**
	12nm,0.3s,baz=83,slow=18,SNR=40						
MJAR				Sn	**Sb**	**13 55 12.8**	**-1.2**
	25nm,0.3s,baz=256,slow=24,SNR=13						
MAT	**Matsushiro**	**2.05**	**257**	P	**Pn**	**13 54 46.8**	**+1.1**
MAT				S	**Sb**	**13 55 14.2**	**+0.1**
JHJ	**Hachijo jima 2**	**3.98**	**191**	Pn	**Pn**	**13 55 13.8**	**+1.5**
	4.8nm,0.3s,baz=107,slow=19,SNR=2.5						
JHJ				Sn	**Sn**	**13 56 00.2**	**+1.1**
	12nm,0.3s,baz=90,slow=20,SNR=4.1						
H11N2	**WAKE ISLAND Hy**	**28.66**	**120**	T	T	14 30 00.4	
	baz=313,slow=75,SNR=40						
H11N1	**WAKE ISLAND Hy**	**28.66**	**120**	T	T	14 29 55.0	
	baz=313,slow=75,SNR=32						
H11N3	**WAKE ISLAND Hy**	**28.67**	**120**	T	T	14 30 01.8	
	baz=313,slow=75,SNR=42						
H11S1	**WAKE ISLAND Hy**	**29.36**	**122**	T	T	14 30 50.0	
	baz=314,slow=75,SNR=24						
H11S3	**WAKE ISLAND Hy**	**29.36**	**122**	T	T	14 30 47.6	
	baz=314,slow=75,SNR=22						
H11S2	**WAKE ISLAND Hy**	**29.37**	**122**	T	T	14 30 53.2	
	baz=314,slow=75,SNR=20						
MKAR	**Makanchi Array**	**43.62**	**302**	P	**P**	**14 02 15.6**	**-0.1**
	0.5nm,0.6s,baz=86,slow=9.6,SNR=3.7						
KURBB	**Kurchatov Arra**	**45.54**	**308**	P	**P**	**14 02 30.4**	**-0.5**
	0.5nm,0.5s,baz=83,slow=7.8,SNR=4.3						
WRA	**Warramunga Arr**	**56.99**	**187**	P	**P**	**14 03 56.0**	**-1.1**
	1.8nm,0.5s,baz=3.6,slow=7.2,SNR=37						
ASAR	**Alice Springs**	**60.72**	**187**	P	**P**	**14 04 22.4**	**-0.5**
	0.6nm,0.7s,baz=15,slow=11,SNR=11						

*IDC **28** 14:10:35.0±1.0,35°.12N×141°.43E,h0km,mb3.2/5,*
mb1 3.4/6,mb1mx3.3/39,mbtmp3.2/6,ML2.8/2,MS3.2/1,
Ms1 3.4/1,ms1mx2.5/18,Error ellipse: s-maj=31.6km
s-min=18.7km az=112.0
*ISCJB **28** 14:10:36.8±0.8,35°.12N±0°.05×141°.46E±0°.09,h27km,*
mb3.2/5,MS3.2/1,Error ellipse: s-maj=10.7km
s-min=6.9km az=0.6
*JMA **28** 14:10:36.1±0.3,35°.15N×141°.53E,h47km±5km,M2.2*

ISC 28 14:10:38.4±1.0,35°.13N±0°.06×141°.4E±0°.1,h27km,n19,
σ0s89/13,mb3.2/5,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**0.57**	**213**	P	**Pn**	**14 10 49.4**	**-0.8**
BSO1				X		14 11 02.5	
CHOJ	**Chosi**	**0.70**	**325**	P	**Pb**	**14 10 50.7**	**-1.3**
CHOJ				*e*S	**Sn**	**14 11 02.1**	**-0.3**
BSO3	**Boso 3**	**0.77**	**245**	P	**Pn**	**14 10 52.4**	**-0.8**
BSO4	**Boso 4**	**0.85**	**261**	P	**Pb**	**14 10 54.3**	**-0.1**
BSO4				*e*X		14 11 09.4	
JIM2	**Oshima 3**	**1.64**	**256**	P	**Pn**	**14 11 04.6**	**-0.8**
JHJ	**Hachijo jima 2**	**2.40**	**213**	Pn	**Pn**	**14 11 14.7**	**-1.1**
	11nm,0.3s,baz=343,slow=19,SNR=4.0						
JHJ				Sn	**Sn**	**14 11 45.5**	**+1.2**
	16nm,0.3s,baz=253,slow=19,SNR=4.0						
MJAR	**Matsushiro Arr**	**2.92**	**300**	Pn	**Pn**	**14 11 23.6**	**+0.5**
	0.5nm,0.3s,baz=332,slow=19,SNR=9.1						
H11N2	**WAKE ISLAND Hy**	**27.26**	**118**	T	T	14 45 39.9	
	baz=306						
H11N1	**WAKE ISLAND Hy**	**27.27**	**118**	T	T	14 45 21.7	
	baz=306						
H11N3	**WAKE ISLAND Hy**	**27.28**	**118**	T	T	14 45 27.3	
	baz=306						
H11S1	**WAKE ISLAND Hy**	**27.91**	**120**	T	T	14 45 50.6	
	baz=311						
H11S3	**WAKE ISLAND Hy**	**27.91**	**120**	T	T	14 45 42.7	
	baz=311						
H11S2	**WAKE ISLAND Hy**	**27.93**	**120**	T	T	14 45 55.9	
	baz=311						
CMAR	**Chiang Mai Arr**	**41.00**	**257**	LR	LR	14 36 23.6	
	comp=Z,31nm,18.1s,baz=95,slow=38						
MKAR	**Makanchi Array**	**45.11**	**304**	P	**P**	**14 18 53.1**	**+0.8**
	0.2nm,0.6s,baz=97,slow=7.4,SNR=2.8						
ILAR	**Eielson Array**	**51.13**	**32**	P	**P**	**14 19 38.9**	**+0.4**
	0.2nm,0.7s,baz=288,slow=6.6,SNR=3.1						
WRA	**Warramunga Arr**	**55.18**	**188**	P	**P**	**14 20 08.5**	**-0.2**
	0.3nm,0.6s,baz=3.9,slow=7.8,SNR=6.6						
ASAR	**Alice Springs**	**58.90**	**188**	P	P	14 20 37.4	+2.3
	0.2nm,0.9s,baz=18,slow=11,SNR=4.3						
YKA	**Yellowknife Ar**	**65.47**	**30**	P	**P**	**14 21 19.0**	**+0.4**
	0.1nm,0.5s,baz=281,slow=6.2,SNR=2.7						

IDC 28 14:15:50.1±45.0,17°.07S×173°.25W,h0km,mb4.3/3,
mb1 4.4/3,mb1mx3.7/46,mbtmp4.3/3,MS3.8/1,Ms1 3.8/1,
ms1mx3.0/40,Error ellipse: s-maj=863.0km
s-min=169.3km az=80.0,Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**22.74**	**200**	LR	LR	14 27 13.5	
	comp=Z,260nm,20.9s,baz=314,slow=30						
STKA	**Stephens Creek**	**43.35**	**241**	P	P	14 23 55.1	+0.8
	1.8nm,0.7s,baz=85,slow=12,SNR=5.5						
WRA	**Warramunga Arr**	**49.62**	**258**	P	P	14 24 43.2	-0.5
	1.5nm,0.4s,baz=98,slow=6.8,SNR=65						
ASAR	**Alice Springs**	**49.75**	**253**	P	P	14 24 44.3	-0.4
	4.5nm,0.6s,baz=89,slow=8.8,SNR=131						

*NIED **28** 14:18:00,37°.80N×144°.00E,h8km,Mw4.1 Best double*
couple: M0 1.65000×10^15 NP1:φs24.00000°,δ24.00000°,
λ-92.00000°. NP2:φs206.00000°,δ66.00000°,
λ-89.00000°.
*IDC **28** 14:18:32.0±0.6,37°.61N×144°.22E,h0km,mb4.0/19,*
mb1 4.3/25,mb1mx4.1/50,mbtmp4.1/25,ML4.1/5,MS3.0/4,
Ms1 3.0/4,ms1mx2.7/45,Error ellipse: s-maj=15.5km
s-min=13.4km az=127.0
*ISCJB **28** 14:18:33.5±1.3,37°.73N±0°.03×144°.07E±0°.04,h17km±9km,*
mb4.3/39,MS3.2/2,Error ellipse: s-maj=5.8km
s-min=4.8km az=162.5
*JMA **28** 14:18:35.6±0.2,37°.80N×144°.05E,h45km,M4.3*
*MOS **28** 14:18:35.1±1.5,37°.76N×144°.25E,h32km,mb4.4/19,Error*
ellipse: s-maj=9.7km s-min=6.6km az=105.8
*NEIC **28** 14:18:37.1±0.3,37°.63N×144°.16E,h35km,mb4.6/8,Error*
ellipse: s-maj=8.1km s-min=6.2km az=149.0

ISC 28 14:18:32.7±2.5,37°.76N±0°.05×144°.14E±0°.05,h1km±15km,
n103,σ1s85/113,mb4.3/39,7C-7D,Off east coast of
Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.31**	**288**	P	**Pn**	**14 19 11.3**	**-0.6**
JIO				S	**Sn**	**14 19 37.6**	**-3.3**
OFUJ	**Ofunato**	**2.34**	**305**	P	**Pn**	**14 19 11.7**	**-0.7**
OFUJ				*e*S	**Sn**	**14 19 39.0**	**-2.9**
JMK	**Ichinoseki**	**2.58**	**298**	P	**Pn**	**14 19 15.3**	**-0.4**
JMK				*e*S	**Sn**	**14 19 44.7**	**-3.1**
JOU	**Okura**	**2.81**	**283**	P	**Pn**	**14 19 18.8**	**0.0**
JOM	**Ohasama**	**2.81**	**308**	P	**Pn**	**14 19 18.6**	**-0.2**
JOM				S	**Sn**	**14 19 51.0**	**-2.3**
JFT	**Otama**	**3.03**	**267**	P	**Pn**	**14 19 21.8**	**0.0**
JFT				S	**Sn**	**14 19 55.8**	**-3.0**
JYK	**Kaneyama**	**3.19**	**292**	P	**Pn**	**14 19 24.2**	**+0.2**
JYK				*e*S	**Sn**	**14 20 00.3**	**-2.4**
JRG	**Rokugo**	**3.20**	**302**	P	**Pn**	**14 19 24.1**	**0.0**
JRG				*e*S	**Sn**	**14 20 00.6**	**-2.3**
JANG	**Nango**	**3.31**	**323**	P	**Pn**	**14 19 25.0**	**-0.7**
JANG				*e*S	**Sn**	**14 20 01.8**	**-4.0**
JAH	**Hinai**	**3.65**	**313**	P	**Pn**	**14 19 30.7**	**+0.3**
JTM	**Tenmabayashi**	**3.85**	**323**	P	**Pn**	**14 19 33.0**	**-0.1**
JTM				S	**Sn**	**14 20 14.9**	**-4.0**
ERM	**Erimo**	**4.32**	**350**	*d i*P	**Pn**	**14 19 39.3**	**-0.2**
ERM	**Erimo**	**4.32**	**350**	*e*Sn	Sn	14 20 23.8	-6.6
JOT	**Ohata**	**4.33**	**328**	P	**Pn**	**14 19 40.1**	**+0.4**
JOT				S	**Sn**	**14 20 26.0**	**-4.9**
JRY	**Ryogami san**	**4.55**	**249**	P	**Pn**	**14 19 41.7**	**-1.0**
JRY				S	**Sn**	**14 20 30.6**	**-5.6**
JKB	**Kayabe**	**4.76**	**331**	P	**Pn**	**14 19 45.9**	**+0.3**
JKB				S	**Sn**	**14 20 36.9**	**-4.6**
JCH	**Churui**	**4.88**	**353**	P	**Pn**	**14 19 46.5**	**-0.8**
JCH				*e*S	**Sn**	**14 20 39.6**	**-4.8**
MJAR	**Matsushiro Arr**	**4.89**	**257**	Pn	**Pn**	**14 19 48.2**	**+0.8**
	10nm,0.3s,baz=82,slow=14,SNR=111						
MJAR				Sn	**Sn**	**14 20 41.8**	**-2.9**
	1.5nm,0.3s,baz=90,slow=26,SNR=6.1						
MAJO	**Matsushiro**	**4.89**	**257**	*c i*P	**Pn**	**14 19 48.5**	**+1.0**
MAJO	**Matsushiro**	**4.89**	**257**	*e*Pn	**Pn**	**14 19 47.1**	**-0.4**
MAJO				*e*Sn	**Sn**	**14 20 42.4**	**-2.4**
MAT	**Matsushiro**	**4.89**	**257**	P	**Pn**	**14 19 48.4**	**+0.9**
MAT				S	**Sn**	**14 20 43.1**	**-1.7**
MJB9	**Matsu-Tunnel**	**4.89**	**257**	*e*Pn	**Pn**	**14 19 48.5**	**+1.0**
JHJ	**Hachijo jima 2**	**5.84**	**219**	Pn	Pn	14 19 57.1	-3.4
	21nm,0.3s,baz=328,slow=23,SNR=8.9						
JHJ				Sn	Sn	14 20 58.2	-10
	39nm,0.3s,baz=110,slow=22,SNR=7.1						

comp=Z,24nm,0.9s
HHC pmax pmax
SEY Seymchan 25.70 9 P **P 14 24 05.1 +1.0**
comp=Z,2.9nm,0.9s,baz=186,slow=4.2,SNR=10.0
SEY Seymchan 25.70 9 *e*P **P 14 24 05.9 +1.8**
YAK Yakutsk 25.89 344 LR LR 14 33 42.2
comp=Z,31nm,21.4s,baz=82,slow=35
H11N2 WAKE ISLAND Hy 26.73 126 T T 14 51 59.8
baz=318,slow=74,SNR=23
H11N1 WAKE ISLAND Hy 26.74 126 T T 14 52 00.1
baz=318,slow=74,SNR=6.3
H11N3 WAKE ISLAND Hy 26.75 126 T T 14 52 00.2
baz=318,slow=74,SNR=17
ULN Ulaanbaatar 28.77 302 *i*P **P 14 24 33.6 +1.5**
ULN pmax pmax
comp=Z,7.0nm,1.7s
SONA1 Songino Array 29.20 302 *e*P **P 14 24 36.2 +0.3**
SONM Songino Array 29.21 302 P **P 14 24 37.1 +1.1**
comp=Z,1.2nm,0.5s,baz=96,slow=8.2,SNR=9.6
ZAK Zakamensk 31.55 307 *e*P **P 14 24 55.0 -1.6**
ZAK pmax pmax
comp=Z,3.0nm,1.4s
BILL Bilibino 32.74 15 *e*P **P 14 25 07.3 +0.7**
BILL *e* 14 25 17.6
BILL *e* 14 25 25.4
BILL *e*S **S 14 30 23.1 -0.7**
BILL pmax pmax
comp=Z,9.0nm,2.6s
BILL MLR MLR
comp=Z,95nm,16.0s
CD2 Chengdu 33.84 271 P **P 14 25 14.8 -2.0**
CD2 pmax pmax
comp=Z,22nm,0.7s
GTA Gaotai 34.43 287 *e*P **P 14 25 23.8 +1.9**
GTA pP 14 25 27.8
GTA sP 14 25 31.0
GTA pmax pmax
comp=Z,3.0nm,0.8s
WMQ Urumqi 42.45 297 *e*P **P 14 26 30.5 +1.3**
WMQ pmax pmax
comp=Z,4.0nm,0.6s
WMQ pmax pmax
comp=Z,52nm,5.6s
ZAA0 Zalesovo Array 43.04 312 *e*P **P 14 26 33.5 -0.2**
ZALV Zalesovo Beam 43.04 312 P **P 14 26 34.1 +0.4**
comp=Z,1.7nm,0.4s,baz=92,slow=7.4,SNR=3.6
ZALV PcP **PcP 14 28 22.9 -0.9**
comp=Z,0.5nm,0.4s,baz=48,slow=2.1,SNR=3.5
ZALV Zalesovo Beam 43.04 312 P **P 14 26 34.1 +0.4**
ZALV 14 28 22.9
ZALV pmax pmax
comp=Z,1.0nm,0.4s
ZALV pmax pmax
comp=Z,1.0nm,0.4s
CMAR Chiang Mai Arr 43.78 257 P **P 14 26 39.3 -0.8**
comp=Z,1.6nm,0.9s,baz=44,slow=7.0,SNR=10
CMAR Chiang Mai Arr 43.78 257 *i* P **P 14 26 41.7 +1.5**
CMAR pmax pmax
comp=Z,2.0nm,0.9s
KDAK Kodiak Island 45.10 42 *i* P **P 14 26 50.2 0.0**
MK01 Makanchi Array 45.57 302 *e*P **P 14 26 54.3 +0.1**
MKAR Makanchi Array 45.57 302 P **P 14 26 54.8 +0.6**
comp=Z,2.4nm,0.8s,baz=84,slow=9.2,SNR=14
MLY Manley 46.08 32 *e*P **P 14 26 59.2 +1.3**
comp=Z,3.7nm,0.9s
MDM Murphy Dome 47.14 32 *e*P **P 14 27 07.3 +1.1**
comp=Z,3.7nm,0.8s
KURK Kurchatov 47.20 308 P **P 14 27 07.5 +0.7**
KURK pmax pmax
comp=Z,2.0nm,0.5s
KURK Kurchatov 47.20 308 *e*P **P 14 27 04.6 -2.2**
comp=Z,7.5nm,0.7s
KURBB Kurchatov Arra 47.27 308 P **P 14 27 07.5 +0.1**
comp=Z,2.4nm,0.5s,baz=81,slow=8.0,SNR=23
ILAR Eielson Array 47.71 33 P **P 14 27 10.8 +0.1**
comp=Z,2.5nm,0.8s,baz=263,slow=6.5,SNR=28
ILB Eielson Array 47.71 33 *e*P **P 14 27 10.5 -0.2**
IL1 Eielson Array 47.71 33 *e*P **P 14 27 10.1 -0.6**
TKM2 Tokmak 2 51.19 299 *e*P **P 14 27 37.4 -0.4**
TKM2 pmax pmax
comp=Z,8.0nm,1.0s
TKM2 Tokmak 2 51.19 299 *e*P **P 14 27 37.4 -0.4**
comp=Z,7.7nm,1.0s
AAK Ala-Archa 52.05 299 *e*P **P 14 27 45.0 +0.8**
AAK pmax pmax
comp=Z,3.0nm,0.9s
ZRNK Zerenda 52.52 313 *e*P **P 14 27 46.2 -1.1**
ZRNK pmax pmax
comp=Z,5.0nm,1.0s
ZRNK Zerenda 52.52 313 *e*P **P 14 27 46.2 -1.1**
comp=Z,4.8nm,1.0s
SVE Sverdlovsk 56.03 319 *e*P **P 14 28 14.4 +1.5**
DLBC Dease Lake 56.71 39 P **P 14 28 16.1 -1.6**
comp=Z,2.1nm,0.7s,baz=63,slow=13,SNR=4.6
ARU Arti 57.25 319 *c i*P **P 14 28 23.4 +1.9**
ARU 14 30 30.7
ARU S **S 14 36 20.9 +2.8**
ARU SS **SS 14 40 07.3 +0.8**
ARU pmax pmax
comp=Z,11nm,1.7s
WRAB Tennant Creek 58.12 191 *de*P **P 14 28 26.1 -1.9**
WRAB pmax pmax
comp=Z,52nm,0.8s
WRAB Tennant Creek 58.12 191 *e*P P 14 28 24.1 -3.8
comp=Z,19nm,0.8s
WB2 Warramunga Arr 58.13 191 *e*P **P 14 28 25.9 -2.1**
comp=Z,20nm,0.8s
WRA Warramunga Arr 58.13 191 P **P 14 28 26.1 -1.9**
comp=Z,17nm,0.7s,baz=12,slow=7.3,SNR=81
WRA Warramunga Arr 58.13 191 P **P 14 28 26.2 -1.9**
WRA pmax pmax
comp=Z,18nm,0.7s
AS01 Alice Springs 61.85 191 *e*P **P 14 28 51.9 -1.6**
AS31 Alice Springs 61.85 191 *e*P **P 14 28 52.1 -1.5**
comp=Z,1.8nm,0.6s
ASAR Alice Springs 61.85 191 P **P 14 28 52.0 -1.5**
comp=Z,4.3nm,0.8s,baz=7.0,slow=7.4,SNR=64
YKA Yellowknife Ar 62.08 31 P **P 14 28 54.6 0.0**
comp=Z,0.4nm,0.6s,baz=299,slow=6.4,SNR=6.4
GEYT Alibeck 65.37 300 P **P 14 29 17.7 +0.8**
comp=Z,1.1nm,0.5s,baz=44,slow=13,SNR=3.1
FINES FINESS Array B 69.17 333 P **P 14 29 41.5 +1.0**
comp=Z,1.5nm,0.8s,baz=32,slow=13,SNR=3.5
STKA Stephens Creek 69.32 182 P **P 14 29 40.5 -1.2**
comp=Z,0.6nm,0.3s,baz=337,slow=11,SNR=3.8
KIV Kislovodsk 72.05 312 *e*P P 14 30 01.8 +3.3
KIV *e* 14 30 10.9
KIV *e* 14 30 15.9
KIV 14 32 39.0
KIV pmax pmax
comp=Z,7.0nm,1.0s
KBZ Khabaz 72.06 312 P **P 14 29 59.4 +0.9**
comp=Z,0.9nm,0.5s,baz=58,slow=5.6,SNR=5.0
NVAR Mina Array Bea 72.81 55 P **P 14 30 03.9 +0.6**
comp=Z,2.5nm,0.7s,baz=297,slow=6.6,SNR=15
GNI Garni 73.00 308 *e*P **P 14 30 05.2 +0.9**
GNI pmax pmax
comp=Z,26nm,1.1s
AKASG Malin Array Be 75.03 323 P **P 14 30 15.3 -0.4**
comp=Z,1.1nm,0.5s,baz=42,slow=5.4,SNR=5.6
AKASG Malin Array Be 75.03 323 *i* P **P 14 30 16.6 +0.8**
AKASG pmax pmax
comp=Z,1.0nm,0.6s
KIEV Kiev 75.04 323 *e*P **P 14 30 16.9 +1.1**
KIEV pmax pmax
comp=Z,3.0nm,1.2s
PDAR Pinedale Array 75.60 47 P **P 14 30 19.7 +0.2**
comp=Z,0.6nm,0.6s,baz=269,slow=1.8,SNR=7.7
CLL Collm 81.52 331 *e*(P) **P 14 30 53.0 +1.3**
CLL Collm 81.52 331 *e*P **P 14 30 53.0 +1.3**
GERES GERESS Array B 83.21 330 P **P 14 31 01.6 +0.8**
comp=Z,0.2nm,0.2s,baz=35,slow=2.4,SNR=3.1
TXAR Lajitas Array 87.95 54 P **P 14 31 24.2 -0.5**
comp=Z,0.3nm,0.6s,baz=304,slow=5.0,SNR=5.2

*IDC **28** 14:28:58.9±2.1, 36°.06N×142°.25E, h0km, mb3.5/5, mb1 3.6/7, mb1mx3.4/50, mbtmp3.5/7, ML3.6/2, MS3.8/1, Ms1 3.8/1, ms1mx2.6/38, Error ellipse: s-maj=47.3km s-min=22.9km az=73.0*
*JMA **28** 14:29:01.1±0.3, 36°.26N×142°.21E, h67km, M3.2*
ISC 28 14:28:57.9±2.2, 36°.22N±0°.04×142°.27E±0°.08, h2km±13km, n25, σ1°57/29, mb3.6/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**1.26**	**246**	P	**Pg**	**14 29 22.7**	**+0.6**
JHO	**Hitachi**	**1.43**	**286**	P	**Pb**	**14 29 24.3**	**-1.0**
ONAJ	**Iwakimizuishiy**	**1.48**	**307**	P	**Pn**	**14 29 24.6**	**-1.0**
BSO1	**Boso 1**	**1.89**	**214**	P	**Pb**	**14 29 31.9**	**-0.9**
BSO3	**Boso 3**	**2.02**	**226**	P	**Pb**	**14 29 33.8**	**-1.4**
BSO3				*e*S	**Sb**	**14 29 58.7**	**-1.9**
JFT	**Otama**	**2.02**	**310**	P	**Pb**	**14 29 33.7**	**-1.7**
JFT				*e*S	**Sn**	**14 29 57.7**	**-1.2**
JMM	**Marumori**	**2.02**	**325**	P	**Pn**	**14 29 32.8**	**-0.2**
JMM				*e*S	**Sn**	**14 29 56.7**	**-2.2**
JAG	**Ashikaga**	**2.29**	**276**	P	**Pn**	**14 29 37.0**	**+0.3**
JAG				*e*S	**Sn**	**14 30 02.8**	**-2.6**
JRY	**Ryogami san**	**2.74**	**267**	P	**Pn**	**14 29 42.9**	**0.0**
JOD2	**Odawara 2**	**2.76**	**251**	P	**Pn**	**14 29 43.9**	**+0.7**
JOD2				*e*S	**Sn**	**14 30 15.1**	**-2.0**
JMK	**Ichinoseki**	**2.85**	**343**	P	**Pn**	**14 29 43.5**	**-0.9**
JYN	**Shimob**	**3.11**	**258**	P	**Pn**	**14 29 49.3**	**+1.2**
JYN				*e*S	**Sn**	**14 30 24.8**	**-1.1**
MJAR	**Matsushiro Arr**	**3.29**	**277**	Pn	**Pn**	**14 29 51.2**	**+0.6**
	3.4nm,0.3s,baz=114,slow=8.7,SNR=57						
MAT	**Matsushiro**	**3.30**	**277**	P	**Pn**	**14 29 51.8**	**+1.2**
MAT				*e*S	**Sn**	**14 30 32.2**	**+1.9**
MAT	**Matsushiro**	**3.30**	**277**	P	**Pn**	**14 29 51.8**	**+1.2**
JHJ	**Hachijo jima 2**	**3.71**	**214**	Pn	**Pn**	**14 29 56.4**	**+0.1**
	32nm,0.3s,baz=119,slow=23,SNR=8.9						
JHJ				Sn	**Sn**	**14 30 37.5**	**-3.1**
	11nm,0.3s,baz=340,slow=22,SNR=4.2						
H11N2	**WAKE ISLAND Hy**	**27.14**	**121**	T	T	15 03 17.0	
	baz=316						
H11N1	**WAKE ISLAND Hy**	**27.15**	**121**	T	T	15 03 19.2	
	baz=316						
H11N3	**WAKE ISLAND Hy**	**27.16**	**121**	T	T	15 03 20.5	
	baz=316						
SONM	**Songino Array**	**28.81**	**305**	P	**P**	**14 34 59.0**	**+1.5**
	0.5nm,0.6s,baz=92,slow=8.4,SNR=4.5						
MKAR	**Makanchi Array**	**45.14**	**303**	P	**P**	**14 37 18.8**	**+3.1**
	0.5nm,0.6s,baz=86,slow=10.0,SNR=4.8						
KURBB	**Kurchatov Arra**	**47.05**	**309**	P	**P**	**14 37 31.5**	**+0.8**
	0.3nm,0.3s,baz=82,slow=7.3,SNR=4.2						
WRA	**Warramunga Arr**	**56.36**	**189**	P	**P**	**14 38 40.5**	**0.0**
	0.2nm,0.7s,baz=6.2,slow=7.4,SNR=3.3						
AKTO	**Aktyubinsk**	**59.73**	**313**	LR	LR	15 04 58.3	
	comp=Z,64nm,18.1s,slow=36						
ASAR	**Alice Springs**	**60.09**	**189**	P	**P**	**14 39 06.5**	**-0.1**
	0.5nm,1.0s,baz=6.3,slow=9.3,SNR=3.5						

*ISCJB **28** 14:30:46.6±0.5, 20°.66N±0°.04×100°.01E±0°.06, h10km, mb3.5/7, Error ellipse: s-maj=8.2km s-min=5.5km az=155.2*
*IDC **28** 14:30:46.7±1.0, 20°.65N×99°.98E, h0km, mb3.6/7, mb1 3.5/8, mb1mx3.3/47, mbtmp3.5/8, ML3.5/1, Error ellipse: s-maj=22.8km s-min=13.7km az=89.0*
*BKK **28** 14:30:48.4±1.0, 21°.N±9°×10°.E±°, h0km, M4.2/15, mb4.1/9, mB4.8/4, MLv4.2/15, Mw(mB)4.0/4*
ISC 28 14:30:48.1±0.8, 20°.61N±0°.05×99°.98E±0°.05, h10km, n26, σ1°19/31, mb3.6/7, Myanmar

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRAI	**Chiangrai**	**0.53**	**136**	P	**Pb**	**14 30 58.8**	**-0.7**
CRAI				S	**Sg**	**14 31 03.7**	**-1.7**
CMMT	**Chiang Mai**	**2.04**	**209**	P	**Pn**	**14 31 22.1**	**-0.4**
CHTO	**Chiang Mai**	**2.04**	**209**	P	**Pn**	**14 31 22.1**	**-0.4**
LAMP	**Lampang**	**2.10**	**189**	P	**Pn**	**14 31 23.5**	**+0.1**
CMAR	**Chiang Mai Arr**	**2.35**	**205**	Pn	**Pn**	**14 31 26.6**	**-0.2**
	3.1nm,0.3s,baz=16,slow=13,SNR=39						
CMAR				Pg	**Pg**	**14 31 33.2**	**0.0**
	32nm,0.3s,baz=22,slow=18,SNR=302						
CMAR				Lg	Lg	14 32 03.9	
	57nm,0.3s,baz=19,slow=29,SNR=18						
UTTA	**Uttaradit**	**2.90**	**169**	P	**Pn**	**14 31 33.2**	**-1.2**
MHMT	**Maesarieng**	**3.10**	**219**	P	**Pn**	**14 31 37.0**	**-0.1**
SUKH	**Sukhothai**	**3.13**	**186**	P	**Pn**	**14 31 37.8**	**+0.3**
NONG	**Nongkai**	**3.92**	**130**	P	**Pn**	**14 31 50.1**	**+1.8**
NONG				S	**Sb**	**14 32 45.5**	**+0.7**
PBKT	**Sadao Pong**	**4.13**	**167**	P	**Pn**	**14 31 51.5**	**+0.3**
UMPA	**Umpang Tak**	**4.51**	**194**	P	**Pn**	**14 31 58.8**	**+2.3**
UMPA				S	**Sg**	**14 33 12.1**	**-0.9**
KHON	**Khomkaen**	**5.03**	**147**	P	Pn	14 32 08.5	+4.8
	12nm,0.5s,813nm0.3nm						
CHAI	**Chaiyaphum**	**5.06**	**158**	P	**Pn**	**14 32 05.4**	**+1.4**
	17nm,0.7s,502nm0.2nm						
SKNT	**Sakolnakorn**	**5.24**	**133**	P	**Pn**	**14 32 06.8**	**+0.3**
	26nm,0.8s						
PANO	**Nakornpanom**	**5.58**	**127**	P	**Pn**	**14 32 12.0**	**+0.9**
KHLT	**Khaolaem Dam**	**5.93**	**193**	P	**Pn**	**14 32 18.8**	**+2.7**
	9.9nm,0.8s,0.1nm						
SRDT	**SRDT**	**6.28**	**188**	P	**Pn**	**14 32 24.2**	**+3.4**
	32nm,1.1s,3μm0.4nm						
SRDT				S	**Sg**	**14 34 09.6**	**-0.2**
	32nm,1.1s,3μm0.4nm						
SRAK	**Srakaew**	**6.85**	**163**	P	**Pn**	**14 32 29.4**	**+0.7**
	18nm,0.7s,0.6nm						
SRAK				S	**Sb**	**14 34 09.8**	**+0.6**
	18nm,0.7s,0.6nm						
UBPT	**Khong Chiam**	**7.44**	**135**	P	**Pn**	**14 32 37.7**	**+0.9**
SONM	**Songino Array**	**27.65**	**9**	P	**P**	**14 36 36.6**	**+0.5**
	0.3nm,0.5s,baz=187,slow=8.7,SNR=2.8						
MKAR	**Makanchi Array**	**29.84**	**335**	P	**P**	**14 36 55.8**	**+0.3**
	0.7nm,0.6s,baz=144,slow=9.5,SNR=8.7						
KURBB	**Kurchatov Arra**	**34.40**	**336**	P	**P**	**14 37 34.6**	**-0.8**
	0.4nm,0.5s,baz=143,slow=9.3,SNR=4.0						
ZALV	**Zalesovo Beam**	**35.24**	**344**	P	**P**	**14 37 43.0**	**+0.4**
	0.6nm,0.4s,baz=144,slow=11,SNR=3.0						
BVAR	**Borovoye Array**	**39.56**	**332**	P	**P**	**14 38 18.5**	**-0.7**
	0.9nm,0.6s,baz=116,slow=10,SNR=4.5						
AKTO	**Aktyubinsk**	**44.40**	**322**	P	**P**	**14 38 59.1**	**+0.2**
	0.4nm,0.3s,baz=139,slow=11,SNR=2.6						
ASAR	**Alice Springs**	**55.04**	**141**	P	**P**	**14 40 19.7**	**-0.5**
	0.1nm,0.5s,baz=319,slow=6.9,SNR=3.0						

*DDA **28** 14:37:17.8, 39°.08N×29°.03E, h7km, Ml2.4*
*ISCJB **28** 14:37:18.3±0.6, 39°.11N±0°.04×29°.05E±0°.04, h1km±10km, Error ellipse: s-maj=7.4km s-min=4.7km az=166.4*
*CSEM **28** 14:37:18.7±0.2, 39°.14N×29°.06E, h2km, ML2.4, Error ellipse: s-maj=4.7km s-min=4.2km az=31.0*
*ISK **28** 14:37:19.1, 39°.17N×29°.08E, h5km, MD2.7*
ISC 28 14:37:18.3±1.1, 39°.10N±0°.03×29°.04E±0°.02, h4km±11km, n28, σ0°35/38, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**256**	P	**Pg**	**14 37 23.2**	**0.0**
DEMI				S	**Sg**	**14 37 26.6**	**0.0**
DEMI	**Demirci**	**0.26**	**256**	*i* P	**Pg**	**14 37 23.2**	**0.0**
DEMI				*i* S	**Sg**	**14 37 26.6**	**0.0**
GDZ	**Gediz**	**0.35**	**92**	P	**Pg**	**14 37 25.1**	**+0.1**
GDZ				S	**Sg**	**14 37 30.4**	**+0.8**
GDZ	**Gediz**	**0.35**	**92**	*i* P	**Pg**	**14 37 25.1**	**+0.1**
GDZ				*i* S	**Sg**	**14 37 30.4**	**+0.8**
TVSB	**Tavsanli**	**0.48**	**44**	*e*PG	**Pg**	**14 37 27.4**	**-0.1**
TVSB				*e*SG	**Sg**	**14 37 33.5**	**-0.3**
TVSB	**Tavsanli**	**0.48**	**44**	*e*Pg	**Pg**	**14 37 27.4**	**-0.1**
TVSB				*e*Sg	**Sg**	**14 37 33.5**	**-0.3**
KHAL	**Karahalli**	**0.81**	**154**	P	**Pb**	**14 37 34.7**	**-0.4**
KHAL				S	**Sg**	**14 37 44.5**	**0.0**
KHAL	**Karahalli**	**0.81**	**154**	*i* P	**Pb**	**14 37 34.7**	**-0.4**
KHAL				*i* S	**Sg**	**14 37 44.5**	**0.0**
KHL	**Karahalli**	**0.87**	**154**	*e*PG	**Pn**	**14 37 37.1**	**-0.3**
KHL	**Karahalli**	**0.87**	**154**	*e*Pg	**Pn**	**14 37 37.1**	**-0.3**
AKS	**Akhisar**	**0.98**	**257**	*e*PG	**Pn**	**14 37 39.2**	**+0.4**
AKS	**Akhisar**	**0.98**	**257**	*e*Pg	**Pn**	**14 37 39.2**	**+0.4**
CAVI	**Cavuskoy**	**1.26**	**29**	*e*PN	**Pg**	**14 37 42.3**	**-0.2**
CAVI	**Cavuskoy**	**1.26**	**29**	*e*Pn	**Pg**	**14 37 42.3**	**-0.2**
BALY	**Balya**	**1.27**	**301**	P	**Pg**	**14 37 42.1**	**-0.5**
BALY				S	**Sn**	**14 38 00.7**	**+0.3**
BALY	**Balya**	**1.27**	**301**	*i* P	**Pg**	**14 37 42.1**	**-0.5**
BALY				*i* S	**Sn**	**14 38 00.7**	**+0.3**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*PN	**Pn**	**14 37 42.9**	**0.0**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*Pn	**Pn**	**14 37 42.9**	**0.0**
IZI	**Iznik**	**1.28**	**15**	*e*PN	**Pg**	**14 37 42.3**	**-0.5**
IZI	**Iznik**	**1.28**	**15**	*e*Pn	**Pg**	**14 37 42.3**	**-0.5**
GONE	**Gonen-Balikesi**	**1.41**	**313**	*e*PN	**Pg**	**14 37 45.6**	**+0.4**
GONE	**Gonen-Balikesi**	**1.41**	**313**	*e*Pn	**Pg**	**14 37 45.6**	**+0.4**
ARMT	**Armutlu**	**1.47**	**355**	*e*PN	**Pb**	**14 37 45.9**	**-0.3**
ARMT	**Armutlu**	**1.47**	**355**	*e*Pn	**Pb**	**14 37 45.9**	**-0.3**
EDC	**Edincik**	**1.54**	**324**	*e*PN	**Pb**	**14 37 47.2**	**-0.1**
EDC	**Edincik**	**1.54**	**324**	*e*Pn	**Pb**	**14 37 47.2**	**-0.1**
GULT	**Gulveren**	**1.75**	**40**	*e*PN	**Pn**	**14 37 49.9**	**+0.4**
GULT	**Gulveren**	**1.75**	**40**	*e*Pn	**Pn**	**14 37 49.9**	**+0.4**

*NIED **28** 14:39:00, 36°.00N×142°.10E, h5km, Mw3.8 Best double couple: M0:6.63000×10^14 NP1:φ0=358.00000°, δ40.00000°, λ131.00000°. NP2:φ0=129.00000°, δ61.00000°, λ61.00000°.*
*IDC **28** 14:39:37.9±0.6, 35°.91N×142°.01E, h0km, mb3.7/17, mb1 4.0/21, mb1mx3.8/44, mbtmp3.8/21, ML3.4/3, MS3.4/2, Ms1 3.4/2, ms1mx2.6/53, Error ellipse: s-maj=17.6km s-min=16.2km az=136.0*
*ISCJB **28** 14:39:39.3±0.5, 35°.89N±0°.05×142°.12E±0°.05, h23km, mb3.7/17, MS4.1/1, Error ellipse: s-maj=7.0km s-min=6.0km az=145.9*
*JMA **28** 14:39:39.4±0.3, 35°.96N×142°.14E, h75km±5km, M3.5*
ISC 28 14:39:41.3±0.6, 35°.97N±0°.05×142°.00E±0°.07, h23km, n42, σ1°32/40, mb3.8/17, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.97**	**254**	P	**Pn**	**14 39 59.3**	**-0.2**
CHOJ				S	**Sn**	**14 40 14.5**	**+2.0**
JHO	**Hitachi**	**1.32**	**299**	P	**Pn**	**14 40 03.5**	**-0.8**
JFK	**Kawauchi**	**1.66**	**327**	P	**Pn**	**14 40 08.1**	**-1.0**
JFK				*e*S	**Sn**	**14 40 30.2**	**+0.5**
BSO3	**Boso 3**	**1.69**	**227**	P	**Pn**	**14 40 09.0**	**-0.1**
JFT	**Otama**	**2.04**	**320**	P	**Pn**	**14 40 14.5**	**+0.2**
JAG	**Ashikaga**	**2.11**	**283**	P	**Pn**	**14 40 15.0**	**-0.2**
JOD2	**Odawara 2**	**2.48**	**254**	P	**Pn**	**14 40 20.3**	**0.0**
JRY	**Ryogami san**	**2.51**	**272**	P	**Pn**	**14 40 20.7**	**-0.1**
JYN	**Shimob**	**2.85**	**261**	P	**Pn**	**14 40 26.2**	**+0.7**
MJAR	**Matsushiro Arr**	**3.12**	**282**	Pn	**Pn**	**14 40 29.7**	**+0.7**
	9.4nm,0.3s,baz=95,slow=8.6,SNR=98						
MAT	**Matsushiro**	**3.12**	**282**	P	**Pn**	**14 40 30.0**	**+0.9**
MAT				S	**Sb**	**14 41 09.7**	**-4.0**
JHJ	**Hachijo jima 2**	**3.38**	**213**	Pn	**Pn**	**14 40 30.8**	**-2.0**
	39nm,0.3s,baz=220,slow=2.3,SNR=8.8						
JHJ				Sn	**Sn**	**14 41 09.7**	**-2.5**
	10nm,0.3s,baz=66,slow=20,SNR=4.2						
ASAJ	**Asahikawa**	**8.15**	**3**	Pn	**Pn**	**14 41 36.6**	**-1.5**
	baz=212,slow=7.0						
ASAJ				Sn	**Sn**	**14 43 05.2**	**-4.2**
	0.4nm,0.3s,baz=82,slow=19,SNR=2.7						
JCJ	**Chichijima**	**8.85**	**179**	Sn	Sn	14 43 18.6	-8.3
	1.3nm,0.3s,baz=307,slow=20,SNR=2.5						
JCJ				LR	LR	14 49 09.2	
	comp=Z,57nm,18.5s,baz=146,slow=65						
USRK	**Ussuriysk Ar.**	**11.23**	**320**	Pn	**Pn**	**14 42 19.9**	**-0.4**
	0.4nm,0.3s,baz=122,slow=17,SNR=4.0						
KSRS	**Korea Array**	**11.40**	**282**	Pn	Pn	14 42 26.4	+3.8
	0.1nm,0.3s,baz=98,slow=11,SNR=5.0						
H11N2	**WAKE ISLAND Hy**	**27.20**	**120**	T	T	15 13 52.2	
	baz=312,slow=75,SNR=27						
H11N1	**WAKE ISLAND Hy**	**27.21**	**120**	T	T	15 13 51.9	
	baz=312,slow=75,SNR=26						
H11N3	**WAKE ISLAND Hy**	**27.22**	**120**	T	T	15 13 52.3	
	baz=312,slow=75,SNR=24						
H11S1	**WAKE ISLAND Hy**	**27.89**	**122**	T	T	15 14 43.8	
	baz=314,slow=75,SNR=45						
H11S3	**WAKE ISLAND Hy**	**27.89**	**122**	T	T	15 14 34.8	
	baz=314,slow=75,SNR=43						
H11S2	**WAKE ISLAND Hy**	**27.91**	**122**	T	T	15 14 40.8	
	baz=314,slow=75,SNR=43						
SONM	**Songino Array**	**28.78**	**305**	P	**P**	**14 45 37.9**	**+0.5**
	1.7nm,0.7s,baz=107,slow=9.8,SNR=10						
CMAR	**Chiang Mai Arr**	**41.70**	**257**	P	**P**	**14 47 27.5**	**-1.0**
	0.4nm,0.8s,baz=50,slow=8.4,SNR=4.5						
ZALV	**Zalesovo Beam**	**42.98**	**313**	P	**P**	**14 47 39.1**	**+0.6**
	1.0nm,0.4s,baz=90,slow=7.4,SNR=6.0						
ZALV				PcP	**PcP**	**14 49 29.1**	**+0.6**
	0.6nm,0.5s,baz=72,slow=4.7,SNR=3.4						
MKAR	**Makanchi Array**	**45.09**	**303**	P	**P**	**14 47 56.3**	**+0.7**
	1.4nm,0.7s,baz=86,slow=10,SNR=14						
MKAR				PcP	**PcP**	**14 49 37.2**	**+1.2**
	0.4nm,0.8s,baz=90,slow=4.5,SNR=2.6						
ILAR	**Eielson Array**	**50.14**	**32**	P	**P**	**14 48 35.0**	**+0.5**
	0.4nm,0.7s,baz=260,slow=5.8,SNR=6.4						
WRA	**Warramunga Arr**	**56.08**	**189**	P	**P**	**14 49 18.0**	**-0.7**
	0.7nm,0.7s,baz=6.1,slow=7.5,SNR=9.4						
ASAR	**Alice Springs**	**59.81**	**189**	P	**P**	**14 49 44.6**	**-0.2**
	0.4nm,0.8s,baz=14,slow=7.9,SNR=4.5						
YKA	**Yellowknife Ar**	**64.49**	**30**	P	**P**	**14 50 16.2**	**+0.5**
	0.3nm,0.7s,baz=300,slow=6.5,SNR=5.1						
FINES	**FINESS Array B**	**69.97**	**333**	P	**P**	**14 50 51.5**	**+1.0**
	1.6nm,0.8s,baz=27,slow=12,SNR=4.5						
KBZ	**Khabaz**	**71.95**	**311**	P	**P**	**14 51 04.1**	**+1.3**
	0.7nm,0.4s,baz=63,slow=4.5,SNR=2.4						
NVAR	**Mina Array Bea**	**75.24**	**53**	P	**P**	**14 51 23.8**	**+1.2**
	0.4nm,0.7s,baz=316,slow=5.0,SNR=3.2						
NB2	**NORSAR Subarra**	**75.35**	**338**	P	**P**	**14 51 23.3**	**+0.8**
	comp=Z,1.0nm,0.5s,baz=41,slow=5.9						
NOA	**NORSAR Array B**	**75.35**	**338**	P	**P**	**14 51 22.2**	**-0.3**
	comp=Z,1.6nm,0.8s,baz=40,slow=5.8,SNR=4.6						
AKASG	**Malin Array Be**	**75.43**	**323**	P	**P**	**14 51 22.8**	**-0.3**
	comp=Z,0.5nm,0.4s,baz=51,slow=5.8,SNR=3.5						
PDAR	**Pinedale Array**	**78.07**	**46**	P	**P**	**14 51 38.8**	**+0.3**
	comp=Z,0.1nm,0.5s,baz=245,slow=1.7,SNR=2.3						
BRTR	**Keskin Array B**	**79.91**	**312**	P	**P**	**14 51 48.8**	**+0.3**
	comp=Z,0.3nm,0.3s,baz=69,slow=7.8,SNR=4.5						
URZ	**Urewera**	**80.69**	**153**	LR	LR	15 25 23.0	
	comp=Z,84nm,18.2s,baz=158,slow=34						
GERES	**GERESS Array B**	**83.86**	**329**	P	**P**	**14 52 09.7**	**+0.6**
	comp=Z,0.4nm,0.7s,baz=44,slow=8.7,SNR=3.7						
TXAR	**Lajitas Array**	**90.39**	**53**	P	**P**	**14 52 41.1**	**-0.1**
	comp=Z,0.5nm,1.1s,baz=251,slow=2.8,SNR=4.1						
LPAZ	**La Paz**	**146.80**	**62**	PKPbc	**PKPbc**	**14 59 23.4**	**+0.6**
	comp=Z,1.2nm,0.5s,baz=352,slow=3.4,SNR=6.2						

*ISCJB **28** 14:45:55.5±0.6, 39°.11N±0°.04×29°.12E±0°.04, h2km±9km, Error ellipse: s-maj=7.0km s-min=5.0km az=162.8*
*CSEM **28** 14:45:55.7±0.1, 39°.11N×29°.11E, h

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**4.05**	**282**	Pn	Pn	14 56 46.4	-0.3
	2.2nm,0.3s,baz=82,slow=14,SNR=15						
H11N2	**WAKE ISLAND Hy**	**26.33**	**121**	T	T	15 28 45.5	
	baz=317,slow=75,SNR=115						
H11N1	**WAKE ISLAND Hy**	**26.34**	**121**	T	T	15 28 48.4	
	baz=317,slow=75,SNR=64						
H11N3	**WAKE ISLAND Hy**	**26.35**	**121**	T	T	15 28 47.2	
	baz=317,slow=75,SNR=79						
H11S1	**WAKE ISLAND Hy**	**27.03**	**123**	T	T	15 29 44.1	
	baz=322,slow=74						
H11S3	**WAKE ISLAND Hy**	**27.04**	**123**	T	T	15 29 44.8	
	baz=322,slow=74						
H11S2	**WAKE ISLAND Hy**	**27.05**	**123**	T	T	15 29 45.5	
	baz=322						
TGY	**Tagaytay City**	**29.41**	**228**	LR	LR	15 13 00.4	
	comp=Z,111nm,21.6s,baz=16,slow=35						
MKAR	**Makanchi Array**	**45.94**	**303**	P	P	15 04 07.7	-0.2
	0.2nm,0.8s,baz=91,slow=6.1,SNR=3.6						
WRA	**Warramunga Arr**	**56.09**	**190**	P	P	15 05 24.2	-0.2
	0.8nm,0.9s,baz=12,slow=7.4,SNR=6.0						
ASAR	**Alice Springs**	**59.81**	**190**	P	P	15 05 50.5	0.0
	0.2nm,0.6s,baz=19,slow=8.8,SNR=3.1						

IDC ***28*** *14:55:59.9±0.5,37.°42N×143.°71E,h0km,mb4.4/31, mb1 4.6/38,mb1mx4.5/57,mbtmp4.5/38,ML4.3/5,MS4.3/14, Ms1 4.3/14,ms1mx4.1/21,Error ellipse: s-maj=13.0km s-min=10.5km az=108.0*

ISCJB ***28*** *14:56:01.0±0.8,37.°55N±0.°03×143.°53E±0.°02,h12km±4km, mb4.8/117,MS4.6/45,Error ellipse: s-maj=4.4km s-min=3.1km az=165.9*

NIED ***28*** *14:56:00,37.°50N×143.°50E,h5km,Mw4.9 Best double couple: M0:2.89000×10^16 NP1:ϕs306.00000°,δ44.00000°, λ179.00000°. NP2:ϕs37.00000°,δ89.00000°,λ46.00000°.*

JMA ***28*** *14:56:02.3±0.1,37.°48N×143.°55E,h41km,M4.7*

JMA Felt I J1.

NEIC ***28*** *14:56:04.9±0.3,37.°42N×143.°59E,h35km,mb5.0/48,Error ellipse: s-maj=7.2km s-min=5.1km az=146.0*

NEIC Recorded [1 JMA] in Iwate and Miyagi.

GCMT ***28*** *14:56:04.9±0.2,37.°54N×143.°64E,h19km±1km,MW5.0/84, Moment Tensor Solution. s33,c38; s84,c146; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr-1.21±.14; Mθθ-2.95±.10; Mϕϕ4.16±.12; Mrθ0.81±.21; Mθϕ-0.40±.08; Mϕr0.78±.20; Best double couple: M0:3.80200×10^16 NP1:ϕs219.00000°,δ80.00000°,λ-22.00000°. NP2: ϕs313.00000°,δ69.00000°,λ-169.00000°. Principal axes: T 4.2810, Plg8.0000°, Azm268.0000°; N -0.9570, Plg66.0000°, Azm15.0000°; P -3.3240, Plg23.0000°, Azm175.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

MOS ***28*** *14:56:06.1±1.1,37.°86N×143.°40E,h34km,mb5.0/58, MS4.4/25 Error ellipse: s-maj=7.7km s-min=4.7km az=110.1*

BJI ***28*** *14:56:07.0,37.°61N×143.°09E,h35km,mb4.8/67,mB5.2/49, Ms4.9/62,Ms7 4.6/45*

ISC 28 14:56:04.5±0.5,37.°48N±0.°04×143.°65E±0.°04,h31km±2km, h31km:pP-P,n340,σ2s34/372,mb4.9/121,MS4.7/46, 22C-28D,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.06**	**299**	P	**Pn**	**14 56 34.8**	**-2.1**
JIO				*e*S	**Sn**	**14 56 58.1**	**-3.4**
JFK	**Kawauchi**	**2.21**	**268**	P	**Pn**	**14 56 36.5**	**-2.6**
JFK				S	**Sn**	**14 57 02.3**	**-3.0**
OFUJ	**Ofunato**	**2.23**	**316**	P	**Pn**	**14 56 37.2**	**-2.1**
OFUJ				S	**Sn**	**14 57 02.9**	**-2.9**
JMK	**Ichinoseki**	**2.41**	**308**	P	**Pn**	**14 56 40.1**	**-1.7**
JMK				S	**Sn**	**14 57 07.6**	**-2.6**
JOU	**Okura**	**2.52**	**291**	P	**Pn**	**14 56 41.6**	**-1.7**
JOU				S	**Sn**	**14 57 09.9**	**-3.0**
JFT	**Otama**	**2.63**	**272**	P	**Pn**	**14 56 43.3**	**-1.6**
JFT				*e*S	**Sn**	**14 57 13.4**	**-2.3**
JOM	**Ohasama**	**2.71**	**318**	P	**Pn**	**14 56 44.3**	**-1.7**
JOM				S	**Sn**	**14 57 15.2**	**-2.5**
JYK	**Kaneyama**	**2.96**	**300**	P	**Pn**	**14 56 47.7**	**-1.6**
JYK				*e*S	**Sn**	**14 57 21.8**	**-2.0**
JANG	**Nango**	**3.33**	**331**	P	**Pn**	**14 56 53.2**	**-1.3**
JANG				*e*S	**Sn**	**14 57 29.8**	**-3.2**
JNS	**Sasagawa**	**3.45**	**277**	P	**Pn**	**14 56 55.0**	**-1.1**
JAG	**Ashikaga**	**3.52**	**254**	P	**Pn**	**14 56 55.1**	**-2.0**
JAG				S	**Sn**	**14 57 34.4**	**-3.2**
JAH	**Hinai**	**3.58**	**320**	P	**Pn**	**14 56 56.5**	**-1.4**
JAH				*e*S	**Sn**	**14 57 37.8**	**-1.3**
JAW	**Awa shima**	**3.61**	**287**	P	**Pn**	**14 56 57.1**	**-1.1**
JTM	**Tenmabayashi**	**3.86**	**330**	P	**Pn**	**14 57 00.2**	**-1.5**
JTM				*e*S	**Sn**	**14 57 42.6**	**-3.4**
JRY	**Ryogami san**	**4.08**	**250**	P	**Pn**	**14 57 02.7**	**-2.1**
JRY				S	**Sn**	**14 57 47.2**	**-4.3**
MJAR	**Matsushiro Arr**	**4.45**	**259**	Pn	**Pn**	**14 57 09.6**	**-0.2**
	84nm,0.3s,baz=88,slow=15,SNR=259						
MJAR				Sn	**Sn**	**14 57 59.5**	**-1.2**
	28nm,0.3s,baz=84,slow=14,SNR=8.2						
MJAR				LR	LR	14 59 18.0	
	comp=Z,3μm,21.9s,baz=75,slow=44						
MAJO	**Matsushiro**	**4.45**	**260**	*c iP*	**Pn**	**14 57 09.5**	**-0.4**
MAJO	**Matsushiro**	**4.45**	**260**	*e*Pn	**Pn**	**14 57 09.6**	**-0.4**
MAJO				*e*Sn	**Sn**	**14 57 56.2**	**-4.5**
MAT	**Matsushiro**	**4.45**	**260**	P	**Pn**	**14 57 09.5**	**-0.4**
MAT				S	**Sn**	**14 58 01.5**	**+0.8**
MJB9	**Matsu-Tunnel**	**4.46**	**260**	*e*Pn	**Pn**	**14 57 09.8**	**-0.2**
ERM	**Erimo**	**4.54**	**355**	*de*P	**Pn**	**14 57 08.6**	**-2.5**
ERM				pmax	pmax		
	comp=Z,200nm,1.0s						
ERM	**Erimo**	**4.54**	**355**	*e*Pn	**Pn**	**14 57 08.8**	**-2.3**
ERM				*e*Sn	**Sn**	**14 57 55.5**	**-7.2**
JKB	**Kayabe**	**4.84**	**336**	P	**Pn**	**14 57 13.8**	**-1.4**
JHJ2	**Mitsune**	**5.37**	**217**	*e*Pn	**Pn**	**14 57 17.8**	**-4.6**
JHJ2				*e*Sn	**Sn**	**14 58 17.7**	**-5.4**
JHJ	**Hachijo jima 2**	**5.38**	**217**	Pn	**Pn**	**14 57 20.0**	**-2.6**
	comp=Z,78nm,0.3s,baz=264,slow=24,SNR=22						
JHJ				Sn	**Sn**	**14 58 15.9**	**-7.5**
	comp=Z,198nm,0.3s,baz=318,slow=23,SNR=10						
INU	**Inuyama**	**5.75**	**250**	*e*Pn	**Pn**	**14 57 26.8**	**-1.0**
ASAJ	**Asahikawa**	**6.68**	**353**	Pn	**Pn**	**14 57 38.9**	**-1.5**
	baz=196,slow=7.4						
ASAJ				Sn	**Sn**	**14 58 50.1**	**-5.2**
	comp=Z,18nm,0.3s,baz=21,slow=24,SNR=8.0						
ASAJ				LR	LR	15 01 01.0	
	comp=Z,5μm,18.8s,baz=178,slow=45						
ASAJ	**Asahikawa**	**6.68**	**353**	*e*Pn	**Pn**	**14 57 38.3**	**-2.1**
ASAJ				Sn	**Sn**	**14 58 50.1**	**-5.2**
ASAJ				*e*Sn	**Sn**	**14 58 51.0**	**-4.3**
YUK	**Yuzh-Kuril'sk**	**6.76**	**14**	⇑*e*P	**Pn**	**14 57 38.1**	**-3.4**
KUR	**Kuril'sk**	**8.37**	**21**	*e*P	**Pn**	**14 58 00.2**	**-3.4**
KUR				*e*S	Sn	14 59 27.2	-10
KUR				pmax	pmax		
	comp=Z,50nm,0.6s						
KUR				pmax	pmax		
	comp=E,54nm,0.5s						
KUR				pmax	pmax		
	comp=N,29nm,0.4s						
KUR				smax	smax		
	comp=E,261nm,0.5s						
KUR				smax	smax		
	comp=N,169nm,0.6s						
KUR				smax	smax		
	comp=E,763nm,2.5s						
YSS	**Yuzh-Sakhalins**	**9.49**	**356**	⇓*iP*	**Pn**	**14 58 17.9**	**-1.0**
YSS				*e*S	**Sn**	**14 59 59.0**	**-5.4**
YSS				pmax	pmax		
	comp=Z,90nm,0.5s						
YSS				MLR	MLR		
	comp=Z,1μm,13.0s						
YSS				MLR	MLR		
	comp=N,2μm,12.0s						
YSS				MLR	MLR		
	comp=E,2μm,14.0s						
YSS	**Yuzh-Sakhalins**	**9.49**	**356**	*e*Pn	**Pn**	**14 58 15.1**	**-3.8**
YSS				*e*Sn	**Sn**	**14 59 57.7**	**-6.7**
CBIJ	**Chichi jima**	**10.43**	**187**	*e*Pn	Pn	14 58 21.7	-10
CBIJ				Sn	Sn	15 00 14.4	-13
JCJ	**Chichijima**	**10.43**	**187**	Pn	Pn	14 58 26.4	-5.6
	comp=E,39nm,0.3s,baz=88,slow=19,SNR=19						
JCJ				Sn	Sn	15 00 14.4	-13
	comp=E,40nm,0.3s,baz=280,slow=21,SNR=6.2						
VLA	**Vladivostok**	**10.60**	**306**	⇑*e*P	**Pn**	**14 58 38.5**	**+4.4**
VLA				pmax	pmax		
	comp=Z,37nm,1.0s						
USRK	**Ussuriysk Ar.**	**11.09**	**311**	Pn	**Pn**	**14 58 42.0**	**+1.2**
	comp=Z,2.0nm,0.3s,baz=120,slow=14,SNR=42						
JNU	**Nakatsue**	**11.30**	**251**	Pn	**Pn**	**14 58 43.3**	**-0.6**
	comp=Z,1.0nm,0.3s,baz=66,slow=8.3,SNR=8.5						
JNU	**Nakatsue**	**11.30**	**251**	*e*Pn	Pn	14 58 39.0	-4.9
UGL	**Uglegorsk**	**11.65**	**355**	P	**Pn**	**14 58 46.0**	**-2.4**
UGL				pmax	pmax		
	comp=Z,36nm,0.5s						
UGL				MLR	MLR		
	comp=N,1μm,14.0s						
UGL				MLR	MLR		
	comp=E,2μm,14.0s						
UGL				MLR	MLR		
	comp=Z,2μm,14.0s						
KSRS	**Korea Array**	**12.50**	**275**	Pn	**Pn**	**14 59 01.9**	**+1.8**
	comp=Z,2.3nm,0.3s,baz=84,slow=12,SNR=68						
KS01	**Wonju Array Si**	**12.52**	**275**	*e*Pn	**Pn**	**14 59 00.7**	**+0.3**
KS15	**Wonju Array Si**	**12.53**	**275**	*e*Pn	**Pn**	**14 59 01.2**	**+0.6**
KSAR	**Wonju Array Be**	**12.53**	**275**	P	**Pn**	**14 59 01.9**	**+1.4**
KSAR	**Wonju Array Be**	**12.53**	**275**	Pn	**Pn**	**14 59 01.9**	**+1.4**
HABR	**Khabarovsk**	**12.65**	**333**	*ce*P	**Pn**	**14 59 00.2**	**-1.9**
HABR				*e*S	**Sn**	**15 01 21.4**	**-0.4**
HABR				pmax	pmax		
	comp=N,29nm,1.5s						
HABR				pmax	pmax		
	comp=E,18nm,1.5s						
HABR				pmax	pmax		
	comp=Z,33nm,1.5s						
HABR				MLR	MLR		
	comp=Z,869nm,13.0s						
MDJ	**Mudanjiang**	**12.77**	**308**	P	**Pn**	**14 59 02.8**	**-1.0**
MDJ				S	**Sn**	**15 01 24.0**	**-0.8**
MDJ				ScP	**ScP**	**15 08 09.8**	**+0.5**
MDJ				pmax	pmax		
	comp=Z,14nm,1.1s						
MDJ				pmax	pmax		
	comp=Z,130nm,4.8s						
MDJ				LR	LR		
	comp=Z,3μm,16.9s						
MDJ				LR	LR		
	comp=Z,2μm,19.1s						
MDJ	**Mudanjiang**	**12.77**	**308**	*e*P	**Pn**	**14 59 03.3**	**-0.5**
	comp=Z,22nm,0.8s						
TJN	**Taejon**	**13.08**	**270**	⇑*e*P	**Pn**	**14 59 07.6**	**-0.5**
TYV	**Tymovskoe**	**13.40**	**357**	*e*P	**Pn**	**14 59 09.5**	**-2.8**
TYV				pmax	pmax		
	comp=Z,44nm,1.0s						
TYV				MLR	MLR		
	comp=N,2μm,20.0s						
TYV				MLR	MLR		
	comp=Z,2μm,20.0s						
INCN	**Inchon**	**13.52**	**275**	*e*Pn	**Pn**	**14 59 14.8**	**+0.7**
KLR	**Kul'dur**	**14.56**	**327**	Pn	**Pn**	**14 59 25.8**	**-2.5**
	comp=Z,2.1nm,0.3s,baz=133,slow=12,SNR=52						
KLR				LR	LR	15 05 13.1	
	comp=Z,2μm,18.3s,baz=144,slow=38						
CN2	**Changchun**	**15.18**	**300**	*e*P	**Pn**	**14 59 33.5**	**-3.0**
CN2				*ep*P	P	14 59 41.0	-0.2
CN2				pmax	pmax		
	comp=Z,10.0nm,0.6s						
CN2				pmax	pmax		
	comp=Z,200nm,3.0s						
SKR	**Severo-Kuril's**	**15.92**	**30**	*e*P	**Pn**	**14 59 41.0**	**-5.1**
SKR				pmax	pmax		
	comp=E,180nm,1.0s						
SKR				pmax	pmax		
	comp=Z,180nm,1.0s						
SKR				MLR	MLR		
	comp=N,2μm,14.0s						
SKR				MLR	MLR		
	comp=E,2μm,14.0s						
SKR				MLR	MLR		
	comp=Z,2μm,14.0s						
DL2	**Dalian**	**17.37**	**281**	P	**Pn**	**15 00 03.3**	**-1.1**
DL2				pmax	pmax		
	comp=Z,90nm,0.8s						
DL2				pmax	pmax		
	comp=Z,520nm,5.4s						
DL2				LR	LR		
	comp=Z,1μm,13.4s						
DL2				LR	LR		
	comp=Z,1μm,12.7s						
DL2				LR	LR		
	comp=Z,1μm,12.7s						
PETK	**Petropavlovsk-**	**18.43**	**28**	P	**P**	**15 00 16.6**	**-0.6**
	comp=Z,0.2nm,0.3s,baz=212,slow=8.6,SNR=5.5						
PET	**Petropavlovsk**	**18.73**	**29**	*e*P	**P**	**15 00 14.1**	**-6.3**
PET				*e*S	Sn	15 03 33.4	-16
PET				pmax	pmax		
	comp=Z,300nm,8.2s						
PET				pmax	pmax		
	comp=Z,200nm,14.1s						
PET				pmax	pmax		
	comp=Z,23nm,1.0s						
PET				MLR	MLR		
	comp=Z,600nm,15.0s						
PET				MLR	MLR		
	comp=Z,600nm,14.0s						
SSE	**Sheshan**	**19.60**	**258**	P	**P**	**15 00 30.5**	**+0.4**
SSE				S	**S**	**15 04 06.8**	**-2.8**
SSE				pmax	pmax		
	comp=Z,44nm,0.7s						
SSE				pmax	pmax		
	comp=Z,480nm,6.7s						
SSE				LR	LR		
	comp=Z,1μm,22.8s						
SSE				LR	LR		
	comp=Z,380nm,23.4s						
HIA	**Hailar**	**20.89**	**312**	*e*P	**P**	**15 00 41.4**	**-2.7**
HIA				pmax	pmax		
	comp=Z,27nm,0.8s						
HIA	**Hailar**	**20.89**	**312**	*e*P	**P**	**15 00 41.4**	**-2.7**
	comp=Z,27nm,0.8s						
NJ2	**Nanjing**	**21.05**	**262**	*e*P	**P**	**15 00 46.0**	**+0.2**
NJ2				LR	LR		
	comp=Z,2μm,16.2s						
NJ2				LR	LR		
	comp=Z,1μm,19.5s						
TIA	**Tai'an**	**21.24**	**275**	⇓P	**P**	**15 00 46.5**	**-1.4**
TIA				S	S	15 04 31.0	-11
TIA				pmax	pmax		
	comp=Z,80nm,0.9s						
TIA				LR	LR		
	comp=Z,2μm,13.0s						
TIA				LR	LR		
	comp=Z,2μm,13.8s						
TIA				LR	LR		
	comp=Z,1μm,15.0s						
BJI	**Beijing**	**21.54**	**285**	P	**P**	**15 00 49.0**	**-2.1**
BJI				S	**S**	**15 04 46.8**	**-1.4**
BJI				pmax	pmax		
	comp=Z,9.0nm,0.8s						
BJI				pmax	pmax		
	comp=Z,240nm,4.5s						
BJI				LR	LR		
	comp=Z,2μm,16.1s						
BJI				LR	LR		
	comp=Z,850nm,11.5s						
BJT	**Baijiatuau**	**21.55**	**285**	*e*P	**P**	**15 00 46.1**	**-5.1**
BJT				pmax	pmax		
	comp=Z,25nm,0.6s						
BJT	**Baijiatuau**	**21.55**	**285**	*e*P	**P**	**15 00 46.1**	**-5.1**
	comp=Z,25nm,0.6s						
MA2	**Magadan**	**22.58**	**9**	P	**P**	**15 01 02.4**	**+0.3**
	comp=Z,5.5nm,0.7s,baz=303,slow=6.5,SNR=4.5						
MA2	**Magadan**	**22.58**	**9**	P	**P**	**15 01 02.4**	**+0.3**
MA2				pmax	pmax		
	comp=Z,9.0nm,0.9s						
CLNS	**Chul'man**	**23.04**	**333**	*e*P	**P**	**15 01 05.1**	**-1.8**
CLNS				pmax	pmax		
	comp=Z,42nm,1.0s						
CLNS				pmax	pmax		
	comp=N,29nm,0.9s						
CLNS				pmax	pmax		
	comp=E,21nm,0.9s						
CLNS				MLR	MLR		
	comp=E,686nm,13.0s						
CLNS				MLR	MLR		
	comp=Z,815nm,15.0s						
CLNS				MLR	MLR		
	comp=N,620nm,14.0s						
GUMO	**Guam**	**23.82**	**177**	LR	LR	15 10 34.4	
	comp=N,144nm,19.2s,baz=7.5,slow=37						
HHC	**Hu-ho-hao-te**	**25.03**	**288**	*e*P	**P**	**15 01 25.8**	**0.0**
HHC				S	**S**	**15 05 46.8**	**-1.1**
HHC				pmax	pmax		
	comp=N,49nm,0.7s						
HHC				pmax	pmax		
	comp=N,250nm,4.1s						
HHC				LR	LR		
	comp=N,1μm,13.2s						
HHC				LR	LR		
	comp=N,1μm,12.2s						
HHC				LR	LR		
	comp=N,1μm,12.8s						
WHN	**Wuhan**	**25.19**	**263**	⇓P	**P**	**15 01 27.5**	**+0.3**
WHN				sP	**sP**	**15 01 43.8**	**+3.8**
CIT	**Chita**	**25.62**	**314**	*e*P	**P**	**15 01 31.8**	**+0.8**
CIT				*e*		15 01 43.0	
CIT				*e*		15 02 06.4	
CIT				pmax	pmax		
	comp=Z,110nm,1.2s						
SEY	**Seymchan**	**26.04**	**9**	P	**P**	**15 01 35.9**	**+1.3**
	comp=Z,8.5nm,0.8s,baz=187,slow=6.8,SNR=14						
YAK	**Yakutsk**	**26.06**	**345**	P	**P**	**15 01 34.2**	**-0.5**
	comp=Z,0.8nm,0.4s,baz=323,slow=20,SNR=2.6						
YAK	**Yakutsk**	**26.06**	**345**	*e*P	**P**	**15 01 34.3**	**-0.5**
YAK				*e**PP	**sP**	**15 01 47.0**	**-0.7**
YAK				*e*		15 02 10.7	
YAK				*e*PPP	PPP	15 02 21.6	
YAK				*e*		15 04 58.3	
YAK				*e*S	**S**	**15 06 04.2**	**+0.6**
YAK				*e*SS	**SnSn**	**15 07 01.5**	**-1.2**
YAK				pmax	pmax		
	comp=Z,14nm,0.9s						
YAK				pmax	pmax		
	comp=Z,200nm,4.4s						
YAK				pmax	pmax		
	comp=N,66nm,3.4s						
YAK				pmax	pmax		
	comp=E,79nm,3.2s						
YAK				smax	smax		
	comp=N,172nm,2.9s						
YAK				smax	smax		
	comp=E,113nm,2.3s						
YAK				MLR	MLR		
	comp=Z,746nm,14.0s						
YAK				MLR	MLR		
	comp=N,431nm,14.0s						
YAK				MLR	MLR		
	comp=E,681nm,15.0s						
YAK	**Yakutsk**	**26.06**	**345**	*e*P	**P**	**15 01 34.6**	**-0.2**
	comp=E,56nm,0.7s						
H11S1	**WAKE ISLAND Hy**	**27.65**	**127**	T	T	15 30 50.6	
	baz=318,slow=76,SNR=8.9						
H11S3	**WAKE ISLAND Hy**	**27.65**	**127**	T	T	15 30 43.2	
	baz=318,slow=76,SNR=8.1						
H11S2	**WAKE ISLAND Hy**	**27.67**	**127**	T	T	15 30 59.0	
	baz=318,slow=76,SNR=14						
BOD	**Bodaibo**	**28.13**	**326**	*e*P	P	15 01 48.4	-5.0
BOD				pmax	pmax		
	comp=Z,25nm,1.3s						
XAN	**Xi'an**	**28.29**	**274**	P	**P**	**15 01 55.3**	**+0.1**
XAN				pmax	pmax		
	comp=Z,25nm,0.6s						
XAN				LR	LR		
	comp=Z,1μm,12.5s						
XAN				LR	LR		
	comp=Z,380nm,13.5s						
ULN	**Ulaanbaatar**	**28.59**	**303**	*de*P	**P**	**15 01 58.8**	**+0.9**
ULN				pmax	pmax		
	comp=Z,24nm,1.2s						
ULN	**Ulaanbaatar**	**28.59**	**303**	P	**P**	**15 01 56.6**	**-1.3**
	comp=Z,21nm,1.1s						
SONA1	**Songino Array**	**29.02**	**303**	*e*P	**P**	**15 02 02.5**	**+0.8**
SONM	**Songino Array**	**29.03**	**303**	P	**P**	**15 02 02.5**	**+0.8**
	comp=Z,8.0nm,0.7s,baz=98,slow=9.1,SNR=35						
ENH	**Enshi**	**29.14**	**266**	*e*P	**P**	**15 02 02.4**	**-0.4**
	comp=Z,59nm,0.9s						
IRK	**Irkutsk**	**31.13**	**311**	*e*P	**P**	**15 02 20.0**	**-0.1**
IRK				pmax	pmax		
	comp=Z,23nm,1.3s						
TLY	**Talaya**	**31.40**	**310**	P	**P**	**15 02 25.0**	**+2.5**
	comp=Z,17nm,0.9s,baz=110,slow=3.5,SNR=18						
TLY	**Talaya**	**31.40**	**310**	*e*P	**P**	**15 02 23.6**	**+1.1**
TLY				pmax	pmax		
	comp=Z,19nm,0.9s						
TLY				MLR	MLR		
	comp=Z,715nm,18.0s						
TLY	**Talaya**	**31.40**	**310**	P	**P**	**15 02 21.5**	**-1.0**
	comp=Z,16nm,0.8s						
ZAK	**Zakamensk**	**31.40**	**307**	*e*P	**P**	**15 02 22.4**	**-0.3**
ZAK				pmax	pmax		
	comp=Z,9.0nm,1.1s						
LZH	**Lanzhou**	**31.75**	**280**	*e*P	**P**	**15 02 27.8**	**+1.9**
LZH				pP	pP	15 02 35.8	+0.8
LZH				sP	sP	15 02 40.3	+1.4
LZH				PP	**PnPn**	**15 03 34.0**	**+3.5**
LZH				*e*S	**S**	**15 07 33.0**	**-0.9**
LZH				sS	sS	15 07 47.3	-1.7
LZH				pmax	pmax		
	comp=Z,27nm,1.1s						
LZH				pmax	pmax		
	comp=Z,110nm,5.0s						
LZH				LR	LR		
	comp=Z,1μm,13.9s						
LZH				LR	LR		
	comp=Z,1μm,13.4s						
LZH				LR	LR		
	comp=Z,2μm,16.8s						
MOY	**Mondy**	**33.02**	**309**	*e*P	**P**	**15 02 40.1**	**+3.2**
GYA	**Guiyang**	**33.05**	**261**	P	**P**	**15 02 38.3**	**+0.9**
GYA				pP	pP	15 02 47.8	+1.3
GYA				PP	**PnPn**	**15 03 49.0**	**+1.7**
GYA				PcP	**PcP**	**15 05 21.5**	**+1.0**
GYA				S	**S**	**15 07 53.3**	**-1.0**
GYA				sS	sS	15 08 10.0	+0.6
GYA				ScP	**ScP**	**15 09 01.5**	**-0.8**
GYA				SS	**SnSn**	**15 09 53.5**	**-0.4**
GYA				pmax	pmax		
	comp=Z,30nm,1.1s						
GYA				pmax	pmax		
	comp=Z,120nm,5.4s						
GYA				LR	LR		
	comp=Z,530nm,17.5s						
GYA				LR	LR		
	comp=Z,520nm,18.0s						
BILL	**Bilibino**	**33.11**	**15**	⇓*iP*	**P**	**15 02 37.5**	**+0.2**
BILL				*e**PP	**sP**	**15 02 49.1**	**-1.1**
BILL				*i **SP	pP	15 02 54.5	+8.1
BILL				S	**S**	**15 07 57.0**	**+2.9**
BILL				*e*SSS	SSS	15 10 10.7	
BILL				pmax	pmax		
	comp=Z,10.0nm,1.7s						
BILL				MLR	MLR		
	comp=Z,326nm,19.0s						
BILL	**Bilibino**	**33.11**	**15**	*e*P	**P**	**15 02 36.0**	**-1.2**
CD2	**Chengdu**	**33.45**	**271**	P	**P**	**15 02 40.0**	**-0.7**
CD2				sP	sP	15 02 54.5	+0.8
CD2				PP	**PP**	**15 03 56.0**	**-0.6**
CD2				PcP	**PcP**	**15 05 20.8**	**-0.7**
CD2				S	**S**	**15 07 59.8**	**-0.5**
CD2				sS	sS	15 08 16.8	+1.4
CD2				pmax	pmax		
	comp=Z,60nm,0.6s						
CD2				pmax	pmax		
	comp=Z,390nm,6.5s						
CD2				LR	LR		
	comp=Z,2μm,7.1s						
CD2				LR	LR		
	comp=Z,2μm,6.6s						
GTA	**Gaotai**	**34.13**	**287**	*e*P	**P**	**15 02 47.8**	**+1.1**
GTA				pP	pP	15 02 57.0	+1.1
GTA				sP	sP	15 03 01.5	+1.8
GTA				S	**S**	**15 08 10.0**	**-0.9**
GTA				sS	sS	15 08 28.3	+2.3
GTA				SS	**SnSn**	**15 10 17.0**	**-2.9**
GTA				pmax	pmax		
	comp=Z,12nm,0.8s						
GTA				pmax	pmax		
	comp=Z,250nm,6.4s						
GTA				LR	LR		
	comp=Z,2μm,17.6s						
GTA				LR	LR		
	comp=Z,1μm,17.8s						
GTA				LR	LR		
	comp=Z,980nm,15.4s						
QIZ	**Qiongzhong**	**34.74**	**247**	P	**P**	**15 02 52.0**	**+0.1**
QIZ				S	**S**	**15 08 22.0**	**+1.7**
QIZ				LR	LR		
	comp=Z,670nm,20.0s						

QIZ LR LR
comp=Z,530nm,21.8s
QIZ LR LR
comp=Z,450nm,12.7s
TIXI Tiksi 35.08 352 P **P 15 02 53.4 -0.9**
comp=Z,0.8nm,0.5s,baz=192,slow=9.3,SNR=2.7
TIXI Tiksi 35.08 352⇓ *eP* **P 15 02 54.2 0.0**
TIXI pmax pmax
comp=Z,5.0nm,1.7s
TIXI Tiksi 35.08 352 *eP* **P 15 02 53.6 -0.6**
comp=Z,5.0nm,0.7s
KMI Kunming 36.79 262 P **P 15 03 09.8 +0.1**
KMI pP pP 15 03 19.8 +0.8
KMI PP **PnPn 15 04 35.5 +1.6**
KMI S **S 15 08 52.3 +0.3**
KMI pmax pmax
comp=Z,19nm,0.7s
KMI pmax pmax
comp=Z,330nm,5.3s
KMI LR LR
comp=Z,570nm,6.1s
KMI LR LR
comp=Z,580nm,6.8s
KMI LR LR
comp=Z,530nm,7.2s
MANU Manus Island 39.48 174 *eP* **P 15 03 28.1 -4.0**
comp=Z,2μm,0.7s
JAY Jayapura 39.89 185 P **P 15 03 36.2 +0.6**
comp=Z,4.1nm,0.8s,baz=82,slow=23,SNR=11
WMQ Urumqi 42.23 297 P **P 15 03 56.0 +1.3**
WMQ pP pP 15 04 03.0 -1.0
WMQ sP sP 15 04 10.3 +2.5
WMQ S **S 15 10 15.0 +2.0**
WMQ ScS **ScS 15 13 55.3 +0.9**
WMQ pmax pmax
comp=Z,8.0nm,0.6s
WMQ pmax pmax
comp=Z,120nm,4.0s
WMQ LR LR
comp=Z,650nm,19.4s
WMQ LR LR
comp=Z,170nm,24.6s
LAMP Lampang 42.76 256 P **P 15 04 00.8 +1.6**
comp=Z,4.8nm,0.8s
ZAA0 Zalesovo Array 42.94 312 *eP* **P 15 04 00.3 +0.1**
ZALV Zalesovo Beam 42.94 312 P **P 15 04 00.5 +0.3**
comp=Z,5.0nm,0.5s,baz=89,slow=6.9,SNR=32
ZALV PcP **PcP 15 05 51.6 +1.2**
comp=Z,3.8nm,0.7s,baz=94,slow=2.7,SNR=3.8
CMMT Chiang Mai 43.13 257 P **P 15 04 03.2 +1.0**
comp=Z,7.6nm,1.0s
CHTO Chiang Mai 43.13 257 *eP* **P 15 03 57.5 -4.7**
CHTO pmax pmax
comp=Z,7.0nm,0.8s
CHTO Chiang Mai 43.13 257 *eP* **P 15 03 57.5 -4.7**
comp=Z,7.4nm,0.8s
CMAR Chiang Mai Arr 43.33 257 P **P 15 04 04.5 +0.6**
comp=Z,3.6nm,0.8s,baz=46,slow=6.7,SNR=31
CMAR Chiang Mai Arr 43.33 257 P **P 15 04 04.5 +0.6**
CMAR pmax pmax
comp=Z,3.0nm,0.8s
CM01 Chiang Mai Arr 43.34 257 *eP* **P 15 04 03.9 0.0**
NRIK Noril'sk 43.62 335 P **P 15 04 04.5 -1.0**
comp=Z,0.9nm,0.3s,baz=338,slow=16,SNR=5.2
NRIK LR LR 15 23 35.6
comp=Z,618nm,18.4s,baz=106,slow=38
NVS Novosibirsk 43.82 313 *eP* **P 15 04 07.6 +0.3**
NVS pmax pmax
comp=Z,29nm,1.1s
NVS pmax pmax
comp=E,25nm,1.3s
TT01 Tatalina 44.03 35 *eP* **P 15 04 10.8 +1.9**
SHL Shillong 45.19 270 *eP* P 15 04 24.0 +5.2
MK01 Makanchi Array 45.39 302 *eP* **P 15 04 19.7 -0.3**
MK31 Makanchi Array 45.39 302 P **P 15 04 19.9 -0.1**
MK31 pmax pmax
comp=Z,9.0nm,0.7s
MK31 Makanchi Array 45.39 302 *eP* **P 15 04 20.8 +0.8**
MKAR Makanchi Array 45.39 302 P **P 15 04 20.9 +0.8**
comp=Z,4.8nm,0.6s,baz=86,slow=9.4,SNR=60
MKAR Makanchi Array 45.39 302 *eP* **P 15 04 20.5 +0.5**
KDAK Kodiak Island 45.57 42 *i P* **P 15 04 23.2 +2.0**
MAKZ Makanchi 45.60 302 *eP* **P 15 04 20.9 -0.7**
MAKZ pmax pmax
comp=Z,11nm,0.8s
MAKZ Makanchi 45.60 302 *eP* **P 15 04 20.9 -0.7**
comp=Z,11nm,0.8s
PPLA Purkeypile 45.78 35 *eP* **P 15 04 21.0 -2.0**
BPAW Bear Paw Mtn. 46.37 33 *eP* **P 15 04 28.1 +0.6**
comp=Z,0.3nm,0.6s
KTH Kantishna Hill 46.38 34 *eP* **P 15 04 27.5 -0.1**
comp=Z,16nm,1.1s
MLY Manley 46.52 32 *eP* **P 15 04 30.7 +2.0**
comp=Z,12nm,1.0s
TRF Thorofare Moun 46.66 34 *eP* **P 15 04 28.5 -1.4**
comp=Z,32nm,1.8s
RC01 Rabbit Creek A 46.92 38 *eP* **P 15 04 36.0 +4.2**
comp=Z,20nm,1.3s
KURK Kurchatov 47.06 308 P **P 15 04 32.5 -0.5**
KURK pmax pmax
comp=Z,64nm,0.8s
KURK Kurchatov 47.06 308 *eP* **P 15 04 31.5 -1.5**
comp=Z,45nm,0.8s
MCK McKinley 47.27 34 *eP* **P 15 04 38.5 +4.0**
MCK pmax pmax
comp=Z,11nm,1.1s
MCK McKinley 47.27 34 *eP* **P 15 04 38.5 +4.0**
comp=Z,11nm,1.1s
RND Reindeer 47.30 34 *eP* **P 15 04 35.5 +0.6**
RND pmax pmax
comp=Z,12nm,0.9s
RND Reindeer 47.30 34 *eP* **P 15 04 35.5 +0.6**
comp=Z,12nm,0.9s
MDM Murphy Dome 47.59 32 *eP* **P 15 04 39.1 +2.2**
comp=Z,18nm,1.0s
WRH Wood River Hil 47.64 33 *eP* **P 15 04 39.1 +1.8**
comp=Z,4.7nm,0.8s
COLA College 47.75 32⇓ *eP* **P 15 04 40.4 +2.3**
COLA pmax pmax
comp=Z,7.0nm,0.9s
COLA College 47.75 32 *eP* **P 15 04 37.2 -0.9**
comp=Z,4.7nm,0.7s
SCM Sheep Creek Mo 48.05 37 *eP* **P 15 04 42.1 +1.4**
SCM pmax pmax
comp=Z,15nm,0.7s
SCM Sheep Creek Mo 48.05 37 *eP* **P 15 04 42.1 +1.4**
comp=Z,14nm,0.7s
HDA Harding Lake 48.14 33 *eP* **P 15 04 42.3 +1.1**
comp=Z,9.7nm,0.9s
PDGK Podgornoye 48.14 298 P **P 15 04 41.4 -0.1**
PDGK pmax pmax
comp=Z,29nm,1.3s
ILAR Eielson Array 48.16 33 P **P 15 04 42.1 +0.8**
comp=Z,4.9nm,0.7s,baz=263,slow=6.4,SNR=38
ILB Eielson Array 48.16 33 *eP* **P 15 04 42.0 +0.7**
IL1 Eielson Array 48.16 33 *eP* **P 15 04 42.0 +0.7**
KLU Klutina 48.74 37 *eP* **P 15 04 47.4 +1.5**
comp=Z,16nm,1.1s
FYU Fort Yukon 48.83 30 *eP* P 15 04 51.7 +5.2
comp=Z,56nm,1.6s
DIV Divide 48.84 37 *eP* **P 15 04 45.2 -1.6**
comp=Z,59nm,1.7s
GUN Gumba 48.88 276 *eP* **P 15 04 48.4 +0.6**
comp=Z,57nm,0.5s
KKN Kakani 49.41 277 *eP* **P 15 04 52.3 +0.6**
comp=Z,30nm,0.5s
BMRM Bremner River 49.42 38 *eP* **P 15 04 55.8 +4.6**
comp=Z,66nm,1.9s
DOT Dot Lake 49.44 34 *eP* **P 15 04 51.2 -0.1**
comp=Z,45nm,1.6s
DMN Daman 49.63 276 *eP* **P 15 04 54.0 +0.6**
comp=Z,15nm,0.5s
MENT Mentasta 49.65 35 *eP* **P 15 04 55.2 +2.4**
comp=Z,7.2nm,0.8s
GKN Gorkha 49.82 277 *eP* **P 15 04 55.7 +0.9**
comp=Z,29nm,0.5s
BALM Baldy 50.51 37 *eP* **P 15 05 01.3 +1.8**
BALM pmax pmax
comp=Z,14nm,1.2s
BALM Baldy 50.51 37 *eP* **P 15 05 01.3 +1.8**
comp=Z,14nm,1.2s
EGAK Eagle 50.61 32 *eP* **P 15 05 00.9 +0.9**
KOLN Koldanda 50.74 277 *eP* **P 15 05 03.5 +1.7**
comp=Z,20nm,0.6s
TKM2 Tokmak 2 50.98 299 P **P 15 05 04.8 +1.3**
TKM2 pmax pmax
comp=Z,19nm,0.5s
TKM2 Tokmak 2 50.98 299 *eP* **P 15 05 03.8 +0.3**
comp=Z,32nm,0.5s
PYUN Piuthan 51.08 278 *eP* **P 15 05 06.3 +2.0**
comp=Z,101nm,0.9s
COEN Coen 51.16 181 *eP* **P 15 05 01.6 -3.1**
comp=Z,26nm,1.0s
MTN Manton Dam 51.42 196 *eP* **P 15 05 06.3 -0.3**
comp=Z,47nm,0.7s
DAWY Dawson 51.46 33 *eP* **P 15 05 10.7 +4.2**
BVA0 Borovoye Array 51.59 312 *i* P **P 15 05 07.7 +0.1**
BVA0 pmax pmax
comp=Z,13nm,0.9s
BVAR Borovoye Array 51.59 312 P **P 15 05 07.9 +0.3**
comp=Z,7.2nm,0.9s,baz=69,slow=8.1,SNR=25
OTUK Ortayu 51.61 306 P **P 15 05 08.1 +0.3**
OTUK pmax pmax
comp=Z,12nm,1.0s
FRU Bishkek 51.69 299 *eP* **P 15 05 11.0 +2.4**
FRU *e* 15 07 10.0
FRU pmax pmax
comp=Z,65nm,2.4s
AAK Ala-Archa 51.84 299⇑ *eP* **P 15 05 11.0 +1.2**
AAK Ala-Archa 51.84 299 *eP* **P 15 05 09.2 -0.6**
comp=Z,11nm,1.0s
KSH Kashi 51.85 295 *eP* **P 15 05 14.5 +4.6**
KSH *es*P sP 15 05 28.8 +5.7
KSH *eP*P **PP 15 07 14.0 +6.3**
KSH PcS **PcS 15 10 23.0 +2.3**
KSH S **S 15 12 35.3 +5.0**
KSH ScS **ScS 15 14 58.3 +0.5**
KSH pmax pmax
comp=Z,170nm,4.8s
KSH LR LR
comp=Z,410nm,13.0s
KSH LR LR
comp=Z,620nm,13.5s
KSH LR LR
comp=Z,470nm,16.1s
EKS2 Erkin-Say 52.33 299 *eP* **P 15 05 11.2 -2.2**
EKS2 pmax pmax
comp=Z,12nm,1.0s
EKS2 Erkin-Say 52.33 299 *eP* **P 15 05 11.2 -2.2**
comp=Z,12nm,1.0s
ZRNK Zerenda 52.42 313 P **P 15 05 13.7 0.0**
ZRNK pmax pmax
comp=Z,21nm,1.1s
ZRNK Zerenda 52.42 313 *eP* **P 15 05 14.0 +0.3**
comp=Z,18nm,1.0s
INK Inuvik 53.17 27 P **P 15 05 20.4 +1.4**
comp=Z,3.2nm,0.8s,baz=227,slow=10.0,SNR=4.2
INK Inuvik 53.17 27 P **P 15 05 20.4 +1.4**
INK pmax pmax
comp=Z,2.0nm,0.6s
MNAS Manas 53.28 299 P **P 15 05 20.6 +0.2**
MNAS pmax pmax
comp=Z,17nm,0.6s
PSI Prapat 53.56 241 P **P 15 05 23.2 +0.4**
comp=Z,4.0nm,0.6s,baz=311,slow=13,SNR=6.0
KK31 Karatay Array 54.44 301 P **P 15 05 27.8 -1.0**
KK31 pmax pmax
comp=Z,8.0nm,0.7s
KKAR Karatay Array 54.44 301 *eP* **P 15 05 28.9 +0.1**
KKAR Karatay Array 54.44 301 *eP* **P 15 05 28.9 +0.1**
SVE Sverdlovsk 55.99 319⇓ *iP* **P 15 05 40.9 +1.2**
SVE pmax pmax
comp=Z,35nm,0.9s
SVE MLR MLR
comp=Z,1μm,17.0s
SOKR Solikamsk 57.05 323 *eP* **sP 15 05 59.6 -0.9**
SOKR pmax pmax
comp=Z,24nm,0.9s
SOKR MLR MLR
comp=Z,303nm,20.0s
DLBC Dease Lake 57.17 39 P **P 15 05 48.2 0.0**
comp=Z,2.1nm,0.7s,baz=272,slow=5.7,SNR=5.3
DLBC Dease Lake 57.17 39 *eP* **P 15 05 51.4 +3.2**
comp=Z,37nm,1.9s
ARU Arti 57.20 319 *d iP* **P 15 05 49.2 +0.9**
ARU 15 06 39.6
ARU 15 07 56.2
ARU S **S 15 13 46.9 +5.3**
ARU SS **SS 15 17 33.4 +3.1**
ARU pmax pmax
comp=Z,26nm,1.7s
ARU MLR MLR
comp=Z,1μm,19.0s
ARU Arti 57.20 319 *eP* **P 15 05 48.5 +0.3**
comp=Z,32nm,0.9s
WRAB Tennant Creek 57.77 190 *c iP* **P 15 05 51.7 -1.0**
WRAB pmax pmax
comp=Z,114nm,0.8s
WRAB Tennant Creek 57.77 190 *eP* **P 15 05 49.8 -2.8**
comp=Z,42nm,0.8s
WB2 Warramunga Arr 57.78 190 *eP* **P 15 05 51.1 -1.6**
comp=Z,47nm,0.8s
WRA Warramunga Arr 57.78 190 P **P 15 05 51.4 -1.3**
comp=Z,38nm,0.7s,baz=9.4,slow=7.2,SNR=12
FITZ Fitzroy Crossi 57.83 200 *eP* **P 15 05 53.6 +0.6**
comp=Z,13nm,0.7s
AB31 Akbulak array 59.01 311 *i* P **P 15 06 01.2 +0.1**
AB31 pmax pmax
comp=Z,5.0nm,0.6s
ABKAR Akbulak array 59.01 311 *eP* **P 15 06 00.9 -0.2**
AKTO Aktyubinsk 59.70 312 P **P 15 06 06.3 +0.5**
comp=Z,5.3nm,0.8s,baz=74,slow=10,SNR=13
AKTO Aktyubinsk 59.70 312 P **P 15 06 05.5 -0.3**
AKTO pmax pmax
comp=Z,15nm,0.8s
AS01 Alice Springs 61.50 190 *eP* **P 15 06 16.2 -2.1**
ASAR Alice Springs 61.51 190 P **P 15 06 18.2 -0.2**
comp=Z,24nm,0.9s,baz=6.2,slow=7.5,SNR=99
YKW3 Yellowknife Ar 62.48 31 *eP* **P 15 06 27.4 +3.0**
comp=Z,20nm,1.9s
YKA Yellowknife Ar 62.52 31 P **P 15 06 25.0 +0.3**
comp=Z,1.2nm,0.7s,baz=300,slow=7.1,SNR=11
YKA Yellowknife Ar 62.52 31 P **P 15 06 25.0 +0.3**
YKA pmax pmax
comp=Z,1.0nm,0.7s
YKB5 Yellowknife Ar 62.52 31 *eP* **P 15 06 27.6 +2.9**
DZM Mont Dzumac 63.01 156 *e*LR LR 15 25 04.2
comp=Z,372nm,23.0s
ARCES ARCESS Array B 64.20 340 P **P 15 06 36.4 +0.7**
comp=Z,4.7nm,0.9s,baz=30,slow=7.3,SNR=4.7
KLMR Klimovskoe 64.32 328 *eP* **P 15 06 35.7 -1.0**
KLMR *e* 15 08 57.6
KLMR pmax pmax
comp=Z,23nm,1.5s
GEYT Alibeck 65.17 300 P **P 15 06 42.1 -0.5**
comp=Z,3.8nm,0.9s,baz=340,slow=3.5,SNR=7.1
DAG Danmarks Havn 65.47 356 *i P* **P 15 06 45.6 +1.7**
DAG *i* 15 06 54.5
DAG Danmarks Havn 65.47 356 *i P* **P 15 06 45.6 +1.7**
DAG *i* 15 06 54.5
MOS Moscow 67.94 324 *eP* P 15 07 14.1 +14
MOS *e* 15 07 24.7
MOS pmax pmax
comp=Z,37nm,1.1s
VRH Novokhopyorsk 68.43 319 *eP* P 15 07 08.0 +4.9
VRH pmax pmax
comp=Z,30nm,1.0s
VRH MLR MLR
comp=Z,1μm,28.0s
OBN Obninsk 68.80 324 *eP* **P 15 07 05.5 +0.2**
OBN *i* 15 07 19.0
OBN pmax pmax
comp=Z,8.0nm,0.5s
OBN MLR MLR
comp=Z,359nm,16.0s
STKA Stephens Creek 69.03 182 P **P 15 07 06.2 -0.6**
comp=Z,14nm,0.6s,baz=349,slow=7.2,SNR=49
STKA Stephens Creek 69.03 182 *eP* **P 15 07 06.4 -0.5**
STKA pmax pmax
comp=Z,3.0nm,0.6s
STKA Stephens Creek 69.03 182 *eP* **P 15 07 06.4 -0.5**
comp=Z,3.4nm,0.6s
LPSR Galich'ya Gora 69.09 321 *eP* P 15 07 15.3 +8.1
LPSR pmax pmax
comp=Z,30nm,1.1s
LPSR MLR MLR
comp=Z,350nm,14.0s
FIA1 FINESS Array S 69.24 333 *eP* **P 15 07 11.1 +3.2**
FINES FINESS Array B 69.24 333 P **P 15 07 08.8 +0.8**
comp=Z,3.8nm,0.7s,baz=25,slow=5.0,SNR=12
FINES LR LR 15 39 42.7
comp=Z,369nm,20.4s,baz=48,slow=38
VSR Storozhevoye 69.76 320 *eP* **P 15 07 13.7 +2.3**
VSR pmax pmax
comp=Z,8.0nm,0.6s
VSR MLR MLR
comp=Z,530nm,15.0s
SUMG Summit 70.23 1 *i* P **P 15 07 15.4 +1.0**
SUMG *i* 15 07 28.5
SUMG Summit 70.23 1 *eP* **P 15 07 11.9 -2.5**
SUMG pmax pmax
comp=Z,17nm,0.9s
SUMG Summit 70.23 1 *eP* **P 15 07 11.9 -2.5**
comp=Z,17nm,0.9s
BBOO Buckleboo 70.29 187 *eP* **P 15 07 12.3 -2.4**
comp=Z,20nm,0.8s
ZEI Tsey 71.88 310 *eP* **P 15 07 24.4 -0.3**
ZEI pmax pmax
comp=Z,26nm,0.8s
KIV Kislovodsk 71.95 312 *c iP* **P 15 07 26.9 +2.0**
KIV *i* *PP **sP 15 07 39.4 +0.9**
KIV *i* *SP **PcP 15 07 46.7 +3.2**
KIV pmax pmax
comp=Z,40nm,1.7s
KIV MLR MLR
comp=Z,227nm,16.0s
KIV Kislovodsk 71.95 312 *eP* **P 15 07 24.6 -0.3**
comp=Z,70nm,1.0s
KBZ Khabaz 71.95 311 P **P 15 07 25.8 +1.0**
comp=Z,5.1nm,0.9s,baz=76,slow=0.9,SNR=9.9
LRM Limekiln Ridge 72.57 45 *eP* **P 15 07 29.8 +0.9**
AKH Akhalkalaki 72.92 309⇓ *iP* sP 15 07 46.1 +1.7
NV01 Mina Array Sit 73.29 54 *eP* **P 15 07 33.6 +0.5**
NVAR Mina Array Bea 73.29 54 P **P 15 07 32.8 -0.4**
comp=Z,0.5nm,0.6s,baz=288,slow=3.5,SNR=4.0
SOC Sochi 73.91 313 *eP* **P 15 07 34.1 -2.3**
SOC *e* 15 07 48.8
SOC *e*PPP PPP 15 12 03.9
SOC *e*S **S 15 17 04.5 -1.7**
SOC *e*SS **SS 15 21 41.6 -8.3**
SOC pmax pmax
comp=Z,9.0nm,0.6s
SOC MLR MLR
comp=Z,264nm,16.0s
NB2 NORSAR Subarra 74.45 338 P **P 15 07 40.2 +0.9**
comp=Z,6.1nm,0.7s,baz=39,slow=6.2
NOA NORSAR Array B 74.45 338 P **P 15 07 40.1 +0.8**
comp=Z,1.7nm,0.6s,baz=40,slow=5.8,SNR=8.2
IMW Indian Meadow 74.58 46 *eP* **P 15 07 40.8 0.0**
comp=Z,2.0nm,0.8s
AKASG Malin Array Be 75.02 323 P **P 15 07 42.6 -0.1**
comp=Z,2.7nm,0.5s,baz=45,slow=5.9,SNR=9.7
AKASG LR LR 15 43 52.8
comp=Z,516nm,18.1s,baz=45,slow=38
AKASG Malin Array Be 75.02 323 *i* P **P 15 07 44.7 +2.0**
AKASG pmax pmax
comp=Z,3.0nm,0.5s
KIEV Kiev 75.03 323⇓ *eP* **P 15 07 45.8 +3.0**
KIEV pmax pmax
comp=Z,7.0nm,0.8s
KIEV Kiev 75.03 323 *eP* **P 15 07 42.6 -0.2**
comp=Z,18nm,0.9s
AK11 Malin Array Si 75.06 323 *eP* **P 15 07 44.0 +1.0**
BW06 Boulder Array 76.07 47 *eP* **P 15 07 49.8 +0.5**
PDAR Pinedale Array 76.07 47 P **P 15 07 49.9 +0.6**
comp=Z,0.9nm,0.8s,baz=262,slow=2.8,SNR=7.3
SIM Simferopol' 76.25 316 *eP* **sP 15 08 04.2 +0.8**
SIM pmax pmax
comp=Z,15nm,0.8s
SIM MLR MLR
comp=Z,160nm,17.0s
SORM Soroca 77.16 322⇓ *iP* **P 15 07 55.7 +0.7**
SORM Soroca 77.16 322⇓ **P 15 07 55.7 +0.7**
LVV L'vov 78.05 325 *eP* **sP 15 08 13.5 0.0**
LVV MLR MLR
comp=N,300nm,17.0s
LVV MLR MLR
comp=E,200nm,17.0s
LVV MLR MLR
comp=Z,300nm,17.0s
ULM Lac du Bonnet 78.14 34 LR LR 15 47 31.3
comp=Z,38nm,19.2s,baz=25,slow=40
KWP Kalwaria Pacla 78.79 325⇓ *iP* sP 15 08 18.0 +0.4
KWP Kalwaria Pacla 78.79 325⇓ P sP 15 08 18.0 +0.4
BURAR Bucovina Array 79.05 323⇑ *iP* **P 15 08 07.6 +2.0**
BURAR Bucovina Array 79.05 323⇑ **P 15 08 07.6 +2.0**
TESR Tescani 79.12 321⇓ *iP* **P 15 08 06.1 +0.2**
CFR Carcaliu 79.28 319⇓ *iP* sP 15 08 19.8 -0.5
CFR Carcaliu 79.28 319⇓ P sP 15 08 19.8 -0.5
VRI Vrincioaia 79.53 321⇑ *iP* pP 15 08 18.4 +0.3
VRI Vrincioaia 79.53 321⇑ P pP 15 08 18.4 +0.3
PLOR Plostina 79.58 321⇑ *iP* **P 15 08 09.3 +0.9**
PLOR Plostina 79.58 321⇑ P **P 15 08 09.3 +0.9**
OJC Ojcow 79.65 327 *eP* **P 15 08 12.8 +4.1**
OJC Ojcow 79.65 327 *eP* **P 15 08 12.8 +4.1**
UZH Uzhgorod 79.70 325 *eP* **sP 15 08 23.6 +1.0**
UZH *e* 15 08 32.0
UZH *e* 15 08 40.8
HARR Harsova 79.72 319⇓ *iP* pP 15 08 18.5 -0.6
HARR Harsova 79.72 319⇓ P pP 15 08 18.5 -0.6
BRTR Keskin Array B 79.88 313 P **P 15 08 12.0 +1.7**
comp=Z,0.8nm,0.6s,baz=43,slow=53,SNR=5.3
BRTR PP **PP 15 11 11.9 +0.5**
comp=Z,0.5nm,0.6s,baz=64,slow=5.0,SNR=2.6
BRTR LR LR 15 48 02.2
comp=Z,122nm,19.1s,baz=44,slow=39
NIE Niedzica 80.02 326 *eP* **P 15 08 13.1 +2.3**
NIE Niedzica 80.02 326 *eP* **P 15 08 13.1 +2.3**
MLR Muntele Rosu 80.18 321⇓ *iP* pP 15 08 19.8 -2.0
MLR Muntele Rosu 80.18 321⇓ P pP 15 08 19.8 -2.0
MSAB Monastry St. A 80.19 319⇓ *iP* sP 15 08 22.0 -3.3
LANS Liptovska Anna 80.58 327 *eP* sP 15 08 29.4 +2.0
LANS Liptovska Anna 80.58 327 *e* sP 15 08 29.3 +1.9
KECS Kecovo 80.63 326 *eP* sP 15 08 28.6 +1.0
KECS Kecovo 80.63 326 *e* sP 15 08 28.6 +1.0
OKC Ostrava-Krasne 80.64 328 *eP* **P 15 08 18.1 +4.1**
OKC *ex* x 15 08 28.7
OKC AMS AMS 15 47 00.0
comp=Z,500nm,19.1s
OKC Ostrava-Krasne 80.64 328 *eP* **P 15 08 18.1 +4.1**
OKC *e* 15 08 28.7
OKC MLR MLR
comp=Z,500nm,19.1s
DRGR 80.84 323⇓ *iP* P 15 08 21.0 +5.8
DRGR 80.84 323⇓ P P 15 08 21.0 +5.8
ARR Arges 80.92 321⇑ *iP* sP 15 08 30.9 +1.6
MORC Moravsky Berou 80.94 328⇓ *iP* **P 15 08 20.4 +4.7**
MORC Moravsky Berou 80.94 328⇓ P **P 15 08 20.4 +4.7**
DPC Dobruska-Polom 81.01 329 *eP* **P 15 08 19.6 +3.5**
DPC *ep*P **sP 15 08 30.2 +0.5**
DPC AMS AMS 15 46 50.0
comp=Z,400nm,17.0s
DPC Dobruska-Polom 81.01 329 *eP* **P 15 08 19.6 +3.5**
DPC *e* 15 08 30.2
DPC MLR MLR
comp=Z,400nm,17.0s
UPC Upice 81.02 329 *eP* **P 15 08 20.3 +4.3**
UPC *ep*P **sP 15 08 30.3 +0.6**
UPC AMS AMS 15 47 00.0
comp=Z,500nm,16.6s
UPC Upice 81.02 329 *eP* **P 15 08 20.3 +4.3**
UPC *e* 15 08 30.3
UPC MLR MLR
comp=Z,500nm,16.6s
KRLC Kraliky 81.03 329 *eP* **P 15 08 20.1 +3.9**
KRLC *ep*P **sP 15 08 30.4 +0.6**
KRLC Kraliky 81.03 329 *eP* **P 15 08 20.1 +3.9**
KRLC *e* 15 08 30.4
PSZ Piszkesteto 81.31 326⇑ *iP* **P 15 08 18.3 +0.5**
PSZ Piszkesteto 81.31 326⇑ P **P 15 08 18.3 +0.5**
BRG Berggiesshubel 81.56 330 *e*PKP **P 15 08 21.1 +2.2**
comp=Z,6.9nm,1.1s
BRG *e* 15 08 32.6
comp=Z,15nm,1.1s
comp=N,443nm,18.6s
comp=E,265nm,18.2s
comp=Z,520nm,15.9s
BRG Berggiesshubel 81.56 330 *eP* **P 15 08 21.1 +2.2**
BRG *e* 15 08 32.6
BRG pmax pmax
comp=Z,7.0nm,1.1s
BRG pmax pmax
comp=Z,15nm,1.1s
BRG MLR MLR
comp=N,443nm,18.6s
BRG MLR MLR

comp=E,265nm,18.2s
BRG MLR MLR
comp=Z,520nm,15.9s
CLL Collm 81.58 331 *e*P **P 15 08 20.0 +1.0**
comp=Z,14nm,1.5s
CLL *i* 15 08 32.4
comp=Z,24nm,1.0s
CLL *i* 15 08 42.2
CLL *e*PP **PP 15 11 28.0 +3.1**
CLL Collm 81.58 331 *e*P **P 15 08 20.0 +1.0**
CLL *i* 15 08 32.4
CLL pmax pmax
comp=Z,14nm,1.5s
PVCC Panska Ves 81.58 330 *e*P **P 15 08 22.7 +3.7**
PVCC *e*pP **sP 15 08 33.9 +1.3**
PVCC AMS AMS 15 47 30.0
comp=Z,400nm,14.1s
PVCC Panska Ves 81.58 330 *e*P **P 15 08 22.7 +3.7**
PVCC *e* 15 08 33.9
PVCC MLR MLR
comp=Z,400nm,14.1s
VRAC Vranov 81.70 328⇑*i*P **P 15 08 21.4 +1.7**
VRAC Vranov 81.70 328⇑P **P 15 08 21.4 +1.7**
GOPC GO Pecny, Ondr 81.97 329 *e*P **P 15 08 25.2 +4.1**
GOPC AMS AMS 15 47 30.0
comp=Z,500nm,17.6s
GOPC GO Pecny, Ondr 81.97 329 *e*P **P 15 08 25.2 +4.1**
GOPC MLR MLR
comp=Z,500nm,17.6s
PRU Pruhonice 82.02 330 *e*P **P 15 08 25.2 +3.9**
PRU *e*pP **sP 15 08 35.5 +0.6**
PRU AMS AMS 15 47 40.0
comp=Z,400nm,17.1s
PRU Pruhonice 82.02 330 *e*P **P 15 08 25.2 +3.9**
PRU *e* 15 08 35.5
PRU MLR MLR
comp=Z,400nm,17.1s
TREC Trest 82.17 329 AMS AMS 15 47 50.0
comp=Z,500nm,16.6s
NKC Novy Kostel 82.65 331 *e*P **P 15 08 28.8 +4.1**
NKC *e*pP **sP 15 08 39.0 +0.7**
NKC Novy Kostel 82.65 331 *e*P **P 15 08 28.8 +4.1**
NKC *e* 15 08 39.0
MDVR Moldovita 82.78 322⇓*i*P **P 15 08 26.7 +1.2**
ANMO Albuquerque 82.93 51⇑*e*P **P 15 08 27.9 +1.3**
ANMO pmax pmax
comp=Z,4.0nm,2.5s
KHC Kasperske Hory 83.08 330 *e*P **P 15 08 28.6 +1.7**
KHC *e*pP **sP 15 08 41.3 +0.7**
KHC *e*x x 15 08 50.7
KHC AMS AMS 15 47 50.0
comp=Z,400nm,16.6s
KHC Kasperske Hory 83.08 330 *e*P **P 15 08 28.6 +1.7**
KHC *e* 15 08 41.3
KHC MLR MLR
comp=Z,400nm,16.6s
KHC Kasperske Hory 83.08 330 *e*P **P 15 08 28.1 +1.1**
comp=Z,13nm,1.4s
GERES GERESS Array B 83.25 329 P **P 15 08 29.1 +1.1**
comp=Z,1.4nm,0.6s,baz=35,slow=4.9,SNR=14
GERES PP **PP 15 11 35.1 -3.8**
comp=Z,0.3nm,0.6s,baz=34,slow=11,SNR=3.4
GERES LR LR 15 48 25.3
comp=Z,362nm,18.1s,baz=37,slow=38
PPT Papeete 83.25 118 LR LR 15 43 29.3
comp=Z,124nm,18.4s,baz=305,slow=34
GEA0 GERESS Array S 83.26 329 *e*P **P 15 08 29.2 +1.2**
PPT2 Papeete2 83.27 118 *e*LR LR 15 34 22.2
comp=Z,130nm,20.8s
MOA Molln 83.81 328 *i*PcP **P 15 08 35.2 +4.5**
comp=Z,8.1nm,1.5s
MOA *i*sP **sP 15 08 45.7 +1.3**
comp=Z,17nm,1.5s
SCHQ Schefferville 84.40 17 P **P 15 08 34.3 +0.8**
comp=Z,3.1nm,0.6s,baz=346,slow=4.2,SNR=2.6
SCHQ LR LR 15 51 11.7
comp=Z,62nm,18.1s,baz=34,slow=39
BCLA Clavier 85.09 335 AP pP 15 08 50.9 +3.8
WLF Walferdange 85.44 334 XP sP 15 08 54.4 +1.9
MOTA Moosalm 85.50 330 *i*PcP **P 15 08 43.2 +3.8**
comp=Z,3.3nm,0.7s
MOTA *i*sP **sP 15 08 53.8 +0.7**
comp=Z,9.9nm,0.8s
RETA Reutte 85.52 330 *i*PcP **P 15 08 43.5 +4.1**
comp=Z,12nm,0.9s
RETA *i*sP **sP 15 08 53.8 +0.8**
comp=Z,22nm,0.9s
DOU Dourbes 85.61 335 AP pP 15 08 53.8 +4.1
PDG Podgorica 85.72 322⇑*i*P **P 15 08 43.3 +2.9**
BFO Black Forest 85.77 332 *e*P **P 15 08 37.3 -3.3**
BFO pmax pmax
comp=Z,32nm,1.4s
BFO Black Forest 85.77 332 *e*P **P 15 08 37.3 -3.3**
comp=Z,32nm,1.4s
DAVA Damuels 86.03 330 *i*PcP **P 15 08 45.5 +3.5**
comp=Z,11nm,0.8s
DAVA *e*sP **sP 15 08 56.3 +0.6**
comp=Z,17nm,1.0s
TBI Tubuai 87.24 122 *e*LR LR 15 36 12.4
comp=Z,160nm,24.2s
TXAR Lajitas Array 88.43 54 P **P 15 08 54.8 +0.9**
comp=Z,0.5nm,0.6s,baz=298,slow=3.4,SNR=9.5
GNAR Gosnell 91.61 41 *e*P **P 15 09 06.1 -2.4**
KEST Kesra 95.73 324 LR LR 15 57 32.4
comp=Z,178nm,18.2s,baz=227,slow=38
RKT Rikitea 97.28 113 *e*LR LR 15 40 51.8
comp=Z,187nm,23.5s
ESDC Sonseca Array 97.65 335 LR LR 15 58 45.9
comp=Z,186nm,18.1s,baz=65,slow=38
TORD Torodi Ar. Bea 118.25 317 PKP **PKPdf 15 14 48.8 -0.3**
comp=Z,0.4nm,0.6s,baz=26,slow=1.6,SNR=2.7
TORD PP **PP 15 16 09.1 +5.1**
comp=Z,1.7nm,1.1s,baz=25,slow=6.2,SNR=4.8
SNAA Sanae 141.69 196 PKP PKPpre 15 15 23.0
VNA3 Neumayer Olymp 143.44 194 PKP PKPbc 15 15 32.0 -0.1
VNA1 Neumayer--Stat 143.63 195 PKP PKPbc 15 15 32.4 -0.1
LPAZ La Paz 144.92 62 PKP **PKPdf 15 15 39.5 -0.2**
comp=Z,1.7nm,0.5s,baz=335,slow=2.0,SNR=9.9
PLCA Paso Flores 153.36 108 PKPbc **PKPbc 15 16 00.3 +0.9**
comp=Z,4.1nm,1.1s,baz=264,slow=10,SNR=2.6

*IDC **28** 14:59:13.2±0.7, 10°.38N×125°.94E, h0km, mb4.0/18, mb1 4.1/19, mb1mx3.9/49, mbtmp4.0/19, ML4.3/1, MS3.1/2, Ms1 3.1/2, ms1mx2.8/35, Error ellipse: s-maj=34.0km s-min=15.0km az=78.0*
*MAN **28** 14:59:17, 10°.83N×126°.32E, h63km, mb4.9, ML3.8, MS3.8*
*ISCJB **28** 14:59:19.1±1.2, 10°.72N±0°.04×126°.29E±0°.08, h46km±10km, mb4.0/18, Error ellipse: s-maj=12.7km s-min=7.1km az=176.7*
ISC 28 14:59:18.2±1.8,**10°.54N**±0°.05×**126°.34E**±0°.08,**h30**km±13km, **n45**,σ1§**44**/37,**mb4.0**/18,**4C-3D**,**Philippine Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BESP	**Borongan**	**1.37**	**320**	*e*P	**Pn**	**14 59 40.1**	**-1.2**
PLP	**Palo**	**1.47**	**295**⇑	*e*P	**Pn**	**14 59 40.8**	**-1.9**
PLP				*e*S	**Sn**	**14 59 59.5**	**-1.4**
OCLP	**Ormoc**	**1.77**	**287**	*e*P	**Pn**	**14 59 45.8**	**-1.0**
OCLP				*e*S	**Sn**	**15 00 08.9**	**+0.6**
LLP	**Lapu-Lapu**	**2.34**	**265**⇓	*e*P	**Pn**	**14 59 54.6**	**-0.1**
LLP				*e*S	**Sn**	**15 00 23.3**	**+0.9**
BIPH	**Bislig**	**2.34**	**179**⇑	*e*P	Pb	15 00 08.9	+9.1
TBP	**Tagbilaran**	**2.58**	**251**⇑	*i*P	Pn	15 00 01.8	+3.9
CGP	**Cagayan de Oro**	**2.63**	**218**⇓	*e*P	Pn	15 00 01.6	+2.9
CGP				*e*S	**Sn**	**15 00 32.8**	**+3.2**
BUKP	**Musuan**	**2.93**	**206**	*e*P	Pn	15 00 07.0	+4.2
BUKP				*e*S	**Sb**	**15 00 45.1**	**-0.1**
DCPH	**Dipolog City**	**3.53**	**237**	*e*P	**Pn**	**15 00 11.9**	**+0.9**
DAV	**Davao City (W)**	**3.53**	**192**	Pn	**Pn**	**15 00 07.5**	**-3.6**
	32nm,0.3s,baz=259,slow=16,SNR=2.5						
DAV				Sn	Sn	15 00 42.4	-9.4
	67nm,0.3s,baz=178,slow=11,SNR=4.0						
DAV				LR	LR	15 01 53.1	
	comp=Z,249nm,21.9s,baz=335,slow=48						
MATI	**Mati**	**3.57**	**181**	*e*P	**Pb**	**15 00 20.5**	**-0.3**
MATI				*e*S	Sb	15 01 13.6	+10
RCP	**Roxas**	**3.67**	**286**⇑	*e*P	**Pn**	**15 00 13.6**	**+0.7**
GUIM	**Jordan**	**3.69**	**272**	*e*P	**Pn**	**15 00 13.7**	**+0.6**
GUIM				*e*S	Sn	15 00 50.0	-5.6
PVCP	**Virac**	**3.71**	**325**	*e*S	**Sb**	**15 01 08.1**	**+0.4**
CTBH	**Cotabato--PC H**	**3.89**	**212**⇓	*i*P	Pn	15 00 20.1	+4.1
IPIL	**Ipil**	**4.62**	**234**	*e*P	Pn	15 00 28.9	+3.0
IPIL				*e*S	Sn	15 01 24.6	+6.0
BUSP	**Coron**	**6.19**	**284**	*e*P	**Pn**	**15 00 48.6**	**+1.0**
TGY	**Tagaytay City**	**6.35**	**304**	LR	LR	15 03 30.2	
	comp=Z,199nm,18.9s,slow=42						
CAUP	**Cauayan**	**7.73**	**326**	*e*P	**Pn**	**15 01 08.5**	**-0.2**
CAUP				*e*S	Sn	15 02 27.9	-7.3
UBPT	**Khong Chiam**	**20.87**	**285**	P	**P**	**15 03 59.2**	**+1.2**
	17nm,1.1s						
KSRS	**Korea Array**	**26.83**	**3**	P	**P**	**15 04 57.2**	**+1.3**
	1.0nm,0.8s,baz=182,slow=11,SNR=4.6						
WRA	**Warramunga Arr**	**31.30**	**165**	P	**P**	**15 05 33.2**	**-2.6**
	0.9nm,0.9s,baz=346,slow=9.2,SNR=4.0						
ASAR	**Alice Springs**	**34.80**	**168**	P	**P**	**15 06 05.8**	**-0.6**
	1.2nm,0.3s,baz=351,slow=6.9,SNR=30						
KLR	**Kul'dur**	**38.83**	**6**	P	**P**	**15 06 41.1**	**+0.7**
	0.9nm,0.5s,baz=204,slow=10.0,SNR=3.2						
H11S3	**WAKE ISLAND Hy**	**39.78**	**74**	T	T	15 49 36.7	
	baz=264,slow=75,SNR=32						
H11S1	**WAKE ISLAND Hy**	**39.80**	**74**	T	T	15 49 35.4	
	baz=264,slow=75,SNR=25						
H11S2	**WAKE ISLAND Hy**	**39.80**	**74**	T	T	15 49 37.2	
	baz=264,slow=75,SNR=39						
H11N1	**WAKE ISLAND Hy**	**40.11**	**72**	T	T	15 50 04.8	
	baz=264,slow=74,SNR=41						
H11N2	**WAKE ISLAND Hy**	**40.12**	**72**	T	T	15 50 02.2	
	baz=264,slow=74,SNR=45						
H11N3	**WAKE ISLAND Hy**	**40.13**	**72**	T	T	15 50 06.0	
	baz=264,slow=74,SNR=40						
SONM	**Songino Array**	**40.79**	**339**	P	**P**	**15 06 57.7**	**+0.8**
	0.5nm,0.4s,baz=153,slow=11,SNR=4.1						
PETK	**Petropavlovsk-**	**49.36**	**24**	P	**P**	**15 08 07.9**	**+3.1**
	2.3nm,0.9s,baz=227,slow=3.6,SNR=5.2						
MKAR	**Makanchi Array**	**51.85**	**323**	P	**P**	**15 08 23.1**	**-0.6**
	2.6nm,0.6s,baz=109,slow=8.6,SNR=9.6						
ZALV	**Zalesovo Beam**	**54.42**	**331**	P	**P**	**15 08 41.3**	**-1.2**
	0.6nm,0.3s,baz=112,slow=9.6,SNR=3.0						
KURBB	**Kurchatov Arra**	**55.89**	**325**	P	**P**	**15 08 52.2**	**-0.9**
	2.3nm,0.6s,baz=125,slow=6.9,SNR=6.1						
BVAR	**Borovoye Array**	**61.48**	**325**	P	**P**	**15 09 30.6**	**-1.4**
	0.7nm,0.6s,baz=131,slow=8.1,SNR=3.4						
NRIK	**Noril'sk**	**63.77**	**346**	P	**P**	**15 09 47.0**	**0.0**
	2.2nm,0.5s,baz=140,slow=8.9,SNR=3.8						
ILAR	**Eielson Array**	**79.17**	**26**	P	**P**	**15 11 20.9**	**+1.0**
	0.5nm,0.8s,baz=235,slow=4.7,SNR=7.3						
ARCES	**ARCESS Array B**	**83.96**	**340**	P	**P**	**15 11 45.2**	**+0.1**
	3.5nm,1.1s,baz=84,slow=6.0,SNR=8.1						
BRTR	**Keskin Arrg B**	**85.41**	**309**	P	**P**	**15 11 51.7**	**-1.6**
	0.5nm,0.4s,baz=91,slow=4.4,SNR=9.4						
FINES	**FINESS Array B**	**85.68**	**332**	P	**P**	**15 11 53.2**	**-0.7**
	1.2nm,0.6s,baz=64,slow=3.2,SNR=7.0						
AKASG	**Malin Array Be**	**86.39**	**321**	P	**P**	**15 11 55.8**	**-1.9**
	0.3nm,0.4s,baz=64,slow=4.8,SNR=1.9						
VNDA	**Vanda**	**90.19**	**173**	P	**P**	**15 12 15.1**	**0.0**
	0.4nm,0.5s,baz=316,slow=7.3,SNR=2.6						
YKA	**Yellowknife Ar**	**93.48**	**24**	P	**P**	**15 12 30.8**	**0.0**
	0.1nm,0.4s,baz=303,slow=4.4,SNR=2.6						
TXAR	**Lajitas Array**	**117.60**	**49**	PKP	**PKPdf**	**15 18 02.5**	**+0.4**
	0.3nm,0.8s,baz=308,slow=7.8,SNR=2.8						

DJA 28 15:00:27.8±0.3,**1°N**±3°×**9°8E**±°,**h28**km±6km,**M3.8**/4, **mb4.0**/1,**MLv3.7**/4,**Northern Sumatera**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PBSI	**Pulau Batu**	**0.60**	**197**	P	Pn	15 00 40.2	-0.2
PBSI				S	Sn	15 00 49.7	+0.5
MNSI	**Mandailing Nat**	**1.16**	**76**	P	Pn	15 00 48.0	-0.2
MNSI				S	Sn	15 01 03.2	0.0
GSI	**Gunungsitoli**	**1.17**	**312**	P	Pn	15 00 47.5	-0.8
GSI				S	Sn	15 01 03.7	+0.3
PPI	**Padang Panjang**	**2.17**	**116**	P	Pn	15 01 02.3	+0.1
PDSI	**Padang**	**2.46**	**125**	P	Pn	15 01 06.7	+0.5
BKNI	**Bangkinang**	**2.60**	**94**	P	Sn	15 01 33.2	-5.4
TSI	**Tuntungan**	**2.96**	**2**	P	Pn	15 01 12.9	-0.1
KCSI	**Kotacane, Aceh**	**3.06**	**347**	P	Pn	15 01 13.5	-0.8
PPSI	**Pulau Pagai**	**3.62**	**154**	P	Pn	15 01 22.0	0.0
MLSI	**Meulaboh, Aceh**	**4.25**	**331**	P	Pn	15 01 30.8	+0.1

IDC 28 15:16:19.2±43.0,**16°.07S**×**175°.13W**,**h0**km,**mb4.4**/3, **mb1 4.6**/3,**mb1mx3.7**/33,**mbtmp4.4**/3,**MS3.3**/1,**Ms1 3.3**/1, **ms1mx2.6**/39,**Error ellipse: s-maj=821.3km s-min=161.0km az=78.0**,**Tonga Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**18.40**	**248**	LR	LR	15 25 53.4	
	comp=Z,109nm,21.3s,baz=322,slow=31						
STKA	**Stephens Creek**	**42.26**	**240**	P	P	15 24 14.9	+0.4
	1.4nm,0.5s,baz=95,slow=10.0,SNR=7.1						
WRA	**Warramunga Arr**	**48.07**	**257**	P	P	15 25 00.6	-0.3
	1.8nm,0.4s,baz=95,slow=7.0,SNR=88						
ASAR	**Alice Springs**	**48.32**	**252**	P	P	15 25 02.5	-0.3
	11nm,0.6s,baz=87,slow=8.6,SNR=295						

*ISCJB **28** 15:24:40.7±0.6, 39°.11N±0°.04×29°.01E±0°.04, h5km±7km, Error ellipse: s-maj=6.4km s-min=5.1km az=156.7*
*CSEM **28** 15:24:40.6±0.2, 39°.13N×28°.98E, h8km, ML2.4, Error ellipse: s-maj=4.5km s-min=3.6km az=92.0*
*ISK **28** 15:24:40.4, 39°.11N×29°.05E, h12km, MD2.7*
*DDA **28** 15:24:40.7, 39°.13N×29°.01E, h7km, Ml2.4*
ISC 28 15:24:40.9±0.9,**39°.11N**±0°.03×**29°.01E**±0°.03,**h12**km±8km, **n20**,σ0§**26**/30,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**253**	P	**Pg**	**15 24 46.0**	**+0.1**
DEMI				S	**Sg**	**15 24 49.3**	**-0.1**
DEMI	**Demirci**	**0.24**	**253**	*i*P	**Pg**	**15 24 46.0**	**+0.1**
DEMI				*i*S	**Sg**	**15 24 49.3**	**-0.1**
GDZ	**Gediz**	**0.37**	**94**	P	**Pg**	**15 24 48.2**	**-0.1**
GDZ				S	**Sg**	**15 24 53.5**	**+0.2**
GDZ	**Gediz**	**0.37**	**94**	*i*P	**Pg**	**15 24 48.2**	**-0.1**
GDZ				*i*S	**Sg**	**15 24 53.5**	**+0.2**
TVSB	**Tavsanli**	**0.49**	**46**	*e*PG	**Pg**	**15 24 50.3**	**-0.2**
TVSB				*e*SG	**Sg**	**15 24 56.7**	**-0.2**
KULA	**Kula-Manisa**	**0.66**	**204**	*e*PG	**Pg**	**15 24 53.7**	**0.0**
KHAL	**Karahalli**	**0.83**	**153**	P	**Pb**	**15 24 57.5**	**+0.2**
KHAL				S	**Sb**	**15 25 08.4**	**-0.1**
KHAL	**Karahalli**	**0.83**	**153**	*i*P	**Pb**	**15 24 57.5**	**+0.2**
KHAL				*i*S	**Sb**	**15 25 08.4**	**-0.1**
KHL	**Karahalli**	**0.89**	**153**	*e*PG	**Pg**	**15 24 57.8**	**-0.2**
KHL	**Karahalli**	**0.89**	**153**	*e*Pg	**Pg**	**15 24 57.8**	**-0.2**
IGD	**Bursa**	**1.16**	**7**	*i*P	**Pb**	**15 25 02.8**	**-0.1**
IGD				*i*S	**Sn**	**15 25 18.8**	**+0.1**
KCTX	**Karacabey (Bur**	**1.25**	**337**	*e*PN	**Pg**	**15 25 04.8**	**-0.2**
IZI	**Iznik**	**1.27**	**16**	*e*PN	**Pn**	**15 25 04.5**	**0.0**
IZI	**Iznik**	**1.27**	**16**	*e*Pn	**Pn**	**15 25 04.5**	**0.0**
BORA	**Eskisehir**	**1.35**	**55**	P	**Pg**	**15 25 06.8**	**-0.1**
BORA				S	**Sg**	**15 25 25.2**	**+0.7**
BORA	**Eskisehir**	**1.35**	**55**	*i*P	**Pg**	**15 25 06.8**	**-0.1**
BORA				*i*S	**Sg**	**15 25 25.2**	**+0.7**
ARMT	**Armutlu**	**1.45**	**356**	*e*PN	**Pn**	**15 25 07.1**	**+0.1**
ARMT	**Armutlu**	**1.45**	**356**	*e*Pn	**Pn**	**15 25 07.1**	**+0.1**
GULT	**Gulveren**	**1.75**	**41**	*e*PN	**Pn**	**15 25 10.8**	**-0.4**
GULT	**Gulveren**	**1.75**	**41**	*e*Pn	**Pn**	**15 25 10.8**	**-0.4**

JMA 28 15:28:03.8±0.1,**38°.43N**×**142°.30E**,**h22**km±2km,**M3.5**, **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.75**	**272**	P	Pb	15 28 17.9	-0.2
JIO				S	Sb	15 28 27.5	-0.4
OFUJ	**Ofunato**	**0.81**	**323**	P	Pb	15 28 18.8	-0.5
OFUJ				S	Sb	15 28 30.3	+0.4
JMK	**Ichinoseki**	**0.99**	**302**	P	Pb	15 28 22.0	-0.3
JMK				S	Sn	15 28 35.4	-0.3
JOU	**Okura**	**1.29**	**268**	P	Pb	15 28 27.0	-0.3
JOU				S	Sn	15 28 43.0	0.0
JOM	**Ohasama**	**1.30**	**323**	P	Pn	15 28 27.1	+0.4
JOM				S	Sb	15 28 43.7	-0.2
JMM	**Marumori**	**1.31**	**245**	P	Pn	15 28 27.0	+0.2
JMM				S	Sn	15 28 41.6	-2.1
JFK	**Kawauchi**	**1.55**	**227**	S	Sn	15 28 46.7	-2.8
JYK	**Kaneyama**	**1.59**	**288**	P	Pb	15 28 32.0	-0.6
JRG	**Rokugo**	**1.62**	**307**	P	Pb	15 28 32.2	-0.8

*IDC **28** 15:29:14.3±2.3, 36°.58N×142°.12E, h0km, mb3.4/3, mb1 3.5/4, mb1mx3.2/33, mbtmp3.3/4, ML3.2/1, Error ellipse: s-maj=54.7km s-min=27.8km az=49.0*
*ISCJB **28** 15:29:15.3±1.3, 36°.58N±0°.04×142°.08E±0°.07, h15km±7km, mb3.5/3, Error ellipse: s-maj=9.9km s-min=6.7km az=13.9*
*JMA **28** 15:29:17.9±0.3, 36°.62N×141°.91E, h66km, M2.9*
ISC 28 15:29:15.1±2.3,**36°.60N**±0°.05×**142°.00E**±0°.08,**h2**km±12km, **n21**,σ1§**40**/24,**mb3.6**/3,**Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**1.08**	**298**	P	**Pg**	**15 29 36.7**	**+0.8**
ONAJ				*e*S	**Sg**	**15 29 50.6**	**+0.6**
JHO	**Hitachi**	**1.15**	**271**	P	**Pg**	**15 29 36.9**	**-0.2**
JHO				*e*S	**Sg**	**15 29 51.0**	**-1.0**
JFK	**Kawauchi**	**1.18**	**311**	P	**Pb**	**15 29 38.0**	**-0.3**
JFK				*e*S	**Sb**	**15 29 53.9**	**-0.1**
CHOJ	**Chosi**	**1.28**	**226**	P	**Pn**	**15 29 39.4**	**-0.6**
CHOJ				*e*S	**Sb**	**15 29 56.8**	**0.0**
JMM	**Marumori**	**1.59**	**323**	P	**Pn**	**15 29 42.6**	**-1.6**
JMM				*e*S	**Sn**	**15 30 01.9**	**-3.4**
JFT	**Otama**	**1.61**	**305**	P	**Pn**	**15 29 43.7**	**-0.9**
JFT				*e*S	**Sn**	**15 30 05.9**	**-0.1**
JMK	**Ichinoseki**	**2.43**	**346**	P	**Pn**	**15 29 57.0**	**+1.2**
JMK				*e*S	**Sn**	**15 30 25.7**	**-0.4**
JRY	**Ryogami san**	**2.57**	**258**	*e*S	**Sn**	**15 30 28.2**	**-1.3**
JYK	**Kaneyama**	**2.66**	**331**	P	**Pn**	**15 29 58.5**	**-0.4**
JOM	**Ohasama**	**2.92**	**349**	*e*S	**Sn**	**15 30 40.7**	**+2.4**
MJAR	**Matsushiro Arr**	**3.05**	**270**	Pn	**Pn**	**15 30 05.4**	**+1.1**
	2.8nm,0.3s,baz=86,slow=9.7,SNR=20						
MJAR				Sn	**Sn**	**15 30 43.0**	**+1.6**
	1.1nm,0.3s,baz=81,slow=18,SNR=6.7						
MAT	**Matsushiro**	**3.05**	**270**	P	**Pn**	**15 30 05.3**	**+1.0**
MAT				S	**Sn**	**15 30 44.1**	**+2.7**
H11N2	**WAKE ISLAND Hy**	**27.52**	**121**	T	T	16 03 44.4	
	baz=316,slow=75,SNR=20						
H11N1	**WAKE ISLAND Hy**	**27.53**	**121**	T	T	16 03 46.7	
	baz=316,slow=75,SNR=16						
H11N3	**WAKE ISLAND Hy**	**27.54**	**121**	T	T	16 03 46.5	
	baz=316,slow=75,SNR=15						
H11S1	**WAKE ISLAND Hy**	**28.23**	**123**	T	T	16 04 39.8	
	baz=321,slow=74						
H11S3	**WAKE ISLAND Hy**	**28.23**	**123**	T	T	16 05 10.2	
	baz=321						
H11S2	**WAKE ISLAND Hy**	**28.25**	**123**	T	T	16 04 42.0	
	baz=321,slow=74						
SONM	**Songino Array**	**28.42**	**304**	P	**P**	**15 35 11.0**	**-0.1**
	0.7nm,0.7s,baz=95,slow=8.6,SNR=4.4						
MKAR	**Makanchi Array**	**44.75**	**303**	P	**P**	**15 37 30.4**	**+0.6**
	0.1nm,0.2s,baz=92,slow=8.9,SNR=3.2						
WRA	**Warramunga Arr**	**56.70**	**189**	P	**P**	**15 38 59.5**	**-0.6**
	0.4nm,0.3s,baz=4.0,slow=7.2,SNR=33						

*ISCJB **28** 15:33:33.3±0.7, 39°.12N±0°.04×29°.07E±0°.04, h1km±10km, Error ellipse: s-maj=7.4km s-min=5.1km az=159.7*
*CSEM **28** 15:33:33.5±0.1, 39°.13N×29°.07E, h2km, ML2.3, Error ellipse: s-maj=2.0km s-min=1.5km az=114.0*
*ISK **28** 15:33:33.2, 39°.13N×29°.12E, h5km, MD2.6*
*DDA **28** 15:33:33.2, 39°.10N×29°.06E, h7km, Ml2.3*
ISC 28 15:33:33.7±1.1,**39°.14N**±0°.03×**29°.07E**±0°.03,**h4**km±13km, **n20**,σ0§**30**/30,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.29**	**251**	P	**Pg**	**15 33 39.2**	**-0.1**
DEMI				S	**Sg**	**15 33 43.0**	**-0.1**
DEMI	**Demirci**	**0.29**	**251**	*i*P	**Pg**	**15 33 39.2**	**-0.1**
DEMI				*i*S	**Sg**	**15 33 43.0**	**-0.1**
GDZ	**Gediz**	**0.33**	**98**	P	**Pg**	**15 33 40.2**	**+0.2**
GDZ				S	**Sg**	**15 33 44.8**	**+0.5**
GDZ	**Gediz**	**0.33**	**98**	*i*P	**Pg**	**15 33 40.2**	**+0.2**
GDZ				*i*S	**Sg**	**15 33 44.9**	**+0.5**
TVSB	**Tavsanli**	**0.44**	**44**	*e*PG	**Pg**	**15 33 41.9**	**-0.3**
TVSB				*e*SG	**Sg**	**15 33 47.9**	**0.0**
TVSB	**Tavsanli**	**0.44**	**44**	*e*Pg	**Pg**	**15 33 41.9**	**-0.3**
TVSB				*e*Sg	**Sg**	**15 33 47.9**	**0.0**
KULA	**Kula-Manisa**	**0.70**	**207**	*e*PG	**Pg**	**15 33 47.2**	**+0.1**
KULA	**Kula-Manisa**	**0.70**	**207**	*e*Pg	**Pg**	**15 33 47.2**	**+0.1**
KHAL	**Karahalli**	**0.83**	**156**	P	**Pg**	**15 33 49.4**	**-0.3**
KHAL				S	**Sg**	**15 34 00.2**	**-0.3**
KHAL	**Karahalli**	**0.83**	**156**	*i*P	**Pg**	**15 33 49.4**	**-0.3**
KHAL				*i*S	**Sg**	**15 34 00.2**	**-0.3**
KHL	**Karahalli**	**0.89**	**156**	*e*PG	**Pg**	**15 33 50.2**	**-0.5**
KHL	**Karahalli**	**0.89**	**156**	*e*Pg	**Pg**	**15 33 50.2**	**-0.5**
KCTX	**Karacabey (Bur**	**1.25**	**334**	*e*PN	**Pn**	**15 33 58.0**	**+0.1**
KCTX	**Karacabey (Bur**	**1.25**	**334**	*e*Pn	**Pn**	**15 33 58.1**	**+0.1**
BORA	**Eskisehir**	**1.30**	**55**	P	**Pg**	**15 33 58.2**	**-0.5**
BORA				S	**Sb**	**15 34 16.2**	**+0.2**
BORA	**Eskisehir**	**1.30**	**55**	*i*P	**Pg**	**15 33 58.2**	**-0.5**
BORA				*i*S	**Sb**	**15 34 16.2**	**+0.2**
ARMT	**Armutlu**	**1.44**	**354**	*e*PN	**Pn**	**15 34 00.8**	**+0.3**
ARMT	**Armutlu**	**1.44**	**354**	*e*Pn	**Pn**	**15 34 00.8**	**+0.3**
GULT	**Gulveren**	**1.71**	**40**	*e*PN	**Pn**	**15 34 04.2**	**-0.1**
GULT	**Gulveren**	**1.71**	**40**	*e*Pn	**Pn**	**15 34 04.2**	**-0.1**

*ISK **28** 15:47:37.4, 36°.97N×28°.27E, h13km, MD2.6*
*CSEM **28** 15:47:38.0±0.1, 36°.96N×28°.26E, h10km, MD2.6, Error ellipse: s-maj=3.1km s-min=2.5km az=166.0*
*DDA **28** 15:47:38.9, 36°.95N×28°.15E, h7km, Ml2.6*
ISC 28 15:47:38.0±1.0,**36°.97N**±0°.05×**28°.23E**±0°.03,**h8**km±7km, **n19**,σ1§**17**/27,**Dodecanese Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.17**	**14**	*e*PG	**Pb**	**15 47 42.0**	**+0.3**
YER				*e*SG	**Sg**	**15 47 44.8**	**+0.5**
YER	**Yerkesik**	**0.17**	**14**	*e*Pg	**Pb**	**15 47 42.0**	**+0.3**
YER				*e*Sg	**Sg**	**15 47 44.8**	**+0.5**
TURN	**Turunc**	**0.31**	**107**	*i*P	**Pg**	**15 47 42.5**	**-1.7**
TURN				*i

MUGZ	Murupara	1.10 171	PN	Pn	15 48 24.2	-0.2
PRRZ	Plateau Road	1.12 187	⇑PN	Pn	15 48 24.5	0.0
PRRZ	Plateau Road	1.12 187	Pn	Pn	15 48 24.5	0.0
MKAZ	Moumakai	1.15 284	PN	Pn	15 48 24.7	-0.1
MKAZ	Moumakai	1.15 284	Pn	Pn	15 48 24.4	-0.4
WPRZ	Whakapapatarin	1.18 195	PN	Pn	15 48 25.2	+0.3
WPRZ	Whakapapatarin	1.18 195	Pn	Pn	15 48 25.2	+0.3
ALRZ	Allen Road	1.19 188	PN	Pn	15 48 25.1	0.0
ALRZ	Allen Road	1.19 188	Pn	Pn	15 48 25.1	0.0
MWZ	Matawai	1.22 141	⇑PN	Pn	15 48 24.8	-0.5
MWZ			SN	S	15 48 50.5	-0.4
MWZ	Matawai	1.22 141	Pn	Pn	15 48 24.9	-0.5
TLZ	Tolley Road	1.24 220	PN	Pn	15 48 25.5	0.0
TLZ	Tolley Road	1.24 220	Pn	Pn	15 48 25.3	-0.2
KUTZ	Kaahu Road	1.25 208	⇑PN	Pn	15 48 25.9	+0.4
KUTZ	Kaahu Road	1.25 208	Pn	Pn	15 48 25.9	+0.4
RTZ	Ruatahuna	1.27 165	⇑PN	Pn	15 48 25.5	-0.3
WIAZ	Waiheke Island	1.28 297	⇑PN	Pn	15 48 25.5	-0.2
RAGZ	Rawiri	1.30 149	PN	Pn	15 48 26.0	0.0
RAGZ	Rawiri	1.30 149	Pn	Pn	15 48 26.0	0.0
PKGZ	Pakihiroa	1.31 113	PN	Pn	15 48 26.1	+0.1
TWGZ	Tauwhareparae	1.38 125	PN	Pn	15 48 26.9	+0.4
TWGZ	Tauwhareparae	1.38 125	Pn	Pn	15 48 26.9	+0.4
MXZ	Matakaoa Point	1.40 98	⇑PN	Pn	15 48 26.7	0.0
MXZ	Matakaoa Point	1.40 98	Pn	Pn	15 48 26.7	0.0
MRHZ	Matea Rd	1.45 184	⇑PN	Pn	15 48 26.6	-0.5
TKGZ	Te Karaka	1.47 136	⇓PN	Pn	15 48 27.3	+0.1
TKGZ	Te Karaka	1.47 136	Pn	Pn	15 48 27.3	+0.1
WATZ	Wairara	1.47 206	PN	Pn	15 48 27.4	+0.1
WATZ	Wairara	1.47 206	Pn	Pn	15 48 27.4	+0.1
PUZ	Puketiti	1.51 117	PN	Pn	15 48 27.5	-0.1
PUZ			SN	S	15 48 54.6	-0.2
PUZ	Puketiti	1.51 117	Pn	Pn	15 48 27.5	-0.1
SNGZ	Shannon Statio	1.52 156	⇑PN	Pn	15 48 27.8	+0.1
SNGZ	Shannon Statio	1.52 156	Pn	Pn	15 48 27.8	+0.1
WMGZ	Waiomatatini S	1.54 107	⇑PN	Pn	15 48 28.0	+0.2
WMGZ	Waiomatatini S	1.54 107	Pn	Pn	15 48 28.0	+0.2
RAHZ	Arahi	1.58 165	PN	Pn	15 48 28.4	+0.2
RAHZ	Arahi	1.58 165	Pn	Pn	15 48 28.4	+0.2
RATZ	Rangitukua	1.60 202	⇑PN	Pn	15 48 28.2	-0.2
RATZ	Rangitukua	1.60 202	Pn	Pn	15 48 28.2	-0.2
RIGZ	Rimuhau	1.63 145	PN	Pn	15 48 29.0	+0.3
RITZ	Rihia Road	1.68 199	PN	Pn	15 48 29.0	-0.1
RITZ	Rihia Road	1.68 199	Pn	Pn	15 48 29.0	-0.1
CNGZ	Carnagh Statio	1.71 131	⇓PN	Pn	15 48 30.0	+0.7
CNGZ	Carnagh Statio	1.71 131	Pn	Pn	15 48 30.0	+0.7
NMHZ	Naumai	1.72 174	PN	Pn	15 48 29.8	+0.3
NMHZ	Naumai	1.72 174	Pn	Pn	15 48 29.8	+0.3
HIZ	Hauiti	1.75 230	PN	Pn	15 48 29.6	-0.1
HIZ	Hauiti	1.75 230	Pn	Pn	15 48 29.6	-0.1
WHHZ	Waihua	1.77 163	PN	Pn	15 48 30.0	+0.1
BKZ	Black Stump Fm	1.78 182	⇑PN	Pn	15 48 29.1	-0.9
BKZ	Black Stump Fm	1.78 182	Pn	Pn	15 48 29.1	-0.9
PRGZ	Paritu Road	1.86 146	PN	Pn	15 48 30.8	+0.1
PRGZ	Paritu Road	1.86 146	Pn	Pn	15 48 30.8	+0.1
TWVZ	Taurewa	1.90 207	Pn	Pn	15 48 30.7	-0.5
ARHZ	Aropaoanui	1.91 170	⇑PN	Pn	15 48 31.2	0.0
ARHZ	Aropaoanui	1.91 170	Pn	Pn	15 48 31.2	0.0
NGZ	Ngauruhoe	1.94 203	PN	Pn	15 48 31.3	-0.3
NGZ	Ngauruhoe	1.94 203	Pn	Pn	15 48 31.4	-0.3
TUVZ	Tukino	2.01 200	PN	Pn	15 48 31.6	-0.7
TUVZ	Tukino	2.01 200	Pn	Pn	15 48 31.6	-0.7
FWVZ	Far West T-bar	2.03 203	PN	Pn	15 48 32.1	-0.5
FWVZ	Far West T-bar	2.03 203	Pn	Pn	15 48 32.1	-0.5
KWHZ	Kaweka Forest	2.04 183	PN	Pn	15 48 31.9	-0.6
WHVZ	Whangaehu Hut	2.04 202	PN	Pn	15 48 32.1	-0.7
WHVZ	Whangaehu Hut	2.04 202	Pn	Pn	15 48 32.1	-0.7
MCHZ	McNeill Hill	2.06 177	⇑PN	Pn	15 48 32.5	-0.1
MCHZ	McNeill Hill	2.06 177	Pn	Pn	15 48 32.5	-0.1
MHGZ	Mahia Peninsul	2.06 149	PN	Pn	15 48 32.5	-0.2
MHGZ	Mahia Peninsul	2.06 149	Pn	Pn	15 48 32.5	-0.2
TRVZ	Turoa	2.07 202	⇓PN	Pn	15 48 32.7	-0.4
TRVZ	Turoa	2.07 202	Pn	Pn	15 48 32.7	-0.4
WNVZ	Wahianoa	2.08 201	PN	Pn	15 48 32.1	-0.9
WNVZ	Wahianoa	2.08 201	Pn	Pn	15 48 32.1	-0.9
MOVZ	Moawhango	2.12 197	PN	Pn	15 48 32.0	-1.3
MOVZ	Moawhango	2.12 197	Pn	Pn	15 48 32.0	-1.3
PKVZ	Pokaka	2.13 206	PN	Pn	15 48 32.7	-0.7
PKVZ	Pokaka	2.13 206	Pn	Pn	15 48 32.7	-0.7
BHHZ	Black Hill Sta	2.14 190	PN	Pn	15 48 32.2	-1.3
MTVZ	Mangateitei	2.17 203	PN	Pn	15 48 33.0	-0.9
MTVZ	Mangateitei	2.17 203	Pn	Pn	15 48 33.0	-0.9
VRZ	Vera Road	2.24 219	⇑PN	Pn	15 48 34.4	-0.1
VRZ	Vera Road	2.24 219	Pn	Pn	15 48 34.4	-0.1
KRHZ	Kereru	2.26 184	PN	Pn	15 48 33.7	-0.1
CKHZ	Cape Kidnapper	2.31 170	PN	Pn	15 48 34.6	-0.5
CKHZ	Cape Kidnapper	2.31 170	Pn	Pn	15 48 34.6	-0.5
KAHZ	Kahuranaki	2.42 174	PN	Pn	15 48 35.8	-0.6
KAHZ	Kahuranaki	2.42 174	Pn	Pn	15 48 35.8	-0.6
PNHZ	Pukenui	2.54 186	⇓PN	Pn	15 48 36.4	-1.3
PNHZ	Pukenui	2.54 186	Pn	Pn	15 48 36.4	-1.3
PXZ	Pawanui	2.65 175	PN	Pn	15 48 37.5	-1.4
PXZ			AML	AML	15 49 17.2	
PXZ			AML	AML	15 49 17.3	
WAZ	Wanganui	2.67 207	PN	Pn	15 48 37.7	-1.4
WAZ	Wanganui	2.67 207	Pn	Pn	15 48 37.9	-1.2
WPHZ	Waipukurau	2.68 182	PN	Pn	15 48 37.8	-1.4
WPHZ	Waipukurau	2.68 182	Pn	Pn	15 48 37.8	-1.4
NEZ	North Egmont	2.70 225	PN	Pn	15 48 39.8	+0.3
NEZ	North Egmont	2.70 225	Pn	Pn	15 48 39.8	+0.3
TSZ	Takapari Road	2.71 190	PN	Pn	15 48 37.8	-1.8
PRHZ	Porangahau	2.88 179	PN	Pn	15 48 39.8	-1.7
PRHZ	Porangahau	2.88 179	Pn	Pn	15 48 39.8	-1.7
DVHZ	Dannevirke	2.93 186	PN	Pn	15 48 39.9	-2.1
DVHZ	Dannevirke	2.93 186	Pn	Pn	15 48 39.9	-2.1
POWZ	Post Office Ro	3.06 191	PN	Pn	15 48 41.6	-2.0
POWZ	Post Office Ro	3.06 191	Pn	Pn	15 48 41.6	-2.0
ANWZ	Angora Road	3.07 181	PN	Pn	15 48 41.9	-1.7
PRWZ	Pori Road	3.20 188	PN	Pn	15 48 43.3	-1.8
PRWZ	Pori Road	3.20 188	Pn	Pn	15 48 43.3	-1.8
BFZ	Birch Farm	3.30 184	PN	Pn	15 48 44.0	-2.3
TIWZ	Tintock	3.43 189	PN	Pn	15 48 45.4	-2.4
TIWZ			AML	AML	15 49 30.6	
TIWZ			AML	AML	15 49 30.9	
TIWZ	Tintock	3.43 189	Pn	Pn	15 48 45.4	-2.4
CPWZ	Castlepoint	3.53 184	PN	Pn	15 48 47.6	-1.4
CPWZ	Castlepoint	3.53 184	Pn	Pn	15 48 47.6	-1.4
OGWZ	Otaki Gorge	3.59 197	PN	Pn	15 48 47.0	-2.8
OGWZ	Otaki Gorge	3.59 197	Pn	Pn	15 48 47.0	-2.8
HOWZ	Holdsworth Sta	3.60 193	PN	Pn	15 48 46.8	-3.1
HOWZ	Holdsworth Sta	3.60 193	Pn	Pn	15 48 46.8	-3.1
KIW	Kapiti Island	3.70 200	PN	Pn	15 48 47.9	-3.2
KIW			AML	AML	15 49 34.8	
KIW			AML	AML	15 49 35.4	
KIW	Kapiti Island	3.70 200	Pn	Pn	15 48 47.9	-3.2
TMWZ	Te Maipa	3.75 188	PN	Pn	15 48 49.1	-2.7
TMWZ	Te Maipa	3.75 188	Pn	Pn	15 48 49.1	-2.7
MTW	Mount Morrison	3.86 192	PN	Pn	15 48 49.5	-3.5
MTW			AML	AML	15 49 38.3	
MTW			AML	AML	15 49 38.6	
MTW	Mount Morrison	3.86 192	Pn	Pn	15 48 49.5	-3.5
CAW	Cannon Point	3.89 197	⇓PN	Pn	15 48 50.1	-3.3
CAW			AML	AML	15 49 39.2	
CAW			AML	AML	15 49 39.4	
CAW	Cannon Point	3.89 197	Pn	Pn	15 48 50.1	-3.3
DUWZ	D'Urville Isla	3.98 210	PN	Pn	15 48 51.0	-3.5
TRWZ	Traveller	4.06 189	PN	Pn	15 48 52.4	-3.1
TRWZ			AML	AML	15 49 43.7	
TRWZ			AML	AML	15 49 43.7	
TRWZ	Traveller	4.06 189	Pn	Pn	15 48 52.5	-3.1
PAWZ	Paruwai Farm	4.09 192	PN	Pn	15 48 52.4	-3.4
PAWZ			AML	AML	15 49 42.8	
PAWZ			AML	AML	15 49 44.1	
PAWZ	Paruwai Farm	4.09 192	Pn	Pn	15 48 52.4	-3.4
WEL	Wellington	4.13 199	PN	Pn	15 48 52.6	-3.7
MSWZ	Moikau Station	4.15 194	PN	Pn	15 48 52.8	-3.7
MSWZ			AML	AML	15 49 43.7	
MSWZ			AML	AML	15 49 44.5	
MSWZ	Moikau Station	4.15 194	Pn	Pn	15 48 52.8	-3.7
SNZO	South Karori	4.17 200	*e*Pn	Pn	15 48 53.6	-3.2
TCW	Tory Channel	4.21 204	PN	Pn	15 48 53.7	-3.6
TCW			AML	AML	15 49 45.6	
TCW			AML	AML	15 49 45.8	
TCW	Tory Channel	4.21 204	Pn	Pn	15 48 53.7	-3.6
BHW	Baring Head	4.22 197	PN	Pn	15 48 53.6	-3.8
BHW			AML	AML	15 49 45.0	
BHW			AML	AML	15 49 46.3	
BHW	Baring Head	4.22 197	Pn	Pn	15 48 53.6	-3.8
PLWZ	Palliser	4.30 193	PN	Pn	15 48 54.7	-3.7
PLWZ	Palliser	4.30 193	Pn	Pn	15 48 54.7	-3.7
TUWZ	Tuamarina	4.52 206	PN	Pn	15 48 56.9	-4.2
TUWZ			AML	AML	15 49 51.4	
TUWZ			AML	AML	15 49 53.8	
TUWZ	Tuamarina	4.52 206	Pn	Pn	15 48 57.1	-4.0
NNZ	Nelson	4.55 212	PN	Pn	15 48 57.6	-3.9
NNZ	Nelson	4.55 212	Pn	Pn	15 48 57.6	-3.9
QRZ	Quartz Range	4.65 221	PN	Pn	15 48 58.7	-4.1
QRZ	Quartz Range	4.65 221	Pn	Pn	15 48 58.7	-4.1
CMWZ	Cape Campbell	4.72 202	PN	Pn	15 48 59.7	-3.9
CMWZ	Cape Campbell	4.72 202	Pn	Pn	15 48 59.8	-3.9
BSWZ	Blackbirch Sta	4.79 205	PN	Pn	15 49 01.2	-3.4
BSWZ	Blackbirch Sta	4.79 205	Pn	Pn	15 49 01.2	-3.4
THZ	Tophouse	5.20 212	PN	Pn	15 49 05.7	-4.0
THZ	Tophouse	5.20 212	Pn	Pn	15 49 05.7	-4.0
KHZ	Kahutara	5.54 204	⇓PN	Pn	15 49 09.8	-4.0
KHZ	Kahutara	5.54 204	Pn	Pn	15 49 09.8	-4.0
DSZ	Denniston Nort	5.70 219	PN	Pn	15 49 11.3	-4.7
DSZ	Denniston Nort	5.70 219	Pn	Pn	15 49 11.3	-4.7
LTZ	Lake Taylor	6.31 210	PN	Pn	15 49 19.0	-4.9
LTZ	Lake Taylor	6.31 210	Pn	Pn	15 49 19.0	-4.9
INZ	Inchbonnie	6.62 215	PN	Pn	15 49 23.2	-4.6
OXZ	Oxford	6.86 209	PN	Pn	15 49 25.5	-5.4
OXZ	Oxford	6.86 209	Pn	Pn	15 49 25.5	-5.4
CRLZ	Canterbury Las	6.87 205	Pn	Pn	15 49 25.5	-5.5
MQZ	McQueen's Vall	6.98 204	Pn	Pn	15 49 26.9	-5.5
WVZ	Waitaha Valley	7.22 216	Pn	Pn	15 49 31.4	-4.1
RPZ	Rata Peaks	7.58 212	PN	Pn	15 49 35.3	-4.9
RPZ	Rata Peaks	7.58 212	Pn	Pn	15 49 35.3	-4.9
FOZ	Fox Glacier	8.01 218	PN	Pn	15 49 40.9	-4.7
FOZ	Fox Glacier	8.01 218	Pn	Pn	15 49 40.9	-4.7
ODZ	Otahua Downs	8.85 208	PN	Pn	15 49 51.9	-4.6
ODZ	Otahua Downs	8.85 208	Pn	Pn	15 49 51.9	-4.6

JMA 28 15:48:31.3±0.2, 38°.02N×142°.20E, h38km±2km, M2.4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.80	303	P	Pn	15 48 46.4	+0.4
JIO				S	Sn	15 48 56.7	0.0
JMM	Marumori	1.12	263	P	Pn	15 48 50.6	+0.1
JMM				S	Sn	15 49 04.5	-0.1
OFUJ	Ofunato	1.14	339	P	Pn	15 48 50.8	+0.1
JMK	Ichinoseki	1.21	321	P	Pn	15 48 52.4	+0.8
JOM	Ohasama	1.61	334	P	Pn	15 48 58.4	+1.2
JYK	Kaneyama	1.70	302	P	Pn	15 49 00.0	+1.6

*ISCJB **28** 15:49:15.4±0.7, 37°.5N±0°.1×144°.3E±0°.1, h10km, mb3.5/8, Error ellipse: s-maj=17.2km s-min=9.9km az=141.9*
*IDC **28** 15:49:15.9±0.8, 37°.56N×144°.33E, h0km, mb3.6/8, mb1 3.8/11, mb1mx3.6/38, mbtmp3.7/11, ML3.3/3, MS2.5/1, Ms1 2.5/1, ms1mx2.2/41, Error ellipse: s-maj=29.4km s-min=16.2km az=119.0*

ISC 28 15:49:17.4±0.9, 37°.6N±0°.1×144°.3E±0°.1, h10km, n14, σ1°.11/13, mb3.6/8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	5.00	259	Pn	Pn	15 50 31.7	-0.7
	2.0nm,0.3s,baz=86,slow=14,SNR=36						
MJAR				LR	LR	15 52 36.0	
	comp=Z,51nm,19.1s,baz=210,slow=40						
MAT	Matsushiro	5.00	259	P	Pn	15 50 31.8	-0.7
MAT				S	Sn	15 51 16.5	-14
MAT	Matsushiro	5.00	259	S	Sn	15 51 16.6	-14
JHJ	Hachijo jima 2	5.81	221	Pn	Pn	15 50 42.3	-1.4
	8.2nm,0.3s,baz=47,slow=18,SNR=2.4						
JHJ				Sn	Sn	15 51 38.9	-12
	6.7nm,0.3s,baz=233,slow=20,SNR=1.8						
ASAJ	Asahikawa	6.62	349	Pn	Pn	15 50 52.3	-2.4
	baz=270,slow=6.5						
KSRS	Korea Array	13.01	274	Pn	Pn	15 52 23.5	+1.2
	0.0nm,0.3s,baz=92,slow=13,SNR=4.7						
SEY	Seymchan	25.82	8	P	P	15 54 48.9	+0.4
	0.8nm,0.5s,baz=180,slow=20,SNR=4.9						
YAK	Yakutsk	26.07	344	P	P	15 54 51.5	+0.8
	0.4nm,0.4s,baz=204,slow=20,SNR=1.9						
ILAR	Eielson Array	47.76	33	P	P	15 57 54.5	+0.2
	0.8nm,0.7s,baz=263,slow=6.6,SNR=10						
WRA	Warramunga Arr	58.01	191	P	P	15 59 09.8	-0.6
	0.9nm,0.6s,baz=10,slow=7.2,SNR=11						
ASAR	Alice Springs	61.74	191	P	P	15 59 36.0	0.0
	0.4nm,0.8s,baz=10.0,slow=7.8,SNR=7.4						
YKA	Yellowknife Ar	62.13	31	P	P	15 59 38.1	-0.1
	0.1nm,0.4s,baz=304,slow=6.7,SNR=2.5						
NVAR	Mina Array Bea	72.78	55	P	P	16 00 47.0	+0.7
	0.4nm,0.7s,baz=287,slow=6.3,SNR=3.3						
PDAR	Pinedale Array	75.60	47	P	P	16 01 03.3	+0.7
	0.2nm,0.6s,baz=327,slow=1.5,SNR=2.7						

*ISCJB **28** 15:51:56.0±0.5, 39°.15N±0°.03×29°.06E±0°.04, h6km±5km, Error ellipse: s-maj=5.1km s-min=4.5km az=150.1*
*ISK **28** 15:51:55.6, 39°.17N×29°.06E, h5km, MD2.8*
*DDA **28** 15:51:56.2, 39°.13N×29°.10E, h7km, Ml2.9*
*CSEM **28** 15:51:56.1±0.1, 39°.15N×29°.06E, h8km, ML2.9, Error ellipse: s-maj=2.3km s-min=2.1km az=114.0*

ISC 28 15:51:55.9±0.9, 39°.16N±0°.02×29°.07E±0°.03, h16km±9km, n39, σ0°.26/50, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.30	247	P	Pb	15 52 03.1	+0.2
DEMI				S	Sb	15 52 07.6	-0.1
DEMI	Demirci	0.30	247	*i* P	Pb	15 52 03.1	+0.2
DEMI				*i* S	Sb	15 52 07.6	-0.1
GDZ	Gediz	0.33	103	P	Pg	15 52 02.7	-0.1
GDZ				S	Sg	15 52 07.2	-0.3
GDZ	Gediz	0.33	103	*i* P	Pg	15 52 02.7	-0.1
GDZ				*i* S	Sg	15 52 07.2	-0.3
TVSB	Tavsanli	0.42	47	PG	Pg	15 52 04.3	0.0
TVSB				SG	Sg	15 52 10.3	+0.2
TVSB	Tavsanli	0.42	47	*i* Pg	Pg	15 52 04.3	0.0
TVSB				*i* Sg	Sg	15 52 10.3	+0.2
KULA	Kula-Manisa	0.72	206	*e*PG	Pg	15 52 10.0	0.0
KULA	Kula-Manisa	0.72	206	*e*Pg	Pg	15 52 10.0	0.0
KHAL	Karahalli	0.86	157	P	Pg	15 52 12.6	+0.1
KHAL				S	Sb	15 52 23.4	-0.3
KHAL	Karahalli	0.86	157	*i* P	Pg	15 52 12.7	+0.1
KHAL				*i* S	Sb	15 52 23.4	-0.3
ORLT	Orhaneli	0.89	351	*e*PG	Pb	15 52 12.9	0.0
ORLT	Orhaneli	0.89	351	*e*Pg	Pb	15 52 13.0	0.0
KHL	Karahalli	0.91	157	*e*PG	Pg	15 52 13.6	+0.1
KHL	Karahalli	0.91	157	*e*Pg	Pg	15 52 13.6	+0.1
AKS	Akhisar	1.02	254	*e*PG	Pb	15 52 15.2	+0.1
AKS	Akhisar	1.02	254	*e*Pg	Pb	15 52 15.2	+0.1
BALB	Balikesir	1.04	298	*e*PG	Pn	15 52 15.7	0.0
BALB	Balikesir	1.04	298	*e*Pg	Pn	15 52 15.7	0.0
IGD	Bursa	1.10	5	*i* P	Pg	15 52 17.4	+0.2
IGD				*i* S	Sn	15 52 31.4	-0.2
CAVI	Cavuskoy	1.20	30	*e*PN	Pg	15 52 18.8	-0.1
CAVI	Cavuskoy	1.20	30	*e*Pn	Pg	15 52 18.8	-0.1
IZI	Iznik	1.21	15	*e*PN	Pg	15 52 19.4	+0.1
IZI	Iznik	1.21	15	*e*Pn	Pg	15 52 19.4	+0.1
KCTX	Karacabey (Bur	1.23	334	*e*PN	Pg	15 52 19.7	+0.1
KCTX	Karacabey (Bur	1.23	334	*e*Pn	Pg	15 52 19.7	+0.1
BORA	Eskisehir	1.29	56	P	Pg	15 52 21.2	+0.5
BORA				S	Sg	15 52 38.1	+0.6
BORA	Eskisehir	1.29	56	*i* P	Pg	15 52 21.2	+0.5
BORA				*i* S	Sg	15 52 38.1	+0.6
ADVT	Abdulvahap	1.37	22	*e*PN	Pg	15 52 21.9	-0.3
ADVT	Abdulvahap	1.37	22	*e*Pn	Pg	15 52 21.9	-0.3
GONE	Gonen-Balikesi	1.39	310	*e*PN	Pb	15 52 21.9	+0.5
GONE	Gonen-Balikesi	1.39	310	*e*Pn	Pb	15 52 21.9	+0.5
ARMT	Armutlu	1.41	354	*e*PN	Pg	15 52 22.6	-0.4
ARMT	Armutlu	1.41	354	*e*Pn	Pg	15 52 22.6	-0.4
EDC	Edincik	1.50	322	*e*PN	Pb	15 52 23.3	-0.1
EDC	Edincik	1.50	322	*e*Pn	Pb	15 52 23.3	-0.1
GULT	Gulveren	1.69	41	*e*PN	Pb	15 52 26.6	0.0
GULT	Gulveren	1.69	41	*e*Pn	Pb	15 52 26.6	0.0
HRT	Hereke	1.72	15	*e*PN	Pb	15 52 27.1	0.0
HRT	Hereke	1.72	15	*e*Pn	Pb	15 52 27.1	0.0

*ISCJB **28** 15:56:46.1±1.0, 13°.8N±0°.1×90°.92W±0°.06, h89km±13km, Error ellipse: s-maj=19.7km s-min=4.9km az=28.9*
*CASC **28** 15:56:46.5±0.7, 13°.78N×90°.94W, h72km±10km, MD3.9, ML4.2*
*MEX **28** 15:56:48.3±0.6, 13°.70N×90°.96W, h78km±30km, MD4.1*
*NEIC **28** 15:56:48.3, 13°.70N×90°.96W, h78km, MD4.1(MEX), MD4.3(SNET), After MEX.*
NEIC Felt [I] at Ahuachapan, El Salvador.

ISC 28 15:56:47.7±1.6, 13°.8N±0°.1×90°.91W±0°.06, h70km±18km, n26, σ0°.62/38, 2C-3D, Near coast of Guatemala

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IXG	Ixpaco	0.59	48	⇑ *i* P	Pn	15 57 01.1	-0.5
CUS1	Cusmapa	0.94	82	⇓ *e*P	Pn	15 57 05.1	-0.4
CUS1				*e*S	Sn	15 57 18.6	-0.2
MONT	Ecomontaæa	1.23	86	⇑ *e*P	Pn	15 57 09.0	-0.3
RBDL	Robledal	1.23	74	⇓ *e*P	Pn	15 57 08.6	-0.7
RTR	El Retiro	1.23	84	*e*P	Pn	15 57 09.0	-0.3
SBLS	San Blas	1.25	87	*e*P	Pn	15 57 09.4	-0.2
SBLS				*e*S	Sn	15 57 27.4	+1.4
SNJE	San Jose	1.27	86	*e*P	Pn	15 57 09.2	-0.6
SNJE				*e*S	Sn	15 57 27.5	+1.1
COLS	Colinas	1.57	94	⇓ *e*P	Pn	15 57 13.2	-0.4
BOQS	Boqueron	1.58	91	*e*P	Pn	15 57 13.4	-0.5
BOQS				*e*S	Sn	15 57 34.8	+1.0
SNET	Serv Nac Est T	1.63	93	AML	AML	15 57 15.7	
	comp=Z,3μm,0.2s						
THIG		1.73	311	*i* P	Pn	15 57 15.8	0.0
THIG				*i* S	Sn	15 57 36.5	-0.5
THIG		1.73	311	*i* P	Pn	15 57 15.8	0.0
THIG				*i* S	Sn	15 57 36.5	-0.5
MRL	Marmol	1.74	42	*e*P	Pn	15 57 15.5	-0.6
LFU	La Fuente	1.74	91	*e*P	Pn	15 57 15.3	-0.7
LFRS	El Faro	1.80	95	*e*P	Pn	15 57 16.0	-0.7
LBRS	Las Brisas	1.81	91	*e*P	Pn	15 57 16.4	-0.4
SNVI	San Vicente	2.02	94	*e*P	Pn	15 57 19.5	-0.2
SNVI				*e*S	Sn	15 57 44.6	+0.6
LCY	Lacayo	2.56	98	*e*P	Pn	15 57 26.8	-0.3
CCIG	Comitan	2.76	335	*e*P	Pn	15 57 30.2	+0.4
CCIG				*i* S	Sn	15 58 02.7	+0.6
CCIG	Comitan	2.76	335	*e*P	Pn	15 57 30.2	+0.4
CCIG				*i* S	Sn	15 58 02.7	+0.6
PCIG		2.94	311	*e*P	Pn	15 57 31.6	-0.6
PCIG				*e*S	Sn	15 58 06.6	+0.2
PCIG		2.94	311	*e*P	Pn	15 57 31.6	-0.6
PCIG				*e*S	Sn	15 58 06.6	+0.2
CNCH	Conchagua	3.03	99	*e*P	Pn	15 57 32.9	-0.5
TGIG		3.67	325	*i* P	Pn	15 57 42.6	+0.5
TGIG				*i* S	Sn	15 58 24.6	+0.3
TGIG		3.67	325	*i* P	Pn	15 57 42.6	+0.5
TGIG				*i* S	Sn	15 58 24.6	+0.3
TEIG	Tepich	6.89	21	*e*Pn	Pn	15 58 24.9	-1.2
	comp=Z,15nm,0.5s						

*ISK **28** 16:02:37.4, 39°.10N×29°.01E, h5km, ML3.0*
*ISCJB **28** 16:02:38.8±0.4, 39°.09N±0°.03×29°.01E±0°.04, h9km, Error ellipse: s-maj=4.7km s-min=4.4km az=21.4*
*DDA **28** 16:02:38.4, 39°.11N×29°.05E, h7km, Md2.9*
*CSEM **28** 16:02:38.6±0.1, 39°.10N×29°.02E, h2km, MD2.9, Error ellipse: s-maj=2.2km s-min=2.2km az=115.0*

ISC 28 16:02:38.9±0.9, 39°.11N±0°.03×29°.03E±0°.02, h9km, n70, σ0°.75/72, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.26	256	*i* P	Pn	16 02 49.2	+0.3
GDZ	Gediz	0.35	93	P	Pg	16 02 45.2	-0.6
GDZ	Gediz	0.35	93	*i* P	Pg	16 02 45.2	-0.6
TVSB	Tavsanli	0.48	44	*e*PG	Pg	16 02 47.4	-0.8
TVSB	Tavsanli	0.48

MKAR Makanchi Array 68.57 325 P P 16 17 02.7 -0.3
0.7nm,0.6s,baz=121,slow=6.8,SNR=8.7

IDC 28 16:14:20.1±2.1, 5°.18N×123°.66E, h0km, mb3.3/4, mb1 3.5/4, mb1mx3.3/44, mbtmp3.3/4, 1C, Error ellipse: s-maj=281.9km s-min=23.2km az=64.0, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DMPH	**Davao City--Mi**	**2.64**	**44**	⇑*eP*	Pb	16 15 07.0	-1.3
DMPH				*eS*	Sn	16 15 31.6	-5.2
WRA	**Warramunga Arr**	**27.08**	**157**	P	P	16 20 04.7	0.0
	0.1nm,0.3s,baz=336,slow=10,SNR=3.0						
ASAR	**Alice Springs**	**30.36**	**161**	P	P	16 20 34.0	0.0
	0.1nm,0.3s,baz=341,slow=7.0,SNR=4.0						
MKAR	**Makanchi Array**	**54.64**	**326**	P	P	16 23 51.2	+0.4
	0.2nm,0.4s,baz=117,slow=7.8,SNR=5.0						
KURBB	**Kurchatov Arra**	**58.89**	**328**	P	P	16 24 20.1	-0.7
	0.2nm,0.4s,baz=124,slow=6.5,SNR=3.1						

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*ISCJB **28** 16:18:14.0±0.8, 31°.72N±0°.10×104°.2E±0°.2, h14km, mb3.4/4, Error ellipse: s-maj=21.4km s-min=13.9km az=179.1*
*IDC **28** 16:18:13.9±1.2, 31°.72N×104°.12E, h0km, mb3.3/5, mb1 3.4/7, mb1mx3.2/57, mbtmp3.3/7, ML3.3/2, Error ellipse: s-maj=36.5km s-min=22.4km az=62.0*
ISC 28 16:18:16.1±1.0, 31°.8N±0°.1×104°.1E±0°.2, h14km, n7, σ0s40/7, mb3.3/4, Sichuan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**14.04**	**201**	Pn	**Pn**	**16 21 34.8**	**+0.1**
	0.1nm,0.3s,baz=14,slow=12,SNR=3.0						
SONM	**Songino Array**	**16.16**	**5**	Pn	**Pn**	**16 22 02.5**	**-0.2**
	0.1nm,0.3s,baz=183,slow=13,SNR=2.9						
KSRS	**Korea Array**	**20.36**	**67**	P	**P**	**16 22 52.6**	**+0.4**
	0.5nm,0.6s,baz=267,slow=11,SNR=3.4						
MKAR	**Makanchi Array**	**22.52**	**318**	P	**P**	**16 23 15.8**	**+0.5**
	0.5nm,0.7s,baz=128,slow=11,SNR=4.1						
FINES	**FINESS Array B**	**57.05**	**326**	P	**P**	**16 28 01.0**	**-0.3**
	2.0nm,0.9s,baz=100,slow=11,SNR=3.8						
WRA	**Warramunga Arr**	**58.99**	**146**	P	**P**	**16 28 15.2**	**-0.2**
	0.2nm,0.6s,baz=339,slow=7.7,SNR=5.2						
ASAR	**Alice Springs**	**62.03**	**149**	P	**P**	**16 28 35.9**	**-0.2**
	0.1nm,0.5s,baz=336,slow=7.2,SNR=4.3						

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*NEIC **28** 16:21:15.5, 38°.42N×118°.74W, h5km, ML3.3(REN), After REN.*
NEIC Felt at Hawthorne.
*ISCJB **28** 16:21:16.0±0.3, 38°.49N±0°.02×118°.78W±0°.04, h10km, mb2.8/1, Error ellipse: s-maj=4.2km s-min=3.1km az=156.1*
*IDC **28** 16:21:18.0±0.9, 38°.65N×118°.59W, h0km, mb2.9/1, mb1 3.3/4, mb1mx3.2/50, mbtmp3.0/4, ML3.5/3, MS2.7/2, Ms1 2.7/2, ms1mx2.4/13, Error ellipse: s-maj=23.0km s-min=5.8km az=50.0*
ISC 28 16:21:15.7±0.7, 38°.44N±0°.02×118°.75W±0°.02, h10km, n46, σ2s24/54, California-Nevada border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NV01	**Mina Array Sit**	**0.35**	**91**	*e*Pg	**Pg**	**16 21 21.0**	**-1.7**
NV01				*e*Sg	**Sg**	**16 21 22.2**	**-5.1**
NVAR	**Mina Array Bea**	**0.35**	**91**	Pg	**Pb**	**16 21 23.4**	**-0.7**
	769nm,0.3s,baz=265,slow=21						
NVAR				Lg	Lg	16 21 27.9	
	1μm,0.3s,baz=168,slow=11,SNR=58						
NVAR				LR	LR	16 21 52.5	
	comp=Z,348nm,18.0s,baz=262,slow=85						
NV11	**Mina Array Sit**	**0.47**	**90**	*e*Pg	**Pg**	**16 21 24.7**	**-0.1**
WAKR	**Walker**	**0.55**	**277**	*e*Pg	**Pg**	**16 21 26.6**	**+0.2**
MLAC	**Mammoth, Mammo**	**0.81**	**185**	P	**Pg**	**16 21 31.0**	**-0.3**
	baz=5.3						
MLAC				S	**Sb**	**16 21 42.2**	**-0.8**
	baz=5.3						
MTUM	**Tungsten Hills**	**1.09**	**172**	*e*Pg	**Pg**	**16 21 36.1**	**-0.5**
CMB	**Columbia Colle**	**1.35**	**253**	*e*Pn	**Pb**	**16 21 41.0**	**-0.1**
PAHR	**Pah Rah Range**	**1.36**	**339**	*e*Pn	**Pb**	**16 21 41.6**	**+0.3**
TIN	**Tinemaha, Big**	**1.44**	**163**	Pb	**Pg**	**16 21 43.0**	**-0.3**
	baz=344						
TIN				S	**Sg**	**16 22 02.6**	**+0.6**
	baz=344						
GRAC	**Grapevine Rang**	**1.81**	**142**	Pb	**Pg**	**16 21 49.4**	**-1.0**
	baz=323						
GRAC				Sb	**Sg**	**16 22 14.0**	**+0.2**
	baz=323						
AFDM	**Forest Hills D**	**1.81**	**287**	*e*Pn	**Pb**	**16 21 48.7**	**-0.3**
RCTC	**Rector, Farmer**	**2.16**	**191**	Sb	**Sg**	**16 22 23.2**	**-2.0**
	baz=10						
BMN	**Battle Mountai**	**2.32**	**30**	*e*Pn	**Pn**	**16 21 54.1**	**+0.1**
DAC	**Darwin (Calif)**	**2.34**	**157**	*e*Pn	**Pn**	**16 21 55.3**	**+0.8**
ORV	**Oroville**	**2.42**	**298**	*e*Pn	**Pn**	**16 21 57.0**	**+1.7**
TPNV	**Topopah Spring**	**2.48**	**126**	P	**Pn**	**16 21 57.3**	**+1.1**
	baz=307						
TPNV	**Topopah Spring**	**2.48**	**126**	*e*Pn	**Pb**	**16 21 58.0**	**-2.4**
R11A	**Troy Canyon, C**	**2.49**	**91**	Pb	**Pb**	**16 22 00.7**	**+0.1**
	baz=273						
R11A				Sb	**Sg**	**16 22 33.9**	**-1.7**
	baz=273						
R11A	**Troy Canyon, C**	**2.49**	**91**	*e*Pn	**Pb**	**16 21 59.8**	**-0.8**
MPMC	**Manual Prospec**	**2.58**	**157**	Sb	**Sg**	**16 22 36.3**	**-2.2**
	baz=338						
VES	**Vestal, Richgr**	**2.60**	**186**	P	**Pb**	**16 22 00.8**	**-1.6**
	baz=5.9						
SAO	**San Andreas Ge**	**2.72**	**233**	*e*Pn	**Pb**	**16 22 01.8**	**-2.6**
ISA	**Isabella, Lake**	**2.78**	**175**	Pb	**Pb**	**16 22 06.4**	**+0.9**
	baz=356						
ISA				Sb	**Sg**	**16 22 41.8**	**-3.1**
	baz=356						
ISA	**Isabella, Lake**	**2.78**	**175**	*e*Pn	**Pb**	**16 22 02.8**	**-2.6**
MCCM	**Marconi Confer**	**3.27**	**266**	*e*Sg	**Sb**	**16 22 56.7**	**+3.3**
SHPR	**Sheep Range**	**3.44**	**123**	*e*Pn	**Pn**	**16 22 11.0**	**+1.4**
GSC	**Goldstone, Bar**	**3.50**	**153**	*e*Pn	**Pn**	**16 22 11.7**	**+1.5**
ELK	**Elko**	**3.56**	**49**	*e*Pn	**Pn**	**16 22 11.7**	**+0.5**
ELK				*e*Sg	**Sg**	**16 23 08.2**	**-1.8**
WDC	**Whiskeytown Da**	**3.63**	**307**	*e*Pn	**Pn**	**16 22 13.7**	**+1.7**
WDC				*e*Sg	**Sg**	**16 23 09.5**	**-2.8**
MOD	**Modoc Plateau**	**3.66**	**341**	*e*Pn	**Pn**	**16 22 12.8**	**+0.2**
MOD				*e*Sg	**Sg**	**16 23 13.4**	**+0.1**
PSUT	**Pine Spring**	**3.84**	**87**	*e*Pg	**Pg**	**16 22 27.2**	**-2.1**
WVOR	**Wild Horse Val**	**3.99**	**1**	*e*Pg	**Pg**	**16 22 30.7**	**-1.5**
KMRM	**Mail Ridge**	**4.24**	**296**	*e*Sn	**Sn**	**16 23 09.1**	**-0.9**
YBH	**Yreka Blue Hor**	**4.48**	**319**	Pn	**Pn**	**16 22 28.4**	**+4.7**
	0.4nm,0.3s,baz=135,slow=19,SNR=6.4						
YBH				Lg	Lg	16 23 35.4	
	0.1nm,0.3s,baz=185,slow=11,SNR=1.7						
YBH				LR	LR	16 24 28.1	
	comp=Z,112nm,21.4s,baz=154,slow=43						
YBH	**Yreka Blue Hor**	**4.48**	**319**	*e*Pn	**Pb**	**16 22 30.2**	**-4.2**
K05A	**Summer Lake**	**4.58**	**340**	*e*Pn	Pn	16 22 30.6	+5.4
KNB	**Kanab**	**4.91**	**105**	*e*Pn	**Pn**	**16 22 32.8**	**+3.1**
PFO	**Pinyon Flats O**	**5.16**	**158**	Pg	**Pg**	**16 22 50.8**	**-3.7**
	0.2nm,0.3s,baz=339,slow=14,SNR=2.5						
PFO				Lg	Lg	16 24 02.8	
	0.3nm,0.3s,baz=243,slow=15,SNR=3.4						
MTPU	**Mount Pierson**	**5.18**	**92**	*e*Pg	**Pb**	**16 22 50.3**	**+3.7**
PKCU	**Pink Cliffs**	**5.18**	**99**	*e*Pg	**Pg**	**16 22 54.2**	**-0.8**
SRU	**San Rafael Swe**	**6.46**	**81**	*e*Pn	**Pn**	**16 22 54.9**	**+3.9**
SRU				*e*Sg	**Sg**	**16 24 37.9**	**-5.1**
MVCO	**Mesa Verde**	**8.20**	**95**	*e*Pg	**Pg**	**16 23 53.9**	**+1.1**
PDAR	**Pinedale Array**	**8.22**	**55**	Pn	**Pn**	**16 23 17.7**	**+2.5**
	0.1nm,0.3s,baz=246,slow=14,SNR=3.2						
ANMO	**Albuquerque**	**10.46**	**106**	LR	LR	16 27 14.1	
	comp=Z,40nm,21.5s,baz=136,slow=34						
TXAR	**Lajitas Array**	**15.45**	**121**	Pn	**P**	**16 25 01.1**	**+2.8**
	0.0nm,0.3s,baz=310,slow=9.7,SNR=4.7						
YKA	**Yellowknife Ar**	**24.22**	**5**	P	**P**	**16 26 34.1**	**+1.9**
	0.3nm,0.8s,baz=182,slow=9.2,SNR=7.1						

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*ISK **28** 16:33:57.7, 39°.20N×28°.97E, h6km, MD2.7*
*ISCJB **28** 16:33:58.2±0.6, 39°.18N±0°.04×28°.99E±0°.05, h9km, Error ellipse: s-maj=6.0km s-min=4.5km az=142.0*
*CSEM **28** 16:33:58.2±0.1, 39°.19N×28°.97E, h10km, MD2.5, Error ellipse: s-maj=3.2km s-min=2.6km az=110.0*
*DDA **28** 16:33:58.8, 39°.11N×29°.01E, h7km, Md2.5*
ISC 28 16:33:58.2±0.9, 39°.17N±0°.03×29°.00E±0°.03, h9km, n18, σ0s53/26, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**240**	P	**Pg**	**16 34 03.8**	**+0.5**
DEMI				S	**Sg**	**16 34 07.5**	**+0.7**
DEMI	**Demirci**	**0.25**	**240**	*i* P	**Pg**	**16 34 03.8**	**+0.5**
DEMI				*i* S	**Sg**	**16 34 07.5**	**+0.7**
GDZ	**Gediz**	**0.39**	**102**	P	**Pg**	**16 34 06.3**	**+0.5**
GDZ				S	**Sg**	**16 34 11.9**	**+0.9**
GDZ	**Gediz**	**0.39**	**102**	*i* P	**Pg**	**16 34 06.3**	**+0.5**
GDZ				*i* S	**Sg**	**16 34 11.9**	**+0.9**
TVSB	**Tavsanli**	**0.46**	**52**	*e*PG	**Pg**	**16 34 07.3**	**+0.1**
TVSB				*e*SG	**Sg**	**16 34 13.5**	**+0.3**
TVSB	**Tavsanli**	**0.46**	**52**	*e*Pg	**Pg**	**16 34 07.3**	**+0.1**
TVSB				*e*Sg	**Sg**	**16 34 13.5**	**+0.3**
KULA	**Kula-Manisa**	**0.71**	**202**	*e*PG	**Pg**	**16 34 12.1**	**+0.3**
KULA	**Kula-Manisa**	**0.71**	**202**	*e*Pg	**Pg**	**16 34 12.1**	**+0.3**
KHAL	**Karahalli**	**0.89**	**154**	P	**Pn**	**16 34 16.5**	**-0.5**
KHAL				S	**Sg**	**16 34 26.7**	**-0.2**
KHAL	**Karahalli**	**0.89**	**154**	*i* P	**Pn**	**16 34 16.5**	**-0.5**
KHAL				*i* S	**Sg**	**16 34 26.7**	**-0.2**
KCTX	**Karacabey (Bur**	**1.20**	**336**	*e*PN	**Pb**	**16 34 20.4**	**-0.8**
KCTX	**Karacabey (Bur**	**1.20**	**336**	*e*Pn	**Pb**	**16 34 20.4**	**-0.8**
CAVI	**Cavuskoy**	**1.22**	**32**	*e*PN	**Pn**	**16 34 21.2**	**-0.3**
CAVI	**Cavuskoy**	**1.22**	**32**	*e*Pn	**Pn**	**16 34 21.2**	**-0.3**
ARMT	**Armutlu**	**1.40**	**356**	*e*PN	**Pb**	**16 34 24.1**	**-0.4**
ARMT	**Armutlu**	**1.40**	**356**	*e*Pn	**Pb**	**16 34 24.1**	**-0.4**
GULT	**Gulveren**	**1.72**	**42**	*e*PN	**Pn**	**16 34 28.7**	**+0.3**
GULT	**Gulveren**	**1.72**	**42**	*e*Pn	**Pn**	**16 34 28.7**	**+0.3**

WEL 28 16:42:00.2±0.4, 43°.13S×176°.12E, h33km, ML3.5/22, 2C-2D, Error ellipse: s-maj=4.4km s-min=3.3km az=90.0, Off east coast of South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MTW	**Mount Morrison**	**2.02**	**347**	PN	Pn	16 42 30.6	-1.3
TMWZ	**Te Maipa**	**2.03**	**355**	PN	Pn	16 42 31.2	-0.8
KHZ	**Kahutara**	**2.03**	**290**	PN	Pn	16 42 30.2	-1.8
BSWZ	**Blackbirch Sta**	**2.18**	**310**	PN	Pn	16 42 32.3	-1.8
HOWZ	**Holdsworth Sta**	**2.27**	**348**	PN	Pn	16 42 34.5	-0.9
TCW	**Tory Channel**	**2.35**	**324**	PN	Pn	16 42 35.4	-1.1
TIWZ	**Tintock**	**2.35**	**356**	PN	Pn	16 42 35.7	-0.9
OGWZ	**Otaki Gorge**	**2.41**	**343**	PN	Pn	16 42 37.7	+0.3
KIW	**Kapiti Island**	**2.44**	**338**	PN	Pn	16 42 38.5	+0.8
BFZ	**Birch Farm**	**2.44**	**2**	PN	Pn	16 42 37.0	-0.8
MRZ	**Mangatainoka R**	**2.50**	**351**	PN	Pn	16 42 38.1	-0.5
PRWZ	**Pori Road**	**2.57**	**357**	PN	Pn	16 42 39.0	-0.5
CRLZ	**Canterbury Las**	**2.59**	**259**	PN	Pn	16 42 39.1	-0.6
CRLZ				SN	Sn	16 43 07.1	-2.9
MQZ	**McQueen's Vall**	**2.59**	**256**	PN	Pn	16 42 39.3	-0.5
MQZ				SN	Sn	16 43 07.0	-3.1
ANWZ	**Angora Road**	**2.68**	**6**	PN	Pn	16 42 40.1	-0.9
ANWZ				SN	Sn	16 43 10.8	-1.4
THZ	**Tophouse**	**2.74**	**299**	⇓PN	Pn	16 42 40.5	-1.4
POWZ	**Post Office Ro**	**2.75**	**354**	PN	Pn	16 42 41.7	-0.2
DVHZ	**Dannevirke**	**2.83**	**1**	PN	Pn	16 42 42.1	-1.0
DUWZ	**D'Urville Isla**	**2.84**	**324**	PN	Pn	16 42 42.8	-0.5
DUWZ				AML	AML	16 43 13.4	
DUWZ				AML	AML	16 43 15.7	
LTZ	**Lake Taylor**	**2.84**	**276**	PN	Pn	16 42 42.8	-0.6
PRHZ	**Porangahau**	**2.88**	**8**	PN	Pn	16 42 42.8	-1.0
OXZ	**Oxford**	**2.99**	**265**	PN	Pn	16 42 45.3	+0.1
TSZ	**Takapari Road**	**3.07**	**358**	PN	Pn	16 42 45.5	-0.9
PXZ	**Pawanui**	**3.14**	**10**	PN	Pn	16 42 45.9	-1.4
PNHZ	**Pukenui**	**3.21**	**1**	PN	Pn	16 42 47.6	-0.7
KAHZ	**Kahuranaki**	**3.38**	**10**	PN	Pn	16 42 49.2	-1.5
INZ	**Inchbonnie**	**3.46**	**275**	PN	Pn	16 42 52.3	+0.6
WAZ	**Wanganui**	**3.48**	**345**	⇑PN	Pn	16 42 53.4	+1.4
DSZ	**Denniston Nort**	**3.48**	**292**	PN	Pn	16 42 52.1	+0.1
KRHZ	**Kereru**	**3.49**	**3**	PN	Pn	16 42 51.4	-0.7
QRZ	**Quartz Range**	**3.53**	**309**	PN	Pn	16 42 51.6	-1.1
BHHZ	**Black Hill Sta**	**3.63**	**359**	PN	Pn	16 42 53.9	-0.3
MCHZ	**McNeill Hill**	**3.71**	**7**	PN	Pn	16 42 54.7	-0.4
MOVZ	**Moawhango**	**3.73**	**356**	PN	Pn	16 42 55.4	-0.1
MTVZ	**Mangateitei**	**3.77**	**352**	PN	Pn	16 42 56.7	+0.6
WNVZ	**Wahianoa**	**3.82**	**354**	PN	Pn	16 42 57.3	+0.4
TRVZ	**Turoa**	**3.85**	**353**	PN	Pn	16 42 57.8	+0.5
TUVZ	**Tukino**	**3.87**	**355**	PN	Pn	16 42 58.0	+0.5
PKVZ	**Pokaka**	**3.88**	**351**	⇓PN	Pn	16 42 58.2	+0.6
LREZ	**Lake Rotokare**	**3.88**	**340**	PN	Pn	16 42 58.8	+1.3
FWVZ	**Far West T-bar**	**3.89**	**354**	PN	Pn	16 42 58.2	+0.3
NGZ	**Ngauruhoe**	**3.97**	**354**	PN	Pn	16 42 59.2	+0.3
BKZ	**Black Stump Fm**	**3.97**	**4**	⇑PN	Pn	16 42 58.0	-0.8
NMHZ	**Naumai**	**4.06**	**8**	PN	Pn	16 42 59.7	-0.3
VRZ	**Vera Road**	**4.13**	**345**	PN	Pn	16 43 01.4	+0.5
KHEZ	**Kahui Hut**	**4.14**	**337**	PN	Pn	16 43 02.5	+1.3
MRHZ	**Matea Rd**	**4.29**	**3**	PN	Pn	16 43 02.4	-0.9
ODZ	**Otahua Downs**	**4.38**	**242**	PN	Pn	16 43 04.6	+0.1
LBZ	**Lake Benmore**	**4.48**	**252**	PN	Pn	16 43 06.7	+1.0
RTZ	**Ruatahuna**	**4.55**	**9**	PN	Pn	16 43 05.7	-1.1
RIGZ	**Rimuhau**	**4.59**	**16**	PN	Pn	16 43 05.4	-1.9
MWZ	**Matawai**	**4.91**	**13**	PN	Pn	16 43 09.6	-2.0
TWGZ	**Tauwhareparae**	**5.14**	**17**	PN	Pn	16 43 12.7	-2.2
EAZ	**Earnscleugh**	**5.33**	**244**	PN	Pn	16 43 17.9	+0.4
TUZ	**Tuapeka**	**5.43**	**236**	PN	Pn	16 43 19.5	+0.7

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*DDA **28** 16:43:19.9, 39°.08N×29°.09E, h7km, Md2.7*
*ISCJB **28** 16:43:20.2±0.5, 39°.11N±0°.03×29°.09E±0°.04, h8km±5km, Error ellipse: s-maj=5.6km s-min=5.1km az=162.3*
*CSEM **28** 16:43:20.3±0.1, 39°.13N×29°.08E, h5km, MD2.7, Error ellipse: s-maj=3.0km s-min=2.5km az=79.0*
*ISK **28** 16:43:20.1, 39°.16N×29°.08E, h6km, MD2.7*
ISC 28 16:43:20.2±0.9, 39°.12N±0°.03×29°.09E±0°.02, h10km±9km, n28, σ0s32/38, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.30**	**256**	P	**Pg**	**16 43 26.0**	**-0.3**
DEMI				S	**Sg**	**16 43 30.8**	**+0.4**
DEMI	**Demirci**	**0.30**	**256**	*i* P	**Pg**	**16 43 26.0**	**-0.3**
DEMI				*i* S	**Sg**	**16 43 30.8**	**+0.4**
GDZ	**Gediz**	**0.30**	**95**	P	**Pg**	**16 43 26.4**	**0.0**
GDZ				S	**Sg**	**16 43 31.0**	**+0.5**
GDZ	**Gediz**	**0.30**	**95**	*i* P	**Pg**	**16 43 26.4**	**0.0**
GDZ				*i* S	**Sg**	**16 43 31.0**	**+0.5**
TVSB	**Tavsanli**	**0.44**	**41**	*e*PG	**Pg**	**16 43 28.6**	**-0.3**
TVSB				*e*SG	**Sg**	**16 43 34.5**	**-0.2**
TVSB	**Tavsanli**	**0.44**	**41**	*e*Pg	**Pg**	**16 43 28.6**	**-0.3**
TVSB				*e*Sg	**Sg**	**16 43 34.5**	**-0.2**
KULA	**Kula-Manisa**	**0.69**	**209**	*e*PG	**Pg**	**16 43 33.5**	**0.0**
KULA	**Kula-Manisa**	**0.69**	**209**	*e*Pg	**Pg**	**16 43 33.5**	**0.0**
KHAL	**Karahalli**	**0.81**	**157**	P	**Pg**	**16 43 35.9**	**+0.1**
KHAL				S	**Sg**	**16 43 45.9**	**-0.4**
KHAL	**Karahalli**	**0.81**	**157**	*i* P	**Pg**	**16 43 35.9**	**+0.1**
KHAL				*i* S	**Sg**	**16 43 45.9**	**-0.4**
KHL	**Karahalli**	**0.86**	**157**	*e*PG	**Pn**	**16 43 38.5**	**0.0**
KHL	**Karahalli**	**0.86**	**157**	*e*Pg	**Pn**	**16 43 38.5**	**0.0**
KCTX	**Karacabey (Bur**	**1.28**	**334**	*e*PN	**Pg**	**16 43 44.6**	**-0.2**
KCTX				*e*SN	**Sn**	**16 44 01.4**	**0.0**
KCTX	**Karacabey (Bur**	**1.28**	**334**	*e*Pn	**Pg**	**16 43 44.6**	**-0.2**
KCTX				*e*Sn	**Sn**	**16 44 01.4**	**0.0**
BALY	**Balya**	**1.30**	**299**	P	**Pb**	**16 43 44.5**	**-0.2**
BALY	**Balya**	**1.30**	**299**	*i* P	**Pb**	**16 43 44.5**	**-0.2**
ADVT	**Abdulvahap**	**1.41**	**21**	*e*PN	**Pb**	**16 43 46.5**	**-0.1**
ADVT	**Abdulvahap**	**1.41**	**21**	*e*Pn	**Pb**	**16 43 46.5**	**-0.1**
GONE	**Gonen-Balikesi**	**1.43**	**311**	*e*PN	**Pb**	**16 43 46.9**	**-0.1**
GONE	**Gonen-Balikesi**	**1.43**	**311**	*e*Pn	**Pb**	**16 43 46.9**	**-0.1**
ARMT	**Armutlu**	**1.46**	**353**	*e*PN	**Pb**	**16 43 47.5**	**0.0**
ARMT	**Armutlu**	**1.46**	**353**	*e*Pn	**Pb**	**16 43 47.5**	**0.0**
EDC	**Edincik**	**1.55**	**323**	*e*PN	**Pb**	**16 43 48.7**	**-0.3**
EDC	**Edincik**	**1.55**	**323**	*e*Pn	**Pb**	**16 43 48.7**	**-0.3**
GULT	**Gulveren**	**1.71**	**39**	*e*PN	**Pb**	**16 43 51.2**	**-0.6**
GULT	**Gulveren**	**1.71**	**39**	*e*Pn	**Pb**	**16 43 51.2**	**-0.6**
HRT	**Hereke**	**1.76**	**14**	*e*PN	**Pn**	**16 43 51.4**	**+0.6**
HRT	**Hereke**	**1.76**	**14**	*e*Pn	**Pn**	**16 43 51.4**	**+0.6**

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*KRNET **28** 16:45:42.3±0.1, 39°.81N×70°.48E, mb2.1*
*ISCJB **28** 16:45:46.7±1.0, 39°.78N±0°.09×70°.5E±0°.1, h16km, Error ellipse: s-maj=15.5km s-min=8.1km az=139.1*
*NNC **28** 16:45:46.0±0.8, 40°.11N×70°.22E, h0km, mb3.2, mpv2.9, Error ellipse: s-maj=20.7km s-min=5.4km az=126.0*
ISC 28 16:45:46.4±1.5, 39°.89N±0°.09×70°.49E±0°.08, h16km, n10, σ1s73/14, 13C-6D, Tajikistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BTK	**Batken**	**0.30**	**56**	⇑*eP*	Pg	16 45 49.4	-3.4
	baz=46						
BTK				⇑*iS*	**Sg**	**16 45 54.8**	**-2.4**
	baz=46						
DZET	**Dzherino**	**1.69**	**231**	⇓Pg	**Pn**	**16 46 16.2**	**+0.9**
	5.5nm,0.3s						
DZET				⇑Lg	Lg	16 46 40.8	
	27nm,0.4s						
OHH	**Osh**	**1.86**	**69**	⇑*eP*	**Pn**	**16 46 18.0**	**+0.3**
	baz=67						
OHH				⇑*eS*	**Sb**	**16 46 43.3**	**+0.1**
	baz=67						
ARK	**Arkit**	**2.21**	**30**	⇑*iP*	**Pn**	**16 46 23.3**	**+0.9**
	baz=30						
ARK				⇑*iS*	**Sb**	**16 46 53.3**	**+0.2**
	baz=30						
ARSB	**Arslanbob**	**2.37**	**52**	⇓*eP*	**Pn**	**16 46 25.3**	**+0.5**
	baz=50						
ARSB				⇓*iS*	**Sb**	**16 46 57.7**	**-0.2**
	baz=50						
MNAS	**Manas**	**3.00**	**30**	⇓*eP*	**Pn**	**16 46 34.5**	**+1.1**
	baz=29						
MNAS				⇓*iS*	**Sn**	**16 47 12.2**	**+3.0**
	baz=29						
MNAS	**Manas**	**3.00**	**30**	⇑Pn	**Pn**	**16 46 34.6**	**+1.2**
	1.6nm,0.4s						
MNAS				⇑Lg	Lg	16 47 17.2	
	5.2nm,0.4s						
KK31	**Karatay Array**	**3.21**	**0**	⇑Pg	**Pb**	**16 46 40.7**	**-2.3**
	0.3nm,0.2s,baz=195,slow=16,SNR=6.2						
KK31				Lg	Lg	16 47 22.0	
	1.9nm,0.2s,baz=182,slow=29,SNR=12						
AAK	**Ala-Archa**	**4.07**	**46**	⇑Pn	**Pn**	**16 46 50.7**	**+2.6**
	2.4nm,0.6s						
AAK				⇓Lg	Lg	16 47 57.7	
	4.3nm,0.7s						
TKM2	**Tokmak 2**	**4.89**	**50**	⇑Pn	**Pn**	**16 47 00.6**	**+1.3**
	1.2nm,0.3s						
TKM2				⇑Lg	Lg	16 48 20.4	
	1.8nm,0.6s						

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*IDC **28** 16:47:06.5±0.5, 11°.48S×165°.88E, h0km, mb4.5/23, mb1 4.5/26, mb1mx4.5/44, mbtmp4.5/26, ML4.5/2, MS4.4/11, Ms1 4.4/11, ms1mx3.9/41, Error ellipse: s-maj=17.6km s-min=13.9km az=103.0*
*ISCJB **28** 16:47:10.0±0.2, 11°.51S±0°.04×165°.84E±0°.04, h37km, mb4.8/87, MS4.5/11, Error ellipse: s-maj=6.5km s-min=5.1km az=42.8*
*NEIC **28** 16:47:11.2±0.2, 11°.50S×165°.80E, h35km, mb4.9/47, Error ellipse: s-maj=8.3km s-min=5.9km az=133.0*
*GCMT **28** 16:47:11.2±0.2, 11°.63S×165°.62E, h17km±1km, MW5.1/67, Moment Tensor Solution. s53,c68; s67,c93; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}4.15±.19; $M_{\theta\theta}$-1.01±.15; $M_{\phi\phi}$-3.14±.15; $M_{r\theta}$3.22±.41; $M_{\theta\phi}$1.98±.10; $M_{\phi r}$-3.30±.39; Best double couple: $M_0$6.26300×10^{16} NP1:ϕ_s139.00000°, δ69.00000°, λ83.00000°. NP2: ϕ_s339.00000°, δ22.00000°, λ109.00000°. Principal axes: T 6.2420, Plg65.0000°, Azm37.0000°; N 0.0420, Plg7.0000°, Azm142.0000°; P -6.2840, Plg24.0000°, Azm235.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
ISC 28 16:47:12.3±0.3, 11°.53S±0°.05×165°.78E±0°.05, h37km, n199, σ1s78/183, mb4.9/87, MS4.4/12, 1C-1D, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	**Honiara**	**6.11**	**289**	P	**Pn**	**16 48 39.6**	**-0.4**
	10nm,0.3s,baz=104,slow=11,SNR=12						
HNR				Sn	**Sn**	**16 49 45.6**	**-3.0**
	7.8nm,0.3s,baz=75,slow=22,SNR=9.7						
HNR				LR	LR	16 51 15.1	
	comp=Z,3μm,19.9s,baz=123,slow=40						
HNR	**Honiara**	**6.11**	**289**	*e*Pn	**Pn**	**16 48 38.8**	**-1.2**
HNR				Sn

TBI	Tubuai	44.12 112	*e*S		S	17 01 49.1	+1.2
	214nm,26.5s						
TBI			*e*LQ		LQ	17 05 51.9	
	801nm,29.8s						
TBI			*e*LR		LR	17 07 36.9	
	465nm,25.0s,baz=288						
BSSI	Bau Bau, Buton	45.03 273	P		P	16 55 29.2	+4.4
MRSI	Marisa	45.15 282	P		P	16 55 29.9	+4.2
KAPI	Kappang	45.96 274	*e*P		P	16 55 35.1	+2.9
	67nm,1.8s						
PLAI	Plampang	47.29 269	P		P	16 55 46.9	+4.4
KLBR	Kellerberrin	48.48 238	P		P	16 55 52.3	+0.8
	baz=48,SNR=8.3						
NWAO	Narrogin (SRO)	49.22 236	P		P	16 55 57.1	-0.1
	baz=49,SNR=3.8						
NWAO	Narrogin (SRO)	49.22 236	*e*P		P	16 55 55.0	-2.2
	20nm,1.1s						
MORW	Morawa	49.42 242	P		P	16 55 59.4	+0.6
	baz=49,SNR=11						
BKB	Balikpapan	49.56 278	P		P	16 56 05.3	+5.2
MYLDM	Lahad Datu	49.88 287	*e*P		P	16 56 02.1	-0.4
	69nm,1.4s						
SBUM	Sibu	55.03 281	*e*P		P	16 56 40.0	-0.7
	30nm,1.6s						
JNU	Nakatsue	55.49 324	P		P	16 56 44.1	+0.4
	12nm,0.8s,baz=76,slow=4.8,SNR=4.4						
RKT	Rikitea	57.39 110	*e*S		S	17 04 54.4	+2.5
	161nm,27.5s						
RKT			*e*LR		LR	17 13 45.8	
	468nm,25.2s						
KSRS	Korea Array	60.30 326	P		P	16 57 17.6	+0.4
	2.0nm,0.8s,baz=136,slow=7.4,SNR=9.9						
KSAR	Wonju Array Be	60.31 326	P		P	16 57 17.6	+0.3
KS01	Wonju Array Si	60.33 326	*e*P		P	16 57 16.9	-0.5
QIZ	Qiongzhong	62.94 298	P		P	16 57 34.0	-1.5
QIZ			S		S	17 06 01.0	-2.3
USRK	Ussuriysk Ar.	63.40 333	P		P	16 57 38.3	+0.3
	5.6nm,0.9s,baz=148,slow=6.1,SNR=9.8						
PETK	Petropavlovsk-	64.75 355	P		P	16 57 46.3	-0.4
	5.2nm,0.9s,baz=134,slow=6.2,SNR=5.4						
MDJ	Mudanjiang	64.79 332	P		P	16 57 47.0	-0.1
MDJ			pP		pP	16 57 58.0	-0.4
MDJ			sP		sP	16 58 03.5	+0.8
MDJ			S		S	17 06 24.5	-0.9
MDJ			sS		sS	17 06 45.0	+1.0
MDJ			pmax		pmax		
	comp=Z,8.0nm,1.3s						
MDJ			pmax		pmax		
	comp=Z,50nm,4.9s						
MDJ			LR		LR		
	comp=N,71nm,24.2s						
MDJ			LR		LR		
	comp=E,68nm,25.6s						
MDJ			LR		LR		
	comp=Z,160nm,24.7s						
BKNI	Bangkinang	65.35 276	P		P	16 57 58.0	+6.6
	comp=Z,113nm,0.5s,comp=Z,1μm						
PPI	Padang Panjang	65.81 275	P		P	16 58 02.0	+7.6
CASY	Casey	65.94 201	P		P	16 57 51.2	-3.0
	comp=Z,8.8nm,1.6s						
VNDA	Vanda	66.01 181	P		P	16 57 55.0	+0.5
	comp=Z,1.9nm,1.0s,baz=358,slow=6.1,SNR=3.7						
VNDA	Vanda	66.01 181	*e*P		P	16 57 55.8	+1.3
	comp=Z,6.9nm,1.1s						
CN2	Changchun	66.17 329	*e*P		P	16 57 59.5	+3.4
CN2			pmax		pmax		
	comp=Z,10.0nm,0.8s						
SBA	Scott Base	66.32 180	*e*P		P	16 57 55.9	-0.6
	comp=Z,45nm,1.9s						
MNSI	Mandailing Nat	66.88 276	P		P	16 58 05.4	+4.2
	comp=Z,26nm,0.8s						
KULM	Kulim	66.91 281	*e*P		P	16 57 59.1	-2.3
	comp=Z,21nm,1.2s						
SKNT	Sakolnakorn	67.32 294	P		P	16 58 06.0	+2.1
	comp=Z,26nm,2.4s						
KLR	Kul'dur	67.52 337	P		P	16 58 04.5	0.0
	comp=Z,3.6nm,0.9s,baz=158,slow=5.2,SNR=8.3						
PSI	Prapat	67.97 278	*e*P		P	16 58 09.2	+1.0
	comp=Z,23nm,1.2s						
ENH	Enshi	68.23 309	*e*P		P	16 58 05.5	-4.0
	comp=Z,26nm,1.2s						
NONG	Nongkai	68.45 295	P		P	16 58 12.6	+1.6
	comp=Z,50nm,1.1s						
TSI	Tuntungan	68.48 278	P		P	16 58 15.7	+4.4
	comp=Z,41nm,1.3s						
GYA	Guiyang	68.72 304	P		P	16 58 13.3	+0.6
GYA			pmax		pmax		
	comp=Z,10.0nm,1.0s						
BJI	Beijing	68.88 321	P		P	16 58 14.0	+0.7
BJI			pmax		pmax		
	comp=Z,12nm,0.9s						
GSI	Gunungsitoli	68.94 276	P		P	16 58 19.2	+5.0
	comp=Z,54nm,0.8s						
PBKT	Sadao Pong	69.90 292	P		P	16 58 24.9	+4.9
	comp=Z,12nm,1.3s						
XAN	Xi'an	70.47 312	P		P	16 58 23.8	+0.5
XAN			pP		pP	16 58 35.0	+0.3
XAN			pmax		pmax		
	comp=Z,10.0nm,1.0s						
NANT	Nan	70.88 295	P		P	16 58 30.8	+4.8
	comp=Z,2.1nm,1.4s						
KMI	Kunming	71.40 302	P		P	16 58 30.8	+1.4
KMI			pP		pP	16 58 41.5	+0.8
KMI			S		S	17 07 44.5	-1.0
KMI			pmax		pmax		
	comp=Z,21nm,1.3s						
KMI			pmax		pmax		
	comp=Z,550nm,6.9s						
KMI			LR		LR		
	comp=N,5μm,21.6s						
KMI			LR		LR		
	comp=E,7μm,14.4s						
KMI			LR		LR		
	comp=Z,6μm,27.7s						
CRAI	Chiangrai	71.66 296	P		P	16 58 32.2	+1.5
	comp=Z,132nm,1.2s						
LAMP	Lampang	71.74 294	P		P	16 58 35.1	+3.9
	comp=Z,5.0nm,0.9s						
HHC	Hu-ho-hao-te	72.22 320	*e*P		P	16 58 33.5	-0.3
HHC			pmax		pmax		
	comp=Z,21nm,1.2s						
HHC			pmax		pmax		
	comp=Z,160nm,7.5s						
CM01	Chiang Mai Arr	72.31 294	*e*P		P	16 58 35.6	+1.0
CM31	Chiang Mai Arr	72.34 294	*e*P		P	16 58 37.3	+2.5
CMAR	Chiang Mai Arr	72.34 294	P		P	16 58 36.1	+1.3
	comp=Z,3.2nm,0.9s,baz=113,slow=4.2,SNR=21						
CMMT	Chiang Mai	72.45 294	P		P	16 58 37.3	+1.8
	comp=Z,8.6nm,1.5s						
CHTO	Chiang Mai	72.45 294	P		P	16 58 37.3	+1.8
	comp=Z,33nm,1.7s						
CHTO	Chiang Mai	72.45 294	*e*P		P	16 58 31.6	-3.9
	comp=Z,8.9nm,1.1s						
CD2	Chengdu	72.92 307	P		P	16 58 36.8	-1.3
CD2			pmax		pmax		
	comp=Z,23nm,0.8s						
SEY	Seymchan	74.96 354	P		P	16 58 48.4	-0.9
	comp=Z,4.1nm,0.9s,baz=149,slow=6.0,SNR=10						
LZH	Lanzhou	75.11 312	*e*P		P	16 58 52.3	+1.4
LZH			pP		pP	16 59 03.3	+0.9
LZH			sP		sP	16 59 08.5	+1.9
LZH			pmax		pmax		
	comp=Z,16nm,1.0s						
QSPA	South Pole Qui	78.47 180	*e*P		P	16 59 09.8	+0.4
YAK	Yakutsk	78.57 344	P		P	16 59 09.0	-0.5
	comp=Z,0.8nm,0.5s,baz=307,slow=20,SNR=3.3						
YAK	Yakutsk	78.57 344	*e*P		P	16 59 08.1	-1.5
	comp=Z,23nm,1.1s						
ULN	Ulaanbaatar	78.71 324	P		P	16 59 07.6	-3.4
	comp=Z,13nm,1.0s						
BRLK	Bradley Lake	79.08 21	*e*P		P	16 59 11.4	-1.1
	comp=Z,14nm,0.8s						
SONM	Songino Array	79.08 324	P		P	16 59 13.3	+0.4
	comp=Z,3.9nm,1.0s,baz=135,slow=5.9,SNR=23						
SONA1	Songino Array	79.08 324	*e*P		P	16 59 12.1	-0.8
BILL	Bilibino	79.36 0	*e*P		P	16 59 11.9	-1.9
	comp=Z,18nm,1.0s						
GTA	Gaotai	79.42 314	*e*P		P	16 59 16.5	+1.5
GTA			pP		sP	16 59 29.8	-0.9
GTA			sP		pP	16 59 35.3	+8.8
GTA			S		S	17 09 15.3	+1.6
GTA	Gaotai	79.42 314	sS		sS	17 09 35.5	+2.8
GTA	Gaotai	79.42 314	SS		SS	17 14 21.5	-0.4
GTA			pmax		pmax		
	comp=Z,15nm,1.0s						
GTA			pmax		pmax		
	comp=Z,190nm,5.0s						
GTA			LR		LR		
	comp=N,2μm,28.0s						
GTA			LR		LR		
	comp=E,3μm,29.5s						
GTA			LR		LR		
	comp=Z,6μm,24.2s						
TT01	Tatalina	79.86 17	*e*P		P	16 59 16.0	-0.6
TTA	Tatalina	79.88 17	*e*P		P	16 59 16.3	-0.6
	comp=Z,8.2nm,1.0s						
CAST	Castle Rocks	81.40 18	*e*P		P	16 59 22.7	-2.2
	comp=Z,7.4nm,0.8s						
DIV	Divide	81.85 22	*e*P		P	16 59 25.0	-2.4
	comp=Z,11nm,0.8s						
KTH	Kantishna Hill	81.85 18	*e*P		P	16 59 24.5	-2.9
	comp=Z,6.7nm,0.9s						
TRF	Thorofare Moun	81.97 18	*e*P		P	16 59 25.2	-2.9
	comp=Z,6.3nm,1.0s						
KLU	Klutina	82.04 21	*e*P		P	16 59 27.5	-0.9
	comp=Z,9.3nm,0.9s						
BPAW	Bear Paw Mtn.	82.23 18	*e*P		P	16 59 26.7	-2.6
	comp=Z,18nm,1.7s						
RND	Reindeer	82.38 19	*e*P		P	16 59 29.1	-1.1
	comp=Z,11nm,1.1s						
TLY	Talaya	82.55 326	*e*P		P	16 59 31.5	+0.3
	comp=Z,7.1nm,0.9s						
MCK	McKinley	82.59 19	*e*P		P	16 59 27.9	-3.3
	comp=Z,16nm,1.3s						
BWN	Browne	82.74 18	*e*P		P	16 59 30.2	-1.8
	comp=Z,31nm,1.2s						
MLY	Manley	82.99 17	*e*P		P	16 59 32.2	-1.0
	comp=Z,7.1nm,1.3s						
BALM	Baldy	83.05 23	*e*P		P	16 59 32.0	-1.7
	comp=Z,14nm,1.2s						
WRH	Wood River Hil	83.38 18	*e*P		P	16 59 33.8	-1.4
	comp=Z,9.4nm,1.0s						
CCB	Clear Creek Bu	83.59 18	*e*P		P	16 59 34.7	-1.6
	comp=Z,7.4nm,1.0s						
MDM	Murphy Dome	83.68 18	*e*P		P	16 59 35.4	-1.4
	comp=Z,7.8nm,0.8s						
COLA	College	83.73 18	*e*P		P	16 59 36.0	-1.0
	comp=Z,15nm,0.8s						
MENT	Mentasta	83.77 21	*e*P		P	16 59 36.7	-0.7
	comp=Z,9.3nm,1.0s						
ILAR	Eielson Array	83.96 18	P		P	16 59 37.1	-1.1
	comp=Z,3.6nm,0.8s,baz=253,slow=4.8,SNR=26						
ILB	Eielson Array	83.96 18	*e*P		P	16 59 36.4	-1.8
IL1	Eielson Array	83.96 18	*e*P		P	16 59 35.6	-2.6
DOT	Dot Lake	84.12 20	*e*P		P	16 59 37.6	-1.5
	comp=Z,48nm,1.0s						
YBH	Yreka Blue Hor	84.21 46	P		P	16 59 39.5	-0.6
	comp=Z,4.2nm,1.1s,baz=178,slow=2.1,SNR=4.0						
AFDM	Forest Hills D	84.49 49	*e*P		P	16 59 40.1	-1.5
	comp=Z,11nm,1.2s						
EGAK	Eagle	85.82 20	*e*P		P	16 59 47.0	-0.6
	comp=Z,12nm,0.8s						
NVAR	Mina Array Bea	86.31 50	P		P	16 59 50.3	-0.6
	comp=Z,0.6nm,0.7s,baz=224,slow=6.2,SNR=6.7						
NVAR			LR		LR	17 35 22.5	
	comp=Z,357nm,18.0s,baz=252,slow=34						
NV01	Mina Array Sit	86.31 50	*e*P		P	16 59 49.8	-1.1
TIXI	Tiksi	86.57 349	P		P	16 59 50.5	-0.6
	comp=Z,3.6nm,1.0s,baz=128,slow=6.5,SNR=8.4						
DLBC	Dease Lake	86.82 28	P		P	16 59 51.9	-0.8
	comp=Z,2.9nm,0.9s,baz=241,slow=7.8,SNR=3.8						
LPIG	La Paz	89.18 65	LR		LR	17 33 12.7	
	comp=Z,109nm,18.1s,baz=352,slow=31						
ELK	Elko	89.24 48	LR		LR	17 30 07.6	
	comp=Z,164nm,21.4s,baz=134,slow=29						
WMQ	Urumqi	89.46 315	*e*P		P	17 00 07.0	+1.4
WMQ	Urumqi	89.46 315	S		S	17 10 58.5	+4.9
WMQ			pmax		pmax		
	comp=Z,5.0nm,0.6s						
WMQ			pmax		pmax		
	comp=Z,65nm,5.0s						
HVU	Hansel Valley	91.31 48	*e*P		P	17 00 14.9	+0.5
SYO	Syowa Base	91.33 197	*e*P		P	17 00 12.0	-1.8
SYO	Syowa Base	91.33 197	*e*pP		pP	17 00 24.0	-1.4
PDAR	Pinedale Array	93.85 47	P		P	17 00 25.5	-0.7
	comp=Z,0.1nm,0.4s,baz=262,slow=6.2,SNR=2.9						
MK01	Makanchi Array	93.89 317	*e*P		P	17 00 25.8	-0.3
MKAR	Makanchi Array	93.90 317	P		P	17 00 26.2	+0.1
	comp=Z,8.1nm,0.8s,baz=100,slow=6.1,SNR=76						
ZALV	Zalesovo Beam	93.97 324	P		P	17 00 25.6	-0.6
	comp=Z,3.2nm,0.8s,baz=108,slow=4.8,SNR=18						
MAKZ	Makanchi	94.11 317	*e*P		P	17 00 27.3	+0.3
YKA	Yellowknife Ar	95.39 27	P		P	17 00 29.8	-2.7
	comp=Z,1.0nm,0.8s,baz=257,slow=4.7,SNR=12						
YKB5	Yellowknife Ar	95.39 27	*e*P		P	17 00 29.5	-2.9
TXAR	Lajitas Array	96.03 61	P		P	17 00 36.6	+0.3
	comp=Z,0.2nm,0.7s,baz=258,slow=4.5,SNR=2.6						
TXAR			LR		LR	17 38 33.7	
	comp=Z,255nm,18.6s,baz=0.0,slow=32						
BVAR	Borovoye Array	102.35 322	P		Pdif	17 01 03.6	-0.3
	comp=Z,0.7nm,0.8s,baz=131,slow=4.5,SNR=4.4						
ARCES	ARCESS Array B	116.81 345	PKP		PKPdf	17 05 51.9	-0.3
	comp=Z,2.7nm,0.7s,baz=56,slow=2.2,SNR=7.7						
LPAZ	La Paz	119.94 116	PKP		PKPdf	17 06 00.1	-0.4
	comp=Z,2.3nm,1.0s,baz=352,slow=1.5,SNR=6.2						
FINES	FINESS Array B	122.23 338	PKP		PKPdf	17 06 02.6	-0.3
	comp=Z,4.2nm,0.9s,baz=58,slow=3.4,SNR=7.8						
CPUP	Villa Florida	123.67 133	PKP		PKPdf	17 06 06.5	-0.3
	comp=Z,3.3nm,0.9s,baz=353,slow=3.4,SNR=4.6						
BOSA	Boshof	124.79 223	PKP		PKPdf	17 06 09.6	+0.6
	comp=Z,6.0nm,1.1s,baz=146,slow=3.6,SNR=3.6						
NB2	NORSAR Subarra	127.18 345	PKPdf		PKPdf	17 06 12.2	-0.2
	comp=Z,1.3nm,0.7s,baz=32,slow=1.8						
NOA	NORSAR Array B	127.18 345	PKP		PKPdf	17 06 12.4	-0.1
	comp=Z,2.9nm,0.9s,baz=38,slow=1.9,SNR=6.8						
HFS	Hagfors	127.26 343	PKP		PKPdf	17 06 12.2	-0.4
	comp=Z,3.8nm,0.9s,baz=108,slow=8.0,SNR=3.7						
AKASG	Malin Array Be	127.29 327	PKP		PKPdf	17 06 12.9	0.0
	comp=Z,1.0nm,0.7s,baz=56,slow=2.2,SNR=8.2						
BRTR	Keskin Array B	129.32 312	PKhKP		PKPpre	17 06 13.3	
	comp=Z,0.7nm,0.9s,baz=151,slow=3.3,SNR=2.9						
BRTR			PP		PP	17 08 25.9	-0.5
	comp=Z,1.4nm,1.1s,baz=27,slow=1.4,SNR=5.0						
DPC	Dobruska-Polom	133.89 333	*e*PKP		PKPdf	17 06 25.2	-0.3
DPC			*ep*PKP		pPKPdf	17 06 38.8	+1.3
VRAC	Vranov	134.52 332	PKP		PKPdf	17 06 27.1	+0.5
	comp=Z,2.1nm,0.6s,baz=70,slow=5.2,SNR=4.4						
BRG	Berggiesshubel	134.52 335	*e*PKP		PKPdf	17 06 24.5	-2.1
	comp=Z,14nm,1.8s						
CLL	Collm	134.56 336	*i* PKPdf		PKPdf	17 06 28.0	+1.4
	comp=Z,12nm,1.5s						
PRU	Pruhonice	134.93 334	*e*PKP		PKPdf	17 06 28.0	+0.6
EKA	Eskdalemuir Ar	135.45 351	PKP		PKPdf	17 06 28.4	+0.2
	comp=Z,3.5nm,0.9s,baz=30,slow=5.8,SNR=4.0						
KHC	Kasperske Hory	135.99 334	*e*PKP		PKPdf	17 06 30.0	+0.5
KHC			*ep*PKP		pPKPdf	17 06 43.2	+1.7
GERES	GERESS Array B	136.15 333	PKP		PKPdf	17 06 29.9	0.0
	comp=Z,1.5nm,0.9s,baz=5.7,slow=2.7,SNR=9.8						
MEM	Membach	137.65 341	PKP		PKPdf	17 06 34.1	+1.7
DAVOX	Davos/Dischmat	139.39 334	PKP		PKPdf	17 06 36.7	+0.7
	comp=Z,8.0nm,1.0s,baz=252,slow=3.3,SNR=7.0						
KEST	Kesra	147.82 322	PKPbc		PKPbc	17 06 53.7	-0.2
	comp=Z,22nm,0.8s,baz=247,slow=1.5,SNR=26						
PBRG	Braganca	149.14 349	*e*PKP		PKPbc	17 06 55.5	-1.6
PBRG	Braganca	149.14 349	*e*LR		LR	18 03 27.1	
	comp=Z,643nm,20.0s						
PGAV	Gavieira, Arco	149.24 351	*e*PKP		PKPpre	17 06 48.0	
PGAV	Gavieira, Arco	149.24 351	*e*LR		LR	18 08 48.0	
	comp=Z,713nm,22.0s						
POLO	Lamas de Olo	149.74 350	*e*PKP		PKPbc	17 06 59.0	+0.4
POLO	Lamas de Olo	149.74 350	*e*LR		LR	18 04 20.9	
	comp=Z,374nm,20.0s						
MVO	Moncorvo	149.81 349	*e*PKP		PKPbc	17 06 59.2	+0.4
MVO	Moncorvo	149.81 349	*e*LR		LR	18 03 40.8	
	comp=Z,652nm,22.0s						
PVRL	Vila Real	149.83 350	*e*PKP		PKPbc	17 07 00.1	+1.3
ESDC	Sonseca Array	150.53 344	PKP		PKPdf	17 06 55.0	-0.1
	comp=Z,0.3nm,0.5s,baz=357,slow=4.0,SNR=4.7						
ESDC			PKPbc		PKPbc	17 07 00.4	-0.1
	comp=Z,4.5nm,0.8s,baz=18,slow=2.4,SNR=23						
MTE	Manteigas	150.65 350	*e*PKP		PKPbc	17 07 01.9	+1.1
MTE	Manteigas	150.65 350	*e*LR		LR	18 05 24.8	
	comp=Z,19nm,20.0s						
PCBR	Castelo Branco	151.18 349	*e*PKP		PKPbc	17 07 02.3	+0.3
PMRV	Marv??o	151.56 349	*e*PKP		PKPbc	17 07 03.8	+0.9
PMRV	Marv??o	151.56 349	*e*LR		LR	18 01 52.2	
	comp=Z,754nm,18.0s						
PMTG	Montargil	152.06 350	*e*PKP		PKPdf	17 06 58.5	+1.1
PMTG	Montargil	152.06 350	*e*LR		LR	18 01 53.0	
	comp=Z,521nm,18.0s						
PMAFR	Mafra	152.34 352	*e*LR		LR	18 03 27.1	
	comp=Z,524nm,20.0s						
PBAR	Barrancos	152.70 348	*e*PKP		PKPdf	17 06 59.0	+0.6
PBAR	Barrancos	152.70 348	*e*LR		LR	18 03 06.7	
	comp=Z,1μm,18.0s						
PBEJ	Beja	153.01 349	*e*PKP		PKPbc	17 07 07.2	+1.0
PNCL	Nicolau / Gran	153.05 350	*e*LR		LR	18 04 21.5	
	comp=Z,724nm,20.0s						
PCVE	Castro Verde	153.43 349	*e*LR		LR	18 03 27.5	
	comp=Z,724nm,22.0s						
PVAQ	Vaqueiros	153.59 348	*e*LR		LR	18 02 46.4	
	comp=Z,701nm,22.0s						
PBDV	Barranco-do-Ve	153.78 349	*e*LR		LR	18 02 51.6	
	comp=Z,857nm,18.0s						
PFVI	Vila Bisbo	154.05 350	*e*LR		LR	18 03 47.7	
	comp=Z,838nm,20.0s						
PMOZ	Porto Moniz, M	158.63 7	*e*LR		LR	18 04 10.4	
	comp=Z,1μm,20.0s						
TORD	Torodi Ar. Bea	164.37 278	PKP		PKPdf	17 07 13.1	+0.1
	comp=Z,2.5nm,0.9s,baz=33,slow=2.1,SNR=10						

NIED ***28*** *16:54:00,35°.70N×140°.10E,h71km,Mw4.0 Best double couple: M0=1.01000×10^15 NP1:φs=190.00000°,δ21.00000°, λ96.00000°. NP2:φs=4.00000°,δ69.00000°,λ88.00000°.*
ISCJB ***28*** *16:54:15.7±0.5,35°.65N±0°.04×140°.10E±0°.06,h79km±3km, mb3.9/8,Error ellipse: s-maj=8.6km s-min=4.9km az=151.3*
IDC ***28*** *16:54:15.8±2.3,35°.67N×140°.35E,h68km±17km,mb3.6/8, mb1 3.6/12,mb1mx3.3/63,mbtmp3.9/12,MS3.3/3, Ms1 3.3/3,ms1mx2.8/64,Error ellipse: s-maj=34.9km s-min=10.7km az=77.0*
JMA ***28*** *16:54:16.5±0.2,35°.70N×140°.09E,h71km±2km,M3.4 Broadband fault plane solution: P waves. NP1: φs3.00000°,δ67.00000°,λ80.00000°. NP2:φs207.00000°, δ25.00000°,λ112.00000°. Principal axes: T Plg67.0000°, Azm255.0000°; N Plg9.0000°, Azm7.0000°; P Plg21.0000°, Azm101.0000°;*
JMA Felt I J1.
ISC 28 16:54:17.1±0.8,35°.66N±0°.05×140°.08E±0°.06,h74km±6km, n31,σ1°04/36,mb4.0/8,2C-6D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCN	Nagara	0.26 158		⇑P	Pn	16 54 28.3	-0.1
JCN				S	Sn	16 54 37.4	+0.7
TOK	Tokyo	0.26 275		⇓P	Pn	16 54 28.5	+0.1
TOK				S	Sn	16 54 37.7	+1.0
JOD2	Odawara 2	0.90 244		⇓P	Pn	16 54 33.7	-0.9
JAG	Ashikaga	0.92 326		⇓P	Pn	16 54 34.0	-0.7
JAG				S	Sn	16 54 46.9	-1.0
BSO3	Boso 3	0.93 158		⇑P	Pn	16 54 33.9	-0.7
BSO3				S	Sn	16 54 48.1	+0.4
JRY	Ryogami san	1.02 291		⇓P	Pn	16 54 35.9	-0.1
JRY				*e*S	Sn	16 54 50.5	+0.3
JIM2	Oshima 3	1.08 210		P	Pn	16 54 35.3	-1.5
JIM2				S	Sn	16 54 49.3	-2.2
BSO1	Boso 1	1.25 144		⇓P	Pn	16 54 37.6	-0.7
BSO1				*e*S	Sn	16 54 54.0	-0.4
JYN	Shimob	1.26 263		⇓P	Pn	16 54 38.6	-0.5
JYN				*e*S	Sn	16 54 55.4	-0.3
JKT	Katashina	1.29 329		P	Pn	16 54 38.8	-0.7
JKT				*e*S	Sn	16 54 55.9	-0.5
JIZS	Izushimoda	1.36 227		P	Pn	16 54 39.5	-0.9
JIZS				S	Sn	16 54 56.2	-1.7
MJAR	Matsushiro Arr	1.75 301		P	Pn	16 54 45.6	+0.1
	14nm,0.3s,baz=129,slow=15,SNR=199						
JHJ	Hachijo jima 2	2.55 186		P	Pn	16 54 56.4	+0.2
	25nm,0.3s,baz=352,slow=19,SNR=17						
JHJ				S	Sn	16 55 26.3	+0.1
	46nm,0.3s,baz=98,slow=22,SNR=7.8						
JNU	Nakatsue	8.02 254		P	Pn	16 56 13.0	+2.2
	0.2nm,0.3s,baz=31,slow=18,SNR=2.5						
JNU				LR	LR	16 59 40.7	
	comp=Z,104nm,18.9s,baz=117,slow=40						
ASAJ	Asahikawa	8.66 12		P	Pn	16 56 17.4	-2.1
	0.4nm,0.3s,baz=220,slow=13,SNR=6.6						
KSRS	Korea Array	9.94 284		P	Pn	16 56 39.2	+2.2
	0.1nm,0.3s,baz=97,slow=14,SNR=13						
KSRS				LR	LR	17 00 44.2	
	comp=Z,37nm,19.2s,baz=114,slow=38						
H11N2	WAKE ISLAND Hy	28.43 117		T	T	17 29 53.5	
	baz=309,slow=75,SNR=11						
H11N1	WAKE ISLAND Hy	28.44 117		T	T	17 29 43.8	
	baz=309,slow=75,SNR=14						
H11N3	WAKE ISLAND Hy	28.45 117		T	T	17 29 55.0	
	baz=309,slow=75,SNR=9.8						
H11S3	WAKE ISLAND Hy	29.08 119		T	T	17 30 30.7	
	baz=311,slow=75,SNR=6.7						
H11S1	WAKE ISLAND Hy	29.08 119		T	T	17 30 17.8	
	baz=311,slow=75,SNR=5.2						
H11S2	WAKE ISLAND Hy	29.09 119		T	T	17 30 43.4	
	baz=311,slow=75,SNR=6.3						
ZALV	Zalesovo Beam	42.06 314		P	P	17 02 01.7	+0.5
	1.1nm,0.7s,baz=101,slow=7.5,SNR=3.7						
ZALV				PcP	PcP	17 03 54.9	+0.1
	0.5nm,0.4s,baz=116,slow=3.4,SNR=3.5						
MKAR	Makanchi Array	43.95 303		P	P	17 02 17.1	+0.5
	1.4nm,0.6s,baz=89,slow=9.7,SNR=5.4						
BVAR	Borovoye Array	50.71 313		P	P	17 03 10.3	+1.3
	0.4nm,0.5s,baz=52,slow=9.3,SNR=2.9						
WRA	Warramunga Arr	55.57 187		P	P	17 03 44.2	-0.8
	1.2nm,0.5s,baz=0.5,slow=7.4,SNR=39						
ARU	Arti	56.68 319		P	P	17 03 52.0	-0.5
	1.7nm,0.6s,baz=60,slow=6.5,SNR=6.1						
ASAR	Alice Springs	59.30 187		P	P

BVAR	Borovoye Array	51.09	313	LR		LR	17 37 31.7
	comp=Z,268nm,18.5s,baz=265,slow=39						
WRA	Warramunga Arr	55.88	188	P		P	17 14 00.2 +0.2
	0.3nm,0.6s,baz=3.9,slow=7.2,SNR=4.8						

BJI ***28*** *17:07:33.8, 6°.30S×103°.47E, h27km, mb5.8/83, mB5.7/50, Ms5.7/88, Ms7 5.5/85*

NEIC ***28*** *17:07:36.0±0.0, 5°.86S×103°.39E, h15km, Moment Tensor Solution. s8 Moment tensor: Scale 1017Nm; Mrr=0.10; Mθθ=0.90; Mφφ 1.00; Mrθ=3.80; Mrφ 1.20; Mθφ=-3.00; Best double couple: M0=5.00000×1017 NP1:φs=131.00000°, δ86.00000°, λ99.00000°. NP2:φs=240.00000°, δ9.00000°, λ19.00000°. Principal axes: T 4.2000, Plg47.0000°, Azm51.0000°; N 1.5000, Plg9.0000°, Azm310.0000°; P -5.7000, Plg41.0000°, Azm212.0000°;*

GCMT ***28*** *17:07:40.2±0.1, 5°.98S×103°.31E, h26km, MW5.7/106, Moment Tensor Solution. s106,c202; s102,c224; Duration: 1s5 Moment tensor: Scale 1017Nm; Mrr=0.41±.04; Mθθ=-0.64±.03; Mφφ=0.22±.04; Mrθ=2.96±.07; Mrφ=2.14±.03; Mθφ=-2.20±.08; Best double couple: M0=3.95300×1017 NP1:φs=123.00000°, δ80.00000°, λ84.00000°. NP2:φs=335.00000°, δ12.00000°, λ121.00000°. Principal axes: T 2.9730, Plg55.0000°, Azm25.0000°; N 1.9590, Plg6.0000°, Azm124.0000°; P -4.9320, Plg35.0000°, Azm218.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface/mantle waves, cutoff=50s.*

MOS ***28*** *17:07:40.1±0.9, 5°.62S×103°.62E, h33km, mb6.2/90, MS5.2/49 Error ellipse: s-maj=6.9km s-min=4.0km az=115.2*

ISCJB ***28*** *17:07:41.8±0.3, 5°.70S±0°.02×103°.53E±0°.02, h48km±2km, mb6.0/269, MS5.4/112, Error ellipse: s-maj=3.4km s-min=2.1km az=39.9*

NEIC ***28*** *17:07:41.1±0.1, 5°.70S×103°.49E, h32km, mb6.1/156, MS5.5/35, MW5.5, MW5.7, Error ellipse: s-maj=3.8km s-min=2.5km az=219.0, Moment Tensor Solution. s33 Moment tensor: Scale 1017Nm; Mrr=0.89; Mθθ=0.45; Mφφ=-1.34; Mrθ=1.09; Mrφ=0.52; Mθφ=-1.30; Best double couple: M0=2.10000×1017 NP1:φs=141.00000°, δ75.00000°, λ69.00000°. NP2:φs=17.00000°, δ25.00000°, λ143.00000°. Principal axes: T 1.9600, Plg55.0000°, Azm25.0000°; N 0.3100, Plg20.0000°, Azm147.0000°; P -2.2700, Plg27.0000°, Azm248.0000°; Broadband fault plane solution: P waves. NP1:φs=325.00000°, δ2.00000°, λ90.00000°. NP2:φs=145.00000°, δ88.00000°, λ90.00000°. Principal axes: T Plg47.0000°, Azm55.0000°; N Plg0.0000°, Azm0.0000°; P Plg43.0000°, Azm235.0000°; Depth from synthetics of broadband displacement seismograms.*

NEIC Felt [IV] at Krui and Liwa and [II] at Kapahiang and Kotabumi. Felt at Jakarta, Java.

DJA ***28*** *17:07:43.6±0.3, 6°.S±2°.×10°.3E±°, h42km±3km, M6.1/76, mb6.2/76, mB6.3/64, MLv6.2/25, Mw(mB)6.1/64, Mwp5.8/7*

KLM ***28*** *17:07:43.3, 5°.86S×103°.10E, h88km, mb5.7, ML5.7, MS6.4*

IDC ***28*** *17:07:43.9±0.8, 5°.65S×103°.54E, h52km±6km, mb5.5/44, mb1 5.5/46, mb1mx5.5/47, mbtmp5.7/46, MS5.2/27, Ms1 5.3/27, ms1mx4.8/48, Error ellipse: s-maj=9.4km s-min=6.1km az=51.0*

ISC 28 17:07:41.9±0.3, 5.73S±0°.03×103°.46E±0°.03, h43km±2km, h42km; pP-P, n1759, σ1988/1991, mb6.0/301, MS5.4/113, 90C-52D, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LWLI	**Liwa**	**0.92**	**40**	P	**Pn**	**17 08 01.0**	**+2.5**
LWLI				S	**Sn**	**17 08 15.8**	**+5.1**
KASI	**Kota Agung**	**1.05**	**79**	P	**Pn**	**17 08 01.4**	**+1.2**
KASI				S	**Sn**	**17 08 16.0**	**+2.4**
MNAI	**Manna**	**1.45**	**340**	P	**Pn**	**17 08 08.1**	**+2.5**
MNAI	**Manna**	**1.45**	**340**	*e*Pn	**Pn**	**17 08 07.5**	**+1.9**
KLI	**Kotabumi**	**1.63**	**58**	P	**Pn**	**17 08 11.1**	**+2.9**
BLSI	**Bandar Lampung**	**1.81**	**79**	P	**Pn**	**17 08 12.5**	**+1.9**
LHSI	**Lahat**	**1.89**	**2**	P	**Pn**	**17 08 15.9**	**+4.2**
CGJI	**Cibinong**	**2.39**	**112**	P	**Pn**	**17 08 18.6**	**+0.1**
CGJI				S	**Sn**	**17 08 48.6**	**+2.0**
SBJI	**Serang**	**2.69**	**99**	P	**Pn**	**17 08 24.7**	**+2.1**
MASI	**Maura Aman, Be**	**2.84**	**335**	P	**Pn**	**17 08 27.4**	**+2.6**
SKJI	**Sukabumi**	**3.33**	**113**	P	**Pn**	**17 08 32.8**	**+1.3**
CBJI	**Citeko**	**3.44**	**102**	P	Pn	17 08 37.8	+4.8
CNJI	**Cibinong**	**3.97**	**114**	P	**Pn**	**17 08 40.8**	**+0.5**
LEM	**Lembang**	**4.28**	**105**	P	Pn	17 08 53.5	+8.9
	333nm,0.3s,baz=213,slow=6.1,SNR=251						
LEM				S	Sn	17 09 45.5	+12
	262nm,0.3s,baz=301,slow=19,SNR=4.1						
LEM				LR	LR	17 10 57.4	
	comp=Z,40μm,19.6s,baz=270,slow=46						
LEM	**Lembang**	**4.28**	**105**	P	Pn	17 08 53.3	+8.7
PPBI	**Pangkal Pinang**	**4.43**	**37**	P	**Pn**	**17 08 50.0**	**+3.3**
PPSI	**Pulau Pagai**	**4.53**	**310**	P	**Pn**	**17 08 48.6**	**+0.7**
CISI	**Cisompet, Garu**	**4.69**	**113**	P	**Pn**	**17 08 51.0**	**+0.7**
CISI	**Cisompet, Garu**	**4.69**	**113**	*e*Pn	**Pn**	**17 08 50.6**	**+0.3**
CISI				*e*Sn	**Sn**	**17 09 40.2**	**-3.3**
JCJI	**Jatiwangi**	**4.84**	**99**	P	**Pn**	**17 08 56.1**	**+3.8**
XMIS	**Christmas Isla**	**5.20**	**155**	*e*Pn	Pn	17 08 51.0	-6.2
XMIS				*e*Sn	Sn	17 09 42.6	-13
DSRI	**Dabo**	**5.33**	**12**	P	**Pn**	**17 09 02.8**	**+3.8**
	6μm,1.4s,74μm582μm22nm						
CMJI	**Cimerak**	**5.36**	**113**	P	**Pn**	**17 09 00.1**	**+0.7**
	5μm,0.7s,49μm18nm						
RGRI	**Rengat**	**5.46**	**348**	P	**Pn**	**17 09 04.3**	**+3.6**
	4μm,1.0s,87μm14nm						
PDSI	**Padang**	**5.64**	**328**	P	**Pn**	**17 09 04.0**	**+0.7**
	2μm,0.7s,33μm8.3nm						
PPI	**Padang Panjang**	**6.06**	**330**	P	**Pn**	**17 09 09.7**	**+0.7**
	2μm,1.1s,22μm10nm						
BKNI	**Bangkinang**	**6.48**	**338**	P	Pn	17 09 21.1	+6.3
BKNI	**Bangkinang**	**6.48**	**338**	*e*Pn	**Pn**	**17 09 18.1**	**+3.3**
TPRI	**Tanjung Pinang**	**6.69**	**9**	P	Pn	17 09 22.7	+5.1
SMRI	**Semarang**	**7.06**	**101**	P	**Pn**	**17 09 26.1**	**+3.3**
SMRI	**Semarang**	**7.06**	**101**	*e*Pn	**Pn**	**17 09 25.6**	**+2.9**
UGM	**Wanagama**	**7.34**	**108**	P	**Pn**	**17 09 28.9**	**+2.3**
	10μm,0.9s,71μm34nm						
UGM	**Wanagama**	**7.34**	**108**	*e*Pn	**Pn**	**17 09 27.7**	**+1.0**
MYKOM	**Kota Tinggi**	**7.48**	**3**	*e*Pn	**Pn**	**17 09 31.2**	**+2.7**
MNSI	**Mandailing Nat**	**7.55**	**329**	P	Pn	**17 09 29.3**	**-0.1**
PBSI	**Pulau Batu**	**7.65**	**317**	P	**Pn**	**17 09 31.9**	**+1.1**
	3μm,1.3s,29μm78μm25nm						
WOJI	**Wonogiri, Jawa**	**7.70**	**106**	P	**Pn**	**17 09 33.6**	**+2.1**
	3μm,0.7s,30μm8.7nm						
PCJI	**Pacitan**	**8.04**	**108**	P	**Pn**	**17 09 38.0**	**+1.8**
	8μm,0.8s,55μm						
NGJI	**Ngawi**	**8.12**	**102**	P	**Pn**	**17 09 41.4**	**+4.2**
TBJI	**Tambak Boyo**	**8.41**	**98**	P	**Pn**	**17 09 46.0**	**+4.8**
PWJI	**Pagerwojo**	**8.59**	**106**	P	**Pn**	**17 09 45.7**	**+1.9**
	5μm,0.9s,37μm						
PBKI	**Pangkalan Bun**	**8.72**	**70**	P	Pn	17 09 51.5	+6.0
FRIM	**Kepong**	**9.09**	**348**	⇑P	**Pn**	**17 09 53.7**	**+3.1**
GSI	**Gunungsitoli**	**9.13**	**320**	P	**Pn**	**17 09 50.1**	**-1.0**
GSI	**Gunungsitoli**	**9.13**	**320**	*e*Pn	**Pn**	**17 09 49.8**	**-1.3**
COCO	**West Island**	**9.17**	**225**	*e*P	**Pn**	**17 09 47.5**	**-4.1**
COCO	**West Island**	**9.17**	**225**	*e*Pn	**Pn**	**17 09 47.5**	**-4.1**
PSI	**Prapat**	**9.61**	**332**	P	**Pn**	**17 09 59.4**	**+1.6**
	9.7nm,0.3s,baz=150,slow=11,SNR=16						
PSI				S	Sn	17 12 03.5	+19
	1.2nm,0.3s,baz=86,slow=16,SNR=1.8						
PSI	**Prapat**	**9.61**	**332**	*e*Pn	**Pn**	**17 09 56.0**	**-1.7**
STKI	**Sintang**	**9.86**	**55**	P	Pn	**17 10 05.6**	**+4.5**
KSM	**Kuching**	**9.90**	**44**	⇑P	Pn	17 10 06.8	+5.2
KSM	**Kuching**	**9.90**	**44**	*e*Pn	**Pn**	**17 10 04.9**	**+3.2**
GMJI	**Gumukmas**	**10.23**	**105**	P	**Pn**	**17 10 06.7**	**+0.5**
	1μm,0.9s,12μm						
TSI	**Tuntungan**	**10.39**	**332**	P	**Pn**	**17 10 10.7**	**+2.3**
	591nm,1.3s,8μm						
KCSI	**Kotacane, Aceh**	**10.80**	**328**	P	**Pn**	**17 10 14.3**	**+0.2**
	284nm,0.7s,4μm						
ABJI	**Asem Bagus**	**10.89**	**101**	P	**Pn**	**17 10 18.3**	**+3.0**
JAGI	**Jajag, Banyuwa**	**10.96**	**105**	P	**Pn**	**17 10 15.8**	**-0.3**
	6μm,0.8s,43μm						
JAGI	**Jajag, Banyuwa**	**10.96**	**105**	*e*Pn	**Pn**	**17 10 15.5**	**-0.6**
KTGM	**Kuala Trenggan**	**10.99**	**358**	⇑P	**Pn**	**17 10 21.0**	**+4.4**
KULM	**Kulim**	**11.30**	**346**	⇑P	**Pn**	**17 10 22.2**	**+1.4**
KULM	**Kulim**	**11.30**	**346**	*e*Pn	**Pn**	**17 10 20.6**	**-0.2**
BBKI	**Banjar Baru**	**11.56**	**79**	P	**Pn**	**17 10 28.5**	**+4.0**
SBUM	**Sibu**	**11.94**	**47**	⇑P	Pn	17 10 36.1	+6.5
SBUM	**Sibu**	**11.94**	**47**	*e*Pn	Pn	17 10 34.8	+5.2
DNP	**Denpasar**	**12.02**	**105**	P	**Pn**	**17 10 31.0**	**+0.3**
	7μm,0.9s,62μm						
MLSI	**Meulaboh, Aceh**	**12.17**	**324**	P	**Pn**	**17 10 30.4**	**-2.4**
MTKI	**Muara Teweh, K**	**12.36**	**68**	P	**Pn**	**17 10 40.1**	**+4.7**
LHMI	**Lhok Sumawe**	**12.68**	**329**	P	**Pn**	**17 10 37.3**	**-2.4**
LHMI	**Lhok Sumawe**	**12.68**	**329**	*e*Pn	**Pn**	**17 10 37.2**	**-2.4**
BTM	**Bintulu**	**13.08**	**48**	⇓P	**P**	**17 10 51.1**	**-3.4**
SKLT	**Songkhla**	**13.12**	**347**	P	**Pn**	**17 10 48.7**	**+3.0**
	190nm,1.1s						
TWSI	**Taliwang, Sumb**	**13.65**	**103**	P	**Pn**	**17 10 50.6**	**-2.4**
TRTT	**Trang**	**13.99**	**344**	P	**Pn**	**17 10 56.3**	**-1.3**
	240nm,1.3s,4μm						
BKB	**Balikpapan**	**14.12**	**72**	P	**P**	**17 11 08.7**	**+2.6**
PKDT	**Phuket**	**14.46**	**339**	P	**Pn**	**17 11 06.7**	**+2.7**
	154nm,1.4s,4μm						
KRAB	**Krabi**	**14.49**	**343**	P	**Pn**	**17 11 01.3**	**-3.1**
	601nm,0.8s,55μm						
PLAI	**Plampang**	**14.53**	**103**	P	**Pn**	**17 11 02.1**	**-2.8**
SURT	**Suratani**	**15.31**	**342**	P	**P**	**17 11 18.0**	**-1.3**
	71nm,1.3s,1μm						
CMBY	**CAMPBELL BAY**	**15.83**	**323**	*e*P	**Pn**	**17 11 23.3**	**+1.4**
KAPI	**Kappang**	**16.24**	**88**	P	**Pn**	**17 11 28.0**	**+0.9**
	8.7nm,0.3s,baz=269,slow=10,SNR=70						
KAPI				S	**Sn**	**17 14 18.7**	**-7.6**
	1.1nm,0.3s,baz=108,slow=20,SNR=1.4						
KAPI				LR	LR	17 18 28.6	
	comp=Z,10μm,19.2s,baz=274,slow=40						
KAPI	**Kappang**	**16.24**	**88**	*e*Pn	**Pn**	**17 11 27.3**	**+0.2**
	459nm,1.0s						
SPSI	**Sidrap Palu**	**16.34**	**85**	P	**Pn**	**17 11 29.6**	**+1.1**
	679nm,1.3s,9μm						
TTSI	**Tana Toraja**	**16.53**	**81**	P	**P**	**17 11 33.9**	**+1.0**
BSSI	**Bau Bau, Buton**	**16.95**	**92**	P	**P**	**17 11 37.9**	**+0.4**
	2μm,1.0s,14μm						
PCI	**Palu**	**17.03**	**74**	P	**P**	**17 11 40.4**	**+1.9**
WSI	**Waingapu**	**17.14**	**104**	P	**Pn**	**17 11 34.4**	**-4.0**
KKM	**Kota Kinabalu**	**17.29**	**48**	⇑P	**P**	**17 11 43.4**	**+2.0**
KKM	**Kota Kinabalu**	**17.29**	**48**	*e*P	**P**	**17 11 42.5**	**+1.1**
	945nm,1.4s						
TSM	**Tawau**	**17.50**	**56**	⇑P	**P**	**17 11 46.6**	**+2.9**
BASI	**Baing, Sumba**	**17.53**	**106**	P	**Pn**	**17 11 40.6**	**-2.6**
MYLDM	**Lahad Datu**	**18.52**	**54**	*e*P	**Pn**	**17 11 58.3**	**+2.9**
	3μm,1.2s						
MMRI	**Maumere**	**18.85**	**100**	P	**P**	**17 11 56.6**	**-2.0**
MMRI	**Maumere**	**18.85**	**100**	*e*P	**P**	**17 11 55.8**	**-2.8**
	2μm,0.8s						
PHET	**Kaeng Krachan**	**18.90**	**348**	P	**P**	**17 11 58.8**	**-0.2**
	80nm,0.8s,571nm						
KDI	**Kendari**	**19.17**	**86**	P	**Pn**	**17 12 03.7**	**+0.4**
	536nm,0.8s,5μm						
MRSI	**Marisa**	**19.45**	**72**	P	**Pn**	**17 12 06.3**	**-0.3**
	3μm,0.6s,25μm						
GIRL	**Giralia**	**19.78**	**149**	P	**Pn**	**17 12 09.8**	**-0.5**
	baz=20,SNR=51						
LUWI	**Luwuk**	**19.83**	**77**	P	**Pn**	**17 12 11.0**	**0.0**
	3μm,1.2s,30μm						
LUWI	**Luwuk**	**19.83**	**77**	*e*P	**P**	**17 12 10.1**	**+0.9**
	2μm,0.8s						
LUWI				*e*ScP	**ScP**	**17 20 00.0**	**+1.0**
BATP	**Bataraza**	**20.31**	**45**	*e*P	Pn	17 12 16.5	-0.2
BATP				*e*S	Sn	17 16 05.1	+0.2
SRDT	**SRDT**	**20.41**	**348**	P	**P**	**17 12 15.8**	**+0.4**
	551nm,1.1s,9μm						
BATI	**Baumata**	**20.49**	**104**	P	**P**	**17 12 16.8**	**+0.3**
	2μm,1.3s,17μm						
KHLT	**Khaolaem Dam**	**20.95**	**347**	P	**P**	**17 12 20.8**	**-0.6**
	190nm,1.1s						
UBPT	**Khong Chiam**	**20.97**	**5**	P	**P**	**17 12 21.0**	**-0.5**
	392nm,1.1s,5μm						
SOEI	**Soe**	**21.00**	**102**	P	**P**	**17 12 21.2**	**-0.9**
SOEI	**Soe**	**21.00**	**102**	*e*P	**P**	**17 12 20.6**	**-1.4**
	5μm,1.1s						
DGPR	**DIGLIPUR**	**21.50**	**331**	*e*P	**P**	**17 12 26.1**	**-1.1**
DGPR				IAmb	IAmb	17 12 44.3	
	comp=Z,394nm,0.5s						
PPR	**Puerto Princes**	**21.65**	**45**	⇓*e*P	**P**	**17 12 31.2**	**+2.4**
KHON	**Khomkaen**	**21.93**	**358**	P	**P**	**17 12 33.1**	**+1.3**
	comp=Z,208nm,1.1s,comp=Z,2μm						
MBWA	**Marble Bar**	**22.00**	**136**	P	**P**	**17 12 33.2**	**+0.6**
	SNR=28						
MBWA	**Marble Bar**	**22.00**	**136**	*e*P	**P**	**17 12 33.0**	**+0.3**
	comp=Z,730nm,1.2s						
PBKT	**Sadao Pong**	**22.29**	**354**	P	**P**	**17 12 35.4**	**-0.3**
	comp=Z,297nm,1.0s,comp=Z,3μm						
SKNT	**Sakolnakorn**	**22.56**	**1**	P	**P**	**17 12 37.5**	**-1.1**
	comp=Z,140nm,1.1s,comp=Z,3μm						
SANI	**Sanana**	**22.77**	**82**	P	**P**	**17 12 40.9**	**0.0**
	comp=Z,780nm,1.1s,comp=Z,10μm						
ENPP	**El Nido**	**23.14**	**43**	*e*P	**P**	**17 12 46.4**	**+1.8**
IPIL	**Ipil**	**23.32**	**55**	*e*P	**P**	**17 12 47.8**	**+1.4**
SUKH	**Sukhothai**	**23.37**	**351**	P	**P**	**17 12 46.5**	**-0.3**
	comp=Z,110nm,1.2s,comp=Z,1μm						
NONG	**Nongkai**	**23.64**	**359**	P	**P**	**17 12 47.9**	**-1.5**
	comp=Z,217nm,1.4s,comp=Z,4μm						
SGSI	**Sangihe**	**23.94**	**68**	P	**P**	**17 12 56.7**	**+4.4**
CUYO	**Cuyo Island**	**24.02**	**47**	*e*P	**P**	**17 12 54.2**	**+1.2**
PAGZ	**Pagadian**	**24.02**	**56**	*e*P	**P**	**17 12 55.2**	**+2.2**
BUSP	**Coron**	**24.24**	**43**	*e*P	**P**	**17 12 56.5**	**+1.6**
LAMP	**Lampang**	**24.39**	**351**	P	**P**	**17 12 56.2**	**-0.1**
	comp=Z,90nm,1.0s,comp=Z,681nm						
CM01	**Chiang Mai Arr**	**24.40**	**350**	*e*P	**P**	**17 12 55.7**	**-0.7**
DCPH	**Dipolog City**	**24.40**	**55**	⇑*e*P	**P**	**17 12 59.6**	**+3.0**
CTBH	**Cotabato--PC H**	**24.41**	**58**	⇑*e*P	**P**	**17 12 58.8**	**+2.3**
CM31	**Chiang Mai Arr**	**24.44**	**350**	*e*P	**P**	**17 12 56.4**	**-0.4**
CM31				*e*ScP	**ScP**	**17 20 12.8**	**+2.2**
CMAR	**Chiang Mai Arr**	**24.44**	**350**	P	**P**	**17 12 56.9**	**+0.1**
	comp=Z,145nm,0.9s,baz=180,slow=8.6,SNR=588						
CMAR				PcP	**PcP**	**17 16 36.2**	**+1.0**
	comp=Z,16nm,0.9s,baz=210,slow=2.6,SNR=5.6						
CMAR				S	**S**	**17 17 14.8**	**+0.7**
	comp=Z,8.7nm,1.0s,baz=187,slow=7.0,SNR=2.7						
CMAR				ScP	**ScP**	**17 20 11.4**	**+0.8**
	comp=Z,17nm,1.0s,baz=214,slow=3.4,SNR=10						
CMAR				LR	LR	17 24 03.0	
	comp=Z,8μm,18.2s,baz=177,slow=40						
CMAR				P3KPbc		17 46 08.9	
	comp=Z,2.3nm,0.9s,baz=323,slow=4.8,SNR=16						
CMAR	**Chiang Mai Arr**	**24.44**	**350**	P	**P**	**17 12 56.9**	**+0.1**
CMAR						17 16 36.2	
CMAR				S	**S**	**17 17 14.8**	**+0.7**
CMAR				pmax	pmax		
	comp=Z,170nm,1.0s						
CMAR				pmax	pmax		
	comp=Z,16nm,0.9s						
CMAR				smax	smax		
	comp=N,9.0nm,1.0s						
CMAR				pmax	pmax		
	comp=N,17nm,1.0s						
CMAR				MLR	MLR		
	comp=Z,8μm,18.3s						
GSPH	**General Santos**	**24.45**	**62**	⇑*e*P	**P**	**17 13 00.2**	**+3.0**
LBMI	**Labuha**	**24.52**	**79**	P	**P**	**17 12 58.0**	**+0.3**
	comp=Z,3μm,0.9s,comp=Z,31μm						
CHTO	**Chiang Mai**	**24.79**	**350**	P	**P**	**17 12 59.2**	**-0.8**
	comp=Z,1μm,1.0s,comp=Z,12μm						
CHTO	**Chiang Mai**	**24.79**	**350**	*e*P	**P**	**17 12 58.8**	**-1.2**
CHTO				pmax	pmax		
	comp=Z,370nm,1.0s						
CHTO	**Chiang Mai**	**24.79**	**350**	P	**P**	**17 12 59.5**	**-0.4**
	SNR=113						
CHTO	**Chiang Mai**	**24.79**	**350**	*e*P	**P**	**17 12 59.4**	**-0.6**
	comp=Z,368nm,1.0s						
FITZ	**Fitzroy Crossi**	**24.90**	**121**	P	**P**	**17 13 01.1**	**0.0**
	baz=25,SNR=546						
FITZ	**Fitzroy Crossi**	**24.90**	**121**	*e*P	**P**	**17 13 00.9**	**-0.2**
	comp=Z,652nm,0.8s						
KCP	**Kidapawan**	**25.02**	**60**	⇑*e*P	**P**	**17 13 03.9**	**+1.7**
GUIM	**Jordan**	**25.03**	**50**	*e*P	**P**	**17 13 02.6**	**+0.4**
QIZ	**Qiongzhong**	**25.39**	**14**	P	**P**	**17 13 06.5**	**+1.1**
QIZ				pP	**pP**	**17 13 16.0**	**-0.8**
QIZ				sP	**sP**	**17 13 20.5**	**-1.4**
QIZ				S	**S**	**17 17 34.8**	**+5.5**
QIZ				sS	**sS**	**17 17 50.3**	**+1.9**
QIZ				pmax	pmax		
	comp=Z,68nm,1.1s						
QIZ				pmax	pmax		
	comp=Z,700nm,7.6s						
QIZ				LR	LR		
	comp=Z,7μm,18.1s						
QIZ				LR	LR		
	comp=Z,10μm,17.2s						
QIZ	**Qiongzhong**	**25.39**	**14**	*e*P	**P**	**17 13 06.1**	**+0.6**
	comp=Z,236nm,0.8s						
QIZ				*e*ScP	**ScP**	**17 20 14.5**	**+1.2**
DMPH	**Davao City--Mi**	**25.42**	**60**	⇑*e*P	**P**	**17 13 04.7**	**-1.1**
CGP	**Cagayan de Oro**	**25.43**	**57**	⇓*e*P	**P**	**17 13 07.2**	**+1.3**
BUKP	**Musuan**	**25.44**	**58**	*e*P	**P**	**17 13 08.2**	**+2.2**
DAV	**Davao City (W)**	**25.47**	**60**	P	**P**	**17 13 07.8**	**+1.5**
	comp=Z,2μm,1.0s,baz=69,slow=1.6,SNR=32						
DAV				S	**S**	**17 17 30.8**	**0.0**
	comp=Z,108nm,0.4s,baz=36,slow=19,SNR=2.0						
DAV				LR	LR	17 24 00.4	
	comp=Z,4μm,19.7s,baz=210,slow=38						
DAV	**Davao City (W)**	**25.47**	**60**	P	**P**	**17 13 08.9**	**+2.6**
	SNR=49						
DAV	**Davao City (W)**	**25.47**	**60**	*e*P	**P**	**17 13 08.2**	**+1.9**
	comp=Z,4μm,1.3s						
DAV				*e*S	**S**	**17 17 30.8**	**0.0**
DAV				*e*ScS	**ScS**	**17 24 00.4**	**-2.6**
MSAI	**Masohi**	**25.50**	**86**	P	**P**	**17 13 07.6**	**+1.1**
	comp=Z,52nm,1.0s,comp=Z,539nm						
LUBP	**Lubang**	**25.52**	**41**	*e*P	**P**	**17 13 07.7**	**+1.0**
RCP	**Roxas**	**25.75**	**48**	⇑*e*P	**P**	**17 13 09.9**	**+1.2**
OTRP	**Odiongan**	**25.76**	**46**	*e*P	**P**	**17 13 10.8**	**+2.0**
PGP	**Puerto Galera**	**25.82**	**42**	⇑*e*P	**P**	**17 13 10.8**	**+1.4**
LLP	**Lapu-Lapu**	**25.91**	**52**	⇑*e*P	**P**	**17 13 10.0**	**-0.2**
CRAI	**Chiangrai**	**25.97**	**353**	P	**P**	**17 13 10.3**	**-0.4**
	comp=Z,753nm,1.1s						
MATI	**Mati**	**26.00**	**61**	*e*P	**P**	**17 13 11.1**	**0.0**
MORW	**Morawa**	**26.09**	**154**	P	**P**	**17 13 11.7**	**0.0**
	baz=26,SNR=19						
PALK	**Pallekele**	**26.12**	**299**	P	**P**	**17 13 14.6**	**+2.4**
	comp=Z,108nm,1.1s,baz=116,slow=11,SNR=9.1						
PALK				LR	LR	17 21 58.6	
	comp=Z,11μm,21.4s,baz=116,slow=33						
PALK	**Pallekele**	**26.12**	**299**	P	**P**	**17 13 14.6**	**+2.4**
PALK				pmax	pmax		
	comp=Z,56nm,1.1s						
PALK				MLR	MLR		
	comp=Z,11μm,21.4s						
PALK	**Pallekele**	**26.12**	**299**	*e*P	**P**	**17 13 12.7**	**+0.5**
	comp=Z,360nm,1.1s						
TGY	**Tagaytay City**	**26.25**	**41**	P	**P**	**17 13 14.5**	**+1.2**
	comp=Z,2μm,1.1s,baz=268,slow=3.1,SNR=28						
TGY				S	**S**	**17 17 51.2**	**+8.2**
	comp=Z,124nm,0.2s,baz=41,slow=20,SNR=6.2						
LQP	**Lukban**	**26.65**	**42**	⇓*e*P	**P**	**17 13 18.4**	**+1.3**
BIPH	**Bislig**	**26.70**	**59**	⇓*e*P	**P**	**17 13 18.0**	**+0.7**
OCLP	**Ormoc**	**26.85**	**52**	*e*P	**P**	**17 13 18.3**	**-0.4**
SCZP	**Santa Cruz**	**26.87**	**37**	*e*P	**P**	**17 13 19.7**	**+0.9**
BLDU	**Ballidu**	**27.72**	**155**	P	**P**	**17 13 26.6**	**+0.2**
	baz=28,SNR=14						
SAUI	**Saumlaki**	**27.73**	**96**	*e*P	**P**	**17 13 25.7**	**-0.9**
	comp=Z,524nm,0.9s						
BALP	**Baler**	**27.87**	**40**	*e*P	**P**	**17 13 28.3**	**+0.4**
PVCP	**Virac**	**28.12**	**47**	*e*P	**P**	**17 13 29.2**	**-0.8**
SWI	**Sorong**	**28.16**	**81**	P	**P**	**17 13 29.4**	**-1.1**
MTN	**Manton Dam**	**28.19**	**106**	P	**P**	**17 13 30.1**	**-0.7**
	baz=28,SNR=42						
MTN	**Manton Dam**	**28.19**	**106**	*e*P	**P**	**17 13 29.9**	**-0.9**
	comp=Z,436nm,0.8s						
ABRA	**Dolores**	**28.80**	**36**	*e*P	**P**	**17 13 36.5**	**+0.4**
FAKI	**Fak Fak**	**28.84**	**86**	P	**P**	**17 13 35.8**	**-0.8**
FAKI	**Fak Fak**	**28.84**	**86**	*e*P	**P**	**17 13 35.0**	**-1.5**
	comp=Z,239nm,0.8s						
CAUP	**Cauayan**	**28.93**	**39**	*e*P	**P**	**17 13 38.3**	**+1.0**
KLBR	**Kellerberrin**	**29.01**	**154**	P	**P**	**17 13 37.7**	**-0.1**
	baz=29,SNR=7.6						
APYP	**Conner**	**29.28**	**36**	*e*P	**P**	**17 13 40.2**	**-0.2**
MCO	**Taipa Grande**	**29.39**	**19**	P	**P**	**17 13 44.0**	**+2.7**
KDU	**Kakadu**	**29.44**	**106**	P	**P**	**17 13 41.0**	**-0.9**
	baz=29,SNR=22						
MDRS	**Chennai**	**29.67**	**309**	*e*P	**P**	**17 13 45.8**	**+2.0**
NWAO	**Narrogin (SRO)**	**29.95**	**156**	P	**P**	**17 13 46.1**	**-0.1**
	baz=30,SNR=8.2						
NWAO	**Narrogin (SRO)**	**29.95**	**156**	*e*P	**P**	**17 13 45.6**	**-0.6**
NWAO				pmax	pmax		
	comp=Z,370nm,1.3s						
NWAO	**

comp=Z,272nm,1.7s
NJS eS S 17 19 22.4 +0.1
NJS IVMs_BB IVMs_BB 17 26 34.6
comp=Z,2μm,23.1s
SRLM Srisailam 32.58 312 eP P 17 14 10.4 +0.8
SRLM IAmb IAmb 17 14 16.6
comp=Z,197nm,1.3s
SRLM eS S 17 19 23.4 +0.9
SRLM IVMs_BB IVMs_BB 17 26 37.1
comp=Z,2μm,17.0s
SHL Shillong 33.08 341 eP P 17 14 13.3 -0.6
SHL IAmb IAmb 17 14 19.2
comp=Z,106nm,0.8s
SHL eS S 17 19 31.0 +0.7
SHL ex x 17 24 37.0
WR1 Warramunga Arr 33.17 118 eP P 17 14 14.8 +0.1
comp=Z,189nm,0.7s
WR1 eS S 17 19 30.3 -1.3
WR1 eScP ScP 17 20 39.2 +1.0
WRA Warramunga Arr 33.17 118 P P 17 14 14.8 +0.1
comp=Z,154nm,0.7s,baz=287,slow=12,SNR=828
WRA S S 17 19 30.3 -1.4
comp=Z,13nm,1.1s,baz=291,slow=18,SNR=2.5
WRA ScP ScP 17 20 39.2 +1.0
comp=Z,16nm,1.0s,baz=296,slow=3.7,SNR=4.5
WRA LR LR 17 30 11.5
comp=Z,1μm,19.2s,baz=280,slow=41
WRA P3KPbc 17 45 32.5
comp=Z,2.1nm,0.9s,baz=113,slow=4.3,SNR=7.6
WRA Warramunga Arr 33.17 118 P P 17 14 14.8 +0.1
WRA S S 17 19 30.3 -1.4
WRA pmax pmax
comp=Z,128nm,0.6s
WRA smax smax
comp=N,13nm,1.1s
WRA pmax pmax
comp=N,16nm,1.0s
WRA MLR MLR
comp=Z,1μm,19.2s
WRAB Tennant Creek 33.18 118c iP P 17 14 14.9 +0.1
WRAB pmax pmax
comp=Z,708nm,1.0s
WRAB MLR MLR
comp=Z,5μm,18.0s
WRAB Tennant Creek 33.18 118 eP P 17 14 14.8 +0.1
comp=Z,212nm,0.8s
WB2 Warramunga Arr 33.18 118 eP P 17 14 14.7 -0.1
comp=Z,191nm,0.7s
TWG Pinlang 33.19 31 eP P 17 14 16.0 +1.2
comp=Z,637nm,1.0s
WC3 Warramunga Arr 33.20 118 eP P 17 14 14.5 -0.5
comp=Z,210nm,0.8s
TPUB Ta-pu 33.37 30 eP P 17 14 17.3 +1.0
comp=Z,276nm,0.9s
HYB Hyderabad 33.68 314 i P P 17 14 20.0 +0.9
HYB epP pP 17 14 26.0 -4.7
HYB esP pP 17 14 30.0 -0.7
HYB ePP pP 17 14 33.0 +2.3
HYB eS S 17 19 40.0 +0.5
HYB Hyderabad 33.68 314 eP P 17 14 19.1 0.0
HYB IAmb IAmb 17 14 25.3
comp=Z,112nm,1.2s
HYBB Hyderabad (bro 33.68 314 eP P 17 14 19.0 -0.2
HYBB epP pP 17 14 24.7 -6.0
HYBB IAmb IAmb 17 14 25.4
comp=Z,67nm,0.9s
HYBB eS S 17 19 40.2 +0.6
HYBB IVMs_BB IVMs_BB 17 29 37.3
comp=Z,2μm,16.5s
YULB Yu-li 33.78 30 eP P 17 14 20.8 +0.9
comp=Z,196nm,1.1s
QZH Quanzhou 33.86 25⇓ iP P 17 14 19.0 -1.5
QZH S S 17 19 39.0 -3.0
QZH LR LR
comp=Z,7μm,16.0s
QZH LR LR
comp=Z,4μm,11.8s
QZH LR LR
comp=Z,9μm,17.5s
SSLB Suanglung 33.94 30 eP P 17 14 22.0 +0.7
comp=Z,180nm,1.0s
SSLB eScP ScP 17 20 43.0 +2.3
BOK Bokaro 33.99 330 eP P 17 14 22.9 +1.2
BOK IAmb IAmb 17 14 24.7
comp=Z,696nm,1.2s
RPR Rampur 34.12 316 eP P 17 14 24.3 +1.4
RPR IAmb IAmb 17 14 29.3
comp=Z,91nm,0.8s
RPR eS S 17 19 46.5 +0.3
RPR IVMs_BB IVMs_BB 17 26 39.6
comp=Z,2μm,24.2s
AS31 Alice Springs 34.30 124 eP P 17 14 24.5 0.0
comp=Z,54nm,0.6s
AS31 eS S 17 19 44.3 -4.8
ASAR Alice Springs 34.30 124 P P 17 14 25.1 +0.6
comp=Z,188nm,0.8s,baz=297,slow=8.1,SNR=1797
ASAR S S 17 19 48.0 -1.1
comp=Z,12nm,1.1s,baz=299,slow=16,SNR=4.4
ASAR ScP ScP 17 20 42.4 +0.3
comp=Z,16nm,0.9s,baz=314,slow=3.3,SNR=5.3
ASAR LR LR 17 29 55.1
comp=Z,3μm,20.6s,baz=298,slow=39
ASAR P3KPbc 17 45 26.8
comp=Z,1.5nm,0.7s,baz=117,slow=4.2,SNR=16
ASAR P3KP 17 46 52.7
comp=Z,0.6nm,0.8s,baz=64,slow=2.5,SNR=4.2
ASAR Alice Springs 34.30 124 P P 17 14 25.1 +0.6
ASAR S S 17 19 48.0 -1.1
ASAR pmax pmax
comp=Z,189nm,0.8s
ASAR smax smax
comp=N,12nm,1.1s
ASAR pmax pmax
comp=N,16nm,1.0s
ASAR MLR MLR
comp=Z,3μm,20.6s
AS01 Alice Springs 34.33 124 eP P 17 14 24.6 -0.2
NACB Ninganchiao 34.58 30 eP P 17 14 26.9 +0.1
comp=Z,170nm,0.8s
SRSP Sriramsagar 34.82 315 eP P 17 14 30.1 +1.1
SRSP IAmb IAmb 17 14 35.8
comp=Z,173nm,0.9s
SRSP eS S 17 19 58.0 +0.9
SRSP IVMs_BB IVMs_BB 17 28 06.7
comp=Z,2μm,18.8s
YHNB Yeheng 34.89 29 eP P 17 14 30.1 +0.5
comp=Z,173nm,1.0s
TATO Taipei 35.20 29 eP P 17 14 32.4 +0.2
comp=Z,390nm,1.4s
KLRI Killari 35.52 312 eP P 17 14 36.2 +1.1
KLRI IAmb IAmb 17 14 41.5
comp=Z,167nm,0.9s
KLRI eS S 17 20 08.4 +0.4
KLRI IVMs_BB IVMs_BB 17 28 01.5
comp=Z,3μm,19.6s
YOJ Yonaguni jima 35.54 32 eP P 17 14 35.4 +0.3
YOJ pmax pmax
comp=Z,325nm,0.9s
YOJ Yonaguni jima 35.54 32 eP P 17 14 35.4 +0.3
comp=Z,325nm,0.9s
NGP Nagpur 35.88 319 eP P 17 14 39.3 +1.3
NGP IAmb IAmb 17 14 46.1
comp=Z,2μm,2.2s
ENH Enshi 36.26 9 eP P 17 14 40.6 -0.5
comp=Z,366nm,1.3s
CD2 Chengdu 36.43 0⇑ iP P 17 14 42.5 -0.2
CD2 sP pP 17 14 56.0 +1.7
CD2 PP PP 17 16 06.5 +0.3
CD2 PcP PcP 17 17 04.3 -2.0
CD2 S S 17 20 24.8 +3.2
CD2 sS sS 17 20 41.0 0.0
CD2 pmax pmax
comp=Z,410nm,0.7s
CD2 pmax pmax
comp=Z,620nm,6.0s
CD2 LR LR
comp=Z,14μm,18.0s
CD2 LR LR
comp=Z,16μm,17.1s
GENI Genyem 36.74 87 P P 17 14 43.7 -1.8
LSA Lhasa 37.16 342 P P 17 14 50.3 +1.0
LSA PP PnPn 17 16 20.0 +4.6
LSA S S 17 20 34.8 +1.3
LSA pmax pmax
comp=Z,160nm,1.0s
LSA LR LR
comp=Z,2μm,21.6s
LSA LR LR
comp=Z,2μm,25.9s
LSA LR LR
comp=Z,5μm,21.6s
LSA Lhasa 37.16 342 eP P 17 14 49.5 +0.1
LSA pmax pmax
comp=Z,140nm,0.9s
LSA Lhasa 37.16 342 eP P 17 14 49.5 +0.1
comp=Z,140nm,0.9s
JAY Jayapura 37.28 87 P P 17 14 48.1 -2.0
comp=Z,12nm,0.8s,baz=267,slow=23,SNR=23
JAY LR LR 17 32 44.5
comp=Z,58nm,21.9s,baz=184,slow=40
JAY Jayapura 37.28 87 P P 17 14 48.2 -2.0
GUN Gumba 37.50 334 eP P 17 14 52.9 +0.7
comp=Z,659nm,0.6s
WHN Wuhan 37.54 16⇑ P P 17 14 53.0 +1.0
WHN pP pP 17 15 05.8 +2.1
WHN S S 17 20 38.5 +0.1
WHN pmax pmax
comp=Z,270nm,0.9s
WHN LR LR
comp=Z,5μm,14.9s
WHN LR LR
comp=Z,18μm,15.8s
WHN LR LR
comp=Z,11μm,15.2s
DMN Daman 37.59 333 eP P 17 14 53.4 +0.6
comp=Z,494nm,1.1s
KKN Kakani 37.66 333 eP P 17 14 54.0 +0.6
comp=Z,355nm,0.7s
POO Poona 37.86 310 eP P 17 14 56.8 +1.8
POO IAmb IAmb 17 15 02.6
comp=Z,224nm,1.0s
QIS Mount Isa 38.04 116 P P 17 14 57.0 +0.5
baz=38,SNR=112
GKN Gorkha 38.14 332 eP P 17 14 58.0 +0.7
comp=Z,848nm,1.0s
BHPL Bhopal 38.42 319 eP P 17 15 00.8 +1.2
BHPL IAmb IAmb 17 15 06.4
comp=Z,178nm,0.7s
KOLN Koldanda 38.43 331 eP P 17 15 00.8 +0.9
comp=Z,447nm,0.7s
BOM Bombay 38.87 310 eP P 17 15 02.5 -0.9
PYUN Piuthan 39.00 331 eP P 17 15 05.5 +0.9
comp=Z,1μm,1.1s
XAN Xi'an 39.89 7 P P 17 15 11.5 -0.2
XAN pP pP 17 15 23.0 -0.5
XAN PP PnPn 17 16 47.3 -0.3
XAN S S 17 21 20.0 +6.2
XAN pmax pmax
comp=Z,230nm,0.9s
XAN pmax pmax
comp=Z,630nm,5.8s
XAN LR LR
comp=Z,2μm,17.1s
XAN LR LR
comp=Z,6μm,16.8s
XAN LR LR
comp=Z,7μm,17.2s
COEN Coen 39.92 105 P P 17 15 12.0 -0.3
baz=40,SNR=255
COEN Coen 39.92 105 eP P 17 15 11.8 -0.6
comp=Z,434nm,0.8s
JOW Kunigami 40.31 35 eP P 17 15 17.0 +1.7
comp=Z,318nm,0.8s
NJ2 Nanjing 40.33 20 eP P 17 15 16.3 +0.9
NJ2 pP pP 17 15 24.5 -2.6
NJ2 sP sP 17 15 29.5 -2.7
NJ2 S S 17 21 23.3 +3.0
NJ2 pmax pmax
comp=Z,100nm,0.9s
NJ2 LR LR
comp=Z,5μm,15.2s
NJ2 LR LR
comp=Z,4μm,16.2s
NJ2 LR LR
comp=Z,6μm,16.2s
SSE Sheshan 40.35 24 P P 17 15 17.0 +1.5
SSE sP pP 17 15 29.5 +2.2
SSE S S 17 21 28.0 +7.4
SSE pmax pmax
comp=Z,160nm,1.0s
SSE pmax pmax
comp=Z,970nm,7.4s
SSE LR LR
comp=Z,2μm,20.1s
SSE LR LR
comp=Z,1μm,20.1s
SSE LR LR
comp=Z,2μm,19.6s
BBOO Buckleboo 40.59 136 P P 17 15 17.7 +0.1
baz=41,SNR=74
BBOO Buckleboo 40.59 136 eP P 17 15 17.6 0.0
comp=Z,134nm,0.8s
LZH Lanzhou 41.59 0⇑ P P 17 15 26.5 +0.6
LZH pP pP 17 15 37.0 -0.7
LZH sP sP 17 15 40.5 -2.2
LZH S S 17 21 43.5 +4.1
LZH sS sS 17 21 58.0 -1.0
LZH SS SS 17 24 47.3 +1.6
LZH ScS ScS 17 25 26.0 -0.1
LZH pmax pmax
comp=Z,220nm,1.0s
LZH pmax pmax
comp=Z,710nm,4.3s
LZH LR LR
comp=Z,6μm,13.6s
LZH LR LR
comp=Z,6μm,14.2s
LZH LR LR
comp=Z,8μm,15.1s
NDI New Delhi 42.53 325 ex P 17 15 27.0 -6.5
NDI ex x 17 15 49.5
HTT Hallett 42.94 135 P P 17 15 37.9 +1.0
baz=43,SNR=114
DDI Dehra Dun 43.33 327 eP P 17 15 40.3 +0.3
DDI IAmb IAmb 17 15 46.1
comp=Z,272nm,0.7s
PMG Port Moresby 43.45 98 P P 17 15 41.1 0.0
comp=Z,850nm,0.9s,baz=201,slow=1.2,SNR=121
PMG Port Moresby 43.45 98⇑ iP P 17 15 41.2 0.0
PMG pmax pmax
comp=Z,4μm,1.0s
PMG MLR MLR
comp=Z,6μm,22.0s
PMG Port Moresby 43.45 98 eP P 17 15 41.1 0.0
comp=Z,854nm,0.8s
TIA Tai'an 43.64 16⇑ P P 17 15 42.0 -0.4
TIA ScS ScS 17 25 40.0 +1.5
TIA pmax pmax
comp=Z,140nm,0.8s
TIA LR LR
comp=Z,4μm,21.0s
TIA LR LR
comp=Z,3μm,22.0s
TIA LR LR
comp=Z,4μm,24.0s
BHJ Bhuj 43.82 312 eP P 17 15 43.9 -0.1
BHJ IAmb IAmb 17 15 52.6
comp=Z,224nm,1.0s
CTAO Charters Tower 43.93 113 eP P 17 15 46.1 +1.0
CTAO pmax pmax
comp=Z,230nm,0.9s
CTAO Charters Tower 43.93 113 eP P 17 15 46.0 +1.0
comp=Z,232nm,0.9s
MANU Manus Island 43.95 87 eP P 17 15 44.4 -0.8
comp=Z,1μm,0.9s
TIY Taiyuan 44.02 10 eP P 17 15 46.3 +0.9
TIY S S 17 22 15.8 +1.0
TIY SS SS 17 25 35.8 +2.7
TIY pmax pmax
comp=Z,95nm,0.7s
TIY LR LR
comp=Z,6μm,15.8s
TIY LR LR
comp=Z,5μm,18.1s
STKA Stephens Creek 44.11 131 P P 17 15 47.1 +0.8
comp=Z,414nm,0.7s,baz=304,slow=7.8,SNR=1101
STKA S S 17 22 15.9 -0.4
comp=Z,8.6nm,1.1s,baz=197,slow=20,SNR=2.8
STKA LR LR 17 36 48.5
comp=Z,1μm,19.8s,baz=297,slow=40
STKA Stephens Creek 44.11 131 P P 17 15 47.5 +1.2
baz=44,SNR=1000
STKA Stephens Creek 44.11 131 eP P 17 15 47.5 +1.2
comp=Z,94nm,0.6s
STKA eS S 17 22 15.9 -0.4
SMLA Simla 44.44 327 eP P 17 15 49.4 +0.7
SMLA IAmb IAmb 17 15 55.0
comp=Z,736nm,1.3s
GTA Gaotai 45.04 356 P P 17 15 54.3 +0.7
GTA S S 17 22 29.5 -0.1
GTA ScS ScS 17 25 45.5 -2.0
GTA SS SS 17 25 47.3 -5.6
GTA pmax pmax
comp=Z,140nm,1.0s
GTA pmax pmax
comp=Z,550nm,6.4s
GTA LR LR
comp=Z,5μm,20.4s
GTA LR LR
comp=Z,3μm,18.5s
GTA LR LR
comp=Z,6μm,21.9s
GUMO Guam 45.37 65 P P 17 15 54.2 -2.2
comp=Z,190nm,0.6s,baz=212,slow=15,SNR=15
GUMO Guam 45.37 65 eP P 17 15 53.8 -2.7
GUMO pmax pmax
comp=Z,226nm,0.7s
GUMO Guam 45.37 65 eP P 17 15 53.8 -2.7
comp=Z,226nm,0.7s
DHRM DHARAMSHALA 45.77 327 eP P 17 15 60.0 +0.3
DHRM IAmb IAmb 17 16 05.5
comp=Z,279nm,0.7s
THN Thein Dam 46.22 327 ex P 17 16 00.6 -2.3
THN ex x 17 22 40.8
BTO Baotou 46.50 7 eP P 17 16 05.3 +0.2
BTO pmax pmax
comp=Z,20nm,1.4s
JNU Nakatsue 46.58 32 eP P 17 16 06.3 +0.5
comp=Z,805nm,0.9s
ARPS Mount Arapiles 46.73 137 P P 17 16 08.5 +1.6
baz=47,SNR=45
MRIV Mauritius Mete 46.89 248 eP P 17 16 09.7 +1.2
HHC Hu-ho-hao-te 46.94 8⇑ iP P 17 16 10.0 +1.4
HHC PP PP 17 18 00.5 +0.9
HHC S S 17 23 02.8 +5.9
HHC ScS ScS 17 26 01.0 +1.3
HHC pmax pmax
comp=Z,170nm,1.0s
HHC pmax pmax
comp=Z,860nm,6.5s
HHC LR LR
comp=Z,4μm,15.2s
HHC LR LR
comp=Z,3μm,16.0s
HHC LR LR
comp=Z,4μm,15.3s
BJT Baijiatuau 47.00 13 eP P 17 16 09.8 +0.9
BJT e 17 17 41.8
BJT pmax pmax
comp=Z,189nm,0.7s
BJT Baijiatuau 47.00 13 eP P 17 16 09.8 +0.9
comp=Z,189nm,0.7s
BJT ePcP PcP 17 17 41.8 +1.1
BJI Beijing 47.02 13 P P 17 16 10.0 +0.9
BJI PP PP 17 18 00.5 +0.3
BJI S S 17 22 58.8 +1.0
BJI pmax pmax
comp=Z,220nm,0.8s
BJI pmax pmax
comp=Z,940nm,3.1s
BJI LR LR
comp=Z,9μm,16.3s
BJI LR LR
comp=Z,2μm,16.3s
BJI LR LR
comp=Z,6μm,23.0s
CMSA Cobar Meteorol 47.10 128 P P 17 16 11.3 +1.4
baz=47,SNR=430
DL2 Dalian 47.49 19 P P 17 16 13.0 +0.3
DL2 S S 17 23 08.5 +3.9
DL2 pmax pmax
comp=Z,110nm,1.1s
DL2 pmax pmax
comp=Z,480nm,4.7s
DL2 LR LR
comp=Z,4μm,22.2s
DL2 LR LR
comp=Z,3μm,15.1s
DL2 LR LR
comp=Z,5μm,17.6s
TJN Taejon 47.50 26c iP P 17 16 13.2 +0.4
RMQ Roma 47.83 121 P P 17 16 17.5 +1.8
baz=48,SNR=85
INCN Inchon 48.11 25 P P 17 16 17.9 +0.2
SNR=17
INCN Inchon 48.11 25 eP P 17 16 18.0 +0.4
comp=Z,163nm,0.8s
RABL Rabaul 48.53 91 eP P 17 16 19.8 -1.5
comp=Z,287nm,0.9s
KS15 Wonju Array Si 48.61 26 eP P 17 16 22.3 +0.8
KS15 eScP ScP 17 21 38.9 +0.7
KSAR Wonju Array Be 48.61 26 P P 17 16 22.4 +1.0
KSAR Wonju Array Be 48.61 26 P P 17 16 22.4 +1.0
KSRS Korea Array 48.64 26 P P 17 16 22.4 +0.8
comp=Z,299nm,0.7s,baz=222,slow=7.8,SNR=853
KSRS ScP ScP 17 21 38.9 +0.6
comp=Z,15nm,1.0s,baz=216,slow=4.2,SNR=6.8
KSRS LR LR 17 37 19.3
comp=Z,1μm,19.5s,baz=228,slow=37
KSRS Korea Array 48.64 26 P P 17 16 22.4 +0.8
KSRS pmax pmax
comp=Z,314nm,0.7s
KSRS pmax pmax
comp=N,15nm,1.0s
KSRS MLR MLR
comp=Z,1μm,19.5s
KS01 Wonju Array Si 48.65 26 eP P 17 16 22.6 +0.9
KS01 eScP ScP 17 21 39.1 +0.8
RER Riviere de l'E 48.66 247 eP P 17 16 23.2 +1.0
comp=Z,322nm,1.0s
EIDS Eidsvold 49.53 119 P P 17 16 30.0 +1.2
baz=50,SNR=32
EIDS Eidsvold 49.53 119 eP P 17 16 29.6 +0.9
comp=Z,380nm,1.4s
TOO Toolangi 49.65 136 P P 17 16 32.0 +2.5
baz=50,SNR=30
CBIJ Chichi jima 49.67 47 eP P 17 16 27.8 -1.9
comp=Z,415nm,0.9s
YNG Young 50.30 131 P P 17 16 36.2 +1.7
baz=50,SNR=89
SNY Shenyang 50.77 19⇑ P P 17 16 37.5 -0.2
SNY PP PP 17 18 35.3 +1.0
SNY S S 17 23 45.0 -5.4
SNY pmax pmax
comp=Z,170nm,1.1s
SNY LR LR
comp=Z,2μm,16.1s
SNY LR LR
comp=Z,4μm,17.6s
SNY LR LR
comp=Z,4μm,21.4s
CAN Canberra 51.17 131 eP P 17 16 42.1 +1.0
CAN pmax pmax
comp=Z,449nm,1.3s
CAN Canberra 51.17 131 eP P 17 16 42.1 +1.0
comp=Z,449nm,1.3s
WMQ Urumqi 51.33 345⇑ iP P 17 16 43.5 +1.4
WMQ pP pP 17 16 53.3 -0.9
WMQ sP sP 17 16 57.0 -2.1
WMQ ScP ScP 17 21 50.8 +1.0
WMQ S S 17 23 58.3 -0.1
WMQ sS sS 17 24 17.0 -1.5
WMQ ScS ScS 17 26 29.5 +0.4
WMQ pmax pmax
comp=Z,270nm,0.8s
WMQ pmax pmax
comp=Z,310nm,3.6s
WMQ LR LR
comp=Z,870nm,20.4s
WMQ LR LR
comp=Z,900nm,22.0s
WMQ LR LR
comp=Z,1μm,25.4s
CNB Canberra Magne 51.44 131 P P 17 16 44.8 +1.7
baz=52,SNR=22
ARMA Armidale 51.45 125 eP P 17 16 45.5 +2.1
comp=Z,353nm,1.4s
KBL Kabul 51.56 323 eP P 17 16 44.6 +0.4

KBL pmax pmax
comp=Z,125nm,0.9s
KBL Kabul 51.56 323 *e*P **P 17 16 44.5 +0.4**
comp=Z,124nm,0.9s
INU Inuyama 51.63 35 *e*P **P 17 16 43.6 -0.7**
comp=Z,233nm,1.0s
KSH Kashi 51.68 333⇑ *i*P **P 17 16 44.5 -0.4**
KSH *e*pP pP 17 16 54.0 -2.9
KSH *e*sP sP 17 16 58.3 -3.6
KSH *e*PP **PP 17 18 42.5 -0.4**
KSH PcS **PcS 17 21 55.0 -1.1**
KSH S **S 17 24 00.3 -3.2**
KSH ScS **ScS 17 26 31.0 -0.8**
KSH pmax pmax
comp=Z,220nm,0.8s
KSH LR LR
comp=Z,4μm,27.7s
KSH LR LR
comp=Z,3μm,18.0s
KSH LR LR
comp=Z,3μm,20.8s
PAF Port-aux-Franc 51.74 207 *e*P **P 17 16 40.9 -4.1**
PAF pmax pmax
comp=Z,531nm,1.2s
PAF Port-aux-Franc 51.74 207 *e*P **P 17 16 40.9 -4.1**
comp=Z,531nm,1.2s
JHJ2 Mitsune 51.78 39 *e*P **P 17 16 43.7 -1.9**
comp=Z,443nm,0.8s
MGCD Mangrove Creek 51.97 128 P **P 17 16 49.3 +2.3**
baz=52,SNR=36
WSAR Wadi Sarin 52.39 305 P **P 17 16 51.6 +1.3**
comp=Z,34nm,1.0s,baz=147,slow=8.0,SNR=16
SMDO Samad 52.78 305 P **P 17 16 55.2 +1.9**
SNR=56
BIDO Bidbid 52.93 305 P **P 17 16 56.5 +2.2**
SNR=42
SHLS Shalkode 53.14 339 *i*P **P 17 16 55.2 -0.5**
comp=Z,4μm,1.0s
SHLS *i*S **S 17 24 24.3 +0.7**
CN2 Changchun 53.15 20⇑P **P 17 16 55.5 0.0**
CN2 *es*P pP 17 17 10.0 +2.4
CN2 *e*S **S 17 24 23.5 +0.4**
CN2 pmax pmax
comp=Z,20nm,1.0s
CN2 pmax pmax
comp=Z,200nm,4.0s
CN2 LR LR
comp=Z,3μm,15.0s
CN2 LR LR
comp=Z,3μm,15.0s
CN2 LR LR
comp=Z,1μm,16.0s
MAJO Matsushiro 53.15 35 *e*P **P 17 16 54.8 -0.9**
MAJO pmax pmax
comp=Z,290nm,1.1s
MAJO Matsushiro 53.15 35 *e*P **P 17 16 54.8 -0.9**
comp=Z,290nm,1.1s
MAJO *e*ScP **ScP 17 21 59.2 +1.4**
MAT Matsushiro 53.15 35 P **P 17 16 54.5 -1.2**
MAT S **S 17 24 28.2 +4.7**
MJAR Matsushiro Arr 53.15 35 P **P 17 16 54.9 -0.8**
comp=Z,198nm,0.9s,baz=216,slow=7.4,SNR=358
MJAR ScP **ScP 17 21 59.1 +1.3**
comp=Z,12nm,1.0s,baz=222,slow=4.5,SNR=8.8
MJAR S **S 17 24 16.4 -7.1**
comp=Z,0.3nm,0.3s,baz=212,slow=16,SNR=4.3
MJAR LR LR 17 41 17.5
comp=Z,816nm,20.1s,baz=180,slow=38
MJAR Matsushiro Arr 53.15 35 P **P 17 16 54.9 -0.8**
MJAR S **S 17 24 16.4 -7.1**
MJAR pmax pmax
comp=Z,196nm,0.9s
MJAR pmax pmax
comp=N,12nm,1.0s
MJAR MLR MLR
comp=Z,816nm,20.1s
MJB9 Matsu-Tunnel 53.15 35 *e*P **P 17 16 54.5 -1.2**
comp=Z,78nm,1.1s
MJB9 *e*ScP **ScP 17 21 59.8 +1.9**
MOO Moorlands 53.21 140 P **P 17 16 56.2 +0.2**
baz=53,SNR=4.8
SONA0 Songino Array 53.40 2 *e*P **P 17 16 58.7 +1.3**
SONA0 *e*ScP **ScP 17 22 01.5 +2.8**
SONA0 *e*S **S 17 24 24.4 -2.2**
SONM Songino Array 53.40 2 P **P 17 16 58.7 +1.3**
comp=Z,336nm,0.9s,baz=180,slow=8.6,SNR=1232
SONM ScP **ScP 17 22 01.5 +2.8**
comp=Z,9.8nm,0.9s,baz=193,slow=4.5,SNR=3.5
SONM S **S 17 24 24.4 -2.2**
comp=Z,1.7nm,1.1s,baz=198,slow=8.9,SNR=2.3
SONM LR LR 17 43 05.3
comp=Z,3μm,19.6s,baz=182,slow=40
SONM PKPPKP P'P'df 17 47 07.5 -10
comp=Z,0.6nm,0.6s,baz=0.0,slow=0.4,SNR=3.3
SONM Songino Array 53.40 2 P **P 17 16 58.7 +1.3**
SONM S **S 17 24 24.4 -2.2**
SONM pmax pmax
comp=Z,335nm,0.9s
SONM pmax pmax
comp=N,10.0nm,0.9s
SONM smax smax
comp=N,2.0nm,1.1s
SONM MLR MLR
comp=Z,3μm,19.6s
SONA1 Songino Array 53.41 2 *e*P **P 17 16 58.2 +0.8**
SONA1 *e*PcP **PcP 17 18 05.3 +1.0**
PDGK Podgornoye 53.44 338 P **P 17 16 58.6 +1.1**
PDGK pmax pmax
comp=Z,848nm,1.2s
UZB Uzynbulak 53.45 338 *i*P **P 17 16 57.2 -0.7**
comp=Z,3μm,1.1s
UZB *i*S **S 17 24 27.5 -0.1**
UZB *e*LR LR 17 40 19.1
comp=Z,331nm,19.3s
ULN Ulaanbaatar 53.46 3*c i*P **P 17 16 58.8 +0.9**
ULN pmax pmax
comp=Z,370nm,1.2s
ULN Ulaanbaatar 53.46 3 P **P 17 16 59.2 +1.3**
SNR=194
ULN Ulaanbaatar 53.46 3 *e*P **P 17 16 58.7 +0.9**
comp=Z,418nm,1.1s
TAU Tasmania Unive 53.53 141 *e*P **P 17 17 00.3 +1.9**
TAU pmax pmax
comp=Z,202nm,1.0s
TAU Tasmania Unive 53.53 141 *e*P **P 17 17 00.3 +1.9**
comp=Z,202nm,1.0s
SATY Saty 53.61 337 *i*P **P 17 16 58.3 -0.7**
comp=Z,5μm,1.2s
SATY *i*S **S 17 24 30.0 +0.3**
KPKS Kokpek 53.85 338 *i*P **P 17 16 59.5 -1.3**
comp=Z,5μm,1.2s
KPKS *i*S **S 17 24 32.6 -0.3**
KPKS *e*LR LR 17 40 41.6
comp=Z,523nm,17.1s
MDOK Medeo 54.23 336 *i*P **P 17 17 02.8 -0.8**
comp=Z,2μm,1.3s
MDOK *i*S **S 17 24 38.8 +0.7**
MDOK *e*LR LR 17 40 17.1
comp=Z,676nm,19.7s
AAA Alma-Ata 54.36 336 *e*P **P 17 17 05.0 +0.6**
AAA *e*S **S 17 24 40.0 +0.3**
AAA pmax pmax
comp=Z,600nm,2.9s
AAA smax smax
comp=N,3μm,7.0s
AAA MLR MLR
comp=Z,2μm,18.0s
ABTO Aybut 54.59 296 P **P 17 17 08.1 +1.6**
SNR=22
TKM2 Tokmak 2 54.62 335 P **P 17 17 07.2 +0.7**
TKM2 pmax pmax
comp=Z,603nm,1.1s
TKM2 Tokmak 2 54.62 335 *e*P **P 17 17 06.9 +0.4**
comp=Z,458nm,0.8s
DZET Dzherino 54.70 327 P **P 17 17 06.0 -1.1**
DZET pmax pmax
comp=Z,124nm,0.7s
AAK Ala-Archa 54.86 334 S **S 17 24 47.9 +1.2**
comp=Z,4.0nm,0.9s,baz=180,slow=20,SNR=4.8
AAK Ala-Archa 54.86 334*c i*P **P 17 17 09.1 +0.9**
AAK pmax pmax
comp=Z,327nm,1.2s
AAK Ala-Archa 54.86 334 *e*P **P 17 17 08.9 +0.7**
comp=Z,157nm,0.9s
AAK *e*S **S 17 24 47.9 +1.2**
FRU Bishkek 54.97 334⇑ *i*P **P 17 17 10.0 +1.2**
FRU *i* 17 17 19.0
FRU *i* 17 17 23.0
FRU *e*S **S 17 24 48.0 +0.2**
FRU *e* 17 25 10.0
FRU *e*SS **ScS 17 26 54.0 -0.7**
FRU pmax pmax
comp=Z,450nm,1.8s
FRU smax smax
comp=E,2μm,8.0s
VLA Vladivostok 55.02 25*c i*P **P 17 17 10.0 +0.9**
VLA pmax pmax
comp=Z,446nm,1.0s
KUU Kurty 55.12 336 *i*P **P 17 17 07.7 -2.2**
comp=Z,5μm,1.1s
KUU *i*S **S 17 24 48.3 -1.6**
ASHO Ashiyiah 55.14 305 *i*P **P 17 17 12.2 +1.7**
SNR=26
ASHO Ashiyiah 55.14 305 P **P 17 17 11.9 +1.4**
SNR=12
UOSS Minazif 55.14 306 *e*P **P 17 17 10.3 -0.1**
comp=Z,16nm,1.2s
HATD Hatta, Dubai 55.15 306 *i*P **P 17 17 12.3 +1.8**
SNR=21
HATD Hatta, Dubai 55.15 306 P **P 17 17 12.2 +1.8**
SNR=16
EKS2 Erkin-Say 55.20 334 *e*P **P 17 17 11.2 +0.6**
EKS2 *e* 17 18 10.1
EKS2 pmax pmax
comp=Z,417nm,0.8s
EKS2 Erkin-Say 55.20 334 *e*P **P 17 17 11.2 +0.6**
comp=Z,417nm,0.8s
EKS2 *e*PcP **PcP 17 18 10.1 -1.1**
MDJ Mudanjiang 55.34 22 P **P 17 17 11.8 +0.4**
MDJ pP pP 17 17 21.5 -2.1
MDJ sP sP 17 17 24.3 -4.3
MDJ S **S 17 24 51.0 -1.7**
MDJ ScS **ScS 17 26 55.3 -1.9**
MDJ pmax pmax
comp=Z,170nm,1.1s
MDJ pmax pmax
comp=Z,370nm,5.2s
MDJ LR LR
comp=Z,2μm,18.6s
MDJ LR LR
comp=Z,1μm,17.5s
MDJ LR LR
comp=Z,3μm,20.5s
MDJ Mudanjiang 55.34 22 *e*P **P 17 17 11.5 +0.1**
comp=Z,224nm,1.0s
MK01 Makanchi Array 55.54 342 *e*P **P 17 17 13.4 +0.6**
FAQ Al Faqa, Dubai 55.55 305 *i*P **P 17 17 15.0 +1.7**
SNR=28
FAQ Al Faqa, Dubai 55.55 305 P **P 17 17 16.0 +2.7**
SNR=38
MK31 Makanchi Array 55.56 342 *e*P **P 17 17 13.5 +0.5**
MK31 Makanchi Array 55.56 342 *e*P **P 17 17 13.5 +0.5**
MK32 Makanchi Array 55.56 342 *e*P **P 17 17 13.6 +0.6**
MK32 *e*S **S 17 24 56.3 +0.7**
MKAR Makanchi Array 55.56 342 P **P 17 17 13.6 +0.5**
comp=Z,271nm,0.8s,baz=144,slow=8.0,SNR=1748
MKAR S **S 17 24 56.3 +0.7**
comp=Z,9.8nm,1.0s,baz=148,slow=14,SNR=5.0
MKAR LR LR 17 43 55.3
comp=Z,3μm,21.4s,baz=149,slow=39
MKAR PKPPKP **P'P'df 17 47 14.5 -0.1**
comp=Z,1.7nm,1.0s,baz=336,slow=2.7,SNR=6.3
ZSN Zaisan 55.56 344 *i*P **P 17 17 11.5 -1.5**
comp=Z,4μm,0.9s
ZSN *i*S **S 17 24 54.4 -1.2**
ZSN *e*LR LR 17 41 57.9
comp=Z,381nm,16.6s
NAZ Nazwa, Dubai 55.60 305 *i*P **P 17 17 15.2 +1.5**
SNR=30
NAZ Nazwa, Dubai 55.60 305 P **P 17 17 16.1 +2.4**
SNR=21
MAKZ Makanchi 55.67 342 *e*P **P 17 17 14.1 +0.3**
MAKZ pmax pmax
comp=Z,363nm,1.1s
MAKZ Makanchi 55.67 342 *e*P **P 17 17 14.1 +0.3**
comp=Z,363nm,1.1s
ZAK Zakamensk 55.88 360 *e*P **P 17 17 15.3 0.0**
ZAK pmax pmax
comp=Z,113nm,1.2s
USRK Ussuriysk Ar. 55.95 24 P **P 17 17 16.3 +0.6**
comp=Z,494nm,0.9s,baz=217,slow=6.3,SNR=470
USRK LR LR 17 42 25.5
comp=Z,2μm,19.5s,baz=220,slow=37
HNR Honiara 56.07 97 P **P 17 17 16.9 -0.3**
comp=Z,2μm,0.7s,baz=181,slow=6.4
HNR Honiara 56.07 97 *e*P **P 17 17 16.8 -0.4**
comp=Z,2μm,0.8s
IUG Iuzhnay 56.54 331 *i*P **P 17 17 19.0 -1.2**
comp=Z,862nm,0.9s
IUG *i*S **S 17 25 08.1 -0.9**
HIA Hailar 56.58 13 *e*P **P 17 17 20.0 -0.2**
HIA pmax pmax
comp=Z,230nm,1.0s
HIA Hailar 56.58 13 *e*P **P 17 17 20.0 -0.2**
comp=Z,230nm,1.0s
KKAR Karatay Array 57.04 332 *e*P **P 17 17 23.1 -0.5**
KKAR Karatay Array 57.04 332 *e*P **P 17 17 23.1 -0.5**
TLY Talaya 57.18 0*c i*P **P 17 17 25.6 +1.2**
TLY *e* 17 19 32.4
TLY *e*S **S 17 25 18.6 +1.7**
TLY *e* 17 27 10.2
TLY pmax pmax
comp=Z,564nm,1.3s
TLY Talaya 57.18 0 *e*P **P 17 17 25.6 +1.2**
comp=Z,445nm,1.1s
MOY Mondy 57.21 358 *e*P **P 17 17 26.0 +1.3**
MOY pmax pmax
comp=Z,169nm,2.1s
IRK Irkutsk 57.75 1 *e*P **P 17 17 29.1 +0.7**
IRK *e* 17 17 43.4
IRK *e*S **S 17 25 17.6 -6.7**
IRK pmax pmax
comp=Z,332nm,1.4s
LHI Lord Howe Isla 57.88 124 P **P 17 17 30.1 +0.3**
baz=58,SNR=4.5
LHI Lord Howe Isla 57.88 124 *e*P **P 17 17 31.3 +1.5**
comp=Z,254nm,0.8s
CIT Chita 58.17 7 *e*P **P 17 17 32.3 +0.9**
CIT *e* 17 17 41.5
CIT *e* 17 17 46.3
CIT *e* 17 18 22.0
CIT pmax pmax
comp=Z,332nm,1.4s
SEM Semipalatinsk 59.40 343 *i*P **P 17 17 37.9 -2.1**
comp=Z,2μm,1.0s
SEM *i*S **S 17 25 44.1 -1.8**
SEM *e*LR LR 17 44 06.3
comp=Z,697nm,20.4s
ERM Erimo 59.70 33*d i*P **P 17 17 42.5 +0.3**
ERM Erimo 59.70 33 *e*P **P 17 17 42.6 +0.4**
comp=Z,277nm,0.8s
KLR Kul'dur 60.03 21 P **P 17 17 44.5 +0.2**
comp=Z,80nm,0.6s,baz=226,slow=7.7,SNR=196
CRZF Crozet Islands 60.06 219 *e*P **P 17 17 43.1 -1.5**
comp=Z,82nm,0.5s
KURBB Kurchatov Arra 60.11 342 S **S 17 25 52.9 -2.0**
comp=Z,14nm,1.1s,baz=160,slow=11,SNR=10
KURK Kurchatov 60.16 342 *e*P **P 17 17 45.4 +0.3**
KURK *e*S **S 17 25 52.9 -2.7**
KURK pmax pmax
comp=Z,539nm,1.0s
KURK Kurchatov 60.16 342 *e*P **P 17 17 45.4 +0.3**
comp=Z,538nm,1.0s
KURK *e*S **S 17 25 52.9 -2.7**
OTUK Ortayu 60.28 337 P **P 17 17 46.3 +0.2**
OTUK pmax pmax
comp=Z,655nm,1.3s
GEYT Alibeck 60.50 320 P **P 17 17 48.4 +0.6**
comp=Z,46nm,0.9s,baz=152,slow=6.7,SNR=68
GEYT S **S 17 26 00.8 +0.3**
comp=Z,3.0nm,0.9s,baz=262,slow=9.9,SNR=3.7
GEYT LR LR 17 45 18.0
comp=Z,3μm,20.8s,baz=135,slow=37
GEYT PKP2bc 17 47 20.8
comp=Z,2.3nm,0.8s,baz=324,slow=4.2,SNR=3.7
CASY Casey 60.65 177 *e*P **P 17 17 48.4 +0.1**
comp=Z,118nm,1.1s
HABR Khabarovsk 60.66 24*de*P **P 17 17 46.4 -2.1**
HABR *e* 17 18 30.3
HABR *e* 17 20 00.0
HABR *e*S **S 17 26 03.4 +1.5**
HABR *e*S S 17 26 07.4 +5.5
HABR *e**SS sS 17 26 09.0 -13
HABR *e* 17 27 37.0
HABR *e*SS **SS 17 30 03.3 +2.1**
HABR pmax pmax
comp=N,24nm,1.6s
HABR pmax pmax
comp=E,36nm,1.6s
HABR pmax pmax
comp=Z,120nm,1.6s
HABR pmax pmax
comp=Z,899nm,2.1s
HABR smax smax
comp=E,81nm,3.5s
HABR smax smax
comp=Z,64nm,3.5s
HABR smax smax
comp=N,76nm,3.5s
HABR MLR MLR
comp=Z,954nm,17.0s
BDHA Al Bayda' 60.68 289 *e*P **P 17 17 51.3 +1.6**
BDHA AMb AMB 17 17 52.4
comp=Z,46nm,0.8s
ASAJ Asahikawa 60.85 31 *e*P **P 17 17 50.1 +0.2**
comp=Z,400nm,0.8s
ADEN Aden 60.94 288 *e*P **P 17 17 52.7 +1.6**
ADEN AMb AMB 17 17 53.3
comp=Z,30nm,0.6s
MIR Mirnyy 61.15 185 *i*P **P 17 17 52.0 +0.3**
MIR pmax pmax
comp=Z,17nm,1.5s
ZAA0 Zalesovo Array 61.48 348 *e*P **P 17 17 54.0 -0.1**
ZALV Zalesovo Beam 61.48 348 P **P 17 17 54.4 +0.3**
comp=Z,636nm,0.9s,baz=159,slow=5.5,SNR=1163
ZALV S **S 17 26 09.7 -2.7**
comp=Z,43nm,1.1s,baz=153,slow=13,SNR=19
ZALV PKPPKP **P'P'df 17 47 06.5 +1.3**
comp=Z,8.0nm,1.1s,baz=298,slow=3.2,SNR=11
ZALV LR LR 17 47 32.6
comp=Z,7μm,19.1s,baz=150,slow=39
ZAA1 Zalesovo Array 61.49 348 *e*P **P 17 17 54.4 +0.3**
ZAA1 *e*S **S 17 26 09.7 -2.7**
BRZS Berezniki 61.56 338 *i*P **P 17 17 53.2 -1.6**
comp=Z,180nm,1.2s
BRZS *i*S **S 17 26 11.6 -2.0**
DAMY Dhamar 61.94 290 *e*P **P 17 18 00.4 +2.1**
comp=Z,352nm,1.3s
YUK Yuzh-Kuril'sk 62.53 33⇓ *e*P **P 17 18 01.1 -0.2**
NVS Novosibirsk 62.66 347⇑ *i*P **P 17 18 01.7 -0.2**
NVS *i* 17 18 12.8
NVS *e*S **S 17 26 20.0 -7.1**
NVS pmax pmax
comp=N,83nm,1.0s
NVS pmax pmax
comp=E,60nm,1.0s
NVS pmax pmax
comp=Z,120nm,1.0s
NVS smax smax
comp=N,78nm,1.5s
NVS smax smax
comp=E,275nm,1.5s
DZM Mont Dzumac 62.85 112 *e*P **P 17 18 04.1 +0.1**
comp=E,383nm,1.1s
DZM *e*pP **pP 17 18 18.3 +1.9**
comp=E,587nm,1.3s
DZM *e*S **S 17 26 33.0 +2.0**
comp=E,1μm,28.6s
DZM Mont Dzumac 62.85 112 *e*LR LR 17 36 59.5
comp=E,2μm,26.4s
DZM Mont Dzumac 62.85 112 P **P 17 18 05.0 +1.0**
comp=E,134nm,1.0s,baz=277,slow=7.0,SNR=41
YSS Yuzh-Sakhalins 62.91 29⇑ *i*P **P 17 18 03.4 -0.4**
YSS *e**SP **pP 17 18 17.5 +1.3**
YSS *e*S **S 17 26 28.0 -2.6**
YSS pmax pmax
comp=Z,280nm,0.8s
YSS Yuzh-Sakhalins 62.91 29 *e*P **P 17 18 03.6 -0.1**
comp=Z,811nm,1.0s
BOD Bodaibo 63.91 6⇓ *i*P **P 17 18 10.2 +0.1**
BOD pmax pmax
comp=Z,314nm,1.3s
KUR Kuril'sk 64.39 33*c i*P **P 17 18 14.0 +0.4**
KUR S **S 17 26 49.7 +0.6**
KUR pmax pmax
comp=Z,1μm,1.6s
KUR pmax pmax
comp=Z,992nm,1.3s
BVAR Borovoye Array 64.87 339 S **S 17 26 52.4 -2.3**
comp=Z,3.3nm,0.8s,baz=134,slow=15,SNR=4.0
NFK Norfolk Island 64.96 119 P **P 17 18 19.8 +2.1**
baz=65,SNR=5.2
CHKZ Chkalovo 65.31 339 P **P 17 18 19.8 +0.4**
CHKZ pmax pmax
comp=Z,598nm,1.3s
ZRNK Zerenda 65.32 338 P **P 17 18 19.5 0.0**
ZRNK pmax pmax
comp=Z,426nm,1.2s
ZRNK Zerenda 65.32 338 *e*P **P 17 18 19.4 0.0**
comp=Z,362nm,1.0s
KWAJ Kwajalein Atol 65.56 78 *e*P **P 17 18 21.0 -0.8**
KWAJ pmax pmax
comp=Z,349nm,1.3s
KWAJ Kwajalein Atol 65.56 78 *e*P **P 17 18 21.0 -0.8**
comp=Z,349nm,1.3s
TYV Tymovskoe 65.67 26 *e*P **P 17 18 22.8 +1.1**
TYV *e*S **S 17 27 12.0 +7.5**
TYV pmax pmax
comp=Z,800nm,1.6s
TYV pmax pmax
comp=E,110nm,1.0s
TYV smax smax
comp=E,2μm,7.0s
FURI Furi 66.19 282 *e*P **P 17 18 29.5 +3.3**
comp=E,402nm,1.8s
KMBO Kilima Mbogo 66.22 271 P **P 17 18 27.4 +1.0**
comp=E,46nm,1.1s,baz=86,slow=8.0,SNR=63
KMBO LR LR 17 42 08.6
comp=E,4μm,21.5s,baz=94,slow=31
KMBO Kilima Mbogo 66.22 271 P **P 17 18 28.3 +1.9**
SNR=25
KMBO Kilima Mbogo 66.22 271 *e*P **P 17 18 27.2 +0.9**
comp=E,89nm,1.1s
KMBO LR LR
comp=Z,4μm,21.0s
NKL Nikolayevsk 66.54 23 *i*P **P 17 18 27.5 +0.2**
NKL *e* 17 18 37.0
NKL *e* 17 27 17.0
NKL *e* 17 28 20.0
NKL pmax pmax
comp=Z,600nm,2.0s
NKL pmax pmax
comp=Z,260nm,1.0s
NKL MLR MLR
comp=N,1μm,16.0s
NKL MLR MLR
comp=E,1μm,16.0s
NKL MLR MLR
comp=Z,3μm,16.0s
AB31 Akbulak array 66.55 331 P **P 17 18 27.8 +0.3**
AB31 pmax pmax
comp=Z,804nm,1.4s
ABKAR Akbulak array 66.55 331 *e*P **P 17 18 27.6 +0.1**
H11N1 WAKE ISLAND Hy 67.29 66 P **P 17 18 32.6 +0.1**
baz=255,slow=8.8,SNR=41
H11N2 WAKE ISLAND Hy 67.30 66 P **P 17 18 32.7 +0.1**
baz=255,slow=8.8,SNR=34
H11N3 WAKE ISLAND Hy 67.31 66 P **P 17 18 32.8 +0.2**
baz=255,slow=8.8,SNR=52
DCZ Deep Cove 67.62 137 *e*P **P 17 18 37.5 +3.2**
comp=Z,245nm,1.3s
MLZ Mavora Lakes 68.25 137 *e*P **P 17 18 39.9 +1.5**
comp=Z,162nm,1.2s
WHZ Wether Hill Ro 68.27 137 *e*P **P 17 18 39.7 +1.3**
comp=Z,267nm,1.7s
AKTO Aktyubinsk 68.27 331 P **P 17 18 39.0 +0.7**
comp=Z,37nm,0.8s,baz=128,slow=8.3,SNR=4.7
AKTO S **S 17 27 33.1 -2.8**
comp=Z,2.5nm,0.9s,baz=240,slow=22,SNR=12
JCZ Jackson Bay 68.40 135 PN **P 17 18 40.8 +1.3**
WKZ Wanaka 68.74 136 *e*P **P 17 18 43.0 +1.5**
comp=Z,245nm,1.4s
FOZ Fox Glacier 69.00 134 *e*P **P 17 18 44.2 +1.1**
comp=Z,346nm,1.9s
TUZ Tuapeka 69.42 137 PN **P 17 18 47.0 +1.4**
LBZ Lake Benmore 69.45 135 *e*P **P 17 18 46.1 +0.2**
comp=Z,544nm,1.9s
WVZ Waitaha Valley 69.57 134 PN **P 17 18 47.4 +0.8**

TARA	Tarawa	69.72	86	eP	P	17 18 49.0 +0.9
	comp=Z,689nm,0.9s					
ODZ	Otahua Downs	69.91	136	eP	P	17 18 48.7 0.0
	comp=Z,205nm,1.6s					
RPZ	Rata Peaks	69.92	134	P	P	17 18 49.5 +0.6
	comp=Z,36nm,0.6s,baz=250,slow=5.0,SNR=26					
RPZ	Rata Peaks	69.92	134	PN	P	17 18 49.7 +0.9
CUKT	Cukurca	70.18	313	eP	P	17 18 51.0 +0.4
HKR	Hakkari	70.22	313	eP	P	17 18 51.0 +0.1
QRZ	Quartz Range	70.47	131	PN	P	17 18 53.7 +1.5
OUZ	Omahuta	70.50	125	eP	P	17 18 54.7 +2.2
	comp=Z,142nm,1.2s					
YAK	Yakutsk	70.52	13	P	P	17 18 51.5 -0.4
	comp=Z,37nm,0.7s,baz=32,slow=16,SNR=108					
YAK				LR	LR	17 53 01.1
	comp=Z,2μm,18.5s,baz=227,slow=39					
YAK	Yakutsk	70.52	13	c iP	P	17 18 51.4 -0.6
YAK				e		17 19 01.6
YAK				e*PP	PcP	17 19 16.1 +3.1
YAK				ePPP	PPP	17 23 12.4
YAK				eS	S	17 27 57.3 -4.7
YAK				e*SS	SKiKP	17 28 32.9 +0.4
YAK				e		17 28 45.7
YAK				pmax	pmax	
	comp=Z,548nm,0.9s					
YAK				pmax	pmax	
	comp=N,103nm,1.0s					
YAK				pmax	pmax	
	comp=E,112nm,1.1s					
YAK				pmax	pmax	
	comp=Z,73nm,1.6s					
YAK				pmax	pmax	
	comp=N,87nm,1.9s					
YAK				pmax	pmax	
	comp=E,103nm,2.7s					
YAK				smax	smax	
	comp=N,119nm,2.0s					
YAK				smax	smax	
	comp=E,163nm,2.2s					
YAK	Yakutsk	70.52	13	eP	P	17 18 51.6 -0.4
	comp=E,584nm,0.8s					
YAK				LR	LR	
	comp=Z,2μm,19.0s					
OXZ	Oxford	70.55	134	eP	P	17 18 53.0 +0.3
	comp=Z,130nm,0.7s					
GNI	Garni	70.59	316	i P	P	17 18 54.7 +1.6
	SNR=18					
GNI	Garni	70.59	316	d iP	P	17 18 54.3 +1.2
GNI				pmax	pmax	
	comp=Z,132nm,1.2s					
GNI	Garni	70.59	316	P	P	17 18 54.9 +1.8
	SNR=26					
GNI	Garni	70.59	316	eP	P	17 18 54.4 +1.4
	comp=Z,99nm,1.0s					
LTZ	Lake Taylor	70.62	133	eP	P	17 18 53.4 +0.3
	comp=Z,246nm,1.4s					
THZ	Tophouse	70.90	132	eP	P	17 18 55.4 +0.5
	comp=Z,178nm,0.8s					
THZ	Tophouse	70.90	132	PN	P	17 18 54.9 0.0
CRLZ	Canterbury Las	71.01	134	eP	P	17 18 56.9 +1.4
	comp=Z,807nm,1.7s					
MQZ	McQueen's Vall	71.06	134	eP	P	17 18 57.5 +1.8
	comp=Z,100nm,0.9s					
SIRT	Sirnak	71.14	313	eP	P	17 19 01.4 +5.0
TBLG	Delisi	71.28	318	eP	P	17 19 01.4 +4.3
SVE	Sverdlovsk	71.43	337	d iP	P	17 18 58.6 +1.0
SVE				i S	S	17 28 12.4 -0.4
SVE				pmax	pmax	
	comp=Z,1μm,1.1s					
SVE				MLR	MLR	
	comp=Z,2μm,22.0s					
DUS	Dusheti	71.46	318	P	P	17 19 01.7 +3.4
DUS	Dusheti	71.46	318	eP	P	17 19 01.6 +3.4
KHZ	Kahutara	71.48	133	eP	P	17 18 58.9 +0.6
	comp=Z,428nm,1.5s					
DUWZ	D'Urville Isla	71.51	131	PN	P	17 18 59.0 +0.5
AGRB	Hanur-Agry	71.57	315	eP	P	17 19 02.6 +3.5
GUDG	Gudauri	71.78	318	P	P	17 19 02.9 +2.6
BGD	Bogdanovka	71.85	317	P	P	17 19 02.2 +1.4
HIZ	Hauiti	71.91	129	eP	P	17 19 03.1 +2.2
	comp=Z,370nm,1.1s					
MKAZ	Moumakai	71.98	127	PN	P	17 19 03.6 +2.2
AKH	Akhalkalaki	71.98	317	P	P	17 19 07.4 +5.9
AKH	Akhalkalaki	71.98	317	eP	P	17 19 07.3 +5.8
ARU	Arti	71.99	336	P	P	17 19 01.7 +0.8
	comp=Z,88nm,0.8s,baz=121,slow=5.1,SNR=110					
ARU				S	S	17 28 17.5 -1.7
	comp=Z,0.8nm,0.3s,baz=114,slow=20,SNR=5.7					
ARU	Arti	71.99	336	c iP	P	17 19 01.5 +0.5
ARU						17 21 37.6
ARU				eS	S	17 28 21.2 +2.0
ARU				SS	SS	17 32 53.2 -3.7
ARU				SSS	SSS	17 36 12.9
ARU				pmax	pmax	
	comp=Z,137nm,1.0s					
ARU	Arti	71.99	336	eP	P	17 19 01.3 +0.3
	comp=Z,960nm,1.2s					
ARU				eS	S	17 28 17.3 -1.9
SKR	Severo-Kuril's	72.09	32	eP	P	17 18 51.3 -10
SKR				e		17 19 04.6
SKR				e		17 19 06.0
SKR				eS	S	17 28 17.0 -3.6
SKR				pmax	pmax	
	comp=Z,450nm,1.0s					
SKR				pmax	pmax	
	comp=N,50nm,0.6s					
SKR				pmax	pmax	
	comp=E,60nm,0.6s					
SKR				MLR	MLR	
	comp=Z,2μm,18.0s					
SKR				MLR	MLR	
	comp=N,2μm,20.0s					
SKR				MLR	MLR	
	comp=E,2μm,20.0s					
SNZO	South Karori	72.17	131	eP	P	17 19 02.4 0.0
	comp=E,146nm,0.9s					
SVAN	Silvan-Diyarba	72.29	313	eP	P	17 19 04.2 +0.9
ZEI	Tsey	72.30	318	eP	P	17 19 02.9 -0.5
ZEI				eS	S	17 28 23.4 -0.4
ZEI				eSS	SS	17 33 06.6 +4.0
ZEI				pmax	pmax	
	comp=Z,170nm,0.7s					
ZEI				pmax	pmax	
	comp=E,149nm,0.8s					
ZEI				pmax	pmax	
	comp=N,95nm,0.6s					
ZEI				MLR	MLR	
	comp=Z,2μm,15.0s					
SENK	Senkaya-Erzuru	72.42	316	eP	P	17 19 06.3 +2.1
TLZ	Tolley Road	72.42	128	PN	P	17 19 06.2 +2.1
ONI	Oni	72.51	318	P	P	17 19 05.9 +1.4
ONI	Oni	72.51	318	eP	P	17 19 05.9 +1.4
FWVZ	Far West T-bar	72.54	129	PN	P	17 19 06.5 +1.4
MAZI	Mazidag	72.58	312	eP	P	17 19 04.5 -0.7
WNVZ	Wahianoa	72.58	129	PN	P	17 19 06.3 +1.1
NCK	Nalchik	72.81	319	eP	P	17 19 07.6 +1.4
NCK				pmax	pmax	
	comp=Z,37nm,0.8s					
EZM	Erzurum	72.85	315	eP	P	17 19 06.1 -0.8
BNGB	Bing¶ll	72.99	314	eP	P	17 19 06.6 -0.9
DYBB	Diyarbakir	72.99	312	eP	P	17 19 09.5 +2.0
BFZ	Birch Farm	73.24	131	eP	P	17 19 10.0 +1.2
	comp=Z,336nm,1.0s					
BFZ	Birch Farm	73.24	131	PN	P	17 19 09.7 +0.8
YEDI	Yedisu-Bingol	73.25	314	eP	P	17 19 10.9 +1.8
BKZ	Black Stump Fm	73.26	129	eP	P	17 19 09.6 +0.6
	comp=Z,281nm,0.7s					
BKZ	Black Stump Fm	73.26	129	PN	P	17 19 09.7 +0.7
NEY	Neytrino	73.28	318	deP	P	17 19 11.2 +2.0
NEY				pmax	pmax	
	comp=Z,5.0nm,0.9s					
KBZ	Khabaz	73.37	319	P	P	17 19 10.5 +1.1
	comp=Z,36nm,0.9s,baz=107,slow=5.0,SNR=46					
ANWZ	Angora Road	73.39	130	PN	P	17 19 10.9 +1.2
ZALF	Zalf	73.43	307	eP	P	17 19 12.2 +2.1
CHVG	Ch'k'valeri	73.48	318	P	P	17 19 11.9 +1.8
RTZ	Ruatahuna	73.58	128	PN	P	17 19 11.3 +0.4
KVAR	Kislovodsk Arr	73.59	319	P	P	17 19 12.5 +1.6
	comp=Z,86nm,1.1s,baz=75,slow=3.0,SNR=1.8					
KIV	Kislovodsk	73.60	319	d iP	P	17 19 12.2 +1.2
KIV				i		17 19 26.3
KIV				i S	SKiKP	17 28 37.2 -0.7
KIV				pmax	pmax	
	comp=Z,103nm,1.7s					
KIV				MLR	MLR	
	comp=Z,1μm,19.0s					
KIV	Kislovodsk	73.60	319	eP	P	17 19 11.5 +0.5
	comp=Z,213nm,1.3s					
MSVF	Nonsavu	73.62	107	eP	P	17 19 12.5 +0.9
MSVF				pmax	pmax	
	comp=Z,159nm,0.9s					
MSVF	Nonsavu	73.62	107	eP	P	17 19 12.5 +0.9
	comp=Z,159nm,0.9s					
PXZ	Pawanui	73.64	130	PN	P	17 19 12.2 +1.1
URZ	Urewera	73.64	128	P	P	17 19 11.3 0.0
	comp=Z,22nm,0.7s,baz=273,slow=8.1,SNR=9.7					
URZ	Urewera	73.64	128	eP	P	17 19 10.6 -0.7
	comp=Z,108nm,1.0s					
URZ	Urewera	73.64	128	PN	P	17 19 11.1 -0.1
SVRC	Sivrice-ELAZID	73.76	313	eP	P	17 19 13.7 +1.6
GOF	Gofitskoye	73.84	320⇑	eP	P	17 19 12.0 -0.2
GOF				eS	S	17 28 41.4 +0.6
GOF				pmax	pmax	
	comp=Z,187nm,1.3s					
SALA	Sala	73.85	306	eP	P	17 19 14.7 +1.9
ROOS	tl_alroos	73.86	308	eP	P	17 19 14.8 +2.1
PTK	Pertek	73.88	313	eP	P	17 19 14.2 +1.4
BAYT	Ayd¨–ntepe-Bay	73.90	315	eP	P	17 19 09.8 -3.1
MWZ	Matawai	73.98	128	PN	P	17 19 13.4 +0.2
RABH	Abou Rabah	74.02	308	eP	P	17 19 15.1 +1.5
HAZ	Te Kaha	74.12	127	PN	P	17 19 13.5 -0.5
TKGZ	Te Karaka	74.24	128	PN	P	17 19 15.2 +0.5
PEA0	Petropavlovsk-	74.25	31	eP	P	17 19 14.4 0.0
PEA0B	Petropavlovsk-	74.25	31	eP	P	17 19 14.0 -0.4
	comp=Z,148nm,1.0s					
PETK	Petropavlovsk-	74.25	31	P	P	17 19 14.4 0.0
	comp=Z,79nm,0.8s,baz=205,slow=3.8,SNR=103					
PEA1	Petropavlovsk-	74.25	31	eP	P	17 19 14.4 -0.1
TOTH	TOTAH	74.29	307	eP	P	17 19 16.7 +1.5
TWGZ	Tauwhareparae	74.32	128	PN	P	17 19 16.2 +0.9
LSZ	Lusaka	74.33	256	eP	P	17 19 16.0 +0.2
LSZ				pmax	pmax	
	comp=Z,121nm,0.9s					
LSZ				MLR	MLR	
	comp=Z,5μm,22.0s					
LSZ	Lusaka	74.33	256	P	P	17 19 16.7 +0.9
	SNR=30					
LSZ	Lusaka	74.33	256	eP	P	17 19 16.0 +0.2
	comp=Z,121nm,0.9s					
LSZ				LR	LR	
	comp=Z,5μm,22.0s					
PKGZ	Pakihiroa	74.37	128	PN	P	17 19 15.8 +0.2
KTUT	Trabzon	74.39	315	eP	P	17 19 19.8 +4.3
GUMT	Gumushane	74.39	315	eP	P	17 19 16.9 +1.1
MARH	Ras Al Marh	74.45	307	eP	P	17 19 18.1 +1.7
MXZ	Matakaoa Point	74.52	127	eP	P	17 19 17.5 +1.1
	comp=Z,151nm,0.9s					
PUZ	Puketiti	74.53	128	PN	P	17 19 16.5 0.0
KFRA	Kufra	74.58	309	eP	P	17 19 18.5 +1.7
HAWK	Haweek	74.67	308	eP	P	17 19 19.4 +2.0
ILIC	ilic-Erzincan	74.68	313	eP	P	17 19 16.4 -1.1
PET	Petropavlovsk	74.69	31	c iP	P	17 19 16.8 -0.1
PET				e		17 22 03.6
PET				eS	S	17 28 49.0 -0.8
PET				ePS	PnS	17 29 25.2 -3.8
PET				ePPS	PPS	17 29 36.8
PET				pmax	pmax	
	comp=Z,235nm,0.7s					
PET				pmax	pmax	
	comp=Z,400nm,17.4s					
PET				pmax	pmax	
	comp=Z,200nm,14.1s					
PET				MLR	MLR	
	comp=Z,700nm,19.0s					
PET				MLR	MLR	
	comp=Z,600nm,17.0s					
PET	Petropavlovsk	74.69	31	eP	P	17 19 16.9 -0.1
	comp=Z,296nm,0.8s					
BRBR	Barbar	74.69	307	eP	P	17 19 19.1 +1.4
RCY	Rachaya	74.81	307	eP	P	17 19 20.6 +2.3
SOKR	Solikamsk	74.81	337	c iP	P	17 19 16.9 -0.6
SOKR				S	S	17 28 49.2 -1.8
SOKR				pmax	pmax	
	comp=Z,199nm,1.0s					
SOKR				MLR	MLR	
	comp=Z,2μm,19.0s					
BIDA	Albida	74.89	308	eP	P	17 19 20.6 +2.0
GAZ	Gaziantep	74.90	311	eP	P	17 19 20.6 +1.9
HWQ	Hawqa	74.95	308	eP	P	17 19 21.0 +1.9
MA2	Magadan	75.05	23	P	P	17 19 19.5 +0.6
	comp=Z,180nm,0.8s,baz=244,slow=5.8,SNR=112					
MA2				LR	LR	17 55 25.5
	comp=Z,1μm,18.5s,baz=260,slow=38					
BHL	Bhannes	75.07	307	eP	P	17 19 21.9 +2.2
DQRL	Deir Qamar	75.08	307	eP	P	17 19 22.1 +2.4
ESPY	Espiye-Giresun	75.09	315	eP	P	17 19 21.1 +1.4
FUNA	Funafuti	75.10	97	eP	P	17 19 20.7 +0.6
	comp=Z,476nm,1.2s					
BTCH	Batrach	75.10	309	eP	P	17 19 20.2 +0.4
DRWC	Darouich	75.13	310	eP	P	17 19 21.1 +1.1
DARE	Darende-Malaty	75.17	312	eP	P	17 19 20.6 +0.4
SOC	Sochi	75.42	318	d iP	P	17 19 21.2 -0.2
SOC				e		17 22 14.5
SOC				ePPP	PPP	17 23 56.6
SOC				eS	S	17 29 02.9 +4.5
SOC				eSS	SS	17 33 50.7 +1.1
SOC				pmax	pmax	
	comp=Z,105nm,1.1s					
SOC				MLR	MLR	
	comp=Z,1μm,20.0s					
TAHT	Tahtakopru-Hat	75.42	310	eP	P	17 19 22.8 +1.2
ARNB	Al Arnab	75.42	309	eP	P	17 19 22.6 +0.9
SYO	Syowa Base	75.50	200⇑	eP	P	17 19 20.7 -0.7
SYO	Syowa Base	75.50	200⇑	isP	pP	17 19 34.0 0.0
NRIK	Noril'sk	75.70	354	P	P	17 19 22.4 -0.1
	comp=Z,162nm,0.9s,baz=151,slow=5.0,SNR=146					
NRIK				S	S	17 28 57.6 -3.0
	comp=Z,3.9nm,0.7s,baz=324,slow=23,SNR=6.1					
NRIK				LR	LR	17 55 42.3
	comp=Z,3μm,21.7s,baz=163,slow=38					
RSDY	Resadiye-TOKAT	75.91	314	eP	P	17 19 26.3 +2.0
CEYT	Ceyhan	75.95	310	eP	P	17 19 25.2 +0.6
SVSK	Karacayir	75.98	313	eP	P	17 19 25.7 +1.1
KRTS	Karatas	76.10	310	eP	P	17 19 25.5 0.0
BNN	Bunyan	76.47	312	eP	P	17 19 30.3 +2.7
KARA	Karaisali	76.56	310	eP	P	17 19 28.7 +0.6
LBTB	Lobatse	76.61	246	eP	P	17 19 28.9 +0.1
LBTB				pmax	pmax	
	comp=Z,57nm,0.9s					
LBTB	Lobatse	76.61	246	eP	P	17 19 28.9 +0.1
	comp=Z,57nm,0.9s					
MERS	Mersin	76.85	310	eP	P	17 19 26.6 -3.2
BOSA	Boshof	76.93	242	P	P	17 19 30.7 +0.2
	comp=Z,50nm,0.9s,baz=94,slow=6.1,SNR=43					
BOSA				LR	LR	17 49 17.4
	comp=Z,3μm,18.8s,baz=72,slow=32					
BOSA	Boshof	76.93	242	eP	P	17 19 30.2 -0.3
	comp=Z,86nm,1.0s					
KVT	Kavak	77.05	314	eP	P	17 19 33.8 +3.0
LFK	Lefkose	77.15	308	eP	P	17 19 33.0 +1.5
NIG	Nigde	77.16	311	eP	P	17 19 31.9 +0.2
CSS	Mathiatis	77.22	308	P	P	17 19 33.6 +1.8
CSS	Mathiatis	77.22	308	P	P	17 19 33.4 +1.6
CSS	Mathiatis	77.22	308	eP	P	17 19 32.7 +0.8
	comp=Z,88nm,1.0s					
VRH	Novokhopyorsk	77.33	325	eP	P	17 19 33.8 +1.8
VRH				e		17 19 47.1
VRH				e		17 22 26.6
VRH				eS	S	17 29 15.9 -3.1
VRH				pmax	pmax	
	comp=Z,30nm,0.6s					
VRH				smax	smax	
	comp=N,1μm,2.3s					
VRH				MLR	MLR	
	comp=Z,830nm,23.0s					
MAMC	Mammari	77.36	308	P	P	17 19 34.6 +2.0
ANN	Anapa	77.39	318	eP	P	17 19 25.9 -6.6
ANN				e*PP	PcP	17 19 34.0 -8.9
ANN				e		17 19 39.7
ANN				e		17 19 47.6
ANN				e		17 22 28.8
ANN				eS	S	17 29 12.3 -7.7
ANN				pmax	pmax	
	comp=Z,33nm,1.2s					
ANN				MLR	MLR	
	comp=E,1μm,23.0s					
ANN				MLR	MLR	
	comp=N,1μm,23.0s					
ANN				MLR	MLR	
	comp=Z,1μm,23.0s					
GULA	Gulagac	77.51	311	eP	P	17 19 34.0 +0.5
SZAC	Souni	77.51	307	P	P	17 19 35.3 +1.8
LEF	Lefka	77.61	308	eP	P	17 19 34.4 +0.4
CORM	Corum	77.78	313	eP	P	17 19 36.5 +1.5
DIKM	Dikmen	77.80	315	eP	P	17 19 34.1 -0.8
SEY	Seymchan	77.82	21	P	P	17 19 35.2 +0.7
	comp=Z,107nm,0.9s,baz=228,slow=5.5,SNR=259					
ALFC	Alefka	77.85	308	P	P	17 19 36.7 +1.3
VNDA	Vanda	77.87	169	P	P	17 19 35.4 +0.7
	comp=Z,64nm,0.9s,baz=304,slow=5.9,SNR=249					
VNDA				S	S	17 29 25.2 +1.1
	comp=Z,1.9nm,1.2s,baz=56,slow=23,SNR=5.8					
VNDA				LR	LR	17 50 49.5
	comp=Z,2μm,18.8s,baz=308,slow=33					
VNDA	Vanda	77.87	169	eP	P	17 19 35.3 +0.7
	comp=Z,159nm,1.1s					
VNDA				eS	S	17 29 25.2 +1.1
SNOP	Sinop	77.96	315	eP	P	17 19 32.2 -3.6
PPCY	Paphos	77.97	307	P	P	17 19 41.7 +5.7
AKMC	Akamas	78.03	307	P	P	17 19 37.6 +1.3
SERE	Serefikochisa	78.19	312	eP	P	17 19 38.4 +1.1
KAMT	Kaman	78.21	312	eP	P	17 19 38.9 +1.6
BR101	Keskin Array S	78.37	312	eP	P	17 19 38.8 +0.5
BR131	Keskin Array S	78.37	312	eP	P	17 19 38.6 +0.3
BRTR	Keskin Array B	78.37	312	P	P	17 19 38.8 +0.5
	comp=Z,90nm,0.8s,baz=137,slow=6.9,SNR=153					
BRTR				LR	LR	17 57 04.2
	comp=Z,2μm,18.7s,baz=120,slow=38					
CHBY	Cihanbeyli	78.59	311	eP	P	17 19 41.9 +2.4
CANT	Cankiri	78.65	313	eP	P	17 19 39.8 0.0
AFSR	Af¨ar-Bala (A	78.70	312	eP	P	17 19 41.2 +1.1
BZK	Bozkurt	78.79	315	eP	P	17 19 38.9 -1.4
VSR	Storozhevoye	78.79	325	eP	P	17 19 41.5 +1.4
VSR				e		17 19 54.5
VSR				eS	S	17 29 32.0 -2.8
VSR				pmax	pmax	
	comp=Z,60nm,0.9s					
VSR				smax	smax	
	comp=N,750nm,3.0s					
VSR				MLR	MLR	
	comp=Z,590nm,16.0s					
KONT	Konya--Tatoy	78.81	310	eP	P	17 19 40.8 +0.2
LADK	Ladik-KONYA	78.87	311	eP	P	17 19 41.4 +0.3
VORR	Voronezh	78.95	325	eP	P	17 19 41.0 0.0
VORR				pmax	pmax	
	comp=Z,250nm,1.0s					
SBA	Scott Base	78.95	169	eP	P	17 19 42.0 +1.4
SBA				pmax	pmax	
	comp=Z,151nm,1.2s					
SBA	Scott Base	78.95	169	eP	P	17 19 42.0 +1.4
	comp=Z,151nm,1.2s					
TIXI	Tiksi	79.01	8	S	S	17 29 30.5 -5.9
	comp=Z,4.8nm,1.1s,baz=318,slow=22,SNR=12					
TIXI				LR	LR	17 59 05.3
	comp=Z,4μm,18.6s,baz=218,slow=39					
TIXI	Tiksi	79.01	8	c iP	P	17 19 39.9 -1.0
TIXI				pmax	pmax	
	comp=Z,125nm,0.8s					
TIXI				MLR	MLR	
	comp=Z,4μm,18.0s					
TIXI	Tiksi	79.01	8	eP	P	17 19 39.8 -1.1
	comp=Z,386nm,1.5s					
TIXI				eS	S	17 29 30.5 -5.9
ANTO	Ankara	79.03	312	eP	P	17 19 42.2 +0.4
ANTO				pmax	pmax	
	comp=Z,148nm,1.0s					
ANTO	Ankara	79.03	312	eP	P	17 19 42.2 +0.4
	comp=Z,148nm,1.0s					
BR231	Keskin MP Arra	79.04	312	eP	P	17 19 42.4 +0.4
LOD	Lodumlu	79.06	312	eP	P	17 19 41.6 -0.4
KIZT	Kizilcal	79.43	311	eP	P	17 19 44.3 +0.2
LPSR	Galich'ya Gora	79.49	326	eP	P	17 19 45.3 +1.4
LPSR				e*SP	PcP	17 19 49.0 -2.8
LPSR				e		17 19 59.4
LPSR				eS	S	17 29 39.4 -2.7
LPSR				pmax	pmax	
	comp=Z,30nm,1.0s					
LPSR				smax	smax	
	comp=N,670nm,4.6s					
LPSR				MLR	MLR	
	comp=Z,1μm,21.0s					
SAFT	Safranbolu	79.51	314	eP	P	17 19 45.4 +1.0
SIM	Simferopol'	79.66	318	eP	P	17 19 45.9 +0.8
SIM				eS	S	17 29 41.0 -3.3
SIM				e		17 29 54.0
SIM				pmax	pmax	
	comp=Z,135nm,1.0s					
SIM				MLR	MLR	
	comp=Z,500nm,18.0s					
SUTC	Sutluce-Ispart	79.72	310	eP	P	17 19 47.0 +1.3
SVRH	Sivrihisar-ESK	79.85	312	eP	P	17 19 47.7 +1.4
BCK	Bucak	80.03	309	eP	P	17 19 45.4 -1.9
ISP	Isparta	80.17	310	eP	P	17 19 52.1 +3.9
ISP	Isparta	80.17	310⇑	i P	P	17 19 48.8 +0.7
ISP	Isparta	80.17	310	P	P	17 19 46.7 -1.4
ISP	Isparta	80.17	310	eP	P	17 19 46.7 -1.4
ISP	Isparta	80.17	310	eP	P	17 19 46.7 -1.4
ELL	Elmali	80.37	309	eP	P	17 19 50.5 +1.3
KDZE	Karadeniz Ereo	80.43	313	eP	P	17 19 50.0 +0.7
SUR	Sutherland	80.76	238	eP	P	17 19 52.8 +1.2
	comp=Z,167nm,1.1s					
GLHS	Glhisar (BURDU	80.79	309	eP	P	17 19 55.9 +4.4
GULT	Gulveren	80.87	312	eP	P	17 19 53.1 +1.4
FETY	Fethiye	80.99	308	eP	P	17 19 51.6 -0.8
FETY	Fethiye	80.99	308	P	P	17 19 53.2 +0.8
FETY	Fethiye	80.99	308	eP	P	17 19 53.2 +0.8
KHL	Karahalli	81.06	310	eP	P	17 19 49.1 -3.8
CAVI	Cavuskoy	81.30	312	eP	P	17 19 55.5 +1.5
DALY	Dalyan (Mu¨la	81.36	308	eP	P	17 19 55.4 +1.0
TVSB	Tavsanli	81.39	311	eP	P	17 19 56.0 +1.4
ADVT	Abdulvahap	81.44	312	eP	P	17 20 00.8 +6.1
MOS	Moscow	81.45	329	eP	P	17 19 54.2 -0.2
MOS				e		17 20 01.1
MOS				i		17 20 09.7
MOS				e		17 22 57.8
MOS				eS	S	17 30 01.2 -1.4
MOS				pmax	pmax	
	comp=Z,94nm,0.9s					
MOS				pmax	pmax	
	comp=Z,100nm,0.9s					
MOS				smax	smax	
	comp=N,1μm,4.2s					
MOS				smax	smax	
	comp=E,700nm,3.6s					
MOS				MLR	MLR	
	comp=Z,2μm,18.0s					
MOS				MLR	MLR	
	comp=N,900nm,20.0s					
MOS				MLR	MLR	
	comp=E,600nm,20.0s					
HRT	Hereke	81.59	313	eP	P	17 19 56.8 +1.3
IZI	Iznik	81.61	312	eP	P	17 19 57.5 +1.8
ARG	Arkhangelos	81.64	308	P	P	17 19 57.1 +1.3
ARG	Arkhangelos	81.64	308	P	P	17 19 57.1 +1.3
ARG	Arkhangelos	81.64	308	P	P	17 19 57.1 +1.3
SILT	Sile	81.69	313	eP	P	17 19 59.4 +3.4
YER	Yerkesik	81.73	309	eP	P	17 20 00.8 +4.4
YER	Yerkesik	81.73	309	P	P	17 20 01.4 +5.0
YER	Yerkesik	81.73	309	P	P	17 20 01.4 +5.0
YER	Yerkesik	81.73	309	P	P	17 20 01.4 +5.0
OBN	Obninsk	81.76	328	P	P	17 19 57.4 +1.3
	comp=E,126nm,0.9s,baz=118,slow=0.7,SNR=13					
OBN	Obninsk	81.76	328⇓	i P	P	17 19 57.3 +1.3
OBN				i		17 20 12.6
OBN				e		17 23 03.8
OBN				i S	S	17 30 03.3 -2.5
OBN				eSS	SS	17 35 23.6 -0.9
OBN				pmax	pmax	
	comp=Z,130nm,1.0s					
OBN	Obninsk	81.76	328	eP	P	17 19 57.0 +0.9
	comp=Z,386nm,1.1s					
KULA	Kula-Manisa	81.77	310	eP	P	17 19 58.2 +1.6
KULA	Kula-Manisa	81.77	310	P	P	17 19 57.4 +0.8
KULA	Kula-Manisa	81.77	310	P	P	17 19 57.4 +0.8
GEMT	Gemlik	81.84	312	eP	P	17 19 57.5 +0.7
ISK	Istanbul-Kandi	82.10	313

KARP	Karpathos	82.25 307	*e*P		P	17 20 01.2 +2.1
KARP	Karpathos	82.25 307	P		P	17 20 00.7 +1.5
KARP	Karpathos	82.25 307	*e*P		P	17 20 00.6 +1.5
	comp=Z,216nm,0.9s					
BGKT	Bogazkoy	82.34 313	*e*P		P	17 19 59.1 -0.2
KCTX	Karacabey (Bur	82.42 312	*e*P		P	17 20 01.3 +1.4
BODT	Bodrum	82.47 308	*e*P		P	17 20 05.6 +5.4
BODT	Bodrum	82.47 308	P		P	17 20 05.9 +5.7
BODT	Bodrum	82.47 308	P		P	17 20 05.9 +5.7
AKS	Akhisar	82.50 310	*e*P		P	17 20 01.6 +1.3
CTKS	Kestanelik-??a	82.55 313	*e*P		P	17 20 00.8 +0.3
BALB	Balikesir	82.62 311	*e*P		P	17 20 02.1 +1.2
KLMR	Klimovskoe	82.67 334	*c i*P		P	17 20 01.3 +0.6
KLMR			*e*			17 23 13.5
KLMR			*e*S		S	17 30 14.6 -0.3
KLMR			pmax	pmax		
	comp=Z,274nm,1.3s					
CTYL	Yalikoy Yolu	82.76 313	*e*P		P	17 20 02.4 +0.8
EDC	Edincik	82.80 312	*e*P		P	17 20 03.2 +1.3
ZKR	Zakros	82.91 306	P		P	17 20 07.8 +5.3
ZKR	Zakros	82.91 306	P		P	17 20 07.8 +5.3
SMG	Samos	82.98 309	P		P	17 20 04.1 +1.3
SMG	Samos	82.98 309	P		P	17 20 04.1 +1.3
SMY	Shemya	83.00 35	*e*P		P	17 20 01.6 -0.9
SMY			pmax	pmax		
	comp=Z,570nm,1.5s					
SMY	Shemya	83.00 35	*e*P		P	17 20 01.6 -0.9
	comp=Z,570nm,1.5s					
MRMT	Marmara Adasi	83.06 312	*e*P		P	17 20 04.5 +1.2
MIDW	Midway	83.20 61	*e*P		P	17 20 05.3 +1.2
	comp=Z,187nm,0.9s					
TLCR		83.32 317	⇑*i*P		P	17 20 04.4 0.0
PSN	Preselentsi	83.38 315	*i* P		P	17 20 06.8 +2.1
RKY	Sarkoy-Tekirda	83.39 312	*e*P		P	17 20 06.7 +1.7
TIRR	Tirgusor	83.42 316	⇑*i*P		P	17 20 06.6 +1.7
TIRR	Tirgusor	83.42 316	*e*P		P	17 20 06.0 +1.1
TIRR			pmax	pmax		
	comp=Z,92nm,0.9s					
TIRR	Tirgusor	83.42 316	*e*P		P	17 20 06.0 +1.1
	comp=Z,92nm,0.9s					
NPS	Neapolis	83.43 306	P		P	17 20 06.8 +1.6
NPS	Neapolis	83.43 306	P		P	17 20 06.8 +1.6
NPS	Neapolis	83.43 306	P		P	17 20 06.8 +1.6
LAST	Lasithi	83.52 306	||*i*P		P	17 20 08.1 +2.3
LAST	Lasithi	83.52 306	P		P	17 20 07.2 +1.4
LAST	Lasithi	83.52 306	*e*P		P	17 20 07.2 +1.4
	comp=Z,151nm,1.0s					
AFI	Afiamalu	83.58 103	*e*P		P	17 20 08.0 +1.5
AFI			pmax	pmax		
	comp=Z,321nm,1.0s					
AFI	Afiamalu	83.58 103	*e*P		P	17 20 08.0 +1.5
	comp=Z,321nm,1.0s					
LPK	Lapseki	83.63 312	*e*P		P	17 20 08.8 +2.7
CHOS	Chios island	83.73 310	*e*P		P	17 20 07.7 +1.0
CHOS	Chios island	83.73 310	P		P	17 20 08.6 +1.8
CHOS	Chios island	83.73 310	P		P	17 20 08.6 +1.8
PRK	Paraskevi	83.75 310	P		P	17 20 08.0 +1.3
PRK	Paraskevi	83.75 310	P		P	17 20 08.0 +1.3
PRK	Paraskevi	83.75 310	P		P	17 20 08.0 +1.3
SANT	Santorini	83.77 307	||*i*P		P	17 20 08.2 +1.2
SANT	Santorini	83.77 307	*e*P		P	17 20 07.6 +0.6
	comp=Z,502nm,1.4s					
SANT			LR	LR		
	comp=Z,990nm,20.0s					
CFR	Carcaliu	83.79 317	⇑*i*P		P	17 20 08.1 +1.3
KIS	Kishinev	83.79 318	*e*P		P	17 20 11.0 +4.2
KIS	Kishinev	83.79 318	*e*PP		PP	17 23 34.0 +14
KIS			*i* SKS		S	17 30 24.0 -2.8
KIS			*i* S		SKKSac	17 30 30.0 -1.3
KIS			*e*SS		SS	17 35 50.0 -5.0
KIS			LRM	MLR		18 00 40.0
	comp=Z,1μm,22.0s					
KIS	Kishinev	83.79 318	*e*P		P	17 20 11.0 +4.2
KIS			*i*			17 30 24.0
KIS			*i* S		SKKSac	17 30 30.0 -1.3
KIS			*e*SS		SS	17 35 50.0 -5.0
KIS			MLR	MLR		
	comp=N,1μm,20.0s					
KIS			MLR	MLR		
	comp=E,900nm,20.0s					
KIS			MLR	MLR		
	comp=Z,1μm,20.0s					
KIS			MLR	MLR		
	comp=Z,1μm,22.0s					
HARR	Harsova	83.81 316	⇑*i*P		P	17 20 08.8 +1.9
PRD	Provadia	83.82 314	*i* P		P	17 20 09.4 +2.4
EZN	Ezine	83.83 311	*e*P		P	17 20 11.3 +4.1
GELI	Tayfur-Gelibol	83.85 312	*e*P		P	17 20 07.2 0.0
APE	Apeiranthos	83.86 308	||*i*P		P	17 20 08.8 +1.4
APE	Apeiranthos	83.86 308	*d i*P		P	17 20 08.1 +0.7
APE			pmax	pmax		
	comp=Z,64nm,1.4s					
EDRB	Edirne	83.97 313	*e*P		P	17 20 09.1 +1.3
EDRB	Edirne	83.97 313	P		P	17 20 09.1 +1.3
EDRB	Edirne	83.97 313	P		P	17 20 09.1 +1.3
IDI	Anoyia	84.01 306	⇑*i*P		P	17 20 10.5 +2.2
IDI	Anoyia	84.01 306	P		P	17 20 09.0 +0.7
IDI	Anoyia	84.01 306	*e*P		P	17 20 10.0 +1.7
	comp=Z,209nm,1.3s					
SIVA	Sivas	84.02 306	⇑*i*P		P	17 20 08.8 +0.6
SIVA	Sivas	84.02 306	P		P	17 20 09.6 +1.4
SIVA	Sivas	84.02 306	P		P	17 20 09.6 +1.4
LEOM	Leova	84.04 318	⇑*i*P		P	17 20 10.2 +2.2
SIGR	SIGRI	84.06 310	*e*P		P	17 20 10.6 +2.2
SIGR	SIGRI	84.06 310	P		P	17 20 09.2 +0.9
SIGR	SIGRI	84.06 310	*e*P		P	17 20 09.2 +0.9
ENEZ	Enez	84.16 312	*e*P		P	17 20 16.1 +7.3
ENEZ	Enez	84.16 312	P		P	17 20 10.2 +1.4
GADA	Gvkgeada	84.23 311	*e*P		P	17 20 09.4 +0.2
GADA	Gvkgeada	84.23 311	P		P	17 20 10.5 +1.3
GADA	Gvkgeada	84.23 311	*e*P		P	17 20 10.5 +1.3
QSPA	South Pole Qui	84.26 180	*e*P		P	17 20 08.6 -0.4
	comp=Z,907nm,1.1s					
TSUM	Tsumeb	84.26 251	*e*P		P	17 20 10.3 +0.4
	comp=Z,71nm,0.9s					
ALN	Alexandroupoli	84.28 312	*e*P		P	17 20 10.2 +0.8
ALN	Alexandroupoli	84.28 312	P		P	17 20 09.9 +0.5
ALN	Alexandroupoli	84.28 312	P		P	17 20 09.9 +0.5
ALN	Alexandroupoli	84.28 312	P		P	17 20 09.9 +0.5
SORM	Soroca	84.39 319	⇑*i*P		P	17 20 10.9 +1.1
AKASG	Malin Array Be	84.53 322	P		P	17 20 11.0 +0.6
	comp=Z,11nm,0.6s,baz=85,slow=4.8,SNR=71					
AKASG			PP		PP	17 23 26.1 -0.2
	comp=Z,13nm,0.8s,baz=88,slow=7.4,SNR=5.5					
AKASG			S		S	17 30 29.4 -4.7
	comp=Z,1.6nm,0.6s,baz=107,slow=6.0,SNR=4.6					
AKASG	Malin Array Be	84.53 322	*i* P		P	17 20 10.8 +0.4
AKASG			pmax	pmax		
	comp=Z,17nm,0.6s					
AKBB	Malin Array Si	84.53 322	*e*P		P	17 20 09.9 -0.5
AKBB			pmax	pmax		
	comp=Z,56nm,0.9s					
AKBB	Malin Array Si	84.53 322	*e*P		P	17 20 09.9 -0.5
	comp=Z,56nm,0.9s					
KIEV	Kiev	84.53 322	*c i*P		P	17 20 10.7 +0.3
KIEV			pmax	pmax		
	comp=Z,31nm,1.0s					
KIEV	Kiev	84.53 322	*e*P		P	17 20 10.7 +0.3
	comp=Z,52nm,0.9s					
AK11	Malin Array Si	84.55 322	*e*P		P	17 20 10.8 +0.3
SMTH	Samothraki Isl	84.57 311	P		P	17 20 11.7 +0.8
SMTH	Samothraki Isl	84.57 311	*e*P		P	17 20 11.7 +0.8
GRER		84.63 317	||*i*P		P	17 20 14.4 +3.3
ODBI	Odobesti	84.67 317	||*i*P		P	17 20 14.1 +2.9
TMCR	Tamitsa	84.71 336	*e*P		P	17 20 12.2 +1.2
TMCR			*e*S		S	17 30 36.8 +1.5
TMCR			pmax	pmax		
	comp=Z,114nm,1.1s					
LIA	Limnos Island	84.71 311	P		P	17 20 12.5 +0.9
LIA	Limnos Island	84.71 311	P		P	17 20 12.5 +0.9
IMMV	Iera Moni Meta	84.77 306	P		P	17 20 13.7 +1.7
ISR	Istrita	84.87 316	⇑*i*P		P	17 20 15.3 +2.9
SZH	Strazhica	84.88 314	*i* P		P	17 20 14.1 +1.7
DIM	Dimitrovgrad	84.90 313	*i* P		P	17 20 14.5 +2.0
KDZ	Kurdzhali	84.90 313	*i* P		P	17 20 14.1 +1.5
VRI	Vrincioaia	84.91 317	||*i*P		P	17 20 14.7 +2.2
PLOR	Plostina	84.96 317	⇑*i*P		P	17 20 15.1 +2.3
SULR		84.97 316	⇑*i*P		P	17 20 15.6 +2.8
TESR	Tescani	85.12 318	||*i*P		P	17 20 15.6 +2.1
NVL	N'lazarevskaya	85.17 199	||*i*P		P	17 20 16.0 +2.7
NVL			*e**SP		sP	17 20 30.7 -0.2
NVL			*e*S		S	17 30 38.6 -1.2
NVL			*e*SS		SS	17 36 23.1 +9.2
SECR		85.17 316	||*i*P		P	17 20 16.8 +2.9
PTL	Penteli	85.35 309	P		P	17 20 15.0 +0.1
PTL	Penteli	85.35 309	P		P	17 20 15.0 +0.1
MLR	Muntele Rosu	85.36 316	P		P	17 20 16.3 +1.4
	comp=Z,22nm,1.1s,baz=125,slow=0.4,SNR=54					
MLR			S		S	17 30 35.7 -7.2
	comp=Z,0.4nm,0.8s,baz=142,slow=19,SNR=5.7					
MLR	Muntele Rosu	85.36 316	||*i*P		P	17 20 16.5 +1.5
MLR	Muntele Rosu	85.36 316	P		P	17 20 16.3 +1.4
MLR			S		S	17 30 35.7 -7.2
MLR			pmax	pmax		
	comp=Z,55nm,1.2s					
MLR	Muntele Rosu	85.36 316	*e*P		P	17 20 16.4 +1.5
	comp=Z,744nm,1.4s					
ZIMR		85.36 315	⇑*i*P		P	17 20 16.8 +2.0
ANKY	Antikythira Is	85.39 307	P		P	17 20 16.6 +1.5
ANKY	Antikythira Is	85.39 307	*e*P		P	17 20 16.6 +1.5
RZN	Rozhen	85.42 313	*i* P		P	17 20 17.1 +1.7
KAVA	Kavala	85.43 312	P		P	17 20 16.2 +1.0
KAVA	Kavala	85.43 312	*e*P		P	17 20 16.2 +1.0
BILL	Bilibino	85.46 20	*c i*P		P	17 20 14.7 0.0
BILL			*e**SP		pP	17 20 23.0 -4.6
BILL			*i*			17 20 26.9
BILL			*i* S		S	17 30 40.2 -2.4
BILL			SS		SS	17 36 27.0 +8.4
BILL			pmax	pmax		
	comp=Z,114nm,1.2s					
BILL	Bilibino	85.46 20	*e*P		P	17 20 14.4 -0.3
	comp=Z,97nm,1.1s					
PLD	Plovdiv	85.52 313	*i* P		P	17 20 17.5 +1.9
PRAR	RASCA	85.59 318	||*i*P		P	17 20 17.7 +1.8
OUR	Ouranopolis	85.70 311	*e*P		P	17 20 17.4 +0.9
OUR	Ouranopolis	85.70 311	P		P	17 20 17.4 +0.9
OUR	Ouranopolis	85.70 311	*e*P		P	17 20 17.4 +0.9
OUR	Ouranopolis	85.70 311	*e*P		P	17 20 17.4 +0.9
DID	Didima	85.74 308	P		P	17 20 16.7 -0.2
DID	Didima	85.74 308	P		P	17 20 16.7 -0.2
KRND	KRANIDI	85.78 308	P		P	17 20 17.1 +0.1
VLI	Veliai	85.83 307	P		P	17 20 17.1 -0.2
VLI	Veliai	85.83 307	*e*P		P	17 20 17.1 -0.2
DOPR	Dopca	85.85 317	⇑*i*P		P	17 20 19.2 +2.0
PAIG	Paliouri	85.85 311	P		P	17 20 18.0 +0.7
PAIG	Paliouri	85.85 311	*e*P		P	17 20 18.0 +0.7
PAIG	Paliouri	85.85 311	*e*P		P	17 20 18.0 +0.7
MTUR	Matau	85.91 316	||*i*P		P	17 20 21.5 +3.9
VOIR		85.97 316	⇑*i*P		P	17 20 19.3 +1.4
NVR	Nevrokopi	85.98 312	P		P	17 20 18.3 +0.3
NVR	Nevrokopi	85.98 312	P		P	17 20 18.3 +0.3
PGB	Panagyurishte	86.00 313	*i* P		P	17 20 19.6 +1.5
LTK	Loutraki	86.04 309	P		P	17 20 18.1 -0.2
LTK	Loutraki	86.04 309	*e*P		P	17 20 18.1 -0.2
PLG	Polygyros	86.11 311	P		P	17 20 18.5 -0.1
PLG	Polygyros	86.11 311	P		P	17 20 18.5 -0.1
PLG	Polygyros	86.11 311	P		P	17 20 18.5 -0.1
MMB	Musomiste	86.13 319	*i* P		P	17 20 20.0 +1.3
LKR	Lokris	86.13 309	P		P	17 20 18.6 -0.1
LKR	Lokris	86.13 309	P		P	17 20 18.6 -0.1
SRS	Serrai	86.14 312	P		P	17 20 19.1 +0.4
SRS	Serrai	86.14 312	*e*P		P	17 20 19.1 +0.4
SRS	Serrai	86.14 312	*e*P		P	17 20 19.1 +0.4
ARR	Arges	86.24 316	||*i*P		P	17 20 20.0 +0.8
SOH	Sokhos	86.26 311	P		P	17 20 19.9 +0.5
SOH	Sokhos	86.26 311	*e*P		P	17 20 19.9 +0.5
SOH	Sokhos	86.26 311	*e*P		P	17 20 19.9 +0.5
BURAR	Bucovina Array	86.32 318	⇑*i*P		P	17 20 21.9 +2.3
MICGM	Minsk	86.33 326	*e*P		P	17 20 20.0 +0.7
MICGM			*e*S		S	17 30 50.0 -1.6
MICGM			*e*LR	LR		18 01 10.0
MNK	Minsk	86.33 326	*e*P		P	17 20 20.0 +0.7
MNK			*e*S		S	17 30 50.0 -1.6
BUR08	Bucovina Ar. S	86.34 318	*e*P		P	17 20 21.7 +2.0
VLX	Vlachokerasia	86.39 308	P		P	17 20 20.1 -0.1
VLX	Vlachokerasia	86.39 308	*e*P		P	17 20 20.1 -0.1
HORT	Hortiatis	86.41 311	*e*P		P	17 20 21.5 +1.3
HORT	Hortiatis	86.41 311	P		P	17 20 20.1 -0.1
HORT	Hortiatis	86.41 311	P		P	17 20 20.1 -0.1
DSF	Desfina	86.45 309	P		P	17 20 20.0 -0.4
DSF	Desfina	86.45 309	*e*P		P	17 20 20.0 -0.4
MPEP	Malo Peshtene	86.46 314	*i* P		P	17 20 21.6 +1.3
THE	Thessaloniki	86.52 311	P		P	17 20 20.5 -0.1
THE	Thessaloniki	86.52 311	*e*P		P	17 20 20.5 -0.1
THE	Thessaloniki	86.52 311	*e*P		P	17 20 20.5 -0.1
PUL	Pulkovo	86.53 331	||*e*P		P	17 20 21.8 +1.6
PUL			pmax	pmax		
	comp=Z,65nm,0.8s					
KKB	Krupnik	86.66 312	*i* P		P	17 20 22.6 +1.3
KLV	Kalavryta, Ach	86.68 309	P		P	17 20 21.5 0.0
KLV	Kalavryta, Ach	86.68 309	*e*P		P	17 20 21.5 0.0
AGG	Agios Georgios	86.71 310	*e*P		P	17 20 20.7 -0.9
AGG	Agios Georgios	86.71 310	P		P	17 20 21.5 -0.2
AGG	Agios Georgios	86.71 310	*e*P		P	17 20 21.4 -0.2
AGG			pmax	pmax		
	comp=Z,141nm,1.0s					
AGG	Agios Georgios	86.71 310	*e*P		P	17 20 21.4 -0.2
	comp=Z,141nm,1.0s					
ITM	Ithomi	86.71 308	P		P	17 20 22.1 +0.5
ITM	Ithomi	86.71 308	P		P	17 20 22.1 +0.5
LIT	Litokhoron	86.78 311	P		P	17 20 22.3 +0.4
LIT	Litokhoron	86.78 311	*e*P		P	17 20 22.3 +0.4
LIT	Litokhoron	86.78 311	*e*P		P	17 20 22.3 +0.4
ARCR	ARCALIA	86.78 318	⇑*i*P		P	17 20 24.7 +3.0
PYL	PYLOS	86.81 307	P		P	17 20 21.3 -0.8
PYL	PYLOS	86.81 307	*e*P		P	17 20 21.3 -0.8
SERG	Sergoula	86.82 309	P		P	17 20 24.1 +1.9
LAKA	Lakka	86.85 309	P		P	17 20 25.0 +2.7
LAKA	Lakka	86.85 309	*e*P		P	17 20 25.0 +2.7
LOT	Lotru	86.85 316	⇑*i*P		P	17 20 24.2 +1.9
VAY	Valandovo	86.94 312	P		P	17 20 23.3 +0.7
VAY	Valandovo	86.94 312	*e*P		P	17 20 23.7 +1.1
VAY	Valandovo	86.94 312	*e*P		P	17 20 23.3 +0.7
VAY	Valandovo	86.94 312	*e*P		P	17 20 23.3 +0.7
AMT	Artemida-Makis	86.94 308	P		P	17 20 23.2 +0.4
ANX	Ano Chora	86.95 309	P		P	17 20 25.4 +2.5
GRG	Griva	87.00 311	*e*P		P	17 20 23.7 +0.8
GRG	Griva	87.00 311	P		P	17 20 23.5 +0.5
GRG	Griva	87.00 311	*e*P		P	17 20 23.5 +0.5
GRG	Griva	87.00 311	*e*P		P	17 20 23.5 +0.5
DRO	Drossia	87.01 308	P		P	17 20 24.6 +1.5
THL	Klokotos Trika	87.05 310	P		P	17 20 22.7 -0.5
NACGM	Naroch	87.05 326	*e*P		P	17 20 24.0 +1.2
NACGM			PM			17 20 29.0
	comp=Z,0.2nm,0.8s					
NACGM			*e*SKS		S	17 30 57.0 -1.6
NACGM			*e*S		sS	17 31 22.0 +1.9
NACGM			*e*SS		SS	17 36 12.0 -30
NACGM			*e*LR		LR	18 02 04.0
EVR	Evrytania	87.09 309	P		P	17 20 24.3 +0.7
EVR	Evrytania	87.09 309	P		P	17 20 24.3 +0.7
IDID	Didziasalis	87.17 326	*e*P		P	17 20 25.0 +1.6
IDID			IAmb	IAmb		17 20 30.6
	comp=Z,78nm,1.0s					
CJR	Cluj-Napoca	87.21 317	⇑*i*P		P	17 20 27.0 +3.1
RLS	Riolos of Patr	87.22 308	P		P	17 20 25.6 +1.6
RLS	Riolos of Patr	87.22 308	P		P	17 20 25.6 +1.6
PVO	Paravola	87.26 309	P		P	17 20 25.8 +1.5
KZN	Kozani	87.36 311	P		P	17 20 24.5 -0.3
KZN	Kozani	87.36 311	P		P	17 20 24.5 -0.3
KZN	Kozani	87.36 311	P		P	17 20 24.5 -0.3
LVZ	Lovozero	87.46 339	*c i*P		P	17 20 24.5 -0.1
LVZ			pmax	pmax		
	comp=Z,143nm,1.3s					
LVZ	Lovozero	87.46 339	*e*P		P	17 20 24.5 -0.1
	comp=Z,77nm,0.8s					
BMR	Baia Mare	87.47 318	||*i*P		P	17 20 27.6 +2.5
PDO	Prodromos	87.52 309	P		P	17 20 26.8 +1.3
DEV	Deva	87.53 316	⇑*i*P		P	17 20 28.3 +2.9
IZAR	Zarasai	87.55 327	*e*P		P	17 20 26.8 +1.5
IZAR			IAmb	IAmb		17 20 32.2
	comp=Z,53nm,1.1s					
LVV	L'vov	87.55 320	*e*P		P	17 20 26.0 +0.6
LVV			*e*S		S	17 31 00.0 -3.7
LVV			MLR	MLR		
	comp=Z,700nm,22.0s					
ISAL	Salakas	87.57 326	*e*P		P	17 20 26.9 +1.6
ISAL			IAmb	IAmb		17 20 32.4
	comp=Z,48nm,0.9s					
KPRO	Kipourio	87.61 310	P		P	17 20 25.9 -0.1
DSL	Palaion Diasel	87.68 310	P		P	17 20 27.6 +1.3
DSL	Palaion Diasel	87.68 310	*e*P		P	17 20 27.6 +1.3
ZKS	Zakynthos	87.69 308	P		P	17 20 26.0 -0.4
FNA	Florina	87.73 311	*e*P		P	17 20 27.2 +0.6
FNA	Florina	87.73 311	P		P	17 20 26.8 +0.2
FNA	Florina	87.73 311	P		P	17 20 26.8 +0.2
FNA	Florina	87.73 311	P		P	17 20 26.8 +0.2
APA	Apatity	87.78 339	||*i*P		P	17 20 25.0 -1.1
APA			MLR	MLR		
	comp=Z,2μm,17.0s					
BIA	Bitola	87.81 311	*i* P		P	17 20 27.3 +0.3
DRGR		87.83 317	⇑*i*P		P	17 20 28.8 +1.9
SKO	Skopje	87.88 312	P		P	17 20 27.2 0.0
SKO	Skopje	87.88 312	*i* P		P	17 20 27.9 +0.7
SKO	Skopje	87.88 312	*e*P		P	17 20 27.2 0.0
SKO	Skopje	87.88 312	*e*P		P	17 20 27.2 0.0
VLS	Valsamata	87.92 309	P		P	17 20 28.4 +1.0
VLS	Valsamata	87.92 309	P		P	17 20 28.4 +1.0
VLS	Valsamata	87.92 309	P		P	17 20 28.4 +1.0
JAN	Janina	87.95 310	P		P	17 20 29.0 +1.4
JAN	Janina	87.95 310	P		P	17 20 29.0 +1.4
JAN	Janina	87.95 310	P		P	17 20 29.0 +1.4
VSU	Vasula	87.95 329	*c e*P		P	17 20 27.9 +0.8
VSU			pmax	pmax		
	comp=Z,240nm,1.0s					
MDVR	Moldovita	88.16 315	⇑*i*P		P	17 20 30.3 +1.8
OHR	Ohrid	88.22 311	*e*P		P	17 20 29.2 +0.3
IGT	Igoumenitsa	88.32 310	P		P	17 20 30.3 +1.0
IGT	Igoumenitsa	88.32 310	*e*P		P	17 20 30.3 +1.0
IGT	Igoumenitsa	88.32 310	*e*P		P	17 20 30.3 +1.0
KWP	Kalwaria Pacla	88.36 320	*e*P		P	17 20 30.7 +1.4
KWP	Kalwaria Pacla	88.36 320	||*i*P		P	17 20 31.4 +2.1
KWP	Kalwaria Pacla	88.36 320	*e*P		P	17 20 30.7 +1.4
BZS	Buzias	88.37 316	||*i*P		P	17 20 31.4 +2.0
SGD	Sagiada	88.41 310	P		P	17 20 31.1 +1.4
UZH	Uzhgorod	88.44 319	*c i*P		P	17 20 30.8 +1.2
UZH			*i*			17 20 42.4
UZH			*e*			17 24 00.6
UZH			*e*PPP		PPP	17 26 00.4
UZH			*i*			17 30 57.8
UZH			*e*S		S	17 31 11.4 -0.8
UZH			*e*PS		PnS	17 32 16.0 -3.8
UZH			*e*SS		SS	17 37 03.2 +0.1
UZH			*e*SSS		SSS	17 40 36.0
UZH			MLR	MLR		
	comp=N,1μm,18.0s					
UZH			MLR	MLR		
	comp=E,760nm,18.0s					
UZH			MLR	MLR		
	comp=Z,400nm,18.0s					
SIRR	Siria	88.45 317	||*i*P		P	17 20 32.0 +2.2
KOLS	Kolonicke sedl	88.51 319	*e*P		P	17 20 32.4 +2.4
KOLS			*e*			17 24 02.7
KOLS			*e*S		S	17 31 15.5 +2.6
KOLS			pmax	pmax		
	comp=Z,231nm,1.0s					
KOLS	Kolonicke sedl	88.51 319	*e*P		P	17 20 32.4 +2.4
KOLS			*e*			17 20 36.7
KOLS			*e*PP		PP	17 24 02.6 +4.0
KOLS			*e*S		S	17 31 15.5 +2.6
KOLS			*e*L		L	18 06 00.7
KEK	Kerkira	88.76 310	P		P	17 20 32.8 +1.4
KEK	Kerkira	88.76 310	P		P	17 20 32.8 +1.4
SUW	Suwalki	88.90 324	*e*P		P	17 20 32.7 +1.0
SUW	Suwalki	88.90 324	*e*P		P	17 20 32.7 +1.0
TIR	Tirane	88.95 312	⇑*i*P		P	17 20 34.0 +1.8
TIR	Tirane	88.95 312	*e*P		P	17 20 33.0 +0.8
TIR			pmax	pmax		
	comp=Z,111nm,0.9s					
TIR	Tirane	88.95 312	*e*P		P	17 20 33.0 +0.8
	comp=Z,112nm,0.9s					
FIA0	FINESS Array S	89.00 332	*e*P		P	17 20 33.0 +1.0
FIA0	FINESS Array S	89.00 332	*e*P		P	17 20 33.0 +1.0
FIA1	FINESS Array S	89.00 332	*e*P		P	17 20 32.3 +0.4
FINES	FINESS Array B	89.00 332	P		P	17 20 33.0 +1.0
	comp=Z,13nm,0.7s,baz=119,slow=5.7,SNR=34					
FINES			LR	LR		18 04 20.2
	comp=Z,1μm,21.4s,baz=114,slow=38					
FINES	FINESS Array B	89.00 332	P		P	17 20 33.0 +1.0
FINES			pmax	pmax		
	comp=Z,13nm,0.7s					
FINES			MLR	MLR		
	comp=Z,1μm,21.4s					
CRVS	Cervenica-Dubn	89.03 319	*e*P		P	17 20 34.2 +1.8
CRVS			*e*			17 24 08.6
CRVS			*e*S		S	17 31 17.9 +0.1
CRVS	Cervenica-Dubn	89.03 319	*e*P		P	17 20 34.2 +1.8
CRVS			*e*			17 20 38.3
CRVS			*e*PP		PP	17 24 08.6 +5.9
CRVS			*e*S		S	17 31 17.9 +0.1
PVY	Plav	89.06 313	*e*P		P	17 20 33.3 +0.4
IVA	Berane	89.15 313	⇑*i*P		P	17 20 34.2 +0.9
STHS	Stebnicka Huta	89.26 320	*e*P		P	17 20 35.6 +2.1
STHS			pmax	pmax		
	comp=Z,77nm,0.9s					
STHS	Stebnicka Huta	89.26 320	*e*P		P	17 20 35.6 +2.1
STHS			*e*			17 20 40.0
DIVS	Divibare	89.27 314	P		P	17 20 35.6 +1.8
ULC	Ulcinj	89.50 312	⇑*i*P		P	17 20 35.7 +0.9
PDG	Podgorica	89.56 313	⇑*i*P		P	17 20 36.8 +1.8
PDG	Podgorica	89.56 313	P		P	17 20 41.7 +6.7
TTG	Podgorica	89.56 313	⇑*i*P		P	17 20 36.2 +1.2
TTG	Podgorica	89.56 313	P		P	17 20 41.7 +6.7
TTG	Podgorica	89.56 313	P		P	17 20 41.7 +6.7
DRME	Dracevica, Mon	89.57 312	⇑*i*P		P	17 20 36.6 +1.5
PLE	Pljevlja	89.59 313	*e*P		P	17 20 36.1 +0.8
KECS	Kecovo	89.60 319	*e*P		P	17 20 37.0 +1.9
KECS			pmax	pmax		
	comp=Z,28nm,0.9s

OKC			*e*S		**S**	**17 31 39.0**	**+0.2**
OKC			AMS		AMS	18 10 00.0	
	comp=Z,1μm,17.5s						
OKC	**Ostrava-Krasne**	**91.31 320**	*e*P		**P**	**17 20 45.1**	**+2.1**
OKC			*e*			17 20 57.1	
OKC			*e*			17 24 22.4	
OKC			*e*S		**S**	**17 31 39.0**	**+0.2**
OKC			MLR		MLR		
	comp=Z,1μm,17.5s						
BLY	**Banja Luka**	**91.35 315**	⇓ *i*P		**P**	**17 20 45.0**	**+1.7**
CEL	**Celeste**	**91.60 308**	*e*P		**P**	**17 20 46.4**	**+1.6**
	comp=Z,199nm,1.1s						
VNA1	**Neumayer--Stat**	**91.68 198**	P		**P**	**17 20 46.4**	**+2.1**
MORC	**Moravsky Berou**	**91.69 320**	⇑ *i*P		**P**	**17 20 47.2**	**+2.3**
MORC	**Moravsky Berou**	**91.69 320**	*e*P		**P**	**17 20 46.4**	**+1.5**
MORC			pmax		pmax		
	comp=Z,162nm,1.0s						
MORC	**Moravsky Berou**	**91.69 320**	*e*P		**P**	**17 20 46.4**	**+1.5**
	comp=Z,162nm,1.0s						
BEHE	**Becsehely**	**91.83 316**	⇓ *e*P		**P**	**17 20 47.8**	**+2.3**
CUC	**Castrocucco**	**91.84 310**	*e*P		**P**	**17 20 46.5**	**+0.8**
	comp=Z,33nm,1.0s						
VNA3	**Neumayer Olymp**	**91.87 197**	P		**P**	**17 20 47.0**	**+1.7**
KRLC	**Kraliky**	**92.22 320**	*e*P		**P**	**17 20 49.3**	**+2.0**
KRLC			*es*P		**pP**	**17 21 01.1**	**+0.9**
KRLC	**Kraliky**	**92.22 320**	*e*P		**P**	**17 20 49.3**	**+2.0**
KRLC			*e*			17 21 01.1	
VRAC	**Vranov**	**92.25 319**	P		**P**	**17 20 48.3**	**+0.9**
	comp=Z,3.9nm,0.5s,baz=104,slow=4.2,SNR=5.9						
DPC	**Dobruska-Polom**	**92.54 320**	*e*P		**P**	**17 20 50.7**	**+1.9**
DPC			*e*PP		**PP**	**17 24 35.9**	**+5.4**
DPC			*e*S		**S**	**17 31 50.9**	**+1.0**
DPC			AMS		AMS	18 12 10.0	
	comp=Z,1μm,17.8s						
DPC	**Dobruska-Polom**	**92.54 320**	*e*P		**P**	**17 20 50.7**	**+1.9**
DPC			*e*			17 24 35.9	
DPC			*e*S		**S**	**17 31 50.9**	**+1.0**
DPC			MLR		MLR		
	comp=Z,1μm,17.8s						
KSP	**Ksiaz**	**92.61 321**	*e*P		P	17 20 55.0	+6.0
KSP	**Ksiaz**	**92.61 321**	*e*P		P	17 20 55.0	+6.0
UPC	**Upice**	**92.75 320**	*e*P		**P**	**17 20 51.8**	**+2.1**
UPC			*e*PP		**PP**	**17 24 34.2**	**+2.1**
UPC			*e*S		**S**	**17 31 52.6**	**+0.9**
UPC			AMS		AMS	18 08 30.0	
	comp=Z,1μm,19.4s						
UPC	**Upice**	**92.75 320**	*e*P		**P**	**17 20 51.8**	**+2.1**
UPC			*e*			17 24 34.2	
UPC			*e*S		**S**	**17 31 52.6**	**+0.9**
UPC			MLR		MLR		
	comp=Z,1μm,19.4s						
ARSA	**Arzberg**	**92.76 317**	*e*PcP		**P**	**17 20 51.6**	**+1.8**
	comp=Z,20nm,1.1s,SNR=11						
BOJS	**Bojanci**	**92.78 315**	*i* P		**P**	**17 20 51.6**	**+1.6**
BOJS			*i*			17 21 05.6	
GAMB	**Gambell**	**92.81 26**	*e*P		**P**	**17 20 47.8**	**-1.8**
	comp=Z,191nm,1.4s						
GAMB			*es*P		**sP**	**17 21 05.2**	**-2.1**
TREC	**Trest**	**92.97 319**	*e*P		**P**	**17 20 52.5**	**+1.7**
TREC			*es*P		**pP**	**17 21 04.5**	**+0.8**
TREC			*e*SKS		**SKSac**	**17 31 26.3**	**+4.9**
TREC			AMS		AMS	18 06 20.0	
	comp=Z,900nm,17.5s						
TREC	**Trest**	**92.97 319**	*e*P		**P**	**17 20 52.5**	**+1.7**
TREC			*e*			17 21 04.5	
TREC			*e*			17 31 26.3	
TREC			MLR		MLR		
	comp=Z,900nm,17.5s						
SOKA	**Soboth**	**93.04 316**	*e*PcP		**P**	**17 20 53.0**	**+1.8**
	comp=Z,70nm,1.1s,SNR=27						
VISS	**Visnje**	**93.10 316**	*e*P		**P**	**17 20 52.9**	**+1.5**
VISS			*i*			17 21 08.0	
NIKH	**Nikolski High**	**93.13 37**	*e*P		**P**	**17 20 51.0**	**-0.3**
	comp=Z,277nm,0.8s						
LJU	**Ljubljana**	**93.34 316**	*e*P		**P**	**17 20 54.4**	**+1.9**
LJU			*i*			17 21 08.0	
OBKA	**Obir**	**93.36 316**	*e*PcP		**PcP**	**17 20 55.4**	**+2.2**
	comp=Z,52nm,1.3s						
GOPC	**GO Pecny, Ondr**	**93.48 320**	*e*P		**P**	**17 20 54.7**	**+1.6**
GOPC			*e*S		**S**	**17 31 56.5**	**-1.7**
GOPC			AMS		AMS	18 11 10.0	
	comp=Z,1μm,19.3s						
GOPC	**GO Pecny, Ondr**	**93.48 320**	*e*P		**P**	**17 20 54.7**	**+1.6**
GOPC			*e*S		**S**	**17 31 56.5**	**-1.7**
GOPC			MLR		MLR		
	comp=Z,1μm,19.3s						
CLTB	**Caltabellotta**	**93.64 307**	*e*P		**P**	**17 20 53.7**	**-0.5**
	comp=Z,52nm,1.2s						
PRU	**Pruhonice**	**93.64 320**	*e*P		**P**	**17 20 55.4**	**+1.6**
PRU			*es*P		**pP**	**17 21 07.3**	**+0.6**
PRU			*e*PP		**PP**	**17 24 44.6**	**+5.5**
PRU			*e*SKS		**SKSac**	**17 31 22.9**	**-2.1**
PRU			*e*S		**ScS**	**17 32 04.8**	**+3.7**
PRU			AMS		AMS	18 09 50.0	
	comp=Z,800nm,19.1s						
PRU	**Pruhonice**	**93.64 320**	*e*P		**P**	**17 20 55.4**	**+1.6**
PRU			*e*			17 21 07.3	
PRU			*e*			17 24 44.6	
PRU			*e*			17 31 22.9	
PRU			*e*S		**ScS**	**17 32 04.8**	**+3.7**
PRU			MLR		MLR		
	comp=Z,800nm,19.1s						
JAVS	**Javornik**	**93.65 316**	*i* P		**P**	**17 20 55.1**	**+1.1**
JAVS			*i*			17 21 09.5	
PVCC	**Panska Ves**	**93.67 320**	*e*P		**P**	**17 20 55.7**	**+1.8**
PVCC			*e*S		**S**	**17 32 00.8**	**+1.0**
PVCC			AMS		AMS	18 08 10.0	
	comp=Z,900nm,16.1s						
PVCC	**Panska Ves**	**93.67 320**	*e*P		**P**	**17 20 55.7**	**+1.8**
PVCC			*e*S		**S**	**17 32 00.8**	**+1.0**
PVCC			MLR		MLR		
	comp=Z,900nm,16.1s						
AQU	**L'Aquila**	**93.86 312**	*e*P		**P**	**17 20 55.5**	**+0.4**
AQU			pmax		pmax		
	comp=Z,79nm,1.1s						
AQU	**L'Aquila**	**93.86 312**	*e*P		**P**	**17 20 55.5**	**+0.4**
	comp=Z,80nm,1.1s						
MYKA	**Terra Mystica**	**93.99 316**	*e*PcP		**P**	**17 20 57.8**	**+2.2**
	comp=Z,50nm,1.3s						
BRG	**Berggiesshubel**	**94.09 321**	*e*P		**P**	**17 20 57.3**	**+1.4**
	comp=Z,17nm,1.2s						
BRG			*i*			17 21 11.8	
	comp=Z,29nm,1.2s						
BRG			*e*PP		**PP**	**17 24 42.5**	**-0.1**
	comp=Z,46nm,1.6s						
BRG			S		**S**	**17 32 04.0**	**+0.5**
BRG			PS		**PS**	**17 33 12.0**	**-12**
BRG			SS		**SS**	**17 38 21.0**	**-3.4**
BRG	**Berggiesshubel**	**94.09 321**	*e*P		**P**	**17 20 57.3**	**+1.4**
BRG			*i*			17 21 11.8	
BRG			*e*			17 24 42.5	
BRG			S		**S**	**17 32 04.0**	**+0.5**
BRG			SS		**SS**	**17 38 21.0**	**-3.4**
BRG			pmax		pmax		
	comp=Z,17nm,1.3s						
BRG			pmax		pmax		
	comp=Z,29nm,1.2s						
BRG			pmax		pmax		
	comp=Z,47nm,1.6s						
BRG			MLR		MLR		
	comp=N,551nm,22.1s						
BRG			MLR		MLR		
	comp=E,1μm,20.5s						
BRG			MLR		MLR		
	comp=Z,1μm,20.5s						
GEA0	**GERESS Array S**	**94.11 319**	*e*P		**P**	**17 20 56.8**	**+0.7**
GEC2	**GERESS Array S**	**94.11 319**	*e*P		**P**	**17 20 56.3**	**+0.2**
GEC2			pmax		pmax		
	comp=Z,69nm,1.3s						
GEC2	**GERESS Array S**	**94.11 319**	*e*P		**P**	**17 20 56.3**	**+0.2**
	comp=Z,69nm,1.3s						
GERES	**GERESS Array B**	**94.11 319**	P		**P**	**17 20 57.3**	**+1.1**
	comp=Z,9.2nm,0.8s,baz=98,slow=4.0,SNR=38						
GERES			PP		**PP**	**17 24 43.9**	**+1.0**
	comp=Z,5.8nm,1.0s,baz=90,slow=8.0,SNR=4.7						
KHC	**Kasperske Hory**	**94.21 319**	*e*P		**P**	**17 20 57.8**	**+1.3**
KHC			*ex*		x	17 21 08.7	
KHC			*ex*		x	17 21 20.2	
KHC			*e*PP		**PP**	**17 24 45.1**	**+1.5**
KHC			*e*S		**S**	**17 32 04.6**	**-0.1**
KHC			AMS		AMS	18 11 50.0	
	comp=Z,2μm,20.1s						
KHC	**Kasperske Hory**	**94.21 319**	*e*P		**P**	**17 20 57.8**	**+1.3**
KHC			*e*			17 21 08.7	
KHC			*e*			17 24 45.1	
KHC			*e*S		**S**	**17 32 04.6**	**-0.1**
KHC			MLR		MLR		
	comp=Z,2μm,20.1s						
KHC	**Kasperske Hory**	**94.21 319**	*e*P		**P**	**17 20 56.2**	**-0.3**
	comp=Z,26nm,1.9s						
KBA	**Koelnbreinsper**	**94.23 317**	*e*PcP		**P**	**17 20 57.8**	**+0.9**
	comp=Z,28nm,1.2s,SNR=14						
UNV	**Unalaska Valle**	**94.60 36**	*e*P		**P**	**17 20 57.2**	**-0.8**
	comp=Z,55nm,1.0s						
CLL	**Collm**	**94.71 321**	⇓ *i*P		**P**	**17 21 00.0**	**+1.3**
	comp=Z,14nm,1.2s						
CLL			*i*			17 21 03.5	
	comp=Z,23nm,1.1s						
CLL			*e*			17 21 14.0	
CLL			*e*			17 24 24.0	
CLL			*e*PP		**PP**	**17 24 48.0**	**+0.6**
CLL			*e*			17 24 54.0	
CLL			*e*			17 25 04.0	
CLL			*e*SKSac		**SKSac**	**17 31 33.0**	**+2.3**
CLL			*e*S		**ScS**	**17 32 10.0**	**+0.1**
CLL			*e*PS		**PS**	**17 33 30.0**	**-0.3**
CLL			*e*SS		**SS**	**17 38 24.0**	**-9.2**
CLL			*e*SSS		SSS	17 42 18.0	
CLL			*e*			17 43 42.0	
CLL			LmH			18 09 00.0	
	comp=N,1μm,22.0s						
CLL			LmH			18 09 00.0	
	comp=E,700nm,20.3s						
CLL			LmV			18 10 00.0	
	comp=Z,1μm,20.9s						
CLL	**Collm**	**94.71 321**	⇓ *i*P		**P**	**17 21 00.0**	**+1.3**
CLL			*e*			17 31 33.0	
CLL			*e*S		**ScS**	**17 32 10.0**	**+0.1**
CLL			pmax		pmax		
	comp=Z,14nm,1.2s						
CLL			MLR		MLR		
	comp=Z,1μm,20.9s						
CLL	**Collm**	**94.71 321**	*e*P		**P**	**17 20 59.6**	**+1.0**
	comp=Z,18nm,1.0s						
HFS	**Hagfors**	**94.81 330**	P		**P**	**17 21 00.0**	**+1.1**
	comp=Z,26nm,0.9s,baz=111,slow=3.7,SNR=14						
HFS			PP		**PP**	**17 24 45.5**	**-2.3**
	comp=Z,13nm,1.0s,baz=113,slow=11,SNR=3.7						
HFS	**Hagfors**	**94.81 330**	P		**P**	**17 21 00.0**	**+1.1**
HFS						17 24 45.5	
HFS			pmax		pmax		
	comp=Z,35nm,1.0s						
HFS			pmax		pmax		
	comp=Z,13nm,1.0s						
SPA0	**Spitsbergen Ar**	**94.97 348**	*e*P		**P**	**17 20 59.3**	**0.0**
SPITS	**Spitsbergen Ar**	**94.97 348**	P		**P**	**17 20 59.2**	**-0.1**
	comp=Z,12nm,0.6s,baz=129,slow=8.7,SNR=26						
NKC	**Novy Kostel**	**95.01 320**	*e*P		**P**	**17 21 01.1**	**+1.0**
NKC			AMS		AMS	18 09 40.0	
	comp=Z,1μm,20.2s						
NKC	**Novy Kostel**	**95.01 320**	*e*P		**P**	**17 21 01.1**	**+1.0**
NKC			MLR		MLR		
	comp=Z,1μm,20.2s						
AKUT	**Akutan**	**95.05 36**	*e*P		**P**	**17 20 59.5**	**-0.6**
	comp=Z,459nm,1.8s						
WTTA	**Wattenberg**	**95.40 317**	*e*PcP		**P**	**17 21 04.0**	**+1.8**
	comp=Z,25nm,1.1s						
MOTA	**Moosalm**	**95.77 317**	*e*PcP		**P**	**17 21 04.6**	**+0.8**
	comp=Z,21nm,1.0s,SNR=12						
KBS	**Kingsbay**	**95.87 349**	*e*P		**P**	**17 21 03.5**	**+0.1**
KBS			pmax		pmax		
	comp=Z,48nm,1.1s						
KBS	**Kingsbay**	**95.87 349**	*e*P		**P**	**17 21 03.5**	**+0.1**
	comp=Z,48nm,1.1s						
RETA	**Reutte**	**96.00 317**	*i* PcP		**P**	**17 21 06.0**	**+1.2**
	comp=Z,44nm,1.3s						
FETA	**Feichten**	**96.01 317**	*e*PcP		**P**	**17 21 06.4**	**+1.4**
	comp=Z,30nm,1.3s,SNR=6.4						
NB2	**NORSAR Subarra**	**96.06 331**	P		**P**	**17 21 05.1**	**+0.4**
	comp=Z,1.5nm,0.6s,baz=89,slow=5.1						
NB200	**NORSAR Array S**	**96.06 331**	*e*P		**P**	**17 21 05.1**	**+0.4**
NB200			*e*PP		**PP**	**17 24 58.7**	**+1.0**
NB200			*e*PKKPbc		**PKKPbc**	**17 37 53.0**	**-1.7**
NOA	**NORSAR Array B**	**96.06 331**	P		**P**	**17 21 05.1**	**+0.4**
	comp=Z,6.5nm,1.0s,baz=92,slow=4.6,SNR=8.2						
NOA			PP		**PP**	**17 24 58.7**	**+1.0**
	comp=Z,5.0nm,0.8s,baz=88,slow=7.6,SNR=5.7						
NOA			PKKPbc		**PKKPbc**	**17 37 53.0**	**-1.7**
	comp=Z,0.9nm,0.8s,baz=256,slow=2.1,SNR=3.2						
NOA			LR		LR	18 08 34.7	
	comp=Z,842nm,21.0s,baz=100,slow=38						
VLC	**Villacollemand**	**96.16 314**	PFAKE			17 21 20.0	+15
VLC			LR		LR		
	comp=Z,982nm,22.0s						
NBO02	**NORSAR Array S**	**96.23 331**	*e*P		**P**	**17 21 06.3**	**+0.8**
FUORN	**Ofenpass-Fuorn**	**96.32 316**	*e*P		**P**	**17 21 07.5**	**+1.0**
	comp=Z,158nm,1.8s						
DAVOX	**Davos/Dischmat**	**96.59 316**	P		**P**	**17 21 09.0**	**+1.4**
	comp=Z,8.4nm,0.7s,baz=225,slow=7.1,SNR=4.2						
DAVA	**Damuels**	**96.60 317**	*e*PcP		**P**	**17 21 09.1**	**+1.5**
	comp=Z,22nm,0.8s,SNR=9.2						
KEST	**Kesra**	**96.64 305**	P		**P**	**17 21 09.8**	**+1.9**
	comp=Z,24nm,1.0s,baz=54,slow=3.7,SNR=9.0						
KEST			LR		LR	18 08 11.3	
	comp=Z,817nm,19.1s,baz=22,slow=38						
KEST	**Kesra**	**96.64 305**	*e*P		**P**	**17 21 09.9**	**+1.9**
	comp=Z,33nm,1.1s						
KONO	**Kongsberg**	**96.86 329**	PFAKE			17 21 20.0	+12
KONO			LR		LR		
	comp=Z,2μm,19.0s						
TUE	**Stuetta**	**96.95 316**	*e*P		**P**	**17 21 09.9**	**+0.6**
	comp=Z,22nm,1.3s						
BFO	**Black Forest**	**97.66 318**	*i* P		Pdif	17 21 14.6	+2.4
BFO	**Black Forest**	**97.66 318**	*e*P		Pdif	17 21 13.3	+1.0
	comp=Z,24nm,1.4s						
LANF	**Langenberg**	**98.00 319**	*e*P		Pdif	17 21 15.4	+1.7
ABSA	**Djebel Ababsia**	**98.17 306**	P		PP	17 25 27.3	+13
CMAH	**Djebel Manchou**	**98.23 306**	P		PP	17 25 24.9	+10
SENIN	**Lac Senin/Sane**	**98.36 316**	*e*P		Pdif	17 21 19.2	+3.6
	comp=Z,20nm,1.3s						
ECH	**Echery**	**98.44 318**	*e*P		Pdif	17 21 15.9	+0.2
MOF	**Molkenrain**	**98.46 317**	*e*P		Pdif	17 21 19.3	+3.4
LOMF	**Lomont**	**98.67 317**	*e*P		Pdif	17 21 18.7	+1.8
BNI	**Bardonecchia**	**98.81 315**	PFAKE			17 21 30.0	+12
BNI			LR		LR		
	comp=Z,2μm,21.0s						
WLF	**Walferdange**	**99.07 319**	PFAKE			17 21 30.0	+12
WLF			LR		LR		
	comp=Z,936nm,20.0s						
TAM	**Tamanrasset**	**99.50 292**	*e*P		**Pdif**	**17 21 22.7**	**+1.5**
TAM			*e*			17 25 24.4	
TAM			pmax		pmax		
	comp=Z,10.0nm,1.1s						
TAM	**Tamanrasset**	**99.50 292**	*e*P		**Pdif**	**17 21 22.7**	**+1.5**
	comp=Z,10nm,1.1s						
TAM			*e*PP		**PP**	**17 25 24.4**	**-0.9**
SET	**Setif**	**99.85 306**	P		**PP**	**17 25 21.0**	**-6.6**
TT01	**Tatalina**	**99.86 27**	*e*Pdif		**Pdif**	**17 21 21.5**	**-0.2**
TT01			*e*PP		**PP**	**17 25 19.9**	**-6.8**
TTA	**Tatalina**	**99.86 27**	*e*P		**Pdif**	**17 21 22.1**	**+0.3**
TTA			pmax		pmax		
	comp=Z,48nm,1.5s						
TTA	**Tatalina**	**99.86 27**	*e*Pdif		**Pdif**	**17 21 22.1**	**+0.3**
	comp=Z,48nm,1.5s						
SSB	**Saint Sauveur**	**100.32 315**	PFAKE			17 21 30.0	+5.8
SSB			LR		LR		
	comp=Z,1μm,19.0s						
PLDF	**La Plantade**	**100.93 316**	*e*P		**Pdif**	**17 21 29.8**	**+2.9**
LBL	**Lubilhac**	**101.23 315**	*e*P		**Pdif**	**17 21 31.9**	**+3.6**
AGO	**Saint Agoulin**	**101.27 316**	*e*P		**Pdif**	**17 21 34.2**	**+5.8**
COLD	**Coldfoot**	**101.55 22**	*e*Pdif		**Pdif**	**17 21 29.3**	**+0.1**
COLD			*e*PKKPbc		**PKKPbc**	**17 37 38.6**	**-0.8**
CAST	**Castle Rocks**	**101.55 26**	*e*Pdif		**Pdif**	**17 21 29.6**	**+0.3**
CAST			*e*PP		**PP**	**17 25 36.6**	**-2.8**
PPLA	**Purkeypile**	**101.60 27**	*e*Pdif		**Pdif**	**17 21 30.3**	**+0.7**
PPLA			*e*PP		**PP**	**17 25 36.2**	**-3.7**
MLY	**Manley**	**101.82 25**	*e*Pdif		**Pdif**	**17 21 30.3**	**-0.1**
MLY			*e*PP		**PP**	**17 25 39.4**	**-2.0**
BPAW	**Bear Paw Mtn.**	**101.90 26**	*e*Pdif		**Pdif**	**17 21 30.6**	**-0.2**
BPAW			*e*PP		**PP**	**17 25 44.0**	**+2.0**
OHAK	**Old Harbor**	**101.96 33**	*e*Pdif		**Pdif**	**17 21 30.4**	**-0.7**
OHAK			*e*PP		**PP**	**17 25 41.9**	**-0.7**
SPU	**Mount Spurr**	**101.97 29**	*e*Pdif		**Pdif**	**17 21 30.6**	**-0.5**
SPU			*e*PP		**PP**	**17 25 37.9**	**-4.7**
KDAK	**Kodiak Island**	**102.25 32**	*e*P		**Pdif**	**17 21 33.0**	**+0.6**
KDAK	**Kodiak Island**	**102.25 32**	*e*Pdif		**Pdif**	**17 21 33.0**	**+0.6**
TRF	**Thorofare Moun**	**102.34 26**	*e*Pdif		**Pdif**	**17 21 31.9**	**-1.0**
DAG	**Danmarks Havn**	**102.61 348**	*i* P		**Pdif**	**17 21 33.1**	**-0.5**
	comp=Z,16nm,1.1s						
DAG			*i*			17 21 47.9	
DAG	**Danmarks Havn**	**102.61 348**	*i* P		PP	17 25 35.9	-11
DAG	**Danmarks Havn**	**102.61 348**	*i* P		**Pdif**	**17 21 33.1**	**-0.5**
DAG			pmax		pmax		
	comp=Z,20nm,1.1s						
TOA0	**Torodi Ar. Sit**	**102.71 282**	*e*Pdif		**Pdif**	**17 21 35.0**	**-0.4**
TOA0			*e*PP		PP	17 25 40.8	-8.7
TORD	**Torodi Ar. Bea**	**102.71 282**	Pdiff		**Pdif**	**17 21 35.6**	**+0.2**
	comp=Z,4.5nm,1.0s,baz=92,slow=5.1,SNR=17						
TORD			PP		**PP**	**17 25 51.1**	**+1.6**
	comp=Z,3.1nm,1.1s,baz=114,slow=7.5,SNR=4.3						
TORD			PKKPbc		**PKKPbc**	**17 37 35.3**	**+0.9**
	comp=Z,2.1nm,0.8s,baz=305,slow=4.4,SNR=9.3						
TOA1	**Torodi Ar. Sit**	**102.72 282**	*e*Pdif		**Pdif**	**17 21 35.6**	**+0.2**
TOA1			*e*PP		**PP**	**17 25 51.1**	**+1.5**
TOA1			*e*PKKPbc		**PKKPbc**	**17 37 35.3**	**+1.0**
BRLK	**Bradley Lake**	**102.79 30**	*e*Pdif		**Pdif**	**17 21 34.6**	**-0.3**
MCK	**McKinley**	**102.87 26**	*e*P		**Pdif**	**17 21 34.6**	**-0.5**
MCK			*e*			17 25 49.7	
MCK	**McKinley**	**102.87 26**	*e*Pdif		**Pdif**	**17 21 34.6**	**-0.5**
MCK			*e*PP		**PP**	**17 25 49.7**	**+0.4**
RND	**Reindeer**	**102.98 26**	*e*P		**Pdif**	**17 21 35.4**	**-0.2**
RND	**Reindeer**	**102.98 26**	*e*Pdif		**Pdif**	**17 21 35.4**	**-0.2**
RND			*e*PP		**PP**	**17 25 44.9**	**-5.3**
COLA	**College**	**103.05 25**	PFAKE			17 21 50.0	+14
COLA			LR		LR		
	comp=Z,892nm,20.0s						
WRH	**Wood River Hil**	**103.05 25**	*e*Pdif		**Pdif**	**17 21 35.7**	**-0.1**
WRH			*e*PP		**PP**	**17 25 47.2**	**-3.3**
WRH			*e*PKKPbc		**PKKPbc**	**17 37 33.5**	**-1.5**
RC01	**Rabbit Creek A**	**103.09 29**	*e*Pdif		**Pdif**	**17 21 36.0**	**-0.1**
RC01			*e*PP		**PP**	**17 25 50.7**	**-0.3**
TBI	**Tubuai**	**103.27 115**	*e*PP		PP	17 25 47.7	-5.7
	comp=Z,53nm,27.5s						
TBI			*e*Sdif		Sdif	17 33 18.2	-4.3
	comp=Z,466nm,32.0s						
TBI			*e*SS		**SS**	**17 40 39.0**	**+4.8**
	comp=Z,651nm,32.8s						
TBI	**Tubuai**	**103.27 115**	*e*LR		LR	17 55 34.5	
	comp=Z,750nm,22.0s						
SEW	**Seward**	**103.43 29**	*e*PP		PP	17 25 52.2	-1.3
ILAR	**Eielson Array**	**103.47 25**	Pdiff		**Pdif**	**17 21 38.6**	**+0.9**
	comp=Z,0.6nm,0.6s,baz=299,slow=4.0,SNR=7.0						
ILAR			PP		**PP**	**17 25 51.6**	**-2.1**
	comp=Z,10nm,1.2s,baz=287,slow=7.6,SNR=4.7						
ILAR			PKKPbc		**PKKPbc**	**17 37 31.9**	**-1.8**
	comp=Z,3.2nm,0.7s,baz=129,slow=2.0,SNR=19						
ILB	**Eielson Array**	**103.47 25**	*e*Pdif		**Pdif**	**17 21 38.6**	**+0.9**
ILB			*e*PP		**PP**	**17 25 51.6**	**-2.1**
ILB			*e*PKKPbc		**PKKPbc**	**17 37 31.9**	**-1.8**
FYU	**Fort Yukon**	**103.62 23**	*e*Pdif		**Pdif**	**17 21 39.5**	**+1.3**
FYU			*e*PP		**PP**	**17 25 55.5**	**+0.8**
EKA	**Eskdalemuir Ar**	**104.12 326**	PP		PP	17 25 59.6	+0.8
	comp=Z,26nm,1.0s,baz=82,slow=8.1,SNR=9.3						
ESK	**Eskdalemuir**	**104.15 326**	PFAKE			17 21 50.0	+9.1
ESK			LR		LR		
	comp=Z,2μm,20.0s						
PPT2	**Papeete2**	**104.31 110**	*e*PP		PP	17 26 02.4	+1.0
	comp=Z,78nm,23.0s						
PPT2			*e*Sdif		Sdif	17 33 26.6	-4.9
	comp=Z,550nm,26.8s						
PPT2	**Papeete2**	**104.31 110**	*e*LR		LR	17 56 10.0	
	comp=Z,1μm,24.0s						
DOT	**Dot Lake**	**104.98 25**	*e*Pdif		**Pdif**	**17 21 43.7**	**-0.7**
DOT			*e*PP		**PP**	**17 26 05.3**	**+0.4**
BMRM	**Bremner River**	**105.54 28**	*e*Pdif		**Pdif**	**17 21 47.0**	**0.0**
EGAK	**Eagle**	**105.80 24**	*e*Pdif		**Pdif**	**17 21 49.2**	**+1.2**
EGAK			*e*PP		**PP**	**17 26 10.5**	**-0.4**
BALM	**Baldy**	**106.56 28**	*e*P		**Pdif**	**17 21 51.2**	**-0.5**
BALM			*e*			17 26 18.8	
BALM	**Baldy**	**106.56 28**	*e*Pdif		**Pdif**	**17 21 51.2**	**-0.5**
BALM			*e*PP		**PP**	**17 26 18.8**	**+2.0**
SCO	**Scoresbysund**	**106.69 343**	*i* P		**PP**	**17 26 17.8**	**+0.6**
SHEL	**Horse Pasture**	**106.73 252**	PFAKE			17 26 10.0	
SHEL			LR		LR		
	comp=Z,2μm,20.0s						
DAWY	**Dawson**	**106.78 24**	*e*Pdif		**Pdif**	**17 21 51.9**	**-0.6**
DAWY			*e*PP		**PP**	**17 26 11.8**	**-6.5**
DAWY			*e*PKKPbc		**PKKPbc**	**17 37 21.5**	**-2.2**
ES19	**SONSECA Array**	**106.98 310**	*e*PP		PP	17 26 18.8	-1.9
ES19			*e*PKKPab		**PKKPab**	**17 37 36.6**	**+0.4**
ESDC	**Sonseca Array**	**107.04 310**	PP		PP	17 26 18.2	-2.8
	comp=Z,6.3nm,1.1s,baz=78,slow=5.8,SNR=8.0						
ESDC			PKKPab		**PKKPab**	**17 37 37.0**	**+1.0**
	comp=Z,1.6nm,0.6s,baz=278,slow=4.4,SNR=11						
INK	**Inuvik**	**107.08 19**	PKKPbc		PKKPbc	17 37 20.4	-2.4
	comp=Z,6.1nm,0.9s,baz=96,slow=4.1,SNR=8.4						
INK	**Inuvik**	**107.08 19**	*e*P		**Pdif**	**17 21 51.5**	**-2.1**
INK	**Inuvik**	**107.08 19**	*e*Pdif		**Pdif**	**17 21 51.5**	**-2.1**
INK			*e*PP		**PP**	**17 26 14.5**	**-5.7**
INK			*e*PKKPdf		**PKKPdf**	**17 37 32.5**	**-2.6

baz=298
HUMO Hull Mountain 124.98 41 *e*PKPdf **PKPdf 17 26 39.1 +1.3**
C09A Chrisman Ranch 125.02 33 *e*PKPdf **PKPdf 17 26 38.3 +0.6**
CROR Criterion Ridg 125.03 37 P **PKPdf 17 26 39.5 +1.6**
D08A Wollman Farm, 125.09 34 *e*PKPdf **PKPdf 17 26 38.1 +0.2**
HAWA Hanford 125.12 35 *e*PKPdf **PKPdf 17 26 36.9 -1.0**
I05D Terrebonne, OR 125.15 38 P **PKPdf 17 26 39.8 +1.7**
baz=301
NEW Newport 125.36 32 PKP **PKPdf 17 26 39.1 +0.7**
comp=Z,5.5nm,0.8s,baz=128,slow=1.9,SNR=4.8
NEW Newport 125.36 32 P **PKPdf 17 26 39.9 +1.5**
baz=308
NEW Newport 125.36 32 *e*PKPdf **PKPdf 17 26 39.4 +1.0**
FCC Fort Churchill 125.38 11 *e*PKIKP **PKPdf 17 26 37.9 -0.1**
FCC Fort Churchill 125.38 11 *e*PKPdf **PKPdf 17 26 37.9 -0.1**
YBH Yreka Blue Hor 125.56 42 PKP **PKPdf 17 26 40.4 +1.4**
comp=Z,3.3nm,0.8s,baz=100,slow=3.8,SNR=5.6
YBH Yreka Blue Hor 125.56 42 *e*PKPdf **PKPdf 17 26 41.2 +2.2**
M02C Callahan 125.62 42 P **PKPdf 17 26 41.3 +2.1**
baz=298
J05D Fort Rock, OR 125.75 39 P **PKPdf 17 26 41.2 +1.7**
baz=300
N02D Trinity Center 125.92 42 P **PKPdf 17 26 41.7 +1.9**
baz=298
G08A Pilot Rock 126.07 36 *e*PKPdf **PKPdf 17 26 40.0 0.0**
M04C Macdoel 126.11 41 P **PKPdf 17 26 41.8 +1.7**
baz=299
WDC Whiskeytown Da 126.21 43 *e*PKIKP **PKPdf 17 26 40.1 -0.1**
WDC Whiskeytown Da 126.21 43 *e*PKPdf **PKPdf 17 26 40.1 -0.1**
WDC *e*PP **PP 17 28 29.6 -5.0**
K05A Summer Lake 126.25 40 *e*PKPdf **PKPdf 17 26 42.2 +1.7**
K05A *e*PP **PP 17 28 29.8 -5.2**
F10A Beach Ranch, E 126.67 35 *e*PKPdf **PKPdf 17 26 42.2 +1.1**
O03D Paynes Creek 126.84 43 P **PKPdf 17 26 42.4 +0.9**
baz=298
BSMT Bassoo Peak 126.84 31 *e*PKPdf **PKPdf 17 26 42.1 +0.7**
BSMT *e*PP **PP 17 28 36.7 -1.9**
BLMT Blacktail Moun 126.96 31 *e*PKPdf **PKPdf 17 26 39.8 -1.9**
BLMT *e*PP **PP 17 28 34.1 -5.2**
FFC Flin Flon 127.01 18 *e*PKIKP **PKPdf 17 26 41.4 +0.1**
FFC Flin Flon 127.01 18 *e*PKPdf **PKPdf 17 26 41.4 +0.1**
FFC *e*PP PP 17 28 28.7 -10
MOD Modoc Plateau 127.04 40 *e*PKPdf **PKPdf 17 26 42.7 +0.7**
MOD *e*PP **PP 17 28 34.8 -5.4**
BMO Blue Mountains 127.28 36 PFAKE 17 26 50.0 +7.8
BMO LR LR
comp=Z,531nm,20.0s
ORV Oroville 127.39 43 *e*PKIKP **PKPdf 17 26 43.5 +1.0**
ORV *e* 17 28 37.3
ORV Oroville 127.39 43 *e*PKPdf **PKPdf 17 26 43.5 +1.0**
ORV *e*PP **PP 17 28 37.2 -5.2**
SWMT Swartz Lake 127.47 31 *e*PKPdf **PKPdf 17 26 42.7 +0.1**
SWMT *e*PP PP 17 28 34.2 -8.5
WVOR Wild Horse Val 127.83 39 *e*PKIKP **PKPdf 17 26 44.6 +1.2**
WVOR *e* 17 28 43.0
WVOR Wild Horse Val 127.83 39 *e*PKPdf **PKPdf 17 26 44.6 +1.2**
WVOR *e*PP **PP 17 28 43.0 -2.2**
MSO Missoula 127.94 32 P **PKPdf 17 26 44.5 +1.0**
baz=310
MSO Missoula 127.94 32 *e*PKPdf **PKPdf 17 26 43.8 +0.4**
MSO *e*PP **PP 17 28 44.7 -1.0**
AFDM Forest Hills D 128.03 44 *e*PKPdf **PKPdf 17 26 45.0 +1.2**
AFDM *e*PP **PP 17 28 45.7 -1.0**
AFDM *e*SKPdf **SKPdf 17 30 13.8 -2.1**
CHMT Chamberlain Mo 128.25 31 *e*PKPdf **PKPdf 17 26 44.6 +0.4**
PAHR Pah Rah Range 128.75 42 *e*PKPdf **PKPdf 17 26 45.9 +0.7**
CMB Columbia Colle 128.87 45 *e*PKIKP **PKPdf 17 26 46.4 +1.0**
CMB Columbia Colle 128.87 45 *e*PKPdf **PKPdf 17 26 46.4 +1.0**
MFID Camas Ranch 128.98 36 *e*PKPdf **PKPdf 17 26 46.8 +1.2**
MFID *e*PP **PP 17 28 46.3 -6.4**
EGMT Eagleton 129.22 28 PFAKE 17 27 00.0 +14
EGMT LR LR
comp=Z,1μm,20.0s
WAKR Walker 129.30 44 *e*PKPdf **PKPdf 17 26 46.4 0.0**
LRM Limekiln Ridge 129.38 32 *e*PKPdf **PKPdf 17 26 47.7 +1.3**
DLMT Dillon 129.60 33 *e*PKPdf **PKPdf 17 26 48.3 +1.5**
HLID Hailey 129.72 35 P **PKPdf 17 26 49.4 +2.4**
baz=308
HLID Hailey 129.72 35 *e*PKPdf **PKPdf 17 26 49.0 +2.0**
HLID *e*SKPdf SKPbc 17 30 06.2 +0.2
BMN Battle Mountai 129.79 40 *e*PKIKP **PKPdf 17 26 48.5 +1.3**
BMN Battle Mountai 129.79 40 *e*PKPdf **PKPdf 17 26 48.5 +1.3**
BMN *e*PP PP 17 28 46.7 -12
BMN *e*SKPdf SKPbc 17 30 07.3 +0.9
MCMT McKenzie Canyo 129.81 33 *e*PKPdf **PKPdf 17 26 48.4 +1.1**
BOZ Bozeman (W) 129.93 32 P **PKPdf 17 26 48.9 +1.6**
baz=312
BOZ Bozeman (W) 129.93 32 *e*PKIKP **PKPdf 17 26 48.5 +1.2**
BOZ Bozeman (W) 129.93 32 *e*PKPdf **PKPdf 17 26 48.5 +1.2**
BOZ *e*SKPdf SKPbc 17 30 07.1 +0.5
NV01 Mina Array Sit 130.11 43 *e*PKPpre PKPpre 17 26 40.2
NV01 *e*PKPdf **PKiKP 17 26 50.3 +1.5**
NV01 *e*PP **PP 17 28 54.9 -5.7**
NV01 *e* 17 30 08.3
NVAR Mina Array Bea 130.11 43 PKhKP PKPpre 17 26 41.2
comp=Z,1.8nm,0.9s,baz=199,slow=4.1,SNR=5.1
NVAR PKP **PKiKP 17 26 49.9 +1.1**
comp=Z,3.9nm,0.7s,baz=308,slow=2.3,SNR=14
NVAR PP **PP 17 28 55.3 -5.2**
comp=Z,6.4nm,1.0s,baz=286,slow=7.0,SNR=3.8
NVAR SKPbc **SKPbc 17 30 07.6 0.0**
comp=Z,5.9nm,0.9s,baz=274,slow=4.1,SNR=5.9
NVAR SKKPbc **SKKPbc 17 39 41.1 -8.3**
comp=Z,1.9nm,0.9s,baz=123,slow=5.5,SNR=5.3
SCHQ Schefferville 130.41 353 PKP **PKPdf 17 26 48.7 +0.9**
comp=Z,10nm,0.6s,baz=14,slow=5.4,SNR=9.2
SCHQ PP **PP 17 28 58.6 -2.6**
comp=Z,17nm,1.0s,baz=20,slow=6.4,SNR=5.0
SCHQ SKPbc **SKPab 17 30 07.6 -0.2**
comp=Z,19nm,0.8s,baz=31,slow=3.9,SNR=5.6
SCHQ Schefferville 130.41 353 *e*PKPdf **PKPdf 17 26 48.6 +0.9**
SCHQ *e*PP **PP 17 28 58.7 -2.5**
SCHQ *e*SKPbc **SKPab 17 30 06.7 -1.1**
QLMT Earthquake Lak 130.57 32 *e*PKPdf **PKPdf 17 26 49.8 +1.2**
QLMT *e*SKPbc **SKPab 17 30 10.5 +1.4**
ELK Elko 130.88 39 *e*PKIKP **PKPdf 17 26 51.5 +2.1**
ELK Elko 130.88 39 *e*PKPdf **PKPdf 17 26 51.5 +2.1**
ELK *e*PP PP 17 28 56.3 -9.0
ELK *e*SKPbc **SKPab 17 30 11.9 +1.4**
LKWY Lake 131.30 32 PFAKE 17 27 00.0 +10
LKWY LR LR
comp=Z,2μm,20.0s
ISA Isabella, Lake 131.32 46 P **PKPdf 17 26 52.7 +2.5**
baz=298
ISA Isabella, Lake 131.32 46 *e*PKIKP **PKPdf 17 26 52.2 +2.0**
ISA Isabella, Lake 131.32 46 *e*PKPdf **PKPdf 17 26 52.2 +2.0**
ISA *e*SKPbc **SKPbc 17 30 11.9 0.0**
DGMT Dagmar 131.34 24 *e*PKPdf **PKPdf 17 26 50.2 +0.4**
DGMT *e*PP **PP 17 29 09.3 +1.8**
DGMT *e*SKPbc **SKPab 17 30 12.3 +0.4**
FLWY Flagg Ranch 131.46 33 *e*PKPdf **PKPdf 17 26 49.4 -1.0**
FLWY *e*SKPbc **SKPab 17 30 14.8 +1.9**
GRAC Grapevine Rang 131.47 44 P **PKPdf 17 26 51.6 +1.3**
baz=300
RLMT Red Lodge 131.50 31 *e*PKPdf **PKPdf 17 26 51.2 +0.8**
RLMT *e*PP **PP 17 29 06.8 -2.3**
RLMT *e*SKPbc **SKPab 17 30 13.8 +0.8**
FXWY Fox Creek 131.58 33 *e*PKPdf **PKPdf 17 26 50.9 +0.3**
FXWY *e*PP PP 17 29 01.3 -8.4
FXWY *e*SKPbc **SKPab 17 30 14.2 +0.9**
MOOW Moose Ponds 131.66 33 *e*PKPdf **PKPdf 17 26 53.0 +2.2**
MOOW *e*PP PP 17 29 00.5 -10
MOOW *e*SKPbc **SKPab 17 30 14.7 +1.0**
DAC Darwin (Calif) 131.66 45 *e*PKIKP **PKPdf 17 26 51.6 +0.6**
DAC Darwin (Calif) 131.66 45 *e*PKPdf **PKPdf 17 26 51.5 +0.6**
DAC *e*SKPbc **SKPab 17 30 14.3 +0.3**
TPAW Teton Pass 131.72 33 *e*PKPdf **PKPdf 17 26 52.9 +1.9**
TPAW *e*PP **PP 17 29 13.7 +3.1**
TPAW *e*SKPbc **SKPab 17 30 14.8 +0.8**
HVU Hansel Valley 131.77 36 *e*PKIKP **PKPdf 17 26 52.0 +1.1**
HVU Hansel Valley 131.77 36 *e*PKPdf **PKPdf 17 26 52.0 +1.1**
LOHW Long Hollow 131.83 33 *e*PKPdf **PKPdf 17 26 52.1 +1.0**
LAO LASA Array 131.84 27 *e*PKPdf **PKPdf 17 26 51.5 +0.7**
LAO *e*SKPbc **SKPab 17 30 15.1 +0.9**
MPMC Manual Prospec 131.84 45 P **PKPdf 17 26 53.0 +1.7**
baz=299
A26A Wade Farm, Ken 131.85 22 P **PKPdf 17 26 52.7 +2.0**
baz=325
REDW Red Top Meadow 131.86 34 *e*PKPdf **PKPdf 17 26 52.2 +1.0**
R11A Troy Canyon, C 131.98 42 P **PKPdf 17 26 53.5 +2.0**
baz=303
R11A Troy Canyon, C 131.98 42 *e*PKPdf **PKPdf 17 26 52.1 +0.7**
R11A *e*SKPbc **SKPab 17 30 15.5 +0.3**
A27A Ledoux Ranch, 132.10 22 P **PKPdf 17 26 53.2 +2.1**
baz=326
AHID Auburn Hatcher 132.11 34 PFAKE 17 27 00.0 +8.4
AHID LR LR
comp=Z,737nm,20.0s
TPNV Topopah Spring 132.27 44 *e*PKIKP **PKPdf 17 26 50.4 -1.6**
TPNV Topopah Spring 132.27 44 *e*PKPdf **PKPdf 17 26 50.4 -1.6**
TPNV *e*PP PP 17 29 04.5 -10
TPNV *e*SKPbc **SKPab 17 30 16.3 -0.1**
HWUT Hardware Ranch 132.58 36 *e*PKPdf **PKPdf 17 26 53.0 +0.5**
HWUT *e*PP **PP 17 29 09.9 -6.2**
HWUT *e*SKPbc **SKPab 17 30 17.7 +0.1**
GSC Goldstone, Bar 132.69 46 P **PKPdf 17 26 53.8 +1.0**
baz=299
GSC Goldstone, Bar 132.69 46 *e*PKIKP **PKPdf 17 26 54.9 +2.1**
GSC Goldstone, Bar 132.69 46 *e*PKPdf **PKPdf 17 26 54.9 +2.1**
GSC *e*SKPbc **SKPab 17 30 18.7 +0.5**
DUG Dugway, Tooele 132.71 38 P **PKPdf 17 26 53.2 +0.5**
baz=307
DUG Dugway, Tooele 132.71 38 *e*PKIKP **PKPdf 17 26 52.5 -0.3**
DUG Dugway, Tooele 132.71 38 *e*PKPdf **PKPdf 17 26 52.5 -0.3**
DUG *e*SKPbc **SKPab 17 30 18.1 -0.1**
ULM Lac du Bonnet 132.75 17 PKP **PKPdf 17 26 52.4 +0.1**
comp=Z,14nm,0.8s,baz=334,slow=2.7,SNR=14
ULM SKPbc **SKPbc 17 30 15.6 -0.8**
comp=Z,21nm,1.0s,baz=349,slow=4.5,SNR=8.0
ULM Lac du Bonnet 132.75 17 *e*PKPdf **PKPdf 17 26 51.5 -0.8**
ULM *e*SKPbc **SKPbc 17 30 15.8 -0.5**
B28A Dugan Ranch, T 132.84 22 P **PKPdf 17 26 53.8 +1.3**
baz=327
A29A Manning Farm, 132.85 20 P **PKPdf 17 26 53.6 +1.0**
baz=328
BW06 Boulder Array 132.96 33 P **PKPdf 17 26 54.4 +1.2**
baz=312
BW06 Boulder Array 132.96 33 *e*PKPpre PKPpre 17 26 42.2
BW06 *e*PP **PP 17 29 17.7 -0.8**
BW06 *e*SKPbc **SKPbc 17 30 17.8 +0.1**
PD31 Pinedale Array 132.96 33 *e*PKPpre PKPpre 17 26 43.0
PD31 *e*PKPdf **PKiKP 17 26 54.5 0.0**
PD31 *e*PP **PP 17 29 16.9 -1.6**
PD31 *e*SKPbc **SKPbc 17 30 16.5 -1.2**
PD31 *e*SP **SP 17 39 15.9 -15**
PDAR Pinedale Array 132.96 33 PKhKP PKPpre 17 26 47.7
comp=Z,0.6nm,0.6s,baz=318,slow=2.0,SNR=4.6
PDAR PKP **PKPdf 17 26 53.5 +0.2**
comp=Z,2.1nm,0.6s,baz=90,slow=1.5,SNR=7.5
PDAR PP **PP 17 29 17.5 -1.0**
comp=Z,3.9nm,0.9s,baz=306,slow=3.5,SNR=4.6
PDAR SKPbc **SKPbc 17 30 16.9 -0.8**
comp=Z,23nm,1.0s,baz=321,slow=1.9,SNR=6.8
PDAR SKKPbc **SKKPbc 17 39 29.8 -10**
comp=Z,1.3nm,0.9s,baz=122,slow=5.4,SNR=3.9
A30A Hoffart Farm, 133.15 20 P **PKPdf 17 26 54.0 +0.8**
baz=330
D26A Manning 133.21 24 P **PKPdf 17 26 54.7 +1.4**
baz=324
E25A Miller Ranch, 133.23 25 P **PKPdf 17 26 55.2 +1.7**
baz=322
SHPR Sheep Range 133.24 44 *e*PKPdf **PKPdf 17 26 52.1 -1.8**
SHPR *e*SKPbc **SKPab 17 30 20.7 +0.1**
PLCA Paso Flores 133.44 186 PKP **PKPdf 17 26 55.0 +0.9**
comp=Z,8.2nm,1.1s,baz=64,slow=0.8,SNR=7.9
PLCA PP **PP 17 29 19.3 -1.3**
comp=Z,8.8nm,1.0s,baz=170,slow=8.3,SNR=4.0
PLCA SKPbc **SKPbc 17 30 18.8 -0.4**
comp=Z,12nm,1.1s,baz=174,slow=4.6,SNR=4.0
PLCA Paso Flores 133.44 186 *e*PKPdf **PKPdf 17 26 55.0 +0.9**
PLCA *e*PP **PP 17 29 19.0 -1.6**
PLCA *e*SKPbc **SKPbc 17 30 19.7 +0.5**
B30A Myrvik Farm, E 133.56 20 P **PKPdf 17 26 54.6 +0.6**
baz=329
MDND Maddock 133.63 21 P **PKPdf 17 26 55.7 +1.7**
baz=328
MDND Maddock 133.63 21 *e*PKPdf **PKPdf 17 26 53.6 -0.5**
MDND *e*SKPbc **SKPbc 17 30 20.2 +0.8**
E26A Carlson Angus 133.65 25 P **PKPdf 17 26 55.9 +1.7**
baz=323
PFO Pinyon Flats O 133.75 48 SKPbc **SKPbc 17 30 20.1 -0.4**
comp=Z,28nm,1.1s,baz=254,slow=2.7,SNR=7.6
PFO Pinyon Flats O 133.75 48 P **PKPdf 17 26 57.3 +2.4**
baz=298
PFO Pinyon Flats O 133.75 48 *e*PKIKP **PKPdf 17 26 56.3 +1.4**
PFO Pinyon Flats O 133.75 48 *e*PKPdf **PKPdf 17 26 56.3 +1.4**
PFO *e*PP **PP 17 29 18.2 -5.8**
PFO *e*SKPbc **SKPab 17 30 22.1 -0.8**
TPFO Pinon Flats 133.75 48 P **PKPdf 17 26 56.6 +1.7**
baz=298
GMRC Granite Mounta 133.77 46 P **PKPdf 17 26 56.7 +1.8**
baz=300
B31A Greenbush Farm 133.81 19 P **PKPdf 17 26 55.1 +0.8**
baz=330
BELC Belle Mtn. Jos 133.90 47 P **PKPdf 17 26 57.0 +1.8**
baz=299
A33A Warroad 134.06 17 P **PKPdf 17 26 56.1 +1.3**
baz=334
C30A Mose, Pekin 134.15 21 P **PKPdf 17 26 56.2 +1.1**
baz=329
B32A Ashes, Strandq 134.20 19 P **PKPdf 17 26 55.7 +0.7**
baz=332
TMUT Trail Mountain 134.23 38 *e*PKPdf **PKPdf 17 26 56.4 +0.5**
TMUT *e*SKPbc **SKPbc 17 30 23.3 +1.1**
G25A Newell 134.24 27 P **PKPdf 17 26 56.1 +0.7**
baz=321
C31A Landman Farms, 134.33 20 P **PKPdf 17 26 55.7 +0.4**
baz=330
MTPU Mount Pierson 134.37 40 *e*PKPdf **PKPdf 17 26 55.4 -0.8**
TRQA Tornquist 134.38 196 *e*PKPdf **PKPdf 17 26 56.2 +0.4**
BC3 Big Chuckawall 134.47 47 P **PKPdf 17 26 58.1 +1.9**
baz=299
Q16A Castle Valley 134.49 38 *e*PKPdf **PKPdf 17 26 57.4 +1.2**
KNB Kanab 134.54 42 *e*PKIKP PKPpre 17 26 50.0
KNB *e* 17 26 57.9
KNB Kanab 134.54 42 *e*PKPpre PKPpre 17 26 50.0
KNB *e*PKPdf **PKiKP 17 26 57.9 +0.2**
KNB *e*PP PP 17 29 20.8 -8.0
KNB *e*SKPbc **SKPab 17 30 24.9 -1.4**
K22A Casper 134.65 31 P **PKPdf 17 26 56.9 +0.5**
baz=316
K22A Casper 134.65 31 *e*PKPdf **PKPdf 17 26 56.2 -0.1**
K22A *e*SKPbc **SKPbc 17 30 23.8 +0.5**
B34A Aery, Baudette 134.69 17 P **PKPdf 17 26 56.3 +0.3**
baz=334
SRU San Rafael Swe 134.77 38 *e*PKIKP **PKPdf 17 26 55.5 -1.2**
SRU San Rafael Swe 134.77 38 *e*PKPdf **PKPdf 17 26 55.5 -1.2**
RSSD Black Hills 134.79 28 P **PKPdf 17 26 57.0 +0.3**
baz=320
RSSD Black Hills 134.79 28 *e*PKHKP PKPpre 17 26 45.5
RSSD *e* 17 26 56.9
RSSD Black Hills 134.79 28 *e*PKPpre PKPpre 17 26 45.5
RSSD *e*PKPdf **PKPdf 17 26 56.9 +0.3**
RSSD *e*SKPbc **SKPbc 17 30 24.6 +0.9**
W13A Hualapai Mount 134.86 45 *e*PKPpre PKPpre 17 26 49.5
W13A *e*PKPdf **PKPdf 17 26 57.0 0.0**
W13A *e*PP PP 17 29 21.7 -9.3
W13A *e*SKPbc **SKPab 17 30 26.3 -1.5**
B35A Bob, Littlefor 135.06 16 P **PKPdf 17 26 57.5 +0.8**
baz=335
Y12C Blythe 135.10 47 *e*PKPdf **PKPdf 17 26 57.7 +0.5**
Y12C *e*PP **PP 17 29 27.8 -4.5**
Y12C *e*SKPbc **SKPbc 17 30 26.2 +1.5**
U15A North Rim 135.23 42 *e*PKPdf **PKPdf 17 26 58.1 +0.3**
U15A *e*SKPbc **SKPab 17 30 27.4 -2.1**
O20A White River Ci 135.46 35 P **PKPdf 17 26 58.1 +0.1**
baz=312
O20A White River Ci 135.46 35 *e*PKPdf **PKPdf 17 26 57.9 -0.1**
O20A *e*SKPbc **SKPbc 17 30 26.8 +0.9**
D34A Park Rapids 135.78 18 P **PKPdf 17 26 58.9 +0.8**
baz=333
C36A Pine Crest Far 135.86 16 P **PKPdf 17 26 59.2 +1.0**
baz=336
EYMN Ely 136.03 14 *e*PKPpre PKPpre 17 26 47.8
EYMN *e*PKPdf **PKiKP 17 26 59.5 -0.7**
EYMN *e*PP **PP 17 29 32.8 -4.3**
EYMN *e*SKPbc **SKPbc 17 30 28.2 +1.1**
C37A Embarrass 136.06 15 P **PKPdf 17 26 59.1 +0.5**
baz=337
G30A Faulkton 136.08 23 P **PKPdf 17 26 59.4 +0.7**
baz=327
Y14A Wickenburg 136.09 45 *e*PKPpre PKPpre 17 26 48.0
Y14A *e*PKPdf **PKiKP 17 27 00.1 -0.7**
Y14A *e*PP **PP 17 29 31.3 -7.3**
Y14A *e*SKPbc **SKPbc 17 30 29.9 +2.0**
D35A Remer 136.13 17 P **PKPdf 17 26 59.1 +0.4**
baz=334
113A Mohawk Valley, 136.13 47 *e*PKPdf **PKPdf 17 26 58.0 -1.1**
PHWY Pilot Hill 136.17 32 *e*PKPdf **PKPdf 17 26 59.2 -0.2**
PHWY *e*PP **PP 17 29 39.4 +0.6**
PHWY *e*SKPbc **SKPbc 17 30 28.3 +0.1**
N23A Red Feather La 136.21 33 P **PKPdf 17 27 00.1 +0.7**
baz=315
N23A Red Feather La 136.21 33 *e*PKPdf **PKPdf 17 26 59.1 -0.3**
D36A Goodland 136.30 16 P **PKPdf 17 26 59.7 +0.6**
baz=336
WUAZ Wupatki 136.36 42 *e*PKPdf **PKPdf 17 27 00.2 +0.5**
WUAZ *e*PP **PP 17 29 34.8 -5.5**
WUAZ *e*SKPbc **SKPbc 17 30 28.8 0.0**
E35A Pequot Lakes 136.49 18 P **PKPdf 17 26 59.5 0.0**
baz=334
D37A Cotton 136.52 16 P **PKPdf 17 26 59.8 +0.3**
baz=337
E36A McGregor 136.87 17 P **PKPdf 17 27 00.6 +0.4**
baz=335
G33A Ortonville 137.03 21 P **PKPdf 17 27 01.4 +0.9**
baz=330
ISCO Idaho Springs 137.16 33 P **PKPdf 17 27 01.8 +0.5**
baz=315
ISCO Idaho Springs 137.16 33 *e*PKHKP PKPpre 17 26 52.6
ISCO *e* 17 27 01.6
ISCO *e* 17 29 39.8
ISCO Idaho Springs 137.16 33 *e*PKPpre PKPpre 17 26 52.6
ISCO *e*PKPdf **PKPdf 17 27 01.6 +0.3**
ISCO *e*PP **PP 17 29 39.8 -5.4**
ISCO *e*SKPbc **SKPbc 17 30 32.5 +1.3**
MVCO Mesa Verde 137.20 38 *e*PKPdf **PKPdf 17 27 02.3 +1.0**
MVCO *e*SKPbc **SKPbc 17 30 33.0 +1.6**
F36A Milaca 137.39 18 P **PKPdf 17 27 01.4 +0.2**
baz=335
RCBR Riachuelo 137.84 255 PKP **PKPdf 17 27 03.3 +0.4**
comp=Z,19nm,1.1s,baz=63,slow=6.4,SNR=2.9
S22A 4UR Ranch, Cre 137.86 37 *e*PKPdf **PKPdf 17 27 03.8 +1.1**
S22A *e*PP **PP 17 29 47.1 -2.5**
X18A Snowflake 137.88 43 *e*PKPpre PKPpre 17 26 52.1
X18A *e*PKPdf **PKPdf 17 27 02.3 -0.3**
G36A St. Michael 137.88 18 P **PKPdf 17 27 03.4 +1.3**
baz=334
LMQ La Malbaie 137.99 354 *e*PKPdf **PKPdf 17 27 02.8 +0.6**
H35A Sunnyside Ranc 138.01 20 P **PKPdf 17 27 03.7 +1.4**
baz=332
OGNE Ogallala 138.17 29 PFAKE 17 27 10.0 +7.2
OGNE LR LR
comp=Z,850nm,20.0s
SPMN Marine on St. 138.18 17 *e*PKPdf **PKPdf 17 27 02.4 -0.2**
ECSD EROS Data Cent 138.22 22 *e*PKPpre PKPpre 17 26 52.8
ECSD *e*PKPdf **PKPdf 17 27 01.3 -1.5**
COWI Conover 138.32 13 PFAKE 17 27 10.0 +7.1
COWI LR LR
comp=Z,1μm,21.0s
TUC Tucson 138.53 46 *e*PKHKP PKPpre 17 26 56.4
TUC *e* 17 29 49.2
TUC Tucson 138.53 46 *e*PKPpre PKPpre 17 26 56.4
TUC *e*PP **PP 17 29 49.2 -4.7**
TUC *e*SKPbc **SKiKP 17 30 37.3 -1.5**
SDCO Great Sand Dun 138.64 36 P **PKPdf 17 27 05.4 +1.3**
baz=313
SDCO Great Sand Dun 138.64 36 *e*PKPpre PKPpre 17 26 56.2
SDCO *e*PKPdf **PKPdf 17 27 04.8 +0.7**
LMN Caledonia Moun 138.75 348 *e*PKPdf **PKPdf 17 27 02.8 -0.8**
I37A Lemond, Waseca 139.09 19 P PKPpre 17 26 57.1
baz=334
I38A Scanlan Farm, 139.40 18 P PKPpre 17 26 57.0
baz=336
SUCO SUCO 139.60 195 *e*P **PKPdf 17 27 06.0 +0.3**
J37A Redenius Farm, 139.67 19 P PKPpre 17 26 58.2
baz=333
T25A Trinidad 139.69 35 P PKPpre 17 26 58.2
baz=314
T25A Trinidad 139.69 35 *e*PKPpre PKPpre 17 26 57.9
T25A *e*PKPdf **PKPdf 17 27 07.1 +1.2**
T25A *e*PP **PP 17 29 57.9 -2.9**
LAZ Ladron 139.81 41 *e*PKPdf **PKPdf 17 27 05.2 -1.0**
ANMO Albuquerque 139.91 40 SKPbc **SKiKP 17 30 40.5 -1.3**
comp=Z,25nm,1.1s,baz=272,slow=2.8,SNR=8.9
ANMO Albuquerque 139.91 40 P PKPpre 17 26 59.7
baz=310
ANMO Albuquerque 139.91 40 *e*PKHKP PKPpre 17 26 58.5
ANMO *e* 17 27 08.0
ANMO Albuquerque 139.91 40 *e*PKPpre PKPpre 17 26 58.5
ANMO *e*PKPdf **PKiKP 17 27 08.0 -0.8**
ANMO *e*SKPbc **SKiKP 17 30 41.4 -0.3**
319A Douglas 140.11 46 *e*PKPpre PKPpre 17 27 01.0
319A *e*PP **PP 17 30 02.1 -1.6**
PKME Peaks-Kenny Pk 140.11 352 *e*PKPdf **PKPdf 17 27 08.5 +2.4**
K37A Belmond 140.12 20 P PKPpre 17 26 58.9
baz=333
LPM Los Pinos Moun 140.20 40 *e*PKPdf **PKPdf 17 27 05.4 -1.5**
LPM *e*PP **PP 17 29 58.0 -6.0**
LPM *e*SKPbc **SKiKP 17 30 41.7 -0.6**
BNM Barren Site 140.30 41 *e*PKPdf **PKPdf 17 27 06.2 -0.9**
BNM *e*PP **PP 17 29 58.2 -6.6**
BNM *e*SKPbc **SKiKP 17 30 42.0 -0.6**
L36A Harm Buss Farm 140.35 21 P PKPpre 17 27 00.1
baz=331
O32A Brockman Farm, 140.46 26 P PKPpre 17 27 02.3
baz=325
121A Cookes Peak, D 140.51 44 P PKPpre 17 27 03.4
baz=306
K38A Parkersburg 140.52 19 P PKPpre 17 27 00.6
baz=334
M35A Neola 140.52 23 P PKPpre 17 27 01.6
baz=329
MRA San Martin 140.69 195 *e*P PKPpre 17 27 01.0
P32A Huiting Farm, 140.83 27 P PKPpre 17 27 00.8
baz=324
WVL Waterville 140.85 352 *e*PKPdf **PKPdf 17 27 05.9 -1.5**
O33A Hebron 140.91 26 P PKPpre 17 27 01.2
baz=326
FRNY Flat Rock 140.96 357 *e*PKPdf **PKPdf 17 27 07.5 -0.1**
JFWS Jewell Farm 141.03 16 *e*PKHKP PKPpre 17 26 59.7
JFWS Jewell Farm 141.03 16 *e*PKPpre PKPpre 17 26 59.7
JFWS *e*PP **PP 17 30 03.0 -5.0**
SCIA State Center 141.03 20 PFAKE 17 27 20.0 +12
SCIA LR LR
comp=Z,1μm,19.0s
SADO Sadowa 141.04 3 PKhKP PKPpre 17 27 00.3
comp=Z,6.1nm,0.6s,baz=352,slow=4.0,SNR=6.2
SADO PKP **PKPdf 17 27 08.0 +0.2**
comp=Z,19nm,0.8s,baz=331,slow=3.5,SNR=12
SADO Sadowa 141.04 3 *e*PKPpre PKPpre 17 27 00.1
SADO *e*PKPdf **PKPdf 17 27 07.6 -0.2**
ROC1 El Roble 141.16 187 *e*PKPpre PKPpre 17 27 03.8
M37A Trindle Farm, 141.18 21 P PKPpre 17 27 02.3
baz=332
O34A Beatrice 141.20 25 P PKPpre 17 27 02.1
baz=327
LONY Lake Ozonia 141.22 358 *e*PKPpre PKPpre 17 27 01.4
LONY *e*PP **PP 17 30 05.2 -3.8**
Q32A Meitler Ranch, 141.35 28 P PKPpre 17 27 03.2
baz=323
TCA Tanti 141.42 196 ||*e*P PKPpre 17 27 04.2
M38A Pleasantville 141.47 20 P PKPpre 17 27 02.8
baz=333
AUSP Uspallata 141.65 190 ||*e*P PKPpre 17 27 05.9
P34A Walnut Farm, R 141.68 26 P PKPpre 17 27 02.5
baz=326
Q33A Connelly Farm, 141.68 27 P PKPpre 17 27 02.9
baz=324
R32A Long Quarter, 141.74 29 P PKPpre 17 27 04.7
baz=323
RTCV Cerro Valdivia 141.85 191 ||*e*P PKPpre 17 27 05.5
O36A Bolckow 141.95 23 P PKPpre 17 27 04.7
baz=329
HNH Hanover 141.99 355 *e*PKPdf **PKPdf 17 27 09.1 -0.5**
HNH *e*SKPdf SKPdf 17 30 27.7 -13
N38A Joes South For 142.01 21 P PKPpre 17 27 04.4
baz=332
RTLS Leoncito 142.05 190 ||*e*P PKPpre 17 27 06.6
KSU1 Kansas State U 142.14 26 *e*PKPpre PKPpre 17 27 07.1
R33A Olander Ranch, 142.17 28 P PKPpre 17 27 06.1
baz=324
N39A Derby Farms, D 142.19 20 P PKPpre 17 27 05.3
baz=334
S32A Newby Ranch, P 142.20 30 P PKPpre 17 27 05.4
baz=322
O37A Wolven Farm, M 142.23 22 P **PKPdf 17 27 05.4 -4.7**
baz=331
ACCN Adirondack Com 142.41 357 *e*PKPpre PKPpre 17 27 05.7
ACCN *e*SKPdf SKPdf 17 30 28.9 -13

R34A	Isabella, Hill	142.52	27	P	PKPpre	17 27 06.9	
	baz=325						
O38A	Galt	142.52	22	P	PKPpre	17 27 06.5	
	baz=332						
Q35A	Mercer Eighty,	142.59	25	P	PKPpre	17 27 07.0	
	baz=327						
T32A	Huddler Ranch,	142.61	30	P	PKPpre	17 27 07.7	
	baz=322						
MNTX	Cornudas Mount	142.64	43	P	PKPpre	17 27 08.7	
	baz=308						
MNTX	Cornudas Mount	142.64	43	ePKPpre	PKPpre	17 27 08.3	
P37A	Lathrop	142.66	23	P	PKPpre	17 27 06.8	
	baz=330						
S33A	Kaszmaul Farm,	142.73	29	P	PKPpre	17 27 07.7	
	baz=323						
MSTX	Muleshoe	142.84	37	P	PKPpre	17 27 08.9	
	baz=313						
MSTX	Muleshoe	142.84	37	ePKPdf	PKPdf	17 27 09.7	-1.8
AMTX	Amarillo	142.84	35	P	PKPpre	17 27 07.8	
	baz=316						
AMTX	Amarillo	142.84	35	ePKPpre	PKPpre	17 27 07.7	
P38A	Dawn	142.94	22	P	PKPpre	17 27 07.7	
	baz=331						
R35A	Emporia Munici	142.97	26	P	PKPpre	17 27 07.7	
	baz=326						
T33A	Patterson Ranc	143.02	29	P	PKPpre	17 27 08.8	
	baz=322						
AAM	Ann Arbor	143.03	9	PFAKE		17 27 20.0	+8.6
AAM				LR	LR		
	comp=Z,1µm,21.0s						
TRY	Troy	143.06	356	ePKPpre	PKPpre	17 27 08.2	
TRY				ePP	PP	17 30 20.7	+0.5
S34A	Willow Spring	143.07	28	P	PKPpre	17 27 08.3	
	baz=324						
O40A	La Belle	143.08	20	P	PKPbc	17 27 08.2	-0.2
	baz=334						
CPUP	Villa Florida	143.09	209‖	eP	PKPab	17 27 08.0	+0.6
CPUP	Villa Florida	143.09	209	PKhKP	PKPpre	17 27 08.3	
	comp=Z,19nm,0.9s,baz=164,slow=3.6,SNR=21						
CPUP	Villa Florida	143.09	209	ePKPdf	PKPbc	17 27 09.3	+0.5
U32A	Winter Ranch,	143.19	31	P	PKPbc	17 27 09.0	+0.1
	baz=321						
Q37A	Longview Farm,	143.23	24	P	PKPab	17 27 07.8	+0.2
	baz=329						
SLBS	Sierra La Lagu	143.24	57	ePKPdf	PKPbc	17 27 10.1	+0.6
R36A	Gordon, Harris	143.26	25	P	PKPab	17 27 08.3	+0.5
	baz=327						
P39B	Salisbury	143.34	21	P	PKPbc	17 27 08.9	-0.3
	baz=332						
S35A	Otter Creek Ra	143.44	27	P	PKPbc	17 27 09.4	-0.1
	baz=326						
HDIL	Hopedale	143.48	16	P	PKPbc	17 27 09.2	-0.4
	baz=338						
HDIL	Hopedale	143.48	16	PFAKE		17 27 20.0	+7.7
HDIL				LR	LR		
	comp=Z,1µm,20.0s						
Q38A	Cooks Store, C	143.48	23	P	PKPab	17 27 08.8	+0.2
	baz=331						
P40A	Paris	143.55	20	P	PKPbc	17 27 09.4	-0.4
	baz=334						
R37A	Teagarden Farm	143.56	25	P	PKPab	17 27 08.8	-0.1
	baz=328						
T34A	McClaskey Farm	143.58	28	P	PKPbc	17 27 09.8	-0.2
	baz=324						
U33A	Lingo Farm, Me	143.60	30	P	PKPbc	17 27 10.0	-0.1
	baz=322						
Q39A	Willow Grove F	143.65	22	P	PKPab	17 27 09.5	+0.2
	baz=332						
V32A	Arapaho	143.68	32	P	PKPbc	17 27 10.5	+0.1
	baz=320						
BINY	Binghamton	143.68	359	PFAKE		17 27 20.0	+7.4
BINY				LR	LR		
	comp=Z,1µm,22.0s						
BRYW	Bryant College	143.69	354	ePKPpre	PKPpre	17 27 10.2	
S36A	Lake Cedric, C	143.73	26	P	PKPab	17 27 09.9	+0.3
	baz=327						
U34A	Anderson Ranch	143.88	29	P	PKPbc	17 27 11.0	+0.1
	baz=323						
U34A	Anderson Ranch	143.88	29	ePKPpre	PKPpre	17 27 10.8	
T35A	Sooner Cattle	143.98	28	P	PKPbc	17 27 11.1	-0.1
	baz=325						
V33A	Lossen Ranch,	143.99	31	P	PKPab	17 27 10.9	+0.2
	baz=321						
Q40A	Laux Farm, Aux	144.02	21	P	PKPab	17 27 10.8	+0.1
	baz=333						
W32A	Sentinel	144.02	33	P	PKPbc	17 27 11.4	0.0
	baz=319						
S37A	Fort Scott	144.03	25	P	PKPab	17 27 10.7	0.0
	baz=328						
R38A	Fenwick Farm,	144.04	24	P	PKPab	17 27 10.2	-0.6
	baz=330						
AGUA	GUANDACOL	144.14	192‖	eP	PKPdf	17 27 13.2	-0.8
T36A	Boggs Farm, Ca	144.15	27	P	PKPbc	17 27 11.7	0.0
	baz=326						
SFIN	Lafayette	144.22	14	P	PKPbc	17 27 11.9	+0.2
	baz=342						
SFIN	Lafayette	144.22	14	ePKPdf	PKPbc	17 27 12.0	+0.3
M54A	Oil Creek Stat	144.26	4	P	PKPbc	17 27 11.7	-0.2
	baz=355						
R39A	Chumby, Stover	144.27	22	P	PKPab	17 27 11.5	-0.1
	baz=331						
KSPA	Keystone Colle	144.32	359	ePKPdf	PKPab	17 27 11.8	+0.2
U35A	Pawnee	144.32	29	P	PKPbc	17 27 12.7	+0.4
	baz=324						
V34A	Guthrie	144.37	30	P	PKPbc	17 27 12.8	+0.4
	baz=322						
W33A	Caddo, Fort Co	144.41	32	P	PKPdf	17 27 13.4	-0.8
	baz=320						
CYA	Choya	144.49	196‖	eP	PKPbc	17 27 13.5	+0.5
S38A	Stockton	144.52	24	P	PKPab	17 27 12.1	-0.4
	baz=329						
T37A	Cheneyville 18	144.52	26	P	PKPbc	17 27 12.8	0.0
	baz=327						
X32A	Elmer	144.53	33	P	PKPbc	17 27 13.1	+0.2
	baz=319						
WMOK	Wichita Mounta	144.56	33	P	PKPbc	17 27 13.1	0.0
	baz=320						
WMOK	Wichita Mounta	144.56	33	PFAKE		17 27 20.0	+5.6
WMOK				LR	LR		
	comp=Z,997nm,20.0s						
R40A	Maddies Statio	144.57	22	P	PKPab	17 27 12.9	+0.1
	baz=332						
Q42A	Golden Eagle	144.62	19	P	PKPbc	17 27 13.1	0.0
	baz=336						
S39A	Bolivar	144.70	23	P	PKPab	17 27 12.8	-0.4
	baz=330						
W34A	Bridge Creek,	144.71	31	P	PKPbc	17 27 14.1	+0.6
	baz=322						
W34A	Bridge Creek,	144.71	31	ePKPdf	PKPbc	17 27 13.8	+0.3
ODNJ	Ogdensburg	144.75	357	ePKPdf	PKPbc	17 27 13.4	0.0
ODNJ				ePP	PP	17 30 21.2	-9.1
V35A	Meyer Ranch, C	144.76	29	P	PKPbc	17 27 13.9	+0.2
	baz=323						
U36A	Oologah	144.77	27	P	PKPbc	17 27 14.0	+0.4
	baz=326						
N54A	Moraine State	144.78	5	P	PKPbc	17 27 13.6	0.0
	baz=354						
PAL	Palisades	144.79	357	ePKIKP	PKPbc	17 27 13.8	+0.3
PAL	Palisades	144.79	357	ePKPdf	PKPbc	17 27 13.8	+0.2
VCA	Vinchina	144.81	193	eP	PKPdf	17 27 15.3	+0.1
VCA				eP	PKPbc	17 27 15.4	+1.2
Q43A	New Douglas	144.85	18	P	PKPab	17 27 13.7	0.0
	baz=337						
X33A	Lawton	144.86	32	P	PKPab	17 27 13.9	0.0
	baz=320						
T38A	Diamond	144.86	25	P	PKPbc	17 27 14.0	0.0
	baz=328						
N59A	State Game Lan	144.96	359	P	PKPdf	17 27 14.6	-0.3
	baz=1.3						
SLM	Saint Louis	144.96	19	ePKIKP	PKPab	17 27 14.1	-0.1
SLM	Saint Louis	144.96	19	ePKPbc	PKPab	17 27 14.1	-0.1
LCO	Las Campanas	145.01	189	ePKPbc	PKPab	17 27 14.9	0.0
CPNY	Central Park	145.01	357	ePKPbc	PKPbc	17 27 14.4	+0.2
U37A	Salina	145.04	27	P	PKPab	17 27 14.8	+0.3
	baz=326						
S40A	Lebanon	145.10	22	P	PKPbc	17 27 14.5	-0.1
	baz=332						
TUL1	Leonard	145.14	28	P	PKPdf	17 27 15.1	-0.2
	baz=325						
TUL1	Leonard	145.14	28	ePKPbc	PKPab	17 27 14.9	0.0
BRNJ	Basking Ridge	145.15	357	ePKPbc	PKPdf	17 27 15.1	0.0
HPIG		145.15	50	ePKPbc	PKPdf	17 27 16.1	+0.3
ACSO	Alum Creek Sta	145.16	9	ePKPbc	PKPbc	17 27 14.7	-0.1
ACSO				eSKPbc	SKiKP	17 30 52.1	0.0
V36A	Jenks	145.17	28	P	PKPdf	17 27 15.4	0.0
	baz=325						
X34A	Smith Ranch, M	145.17	32	P	PKPdf	17 27 15.4	0.0
	baz=321						
Y33A	Hilltop Ranch,	145.20	33	P	PKPab	17 27 15.2	0.0
	baz=319						
SSPA	Standing Stone	145.22	2	ePKPbc	PKPab	17 27 15.2	+0.1
W35A	Tecumseh	145.22	30	P	PKPdf	17 27 15.5	0.0
	baz=323						
TX31	Lajitas Ar. Si	145.25	44	ePKPbc	PKPdf	17 27 16.3	+0.4
LTX	Lajitas	145.25	44	ePKIKP	PKPdf	17 27 16.8	+1.0
LTX	Lajitas	145.25	44	ePKPbc	PKPdf	17 27 16.8	+1.0
LTX				eSKPbc	SKiKP	17 30 53.0	+0.3
TXAR	Lajitas Array	145.25	44	PKPbc	PKPdf	17 27 16.8	+1.0
	comp=Z,146nm,0.6s,baz=284,slow=1.3,SNR=1633						
TXAR				SKPbc	SKiKP	17 30 53.0	+0.3
	comp=Z,8.3nm,1.0s,baz=270,slow=0.5,SNR=3.6						
T39A	Clever	145.25	24	P	PKPab	17 27 15.3	0.0
	baz=330						
LUPA	Lehigh Univers	145.26	358	ePKPbc	PKPbc	17 27 15.1	0.0
U38A	Gravette	145.33	26	P	PKPbc	17 27 15.4	-0.1
	baz=328						
V37A	Hulbert	145.46	27	P	PKPab	17 27 16.0	-0.1
	baz=326						
T40A	Mansfield	145.48	23	P	PKPdf	17 27 15.8	-0.1
	baz=331						
BLO	Bloomington	145.50	14	ePKIKP	PKPbc	17 27 15.9	0.0
BLO	Bloomington	145.50	14	ePKPdf	PKPbc	17 27 15.9	0.0
OLIL	Olney	145.51	16	ePKPdf	PKPbc	17 27 16.0	+0.1
W36A	Wetumka	145.55	29	P	PKPab	17 27 16.5	0.0
	baz=324						
O56A	Blue Knob Stat	145.56	3	P	PKPab	17 27 16.5	+0.2
	baz=356						
ABTX	Abilene, Hawle	145.64	36	P	PKPab	17 27 17.5	+0.6
	baz=316						
ABTX	Abilene, Hawle	145.64	36	ePKPdf	PKPab	17 27 17.2	+0.3
HHAR	Hobbs	145.65	25	ePKPdf	PKPdf	17 27 16.0	-0.2
Z33A	Whitaker Ranch	145.66	34	P	PKPab	17 27 17.2	+0.2
	baz=318						
R44A	Waltonville	145.68	18	P	PKPab	17 27 16.8	0.0
	baz=338						
Y34A	Reagan Ranch,	145.70	32	P	PKPab	17 27 17.1	0.0
	baz=320						
U39A	Green Forest	145.76	25	P	PKPbc	17 27 16.7	-0.2
	baz=329						
X35A	Drake	145.77	31	P	PKPbc	17 27 17.1	+0.2
	baz=322						
V38A	Canehill	145.80	26	P	PKPdf	17 27 16.6	+0.1
	baz=327						
T41A	Mountain View	145.86	22	P	PKPbc	17 27 17.2	+0.1
	baz=332						
MVL	Millersville	145.88	360	ePKPdf	PKPab	17 27 17.4	-0.1
AHML	Horco Molle	145.91	198‖	eP	PKPab	17 27 18.8	+0.7
W37B	Quinton	145.94	28	P	PKPbc	17 27 17.6	+0.2
	baz=325						
PSUB	Penn St. - Bra	145.94	359	ePKPdf	PKPbc	17 27 17.1	-0.2
X36A	Centrahoma	145.95	30	P	PKPab	17 27 17.8	-0.2
	baz=323						
S43A	Fulton Ridge,	145.98	19	P	PKPdf	17 27 17.0	+0.3
	baz=336						
U40A	Yellville	146.04	24	P	PKPbc	17 27 17.7	0.0
	baz=330						
Z34A	Collier Ranch,	146.07	33	P	PKPbc	17 27 18.1	+0.3
	baz=320						
133A	Hamilton Ranch	146.08	35	P	PKPab	17 27 19.1	+0.6
	baz=317						
Y35A	Marietta	146.12	31	P	PKPbc	17 27 18.1	+0.1
	baz=321						
SIUC	Southern Illin	146.13	18	ePKPdf	PKPbc	17 27 18.0	+0.1
S44A	Carbondale	146.14	18	P	PKPbc	17 27 18.2	+0.3
	baz=337						
V39A	Pettigrew	146.16	25	P	PKPbc	17 27 17.9	-0.2
	baz=328						
USIN	University of	146.35	16	ePKPdf	PKPbc	17 27 18.2	-0.3
S45A	Carrier Mills	146.36	17	P	PKPbc	17 27 18.9	+0.3
	baz=338						
X37A	Clayton	146.41	29	P	PKPbc	17 27 19.0	+0.2
	baz=325						
W38A	Poteau	146.41	27	P	PKPbc	17 27 19.0	+0.2
	baz=326						
WCI	Wyandotte Cave	146.45	14	ePKP2	PKPbc	17 27 18.3	-0.6
WCI	Wyandotte Cave	146.45	14	ePKPdf	PKPbc	17 27 18.3	-0.6
Z35A	Perchaven, San	146.45	32	P	PKPbc	17 27 19.3	+0.3
	baz=321						
SDMD	Soldier's Deli	146.47	0	ePKPdf	PKPbc	17 27 19.2	+0.3
Y36A	Durant	146.51	31	P	PKPbc	17 27 19.3	+0.2
	baz=323						
233A	Rising Star	146.52	36	P	PKPab	17 27 20.3	0.0
	baz=317						
V40A	Witts Springs	146.53	24	P	PKPbc	17 27 18.9	-0.3
	baz=330						
134A	White-Moore Ra	146.58	34	P	PKPab	17 27 20.4	0.0
	baz=319						
PBMO	Poplar Bluff	146.58	20	ePKPdf	PKPbc	17 27 18.9	-0.3
X38A	Whitesboro	146.60	28	P	PKPab	17 27 20.0	-0.5
	baz=326						
W39A	Magazine	146.64	26	P	PKPbc	17 27 19.5	0.0
	baz=328						
FSA	Cafayete	146.73	197	eP	PKPab	17 27 22.0	+0.6
Y37A	Hugo	146.78	30	P	PKPbc	17 27 20.1	+0.2
	baz=324						
V41A	Mountainview	146.81	24	P	PKPbc	17 27 19.8	-0.2
	baz=331						
W40A	Ferguson Farm,	146.95	25	P	PKPbc	17 27 20.4	+0.1
	baz=329						
135A	Vickery Place,	146.96	33	P	PKPab	17 27 21.3	-0.7
	baz=320						
333A	Richland Sprin	146.97	37	P	PKPab	17 27 21.5	-0.6
	baz=316						
234A	Clairette	146.97	35	P	PKPab	17 27 21.5	-0.4
	baz=318						
JCT	Junction City	147.06	39	P	PKPab	17 27 21.8	-0.7
	baz=314						
JCT	Junction City	147.06	39	ePKP2	PKPdf	17 27 19.8	+1.0
JCT	Junction City	147.06	39	ePKPdf	PKPdf	17 27 19.8	+1.0
JCT				ePKPbc	PKPab	17 27 22.0	-0.4
X39A	Fountain Ranch	147.06	27	P	PKPbc	17 27 21.3	+0.6
	baz=327						
V42A	Cord	147.10	23	P	PKPbc	17 27 20.7	0.0
	baz=332						
X201	Greenbrier Sit	147.16	24	ePKPdf	PKPdf	17 27 19.5	+0.7
X301	Greenbrier Sit	147.19	24	ePKPdf	PKPbc	17 27 20.5	-0.5
WHAR	Wooly Hollow	147.19	24	ePKPdf	PKPbc	17 27 20.5	-0.5
WHAR				eSKPbc	SKPbc	17 30 54.7	-1.5
Y38A	Idabel	147.26	29	P	PKPbc	17 27 21.1	-0.1
	baz=325						
MIAR	Mount Ida	147.28	27	P	PKPbc	17 27 22.0	+0.7
	baz=328						
MIAR	Mount Ida	147.28	27	ePKIKP	PKPdf	17 27 19.8	+0.8
MIAR				MLR	MLR		
	comp=Z,1µm,21.0s						
MIAR	Mount Ida	147.28	27	ePKPdf	PKPdf	17 27 19.8	+0.8
MIAR				LR	LR		
	comp=Z,1µm,21.0s						
433A	Art	147.31	38	P	PKPbc	17 27 22.1	+0.6
	baz=315						
W41B	Gary Mavity, V	147.31	24	P	PKPbc	17 27 21.2	-0.2
	baz=330						
WHTX	Lake Whitney,	147.36	34	P	PKPbc	17 27 22.5	+0.9
	baz=319						
WHTX	Lake Whitney,	147.36	34	ePKPdf	PKPdf	17 27 18.5	-0.7
WHTX				ePKPbc	PKPab	17 27 22.6	-0.9
334A	Lometa	147.40	36	P	PKPbc	17 27 22.2	+0.4
	baz=317						
Z37A	Pogue Cattle C	147.41	31	P	PKPbc	17 27 22.3	+0.6
	baz=323						
GLAT	Glass	147.43	19	ePKPdf	PKPbc	17 27 21.7	0.0
UTMT	University of	147.50	19	ePKPdf	PKPbc	17 27 21.8	-0.1
136A	Ennis	147.50	33	P	PKPbc	17 27 22.6	+0.6
	baz=321						
Y39A	Lockesburg	147.55	28	P	PKPbc	17 27 22.3	+0.3
	baz=326						
HBAR	Harrisburg	147.59	22	ePKPdf	PKPbc	17 27 21.4	-0.7
UALR	University of	147.61	25	ePKPdf	PKPdf	17 27 20.3	+0.7
UALR				ePKPbc	PKPbc	17 27 22.8	+0.6
X40A	Basin Creek Fa	147.65	26	P	PKPbc	17 27 22.4	+0.1
	baz=329						
CBN	Corbin Frederi	147.66	1	ePKPdf	PKPdf	17 27 16.9	-2.6
CBN				ePKPbc	PKPbc	17 27 22.6	+0.4
Z38A	Mt. Pleasant	147.68	30	P	PKPbc	17 27 22.9	+0.5
	baz=324						
HALT	Halls	147.74	20	ePKPdf	PKPdf	17 27 19.9	+0.2
HALT				ePKPbc	PKPbc	17 27 22.9	+0.4
434A	Burnet	147.76	37	P	PKPbc	17 27 23.2	+0.4
	baz=316						
X41A	Kaden, Bauxite	147.78	25	P	PKPbc	17 27 22.8	+0.1
	baz=329						
137A	Heron Place, G	147.81	31	P	PKPbc	17 27 23.9	+1.1
	baz=322						
533A	Kerrville	147.82	39	P	PKPbc	17 27 23.9	+0.9
	baz=314						
Y40A	Okolona	147.86	27	P	PKPbc	17 27 23.3	+0.4
	baz=328						
236A	Katherine and	147.86	33	P	PKPbc	17 27 24.1	+1.1
	baz=320						
335A	Moody	147.91	35	P	PKPbc	17 27 23.9	+0.8
	baz=318						
Z39A	Irene McRaven,	148.08	29	P	PKPbc	17 27 24.4	+0.9
	baz=325						
138A	Matatall Enter	148.10	31	P	PKPab	17 27 25.1	-1.3
	baz=323						
633A	Saathoff Ranch	148.15	40	P	PKPbc	17 27 25.0	+1.1
	baz=314						
336A	Riesel	148.16	34	P	PKPbc	17 27 24.9	+1.1
	baz=319						
435B	Jarrell	148.18	36	P	PKPbc	17 27 24.7	+0.8
	baz=317						
ALOL	LOMAS DE OLMED	148.18	202	eP	PKPab	17 27 26.4	-0.6
534A	Blanco	148.19	38	P	PKPbc	17 27 24.5	+0.6
	baz=315						
AZAP	Zapla	148.20	200‖	eP	PKPbc	17 27 24.9	+0.5
WLAR	White Oak Lake	148.21	27	ePKPbc	PKPbc	17 27 24.7	+0.9
ASTB	Santa Barbara	148.24	201‖	eP	PKPbc	17 27 25.1	+0.7
237A	Washetta, Mont	148.25	32	P	PKPbc	17 27 25.3	+1.3
	baz=322						
Y41A	Eaglette Beard	148.26	26	P	PKPbc	17 27 24.6	+0.6
	baz=328						
URVA	University of	148.29	2	ePKPbc	PKPbc	17 27 23.7	-0.2
832A	Faith Ranch, C	148.42	42	P	PKPbc	17 27 25.7	+1.2
	baz=311						
X43A	Marvell	148.43	23	P	PKPbc	17 27 25.1	+0.8
	baz=332						
139A	Bunkhouse Ranc	148.44	30	P	PKPbc	17 27 25.1	+0.7
	baz=324						
BLA	Blacksburg	148.46	6	ePKIKP	PKPdf	17 27 21.4	+0.5
BLA				e		17 27 24.3	
BLA	Blacksburg	148.46	6	ePKPdf	PKPdf	17 27 21.4	+0.5
BLA				ePKPbc	PKPbc	17 27 24.2	-0.2
VWCC	Virginia Weste	148.47	5	ePKPbc	PKPbc	17 27 24.4	-0.1
733A	Divot King Ran	148.58	41	P	PKPbc	17 27 26.1	+1.1
	baz=313						
CCAR	Cane Creek	148.59	25	ePKPbc	PKPbc	17 27 25.5	+0.7
238A	Jacksonville	148.61	31	P	PKPbc	17 27 26.4	+1.4
	baz=323						
436A	Wall Ranch, Ga	148.65	35	P	PKPbc	17 27 26.6	+1.5
	baz=319						
Y42A	Garnett, Star	148.65	25	P	PKPbc	17 27 25.8	+0.8
	baz=330						
TZTN	Tazewell	148.66	11	ePKPdf	PKPdf	17 27 22.0	+0.8
TZTN				ePKPbc	PKPbc	17 27 25.3	+0.3
Z41A	Richland Creek	148.71	27	P	PKPbc	17 27 26.0	+0.8
	baz=328						
X44A	Crenshaw	148.72	22	P	PKPbc	17 27 25.4	+0.2
	baz=333						
634A	China Grove, S	148.72	39	P	PKPbc	17 27 26.1	+0.8
	baz=315						
535A	Dale	148.74	37	P	PKPbc	17 27 26.6	+1.3
	baz=317						
337A	Centerville	148.74	33	P	PKPab	17 27 27.3	-1.7
	baz=321						
833A	Chaparral WMA,	148.78	41	P	PKPbc	17 27 26.8	+1.3
	baz=312						
140A	Cam and Jess,	148.86	29	P	PKPbc	17 27 26.6	+1.1
	baz=326						
239A	Gary	148.93	30	P	PKPbc	17 27 27.1	+1.4
	baz=324						
Y43A	Makayla and Ka	148.94	24	P	PKPbc	17 27 26.8	+1.1
	baz=331						
734A	La Parita Cree	148.97	40	P	PKPbc	17 27 27.4	+1.5
	baz=314						
437A	Phantom Ranch,	148.97	34	P	PKPbc	17 27 27.4	+1.5
	baz=320						
OXF	Oxford	148.98	21	ePKP2	PKPbc	17 27 26.1	+0.3
OXF	Oxford	148.98	21	ePKPbc	PKPbc	17 27 26.1	+0.3
PLAL	Pickwick Lake	149.00	19	ePKPbc	PKPbc	17 27 25.3	-0.5
536A	Bastrop	149.01	36	P	PKPbc	17 27 27.2	+1.2
	baz=318						
338A	Crockett	149.02	32	P	PKPbc	17 27 27.5	+1.5
	baz=322						
NATX	Nacogdoches	149.04	31	P	PKPbc	17 27 27.2	+1.1
	baz=323						
NATX	Nacogdoches	149.04	31	ePKPbc	PKPbc	17 27 26.9	+0.8
NATX				LR	LR		
	comp=Z,1µm,22.0s						
X45A	UM Field Stati	149.06	21	P	PKPbc	17 27 26.2	+0.1
	baz=335						
Z42A	Norrel Spur, H	149.07	26	P	PKPbc	17 27 26.9	+0.9
	baz=329						
635A	Leesville	149.08	38	P	PKPbc	17 27 27.9	+1.7
	baz=316						
Y44A	Strider, Charl	149.18	23	P	PKPbc	17 27 27.0	+0.7
	baz=333						
141A	Papa Simpson,	149.21	28	P	PKPbc	17 27 27.4	+0.9
	baz=327						
HJA	Humahuaca	149.25	200	eP	PKPbc	17 27 29.3	+2.0
240A	Hunter Patters	149.26	29	P	PKPbc	17 27 27.8	+1.2
	baz=325						
933A	Laredo	149.33	42	P	PKPbc	17 27 28.6	+1.7
	baz=311						
438A	Sam Houston St	149.40	33	P	PKPbc	17 27 28.1	+1.1
	baz=321						
SWET	Sewanee	149.40	15	ePKPdf	PKPdf	17 27 22.6	0.0
SWET				ePKPbc	PKPbc	17 27 26.6	-0.3
735A	Kenedy	149.43	39	P	PKPbc	17 27 29.0	+1.9
	baz=315						
339A	Huntington	149.43	31	P	PKPbc	17 27 28.0	+1.0
	baz=323						
537A	Green Hill Far	149.44	35	P	PKPbc	17 27 28.8	+1.8
	baz=319						
636A	Smothers Creek	149.44	37	P	PKPbc	17 27 29.2	+2.1
	baz=317						
834A	Tilden	149.46	41	P	PKPbc	17 27 28.8	+1.6
	baz=313						
TKL	Tuckaleechee C	149.48	12	PKP	PKPdf	17 27 23.0	+0.4
	comp=Z,82nm,0.9s,baz=165,slow=0.6,SNR=3.5						
TKL				PKPbc	PKPbc	17 27 27.6	+0.5
	comp=Z,58nm,0.7s,baz=125,slow=3.0,SNR=80						
TKL	Tuckaleechee C	149.48	12	ePKPdf	PKPdf	17 27 23.3	+0.8
TKL				ePKPbc	PKPbc	17 27 27.2	+0.2
Y45A	Yeager Farm, C	149.51	22	P	PKPbc	17 27 27.9	+0.7
	baz=334						
CPCT	Cooper Cave	149.52	13	ePKPdf	PKPdf	17 27 23.4	+0.8
CPCT				ePKPbc	PKPbc	17

KMSC *e*PKPab **PKPab** **17 27 35.8 +0.2**
638A Rosharon 150.43 35 P **PKPbc** **17 27 32.0 +2.5**
baz=319
243A Waterproof 150.46 26 P **PKPbc** **17 27 30.4 +0.9**
baz=329
145A Houston Renfro 150.49 23 P **PKPbc** **17 27 30.5 +1.0**
baz=332
VBMS Vicksburg 150.58 25 P **PKPbc** **17 27 30.8 +1.0**
baz=331
441A DeRidder 150.60 30 P **PKPbc** **17 27 31.5 +1.6**
baz=325
Z47A Carrollton 150.63 20 P **PKPbc** **17 27 30.2 +0.3**
baz=336
Z48A Northport 150.64 19 P **PKPbc** **17 27 29.8 -0.1**
baz=337
146A Union 150.79 22 P **PKPbc** **17 27 31.3 +1.0**
baz=334
LVC Limon Verde 150.87 195 *e*PKPdf **PKPdf** **17 27 26.2 +0.6**
LVC *e*PKPbc **PKPbc** **17 27 32.5 +1.3**
LVC *e*PKPbc **PKPbc** **17 27 32.6 +1.4**
035Z Hargill 150.89 43 P **PKPbc** **17 27 32.9 +2.2**
baz=312
245A Little AP, Sta 151.00 24 P **PKPbc** **17 27 31.7 +0.9**
baz=332
147A Livingston 151.04 21 P **PKPbc** **17 27 31.5 +0.6**
baz=335
LRAL Lakeview Retre 151.14 18 *e*PKPdf **PKPdf** **17 27 25.6 +0.4**
LRAL *e*PKPbc **PKPbc** **17 27 30.9 -0.2**
344A Westbrook Farm 151.16 26 P **PKPbc** **17 27 32.4 +1.2**
baz=330
JSC Jenkinsville 151.25 8 *e*PKIKP **PKPdf** **17 27 26.3 +1.0**
JSC *e* 17 27 31.3
JSC Jenkinsville 151.25 8 *e*PKPdf **PKPdf** **17 27 26.3 +1.0**
JSC *e*PKPbc **PKPbc** **17 27 31.3 0.0**
BBSR BB Station 151.28 339 *e*PKPbc **PKPbc** **17 27 32.2 +0.8**
246A Jackson Lee, B 151.32 23 P **PKPbc** **17 27 32.7 +1.2**
baz=333
PB04 IPOC Station P 151.42 192 *e*PKPbc **PKPbc** **17 27 34.2 +1.9**
247A Quitman 151.48 22 P **PKPbc** **17 27 33.2 +1.3**
baz=334
345A Thompson Farm, 151.58 25 P **PKPbc** **17 27 33.3 +1.2**
baz=331
GOGA Godfrey 151.71 12 *e*PKIKP **PKPdf** **17 27 26.8 +0.7**
GOGA *e* 17 27 33.2
GOGA *e* 17 27 41.3
GOGA Godfrey 151.71 12 *e*PKPdf **PKPdf** **17 27 26.8 +0.7**
GOGA *e*PKPbc **PKiKP** **17 27 33.2 +0.4**
GOGA *e*PKPab **PKPab** **17 27 41.3 +0.2**
346A Big Creek Wild 151.74 24 P **PKPbc** **17 27 33.5 +1.0**
baz=332
248A Dixon Mills 151.75 20 P **PKPbc** **17 27 33.4 +0.9**
baz=336
444A Pine Grove 151.78 27 P **PKPbc** **17 27 33.7 +1.1**
baz=329
347A Saraland 152.09 22 P **PKPbc** **17 27 34.4 +1.1**
baz=334
MOIG Morelia 152.30 58 *e*PKPdf **PKPdf** **17 27 28.2 +0.6**
MOIG *e*PKPbc **PKPbc** **17 27 35.5 +1.1**
MOIG *e*PKPab **PKPab** **17 27 46.0 +1.6**
348A Jackson 152.31 21 P **PKPbc** **17 27 34.8 +1.0**
baz=335
PB01 IPOC Station P 152.51 194 *e*PKPdf **PKPdf** **17 27 29.1 +1.3**
PB01 *e*PKPbc **PKiKP** **17 27 35.8 +0.9**
NHSC New Hope 152.55 7 *e*PKPbc **PKPbc** **17 27 34.3 0.0**
RGRS Roger Stewart 152.74 7 *e*PKPdf **PKPdf** **17 27 29.2 +1.6**
RGRS *e*PKPab **PKPab** **17 27 45.9 +0.5**
BRAL Brewton 152.84 20 PFAKE 17 27 40.0 +5.0
BRAL LR LR
comp=Z,2μm,20.0s
SIV San Ignacio 153.54 215 PKP **PKPdf** **17 27 29.6 +0.3**
comp=Z,8.6nm,1.0s,baz=116,slow=2.2,SNR=12
SIV PKPbc **PKiKP** **17 27 37.8 +0.7**
comp=Z,42nm,0.9s,baz=139,slow=3.7,SNR=44
SIV PKPab **PKPab** **17 27 50.4 +1.1**
comp=Z,65nm,0.9s,baz=175,slow=3.7,SNR=17
TIGA Tifton 153.58 14 P **PKPbc** **17 27 37.3 +0.7**
baz=344
PB11 IPOC Station P 153.78 195 *e*PKPdf **PKPdf** **17 27 30.7 +1.0**
PB11 *e*PKPbc **PKiKP** **17 27 38.6 +0.9**
PB11 *e*PKPab **PKPab** **17 27 47.7 -2.6**
TLIG Tlapa 155.47 59 *e*PKPdf **PKPdf** **17 27 33.6 +1.6**
LPAZ La Paz 156.60 201 PKP **PKPdf** **17 27 35.4 +1.2**
comp=Z,11nm,1.0s,baz=60,slow=2.4,SNR=27
LPAZ PKPab **PKPab** **17 28 04.6 +1.7**
comp=Z,34nm,1.0s,baz=193,slow=3.3,SNR=10
LPAZ La Paz 156.60 201 *e*PKPdf **PKPdf** **17 27 34.9 +0.7**
LPAZ *e*PKPab **PKPab** **17 28 04.6 +1.7**
DWPF Disney Wildern 157.26 11 *e*PKPdf **PKPdf** **17 27 34.9 +1.0**
DWPF *e*PKPab **PKPab** **17 28 04.8 0.0**
SAML Samuel 160.26 223 *e*PKPdf **PKPdf** **17 27 38.0 +0.1**
SAML *e*PKPab **PKPab** **17 28 18.3 +0.1**
ANWB Willy Bob 161.32 311 *e*PKPdf **PKPdf** **17 27 39.4 +0.5**
ANWB *e*PKPab **PKPab** **17 28 24.0 +1.2**
TEIG Tepich 161.62 37 PKP **PKPdf** **17 27 40.1 +0.9**
comp=Z,5.3nm,0.9s,baz=270,slow=20,SNR=3.7
TEIG PKPab **PKPab** **17 28 23.7 -0.3**
comp=Z,13nm,0.9s,baz=90,slow=20,SNR=5.0
TEIG Tepich 161.62 37 *e*PKPdf **PKPdf** **17 27 40.1 +0.9**
TEIG *e*PKPab **PKPab** **17 28 23.4 -0.6**
SMRT St. Maarten 162.03 314 *e*PKPdf **PKPdf** **17 27 40.3 +0.7**
PTGA Pitinga 162.25 249 PKP **PKPdf** **17 27 40.8 +0.7**
comp=Z,7.0nm,0.8s,baz=74,slow=2.5,SNR=11
PTGA PKPab **PKPab** **17 28 27.7 +0.6**
comp=Z,21nm,0.9s,baz=109,slow=5.0,SNR=6.9
PTGA Pitinga 162.25 249 *e*PKPdf **PKPdf** **17 27 40.2 +0.2**
PTGA *e*PKPab **PKPab** **17 28 26.5 -0.6**
PTGA *e*PP **PP** **17 32 11.0 -0.4**
FDF Fort de France 162.42 302 *e*P **PKPdf** **17 27 41.8 +1.7**
FDF Fort de France 162.42 302 *e*PKIKP **PKPdf** **17 27 40.6 +0.5**
FDF Fort de France 162.42 302 *e*PKPdf **PKPdf** **17 27 40.6 +0.5**
HUMP Col San Antoni 163.84 321 *e*PKPdf **PKPdf** **17 27 41.8 +0.4**
SJG San Juan 164.05 321 PKP **PKPdf** **17 27 41.6 0.0**
comp=Z,2.3nm,0.2s,baz=90,slow=6.1,SNR=2.1
LRS Lares 164.33 324 *e*PKPdf **PKPdf** **17 27 41.8 -0.1**
GTBY Guantanamo Bay 165.82 355 PFAKE 17 27 50.0 +7.0
GTBY LR LR
comp=Z,1μm,21.0s
SDDR Presa de Saban 165.87 339 *e*PKPdf **PKPdf** **17 27 44.2 +1.0**
SDDR *e*PKPab **PKPab** **17 28 43.7 +1.1**
SDDR *e*PP **PP** **17 32 24.7 -3.7**
ATAH Atahualpa 167.09 172 PKP **PKPdf** **17 27 46.0 +1.2**
comp=Z,6.0nm,0.7s,baz=159,slow=3.6,SNR=5.7
ATAH PKPab **PKPab** **17 28 49.9 +1.4**
comp=Z,31nm,1.0s,baz=236,slow=4.6,SNR=6.5
MTDJ Mount Denham 167.54 4 *e*PKPab **PKPab** **17 28 50.1 +0.1**
MTDJ *e*PP **PP** **17 32 39.0 +2.2**
SDV Santo Domingo 173.35 299 PKP **PKPdf** **17 27 47.2 -0.8**
comp=Z,11nm,0.4s,baz=195,slow=0.9,SNR=3.4
SDV PKPab **PKPab** **17 29 17.1 +0.7**
comp=Z,9.2nm,0.3s,baz=334,slow=5.9,SNR=3.7
OTAV Otavalo 174.22 161 *e*PKPdf **PKPdf** **17 27 49.2 +0.5**
OTAV *e*PKPab **PKPab** **17 29 22.5 +2.3**
OTAV *e*PP **PP** **17 33 14.2 +3.3**
CAPC Capurgana 177.00 16 *e*P pPKPab 17 29 42.6 -2.3
ROSC El Rosal 177.62 248 PKP **PKPdf** **17 27 49.9 +0.5**
comp=Z,4.3nm,0.3s,baz=180,slow=16,SNR=3.1
ROSC PKPab PKPab 17 29 36.6 +0.9
comp=Z,5.9nm,0.3s,baz=142,slow=19,SNR=1.9
ROSC El Rosal 177.62 248 *e*PKPdf **PKPdf** **17 27 48.7 -0.7**
ROSC *e*PKPab PKPab 17 29 36.3 +0.6

WEL 28 17:14:09.7±0.1, 43°.58S×172°.61E, h5km, ML3.5/4, 4C-1D, Error ellipse: s-maj=0.8km s-min=0.7km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRLZ	**Canterbury Las**	**0.01**	**86⇑**	*e*PG	Pg	17 14 10.3	-0.3
CRLZ				SG	Sg	17 14 10.8	-0.4
CRLZ				AML	AML	17 14 10.8	
CRLZ				AML	AML	17 14 10.9	
CRLZ				AML	AML	17 14 10.9	
MQZ	**McQueen's Vall**	**0.14**	**165**	⇑PG	Pg	17 14 12.6	+0.2
MQZ				SG	Sg	17 14 14.8	+0.5
MQZ				AML	AML	17 14 15.0	
OXZ	**Oxford**	**0.48**	**301**	PG	Pg	17 14 19.3	+0.4
LTZ	**Lake Taylor**	**0.83**	**343**	⇑P*	Pb	17 14 26.3	-0.3
LTZ				AML	AML	17 14 39.2	
LTZ				AML	AML	17 14 44.1	
RPZ	**Rata Peaks**	**1.14**	**262**	⇑P*	Pg	17 14 30.9	-0.5
INZ	**Inchbonnie**	**1.20**	**315**	P*	Pg	17 14 32.6	-0.1
THZ	**Tophouse**	**1.82**	**7**	PN	Pn	17 14 40.5	-1.3
DSZ	**Denniston Nort**	**1.92**	**342**	⇓PN	Pn	17 14 42.2	-0.9
ODZ	**Otahua Downs**	**2.04**	**223**	PN	Pn	17 14 43.3	-1.3
ODZ				AML	AML	17 17 14.2	
ODZ				AML	AML	17 17 14.2	

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*LDG **28** 17:24:18.4±0.2, 41°.74N×3°.03E, h2km, MI1.5/2, Error ellipse: s-maj=3.4km s-min=1.8km az=132.0*
*CSEM **28** 17:24:19.2±0.6, 41°.79N×2°.96E, h5km, ML1.1, Error ellipse: s-maj=9.9km s-min=3.4km az=141.0*
MDD 28 17:24:19.4±1.0, 41°.76N×3°.00E, h0km, mbLg1.1/6, Error ellipse: s-maj=7.4km s-min=4.2km az=131.0, PRXIMO, Spain

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CCAS	**Cassa de la Se**	**0.14**	**330**	Pg	Pg	17 24 21.5	-0.6
CCAS				Lg	Lg	17 24 23.5	
14nm,0.2s							
CCAS	**Cassa de la Se**	**0.14**	**330**	Pg	Pg	17 24 21.5	-0.6
CCAS				Lg	Lg	17 24 23.5	
14nm,0.2s							
CFON	**Fontmartina**	**0.42**	**270**	Pg	Pg	17 24 27.2	-0.2
5.8nm,0.8s,SNR=7.0							
CFON				Lg	Lg	17 24 32.9	
6.1nm,0.5s,SNR=9.6							
CFON	**Fontmartina**	**0.42**	**270**	Pg	Pg	17 24 27.2	-0.2
5.8nm,0.8s,SNR=7.0							
CFON				Lg	Lg	17 24 32.9	
6.1nm,0.5s,SNR=9.6							
CBEU	**Beuda**	**0.55**	**334**	Pg	Pg	17 24 29.2	-0.7
CBEU				Lg	Lg	17 24 36.9	
1.9nm,0.3s							
CBEU	**Beuda**	**0.55**	**334**	Pg	Pg	17 24 29.2	-0.7
CBEU				Lg	Lg	17 24 36.9	
1.9nm,0.3s							
CPAL	**Palau Saverder**	**0.56**	**13**	Pg	Pg	17 24 29.4	-0.8
CPAL				Lg	Lg	17 24 37.3	
CPAL	**Palau Saverder**	**0.56**	**13**	Pg	Pg	17 24 29.4	-0.8
CPAL				Lg	Lg	17 24 37.3	
EJON	**La Jonquera**	**0.69**	**353**	Pg	Pg	17 24 32.5	-0.1
1.1nm,0.2s,SNR=7.9							
EJON				Lg	Lg	17 24 42.8	
5.2nm,0.4s,SNR=7.9							
EJON	**La Jonquera**	**0.69**	**353**	Pg	Pg	17 24 32.5	-0.1
1.1nm,0.2s,SNR=7.9							
EJON				Lg	Lg	17 24 42.8	
5.2nm,0.4s,SNR=7.9							
SJAF	**Saint Jean de**	**0.72**	**353**	Pg	Pg	17 24 32.4	-0.9
0.2nm,0.4s,SNR=7.9							
SJAF				Lg	Lg	17 24 43.0	
2.6nm,0.4s,SNR=7.9							
SJAF	**Saint Jean de**	**0.72**	**353**	Pg	Pg	17 24 32.4	-0.9
0.2nm,0.4s,SNR=7.9							
SJAF				Lg	Lg	17 24 43.0	
2.6nm,0.4s,SNR=7.9							
CBRU	**Bruguera**	**0.80**	**311**	Pg	Pg	17 24 34.2	-0.6
CBRU				Lg	Lg	17 24 45.7	
CBRU	**Bruguera**	**0.80**	**311**	Pg	Pg	17 24 34.2	-0.6
CBRU				Lg	Lg	17 24 45.7	
CLLI	**Llivia**	**1.04**	**314**	Pg	Pg	17 24 39.2	-0.2
0.1nm,0.1s,SNR=7.9							
CLLI				Lg	Lg	17 24 52.9	
2.3nm,0.6s,SNR=7.9							
CLLI	**Llivia**	**1.04**	**314**	Pg	Pg	17 24 39.2	-0.2
0.1nm,0.1s,SNR=7.9							
CLLI				Lg	Lg	17 24 52.9	
2.3nm,0.6s,SNR=7.9							
EPOB	**Poblet**	**1.50**	**255**	Pg	Pn	17 24 46.7	-0.9
0.4nm,0.3s,SNR=7.9							
EPOB				Lg	Lg	17 25 06.9	
16nm,1.0s,SNR=5.9							
CSOR	**Sort**	**1.52**	**294**	Lg	Lg	17 25 08.1	
4.0nm,0.6s,SNR=7.9							
CSOR	**Sort**	**1.52**	**294**	Lg	Lg	17 25 08.1	
4.0nm,0.6s,SNR=7.9							
MTLF	**Montolieu**	**1.68**	**340**	*e*Pg	Pn	17 24 50.3	+0.3
MTLF				*e*Sg	Sn	17 25 12.2	-0.1
0.5nm,0.3s							
MTLF	**Montolieu**	**1.68**	**340**	Pg	Pn	17 24 50.3	+0.3
MTLF				Lg	Lg	17 25 12.2	
0.2nm,0.3s							
MTLF	**Montolieu**	**1.68**	**340**	Pg	Pn	17 24 50.3	+0.3
MTLF				Lg	Lg	17 25 12.2	
0.2nm,0.3s							
EPF	**Esparros**	**2.34**	**304**	*e*Pg	Pb	17 25 02.4	-0.1
EPF				*e*Sg	Sb	17 25 33.1	+1.2
0.3nm,0.2s							
EPF	**Esparros**	**2.34**	**304**	*e*Sg	Sg	17 25 33.4	-1.2
1.2nm,0.2s							
EPF	**Esparros**	**2.34**	**304**	Pg	Pb	17 25 02.4	-0.1
EPF				Lg	Lg	17 25 33.4	
0.6nm,0.2s							
EPF	**Esparros**	**2.34**	**304**	Pg	Pb	17 25 02.4	-0.1
EPF				Lg	Lg	17 25 33.4	
0.6nm,0.2s							
EPF	**Esparros**	**2.34**	**304**	*e*Sg	Sg	17 25 33.4	-1.2
0.6nm,0.2s							

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*CSEM **28** 17:24:50.5±0.1, 42°.84N×1°.48W, h8km, ML1.0, Error ellipse: s-maj=1.1km s-min=0.8km az=83.0*
*LDG **28** 17:24:50.7±0.1, 42°.85N×1°.49W, h4km±2km, Md1.3/2, MI1.7/1, Error ellipse: s-maj=0.8km s-min=0.6km az=76.0*
MDD 28 17:24:51.1±0.2, 42°.85N×1°.49W, h4km±2km, mbLg1.0/10, 1C-1D, Error ellipse: s-maj=2.2km s-min=1.2km az=150.0, PRXIMO, Pyrenees

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IZUN	**Zunzarren**	**0.02**	**65**	⇓Pg	Pg	17 24 51.9	-0.1
70nm,0.1s,SNR=18							
IZUN				Lg	Lg	17 24 52.6	
SNR=7.9							
IZUN	**Zunzarren**	**0.02**	**65**	Pg	Pg	17 24 51.9	-0.1
70nm,0.1s,SNR=18							
IZUN				Lg	Lg	17 24 52.6	
SNR=7.9							
EARA	**Aranguren**	**0.10**	**222**	⇑Pg	Pg	17 24 53.1	-0.1
2.9nm,0.1s,SNR=18							
EARA				Lg	Lg	17 24 54.9	
23nm,0.0s,SNR=7.9							
EARA	**Aranguren**	**0.10**	**222**	Pg	Pg	17 24 53.1	-0.1
2.9nm,0.1s,SNR=18							
EARA				Lg	Lg	17 24 54.9	
23nm,0.0s,SNR=7.9							
IPRE	**Itoiz**	**0.10**	**115**	Pg	Pg	17 24 52.9	-0.3
0.8nm,0.2s,SNR=7.9							
IPRE				Lg	Lg	17 24 54.6	
3.3nm,0.1s,SNR=7.9							
IPRE	**Itoiz**	**0.10**	**115**	Pg	Pg	17 24 52.9	-0.3
0.8nm,0.2s,SNR=7.9							
IPRE				Lg	Lg	17 24 54.6	
3.3nm,0.1s,SNR=7.9							
EORO	**Oroz-Betelu**	**0.14**	**72**	Pg	Pg	17 24 53.7	-0.1
10nm,0.4s,SNR=39							
EORO				Lg	Lg	17 24 55.6	
5.6nm,0.1s,SNR=7.9							
EORO	**Oroz-Betelu**	**0.14**	**72**	Pg	Pg	17 24 53.7	-0.1
10nm,0.4s,SNR=39							
EORO				Lg	Lg	17 24 55.6	
5.6nm,0.1s,SNR=7.9							
IEPA	**Eparoz**	**0.18**	**114**	Pg	Pg	17 24 54.4	-0.1
0.8nm,0.0s,SNR=7.9							
IEPA				Lg	Lg	17 24 56.9	
6.5nm,0.1s,SNR=7.9							
IEPA	**Eparoz**	**0.18**	**114**	Pg	Pg	17 24 54.4	-0.1
0.8nm,0.0s,SNR=7.9							
IEPA				Lg	Lg	17 24 56.9	
6.5nm,0.1s,SNR=7.9							
IELO	**Elcoad**	**0.18**	**92**	Pg	Pg	17 24 54.4	-0.2
1.0nm,0.3s,SNR=7.9							
IELO				Lg	Lg	17 24 57.4	
6.4nm,0.1s,SNR=7.9							
IELO	**Elcoad**	**0.18**	**92**	Pg	Pg	17 24 54.4	-0.3
1.0nm,0.3s,SNR=7.9							
IELO				Lg	Lg	17 24 57.4	
6.4nm,0.1s,SNR=7.9							
YASP	**Aspurt**	**0.27**	**117**	Pg	Pg	17 24 56.0	-0.2
0.6nm,0.1s,SNR=7.9							
YASP				Lg	Lg	17 24 59.8	
1.8nm,0.1s,SNR=7.9							
YASP	**Aspurt**	**0.27**	**117**	Pg	Pg	17 24 56.0	-0.2
0.6nm,0.1s,SNR=7.9							
YASP				Lg	Lg	17 24 59.8	
1.8nm,0.1s,SNR=7.9							
YARA	**Arangoiti**	**0.30**	**133**	Pg	Pg	17 24 56.5	-0.3
0.2nm,0.1s,SNR=7.9							
YARA				Lg	Lg	17 25 00.9	
2.2nm,0.1s,SNR=7.9							
YARA	**Arangoiti**	**0.30**	**133**	Pg	Pg	17 24 56.5	-0.3
0.2nm,0.1s,SNR=7.9							
YARA				Lg	Lg	17 25 00.9	
2.2nm,0.1s,SNR=7.9							
SJPF	**Ste Jean**	**0.33**	**36**	*e*Pg	Pg	17 24 57.1	-0.2
SJPF				*e*Sg	Sg	17 25 01.4	-0.2
4.5nm,0.2s							
SJPF	**Ste Jean**	**0.33**	**36**	Pg	Pg	17 24 57.1	-0.2
SJPF				Lg	Lg	17 25 01.4	
2.2nm,0.2s							
SJPF	**Ste Jean**	**0.33**	**36**	Pg	Pg	17 24 57.1	-0.2
SJPF				*e*Sg	Sg	17 25 01.4	-0.2
2.2nm,0.2s							
EALK	**Alkurruntz**	**0.37**	**358**	Pg	Pg	17 24 58.1	-0.1
0.2nm,0.1s,SNR=7.9							
EALK				Lg	Lg	17 25 03.0	
2.0nm,0.1s,SNR=7.4							
EALK	**Alkurruntz**	**0.37**	**358**	Pg	Pg	17 24 58.1	-0.1
0.2nm,0.1s,SNR=7.9							
EALK				Lg	Lg	17 25 03.0	
2.0nm,0.1s,SNR=7.4							
YUND	**Undues**	**0.38**	**136**	Pg	Pg	17 24 57.9	-0.4
0.3nm,0.0s,SNR=7.9							
YUND				Lg	Lg	17 25 03.2	
0.3nm,0.0s,SNR=7.9							
YUND	**Undues**	**0.38**	**136**	Pg	Pg	17 24 57.9	-0.4
0.3nm,0.0s,SNR=7.9							
YUND				Lg	Lg	17 25 03.2	
0.3nm,0.0s,SNR=7.9							
YSIG	**Sigues**	**0.42**	**120**	Pg	Pg	17 24 58.7	-0.4
0.2nm,0.1s,SNR=7.9							
YSIG				Lg	Lg	17 25 04.6	
0.7nm,0.1s,SNR=7.9							
YSIG	**Sigues**	**0.42**	**120**	Pg	Pg	17 24 58.7	-0.4
0.2nm,0.1s,SNR=7.9							
YSIG				Lg	Lg	17 25 04.6	
0.7nm,0.1s,SNR=7.9							
YMUS	**Peˆ–a Musera**	**0.43**	**128**	Pg	Pg	17 24 59.0	-0.5
0.5nm,0.1s,SNR=7.9							
YMUS				Lg	Lg	17 25 05.2	
0.3nm,0.1s,SNR=7.9							
YMUS	**Peˆ–a Musera**	**0.43**	**128**	Pg	Pg	17 24 59.0	-0.4
0.5nm,0.1s,SNR=7.9							
YMUS				Lg	Lg	17 25 05.2	
0.3nm,0.1s,SNR=7.9							
YBER	**Berdun**	**0.50**	**123**	Pg	Pg	17 25 00.1	-0.5
0.2nm,0.1s,SNR=7.9							
YBER				Lg	Lg	17 25 07.2	
0.2nm,0.1s,SNR=7.9							
YBER	**Berdun**	**0.50**	**123**	Pg	Pg	17 25 00.1	-0.5
0.2nm,0.1s,SNR=7.9							
YBER				Lg	Lg	17 25 07.2	
0.2nm,0.1s,SNR=7.9							
ATE	**Arette**	**0.62**	**68**	Pg	Pg	17 25 02.4	-0.6
0.6nm,0.4s,SNR=7.9							
ATE				Lg	Lg	17 25 11.4	
2.5nm,0.4s,SNR=7.9							
ATE	**Arette**	**0.62**	**68**	Pg	Pg	17 25 02.4	-0.6
0.6nm,0.4s,SNR=7.9							
ATE				Lg	Lg	17 25 11.4	
2.5nm,0.4s,SNR=7.9							
ETSF	**Etsaut**	**0.68**	**86**	*e*Pg	Pg	17 25 03.7	-0.5
ETSF				*e*Sg	Sg	17 25 12.8	-0.2
0.4nm,0.2s							
ETSF	**Etsaut**	**0.68**	**86**	Pg	Pg	17 25 03.7	-0.5
ETSF				Lg	Lg	17 25 12.8	
0.2nm,0.2s							
ETSF	**Etsaut**	**0.68**	**86**	Pg	Pg	17 25 03.7	-0.5
ETSF				*e*Sg	Sg	17 25 12.8	-0.2
0.2nm,0.2s							
ESAC	**San Caprasio**	**1.36**	**146**	Pg	Pn	17 25 16.2	-0.6
1.6nm,0.2s,SNR=7.9							
ESAC				Lg	Lg	17 25 34.9	
8.5nm,0.3s,SNR=7.9							
ESAC	**San Caprasio**	**1.36**	**146**	Pg	Pn	17 25 16.2	-0.7
1.6nm,0.2s,SNR=7.9							
ESAC				Lg	Lg	17 25 34.9	
8.5nm,0.3s,SNR=7.9							

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*ISK **28** 17:28:06.2, 39°.10N×29°.05E, h5km, ML2.9*
*ISCJB **28** 17:28:07.5±0.3, 39°.09N±0°.03×29°.05E±0°.03, h9km, Error ellipse: s-maj=4.0km s-min=3.6km az=28.2*
*DDA **28** 17:28:07.3, 39°.08N×29°.07E, h7km, Ml3.0*
*CSEM **28** 17:28:07.5±0.1, 39°.11N×29°.05E, h2km, ML3.0, Error ellipse: s-maj=2.3km s-min=1.9km az=76.0*
ISC 28 17:28:07.5±0.8, 39°.11N±0°.02×29°.06E±0°.02, h9km, n55, σ0°59/62, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**257**	S	**Sg**	**17 28 16.3**	**-0.5**
DEMI	**Demirci**	**0.28**	**257**	*i* S	**Sg**	**17 28 16.3**	**-0.5**
DEMI				*i* P	**Pn**	**17 28 17.8**	**-0.1**
GDZ	**Gediz**	**0.33**	**93**	P	**Pg**	**17 28 13.8**	**-0.3**
GDZ				S	**Sg**	**17 28 18.9**	**+0.4**
GDZ	**Gediz**	**0.33**	**93**	*i* P	**Pg**	**17 28 13.8**	**-0.3**
GDZ				*i* S	**Sg**	**17 28 18.9**	**+0.4**
TVSB	**Tavsanli**	**0.46**	**42**	*e*PG	**Pg**	**17 28 16.0**	**-0.6**
TVSB	**Tavsanli**	**0.46**	**42**	*e*Pg	**Pg**	**17 28 16.0**	**-0.6**
KULA	**Kula-Manisa**	**0.67**	**208**	PG	**Pg**	**17 28 19.9**	**-0.6**
KULA	**Kula-Manisa**	**0.67**	**208**	*i* Pg	**Pg**	**17 28 19.9**	**-0.6**
KHAL	**Karahalli**	**0.81**	**155**	P	**Pg**	**17 28 22.8**	**-0.3**
KHAL				S	**Sg**	**17 28 33.6**	**0.0**
KHAL	**Karahalli**	**0.81**	**155**	*i* P	**Pg**	**17 28 22.8**	**-0.3**
KHAL				*i* S	**Sg**	**17 28 33.6**	**0.0**
KHL	**Karahalli**	**0.86**	**155**	*e*PG	**Pg**	**17 28 24.4**	**+0.3**
KHL	**Karahalli**	**0.86**	**155**	*e*Pg	**Pg**	**17 28 24.4**	**+0.3**
ORLT	**Orhaneli**	**0.95**	**352**	*e*PG	**Pg**	**17 28 25.6**	**-0.2**
ORLT	**Orhaneli**	**0.95**	**352**	*e*Pg	**Pg**	**17 28 25.6**	**-0.2**
AKHS	**Akhisar**	**1.00**	**257**	P	**Pg**	**17 28 26.7**	**0.0**
AKHS	**Akhisar**	**1.00**	**257**	*i* P	**Pg**	**17 28 26.7**	**0.0**
AKS	**Akhisar**	**1.00**	**257**	*e*PG	**Pg**	**17 28 26.4**	**-0.3**
BALB	**Balikesir**	**1.06**	**301**	*e*PG	**Pg**	**17 28 27.7**	**-0.2**
BALB				*e*SG	**Sn**	**17 28 43.3**	**-0.1**
BALB	**Balikesir**	**1.06**	**301**	*e*Pg	**Pg**	**17 28 27.7**	**-0.2**
BALB				*e*Sg	**Sn**	**17 28 43.3**	**-0.1**
IGD	**Bursa**	**1.16**	**5**	*i* P	**Pb**	**17 28 28.1**	**-1.7**
MDNY	**Mudanya-Bursa**	**1.27**	**354**	*e*PN	**Pb**	**17 28 31.8**	**+0.1**
IZI	**Iznik**	**1.27**	**14**	*e*PN	**Pg**	**17 28 32.0**	**+0.1**
IZI	**Iznik**	**1.27**	**14**	*e*Pn	**Pg**	**17 28 32.0**	**+0.1**
KCTX	**Karacabey (Bur**	**1.28**	**335**	PN	**Pg**	**17 28 32.0**	**-0.1**
KCTX	**Karacabey (Bur**	**1.28**	**335**	*i* Pn	**Pg**	**17 28 32.0**	**-0.1**
GEMT	**Gemlik**	**1.33**	**4**	*e*PN	**Pb**	**17 28 32.9**	**+0.2**
DENT	**Denizli**	**1.35**	**181**	*e*PN	**Pg**	**17 28 33.5**	**+0.1**
DENT	**Denizli**	**1.35**	**181**	*e*Pn	**Pg**	**17 28 33.5**	**+0.1**
DNZL	**Cakiroluk**	**1.41**	**180**	P	**Pb**	**17 28 34.3**	**+0.1**

JFK			S	Sb	17 30 25.5	-0.5
ONAJ	**Iwakimizuishiy**	**0.75 255**	P	Pn	17 30 17.5	-0.5
ONAJ			S	Sb	17 30 28.8	+0.5
JMM	**Marumori**	**0.92 308**	P	Pn	17 30 20.3	+0.1
JMM			S	Sn	17 30 32.5	+0.2
JFT	**Otama**	**1.11 282**	P	Pb	17 30 23.9	-0.5
JFT			S	Sb	17 30 38.0	-0.5
JHO	**Hitachi**	**1.14 233**	P	Pn	17 30 23.5	+0.2
JHO			S	Sn	17 30 37.3	-0.5
JIO	**Ouri**	**1.19 347**	P	Pn	17 30 24.5	+0.5
JIO			S	Sb	17 30 40.2	-0.5
JOU	**Okura**	**1.34 323**	P	Pb	17 30 27.8	-0.5
JOU			*i* S	Sb	17 30 44.9	-0.3
MAT	**Matsushiro**	**2.90 256**	P	Pn	17 30 50.7	+3.1
MAT			*e*S	Sb	17 31 29.3	-0.5

*ISK **28** 17:32:06.3, 39°.04N×29°.24E, h14km, MD2.7*
*DDA **28** 17:32:07.0, 39°.08N×29°.05E, h7km, Md2.6*
*ISCJB **28** 17:32:07.1±0.5, 39°.11N±0°.04×29°.07E±0°.04, h9km, Error ellipse: s-maj=5.4km s-min=4.4km az=152.2*
*CSEM **28** 17:32:07.0±0.2, 39°.13N×29°.08E, h5km, MD2.6, Error ellipse: s-maj=6.2km s-min=5.1km az=103.0*
ISC 28 17:32:06.5±0.9, 39°.08N±0°.04×29°.10E±0°.03, h9km, n22, σ0s40/29, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.29**	**88**	P	**Pb**	**17 32 13.9**	**-0.2**
GDZ				S	**Sb**	**17 32 18.9**	**-0.2**
GDZ	**Gediz**	**0.29**	**88**	*i* P	**Pb**	**17 32 13.9**	**-0.2**
GDZ				*i* S	**Sb**	**17 32 18.9**	**-0.2**
DEMI	**Demirci**	**0.30**	**264**	P	**Pg**	**17 32 12.7**	**+0.1**
DEMI				S	**Sg**	**17 32 16.5**	**-0.2**
DEMI	**Demirci**	**0.30**	**264**	*i* P	**Pg**	**17 32 12.7**	**+0.1**
DEMI				*i* S	**Sg**	**17 32 16.5**	**-0.2**
TVSB	**Tavsanli**	**0.46**	**37**	*e*PG	**Sg**	**17 32 15.9**	**+0.3**
TVSB				*e*SG	**Sg**	**17 32 22.1**	**+0.4**
TVSB	**Tavsanli**	**0.46**	**37**	*e*Pg	**Pg**	**17 32 15.9**	**+0.3**
KULA	**Kula-Manisa**	**0.66**	**212**	*e*PG	**Pb**	**17 32 20.2**	**-0.1**
KULA	**Kula-Manisa**	**0.66**	**212**	*e*Pg	**Pb**	**17 32 20.2**	**-0.1**
KHAL	**Karahalli**	**0.77**	**157**	P	**Pn**	**17 32 23.5**	**-0.2**
KHAL				S	**Sb**	**17 32 33.5**	**+0.8**
KHAL	**Karahalli**	**0.77**	**157**	*i* P	**Pn**	**17 32 23.5**	**-0.2**
KHAL				*i* S	**Sb**	**17 32 33.5**	**+0.8**
CAVI	**Cavuskoy**	**1.26**	**27**	*e*PN	**Pn**	**17 32 29.9**	**-0.5**
CAVI	**Cavuskoy**	**1.26**	**27**	*e*Pn	**Pn**	**17 32 29.9**	**-0.5**
IZI	**Iznik**	**1.29**	**13**	*e*PN	**Pn**	**17 32 30.8**	**-0.1**
IZI	**Iznik**	**1.29**	**13**	*e*Pn	**Pn**	**17 32 30.8**	**-0.1**
KCTX	**Karacabey (Bur**	**1.32**	**334**	*e*PN	**Pg**	**17 32 32.3**	**+0.4**
KCTX	**Karacabey (Bur**	**1.32**	**334**	*e*Pn	**Pg**	**17 32 32.3**	**+0.4**
GONE	**Gonen-Balikesi**	**1.46**	**312**	*e*PN	**Pg**	**17 32 34.4**	**-0.2**
GONE	**Gonen-Balikesi**	**1.46**	**312**	*e*Pn	**Pg**	**17 32 34.4**	**-0.2**
ARMT	**Armutlu**	**1.50**	**353**	*e*PN	**Pn**	**17 32 34.1**	**+0.5**
ARMT	**Armutlu**	**1.50**	**353**	*e*Pn	**Pn**	**17 32 34.1**	**+0.5**
GULT	**Gulveren**	**1.74**	**38**	*e*PN	**Pn**	**17 32 36.3**	**-0.7**
GULT	**Gulveren**	**1.74**	**38**	*e*Pn	**Pn**	**17 32 36.3**	**-0.7**

*ISCJB **28** 17:40:49.5±0.5, 39°.13N±0°.04×29°.05E±0°.04, h4km, 8km, Error ellipse: s-maj=7.0km s-min=4.8km az=158.4*
*DDA **28** 17:40:49.4, 39°.12N×29°.02E, h7km, Md2.7*
*ISK **28** 17:40:49.2, 39°.11N×29°.09E, h6km, MD2.7*
*CSEM **28** 17:40:49.8±0.1, 39°.12N×29°.05E, h5km, MD2.7, Error ellipse: s-maj=3.3km s-min=3.1km az=100.0*
ISC 28 17:40:49.4±0.9, 39°.12N±0°.02×29°.05E±0°.02, h14km±8km, n31, σ0s37/40, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**254**	P	**Pg**	**17 40 55.1**	**0.0**
DEMI				S	**Sg**	**17 40 58.8**	**-0.1**
DEMI	**Demirci**	**0.27**	**254**	*i* P	**Pg**	**17 40 55.1**	**0.0**
DEMI				*i* S	**Sg**	**17 40 58.8**	**-0.1**
GDZ	**Gediz**	**0.34**	**94**	P	**Pg**	**17 40 56.8**	**+0.4**
GDZ				S	**Sg**	**17 41 01.1**	**-0.1**
GDZ	**Gediz**	**0.34**	**94**	*i* P	**Pg**	**17 40 56.8**	**+0.4**
GDZ				*i* S	**Sg**	**17 41 01.1**	**-0.1**
TVSB	**Tavsanli**	**0.47**	**44**	*e*PG	**Pg**	**17 40 58.7**	**0.0**
TVSB				*e*SG	**Sg**	**17 41 04.4**	**-0.6**
TVSB	**Tavsanli**	**0.47**	**44**	*e*Pg	**Pg**	**17 40 58.7**	**0.0**
TVSB				*e*Sg	**Sg**	**17 41 04.4**	**-0.6**
KULA	**Kula-Manisa**	**0.67**	**207**	*e*PG	**Pb**	**17 41 02.8**	**-0.1**
KULA	**Kula-Manisa**	**0.67**	**207**	*e*Pg	**Pb**	**17 41 02.8**	**-0.1**
KHAL	**Karahalli**	**0.82**	**155**	P	**Pn**	**17 41 07.0**	**+0.3**
KHAL				S	**Sb**	**17 41 16.7**	**+0.2**
KHAL	**Karahalli**	**0.82**	**155**	*i* P	**Pn**	**17 41 07.0**	**+0.3**
KHAL				*i* S	**Sb**	**17 41 16.7**	**+0.2**
KHL	**Karahalli**	**0.88**	**155**	*e*PG	**Pg**	**17 41 06.0**	**-0.3**
KHL	**Karahalli**	**0.88**	**155**	*e*Pg	**Pg**	**17 41 06.0**	**-0.3**
AKS	**Akhisar**	**0.99**	**257**	*e*PG	**Pn**	**17 41 09.1**	**+0.2**
AKS	**Akhisar**	**0.99**	**257**	*e*Pg	**Pn**	**17 41 09.1**	**+0.2**
BALB	**Balikesir**	**1.04**	**301**	*e*PN	**Pn**	**17 41 10.2**	**+0.6**
BALB	**Balikesir**	**1.04**	**301**	*e*Pn	**Pn**	**17 41 10.2**	**+0.6**
IGD	**Bursa**	**1.15**	**6**	*i* P	**Pb**	**17 41 10.8**	**-0.3**
IGD				*i* S	**Sb**	**17 41 24.8**	**-1.2**
CAVI	**Cavuskoy**	**1.25**	**29**	*e*PN	**Pg**	**17 41 13.4**	**0.0**
CAVI	**Cavuskoy**	**1.25**	**29**	*e*Pn	**Pg**	**17 41 13.4**	**0.0**
IZI	**Iznik**	**1.26**	**15**	*e*PN	**Pg**	**17 41 14.0**	**+0.3**
IZI	**Iznik**	**1.26**	**15**	*e*Pn	**Pg**	**17 41 14.0**	**+0.3**
KCTX	**Karacabey (Bur**	**1.27**	**335**	*e*PN	**Pg**	**17 41 14.3**	**+0.5**
KCTX	**Karacabey (Bur**	**1.27**	**335**	*e*Pn	**Pg**	**17 41 14.3**	**+0.5**
GONE	**Gonen-Balikesi**	**1.40**	**312**	*e*PN	**Pg**	**17 41 16.2**	**-0.2**
GONE	**Gonen-Balikesi**	**1.40**	**312**	*e*Pn	**Pg**	**17 41 16.2**	**-0.2**
ARMT	**Armutlu**	**1.46**	**355**	*e*PN	**Pb**	**17 41 16.7**	**+0.4**
ARMT	**Armutlu**	**1.46**	**355**	*e*Pn	**Pb**	**17 41 16.7**	**+0.4**
EDC	**Edincik**	**1.53**	**324**	*e*PN	**Pg**	**17 41 18.6**	**-0.2**
EDC	**Edincik**	**1.53**	**324**	*e*Pn	**Pg**	**17 41 18.6**	**-0.2**
GULT	**Gulveren**	**1.74**	**40**	*e*PN	**Pb**	**17 41 21.0**	**-0.1**
GULT	**Gulveren**	**1.74**	**40**	*e*Pn	**Pb**	**17 41 21.0**	**-0.1**

*ISK **28** 17:41:54.2, 39°.11N×29°.04E, h5km, MD2.9*
*DDA **28** 17:41:54.9, 39°.08N×29°.05E, h7km, Md2.9*
*CSEM **28** 17:41:55.3±0.1, 39°.11N×29°.05E, h2km, MD2.9, Error ellipse: s-maj=2.1km s-min=2.0km az=137.0*
ISC 28 17:41:55.4±1.2, 39°.12N±0°.03×29°.05E±0°.02, h1km±15km, n50, σ0s31/60, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**254**	P	**Pg**	**17 42 00.6**	**+0.1**
DEMI				S	**Sg**	**17 42 04.3**	**+0.3**
DEMI	**Demirci**	**0.27**	**254**	*i* P	**Pg**	**17 42 00.6**	**+0.1**
DEMI				*i* S	**Sg**	**17 42 04.3**	**+0.3**
GDZ	**Gediz**	**0.34**	**94**	P	**Pg**	**17 42 01.9**	**-0.1**
GDZ				S	**Sg**	**17 42 06.7**	**+0.4**
GDZ	**Gediz**	**0.34**	**94**	*i* P	**Pg**	**17 42 01.9**	**-0.1**
GDZ				*i* S	**Sg**	**17 42 06.7**	**+0.4**
TVSB	**Tavsanli**	**0.47**	**44**	*e*PG	**Pg**	**17 42 04.2**	**-0.1**
TVSB	**Tavsanli**	**0.47**	**44**	*e*Pg	**Pg**	**17 42 04.2**	**-0.1**
KULA	**Kula-Manisa**	**0.67**	**207**	*e*PG	**Pg**	**17 42 07.6**	**-0.6**
KULA	**Kula-Manisa**	**0.67**	**207**	*e*Pg	**Pg**	**17 42 07.6**	**-0.6**
KHAL	**Karahalli**	**0.82**	**155**	P	**Pg**	**17 42 11.0**	**-0.2**
KHAL				S	**Sg**	**17 42 21.4**	**-0.4**
KHAL	**Karahalli**	**0.82**	**155**	*i* P	**Pg**	**17 42 11.0**	**-0.2**
KHAL				*i* S	**Sg**	**17 42 21.4**	**-0.4**
KHL	**Karahalli**	**0.87**	**155**	*e*PG	**Pg**	**17 42 12.5**	**+0.3**
KHL	**Karahalli**	**0.87**	**155**	*e*Pg	**Pg**	**17 42 12.5**	**+0.3**
ORLT	**Orhaneli**	**0.94**	**353**	*e*PG	**Pg**	**17 42 13.0**	**-0.4**
ORLT	**Orhaneli**	**0.94**	**353**	*e*Pg	**Pg**	**17 42 13.0**	**-0.4**
AKHS	**Akhisar**	**0.99**	**257**	P	**Pg**	**17 42 14.2**	**-0.2**
AKHS				S	**Sg**	**17 42 27.7**	**+0.6**
AKHS	**Akhisar**	**0.99**	**257**	*i* P	**Pg**	**17 42 14.2**	**-0.2**
AKHS				*i* S	**Sg**	**17 42 27.7**	**+0.6**
AKS	**Akhisar**	**0.99**	**257**	*e*PG	**Pg**	**17 42 14.2**	**-0.2**
AKS	**Akhisar**	**0.99**	**257**	*e*Pg	**Pg**	**17 42 14.2**	**-0.2**
BALB	**Balikesir**	**1.04**	**301**	*e*PG	**Pg**	**17 42 15.5**	**+0.1**
BALB				*e*SG	**Sb**	**17 42 30.6**	**+0.1**
BALB	**Balikesir**	**1.04**	**301**	*e*Pg	**Pg**	**17 42 15.5**	**+0.1**
BALB				*e*Sg	**Sb**	**17 42 30.6**	**+0.1**
CAVI	**Cavuskoy**	**1.25**	**29**	*e*PN	**Pg**	**17 42 19.2**	**-0.1**
CAVI	**Cavuskoy**	**1.25**	**29**	*e*Pn	**Pg**	**17 42 19.2**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.26**	**354**	*e*PN	**Pb**	**17 42 19.7**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.26**	**354**	*e*Pn	**Pb**	**17 42 19.7**	**-0.3**
IZI	**Iznik**	**1.26**	**15**	*e*PN	**Pb**	**17 42 20.0**	**-0.2**
IZI	**Iznik**	**1.26**	**15**	*e*Pn	**Pb**	**17 42 20.0**	**-0.2**
KCTX	**Karacabey (Bur**	**1.27**	**335**	*e*PN	**Pg**	**17 42 19.8**	**+0.1**
KCTX	**Karacabey (Bur**	**1.27**	**335**	*e*Pn	**Pg**	**17 42 19.8**	**+0.1**
GEMT	**Gemlik**	**1.32**	**5**	*e*PN	**Pn**	**17 42 21.1**	**0.0**
GEMT	**Gemlik**	**1.32**	**5**	*e*Pn	**Pn**	**17 42 21.1**	**0.0**
GONE	**Gonen-Balikesi**	**1.40**	**312**	*e*PN	**Pn**	**17 42 22.1**	**0.0**
GONE	**Gonen-Balikesi**	**1.40**	**312**	*e*Pn	**Pn**	**17 42 22.2**	**0.0**
ADVT	**Abdulvahap**	**1.42**	**22**	*e*PN	**Pn**	**17 42 21.9**	**-0.6**
ADVT	**Abdulvahap**	**1.42**	**22**	*e*Pn	**Pn**	**17 42 21.9**	**-0.6**
ARMT	**Armutlu**	**1.46**	**354**	*e*PN	**Pg**	**17 42 23.2**	**-0.2**
ARMT	**Armutlu**	**1.46**	**354**	*e*Pn	**Pg**	**17 42 23.2**	**-0.2**
GPA	**Golpazari**	**1.52**	**39**	*e*PN	**Pn**	**17 42 24.0**	**+0.1**
GPA	**Golpazari**	**1.52**	**39**	*e*Pn	**Pn**	**17 42 24.0**	**+0.1**
EDC	**Edincik**	**1.53**	**324**	*e*PN	**Pn**	**17 42 24.0**	**0.0**
EDC	**Edincik**	**1.53**	**324**	*e*Pn	**Pn**	**17 42 24.0**	**0.0**
GULT	**Gulveren**	**1.74**	**40**	*e*PN	**Pn**	**17 42 27.2**	**+0.3**
GULT	**Gulveren**	**1.74**	**40**	*e*Pn	**Pn**	**17 42 27.2**	**+0.3**
HRT	**Hereke**	**1.77**	**15**	*e*PN	**Pn**	**17 42 27.8**	**+0.5**
HRT	**Hereke**	**1.77**	**15**	*e*Pn	**Pn**	**17 42 27.8**	**+0.5**
SPNC	**Sapanca-Adapaz**	**1.85**	**31**	*e*PN	**Pn**	**17 42 28.2**	**-0.1**
SPNC	**Sapanca-Adapaz**	**1.85**	**31**	*e*Pn	**Pn**	**17 42 28.2**	**-0.1**
ISK	**Istanbul-Kandi**	**1.95**	**0**	*e*PN	**Pn**	**17 42 29.6**	**-0.1**
ISK	**Istanbul-Kandi**	**1.95**	**0**	*e*Pn	**Pn**	**17 42 29.6**	**-0.1**
SVRH	**Sivrihisar-ESK**	**1.95**	**79**	*e*PN	**Pn**	**17 42 30.4**	**+0.5**
SVRH	**Sivrihisar-ESK**	**1.95**	**79**	*e*Pn	**Pn**	**17 42 30.4**	**+0.5**

*KRSC **28** 17:47:03.8±0.5, 56°.01N×161°.31E, h108km±5km, ML4.0*
*ISCJB **28** 17:47:04.5±0.3, 56°.03N±0°.03×161°.28E±0°.06, h111km±3km, mb3.3/4, Error ellipse: s-maj=6.3km s-min=3.6km az=29.3*
*IDC **28** 17:47:05.5±0.8, 55°.91N×161°.15E, h106km±7km, mb3.2/5, mb1 3.4/8, mb1mx3.1/36, mbtmp3.5/8, Error ellipse: s-maj=25.0km s-min=14.8km az=130.0*
ISC 28 17:47:05.6±0.7, 56°.02N±0°.04×161°.27E±0°.04, h103km±5km, n43, σ0s82/70, mb3.4/4, Near east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZLN	**Zelenaya**	**0.26**	**270**	*i* P	**Pn**	**17 47 20.6**	**+0.1**
ZLN				*e*S	**Sn**	**17 47 32.7**	**+1.0**
CIRR	**Tsirk**	**0.31**	**289**	*i* P	**Pn**	**17 47 20.5**	**-0.3**
CIRR				*e*S	**Sn**	**17 47 32.0**	**-0.2**
LGNR	**Loginova**	**0.33**	**282**	*e*P	**Pn**	**17 47 20.9**	**-0.2**
LGNR				*e*S	**Sn**	**17 47 33.2**	**+0.5**
BZMR	**Bezymyannaya**	**0.45**	**260**	*i* P	**Pn**	**17 47 21.3**	**-0.2**
BZMR				*e*S	**Sn**	**17 47 33.9**	**+0.4**
KLY	**Klyuchi**	**0.46**	**311**	*i* P	**Pn**	**17 47 20.6**	**-0.8**
KLY				*e*S	**Sn**	**17 47 32.4**	**-0.8**
KIRR	**Kirishev**	**0.53**	**263**	*e*P	**Pn**	**17 47 21.8**	**-0.3**
KIRR				*e*S	**Sn**	**17 47 34.2**	**-0.2**
BDR	**Baidarnaya**	**0.55**	**356**	*i* P	**Pn**	**17 47 22.3**	**+0.1**
BDR				*e*S	**Sn**	**17 47 35.5**	**+0.8**
SMKR	**Semkarok**	**0.58**	**11**	*i* P	**Pn**	**17 47 22.4**	**0.0**
SMKR				*e*S	**Sn**	**17 47 36.3**	**+1.3**
KPT	**Kopyto**	**0.59**	**265**	*i* P	**Pn**	**17 47 22.0**	**-0.5**
KPT				*e*S	**Sn**	**17 47 35.1**	**-0.1**
KMNR	**Kamenistaya**	**0.64**	**246**	*i* P	**Pn**	**17 47 22.4**	**-0.5**
KMNR				*e*S	**Sn**	**17 47 36.7**	**+0.8**
SRKR	**Sorokina**	**0.64**	**355**	*i* P	**Pn**	**17 47 22.9**	**0.0**
SRKR				*i* S	**Sn**	**17 47 36.8**	**+0.9**
KOZ	**Kozyrevsk**	**0.79**	**273**	*i* P	**Pn**	**17 47 23.7**	**-0.4**
KOZ				*e*S	**Sn**	**17 47 38.0**	**0.0**
KBG	**Krutoberegovo**	**0.84**	**73**	*i* P	**Pn**	**17 47 24.2**	**-0.3**
KBG				*i* S	**Sn**	**17 47 39.6**	**+0.8**
TUMR	**Tumrok**	**0.97**	**221**	*i* P	**Pn**	**17 47 26.1**	**0.0**
TUMR				*e*S	**Sn**	**17 47 41.8**	**+0.3**
ESO	**Esso**	**1.45**	**267**	*e*P	**Pn**	**17 47 30.8**	**-0.6**
ESO				*e*S	**Sn**	**17 47 50.5**	**-0.4**
MKZ	**Mys Kozlova**	**1.49**	**170**	*e*P	**Pn**	**17 47 31.0**	**-0.8**
MKZ				*e*S	**Sn**	**17 47 50.9**	**-0.8**
BKI	**Bering**	**2.79**	**105**	*i* P	**Pn**	**17 47 48.1**	**-0.4**
BKI				*i* S	**Sn**	**17 48 20.3**	**-1.3**
GNL	**Ganaly**	**3.02**	**221**	*i* P	**Pn**	**17 47 51.5**	**-0.2**
GNL				*e*S	**Sn**	**17 48 27.6**	**+0.3**
NLC	**Nalytchevo**	**3.06**	**202**	*e*P	**Pn**	**17 47 52.8**	**+0.6**
NLC				*e*S	**Sn**	**17 48 29.6**	**+1.5**
KRX	**Arik**	**3.07**	**211**	*e*P	**Pn**	**17 47 52.9**	**+0.5**
SDLR	**Sedlovina**	**3.08**	**208**	*e*P	**Pn**	**17 47 52.8**	**+0.3**
SDLR				*e*S	**Sn**	**17 48 30.3**	**+1.7**
KRER	**Koryakskii**	**3.09**	**209**	*e*P	**Pn**	**17 47 53.8**	**+1.1**
SMAR	**Somma**	**3.11**	**208**	*e*P	**Pn**	**17 47 53.5**	**+0.4**
AVH	**Avacha**	**3.13**	**209**	*e*P	**Pn**	**17 47 53.9**	**+0.8**
KOK	**Koryaka**	**3.13**	**210**	*e*P	**Pn**	**17 47 54.0**	**+0.8**
UGLR	**Uglovaya**	**3.15**	**208**	*e*P	**Pn**	**17 47 54.9**	**+1.4**
DALK	**Dalny**	**3.33**	**207**	*e*P	**Pn**	**17 47 56.8**	**+1.0**
DALK				*i* S	**Sn**	**17 48 35.6**	**+1.0**
PET	**Petropavlovsk**	**3.37**	**208**	*e*P	**Pn**	**17 47 57.6**	**+1.4**
PET				*e*S	**Sn**	**17 48 36.2**	**+0.9**
OSSR	**Ossora**	**3.38**	**16**	*e*P	**Pn**	**17 47 57.0**	**+0.6**
OSSR				*e*S	**Sn**	**17 48 36.6**	**+1.0**
PETK	**Petropavlovsk-**	**3.58**	**217**	P	**Pn**	**17 47 58.9**	**-0.2**
	2.0nm,0.3s,baz=59,slow=16,SNR=33						
KRMR	**Karymshinskiy**	**3.68**	**211**	*e*P	**Pn**	**17 48 01.1**	**+0.6**
KRMR				*e*S	**Sn**	**17 48 42.8**	**-0.2**
RUS	**Russkaya**	**3.94**	**205**	*e*P	**Pn**	**17 48 03.8**	**-0.1**
ASAK	**Asacha**	**4.14**	**210**	*e*P	**Pn**	**17 48 07.0**	**+0.2**
TILK	**Tilichiki**	**5.13**	**28**	*e*S	**Sn**	**17 49 16.8**	**-1.1**
SKR	**Severo-Kuril's**	**6.17**	**212**	*e*P	**Pn**	**17 48 33.5**	**-0.6**
MA2	**Magadan**	**6.65**	**307**	P	**Pn**	**17 48 41.4**	**+0.9**
	0.6nm,0.3s,baz=142,slow=14,SNR=5.1						
KLR	**Kul'dur**	**19.06**	**262**	P	**P**	**17 51 18.0**	**-1.5**
	0.1nm,0.3s,baz=62,slow=11,SNR=5.4						
TIXI	**Tiksi**	**20.77**	**331**	P	**P**	**17 51 37.7**	**0.0**
	0.7nm,0.4s,baz=110,slow=11,SNR=6.6						
ILAR	**Eielson Array**	**26.32**	**49**	P	**P**	**17 52 33.1**	**+1.9**
	0.2nm,0.5s,baz=320,slow=33,SNR=4.0						
ILAR				pP	**pP**	**17 52 55.2**	**+1.3**
	0.5nm,0.8s,baz=268,slow=8.5,SNR=4.5						
YKA	**Yellowknife Ar**	**40.58**	**45**	P	**P**	**17 54 35.1**	**+0.8**
	0.3nm,0.5s,baz=301,slow=7.5,SNR=3.8						
YKA				pP	**pP**	**17 54 57.6**	**-0.5**
	0.2nm,0.6s,baz=299,slow=7.8,SNR=3.3						
TXAR	**Lajitas Array**	**68.90**	**69**	pP	pP	17 58 24.7	-0.4
	0.3nm,0.6s,baz=329,slow=4.4,SNR=4.8						
WRA	**Warramunga Arr**	**79.02**	**206**	P	**P**	**17 58 56.3**	**-1.6**
	0.3nm,0.4s,baz=9.4,slow=5.9,SNR=7.4						
WRA				pP	**pP**	**17 59 24.9**	**+0.4**
	0.4nm,1.0s,baz=19,slow=5.8,SNR=1.5						
ASAR	**Alice Springs**	**82.71**	**205**	P	**P**	**17 59 16.4**	**-1.1**
	0.4nm,0.5s,baz=15,slow=4.8,SNR=9.0						
ASAR				pP	**pP**	**17 59 43.2**	**-1.0**
	0.1nm,0.4s,baz=19,slow=5.9,SNR=1.0						

IDC 28 17:58:04.0±3.7, 7°.14S×148°.96E, h0km, mb3.2/1, mb1 3.6/2, mb1mx3.1/46, mbtmp3.3/2, ML3.4/1, Error ellipse: s-maj=122.1km s-min=48.8km az=119.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**19.06**	**227**	P	P	18 02 28.0	-0.1
	0.1nm,0.3s,baz=52,slow=10,SNR=7.5						
ASAR	**Alice Springs**	**21.89**	**220**	P	P	18 02 58.2	-0.6
	0.6nm,0.5s,baz=52,slow=9.1,SNR=13						
TORD	**Torodi Ar. Bea**	**147.25**	**283**	PKPbc	PKPbc	18 17 50.4	-0.1
	0.3nm,0.7s,baz=53,slow=3.0,SNR=2.7						

*KRSC **28** 17:58:44.2±1.8, 49°.79N×157°.31E, h50km±24km, ML4.3*
*MOS **28** 17:58:44.2±2.3, 49°.79N×157°.31E, h49km, mb4.4/1, Error ellipse: s-maj=43.1km s-min=7.8km az=84.5*
ISC 28 17:58:44.4±4.1, 49°.6N±0°.2×157°.09E±0°.09, h35km, n24, σ1s29/32, 1D, East of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**1.22**	**330**	*e*P	**Pn**	**17 59 04.3**	**-0.7**
SKR				*e*S	**Sn**	**17 59 19.2**	**-1.1**
SKR	**Severo-Kuril's**	**1.22**	**330**	||PN	Pn	17 58 53.2	-12
SKR				pmax	pmax		
	comp=N,80nm,0.4s						
SKR				pmax	pmax		
	comp=E,30nm,0.4s						
SKR				pmax	pmax		
	comp=Z,150nm,0.4s						
PAU	**Pauzhetka**	**1.84**	**355**	*i* P	**Pn**	**17 59 13.6**	**+0.1**
PAU				*e*S	**Sn**	**17 59 35.4**	**-0.2**
PAU	**Pauzhetka**	**1.84**	**355**	PN	**Pn**	**17 59 13.6**	**+0.1**
PAU				S	**Sn**	**17 59 35.4**	**-0.2**
ASAK	**Asacha**	**2.80**	**10**	*e*P	**Pn**	**17 59 27.3**	**+0.6**
ASAK	**Asacha**	**2.80**	**10**	PN	**Pn**	**17 59 27.3**	**+0.6**
RUS	**Russkaya**	**2.94**	**17**	*e*P	**Pn**	**17 59 28.4**	**-0.2**
RUS				*e*S	**Sn**	**18 00 01.5**	**-1.2**
RUS	**Russkaya**	**2.94**	**17**	PN	**Pn**	**17 59 28.4**	**-0.2**
RUS				S	**Sn**	**18 00 01.5**	**-1.2**
KRMR	**Karymshinskiy**	**3.27**	**11**	*e*P	**Pn**	**17 59 34.7**	**+1.6**
KRMR				*e*S	**Sn**	**18 00 11.5**	**+0.8**
KRMR	**Karymshinskiy**	**3.27**	**11**	PN	**Pn**	**17 59 34.7**	**+1.6**
KRMR				S	**Sn**	**18 00 11.5**	**+0.8**
UGLR	**Uglovaya**	**3.74**	**16**	*e*P	**Pn**	**17 59 40.9**	**+1.2**
UGLR	**Uglovaya**	**3.74**	**16**	PN	**Pn**	**17 59 40.9**	**+1.2**
AVH	**Avacha**	**3.78**	**15**	*e*P	**Pn**	**17 59 41.5**	**+1.3**
AVH	**Avacha**	**3.78**	**15**	PN	**Pn**	**17 59 41.5**	**+1.3**
SDLR	**Sedlovina**	**3.82**	**16**	*e*P	**Pn**	**17 59 40.9**	**+0.1**
SDLR	**Sedlovina**	**3.82**	**16**	PN	**Pn**	**17 59 40.9**	**+0.1**
KRER	**Koryakskii**	**3.82**	**15**	*e*P	**Pn**	**17 59 41.9**	**+1.1**
KRER	**Koryakskii**	**3.82**	**15**	PN	**Pn**	**17 59 41.9**	**+1.1**
KRX	**Arik**	**3.86**	**14**	*e*P	**Pn**	**17 59 42.4**	**+1.1**
KRX	**Arik**	**3.86**	**14**	PN	**Pn**	**17 59 42.4**	**+1.1**
GNL	**Ganaly**	**4.10**	**7**	*e*P	**Pn**	**17 59 47.0**	**+2.4**
GNL	**Ganaly**	**4.10**	**7**	PN	**Pn**	**17 59 47.0**	**+2.4**
MKZ	**Mys Kozlova**	**5.70**	**28**	*e*P	**Pn**	**18 00 07.3**	**+0.9**
MKZ				*e*S	**Sn**	**18 01 08.0**	**-2.5**
MKZ	**Mys Kozlova**	**5.70**	**28**	PN	**Pn**	**18 00 07.3**	**+0.9**
MKZ				S	**Sn**	**18 01 08.0**	**-2.5**

*JMA **28** 17:59:39.8±0.1, 40°.54N×142°.05E, h41km±1km, M3.7*
JMA Felt II J1.
*ISCJB **28** 17:59:40.0±1.0, 40°.55N±0°.04×142°.0E±0°.1, h46km±9km, mb3.5/3, Error ellipse: s-maj=14.3km s-min=7.3km az=178.2*
*IDC **28** 17:59:41.8±2.9, 40°.49N×142°.23E, h67km±25km, mb3.3/3, mb1 3.4/5, mb1mx3.0/69, mbtmp3.5/5, Error ellipse: s-maj=43.3km s-min=22.2km az=81.0*
ISC 28 17:59:40.4±1.5, 40°.55N±0°.05×141°.98E±0°.10, h41km±13km, n19, σ1s12/17, mb3.6/3, 2C-2D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JANG	**Nango**	**0.40**	**244**	P	**Pn**	**17 59 49.8**	**-0.1**
JANG				*e*S	**Sn**	**17 59 56.3**	**-0.2**
JTH	**Tanohata**	**0.61**	**188**	||P	**Pn**	**17 59 52.0**	**-0.7**
JTM	**Tenmabayashi**	**0.73**	**289**	||P	**Pn**	**17 59 54.2**	**-0.1**
JTM				*e*S	**Sn**	**18 00 04.1**	**-0.3**
JKZ	**Kuzumaki**	**0.75**	**222**	||P	**Pn**	**17 59 55.1**	**+0.5**
JKZ				S	**Sn**	**18 00 05.1**	**+0.3**
JAH	**Hinai**	**1.09**	**251**	||P	**Pn**	**17 59 59.5**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	Gediz	0.30	83	P	Pb	18 03 53.8	+0.1
GDZ				S	Sb	18 03 59.0	+0.3
GDZ	Gediz	0.30	83	*i* P	Pb	18 03 53.8	+0.1
GDZ				*i* S	Sb	18 03 59.0	+0.3
DEMI	Demirci	0.30	268	P	Pg	18 03 52.0	-0.1
DEMI				S	Sg	18 03 55.5	-0.6
DEMI	Demirci	0.30	268	*i* P	Pg	18 03 52.0	-0.1
DEMI				*i* S	Sg	18 03 55.5	-0.6
TVSB	Tavsanli	0.48	35	*e*PG	Pg	18 03 55.4	-0.1
TVSB				*e*SG	Sg	18 04 02.0	+0.1
TVSB	Tavsanli	0.48	35	*e*Pg	Pg	18 03 55.4	-0.1
TVSB				*e*Sg	Sg	18 04 02.0	+0.1
KULA	Kula-Manisa	0.64	213	*e*PG	Pb	18 03 59.6	+0.1
KULA	Kula-Manisa	0.64	213	*e*Pg	Pb	18 03 59.6	+0.1
KHAL	Karahalli	0.75	156	P	Pn	18 04 03.7	+0.8
KHAL				S	Sn	18 04 13.5	-0.9
KHAL	Karahalli	0.75	156	*i* P	Pn	18 04 03.7	+0.8
KHAL				*i* S	Sn	18 04 13.5	-0.9
CAVI	Cavuskoy	1.28	26	*e*PN	Pn	18 04 10.1	-0.1
CAVI	Cavuskoy	1.28	26	*e*Pn	Pn	18 04 10.1	-0.1
IZI	Iznik	1.31	12	*e*PN	Pg	18 04 11.2	0.0
IZI	Iznik	1.31	12	*e*Pn	Pg	18 04 11.2	0.0
KCTX	Karacabey (Bur	1.34	335	*e*PN	Pg	18 04 12.8	+1.0
KCTX	Karacabey (Bur	1.34	335	*e*Pn	Pg	18 04 12.8	+1.0
ARMT	Armutlu	1.52	353	*e*PN	Pb	18 04 14.6	+0.2
ARMT	Armutlu	1.52	353	*e*Pn	Pb	18 04 14.6	+0.2
GULT	Gulveren	1.75	38	*e*PN	Pn	18 04 16.3	-0.4
GULT	Gulveren	1.75	38	*e*Pn	Pn	18 04 16.3	-0.4

*IDC **28** 18:04:11.8±0.9, 39°.30N×20°.66E, h0^{km}, mb3.8/10, mb1 3.7/13, mb1mx3.5/50, mbtmp3.7/13, ML3.3/3, Error ellipse: s-maj=19.2km s-min=15.2km az=66.0*
*PDG **28** 18:04:12.8±0.3, 39°.09N×20°.29E, h22^{km}±3^{km}, ML3.5/10, Error ellipse: s-maj=3.7km s-min=1.7km az=90.0*
*ATH **28** 18:04:13.3, 39°.23N×20°.56E, h12^{km}±1^{km}, ML3.4/3, Error ellipse: s-maj=1.9km s-min=0.8km az=261.0*
*ISCJB **28** 18:04:13.5±0.5, 39°.25N±0°.02×20°.46E±0°.02, h8^{km}±3^{km}, mb3.7/10, Error ellipse: s-maj=3.5km s-min=1.9km az=145.4*
*CSEM **28** 18:04:13.6±0.1, 39°.23N×20°.50E, h2^{km}, ML3.4, Error ellipse: s-maj=3.4km s-min=1.9km az=55.0*
*THE **28** 18:04:14.3, 39°.25N×20°.56E, h0^{km}±1^{km}, ML3.4/25, Error ellipse: s-maj=1.5km s-min=0.5km az=261.0*

ISC 28 18:04:13.4±1.0,**39°.24N**±0°.01×**20°.52E**±0°.02,**h8**^{km}±7^{km}, **n164**,σ1^{s}**27**/249,**mb3.7**/10,**16C-12D, Greece-Albania border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IGT	Igoumenitsa	0.33	334	P	Pb	18 04 20.7	-0.9
IGT				S	Sb	18 04 26.4	-0.7
IGT	Igoumenitsa	0.33	334	P	Pg	18 04 20.2	+0.2
IGT				S	Sb	18 04 26.1	-1.0
IGT	Igoumenitsa	0.33	334	P	Pg	18 04 20.2	+0.2
IGT				S	Sb	18 04 26.1	-1.0
IGT				AML	AML	18 04 30.8	
	comp=N,6941μm,0.7s						
IGT				AML	AML	18 04 31.5	
	comp=E,8849μm,0.7s						
SGD	Sagiada	0.44	330	P	Pb	18 04 22.7	-0.7
SGD				S	Sb	18 04 28.9	-1.2
SGD	Sagiada	0.44	330	P	Pb	18 04 22.7	-0.7
SGD				S	Sb	18 04 28.9	-1.2
SGD	Sagiada	0.44	330	P	Pb	18 04 22.9	-0.5
SGD				S	Sb	18 04 28.9	-1.2
DSL	Palaion Diasel	0.46	103	P	Pg	18 04 21.4	-0.9
DSL				S	Sg	18 04 29.1	+0.7
DSL	Palaion Diasel	0.46	103	P	Pg	18 04 21.4	-0.9
DSL				S	Sg	18 04 27.9	-0.5
DSL	Palaion Diasel	0.46	103	P	Pg	18 04 20.9	-1.5
DSL				S	Sg	18 04 27.9	-0.5
DSL				AML	AML	18 04 30.8	
	comp=E,19118μm,0.3s						
DSL				AML	AML	18 04 31.4	
	comp=N,22405μm,0.3s						
JAN	Janina	0.49	31	P	Pg	18 04 22.6	-0.4
JAN				S	Sg	18 04 30.2	+0.7
JAN	Janina	0.49	31	P	Pg	18 04 22.6	-0.4
JAN				S	Sg	18 04 30.2	+0.7
JAN	Janina	0.49	31	S	Sg	18 04 30.3	+0.7
JAN				AML	AML	18 04 30.7	
	comp=E,38526μm,0.5s						
KEK	Kerkira	0.73	311	P	Pb	18 04 28.2	-0.3
KEK				S	Sb	18 04 39.4	+0.7
KEK	Kerkira	0.73	311	P	Pb	18 04 28.2	-0.3
KEK				S	Sb	18 04 39.0	+0.3
PDO	Prodromos	0.82	141	P	Pg	18 04 29.0	-0.2
PDO				S	Sb	18 04 42.5	+1.4
PDO	Prodromos	0.82	141	P	Pg	18 04 29.4	+0.2
PDO				S	Sg	18 04 39.8	-0.1
PDO	Prodromos	0.82	141	P	Pg	18 04 29.4	+0.2
PDO				S	Sg	18 04 39.8	-0.1
KPRO	Kipourio	0.97	42	P	Pg	18 04 30.7	-1.3
KPRO				S	Sb	18 04 46.2	+0.6
KPRO	Kipourio	0.97	42	P	Pg	18 04 30.8	-1.3
KPRO				S	Sb	18 04 46.2	+0.6
KPRO	Kipourio	0.97	42	P	Pg	18 04 30.8	-1.3
PVO				S	Sn	18 04 48.0	0.0
PVO	Paravola	1.00	128	P	Pg	18 04 32.5	-0.1
PVO				S	Sn	18 04 48.0	0.0
PVO	Paravola	1.00	128	P	Pg	18 04 32.3	-0.3
EVR	Evrytania	1.05	107	P	Pg	18 04 32.8	-0.8
EVR				S	Sn	18 04 49.3	-0.2
EVR	Evrytania	1.05	107	P	Pg	18 04 33.0	-0.7
EVR				S	Sn	18 04 49.3	-0.2
EVR	Evrytania	1.05	107	P	Pg	18 04 33.0	-0.7
VLS	Valsamata	1.06	177	P	Pb	18 04 34.1	+0.1
VLS				S	Sn	18 04 51.0	+1.5
VLS	Valsamata	1.06	177	P	Pb	18 04 34.1	+0.1
KFL	Anninata	1.14	169	P	Pg	18 04 34.5	-0.9
KFL				S	Sn	18 04 52.9	+1.3
KFL	Anninata	1.14	169	P	Pg	18 04 34.5	-0.9
KFL	Anninata	1.14	169	P	Pg	18 04 34.1	-1.3
THL	Klokotos Trika	1.20	74	P	Pg	18 04 35.7	-0.8
THL				S	Sn	18 04 53.3	+0.2
THL	Klokotos Trika	1.20	74	P	Pg	18 04 35.9	-0.6
THL				S	Sn	18 04 53.3	+0.2
AXS	Araxos	1.23	147	P	Pg	18 04 36.4	-0.7
AXS				S	Sn	18 04 55.4	+1.6
AXS	Araxos	1.23	147	P	Pg	18 04 36.4	-0.7
AXS				S	Sn	18 04 55.4	+1.6
AXS	Araxos	1.23	147	P	Pg	18 04 35.3	-1.9
AGG	Agios Georgios	1.42	98	P	Pn	18 04 39.9	+0.3
AGG				S	Sg	18 05 00.9	+1.7
AGG	Agios Georgios	1.42	98	P	Pn	18 04 40.0	+0.3
AGG				S	Sg	18 05 00.9	+1.7
AGG	Agios Georgios	1.42	98	P	Pn	18 04 40.0	+0.4
KZN	Kozani	1.44	42	P	Pn	18 04 40.3	+0.4
KZN				S	Sg	18 05 01.6	+1.8
KZN	Kozani	1.44	42	P	Pn	18 04 40.3	+0.4
KZN				S	Sg	18 05 01.6	+1.8
LAKA	Lakka	1.51	131	P	Pg	18 04 42.2	-0.2
LAKA				S	Sg	18 05 02.8	+0.8
LAKA	Lakka	1.51	131	P	Pg	18 04 42.2	-0.2
LAKA				S	Sg	18 05 02.8	+0.8
LAKA	Lakka	1.51	131	P	Pg	18 04 42.2	-0.2
ZKS	Zakynthos	1.55	172	P	Pb	18 04 42.1	-0.3
ZKS	Zakynthos	1.55	172	P	Pb	18 04 42.1	-0.3
ZKS	Zakynthos	1.55	172	P	Pn	18 04 41.2	-0.1
DRO	Drossia	1.58	144	P	Pn	18 04 42.1	+0.3
DRO				S	Sg	18 05 05.4	+1.1
DRO	Drossia	1.58	144	P	Pb	18 04 42.5	-0.5
DRO				S	Sg	18 05 05.4	+1.1
DRO	Drossia	1.58	144	P	Pb	18 04 42.5	-0.5
FNA	Florina	1.68	23	P	Pb	18 04 44.2	-0.5
FNA	Florina	1.68	23	P	Pb	18 04 44.2	-0.5
FNA	Florina	1.68	23	P	Pn	18 04 43.7	+0.5
KLV	Kalavryta, Ach	1.75	132	P	Pb	18 04 45.7	0.0
KLV				S	Sb	18 05 08.2	+0.4
KLV	Kalavryta, Ach	1.75	132	P	Pb	18 04 45.7	0.0
KLV				S	Sb	18 05 08.2	+0.4
KLV	Kalavryta, Ach	1.75	132	P	Pg	18 04 46.2	-0.7
LIT	Litokhoron	1.75	60	P	Pb	18 04 45.1	-0.7
LIT				S	Sb	18 05 07.8	-0.1
LIT	Litokhoron	1.75	60	P	Pb	18 04 45.1	-0.7
LIT				S	Sb	18 05 07.8	-0.1
LIT	Litokhoron	1.75	60	P	Pn	18 04 44.5	+0.4
DSF	Desfina	1.77	117	P	Pb	18 04 46.0	-0.2
DSF				S	Sb	18 05 08.9	+0.4
DSF	Desfina	1.77	117	P	Pb	18 04 46.0	-0.2
DSF				S	Sb	18 05 08.9	+0.4
DSF	Desfina	1.77	117	P	Pb	18 04 46.6	+0.4
BIA	Bitola	1.89	19	*e*Pn	Pb	18 04 48.0	-0.1
BIA				*e*Sn	Sg	18 05 14.7	+0.7
BIA	Bitola	1.89	19	*e*Pn	Pb	18 04 48.0	-0.1
BIA				*e*Sn	Sg	18 05 14.7	+0.7
OHR	Ohrid	1.89	6	*e*Pn	Pb	18 04 48.2	+0.1
OHR				*e*Sn	Sg	18 05 15.1	+1.0
OHR	Ohrid	1.89	6	*e*Pn	Pb	18 04 48.2	+0.1
OHR				*e*Sn	Sg	18 05 15.1	+1.0
AMT	Artemida-Makis	1.94	151	P	Pb	18 04 48.5	-0.5
AMT				S	Sb	18 05 14.2	+0.8
AMT	Artemida-Makis	1.94	151	P	Pb	18 04 48.5	-0.5
AMT				S	Sb	18 05 14.2	+0.8
LKR	Lokris	2.02	106	P	Pb	18 04 50.0	-0.4
LKR	Lokris	2.02	106	P	Pb	18 04 50.0	-0.4
XOR	Xorichti	2.08	86	P	Pn	18 04 49.8	+1.2
XOR				S	Sb	18 05 17.3	-0.1
XOR	Xorichti	2.08	86	P	Pn	18 04 49.8	+1.2
XOR				S	Sb	18 05 17.3	-0.1
XOR	Xorichti	2.08	86	P	Pn	18 04 49.8	+1.2
NEO	Neokhori	2.10	87	P	Pn	18 04 50.0	+1.1
NEO				S	Sb	18 05 17.2	-0.8
NEO	Neokhori	2.10	87	P	Pn	18 04 50.0	+1.1
NEO				S	Sb	18 05 17.2	-0.8
NEO	Neokhori	2.10	87	P	Pn	18 04 49.7	+0.8
GRG	Griva	2.25	39	P	Pn	18 04 52.0	+1.1
GRG	Griva	2.25	39	P	Pn	18 04 52.0	+1.1
LTK	Loutraki	2.27	122	P	Pn	18 04 52.5	+1.3
LTK	Loutraki	2.27	122	P	Pn	18 04 52.5	+1.3
ITM	Ithomi	2.33	151	P	Pb	18 04 54.4	-1.3
ITM	Ithomi	2.33	151	P	Pb	18 04 54.4	-1.3
HORT	Hortiatis	2.41	55	P	Pn	18 04 54.0	+0.8
HORT				S	Sn	18 05 24.5	+1.6
HORT	Hortiatis	2.41	55	P	Pn	18 04 54.0	+0.8
HORT				S	Sn	18 05 24.5	+1.6
PLG	Polygyros	2.52	62	P	Pn	18 04 55.6	+0.8
PLG				S	Sn	18 05 27.1	+1.4
PLG	Polygyros	2.52	62	P	Pn	18 04 55.6	+0.8
PLG				S	Sn	18 05 27.1	+1.4
PAIG	Paliouri	2.54	73	P	Pn	18 04 55.7	+0.8
PAIG	Paliouri	2.54	73	P	Pn	18 04 55.7	+0.8
VAY	Valandovo	2.61	36	*e*Pn	Pn	18 04 57.1	+1.3
VAY	Valandovo	2.61	36	*e*Pn	Pn	18 04 57.1	+1.3
AOS	Alonnisos	2.61	90	P	Pn	18 04 56.9	+1.0
AOS	Alonnisos	2.61	90	P	Pn	18 04 56.9	+1.0
SOH	Sokhos	2.69	53	P	Pn	18 04 58.8	+1.7
SOH	Sokhos	2.69	53	P	Pn	18 04 58.8	+1.7
DID	Didima	2.75	128	P	Pn	18 04 58.6	+0.8
DID				S	Sn	18 05 33.6	+2.4
DID	Didima	2.75	128	P	Pn	18 04 58.6	+0.8
DID				S	Sn	18 05 33.6	+2.4
DID	Didima	2.75	128	P	Pn	18 04 59.1	+1.3
SKO	Skopje	2.82	14	*e*Pn	Pn	18 05 00.6	+1.8
SKO	Skopje	2.82	14	*e*Pn	Pn	18 05 00.6	+1.8
OUR	Ouranopolis	2.88	67	P	Pn	18 05 01.1	+1.4
OUR				S	Sn	18 05 36.1	+1.6
OUR	Ouranopolis	2.88	67	P	Pn	18 05 01.1	+1.4
OUR				S	Sn	18 05 36.1	+1.6
ULC	Ulcinj	2.89	341	⇓*i*Pn	Pn	18 04 59.9	+0.1
ULC				*e*Sn	Sn	18 05 36.5	+1.7
ULC	Ulcinj	2.89	341	⇓*i*Pn	Pn	18 04 59.9	+0.1
SRS	Serrai	3.01	50	P	Pn	18 05 03.0	+1.5
SRS				S	Sn	18 05 39.6	+1.9
SRS	Serrai	3.01	50	P	Pn	18 05 03.0	+1.5
SRS				S	Sn	18 05 39.6	+1.9
DRME	Dracevica, Mon	3.12	341	⇑*i*Pn	Pn	18 05 03.6	+0.7
DRME				*e*Sn	Sn	18 05 42.1	+1.8
DRME	Dracevica, Mon	3.12	341	⇑*i*Pn	Pn	18 05 03.6	+0.7
DRME				*e*Sn	Sn	18 05 42.1	+1.8
NVR	Nevrokopi	3.32	49	P	Pn	18 05 07.5	+1.9
NVR	Nevrokopi	3.32	49	P	Pn	18 05 07.5	+1.9
PDG	Podgorica	3.33	344	⇑*i*Pn	Pn	18 05 06.4	+0.6
PDG				*e*Sn	Sn	18 05 47.5	+1.9
TTG	Podgorica	3.33	344	⇑*i*Pn	Pn	18 05 06.4	+0.6
TTG				*e*Sn	Sn	18 05 47.5	+1.9
SG1	Sgolgore (BA)	3.36	300	*e*Pn	Pn	18 05 05.4	-0.8
PVY	Plav	3.38	353	*e*Pn	Pn	18 05 07.5	+0.8
PVY				*e*Sn	Sn	18 05 49.2	+2.1
PVY	Plav	3.38	353	*e*Pn	Pn	18 05 07.5	+0.8
PVY				*e*Sn	Sn	18 05 49.2	+2.1
CEME	Cevo	3.52	340	*e*Pn	Pn	18 05 08.4	-0.1
CEME				*e*Sn	Sn	18 05 51.5	+1.1
CEME	Cevo	3.52	340	*e*Pn	Pn	18 05 08.4	-0.1
CEME				*e*Sn	Sn	18 05 51.5	+1.1
HCY	Herceg Novi	3.56	335	⇓*i*Pn	Pn	18 05 09.0	+0.1
HCY				*e*Sn	Sn	18 05 51.5	+0.3
HCY	Herceg Novi	3.56	335	⇓*i*Pn	Pn	18 05 09.0	+0.1
BEY	Berane	3.66	353	*e*Pn	Pn	18 05 12.1	+1.6
BEY				*e*Sn	Sn	18 05 55.9	+2.0
IVA	Berane	3.66	353	*e*Pn	Pn	18 05 12.1	+1.6
IVA				*e*Sn	Sn	18 05 55.9	+2.0
BARS	Barje	3.71	15	⇑*i*Pn	Pn	18 05 11.9	+0.9
NKME	Niksic	3.72	342	⇓*i*Pn	Pn	18 05 11.9	+0.6
NKME				*e*Sn	Sn	18 05 55.9	+0.6
NKME	Niksic	3.72	342	⇓*i*Pn	Pn	18 05 11.9	+0.6
NKME				*e*Sn	Sn	18 05 55.9	+0.6
CDT	Castel del Mon	3.74	301	*e*Pn	Pn	18 05 12.8	+1.3
NKY	Niksic	3.76	343	⇑*i*Pn	Pn	18 05 12.7	+0.9
NKY				*e*Sn	Sn	18 05 57.2	+1.0
NKY	Niksic	3.76	343	⇑*i*Pn	Pn	18 05 12.7	+0.9
NKY				*e*Sn	Sn	18 05 57.2	+1.0
BRY	Bratogost	3.96	338	⇓*i*Pn	Pn	18 05 14.5	-0.1
BRY				*e*Sn	Sn	18 06 01.2	0.0
BRY	Bratogost	3.96	338	⇓*i*Pn	Pn	18 05 14.5	-0.1
BRY				*e*Sn	Sn	18 06 01.2	0.0
UPM	Unac-Piva	4.15	343	⇑*i*Pn	Pn	18 05 18.4	+1.2
UPM				*e*Sn	Sn	18 06 06.8	+0.8
UPM	Unac-Piva	4.15	343	⇑*i*Pn	Pn	18 05 18.4	+1.2
UPM				*e*Sn	Sn	18 06 06.8	+0.8
PLE	Pljevlja	4.18	349	⇑*i*Pn	Pn	18 05 17.5	-0.1
PLE				*e*Sn	Sn	18 06 07.6	+0.9
PLE	Pljevlja	4.18	349	⇑*i*Pn	Pn	18 05 17.5	-0.1
PLE				*e*Sn	Sn	18 06 07.6	+0.9
BOVS	Bovan	4.49	11	*e*Pn	Pn	18 05 22.8	+1.1
GRUS	Gruza	4.65	2	⇑*i*Pn	Pn	18 05 24.4	+0.4
BBLS	Lazići	4.70	350	*e*Pn	Pn	18 05 27.3	+2.6
DIVS	Divibare	4.88	356	*e*Pn	Pn	18 05 27.6	+0.5
TRUS	Trudelj	4.99	359	*e*Pn	Pn	18 05 33.1	+4.5
VAE	Valguarnera	5.11	252	Sn	Sn	18 06 34.5	+5.0
	comp=E,1.4nm,0.3s,baz=123,slow=12,SNR=4.7						
KUBS	Kucevo	5.25	9	*e*Pn	Pn	18 05 30.8	-1.3
IDI	Anoyia	5.26	137	Pn	Pn	18 05 32.6	+0.2
	comp=E,1.2nm,0.3s,baz=319,slow=11,SNR=7.0						
IDI				Sn	Sn	18 06 29.6	-3.7
	comp=E,1.9nm,0.3s,baz=292,slow=19,SNR=6.7						
TEKS	Tekeris	5.36	352	*i* Pn	Pn	18 05 33.5	-0.2
MDVR	Moldovita	5.61	9	⇓*i*P	Pg	18 06 00.6	-0.3
NVLJ	Novalja	6.79	323	*e*Pn	Pn	18 05 53.7	+0.4
NVLJ				Sn	Sn	18 07 07.8	-3.0
NVLJ	Novalja	6.79	323	*e*Pn	Pn	18 05 53.6	+0.4
VOIR		7.05	27	⇓*i*P	Pn	18 05 59.5	+2.6
VOIR		7.05	27	⇓*i*P	Pn	18 05 59.5	+2.6
MLR	Muntele Rosu	7.43	31	Pn	Pn	18 06 05.9	+3.7
	comp=E,0.2nm,0.3s,baz=245,slow=19,SNR=9.6						
MLR	Muntele Rosu	7.43	31	⇑*i*P	Pn	18 06 06.4	+4.2
DRGR		7.72	11	⇑*i*P	Pn	18 06 15.3	+9.1
PLOR	Plostina	8.01	32	⇓*i*P	Pn	18 06 14.0	+3.9
VRI	Vrincioaia	8.05	33	⇑*i*P	Pn	18 06 14.2	+3.5
VRI	Vrincioaia	8.05	33	⇑*i*P	Pn	18 06 14.2	+3.5
BRTR	Keskin Array B	10.16	83	Pn	Pn	18 06 39.2	-0.4
	comp=E,0.1nm,0.3s,baz=311,slow=13,SNR=2.7						
GERES	GERESS Array B	10.78	335	Pn	Pn	18 06 47.7	-0.4
	comp=E,0.2nm,0.3s,baz=156,slow=13,SNR=5.2						
HFS	Hagfors	21.36	351	P	P	18 09 00.8	-0.1
	comp=E,2.2nm,0.6s,baz=156,slow=11,SNR=4.3						
FINES	FINESS Array B	22.50	7	P	P	18 09 12.6	-0.5
	comp=E,1.0nm,0.5s,baz=182,slow=11,SNR=6.0						
EKA	Eskdalemuir Ar	22.57	323	P	P	18 09 13.4	-0.6
	comp=E,1.4nm,0.7s,baz=116,slow=11,SNR=4.6						
NOA	NORSAR Array B	22.58	348	P	P	18 09 13.5	-0.6
	comp=E,1.0nm,0.7s,baz=165,slow=11,SNR=3.1						
GEYT	Alibeck	29.29	81	P	P	18 10 14.8	-1.5
	comp=E,0.9nm,0.5s,baz=265,slow=9.8,SNR=2.6						
TORD	Torodi Ar. Bea	30.86	218	P	P	18 10 30.9	+0.7
	comp=E,0.6nm,0.6s,baz=31,slow=8.8,SNR=3.2						
KURBB	Kurchatov Arra	41.61	54	P	P	18 12 00.2	-1.5
	comp=E,0.6nm,0.8s,baz=285,slow=9.6,SNR=8.5						
MKAR	Makanchi Array	44.76	59	P	P	18 12 25.6	-1.7
	comp=E,1.4nm,0.5s,baz=280,slow=7.0,SNR=21						
ZALV	Zalesovo Beam	44.99	49	P	P	18 12 27.5	-1.5
	comp=E,1.8nm,0.4s,baz=272,slow=8.2,SNR=11						
BOSA	Boshof	67.64	175	P	P	18 15 10.8	-0.1
	comp=E,3.0nm,0.9s,baz=355,slow=11,SNR=3.6						

*NEIC **28** 18:06:46.9, 39°.11N×29°.05E, h5^{km}, mb4.2/7, ML4.0(THE), ML4.1(ISK), After ISK.*
*ISK **28** 18:06:46.9, 39°.11N×29°.05E, h5^{km}, ML4.1*
*IDC **28** 18:06:47.7±0.8, 39°.08N×29°.02E, h0^{km}, mb3.7/13, mb1 3.7/20, mb1mx3.6/55, mbtmp3.7/20, ML3.3/7, Error ellipse: s-maj=13.8km s-min=11.5km az=37.0*
*DDA **28** 18:06:47.5, 39°.11N×29°.03E, h17^{km}, Ml4.0*
*ISCJB **28** 18:06:48.1±0.1, 39°.10N±0°.01×29°.02E±0°.02, h10^{km}, mb3.8/21, Error ellipse: s-maj=1.8km s-min=1.8km az=151.0*
*CSEM **28** 18:06:48.3±0.1, 39°.10N×29°.04E, h2^{km}, mb3.9/15, Error ellipse: s-maj=2.0km s-min=1.9km az=71.0*
*MOS **28** 18:06:48.0±0.9, 39°.14N×29°.03E, h9^{km}, mb4.0/16, Error ellipse: s-maj=8.2km s-min=5.5km az=77.6*
*THE **28** 18:06:49.3, 39°.04N×28°.97E, h2^{km}±1^{km}, ML3.8/2, Error ellipse: s-maj=1.8km s-min=0.8km az=87.0*

ISC 28 18:06:49.4±0.4,**39°.13N**±0°.01×**29°.01E**±0°.01,**h10**^{km},**n349**, σ1^{s}**47**/422,**mb3.8**/21,**44C-11D,Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.25	250	P	Pg	18 06 53.3	-1.2
DEMI				S	Sg	18 06 56.8	-1.1
DEMI	Demirci	0.25	250	⇓*i*P	Pg	18 06 53.3	-1.2
DEMI				*i* S	Sg	18 06 56.9	-1.1
GDZ	Gediz	0.36	96	P	Pg	18 06 54.8	-1.9
GDZ				S	Sg	18 06 59.9	-1.7
GDZ	Gediz	0.36	96	⇓*i*P	Pg	18 06 54.9	-1.9
GDZ				*i* S	Sg	18 06 59.9	-1.7
KULA	Kula-Manisa	0.67	204	*e*PG	Pg	18 07 00.4	-2.1
KULA	Kula-Manisa	0.67	204	P	Pg	18 07 00.3	-2.1
KULA				S	Sg	18 07 08.9	-2.3
KULA	Kula-Manisa	0.67	204	*e*Pg	Pg	18 07 00.4	-2.1
KULA				S	Sg	18 07 08.9	-2.3
KULA	Kula-Manisa	0.67	204	P	Pg	18 07 00.3	-2.1
KHAL	Karahalli	0.84	154	P	Pg	18 07 03.4	-2.3
KHAL	Karahalli	0.84	154	⇑*i*P	Pg	18 07 03.4	-2.3
KHAL				*i* S	Sn	18 07 18.6	-1.4
KHL	Karahalli	0.90	154	*e*PG	Pg	18 07 05.0	-1.7
KHL	Karahalli	0.90	154	*e*Pg	Pg	18 07 05.0	-1.7
ORLT	Orhaneli	0.92	354	*e*PG	Pb	18 07 06.0	-1.5
ORLT	Orhaneli	0.92	354	*e*Pg	Pb	18 07 06.0	-1.5
AKHS	Akhisar	0.97	255	P	Pb	18 07 06.7	-1.6
AKHS				S	Sb	18 07 20.3	-0.8
AKHS	Akhisar	0.97	255	⇓*i*P	Pb	18 07 06.7	-1.6
AKHS				*i* S	Sb	18 07 20.3	-0.8
AKS	Akhisar	0.97	255	*e*PG	Pb	18 07 06.9	-1.4
AKS	Akhisar	0.97	255	*e*Pg	Pb	18 07 06.9	-1.4
BALB	Balikesir	1.02	301	*e*PG	Pn	18 07 08.4	-1.3
BALB				*e*SG	Sn	18 07 23.6	-0.4
BALB	Balikesir	1.02	301	*e*Pg	Pn	18 07 08.4	-1.3
BALB				*e*Sg	Sn	18 07 23.6	-0.4
IGD	Bursa	1.14	7	⇑*i*P	Pb	18 07 08.6	-2.7
IGD				*i* S	Sn	18 07 26.5	-0.7
BALY	Balya	1.24	300	P	Pg	18 07 12.3	-1.0
BALY				S	Sn	18 07 28.3	-1.4
BALY	Balya	1.24	300	⇓*i*P	Pg	18 07 12.3	-1.0
BALY				*i* S	Sn	18 07 28.3	-1.4
MDNY	Mudanya-Bursa	1.24	355	*e*PN	Pg	18 07 12.0	-1.3
MDNY	Mudanya-Bursa	1.24	355	*e*Pn	Pg	18 07 12.0	-1.3
KCTX	Karacabey (Bur	1.24	336	*e*PN	Pg	18 07 12.2	-1.1
KC

GLHS	Glhisar (BURDU	2.01 169	ePn	Pn	18 07 22.9	-0.5
URLA	Izmir	2.04 249	P	Pn	18 07 22.1	-1.8
URLA	Izmir	2.04 249	i P	Pn	18 07 22.1	-1.8
URLA			i S	Sg	18 07 55.4	+0.4
BGKT	Bogazkoy	2.06 355	ePN	Pb	18 07 24.5	-2.3
BGKT	Bogazkoy	2.06 355	ePn	Pb	18 07 24.5	-2.3
YER	Yerkesik	2.07 196	ePN	Pn	18 07 24.0	-0.3
YER	Yerkesik	2.07 196	eP	Pb	18 07 26.1	-1.0
YER	Yerkesik	2.07 196	ePn	Pb	18 07 24.0	-0.3
YER	Yerkesik	2.07 196	eP	Pb	18 07 26.1	-1.0
YER	Yerkesik	2.07 196	ePn	Pb	18 07 26.1	-1.0
BCK	Bucak	2.08 143	ePN	Pn	18 07 23.6	-0.7
BCK	Bucak	2.08 143	ePn	Pn	18 07 23.6	-0.7
SILT	Sile	2.08 13	ePN	Pb	18 07 24.7	-2.5
SILT	Sile	2.08 13	ePn	Pb	18 07 24.7	-2.5
BTAS	Taskesti	2.10 46	P	Pn	18 07 24.0	-0.7
BTAS	Taskesti	2.10 46	i P	Pn	18 07 24.1	-0.7
BTAS			i S	Sg	18 07 58.2	+1.3
RKY	Sarkoy-Tekirda	2.10 318	ePN	Pb	18 07 25.1	-2.6
RKY	Sarkoy-Tekirda	2.10 318	ePn	Pb	18 07 25.1	-2.6
KLYT	Kilyos	2.12 1	ePN	Pb	18 07 25.2	-2.7
KLYT	Kilyos	2.12 1	ePn	Pb	18 07 25.3	-2.7
PRK	Paraskevi	2.13 274	P	Pn	18 07 24.6	-0.5
PRK	Paraskevi	2.13 274	P	Pn	18 07 24.6	-0.5
PRK			S	Sg	18 07 57.4	-0.6
PRK	Paraskevi	2.13 274	P	Pn	18 07 24.6	-0.5
PRK	Paraskevi	2.13 274	P	Pn	18 07 24.6	-0.5
PRK			S	Sg	18 07 57.4	-0.6
LPK	Lapseki	2.14 306	ePN	Pb	18 07 26.0	-2.2
LPK	Lapseki	2.14 306	ePn	Pb	18 07 26.0	-2.2
CTKS	Kestanelik-??a	2.14 350	ePN	Pn	18 07 25.1	-0.1
CTKS	Kestanelik-??a	2.14 350	ePn	Pn	18 07 25.1	-0.1
KAND	Kocaeli-Kandir	2.16 24	P	Pn	18 07 25.1	-0.3
KAND			S	Sn	18 07 52.1	-0.2
KAND	Kocaeli-Kandir	2.16 24	i P	Pn	18 07 25.1	-0.3
KAND			i S	Sn	18 07 52.1	-0.2
TKR	Tekirdag	2.18 329	ePN	Pn	18 07 25.8	+0.1
TKR	Tekirdag	2.18 329	ePn	Pn	18 07 25.8	+0.1
SLVT	Silivri	2.19 344	P	Pb	18 07 27.7	-1.4
SLVT			S	Sb	18 07 55.1	-1.1
EZN	Ezine	2.19 289	ePN	Pb	18 07 26.5	-2.7
EZN	Ezine	2.19 289	ePn	Pb	18 07 26.5	-2.7
SMG	Samos	2.22 231	P	Pg	18 07 29.5	-2.5
SMG	Samos	2.22 231	P	Pg	18 07 29.5	-2.5
SMG			S	Sg	18 07 58.9	-1.9
CRLT	Corlu	2.23 334	ePN	Pb	18 07 27.2	-2.5
CRLT	Corlu	2.23 334	ePn	Pb	18 07 27.2	-2.5
SAHE	Sakarya_HENDEK	2.23 39	P	Pn	18 07 25.7	-0.7
SAHE			S	Sn	18 07 54.2	+0.2
SAHE	Sakarya_HENDEK	2.23 39	i P	Pn	18 07 25.7	-0.7
SAHE			i S	Sn	18 07 54.2	+0.2
KIZT	Kizilcal	2.25 95	ePN	Pn	18 07 26.1	-0.6
KIZT	Kizilcal	2.25 95	ePn	Pn	18 07 26.2	-0.6
SUTC	Sutluce-Ispart	2.27 136	ePN	Pn	18 07 27.0	-0.1
SUTC	Sutluce-Ispart	2.27 136	ePn	Pn	18 07 27.0	-0.1
GELI	Tayfur-Gelibol	2.33 304	ePN	Pb	18 07 28.3	-3.2
GELI	Tayfur-Gelibol	2.33 304	ePn	Pb	18 07 28.3	-3.2
KORT	Korkueli	2.37 153	P	Pn	18 07 28.3	-0.2
KORT	Korkueli	2.37 153	i P	Pn	18 07 28.3	-0.2
KORT			i S	Sg	18 08 10.5	+4.9
CTYL	Yalikoy Yolu	2.41 347	ePN	Pn	18 07 29.4	+0.5
CTYL	Yalikoy Yolu	2.41 347	ePn	Pn	18 07 29.4	+0.5
CHOS	Chios island	2.43 253	P	Pn	18 07 28.2	-1.0
CHOS			S	Sn	18 07 58.8	-0.2
CHOS	Chios island	2.43 253	P	Pn	18 07 28.2	-1.0
CHOS			S	Sn	18 07 58.8	-0.2
CHOS	Chios island	2.43 253	P	Pg	18 07 34.9	-1.1
SIGR	SIGRI	2.46 273	P	Pn	18 07 28.6	-0.9
SIGR	SIGRI	2.46 273	P	Pn	18 07 28.6	-0.9
BODT	Bodrum	2.46 214	P	Pn	18 07 28.2	-1.4
BODT			S	Sn	18 07 58.2	-1.6
BODT	Bodrum	2.46 214	P	Pn	18 07 28.2	-1.4
BODT	Bodrum	2.46 214	ePn	Pn	18 07 29.6	0.0
BODT			S	Sn	18 07 58.2	-1.6
BODT	Bodrum	2.46 214	ePn	Pn	18 07 29.6	0.0
ERIK	Erikli-Kesan	2.46 309	ePN	Pb	18 07 30.6	-3.2
ERIK	Erikli-Kesan	2.46 309	ePn	Pb	18 07 30.6	-3.2
FETY	Fethiye	2.49 179	P	Pn	18 07 27.8	-2.2
FETY	Fethiye	2.49 179	P	Pn	18 07 27.8	-2.2
FETY	Fethiye	2.49 179	ePn	Pn	18 07 29.6	-0.4
FETY	Fethiye	2.49 179	ePn	Pn	18 07 29.6	-0.4
FETY			S	Sg	18 08 12.1	+2.7
KDHN	Kadinhani	2.50 103	P	Pn	18 07 29.9	-0.3
KDHN	Kadinhani	2.50 103	i P	Pn	18 07 29.9	-0.3
KDHN			i S	Sg	18 08 09.2	-0.4
GADA	Gvkgeada	2.63 295	P	Pn	18 07 31.9	0.0
GADA	Gvkgeada	2.63 295	ePn	Pn	18 07 32.1	+0.2
GADA	Gvkgeada	2.63 295	ePn	Pn	18 07 32.1	+0.2
GADA			eSn	Sg	18 08 12.3	-1.5
ENEZ	Enez	2.72 307	P	Pn	18 07 33.4	+0.2
ENEZ			S	Sn	18 08 07.0	+0.8
ENEZ	Enez	2.72 307	P	Pn	18 07 33.4	+0.2
ENEZ			S	Sn	18 08 07.0	+0.8
PHSR	Pinarhisar	2.75 336	ePN	Pn	18 07 34.4	+0.9
PHSR	Pinarhisar	2.75 336	ePn	Pn	18 07 34.4	+0.9
LADK	Ladik-KONYA	2.78 108	ePN	Pn	18 07 33.8	-0.3
LADK	Ladik-KONYA	2.78 108	ePn	Pn	18 07 33.8	-0.3
KDZE	Karadeniz Ereo	2.87 40	ePN	Pn	18 07 35.3	+0.1
KDZE	Karadeniz Ereo	2.87 40	ePn	Pn	18 07 35.3	+0.1
ALN	Alexandroupoli	2.88 309	P	Pn	18 07 35.1	-0.3
ALN			S	Sn	18 08 10.4	+0.3
ALN	Alexandroupoli	2.88 309	P	Pn	18 07 35.3	-0.1
ALN			S	Sg	18 08 19.5	-2.5
ALN	Alexandroupoli	2.88 309	P	Pn	18 07 35.3	-0.1
ALN			S	Sn	18 08 10.4	+0.3
ALN	Alexandroupoli	2.88 309	P	Pn	18 07 35.3	-0.1
ALN			S	Sg	18 08 19.5	-2.5
BR231	Keskin MP Arra	3.00 75	ePn	Pb	18 07 38.8	-4.2
BR231	Keskin MP Arra	3.00 75	ePn	Pb	18 07 38.8	-4.2
LOD	Lodumlu	3.00 74	ePN	Pn	18 07 37.1	0.0
LOD	Lodumlu	3.00 74	ePn	Pn	18 07 37.1	0.0
SMTH	Samothraki Isl	3.00 298	P	Pn	18 07 36.2	-0.8
SMTH	Samothraki Isl	3.00 298	P	Pn	18 07 36.2	-0.8
ANTO	Ankara	3.02 75	eP	Pn	18 07 38.2	+0.9
ANTO	Ankara	3.02 75	eP	Pn	18 07 38.2	+0.9
ANTO	Ankara	3.02 75	ePn	Pn	18 07 38.2	+0.9
LIA	Limnos Island	3.06 286	P	Pn	18 07 37.6	-0.3
LIA	Limnos Island	3.06 286	P	Pn	18 07 37.6	-0.3
LIA	Limnos Island	3.06 286	P	Pn	18 07 37.5	-0.3
LIA			S	Sg	18 08 24.9	-2.8
EDRB	Edirne	3.22 328	P	Pn	18 07 40.2	+0.2
EDRB			S	Sn	18 08 17.9	-0.5
EDRB	Edirne	3.22 328	P	Pn	18 07 40.2	+0.2
EDRB			S	Sn	18 08 17.9	-0.5
APE	Apeiranthos	3.43 234	‖ iP	Pn	18 07 42.2	-0.8
APE	Apeiranthos	3.43 234	i P	Pn	18 07 42.2	-0.8
BR131	Keskin Array S	3.63 79	ePn	Pn	18 07 45.8	0.0
BR131	Keskin Array S	3.63 79	ePn	Pn	18 07 45.8	0.0
BRTR	Keskin Array B	3.63 79	Pn	Pn	18 07 46.7	+0.9
	1.0nm,0.3s,baz=252,slow=12,SNR=35					
BRTR			Lg	Lg	18 08 45.2	
	1.7nm,0.3s,baz=265,slow=26,SNR=7.0					
KDZ	Kurdzhali	3.73 314	i P	Pn	18 07 47.4	+0.4
KARP	Karpathos	3.87 203	ePn	Pn	18 07 48.7	-0.3
KARP	Karpathos	3.87 203	ePn	Pn	18 07 48.7	-0.3
KARP			ePg	Pb	18 07 57.2	-0.5
KAVA	Kavala	3.92 300	P	Pn	18 07 49.5	-0.2
KAVA	Kavala	3.92 300	P	Pn	18 07 49.5	-0.2
SANT	Santorini	3.94 227	ePn	Pn	18 07 49.1	-0.8
SANT	Santorini	3.94 227	ePn	Pn	18 07 49.1	-0.8
RZN	Rozhen	4.16 309	i P	Pn	18 07 53.3	+0.2
PLD	Plovdiv	4.43 314	i P	Pn	18 07 56.5	-0.1
MMB	Musomiste	4.73 303	P	Pn	18 07 59.8	-1.0
SZH	Strazhica	4.74 332	i P	Pn	18 08 00.7	-0.2
LAST	Lasithi	4.86 217	⇑ iP	Pn	18 08 02.2	-0.5
LAST	Lasithi	4.86 217	⇑ iP	Pn	18 08 02.2	-0.5
LAST	Lasithi	4.86 217	ePn	Pn	18 08 03.7	+1.0
LAST	Lasithi	4.86 217	ePn	Pn	18 08 03.7	+1.0
MSAB	Monastry St. A	5.04 350	⇑ iP	Pn	18 08 06.7	+1.7
MSAB	Monastry St. A	5.04 350	⇑ iP	Pn	18 08 06.7	+1.7
IDI	Anoyia	5.05 222	Pn	Pn	18 08 04.5	-0.8
	0.9nm,0.3s,baz=50,slow=15,SNR=3.7					
IDI			Sn	Sn	18 09 03.6	-0.1
	0.2nm,0.3s,baz=121,slow=20,SNR=1.7					
IDI			Lg	Lg	18 09 33.5	
	0.8nm,0.3s,baz=54,slow=9.2,SNR=2.1					
TIRR	Tirgusor	5.34 355	⇑ iP	Pn	18 08 10.3	+1.1
TIRR	Tirgusor	5.34 355	eP	Pn	18 08 09.3	+0.1
TIRR	Tirgusor	5.34 355	eP	Pn	18 08 09.3	+0.1
TIRR	Tirgusor	5.34 355	ePn	Pn	18 08 09.3	+0.1
CSS	Mathiatis	5.40 139	ePn	Pn	18 08 09.9	-0.1
CSS	Mathiatis	5.40 139	ePn	Pn	18 08 09.9	-0.1
HARR	Harsova	5.62 352	⇑ iP	Pn	18 08 14.9	+2.0
HARR	Harsova	5.62 352	⇑ iP	Pn	18 08 14.9	+2.0
MPEP	Malo Peshtene	5.80 318	i P	Pn	18 08 15.8	+0.3
TLCR		6.05 359	⇑ iP	Pn	18 08 20.5	+1.6
TLCR		6.05 359	⇑ iP	Pn	18 08 20.5	+1.6
CFR	Carcaliu	6.08 354	⇑ iP	Pn	18 08 19.9	+0.6
CFR	Carcaliu	6.08 354	⇑ iP	Pn	18 08 19.9	+0.6
SEV	Sevastopol'	6.43 31	eP	Pn	18 08 23.3	-0.8
SEV			eS	Sn	18 09 34.7	-2.8
SEV	Sevastopol'	6.43 31	eP	Pn	18 08 23.3	-0.8
BARS	Barje	6.58 306	‖ iPn	Pn	18 08 26.3	+0.2
YAL	Yalta	6.59 34	eP	Pn	18 08 27.2	+0.9
YAL			eS	Sn	18 09 39.9	-1.5
YAL	Yalta	6.59 34	eP	Pn	18 08 27.2	+0.9
YAL			eS	Sn	18 09 39.9	-1.5
MLR	Muntele Rosu	6.75 341	Pn	Pn	18 08 29.7	+1.1
	0.1nm,0.3s,baz=112,slow=7.2,SNR=8.6					
MLR			Sn	Sn	18 09 47.5	+1.9
	0.1nm,0.3s,baz=86,slow=19,SNR=1.7					
MLR			Lg	Lg	18 10 23.0	
	0.1nm,0.3s,baz=187,slow=17,SNR=2.3					
MLR	Muntele Rosu	6.75 341	⇑ iP	Pn	18 08 29.8	+1.1
MTUR	Matau	6.76 336	⇑ iP	Pn	18 08 29.1	+0.3
MTUR	Matau	6.76 336	⇑ iP	Pn	18 08 29.1	+0.3
ALU	Alushta	6.85 34	eP	Pn	18 08 29.0	-0.9
ALU			eS	Sn	18 09 44.4	-3.4
ALU	Alushta	6.85 34	eP	Pn	18 08 29.0	-0.9
PLOR	Plostina	6.94 346	⇑ iP	Pn	18 08 32.9	+1.7
PLOR	Plostina	6.94 346	⇑ iP	Pn	18 08 32.9	+1.7
VRI	Vrincioaia	6.94 347	⇑ iP	Pn	18 08 33.3	+2.1
VRI	Vrincioaia	6.94 347	⇑ iP	Pn	18 08 33.3	+2.1
SIM	Simferopol'	6.94 31	P	Pn	18 08 34.5	+3.3
SIM			S	Sn	18 09 49.7	-0.5
SIM			pmax	pmax		
	comp=Z,56nm,0.5s					
SIM			smax	smax		
	comp=E,71nm,0.9s					
SIM			smax	smax		
	comp=E,23nm,1.0s					
VOIR		6.96 336	⇑ iP	Pn	18 08 31.8	+0.4
VOIR		6.96 336	⇑ iP	Pn	18 08 31.8	+0.4
ARR	Arges	7.03 334	⇑ iP	Pn	18 08 34.1	+1.7
ARR	Arges	7.03 334	⇑ iP	Pn	18 08 34.1	+1.7
BOVS	Bovan	7.10 312	i Pn	Pn	18 08 34.3	+1.0
SUDU	Sudak	7.28 36	eP	Pn	18 08 28.7	-7.0
DOPR	Dopca	7.34 340	⇑ iP	Pn	18 08 38.1	+1.5
DOPR	Dopca	7.34 340	⇑ iP	Pn	18 08 38.1	+1.5
LOT	Lotru	7.41 330	⇑ iP	Pn	18 08 39.5	+1.8
LOT	Lotru	7.41 330	⇑ iP	Pn	18 08 39.5	+1.8
TESR	Tescani	7.58 348	⇑ iP	Pn	18 08 41.6	+1.7
TESR	Tescani	7.58 348	⇑ iP	Pn	18 08 41.6	+1.7
KUBS	Kucevo	7.61 316	i Pn	Pn	18 08 38.4	-1.9
GZR	Gura Zlata	7.78 326	⇑ iP	Pn	18 08 42.7	0.0
GZR	Gura Zlata	7.78 326	⇑ iP	Pn	18 08 42.7	0.0
GRUS	Gruza	7.83 310	i Pn	Pn	18 08 42.9	-0.5
MDVR	Moldovita	7.84 318	⇑ iP	Pn	18 08 43.7	+0.2
MDVR	Moldovita	7.84 318	⇑ iP	Pn	18 08 43.7	+0.2
MMAI	Mount Meron Ar	8.00 138	Pn	Pn	18 08 45.0	-0.7
	comp=E,4.1nm,0.3s,baz=316,slow=11,SNR=23					
IVAS	Ivanjica	8.01 307	i Pn	Pn	18 08 46.1	+0.2
BZS	Buzias	8.48 322	⇑ iP	Pn	18 08 52.0	-0.3
BZS	Buzias	8.48 322	⇑ iP	Pn	18 08 52.0	-0.3
BURAR	Bucovina Array	8.92 343	⇑ iP	Pn	18 09 00.4	+2.0
BURAR	Bucovina Array	8.92 343	⇑ iP	Pn	18 09 00.4	+2.0
BUR08	Bucovina Ar. S	8.95 343	ePn	Pn	18 08 59.3	+0.5
BUR08	Bucovina Ar. S	8.95 343	ePn	Pn	18 08 59.3	+0.5
SORM	Soroca	9.02 357	⇑ iP	Pn	18 09 01.1	+1.6
SORM	Soroca	9.02 357	⇑ iP	Pn	18 09 01.1	+1.6
ASF	Jabal al Asfar	9.45 135	Pn	Pn	18 09 06.2	+0.6
	comp=E,0.3nm,0.3s,baz=307,slow=5.1,SNR=2.1					
TIP	Timpagrande	9.52 274	ePn	Pn	18 09 07.1	+0.5
TIP	Timpagrande	9.52 274	ePn	Pn	18 09 07.1	+0.5
CUC	Castrocucco	10.23 279	ePn	Pn	18 09 18.7	+2.4
CUC	Castrocucco	10.23 279	ePn	Pn	18 09 18.7	+2.4
CEL	Celeste	10.29 269	ePn	Pn	18 09 17.3	+0.1
CEL	Celeste	10.29 269	ePn	Pn	18 09 17.3	+0.1
EIL	Elat	10.63 151	Pn	Pn	18 09 21.6	-0.1
	comp=E,0.4nm,0.3s,baz=346,slow=15,SNR=2.9					
PSZ	Piszkesteto	10.99 326	eP	Pn	18 09 27.7	+1.0
PSZ	Piszkesteto	10.99 326	eP	Pn	18 09 27.7	+1.0
PSZ	Piszkesteto	10.99 326	ePn	Pn	18 09 27.7	+1.0
KIV	Kislovodsk	11.32 60	‖ eP	Pn	18 09 30.1	-1.1
KIV	Kislovodsk	11.32 60	eP	Pn	18 09 30.1	-1.1
KIEV	Kiev	11.57 1	‖ eP	Pn	18 09 35.4	+0.9
KIEV	Kiev	11.57 1	ePn	Pn	18 09 34.9	+0.4
KIEV	Kiev	11.57 1	eP	Pn	18 09 35.4	+0.9
KIEV	Kiev	11.57 1	ePn	Pn	18 09 34.9	+0.4
AKASG	Malin Array Be	11.57 1	Pn	Pn	18 09 34.5	-0.1
	comp=E,0.6nm,0.3s,baz=180,slow=11,SNR=5.6					
AKASG	Malin Array Be	11.57 1	eP	Pn	18 09 37.8	+3.3
AKASG			pmax	pmax		
	comp=Z,1.0nm,0.3s					
GNI	Garni	12.17 80	⇑ eP	Pn	18 09 44.0	+1.0
GNI			pmax	pmax		
	comp=Z,8.0nm,0.7s					
GNI	Garni	12.17 80	eP	Pn	18 09 44.0	+1.0
	comp=Z,8.0nm,0.7s					
VSR	Storozhevoye	14.03 27	eP	P	18 10 24.1	+8.1
VSR			pmax	pmax		
	comp=Z,6.0nm,0.6s					
FINES	FINESS Array B	22.41 356	P	P	18 11 47.8	-0.1
	comp=Z,1.2nm,0.7s,baz=162,slow=9.6,SNR=2.8					
GEYT	Alibeck	22.76 84	P	P	18 11 51.7	-0.2
	comp=Z,3.2nm,0.8s,baz=285,slow=12,SNR=7.5					
HFS	Hagfors	23.14 340	P	P	18 11 56.0	+0.5
	comp=Z,3.3nm,0.9s,baz=147,slow=10,SNR=2.8					
HFS	Hagfors	23.14 340	P	P	18 11 56.0	+0.5
HFS			pmax	pmax		
	comp=Z,3.0nm,0.9s					
HFS	Hagfors	23.14 340	P	P	18 11 56.0	+0.5
	comp=Z,3.0nm,0.9s					
AKTK	Aktyubinsk	23.33 52	P	P	18 11 57.1	-0.5
	comp=Z,2.0nm,0.6s					
AKTO	Aktyubinsk	23.33 52	P	P	18 11 57.1	-0.5
	comp=Z,1.5nm,0.6s,baz=238,slow=9.4,SNR=4.4					
ABKAR	Akbulak array	24.22 55	eP	P	18 12 05.8	-0.4
ABKAR	Akbulak array	24.22 55	eP	P	18 12 05.8	-0.4
NOA	NORSAR Array B	24.57 339	P	P	18 12 08.8	-0.4
	comp=Z,1.1nm,0.8s,baz=143,slow=9.1,SNR=3.3					
ESDC	Sonseca Array	25.41 282	P	P	18 12 17.1	-0.1
	comp=Z,0.3nm,0.4s,baz=80,slow=11,SNR=4.1					
TAM	Tamanrasset	25.79 238	eP	P	18 12 21.7	+0.9
TAM			pmax	pmax		
	comp=Z,2.0nm,1.0s					
TAM	Tamanrasset	25.79 238	eP	P	18 12 21.7	+0.9
	comp=Z,1.6nm,1.0s					
TAM	Tamanrasset	25.79 238	eP	P	18 12 21.7	+0.9
	comp=Z,1.6nm,1.0s					
ARU	Arti	26.04 39	P	P	18 12 23.7	+1.2
	comp=Z,2.3nm,0.3s,baz=239,slow=12,SNR=6.6					
ARU	Arti	26.04 39	c iP	P	18 12 24.3	+1.8
ARU					18 12 59.4	
ARU			S	S	18 16 59.0	+5.7
ARU			SS	SnSn	18 17 58.4	+7.9
ARU			pmax	pmax		
	comp=Z,3.0nm,0.7s					
ARU	Arti	26.04 39	eP	P	18 12 23.5	+1.0
	comp=Z,9.1nm,1.3s					
ARU	Arti	26.04 39	eP	P	18 12 23.6	+1.0
	comp=Z,9.1nm,1.3s					
EKA	Eskdalemuir Ar	26.88 318	P	P	18 12 31.1	+0.9
	comp=Z,0.5nm,0.5s,baz=113,slow=12,SNR=3.7					
ZRNK	Zerenda	30.57 50	eP	P	18 13 03.5	+0.4
ZRNK			pmax	pmax		
	comp=Z,5.0nm,1.8s					
ZRNK	Zerenda	30.57 50	eP	P	18 13 03.5	+0.4
	comp=Z,5.4nm,1.8s					
ZRNK	Zerenda	30.57 50	eP	P	18 13 03.5	+0.4
	comp=Z,5.4nm,1.8s					
KKAR	Karatay Array	31.28 69	eP	P	18 13 11.0	+1.5
KKAR	Karatay Array	31.28 69	eP	P	18 13 11.0	+1.5
KKAR	Karatay Array	31.28 69	eP	P	18 13 11.0	+1.5
EKS2	Erkin-Say	33.72 69	eP	P	18 13 31.8	+0.8
EKS2			pmax	pmax		
	comp=Z,3.0nm,0.7s					
EKS2	Erkin-Say	33.72 69	eP	P	18 13 31.8	+0.8
	comp=Z,3.0nm,0.7s					
EKS2	Erkin-Say	33.72 69	eP	P	18 13 31.8	+0.8
	comp=Z,3.0nm,0.7s					
AAK	Ala-Archa	34.25 69	‖ iP	P	18 13 36.4	+0.8
AAK			pmax	pmax		
	comp=Z,3.0nm,1.1s					
AAK	Ala-Archa	34.25 69	eP	P	18 13 35.8	+0.2
	comp=Z,4.9nm,1.4s					
AAK	Ala-Archa	34.25 69	eP	P	18 13 35.8	+0.2
	comp=Z,4.9nm,1.4s					
TKM2	Tokmak 2	35.00 68	eP	P	18 13 42.5	+0.4
TKM2			pmax	pmax		
	comp=Z,2.0nm,0.6s					
TKM2	Tokmak 2	35.00 68	eP	P	18 13 42.5	+0.4
	comp=Z,2.1nm,0.6s					
TKM2	Tokmak 2	35.00 68	eP	P	18 13 42.5	+0.4
	comp=Z,2.1nm,0.6s					
TOA0	Torodi Ar. Sit	35.39 231	eP	P	18 13 46.2	+0.7
TOA0	Torodi Ar. Sit	35.39 231	eP	P	18 13 46.1	+0.7
TORD	Torodi Ar. Bea	35.39 231	P	P	18 13 44.6	-0.8
	comp=Z,0.4nm,0.5s,baz=39,slow=9.2,SNR=3.0					
KURBB	Kurchatov Arra	36.28 55	P	P	18 13 52.5	-0.2
	comp=Z,0.5nm,0.7s,baz=277,slow=8.9,SNR=8.1					
KURK	Kurchatov	36.33 55	P	P	18 13 52.5	-0.7
KURK			pmax	pmax		
	comp=Z,1.0nm,0.7s					
KURK	Kurchatov	36.33 55	P	P	18 13 52.5	-0.7
	comp=Z,1.0nm,0.7s					
MK31	Makanchi Array	39.08 61	eP	P	18 14 16.2	-0.4
MK31	Makanchi Array	39.08 61	eP	P	18 14 16.2	-0.4
MK31	Makanchi Array	39.08 61	eP	P	18 14 16.2	-0.4
MKAR	Makanchi Array	39.08 61	P	P	18 14 16.0	-0.6
	comp=Z,0.9nm,0.6s,baz=281,slow=7.5,SNR=8.6					
MKAR	Makanchi Array	39.08 61	P	P	18 14 16.0	-0.6
MKAR			pmax	pmax		
	comp=Z,1.0nm,0.6s					
MKAR	Makanchi Array	39.08 61	P	P	18 14 16.0	-0.6
	comp=Z,1.0nm,0.6s					
MK01	Makanchi Array	39.09 61	eP	P	18 14 15.9	-0.8
MK01	Makanchi Array	39.09 61	eP	P	18 14 15.9	-0.8
SPA0	Spitsbergen Ar	39.51 356	eP	P	18 14 19.9	+0.2
SPA0	Spitsbergen Ar	39.51 356	eP	P	18 14 19.9	+0.2
ZAA0	Zalesovo Array	40.06 49	eP	P	18 14 23.4	-1.2
ZAA0	Zalesovo Array	40.06 49	eP	P	18 14 23.4	-1.2
ZALV	Zalesovo Beam	40.06 49	P	P	18 14 24.1	-0.5
	comp=Z,0.9nm,0.6s,baz=266,slow=9.0,SNR=4.1					
ZALV	Zalesovo Beam	40.06 49	eP	P	18 14 25.4	+0.8
ZALV			pmax	pmax		
	comp=Z,1.0nm,0.6s					
ZALV	Zalesovo Beam	40.06 49	eP	P	18 14 25.4	+0.8
	comp=Z,1.0nm,0.6s					
CMLA	Cha da Macela	42.19 286	eP	P	18 14 43.8	+1.5
CMLA	Cha da Macela	42.19 286	eP	P	18 14 43.8	+1.5
CMLA	Cha da Macela	42.19 286	eP	P	18 14 43.8	+1.5
TLY	Talaya	51.67 50	eP	P	18 15 57.6	+1.3
TLY			pmax	pmax		
	comp=Z,4.0nm,1.3s					
TLY	Talaya	51.67 50	eP	P	18 15 57.6	+1.3
	comp=Z,4.4nm,1.3s					
TLY	Talaya	51.67 50	eP	P	18 15 57.6	+1.3
	comp=Z,4.4nm,1.3s					
KS01	Wonju Array Si	73.42 55	eP	P	18 18 20.0	-1.9
KSRS	Korea Array	73.46 55	P	P	18 18 21.4	-0.6
	comp=Z,1.8nm,0.7s,baz=292,slow=6.2,SNR=7.1					

*DDA **28** 18:10:00.9, 39°.08N×29°.03E, h7km, Md2.8*
*ISCJB **28** 18:10:01.2±0.6, 39°.07N±0°.04×29°.04E±0°.03, h2km±7km, Error ellipse: s-maj=6.7km s-min=4.4km az=178.0*
*CSEM **28** 18:10:01.4±0.1, 39°.08N×29°.04E, h2km, MD2.8, Error ellipse: s-maj=1.9km s-min=1.9km az=92.0*
*ISK **28** 18:10:01.1, 39°.06N×29°.08E, h6km, MD2.9*
ISC 28 18:10:01.6±1.1, 39°.09N±0°.03×29°.05E±0°.02, h3km±11km, n41, σ0s31/52, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.26	260	P	Pg	18 10 06.4	-0.2
DEMI				S	Sg	18 10 10.1	0.0
DEMI	Demirci	0.26	260	i P	Pg	18 10 06.4	-0.2
DEMI				i S	Sg	18 10 10.1	0.0
GDZ	Gediz	0.34	90	P	Pg	18 10 07.9	-0.2
GDZ

TVSB				*e*Sg	Sg	18 15 34.7	+0.3
KULA	Kula-Manisa	0.66	207	*e*PG	Pg	18 15 30.9	-0.8
KULA	Kula-Manisa	0.66	207	*e*Pg	Pg	18 15 30.9	-0.8
KHAL	Karahalli	0.82	154	P	Pg	18 15 34.5	-0.1
KHAL				S	Sb	18 15 45.8	-0.1
KHAL	Karahalli	0.82	154	*i* P	Pg	18 15 34.5	-0.1
KHAL				*i* S	Sb	18 15 45.8	-0.1
KHL	Karahalli	0.87	154	*e*PG	Pb	18 15 36.0	+0.2
KHL	Karahalli	0.87	154	*e*Pg	Pb	18 15 36.0	+0.2
AKHS	Akhisar	0.98	257	P	Pn	18 15 38.3	+0.1
AKHS				S	Sg	18 15 51.0	+0.5
AKHS	Akhisar	0.98	257	*i* P	Pn	18 15 38.3	+0.1
AKHS				*i* S	Sg	18 15 51.0	+0.5
AKS	Akhisar	0.98	257	*e*PG	Pg	18 15 37.9	+0.2
AKS	Akhisar	0.98	257	*e*Pg	Pg	18 15 37.9	+0.2
BALB	Balikesir	1.04	301	*e*PG	Pg	18 15 38.9	+0.1
BALB	Balikesir	1.04	301	*e*Pg	Pg	18 15 38.9	+0.1
IGD	Bursa	1.16	6	*i* P	Pn	18 15 40.6	0.0
IGD				*i* S	Sb	18 15 55.5	0.0
CAVI	Cavuskoy	1.25	29	*e*PN	Pg	18 15 42.7	-0.2
CAVI	Cavuskoy	1.25	29	*e*Pn	Pg	18 15 42.7	-0.2
KCTX	Karacabey (Bur	1.27	336	*e*PN	Pg	18 15 43.2	+0.1
KCTX	Karacabey (Bur	1.27	336	*e*Pn	Pg	18 15 43.2	+0.1
IZI	Iznik	1.27	15	*e*PN	Pg	18 15 43.5	+0.3
IZI	Iznik	1.27	15	*e*Pn	Pg	18 15 43.5	+0.3
GONE	Gonen-Balikesi	1.40	312	*e*PN	Pg	18 15 45.4	-0.3
GONE	Gonen-Balikesi	1.40	312	*e*Pn	Pg	18 15 45.4	-0.3
ARMT	Armutlu	1.46	355	*e*PN	Pb	18 15 45.6	-0.1
ARMT	Armutlu	1.46	355	*e*Pn	Pb	18 15 45.6	-0.1
EDC	Edincik	1.53	324	*e*PN	Pb	18 15 46.7	-0.3
EDC	Edincik	1.53	324	*e*Pn	Pb	18 15 46.7	-0.3
GULT	Gulveren	1.74	40	*e*PN	Pb	18 15 50.2	-0.4
GULT	Gulveren	1.74	40	*e*Pn	Pb	18 15 50.2	-0.4

*ISK **28** 18:21:46.6, 39°.12N×29°.02E, h8km, MD2.6*
*ISCJB **28** 18:21:47.2±0.5, 39°.11N±0°.04×29°.04E±0°.04, h9km, Error ellipse: s-maj=5.4km s-min=4.5km az=147.1*
*DDA **28** 18:21:47.0, 39°.08N×29°.04E, h7km, Md2.2*
*CSEM **28** 18:21:47.1±0.1, 39°.12N×29°.02E, h8km, MD2.2, Error ellipse: s-maj=2.2km s-min=1.6km az=97.0*

ISC 28 18:21:47.0±1.0, 39°.13N±0°.03×29°.03E±0°.03, h9km, n20, σ0°39/28, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.26	251	P	Pg	18 21 52.7	+0.4
DEMI				S	Sg	18 21 56.2	+0.4
DEMI	Demirci	0.26	251	*i* P	Pg	18 21 52.6	+0.4
DEMI				*i* S	Sg	18 21 56.2	+0.4
GDZ	Gediz	0.35	96	P	Pg	18 21 54.3	+0.4
GDZ				S	Sg	18 21 59.0	+0.4
GDZ	Gediz	0.35	96	*i* P	Pg	18 21 54.3	+0.4
GDZ				*i* S	Sg	18 21 59.0	+0.4
TVSB	Tavsanli	0.46	46	*e*PG	Pg	18 21 56.4	+0.4
TVSB				*e*SG	Sb	18 22 03.4	-1.0
TVSB	Tavsanli	0.46	46	*e*Pg	Pg	18 21 56.4	+0.4
TVSB				*e*Sg	Sb	18 22 03.4	-1.0
KULA	Kula-Manisa	0.68	206	*e*PG	Pg	18 21 59.9	-0.2
KULA	Kula-Manisa	0.68	206	*e*Pg	Pg	18 21 59.9	-0.2
KHAL	Karahalli	0.84	154	P	Pb	18 22 03.8	+0.1
KHAL				S	Sg	18 22 14.1	+0.1
KHAL	Karahalli	0.84	154	*i* P	Pb	18 22 03.9	+0.1
KHAL				*i* S	Sg	18 22 14.1	+0.1
KHL	Karahalli	0.89	154	*e*PG	Pg	18 22 04.1	0.0
KHL	Karahalli	0.89	154	*e*Pg	Pg	18 22 04.1	0.0
CAVI	Cavuskoy	1.24	30	*e*PN	Pg	18 22 11.0	+0.2
CAVI	Cavuskoy	1.24	30	*e*Pn	Pg	18 22 11.0	+0.2
KCTX	Karacabey (Bur	1.25	336	*e*PN	Pg	18 22 11.1	+0.1
KCTX	Karacabey (Bur	1.25	336	*e*Pn	Pg	18 22 11.1	+0.1
IZI	Iznik	1.25	16	*e*PN	Pg	18 22 11.1	0.0
IZI	Iznik	1.25	16	*e*Pn	Pg	18 22 11.1	0.0
ARMT	Armutlu	1.44	355	*e*PN	Pb	18 22 14.1	0.0
ARMT	Armutlu	1.44	355	*e*Pn	Pb	18 22 14.1	0.0

*DDA **28** 18:23:43.8, 39°.10N×29°.03E, h10km, Md2.4*
*ISCJB **28** 18:23:44.2±0.5, 39°.08N±0°.03×29°.04E±0°.03, h3km±7km, Error ellipse: s-maj=5.7km s-min=4.2km az=173.2*
*CSEM **28** 18:23:44.5±0.1, 39°.10N×29°.05E, h2km, MD2.4, Error ellipse: s-maj=2.1km s-min=1.9km az=176.0*
*ISK **28** 18:23:44.3, 39°.11N×29°.06E, h6km, MD2.7*

ISC 28 18:23:44.4±1.0, 39°.10N±0°.02×29°.04E±0°.02, h9km±10km, n30, σ0°28/42, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.26	258	P	Pg	18 23 49.4	-0.2
DEMI				S	Sg	18 23 53.1	-0.1
DEMI	Demirci	0.26	258	*i* P	Pg	18 23 49.4	-0.2
DEMI				*i* S	Sg	18 23 53.1	-0.1
GDZ	Gediz	0.34	91	P	Pg	18 23 51.1	0.0
GDZ				S	Sg	18 23 56.0	+0.3
GDZ	Gediz	0.34	91	*i* P	Pg	18 23 51.1	0.0
GDZ				*i* S	Sg	18 23 56.0	+0.3
TVSB	Tavsanli	0.48	43	*e*PG	Pg	18 23 53.7	0.0
TVSB				*e*SG	Sg	18 24 00.1	+0.1
TVSB	Tavsanli	0.48	43	*e*Pg	Pg	18 23 53.7	0.0
TVSB				*e*Sg	Sg	18 24 00.1	+0.1
KULA	Kula-Manisa	0.65	207	*e*PG	Pg	18 23 57.0	0.0
KULA	Kula-Manisa	0.65	207	*e*Pg	Pg	18 23 57.0	0.0
KHAL	Karahalli	0.81	154	P	Pg	18 24 00.0	+0.1
KHAL				S	Sg	18 24 10.4	0.0
KHAL	Karahalli	0.81	154	*i* P	Pg	18 23 60.0	+0.1
KHAL				*i* S	Sg	18 24 10.4	0.0
KHL	Karahalli	0.86	154	*e*PG	Pb	18 24 01.7	+0.2
KHL	Karahalli	0.86	154	*e*Pg	Pb	18 24 01.7	+0.2
AKHS	Akhisar	0.98	258	P	Pg	18 24 03.6	+0.4
AKHS				S	Sg	18 24 15.5	-0.5
AKHS	Akhisar	0.98	258	*i* P	Pg	18 24 03.6	+0.4
AKHS				*i* S	Sg	18 24 15.5	-0.5
AKS	Akhisar	0.98	258	*e*PG	Pg	18 24 03.6	+0.3
AKS	Akhisar	0.98	258	*e*Pg	Pg	18 24 03.6	+0.3
BALB	Balikesir	1.05	301	*e*PG	Pb	18 24 05.1	+0.4
BALB				*e*SG	Sn	18 24 19.7	-0.4
BALB	Balikesir	1.05	301	*e*Pg	Pb	18 24 05.1	+0.4
BALB				*e*Sg	Sn	18 24 19.7	-0.4
CAVI	Cavuskoy	1.27	29	*e*PN	Pb	18 24 08.6	+0.2
CAVI	Cavuskoy	1.27	29	*e*Pn	Pb	18 24 08.6	+0.2
KCTX	Karacabey (Bur	1.28	336	*e*PN	Pg	18 24 09.3	+0.3
KCTX	Karacabey (Bur	1.28	336	*e*Pn	Pg	18 24 09.3	+0.3
GONE	Gonen-Balikesi	1.41	313	*e*PN	Pg	18 24 11.7	+0.2
GONE	Gonen-Balikesi	1.41	313	*e*Pn	Pg	18 24 11.7	+0.2
ARMT	Armutlu	1.47	355	*e*PN	Pb	18 24 11.9	-0.1
ARMT	Armutlu	1.47	355	*e*Pn	Pb	18 24 11.9	-0.1
EDC	Edincik	1.54	324	*e*PN	Pb	18 24 13.5	+0.3
EDC	Edincik	1.54	324	*e*Pn	Pb	18 24 13.5	+0.3
GULT	Gulveren	1.75	40	*e*PN	Pb	18 24 16.3	-0.4
GULT	Gulveren	1.75	40	*e*Pn	Pb	18 24 16.3	-0.4

DDA 28 18:24:12.7, 39°.12N×29°.15E, h7km, Md2.5, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	Gediz	0.26	96	*i* P	Pg	18 24 18.4	+0.5
GDZ				*i* S	Sg	18 24 22.0	+0.7
DEMI	Demirci	0.34	258	*i* P	Pg	18 24 20.0	+0.6
DEMI				*i* S	Sg	18 24 24.9	+0.9
KHAL	Karahalli	0.79	160	*i* P	Pb	18 24 28.5	-0.3
KHAL				*i* S	Sb	18 24 39.5	-0.2
IGD	Bursa	1.15	2	*i* P	Pg	18 24 34.2	-0.5
IGD				*i* S	Sg	18 24 48.6	-1.0

*DDA **28** 18:26:49.7, 39°.12N×29°.06E, h7km, Md2.7*
*ISCJB **28** 18:26:50.4±0.6, 39°.10N±0°.04×29°.05E±0°.04, h6km±8km, Error ellipse: s-maj=7.4km s-min=5.5km az=179.9*
*CSEM **28** 18:26:50.7±0.1, 39°.10N×29°.04E, h5km, MD2.7, Error ellipse: s-maj=3.6km s-min=2.9km az=125.0*
*ISK **28** 18:26:50.2, 39°.12N×29°.01E, h5km, MD2.7*

ISC 28 18:26:50.5±1.0, 39°.10N±0°.03×29°.05E±0°.03, h13km±11km, n23, σ0°48/32, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.26	257	P	Pg	18 26 56.3	+0.1
DEMI				S	Sg	18 27 00.0	+0.1
DEMI	Demirci	0.26	257	*i* P	Pg	18 26 56.3	+0.1
DEMI				*i* S	Sg	18 27 00.0	+0.1
GDZ	Gediz	0.34	92	P	Pg	18 26 57.3	-0.2
GDZ				S	Sg	18 27 02.3	+0.1
GDZ	Gediz	0.34	92	*i* P	Pg	18 26 57.3	-0.2
GDZ				*i* S	Sg	18 27 02.3	+0.1
TVSB	Tavsanli	0.47	43	*e*PG	Pg	18 26 59.7	-0.2
TVSB	Tavsanli	0.47	43	*e*Pg	Pg	18 26 59.7	-0.2
KULA	Kula-Manisa	0.66	207	*e*PG	Pg	18 27 03.5	0.0
KULA	Kula-Manisa	0.66	207	*e*Pg	Pg	18 27 03.5	0.0
KHAL	Karahalli	0.81	154	P	Pb	18 27 06.7	+0.1
KHAL				S	Sg	18 27 16.7	-0.3
KHAL	Karahalli	0.81	154	*i* P	Pb	18 27 06.7	+0.1
KHAL				*i* S	Sg	18 27 16.7	-0.3
AKS	Akhisar	0.99	257	*e*PG	Pb	18 27 09.0	-0.5
AKS	Akhisar	0.99	257	*e*Pg	Pb	18 27 09.0	-0.5
IGD	Bursa	1.17	6	*i* P	Pb	18 27 10.5	-2.0
IGD				*i* S	Sb	18 27 27.8	+0.3
CAVI	Cavuskoy	1.26	29	*e*PN	Pg	18 27 15.1	+0.3
CAVI				*e*SN	Sg	18 27 31.8	+0.7
CAVI	Cavuskoy	1.26	29	*e*Pn	Pg	18 27 15.1	+0.3
CAVI				*e*Sn	Sg	18 27 31.8	+0.7
IZI	Iznik	1.27	15	*e*PN	Pg	18 27 15.1	0.0
IZI	Iznik	1.27	15	*e*Pn	Pg	18 27 15.1	0.0
KCTX	Karacabey (Bur	1.28	336	*e*PN	Pb	18 27 14.7	+0.3
KCTX	Karacabey (Bur	1.28	336	*e*Pn	Pb	18 27 14.7	+0.3
ARMT	Armutlu	1.47	355	*e*PN	Pg	18 27 18.6	-0.1
ARMT	Armutlu	1.47	355	*e*Pn	Pg	18 27 18.6	-0.1
GULT	Gulveren	1.75	40	*e*PN	Pb	18 27 22.6	+0.1
GULT	Gulveren	1.75	40	*e*Pn	Pb	18 27 22.6	+0.1

*BJI **28** 18:35:45.6, 26°.99S×178°.02W, h253km, mb5.0/53, mB5.2/29*
*ISCJB **28** 18:35:51.5±0.1, 27°.56S±0°.02×178°.49W±0°.02, h308km, mb5.4/240, Error ellipse: s-maj=3.2km s-min=1.9km az=37.0*
*MOS **28** 18:35:51.8±0.8, 27°.07S×178°.58W, h299km, mb5.4/39, Error ellipse: s-maj=8.7km s-min=7.4km az=68.1*
*GCMT **28** 18:35:52.5±0.3, 27°.14S×178°.26W, h318km±1km, MW5.5/76, Moment Tensor Solution. s76,c113; Duration: 1s4 Moment tensor: Scale 10^{17}Nm; M_{rr}0.02±.06; $M_{\theta\theta}$-0.46±.10; $M_{\phi\phi}$0.43±.09; $M_{r\theta}$0.73±.08; $M_{\theta\phi}$0.67±.08; $M_{\phi r}$-2.30±.07; Best double couple: M_o2.54400×10^{17} NP1:ϕ_s162.00000°, δ90.00000°, λ108.00000°. NP2:ϕ_p253.00000°, δ18.00000°, λ1.00000°. Principal axes: T 2.5370, Plg42.0000°, Azm90.0000°; N 0.0140, Plg18.0000°, Azm342.0000°; P -2.5500, Plg42.0000°, Azm235.0000°; nsta1 refers to body waves, cutoff=40s.*
*IDC **28** 18:35:52.9±0.5, 27°.14S×178°.52W, h302km±4km, mb4.8/34, mb1 4.8/36, mb1mx4.8/41, mbtmp5.4/36 Error ellipse: s-maj=9.9km s-min=8.3km az=2.0*
*NEIC **28** 18:35:52.5±0.1, 27°.47S×178°.53W, mb5.3/137, Error ellipse: s-maj=5.0km s-min=3.1km az=146.0*

ISC 28 18:35:52.7±0.2, 27°.49S±0°.03×178°.42W±0°.03, h307km±1km, h306km; pP-P, n1138, σ1°51/1352, mb5.4/239, 30C-54D, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	Raoul Island	1.81	166	P	Pn	18 36 41.6	+3.0
	2μm,0.3s,baz=258,slow=0.3,SNR=115						
RAO				S	S	18 37 16.4	+1.3
	3μm,0.3s,baz=86,slow=23,SNR=15						
MSVF	Nonsavu	10.25	341	*e*P	Pn	18 38 12.3	-1.7
MSVF	Nonsavu	10.25	341	*e*Pn	Pn	18 38 12.3	-1.7
OUZ	Omahuta	10.29	220	PN	P	18 38 19.8	+2.7
MXZ	Matakaoa Point	10.41	195	*e*Pn	Pn	18 38 13.3	-2.4
MXZ	Matakaoa Point	10.41	195	PN	Pn	18 38 12.5	-3.2
MXZ				SN	S	18 40 08.9	-3.8
WCZ	Waipu Caves	10.43	214	PN	P	18 38 21.7	+2.9
KUZ	Kuaotunu	10.47	207	PN	P	18 38 20.5	+1.3
WMGZ	Waiomatatini S	10.64	194	PN	Pn	18 38 16.2	-2.3
WMGZ				SN	S	18 40 15.8	-2.0
HAZ	Te Kaha	10.72	196	PN	Pn	18 38 16.4	-3.1
PKGZ	Pakihiroa	10.78	195	PN	Pn	18 38 17.1	-3.1
PKGZ				SN	S	18 40 17.4	-3.6
PUZ	Puketiti	10.91	194	PN	Pn	18 38 18.0	-3.9
PUZ				SN	S	18 40 19.1	-4.9
ETAZ	East Tamaki Re	10.98	209	PN	P	18 38 28.0	+3.1
MKAZ	Moumakai	11.01	208	PN	P	18 38 26.9	+1.7
TWGZ	Tauwhareparae	11.07	195	PN	Pn	18 38 21.1	-2.7
OPRZ	Ohinepanea	11.15	201	PN	Pn	18 38 23.8	-0.9
OPRZ				SN	S	18 40 33.9	+4.4
AWAZ	Awhitu Peninsu	11.20	210	PN	P	18 38 30.0	+2.7
CNGZ	Carnagh Statio	11.32	194	PN	Pn	18 38 23.9	-2.8
MWZ	Matawai	11.33	196	PN	Pn	18 38 23.3	-3.7
TKGZ	Te Karaka	11.36	195	PN	Pn	18 38 22.9	-4.3
KMRZ	Kaimai	11.36	203	PN	P	18 38 31.0	+1.9
URZ	Urewera	11.37	198	P	Pn	18 38 25.8	-1.5
	47nm,0.3s,baz=337,slow=2.9,SNR=51						
URZ				S	S	18 40 31.6	-2.8
	261nm,0.3s,baz=266,slow=21,SNR=18						
URZ	Urewera	11.37	198	*e*Pn	Pn	18 38 24.8	-2.6
URZ				*e*S	S	18 40 31.6	-2.8
TOZ	Tahuroa Road	11.42	205	PN	P	18 38 30.2	+0.5
NIUE	Niue	11.44	45	P	Pn	18 38 24.4	-4.1
	baz=11,SNR=44						
RAGZ	Rawiri	11.51	197	PN	Pn	18 38 26.1	-3.1
TARZ	Mount Tarawera	11.53	200	PN	P	18 38 32.8	+1.8
RRRZ	Republican Roa	11.62	200	PN	P	18 38 32.3	+0.3
RIGZ	Rimuhau	11.63	195	PN	Pn	18 38 29.6	-1.0
MUGZ	Murupara	11.67	199	PN	Pn	18 38 27.3	-3.8
HSRZ	Hossack Road	11.68	201	PN	P	18 38 34.5	+1.9
HRRZ	Handcock Road	11.74	201	PN	P	18 38 33.7	+0.4
RTZ	Ruatahuna	11.74	198	PN	Pn	18 38 31.6	-0.3
SNGZ	Shannon Statio	11.80	196	PN	Pn	18 38 29.1	-3.6
PRRZ	Plateau Road	11.80	200	PN	P	18 38 34.3	+0.3
PRGZ	Paritu Road	11.81	194	PN	Pn	18 38 28.8	-4.0
WPRZ	Whakapapatarin	11.89	201	PN	P	18 38 35.7	+0.6
TLZ	Tolley Road	11.94	204	PN	Pn	18 38 34.3	+0.1
KNZ	Kokohu	11.95	195	PN	Pn	18 38 29.8	-4.6
KUTZ	Kaahu Road	11.98	202	PN	P	18 38 36.1	+0.1
RAHZ	Arahi	11.99	197	PN	Pn	18 38 31.2	-3.8
MHGZ	Mahia Peninsul	12.03	194	PN	Pn	18 38 31.9	-3.4
MRHZ	Matea Rd	12.11	200	PN	Pn	18 38 33.5	-2.8
WHHZ	Waihua	12.11	196	PN	Pn	18 38 32.9	-3.4
NFK	Norfolk Island	12.13	259	P	P	18 38 41.9	+4.2
	baz=12,SNR=17						
NMHZ	Naumai	12.24	198	PN	Pn	18 38 34.3	-3.7
RATZ	Rangitukua	12.34	202	PN	Pn	18 38 39.2	0.0
ARHZ	Aropaoanui	12.35	197	PN	Pn	18 38 37.6	-1.5
HIZ	Hauiti	12.35	205	PN	P	18 38 43.3	+3.3
BKZ	Black Stump Fm	12.39	199	*e*Pn	Pn	18 38 36.5	-3.3
BKZ	Black Stump Fm	12.39	199	PN	Pn	18 38 36.3	-3.5
RITZ	Rihia Road	12.41	201	PN	Pn	18 38 40.1	+0.1
MCHZ	McNeill Hill	12.59	198	PN	Pn	18 38 39.9	-2.2
NGZ	Ngauruhoe	12.67	202	PN	Pn	18 38 43.5	+0.2
CKHZ	Cape Kidnapper	12.70	196	PN	Pn	18 38 43.7	+0.3
TUVZ	Tukino	12.74	201	PN	Pn	18 38 42.7	-1.4
FWVZ	Far West T-bar	12.76	202	PN	Pn	18 38 43.6	-0.9
TRVZ	Turoa	12.80	202	PN	Pn	18 38 44.0	-0.9
WNVZ	Wahianoa	12.81	201	PN	Pn	18 38 42.4	-2.6
BHHZ	Black Hill Sta	12.81	200	PN	Pn	18 38 41.0	-3.9
MOVZ	Moawhango	12.84	201	PN	Pn	18 38 42.8	-2.4
PKVZ	Pokaka	12.86	202	PN	Pn	18 38 44.5	-1.0
KRHZ	Kereru	12.87	198	PN	Pn	18 38 40.6	-4.9
KAHZ	Kahuranaki	12.88	196	PN	Pn	18 38 41.1	-4.5
MTVZ	Mangateitei	12.90	202	PN	Pn	18 38 45.7	-0.3
VRZ	Vera Road	12.92	204	PN	P	18 38 46.7	+0.3
PXZ	Pawanui	13.10	196	PN	Pn	18 38 42.9	-5.4
NEZ	North Egmont	13.30	206	PN	Pn	18 38 53.3	+2.5
TSZ	Takapari Road	13.37	199	PN	P	18 38 46.2	-5.2
PRHZ	Porangahau	13.38	197	PN	P	18 38 46.7	-4.8
WAZ	Wanganui	13.40	202	PN	P	18 38 50.8	-1.0
DVHZ	Danevirke	13.54	198	PN	P	18 38 50.7	-2.5
POWZ	Post Office Ro	13.73	199	PN	P	18 38 53.9	-1.5
BFZ	Birch Farm	13.87	197	*e*P	P	18 38 53.0	-3.9
BFZ	Birch Farm	13.87	197	PN	P	18 38 52.9	-4.0
MRZ	Mangatainoka R	14.04	199	PN	P	18 38 54.2	-4.5
HOWZ	Holdsworth Sta	14.28	199	PN	P	18 38 57.8	-3.5
OGWZ	Otaki Gorge	14.30	200	PN	P	18 38 57.5	-4.1
TMWZ	Te Maipa	14.37	198	PN	P	18 38 59.2	-3.2
CAW	Cannon Point	14.60	200	PN	P	18 39 01.3	-3.7
TRWZ	Traveller	14.69	198	PN	P	18 39 05.3	-0.6
PAWZ	Paruwai Farm	14.75	198	PN	P	18 39 04.2	-2.4
DZM	Mont Dzumac	14.77	288	*e*Pn	Pn	18 39 08.2	-0.2
	1μm,1.1s						
DZM	Mont Dzumac	14.77	288	P	Pn	18 39 09.3	+0.9
	14nm,0.3s,baz=101,slow=19,SNR=48						
DZM				S	S	18 41 50.1	+1.6
	1.3nm,0.3s,baz=68,slow=19,SNR=1.5						
MSWZ	Moikau Station	14.83	199	PN	P	18 39 05.8	-1.7
AFI	Afiamalu	14.87	26	P	P	18 39 03.0	-5.2
	39nm,0.3s,baz=94,slow=1.6,SNR=41						
AFI				S	S	18 41 33.5	-17
	57nm,0.3s,baz=30,slow=18,SNR=4.0						
AFI	Afiamalu	14.87	26	*e*P	P	18 39 02.6	-5.6
AFI				S	S	18 41 33.5	-17
SNZO	South Karori	14.90	201	*e*P	P	18 39 05.1	-3.1
	451nm,1.9s						
BHW	Baring Head	14.94	200	PN	P	18 39 06.7	-1.9
TCW	Tory Channel	14.94	202	PN	P	18 39 06.3	-2.4
PLWZ	Palliser	14.97	199	PN	P	18 39 07.3	-1.7
QRZ	Quartz Range	15.25	207	PN	P	18 39 12.5	+0.5
TUWZ	Tuamarina	15.25	202	PN	P	18 39 08.9	-3.1
NNZ	Nelson	15.26	204	PN	P	18 39 09.3	-2.8
BSWZ	Blackbirch Sta	15.53	202	PN	P	18 39 13.9	-1.2
THZ	Tophouse	15.91	204	*e*P	P	18 39 18.3	-1.0
	49nm,1.0s						
THZ	Tophouse	15.91	204	PN	P	18 39 17.9	-1.5
KHZ	Kahutara	16.27	202	*e*P	P	18 39 22.1	-1.0
	119nm,0.4s						
KHZ	Kahutara	16.27	202	PN	P	18 39 20.8	-2.4
DSZ	Denniston Nort	16.32	207	PN	P	18 39 23.1	-0.6
LTZ	Lake Taylor	17.03	204	*e*P	P	18 39 30.2	-1.3
	40nm,0.7s						
LTZ	Lake Taylor	17.03	204	PN	P	18 39 29.6	-1.8
INZ	Inchbonnie	17.29	206	PN	P	18 39 32.2	-2.0
OXZ	Oxford	17.59	204	*e*P	P	18 39 35.6	-1.8
	64nm,0.6s						
OXZ	Oxford	17.59	204	PN	P	18 39 35.4	-2.0
MOZ	McQueen's Vall	17.71	202	PN	P	18 39 36.6	-2.1
WVZ	Waitaha Valley	17.86	207	PN	P	18 39 40.0	-0.4
RAR	Rarotonga	18.09	74	P	P	18 39 42.7	-0.4
	3.2nm,0.3s,baz=242,slow=5.8,SNR=17						
RAR	Rarotonga	18.09	74	*e*P	P	18 39 42.6	-0.4
RAR				pmax	pmax		
	comp=Z,380nm,1.1s						
RAR	Rarotonga	18.09	74	*e*P	P	18 39 42.0	-1.0
	comp=Z,383nm,1.1s						
RPZ	Rata Peaks	18.28	205	P	P	18 39 43.4	-1.4
	comp=Z,4.5nm,0.3s,baz=164,slow=1.6,SNR=24						
RPZ				S	S	18 42 58.2	+0.6
	comp=Z,11nm,0.3s,baz=21,slow=18,SNR=12						
RPZ	Rata Peaks	18.28	205	*e*P	P	18 39 43.0	-1.9
	comp=Z,48nm,0.6s						
RPZ				*e*S	S	18 42 58.2	+0.6
RPZ	Rata Peaks	18.28	205	PN	P	18 39 43.3	-1.6
FOZ	Fox Glacier	18.62	208	*e*P	P	18 39 46.8	-1.6
	comp=Z,119nm,0.8s						
FOZ	Fox Glacier	18.62	208	PN	P	18 39 46.8	-1.6
LBZ	Lake Benmore	19.18	206	PN	P	18 39 59.0	+4.5
JCZ	Jackson Bay	19.49	209	PN	P	18 39 55.3	-2.6
ODZ	Otahua Downs	19.58	204	*e*P	P	18 39 57.5	-1.2
	comp=Z,30nm,0.9s						
ODZ	Otahua Downs	19.58	204	PN	P	18 39 57.3	-1.3
LHI	Lord Howe Isla	20.00	253	P	P	18 40 06.9	+3.7
	baz=20,SNR=37						
WKZ	Wanaka	20.01	207	*e*P	P	18 40 01.0	-2.2
	comp=Z,284nm,1.7s						
TUZ	Tuapeka	20.72	204	PN	P	18 40 13.1	+2.9
MLZ	Mavora Lakes	20.82	208	*e*P	P	18 40 10.4	-0.8
	comp=Z,88nm,1.3s						
MLZ	Mavora Lakes	20.82	208	PN	P	18 40 11.4	+0.2
ARMA	Armidale	26.34	256	P	P	18 41 04.3	+2.8
	baz=27,SNR=25						
ARMA	Armidale	26.34	256	*e*P	P	18 41 03.5	+2.0
	comp=Z,85nm,0.9s						
TBI	Tubuai	26.45	88	*e*P	P	18 41 01.9	-0.5
	comp=Z,143nm,1.0s						
MGCD	Mangrove Creek	26.85	250	P	P	18 41 08.9	+3.0
	baz=27,SNR=16						
HNR	Honiara	27.19	307	P	P	18 41 06.4	-2.7
	comp=Z,161nm,0.9s,baz=189,slow=2.8,SNR=12						

MANU **Manus Island** 41.38 302 *eP* P 18 43 03.3 -6.6
comp=Z,280nm,1.0s
AS01 **Alice Springs** 42.93 264 *eP* P 18 43 21.6 -0.7
AS01 *epP* pP 18 44 30.8 +6.3
AS31 **Alice Springs** 42.97 264 *eP* P 18 43 22.3 -0.3
comp=Z,82nm,1.3s
AS31 *epP* pP 18 44 31.2 +6.4
ASAR **Alice Springs** 42.97 264 P P 18 43 22.7 0.0
comp=Z,93nm,0.6s,baz=96,slow=6.8,SNR=2957
ASAR pP pP 18 44 24.6 -0.2
comp=Z,11nm,1.0s,baz=99,slow=7.5,SNR=1.3
ASAR ScP ScP 18 48 29.0 +0.7
comp=Z,3.6nm,0.7s,baz=124,slow=4.9,SNR=3.0
WB2 **Warramunga Arr** 43.68 269 *eP* P 18 43 27.6 -0.7
comp=Z,250nm,0.6s
WRAB **Tennant Creek** 43.69 269*d iP* P 18 43 27.7 -0.6
WRAB pmax pmax
comp=Z,567nm,0.7s
WRAB **Tennant Creek** 43.69 269 *eP* P 18 43 27.6 -0.7
comp=Z,227nm,0.8s
WR1 **Warramunga Arr** 43.69 269 *eP* P 18 43 27.9 -0.5
comp=Z,276nm,0.6s
WR1 *epP* pP 18 44 30.4 -0.4
WR1 *e*ScP ScP 18 48 32.7 +1.4
WRA **Warramunga Arr** 43.69 269 P P 18 43 27.9 -0.5
comp=Z,232nm,0.6s,baz=108,slow=7.5,SNR=761
WRA pP pP 18 44 30.4 -0.4
comp=Z,11nm,0.9s,baz=109,slow=7.8,SNR=1.1
WRA ScP ScP 18 48 32.7 +1.4
comp=Z,8.7nm,1.1s,baz=104,slow=5.0,SNR=4.6
WRA **Warramunga Arr** 43.69 269 P P 18 43 27.9 -0.5
WRA *PP pP 18 44 30.4 -0.4
WRA pmax pmax
comp=Z,238nm,0.6s
WRA pmax pmax
comp=Z,11nm,0.9s
WRA pmax pmax
comp=N,9.0nm,1.1s
JAY **Jayapura** 46.29 295 P P 18 43 46.9 -1.8
comp=N,3.1nm,0.5s,baz=95,slow=23,SNR=12
JAY **Jayapura** 46.29 295 P P 18 43 46.6 -2.1
comp=N,57nm,1.1s
GENI **Genyem** 46.67 295 P P 18 43 50.5 -1.1
comp=N,208nm,1.2s,comp=N,2μm
WRKA **Warakurna** 47.55 260 P P 18 43 57.6 -0.7
baz=48,SNR=1000
KDU **Kakadu** 48.11 278 P P 18 44 01.6 -1.0
baz=48,SNR=50
MTN **Manton Dam** 49.22 277 P P 18 44 10.0 -1.0
baz=50,SNR=19
MTN **Manton Dam** 49.22 277 *eP* P 18 44 09.6 -1.4
comp=N,62nm,0.6s
SBA **Scott Base** 50.90 184 *eP* P 18 44 28.1 +5.5
SBA pmax pmax
comp=Z,550nm,1.6s
SBA **Scott Base** 50.90 184 *eP* P 18 44 27.6 +5.0
comp=Z,550nm,1.6s
VNDA **Vanda** 50.94 185 P P 18 44 26.6 +3.6
comp=Z,49nm,0.7s,baz=4.9,slow=8.2,SNR=500
VNDA **Vanda** 50.94 185 *eP* P 18 44 27.3 +4.3
VNDA pmax pmax
comp=Z,53nm,0.7s
VNDA **Vanda** 50.94 185 *eP* P 18 44 26.9 +3.9
comp=Z,53nm,0.7s
SAUI **Saumlaki** 51.28 282 P P 18 44 25.6 -0.8
comp=Z,523nm,1.1s
KMBL **Kambalda** 51.59 250 P P 18 44 27.8 -0.7
baz=52,SNR=11
FITZ **Fitzroy Crossi** 52.05 268 P P 18 44 31.7 -0.3
baz=52,SNR=144
FITZ **Fitzroy Crossi** 52.05 268 *eP* P 18 44 31.4 -0.5
comp=Z,100nm,0.8s
FITZ *epP* PcP 18 45 38.8 -0.8
HPAH **Hawaii Prepara** 52.12 27 *eP* P 18 44 31.2 -1.2
comp=Z,240nm,0.9s
KIP **Kipapa** 52.48 24⇓*iP* P 18 44 34.0 -1.0
KIP pmax pmax
comp=Z,1μm,1.1s
FAKI **Fak Fak** 53.03 289 P P 18 44 38.1 -1.1
comp=Z,112nm,1.5s,comp=Z,2μm
FAKI **Fak Fak** 53.03 289 *eP* P 18 44 37.2 -2.1
comp=Z,111nm,1.1s
FAKI *epP* pP 18 45 47.5 +3.2
GUMO **Guam** 54.18 314 P P 18 44 45.4 -2.0
comp=Z,188nm,0.9s,baz=154,slow=7.1,SNR=6.5
GUMO **Guam** 54.18 314 *eP* P 18 44 45.0 -2.4
comp=Z,371nm,1.1s
BNDI **Bandanaira** 54.19 285 P P 18 44 47.4 -0.1
SWI **Sorong** 54.97 290 P P 18 44 52.3 -0.8
comp=Z,519nm,0.9s,comp=Z,4μm
RKGY **Rocky Gully** 54.98 245 P P 18 44 52.3 -0.6
baz=55,SNR=4.8
KLBR **Kellerberrin** 54.99 249 P P 18 44 52.4 -0.7
baz=55,SNR=106
NWAO **Narrogin (SRO)** 55.12 248 P P 18 44 53.2 -0.8
baz=55,SNR=23
NWAO **Narrogin (SRO)** 55.12 248 *eP* P 18 44 52.8 -1.2
NWAO pmax pmax
comp=Z,110nm,1.6s
NWAO **Narrogin (SRO)** 55.12 248 *eP* P 18 44 52.8 -1.2
comp=Z,108nm,1.6s
MSAI **Masohi** 55.62 286 P P 18 45 00.6 +2.8
BLDU **Ballidu** 56.09 250 P P 18 45 00.1 -0.8
baz=56,SNR=158
MBWA **Marble Bar** 56.22 262 *eP* P 18 45 01.2 -0.7
comp=Z,97nm,0.6s
SOEI **Soe** 56.62 277 P P 18 45 04.8 -0.1
comp=Z,467nm,0.9s,comp=Z,4μm
SOEI **Soe** 56.62 277 *eP* P 18 45 05.3 +0.3
comp=Z,350nm,0.8s
MORW **Morawa** 57.05 252 P P 18 45 07.1 -0.5
baz=57,SNR=50
PALU **Palau** 57.22 300 P P 18 45 07.9 -1.0
baz=58,SNR=13
CASY **Casey** 57.54 207 *eP* P 18 45 10.9 +0.6
comp=Z,79nm,0.6s
LBMI **Labuha** 58.25 288 P P 18 45 15.4 -0.7
comp=Z,106nm,1.2s,comp=Z,2μm
SANI **Sanana** 58.80 285 P P 18 45 18.5 -1.4
comp=Z,175nm,0.8s,comp=Z,2μm
MMRI **Maumere** 58.91 277 P P 18 45 20.1 -0.5
comp=Z,313nm,1.2s,comp=Z,3μm
MMRI **Maumere** 58.91 277 *eP* P 18 45 19.4 -1.3
comp=Z,540nm,1.4s
MMRI *epP* pP 18 46 32.0 +4.8
BASI **Baing, Sumba** 59.68 274 P P 18 45 29.2 +3.4
WSI **Waingapu** 60.17 275 P P 18 45 28.9 -0.2
comp=Z,1μm,1.0s,comp=Z,8μm
GIRL **Giralia** 60.54 258 P P 18 45 32.4 +0.9
baz=61,SNR=52
KDI **Kendari** 60.76 282 P P 18 45 32.0 -1.1
comp=Z,132nm,1.1s,comp=Z,2μm
BSSI **Bau Bau, Buton** 61.59 278 P P 18 45 36.6 -2.1
LUWI **Luwuk** 62.08 285 P P 18 45 41.3 -0.6
comp=Z,326nm,1.1s,comp=Z,3μm
LUWI **Luwuk** 62.08 285 *eP* P 18 45 40.9 -1.0
comp=Z,293nm,1.0s
LUWI *epP* pP 18 46 53.9 +4.7
QSPA **South Pole Qui** 62.61 180 *eP* P 18 45 47.8 +3.1
KAPI **Kappang** 62.76 279 P P 18 45 45.9 -0.5
comp=Z,96nm,1.2s,baz=162,slow=5.0,SNR=4.9
KAPI **Kappang** 62.76 279 *eP* P 18 45 46.1 -0.3
comp=Z,313nm,1.7s
KAPI *epP* pP 18 46 58.9 +4.9
PLAI **Plampang** 62.77 274 P P 18 45 45.8 -0.7
comp=Z,566nm,0.8s,comp=Z,5μm
SPSI **Sidrap Palu** 63.25 280 P P 18 45 47.9 -1.7
comp=Z,80nm,0.9s,comp=Z,1μm
MRSI **Marisa** 63.57 286 P P 18 45 49.8 -1.8
comp=Z,66nm,0.9s
TWSI **Taliwang, Sumb** 63.60 274 P P 18 45 51.2 -0.7
comp=Z,183nm,0.7s,comp=Z,2μm
TTSI **Tana Toraja** 63.65 281 P P 18 45 51.4 -0.8
comp=Z,50nm,1.5s,comp=Z,697nm
DAV **Davao City (W)** 64.10 294 P P 18 45 54.0 -1.0
comp=Z,100nm,0.4s,baz=180,slow=6.1,SNR=4.3
DAV **Davao City (W)** 64.10 294 *eP* P 18 45 54.0 -1.0
comp=Z,256nm,0.4s
MIR **Mirnyy** 64.55 206 *i P* P 18 45 59.0 +1.9
MIR pmax pmax
comp=Z,28nm,1.0s
PCI **Palu** 64.68 283 P P 18 45 59.2 +0.3
comp=Z,259nm,1.1s,comp=Z,3μm
BUKP **Musuan** 64.98 294 *eP* P 18 45 59.9 -0.9
CTBH **Cotabato--PC H** 65.27 293⇓*iP* P 18 46 01.7 -0.9
CGP **Cagayan de Oro** 65.61 295⇓*eP* P 18 46 04.3 -0.4
JAGI **Jajag, Banyuwa** 66.14 273 P P 18 46 07.1 -1.1
comp=Z,349nm,1.4s,comp=Z,3μm
JAGI **Jajag, Banyuwa** 66.14 273 *eP* P 18 46 06.7 -1.5
comp=Z,258nm,0.9s
JAGI *epP* pP 18 47 20.4 +3.9
CBIJ **Chichi jima** 66.18 322 *eP* P 18 46 05.5 -2.5
comp=Z,272nm,1.3s
JCJ **Chichijima** 66.18 322 P P 18 46 05.6 -2.5
comp=Z,72nm,0.7s,baz=217,slow=2.5,SNR=4.9
ABJI **Asem Bagus** 66.37 273 P P 18 46 09.6 0.0
comp=Z,190nm,1.0s,comp=Z,2μm
GMJI **Gumukmas** 66.86 273 P P 18 46 11.9 -0.8
comp=Z,206nm,0.8s,comp=Z,2μm
IPIL **Ipil** 66.96 293 *eP* P 18 46 12.4 -0.8
BBKI **Banjar Baru** 67.81 278 P P 18 46 18.6 0.0
comp=Z,217nm,1.3s,comp=Z,3μm
PWJI **Pagerwojo** 68.42 272 P P 18 46 22.0 -0.4
comp=Z,179nm,0.7s,comp=Z,2μm
PCJI **Pacitan** 68.90 272 P P 18 46 25.5 +0.2
comp=Z,631nm,1.2s,comp=Z,6μm
MYLDM **Lahad Datu** 68.94 288 *eP* P 18 46 25.3 -0.2
comp=Z,58nm,1.2s
MTKI **Muara Teweh, K** 68.96 280 P P 18 46 25.7 0.0
comp=Z,134nm,1.0s,comp=Z,6μm
NGJI **Ngawi** 69.02 273 P P 18 46 27.8 +1.8
WOJI **Wonogiri, Jawa** 69.29 272 P P 18 46 27.7 0.0
comp=Z,385nm,1.0s,comp=Z,5μm
UGM **Wanagama** 69.61 272 P P 18 46 29.9 +0.2
comp=Z,365nm,1.3s
UGM **Wanagama** 69.61 272 *eP* P 18 46 29.3 -0.4
comp=Z,272nm,1.0s
PBKI **Pangkalan Bun** 70.96 277 P P 18 46 38.6 +0.8
comp=Z,719nm,1.1s,comp=Z,9μm
KKM **Kota Kinabalu** 71.33 287 *eP* P 18 46 39.1 -1.0
comp=Z,97nm,0.9s
CMJI **Cimerak** 71.51 271 P P 18 46 40.5 -0.6
comp=Z,266nm,1.1s,comp=Z,3μm
TGY **Tagaytay City** 71.86 297 P P 18 46 42.0 -1.1
comp=Z,77nm,0.4s,baz=37,slow=4.3,SNR=8.5
TGY **Tagaytay City** 71.86 297 P P 18 46 42.0 -1.1
TGY pmax pmax
comp=Z,77nm,0.4s
CISI **Cisompet, Garu** 72.17 271 P P 18 46 44.2 -0.9
comp=Z,402nm,1.1s,comp=Z,4μm
CISI **Cisompet, Garu** 72.17 271 *eP* P 18 46 43.9 -1.2
comp=Z,412nm,1.1s
JHJ **Hachijo jima 2** 72.18 324 P P 18 46 42.9 -1.7
comp=Z,132nm,0.7s,baz=78,slow=22,SNR=3.8
JCJI **Jatiwangi** 72.24 272 P P 18 46 44.6 -0.8
comp=Z,594nm,1.0s,comp=Z,5μm
STKI **Sintang** 72.44 279 P P 18 46 46.8 +0.3
comp=Z,296nm,1.1s,comp=Z,3μm
LEM **Lembang** 72.67 271 P P 18 46 53.8 +5.7
comp=Z,458nm,0.8s,baz=48,slow=2.7,SNR=118
LEM **Lembang** 72.67 271 P P 18 46 53.7 +5.6
XMIS **Christmas Isla** 72.82 267 *eP* P 18 46 48.6 -0.2
comp=Z,301nm,0.8s
CNJI **Cibinong** 72.89 271 P P 18 46 48.7 -0.5
comp=Z,530nm,0.9s,comp=Z,4μm
SBUM **Sibu** 72.94 282 *eP* P 18 46 49.3 -0.2
comp=Z,171nm,1.2s
CBJI **Citeko** 73.53 271 P P 18 46 51.6 -1.3
comp=Z,1μm,0.9s,comp=Z,14μm
SKJI **Sukabumi** 73.53 271 P P 18 46 53.1 +0.2
comp=Z,550nm,1.1s,comp=Z,5μm
KSM **Kuching** 74.14 280 *eP* P 18 46 56.0 -0.4
comp=Z,291nm,1.1s
SBJI **Serang** 74.31 271 P P 18 46 57.5 +0.1
comp=Z,272nm,1.4s,comp=Z,3μm
CGJI **Cibinong** 74.47 271 P P 18 46 57.4 -0.9
comp=Z,528nm,1.1s,comp=Z,6μm
INU **Inuyama** 75.35 324 *eP* P 18 47 01.9 -0.9
comp=Z,86nm,1.0s
BLSI **Bandar Lampung** 75.43 272 P P 18 47 03.1 -0.7
comp=Z,307nm,1.0s,comp=Z,3μm
MJAR **Matsushiro Arr** 75.65 325 P P 18 47 03.3 -1.2
comp=Z,48nm,0.9s,baz=162,slow=5.6,SNR=140
MAJO **Matsushiro** 75.66 325*d iP* P 18 47 03.2 -1.3
MAJO pmax pmax
comp=Z,529nm,1.0s
MAJO **Matsushiro** 75.66 325 *eP* P 18 47 03.0 -1.6
comp=Z,70nm,0.9s
MJB9 **Matsu-Tunnel** 75.66 325 *eP* P 18 47 03.2 -1.3
comp=Z,18nm,0.9s
KLI **Kotabumi** 76.00 272 P P 18 47 05.8 -1.2
comp=Z,364nm,0.9s
KASI **Kota Agung** 76.02 271 P P 18 47 06.1 -1.0
comp=Z,525nm,1.1s,comp=Z,4μm
PPBI **Pangkal Pinang** 76.10 275 P P 18 47 07.7 +0.1
comp=Z,214nm,1.1s,comp=Z,2μm
LWLI **Liwa** 76.64 271 P P 18 47 10.0 -0.7
comp=Z,494nm,1.1s,comp=Z,5μm
JNU **Nakatsue** 77.15 318 P P 18 47 12.1 -0.9
comp=Z,88nm,1.1s,baz=74,slow=2.5,SNR=15
JNU **Nakatsue** 77.15 318 *eP* P 18 47 11.9 -1.1
comp=Z,281nm,1.5s
NACB **Ninganchiao** 77.36 306 *eP* P 18 47 12.9 -1.3
comp=Z,182nm,1.5s
SSLB **Suanglung** 77.59 305 *eP* P 18 47 13.9 -1.7
comp=Z,38nm,1.1s
LHSI **Lahat** 77.65 272 P P 18 47 15.3 -0.9
comp=Z,264nm,1.0s,comp=Z,3μm
DSRI **Dabo** 78.25 276 P P 18 47 19.5 0.0
comp=Z,522nm,1.0s,comp=Z,6μm
TPRI **Tanjung Pinang** 78.95 277 P P 18 47 23.3 0.0
comp=Z,212nm,1.1s,comp=Z,2μm
MASI **Maura Aman, Be** 79.10 272 P P 18 47 23.4 -0.7
comp=Z,1μm,1.0s,comp=Z,12μm
ASAJ **Asahikawa** 79.70 333 P P 18 47 26.2 -0.3
comp=Z,31nm,0.9s,baz=192,slow=5.2,SNR=12
ASAJ **Asahikawa** 79.70 333 *eP* P 18 47 27.1 +0.6
comp=Z,37nm,0.9s
SYO **Syowa Base** 79.85 193⇑*iP* P 18 47 27.2 +0.1
SYO **Syowa Base** 79.85 193⇑*iPcP* P 18 47 30.0 +2.9
COCO **West Island** 79.87 262 *eP* P 18 47 29.1 +1.0
COCO pmax pmax
comp=Z,423nm,1.1s
COCO **West Island** 79.87 262 *eP* P 18 47 29.1 +1.0
comp=Z,423nm,1.1s
MYKOM **Kota Tinggi** 79.95 277 *eP* P 18 47 28.8 +0.2
comp=Z,205nm,0.9s
QZH **Quanzhou** 80.00 305⇓*iP* P 18 47 22.8 -5.8
QZH pmax pmax
comp=Z,250nm,1.1s
RGRI **Rengat** 80.30 275 P P 18 47 31.7 +1.2
NIKH **Nikolski High** 80.56 6 *eP* P 18 47 29.9 -1.0
comp=Z,211nm,0.4s
SNAA **Sanae** 81.06 179 P P 18 47 35.5 +1.9
SNAA **Sanae** 81.06 179 *eP* P 18 47 35.0 +1.4
SNAA pmax pmax
comp=Z,42nm,0.9s
SNAA **Sanae** 81.06 179 *eP* P 18 47 35.0 +1.4
comp=Z,42nm,0.9s
VNA3 **Neumayer Olymp** 81.22 176 P P 18 47 36.1 +1.8
PPSI **Pulau Pagai** 81.25 271 P P 18 47 37.2 +1.7
TJN **Taejon** 81.49 319*d iP* P 18 47 35.7 -0.4
PDSI **Padang** 81.70 273 P P 18 47 35.8 -2.1
NVL **N'lazarevskaya** 81.75 183 *eP* P 18 47 40.3 +3.3
BKNI **Bangkinang** 81.76 275 P P 18 47 37.9 -0.2
comp=Z,303nm,1.0s,comp=Z,3μm
BKNI **Bangkinang** 81.76 275 *eP* P 18 47 37.5 -0.6
comp=Z,245nm,0.9s
VNA1 **Neumayer--Stat** 81.88 177 P P 18 47 40.0 +2.3
KSRS **Korea Array** 81.90 320 P P 18 47 38.2 0.0
comp=Z,22nm,0.9s,baz=140,slow=5.9,SNR=70
KS15 **Wonju Array Si** 81.92 320 *eP* P 18 47 38.4 +0.1
KSAR **Wonju Array Be** 81.92 320 P P 18 47 38.3 -0.1
KSAR **Wonju Array Be** 81.92 320 P P 18 47 38.2 -0.1
KS01 **Wonju Array Si** 81.94 320 *eP* P 18 47 38.4 0.0
PPI **Padang Panjang** 81.97 274 P P 18 47 37.6 -1.6
comp=Z,63nm,0.9s,comp=Z,792nm
YSS **Yuzh-Sakhalins** 81.98 334⇑*eP* P 18 47 34.6 -3.8
YSS *eS* S 18 57 29.8 +3.8
YSS pmax pmax
comp=Z,200nm,2.0s
YSS **Yuzh-Sakhalins** 81.98 334 *eP* P 18 47 38.7 +0.3
comp=Z,74nm,1.1s
SNCC **San Nicolas Is** 82.30 46 P P 18 47 41.5 +1.0
baz=230
PET **Petropavlovsk** 82.63 346 *eP* P 18 47 40.7 -0.9
PET *eS* S 18 57 29.8 -2.5
PET pmax pmax
comp=Z,8.0nm,0.7s
PET MLR MLR
comp=Z,100nm,20.0s
SCZ2 **Santa Cruz Isl** 82.71 46 P P 18 47 43.3 +0.7
baz=230
SCI2 **San Clemente I** 82.76 47 P P 18 47 43.4 +0.6
baz=231
PEA0 **Petropavlovsk-** 82.92 346 *eP* P 18 47 42.5 -0.6
PETK **Petropavlovsk-** 82.92 346 P P 18 47 42.4 -0.7
comp=Z,16nm,0.8s,baz=120,slow=7.2,SNR=22
PEA1 **Petropavlovsk-** 82.92 346 *eP* P 18 47 42.4 -0.8
SBC **Santa Barbara** 82.94 45 P P 18 47 45.0 +1.3
baz=230
CIS **Catalina Islan** 83.11 47 P P 18 47 44.8 +0.2
baz=231
BLG **Laguna Peak, P** 83.14 46 P P 18 47 45.1 +0.4
baz=230
PKM **Mcpherson Peak** 83.17 45 P P 18 47 45.8 +0.7
baz=230
MNSI **Mandailing Nat** 83.27 274 P P 18 47 44.4 -1.5
comp=Z,184nm,0.8s,comp=Z,2μm
SMMC **Simmler** 83.33 45 P P 18 47 46.6 +0.9
baz=230
SLBS **Sierra La Lagu** 83.37 59 *eP* P 18 47 47.1 +0.9
comp=Z,88nm,1.4s
SAO **San Andreas Ge** 83.39 43 *eP* P 18 47 46.4 +0.5
SAO pmax pmax
comp=Z,28nm,0.9s
SAO **San Andreas Ge** 83.39 43 *eP* P 18 47 46.4 +0.5
comp=Z,28nm,0.9s
QIZ **Qiongzhong** 83.42 295 P P 18 47 46.8 +0.3
QIZ S S 18 57 40.8 -0.9
QIZ sS sS 18 59 36.0 -13
QIZ pmax pmax
comp=Z,36nm,1.2s
QIZ pmax pmax
comp=Z,150nm,6.0s
QIZ **Qiongzhong** 83.42 295 *eP* P 18 47 46.2 -0.3
comp=Z,36nm,1.0s
109C **Camp Elliot, M** 83.65 48 P P 18 47 47.7 +0.4
baz=232
OSI **Osito Audit: C** 83.68 46 P P 18 47 47.8 +0.3
baz=230
DECC **Green Verdugo** 83.70 46 P P 18 47 47.7 +0.1
baz=231
PASC **Pasadena Art C** 83.75 46 *eP* P 18 47 48.2 +0.4
comp=Z,32nm,0.8s
VLA **Vladivostok** 83.80 326⇓*eP* P 18 47 47.8 0.0
VLA pmax pmax
comp=Z,31nm,1.0s
BAR **Barrett** 83.81 48 *eP* P 18 47 48.5 +0.3
comp=Z,52nm,1.6s
MWC **Mount Wilson** 83.86 46 *eP* P 18 47 48.7 +0.1
MWC pmax pmax
comp=Z,31nm,0.9s
MWC **Mount Wilson** 83.86 46 *eP* P 18 47 48.7 +0.1
comp=Z,31nm,0.9s
HOPS **Hopland Field** 83.92 40 *eP* P 18 47 49.3 +0.7
comp=Z,66nm,1.1s
ARVC **Arvin** 83.94 45 P P 18 47 49.2 +0.4
baz=230
PBSI **Pulau Batu** 84.03 273 P P 18 47 51.3 +1.6
MURC **Murrieta** 84.03 47 P P 18 47 49.8 +0.5
baz=232,SNR=7.2
NJ2 **Nanjing** 84.08 311 *eP* P 18 47 49.8 +0.3
NJ2 pmax pmax
comp=Z,67nm,0.9s
MONP2 **Monument Peak** 84.10 48 P P 18 47 50.5 +0.6
baz=232,SNR=5.6
BFSC **Mount Baldy Ra** 84.13 47 P P 18 47 50.1 +0.2
baz=231,SNR=6.7
IKP **In-Ko-Pah, Jac** 84.16 49 P P 18 47 50.7 +0.7
baz=232,SNR=8.8
VES **Vestal, Richgr** 84.24 45 P P 18 47 50.3 +0.1
baz=230,SNR=8.4
EDW2 **Edwards Air Fo** 84.32 46 P P 18 47 51.0 +0.2
baz=231,SNR=13
KMRM **Mail Ridge** 84.40 39 *eP* P 18 47 50.8 -0.3
comp=Z,78nm,1.0s
KULM **Kulim** 84.41 279 *eP* P 18 47 51.1 -0.5
comp=Z,174nm,1.4s
RCTC **Rector, Farmer** 84.43 44 P P 18 47 51.1 0.0
baz=230
ISA **Isabella, Lake** 84.50 45 P P 18 47 52.2 +0.5
baz=230,SNR=8.9
ISA **Isabella, Lake** 84.50 45 *eP* P 18 47 52.2 +0.5
ISA *e*PP pP 18 49 05.8 +2.1
ISA **Isabella, Lake** 84.50 45 *eP* P 18 47 52.2 +0.5
ISA *epP* pP 18 49 05.8 +2.1
TPFO **Pinon Flats** 84.52 48 P P 18 47 52.3 +0.5
baz=232,SNR=5.2
PFO **Pinyon Flats O** 84.52 48 P P 18 47 52.4 +0.5
comp=Z,21nm,1.0s,baz=257,slow=4.0,SNR=13
PFO **Pinyon Flats O** 84.52 48 P P 18 47 52.5 +0.6
baz=232
PFO **Pinyon Flats O** 84.52 48 *eP* P 18 47 52.3 +0.5
PFO *epP* pP 18 49 05.5 +1.7
USRK **Ussuriysk Ar.** 84.54 327 P P 18 47 51.5 0.0
comp=Z,23nm,0.9s,baz=141,slow=3.5,SNR=44
SWSC **Sam W. Stewart** 84.55 49 P P 18 47 52.5 +0.7
baz=232,SNR=8.6
BBRC **Big Bear Solar** 84.62 47 P P 18 47 52.9 +0.5
baz=232
PLCA **Paso Flores** 84.76 133 P P 18 47 55.6 +2.6
comp=Z,20nm,1.0s,baz=248,slow=4.6,SNR=19
PLCA **Paso Flores** 84.76 133 *eP* P 18 47 55.4 +2.4
PLCA *e*PP pP 18 49 06.5 +1.5
PLCA **Paso Flores** 84.76 133 *eP* P 18 47 55.4 +2.4
PLCA *epP* pP 18 49 06.5 +1.5
PSI **Prapat** 84.77 276 P P 18 47 52.7 -0.9
comp=Z,99nm,1.0s,baz=171,slow=4.8,SNR=66
PSI **Prapat** 84.77 276 *eP* P 18 47 52.5 -1.1
PSI pmax pmax
comp=Z,160nm,1.0s
PSI **Prapat** 84.77 276 *eP* P 18 47 52.5 -1.1
comp=Z,160nm,1.0s
KHMM **Horse Mountain** 84.83 38 *eP* P 18 47 50.4 -2.8
comp=Z,38nm,0.6s
CMB **Columbia Colle** 84.86 42 *eP* P 18 47 53.2 -0.1
CMB *e*PP pP 18 49 06.9 +1.6
CMB **Columbia Colle** 84.86 42 *eP* P 18 47 53.2 -0.1
CMB *epP* pP 18 49 06.9 +1.6
LRMC **Laurel Mtn Rad** 84.89 46 P P 18 47 54.4 +0.7
baz=231
RRX **Edison Barstow** 84.95 46 P P 18 47 54.4 +0.6
baz=232
BELC **Belle Mtn. Jos** 85.06 48 P P 18 47 55.3 +0.8
baz=232,SNR=22
UBPT **Khong Chiam** 85.09 290 P P 18 47 55.5 +0.6
comp=Z,86nm,1.1s,comp=Z,1μm
AFDM **Forest Hills D** 85.11 41 *eP* P 18 47 54.4 -0.1
AFDM *epP* pP 18 49 08.4 +1.8
ORV **Oroville** 85.20 41 *eP* P 18 47 54.9 -0.1
ORV *e*PP pP 18 49 08.5 +1.5
ORV **Oroville** 85.20 41 *eP* P 18 47 54.9 -0.1
ORV *epP* pP 18 49 08.5 +1.5
BC3 **Big Chuckawall** 85.21 48 P P 18 47 56.3 +1.1
baz=232,SNR=15
CWC **Cottonwood Cre** 85.24 45 P P 18 47 55.9 +0.5
baz=231
TYV **Tymovskoe** 85.25 336 *eP* P 18 47 54.2 -0.6
TYV pmax pmax
comp=Z,120nm,1.6s
GLA **Glamis** 85.26 49 P P 18 47 56.8 +1.3
baz=233,SNR=9.1
GLA **Glamis** 85.26 49 *eP* P 18 47 56.4 +1.0
GLA *e*PP pP 18 49 09.2 +1.7
GLA pmax pmax
comp=Z,60nm,0.9s
GLA **Glamis** 85.26 49 *eP* P 18 47 56.4 +1.0
comp=Z,60nm,0.9s
GLA *epP* pP 18 49 09.2 +1.7
GSI **Gunungsitoli** 85.28 274 P P 18 47 56.8 +0.8
comp=Z,468nm,1.2s
GSI **Gunungsitoli** 85.28 274 *eP* P 18 47 56.7 +0.8
comp=Z,444nm,1.0s
WDC **Whiskeytown Da** 85.30 39 *eP* P 18 47 55.8 +0.5
WDC *e*PP pP 18 49 10.1 +2.6
WDC pmax pmax
comp=Z,58nm,1.0s
WDC **Whiskeytown Da** 85.30 39 *eP* P 18 47 55.8 +0.5
comp=Z,58nm,1.0s
WDC *epP* pP 18 49 10.1 +2.6
SKLT **Songkhla** 85.32 281 P P 18 47 56.9 +0.8
comp=Z,88nm,1.2s
GSC **Goldstone, Bar** 85.34 46 P P 18 47 56.3 +0.5
baz=232,SNR=15
GSC **Goldstone, Bar** 85.34 46 *eP* P 18 47 56.2 +0.4
GSC *e*PP pP 18 49 09.5 +1.6
GSC **Goldstone, Bar** 85.34 46 *eP* P 18 47 56.2 +0.4
GSC *epP* pP 18 49 09.5 +1.6
HEC **Hector,Ludlow** 85.35 47 P P 18 47 56.4 +0.5

baz=232,SNR=12
MPMC Manual Prospec 85.37 45 P P 18 47 56.5 +0.4
baz=231,SNR=23
TSI Tuntungan 85.42 276 P P 18 47 56.4 -0.2
comp=Z,202nm,0.9s
DAC Darwin (Calif) 85.45 45 *eP* **P 18 47 56.4 -0.1**
DAC *e**PP **pP 18 49 09.9 +1.3**
DAC Darwin (Calif) 85.45 45 *eP* **P 18 47 56.4 -0.1**
DAC *ep*P **pP 18 49 09.9 +1.3**
N02D Trinity Center 85.47 39 P P 18 47 57.2 +0.9
baz=227,SNR=18
O03D Paynes Creek 85.52 40 P P 18 47 56.6 0.0
baz=228,SNR=18
MLAC Mammoth, Mammo 85.53 43 P P 18 47 57.6 +0.7
baz=230
TIN Tinemaha, Big 85.54 44 P P 18 47 57.3 +0.5
baz=231
HSIG 85.61 54 *eP* **P 18 47 57.3 +0.1**
HSIG *ep*P **pP 18 49 10.2 +0.9**
M02C Callahan 85.67 38 P P 18 47 58.4 +1.1
baz=227,SNR=22
IRM Iron Mountain 85.72 48 P P 18 47 58.5 +0.8
baz=233,SNR=18
WAKR Walker 85.73 42 *eP* **P 18 47 58.0 +0.2**
WAKR *ep*P **pP 18 49 11.4 +1.4**
GMRC Granite Mounta 85.76 47 P P 18 47 58.7 +0.7
baz=232,SNR=16
L02D Cave Junction, 85.78 38 P P 18 47 58.4 +0.7
baz=227
113A Mohawk Valley, 85.81 50 *eP* **P 18 47 58.3 +0.3**
comp=Z,44nm,1.1s
113A *ep*P **pP 18 49 12.1 +1.8**
Y12C Blythe 85.89 49 P P 18 47 59.3 +0.9
baz=233,SNR=6.5
Y12C Blythe 85.89 49 *eP* **P 18 47 59.3 +0.9**
comp=Z,35nm,1.1s
Y12C *ep*P **pP 18 49 12.3 +1.7**
YBH Yreka Blue Hor 85.98 38 P P 18 47 58.9 +0.1
comp=Z,16nm,1.0s,baz=200,slow=1.9,SNR=20
YBH Yreka Blue Hor 85.98 38 *eP* **P 18 47 58.7 -0.1**
YBH *e**PP **pP 18 49 13.4 +2.4**
YBH pmax pmax
comp=Z,26nm,1.2s
YBH Yreka Blue Hor 85.98 38 *eP* **P 18 47 58.7 -0.1**
comp=Z,26nm,1.2s
YBH *ep*P **pP 18 49 13.4 +2.4**
214A Organ Pipe Nat 85.99 51 P P 18 48 00.0 +1.0
baz=234,SNR=19
TUQ Turquoise Moun 85.99 47 P P 18 47 59.7 +0.6
baz=232
FURC Furnace Creek, 86.02 45 P P 18 47 59.3 +0.4
baz=232,SNR=7.1
MDJ Mudanjiang 86.03 326 P P 18 47 58.8 0.0
MDJ sP pP 18 49 25.8 +15
MDJ S **S 18 58 09.8 +3.6**
MDJ sS sS 18 59 51.5 -22
MDJ pmax pmax
comp=Z,41nm,1.1s
MDJ pmax pmax
comp=Z,150nm,4.4s
MDJ Mudanjiang 86.03 326 *eP* **P 18 47 59.0 +0.2**
comp=Z,53nm,1.1s
GRAC Grapevine Rang 86.04 45 P P 18 47 59.8 +0.6
baz=231,SNR=8.4
SHOC Shoshone, Teco 86.05 46 P P 18 47 59.6 +0.5
baz=232,SNR=10
KCSI Kotacane, Aceh 86.12 276 P P 18 48 00.1 0.0
comp=Z,59nm,1.3s,comp=Z,2μm
WHN Wuhan 86.31 307 ⇓*iP* **P 18 48 01.0 +0.5**
WHN pmax pmax
comp=Z,180nm,1.1s
HABR Khabarovsk 86.33 331 *deP* **P 18 47 58.9 -1.3**
HABR *e**PP **pP 18 49 13.8 +1.3**
HABR *e* 18 51 24.1
HABR S **SKSac 18 57 52.7 -3.6**
HABR *e* 18 58 12.5
HABR *eS* **pS 18 59 38.1 -1.1**
HABR *eSS* **SS 19 03 53.2 -4.0**
HABR *eSSS* SSS 19 07 27.8
HABR pmax pmax
comp=N,9.0nm,1.2s
HABR pmax pmax
comp=Z,40nm,1.2s
HABR pmax pmax
comp=E,4.0nm,0.6s
HABR MLR MLR
comp=Z,49nm,17.0s
NV01 Mina Array Sit 86.36 43 *eP* **P 18 48 00.7 -0.2**
NV01 *ep*P **pP 18 49 13.7 +0.5**
NVAR Mina Array Bea 86.36 43 P P 18 48 01.1 +0.1
comp=Z,18nm,0.8s,baz=226,slow=8.0,SNR=72
NVAR pP **pP 18 49 12.2 -1.0**
comp=Z,14nm,1.0s,baz=226,slow=8.1,SNR=7.8
NEE2 Needles Airpor 86.43 48 P P 18 48 01.9 +0.9
baz=233
HUMO Hull Mountain 86.44 38 *eP* **P 18 48 01.9 +1.0**
comp=Z,82nm,1.8s
HUMO *ep*P **pP 18 49 15.6 +2.4**
TRTT Trang 86.45 281 P P 18 48 02.3 +0.7
comp=Z,127nm,1.2s,comp=Z,1μm
NV11 Mina Array Sit 86.46 43 *eP* **P 18 48 00.9 -0.4**
NV11 *ep*P **pP 18 49 14.8 +1.2**
PDMCI Parker Dam,Lak 86.47 48 P P 18 48 02.2 +1.0
baz=233
M04C Macdoel 86.50 39 P P 18 48 01.8 +0.4
baz=229,SNR=6.6
CHBT CHBT 86.51 286 P P 18 48 02.9 +1.1
comp=Z,203nm,1.1s,comp=Z,2μm
PAHR Pah Rah Range 86.54 42 *eP* **P 18 48 01.7 +0.1**
PAHR *ep*P **pP 18 49 15.9 +2.0**
DL2 Dalian 86.57 317 P P 18 48 02.0 +0.4
DL2 S S 18 58 21.5 +10
DL2 pmax pmax
comp=Z,62nm,1.2s
TPNV Topopah Spring 86.71 45 P P 18 48 02.9 +0.4
baz=232,SNR=23
TPNV Topopah Spring 86.71 45 *eP* **P 18 48 02.7 +0.2**
TPNV *e**PP **pP 18 49 15.9 +1.0**
TPNV Topopah Spring 86.71 45 *eP* **P 18 48 02.7 +0.2**
TPNV *ep*P **pP 18 49 15.9 +1.0**
I03D Drain, OR 86.97 37 P P 18 48 04.0 +0.7
baz=227
Y14A Wickenburg 87.01 49 *eP* **P 18 48 04.2 +0.3**
Y14A *ep*P **pP 18 49 17.7 +1.4**
K04D Chiloquin, OR 87.11 38 P P 18 48 04.5 +0.3
baz=228
W13A Hualapai Mount 87.11 48 *eP* **P 18 48 05.2 +0.6**
W13A *ep*P **pP 18 49 18.3 +1.3**
SHPR Sheep Range 87.13 46 *eP* **P 18 48 05.7 +1.2**
SHPR *ep*P **pP 18 49 18.3 +1.3**
SKNT Sakolnakorn 87.17 291 P P 18 48 05.5 +0.5
comp=Z,212nm,1.1s,comp=Z,2μm
SNY Shenyang 87.32 321 ⇑P **P 18 48 05.3 +0.2**
SNY pmax pmax
comp=Z,43nm,1.0s
MOD Modoc Plateau 87.44 39 *eP* **P 18 48 05.5 -0.4**
MOD *ep*P **pP 18 49 19.5 +1.1**
I04A Tendick Farm, 87.54 37 P P 18 48 06.1 0.0
baz=228,SNR=5.5
TUC Tucson 87.59 52 P P 18 48 08.2 +1.4
baz=235
TUC Tucson 87.59 52 *eP* **P 18 48 08.1 +1.4**
TUC *e**PP **pP 18 49 21.5 +2.2**
TUC pmax pmax
comp=Z,79nm,1.1s
TUC Tucson 87.59 52 *eP* **P 18 48 08.1 +1.4**
comp=Z,79nm,1.1s
TUC *ep*P **pP 18 49 21.4 +2.2**
LHMI Lhok Sumawe 87.64 277 P P 18 48 08.7 +1.4
LHMI Lhok Sumawe 87.64 277 *eP* **P 18 48 07.2 0.0**
comp=Z,168nm,1.2s
K05A Summer Lake 87.65 38 *eP* **P 18 48 07.0 +0.1**
K05A *ep*P **pP 18 49 21.8 +2.4**
PKDT Phuket 87.66 280 P P 18 48 08.7 +1.4
comp=Z,106nm,1.1s,comp=Z,5μm
KDAK Kodiak Island 87.68 14 *eP* **P 18 48 05.9 -0.4**
KDAK pmax pmax
comp=Z,29nm,1.2s
KDAK Kodiak Island 87.68 14 *eP* **P 18 48 05.8 -0.4**
comp=Z,29nm,1.2s
MLSI Meulaboh, Aceh 87.68 276 P P 18 48 08.4 +0.9
comp=Z,177nm,1.4s
TIA Tai'an 87.73 313 ⇓P **P 18 48 07.8 +0.6**
TIA pmax pmax
comp=Z,120nm,1.1s

SURT Suratani 87.76 281 P P 18 48 09.4 +1.6
comp=Z,39nm,1.2s,comp=Z,439nm
KHON Khomkaen 87.83 290 P P 18 48 09.2 +1.2
comp=Z,51nm,1.0s,comp=Z,391nm
J05D Fort Rock, OR 87.83 38 P P 18 48 08.3 +0.6
baz=228,SNR=20
R11A Troy Canyon, C 87.98 44 P P 18 48 08.6 0.0
baz=232,SNR=9.7
R11A Troy Canyon, C 87.98 44 *eP* **P 18 48 08.6 0.0**
comp=Z,13nm,1.4s
G03D McMinnville, O 88.05 35 P P 18 48 09.1 +0.7
baz=227
319A Douglas 88.13 53 *eP* **P 18 48 10.4 +1.1**
319A *ep*P **pP 18 49 21.9 -0.1**
H04A Detroit Lake 88.26 36 *eP* **P 18 48 09.4 -0.1**
comp=Z,89nm,1.4s
BMN Battle Mountai 88.28 42 *eP* **P 18 48 09.8 0.0**
BMN *e**PP **pP 18 49 23.5 +1.0**
BMN pmax pmax
comp=Z,30nm,1.2s
BMN Battle Mountai 88.28 42 *eP* **P 18 48 09.8 0.0**
comp=Z,30nm,1.2s
BMN *ep*P **pP 18 49 23.4 +1.0**
KLR Kul'dur 88.35 330 P P 18 48 09.4 -0.3
comp=Z,15nm,0.9s,baz=114,slow=3.3,SNR=46
X16A Lo Mia Camp, P 88.35 50 *eP* **P 18 48 11.4 +1.1**
X16A *ep*P **pP 18 49 23.7 +0.7**
HPIG 88.38 59 *eP* **P 18 48 11.0 +0.3**
comp=Z,20nm,0.7s
F03A Seaside 88.40 35 *eP* **P 18 48 10.8 +0.7**
comp=Z,91nm,0.9s
NONG Nongkai 88.40 291 P P 18 48 11.5 +0.8
comp=Z,190nm,1.0s
I05D Terrebonne, OR 88.48 37 P P 18 48 11.1 +0.6
baz=228
ZAIG Zacatecas 88.64 64 *eP* **P 18 48 13.0 +0.9**
comp=Z,34nm,1.1s
WVOR Wild Horse Val 88.72 40 *eP* **P 18 48 11.5 -0.4**
WVOR *e**PP **pP 18 49 25.2 +0.6**
WVOR pmax pmax
comp=Z,30nm,1.1s
WVOR Wild Horse Val 88.72 40 *eP* **P 18 48 11.5 -0.4**
comp=Z,30nm,1.1s
WVOR *ep*P **pP 18 49 25.2 +0.6**
F04D Rainier, OR 88.78 35 P P 18 48 12.7 +0.8
baz=227
E03A Lebam 88.82 34 *eP* **P 18 48 12.7 +0.8**
comp=Z,116nm,0.9s
CCUT Cedar City 88.91 46 *eP* **P 18 48 13.7 +0.7**
CCUT *ep*P **pP 18 49 26.2 +0.5**
KNB Kanab 88.94 47 *eP* **P 18 48 13.5 +0.4**
KNB *e**PP **pP 18 49 26.8 +1.0**
KNB Kanab 88.94 47 *eP* **P 18 48 13.5 +0.4**
KNB *ep*P **pP 18 49 26.8 +1.0**
U15A North Rim 88.94 48 *eP* **P 18 48 14.3 +1.1**
U15A *ep*P **pP 18 49 26.8 +0.9**
F04A Amboy 88.98 35 *eP* **P 18 48 13.0 +0.2**
F04A *ep*P **pP 18 49 26.6 +1.1**
WUAZ Wupatki 89.02 49 P P 18 48 13.9 +0.5
baz=235
G05D Wamic, OR 89.09 36 P P 18 48 13.9 +0.5
baz=228
NLWA Neilton Lookou 89.25 34 *eP* **P 18 48 15.4 +1.3**
comp=Z,65nm,1.0s
TLIG Tlapa 89.34 70 *eP* **P 18 48 16.7 +1.4**
comp=Z,26nm,1.1s
X18A Snowflake 89.42 50 *eP* **P 18 48 16.6 +1.2**
X18A *ep*P **pP 18 49 29.3 +1.1**
G06A Carlson Farm, 89.45 37 *eP* **P 18 48 15.2 +0.1**
comp=Z,63nm,1.0s
PBKT Sadao Pong 89.50 289 P P 18 48 17.2 +1.4
comp=Z,83nm,1.3s,comp=Z,1μm
ASR Mount Adams--S 89.55 36 *eP* **P 18 48 12.9 -2.7**
ELK Elko 89.66 43 *eP* **P 18 48 15.9 -0.5**
ELK *e**PP **pP 18 49 28.0 -1.2**
ELK pmax pmax
comp=Z,30nm,1.6s
ELK Elko 89.66 43 *eP* **P 18 48 15.9 -0.5**
comp=Z,30nm,1.6s
ELK *ep*P **pP 18 49 28.0 -1.2**
ENH Enshi 89.66 305 *eP* **P 18 48 16.4 0.0**
comp=Z,237nm,1.3s
GYA Guiyang 89.79 300 P P 18 48 18.3 +1.1
GYA pP pP 18 49 19.8 -10
GYA sP sP 18 49 46.0 -16
GYA PP **PP 18 51 55.3 +0.6**
GYA SKS **SKSac 18 58 22.5 +4.3**
GYA S **ScS 18 58 45.5 -0.4**
GYA sS sS 19 00 33.5 -18
GYA pmax pmax
comp=Z,30nm,1.0s
GYA pmax pmax
comp=Z,140nm,5.8s
121A Cookes Peak, D 89.82 53 P P 18 48 18.4 +1.1
baz=237
LON Longmire 89.84 35 *eP* **P 18 48 16.6 -0.3**
LON pmax pmax
comp=Z,22nm,1.0s
LON Longmire 89.84 35 *eP* **P 18 48 16.6 -0.3**
comp=Z,22nm,1.0s
BRLK Bradley Lake 89.85 14 *eP* **P 18 48 15.8 -0.8**
comp=Z,39nm,1.2s
W18A Petrified Fore 89.90 50 P P 18 48 18.1 +0.5
baz=236
W18A Petrified Fore 89.90 50 *eP* **P 18 48 18.1 +0.5**
W18A *ep*P **pP 18 49 31.5 +1.0**
MTPU Mount Pierson 89.95 46 *eP* **P 18 48 19.1 +1.1**
MTPU *ep*P **pP 18 49 32.7 +1.9**
SRDT SRDT 90.01 286 P P 18 48 20.1 +1.8
comp=Z,312nm,1.0s,comp=Z,3μm
D05A Enumclaw 90.05 35 *eP* **P 18 48 18.9 +1.2**
comp=Z,191nm,1.2s
D05A *ep*P **pP 18 49 32.9 +2.4**
MSU Marysvale 90.23 46 *eP* **P 18 48 19.7 +0.6**
MSU *e**PP **pP 18 49 33.6 +1.7**
MSU Marysvale 90.23 46 *eP* **P 18 48 19.7 +0.6**
MSU *ep*P **pP 18 49 33.6 +1.7**
PGC Sidney 90.32 33 *eP* **P 18 48 19.4 +0.6**
comp=Z,61nm,0.9s
G08A Pilot Rock 90.38 37 *eP* **P 18 48 19.7 +0.2**
G08A *ep*P **pP 18 49 32.9 +0.6**
MA2 Magadan 90.40 345 P P 18 48 17.4 -1.6
comp=Z,7.0nm,0.9s,baz=162,slow=7.1,SNR=4.1
UTTA Uttaradit 90.41 290 P P 18 48 21.8 +1.8
comp=Z,16nm,1.2s,comp=Z,158nm
BJT Baijiatuau 90.59 316 *eP* **P 18 48 20.3 -0.1**
BJT pmax pmax
comp=Z,57nm,1.1s
BJT Baijiatuau 90.59 316 *eP* **P 18 48 20.2 -0.1**
comp=Z,57nm,1.1s
BJI Beijing 90.60 316 P P 18 48 20.8 +0.4
BJI sP pP 18 49 48.5 +15
BJI PP **PP 18 51 59.5 -1.2**
BJI S **S 18 58 53.5 +4.5**
BJI SS **SS 19 05 02.8 +3.5**
BJI pmax pmax
comp=Z,46nm,0.8s
BJI LR LR
comp=Z,200nm,5.9s
BJI LR LR
comp=Z,360nm,5.3s
BJI LR LR
comp=Z,170nm,29.5s
KHLT Khaolaem Dam 90.67 286 P P 18 48 23.5 +2.2
comp=Z,21nm,1.6s
B05A Bryant 90.72 34 P P 18 48 21.3 +0.5
baz=228,SNR=22
BBB Bella Bella 90.72 28 P P 18 48 20.3 -0.3
comp=Z,34nm,1.1s,baz=229,slow=4.2,SNR=4.9
A04D Lummi Island 90.73 33 P P 18 48 21.5 +0.8
baz=227
HAWA Hanford 90.79 36 *eP* **P 18 48 22.0 +0.8**
comp=Z,40nm,1.0s
DUG Dugway, Tooele 90.81 44 P P 18 48 21.7 +0.1
baz=234
DUG Dugway, Tooele 90.81 44 *eP* **P 18 48 22.0 +0.4**
DUG Dugway, Tooele 90.81 44 *eP* **P 18 48 22.0 +0.4**
comp=Z,11nm,1.2s
SPU Mount Spurr 90.92 12 *eP* **P 18 48 19.7 -1.8**
MFID Camas Ranch 90.94 40 *eP* **P 18 48 22.2 +0.1**
MFID *ep*P **pP 18 49 36.5 +1.5**
BMO Blue Mountains 91.00 39 *eP* **P 18 48 22.7 +0.3**
BMO Blue Mountains 91.00 39 *eP* **P 18 48 22.7 +0.3**
comp=Z,10nm,0.8s
C06D Leavenworth 91.09 35 P P 18 48 23.2 +0.6

baz=229
MNTX Cornudas Mount 91.10 55 P P 18 48 23.6 +0.6
baz=238
MNTX Cornudas Mount 91.10 55 *eP* **P 18 48 23.6 +0.6**
MNTX *ep*P **pP 18 49 32.3 -3.6**
MNTX *e*PKKPdf **PKKPbc 19 05 45.8 +0.5**
Q16A Castle Valley 91.10 46 *eP* **P 18 48 23.8 +0.7**
Q16A *ep*P **pP 18 49 37.2 +1.2**
BGU Big Grassy Mou 91.11 44 *eP* **P 18 48 23.0 0.0**
comp=Z,38nm,1.8s
BGU *ep*P **pP 18 49 37.2 +1.3**
TX31 Lajitas Ar. Si 91.13 57 *eP* **P 18 48 23.6 +0.3**
TX31 *ep*P **pP 18 49 36.2 0.0**
TX31 *ep*P **pP 18 49 37.1 +0.9**
LTX Lajitas 91.14 57 *eP* **P 18 48 23.9 +0.6**
LTX *e**PP **pP 18 49 35.7 -0.5**
LTX Lajitas 91.14 57 *eP* **P 18 48 23.9 +0.6**
LTX *ep*P **pP 18 49 35.7 -0.5**
TXAR Lajitas Array 91.14 57 P P 18 48 23.9 +0.6
comp=Z,14nm,1.0s,baz=216,slow=5.7,SNR=84
TXAR pP **pP 18 49 35.7 -0.5**
comp=Z,4.1nm,0.9s,baz=211,slow=4.5,SNR=4.0
TXAR Lajitas Array 91.14 57 P **P 18 48 23.9 +0.6**
TXAR *PP **pP 18 49 35.7 -0.5**
TXAR pmax pmax
comp=Z,14nm,1.0s
TXAR pmax pmax
comp=Z,5.0nm,0.9s
CRAG Craig 91.24 24 *eP* **P 18 48 23.7 +0.7**
comp=Z,28nm,1.1s
Y22D IRIS PASSCAL I 91.27 52 P P 18 48 24.7 +0.8
baz=237
LAZ Ladron 91.29 52 *eP* **P 18 48 24.8 +0.7**
LAZ *ep*P **pP 18 49 38.2 +1.3**
RC01 Rabbit Creek A 91.30 13 *eP* **P 18 48 22.4 -0.7**
RC01 *ep*P **pP 18 49 35.4 -0.7**
TMUT Trail Mountain 91.30 46 *eP* **P 18 48 24.8 +0.7**
TMUT *ep*P **pP 18 49 37.5 +0.4**
SUA Susitna One 91.44 13 *eP* **P 18 48 23.2 -0.7**
comp=Z,18nm,0.7s
BNM Barren Site 91.51 52 *eP* **P 18 48 25.5 +0.4**
BNM *ep*P **pP 18 49 39.4 +1.4**
LAMP Lampang 91.55 290 P P 18 48 27.0 +1.7
comp=Z,16nm,1.0s,comp=Z,178nm
LPM Los Pinos Moun 91.59 52 *eP* **P 18 48 25.8 +0.3**
LPM *ep*P **pP 18 49 40.2 +1.8**
SRU San Rafael Swe 91.63 46 *eP* **P 18 48 25.4 -0.1**
SRU *e**PP **pP 18 49 38.9 +0.5**
SRU San Rafael Swe 91.63 46 *eP* **P 18 48 25.4 -0.1**
SRU *ep*P **pP 18 49 38.9 +0.5**
SPUT South Promonto 91.69 44 *eP* **P 18 48 26.3 +0.6**
comp=Z,37nm,1.0s
SPUT *ep*P **pP 18 49 38.8 +0.2**
P17A Butcher Ranch, 91.70 46 *eP* **P 18 48 26.4 +0.6**
comp=Z,22nm,1.1s
P17A *ep*P **pP 18 49 38.9 +0.2**
CRAI Chiangrai 91.74 292 P P 18 48 27.3 +1.1
comp=Z,265nm,1.2s,comp=Z,34μm
F10A Beach Ranch, E 91.75 38 *eP* **P 18 48 25.1 -0.6**
comp=Z,29nm,1.1s
HVU Hansel Valley 91.77 43 *eP* **P 18 48 26.1 +0.1**
HVU *e**PP **pP 18 49 39.0 +0.1**
HVU Hansel Valley 91.77 43 *eP* **P 18 48 26.1 +0.1**
HVU *ep*P **pP 18 49 39.0 +0.1**
TT01 Tatalina 91.84 10 *eP* **P 18 48 24.9 -0.8**
TT01 *ep*P **pP 18 49 38.1 -0.5**
HLID Hailey 91.85 41 P P 18 48 27.0 +0.5
baz=233
HLID Hailey 91.85 41 *eP* **P 18 48 26.9 +0.5**
comp=Z,20nm,1.1s
HLID *ep*P **pP 18 49 41.4 +2.1**
TTA Tatalina 91.87 10 *eP* **P 18 48 25.3 -0.6**
TTA *e**PP **pP 18 49 38.1 -0.7**
TTA Tatalina 91.87 10 *eP* **P 18 48 25.3 -0.6**
TTA *ep*P **pP 18 49 38.1 -0.7**
PMR Palmer 91.88 14 *eP* **P 18 48 25.0 -0.8**
PMR *e**PP **pP 18 49 37.9 -0.8**
PMR Palmer 91.88 14 *eP* **P 18 48 25.0 -0.8**
PMR *ep*P **pP 18 49 37.9 -0.8**
MVCO Mesa Verde 91.89 49 P P 18 48 27.1 +0.2
baz=237
JLU Jordanelle 91.89 45 *eP* **P 18 48 26.9 +0.1**
comp=Z,40nm,1.7s
JLU *ep*P **pP 18 49 40.0 +0.4**
ANMO Albuquerque 92.06 51 P P 18 48 27.9 +0.3
comp=Z,11nm,0.9s,baz=206,slow=6.2,SNR=29
ANMO Albuquerque 92.06 51 P P 18 48 27.9 +0.3
baz=238
ANMO Albuquerque 92.06 51 *ceP* **P 18 48 27.6 0.0**
ANMO pmax pmax
comp=Z,18nm,1.1s
ANMO Albuquerque 92.06 51 *eP* **P 18 48 27.6 0.0**
ANMO *ep*P **pP 18 49 41.8 +1.2**
CM01 Chiang Mai Arr 92.06 290 *eP* **P 18 48 28.7 +1.0**
CM01 *ep*P **pP 18 49 41.8 +1.2**
XAN Xi'an 92.06 308 P P 18 48 28.0 +0.5
XAN pmax pmax
comp=Z,22nm,1.1s
CM31 Chiang Mai Arr 92.09 290 *eP* **P 18 48 28.9 +1.0**
CM31 *e*PKKPdf **PKKPbc 19 05 43.5 +1.4**
CMAR Chiang Mai Arr 92.09 290 P P 18 48 28.9 +1.0
comp=Z,14nm,0.9s,baz=140,slow=3.8,SNR=65
CMAR PKKPbc **PKKPbc 19 05 43.5 +1.4**
comp=Z,1.0nm,0.7s,baz=286,slow=4.2,SNR=8.2
CMAR Chiang Mai Arr 92.09 290 *iP* **P 18 48 29.2 +1.3**
CMAR pmax pmax
comp=Z,15nm,0.9s
P18A Preston Nutter 92.10 46 *eP* **P 18 48 27.9 +0.1**
P18A *ep*P **pP 18 49 41.3 +0.5**
B08A Colville Reser 92.16 35 *eP* **P 18 48 27.1 -0.5**
B08A *ep*P **pP 18 49 39.2 -1.3**
KMI Kunming 92.18 297 P P 18 48 30.0 +1.6
KMI pP pP 18 49 31.0 -10
KMI sP sP 18 49 57.8 -15
KMI PP **PP 18 52 13.5 -0.2**
KMI SKS **SKSac 18 58 37.3 +5.2**
KMI S **ScS 18 59 06.8 +0.7**
KMI sS sS 19 00 59.0 -15
KMI pmax pmax
comp=Z,41nm,1.5s
KMI pmax pmax
comp=Z,300nm,5.9s
KMI LR LR
comp=Z,310nm,6.2s
KMI LR LR
comp=Z,460nm,5.4s
KMI LR LR
comp=Z,130nm,5.9s
TCUT Toone Canyon 92.22 44 *eP* **P 18 48 28.5 +0.2**
TCUT *ep*P **pP 18 49 40.6 -0.6**
CMMT Chiang Mai 92.25 290 P P 18 48 29.5 +0.9
comp=Z,34nm,1.4s
WRAK Wrangell Islan 92.25 24 *eP* **P 18 48 27.8 +0.1**
comp=Z,23nm,0.9s
CHTO Chiang Mai 92.26 290 P P 18 48 29.6 +1.0
comp=Z,152nm,1.4s
CHTO Chiang Mai 92.26 290 *eP* **P 18 48 29.1 +0.5**
CHTO pmax pmax
comp=Z,57nm,1.4s
CHTO Chiang Mai 92.26 290 *eP* **P 18 48 29.1 +0.5**
comp=Z,57nm,1.4s
BMRM Bremner River 92.34 16 *eP* **P 18 48 27.3 -0.8**
BMRM *ep*P **pP 18 49 40.2 -0.8**
C09A Chrisman Ranch 92.35 36 *eP* **P 18 48 28.2 -0.2**
C09A *ep*P **pP 18 49 41.8 +0.5**
HWUT Hardware Ranch 92.40 44 *eP* **P 18 48 27.9 -1.1**
HWUT *ep*P **pP 18 49 41.4 -0.6**
CRQM Cirque 92.52 16 *eP* **P 18 48 28.8 -0.2**
comp=Z,22nm,1.2s
BALM Baldy 92.96 17 *eP* **P 18 48 30.5 -0.5**
BALM *e**PP **pP 18 49 43.0 -0.9**
BALM Baldy 92.96 17 *eP* **P 18 48 30.5 -0.5**
BALM *ep*P **pP 18 49 43.0 -0.9**
CAST Castle Rocks 92.98 12 *eP* **P 18 48 28.6 -2.3**
comp=Z,10nm,0.8s
CAST *ep*P **pP 18 49 42.0 -1.9**
SEY Seymchan 93.07 347 P P 18 48 30.5 -0.8
comp=Z,8.1nm,0.7s,baz=157,slow=4.3,SNR=34
SEY Seymchan 93.07 347 ⇑*iP* **P 18 48 31.0 -0.3**
NEW Newport 93.24 36 P P 18 48 32.3 -0.3
baz=231
S22A 4UR Ranch, Cre 93.30 49 P P 18 48 33.7 +0.3
baz=238
S22A 4UR Ranch, Cre 93.30 49 *eP* **P 18 48 32.7 -0.7**

comp=Z,31nm,1.4s
S22A *e*pP **pP** **18 49 46.8 +0.5**
KTH Kantishna Hill 93.31 12 *e*P **P** **18 48 30.4 -2.1**
KTH *e*pP **pP** **18 49 43.1 -2.4**
TRF Thorofare Moun 93.34 12 *e*P **P** **18 48 31.1 -1.7**
comp=Z,17nm,0.8s
TRF *e*pP **pP** **18 49 44.3 -1.4**
AHID Auburn Hatcher 93.35 43 *e*P **P** **18 48 33.6 +0.2**
AHID *e*pP **pP** **18 49 47.2 +0.9**
832A Faith Ranch, C 93.41 60 P **P** **18 48 33.8 +0.1**
baz=241
MCMT McKenzie Canyo 93.51 40 *e*P **P** **18 48 34.0 -0.1**
MCMT *e*pP **pP** **18 49 48.6 +1.5**
RND Reindeer 93.57 13 *e*P **P** **18 48 33.0 -0.7**
RND *e**PP **pP** **18 49 45.8 -0.9**
RND pmax pmax
comp=Z,18nm,0.9s
RND Reindeer 93.57 13 *e*P **P** **18 48 33.0 -0.7**
comp=Z,18nm,0.9s
RND *e*pP **pP** **18 49 45.8 -0.9**
933A Laredo 93.63 61 P **P** **18 48 35.1 +0.4**
baz=241
O20A White River Ci 93.66 46 P **P** **18 48 34.8 -0.1**
baz=237
034A Hebbronville 93.82 62 P **P** **18 48 35.5 -0.1**
baz=241
REDW Red Top Meadow 93.84 43 *e*P **P** **18 48 35.4 -0.2**
comp=Z,29nm,1.2s
REDW *e*pP **pP** **18 49 49.3 +0.7**
MCK McKinley 93.85 13 *e*P **P** **18 48 33.6 -1.3**
MCK *e**PP **pP** **18 49 45.9 -2.0**
MCK McKinley 93.85 13 *e*P **P** **18 48 33.6 -1.3**
MCK *e*pP **pP** **18 49 45.9 -2.0**
TPAW Teton Pass 93.85 42 *e*P **P** **18 48 35.5 -0.3**
TPAW *e*pP **pP** **18 49 50.2 +1.5**
833A Chaparral WMA, 93.88 60 P **P** **18 48 36.0 +0.1**
baz=241
FXWY Fox Creek 93.89 42 *e*P **P** **18 48 36.1 +0.2**
FXWY *e*pP **pP** **18 49 50.2 +1.4**
HHC Hu-ho-hao-te 93.95 314 *e*P **P** **18 48 37.0 +0.9**
HHC pP pP 18 49 42.8 -6.2
HHC PP **PP** **18 52 30.8 +3.8**
HHC SKS **SKSac** **18 58 46.3 +5.5**
HHC S **ScS** **18 59 23.3 +3.4**
HHC pmax pmax
comp=Z,100nm,1.3s
HHC pmax pmax
comp=Z,520nm,7.6s
SNOW Snow King Moun 93.95 42 *e*P **P** **18 48 36.4 +0.2**
SNOW *e*pP **pP** **18 49 48.8 -0.4**
DLMT Dillon 93.97 40 *e*P **P** **18 48 36.0 -0.1**
DLMT *e*pP **pP** **18 49 50.2 +1.2**
035Z Hargill 94.02 62 P **P** **18 48 36.4 -0.1**
baz=241
MSO Missoula 94.07 38 P **P** **18 48 36.4 -0.1**
baz=234
MSO Missoula 94.07 38 *e*pP pP 18 49 51.2 +1.7
IMW Indian Meadow 94.09 42 *e*P **P** **18 48 37.1 +0.3**
IMW *e*pP **pP** **18 49 50.2 +0.3**
MOOW Moose Ponds 94.12 42 *e*P **P** **18 48 36.7 -0.2**
MOOW *e*pP **pP** **18 49 50.9 +1.0**
LOHW Long Hollow 94.13 42 *e*P **P** **18 48 36.6 -0.3**
LOHW *e*pP **pP** **18 49 50.8 +0.8**
733A Divot King Ran 94.15 60 P **P** **18 48 37.0 -0.1**
baz=241
MSTX Muleshoe 94.15 54 P **P** **18 48 37.1 -0.1**
baz=240
MSTX Muleshoe 94.15 54 *e*P **P** **18 48 36.7 -0.4**
MSTX *e*pP **pP** **18 49 49.1 -1.0**
SDCO Great Sand Dun 94.19 49 P **P** **18 48 37.6 +0.2**
baz=238
SDCO Great Sand Dun 94.19 49 *e*P **P** **18 48 37.9 +0.5**
comp=Z,20nm,1.3s
CD2 Chengdu 94.23 303 P **P** **18 48 37.0 -0.5**
CD2 pP pP 18 49 38.0 -12
CD2 sP sP 18 50 04.5 -18
CD2 PP **PP** **18 52 27.0 -2.3**
CD2 SKS **SKSac** **18 58 47.0 +4.4**
CD2 S **ScS** **18 59 25.5 +3.0**
CD2 sS sS 19 01 14.0 -18
CD2 SS **SS** **19 05 53.8 +2.3**
CD2 pmax pmax
comp=Z,60nm,1.6s
CD2 pmax pmax
comp=Z,280nm,4.8s
MENT Mentasta 94.26 15 *e*P **P** **18 48 35.8 -1.0**
comp=Z,7.1nm,0.8s
BW06 Boulder Array 94.29 44 P **P** **18 48 37.4 -0.3**
baz=236
BW06 Boulder Array 94.29 44 *e*P **P** **18 48 36.6 -1.2**
comp=Z,7.5nm,0.9s
BW06 *e*pP **pP** **18 49 49.5 -1.2**
PD31 Pinedale Array 94.29 44 *e*P **P** **18 48 36.7 -1.0**
PD31 *e*pP **pP** **18 49 50.3 -0.4**
PD31 *e*PP **PP** **18 52 24.6 -5.1**
PDAR Pinedale Array 94.29 44 P **P** **18 48 37.2 -0.5**
comp=Z,6.0nm,0.8s,baz=213,slow=3.2,SNR=38
PDAR pP **pP** **18 49 49.5 -1.3**
comp=Z,4.7nm,0.9s,baz=204,slow=3.3,SNR=7.5
PDAR PP **PP** **18 52 24.6 -5.1**
comp=Z,2.2nm,1.0s,baz=236,slow=6.9,SNR=4.5
PDAR PKKPbc **PKKPdf** **19 05 36.8 -0.4**
comp=Z,0.6nm,0.5s,baz=72,slow=2.9,SNR=6.3
QLMT Earthquake Lak 94.33 41 *e*P **P** **18 48 39.0 +1.2**
QLMT *e*pP **pP** **18 49 50.7 -0.1**
FLWY Flagg Ranch 94.34 42 *e*P **P** **18 48 38.2 +0.4**
comp=Z,18nm,1.0s
FLWY *e*pP **pP** **18 49 52.4 +1.5**
834A Tilden 94.43 61 P **P** **18 48 38.5 +0.1**
baz=241
CHMT Chamberlain Mo 94.51 39 *e*P **P** **18 48 37.6 -1.0**
CHMT *e*pP **pP** **18 49 51.2 -0.4**
H17A Grant Village 94.59 42 P **P** **18 48 39.7 +0.7**
baz=236
H17A Grant Village 94.59 42 *e*P **P** **18 48 39.9 +0.9**
H17A *e*pP **pP** **18 49 53.9 +1.9**
633A Saathoff Ranch 94.59 59 P **P** **18 48 39.3 +0.1**
baz=241
DLBC Dease Lake 94.61 23 P **P** **18 48 38.3 -0.2**
comp=Z,2.0nm,0.7s,baz=190,slow=6.1,SNR=4.4
DLBC Dease Lake 94.61 23 *e*P **P** **18 48 37.8 -0.7**
comp=Z,12nm,1.5s
JCT Junction City 94.61 58 P **P** **18 48 38.7 -0.5**
baz=241
JCT Junction City 94.61 58 *e*P **P** **18 48 39.0 -0.2**
JCT Junction City 94.61 58 *e*P **P** **18 48 39.0 -0.2**
T25A Trinidad 94.62 50 P **P** **18 48 39.1 -0.2**
baz=239
T25A Trinidad 94.62 50 *e*P **P** **18 48 39.2 -0.2**
comp=Z,7.2nm,0.9s
WRH Wood River Hil 94.68 13 *e*P **P** **18 48 37.4 -1.3**
comp=Z,18nm,1.3s
WRH *e*pP **pP** **18 49 50.9 -0.8**
BOZ Bozeman (W) 94.69 40 P **P** **18 48 39.4 +0.1**
baz=235
BOZ Bozeman (W) 94.69 40 *e*P **P** **18 48 39.3 -0.1**
BOZ Bozeman (W) 94.69 40 *e*P **P** **18 48 39.3 -0.1**
comp=Z,17nm,1.1s
DOT Dot Lake 94.80 15 *e*P **P** **18 48 38.4 -0.9**
comp=Z,22nm,0.9s
DOT *e*pP **pP** **18 49 50.9 -1.4**
CCB Clear Creek Bu 94.89 13 *e*P **P** **18 48 37.8 -1.8**
comp=Z,11nm,1.2s
CCB *e*pP **pP** **18 49 50.8 -1.9**
533A Kerrville 95.00 59 P **P** **18 48 40.5 -0.5**
baz=241
Q24A Divide 95.06 49 P **P** **18 48 41.2 -0.3**
baz=239
Q24A Divide 95.06 49 *e*P **P** **18 48 42.4 +1.0**
comp=Z,6.0nm,0.8s
COLA College 95.09 13 *c i*P **P** **18 48 39.2 -1.2**
COLA pmax pmax
comp=Z,12nm,1.0s
ILAR Eielson Array 95.19 13 P **P** **18 48 39.5 -1.4**
comp=Z,2.6nm,0.9s,baz=222,slow=5.9,SNR=17
ILAR pP **pP** **18 49 51.9 -2.1**
comp=Z,1.6nm,0.8s,baz=230,slow=5.2,SNR=3.0
ILAR PKKPbc **PKKPdf** **19 05 33.8 -2.3**
comp=Z,0.5nm,0.7s,baz=345,slow=1.9,SNR=4.2
ILB Eielson Array 95.19 13 *e*P **P** **18 48 39.4 -1.5**
ILB *e*pP **pP** **18 49 52.6 -1.4**
ILB *e*PKKPdf **PKKPdf** **19 05 33.8 -2.3**
IL1 Eielson Array 95.19 13 *e*P **P** **18 48 39.2 -1.8**
IL1 *e*pP **pP** **18 49 52.5 -1.5**

ISCO Idaho Springs 95.19 48 P **P** **18 48 41.7 -0.3**
baz=238
ISCO Idaho Springs 95.19 48 *e*P **P** **18 48 42.3 +0.3**
ISCO Idaho Springs 95.19 48 *e*P **P** **18 48 42.3 +0.3**
ISCO *e*pP **pP** **18 49 56.6 +1.6**
433A Art 95.28 58 P **P** **18 48 41.8 -0.4**
baz=241
AMTX Amarillo 95.39 53 P **P** **18 48 42.4 -0.4**
baz=240
AMTX Amarillo 95.39 53 *e*pP pP 18 49 59.2 +3.5
534A Blanco 95.40 59 P **P** **18 48 42.4 -0.4**
baz=241
N23A Red Feather La 95.55 47 P **P** **18 48 43.3 -0.2**
baz=238
N23A Red Feather La 95.55 47 *e*P **P** **18 48 43.3 -0.2**
N23A *e*pP **pP** **18 49 56.4 -0.2**
333A Richland Sprin 95.63 58 P **P** **18 48 43.4 -0.4**
baz=241
635A Leesville 95.63 60 P **P** **18 48 43.4 -0.4**
baz=242
ABTX Abilene, Hawle 95.77 56 P **P** **18 48 44.3 -0.1**
baz=241
ABTX Abilene, Hawle 95.77 56 *e*P **P** **18 48 44.4 -0.1**
comp=Z,27nm,1.1s
ABTX *e*pP **pP** **18 49 56.1 -1.4**
RLMT Red Lodge 95.77 42 P **P** **18 48 44.4 0.0**
baz=237
RLMT Red Lodge 95.77 42 *e*pP pP 18 49 59.4 +2.0
BILL Bilibino 95.92 354‖ *e*P **P** **18 48 44.6 +0.4**
BILL *i* *PP **pP** **18 49 59.0 +1.7**
BILL *i* *SP **sP** **18 50 29.1 0.0**
BILL *e* 18 52 37.2
BILL *e* 18 59 38.4
BILL pmax pmax
comp=Z,3.0nm,1.0s
BILL Bilibino 95.92 354 *e*P **P** **18 48 43.4 -0.8**
BILL *e*pP **pP** **18 49 58.2 +0.9**
434A Burnet 95.93 58 P **P** **18 48 44.6 -0.6**
baz=242
233A Rising Star 96.03 57 P **P** **18 48 45.5 -0.1**
baz=241
K22A Casper 96.10 45 P **P** **18 48 45.4 -0.5**
baz=238
K22A Casper 96.10 45 *e*P **P** **18 48 45.1 -0.8**
K22A *e*pP **pP** **18 49 58.7 -0.2**
K22A *e*PP **PP** **18 52 41.6 -2.0**
334A Lometa 96.20 58 P **P** **18 48 45.9 -0.5**
baz=242
DAWY Dawson 96.26 16 *e*P **P** **18 48 45.7 -0.2**
DAWY *e*pP **pP** **18 49 58.6 -0.4**
DAWY *e*PP **PP** **18 52 41.5 -2.7**
133A Hamilton Ranch 96.30 57 P **P** **18 48 46.5 -0.3**
baz=242
EGAK Eagle 96.43 15 *e*P **P** **18 48 46.4 -0.2**
comp=Z,9.1nm,1.1s
234A Clairette 96.59 57 P **P** **18 48 47.7 -0.5**
baz=242
LZH Lanzhou 96.69 307 *e*P **P** **18 48 50.0 +1.3**
LZH pP pP 18 49 50.5 -11
LZH sP sP 18 50 14.5 -19
LZH pmax pmax
comp=Z,17nm,1.0s
Z33A Whitaker Ranch 96.73 56 P **P** **18 48 48.0 -0.8**
baz=242
KSCO Kaye Shedlock' 96.78 50 P **P** **18 48 49.0 0.0**
baz=240
COLD Coldfoot 96.79 11 *e*P **P** **18 48 48.1 0.0**
comp=Z,3.6nm,1.0s
X32A Elmer 96.89 55 P **P** **18 48 49.5 +0.1**
baz=242
Y33A Hilltop Ranch, 97.17 55 P Pdif 18 48 51.1 +0.3
baz=242
W32A Sentinel 97.25 54 P Pdif 18 48 51.3 +0.2
baz=242
Z34A Collier Ranch, 97.40 56 P Pdif 18 48 53.1 +1.3
baz=242
WMOK Wichita Mounta 97.41 55 P Pdif 18 48 52.0 +0.2
baz=242
X33A Lawton 97.52 55 Pdiff Pdif 18 48 52.4 +0.2
baz=242
V32A Arapaho 97.68 54 Pdiff Pdif 18 48 53.0 0.0
baz=242
Y34A Reagan Ranch, 97.79 56 Pdiff Pdif 18 48 54.0 +0.5
baz=242
236A Katherine and 97.80 58 Pdiff Pdif 18 48 54.2 +0.7
baz=242
W33A Caddo, Fort Co 97.83 55 Pdiff Pdif 18 48 54.1 +0.5
baz=242
U32A Winter Ranch, 98.02 53 Pdiff Pdif 18 48 55.0 +0.5
baz=242
X34A Smith Ranch, M 98.03 55 Pdiff Pdif 18 48 55.4 +0.8
baz=242
OGNE Ogallala 98.13 48 Pdiff Pdif 18 48 56.1 +1.2
baz=241
Y35A Marietta 98.29 56 Pdiff **P** **18 48 56.6 +0.8**
baz=242
W34A Bridge Creek, 98.37 55 Pdiff **P** **18 48 56.9 +0.8**
baz=242
RSSD Black Hills 98.42 45 Pdiff **P** **18 48 56.4 0.0**
baz=240
RSSD Black Hills 98.42 45 *e*P Pdif 18 48 55.8 -0.5
RSSD *e**PP pP 18 50 09.7 +0.2
RSSD Black Hills 98.42 45 *e*P Pdif 18 48 55.8 -0.5
RSSD *e*pP pP 18 50 09.7 +0.2
YAK Yakutsk 98.43 338 *e*P Pdif 18 48 54.6 -1.0
YAK pmax pmax
comp=Z,16nm,2.6s
X35A Drake 98.57 56 Pdiff **P** **18 48 57.1 +0.2**
baz=243
J26A Sides Ranch, S 98.62 46 Pdiff Pdif 18 48 56.8 -0.3
baz=240
V34A Guthrie 98.83 54 Pdiff **P** **18 48 58.8 +0.7**
baz=243
Y36A Durant 98.85 56 Pdiff **P** **18 48 58.9 +0.7**
baz=243
238A Jacksonville 98.86 59 Pdiff **P** **18 48 58.9 +0.6**
baz=243
W35A Tecumseh 98.98 55 Pdiff Pdif 18 48 58.6 -0.1
baz=243
440A Kirbyville 99.19 60 Pdiff **Pdif** **18 48 59.4 -0.3**
baz=244
V35A Meyer Ranch, C 99.29 55 Pdiff **Pdif** **18 48 59.8 -0.3**
baz=243
T34A McClaskey Farm 99.61 53 Pdiff **Pdif** **18 49 03.0 +1.5**
baz=243
U35A Pawnee 99.64 54 Pdiff **Pdif** **18 49 02.7 +1.0**
baz=243
LPAZ La Paz 99.66 114 P **Pdif** **18 49 04.8 +1.8**
comp=Z,1.0nm,0.6s,baz=170,slow=2.0,SNR=4.8
441A DeRidder 99.79 61 Pdiff **Pdif** **18 49 03.7 +1.3**
baz=244
S34A Willow Spring 99.97 53 Pdiff **Pdif** **18 49 04.0 +0.9**
baz=243
W37B Quinton 100.03 56 Pdiff **Pdif** **18 49 03.8 +0.3**
baz=244
T35A Sooner Cattle 100.04 54 Pdiff **Pdif** **18 49 04.6 +1.2**
baz=243
341A Kurthwood 100.06 60 Pdiff **Pdif** **18 49 04.1 +0.5**
baz=244
F26A Lodgepole 100.11 43 Pdiff **Pdif** **18 49 04.7 +1.1**
baz=241
ULN Ulaanbaatar 100.37 319‖ *e*P **Pdif** **18 49 03.8 -1.0**
18 53 10.6 -8.1
ULN Ulaanbaatar 100.37 319 *e*Pdif **Pdif** **18 49 03.9 -0.9**
DGMT Dagmar 100.49 41 Pdiff **Pdif** **18 49 06.0 +0.8**
baz=240
K30A Basset 100.54 47 Pdiff **Pdif** **18 49 07.1 +1.5**
baz=242
T36A Boggs Farm, Ca 100.56 54 Pdiff **Pdif** **18 49 07.1 +1.4**
baz=244
SONA0 Songino Array 100.74 318 *e*Pdif **Pdif** **18 49 05.6 -0.8**
SONA0 *e*PP PP 18 53 10.6 -8.1
SONA0 *e*PKKPbc **PKKPbc** **19 05 20.3 0.0**
SONM Songino Array 100.74 318 P **Pdif** **18 49 05.6 -0.8**
comp=Z,1.5nm,0.9s,baz=116,slow=3.4,SNR=5.0
SONM PP PP 18 53 10.6 -8.1
comp=Z,1.7nm,0.9s,baz=134,slow=6.4,SNR=5.1
SONM PKKPbc **PKKPbc** **19 05 20.3 0.0**
comp=Z,0.9nm,0.6s,baz=266,slow=2.5,SNR=7.6
SONA1 Songino Array 100.74 318 *e*Pdif **Pdif** **18 49 05.6 -0.9**
SONA1 *e*PP **PP** **18 53 11.5 -7.1**
GTA Gaotai 101.06 309 *e*P **Pdif** **18 49 08.8 +0.7**
GTA pP pP 18 50 11.3 -10
GTA sP 18 50 36.8
GTA pmax pmax
comp=Z,5.0nm,1.1s
SHL Shillong 101.12 293 *ex* **Pdif** **18 49 09.5 +0.8**

S37A Fort Scott 101.62 54 Pdiff **Pdif** **18 49 11.6 +1.2**
baz=244
344A Westbrook Farm 101.99 61 Pdiff **Pdif** **18 49 13.6 +1.4**
baz=245
S38A Stockton 102.22 54 Pdiff **Pdif** **18 49 14.8 +1.7**
baz=245
V40A Witts Springs 102.24 56 Pdiff **Pdif** **18 49 14.9 +1.6**
baz=245
W41B Gary Mavity, V 102.40 57 Pdiff **Pdif** **18 49 14.6 +0.7**
baz=245
R38A Fenwick Farm, 102.46 53 Pdiff **Pdif** **18 49 15.0 +0.9**
baz=245
ECSD EROS Data Cent 102.98 47 Pdiff **Pdif** **18 49 17.4 +1.1**
baz=244
YKA Yellowknife Ar 102.98 25 P **Pdif** **18 49 14.9 -0.9**
comp=Z,0.8nm,0.8s,baz=237,slow=4.4,SNR=8.2
YKA PP PKiKP 18 53 22.6 -11
comp=Z,0.4nm,0.7s,baz=233,slow=6.3,SNR=3.8
YKA PKKPbc **PKKPbc** **19 05 07.1 -6.9**
comp=Z,0.5nm,0.7s,baz=39,slow=3.8,SNR=5.6
YKA PKKPab PKKPdf 19 05 33.9 +12
comp=Z,2.9nm,1.0s,baz=48,slow=5.0,SNR=15
YKB5 Yellowknife Ar 102.98 25 *e*Pdif **Pdif** **18 49 14.9 -0.9**
M36A Felix, Anita 103.22 50 Pdiff **Pdif** **18 49 18.3 +0.9**
baz=245
A29A Manning Farm, 103.61 42 Pdiff **Pdif** **18 49 20.4 +1.5**
baz=244
F34A Alexandria 104.72 46 Pdiff **Pdif** **18 49 24.4 +0.4**
baz=246
B32A Ashes, Strandq 105.00 43 PKiKP **PKiKP** **18 53 39.6 +1.5**
baz=246
I37A Lemond, Waseca 105.21 48 PKiKP **PKiKP** **18 53 38.8 0.0**
baz=246
B33A Robert and Kas 105.52 43 PKiKP **PKiKP** **18 53 40.8 +1.6**
baz=246
LRAL Lakeview Retre 105.52 61 *e*PKKPab PKKPab 19 05 24.1 +2.7
A33A Warroad 105.91 43 PKiKP **PKiKP** **18 53 41.2 +1.3**
baz=246
I38A Scanlan Farm, 105.93 48 PKiKP **PKiKP** **18 53 41.7 +1.6**
baz=247
ULM Lac du Bonnet 106.14 42 PKKPab PKKPab 19 05 19.3 +1.6
comp=Z,6.2nm,0.8s,baz=68,slow=4.4,SNR=6.1
C36A Pine Crest Far 107.02 45 PKiKP **PKiKP** **18 53 43.4 +1.4**
baz=248
EYMN Ely 107.93 45 *e*PKKPdf PKKPdf 19 05 12.1 +0.4
C38A Sawbill Land. 107.99 45 PKiKP **PKiKP** **18 53 45.7 +1.9**
baz=249
GOGA Godfrey 108.41 61 *e*PP PP 18 54 13.3 -2.0
FCC Fort Churchill 110.25 34 *e*PP PP 18 54 22.1 -5.9
WMQ Urumqi 111.13 309 *e*PKP **PKiKP** **18 53 49.5 -0.4**
SSPA Standing Stone 114.93 56 *e*PP PP 18 54 57.9 -3.6
MK01 Makanchi Array 115.59 311 *e*PKPdf **PKPdf** **18 53 56.5 -1.8**
MK01 *e*PP **PP** **18 54 59.8 -6.3**
MK01 *e*PKKPbc **PKKPbc** **19 04 33.2 +0.1**
MK31 Makanchi Array 115.61 311 *e*PKIKP **PKPdf** **18 53 57.1 -1.2**
MK31 Makanchi Array 115.61 311 *e*PKPdf **PKPdf** **18 53 57.1 -1.2**
MK31 *e*PP **PP** **18 54 59.7 -6.5**
MK32 Makanchi Array 115.61 311 *e*Pdif **Pdif** **18 50 14.4 +1.9**
MK32 *e*PKPdf **PKPdf** **18 53 56.7 -1.6**
MK32 *e*PP **PP** **18 55 00.3 -5.8**
MK32 *e*PKKPbc **PKKPbc** **19 04 33.6 +0.6**
MKAR Makanchi Array 115.61 311 Pdiff **Pdif** **18 50 14.4 +1.9**
comp=Z,0.5nm,0.8s,baz=102,slow=4.0,SNR=4.3
MKAR PKP **PKPdf** **18 53 56.7 -1.6**
comp=Z,3.9nm,0.8s,baz=84,slow=1.4,SNR=19
MKAR PP **PP** **18 55 00.3 -5.8**
comp=Z,1.7nm,0.9s,baz=92,slow=6.1,SNR=4.8
MKAR PKKPbc **PKKPbc** **19 04 33.6 +0.6**
comp=Z,1.0nm,0.4s,baz=281,slow=3.0,SNR=10
MKAR Makanchi Array 115.61 311 Pdif **Pdif** **18 50 14.4 +1.9**
MKAR *e*PKPdf **PKPdf** **18 53 57.1 -1.2**
MKAR *e*PP **PP** **18 54 59.8 -6.3**
MKAR PKKPbc **PKKPbc** **19 04 33.6 +0.6**
ZAA0 Zalesovo Array 115.61 319 *e*PP PP 18 54 56.3 -10
ZAA1 Zalesovo Array 115.61 319 *e*PKPdf **PKPdf** **18 53 56.6 -1.5**
ZAA1 *e*PP **PP** **18 55 05.3 -0.6**
ZALV Zalesovo Beam 115.61 319 PKP **PKPdf** **18 53 56.6 -1.5**
comp=Z,2.0nm,0.7s,baz=149,slow=3.1,SNR=8.2
ZALV PP **PP** **18 55 05.3 -0.6**
comp=Z,2.6nm,0.8s,baz=90,slow=4.4,SNR=5.8
MAKZ Makanchi 115.82 311 *e*PKIKP **PKPdf** **18 53 57.2 -1.6**
MAKZ Makanchi 115.82 311 *e*PKPdf **PKPdf** **18 53 57.2 -1.6**
OPO Ambohidratompo 116.37 229 PKP **PKPdf** **18 54 01.2 +0.3**
comp=Z,8.5nm,0.8s,baz=233,slow=1.1,SNR=12
NVS Novosibirsk 116.69 320 *e*PKIKP **PKPdf** **18 53 57.6 -2.5**
NVS *e* 18 55 11.6
NVS *e* 19 00 21.5
SUR Sutherland 117.71 198 PKP **PKPdf** **18 54 03.8 +0.6**
comp=Z,0.5nm,0.6s,baz=78,slow=3.1,SNR=11
HUMP Col San Antoni 117.80 83 *e*PKPdf **PKPdf** **18 54 02.7 -0.6**
KSH Kashi 118.42 302 PKP **PKPdf** **18 54 04.8 +0.7**
KSH SKS **SKSdf** **19 00 54.0 +7.4**
KSH AMB AMB
comp=Z,120nm,3.6s
KSH LR LR
comp=Z,81nm,5.4s
KSH LR LR
comp=Z,120nm,4.4s
KSH LR LR
comp=Z,160nm,6.1s
KURK Kurchatov 118.76 315 PKIKP **PKPdf** **18 54 03.3 -0.9**
KURK 18 55 19.5
KURK pmax pmax
comp=Z,6.0nm,0.8s
KURK pmax pmax
comp=Z,2.0nm,1.0s
KURK pmax pmax
comp=Z,2.0nm,1.1s
KURK Kurchatov 118.76 315 *e*PKPdf **PKPdf** **18 54 02.9 -1.3**
KURK *e*PP PP 18 55 19.3 -8.5
KURK *e*PP PP 18 55 19.5 -8.3
KURBB Kurchatov Arra 118.80 315 PKP **PKPdf** **18 54 03.2 -1.0**
comp=Z,6.1nm,0.8s,baz=104,slow=2.0,SNR=60
KURBB PP PP 18 55 19.5 -8.6
comp=Z,2.2nm,1.0s,baz=103,slow=6.9,SNR=6.9
KURBB PKKPbc **PKKPab** **19 04 22.6 +0.5**
comp=Z,2.2nm,1.1s,baz=281,slow=4.4,SNR=6.4
TKM2 Tokmak 2 119.43 306 *e*PKIKP **PKPdf** **18 54 04.9 -1.2**
TKM2 Tokmak 2 119.43 306 *e*PKPdf **PKPdf** **18 54 04.9 -1.2**
BOSA Boshof 119.77 204 PKP **PKPdf** **18 54 07.8 +0.7**
comp=Z,5.2nm,0.6s,baz=143,slow=2.5,SNR=16
BOSA PKKPbc **PKKPbc** **19 04 17.0 -1.2**
comp=Z,1.8nm,0.7s,baz=288,slow=3.1,SNR=3.7
FRU Bishkek 120.12 306 *e*PKIKP **PKPdf** **18 54 08.0 +0.8**
FRU *i* 18 55 33.0
AAK Ala-Archa 120.17 305 PKP **PKPdf** **18 54 06.6 -0.8**
comp=Z,1.7nm,0.7s,baz=151,slow=3.8,SNR=9.0
AAK PKKPbc **PKKPab** **19 04 17.7 +0.9**
comp=Z,2.0nm,0.5s,baz=177,slow=5.7,SNR=6.6
AAK Ala-Archa 120.17 305⇑ *i*PKIKP **PKPdf** **18 54 07.1 -0.3**
AAK Ala-Archa 120.17 305 *e*PKPdf **PKPdf** **18 54 06.6 -0.8**
AAK *e*PKKPbc **PKKPab** **19 04 17.4 +0.6**
AAK *e*PKKPbc **PKKPab** **19 04 17.7 +0.9**
EKS2 Erkin-Say 120.69 305 *e*PKIKP **PKPdf** **18 54 08.0 -0.4**
EKS2 Erkin-Say 120.69 305 *e*PKPdf **PKPdf** **18 54 08.0 -0.4**
EKS2 *e*PP PP 18 55 27.9 -13
KBL Kabul 122.70 295 *e*PKIKP **PKPdf** **18 54 12.6 0.0**
KBL Kabul 122.70 295 *e*PKPdf **PKPdf** **18 54 12.6 0.0**
LBTB Lobatse 122.89 206 PKP **PKPdf** **18 54 14.1 +0.8**
comp=Z,3.7nm,0.6s,baz=161,slow=3.3,SNR=12
KKAR Karatay Array 123.13 305 *e*PKIKP **PKPdf** **18 54 12.1 -0.8**
KKAR Karatay Array 123.13 305 *e*PKPdf **PKPdf** **18 54 12.1 -0.8**
VOSK Vostochnaya 123.69 317 *e*PKIKP **PKPdf** **18 54 12.1 -1.5**
VOSK Vostochnaya 123.69 317 *e*PKPdf **PKPdf** **18 54 12.1 -1.5**
BVAR Borovoye Array 124.05 317 PKP **PKPdf** **18 54 13.9 -0.4**
comp=Z,8.2nm,0.7s,baz=99,slow=2.0,SNR=41
SCHQ Schefferville 124.31 41 PKP **PKPdf** **18 54 14.2 -0.6**
comp=Z,8.9nm,0.9s,baz=196,slow=1.6,SNR=4.5
SCHQ PKKPbc **PKKPbc** **19 04 01.9 +0.7**
comp=Z,3.6nm,0.7s,baz=70,slow=3.1,SNR=4.5
SCHQ Schefferville 124.31 41 *e*PKPdf **PKPdf** **18 54 12.8 -2.0**
SCHQ PKKPbc **PKKPbc** **19 04 01.9 +0.7**
ZRNK Zerenda 124.89 317 *e*PKIKP **PKPdf** **18 54 15.2 -0.7**
ZRNK Zerenda 124.89 317 *e*PKPdf **PKPdf** **18 54 15.2 -0.7**
LMN Caledonia Moun 125.25 52 *e*PKPdf **PKPdf** **18 54 15.8 -1.1**
MATP Matopo 125.70 212 PKP **PKPdf** **18 54 19.2 +0.4**
comp=Z,12nm,0.8s,baz=142,slow=1.8,SNR=20
SPITS Spitsbergen Ar 128.79 356 PKP **PKPdf** **18 54 22.2 -0.5**
comp=Z,3.1nm,0.4s,baz=115,slow=3.2,SNR=29
DAG Danmarks Havn 129.70 6‖ *i*P SKPab 18 57 15.9 -1.3
comp=Z,10nm,1.1s
SUMG Summit 130.00 15 *i*P SKPab 18 57 20.5 +1.5
LSZ Lusaka 130.26 215 PKP **PKPdf** **18 54 28.8 +1.2**
comp=Z,8.7nm,0.7s,baz=81,slow=2.0,SNR=12
LSZ SKPbc **SKPab** **18 57 23.1 +1.6**

comp=Z,7.7nm,0.9s,baz=171,slow=3.6,SNR=7.8
LSZ Lusaka 130.26 215 *e*PKPdf **PKPdf 18 54 26.8 -0.7**
LSZ *e*SKPbc **SKPab 18 57 24.0 +2.4**
ARU Arti 130.60 322 PKP **PKPdf 18 54 26.2 -0.5**
comp=Z,9.1nm,0.7s,baz=320,slow=1.0,SNR=18
ARU SKPbc **SKPbc 18 57 20.9 -0.2**
comp=Z,2.3nm,0.6s,baz=93,slow=1.9,SNR=6.1
ARU Arti 130.60 322 *i* PKIKP **PKPdf 18 54 26.0 -0.7**
ARU 18 56 42.4
ARU Arti 130.60 322 *e*PKPdf **PKPdf 18 54 25.8 -0.9**
ARU *e*SKPbc **SKPbc 18 57 21.1 -0.1**
ARU Arti 130.60 322 *ep*PKPdf **SKPbc 18 57 21.3 +0.2**
ABKAR Akbulak array 130.71 313 *e*PKPdf **PKPdf 18 54 23.9 -3.2**
ABKAR *e*SKPbc **SKPbc 18 57 21.5 -0.3**
TSUM Tsumeb 131.06 200 PKP **PKPdf 18 54 30.0 +1.0**
comp=Z,4.0nm,0.6s,baz=163,slow=4.0,SNR=6.6
TSUM SKPbc **SKPab 18 57 26.5 +1.7**
comp=Z,4.6nm,0.8s,baz=174,slow=4.9,SNR=3.5
TSUM Tsumeb 131.06 200 *e*PKPdf **PKPdf 18 54 29.9 +0.9**
TSUM *ep*PP **PP 18 56 49.3 +0.9**
TSUM *e*SKPbc **SKPab 18 57 26.5 +1.7**
UOSS Minazif 131.26 280 *e*SKPbc **SKPab 18 57 25.7 +0.4**
AKTO Aktyubinsk 131.85 314 PKP **PKPdf 18 54 29.1 -0.2**
comp=Z,5.3nm,0.8s,baz=37,slow=2.1,SNR=15
AKTO SKPbc **SKPbc 18 57 25.8 -0.1**
comp=Z,31nm,1.2s,baz=75,slow=5.7,SNR=26
GEYT Alibeck 131.95 298 PKP **PKPdf 18 54 30.2 +0.3**
comp=Z,8.9nm,0.7s,baz=248,slow=0.8,SNR=21
GEYT SKPbc **SKPab 18 57 27.5 -0.4**
comp=Z,22nm,1.1s,baz=288,slow=0.5,SNR=14
KMBO Kilima Mbogo 135.44 236 PKP **PKPdf 18 54 37.6 +0.2**
comp=Z,3.1nm,0.6s,baz=360,slow=1.5,SNR=6.6
KMBO SKPbc **SKPbc 18 57 40.7 +1.4**
comp=Z,4.7nm,0.8s,baz=55,slow=4.3,SNR=7.0
KMBO Kilima Mbogo 135.44 236 *e*PKPdf **PKPdf 18 54 38.1 +0.6**
KMBO *e*SKPbc **SKPab 18 57 41.6 -2.6**
ARA0 ARCESS Array S 135.68 348 *e*PKPpre PKPpre 18 54 27.1
ARA0 *e*PKPdf **PKPdf 18 54 35.4 -0.6**
ARA0 *e*SKPbc **SKPbc 18 57 38.0 +0.1**
ARA0 *e*SKPbc **SKPbc 18 57 38.1 +0.2**
ARCES ARCESS Array B 135.68 348 PKhKP PKPpre 18 54 27.1
comp=Z,1.3nm,0.5s,baz=34,slow=3.8,SNR=9.9
ARCES PKP **PKPdf 18 54 35.4 -0.6**
comp=Z,2.8nm,0.6s,baz=64,slow=2.1,SNR=5.3
ARCES SKPbc **SKPbc 18 57 38.0 +0.1**
comp=Z,11nm,0.9s,baz=3.3,slow=4.7,SNR=8.8
ARCES ARCESS Array B 135.68 348 PKHKP PKPpre 18 54 27.2
ARCES 18 54 35.4
ARCES *p*max *p*max
comp=Z,1.0nm,0.5s
ARCES *p*max *p*max
comp=Z,5.0nm,0.6s
ARCES *p*max *p*max
comp=N,11nm,0.9s
KLMR Klimovskoe 138.02 333 *e*PKHKP PKPpre 18 54 33.8
KLMR *p*max *p*max
comp=Z,20nm,1.4s
DAMY Dhamar 138.23 261 *e*PKPdf **PKPdf 18 54 40.0 -2.6**
VRH Novokhopyorsk 141.65 319 *e*PKIKP **PKPdf 18 54 46.8 -0.5**
VRH *p*max *p*max
comp=Z,10.0nm,0.9s
DGRG David-gareji 141.71 303 P **PKPdf 18 54 44.2 -3.6**
DGRG David-gareji 141.71 303 *e*PKIKP **PKPdf 18 54 44.2 -3.6**
GUDG Gudauri 142.23 305 P **PKPdf 18 54 46.6 -2.4**
FIA1 FINESS Array S 142.29 341 *e*PKPpre PKPpre 18 54 42.1
FIA0 FINESS Array S 142.29 341 *e*PKHKP PKPpre 18 54 42.2
FIA0 FINESS Array S 142.29 341 *e*PKPpre PKPpre 18 54 42.2
FINES FINESS Array B 142.29 341 PKhKP PKPpre 18 54 42.2
comp=Z,3.9nm,0.6s,baz=51,slow=3.6,SNR=28
GNI Garni 142.34 301 PKhKP PKPpre 18 54 44.9
comp=Z,4.9nm,0.5s,baz=183,slow=5.6,SNR=6.2
GNI Garni 142.34 301 ⇓*i* PKIKP **PKPdf 18 54 51.4 +2.3**
GNI Garni 142.34 301 *e*PKPpre PKPpre 18 54 44.9
GNI *e*PKPpre PKPpre 18 54 45.1
OBN Obninsk 142.56 327 PKhKP PKPpre 18 54 45.1
comp=Z,15nm,0.4s,baz=238,slow=13,SNR=4.9
OBN Obninsk 142.56 327 ⇑*i* PKHKP PKPpre 18 54 44.5
OBN *e*SS SS 19 16 14.0 +3.4
OBN *p*max *p*max
comp=Z,31nm,1.6s
ZEI Tsey 142.59 305 *i* PKHKP PKPpre 18 54 45.4
ZEI *p*max *p*max
comp=Z,33nm,0.6s
LPSR Galich'ya Gora 142.62 322 *e*PKHKP PKPpre 18 54 44.8
LPSR *p*max *p*max
comp=Z,10.0nm,0.5s
NCK Nalchik 142.68 307 ⇑*i* PKIKP **PKPdf 18 54 50.9 +1.4**
ONI Oni 142.95 305 P PKPpre 18 54 45.8
ONI Oni 142.95 305 *e*PKHKP PKPpre 18 54 45.8
VSR Storozhevoye 143.11 320 *e*PKHKP PKPpre 18 54 45.5
VSR *p*max *p*max
comp=Z,20nm,1.3s
AKH Akhalkalaki 143.12 303 ⇑*i* P PKPbc 18 54 48.3 -0.1
KBZ Khabaz 143.13 307 PKhKP PKPpre 18 54 47.0
comp=Z,16nm,0.9s,baz=159,slow=1.7,SNR=18
KBZ Khabaz 143.13 307 PKIKP PKPab 18 54 47.0 +0.4
KBZ *p*max *p*max
comp=Z,16nm,0.9s
KVAR Kislovodsk Arr 143.22 308 PKP PKPbc 18 54 47.8 -0.7
comp=Z,21nm,0.8s,baz=162,slow=2.8,SNR=18
KIV Kislovodsk 143.23 308 *d*i PKHKP PKPpre 18 54 47.0
KIV *i* 18 54 51.8
KIV *p*max *p*max
comp=Z,26nm,0.9s
KIV *p*max *p*max
comp=Z,13nm,0.8s
KIV Kislovodsk 143.23 308 *e*PKPpre PKPpre 18 54 47.8
NEY Neytrino 143.35 306 ⇓*i* PKIKP **PKPdf 18 54 51.9 +1.0**
CHVG Ch'k'valeri 143.92 306 ⇓*i* P PKPbc 18 54 50.4 0.0
CHVG Ch'k'valeri 143.92 306 P PKPbc 18 54 50.1 -0.3
VSU Vasula 144.42 337 *d*i PKIKP **PKPab 18 54 50.2 -1.0**
MOL Molde 144.70 355 *e*PKPdf PKPbc 18 54 51.6 -0.4
AKN Aaknes 145.13 356 *e*PKPdf **PKPdf 18 54 52.7 -0.5**
SOC Sochi 145.41 308 *e*PKIKP **PKPdf 18 54 52.6 -1.5**
SOC *e* 18 58 16.2
SOC *e*PPP PPP 19 01 34.2
SOC *e*SS SS 19 16 43.6 -0.7
SOC *p*max *p*max
comp=Z,41nm,0.6s
NC303 NORSAR Array S 145.63 352 *e*PKPdf **PKPdf 18 54 53.6 -0.4**
NC303 *ep*PKPdf **pPKPdf 18 56 09.1 -1.8**
NC405 NORSAR Array S 145.70 351 *e*PKPdf **PKPdf 18 54 54.4 +0.3**
NC405 *ep*PKPdf **pPKPdf 18 56 08.6 -2.5**
NB201 NORSAR Array S 145.81 352 *e*PKPdf **PKPdf 18 54 54.4 0.0**
NB201 *ep*PKPdf **pPKPdf 18 56 09.2 -2.1**
FOO Floro 145.82 357 *e*PKPdf **PKPdf 18 54 54.5 +0.3**
NB2 NORSAR Subarra145.83 352 PKP **PKPdf 18 54 54.2 -0.2**
comp=Z,11nm,0.7s,baz=24,slow=3.1
NB2 NORSAR Subarra145.83 352 PKP **PKPdf 18 54 54.2 -0.2**
comp=Z,11nm,0.7s,baz=24,slow=3.1
NB200 NORSAR Array S 145.83 352 *e*PKPdf **PKPdf 18 54 54.2 -0.2**
NB200 *ep*PKPdf **pPKPdf 18 56 10.1 -1.2**
NOA NORSAR Array B 145.83 352 PKPbc **PKPdf 18 54 54.2 -0.2**
comp=Z,6.9nm,0.6s,baz=17,slow=2.9,SNR=31
NOA *p*PKPbc pPKPbc 18 56 10.1 -1.1
comp=Z,48nm,1.1s,baz=14,slow=2.4,SNR=6.2
NOA NORSAR Array B 145.83 352 PKIKP **PKPdf 18 54 54.2 -0.2**
NOA 18 56 10.1
NOA *p*max *p*max
comp=Z,7.0nm,0.6s
NOA *p*max *p*max
comp=Z,31nm,1.0s
NBO02 NORSAR Array S 145.87 352 *e*PKPdf **PKPdf 18 54 54.2 -0.3**
NBO02 *ep*PKPdf **pPKPdf 18 56 09.8 -1.5**
NBO00 NORSAR Array S 145.90 352 *e*PKPdf **PKPdf 18 54 54.6 +0.1**
NBO00 *ep*PKPdf **pPKPdf 18 56 10.4 -1.0**
MZRK Al-Mazaregh 145.90 294 *e*P **PKPbc 18 54 56.5 -0.1**
NAO01 NORSAR Array S 146.06 352 *e*PKPdf **PKPdf 18 54 55.0 +0.3**
NAO01 *ep*PKPab pPKPab 18 56 10.8 -1.1
NC602 NORSAR Array S 146.08 351 *e*PKPdf **PKPdf 18 54 54.8 0.0**
NC602 IAmb IAmb 18 54 56.0
comp=Z,11nm,0.6s
SFNV Sufian 146.30 295 *e*P **PKPbc 18 54 58.2 +0.4**
HFS Hagfors 146.33 349 PKPbc **PKPdf 18 54 55.6 +0.4**
comp=Z,19nm,0.8s,baz=48,slow=1.9,SNR=70
SUE Sulen 146.37 357 *e*PKPdf **PKPbc 18 54 56.5 -0.6**
ANN Anapa 146.62 311 *i* PKP2 **PKPbc 18 54 57.8 -0.5**
ANN *e* 18 58 21.3
ANN *e*PPP PPP 19 01 38.9
ANN *p*max *p*max
comp=Z,174nm,1.0s
IZAR Zarasai 146.64 335 *e*P **PKPbc 18 54 58.1 +0.1**
IZAR IAmb IAmb 18 54 59.6
comp=Z,39nm,0.9s

IDID Didziasalis 146.76 334 *e*P **PKPbc 18 54 58.2 -0.1**
IDID IAmb IAmb 18 55 00.0
comp=Z,22nm,0.9s
ISAL Salakas 146.81 334 *e*P **PKPbc 18 54 58.5 +0.1**
ISAL IAmb IAmb 18 55 01.4
comp=Z,20nm,1.0s
MICGM Minsk 146.88 332 *e* **PKPab 18 55 00.0 -0.8**
MICGM *e* 18 56 15.0
MNK Minsk 146.88 332 *e*PKP2 **PKPab 18 55 00.0 -0.8**
OSL Oslo 146.96 352 *e*PKPdf **PKPbc 18 54 58.3 -0.4**
NACGM Naroch 147.04 333 *e*P **PKPbc 18 54 58.0 -1.1**
KONO Kongsberg 147.38 352 *e*PKPdf **PKPbc 18 54 59.0 -0.9**
BLS5 Blasjo 147.91 355 *e*P **PKPbc 18 55 01.5 +0.2**
KMY Karmoy 148.19 356 *e*PKPdf **PKPbc 18 55 00.9 -1.1**
KMY IAmb IAmb 18 55 02.2
comp=Z,37nm,0.7s
STAV Stavanger 148.44 356 *e*PKPdf **PKPbc 18 55 01.8 -0.8**
ROOS tl_alroos 148.74 291 *e*P **PKPdf 18 55 02.1 +2.0**
AKASG Malin Array Be 148.74 325 PKPbc **PKPbc 18 55 02.9 -0.8**
comp=Z,32nm,0.7s,baz=44,slow=3.3,SNR=18
AKBB Malin Array Si 148.74 325 *e*PKP2 **PKPbc 18 55 02.6 -1.1**
AKBB Malin Array Si 148.74 325 *e*PKPbc **PKPbc 18 55 02.6 -1.1**
KIEV Kiev 148.75 325⇓*e*PKIKP **PKPdf 18 54 59.3 -0.2**
KIEV Kiev 148.75 325 *e*PKPbc **PKPbc 18 55 02.5 -1.1**
SIM Simferopol' 148.78 313 *i* PKP2 **PKPbc 18 55 03.9 -0.1**
SIM *p*max *p*max
comp=Z,48nm,0.8s
AK11 Malin Array Si 148.78 325 *e*PKPdf **PKPdf 18 54 58.9 -0.6**
AK11 *e*PKPbc **PKPbc 18 55 02.9 -0.9**
AK11 *ep*PKPab **pPKPab 18 56 23.8 +1.1**
RABH Abou Rabah 148.79 292 *e*P **PKPbc 18 55 02.5 -2.0**
SNART Snartemo 148.92 354 *e*PKPdf **PKPbc 18 55 03.5 -0.3**
SNART IAmb IAmb 18 55 04.1
comp=Z,17nm,0.5s
DRWC Darouich 149.04 296 *e*P **PKPdf 18 55 01.0 +0.5**
KFRA Kufra 149.08 293 *e*P **PKPdf 18 55 02.4 +1.8**
ASF Jabal al Asfar 149.10 287 PKPbc **PKPbc 18 55 06.1 +0.8**
comp=Z,27nm,0.7s,baz=78,slow=1.5,SNR=48
SUW Suwalki 149.11 335 *e*PKP **PKPbc 18 55 03.9 -0.6**
SUW Suwalki 149.11 335 *e*PKP2 **PKPbc 18 55 03.9 -0.6**
SALA Sala 149.24 288 *e*P **PKPdf 18 55 03.2 +2.1**
BTCH Batrach 149.28 295 *e*P **PKPdf 18 55 02.9 +1.9**
WRDH Warideh 149.37 294 *e*P **PKPdf 18 55 02.8 +1.7**
MARH Ras Al Marh 149.41 291 *e*P **PKPdf 18 55 02.7 +1.2**
HAWK Haweek 149.45 292 *e*P **PKPdf 18 55 03.3 +2.0**
BIDA Albida 149.48 293 *e*P **PKPdf 18 55 03.2 +1.9**
TOTH TOTAH 149.48 290 *e*P **PKPbc 18 55 03.8 -2.4**
KAC Achnashellach 149.62 7 *e*P **PKPbc 18 55 05.3 -0.3**
KLNR Kaliningrad 149.68 338⇓*e*PKHKP PKPpre 18 55 00.5
ARNB Al Arnab 149.69 295 *e*P **PKPdf 18 55 03.5 +1.9**
KPL Plockton 149.73 8 *e*P **PKPbc 18 55 04.8 -1.0**
MCD Coleburn Disti 149.73 5 *e*P **PKPbc 18 55 05.0 -0.9**
MDO Dochfour 149.78 6 *e*P **PKPbc 18 55 05.3 -0.6**
BRBR Barbar 149.88 290 *e*P **PKPdf 18 55 04.0 +1.9**
KSB Sheil Bridge 149.89 8 *e*P **PKPbc 18 55 05.5 -0.7**
MMAI Mount Meron Ar 150.35 289 PKPbc **PKPbc 18 55 09.2 +1.0**
comp=Z,87nm,0.7s,baz=72,slow=5.4,SNR=174
DRUM Mains of Drumt 150.46 5 *e*P **PKPbc 18 55 06.4 -1.2**
EIL Elat 150.67 282 PKPbc **PKPbc 18 55 09.6 +0.5**
comp=Z,47nm,0.7s,baz=296,slow=0.1,SNR=33
SORM Soroca 150.72 322⇓*i* P **PKPbc 18 55 07.9 -0.6**
SORM Soroca 150.72 322 ⇓PKIKP **PKPbc 18 55 07.9 -0.6**
EDU Dundee 150.78 5 *e*P **PKPbc 18 55 08.0 -0.4**
BR101 Keskin Array S 150.80 303 *e*PKPdf **PKPdf 18 55 02.9 -0.4**
BR101 *e*PKPbc **PKPbc 18 55 08.7 -0.5**
BR131 Keskin Array S 150.80 303 *e*PKPdf **PKPdf 18 55 01.9 -1.4**
BR131 *e*PKPbc **PKPbc 18 55 08.3 -0.9**
BR131 *e*PKPab **PKPab 18 55 17.2 -0.4**
BR131 *ep*PKPab **pPKPab 18 56 26.6 -4.8**
BRTR Keskin Array B 150.80 303 PKP **PKPdf 18 55 02.9 -0.4**
comp=Z,1.8nm,1.1s,baz=46,slow=3.6,SNR=7.1
BRTR PKPbc **PKPbc 18 55 08.7 -0.5**
comp=Z,23nm,1.0s,baz=134,slow=3.7,SNR=65
BRTR Keskin Array B 150.80 303 PKIKP **PKPdf 18 55 02.9 -0.4**
BRTR *p*max *p*max
comp=Z,1.0nm,1.0s
BRTR *p*max *p*max
comp=Z,23nm,1.0s
EAB Aberfoyle 151.01 7 *e*P **PKPbc 18 55 08.6 -0.4**
KIS Kishinev 151.09 320 *e*PKP **PKPbc 18 55 08.0 -1.4**
KIS Kishinev 151.09 320 *e*PKIKP **PKPbc 18 55 08.0 -1.4**
PGBU Glenifferbraes 151.37 7 *e*P **PKPbc 18 55 08.2 -1.5**
EDI Edinburgh 151.38 6 *e*P **PKPbc 18 55 09.1 -0.7**
ANTO Ankara 151.39 304 *e*PKIKP **PKPbc 18 55 09.9 -0.6**
ANTO *e* 18 55 20.0
ANTO Ankara 151.39 304 *e*PKPbc **PKPbc 18 55 09.9 -0.6**
ANTO *e*PKPab **PKPab 18 55 20.0 0.0**
ANTO *ep*PKPab **pPKPab 18 56 31.0 -2.8**
BR231 Keskin MP Arra 151.41 304 *e*PKPdf **PKPdf 18 55 02.3 -1.9**
BR231 *e*PKPbc **PKPbc 18 55 09.1 -1.4**
BR231 *e*PKPbc **PKiKP 18 55 10.4 -0.5**
BR231 *e*PKPab **PKPab 18 55 17.7 -2.4**
BR231 *e*PKPab PKPab 18 55 20.1 0.0
ESY Stoneypath 151.44 5 *e*P **PKPbc 18 55 09.2 -0.7**
LEOM Leova 151.71 319 ⇑PKIKP **PKPbc 18 55 10.6 -0.2**
BEL Belsk 151.72 334 *e*PKP **PKPbc 18 55 11.0 +0.3**
BEL Belsk 151.72 334 *e*PKIKP **PKPbc 18 55 11.0 +0.3**
LVV L'vov 151.84 328 *e*PKIKP **PKPbc 18 55 10.1 -0.9**
CSS Mathiatis 151.93 293 *e*PKPbc **PKPbc 18 55 11.7 -0.1**
CSS *e*PKPab **PKPab 18 55 22.1 -0.2**
EKA Eskdalemuir Ar 151.97 6 PKPbc **PKPbc 18 55 10.2 -0.9**
comp=Z,3.7nm,0.5s,baz=333,slow=2.0,SNR=40
ESK Eskdalemuir 151.98 6 *e*P **PKPbc 18 55 10.3 -0.8**
TLCR 152.04 316⇓*i* P **PKPbc 18 55 11.4 -0.2**
TLCR 152.04 316 ⇓PKIKP **PKPbc 18 55 11.4 -0.2**
ECK Cauldkaine Hil 152.12 6 *e*P **PKPbc 18 55 10.7 -0.7**
GAL1 Galloway 152.27 8 *e*P **PKPbc 18 55 10.2 -1.6**
PRAR RASCA 152.33 322⇑*i* P **PKPbc 18 55 12.0 -0.2**
CFR Carcaliu 152.46 317⇓*i* P **PKPbc 18 55 12.4 -0.1**
CFR Carcaliu 152.46 317 ⇓PKIKP **PKPbc 18 55 12.4 -0.1**
KWP Kalwaria Pacla 152.58 329⇓*i* P **PKPbc 18 55 12.4 -0.3**
KWP Kalwaria Pacla 152.58 329 ⇓PKIKP **PKPbc 18 55 12.5 -0.3**
TESR Tescani 152.60 321⇑*i* P **PKPbc 18 55 12.8 0.0**
TIRR Tirgusor 152.65 315⇑*i* P **PKPbc 18 55 13.2 +0.2**
TIRR Tirgusor 152.65 315 ⇑PKIKP **PKPbc 18 55 13.2 +0.2**
TIRR Tirgusor 152.65 315 *e*PKPbc **PKPbc 18 55 12.8 -0.2**
TIRR *e*PKPab **PKPab 18 55 24.5 -0.5**
LCP Cassop 152.69 4 *e*P **PKPbc 18 55 12.3 -0.4**
BUR08 Bucovina Ar. S 152.71 324 *e*PKPdf **PKPdf 18 55 03.0 -2.8**
BUR08 *e*PKPbc **PKPbc 18 55 13.0 -0.2**
BUR08 *e*PKPab **PKPab 18 55 24.0 -1.3**
KESW Keswick, Cumbr 152.71 6 *e*P **PKPbc 18 55 11.9 -0.8**
BURAR Bucovina Array 152.72 324⇓*i* P **PKPbc 18 55 13.4 +0.2**
BURAR Bucovina Array 152.72 324 ⇓PKIKP **PKPbc 18 55 13.4 +0.2**
ODBI Odobesti 152.79 319⇑*i* P **PKPbc 18 55 14.1 +0.9**
HARR Harsova 152.83 316⇓*i* P **PKPbc 18 55 13.6 +0.2**
HARR Harsova 152.83 316 ⇓PKIKP **PKPbc 18 55 13.6 +0.2**
PLOR Plostina 152.98 319⇓*i* P **PKPbc 18 55 13.1 -0.6**
PLOR Plostina 152.98 319 ⇓PKIKP **PKPbc 18 55 13.1 -0.6**
MSAB Monastry St. A 153.19 315⇓*i* P **PKPbc 18 55 14.1 -0.1**
KOLS Kolonicke sedl 153.28 329 *e*PKIKP **PKPdf 18 55 06.7 +0.2**
KOLS *e* 18 55 27.1
KOLS Kolonicke sedl 153.28 329 *e*PKP **PKPdf 18 55 06.7 +0.2**
KOLS *e* 18 55 14.8
KOLS *e* 18 55 27.1
KOLS *e* 18 56 36.3
OJC Ojcow 153.38 333 *e*PKP **PKPbc 18 55 14.2 -0.2**
OJC Ojcow 153.38 333 *e*PKIKP **PKPbc 18 55 14.2 -0.2**
OJC Ojcow 153.38 333 *e*PKPdf **PKPdf 18 55 06.0 -0.5**
OJC *e*PKPbc **PKPbc 18 55 14.2 -0.2**
STHS Stebnicka Huta 153.39 331 *e*PKIKP **PKPbc 18 55 15.6 +1.1**
STHS *e* 18 55 27.7
STHS Stebnicka Huta 153.39 331 *e*PKP **PKPbc 18 55 15.6 +1.1**
STHS *e* 18 55 27.7
ISR Istrita 153.44 318⇓*i* P **PKPbc 18 55 15.3 +0.5**
ISR Istrita 153.44 318 ⇓PKIKP **PKPbc 18 55 15.3 +0.5**
UZH Uzhgorod 153.49 328 *e*PKIKP **PKPbc 18 55 10.8 -3.9**
UZH *e* 18 55 27.6
ARCR ARCALIA 153.51 324⇑*i* P **PKPbc 18 55 15.2 +0.4**
MLR Muntele Rosu 153.59 319 PKPbc **PKPbc 18 55 14.5 -0.6**
comp=Z,1.4nm,1.0s,baz=266,slow=2.7,SNR=7.9
MLR PKPab **PKPab 18 55 28.2 -1.0**
comp=Z,3.9nm,1.0s,baz=82,slow=4.7,SNR=12
MLR Muntele Rosu 153.59 319⇓*i* P **PKPbc 18 55 15.3 +0.1**
MLR Muntele Rosu 153.59 319 ⇓PKIKP **PKPbc 18 55 15.3 +0.1**
MLR Muntele Rosu 153.59 319 *e*PKPdf **PKPdf 18 55 06.0 -1.2**
MLR *e*PKPbc **PKPbc 18 55 14.7 -0.5**
MLR *e*PKPab **PKPab 18 55 28.0 -1.1**
ISP Isparta 153.64 300 ⇓PKP2 **PKPab 18 55 29.2 -0.4**
CRVS Cervenica-Dubn 153.67 330 *e*PKIKP **PKPdf 18 55 07.0 0.0**
CRVS *e* 18 55 28.9

CRVS Cervenica-Dubn 153.67 330 *e*PKP **PKPdf 18 55 07.0 0.0**
CRVS *e* 18 55 28.9
CRVS *e* 18 56 38.7
CRVS *e* 18 56 47.2
NIE Niedzica 153.79 332 *e*PKP **PKPdf 18 55 07.2 0.0**
NIE Niedzica 153.79 332 *e*PKIKP **PKPdf 18 55 07.2 0.0**
PRD Provadia 153.89 314 *i* P **PKPab 18 55 31.1 +0.8**
VOIR 154.13 320⇓*i* P **PKPbc 18 55 17.6 +1.3**
VOIR 154.13 320 ⇓PKIKP **PKPbc 18 55 17.6 +1.3**
KSP Ksiaz 154.14 338 *e*PKP **PKPbc 18 55 16.2 +0.2**
KSP Ksiaz 154.14 338 *e*PKIKP **PKPbc 18 55 16.2 +0.2**
OKC Ostrava-Krasne 154.32 335 *e*PKPAB **PKPab 18 55 31.5 -0.4**
OKC *e*PKPAB **PKPab 18 55 33.9 +2.0**
OKC Ostrava-Krasne 154.32 335 *e*PKP2 **PKPab 18 55 31.5 -0.4**
LANS Liptovska Anna 154.35 332 *e*PKP2 **PKPab 18 55 31.6 -0.5**
LANS Liptovska Anna 154.35 332 *e*PKP **PKPab 18 55 31.6 -0.5**
ARR Arges 154.41 320⇓*i* P **PKPbc 18 55 17.1 +0.2**
KECS Kecovo 154.42 330 *e*PKP2 **PKPab 18 55 32.4 0.0**
KECS Kecovo 154.42 330 *e*PKP **PKPab 18 55 32.4 0.0**
KECS *e* 18 56 49.3
UPC Upice 154.52 338 *e*PKPDF **PKPdf 18 55 08.7 +0.5**
UPC *ep*PKP pPKPdf 18 56 36.7 +11
UPC Upice 154.52 338 *e*PKIKP **PKPdf 18 55 08.7 +0.5**
DPC Dobruska-Polom 154.55 338 *e*PKPDF **PKPdf 18 55 08.3 0.0**
DPC ⇑*e*PKP **PKiKP 18 55 17.3 +0.3**
DPC *e*PKPAB **PKPab 18 55 32.6 -0.3**
DPC *ep*PKP **pPKPdf 18 56 33.8 +8.4**
DPC Dobruska-Polom 154.55 338 *e*PKIKP **PKPdf 18 55 08.3 0.0**
DPC *e* 18 55 32.6
DRGR 154.55 325⇑*i* P **PKPbc 18 55 17.5 +0.4**
DRGR 154.55 325 ⇑PKP2 **PKPab 18 55 32.7 -0.4**
MORC Moravsky Berou 154.60 335⇓*i* P **PKPbc 18 55 17.3 +0.2**
MORC Moravsky Berou 154.60 335 ⇓PKIKP **PKPbc 18 55 17.3 +0.2**
MORC Moravsky Berou 154.60 335 *e*PKPdf **PKPdf 18 55 07.2 -1.1**
MORC *e*PKPab **PKPab 18 55 32.1 -1.1**
KRLC Kraliky 154.62 337 *e*PKPDF **PKPdf 18 55 08.1 -0.3**
KRLC ⇑*e*PKP **PKiKP 18 55 17.7 +0.6**
KRLC *e*PKPAB **PKPab 18 55 32.7 -0.5**
KRLC Kraliky 154.62 337 *e*PKIKP **PKPdf 18 55 08.1 -0.3**
KRLC *e* 18 55 32.7
CLL Collm 154.69 343⇓*i* PKPbc **PKPbc 18 55 16.9 -0.2**
comp=Z,17nm,1.2s
CLL *i* PKPab **PKPab 18 55 32.5 -0.9**
comp=Z,9.0nm,0.9s
CLL *i* pPKPbc **pPKPbc 18 56 36.8 +3.1**
CLL *i* 18 56 45.2
CLL *i* pPKPab **pPKPab 18 56 49.5 +2.4**
CLL *i* 18 58 30.7
CLL *e*SS SS 19 18 18.0 -6.9
CLL *e* 19 20 06.0
CLL *es*SS 19 20 30.0
CLL Collm 154.69 343⇓*i* PKIKP **PKPbc 18 55 16.9 -0.2**
CLL *i* 18 55 32.5
CLL *i* 18 56 36.8
CLL *p*max *p*max
comp=Z,17nm,1.2s
CLL *p*max *p*max
comp=Z,9.0nm,0.9s
CLL Collm 154.69 343 *e*PKPbc **PKPbc 18 55 16.6 -0.5**
HUMR Humele 154.70 318⇑*i* P **PKPbc 18 55 17.1 -0.3**
SZH Strazhica 154.79 315 *i* P **PKPab 18 55 34.5 +0.3**
BRG Berggiesshubel 154.83 341 *e*PKP **PKPdf 18 55 08.3 -0.2**
comp=Z,18nm,1.5s
BRG *e* 18 55 17.6
comp=Z,23nm,1.7s
BRG *ep*PKP **pPKPdf 18 56 16.0 -10**
comp=Z,4.5nm,0.9s
BRG *es*PKP 18 56 37.9
comp=Z,20nm,1.4s
BRG *e*SKP 18 58 19.2
comp=Z,19nm,1.6s
BRG Berggiesshubel 154.83 341 *e*PKIKP **PKPdf 18 55 08.3 -0.2**
BRG *e* 18 55 17.6
BRG *p*max *p*max
comp=Z,18nm,1.5s
BRG *p*max *p*max
comp=Z,23nm,1.7s
BRG *p*max *p*max
comp=Z,5.0nm,0.9s
BRG *p*max *p*max
comp=N,20nm,1.4s
BRG *p*max *p*max
comp=N,19nm,1.6s
PVCC Panska Ves 154.96 340 *e*PKPDF **PKPdf 18 55 08.4 -0.3**
PVCC ⇑*e*PKP **PKPbc 18 55 18.4 +0.7**
PVCC *e*PKPAB **PKPab 18 55 34.4 -0.2**
PVCC Panska Ves 154.96 340 *e*PKIKP **PKPdf 18 55 08.4 -0.3**
PVCC *e* 18 55 34.4
FETY Fethiye 155.04 298 P **PKPab 18 55 34.8 -0.7**
FETY Fethiye 155.04 298 *e*PKPab **PKPab 18 55 34.8 -0.7**
PSZ Piszkesteto 155.10 330 ⇓PKIKP **PKPdf 18 55 08.8 -0.3**
PSZ Piszkesteto 155.10 330 *e*PKPdf **PKPdf 18 55 08.1 -1.1**
PSZ *e*PKPab **PKPab 18 55 34.8 -0.6**
VRAC Vranov 155.34 336 PKPab **PKPab 18 55 35.6 -0.6**
comp=N,14nm,0.8s,baz=47,slow=3.9,SNR=13
VRAC Vranov 155.34 336 ⇑PKP2 **PKPab 18 55 35.8 -0.5**
GOPC GO Pecny, Ondr 155.43 339 *e*PKPAB **PKPab 18 55 36.7 +0.1**
GOPC GO Pecny, Ondr 155.43 339 *e*PKP2 **PKPab 18 55 36.7 +0.1**
PRU Pruhonice 155.44 340 *e*PKPDF **PKPdf 18 55 08.2 -1.2**
PRU *e*PKPAB **PKPab 18 55 36.2 -0.5**
PRU Pruhonice 155.44 340 *e*PKIKP **PKPdf 18 55 08.2 -1.2**
PRU *e* 18 55 36.2
TREC Trest 155.73 337 *e*PKPAB **PKPab 18 55 37.3 -0.7**
TREC Trest 155.73 337 *e*PKP2 **PKPab 18 55 37.3 -0.7**
BZS Buzias 155.90 324⇓*i* P PKPdf 18 55 20.5 +10
BZS Buzias 155.90 324 ⇓PKP2 **PKPab 18 55 38.1 -0.7**
MPEP Malo Peshtene 156.10 317 *i* P **PKPab 18 55 40.1 +0.3**
PLD Plovdiv 156.16 314 *i* P **PKPab 18 55 40.5 +0.4**
MDVR Moldovita 156.40 322⇓*i* P PKPdf 18 55 25.6 +15
KHC Kasperske Hory 156.49 340 *e*PKPDF **PKPdf 18 55 10.6 -0.3**
KHC *ex* *x* 18 55 21.1
KHC *e*PKPAB **PKPab 18 55 40.9 -0.4**
KHC *ep*PKP **pPKPdf 18 56 31.0 +3.0**
KHC Kasperske Hory 156.49 340 *e*PKIKP **PKPdf 18 55 10.6 -0.3**
KHC *e* 18 55 40.9
KHC Kasperske Hory 156.49 340 *e*PKPdf **PKPdf 18 55 10.2 -0.7**
KHC *e*PKPab **PKPab 18 55 40.7 -0.6**
GERES GERESS Array B 156.71 339 PKP **PKPdf 18 55 10.7 -0.5**
comp=N,2.0nm,1.1s,baz=122,slow=1.3,SNR=8.7
GERES PKPab **PKPab 18 55 41.3 -1.0**
comp=N,1.9nm,0.8s,baz=35,slow=4.9,SNR=9.9
GEA0 GERESS Array S 156.71 339 *e*PKPdf **PKPdf 18 55 09.4 -1.8**
GEA0 *e*PKPab **PKPab 18 55 41.0 -1.3**
KAVA Kavala 156.83 311 P **PKPab 18 55 42.6 -0.4**
KAVA Kavala 156.83 311 *e*PKPab **PKPab 18 55 42.6 -0.4**
MMB Musomiste 157.05 314 *i* P **PKPab 18 55 44.3 +0.3**
NVR Nevrokopi 157.09 313 P **PKPab 18 55 43.1 -1.1**
KKB Krupnik 157.32 315 *i* P **PKPab 18 55 45.2 +0.1**
MOA Molln 157.39 337 *e*PKPab **PKPab 18 55 44.6 -0.6**
comp=N,8.1nm,0.9s
ARSA Arzberg 157.44 335 *i* PKPab **PKPab 18 55 45.1 -0.4**
comp=N,4.2nm,0.7s
PAIG Paliouri 157.89 310 P **PKPab 18 55 46.9 -0.7**
PAIG Paliouri 157.89 310 *e*PKP2 **PKPab 18 55 46.9 -0.7**
PAIG Paliouri 157.89 310 *e*PKPab **PKPab 18 55 46.9 -0.7**
LIC Lamto 157.93 162 *e*PKP2 **PKPab 18 55 50.2 +1.9**
comp=N,46nm,1.5s
HORT Hortiatis 157.96 312 P **PKPab 18 55 47.0 -1.1**
SOKA Soboth 158.11 335 *e*PKPab **PKPab 18

IDI	Anoyia	158.67 297	PKPab	PKPab	18 55 50.5	-0.8
	comp=N,6.8nm,0.5s,baz=340,slow=10,SNR=8.8					
IDI	Anoyia	158.67 297	⇑*i*P	PKPab	18 55 50.8	-0.5
IDI	Anoyia	158.67 297	*e*PKPab	PKPab	18 55 50.2	-1.1
WTTA	Wattenberg	158.74 341	*e*PKPab	PKPab	18 55 51.1	-0.2
	comp=N,6.4nm,0.6s					
RETA	Reutte	158.78 343	*e*PKPab	PKPab	18 55 50.8	-0.5
	comp=N,4.1nm,0.8s					
GORS	Gorjuse	158.80 336	*i*PKPdf	PKPab	18 55 53.0	+1.5
MOTA	Moosalm	158.82 342	*e*PKPab	PKPab	18 55 50.2	-1.3
	comp=N,4.6nm,0.8s					
VISS	Visnje	158.91 334	*i*PKPdf	PKPab	18 55 50.9	-0.9
LKR	Lokris	158.93 307	P	PKPab	18 55 50.4	-1.8
ABTA	Abfaltersbach	158.94 339	*e*PKPab	PKPab	18 55 50.8	-1.2
	comp=N,14nm,1.1s					
KZN	Kozani	158.99 313	P	PKPab	18 55 51.3	-1.2
BOJS	Bojanci	158.99 332	*i*PKPdf	PKPab	18 55 51.5	-0.6
FNA	Florina	158.99 314	P	PKPab	18 55 50.7	-1.8
JAVS	Javornik	159.13 335	*i*PKPdf	PKPab	18 55 51.4	-1.5
DAVA	Damuels	159.19 344	*i*PKPab	PKPab	18 55 52.6	-0.6
	comp=N,3.9nm,0.7s					
LTK	Loutraki	159.22 306	P	PKPab	18 55 50.9	-2.6
DID	Didima	159.23 304	P	PKPab	18 55 51.6	-2.0
DID	Didima	159.23 304	*e*PKPab	PKPab	18 55 51.6	-2.0
AGG	Agios Georgios	159.24 309	*e*PKP2	PKPab	18 55 52.0	-1.6
AGG	Agios Georgios	159.24 309	*e*PKPab	PKPab	18 55 52.0	-1.6
PDG	Podgorica	159.28 321	⇑*i*P	PKPab	18 55 52.8	-0.7
IMMV	Iera Moni Meta	159.34 298	P	PKPab	18 55 53.5	-0.6
DSF	Desfina	159.37 307	P	PKPab	18 55 52.1	-2.1
DSF	Desfina	159.37 307	*e*PKPab	PKPab	18 55 52.1	-2.1
TIR	Tirane	159.60 317	⇑*i*P	PKPab	18 55 55.3	+0.3
TIR	Tirane	159.60 317	⇑PKP2	PKPab	18 55 55.3	+0.3
TIR	Tirane	159.60 317	*e*PKPab	PKPab	18 55 54.6	-0.4
DAVOX	Davos/Dischmat	159.67 343	PKPab	PKPab	18 55 54.3	-1.0
	comp=N,3.1nm,0.6s,baz=335,slow=4.3,SNR=4.2					
FUORN	Ofenpass-Fuorn	159.72 343	*e*PKPdf	PKPdf	18 55 14.3	-0.9
FUORN			*e*PKPab	PKPab	18 55 55.5	-0.1
ANX	Ano Chora	159.72 308	P	PKPab	18 55 55.8	0.0
KLV	Kalavryta, Ach	159.80 307	P	PKPab	18 55 54.9	-1.2
DSL	Palaion Diasel	160.03 310	P	PKPab	18 55 56.1	-0.9
DSL	Palaion Diasel	160.03 310	*e*PKPab	PKPab	18 55 56.1	-0.9
DRO	Drossia	160.15 307	P	PKPab	18 55 57.3	-0.3
PDO	Prodromos	160.23 309	P	PKPab	18 55 56.4	-1.5
ITM	Ithomi	160.32 304	P	PKPab	18 55 56.6	-1.8
IGT	Igoumenitsa	160.33 312	P	PKPab	18 55 57.3	-1.0
IGT	Igoumenitsa	160.33 312	*e*PKP2	PKPab	18 55 57.3	-1.0
IGT	Igoumenitsa	160.33 312	*e*PKPab	PKPab	18 55 57.3	-1.0
SGD	Sagiada	160.35 313	P	PKPab	18 55 57.1	-1.3
KEK	Kerkira	160.58 314	P	PKPab	18 55 58.4	-1.0
TIP	Timpagrande	162.81 317	||*i*P	PKPab	18 56 09.5	+0.3
TIP	Timpagrande	162.81 317	*e*PKPdf	PKPdf	18 55 17.4	-1.0
TIP			*e*PKPab	PKPab	18 56 08.3	-0.9
CEL	Celeste	163.90 315	*e*PKPab	PKPab	18 56 13.0	-1.0
POLO	Lamas de Olo	164.16 27	*e*PKPab	PKPab	18 56 15.5	+0.5
PVRL	Vila Real	164.27 27	*e*PKPab	PKPab	18 56 14.8	-0.7
MVO	Moncorvo	164.63 25	*e*PKPdf	PKPdf	18 55 19.1	-0.9
PTOM	Tomar	165.33 32	*e*PKPab	PKPab	18 56 19.5	-0.6
PCBR	Castelo Branco	165.57 29	*e*PKPdf	PKPdf	18 55 21.6	+0.9
PCBR	Castelo Branco	165.57 29	*e*PKPab	PKPab	18 56 20.3	-0.9
TOA0	Torodi Ar. Sit	165.73 180	*e*PKPdf	PKPdf	18 55 21.2	-0.4
TOA0			*e*PKPdf	PKPdf	18 55 21.3	-0.3
TORD	Torodi Ar. Bea	165.73 180	PKP	PKPdf	18 55 21.4	-0.1
	comp=N,4.7nm,0.8s,baz=357,slow=0.3,SNR=25					
TORD			PKPab	PKPab	18 56 23.9	+1.5
	comp=N,27nm,0.8s,baz=172,slow=3.7,SNR=48					
TORD			pPKPab	pPKPab	18 57 37.0	+1.4
	comp=N,7.0nm,1.0s,baz=172,slow=3.8,SNR=3.2					
TOA1	Torodi Ar. Sit	165.73 180	*e*PKPdf	PKPdf	18 55 21.4	-0.1
TOA1			*e*PKPab	PKPab	18 56 23.9	+1.5
TOA1			*ep*PKPab	pPKPab	18 57 37.0	+1.4
PMTG	Montargil	165.85 33	*e*PKPdf	PKPdf	18 55 21.8	+0.8
PMTG	Montargil	165.85 33	*e*PKPab	PKPab	18 56 21.5	-1.0
PMRV	Marv??o	165.95 30	*e*PKPab	PKPab	18 56 21.9	-1.0
PNCL	Nicolau / Gran	166.43 36	*e*PKPdf	PKPdf	18 55 22.4	+1.0
PTEO	Sao Teotonio	166.74 38	*e*PKPdf	PKPdf	18 55 17.3	-4.4
MESJ	Messejana	166.80 36	*e*PKPdf	PKPdf	18 55 23.3	+1.6
ES19	SONSECA Array	167.00 19	*e*PKPdf	PKPdf	18 55 22.4	+0.5
ES19			*e*PKPab	PKPab	18 56 26.1	-1.4
ESDC	Sonseca Array	167.01 19	PKP	PKPdf	18 55 21.6	-0.3
	comp=N,0.4nm,0.7s,baz=334,slow=2.0,SNR=5.8					
ESDC			PKPab	PKPab	18 56 26.7	-0.9
	comp=N,5.8nm,1.0s,baz=338,slow=4.0,SNR=20					
ESLA	Sonseca Array	167.01 19	*e*PKPab	PKPab	18 56 26.9	-0.6
KEST	Kesra	169.46 323	PKPab	PKPab	18 56 38.2	-0.4
	comp=N,5.2nm,1.0s,baz=22,slow=5.8,SNR=4.5					
KEST	Kesra	169.46 323	*e*PKPab	PKPab	18 56 37.8	-0.8

*ISCJB **28** 18:37:32.8±0.1,27°.38S±0°.02×178°.45W±0°.03,h300km, mb5.2/125,Error ellipse: s-maj=4.4km s-min=2.3km az=31.5*

*IDC **28** 18:37:32.9±0.9,27°.18S×178°.48W,h290km±7km,mb4.7/30, mb1 4.8/34,mb1mx4.7/43,mbtmp5.3/34,Error ellipse: s-maj=11.9km s-min=9.3km az=165.0*

*GCMT **28** 18:37:34.5±0.3,27°.12S×178°.49W,h314km±1km, MW5.5/84,Moment Tensor Solution. s84,c123; Duration: 1s4 Moment tensor: Scale 10^{17}Nm; M_{rr}0.03±.05; $M_{\theta\theta}$-0.03±.09; $M_{\phi\phi}$0.00±.08; $M_{r\theta}$0.62±.07; $M_{\theta\phi}$0.06±.07; $M_{\phi r}$-2.13±.06; Best double couple: $M_0$2.22000×10^{17} NP1:ϕ_s164.00000°,δ90.00000°, λ91.00000°. NP2:ϕ_s269.00000°,δ1.00000°,λ16.00000°. Principal axes: T 2.2170, Plg45.0000°, Azm75.0000°; N 0.0060, Plg1.0000°, Azm344.0000°; P -2.2220, Plg45.0000°, Azm252.0000°; nsta1 refers to body waves, cutoff=40s.*

*NEIC **28** 18:37:34.5±0.1,27°.26S×178°.52W,mb5.2/82 Error ellipse: s-maj=5.9km s-min=3.7km az=148.0*

ISC 28 18:37:33.3±0.2,27°.38S±0°.05×178°.40W±0°.05,h300km, n386,σ1$59/453,mb5.2/124,1D,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	Raoul Island	1.91	167	P	Pn	18 38 23.2	+3.9
	1μm,0.3s,baz=89,slow=11,SNR=2.7						
RAO				S	S	18 38 58.3	+2.3
	3μm,0.3s,baz=73,slow=19,SNR=4.4						
OUZ	Omahuta	10.38	219	PN	P	18 40 01.4	+2.2
MXZ	Matakaoa Point	10.53	194	*e*PN	Pn	18 39 59.0	+1.2
MXZ				SN	S	18 41 49.9	-5.9
WCZ	Waipu Caves	10.53	214	PN	P	18 40 02.7	+1.9
WMGZ	Waiomatatini S	10.75	194	PN	P	18 40 02.3	-0.9
WMGZ				SN	S	18 41 55.1	-5.8
HAZ	Te Kaha	10.83	196	PN	P	18 40 03.1	-1.1
PKGZ	Pakihiroa	10.89	195	PN	P	18 40 03.8	-1.0
PUZ	Puketiti	11.02	194	PN	P	18 40 05.7	-0.6
PUZ				SN	S	18 41 59.5	-7.7
ETAZ	East Tamaki Re	11.09	209	PN	P	18 40 09.7	+2.7
MKAZ	Moumakai	11.12	208	PN	P	18 40 10.0	+2.7
OPRZ	Ohinepanea	11.26	201	PN	P	18 40 08.9	-0.1
AWAZ	Awhitu Peninsu	11.30	210	PN	P	18 40 12.3	+2.9
NIUE	Niue	11.35	45	P	Pn	18 40 05.7	-2.4
	baz=11						
CNGZ	Carnagh Statio	11.43	194	PN	Pn	18 40 09.6	+0.8
MWZ	Matawai	11.44	196	PN	Pn	18 40 10.1	+1.1
MWZ				SN	S	18 42 11.1	-5.7
KMRZ	Kaimai	11.47	203	PN	P	18 40 13.4	+2.1
URZ	Urewera	11.48	198	P	P	18 40 11.1	-0.3
	190nm,0.3s,baz=326,slow=12,SNR=8.4						
URZ				S	S	18 42 15.4	-2.1
	132nm,0.3s,baz=120,slow=22,SNR=6.9						
URZ	Urewera	11.48	198	PN	Pn	18 40 09.6	+0.2
URZ				SN	S	18 42 11.3	-6.3
TOZ	Tahuroa Road	11.53	205	PN	P	18 40 13.5	+1.6
RAGZ	Rawiri	11.62	196	PN	Pn	18 40 11.5	+0.2
TARZ	Mount Tarawera	11.64	200	PN	P	18 40 14.8	+1.6
HSRZ	Hossack Road	11.79	201	PN	P	18 40 15.7	+0.9
HRRZ	Handcock Road	11.85	201	PN	P	18 40 15.7	+0.2
RTZ	Ruatahuna	11.85	198	PN	Pn	18 40 13.6	-0.4
PRRZ	Plateau Road	11.91	200	PN	Pn	18 40 15.6	+0.9
SNGZ	Shannon Statio	11.91	196	PN	Pn	18 40 15.2	+0.5
PRGZ	Paritu Road	11.92	194	PN	P	18 40 16.5	+0.2
ALRZ	Allen Road	11.99	200	PN	Pn	18 40 16.3	+0.7
WPRZ	Whakapapatarin	12.01	201	PN	P	18 40 17.1	-0.1
TLZ	Tolley Road	12.04	203	PN	P	18 40 18.6	+0.9
KNZ	Kokohu	12.06	195	PN	Pn	18 40 15.6	-0.8
KNZ				SN	S	18 42 23.6	-7.0
RAHZ	Arahi	12.11	197	PN	Pn	18 40 17.4	+0.4
MHGZ	Mahia Peninsul	12.14	194	PN	Pn	18 40 17.7	+0.3
NFK	Norfolk Island	12.16	259	P	P	18 40 22.4	+3.3
	baz=12						
MRHZ	Matea Rd	12.22	199	PN	Pn	18 40 18.0	-0.4
MRHZ				SN	S	18 42 28.9	-5.2
WHHZ	Waihua	12.22	196	PN	Pn	18 40 19.0	+0.6
WHHZ				SN	S	18 42 28.9	-5.3
HIZ	Hauiti	12.46	205	PN	P	18 40 25.0	+2.8
BKZ	Black Stump Fm	12.50	199	PN	Pn	18 40 21.1	-0.8
KRVZ	Karewarewa	12.70	202	PN	Pn	18 40 24.0	-0.3
MCHZ	McNeill Hill	12.71	198	PN	Pn	18 40 24.2	0.0
CKHZ	Cape Kidnapper	12.81	196	PN	Pn	18 40 24.4	-1.1
WHVZ	Whangaehu Hut	12.88	201	PN	Pn	18 40 25.8	-0.9
TRVZ	Turoa	12.91	201	PN	Pn	18 40 26.3	-0.7
WNVZ	Wahianoa	12.92	201	PN	Pn	18 40 25.7	-1.4
MOVZ	Moawhango	12.95	201	PN	Pn	18 40 26.7	-0.6
PXZ	Pawanui	13.21	196	PN	Pn	18 40 26.6	-3.8
PNHZ	Pukenui	13.28	198	PN	Pn	18 40 28.8	-2.4
NEZ	North Egmont	13.41	206	PN	P	18 40 36.8	+4.0
HOWZ	Holdsworth Sta	14.39	199	PN	P	18 40 42.0	-1.5
CAW	Cannon Point	14.71	200	PN	P	18 40 44.9	-2.2
DZM	Mont Dzumac	14.75	288	*e*Pn	Pn	18 40 49.8	+0.9
	650nm,1.0s						
DZM	Mont Dzumac	14.75	288	P	P	18 40 45.9	-1.9
	baz=77,slow=18,SNR=1.5						
AFI	Afiamalu	14.76	26	P	P	18 40 44.7	-3.3
	78nm,0.3s,baz=210,slow=8.1,SNR=12						
AFI				S	S	18 43 13.4	-16
	33nm,0.3s,baz=49,slow=20,SNR=3.4						
WEL	Wellington	14.96	200	PN	P	18 40 46.8	-3.0
TUWZ	Tuamarina	15.36	202	PN	P	18 40 52.7	-1.5
CRLZ	Canterbury Las	17.71	202	*e*P	P	18 41 18.7	-1.0
	199nm,1.6s						
MQZ	McQueen's Vall	17.82	202	*e*P	P	18 41 22.7	+1.8
	268nm,1.9s						
RAR	Rarotonga	18.05	74	P	P	18 41 22.5	-1.1
	0.6nm,0.3s,baz=252,slow=9.9,SNR=2.4						
RAR	Rarotonga	18.05	74	*e*P	P	18 41 23.4	-0.2
	252nm,1.0s						
RPZ	Rata Peaks	18.39	205	S	S	18 44 39.9	-1.2
	12nm,0.3s,baz=123,slow=22,SNR=14						
FOZ	Fox Glacier	18.72	208	*e*P	P	18 41 29.6	-1.0
	73nm,0.6s						
LHI	Lord Howe Isla	20.05	253	P	P	18 41 48.7	+4.0
	baz=20,SNR=18						
LHI	Lord Howe Isla	20.05	253	*e*P	P	18 41 48.2	+3.6
	477nm,0.7s						
WHZ	Wether Hill Ro	21.42	207	*e*P	P	18 41 58.6	+0.6
	88nm,1.0s						
ARMA	Armidale	26.38	256	P	P	18 42 45.8	+2.9
	baz=27,SNR=5.7						
TBI	Tubuai	26.43	88	*e*P	P	18 42 43.3	0.0
	289nm,1.1s						
MGCD	Mangrove Creek	26.90	250	P	P	18 42 50.4	+2.9
	baz=27,SNR=13						
EIDS	Eidsvold	27.38	267	P	P	18 42 53.1	+1.3
	baz=28,SNR=11						
PAE	Paea	28.27	76	*e*P	P	18 43 00.1	+0.5
	19nm,1.0s						
PPT	Papeete	28.31	76	P	P	18 43 00.2	+0.2
	72nm,0.9s,baz=271,slow=22,SNR=5.0						
TVO	Taravao	28.50	77	*e*P	P	18 43 02.2	+0.4
	31nm,0.9s						
TIAR	Tiarei	28.51	76	*e*P	P	18 43 02.6	+0.7
	59nm,0.9s						
CNB	Canberra Magne	28.55	246	P	P	18 43 04.7	+2.6
	baz=29,SNR=5.5						
MILA	Mila	28.98	242	P	P	18 43 08.5	+2.7
	baz=29,SNR=16						
YNG	Young	29.24	248	P	P	18 43 10.7	+2.5
	baz=30,SNR=9.1						
RMQ	Roma	29.25	264	P	P	18 43 10.6	+2.3
	baz=29,SNR=9.1						
VAH	Vaihoa	31.02	73	*e*P	P	18 43 24.3	+0.4
	260nm,1.0s						
CMSA	Cobar Meteorol	31.45	254	P	P	18 43 29.3	+1.8
	baz=32,SNR=6.6						
MOO	Moorlands	31.72	233	P	P	18 43 30.9	+1.3
	baz=32,SNR=3.2						
TAU	Tasmania Unive	31.77	232	*e*P	P	18 43 31.3	+1.2
	271nm,1.6s						
TOO	Toolangi	31.94	242	P	P	18 43 33.7	+1.9
	baz=32,SNR=12						
ARPS	Mount Arapiles	34.76	244	P	P	18 43 57.6	+1.7
	baz=35,SNR=14						
STKA	Stephens Creek	34.92	253	P	P	18 43 57.9	+0.6
	39nm,0.8s,baz=96,slow=11,SNR=7.9						
STKA				ScP	ScP	18 49 40.5	+1.4
	5.4nm,0.6s,baz=76,slow=4.2,SNR=3.8						
STKA	Stephens Creek	34.92	253	P	P	18 43 57.8	+0.4
	baz=35						
STKA	Stephens Creek	34.92	253	*e*P	P	18 43 58.0	+0.6
	15nm,1.0s						
STKA				ScP	ScP	18 49 40.5	+1.4
PMG	Port Moresby	37.07	292	P	P	18 44 14.5	-1.1
	62nm,0.9s,baz=102,slow=8.2,SNR=5.8						
HTT	Hallett	37.10	250	P	P	18 44 16.3	+0.5
	baz=37,SNR=14						
COEN	Coen	38.19	283	P	P	18 44 25.8	+0.9
	baz=38,SNR=22						
QIS	Mount Isa	38.83	271	P	P	18 44 30.5	+0.3
	baz=39,SNR=5.8						
BBOO	Buckleboo	39.54	251	P	P	18 44 35.8	-0.1
	baz=40,SNR=8.9						
AS31	Alice Springs	43.00	264	*e*P	P	18 45 04.4	+0.3
	31nm,0.6s						
ASAR	Alice Springs	43.00	264	P	P	18 45 04.1	0.0
	84nm,0.7s,baz=94,slow=6.6,SNR=21						
ASAR				ScP	ScP	18 50 10.9	+0.5
	2.2nm,0.8s,baz=124,slow=3.6,SNR=4.5						
ASAR				S	S	18 51 02.6	-4.0
	3.7nm,0.9s,baz=95,slow=15,SNR=5.8						
WR1	Warramunga Arr	43.71	269	*e*P	P	18 45 09.2	-0.5
	270nm,0.7s						
WR1				*e*ScP	ScP	18 50 14.1	+0.8
WR1				*e*S	S	18 51 12.4	-4.4
WRA	Warramunga Arr	43.71	269	P	P	18 45 09.2	-0.5
	230nm,0.7s,baz=106,slow=7.9,SNR=18						
WRA				ScP	ScP	18 50 14.1	+0.8
	21nm,1.3s,baz=106,slow=4.4,SNR=7.7						
WRA				S	S	18 51 12.4	-4.4
	4.3nm,0.9s,baz=107,slow=14,SNR=4.6						
JAY	Jayapura	46.25	295	P	P	18 45 28.6	-1.0
	2.2nm,0.5s,baz=90,slow=20,SNR=8.8						
WRKA	Warakurna	47.58	260	P	P	18 45 38.9	-0.9
	baz=48						
KDU	Kakadu	48.11	278	P	P	18 45 42.9	-0.9
	baz=48,SNR=14						
MTN	Manton Dam	49.23	277	P	P	18 45 51.9	-0.3
	baz=49,SNR=3.2						
VNDA	Vanda	51.05	185	P	P	18 46 07.5	+2.4
	26nm,0.7s,baz=15,slow=7.3,SNR=8.1						
VNDA				ScP	ScP	18 50 45.1	+1.8
	6.1nm,1.0s,baz=0.6,slow=5.4,SNR=4.3						
VNDA	Vanda	51.05	185	P	P	18 46 07.5	+2.4
VNDA				*es*P	P	18 46 08.3	+3.3
VNDA				*e*ScP	ScP	18 50 45.1	+1.8
KMBL	Kambalda	51.65	250	P	P	18 46 10.7	+0.6
	baz=52,SNR=4.6						
HPAH	Hawaii Prepara	52.01	27	*e*P	P	18 46 12.9	+0.1
	240nm,0.9s						
FITZ	Fitzroy Crossi	52.07	268	P	P	18 46 12.9	-0.4
	baz=52						
GUMO	Guam	54.11	314	P	P	18 46 26.9	-1.2
	98nm,0.9s,baz=201,slow=17,SNR=2.9						
KLBR	Kellerberrin	55.04	249	P	P	18 46 33.8	-0.9
	baz=55,SNR=12						
NWAO	Narrogin (SRO)	55.18	247	P	P	18 46 34.8	-0.8
	baz=55,SNR=5.4						
NWAO	Narrogin (SRO)	55.18	247	*e*P	P	18 46 34.7	-0.8
BLDU	Ballidu	56.14	250	P	P	18 46 41.5	-1.0
	baz=56,SNR=12						
MORW	Morawa	57.10	252	P	P	18 46 48.6	-0.6
	baz=57,SNR=8.6						
PALU	Palau	57.18	300	P	P	18 46 49.5	-0.4
	baz=57,SNR=4.1						
MMRI	Maumere	58.91	277	*e*P	P	18 47 01.7	-0.2
	156nm,0.8s						
GIRL	Giralia	60.58	258	P	P	18 47 13.8	+0.8
	baz=61,SNR=10						
KAPI	Kappang	62.76	279	P	P	18 47 27.4	-0.3
	42nm,0.9s,baz=103,slow=3.8,SNR=3.8						
JAGI	Jajag, Banyuwa	66.15	273	*e*P	P	18 47 48.6	-0.9
	217nm,0.8s						
KKM	Kota Kinabalu	71.31	287	*e*P	P	18 48 21.1	-0.2
	68nm,0.8s						
TGY	Tagaytay City	71.82	297	P	P	18 48 24.1	-0.1
	97nm,0.7s,baz=326,slow=4.6,SNR=4.3						
CISI	Cisompet, Garu	72.18	271	*e*P	P	18 48 25.9	-0.5
	268nm,0.9s						
LEM	Lembang	72.68	271	P	P	18 48 35.3	+5.8
	397nm,0.8s,baz=69,slow=5.4,SNR=19						
XMIS	Christmas Isla	72.84	267	*e*P	P	18 48 30.5	+0.3
	288nm,0.8s						
INU	Inuyama	75.27	324	*e*P	P	18 48 44.1	+0.5
	31nm,0.9s						
MJAR	Matsushiro Arr	75.57	325	P	P	18 48 44.8	-0.5
	23nm,0.8s,baz=161,slow=5.8,SNR=14						
MAJO	Matsushiro	75.57	325	*e*P	P	18 48 45.3	-0.1
	35nm,0.9s						
MJB9	Matsu-Tunnel	75.58	325	*e*P	P	18 48 45.1	-0.2
	8.8nm,0.9s						
JNU	Nakatsue	77.08	318	P	P	18 48 53.7	-0.2
	19nm,0.8s,baz=140,slow=2.0,SNR=6.0						
JNU	Nakatsue	77.08	318	*e*P	P	18 48 53.7	-0.2
	56nm,1.2s						
SSLB	Suanglung	77.53	305	*e*P	P	18 48 55.1	-1.5
	38nm,1.1s						
ASAJ	Asahikawa	79.61	333	P	P	18 49 08.1	+0.8
	16nm,0.8s,baz=203,slow=5.0,SNR=5.1						
ASAJ	Asahikawa	79.61	333	*e*P	P	18 49 08.7	+1.4
	25nm,1.0s						
COCO	West Island	79.90	261	*e*P	P	18 49 10.8	+1.2
	448nm,1.2s						
MYKOM	Kota Tinggi	79.95	277	*e*P	P	18 49 10.5	+0.6
	151nm,0.8s						
SYO	Syowa Base	79.97	193	||*e*P	P	18 49 07.4	-1.6
BKNI	Bangkinang	81.76	275	*e*P	P	18 49 19.3	-0.2
	261nm,1.1s						
KSRS	Korea Array	81.83	320	P	P	18 49 19.8	+0.6
	12nm,0.9s,baz=142,slow=5.9,SNR=11						
KS15	Wonju Array Si	81.84	320	*e*P	P	18 49 19.9	+0.7
KSAR	Wonju Array Be	81.84	320	P	P	18 49 19.8	+0.6
PETK	Petropavlovsk-	82.81	346	P	P	18 49 23.6	-0.2
	9.8nm,0.7s,baz=106,slow=7.9,SNR=11						
PEA1	Petropavlovsk-	82.81	346	*e*P	P	18 49 23.6	-0.3
LPIG	La Paz	83.26	59	P	P	18 49 27.9	+1.1
	25nm,0.5s,baz=187,slow=8.1,SNR=4.1						
SLBS	Sierra La Lagu	83.31	59	*e*P	P	18 49 28.7	+1.5
	80nm,1.4s						
QIZ	Qiongzhong	83.39	295	*e*P	P	18 49 28.3	+0.7
	31nm,1.1s						
109C	Camp Elliot, M	83.56	48	P	P	18 49 29.8	+1.6
	baz=232						
DECC	Green Verdugo	83.61	46	P	P	18 49 29.5	+1.0
	baz=231						
PASC	Pasadena Art C	83.66	46	*e*P	P	18 49 29.7	+1.0
	32nm,0.8s						
MWC	Mount Wilson	83.77	46	*e*P	P	18 49 29.5	0.0
	32nm,1.0s						
HOPS	Hopland Field	83.83	40	*e*P	P	18 49 30.7	+1.3
	53nm,1.0s						
ARVC	Arvin	83.85	45	P	P	18 49 30.5	+0.9
	baz=230						
MURC	Murrieta	83.94	47	P	P	18 49 31.1	+0.9
	baz=232						
MONP2	Monument Peak	84.02	48	P	P	18 49 31.9	+1.1
	baz=232						
BFSC	Mount Baldy Ra	84.04	47	P	P	18 49 31.3	+0.6
	baz=231						
IKP	In-Ko-Pah, Jac	84.08	49	P	P	18 49 32.2	+1.3
	baz=232						
VES	Vestal, Richgr	84.15	45	P	P	18 49 31.7	+0.6
	baz=230						
EDW2	Edwards Air Fo	84.23	46	P	P	18 49 32.4	+0.8
	baz=231						
KULM	Kulim	84.41	279	*e*P	P	18 49 33.8	+0.9
	123nm,1.4s						
ISA	Isabella, Lake	84.42	45	P	P	18 49 33.5	+1.0
	baz=231						
ISA	Isabella, Lake	84.42	45	*e*P	P	18 49 33.2	+0.7
	35nm,0.9s						
PFO	Pinyon Flats O	84.44	48	P	P	18 49 33.4	+0.6
	19nm,0.9s,baz=266,slow=4.3,SNR=9.4						
PFO	Pinyon Flats O	84.44	48	P	P	18 49 33.7	+1.0
	baz=232						
USRK	Ussuriysk Ar.	84.46	327	P	P	18 49 32.5	+0.2
	18nm,0.9s,baz=121,slow=3.6,SNR=9.4						
SWSC	Sam W. Stewart	84.47	49	P	P	18 49 33.9	+1.1
	baz=232						
KHMM	Horse Mountain	84.74	38	*e*P	P	18 49 35.5	+1.4
	43nm,1.0s						
CMB	Columbia Colle	84.77	42	*e*P	P	18 49 34.9	+0.7
	42nm,0.9s						
PSI	Prapat	84.78	276	P	P	18 49 33.6	-1.2
	78nm,1.0s,baz=167,slow=4.3,SNR=17						
PSI	Prapat	84.78	276	*e*P	P	18 49 33.8	-1.1
	116nm,1.0s						
PLCA	Paso Flores	84.82	133	P	P	18 49 36.6	+2.

TRTT	Trang	86.44	281	P	P	18 49 44.2	+1.3
	96nm,0.9s,852nm						
PAHR	Pah Rah Range	86.44	42	eP	P	18 49 43.3	+0.9
CHBT	CHBT	86.49	286	P	P	18 49 44.7	+1.7
	128nm,1.0s,3µm						
TPNV	Topopah Spring	86.62	45	P	P	18 49 44.3	+0.8
	baz=232						
TPNV	Topopah Spring	86.62	45	eP	P	18 49 43.7	+0.3
	39nm,1.1s						
TPNV				epP	pP	18 50 57.3	+2.9
I03D	Drain, OR	86.88	37	P	P	18 49 45.5	+1.3
	baz=227						
Y14A	Wickenburg	86.93	49	eP	P	18 49 46.0	+1.1
	148nm,0.8s						
Y14A				epP	pP	18 50 58.7	+2.9
SKNT	Sakolnakorn	87.15	291	P	P	18 49 47.6	+1.4
	143nm,1.1s						
MOD	Modoc Plateau	87.34	39	eP	P	18 49 46.9	+0.2
	26nm,0.8s						
MOD				epP	pP	18 50 59.9	+2.1
I04A	Tendick Farm,	87.44	37	P	P	18 49 47.6	+0.6
	baz=228						
TUC	Tucson	87.51	52	P	P	18 49 49.5	+1.8
	baz=235						
J05D	Fort Rock, OR	87.73	38	P	P	18 49 49.3	+0.8
	baz=228						
SURT	Suratani	87.75	281	P	P	18 49 51.0	+1.9
	26nm,1.4s						
KHON	Khomkaen	87.81	290	P	P	18 49 51.4	+2.2
	40nm,1.0s,401nm						
R11A	Troy Canyon, C	87.89	44	P	P	18 49 49.5	+0.1
	baz=232						
G03D	McMinnville, O	87.95	35	P	P	18 49 50.7	+1.4
	baz=227						
H04A	Detroit Lake	88.16	36	eP	P	18 49 50.7	+0.4
	89nm,1.4s						
H04A				epP	pP	18 51 00.9	-0.7
BMN	Battle Mountai	88.19	42	eP	P	18 49 51.1	+0.3
	21nm,1.0s						
BMN				epP	pP	18 51 04.9	+2.9
KLR	Kul'dur	88.26	330	P	P	18 49 50.6	0.0
	4.2nm,0.7s,baz=85,slow=3.1,SNR=5.2						
F03A	Seaside	88.30	35	eP	P	18 49 52.1	+1.3
	59nm,0.8s						
HPIG		88.31	59	eP	P	18 49 52.1	+0.4
	20nm,0.7s						
NONG	Nongkai	88.38	291	P	P	18 49 53.6	+1.7
	126nm,1.1s,6µm						
I05D	Terrebonne, OR	88.38	37	P	P	18 49 52.2	+0.8
	baz=228						
ZAIG	Zacatecas	88.58	64	eP	P	18 49 54.1	+1.0
	33nm,1.1s						
F04D	Rainier, OR	88.68	35	P	P	18 49 54.2	+1.6
	baz=227						
E03A	Lebam	88.72	34	eP	P	18 49 53.7	+0.9
	116nm,0.9s						
KNB	Kanab	88.85	47	eP	P	18 49 54.6	+0.6
	60nm,1.3s						
KNB				epP	pP	18 51 08.3	+2.9
F04A	Amboy	88.88	35	eP	P	18 49 54.2	+0.6
	96nm,0.9s						
WUAZ	Wupatki	88.94	49	P	P	18 49 55.6	+1.2
	baz=235						
G05D	Wamic, OR	88.99	36	P	P	18 49 55.0	+0.8
	baz=228						
TLIG	Tlapa	89.28	70	eP	P	18 49 57.5	+1.1
	28nm,1.2s						
X18A	Snowflake	89.34	50	eP	P	18 49 57.6	+1.3
	22nm,0.9s						
X18A				epP	pP	18 51 10.0	+2.3
G06A	Carlson Farm,	89.35	37	eP	P	18 49 56.7	+0.8
	63nm,1.0s						
PBKT	Sadao Pong	89.47	289	P	P	18 49 59.3	+2.3
	57nm,1.2s						
BRLK	Bradley Lake	89.74	14	eP	P	18 49 56.0	-1.3
	26nm,1.1s						
121A	Cookes Peak, D	89.75	53	P	P	18 49 59.7	+1.5
	baz=237						
W18A	Petrified Fore	89.82	50	P	P	18 49 59.3	+0.8
	baz=236						
MTPU	Mount Pierson	89.86	46	eP	P	18 50 00.5	+1.7
	32nm,0.8s						
MTPU				epP	pP	18 51 12.1	+1.8
SRDT	SRDT	89.99	286	P	P	18 50 02.1	+2.6
	169nm,1.1s						
MSU	Marysvale	90.14	46	eP	P	18 50 00.9	+0.9
MSU				epP	pP	18 51 13.9	+2.5
G08A	Pilot Rock	90.28	37	eP	P	18 50 00.7	+0.4
	71nm,1.0s						
UTTA	Uttaradit	90.38	290	P	P	18 50 03.8	+2.6
	12nm,1.1s,117nm						
BJT	Baijiatuau	90.52	316	eP	P	18 50 01.1	-0.3
	31nm,0.9s						
BBB	Bella Bella	90.61	28	P	P	18 50 01.9	+0.4
	16nm,0.8s,baz=247,slow=4.1,SNR=5.1						
B05A	Bryant	90.61	34	P	P	18 50 02.4	+0.8
	baz=228						
A04D	Lummi Island	90.62	33	P	P	18 50 02.7	+1.1
	baz=227						
DUG	Dugway, Tooele	90.72	44	P	P	18 50 03.0	+0.4
	baz=234						
BMO	Blue Mountains	90.91	39	eP	P	18 50 03.4	+0.1
Q16A	Castle Valley	91.02	46	eP	P	18 50 04.8	+0.8
	11nm,0.9s						
Q16A				epP	pP	18 51 18.8	+3.3
MNTX	Cornudas Mount	91.02	55	P	P	18 50 04.8	+0.8
	baz=238						
MNTX	Cornudas Mount	91.02	55	eP	P	18 50 04.6	+0.6
MNTX				epP	pP	18 51 16.7	+1.2
SUKH	Sukhothai	91.03	289	P	P	18 50 07.6	+3.3
	8.9nm,0.8s,71nm						
LTX	Lajitas	91.06	57	eP	P	18 50 05.2	+0.9
LTX				ePKKPdf	PKKPbc	19 07 27.1	+0.4
TXAR	Lajitas Array	91.06	57	P	P	18 50 05.2	+0.9
	14nm,1.0s,baz=220,slow=5.7,SNR=12						
TXAR				PKKPbc	PKKPbc	19 07 27.1	+0.4
	0.5nm,0.6s,baz=116,slow=2.9,SNR=4.0						
LAZ	Ladron	91.21	52	eP	P	18 50 05.8	+0.8
LAZ				epP	pP	18 51 19.0	+2.5
TMUT	Trail Mountain	91.21	46	eP	P	18 50 06.1	+1.1
	40nm,0.7s						
TMUT				epP	pP	18 51 18.6	+2.1
SUA	Susitna One	91.32	13	eP	P	18 50 04.5	-0.2
LAMP	Lampang	91.52	290	P	P	18 50 09.2	+2.7
	11nm,1.2s						
SPUT	South Promonto	91.60	43	eP	P	18 50 07.4	+0.8
	27nm,1.0s						
SPUT				epP	pP	18 51 20.7	+2.6
P17A	Butcher Ranch,	91.61	46	eP	P	18 50 07.8	+1.1
	16nm,0.9s						
P17A				epP	pP	18 51 21.5	+3.3
HVU	Hansel Valley	91.67	43	eP	P	18 50 07.1	+0.2
	25nm,0.9s						
HVU				epP	pP	18 51 20.5	+2.1
CRAI	Chiangrai	91.71	292	P	P	18 50 09.3	+1.9
	368nm,0.8s						
HLID	Hailey	91.76	41	P	P	18 50 07.9	+0.6
	baz=233						
ANMO	Albuquerque	91.97	51	P	P	18 50 09.1	+0.5
	13nm,0.9s,baz=204,slow=5.4,SNR=10						
ANMO	Albuquerque	91.97	51	P	P	18 50 09.1	+0.5
	baz=238						
P18A	Preston Nutter	92.01	46	eP	P	18 50 09.3	+0.5
	10nm,0.8s						
CM01	Chiang Mai Arr	92.04	290	eP	P	18 50 10.4	+1.4
B08A	Colville Reser	92.06	35	eP	P	18 50 08.0	-0.4
	9.5nm,0.8s						
CM31	Chiang Mai Arr	92.07	290	eP	P	18 50 10.5	+1.4
CM31				epP	pP	18 51 23.3	+2.7
CMAR	Chiang Mai Arr	92.07	290	P	P	18 50 10.2	+1.1
	9.6nm,0.9s,baz=137,slow=3.6,SNR=10						
CMAR				PKKPbc	PKKPbc	19 07 24.2	+0.7
	1.4nm,0.8s,baz=301,slow=4.1,SNR=6.2						
CMMT	Chiang Mai	92.23	290	P	P	18 50 11.9	+2.1
	29nm,0.8s						
BMRM	Bremner River	92.23	16	eP	P	18 50 07.8	-1.1
	14nm,1.0s						
CHTO	Chiang Mai	92.23	290	P	P	18 50 12.0	+2.2
	100nm,1.1s						
HWUT	Hardware Ranch	92.31	44	eP	P	18 50 09.9	0.0
	12nm,0.6s						
SCM	Sheep Creek Mo	92.37	14	eP	P	18 50 09.3	-0.2
	17nm,0.8s						
CAST	Castle Rocks	92.87	12	eP	P	18 50 10.1	-1.6
	9.4nm,0.7s						
CAST				epP	pP	18 51 22.5	-0.8
SEY	Seymchan	92.97	347	P	P	18 50 11.8	-0.3
	6.1nm,0.8s,baz=147,slow=4.1,SNR=8.7						
NEW	Newport	93.14	36	P	P	18 50 14.2	+0.8
	5.7nm,1.0s,baz=210,slow=5.1,SNR=3.3						
S22A	4UR Ranch, Cre	93.21	49	P	P	18 50 15.2	+0.8
	baz=238						
MCMT	McKenzie Canyo	93.41	40	eP	P	18 50 16.2	+1.2
MCMT				epP	pP	18 51 28.9	+2.4
034A	Hebbronville	93.76	62	P	P	18 50 18.1	+1.4
	baz=241						
TPAW	Teton Pass	93.76	42	eP	P	18 50 17.2	+0.6
	43nm,1.6s						
TPAW				epP	pP	18 51 30.8	+2.6
SNOW	Snow King Moun	93.86	42	eP	P	18 50 17.8	+0.7
	18nm,0.7s						
SNOW				epP	pP	18 51 31.5	+2.9
LOHW	Long Hollow	94.04	42	eP	P	18 50 18.2	+0.4
	34nm,1.6s						
LOHW				epP	pP	18 51 32.3	+2.9
MSTX	Muleshoe	94.07	54	P	P	18 50 18.2	+0.1
	baz=240						
MSTX	Muleshoe	94.07	54	eP	P	18 50 18.1	0.0
	18nm,0.8s						
MSTX				epP	pP	18 51 32.6	+2.9
SDCO	Great Sand Dun	94.11	49	P	P	18 50 19.4	+1.0
	baz=238						
BW06	Boulder Array	94.20	44	P	P	18 50 18.4	-0.2
	baz=236						
BW06	Boulder Array	94.20	44	eP	P	18 50 17.8	-0.8
	6.1nm,0.8s						
PD31	Pinedale Array	94.20	44	eP	P	18 50 18.2	-0.4
PD31				ePP	PP	18 54 07.0	-3.3
PDAR	Pinedale Array	94.20	44	P	P	18 50 18.6	0.0
	7.1nm,0.8s,baz=213,slow=3.0,SNR=12						
PDAR				PP	PP	18 54 07.1	-3.1
	3.5nm,1.2s,baz=243,slow=6.2,SNR=5.0						
633A	Saathoff Ranch	94.52	59	P	P	18 50 20.0	-0.1
	baz=241						
T25A	Trinidad	94.53	50	P	P	18 50 20.8	+0.6
	baz=239						
JCT	Junction City	94.54	58	eP	P	18 50 20.3	+0.1
BOZ	Bozeman (W)	94.59	40	P	P	18 50 20.7	+0.4
	baz=235						
DOT	Dot Lake	94.69	15	eP	P	18 50 19.6	-0.5
	17nm,0.8s						
ILAR	Eielson Array	95.07	13	P	P	18 50 20.8	-1.0
	2.2nm,0.8s,baz=230,slow=5.9,SNR=6.5						
ILB	Eielson Array	95.07	13	eP	P	18 50 20.8	-1.0
ISCO	Idaho Springs	95.10	48	P	P	18 50 23.2	+0.2
	baz=239						
ISCO	Idaho Springs	95.10	48	eP	P	18 50 23.3	+0.4
433A	Art	95.21	58	P	P	18 50 22.9	-0.4
	baz=241						
AMTX	Amarillo	95.31	53	P	P	18 50 23.5	-0.2
	baz=240						
534A	Blanco	95.33	59	P	P	18 50 23.4	-0.4
	baz=242						
N23A	Red Feather La	95.46	47	P	P	18 50 24.7	+0.3
	baz=238						
N23A	Red Feather La	95.46	47	eP	P	18 50 24.5	+0.1
	12nm,1.0s						
333A	Richland Sprin	95.56	58	P	P	18 50 24.5	-0.4
	baz=242						
ABTX	Abilene, Hawle	95.69	56	P	P	18 50 25.4	0.0
	baz=241						
ABTX	Abilene, Hawle	95.69	56	eP	P	18 50 24.9	-0.5
	42nm,1.4s						
434A	Burnet	95.86	58	P	P	18 50 25.8	-0.4
	baz=242						
233A	Rising Star	95.95	57	P	P	18 50 27.0	+0.3
	baz=242						
K22A	Casper	96.01	45	P	P	18 50 26.8	0.0
	baz=238						
EGAK	Eagle	96.32	15	eP	P	18 50 27.4	0.0
234A	Clairette	96.52	57	P	P	18 50 29.1	0.0
	baz=242						
KSCO	Kaye Shedlock'	96.69	49	P	P	18 50 30.9	+1.0
	baz=240						
LPAZ	La Paz	99.69	114	P	Pdif	18 50 46.9	+2.4
	1.9nm,0.8s,baz=258,slow=3.7,SNR=6.8						
SONA0	Songino Array	100.66	318	ePdif	Pdif	18 50 48.2	+0.8
SONA0				ePKKPbc	PKKPbc	19 07 01.3	-0.5
SONM	Songino Array	100.66	318	P	Pdif	18 50 48.2	+0.8
	0.4nm,0.3s,baz=142,slow=4.9,SNR=2.2						
SONM				PKKPbc	PKKPbc	19 07 01.3	-0.5
	0.2nm,0.2s,baz=263,slow=3.4,SNR=4.5						
YKA	Yellowknife Ar	102.88	25	P	Pdif	18 50 56.6	-0.1
	1.0nm,0.9s,baz=233,slow=4.1,SNR=5.2						
YKA				PP	PP	18 55 10.3	-4.9
	0.5nm,0.8s,baz=231,slow=6.1,SNR=2.9						
YKA				PKKPbc	PKKPbc	19 06 52.0	-3.7
	1.3nm,0.8s,baz=40,slow=2.9,SNR=6.3						
YKA				PKKPab	PKKPdf	19 07 14.9	+12
	2.0nm,0.9s,baz=46,slow=5.0,SNR=9.4						
YKB5	Yellowknife Ar	102.88	25	ePdif	Pdif	18 50 55.6	-1.1
ULM	Lac du Bonnet	106.05	41	PKKPab	PKKPab	19 07 01.0	+1.6
	4.7nm,0.7s,baz=80,slow=6.2,SNR=5.6						
MK32	Makanchi Array	115.54	311	ePKPdf	PKPdf	18 55 38.7	-0.9
MK32				ePKKPbc	PKKPbc	19 06 14.8	+0.2
MKAR	Makanchi Array	115.54	311	PKP	PKPdf	18 55 38.7	-0.9
	4.4nm,0.9s,baz=174,slow=1.4,SNR=5.8						
MKAR				PKKPbc	PKKPbc	19 06 14.8	+0.2
	1.4nm,0.5s,baz=270,slow=3.5,SNR=9.2						
OPO	Ambohidratompo	116.45	229	PKP	PKPdf	18 55 43.6	+1.2
	4.3nm,0.6s,baz=312,slow=2.8,SNR=5.7						
SUR	Sutherland	117.82	198	PKP	PKPdf	18 55 45.5	+0.7
	1.1nm,1.0s,baz=68,slow=5.1,SNR=4.7						
SUR	Sutherland	117.82	198	ePKPdf	PKPdf	18 55 45.3	+0.5
KURK	Kurchatov	118.69	315	ePKPdf	PKPdf	18 55 44.6	-0.8
KURK				ePKKPbc	PKKPbc	19 06 03.4	-0.2
KURBB	Kurchatov Arra	118.73	315	PKP	PKPdf	18 55 44.6	-0.9
	5.2nm,0.8s,baz=109,slow=2.1,SNR=10						
KURBB				PKKPbc	PKKPbc	19 06 03.4	0.0
	1.1nm,0.8s,baz=278,slow=4.6,SNR=7.5						
BOSA	Boshof	119.88	204	PKKPbc	PKKPbc	19 05 58.0	-1.1
	4.2nm,0.9s,baz=308,slow=4.1,SNR=4.6						
AAK	Ala-Archa	120.11	305	PKP	PKPdf	18 55 48.6	-0.1
	3.3nm,0.6s,baz=180,slow=5.1,SNR=5.6						
AAK				PKKPbc	PKKPab	19 05 59.3	+1.0
	3.9nm,0.7s,baz=242,slow=3.4,SNR=11						
LBTB	Lobatse	123.00	206	PKP	PKPdf	18 55 54.5	-0.3
	5.1nm,0.8s,baz=168,slow=5.9,SNR=5.4						
LBTB	Lobatse	123.00	206	ePKPdf	PKPdf	18 55 53.6	-1.2
BVAR	Borovoye Array	123.98	317	PKP	PKPdf	18 55 55.0	-0.6
	7.3nm,0.7s,baz=72,slow=1.9,SNR=9.2						
MATP	Matopo	125.81	212	PKP	PKPdf	18 56 01.0	+0.7
	6.8nm,0.9s,baz=171,slow=1.1,SNR=8.1						
SPITS	Spitsbergen Ar	128.68	356	PKP	PKPdf	18 56 03.6	-0.3
	7.0nm,0.7s,baz=121,slow=4.0,SNR=9.4						
SFJD	Kangerlussuaq	129.40	24	*i* P	SKPab	18 58 57.8	-0.3
	6.6nm,0.8s						
DAG	Danmarks Havn	129.59	6	*i* P	SKPab	18 58 57.6	-1.1
	6.2nm,0.8s						
SUMG	Summit	129.89	15	*i* P	SKPab	18 59 00.8	+0.3
	24nm,1.3s						
LSZ	Lusaka	130.37	215	PKP	PKPdf	18 56 10.5	+1.5
	7.6nm,0.8s,baz=248,slow=0.2,SNR=6.6						
LSZ				SKPbc	SKPab	18 59 04.9	+1.0
	5.4nm,0.8s,baz=147,slow=5.9,SNR=6.0						
ARU	Arti	130.52	322	PKP	PKPdf	18 56 07.8	-0.1
	7.0nm,0.6s,baz=46,slow=0.8,SNR=9.2						
ARU				SKPbc	SKPbc	18 59 02.9	+0.1
	1.4nm,0.4s,baz=62,slow=5.2,SNR=5.2						
ARU	Arti	130.52	322	ePKPdf	PKPdf	18 56 07.0	-0.9
ARU				eSKPbc	SKPbc	18 59 02.9	+0.1
TSUM	Tsumeb	131.17	200	PKP	PKPdf	18 56 11.5	+0.9
	2.4nm,0.8s,baz=296,slow=1.7,SNR=4.7						
TSUM				SKPbc	SKPab	18 59 08.2	+0.9
	4.4nm,0.7s,baz=168,slow=6.3,SNR=4.8						
AKTO	Aktyubinsk	131.78	314	PKP	PKPdf	18 56 10.4	-0.1
	5.1nm,0.8s,baz=99,slow=2.0,SNR=8.0						
AKTO				SKPbc	SKPbc	18 59 07.7	0.0
	20nm,1.1s,baz=75,slow=7.0,SNR=13						
GEYT	Alibeck	131.91	298	PKhKP	PKPpre	18 55 54.5	
	2.6nm,1.0s,baz=270,slow=1.5,SNR=4.7						
GEYT				PKP	PKPdf	18 56 11.3	+0.1
	6.4nm,0.7s,baz=53,slow=0.7,SNR=9.0						
GEYT				SKPbc	SKPab	18 59 09.3	-0.4
	20nm,1.0s,baz=259,slow=0.8,SNR=13						
KMBO	Kilima Mbogo	135.52	236	PKP	PKPdf	18 56 20.1	+1.4
	2.0nm,0.4s,baz=71,slow=3.7,SNR=4.6						
KMBO				SKPbc	SKPbc	18 59 23.0	+1.4
	6.2nm,0.8s,baz=60,slow=3.2,SNR=9.7						
ARA0	ARCESS Array S	135.57	348	ePKPdf	PKPdf	18 56 17.0	-0.1
ARA0				eSKPbc	SKPbc	18 59 19.5	-0.1
ARCES	ARCESS Array B	135.57	348	PKhKP	PKPpre	18 55 55.8	
	7.9nm,0.9s,baz=91,slow=4.5,SNR=5.4						
ARCES				PKP	PKPdf	18 56 17.0	-0.1
	7.7nm,0.7s,baz=356,slow=0.8,SNR=7.6						
ARCES				SKPbc	SKPbc	18 59 19.5	-0.1
	14nm,0.9s,baz=21,slow=4.0,SNR=11						
FIA0	FINESS Array S	142.19	341	ePKPpre	PKPpre	18 56 24.4	
FIA0				eSKPbc	SKPbc	18 59 37.3	-0.7
FINES	FINESS Array B	142.19	341	PKhKP	PKPpre	18 56 24.4	
	7.1nm,0.8s,baz=58,slow=4.0,SNR=5.5						
FINES				SKPbc	SKPbc	18 59 37.3	-0.7
	4.5nm,0.9s,baz=69,slow=4.6,SNR=4.5						
KBZ	Khabaz	143.07	307	PKhKP	PKPpre	18 56 26.6	
	11nm,0.9s,baz=155,slow=3.1,SNR=4.6						
KVAR	Kislovodsk Arr	143.17	308	PKP	PKPbc	18 56 30.0	+0.3
	14nm,0.8s,baz=166,slow=4.2,SNR=4.2						
KIV	Kislovodsk	143.17	308	ePKPpre	PKPpre	18 56 29.1	
NB200	NORSAR Array S	145.72	352	ePKPdf	PKPdf	18 56 35.9	+0.4
NB200				eSKPbc	SKPbc	18 59 45.9	-0.6
NOA	NORSAR Array B	145.72	352	PKPbc	PKPdf	18 56 35.9	+0.4
	15nm,0.8s,baz=16,slow=5.0,SNR=10						
NOA				SKPbc	SKPbc	18 59 45.9	-0.6
	2.7nm,0.8s,baz=14,slow=4.1,SNR=4.2						
HFS	Hagfors	146.22	349	PKPbc	PKPdf	18 56 36.9	+0.5
	23nm,0.7s,baz=47,slow=2.0,SNR=10						
AKASG	Malin Array Be	148.66	325	PKPbc	PKPbc	18 56 44.3	-0.5
	19nm,0.6s,baz=45,slow=4.0,SNR=15						
AKBB	Malin Array Si	148.66	325	ePKPbc	PKPbc	18 56 44.3	-0.5
KIEV	Kiev	148.67	325	ePKPbc	PKPbc	18 56 44.5	-0.4
ASF	Jabal al Asfar	149.08	288	PKPbc	PKPbc	18 56 47.6	+1.0
	15nm,0.7s,baz=78,slow=2.1,SNR=8.9						
MMAI	Mount Meron Ar	150.33	289	PKPbc	PKPbc	18 56 50.7	+1.1
	43nm,0.6s,baz=76,slow=7.0,SNR=20						
BSD	Bornholm Skovb	150.64	344	*i* P	PKPbc	18 56 49.4	0.0
	31nm,0.8s						
COP	Copenhagen	150.65	347	*i* P	PKPbc	18 56 49.4	0.0
	26nm,0.8s						
EIL	Elat	150.66	282	PKPbc	PKPbc	18 56 50.8	+0.5
	62nm,1.0s,baz=329,slow=3.2,SNR=9.5						
BR101	Keskin Array S	150.75	303	ePKPdf	PKPdf	18 56 44.7	+0.1
BR101				ePKPbc	PKPbc	18 56 50.2	-0.2
BR101				ePKPab	PKPab	18 56 58.8	+0.1
BRTR	Keskin Array B	150.75	303	PKP	PKPdf	18 56 44.7	+0.1
	3.7nm,0.7s,baz=76,slow=4.0,SNR=3.8						
BRTR				PKPbc	PKPbc	18 56 50.2	-0.2
	19nm,1.0s,baz=127,slow=3.5,SNR=7.6						
BRTR				PKPab	PKPab	18 56 58.8	+0.1
	12nm,0.7s,baz=81,slow=1.9,SNR=9.5						
KIS	Kishinev	151.02	320	epPKP	PKPbc	18 56 50.0	-0.6
KIS	Kishinev	151.02	320	*e*	PKPbc	18 56 50.0	-0.6
ANTO	Ankara	151.34	304	ePKPbc	PKPbc	18 56 51.7	0.0
BR231	Keskin MP Arra	151.36	304	ePKPbc	PKPbc	18 56 52.0	+0.2
EKA	Eskdalemuir Ar	151.86	6	PKPbc	PKPbc	18 56 51.5	-0.7
	3.0nm,0.5s,baz=341,slow=2.4,SNR=13						
MLR	Muntele Rosu	153.51	319	PKPbc	PKPbc	18 56 56.2	-0.2
	1.5nm,0.9s,baz=346,slow=2.7,SNR=3.4						
MLR	Muntele Rosu	153.51	319	ePKPbc	PKPbc	18 56 55.7	-0.7
GERES	GERESS Array B	156.61	340	PKPbc	PKPdf	18 57 02.4	+10
	2.0nm,0.9s,baz=5.7,slow=2.7,SNR=4.0						
IDI	Anoyia	158.63	297	PKPab	PKPab	18 57 31.6	-0.9
	8.4nm,0.7s,baz=56,slow=4.9,SNR=5.4						
AGG	Agios Georgios	159.18	309	ePKPdf	PKPdf	18 56 54.3	-1.5
AGG				ePKPab	PKPab	18 57 33.2	-1.4
CEL	Celeste	163.83	316	ePKPab	PKPab	18 57 54.4	-0.7
POLO	Lamas de Olo	164.05	27	*i* P	PKPab	18 57 55.7	-0.2
PVRL	Vila Real	164.16	27	*i* P	PKPab	18 57 56.1	-0.2
PTOM	Tomar	165.23	32	*i* P	PKPab	18 58 00.8	-0.2
TOA0	Torodi Ar. Sit	165.84	180	ePKPdf	PKPdf	18 57 03.0	0.0
TOA0				ePKPdf	PKPdf	18 57 03.3	+0.2
TOA0				ePKPab	PKPab	18 58 04.0	-0.1
TOA0				ePKPab	PKPab	18 58 05.0	+0.8
TORD	Torodi Ar. Bea	165.84	180	PKPab	PKPab	18 58 05.2	+1.1
	22nm,0.9s,baz=173,slow=3.8,SNR=13						
PMRV	Marv??o	165.84	30	*i* P	PKPab	18 58 03.3	-0.5
TOA1	Torodi Ar. Sit	165.84	180	ePKPab	PKPab	18 58 05.2	+1.0
ES19	SONSECA Array	166.89	19	ePKPab	PKPab	18 58 07.8	-0.6
ESDC	Sonseca Array	166.90	19	PKPab	PKPab	18 58 07.7	-0.7
	5.8nm,1.0s,baz=331,slow=4.2,SNR=9.7						

ISCJB ***28*** *18:52:48.7±0.5, 39°.13N±0°.03×29°.08E±0°.04, h9km±5km, Error ellipse: s-maj=5.6km s-min=4.9km az=30.6*
DDA ***28*** *18:52:48.0, 39°.14N×29°.07E, h7km, Md2.4*
ISK ***28*** *18:52:48.6, 39°.13N×29°.12E, h10km, MD2.7*
CSEM ***28*** *18:52:48.8±0.1, 39°.13N×29°.08E, h8km, MD2.4, Error ellipse: s-maj=1.5km s-min=1.1km az=93.0*

ISC 28 18:52:48.2±1.1, 39°.11N±0°.04×29°.09E±0°.03, h18km±4km, n29, σ0$41/38, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.29**	**258**	P	**Pb**	**18 52 54.8**	**-0.1**
DEMI				S	**Sg**	**18 52 58.9**	**-0.3**
DEMI	**Demirci**	**0.29**	**258**	*i* P	**Pb**	**18 52 54.8**	**-0.1**
DEMI				*i* S	**Sg**	**18 52 58.9**	**-0.3**
GDZ	**Gediz**	**0.31**	**93**	P	**Pb**	**18 52 55.5**	**+0.3**
GDZ

JOU			eS		Sn	18 53 34.2 +0.7
JRG	**Rokugo**	**1.38 294**	P		**Pn**	18 53 17.5 +0.1
JRG			eS		Sn	18 53 35.0 +0.5
JYK	**Kaneyama**	**1.49 274**	P		**Pn**	18 53 19.0 +0.2
JMM	**Marumori**	**1.51 230**	P		**Pn**	18 53 19.2 +0.1
JMM			S		Sn	18 53 38.0 +0.4
JANG	**Nango**	**1.64 340**	P		**Pn**	18 53 20.5 -0.3
JANG			eS		Sn	18 53 40.4 -0.3
ERM	**Erimo**	**3.24 12**	ePn		**Pn**	18 53 42.9 +0.1
MJAR	**Matsushiro Arr**	**3.95 236**	P		**Pn**	18 53 55.4 +2.8
	7.9nm,0.3s,baz=36,slow=12,SNR=110					
MJAR			LR		LR	18 55 39.5
	comp=Z,304nm,18.5s,baz=50,slow=42					
MAJO	**Matsushiro**	**3.95 236**	ePn		**Pn**	18 53 55.3 +2.7
MAT	**Matsushiro**	**3.95 236**	P		**Pn**	18 53 55.3 +2.7
MAT			S		Sn	18 54 44.8 +7.1
MJB9	**Matsu-Tunnel**	**3.95 236**	ePn		**Pn**	18 53 55.2 +2.6
ASAJ	**Asahikawa**	**5.28 3**	S		**Sn**	18 55 12.1 +1.9
	2.7nm,0.3s,baz=190,slow=19,SNR=3.6					
ASAJ	**Asahikawa**	**5.28 3**	ePn		**Pn**	18 54 11.2 +0.5
ASAJ			eSn		**Sn**	18 55 13.5 +3.3
INU	**Inuyama**	**5.45 232**	ePn		**Pn**	18 54 15.6 +2.5
JHJ2	**Mitsune**	**6.05 200**	ePn		Pn	18 54 16.8 -4.6
JHJ	**Hachijo jima 2**	**6.05 200**	P		**Pn**	18 54 21.1 -0.3
	19nm,0.3s,baz=58,slow=18,SNR=9.4					
JHJ			S		**Sn**	18 55 26.8 -2.6
	38nm,0.3s,baz=246,slow=23,SNR=7.2					
USRK	**Ussuriysk Ar.**	**9.38 308**	P		Pn	18 55 10.5 +3.7
	1.2nm,0.3s,baz=117,slow=14,SNR=28					
USRK			LR		LR	18 58 35.8
	comp=Z,195nm,18.6s,baz=111,slow=36					
JNU	**Nakatsue**	**10.84 242**	P		**Pn**	18 55 29.8 +2.8
	0.4nm,0.3s,baz=85,slow=8.6,SNR=4.8					
JNU			LR		LR	19 00 00.4
	comp=Z,127nm,19.2s,baz=101,slow=39					
JNU	**Nakatsue**	**10.84 242**	ePn		Pn	18 55 30.4 +3.4
MDJ	**Mudanjiang**	**11.08 305**	P		Pn	18 55 33.5 +3.4
MDJ			S		Sn	18 57 38.5 +5.9
MDJ			pmax		pmax	
	comp=Z,6.0nm,1.3s					
MDJ			pmax		pmax	
	comp=Z,70nm,2.9s					
MDJ			LR		LR	
	comp=N,310nm,15.7s					
MDJ			LR		LR	
	comp=E,180nm,10.2s					
MDJ			LR		LR	
	comp=Z,310nm,18.4s					
MDJ	**Mudanjiang**	**11.08 305**	ePn		Pn	18 55 33.6 +3.4
KSRS	**Korea Array**	**11.38 267**	P		Pn	18 55 37.8 +3.5
	comp=Z,0.5nm,0.3s,baz=80,slow=14,SNR=33					
KSRS			LR		LR	18 59 25.8
	comp=Z,197nm,21.4s,baz=117,slow=34					
KS01	**Wonju Array Si**	**11.40 268**	ePn		**Pn**	18 55 36.7 +2.2
KS15	**Wonju Array Si**	**11.41 267**	ePn		Pn	18 55 38.8 +4.1
KSAR	**Wonju Array Be**	**11.41 267**	P		**Pn**	18 55 37.8 +3.0
KLR	**Kul'dur**	**12.83 327**	P		**P**	18 56 01.8 -1.7
	comp=Z,0.3nm,0.3s,baz=136,slow=16,SNR=6.6					
KLR			LR		LR	19 00 56.6
	comp=Z,228nm,18.1s,baz=121,slow=37					
BJT	**Baijiatuan**	**20.17 282**	eP		**P**	18 57 22.8 -1.9
	comp=Z,8.0nm,0.7s					
HHC	**Hu-ho-hao-te**	**23.60 285**	eP		**P**	18 58 02.3 +1.5
HHC			pmax		pmax	
	comp=Z,16nm,0.9s					
HHC			pmax		pmax	
	comp=Z,170nm,4.5s					
TPUB	**Ta-pu**	**24.06 236**	eP		**P**	18 58 02.2 -2.9
	comp=Z,190nm,2.0s					
YAK	**Yakutsk**	**24.47 346**	eP		**P**	18 58 06.8 -1.6
	comp=Z,12nm,0.9s					
SEY	**Seymchan**	**24.89 11**	P		**P**	18 58 14.7 +2.4
	comp=Z,2.0nm,0.7s,baz=184,slow=8.4,SNR=6.1					
ULN	**Ulaanbaatar**	**26.95 301**	eP		**P**	18 58 31.2 0.0
	comp=Z,12nm,1.8s					
SONA1	**Songino Array**	**27.38 301**	eP		**P**	18 58 34.9 -0.1
SONA0	**Songino Array**	**27.38 301**	eP		**P**	18 58 35.4 +0.3
	comp=Z,2.6nm,0.8s					
SONM	**Songino Array**	**27.38 301**	P		**P**	18 58 35.4 +0.3
	comp=Z,1.6nm,0.6s,baz=102,slow=8.8,SNR=7.3					
H11N2	**WAKE ISLAND Hy**	**28.56 125**	T		T	19 29 10.7
	baz=317,slow=75,SNR=1376					
H11N1	**WAKE ISLAND Hy**	**28.57 125**	T		T	19 29 11.4
	baz=317,slow=75,SNR=2333					
H11N3	**WAKE ISLAND Hy**	**28.58 125**	T		T	19 29 12.1
	baz=317,slow=75,SNR=2129					
H11S1	**WAKE ISLAND Hy**	**29.34 127**	T		T	19 30 11.3
	baz=318,slow=76,SNR=263					
H11S3	**WAKE ISLAND Hy**	**29.34 127**	T		T	19 30 11.0
	baz=318,slow=76,SNR=187					
H11S2	**WAKE ISLAND Hy**	**29.36 127**	T		T	19 30 12.1
	baz=318,slow=76,SNR=171					
TLY	**Talaya**	**29.70 308**	P		**P**	18 58 56.0 +0.5
	comp=Z,2.4nm,0.6s,baz=108,slow=4.4,SNR=6.4					
TLY			LR		LR	19 11 22.4
	comp=Z,107nm,18.2s,baz=38,slow=37					
TLY	**Talaya**	**29.70 308**	eP		**P**	18 58 55.2 -0.2
	comp=Z,3.3nm,0.8s					
CD2	**Chengdu**	**32.38 268**	P		**P**	18 59 18.0 -1.3
CD2			pmax		pmax	
	comp=Z,9.0nm,0.6s					
TIXI	**Tiksi**	**33.58 352**	P		**P**	18 59 30.8 +1.5
	comp=Z,0.9nm,0.6s,baz=193,slow=6.9,SNR=3.7					
WMQ	**Urumqi**	**40.65 295**	P		**P**	19 00 31.0 +1.3
WMQ			pP		pP	19 00 44.5 +1.5
WMQ			sP		sP	19 00 48.5 -0.4
WMQ			pmax		pmax	
	comp=Z,8.0nm,0.6s					
WMQ			pmax		pmax	
	comp=Z,49nm,9.4s					
ZAA1	**Zalesovo Array**	**41.22 311**	eP		**P**	19 00 34.3 +0.2
ZALV	**Zalesovo Beam**	**41.22 311**	P		**P**	19 00 34.3 +0.2
	comp=Z,5.4nm,0.6s,baz=92,slow=8.3,SNR=19					
CM31	**Chiang Mai Arr**	**42.62 254**	eP		**P**	19 00 46.0 0.0
CMAR	**Chiang Mai Arr**	**42.62 254**	P		**P**	19 00 45.9 0.0
	comp=Z,0.5nm,0.7s,baz=42,slow=8.6,SNR=3.5					
CM01	**Chiang Mai Arr**	**42.63 254**	eP		**P**	19 00 45.5 -0.5
LSA	**Lhasa**	**42.74 274**	eP		**P**	19 00 48.0 +0.7
	comp=Z,3.3nm,1.1s					
MK01	**Makanchi Array**	**43.75 301**	eP		**P**	19 00 54.5 -0.3
MK31	**Makanchi Array**	**43.75 301**	eP		**P**	19 00 54.8 0.0
MK32	**Makanchi Array**	**43.75 301**	eP		**P**	19 00 54.9 +0.1
MKAR	**Makanchi Array**	**43.75 301**	P		**P**	19 00 54.9 +0.1
	comp=Z,4.6nm,0.7s,baz=85,slow=9.8,SNR=29					
MKAR			LR		LR	19 19 10.4
	comp=Z,74nm,19.8s,baz=79,slow=36					
MAKZ	**Makanchi**	**43.96 301**	eP		**P**	19 00 56.6 +0.1
	comp=Z,6.1nm,1.0s					
KURK	**Kurchatov**	**45.37 307**	eP		**P**	19 01 07.0 -0.5
	comp=Z,17nm,1.0s					
KURBB	**Kurchatov Arra**	**45.44 307**	P		**P**	19 01 08.1 -0.1
	comp=Z,12nm,0.5s,baz=80,slow=8.4,SNR=132					
KTH	**Kantishna Hill**	**45.88 35**	eP		**P**	19 01 08.6 -3.0
	comp=Z,8.9nm,1.1s					
ILAR	**Eielson Array**	**47.61 33**	P		**P**	19 01 26.5 +1.5
	comp=Z,1.0nm,0.7s,baz=264,slow=6.1,SNR=11					
ILB	**Eielson Array**	**47.61 33**	eP		**P**	19 01 22.8 -2.2
GUN	**Gumba**	**47.66 274**	eP		**P**	19 01 27.6 +1.3
	comp=Z,20nm,0.5s					
KKN	**Kakani**	**48.19 275**	eP		**P**	19 01 31.5 +1.3
	comp=Z,17nm,0.7s					
GKN	**Gorkha**	**48.59 275**	eP		**P**	19 01 34.3 +1.1
	comp=Z,9.8nm,0.6s					
TKM2	**Tokmak 2**	**49.38 297**	eP		**P**	19 01 38.7 -0.4
	comp=Z,7.5nm,1.2s					
KOLN	**Koldanda**	**49.51 276**	eP		**P**	19 01 40.7 +0.4
	comp=Z,3.8nm,0.3s					
VOSK	**Vostochnaya**	**49.59 311**	eP		**P**	19 01 40.3 -0.1
	comp=Z,4.8nm,0.9s					
PYUN	**Piuthan**	**49.82 276**	eP		**P**	19 01 43.1 +0.4
	comp=Z,39nm,1.0s					
BVAR	**Borovoye Array**	**49.87 311**	P		**P**	19 01 42.5 0.0
	comp=Z,2.8nm,0.5s,baz=70,slow=7.7,SNR=16					
AAK	**Ala-Archa**	**50.24 297**	P		**P**	19 01 45.6 0.0
	comp=Z,1.0nm,0.4s,baz=37,slow=3.9,SNR=3.2					
ZRNK	**Zerenda**	**50.70 312**	eP		**P**	19 01 48.6 -0.1
	comp=Z,4.8nm,0.9s					
EKS2	**Erkin-Say**	**50.73 298**	eP		**P**	19 01 49.0 -0.2
	comp=Z,2.2nm,0.8s					
KKAR	**Karatay Array**	**52.81 299**	eP		**P**	19 02 04.5 -0.2
ARU	**Arti**	**55.46 318**	P		**P**	19 02 23.6 -0.1
	comp=Z,2.6nm,0.5s,baz=89,slow=6.1,SNR=5.3					
ARU	**Arti**	**55.46 318**	eP		**P**	19 02 23.5 -0.1
	comp=Z,13nm,1.3s					
ABKAR	**Akbulak array**	**57.30 310**	eP		**P**	19 02 36.5 -0.4
AKTO	**Aktyubinsk**	**57.98 311**	P		**P**	19 02 41.6 0.0
	comp=Z,2.9nm,0.8s,baz=71,slow=6.8,SNR=3.6					
WR1	**Warramunga Arr**	**58.94 189**	eP		**P**	19 02 48.9 +0.3
	comp=Z,5.5nm,0.9s					
WRA	**Warramunga Arr**	**58.94 189**	P		**P**	19 02 48.9 +0.3
	comp=Z,3.2nm,0.4s,baz=7.0,slow=7.0,SNR=78					
YKA	**Yellowknife Ar**	**61.91 31**	P		**P**	19 03 09.6 +1.2
	comp=Z,0.4nm,0.6s,baz=300,slow=6.6,SNR=4.5					
YKB5	**Yellowknife Ar**	**61.91 31**	eP		**P**	19 03 07.2 -1.2
AS01	**Alice Springs**	**62.66 189**	eP		**P**	19 03 14.3 +0.4
AS31	**Alice Springs**	**62.67 189**	eP		**P**	19 03 14.6 +0.7
	comp=Z,0.6nm,0.8s					
ASAR	**Alice Springs**	**62.67 189**	P		**P**	19 03 14.6 +0.6
	comp=Z,1.9nm,0.8s,baz=14,slow=8.1,SNR=39					
FIA1	**FINESS Array S**	**67.53 332**	eP		**P**	19 03 43.8 -1.2
FIA0	**FINESS Array S**	**67.53 332**	eP		**P**	19 03 45.0 0.0
FINES	**FINESS Array B**	**67.53 332**	P		**P**	19 03 45.0 0.0
	comp=Z,1.6nm,0.7s,baz=15,slow=6.3,SNR=3.9					
KBZ	**Khabaz**	**70.24 311**	P		**P**	19 04 02.0 -0.1
	comp=Z,1.6nm,0.6s,baz=124,slow=3.6,SNR=3.5					
HFS	**Hagfors**	**72.72 336**	P		**P**	19 04 17.2 +0.4
	comp=Z,2.8nm,1.0s,baz=35,slow=5.5,SNR=3.7					
AKASG	**Malin Array Be**	**73.28 322**	P		**P**	19 04 20.1 -0.2
	comp=Z,0.4nm,0.3s,baz=42,slow=6.3,SNR=6.1					
HONU	**Honeyville**	**75.31 48**	eP		P	19 04 27.9 -4.6
NLU	**North Lily Min**	**76.26 50**	eP		P	19 04 32.1 -5.9
	comp=Z,52nm,0.9s					
LTX	**Lajitas**	**88.49 53**	eP		**P**	19 05 42.4 +0.6
TXAR	**Lajitas Array**	**88.49 53**	P		**P**	19 05 42.4 +0.6
	comp=Z,0.9nm,0.7s,baz=276,slow=2.8,SNR=7.7					
HHAR	**Hobbs**	**89.03 42**	eP		P	19 05 40.2 -3.9
	comp=Z,31nm,1.8s					
LPAZ	**La Paz**	**145.19 58**	PKPbc		**PKPbc**	19 12 26.9 -0.3
	comp=Z,0.6nm,0.6s,baz=298,slow=2.8,SNR=3.7					

*DDA **28** 18:59:12.8, 39°.07N×29°.04E, h7km, Ml3.0*
*ISCJB **28** 18:59:13.1±0.5, 39°.08N±0°.04×29°.05E±0°.03, h2km±6km,*
Error ellipse: s-maj=5.9km s-min=3.9km az=178.7
*ISK **28** 18:59:13.2, 39°.07N×29°.05E, h6km, MD2.8*
*CSEM **28** 18:59:13.4±0.1, 39°.08N×29°.06E, h2km, ML3.0, Error ellipse: s-maj=1.7km s-min=1.6km az=158.0*

ISC 28 18:59:13.1±1.0, 39°.08N±0°.03×29°.04E±0°.02, h8km±9km, n45, σ0s62/60, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**262**	P	**Pg**	**18 59 18.4**	**+0.3**
DEMI				S	**Sg**	**18 59 22.0**	**+0.5**
DEMI	**Demirci**	**0.25**	**262**	*i* P	**Pg**	**18 59 18.4**	**+0.3**
DEMI				*i* S	**Sg**	**18 59 22.0**	**+0.5**
GDZ	**Gediz**	**0.35**	**88**	P	**Pg**	**18 59 20.1**	**+0.1**
GDZ				S	**Sg**	**18 59 24.9**	**+0.4**
GDZ	**Gediz**	**0.35**	**88**	*i* P	**Pg**	**18 59 20.1**	**+0.1**
GDZ				*i* S	**Sg**	**18 59 24.9**	**+0.4**
TVSB	**Tavsanli**	**0.50**	**42**	ePG	**Pg**	**18 59 22.3**	**-0.5**
TVSB	**Tavsanli**	**0.50**	**42**	ePg	**Pg**	**18 59 22.3**	**-0.5**
KULA	**Kula-Manisa**	**0.64**	**208**	ePG	**Pb**	**18 59 25.7**	**-0.9**
KULA	**Kula-Manisa**	**0.64**	**208**	ePg	**Pb**	**18 59 25.7**	**-0.9**
KHAL	**Karahalli**	**0.79**	**153**	P	**Pb**	**18 59 28.9**	**-0.4**
KHAL				S	**Sg**	**18 59 38.8**	**+0.1**
KHAL	**Karahalli**	**0.79**	**153**	*i* P	**Pb**	**18 59 28.9**	**-0.4**
KHAL				*i* S	**Sg**	**18 59 38.8**	**+0.1**
KHL	**Karahalli**	**0.85**	**153**	ePG	**Pb**	**18 59 29.7**	**-0.5**
KHL	**Karahalli**	**0.85**	**153**	ePg	**Pb**	**18 59 29.7**	**-0.5**
AKHS	**Akhisar**	**0.97**	**258**	P	**Pn**	**18 59 32.6**	**-0.5**
AKHS				S	**Sb**	**18 59 45.8**	**+0.5**
AKHS	**Akhisar**	**0.97**	**258**	*i* P	**Pn**	**18 59 32.6**	**-0.5**
AKHS				*i* S	**Sb**	**18 59 45.8**	**+0.5**
AKS	**Akhisar**	**0.97**	**258**	ePG	**Pn**	**18 59 32.8**	**-0.4**
AKS	**Akhisar**	**0.97**	**258**	ePg	**Pn**	**18 59 32.8**	**-0.4**
BALB	**Balikesir**	**1.06**	**302**	ePG	**Pn**	**18 59 34.3**	**+0.1**
BALB				eSG	**Sn**	**18 59 48.9**	**-0.3**
BALB	**Balikesir**	**1.06**	**302**	ePg	**Pn**	**18 59 34.3**	**+0.1**
BALB				eSg	**Sn**	**18 59 48.9**	**-0.3**
IGD	**Bursa**	**1.19**	**6**	*i* P	**Pg**	**18 59 35.1**	**-0.9**
IGD				*i* S	**Sg**	**18 59 50.2**	**-1.2**
BALY	**Balya**	**1.28**	**301**	P	**Pg**	**18 59 38.1**	**+0.4**
BALY				S	**Sb**	**18 59 53.1**	**-1.1**
BALY	**Balya**	**1.28**	**301**	*i* P	**Pg**	**18 59 38.1**	**+0.4**
BALY				*i* S	**Sb**	**18 59 53.1**	**-1.1**
CAVI	**Cavuskoy**	**1.28**	**29**	ePN	**Pg**	**18 59 38.0**	**+0.3**
CAVI				eSN	**Sn**	**18 59 56.4**	**+1.5**
CAVI	**Cavuskoy**	**1.28**	**29**	ePn	**Pg**	**18 59 38.0**	**+0.3**
CAVI				eSn	**Sn**	**18 59 56.4**	**+1.5**
MDNY	**Mudanya-Bursa**	**1.29**	**355**	ePN	**Pg**	**18 59 38.5**	**+0.7**
MDNY	**Mudanya-Bursa**	**1.29**	**355**	ePn	**Pg**	**18 59 38.6**	**+0.7**
KCTX	**Karacabey (Bur**	**1.29**	**336**	ePN	**Pg**	**18 59 38.5**	**+0.5**
KCTX	**Karacabey (Bur**	**1.29**	**336**	ePn	**Pg**	**18 59 38.5**	**+0.5**
IZI	**Iznik**	**1.30**	**15**	ePN	**Pg**	**18 59 38.5**	**+0.5**
IZI	**Iznik**	**1.30**	**15**	ePn	**Pg**	**18 59 38.5**	**+0.5**
GEMT	**Gemlik**	**1.36**	**5**	ePN	**Pg**	**18 59 39.4**	**+0.2**
GEMT	**Gemlik**	**1.36**	**5**	ePn	**Pg**	**18 59 39.4**	**+0.2**
GONE	**Gonen-Balikesi**	**1.42**	**313**	ePN	**Pg**	**18 59 40.7**	**+0.3**
GONE	**Gonen-Balikesi**	**1.42**	**313**	ePn	**Pg**	**18 59 40.7**	**+0.3**
ADVT	**Abdulvahap**	**1.46**	**22**	ePN	**Pg**	**18 59 40.7**	**-0.3**
ADVT	**Abdulvahap**	**1.46**	**22**	ePn	**Pg**	**18 59 40.7**	**-0.3**
ARMT	**Armutlu**	**1.49**	**355**	ePN	**Pg**	**18 59 41.3**	**-0.4**
ARMT	**Armutlu**	**1.49**	**355**	ePn	**Pg**	**18 59 41.3**	**-0.4**
EDC	**Edincik**	**1.56**	**325**	ePN	**Pb**	**18 59 42.0**	**-0.2**
EDC	**Edincik**	**1.56**	**325**	ePn	**Pb**	**18 59 42.0**	**-0.2**
GULT	**Gulveren**	**1.77**	**40**	ePN	**Pb**	**18 59 45.2**	**-0.7**
GULT	**Gulveren**	**1.77**	**40**	ePn	**Pb**	**18 59 45.2**	**-0.7**
HRT	**Hereke**	**1.81**	**15**	ePN	**Pb**	**18 59 45.8**	**-0.7**
HRT	**Hereke**	**1.81**	**15**	ePn	**Pb**	**18 59 45.8**	**-0.7**
ISK	**Istanbul-Kandi**	**1.98**	**1**	ePN	**Pn**	**18 59 48.0**	**+1.0**
ISK	**Istanbul-Kandi**	**1.98**	**1**	ePn	**Pn**	**18 59 48.0**	**+1.0**

*IDC **28** 19:05:49.3±1.9, 33°.31S×178°.45W, h0km, mb4.1/3, mb1 4.2/4, mb1mx3.8/38, mbtmp4.1/4, ML3.5/1, Error ellipse: s-maj=57.2km s-min=30.9km az=135.0*
*NEIC **28** 19:05:54.3±0.9, 33°.40S×178°.50W, h35km, mb4.4/6, Error ellipse: s-maj=22.1km s-min=7.3km az=103.0*

ISC 28 19:05:54.8±1.1, 33°.4S±0°.1×178°.6W±0°.2, h41km, n29, σ2s11/33, mb4.5/8, 1C-1D, South of Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MXZ	**Matakaoa Point**	**4.85**	**211**	ePn	**Pn**	**19 07 04.4**	**-0.8**
MXZ				eSn	**Sn**	**19 08 04.0**	**+4.0**
URZ	**Urewera**	**5.96**	**215**	Pn	**Pn**	**19 07 21.7**	**+1.2**
	1.2nm,0.3s,baz=268,slow=5.1,SNR=8.5						
URZ				Sn	**Sn**	**19 08 30.9**	**+3.5**
	4.8nm,0.3s,baz=309,slow=16,SNR=10						
URZ	**Urewera**	**5.96**	**215**	ePn	**Pn**	**19 07 20.0**	**-0.5**
URZ				eSn	**Sn**	**19 08 29.1**	**+1.6**
OUZ	**Omahuta**	**6.72**	**252**	ePn	Pn	19 07 36.3	+5.4
BKZ	**Black Stump Fm**	**6.97**	**213**	ePn	**Pn**	**19 07 37.1**	**+2.6**
BKZ				eSn	**Sn**	**19 08 50.9**	**-1.6**
HIZ	**Hauiti**	**7.36**	**225**	ePn	Pn	19 07 45.1	+5.5
BFZ	**Birch Farm**	**8.34**	**208**	ePn	**Pn**	**19 07 53.7**	**+0.6**
BFZ				eSn	**Sn**	**19 09 25.2**	**-0.7**
SNZO	**South Karori**	**9.51**	**212**	ePn	**Pn**	**19 08 07.5**	**-1.6**
SNZO				eSn	**Sn**	**19 09 49.5**	**-5.1**
THZ	**Tophouse**	**10.71**	**217**	ePn	**Pn**	**19 08 26.2**	**+0.5**
THZ				eSn	**Sn**	**19 10 18.6**	**-5.7**
KHZ	**Kahutara**	**10.92**	**212**	ePn	**Pn**	**19 08 28.2**	**-0.2**
KHZ				eSn	Sn	19 10 18.0	-11
CRLZ	**Canterbury Las**	**12.24**	**212**	ePn	**Pn**	**19 08 47.2**	**+0.6**
OXZ	**Oxford**	**12.31**	**214**	ePn	**Pn**	**19 08 46.8**	**-0.7**
RPZ	**Rata Peaks**	**13.08**	**215**	ePn	**Pn**	**19 08 55.0**	**-2.9**
MSVF	**Nonsavu**	**15.93**	**348**	ePn	**Pn**	**19 09 34.6**	**-1.5**
	50nm,1.8s						
STKA	**Stephens Creek**	**33.44**	**262**	P	**P**	**19 12 30.7**	**+0.8**
	1.0nm,0.8s,baz=106,slow=20,SNR=2.4						
AS01	**Alice Springs**	**42.52**	**271**	eP	**P**	**19 13 47.4**	**+0.9**
AS31	**Alice Springs**	**42.56**	**270**	eP	**P**	**19 13 47.9**	**+1.0**
	1.7nm,0.6s						
ASAR	**Alice Springs**	**42.56**	**270**	P	**P**	**19 13 48.0**	**+1.2**
	4.3nm,0.7s,baz=109,slow=7.4,SNR=96						
WRAB	**Tennant Creek**	**43.81**	**276**	eP	**P**	**19 13 55.7**	**-1.3**
	8.0nm,0.6s						
WR1	**Warramunga Arr**	**43.82**	**276**	eP	**P**	**19 13 57.8**	**+0.8**
	21nm,1.8s						
WRA	**Warramunga Arr**	**43.82**	**276**	P	**P**	**19 13 57.8**	**+0.8**
	2.3nm,0.6s,baz=115,slow=7.8,SNR=30						
JOHN	**Johnston Islan**	**50.62**	**11**	eP	**P**	**19 14 49.0**	**-0.8**
	207nm,1.1s						
FITZ	**Fitzroy Crossi**	**51.94**	**273**	eP	**P**	**19 15 01.1**	**+1.3**
CASY	**Casey**	**52.25**	**209**	eP	**P**	**19 15 03.1**	**+1.7**
	28nm,1.8s						
SYO	**Syowa Base**	**74.06**	**193**	eP	**P**	**19 17 24.4**	**-1.6**
SYO	**Syowa Base**	**74.06**	**193**	eP	pP	19 17 34.0	-4.2
FINES	**FINESS Array B**	**147.79**	**338**	PKPbc	**PKPbc**	**19 25 34.2**	**-0.2**
	1.7nm,0.7s,baz=38,slow=3.9,SNR=8.5						
AKASG	**Malin Array Be**	**153.33**	**319**	PKPbc	**PKPbc**	**19 25 48.6**	**+0.6**
	0.3nm,0.3s,baz=56,slow=2.7,SNR=4.2						
BRTR	**Keskin Array B**	**153.48**	**293**	PKPbc	**PKPbc**	**19 25 50.3**	**+1.4**
	0.8nm,0.6s,baz=167,slow=2.6,SNR=5.6						

*ISCJB **28** 19:15:11.7±0.5, 39°.08N±0°.03×29°.06E±0°.03, h6km±6km,*
Error ellipse: s-maj=5.8km s-min=4.0km az=156.5
*CSEM **28** 19:15:11.7±0.1, 39°.10N×29°.06E, h5km, MD2.9, Error ellipse: s-maj=2.6km s-min=2.3km az=155.0*
*ISK **28** 19:15:11.3, 39°.08N×29°.13E, h9km, MD2.8*
*DDA **28** 19:15:11.4, 39°.10N×29°.02E, h7km, Md2.9*

ISC 28 19:15:11.0±1.0, 39°.04N±0°.03×29°.10E±0°.02, h9km±9km, n39, σ0s40/54, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.30**	**272**	P	**Pg**	**19 15 17.3**	**+0.3**
DEMI				S	**Sg**	**19 15 20.7**	**-0.3**
DEMI	**Demirci**	**0.30**	**272**	*i* P	**Pg**	**19 15 17.3**	**+0.3**
DEMI				*i* S	**Sg**	**19 15 20.7**	**-0.3**
GDZ	**Gediz**	**0.30**	**80**	P	**Pb**	**19 15 18.7**	**-0.1**
GDZ				S	**Sb**	**19 15 23.9**	**0.0**
GDZ	**Gediz**	**0.30**	**80**	*i* P	**Pb**	**19 15 18.7**	**-0.1**
GDZ				*i* S	**Sb**	**19 15 23.9**	**0.0**
TVSB	**Tavsanli**	**0.50**	**34**	ePG	**Pg**	**19 15 21.2**	**+0.4**
TVSB				eSG	**Sg**	**19 15 27.3**	**-0.1**
TVSB	**Tavsanli**	**0.50**	**34**	ePg	**Pg**	**19 15 21.2**	**+0.4**
TVSB				eSg	**Sg**	**19 15 27.3**	**-0.1**
KULA	**Kula-Manisa**	**0.62**	**213**	ePG	**Pb**	**19 15 24.6**	**+0.5**
KULA	**Kula-Manisa**	**0.62**	**213**	ePg	**Pb**	**19 15 24.6**	**+0.5**
KHAL	**Karahalli**	**0.73**	**155**	P	**Pn**	**19 15 27.7**	**0.0**
KHAL				S	**Sn**	**19 15 38.6**	**-0.5**
KHAL	**Karahalli**	**0.73**	**155**	*i* P	**Pn**	**19 15 27.7**	**0.0**
KHAL				*i* S	**Sn**	**19 15 38.6**	**-0.5**
KHL	**Karahalli**	**0.79**	**155**	ePG	**Pb**	**19 15 27.5**	**+0.5**
KHL	**Karahalli**	**0.79**	**155**	ePg	**Pb**	**19 15 27.5**	**+0.5**
AKHS	**Akhisar**	**1.01**	**262**	P	**Pg**	**19 15 30.1**	**-0.4**
AKHS				S	**Sg**	**19 15 43.0**	**-0.7**
AKHS	**Akhisar**	**1.01**	**262**	*i* P	**Pg**	**19 15 30.1**	**-0.4**
AKHS				*i* S	**Sg**	**19 15 43.0**	**-0.7**
AKS	**Akhisar**	**1.01**	**262**	ePG	**Pn**	**19 15 31.7**	**+0.2**
AKS	**Akhisar**	**1.01**	**262**	ePg	**Pn**	**19 15 31.7**	**+0.2**
BALB	**Balikesir**	**1.12**	**303**	ePN	**Pn**	**19 15 33.3**	**+0.4**
BALB				eSN	**Sn**	**19 15 49.1**	**+0.7**
BALB	**Balikesir**	**1.12**	**303**	ePn	**Pn**	**19 15 33.3**	**+0.4**
BALB				eSn	**Sn**	**19 15 49.2**	**+0.7**
IGD	**Bursa**	**1.23**	**4**	*i* P	**Pg**	**19 15 33.7**	**-1.0**
IGD				*i* S	**Sg**	**19 15 50.4**	**-0.2**
CAVI	**Cavuskoy**	**1.30**	**26**	ePN	**Pn**	**19 15 35.4**	**0.0**
CAVI	**Cavuskoy**	**1.30**	**26**	ePn	**Pn**	**19 15 35.4**	**0.0**
IZI	**Iznik**	**1.33**	**12**	ePN	**Pn**	**19 15 35.9**	**-0.1**
IZI	**Iznik**	**1.33**	**12**	ePn	**Pn**	**19 15 35.9**	**-0.1**
BALY	**Balya**	**1.34**	**302**	P	**Pn**	**19 15 36.3**	**

GDZ				S		Sg	19 22 01.4	+0.5
GDZ	**Gediz**	**0.35**	**93**	*i* P		**Pg**	19 21 56.2	0.0
GDZ				*i* S		**Sg**	19 22 01.4	+0.5
TVSB	**Tavsanli**	**0.48**	**45**	*e*PG		**Pg**	19 21 58.0	-0.4
TVSB	**Tavsanli**	**0.48**	**45**	*e*Pg		**Pg**	19 21 58.1	-0.4
KULA	**Kula-Manisa**	**0.66**	**206**	*e*PG		**Pg**	19 22 01.7	-0.2
KULA	**Kula-Manisa**	**0.66**	**206**	*e*Pg		**Pg**	19 22 01.7	-0.2
KHAL	**Karahalli**	**0.82**	**154**	P		**Pb**	19 22 05.4	-0.4
KHAL				S		**Sb**	19 22 16.3	-0.8
KHAL	**Karahalli**	**0.82**	**154**	*i* P		**Pb**	19 22 05.4	-0.4
KHAL				*i* S		**Sb**	19 22 16.3	-0.8
KHL	**Karahalli**	**0.88**	**153**	*e*PG		**Pn**	19 22 07.4	-0.5
KHL	**Karahalli**	**0.88**	**153**	*e*Pg		**Pn**	19 22 07.4	-0.5
ORLT	**Orhaneli**	**0.94**	**354**	*e*PG		**Pg**	19 22 07.1	-0.1
ORLT	**Orhaneli**	**0.94**	**354**	*e*Pg		**Pg**	19 22 07.1	-0.1
AKHS	**Akhisar**	**0.97**	**257**	P		**Pb**	19 22 08.1	-0.2
AKHS				S		**Sb**	19 22 21.2	-0.1
AKHS	**Akhisar**	**0.97**	**257**	*i* P		**Pb**	19 22 08.1	-0.2
AKHS				*i* S		**Sb**	19 22 21.2	-0.1
AKS	**Akhisar**	**0.97**	**257**	*e*PG		**Pb**	19 22 08.1	-0.2
AKS	**Akhisar**	**0.97**	**257**	*e*Pg		**Pb**	19 22 08.1	-0.2
BALB	**Balikesir**	**1.03**	**301**	*e*PG		**Pg**	19 22 09.2	+0.2
BALB				*e*SG		**Sn**	19 22 24.5	-0.2
BALB	**Balikesir**	**1.03**	**301**	*e*Pg		**Pg**	19 22 09.2	+0.2
BALB				*e*Sg		**Sn**	19 22 24.5	-0.2
IGD	**Bursa**	**1.16**	**7**	*i* P		**Pg**	19 22 09.9	-1.6
IGD				*i* S		**Sg**	19 22 27.2	+0.7
BALY	**Balya**	**1.26**	**301**	P		**Pg**	19 22 13.6	+0.3
BALY				S		**Sg**	19 22 27.6	-2.0
BALY	**Balya**	**1.26**	**301**	*i* P		**Pg**	19 22 13.6	+0.3
BALY				*i* S		**Sg**	19 22 27.6	-2.0
CAVI	**Cavuskoy**	**1.26**	**30**	*e*PN		**Pn**	19 22 12.8	-0.4
CAVI				*e*SN		**Sn**	19 22 31.0	+0.6
CAVI	**Cavuskoy**	**1.26**	**30**	*e*Pn		**Pn**	19 22 12.8	-0.4
CAVI				*e*Sn		**Sn**	19 22 31.0	+0.6
MDNY	**Mudanya-Bursa**	**1.26**	**355**	*e*PN		**Pn**	19 22 13.0	-0.2
MDNY	**Mudanya-Bursa**	**1.26**	**355**	*e*Pn		**Pn**	19 22 13.0	-0.2
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*PN		**Pn**	19 22 13.0	-0.3
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*Pn		**Pn**	19 22 13.0	-0.3
IZI	**Iznik**	**1.27**	**16**	*e*PN		**Pn**	19 22 13.8	+0.4
IZI	**Iznik**	**1.27**	**16**	*e*Pn		**Pn**	19 22 13.8	+0.4
BORA	**Eskisehir**	**1.35**	**55**	P		**Pn**	19 22 14.0	-0.4
BORA	**Eskisehir**	**1.35**	**55**	*i* P		**Pn**	19 22 14.0	-0.4
GONE	**Gonen-Balikesi**	**1.40**	**313**	*e*PN		**Pb**	19 22 15.8	+0.3
GONE	**Gonen-Balikesi**	**1.40**	**313**	*e*Pn		**Pb**	19 22 15.8	+0.3
ADVT	**Abdulvahap**	**1.43**	**22**	*e*PN		**Pn**	19 22 16.1	+0.6
ADVT	**Abdulvahap**	**1.43**	**22**	*e*Pn		**Pn**	19 22 16.1	+0.6
ARMT	**Armutlu**	**1.46**	**355**	*e*PN		**Pn**	19 22 16.6	+0.7
ARMT	**Armutlu**	**1.46**	**355**	*e*Pn		**Pn**	19 22 16.6	+0.7
ESKT	**Eskisehir**	**1.47**	**73**	*i* P		**Pb**	19 22 17.1	+0.2
SEYT	**Eskypehyr**	**1.47**	**73**	P		**Pb**	19 22 17.1	+0.2
EDC	**Edincik**	**1.53**	**324**	*e*PN		**Pn**	19 22 17.5	+0.7
EDC	**Edincik**	**1.53**	**324**	*e*Pn		**Pn**	19 22 17.5	+0.7
GPA	**Golpazari**	**1.54**	**40**	*e*PN		**Pb**	19 22 17.9	0.0
GPA	**Golpazari**	**1.54**	**40**	*e*Pn		**Pb**	19 22 18.0	0.0
GULT	**Gulveren**	**1.75**	**41**	*e*PN		**Pn**	19 22 20.9	+0.9
GULT	**Gulveren**	**1.75**	**41**	*e*Pn		**Pn**	19 22 20.9	+0.9
HRT	**Hereke**	**1.78**	**16**	*e*PN		**Pn**	19 22 21.0	+0.7
HRT	**Hereke**	**1.78**	**16**	*e*Pn		**Pn**	19 22 21.0	+0.7
SVRH	**Sivrihisar-ESK**	**1.97**	**79**	*e*PN		**Pn**	19 22 24.3	+1.3
SVRH	**Sivrihisar-ESK**	**1.97**	**79**	*e*Pn		**Pn**	19 22 24.3	+1.3
URLA	**Izmir**	**2.04**	**249**	*i* P		**Pg**	19 22 30.1	+1.8

*ISK **28** 19:28:30.4, 40.°24N×42.°08E, h5km, MD2.8*
*CSEM **28** 19:28:31.7±0.2, 40.°11N×42.°02E, h10km, MD2.8, Error ellipse: s-maj=5.4km s-min=4.5km az=49.0*
*ISCJB **28** 19:28:32.1±0.5, 40.°11N±0.°04×42.°03E±0.°04, h10km±6km, Error ellipse: s-maj=6.9km s-min=5.0km az=15.6*
*DDA **28** 19:28:32.0, 40.°13N×42.°04E, h7km, Md2.8*
ISC 28 19:28:31.8±1.0, 40.°13N±0.°03×42.°05E±0.°03, h11km±8km, n21, σ0°56/33, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HOMI	**Horasan**	**0.14**	**233**	*i* P		**Pg**	19 28 34.9	-0.3
HOMI				*i* S		**Sg**	19 28 37.6	0.0
EATA	**Eleskirt**	**0.43**	**128**	P		**Pg**	19 28 40.7	+0.4
EATA				S		**Sb**	19 28 47.4	-0.8
EATA	**Eleskirt**	**0.43**	**128**	*i* P		**Pg**	19 28 40.7	+0.4
EATA				*i* S		**Sb**	19 28 47.4	-0.8
ERZM	**Erzurum**	**0.57**	**247**	P		**Pg**	19 28 43.1	+0.2
ERZM				S		**Sg**	19 28 50.7	+0.2
ERZM	**Erzurum**	**0.57**	**247**	*i* P		**Pg**	19 28 43.1	+0.2
ERZM				*i* S		**Sg**	19 28 50.7	+0.2
EZM	**Erzurum**	**0.57**	**247**	*e*PG		**Pg**	19 28 43.3	+0.3
DDEM	**Demirkent**	**0.80**	**343**	P		**Pg**	19 28 47.1	-0.1
DDEM				S		**Sb**	19 28 59.4	+0.7
DDEM	**Demirkent**	**0.80**	**343**	*i* P		**Pg**	19 28 47.1	-0.1
DDEM				*i* S		**Sb**	19 28 59.4	+0.7
AGRB	**Hanur-Agry**	**0.91**	**127**	*e*PG		**Pg**	19 28 49.3	-0.1
AGRB				*e*SG		**Sb**	19 29 03.1	+1.1
AGRB	**Hanur-Agry**	**0.91**	**127**	*e*Pg		**Pg**	19 28 49.3	-0.1
AGRB				*e*Sg		**Sb**	19 29 03.1	+1.1
DBAD	**Bademkaya**	**0.93**	**343**	P		**Pg**	19 28 49.3	-0.4
DBAD				S		**Sb**	19 29 02.7	+0.2
DBAD	**Bademkaya**	**0.93**	**343**	*i* P		**Pg**	19 28 49.3	-0.4
DBAD				*i* S		**Sb**	19 29 02.6	+0.2
DAGI	**Agillar**	**0.95**	**354**	*i* P		**Pg**	19 28 49.5	-0.7
DAGI				*i* S		**Sb**	19 29 03.5	+0.3
ARTV	**Artvin**	**1.06**	**355**	P		**Pb**	19 28 52.7	+0.4
ARTV	**Artvin**	**1.06**	**355**	*i* P		**Pb**	19 28 52.7	+0.4
YEDI	**Yedisu-Bingol**	**1.35**	**240**	*e*PN		**Pg**	19 28 57.7	0.0
YEDI	**Yedisu-Bingol**	**1.35**	**240**	*e*Pn		**Pg**	19 28 57.7	0.0
BAYT	**Ayd¨–ntepe-Bay**	**1.48**	**281**	*e*PN		**Pn**	19 28 58.5	-0.1
BAYT	**Ayd¨–ntepe-Bay**	**1.48**	**281**	*e*Pn		**Pn**	19 28 58.5	-0.1
BNGB	**Bing¨¶l**	**1.55**	**223**	*e*PN		**Pb**	19 29 00.7	+0.1
BINT	**Bingol**	**1.74**	**225**	*e*Pn		**Pn**	19 29 00.7	-1.4

*IDC **28** 19:36:58.9±0.6, 2.°33S×81.°71W, h0km, mb4.0/17, mb1 4.3/22, mb1mx4.2/42, mbtmp4.2/22, ML4.5/3, MS3.7/2, Ms1 3.7/2, ms1mx3.1/25, Error ellipse: s-maj=21.4km s-min=11.8km az=53.0*
*ISCJB **28** 19:37:02.0±0.3, 2.°36S±0.°04×81.°65W±0.°04, h33km, mb4.4/62, MS3.7/2, Error ellipse: s-maj=6.4km s-min=4.4km az=136.0*
*NEIC **28** 19:37:02.5±2.0, 2.°37S×81.°63W, h24km±15km, mb4.5/56, MD4.2(IGQ), Error ellipse: s-maj=7.7km s-min=4.2km az=54.0*
NEIC Felt [IV] at Salinas.
ISC 28 19:37:03.7±0.5, 2.°37S±0.°05×81.°64W±0.°07, h35km, n106, σ1°28/111, mb4.4/62, Near coast of Ecuador

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OTAV	**Otavalo**	**4.11**	**51**	*e*Pn		**Pn**	19 38 04.4	-0.1
OTAV				*e*Sn		**Sn**	19 38 51.9	+0.3
ATAH	**Atahualpa**	**5.73**	**146**	Pn		**Pn**	19 38 28.2	+1.5
	19nm,0.3s,baz=358,slow=9.6,SNR=84							
ATAH				Sn		**Sn**	19 39 32.7	+1.2
	7.6nm,0.3s,baz=116,slow=15,SNR=3.7							
CRUC	**La Cruz**	**6.11**	**50**	*e*P		**Pn**	19 38 32.3	+0.4
POPC	**Popayan, Colom**	**6.96**	**46**	*e*P		**Pn**	19 38 40.2	-3.3
PAYG	**Puerto Ayora**	**8.81**	**281**	*e*Pn		**Pn**	19 39 08.4	-0.3
PAYG				*e*Sn		Sn	19 40 32.9	-14
PRAC	**Prado**	**9.06**	**48**	*e*Pn		**Pn**	19 39 10.5	-1.7
SJAC	**San Juan de Ar**	**9.52**	**54**	*e*P		**Pn**	19 39 14.2	-4.3
ROSC	**El Rosal**	**10.24**	**46**	Pn		**Pn**	19 39 29.7	+1.1
	1.2nm,0.3s,baz=156,slow=20,SNR=2.7							
HELC	**Santa Helena**	**10.47**	**36**	*e*Pn		**Pn**	19 39 28.5	-3.2
NNA	**Nana**	**10.67**	**154**	Pn		**Pn**	19 39 33.0	-1.2
	6.7nm,0.3s,baz=312,slow=11,SNR=16							
NNA				Sn		**Sn**	19 41 30.2	-2.3
	1.3nm,0.3s,baz=239,slow=19,SNR=3.3							
BCIP	**Isla Barro Col**	**11.60**	**9**	*e*Pn		**Pn**	19 39 50.3	+3.4
MGAN	**Managua**	**15.13**	**342**	*e*Pn		**P**	19 40 39.1	-0.7
	0.2nm,0.7s							
SDV	**Santo Domingo**	**15.67**	**44**	Pn		**Pn**	19 40 41.2	-1.0
	0.5nm,0.3s,baz=234,slow=10.0,SNR=18							
SDV	**Santo Domingo**	**15.67**	**44**	*e*Pn		**Pn**	19 40 40.7	-1.5
	79nm,0.8s							
TGUH	**Tegucigalpa,Un**	**17.25**	**341**	*e*Pn		**Pn**	19 41 00.6	-1.5
	17nm,0.6s							
LPAZ	**La Paz**	**19.18**	**137**	P		**Pn**	19 41 26.6	+0.3
	0.5nm,0.3s,baz=322,slow=9.2,SNR=38							
LPAZ	**La Paz**	**19.18**	**137**	*e*P		**Pn**	19 41 26.4	+0.1
	14nm,0.9s							
SAML	**Samuel**	**19.48**	**110**	*e*P		**P**	19 41 26.4	-1.5
	43nm,0.9s							
PB11	**IPOC Station P**	**20.88**	**147**	*e*P		**P**	19 41 42.9	-0.3
	20nm,0.9s							
PCRV	**Puerto La Cruz**	**21.03**	**53**	P		**P**	19 41 46.5	+1.8
	46nm,0.8s,baz=228,slow=1.7,SNR=17							
CCIG	**Comitan**	**21.24**	**331**	*e*P		**P**	19 41 47.6	+0.5
	9.2nm,0.9s							
PTGA	**Pitinga**	**21.73**	**86**	P		**P**	19 41 53.6	+1.5
	11nm,0.8s,baz=274,slow=9.3,SNR=14							
PTGA	**Pitinga**	**21.73**	**86**	*e*P		**P**	19 41 53.0	+0.8
	11nm,0.8s							
TEIG	**Tepich**	**23.38**	**344**	P		**P**	19 42 09.2	-0.2
	2.0nm,0.5s,baz=270,slow=20,SNR=4.0							
TEIG	**Tepich**	**23.38**	**344**	*e*P		**P**	19 42 09.1	-0.4
	7.5nm,1.1s							
PB10	**IPOC Station P**	**23.60**	**154**	*e*P		**P**	19 42 11.0	-0.5
	45nm,1.3s							
LVC	**Limon Verde**	**23.61**	**149**	P		**P**	19 42 13.0	+0.9
	33nm,0.8s,baz=318,slow=7.6,SNR=9.4							
SIV	**San Ignacio**	**24.36**	**125**	P		**P**	19 42 19.1	+0.4
	3.9nm,0.8s,baz=316,slow=9.0,SNR=8.9							
LRS	**Lares**	**25.18**	**35**	*e*P		**P**	19 42 23.3	-2.8
SJG	**San Juan**	**25.44**	**36**	P		**P**	19 42 27.8	-0.7
	4.5nm,0.3s,baz=260,slow=12,SNR=3.0							
SJG	**San Juan**	**25.44**	**36**	*e*P		**P**	19 42 27.3	-1.2
	39nm,1.6s							
HUMP	**Col San Antoni**	**25.64**	**37**	*e*P		**P**	19 42 31.1	+0.8
HUMP				*e*SP		**sP**	19 42 44.7	+0.2
LRAL	**Lakeview Retre**	**35.58**	**352**	*e*P		**P**	19 44 01.3	+3.4
	4.9nm,0.6s							
JCT	**Junction City**	**36.98**	**333**	*e*P		**P**	19 44 10.9	+1.0
	8.9nm,0.8s							
WHTX	**Lake Whitney,**	**37.33**	**338**	*e*P		**P**	19 44 15.9	+3.1
	11nm,0.8s							
SWET	**Sewanee**	**37.61**	**354**	*e*P		**P**	19 44 15.2	0.0
	1.9nm,0.9s							
CPCT	**Cooper Cave**	**37.72**	**356**	*e*P		**P**	19 44 17.8	+1.6
	4.4nm,0.9s							
LTX	**Lajitas**	**37.94**	**328**	*e*P		**P**	19 44 18.7	+0.5
LTX				*e*PcP		**PcP**	19 46 34.0	+0.2
TXAR	**Lajitas Array**	**37.94**	**328**	P		**P**	19 44 18.7	+0.5
	0.6nm,0.7s,baz=142,slow=9.5,SNR=8.9							
TXAR				PcP		**PcP**	19 46 33.9	+0.2
	0.2nm,0.6s,baz=152,slow=4.1,SNR=2.9							
TX31	**Lajitas Ar. Si**	**37.94**	**328**	*e*P		**P**	19 44 18.1	-0.1
LPIG	**La Paz**	**38.33**	**315**	P		**P**	19 44 19.7	-1.7
	29nm,0.3s,baz=162,slow=1.5,SNR=4.5							
X301	**Greenbrier Sit**	**38.75**	**346**	*e*P		**P**	19 44 24.5	-0.2
	5.5nm,1.1s							
PLCA	**Paso Flores**	**39.48**	**167**	P		**P**	19 44 32.8	+1.9
	1.0nm,0.8s,baz=17,slow=11,SNR=3.1							
PLCA	**Paso Flores**	**39.48**	**167**	*e*P		**P**	19 44 32.4	+1.5
	52nm,1.9s							
WMOK	**Wichita Mounta**	**40.27**	**338**	*e*P		**P**	19 44 37.7	+0.2
	4.0nm,1.0s							
TUL1	**Leonard**	**40.32**	**342**	*e*P		**P**	19 44 37.5	-0.3
	5.5nm,0.8s							
W34A	**Bridge Creek,**	**40.35**	**339**	*e*P		**P**	19 44 38.6	+0.4
	9.8nm,0.8s							
GDL2	**Guadalupe Moun**	**40.58**	**330**	*e*P		**P**	19 44 40.0	-0.2
MNTX	**Cornudas Mount**	**40.70**	**328**	*e*P		**P**	19 44 41.5	+0.3
	6.1nm,0.8s							
MSTX	**Muleshoe**	**41.27**	**333**	*e*P		**P**	19 44 46.2	+0.4
	9.9nm,0.8s							
ANMO	**Albuquerque**	**43.82**	**330**	P		**P**	19 45 07.8	+1.1
	2.6nm,0.9s,baz=154,slow=11,SNR=9.5							
ANMO	**Albuquerque**	**43.82**	**330**	*e*P		**P**	19 45 07.6	+0.9
	6.0nm,0.8s							
TUC	**Tucson**	**44.19**	**324**	*e*P		**P**	19 45 09.4	-0.2
	2.2nm,0.9s							
T25A	**Trinidad**	**44.64**	**334**	*e*P		**P**	19 45 13.7	+0.4
	7.8nm,1.1s							
BINY	**Binghamton**	**44.66**	**6**	*e*P		**P**	19 45 13.0	-0.1
	5.8nm,0.8s							
QUA2	**Belchertown**	**45.23**	**10**	*e*P		**P**	19 45 19.5	+1.9
	45nm,1.6s							
X18A	**Snowflake**	**45.33**	**327**	*e*P		**P**	19 45 20.3	+1.6
	8.1nm,0.8s							
W18A	**Petrified Fore**	**45.65**	**327**	*e*P		**P**	19 45 22.0	+0.7
	9.3nm,0.8s							
Y14A	**Wickenburg**	**46.65**	**323**	*e*P		**P**	19 45 29.3	+0.3
	18nm,0.8s							
PV01	**Paradox Valley**	**47.38**	**331**	*e*P		**P**	19 45 36.0	+1.1
ISCO	**Idaho Springs**	**47.38**	**335**	*e*P		**P**	19 45 35.5	+0.6
	2.7nm,0.9s							
W13A	**Hualapai Mount**	**47.98**	**324**	*e*P		**P**	19 45 38.6	-1.0
	3.3nm,0.8s							
Q16A	**Castle Valley**	**49.27**	**330**	*e*P		**P**	19 45 50.6	+1.2
	10nm,1.6s							
CCUT	**Cedar City**	**49.42**	**327**	*e*P		**P**	19 45 52.3	+1.7
	5.2nm,1.0s							
MSU	**Marysvale**	**49.49**	**328**	*e*P		**P**	19 45 50.8	-0.3
RSSD	**Black Hills**	**50.45**	**339**	*e*P		**P**	19 45 58.7	+0.4
	3.8nm,0.8s							
BW06	**Boulder Array**	**51.52**	**334**	*e*P		**P**	19 46 05.4	-0.9
	2.2nm,0.9s							
PD31	**Pinedale Array**	**51.52**	**334**	*e*P		**P**	19 46 05.1	-1.2
PDAR	**Pinedale Array**	**51.52**	**334**	P		**P**	19 46 06.1	-0.2
	0.3nm,0.4s,baz=133,slow=8.3,SNR=5.2							
HWUT	**Hardware Ranch**	**51.52**	**331**	*e*P		**P**	19 46 06.5	+0.2
	7.2nm,0.9s							
CRGC	**Crocker Grade**	**51.68**	**320**	*e*P		**P**	19 46 08.9	+1.4
BGU	**Big Grassy Mou**	**51.72**	**330**	*e*P		**P**	19 46 06.4	-1.4
	3.9nm,0.9s							
HVU	**Hansel Valley**	**52.24**	**331**	*e*P		**P**	19 46 11.0	-0.7
	3.0nm,1.0s							
LOHW	**Long Hollow**	**52.65**	**334**	*e*P		**P**	19 46 13.6	-1.1
	5.3nm,1.3s							
ELK	**Elko**	**52.73**	**328**	*e*P		**P**	19 46 15.7	+0.2
	3.9nm,0.8s							
NV11	**Mina Array Sit**	**52.76**	**324**	*e*P		**P**	19 46 16.4	+0.8
	6.9nm,1.1s							
MOOW	**Moose Ponds**	**52.82**	**334**	*e*P		**P**	19 46 15.8	-0.2
	1.8nm,0.7s							
NV01	**Mina Array Sit**	**52.84**	**324**	*e*P		**P**	19 46 17.2	+0.9
NVAR	**Mina Array Bea**	**52.84**	**324**	P		**P**	19 46 17.1	+0.9
	1.2nm,0.6s,baz=134,slow=5.8,SNR=8.1							
FXWY	**Fox Creek**	**52.86**	**333**	*e*P		**P**	19 46 15.7	-0.7
	3.2nm,1.3s							
IMW	**Indian Meadow**	**53.02**	**334**	*e*P		**P**	19 46 16.8	-0.8
	11nm,1.6s							
YFT	**Old Faithful**	**53.42**	**334**	*e*P		**P**	19 46 22.0	+1.6
	5.1nm,0.9s							
LAO	**LASA Array**	**53.44**	**339**	*e*P		**P**	19 46 21.0	+0.7
	22nm,0.5s							
BMN	**Battle Mountai**	**53.58**	**326**	*e*P		**P**	19 46 22.3	+0.7
	5.5nm,1.3s							
ULM	**Lac du Bonnet**	**53.83**	**349**	P		**P**	19 46 21.4	-1.6
	1.1nm,0.3s,baz=159,slow=6.8,SNR=1.9							
ULM				LR		LR	20 08 33.6	
	comp=Z,86nm,18.4s,baz=125,slow=35							
ULM	**Lac du Bonnet**	**53.83**	**349**	*e*P		**P**	19 46 23.1	+0.1
	5.2nm,0.6s							
HLID	**Hailey**	**54.38**	**331**	*e*P		**P**	19 46 28.2	+0.9
	3.5nm,0.9s							
MCMT	**McKenzie Canyo**	**54.61**	**333**	*e*P		**P**	19 46 29.4	+0.3
MFID	**Camas Ranch**	**54.96**	**330**	*e*P		**P**	19 46 30.4	-1.1
	9.8nm,1.4s							
ORV	**Oroville**	**55.47**	**323**	*e*P		**P**	19 46 36.3	+1.1
	11nm,1.4s							
K05A	**Summer Lake**	**57.16**	**326**	*e*P		**P**	19 46 48.2	+0.8
	23nm,1.4s							
YBH	**Yreka Blue Hor**	**57.55**	**324**	LR		LR	20 10 30.1	
	comp=Z,48nm,18.5s,baz=116,slow=35							
G08A	**Pilot Rock**	**57.88**	**330**	*e*P		**P**	19 46 52.8	+0.5
	6.5nm,0.9s							
YKA	**Yellowknife Ar**	**69.34**	**344**	P		**P**	19 48 07.9	+0.4
	0.3nm,0.6s,baz=146,slow=6.4,SNR=4.4							
INK	**Inuvik**	**78.98**	**343**	P		**P**	19 49 04.0	+0.5
	2.0nm,0.8s,baz=94,slow=8.2,SNR=3.2							
INK	**Inuvik**	**78.98**	**343**	*e*P		**P**	19 49 04.6	+1.1
	2.6nm,0.9s							
ILAR	**Eielson Array**	**81.83**	**337**	P		**P**	19 49 18.7	-0.3
	0.4nm,0.8s,baz=123,slow=3.3,SNR=3.5							
ESDC	**Sonseca Array**	**82.04**	**50**	P		**P**	19 49 21.3	+0.6
	1.0nm,0.8s,baz=272,slow=5.5,SNR=5.8							
ES19	**SONSECA Array**	**82.10**	**50**	*e*P		**P**	19 49 20.9	-0.1
TOA1	**Torodi Ar. Sit**	**84.05**	**77**	*e*P		**P**	19 49 31.1	-0.3
	9.2nm,1.5s							
TORD	**Torodi Ar. Bea**	**84.05**	**77**	P		**P**	19 49 31.1	-0.4
	0.4nm,0.7s,baz=273,slow=6.9,SNR=3.9							
GEYT	**Alibeck**	**126.92**	**41**	PKP		**PKPdf**	19 56 08.5	+0.2
	0.4nm,0.4s,baz=90,slow=2.9,SNR=2.6							
ASAR	**Alice Springs**	**136.80**	**231**	PKP		**PKPdf**	19 56 22.4	-1.1
	0.4nm,0.8s,baz=126,slow=2.9,SNR=5.3							
WR1	**Warramunga Arr**	**138.31**	**236**	*e*PKPdf		**PKPdf**	19 56 25.6	-0.7
WRA	**Warramunga Arr**	**138.31**	**236**	PKP		**PKPdf**	19 56 25.6	-0.7
	0.5nm,0.7s,baz=116,slow=1.9,SNR=4.8							
CD2	**Chengdu**	**151.16**	**350**	PKPbc		**PKPdf**	19 56 45.5	-2.7

*ISCJB **28** 19:38:46.5±0.6, 39.°12N±0.°04×29.°10E±0.°04, h6km±7km, Error ellipse: s-maj=6.7km s-min=4.9km az=154.0*
*CSEM **28** 19:38:46.6±0.1, 39.°13N×29.°10E, h8km, MD2.2, Error ellipse: s-maj=3.1km s-min=2.7km az=135.0*
*ISK **28** 19:38:46.0, 39.°15N×29.°11E, h8km, MD2.6*
*DDA **28** 19:38:46.5, 39.°09N×29.°12E, h7km, Md2.2*
ISC 28 19:38:46.6±1.0, 39.°13N±0.°03×29.°11E±0.°03, h13km±12km, n18, σ0°42/28, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.29**	**97**	P		**Pg**	19 38 52.7	0.0
GDZ				S		**Sg**	19 38 57.0	+0.2
GDZ	**Gediz**	**0.29**	**97**	*i* P		**Pg**	19 38 52.7	0.0
GDZ				*i* S		**Sg**	19 38 57.0	+0.2
DEMI	**Demirci**	**0.32**	**255**	P		**Pg**	19 38 53.5	+0.3
DEMI				S		**Sg**	19 38 57.7	+0.1
DEMI	**Demirci**	**0.32**	**255**	*i* P		**Pg**	19 38 53.5	+0.3
DEMI				*i* S		**Sg**	19 38 57.6	+0.1
TVSB	**Tavsanli**	**0.42**	**40**	*e*PG		**Pg**	19 38 54.6	-0.5
TVSB				*e*SG		**Sg**	19 39 00.6	-0.2
TVSB	**Tavsanli**	**0.42**	**40**	*e*Pg		**Pg**	19 38 54.6	-0.5
TVSB				*e*Sg		**Sg**	19 39 00.6	-0.2
KULA	**Kula-Manisa**	**0.70**	**210**	*e*PG		**Pg**	19 39 00.3	0.0
KULA	**Kula-Manisa**	**0.70**	**210**	*e*Pg		**Pg**	19 39 00.4	0.0
KHAL	**Karahalli**	**0.81**	**158**	P		**Pb**	19 39 02.5	-0.1
KHAL				S		**Sg**	19 39 12.6	-0.4
KHAL	**Karahalli**	**0.81**	**158**	*i* P		**Pb**	19 39 02.5	-0.1
KHAL				*i* S		**Sg**	19 39 12.6	-0.4
BALB	**Balikesir**	**1.08**	**299**	*e*PG		**Pb**	19 39 07.0	-0.2
BALB	**Balikesir**	**1.08**	**299**	*e*Pg		**Pb**	19 39 07.0	-0.2
KCTX	**Karacabey (Bur**	**1.28**	**333**	*e*PN		**Pb**	19 39 10.5	-0.1
KCTX	**Karacabey (Bur**	**1.28**	**333**	*e*Pn		**Pb**	19 39 10.5	-0.1
BORA	**Eskisehir**	**1.28**	**54**	P		**Pg**	19 39 11.7	+0.4
BORA				S		**Sg**	19 39 29.1	+1.1
BORA	**Eskisehir**	**1.28**	**54**	*i* P		**Pg**	19 39 11.7	+0.4
BORA				*i* S		**Sg**	19 39 29.1	+1.1
ARMT	**Armutlu**	**1.45**	**352**	*e*PN		**Pb**	19 39 13.1	-0.4
ARMT	**

	baz=350						
WSF				*e*S	Sn	19 49 03.3	+0.1
	baz=350						
WGK	**Gukeng**	**1.75**	**360**	*e*P	Pn	19 48 43.0	+0.4
	baz=350						
WGK				*e*S	Sn	19 49 05.1	+1.4
	baz=350						
PNG	**Penghu**	**1.88**	**330**	*e*P	Pn	19 48 43.6	-0.8
	baz=331						
WNT	**Mingjian**	**1.94**	**3**	*e*P	Pn	19 48 46.9	+1.5
	baz=4.0						
WNT				*e*S	Sn	19 49 09.2	+0.7
	baz=4.0						
SMLT	**Sun Moon Lake**	**1.97**	**9**	P	Pn	19 48 47.0	+1.2
	baz=358						
SMLT				*e*S	Sn	19 49 11.0	+1.7
	baz=358						
TYC	**Yuchr**	**1.98**	**8**	P	Pn	19 48 47.0	+1.2
	baz=357						
TYC				*e*S	Sn	19 49 11.4	+1.9
	baz=357						
ESL	**Shilin**	**2.04**	**23**	*e*P	Pn	19 48 48.8	+2.1
	baz=35						
ESL				*e*S	Sn	19 49 11.9	+1.0
	baz=35						
TCU	**Taichung**	**2.21**	**3**	*e*P	Pn	19 48 50.3	+1.3
	baz=3.0						
TCU				*e*S	Sn	19 49 16.2	+1.1
	baz=3.0						
TWQ1	**Liyutan**	**2.41**	**5**	*e*P	Pn	19 48 53.4	+1.6
	baz=355						
TWQ1				*e*S	Sn	19 49 20.8	+0.7
	baz=355						
NSTT	**Nanjuang**	**2.72**	**8**	*e*P	Pn	19 48 56.9	+1.0
	baz=357						

CSEM ***28*** *19:52:48.9±0.1, 39.°11N×29.°04E, h2km, MD2.8, Error ellipse: s-maj=2.1km s-min=1.8km az=171.0*
ISK ***28*** *19:52:48.7, 39.°10N×29.°01E, h5km, MD2.9*
DDA ***28*** *19:52:48.2, 39.°12N×29.°03E, h7km, Md2.8*
ISC 28 19:52:48.6±0.9, 39.°11N±0.°02×29.°03E±0.°02, h14km±7km, n52, σ0°40/70, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**256**	P	**Pg**	**19 52 54.1**	**0.0**
DEMI				S	**Sg**	**19 52 57.8**	**0.0**
DEMI	**Demirci**	**0.26**	**256**	*i* P	**Pg**	**19 52 54.1**	**0.0**
DEMI				*i* S	**Sg**	**19 52 57.8**	**0.0**
GDZ	**Gediz**	**0.35**	**93**	P	**Pg**	**19 52 55.8**	**0.0**
GDZ				S	**Sg**	**19 53 00.9**	**+0.2**
GDZ	**Gediz**	**0.35**	**93**	*i* P	**Pg**	**19 52 55.8**	**0.0**
GDZ				*i* S	**Sg**	**19 53 00.8**	**+0.2**
TVSB	**Tavsanli**	**0.48**	**44**	*e*PG	**Pg**	**19 52 58.0**	**-0.1**
TVSB	**Tavsanli**	**0.48**	**44**	*e*Pg	**Pg**	**19 52 58.0**	**-0.1**
KULA	**Kula-Manisa**	**0.66**	**206**	*e*PG	**Pg**	**19 53 01.6**	**+0.2**
KULA	**Kula-Manisa**	**0.66**	**206**	*e*Pg	**Pg**	**19 53 01.6**	**+0.2**
KHAL	**Karahalli**	**0.82**	**154**	P	**Pn**	**19 53 05.4**	**-0.4**
KHAL				S	**Sg**	**19 53 15.7**	**+0.5**
KHAL	**Karahalli**	**0.82**	**154**	*i* P	**Pn**	**19 53 05.4**	**-0.4**
KHAL				*i* S	**Sg**	**19 53 15.7**	**+0.5**
KHL	**Karahalli**	**0.87**	**154**	*e*PG	**Pg**	**19 53 05.8**	**+0.3**
KHL	**Karahalli**	**0.87**	**154**	*e*Pg	**Pg**	**19 53 05.8**	**+0.3**
ORLT	**Orhaneli**	**0.95**	**354**	*e*PG	**Pn**	**19 53 07.2**	**-0.3**
ORLT	**Orhaneli**	**0.95**	**354**	*e*Pg	**Pn**	**19 53 07.2**	**-0.3**
AKHS	**Akhisar**	**0.98**	**257**	P	**Pg**	**19 53 07.5**	**+0.1**
AKHS				S	**Sg**	**19 53 20.7**	**+0.5**
AKHS	**Akhisar**	**0.98**	**257**	*i* P	**Pg**	**19 53 07.5**	**+0.1**
AKHS				*i* S	**Sg**	**19 53 20.7**	**+0.5**
AKS	**Akhisar**	**0.98**	**257**	*e*PG	**Pb**	**19 53 07.2**	**0.0**
AKS	**Akhisar**	**0.98**	**257**	*e*Pg	**Pb**	**19 53 07.3**	**0.0**
BALB	**Balikesir**	**1.04**	**301**	*e*PG	**Pg**	**19 53 09.5**	**+0.8**
BALB				*e*SG	**Sn**	**19 53 23.2**	**+0.2**
BALB	**Balikesir**	**1.04**	**301**	*e*Pg	**Pg**	**19 53 09.5**	**+0.8**
BALB				*e*Sg	**Sn**	**19 53 23.3**	**+0.2**
IGD	**Bursa**	**1.17**	**6**	*i* P	**Pn**	**19 53 10.1**	**-0.4**
IGD				*i* S	**Sb**	**19 53 24.4**	**-1.0**
CAVI	**Cavuskoy**	**1.26**	**29**	*e*PN	**Pg**	**19 53 13.7**	**+0.8**
CAVI	**Cavuskoy**	**1.26**	**29**	*e*Pn	**Pg**	**19 53 13.7**	**+0.8**
BALY	**Balya**	**1.27**	**301**	P	**Pg**	**19 53 12.9**	**-0.1**
BALY				S	**Sg**	**19 53 29.8**	**+0.3**
BALY	**Balya**	**1.27**	**301**	*i* P	**Pg**	**19 53 12.9**	**-0.1**
BALY				*i* S	**Sg**	**19 53 29.8**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.27**	**355**	*e*PN	**Pg**	**19 53 12.9**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.27**	**355**	*e*Pn	**Pg**	**19 53 12.9**	**-0.1**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*PN	**Pg**	**19 53 13.4**	**+0.4**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*Pn	**Pg**	**19 53 13.5**	**+0.4**
IZI	**Iznik**	**1.28**	**15**	*e*PN	**Pg**	**19 53 13.9**	**+0.7**
IZI	**Iznik**	**1.28**	**15**	*e*Pn	**Pg**	**19 53 13.9**	**+0.7**
BORA	**Eskisehir**	**1.34**	**54**	P	**Pb**	**19 53 13.2**	**-0.4**
BORA				S	**Sg**	**19 53 32.2**	**+0.2**
BORA	**Eskisehir**	**1.34**	**54**	*i* P	**Pb**	**19 53 13.2**	**-0.4**
BORA				*i* S	**Sg**	**19 53 32.2**	**+0.2**
GONE	**Gonen-Balikesi**	**1.40**	**313**	*e*PN	**Pg**	**19 53 15.4**	**-0.2**
GONE	**Gonen-Balikesi**	**1.40**	**313**	*e*Pn	**Pg**	**19 53 15.4**	**-0.2**
ADVT	**Abdulvahap**	**1.43**	**22**	*e*PN	**Pg**	**19 53 16.4**	**+0.2**
ADVT	**Abdulvahap**	**1.43**	**22**	*e*Pn	**Pg**	**19 53 16.4**	**+0.2**
ARMT	**Armutlu**	**1.47**	**355**	*e*PN	**Pg**	**19 53 16.6**	**-0.2**
ARMT	**Armutlu**	**1.47**	**355**	*e*Pn	**Pg**	**19 53 16.6**	**-0.2**
ESKT	**Eskisehir**	**1.47**	**73**	*i* P	**Pb**	**19 53 15.6**	**-0.2**
ESKT				*i* S	**Sg**	**19 53 36.7**	**+0.8**
SEYT	**Eskypehyr**	**1.47**	**73**	P	**Pb**	**19 53 15.6**	**-0.2**
SEYT				S	**Sg**	**19 53 36.7**	**+0.8**
EDC	**Edincik**	**1.53**	**324**	*e*PN	**Pb**	**19 53 17.1**	**+0.3**
EDC	**Edincik**	**1.53**	**324**	*e*Pn	**Pb**	**19 53 17.1**	**+0.3**
KNL	**Bal¨–kesir**	**1.65**	**316**	*i* P	**Pb**	**19 53 18.3**	**-0.4**
KNL				*i* S	**Sb**	**19 53 39.6**	**+0.3**
GULT	**Gulveren**	**1.75**	**40**	*e*PN	**Pb**	**19 53 20.8**	**+0.3**
GULT	**Gulveren**	**1.75**	**40**	*e*Pn	**Pb**	**19 53 20.8**	**+0.3**
HRT	**Hereke**	**1.78**	**16**	*e*PN	**Pb**	**19 53 21.0**	**0.0**
HRT	**Hereke**	**1.78**	**16**	*e*Pn	**Pb**	**19 53 21.0**	**0.0**
ISK	**Istanbul-Kandi**	**1.96**	**1**	*e*PN	**Pb**	**19 53 23.5**	**-0.5**
ISK	**Istanbul-Kandi**	**1.96**	**1**	*e*Pn	**Pb**	**19 53 23.5**	**-0.5**
SVRH	**Sivrihisar-ESK**	**1.96**	**79**	*e*PN	**Pb**	**19 53 23.7**	**-0.4**
SVRH	**Sivrihisar-ESK**	**1.96**	**79**	*e*Pn	**Pb**	**19 53 23.7**	**-0.4**

DDA ***28*** *19:56:47.6, 39.°13N×29.°02E, h7km, Md2.7*
ISCJB ***28*** *19:56:48.1±0.5, 39.°09N±0.°04×29.°04E±0.°04, h3km±8km, Error ellipse: s-maj=6.7km s-min=4.4km az=16.7*
CSEM ***28*** *19:56:48.4±0.1, 39.°09N×29.°05E, h5km, MD2.7, Error ellipse: s-maj=1.7km s-min=1.5km az=60.0*
ISK ***28*** *19:56:48.0, 39.°10N×29.°04E, h5km, MD2.7*
ISC 28 19:56:48.5±1.0, 39.°10N±0.°02×29.°04E±0.°02, h7km±10km, n31, σ0°48/42, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**257**	P	**Pg**	**19 56 53.7**	**0.0**
DEMI				S	**Sg**	**19 56 57.4**	**+0.2**
DEMI	**Demirci**	**0.26**	**257**	*i* P	**Pg**	**19 56 53.7**	**0.0**
DEMI				*i* S	**Sg**	**19 56 57.4**	**+0.2**
GDZ	**Gediz**	**0.34**	**92**	P	**Pg**	**19 56 55.2**	**-0.1**
GDZ				S	**Sg**	**19 57 00.5**	**+0.7**
GDZ	**Gediz**	**0.34**	**92**	*i* P	**Pg**	**19 56 55.2**	**-0.1**
GDZ				*i* S	**Sg**	**19 57 00.5**	**+0.7**
TVSB	**Tavsanli**	**0.48**	**43**	*e*PG	**Pg**	**19 56 57.8**	**0.0**
TVSB	**Tavsanli**	**0.48**	**43**	*e*Pg	**Pg**	**19 56 57.8**	**0.0**
KULA	**Kula-Manisa**	**0.66**	**207**	*e*PG	**Pg**	**19 57 00.9**	**-0.2**
KULA	**Kula-Manisa**	**0.66**	**207**	*e*Pg	**Pg**	**19 57 00.9**	**-0.2**
KHAL	**Karahalli**	**0.81**	**154**	P	**Pg**	**19 57 03.9**	**-0.2**
KHAL				S	**Sg**	**19 57 14.0**	**-0.6**
KHAL	**Karahalli**	**0.81**	**154**	*i* P	**Pg**	**19 57 03.9**	**-0.2**
KHAL				*i* S	**Sg**	**19 57 14.0**	**-0.6**
KHL	**Karahalli**	**0.86**	**154**	*e*PG	**Pb**	**19 57 05.1**	**-0.7**
KHL	**Karahalli**	**0.86**	**154**	*e*Pg	**Pb**	**19 57 05.1**	**-0.7**
ORLT	**Orhaneli**	**0.95**	**353**	*e*PG	**Pg**	**19 57 06.5**	**-0.3**
ORLT	**Orhaneli**	**0.95**	**353**	*e*Pg	**Pg**	**19 57 06.5**	**-0.3**
BALB	**Balikesir**	**1.05**	**301**	*e*PG	**Pb**	**19 57 08.8**	**-0.2**
BALB				*e*SG	**Sb**	**19 57 23.4**	**+0.5**
BALB	**Balikesir**	**1.05**	**301**	*e*Pg	**Pb**	**19 57 08.8**	**-0.2**
BALB				*e*Sg	**Sb**	**19 57 23.4**	**+0.5**
IGD	**Bursa**	**1.17**	**6**	*i* P	**Pg**	**19 57 09.5**	**-1.4**
IGD				*i* S	**Sg**	**19 57 25.2**	**-0.9**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*PN	**Pb**	**19 57 12.9**	**0.0**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*Pn	**Pb**	**19 57 12.9**	**0.0**
BORA	**Eskisehir**	**1.34**	**54**	P	**Pb**	**19 57 13.7**	**-0.3**
BORA				S	**Sn**	**19 57 31.8**	**0.0**
BORA	**Eskisehir**	**1.34**	**54**	*i* P	**Pb**	**19 57 13.7**	**-0.3**
BORA				*i* S	**Sn**	**19 57 31.8**	**0.0**
GONE	**Gonen-Balikesi**	**1.41**	**313**	*e*PN	**Pg**	**19 57 15.1**	**-0.5**
GONE	**Gonen-Balikesi**	**1.41**	**313**	*e*Pn	**Pg**	**19 57 15.1**	**-0.5**
ADVT	**Abdulvahap**	**1.44**	**22**	*e*PN	**Pb**	**19 57 15.3**	**-0.2**
ADVT	**Abdulvahap**	**1.44**	**22**	*e*Pn	**Pb**	**19 57 15.4**	**-0.2**
ARMT	**Armutlu**	**1.47**	**355**	*e*PN	**Pg**	**19 57 16.2**	**-0.5**
ARMT	**Armutlu**	**1.47**	**355**	*e*Pn	**Pg**	**19 57 16.2**	**-0.5**
EDC	**Edincik**	**1.54**	**324**	*e*PN	**Pb**	**19 57 17.0**	**-0.4**
EDC	**Edincik**	**1.54**	**324**	*e*Pn	**Pb**	**19 57 17.0**	**-0.4**
GULT	**Gulveren**	**1.75**	**40**	*e*PN	**Pn**	**19 57 19.9**	**+0.6**
GULT	**Gulveren**	**1.75**	**40**	*e*Pn	**Pn**	**19 57 19.9**	**+0.6**

JMA ***28*** *19:59:14.6±0.2, 37.°76N×144.°15E, h11km, M3.7*
ISCJB ***28*** *19:59:15.9±1.4, 37.°67N±0.°07×144.°24E±0.°10, h72km±18km, mb3.5/3, Error ellipse: s-maj=13.0km s-min=10.7km az=15.4*
IDC ***28*** *19:59:18.8±2.6, 36.°32N×143.°89E, h0km, mb3.4/3, mb1 3.6/4, mb1mx3.3/47, mbtmp3.3/4, ML3.0/1, Error ellipse: s-maj=64.7km s-min=27.4km az=49.0*
ISC 28 19:59:15.8±4.0, 37.°6N±0.°1×144.°3E±0.°2, h46km±44km, n18, σ0°83/26, mb3.7/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.50**	**290**	P	**Pn**	**19 59 53.8**	**-0.1**
JIO				*e*S	**Sn**	**20 00 22.0**	**-1.1**
OFUJ	**Ofunato**	**2.54**	**305**	P	**Pn**	**19 59 54.3**	**-0.3**
OFUJ				*e*S	**Sn**	**20 00 24.2**	**-0.1**
JMK	**Ichinoseki**	**2.78**	**299**	P	**Pn**	**19 59 57.8**	**0.0**
JMK				*e*S	**Sn**	**20 00 29.8**	**-0.4**
JOU	**Okura**	**2.99**	**285**	P	**Pn**	**20 00 01.1**	**+0.3**
JOU				S	**Sn**	**20 00 35.3**	**-0.1**
JOM	**Ohasama**	**3.01**	**308**	P	**Pn**	**20 00 01.3**	**+0.3**
JOM				*e*S	**Sn**	**20 00 35.8**	**0.0**
JFT	**Otama**	**3.18**	**269**	P	**Pn**	**20 00 03.8**	**+0.4**
JFT				*e*S	**Sn**	**20 00 39.9**	**-0.2**
JYK	**Kaneyama**	**3.38**	**293**	P	**Pn**	**20 00 06.7**	**+0.6**
JYK				S	**Sn**	**20 00 45.1**	**+0.1**
JRG	**Rokugo**	**3.39**	**302**	P	**Pn**	**20 00 07.5**	**+1.2**
JRG				*e*S	**Sn**	**20 00 46.1**	**+0.8**
JANG	**Nango**	**3.50**	**322**	P	**Pn**	**20 00 07.7**	**-0.1**
JANG				S	**Sn**	**20 00 46.4**	**-1.6**
JAH	**Hinai**	**3.85**	**313**	P	**Pn**	**20 00 14.1**	**+1.6**
JAH				*e*S	**Sn**	**20 00 57.1**	**+0.7**
JTM	**Tenmabayashi**	**4.04**	**322**	P	**Pn**	**20 00 15.7**	**+0.6**
JTM				*e*S	**Sn**	**20 00 59.4**	**-1.7**
MJAR	**Matsushiro Arr**	**5.02**	**259**	Pn	**Pn**	**20 00 29.0**	**+0.4**
	0.7nm,0.3s,baz=90,slow=14,SNR=6.8						
MJAR				Sn	**Sn**	**20 01 24.3**	**-1.1**
	0.4nm,0.3s,baz=318,slow=30,SNR=4.2						
H11N2	**WAKE ISLAND Hy**	**26.54**	**126**	T	T	20 31 51.6	
	baz=317						
H11N1	**WAKE ISLAND Hy**	**26.54**	**126**	T	T	20 31 53.2	
	baz=317						
H11N3	**WAKE ISLAND Hy**	**26.55**	**126**	T	T	20 32 09.4	
	baz=317						
MKAR	**Makanchi Array**	**45.77**	**302**	P	P	20 07 45.1	+12
	0.2nm,0.7s,baz=79,slow=7.5,SNR=3.2						
WRA	**Warramunga Arr**	**58.04**	**191**	P	**P**	**20 09 03.9**	**-0.4**
	0.7nm,0.7s,baz=11,slow=7.6,SNR=4.6						
ASAR	**Alice Springs**	**61.77**	**191**	P	**P**	**20 09 30.0**	**+0.3**
	0.3nm,0.5s,baz=16,slow=7.7,SNR=3.9						

IDC 28 20:02:32.4±5.1, 4.°77S×147.°28E, h170km±66km, mb3.0/2, mb1 3.2/4, mb1mx2.9/31, mbtmp3.6/4, Error ellipse: s-maj=121.6km s-min=39.3km az=107.0, Bismarck Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**4.61**	**181**	P	Pn	20 03 41.2	+0.1
	0.6nm,0.3s,baz=0.0,slow=20,SNR=2.9						
PMG				S	Sn	20 04 27.4	-7.4
	4.1nm,0.3s,baz=191,slow=13,SNR=12						
WRA	**Warramunga Arr**	**19.65**	**219**	P	P	20 06 48.0	-0.3
	0.5nm,0.3s,baz=44,slow=11,SNR=22						
WRA				S	S	20 10 11.6	-9.3
	baz=55,slow=26,SNR=2.7						
ASAR	**Alice Springs**	**22.79**	**213**	P	P	20 07 20.9	+0.2
	1.7nm,0.8s,baz=46,slow=7.4,SNR=19						
MKAR	**Makanchi Array**	**76.73**	**320**	P	P	20 14 05.0	0.0
	0.1nm,0.3s,baz=98,slow=6.0,SNR=2.7						

ISCJB ***28*** *20:03:05.9±0.5, 39.°12N±0.°03×29.°01E±0.°03, h4km±6km, Error ellipse: s-maj=5.4km s-min=3.9km az=0.8*
ISK ***28*** *20:03:05.9, 39.°13N×29.°01E, h7km, MD2.9*
DDA ***28*** *20:03:05.8, 39.°12N×29.°01E, h7km, Md2.9*
CSEM ***28*** *20:03:06.2±0.1, 39.°12N×29.°01E, h5km, MD2.9, Error ellipse: s-maj=1.2km s-min=1.1km az=151.0*
ISC 28 20:03:06.3±1.1, 39.°13N±0.°03×29.°01E±0.°02, h5km±12km, n48, σ0°27/60, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**249**	P	**Pg**	**20 03 11.1**	**0.0**
DEMI				S	**Sg**	**20 03 14.6**	**+0.2**
DEMI	**Demirci**	**0.25**	**249**	*i* P	**Pg**	**20 03 11.1**	**0.0**
DEMI				*i* S	**Sg**	**20 03 14.6**	**+0.2**
GDZ	**Gediz**	**0.37**	**97**	P	**Pg**	**20 03 13.4**	**0.0**
GDZ				S	**Sg**	**20 03 18.4**	**+0.1**
GDZ	**Gediz**	**0.37**	**97**	*i* P	**Pg**	**20 03 13.4**	**0.0**
GDZ				*i* S	**Sg**	**20 03 18.4**	**+0.1**
TVSB	**Tavsanli**	**0.47**	**48**	*e*PG	**Pg**	**20 03 15.1**	**-0.3**
TVSB	**Tavsanli**	**0.47**	**48**	*e*Pg	**Pg**	**20 03 15.1**	**-0.3**
KULA	**Kula-Manisa**	**0.68**	**204**	*e*PG	**Pg**	**20 03 19.1**	**-0.2**
KULA	**Kula-Manisa**	**0.68**	**204**	*e*Pg	**Pg**	**20 03 19.1**	**-0.2**
KHAL	**Karahalli**	**0.85**	**154**	P	**Pg**	**20 03 22.3**	**-0.2**
KHAL				S	**Sg**	**20 03 33.6**	**+0.1**
KHAL	**Karahalli**	**0.85**	**154**	*i* P	**Pg**	**20 03 22.3**	**-0.2**
KHAL				*i* S	**Sg**	**20 03 33.6**	**+0.1**
KHL	**Karahalli**	**0.90**	**154**	*e*PG	**Pg**	**20 03 23.7**	**+0.1**
KHL	**Karahalli**	**0.90**	**154**	*e*Pg	**Pg**	**20 03 23.7**	**+0.1**
ORLT	**Orhaneli**	**0.92**	**354**	*e*PG	**Pg**	**20 03 23.9**	**0.0**
ORLT	**Orhaneli**	**0.92**	**354**	*e*Pg	**Pg**	**20 03 23.9**	**0.0**
AKHS	**Akhisar**	**0.97**	**255**	P	**Pg**	**20 03 24.9**	**+0.1**
AKHS				S	**Sg**	**20 03 36.6**	**-0.8**
AKHS	**Akhisar**	**0.97**	**255**	*i* P	**Pg**	**20 03 24.9**	**+0.1**
AKHS				*i* S	**Sg**	**20 03 36.6**	**-0.8**
AKS	**Akhisar**	**0.97**	**255**	*e*PG	**Pg**	**20 03 24.9**	**+0.1**
AKS	**Akhisar**	**0.97**	**255**	*e*Pg	**Pg**	**20 03 24.9**	**+0.1**
BALB	**Balikesir**	**1.01**	**300**	*e*PG	**Pg**	**20 03 25.7**	**0.0**
BALB				*e*SG	**Sb**	**20 03 40.0**	**+0.1**
BALB	**Balikesir**	**1.01**	**300**	*e*Pg	**Pg**	**20 03 25.7**	**0.0**
BALB				*e*Sg	**Sb**	**20 03 40.0**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.24**	**355**	*e*PN	**Pn**	**20 03 30.6**	**+0.4**
MDNY	**Mudanya-Bursa**	**1.24**	**355**	*e*Pn	**Pn**	**20 03 30.6**	**+0.4**
KCTX	**Karacabey (Bur**	**1.24**	**336**	*e*PN	**Pg**	**20 03 30.2**	**+0.2**
KCTX	**Karacabey (Bur**	**1.24**	**336**	*e*Pn	**Pg**	**20 03 30.2**	**+0.2**
CAVI	**Cavuskoy**	**1.25**	**31**	*e*PN	**Pg**	**20 03 30.2**	**0.0**
CAVI	**Cavuskoy**	**1.25**	**31**	*e*Pn	**Pg**	**20 03 30.2**	**0.0**
IZI	**Iznik**	**1.25**	**16**	*e*PN	**Pb**	**20 03 30.6**	**+0.2**
IZI	**Iznik**	**1.25**	**16**	*e*Pn	**Pb**	**20 03 30.6**	**+0.2**
GEMT	**Gemlik**	**1.31**	**6**	*e*PN	**Pn**	**20 03 31.3**	**+0.1**
GEMT	**Gemlik**	**1.31**	**6**	*e*Pn	**Pn**	**20 03 31.3**	**+0.1**
BORA	**Eskisehir**	**1.34**	**56**	P	**Pn**	**20 03 31.9**	**+0.2**
BORA				S	**Sb**	**20 03 48.7**	**-0.8**
BORA	**Eskisehir**	**1.34**	**56**	*i* P	**Pn**	**20 03 31.9**	**+0.2**
BORA				*i* S	**Sb**	**20 03 48.7**	**-0.8**
GONE	**Gonen-Balikesi**	**1.37**	**312**	*e*PN	**Pn**	**20 03 32.1**	**0.0**
GONE	**Gonen-Balikesi**	**1.37**	**312**	*e*Pn	**Pn**	**20 03 32.1**	**0.0**
ADVT	**Abdulvahap**	**1.41**	**23**	*e*PN	**Pn**	**20 03 32.6**	**0.0**
ADVT	**Abdulvahap**	**1.41**	**23**	*e*Pn	**Pn**	**20 03 32.6**	**0.0**
ARMT	**Armutlu**	**1.44**	**355**	*e*PN	**Pn**	**20 03 33.0**	**0.0**
ARMT	**Armutlu**	**1.44**	**355**	*e*Pn	**Pn**	**20 03 33.0**	**0.0**
EDC	**Edincik**	**1.50**	**324**	*e*PN	**Pn**	**20 03 33.9**	**+0.1**
EDC	**Edincik**	**1.50**	**324**	*e*Pn	**Pn**	**20 03 33.9**	**+0.1**
GULT	**Gulveren**	**1.74**	**41**	*e*PN	**Pn**	**20 03 37.6**	**+0.4**
GULT	**Gulveren**	**1.74**	**41**	*e*Pn	**Pn**	**20 03 37.6**	**+0.4**
HRT	**Hereke**	**1.76**	**16**	*e*PN	**Pn**	**20 03 37.4**	**-0.1**
HRT	**Hereke**	**1.76**	**16**	*e*Pn	**Pn**	**20 03 37.4**	**-0.1**
ISK	**Istanbul-Kandi**	**1.93**	**1**	*e*PN	**Pn**	**20 03 40.0**	**+0.3**
ISK	**Istanbul-Kandi**	**1.93**	**1**	*e*Pn	**Pn**	**20 03 40.0**	**+0.3**
SVRH	**Sivrihisar-ESK**	**1.97**	**80**	*e*PN	**Pn**	**20 03 40.8**	**+0.4**
SVRH	**Sivrihisar-ESK**	**1.97**	**80**	*e*Pn	**Pn**	**20 03 40.8**	**+0.4**

MOS ***28*** *20:17:06.6±1.0, 4.°73N×127.°61E, h38km, mb5.6/79, MS4.4/35, Error ellipse: s-maj=8.4km s-min=4.4km az=112.3*

BJI ***28*** *20:17:06.9, 4.°34N×127.°82E, h69km, mb5.4/81, mB5.3/49, Ms5.0/69, Ms7 4.6/71*
ISCJB ***28*** *20:17:11.6±0.3, 4.°73N±0.°01×127.°70E±0.°02, h85km±2km, mb5.3/230, Error ellipse: s-maj=3.4km s-min=2.3km az=167.6*
KLM ***28*** *20:17:12.8, 4.°66N×127.°74E, h84km, mb5.7, MS6.5*
NEIC ***28*** *20:17:13.0±0.5, 4.°69N×127.°67E, h85km±4km, mb5.4/125, MW5.4, Error ellipse: s-maj=3.6km s-min=2.6km az=71.0, Moment Tensor Solution. s17 Moment tensor: Scale 10^{17}Nm; M_{rr}0.62; $M_{\theta\theta}$0.33; $M_{\phi\phi}$-0.95; $M_{r\theta}$-0.88; $M_{\theta\phi}$-0.36; $M_{\phi r}$~1.00; Best double couple: $M_0$1.60000×10^{17} NP1: ϕ_s220.00000°, δ76.00000°, λ110.00000°. NP2: ϕ_s342.00000°, δ24.00000°, λ35.00000°. Principal axes: T 1.5000, Plg54.0000°, Azm154.0000°; N 0.2000, Plg20.0000°, Azm35.0000°; P -1.7000, Plg29.0000°, Azm294.0000°;*
MAN ***28*** *20:17:12, 4.°86N×127.°72E, h71km, mb5.9, ML4.9, MS5.5*
IDC ***28*** *20:17:13.4±1.1, 4.°66N×127.°67E, h89km±9km, mb4.9/45, mb1 4.9/49, mb1mx4.9/56, mbtmp5.2/49, MS4.3/31, Ms1 4.3/31, ms1mx4.2/38, Error ellipse: s-maj=10.5km s-min=6.8km az=57.0*
GCMT ***28*** *20:17:13.0±0.1, 4.°81N×127.°56E, h75km±1km, MW5.5/104, Moment Tensor Solution. s100,c166; s104,c186; Duration: 1s4 Moment tensor: Scale 10^{17}Nm; M_{rr}0.06±.02; $M_{\theta\theta}$2.01±.03; $M_{\phi\phi}$-2.06±.03; $M_{r\theta}$-0.61±.02; $M_{\theta\phi}$-0.46±.03; $M_{\phi r}$-0.47±.02; Best double couple: $M_0$2.22200×10^{17} NP1:ϕ_s231.00000°, δ89.00000°, λ160.00000°. NP2:ϕ_s321.00000°, δ70.00000°, λ1.00000°. Principal axes: T 2.2060, Plg15.0000°, Azm184.0000°; N 0.0370, Plg70.0000°, Azm49.0000°; P -2.2380, Plg13.0000°, Azm278.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
DJA ***28*** *20:17:14.7±0.4, 5.°N±3.°×12.°8E±.°, h93km±4km, M5.6/87, mb5.7/87, mB5.9/64, MLv6.3/3, Mw(mB)5.5/64, Mwp5.6/1*
ISC 28 20:17:11.6±0.3, 4.°70N±0.°03×127.°69E±0.°03, h73km±2km, h73km:pP-P, n831, σ1°84/841, mb5.4/233, 55C-35D, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SGSI	**Sangihe**	**2.38**	**245**	P	**Pn**	**20 17 51.4**	**+2.9**
SGSI				S	**Sn**	**20 18 17.9**	**+1.2**
MATI	**Mati**	**2.65**	**327**	*e*P	**Pn**	**20 17 52.5**	**+0.3**
MATI				*e*S	**Sn**	**20 18 22.2**	**-1.1**
GSPH	**General Santos**	**3.06**	**297⇑**	*e*P	**Pn**	**20 17 57.0**	**-0.9**
GSPH				*i* S	**Sn**	**20 18 28.6**	**-4.8**
DAV	**Davao City (W)**	**3.16**	**318**	P	**Pn**	**20 18 01.7**	**+2.6**
	770nm,0.3s,baz=122,slow=1.4,SNR=66						
DAV				S	**Sn**	**20 18 39.1**	**+3.4**
	1μm,0.3s,baz=90,slow=22,SNR=8.4						
DAV				LR	LR	20 18 54.9	
	comp=Z,9μm,21.3s,baz=119,slow=32						
DAV	**Davao City (W)**	**3.16**	**318**	*e*Pn	**Pn**	**20 18 00.9**	**+1.8**
DAV				*e*Sn	**Sn**	**20 18 39.1**	**+3.4**
DMPH	**Davao City--Mi**	**3.22**	**318⇑**	*e*P	**Pn**	**20 18 01.9**	**+2.0**
DMPH				*i* S	**Sn**	**20 18 41.2**	**+4.2**
KCP	**Kidapawan**	**3.46**	**312⇓**	*e*P	**Pn**	**20 18 03.9**	**+0.6**
KCP				*i* S

STKI **Sintang** 16.84 255 P P 20 21 04.3 +0.5
384nm,1.0s,5μm
TWSI **Taliwang, Sumb** 17.16 219 P P 20 21 09.7 +2.4
PBKI **Pangkalan Bun** 17.62 246 P P 20 21 13.9 +1.5
620nm,0.9s,10μm
KSM **Kuching** 17.65 260 eP Pn 20 21 13.3 +0.4
315nm,0.6s
MTN **Manton Dam** 17.76 169 P P 20 21 13.3 -0.6
baz=18,SNR=118
MTN **Manton Dam** 17.76 169 eP P 20 21 13.0 -0.9
195nm,0.8s
SRBI **Singaraja** 17.78 224 P Pn 20 21 15.8 +1.4
241nm,0.9s,3μm
KDU **Kakadu** 17.91 165 P P 20 21 15.7 0.0
baz=18,SNR=13
DNP **Denpasar** 18.21 223 P Pn 20 21 21.9 +2.4
ABJI **Asem Bagus** 18.28 227 P Pn 20 21 22.1 +1.6
JAGI **Jajag, Banyuwa** 18.80 226 P Pn 20 21 28.0 +1.3
325nm,1.5s,4μm
JAGI **Jajag, Banyuwa** 18.80 226 eP P 20 21 25.4 0.0
256nm,0.8s
GUMO **Guam** 19.11 61 P Pn 20 21 30.0 -0.3
1.6nm,0.3s,baz=206,slow=11,SNR=2.1
GUMO LR LR 20 27 17.5
comp=Z,349nm,19.5s,baz=238,slow=32
TWG **Pinlang** 19.12 341 eP P 20 21 28.2 -0.6
370nm,0.6s
GMJI **Gumukmas** 19.18 228 P Pn 20 21 31.7 +0.5
351nm,1.0s,3μm
YULB **Yu-li** 19.59 342 eP P 20 21 31.5 -2.4
64nm,0.9s
TPUB **Ta-pu** 19.71 340 eP P 20 21 34.5 -0.8
178nm,0.7s
SSLB **Suanglung** 20.06 342 eP P 20 21 39.0 -0.1
118nm,0.8s
SSLB eS S 20 25 12.9 -7.9
NGJI **Ngawi** 20.15 234 P Pn 20 21 42.0 -0.6
252nm,0.8s
YOJ **Yonaguni jima** 20.16 348 eP P 20 21 39.6 -0.6
YOJ pmax pmax
comp=Z,226nm,0.7s
YOJ **Yonaguni jima** 20.16 348 eP P 20 21 39.6 -0.6
comp=Z,226nm,0.7s
NACB **Ninganchiao** 20.24 344 eP P 20 21 42.2 +1.2
comp=Z,61nm,0.8s
PWJI **Pagerwojo** 20.27 232 P P 20 21 42.2 +0.8
MANU **Manus Island** 20.76 108 eP P 20 21 47.6 +0.8
comp=Z,1μm,2.0s
YHNB **Yeheng** 20.77 344 eP P 20 21 48.0 +1.2
comp=Z,179nm,0.8s
YHNB eS S 20 25 31.1 -3.6
WOJI **Wonogiri, Jawa** 20.86 233 P Pn 20 21 51.7 +0.8
PCJI **Pacitan** 20.87 232 P Pn 20 21 54.2 +3.2
TATO **Taipei** 21.03 344 eP P 20 21 49.9 +0.5
comp=Z,270nm,1.2s
UGM **Wanagama** 21.22 234 eP P 20 21 52.9 +1.2
comp=Z,1μm,2.0s
TPI **Tanjungpandan** 21.35 250 P P 20 21 58.3 +5.3
HKC **Hong Kong Obse** 21.86 324 P P 20 21 58.0 -0.3
QZH **Quanzhou** 21.95 337⇑iP P 20 21 54.5 -4.8
QZH S S 20 25 46.0 -12
QZH SS SnSn 20 26 21.0 -8.2
QZH pmax pmax
comp=Z,290nm,0.9s
MCO **Taipa Grande** 22.08 323 P P 20 22 03.0 +2.2
JCJI **Jatiwangi** 22.35 240 P P 20 22 07.0 +3.2
comp=Z,249nm,0.8s,comp=Z,3μm
QIZ **Qiongzhong** 22.50 311 P P 20 22 04.8 -0.6
QIZ sP sP 20 22 28.3 -1.4
QIZ S S 20 25 58.5 -9.0
QIZ sS Sn 20 26 28.0 +2.5
QIZ pmax pmax
comp=Z,110nm,1.0s
QIZ pmax pmax
comp=Z,470nm,6.2s
QIZ LR LR
comp=Z,3μm,19.9s
QIZ LR LR
comp=Z,2μm,19.0s
QIZ LR LR
comp=Z,1μm,19.0s
QIZ **Qiongzhong** 22.50 311 eP P 20 22 03.6 -1.8
comp=Z,98nm,0.9s
QIZ LR LR
comp=Z,2μm,21.0s
PPBI **Pangkal Pinang** 22.59 253 P P 20 22 06.4 0.0
comp=Z,87nm,0.7s,comp=Z,2μm
FITZ **Fitzroy Crossi** 22.74 185 P P 20 22 07.4 -0.5
baz=23,SNR=86
FITZ **Fitzroy Crossi** 22.74 185 eP P 20 22 07.4 -0.5
comp=Z,256nm,1.1s
CMJI **Cimerak** 22.86 237 P P 20 22 10.1 +1.0
comp=Z,150nm,0.8s
GZH **Guangzhou** 22.95 324 P P 20 22 11.5 +1.6
GZH S S 20 26 16.5 +2.0
LEM **Lembang** 23.08 240 P P 20 22 15.0 +3.4
comp=Z,144nm,0.8s,baz=73,slow=8.3,SNR=40
LEM S S 20 26 19.1 +1.9
comp=Z,5.8nm,0.3s,baz=330,slow=20,SNR=3.0
LEM **Lembang** 23.08 240 P P 20 22 18.8 +7.3
CISI **Cisompet, Garu** 23.27 239 P P 20 22 14.2 +0.9
comp=Z,149nm,0.8s,comp=Z,2μm
CISI **Cisompet, Garu** 23.27 239 eP P 20 22 12.1 -1.2
comp=Z,183nm,0.9s
TPRI **Tanjung Pinang** 23.44 261 P P 20 22 14.4 -0.3
comp=Z,237nm,0.8s,comp=Z,21μm
CBJI **Citeko** 23.56 242 P P 20 22 18.1 +2.3
comp=Z,793nm,0.8s,comp=Z,8μm
PMG **Port Moresby** 23.93 126 P P 20 22 18.2 -0.9
comp=Z,16nm,0.8s,baz=306,slow=17,SNR=3.8
PMG S S 20 26 24.1 -6.5
comp=Z,14nm,0.8s,baz=246,slow=12,SNR=1.8
PMG LR LR 20 33 33.6
comp=Z,562nm,18.1s,baz=304,slow=41
PMG **Port Moresby** 23.93 126 eP P 20 22 17.1 -2.1
comp=Z,60nm,1.0s
PMG S S 20 26 24.1 -6.5
MYKOM **Kota Tinggi** 23.98 264 eP P 20 22 18.7 -0.8
comp=Z,202nm,1.1s
SBJI **Serang** 24.06 244 P P 20 22 23.1 +2.8
COEN **Coen** 24.07 141 P P 20 22 20.3 0.0
baz=24,SNR=9.3
COEN **Coen** 24.07 141 eP P 20 22 20.6 +0.2
comp=Z,40nm,0.8s
UBPT **Khong Chiam** 24.25 297 P P 20 22 20.8 -1.2
comp=Z,191nm,1.1s,comp=Z,3μm
BLSI **Bandar Lampung** 24.55 246 P P 20 22 27.0 +2.2
comp=Z,200nm,0.8s,comp=Z,2μm
CGJI **Cibinong** 24.67 243 P P 20 22 26.4 +0.5
comp=Z,165nm,0.9s,comp=Z,1μm
KASI **Kota Agung** 25.29 247 P P 20 22 33.1 +1.6
comp=Z,196nm,0.9s,comp=Z,2μm
WRAB **Tennant Creek** 25.34 165c iP P 20 22 31.9 +0.1
WRAB pmax pmax
comp=Z,687nm,1.2s
WRAB **Tennant Creek** 25.34 165 eP P 20 22 32.1 +0.3
comp=Z,177nm,0.9s
WRAB LR LR
comp=Z,1μm,19.0s
WR1 **Warramunga Arr** 25.34 165 eP P 20 22 32.0 +0.1
comp=Z,180nm,0.8s
WR1 eS S 20 26 49.7 -3.4
WRA **Warramunga Arr** 25.34 165 P P 20 22 32.0 +0.1
comp=Z,144nm,0.7s,baz=344,slow=10,SNR=193
WRA S S 20 26 49.7 -3.4
comp=Z,9.5nm,1.1s,baz=345,slow=16,SNR=4.7
WRA LR LR 20 33 47.4
comp=Z,635nm,19.8s,baz=345,slow=39
WB2 **Warramunga Arr** 25.34 165 eP P 20 22 32.0 +0.1
comp=Z,210nm,0.9s
LWLI **Liwa** 25.50 248 P P 20 22 34.9 +1.3
comp=Z,423nm,0.8s,comp=Z,4μm
LHSI **Lahat** 25.59 251 P P 20 22 37.4 +3.2
RABL **Rabaul** 25.99 109 eP P 20 22 38.0 +0.1
comp=Z,96nm,0.8s
FRIM **Kepong** 26.05 268 ⇑P P 20 22 38.1 -0.3
CBIJ **Chichi jima** 26.22 30 eP P 20 22 39.2 -0.6
comp=Z,440nm,1.1s
JCJ **Chichijima** 26.22 30 P P 20 22 39.9 +0.1
comp=Z,113nm,0.6s,baz=285,slow=5.3,SNR=7.6
SKNT **Sakolnakorn** 26.25 300 P P 20 22 39.1 -1.1
comp=Z,364nm,0.8s,comp=Z,3μm
CHBT **CHBT** 26.30 289 P P 20 22 40.9 +0.3
comp=Z,307nm,0.9s
MASI **Maura Aman, Be** 26.60 253 P P 20 22 45.7 +2.3
comp=Z,519nm,0.8s,comp=Z,13μm
XMIS **Christmas Isla** 26.63 235 eP P 20 22 44.1 +0.5
comp=Z,80nm,0.8s
MBWA **Marble Bar** 26.86 197 P P 20 22 46.3 +0.7
SNR=13
MBWA P P 20 22 46.3 +0.7
SNR=13
MBWA **Marble Bar** 26.86 197 eP P 20 22 45.4 -0.1
comp=Z,95nm,0.8s
MBWA LR LR
comp=Z,545nm,20.0s
KULM **Kulim** 26.95 272 ⇓P P 20 22 46.6 +0.1
KULM **Kulim** 26.95 272 eP P 20 22 46.2 -0.3
comp=Z,158nm,1.2s
KULM LR LR
comp=Z,707nm,19.0s
SSE **Sheshan** 26.96 348 P P 20 22 47.0 +0.6
SSE S S 20 27 19.5 +1.0
SSE pmax pmax
comp=Z,31nm,0.9s
SSE pmax pmax
comp=Z,630nm,5.7s
SSE LR LR
comp=Z,290nm,21.3s
SSE LR LR
comp=Z,1μm,21.2s
SSE LR LR
comp=Z,630nm,23.7s
BKNI **Bangkinang** 26.97 261 P P 20 22 47.3 +0.5
comp=Z,164nm,0.9s,comp=Z,3μm
BKNI **Bangkinang** 26.97 261 eP P 20 22 46.2 -0.5
comp=Z,190nm,0.8s
KHON **Khomkaen** 27.01 297 P P 20 22 46.8 -0.2
comp=Z,78nm,0.8s,comp=Z,630nm
QIS **Mount Isa** 27.69 155 P P 20 22 53.0 -0.1
baz=28,SNR=125
PPI **Padang Panjang** 27.75 260 P P 20 22 54.1 +0.4
comp=Z,73nm,0.8s,comp=Z,1μm
PDSI **Padang** 27.77 259 P P 20 22 54.3 +0.4
comp=Z,67nm,0.7s,comp=Z,6μm
TRTT **Trang** 28.00 278 P P 20 22 55.8 -0.2
comp=Z,190nm,0.8s,comp=Z,2μm
MNSI **Mandailing Nat** 28.34 263 P P 20 22 59.8 +0.8
comp=Z,124nm,0.8s,comp=Z,1μm
JNU **Nakatsue** 28.44 6 eP P 20 22 59.7 +0.1
comp=Z,304nm,0.9s
NJ2 **Nanjing** 28.45 344 eP P 20 23 04.8 +5.1
NJ2 pmax pmax
comp=Z,44nm,1.1s
NJ2 LR LR
comp=Z,920nm,19.5s
NJ2 LR LR
comp=Z,1μm,16.8s
NJ2 LR LR
comp=Z,750nm,17.3s
KRAB **Krabi** 28.53 279 P P 20 23 00.3 -0.3
comp=Z,380nm,0.7s,comp=Z,2μm
WHN **Wuhan** 28.62 335⇓iP P 20 23 02.8 +1.6
WHN S S 20 27 45.8 +1.1
WHN pmax pmax
comp=Z,190nm,0.9s
WHN LR LR
comp=Z,3μm,14.8s
PBKT **Sadao Pong** 28.75 296 P P 20 23 02.2 -0.3
comp=Z,188nm,1.0s,comp=Z,2μm
PSI **Prapat** 28.77 267 P P 20 23 02.5 -0.4
comp=Z,42nm,0.6s,baz=81,slow=3.6,SNR=28
PSI S S 20 27 46.1 -1.5
comp=Z,2.3nm,0.4s,baz=328,slow=9.5,SNR=2.7
PSI ScP ScP 20 29 44.6 -2.2
comp=Z,3.4nm,0.3s,baz=108,slow=3.6,SNR=4.0
PSI **Prapat** 28.77 267 eP P 20 23 02.0 -0.9
comp=Z,47nm,0.7s
PSI S S 20 27 46.1 -1.5
PSI ScP ScP 20 29 44.6 -2.2
AS31 **Alice Springs** 28.83 168 eP P 20 23 03.6 +0.3
comp=Z,23nm,0.6s
ASAR **Alice Springs** 28.83 168 P P 20 23 03.5 +0.3
comp=Z,37nm,0.7s,baz=349,slow=7.3,SNR=427
ASAR S S 20 27 45.5 -2.7
comp=Z,3.1nm,0.8s,baz=348,slow=18,SNR=2.6
ASAR ScP ScP 20 29 45.5 -1.2
comp=Z,9.2nm,1.0s,baz=355,slow=2.2,SNR=7.7
ASAR LR LR 20 35 57.8
comp=Z,1μm,19.1s,baz=344,slow=39
ASAR P3KPbc 20 55 43.5
comp=Z,0.7nm,0.9s,baz=158,slow=4.4,SNR=4.6
ASAR **Alice Springs** 28.83 168 P P 20 23 03.5 +0.3
ASAR S S 20 27 45.5 -2.7
ASAR 20 29 45.5
ASAR pmax pmax
comp=Z,43nm,0.7s
ASAR smax smax
comp=N,3.0nm,0.8s
ASAR pmax pmax
comp=N,9.0nm,1.0s
ASAR MLR MLR
comp=Z,1μm,19.1s
AS01 **Alice Springs** 28.84 168 eP P 20 23 03.5 +0.2
PHET **Kaeng Krachan** 28.88 288 P P 20 23 03.9 +0.1
comp=Z,56nm,1.0s,comp=Z,487nm
SURT **Suratani** 29.00 280 P P 20 23 04.4 -0.4
comp=Z,161nm,0.7s,comp=Z,1μm
TSI **Tuntungan** 29.08 269 P P 20 23 06.2 +0.7
comp=Z,113nm,0.9s
PKDT **Phuket** 29.35 278 P P 20 23 07.7 -0.2
comp=Z,373nm,0.9s,comp=Z,3μm
GYA **Guiyang** 29.54 319⇓iP P 20 23 10.0 +0.4
GYA pP pP 20 23 29.0 +2.1
GYA sP sP 20 23 37.3 +1.9
GYA PP PnPn 20 24 11.3 +3.9
GYA PcP PcP 20 26 15.5 +2.1
GYA S S 20 28 04.3 +4.8
GYA sS sS 20 28 30.0 +0.9
GYA SS SnSn 20 29 39.0 +4.6
GYA ScP ScP 20 29 50.3 +1.3
GYA ScS ScS 20 33 44.5 +0.5
GYA pmax pmax
comp=Z,50nm,0.6s
GYA pmax pmax
comp=Z,240nm,6.5s
GYA LR LR
comp=Z,3μm,12.9s
GYA LR LR
comp=Z,3μm,15.1s
GYA LR LR
comp=Z,1μm,14.2s
UTTA **Uttaradit** 29.55 298 P P 20 23 09.4 -0.2
comp=Z,44nm,1.0s,comp=Z,310nm
WRKA **Warakurna** 29.56 179 P P 20 23 10.3 +0.6
baz=30,SNR=127
NANT **Nan** 29.85 300 P P 20 23 12.0 -0.3
comp=Z,73nm,0.6s,comp=Z,642nm
KCSI **Kotacane, Aceh** 29.87 269 P P 20 23 11.5 -1.0
comp=Z,232nm,0.7s,comp=Z,3μm
GIRL **Giralia** 30.19 205 P P 20 23 17.1 +1.9
baz=30,SNR=12
GSI **Gunungsitoli** 30.26 265 P P 20 23 15.2 -0.8
comp=Z,161nm,0.9s
GSI **Gunungsitoli** 30.26 265 eP P 20 23 14.3 -1.7
comp=Z,108nm,0.8s
SUKH **Sukhothai** 30.27 297 P P 20 23 16.1 +0.1
comp=Z,31nm,0.8s,comp=Z,228nm
KHLT **Khaolaem Dam** 30.35 291 P P 20 23 16.7 0.0
comp=Z,204nm,0.9s
LHMI **Lhok Sumawe** 30.64 272 P P 20 23 20.6 +1.3
comp=Z,182nm,0.7s
LHMI **Lhok Sumawe** 30.64 272 eP P 20 23 18.9 -0.3
comp=Z,122nm,0.7s
CTAO **Charters Tower** 30.65 144 eP P 20 23 20.9 +1.6
CTAO pmax pmax
comp=Z,21nm,0.9s
CTAO **Charters Tower** 30.65 144 eP P 20 23 20.9 +1.6
comp=Z,21nm,0.8s
CTAO LR LR
comp=Z,1μm,21.0s
LAMP **Lampang** 30.66 299 P P 20 23 19.6 +0.1
comp=Z,35nm,1.0s,comp=Z,325nm
ENH **Enshi** 30.70 328 eP P 20 23 20.3 +0.7
comp=Z,184nm,0.8s
ENH LR LR
comp=Z,1μm,20.0s
CRAI **Chiangrai** 30.74 303 P P 20 23 19.8 -0.4
comp=Z,1μm,0.9s,comp=Z,30μm
MLSI **Meulaboh, Aceh** 31.20 270 P P 20 23 23.4 -0.8
comp=Z,148nm,0.9s
CM01 **Chiang Mai Arr** 31.21 298 eP P 20 23 24.2 -0.2
CM31 **Chiang Mai Arr** 31.24 298 eP P 20 23 24.6 0.0
CM31 eScP ScP 20 29 53.0 -1.6
CMAR **Chiang Mai Arr** 31.24 298 P P 20 23 24.7 +0.1
comp=Z,61nm,0.8s,baz=122,slow=7.5,SNR=204
CMAR S S 20 28 22.6 -3.4
comp=Z,0.5nm,0.7s,baz=116,slow=10,SNR=2.1
CMAR ScP ScP 20 29 53.5 -1.0
comp=Z,5.1nm,0.9s,baz=132,slow=1.7,SNR=8.7
CMAR LR LR 20 35 59.4
comp=Z,958nm,21.0s,baz=116,slow=36
CMMT **Chiang Mai** 31.37 299 P P 20 23 25.2 -0.6
comp=Z,134nm,1.2s,comp=Z,2μm
CHTO **Chiang Mai** 31.38 299 P P 20 23 25.2 -0.6
comp=Z,591nm,1.3s,comp=Z,7μm
CHTO **Chiang Mai** 31.38 299 eP P 20 23 25.2 -0.6
CHTO pmax pmax
comp=Z,79nm,0.9s
CHTO **Chiang Mai** 31.38 299 P P 20 23 25.8 0.0
SNR=35
CHTO P P 20 23 25.8 0.0
SNR=35
CHTO **Chiang Mai** 31.38 299 eP P 20 23 25.2 -0.6
comp=Z,79nm,0.8s
CHTO LR LR
comp=Z,921nm,20.0s
KMI **Kunming** 31.41 313 P P 20 23 27.8 +1.6
KMI pP pP 20 23 43.5 -0.1
KMI sP sP 20 23 50.0 -2.1
KMI S S 20 28 28.5 -0.5
KMI pmax pmax
comp=Z,55nm,0.9s
KMI pmax pmax
comp=Z,330nm,3.1s
KMI LR LR
comp=Z,690nm,14.9s
KMI LR LR
comp=Z,420nm,10.9s
KMI LR LR
comp=Z,980nm,20.4s
INU **Inuyama** 31.70 15 eP P 20 23 28.0 -0.4
comp=Z,58nm,0.8s
MHMT **Maesarieng** 32.03 297 P P 20 23 31.5 0.0
comp=Z,233nm,0.8s
KS15 **Wonju Array Si** 32.59 0 eP P 20 23 35.5 -0.7
KSAR **Wonju Array Be** 32.59 0 P P 20 23 35.9 -0.2
KSAR **Wonju Array Be** 32.59 0 P P 20 23 35.9 -0.2
KSAR ScP ScP 20 29 57.9 -0.9
KSRS **Korea Array** 32.60 0 P P 20 23 35.9 -0.3
comp=Z,30nm,0.7s,baz=176,slow=9.9,SNR=11
KSRS ScP ScP 20 29 57.9 -0.9
comp=Z,2.3nm,0.9s,baz=191,slow=3.7,SNR=4.4
KSRS LR LR 20 40 52.8
comp=Z,264nm,18.5s,baz=180,slow=44
KSRS **Korea Array** 32.60 0 P P 20 23 35.9 -0.3
KSRS pmax pmax
comp=Z,29nm,0.7s
KSRS pmax pmax
comp=N,2.0nm,0.9s
KSRS MLR MLR
comp=Z,264nm,18.5s
KS01 **Wonju Array Si** 32.63 0 eP P 20 23 36.5 0.0
INCN **Inchon** 32.65 358 eP P 20 23 36.0 -0.7
comp=Z,187nm,1.9s
INCN LR LR
comp=Z,711nm,19.0s
TIA **Tai'an** 32.84 344 ⇑P P 20 23 39.3 +0.9
TIA pmax pmax
comp=Z,70nm,0.8s
MAJO **Matsushiro** 33.13 16⇑eP P 20 23 42.4 +1.4
MAJO pmax pmax
comp=Z,65nm,0.7s
MAJO **Matsushiro** 33.13 16 eP P 20 23 40.2 -0.7
comp=Z,58nm,1.1s
MAJO LR LR
comp=Z,1μm,20.0s
MAT **Matsushiro** 33.13 16 P P 20 23 41.1 +0.1
MAT S S 20 28 44.6 -11
MJAR **Matsushiro Arr** 33.13 16 P P 20 23 39.9 -1.1
comp=Z,8.2nm,0.7s,baz=181,slow=9.9,SNR=30
MJAR ScP ScP 20 29 58.9 -1.8
comp=Z,2.3nm,0.8s,baz=193,slow=3.9,SNR=5.3
MJAR LR LR 20 36 34.6
comp=Z,880nm,20.5s,baz=205,slow=35
MJAR **Matsushiro Arr** 33.13 16 P P 20 23 39.9 -1.1
MJAR pmax pmax
comp=Z,6.0nm,0.7s
MJAR pmax pmax
comp=N,2.0nm,0.8s
MJAR MLR MLR
comp=Z,880nm,20.5s
MJB9 **Matsu-Tunnel** 33.14 16 eP P 20 23 41.2 +0.2
comp=Z,14nm,1.1s
XAN **Xi'an** 34.01 331 P P 20 23 49.0 +0.3
XAN pmax pmax
comp=Z,220nm,0.6s
XAN LR LR
comp=Z,710nm,18.0s
XAN LR LR
comp=Z,320nm,19.5s
XAN LR LR
comp=Z,730nm,18.1s
CD2 **Chengdu** 34.46 322⇓iP P 20 23 52.8 +0.2
CD2 pP pP 20 24 09.3 -0.7
CD2 sP sP 20 24 17.5 -1.0
CD2 PP PP 20 25 12.3 +0.3
CD2 S S 20 29 17.5 +1.7
CD2 sS sS 20 29 46.3 +0.5
CD2 pmax pmax
comp=Z,150nm,1.0s
CD2 pmax pmax
comp=Z,460nm,4.8s
CD2 LR LR
comp=Z,3μm,18.0s
CD2 LR LR
comp=Z,2μm,20.9s
DL2 **Dalian** 34.50 352 P P 20 23 46.5 -6.2
DL2 pmax pmax
comp=Z,63nm,0.8s
COCO **West Island** 34.97 241 PFAKE 20 24 10.0 +13
COCO LR LR
comp=Z,1μm,21.0s
HNR **Honiara** 35.07 114 P P 20 23 57.0 -1.0
comp=Z,45nm,0.4s,baz=275,slow=15,SNR=3.0
HNR LR LR 20 38 28.5
comp=Z,219nm,19.6s,baz=288,slow=36
HNR **Honiara** 35.07 114 eP P 20 23 57.0 -1.0
HNR pmax pmax
comp=Z,140nm,1.0s
MORW **Morawa** 35.39 198 P P 20 24 01.0 +0.5
baz=36,SNR=36
TIY **Taiyuan** 35.70 339 eP P 20 24 04.5 +1.3
TIY pmax pmax
comp=Z,76nm,0.7s
TIY pmax pmax
comp=Z,410nm,3.8s
TIY LR LR
comp=Z,340nm,5.4s
TIY LR LR
comp=Z,340nm,5.6s
TIY LR LR
comp=Z,580nm,17.7s
KMBL **Kambalda** 36.29 188 P P 20 24 08.9 +0.7
baz=36,SNR=42
BLDU **Ballidu** 36.65 196 P P 20 24 11.8 +0.5
baz=37,SNR=96
BJT **Baijiatuau** 36.67 345 eP P 20 24 11.5 +0.2
BJT pmax pmax
comp=Z,125nm,0.8s
BJT MLR MLR
comp=Z,557nm,21.0s
BJT **Baijiatuau** 36.67 345 eP P 20 24 11.5 +0.2
comp=Z,125nm,0.8s
BJT LR LR
comp=Z,557nm,21.0s
BJI **Beijing** 36.69 345 P P 20 24 11.8 +0.3
BJI sP sP 20 24 36.3 -1.2
BJI PP PnPn 20 25 37.5 +0.5
BJI S S 20 29 44.5 -5.1
BJI pmax pmax
comp=Z,50nm,1.2s
BJI LR LR
comp=Z,300nm,8.4s
BJI LR LR
comp=Z,820nm,16.8s
BJI LR LR
comp=Z,370nm,37.1s
RMQ **Roma** 37.11 148 P P 20 24 15.7 +0.5
baz=37,SNR=15
SNY **Shenyang** 37.15 355 ⇑P P 20 24 17.0 +1.6

SNY			PP	PnPn	20 25 46.0	+3.4
SNY			S	S	20 29 55.0	-1.6
SNY			sS	sS	20 30 27.0	+0.2
SNY			pmax	pmax		
	comp=Z,25nm,0.6s					
SNY			pmax	pmax		
	comp=Z,130nm,3.5s					
SNY			LR	LR		
	comp=Z,580nm,15.2s					
SNY			LR	LR		
	comp=Z,1μm,15.6s					
SNY			LR	LR		
	comp=Z,980nm,31.2s					
KLBR	**Kellerberrin**	**37.31 194**	P	**P**	**20 24 17.4**	**+0.6**
	baz=37,SNR=19					
EIDS	**Eidsvold**	**37.54 144**	P	**P**	**20 24 19.9**	**+1.0**
	baz=38,SNR=6.8					
EIDS	**Eidsvold**	**37.54 144**	*e*P	**P**	**20 24 18.9**	**0.0**
	comp=Z,57nm,1.0s					
BBOO	**Buckleboo**	**38.14 169**	P	**P**	**20 24 24.2**	**+0.4**
	baz=38,SNR=123					
BBOO	**Buckleboo**	**38.14 169**	*e*P	**P**	**20 24 24.1**	**+0.2**
	comp=Z,49nm,0.8s					
LZH	**Lanzhou**	**38.18 328**	*e*P	**P**	**20 24 26.3**	**+1.9**
LZH			pP	pP	20 24 40.0	-2.0
LZH			sP	sP	20 24 49.0	-1.5
LZH			PP	**PnPn**	**20 25 56.3**	**+1.0**
LZH			S	**S**	**20 30 11.0**	**-1.8**
LZH			SS	**SnSn**	**20 33 01.0**	**-2.4**
LZH			pmax	pmax		
	comp=Z,140nm,1.1s					
LZH			pmax	pmax		
	comp=Z,470nm,5.6s					
LZH			LR	LR		
	comp=Z,950nm,15.0s					
LZH			LR	LR		
	comp=Z,1μm,15.7s					
LZH			LR	LR		
	comp=Z,2μm,15.8s					
VLA	**Vladivostok**	**38.44 5**	*ce*P	**P**	**20 24 26.6**	**+0.4**
VLA			pmax	pmax		
	comp=Z,67nm,1.8s					
STKA	**Stephens Creek**	**38.70 161**	P	**P**	**20 24 29.1**	**+0.5**
	comp=Z,118nm,0.8s,baz=338,slow=8.4,SNR=333					
STKA			LR	LR	20 42 41.2	
	comp=Z,601nm,18.6s,baz=327,slow=40					
STKA	**Stephens Creek**	**38.70 161**	P	**P**	**20 24 29.1**	**+0.5**
	baz=39,SNR=234					
STKA	**Stephens Creek**	**38.70 161**	*e*P	**P**	**20 24 28.8**	**+0.2**
	comp=Z,31nm,0.8s					
STKA			*e*PcP	**PcP**	**20 26 36.0**	**-3.2**
NWAO	**Narrogin (SRO)**	**38.71 194**	P	**P**	**20 24 29.6**	**+1.0**
	baz=39,SNR=40					
NWAO	**Narrogin (SRO)**	**38.71 194**	*e*P	**P**	**20 24 29.3**	**+0.6**
NWAO			pmax	pmax		
	comp=Z,110nm,1.0s					
NWAO	**Narrogin (SRO)**	**38.71 194**	P	**P**	**20 24 29.7**	**+1.0**
	SNR=6.6					
NWAO	**Narrogin (SRO)**	**38.71 194**	*e*P	**P**	**20 24 29.2**	**+0.6**
	comp=Z,111nm,0.9s					
NWAO			LR	LR		
	comp=Z,869nm,20.0s					
HHC	**Hu-ho-hao-te**	**38.80 340**	⇓P	**P**	**20 24 30.8**	**+1.3**
HHC			S	**S**	**20 30 22.5**	**+0.6**
HHC			SS	**SS**	**20 33 12.3**	**-3.4**
HHC			pmax	pmax		
	comp=Z,420nm,1.0s					
HHC			pmax	pmax		
	comp=Z,1μm,5.2s					
HHC			LR	LR		
	comp=Z,2μm,14.1s					
HHC			LR	LR		
	comp=Z,1μm,14.0s					
HHC			LR	LR		
	comp=Z,1μm,14.5s					
CN2	**Changchun**	**38.99 357**	*e*P	**P**	**20 24 31.8**	**+0.9**
CN2			*es*P	sP	20 24 56.5	-0.5
CN2			*e*S	**S**	**20 30 25.5**	**+1.1**
CN2			pmax	pmax		
	comp=Z,20nm,0.7s					
CN2			LR	LR		
	comp=Z,3μm,16.0s					
CN2			LR	LR		
	comp=Z,3μm,16.0s					
CN2			LR	LR		
	comp=Z,4μm,17.0s					
BTO	**Baotou**	**39.13 339**	*e*P	**P**	**20 24 31.8**	**-0.4**
HTT	**Hallett**	**39.38 165**	P	**P**	**20 24 35.2**	**+0.9**
	baz=40,SNR=24					
USRK	**Ussuriysk Ar.**	**39.52 5**	P	**P**	**20 24 35.5**	**+0.2**
	comp=Z,9.6nm,0.6s,baz=179,slow=7.0,SNR=32					
USRK			LR	LR	20 41 01.0	
	comp=Z,321nm,21.0s,baz=170,slow=36					
ERM	**Erimo**	**39.64 18**	PFAKE		20 24 50.0	+14
ERM			LR	LR		
	comp=Z,520nm,19.0s					
MDJ	**Mudanjiang**	**39.79 2**	P	**P**	**20 24 37.8**	**+0.3**
MDJ			pP	pP	20 24 52.8	-2.5
MDJ			sP	sP	20 25 00.3	-3.4
MDJ			ScP	**ScP**	**20 30 27.0**	**+1.9**
MDJ			S	**S**	**20 30 37.5**	**+1.1**
MDJ			pmax	pmax		
	comp=Z,15nm,1.1s					
MDJ			LR	LR		
	comp=Z,660nm,23.9s					
MDJ			LR	LR		
	comp=Z,190nm,10.4s					
MDJ			LR	LR		
	comp=Z,860nm,27.1s					
MDJ	**Mudanjiang**	**39.79 2**	*e*P	**P**	**20 24 38.0**	**+0.5**
	comp=Z,44nm,0.8s					
MDJ			LR	LR		
	comp=Z,540nm,20.0s					
CMSA	**Cobar Meteorol**	**39.91 156**	P	**P**	**20 24 39.2**	**+0.6**
	baz=40,SNR=52					
SHL	**Shillong**	**40.10 305**	*i* P	**P**	**20 24 41.0**	**+0.4**
SHL			*ex*	x	20 30 38.0	
RKGY	**Rocky Gully**	**40.38 194**	P	**P**	**20 24 44.6**	**+2.1**
	baz=40,SNR=29					
ASAJ	**Asahikawa**	**41.40 16**	P	**P**	**20 24 51.5**	**+0.8**
	comp=Z,17nm,0.6s,baz=243,slow=9.8,SNR=14					
ASAJ	**Asahikawa**	**41.40 16**	*e*P	**P**	**20 24 52.0**	**+1.3**
	comp=Z,54nm,0.8s					
ARMA	**Armidale**	**41.76 148**	P	**P**	**20 24 55.0**	**+1.0**
	baz=42,SNR=104					
ARMA	**Armidale**	**41.76 148**	*e*P	**P**	**20 24 54.7**	**+0.7**
	comp=Z,130nm,0.8s					
LSA	**Lhasa**	**42.54 310**	P	**P**	**20 25 02.3**	**+1.4**
LSA			pmax	pmax		
	comp=Z,74nm,0.7s					
LSA			pmax	pmax		
	comp=Z,82nm,8.1s					
LSA			LR	LR		
	comp=Z,76nm,23.2s					
LSA			LR	LR		
	comp=Z,500nm,23.2s					
LSA			LR	LR		
	comp=Z,360nm,23.2s					
LSA	**Lhasa**	**42.54 310**	*e*P	**P**	**20 25 01.3**	**+0.4**
LSA			pmax	pmax		
	comp=Z,100nm,0.7s					
LSA			MLR	MLR		
	comp=Z,584nm,21.0s					
LSA	**Lhasa**	**42.54 310**	*e*P	**P**	**20 25 01.3**	**+0.4**
	comp=Z,100nm,0.7s					
LSA			LR	LR		
	comp=Z,584nm,21.0s					
GTA	**Gaotai**	**42.78 328**	P	**P**	**20 25 03.5**	**+1.2**
GTA			pP	pP	20 25 19.0	-1.2
GTA			sP	sP	20 25 25.0	-3.6
GTA			S	**S**	**20 31 20.0**	**-1.2**
GTA			pmax	pmax		
	comp=Z,12nm,1.1s					
GTA			pmax	pmax		
	comp=Z,220nm,5.7s					
GTA			LR	LR		
	comp=Z,2μm,18.1s					
GTA			LR	LR		
	comp=Z,2μm,13.8s					
GTA			LR	LR		
	comp=Z,980nm,13.5s					
ARPS	**Mount Arapiles**	**43.32 163**	P	**P**	**20 25 07.4**	**+1.0**
	baz=43,SNR=139					
YNG	**Young**	**43.43 155**	P	**P**	**20 25 08.6**	**+1.2**
	baz=44,SNR=12					
YSS	**Yuzh-Sakhalins**	**44.06 15**	*e*P	**P**	**20 25 14.3**	**+2.0**
YSS			*e*S	**S**	**20 31 46.0**	**+6.7**
YSS			pmax	pmax		
	comp=Z,200nm,3.0s					
YSS	**Yuzh-Sakhalins**	**44.06 15**	*e*P	**P**	**20 25 12.1**	**-0.1**
	comp=Z,36nm,0.7s					
YSS			LR	LR		
	comp=Z,227nm,21.0s					
HABR	**Khabarovsk**	**44.07 7**	*e*P	**P**	**20 25 10.8**	**-1.5**
HABR			*e**PP	**pP**	**20 25 28.2**	**-2.1**
HABR			*e*		20 26 54.7	
HABR			*e*S	**S**	**20 31 38.7**	**-0.6**
HABR			*e*SS	**SS**	**20 35 00.0**	**+0.9**
HABR			*e*SSS	SSS	20 35 44.1	
HABR			pmax	pmax		
	comp=N,20nm,1.4s					
HABR			pmax	pmax		
	comp=Z,59nm,1.4s					
HABR			pmax	pmax		
	comp=E,11nm,0.7s					
HABR			MLR	MLR		
	comp=Z,250nm,17.0s					
KLR	**Kul'dur**	**44.51 4**	P	**P**	**20 25 16.3**	**+0.5**
	comp=Z,24nm,0.9s,baz=209,slow=5.4,SNR=27					
KLR			LR	LR	20 43 47.8	
	comp=Z,160nm,20.5s,slow=36					
CAN	**Canberra**	**44.56 155**	*e*P	**P**	**20 25 17.9**	**+1.5**
CAN			pmax	pmax		
	comp=Z,110nm,1.5s					
CAN	**Canberra**	**44.56 155**	*e*P	**P**	**20 25 17.9**	**+1.5**
	comp=Z,113nm,1.5s					
CAN			LR	LR		
	comp=Z,675nm,20.0s					
CNB	**Canberra Magne**	**44.71 155**	P	**P**	**20 25 19.2**	**+1.6**
	baz=45,SNR=11					
HIA	**Hailar**	**44.92 353**	*e*P	**P**	**20 25 19.7**	**+0.6**
HIA			pmax	pmax		
	comp=Z,27nm,0.9s					
HIA			MLR	MLR		
	comp=Z,507nm,21.0s					
HIA	**Hailar**	**44.92 353**	*e*P	**P**	**20 25 19.7**	**+0.6**
	comp=Z,26nm,0.9s					
HIA			LR	LR		
	comp=Z,507nm,21.0s					
TOO	**Toolangi**	**45.20 160**	P	**P**	**20 25 23.1**	**+1.6**
	baz=45,SNR=35					
TARA	**Tarawa**	**45.28 93**	*e*P	**P**	**20 25 21.5**	**-0.9**
	comp=Z,245nm,1.6s					
GUN	**Gumba**	**45.95 305**	*e*P	**P**	**20 25 28.1**	**+0.1**
	comp=Z,858nm,0.7s					
MILA	**Mila**	**46.11 156**	P	**P**	**20 25 30.3**	**+1.6**
	baz=46,SNR=7.1					
DZM	**Mont Dzumac**	**46.32 127**	*e*P	**P**	**20 25 29.9**	**-0.7**
	comp=Z,167nm,0.9s					
DZM			*e*S	**S**	**20 32 16.9**	**+4.1**
	comp=Z,361nm,31.1s					
DZM			*e*LQ	LQ	20 36 37.8	
	comp=Z,1μm,42.2s					
DZM			*e*LR	LR	20 38 37.9	
	comp=Z,2μm,32.5s					
DZM	**Mont Dzumac**	**46.32 127**	P	**P**	**20 25 31.5**	**+0.9**
	comp=Z,65nm,0.7s,baz=297,slow=6.5,SNR=59					
KKN	**Kakani**	**46.40 304**	*e*P	**P**	**20 25 31.2**	**-0.2**
	comp=Z,387nm,0.8s					
DMN	**Daman**	**46.48 304**	*e*P	**P**	**20 25 31.9**	**-0.1**
	comp=Z,423nm,0.8s					
ULN	**Ulaanbaatar**	**46.52 341**	*c i*P	**P**	**20 25 32.5**	**+0.6**
ULN			pmax	pmax		
	comp=Z,72nm,0.8s					
ULN	**Ulaanbaatar**	**46.52 341**	P	**P**	**20 25 32.8**	**+0.9**
	SNR=24					
ULN			P	**P**	**20 25 32.8**	**+0.9**
	SNR=24					
ULN	**Ulaanbaatar**	**46.52 341**	*e*P	**P**	**20 25 32.1**	**+0.2**
	comp=Z,67nm,0.8s					
ULN			LR	LR		
	comp=Z,500nm,22.0s					
SONA0	**Songino Array**	**46.71 340**	*e*P	**P**	**20 25 34.2**	**+0.9**
	comp=Z,27nm,0.8s					
SONM	**Songino Array**	**46.71 340**	P	**P**	**20 25 34.2**	**+0.9**
	comp=Z,22nm,0.6s,baz=154,slow=7.5,SNR=77					
SONM			LR	LR	20 49 40.6	
	comp=Z,293nm,18.3s,baz=153,slow=42					
SONA1	**Songino Array**	**46.71 340**	*e*P	**P**	**20 25 34.0**	**+0.6**
PALK	**Pallekele**	**46.79 276**	P	**P**	**20 25 34.7**	**+0.2**
	comp=Z,33nm,1.0s,baz=116,slow=5.7,SNR=9.4					
PALK	**Pallekele**	**46.79 276**	*ce*P	**P**	**20 25 35.8**	**+1.4**
PALK	**Pallekele**	**46.79 276**	*e*P	**P**	**20 25 33.9**	**-0.5**
	comp=Z,50nm,1.0s					
LHI	**Lord Howe Isla**	**46.81 142**	*e*P	**P**	**20 25 33.8**	**-0.3**
	comp=Z,46nm,0.9s					
GKN	**Gorkha**	**47.01 304**	*e*P	**P**	**20 25 35.7**	**-0.4**
	comp=Z,247nm,0.8s					
TYV	**Tymovskoe**	**47.69 13**	*e*P	**P**	**20 25 43.0**	**+2.3**
TYV			pmax	pmax		
	comp=Z,24nm,0.8s					
KOLN	**Koldanda**	**47.78 304**	*e*P	**P**	**20 25 42.5**	**+0.4**
	comp=Z,1μm,0.6s					
PYUN	**Piuthan**	**48.40 304**	*e*P	**P**	**20 25 47.2**	**+0.3**
	comp=Z,975nm,0.8s					
CIT	**Chita**	**48.61 348**	*e*P	**P**	**20 25 49.2**	**+1.3**
CIT			*e*		20 25 59.4	
CIT			*e*		20 26 01.3	
CIT			pmax	pmax		
	comp=Z,202nm,0.8s					
HYB	**Hyderabad**	**49.71 289**	⇓*i*P	**P**	**20 25 55.0**	**-1.8**
ZAK	**Zakamensk**	**49.95 340**	*e*P	**P**	**20 25 58.3**	**+0.1**
ZAK			pmax	pmax		
	comp=Z,14nm,1.1s					
TAU	**Tasmania Unive**	**50.61 161**	*e*P	**P**	**20 26 03.1**	**0.0**
TAU			pmax	pmax		
	comp=Z,43nm,1.1s					
TAU	**Tasmania Unive**	**50.61 161**	*e*P	**P**	**20 26 03.1**	**0.0**
	comp=Z,43nm,1.1s					
TLY	**Talaya**	**50.93 341**	P	**P**	**20 26 07.2**	**+1.8**
	comp=Z,19nm,0.7s,baz=177,slow=4.2,SNR=37					
TLY	**Talaya**	**50.93 341**	*ce*P	**P**	**20 26 06.3**	**+0.8**
TLY			*e*S	**S**	**20 33 15.9**	**-0.8**
TLY			pmax	pmax		
	comp=Z,45nm,0.8s					
TLY			MLR	MLR		
	comp=Z,410nm,20.0s					
TLY	**Talaya**	**50.93 341**	*e*P	**P**	**20 26 06.3**	**+0.8**
	comp=Z,42nm,0.7s					
TLY			LR	LR		
	comp=Z,493nm,22.0s					
IRK	**Irkutsk**	**51.21 342**	*e*P	**P**	**20 26 07.8**	**+0.2**
IRK			*e*S	**S**	**20 33 21.4**	**+0.9**
IRK			pmax	pmax		
	comp=Z,39nm,1.9s					
SKR	**Severo-Kuril's**	**51.66 23**	*e*P	**P**	20 26 23.5	+13
MOY	**Mondy**	**51.82 339**	*e*P	**P**	**20 26 13.7**	**+1.5**
MOY			pmax	pmax		
	comp=Z,71nm,2.4s					
JOSI	**Joshimath**	**52.05 305**	*e*P	**P**	**20 26 15.0**	**+0.5**
WMQ	**Urumqi**	**52.50 324**	⇑*i*P	**P**	**20 26 19.0**	**+1.6**
WMQ			sP	sP	20 26 46.5	+2.4
WMQ			PP	**PP**	**20 28 19.3**	**+2.3**
WMQ			S	**S**	**20 33 35.3**	**-3.3**
WMQ			sS	sS	20 34 08.0	-2.1
WMQ			SS	**SS**	**20 37 14.5**	**-3.2**
WMQ			pmax	pmax		
	comp=Z,27nm,1.2s					
WMQ			pmax	pmax		
	comp=Z,220nm,5.8s					
WMQ			LR	LR		
	comp=Z,2μm,19.8s					
WMQ			LR	LR		
	comp=Z,800nm,16.0s					
WMQ			LR	LR		
	comp=Z,480nm,19.8s					
BISR	**Bishrakh**	**53.19 302**	*e*P	**P**	**20 26 19.3**	**-3.3**
SONA	**Sohna**	**53.40 302**	*e*P	**P**	**20 26 24.2**	**0.0**
SONA			IAmb	IAmb	20 26 24.9	
	comp=Z,16nm,0.9s					
NDI	**New Delhi**	**53.41 302**	*ex*	P	20 26 15.5	-8.8
KUDL	**Kundal**	**53.87 302**	*e*P	**P**	**20 26 27.0**	**-0.6**
KUDL			IAmb	IAmb	20 26 28.4	
	comp=Z,210nm,0.8s					
BOD	**Bodaibo**	**54.06 351**	*e*P	**P**	**20 26 28.4**	**-0.1**
BOD			pmax	pmax		
	comp=Z,45nm,0.9s					
KKR	**Kurukshetra**	**54.11 304**	*e*P	**P**	**20 26 29.6**	**+0.2**
PEA0	**Petropavlovsk-**	**54.18 22**	*e*P	**P**	**20 26 29.9**	**+0.5**
PEA0B	**Petropavlovsk-**	**54.18 22**	*e*P	**P**	**20 26 30.4**	**+0.9**
	comp=Z,67nm,0.7s					
PETK	**Petropavlovsk-**	**54.18 22**	P	**P**	**20 26 30.6**	**+1.1**
	comp=Z,49nm,0.7s,baz=188,slow=3.4,SNR=63					
PETK			LR	LR	20 48 49.8	
	comp=Z,169nm,21.0s,baz=211,slow=35					
PETK	**Petropavlovsk-**	**54.18 22**	P	**P**	**20 26 30.6**	**+1.1**
PETK			pmax	pmax		
	comp=Z,48nm,0.7s					
PETK			MLR	MLR		
	comp=Z,169nm,21.0s					
PEA1	**Petropavlovsk-**	**54.18 22**	*e*P	**P**	**20 26 30.6**	**+1.1**
SMLA	**Simla**	**54.19 305**	*e*P	**P**	**20 26 30.4**	**+0.5**
POO	**Poona**	**54.30 289**	*e*P	**P**	**20 26 30.0**	**-0.9**
	comp=Z,22nm,0.8s					
PET	**Petropavlovsk**	**54.47 22**	*e*P	**P**	**20 26 32.9**	**+1.4**
PET			*e**PP	**pP**	**20 26 48.7**	**-1.4**
PET			*e*		20 28 36.6	
PET			*e*S	**S**	**20 34 06.3**	**+1.5**
PET			*e*SS	**SS**	**20 37 53.4**	**+5.2**
PET			pmax	pmax		
	comp=Z,39nm,0.8s					
PET			MLR	MLR		
	comp=Z,300nm,20.0s					
PET	**Petropavlovsk**	**54.47 22**	*e*P	**P**	**20 26 32.6**	**+1.1**
	comp=Z,141nm,1.4s					
PET			LR	LR		
	comp=Z,296nm,20.0s					
JWA	**Jwalamukhi**	**55.09 306**	*e*P	**P**	**20 26 36.0**	**-0.4**
JWA			*ex*	x	20 27 43.0	
THN	**Thein Dam**	**55.77 306**	*e*P	**P**	**20 26 39.0**	**-2.2**
DGAR	**Diego Garcia**	**56.42 258**	PFAKE		20 27 00.0	+14
DGAR			LR	LR		
	comp=Z,1μm,22.0s					
YAK	**Yakutsk**	**57.23 1**	*e*P	**P**	**20 26 51.3**	**+0.3**
YAK			*e**PP	**pP**	**20 27 04.9**	**-4.9**
YAK			*e*		20 27 42.8	
YAK			*e*		20 28 55.9	
YAK			*e*PPP	PPP	20 30 15.7	
YAK			*e*S	**S**	**20 34 42.0**	**+0.9**
YAK			*e*		20 36 28.0	
YAK			pmax	pmax		
	comp=Z,122nm,0.9s					
YAK			pmax	pmax		
	comp=N,49nm,1.2s					
YAK			pmax	pmax		
	comp=E,11nm,1.0s					
YAK			pmax	pmax		
	comp=Z,68nm,2.7s					
YAK			pmax	pmax		
	comp=N,14nm,1.4s					
YAK			pmax	pmax		
	comp=E,11nm,1.2s					
YAK			smax	smax		
	comp=N,73nm,3.5s					
YAK			smax	smax		
	comp=E,18nm,1.8s					
YAK	**Yakutsk**	**57.23 1**	*e*P	**P**	**20 26 51.0**	**0.0**
	comp=E,143nm,0.7s					
YAK			LR	LR		
	comp=Z,206nm,20.0s					
MK01	**Makanchi Array**	**57.30 324**	*e*P	**P**	**20 26 52.4**	**+0.4**
MK31	**Makanchi Array**	**57.32 324**	*e*P	**P**	**20 26 52.6**	**+0.5**
MK31	**Makanchi Array**	**57.32 324**	*e*P	**P**	**20 26 52.5**	**+0.5**
MK32	**Makanchi Array**	**57.32 324**	*e*P	**P**	**20 26 52.8**	**+0.7**
MKAR	**Makanchi Array**	**57.32 324**	P	**P**	**20 26 52.8**	**+0.7**
	comp=Z,58nm,0.5s,baz=120,slow=7.4,SNR=306					
MKAR			PKP2ab		20 57 10.8	
	comp=Z,0.6nm,0.8s,baz=261,slow=5.6,SNR=3.7					
MKAR	**Makanchi Array**	**57.32 324**	P	**P**	**20 26 52.8**	**+0.7**
MKAR			pmax	pmax		
	comp=Z,59nm,0.5s					
MAKZ	**Makanchi**	**57.51 324**	*e*P	**P**	**20 26 54.0**	**+0.6**
MAKZ			pmax	pmax		
	comp=Z,75nm,0.8s					
MAKZ	**Makanchi**	**57.51 324**	*e*P	**P**	**20 26 54.0**	**+0.6**
	comp=Z,75nm,0.8s					
MA2	**Magadan**	**57.54 14**	*i* P	**P**	**20 26 55.1**	**+1.7**
MA2	**Magadan**	**57.54 14**	PFAKE		20 27 10.0	+17
MA2			LR	LR		
	comp=Z,293nm,20.0s					
KSH	**Kashi**	**58.05 314**	P	**P**	**20 26 59.5**	**+2.0**
KSH			*ep*P	pP	20 27 19.0	+2.7
KSH			*es*P	sP	20 27 27.5	+3.1
KSH			*e*PP	**PP**	**20 29 10.5**	**+3.7**
KSH			PcS	**PcS**	**20 31 49.8**	**-0.4**
KSH			S	**S**	**20 34 51.8**	**-1.3**
KSH			ScS	**ScS**	**20 36 38.0**	**-2.8**
KSH			SS	**SS**	**20 38 46.5**	**+1.1**
KSH			pmax	pmax		
	comp=Z,55nm,1.1s					
KSH			LR	LR		
	comp=Z,290nm,9.3s					
KSH			LR	LR		
	comp=Z,390nm,15.9s					
KSH			LR	LR		
	comp=Z,640nm,25.7s					
KSH	**Kashi**	**58.05 314**	*es*P	SS	20 38 46.0	+0.6
AAA	**Alma-Ata**	**58.92 319**	*e*P	**P**	**20 27 04.4**	**+1.0**
AAA			*e*S	**S**	**20 35 01.4**	**-2.7**
AAA			pmax	pmax		
	comp=Z,400nm,5.9s					
AAA			smax	smax		
	comp=E,300nm,3.0s					
AAA			MLR	MLR		
	comp=Z,600nm,25.0s					
TKM2	**Tokmak 2**	**59.67 318**	*e*P	**P**	**20 27 09.4**	**+0.6**
TKM2			pmax	pmax		
	comp=Z,38nm,0.6s					
TKM2	**Tokmak 2**	**59.67 318**	*e*P	**P**	**20 27 09.4**	**+0.6**
	comp=Z,38nm,0.6s					
TKM2			LR	LR		
	comp=Z,852nm,22.0s					
ZAA0	**Zalesovo Array**	**60.18 332**	*e*P	**P**	**20 27 10.7**	**-1.0**
ZALV	**Zalesovo Beam**	**60.18 332**	P	**P**	**20 27 11.2**	**-0.5**
	comp=Z,22nm,0.5s,baz=126,slow=7.1,SNR=58					
ZALV			LR	LR	20 55 16.8	
	comp=Z,312nm,18.5s,baz=158,slow=38					
ZALV			PKP2bc		20 56 44.9	
	comp=Z,0.4nm,0.5s,baz=322,slow=4.1,SNR=4.7					
ZAA1	**Zalesovo Array**	**60.18 332**	*e*P	**P**	**20 27 11.2**	**-0.5**
ZAA1			⇑*e*		20 56 44.9	
FRU	**Bishkek**	**60.30 317**	*e*P	**P**	**20 27 13.0**	**+0.2**
FRU			*e*S	**S**	**20 35 20.0**	**-1.8**
FRU			pmax	pmax		
	comp=Z,80nm,1.9s					
AAK	**Ala-Archa**	**60.30 317**	P	**P**	**20 27 14.1**	**+1.1**
	comp=Z,18nm,0.5s,baz=109,slow=5.9,SNR=59					
AAK			LR	LR	20 56 49.8	
	comp=Z,332nm,19.6s,baz=88,slow=39					
AAK	**Ala-Archa**	**60.30 317**	*d i*P	**P**	**20 27 13.9**	**+0.9**
AAK	**Ala-Archa**	**60.30 317**	*e*P	**P**	**20 27 13.4**	**+0.4**
	comp=Z,82nm,1.5s					
AAK			⇑*e*		20 56 49.8	
AAK			LR	LR		
	comp=Z,790nm,21.0s					
EKS2	**Erkin-Say**	**60.80 317**	*e*P	**P**	**20 27 16.8**	**+0.5**
EKS2			pmax	pmax		
	comp=Z,62nm,1.0s					
EKS2	**Erkin-Say**	**60.80 317**	*e*P	**P**	**20 27 16.8**	**+0.5**
	comp=Z,62nm,1.0s					
EKS2			LR	LR		
	comp=Z,794nm,22.0s					
SEY	**Seymchan**	**60.88 13**	⇓*i*P	**P**	**20 27 17.9**	**+1.6**
KURK	**Kurchatov**	**61.45 327**	P	**P**	**20 27 20.7**	**+0.3**
KURK			pmax	pmax		
	comp=Z,64nm,0.6s					
KURK	**Kurchatov**	**61.45 327**	*e*P	**P**	**20 27 20.5**	**+0.1**
	comp=Z,108nm,0.6s					
KURK			P'P'	**P'P'df**	**20 56 27.8**	**-6.2**
KURK			LR	LR		
	comp=Z,691nm,22.0s					
KURBB	**Kurchatov Arra**	**61.46 327**	P	**P**	**20 27 20.7**	**+0.3**
	comp=Z,63nm,0.6s,baz=127,slow=6.7,SNR=296					
KURBB			PKPPKP	**P'P'df**	**20 56 27.8**	**-6.2**
	comp=Z,0.4nm,0.9s,baz=273,slow=3.3,SNR=4.8					
NVS	**Novosibirsk**	**61.46 333**	⇑*i*P	**P**	**20 27 20.3**	**-0.1**
NVS			*e*S	**S**	**20 35 30.6**	**-5.4**
NVS			*e*PS	**PnS**	**20 36 02.7**	**+2.2**
NVS			pmax	pmax		
	comp=Z,36nm,0.9s					
NVS			pmax	pmax		
	comp=N,18nm,1.0s					
NVS			smax	smax		
	comp=N,41nm,2.1s					
NVS			smax	smax		
	comp=E,72nm,2.3s					
KBL	**Kabul**	**61.71 307**	*e*P	**P**	**20 27 22.6**	**-0.2**

KBL pmax pmax
comp=Z,70nm,0.7s
KBL Kabul 61.71 307 *eP* **P 20 27 22.6 -0.2**
comp=Z,70nm,0.6s
RPZ Rata Peaks 62.00 146 P **P 20 27 24.5 +0.3**
comp=Z,56nm,0.9s,baz=246,slow=1.0,SNR=11
RPZ LR LR 20 53 24.8
comp=Z,427nm,21.6s,baz=307,slow=35
RPZ Rata Peaks 62.00 146 *eP* **P 20 27 24.1 -0.1**
comp=Z,53nm,0.8s
LTZ Lake Taylor 62.12 144 *eP* **P 20 27 25.7 +0.6**
comp=Z,64nm,1.1s
RAO Raoul Island 62.12 127 LR LR 20 53 22.8
comp=Z,103nm,18.8s,baz=208,slow=35
OXZ Oxford 62.32 145 *eP* **P 20 27 26.0 -0.4**
comp=Z,72nm,0.5s
URZ Urewera 62.59 138 LR LR 20 54 33.8
comp=Z,207nm,19.9s,baz=308,slow=36
KKAR Karatay Array 63.19 316 *eP* **P 20 27 32.4 +0.1**
KKAR Karatay Array 63.19 316 *eP* **P 20 27 32.4 +0.1**
VOSK Vostochnaya 66.59 326 *eP* **P 20 27 53.5 -0.7**
VOSK pmax pmax
comp=Z,63nm,0.6s
VOSK Vostochnaya 66.59 326 *eP* **P 20 27 53.5 -0.7**
comp=Z,63nm,0.6s
TIXI Tiksi 66.87 0*ceP* **P 20 27 55.1 -0.4**
TIXI pmax pmax
comp=Z,41nm,0.6s
TIXI Tiksi 66.87 0 *eP* **P 20 27 54.3 -1.2**
comp=Z,51nm,0.5s
TIXI LR LR
comp=Z,440nm,21.0s
BVAR Borovoye Array 67.05 326 P **P 20 27 57.5 +0.5**
comp=Z,48nm,0.7s,baz=126,slow=7.5,SNR=58
BVAR Borovoye Array 67.05 326 P **P 20 27 57.5 +0.5**
BVAR pmax pmax
comp=Z,47nm,0.7s
ZRNK Zerenda 67.78 326 *eP* **P 20 28 01.4 -0.3**
ZRNK pmax pmax
comp=Z,94nm,0.7s
ZRNK Zerenda 67.78 326 *eP* **P 20 28 01.4 -0.3**
comp=Z,94nm,0.6s
BILL Bilibino 68.38 15‖*eP* **P 20 28 05.1 0.0**
BILL *i* *PP **pP 20 28 22.1 -2.2**
BILL *i* 20 28 31.0
BILL *e* 20 30 43.1
BILL pmax pmax
comp=Z,9.0nm,0.8s
BILL MLR MLR
comp=Z,366nm,19.0s
BILL Bilibino 68.38 15 *eP* **P 20 28 05.2 0.0**
comp=Z,14nm,0.8s
BILL LR LR
comp=Z,322nm,20.0s
WSAR Wadi Sarin 68.93 293 P **P 20 28 09.2 -0.2**
comp=Z,6.6nm,0.8s,baz=104,slow=12,SNR=5.3
BIDO Bidbid 69.41 293 P **P 20 28 12.7 +0.3**
SNR=6.1
BIDO P **P 20 28 12.7 +0.3**
SNR=6.1
SMDO Samad 69.45 293 P **P 20 28 12.7 -0.1**
SNR=6.7
NRIK Noril'sk 69.73 346 P **P 20 28 14.1 +0.7**
comp=Z,16nm,0.6s,baz=124,slow=5.6,SNR=14
NRIK LR LR 21 03 06.2
comp=Z,191nm,19.2s,baz=134,slow=40
NIKH Nikolski High 70.48 35 *eP* **P 20 28 19.5 +1.2**
comp=Z,41nm,0.6s
GEYT Alibeck 71.05 308 P **P 20 28 23.2 +1.1**
comp=Z,60nm,0.8s,baz=134,slow=4.3,SNR=148
GEYT LR LR 21 03 47.7
comp=Z,387nm,21.0s,baz=80,slow=39
UOSS Minazif 71.25 295 *eP* **P 20 28 23.1 -0.6**
comp=Z,1.2nm,0.8s
HATD Hatta, Dubai 71.31 294 *i* P **P 20 28 24.4 +0.4**
SNR=7.4
NAZ Nazwa, Dubai 71.75 295 P **P 20 28 26.9 +0.3**
FAQ Al Faqa, Dubai 71.80 294 *i* P **P 20 28 26.8 0.0**
SNR=12
CASY Casey 71.89 187 *eP* **P 20 28 27.4 +0.9**
comp=Z,28nm,0.8s
CASY LR LR
comp=Z,86nm,19.0s
ABKAR Akbulak array 72.02 320 *eP* **P 20 28 27.6 -0.1**
UNV Unalaska Valle 72.09 35 *eP* **P 20 28 28.3 +0.3**
comp=Z,40nm,0.8s
AKUT Akutan 72.58 34 *eP* **P 20 28 30.9 0.0**
comp=Z,80nm,0.8s
MRIV Mauritius Mete 73.21 247 *eP* **P 20 28 33.8 -1.6**
AKTO Aktyubinsk 73.51 321 P **P 20 28 36.2 -0.4**
comp=Z,51nm,0.7s,baz=98,slow=10,SNR=64
SVE Sverdlovsk 73.65 328 *eP* **P 20 28 37.1 -0.1**
SVE pmax pmax
comp=Z,75nm,1.0s
ARU Arti 74.64 327 P **P 20 28 42.5 -0.5**
comp=Z,19nm,0.5s,baz=110,slow=3.1,SNR=22
ARU Arti 74.64 327*d i P* **P 20 28 42.1 -0.9**
ARU *PP **pP 20 28 59.9 -2.6**
ARU 20 31 27.6
ARU PPP PPP 20 33 10.1
ARU S **S 20 38 08.9 -4.2**
ARU *SS **SKSac 20 38 42.1 -2.7**
ARU pmax pmax
comp=Z,38nm,1.0s
ARU Arti 74.64 327 *eP* **P 20 28 42.4 -0.5**
comp=Z,44nm,0.6s
ARU LR LR
comp=Z,369nm,20.0s
XMAS Kiritimati 74.75 89 *eP* **P 20 28 43.2 -1.3**
comp=Z,380nm,1.6s
RER Riviere de l'E 74.98 247 *eP* **P 20 28 47.8 +2.0**
comp=Z,74nm,0.9s
MIR Mirnyy 75.32 194 *i* P **P 20 28 47.0 +0.4**
MIR pmax pmax
comp=Z,8.0nm,1.0s
RAR Rarotonga 75.53 113 LR LR 21 02 57.8
comp=Z,62nm,18.0s,baz=276,slow=36
SOKR Solikamsk 76.36 330*c i P* **P 20 28 54.1 +1.4**
SOKR pmax pmax
comp=Z,11nm,0.6s
SOKR MLR MLR
comp=Z,390nm,20.0s
TT01 Tatalina 79.60 27 *eP* **P 20 29 10.8 +0.1**
TTA Tatalina 79.61 27 *eP* **P 20 29 11.4 +0.6**
TTA pmax pmax
comp=Z,10.0nm,0.8s
TTA Tatalina 79.61 27 *eP* **P 20 29 11.4 +0.6**
comp=Z,10.0nm,0.8s
KDAK Kodiak Island 80.56 32*ceP* **P 20 29 17.2 +1.3**
KDAK Kodiak Island 80.56 32 *eP* **P 20 29 16.5 +0.6**
comp=Z,33nm,0.7s
KDAK LR LR
comp=Z,357nm,20.0s
DGRG David-gareji 81.16 311 P **P 20 29 20.7 +1.1**
DGRG David-gareji 81.16 311 *eP* **P 20 29 20.6 +1.1**
SPU Mount Spurr 81.20 29 *eP* **P 20 29 19.2 -0.1**
PPLA Purkeypile 81.34 27 *eP* **P 20 29 20.8 +0.7**
comp=Z,29nm,1.0s
CAST Castle Rocks 81.44 27 *eP* **P 20 29 20.7 +0.2**
comp=Z,24nm,0.8s
GNI Garni 81.61 310 P **P 20 29 25.8 +3.7**
comp=Z,7.3nm,0.7s,baz=200,slow=7.8,SNR=6.1
GNI Garni 81.61 310*d i P* **P 20 29 24.4 +2.3**
GNI pmax pmax
comp=Z,50nm,1.2s
GNI Garni 81.61 310 *eP* **P 20 29 22.8 +0.7**
comp=Z,57nm,0.9s
GNI LR LR
comp=Z,344nm,21.0s
TBLG Delisi 81.64 311 P **P 20 29 22.6 +0.6**
TBLG Delisi 81.64 311 *eP* **P 20 29 22.6 +0.6**
BRLK Bradley Lake 81.64 30 *eP* **P 20 29 21.3 -0.4**
comp=Z,29nm,0.9s
DUS Dusheti 81.67 312 P P 20 29 30.6 +8.3
DUS Dusheti 81.67 312 *eP* P 20 29 30.5 +8.2
GUDG Gudauri 81.85 312 P **P 20 29 25.3 +1.9**
SUA Susitna One 81.86 29 *eP* **P 20 29 23.3 +0.3**
KTH Kantishna Hill 81.98 27 *eP* **P 20 29 24.4 +1.0**
comp=Z,28nm,1.0s
BPAW Bear Paw Mtn. 82.00 26 *eP* **P 20 29 23.4 -0.1**
comp=Z,32nm,0.9s
MLY Manley 82.20 25 *eP* **P 20 29 25.2 +0.6**
comp=Z,34nm,1.0s
TRF Thorofare Moun 82.25 27 *eP* **P 20 29 24.5 -0.5**
comp=Z,35nm,0.9s
ZEI Tsey 82.28 312 *eP* **P 20 29 24.6 -1.0**
ZEI *e*S **S 20 39 34.8 -1.0**
ZEI pmax pmax
comp=Z,111nm,0.7s
ZEI pmax pmax
comp=N,87nm,0.8s
ZEI pmax pmax
comp=E,174nm,0.8s
RC01 Rabbit Creek A 82.31 29 *eP* **P 20 29 24.6 -0.5**
comp=E,22nm,0.7s
SEW Seward 82.39 30 *eP* **P 20 29 22.8 -2.7**
comp=E,29nm,0.8s
NCK Nalchik 82.51 313⇑*eP* **P 20 29 28.9 +2.3**
NCK pmax pmax
comp=Z,19nm,0.8s
AKH Akhalkalaki 82.57 311⇑*i P* **P 20 29 28.8 +1.7**
AKH Akhalkalaki 82.57 311 P P 20 29 32.7 +5.6
AKH Akhalkalaki 82.57 311 *eP* P 20 29 32.7 +5.6
ONI Oni 82.61 312 P P 20 29 32.0 +4.9
ONI Oni 82.61 312 *eP* P 20 29 32.0 +4.8
COLD Coldfoot 82.63 23 *eP* **P 20 29 27.8 +1.1**
comp=Z,31nm,0.9s
PMR Palmer 82.64 29 *eP* **P 20 29 26.9 +0.1**
PMR pmax pmax
comp=Z,23nm,0.7s
PMR Palmer 82.64 29 *eP* **P 20 29 26.3 -0.5**
comp=Z,23nm,0.7s
MCK McKinley 82.88 26 *eP* **P 20 29 28.4 +0.4**
MCK pmax pmax
comp=Z,44nm,1.0s
MCK McKinley 82.88 26 *eP* **P 20 29 27.5 -0.5**
comp=Z,44nm,1.0s
RND Reindeer 82.89 27 *eP* **P 20 29 28.3 +0.1**
RND pmax pmax
comp=Z,33nm,0.9s
RND Reindeer 82.89 27 *eP* **P 20 29 27.6 -0.6**
comp=Z,33nm,0.9s
KBZ Khabaz 83.02 313 P **P 20 29 28.7 -0.4**
comp=Z,14nm,0.8s,baz=123,slow=1.8,SNR=7.2
KBZ LR LR 21 12 21.0
comp=Z,189nm,18.7s,baz=77,slow=40
KBZ Khabaz 83.02 313 P **P 20 29 28.7 -0.4**
KBZ pmax pmax
comp=Z,2.0nm,0.5s
KBZ MLR MLR
comp=Z,189nm,18.7s
NEY Neytrino 83.14 313‖*eP* **P 20 29 30.9 +0.8**
NEY pmax pmax
comp=Z,2.0nm,0.8s
KVAR Kislovodsk Arr 83.17 314 P **P 20 29 31.0 +0.9**
comp=Z,5.8nm,0.8s,baz=66,slow=9.8,SNR=5.6
KIV Kislovodsk 83.17 314*c i P* **P 20 29 30.8 +0.7**
KIV *i* *PP **pP 20 29 48.2 -1.7**
KIV *i* S **S 20 39 42.1 -2.5**
KIV pmax pmax
comp=Z,8.0nm,0.8s
KIV MLR MLR
comp=Z,310nm,21.0s
KIV Kislovodsk 83.17 314 *eP* **P 20 29 30.5 +0.4**
comp=Z,36nm,0.8s
KIV LR LR
comp=Z,328nm,22.0s
MDM Murphy Dome 83.26 25 *eP* **P 20 29 29.8 -0.3**
comp=Z,18nm,0.9s
WRH Wood River Hil 83.29 26 *eP* **P 20 29 29.9 -0.2**
comp=Z,47nm,1.3s
COLA College 83.42 25‖*eP* **P 20 29 31.6 +0.9**
COLA pmax pmax
comp=Z,5.0nm,0.7s
COLA College 83.42 25 PFAKE 20 29 40.0 +9.3
COLA LR LR
comp=Z,200nm,19.0s
CCB Clear Creek Bu 83.42 26 *eP* **P 20 29 30.4 -0.4**
comp=Z,50nm,1.4s
SCM Sheep Creek Mo 83.51 28 *eP* **P 20 29 32.0 +0.5**
SCM pmax pmax
comp=Z,76nm,1.2s
SCM Sheep Creek Mo 83.51 28 *eP* **P 20 29 31.9 +0.5**
comp=Z,76nm,1.2s
CHVG Ch'k'valeri 83.62 312⇑*i P* P 20 29 39.3 +7.0
CHVG Ch'k'valeri 83.62 312 P P 20 29 39.1 +6.8
IL1 Eielson Array 83.82 25 *eP* **P 20 29 32.0 -0.9**
ILAR Eielson Array 83.82 25 P **P 20 29 32.5 -0.4**
comp=Z,3.4nm,0.8s,baz=247,slow=5.7,SNR=19
ILAR LR LR 21 08 47.9
comp=Z,82nm,18.5s,baz=266,slow=37
ILB Eielson Array 83.82 25 *eP* **P 20 29 32.2 -0.7**
VRH Novokhopyorsk 83.84 321 *eP* **P 20 29 35.8 +2.6**
VRH pmax pmax
comp=Z,80nm,1.1s
KLU Klutina 84.17 29 *eP* **P 20 29 35.3 +0.5**
comp=Z,31nm,1.0s
DIV Divide 84.24 29 *eP* **P 20 29 35.6 +0.5**
comp=Z,84nm,1.1s
VNDA Vanda 84.26 173 P **P 20 29 34.5 -0.3**
comp=Z,11nm,0.8s,baz=319,slow=6.1,SNR=73
VNDA LR LR 21 04 27.3
comp=Z,281nm,21.1s,baz=332,slow=34
VNDA Vanda 84.26 173 *eP* **P 20 29 34.7 -0.1**
comp=Z,12nm,0.8s
PPT2 Papeete2 84.50 108 *eS* **S 20 40 04.1 +5.4**
comp=Z,237nm,26.5s
PPT2 Papeete2 84.50 108 *e*LR LR 20 56 12.9
comp=Z,511nm,28.0s
FYU Fort Yukon 84.56 24 *eP* **P 20 29 37.2 +0.7**
comp=Z,123nm,1.4s
BMRM Bremner River 84.81 29 *eP* **P 20 29 38.5 +0.5**
comp=Z,79nm,1.2s
KLMR Klimovskoe 85.04 331 *i P* **P 20 29 38.3 -0.7**
KLMR *e**PP **pP 20 29 57.1 -1.8**
KLMR *e*S **S 20 39 56.0 -6.3**
KLMR pmax pmax
comp=Z,54nm,0.8s
DOT Dot Lake 85.04 27 *eP* **P 20 29 39.7 +0.6**
comp=Z,31nm,0.8s
SBA Scott Base 85.16 172 *eP* **P 20 29 40.2 +0.9**
SBA pmax pmax
comp=Z,19nm,1.0s
SBA Scott Base 85.16 172 *eP* **P 20 29 39.6 +0.4**
comp=Z,19nm,1.0s
MENT Mentasta 85.21 27 *eP* **P 20 29 40.6 +0.6**
TBI Tubuai 85.29 114 *eS* **S 20 40 11.4 +5.1**
comp=Z,142nm,27.5s
TBI Tubuai 85.29 114 *e*LR LR 20 56 45.5
comp=Z,591nm,35.0s
SOC Sochi 85.33 313 *eP* **P 20 29 39.6 -1.3**
SOC *e* 20 32 59.0
SOC *e*PPP PPP 20 35 02.1
SOC *e*S S 20 39 56.6 -9.3
SOC *e*SS **SS 20 45 44.4 +2.5**
SOC pmax pmax
comp=Z,20nm,0.6s
SOC MLR MLR
comp=Z,289nm,19.0s
VORR Voronezh 85.41 321 P **P 20 29 42.0 +0.9**
VORR pmax pmax
comp=Z,250nm,1.2s
VSR Storozhevoye 85.45 321 *eP* **P 20 29 43.6 +2.3**
VSR pmax pmax
comp=Z,50nm,1.2s
CRQM Cirque 85.53 30 *eP* **P 20 29 44.8 +3.0**
comp=Z,55nm,1.2s
LPSR Galich'ya Gora 85.55 322 *eP* **P 20 29 44.0 +2.2**
LPSR pmax pmax
comp=Z,50nm,0.7s
TMCR Tamitsa 85.66 334 *eP* **P 20 29 46.5 +4.5**
TMCR pmax pmax
comp=Z,44nm,0.9s
BALM Baldy 85.91 29 *eP* **P 20 29 44.8 +1.3**
BALM pmax pmax
comp=Z,22nm,0.9s
BALM Baldy 85.91 29 *eP* **P 20 29 44.2 +0.6**
comp=Z,22nm,0.9s
MOS Moscow 86.19 325 *eP* **P 20 29 47.4 +2.5**
MOS *e* 20 33 08.4
MOS *e*S **S 20 40 10.7 -3.2**
MOS *e*SS **SS 20 45 53.6 -0.2**
MOS pmax pmax
comp=Z,100nm,1.3s
MOS pmax pmax
comp=Z,94nm,1.1s
MOS MLR MLR
comp=Z,700nm,20.0s
EGAK Eagle 86.28 25 *eP* **P 20 29 44.7 -0.4**
comp=Z,10nm,0.8s
EGAK *e*PcP **PcP 20 29 54.1 +6.5**
EGAK LR LR
comp=Z,324nm,20.0s
OBN Obninsk 86.83 325 P **P 20 29 47.2 -0.8**
comp=Z,24nm,0.7s,baz=59,slow=14,SNR=6.6
OBN Obninsk 86.83 325 *eP* **P 20 29 47.5 -0.5**
OBN *i* S **S 20 40 11.7 -8.3**
OBN *e*SS **SS 20 46 09.7 +6.6**
OBN pmax pmax
comp=Z,14nm,0.7s
OBN MLR MLR
comp=Z,372nm,20.0s
OBN Obninsk 86.83 325 *eP* **P 20 29 47.1 -0.9**
comp=Z,55nm,0.7s
OBN LR LR
comp=Z,364nm,21.0s
LVZ Lovozero 86.83 338‖*eP* **P 20 29 50.5 +2.7**
LVZ pmax pmax
comp=Z,23nm,1.0s
LVZ Lovozero 86.83 338 PFAKE 20 30 00.0 +12
LVZ LR LR
comp=Z,334nm,20.0s
ANN Anapa 86.91 315 *eP* **P 20 29 45.5 -3.1**
ANN *e*PPP PPP 20 35 08.3
ANN *e*S S 20 40 04.9 -16
ANN pmax pmax
comp=Z,36nm,1.3s
DAWY Dawson 87.09 26 *eP* **P 20 29 50.2 +1.0**
comp=Z,7.7nm,0.9s
APA Apatity 87.33 337⇑*i P* **P 20 29 48.5 -1.7**
APA MLR MLR
comp=Z,300nm,16.0s
ASF Jabal al Asfar 88.20 302 P **P 20 29 55.2 0.0**
comp=Z,9.3nm,0.8s,baz=28,slow=4.6,SNR=22
FURI Furi 88.31 279 *eP* **P 20 29 57.5 +1.1**
comp=Z,20nm,0.8s
INK Inuvik 88.92 22 LR LR 21 09 12.0
comp=Z,130nm,21.5s,baz=265,slow=35
INK Inuvik 88.92 22 *eP* **P 20 29 58.7 +1.0**
INK pmax pmax
comp=Z,11nm,0.8s
INK Inuvik 88.92 22 *eP* **P 20 29 58.7 +1.0**
comp=Z,12nm,0.8s
SIM Simferopol' 89.25 315*deP* **P 20 29 58.7 -1.1**
SIM *e*S **S 20 40 42.0 -1.5**
SIM pmax pmax
comp=Z,16nm,0.7s
KEV Kevo 89.32 340 PFAKE 20 30 10.0 +10
KEV LR LR
comp=Z,277nm,22.0s
MMAI Mount Meron Ar 89.39 303 P **P 20 30 01.8 +1.0**
comp=Z,2.8nm,0.5s,baz=74,slow=6.2,SNR=12
SPA0 Spitsbergen Ar 89.72 349 *eP* **P 20 30 01.7 +0.4**
ARA0 ARCESS Array S 89.88 340 *eP* **P 20 30 00.7 -1.6**
ARCES ARCESS Array B 89.88 340 P **P 20 30 01.3 -0.9**
comp=Z,5.9nm,0.5s,baz=82,slow=6.2,SNR=32
ARCES LR LR 21 16 08.3
comp=Z,116nm,18.5s,baz=88,slow=39
ARCES ARCESS Array B 89.88 340 P **P 20 30 01.3 -0.9**
ARCES pmax pmax
comp=Z,8.0nm,0.6s
ARCES MLR MLR
comp=Z,116nm,18.5s
ARE0 ARCESS Array S 89.88 340 *eP* **P 20 30 04.0 +1.8**
comp=Z,22nm,0.8s
EIL Elat 90.08 300 P **P 20 30 04.2 +0.1**
comp=Z,14nm,0.8s,baz=12,slow=4.9,SNR=7.6
BR101 Keskin Array S 90.15 310 *eP* **P 20 30 03.5 -0.8**
BR101 *e*PP **PP 20 33 43.2 +4.6**
BR131 Keskin Array S 90.15 310 *eP* **P 20 30 02.5 -1.7**
BRTR Keskin Array B 90.15 310 P **P 20 30 03.5 -0.8**
comp=Z,8.5nm,0.7s,baz=130,slow=4.6,SNR=17
BRTR PP **PP 20 33 43.2 +4.6**
comp=Z,2.7nm,0.8s,baz=120,slow=7.4,SNR=3.7
KBS Kingsbay 90.22 350 PFAKE 20 30 10.0 +6.4
KBS LR LR
comp=Z,262nm,20.0s
KMBO Kilima Mbogo 90.53 269 P **P 20 30 07.3 +0.6**
comp=Z,4.1nm,0.7s,baz=64,slow=5.9,SNR=8.5
KMBO Kilima Mbogo 90.53 269 *eP* **P 20 30 07.7 +1.0**
KMBO pmax pmax
comp=Z,8.0nm,0.9s
KMBO MLR MLR
comp=Z,293nm,19.0s
KMBO Kilima Mbogo 90.53 269 *eP* **P 20 30 07.7 +1.0**
comp=Z,7.5nm,0.9s
KMBO LR LR
comp=Z,293nm,19.0s
ANTO Ankara 90.78 310 *eP* P 20 30 12.4 +5.3
ANTO pmax pmax
comp=Z,15nm,1.0s
ANTO Ankara 90.78 310 *eP* **P 20 30 10.0 +2.8**
comp=Z,15nm,1.0s
CSS Mathiatis 90.91 305 *eP* **P 20 30 07.2 -0.6**
comp=Z,4.5nm,0.8s
CSS LR LR
comp=Z,82nm,20.0s
FIA1 FINESS Array S 91.44 332 *eP* **P 20 30 07.7 -1.9**
FIA0 FINESS Array S 91.44 332 *eP* **P 20 30 08.3 -1.3**
FIA0 FINESS Array S 91.44 332 *eP* **P 20 30 08.3 -1.3**
FINES FINESS Array B 91.44 332 P **P 20 30 08.3 -1.3**
comp=Z,5.5nm,0.7s,baz=82,slow=4.4,SNR=13
FINES LR LR 21 13 48.9
comp=Z,214nm,21.3s,baz=88,slow=37
FINES FINESS Array B 91.44 332 P **P 20 30 08.3 -1.3**
FINES pmax pmax
comp=Z,2.0nm,0.4s
FINES MLR MLR
comp=Z,214nm,21.3s
VSU Vasula 91.74 329‖*eP* **P 20 30 13.2 +2.2**
VSU pmax pmax
comp=Z,44nm,0.8s
AKASG Malin Array Be 91.75 321 P **P 20 30 09.9 -1.3**
comp=Z,3.8nm,0.7s,baz=65,slow=5.2,SNR=19
AKASG LR LR 21 14 52.0
comp=Z,176nm,18.9s,baz=135,slow=38
AKASG Malin Array Be 91.75 321 P **P 20 30 10.0 -1.3**
AKASG pmax pmax
comp=Z,5.0nm,0.7s
AKASG MLR MLR
comp=Z,177nm,18.9s
KIEV Kiev 91.76 321‖*eP* **P 20 30 09.8 -1.5**
KIEV Kiev 91.76 321 *eP* **P 20 30 09.1 -2.2**
comp=Z,16nm,1.0s
KIEV LR LR
comp=Z,286nm,21.0s
AK11 Malin Array Si 91.79 321 *eP* **P 20 30 09.7 -1.7**
NACGM Naroch 92.44 325 *e* **P 20 30 17.0 +2.6**
NACGM *e*LR LR 21 13 20.0
ISP Isparta 92.80 308 PFAKE 20 30 30.0 +13
ISP LR LR
comp=Z,198nm,21.0s
TAOE Nuku Hiva Isla 92.84 99 *e*PS PS 20 42 39.1 +0.4
comp=Z,341nm,26.5s
TAOE Nuku Hiva Isla 92.84 99 *e*LR LR 20 59 57.1
comp=Z,502nm,32.1s
SYO Syowa Base 93.67 201⇑*eP* **P 20 30 18.0 -1.6**
MSAB Monastry St. A 93.82 315‖⇑*iP* **P 20 30 18.7 -2.3**
TESR Tescani 94.19 317⇑⇑*iP* **P 20 30 22.3 -0.3**
VRI Vrincioaia 94.26 317⇑⇑*iP* **P 20 30 23.8 +0.8**
VRI Vrincioaia 94.26 317⇑⇑*P* **P 20 30 23.8 +0.8**
PLOR Plostina 94.32 317⇑⇑*iP* **P 20 30 23.4 +0.1**
PLOR Plostina 94.32 317⇑⇑*P* **P 20 30 23.4 +0.1**
QSPA South Pole Qui 94.60 180 *eP* **P 20 30 24.2 +0.1**
SULR 94.82 315⇑⇑*iP* **P 20 30 25.7 +0.2**
MLR Muntele Rosu 94.87 316 P **P 20 30 25.4 -0.6**
comp=Z,2.4nm,0.8s,baz=113,slow=3.0
MLR Muntele Rosu 94.87 316⇑⇑*iP* **P 20 30 26.3 +0.3**
MLR Muntele Rosu 94.87 316⇑⇑*P* **P 20 30 26.3 +0.3**
MLR Muntele Rosu 94.87 316 *eP* **P 20 30 23.9 -2.0**
comp=Z,17nm,0.9s
BURAR Bucovina Array 94.92 318‖⇓*iP* **P 20 30 25.7 -0.4**
BURAR Bucovina Array 94.92 318‖⇓*P* **P 20 30 25.7 -0.4**
DOPR Dopca 95.16 317‖⇓*iP* **P 20 30 30.6 +3.5**
VOIR 95.50 316⇑⇑*iP* **P 20 30 27.8 -1.0**
VOIR 95.50 316⇑⇑*P* **P 20 30 27.8 -1.0**
KWP Kalwaria Pacla 96.07 321⇑⇑*iP* **P 20 30 29.0 -2.2**
KWP Kalwaria Pacla 96.07 321⇑⇑*P* **P 20 30 29.0 -2.2**
LOT Lotru 96.38 317⇑⇑*iP* **P 20 30 32.4 -0.4**
DAG Danmarks Havn 96.43 353 *i P* **P 20 30 31.0 -1.2**
DAG Danmarks Havn 96.43 353 *eP* **P 20 30 31.0 -1.2**
UZH Uzhgorod 96.59 320*deP* **P 20 30 32.8 -0.7**
UZH *i* 20 30 43.8
DRGR 96.77 318⇑⇑*iP* **P 20 30 33.9 -0.6**
DRGR 96.77 318⇑⇑*P* **P 20 30 33.9 -0.6**
SANT Santorini 97.03 307 PFAKE 20 30 50.0 +14
SANT LR LR

comp=Z,202nm,22.0s
CRVS Cervenica-Dubn 97.05 320 *e*P Pdif 20 30 36.4 +0.7
CRVS Cervenica-Dubn 97.05 320 *e*P Pdif 20 30 36.4 +0.7
STHS Stebnicka Huta 97.05 321 *e*P Pdif 20 30 36.6 +0.9
STHS pmax pmax
comp=Z,7.0nm,0.9s
STHS Stebnicka Huta 97.05 321 *e*P Pdif 20 30 36.6 +0.9
LAST Lasithi 97.25 306 ⇓*i*P **P 20 30 36.7 -0.2**
SIRR Siria 97.61 318 ⇓*i*P Pdif 20 30 41.4 +3.1
KECS Kecovo 97.79 320 *e*P **P 20 30 38.6 -0.3**
KECS pmax pmax
comp=Z,5.0nm,0.8s
KECS Kecovo 97.79 320 *e*P **P 20 30 38.6 -0.3**
BZS Buzias 97.80 317 ⇑*i*P Pdif 20 30 42.1 +3.0
BZS Buzias 97.80 317 ⇑P Pdif 20 30 42.1 +3.0
MDVR Moldovita 97.95 316 ⇓*i*P **P 20 30 39.6 -0.2**
YKA Yellowknife Ar 98.23 25 P **P 20 30 40.6 0.0**
comp=Z,0.5nm,0.8s,baz=300,slow=5.0,SNR=4.2
YKA PKKP PKKPdf 20 47 28.2 +11
comp=Z,0.5nm,0.7s,baz=109,slow=2.3,SNR=5.6
YKA Yellowknife Ar 98.23 25 P Pdif 20 30 40.6 0.0
YKA pmax pmax
comp=Z,1.0nm,0.9s
YKA pmax pmax
comp=Z,1.0nm,0.7s
YKB5 Yellowknife Ar 98.23 25 *e*P **P 20 30 39.4 -1.1**
LANS Liptovska Anna 98.24 321 *e*P **P 20 30 39.5 -1.5**
LANS Liptovska Anna 98.24 321 *e*P **P 20 30 39.5 -1.5**
PSZ Piszkesteto 98.32 320 PFAKE 20 30 50.0 +8.5
PSZ LR LR
comp=Z,304nm,20.0s
NB2 NORSAR Subarra 98.35 334 P **P 20 30 39.5 -1.7**
comp=Z,11nm,0.8s,baz=67,slow=4.6
NB2 NORSAR Subarra 98.35 334 P **P 20 30 39.5 -1.7**
baz=67,slow=4.6
NB200 NORSAR Array S 98.35 334 *e*P **P 20 30 40.5 -0.8**
NOA NORSAR Array B 98.35 334 P **P 20 30 40.5 -0.8**
comp=Z,2.0nm,0.6s,baz=148,slow=18,SNR=8.8
NOA LR LR 21 19 59.4
comp=Z,235nm,19.8s,baz=70,slow=38
NC204 NORSAR Array S 98.44 334 *e*P Pdif 20 30 42.6 +0.9
NLWA Neilton Lookou 98.89 41 PFAKE 20 31 00.0 +16
NLWA LR LR
comp=Z,293nm,20.0s
KONO Kongsberg 99.69 333 PFAKE 20 31 00.0 +13
KONO LR LR
comp=Z,235nm,19.0s
DPC Dobruska-Polom 99.80 323 AMS AMS 21 18 20.0
comp=Z,300nm,21.0s
UPC Upice 99.94 323 AMS AMS 21 18 40.0
comp=Z,500nm,29.5s
VRAC Vranov 99.98 322 ⇑*i*P **Pdif 20 30 47.0 -1.8**
VRAC Vranov 99.98 322 ⇑P **Pdif 20 30 47.0 -1.8**
TIR Tirane 100.15 313 PFAKE 20 31 00.0 +10
TIR LR LR
comp=Z,273nm,21.0s
LSZ Lusaka 100.38 255 PFAKE 20 31 00.0 +8.7
LSZ LR LR
comp=Z,486nm,19.0s
TREC Trest 100.67 322 AMS AMS 21 20 50.0
comp=Z,400nm,20.7s
PVCC Panska Ves 100.79 323 AMS AMS 21 19 10.0
comp=Z,300nm,19.3s
PRU Pruhonice 101.00 323 *e*PP PP 20 35 09.4 +7.4
PRU AMS AMS 21 19 00.0
comp=Z,400nm,18.1s
BRG Berggiesshubel 101.04 324 *e*P **Pdif 20 30 57.7 +4.3**
comp=Z,4.4nm,0.8s
BRG Berggiesshubel 101.04 324 *e*P **Pdif 20 30 57.7 +4.3**
BRG pmax pmax
comp=Z,4.0nm,0.8s
CLL Collm 101.42 324 ⇑*i*Pdif **Pdif 20 30 50.8 -4.3**
comp=Z,13nm,1.5s
CLL *i* 20 30 54.4
CLL *i* 20 31 22.8
CLL *e*SKSac **SKSac 20 41 30.0 +2.0**
CLL *e*Sdif **Sdif 20 42 34.0 +4.7**
CLL *e*SP **SP 20 43 58.0 -2.5**
CLL *e*PPS PPS 20 45 21.0
CLL *e*SS **SS 20 49 36.0 +5.0**
CLL LmV 21 29 00.0
comp=Z,200nm,18.2s
CLL Collm 101.42 324 *i* P **Pdif 20 30 50.8 -4.3**
CLL *e* 20 41 30.0
CLL *e*S **Sdif 20 42 34.0 +4.7**
CLL pmax pmax
comp=Z,13nm,1.5s
KHC Kasperske Hory 101.90 322 *e*PDIFF **Pdif 20 30 57.0 -0.3**
KHC *e*PP **PP 20 35 09.2 +0.4**
KHC Kasperske Hory 101.90 322 *e*P **Pdif 20 30 57.0 -0.3**
KHC *e* 20 35 09.2
GEC2 GERESS Array S 101.93 322 *e*P **Pdif 20 30 56.4 -1.2**
GEC2 GERESS Array S 101.93 322 *e*Pdif **Pdif 20 30 56.4 -1.2**
GERES GERESS Array B 101.93 322 P **Pdif 20 30 56.9 -0.7**
comp=Z,0.7nm,0.8s,baz=38,slow=6.8,SNR=4.1
NEW Newport 102.88 38 PFAKE 20 31 10.0 +8.3
NEW LR LR
comp=Z,264nm,19.0s
TIP Timpagrande 103.04 312 PFAKE 20 31 10.0 +7.3
TIP LR LR
comp=Z,205nm,21.0s
CUC Castrocucco 103.49 313 PFAKE 20 31 20.0 +15
CUC LR LR
comp=Z,158nm,20.0s
CEL Celeste 103.96 311 PFAKE 20 31 20.0 +13
CEL LR LR
comp=Z,199nm,21.0s
WVOR Wild Horse Val 103.98 44 PFAKE 20 31 20.0 +13
WVOR LR LR
comp=Z,173nm,19.0s
BMO Blue Mountains 104.03 42 PFAKE 20 31 20.0 +13
BMO LR LR
comp=Z,365nm,22.0s
AQU L'Aquila 104.44 316 PFAKE 20 31 20.0 +11
AQU LR LR
comp=Z,256nm,21.0s
BFO Black Forest 105.40 323 PFAKE 20 35 40.0
BFO LR LR
comp=Z,333nm,21.0s
TUE Stuetta 105.56 321 PFAKE 20 35 40.0
TUE LR LR
comp=Z,317nm,19.0s
WDD Wied Dalam 105.73 309 PFAKE 20 35 40.0
WDD LR LR
comp=Z,140nm,19.0s
VLC Villacollemand 105.82 318 PFAKE 20 35 40.0
VLC LR LR
comp=Z,189nm,19.0s
WLF Walferdange 106.08 325 PFAKE 20 35 40.0
WLF LR LR
comp=Z,339nm,21.0s
CLTB Caltabellotta 106.18 311 PFAKE 20 35 40.0
CLTB LR LR
comp=Z,113nm,21.0s
HLID Hailey 106.44 42 PFAKE 20 35 40.0
HLID LR LR
comp=Z,197nm,19.0s
BOZ Bozeman (W) 107.38 39 PFAKE 20 35 40.0
BOZ LR LR
comp=Z,168nm,19.0s
BNI Bardonecchia 107.86 320 PFAKE 20 35 40.0
BNI LR LR
comp=Z,395nm,20.0s
FFC Flin Flon 107.93 28 PFAKE 20 35 40.0
FFC LR LR
comp=Z,327nm,22.0s
VSL Villasalto 108.32 314 PFAKE 20 35 40.0
VSL LR LR
comp=Z,194nm,20.0s
SFJD Kangerlussuaq 108.47 359 PFAKE 20 35 40.0
SFJD LR LR
comp=Z,207nm,19.0s
PFO Pinyon Flats O 108.53 52 PFAKE 20 35 40.0
PFO LR LR
comp=Z,179nm,19.0s
LKWY Lake 108.64 40 PFAKE 20 35 40.0
LKWY LR LR
comp=Z,367nm,21.0s
DUG Dugway, Tooele 108.88 45 PFAKE 20 35 40.0
DUG LR LR
comp=Z,183nm,19.0s
AHID Auburn Hatcher 108.98 42 PFAKE 20 35 40.0
AHID LR LR
comp=Z,191nm,20.0s
RLMT Red Lodge 109.10 39 PFAKE 20 35 40.0
RLMT LR LR
comp=Z,257nm,21.0s
HWUT Hardware Ranch 109.16 43 PFAKE 20 35 50.0
HWUT LR LR
comp=Z,312nm,19.0s
BW06 Boulder Array 110.00 41 PFAKE 20 35 50.0
BW06 LR LR
comp=Z,314nm,20.0s
PD31 Pinedale Array 110.00 41 *e*Pdif **Pdif 20 31 29.4 -4.3**
PDAR Pinedale Array 110.00 41 PKKPbc PKKPbc 20 46 42.5 +3.4
comp=Z,0.4nm,0.6s,baz=106,slow=5.3,SNR=3.7
PDAR PKKP **PKKPdf 20 46 55.3 +0.1**
comp=Z,1.0nm,0.7s,baz=122,slow=4.9,SNR=4.3
LAO LASA Array 110.19 36 PFAKE 20 35 50.0
LAO LR LR
comp=Z,252nm,21.0s
DGMT Dagmar 110.41 34 PFAKE 20 35 50.0
DGMT LR LR
comp=Z,240nm,19.0s
WUAZ Wupatki 111.77 49 PFAKE 20 35 50.0
WUAZ LR LR
comp=Z,197nm,20.0s
MVCO Mesa Verde 113.19 46 PFAKE 20 35 50.0
MVCO LR LR
comp=Z,364nm,20.0s
ISCO Idaho Springs 114.01 43 PFAKE 20 35 50.0 +6.8
ISCO LR LR
comp=Z,218nm,20.0s
SDCO Great Sand Dun 115.07 44 PFAKE 20 36 00.0 +15
SDCO LR LR
comp=Z,297nm,21.0s
ANMO Albuquerque 115.67 48 *e*PKIKP **PKPdf 20 35 46.6 +0.2**
ANMO MLR MLR
comp=Z,136nm,20.0s
ANMO Albuquerque 115.67 48 *e*PKPdf **PKPdf 20 35 46.6 +0.2**
ANMO LR LR
comp=Z,136nm,20.0s
OGNE Ogallala 115.78 40 PFAKE 20 36 00.0 +14
OGNE LR LR
comp=Z,178nm,19.0s
TAM Tamanrasset 117.28 298 PFAKE 20 36 00.0 +10
TAM LR LR
comp=Z,209nm,19.0s
EYMN Ely 117.33 29 PFAKE 20 36 00.0 +11
EYMN LR LR
comp=Z,207nm,19.0s
ESDC Sonseca Array 117.36 320 PKP **PKPdf 20 35 53.2 +3.9**
comp=Z,0.3nm,0.5s,baz=18,slow=1.5,SNR=4.8
ESDC PKKPbc **PKKPbc 20 46 15.2 +1.3**
comp=Z,0.2nm,0.4s,baz=230,slow=3.4,SNR=4.1
ECSD EROS Data Cent 117.45 35 P **PKPdf 20 35 49.3 0.0**
baz=308
ECSD EROS Data Cent 117.45 35 *e*PKPdf **PKPdf 20 35 48.7 -0.6**
ECSD LR LR
comp=Z,179nm,19.0s
PAB San Pablo 117.68 320 PFAKE 20 36 00.0 +10
PAB LR LR
comp=Z,247nm,22.0s
F36A Milaca 117.76 31 P **PKPdf 20 35 49.8 0.0**
baz=312
H35A Sunnyside Ranc 117.83 33 P **PKPdf 20 35 50.3 +0.3**
baz=310
MNTX Cornudas Mount 117.89 50 P **PKPdf 20 35 51.7 +1.2**
baz=296
MNTX Cornudas Mount 117.89 50 *e*PKPdf **PKPdf 20 35 50.9 +0.4**
MNTX LR LR
comp=Z,101nm,20.0s
CBKS Cedar Bluff 118.42 41 PFAKE 20 36 00.0 +8.6
CBKS LR LR
comp=Z,276nm,20.0s
O32A Brockman Farm, 118.54 39 P **PKPdf 20 35 51.2 -0.4**
baz=306
MSTX Muleshoe 118.82 47 P **PKPdf 20 35 53.1 +0.7**
baz=299
MSTX Muleshoe 118.82 47 *e*PKPdf **PKPdf 20 35 52.5 +0.1**
O33A Hebron 119.08 39 P **PKPdf 20 35 52.3 -0.3**
baz=306
MTE Manteigas 119.21 322 PFAKE 20 36 00.0 +7.1
MTE LR LR
comp=Z,258nm,19.0s
M35A Neola 119.39 36 P **PKPdf 20 35 53.0 -0.1**
baz=308
I38A Scanlan Farm, 119.61 32 P **PKPdf 20 35 53.7 +0.3**
baz=313
COWI Conover 119.78 29 PFAKE 20 36 10.0 +16
COWI LR LR
comp=Z,309nm,20.0s
R33A Olander Ranch, 119.84 40 P **PKPdf 20 35 54.7 +0.6**
baz=305
T32A Huddler Ranch, 119.86 42 P **PKPdf 20 35 54.2 +0.1**
baz=304
P34A Walnut Farm, R 119.86 39 P **PKPdf 20 35 53.8 -0.2**
baz=306
TX31 Lajitas Ar. Si 120.25 52 *e*PKPdf **PKPdf 20 35 55.0 -0.2**
LTX Lajitas 120.25 52 *e*PKIKP **PKPdf 20 35 55.9 +0.7**
LTX Lajitas 120.25 52 *e*PKPdf **PKPdf 20 35 55.9 +0.7**
LTX *e*PKKPbc **PKKPab 20 46 06.3 +1.5**
TXAR Lajitas Array 120.25 52 PKP **PKPdf 20 35 55.9 +0.7**
comp=Z,2.4nm,0.7s,baz=216,slow=0.7,SNR=27
TXAR PKKPab **PKKPab 20 46 06.3 +1.5**
comp=Z,0.5nm,0.8s,baz=134,slow=5.4,SNR=4.5
KSU1 Kansas State U 120.26 39 *e*PKPdf **PKPdf 20 35 55.8 +0.9**
KSU1 LR LR
comp=Z,155nm,20.0s
T33A Patterson Ranc 120.36 42 P **PKPdf 20 35 55.6 +0.5**
baz=304
P35A Duane Minner, 120.37 38 P **PKPdf 20 35 54.8 -0.3**
baz=307
L38A Oak Wood Farm, 120.53 34 P **PKPdf 20 35 55.1 -0.1**
baz=311
SCIA State Center 120.54 35 PFAKE 20 36 10.0 +15
SCIA LR LR
comp=Z,211nm,19.0s
Q35A Mercer Eighty, 120.76 39 P **PKPdf 20 35 56.0 +0.1**
baz=307
M38A Pleasantville 120.87 35 P **PKPdf 20 35 55.9 0.0**
baz=311
T34A McClaskey Farm 121.09 41 P **PKPdf 20 35 56.7 +0.2**
baz=305
O37A Wolven Farm, M 121.11 37 P **PKPdf 20 35 56.9 +0.4**
baz=309
WMOK Wichita Mounta 121.28 44 P **PKPdf 20 35 57.4 +0.5**
baz=302
WMOK Wichita Mounta 121.28 44 PFAKE 20 36 10.0 +13
WMOK LR LR
comp=Z,268nm,20.0s
S35A Otter Creek Ra 121.28 40 P **PKPdf 20 35 57.1 +0.3**
baz=306
P37A Lathrop 121.36 37 P **PKPdf 20 35 56.5 -0.4**
baz=309
R36A Gordon, Harris 121.42 39 P **PKPdf 20 35 56.6 -0.5**
baz=307
JFWS Jewell Farm 121.48 32 *e*PKIKP **PKPdf 20 35 56.3 -0.8**
JFWS MLR MLR
comp=Z,238nm,20.0s
JFWS Jewell Farm 121.48 32 *e*PKPdf **PKPdf 20 35 56.2 -0.8**
JFWS LR LR
comp=Z,238nm,20.0s
V34A Guthrie 121.54 43 P **PKPdf 20 35 58.1 +0.7**
baz=304
X33A Lawton 121.58 44 P **PKPdf 20 35 58.3 +0.8**
baz=302
U35A Pawnee 121.77 42 P **PKPdf 20 35 58.2 +0.3**
baz=305
P38A Dawn 121.82 37 P **PKPdf 20 35 57.7 -0.1**
baz=310
R37A Teagarden Farm 121.84 39 P **PKPdf 20 35 57.4 -0.5**
baz=308
S37A Fort Scott 122.18 39 P **PKPdf 20 35 58.3 -0.2**
baz=307
Q38A Cooks Store, C 122.19 37 P **PKPdf 20 35 58.1 -0.4**
baz=309
P39B Salisbury 122.37 36 P **PKPdf 20 35 58.8 -0.1**
baz=310
RTC Rabat Centre 122.39 315 PFAKE 20 36 10.0 +11
RTC LR LR
comp=Z,576nm,19.0s
Y34A Reagan Ranch, 122.41 45 P **PKPdf 20 35 59.9 +0.8**
baz=303
R38A Fenwick Farm, 122.50 38 P **PKPdf 20 35 58.6 -0.6**
baz=308
T37A Cheneyville 18 122.51 40 P **PKPdf 20 35 59.4 +0.2**
baz=307
Q39A Willow Grove F 122.52 37 P **PKPdf 20 35 59.3 +0.1**
baz=310
JCT Junction City 122.70 49 P **PKPdf 20 36 00.2 +0.4**
baz=299
JCT Junction City 122.70 49 *e*PKIKP **PKPdf 20 36 00.6 +0.8**
JCT Junction City 122.70 49 *e*PKPdf **PKPdf 20 36 00.6 +0.8**
JCT LR LR
comp=Z,187nm,19.0s
P40A Paris 122.76 36 P **PKPdf 20 35 59.7 +0.1**
baz=311
W36A Wetumka 122.81 43 P **PKPdf 20 36 00.4 +0.6**
baz=305
S38A Stockton 122.84 39 P **PKPdf 20 35 59.4 -0.4**
baz=308
333A Richland Sprin 122.90 48 P **PKPdf 20 36 00.2 +0.1**
baz=300
R39A Chumby, Stover 122.95 38 P **PKPdf 20 35 59.8 -0.2**
baz=309
T38A Diamond 122.96 40 P **PKPdf 20 36 00.1 0.0**
baz=308
X36A Centrahoma 123.04 43 P **PKPdf 20 36 00.3 0.0**
baz=304
Q40A Laux Farm, Aux 123.09 37 P **PKPdf 20 36 00.3 0.0**
baz=311
433A Art 123.10 48 P **PKPdf 20 36 00.6 0.0**
baz=300
S39A Bolivar 123.17 38 P **PKPdf 20 36 00.3 -0.2**
baz=309
234A Clairette 123.17 47 P **PKPdf 20 36 01.1 +0.5**
baz=302
U38A Gravette 123.26 40 P **PKPdf 20 36 00.7 0.0**
baz=307
R40A Maddies Statio 123.43 37 P **PKPdf 20 36 00.8 -0.2**
baz=310
334A Lometa 123.44 47 P **PKPdf 20 36 01.3 +0.1**
baz=301
Y36A Durant 123.46 44 P **PKPdf 20 36 01.3 +0.2**
baz=304
533A Kerrville 123.48 49 P **PKPdf 20 36 01.9 +0.6**
baz=300
TOA0 Torodi Ar. Sit 123.52 289 *e*PKPdf **PKPdf 20 36 00.7 -1.0**
TOA0 *e*PKPdf **PKPdf 20 36 01.3 -0.4**
TORD Torodi Ar. Bea 123.52 289 PKP **PKPdf 20 36 01.6 -0.1**
comp=Z,5.4nm,0.7s,baz=54,slow=2.1,SNR=27
TORD PKKPbc **PKKPab 20 45 51.1 +0.5**
comp=Z,1.7nm,0.7s,baz=276,slow=3.3,SNR=8.6
TOA1 Torodi Ar. Sit 123.53 289 *e*PKPdf **PKPdf 20 36 01.6 -0.1**
TOA1 *e*PKKPbc **PKKPab 20 45 51.1 +0.5**
T39A Clever 123.55 39 P **PKPdf 20 36 01.2 0.0**
baz=308
V38A Canehill 123.59 41 P **PKPdf 20 36 01.6 +0.2**
baz=307
832A Faith Ranch, C 123.61 52 P **PKPdf 20 36 02.9 +1.4**
baz=298
HDIL Hopedale 123.64 33 P **PKPdf 20 36 01.3 +0.1**
baz=314
HDIL Hopedale 123.64 33 PFAKE 20 36 10.0 +8.7
HDIL LR LR
comp=Z,147nm,20.0s
434A Burnet 123.68 48 P **PKPdf 20 36 01.7 0.0**
baz=301
S40A Lebanon 123.73 38 P **PKPdf 20 36 01.4 -0.2**
baz=310
U39A Green Forest 123.87 40 P **PKPdf 20 36 01.6 -0.3**
baz=308
534A Blanco 123.92 49 P **PKPdf 20 36 02.3 +0.1**
baz=300
W38A Poteau 123.99 42 P **PKPdf 20 36 02.5 +0.4**
baz=306
T40A Mansfield 124.00 38 P **PKPdf 20 36 01.9 -0.2**
baz=309
X38A Whitesboro 124.01 42 P **PKPdf 20 36 03.4 +1.2**
baz=306
833A Chaparral WMA, 124.05 51 P **PKPdf 20 36 03.4 +1.0**
baz=298
V39A Pettigrew 124.10 40 P **PKPdf 20 36 02.1 -0.3**
baz=308
U40A Yellville 124.29 39 P **PKPdf 20 36 02.5 -0.2**
baz=308
W39A Magazine 124.40 41 P **PKPdf 20 36 03.1 +0.2**
baz=307
933A Laredo 124.47 52 P **PKPdf 20 36 05.0 +1.8**
baz=298
Q43A New Douglas 124.52 35 P **PKPdf 20 36 03.3 +0.3**
baz=313
T41A Mountain View 124.54 38 P **PKPdf 20 36 03.1 0.0**
baz=310
X39A Fountain Ranch 124.58 42 P **PKPdf 20 36 04.0 +0.7**
baz=306
V40A Witts Springs 124.65 40 P **PKPdf 20 36 03.4 0.0**
baz=308
MIAR Mount Ida 124.92 42 P **PKPdf 20 36 05.3 +1.4**
baz=307
MIAR Mount Ida 124.92 42 *e*PKIKP **PKPdf 20 36 02.9 -1.0**
MIAR MLR MLR
comp=Z,258nm,20.0s
MIAR Mount Ida 124.92 42 *e*PKPdf **PKPdf 20 36 02.9 -1.0**
MIAR LR LR
comp=Z,258nm,20.0s
034A Hebbronville 125.19 52 P **PKPdf 20 36 05.2 +0.6**
baz=298
AAM Ann Arbor 125.23 28 PFAKE 20 36 20.0 +16
AAM LR LR
comp=Z,240nm,19.0s
636A Smothers Creek 125.26 49 P **PKPdf 20 36 06.8 +2.1**
baz=301
V42A Cord 125.56 39 P **PKPdf 20 36 05.2 +0.1**
baz=310
OLIL Olney 125.56 34 *e*PKPdf **PKPdf 20 36 05.0 0.0**
NATX Nacogdoches 125.79 45 PFAKE 20 36 20.0 +14
NATX LR LR
comp=Z,369nm,19.0s
S45A Carrier Mills 126.02 35 P **PKPdf 20 36 05.9 0.0**
baz=313
BLO Bloomington 126.12 33 *e*PKIKP **PKPdf 20 36 06.3 +0.2**
BLO Bloomington 126.12 33 *e*PKPdf **PKPdf 20 36 06.3 +0.2**
WCI Wyandotte Cave 126.92 33 *e*PKIKP **PKPdf 20 36 08.3 +0.6**
WCI Wyandotte Cave 126.92 33 *e*PKPdf **PKPdf 20 36 07.8 +0.1**
LONY Lake Ozonia 126.99 20 PFAKE 20 36 20.0 +12
LONY LR LR
comp=Z,233nm,20.0s
ACSO Alum Creek Sta 127.15 29 *e*PKPdf **PKPdf 20 36 07.1 -0.9**
ACSO LR LR
comp=Z,197nm,20.0s
M54A Oil Creek Stat 127.67 26 P **PKPdf 20 36 09.5 +0.5**
baz=325
PKME Peaks-Kenny Pk 128.00 15 PFAKE 20 36 20.0 +11
PKME LR LR
comp=Z,234nm,21.0s
PLAL Pickwick Lake 128.14 38 *e*PKPdf **PKPdf 20 36 09.7 -0.4**
KOWA Kowa 128.47 293 *e*PKPdf **PKPdf 20 36 14.6 +3.5**
BINY Binghamton 128.59 22 *e*PKPdf **PKPdf 20 36 12.0 +1.3**
BINY LR LR
comp=Z,285nm,22.0s
Y47A UCPARC, Winfie 129.00 38 P **PKPdf 20 36 11.9 +0.2**
baz=312
SSPA Standing Stone 129.15 25 *e*PKPdf **PKPdf 20 36 12.2 +0.4**
O56A Blue Knob Stat 129.16 26 P **PKPdf 20 36 13.0 +1.0**
baz=326
LRAL Lakeview Retre 130.11 39 *e*PKPdf **PKPdf 20 36 13.8 0.0**
TKL Tuckaleechee C 130.17 34 *e*PKIKP **PKPdf 20 36 14.7 +0.8**
TKL Tuckaleechee C 130.17 34 *e*PKPdf **PKPdf 20 36 14.2 +0.3**
BLA Blacksburg 130.76 30 *e*SKPbc **SKPbc 20 39 31.4 -1.4**
BLA LR LR
comp=Z,149nm,21.0s
CMLA Cha da Macela 130.96 332 PFAKE 20 36 30.0 +15
CMLA LR LR
comp=Z,2μm,20.0s
KIC Kosan Boka 131.26 283 *e*PKP1 **PKPdf 20 36 19.7 +3.2**
comp=Z,34nm,1.0s
KIC Kosan Boka 131.26 283 *e*PKP2 **SKPbc 20 39 33.0 -2.3**
comp=Z,33nm,1.0s
BRAL Brewton 131.31 41 PFAKE 20 36 30.0 +14
BRAL LR LR
comp=Z,228nm,20.0s
DBIC Dimbokro 131.31 283 PKP **PKPdf 20 36 19.6 +3.0**
comp=Z,4.0nm,0.8s,baz=48,slow=5.4,SNR=4.7
DBIC SKPab **SKPbc 20 39 33.4 -2.0**
comp=Z,11nm,0.7s,baz=62,slow=4.0,SNR=10
CBN Corbin Frederi 131.39 26 PFAKE 20 36 30.0 +14
CBN LR LR
comp=Z,296nm,20.0s
TIC Toumodi 131.47 283 *e*PKP1 **PKPdf 20 36 19.2 +2.2**
TIC Toumodi 131.47 283 *e*PKP2 **SKPbc 20 39 33.7 -2.3**
LIC Lamto 131.57 283 *e*PKP1 **PKPdf 20 36 20.1 +3.0**
comp=Z,34nm,0.9s
LIC Lamto 131.57 283 *e*PKP2 **SKPbc 20 39 32.2 -4.2**
comp=Z,28nm,0.9s
URVA University of 131.84 27 *e*PKPdf **PKPdf 20 36 16.4 -0.5**
URVA *e*SKPbc **SKPbc 20 39 34.8 -1.9**

KMSC Kings Mountain 131.88 32 *e*PKPdf **PKPdf 20 36 17.6 +0.5**
GOGA Godfrey 131.97 36 PFAKE 20 36 30.0 +13
GOGA LR LR
comp=Z,190nm,21.0s
CNNC Cliffs of the 133.56 29 PFAKE 20 36 30.0 +10
CNNC LR LR
comp=Z,177nm,20.0s
NHSC New Hope 134.05 33 PFAKE 20 36 30.0 +8.7
NHSC LR LR
comp=Z,173nm,19.0s
TEIG Tepich 136.85 54 PFAKE 20 36 40.0 +13
TEIG LR LR
comp=Z,103nm,21.0s
PLCA Paso Flores 140.55 158 PKP **PKPdf 20 36 32.4 -0.8**
comp=Z,3.2nm,0.9s,baz=246,slow=4.8,SNR=6.0
BBSR BB Station 141.30 17 PFAKE 20 36 50.0 +15
BBSR LR LR
comp=Z,405nm,19.0s
ASCN Ascension 142.16 263 PFAKE 20 36 50.0 +13
ASCN LR LR
comp=Z,1μm,20.0s
TRQA Tornquist 145.64 166 *e*PKPdf **PKPbc 20 36 42.5 0.0**
MTDJ Mount Denham 146.27 47 PFAKE 20 37 00.0 +14
MTDJ LR LR
comp=Z,388nm,21.0s
GTBY Guantanamo Bay 146.81 42 PFAKE 20 37 00.0 +12
GTBY LR LR
comp=Z,261nm,20.0s
ROC1 El Roble 146.88 150 *e*PKPdf **PKPbc 20 36 46.9 +0.2**
GRTK Grand Turk 148.08 35 PFAKE 20 37 00.0 +7.3
GRTK LR LR
comp=Z,388nm,22.0s
AUSP Uspallata 148.28 152⇓*e*P **PKPbc 20 36 51.3 +0.8**
RTLS Leoncito 148.68 151 *e*P **PKPbc 20 36 51.3 -0.3**
ACAN Cantantal 149.23 155 *e*P **PKPbc 20 36 51.7 -0.9**
BCIP Isla Barro Col 149.29 63 *e*PKPbc **PKPbc 20 36 51.2 -2.0**
BCIP LR LR
comp=Z,209nm,19.0s
BCIP Isla Barro Col 149.29 63 *e*P **PKPbc 20 36 51.2 -2.0**
SDDR Presa de Saban 149.95 38 *e*PKPbc **PKPbc 20 36 55.2 +0.5**
SDDR LR LR
comp=Z,457nm,21.0s
LCO Las Campanas 150.19 146 *e*PKPbc **PKPbc 20 36 55.4 +0.1**
AGUA GUANDACOL 150.97 150⇓*e*P **PKPbc 20 36 57.7 +0.7**
TCA Tanti 151.09 158⇓*e*P **PKPbc 20 36 57.6 +0.4**
CAPC Capurgana 151.73 62 *e*P **PKPbc 20 36 58.0 -1.0**
SJCC San Jacinto, C 152.99 57 *e*P **PKPdf 20 36 54.6 0.0**
CYA Choya 153.13 153 *e*P **PKPbc 20 37 02.0 +0.3**
MOTC Monteria, Cord 153.14 60 *e*P **PKPdf 20 36 54.0 -0.7**
OTAV Otavalo 153.43 80 PFAKE 20 37 10.0 -5.8
OTAV LR LR
comp=Z,141nm,21.0s
DBBC Dabeiba 153.46 64 *e*P **PKPdf 20 36 55.1 -0.1**
SJG San Juan 153.54 31 PFAKE 20 37 10.0 -5.3
SJG LR LR
comp=Z,261nm,22.0s
STVI Saint Thomas 153.92 28 *e*PKPdf **PKPdf 20 36 51.6 -4.1**
STVI *e*PKPbc **PKPbc 20 37 03.2 -0.4**
ATAH Atahualpa 153.94 97 PKPbc **PKPbc 20 37 05.6 +1.2**
comp=Z,15nm,0.8s,baz=198,slow=1.2,SNR=10.0
URIC Uribia, Colomb 154.53 50 *e*P **PKPbc 20 37 03.6 -1.5**
CRUC La Cruz 154.60 76 *e*P **PKPbc 20 37 03.1 -2.7**
GUYC Guyana, Colomb 154.93 67 *e*P **PKPbc 20 37 05.9 -0.7**
TOLC Tolima 155.23 68 *e*P **PKPdf 20 36 54.0 -4.1**
NORC Norcasia 155.27 66 *e*P **PKPab 20 37 24.0 +0.9**
OCAC Ocana 155.42 59 *e*P **PKPdf 20 36 58.0 -0.1**
ANWB Willy Bob 155.89 23 PFAKE 20 37 10.0 +12
ANWB LR LR
comp=Z,226nm,21.0s
GRMC Gramalote, San 156.12 59 *e*P **PKPab 20 37 25.1 -1.7**
CBRI Barrientos, No 156.12 59 *e*P **PKPab 20 37 27.4 +0.6**
BARC Barichara 156.33 62 *e*P **PKPab 20 37 26.8 -1.0**
VILC Villavicencio, 156.91 68 *e*P PKPab 20 37 55.7 +25
SDV Santo Domingo 157.29 54 *e*PKPdf **PKPdf 20 37 00.6 0.0**
SDV LR LR
comp=Z,382nm,20.0s
CPUP Villa Florida 157.96 168 PKP **PKPdf 20 37 01.4 +0.6**
comp=Z,2.1nm,0.9s,baz=162,slow=3.2,SNR=2.0
CPUP PKPab **PKPab 20 37 33.8 -0.2**
comp=Z,5.1nm,0.9s,baz=204,slow=2.6,SNR=5.2
CPUP Villa Florida 157.96 168 *e*PKPdf **PKPdf 20 37 01.3 +0.6**
CPUP *e*PKPab **PKPab 20 37 33.3 -0.7**
FDF Fort de France 158.80 24 PFAKE 20 37 10.0 +7.8
FDF LR LR
comp=Z,309nm,19.0s
LPAZ La Paz 160.66 128 PKP **PKPdf 20 37 05.2 +0.3**
comp=Z,3.5nm,1.0s,baz=28,slow=2.0,SNR=9.7
LPAZ PKPab **PKPab 20 37 47.0 +0.1**
comp=Z,5.5nm,0.8s,baz=202,slow=4.9,SNR=6.8
BBGH Gun Hill 160.87 22 PFAKE 20 37 10.0 +5.5
BBGH LR LR
comp=Z,930nm,22.0s
GRGR Grenville 160.87 29 PFAKE 20 37 10.0 +5.5
GRGR LR LR
comp=Z,169nm,19.0s
RCBR Riachuelo 163.63 265 PFAKE 20 37 20.0 +13
RCBR LR LR
comp=Z,266nm,20.0s
SIV San Ignacio 165.85 143 PKP **PKPdf 20 37 09.9 +0.7**
comp=Z,3.5nm,0.9s,baz=174,slow=1.4,SNR=5.4
SAML Samuel 168.40 112 *e*PKPdf **PKPdf 20 37 10.9 -0.2**
SAML LR LR
comp=Z,644nm,19.0s
PTGA Pitinga 171.40 63 PKP **PKPdf 20 37 13.0 +0.1**
comp=Z,1.2nm,0.3s,baz=324,slow=5.6,SNR=3.8

NIED ***28*** *20:18:00,31°.60N×129°.60E,h5km,Mw4.3 Best double couple: M0.23000×10^15 NP1:φ=97.00000°,δ35.00000°, λ-29.00000°. NP2:φ=211.00000°,δ74.00000°, λ-121.00000°.*
ISCJB ***28*** *20:18:37.5±0.7,31°.61N±0°.03×129°.60E±0°.03,h13km±4km, mb4.4/48, Error ellipse: s-maj=5.2km s-min=4.4km az=9.2*
JMA ***28*** *20:18:38.0±0.1,31°.62N×129°.60E,h7km,M4.3 Broadband fault plane solution: P waves. NP1: φ=87.00000°,δ56.00000°,λ-79.00000°. NP2:φ=248.00000°, δ35.00000°,λ-105.00000°. Principal axes: T Plg11.0000°, Azm169.0000°; N Plg9.0000°, Azm261.0000°; P Plg76.0000°, Azm29.0000°;*
JMA Felt III J1.
NEIC ***28*** *20:18:41.2±1.3,31°.65N×129°.59E,h24km±9km,mb4.6/32 Error ellipse: s-maj=7.0km s-min=4.3km az=166.0*
NEIC Recorded [3 JMA] in Kagoshima.
IDC ***28*** *20:18:45.9±2.9,31°.84N×129°.64E,h60km±22km,mb3.7/14, mb1 3.9/17,mb1mx3.7/59,mbtmp4.0/17,ML3.5/3,MS3.3/2, Ms1 3.3/2,ms1mx2.9/49,Error ellipse: s-maj=26.0km s-min=16.7km az=7.0*

ISC 28 20:18:38.7±1.0,31°.63N±0°.04×129°.63E±0°.04,h10km±6km, n94,σ1§11/103,mb4.5/48,4C-3D,Kyushu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JSJ	**Shimokoshiki**	**0.09**	**55**	⇑P	**Pg**	**20 18 40.5**	**-0.7**
JSJ				S	**Sg**	**20 18 42.2**	**-0.7**
JSU	**Suzuyama**	**0.71**	**99**	⇑P	**Pg**	**20 18 52.1**	**-0.5**
JSU				S	**Sg**	**20 19 01.8**	**-0.1**
JHD	**Hondo**	**0.94**	**27**	⇑P	**Pg**	**20 18 56.4**	**-0.5**
JHD				S	**Sb**	**20 19 09.6**	**-0.2**
JZO	**Okuchi**	**0.97**	**58**	⇓P	**Pg**	**20 18 57.4**	**0.0**
JZO				S	**Sb**	**20 19 10.7**	**+0.1**
JKC	**Kuchinoerabu**	**1.26**	**157**	P	**Pn**	**20 19 01.0**	**-1.4**
JKC				S	**Sb**	**20 19 18.3**	**-0.5**
JFU	**Fukue jima 2**	**1.27**	**324**	⇑P	**Pn**	**20 19 00.9**	**-1.7**
JFU				S	**Sb**	**20 19 18.0**	**-1.2**
JTZ	**Takazaki**	**1.27**	**77**	⇓P	**Pn**	**20 19 01.7**	**-0.9**
JIU2	**Izumi 2**	**1.36**	**47**	⇓P	**Pn**	**20 19 03.0**	**-0.9**
JIU2				S	**Sn**	**20 19 22.2**	**+0.2**
JNU	**Nakatsue**	**1.83**	**35**	P	**Pb**	**20 19 13.2**	**+0.8**
	152nm,0.3s,baz=250,slow=4.7,SNR=199						
JNU				LR		20 19 21.5	
	comp=Z,74nm,21.3s,baz=116,slow=22						
JNU				S	**Sb**	**20 19 36.6**	**+1.2**
	487nm,0.3s,baz=296,slow=18,SNR=24						
JNU	**Nakatsue**	**1.83**	**35**	*e*Pn	**Pn**	**20 19 10.8**	**+0.4**
KS15	**Wonju Array Si**	**5.98**	**347**	*e*Pn	**Pn**	**20 20 07.8**	**+0.5**
KSRS	**Korea Array**	**5.98**	**347**	P	**Pn**	**20 20 08.2**	**+0.9**
	0.7nm,0.3s,baz=165,slow=13,SNR=16						
KSRS				S	**Sn**	**20 21 15.2**	**-0.8**
	2.7nm,0.3s,baz=172,slow=27,SNR=7.8						
KSRS				LR	LR	20 22 28.5	
	comp=Z,536nm,19.3s,baz=166,slow=38						
KS01	**Wonju Array Si**	**6.01**	**347**	*e*Pn	**Pn**	**20 20 07.9**	**+0.2**
INCN	**Inchon**	**6.34**	**338**	*e*Pn	**Pn**	**20 20 13.7**	**+1.3**
INU	**Inuyama**	**7.20**	**57**	*e*Pn	**Pn**	**20 20 24.4**	**+0.3**
MJB9	**Matsu-Tunnel**	**8.64**	**53**	*e*Pn	**Pn**	**20 20 44.9**	**+1.0**
MAJO	**Matsushiro**	**8.64**	**53**	*e*Pn	**Pn**	**20 20 45.1**	**+1.2**
MAT	**Matsushiro**	**8.64**	**53**	P	**Pn**	**20 20 44.5**	**+0.6**
MJAR	**Matsushiro Arr**	**8.64**	**53**	P	**Pn**	**20 20 45.2**	**+1.3**
	0.6nm,0.3s,baz=243,slow=14,SNR=16						
MJAR				LR	LR	20 23 57.9	
	comp=Z,106nm,22.0s,baz=220,slow=37						
YOJ	**Yonaguni jima**	**9.22**	**221**	*e*Pn	**Pn**	**20 20 52.4**	**+0.5**
USRK	**Ussuriysk Ar.**	**12.69**	**8**	P	Pn	20 21 50.5	+11
	0.0nm,0.3s,baz=186,slow=9.0,SNR=2.8						
MDJ	**Mudanjiang**	**12.97**	**360**	P	**Pn**	**20 21 44.8**	**+1.7**
MDJ				S	**Sn**	**20 24 02.5**	**-5.0**
MDJ				pmax	pmax		
	comp=Z,4.0nm,0.7s						
MDJ				pmax	pmax		
	comp=Z,75nm,4.1s						
MDJ				LR	LR		
	comp=N,57nm,4.9s						
MDJ				LR	LR		
	comp=E,150nm,5.6s						
MDJ				LR	LR		
	comp=Z,160nm,6.0s						
ASAJ	**Asahikawa**	**16.11**	**36**	P	**Pn**	**20 22 25.6**	**+0.3**
	comp=Z,0.4nm,0.3s,baz=247,slow=10,SNR=7.8						
ASAJ	**Asahikawa**	**16.11**	**36**	*e*Pn	**Pn**	**20 22 25.2**	**0.0**
	comp=Z,20nm,0.9s						
HHC	**Hu-ho-hao-te**	**17.21**	**307**	*e*P	**P**	**20 22 40.8**	**-0.2**
HHC				pmax	pmax		
	comp=Z,22nm,0.7s						
HHC				pmax	pmax		
	comp=Z,130nm,3.7s						
KLR	**Kul'dur**	**17.66**	**5**	P	**P**	**20 22 49.0**	**+3.3**
	comp=Z,1.3nm,0.3s,baz=185,slow=7.1,SNR=104						
LZH	**Lanzhou**	**21.85**	**289**	*e*P	**P**	**20 23 33.8**	**+2.1**
LZH				pP	sP	20 23 43.0	+7.3
LZH				sP	pP	20 23 47.8	+13
LZH				pmax	pmax		
	comp=Z,16nm,1.0s						
CD2	**Chengdu**	**22.11**	**275**	P	**P**	**20 23 33.5**	**-1.0**
CD2				pmax	pmax		
	comp=Z,15nm,0.6s						
ULN	**Ulaanbaatar**	**23.63**	**320**	*e*P	**P**	**20 23 49.6**	**-0.6**
	comp=Z,9.4nm,1.1s						
SONM	**Songino Array**	**23.97**	**319**	P	**P**	**20 23 53.2**	**-0.2**
	comp=Z,2.8nm,0.9s,baz=132,slow=7.3,SNR=16						
SONA1	**Songino Array**	**23.98**	**319**	*e*P	**P**	**20 23 53.3**	**-0.2**
GTA	**Gaotai**	**25.40**	**296**	*e*P	**P**	**20 24 08.0**	**+1.5**
GTA				pP	sP	20 24 19.3	+8.6
GTA				sP	pP	20 24 25.5	+16
GTA				pmax	pmax		
	comp=Z,4.0nm,0.9s						
YAK	**Yakutsk**	**30.42**	**0**	*e*P	**P**	**20 24 51.3**	**+0.3**
	comp=Z,7.8nm,0.5s						
WMQ	**Urumqi**	**34.98**	**302**	P	**P**	**20 25 33.3**	**+2.1**
ZAA0	**Zalesovo Array**	**38.87**	**318**	*e*P	**P**	**20 26 03.3**	**-0.7**
ZALV	**Zalesovo Beam**	**38.87**	**318**	P	**P**	**20 26 02.6**	**-1.4**
	comp=Z,0.6nm,0.7s,baz=118,slow=5.4,SNR=3.5						
MK01	**Makanchi Array**	**39.06**	**307**	*e*P	**P**	**20 26 05.5**	**-0.4**
MK31	**Makanchi Array**	**39.07**	**307**	*e*P	**P**	**20 26 05.9**	**-0.1**
MKAR	**Makanchi Array**	**39.07**	**307**	P	**P**	**20 26 06.6**	**+0.7**
	comp=Z,0.5nm,0.5s,baz=94,slow=11,SNR=8.3						
MKAR	**Makanchi Array**	**39.07**	**307**	*e*P	**P**	**20 26 06.3**	**+0.3**
TIXI	**Tiksi**	**40.08**	**360**	*e*P	**P**	**20 26 14.0**	**+0.1**
	comp=Z,7.6nm,1.0s						
PSI	**Prapat**	**40.72**	**231**	P	**P**	**20 26 23.1**	**+3.1**
	comp=Z,4.4nm,0.5s,baz=350,slow=19,SNR=1.9						
KURK	**Kurchatov**	**41.92**	**312**	*e*P	**P**	**20 26 28.9**	**-0.5**
	comp=Z,2.6nm,1.0s						
KURBB	**Kurchatov Arra**	**41.97**	**312**	P	**P**	**20 26 29.6**	**-0.2**
	comp=Z,0.9nm,0.8s,baz=98,slow=8.8,SNR=6.1						
BILL	**Bilibino**	**42.19**	**20**	*e*P	**P**	**20 26 31.8**	**+0.5**
	comp=Z,15nm,1.6s						
TKM2	**Tokmak 2**	**43.77**	**301**	*e*P	**P**	**20 26 45.7**	**+0.9**
	comp=Z,4.4nm,1.0s						
AAK	**Ala-Archa**	**44.60**	**300**	*e*P	**P**	**20 26 51.5**	**+0.1**
	comp=Z,2.0nm,0.9s						
VOSK	**Vostochnaya**	**46.83**	**315**	*e*P	**P**	**20 27 08.2**	**-0.5**
	comp=Z,3.3nm,0.8s						
BVAR	**Borovoye Array**	**47.20**	**315**	P	**P**	**20 27 11.0**	**-0.6**
	comp=Z,3.9nm,0.7s,baz=94,slow=9.5,SNR=16						
KKAR	**Karatay Array**	**47.47**	**301**	*e*P	**P**	**20 27 14.2**	**+0.3**
ZRNK	**Zerenda**	**48.04**	**315**	*e*P	**P**	**20 27 18.1**	**0.0**
	comp=Z,6.6nm,0.8s						
ABKAR	**Akbulak array**	**53.97**	**311**	*e*P	**P**	**20 28 03.0**	**+0.3**
ARU	**Arti**	**54.01**	**319**	P	**P**	**20 28 02.9**	**0.0**
	comp=Z,2.4nm,0.6s,baz=37,slow=4.3,SNR=5.8						
ARU	**Arti**	**54.01**	**319**	*e*P	**P**	**20 28 02.8**	**-0.1**
	comp=Z,4.8nm,0.9s						
AS01	**Alice Springs**	**55.13**	**175**	*e*P	**P**	**20 28 12.4**	**+1.0**
TT01	**Tatalina**	**55.30**	**32**	*e*P	**P**	**20 28 12.5**	**+0.3**
TTA	**Tatalina**	**55.30**	**32**	*e*P	**P**	**20 28 12.2**	**-0.1**
	comp=Z,4.5nm,1.2s						
JOHN	**Johnston Islan**	**56.80**	**90**	*e*P	**P**	**20 28 20.1**	**-3.4**
	comp=Z,1μm,1.9s						
CAST	**Castle Rocks**	**57.05**	**32**	*e*P	**P**	**20 28 25.6**	**+0.9**
	comp=Z,3.4nm,0.8s						
RSO	**Redoubt South**	**57.05**	**35**	*e*P	**P**	**20 28 25.6**	**+0.6**
OHAK	**Old Harbor**	**57.21**	**39**	*e*P	**P**	**20 28 25.6**	**-0.3**
	comp=Z,50nm,1.7s						
SPU	**Mount Spurr**	**57.30**	**34**	*e*P	**P**	**20 28 26.8**	**+0.2**
BPAW	**Bear Paw Mtn.**	**57.47**	**31**	*e*P	**P**	**20 28 28.1**	**+0.5**
	comp=Z,3.5nm,1.0s						
MLY	**Manley**	**57.48**	**30**	*e*P	**P**	**20 28 28.5**	**+0.7**
	comp=Z,4.4nm,0.9s						
COLD	**Coldfoot**	**57.50**	**27**	*e*P	**P**	**20 28 28.0**	**+0.2**
	comp=Z,11nm,1.8s						
KTH	**Kantishna Hill**	**57.55**	**31**	*e*P	**P**	**20 28 28.9**	**+0.6**
	comp=Z,6.8nm,1.2s						
SUA	**Susitna One**	**57.90**	**34**	*e*P	**P**	**20 28 30.6**	**-0.2**
	comp=Z,8.4nm,0.8s						
BRLK	**Bradley Lake**	**58.07**	**36**	*e*P	**P**	**20 28 32.7**	**+0.8**
	comp=Z,21nm,1.4s						
MCK	**McKinley**	**58.41**	**31**	*e*P	**P**	**20 28 33.8**	**-0.4**
	comp=Z,9.9nm,1.6s						
RC01	**Rabbit Creek A**	**58.43**	**34**	*e*P	**P**	**20 28 34.1**	**-0.3**
	comp=Z,8.4nm,1.2s						
RND	**Reindeer**	**58.49**	**31**	*e*P	**P**	**20 28 34.5**	**-0.4**
	comp=Z,6.6nm,0.8s						
MDM	**Murphy Dome**	**58.55**	**30**	*e*P	**P**	**20 28 35.9**	**+0.7**
	comp=Z,11nm,0.9s						
WRH	**Wood River Hil**	**58.67**	**30**	*e*P	**P**	**20 28 36.9**	**+0.9**
	comp=Z,5.8nm,1.1s						
IL1	**Eielson Array**	**59.14**	**30**	*e*P	**P**	**20 28 38.7**	**-0.6**
ILAR	**Eielson Array**	**59.14**	**30**	P	**P**	**20 28 38.9**	**-0.4**
	comp=Z,1.4nm,0.8s,baz=273,slow=5.5,SNR=20						
ILB	**Eielson Array**	**59.14**	**30**	*e*P	**P**	**20 28 40.1**	**+0.8**
SCM	**Sheep Creek Mo**	**59.45**	**33**	*e*P	**P**	**20 28 41.3**	**-0.3**
	comp=Z,13nm,1.4s						
EYAK	**Cordova Ski Ar**	**60.45**	**34**	*e*P	**P**	**20 28 49.5**	**+1.2**
	comp=Z,13nm,1.0s						
DOT	**Dot Lake**	**60.56**	**31**	*e*P	**P**	**20 28 48.4**	**-0.7**
	comp=Z,8.8nm,0.9s						
MENT	**Mentasta**	**60.87**	**32**	*e*P	**P**	**20 28 51.5**	**+0.3**
	comp=Z,5.5nm,0.9s						
BMRM	**Bremner River**	**60.91**	**34**	*e*P	**P**	**20 28 53.0**	**+1.5**
	comp=Z,5.7nm,1.0s						
INK	**Inuvik**	**63.48**	**24**	*e*P	**P**	**20 29 07.7**	**-0.8**
	comp=Z,3.6nm,1.0s						
ARA0	**ARCESS Array S**	**65.46**	**338**	*e*P	**P**	**20 29 21.2**	**-0.4**
FINES	**FINESS Array B**	**68.80**	**330**	P	**P**	**20 29 42.1**	**-0.8**
	comp=Z,0.8nm,0.5s,baz=86,slow=7.0,SNR=12						
AKASG	**Malin Array Be**	**72.26**	**319**	P	**P**	**20 30 03.7**	**-0.4**
	comp=Z,1.4nm,0.6s,baz=54,slow=6.7,SNR=7.2						
AK11	**Malin Array Si**	**72.30**	**319**	*e*P	**P**	**20 30 03.5**	**-1.0**
YKW3	**Yellowknife Ar**	**73.10**	**26**	*e*P	**P**	**20 30 07.4**	**-1.5**
	comp=Z,2.5nm,1.2s						
YKA	**Yellowknife Ar**	**73.14**	**26**	P	**P**	**20 30 09.0**	**-0.2**
	comp=Z,0.4nm,0.6s,baz=301,slow=6.0,SNR=6.7						
NB2	**NORSAR Subarra**	**75.03**	**334**	P	**P**	**20 30 19.0**	**-1.4**
	comp=Z,1.4nm,0.7s,baz=49,slow=5.9						
NOA	**NORSAR Array B**	**75.03**	**334**	P	**P**	**20 30 19.0**	**-1.4**
	comp=Z,1.4nm,0.7s,baz=51,slow=5.8,SNR=5.7						
BUR08	**Bucovina Ar. S**	**76.07**	**318**	*e*P	**P**	**20 30 25.1**	**-1.6**
NVAR	**Mina Array Bea**	**85.91**	**47**	P	**P**	**20 31 18.0**	**-1.5**
	comp=Z,0.7nm,0.5s,baz=282,slow=4.2,SNR=4.8						
PDAR	**Pinedale Array**	**88.21**	**39**	P	**P**	**20 31 30.4**	**-0.1**
	comp=Z,0.8nm,0.8s,baz=316,slow=2.5,SNR=6.1						
TXAR	**Lajitas Array**	**101.00**	**45**	P	**Pdif**	**20 32 28.8**	**-0.3**
	comp=Z,0.2nm,0.6s,baz=298,slow=1.9,SNR=2.5						

IDC ***28*** *20:22:20.4±1.2,31°.08S×179°.85E,h422km±14km,mb3.6/7, mb1 3.8/9,mb1mx3.6/30,mbtmp4.5/9,Error ellipse:*
s-maj=26.7km s-min=12.2km az=132.0

ISC 28 20:22:19.8±0.6,31°.17S±0°.07×180°.0E±0°.1,h426km,n59, σ1§43/65,mb4.0/7,Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**2.66**	**44**	P	**P**	**20 23 22.5**	**+0.1**
	660nm,0.3s,baz=175,slow=20,SNR=37						
RAO				S	**S**	**20 24 08.6**	**-4.5**
	519nm,0.3s,baz=33,slow=21,SNR=8.0						
MXZ	**Matakaoa Point**	**6.52**	**192**	PN	**P**	**20 23 59.6**	**+0.8**
MXZ				SN	**S**	**20 25 18.2**	**-1.2**
WMGZ	**Waiomatatini S**	**6.75**	**190**	PN	**P**	**20 24 02.3**	**+0.9**
WMGZ				SN	**S**	**20 25 23.8**	**-0.3**
HAZ	**Te Kaha**	**6.81**	**195**	PN	**P**	**20 24 03.7**	**+1.8**
PKGZ	**Pakihiroa**	**6.88**	**193**	PN	**P**	**20 24 04.9**	**+2.1**
PKGZ				SN	**S**	**20 25 27.7**	**+1.0**
PUZ	**Puketiti**	**7.02**	**191**	PN	**P**	**20 24 06.3**	**+1.9**
MKAZ	**Moumakai**	**7.13**	**213**	PN	P	20 24 10.0	+4.6
TWGZ	**Tauwhareparae**	**7.17**	**193**	PN	**P**	**20 24 08.1**	**+2.1**
LIRZ	**Lichensteins R**	**7.42**	**202**	PN	P	20 24 12.4	+3.8
CNGZ	**Carnagh Statio**	**7.43**	**191**	PN	**P**	**20 24 10.9**	**+2.2**
URZ	**Urewera**	**7.45**	**198**	P	**P**	**20 24 10.7**	**+1.8**
	194nm,0.3s,baz=37,slow=3.2,SNR=247						
URZ				S	**S**	**20 25 37.5**	**-0.5**
	30nm,0.3s,baz=269,slow=21,SNR=14						
URZ	**Urewera**	**7.45**	**198**	PN	**P**	**20 24 09.2**	**+0.3**
URZ				SN	**S**	**20 25 36.8**	**-1.2**
TKGZ	**Te Karaka**	**7.45**	**193**	PN	**P**	**20 24 11.4**	**+2.5**
OMRZ	**Omania**	**7.52**	**202**	PN	P	20 24 13.8	+4.0
TARZ	**Mount Tarawera**	**7.60**	**201**	PN	P	20 24 14.7	+4.1
RAGZ	**Rawiri**	**7.60**	**195**	PN	**P**	**20 24 10.6**	**0.0**
RAGZ				SN	**S**	**20 25 41.4**	**+0.1**
RIGZ	**Rimuhau**	**7.73**	**193**	PN	**P**	**20 24 13.7**	**+1.7**
RIGZ				SN	**S**	**20 25 43.7**	**-0.1**
RTZ	**Ruatahuna**	**7.82**	**197**	PN	**P**	**20 24 13.9**	**+0.9**
MHGZ	**Mahia Peninsul**	**8.13**	**191**	PN	**P**	**20 24 19.4**	**+3.0**
MRHZ	**Matea Rd**	**8.17**	**200**	PN	**P**	**20 24 17.2**	**+0.4**
WHHZ	**Waihua**	**8.19**	**195**	PN	**P**	**20 24 19.4**	**+2.4**
ARHZ	**Aropaoanui**	**8.43**	**196**	PN	**P**	**20 24 21.2**	**+1.7**
HIZ	**Hauiti**	**8.44**	**208**	PN	**P**	**20 24 22.7**	**+3.0**
KWHZ	**Kaweka Forest**	**8.72**	**198**	PN	**P**	**20 24 24.6**	**+1.7**
CKHZ	**Cape Kidnapper**	**8.79**	**195**	PN	**P**	**20 24 25.5**	**+2.0**
FWVZ	**Far West T-bar**	**8.83**	**203**	PN	**P**	**20 24 24.0**	**-0.2**
WNVZ	**Wahianoa**	**8.88**	**202**	PN	**P**	**20 24 23.8**	**-0.9**
BHHZ	**Black Hill Sta**	**8.88**	**200**	PN	**P**	**20 24 23.4**	**-1.2**
MOVZ	**Moawhango**	**8.90**	**202**	PN	**P**	**20 24 23.7**	**-1.2**
PKVZ	**Pokaka**	**8.93**	**204**	PN	**P**	**20 24 24.4**	**-0.7**
MTVZ	**Mangateitei**	**8.97**	**203**	PN	**P**	**20 24 27.6**	**+2.0**
PNHZ	**Pukenui**	**9.24**	**198**	PN	**P**	**20 24 26.9**	**-1.6**
TSZ	**Takapari Road**	**9.44**	**199**	PN	**P**	**20 24 31.1**	**+0.3**
WAZ	**Wanganui**	**9.47**	**204**	PN	**P**	**20 24 32.8**	**+1.8**
ANWZ	**Angora Road**	**9.69**	**196**	PN	**P**	**20 24 34.3**	**+1.0**
POWZ	**Post Office Ro**	**9.80**	**199**	PN	**P**	**20 24 36.2**	**+1.6**
HOWZ	**Holdsworth Sta**	**10.35**	**199**	PN	**P**	**20 24 39.3**	**-1.4**
OGWZ	**Otaki Gorge**	**10.37**	**201**	PN	**P**	**20 24 40.6**	**-0.3**
CAW	**Cannon Point**	**10.67**	**200**	PN	**P**	**20 24 44.4**	**+0.2**
TCW	**Tory Channel**	**11.01**	**203**	PN	**P**	**20 24 47.3**	**-0.7**
TUWZ	**Tuamarina**	**11.32**	**204**	PN	**P**	**20 24 51.2**	**-0.1**
NNZ	**Nelson**	**11.34**	**206**	PN	**P**	**20 24 50.7**	**-0.8**
BSWZ	**Blackbirch Sta**	**11.60**	**203**	PN	**P**	**20 24 54.6**	**+0.2**
THZ	**Tophouse**	**11.99**	**206**	PN	**P**	**20 24 58.9**	**+0.2**
RPZ	**Rata Peaks**	**14.37**	**207**	P	**P**	**20 25 25.1**	**+0.7**
	1.9nm,0.3s,baz=99,slow=0.3,SNR=6.3						
RPZ				S	**S**	**20 27 55.8**	**-1.4**
	1.5nm,0.3s,baz=31,slow=7.9,SNR=3.1						
AFI	**Afiamalu**	**18.79**	**26**	P	**P**	**20 26 11.6**	**+0.1**
	7.4nm,0.3s,baz=357,slow=3.4,SNR=6.7						
AFI				S	**S**	**20 29 23.6**	**+2.2**
	2.6nm,0.3s,baz=49,slow=20,SNR=3.1						
STKA	**Stephens Creek**	**32.60**	**259**	P	**P**	**20 28 14.4**	**+0.2**
	7.0nm,0.7s,baz=94,slow=14,SNR=2.8						
ASAR	**Alice Springs**	**41.32**	**269**	P	**P**	**20 29 26.9**	**+0.3**
	3.3nm,0.7s,baz=106,slow=7.1,SNR=5.0						
WRA	**Warramunga Arr**	**42.38**	**274**	P	**P**	**20 29 35.2**	**+0.1**
	6.2nm,0.4s,baz=111,slow=8.1,SNR=19						
MJAR	**Matsushiro Arr**	**77.90**	**327**	P	**P**	**20 33 31.3**	**-0.8**
	0.9nm,0.7s,baz=165,slow=4.5,SNR=3.5						
KSRS	**Korea Array**	**83.82**	**321**	P	**P**	**20 34 03.9**	**+1.0**
	1.3nm,0.7s,baz=136,slow=6.2,SNR=6.9						
PETK	**Petropavlovsk-**	**86.14**	**347**	P	**P**	**20 34 13.5**	**-0.4**
	2.7nm,0.8s,baz=147,slow=8.2,SNR=2.7						
USRK	**Ussuriysk Ar.**	**86.85**	**328**	P	**P**	**20 34 18.6**	**+1.0**
	1.9nm,0.7s,baz=126,slow=2.0,SNR=3.4						
FINES	**FINESS Array B**	**145.24**	**338**	PKPbc	**PKPdf**	**20 41 07.4**	**+0.4**

54nm,0.8s,10μm
KSM Kuching 10.42 9 *e*Pn **Pn 20 31 22.8 +1.0**
TPRI Tanjung Pinang 10.57 337 P Pn 20 31 32.4 +8.7
MYKOM Kota Tinggi 11.63 335 *e*Pn **Pn 20 31 39.8 +1.5**
KAPI Kappang 11.67 72 P **Pn 20 31 42.3 +3.5**
1.0nm,0.3s,baz=321,slow=3.0,SNR=9.8
KAPI LR LR 20 36 51.6
comp=Z,1μm,20.0s,baz=262,slow=41
KAPI Kappang 11.67 72 *e*Pn **Pn 20 31 41.3 +2.4**
SBUM Sibu 11.81 18 *e*Pn **Pn 20 31 42.1 +1.4**
BKNI Bangkinang 11.88 320 *e*Pn **Pn 20 31 41.3 -0.4**
BSSI Bau Bau, Buton 12.05 78 P **Pn 20 31 48.8 +4.8**
COCO West Island 12.07 253 *e*P **Pn 20 31 40.7 -3.6**
COCO West Island 12.07 253 *e*Pn **Pn 20 31 40.6 -3.6**
SPSI Sidrap Palu 12.08 67 P Pn 20 31 50.2 +5.8
38nm,1.1s
TTSI Tana Toraja 12.53 63 P **P 20 32 01.5 -0.3**
MNSI Mandailing Nat 13.20 316 P **Pn 20 32 02.9 +3.2**
39nm,0.6s,1μm
MMRI Maumere 13.43 90 *e*Pn **Pn 20 32 00.1 -2.8**
PCI Palu 13.67 55 P **P 20 32 12.2 -2.3**
GSI Gunungsitoli 14.97 312 *e*Pn **Pn 20 32 22.8 -1.0**
PSI Prapat 15.12 320 P **P 20 32 29.1 -1.7**
2.9nm,0.3s,baz=166,slow=11,SNR=3.9
PSI Prapat 15.12 320 *e*P **Pn 20 32 19.2 -6.8**
PSI Prapat 15.12 320 *e*Pn **Pn 20 32 19.2 -6.8**
PSI *es*P **P 20 32 29.1 -1.7**
SOEI Soe 15.44 94 P **P 20 32 35.1 +0.8**
SOEI Soe 15.44 94 *e*Pn **Pn 20 32 28.1 -2.0**
172nm,1.0s
LUWI Luwuk 16.07 62 P **P 20 32 42.4 +1.2**
LUWI Luwuk 16.07 62 *e*Pn **Pn 20 32 33.2 -5.0**
113nm,1.0s
MRSI Marisa 16.18 56 P **P 20 32 43.9 +1.5**
99nm,1.2s,2μm
KULM Kulim 16.18 330 *e*Pn **Pn 20 32 38.7 -0.8**
13nm,1.0s
KKM Kota Kinabalu 16.64 27 *e*Pn **Pn 20 32 42.0 -3.5**
63nm,1.3s
MYLDM Lahad Datu 17.08 35 *e*Pn **Pn 20 32 47.6 -3.2**
92nm,1.3s
LHMI Lhok Sumawe 18.24 320 *e*Pn **Pn 20 33 00.1 -5.1**
62nm,1.1s
SANI Sanana 18.54 70 P **Pn 20 33 10.3 +1.4**
67nm,0.9s
FITZ Fitzroy Crossi 18.88 121 P **Pn 20 33 14.2 +1.3**
baz=19,SNR=10
FITZ Fitzroy Crossi 18.88 121 *e*P **Pn 20 33 13.6 +0.7**
20nm,0.9s
LBMI Labuha 20.48 67 P **P 20 33 31.3 +1.6**
MORW Morawa 21.25 162 P **P 20 33 38.6 +0.8**
baz=21,SNR=8.5
MTN Manton Dam 22.42 102 P **P 20 33 51.2 +0.5**
baz=22,SNR=22
MTN Manton Dam 22.42 102 *e*P **P 20 33 50.1 -0.6**
42nm,0.6s
SAUI Saumlaki 22.42 89 *e*P **P 20 33 47.2 -3.5**
539nm,1.1s
DAV Davao City (W) 23.15 47 LR LR 20 43 24.9
comp=Z,580nm,20.6s,baz=212,slow=38
SWI Sorong 23.88 72 P P 20 34 14.2 +8.9
FAKI Fak Fak 24.20 77 *e*P **P 20 34 04.8 -3.5**
60nm,1.3s
WRKA Warakurna 24.66 133 P **P 20 34 13.8 +1.4**
baz=25,SNR=12
NWAO Narrogin (SRO) 25.21 163 P **P 20 34 16.9 -0.4**
baz=25,SNR=4.4
NWAO Narrogin (SRO) 25.21 163 *e*P **P 20 34 16.9 -0.4**
NWAO pmax pmax
comp=Z,28nm,1.0s
NWAO Narrogin (SRO) 25.21 163 *e*P **P 20 34 16.9 -0.4**
comp=Z,28nm,1.0s
H01W3 Cape Leeuwin H 26.36 170 T T 21 02 09.0
baz=342
H01W1 Cape Leeuwin H 26.38 170 T T 21 02 13.1
baz=342
H01W2 Cape Leeuwin H 26.38 170 T T 21 02 11.1
baz=342
WR1 Warramunga Arr 27.16 117 *e*P **P 20 34 35.4 +0.3**
comp=Z,17nm,0.7s
WR1 *e*PcP **PcP 20 37 55.8 +0.6**
WRA Warramunga Arr 27.16 117 P **P 20 34 35.4 +0.3**
comp=Z,14nm,0.8s,baz=290,slow=11,SNR=29
WRA PcP **PcP 20 37 55.8 +0.6**
comp=Z,3.4nm,0.8s,baz=301,slow=2.3,SNR=5.0
WRA Warramunga Arr 27.16 117 P **P 20 34 35.4 +0.3**
WRA PcP **PcP 20 37 55.8 +0.6**
WRAB Tennant Creek 27.16 117 *d iP* **P 20 34 35.2 +0.1**
WRAB pmax pmax
comp=Z,65nm,1.2s
WRAB Tennant Creek 27.16 117 *e*P **P 20 34 35.7 +0.5**
comp=Z,21nm,0.9s
WB2 Warramunga Arr 27.17 117 *e*P **P 20 34 34.8 -0.3**
comp=Z,38nm,1.3s
QIZ Qiongzhong 27.76 2 P **P 20 34 43.0 +2.6**
QIZ S **S 20 39 23.5 +2.5**
QIZ pmax pmax
comp=Z,430nm,11.6s
QIZ LR LR
comp=Z,450nm,12.7s
QIZ LR LR
comp=Z,490nm,18.1s
AS31 Alice Springs 28.28 124 *e*P **P 20 34 45.0 -0.1**
comp=Z,2.5nm,0.8s
ASAR Alice Springs 28.28 124 P **P 20 34 45.5 +0.4**
comp=Z,4.5nm,0.8s,baz=301,slow=7.9,SNR=16
ASAR PcP **PcP 20 37 58.8 +0.9**
comp=Z,5.9nm,0.8s,baz=317,slow=1.8,SNR=13
ASAR Alice Springs 28.28 124 P **P 20 34 45.5 +0.4**
ASAR PcP **PcP 20 37 58.8 +0.9**
AS01 Alice Springs 28.31 124 *e*P **P 20 34 44.8 -0.6**
LAMP Lampang 28.65 342 P **P 20 34 51.5 +3.2**
comp=Z,6.1nm,0.8s
LAMP Lampang 28.65 342 P **P 20 34 51.5 +3.2**
comp=Z,6.1nm,0.8s
CM01 Chiang Mai Arr 28.77 341 *e*P **P 20 34 48.1 -1.3**
CM31 Chiang Mai Arr 28.81 341 *e*P **P 20 34 46.4 -3.3**
CM31 *e*PcP **PcP 20 37 59.8 +0.6**
CMAR Chiang Mai Arr 28.81 341 P **P 20 34 48.8 -0.9**
comp=Z,1.1nm,0.6s,baz=171,slow=6.8,SNR=9.4
CMAR PcP **PcP 20 38 00.1 +0.9**
comp=Z,3.6nm,1.0s,baz=209,slow=3.3,SNR=6.9
CMAR LR LR 20 47 04.9
comp=Z,672nm,20.6s,baz=155,slow=38
CMAR Chiang Mai Arr 28.81 341 *ce*P **P 20 34 51.2 +1.5**
CMAR pmax pmax
comp=Z,1.0nm,0.6s
CMAR Chiang Mai Arr 28.81 341 P **P 20 34 48.8 -0.9**
CMAR PcP **PcP 20 38 00.1 +0.9**
CHTO Chiang Mai 29.14 341 *e*P **P 20 34 50.6 -2.1**
CHTO pmax pmax
comp=Z,7.0nm,1.0s
CHTO Chiang Mai 29.14 341 *e*P **P 20 34 50.6 -2.1**
comp=Z,6.8nm,1.0s
QIS Mount Isa 32.04 115 P **P 20 35 19.5 +1.1**
baz=32,SNR=7.5
PALK Pallekele 32.15 299 P **P 20 35 23.8 +4.4**
comp=Z,15nm,1.0s,baz=116,slow=7.4,SNR=2.6
PALK Pallekele 32.15 299 P **P 20 35 23.8 +4.4**
COEN Coen 34.19 102 P **P 20 35 38.4 +1.1**
baz=34,SNR=6.5
COEN Coen 34.19 102 *e*P **P 20 35 37.6 +0.4**
comp=Z,33nm,1.2s
KMI Kunming 34.29 350 P **P 20 35 38.0 -0.1**
KMI pmax pmax
comp=Z,15nm,0.5s
SSLB Suanglung 34.63 20 *e*P **P 20 35 40.3 -0.5**
comp=Z,27nm,1.0s
BBOO Buckleboo 34.77 137 P **P 20 35 41.8 -0.2**
baz=35,SNR=14
BBOO Buckleboo 34.77 137 *e*P **P 20 35 41.1 -0.9**
comp=Z,21nm,1.0s
GYA Guiyang 35.18 357 P **P 20 35 49.0 +3.3**
GYA pP sP 20 35 56.0 -3.4
GYA PP **PP 20 37 09.0 +3.0**
GYA PcP **PcP 20 38 19.3 +2.7**
GYA S **S 20 41 21.5 +4.5**
GYA sS sS 20 41 33.8 +0.8
GYA ScP **ScP 20 42 02.0 +2.0**
GYA pmax pmax
comp=Z,30nm,1.1s
GYA pmax pmax
comp=Z,120nm,5.4s
GYA LR LR
comp=Z,530nm,17.5s
GYA LR LR
comp=Z,520nm,18.0s
GYA LR LR
comp=Z,510nm,17.9s
H08S2 Diego Garcia H 35.79 269 T T 21 13 41.0
baz=92
H08S3 Diego Garcia H 35.80 269 T T 21 13 35.8
baz=92,slow=74
H08S1 Diego Garcia H 35.81 269 T T 21 13 42.7
baz=92,slow=74
HTT Hallett 37.08 136 P **P 20 36 02.6 +0.7**
baz=37,SNR=7.0
CTAO Charters Tower 37.98 111 *e*P **P 20 36 11.4 +1.7**
CTAO pmax pmax
comp=Z,26nm,1.3s
CTAO Charters Tower 37.98 111 *e*P **P 20 36 11.4 +1.7**
comp=Z,26nm,1.3s
PMG Port Moresby 38.01 94 P **P 20 36 09.0 -0.9**
comp=Z,19nm,0.9s,baz=358,slow=3.9,SNR=3.4
PMG Port Moresby 38.01 94 *e*P **P 20 36 10.7 +0.8**
PMG pmax pmax
comp=Z,176nm,1.2s
PMG Port Moresby 38.01 94 *e*P **P 20 36 08.7 -1.2**
comp=Z,40nm,1.1s
STKA Stephens Creek 38.17 132 P **P 20 36 11.9 +0.8**
comp=Z,47nm,0.7s,baz=304,slow=8.8,SNR=96
STKA PcP **PcP 20 38 26.0 +0.6**
comp=Z,12nm,0.8s,baz=329,slow=8.4,SNR=3.9
STKA Stephens Creek 38.17 132 P **P 20 36 11.9 +0.8**
baz=38,SNR=55
STKA Stephens Creek 38.17 132 *e*P **P 20 36 11.5 +0.4**
STKA 20 38 26.0
STKA pmax pmax
comp=Z,12nm,0.8s
STKA Stephens Creek 38.17 132 *e*P **P 20 36 11.5 +0.4**
comp=Z,12nm,0.8s
STKA PcP **PcP 20 38 26.0 +0.6**
CD2 Chengdu 39.84 353 P **P 20 36 25.8 +0.8**
CD2 pmax pmax
comp=Z,20nm,0.8s
ARPS Mount Arapiles 40.93 138 P **P 20 36 35.1 +1.1**
baz=41,SNR=5.7
CMSA Cobar Meteorol 41.12 129 P **P 20 36 37.1 +1.5**
baz=41,SNR=24
NJ2 Nanjing 41.86 13 *e*P **P 20 36 43.3 +1.8**
NJ2 pmax pmax
comp=Z,26nm,0.8s
LSA Lhasa 41.90 337 *e*P **P 20 36 42.4 -0.1**
LSA pmax pmax
comp=Z,7.0nm,0.8s
LSA Lhasa 41.90 337 *e*P **P 20 36 42.4 -0.1**
comp=Z,6.5nm,0.8s
XAN Xi'an 42.69 0 P **P 20 36 48.0 -0.3**
XAN S **S 20 43 15.3 +5.6**
XAN pmax pmax
comp=Z,21nm,0.8s
XAN LR LR
comp=Z,230nm,17.8s
XAN LR LR
comp=Z,510nm,16.2s
XAN LR LR
comp=Z,410nm,13.6s
GUN Gumba 42.70 330 *e*P **P 20 36 49.4 +0.5**
comp=Z,18nm,0.5s
DMN Daman 42.85 329 *e*P **P 20 36 50.4 +0.4**
comp=Z,12nm,0.7s
KKN Kakani 42.91 329 *e*P **P 20 36 50.7 +0.3**
comp=Z,17nm,0.8s
GKN Gorkha 43.41 328 *e*P **P 20 36 54.2 -0.2**
comp=Z,7.9nm,0.3s
KOLN Koldanda 43.77 327 *e*P **P 20 36 57.2 -0.2**
comp=Z,31nm,0.6s
POO Poona 43.83 309 *e*P **P 20 36 55.0 -2.8**
YNG Young 44.35 131 P **P 20 37 03.2 +1.4**
baz=44,SNR=9.9
PYUN Piuthan 44.36 327 *e*P **P 20 37 02.4 +0.3**
comp=Z,29nm,0.5s
LZH Lanzhou 44.96 354 *e*P **P 20 37 08.5 +1.8**
LZH pP pP 20 37 15.5 -1.1
LZH sP sP 20 37 20.8 +0.3
LZH pmax pmax
comp=Z,19nm,1.0s
CAN Canberra 45.24 132 *e*P **P 20 37 10.0 +1.0**
CAN pmax pmax
comp=Z,19nm,0.9s
CAN Canberra 45.24 132 *e*P **P 20 37 10.0 +1.0**
comp=Z,19nm,0.9s
TIA Tai'an 45.56 10 *e*P **P 20 37 10.0 -1.3**
TIA pmax pmax
comp=Z,20nm,1.0s
NDI New Delhi 48.12 322 *e*P P 20 37 22.5 -9.0
TJN Taejon 48.34 20 *d iP* **P 20 37 31.5 -1.5**
GTA Gaotai 48.74 351 *e*P **P 20 37 37.5 +1.3**
GTA pP pP 20 37 44.5 -1.7
GTA sP sP 20 37 48.0 -2.1
GTA S **S 20 44 38.5 +1.6**
GTA sS sS 20 44 52.5 -0.8
GTA SS **SS 20 48 04.8 -3.1**
GTA pmax pmax
comp=Z,6.0nm,0.9s
GTA pmax pmax
comp=Z,220nm,5.9s
GTA LR LR
comp=Z,340nm,17.8s
GTA LR LR
comp=Z,340nm,13.5s
GTA LR LR
comp=Z,500nm,16.9s
BJT Baijiatuau 49.15 8 *e*P **P 20 37 38.8 -0.3**
BJT pmax pmax
comp=Z,30nm,0.9s
BJT Baijiatuau 49.15 8 *e*P **P 20 37 38.8 -0.3**
comp=Z,30nm,0.9s
BJI Beijing 49.17 8 P **P 20 37 41.0 +1.7**
KS15 Wonju Array Si 49.48 20 *e*P **P 20 37 41.1 -0.6**
KSAR Wonju Array Be 49.48 20 P **P 20 37 40.8 -0.9**
KSAR Wonju Array Be 49.48 20 P **P 20 37 40.8 -0.9**
KSRS Korea Array 49.50 20 P **P 20 37 40.8 -1.1**
comp=Z,4.9nm,0.9s,baz=199,slow=9.0,SNR=14
KSRS LR LR 20 59 14.5
comp=Z,139nm,21.2s,baz=140,slow=37
KS01 Wonju Array Si 49.51 20 *e*P **P 20 37 41.7 -0.3**
HHC Hu-ho-hao-te 49.56 3 *e*P **P 20 37 45.3 +2.9**
HHC pmax pmax
comp=Z,55nm,1.1s
HHC pmax pmax
comp=Z,630nm,6.2s
HNR Honiara 50.61 95 LR LR 21 02 31.2
comp=Z,119nm,18.9s,baz=244,slow=40
MAJO Matsushiro 53.04 30 *ce*P **P 20 38 06.5 -2.0**
MAJO Matsushiro 53.04 30 *e*P **P 20 38 06.5 -2.0**
comp=Z,62nm,1.8s
MAT Matsushiro 53.04 30 P **P 20 38 06.3 -2.2**
MJAR Matsushiro Arr 53.04 30 P **P 20 38 06.4 -2.1**
comp=Z,11nm,0.9s,baz=208,slow=7.7,SNR=38
MJAR LR LR 21 01 17.0
comp=Z,102nm,20.9s,baz=175,slow=37
MJAR Matsushiro Arr 53.04 30 P **P 20 38 06.4 -2.1**
MJB9 Matsu-Tunnel 53.04 30 *e*P **P 20 38 06.4 -2.1**
comp=Z,15nm,1.7s
CN2 Changchun 54.61 15 *e*P **P 20 38 24.0 +4.2**
CN2 *es*P sP 20 38 35.0 +1.2
CN2 *e*S **S 20 46 01.8 +4.5**
CN2 pmax pmax
comp=Z,10.0nm,0.7s
CN2 pmax pmax
comp=Z,200nm,4.0s
CN2 LR LR
comp=Z,2μm,15.0s
CN2 LR LR
comp=Z,2μm,15.0s
CN2 LR LR
comp=Z,2μm,16.0s
WMQ Urumqi 55.80 342 *e*P **P 20 38 29.3 +0.8**
WMQ ScP **ScP 20 43 24.5 +0.5**
WMQ S **S 20 46 14.0 +0.6**
WMQ pmax pmax
comp=Z,4.0nm,0.6s
WMQ pmax pmax
comp=Z,59nm,4.6s
WMQ LR LR
comp=Z,110nm,21.2s
WMQ LR LR
comp=Z,77nm,26.6s
WMQ LR LR
comp=Z,89nm,22.6s
SONA0 Songino Array 56.50 358 *e*P **P 20 38 33.6 +0.1**
comp=Z,12nm,0.9s
SONM Songino Array 56.50 358 P **P 20 38 33.6 +0.1**
comp=Z,8.7nm,0.7s,baz=174,slow=8.1,SNR=61
SONM LR LR 21 04 19.6
comp=Z,268nm,21.4s,baz=166,slow=38
SONM Songino Array 56.50 358 P **P 20 38 33.6 +0.1**
MDJ Mudanjiang 56.52 18 P **P 20 38 34.5 +1.0**
MDJ pmax pmax
comp=Z,8.0nm,1.1s
MDJ pmax pmax
comp=Z,77nm,4.9s
SONA1 Songino Array 56.52 358 *e*P **P 20 38 33.0 -0.6**
SONA1 *e*PcP **PcP 20 39 30.5 +0.5**
ULN Ulaanbaatar 56.52 359 *ce*P **P 20 38 33.6 0.0**
ULN pmax pmax
comp=Z,14nm,0.7s
ULN Ulaanbaatar 56.52 359 *e*P **P 20 38 33.0 -0.6**
comp=Z,19nm,0.9s
ULN *e*PcP **PcP 20 39 27.4 -2.7**
KSH Kashi 56.90 330 P **P 20 38 34.8 -1.7**
KSH *ep*P pP 20 38 42.5 -4.1
KSH *e*PcP **PcP 20 39 32.0 +0.3**
KSH *e*ScP **ScP 20 43 28.8 -0.2**
KSH PcS **PcS 20 43 31.0 -1.6**
KSH S **S 20 46 20.5 -7.7**
KSH pmax pmax
comp=Z,12nm,0.7s
KSH pmax pmax
comp=Z,110nm,5.6s
KSH LR LR
comp=Z,140nm,5.0s
KSH LR LR
comp=Z,150nm,10.3s
KSH LR LR
comp=Z,180nm,10.6s
USRK Ussuriysk Ar. 56.91 20 P **P 20 38 35.4 -0.9**
comp=Z,7.8nm,0.8s,baz=215,slow=6.3,SNR=16
KBL Kabul 57.19 321 *e*P **P 20 38 37.8 -0.9**
KBL pmax pmax
comp=Z,16nm,0.9s
KBL Kabul 57.19 321 *e*P **P 20 38 37.8 -0.9**
comp=Z,16nm,0.9s
CASY Casey 57.33 179 *e*P **P 20 38 38.7 -0.2**
comp=Z,33nm,1.7s
WSAR Wadi Sarin 58.41 304 P **P 20 38 49.2 +1.9**
comp=Z,3.5nm,0.6s,baz=140,slow=7.9,SNR=2.4
WSAR Wadi Sarin 58.41 304 *e*P **P 20 38 49.2 +1.9**
ZAK Zakamensk 59.20 356 *e*P **P 20 38 51.9 -0.5**
ZAK pmax pmax
comp=Z,8.0nm,1.4s
TKM2 Tokmak 2 59.72 332 *e*P **P 20 38 55.7 -0.5**
TKM2 pmax pmax
comp=Z,26nm,0.6s
TKM2 Tokmak 2 59.72 332 *e*P **P 20 38 55.7 -0.5**
comp=Z,26nm,0.6s
AAK Ala-Archa 60.01 331 P **P 20 38 57.9 -0.3**
comp=Z,4.5nm,0.9s,baz=151,slow=6.2,SNR=7.9
AAK Ala-Archa 60.01 331 *d iP* **P 20 38 57.7 -0.5**
AAK pmax pmax
comp=Z,25nm,1.3s
AAK Ala-Archa 60.01 331 *e*P **P 20 38 57.3 -0.9**
comp=Z,12nm,1.3s
FRU Bishkek 60.10 332 *e*P **P 20 38 58.0 -0.6**
MK01 Makanchi Array 60.18 339 *e*P **P 20 38 58.1 -1.0**
MK31 Makanchi Array 60.21 339 *e*P **P 20 38 59.0 -0.3**
MK31 Makanchi Array 60.21 339 *e*P **P 20 38 59.0 -0.3**
MK32 Makanchi Array 60.21 339 *e*P **P 20 38 59.2 -0.1**
MKAR Makanchi Array 60.21 339 P **P 20 38 59.2 -0.1**
comp=Z,10nm,0.5s,baz=149,slow=7.6,SNR=110
MKAR Makanchi Array 60.21 339 *e*P **P 20 38 59.1 -0.1**
OPO Ambohidratompo 60.24 254 P **P 20 39 02.3 +2.1**
comp=Z,12nm,0.8s,baz=88,slow=4.2,SNR=9.1
MAKZ Makanchi 60.33 339 *e*P **P 20 38 59.4 -0.7**
MAKZ pmax pmax
comp=Z,5.0nm,0.8s
MAKZ Makanchi 60.33 339 *e*P **P 20 38 59.4 -0.7**
comp=Z,5.2nm,0.8s
EKS2 Erkin-Say 60.37 331 *e*P **P 20 39 00.6 0.0**
EKS2 pmax pmax
comp=Z,13nm,0.8s
EKS2 Erkin-Say 60.37 331 *e*P **P 20 39 00.6 0.0**
comp=Z,14nm,0.8s
TLY Talaya 60.47 356 P **P 20 39 01.6 +0.6**
comp=Z,1.7nm,0.5s,baz=166,slow=9.0,SNR=5.5
TLY Talaya 60.47 356 *e*P **P 20 39 02.0 +1.0**
TLY *e* 20 39 15.1
TLY pmax pmax
comp=Z,10.0nm,1.4s
TLY MLR MLR
comp=Z,241nm,21.0s
TLY Talaya 60.47 356 *e*P **P 20 39 01.6 +0.6**
comp=Z,23nm,1.6s
MOY Mondy 60.67 355 *e*P **P 20 39 03.0 +0.6**
MOY pmax pmax
comp=Z,34nm,2.7s
ASAJ Asahikawa 61.05 27 *e*P **P 20 39 04.0 -1.0**
comp=Z,84nm,1.8s
KWAJ Kwajalein Atol 61.30 75 *e*P **P 20 39 05.3 -2.0**
KWAJ pmax pmax
comp=Z,147nm,1.2s
KWAJ Kwajalein Atol 61.30 75 *e*P **P 20 39 05.3 -2.0**
comp=Z,147nm,1.2s
KLR Kul'dur 61.32 17 P **P 20 39 05.8 -0.9**
comp=Z,15nm,0.7s,baz=217,slow=4.3,SNR=7.0
KLR LR LR 21 05 47.7
comp=Z,124nm,21.7s,baz=201,slow=36
KLR Kul'dur 61.32 17 *e*P **P 20 39 05.8 -0.9**
HABR Khabarovsk 61.67 20 *ce*P **P 20 39 06.2 -2.9**
HABR *e**PP **sP 20 39 20.1 -3.1**
HABR *e* 20 39 47.8
HABR *e* 20 41 21.8
HABR *e*S **S 20 47 24.1 -5.2**
HABR *e*S S 20 47 41.1 +12
HABR *e**SS **sS 20 47 47.7 +1.6**
HABR 20 48 53.2
HABR *e*SS **SS 20 51 27.0 -4.5**
HABR pmax pmax
comp=N,7.0nm,1.1s
HABR pmax pmax
comp=E,14nm,1.1s
HABR pmax pmax
comp=Z,36nm,1.1s
HABR MLR MLR
comp=Z,112nm,21.0s
KKAR Karatay Array 62.30 329 *e*P **P 20 39 11.9 -1.6**
KKAR Karatay Array 62.30 329 *e*P **P 20 39 11.9 -1.6**
YUK Yuzh-Kuril'sk 62.53 29 *i P* **P 20 39 14.3 -0.6**
YSS Yuzh-Sakhalins 63.34 25 ‖ *e*P **P 20 39 19.0 -1.3**
YSS *i* 20 39 33.6
YSS pmax pmax
comp=Z,40nm,1.0s
YSS Yuzh-Sakhalins 63.34 25 *e*P **P 20 39 19.2 -1.1**
comp=Z,78nm,1.1s
KURBB Kurchatov Arra 64.78 339 P **P 20 39 29.5 -0.1**
comp=Z,13nm,0.8s,baz=156,slow=5.3,SNR=68
KURK Kurchatov 64.82 339 *e*P **P 20 39 29.8 -0.2**
KURK pmax pmax
comp=Z,22nm,0.9s
KURK Kurchatov 64.82 339 *e*P **P 20 39 29.8 -0.2**
comp=Z,22nm,0.9s
ZAA0 Zalesovo Array 65.76 345 *e*P **P 20 39 34.6 -1.4**
ZALV Zalesovo Beam 65.76 345 P **P 20 39 35.2 -0.8**
comp=Z,8.4nm,0.6s,baz=132,slow=4.2,SNR=42
ZALV PKPPKP **P'P'df 21 08 14.6 +3.1**
comp=Z,0.3nm,0.3s,baz=314,slow=5.2,SNR=3.6
ZALV Zalesovo Beam 65.76 345 P **P 20 39 35.2 -0.8**
ZALV P'P' 21 08 14.6
ZAA1 Zalesovo Array 65.76 345 *e*P **P 20 39 35.2 -0.8**
GEYT Alibeck 66.25 318 P **P 20 39 39.5 0.0**
comp=Z,5.9nm,0.8s,baz=151,slow=6.8,SNR=15
BOD Bodaibo 66.61 3 *e*P **P 20 39 40.3 -1.1**
BOD pmax pmax
comp=Z,31nm,1.4s
NVS Novosibirsk 66.97 344 *e*P **P 20 39 42.3 -1.4**
BKZ Black Stump Fm 67.28 129 *e*P **P 20 39 47.0 +0.8**
comp=Z,23nm,1.0s
MSVF Nonsavu 67.80 106 *e*P **P 20 39 49.1 -0.8**
MSVF pmax pmax
comp=Z,120nm,2.0s
MSVF Nonsavu 67.80 106 *e*P **P 20 39 49.1 -0.8**
comp=Z,120nm,2.0s
ATD Arta Tunnel 68.50 286 P **P 20 39 55.8 +1.5**
comp=Z,3.8nm,0.7s,baz=115,slow=11,SNR=4.2
VOSK Vostochnaya 69.27 337 *e*P **P 20 39 57.8 -0.4**
VOSK pmax pmax

comp=Z,43nm,1.5s
VOSK Vostochnaya 69.27 337 *e*P **P 20 39 57.8 -0.4**
comp=Z,43nm,1.5s
BVAR Borovoye Array 69.73 336 P **P 20 40 00.9 -0.1**
comp=Z,20nm,0.7s,baz=139,slow=8.4,SNR=94
BVAR Borovoye Array 69.73 336 P **P 20 40 00.9 -0.1**
ZRNK Zerenda 70.23 336 *e*P **P 20 40 03.7 -0.4**
ZRNK pmax pmax
comp=Z,30nm,0.8s
ZRNK Zerenda 70.23 336 *e*P **P 20 40 03.7 -0.4**
comp=Z,30nm,0.8s
KMBO Kilima Mbogo 71.45 272 P **P 20 40 13.9 +1.3**
comp=Z,3.6nm,0.7s,baz=57,slow=11,SNR=6.9
KMBO Kilima Mbogo 71.45 272 *e*P **P 20 40 14.2 +1.5**
KMBO pmax pmax
comp=Z,19nm,1.4s
KMBO Kilima Mbogo 71.45 272 *e*P **P 20 40 14.2 +1.5**
comp=Z,19nm,1.4s
ABKAR Akbulak array 71.86 329 *e*P **P 20 40 13.7 -0.4**
FURI Furi 71.89 282 *e*P **P 20 40 16.6 +1.2**
comp=Z,28nm,1.0s
YAK Yakutsk 72.57 10 P **P 20 40 16.9 -1.0**
comp=Z,2.3nm,0.5s,baz=20,slow=23,SNR=11
YAK Yakutsk 72.57 10 *e*P **P 20 40 17.0 -1.0**
YAK *e* 20 40 30.6
YAK *e**PP **PcP 20 40 35.2 -0.2**
YAK *e* 20 42 54.7
YAK *e*PPP PPP 20 44 45.4
YAK *e*S **S 20 49 34.5 -5.6**
YAK *e**SS SKSac 20 50 07.9 -12
YAK *e* 20 50 16.9
YAK *e*SS **SS 20 54 16.7 -3.2**
YAK pmax pmax
comp=Z,49nm,0.9s
YAK pmax pmax
comp=N,28nm,1.3s
YAK pmax pmax
comp=E,13nm,1.4s
YAK pmax pmax
comp=Z,95nm,4.9s
YAK pmax pmax
comp=N,104nm,5.2s
YAK pmax pmax
comp=E,86nm,6.1s
YAK smax smax
comp=N,42nm,2.0s
YAK smax smax
comp=E,34nm,1.8s
YAK Yakutsk 72.57 10 *e*P **P 20 40 16.7 -1.3**
comp=E,137nm,0.9s
VNDA Vanda 73.83 170 P **P 20 40 25.9 +0.6**
comp=E,10.0nm,0.8s,baz=289,slow=6.9,SNR=46
VNDA Vanda 73.83 170 *e*P **P 20 40 25.6 +0.3**
VNDA pmax pmax
comp=Z,14nm,1.0s
VNDA Vanda 73.83 170 *e*P **P 20 40 25.6 +0.3**
comp=Z,14nm,1.0s
SYO Syowa Base 74.31 200⇓ *e*X 20 40 34.2
SYO Syowa Base 74.31 200⇓ *e*pP pP 20 40 40.9 +2.2
PEA0 Petropavlovsk- 74.45 28 *e*P **P 20 40 28.7 -0.6**
PEA0B Petropavlovsk- 74.45 28 *e*P **P 20 40 27.8 -1.5**
comp=Z,42nm,1.2s
PETK Petropavlovsk- 74.45 28 P **P 20 40 28.8 -0.6**
comp=Z,8.1nm,0.8s,baz=259,slow=1.5,SNR=6.9
PETK LR LR 21 12 32.7
comp=Z,53nm,21.9s,baz=232,slow=35
PETK Petropavlovsk- 74.45 28 P **P 20 40 28.8 -0.6**
PEA1 Petropavlovsk- 74.45 28 *e*P **P 20 40 28.8 -0.6**
PET Petropavlovsk 74.85 29⇑ *i*P **P 20 40 30.4 -1.2**
PET pmax pmax
comp=Z,40nm,1.7s
PET Petropavlovsk 74.85 29 *e*P **P 20 40 31.3 -0.3**
comp=Z,39nm,1.2s
SBA Scott Base 74.90 169 *e*P **P 20 40 32.9 +1.3**
SBA pmax pmax
comp=Z,9.0nm,0.8s
SBA Scott Base 74.90 169 *e*P **P 20 40 32.9 +1.3**
comp=Z,8.9nm,0.8s
MA2 Magadan 76.06 21⇑ *i*P **P 20 40 37.8 -0.6**
SVE Sverdlovsk 76.39 335⇑ *e*P **P 20 40 40.7 +0.3**
SVE pmax pmax
comp=Z,45nm,1.5s
GNI Garni 76.43 315 P **P 20 40 41.5 +0.4**
comp=Z,3.3nm,0.7s,baz=287,slow=4.0,SNR=4.5
GNI Garni 76.43 315⇑ *i*P **P 20 40 41.6 +0.4**
GNI pmax pmax
comp=Z,24nm,1.2s
GNI Garni 76.43 315 *e*P **P 20 40 41.5 +0.4**
ARU Arti 77.02 334 P **P 20 40 43.9 0.0**
comp=Z,5.6nm,0.6s,baz=117,slow=3.4,SNR=15
ARU Arti 77.02 334 *d i*P **P 20 40 43.6 -0.3**
ARU *PP **sP 20 40 57.6 -0.6**
ARU 20 43 35.0
ARU S **S 20 50 30.0 0.0**
ARU SS **SS 20 55 34.0 +6.3**
ARU pmax pmax
comp=Z,43nm,1.7s
ARU Arti 77.02 334 *e*P **P 20 40 42.7 -1.2**
comp=Z,46nm,1.4s
ZEI Tsey 78.08 317 *e*P **P 20 40 49.9 -0.6**
ZEI *e* 20 41 06.5
ZEI pmax pmax
comp=Z,35nm,1.4s
LSZ Lusaka 78.57 256 *e*P **P 20 40 53.8 +0.2**
LSZ pmax pmax
comp=Z,17nm,1.0s
LSZ Lusaka 78.57 256 *e*P **P 20 40 53.8 +0.2**
comp=Z,17nm,1.0s
NCK Nalchik 78.58 318 *c i*P **P 20 40 53.6 +0.7**
NCK pmax pmax
comp=Z,12nm,0.6s
SEY Seymchan 79.03 19⇓ *e*P **P 20 40 54.9 0.0**
NEY Neytrino 79.06 317⇑ *e*P **P 20 40 57.5 +1.7**
NEY pmax pmax
comp=Z,2.0nm,0.9s
KBZ Khabaz 79.13 318 P **P 20 40 56.5 +0.7**
comp=Z,8.9nm,0.9s,baz=181,slow=4.6,SNR=15
KBZ Khabaz 79.13 318 *e*P **P 20 40 56.5 +0.7**
KVAR Kislovodsk Arr 79.36 318 P **P 20 40 57.6 +0.3**
comp=Z,5.3nm,0.8s,baz=63,slow=2.2,SNR=4.9
KVAR Kislovodsk Arr 79.36 318 P **P 20 40 57.6 +0.3**
KIV Kislovodsk 79.36 318 *d i*P **P 20 40 57.4 +0.1**
KIV *i* 20 41 07.2
KIV *e**PP **sP 20 41 13.1 +1.5**
KIV *e*S **S 20 50 50.5 -5.5**
KIV pmax pmax
comp=Z,11nm,1.0s
KIV Kislovodsk 79.36 318 *e*P **P 20 40 56.0 -1.3**
comp=Z,8.3nm,0.8s
NRIK Noril'sk 79.41 353 P **P 20 40 55.9 -1.0**
comp=Z,9.6nm,0.8s,baz=156,slow=5.0,SNR=14
ASF Jabal al Asfar 79.57 305 P **P 20 41 00.1 +1.4**
comp=Z,11nm,1.1s,baz=175,slow=2.0,SNR=12
ASF Jabal al Asfar 79.57 305 *e*P **P 20 41 00.1 +1.4**
SOKR Solikamsk 79.73 336 *e*P P 20 41 10.7 +12
SOKR pmax pmax
comp=Z,17nm,0.9s
BOSA Boshof 80.03 242 P **P 20 41 02.3 +0.9**
comp=Z,6.6nm,1.1s,baz=91,slow=5.4,SNR=3.2
BOSA LR LR 21 11 19.4
comp=Z,342nm,18.2s,baz=94,slow=32
BOSA Boshof 80.03 242 *e*P **P 20 41 02.3 +0.9**
LBTB Lobatse 80.04 246 *e*P **P 20 41 02.3 +0.8**
LBTB pmax pmax
comp=Z,60nm,1.8s
LBTB Lobatse 80.04 246 *e*P **P 20 41 02.3 +0.8**
comp=Z,60nm,1.8s
EIL Elat 80.45 302 P **P 20 41 04.2 +0.7**
comp=Z,11nm,1.0s,baz=53,slow=18,SNR=6.7
MMAI Mount Meron Ar 81.02 305 P **P 20 41 08.2 +1.7**
comp=Z,6.3nm,0.9s,baz=109,slow=12,SNR=8.5
MMAI Mount Meron Ar 81.02 305 P **P 20 41 08.2 +1.7**
QSPA South Pole Qui 81.12 180 *e*P **P 20 41 06.6 +0.2**
TIXI Tiksi 81.48 6 *d i*P **P 20 41 06.8 -1.1**
TIXI pmax pmax
comp=Z,19nm,1.0s
TIXI Tiksi 81.48 6 *e*P **P 20 41 06.9 -1.0**
comp=Z,54nm,0.8s
VRH Novokhopyorsk 82.86 324 *e*P **P 20 41 15.5 -0.1**
VRH pmax pmax
comp=Z,40nm,0.9s
ANN Anapa 83.18 317 *e*P **P 20 41 14.8 -2.6**
ANN *e* 20 41 20.9
ANN *e**PP **sP 20 41 30.7 -1.0**
ANN *e*S **S 20 51 30.0 -5.2**
ANN pmax pmax
comp=Z,34nm,1.5s
BR101 Keskin Array S 84.29 312 *e*P **P 20 41 23.4 0.0**
BR131 Keskin Array S 84.29 312 *e*P **P 20 41 22.6 -0.8**
BRTR Keskin Array B 84.29 312 P **P 20 41 23.4 0.0**
comp=Z,7.4nm,0.9s,baz=131,slow=5.6,SNR=33
BRTR Keskin Array B 84.29 312 P **P 20 41 23.4 0.0**
VSR Storozhevoye 84.34 324 *e*P **P 20 41 22.6 -0.6**
VSR pmax pmax
comp=Z,30nm,1.3s
ANTO Ankara 84.96 311 *e*P **P 20 41 26.4 -0.3**
ANTO pmax pmax
comp=Z,23nm,1.2s
ANTO Ankara 84.96 311 *e*P **P 20 41 26.4 -0.3**
comp=Z,23nm,1.2s
BR231 Keskin MP Arra 84.96 311 *e*P **P 20 41 24.1 -2.7**
LPSR Galich'ya Gora 84.99 325 *e*P **P 20 41 26.8 +0.4**
LPSR pmax pmax
comp=Z,20nm,0.9s
BILL Bilibino 86.74 19⇑ *i*P **P 20 41 34.6 -0.2**
BILL *i* *PP sP 20 41 48.0 -1.2
BILL *e*SSS SSS 21 01 22.8
BILL pmax pmax
comp=Z,9.0nm,2.5s
OBN Obninsk 87.19 327 P **P 20 41 37.1 0.0**
comp=Z,16nm,0.7s,baz=82,slow=10.0,SNR=7.8
OBN Obninsk 87.19 327 *d i*P **P 20 41 37.2 0.0**
OBN *i* 20 41 51.7
OBN pmax pmax
comp=Z,50nm,1.7s
OBN MLR MLR
comp=Z,142nm,20.0s
OBN Obninsk 87.19 327 *e*P **P 20 41 37.4 +0.2**
comp=Z,25nm,0.9s
KLMR Klimovskoe 87.79 333 *d i*P **P 20 41 39.8 -0.2**
KLMR *e**PP **sP 20 41 52.7 -1.7**
KLMR *e**SP pP 20 41 59.2 +8.6
KLMR *e* 20 45 05.3
KLMR pmax pmax
comp=Z,45nm,1.2s
TSUM Tsumeb 88.12 251 *e*P **P 20 41 44.3 +1.6**
comp=Z,22nm,1.2s
SNAA Sanae 88.22 197 P **P 20 41 43.3 +1.2**
SNAA Sanae 88.22 197 *d i*P **P 20 41 42.7 +0.6**
SNAA Sanae 88.22 197 *e*P **P 20 41 43.0 +0.9**
comp=Z,20nm,1.0s
KARP Karpathos 88.25 306 *e*P **P 20 41 44.0 +1.2**
comp=Z,48nm,1.0s
LAST Lasithi 89.52 306⇓ *i*P **P 20 41 50.4 +1.5**
CFR Carcaliu 89.61 316⇑ *i*P **P 20 41 49.7 +0.7**
CFR Carcaliu 89.61 316⇑ *e*P **P 20 41 49.7 +0.7**
AKASG Malin Array Be 90.18 321 P **P 20 41 50.6 -0.9**
comp=Z,1.3nm,0.6s,baz=83,slow=4.3,SNR=6.4
AKASG Malin Array Be 90.18 321 P **P 20 41 50.6 -0.9**
KIEV Kiev 90.19 321⇓ *e*P **P 20 41 50.2 -1.3**
KIEV pmax pmax
comp=Z,4.0nm,1.0s
VNA1 Neumayer--Stat 90.25 197 P **P 20 41 53.4 +1.9**
VNA3 Neumayer Olymp 90.37 197 P **P 20 41 53.2 +1.1**
VRI Vrincioaia 90.73 316⇑ *i*P P 20 41 49.3 -4.9
VRI Vrincioaia 90.73 316⇑ *e*P P 20 41 49.3 -4.9
PLOR Plostina 90.78 316⇑ *i*P P 20 41 44.4 -10
PLOR Plostina 90.78 316⇑ *e*P P 20 41 44.4 -10
TESR Tescani 90.92 317⇑ *i*P P 20 41 46.0 -9.1
MLR Muntele Rosu 91.19 316 P **P 20 41 56.8 +0.2**
comp=Z,0.6nm,0.8s,baz=104,slow=4.2
MLR Muntele Rosu 91.19 316⇑ *i*P **P 20 41 56.5 0.0**
MLR Muntele Rosu 91.19 316⇑ *e*P **P 20 41 56.6 0.0**
MLR Muntele Rosu 91.19 316 *e*P **P 20 41 56.5 0.0**
comp=Z,13nm,1.2s
BURAR Bucovina Array 92.09 318⇑ *i*P P 20 41 48.0 -13
FIA0 FINESS Array S 94.20 331 *e*P **P 20 42 07.6 -2.2**
FIA0 FINESS Array S 94.20 331 *e*P **P 20 42 07.6 -2.2**
FINES FINESS Array B 94.20 331 P **P 20 42 07.6 -2.2**
comp=Z,3.5nm,1.0s,baz=101,slow=7.5,SNR=2.6
FINES FINESS Array B 94.20 331 P **P 20 42 07.6 -2.2**
ARA0 ARCESS Array S 95.86 339 *e*P **P 20 42 16.7 -0.6**
ARCES ARCESS Array B 95.86 339 P **P 20 42 16.7 -0.6**
comp=Z,1.1nm,0.6s,baz=122,slow=14,SNR=9.0
ARCES ARCESS Array B 95.86 339 P **P 20 42 16.7 -0.6**
CLL Collm 100.40 321 *e*Pdif **Pdif 20 42 31.0 -7.1**
CLL Lm MLR 21 31 00.0
comp=Z,200nm,18.2s
CLL Collm 100.40 321 *e*P **Pdif 20 42 31.0 -7.1**
TORD Torodi Ar. Bea 108.38 281 PKiKP **PKiKP 20 47 18.9 -1.6**
comp=Z,0.7nm,0.7s,baz=40,slow=2.3,SNR=3.9
TORD Torodi Ar. Bea 108.38 281 PKiKP **PKiKP 20 47 18.9 -1.6**
TOA1 Torodi Ar. Sit 108.39 281 *e*PKiKP **PKiKP 20 47 18.9 -1.6**
YKA Yellowknife Ar 118.04 21 PKP **PKPdf 20 47 37.2 -0.3**
comp=Z,1.2nm,0.7s,baz=333,slow=1.9,SNR=12
YKA PKKPbc **PKKPbc 20 57 59.1 -0.4**
comp=Z,0.2nm,0.5s,baz=113,slow=3.8,SNR=4.0
YKA Yellowknife Ar 118.04 21 PKP **PKPdf 20 47 37.2 -0.3**
YKA PKKPbc **PKKPbc 20 57 59.1 -0.4**
YKB5 Yellowknife Ar 118.04 21 *e*PKPdf **PKPdf 20 47 37.4 -0.2**
YKB5 *e*PKKPbc **PKKPbc 20 57 56.0 -3.6**
MTPU Mount Pierson 133.19 45 *e*PKPdf **PKPdf 20 48 04.6 -3.2**
TX31 Lajitas Ar. Si 143.51 52 *e*PKPdf PKPab 20 48 23.9 +0.9
LTX Lajitas 143.51 52 *e*PKIKP PKPbc 20 48 24.4 +0.5
LTX Lajitas 143.51 52 *e*PKPdf PKPbc 20 48 24.4 +0.5
TXAR Lajitas Array 143.51 52 PKP PKPbc 20 48 24.4 +0.5
comp=Z,0.9nm,0.7s,baz=270,slow=2.1,SNR=8.7
TXAR Lajitas Array 143.51 52 PKP PKPbc 20 48 24.4 +0.5
S35A Otter Creek Ra 143.53 34 P PKPbc 20 48 23.9 +0.4
baz=316
P38A Dawn 143.53 29 P PKPbc 20 48 24.3 +0.8
baz=321
SADO Sadowa 143.62 9 PKhKP PKPpre 20 48 21.2
comp=Z,1.4nm,0.4s,baz=0.0,slow=8.1,SNR=3.2
SADO Sadowa 143.62 9 *e*PKPpre PKPpre 20 48 23.3
O40A La Belle 143.91 27 P PKPab 20 48 24.3 +0.3
baz=324
Q38A Cooks Store, C 144.00 30 P **PKPab 20 48 24.4 0.0**
baz=320
P39B Salisbury 144.01 29 P **PKPab 20 48 25.1 +0.7**
baz=322
WMOK Wichita Mounta 144.03 40 P **PKPab 20 48 25.5 +0.8**
baz=309
U35A Pawnee 144.21 36 P **PKPab 20 48 26.2 +0.9**
baz=314
T36A Boggs Farm, Ca 144.21 35 P **PKPab 20 48 25.7 +0.5**
baz=316
Q39A Willow Grove F 144.25 29 P **PKPab 20 48 25.6 +0.3**
baz=322
S37A Fort Scott 144.28 33 P **PKPab 20 48 25.5 0.0**
baz=318
LONY Lake Ozonia 144.29 4 *e*PKPdf **PKPab 20 48 25.8 +0.5**
P40A Paris 144.31 28 P **PKPab 20 48 25.9 +0.3**
baz=323
W34A Bridge Creek, 144.34 39 P PKPbc 20 48 26.8 +0.7
baz=311
R38A Fenwick Farm, 144.45 31 P **PKPab 20 48 25.6 -0.5**
baz=319
V35A Meyer Ranch, C 144.56 37 P **PKPab 20 48 27.2 +0.6**
baz=313
HDIL Hopedale 144.65 24 P **PKPab 20 48 26.7 0.0**
baz=328
HDIL Hopedale 144.65 24 *e*PKPdf **PKPab 20 48 27.2 +0.5**
T37A Cheneyville 18 144.70 34 P **PKPab 20 48 27.3 +0.2**
baz=317
Q40A Laux Farm, Aux 144.72 29 P **PKPab 20 48 27.2 +0.1**
baz=323
ABTX Abilene, Hawle 144.74 44 P PKPbc 20 48 28.4 +0.8
baz=306
U36A Oologah 144.77 35 P **PKPab 20 48 27.6 +0.2**
baz=315
R39A Chumby, Stover 144.79 30 P **PKPab 20 48 27.1 -0.3**
baz=321
S38A Stockton 144.87 32 P **PKPab 20 48 27.1 -0.6**
baz=319
Z33A Whitaker Ranch 144.94 42 P **PKPdf 20 48 29.3 +0.4**
baz=308
W35A Tecumseh 144.95 38 P **PKPab 20 48 28.3 +0.2**
baz=312
MDV Middlebury 144.98 2 *e*PKPbc **PKPab 20 48 27.9 +0.1**
AAM Ann Arbor 145.00 16 *e*PKIKP **PKPab 20 48 28.3 +0.4**
AAM Ann Arbor 145.00 16 *e*PKPbc **PKPab 20 48 28.3 +0.4**
V36A Jenks 145.07 36 P **PKPbc 20 48 28.8 +0.4**
baz=314
TUL1 Leonard 145.07 36 P **PKPbc 20 48 28.7 +0.2**
baz=314
TUL1 Leonard 145.07 36 *e*PKPbc **PKPbc 20 48 28.5 +0.1**
T38A Diamond 145.10 33 P **PKPbc 20 48 28.4 -0.1**
baz=318
U37A Salina 145.11 35 P **PKPbc 20 48 28.8 +0.2**
baz=316
S39A Bolivar 145.12 31 P **PKPbc 20 48 28.1 -0.5**
baz=320
Y34A Reagan Ranch, 145.18 40 P **PKPbc 20 48 29.6 +0.7**
baz=310
R40A Maddies Statio 145.19 29 P **PKPbc 20 48 28.7 0.0**
baz=322
133A Hamilton Ranch 145.25 43 P **PKPab 20 48 30.1 +0.8**
baz=307
HNH Hanover 145.30 1 *e*PKPbc **PKPbc 20 48 29.0 +0.1**
W36A Wetumka 145.35 37 P **PKPbc 20 48 29.4 +0.1**
baz=313
X35A Drake 145.39 39 P **PKPbc 20 48 29.6 0.0**
baz=311
Z34A Collier Ranch, 145.45 41 P **PKPbc 20 48 30.4 +0.6**
baz=309
V37A Hulbert 145.47 35 P **PKPdf 20 48 29.7 0.0**
baz=315
Q42A Golden Eagle 145.50 27 P **PKPdf 20 48 29.9 +0.2**
baz=325
ACCN Adirondack Com 145.57 3 *e*PKPdf **PKPdf 20 48 29.9 +0.2**
T39A Clever 145.60 32 P **PKPdf 20 48 30.0 +0.1**
baz=319
233A Rising Star 145.61 44 P **PKPab 20 48 31.4 +0.8**
baz=306
S40A Lebanon 145.61 30 P **PKPdf 20 48 29.7 -0.2**
baz=321
SFIN Lafayette 145.64 22 P **PKPdf 20 48 30.2 +0.4**
baz=332
SFIN Lafayette 145.64 22 *e*PKPdf **PKPdf 20 48 30.5 +0.7**
X36A Centrahoma 145.66 38 P **PKPdf 20 48 30.8 +0.8**
baz=312
MMNY Mt. Morris Dam 145.80 9 *e*PKPdf **PKPdf 20 48 30.5 +0.5**
134A White-Moore Ra 145.83 43 P **PKPab 20 48 32.3 +0.9**
baz=308
JCT Junction City 145.84 47 P **PKPbc 20 48 31.9 +0.9**
baz=303
JCT Junction City 145.84 47 *e*PKP2 **PKPbc 20 48 32.0 +0.9**
JCT Junction City 145.84 47 *e*PKPdf **PKPbc 20 48 31.9 +0.9**
HHAR Hobbs 145.85 34 *e*PKPdf **PKPdf 20 48 30.6 +0.2**
V38A Canehill 145.90 35 P **PKPdf 20 48 31.2 +0.8**
baz=316
T40A Mansfield 145.95 31 P **PKPdf 20 48 31.1 +0.6**
baz=320
333A Richland Sprin 145.95 45 P **PKPbc 20 48 32.0 +0.6**
baz=305
U39A Green Forest 146.03 33 P **PKPdf 20 48 31.0 +0.3**
baz=318
Y36A Durant 146.15 39 P **PKPbc 20 48 32.2 +0.3**
baz=312
433A Art 146.20 46 P **PKPbc 20 48 32.7 +0.5**
baz=304
V39A Pettigrew 146.34 34 P **PKPdf 20 48 32.2 +0.9**
baz=318
U40A Yellville 146.38 32 P **PKPdf 20 48 31.7 +0.4**
baz=319
W38A Poteau 146.40 36 P **PKPbc 20 48 33.1 +0.5**
baz=316
T41A Mountain View 146.41 30 P **PKPdf 20 48 32.5 +1.2**
baz=322
ALLY Alegheny Colle 146.45 12 *e*PKPdf **PKPdf 20 48 32.6 +1.4**
X38A Whitesboro 146.50 37 P **PKPbc 20 48 33.5 +0.6**
baz=315
BINY Binghamton 146.57 6 *e*PKPdf **PKPbc 20 48 33.3 +0.4**
533A Kerrville 146.62 47 P **PKPdf 20 48 33.3 +1.4**
baz=304
M54A Oil Creek Stat 146.69 11 P **PKPbc 20 48 33.6 +0.3**
baz=345
OLIL Olney 146.69 24 *e*PKPdf **PKPdf 20 48 33.1 +1.5**
R44A Waltonville 146.69 26 P **PKPdf 20 48 33.0 +1.3**
baz=327
W39A Magazine 146.73 35 P **PKPdf 20 48 33.3 +1.4**
baz=317
V40A Witts Springs 146.81 33 P **PKPdf 20 48 33.4 +1.3**
baz=319
633A Saathoff Ranch 146.85 48 P **PKPbc 20 48 34.6 +0.5**
baz=303
X39A Fountain Ranch 147.03 36 P **PKPbc 20 48 34.6 +0.1**
baz=316
ZAIG Zacatecas 147.04 62 *e*PKPdf **PKPdf 20 48 34.4 +1.3**
534A Blanco 147.04 47 P **PKPdf 20 48 34.3 +1.7**
baz=304
ACSO Alum Creek Sta 147.11 17 *e*PKPdf **PKPdf 20 48 34.0 +1.7**
W40A Ferguson Farm, 147.13 34 P **PKPbc 20 48 34.8 +0.1**
baz=318
N54A Moraine State 147.15 12 P **PKPbc 20 48 34.6 +0.1**
baz=344
V41A Mountainview 147.18 32 P **PKPbc 20 48 34.6 -0.3**
baz=320
833A Chaparral WMA, 147.28 50 P **PKPbc 20 48 36.5 +1.2**
baz=301
MIAR Mount Ida 147.32 35 P **PKPbc 20 48 35.7 +0.5**
baz=316
MIAR Mount Ida 147.32 35 *e*PKP2 **PKPdf 20 48 33.1 +0.2**
MIAR Mount Ida 147.32 35 *e*PKPdf **PKPdf 20 48 33.1 +0.2**
MIAR *e*PKPbc **PKPbc 20 48 36.0 +0.8**
S45A Carrier Mills 147.38 26 P **PKPbc 20 48 35.6 +0.3**
baz=327
V42A Cord 147.56 31 P **PKPdf 20 48 35.2 +2.0**
baz=321
ODNJ Ogdensburg 147.80 5 *e*PKPbc **PKPbc 20 48 36.2 -0.1**
WCI Wyandotte Cave 147.83 22 *e*PKP2 **PKPbc 20 48 35.9 -0.6**
WCI Wyandotte Cave 147.83 22 *e*PKPbc **PKPbc 20 48 35.9 -0.6**
SSPA Standing Stone 147.85 9 *e*PKPbc **PKPbc 20 48 36.4 -0.1**
N59A State Game Lan 147.86 6 P **PKPbc 20 48 36.8 +0.2**
baz=352
O56A Blue Knob Stat 148.09 10 P **PKPbc 20 48 37.3 +0.1**
baz=346
LUPA Lehigh Univers 148.21 6 *e*PKPbc **PKPdf 20 48 35.9 +1.7**
Y41A Eaglette Beard 148.35 35 P **PKPbc 20 48 38.2 +0.2**
baz=317
LVC Limon Verde 148.61 184 PKPbc **PKPbc 20 48 40.4 +1.0**
comp=Z,102nm,0.9s,baz=243,slow=3.0,SNR=11
LVC Limon Verde 148.61 184 *e*PKPbc **PKPbc 20 48 40.4 +1.0**
MVL Millersville 148.69 7 *e*PKPbc **PKPbc 20 48 39.5 +0.8**
341A Kurthwood 149.81 39 P **PKPbc 20 48 43.2 +1.4**
baz=313
PLAL Pickwick Lake 149.84 28 *e*PKPbc **PKPbc 20 48 40.8 -1.0**
PB01 IPOC Station P 150.20 184 *e*PKPbc **PKPbc 20 48 43.4 +0.3**
TZTN Tazewell 150.31 20 *e*PKPbc **PKPbc 20 48 43.2 +0.3**
Y46A Houston 150.36 30 P **PKPbc 20 48 43.3 +0.3**
baz=323
SWET Sewanee 150.59 25 *e*PKPbc **PKPbc 20 48 42.8 -0.8**
JSRW J. Sargeant Re 150.72 11 *e*PKPbc **PKPbc 20 48 43.5 -0.3**
Y47A UCPARC, Winfie 150.83 29 P **PKPbc 20 48 43.8 -0.3**
baz=325
URVA University of 150.90 10 *e*PKPdf **PKPdf 20 48 35.5 -3.0**
URVA *e*PKPbc **PKPbc 20 48 45.1 +0.9**
CPCT Cooper Cave 150.94 23 *e*PKPdf **PKPdf 20 48 36.4 -2.2**
CPCT *e*PKPbc **PKPbc 20 48 44.3 -0.1**
TKL Tuckaleechee C 151.03 21 *e*PKIKP **PKPdf 20 48 36.1 -2.7**
TKL *e* 20 48 37.8
TKL *e* 20 48 44.6
TKL Tuckaleechee C 151.03 21 *e*PKPdf **PKPdf 20 48 36.1 -2.7**
TKL *e* 20 48 37.8
TKL *e*pPKPdf **PKPbc 20 48 44.6 0.0**
146A Union 151.24 32 P **PKPbc 20 48 45.8 +0.6**
baz=321
Z48A Northport 151.40 29 P **PKPbc 20 48 45.1 -0.4**
baz=325
PB11 IPOC Station P 151.49 183 *e*PKPbc **PKPbc 20 48 45.4 -0.9**
147A Livingston 151.61 31 P **PKPbc 20 48 45.9 -0.1**
baz=323
LRAL Lakeview Retre 151.95 29 *e*PKPdf **PKPdf 20 48 40.5 +0.3**
LRAL *e*PKPbc **PKPbc 20 48 46.4 -0.3**
KMSC Kings Mountain 152.31 18 P **PKPbc 20 48 47.7 +0.1**
baz=338
KMSC Kings Mountain 152.31 18 *e*PKPbc **PKPbc 20 48 47.6 +0.1**
GOGA Godfrey 153.15 23 *e*PKIKP **PKPbc 20 48 50.0 +0.6**
GOGA *e* 20 49 01.4
GOGA Godfrey 153.15 23 *e*PKPbc **PKPbc 20 48 50.0 +0.6**
GOGA *e*PKPab **PKPab 20 49 01.4 +0.4**
SIV San Ignacio 153.27 202 PKPbc **PKPbc 20 48 51.1 +0.9**
comp=Z,6.4nm,0.9s,baz=158,slow=3.4,SNR=8.3
SIV PKPab **PKPab 20 49 02.8 +0.9**
comp=Z,5.6nm,0.8s,baz=134,slow=4.9,SNR=6.8
SIV San Ignacio 153.27 202 *e*PKPbc **PKPbc 20 48 51.1 +0.9**
LPAZ La Paz 154.79 187 PKP **PKPdf 20 48 46.1 +0.6**
comp=Z,0.8nm,0.4s,baz=107,slow=5.2,SNR=3.9
LPAZ PKPab **PKPab 20 49 09.7 +0.7**
comp=Z,5.1nm,0.7s,baz=170,slow=4.8,SNR=12
LPAZ La Paz 154.79 187 *e*PKIKP **PKPdf 20 48 43.2 -2.4**
LPAZ *e* 20 48 55.9
LPAZ *e* 20 49 09.7
LPAZ La Paz 154.79 187 *e*PKPdf **PKPdf 20 48 43.2 -2.4**
LPAZ *e*PKPbc **PKiKP 20 48 55.9 +1.7**

LPAZ			*e*PKPab	**PKPab**	**20 49 09.7**	**+0.7**
SAML	**Samuel**	**160.51 205**	*e*PKPdf	**PKPdf**	**20 48 52.7**	**+0.7**
SAML			*e*PKPab	**PKPab**	**20 49 33.4**	**+0.4**
PTGA	**Pitinga**	**165.17 230**	PKPab	**PKPab**	**20 49 54.7**	**+1.0**
	comp=Z,3.0nm,0.5s,baz=133,slow=7.5,SNR=8.0					
PTGA	**Pitinga**	**165.17 230**	*e*PKPdf	**PKPdf**	**20 48 56.8**	**+0.2**
PTGA			*e*PKPab	**PKPab**	**20 49 53.1**	**-0.6**
OTAV	**Otavalo**	**168.87 140**	*e*PKPdf	**PKPdf**	**20 49 00.9**	**+1.0**
OTAV			*e*PKPab	**PKPab**	**20 50 11.7**	**+1.2**

*IDC **28** 20:44:13.2±0.9, 28°.95S×67°.73W, h0km, mb3.7/4, mb1 3.9/7, mb1mx3.8/32, mbtmp3.7/7, ML3.7/2, Error ellipse: s-maj=35.7km s-min=21.8km az=67.0*
*SJA **28** 20:44:15.4±1.2, 28°.70S×67°.66W, h4km, ML3.6, MW3.4*
ISC 28 20:44:14.9±1.2, 28°.84S±0°.04×67°.68W±0°.04, h9km±9km, n24, σ1§18/32, mb3.6/4, 6D, La Rioja Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VCA	**Vinchina**	**0.47**	**283**	*e*P	**Pg**	**20 44 23.7**	**-0.4**
VCA				⇓*e*S	**Sb**	**20 44 33.9**	**+1.3**
VCA				IAML		20 44 34.8	
	comp=Z,3μm,0.3s						
AGUA	**GUANDACOL**	**0.95**	**228**	*e*P	**Pn**	**20 44 35.0**	**+0.4**
AGUA				⇓*e*S	**Sn**	**20 44 48.6**	**+0.2**
CYA	**Choya**	**1.70**	**77**	*e*P	**Pb**	**20 44 46.6**	**+0.3**
CYA				⇓*e*S	**Sg**	**20 45 09.1**	**-0.5**
CYA				IAML		20 45 10.6	
	comp=Z,1μm,0.5s						
AMOG	**MOGNA**	**2.20**	**198**	*e*P	**Pg**	**20 44 57.6**	**+0.4**
AMOG				*e*S	**Sg**	**20 45 27.4**	**+1.6**
RTLL	**Cerro Villicun**	**2.57**	**195**	*e*S	**Sg**	**20 45 37.8**	**0.2**
LCO	**Las Campanas**	**2.65**	**266**	*e*P	**Pb**	**20 45 02.6**	**-0.1**
SJA	**San Juan**	**2.78**	**196**	*e*S	**Sg**	**20 45 46.0**	**+1.7**
AHML	**Horco Molle**	**2.92**	**46**	*e*P	**Pn**	**20 45 01.8**	**+0.2**
AHML				*e*S	**Sb**	**20 45 40.7**	**-2.3**
FSA	**Cafayete**	**3.11**	**29**	*e*P	**Pn**	**20 45 06.2**	**+1.8**
FSA				*e*S	**Sn**	**20 45 43.7**	**+1.9**
FSA				IAML		20 45 50.5	
	comp=Z,156nm,0.2s						
RTLS	**Leoncito**	**3.26**	**205**	⇓*e*P	**Pb**	**20 45 13.5**	**+0.3**
RTLS				*e*S	**Sg**	**20 45 58.8**	**-0.9**
ACAN	**Cantantal**	**3.45**	**173**	*e*P	**Pb**	**20 45 15.1**	**-1.0**
ACAN				*e*S	**Sg**	**20 46 04.9**	**-0.7**
TCA	**Tanti**	**3.65**	**134**	⇓*e*P	**Pn**	**20 45 15.2**	**+3.5**
AUSP	**Uspallata**	**3.68**	**203**	⇓*e*P	**Pb**	**20 45 19.0**	**-1.2**
LVC	**Limon Verde**	**6.30**	**350**	Pn	**Pn**	**20 45 49.2**	**+0.7**
	comp=Z,48nm,0.3s,baz=160,slow=6.8,SNR=9.8						
LVC				Lg	Lg	20 47 38.9	
	comp=Z,16nm,0.3s,baz=239,slow=11,SNR=2.4						
CPUP	**Villa Florida**	**9.52**	**77**	Pn	**Pn**	**20 46 32.4**	**+0.2**
	comp=Z,0.4nm,0.3s,baz=265,slow=9.9,SNR=4.7						
LPAZ	**La Paz**	**12.50**	**358**	Pn	**Pn**	**20 47 13.2**	**-0.4**
	comp=Z,0.1nm,0.3s,baz=180,slow=11,SNR=2.4						
TXAR	**Lajitas Array**	**67.30**	**326**	P	**P**	**20 55 09.7**	**-0.5**
	comp=Z,0.2nm,0.7s,baz=137,slow=9.4,SNR=2.3						
TORD	**Torodi Ar. Bea**	**78.90**	**68**	P	**P**	**20 56 18.4**	**-0.6**
	comp=Z,0.7nm,0.7s,baz=256,slow=4.1,SNR=4.5						
BOSA	**Boshof**	**79.10**	**117**	P	**P**	**20 56 20.5**	**+0.2**
	comp=Z,5.5nm,1.1s,baz=260,slow=9.9,SNR=3.7						
PDAR	**Pinedale Array**	**81.00**	**330**	P	**P**	**20 56 30.1**	**0.0**
	comp=Z,0.3nm,0.7s,baz=139,slow=4.3,SNR=2.5						
ASAR	**Alice Springs**	**123.81**	**204**	PKP	**PKPdf**	**21 03 13.3**	**-0.6**
	comp=Z,0.2nm,0.4s,baz=122,slow=1.5,SNR=6.5						
WRA	**Warramunga Arr**	**127.04**	**206**	PKP	**PKPdf**	**21 03 19.6**	**-0.6**
	comp=Z,0.3nm,0.5s,baz=162,slow=1.8,SNR=12						
ZALV	**Zalesovo Beam**	**147.90**	**31**	PKPbc	**PKPbc**	**21 04 00.3**	**+0.3**
	comp=Z,1.6nm,0.4s,baz=297,slow=3.3,SNR=7.6						
MKAR	**Makanchi Array**	**150.53**	**44**	PKPbc	**PKPbc**	**21 04 07.1**	**+0.1**
	comp=Z,0.7nm,0.6s,baz=296,slow=2.3,SNR=7.0						

*ISK **28** 20:45:50.7, 39°.10N×29°.04E, h4km, ML3.1*
*ISCJB **28** 20:45:51.6±0.3, 39°.10N±0°.02×29°.03E±0°.04, h9km, Error ellipse: s-maj=4.1km s-min=3.4km az=11.0*
*CSEM **28** 20:45:51.3±0.1, 39°.11N×29°.05E, h2km, ML3.1, Error ellipse: s-maj=2.3km s-min=1.9km az=97.0*
*DDA **28** 20:45:51.1, 39°.13N×29°.04E, h7km, Ml3.1*
ISC 28 20:45:51.6±0.9, 39°.11N±0°.02×29°.04E±0°.02, h9km, n82, σ0§67/86, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**255**	P	**Pg**	**20 45 56.6**	**-0.3**
DEMI	**Demirci**	**0.26**	**255**	*i* P	**Pg**	**20 45 56.6**	**-0.3**
GDZ	**Gediz**	**0.34**	**93**	P	**Pg**	**20 45 58.3**	**-0.1**
GDZ	**Gediz**	**0.34**	**93**	*i* P	**Pg**	**20 45 58.3**	**-0.1**
TVSB	**Tavsanli**	**0.47**	**44**	*e*PG	**Pg**	**20 46 00.4**	**-0.4**
TVSB	**Tavsanli**	**0.47**	**44**	*e*Pg	**Pg**	**20 46 00.4**	**-0.4**
KULA	**Kula-Manisa**	**0.66**	**207**	*e*PG	**Pg**	**20 46 04.0**	**-0.5**
KULA				*e*SG	**Sg**	**20 46 13.1**	**-0.1**
KULA	**Kula-Manisa**	**0.66**	**207**	*e*Pg	**Pg**	**20 46 04.0**	**-0.5**
KULA				*e*Sg	**Sg**	**20 46 13.1**	**-0.1**
KHAL	**Karahalli**	**0.82**	**154**	P	**Pg**	**20 46 07.2**	**-0.1**
KHAL	**Karahalli**	**0.82**	**154**	*i* P	**Pg**	**20 46 07.2**	**-0.1**
KHL	**Karahalli**	**0.87**	**154**	*e*PG	**Pg**	**20 46 07.9**	**-0.5**
KHL	**Karahalli**	**0.87**	**154**	*e*Pg	**Pg**	**20 46 07.9**	**-0.5**
ORLT	**Orhaneli**	**0.94**	**353**	*e*PG	**Pg**	**20 46 09.0**	**-0.7**
ORLT	**Orhaneli**	**0.94**	**353**	*e*Pg	**Pg**	**20 46 09.0**	**-0.7**
AKHS	**Akhisar**	**0.98**	**257**	P	**Pg**	**20 46 10.2**	**-0.3**
AKHS	**Akhisar**	**0.98**	**257**	*i* P	**Pg**	**20 46 10.2**	**-0.3**
AKS	**Akhisar**	**0.98**	**257**	*e*PG	**Pg**	**20 46 10.6**	**+0.1**
AKS	**Akhisar**	**0.98**	**257**	*e*Pg	**Pg**	**20 46 10.6**	**+0.1**
BALB	**Balikesir**	**1.04**	**301**	*e*PG	**Pg**	**20 46 11.8**	**+0.1**
BALB				*e*SG	**Sb**	**20 46 25.8**	**+0.2**
BALB	**Balikesir**	**1.04**	**301**	*e*Pg	**Pg**	**20 46 11.8**	**+0.1**
BALB				*e*Sg	**Sb**	**20 46 25.8**	**+0.2**
IGD	**Bursa**	**1.16**	**6**	*i* P	**Pb**	**20 46 12.4**	**-1.4**
CAVI	**Cavuskoy**	**1.25**	**29**	*e*PN	**Pn**	**20 46 15.1**	**-0.3**
CAVI	**Cavuskoy**	**1.25**	**29**	*e*Pn	**Pn**	**20 46 15.1**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.26**	**355**	*e*PN	**Pn**	**20 46 15.2**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.26**	**355**	*e*Pn	**Pn**	**20 46 15.2**	**-0.2**
BALY	**Balya**	**1.27**	**300**	P	**Pn**	**20 46 15.5**	**0.0**
BALY	**Balya**	**1.27**	**300**	*i* P	**Pn**	**20 46 15.5**	**0.0**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*PN	**Pn**	**20 46 15.7**	**+0.2**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*Pn	**Pn**	**20 46 15.7**	**+0.2**
IZI	**Iznik**	**1.27**	**15**	*e*PN	**Pn**	**20 46 15.7**	**+0.1**
IZI	**Iznik**	**1.27**	**15**	*e*Pn	**Pn**	**20 46 15.7**	**+0.1**
GEMT	**Gemlik**	**1.33**	**5**	*e*PN	**Pn**	**20 46 16.3**	**0.0**
GEMT	**Gemlik**	**1.33**	**5**	*e*Pn	**Pn**	**20 46 16.3**	**0.0**
DENT	**Denizli**	**1.35**	**180**	*e*PN	**Pn**	**20 46 16.7**	**0.0**
DENT	**Denizli**	**1.35**	**180**	*e*Pn	**Pn**	**20 46 16.7**	**0.0**
DNZL	**Cakiroluk**	**1.42**	**180**	P	**Pg**	**20 46 19.2**	**+0.4**
DNZL	**Cakiroluk**	**1.42**	**180**	*i* P	**Pg**	**20 46 19.2**	**+0.4**
ADVT	**Abdulvahap**	**1.43**	**22**	*e*PN	**Pn**	**20 46 18.0**	**+0.3**
ADVT	**Abdulvahap**	**1.43**	**22**	*e*Pn	**Pn**	**20 46 18.0**	**+0.3**
ARMT	**Armutlu**	**1.46**	**355**	*e*PN	**Pn**	**20 46 18.7**	**+0.5**
ARMT	**Armutlu**	**1.46**	**355**	*e*Pn	**Pn**	**20 46 18.7**	**+0.5**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**218**	*e*PN	**Pn**	**20 46 18.6**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**218**	*e*Pn	**Pn**	**20 46 18.6**	**+0.2**
GPA	**Golpazari**	**1.53**	**39**	*e*PN	**Pn**	**20 46 19.7**	**+0.6**
GPA	**Golpazari**	**1.53**	**39**	*e*Pn	**Pn**	**20 46 19.7**	**+0.6**
EDC	**Edincik**	**1.53**	**324**	*e*PN	**Pb**	**20 46 20.0**	**-0.2**
EDC	**Edincik**	**1.53**	**324**	*e*Pn	**Pb**	**20 46 20.0**	**-0.2**
KNL	**Bal¨–kesir**	**1.65**	**315**	*i* P	**Pn**	**20 46 21.5**	**+0.8**
DKL	**Dikili**	**1.66**	**269**	*e*PN	**Pn**	**20 46 21.4**	**+0.5**
DKL	**Dikili**	**1.66**	**269**	*e*Pn	**Pn**	**20 46 21.4**	**+0.5**
AYDN	**Tasoluk**	**1.71**	**213**	P	**Pn**	**20 46 21.2**	**-0.4**
AYDN	**Tasoluk**	**1.71**	**213**	*i* P	**Pn**	**20 46 21.2**	**-0.4**
ISP	**Isparta**	**1.73**	**137**	*e*PN	**Pn**	**20 46 22.6**	**+0.6**
ISP	**Isparta**	**1.73**	**137**	*e*Pn	**Pn**	**20 46 22.6**	**+0.6**
GULT	**Gulveren**	**1.74**	**40**	*e*PN	**Pn**	**20 46 22.6**	**+0.6**
GULT	**Gulveren**	**1.74**	**40**	*e*Pn	**Pn**	**20 46 22.7**	**+0.6**
HRT	**Hereke**	**1.78**	**16**	*e*PN	**Pn**	**20 46 23.2**	**+0.6**
HRT	**Hereke**	**1.78**	**16**	*e*Pn	**Pn**	**20 46 23.2**	**+0.6**
SPNC	**Sapanca-Adapaz**	**1.85**	**31**	*e*PN	**Pn**	**20 46 24.5**	**+1.0**
SPNC	**Sapanca-Adapaz**	**1.85**	**31**	*e*Pn	**Pn**	**20 46 24.5**	**+1.0**
KRBG	**Karabiga-Canak**	**1.86**	**314**	*e*PN	**Pn**	**20 46 24.5**	**+0.9**
KRBG	**Karabiga-Canak**	**1.86**	**314**	*e*Pn	**Pn**	**20 46 24.5**	**+0.9**
MRMT	**Marmara Adasi**	**1.86**	**324**	*e*PN	**Pn**	**20 46 24.8**	**+1.1**
MRMT	**Marmara Adasi**	**1.86**	**324**	*e*Pn	**Pn**	**20 46 24.8**	**+1.1**
ISK	**Istanbul-Kandi**	**1.95**	**0**	*e*PN	**Pn**	**20 46 26.1**	**+1.2**
ISK	**Istanbul-Kandi**	**1.95**	**0**	*e*Pn	**Pn**	**20 46 26.1**	**+1.2**
SVRH	**Sivrihisar-ESK**	**1.96**	**79**	*e*PN	**Pn**	**20 46 25.8**	**+0.8**
SVRH	**Sivrihisar-ESK**	**1.96**	**79**	*e*Pn	**Pn**	**20 46 25.8**	**+0.8**
BGKT	**Bogazkoy**	**2.08**	**354**	*e*PN	**Pn**	**20 46 27.7**	**+1.1**
BGKT	**Bogazkoy**	**2.08**	**354**	*e*Pn	**Pn**	**20 46 27.7**	**+1.1**
SILT	**Sile**	**2.09**	**13**	*e*PN	**Pn**	**20 46 28.0**	**+1.2**
SILT	**Sile**	**2.09**	**13**	*e*Pn	**Pn**	**20 46 28.0**	**+1.2**
RKY	**Sarkoy-Tekirda**	**2.13**	**318**	*e*PN	**Pn**	**20 46 28.5**	**+1.1**
RKY	**Sarkoy-Tekirda**	**2.13**	**318**	*e*Pn	**Pn**	**20 46 28.5**	**+1.1**
KLYT	**Kilyos**	**2.14**	**0**	*e*PN	**Pn**	**20 46 28.5**	**+1.0**
KLYT	**Kilyos**	**2.14**	**0**	*e*Pn	**Pn**	**20 46 28.5**	**+1.0**
CTKS	**Kestanelik-??a**	**2.16**	**349**	*e*PN	**Pn**	**20 46 29.3**	**+1.5**
CTKS	**Kestanelik-??a**	**2.16**	**349**	*e*Pn	**Pn**	**20 46 29.3**	**+1.5**
KIZT	**Kizilcal**	**2.22**	**95**	*e*PN	**Pn**	**20 46 29.8**	**+1.1**
KIZT	**Kizilcal**	**2.22**	**95**	*e*Pn	**Pn**	**20 46 29.8**	**+1.1**
CTYL	**Yalikoy Yolu**	**2.43**	**347**	*e*PN	**Pn**	**20 46 32.2**	**+0.7**
CTYL	**Yalikoy Yolu**	**2.43**	**347**	*e*Pn	**Pn**	**20 46 32.2**	**+0.7**

*DJA **28** 20:47:44.2±0.7, 8°S±5°×10°7E±°, h19km±7km, M4.3/8, MLv4.3/8*
*ISCJB **28** 20:47:46.1±0.8, 7°.9S±0°.1×107°.44E±0°.07, h62km, mb3.5/6, Error ellipse: s-maj=18.4km s-min=5.9km az=30.0*
*IDC **28** 20:47:52.1±3.2, 7°.87S×107°.26E, h109km±22km, mb3.2/6, mb1 3.3/6, mb1mx3.1/40, mbtmp3.6/6, MS3.2/1, Ms1 3.2/1, ms1mx2.8/9, Error ellipse: s-maj=61.9km s-min=16.5km az=54.0*
ISC 28 20:47:47.7±0.9, 7°.8S±0°.2×107°.49E±0°.10, h62km, n26, σ1§29/19, mb3.6/6, Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CISI	**Cisompet, Garu**	**0.38**	**57**	P	**Pn**	**20 47 59.3**	**+0.5**
CNJI	**Cibinong**	**0.58**	**322**	P	**Pn**	**20 48 01.2**	**+0.5**
CNJI				S	**Sn**	**20 48 10.6**	**+0.4**
LEM	**Lembang**	**0.94**	**8**	P	Pn	20 48 14.5	+9.2
	372nm,0.3s,baz=12,slow=1.8,SNR=89						
LEM				S	Sn	20 48 31.4	+13
	178nm,0.3s,baz=197,slow=21,SNR=9.1						
LEM				LR	LR	20 48 49.6	
	comp=Z,769nm,20.0s,baz=154,slow=53						
LEM	**Lembang**	**0.94**	**8**	P	Pn	20 48 14.3	+9.0
CMJI	**Cimerak**	**0.95**	**91**	P	**Pn**	**20 48 04.8**	**-0.4**
SKJI	**Sukabumi**	**1.20**	**309**	P	**Pn**	**20 48 09.1**	**+0.6**
CGJI	**Cibinong**	**2.12**	**303**	P	**Pn**	**20 48 20.3**	**-0.6**
SBJI	**Serang**	**2.12**	**320**	P	Pn	20 48 24.1	+3.2
UGM	**Wanagama**	**3.01**	**93**	P	**Pn**	**20 48 32.0**	**-1.0**
PCJI	**Pacitan**	**3.67**	**97**	P	**Pn**	**20 48 41.3**	**-0.8**
KASI	**Kota Agung**	**3.72**	**307**	P	**Pn**	**20 48 43.5**	**+0.8**
NGJI	**Ngawi**	**3.96**	**84**	P	Pn	20 48 52.9	+7.0
PWJI	**Pagerwojo**	**4.28**	**94**	P	**Pn**	**20 48 50.7**	**+0.3**
JAGI	**Jajag, Banyuwa**	**6.63**	**96**	P	**Pn**	**20 49 24.7**	**+2.1**
SRBI	**Singaraja**	**7.65**	**93**	P	Pn	20 49 38.8	**+2.2**
KAPI	**Kappang**	**12.49**	**78**	LR	LR	20 56 24.4	
	comp=Z,92nm,18.7s,baz=312,slow=40						
WRA	**Warramunga Arr**	**28.68**	**118**	P	**P**	**20 53 40.2**	**+1.1**
	0.6nm,1.1s,baz=288,slow=11,SNR=3.6						
ASAR	**Alice Springs**	**29.85**	**125**	P	**P**	**20 53 52.5**	**+3.0**
	0.3nm,0.9s,baz=301,slow=8.6,SNR=2.7						
H08S2	**Diego Garcia H**	**34.68**	**268**	T	T	21 31 35.6	
	baz=92						
H08S3	**Diego Garcia H**	**34.69**	**268**	T	T	21 31 35.7	
	baz=92						
H08S1	**Diego Carcia H**	**34.70**	**268**	T	T	21 31 33.1	
	baz=92						
STKA	**Stephens Creek**	**39.77**	**132**	P	**P**	**20 55 13.5**	**-1.2**
	0.8nm,0.4s,baz=315,slow=9.6,SNR=7.8						
SONM	**Songino Array**	**55.37**	**359**	P	**P**	**20 57 15.0**	**-0.5**
	0.2nm,0.4s,baz=180,slow=7.2,SNR=2.7						
MKAR	**Makanchi Array**	**58.77**	**340**	P	**P**	**20 57 39.1**	**-0.4**
	0.3nm,0.4s,baz=158,slow=8.3,SNR=4.6						
BRTR	**Keskin Array B**	**82.70**	**312**	P	**P**	**21 00 03.8**	**-1.4**
	0.5nm,0.7s,baz=106,slow=3.1,SNR=4.5						
TXAR	**Lajitas Array**	**143.70**	**50**	PKP	**PKPdf**	**21 07 16.3**	**-0.3**
	0.2nm,0.6s,baz=227,slow=1.7,SNR=3.8						

GUC 28 20:56:35.7±0.6, 20°.83S×69°.20W, h103km±4km, ML3.6, Northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB01	**IPOC Station P**	**0.34**	**232**	*i* P	Pn	20 56 51.4	+0.4
PB01				*i* S	Sn	20 57 03.1	+0.6
PB01				IAML		20 57 04.0	
	comp=E,7μm,0.3s						
PB08	**IPOC Station P**	**0.69**	**4**	*i* P	Pn	20 56 54.4	+0.6
PB08				*i* S	Sn	20 57 08.4	+1.1
PB08				IAML		20 57 09.2	
	comp=E,2μm,0.5s						
PB09	**IPOC Station P**	**0.96**	**182**	*i* P	Pn	20 56 57.0	+0.8
PB09				*i* S	Sn	20 57 12.2	+0.6
PB09				IAML		20 57 15.7	
	comp=E,2μm,0.3s						
PB07	**IPOC Station P**	**1.10**	**216**	*i* P	Pn	20 56 57.9	+0.2
PB07				*i* S	Sn	20 57 14.1	-0.1
PB11	**IPOC Station P**	**1.15**	**338**	*i* P	Pn	20 56 58.5	+0.3
PB11				*i* S	Sn	20 57 16.1	+1.1

*ISCJB **28** 21:03:38.8±0.4, 39°.08N±0°.03×29°.00E±0°.03, h9km, Error ellipse: s-maj=4.7km s-min=3.6km az=175.1*
*ISK **28** 21:03:38.2, 39°.09N×29°.01E, h4km, MD2.9*
*DDA **28** 21:03:38.7, 39°.10N×29°.03E, h7km, Md3.0*
*CSEM **28** 21:03:38.8±0.1, 39°.09N×29°.01E, h5km, MD3.0, Error ellipse: s-maj=1.6km s-min=1.5km az=149.0*
ISC 28 21:03:38.9±0.9, 39°.09N±0°.03×29°.00E±0°.02, h9km, n56, σ0§50/62, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.23**	**258**	P	**Pg**	**21 03 43.5**	**0.0**
DEMI				S	**Sg**	**21 03 46.4**	**-0.2**
DEMI	**Demirci**	**0.23**	**258**	*i* P	**Pg**	**21 03 43.5**	**0.0**
DEMI				*i* S	**Sg**	**21 03 46.4**	**-0.2**
GDZ	**Gediz**	**0.38**	**90**	P	**Pg**	**21 03 46.0**	**-0.3**
GDZ				S	**Sg**	**21 03 51.2**	**0.0**
GDZ	**Gediz**	**0.38**	**90**	*i* P	**Pg**	**21 03 46.0**	**-0.3**
GDZ				*i* S	**Sg**	**21 03 51.2**	**0.0**
TVSB	**Tavsanli**	**0.51**	**45**	*e*PG	**Pg**	**21 03 48.4**	**-0.3**
TVSB	**Tavsanli**	**0.51**	**45**	*e*Pg	**Pg**	**21 03 48.4**	**-0.3**
KULA	**Kula-Manisa**	**0.63**	**205**	*e*PG	**Pg**	**21 03 51.0**	**-0.1**
KULA	**Kula-Manisa**	**0.63**	**205**	*e*Pg	**Pg**	**21 03 51.0**	**-0.1**
KHAL	**Karahalli**	**0.82**	**152**	P	**Pg**	**21 03 54.6**	**0.0**
KHAL	**Karahalli**	**0.82**	**152**	*i* P	**Pg**	**21 03 54.6**	**0.0**
KHL	**Karahalli**	**0.87**	**152**	*e*PG	**Pg**	**21 03 55.9**	**+0.3**
KHL	**Karahalli**	**0.87**	**152**	*e*Pg	**Pg**	**21 03 55.9**	**+0.3**
AKHS	**Akhisar**	**0.95**	**257**	P	**Pg**	**21 03 57.4**	**+0.3**
AKHS	**Akhisar**	**0.95**	**257**	*i* P	**Pg**	**21 03 57.4**	**+0.3**
AKS	**Akhisar**	**0.95**	**257**	*e*PG	**Pg**	**21 03 57.1**	**0.0**
AKS	**Akhisar**	**0.95**	**257**	*e*Pg	**Pg**	**21 03 57.1**	**0.0**
ORLT	**Orhaneli**	**0.96**	**355**	*e*PG	**Pg**	**21 03 57.2**	**-0.1**
ORLT	**Orhaneli**	**0.96**	**355**	*e*Pg	**Pg**	**21 03 57.2**	**-0.1**
BALB	**Balikesir**	**1.03**	**303**	*e*PG	**Pg**	**21 03 58.7**	**+0.1**
BALB				*e*SG	**Sn**	**21 04 13.5**	**-0.4**
BALB	**Balikesir**	**1.03**	**303**	*e*Pg	**Pg**	**21 03 58.7**	**+0.1**
BALB				*e*Sg	**Sn**	**21 04 13.5**	**-0.4**
IGD	**Bursa**	**1.18**	**8**	*i* P	**Pb**	**21 03 59.1**	**-2.4**
BALY	**Balya**	**1.25**	**302**	P	**Pn**	**21 04 02.6**	**0.0**
BALY	**Balya**	**1.25**	**302**	*i* P	**Pn**	**21 04 02.6**	**0.0**
KCTX	**Karacabey (Bur**	**1.27**	**337**	*e*PN	**Pb**	**21 04 03.2**	**+0.2**
KCTX	**Karacabey (Bur**	**1.27**	**337**	*e*Pn	**Pb**	**21 04 03.2**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.28**	**356**	*e*PN	**Pn**	**21 04 03.1**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.28**	**356**	*e*Pn	**Pn**	**21 04 03.1**	**+0.2**
CAVI	**Cavuskoy**	**1.29**	**30**	*e*PN	**Pg**	**21 04 03.6**	**0.0**
CAVI	**Cavuskoy**	**1.29**	**30**	*e*Pn	**Pg**	**21 04 03.6**	**0.0**
IZI	**Iznik**	**1.30**	**16**	*e*PN	**Pb**	**21 04 03.6**	**+0.1**
IZI	**Iznik**	**1.30**	**16**	*e*Pn	**Pb**	**21 04 03.6**	**+0.1**
GEMT	**Gemlik**	**1.35**	**6**	*e*PN	**Pb**	**21 04 04.5**	**+0.2**
GEMT	**Gemlik**	**1.35**	**6**	*e*Pn	**Pb**	**21 04 04.5**	**+0.2**
BORA	**Eskisehir**	**1.37**	**55**	P	Pn	21 04 04.2	-0.1
BORA	**Eskisehir**	**1.37**	**55**	*i* P	Pn	21 04 04.2	-0.1
GONE	**Gonen-Balikesi**	**1.39**	**314**	*e*PN	**Pb**	**21 04 05.2**	**+0.1**
GONE	**Gonen-Balikesi**	**1.39**	**314**	*e*Pn	**Pb**	**21 04 05.2**	**+0.1**
ADVT	**Abdulvahap**	**1.46**	**23**	*e*PN	**Pb**	**21 04 06.0**	**-0.1**
ADVT	**Abdulvahap**	**1.46**	**23**	*e*Pn	**Pb**	**21 04 06.0**	**-0.1**
ARMT	**Armutlu**	**1.48**	**356**	*e*PN	**Pn**	**21 04 06.2**	**+0.5**
ARMT	**Armutlu**	**1.48**	**356**	*e*Pn	**Pn**	**21 04 06.2**	**+0.5**
EDC	**Edincik**	**1.53**	**325**	*e*PN	**Pb**	**21 04 07.1**	**-0.3**
EDC	**Edincik**	**1.53**	**325**	*e*Pn	**Pb**	**21 04 07.1**	**-0.3**
KNL	**Bal¨–kesir**	**1.64**	**316**	*i* P	**Pb**	**21 04 08.7**	**-0.5**
AYDN	**Tasoluk**	**1.68**	**212**	P	Pn	21 04 08.4	0.0
AYDN	**Tasoluk**	**1.68**	**212**	*i* P	Pn	21 04 08.4	0.0
GULT	**Gulveren**	**1.78**	**41**	*e*PN	Pn	21 04 10.3	+0.5
GULT	**Gulveren**	**1.78**	**41**	*e*Pn	Pn	21 04 10.3	+0.5
HRT	**Hereke**	**1.80**	**16**	*e*PN	Pn	21 04 10.7	+0.5
HRT	**Hereke**	**1.80**	**16**	*e*Pn	Pn	21 04 10.7	+0.5
SPNC	**Sapanca-Adapaz**	**1.88**	**32**	*e*PN	Pn	21 04 12.0	+0.8
SPNC	**Sapanca-Adapaz**	**1.88**	**32**	*e*Pn	Pn	21 04 12.0	+0.8
ISK	**Istanbul-Kandi**	**1.97**	**1**	*e*PN	**Pn**	**21 04 13.5**	**+1.1**
ISK	**Istanbul-Kandi**	**1.97**	**1**	*e*Pn	**Pn**	**21 04 13.5**	**+1.1**
SVRH	**Sivrihisar-ESK**	**1.99**	**79**	*e*PN	**Pn**	**21 04 13.9**	**+1.1**
SVRH	**Sivrihisar-ESK**	**1.99**	**79**	*e*Pn	**Pn**	**21 04 13.9**	**+1.1**

*ISCJB **28** 21:04:00.4±0.8, 37°.31N±0°.03×141°.50E±0°.08, h50km±6km, mb3.7/15, Error ellipse: s-maj=10.2km s-min=5.3km az=11.1*
*NIED **28** 21:04:00, 37°.30N×141°.40E, h44km, Mw3.9 Best double couple: M0:7.80000×10^14 NP1:φ0=177.00000°, δ20.00000°, λ64.00000°. NP2:φ0=25.00000°, δ72.00000°, λ99.00000°.*
*JMA **28** 21:04:02.2±0.1, 37°.34N×141°.37E, h48km±1km, M3.9*
JMA Felt II J1.
*IDC **28** 21:04:03.3±2.1, 37°.28N×141°.50E, h63km±19km, mb3.5/15, mb1 3.7/18, mb1mx3.5/34, mbtmp3.8/18, Error ellipse: s-maj=16.3km s-min=12.8km az=82.0*
ISC 28 21:04:01.4±1.4, 37°.32N±0°.04×141°.52E±0°.08, h43km±12km, n37, σ1§49/43, mb3.8/15, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.52**	**275**	P	**Pn**	**21 04 12.1**	**-0.5**
JFK				S	**Sn**	**21 04 18.7**	**-1.8**
ONAJ	**Iwakimizuishiy**	**0.62**	**249**	P	**Pn**	**21 04 13.5**	**-0.4**
ONAJ				S	**Sn**	**21 04 21.4**	**-1.4**
JMM	**Marumori**	**0.80**	**313**	P	**Pn**	**21 04 15.7**	**-0.5**
JMM				S	**Sn**	**21 04 25.4**	**-1.6**
JFT	**Otama**	**0.97**	**282**	P	**Pn**	**21 04 18.5**	**-0.1**
JFT				S	**Sn**	**21 04 29.8**	**-1.3**
JHO	**Hitachi**	**1.04**	**227**	P	**Pn**

AKS	**Akhisar**	**1.01**	**259**	*e*Pg	**Pb**	**21 15 04.8**	**+0.3**
BALB	**Balikesir**	**1.08**	**301**	*e*PG	**Pb**	**21 15 06.2**	**+0.5**
BALB				*e*SG	**Sn**	**21 15 21.1**	**-0.3**
BALB	**Balikesir**	**1.08**	**301**	*e*Pg	**Pb**	**21 15 06.2**	**+0.5**
BALB				*e*Sg	**Sn**	**21 15 21.1**	**-0.3**
IGD	**Bursa**	**1.18**	**4**	*i* P	**Pb**	**21 15 05.6**	**-1.8**
IGD				*i* S	**Sb**	**21 15 17.5**	**-5.3**
CAVI	**Cavuskoy**	**1.26**	**28**	*e*PN	**Pg**	**21 15 09.8**	**+0.9**
CAVI	**Cavuskoy**	**1.26**	**28**	*e*Pn	**Pg**	**21 15 09.8**	**+0.9**
IZI	**Iznik**	**1.28**	**13**	*e*PN	**Pg**	**21 15 10.6**	**+1.2**
IZI	**Iznik**	**1.28**	**13**	*e*Pn	**Pg**	**21 15 10.6**	**+1.2**
MDNY	**Mudanya-Bursa**	**1.29**	**353**	*e*PN	**Pb**	**21 15 10.0**	**+0.7**
MDNY	**Mudanya-Bursa**	**1.29**	**353**	*e*Pn	**Pb**	**21 15 10.0**	**+0.7**
KCTX	**Karacabey (Bur**	**1.30**	**335**	*e*PN	**Pb**	**21 15 10.2**	**+0.7**
KCTX	**Karacabey (Bur**	**1.30**	**335**	*e*Pn	**Pb**	**21 15 10.2**	**+0.7**
BALY	**Balya**	**1.31**	**300**	P	**Pn**	**21 15 09.2**	**-0.1**
BALY	**Balya**	**1.31**	**300**	*i* P	**Pn**	**21 15 09.2**	**-0.1**
BALY				*i* S	**Sb**	**21 15 21.7**	**-4.8**
BORA	**Eskisehir**	**1.33**	**53**	P	**Pn**	**21 15 09.7**	**+0.1**
BORA	**Eskisehir**	**1.33**	**53**	*i* P	**Pn**	**21 15 09.7**	**+0.1**
GEMT	**Gemlik**	**1.35**	**4**	*e*PN	**Pg**	**21 15 11.5**	**+0.9**
GEMT	**Gemlik**	**1.35**	**4**	*e*Pn	**Pg**	**21 15 11.5**	**+0.9**
ADVT	**Abdulvahap**	**1.44**	**20**	*e*PN	**Pb**	**21 15 12.5**	**+0.7**
ADVT	**Abdulvahap**	**1.44**	**20**	*e*Pn	**Pb**	**21 15 12.5**	**+0.7**
GONE	**Gonen-Balikesi**	**1.44**	**312**	*e*PN	**Pb**	**21 15 12.5**	**+0.7**
GONE	**Gonen-Balikesi**	**1.44**	**312**	*e*Pn	**Pb**	**21 15 12.5**	**+0.7**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**220**	*e*PN	**Pb**	**21 15 13.0**	**+0.6**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**220**	*e*Pn	**Pb**	**21 15 13.0**	**+0.6**
ARMT	**Armutlu**	**1.49**	**354**	*e*PN	**Pb**	**21 15 13.0**	**+0.4**
ARMT	**Armutlu**	**1.49**	**354**	*e*Pn	**Pb**	**21 15 13.0**	**+0.4**
EDC	**Edincik**	**1.57**	**324**	*e*PN	**Pb**	**21 15 14.3**	**+0.2**
EDC	**Edincik**	**1.57**	**324**	*e*Pn	**Pb**	**21 15 14.3**	**+0.2**
DKL	**Dikili**	**1.69**	**270**	*e*PN	**Pb**	**21 15 16.0**	**-0.1**
DKL	**Dikili**	**1.69**	**270**	*e*Pn	**Pb**	**21 15 16.0**	**-0.1**
AYDN	**Tasoluk**	**1.71**	**214**	P	**Pn**	**21 15 14.2**	**-0.6**
AYDN	**Tasoluk**	**1.71**	**214**	*i* P	**Pn**	**21 15 14.2**	**-0.6**
GULT	**Gulveren**	**1.74**	**39**	*e*PN	**Pb**	**21 15 16.8**	**-0.2**
GULT	**Gulveren**	**1.74**	**39**	*e*Pn	**Pb**	**21 15 16.8**	**-0.2**
HRT	**Hereke**	**1.79**	**14**	*e*PN	**Pb**	**21 15 17.6**	**-0.3**
HRT	**Hereke**	**1.79**	**14**	*e*Pn	**Pb**	**21 15 17.6**	**-0.3**
MRMT	**Marmara Adasi**	**1.90**	**323**	*e*PN	**Pb**	**21 15 19.3**	**-0.3**
MRMT	**Marmara Adasi**	**1.90**	**323**	*e*Pn	**Pb**	**21 15 19.3**	**-0.3**
SVRH	**Sivrihisar-ESK**	**1.93**	**78**	*e*PN	**Pb**	**21 15 19.9**	**-0.3**
SVRH	**Sivrihisar-ESK**	**1.93**	**78**	*e*Pn	**Pb**	**21 15 19.9**	**-0.3**
ISK	**Istanbul-Kandi**	**1.98**	**360**	*e*PN	**Pb**	**21 15 20.4**	**-0.5**
ISK	**Istanbul-Kandi**	**1.98**	**360**	*e*Pn	**Pb**	**21 15 20.4**	**-0.5**
BGKT	**Bogazkoy**	**2.11**	**354**	*e*PN	**Pb**	**21 15 22.7**	**-0.4**
BGKT	**Bogazkoy**	**2.11**	**354**	*e*Pn	**Pb**	**21 15 22.7**	**-0.4**
KLYT	**Kilyos**	**2.16**	**359**	*e*PN	**Pn**	**21 15 23.1**	**+2.0**
KLYT	**Kilyos**	**2.16**	**359**	*e*Pn	**Pn**	**21 15 23.1**	**+2.0**
RKY	**Sarkoy-Tekirda**	**2.17**	**318**	*e*PN	**Pn**	**21 15 23.1**	**+1.9**
RKY	**Sarkoy-Tekirda**	**2.17**	**318**	*e*Pn	**Pn**	**21 15 23.1**	**+1.9**
CTKS	**Kestanelik-??a**	**2.19**	**349**	*e*PN	**Pb**	**21 15 23.6**	**-1.0**
CTKS	**Kestanelik-??a**	**2.19**	**349**	*e*Pn	**Pb**	**21 15 23.6**	**-1.0**
GELI	**Tayfur-Gelibol**	**2.40**	**304**	*e*PN	**Pn**	**21 15 26.4**	**+2.1**
GELI	**Tayfur-Gelibol**	**2.40**	**304**	*e*Pn	**Pn**	**21 15 26.4**	**+2.1**
ERIK	**Erikli-Kesan**	**2.53**	**310**	*e*PN	**Pn**	**21 15 27.9**	**+1.8**
ERIK	**Erikli-Kesan**	**2.53**	**310**	*e*Pn	**Pn**	**21 15 27.9**	**+1.8**

WEL 28 21:32:20.0±0.3, 37°64′×176°05′E, h259km±3km, ML3.5/9, Error ellipse: s-maj=7.4km s-min=5.1km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**1.04**	**127**	PN	Pn	21 32 56.6	+0.5
URZ				SN	S	21 33 24.2	-0.4
MWZ	**Matawai**	**1.35**	**121**	PN	Pn	21 32 58.5	+0.4
HAZ	**Te Kaha**	**1.38**	**95**	PN	Pn	21 32 58.0	-0.2
HAZ				SN	S	21 33 28.0	-0.3
BKZ	**Black Stump Fm**	**1.56**	**167**	PN	Pn	21 32 59.5	-0.1
BKZ				SN	S	21 33 30.1	-0.8
TUVZ	**Tukino**	**1.65**	**191**	PN	Pn	21 33 00.8	+0.4
RIGZ	**Rimuhau**	**1.71**	**129**	PN	Pn	21 33 00.9	+0.1
WNVZ	**Wahianoa**	**1.72**	**192**	PN	Pn	21 33 01.0	0.0
ARHZ	**Aropaoanui**	**1.78**	**156**	PN	Pn	21 33 01.3	+0.1
ARHZ				SN	S	21 33 33.8	-0.2
BHHZ	**Black Hill Sta**	**1.84**	**180**	PN	Pn	21 33 01.6	-0.3
KRHZ	**Kereru**	**2.01**	**173**	PN	Pn	21 33 02.8	-0.4
KAHZ	**Kahuranaki**	**2.24**	**164**	PN	Pn	21 33 04.9	-0.5
WAZ	**Wanganui**	**2.27**	**201**	PN	Pn	21 33 05.3	-0.3
PNHZ	**Pukenui**	**2.27**	**177**	PN	Pn	21 33 04.7	-0.9
TSZ	**Takapari Road**	**2.42**	**182**	PN	Pn	21 33 05.8	-1.2
PXZ	**Pawanui**	**2.47**	**165**	PN	Pn	21 33 06.5	-0.9
ANWZ	**Angora Road**	**2.83**	**173**	PN	Pn	21 33 09.8	-1.3
MRZ	**Mangatainoka R**	**3.04**	**187**	PN	Pn	21 33 11.2	-2.1
OGWZ	**Otaki Gorge**	**3.25**	**192**	PN	Pn	21 33 13.5	-2.1
HOWZ	**Holdsworth Sta**	**3.28**	**187**	PN	Pn	21 33 13.4	-2.5
KIW	**Kapiti Island**	**3.34**	**195**	PN	Pn	21 33 14.3	-2.3
CAW	**Cannon Point**	**3.54**	**192**	PN	Pn	21 33 16.3	-2.5
TCW	**Tory Channel**	**3.82**	**201**	PN	Pn	21 33 19.7	-2.3
PLWZ	**Palliser**	**3.97**	**189**	PN	Pn	21 33 20.5	-3.3
TUWZ	**Tuamarina**	**4.12**	**203**	PN	Pn	21 33 22.9	-2.6
NNZ	**Nelson**	**4.13**	**209**	PN	Pn	21 33 22.5	-3.1
INZ	**Inchbonnie**	**6.18**	**213**	PN	Pn	21 33 46.2	-4.2

*ISK **28** 21:33:25.6, 39°12N×29°08E, h10km, MD2.6*
*ISCJB **28** 21:33:26.2±0.6, 39°13N±0°04×29°02E±0°04, h5km±7km, Error ellipse: s-maj=6.6km s-min=4.7km az=156.1*
*CSEM **28** 21:33:26.2±0.1, 39°12N×29°04E, h8km, MD2.6, Error ellipse: s-maj=3.3km s-min=2.4km az=152.0*
*DDA **28** 21:33:26.1, 39°08N×29°03E, h7km, Md2.6*
ISC 28 21:33:26.3±1.0, 39°14N±0°03×29°03E±0°03, h10km±11km, n21, σ0°26/30, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**249**	P	**Pg**	**21 33 31.6**	**+0.1**
DEMI				S	**Sg**	**21 33 35.0**	**-0.1**
DEMI	**Demirci**	**0.26**	**249**	*i* P	**Pg**	**21 33 31.6**	**+0.1**
DEMI				*i* S	**Sg**	**21 33 35.0**	**-0.1**
GDZ	**Gediz**	**0.36**	**97**	P	**Pg**	**21 33 33.5**	**+0.1**
GDZ				S	**Sg**	**21 33 38.6**	**+0.4**
GDZ	**Gediz**	**0.36**	**97**	*i* P	**Pg**	**21 33 33.5**	**+0.1**
GDZ				*i* S	**Sg**	**21 33 38.6**	**+0.4**
TVSB	**Tavsanli**	**0.46**	**47**	*e*PG	**Pg**	**21 33 35.1**	**-0.2**
TVSB				*e*SG	**Sg**	**21 33 41.1**	**-0.4**
TVSB	**Tavsanli**	**0.46**	**47**	*e*Pg	**Pg**	**21 33 35.1**	**-0.2**
TVSB				*e*Sg	**Sg**	**21 33 41.1**	**-0.4**
KULA	**Kula-Manisa**	**0.68**	**205**	*e*PG	**Pg**	**21 33 39.4**	**-0.1**
KULA	**Kula-Manisa**	**0.68**	**205**	*e*Pg	**Pg**	**21 33 39.4**	**-0.1**
KHAL	**Karahalli**	**0.85**	**154**	*i* P	**Pn**	**21 33 44.5**	**+0.1**
KHAL				*i* S	**Sg**	**21 33 52.9**	**-0.7**
AKS	**Akhisar**	**0.98**	**255**	*e*PG	**Pb**	**21 33 45.4**	**+0.1**
AKS	**Akhisar**	**0.98**	**255**	*e*Pg	**Pb**	**21 33 45.4**	**+0.1**
BALB	**Balikesir**	**1.02**	**300**	*e*PG	**Pn**	**21 33 46.7**	**0.0**
BALB	**Balikesir**	**1.02**	**300**	*e*Pg	**Pn**	**21 33 46.7**	**0.0**
KCTX	**Karacabey (Bur**	**1.24**	**336**	*e*PN	**Pg**	**21 33 50.1**	**0.0**
KCTX	**Karacabey (Bur**	**1.24**	**336**	*e*Pn	**Pg**	**21 33 50.2**	**0.0**
IZI	**Iznik**	**1.25**	**16**	*e*PN	**Pn**	**21 33 49.6**	**-0.2**
IZI	**Iznik**	**1.25**	**16**	*e*Pn	**Pn**	**21 33 49.7**	**-0.2**
BORA	**Eskisehir**	**1.33**	**56**	P	**Pg**	**21 33 51.8**	**-0.1**
BORA				S	**Sg**	**21 34 09.5**	**+0.3**
BORA	**Eskisehir**	**1.33**	**56**	*i* P	**Pg**	**21 33 51.8**	**-0.1**
BORA				*i* S	**Sg**	**21 34 09.5**	**+0.3**
ARMT	**Armutlu**	**1.44**	**355**	*e*PN	**Pn**	**21 33 52.6**	**+0.3**
ARMT	**Armutlu**	**1.44**	**355**	*e*Pn	**Pn**	**21 33 52.7**	**+0.3**

NNC 28 21:34:38.6±3.1, 37°61N×71°51E, h0km, mb3.6, mpv3.2, 6C-1D, Error ellipse: s-maj=24.1km s-min=11.5km az=151.0, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**2.43**	**300**	⇑Pg	Pb	21 35 22.7	-0.6
	13nm,0.3s						
DZET				⇑Lg	Lg	21 35 57.2	
	51nm,0.5s						
MNAS	**Manas**	**4.93**	**9**	⇓Pn	Pn	21 35 54.3	+0.2
	0.8nm,0.5s						
MNAS				⇑Sn	Sn	21 36 53.6	+1.6
	4.3nm,0.7s						
MNAS				⇑Lg	Lg	21 37 19.8	
	6.3nm,0.9s						
KK31	**Karatay Array**	**5.54**	**352**	Pn	Pn	21 36 02.8	+0.4
	0.8nm,0.3s,baz=178,slow=13,SNR=34						
KK31				⇑Sn	Sn	21 37 06.7	-0.2
	1.3nm,0.5s,baz=166,slow=22,SNR=3.6						
KK31				⇑Lg	Lg	21 37 32.8	
	2.5nm,0.5s,baz=162,slow=29,SNR=4.2						

*ISK **28** 21:42:27.3, 39°07N×29°22E, h5km, MD2.7*
*DDA **28** 21:42:27.9, 39°08N×29°13E, h7km, Md2.8*
*ISCJB **28** 21:42:28.1±0.5, 39°09N±0°04×29°14E±0°04, h9km, Error ellipse: s-maj=5.4km s-min=4.5km az=151.8*
*CSEM **28** 21:42:28.1±0.1, 39°10N×29°14E, h5km, MD2.8, Error ellipse: s-maj=2.3km s-min=1.8km az=113.0*
ISC 28 21:42:28.4±0.9, 39°11N±0°03×29°13E±0°03, h9km, n22, σ0°41/30, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.27**	**93**	P	**Pg**	**21 42 33.8**	**-0.1**
GDZ				S	**Sg**	**21 42 38.0**	**+0.4**
GDZ	**Gediz**	**0.27**	**93**	*i* P	**Pg**	**21 42 33.8**	**-0.1**
GDZ				*i* S	**Sg**	**21 42 38.0**	**+0.4**
DEMI	**Demirci**	**0.33**	**259**	P	**Pg**	**21 42 34.8**	**-0.2**
DEMI				S	**Sg**	**21 42 39.3**	**-0.1**
DEMI	**Demirci**	**0.33**	**259**	*i* P	**Pg**	**21 42 34.8**	**-0.2**
DEMI				*i* S	**Sg**	**21 42 39.3**	**-0.1**
TVSB	**Tavsanli**	**0.43**	**36**	*e*PG	**Pg**	**21 42 36.2**	**-0.7**
TVSB				*e*SG	**Sg**	**21 42 42.1**	**-0.4**
TVSB	**Tavsanli**	**0.43**	**36**	*e*Pg	**Pg**	**21 42 36.2**	**-0.7**
TVSB				*e*Sg	**Sg**	**21 42 42.1**	**-0.4**
KULA	**Kula-Manisa**	**0.70**	**212**	*e*PG	**Pg**	**21 42 41.3**	**-0.6**
KULA	**Kula-Manisa**	**0.70**	**212**	*e*Pg	**Pg**	**21 42 41.3**	**-0.6**
KHAL	**Karahalli**	**0.79**	**159**	P	**Pg**	**21 42 43.6**	**0.0**
KHAL				S	**Sg**	**21 42 53.1**	**-0.7**
KHAL	**Karahalli**	**0.79**	**159**	*i* P	**Pg**	**21 42 43.6**	**0.0**
KHAL				*i* S	**Sg**	**21 42 53.1**	**-0.7**
BALB	**Balikesir**	**1.11**	**299**	*e*PN	**Pn**	**21 42 50.4**	**+0.3**
BALB	**Balikesir**	**1.11**	**299**	*e*Pn	**Pn**	**21 42 50.4**	**+0.3**
IZI	**Iznik**	**1.26**	**12**	*e*PN	**Pn**	**21 42 52.3**	**0.0**
IZI	**Iznik**	**1.26**	**12**	*e*Pn	**Pn**	**21 42 52.3**	**0.0**
KCTX	**Karacabey (Bur**	**1.30**	**333**	*e*PN	**Pb**	**21 42 53.6**	**+0.5**
KCTX	**Karacabey (Bur**	**1.30**	**333**	*e*Pn	**Pb**	**21 42 53.6**	**+0.5**
ADVT	**Abdulvahap**	**1.41**	**19**	*e*PN	**Pn**	**21 42 54.4**	**+0.2**
ADVT	**Abdulvahap**	**1.41**	**19**	*e*Pn	**Pn**	**21 42 54.4**	**+0.2**
ARMT	**Armutlu**	**1.47**	**352**	*e*PN	**Pn**	**21 42 55.7**	**+0.5**
ARMT	**Armutlu**	**1.47**	**352**	*e*Pn	**Pn**	**21 42 55.7**	**+0.5**
GULT	**Gulveren**	**1.70**	**38**	*e*PN	**Pn**	**21 42 58.3**	**-0.1**
GULT	**Gulveren**	**1.70**	**38**	*e*Pn	**Pn**	**21 42 58.3**	**-0.1**

*ISCJB **28** 21:45:22.9±0.2, 36°81N±0°04×33°23W±0°02, h10km, mb4.8/196, MS4.1/47, Error ellipse: s-maj=5.8km s-min=1.8km az=173.4*
*PDA **28** 21:45:23.7±0.7, 36°64N×33°40W, h5km, mb4.8, ML3.8, Error ellipse: s-maj=6.4km s-min=3.4km az=88.0*
*CSEM **28** 21:45:23.8±0.1, 36°83N×33°18W, h2km, mb4.9/99, Error ellipse: s-maj=7.0km s-min=2.4km az=176.0*
*IDC **28** 21:45:23.1±0.5, 36°79N×33°18W, h0km, mb4.3/27, mb1 4.5/27, mb1mx4.4/44, mbtmp4.3/27, MS4.0/31, Ms1 4.0/31, ms1mx3.9/44, Error ellipse: s-maj=14.9km s-min=11.4km az=174.0*
*NEIC **28** 21:45:25.0±0.2, 36°78N×33°19W, h10km, mb4.9/140, Error ellipse: s-maj=5.4km s-min=2.2km az=176.0*
*MOS **28** 21:45:26.7±1.1, 36°81N×33°20W, h33km, mb5.0/67, MS4.3/12, Error ellipse: s-maj=7.6km s-min=4.9km az=135.2*
ISC 28 21:45:25.1±0.3, 36°83N±0°06×33°14W±0°04, h10km, n888, σ1§10/856, mb4.8/196, MS4.1/47, 26C-10D, Azores Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H07S1	**FLORES T-PHASE**	**2.96**	**30**	Pn	**Pn**	**21 46 10.1**	**-2.1**
	SNR=1442						
H07S1				T	T	21 49 18.1	
	SNR=16						
H07S1	**FLORES T-PHASE**	**2.96**	**30**	*e*P	**Pn**	**21 46 10.3**	**-1.9**
H07S1				*e*S	**Sn**	**21 46 45.8**	**-2.0**
H07N1	**FLORES T-PHASE**	**3.27**	**28**	Pn	**Pn**	**21 46 14.4**	**-1.9**
	SNR=723						
H07N1	**FLORES T-PHASE**	**3.27**	**28**	*e*P	**Pn**	**21 46 14.9**	**-1.4**
H07N1				*e*S	**Sn**	**21 46 53.4**	**-1.9**
CALA	**Caldeira**	**3.92**	**62**	*e*P	**Pn**	**21 46 26.8**	**+1.3**
CALA	**Caldeira**	**3.92**	**62**	*e*P	**Pn**	**21 46 26.8**	**+1.3**
PCED	**Cedros**	**3.94**	**62**	*e*P	**Pn**	**21 46 24.0**	**-1.7**
PCED	**Cedros**	**3.94**	**62**	*e*P	**Pn**	**21 46 24.0**	**-1.7**
HOR	**Horta**	**3.95**	**63**	*e*P	**Pn**	**21 46 24.6**	**-1.2**
HOR	**Horta**	**3.95**	**63**	*e*P	**Pn**	**21 46 24.6**	**-1.2**
PCAN	**Candelaria**	**4.03**	**65**	*e*P	**Pn**	**21 46 25.2**	**-1.7**
PCAN				*e*S	**Sn**	**21 47 11.9**	**-2.3**
PCAN	**Candelaria**	**4.03**	**65**	*e*P	**Pn**	**21 46 25.2**	**-1.7**
PCAN				*e*S	**Sn**	**21 47 11.9**	**-2.3**
PCAN				A	A	21 47 15.5	
	26nm,0.4s						
PICO	**Pico**	**4.09**	**65**	*e*P	**Pn**	**21 46 26.4**	**-1.3**
PICO	**Pico**	**4.09**	**65**	*e*P	**Pn**	**21 46 26.4**	**-1.3**
ROSA	**Rosais**	**4.31**	**63**	*e*P	**Pn**	**21 46 29.8**	**-0.9**
ROSA				*e*S	**Sn**	**21 47 18.4**	**-2.6**
ROSA	**Rosais**	**4.31**	**63**	*e*P	**Pn**	**21 46 29.8**	**-0.9**
ROSA				*e*S	**Sn**	**21 47 18.4**	**-2.6**
ROSA				A	A	21 47 20.1	
	21nm,0.5s						
ROSA	**Rosais**	**4.31**	**63**	*e*Pn	**Pn**	**21 46 29.7**	**-0.9**
PMAN	**Manadas**	**4.38**	**64**	*e*P	**Pn**	**21 46 30.2**	**-1.5**
PMAN	**Manadas**	**4.38**	**64**	*e*P	**Pn**	**21 46 30.2**	**-1.5**
PGRA	**Graciosa**	**4.63**	**60**	*e*P	**Pn**	**21 46 33.8**	**-1.2**
PGRA	**Graciosa**	**4.63**	**60**	*e*P	**Pn**	**21 46 33.8**	**-1.2**
ADH	**Angra Heroismo**	**5.02**	**67**	*e*P	**Pn**	**21 46 39.3**	**-1.1**
ADH	**Angra Heroismo**	**5.02**	**67**	*e*P	**Pn**	**21 46 39.3**	**-1.1**
PSET	**Sete Cidades**	**5.99**	**78**	*e*P	**Pn**	**21 46 51.0**	**-2.8**
PDA	**Ponta Delgada**	**6.03**	**79**	*e*P	**Pn**	**21 46 52.2**	**-2.1**
CMLA	**Cha da Macela**	**6.14**	**79**	*e*P	**Pn**	**21 46 57.0**	**+1.2**
CMLA	**Cha da Macela**	**6.14**	**79**	*e*Pn	**Pn**	**21 46 57.0**	**+1.2**
CMLA	**Cha da Macela**	**6.14**	**79**	*e*Pn	**Pn**	**21 46 57.0**	**+1.2**
PSMA	**Santa Maria**	**6.42**	**86**	*e*P	**Pn**	**21 46 58.2**	**-1.4**
BART	**Pico Bartolome**	**6.42**	**79**	*e*P	**Pn**	**21 46 58.4**	**-1.4**
BART	**Pico Bartolome**	**6.42**	**79**	*e*P	**Pn**	**21 46 58.4**	**-1.4**
PSMN	**Pico do Norte,**	**6.47**	**86**	*e*P	**Pn**	**21 46 58.7**	**-1.6**
PSMN	**Pico do Norte,**	**6.47**	**86**	*e*P	**Pn**	**21 46 58.7**	**-1.6**
PMAR	**Madeira**	**13.95**	**102**	*e*P	**Pn**	**21 48 42.8**	**-0.2**
PMAR	**Madeira**	**13.95**	**102**	*e*P	**Pn**	**21 48 42.8**	**-0.2**
PTO	**Porto**	**19.53**	**70**	*e*P	**Pn**	**21 49 54.7**	**+0.9**
	38nm,1.3s						
PTO	**Porto**	**19.53**	**70**	*e*P	**Pn**	**21 49 54.7**	**+0.9**
	38nm,1.3s						
MORF	**Marmelete**	**19.54**	**81**	*e*P	**P**	**21 49 53.1**	**+0.3**
	40nm,1.9s						
MORF				*e*LR	LR	21 54 18.3	
	532nm,18.0s						
MORF	**Marmelete**	**19.54**	**81**	*e*P	**P**	**21 49 53.1**	**+0.3**
	40nm,1.9s						
PNCL	**Nicolau / Gran**	**19.56**	**79**	*e*P	**P**	**21 49 52.9**	**-0.1**
	45nm,1.7s						
PNCL				*e*LR	LR	21 54 11.9	
	481nm,20.0s						
PNCL	**Nicolau / Gran**	**19.56**	**79**	*e*P	**P**	**21 49 52.9**	**-0.1**
	45nm,1.7s						
PTOM	**Tomar**	**19.61**	**74**	*e*P	**Pn**	**21 49 54.2**	**-0.6**
	54nm,1.6s						
PTOM	**Tomar**	**19.61**	**74**	*e*P	**Pn**	**21 49 54.2**	**-0.6**
	54nm,1.6s						
PMTG	**Montargil**	**19.76**	**76**	*e*P	**Pn**	**21 49 57.1**	**+0.5**
	62nm,1.8s						
PMTG				*e*LR	LR	21 54 15.1	
	479nm,20.0s						
PMTG	**Montargil**	**19.76**	**76**	*e*P	**Pn**	**21 49 57.1**	**+0.5**
	62nm,1.8s						
PGAV	**Gavieira, Arco**	**19.86**	**67**	*e*P	**Pn**	**21 49 59.0**	**+1.1**
	94nm,1.8s						
PGAV				*e*LR	LR	21 54 24.8	
	586nm,18.0s						
PGAV	**Gavieira, Arco**	**19.86**	**67**	*e*P	**Pn**	**21 49 59.0**	**+1.1**
	94nm,1.8s						
PCVE	**Castro Verde**	**19.99**	**80**	*e*P	Pn	21 49 58.8	-0.6
	55nm,2.1s						
PCVE				*e*LR	LR	21 54 21.6	
	506nm,20.0s						
PCVE	**Castro Verde**	**19.99**	**80**	*e*P	Pn	21 49 58.8	-0.6
	55nm,2.1s						
PCAB	**Cabril**	**20.01**	**68**	*e*P	Pn	21 50 00.3	+0.7
	60nm,1.8s						
PCAB	**Cabril**	**20.01**	**68**	*e*P	Pn	21 50 00.3	+0.7
	60nm,1.8s						
PBEJ	**Beja**	**20.09**	**79**	*e*P	**P**	**21 49 58.0**	**-0.8**
	43nm,1.7s						
PBEJ	**Beja**	**20.09**	**79**	*e*P	**P**	**21 49 58.0**	**-0.8**
	43nm,1.7s						
POLO	**Lamas de Olo**	**20.15**	**69**	*e*P	Pn	21 50 00.9	-0.5
	31nm,2.0s						
POLO				*e*LR	LR	21 54 31.3	
	257nm,20.0s						
POLO	**Lamas de Olo**	**20.15**	**69**	*e*P	Pn	21 50 00.9	-0.5
	31nm,2.0s						
PVRL	**Vila Real**	**20.20**	**70**	*e*P	Pn	21 50 02.1	+0.1
	62nm,1.9s						
PVRL	**Vila Real**	**20.20**	**70**	*e*P	Pn	21 50 02.1	+0.1
	62nm,1.9s						
MTE	**Manteigas**	**20.29**	**72**	*e*P	**P**	**21 50 01.7**	**+0.7**
	40nm,1.7s						
MTE				*e*LR	LR	21 54 31.3	
	805nm,18.0s						
MTE	**Manteigas**	**20.29**	**72**	*e*P	**P**	**21 50 01.7**	**+0.7**
	40nm,1.7s						
PCBR	**Castelo Branco**	**20.33**	**74**	*e*P	Pn	21 50 04.2	+0.8
	41nm,1.8s						
PCBR	**Castelo Branco**	**20.33**	**74**	*e*P	Pn	21 50 04.2	+0.8
	41nm,1.8s						
PMRV	**Marv??o**	**20.40**	**75**	*e*P	**P**	**21 50 02.4**	**+0.3**
	49nm,1.9s						
PMRV				*e*LR	LR	21 54 28.0	
	575nm,20.0s						
PMRV	**Marv??o**	**20.40**	**75**	*e*P	**P**	**21 50 02.4**	**+0.3**
	49nm,1.9s						
MVO	**Moncorvo**	**20.71**	**70**	*e*P	Pn	21 50 07.3	-0.7
	131nm,1.7s						
MVO				*e*LR	LR	21 54 18.3	
	470nm,20.0s						
MVO	**Moncorvo**	**20.71**	**70**	*e*P	Pn	21 50 07.3	-0.7
	131nm,1.7s						
PBAR	**Barrancos**	**20.73**	**78**	*e*P	**P**	**21 50 05.8**	**+0.1**
	28nm,2.8s						
PBAR				*e*LR	LR	21 54 34.5	
	746nm,20.0s						
PBAR	**Barrancos**	**20.73**	**78**	*e*P	**P**	**21 50 05.8**	**+0.1**
	28nm,2.8s						
PBRG	**Braganca**	**20.98**	**68**	*e*P	**P**	**21 50 10.5**	**+2.1**
	64nm,1.5s						
PBRG				*e*LR	LR	21 54 34.5	
	357nm,20.0s						
PBRG	**Braganca**	**20.98**	**68**	*e*P	**P**	**21 50 10.5**	**+2.1**
	64nm,1.5s						
RTC	**Rabat Centre**	**21.58**	**90**	*e*P	**P**	**21 50 15.6**	**+0.7**
	293nm,0.4s						
RTC	**Rabat Centre**	**21.58**	**90**	*e*P	**P**	**21 50 15.6**	**+0.7**
	293nm,0.4s						
DRLN	**Deer Lake**	**21.60**	**313**	*e*P	**P**	**21 50 14.9**	**-0.1**
	43nm,0.8s						
DRLN	**Deer Lake**	**21.60**	**313**	*e*P	**P**	**21 50 14.8**	**-0.1**
	43nm,0.8s						
PAB	**San Pablo**	**22.75**	**74**	*e*P	**P**	**21 50 28.1**	**+0.6**
PAB				pmax	pmax		
	comp=Z,30nm,1.2s						
PAB	**San Pablo**	**22.75**	**74**	*e*P	**P**	**21 50 28.1**	**+0.6**
	comp=Z,30nm,1.2s						
PAB	**San Pablo**	**22.75**	**74**	*e*P	**P**	**21 50 28.1**	**+0.6**
	comp=Z,30nm,1.2s						
ESDC	**Sonseca Array**	**23.04**	**74**	P	**P**	**21 50 30.6**	**+0.1**
	com

SFJD Kangerlussuaq 31.83 347 P **P 21 51 49.4 -0.1**
comp=Z,11nm,0.9s,baz=150,slow=9.5,SNR=5.3
SFJD Kangerlussuaq 31.83 347 *i* P **P 21 51 49.0 -0.6**
comp=Z,14nm,1.1s
SFJD Kangerlussuaq 31.83 347 *i* P **P 21 51 49.0 -0.6**
SFJD pmax pmax
comp=Z,14nm,1.1s
SFJD Kangerlussuaq 31.83 347 *e*P **P 21 51 49.5 -0.1**
comp=Z,16nm,1.0s
SFJD Kangerlussuaq 31.83 347 *e*P **P 21 51 49.5 -0.1**
comp=Z,16nm,1.0s
CPNY Central Park 31.85 290 *e*P **P 21 51 49.9 -0.2**
comp=Z,67nm,1.8s
CPNY Central Park 31.85 290 *e*P **P 21 51 49.9 -0.2**
comp=Z,67nm,1.8s
BFO Black Forest 32.25 56 *i* P **P 21 51 54.7 +1.1**
BFO Black Forest 32.25 56 *e*P **P 21 51 53.7 +0.1**
comp=Z,23nm,1.5s
BFO Black Forest 32.25 56 *e*P **P 21 51 53.7 +0.1**
comp=Z,23nm,1.5s
BRNJ Basking Ridge 32.32 290 *e*P **P 21 51 53.6 -0.7**
comp=Z,66nm,1.8s
BRNJ Basking Ridge 32.32 290 *e*P **P 21 51 53.6 -0.7**
comp=Z,66nm,1.8s
ABVI Anegada Island 32.76 245 *e*P **P 21 51 58.9 +0.6**
comp=Z,59nm,0.9s
ABVI Anegada Island 32.76 245 *e*P **P 21 51 58.9 +0.6**
comp=Z,59nm,0.9s
TUE Stuetta 32.82 59 *e*P **P 21 51 59.6 +0.7**
comp=Z,11nm,1.0s
TUE Stuetta 32.82 59 *e*P **P 21 51 59.6 +0.7**
comp=Z,11nm,1.0s
STU Stuttgart 32.86 55 *e*P **P 21 51 58.7 -0.2**
STU pmax pmax
comp=Z,6.0nm,0.7s
STU Stuttgart 32.86 55 *e*P **P 21 51 58.7 -0.2**
comp=Z,5.5nm,0.7s
STU Stuttgart 32.86 55 *e*P **P 21 51 58.7 -0.2**
comp=Z,5.5nm,0.7s
LUPA Lehigh Univers 32.94 290 *e*P **P 21 51 59.2 -0.5**
comp=Z,24nm,1.5s
LUPA Lehigh Univers 32.94 290 *e*P **P 21 51 59.2 -0.5**
comp=Z,24nm,1.5s
KSPA Keystone Colle 33.13 292 *e*P **P 21 52 00.1 -1.2**
comp=Z,19nm,1.3s
KSPA Keystone Colle 33.13 292 *e*P **P 21 52 00.1 -1.2**
comp=Z,19nm,1.3s
N59A State Game Lan 33.20 290 P **P 21 52 01.3 -0.7**
baz=83
BINY Binghamton 33.22 293 *e*P **P 21 52 00.0 -2.2**
comp=Z,40nm,1.8s
BINY Binghamton 33.22 293 *e*P **P 21 51 60.0 -2.2**
comp=Z,40nm,1.8s
FDF Fort de France 33.26 236 *e*P **P 21 52 01.1 -1.7**
FDF pmax pmax
comp=Z,79nm,1.3s
FDF Fort de France 33.26 236 *e*P **P 21 52 01.1 -1.7**
comp=Z,79nm,1.3s
FDF Fort de France 33.26 236 *e*P **P 21 52 01.1 -1.7**
comp=Z,79nm,1.3s
VSL Villasalto 33.31 72 *e*P **P 21 52 02.1 -0.9**
comp=Z,23nm,1.2s
VSL Villasalto 33.31 72 *e*P **P 21 52 02.1 -0.9**
comp=Z,23nm,1.2s
STVI Saint Thomas 33.46 245 *e*P **P 21 52 03.5 -0.9**
comp=Z,29nm,1.3s
STVI Saint Thomas 33.46 245 *e*P **P 21 52 03.5 -0.9**
comp=Z,29nm,1.3s
FUORN Ofenpass-Fuorn 33.46 59 *e*P **P 21 52 04.3 -0.2**
comp=Z,8.3nm,1.1s
FUORN Ofenpass-Fuorn 33.46 59 *e*P **P 21 52 04.3 -0.2**
comp=Z,8.3nm,1.1s
VLC Villacollemand 33.58 64 *e*P **P 21 52 05.2 -0.1**
comp=Z,14nm,1.2s
VLC Villacollemand 33.58 64 *e*P **P 21 52 05.2 -0.1**
comp=Z,14nm,1.2s
MVL Millersville 33.77 289 *e*P **P 21 52 06.4 -0.5**
comp=Z,13nm,1.4s
MVL Millersville 33.77 289 *e*P **P 21 52 06.4 -0.5**
comp=Z,13nm,1.4s
MOTA Moosalm 34.05 58 *e*pP **P 21 52 10.5 +1.0**
comp=Z,9.6nm,1.2s
FRB Frobisher Bay 34.37 333 P **P 21 52 11.1 -0.7**
comp=Z,10nm,0.8s,baz=149,slow=7.8,SNR=4.7
ABTA Abfaltersbach 35.01 59 *e*P **P 21 52 17.6 -0.1**
comp=Z,9.8nm,1.3s
NKC Novy Kostel 35.10 53 *e*P **P 21 52 18.8 +0.4**
NKC AMS AMS 22 05 00.0
comp=Z,800nm,18.2s
NKC Novy Kostel 35.10 53 *e*P **P 21 52 18.8 +0.4**
NKC MLR MLR
comp=Z,800nm,18.2s
NKC Novy Kostel 35.10 53 *e*P **P 21 52 18.8 +0.4**
comp=Z,800nm,18.2s
O56A Blue Knob Stat 35.40 290 P **P 21 52 20.7 -0.5**
baz=81
CLL Collm 35.55 51 *e*P **P 21 52 22.0 -0.2**
comp=Z,5.0nm,1.0s
CLL *e* 21 52 27.0
CLL *e*S S 21 58 12.0 +14
CLL *e*SS **SS 22 00 36.0 +3.9**
CLL Lm MLR 22 05 00.0
comp=N,300nm,18.1s
CLL Lm MLR 22 05 00.0
comp=E,400nm,19.5s
CLL Lm MLR 22 05 00.0
comp=Z,600nm,20.4s
CLL Collm 35.55 51 *e*P **P 21 52 22.0 -0.2**
CLL *e* 21 52 27.0
CLL pmax pmax
comp=Z,5.0nm,1.0s
CLL MLR MLR
comp=Z,600nm,20.4s
CLL Collm 35.55 51 *e*P **P 21 52 22.0 -0.2**
comp=Z,5.0nm,1.0s
KONO Kongsberg 35.56 36⇑*e*P **P 21 52 24.1 +1.9**
KONO Kongsberg 35.56 36 *e*P **P 21 52 24.1 +1.9**
KBA Koelnbreinsper 35.58 58 *i* P **P 21 52 23.1 +0.3**
comp=Z,12nm,1.2s
KHC Kasperske Hory 35.77 55 *e*P **P 21 52 24.1 0.0**
KHC *e*x x 21 52 34.7
KHC AMS AMS 22 06 50.0
comp=Z,200nm,20.3s
KHC Kasperske Hory 35.77 55 *e*P **P 21 52 24.1 0.0**
KHC *e* 21 52 34.7
KHC MLR MLR
comp=Z,200nm,20.3s
KHC Kasperske Hory 35.77 55 *e*P **P 21 52 24.2 +0.1**
comp=Z,4.7nm,1.5s
KHC Kasperske Hory 35.77 55 *e*P **P 21 52 24.2 +0.1**
comp=Z,4.7nm,1.5s
GEA0 GERESS Array S 35.84 55 *e*P **P 21 52 24.0 -0.8**
GEA0 GERESS Array S 35.84 55 *e*P **P 21 52 23.9 -0.8**
GEC2 GERESS Array S 35.84 55 *e*P **P 21 52 25.7 +0.8**
GEC2 pmax pmax
comp=Z,6.0nm,1.2s
GEC2 GERESS Array S 35.84 55 *e*P **P 21 52 25.6 +0.8**
comp=Z,5.5nm,1.2s
GEC2 GERESS Array S 35.84 55 *e*P **P 21 52 25.6 +0.8**
comp=Z,5.5nm,1.2s
GERES GERESS Array B 35.84 55 P **P 21 52 24.2 -0.7**
comp=Z,2.4nm,1.1s,baz=261,slow=8.0,SNR=11
GERES LR LR 22 06 40.4
comp=Z,175nm,18.2s,baz=257,slow=36
SUMG Summit 35.92 357 *i* P **P 21 52 26.3 +0.7**
comp=Z,25nm,1.1s
SUMG Summit 35.92 357 *i* P **P 21 52 26.3 +0.7**
SUMG pmax pmax
comp=Z,25nm,1.1s
SUMG Summit 35.92 357 *i* P **P 21 52 26.3 +0.7**
comp=Z,25nm,1.1s
SUMG Summit 35.92 357 *e*P **P 21 52 26.1 +0.5**
comp=Z,20nm,1.0s
AQU L'Aquila 35.93 66 *e*P **P 21 52 28.4 +2.7**
AQU pmax pmax
comp=Z,19nm,1.0s
AQU L'Aquila 35.93 66 *e*P **P 21 52 28.4 +2.7**
comp=Z,19nm,1.0s
AQU L'Aquila 35.93 66 *e*P **P 21 52 28.4 +2.7**
comp=Z,19nm,1.0s
M54A Oil Creek Stat 36.03 292 P **P 21 52 25.6 -0.9**
baz=82
TAM Tamanrasset 36.09 102 *e*P **P 21 52 28.3 +1.0**
TAM pmax pmax
comp=Z,10.0nm,0.9s
TAM Tamanrasset 36.09 102 *e*P **P 21 52 28.3 +1.0**
comp=Z,9.9nm,0.9s
TAM Tamanrasset 36.09 102 *e*P **P 21 52 28.3 +1.0**
comp=Z,9.9nm,0.9s
BRG Berggiesshubel 36.10 52 *e*P **P 21 52 27.3 +0.4**
comp=Z,9.7nm,1.4s
comp=N,170nm,12.9s
comp=E,591nm,16.7s
comp=Z,863nm,17.1s
BRG Berggiesshubel 36.10 52 *e*P **P 21 52 27.3 +0.4**
BRG pmax pmax
comp=Z,10.0nm,1.4s
BRG MLR MLR
comp=N,170nm,12.9s
BRG MLR MLR
comp=E,591nm,16.7s
BRG MLR MLR
comp=Z,863nm,17.1s
BRG Berggiesshubel 36.10 52 *e*P **P 21 52 27.3 +0.4**
comp=Z,863nm,17.1s
MOA Molln 36.20 57 *i* P **P 21 52 27.6 -0.2**
comp=Z,10nm,1.2s
N54A Moraine State 36.36 291 P **P 21 52 28.8 -0.4**
baz=81
PRU Pruhonice 36.43 53 *e*P **P 21 52 30.6 +0.8**
PRU *e*pP **sP 21 52 36.9 +2.8**
PRU *e*x x 21 52 43.1
PRU AMS AMS 22 06 50.0
comp=Z,400nm,14.3s
PRU Pruhonice 36.43 53 *e*P **P 21 52 30.6 +0.8**
PRU *e* 21 52 36.9
PRU *e* 21 52 43.1
PRU MLR MLR
comp=Z,400nm,14.3s
PRU Pruhonice 36.43 53 *e*P **P 21 52 30.6 +0.8**
PVCC Panska Ves 36.47 53 AMS AMS 22 06 00.0
comp=Z,800nm,19.9s
GOPC GO Pecny, Ondr 36.58 54 *e*P **P 21 52 32.2 +1.1**
GOPC AMS AMS 22 07 00.0
comp=Z,400nm,16.1s
GOPC GO Pecny, Ondr 36.58 54 *e*P **P 21 52 32.2 +1.1**
GOPC MLR MLR
comp=Z,400nm,16.1s
GOPC GO Pecny, Ondr 36.58 54 *e*P **P 21 52 32.2 +1.1**
comp=Z,400nm,16.1s
NBO02 NORSAR Array S 36.65 34 *e*P **P 21 52 32.1 +0.6**
NBO02 NORSAR Array S 36.65 34 *e*P **P 21 52 32.1 +0.6**
NB2 NORSAR Subarra 36.81 35 P **P 21 52 34.0 +1.1**
comp=Z,67nm,1.7s,baz=250,slow=9.3
NB2 NORSAR Subarra 36.81 35 P **P 21 52 34.0 +1.1**
baz=250,slow=9.3
NB2 NORSAR Subarra 36.81 35 P **P 21 52 34.0 +1.1**
comp=Z,67nm,1.7s,SNR=1.4
NOA NORSAR Array B 36.81 35 P **P 21 52 34.0 +1.1**
comp=Z,11nm,1.1s,baz=250,slow=8.6,SNR=9.1
NOA LR LR 22 05 18.1
comp=Z,228nm,20.1s,baz=255,slow=32
NOA NORSAR Array B 36.81 35 P **P 21 52 34.0 +1.1**
NOA NORSAR Array B 36.81 35 P **P 21 52 34.0 +1.1**
NB201 NORSAR Array S 36.84 35 *e*P **P 21 52 35.1 +1.9**
NB201 NORSAR Array S 36.84 35 *e*P **P 21 52 35.1 +1.9**
NC602 NORSAR Array S 36.85 35 *e*P **P 21 52 34.9 +1.7**
NC602 NORSAR Array S 36.85 35 *e*P **P 21 52 34.9 +1.7**
NC303 NORSAR Array S 36.94 34 *e*P **P 21 52 35.7 +1.7**
NC303 NORSAR Array S 36.94 34 *e*P **P 21 52 35.6 +1.7**
UPC Upice 37.39 53 *e*P **P 21 52 38.2 +0.2**
UPC AMS AMS 22 06 30.0
comp=Z,700nm,16.8s
UPC Upice 37.39 53 *e*P **P 21 52 38.2 +0.2**
UPC MLR MLR
comp=Z,700nm,16.8s
UPC Upice 37.39 53 *e*P **P 21 52 38.2 +0.2**
comp=Z,700nm,16.8s
DPC Dobruska-Polom 37.59 53 *e*P P 21 52 35.3 -4.4
DPC *e*pP pP 21 52 40.0 -2.8
DPC *e*sP sP 21 52 43.9 -0.1
DPC AMS AMS 22 06 20.0
comp=Z,500nm,16.9s
DPC Dobruska-Polom 37.59 53 *e*P P 21 52 35.3 -4.4
DPC *e* 21 52 43.9
DPC MLR MLR
comp=Z,500nm,16.9s
KRLC Kraliky 37.88 53 *e*P P 21 52 36.0 -6.1
KRLC *e*pP pP 21 52 42.5 -2.7
KRLC Kraliky 37.88 53 *e*P P 21 52 36.0 -6.1
KRLC *e* 21 52 42.5
CUC Castrocucco 38.10 70 *e*P **P 21 52 44.4 +0.3**
comp=Z,26nm,1.2s
CUC Castrocucco 38.10 70 *e*P **P 21 52 44.4 +0.3**
comp=Z,26nm,1.2s
KMSC Kings Mountain 38.71 282 P **P 21 52 48.0 -1.3**
baz=73
ACSO Alum Creek Sta 38.73 291 *e*P **P 21 52 49.5 +0.1**
comp=Z,73nm,2.0s
ACSO Alum Creek Sta 38.73 291 *e*P **P 21 52 49.5 +0.1**
comp=Z,73nm,2.0s
OKC Ostrava-Krasne 38.76 54 AMS AMS 22 08 30.0
comp=Z,300nm,21.8s
TOA0 Torodi Ar. Sit 39.06 118 *e*P **P 21 52 51.7 -0.7**
TOA0 Torodi Ar. Sit 39.06 118 *e*P **P 21 52 51.7 -0.7**
TORD Torodi Ar. Bea 39.06 118 P **P 21 52 51.5 -0.9**
comp=Z,3.2nm,0.7s,baz=318,slow=6.2,SNR=18
DBIC Dimbokro 39.58 132 P **P 21 52 55.4 -1.3**
comp=Z,2.8nm,0.6s,baz=261,slow=3.4,SNR=3.6
DBIC LR LR 22 08 03.9
comp=Z,245nm,18.7s,baz=296,slow=34
OJC Ojcow 39.82 53 *e*P **P 21 52 59.6 +1.3**
OJC Ojcow 39.82 53 *e*P **P 21 52 59.6 +1.3**
OJC Ojcow 39.82 53 *e*P **P 21 52 59.4 +1.1**
comp=Z,35nm,1.7s
OJC Ojcow 39.82 53 *e*P **P 21 52 59.4 +1.1**
comp=Z,35nm,1.7s
TZTN Tazewell 40.04 285 *e*P **P 21 53 00.9 +0.6**
comp=Z,30nm,1.8s
TZTN Tazewell 40.04 285 *e*P **P 21 53 00.9 +0.6**
comp=Z,30nm,1.8s
NIE Niedzica 40.17 54 *e*P **P 21 53 02.8 +1.5**
NIE Niedzica 40.17 54 *e*P **P 21 53 02.8 +1.5**
TKL Tuckaleechee C 40.47 284 *e*P **P 21 53 03.9 0.0**
TKL pmax pmax
comp=Z,21nm,1.4s
TKL Tuckaleechee C 40.47 284 *e*P **P 21 53 03.9 0.0**
comp=Z,21nm,1.4s
TKL Tuckaleechee C 40.47 284 *e*P **P 21 53 03.9 0.0**
comp=Z,21nm,1.4s
DAG Danmarks Havn 40.56 5 *i* P **P 21 53 04.7 +0.6**
comp=Z,8.7nm,1.0s
DAG Danmarks Havn 40.56 5 *i* P **P 21 53 04.7 +0.6**
DAG pmax pmax
comp=Z,9.0nm,1.0s
DAG Danmarks Havn 40.56 5 *i* P **P 21 53 04.7 +0.6**
comp=Z,9.0nm,1.0s
GOGA Godfrey 40.93 281 *e*P **P 21 53 08.5 +0.8**
GOGA pmax pmax
comp=Z,36nm,1.9s
GOGA Godfrey 40.93 281 *e*P **P 21 53 08.5 +0.8**
comp=Z,36nm,1.9s
GOGA Godfrey 40.93 281 *e*P **P 21 53 08.5 +0.8**
comp=Z,36nm,1.9s
CRVS Cervenica-Dubn 40.96 55 *e*P **P 21 53 09.1 +1.3**
CRVS Cervenica-Dubn 40.96 55 *e*P **P 21 53 09.1 +1.3**
CRVS Cervenica-Dubn 40.96 55 *e*P **P 21 53 09.1 +1.3**
CPCT Cooper Cave 41.11 284 *e*P **P 21 53 09.3 +0.1**
comp=Z,22nm,1.8s
CPCT Cooper Cave 41.11 284 *e*P **P 21 53 09.3 +0.1**
comp=Z,22nm,1.8s
BZS Buzias 41.40 60⇑*i*P **P 21 53 12.2 +0.8**
BZS Buzias 41.40 60 ⇑P **P 21 53 12.2 +0.8**
BZS Buzias 41.40 60 P **P 21 53 12.2 +0.8**
KOLS Kolonicke sedl 41.49 55 *e*P **P 21 53 12.2 0.0**
KOLS pmax pmax
comp=Z,8.0nm,1.3s
KOLS Kolonicke sedl 41.49 55 *e*P **P 21 53 12.2 0.0**
comp=Z,8.0nm,1.3s
KOLS Kolonicke sedl 41.49 55 *e*P **P 21 53 12.2 0.0**
comp=Z,18nm,1.3s
UZH Uzhgorod 41.52 55 *e*P **P 21 53 12.7 +0.3**
UZH *e* 21 53 24.7
UZH Uzhgorod 41.52 55 *e*P **P 21 53 12.7 +0.3**
BLO Bloomington 41.63 290 *e*P **P 21 53 13.4 0.0**
BLO pmax pmax
comp=Z,18nm,1.3s
BLO Bloomington 41.63 290 *e*P **P 21 53 13.4 0.0**
comp=Z,18nm,1.3s
BLO Bloomington 41.63 290 *e*P **P 21 53 13.4 0.0**
comp=Z,18nm,1.3s
WCI Wyandotte Cave 41.69 289 *e*P **P 21 53 14.1 +0.1**
WCI pmax pmax
comp=Z,19nm,1.5s
WCI Wyandotte Cave 41.69 289 *e*P **P 21 53 14.1 +0.1**
comp=Z,19nm,1.5s
WCI Wyandotte Cave 41.69 289 *e*P **P 21 53 14.1 +0.1**
comp=Z,19nm,1.5s
TIGA Tifton 41.72 278 P **P 21 53 14.2 0.0**
baz=68
KWP Kalwaria Pacla 41.72 54 *e*P **P 21 53 16.5 +2.5**
KWP Kalwaria Pacla 41.72 54⇑*i*P **P 21 53 15.1 +1.1**
KWP Kalwaria Pacla 41.72 54 ⇑P **P 21 53 15.1 +1.1**
KWP Kalwaria Pacla 41.72 54 P **P 21 53 15.1 +1.1**
SFIN Lafayette 41.77 292 P **P 21 53 13.7 -0.9**
baz=77
DRGR 42.00 58⇑*i*P **P 21 53 16.3 -0.1**
DRGR 42.00 58 ⇑P **P 21 53 16.3 -0.1**
DRGR 42.00 58 P **P 21 53 16.3 -0.1**
SWET Sewanee 42.28 284 *e*P **P 21 53 18.9 0.0**
comp=Z,7.5nm,1.3s
SWET Sewanee 42.28 284 *e*P **P 21 53 18.9 0.0**
comp=Z,7.5nm,1.3s
C39A Grand Marais 42.65 303 P **P 21 53 20.3 -1.3**
baz=83
LOT Lotru 42.92 60⇑*i*P **P 21 53 22.6 -1.4**
OLIL Olney 42.93 290 *e*P **P 21 53 23.8 -0.2**
comp=Z,50nm,1.8s
OLIL Olney 42.93 290 *e*P **P 21 53 23.8 -0.2**
comp=Z,50nm,1.8s
AGG Agios Georgios 43.23 70 *e*P **P 21 53 28.3 +1.8**
AGG pmax pmax
comp=Z,47nm,1.4s
AGG Agios Georgios 43.23 70 *e*P **P 21 53 28.3 +1.8**
comp=Z,46nm,1.4s
AGG Agios Georgios 43.23 70 *e*P **P 21 53 28.3 +1.8**
comp=Z,46nm,1.4s
HDIL Hopedale 43.36 293 P **P 21 53 26.6 -0.9**
baz=76
C38A Sawbill Land. 43.43 303 P **P 21 53 26.1 -1.9**
baz=82
EYMN Ely 43.55 304 P **P 21 53 28.1 -0.8**
baz=83
EYMN Ely 43.55 304 *e*P **P 21 53 28.1 -0.8**
comp=Z,5.5nm,0.9s
EYMN Ely 43.55 304 *e*P **P 21 53 28.1 -0.8**
comp=Z,5.5nm,0.9s
BUR08 Bucovina Ar. S 43.57 57 *e*P **P 21 53 30.3 +1.1**
BUR08 Bucovina Ar. S 43.57 57 *e*P **P 21 53 30.3 +1.1**
BURAR Bucovina Array 43.58 57⇑*i*P **P 21 53 30.6 +1.3**
BURAR Bucovina Array 43.58 57 ⇑P **P 21 53 30.6 +1.3**
VOIR 43.81 60⇑*i*P **P 21 53 31.5 +0.4**
VOIR 43.81 60 ⇑P **P 21 53 31.5 +0.4**
VOIR 43.81 60 P **P 21 53 31.5 +0.4**
LRAL Lakeview Retre 43.84 282 *e*P **P 21 53 31.6 +0.2**
comp=Z,33nm,1.9s
LRAL Lakeview Retre 43.84 282 *e*P **P 21 53 31.6 +0.2**
comp=Z,33nm,1.9s
FINES FINESS Array B 43.88 37 P **P 21 53 31.9 +0.5**
comp=Z,7.5nm,1.0s,baz=236,slow=2.1,SNR=12
FINES LR LR 22 09 57.4
comp=Z,473nm,19.7s,baz=254,slow=34
FIA1 FINESS Array S 43.88 37 *e*P **P 21 53 31.6 +0.3**
FIA1 FINESS Array S 43.88 37 *e*P **P 21 53 31.6 +0.3**
VSU Vasula 43.99 41⇓*e*P **P 21 53 32.5 +0.3**
VSU pmax pmax
comp=Z,58nm,1.7s
VSU Vasula 43.99 41 *e*P **P 21 53 32.5 +0.3**
comp=Z,58nm,1.7s
PLAL Pickwick Lake 44.02 285 *e*P **P 21 53 32.9 0.0**
comp=Z,34nm,1.5s
PLAL Pickwick Lake 44.02 285 *e*P **P 21 53 32.9 0.0**
comp=Z,34nm,1.5s
C37A Embarrass 44.03 304 P **P 21 53 31.7 -1.1**
baz=82
SIUC Southern Illin 44.06 289 *e*P **P 21 53 33.2 +0.1**
comp=Z,16nm,0.6s
SIUC Southern Illin 44.06 289 *e*P **P 21 53 33.2 +0.1**
comp=Z,16nm,0.6s
Z48A Northport 44.16 282 P **P 21 53 33.4 -0.6**
baz=70
Y47A UCPARC, Winfie 44.20 283 P **P 21 53 33.5 -0.8**
baz=70
D37A Cotton 44.28 303 P **P 21 53 33.8 -1.0**
baz=81
E37A Wrenshall 44.36 302 P **P 21 53 33.7 -1.8**
baz=81
MLR Muntele Rosu 44.42 60⇑*i*P **P 21 53 38.4 +2.3**
MLR Muntele Rosu 44.42 60 ⇑P **P 21 53 38.4 +2.3**
MLR Muntele Rosu 44.42 60 *e*P **P 21 53 37.4 +1.3**
comp=Z,52nm,2.0s
MLR Muntele Rosu 44.42 60 *e*P **P 21 53 37.4 +1.3**
comp=Z,52nm,2.0s
C36A Pine Crest Far 44.47 304 P **P 21 53 34.5 -1.8**
baz=82,SNR=5.7
FCC Fort Churchill 44.56 320 *e*P **P 21 53 37.2 +0.3**
FCC pmax pmax
comp=Z,10.0nm,0.9s
FCC Fort Churchill 44.56 320 *e*P **P 21 53 37.2 +0.3**
comp=Z,10.0nm,0.9s
FCC Fort Churchill 44.56 320 *e*P **P 21 53 37.2 +0.3**
comp=Z,10.0nm,0.9s
Z47A Carrollton 44.62 282 P **P 21 53 36.9 -0.8**
baz=69
Q42A Golden Eagle 44.71 291 P **P 21 53 37.4 -1.0**
baz=74
S43A Fulton Ridge, 44.75 289 P **P 21 53 37.4 -1.2**
baz=73,SNR=5.9
248A Dixon Mills 44.76 281 P **P 21 53 37.5 -1.3**
baz=68
D36A Goodland 44.78 303 P **P 21 53 37.7 -1.0**
baz=81
PLOR Plostina 44.84 59⇑*i*P **P 21 53 39.9 +0.6**
PLOR Plostina 44.84 59 ⇑P **P 21 53 39.9 +0.6**
PLOR Plostina 44.84 59 P **P 21 53 39.9 +0.6**
SPMN Marine on St. 44.88 300 P **P 21 53 38.9 -0.7**
baz=79
SPMN Marine on St. 44.88 300 *e*P **P 21 53 39.3 -0.3**
comp=Z,59nm,0.1s
SPMN Marine on St. 44.88 300 *e*P **P 21 53 39.3 -0.3**
comp=Z,59nm,0.1s
VRI Vrincioaia 44.89 59⇓*i*P **P 21 53 39.9 +0.2**
VRI Vrincioaia 44.89 59 ⇓P **P 21 53 39.9 +0.2**
VRI Vrincioaia 44.89 59 P **P 21 53 39.9 +0.2**
PTGA Pitinga 44.90 220 P **P 21 53 39.5 -0.5**
comp=Z,4.8nm,0.8s,baz=8.3,slow=11,SNR=6.9
PTGA Pitinga 44.90 220 *e*P **P 21 53 40.0 0.0**
comp=Z,10nm,1.1s
PTGA Pitinga 44.90 220 *e*P **P 21 53 40.0 0.0**
comp=Z,10nm,1.1s
E36A McGregor 44.95 302 P **P 21 53 39.5 -0.7**
baz=80
B35A Bob, Littlefor 44.97 305 P **P 21 53 39.1 -1.1**
baz=82,SNR=9.5
Y46A Houston 45.00 284 P **P 21 53 39.6 -1.1**
baz=70,SNR=7.7
H37A Dierke Farm, C 45.08 299 P **P 21 53 40.7 -0.6**
baz=78
ARCES ARCESS Array B 45.12 25 P **P 21 53 40.9 -0.3**
comp=Z,7.0nm,1.1s,baz=250,slow=8.9,SNR=7.5
ARCES LR LR 22 09 58.1
comp=Z,80nm,19.8s,baz=263,slow=33
X45A UM Field Stati 45.23 284 P **P 21 53 41.4 -1.1**
baz=70
C35A Jirik Farms, M 45.23 304 P **P 21 53 40.8 -1.7**
baz=81,SNR=5.5
F36A Milaca 45.25 301 P **P 21 53 40.9 -1.7**
baz=79
PBMO Poplar Bluff 45.26 288 *e*P **P 21 53 42.3 -0.4**
comp=Z,36nm,1.1s
PBMO Poplar Bluff 45.26 288 *e*P **P 21 53 42.3 -0.4**
comp=Z,36nm,1.1s
Z46A Louisville 45.30 283 P **P 21 53 42.2 -1.0**
baz=69
O40A La Belle 45.38 293 P **P 21 53 42.7 -1.0**
baz=74
K38A Parkersburg 45.40 297 P **P 21 53 43.1 -0.7**
baz=76
G36A St. Michael 45.53 300 P **P 21 53 44.1 -0.7**
baz=78
Y45A Yeager Farm, C 45.54 284 P **P 21 53 44.1 -0.8**
baz=70
SORM Soroca 45.59 55⇑*i*P **P 21 53 43.7 -1.5**
SORM Soroca 45.59 55 ⇑P **P 21 53 43.7 -1.5**
SORM Soroca 45.59 55 P **P 21 53 43.7 -1.5**
146A Union 45.60 282 P **P 21 53 45.2 -0.2**
baz=68
N39A Derby Farms, D 45.64 294 P **P 21 53 45.0 -0.7**
baz=75
347A Saraland 45.65 280 P **P 21 53 44.8 -1.1**
baz=67

L38A	Oak Wood Farm,	45.66	296	P	P	21 53 45.2 -0.6
	baz=76					
P40A	Paris	45.67	292	P	P	21 53 44.8 -1.1
	baz=74,SNR=5.9					
KIEV	Kiev	45.77	52	eP	P	21 53 46.2 -0.4
KIEV				pmax	pmax	
	comp=Z,35nm,1.4s					
KIEV	Kiev	45.77	52	eP	P	21 53 46.2 -0.4
	comp=Z,35nm,1.4s					
KIEV	Kiev	45.77	52	eP	P	21 53 46.2 -0.4
	comp=Z,35nm,1.4s					
AKASG	Malin Array Be	45.78	52	P	P	21 53 46.2 -0.5
	comp=Z,3.6nm,0.6s,baz=275,slow=7.7,SNR=37					
AKASG				LR	LR	22 11 31.2
	comp=Z,306nm,19.8s,baz=275,slow=34					
AKBB	Malin Array Si	45.78	52	eP	P	21 53 47.2 +0.5
AKBB				pmax	pmax	
	comp=Z,35nm,1.4s					
AKBB	Malin Array Si	45.78	52	eP	P	21 53 47.2 +0.5
	comp=Z,35nm,1.4s					
AKBB	Malin Array Si	45.78	52	eP	P	21 53 47.2 +0.5
	comp=Z,35nm,1.4s					
X44A	Crenshaw	45.79	285	P	P	21 53 46.5 -0.5
	baz=70					
J37A	Redenius Farm,	45.80	298	P	P	21 53 46.1 -0.9
	baz=77					
O39A	Kirksville	45.84	293	P	P	21 53 46.7 -0.6
	baz=74					
Q40A	Laux Farm, Aux	45.84	291	P	P	21 53 46.1 -1.2
	baz=73,SNR=10.0					
A33A	Warroad	45.97	306	P	P	21 53 47.1 -1.1
	baz=81,SNR=5.4					
K37A	Belmond	45.99	297	P	P	21 53 47.5 -1.0
	baz=76					
M38A	Pleasantville	46.01	295	P	P	21 53 47.8 -0.9
	baz=75					
ULM	Lac du Bonnet	46.09	308	P	P	21 53 48.0 -1.1
	comp=Z,6.8nm,0.8s,baz=84,slow=6.8,SNR=7.6					
ULM				LR	LR	22 12 45.1
	comp=Z,77nm,19.4s,baz=98,slow=36					
ULM	Lac du Bonnet	46.09	308	eP	P	21 53 48.0 -1.1
ULM				pmax	pmax	
	comp=Z,8.0nm,0.8s					
ULM	Lac du Bonnet	46.09	308	eP	P	21 53 48.0 -1.1
	comp=Z,8.4nm,0.8s					
ULM	Lac du Bonnet	46.09	308	eP	P	21 53 48.0 -1.1
	comp=Z,8.4nm,0.8s					
R40A	Maddies Statio	46.19	291	P	P	21 53 48.7 -1.4
	baz=73,SNR=5.2					
T41A	Mountain View	46.19	289	P	P	21 53 48.7 -1.4
	baz=72					
N38A	Joes South For	46.20	294	P	P	21 53 49.1 -1.0
	baz=74					
P39B	Salisbury	46.21	292	P	P	21 53 49.6 -0.6
	baz=74,SNR=6.4					
B33A	Robert and Kas	46.21	305	P	P	21 53 49.3 -0.8
	baz=80					
L37A	Phoenix Point,	46.23	296	P	P	21 53 49.3 -1.1
	baz=76					
E34A	Wadena	46.25	302	P	P	21 53 49.7 -0.7
	baz=79					
145A	Houston Renfro	46.29	282	P	P	21 53 50.2 -0.7
	baz=68					
V42A	Cord	46.31	287	P	P	21 53 49.8 -1.2
	baz=71					
TIRR	Tirgusor	46.34	60	‖iP	P	21 53 49.0 -2.1
TIRR	Tirgusor	46.34	60	‖P	P	21 53 49.1 -2.1
TIRR	Tirgusor	46.34	60	P	P	21 53 49.1 -2.1
X43A	Marvell	46.35	285	P	P	21 53 50.5 -0.8
	baz=70					
J36A	Seneca 1, Swea	46.36	298	P	P	21 53 49.6 -1.7
	baz=76					
H35A	Sunnyside Ranc	46.39	300	P	P	21 53 50.9 -0.7
	baz=77,SNR=12					
Z44A	Pea Ridge, Bel	46.44	283	P	P	21 53 50.6 -1.5
	baz=69					
245A	Little AP, Sta	46.48	282	P	P	21 53 52.0 -0.5
	baz=68					
Q39A	Willow Grove F	46.50	292	P	P	21 53 51.5 -1.0
	baz=73					
446A	Poplarville	46.54	280	P	P	21 53 52.8 -0.1
	baz=67					
O38A	Galt	46.56	293	P	P	21 53 51.8 -1.1
	baz=74					
S40A	Lebanon	46.58	290	P	P	21 53 53.4 +0.2
	baz=72,SNR=6.4					
D33A	AnnSam, Waubun	46.58	303	P	P	21 53 52.4 -0.7
	baz=79					
Y43A	Makayla and Ka	46.60	284	P	P	21 53 51.7 -1.6
	baz=69					
K36A	Gilmore City	46.60	297	P	P	21 53 52.2 -1.1
	baz=76					
M37A	Trindle Farm,	46.64	295	P	P	21 53 52.8 -0.7
	baz=75					
144A	Alexander Plac	46.67	283	P	P	21 53 52.7 -1.2
	baz=68					
A32A	Rocking H Ranc	46.69	306	P	P	21 53 53.1 -0.8
	baz=80,SNR=6.0					
T40A	Mansfield	46.73	289	P	P	21 53 53.0 -1.4
	baz=72,SNR=7.5					
P38A	Dawn	46.74	293	P	P	21 53 53.2 -1.2
	baz=73					
R39A	Chumby, Stover	46.76	291	P	P	21 53 53.6 -1.0
	baz=72					
E33A	Westby DABS, E	46.82	303	P	P	21 53 53.9 -1.0
	baz=78					
G34A	Benson	46.83	301	P	P	21 53 54.6 -0.5
	baz=77					
L36A	Harm Buss Farm	46.90	296	P	P	21 53 54.5 -1.1
	baz=75					
VBMS	Vicksburg	46.90	282	P	P	21 53 54.7 -1.0
	baz=68					
V41A	Mountainview	46.90	287	P	P	21 53 53.8 -1.9
	baz=70					
N37A	Lee Faris, Mou	46.92	294	P	P	21 53 54.7 -1.1
	baz=74					
Q38A	Cooks Store, C	47.00	292	P	P	21 53 54.8 -1.6
	baz=73					
O37A	Wolven Farm, M	47.04	294	P	P	21 53 55.5 -1.3
	baz=74					
H34A	Spellman Lake,	47.06	300	P	P	21 53 55.7 -1.1
	baz=77					
244A	Avery, Jackson	47.10	282	P	P	21 53 56.3 -1.0
	baz=68					
K35A	Storm Lake	47.14	297	P	P	21 53 56.4 -1.1
	baz=75					
M36A	Felix, Anita	47.16	296	P	P	21 53 56.1 -1.6
	baz=74					
S39A	Bolivar	47.17	290	P	P	21 53 56.2 -1.5
	baz=72,SNR=11					
W41B	Gary Mavity, V	47.18	287	P	P	21 53 56.1 -1.7
	baz=70					
U40A	Yellville	47.24	288	P	P	21 53 57.1 -1.3
	baz=71,SNR=6.2					
X301	Greenbrier Sit	47.27	287	eP	P	21 53 57.8 -0.8
	comp=Z,7.9nm,1.0s					
X301	Greenbrier Sit	47.27	287	eP	P	21 53 57.8 -0.8
	comp=Z,7.9nm,1.0s					
Y42A	Garnett, Star	47.29	285	P	P	21 53 57.9 -0.9
	baz=69					
P37A	Lathrop	47.36	293	P	P	21 53 58.2 -1.0
	baz=73					
344A	Westbrook Farm	47.36	281	P	P	21 53 58.7 -0.6
	baz=67					
G33A	Ortonville	47.39	301	P	P	21 53 58.8 -0.6
	baz=77					
T39A	Clever	47.42	289	P	P	21 53 58.7 -1.0
	baz=71,SNR=9.3					
R38A	Fenwick Farm,	47.45	291	P	P	21 53 58.7 -1.3
	baz=72,SNR=15					
J34A	George	47.52	298	P	P	21 53 58.6 -1.8
	baz=76					
L35A	Bielow Farm, R	47.52	297	P	P	21 53 59.5 -1.0
	baz=75					
B31A	Greenbush Farm	47.53	305	P	P	21 53 59.6 -0.8
	baz=79					
X41A	Kaden, Bauxite	47.62	286	P	P	21 53 59.9 -1.4
	baz=69					
Z42A	Norrel Spur, H	47.62	284	P	P	21 53 59.9 -1.5
	baz=68					
S38A	Stockton	47.63	290	P	P	21 54 00.4 -0.9
	baz=71					
Q37A	Longview Farm,	47.65	292	P	P	21 54 00.2 -1.3
	baz=72					
O36A	Bolckow	47.65	294	P	P	21 54 00.2 -1.3
	baz=73					
444A	Pine Grove	47.66	280	P	P	21 54 00.5 -1.2
	baz=66					
U39A	Green Forest	47.71	289	P	P	21 54 00.6 -1.4
	baz=70					
C31A	Landman Farms,	47.71	305	P	P	21 54 00.7 -1.2
	baz=78					
H33A	Prehn Over Nor	47.72	300	P	P	21 54 01.1 -0.9
	baz=76					
K34A	Le Mars	47.77	298	P	P	21 54 01.1 -1.3
	baz=75					
W40A	Ferguson Farm,	47.80	287	P	P	21 54 01.0 -1.7
	baz=70					
M35A	Neola	47.81	296	P	P	21 54 01.4 -1.3
	baz=74					
A30A	Hoffart Farm,	47.86	306	P	P	21 54 02.0 -0.9
	baz=79,SNR=7.7					
ECSD	EROS Data Cent	47.86	299	P	P	21 54 01.5 -1.6
	baz=76,SNR=15					
ECSD	EROS Data Cent	47.86	299	eP	P	21 54 01.9 -1.2
	comp=Z,11nm,0.8s					
ECSD	EROS Data Cent	47.86	299	eP	P	21 54 01.9 -1.2
	comp=Z,11nm,0.8s					
X40A	Basin Creek Fa	47.87	286	P	P	21 54 01.4 -1.9
	baz=69,SNR=6.9					
B30A	Myrvik Farm, E	47.97	306	P	P	21 54 02.7 -1.2
	baz=79,SNR=13					
P36A	Good Intent, A	47.98	293	P	P	21 54 02.8 -1.3
	baz=73					
V39A	Pettigrew	48.02	288	P	P	21 54 03.1 -1.3
	baz=70					
645A	Chauvin	48.06	279	P	P	21 54 03.5 -1.2
	baz=65					
E31A	Nome	48.08	303	P	P	21 54 04.1 -0.6
	baz=77					
T38A	Diamond	48.11	290	P	P	21 54 03.6 -1.5
	baz=71,SNR=5.5					
L34A	Svendsen Farm,	48.16	297	P	P	21 54 04.0 -1.4
	baz=74					
J33A	Davis	48.22	299	P	P	21 54 04.5 -1.4
	baz=75					
H32A	Carlson Farm,	48.25	300	P	P	21 54 05.0 -1.0
	baz=76					
S37A	Fort Scott	48.28	291	P	P	21 54 04.7 -1.6
	baz=71,SNR=5.6					
Z41A	Richland Creek	48.29	284	P	P	21 54 05.3 -1.2
	baz=68					
W39A	Magazine	48.35	287	P	P	21 54 05.9 -1.0
	baz=69					
Q36A	Arnold C. Orve	48.37	293	P	P	21 54 05.5 -1.5
	baz=72					
U38A	Gravette	48.38	289	P	P	21 54 05.9 -1.3
	baz=70					
Y40A	Okolona	48.38	286	P	P	21 54 05.4 -1.9
	baz=68					
MIAR	Mount Ida	48.42	286	P	P	21 54 06.5 -1.0
	baz=69					
MIAR	Mount Ida	48.42	286	eP	P	21 54 06.8 -0.7
MIAR				pmax	pmax	
	comp=Z,18nm,1.1s					
MIAR	Mount Ida	48.42	286	eP	P	21 54 06.8 -0.7
	comp=Z,18nm,1.1s					
MIAR	Mount Ida	48.42	286	eP	P	21 54 06.8 -0.7
	comp=Z,18nm,1.1s					
M34A	Aspy Farms, Fr	48.44	296	P	P	21 54 06.5 -1.0
	baz=74					
A29A	Manning Farm,	48.47	306	P	P	21 54 06.2 -1.4
	baz=78					
F31A	Hecla	48.48	302	P	P	21 54 07.0 -0.9
	baz=76					
T37A	Cheneyville 18	48.55	290	P	P	21 54 07.4 -1.1
	baz=71					
N34A	Lincoln	48.57	295	P	P	21 54 06.9 -1.7
	baz=73					
V38A	Canehill	48.59	288	P	P	21 54 07.4 -1.4
	baz=70					
R36A	Gordon, Harris	48.60	292	P	P	21 54 07.2 -1.7
	baz=71					
P35A	Duane Minner,	48.61	293	P	P	21 54 07.6 -1.3
	baz=72,SNR=7.6					
L33A	Hoskins	48.74	297	P	P	21 54 08.4 -1.5
	baz=74					
Q35A	Mercer Eighty,	48.83	293	P	P	21 54 09.2 -1.4
	baz=72					
X39A	Fountain Ranch	48.85	286	P	P	21 54 09.7 -1.2
	baz=69,SNR=9.9					
M33A	Taylor Creek F	48.86	296	P	P	21 54 09.4 -1.4
	baz=73					
S36A	Lake Cedric, C	48.86	291	P	P	21 54 09.1 -1.8
	baz=71,SNR=6.4					
O34A	Beatrice	48.90	294	P	P	21 54 10.0 -1.2
	baz=72					
U37A	Salina	48.95	289	P	P	21 54 09.8 -1.8
	baz=70					
W38A	Poteau	48.96	287	P	P	21 54 10.9 -0.8
	baz=69					
H31A	Wolsey	48.97	300	P	P	21 54 10.6 -1.0
	baz=75					
F30A	Leola	49.01	302	P	P	21 54 11.2 -0.8
	baz=76					
140A	Cam and Jess,	49.13	284	P	P	21 54 11.2 -1.7
	baz=67					
FFC	Flin Flon	49.14	314	eP	P	21 54 12.9 +0.1
FFC				pmax	pmax	
	comp=Z,9.0nm,0.8s					
FFC	Flin Flon	49.14	314	eP	P	21 54 12.9 +0.1
	comp=Z,9.3nm,0.8s					
FFC	Flin Flon	49.14	314	eP	P	21 54 12.9 +0.1
	comp=Z,9.3nm,0.8s					
V37A	Hulbert	49.15	289	P	P	21 54 11.2 -1.9
	baz=70					
KSU1	Kansas State U	49.17	293	P	P	21 54 11.5 -1.8
	baz=72					
KSU1	Kansas State U	49.17	293	eP	P	21 54 12.7 -0.6
	comp=Z,18nm,0.9s					
KSU1	Kansas State U	49.17	293	eP	P	21 54 12.7 -0.6
	comp=Z,18nm,0.9s					
P34A	Walnut Farm, R	49.20	294	P	P	21 54 12.2 -1.2
	baz=72,SNR=5.1					
E29A	Napoleon	49.25	303	P	P	21 54 12.2 -1.5
	baz=76					
G30A	Faulkton	49.27	301	P	P	21 54 12.9 -1.0
	baz=75					
B28A	Dugan Ranch, T	49.30	306	P	P	21 54 13.2 -0.8
	baz=77					
T36A	Boggs Farm, Ca	49.30	290	P	P	21 54 12.7 -1.5
	baz=70					
341A	Kurthwood	49.32	282	P	P	21 54 13.5 -1.0
	baz=66					
X38A	Whitesboro	49.34	287	P	P	21 54 13.5 -1.0
	baz=69					
S35A	Otter Creek Ra	49.42	291	P	P	21 54 13.2 -1.9
	baz=70					
TMCR	Tamitsa	49.46	33	eP	P	21 54 14.9 -0.1
TMCR				pmax	pmax	
	comp=Z,15nm,0.5s					
TMCR	Tamitsa	49.46	33	eP	P	21 54 14.9 -0.1
	comp=Z,15nm,0.5s					
J31A	Geddes	49.47	299	P	P	21 54 13.8 -1.7
	baz=74					
OBN	Obninsk	49.58	45	diP	P	21 54 16.7 +0.7
OBN				iS	S	22 01 26.5 +2.7
OBN				pmax	pmax	
	comp=Z,24nm,1.2s					
OBN				MLR	MLR	
	comp=Z,293nm,18.0s					
OBN	Obninsk	49.58	45	iP	P	21 54 16.7 +0.7
	comp=Z,24nm,1.2s					
O33A	Hebron	49.59	295	P	P	21 54 14.7 -1.7
	baz=72					
BGNE	Belgrade	49.59	296	P	P	21 54 14.6 -1.8
	baz=73					
TUL1	Leonard	49.63	289	P	P	21 54 14.7 -2.0
	baz=69					
TUL1	Leonard	49.63	289	eP	P	21 54 15.1 -1.7
	comp=Z,10nm,0.9s					
TUL1	Leonard	49.63	289	eP	P	21 54 15.1 -1.7
	comp=Z,10nm,0.9s					
X37A	Clayton	49.78	287	P	P	21 54 16.6 -1.4
	baz=68					
V36A	Jenks	49.79	289	P	P	21 54 16.3 -1.6
	baz=69					
T35A	Sooner Cattle	49.82	290	P	P	21 54 16.7 -1.6
	baz=70					
L31A	Butterfield Fa	49.86	298	P	P	21 54 16.8 -1.7
	baz=73					
P33A	Williams Farm,	49.87	294	P	P	21 54 17.0 -1.6
	baz=71					
B27A	Peters Farms,	49.89	306	P	P	21 54 17.2 -1.4
	baz=77					
R34A	Isabella, Hill	49.91	292	P	P	21 54 16.9 -1.9
	baz=71					
E28A	Huff	49.95	304	P	P	21 54 17.5 -1.6
	baz=76					
Z38A	Mt. Pleasant	49.99	285	P	P	21 54 18.0 -1.5
	baz=68					
J30A	Dallas	49.99	299	P	P	21 54 17.8 -1.7
	baz=74					
U35A	Pawnee	50.18	290	P	P	21 54 19.5 -1.4
	baz=69					
M31A	Lambtecht Ranc	50.20	297	P	P	21 54 19.3 -1.8
	baz=72					
W36A	Wetumka	50.24	288	P	P	21 54 20.4 -1.0
	baz=68					
T34A	McClaskey Farm	50.30	291	P	P	21 54 20.5 -1.3
	baz=70					
138A	Matatall Enter	50.30	285	P	P	21 54 20.9 -1.0
	baz=67					
NATX	Nacogdoches	50.32	283	P	P	21 54 21.2 -0.9
	baz=66					
I29A	Vivian Onida	50.36	300	P	P	21 54 21.3 -0.9
	baz=74					
D27A	Center	50.37	304	P	P	21 54 21.8 -0.5
	baz=76					
KLMR	Klimovskoe	50.39	37	eP	P	21 54 20.8 -1.3
KLMR				e		21 55 38.8
KLMR				pmax	pmax	
	comp=Z,22nm,1.3s					
KLMR	Klimovskoe	50.39	37	eP	P	21 54 20.8 -1.3
	comp=Z,22nm,1.3s					
KLMR	Klimovskoe	50.39	37	ePcP	PcP	21 55 38.8 -1.6
R33A	Olander Ranch,	50.45	293	P	P	21 54 21.7 -1.3
	baz=70					
P32A	Huiting Farm,	50.47	294	P	P	21 54 21.8 -1.3
	baz=71					
Z37A	Pogue Cattle C	50.50	285	P	P	21 54 22.3 -1.1
	baz=67					
X36A	Centrahoma	50.54	287	P	P	21 54 21.9 -1.8
	baz=68					
E27A	Carson	50.57	304	P	P	21 54 23.3 -0.6
	baz=75					
238A	Jacksonville	50.58	284	P	P	21 54 23.1 -0.9
	baz=66					
S33A	Kaszmaul Farm,	50.71	292	P	P	21 54 24.0 -0.9
	baz=70					
BR231	Keskin MP Arra	50.73	65	eP	P	21 54 29.9 +4.7
W35A	Tecumseh	50.73	288	P	P	21 54 23.4 -1.7
	baz=68					
Y36A	Durant	50.74	287	P	P	21 54 23.8 -1.4
	baz=68					
U34A	Anderson Ranch	50.76	290	P	P	21 54 24.3 -1.1
	baz=69					
439A	Center Grove,	50.79	282	P	P	21 54 24.8 -0.9
	baz=66					
R32A	Long Quarter,	50.95	293	P	P	21 54 25.7 -1.1
	baz=70					
V34A	Guthrie	50.97	289	P	P	21 54 25.2 -1.7
	baz=69					
D26A	Manning	50.99	305	P	P	21 54 26.1 -0.9
	baz=75					
X35A	Drake	51.08	287	P	P	21 54 25.6 -2.2
	baz=68					
B25A	Knox Farm, Ray	51.15	306	P	P	21 54 27.4 -0.8
	baz=76					
E26A	Carlson Angus	51.16	304	P	P	21 54 26.7 -1.6
	baz=75					
U33A	Lingo Farm, Me	51.20	290	P	P	21 54 27.2 -1.4
	baz=69					
W34A	Bridge Creek,	51.38	289	P	P	21 54 28.8 -1.2
	baz=68					
BR131	Keskin Array S	51.39	65	eP	P	21 54 30.7 +0.5
BR131	Keskin Array S	51.39	65	eP	P	21 54 30.7 +0.5
BRTR	Keskin Array B	51.39	65	P	P	21 54 30.5 +0.3
	comp=Z,6.4nm,1.2s,baz=286,slow=4.9,SNR=16					
BRTR				PcP	PcP	21 55 43.5 -1.3
	comp=Z,1.2nm,0.9s,baz=264,slow=1.1,SNR=3.9					
BRTR				LR	LR	22 15 18.3
	comp=Z,147nm,21.6s,baz=281,slow=35					
LPSR	Galich'ya Gora	51.41	48	eP	P	21 54 30.0 +0.1
LPSR				pmax	pmax	
	comp=Z,10.0nm,1.5s					
LPSR	Galich'ya Gora	51.41	48	eP	P	21 54 30.0 +0.1
	comp=Z,10.0nm,1.5s					
337A	Centerville	51.45	283	P	P	21 54 29.7 -0.9
	baz=66					
F26A	Lodgepole	51.47	303	P	P	21 54 29.5 -1.1
	baz=74					
136A	Ennis	51.49	285	P	P	21 54 30.0 -0.9
	baz=66					
T32A	Huddler Ranch,	51.54	292	P	P	21 54 30.0 -1.2
	baz=69					
D25A	Fairfield	51.55	305	P	P	21 54 30.1 -1.1
	baz=75					
V33A	Lossen Ranch,	51.55	290	P	P	21 54 29.9 -1.4
	baz=68					
E25A	Miller Ranch,	51.78	304	P	P	21 54 32.1 -0.8
	baz=74					
VSR	Storozhevoye	51.87	50	eP	P	21 54 32.7 -0.7
VSR				pmax	pmax	
	comp=Z,10.0nm,1.3s					
VSR	Storozhevoye	51.87	50	eP	P	21 54 32.7 -0.7
	comp=Z,10.0nm,1.3s					
U32A	Winter Ranch,	51.89	291	P	P	21 54 32.4 -1.5
	baz=68					
H26A	Fairpoint	51.89	302	P	P	21 54 32.8 -1.0
	baz=73					
G25A	Newell	52.16	303	P	P	21 54 34.4 -1.4
	baz=73					
V32A	Arapaho	52.16	290	P	P	21 54 34.4 -1.5
	baz=68					
X33A	Lawton	52.20	288	P	P	21 54 34.7 -1.4
	baz=67					
Z34A	Collier Ranch,	52.20	287	P	P	21 54 34.8 -1.4
	baz=67					
WHTX	Lake Whitney,	52.40	285	P	P	21 54 36.9 -0.8
	baz=66					
WHTX	Lake Whitney,	52.40	285	eP	P	21 54 37.7 0.0
	comp=Z,34nm,1.2s					
WHTX	Lake Whitney,	52.40	285	eP	P	21 54 37.6 0.0
	comp=Z,34nm,1.2s					
ANN	Anapa	52.47	58	eP	P	21 54 33.0 -4.9
ANN				e*PP	pP	21 54 39.8 -1.3
ANN				e		21 55 45.3
ANN				e		21 56 33.6
ANN				ePPP	PPP	21 57 35.7
ANN				eS	S	22 01 57.4 -6.8
ANN				eSS	SS	22 05 36.5 -5.3
ANN				pmax	pmax	
	comp=Z,36nm,1.3s					
J26A	Sides Ranch, S	52.49	300	P	P	21 54 37.8 -0.5
	baz=72					
Y33A	Hilltop Ranch,	52.50	288	P	P	21 54 36.6 -1.8
	baz=67					
134A	White-Moore Ra	52.65	286	P	P	21 54 37.8 -1.7
	baz=66					
335A	Moody	52.67	284	P	P	21 54 38.3 -1.4
	baz=65					
X32A	Elmer	52.84	288	P	P	21 54 39.1 -1.8
	baz=67					
536A	Bastrop	52.90	283	P	P	21 54 40.2 -1.1
	baz=65					
435B	Jarrell	53.00	284	P	P	21 54 41.2 -0.9
	baz=65					
133A	Hamilton Ranch	53.28	286	P	P	21 54 42.5 -1.7
	baz=66					
VRH	Novokhopyorsk	53.43	49	eP	P	21 54 44.5 -0.4
VRH				pmax	pmax	
	comp=Z,10.0nm,0.8s					
VRH				MLR	MLR	
	comp=Z,750nm,22.0s					
VRH	Novokhopyorsk	53.43	49	eP	P	21 54 44.5 -0.4
	comp=Z,750nm,22.0s					
233A	Rising Star	53.51	286	P	P	21 54 44.4 -1.4
	baz=66					
SAML	Samuel	53.57	218	eP	P	21 54 45.6 -0.7
	comp=Z,12nm,1.4s					
SAML	Samuel	53.57	218	eP	P	21 54 45.6 -0.7
	comp=Z,12nm,1.4s					
KSCO	Kaye Shedlock'	53.62	295	P	P	21 54 45.0 -1.7
	baz=69					
635A	Leesville	53.75	282	P	P	21 54 46.5 -1.1
	baz=64					
333A	Richland Sprin	53.86	285	P	P	21 54 46.9 -1.6
	baz=65					
735A	Kenedy	54.01	281	P	P	21 54 47.8 -1.7
	baz=64					
534A	Blanco	54.02	283	P	P	21 54 48.1 -1.5
	baz=64					
433A	Art	54.19	284	P	P	21 54 49.3 -1.5

baz=65
YKW3 Yellowknife Ar 54.26 326 *e*P **P 21 54 50.5 -0.4**
comp=Z,7.6nm,1.2s
YKW3 Yellowknife Ar 54.26 326 *e*P **P 21 54 50.5 -0.4**
comp=Z,7.6nm,1.2s
YKA Yellowknife Ar 54.27 326 P **P 21 54 50.8 -0.1**
comp=Z,3.2nm,0.8s,baz=78,slow=7.4,SNR=36
YKA PcP **PcP 21 55 54.7 -0.3**
comp=Z,1.7nm,0.9s,baz=79,slow=4.1,SNR=3.6
YKA LR LR 22 15 27.4
comp=Z,11nm,19.5s,baz=0.0,slow=33
YKB5 Yellowknife Ar 54.27 326 *e*P **P 21 54 50.3 -0.6**
YKB5 Yellowknife Ar 54.27 326 *e*P **P 21 54 50.3 -0.6**
AMTX Amarillo 54.47 290 P **P 21 54 51.4 -1.5**
baz=66
AMTX Amarillo 54.47 290 *e*P **P 21 54 54.1 +1.1**
comp=Z,9.4nm,0.6s
AMTX Amarillo 54.47 290 *e*P **P 21 54 54.1 +1.1**
comp=Z,9.4nm,0.6s
734A La Parita Cree 54.60 282 P **P 21 54 52.6 -1.2**
baz=64
633A Saathoff Ranch 54.82 283 P **P 21 54 53.8 -1.6**
baz=64
JCT Junction City 54.86 284 P **P 21 54 54.2 -1.6**
baz=64
JCT Junction City 54.86 284 *e*P **P 21 54 54.6 -1.2**
JCT pmax pmax
comp=Z,19nm,1.3s
JCT Junction City 54.86 284 *e*P **P 21 54 54.6 -1.2**
comp=Z,19nm,1.3s
JCT Junction City 54.86 284 *e*P **P 21 54 54.6 -1.2**
comp=Z,19nm,1.3s
K22A Casper 55.10 300 P **P 21 54 55.8 -1.6**
baz=70
MMAI Mount Meron Ar 55.23 72 LR LR 22 17 44.1
comp=Z,41nm,21.8s,baz=15,slow=35
035Z Hargill 55.30 279 P **P 21 54 57.4 -1.5**
baz=62
N23A Red Feather La 55.32 298 P **P 21 54 57.9 -1.3**
baz=69
N23A Red Feather La 55.32 298 *e*P **P 21 54 59.1 -0.1**
comp=Z,17nm,1.1s
N23A Red Feather La 55.32 298 *e*P **P 21 54 59.1 -0.1**
comp=Z,17nm,1.1s
ISCO Idaho Springs 55.48 297 P **P 21 54 59.5 -1.0**
baz=68
ISCO Idaho Springs 55.48 297 *e*P **P 21 55 00.1 -0.4**
ISCO pmax pmax
comp=Z,3.0nm,0.8s
ISCO Idaho Springs 55.48 297 *e*P **P 21 55 00.1 -0.4**
comp=Z,2.8nm,0.8s
ISCO Idaho Springs 55.48 297 *e*P **P 21 55 00.1 -0.4**
comp=Z,2.8nm,0.8s
OTAV Otavalo 55.48 240 *e*P **P 21 55 01.2 +0.3**
comp=Z,13nm,1.3s
OTAV Otavalo 55.48 240 *e*P **P 21 55 01.2 +0.3**
comp=Z,13nm,1.3s
T25A Trinidad 55.62 294 *e*P **P 21 55 01.5 +0.1**
comp=Z,7.6nm,1.0s
T25A Trinidad 55.62 294 *e*P **P 21 55 01.5 +0.1**
comp=Z,7.6nm,1.0s
MSTX Muleshoe 55.67 289 P **P 21 55 00.6 -1.1**
baz=66
MSTX Muleshoe 55.67 289 *e*P **P 21 55 00.5 -1.1**
comp=Z,15nm,1.4s
MSTX Muleshoe 55.67 289 *e*P **P 21 55 00.5 -1.1**
comp=Z,15nm,1.4s
RLMT Red Lodge 56.10 304 P **P 21 55 03.8 -1.0**
baz=70
RLMT Red Lodge 56.10 304 *e*P **P 21 55 04.7 0.0**
comp=Z,15nm,1.4s
RLMT Red Lodge 56.10 304 *e*P **P 21 55 04.7 0.0**
comp=Z,15nm,1.4s
GCMT Greycliff 56.14 305 *e*P **P 21 55 05.3 +0.4**
GCMT Greycliff 56.14 305 *e*P **P 21 55 05.3 +0.4**
KIV Kislovodsk 56.30 57 *c i*P **P 21 55 06.5 +0.5**
KIV *e* 21 55 20.9
KIV *e*S S 22 03 11.8 +16
KIV pmax pmax
comp=Z,6.0nm,1.0s
KIV MLR MLR
comp=Z,82nm,16.0s
KIV Kislovodsk 56.30 57 *i* P **P 21 55 06.5 +0.5**
comp=Z,6.0nm,1.0s
EIL Elat 56.32 76 LR LR 22 19 33.5
comp=Z,39nm,18.9s,baz=250,slow=36
KBZ Khabaz 56.53 57 P **P 21 55 09.1 +1.6**
comp=Z,7.9nm,1.0s,baz=298,slow=5.5,SNR=12
KBZ LR LR 22 18 50.1
comp=Z,60nm,18.9s,baz=340,slow=36
NEY Neytrino 56.58 58⇑ *i*P **P 21 55 10.6 +2.5**
NEY pmax pmax
comp=Z,3.0nm,1.3s
NEY Neytrino 56.58 58 *i* P **P 21 55 10.6 +2.5**
comp=Z,3.0nm,1.3s
NCK Nalchik 57.08 58⇓ *i*P **P 21 55 13.1 +1.6**
NCK pmax pmax
comp=Z,14nm,1.3s
NCK Nalchik 57.08 58 *i* P **P 21 55 13.1 +1.6**
comp=Z,14nm,1.3s
BW06 Boulder Array 57.14 302 P **P 21 55 10.8 -1.4**
baz=68
BW06 Boulder Array 57.14 302 *e*P **P 21 55 11.1 -1.1**
BW06 Boulder Array 57.14 302 *e*P **P 21 55 11.1 -1.1**
PD31 Pinedale Array 57.14 302 *e*P **P 21 55 11.1 -1.1**
PD31 Pinedale Array 57.14 302 *e*P **P 21 55 11.1 -1.1**
PDAR Pinedale Array 57.14 302 P **P 21 55 10.9 -1.2**
comp=Z,1.9nm,0.7s,baz=69,slow=8.1,SNR=16
PDAR LR LR 22 20 03.8
comp=Z,114nm,18.2s,baz=74,slow=36
S22A 4UR Ranch, Cre 57.15 295 *e*P **P 21 55 09.8 -2.6**
comp=Z,12nm,0.9s
S22A 4UR Ranch, Cre 57.15 295 *e*P **P 21 55 09.8 -2.6**
comp=Z,12nm,0.9s
O20A White River Ci 57.23 298 P **P 21 55 11.3 -1.5**
baz=67
O20A White River Ci 57.23 298 *e*P **P 21 55 12.6 -0.1**
comp=Z,46nm,1.8s
O20A White River Ci 57.23 298 *e*P **P 21 55 12.7 -0.1**
comp=Z,46nm,1.8s
H17A Grant Village 57.23 304 *e*P **P 21 55 13.3 +0.5**
comp=Z,6.1nm,0.2s
H17A Grant Village 57.23 304 *e*P **P 21 55 13.3 +0.5**
comp=Z,6.1nm,0.2s
FLWY Flagg Ranch 57.43 303 *e*P **P 21 55 14.0 -0.2**
comp=Z,12nm,1.1s
FLWY Flagg Ranch 57.43 303 *e*P **P 21 55 14.0 -0.2**
comp=Z,12nm,1.1s
BOZ Bozeman (W) 57.48 305 P **P 21 55 13.6 -0.8**
baz=69
BOZ Bozeman (W) 57.48 305 *e*P **P 21 55 14.0 -0.4**
BOZ pmax pmax
comp=Z,11nm,1.5s
BOZ Bozeman (W) 57.48 305 *e*P **P 21 55 14.0 -0.4**
comp=Z,11nm,1.5s
BOZ Bozeman (W) 57.48 305 *e*P **P 21 55 14.0 -0.4**
comp=Z,11nm,1.5s
LOHW Long Hollow 57.54 303 *e*P **P 21 55 14.6 -0.4**
comp=Z,23nm,1.8s
LOHW Long Hollow 57.54 303 *e*P **P 21 55 14.6 -0.4**
comp=Z,23nm,1.8s
ZEI Tsey 57.55 58 *e*P **P 21 55 13.7 -1.4**
ZEI pmax pmax
comp=Z,47nm,1.4s
ZEI Tsey 57.55 58 *e*P **P 21 55 13.7 -1.4**
comp=Z,47nm,1.4s
MOOW Moose Ponds 57.58 303 *e*P **P 21 55 15.4 +0.1**
comp=Z,18nm,1.7s
MOOW Moose Ponds 57.58 303 *e*P **P 21 55 15.4 +0.1**
comp=Z,18nm,1.7s
IMW Indian Meadow 57.66 303 *e*P **P 21 55 15.6 -0.3**
comp=Z,8.9nm,1.0s
IMW Indian Meadow 57.66 303 *e*P **P 21 55 15.6 -0.3**
comp=Z,8.9nm,1.0s
SNOW Snow King Moun 57.70 303 *e*P **P 21 55 16.1 0.0**
comp=Z,7.5nm,0.7s
SNOW Snow King Moun 57.70 303 *e*P **P 21 55 16.1 0.0**
comp=Z,7.5nm,0.7s
WALA Waterton Lakes 57.71 310 *e*P **P 21 55 15.2 -0.8**
comp=Z,8.5nm,1.1s
WALA Waterton Lakes 57.71 310 *e*P **P 21 55 15.2 -0.8**
comp=Z,8.5nm,1.1s
REDW Red Top Meadow 57.80 303 *e*P **P 21 55 16.3 -0.5**
comp=Z,18nm,1.3s
REDW Red Top Meadow 57.80 303 *e*P **P 21 55 16.3 -0.5**
comp=Z,18nm,1.3s
FXWY Fox Creek 57.81 303 *e*P **P 21 55 16.3 -0.6**
comp=Z,10.0nm,1.3s
FXWY Fox Creek 57.81 303 *e*P **P 21 55 16.3 -0.6**
comp=Z,10.0nm,1.3s
TPAW Teton Pass 57.82 303 *e*P **P 21 55 16.6 -0.4**
comp=Z,23nm,1.4s
TPAW Teton Pass 57.82 303 *e*P **P 21 55 16.6 -0.4**
comp=Z,23nm,1.4s
ANMO Albuquerque 58.03 292 P **P 21 55 18.0 -0.4**
baz=65
ANMO Albuquerque 58.03 292⇓ *e*P **P 21 55 18.4 -0.1**
ANMO pmax pmax
comp=Z,7.0nm,1.7s
ANMO Albuquerque 58.03 292 *e*P **P 21 55 18.4 -0.1**
comp=Z,7.0nm,1.7s
ANMO Albuquerque 58.03 292 *e*P **P 21 55 18.7 +0.2**
comp=Z,17nm,1.9s
AHID Auburn Hatcher 58.20 302 *e*P **P 21 55 19.6 0.0**
comp=Z,19nm,1.2s
AHID Auburn Hatcher 58.20 302 *e*P **P 21 55 19.6 0.0**
comp=Z,19nm,1.2s
DLMT Dillon 58.21 305 *e*P **P 21 55 20.0 +0.4**
comp=Z,6.8nm,1.0s
DLMT Dillon 58.21 305 *e*P **P 21 55 20.0 +0.4**
comp=Z,6.8nm,1.0s
SWMT Swartz Lake 58.32 308 *e*P **P 21 55 19.5 -0.7**
SWMT Swartz Lake 58.32 308 *e*P **P 21 55 19.5 -0.7**
TX31 Lajitas Ar. Si 58.37 285 *e*P **P 21 55 20.0 -0.8**
TX31 Lajitas Ar. Si 58.37 285 *e*P **P 21 55 20.1 -0.8**
TXAR Lajitas Array 58.37 285 P **P 21 55 20.0 -0.9**
comp=Z,3.5nm,0.8s,baz=82,slow=7.0,SNR=39
TXAR LR LR 22 18 31.9
comp=Z,112nm,20.2s,baz=0.0,slow=34
TXAR Lajitas Array 58.37 285 P **P 21 55 20.0 -0.9**
TXAR Lajitas Array 58.37 285 P **P 21 55 20.0 -0.9**
BNM Barren Site 58.49 291 *e*P **P 21 55 22.6 +0.8**
BNM Barren Site 58.49 291 *e*P **P 21 55 22.6 +0.8**
MSO Missoula 58.53 307 P **P 21 55 20.4 -1.3**
baz=68
MNTX Cornudas Mount 58.62 288 P **P 21 55 20.9 -1.6**
baz=64
MNTX Cornudas Mount 58.62 288 *e*P **P 21 55 21.5 -1.0**
comp=Z,3.3nm,0.9s
MNTX Cornudas Mount 58.62 288 *e*P **P 21 55 21.5 -1.0**
comp=Z,3.3nm,0.9s
LAZ Ladron 58.77 292 *e*P **P 21 55 25.1 +1.4**
LAZ Ladron 58.77 292 *e*P **P 21 55 25.1 +1.4**
P18A Preston Nutter 58.84 298 *e*P **P 21 55 23.9 -0.3**
comp=Z,12nm,1.3s
P18A Preston Nutter 58.84 298 *e*P **P 21 55 23.9 -0.3**
comp=Z,12nm,1.3s
HWUT Hardware Ranch 58.97 301 *e*P **P 21 55 24.4 -0.5**
comp=Z,16nm,1.3s
HWUT Hardware Ranch 58.97 301 *e*P **P 21 55 24.4 -0.5**
comp=Z,16nm,1.3s
SOKR Solikamsk 59.04 36 *e*P **P 21 55 23.5 -1.3**
SOKR pmax pmax
comp=Z,12nm,1.2s
SOKR MLR MLR
comp=Z,200nm,18.0s
GNI Garni 59.17 61 *c i*P **P 21 55 26.7 +0.4**
GNI pmax pmax
comp=Z,45nm,1.2s
GNI Garni 59.17 61 *i* P **P 21 55 26.7 +0.4**
comp=Z,45nm,1.2s
GNI Garni 59.17 61 *e*P **P 21 55 27.5 +1.2**
comp=Z,33nm,1.6s
SRU San Rafael Swe 59.25 298 *e*P **P 21 55 26.9 0.0**
SRU pmax pmax
comp=Z,4.0nm,1.0s
SRU San Rafael Swe 59.25 298 *e*P **P 21 55 26.9 0.0**
comp=Z,3.8nm,1.0s
SRU San Rafael Swe 59.25 298 *e*P **P 21 55 26.9 0.0**
comp=Z,3.8nm,1.0s
JLU Jordanelle 59.29 300 *e*P **P 21 55 27.2 -0.1**
comp=Z,18nm,1.4s
JLU Jordanelle 59.29 300 *e*P **P 21 55 27.2 -0.1**
comp=Z,18nm,1.4s
TMUT Trail Mountain 59.66 298 *e*P **P 21 55 30.3 +0.4**
comp=Z,17nm,1.5s
TMUT Trail Mountain 59.66 298 *e*P **P 21 55 30.3 +0.4**
comp=Z,17nm,1.5s
HVU Hansel Valley 59.73 302 *e*P **P 21 55 29.8 -0.3**
HVU pmax pmax
comp=Z,19nm,1.4s
HVU Hansel Valley 59.73 302 *e*P **P 21 55 29.8 -0.3**
comp=Z,19nm,1.4s
HVU Hansel Valley 59.73 302 *e*P **P 21 55 29.8 -0.3**
comp=Z,19nm,1.4s
Q16A Castle Valley 59.79 298 *e*P **P 21 55 30.4 -0.3**
comp=Z,10nm,1.5s
Q16A Castle Valley 59.79 298 *e*P **P 21 55 30.4 -0.3**
comp=Z,10nm,1.5s
INK Inuvik 59.98 335 LR LR 22 18 41.5
comp=Z,226nm,19.0s,baz=56,slow=33
INK Inuvik 59.98 335 *e*P **P 21 55 30.4 -0.8**
INK pmax pmax
comp=Z,19nm,1.6s
INK Inuvik 59.98 335 *e*P **P 21 55 30.4 -0.8**
comp=Z,19nm,1.6s
INK Inuvik 59.98 335 *e*P **P 21 55 30.4 -0.8**
comp=Z,19nm,1.6s
NEW Newport 59.98 310 P **P 21 55 30.6 -1.1**
baz=67
NEW Newport 59.98 310 *e*P **P 21 55 31.2 -0.5**
NEW pmax pmax
comp=Z,12nm,0.9s
NEW Newport 59.98 310 *e*P **P 21 55 31.2 -0.5**
comp=Z,12nm,0.9s
NEW Newport 59.98 310 *e*P **P 21 55 31.2 -0.5**
comp=Z,12nm,0.9s
HLID Hailey 60.11 304 P **P 21 55 32.0 -0.8**
baz=66
BGU Big Grassy Mou 60.25 301 *e*P **P 21 55 33.3 -0.5**
comp=Z,9.6nm,1.3s
BGU Big Grassy Mou 60.25 301 *e*P **P 21 55 33.3 -0.5**
comp=Z,9.6nm,1.3s
DUG Dugway, Tooele 60.41 300 P **P 21 55 34.4 -0.4**
baz=65
DUG Dugway, Tooele 60.41 300 *e*P **P 21 55 34.8 0.0**
DUG pmax pmax
comp=Z,16nm,1.1s
DUG Dugway, Tooele 60.41 300 *e*P **P 21 55 34.8 0.0**
comp=Z,16nm,1.1s
DUG Dugway, Tooele 60.41 300 *e*P **P 21 55 34.8 0.0**
comp=Z,16nm,1.1s
MSU Marysvale 60.67 298 *e*P **P 21 55 37.1 +0.3**
MSU Marysvale 60.67 298 *e*P **P 21 55 37.1 +0.3**
MSU Marysvale 60.67 298 *e*P **P 21 55 37.1 +0.3**
ARU Arti 61.11 39 *c i*P **P 21 55 39.1 0.0**
ARU 21 56 26.5
ARU S **S 22 03 59.8 +1.7**
ARU SS **SS 22 07 53.5 -3.7**
ARU pmax pmax
comp=Z,25nm,1.7s
ARU Arti 61.11 39 *e*P **P 21 55 39.2 +0.1**
comp=Z,17nm,1.2s
ARU Arti 61.11 39 *e*P **P 21 55 39.2 +0.1**
comp=Z,17nm,1.2s
CCUT Cedar City 61.93 297 *e*P **P 21 55 45.8 +0.4**
comp=Z,25nm,1.8s
CCUT Cedar City 61.93 297 *e*P **P 21 55 45.8 +0.4**
comp=Z,25nm,1.8s
SVE Sverdlovsk 61.99 38⇑ *i*P **P 21 55 45.6 +0.5**
SVE pmax pmax
comp=Z,22nm,1.9s
SVE Sverdlovsk 61.99 38 *i* P **P 21 55 45.6 +0.5**
comp=Z,22nm,1.9s
LPAZ La Paz 62.30 218 P **P 21 55 48.1 -0.1**
comp=Z,5.4nm,1.1s,baz=0.1,slow=8.3,SNR=8.2
LPAZ LR LR 22 20 42.9
comp=Z,240nm,19.6s,baz=18,slow=34
LPAZ La Paz 62.30 218 *e*P **P 21 55 48.2 -0.1**
LPAZ pmax pmax
comp=Z,10.0nm,1.1s
LPAZ La Paz 62.30 218 *e*P **P 21 55 48.2 -0.1**
comp=Z,9.6nm,1.1s
LPAZ La Paz 62.30 218 *e*P **P 21 55 48.1 -0.1**
comp=Z,9.6nm,1.1s
R11A Troy Canyon, C 63.15 299 P **P 21 55 52.3 -1.1**
baz=63
R11A Troy Canyon, C 63.15 299 *e*P **P 21 55 53.0 -0.4**
comp=Z,14nm,1.8s
R11A Troy Canyon, C 63.15 299 *e*P **P 21 55 53.0 -0.4**
comp=Z,14nm,1.8s
WVOR Wild Horse Val 63.39 304 *e*P **P 21 55 55.9 +1.0**
WVOR pmax pmax
comp=Z,24nm,1.8s
WVOR Wild Horse Val 63.39 304 *e*P **P 21 55 55.9 +1.0**
comp=Z,24nm,1.8s
WVOR Wild Horse Val 63.39 304 *e*P **P 21 55 55.9 +1.0**
comp=Z,24nm,1.8s
DAWY Dawson 64.06 332 *e*P **P 21 55 59.8 +1.0**
comp=Z,15nm,1.4s
DAWY Dawson 64.06 332 *e*P **P 21 55 59.8 +1.0**
comp=Z,15nm,1.4s
EGAK Eagle 64.34 333 *e*P **P 21 56 02.9 +2.3**
comp=Z,14nm,1.6s
EGAK Eagle 64.34 333 *e*P **P 21 56 02.9 +2.3**
comp=Z,14nm,1.6s
K05A Summer Lake 64.75 305 *e*P **P 21 56 04.2 +0.4**
comp=Z,24nm,1.3s
K05A Summer Lake 64.75 305 *e*P **P 21 56 04.2 +0.4**
comp=Z,24nm,1.3s
NV11 Mina Array Sit 64.90 300 *e*P **P 21 56 04.2 -0.7**
comp=Z,10.0nm,1.2s
NV11 Mina Array Sit 64.90 300 *e*P **P 21 56 04.2 -0.7**
comp=Z,10.0nm,1.2s
ABKAR Akbulak array 64.99 46 *e*P **P 21 56 05.8 +0.7**
comp=Z,0.8nm,0.4s
ABKAR Akbulak array 64.99 46 *e*P **P 21 56 05.8 +0.7**
comp=Z,0.8nm,0.4s
NV01 Mina Array Sit 65.00 300 *e*P **P 21 56 04.6 -1.0**
NV01 Mina Array Sit 65.00 300 *e*P **P 21 56 04.5 -1.0**
NVAR Mina Array Bea 65.00 300 P **P 21 56 05.8 +0.1**
comp=Z,0.7nm,0.5s,baz=64,slow=10,SNR=3.8
DAC Darwin (Calif) 65.53 298 *e*P **P** 21 56 11.3 +2.3
DAC pmax pmax
comp=Z,13nm,1.4s
DAC Darwin (Calif) 65.53 298 *e*P P 21 56 11.3 +2.3
comp=Z,13nm,1.4s
DAC Darwin (Calif) 65.53 298 *e*P P 21 56 11.3 +2.3
comp=Z,13nm,1.4s
NRIK Noril'sk 65.62 20 P **P 21 56 10.2 +1.4**
comp=Z,1.8nm,0.3s,baz=308,slow=5.3,SNR=11
NRIK LR LR 22 24 21.7
comp=Z,47nm,20.6s,baz=294,slow=36
COLD Coldfoot 65.94 338 *e*P P 21 56 13.5 +2.6
comp=Z,9.3nm,1.4s
COLD Coldfoot 65.94 338 *e*P P 21 56 13.5 +2.6
comp=Z,9.3nm,1.4s
DOT Dot Lake 66.03 333 *e*P **P 21 56 12.8 +1.3**
comp=Z,15nm,1.0s
DOT Dot Lake 66.03 333 *e*P **P 21 56 12.8 +1.3**
comp=Z,15nm,1.0s
IL1 Eielson Array 66.37 335 *e*P **P 21 56 14.7 +1.0**
IL1 Eielson Array 66.37 335 *e*P **P 21 56 14.7 +1.0**
ILAR Eielson Array 66.37 335 P **P 21 56 13.9 +0.2**
comp=Z,1.6nm,0.9s,baz=50,slow=5.7,SNR=12
ILAR LR LR 22 22 50.4
comp=Z,102nm,18.1s,baz=88,slow=34
CCB Clear Creek Bu 66.76 335 *e*P **P 21 56 16.3 +0.1**
comp=Z,5.6nm,1.0s
CCB Clear Creek Bu 66.76 335 *e*P **P 21 56 16.3 +0.1**
comp=Z,5.6nm,1.0s
CPUP Villa Florida 66.83 204 LR LR 22 22 38.0
comp=Z,128nm,19.3s,baz=22,slow=34
BALM Baldy 66.86 330 *e*P **P 21 56 18.6 +1.5**
BALM pmax pmax
comp=Z,16nm,1.3s
BALM Baldy 66.86 330 *e*P **P 21 56 18.6 +1.5**
comp=Z,16nm,1.3s
BALM Baldy 66.86 330 *e*P **P 21 56 18.6 +1.5**
comp=Z,16nm,1.3s
WRH Wood River Hil 66.97 335 *e*P **P 21 56 18.2 +0.7**
comp=Z,6.5nm,1.0s
WRH Wood River Hil 66.97 335 *e*P **P 21 56 18.2 +0.7**
comp=Z,6.5nm,1.0s
MLY Manley 67.50 336 *e*P **P 21 56 21.3 +0.3**
comp=Z,6.4nm,1.2s
MLY Manley 67.50 336 *e*P **P 21 56 21.3 +0.3**
comp=Z,6.4nm,1.2s
BMRM Bremner River 67.80 331 *e*P P 21 56 26.1 +3.2
comp=Z,40nm,1.4s
BMRM Bremner River 67.80 331 *e*P P 21 56 26.1 +3.2
comp=Z,40nm,1.4s
ZRNK Zerenda 68.09 40 *e*P **P 21 56 25.1 +0.3**
ZRNK pmax pmax
comp=Z,14nm,1.4s
ZRNK Zerenda 68.09 40 *e*P **P 21 56 25.1 +0.3**
comp=Z,14nm,1.4s
ZRNK Zerenda 68.09 40 *e*P **P 21 56 25.1 +0.3**
comp=Z,14nm,1.4s
BPAW Bear Paw Mtn. 68.18 335 *e*P **P 21 56 25.2 0.0**
comp=Z,31nm,2.0s
BPAW Bear Paw Mtn. 68.18 335 *e*P **P 21 56 25.2 0.0**
comp=Z,31nm,2.0s
TRF Thorofare Moun 68.36 335 *e*P **P 21 56 24.7 -1.9**
comp=Z,7.0nm,1.0s
TRF Thorofare Moun 68.36 335 *e*P **P 21 56 24.7 -1.9**
comp=Z,7.0nm,1.0s
KTH Kantishna Hill 68.52 335 *e*P **P 21 56 27.4 0.0**
comp=Z,14nm,1.1s
KTH Kantishna Hill 68.52 335 *e*P **P 21 56 27.4 0.0**
comp=Z,14nm,1.1s
PMR Palmer 69.14 333 *e*P P 21 56 34.0 +2.8
PMR pmax pmax
comp=Z,8.0nm,1.0s
PMR Palmer 69.14 333 *e*P P 21 56 34.0 +2.8
comp=Z,7.7nm,1.0s
PMR Palmer 69.14 333 *e*P P 21 56 34.0 +2.8
comp=Z,7.7nm,1.0s
GEYT Alibeck 69.42 58 P **P 21 56 33.8 +0.4**
comp=Z,1.5nm,0.7s,baz=297,slow=6.5,SNR=7.0
GEYT LR LR 22 29 12.1
comp=Z,73nm,18.4s,baz=355,slow=38
TIXI Tiksi 71.07 6 *e*P **P 21 56 43.7 +0.9**
TIXI pmax pmax
comp=Z,7.0nm,1.0s
TIXI Tiksi 71.07 6 *e*P **P 21 56 43.7 +0.9**
comp=Z,6.8nm,1.0s
TIXI Tiksi 71.07 6 *e*P **P 21 56 43.6 +0.9**
comp=Z,6.9nm,1.0s
ATD Arta Tunnel 72.00 89 LR LR 22 29 09.5
comp=Z,79nm,18.9s,slow=36
NVS Novosibirsk 73.69 33 *e*P **P 21 56 58.4 -0.4**
NVS Novosibirsk 73.69 33 *e*P **P 21 56 58.4 -0.4**
KURK Kurchatov 74.23 38 *e*P **P 21 57 02.2 +0.2**
KURK pmax pmax
comp=Z,13nm,1.1s
KURK Kurchatov 74.23 38 *e*P **P 21 57 02.2 +0.2**
comp=Z,12nm,1.1s
KURK Kurchatov 74.23 38 *e*P **P 21 57 02.2 +0.2**
comp=Z,12nm,1.1s
BILL Bilibino 74.43 353⇓ *i*P **P 21 57 04.3 +1.4**
BILL *e**SP **sP 21 57 11.0 +3.6**
BILL pmax pmax
comp=Z,11nm,1.8s
BILL Bilibino 74.43 353 *i* P **P 21 57 04.3 +1.4**
comp=Z,11nm,1.8s
KKAR Karatay Array 74.47 48 *e*P **P 21 57 03.8 +0.2**
KKAR Karatay Array 74.47 48 *e*P **P 21 57 03.8 +0.2**
KKAR Karatay Array 74.47 48 *e*P **P 21 57 03.8 +0.2**
ZAA0 Zalesovo Array 74.98 33 *e*P **P 21 57 06.4 +0.1**
ZAA0 Zalesovo Array 74.98 33 *e*P **P 21 57 06.5 +0.1**
ZALV Zalesovo Beam 74.98 33 P **P 21 57 06.0 -0.3**
comp=Z,1.0nm,0.3s,baz=302,slow=6.8,SNR=4.9
ZALV LR LR 22 29 11.9
comp=Z,148nm,20.9s,baz=252,slow=35
ZALV Zalesovo Beam 74.98 33 *i* P **P 21 57 08.6 +2.3**
ZALV pmax pmax
comp=Z,1.0nm,0.3s
ZALV Zalesovo Beam 74.98 33 P **P 21 57 06.0 -0.3**
H09W1 TRISTAN DA CUN 76.04 163 T T 23 20 16.3
SNR=11
EKS2 Erkin-Say 76.65 46 *e*P **P 21 57 17.4 +1.1**
EKS2 pmax pmax
comp=Z,21nm,1.4s
EKS2 Erkin-Say 76.65 46 *e*P **P 21 57 17.4 +1.1**
comp=Z,21nm,1.4s
EKS2 Erkin-Say 76.65 46 *e*P **P 21 57 17.4 +1.1**
comp=Z,21nm,1.4s
FRU Bishkek 77.03 46⇑ *i*P **P 21 57 18.0 -0.3**
FRU pmax pmax
comp=Z,40nm,1.8s
FRU Bishkek 77.03 46 *i* P **P 21 57 18.0 -0.3**
comp=Z,40nm,1.8s
AAK Ala-Archa 77.08 46⇑ *i*P **P 21 57 19.4 +0.6**
AAK pmax pmax
comp=Z,19nm,1.5s
AAK Ala-Archa 77.08 46 *i* P **P 21 57 19.4 +0.6**
comp=Z,19nm,1.5s
AAK Ala-Archa 77.08 46 *e*P **P 21 57 19.9 +1.2**
comp=Z,12nm,1.5s
TKM2 Tokmak 2 77.54 45 *e*P **P 21 57 22.3 +0.9**
TKM2 pmax pmax

comp=Z,15nm,1.4s
TKM2 Tokmak 2 77.54 45 *e*P **P 21 57 22.3 +0.9**
comp=Z,15nm,1.4s
TKM2 Tokmak 2 77.54 45 *e*P **P 21 57 22.3 +0.9**
comp=Z,15nm,1.4s
LSZ Lusaka 77.57 120 *e*P **P 21 57 22.3 +0.6**
LSZ pmax pmax
comp=Z,41nm,1.9s
LSZ Lusaka 77.57 120 *e*P **P 21 57 22.3 +0.6**
comp=Z,41nm,1.9s
LSZ Lusaka 77.57 120 *e*P **P 21 57 22.3 +0.6**
comp=Z,41nm,1.9s
MAKZ Makanchi 78.47 39 *e*P **P 21 57 25.7 -0.5**
MAKZ pmax pmax
comp=Z,9.0nm,1.1s
MAKZ Makanchi 78.47 39 *e*P **P 21 57 25.7 -0.5**
comp=Z,8.8nm,1.1s
MAKZ Makanchi 78.47 39 *e*P **P 21 57 25.7 -0.5**
comp=Z,8.8nm,1.1s
MK31 Makanchi Array 78.64 39 *e*P **P 21 57 26.8 -0.3**
MK31 Makanchi Array 78.64 39 *e*P **P 21 57 26.8 -0.3**
MK31 Makanchi Array 78.64 39 *e*P **P 21 57 26.8 -0.3**
MKAR Makanchi Array 78.64 39 P **P 21 57 26.8 -0.4**
comp=Z,2.8nm,0.8s,baz=310,slow=4.3,SNR=22
MKAR LR LR 22 31 56.7
comp=Z,253nm,19.8s,baz=308,slow=36
MK01 Makanchi Array 78.66 39 *e*P **P 21 57 26.8 -0.5**
MK01 Makanchi Array 78.66 39 *e*P **P 21 57 26.8 -0.5**
KSH Kashi 79.91 48 P **P 21 57 35.3 +0.9**
KSH *e*pP sP 21 57 39.8 +0.9
KSH *e*sP PcP 21 57 42.3 +0.4
KSH *e*PcP pP 21 57 44.0 +6.3
KSH Kashi 79.91 48 S **S 22 07 36.3 -1.8**
KSH Kashi 79.91 48 SKS S 22 07 46.8 +8.7
KSH Kashi 79.91 48 SS SS 22 12 48.8 +2.2
KSH pmax pmax
comp=Z,18nm,1.1s
KSH pmax pmax
comp=Z,63nm,1.8s
KSH LR LR
comp=N,77nm,7.3s
KSH LR LR
comp=E,120nm,6.6s
KSH LR LR
comp=Z,130nm,7.7s
SEY Seymchan 80.48 357⇑ *e*P **P 21 57 38.4 +1.6**
SEY Seymchan 80.48 357 *e*P **P 21 57 38.4 +1.6**
YAK Yakutsk 80.50 8 *e*P P 21 57 39.9 +3.0
YAK pmax pmax
comp=Z,6.0nm,0.7s
YAK Yakutsk 80.50 8 *e*P P 21 57 39.9 +3.0
comp=Z,6.0nm,0.7s
WMQ Urumqi 83.44 39 *e*P **P 21 57 53.3 +0.4**
WMQ pmax pmax
comp=Z,4.0nm,0.8s
WMQ pmax pmax
comp=Z,100nm,6.0s
WMQ LR LR
comp=N,84nm,18.8s
WMQ LR LR
comp=E,76nm,22.6s
WMQ LR LR
comp=Z,73nm,24.4s
TLY Talaya 84.08 25 *i* P **P 21 57 57.2 +1.3**
TLY pmax pmax
comp=Z,3.0nm,1.0s
TLY Talaya 84.08 25 *i* P **P 21 57 57.2 +1.3**
comp=Z,3.0nm,1.0s
PLCA Paso Flores 84.48 208 LR LR 22 34 37.2
comp=Z,121nm,18.1s,baz=67,slow=35
ZAK Zakamensk 85.04 26 *e*P **P 21 57 58.1 -2.8**
ZAK pmax pmax
comp=Z,4.0nm,1.4s
BOSA Boshof 85.11 131 LR LR 22 34 00.8
comp=Z,34nm,19.0s,baz=298,slow=34
SONA1 Songino Array 88.28 26 *e*P **P 21 58 17.1 +0.3**
SONA1 Songino Array 88.28 26 *e*P **P 21 58 17.1 +0.3**
SONM Songino Array 88.29 26 P **P 21 58 17.3 +0.5**
comp=Z,0.9nm,0.9s,baz=307,slow=4.5,SNR=6.6
SONM LR LR 22 37 54.4
comp=Z,50nm,20.7s,baz=306,slow=36
ULN Ulaanbaatar 88.49 26⇓ *e*P **P 21 58 17.8 -0.1**
ULN pmax pmax
comp=Z,6.0nm,1.6s
ULN Ulaanbaatar 88.49 26 *e*P **P 21 58 17.8 -0.1**
comp=Z,6.0nm,1.6s
PETK Petropavlovsk- 89.93 353 LR LR 22 38 13.4
comp=Z,50nm,19.1s,baz=20,slow=35
HHC Hu-ho-hao-te 96.19 26 *e*P **P 21 58 52.5 -1.0**
HHC pmax pmax
comp=Z,22nm,1.4s
HHC pmax pmax
comp=Z,100nm,8.0s
CN2 Changchun 97.42 15 *e*P Pdif 21 58 59.0 +0.1
CD2 Chengdu 101.44 37 P **Pdif 21 59 14.5 -2.7**
CD2 pmax pmax
comp=Z,3.0nm,0.5s
WRA Warramunga Arr 159.92 36 PKPab **PKPab 22 06 02.8 -1.2**
comp=Z,1.4nm,1.0s,baz=336,slow=4.6,SNR=4.2
ASAR Alice Springs 162.77 44 PKPab **PKPab 22 06 15.2 -1.3**
comp=Z,0.6nm,0.7s,baz=321,slow=4.0,SNR=5.2
AS01 Alice Springs 162.80 44 *e*PKPab **PKPab 22 06 15.6 -1.0**
AS01 Alice Springs 162.80 44 *e*PKPab **PKPab 22 06 15.6 -1.0**

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*IDC **28** 21:50:05.5±6.5, 30°.06S×179°.34W, h327km±58km, mb3.2/2, mb1 3.4/3, mb1mx3.1/25, mbtmp3.9/3, Error ellipse: s-maj=57.5km s-min=28.9km az=27.0*
ISC 28 21:50:10.5±1.6,**30°.31S**±0°.10×**179°.8W**±0°.3,**h362**km,**n22,**
σ1°**68**/24,**Kermadec Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MXZ	**Matakaoa Point**	**7.41**	**192**	*e*PN	**P**	**21 52 00.2**	**+1.2**
MXZ				SN	**S**	**21 53 22.4**	**-2.9**
HAZ	**Te Kaha**	**7.70**	**195**	PN	**Pn**	**21 52 02.5**	**+1.3**
PUZ	**Puketiti**	**7.92**	**191**	PN	**P**	**21 52 07.4**	**+2.6**
PUZ				SN	**S**	**21 53 34.5**	**-1.7**
TWGZ	**Tauwhareparae**	**8.07**	**193**	SN	**S**	**21 53 39.5**	**0.0**
MWZ	**Matawai**	**8.31**	**195**	PN	**Pn**	**21 52 10.0**	**+1.7**
URZ	**Urewera**	**8.34**	**197**	P	**Pn**	**21 52 09.0**	**+0.4**
	1.6nm,0.3s,baz=269,slow=4.8,SNR=22						
URZ				S	**S**	**21 53 44.2**	**-1.1**
	4.2nm,0.3s,baz=98,slow=23,SNR=15						
URZ	**Urewera**	**8.34**	**197**	PN	**Pn**	**21 52 09.7**	**+1.1**
RAGZ	**Rawiri**	**8.49**	**195**	PN	**Pn**	**21 52 12.0**	**+1.4**
RIGZ	**Rimuhau**	**8.62**	**193**	PN	**P**	**21 52 14.9**	**+0.9**
ARHZ	**Aropaoanui**	**9.32**	**196**	PN	**P**	**21 52 22.8**	**+1.1**
BKZ	**Black Stump Fm**	**9.36**	**198**	PN	**Pn**	**21 52 22.1**	**+1.3**
KAHZ	**Kahuranaki**	**9.86**	**195**	PN	**Pn**	**21 52 27.8**	**+1.2**
PXZ	**Pawanui**	**10.09**	**195**	SN	**S**	**21 54 19.5**	**-3.6**
ANWZ	**Angora Road**	**10.58**	**196**	SN	**S**	**21 54 33.1**	**-0.8**
OGWZ	**Otaki Gorge**	**11.26**	**200**	PN	**P**	**21 52 42.2**	**-1.1**
KIW	**Kapiti Island**	**11.38**	**201**	PN	**P**	**21 52 44.6**	**0.0**
ASAR	**Alice Springs**	**41.59**	**268**	P	**P**	**21 57 25.7**	**+1.1**
	0.7nm,0.6s,baz=105,slow=7.1,SNR=15						
WRA	**Warramunga Arr**	**42.57**	**273**	P	**P**	**21 57 33.1**	**+0.7**
	1.1nm,0.4s,baz=114,slow=6.7,SNR=23						
FINES	**FINESS Array B**	**144.52**	**339**	PKP	PKPbc	22 09 01.2	-1.9
	1.9nm,0.6s,baz=54,slow=4.0,SNR=31						
NOA	**NORSAR Array B**	**148.41**	**350**	PKPbc	**PKPbc**	**22 09 11.5**	**-2.6**
	1.1nm,0.8s,baz=18,slow=1.4,SNR=3.4						
AKASG	**Malin Array Be**	**150.29**	**322**	PKPbc	**PKPbc**	**22 09 17.3**	**-1.5**
	0.4nm,0.5s,baz=54,slow=2.4,SNR=2.5						
TORD	**Torodi Ar. Bea**	**162.87**	**185**	PKPab	**PKPab**	**22 10 22.1**	**+0.5**
	0.1nm,0.5s,baz=175,slow=3.8,SNR=4.5						

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*ISCJB **28** 21:56:34.4±0.4, 39°.13N±0°.03×29°.00E±0°.04, h9km, Error ellipse: s-maj=4.5km s-min=4.2km az=165.1*
*CSEM **28** 21:56:34.5±0.1, 39°.15N×28°.99E, h5km, MD2.8, Error ellipse: s-maj=3.5km s-min=2.7km az=50.0*
*ISK **28** 21:56:34.3, 39°.16N×28°.99E, h6km, MD2.7*
*DDA **28** 21:56:34.6, 39°.11N×29°.01E, h7km, Md2.8*
ISC 28 21:56:34.0±0.8,**39°.13N**±0°.03×**29°.08E**±0°.04,**h9**km,**n33,**
σ0°**45**/41,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.30**	**253**	P	**Pg**	**21 56 39.7**	**-0.3**
DEMI				S	**Sg**	**21 56 43.2**	**-0.8**
DEMI	**Demirci**	**0.30**	**253**	*i* P	**Pg**	**21 56 39.7**	**-0.3**
DEMI				*i* S	**Sg**	**21 56 43.2**	**-0.8**
GDZ	**Gediz**	**0.31**	**98**	P	**Pb**	**21 56 42.0**	**+0.1**
GDZ				S	**Sb**	**21 56 46.8**	**-0.3**
GDZ	**Gediz**	**0.31**	**98**	*i* P	**Pb**	**21 56 42.0**	**+0.1**
GDZ				*i* S	**Sb**	**21 56 46.8**	**-0.3**
TVSB	**Tavsanli**	**0.43**	**43**	*e*PG	**Pb**	**21 56 44.1**	**+0.2**
TVSB				*e*SG	**Sb**	**21 56 50.7**	**+0.1**
TVSB	**Tavsanli**	**0.43**	**43**	*e*Pg	**Pb**	**21 56 44.1**	**+0.2**
TVSB				*e*Sg	**Sb**	**21 56 50.7**	**+0.1**
KULA	**Kula-Manisa**	**0.70**	**208**	*e*PG	**Pg**	**21 56 47.5**	**0.0**
KHAL	**Karahalli**	**0.82**	**157**	P	**Pb**	**21 56 51.3**	**+0.8**
KHAL				S	**Sb**	**21 57 01.6**	**-0.2**
KHAL	**Karahalli**	**0.82**	**157**	*i* P	**Pb**	**21 56 51.3**	**+0.8**
KHAL				*i* S	**Sb**	**21 57 01.6**	**-0.2**
KHL	**Karahalli**	**0.88**	**157**	*e*PG	**Pn**	**21 56 52.8**	**+0.2**
KHL	**Karahalli**	**0.88**	**157**	*e*Pg	**Pn**	**21 56 52.8**	**+0.2**
ORLT	**Orhaneli**	**0.93**	**351**	*e*PG	**Pg**	**21 56 51.5**	**-0.3**
ORLT	**Orhaneli**	**0.93**	**351**	*e*Pg	**Pg**	**21 56 51.5**	**-0.3**
BALB	**Balikesir**	**1.06**	**299**	*e*PG	**Pg**	**21 56 54.2**	**-0.2**
BALB	**Balikesir**	**1.06**	**299**	*e*Pg	**Pg**	**21 56 54.2**	**-0.2**
CAVI	**Cavuskoy**	**1.22**	**28**	*e*PN	**Pb**	**21 56 57.9**	**+0.7**
CAVI	**Cavuskoy**	**1.22**	**28**	*e*Pn	**Pb**	**21 56 57.9**	**+0.7**
MDNY	**Mudanya-Bursa**	**1.25**	**353**	*e*PN	**Pn**	**21 56 57.1**	**-0.5**
MDNY	**Mudanya-Bursa**	**1.25**	**353**	*e*Pn	**Pn**	**21 56 57.1**	**-0.5**
KCTX	**Karacabey (Bur**	**1.26**	**334**	*e*PN	**Pn**	**21 56 58.2**	**+0.3**
KCTX	**Karacabey (Bur**	**1.26**	**334**	*e*Pn	**Pn**	**21 56 58.2**	**+0.3**
ADVT	**Abdulvahap**	**1.40**	**21**	*e*PN	**Pb**	**21 57 00.9**	**+0.7**
ADVT	**Abdulvahap**	**1.40**	**21**	*e*Pn	**Pb**	**21 57 00.9**	**+0.7**
GONE	**Gonen-Balikesi**	**1.42**	**311**	*e*PN	**Pn**	**21 57 00.3**	**+0.4**
GONE	**Gonen-Balikesi**	**1.42**	**311**	*e*Pn	**Pn**	**21 57 00.3**	**+0.4**
ARMT	**Armutlu**	**1.44**	**353**	*e*PN	**Pn**	**21 57 01.1**	**+0.8**
ARMT	**Armutlu**	**1.44**	**353**	*e*Pn	**Pn**	**21 57 01.1**	**+0.8**
EDC	**Edincik**	**1.54**	**323**	*e*PN	**Pn**	**21 57 01.4**	**-0.2**
EDC	**Edincik**	**1.54**	**323**	*e*Pn	**Pn**	**21 57 01.4**	**-0.2**
GULT	**Gulveren**	**1.71**	**40**	*e*PN	**Pb**	**21 57 06.1**	**+0.5**
GULT	**Gulveren**	**1.71**	**40**	*e*Pn	**Pb**	**21 57 06.1**	**+0.5**
SVRH	**Sivrihisar-ESK**	**1.92**	**80**	*e*PN	**Pb**	**21 57 09.3**	**+0.1**
SVRH	**Sivrihisar-ESK**	**1.92**	**80**	*e*Pn	**Pb**	**21 57 09.3**	**+0.1**

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*ISK **28** 21:59:33.9, 39°.08N×29°.01E, h5km, MD2.9*
*DDA **28** 21:59:34.9, 39°.08N×29°.03E, h7km, Ml3.1*
*ISCJB **28** 21:59:35.0±0.5, 39°.05N±0°.04×29°.01E±0°.04, h9km, Error ellipse: s-maj=5.6km s-min=4.8km az=17.5*
*CSEM **28** 21:59:35.0±0.1, 39°.08N×29°.02E, h2km, MD2.9, Error ellipse: s-maj=3.2km s-min=3.1km az=11.0*
ISC 28 21:59:34.8±1.0,**39°.07N**±0°.03×**29°.04E**±0°.03,**h9**km,**n42,**
σ0°**30**/44,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**265**	P	**Pg**	**21 59 39.8**	**-0.1**
DEMI	**Demirci**	**0.25**	**265**	*i* P	**Pg**	**21 59 39.8**	**-0.1**
GDZ	**Gediz**	**0.35**	**86**	P	**Pg**	**21 59 41.8**	**+0.1**
GDZ	**Gediz**	**0.35**	**86**	*i* P	**Pg**	**21 59 41.8**	**+0.1**
TVSB	**Tavsanli**	**0.51**	**41**	*e*PG	**Pg**	**21 59 44.4**	**-0.3**
TVSB	**Tavsanli**	**0.51**	**41**	*e*Pg	**Pg**	**21 59 44.4**	**-0.3**
KULA	**Kula-Manisa**	**0.62**	**208**	*e*PG	**Pg**	**21 59 46.7**	**-0.2**
KULA	**Kula-Manisa**	**0.62**	**208**	*e*Pg	**Pg**	**21 59 46.7**	**-0.2**
KHAL	**Karahalli**	**0.78**	**153**	P	**Pb**	**21 59 50.5**	**-0.2**
KHAL	**Karahalli**	**0.78**	**153**	*i* P	**Pb**	**21 59 50.5**	**-0.2**
KHL	**Karahalli**	**0.83**	**153**	*e*PG	**Pb**	**21 59 52.1**	**+0.6**
KHL	**Karahalli**	**0.83**	**153**	*e*Pg	**Pb**	**21 59 52.1**	**+0.6**
AKHS	**Akhisar**	**0.97**	**259**	P	**Pg**	**21 59 53.5**	**0.0**
AKHS	**Akhisar**	**0.97**	**259**	*i* P	**Pg**	**21 59 53.5**	**0.0**
AKS	**Akhisar**	**0.97**	**259**	*e*PG	**Pg**	**21 59 53.1**	**-0.4**
AKS	**Akhisar**	**0.97**	**259**	*e*Pg	**Pg**	**21 59 53.1**	**-0.4**
ORLT	**Orhaneli**	**0.98**	**354**	*e*PG	**Pg**	**21 59 53.6**	**-0.2**
ORLT	**Orhaneli**	**0.98**	**354**	*e*Pg	**Pg**	**21 59 53.6**	**-0.2**
BALB	**Balikesir**	**1.06**	**303**	*e*PG	**Pg**	**21 59 55.0**	**-0.3**
BALB				*e*SG	**Sn**	**22 00 10.8**	**-0.1**
BALB	**Balikesir**	**1.06**	**303**	*e*Pg	**Pg**	**21 59 55.0**	**-0.3**
BALB				*e*Sg	**Sn**	**22 00 10.8**	**-0.1**
BALY	**Balya**	**1.29**	**302**	P	**Pb**	**21 59 59.5**	**+0.2**
BALY	**Balya**	**1.29**	**302**	*i* P	**Pb**	**21 59 59.5**	**+0.2**
CAVI	**Cavuskoy**	**1.29**	**28**	*e*PN	**Pb**	**21 59 59.7**	**+0.3**
CAVI	**Cavuskoy**	**1.29**	**28**	*e*Pn	**Pb**	**21 59 59.7**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.31**	**355**	*e*PN	**Pb**	**21 59 59.7**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.31**	**355**	*e*Pn	**Pb**	**21 59 59.7**	**+0.1**
KCTX	**Karacabey (Bur**	**1.31**	**337**	*e*PN	**Pg**	**21 59 60.0**	**0.0**
KCTX	**Karacabey (Bur**	**1.31**	**337**	*e*Pn	**Pg**	**22 00 00.0**	**0.0**
IZI	**Iznik**	**1.31**	**15**	*e*PN	**Pn**	**21 59 59.2**	**-0.2**
IZI	**Iznik**	**1.31**	**15**	*e*Pn	**Pn**	**21 59 59.2**	**-0.2**
GONE	**Gonen-Balikesi**	**1.43**	**314**	*e*PN	**Pb**	**22 00 01.6**	**-0.1**
GONE	**Gonen-Balikesi**	**1.43**	**314**	*e*Pn	**Pb**	**22 00 01.6**	**-0.1**
ADVT	**Abdulvahap**	**1.47**	**21**	*e*PN	**Pg**	**22 00 03.2**	**+0.2**
ADVT	**Abdulvahap**	**1.47**	**21**	*e*Pn	**Pg**	**22 00 03.2**	**+0.2**
ARMT	**Armutlu**	**1.50**	**355**	*e*PN	**Pn**	**22 00 02.6**	**+0.6**
ARMT	**Armutlu**	**1.50**	**355**	*e*Pn	**Pn**	**22 00 02.6**	**+0.6**
EDC	**Edincik**	**1.57**	**325**	*e*PN	**Pb**	**22 00 04.0**	**+0.1**
EDC	**Edincik**	**1.57**	**325**	*e*Pn	**Pb**	**22 00 04.1**	**+0.1**
GULT	**Gulveren**	**1.78**	**39**	*e*PN	**Pb**	**22 00 07.1**	**-0.5**
GULT	**Gulveren**	**1.78**	**39**	*e*Pn	**Pb**	**22 00 07.1**	**-0.5**
SVRH	**Sivrihisar-ESK**	**1.97**	**78**	*e*PN	**Pb**	**22 00 10.6**	**-0.3**
SVRH	**Sivrihisar-ESK**	**1.97**	**78**	*e*Pn	**Pb**	**22 00 10.6**	**-0.3**

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*ISK **28** 22:07:53.6, 39°.10N×29°.09E, h7km, MD2.7*
*DDA **28** 22:07:54.0, 39°.07N×29°.08E, h7km, Md2.6*
*ISCJB **28** 22:07:54.0±0.6, 39°.10N±0°.04×29°.06E±0°.04, h2km±9km, Error ellipse: s-maj=6.7km s-min=4.9km az=168.3*
*CSEM **28** 22:07:54.2±0.1, 39°.11N×29°.06E, h5km, MD2.6, Error ellipse: s-maj=2.4km s-min=2.1km az=107.0*
ISC 28 22:07:54.4±1.0,**39°.10N**±0°.03×**29°.07E**±0°.03,**h7**km±10km,
n24,σ0°**21**/34,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**258**	P	**Pg**	**22 08 00.0**	**+0.1**
DEMI				S	**Sg**	**22 08 03.9**	**+0.3**
DEMI	**Demirci**	**0.28**	**258**	*i* P	**Pg**	**22 07 60.0**	**+0.1**
DEMI				*i* S	**Sg**	**22 08 03.9**	**+0.3**
GDZ	**Gediz**	**0.32**	**92**	P	**Pg**	**22 08 00.8**	**+0.1**
GDZ				S	**Sg**	**22 08 05.2**	**+0.2**
GDZ	**Gediz**	**0.32**	**92**	*i* P	**Pg**	**22 08 00.8**	**+0.1**
GDZ				*i* S	**Sg**	**22 08 05.2**	**+0.2**
TVSB	**Tavsanli**	**0.46**	**41**	*e*PG	**Pg**	**22 08 03.3**	**0.0**
TVSB				*e*SG	**Sg**	**22 08 09.2**	**-0.2**
TVSB	**Tavsanli**	**0.46**	**41**	*e*Pg	**Pg**	**22 08 03.3**	**0.0**
TVSB				*e*Sg	**Sg**	**22 08 09.2**	**-0.2**
KULA	**Kula-Manisa**	**0.67**	**209**	*e*PG	**Pg**	**22 08 06.8**	**-0.4**
KULA	**Kula-Manisa**	**0.67**	**209**	*e*Pg	**Pg**	**22 08 06.8**	**-0.4**
KHAL	**Karahalli**	**0.80**	**155**	P	**Pb**	**22 08 10.8**	**0.0**
KHAL				S	**Sg**	**22 08 20.2**	**0.0**
KHAL	**Karahalli**	**0.80**	**155**	*i* P	**Pb**	**22 08 10.8**	**0.0**
KHAL				*i* S	**Sg**	**22 08 20.2**	**0.0**
KHL	**Karahalli**	**0.86**	**155**	*e*PG	**Pg**	**22 08 10.9**	**+0.1**
KHL	**Karahalli**	**0.86**	**155**	*e*Pg	**Pg**	**22 08 10.9**	**+0.1**
BALB	**Balikesir**	**1.07**	**301**	*e*PG	**Pg**	**22 08 14.9**	**+0.1**
BALB	**Balikesir**	**1.07**	**301**	*e*Pg	**Pg**	**22 08 14.9**	**+0.1**
IZI	**Iznik**	**1.27**	**14**	*e*PN	**Pn**	**22 08 18.6**	**-0.1**
IZI	**Iznik**	**1.27**	**14**	*e*Pn	**Pn**	**22 08 18.6**	**-0.1**
KCTX	**Karacabey (Bur**	**1.28**	**335**	*e*PN	**Pn**	**22 08 18.6**	**-0.2**
KCTX	**Karacabey (Bur**	**1.28**	**335**	*e*Pn	**Pn**	**22 08 18.6**	**-0.2**
BORA	**Eskisehir**	**1.32**	**54**	P	**Pb**	**22 08 19.5**	**-0.1**
BORA				S	**Sn**	**22 08 37.8**	**+0.4**
BORA	**Eskisehir**	**1.32**	**54**	*i* P	**Pb**	**22 08 19.5**	**-0.1**
BORA				*i* S	**Sn**	**22 08 37.8**	**+0.4**
ARMT	**Armutlu**	**1.47**	**354**	*e*PN	**Pn**	**22 08 21.2**	**-0.2**
ARMT	**Armutlu**	**1.47**	**354**	*e*Pn	**Pn**	**22 08 21.2**	**-0.2**
GULT	**Gulveren**	**1.73**	**40**	*e*PN	**Pn**	**22 08 24.9**	**-0.2**
GULT	**Gulveren**	**1.73**	**40**	*e*Pn	**Pn**	**22 08 24.9**	**-0.2**

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*NIED **28** 22:09:00, 38°.80N×142°.10E, h65km, Mw3.8 Best double couple: M0:5.92000×10^14 NP1:φ=319.00000°, δ=10.00000°, λ=-89.00000°. NP2:φ=139.00000°, δ=80.00000°, λ=-90.00000°.*
*ISCJB **28** 22:09:31.2±1.0, 38°.83N±0°.04×142°.15E±0°.09, h50km, mb3.5/3, Error ellipse: s-maj=10.9km s-min=5.3km az=18.5*
*JMA **28** 22:09:32.9±0.1, 38°.84N×142°.06E, h46km±1km, M3.7*
JMA Felt I J1.
*IDC **28** 22:09:45.0±18.0, 38°.43N×141°.02E, h133km±112km, mb3.2/3, mb1 3.2/4, mb1mx2.9/50, mbtmp3.4/4, ML2.7/1, MS2.9/1, Ms1 2.9/1, ms1mx2.2/19, Error ellipse: s-maj=254.7km s-min=26.9km az=65.0*
ISC 28 22:09:32.1±1.2,**38°.80N**±0°.05×**142°.15E**±0°.09,**h50**km,**n21,**
σ1°**13**/22,**mb3.6**/3,**Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.47**	**307**	P	**Pn**	**22 09 42.7**	**-0.2**
OFUJ				*e*S	**Sn**	**22 09 49.3**	**-1.4**
JIO	**Ouri**	**0.72**	**241**	P	**Pn**	**22 09 46.1**	**+0.1**
JIO				*e*S	**Sn**	**22 09 54.9**	**-1.2**
JMK	**Ichinoseki**	**0.74**	**282**	P	**Pn**	**22 09 46.1**	**-0.2**
JMK				S	**Sn**	**22 09 55.3**	**-1.3**
JOM	**Ohasama**	**0.94**	**315**	P	**Pn**	**22 09 48.9**	**-0.1**
JOM				S	**Sn**	**22 10 00.4**	**-1.1**
JOU	**Okura**	**1.24**	**250**	P	**Pn**	**22 09 53.3**	**+0.2**
JOU				S	**Sn**	**22 10 08.5**	**-0.2**
JRG	**Rokugo**	**1.32**	**297**	P	**Pn**	**22 09 54.0**	**-0.1**
JYK	**Kaneyama**	**1.40**	**275**	P	**Pn**	**22 09 55.2**	**0.0**
JMM	**Marumori**	**1.42**	**229**	P	**Pn**	**22 09 55.6**	**+0.2**
JMM				*e*S	**Sn**	**22 10 12.7**	**-0.3**
JANG	**Nango**	**1.64**	**343**	P	**Pn**	**22 09 58.5**	**0.0**
JANG				*e*S	**Sn**	**22 10 18.4**	**-0.1**
MJAR	**Matsushiro Arr**	**3.86**	**235**	P	**Pn**	**22 10 30.7**	**+1.8**
	1.1nm,0.3s,baz=35,slow=13,SNR=25						
ASAJ	**Asahikawa**	**5.32**	**3**	S	**Sn**	**22 11 48.5**	**-0.3**
	baz=192,slow=19						
JHJ	**Hachijo jima 2**	**5.99**	**199**	S	**Sn**	**22 12 01.7**	**-3.7**
	1.7nm,0.3s,baz=72,slow=20,SNR=2.2						
JHJ				LR	LR	22 12 48.8	
	comp=Z,120nm,22.0s,baz=300,slow=34						
H11N2	**WAKE ISLAND Hy**	**28.61**	**125**	T	T	22 45 47.0	
	baz=317,slow=75,SNR=87						
H11N1	**WAKE ISLAND Hy**	**28.62**	**125**	T	T	22 45 46.4	
	baz=317,slow=75,SNR=106						
H11N3	**WAKE ISLAND Hy**	**28.63**	**125**	T	T	22 45 48.6	
	baz=317,slow=75,SNR=104						
H11S1	**WAKE ISLAND Hy**	**29.39**	**127**	T	T	22 46 44.4	
	baz=319,slow=76,SNR=68						
H11S3	**WAKE ISLAND Hy**	**29.39**	**127**	T	T	22 46 44.4	
	baz=319,slow=76,SNR=69						
H11S2	**WAKE ISLAND Hy**	**29.41**	**127**	T	T	22 46 45.6	
	baz=319,slow=76,SNR=73						
ZALV	**Zalesovo Beam**	**41.17**	**311**	P	**P**	**22 17 12.0**	**+0.7**
	0.5nm,0.4s,baz=86,slow=9.9,SNR=2.7						
MKAR	**Makanchi Array**	**43.69**	**301**	P	**P**	**22 17 32.6**	**+0.7**
	0.4nm,0.4s,baz=87,slow=9.9,SNR=4.3						
WRA	**Warramunga Arr**	**58.89**	**189**	P	**P**	**22 19 26.4**	**+0.5**
	0.4nm,0.8s,baz=6.3,slow=7.1,SNR=5.8						

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*ISK **28** 22:12:08.7, 39°.38N×41°.01E, h24km, MD2.6*
*ISCJB **28** 22:12:09.5±0.7, 39°.36N±0°.04×41°.02E±0°.07, h27km±6km, Error ellipse: s-maj=8.5km s-min=6.3km az=5.0*
*CSEM **28** 22:12:09.2±0.3, 39°.37N×41°.04E, h22km±3km, MD2.6, Error ellipse: s-maj=10.2km s-min=6.3km az=135.0*
*DDA **28** 22:12:10.5, 39°.33N×41°.02E, h7km, Md2.6*
ISC 28 22:12:09.1±1.1,**39°.36N**±0°.03×**41°.03E**±0°.04,**h24**km±11km,
n18,σ1°**36**/26,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ECAT	**Cat-ERZURUM**	**0.25**	**350**	P	**Pn**	**22 12 16.1**	**-1.5**
ECAT				S	**Sb**	**22 12 20.9**	**+0.9**
ECAT	**Cat-ERZURUM**	**0.25**	**350**	*i* P	**Pn**	**22 12 16.1**	**-1.5**
ECAT				*i* S	**Sb**	**22 12 20.9**	**+0.9**
YEDI	**Yedisu-Bingol**	**0.39**	**282**	*e*PG	**Pn**	**22 12 18.1**	**-1.3**
YEDI				*e*SG	**Sb**	**22 12 22.9**	**-0.4**
YEDI	**Yedisu-Bingol**	**0.39**	**282**	*e*Pg	**Pn**	**22 12 18.1**	**-1.3**
YEDI				*e*Sg	**Sb**	**22 12 22.9**	**-0.4**
BNGL	**BINGOL**	**0.42**	**167**	*i* P	**Pn**	**22 12 18.9**	**-0.9**
BNGL				*i* S	**Sb**	**22 12 24.6**	**+0.4**
BNGB	**Bing¨¶l**	**0.46**	**217**	*e*PG	**Pb**	**22 12 18.8**	**+0.1**
BGOL	**Bingol**	**0.47**	**217**	P	**Pb**	**22 12 18.6**	**-0.2**
BGOL				S	**Sb**	**22 12 26.0**	**+0.6**
BGOL	**Bingol**	**0.47**	**217**	*i* P	**Pb**	**22 12 18.6**	**-0.2**
BGOL				*i* S	**Sb**	**22 12 26.1**	**+0.6**
EZM	**Erzurum**	**0.60**	**25**	*e*PG	**Pb**	**22 12 21.0**	**-0.2**
BINT	**Bingol**	**0.64**	**221**	*e*Pg	**Pb**	**22 12 18.8**	**-3.0**
TNCL	**Tunceli-Merkez**	**1.18**	**259**	P	**Pb**	**22 12 32.0**	**+1.0**
TNCL	**Tunceli-Merkez**	**1.18**	**259**	*i* P	**Pb**	**22 12 32.0**	**+1.0**
TNCL				*i* S	**Sb**	**22 12 50.1**	**+4.2**
BAYT	**Ayd¨–ntepe-Bay**	**1.24**	**327**	*e*PN	**Pn**	**22 12 30.6**	**-0.5**
BAYT	**Ayd¨–ntepe-Bay**	**1.24**	**327**	*e*Pn	**Pn**	**22 12 30.6**	**-0.5**
PTK	**Pertek**	**1.36**	**250**	*e*PN	**Pn**	**22 12 32.6**	**-0.2**
PTK	**Pertek**	**1.36**	**250**	*e*Pn	**Pn**	**22 12 32.6**	**-0.2**
AGRB	**Hanur-Agry**	**1.53**	**81**	*e*PN	**Pn**	**22 12 35.5**	**+0.4**
AGRB	**Hanur-Agry**	**1.53**	**81**

H11N3	WAKE ISLAND Hy 26.53 118		T	T	22 47 08.2		
	baz=304						
H11S3	WAKE ISLAND Hy 27.16 120		T	T	22 47 59.9		
	baz=317,slow=74						
H11S1	WAKE ISLAND Hy 27.16 120		T	T	22 47 58.8		
	baz=317,slow=74						
H11S2	WAKE ISLAND Hy 27.18 120		T	T	22 48 00.6		
	baz=317						
SONM	Songino Array	29.59 307	P	P	22 20 18.1	-0.3	
	0.5nm,0.5s,baz=106,slow=9.3,SNR=4.3						
CMAR	Chiang Mai Arr	41.55 258	P	P	22 22 00.8	-0.2	
	0.3nm,0.3s,baz=51,slow=7.1,SNR=4.9						
ZALV	Zalesovo Beam	43.91 314	P	P	22 22 20.2	+0.5	
	0.4nm,0.5s,baz=77,slow=7.8,SNR=2.5						
MKAR	Makanchi Array	45.86 304	P	P	22 22 34.9	-0.5	
	0.1nm,0.2s,baz=96,slow=7.4,SNR=2.9						
WRA	Warramunga Arr	54.89 189	P	P	22 23 44.6	+0.8	
	0.8nm,0.8s,baz=5.6,slow=7.3,SNR=5.7						

*NSSC **28** 22:17:52.2±4.0, 33°.57N×35°.06E, h24km±20km, MD1.4, ML1.8*
*CSEM **28** 22:17:58.6±0.6, 33°.29N×35°.38E, h25km±5km, ML3.0, Error ellipse: s-maj=13.9km s-min=9.5km az=95.0*
*ISCJB **28** 22:17:59.2±0.7, 33°.31N±0°.03×35°.37E±0°.06, h23km±6km, Error ellipse: s-maj=8.0km s-min=5.5km az=16.6*
*GRAL **28** 22:18:00.8±0.2, 33°.31N×35°.39E, h2km±2km, MD3.0*

ISC 28 22:17:58.7±1.0, 33°.31N±0°.03×35°.41E±0°.04, h23km±10km, n21, σ1s42/37, Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NAQL	Naqoura	0.29	230	eP	Pb	22 18 05.9	+0.4
NAQL				eS	Sb	22 18 09.7	-0.5
NAQL	Naqoura	0.29	230	eP	Pb	22 18 05.9	+0.4
NAQL				eS	Sb	22 18 09.7	-0.5
RCY	Rachaya	0.40	62	eP	Pb	22 18 08.4	+1.0
RCY				eS	Sb	22 18 13.9	+0.7
DQRL	Deir Qamar	0.42	18	eP	Pb	22 18 08.3	+0.7
DQRL				eS	Sb	22 18 14.1	+0.4
DQRL	Deir Qamar	0.42	18	eP	Pb	22 18 08.3	+0.7
DQRL				eS	Sb	22 18 14.1	+0.4
BRBR	Barbar	0.46	77	eP	Pb	22 18 07.0	-1.3
BRBR				eS	Sb	22 18 16.2	+1.2
BRBR				AML	AML	22 18 17.4	
	comp=N,86nm,0.2s						
BRBR				AML	AML	22 18 19.0	
	comp=E,62nm,0.5s						
BRBR	Barbar	0.46	77	eP	Pb	22 18 07.1	-1.3
BRBR				eS	Sb	22 18 16.2	+1.2
	comp=E,62nm,0.5s						
BHL	Bhannes	0.63	19	eP	Pn	22 18 12.1	-0.3
BHL	Bhannes	0.63	19	eP	Pn	22 18 12.1	-0.3
TCHB	Talchebab	0.79	143	eP	Pn	22 18 14.9	+0.4
TCHB				eS	Sn	22 18 26.1	+0.6
TCHB				AML	AML	22 18 28.7	
	comp=E,60nm,0.4s						
TCHB				AML	AML	22 18 30.9	
	comp=N,29nm,0.2s						
TCHB	Talchebab	0.79	143	eP	Pn	22 18 14.9	+0.4
TCHB				eS	Sn	22 18 26.1	+0.6
	comp=N,29nm,0.2s						
HWQ	Hawqa	1.07	25	eP	Pb	22 18 20.1	+1.5
HWQ				eS	Sb	22 18 34.2	+2.0
HWQ	Hawqa	1.07	25	eP	Pb	22 18 20.1	+1.5
HWQ				eS	Sb	22 18 34.2	+2.0
MARH	Ras Al Marh	1.15	51	eP	Pn	22 18 18.1	-1.5
MARH				eS	Sn	22 18 31.8	-3.0
MARH				AML	AML	22 18 43.4	
	comp=E,29nm,0.4s						
MARH				AML	AML	22 18 47.8	
	comp=N,28nm,0.4s						
MARH	Ras Al Marh	1.15	51	eP	Pn	22 18 18.1	-1.5
MARH				eS	Sn	22 18 31.8	-3.0
	comp=N,28nm,0.4s						
FKH	Fakeheh	1.25	41	eP	Pb	22 18 23.3	+1.5
SALA	Sala	1.26	118	eP	Pn	22 18 19.4	-1.6
SALA				eS	Sb	22 18 40.2	+2.5
SALA				AML	AML	22 18 44.4	
	comp=E,1.8nm,0.6s						
SALA				AML	AML	22 18 45.4	
	comp=N,22nm,0.4s						
SALA	Sala	1.26	118	eP	Pn	22 18 19.4	-1.6
SALA				eS	Sb	22 18 40.2	+2.5
	comp=N,22nm,0.4s						
ZALF	Zalf	1.66	103	eP	Pn	22 18 26.1	-0.3
ZALF				eS	Sb	22 18 49.2	+0.1
ZALF				AML	AML	22 18 53.7	
	comp=N,8.6nm,0.3s						
ZALF				AML	AML	22 18 54.5	
	comp=E,6.3nm,0.4s						
ZALF	Zalf	1.66	103	eP	Pn	22 18 26.1	-0.3
ZALF				eS	Sb	22 18 49.2	+0.1
	comp=E,6.0nm,0.4s						
BIDA	Albida	1.86	24	eP	Pn	22 18 19.1	-10
BIDA				eS	Sn	22 18 43.2	-8.9
BIDA				AML	AML	22 18 47.6	
	comp=N,8.7nm,0.3s						
BIDA				AML	AML	22 18 50.6	
	comp=E,34nm,0.4s						

*IDC **28** 22:18:00.1±2.1, 34°.40N×142°.62E, h0km, mb3.6/3, mb1 3.6/5, mb1mx3.3/54, mbtmp3.5/5, ML3.2/2, MS2.3/1, Ms1 2.3/1, ms1mx1.9/40, Error ellipse: s-maj=42.5km s-min=26.8km az=56.0*
*JMA **28** 22:18:01.8±0.5, 34°.81N×142°.68E, h56km, M3.1*
*ISCJB **28** 22:18:04.4±1.2, 34°.67N±0°.08×142°.4E±0°.1, h76km, mb3.6/3, Error ellipse: s-maj=13.5km s-min=9.6km az=148.6*

ISC 28 22:18:06.7±1.9, 34°.68N±0°.08×142°.4E±0°.1, h76km, n17, σ1s61/13, mb3.7/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	Boso 1	1.13	269	P	Pn	22 18 25.6	-1.0
BSO3	Boso 3	1.52	275	P	Pn	22 18 31.4	-0.5
CHOJ	Chosi	1.60	310	P	Pn	22 18 30.5	-2.6
BSO4	Boso 4	1.69	281	P	Pn	22 18 33.3	-0.9
JHJ	Hachijo jima 2	2.64	235	Pn	Pn	22 18 45.5	-1.6
	11nm,0.3s,baz=65,slow=17,SNR=4.9						
JHJ				Sn	Sn	22 19 16.9	-1.2
	26nm,0.3s,baz=66,slow=23,SNR=6.4						
JOD2	Odawara 2	2.74	283	P	Pn	22 18 47.3	-1.2
JOD2				eS	Sn	22 19 21.9	+1.2
JAG	Ashikaga	2.94	307	P	Pn	22 18 49.6	-1.5
MJAR	Matsushiro Arr	3.85	300	Pn	Pn	22 19 02.7	-0.9
	1.3nm,0.3s,baz=116,slow=8.5,SNR=13						
MJAR				Sn	Sn	22 19 49.4	+1.7
	0.9nm,0.3s,baz=303,slow=12,SNR=4.7						
MJAR				LR	LR	22 21 09.2	
	comp=Z,35nm,20.2s,baz=105,slow=46						
H11N2	WAKE ISLAND Hy 26.33 118			T	T	22 50 41.5	
	baz=312						
H11N1	WAKE ISLAND Hy 26.33 118			T	T	22 50 43.6	
	baz=312						
H11N3	WAKE ISLAND Hy 26.34 118			T	T	22 50 44.2	
	baz=312						
H11S1	WAKE ISLAND Hy 26.98 120			T	T	22 51 31.3	
	baz=312,slow=75,SNR=13						
H11S3	WAKE ISLAND Hy 26.98 120			T	T	22 51 33.1	
	baz=312,slow=75,SNR=12						
H11S2	WAKE ISLAND Hy 26.99 120			T	T	22 51 33.1	
	baz=312,slow=75,SNR=9.3						
MKAR	Makanchi Array	46.04	304	P	P	22 26 28.4	+5.7
	0.2nm,0.2s,baz=96,slow=9.1,SNR=3.5						
WRA	Warramunga Arr	54.85	189	P	P	22 27 29.9	+0.7
	0.9nm,0.8s,baz=8.4,slow=7.5,SNR=5.7						
ASAR	Alice Springs	58.57	189	P	P	22 27 57.4	+1.8
	0.5nm,0.7s,baz=9.4,slow=7.8,SNR=6.1						

IDC 28 22:19:41.4±10.0, 1°.23N×126°.92E, h245km±111km, mb3.0/4, mb1 3.2/5, mb1mx2.9/41, mbtmp3.7/5, Error ellipse: s-maj=88.2km s-min=20.5km az=56.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAPI	Kappang	9.48	229	P	Pn	22 21 54.2	+0.7
	0.9nm,0.3s,baz=46,slow=6.9,SNR=6.6						
KAPI				S	S	22 23 39.4	-1.0
	0.4nm,0.3s,baz=90,slow=20,SNR=4.0						
WRA	Warramunga Arr	22.26	161	P	P	22 24 18.2	-0.2
	0.9nm,0.6s,baz=342,slow=10,SNR=9.2						
ASAR	Alice Springs	25.66	165	P	P	22 24 49.3	+0.1
	0.2nm,0.4s,baz=349,slow=7.3,SNR=4.1						
STKA	Stephens Creek	35.74	158	P	P	22 26 17.4	+0.1
	1.7nm,0.4s,baz=322,slow=7.1,SNR=3.9						
MKAR	Makanchi Array	59.71	326	P	P	22 29 20.4	-0.1
	0.3nm,0.4s,baz=118,slow=8.4,SNR=4.4						

*ISK **28** 22:45:27.6, 39°.07N×28°.99E, h13km, MD2.7*
*CSEM **28** 22:45:28.3±0.2, 39°.15N×28°.88E, h2km, MD2.4, Error ellipse: s-maj=5.4km s-min=4.4km az=142.0*
*DDA **28** 22:45:28.1, 39°.09N×28°.90E, h7km, Md2.4*

ISC 28 22:45:28.3±1.0, 39°.12N±0°.03×28°.89E±0°.03, h8km±10km, n20, σ0s34/26, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.15	242	P	Pg	22 45 31.5	-0.1
DEMI				S	Sg	22 45 33.9	0.0
DEMI	Demirci	0.15	242	iP	Pg	22 45 31.5	-0.1
DEMI				iS	Sg	22 45 33.9	0.0
GDZ	Gediz	0.46	93	P	Pg	22 45 37.3	+0.1
GDZ				S	Sg	22 45 43.8	+0.6
GDZ	Gediz	0.46	93	iP	Pg	22 45 37.3	+0.1
GDZ				iS	Sg	22 45 43.8	+0.6
TVSB	Tavsanli	0.55	53	ePG	Pg	22 45 38.6	-0.4
TVSB				eSG	Sg	22 45 46.0	-0.3
TVSB	Tavsanli	0.55	53	ePg	Pg	22 45 38.6	-0.4
TVSB				eSg	Sg	22 45 46.0	-0.3
KULA	Kula-Manisa	0.63	197	ePG	Pg	22 45 39.9	-0.5
KULA	Kula-Manisa	0.63	197	ePg	Pg	22 45 39.9	-0.5
AKS	Akhisar	0.87	255	ePG	Pb	22 45 46.0	+0.3
AKS	Akhisar	0.87	255	ePg	Pb	22 45 46.0	+0.3
KHAL	Karahalli	0.88	148	P	Pn	22 45 46.9	-0.1
KHAL	Karahalli	0.88	148	iP	Pn	22 45 46.9	-0.1
KCTX	Karacabey (Bur	1.22	340	ePN	Pn	22 45 52.0	+0.3
KCTX	Karacabey (Bur	1.22	340	ePn	Pn	22 45 52.0	+0.3
MDNY	Mudanya-Bursa	1.25	360	ePN	Pg	22 45 52.3	0.0
MDNY	Mudanya-Bursa	1.25	360	ePn	Pg	22 45 52.3	0.0
BORA	Eskisehir	1.43	57	P	Pg	22 45 55.4	-0.3
BORA	Eskisehir	1.43	57	iP	Pg	22 45 55.4	-0.3
ARMT	Armutlu	1.45	359	ePN	Pn	22 45 54.4	-0.4
ARMT	Armutlu	1.45	359	ePn	Pn	22 45 54.4	-0.4

*ISK **28** 22:47:52.4, 39°.07N×29°.15E, h16km, MD2.7*
*DDA **28** 22:47:52.6, 39°.20N×29°.03E, h7km, Md2.4*
*ISCJB **28** 22:47:53.2±0.6, 39°.14N±0°.04×29°.03E±0°.04, h9km, Error ellipse: s-maj=6.5km s-min=4.6km az=153.6*
*CSEM **28** 22:47:53.3±0.2, 39°.13N×29°.01E, h10km, MD2.7, Error ellipse: s-maj=6.2km s-min=4.9km az=101.0*

ISC 28 22:47:53.1±1.1, 39°.13N±0°.03×29°.02E±0°.03, h9km, n20, σ0s29/26, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.25	251	P	Pg	22 47 58.5	+0.3
DEMI				S	Sg	22 48 02.0	+0.3
DEMI	Demirci	0.25	251	iP	Pg	22 47 58.5	+0.3
DEMI				iS	Sg	22 48 02.0	+0.3
GDZ	Gediz	0.36	96	P	Pg	22 48 00.6	+0.4
GDZ				S	Sg	22 48 04.9	-0.1
GDZ	Gediz	0.36	96	iP	Pg	22 48 00.6	+0.4
GDZ				iS	Sg	22 48 04.9	-0.1
TVSB	Tavsanli	0.47	46	ePG	Pg	22 48 02.6	+0.3
TVSB				eSG	Sg	22 48 08.4	-0.1
TVSB	Tavsanli	0.47	46	ePg	Pg	22 48 02.6	+0.3
TVSB				eSg	Sg	22 48 08.4	-0.1
KULA	Kula-Manisa	0.67	205	ePG	Pg	22 48 05.9	-0.2
KULA	Kula-Manisa	0.67	205	ePg	Pg	22 48 05.9	-0.2
KHAL	Karahalli	0.84	154	P	Pn	22 48 11.1	-0.1
KHAL	Karahalli	0.84	154	iP	Pn	22 48 11.1	-0.1
ORLT	Orhaneli	0.92	354	ePG	Pn	22 48 12.1	-0.2
ORLT	Orhaneli	0.92	354	ePg	Pn	22 48 12.1	-0.2
MDNY	Mudanya-Bursa	1.25	355	ePN	Pn	22 48 16.6	-0.1
MDNY	Mudanya-Bursa	1.25	355	ePn	Pn	22 48 16.6	-0.1
KCTX	Karacabey (Bur	1.25	336	ePN	Pg	22 48 17.1	+0.1
KCTX	Karacabey (Bur	1.25	336	ePn	Pg	22 48 17.2	+0.1
IZI	Iznik	1.26	16	ePN	Pn	22 48 16.3	-0.6
IZI	Iznik	1.26	16	ePn	Pn	22 48 16.3	-0.6
ARMT	Armutlu	1.44	355	ePN	Pn	22 48 19.4	0.0
ARMT	Armutlu	1.44	355	ePn	Pn	22 48 19.4	0.0

*IDC **28** 22:49:50.5±2.3, 36°.08N×141°.86E, h0km, mb3.6/4, mb1 3.6/6, mb1mx3.3/47, mbtmp3.5/6, ML3.1/2, Error ellipse: s-maj=51.0km s-min=23.0km az=76.0*
*JMA **28** 22:49:53.6±0.3, 36°.25N×141°.85E, h71km, M2.8*

ISC 28 22:49:51.3±1.6, 36°.11N±0°.06×142°.2E±0°.1, h23km, n21, σ1s18/17, mb3.5/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	1.12	249	P	Pb	22 50 11.9	-0.2
CHOJ				eS	Sn	22 50 26.2	-0.2
JHO	Hitachi	1.37	292	P	Pn	22 50 12.9	-2.2
ONAJ	Iwakimizuishiy	1.47	313	P	Pn	22 50 14.3	-2.2
JFK	Kawauchi	1.62	321	P	Pn	22 50 17.1	-1.4
BSO1	Boso 1	1.74	214	P	Pb	22 50 22.1	-0.1
JFT	Otama	2.02	315	P	Pn	22 50 23.7	-0.4
JMM	Marumori	2.06	329	P	Pn	22 50 23.2	-1.4
JAG	Ashikaga	2.20	279	P	Pn	22 50 25.6	-0.9
MJAR	Matsushiro Arr	3.21	279	Pn	Pn	22 50 40.2	-0.1
	2.7nm,0.3s,baz=102,slow=9.2,SNR=42						
MAT	Matsushiro	3.21	279	P	Pn	22 50 40.7	+0.3
MAT				eS	Sn	22 51 17.8	-0.2
JHJ	Hachijo jima 2	3.56	214	Pn	Pn	22 50 44.0	-1.2
	5.6nm,0.3s,baz=73,slow=19,SNR=2.2						
JHJ				Sn	Sn	22 51 26.0	-0.6
	20nm,0.3s,baz=41,slow=20,SNR=4.9						
H11N2	WAKE ISLAND Hy 27.17 120			T	T	23 24 18.6	
	baz=311						
H11N1	WAKE ISLAND Hy 27.18 120			T	T	23 24 17.8	
	baz=311						
H11N3	WAKE ISLAND Hy 27.19 120			T	T	23 24 18.8	
	baz=311						
H11S1	WAKE ISLAND Hy 27.86 122			T	T	23 25 07.9	
	baz=317						
H11S3	WAKE ISLAND Hy 27.86 123			T	T	23 25 03.3	
	baz=317						
H11S2	WAKE ISLAND Hy 27.88 122			T	T	23 25 05.0	
	baz=317						
SONM	Songino Array	28.80	305	P	P	22 55 48.8	+1.2
	0.3nm,0.3s,baz=93,slow=7.2,SNR=3.0						
MKAR	Makanchi Array	45.12	303	P	P	22 58 06.8	+1.1
	0.2nm,0.3s,baz=86,slow=9.5,SNR=4.7						
KURBB	Kurchatov Arra	47.04	309	P	P	22 58 21.6	+0.7
	0.4nm,0.5s,baz=84,slow=7.9,SNR=6.0						
WRA	Warramunga Arr	56.23	189	P	P	22 59 32.4	+2.6
	0.4nm,0.8s,baz=1.9,slow=6.9,SNR=2.4						

*ISK **28** 22:52:21.8, 39°.10N×29°.08E, h9km, MD2.6*
*ISCJB **28** 22:52:22.1±0.5, 39°.10N±0°.03×29°.06E±0°.04, h9km, Error ellipse: s-maj=4.9km s-min=4.5km az=165.7*
*CSEM **28** 22:52:22.2±0.1, 39°.11N×29°.06E, h7km±1km, MD2.5, Error ellipse: s-maj=1.6km s-min=1.4km az=78.0*
*DDA **28** 22:52:22.1, 39°.08N×29°.06E, h7km, Md2.5*

ISC 28 22:52:22.5±1.0, 39°.11N±0°.03×29°.06E±0°.03, h9km, n22, σ0s21/30, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.27	257	P	Pg	22 52 27.9	-0.1
DEMI				S	Sg	22 52 31.8	+0.1
DEMI	Demirci	0.27	257	iP	Pg	22 52 27.9	-0.1
DEMI				iS	Sg	22 52 31.8	+0.1
GDZ	Gediz	0.33	93	P	Pg	22 52 29.2	+0.1
GDZ				S	Sg	22 52 33.5	0.0
GDZ	Gediz	0.33	93	iP	Pg	22 52 29.2	+0.1
GDZ				iS	Sg	22 52 33.5	0.0
TVSB	Tavsanli	0.47	42	ePG	Pg	22 52 31.4	-0.2
TVSB				eSG	Sg	22 52 37.9	+0.2
TVSB	Tavsanli	0.47	42	ePg	Pg	22 52 31.4	-0.2
TVSB				eSg	Sg	22 52 37.9	+0.2
KULA	Kula-Manisa	0.67	208	ePG	Pg	22 52 35.0	-0.3
KULA	Kula-Manisa	0.67	208	ePg	Pg	22 52 35.1	-0.3
KHAL	Karahalli	0.81	155	P	Pg	22 52 38.3	+0.2
KHAL				S	Sg	22 52 48.7	+0.1
KHAL	Karahalli	0.81	155	iP	Pg	22 52 38.3	+0.2
KHAL				iS	Sg	22 52 48.7	+0.1
KHL	Karahalli	0.86	155	ePG	Pg	22 52 38.6	-0.4
KHL	Karahalli	0.86	155	ePg	Pg	22 52 38.7	-0.4
ORLT	Orhaneli	0.95	353	ePG	Pg	22 52 40.3	-0.4
ORLT	Orhaneli	0.95	353	ePg	Pg	22 52 40.3	-0.4
BALB	Balikesir	1.06	301	ePG	Pg	22 52 42.9	+0.1
BALB	Balikesir	1.06	301	ePg	Pg	22 52 42.9	+0.1
MDNY	Mudanya-Bursa	1.27	354	ePN	Pn	22 52 46.4	0.0
MDNY	Mudanya-Bursa	1.27	354	ePn	Pn	22 52 46.4	0.0
KCTX	Karacabey (Bur	1.28	335	ePN	Pn	22 52 46.7	+0.1
KCTX	Karacabey (Bur	1.28	335	ePn	Pn	22 52 46.7	+0.1
ARMT	Armutlu	1.47	354	ePN	Pn	22 52 49.1	0.0
ARMT	Armutlu	1.47	354	ePn	Pn	22 52 49.1	0.0

*IDC **28** 22:55:21.6±1.9, 38°.64N×123°.14W, h0km, mb1 3.6/5, mb1mx3.4/36, mbtmp3.2/5, ML3.4/5, Error ellipse: s-maj=23.7km s-min=12.9km az=50.0*
*ISCJB **28** 22:55:24.9±0.5, 38°.75N±0°.03×122°.74W±0°.06, h10km, mb4.2/1, Error ellipse: s-maj=7.2km s-min=3.8km az=149.3*
*NEIC **28** 22:55:24.8, 38°.79N×122°.76W, h4km, mb4.3/1, MW3.7(BRK), After NCEDC.*
NEIC Felt [III] at Calistoga, Geyserville and Middletown; [II] at Cloverdale and Healdsburg. Also felt at Clearlake, Glen Ellen, Guerneville, Hidden Valley Lake, Kelseyville, Lower Lake, Napa, Saint Helena, Santa Rosa, Vacaville and Windsor.

ISC 28 22:55:25.5±0.9, 38°.78N±0°.03×122°.74W±0°.04, h10km, n40, σ1s32/42, Northern California

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NMTM	Middletown	0.23	83	ePg	Pg	22 55 30.0	-0.2
NSHM	Saint Helena R	0.28	158	ePg	Pg	22 55 31.0	-0.1
HOPS	Hopland Field	0.34	310	ePg	Pg	22 55 31.5	-0.7
MCCM	Marconi Confer	0.64	190	ePg	Pb	22 55 38.3	-0.5
GASB	Alder Springs	0.88	1	ePg	Pg	22 55 42.6	+0.2
KIPM	Iron Peak	1.18	331	ePn	Pg	22 55 48.6	+0.4
ORV	Oroville	1.24	51	ePn	Pn	22 55 46.3	-2.5
AFDM	Forest Hills D	1.39	82	ePn	Pn	22 55 49.2	-1.8
KMRM	Mail Ridge	1.63	333	ePn	Pn	22 55 54.2	0.0
O03D	Paynes Creek	1.68	25	P	Pn	22 55 53.2	-1.8
	baz=207						
WDC	Whiskeytown Da	1.81	5	ePn	Pn	22 55 55.8	-0.9
CMB	Columbia Colle	1.99	111	ePn	Pn	22 55 58.8	-0.4
SAO	San Andreas Ge	2.26	153	ePn	Pn	22 56 01.0	-1.9
WAKR	Walker	2.60	95	ePn	Pn	22 56 08.9	+1.1
M02C	Callahan	2.61	358	Pb	Pb	22 56 10.9	-1.5
	baz=178						
PAHR	Pah Rah Range	2.77	69	ePn	Pn	22 56 10.0	0.0
YBH	Yreka Blue Hor	2.95	0	Pn	Pn	22 56 13.4	+0.9
	0.5nm,0.3s,baz=191,slow=12,SNR=10						
YBH	Yreka Blue Hor	2.95	0	ePn	Pn	22 56 15.6	+3.1
MLAC	Mammoth, Mammo	3.28	109	Pb	Pb	22 56 22.1	-1.9
	baz=292						
NV01	Mina Array Sit	3.49	94	ePn	Pn	22 56 20.3	+0.3
NVAR	Mina Array Bea	3.49	94	Pn	Pn	22 56 20.4	+0.3
	1.6nm,0.3s,baz=272,slow=16,SNR=19						
NVAR				Pg	Pb	22 56 28.4	+0.9
	7.5nm,0.3s,baz=267,slow=19,SNR=49						
NVAR				Lg	Lg	22 57 18.9	
	5.2nm,0.3s,baz=282,slow=34,SNR=4.6						
NV11	Mina Array Sit	3.61	94	ePn	Pn	22 56 22.0	+0.5
VES	Vestal, Richgr	4.13	134	P	Pn	22 56 28.4	-0.2
	baz=316						
K05A	Summer Lake	4.18	19	ePg	Pb	22 56 40.0	+0.6
WASM	Alta Sierra Ca	4.51	131	eSn	Sn	22 57 26.3	-0.3
GRAC	Grapevine Rang	4.61	111	Pb	Pb	22 56 46.1	-0.3
	baz=294						
ISA	Isabella, Lake	4.61	131	Pb	Pb	22 56 46.0	-0.4
	baz=314						
ISA	Isabella, Lake	4.61	131	ePn	Pn	22 56 37.3	+2.0
ISA				eSg	Sb	22 57 43.8	+1.7
J05D	Fort Rock, OR	4.64	14	P	Pn	22 56 39.4	+3.5
	baz=195						
DAC	Darwin (Calif)	4.79	120	ePn	Pn	22 56 38.2	+0.3
DAC				ePb	Pb	22 56 49.4	-0.2
DAC				eSb	Sb	22 57 47.4	0.0
ARVC	Arvin	4.80	138	P	Pn	22 56 37.7	-0.1
	baz=321						
WVOR	Wild Horse Val	4.80	39	ePn	Pn	22 56 38.5	+0.6
WVOR				ePb	Pb	22 56 50.2	+0.4
WVOR				ePg	Pg	22 56 55.6	-1.9
ELK	Elko	6.10	69	ePn	Pn	22 56 58.6	+2.7
PFO	Pinyon Flats O	7.23	134	Pn	Pn	22 57 11.5	+0.1
	0.5nm,0.3s,baz=331,slow=13,SNR=2.3						
DUG	Dugway, Tooele	7.81	76	ePn	Pn	22 57 21.5	+2.2
BW06	Boulder Array	10.76	64	ePn	Pn	22 58 04.8	+5.0
PDAR	Pinedale Array	10.76	64	Pn	Pn	22 58 04.8	+5.1
	0.0nm,0.3s,baz=245,slow=13,SNR=8.1						
SMCO	Snowmass	12.28	83	ePn	Pn	22 58 18.1	-2.6
TXAR	Lajitas Array	18.37	115	P	P	22 59 41.5	+1.0
	0.0nm,0.3s,baz=295,slow=13,SNR=4.1						
CAST	Castle Rocks	30.28	334	eP	P	23 01 40.0	+3.5
	5.2nm,1.1s						

*ISK **28** 23:00:42.9, 39°.07N×29°.16E, h8km, MD2.8*
*ISCJB **28** 23:00:43.2±0.5, 39°.09N±0°.04×29°.13E±0°.03, h5km±7km, Error ellipse: s-maj=6.8km s-min=4.5km az=174.2*
*CSEM **28** 23:00:43.4±0.1, 39°.10N×29°.14E, h5km, MD2.7, Error ellipse: s-maj=1.8km s-min=1.6km az=143.0*
*DDA **28** 23:00:43.1, 39°.13N×29°.10E, h7km, Md2.7*

ISC 28 23:00:43.4±1.0, 39°.09N±0°.03×29°.14E±0°.02, h9km±9km, n37, σ0s32/48, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	Gediz	0.26	89	P	Pg	23 00 49.1	+0.3
GDZ				S	Sg	23 00 52.3	0.0
GDZ	Gediz	0.26	89	iP	Pg	23 00 49.1	+0.3
GDZ				iS	Sg	23 00 52.3	0.0
DEMI	Demirci	0.34	263	P	Pg	23 00 50.1	0.0
DEMI				S	Sg	23 00 54.5	0.0
DEMI	Demirci	0.34	263	iP	Pg	23 00 50.1	0.0
DEMI				iS	Sg	23 00 54.5	0.0
TVSB	Tavsanli	0.

Error ellipse: s-maj=8.5km s-min=2.2km az=19.0
KRNET ***28*** *23:08:16.6±0.1, 42°.30N×71°.39E, h14km, mb2.1*
SOME ***28*** *23:08:16.7, 42°.32N×71°.28E, h10km*
ISC 28 23:08:14.7±1.4, 42°.33N±0°.03×71°.32E±0°.03, h2km±14km, n23, σ1§12/45, 25C-8D, Kyrgyzstan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ARK	**Arkit**	**0.71**	**138**	⇓*e*P	**Pb**	**23 08 30.2**	**+0.3**
	baz=139						
ARK				⇓*i*S	**Sb**	**23 08 40.2**	**+0.1**
	baz=139						
MNAS	**Manas**	**0.89**	**79**	⇑*i*P	**Pb**	**23 08 33.4**	**+0.5**
	baz=76						
MNAS				⇑*i*S	**Sb**	**23 08 45.3**	**0.0**
	baz=76						
MNAS	**Manas**	**0.89**	**79**	⇑P	**Pb**	**23 08 33.4**	**+0.5**
	0.3nm,0.1s						
MNAS				⇑S	**Sb**	**23 08 45.3**	**0.0**
	8.9nm,0.3s						
IUG	**Iuzhnay**	**0.97**	**260**	⇓*i*P	**Pb**	**23 08 34.9**	**+0.5**
	12nm,0.2s						
IUG				*e*S	**Sb**	**23 08 48.1**	**+0.4**
	59nm,0.2s						
KK31	**Karatay Array**	**0.98**	**323**	P	**Pb**	**23 08 34.5**	**+0.1**
	2.5nm,0.3s,baz=145,slow=17,SNR=61						
KK31				⇑S	**Sb**	**23 08 47.3**	**-0.5**
	3.5nm,0.2s,baz=141,slow=30,SNR=4.1						
BRLS	**Borolday**	**1.30**	**291**	*e*P	**Pn**	**23 08 40.5**	**+0.6**
	2.6nm,0.2s						
BRLS				⇓*i*S	**Sn**	**23 08 56.8**	**-0.9**
	9.1nm,0.5s						
MRKS	**Merke**	**1.47**	**73**	*e*P	**Pg**	**23 08 44.1**	**+1.3**
	12nm,0.2s						
MRKS				*e*S	**Sg**	**23 09 03.4**	**+1.5**
	16nm,0.5s						
ARSB	**Arslanbob**	**1.59**	**128**	⇓*e*P	**Pb**	**23 08 45.4**	**+0.5**
	baz=129						
ARSB				⇓*i*S	**Sg**	**23 09 07.2**	**+1.3**
	baz=129						
AML	**Almayashu**	**1.77**	**95**	⇑*i*P	**Pg**	**23 08 48.9**	**+0.2**
	baz=95						
AML				⇑*i*S	**Sg**	**23 09 12.6**	**+1.0**
	baz=95						
EKS2	**Erkin-Say**	**1.85**	**79**	⇑*i*P	**Pg**	**23 08 50.6**	**+0.5**
	baz=77						
EKS2				⇑*i*S	**Sg**	**23 09 15.2**	**+1.2**
	baz=77						
OHH	**Osh**	**2.11**	**148**	⇑*e*P	**Pb**	**23 08 54.7**	**+1.0**
	baz=149						
OHH				⇑*i*S	**Sg**	**23 09 21.4**	**-1.0**
	baz=149						
ARLS	**Aral**	**2.28**	**101**	⇑*i*P	**Pb**	**23 08 56.6**	**-0.1**
	baz=100						
ARLS				⇑*i*S	**Sg**	**23 09 26.6**	**-1.4**
	baz=100						
BTK	**Batken**	**2.30**	**190**	⇑*e*P	**Pb**	**23 08 57.2**	**+0.3**
	baz=191						
BTK				⇑*i*S	**Sg**	**23 09 28.0**	**-0.5**
	baz=191						
AAK	**Ala-Archa**	**2.37**	**81**	⇓Pg	**Pb**	**23 08 59.5**	**+1.4**
	1.0nm,0.3s						
AAK				⇓Lg	Lg	23 09 31.9	
	3.7nm,0.6s						
UCH	**Uchtor**	**2.37**	**91**	⇑*i*P	**Pb**	**23 08 58.6**	**+0.2**
	baz=91						
UCH				⇑*i*S	**Sg**	**23 09 29.2**	**-1.6**
	baz=91						
USP	**Ospenovka**	**2.52**	**67**	⇑*i*P	**Pb**	**23 09 01.1**	**+0.4**
	baz=66						
USP				⇑*i*S	**Sb**	**23 09 32.9**	**+0.7**
	baz=66						
CHMS	**Chumysh**	**2.62**	**74**	⇑*i*P	**Pb**	**23 09 02.1**	**-0.2**
	baz=73						
CHMS				⇑*i*S	**Sb**	**23 09 34.8**	**-0.1**
	baz=73						
KBK	**Karagaybulak**	**2.70**	**82**	⇑*i*P	**Pb**	**23 09 03.7**	**-0.1**
	baz=81						
KBK				⇑*i*S	**Sb**	**23 09 37.6**	**+0.1**
	baz=81						
KZA	**Kyzart**	**2.93**	**94**	⇑*i*P	**Pb**	**23 09 06.4**	**-1.4**
	baz=93						
KZA				⇑*i*S	**Sb**	**23 09 42.8**	**-1.4**
	baz=93						
DGS	**Degeres**	**3.40**	**73**	*e*P	**Pb**	**23 09 18.2**	**+2.5**
	1.9nm,0.5s						
DGS				*e*S	**Sg**	**23 10 02.3**	**-1.7**
	9.1nm,0.2s						
KST	**Kastek**	**3.50**	**77**	*e*P	**Pb**	**23 09 19.9**	**+2.5**
	1.1nm,0.2s						
KST				*e*S	**Sg**	**23 10 05.2**	**-1.8**
	5.4nm,0.5s						
KUU	**Kurty**	**3.99**	**65**	*e*P	**Pg**	**23 09 30.0**	**-1.2**
	1.8nm,0.1s						
KUU				*e*S	**Sg**	**23 10 23.0**	**+0.1**
	2.8nm,0.5s						
MDOK	**Medeo**	**4.30**	**77**	*e*P	**Pg**	**23 09 35.1**	**-1.9**
	1.3nm,0.3s						
MDOK				*e*S	**Sg**	**23 10 31.3**	**-1.5**
	3.5nm,0.4s						

ISCJB ***28*** *23:08:47.0±0.8, 37°.94N±0°.04×144°.21E±0°.06, h33km, mb3.8/2, MS3.2/1, Error ellipse: s-maj=6.6km s-min=5.9km az=15.9*
JMA ***28*** *23:08:49.2±0.2, 37°.84N×143°.99E, h42km, M3.9*
IDC ***28*** *23:08:53.9±7.9, 36°.44N×143°.63E, h0km, mb3.6/2, mb1 3.8/3, mb1mx3.3/32, mbtmp3.5/3, ML3.3/1, MS3.3/1, Ms1 3.3/1, ms1mx2.4/35, Error ellipse: s-maj=168.8km s-min=34.8km az=26.0*
ISC 28 23:08:48.2±1.3, 37°.85N±0°.06×144°.20E±0°.08, h35km, n19, σ1§72/31, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.33**	**286**	*e*S	**Sn**	**23 09 50.0**	**-1.3**
OFUJ	**Ofunato**	**2.34**	**303**	P	**Pn**	**23 09 24.6**	**+0.5**
OFUJ				*e*S	**Sn**	**23 09 50.6**	**-0.9**
JMK	**Ichinoseki**	**2.59**	**296**	P	**Pn**	**23 09 28.3**	**+0.8**
JMK				*e*S	**Sn**	**23 09 56.9**	**-0.8**
JOM	**Ohasama**	**2.79**	**306**	P	**Pn**	**23 09 31.4**	**+1.0**
JOM				*e*S	**Sn**	**23 10 03.1**	**+0.2**
JFT	**Otama**	**3.08**	**265**	P	**Pn**	**23 09 34.9**	**+0.6**
JFT				*e*S	**Sn**	**23 10 08.7**	**-1.3**
JRG	**Rokugo**	**3.19**	**300**	P	**Pn**	**23 09 37.2**	**+1.4**
JRG				*e*S	**Sn**	**23 10 12.7**	**0.0**
JYK	**Kaneyama**	**3.20**	**291**	P	**Pn**	**23 09 37.1**	**+1.1**
JYK				*e*S	**Sn**	**23 10 13.3**	**+0.4**
JANG	**Nango**	**3.27**	**321**	P	**Pn**	**23 09 38.4**	**+1.4**
JANG				*e*S	**Sn**	**23 10 13.9**	**-0.8**
JTM	**Tenmabayashi**	**3.81**	**321**	*e*S	**Sn**	**23 10 27.0**	**-0.8**
JOT	**Ohata**	**4.29**	**326**	*e*S	**Sn**	**23 10 38.0**	**-1.6**
JRY	**Ryogami san**	**4.62**	**248**	P	**Pn**	**23 09 55.2**	**-0.3**
JRY				*e*S	**Sn**	**23 10 43.7**	**-4.3**
JKB	**Kayabe**	**4.71**	**330**	P	**Pn**	**23 09 58.9**	**+2.2**
JKB				*e*S	**Sn**	**23 10 48.2**	**-1.9**
JCH	**Churui**	**4.80**	**353**	P	**Pn**	**23 09 58.9**	**+0.9**
JCH				*e*S	**Sn**	**23 10 50.7**	**-1.6**
MJAR	**Matsushiro Arr**	**4.96**	**257**	Pn	**Pn**	**23 10 01.5**	**+1.3**
	1.5nm,0.3s,baz=88,slow=14,SNR=13						
MJAR				Sn	**Sn**	**23 10 53.0**	**-3.2**
	0.9nm,0.3s,baz=118,slow=15,SNR=3.6						
NEM2	**Nemuro 2**	**5.63**	**12**	P	**Pn**	**23 10 08.7**	**-0.7**
NEM2				*e*S	**Sn**	**23 11 08.7**	**-4.1**
JTKR	**Abashiri--Toko**	**6.12**	**358**	P	**Pn**	**23 10 16.8**	**+0.8**
JTKR				*e*S	**Sn**	**23 11 22.8**	**-2.0**
NRIK	**Noril'sk**	**43.47**	**334**	LR	LR	23 36 40.7	
	comp=Z,31nm,18.1s,baz=154,slow=37						
WRA	**Warramunga Arr**	**58.23**	**191**	P	**P**	**23 18 39.4**	**+0.5**
	0.7nm,0.6s,baz=12,slow=7.2,SNR=17						
ASAR	**Alice Springs**	**61.95**	**191**	P	**P**	**23 19 05.7**	**+1.3**
	1.0nm,1.2s,baz=7.0,slow=7.2,SNR=2.8						

NIED ***28*** *23:23:00,34°.80N×142°.80E, h5km, Mw3.7 Best double couple: M₀4.62000×10¹⁴ NP1:φ₁s18.00000°, δ37.00000°, λ-95.00000°. NP2:φ₂s204.00000°, δ54.00000°, λ-86.00000°.*
IDC ***28*** *23:23:56.0±0.8, 34°.87N×142°.97E, h0km, mb3.8/14, mb1 4.0/18, mb1mx3.8/39, mbtmp3.8/18, ML3.8/4, MS3.1/1, Ms1 3.1/1, ms1mx2.4/33, Error ellipse: s-maj=22.5km s-min=17.7km az=85.0*
JMA ***28*** *23:23:58.9±0.4, 34°.84N×142°.80E, h64km, M3.6*
ISCJB ***28*** *23:23:59.5±0.5, 34°.97N±0°.04×142°.79E±0°.04, h33km, mb3.9/17, MS3.1/1, Error ellipse: s-maj=6.2km s-min=5.2km az=15.1*
NEIC ***28*** *23:24:01.1±0.5, 34°.91N×142°.91E, h35km, mb4.3/3, Error ellipse: s-maj=12.9km s-min=10.0km az=52.0*
ISC 28 23:24:01.1±0.7, 34°.93N±0°.06×142°.86E±0°.07, h35km, n41, σ1§64/45, mb3.9/17, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BSO1	**Boso 1**	**1.57**	**261**	P	**Pn**	**23 24 24.1**	**-1.9**
BSO1				*e*S	**Sn**	**23 24 43.7**	**-1.1**
CHOJ	**Chosi**	**1.81**	**296**	P	**Pn**	**23 24 28.9**	**-0.8**
CHOJ				*e*S	**Sn**	**23 24 51.1**	**-0.3**
BSO3	**Boso 3**	**1.93**	**267**	P	**Pn**	**23 24 29.6**	**-1.6**
JOD2	**Odawara 2**	**3.11**	**277**	P	**Pn**	**23 24 45.8**	**-1.8**
JOD2				*e*S	**Sn**	**23 25 20.8**	**-2.8**
JHJ	**Hachijo jima 2**	**3.12**	**236**	Pn	**Pn**	**23 24 45.4**	**-2.5**
	30nm,0.3s,baz=248,slow=22,SNR=6.4						
JHJ				Sn	**Sn**	**23 25 19.6**	**-4.3**
	61nm,0.3s,baz=267,slow=23,SNR=8.5						
JAG	**Ashikaga**	**3.15**	**299**	P	**Pn**	**23 24 47.5**	**-0.7**
JAG				*e*S	**Sn**	**23 25 23.0**	**-1.5**
JFT	**Otama**	**3.29**	**323**	P	**Pn**	**23 24 49.4**	**-0.8**
JFT				*e*S	**Sn**	**23 25 26.1**	**-2.0**
JRY	**Ryogami san**	**3.41**	**290**	P	**Pn**	**23 24 51.2**	**-0.5**
MJAR	**Matsushiro Arr**	**4.11**	**294**	Pn	**Pn**	**23 25 00.8**	**-0.6**
	2.7nm,0.3s,baz=113,slow=8.1,SNR=40						
MJAR				Sn	**Sn**	**23 25 47.1**	**-1.1**
	1.7nm,0.3s,baz=123,slow=12,SNR=4.8						
MAJO	**Matsushiro**	**4.11**	**294**	*e*Pn	**Pn**	**23 25 01.2**	**-0.2**
MAT	**Matsushiro**	**4.11**	**294**	P	**Pn**	**23 25 00.6**	**-0.8**
MAT				*e*S	**Sn**	**23 25 46.1**	**-2.2**
JMK	**Ichinoseki**	**4.22**	**342**	P	**Pn**	**23 25 01.4**	**-1.6**
JMK				*e*S	**Sn**	**23 25 48.4**	**-2.7**
JYK	**Kaneyama**	**4.46**	**334**	P	**Pn**	**23 25 05.2**	**-1.0**
JYK				*e*S	**Sn**	**23 25 55.7**	**-1.1**
JOM	**Ohasama**	**4.71**	**345**	P	**Pn**	**23 25 08.0**	**-1.6**
JCJ	**Chichijima**	**7.83**	**184**	Sn	Sn	23 27 10.3	-10
	9.1nm,0.3s,baz=294,slow=22,SNR=3.6						
ASAJ	**Asahikawa**	**9.18**	**359**	Pn	**Pn**	**23 26 09.3**	**-1.6**
	2.6nm,0.3s,baz=224,slow=10,SNR=19						
ASAJ				Sn	**Sn**	**23 27 48.8**	**-4.2**
	0.6nm,0.3s,baz=242,slow=25,SNR=2.9						
KLR	**Kul'dur**	**16.47**	**334**	Pn	**Pn**	**23 27 48.8**	**-0.6**
	0.1nm,0.3s,baz=162,slow=9.6,SNR=2.6						
H11N2	**WAKE ISLAND Hy 26.08**	**119**		T	T	23 56 40.1	
	baz=311,slow=75,SNR=17						
H11N1	**WAKE ISLAND Hy 26.09**	**119**		T	T	23 56 40.7	
	baz=311,slow=75,SNR=9.4						
H11N3	**WAKE ISLAND Hy 26.10**	**119**		T	T	23 56 41.6	
	baz=311,slow=75,SNR=12						
H11S1	**WAKE ISLAND Hy 26.75**	**122**		T	T	23 57 30.1	
	baz=312,slow=75,SNR=21						
H11S3	**WAKE ISLAND Hy 26.75**	**122**		T	T	23 57 30.1	
	baz=312,slow=75,SNR=19						
H11S2	**WAKE ISLAND Hy 26.77**	**122**		T	T	23 57 31.3	
	baz=312,slow=75,SNR=13						
SONM	**Songino Array**	**29.95**	**307**	P	**P**	**23 30 07.9**	**+1.8**
	0.5nm,0.5s,baz=120,slow=9.0,SNR=4.1						
ZALV	**Zalesovo Beam**	**44.21**	**314**	P	**P**	**23 32 07.8**	**+1.2**
	1.7nm,0.8s,baz=107,slow=5.0,SNR=5.9						
MKAR	**Makanchi Array**	**46.25**	**304**	P	**P**	**23 32 24.1**	**+1.2**
	1.0nm,0.7s,baz=95,slow=8.6,SNR=7.3						
MKAR				LR	LR	23 51 54.8	
	comp=Z,19nm,18.6s,baz=42,slow=36						
HNR	**Honiara**	**46.99**	**157**	*e*P	**P**	**23 32 26.5**	**-2.4**
	2.9nm,0.3s						
KURK	**Kurchatov**	**48.16**	**310**	*e*P	**P**	**23 32 38.3**	**+0.6**
	1.3nm,0.4s						
COLA	**College**	**50.25**	**31**	*e*P	**P**	**23 32 53.5**	**+0.1**
	0.7nm,0.4s						
ILAR	**Eielson Array**	**50.66**	**31**	P	**P**	**23 32 57.0**	**+0.5**
	0.4nm,0.6s,baz=273,slow=5.3,SNR=4.7						
WRA	**Warramunga Arr**	**55.16**	**190**	P	**P**	**23 33 30.0**	**-0.2**
	1.5nm,0.6s,baz=11,slow=7.5,SNR=11						
ASAR	**Alice Springs**	**58.89**	**190**	P	**P**	**23 33 56.5**	**0.0**
	0.8nm,0.8s,baz=3.7,slow=8.7,SNR=9.8						
GEYT	**Alibeck**	**65.89**	**300**	P	**P**	**23 34 45.0**	**+1.6**
	0.5nm,0.6s,baz=144,slow=20,SNR=3.2						
FINES	**FINESS Array B**	**71.22**	**333**	P	**P**	**23 35 16.5**	**+0.3**
	2.0nm,1.0s,baz=48,slow=4.3,SNR=4.2						
NVAR	**Mina Array Bea**	**75.31**	**53**	P	**P**	**23 35 41.6**	**+0.5**
	0.4nm,0.6s,baz=283,slow=8.1,SNR=3.7						
NB2	**NORSAR Subarra**	**76.58**	**338**	PKPdf	**P**	**23 35 48.4**	**+0.8**
	comp=Z,0.6nm,0.6s,baz=45,slow=1.9						
NOA	**NORSAR Array B**	**76.58**	**338**	P	**P**	**23 35 48.0**	**+0.4**
	comp=Z,1.0nm,0.8s,baz=41,slow=8.1,SNR=3.6						
AKASG	**Malin Array Be**	**76.68**	**323**	P	**P**	**23 35 48.7**	**+0.4**
	comp=Z,0.5nm,0.4s,baz=43,slow=6.0,SNR=4.2						
BRTR	**Keskin Array B**	**81.13**	**313**	P	**P**	**23 36 14.5**	**+1.4**
	comp=Z,0.8nm,1.0s,baz=101,slow=2.9,SNR=3.8						
GERES	**GERESS Array B**	**85.11**	**329**	P	**P**	**23 36 34.3**	**+0.8**
	comp=Z,0.3nm,0.5s,baz=40,slow=6.8,SNR=3.9						
TXAR	**Lajitas Array**	**90.46**	**53**	P	**P**	**23 36 59.0**	**-0.5**
	comp=Z,0.2nm,0.7s,baz=256,slow=1.9,SNR=3.3						

ISCJB ***28*** *23:29:15.6±0.6, 39°.11N±0°.04×29°.03E±0°.04, h1km±8km, Error ellipse: s-maj=6.4km s-min=4.7km az=163.4*
CSEM ***28*** *23:29:15.9±0.1, 39°.10N×29°.03E, h5km, ML2.2, Error ellipse: s-maj=2.6km s-min=2.2km az=90.0*
ISK ***28*** *23:29:15.4, 39°.09N×29°.10E, h8km, MD2.7*
DDA ***28*** *23:29:15.4, 39°.12N×29°.03E, h7km, Ml2.2*
ISC 28 23:29:15.9±1.0, 39°.10N±0°.03×29°.03E±0°.02, h9km±10km, n31, σ0§30/41, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**257**	P	**Pg**	**23 29 21.0**	**0.0**
DEMI				S	**Sg**	**23 29 24.5**	**0.0**
DEMI	**Demirci**	**0.25**	**257**	*i* P	**Pg**	**23 29 21.0**	**0.0**
DEMI				*i* S	**Sg**	**23 29 24.4**	**0.0**
GDZ	**Gediz**	**0.35**	**92**	P	**Pg**	**23 29 23.0**	**+0.1**
GDZ				S	**Sg**	**23 29 28.0**	**+0.5**
GDZ	**Gediz**	**0.35**	**92**	*i* P	**Pg**	**23 29 23.0**	**+0.1**
GDZ				*i* S	**Sg**	**23 29 28.0**	**+0.5**
TVSB	**Tavsanli**	**0.48**	**43**	*e*PG	**Pg**	**23 29 25.1**	**-0.3**
TVSB				*e*SG	**Sg**	**23 29 31.5**	**-0.3**
TVSB	**Tavsanli**	**0.48**	**43**	*e*Pg	**Pg**	**23 29 25.1**	**-0.3**
TVSB				*e*Sg	**Sg**	**23 29 31.5**	**-0.3**
KULA	**Kula-Manisa**	**0.65**	**207**	*e*PG	**Pg**	**23 29 28.7**	**+0.1**
KULA	**Kula-Manisa**	**0.65**	**207**	*e*Pg	**Pg**	**23 29 28.7**	**+0.1**
KHAL	**Karahalli**	**0.81**	**154**	P	**Pg**	**23 29 31.8**	**+0.2**
KHAL				S	**Sb**	**23 29 43.3**	**-0.1**
KHAL	**Karahalli**	**0.81**	**154**	*i* P	**Pg**	**23 29 31.8**	**+0.2**
KHAL				*i* S	**Sb**	**23 29 43.3**	**-0.1**
KHL	**Karahalli**	**0.86**	**153**	*e*PG	**Pg**	**23 29 31.8**	**-0.8**
KHL	**Karahalli**	**0.86**	**153**	*e*Pg	**Pg**	**23 29 31.8**	**-0.8**
ORLT	**Orhaneli**	**0.95**	**354**	*e*PG	**Pg**	**23 29 34.4**	**+0.1**
ORLT	**Orhaneli**	**0.95**	**354**	*e*Pg	**Pg**	**23 29 34.4**	**+0.1**
BALB	**Balikesir**	**1.04**	**302**	*e*PN	**Pn**	**23 29 36.9**	**+0.2**
BALB	**Balikesir**	**1.04**	**302**	*e*Pn	**Pn**	**23 29 36.9**	**+0.2**
IGD	**Bursa**	**1.17**	**6**	*i* P	**Pb**	**23 29 37.4**	**-0.9**
CAVI	**Cavuskoy**	**1.27**	**29**	*e*PN	**Pb**	**23 29 40.0**	**0.0**
CAVI	**Cavuskoy**	**1.27**	**29**	*e*Pn	**Pb**	**23 29 40.0**	**0.0**
MDNY	**Mudanya-Bursa**	**1.27**	**355**	*e*PN	**Pg**	**23 29 40.4**	**0.0**
MDNY	**Mudanya-Bursa**	**1.27**	**355**	*e*Pn	**Pg**	**23 29 40.4**	**0.0**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*PN	**Pg**	**23 29 40.4**	**0.0**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*Pn	**Pg**	**23 29 40.4**	**0.0**
BORA	**Eskisehir**	**1.35**	**54**	P	**Pg**	**23 29 41.9**	**+0.1**
BORA				S	**Sg**	**23 29 59.6**	**+0.3**
BORA	**Eskisehir**	**1.35**	**54**	*i* P	**Pg**	**23 29 41.9**	**+0.1**
BORA				*i* S	**Sg**	**23 29 59.6**	**+0.3**
ARMT	**Armutlu**	**1.47**	**355**	*e*PN	**Pb**	**23 29 43.3**	**-0.1**
ARMT	**Armutlu**	**1.47**	**355**	*e*Pn	**Pb**	**23 29 43.3**	**-0.1**
EDC	**Edincik**	**1.54**	**324**	*e*PN	**Pb**	**23 29 44.6**	**0.0**
EDC	**Edincik**	**1.54**	**324**	*e*Pn	**Pb**	**23 29 44.6**	**0.0**
GULT	**Gulveren**	**1.75**	**40**	*e*PN	**Pn**	**23 29 46.7**	**+0.1**
GULT	**Gulveren**	**1.75**	**40**	*e*Pn	**Pn**	**23 29 46.7**	**+0.1**

ISK ***28*** *23:33:11.4, 39°.06N×29°.12E, h6km, MD2.7*
DDA ***28*** *23:33:11.8, 39°.08N×29°.06E, h7km, Md2.5*
ISCJB ***28*** *23:33:12.2±0.5, 39°.09N±0°.04×29°.06E±0°.04, h9km, Error ellipse: s-maj=5.3km s-min=4.5km az=150.8*
CSEM ***28*** *23:33:12.2±0.1, 39°.09N×29°.06E, h5km, MD2.5, Error ellipse: s-maj=3.8km s-min=2.9km az=98.0*
ISC 28 23:33:12.5±0.9, 39°.08N±0°.03×29°.07E±0°.03, h9km, n22, σ0§45/30, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**262**	P	**Pg**	**23 33 17.8**	**-0.3**
DEMI				S	**Sg**	**23 33 21.7**	**-0.2**
DEMI	**Demirci**	**0.28**	**262**	*i* P	**Pg**	**23 33 17.8**	**-0.3**
DEMI				*i* S	**Sg**	**23 33 21.7**	**-0.2**
GDZ	**Gediz**	**0.32**	**89**	P	**Pg**	**23 33 18.1**	**-0.8**
GDZ				S	**Sg**	**23 33 23.8**	**+0.6**
GDZ	**Gediz**	**0.32**	**89**	*i* P	**Pg**	**23 33 18.1**	**-0.8**
GDZ				*i* S	**Sg**	**23 33 23.8**	**+0.6**
TVSB	**Tavsanli**	**0.48**	**40**	*e*PG	**Pg**	**23 33 21.3**	**-0.5**
TVSB				*e*SG	**Sg**	**23 33 27.8**	**-0.3**
TVSB	**Tavsanli**	**0.48**	**40**	*e*Pg	**Pg**	**23 33 21.3**	**-0.5**
TVSB				*e*Sg	**Sg**	**23 33 27.8**	**-0.3**
KULA	**Kula-Manisa**	**0.65**	**210**	*e*PG	**Pg**	**23 33 24.4**	**-0.7**
KULA	**Kula-Manisa**	**0.65**	**210**	*e*Pg	**Pg**	**23 33 24.4**	**-0.7**
KHAL	**Karahalli**	**0.78**	**155**	P	**Pb**	**23 33 28.6**	**+0.2**
KHAL				S	**Sg**	**23 33 38.5**	**+0.6**
KHAL	**Karahalli**	**0.78**	**155**	*i* P	**Pb**	**23 33 28.6**	**+0.2**
KHAL				*i* S	**Sg**	**23 33 38.5**	**+0.6**
ORLT	**Orhaneli**	**0.97**	**352**	*e*PG	**Pg**	**23 33 31.1**	**-0.1**
ORLT	**Orhaneli**	**0.97**	**352**	*e*Pg	**Pg**	**23 33 31.1**	**-0.1**
IZI	**Iznik**	**1.29**	**14**	*e*PN	**Pn**	**23 33 36.9**	**+0.1**
IZI	**Iznik**	**1.29**	**14**	*e*Pn	**Pn**	**23 33 36.9**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.29**	**354**	*e*PN	**Pn**	**23 33 36.8**	**0.0**
MDNY	**Mudanya-Bursa**	**1.29**	**354**	*e*Pn	**Pn**	**23 33 36.8**	**0.0**
KCTX	**Karacabey (Bur**	**1.30**	**335**	*e*PN	**Pn**	**23 33 37.1**	**+0.2**
KCTX	**Karacabey (Bur**	**1.30**	**335**	*e*Pn	**Pn**	**23 33 37.1**	**+0.2**
ARMT	**Armutlu**	**1.49**	**354**	*e*PN	**Pn**	**23 33 39.9**	**+0.4**
ARMT	**Armutlu**	**1.49**	**354**	*e*Pn	**Pn**	**23 33 39.9**	**+0.4**
GULT	**Gulveren**	**1.75**	**39**	*e*PN	**Pn**	**23 33 43.2**	**+0.1**
GULT	**Gulveren**	**1.75**	**39**	*e*Pn	**Pn**	**23 33 43.2**	**+0.1**

ISCJB ***28*** *23:39:08.6±0.5, 37°.95N±0°.05×27°.16E±0°.04, h11km±5km, Error ellipse: s-maj=8.9km s-min=3.9km az=30.8*
CSEM ***28*** *23:39:08.7±0.1, 37°.94N×27°.17E, h15km, MD2.6, Error ellipse: s-maj=4.3km s-min=2.4km az=32.0*
ISK ***28*** *23:39:08.8, 37°.95N×27°.25E, h27km, MD2.4*
DDA ***28*** *23:39:08.9, 37°.94N×27°.12E, h7km, Md2.6*
ISC 28 23:39:08.7±0.9, 37°.96N±0°.04×27°.18E±0°.03, h15km±7km, n18, σ0§27/30, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DGB	**˜zmir**	**0.25**	**293**	*i* P	**Pg**	**23 39 14.0**	**-0.2**
DGB				*i* S	**Sg**	**23 39 17.3**	**-0.6**
GCAM	**G?zelcaml?**	**0.26**	**170**	P	**Pg**	**23 39 14.2**	**-0.1**
GCAM				S	**Sg**	**23 39 18.2**	**+0.2**
GCAM	**G?zelcaml?**	**0.26**	**170**	*i* P	**Pg**	**23 39 14.2**	**-0.1**
GCAM				*i* S	**Sg**	**23 39 18.2**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**0.56**	**91**	*e*PG	**Pg**	**23 39 19.8**	**-0.1**
AYDB				*e*SG	**Sb**	**23 39 28.2**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**0.56**	**91**	*e*Pg	**Pg**	**23 39 19.8**	**-0.1**
AYDB				*e*Sg	**Sb**	**23 39 28.2**	**-0.1**
ZEY	**˜zmir**	**0.60**	**298**	*i* P	**Pg**	**23 39 20.3**	**-0.2**
ZEY				*i* S	**Sg**	**23 39 28.4**	**-0.1**
URLA	**Izmir**	**0.61**	**312**	P	**Pg**	**23 39 20.9**	**+0.2**
URLA				S	**Sg**	**23 39 29.2**	**+0.3**
URLA	**Izmir**	**0.61**	**312**	*i* P	**Pg**	**23 39 20.9**	**+0.2**
URLA				*i* S	**Sg**	**23 39 29.2**	**+0.3**
AYDN	**Tasoluk**	**0.63**	**118**	P	**Pb**	**23 39 21.9**	**+0.4**
AYDN				S	**Sb**	**23 39 29.9**	**-0.2**
AYDN	**Tasoluk**	**0.63**	**118**	*i* P	**Pb**	**23 39 21.9**	**+0.4**
AYDN				*i* S	**Sb**	**23 39 29.9**	**-0.2**
BODT	**Bodrum**	**0.90**	**173**	*e*PG	**Pg**	**23 39 25.7**	**-0.4**
BODT	**Bodrum**	**0.90**	**173**	*e*Pg	**Pg**	**23 39 25.7**	**-0.4**
CHOS	**Chios island**	**0.98**	**296**	*e*PG	**Pn**	**23 39 28.1**	**0.0**
CHOS				*e*SG	**Sn**	**23 39 41.6**	**-0.2**
CHOS	**Chios island**	**0.98**	**296**	*e*Pg	**Pn**	**23 39 28.1**	**0.0**
CHOS				*e*Sg	**Sn**	**23 39 41.6**	**-0.2**
DKL	**Dikili**	**1.14**	**349**	*e*PN	**Pn**	**23 39 29.8**	**-0.3**
DKL	**Dikili**	**1.14**	**349**	*e*Pn	**Pn**	**23 39 29.8**	**-0.3**
APE	**Apeiranthos**	**1.58

*MOS **28** 23:51:08.6±0.9, 25°.49N×142°.51E, h35km, mb4.8/52, Error ellipse: s-maj=10.2km s-min=5.4km az=107.7*
*NEIC **28** 23:51:10.3±1.4, 25°.50N×142°.50E, h34km±10km, mb4.8/56, Error ellipse: s-maj=4.6km s-min=3.4km az=111.0*
ISC 28 23:51:10.8±0.4, 25°.48N±0°.05×142°.55E±0°.06, h39km±3km, n201, σ1⇕32/215, mb4.6/95, MS3.2/9, 10C-10D, Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**1.64**	**349**	*e*Pn	**Pn**	**23 51 36.7**	**-0.4**
CBIJ				Sn	**Sn**	**23 52 01.1**	**+4.2**
JCJ	**Chichijima**	**1.64**	**349**	Pn	**Pn**	**23 51 36.0**	**-1.1**
	378nm,0.3s,baz=286,slow=23,SNR=198						
JCJ				Sn	**Sn**	**23 52 01.1**	**+4.2**
	baz=270,slow=0.1						
JHJ2	**Mitsune**	**7.97**	**343**	*e*Pn	**Pn**	**23 53 04.0**	**+0.1**
JHJ	**Hachijo jima 2**	**7.98**	**343**	Pn	**Pn**	**23 53 02.5**	**-1.7**
	5.7nm,0.3s,baz=73,slow=20,SNR=2.5						
JHJ				Sn	**Sn**	**23 54 29.8**	**-3.4**
	9.7nm,0.3s,baz=59,slow=18,SNR=2.5						
INU	**Inuyama**	**10.93**	**335**	*e*Pn	**Pn**	**23 53 42.5**	**-2.1**
MJAR	**Matsushiro Arr**	**11.63**	**342**	Pn	**Pn**	**23 53 53.4**	**-0.8**
	0.4nm,0.3s,baz=157,slow=11,SNR=5.4						
MJAR				Sn	**Sn**	**23 55 58.9**	**-3.9**
	0.2nm,0.3s,baz=11,slow=41,SNR=2.7						
MAJO	**Matsushiro**	**11.63**	**342⇑**	*e*P	**Pn**	**23 53 55.2**	**+0.9**
MAJO	**Matsushiro**	**11.63**	**342**	*e*Pn	**Pn**	**23 53 53.6**	**-0.7**
MJB9	**Matsu-Tunnel**	**11.64**	**342**	*e*Pn	**Pn**	**23 53 53.2**	**-1.1**
GUMO	**Guam**	**12.03**	**169**	LR	LR	23 57 50.6	
	comp=Z,93nm,19.5s,baz=64,slow=34						
ERM	**Erimo**	**16.50**	**2**	*e*P	**Pn**	**23 54 59.7**	**+0.5**
ERM				pmax	pmax		
	comp=Z,133nm,1.8s						
ERM	**Erimo**	**16.50**	**2**	*e*Pn	**Pn**	**23 54 59.7**	**+0.5**
	comp=Z,133nm,1.8s						
TJN	**Taejon**	**16.93**	**313⇓**	*i*P	**Pn**	**23 55 03.4**	**-1.4**
KS15	**Wonju Array Si**	**17.25**	**317**	*e*Pn	**P**	**23 55 09.5**	**-0.4**
YOJ	**Yonaguni jima**	**17.74**	**271**	*e*P	**Pn**	**23 55 13.3**	**-1.6**
YOJ				pmax	pmax		
	comp=Z,395nm,1.4s						
YOJ	**Yonaguni jima**	**17.74**	**271**	*e*Pn	**Pn**	**23 55 13.3**	**-1.6**
	comp=Z,395nm,1.4s						
INCN	**Inchon**	**18.06**	**315**	*e*Pn	**Pn**	**23 55 16.8**	**-1.9**
	comp=Z,17nm,0.9s						
ASAJ	**Asahikawa**	**18.59**	**0**	P	**P**	**23 55 22.9**	**-1.7**
	comp=Z,0.2nm,0.3s,baz=244,slow=33,SNR=2.6						
TATO	**Taipei**	**19.06**	**273**	*e*P	**P**	**23 55 29.2**	**-0.7**
	comp=Z,521nm,1.8s						
NACB	**Ninganchiao**	**19.06**	**271**	*e*P	**P**	**23 55 29.9**	**0.0**
	comp=Z,42nm,1.1s						
YULB	**Yu-li**	**19.46**	**268**	*e*P	**P**	**23 55 33.9**	**-0.4**
	comp=Z,102nm,1.7s						
TWG	**Pinlang**	**19.77**	**267**	*e*P	**P**	**23 55 37.6**	**-0.1**
	comp=Z,348nm,1.5s						
USRK	**Ussuriysk Ar.**	**20.55**	**338**	P	**P**	**23 55 46.0**	**0.0**
	comp=Z,11nm,0.9s,baz=154,slow=9.3,SNR=9.7						
YSS	**Yuzh-Sakhalins**	**21.43**	**0**	*e*P	**P**	**23 55 55.2**	**-0.1**
YSS				pmax	pmax		
	comp=Z,50nm,1.3s						
YSS	**Yuzh-Sakhalins**	**21.43**	**0**	*e*P	**P**	**23 55 55.2**	**-0.1**
	comp=Z,50nm,1.3s						
MDJ	**Mudanjiang**	**21.79**	**334**	P	**P**	**23 55 58.3**	**-0.9**
MDJ				pmax	pmax		
	comp=Z,5.0nm,0.6s						
MDJ				pmax	pmax		
	comp=Z,10.0nm,2.5s						
H11N2	**WAKE ISLAND Hy**	**23.18**	**99**	T	T	00 19 54.8	
	baz=291,slow=74,SNR=18						
H11N1	**WAKE ISLAND Hy**	**23.18**	**99**	T	T	00 19 53.9	
	baz=291,slow=74,SNR=12						
H11N3	**WAKE ISLAND Hy**	**23.20**	**99**	T	T	00 19 51.1	
	baz=291,slow=74,SNR=13						
H11S3	**WAKE ISLAND Hy**	**23.42**	**102**	T	T	00 20 03.0	
	baz=292,slow=76,SNR=11						
H11S1	**WAKE ISLAND Hy**	**23.43**	**102**	T	T	00 20 06.5	
	baz=292,slow=76,SNR=5.9						
H11S2	**WAKE ISLAND Hy**	**23.44**	**102**	T	T	00 20 07.4	
	baz=292,slow=76,SNR=6.6						
HABR	**Khabarovsk**	**23.69**	**348**	*e*P	**P**	**23 56 17.3**	**-1.5**
HABR				*e**PP	**pP**	**23 56 26.5**	**-2.8**
HABR				*e**SP	**sP**	**23 56 30.8**	**-3.3**
HABR				*e*PPP	PPP	23 56 53.9	
HABR				*e*S	**S**	**00 00 30.9**	**-0.1**
HABR				*e**SS	**sS**	**00 00 46.8**	**-2.0**
HABR				*e*SS	**SnSn**	**00 01 12.0**	**+1.0**
HABR				*e*SSS	SSS	00 01 25.8	
HABR				*e*		00 07 23.3	
HABR				pmax	pmax		
	comp=N,9.0nm,1.1s						
HABR				pmax	pmax		
	comp=E,11nm,1.1s						
HABR				pmax	pmax		
	comp=Z,33nm,1.1s						
HABR				MLR	MLR		
	comp=Z,29nm,17.0s						
DAV	**Davao City (W)**	**24.45**	**224**	LR	LR	00 04 05.6	
	comp=Z,66nm,21.1s,baz=103,slow=32						
KLR	**Kul'dur**	**25.16**	**343**	P	**P**	**23 56 32.6**	**+0.4**
	comp=Z,16nm,0.8s,baz=152,slow=8.1,SNR=51						
TYV	**Tymovskoe**	**25.34**	**0**	*e*P	**P**	**23 56 35.5**	**+1.6**
WHN	**Wuhan**	**25.36**	**288**	*e*P	**P**	**23 56 35.0**	**+0.7**
MANU	**Manus Island**	**27.76**	**170**	*e*P	**P**	**23 56 55.3**	**-0.7**
	comp=Z,28nm,1.0s						
KWAJ	**Kwajalein Atol**	**29.05**	**120**	*e*P	**P**	**23 57 07.6**	**+0.1**
KWAJ				pmax	pmax		
	comp=Z,141nm,1.2s						
KWAJ	**Kwajalein Atol**	**29.05**	**120**	*e*P	**P**	**23 57 07.6**	**+0.1**
	comp=Z,141nm,1.2s						
HHC	**Hu-ho-hao-te**	**29.93**	**308**	*e*P	P	23 57 09.0	-6.3
HHC				pmax	pmax		
	comp=Z,37nm,0.8s						
HHC				pmax	pmax		
	comp=Z,160nm,4.3s						
HHC				LR	LR		
	comp=N,1μm,12.9s						
HHC				LR	LR		
	comp=E,1μm,13.0s						
HHC				LR	LR		
	comp=Z,1μm,13.2s						
XAN	**Xi'an**	**30.30**	**294**	P	**P**	**23 57 18.3**	**-0.3**
XAN				pmax	pmax		
	comp=Z,9.0nm,1.2s						
GYA	**Guiyang**	**32.21**	**280**	P	**P**	**23 57 35.5**	**-0.1**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
LUWI	**Luwuk**	**32.58**	**219**	*e*P	**P**	**23 57 38.4**	**-0.3**
	comp=Z,20nm,0.8s						
CD2	**Chengdu**	**34.49**	**288**	P	**P**	**23 57 53.8**	**-1.5**
CD2				pmax	pmax		
	comp=Z,30nm,1.3s						
LZH	**Lanzhou**	**34.69**	**297**	*e*P	**P**	**23 57 57.5**	**+0.4**
LZH				pP	pP	23 58 05.5	-2.5
LZH				sP	sP	23 58 08.0	-4.6
LZH				pmax	pmax		
	comp=Z,14nm,1.0s						
PMG	**Port Moresby**	**34.97**	**172**	*e*P	**P**	**23 58 00.1**	**+0.7**
PMG				pmax	pmax		
	comp=Z,27nm,0.9s						
PMG	**Port Moresby**	**34.97**	**172**	*e*P	**P**	**23 58 00.1**	**+0.7**
	comp=Z,27nm,0.9s						
SAUI	**Saumlaki**	**35.02**	**200**	*e*P	**P**	**23 57 59.5**	**-0.4**
	comp=Z,393nm,0.9s						
ULN	**Ulaanbaatar**	**35.72**	**318⇓**	*i*P	**P**	**23 58 05.4**	**-0.5**
ULN				pmax	pmax		
	comp=Z,6.0nm,1.2s						
ULN	**Ulaanbaatar**	**35.72**	**318**	*e*P	**P**	**23 58 05.3**	**-0.5**
	comp=Z,4.6nm,1.0s						
MIDW	**Midway**	**35.76**	**77**	*e*P	**P**	**23 58 06.0**	**-0.1**
	comp=Z,213nm,1.6s						
SMY	**Shemya**	**36.09**	**33**	*e*P	**P**	**23 58 09.3**	**+0.6**
SMY	**Shemya**	**36.09**	**33**	*e*P	**P**	**23 58 09.2**	**+0.6**
SONA1	**Songino Array**	**36.11**	**318**	*e*P	**P**	**23 58 08.8**	**-0.3**
SONA1				*e*PcP	**PcP**	**00 00 34.7**	**+0.2**
SONM	**Songino Array**	**36.11**	**318**	P	**P**	**23 58 07.7**	**-1.4**
	comp=Z,1.7nm,0.6s,baz=133,slow=8.8,SNR=13						
SONM				PcP	**PcP**	**00 00 34.6**	**+0.2**
	comp=Z,1.1nm,0.8s,baz=134,slow=2.7,SNR=4.1						
YAK	**Yakutsk**	**37.55**	**350⇑**	*i*P	**P**	**23 58 22.1**	**+1.1**
YAK				pmax	pmax		
	comp=Z,14nm,0.8s						
YAK	**Yakutsk**	**37.55**	**350**	*e*P	**P**	**23 58 21.2**	**+0.2**
	comp=Z,14nm,0.6s						
SEY	**Seymchan**	**38.01**	**7**	P	**P**	**23 58 24.6**	**-0.2**
	comp=Z,2.9nm,0.8s,baz=177,slow=5.8,SNR=7.2						
SEY	**Seymchan**	**38.01**	**7⇑**	*i*P	**P**	**23 58 25.6**	**+0.7**
ZAK	**Zakamensk**	**39.04**	**320**	*e*P	P	23 58 26.1	-7.7
ZAK				pmax	pmax		
	comp=Z,4.0nm,1.2s						
MMRI	**Maumere**	**39.26**	**213**	*e*P	**P**	**23 58 35.7**	**-0.1**
	comp=Z,58nm,1.1s						
SOEI	**Soe**	**39.29**	**209**	*e*P	**P**	**23 58 36.6**	**+0.4**
	comp=Z,35nm,0.9s						
TLY	**Talaya**	**39.40**	**322⇑**	*e*P	**P**	**23 58 36.4**	**-0.3**
TLY				pmax	pmax		
	comp=Z,4.0nm,1.0s						
TLY	**Talaya**	**39.40**	**322**	*e*P	**P**	**23 58 36.2**	**-0.5**
	comp=Z,2.3nm,0.8s						
MTN	**Manton Dam**	**39.69**	**198**	*e*P	**P**	**23 58 39.4**	**0.0**
	comp=Z,56nm,1.4s						
CHTO	**Chiang Mai**	**40.79**	**270**	*e*P	**P**	**23 58 48.7**	**+0.1**
CHTO				pmax	pmax		
	comp=Z,3.0nm,0.9s						
CHTO	**Chiang Mai**	**40.79**	**270**	*e*P	**P**	**23 58 48.7**	**+0.1**
	comp=Z,3.1nm,0.9s						
CM01	**Chiang Mai Arr**	**40.89**	**269**	*e*P	**P**	**23 58 48.9**	**-0.6**
CMAR	**Chiang Mai Arr**	**40.90**	**269**	P	**P**	**23 58 50.8**	**+1.3**
	comp=Z,1.2nm,0.6s,baz=64,slow=8.6,SNR=9.6						
CMAR				LR	LR	00 16 28.9	
	comp=Z,29nm,18.4s,baz=110,slow=37						
MYKOM	**Kota Tinggi**	**44.08**	**244**	*e*P	**P**	**23 59 14.9**	**-0.5**
BILL	**Bilibino**	**44.95**	**12⇓**	*i*P	**P**	**23 59 22.6**	**+0.9**
BILL				*e*		23 59 29.1	
BILL				*e*		23 59 41.2	
BILL				pmax	pmax		
	comp=Z,8.0nm,1.0s						
BILL	**Bilibino**	**44.95**	**12**	*e*P	**P**	**23 59 22.5**	**+0.8**
	comp=Z,6.5nm,0.8s						
JOHN	**Johnston Islan**	**45.35**	**91**	*e*P	**P**	**23 59 25.8**	**+0.3**
	comp=Z,205nm,1.0s						
CTAO	**Charters Tower**	**45.44**	**175**	*e*P	**P**	**23 59 26.0**	**-0.1**
CTAO				pmax	pmax		
	comp=Z,16nm,1.3s						
CTAO	**Charters Tower**	**45.44**	**175**	*e*P	**P**	**23 59 26.0**	**-0.1**
	comp=Z,16nm,1.3s						
WRAB	**Tennant Creek**	**45.84**	**191**	*c i*P	**P**	**23 59 29.0**	**-0.2**
WRAB				pmax	pmax		
	comp=Z,16nm,0.5s						
WRAB	**Tennant Creek**	**45.84**	**191**	*e*P	**P**	**23 59 29.3**	**0.0**
	comp=Z,16nm,0.7s						
WB2	**Warramunga Arr**	**45.85**	**191**	*e*P	**P**	**23 59 29.3**	**0.0**
	comp=Z,9.7nm,0.8s						
WRA	**Warramunga Arr**	**45.85**	**191**	P	**P**	**23 59 29.2**	**-0.2**
	comp=Z,7.5nm,0.6s,baz=11,slow=8.4,SNR=57						
WRA	**Warramunga Arr**	**45.85**	**191**	P	**P**	**23 59 29.2**	**-0.2**
WRA				pmax	pmax		
	comp=Z,7.0nm,0.6s						
FITZ	**Fitzroy Crossi**	**46.34**	**202**	*e*P	**P**	**23 59 33.4**	**+0.2**
TIXI	**Tiksi**	**46.84**	**354⇓**	*e*P	**P**	**23 59 37.1**	**+0.6**
TIXI				pmax	pmax		
	comp=Z,3.0nm,0.8s						
TIXI	**Tiksi**	**46.84**	**354**	*e*P	**P**	**23 59 36.8**	**+0.3**
	comp=Z,5.0nm,1.1s						
WMQ	**Urumqi**	**47.79**	**307**	*e*P	**P**	**23 59 44.5**	**+0.1**
WMQ				pmax	pmax		
	comp=Z,4.0nm,0.8s						
WMQ				pmax	pmax		
	comp=Z,32nm,6.8s						
WMQ				LR	LR		
	comp=N,15nm,12.6s						
WMQ				LR	LR		
	comp=Z,16nm,19.0s						
LHMI	**Lhok Sumawe**	**48.05**	**253**	*e*P	**P**	**23 59 46.8**	**+0.1**
	comp=Z,48nm,0.9s						
GAMB	**Gambell**	**48.43**	**25**	*e*P	**P**	**23 59 49.0**	**+0.1**
	comp=Z,46nm,1.0s						
GSI	**Gunungsitoli**	**49.54**	**248**	*e*P	**P**	**23 59 57.3**	**-0.8**
	comp=Z,72nm,1.4s						
AS01	**Alice Springs**	**49.56**	**190**	*e*P	**P**	**23 59 57.5**	**-0.6**
AS31	**Alice Springs**	**49.57**	**190**	*e*P	**P**	**23 59 59.2**	**+1.1**
	comp=Z,1.6nm,0.6s						
ASAR	**Alice Springs**	**49.57**	**190**	P	**P**	**23 59 57.9**	**-0.3**
	comp=Z,1.7nm,0.6s,baz=17,slow=12,SNR=32						
ZAA0	**Zalesovo Array**	**50.92**	**320**	*e*P	**P**	**00 00 07.8**	**-0.2**
ZAA0				*e*PcP	**PcP**	**00 01 23.9**	**-0.1**
ZALV	**Zalesovo Beam**	**50.92**	**320**	P	**P**	**00 00 06.2**	**-1.8**
	comp=Z,0.9nm,0.4s,baz=111,slow=8.1,SNR=4.9						
ZALV				PcP	**PcP**	**00 01 23.8**	**-0.2**
	comp=Z,3.4nm,0.6s,baz=109,slow=4.0,SNR=9.0						
ZALV	**Zalesovo Beam**	**50.92**	**320**	*i* P	**P**	**00 00 07.3**	**-0.7**
ZALV				pmax	pmax		
	comp=Z,1.0nm,0.4s						
MK01	**Makanchi Array**	**51.75**	**311**	*e*P	**P**	**00 00 14.7**	**+0.3**
MK31	**Makanchi Array**	**51.76**	**311**	*e*P	**P**	**00 00 14.1**	**-0.4**
MK31	**Makanchi Array**	**51.76**	**311**	*e*P	**P**	**00 00 14.1**	**-0.4**
MKAR	**Makanchi Array**	**51.76**	**311**	P	**P**	**00 00 13.3**	**-1.1**
	comp=Z,2.0nm,0.7s,baz=92,slow=9.5,SNR=20						
MKAR				PcP	**PcP**	**00 01 27.5**	**+0.2**
	comp=Z,1.4nm,0.7s,baz=90,slow=4.9,SNR=4.7						
MKAR	**Makanchi Array**	**51.76**	**311**	*c i*P	**P**	**00 00 14.6**	**+0.1**
MKAR				pmax	pmax		
	comp=Z,2.0nm,0.7s						
MKAR	**Makanchi Array**	**51.76**	**311**	*e*P	**P**	**00 00 14.1**	**-0.4**
MKAR				PcP	**PcP**	**00 01 27.5**	**+0.2**
MAKZ	**Makanchi**	**51.97**	**311**	*e*P	**P**	**00 00 16.6**	**+0.5**
MAKZ				*e**SP	**sP**	**00 00 34.2**	**+2.3**
MAKZ				pmax	pmax		
	comp=Z,4.0nm,0.8s						
MAKZ	**Makanchi**	**51.97**	**311**	*e*P	**P**	**00 00 16.6**	**+0.5**
	comp=Z,3.9nm,0.8s						
MAKZ				*es*P	**sP**	**00 00 34.2**	**+2.3**
NRIK	**Noril'sk**	**54.26**	**339**	P	**P**	**00 00 32.4**	**-0.1**
	comp=Z,5.0nm,0.7s,baz=105,slow=9.2,SNR=8.8						
KURK	**Kurchatov**	**54.35**	**315**	*e*P	**P**	**00 00 32.3**	**-1.1**
KURK				pmax	pmax		
	comp=Z,15nm,1.1s						
KURK	**Kurchatov**	**54.35**	**315**	*e*P	**P**	**00 00 32.3**	**-1.1**
	comp=Z,15nm,1.1s						
KSH	**Kashi**	**56.69**	**302**	*e*P	**P**	**00 00 54.3**	**+3.6**
KSH				*ep*P	sP	00 01 04.5	-2.1
KSH				*es*P	pP	00 01 08.5	+6.4
KSH				*e*ScP	**ScP**	**00 05 45.0**	**+2.0**
KSH				PcS	**PcS**	**00 05 48.5**	**+1.1**
KSH				S	**S**	**00 08 44.3**	**+3.6**
KSH				ScS	**ScS**	**00 10 37.3**	**+0.2**
KSH	**Kashi**	**56.69**	**302**	SS	**SS**	**00 12 35.5**	**+6.9**
KSH				pmax	pmax		
	comp=Z,100nm,6.3s						
KSH				LR	LR		
	comp=N,97nm,6.8s						
KSH				LR	LR		
	comp=E,97nm,5.3s						
KSH				LR	LR		
	comp=Z,120nm,7.2s						
STKA	**Stephens Creek**	**57.05**	**181**	P	**P**	**00 00 52.3**	**-0.6**
	comp=Z,3.8nm,0.8s,baz=346,slow=8.3,SNR=10.0						
STKA	**Stephens Creek**	**57.05**	**181**	*e*P	**P**	**00 00 52.5**	**-0.3**
	comp=Z,0.9nm,0.8s						
BPAW	**Bear Paw Mtn.**	**57.12**	**29**	*e*P	**P**	**00 00 53.8**	**+0.6**
	comp=Z,9.5nm,1.4s						
TRF	**Thorofare Moun**	**57.33**	**29**	*e*P	**P**	**00 00 54.8**	**0.0**
	comp=Z,5.2nm,0.9s						
AAK	**Ala-Archa**	**57.45**	**306⇑**	*e*P	**P**	**00 00 55.6**	**-0.4**
AAK				pmax	pmax		
	comp=Z,3.0nm,0.8s						
PMR	**Palmer**	**57.63**	**32**	*e*P	**P**	**00 00 56.2**	**-0.5**
PMR				pmax	pmax		
	comp=Z,5.0nm,0.8s						
PMR	**Palmer**	**57.63**	**32**	*e*P	**P**	**00 00 56.2**	**-0.5**
	comp=Z,4.6nm,0.8s						
RND	**Reindeer**	**57.96**	**30**	*e*P	**P**	**00 00 58.6**	**-0.5**
RND				pmax	pmax		
	comp=Z,4.0nm,0.8s						
RND	**Reindeer**	**57.96**	**30**	*e*P	**P**	**00 00 58.6**	**-0.5**
	comp=Z,3.7nm,0.8s						
COLD	**Coldfoot**	**57.98**	**25**	*e*P	**P**	**00 01 00.5**	**+1.3**
	comp=Z,4.8nm,1.1s						
MDM	**Murphy Dome**	**58.42**	**28**	*e*P	**P**	**00 01 03.3**	**+1.0**
	comp=Z,8.2nm,1.4s						
SCM	**Sheep Creek Mo**	**58.50**	**32**	*e*P	**P**	**00 01 03.2**	**+0.2**
SCM				pmax	pmax		
	comp=Z,25nm,1.4s						
SCM	**Sheep Creek Mo**	**58.50**	**32**	*e*P	**P**	**00 01 03.2**	**+0.2**
	comp=Z,25nm,1.4s						
ILAR	**Eielson Array**	**58.97**	**28**	P	**P**	**00 01 05.2**	**-0.8**
	comp=Z,1.9nm,0.8s,baz=259,slow=5.8,SNR=14						
ILAR				LR	LR	00 27 12.7	
	comp=Z,13nm,18.7s,baz=153,slow=37						
ILB	**Eielson Array**	**58.97**	**28**	*e*P	**P**	**00 01 05.3**	**-0.7**
IL1	**Eielson Array**	**58.97**	**28**	*e*P	**P**	**00 01 04.8**	**-1.2**
BVAR	**Borovoye Array**	**59.45**	**318**	P	**P**	**00 01 09.3**	**-0.3**
	comp=Z,7.0nm,0.5s,baz=95,slow=7.1,SNR=19						
DOT	**Dot Lake**	**60.12**	**30**	*e*P	**P**	**00 01 14.4**	**+0.3**
	comp=Z,13nm,1.1s						
ZRNK	**Zerenda**	**60.29**	**318**	*e*P	**P**	**00 01 15.1**	**-0.3**
ZRNK				pmax	pmax		
	comp=Z,7.0nm,0.9s						
ZRNK	**Zerenda**	**60.29**	**318**	*e*P	**P**	**00 01 15.1**	**-0.3**
	comp=Z,6.7nm,0.9s						
KKAR	**Karatay Array**	**60.30**	**307**	*e*P	**P**	**00 01 15.6**	**0.0**
KKAR	**Karatay Array**	**60.30**	**307**	*e*P	**P**	**00 01 15.6**	**0.0**
KBL	**Kabul**	**63.04**	**297**	*e*P	**P**	**00 01 35.3**	**+0.8**
KBL				pmax	pmax		
	comp=Z,10.0nm,1.0s						
KBL	**Kabul**	**63.04**	**297**	*e*P	**P**	**00 01 35.3**	**+0.8**
	comp=Z,10nm,1.0s						
INK	**Inuvik**	**64.36**	**24**	P	**P**	**00 01 42.0**	**-0.3**
	comp=Z,4.1nm,1.1s,baz=298,slow=8.3,SNR=5.9						
INK	**Inuvik**	**64.36**	**24**	P	**P**	**00 01 42.0**	**-0.3**
INK				pmax	pmax		
	comp=Z,4.0nm,1.1s						
INK	**Inuvik**	**64.36**	**24**	*e*P	**P**	**00 01 42.6**	**+0.3**
	comp=Z,4.6nm,1.0s						
SVE	**Sverdlovsk**	**64.70**	**323⇑**	*i*P	**P**	**00 01 45.1**	**+0.4**
SVE				pmax	pmax		
	comp=Z,11nm,0.9s						
ARU	**Arti**	**65.89**	**323**	*c i*P	**P**	**00 01 51.9**	**-0.6**
ARU						00 02 19.7	
ARU				S	**S**	**00 10 38.0**	**+1.3**
ARU				SS	**SS**	**00 14 49.8**	**-1.7**
ARU				pmax	pmax		
	comp=Z,20nm,1.0s						
ARU	**Arti**	**65.89**	**323**	*e*P	**P**	**00 01 51.7**	**-0.7**
	comp=Z,14nm,0.7s						
ABKAR	**Akbulak array**	**66.45**	**315**	*e*P	**P**	**00 01 55.9**	**-0.3**
AKTO	**Aktyubinsk**	**67.41**	**316**	P	**P**	**00 02 01.9**	**-0.4**
	comp=Z,4.7nm,0.8s,baz=76,slow=15,SNR=13						
AKTO	**Aktyubinsk**	**67.41**	**316**	P	**P**	**00 02 01.9**	**-0.4**
AKTO				pmax	pmax		
	comp=Z,4.0nm,0.7s						
GEYT	**Alibeck**	**70.65**	**303**	P	**P**	**00 02 23.2**	**+0.6**
	comp=Z,3.0nm,1.0s,baz=5.7,slow=3.0,SNR=10						
YKA	**Yellowknife Ar**	**73.40**	**28**	P	**P**	**00 02 37.8**	**-0.7**
	comp=Z,1.3nm,0.6s,baz=294,slow=5.6,SNR=18						
YKB5	**Yellowknife Ar**	**73.40**	**28**	*e*P	**P**	**00 02 36.4**	**-2.1**
KLMR	**Klimovskoe**	**74.14**	**330**	*e*P	**P**	**00 02 44.9**	**+2.0**
KLMR				pmax	pmax		
	comp=Z,10.0nm,1.3s						
ARCES	**ARCESS Array B**	**75.17**	**341**	P	**P**	**00 02 48.9**	**+0.2**
	comp=Z,5.8nm,0.9s,baz=83,slow=10.0,SNR=7.5						
VRH	**Novokhopyorsk**	**76.95**	**321**	*e*P	**P**	**00 02 58.6**	**-0.6**
VRH				pmax	pmax		
	comp=Z,8.0nm,0.6s						
K05A	**Summer Lake**	**77.69**	**49**	*e*P	**P**	**00 03 05.5**	**+1.7**
	comp=Z,17nm,1.4s						
LPSR	**Galich'ya Gora**	**77.92**	**323**	*e*P	**P**	**00 03 05.0**	**+0.4**
LPSR				pmax	pmax		
	comp=Z,9.0nm,1.5s						
OBN	**Obninsk**	**78.04**	**326⇑**	*e*P	**P**	**00 03 06.1**	**+0.9**
OBN				*e*		00 03 18.5	
OBN				*e*		00 03 22.9	
OBN				pmax	pmax		
	comp=Z,32nm,2.4s						
VSR	**Storozhevoye**	**78.40**	**321**	*e*P	**P**	**00 03 07.4**	**+0.1**
VSR				pmax	pmax		
	comp=Z,10.0nm,1.5s						
NCK	**Nalchik**	**78.98**	**313⇓**	*e*P	**P**	**00 03 11.2**	**+0.5**
NCK				pmax	pmax		
	comp=Z,5.0nm,1.0s						
ZEI	**Tsey**	**79.07**	**312**	*e*P	**P**	**00 03 10.6**	**-0.9**
ZEI				pmax	pmax		
	comp=Z,14nm,0.8s						
KBZ	**Khabaz**	**79.34**	**313**	P	**P**	**00 03 13.1**	**+0.5**
	comp=Z,12nm,0.8s,baz=79,slow=3.5,SNR=25						
KIV	**Kislovodsk**	**79.39**	**314**	*e*P	**P**	**00 03 14.0**	**+1.0**
KIV				pmax	pmax		
	comp=Z,9.0nm,1.1s						
KIV	**Kislovodsk**	**79.39**	**314**	*e*P	**P**	**00 03 15.4**	**+2.4**
	comp=Z,6.0nm,0.8s						
FIA1	**FINESS Array S**	**79.53**	**344**	*e*P	**P**	**00 03 12.9**	**-0.3**
FINES	**FINESS Array B**	**79.53**	**334**	P	**P**	**00 03 13.0**	**-0.3**
	comp=Z,4.6nm,0.5s,baz=63,slow=5.2,SNR=74						
GNI	**Garni**	**79.59**	**309⇓**	*e*P	**P**	**00 03 15.6**	**+1.3**
GNI				pmax	pmax		
	comp=Z,38nm,1.7s						
CMB	**Columbia Colle**	**79.94**	**53**	*e*P	**P**	**00 03 15.7**	**-0.4**
CMB				pmax	pmax		
	comp=Z,8.0nm,1.3s						
CMB	**Columbia Colle**	**79.94**	**53**	*e*P	**P**	**00 03 15.7**	**-0.4**
	comp=Z,8.1nm,1.3s						
VSU	**Vasula**	**80.96**	**331⇓**	*i*P	**P**	**00 03 21.0**	**0.0**
VSU				pmax	pmax		
	comp=Z,34nm,1.0s						
NV01	**Mina Array Sit**	**81.26**	**52**	*e*P	**P**	**00 03 23.1**	**-0.2**
NVAR	**Mina Array Bea**	**81.26**	**52**	P	**P**	**00 03 23.0**	**-0.3**
	comp=Z,1.6nm,0.8s,baz=305,slow=5.2,SNR=5.7						
NVAR				LR	LR	00 35 42.9	

comp=Z,0.5nm,0.9s,baz=5.7,slow=2.9,SNR=4.2
PLCA Paso Flores 148.60 127 PKPbc **PKPbc 00 10 53.9 +0.1**
comp=Z,2.1nm,0.6s,baz=265,slow=2.9,SNR=13
LPAZ La Paz 149.97 78 PKPbc **PKPbc 00 10 58.6 0.0**
comp=Z,2.6nm,0.6s,baz=295,slow=1.6,SNR=14

MAN 29 00:00:40,9′.41N×122°.43E,h36km,mb3.9,ML2.7,MS2.4, Negros

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUIM	**Jordan**	**1.22**	**7**	*eP*	Pn	00 01 01.7	+1.3
GUIM				*eS*	Sn	00 01 16.6	+0.9
TBP	**Tagbilaran**	**1.44**	**79**	*eP*	Pn	00 01 04.7	+1.2
IPIL	**Ipil**	**1.62**	**175**	*eP*	Pn	00 01 07.0	+1.0
IPIL				*eS*	Sn	00 01 27.2	+1.5
PAGZ	**Pagadian**	**1.82**	**149**	*eP*	Pn	00 01 09.5	+0.7

WEL 29 00:02:18.9±0.6,38°.66S×179°.79W,h33km,ML3.5/4,Error ellipse: s-maj=6.5km s-min=3.2km az=90.0,East of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CNGZ	**Carnagh Statio**	**1.58**	**276**	PN	Pn	00 02 44.4	-0.1
WMGZ	**Waiomatatini S**	**1.65**	**300**	PN	Pn	00 02 44.9	-0.5
WMGZ				SN	Sn	00 03 03.7	-1.7
PKGZ	**Pakihiroa**	**1.85**	**294**	PN	Pn	00 02 47.4	-0.9
MXZ	**Matakaoa Point**	**1.86**	**305**	AML	AML	00 03 06.8	
MXZ				SN	Sn	00 03 10.2	-0.5
MHGZ	**Mahia Peninsul**	**1.87**	**254**	PN	Pn	00 02 47.9	-0.6
RIGZ	**Rimuhau**	**1.92**	**268**	PN	Pn	00 02 48.3	-0.9
RIGZ				SN	Sn	00 03 12.1	-0.2
KNZ	**Kokohu**	**2.02**	**259**	PN	Pn	00 02 50.1	-0.5
MWZ	**Matawai**	**2.13**	**278**	PN	Pn	00 02 51.7	-0.5
MWZ				SN	Sn	00 03 15.2	-2.3
MWZ				AML	AML	00 03 17.5	
URZ	**Urewera**	**2.47**	**278**	PN	Pn	00 02 57.5	+0.8
URZ				AML	AML	00 03 27.3	
ARHZ	**Aropaoanui**	**2.58**	**255**	PN	Pn	00 02 58.4	+0.1
PXZ	**Pawanui**	**2.94**	**241**	PN	Pn	00 03 01.5	-1.7
BHHZ	**Black Hill Sta**	**3.34**	**254**	PN	Pn	00 03 08.1	-0.6

NIED ***29*** *00:03:00, 39°.70N×142°.40E, h44km, Mw4.3 Best double couple: M0=2.77000×10^15 NP1:φs=188.00000°, δ21.00000°, λ76.00000°. NP2:φs=23.00000°, δ70.00000°, λ95.00000°.*
ISCJB ***29*** *00:03:04.7±0.3, 39°.79N±0°.03×142°.52E±0°.04, h33km, mb4.7/86, MS3.4/17, Error ellipse: s-maj=5.0km s-min=3.0km az=34.4*
MOS ***29*** *00:03:05.9±1.0, 39°.93N×142°.21E, h33km, mb4.6/34, Error ellipse: s-maj=9.7km s-min=5.8km az=99.6*
JMA ***29*** *00:03:07.3, 39°.75N×142°.36E, h41km±1km, M4.1*
JMA Felt II J1.
IDC ***29*** *00:03:08.4±1.8, 39°.76N×142°.36E, h51km±15km, mb3.9/25, mb1 4.0/30, mb1mx3.9/44, mbtmp4.1/30, ML3.6/5, MS3.3/18, Ms1 3.3/18, ms1mx3.1/51, Error ellipse: s-maj=15.6km s-min=10.5km az=108.0*
NEIC ***29*** *00:03:13.2±0.7, 40°.24N×141°.45E, h38km±6km, mb4.8/44, Error ellipse: s-maj=6.6km s-min=4.5km az=134.0*
NEIC Recorded [2 JMA] in Aomori.

ISC 29 00:03:06.7±0.6,39°.81N±0°.03×142°.40E±0°.04,h32km±3km, n182,σ1°.82/164,mb4.6/62,MS3.4/18,8C-10D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**0.43**	**288**	P	**Pn**	**00 03 17.1**	**+0.3**
JTH				S	**Sn**	**00 03 24.1**	**+0.5**
MIYJ	**Miyakonagasawa**	**0.51**	**243**	P	**Pb**	**00 03 17.3**	**0.0**
MIYJ				S	**Sb**	**00 03 24.5**	**-0.1**
JKZ	**Kuzumaki**	**0.84**	**282**	P	**Pb**	**00 03 22.7**	**-0.3**
JKZ				*e*S	**Sb**	**00 03 33.2**	**-0.8**
JANG	**Nango**	**0.88**	**310**	P	**Pb**	**00 03 23.0**	**-0.6**
JANG				*e*S	**Sb**	**00 03 34.8**	**-0.3**
JOM	**Ohasama**	**0.92**	**249**	P	**Pn**	**00 03 23.4**	**-0.1**
JOM				S	**Sb**	**00 03 35.0**	**-1.1**
OFUJ	**Ofunato**	**0.92**	**218**	P	**Pn**	**00 03 22.9**	**-0.6**
OFUJ				S	**Sb**	**00 03 34.2**	**-1.9**
JMK	**Ichinoseki**	**1.25**	**227**	P	**Pn**	**00 03 27.8**	**-0.2**
JMK				S	**Sn**	**00 03 42.8**	**-1.0**
JAH	**Hinai**	**1.41**	**286**	P	**Pn**	**00 03 30.9**	**+0.7**
JTM	**Tenmabayashi**	**1.41**	**314**	P	**Pn**	**00 03 31.0**	**+0.7**
JTM				*e*S	**Sn**	**00 03 49.2**	**+1.4**
JRG	**Rokugo**	**1.43**	**254**	P	**Pn**	**00 03 30.5**	**+0.1**
JIO	**Ouri**	**1.58**	**212**	P	**Pn**	**00 03 32.2**	**-0.3**
JIO				*e*S	**Sn**	**00 03 50.4**	**-1.5**
ERM	**Erimo**	**2.28**	**14⇓**	*e*P	**Pn**	**00 03 44.3**	**+2.2**
ERM	**Erimo**	**2.28**	**14**	*e*Pn	**Pb**	**00 03 46.5**	**-0.7**
ASAJ	**Asahikawa**	**4.31**	**2**	P	**Pn**	**00 04 11.9**	**+1.8**
	5.0nm,0.3s,baz=227,slow=8.7,SNR=30						
ASAJ				S	**Sn**	**00 05 01.2**	**+2.0**
	0.2nm,0.3s,baz=242,slow=30,SNR=2.8						
ASAJ	**Asahikawa**	**4.31**	**2**	*e*Pn	**Pn**	**00 04 12.2**	**+2.2**
ASAJ				S	**Sn**	**00 05 01.2**	**+2.0**
MJAR	**Matsushiro Arr**	**4.64**	**227**	P	**Pn**	**00 04 16.9**	**+2.2**
	5.4nm,0.3s,baz=31,slow=13,SNR=72						
MJAR				S	**Sn**	**00 05 13.5**	**+6.0**
	baz=118,slow=15,SNR=2.0						
MJAR				LR	LR	00 06 19.1	
	comp=Z,214nm,19.5s,baz=105,slow=42						
MJB9	**Matsu-Tunnel**	**4.64**	**227**	*e*Pn	**Pn**	**00 04 17.2**	**+2.6**
MAJO	**Matsushiro**	**4.64**	**227**	*c i*P	**Pn**	**00 04 17.2**	**+2.5**
MAJO	**Matsushiro**	**4.64**	**227**	*e*Pn	**Pn**	**00 04 17.2**	**+2.5**
MAT	**Matsushiro**	**4.64**	**227**	P	**Pn**	**00 04 16.9**	**+2.2**
MAT				S	**Sn**	**00 05 09.5**	**+2.0**
YUK	**Yuzh-Kuril'sk**	**4.95**	**30⇓**	*e*P	**Pn**	**00 04 19.7**	**+0.9**
INU	**Inuyama**	**6.17**	**226**	*e*Pn	Pn	00 04 40.7	+5.1
KUR	**Kuril'sk**	**6.76**	**35⇑**	*i*P	**Pn**	**00 04 44.2**	**+0.5**
KUR				*e*S	**Sn**	**00 05 56.3**	**-3.2**
KUR				pmax	pmax		
	comp=Z,22nm,0.5s						
KUR				pmax	pmax		
	comp=N,10.0nm,0.3s						
KUR				smax	smax		
	comp=N,30nm,0.4s						
KUR				smax	smax		
	comp=E,73nm,0.4s						
JHJ	**Hachijo jima 2**	**7.00**	**198**	P	**Pn**	**00 04 46.4**	**-0.6**
	comp=E,9.3nm,0.3s,baz=77,slow=19,SNR=2.9						
JHJ				S	Sn	00 05 56.8	-8.8
	comp=E,6.1nm,0.3s,baz=245,slow=23,SNR=1.9						
YSS	**Yuzh-Sakhalins**	**7.15**	**2⇓**	*e*P	**Pn**	**00 04 49.9**	**+0.9**
YSS				*e*S	**Sn**	**00 06 02.8**	**-6.3**
YSS				pmax	pmax		
	comp=Z,20nm,0.8s						
YSS	**Yuzh-Sakhalins**	**7.15**	**2**	*e*Pn	**Pn**	**00 04 50.2**	**+1.2**
USRK	**Ussuriysk Ar.**	**8.91**	**303**	P	**Pn**	**00 05 15.8**	**+2.7**
	comp=Z,1.4nm,0.3s,baz=113,slow=15,SNR=15						
USRK				LR	LR	00 08 34.9	
	comp=Z,210nm,18.8s,baz=134,slow=37						
MDJ	**Mudanjiang**	**10.64**	**301**	P	Pn	00 05 32.0	-5.0
MDJ				S	Sn	00 07 20.3	-15
MDJ				pmax	pmax		
	comp=Z,6.0nm,0.5s						
MDJ				pmax	pmax		
	comp=Z,120nm,8.2s						
MDJ				LR	LR		
	comp=N,57nm,23.8s						
MDJ				LR	LR		
	comp=E,120nm,20.8s						
MDJ				LR	LR		
	comp=Z,180nm,22.0s						
JNU	**Nakatsue**	**11.42**	**238**	LR	LR	00 10 00.3	
	comp=Z,139nm,21.1s,baz=295,slow=36						
KS01	**Wonju Array Si**	**11.58**	**263**	*e*Pn	**Pn**	**00 05 49.8**	**0.0**
KLR	**Kul'dur**	**12.09**	**325**	P	**Pn**	**00 05 59.9**	**+3.1**
	comp=Z,0.1nm,0.3s,baz=143,slow=15,SNR=3.3						
KLR				LR	LR	00 10 48.9	
	comp=Z,132nm,18.4s,baz=126,slow=38						
CN2	**Changchun**	**13.26**	**293**	*e*P	**Pn**	**00 06 10.5**	**-2.2**
PETK	**Petropavlovsk-**	**16.92**	**33**	LR	LR	00 13 48.2	
	comp=Z,19nm,19.0s,baz=215,slow=38						
BJI	**Beijing**	**20.10**	**279**	P	**P**	**00 07 35.3**	**-2.3**
BJI				pmax	pmax		
	comp=Z,8.0nm,1.0s						
BJI				LR	LR		
	comp=Z,54nm,19.3s						
TIA	**Tai'an**	**20.22**	**268**	⇓P	Pn	00 07 41.5	+0.4
TIA				pmax	pmax		
	comp=Z,20nm,0.8s						
MA2	**Magadan**	**20.48**	**12**	P	**P**	**00 07 41.7**	**+0.1**
	comp=Z,2.0nm,0.3s,baz=170,slow=3.8,SNR=3.8						
NACB	**Ninganchiao**	**23.46**	**235**	*e*P	**P**	**00 08 16.6**	**+3.2**
	comp=Z,34nm,1.1s						
HHC	**Hu-ho-hao-te**	**23.48**	**283**	*e*P	**P**	**00 08 11.3**	**-2.4**
HHC				pmax	pmax		
	comp=Z,32nm,0.8s						
HHC				pmax	pmax		
	comp=Z,140nm,4.1s						
YAK	**Yakutsk**	**23.57**	**345**	P	**P**	**00 08 12.6**	**-1.5**
	comp=Z,1.3nm,0.3s,baz=162,slow=20,SNR=4.0						
YAK	**Yakutsk**	**23.57**	**345**	*e*P	**P**	**00 08 11.5**	**-2.6**
YAK				*e**PP	**pP**	**00 08 22.5**	**-0.5**
YAK				*e*S	**S**	**00 12 24.8**	**-1.1**
YAK				pmax	pmax		
	comp=E,4.0nm,1.1s						
YAK				pmax	pmax		
	comp=Z,22nm,0.9s						
YAK				pmax	pmax		
	comp=N,14nm,1.1s						
YAK				smax	smax		
	comp=E,1.0nm,0.2s						
SEY	**Seymchan**	**23.92**	**11**	P	**P**	**00 08 18.2**	**+0.7**
	comp=E,8.9nm,0.9s,baz=203,slow=7.6,SNR=24						
SEY	**Seymchan**	**23.92**	**11⇑**	*e*P	**P**	**00 08 17.8**	**+0.3**
TWG	**Pinlang**	**24.78**	**233**	*e*P	**P**	**00 08 29.0**	**+3.3**
	comp=E,587nm,1.8s						
SMY	**Shemya**	**25.21**	**49**	*e*P	**pP**	**00 08 37.6**	**-0.8**
SMY				pmax	pmax		
	comp=Z,104nm,1.5s						
SMY	**Shemya**	**25.21**	**49**	*e*P	pP	00 08 37.6	-0.8
	comp=Z,104nm,1.5s						
GUMO	**Guam**	**26.21**	**175**	LR	LR	00 19 30.1	
	comp=Z,11nm,20.1s,baz=140,slow=38						
GUMO	**Guam**	**26.21**	**175**	*e*P	**pP**	**00 08 49.5**	**+1.7**
GUMO				pmax	pmax		
	comp=Z,526nm,1.9s						
GUMO	**Guam**	**26.21**	**175**	*e*P	pP	00 08 49.5	+1.7
	comp=Z,526nm,1.9s						
ULN	**Ulaanbaatar**	**26.55**	**299⇓**	*e*P	**P**	**00 08 40.0**	**-1.8**
ULN				pmax	pmax		
	comp=Z,3.0nm,0.6s						
ULN	**Ulaanbaatar**	**26.55**	**299**	*e*P	**P**	**00 08 40.5**	**-1.3**
	comp=Z,3.3nm,0.6s						
SONA1	**Songino Array**	**26.99**	**299**	*e*P	**P**	**00 08 43.3**	**-2.4**
SONM	**Songino Array**	**26.99**	**299**	P	**P**	**00 08 45.1**	**-0.6**
	comp=Z,2.9nm,0.6s,baz=86,slow=8.9,SNR=24						
SONM				LR	LR	00 19 47.8	
	comp=Z,86nm,19.3s,baz=96,slow=37						
H11N2	**WAKE ISLAND Hy**	**29.03**	**126**	T	T	00 39 43.3	
	baz=319,slow=76,SNR=746						
H11N1	**WAKE ISLAND Hy**	**29.04**	**126**	T	T	00 39 42.6	
	baz=319,slow=76,SNR=959						
H11N3	**WAKE ISLAND Hy**	**29.05**	**126**	T	T	00 39 44.1	
	baz=319,slow=76,SNR=603						
TLY	**Talaya**	**29.19**	**307**	P	**P**	**00 09 04.8**	**-0.3**
	comp=Z,1.6nm,0.7s,baz=107,slow=9.6,SNR=4.1						
TLY				LR	LR	00 21 12.0	
	comp=Z,70nm,19.3s,baz=126,slow=37						
TLY	**Talaya**	**29.19**	**307**	*e*P	**P**	**00 09 05.4**	**+0.2**
TLY				*e*		00 15 34.7	
TLY				pmax	pmax		
	comp=Z,6.0nm,1.5s						
TLY				MLR	MLR		
	comp=Z,79nm,17.0s						
TLY	**Talaya**	**29.19**	**307**	*e*P	**P**	**00 09 04.3**	**-0.8**
	comp=Z,14nm,1.7s						
ZAK	**Zakamensk**	**29.25**	**304**	*e*P	**P**	**00 09 04.9**	**-0.9**
ZAK				pmax	pmax		
	comp=Z,5.0nm,1.4s						
H11S1	**WAKE ISLAND Hy**	**29.84**	**128**	T	T	00 40 55.1	
	baz=321,slow=76,SNR=183						
H11S3	**WAKE ISLAND Hy**	**29.84**	**128**	T	T	00 40 54.8	
	baz=321,slow=76,SNR=110						
H11S2	**WAKE ISLAND Hy**	**29.86**	**128**	T	T	00 40 54.6	
	baz=321,slow=76,SNR=90						
BILL	**Bilibino**	**31.15**	**17⇑**	*e*P	**P**	**00 09 20.8**	**-1.5**
BILL				*e*		00 09 37.0	
BILL				*e*		00 10 26.3	
BILL				pmax	pmax		
	comp=Z,5.0nm,1.4s						
BILL				MLR	MLR		
	comp=Z,53nm,17.0s						
BILL	**Bilibino**	**31.15**	**17**	*e*P	P	00 09 27.9	+5.6
	comp=Z,10nm,1.6s						
GYA	**Guiyang**	**32.53**	**257**	P	**P**	**00 09 37.0**	**+2.0**
GYA				pP	sP	00 09 49.8	+1.8
GYA				PP	**PnPn**	**00 10 43.3**	**+0.5**
GYA				PcP	**PcP**	**00 12 26.0**	**+4.8**
GYA				S	**S**	**00 14 43.5**	**-4.8**
GYA				sS	sS	00 15 05.3	+1.8
GYA				ScP	**ScP**	**00 16 04.8**	**+2.2**
GYA				SS	**SnSn**	**00 16 37.3**	**-6.1**
GYA				pmax	pmax		
	comp=Z,30nm,1.1s						
GYA				pmax	pmax		
	comp=Z,120nm,5.3s						
GYA				LR	LR		
	comp=N,540nm,17.5s						
GYA				LR	LR		
	comp=E,520nm,18.0s						
GYA				LR	LR		
	comp=Z,500nm,17.9s						
CD2	**Chengdu**	**32.54**	**266**	P	**P**	**00 09 34.0**	**-0.9**
CD2				pmax	pmax		
	comp=Z,26nm,0.8s						
TIXI	**Tiksi**	**32.64**	**352⇓**	*e*P	**P**	**00 09 37.3**	**+2.0**
TIXI				pmax	pmax		
	comp=Z,2.0nm,0.8s						
TIXI	**Tiksi**	**32.64**	**352**	*e*P	**P**	**00 09 37.0**	**+1.7**
	comp=Z,2.2nm,0.8s						
TIXI				*e*ScP	**ScP**	**00 16 02.2**	**+0.2**
MIDW	**Midway**	**35.02**	**97**	*e*P	pP	00 10 09.2	+3.5
	comp=Z,81nm,1.0s						
GAMB	**Gambell**	**35.96**	**33**	*e*P	P	00 10 10.8	+6.8
	comp=Z,29nm,0.8s						
KMI	**Kunming**	**36.22**	**258**	P	**P**	**00 10 06.5**	**-0.5**
KMI				pmax	pmax		
	comp=Z,14nm,0.6s						
KMI				pmax	pmax		
	comp=Z,170nm,4.4s						
AKUT	**Akutan**	**37.28**	**50**	*e*P	pP	00 10 23.9	-0.8
	comp=Z,181nm,1.8s						
WMQ	**Urumqi**	**40.35**	**294**	*e*P	**P**	**00 10 45.8**	**+4.4**
WMQ				pmax	pmax		
	comp=Z,5.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,52nm,5.2s						
WMQ				LR	LR		
	comp=N,17nm,15.8s						
WMQ				LR	LR		
	comp=E,12nm,34.4s						
WMQ				LR	LR		
	comp=Z,16nm,21.2s						
ZAA0	**Zalesovo Array**	**40.67**	**310**	*e*P	**P**	**00 10 42.9**	**-0.9**
ZALV	**Zalesovo Beam**	**40.67**	**310**	P	**P**	**00 10 43.5**	**-0.3**
	comp=Z,5.5nm,0.4s,baz=95,slow=8.2,SNR=36						
ZALV				PcP	**PcP**	**00 12 44.2**	**-0.8**
	comp=Z,0.8nm,0.4s,baz=68,slow=3.9,SNR=3.8						
ZALV				LR	LR	00 27 52.3	
	comp=Z,50nm,19.0s,baz=70,slow=36						
NRIK	**Noril'sk**	**41.10**	**334**	LR	LR	00 28 18.4	
	comp=Z,90nm,19.3s,baz=107,slow=37						
NVS	**Novosibirsk**	**41.54**	**311**	*e*P	**P**	**00 10 49.2**	**-1.7**
TT01	**Tatalina**	**42.71**	**36**	*e*P	pP	00 11 07.3	-2.5
CMAR	**Chiang Mai Arr**	**43.00**	**253**	P	**P**	**00 11 02.8**	**-0.5**
	comp=Z,0.8nm,0.4s,baz=47,slow=6.1,SNR=8.2						
CMAR				LR	LR	00 27 59.6	
	comp=Z,18nm,20.0s,baz=155,slow=35						
CMAR	**Chiang Mai Arr**	**43.00**	**253**	*i* P	**P**	**00 11 03.2**	**-0.1**
CMAR				pmax	pmax		
	comp=Z,1.0nm,0.4s						
CM01	**Chiang Mai Arr**	**43.01**	**253**	*e*P	**P**	**00 11 02.9**	**-0.4**
MK01	**Makanchi Array**	**43.36**	**300**	*e*P	**P**	**00 11 05.2**	**-0.8**
MK31	**Makanchi Array**	**43.36**	**300**	*e*P	**P**	**00 11 05.5**	**-0.4**
MK31	**Makanchi Array**	**43.36**	**300**	*e*P	**P**	**00 11 05.5**	**-0.4**
MKAR	**Makanchi Array**	**43.36**	**300**	P	**P**	**00 11 05.3**	**-0.6**
	comp=Z,2.6nm,0.5s,baz=86,slow=10,SNR=28						
MKAR				LR	LR	00 29 56.6	
	comp=Z,62nm,18.9s,baz=78,slow=37						
MKAR	**Makanchi Array**	**43.36**	**300**	*e*P	**P**	**00 11 05.5**	**-0.5**
MAKZ	**Makanchi**	**43.56**	**300**	*e*P	**P**	**00 11 06.9**	**-0.7**
MAKZ				pmax	pmax		
	comp=Z,6.0nm,0.9s						
MAKZ	**Makanchi**	**43.56**	**300**	*e*P	**P**	**00 11 06.9**	**-0.7**
	comp=Z,5.5nm,0.9s						
LUWI	**Luwuk**	**44.45**	**209**	*e*P	pP	00 11 21.3	-3.0
	comp=Z,24nm,0.9s						
HOM	**Homer**	**44.87**	**41**	*e*P	pP	00 11 25.1	-2.1
	comp=Z,156nm,1.1s						
KURK	**Kurchatov**	**44.88**	**306**	*e*P	**P**	**00 11 17.2**	**-0.8**
KURK				pmax	pmax		
	comp=Z,13nm,1.0s						
KURK	**Kurchatov**	**44.88**	**306**	*e*P	**P**	**00 11 17.2**	**-0.8**
	comp=Z,13nm,1.0s						
KTH	**Kantishna Hill**	**45.03**	**36**	*e*P	pP	00 11 26.0	-2.6
	comp=Z,3.9nm,0.9s						
MLY	**Manley**	**45.10**	**33**	*e*P	pP	00 11 27.3	-1.8
	comp=Z,12nm,2.0s						
SUA	**Susitna One**	**45.19**	**38**	*e*P	pP	00 11 27.4	-2.5
	comp=Z,14nm,1.5s						
COLD	**Coldfoot**	**45.36**	**30**	*e*P	pP	00 11 27.3	-3.8
	comp=Z,9.5nm,1.8s						
RC01	**Rabbit Creek A**	**45.70**	**39**	*e*P	pP	00 11 30.9	-2.9
	comp=Z,14nm,1.5s						
MDM	**Murphy Dome**	**46.17**	**34**	*e*P	pP	00 11 34.2	-3.3
	comp=Z,14nm,1.8s						
WRH	**Wood River Hil**	**46.25**	**34**	*e*P	pP	00 11 34.9	-3.2
	comp=Z,8.7nm,1.7s						
CCB	**Clear Creek Bu**	**46.36**	**34**	*e*P	pP	00 11 35.4	-3.6
	comp=Z,10nm,1.9s						
ILAR	**Eielson Array**	**46.75**	**34**	P	**P**	**00 11 33.5**	**+0.9**
	comp=Z,0.9nm,0.7s,baz=271,slow=6.3,SNR=17						
TARA	**Tarawa**	**47.28**	**136**	*e*P	pP	00 11 49.4	+2.6
	comp=Z,76nm,1.0s						
FYU	**Fort Yukon**	**47.33**	**31**	*e*P	pP	00 11 43.6	-2.9
	comp=Z,39nm,2.0s						
JOHN	**Johnston Islan**	**47.49**	**105**	*e*P	pP	00 11 49.5	+1.2
	comp=Z,189nm,1.0s						
KLU	**Klutina**	**47.49**	**38**	*e*P	pP	00 11 44.1	-3.9
	comp=Z,7.1nm,1.4s						
DOT	**Dot Lake**	**48.08**	**35**	*e*P	pP	00 11 49.8	-2.7
	comp=Z,26nm,1.9s						
BMRM	**Bremner River**	**48.20**	**39**	*e*P	pP	00 11 50.5	-2.9
	comp=Z,18nm,1.6s						
MENT	**Mentasta**	**48.33**	**36**	*e*P	pP	00 11 51.8	-2.6
	comp=Z,17nm,0.2s						
TKM2	**Tokmak 2**	**49.04**	**297**	*e*P	**P**	**00 11 51.1**	**+0.2**
TKM2				pmax	pmax		
	comp=Z,8.0nm,0.8s						
TKM2	**Tokmak 2**	**49.04**	**297**	*e*P	**P**	**00 11 51.1**	**+0.2**
	comp=Z,8.1nm,0.8s						
EGAK	**Eagle**	**49.19**	**33**	*e*P	pP	00 11 57.8	-3.2
	comp=Z,11nm,1.8s						
KAPI	**Kappang**	**49.24**	**210**	*e*P	pP	00 11 58.7	-3.1
	comp=Z,64nm,1.5s						
BVAR	**Borovoye Array**	**49.32**	**311**	P	**P**	**00 11 52.1**	**-0.5**
	comp=Z,2.7nm,0.5s,baz=65,slow=8.2,SNR=14						
AAK	**Ala-Archa**	**49.90**	**297⇑**	*e*P	**P**	**00 11 56.7**	**-0.7**
AAK				pmax	pmax		
	comp=Z,3.0nm,0.5s						
AAK	**Ala-Archa**	**49.90**	**297**	*e*P	**P**	**00 11 57.3**	**-0.1**
	comp=Z,2.8nm,1.0s						
KSH	**Kashi**	**50.03**	**292**	*e*P	**P**	**00 12 02.5**	**+4.2**
KSH				*e*pP	sP	00 12 15.3	+3.7
KSH				*e*PcP	**PcP**	**00 13 23.5**	**+5.6**
KSH				*e*PP	**PP**	**00 13 57.3**	**+4.0**
KSH				S	**S**	**00 19 05.8**	**-1.5**
KSH				pmax	pmax		
	comp=Z,55nm,4.3s						
KSH				LR	LR		
	comp=N,70nm,5.6s						
KSH				LR	LR		
	comp=E,71nm,6.8s						
KSH				LR	LR		
	comp=Z,79nm,7.7s						
ZRNK	**Zerenda**	**50.14**	**311**	*e*P	**P**	**00 11 58.5**	**-0.4**
ZRNK				pmax	pmax		
	comp=Z,7.0nm,0.9s						
ZRNK	**Zerenda**	**50.14**	**311**	*e*P	**P**	**00 11 58.5**	**-0.4**
	comp=Z,6.7nm,0.9s						
EKS2	**Erkin-Say**	**50.38**	**297**	*e*P	**P**	**00 12 00.3**	**-0.7**
EKS2				pmax	pmax		
	comp=Z,3.0nm,0.6s						
EKS2	**Erkin-Say**	**50.38**	**297**	*e*P	**P**	**00 12 00.3**	**-0.7**
	comp=Z,3.1nm,0.6s						
MYKOM	**Kota Tinggi**	**51.54**	**233**	*e*P	**P**	**00 12 14.2**	**+4.3**
	comp=Z,13nm,1.4s						
INK	**Inuvik**	**51.57**	**28**	P	**P**	**00 12 10.1**	**+0.7**
	comp=Z,1.1nm,0.6s,baz=258,slow=8.1,SNR=4.8						
INK	**Inuvik**	**51.57**	**28**	*e*P	P	00 12 15.8	+6.4
HNR	**Honiara**	**51.62**	**158**	LR	LR	00 31 06.3	
	comp=Z,32nm,20.6s,baz=152,slow=32						
HNR	**Honiara**	**51.62**	**158**	*e*P	**pP**	**00 12 21.0**	**+1.1**
HNR				pmax	pmax		
	comp=Z,131nm,0.9s						
HNR	**Honiara**	**51.62**	**158**	*e*P	pP	00 12 21.0	+1.1
	comp=Z,131nm,0.9s						
SVE	**Sverdlovsk**	**53.61**	**317⇓**	*e*P	**P**	**00 12 24.8**	**+0.2**
SVE				pmax	pmax		
	comp=Z,17nm,0.8s						
JAGI	**Jajag, Banyuwa**	**54.69**	**215**	*e*P	P	00 12 38.0	+5.0
	comp=Z,88nm,1.5s						
ARU	**Arti**	**54.82**	**317**	*c i*P	**P**	**00 12 32.6**	**-0.8**
ARU						00 14 30.8	
ARU				S	**S**	**00 20 11.6**	**-0.5**
ARU				SS	**SS**	**00 23 55.9**	**+1.0**
ARU				pmax	pmax		
	comp=Z,19nm,1.0s						
ARU	**Arti**	**54.82**	**317**	*e*P	**P**	**00 12 33.1**	**-0.3**
	comp=Z,14nm,0.8s						
WRAK	**Wrangell Islan**	**55.56**	**42**	*e*P	pP	00 12 46.4	-2.0
	comp=Z,36nm,1.8s						
GSI	**Gunungsitoli**	**55.90**	**238**	*e*P	pP	00 12 45.6	-5.8
	comp=Z,61nm,1.2s						
POHA	**Pohakuloa**	**56.35**	**92**	*e*P	pP	00 12 55.6	+0.7
	comp=Z,160nm,1.3s						
ABKAR	**Akbulak array**	**56.77**	**309**	*e*P	**P**	**00 12 46.8**	**-0.7**
KBL	**Kabul**	**57.18**	**290**	*e*P	**P**	**00 12 50.1**	**-0.8**
KBL				pmax	pmax		
	comp=Z,10.0nm,0.9s						
KBL	**Kabul**	**57.18**	**290**	*e*P	**P**	**00 12 50.1**	**-0.8**
	comp=Z,10.0nm,0.9s						
AKTO	**Aktyub

comp=Z,16nm,0.9s
KIV Kislovodsk 69.69 311 *e*P **P 00 14 14.4 +1.1**
comp=Z,14nm,0.8s
KBZ Khabaz 69.69 310 P **P 00 14 13.4 +0.2**
comp=Z,3.7nm,0.7s,baz=52,slow=3.6,SNR=8.3
NEY Neytrino 70.08 310‖ *e*P **P 00 14 16.5 +0.6**
NEY pmax pmax
comp=Z,1.0nm,0.8s
NB2 NORSAR Subarra 71.93 337 P **P 00 14 25.9 -0.7**
comp=Z,2.8nm,0.8s,baz=42,slow=6.2
NOA NORSAR Array B 71.93 337 P **P 00 14 26.0 -0.6**
comp=Z,2.1nm,0.8s,baz=40,slow=5.9,SNR=8.2
NOA LR LR 00 48 43.5
comp=Z,26nm,21.8s,baz=55,slow=38
AKASG Malin Array Be 72.58 322 P **P 00 14 29.8 -0.8**
comp=Z,2.7nm,0.4s,baz=45,slow=6.2,SNR=14
KIEV Kiev 72.59 322*c* *i*P **P 00 14 29.7 -1.0**
KIEV pmax pmax
comp=Z,5.0nm,0.7s
KIEV Kiev 72.59 322 *e*P **P 00 14 29.6 -1.0**
comp=Z,4.9nm,0.6s
PDAR Pinedale Array 75.18 46 P **P 00 14 46.6 +0.3**
comp=Z,0.3nm,0.6s,baz=316,slow=4.1,SNR=3.5
BUR08 Bucovina Ar. S 76.60 322 *e*P **P 00 14 54.3 +0.2**
BRTR Keskin Array B 77.59 312 P **P 00 14 59.6 -0.3**
comp=Z,0.8nm,0.6s,baz=90,slow=4.3,SNR=5.5
BRTR LR LR 00 54 24.5
comp=Z,12nm,18.6s,baz=46,slow=40
OKC Ostrava-Krasne 78.16 327 *e*P **P 00 15 03.1 +0.5**
OKC Ostrava-Krasne 78.16 327 *e*P **P 00 15 03.1 +0.5**
MORC Moravsky Berou 78.46 327 *e*P **P 00 15 04.9 +0.5**
MORC pmax pmax
comp=Z,14nm,1.0s
MORC Moravsky Berou 78.46 327 *e*P **P 00 15 04.8 +0.5**
comp=Z,14nm,1.0s
DPC Dobruska-Polom 78.52 328 *e*P **P 00 15 05.3 +0.6**
DPC Dobruska-Polom 78.52 328 *e*P **P 00 15 05.3 +0.6**
CLL Collm 79.08 330 *e*P **P 00 15 07.0 -0.7**
comp=Z,3.0nm,0.9s
CLL *e* 00 15 19.0
CLL Collm 79.08 330 *e*P **P 00 15 07.0 -0.7**
CLL *e* 00 15 19.0
CLL pmax pmax
comp=Z,3.0nm,0.9s
113A Mohawk Valley, 79.14 56 *e*P pP 00 15 17.3 -1.1
PRU Pruhonice 79.52 329 *e*P **P 00 15 10.1 0.0**
PRU Pruhonice 79.52 329 *e*P **P 00 15 10.1 0.0**
KHC Kasperske Hory 80.58 329 *e*P **P 00 15 15.9 -0.1**
KHC *e*pP **sP 00 15 28.4 -1.2**
KHC Kasperske Hory 80.58 329 *e*P **P 00 15 15.9 -0.1**
KHC *e* 00 15 28.4
GERES GERESS Array B 80.76 329 P **P 00 15 16.5 -0.5**
comp=Z,0.5nm,0.5s,baz=46,slow=5.8,SNR=5.9
GERES LR LR 00 54 37.4
comp=Z,24nm,18.3s,baz=39,slow=38
TXAR Lajitas Array 87.83 53 P **P 00 15 52.6 -0.5**
comp=Z,0.2nm,0.8s,baz=290,slow=3.7,SNR=2.7
SNAA Sanae 143.62 198 PKP PKPab 00 22 32.8 -1.1
VNA3 Neumayer Olymp 145.44 195 PKP **PKPdf 00 22 35.0 -5.3**

*ISCJB **29** 00:04:27.9±0.5, 39°.11N×0°.03×29°.08E±0°.04, h9km, Error ellipse: s-maj=4.9km s-min=4.5km az=136.6*
*DDA **29** 00:04:27.7, 39°.08N×29°.08E, h7km, Md2.8*
*ISK **29** 00:04:27.7, 39°.13N×29°.08E, h8km, MD2.7*
*CSEM **29** 00:04:28.0±0.1, 39°.13N×29°.07E, h5km, MD2.8, Error ellipse: s-maj=2.5km s-min=1.7km az=90.0*
ISC 29 00:04:28.1±0.9, **39°.12N**±0°.03×**29°.07E**±0°.03, **h9km, n24, σ0°24/32, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.29**	**255**	P	**Pg**	**00 04 34.0**	**+0.1**
DEMI				S	**Sg**	**00 04 37.8**	**+0.1**
DEMI	**Demirci**	**0.29**	**255**	*i* P	**Pg**	**00 04 34.0**	**+0.1**
DEMI				*i* S	**Sg**	**00 04 37.9**	**+0.1**
GDZ	**Gediz**	**0.32**	**95**	P	**Pg**	**00 04 34.3**	**-0.2**
GDZ				S	**Sg**	**00 04 39.0**	**+0.3**
GDZ	**Gediz**	**0.32**	**95**	*i* P	**Pg**	**00 04 34.3**	**-0.2**
GDZ				*i* S	**Sg**	**00 04 39.0**	**+0.3**
TVSB	**Tavsanli**	**0.45**	**42**	*e*PG	**Pg**	**00 04 36.8**	**-0.1**
TVSB				*e*SG	**Sg**	**00 04 43.0**	**+0.2**
TVSB	**Tavsanli**	**0.45**	**42**	*e*Pg	**Pg**	**00 04 36.8**	**-0.1**
TVSB				*e*Sg	**Sg**	**00 04 43.0**	**+0.2**
KULA	**Kula-Manisa**	**0.68**	**208**	*e*PG	**Pg**	**00 04 41.1**	**-0.1**
KULA	**Kula-Manisa**	**0.68**	**208**	*e*Pg	**Pg**	**00 04 41.1**	**-0.1**
KHAL	**Karahalli**	**0.81**	**156**	P	**Pb**	**00 04 44.4**	**0.0**
KHAL				S	**Sg**	**00 04 54.0**	**-0.3**
KHAL	**Karahalli**	**0.81**	**156**	*i* P	**Pb**	**00 04 44.4**	**0.0**
KHAL				*i* S	**Sg**	**00 04 54.0**	**-0.3**
KHL	**Karahalli**	**0.87**	**156**	*e*PG	**Pb**	**00 04 45.3**	**0.0**
KHL	**Karahalli**	**0.87**	**156**	*e*Pg	**Pb**	**00 04 45.3**	**0.0**
ORLT	**Orhaneli**	**0.94**	**352**	*e*PG	**Pg**	**00 04 46.2**	**+0.1**
ORLT	**Orhaneli**	**0.94**	**352**	*e*Pg	**Pg**	**00 04 46.2**	**+0.1**
IZI	**Iznik**	**1.26**	**14**	*e*PN	**Pn**	**00 04 51.7**	**-0.2**
IZI	**Iznik**	**1.26**	**14**	*e*Pn	**Pn**	**00 04 51.7**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.26**	**353**	*e*PN	**Pn**	**00 04 51.9**	**0.0**
MDNY	**Mudanya-Bursa**	**1.26**	**353**	*e*Pn	**Pn**	**00 04 51.9**	**0.0**
KCTX	**Karacabey (Bur**	**1.27**	**335**	*e*PN	**Pg**	**00 04 52.5**	**-0.1**
KCTX	**Karacabey (Bur**	**1.27**	**335**	*e*Pn	**Pg**	**00 04 52.5**	**-0.1**
ARMT	**Armutlu**	**1.46**	**354**	*e*PN	**Pb**	**00 04 55.0**	**-0.4**
ARMT	**Armutlu**	**1.46**	**354**	*e*Pn	**Pb**	**00 04 55.0**	**-0.4**
GULT	**Gulveren**	**1.72**	**40**	*e*PN	**Pn**	**00 04 58.9**	**+0.6**
GULT	**Gulveren**	**1.72**	**40**	*e*Pn	**Pn**	**00 04 58.9**	**+0.6**

NDI 29 00:05:39.6±1.7, **28°.08N×76°.49E, h11km**±3km, **ML3.5, Northern India**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUDL	**Kundal**	**0.06**	**356**	*i* P	Pg	00 05 42.2	+0.3
KUDL				*e*S	Sg	00 05 43.6	+0.1
KUDL				*e*S	Sg	00 05 43.6	+0.1
KUDL				AML	AML	00 05 44.3	
	comp=N,21μm,0.2s						
KUDL				AML	AML	00 05 44.3	
	comp=E,17μm,0.2s						
SONA	**Sohna**	**0.55**	**72**	*i* P	Pg	00 05 50.2	0.0
SONA				*e*S	Sg	00 05 57.3	-0.2
SONA				AML	AML	00 05 58.1	
	comp=N,1μm,0.1s						
SONA				AML	AML	00 05 58.1	
	comp=E,1μm,0.1s						
BHGR	**Bahadurgarh**	**0.72**	**33**	*e*P	Pg	00 05 52.6	-0.9
BHGR				*e*S	Sb	00 06 04.1	+0.1
NDI	**New Delhi**	**0.87**	**47**	*ex*	Pg	00 05 48.5	-8.0
NDI				*ex*	Pg	00 05 49.5	-7.0
RTK	**Rohtak**	**0.95**	**356**	*e*P	Pg	00 05 56.9	-1.0
RTK				*ex*	x	00 06 08.9	
RTK				AML	AML	00 06 14.2	
	comp=Z,2μm,0.2s						
BISR	**Bishrakh**	**0.96**	**60**	*e*P	Pg	00 05 55.1	-3.1
BISR				*e*S	Sg	00 06 09.1	-1.6
KKR	**Kurukshetra**	**1.89**	**9**	*e*P	Pn	00 06 11.8	-0.1
KKR				*e*S	Sn	00 06 35.5	-0.2
SMLA	**Simla**	**3.09**	**11**	*e*P	Pn	00 06 29.1	+0.8
SMLA				*e*S	Sn	00 07 05.7	+0.5
SMLA				IAML		00 07 11.4	
	comp=N,295nm,0.2s						
SMLA				IAML		00 07 11.5	
	comp=E,332nm,0.4s						
JOSI	**Joshimath**	**3.64**	**47**	*e*S	Sn	00 07 17.1	-1.9
DHRM	**DHARAMSHALA**	**4.16**	**358**	*ex*	Pn	00 06 46.6	+3.4
DHRM				*e*S	Sn	00 07 29.7	-2.2
DHRM				IAML		00 07 54.2	
	comp=N,221nm,0.8s						
DHRM				IAML		00 07 55.1	
	comp=E,224nm,0.9s						

JMA 29 00:11:49.6±0.1, **37°.90N×143°.94E, h22km, M3.5, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.14**	**304**	P	Pn	00 12 25.0	+1.1
OFUJ				*e*S	Sn	00 12 51.4	+1.6
JMK	**Ichinoseki**	**2.38**	**297**	P	Pn	00 12 28.7	+1.4
JMK				*e*S	Sn	00 12 57.5	+1.7
JOM	**Ohasama**	**2.60**	**308**	P	Pn	00 12 31.9	+1.6
JOM				*e*S	Sn	00 13 03.4	+2.2
JFT	**Otama**	**2.88**	**264**	*e*S	Sn	00 13 09.5	+1.3
JYK	**Kaneyama**	**2.99**	**291**	P	Pn	00 12 37.4	+1.7
JYK				*e*S	Sn	00 13 13.2	+2.3
JANG	**Nango**	**3.11**	**323**	*e*S	Sn	00 13 14.6	+0.9
JTM	**Tenmabayashi**	**3.64**	**323**	*e*S	Sn	00 13 27.8	+0.9
JRY	**Ryogami san**	**4.45**	**247**	*e*S	Sn	00 13 45.0	-1.9
JKB	**Kayabe**	**4.57**	**332**	P	Pn	00 12 59.5	+2.2
JCH	**Churui**	**4.73**	**355**	P	Pn	00 12 59.7	+0.1
JCH				*e*S	Sn	00 13 51.5	-2.2

*ISK **29** 00:19:02.5, 39°.09N×29°.07E, h4km, MD2.7*
*ISCJB **29** 00:19:03.5±0.6, 39°.08N±0°.05×29°.02E±0°.04, h9km, Error ellipse: s-maj=6.8km s-min=4.1km az=159.6*
*DDA **29** 00:19:03.2, 39°.11N×29°.03E, h7km, Md2.6*
*CSEM **29** 00:19:03.5±0.2, 39°.09N×29°.02E, h5km, MD2.6*
ISC 29 00:19:03.8±1.0, **39°.10N**±0°.04×**29°.03E**±0°.03, **h9km, n23, σ0°43/31, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**256**	P	**Pg**	**00 19 08.3**	**-0.5**
DEMI				S	**Sg**	**00 19 12.9**	**+0.6**
DEMI	**Demirci**	**0.25**	**256**	*i* P	**Pg**	**00 19 08.3**	**-0.5**
DEMI				*i* S	**Sg**	**00 19 12.9**	**+0.6**
GDZ	**Gediz**	**0.35**	**92**	P	**Pg**	**00 19 10.5**	**-0.3**
GDZ				S	**Sg**	**00 19 15.9**	**+0.4**
GDZ	**Gediz**	**0.35**	**92**	*i* P	**Pg**	**00 19 10.5**	**-0.3**
GDZ				*i* S	**Sg**	**00 19 15.9**	**+0.4**
TVSB	**Tavsanli**	**0.48**	**44**	*e*PG	**Pg**	**00 19 12.3**	**-0.9**
TVSB				*e*SG	**Sg**	**00 19 19.6**	**0.0**
TVSB	**Tavsanli**	**0.48**	**44**	*e*Pg	**Pg**	**00 19 12.3**	**-0.9**
TVSB				*e*Sg	**Sg**	**00 19 19.6**	**0.0**
KULA	**Kula-Manisa**	**0.66**	**206**	*e*PG	**Pg**	**00 19 15.8**	**-0.6**
KHAL	**Karahalli**	**0.82**	**153**	P	**Pg**	**00 19 19.2**	**-0.4**
KHAL	**Karahalli**	**0.82**	**153**	*i* P	**Pg**	**00 19 19.2**	**-0.4**
BALB	**Balikesir**	**1.04**	**301**	*e*PG	**Pg**	**00 19 23.7**	**0.0**
BALB	**Balikesir**	**1.04**	**301**	*e*Pg	**Pg**	**00 19 23.7**	**0.0**
MDNY	**Mudanya-Bursa**	**1.27**	**355**	*e*PN	**Pn**	**00 19 27.8**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.27**	**355**	*e*Pn	**Pn**	**00 19 27.8**	**+0.1**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*PN	**Pn**	**00 19 27.8**	**+0.1**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*Pn	**Pn**	**00 19 27.8**	**+0.1**
IZI	**Iznik**	**1.28**	**15**	*e*PN	**Pn**	**00 19 27.8**	**-0.1**
IZI	**Iznik**	**1.28**	**15**	*e*Pn	**Pn**	**00 19 27.8**	**-0.1**
BORA	**Eskisehir**	**1.35**	**54**	P	**Pg**	**00 19 30.0**	**+0.3**
BORA				S	**Sg**	**00 19 47.3**	**+0.1**
BORA	**Eskisehir**	**1.35**	**54**	*i* P	**Pg**	**00 19 30.0**	**+0.3**
BORA				*i* S	**Sg**	**00 19 47.3**	**+0.1**
ARMT	**Armutlu**	**1.47**	**355**	*e*PN	**Pb**	**00 19 31.1**	**-0.2**
ARMT	**Armutlu**	**1.47**	**355**	*e*Pn	**Pb**	**00 19 31.1**	**-0.2**
GULT	**Gulveren**	**1.75**	**40**	*e*PN	**Pn**	**00 19 35.1**	**+0.6**
GULT	**Gulveren**	**1.75**	**40**	*e*Pn	**Pn**	**00 19 35.1**	**+0.6**

*ISK **29** 00:21:04.5, 39°.11N×29°.04E, h12km, MD2.5*
*ISCJB **29** 00:21:05.8±0.6, 39°.15N±0°.04×29°.02E±0°.04, h9km, Error ellipse: s-maj=6.3km s-min=4.7km az=159.6*
*DDA **29** 00:21:05.9, 39°.11N×29°.04E, h7km, Md2.5*
*CSEM **29** 00:21:05.6±0.3, 39°.14N×29°.00E, h10km, MD2.5, Error ellipse: s-maj=6.8km s-min=6.0km az=118.0*
ISC 29 00:21:04.8±0.9, **39°.12N**±0°.03×**29°.03E**±0°.03, **h9km, n14, σ0°72/22, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**253**	P	**Pb**	**00 21 11.4**	**-0.2**
DEMI				S	**Sb**	**00 21 15.4**	**-0.7**
DEMI	**Demirci**	**0.25**	**253**	*i* P	**Pb**	**00 21 11.4**	**-0.2**
DEMI				*i* S	**Sb**	**00 21 15.4**	**-0.7**
GDZ	**Gediz**	**0.36**	**95**	P	**Pb**	**00 21 13.3**	**-0.2**
GDZ				S	**Sb**	**00 21 18.1**	**-1.1**
GDZ	**Gediz**	**0.36**	**95**	*i* P	**Pb**	**00 21 13.3**	**-0.2**
GDZ				*i* S	**Sb**	**00 21 18.1**	**-1.1**
TVSB	**Tavsanli**	**0.47**	**46**	*e*PG	**Pg**	**00 21 14.4**	**+0.4**
TVSB				*e*SG	**Sb**	**00 21 21.3**	**-1.3**
TVSB	**Tavsanli**	**0.47**	**46**	*e*Pg	**Pg**	**00 21 14.5**	**+0.4**
TVSB				*e*Sg	**Sb**	**00 21 21.3**	**-1.3**
KULA	**Kula-Manisa**	**0.67**	**205**	*e*PG	**Pg**	**00 21 17.6**	**-0.1**
KULA	**Kula-Manisa**	**0.67**	**205**	*e*Pg	**Pg**	**00 21 17.6**	**-0.1**
KHAL	**Karahalli**	**0.83**	**154**	P	**Pn**	**00 21 23.7**	**+0.9**
KHAL	**Karahalli**	**0.83**	**154**	*i* P	**Pn**	**00 21 23.7**	**+0.9**
KCTX	**Karacabey (Bur**	**1.26**	**336**	*e*PN	**Pg**	**00 21 28.8**	**-0.2**
KCTX				*e*SN	**Sn**	**00 21 46.3**	**+0.7**
KCTX	**Karacabey (Bur**	**1.26**	**336**	*e*Pn	**Pg**	**00 21 28.8**	**-0.2**
KCTX				*e*Sn	**Sn**	**00 21 46.3**	**+0.7**
ARMT	**Armutlu**	**1.45**	**355**	*e*PN	**Pb**	**00 21 31.9**	**-0.2**
ARMT	**Armutlu**	**1.45**	**355**	*e*Pn	**Pb**	**00 21 31.9**	**-0.2**

*IDC **29** 00:21:43.2±1.8, 20°.20S×167°.96E, h0km, mb3.9/6, mb1 4.1/7, mb1mx3.9/33, mbtmp3.9/7, ML3.3/1, Error ellipse: s-maj=40.0km s-min=26.9km az=99.0*
*ISCJB **29** 00:21:45.6±0.6, 20°.13S±0°.07×167°.9E±0°.1, h27km, mb4.2/15, Error ellipse: s-maj=16.2km s-min=7.8km az=31.2*
*NEIC **29** 00:21:45.2±2.7, 20°.21S×167°.96E, h14km±17km, mb4.4/9, Error ellipse: s-maj=9.5km s-min=6.2km az=126.0*
ISC 29 00:21:47.2±0.7, **20°.19S**±0°.09×**168°.0E**±0°.1, **h27km, n19, σ0°44/19, mb4.2/14, Loyalty Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.34**	**217**	Pn	**Pn**	**00 22 23.4**	**-0.7**
	8.0nm,0.3s,baz=87,slow=5.9,SNR=208						
DZM				Sn	**Sn**	**00 22 52.7**	**+0.6**
	18nm,0.3s,baz=40,slow=21,SNR=8.9						
HNR	**Honiara**	**13.20**	**323**	*e*Pn	**Pn**	**00 24 52.4**	**-0.6**
FUNA	**Funafuti**	**15.89**	**45**	*e*Pn	**Pn**	**00 25 29.0**	**-0.2**
	8.7nm,0.3s						
STKA	**Stephens Creek**	**26.32**	**238**	P	**P**	**00 27 20.5**	**-0.3**
	2.2nm,0.6s,baz=75,slow=11,SNR=7.7						
WRA	**Warramunga Arr**	**31.55**	**265**	P	**P**	**00 28 07.1**	**-0.5**
	0.6nm,0.5s,baz=92,slow=8.5,SNR=6.9						
ASAR	**Alice Springs**	**31.73**	**257**	P	**P**	**00 28 09.3**	**+0.1**
	3.1nm,0.7s,baz=88,slow=8.9,SNR=39						
MIDW	**Midway**	**50.17**	**17**	P	**P**	**00 30 40.9**	**+0.4**
	35nm,0.7s						
KKM	**Kota Kinabalu**	**57.15**	**292**	P	**P**	**00 31 32.6**	**+0.4**
	14nm,2.1s						
VNDA	**Vanda**	**57.45**	**182**	P	**P**	**00 31 33.2**	**0.0**
	0.4nm,0.6s,baz=350,slow=7.9,SNR=3.9						
MAJO	**Matsushiro**	**63.04**	**333**	*e*P	**P**	**00 32 12.0**	**0.0**
	1.9nm,0.8s						
COCO	**West Island**	**68.34**	**265**	*e*P	**P**	**00 32 46.5**	**-0.1**
KULM	**Kulim**	**70.77**	**283**	*e*P	**P**	**00 33 01.8**	**+0.1**
	1.8nm,0.5s						
ENH	**Enshi**	**75.36**	**310**	*e*P	**P**	**00 33 28.9**	**+0.3**
	0.5nm,0.5s						
CMAR	**Chiang Mai Arr**	**77.80**	**295**	P	**P**	**00 33 43.5**	**+0.9**
	0.8nm,0.4s,baz=133,slow=3.9,SNR=8.7						
SONM	**Songino Array**	**87.26**	**324**	P	**P**	**00 34 31.1**	**-0.3**
	0.5nm,0.9s,baz=112,slow=3.4,SNR=3.6						
SNAA	**Sanae**	**88.16**	**183**	*e*P	**P**	**00 34 35.4**	**0.0**
	14nm,0.7s						
PMR	**Palmer**	**88.42**	**19**	*e*P	**P**	**00 34 36.5**	**+0.2**
	0.5nm,0.4s						
HWUT	**Hardware Ranch**	**96.34**	**48**	*e*P	**P**	**00 35 13.4**	**-0.4**
	0.7nm,0.4s						
INK	**Inuvik**	**97.83**	**19**	*e*P	Pdif	00 35 19.9	+0.2
	0.1nm,0.3s						

*ISCJB **29** 00:27:14.7±0.5, 16°.67N±0°.04×98°.91W±0°.03, h45km±10km, mb3.3/2, MS3.0/1, Error ellipse: s-maj=7.0km s-min=4.2km az=16.7*
*NEIC **29** 00:27:17.0, 16°.65N×98°.91W, h24km, MD4.1(MEX), After MEX.*
*MEX **29** 00:27:17.0±0.6, 16°.65N×98°.91W, h24km±28km, MD4.1*
*IDC **29** 00:27:37.0±11.0, 17°.66N×98°.14W, h193km±60km, mb2.8/2, mb1 3.1/5, mb1mx2.9/32, mbtmp3.4/5, MS3.1/1, Ms1 3.1/1, ms1mx2.6/9, Error ellipse: s-maj=152.8km s-min=31.4km az=20.0*
ISC 29 00:27:14.4±1.2, **16°.67N**±0°.04×**98°.91W**±0°.03, **h26km**±11km, **n27, σ0°84/47, Near coast of Guerrero**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PNIG	**Pinotepa**	**0.80**	**110**	*e*P	**Pb**	**00 27 29.6**	**-0.1**
PNIG				*e*S	**Sb**	**00 27 40.0**	**-0.2**
PNIG	**Pinotepa**	**0.80**	**110**	*e*P	**Pb**	**00 27 29.6**	**-0.1**
PNIG				*e*S	**Sb**	**00 27 40.0**	**-0.2**
TLIG	**Tlapa**	**0.95**	**20**	*i* P	**Pb**	**00 27 32.1**	**-0.2**
TLIG				*e*S	**Sb**	**00 27 43.8**	**-0.8**
ACP2	**Acapulco**	**0.96**	**283**	*e*P	Pn	00 27 31.6	-0.6
ACP2				*e*S	**Sb**	**00 27 44.5**	**-0.2**
HMTT	**Tlapaneco**	**1.17**	**17**	*e*P	**Pn**	**00 27 36.0**	**+0.6**
HMTT				*i* S	**Sn**	**00 27 48.9**	**-1.7**
CAIG	**El Cayaco**	**1.35**	**286**	*i* P	**Pn**	**00 27 37.3**	**-0.3**
CAIG				*e*S	**Sn**	**00 27 54.1**	**-0.7**
CAIG	**El Cayaco**	**1.35**	**286**	*i* P	**Pn**	**00 27 37.3**	**-0.3**
CAIG				*e*S	**Sn**	**00 27 54.1**	**-0.7**
MEIG	**Mezcala**	**1.42**	**332**	*e*P	**Pn**	**00 27 38.9**	**+0.2**
MEIG				*e*S	**Sn**	**00 27 56.1**	**-0.6**
MEIG	**Mezcala**	**1.42**	**332**	*e*P	**Pn**	**00 27 38.9**	**+0.2**
MEIG				*e*S	**Sn**	**00 27 56.1**	**-0.6**
PLIG	**Platanillo**	**1.81**	**342**	*e*P	**Pn**	**00 27 45.2**	**+1.2**
PLIG				*e*S	**Sn**	**00 28 05.3**	**-0.9**
PLIG	**Platanillo**	**1.81**	**342**	*e*P	**Pn**	**00 27 45.2**	**+1.2**
PLIG				*e*S	**Sn**	**00 28 05.3**	**-0.9**
ARIG	**Puente Sto Nin**	**2.11**	**320**	*e*P	**Pn**	**00 27 49.4**	**+1.3**
ARIG				*i* S	**Sn**	**00 28 13.4**	**-0.2**
VHO	**Vista Hermosa**	**2.12**	**79**	*e*P	**Pn**	**00 27 49.0**	**+0.5**
VHO				*i* S	**Sn**	**00 28 13.6**	**-0.5**
VHO	**Vista Hermosa**	**2.12**	**79**	*e*P	**Pn**	**00 27 49.0**	**+0.5**
VHO				*i* S	**Sn**	**00 28 13.6**	**-0.5**
YAIG	**Yautepec**	**2.19**	**356**	*e*P	**Pn**	**00 27 50.7**	**+1.4**
YAIG				*i* S	**Sn**	**00 28 15.2**	**-0.4**
YAIG	**Yautepec**	**2.19**	**356**	*e*P	**Pn**	**00 27 50.7**	**+1.4**
YAIG				*i* S	**Sn**	**00 28 15.2**	**-0.4**
TPIG	**Tehuac#an**	**2.29**	**40**	*e*P	**Pn**	**00 27 51.2**	**+0.6**
TPIG				*i* S	**Sn**	**00 28 17.4**	**-0.7**
TPIG	**Tehuac#an**	**2.29**	**40**	*e*P	**Pn**	**00 27 51.2**	**+0.6**
TPIG				*i* S	**Sn**	**00 28 17.4**	**-0.7**
ZIIG	**Zihuatanejo**	**2.62**	**291**	*e*P	**Pn**	**00 27 55.8**	**+0.8**
ZIIG				*i* S	**Sn**	**00 28 25.7**	**-0.3**
ZIIG	**Zihuatanejo**	**2.62**	**291**	*e*P	**Pn**	**00 27 55.8**	**+0.8**
ZIIG				*i* S	**Sn**	**00 28 25.7**	**-0.3**
HUIG	**Huatulco**	**2.84**	**108**	*i* P	**Pn**	**00 27 59.2**	**+1.2**
HUIG				*i* S	**Sn**	**00 28 30.3**	**-1.2**
HUIG	**Huatulco**	**2.84**	**108**	*i* P	**Pn**	**00 27 59.2**	**+1.2**
HUIG				*i* S	**Sn**	**00 28 30.3**	**-1.2**
TEIG	**Tepich**	**10.69**	**69**	P	Pn	00 29 52.1	+6.0
	0.2nm,0.3s,baz=270,slow=20,SNR=2.6						
TEIG				S	Sn	00 31 40.5	-4.4
	0.6nm,0.3s,baz=89,slow=23,SNR=6.5						
TXAR	**Lajitas Array**	**13.34**	**342**	P	**P**	**00 30 32.6**	**+0.9**
	0.0nm,0.3s,baz=160,slow=12,SNR=5.2						
ANMO	**Albuquerque**	**19.42**	**341**	P	**P**	**00 31 40.5**	**+1.5**
	0.1nm,0.3s,baz=149,slow=11,SNR=4.3						
PDAR	**Pinedale Array**	**27.56**	**343**	P	**P**	**00 32 58.5**	**-1.0**
	0.2nm,0.4s,baz=143,slow=14,SNR=2.8						
PDAR				LR	LR	00 45 13.9	
	comp=Z,42nm,21.6s,baz=217,slow=39						
YKA	**Yellowknife Ar**	**47.09**	**350**	P	**P**	**00 35 43.7**	**-0.1**
	0.4nm,0.6s,baz=153,slow=6.9,SNR=3.3						

*ISK **29** 00:36:30.9, 39°.06N×29°.19E, h10km, MD2.5*
*ISCJB **29** 00:36:32.0±0.6, 39°.10N±0°.04×29°.12E±0°.04, h9km, Error ellipse: s-maj=5.6km s-min=4.7km az=154.0*
*DDA **29** 00:36:32.2, 39°.09N×29°.12E, h7km, Md2.7*
*CSEM **29** 00:36:32.0±0.1, 39°.10N×29°.11E, h8km, MD2.7, Error ellipse: s-maj=3.5km s-min=2.8km az=104.0*
ISC 29 00:36:31.0±0.9, **39°.08N**±0°.04×**29°.12E**±0°.03, **h9km, n16, σ0°43/24, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.28**	**88**	P	**Pb**	**00 36 38.1**	**-0.2**
GDZ				S	**Sb**	**00 36 42.3**	**-1.0**
GDZ	**Gediz**	**0.28**	**88**	*i* P	**Pb**	**00 36 38.1**	**-0.2**
GDZ				*i* S	**Sb**	**00 36 42.3**	**-1.0**
DEMI	**Demirci**	**0.31**	**264**	P	**Pb**	**00 36 38.7**	**-0.1**
DEMI				S	**Sb**	**00 36 43.7**	**-0.4**
DEMI	**Demirci**	**0.31**	**264**	*i* P	**Pb**	**00 36 38.6**	**-0.1**
DEMI				*i* S	**Sb**	**00 36 43.7**	**-0.4**
TVSB	**Tavsanli**	**0.46**	**36**	*e*PG	**Pg**	**00 36 40.5**	**+0.6**
TVSB				*e*SG	**Sg**	**00 36 46.4**	**+0.4**
TVSB	**Tavsanli**	**0.46**	**36**	*e*Pg	**Pg**	**00 36 40.5**	**+0.6**
TVSB				*e*Sg	**Sg**	**00 36 46.4**	**+0.4**
KULA	**Kula-Manisa**	**0.67**	**213**	*e*PG	**Pb**	**00 36 44.5**	**-0.3**
KULA	**Kula-Manisa**	**0.67**	**213**	*e*Pg	**Pb**	**00 36 44.5**	**-0.3**
KHAL	**Karahalli**	**0.76**	**157**	P	**Pn**	**00 36 47.9**	**-0.1**
KHAL				S	**Sb**	**00 36 57.5**	**+0.4**
KHAL	**Karahalli**	**0.76**	**157**	*i* P	**Pn**	**00 36 47.9**	**-0.1**
KHAL				*i* S	**Sb**	**00 36 57.5**	**+0.4**
MDNY	**Mudanya-Bursa**	**1.30**	**352**	*e*PN	**Pg**	**00 36 56.2**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.30**	**352**	*e*Pn	**Pg**	**00 36 56.2**	**+0.2**
KCTX	**Karacabey (Bur**	**1.32**	**334**	*e*PN	**Pg**	**00 36 56.6**	**+0.2**
KCTX	**Karacabey (Bur**	**1.32**	**334**	*e*Pn	**Pg**	**00 36 56.6**	**+0.2**
ARMT	**Armutlu**	**1.50**	**353**	*e*PN	**Pb**	**00 36

KULA Kula-Manisa 0.70 209 *e*Pg Pg 00 39 29.4 0.0
KHAL Karahalli 0.82 158 P Pb 00 39 31.9 0.0
KHAL S Sb 00 39 42.9 +0.1
KHAL Karahalli 0.82 158 *i* P Pb 00 39 31.9 0.0
KHAL *i* S Sb 00 39 42.9 +0.1
KHL Karahalli 0.87 157 *e*PG Pg 00 39 32.5 -0.1
KHL Karahalli 0.87 157 *e*Pg Pg 00 39 32.5 -0.1
AKHS Akhisar 1.03 256 P Pn 00 39 35.8 0.0
AKHS Akhisar 1.03 256 *i* P Pn 00 39 35.8 0.0
AKS Akhisar 1.03 256 *e*PG Pb 00 39 34.9 -0.4
AKS Akhisar 1.03 256 *e*Pg Pb 00 39 34.9 -0.4
BALB Balikesir 1.07 299 *e*PG Pb 00 39 36.1 +0.1
BALB *e*SG Sn 00 39 51.2 +0.2
BALB Balikesir 1.07 299 *e*Pg Pb 00 39 36.1 +0.1
BALB *e*Sg Sn 00 39 51.2 +0.2
IGD Bursa 1.14 4 *i* P Pb 00 39 36.2 -0.9
IGD *i* S Sg 00 39 52.5 +0.1
CAVI Cavuskoy 1.22 28 *e*PN Pg 00 39 39.2 +0.1
CAVI Cavuskoy 1.22 28 *e*Pn Pg 00 39 39.2 +0.1
IZI Iznik 1.24 14 *e*PN Pg 00 39 39.5 -0.1
IZI Iznik 1.24 14 *e*Pn Pg 00 39 39.5 -0.1
MDNY Mudanya-Bursa 1.25 353 *e*PN Pg 00 39 39.5 -0.2
MDNY Mudanya-Bursa 1.25 353 *e*Pn Pg 00 39 39.5 -0.2
KCTX Karacabey (Bur 1.27 334 *e*PN Pb 00 39 39.7 +0.3
KCTX Karacabey (Bur 1.27 334 *e*Pn Pb 00 39 39.7 +0.3
BORA Eskisehir 1.29 54 P Pb 00 39 40.0 +0.1
BORA S Sn 00 39 56.8 +0.1
BORA Eskisehir 1.29 54 *i* P Pb 00 39 40.0 +0.1
BORA *i* S Sn 00 39 56.8 +0.1
BALY Balya 1.29 299 P Pn 00 39 39.5 0.0
BALY Balya 1.29 299 *i* P Pn 00 39 39.5 0.0
ADVT Abdulvahap 1.39 21 *e*PN Pb 00 39 41.9 +0.3
ADVT Abdulvahap 1.39 21 *e*Pn Pb 00 39 41.9 +0.3
ESKT Eskisehir 1.42 74 *i* P Pb 00 39 42.1 +0.1
SEYT Eskypehyr 1.42 74 P Pb 00 39 42.1 +0.1
ARMT Armutlu 1.44 353 *e*PN Pb 00 39 42.7 +0.3
ARMT Armutlu 1.44 353 *e*Pn Pb 00 39 42.7 +0.3
EDC Edincik 1.54 322 *e*PN Pb 00 39 44.0 -0.1
EDC Edincik 1.54 322 *e*Pn Pb 00 39 44.0 -0.1
GULT Gulveren 1.70 40 *e*PN Pb 00 39 46.4 -0.5
GULT Gulveren 1.70 40 *e*Pn Pb 00 39 46.4 -0.5
HRT Hereke 1.75 14 *e*PN Pb 00 39 47.2 -0.4
HRT Hereke 1.75 14 *e*Pn Pb 00 39 47.2 -0.4
SVRH Sivrihisar-ESK 1.91 80 *e*PN Pb 00 39 49.6 -0.9
SVRH Sivrihisar-ESK 1.91 80 *e*Pn Pb 00 39 49.6 -0.9

ISK ***29*** *01:08:57.1, 39.′02N×29.′28E, h8km, MD2.8*
ISCJB ***29*** *01:08:58.6±0.6, 39.′11N±0.′04×29.′12E±0.′03, h3km±7km, Error ellipse: s-maj=6.0km s-min=4.1km az=173.0*
CSEM ***29*** *01:08:58.8±0.2, 39.′10N×29.′12E, h8km, MD2.9, Error ellipse: s-maj=4.1km s-min=3.8km az=143.0*
DDA ***29*** *01:08:58.4, 39.′11N×29.′10E, h7km, Md2.9*
ISC 29 01:08:57.9±1.0, 39.′05N±0.′03×29.′14E±0.′02, h13km±9km, n34, σ0s54/49, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.27**	**81**	P	**Pb**	**01 09 04.8**	**+0.1**
GDZ				S	**Sb**	**01 09 09.1**	**-0.2**
GDZ	**Gediz**	**0.27**	**81**	*i* P	**Pb**	**01 09 04.8**	**+0.1**
GDZ				*i* S	**Sb**	**01 09 09.1**	**-0.2**
DEMI	**Demirci**	**0.33**	**270**	P	**Pb**	**01 09 05.6**	**-0.1**
DEMI				S	**Sg**	**01 09 09.9**	**+0.7**
DEMI	**Demirci**	**0.33**	**270**	*i* P	**Pb**	**01 09 05.6**	**-0.1**
DEMI				*i* S	**Sg**	**01 09 09.9**	**+0.7**
TVSB	**Tavsanli**	**0.48**	**32**	*e*PG	**Pg**	**01 09 07.2**	**-0.2**
TVSB				*e*SG	**Sg**	**01 09 12.9**	**-0.9**
TVSB	**Tavsanli**	**0.48**	**32**	*e*Pg	**Pg**	**01 09 07.2**	**-0.2**
TVSB				*e*Sg	**Sg**	**01 09 12.9**	**-0.9**
KULA	**Kula-Manisa**	**0.65**	**215**	*e*PG	**Pb**	**01 09 11.3**	**+0.2**
KULA	**Kula-Manisa**	**0.65**	**215**	*e*Pg	**Pb**	**01 09 11.3**	**+0.2**
KHAL	**Karahalli**	**0.73**	**157**	P	**Pn**	**01 09 14.6**	**+0.6**
KHAL				S	**Sn**	**01 09 24.6**	**-0.4**
KHAL	**Karahalli**	**0.73**	**157**	*i* P	**Pn**	**01 09 14.6**	**+0.6**
KHAL				*i* S	**Sn**	**01 09 24.6**	**-0.4**
KHL	**Karahalli**	**0.78**	**157**	*e*PG	**Pg**	**01 09 11.3**	**-1.8**
ORLT	**Orhaneli**	**1.02**	**350**	*e*PG	**Pb**	**01 09 17.4**	**0.0**
ORLT	**Orhaneli**	**1.02**	**350**	*e*Pg	**Pb**	**01 09 17.4**	**0.0**
IGD	**Bursa**	**1.22**	**2**	*i* P	**Pn**	**01 09 20.6**	**0.0**
IGD				*i* S	**Sb**	**01 09 36.2**	**-0.2**
CAVI	**Cavuskoy**	**1.28**	**25**	*e*PN	**Pb**	**01 09 21.7**	**-0.1**
CAVI	**Cavuskoy**	**1.28**	**25**	*e*Pn	**Pb**	**01 09 21.7**	**-0.1**
IZI	**Iznik**	**1.32**	**11**	*e*PN	**Pb**	**01 09 22.5**	**0.0**
IZI	**Iznik**	**1.32**	**11**	*e*Pn	**Pb**	**01 09 22.5**	**0.0**
BORA	**Eskisehir**	**1.32**	**50**	P	**Pg**	**01 09 23.1**	**-0.2**
BORA				S	**Sg**	**01 09 40.3**	**-0.1**
BORA	**Eskisehir**	**1.32**	**50**	*i* P	**Pg**	**01 09 23.1**	**-0.2**
BORA				*i* S	**Sg**	**01 09 40.4**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.34**	**352**	*e*PN	**Pg**	**01 09 23.3**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.34**	**352**	*e*Pn	**Pg**	**01 09 23.3**	**-0.3**
KCTX	**Karacabey (Bur**	**1.36**	**334**	*e*PN	**Pg**	**01 09 24.1**	**0.0**
KCTX	**Karacabey (Bur**	**1.36**	**334**	*e*Pn	**Pg**	**01 09 24.1**	**0.0**
BALY	**Balya**	**1.36**	**301**	P	**Pn**	**01 09 23.0**	**+0.3**
BALY				S	**Sg**	**01 09 42.2**	**+0.2**
BALY	**Balya**	**1.36**	**301**	*i* P	**Pn**	**01 09 23.0**	**+0.3**
BALY				*i* S	**Sg**	**01 09 42.2**	**+0.2**
ESKT	**Eskisehir**	**1.41**	**70**	*i* P	**Pg**	**01 09 26.4**	**+1.3**
ESKT				*i* S	**Sg**	**01 09 44.3**	**+0.9**
SEYT	**Eskypehyr**	**1.41**	**70**	P	**Pg**	**01 09 26.4**	**+1.3**
SEYT				S	**Sg**	**01 09 44.3**	**+0.9**
ARMT	**Armutlu**	**1.53**	**352**	*e*PN	**Pb**	**01 09 26.2**	**0.0**
ARMT	**Armutlu**	**1.53**	**352**	*e*Pn	**Pb**	**01 09 26.2**	**0.0**
EDC	**Edincik**	**1.63**	**323**	*e*PN	**Pb**	**01 09 27.8**	**0.0**
EDC	**Edincik**	**1.63**	**323**	*e*Pn	**Pb**	**01 09 27.8**	**0.0**
GULT	**Gulveren**	**1.75**	**37**	*e*PN	**Pn**	**01 09 27.8**	**-0.1**
GULT	**Gulveren**	**1.75**	**37**	*e*Pn	**Pn**	**01 09 27.8**	**-0.1**

NIED ***29*** *01:11:00, 39.′80N×143.′50E, h26km, Mw3.7 Best double couple: M0=3.61000×10^14 NP1:φ=210.00000°, δ27.00000°, λ82.00000°. NP2:φ=39.00000°, δ64.00000°, λ94.00000°.*
JMA ***29*** *01:11:20.8±0.2, 39.′76N×143.′51E, h18km±4km, M3.9*
IDC ***29*** *01:11:21.1±2.4, 39.′78N×143.′39E, h0km, mb3.7/5, mb1 3.7/8, mb1mx3.4/41, mbtmp3.6/8, ML2.6/2, MS2.6/2, Ms1 2.6/2, ms1mx2.3/42, Error ellipse: s-maj=47.9km s-min=24.8km az=148.0*
ISCJB ***29*** *01:11:22.4±1.8, 39.′71N±0.′05×143.′43E±0.′09, h26km±12km, mb3.5/5, Error ellipse: s-maj=11.9km s-min=7.2km az=28.0*
ISC 29 01:11:23.9±1.6, 39.′74N±0.′05×143.′23E±0.′07, h19km±4km, n23, σ1s66/28, mb3.6/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.07**	**281**	P	**Pg**	**01 11 43.7**	**-1.0**
JTH				*e*S	**Sg**	**01 12 00.3**	**+1.5**
MIYJ	**Miyakonagasawa**	**1.10**	**262**	P	**Pg**	**01 11 44.5**	**-0.8**
MIYJ				*e*S	**Sg**	**01 12 01.2**	**+1.4**
JANG	**Nango**	**1.46**	**296**	P	**Pn**	**01 11 49.0**	**-0.3**
JOM	**Ohasama**	**1.52**	**261**	P	**Pb**	**01 11 50.8**	**-0.7**
JOM				*e*S	**Sg**	**01 12 12.7**	**-0.4**
JMK	**Ichinoseki**	**1.75**	**244**	P	**Pb**	**01 11 53.5**	**-1.8**
JTM	**Tenmabayashi**	**1.96**	**303**	P	**Pb**	**01 11 56.8**	**-2.1**
JTM				*e*S	**Sb**	**01 12 22.6**	**-0.3**
JRG	**Rokugo**	**2.04**	**261**	P	**Pb**	**01 11 58.2**	**-2.1**
JAH	**Hinai**	**2.04**	**284**	P	**Pb**	**01 11 58.4**	**-2.0**
JOT	**Ohata**	**2.34**	**315**	P	**Pn**	**01 12 01.6**	**+0.3**
JYK	**Kaneyama**	**2.37**	**251**	P	**Pn**	**01 12 02.7**	**+0.9**
JOU	**Okura**	**2.42**	**236**	P	**Pn**	**01 12 03.6**	**+1.1**
JNBK	**Urakawa-nobuka**	**2.56**	**352**	P	**Pn**	**01 12 04.2**	**-0.2**
JNBK				*e*S	**Sn**	**01 12 35.2**	**+0.2**
ASAJ	**Asahikawa**	**4.40**	**354**	Pn	**Pn**	**01 12 29.4**	**-0.2**
ASAJ				Sn	**Sn**	**01 13 25.6**	**+5.3**
	1.2nm,0.3s,baz=326,slow=16,SNR=2.6						
MJAR	**Matsushiro Arr**	**5.08**	**233**	Pn	**Pn**	**01 12 40.8**	**+1.7**
	1.0nm,0.3s,baz=42,slow=11,SNR=16						
MAT	**Matsushiro**	**5.08**	**233**	P	**Pn**	**01 12 40.4**	**+1.3**
MAT				*e*S	**Sn**	**01 13 38.0**	**+0.7**
USRK	**Ussuriysk Ar.**	**9.48**	**302**	Pn	**Pn**	**01 13 41.8**	**+2.5**
	0.1nm,0.3s,baz=93,slow=13,SNR=4.4						
JNU	**Nakatsue**	**11.93**	**240**	LR	LR	01 19 12.1	
	comp=Z,52nm,20.6s,baz=117,slow=39						
PETK	**Petropavlovsk-**	**16.64**	**32**	LR	LR	01 20 46.8	
	comp=Z,12nm,20.1s,baz=147,slow=34						
SEY	**Seymchan**	**23.87**	**10**	P	**P**	**01 16 35.0**	**-0.9**
	0.9nm,0.4s,baz=258,slow=9.8,SNR=4.0						
SONM	**Songino Array**	**27.58**	**299**	P	**P**	**01 17 10.6**	**+0.8**
	0.7nm,0.8s,baz=99,slow=9.3,SNR=5.0						
ZALV	**Zalesovo Beam**	**41.21**	**310**	P	**P**	**01 19 07.3**	**+0.2**
	1.1nm,0.4s,baz=89,slow=7.8,SNR=6.5						
MKAR	**Makanchi Array**	**43.95**	**300**	P	**P**	**01 19 29.7**	**+0.2**
	0.9nm,0.8s,baz=82,slow=8.8,SNR=7.0						
ILAR	**Eielson Array**	**46.45**	**34**	P	**P**	**01 19 48.7**	**-0.5**
	0.2nm,0.7s,baz=273,slow=7.8,SNR=3.5						

ISCJB ***29*** *01:11:51.8±0.4, 3.′00N±0.′04×125.′86E±0.′06, h100km, mb4.2/17, Error ellipse: s-maj=7.9km s-min=5.6km az=6.2*
IDC ***29*** *01:11:54.6±9.3, 2.′82N×125.′34E, h119km±87km, mb3.9/14, mb1 4.1/14, mb1mx3.7/37, mbtmp4.3/14, Error ellipse: s-maj=48.9km s-min=13.1km az=87.0*
NEIC ***29*** *01:11:57.8±1.2, 2.′85N×125.′70E, h150km±13km, mb4.2/3, Error ellipse: s-maj=11.9km s-min=9.7km az=68.0*
DJA ***29*** *01:11:58.1±0.3, 3.′N±3.′×12.′6E±.′, h41km±16km, M4.4/8, mB5.8/1, mb4.3/5, MLv4.5/8, Mw(mB)5.3/1*
ISC 29 01:11:53.0±0.5, 2.′83N±0.′05×125.′90E±0.′07, h100km, n35, σ2s71/39, mb4.3/16, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SGSI	**Sangihe**	**0.93**	**337**	P	**Pn**	**01 12 16.6**	**+3.9**
SGSI				S	**Sn**	**01 12 32.0**	**+4.5**
LBMI	**Labuha**	**3.80**	**155**	P	**Pn**	**01 12 51.9**	**+2.4**
LBMI				S	**Sn**	**01 13 36.4**	**+3.2**
MRSI	**Marisa**	**4.59**	**240**	P	**Pn**	**01 13 01.3**	**+1.1**
SANI	**Sanana**	**4.84**	**179**	P	**Pn**	**01 13 04.3**	**+0.6**
SANI				S	**Sn**	**01 13 53.6**	**-5.0**
LUWI	**Luwuk**	**4.95**	**219**	P	**Pn**	**01 13 08.0**	**+2.9**
LUWI	**Luwuk**	**4.95**	**219**	*e*Pn	**Pn**	**01 13 08.9**	**+3.8**
LUWI				*e*Sn	**Sn**	**01 14 03.9**	**+2.7**
SWI	**Sorong**	**6.50**	**124**	P	**Pn**	**01 13 30.4**	**+4.3**
	22nm,0.4s,7μm0.3nm						
MSAI	**Masohi**	**6.84**	**154**	P	**Pn**	**01 13 33.8**	**+3.0**
PCI	**Palu**	**7.10**	**239**	P	**Pn**	**01 13 36.9**	**+2.5**
	20nm,1.1s,0.1nm						
KDI	**Kendari**	**7.49**	**206**	P	**Pn**	**01 13 41.1**	**+1.4**
	16nm,1.2s,0.1nm						
TTSI	**Tana Toraja**	**8.42**	**226**	P	**Pn**	**01 13 54.1**	**+1.8**
FAKI	**Fak Fak**	**8.54**	**132**	*e*Pn	Pn	01 14 00.1	+6.2
KAPI	**Kappang**	**9.92**	**218**	*e*Pn	**Pn**	**01 14 15.7**	**+3.0**
MMRI	**Maumere**	**11.96**	**198**	*e*Pn	**Pn**	**01 14 43.6**	**+3.4**
SOEI	**Soe**	**12.61**	**187**	*e*Pn	**Pn**	**01 14 51.0**	**+2.1**
JAY	**Jayapura**	**15.72**	**110**	P	Pn	01 15 19.0	-10
LEM	**Lembang**	**20.61**	**242**	P	**P**	**01 16 25.5**	**+0.9**
	14nm,0.5s,baz=259,slow=15,SNR=3.3						
COEN	**Coen**	**23.91**	**135**	*e*P	**P**	**01 16 59.3**	**+1.5**
	7.5nm,0.7s						
WRAB	**Tennant Creek**	**24.09**	**160**	*e*P	**P**	**01 17 00.1**	**+0.6**
	18nm,0.9s						
WRA	**Warramunga Arr**	**24.10**	**160**	P	**P**	**01 17 00.6**	**+1.1**
	12nm,0.9s,baz=340,slow=10,SNR=34						
WRA				S	**S**	**01 21 04.0**	**-6.2**
	0.8nm,1.1s,baz=340,slow=20,SNR=2.5						
ASAR	**Alice Springs**	**27.46**	**164**	P	**P**	**01 17 31.1**	**+1.2**
	1.4nm,0.4s,baz=348,slow=8.0,SNR=34						
MJAR	**Matsushiro Arr**	**35.42**	**17**	P	**P**	**01 18 39.4**	**-0.2**
	0.9nm,0.7s,baz=184,slow=8.4,SNR=3.9						
STKA	**Stephens Creek**	**37.60**	**158**	P	**P**	**01 18 60.0**	**+1.9**
	4.6nm,0.7s,baz=339,slow=7.2,SNR=16						
USRK	**Ussuriysk Ar.**	**41.55**	**7**	P	**P**	**01 19 32.0**	**+1.4**
	1.7nm,0.6s,baz=190,slow=7.0,SNR=4.9						
ASAJ	**Asahikawa**	**43.69**	**17**	P	**P**	**01 19 50.4**	**+2.3**
	3.1nm,0.5s,baz=204,slow=10.0,SNR=5.2						
KLR	**Kul'dur**	**46.50**	**5**	P	**P**	**01 20 10.7**	**+0.5**
	1.3nm,0.4s,baz=179,slow=8.1,SNR=9.1						
MKAR	**Makanchi Array**	**57.83**	**326**	P	**P**	**01 21 31.9**	**-2.3**
	0.8nm,0.4s,baz=122,slow=7.7,SNR=11						
MKAR				PcP	**PcP**	**01 22 24.3**	**-1.3**
	2.7nm,0.7s,baz=124,slow=4.0,SNR=14						
MA2	**Magadan**	**59.78**	**14**	P	**P**	**01 21 46.9**	**-0.4**
	4.4nm,0.6s,baz=193,slow=14,SNR=3.5						
SEY	**Seymchan**	**63.09**	**13**	P	**P**	**01 22 10.3**	**+0.7**
	0.7nm,0.6s,baz=186,slow=8.1,SNR=4.0						
NRIK	**Noril'sk**	**71.11**	**347**	P	**P**	**01 22 58.7**	**-1.5**
	4.6nm,0.6s,baz=132,slow=6.6,SNR=6.0						
ABKAR	**Akbulak array**	**72.32**	**321**	*e*P	**P**	**01 23 05.4**	**-2.4**
	0.4nm,0.3s						
ARCES	**ARCESS Array B**	**91.00**	**340**	P	**P**	**01 24 43.6**	**-2.0**
	2.1nm,0.7s,baz=76,slow=6.8,SNR=11						
FINES	**FINESS Array B**	**92.23**	**332**	P	**P**	**01 24 48.9**	**-2.6**
	0.7nm,0.4s,baz=58,slow=3.7,SNR=14						
NOA	**NORSAR Array B**	**99.22**	**333**	P	**Pdif**	**01 25 20.8**	**-2.5**
	0.8nm,0.8s,baz=71,slow=4.7,SNR=2.8						
TORD	**Torodi Ar. Bea**	**122.40**	**287**	PKP	**PKPdf**	**01 30 35.8**	**-1.8**
	0.5nm,0.7s,baz=108,slow=2.1,SNR=5.5						

CSEM ***29*** *01:12:37.0, 46.′29N×7.′60E, h3km, ML0.6/5*
ZUR 29 01:12:37.0, 46.′29N×7.′60E, h3km±2km, ML0.6/5, 4C-2D, Switzerland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VANNI	**Vissoie, Val d**	**0.07**	**180**	⇑*i*Pg	Pg	01 12 38.8	+0.2
	117nm,0.4s						
VANNI	**Vissoie, Val d**	**0.07**	**180**	*i*Pg	Pg	01 12 38.8	+0.2
	117nm,0.4s						
LKBD2	**Leukerbad 2**	**0.10**	**20**	⇓*i*Pg	Pg	01 12 39.2	+0.2
	19nm,0.1s						
LKBD2				*i* Sg	Sg	01 12 40.8	+0.5
	19nm,0.1s						
LKBD2	**Leukerbad 2**	**0.10**	**20**	⇓*i*Pg	Pg	01 12 39.2	+0.2
	19nm,0.1s						
LKBD2				*i* Sg	Sg	01 12 40.8	+0.5
	19nm,0.1s						
LKBD	**Leukerbad**	**0.10**	**12**	*e*Pg	Pg	01 12 39.4	+0.3
	13nm,0.4s						
LKBD				*i* Sg	Sg	01 12 41.0	+0.4
	13nm,0.4s						
LKBD	**Leukerbad**	**0.10**	**12**	*e*Pg	Pg	01 12 39.4	+0.3
	13nm,0.4s						
LKBD				*i* Sg	Sg	01 12 41.0	+0.4
	13nm,0.4s						
LAUCH	**Lauchernalp**	**0.18**	**43**	*i* Pg	Pg	01 12 40.8	+0.3
	37nm,1.2s						
LAUCH	**Lauchernalp**	**0.18**	**43**	*i* Pg	Pg	01 12 40.8	+0.3
	37nm,1.2s						
SENIN	**Lac Senin/Sane**	**0.22**	**291**	*e*Sg	Sg	01 12 41.8	-2.4
	13nm,0.3s						
SENIN	**Lac Senin/Sane**	**0.22**	**291**	*e*Sg	Sg	01 12 41.8	-2.4
	13nm,0.3s						
DIX	**Grande Dixence**	**0.24**	**213**	⇑*i*Pg	Pg	01 12 44.7	+3.0
	13nm,0.6s						
DIX	**Grande Dixence**	**0.24**	**213**	⇑*i*Pg	Pg	01 12 44.7	+3.0
	13nm,0.6s						
FIESA	**Fiescheralp**	**0.39**	**67**	*i* Pg	Pg	01 12 44.8	+0.3
FIESA	**Fiescheralp**	**0.39**	**67**	*i* Pg	Pg	01 12 44.8	+0.3

ISCJB ***29*** *01:21:59.1±0.5, 34.′81N±0.′06×142.′82E±0.′08, h10km, mb4.0/21, Error ellipse: s-maj=10.1km s-min=6.6km az=38.8*
IDC ***29*** *01:21:59.7±0.8, 34.′82N×142.′87E, h0km, mb3.9/16, mb1 4.0/19, mb1mx3.9/61, mbtmp3.9/19, ML3.2/3, MS2.6/2, Ms1 2.6/2, ms1mx2.3/46, Error ellipse: s-maj=20.5km s-min=17.2km az=104.0*
NEIC ***29*** *01:22:04.7±0.4, 34.′82N×142.′78E, h35km, mb4.4/5, Error ellipse: s-maj=8.5km s-min=6.9km az=121.0*
ISC 29 01:22:01.4±0.7, 34.′82N±0.′07×142.′70E±0.′08, h10km, n40, σ1s18/32, mb4.0/21, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHJ2	**Mitsune**	**2.94**	**235**	*e*Pn	**Pn**	**01 22 48.5**	**+0.4**
JHJ2				*e*Sn	**Sn**	**01 23 23.4**	**0.0**
JHJ	**Hachijo jima 2**	**2.95**	**236**	Pn	**Pn**	**01 22 48.7**	**+0.3**
	35nm,0.3s,baz=127,slow=22,SNR=8.5						
JHJ				Sn	**Sn**	**01 23 20.2**	**-3.6**
	18nm,0.3s,baz=89,slow=22,SNR=4.2						
MJAR	**Matsushiro Arr**	**4.04**	**297**	Pn	**Pn**	**01 23 04.1**	**+0.8**
	2.5nm,0.3s,baz=93,slow=13,SNR=41						
MJAR				Sn	**Sn**	**01 23 47.0**	**-3.7**
	1.3nm,0.3s,baz=137,slow=12,SNR=5.1						
MJAR				LR	LR	01 24 44.5	
	comp=Z,70nm,22.0s,baz=110,slow=40						
MAJO	**Matsushiro**	**4.04**	**297**	*e*Pn	**Pn**	**01 23 04.5**	**+1.2**
ERM	**Erimo**	**7.20**	**3**	*e*Pn	Pn	01 23 45.0	-1.6
CBIJ	**Chichi jima**	**7.71**	**183**	*e*Pn	**Pn**	**01 23 53.7**	**0.0**
ASAJ	**Asahikawa**	**9.29**	**360**	Pn	Pn	01 24 11.9	-3.4
ASAJ	**Asahikawa**	**9.29**	**360**	*e*Pn	Pn	01 24 12.1	-3.2
	5.9nm,0.8s						
JNU	**Nakatsue**	**9.96**	**264**	*e*Pn	**Pn**	**01 24 25.8**	**+1.2**
USRK	**Ussuriysk Ar.**	**12.48**	**322**	Pn	**Pn**	**01 24 59.1**	**+0.1**
	0.1nm,0.3s,baz=130,slow=13,SNR=2.9						
KLR	**Kul'dur**	**16.51**	**334**	LR	LR	01 31 56.3	
	comp=Z,20nm,18.8s,baz=74,slow=36						
H11N2	**WAKE ISLAND Hy 26.14**	**119**		T	T	01 54 49.5	
	baz=311,slow=75,SNR=5.1						
H11N1	**WAKE ISLAND Hy 26.15**	**119**		T	T	01 54 52.4	
	baz=311,slow=75,SNR=5.1						
H11N3	**WAKE ISLAND Hy 26.16**	**119**		T	T	01 54 48.6	
	baz=311,slow=75,SNR=3.6						
H11S1	**WAKE ISLAND Hy 26.80**	**121**		T	T	01 55 33.1	
	baz=312,slow=75,SNR=17						
H11S3	**WAKE ISLAND Hy 26.80**	**121**		T	T	01 55 33.2	
	baz=312,slow=75,SNR=17						
H11S2	**WAKE ISLAND Hy 26.82**	**121**		T	T	01 55 35.4	
	baz=312,slow=75,SNR=13						
SEY	**Seymchan**	**28.79**	**9**	P	**P**	**01 27 59.4**	**+0.3**
	2.0nm,0.6s,baz=204,slow=4.9,SNR=8.5						
SONM	**Songino Array**	**29.92**	**307**	P	**P**	**01 28 11.1**	**+1.6**
	0.5nm,0.5s,baz=119,slow=9.9,SNR=4.3						
ZALV	**Zalesovo Beam**	**44.19**	**314**	P	**P**	**01 30 10.7**	**+0.5**
	1.2nm,0.7s,baz=98,slow=6.8,SNR=5.0						
MKAR	**Makanchi Array**	**46.20**	**304**	P	**P**	**01 30 27.1**	**+0.7**
	0.7nm,0.6s,baz=90,slow=8.9,SNR=6.8						
KURK	**Kurchatov**	**48.13**	**310**	*e*P	**P**	**01 30 41.6**	**+0.2**
	5.1nm,0.8s						
SEW	**Seward**	**49.66**	**37**	*e*P	**P**	**01 30 51.6**	**-1.3**
	8.4nm,1.0s						
ILAR	**Eielson Array**	**50.82**	**31**	P	**P**	**01 31 01.2**	**-0.5**
	0.4nm,0.7s,baz=272,slow=6.8,SNR=6.0						
TKM2	**Tokmak 2**	**51.62**	**300**	*e*P	**P**	**01 31 07.9**	**-0.4**
	1.9nm,0.6s						
WRA	**Warramunga Arr**	**55.03**	**190**	P	**P**	**01 31 33.2**	**0.0**
	1.3nm,0.7s,baz=7.2,slow=7.4,SNR=7.3						
INK	**Inuvik**	**55.89**	**27**	P	**P**	**01 31 37.6**	**-1.2**
	0.7nm,0.6s,baz=270,slow=6.1,SNR=3.8						
ARU	**Arti**	**58.71**	**320**	*e*P	**P**	**01 31 59.4**	**+0.4**
	1.4nm,0.6s						
ASAR	**Alice Springs**	**58.76**	**189**	P	**P**	**01 32 00.0**	**+0.4**
	0.8nm,0.7s,baz=16,slow=8.6,SNR=12						
ABKAR	**Akbulak array**	**60.17**	**311**	*e*P	**P**	**01 32 09.1**	**0.0**
AKTO	**Aktyubinsk**	**60.94**	**313**	P	**P**	**01 32 14.6**	**+0.2**
	0.4nm,0.3s,baz=63,slow=9.0,SNR=5.0						
YKA	**Yellowknife Ar**	**65.20**	**30**	P	**P**	**01 32 41.6**	**-0.8**
	0.4nm,0.8s,baz=293,slow=6.4,SNR=3.9						
SUMG	**Summit**	**72.89**	**0**	*e*P	P	01 33 29.1	-1.6
	1.6nm,0.5s						
KBZ	**Khabaz**	**73.14**	**312**	P	**P**	**01 33 33.1**	**+1.0**
	0.4nm,0.4s,baz=58,slow=4.5,SNR=4.2						
NVAR	**Mina Array Bea**	**75.48**	**53**	P	**P**	**01 33 45.4**	**-0.7**
	0.9nm,0.6s,baz=286,slow=5.4,SNR=4.3						
HFS	**Hagfors**	**76.53**	**336**	P	**P**	**01 33 51.9**	**+0.5**
	4.6nm,1.0s,baz=72,slow=4.7,SNR=4.3						
NB2	**NORSAR Subarra**	**76.63**	**338**	P	**P**	**01 33 51.8**	**-0.2**
	comp=Z,7.0nm,0.6s,baz=41,slow=5.9						
NOA	**NORSAR Array B**	**76.63**	**338**	P	**P**	**01 33 52.4**	**+0.4**
	comp=Z,1.7nm,0.8s,baz=39,slow=5.7,SNR=4.2						
AKASG	**Malin Array Be**	**76.69**	**323**	P	**P**	**01 33 52.7**	**+0.2**
	comp=Z,0.6nm,0.4s,baz=48,slow=5.8,SNR=2.7						
GERES	**GERESS Array B**	**85.14**	**329**	P	**P**	**01 34 37.8**	**0.0**
	comp=Z,0.5nm,0.6s,baz=38,slow=6.5,SNR=4.5						

NIED ***29*** *01:22:00, 35.′70N×128.′90E, h8km, Mw3.6 Best double couple: M0=2.98000×10^14 NP1:φ=97.00000°, δ54.00000°, λ30.00000°. NP2:φ=349.00000°, δ66.00000°, λ140.00000°.*
JMA ***29*** *01:22:49.5±0.4, 35.′69N×128.′92E, h16km, M3.6*
ISCJB ***29*** *01:22:50.5±0.3, 35.′60N±0.′02×128.′73E±0.′03, h19km±4km, Error ellipse: s-maj=4.7km s-min=3.7km az=4.6*
KMA ***29*** *01:22:50.4±0.1, 35.′59N×128.′74E, h18km, Error ellipse:

MOS ***29*** *01:31:39.9±1.3,39°.18N×29°.10E,h13km,mb4.3/21,Error ellipse: s-maj=6.2km s-min=3.9km az=86.5*
DDA ***29*** *01:31:39.2,39°.14N×29°.09E,h5km,Ml4.5*
IDC ***29*** *01:31:39.4±0.7,39°.12N×29°.10E,h0km,mb4.1/16, mb1 4.1/28,mb1mx3.9/60,mbtmp4.0/28,ML3.6/11, MS3.3/18,Ms1 3.3/18,ms1mx3.1/53,Error ellipse: s-maj=12.3km s-min=10.2km az=35.0*
NEIC ***29*** *01:31:39.5,39°.12N×29°.08E,h11km,mb4.2/14, ML4.5(THE),ML4.6(ISK),After ISK.*
NEIC Felt at Simav.
ISCJB ***29*** *01:31:39.5±0.4,39°.14N±0°.01×29°.08E±0°.02,h9km±3km, mb4.2/35,MS3.4/10,Error ellipse: s-maj=2.4km s-min=2.0km az=135.9*
ISK ***29*** *01:31:39.5,39°.12N×29°.09E,h10km,ML4.6*
CSEM ***29*** *01:31:40.6±0.1,39°.12N×29°.08E,h10km,mb4.2/24,Error ellipse: s-maj=2.3km s-min=2.0km az=52.0*
NIC ***29*** *01:31:43.6±0.3,39°.08N×29°.18E,h25km,mb4.5,ML4.1*
ISC 29 01:31:40.4±1.0,39°.15N±0°.02×29°.09E±0°.01,h4km±6km, n460,σ1§30/508,mb4.2/35,MS3.3/11,62C-32D,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.31**	**250**	P	**Pg**	**01 31 46.2**	**-0.2**
DEMI				S	**Sg**	**01 31 50.5**	**+0.1**
DEMI	**Demirci**	**0.31**	**250**	⇑iP	**Pg**	**01 31 46.2**	**-0.2**
DEMI				*i* S	**Sg**	**01 31 50.5**	**+0.1**
GDZ	**Gediz**	**0.31**	**101**	P	**Pg**	**01 31 46.2**	**-0.2**
GDZ				S	**Sg**	**01 31 50.6**	**+0.1**
GDZ	**Gediz**	**0.31**	**101**	⇑iP	**Pg**	**01 31 46.1**	**-0.2**
GDZ				*i* S	**Sg**	**01 31 50.6**	**+0.1**
TVSB	**Tavsanli**	**0.42**	**44**	PG	**Pg**	**01 31 48.5**	**+0.1**
TVSB	**Tavsanli**	**0.42**	**44**	*i* Pg	**Pg**	**01 31 48.5**	**+0.1**
TVSB	**Tavsanli**	**0.42**	**44**	Pg	**Pg**	**01 31 48.5**	**+0.1**
KULA	**Kula-Manisa**	**0.72**	**208**	PG	**Pg**	**01 31 53.1**	**-1.0**
KULA	**Kula-Manisa**	**0.72**	**208**	*i* Pg	**Pg**	**01 31 53.1**	**-1.0**
KULA	**Kula-Manisa**	**0.72**	**208**	Pg	**Pg**	**01 31 53.1**	**-1.0**
KHAL	**Karahalli**	**0.84**	**158**	P	**Pg**	**01 31 55.6**	**-0.9**
KHAL				S	**Sg**	**01 32 06.1**	**-1.2**
KHAL	**Karahalli**	**0.84**	**158**	⇑iP	**Pg**	**01 31 55.6**	**-0.9**
KHAL				*i* S	**Sg**	**01 32 06.1**	**-1.2**
KHL	**Karahalli**	**0.89**	**158**	PG	**Pg**	**01 31 56.8**	**-0.7**
KHL	**Karahalli**	**0.89**	**158**	*i* Pg	**Pg**	**01 31 56.8**	**-0.7**
KHL	**Karahalli**	**0.89**	**158**	Pg	**Pg**	**01 31 56.8**	**-0.7**
AKHS	**Akhisar**	**1.03**	**255**	P	**Pg**	**01 31 59.6**	**-0.5**
AKHS				S	**Sg**	**01 32 13.2**	**-0.3**
AKHS	**Akhisar**	**1.03**	**255**	⇓iP	**Pg**	**01 31 59.6**	**-0.5**
AKHS				*i* S	**Sg**	**01 32 13.2**	**-0.3**
AKS	**Akhisar**	**1.03**	**255**	PG	**Pg**	**01 31 59.8**	**-0.3**
AKS	**Akhisar**	**1.03**	**255**	*i* Pg	**Pg**	**01 31 59.8**	**-0.3**
AKS	**Akhisar**	**1.03**	**255**	Pg	**Pg**	**01 31 59.9**	**-0.3**
BALB	**Balikesir**	**1.06**	**298**	PG	**Pg**	**01 32 00.6**	**0.0**
BALB				S	**Sb**	**01 32 15.3**	**-0.1**
BALB	**Balikesir**	**1.06**	**298**	*i* Pg	**Pg**	**01 32 00.6**	**0.0**
BALB				*i* Sg	**Sb**	**01 32 15.4**	**-0.1**
IGD	**Bursa**	**1.12**	**4**	⇑iP	**Pg**	**01 32 00.4**	**-1.4**
IGD				*i* S	**Sb**	**01 32 18.0**	**+0.8**
CAVI	**Cavuskoy**	**1.20**	**29**	PN	**Pg**	**01 32 03.0**	**-0.4**
CAVI	**Cavuskoy**	**1.20**	**29**	*i* Pn	**Pg**	**01 32 03.0**	**-0.4**
IZI	**Iznik**	**1.22**	**14**	*e*PN	**Pg**	**01 32 03.8**	**0.0**
IZI	**Iznik**	**1.22**	**14**	*e*Pn	**Pg**	**01 32 03.8**	**0.0**
IZI	**Iznik**	**1.22**	**14**	Pn	**Pg**	**01 32 03.8**	**0.0**
MDNY	**Mudanya-Bursa**	**1.23**	**353**	*e*PN	**Pg**	**01 32 03.6**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.23**	**353**	*e*Pn	**Pg**	**01 32 03.6**	**-0.3**
KCTX	**Karacabey (Bur**	**1.25**	**333**	*e*PN	**Pg**	**01 32 04.0**	**-0.3**
KCTX	**Karacabey (Bur**	**1.25**	**333**	*e*Pn	**Pg**	**01 32 04.1**	**-0.3**
BALY	**Balya**	**1.28**	**298**	P	**Pg**	**01 32 04.4**	**-0.5**
BALY				S	**Sb**	**01 32 22.2**	**+0.2**
BALY	**Balya**	**1.28**	**298**	⇑iP	**Pg**	**01 32 04.4**	**-0.5**
BALY				*i* S	**Sb**	**01 32 22.2**	**+0.2**
BORA	**Eskisehir**	**1.28**	**55**	P	**Pg**	**01 32 03.9**	**-1.1**
BORA				S	**Sb**	**01 32 22.2**	**+0.2**
BORA	**Eskisehir**	**1.28**	**55**	⇑iP	**Pg**	**01 32 03.9**	**-1.1**
BORA				*i* S	**Sb**	**01 32 22.2**	**+0.2**
GEMT	**Gemlik**	**1.29**	**3**	*e*PN	**Pg**	**01 32 05.0**	**0.0**
GEMT	**Gemlik**	**1.29**	**3**	Pn	**Pg**	**01 32 04.8**	**-0.2**
GEMT	**Gemlik**	**1.29**	**3**	Pn	**Pg**	**01 32 04.8**	**-0.2**
ADVT	**Abdulvahap**	**1.38**	**21**	*e*PN	**Pn**	**01 32 06.0**	**-0.4**
ADVT	**Abdulvahap**	**1.38**	**21**	*e*Pn	**Pn**	**01 32 06.0**	**-0.4**
ADVT	**Abdulvahap**	**1.38**	**21**	Pn	**Pn**	**01 32 06.0**	**-0.4**
DENT	**Denizli**	**1.39**	**182**	*e*PN	**Pn**	**01 32 05.2**	**-1.5**
DENT	**Denizli**	**1.39**	**182**	*e*Pn	**Pn**	**01 32 05.2**	**-1.5**
DENT	**Denizli**	**1.39**	**182**	Pn	**Pn**	**01 32 05.2**	**-1.5**
GONE	**Gonen-Balikesi**	**1.41**	**310**	*e*PN	**Pn**	**01 32 06.0**	**-0.8**
GONE	**Gonen-Balikesi**	**1.41**	**310**	*e*Pn	**Pn**	**01 32 06.0**	**-0.8**
GONE	**Gonen-Balikesi**	**1.41**	**310**	Pn	**Pb**	**01 32 07.1**	**-0.1**
ESKT	**Eskisehir**	**1.42**	**74**	⇑iP	**Pn**	**01 32 05.8**	**-1.2**
ESKT				*i* S	**Sn**	**01 32 26.2**	**0.0**
SEYT	**Eskypehyr**	**1.42**	**74**	P	**Pn**	**01 32 05.8**	**-1.2**
SEYT				S	**Sn**	**01 32 26.2**	**0.0**
ARMT	**Armutlu**	**1.43**	**353**	*e*PN	**Pn**	**01 32 06.3**	**-0.8**
ARMT	**Armutlu**	**1.43**	**353**	*e*Pn	**Pn**	**01 32 06.3**	**-0.8**
ARMT	**Armutlu**	**1.43**	**353**	Pn	**Pn**	**01 32 06.3**	**-0.8**
DNZL	**Cakiroluk**	**1.46**	**181**	P	**Pn**	**01 32 05.9**	**-1.8**
DNZL	**Cakiroluk**	**1.46**	**181**	⇑iP	**Pn**	**01 32 05.9**	**-1.8**
DNZL				*i* S	**Sn**	**01 32 29.1**	**+1.7**
GPA	**Golpazari**	**1.48**	**39**	*e*PN	**Pn**	**01 32 07.2**	**-0.6**
GPA	**Golpazari**	**1.48**	**39**	P	**Pb**	**01 32 08.2**	**-0.2**
GPA	**Golpazari**	**1.48**	**39**	*e*Pn	**Pn**	**01 32 07.2**	**-0.6**
GPA	**Golpazari**	**1.48**	**39**	P	**Pb**	**01 32 08.2**	**-0.2**
GPA	**Golpazari**	**1.48**	**39**	Pn	**Pb**	**01 32 08.2**	**-0.2**
BOLV	**Bolvadin**	**1.51**	**106**	P	**Pn**	**01 32 07.9**	**-0.5**
BOLV	**Bolvadin**	**1.51**	**106**	⇓iP	**Pn**	**01 32 08.0**	**-0.5**
BOLV				*i* S	**Sg**	**01 32 30.3**	**+1.3**
EDC	**Edincik**	**1.52**	**322**	*e*PN	**Pn**	**01 32 07.9**	**-0.5**
EDC	**Edincik**	**1.52**	**322**	*e*Pn	**Pn**	**01 32 07.9**	**-0.5**
AYDB	**Zeytinkoy-Aydi**	**1.52**	**218**	*e*PN	**Pn**	**01 32 06.8**	**-1.8**
AYDB	**Zeytinkoy-Aydi**	**1.52**	**218**	*e*Pn	**Pn**	**01 32 06.8**	**-1.8**
KNL	**Bal¨–kesir**	**1.65**	**313**	⇑iP	**Pn**	**01 32 08.5**	**-1.6**
KNL				*i* S	**Sn**	**01 32 31.5**	**-0.2**
GULT	**Gulveren**	**1.69**	**40**	*e*PN	**Pn**	**01 32 10.5**	**-0.3**
GULT	**Gulveren**	**1.69**	**40**	*e*Pn	**Pn**	**01 32 10.5**	**-0.3**
BUY	**Buyukada**	**1.70**	**1**	P	**Pn**	**01 32 10.1**	**-0.7**
BUY				S	**Sb**	**01 32 33.9**	**-0.1**
BUY	**Buyukada**	**1.70**	**1**	⇑iP	**Pn**	**01 32 10.1**	**-0.7**
BUY				*i* S	**Sb**	**01 32 33.9**	**-0.1**
DKL	**Dikili**	**1.70**	**268**	*e*PN	**Pn**	**01 32 10.1**	**-0.7**
DKL	**Dikili**	**1.70**	**268**	*e*Pn	**Pn**	**01 32 10.1**	**-0.7**
HRT	**Hereke**	**1.73**	**15**	*e*PN	**Pn**	**01 32 10.5**	**-0.8**
HRT	**Hereke**	**1.73**	**15**	*e*Pn	**Pn**	**01 32 10.5**	**-0.8**
ISP	**Isparta**	**1.74**	**139**	*e*PN	**Pn**	**01 32 09.9**	**-1.6**
ISP	**Isparta**	**1.74**	**139**	⇑iP	**Pn**	**01 32 10.5**	**-0.9**
ISP	**Isparta**	**1.74**	**139**	S	**Sg**	**01 32 42.4**	**+6.2**
ISP	**Isparta**	**1.74**	**139**	*e*P	**Pn**	**01 32 09.8**	**-1.6**
ISP				*e*		01 32 31.6	
ISP	**Isparta**	**1.74**	**139**	*e*Pn	**Pn**	**01 32 09.9**	**-1.6**
ISP	**Isparta**	**1.74**	**139**	*e*Pg	**Pb**	**01 32 12.9**	**0.0**
ISP				*e*S	**Sn**	**01 32 31.6**	**-2.5**
ISP	**Isparta**	**1.74**	**139**	*e*Pn	**Pn**	**01 32 09.8**	**-1.6**
ISP				*e*Pg	**Pb**	**01 32 12.9**	**0.0**
ISP				*e*Sn	**Sn**	**01 32 31.6**	**-2.5**
AYDN	**Tasoluk**	**1.76**	**213**	P	**Pn**	**01 32 10.2**	**-1.6**
AYDN	**Tasoluk**	**1.76**	**213**	⇓iP	**Pn**	**01 32 10.2**	**-1.6**
AYDN				*i* S	**Sg**	**01 32 37.3**	**+0.3**
BAGO	**Egridir - ISPA**	**1.76**	**130**	⇓iP	**Pn**	**01 32 10.6**	**-1.2**
BAGO				*i* S	**Sn**	**01 32 34.0**	**-0.8**
SPNC	**Sapanca-Adapaz**	**1.80**	**31**	*e*PN	**Pn**	**01 32 12.0**	**-0.2**
SPNC	**Sapanca-Adapaz**	**1.80**	**31**	*e*Pn	**Pn**	**01 32 12.0**	**-0.2**
SPNC	**Sapanca-Adapaz**	**1.80**	**31**	Pn	**Pn**	**01 32 12.0**	**-0.2**
MRMT	**Marmara Adasi**	**1.85**	**322**	*e*PN	**Pn**	**01 32 12.7**	**-0.3**
MRMT	**Marmara Adasi**	**1.85**	**322**	*e*Pn	**Pn**	**01 32 12.7**	**-0.3**
KRBG	**Karabiga-Canak**	**1.86**	**313**	*e*PN	**Pn**	**01 32 12.4**	**-0.6**
KRBG	**Karabiga-Canak**	**1.86**	**313**	*e*Pn	**Pn**	**01 32 12.4**	**-0.6**
KRBG	**Karabiga-Canak**	**1.86**	**313**	Pn	**Pn**	**01 32 12.0**	**-1.0**
AYVA	**Ayvalik**	**1.87**	**276**	P	**Pn**	**01 32 12.5**	**-0.7**
AYVA	**Ayvalik**	**1.87**	**276**	*i* P	**Pn**	**01 32 12.5**	**-0.7**
AYVA				*i* S	**Sg**	**01 32 40.7**	**+0.3**
SVRH	**Sivrihisar-ESK**	**1.91**	**80**	*e*PN	**Pn**	**01 32 13.0**	**-0.9**
SVRH	**Sivrihisar-ESK**	**1.91**	**80**	Pn	**Pn**	**01 32 13.5**	**-0.4**
SVRH	**Sivrihisar-ESK**	**1.91**	**80**	Pn	**Pn**	**01 32 13.5**	**-0.4**
ISK	**Istanbul-Kandi**	**1.91**	**359**	*e*PN	**Pn**	**01 32 13.0**	**-0.8**
ISK	**Istanbul-Kandi**	**1.91**	**359**	P	**Pn**	**01 32 13.0**	**-0.8**
ISK	**Istanbul-Kandi**	**1.91**	**359**	*e*Pn	**Pn**	**01 32 13.0**	**-0.8**
ISK	**Istanbul-Kandi**	**1.91**	**359**	Pn	**Pn**	**01 32 13.0**	**-0.8**
GOLH	**Golhisar**	**1.94**	**169**	P	**Pn**	**01 32 13.5**	**-0.8**
GOLH	**Golhisar**	**1.94**	**169**	⇓iP	**Pn**	**01 32 13.5**	**-0.8**
GOLH				*i* S	**Sg**	**01 32 45.0**	**+2.1**
BGKT	**Bogazkoy**	**2.04**	**353**	*e*PN	**Pn**	**01 32 14.7**	**-0.8**
BGKT	**Bogazkoy**	**2.04**	**353**	*e*Pn	**Pn**	**01 32 14.7**	**-0.8**
BGKT	**Bogazkoy**	**2.04**	**353**	Pn	**Pn**	**01 32 14.7**	**-0.8**
BTAS	**Tasketi**	**2.04**	**45**	P	**Pn**	**01 32 15.1**	**-0.5**
BTAS	**Tasketi**	**2.04**	**45**	⇑iP	**Pn**	**01 32 15.1**	**-0.5**
BTAS				*i* S	**Sb**	**01 32 44.9**	**+0.9**
SILT	**Sile**	**2.05**	**12**	*e*PN	**Pn**	**01 32 15.4**	**-0.2**
SILT	**Sile**	**2.05**	**12**	*e*Pn	**Pn**	**01 32 15.4**	**-0.2**
DGB	**¨zmir**	**2.05**	**238**	*i* P	**Pn**	**01 32 13.7**	**-1.9**
DGB				*i* S	**Sb**	**01 32 44.4**	**+0.4**
GCAM	**G?zelcaml?**	**2.05**	**226**	P	**Pn**	**01 32 13.7**	**-2.0**
GCAM	**G?zelcaml?**	**2.05**	**226**	*i* P	**Pn**	**01 32 13.7**	**-2.0**
GCAM				*i* S	**Sg**	**01 32 46.5**	**+0.1**
BCK	**Bucak**	**2.06**	**145**	*e*PN	**Pn**	**01 32 14.9**	**-0.8**
BCK	**Bucak**	**2.06**	**145**	P	**Pn**	**01 32 15.0**	**-0.8**
BCK	**Bucak**	**2.06**	**145**	P	**Pn**	**01 32 15.0**	**-0.8**
BCK	**Bucak**	**2.06**	**145**	Pn	**Pn**	**01 32 15.0**	**-0.8**
KLYT	**Kilyos**	**2.10**	**359**	*e*PN	**Pn**	**01 32 15.8**	**-0.5**
KLYT	**Kilyos**	**2.10**	**359**	*e*Pn	**Pn**	**01 32 15.8**	**-0.5**
KLYT	**Kilyos**	**2.10**	**359**	Pn	**Pn**	**01 32 15.8**	**-0.5**
URLA	**Izmir**	**2.10**	**249**	P	**Pn**	**01 32 15.2**	**-1.2**
URLA	**Izmir**	**2.10**	**249**	*i* P	**Pn**	**01 32 15.2**	**-1.2**
URLA				*i* S	**Sg**	**01 32 50.7**	**+2.7**
KAND	**Kocaeli-Kandir**	**2.12**	**23**	P	**Pn**	**01 32 16.3**	**-0.3**
KAND	**Kocaeli-Kandir**	**2.12**	**23**	⇑iP	**Pn**	**01 32 16.3**	**-0.3**
KAND				*i* S	**Sg**	**01 32 48.4**	**-0.1**
RKY	**Sarkoy-Tekirda**	**2.13**	**317**	*e*PN	**Pn**	**01 32 16.3**	**-0.4**
RKY	**Sarkoy-Tekirda**	**2.13**	**317**	*e*Pn	**Pn**	**01 32 16.3**	**-0.4**
SART	**Tekirdag**	**2.13**	**317**	P	**Pn**	**01 32 16.1**	**-0.7**
SART	**Tekirdag**	**2.13**	**317**	*i* P	**Pn**	**01 32 16.1**	**-0.7**
SART				*i* S	**Sg**	**01 32 47.7**	**-1.0**
CTKS	**Kestanelik-??a**	**2.13**	**348**	*e*PN	**Pn**	**01 32 16.1**	**-0.7**
CTKS	**Kestanelik-??a**	**2.13**	**348**	*e*Pn	**Pn**	**01 32 16.1**	**-0.7**
SAHE	**Sakarya_HENDEK**	**2.17**	**38**	P	**Pn**	**01 32 16.9**	**-0.5**
SAHE	**Sakarya_HENDEK**	**2.17**	**38**	⇑iP	**Pn**	**01 32 16.9**	**-0.5**
SLVT	**Silivri**	**2.19**	**342**	P	**Pn**	**01 32 15.0**	**-2.5**
SLVT				S	**Sn**	**01 32 44.5**	**-0.5**
KIZT	**Kizilcal**	**2.19**	**96**	*e*PN	**Pn**	**01 32 17.3**	**-0.4**
KIZT	**Kizilcal**	**2.19**	**96**	*e*Pn	**Pn**	**01 32 17.3**	**-0.4**
KIZT	**Kizilcal**	**2.19**	**96**	Pn	**Pn**	**01 32 17.6**	**-0.1**
TKR	**Tekirdag**	**2.19**	**328**	*e*PN	**Pn**	**01 32 17.2**	**-0.3**
TKR	**Tekirdag**	**2.19**	**328**	*e*Pn	**Pn**	**01 32 17.3**	**-0.3**
TKR	**Tekirdag**	**2.19**	**328**	Pn	**Pb**	**01 32 21.0**	**+0.4**
PRK	**Paraskevi**	**2.19**	**273**	P	**Pn**	**01 32 17.0**	**-0.6**
PRK	**Paraskevi**	**2.19**	**273**	P	**Pn**	**01 32 17.0**	**-0.6**
PRK	**Paraskevi**	**2.19**	**273**	P	**Pn**	**01 32 17.0**	**-0.6**
ZEY	**¨zmir**	**2.22**	**247**	*i* P	**Pn**	**01 32 16.9**	**-1.1**
ZEY				*i* S	**Sg**	**01 32 50.3**	**-1.3**
CRLT	**Corlu**	**2.23**	**333**	*e*PN	**Pn**	**01 32 17.8**	**-0.3**
CRLT	**Corlu**	**2.23**	**333**	*e*Pn	**Pn**	**01 32 17.8**	**-0.3**
CRLT	**Corlu**	**2.23**	**333**	Pn	**Pn**	**01 32 17.3**	**-0.9**
TURN	**Turunc**	**2.31**	**199**	*i* P	**Pn**	**01 32 19.9**	**+0.8**
KORT	**Korkueli**	**2.37**	**155**	P	**Pn**	**01 32 19.6**	**-0.5**
KORT	**Korkueli**	**2.37**	**155**	⇓iP	**Pn**	**01 32 19.6**	**-0.5**
KORT				*i* S	**Sg**	**01 32 57.7**	**+1.3**
CTYL	**Yalikoy Yolu**	**2.40**	**345**	*e*PN	**Pn**	**01 32 20.1**	**-0.4**
CTYL	**Yalikoy Yolu**	**2.40**	**345**	*e*Pn	**Pn**	**01 32 20.1**	**-0.4**
CTYL	**Yalikoy Yolu**	**2.40**	**345**	Pn	**Pn**	**01 32 20.1**	**-0.4**
KDHN	**Kadinhani**	**2.45**	**104**	P	**Pn**	**01 32 20.6**	**-0.6**
KDHN	**Kadinhani**	**2.45**	**104**	⇓iP	**Pn**	**01 32 20.6**	**-0.6**
BOZC	**Bozcaada**	**2.45**	**287**	*i* P	**Pn**	**01 32 20.7**	**-0.4**
BDRM	**Kayabasi**	**2.45**	**212**	P	**Pn**	**01 32 19.2**	**-2.0**
BDRM	**Kayabasi**	**2.45**	**212**	*i* P	**Pn**	**01 32 19.2**	**-2.0**
BDRM				*i* S	**Sg**	**01 33 00.1**	**+1.0**
KESN	**Edirne-Kesan**	**2.50**	**313**	P	**Pn**	**01 32 21.6**	**-0.5**
KESN	**Edirne-Kesan**	**2.50**	**313**	*i* P	**Pn**	**01 32 21.6**	**-0.5**
BCAM	**Yenicaga**	**2.83**	**53**	P	**Pn**	**01 32 25.6**	**-0.9**
BCAM	**Yenicaga**	**2.83**	**53**	*i* P	**Pn**	**01 32 25.6**	**-0.9**
KMER	**Konya-Meram**	**2.92**	**117**	P	**Pn**	**01 32 27.5**	**-0.2**
KMER	**Konya-Meram**	**2.92**	**117**	*i* P	**Pn**	**01 32 27.5**	**-0.2**
BR231	**Keskin MP Arra**	**2.94**	**75**	*e*PN	**Pn**	**01 32 29.2**	**+1.3**
BR231	**Keskin MP Arra**	**2.94**	**75**	*e*Pn	**Pn**	**01 32 29.2**	**+1.3**
AKAS	**Kas**	**2.94**	**172**	P	**Pn**	**01 32 28.6**	**+0.6**
AKAS	**Kas**	**2.94**	**172**	*i* P	**Pn**	**01 32 28.6**	**+0.6**
ANTO	**Ankara**	**2.95**	**75**	*e*P	**Pn**	**01 32 29.4**	**+1.3**
ANTO	**Ankara**	**2.95**	**75**	*e*P	**Pn**	**01 32 29.4**	**+1.3**
ANTO	**Ankara**	**2.95**	**75**	*e*Pn	**Pn**	**01 32 29.4**	**+1.3**
KKUL	**Konya-Kulu**	**2.98**	**88**	P	**Pn**	**01 32 28.2**	**-0.3**
KKUL	**Konya-Kulu**	**2.98**	**88**	*i* P	**Pn**	**01 32 28.2**	**-0.3**
BBAL	**Bala**	**3.15**	**82**	P	**Pn**	**01 32 32.0**	**+1.1**
BBAL	**Bala**	**3.15**	**82**	*i* P	**Pn**	**01 32 32.0**	**+1.1**
BTIN	**Bart¨–n**	**3.46**	**43**	P	**Pn**	**01 32 35.1**	**0.0**
BTIN	**Bart¨–n**	**3.46**	**43**	*i* P	**Pn**	**01 32 35.1**	**0.0**
APE	**Apeiranthos**	**3.49**	**235**	⇓iP	**Pn**	**01 32 34.7**	**-0.8**
APE	**Apeiranthos**	**3.49**	**235**	*de*P	**Pn**	**01 32 34.6**	**-0.9**
APE	**Apeiranthos**	**3.49**	**235**	*e*P	**Pn**	**01 32 34.6**	**-0.9**
BR131	**Keskin Array S**	**3.57**	**79**	*e*PN	**Pn**	**01 32 36.8**	**+0.1**
BR131	**Keskin Array S**	**3.57**	**79**	*e*Pn	**Pn**	**01 32 36.8**	**+0.1**
BRTR	**Keskin Array B**	**3.57**	**79**	Pn	**Pn**	**01 32 36.6**	**0.0**
	3.0nm,0.3s,baz=254,slow=14,SNR=151						
BRTR				Sn	**Sn**	**01 33 17.9**	**-1.5**
	9.9nm,0.3s,baz=254,slow=24,SNR=12						
BRTR				Lg	Lg	01 33 35.6	
	5.7nm,0.3s,baz=270,slow=22,SNR=9.9						
BRTR				LR	LR	01 34 35.7	
	comp=Z,191nm,20.0s,baz=256,slow=49						
ELDT	**Eldivan**	**3.60**	**67**	P	**Pn**	**01 32 37.9**	**+0.8**
ELDT	**Eldivan**	**3.60**	**67**	*i* P	**Pn**	**01 32 37.9**	**+0.8**
KARP	**Karpathos**	**3.91**	**204**	*e*Pn	**Pn**	**01 32 40.7**	**-0.6**
KARP	**Karpathos**	**3.91**	**204**	*e*Pn	**Pn**	**01 32 40.7**	**-0.6**
SANT	**Santorini**	**4.00**	**227**	⇑iP	**Pb**	**01 32 47.3**	**-4.1**
SANT	**Santorini**	**4.00**	**227**	*e*Pn	**Pn**	**01 32 41.4**	**-1.0**
SANT	**Santorini**	**4.00**	**227**	*e*Pn	**Pn**	**01 32 41.4**	**-1.0**
SANT				*e*Pg	**Pb**	**01 32 53.7**	**+2.3**
SANT				*e*Sg	**Sb**	**01 33 42.4**	**+2.3**
MANR	**Mangalia**	**4.68**	**356**	⇑iP	**Pn**	**01 32 52.4**	**+0.6**
MANR	**Mangalia**	**4.68**	**356**	⇑iP	**Pn**	**01 32 52.4**	**+0.6**
AKMC	**Akamas**	**4.86**	**147**	P	**Pn**	**01 32 54.3**	**0.0**
baz=328							
AKMC	**Akamas**	**4.86**	**147**	P	**Pn**	**01 32 54.3**	**0.0**
ALFC	**Alefka**	**4.87**	**144**	P	**Pn**	**01 32 53.7**	**-0.8**
baz=326							
ALFC				S	**Sn**	**01 33 49.7**	**-1.7**
ALFC	**Alefka**	**4.87**	**144**	P	**Pn**	**01 32 53.7**	**-0.8**
ALFC				S	**Sn**	**01 33 49.7**	**-1.7**
LAST	**Lasithi**	**4.92**	**217**	⇑iP	**Pn**	**01 32 56.0**	**+0.9**
LAST	**Lasithi**	**4.92**	**217**	*e*Pn	**Pn**	**01 32 55.8**	**+0.7**
LAST	**Lasithi**	**4.92**	**217**	*e*Pn	**Pn**	**01 32 55.8**	**+0.7**
PPCY	**Paphos**	**4.99**	**148**	P	**Pn**	**01 32 55.8**	**-0.2**
baz=329							
PPCY	**Paphos**	**4.99**	**148**	P	**Pn**	**01 32 55.8**	**-0.2**
MSAB	**Monastry St. A**	**5.03**	**350**	⇓iP	**Pn**	**01 32 56.7**	**+0.2**
MSAB	**Monastry St. A**	**5.03**	**350**	⇓iP	**Pn**	**01 32 56.7**	**+0.2**
IDI	**Anoyia**	**5.11**	**222**	Pn	**Pn**	**01 32 57.3**	**-0.5**
	1.2nm,0.3s,baz=320,slow=8.6,SNR=14						
IDI				LR	LR	01 34 50.7	
	comp=Z,248nm,20.4s,baz=68,slow=38						
IDI	**Anoyia**	**5.11**	**222**	⇓iP	**Pn**	**01 32 57.6**	**-0.2**
IDI	**Anoyia**	**5.11**	**222**	*e*Pn	**Pn**	**01 32 57.5**	**-0.2**
IDI	**Anoyia**	**5.11**	**222**	*e*Pn	**Pn**	**01 32 57.5**	**-0.3**
IDI				*e*Sg	**Sb**	**01 34 15.3**	**+3.2**
MAMC	**Mammari**	**5.16**	**139**	P	**Pn**	**01 32 58.3**	**-0.1**
baz=321							
MAMC	**Mammari**	**5.16**	**139**	P	**Pn**	**01 32 58.3**	**-0.1**
CVDA	**Cernavoda**	**5.24**	**352**	⇑iP	**Pn**	**01 32 59.7**	**+0.2**
CVDA	**Cernavoda**	**5.24**	**352**	⇑iP	**Pn**	**01 32 59.7**	**+0.2**
AGG	**Agios Georgios**	**5.26**	**271**	*e*P	**Pn**	**01 33 00.7**	**+0.9**
AGG	**Agios Georgios**	**5.26**	**271**	*e*P	**Pn**	**01 33 00.7**	**+0.9**
AGG	**Agios Georgios**	**5.26**	**271**	*e*Pn	**Pn**	**01 33 00.7**	**+0.9**
ZIMR		**5.30**	**329**	⇑iP	**Pn**	**01 33 00.9**	**+0.6**
TIRR	**Tirgusor**	**5.33**	**355**	⇑iP	**Pn**	**01 33 00.5**	**-0.2**
TIRR	**Tirgusor**	**5.33**	**355**	*e*P	**Pn**	**01 33 00.4**	**-0.2**
TIRR	**Tirgusor**	**5.33**	**355**	*e*P	**Pn**	**01 33 00.4**	**-0.2**
TIRR	**Tirgusor**	**5.33**	**355**	*e*Pn	**Pn**	**01 33 00.4**	**-0.2**
SIVA	**Sivas**	**5.36**	**221**	⇑iP	**Pn**	**01 33 03.3**	**+2.2**
SIVA	**Sivas**	**5.36**	**221**	⇑iP	**Pn**	**01 33 03.3**	**+2.2**
CSS	**Mathiatis**	**5.38**	**140**	*e*Pn	**Pn**	**01 32 59.5**	**-2.0**
CSS	**Mathiatis**	**5.38**	**140**	*e*Pn	**Pn**	**01 32 59.5**	**-2.0**
VAY	**Valandovo**	**5.44**	**296**	*e*Pn	**Pn**	**01 33 03.2**	**+1.0**
VAY	**Valandovo**	**5.44**	**296**	*e*Pn	**Pn**	**01 33 03.2**	**+1.0**
HARR	**Harsova**	**5.60**	**352**	⇑iP	**Pn**	**01 33 05.0**	**+0.5**
SULR		**5.92**	**340**	⇑iP	**Pn**	**01 33 09.3**	**+0.6**
PGOR	**Pogoanele**	**5.96**	**345**	⇑iP	**Pn**	**01 33 11.0**	**+1.6**
TLCR		**6.04**	**358**	⇑iP	**Pn**	**01 33 10.9**	**+0.5**
CFR	**Carcaliu**	**6.07**	**354**	⇑iP	**Pn**	**01 33 10.3**	**-0.5**
HUMR	**Humele**	**6.19**	**332**	⇓iP	**Pn**	**01 33 12.5**	**0.0**
BIA	**Bitola**	**6.24**	**290**	*e*Pn	**Pn**	**01 33 10.4**	**-2.9**
BIA	**Bitola**	**6.24**	**290**	*e*Pn	**Pn**	**01 33 10.4**	**-2.9**
ISR	**Istrita**	**6.26**	**343**	⇑iP	**Pn**	**01 33 14.6**	**+1.1**
SECR		**6.30**	**340**	⇑iP	**Pn**	**01 33 15.3**	**+1.3**
GIUM	**Giurgiulesti**	**6.37**	**354**	⇑iP	**Pn**	**01 33 16.3**	**+1.4**
**

VRAC Vranov 13.52 323 Pn Pn 01 34 52.5 -0.4
comp=Z,0.2nm,0.3s,baz=140,slow=15,SNR=4.2
VRAC LR LR 01 41 11.0
comp=Z,85nm,19.8s,baz=127,slow=42
VSR Storozhevoye 13.98 27 *eP* **Pn 01 34 57.4 -1.8**
VSR pmax pmax
comp=Z,8.0nm,0.4s
VSR MLR MLR
comp=Z,120nm,13.0s
VSR Storozhevoye 13.98 27 *eP* **Pn 01 34 57.4 -1.8**
comp=Z,120nm,13.0s
TREC Trest 14.05 321 AMS AMS 01 41 10.0
comp=Z,300nm,10.0s
DPC Dobruska-Polom 14.39 325 *eP* **Pn 01 35 07.0 +2.2**
DPC *ex* x 01 35 14.1
DPC AMS AMS 01 42 00.0
comp=Z,400nm,8.4s
DPC Dobruska-Polom 14.39 325 *eP* **Pn 01 35 07.0 +2.2**
DPC MLR MLR
comp=Z,400nm,8.4s
UPC Upice 14.64 325 AMS AMS 01 42 00.0
comp=Z,400nm,11.7s
GEA0 GERESS Array S 14.69 316 *ePn* **Pn 01 35 08.9 0.0**
GEA0 GERESS Array S 14.69 316 *ePn* **Pn 01 35 08.9 0.0**
GERES GERESS Array B 14.69 316 Pn **Pn 01 35 08.6 -0.4**
comp=Z,0.1nm,0.3s,baz=118,slow=11,SNR=8.5
GERES LR LR 01 40 52.8
comp=Z,108nm,19.6s,baz=122,slow=38
GOPC GO Pecny, Ondr 14.80 321 AMS AMS 01 42 00.0
comp=Z,300nm,10.9s
KHC Kasperske Hory 14.92 317 *eP* **Pn 01 35 12.0 -0.1**
KHC *ex* x 01 35 21.0
KHC *ex* x 01 35 30.2
KHC AMS AMS 01 41 40.0
comp=Z,400nm,7.8s
KHC Kasperske Hory 14.92 317 *eP* **Pn 01 35 12.0 -0.1**
KHC MLR MLR
comp=Z,400nm,7.8s
VRH Novokhopyorsk 14.96 32 *eP* **Pn 01 35 11.4 -1.1**
VRH pmax pmax
comp=Z,10.0nm,1.0s
PRU Pruhonice 14.97 321 AMS AMS 01 42 10.0
comp=Z,300nm,10.9s
LPSR Galich'ya Gora 15.08 24 *eP* **Pn 01 35 11.3 -2.7**
LPSR pmax pmax
comp=Z,10.0nm,0.9s
LPSR MLR MLR
comp=Z,170nm,21.0s
PVCC Panska Ves 15.31 323 AMS AMS 01 42 40.0
comp=Z,300nm,10.1s
RETA Reutte 15.70 308 *ep*P **P 01 35 27.1 +0.6**
comp=Z,11nm,1.9s
RETA Reutte 15.70 308 P **P 01 35 27.1 +0.6**
comp=Z,11nm,1.9s
NACGM Naroch 15.84 355 *e* **Pn 01 35 19.0 -5.0**
NACGM *e*LR LR 01 41 24.0
BRG Berggiesshubel 15.84 323 *eP* **P 01 35 29.0 +1.0**
comp=Z,6.5nm,1.3s
BRG Berggiesshubel 15.84 323 *eP* **P 01 35 29.0 +1.0**
BRG pmax pmax
comp=Z,7.0nm,1.3s
BRG Berggiesshubel 15.84 323 *eP* **P 01 35 29.0 +1.0**
comp=Z,7.0nm,1.3s
DAVOX Davos/Dischmat 15.97 305 Pn **Pn 01 35 25.8 -0.3**
comp=Z,0.2nm,0.3s,baz=198,slow=15,SNR=2.6
DAVOX LR LR 01 42 39.5
comp=Z,100nm,19.1s,baz=112,slow=41
KEST Kesra 16.05 264 Pn **Pn 01 35 27.1 +0.2**
comp=Z,0.0nm,0.3s,baz=72,slow=14,SNR=1.9
DAVA Damuels 16.16 306 *es*P **P 01 35 33.7 +1.9**
comp=Z,9.0nm,1.0s
DAVA Damuels 16.16 306 P **P 01 35 33.7 +1.9**
comp=Z,9.0nm,1.0s
NKC Novy Kostel 16.17 319 AMS AMS 01 43 00.0
comp=Z,300nm,10.2s
CLL Collm 16.57 322 *eP* **Pn 01 35 34.0 +0.5**
CLL LmH 01 41 00.0
comp=N,100nm,19.6s
CLL LmH 01 41 00.0
comp=E,200nm,19.4s
CLL Lmax 01 43 00.0
CLL LmV 01 45 00.0
comp=Z,100nm,18.9s
CLL Collm 16.57 322 *eP* **Pn 01 35 34.0 +0.5**
CLL Collm 16.57 322 *eP* **Pn 01 35 34.0 +0.5**
OBN Obninsk 16.75 15 Pn **Pn 01 35 35.4 -0.2**
comp=Z,1.7nm,0.3s,baz=192,slow=18,SNR=3.3
OBN Obninsk 16.75 15⇑ *eP* **Pn 01 35 34.9 -0.7**
OBN pmax pmax
comp=Z,21nm,1.3s
OBN MLR MLR
comp=Z,114nm,15.0s
SENIN Lac Senin/Sane 17.52 301 *eP* **P 01 35 48.3 +1.4**
comp=Z,37nm,1.8s
SENIN Lac Senin/Sane 17.52 301 *eP* **P 01 35 48.3 +1.4**
comp=Z,37nm,1.8s
BFO Black Forest 17.54 308 *eP* **P 01 35 50.3 +3.4**
BFO pmax pmax
comp=Z,9.0nm,1.2s
BFO Black Forest 17.54 308 *ePn* **P 01 35 50.3 +3.4**
comp=Z,9.4nm,1.2s
MOS Moscow 17.55 16 *eP* **Pn 01 35 43.8 -1.9**
MOS pmax pmax
comp=Z,44nm,1.0s
VSU Vasula 19.39 356 *ceP* **P 01 36 06.3 -0.7**
VSU pmax pmax
comp=Z,47nm,0.9s
VSU Vasula 19.39 356 *eP* **P 01 36 06.3 -0.7**
comp=Z,47nm,0.9s
WLF Walferdange 19.39 310 *eP* **Pn 01 36 08.0 -0.3**
WLF pmax pmax
comp=Z,4.0nm,0.5s
WLF Walferdange 19.39 310 *eP* **Pn 01 36 08.0 -0.3**
comp=Z,3.6nm,0.5s
WLF Walferdange 19.39 310 *eP* **Pn 01 36 08.0 -0.3**
comp=Z,3.6nm,0.5s
FINES FINESS Array B 22.40 356 P **P 01 36 38.4 -1.2**
comp=Z,7.4nm,0.8s,baz=158,slow=11,SNR=15
FINES LR LR 01 46 10.2
comp=Z,175nm,18.8s,baz=174,slow=39
FINES FINESS Array B 22.40 356 *i* P **P 01 36 40.7 +1.1**
FINES pmax pmax
comp=Z,7.0nm,0.8s
FIA1 FINESS Array S 22.40 356 *eP* **P 01 36 41.3 +1.7**
FIA1 FINESS Array S 22.40 356 *eP* **P 01 36 41.3 +1.7**
KLMR Klimovskoe 22.68 13 *eP* **P 01 36 39.9 -2.7**
KLMR *e* 01 40 30.1
KLMR pmax pmax
comp=Z,35nm,1.0s
KLMR Klimovskoe 22.68 13 *eP* **P 01 36 39.9 -2.7**
comp=Z,35nm,1.0s
GEYT Alibeck 22.70 84 P **P 01 36 43.1 +0.1**
comp=Z,7.9nm,1.0s,baz=288,slow=10,SNR=17
HFS Hagfors 23.14 340 P **P 01 36 48.7 +1.3**
comp=Z,4.6nm,0.7s,baz=163,slow=16,SNR=6.6
HFS LR LR 01 47 32.6
comp=Z,103nm,19.2s,baz=150,slow=41
AKTK Aktyubinsk 23.27 52 P **P 01 36 49.8 +0.9**
comp=Z,6.0nm,1.0s
AKTO Aktyubinsk 23.27 52 P **P 01 36 49.8 +0.9**
comp=Z,6.4nm,1.0s,baz=252,slow=11,SNR=11
AKTO LR LR 01 49 54.2
comp=Z,72nm,20.0s,baz=256,slow=47
ABKAR Akbulak array 24.16 55 *eP* **P 01 36 58.2 +0.7**
comp=Z,0.4nm,0.3s
ABKAR Akbulak array 24.16 55 *eP* **P 01 36 58.2 +0.7**
comp=Z,0.5nm,0.3s
NAO01 NORSAR Array S 24.50 338 *eP* **P 01 37 02.8 +2.3**
NB2 NORSAR Subarra 24.57 339 P **P 01 37 00.3 -0.9**
comp=Z,7.3nm,0.8s,baz=142,slow=10
NB2 NORSAR Subarra 24.57 339 P **P 01 37 00.3 -0.9**
comp=Z,7.3nm,0.8s,SNR=1.5
NOA NORSAR Array B 24.57 339 P **P 01 37 00.6 -0.6**
comp=Z,5.4nm,0.8s,baz=142,slow=9.3,SNR=12
NOA LR LR 01 47 42.2
comp=Z,57nm,20.5s,baz=155,slow=39
ESDC Sonseca Array 25.47 282 P **P 01 37 09.1 -0.4**
comp=Z,0.2nm,0.5s,baz=74,slow=10,SNR=4.6
TMCR Tamitsa 25.61 9 *eP* **P 01 37 11.2 +0.8**
TMCR pmax pmax
comp=Z,20nm,1.2s
TMCR Tamitsa 25.61 9 *eP* **P 01 37 11.2 +0.8**
comp=Z,20nm,1.2s
TAM Tamanrasset 25.85 238 *eP* **P 01 37 13.6 +0.3**
TAM pmax pmax
comp=Z,5.0nm,1.3s
TAM Tamanrasset 25.85 238 *eP* **P 01 37 13.6 +0.3**
comp=Z,4.9nm,1.3s
TAM Tamanrasset 25.85 238 *eP* **P 01 37 13.6 +0.3**
comp=Z,4.9nm,1.3s
ARU Arti 25.98 39 P **P 01 37 14.6 +0.6**
comp=Z,8.2nm,0.8s,baz=261,slow=6.5,SNR=14
ARU LR LR 01 49 25.6
comp=Z,62nm,18.3s,baz=285,slow=41
ARU Arti 25.98 39*c i*P **P 01 37 14.6 +0.6**
ARU 01 37 49.6
ARU S **S 01 41 48.6 +3.6**
ARU SS **SnSn 01 42 45.5 +4.2**
ARU pmax pmax
comp=Z,21nm,1.2s
ARU Arti 25.98 39 *i* P **P 01 37 14.6 +0.6**
comp=Z,21nm,1.2s
ARU Arti 25.98 39 *eP* **P 01 37 14.8 +0.9**
comp=Z,13nm,0.9s
EKA Eskdalemuir Ar 26.90 318 P **P 01 37 23.1 +0.9**
comp=Z,0.9nm,0.4s,baz=114,slow=12,SNR=10
SOKR Solikamsk 26.93 31 *eP* P 01 37 33.2 +11
SOKR pmax pmax
comp=Z,15nm,1.0s
ARCES ARCESS Array B 30.51 358 P **P 01 37 55.5 +1.2**
comp=Z,3.8nm,0.8s,baz=147,slow=2.5,SNR=9.6
ARCES LR LR 01 50 41.1
comp=Z,124nm,18.0s,baz=192,slow=37
ZRNK Zerenda 30.52 50 *eP* **P 01 37 56.1 +1.6**
ZRNK pmax pmax
comp=Z,3.0nm,0.9s
ZRNK Zerenda 30.52 50 *eP* **P 01 37 56.1 +1.6**
comp=Z,3.0nm,0.9s
ZRNK Zerenda 30.52 50 *eP* **P 01 37 56.1 +1.6**
comp=Z,3.0nm,0.9s
EKS2 Erkin-Say 33.66 69 *eP* **P 01 38 22.6 +0.2**
EKS2 pmax pmax
comp=Z,1.0nm,0.5s
EKS2 Erkin-Say 33.66 69 *eP* **P 01 38 22.6 +0.2**
comp=Z,1.0nm,0.5s
EKS2 Erkin-Say 33.66 69 *eP* **P 01 38 22.6 +0.2**
comp=Z,1.0nm,0.5s
AAK Ala-Archa 34.19 69⇓ *eP* **P 01 38 25.8 -1.2**
AAK pmax pmax
comp=Z,3.0nm,0.9s
AAK Ala-Archa 34.19 69 *eP* **P 01 38 27.2 +0.2**
comp=Z,2.7nm,0.8s
AAK Ala-Archa 34.19 69 *eP* **P 01 38 27.2 +0.2**
comp=Z,2.7nm,0.8s
TOA0 Torodi Ar. Sit 35.45 231 *eP* **P 01 38 37.4 -0.5**
comp=Z,21nm,1.8s
TOA0 Torodi Ar. Sit 35.45 231 *eP* **P 01 38 37.4 -0.5**
comp=Z,21nm,1.8s
TORD Torodi Ar. Bea 35.45 231 P **P 01 38 37.0 -0.9**
comp=Z,3.0nm,0.8s,baz=37,slow=9.1,SNR=22
TORD Torodi Ar. Bea 35.45 231 P **P 01 38 37.0 -0.9**
KURK Kurchatov 36.27 55 *eP* **P 01 38 45.2 +0.6**
KURK pmax pmax
comp=Z,2.0nm,0.5s
KURK Kurchatov 36.27 55 *eP* **P 01 38 45.2 +0.6**
comp=Z,2.0nm,0.5s
KURK Kurchatov 36.27 55 *eP* **P 01 38 45.2 +0.6**
comp=Z,2.0nm,0.5s
MAKZ Makanchi 38.81 61 *eP* **P 01 39 05.8 -0.4**
MAKZ pmax pmax
comp=Z,4.0nm,0.6s
MAKZ Makanchi 38.81 61 *eP* **P 01 39 05.8 -0.4**
comp=Z,3.6nm,0.6s
MAKZ Makanchi 38.81 61 *eP* **P 01 39 05.8 -0.4**
comp=Z,3.6nm,0.6s
MK31 Makanchi Array 39.02 61 *eP* **P 01 39 08.6 +0.6**
MK31 Makanchi Array 39.02 61 *eP* **P 01 39 08.6 +0.6**
MK31 Makanchi Array 39.02 61 *eP* **P 01 39 08.6 +0.6**
MKAR Makanchi Array 39.02 61 P **P 01 39 07.8 -0.2**
comp=Z,1.1nm,0.6s,baz=287,slow=6.2,SNR=11
MKAR Makanchi Array 39.02 61 *eP* **P 01 39 08.4 +0.4**
MK01 Makanchi Array 39.03 61 *eP* **P 01 39 07.8 -0.3**
MK01 Makanchi Array 39.03 61 *eP* **P 01 39 07.8 -0.3**
NVS Novosibirsk 39.07 48 *eP* **P 01 39 09.4 +1.2**
NVS Novosibirsk 39.07 48 *eP* **P 01 39 09.4 +1.2**
ZAA0 Zalesovo Array 40.00 49 *eP* **P 01 39 17.4 +1.4**
ZAA0 Zalesovo Array 40.00 49 *eP* **P 01 39 17.4 +1.4**
ZALV Zalesovo Beam 40.00 49 P **P 01 39 15.9 -0.1**
comp=Z,2.0nm,0.8s,baz=269,slow=8.7,SNR=9.7
ZALV LR LR 01 59 34.2
comp=Z,38nm,18.1s,baz=66,slow=42
NRIK Noril'sk 42.93 26 LR LR 01 58 55.8
comp=Z,32nm,18.1s,baz=266,slow=38
WMQ Urumqi 43.36 64 *eP* **P 01 39 47.0 +3.2**
WMQ LR LR
comp=N,21nm,20.4s
WMQ LR LR
comp=Z,18nm,33.4s
SONM Songino Array 54.56 54 P **P 01 41 09.6 -0.1**
comp=Z,1.1nm,0.7s,baz=283,slow=7.6,SNR=7.2
ULN Ulaanbaatar 54.97 54⇑ *eP* **P 01 41 11.4 -1.3**
ULN pmax pmax
comp=Z,4.0nm,2.5s
ULN Ulaanbaatar 54.97 54 *eP* **P 01 41 11.4 -1.3**
comp=Z,4.0nm,2.5s
ULN Ulaanbaatar 54.97 54 *eP* **P 01 41 15.1 +2.4**
comp=Z,2.2nm,0.8s
TIXI Tiksi 56.32 22⇑ *eP* **P 01 41 22.1 +0.3**
TIXI pmax pmax
comp=Z,5.0nm,2.1s
TIXI Tiksi 56.32 22 *eP* **P 01 41 22.1 +0.3**
comp=Z,5.0nm,2.1s
TSUM Tsumeb 59.04 193 *eP* **P 01 41 40.7 -0.9**
comp=Z,8.1nm,1.2s
TSUM Tsumeb 59.04 193 *eP* **P 01 41 40.7 -0.9**
comp=Z,8.1nm,1.2s
CD2 Chengdu 60.12 73 P **P 01 41 47.8 -1.4**
CD2 pmax pmax
comp=Z,4.0nm,0.6s
HHC Hu-ho-hao-te 60.86 59 *eP* **P 01 41 55.8 +1.7**
HHC pmax pmax
comp=Z,19nm,1.2s
HHC pmax pmax
comp=Z,52nm,6.9s
SCHQ Schefferville 62.20 319 P **P 01 42 02.7 -0.1**
comp=Z,1.6nm,0.6s,baz=308,slow=1.6,SNR=3.8
KMI Kunming 62.36 79 P **P 01 42 05.0 +0.4**
KMI pmax pmax
comp=Z,14nm,0.6s
KMI pmax pmax
comp=Z,83nm,4.7s
BOSA Boshof 67.51 184 P **P 01 42 36.8 -0.9**
comp=Z,6.2nm,1.2s,baz=339,slow=14,SNR=3.2
CN2 Changchun 68.20 51 *eP* **P 01 42 43.3 +1.4**
BILL Bilibino 68.40 16 *eP* **P 01 42 43.4 +0.6**
BILL *e* 01 43 08.5
BILL pmax pmax
comp=Z,1.0nm,0.9s
BILL MLR MLR
comp=Z,99nm,19.0s
BILL Bilibino 68.40 16 *eP* **P 01 42 43.4 +0.6**
comp=Z,1.0nm,0.9s
KS01 Wonju Array Si 73.36 55 *eP* **P 01 43 12.6 -0.8**
YKA Yellowknife Ar 74.58 343 P **P 01 43 20.5 +0.4**
comp=Z,1.1nm,1.2s,baz=28,slow=6.3,SNR=6.1
PETK Petropavlovsk- 77.93 29 LR LR 02 23 57.2
comp=Z,19nm,18.7s,baz=253,slow=40

ISK ***29*** *01:39:50.7,39°.19N×29°.05E,h5km,MD2.7*
ISCJB ***29*** *01:39:51.9±0.6,39°.18N±0°.05×29°.07E±0°.06,h9km,Error ellipse: s-maj=8.6km s-min=4.6km az=146.1*
CSEM ***29*** *01:39:51.9±0.2,39°.17N×29°.08E,h10km,MD2.7,Error ellipse: s-maj=4.9km s-min=3.5km az=144.0*
ISC 29 01:39:51.9±0.9,**39°.19N**±0°.04×**29°.07E**±0°.03,**h9km,n26,**
σ0°50/30,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.31**	**242**	P	**Pb**	**01 39 59.1**	**-0.6**
DEMI				S	**Sg**	**01 40 03.2**	**+1.0**
DEMI	**Demirci**	**0.31**	**242**	*i* P	**Pb**	**01 39 59.1**	**-0.6**
DEMI				*i* S	**Sg**	**01 40 03.2**	**+1.0**
GDZ	**Gediz**	**0.34**	**107**	P	**Pg**	**01 39 58.4**	**-0.2**
GDZ	**Gediz**	**0.34**	**107**	*i* P	**Pg**	**01 39 58.4**	**-0.2**
TVSB	**Tavsanli**	**0.40**	**50**	*e*PG	**Pg**	**01 39 59.7**	**-0.1**
TVSB				*e*SG	**Sb**	**01 40 06.5**	**-1.1**
TVSB	**Tavsanli**	**0.40**	**50**	*e*Pg	**Pg**	**01 39 59.7**	**-0.1**
TVSB				*e*Sg	**Sb**	**01 40 06.5**	**-1.1**
KULA	**Kula-Manisa**	**0.74**	**205**	*e*PG	**Pg**	**01 40 06.1**	**-0.2**
KULA	**Kula-Manisa**	**0.74**	**205**	*e*Pg	**Pg**	**01 40 06.1**	**-0.2**
BALB	**Balikesir**	**1.02**	**296**	*e*PG	**Pg**	**01 40 11.1**	**-0.5**
BALB	**Balikesir**	**1.02**	**296**	*e*Pg	**Pg**	**01 40 11.1**	**-0.5**
CAVI	**Cavuskoy**	**1.18**	**30**	*e*PN	**Pb**	**01 40 14.3**	**-0.1**
CAVI	**Cavuskoy**	**1.18**	**30**	*e*Pn	**Pb**	**01 40 14.3**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.19**	**353**	*e*PN	**Pb**	**01 40 14.3**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.19**	**353**	*e*Pn	**Pb**	**01 40 14.3**	**-0.3**
KCTX	**Karacabey (Bur**	**1.21**	**333**	*e*PN	**Pb**	**01 40 14.8**	**-0.1**
KCTX	**Karacabey (Bur**	**1.21**	**333**	*e*Pn	**Pb**	**01 40 14.8**	**-0.1**
GONE	**Gonen-Balikesi**	**1.37**	**309**	*e*PN	**Pb**	**01 40 17.7**	**+0.1**
GONE	**Gonen-Balikesi**	**1.37**	**309**	*e*Pn	**Pb**	**01 40 17.7**	**+0.1**
ARMT	**Armutlu**	**1.38**	**353**	*e*PN	**Pb**	**01 40 18.0**	**0.0**
ARMT	**Armutlu**	**1.38**	**353**	*e*Pn	**Pb**	**01 40 18.0**	**0.0**
EDC	**Edincik**	**1.48**	**322**	*e*PN	**Pb**	**01 40 19.3**	**-0.3**
EDC	**Edincik**	**1.48**	**322**	*e*Pn	**Pb**	**01 40 19.3**	**-0.3**
GULT	**Gulveren**	**1.67**	**41**	*e*PN	**Pn**	**01 40 21.9**	**+0.5**
GULT	**Gulveren**	**1.67**	**41**	*e*Pn	**Pn**	**01 40 21.9**	**+0.5**
HRT	**Hereke**	**1.69**	**16**	*e*PN	**Pn**	**01 40 22.2**	**+0.5**
HRT	**Hereke**	**1.69**	**16**	*e*Pn	**Pn**	**01 40 22.2**	**+0.5**

IDC ***29*** *01:45:41.3±0.6,2°.63N×99°.08E,h162km±6km,mb3.2/7, mb1 3.3/7,mb1mx3.1/39,mbtmp3.6/7,MS2.9/1,Ms1 2.9/1, ms1mx2.5/12,Error ellipse: s-maj=74.7km s-min=16.0km az=46.0*
DJA ***29*** *01:45:41.3±0.9,3°N±6°×9°9E±°,h172km±14km,M3.4/7, MLv3.4/7*
ISC 29 01:45:40.8±0.8,**2°.62N**±0°.08×**99°.0E**±0°.1,**h150km,n16,**
σ2°38/16,mb3.4/7,Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PSI	**Prapat**	**0.21**	**329**	P	**Pn**	**01 46 04.8**	**+3.6**
	37nm,0.3s,baz=343,slow=15,SNR=72						
PSI				S	**Sn**	**01 46 20.7**	**+3.8**
	14nm,0.3s,baz=291,slow=23,SNR=45						
TSI	**Tuntungan**	**0.99**	**332**	P	**Pn**	**01 46 08.1**	**+2.6**
KCSI	**Kotacane, Aceh**	**1.55**	**306**	P	**Pn**	**01 46 13.3**	**+2.4**
MNSI	**Mandailing Nat**	**1.89**	**163**	P	**Pn**	**01 46 17.9**	**+3.2**
GSI	**Gunungsitoli**	**1.96**	**228**	P	**Pn**	**01 46 18.1**	**+2.7**
PBSI	**Pulau Batu**	**2.76**	**196**	P	**Pn**	**01 46 25.9**	**+0.8**
MLSI	**Meulaboh, Aceh**	**3.09**	**302**	P	**Pn**	**01 46 31.1**	**+1.8**
LHMI	**Lhok Sumawe**	**3.33**	**321**	P	**Pn**	**01 46 34.3**	**+2.0**
KAPI	**Kappang**	**22.04**	**110**	LR	LR	02 00 10.2	
	comp=Z,28nm,19.1s,baz=146,slow=40						
WRA	**Warramunga Arr**	**41.27**	**124**	P	**P**	**01 53 10.1**	**-1.6**
	0.3nm,0.3s,baz=300,slow=9.2,SNR=4.6						
ASAR	**Alice Springs**	**42.83**	**130**	P	**P**	**01 53 22.8**	**-1.5**
	0.2nm,0.4s,baz=304,slow=7.9,SNR=5.5						
MKAR	**Makanchi Array**	**46.35**	**344**	P	**P**	**01 53 51.0**	**-0.9**
	0.4nm,0.4s,baz=170,slow=8.5,SNR=4.2						
GEYT	**Alibeck**	**51.34**	**318**	P	**P**	**01 54 29.7**	**-0.3**
	0.8nm,0.5s,baz=109,slow=7.9,SNR=3.0						
BVAR	**Borovoye Array**	**55.55**	**339**	P	**P**	**01 54 59.3**	**-1.0**
	0.3nm,0.4s,baz=130,slow=8.3,SNR=3.6						
BRTR	**Keskin Array B**	**69.53**	**312**	P	**P**	**01 56 32.5**	**-1.2**
	0.3nm,0.6s,baz=116,slow=6.6,SNR=3.1						
FINES	**FINESS Array B**	**79.60**	**332**	P	**P**	**01 57 30.4**	**-0.7**
	0.4nm,0.3s,baz=109,slow=4.6,SNR=8.7						

DDA ***29*** *01:50:12.8,39°.16N×29°.07E,h5km,Md2.4*
ISCJB ***29*** *01:50:14.8±0.6,39°.22N±0°.04×29°.04E±0°.04,h8km,Error ellipse: s-maj=6.6km s-min=4.5km az=155.1*
CSEM ***29*** *01:50:14.9±0.1,39°.22N×29°.04E,h10km,MD2.6,Error ellipse: s-maj=3.5km s-min=2.8km az=146.0*
ISK ***29*** *01:50:14.8,39°.24N×29°.01E,h11km,MD2.6*
ISC 29 01:50:14.7±0.9,**39°.27N**±0°.04×**29°.07E**±0°.03,**h8km,n20,**
σ0°49/26,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.35**	**231**	P	**Pg**	**01 50 21.5**	**-0.1**
DEMI				S	**Sg**	**01 50 25.8**	**-0.5**
DEMI	**Demirci**	**0.35**	**231**	*i* P	**Pg**	**01 50 21.5**	**-0.1**
DEMI				*i* S	**Sg**	**01 50 25.8**	**-0.5**
TVSB	**Tavsanli**	**0.36**	**59**	*e*PG	**Pb**	**01 50 23.1**	**-0.2**
TVSB				*e*SG	**Sb**	**01 50 29.6**	**+0.5**
TVSB	**Tavsanli**	**0.36**	**59**	*e*Pg	**Pb**	**01 50 23.1**	**-0.2**
TVSB				*e*Sg	**Sb**	**01 50 29.6**	**+0.5**
GDZ	**Gediz**	**0.37**	**119**	P	**Pg**	**01 50 21.8**	**-0.1**
GDZ				S	**Sg**	**01 50 26.6**	**-0.1**
GDZ	**Gediz**	**0.37**	**119**	*i* P	**Pg**	**01 50 21.8**	**-0.1**
GDZ				*i* S	**Sg**	**01 50 26.6**	**-0.1**
KULA	**Kula-Manisa**	**0.81**	**203**	*e*PG	**Pg**	**01 50 30.2**	**-0.1**
KULA	**Kula-Manisa**	**0.81**	**203**	*e*Pg	**Pg**	**01 50 30.2**	**-0.1**
BALB	**Balikesir**	**0.99**	**293**	*e*PG	**Pb**	**01 50 33.7**	**-0.4**
BALB	**Balikesir**	**0.99**	**293**	*e*Pg	**Pb**	**01 50 33.7**	**-0.4**
MDNY	**Mudanya-Bursa**	**1.11**	**353**	*e*PN	**Pn**	**01 50 36.9**	**+0.4**
MDNY	**Mudanya-Bursa**	**1.11**	**353**	*e*Pn	**Pn**	**01 50 36.9**	**+0.4**
IZI	**Iznik**	**1.11**	**16**	*e*PN	**Pn**	**01 50 37.4**	**+0.7**
IZI	**Iznik**	**1.11**	**16**	*e*Pn	**Pn**	**01 50 37.4**	**+0.7**
KCTX	**Karacabey (Bur**	**1.14**	**331**	*e*PN	**Pn**	**01 50 37.4**	**+0.4**
KCTX	**Karacabey (Bur**	**1.14**	**331**	*e*Pn	**Pn**	**01 50 37.4**	**+0.4**
ARMT	**Armutlu**	**1.31**	**353**	*e*PN	**Pg**	**01 50 40.0**	**+0.2**
ARMT	**Armutlu**	**1.31**	**353**	*e*Pn	**Pg**	**01 50 40.0**	**+0.2**
GULT	**Gulveren**	**1.61**	**43**	*e*PN	**Pg**	**01 50 44.5**	**-1.1**
GULT	**Gulveren**	**1.61**	**43**	*e*Pn	**Pg**	**01 50 44.5**	**-1.1**

DDA ***29*** *01:51:20.2,39°.19N×29°.04E,h7km,Md2.7*
ISCJB ***29*** *01:51:22.9±0.7,39°.07N±0°.06×29°.13E±0°.04,h9km,Error ellipse: s-maj=8.1km s-min=4.6km az=168.6*
ISK ***29*** *01:51:22.8,39°.10N×29°.16E,h5km,MD2.7*
CSEM ***29*** *01:51:23.0±0.2,39°.04N×29°.23E,h10km,MD2.7,Error ellipse: s-maj=4.6km s-min=3.0km az=134.0*
ISC 29 01:51:23.1±1.0,**39°.09N**±0°.05×**29°.14E**±0°.03,**h9km,n27,**
σ0°63/32,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.27**	**90**	P	**Pg**	**01 51 27.8**	**-0.7**
GDZ				S	**Sg**	**01 51 32.9**	**+0.8**
GDZ	**Gediz**	**0.27**	**90**	*i* P	**Pg**	**01 51 27.8**	**-0.7**
GDZ				*i* S	**Sg**	**01 51 32.9**	**+0.8**
DEMI	**Demirci**	**0.33**	**262**	*i* P	Pg	01 51 24.7	-5.0
DEMI				*i* S	**Sg**	**01 51 31.6**	**-2.5**
TVSB	**Tavsanli**	**0.44**	**35**	*e*PG	**Pg**	**01 51 31.7**	**0.0**
TVSB				*e*SG	**Sg**	**01 51 37.2**	**-0.4**
TVSB	**Tavsanli**	**0.44**	**35**	*e*Pg	**Pg**	**01 51 31.7**	**0.0**
TVSB				*e*Sg	**Sg**	**01 51 37.2**	**-0.4**
KULA	**Kula-Manisa**	**0.68**	**213**	*e*PG	**Pg**	**01 51 36.3**	**0.0**
KULA	**Kula-Manisa**	**0.68**	**213**	*e*Pg	**Pg**	**01 51 36.3**	**0.0**
BALB	**Balikesir**	**1.12**	**300**	*e*PN	**Pn**	**01 51 45.6**	**+0.6**
BALB				*e*SN	**Sb**	**01 52 00.0**	**+0.7**
BALB	**Balikesir**	**1.12**	**300**	*e*Pn	**Pn**	**01 51 45.6**	**+0.6**
CAVI	**Cavuskoy**	**1.24**	**26**	*e*PN	**Pb**	**01 51 46.6**	**-0.1**
CAVI	**Cavuskoy**	**1.24**	**26**	*e*Pn	**Pb**	**01 51 46.6**	**-0.1**
IZI	**Iznik**	**1.27**	**12**	*e*PN	**Pn**	**01 51 47.1**	**-0.1**
IZI	**Iznik**	**1.27**	**12**	*e*Pn	**Pn**	**01 51 47.1**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.29**	**351**	*e*PN	**Pb**	**01 51 47.9**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.29**	**351**	*e*Pn	**Pb**	**01 51 47.9**	**+0.3**
KCTX	**Karacabey (Bur**	**1.32**	**333**	*e*PN	**Pb**	**01 51 48.5**	**+0.4**
KCTX	**Karacabey (Bur**	**1.32**	**333**	*e*Pn	**Pb**	**01 51 48.5**	**+0.4**
ADVT	**Abdulvahap**	**1.42**	**19**	*e*PN	**Pn**	**01 51 49.2**	**+0.1**
ADVT	**Abdulvahap**	**1.42**	**19**	*e*Pn	**Pn**	**01 51 49.2**	**+0.1**
GONE	**Gonen-Balikesi**	**1.48**	**311**	*e*PN	**Pb**	**01 51 51.1**	**+0.4**
GONE	**Gonen-Balikesi**	**1.48**	**311**	*e*Pn	**Pb**	**01 51 51.1**	**+0.4**
ARMT	**Armutlu**	**1.49**	**352**	*e*PN	**Pb**	**01 51 50.8**	**-0.2**
ARMT	**Armutlu**	**1.49**	**352**	*e*Pn	**Pb**	**01 51 50.8**	**-0.2**
EDC	**Edincik**	**1.60**	**322**	*e*PN	**Pb**	**01 51 52.9**	**+0.2**
EDC	**Edincik**	**1.60**	**322**	*e*Pn	**Pb**	**01 51 52.9**	**+0.2**
GULT	**Gulveren**	**1.71**	**38**	*e*PN	**Pn**	**01 51 52.9**	**-0.3**
GULT	**Gulveren**	**1.71**	**38**	*e*Pn	**Pn**	**01 51 52.9**	**-0.3**

ISCJB ***29*** *02:01:05.4±0.4,39°.07N±0°.03×29°.09E±0°.04,h9km,Error ellipse: s-maj=4.7km s-min=4.0km az=10.9*
DDA ***29*** *02:01:05.3,39°.08N×29°.11E,h7km,Md2.4*
CSEM ***29*** *02:01:05.4±0.1,39°.09N×29°.08E,h5km,MD2.4,Error ellipse: s-maj=2.6km s-min=2.4km az=93.0*
ISK ***29*** *02:01:05.1,39°.08N×29°.07E,h6km,MD2.8*
ISC 29 02:01:05.5±0.8,**39°.08N**±0°.03×**29°.10E**±0°.02,**h9km,n38,**
σ0°39/46,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.30**	**89**	P	**Pg**	**02 01 11.6**	**+0.1**

DEMI				S	Sg	02 01 16.1	+0.6
DEMI	**Demirci**	**0.30**	**263**	*i* P	Pg	02 01 11.6	+0.1
DEMI				*i* S	Sg	02 01 16.1	+0.6
TVSB	**Tavsanli**	**0.46**	**37**	*e*PG	Pg	02 01 13.9	-0.5
TVSB	**Tavsanli**	**0.46**	**37**	*e*Pg	Pg	02 01 14.0	-0.5
KULA	**Kula-Manisa**	**0.66**	**211**	*e*PG	Pg	02 01 18.1	-0.2
KULA	**Kula-Manisa**	**0.66**	**211**	*e*Pg	Pg	02 01 18.1	-0.2
KHAL	**Karahalli**	**0.77**	**157**	P	Pb	02 01 21.0	-0.2
KHAL				S	Sg	02 01 31.1	+0.6
KHAL	**Karahalli**	**0.77**	**157**	*i* P	Pb	02 01 21.0	-0.2
KHAL				*i* S	Sg	02 01 31.1	+0.6
KHL	**Karahalli**	**0.83**	**156**	*e*PG	Pb	02 01 21.9	-0.2
KHL	**Karahalli**	**0.83**	**156**	*e*Pg	Pb	02 01 21.9	-0.2
ORLT	**Orhaneli**	**0.97**	**351**	*e*PG	Pg	02 01 24.2	-0.1
ORLT	**Orhaneli**	**0.97**	**351**	*e*Pg	Pg	02 01 24.2	-0.1
AKS	**Akhisar**	**1.02**	**259**	*e*PG	Pg	02 01 24.5	-0.7
AKS	**Akhisar**	**1.02**	**259**	*e*Pg	Pg	02 01 24.5	-0.7
BALB	**Balikesir**	**1.10**	**301**	*e*PN	Pg	02 01 26.0	-0.5
BALB				*e*SN	Sn	02 01 41.9	-0.4
BALB	**Balikesir**	**1.10**	**301**	*e*Pn	Pg	02 01 26.0	-0.5
BALB				*e*Sn	Sn	02 01 41.9	-0.4
CAVI	**Cavuskoy**	**1.26**	**27**	*e*PN	Pb	02 01 29.6	+0.2
CAVI	**Cavuskoy**	**1.26**	**27**	*e*Pn	Pb	02 01 29.6	+0.2
IZI	**Iznik**	**1.29**	**13**	*e*PN	Pg	02 01 30.4	+0.2
IZI	**Iznik**	**1.29**	**13**	*e*Pn	Pg	02 01 30.4	+0.2
MDNY	**Mudanya-Bursa**	**1.30**	**353**	*e*PN	Pb	02 01 30.1	+0.1
MDNY	**Mudanya-Bursa**	**1.30**	**353**	*e*Pn	Pb	02 01 30.1	+0.1
KCTX	**Karacabey (Bur**	**1.31**	**334**	*e*PN	Pn	02 01 30.3	+0.2
KCTX	**Karacabey (Bur**	**1.31**	**334**	*e*Pn	Pn	02 01 30.3	+0.2
BORA	**Eskisehir**	**1.32**	**52**	P	Pn	02 01 29.9	-0.2
BORA	**Eskisehir**	**1.32**	**52**	*i* P	Pn	02 01 29.9	-0.2
ADVT	**Abdulvahap**	**1.44**	**20**	*e*PN	Pb	02 01 32.6	+0.2
ADVT	**Abdulvahap**	**1.44**	**20**	*e*Pn	Pb	02 01 32.6	+0.2
GONE	**Gonen-Balikesi**	**1.46**	**312**	*e*PN	Pn	02 01 32.4	+0.4
GONE	**Gonen-Balikesi**	**1.46**	**312**	*e*Pn	Pn	02 01 32.4	+0.4
ARMT	**Armutlu**	**1.49**	**353**	*e*PN	Pb	02 01 33.1	-0.3
ARMT	**Armutlu**	**1.49**	**353**	*e*Pn	Pb	02 01 33.1	-0.3
EDC	**Edincik**	**1.58**	**323**	*e*PN	Pn	02 01 34.2	+0.5
EDC	**Edincik**	**1.58**	**323**	*e*Pn	Pn	02 01 34.2	+0.5
GULT	**Gulveren**	**1.73**	**39**	*e*PN	Pb	02 01 36.9	-0.7
GULT	**Gulveren**	**1.73**	**39**	*e*Pn	Pb	02 01 36.9	-0.7

*DDA **29** 02:04:17.9, 39°.10N×29°.10E, h7km, Md2.7*
*ISK **29** 02:04:17.9, 39°.11N×29°.10E, h5km, MD2.8*
*ISCJB **29** 02:04:18.2±0.4, 39°.09N±0°.03×29°.09E±0°.03, h9km, Error ellipse: s-maj=4.4km s-min=3.8km az=7.0*
*CSEM **29** 02:04:18.3±0.1, 39°.10N×29°.10E, h5km, MD2.7, Error ellipse: s-maj=2.1km s-min=2.0km az=104.0*

ISC 29 02:04:18.0±0.8, 39°.09N±0°.03×29°.14E±0°.02, h9km, n49, σ0s59/57, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.27**	**89**	P	**Pb**	**02 04 24.3**	**-0.8**
GDZ				S	**Sb**	**02 04 28.9**	**-0.9**
GDZ	**Gediz**	**0.27**	**89**	*i* P	**Pb**	**02 04 24.3**	**-0.8**
GDZ				*i* S	**Sb**	**02 04 28.9**	**-0.9**
DEMI	**Demirci**	**0.33**	**262**	P	**Pg**	**02 04 24.3**	**-0.3**
DEMI				S	**Sg**	**02 04 28.5**	**-0.4**
DEMI	**Demirci**	**0.33**	**262**	*i* P	**Pg**	**02 04 24.3**	**-0.3**
DEMI				*i* S	**Sg**	**02 04 28.5**	**-0.4**
TVSB	**Tavsanli**	**0.44**	**35**	*e*PG	**Pg**	**02 04 26.7**	**0.0**
TVSB	**Tavsanli**	**0.44**	**35**	*e*Pg	**Pg**	**02 04 26.7**	**0.0**
KULA	**Kula-Manisa**	**0.68**	**213**	*e*PG	**Pb**	**02 04 31.4**	**-0.7**
KULA	**Kula-Manisa**	**0.68**	**213**	*e*Pg	**Pb**	**02 04 31.4**	**-0.7**
KHAL	**Karahalli**	**0.77**	**159**	P	**Pb**	**02 04 33.9**	**+0.3**
KHAL				S	**Sb**	**02 04 44.1**	**0.0**
KHAL	**Karahalli**	**0.77**	**159**	*i* P	**Pb**	**02 04 33.9**	**+0.3**
KHAL				*i* S	**Sb**	**02 04 44.1**	**0.0**
KHL	**Karahalli**	**0.82**	**158**	*e*PG	**Pb**	**02 04 34.6**	**+0.2**
KHL	**Karahalli**	**0.82**	**158**	*e*Pg	**Pb**	**02 04 34.6**	**+0.2**
ORLT	**Orhaneli**	**0.98**	**349**	*e*PG	**Pg**	**02 04 36.7**	**-0.1**
ORLT	**Orhaneli**	**0.98**	**349**	*e*Pg	**Pg**	**02 04 36.7**	**-0.1**
AKS	**Akhisar**	**1.05**	**259**	*e*PG	**Pg**	**02 04 38.0**	**-0.1**
AKS	**Akhisar**	**1.05**	**259**	*e*Pg	**Pg**	**02 04 38.1**	**-0.1**
BALB	**Balikesir**	**1.12**	**300**	*e*PN	**Pb**	**02 04 39.4**	**-0.1**
BALB				*e*SN	**Sg**	**02 04 54.2**	**+0.1**
BALB	**Balikesir**	**1.12**	**300**	*e*Pn	**Pb**	**02 04 39.4**	**-0.1**
BALB				*e*Sn	**Sg**	**02 04 54.2**	**+0.1**
IGD	**Bursa**	**1.18**	**2**	*i* P	**Pb**	**02 04 39.1**	**-1.4**
CAVI	**Cavuskoy**	**1.24**	**26**	*e*PN	**Pn**	**02 04 41.8**	**+0.2**
CAVI	**Cavuskoy**	**1.24**	**26**	*e*Pn	**Pn**	**02 04 41.8**	**+0.2**
IZI	**Iznik**	**1.27**	**12**	*e*PN	**Pn**	**02 04 42.4**	**+0.3**
IZI	**Iznik**	**1.27**	**12**	*e*Pn	**Pn**	**02 04 42.4**	**+0.3**
BORA	**Eskisehir**	**1.29**	**52**	P	**Pb**	**02 04 42.7**	**+0.2**
BORA	**Eskisehir**	**1.29**	**52**	*i* P	**Pb**	**02 04 42.7**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.29**	**351**	*e*PN	**Pb**	**02 04 42.8**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.29**	**351**	*e*Pn	**Pb**	**02 04 42.8**	**+0.3**
KCTX	**Karacabey (Bur**	**1.32**	**333**	*e*PN	**Pn**	**02 04 42.8**	**+0.1**
KCTX	**Karacabey (Bur**	**1.32**	**333**	*e*Pn	**Pn**	**02 04 42.8**	**+0.1**
ESKT	**Eskisehir**	**1.40**	**71**	*i* P	**Pg**	**02 04 44.7**	**-0.1**
SEYT	**Eskypehyr**	**1.40**	**71**	P	**Pg**	**02 04 44.7**	**-0.1**
ADVT	**Abdulvahap**	**1.42**	**19**	*e*PN	**Pb**	**02 04 44.7**	**0.0**
ADVT	**Abdulvahap**	**1.42**	**19**	*e*Pn	**Pb**	**02 04 44.7**	**0.0**
GONE	**Gonen-Balikesi**	**1.48**	**311**	*e*PN	**Pn**	**02 04 45.2**	**+0.5**
GONE	**Gonen-Balikesi**	**1.48**	**311**	*e*Pn	**Pn**	**02 04 45.2**	**+0.5**
ARMT	**Armutlu**	**1.49**	**352**	*e*PN	**Pb**	**02 04 46.0**	**+0.1**
ARMT	**Armutlu**	**1.49**	**352**	*e*Pn	**Pb**	**02 04 46.0**	**+0.1**
EDC	**Edincik**	**1.60**	**322**	*e*PN	**Pn**	**02 04 47.3**	**+0.9**
EDC	**Edincik**	**1.60**	**322**	*e*Pn	**Pn**	**02 04 47.3**	**+0.9**
GULT	**Gulveren**	**1.71**	**38**	*e*PN	**Pb**	**02 04 49.1**	**-0.5**
GULT	**Gulveren**	**1.71**	**38**	*e*Pn	**Pb**	**02 04 49.2**	**-0.5**
HRT	**Hereke**	**1.78**	**13**	*e*PN	**Pn**	**02 04 49.9**	**+0.9**
HRT	**Hereke**	**1.78**	**13**	*e*Pn	**Pn**	**02 04 49.9**	**+0.9**
SPNC	**Sapanca-Adapaz**	**1.83**	**29**	*e*PN	**Pb**	**02 04 51.0**	**-0.7**
SPNC	**Sapanca-Adapaz**	**1.83**	**29**	*e*Pn	**Pb**	**02 04 51.0**	**-0.7**
SVRH	**Sivrihisar-ESK**	**1.89**	**78**	*e*PN	**Pn**	**02 04 51.5**	**+1.0**
SVRH	**Sivrihisar-ESK**	**1.89**	**78**	*e*Pn	**Pn**	**02 04 51.5**	**+1.0**
ISK	**Istanbul-Kandi**	**1.98**	**358**	*e*PN	**Pn**	**02 04 53.1**	**+1.5**
ISK	**Istanbul-Kandi**	**1.98**	**358**	*e*Pn	**Pn**	**02 04 53.1**	**+1.5**

*ISCJB **29** 02:05:49.9±0.8, 25°.1S±0°.1×177°.2W±0°.2, h126km, mb3.8/4, Error ellipse: s-maj=24.7km s-min=14.5km az=24.6*
*IDC **29** 02:05:49.9±4.2, 25°.06S×177°.24W, h105km±42km, mb3.5/4, mb1 3.8/6, mb1mx3.6/31, mbtmp4.1/6, Error ellipse: s-maj=30.9km s-min=28.9km az=177.0*

ISC 29 02:05:51.2±0.9, 25°.1S±0°.1×177°.2W±0°.2, h126km, n9, σ0s82/10, mb3.7/4, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**12.22**	**26**	P	**Pn**	**02 08 40.8**	**-0.5**
	3.1nm,0.3s,baz=207,slow=16,SNR=3.5						
AFI				S	Sn	02 10 46.9	-9.1
	1.5nm,0.3s,baz=37,slow=17,SNR=3.8						
URZ	**Urewera**	**14.00**	**199**	P	**Pn**	**02 09 03.0**	**-1.1**
	0.8nm,0.3s,baz=0.0,slow=3.0,SNR=5.0						
URZ				S	Sn	02 11 20.3	-18
	1.2nm,0.3s,baz=70,slow=18,SNR=9.1						
STKA	**Stephens Creek**	**36.71**	**250**	P	**P**	**02 12 46.0**	**-0.3**
	1.4nm,0.3s,baz=86,slow=13,SNR=5.4						
ASAR	**Alice Springs**	**44.40**	**261**	P	**P**	**02 13 50.0**	**+0.4**
	0.7nm,0.4s,baz=90,slow=6.9,SNR=16						
WRA	**Warramunga Arr**	**44.90**	**266**	P	**P**	**02 13 54.0**	**+0.3**
	0.6nm,0.7s,baz=103,slow=8.2,SNR=5.9						
VNDA	**Vanda**	**53.44**	**186**	P	**P**	**02 14 58.6**	**+0.9**
	0.4nm,0.5s,baz=4.8,slow=6.8,SNR=5.4						
SNAA	**Sanae**	**83.43**	**178**	P	**P**	**02 18 04.3**	**0.0**
VNA3	**Neumayer Olymp**	**83.54**	**176**	P	**P**	**02 18 04.2**	**-0.6**
TORD	**Torodi Ar. Bea**	**168.08**	**175**	PKP	**PKPdf**	**02 25 43.6**	**0.0**
	0.3nm,0.7s,baz=236,slow=2.6,SNR=2.8						
TORD				PKPab	**PKPab**	**02 26 52.9**	**+1.3**
	0.3nm,0.6s,baz=171,slow=3.9,SNR=4.9						

*DDA **29** 02:06:14.8, 39°.13N×29°.09E, h7km, Md2.6*
*ISCJB **29** 02:06:15.3±0.5, 39°.07N±0°.04×29°.10E±0°.04, h9km, Error ellipse: s-maj=5.4km s-min=4.1km az=172.9*
*ISK **29** 02:06:15.0, 39°.08N×29°.12E, h5km, MD2.7*
*CSEM **29** 02:06:15.2±0.1, 39°.10N×29°.11E, h2km, MD2.6, Error ellipse: s-maj=2.8km s-min=2.5km az=116.0*

ISC 29 02:06:15.6±0.8, 39°.11N±0°.03×29°.10E±0°.02, h9km, n43, σ0s81/49, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.29**	**94**	P	**Pg**	**02 06 21.1**	**-0.5**
GDZ				S	**Sg**	**02 06 25.7**	**+0.1**
GDZ	**Gediz**	**0.29**	**94**	*i* P	**Pg**	**02 06 21.1**	**-0.5**
GDZ				*i* S	**Sg**	**02 06 25.7**	**+0.1**
DEMI	**Demirci**	**0.31**	**258**	P	**Pg**	**02 06 21.2**	**-0.6**
DEMI				S	**Sg**	**02 06 25.5**	**-0.4**
DEMI	**Demirci**	**0.31**	**258**	*i* P	**Pg**	**02 06 21.2**	**-0.6**
DEMI				*i* S	**Sg**	**02 06 25.5**	**-0.4**
TVSB	**Tavsanli**	**0.44**	**39**	*e*PG	**Pg**	**02 06 23.6**	**-0.7**
TVSB	**Tavsanli**	**0.44**	**39**	*e*Pg	**Pg**	**02 06 23.6**	**-0.7**
KULA	**Kula-Manisa**	**0.69**	**210**	*e*PG	**Pg**	**02 06 28.1**	**-0.8**
KULA	**Kula-Manisa**	**0.69**	**210**	*e*Pg	**Pg**	**02 06 28.1**	**-0.8**
KHAL	**Karahalli**	**0.80**	**157**	P	**Pg**	**02 06 30.8**	**-0.2**
KHAL	**Karahalli**	**0.80**	**157**	*i* P	**Pg**	**02 06 30.8**	**-0.2**
KHL	**Karahalli**	**0.85**	**157**	*e*PG	**Pg**	**02 06 31.2**	**-0.9**
KHL	**Karahalli**	**0.85**	**157**	*e*Pg	**Pg**	**02 06 31.2**	**-0.9**
ORLT	**Orhaneli**	**0.95**	**350**	*e*PG	**Pb**	**02 06 34.1**	**-0.2**
ORLT	**Orhaneli**	**0.95**	**350**	*e*Pg	**Pb**	**02 06 34.1**	**-0.2**
AKS	**Akhisar**	**1.03**	**257**	*e*PG	**Pb**	**02 06 35.7**	**0.0**
AKS	**Akhisar**	**1.03**	**257**	*e*Pg	**Pb**	**02 06 35.7**	**0.0**
BALB	**Balikesir**	**1.08**	**300**	*e*PN	**Pn**	**02 06 36.7**	**-0.3**
BALB				*e*SN	**Sn**	**02 06 52.3**	**+0.1**
BALB	**Balikesir**	**1.08**	**300**	*e*Pn	**Pn**	**02 06 36.7**	**-0.3**
BALB				*e*Sn	**Sn**	**02 06 52.3**	**+0.1**
IGD	**Bursa**	**1.16**	**4**	*i* P	**Pb**	**02 06 36.3**	**-1.5**
CAVI	**Cavuskoy**	**1.23**	**27**	*e*PN	**Pg**	**02 06 39.4**	**+0.1**
CAVI	**Cavuskoy**	**1.23**	**27**	*e*Pn	**Pg**	**02 06 39.4**	**+0.1**
IZI	**Iznik**	**1.26**	**13**	*e*PN	**Pb**	**02 06 39.6**	**0.0**
IZI	**Iznik**	**1.26**	**13**	*e*Pn	**Pb**	**02 06 39.6**	**0.0**
MDNY	**Mudanya-Bursa**	**1.27**	**352**	*e*PN	**Pg**	**02 06 40.4**	**+0.4**
MDNY	**Mudanya-Bursa**	**1.27**	**352**	*e*Pn	**Pg**	**02 06 40.4**	**+0.4**
KCTX	**Karacabey (Bur**	**1.29**	**334**	*e*PN	**Pg**	**02 06 40.4**	**0.0**
KCTX	**Karacabey (Bur**	**1.29**	**334**	*e*Pn	**Pg**	**02 06 40.4**	**0.0**
BORA	**Eskisehir**	**1.30**	**53**	P	**Pn**	**02 06 39.4**	**-0.6**
BORA	**Eskisehir**	**1.30**	**53**	*i* P	**Pn**	**02 06 39.4**	**-0.6**
BALY	**Balya**	**1.31**	**299**	*i* P	**Sn**	**02 06 59.3**	**+1.4**
ADVT	**Abdulvahap**	**1.41**	**20**	*e*PN	**Pb**	**02 06 42.3**	**+0.2**
ADVT	**Abdulvahap**	**1.41**	**20**	*e*Pn	**Pb**	**02 06 42.3**	**+0.2**
DNZL	**Cakiroluk**	**1.42**	**182**	*i* P	**Sn**	**02 07 04.8**	**+4.2**
GONE	**Gonen-Balikesi**	**1.44**	**311**	*e*PN	**Pb**	**02 06 42.8**	**+0.2**
GONE	**Gonen-Balikesi**	**1.44**	**311**	*e*Pn	**Pb**	**02 06 42.8**	**+0.2**
ARMT	**Armutlu**	**1.47**	**353**	*e*PN	**Pb**	**02 06 43.1**	**0.0**
ARMT	**Armutlu**	**1.47**	**353**	*e*Pn	**Pb**	**02 06 43.1**	**0.0**
EDC	**Edincik**	**1.56**	**323**	*e*PN	**Pb**	**02 06 44.4**	**-0.3**
EDC	**Edincik**	**1.56**	**323**	*e*Pn	**Pb**	**02 06 44.4**	**-0.3**
GULT	**Gulveren**	**1.71**	**39**	*e*PN	**Pb**	**02 06 46.8**	**-0.5**
GULT	**Gulveren**	**1.71**	**39**	*e*Pn	**Pb**	**02 06 46.8**	**-0.5**
HRT	**Hereke**	**1.76**	**14**	*e*PN	**Pb**	**02 06 47.8**	**-0.4**
HRT	**Hereke**	**1.76**	**14**	*e*Pn	**Pb**	**02 06 47.8**	**-0.4**

*ISK **29** 02:06:53.9, 39°.07N×29°.10E, h5km, MD3.1*
*ISCJB **29** 02:06:55.3±0.4, 39°.07N±0°.03×29°.09E±0°.03, h9km, Error ellipse: s-maj=4.5km s-min=3.5km az=145.7*
*DDA **29** 02:06:55.1, 39°.10N×29°.10E, h7km, Md3.0*
*CSEM **29** 02:06:55.2±0.1, 39°.10N×29°.09E, h2km, MD3.0, Error ellipse: s-maj=3.1km s-min=2.5km az=121.0*

ISC 29 02:06:55.2±0.8, 39°.10N±0°.02×29°.10E±0°.02, h9km, n56, σ0s55/63, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.29**	**91**	P	**Pg**	**02 07 01.2**	**0.0**
GDZ				S	**Sg**	**02 07 05.8**	**+0.6**
GDZ	**Gediz**	**0.29**	**91**	*i* P	**Pg**	**02 07 01.2**	**0.0**
GDZ				*i* S	**Sg**	**02 07 05.8**	**+0.6**
DEMI	**Demirci**	**0.30**	**260**	P	**Pg**	**02 07 01.1**	**-0.2**
DEMI				S	**Sg**	**02 07 05.4**	**0.0**
DEMI	**Demirci**	**0.30**	**260**	*i* P	**Pg**	**02 07 01.1**	**-0.2**
DEMI				*i* S	**Sg**	**02 07 05.5**	**0.0**
TVSB	**Tavsanli**	**0.45**	**38**	*e*PG	**Pg**	**02 07 03.5**	**-0.6**
TVSB	**Tavsanli**	**0.45**	**38**	*e*Pg	**Pg**	**02 07 03.5**	**-0.6**
KULA	**Kula-Manisa**	**0.67**	**211**	*e*PG	**Pg**	**02 07 07.7**	**-0.6**
KULA				*e*SG	**Sg**	**02 07 16.9**	**-0.2**
KULA	**Kula-Manisa**	**0.67**	**211**	*e*Pg	**Pg**	**02 07 07.7**	**-0.6**
KULA				*e*Sg	**Sg**	**02 07 16.9**	**-0.2**
KHAL	**Karahalli**	**0.79**	**157**	P	**Pg**	**02 07 10.6**	**+0.2**
KHAL	**Karahalli**	**0.79**	**157**	*i* P	**Pg**	**02 07 10.6**	**+0.2**
KHL	**Karahalli**	**0.84**	**157**	*e*PG	**Pg**	**02 07 11.0**	**-0.4**
KHL	**Karahalli**	**0.84**	**157**	*e*Pg	**Pg**	**02 07 11.0**	**-0.4**
ORLT	**Orhaneli**	**0.96**	**351**	*e*PG	**Pb**	**02 07 14.1**	**0.0**
ORLT	**Orhaneli**	**0.96**	**351**	*e*Pg	**Pb**	**02 07 14.1**	**0.0**
AKHS	**Akhisar**	**1.03**	**258**	P	**Pn**	**02 07 15.8**	**0.0**
AKHS	**Akhisar**	**1.03**	**258**	*i* P	**Pn**	**02 07 15.8**	**0.0**
AKS	**Akhisar**	**1.03**	**258**	*e*PG	**Pg**	**02 07 14.4**	**-0.6**
AKS	**Akhisar**	**1.03**	**258**	*e*Pg	**Pg**	**02 07 14.4**	**-0.6**
BALB	**Balikesir**	**1.09**	**300**	*e*PN	**Pb**	**02 07 16.2**	**0.0**
BALB				*e*SN	**Sn**	**02 07 32.4**	**+0.5**
BALB	**Balikesir**	**1.09**	**300**	*e*Pn	**Pb**	**02 07 16.3**	**0.0**
BALB				*e*Sn	**Sn**	**02 07 32.4**	**+0.5**
IGD	**Bursa**	**1.17**	**4**	*i* P	**Pb**	**02 07 16.4**	**-1.3**
CAVI	**Cavuskoy**	**1.25**	**27**	*e*PN	**Pn**	**02 07 18.6**	**-0.2**
CAVI	**Cavuskoy**	**1.25**	**27**	*e*Pn	**Pn**	**02 07 18.6**	**-0.2**
IZI	**Iznik**	**1.27**	**13**	*e*PN	**Pg**	**02 07 19.7**	**0.0**
IZI	**Iznik**	**1.27**	**13**	*e*Pn	**Pg**	**02 07 19.7**	**0.0**
MDNY	**Mudanya-Bursa**	**1.28**	**353**	*e*PN	**Pb**	**02 07 19.7**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.28**	**353**	*e*Pn	**Pb**	**02 07 19.7**	**+0.1**
KCTX	**Karacabey (Bur**	**1.30**	**334**	*e*PN	**Pb**	**02 07 20.0**	**+0.1**
KCTX	**Karacabey (Bur**	**1.30**	**334**	*e*Pn	**Pb**	**02 07 20.0**	**+0.1**
GEMT	**Gemlik**	**1.34**	**3**	*e*PN	**Pg**	**02 07 21.1**	**+0.1**
GEMT	**Gemlik**	**1.34**	**3**	*e*Pn	**Pg**	**02 07 21.1**	**+0.1**
ADVT	**Abdulvahap**	**1.42**	**20**	*e*PN	**Pb**	**02 07 22.0**	**0.0**
ADVT	**Abdulvahap**	**1.42**	**20**	*e*Pn	**Pb**	**02 07 22.0**	**0.0**
GONE	**Gonen-Balikesi**	**1.45**	**311**	*e*PN	**Pb**	**02 07 22.1**	**-0.3**
GONE	**Gonen-Balikesi**	**1.45**	**311**	*e*Pn	**Pb**	**02 07 22.1**	**-0.3**
ARMT	**Armutlu**	**1.48**	**353**	*e*PN	**Pb**	**02 07 22.6**	**-0.3**
ARMT	**Armutlu**	**1.48**	**353**	*e*Pn	**Pb**	**02 07 22.6**	**-0.3**
GPA	**Golpazari**	**1.51**	**38**	*e*PN	**Pb**	**02 07 23.6**	**+0.2**
GPA	**Golpazari**	**1.51**	**38**	*e*Pn	**Pb**	**02 07 23.7**	**+0.2**
EDC	**Edincik**	**1.57**	**323**	*e*PN	**Pb**	**02 07 24.0**	**-0.5**
EDC	**Edincik**	**1.57**	**323**	*e*Pn	**Pb**	**02 07 24.0**	**-0.5**
KNL	**Bal¯–kesir**	**1.69**	**315**	*i* P	Pn	02 07 09.2	-16
AYDN	**Tasoluk**	**1.72**	**214**	P	**Pb**	**02 07 27.5**	**+0.4**
AYDN	**Tasoluk**	**1.72**	**214**	*i* P	**Pb**	**02 07 27.5**	**+0.4**
GULT	**Gulveren**	**1.72**	**39**	*e*PN	**Pb**	**02 07 26.6**	**-0.4**
GULT	**Gulveren**	**1.72**	**39**	*e*Pn	**Pb**	**02 07 26.7**	**-0.4**
HRT	**Hereke**	**1.78**	**14**	*e*PN	**Pb**	**02 07 27.2**	**-0.8**
HRT	**Hereke**	**1.78**	**14**	*e*Pn	**Pb**	**02 07 27.2**	**-0.8**
SPNC	**Sapanca-Adapaz**	**1.84**	**30**	*e*PN	**Pb**	**02 07 28.3**	**-0.8**
SPNC	**Sapanca-Adapaz**	**1.84**	**30**	*e*Pn	**Pb**	**02 07 28.3**	**-0.8**
SVRH	**Sivrihisar-ESK**	**1.91**	**79**	*e*PN	**Pb**	**02 07 29.4**	**-1.0**
SVRH	**Sivrihisar-ESK**	**1.91**	**79**	*e*Pn	**Pb**	**02 07 29.4**	**-1.0**
ISK	**Istanbul-Kandi**	**1.97**	**359**	*e*PN	**Pn**	**02 07 29.9**	**+1.1**
ISK	**Istanbul-Kandi**	**1.97**	**359**	*e*Pn	**Pn**	**02 07 29.9**	**+1.1**
SILT	**Sile**	**2.10**	**11**	*e*PN	**Pb**	**02 07 32.0**	**-1.4**
SILT	**Sile**	**2.10**	**11**	*e*Pn	**Pb**	**02 07 32.0**	**-1.4**

MEX 29 02:07:10.4±0.9, 15°.40N×92°.88W, h106km±13km, MD3.7, Mexico-Guatemala border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		**0.44**	**313**	*i* P	Pn	02 07 24.7	-1.7
PCIG				*e*S	Sn	02 07 37.1	-1.3
CCIG	**Comitan**	**1.13**	**39**	*e*P	Pn	02 07 32.3	-0.6
CCIG				*e*S	Sn	02 07 47.5	-2.3
TGIG		**1.39**	**351**	*e*P	Pn	02 07 34.8	-0.9
TGIG				*e*S	Sn	02 07 53.0	-1.9

*ISK **29** 02:08:59.9, 39°.12N×29°.14E, h5km, MD2.7*
*ISCJB **29** 02:09:01.0±0.5, 39°.10N±0°.03×29°.09E±0°.04, h9km, Error ellipse: s-maj=5.1km s-min=4.3km az=153.3*
*DDA **29** 02:09:00.7, 39°.10N×29°.08E, h7km, Md2.3*
*CSEM **29** 02:09:00.9±0.1, 39°.12N×29°.08E, h5km, MD2.3, Error ellipse: s-maj=2.7km s-min=2.3km az=101.0*

ISC 29 02:09:01.2±0.9, 39°.12N±0°.03×29°.09E±0°.03, h9km, n24, σ0s33/32, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.30**	**255**	P	**Pg**	**02 09 06.9**	**-0.4**
DEMI				S	**Sg**	**02 09 10.9**	**-0.3**
DEMI	**Demirci**	**0.30**	**255**	*i* P	**Pg**	**02 09 06.9**	**-0.4**
DEMI				*i* S	**Sg**	**02 09 10.9**	**-0.3**
GDZ	**Gediz**	**0.31**	**96**	P	**Pg**	**02 09 07.3**	**-0.1**
GDZ				S	**Sg**	**02 09 11.8**	**+0.3**
GDZ	**Gediz**	**0.31**	**96**	*i* P	**Pg**	**02 09 07.3**	**-0.1**
GDZ				*i* S	**Sg**	**02 09 11.8**	**+0.3**
TVSB	**Tavsanli**	**0.44**	**41**	*e*PG	**Pg**	**02 09 09.0**	**-0.9**
TVSB				*e*SG	**Sg**	**02 09 15.8**	**+0.1**
TVSB	**Tavsanli**	**0.44**	**41**	*e*Pg	**Pg**	**02 09 09.0**	**-0.9**
TVSB				*e*Sg	**Sg**	**02 09 15.8**	**+0.1**
KULA	**Kula-Manisa**	**0.69**	**209**	*e*PG	**Pg**	**02 09 14.5**	**-0.1**
KULA	**Kula-Manisa**	**0.69**	**209**	*e*Pg	**Pg**	**02 09 14.5**	**-0.1**
KHAL	**Karahalli**	**0.81**	**157**	P	**Pg**	**02 09 16.9**	**0.0**
KHAL				S	**Sg**	**02 09 27.4**	**-0.1**
KHAL	**Karahalli**	**0.81**	**157**	*i* P	**Pg**	**02 09 16.9**	**0.0**
KHAL				*i* S	**Sg**	**02 09 27.4**	**-0.1**
KHL	**Karahalli**	**0.86**	**157**	*e*PG	**Pg**	**02 09 17.4**	**-0.5**
KHL	**Karahalli**	**0.86**	**157**	*e*Pg	**Pg**	**02 09 17.4**	**-0.5**
BALB	**Balikesir**	**1.07**	**299**	*e*PN	**Pg**	**02 09 21.9**	**+0.1**
BALB	**Balikesir**	**1.07**	**299**	*e*Pn	**Pg**	**02 09 21.9**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.26**	**353**	*e*PN	**Pn**	**02 09 25.1**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.26**	**353**	*e*Pn	**Pn**	**02 09 25.1**	**+0.1**
KCTX	**Karacabey (Bur**	**1.28**	**334**	*e*PN	**Pg**	**02 09 25.9**	**+0.1**
KCTX	**Karacabey (Bur**	**1.28**	**334**	*e*Pn	**Pg**	**02 09 25.9**	**+0.1**
BORA	**Eskisehir**	**1.30**	**54**	P	**Pn**	**02 09 25.9**	**+0.2**
BORA	**Eskisehir**	**1.30**	**54**	*i* P	**Pn**	**02 09 25.9**	**+0.2**
ARMT	**Armutlu**	**1.46**	**353**	*e*PN	**Pb**	**02 09 28.5**	**0.0**
ARMT	**Armutlu**	**1.46**	**353**	*e*Pn	**Pb**	**02 09 28.5**	**0.0**
GULT	**

1.5nm,0.6s,baz=196,slow=10,SNR=5.3
MMAI Mount Meron Ar 25.13 321 LR LR 02 29 16.7
comp=Z,14nm,20.4s,baz=265,slow=35
H08N2 Diego Garcia H 26.59 139 T T 02 47 52.6
baz=320,slow=76,SNR=5.5
H08N3 Diego Garcia H 26.60 139 T T 02 47 52.2
baz=320,slow=76,SNR=4.5
H08N1 Diego Garcia H 26.61 139 T T 02 47 51.1
baz=320,slow=76,SNR=5.9
MKAR Makanchi Array 40.33 30 P P 02 22 14.1 +0.6
0.4nm,0.5s,baz=211,slow=9.6,SNR=4.0
TORD Torodi Ar. Bea 50.53 275 P P 02 23 34.8 0.0
0.9nm,0.9s,baz=89,slow=6.7,SNR=7.6
FINES FINESS Array B 51.24 343 P P 02 23 39.0 -0.4
0.6nm,0.5s,baz=165,slow=7.9,SNR=6.5
SONM Songino Array 54.79 41 LR 02 50 58.4
comp=Z,18nm,18.7s,baz=164,slow=40
ESDC Sonseca Array 56.34 308 P P 02 24 16.9 -0.3
0.3nm,0.4s,baz=91,slow=6.2,SNR=11
H01W3 Cape Leeuwin H 75.17 132 T T 03 48 35.6
baz=298
H01W2 Cape Leeuwin H 75.18 132 T T 03 48 35.0
baz=298
H01W1 Cape Leeuwin H 75.19 132 T T 03 48 34.7
baz=298
WRA Warramunga Arr 86.15 112 P P 02 27 17.4 -0.3
0.4nm,0.4s,baz=295,slow=4.0,SNR=5.1
ASAR Alice Springs 86.83 115 P P 02 27 20.6 -0.4
0.3nm,0.6s,baz=287,slow=5.2,SNR=5.8

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*CSEM **29** 02:17:53.4±0.1,38°.48N×33°.82E,h2km,MD2.9,Error ellipse: s-maj=3.7km s-min=3.3km az=13.0*
*DDA **29** 02:17:53.3,38°.48N×33°.86E,h7km,Md2.9*
*ISK **29** 02:17:53.3,38°.50N×33°.79E,h8km,MD2.9*
ISC 29 02:17:53.2±1.1,38°.49N±0°.02×33°.85E±0°.03,h5km±10km, n43,σ0°46/55,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKSY	**AKSARAY - Alti**	**0.18**	**337**	P	**Pg**	**02 17 57.4**	**+0.6**
AKSY	**AKSARAY - Alti**	**0.18**	**337**	*i* P	**Pg**	**02 17 57.4**	**+0.6**
SERE	**Sereflikochisa**	**0.51**	**334**	*e*PG	**Pg**	**02 18 03.1**	**0.0**
SERE				*e*SG	**Sg**	**02 18 10.0**	**+0.2**
SERE	**Sereflikochisa**	**0.51**	**334**	*e*Sg	**Sg**	**02 18 10.0**	**+0.2**
NIG	**Nigde**	**0.70**	**122**	*e*PG	**Pb**	**02 18 08.4**	**+0.2**
NIG	**Nigde**	**0.70**	**122**	*e*Pg	**Pb**	**02 18 08.4**	**+0.2**
YESY	**Yesilyurt**	**0.71**	**187**	*e*PG	**Pg**	**02 18 07.1**	**+0.3**
CHBY	**Cihanbeyli**	**0.76**	**278**	*e*PG	**Pg**	**02 18 07.6**	**-0.2**
CHBY	**Cihanbeyli**	**0.76**	**278**	*e*Pg	**Pg**	**02 18 07.6**	**-0.2**
AVNS	**Nevsehir-Avano**	**0.84**	**67**	P	**Pg**	**02 18 09.2**	**-0.3**
AVNS				S	**Sb**	**02 18 21.8**	**-0.3**
AVNS	**Nevsehir-Avano**	**0.84**	**67**	*i* P	**Pg**	**02 18 09.2**	**-0.3**
AVNS				*i* S	**Sb**	**02 18 21.8**	**-0.3**
KAMT	**Kaman**	**0.89**	**353**	*e*PG	**Pg**	**02 18 10.2**	**-0.1**
KAMT	**Kaman**	**0.89**	**353**	*e*Pg	**Pg**	**02 18 10.2**	**-0.1**
KKUL	**Konya-Kulu**	**1.00**	**314**	P	**Pg**	**02 18 12.6**	**+0.2**
KKUL	**Konya-Kulu**	**1.00**	**314**	*i* P	**Pg**	**02 18 12.6**	**+0.2**
KERG	**Konya-Eregli**	**1.09**	**168**	P	**Pg**	**02 18 14.1**	**0.0**
KERG				S	**Sg**	**02 18 27.6**	**-0.7**
KERG	**Konya-Eregli**	**1.09**	**168**	*i* P	**Pg**	**02 18 14.1**	**0.0**
KERG				*i* S	**Sg**	**02 18 27.6**	**-0.7**
AFSR	**Af´ar-Bala (A**	**1.14**	**328**	*e*PN	**Pg**	**02 18 15.1**	**0.0**
AFSR	**Af´ar-Bala (A**	**1.14**	**328**	*e*Pn	**Pg**	**02 18 15.1**	**0.0**
BBAL	**Bala**	**1.20**	**332**	P	**Pg**	**02 18 16.2**	**0.0**
BBAL				S	**Sn**	**02 18 33.4**	**0.0**
BBAL	**Bala**	**1.20**	**332**	*i* P	**Pg**	**02 18 16.2**	**0.0**
BBAL				*i* S	**Sn**	**02 18 33.4**	**0.0**
LADK	**Ladik-KONYA**	**1.20**	**257**	*e*PN	**Pg**	**02 18 15.9**	**-0.4**
LADK	**Ladik-KONYA**	**1.20**	**257**	*e*Pn	**Pg**	**02 18 15.9**	**-0.4**
KONT	**Konya--Tatoy**	**1.29**	**246**	*e*PN	**Pg**	**02 18 18.2**	**+0.2**
KONT	**Konya--Tatoy**	**1.29**	**246**	*e*Pn	**Pg**	**02 18 18.2**	**+0.2**
KDHN	**Kadinhani**	**1.36**	**272**	P	**Pn**	**02 18 18.8**	**-0.1**
KDHN				S	**Sn**	**02 18 37.7**	**+0.3**
KDHN	**Kadinhani**	**1.36**	**272**	*i* P	**Pn**	**02 18 18.8**	**-0.1**
KDHN				*i* S	**Sn**	**02 18 37.7**	**+0.3**
KMER	**Konya-Meram**	**1.37**	**239**	P	**Pg**	**02 18 19.6**	**+0.1**
KMER				S	**Sn**	**02 18 38.6**	**+1.0**
KMER	**Konya-Meram**	**1.37**	**239**	*i* P	**Pg**	**02 18 19.6**	**+0.1**
KMER				*i* S	**Sn**	**02 18 38.6**	**+1.0**
KARA	**Karaisali**	**1.55**	**142**	*e*PN	**Pb**	**02 18 22.3**	**-0.1**
KARA	**Karaisali**	**1.55**	**142**	*e*Pn	**Pb**	**02 18 22.3**	**-0.1**
KIZT	**Kizilcal**	**1.59**	**285**	*e*PN	**Pn**	**02 18 21.3**	**-0.9**
KIZT	**Kizilcal**	**1.59**	**285**	*e*Pn	**Pn**	**02 18 21.3**	**-0.9**
BNN	**Bunyan**	**1.60**	**76**	*e*PN	**Pb**	**02 18 23.5**	**+0.1**
BNN	**Bunyan**	**1.60**	**76**	*e*Pn	**Pb**	**02 18 23.5**	**+0.1**
CORM	**Corum**	**1.80**	**19**	*e*PN	**Pb**	**02 18 26.1**	**-0.6**
CORM	**Corum**	**1.80**	**19**	*e*Pn	**Pb**	**02 18 26.1**	**-0.6**
CUSAR	**Sarkisla-SIVAS**	**2.09**	**63**	P	**Pb**	**02 18 30.8**	**-0.8**
CUSAR	**Sarkisla-SIVAS**	**2.09**	**63**	*i* P	**Pb**	**02 18 30.8**	**-0.8**
CUSAR				*i* S	**Sg**	**02 19 00.7**	**+0.4**
SUTC	**Sutluce-Ispart**	**2.47**	**247**	*e*PN	**Pn**	**02 18 34.6**	**+0.4**
SUTC	**Sutluce-Ispart**	**2.47**	**247**	*e*Pn	**Pn**	**02 18 34.6**	**+0.4**
TOS	**Tosya**	**2.55**	**3**	*e*PN	**Pn**	**02 18 36.2**	**+0.9**
TOS	**Tosya**	**2.55**	**3**	*e*Pn	**Pn**	**02 18 36.2**	**+0.9**

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*CSEM **29** 02:18:44.1,39°.02N×29°.20E,h10km,MD2.6*
ISK 29 02:18:44.1,39°.02N×29°.20E,h10km,MD2.6,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TVSB	**Tavsanli**	**0.47**	**25**	*e*PG	Pg	02 18 53.9	+0.6
TVSB				*e*SG	Sb	02 19 00.7	-0.9
TVSB	**Tavsanli**	**0.47**	**25**	*e*Pg	Pg	02 18 53.9	+0.5
TVSB				*e*Sg	Sb	02 19 00.7	-1.0
KULA	**Kula-Manisa**	**0.66**	**220**	*e*PG	Pb	02 18 57.4	-0.4
KULA				*e*SG	Sb	02 19 06.9	-0.2
KULA	**Kula-Manisa**	**0.66**	**220**	*e*Pg	Pb	02 18 57.4	-0.4
KULA				*e*Sg	Sb	02 19 06.9	-0.1
KCTX	**Karacabey (Bur**	**1.40**	**333**	*e*PN	Pb	02 19 10.3	-0.1
KCTX	**Karacabey (Bur**	**1.40**	**333**	*e*Pn	Pb	02 19 10.3	-0.1
ARMT	**Armutlu**	**1.56**	**350**	*e*PN	Pb	02 19 12.9	-0.2
ARMT	**Armutlu**	**1.56**	**350**	*e*Pn	Pb	02 19 12.9	-0.3

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*CSEM **29** 02:19:39.9,38°.53N×33°.72E,h6km,MD2.8*
ISK 29 02:19:39.9,38°.53N×33°.72E,h6km,MD2.8,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SERE	**Sereflikochisa**	**0.43**	**344**	*e*PG	Pg	02 19 48.9	+0.6
SERE				*e*SG	Sg	02 19 55.2	+1.2
SERE	**Sereflikochisa**	**0.43**	**344**	*e*Pg	Pg	02 19 48.9	+0.6
SERE				*e*Sg	Sg	02 19 55.2	+1.2
CHBY	**Cihanbeyli**	**0.65**	**275**	*e*PG	Pg	02 19 52.9	+0.5
CHBY	**Cihanbeyli**	**0.65**	**275**	*e*Pg	Pg	02 19 52.9	+0.5
YESY	**Yesilyurt**	**0.75**	**178**	*e*PG	Pg	02 19 54.6	+0.4
YESY	**Yesilyurt**	**0.75**	**178**	*e*Pg	Pg	02 19 54.6	+0.4
AFSR	**Af´ar-Bala (A**	**1.04**	**331**	*e*PG	Pb	02 20 00.3	-0.2
AFSR	**Af´ar-Bala (A**	**1.04**	**331**	*e*Pg	Pb	02 20 00.3	-0.2
LADK	**Ladik-KONYA**	**1.11**	**253**	*e*PN	Pg	02 20 01.3	+0.1
LADK	**Ladik-KONYA**	**1.11**	**253**	*e*Pn	Pg	02 20 01.3	+0.1
KONT	**Konya--Tatoy**	**1.22**	**242**	*e*PN	Pn	02 20 03.7	+0.2
KONT	**Konya--Tatoy**	**1.22**	**242**	*e*Pn	Pn	02 20 03.7	+0.2
CORM	**Corum**	**1.79**	**23**	*e*PN	Pn	02 20 12.2	+0.6
CORM	**Corum**	**1.79**	**23**	*e*Pn	Pn	02 20 12.2	+0.7

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*DDA **29** 02:27:48.8,39°.09N×28°.99E,h7km,Md3.0*
*ISK **29** 02:27:48.7,39°.08N×28°.97E,h4km,MD2.9*
*ISCJB **29** 02:27:49.3±0.4,39°.08N±0°.03×28°.98E±0°.04,h9km,Error ellipse: s-maj=4.3km s-min=4.0km az=14.7*
*CSEM **29** 02:27:49.2±0.1,39°.09N×28°.99E,h2km,MD3.0,Error ellipse: s-maj=2.0km s-min=1.8km az=18.0*
ISC 29 02:27:49.3±0.8,39°.09N±0°.03×28°.99E±0°.02,h9km,n56, σ0°57/63,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.22**	**257**	P	**Pg**	**02 27 54.0**	**+0.1**
DEMI				S	**Sg**	**02 27 57.2**	**+0.3**
DEMI	**Demirci**	**0.22**	**257**	*i* P	**Pg**	**02 27 54.0**	**+0.1**
DEMI				*i* S	**Sg**	**02 27 57.2**	**+0.3**
GDZ	**Gediz**	**0.38**	**90**	P	**Pg**	**02 27 56.6**	**-0.2**
GDZ	**Gediz**	**0.38**	**90**	*i* P	**Pg**	**02 27 56.6**	**-0.2**
TVSB	**Tavsanli**	**0.51**	**45**	PG	**Pg**	**02 27 58.7**	**-0.5**
TVSB	**Tavsanli**	**0.51**	**45**	*i* Pg	**Pg**	**02 27 58.7**	**-0.5**
KHAL	**Karahalli**	**0.82**	**151**	P	**Pg**	**02 28 04.9**	**-0.2**
KHAL				S	**Sg**	**02 28 15.7**	**-0.1**
KHAL	**Karahalli**	**0.82**	**151**	*i* P	**Pg**	**02 28 04.9**	**-0.2**
KHAL				*i* S	**Sg**	**02 28 15.7**	**-0.1**
KHL	**Karahalli**	**0.87**	**151**	*e*PG	**Pg**	**02 28 05.9**	**-0.2**
KHL	**Karahalli**	**0.87**	**151**	*e*Pg	**Pg**	**02 28 05.9**	**-0.2**
AKHS	**Akhisar**	**0.94**	**257**	P	**Pg**	**02 28 07.5**	**0.0**
AKHS	**Akhisar**	**0.94**	**257**	*i* P	**Pg**	**02 28 07.5**	**0.0**
AKS	**Akhisar**	**0.94**	**257**	*e*PG	**Pg**	**02 28 06.9**	**-0.5**
AKS	**Akhisar**	**0.94**	**257**	*e*Pg	**Pg**	**02 28 06.9**	**-0.5**
ORLT	**Orhaneli**	**0.95**	**356**	*e*PG	**Pg**	**02 28 07.5**	**-0.2**
ORLT	**Orhaneli**	**0.95**	**356**	*e*Pg	**Pg**	**02 28 07.5**	**-0.2**
BALB	**Balikesir**	**1.02**	**303**	*e*PG	**Pg**	**02 28 08.8**	**-0.2**
BALB				*e*SG	**Sb**	**02 28 22.8**	**+0.1**
BALB	**Balikesir**	**1.02**	**303**	*e*Pg	**Pg**	**02 28 08.8**	**-0.2**
BALB				*e*Sg	**Sb**	**02 28 22.8**	**+0.1**
IGD	**Bursa**	**1.18**	**8**	*i* P	**Pb**	**02 28 10.2**	**-1.7**
IGD				*i* S	**Sb**	**02 28 26.0**	**-1.3**
BALY	**Balya**	**1.25**	**302**	P	**Pn**	**02 28 13.0**	**0.0**
BALY	**Balya**	**1.25**	**302**	*i* P	**Pn**	**02 28 13.0**	**0.0**
KCTX	**Karacabey (Bur**	**1.27**	**337**	*e*PN	**Pb**	**02 28 13.5**	**+0.1**
KCTX	**Karacabey (Bur**	**1.27**	**337**	*e*Pn	**Pb**	**02 28 13.5**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.28**	**356**	*e*PN	**Pn**	**02 28 13.5**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.28**	**356**	*e*Pn	**Pn**	**02 28 13.5**	**+0.2**
CAVI	**Cavuskoy**	**1.29**	**30**	*e*PN	**Pg**	**02 28 14.5**	**+0.5**
CAVI	**Cavuskoy**	**1.29**	**30**	*e*Pn	**Pg**	**02 28 14.5**	**+0.5**
IZI	**Iznik**	**1.30**	**16**	*e*PN	**Pg**	**02 28 14.7**	**+0.5**
IZI	**Iznik**	**1.30**	**16**	*e*Pn	**Pg**	**02 28 14.7**	**+0.5**
GEMT	**Gemlik**	**1.35**	**6**	*e*PN	**Pb**	**02 28 14.9**	**+0.1**
GEMT	**Gemlik**	**1.35**	**6**	*e*Pn	**Pb**	**02 28 14.9**	**+0.1**
GONE	**Gonen-Balikesi**	**1.39**	**314**	*e*PN	**Pb**	**02 28 15.3**	**0.0**
GONE	**Gonen-Balikesi**	**1.39**	**314**	*e*Pn	**Pb**	**02 28 15.4**	**0.0**
ADVT	**Abdulvahap**	**1.46**	**23**	*e*PN	**Pb**	**02 28 17.0**	**+0.4**
ADVT	**Abdulvahap**	**1.46**	**23**	*e*Pn	**Pb**	**02 28 17.0**	**+0.4**
ARMT	**Armutlu**	**1.48**	**356**	*e*PN	**Pb**	**02 28 16.7**	**-0.2**
ARMT	**Armutlu**	**1.48**	**356**	*e*Pn	**Pb**	**02 28 16.7**	**-0.2**
EDC	**Edincik**	**1.53**	**326**	*e*PN	**Pb**	**02 28 17.8**	**0.0**
EDC	**Edincik**	**1.53**	**326**	*e*Pn	**Pb**	**02 28 17.8**	**0.0**
GPA	**Golpazari**	**1.57**	**40**	*e*PN	**Pn**	**02 28 18.0**	**+0.6**
GPA	**Golpazari**	**1.57**	**40**	*e*Pn	**Pn**	**02 28 18.0**	**+0.6**
KNL	**Bal´--kesir**	**1.63**	**317**	*i* P	**Pn**	**02 28 17.6**	**-0.6**
BUY	**Buyukada**	**1.76**	**3**	P	**Pb**	**02 28 21.2**	**-0.6**
BUY	**Buyukada**	**1.76**	**3**	*i* P	**Pb**	**02 28 21.2**	**-0.6**
GULT	**Gulveren**	**1.78**	**41**	*e*PN	**Pb**	**02 28 21.5**	**-0.7**
GULT	**Gulveren**	**1.78**	**41**	*e*Pn	**Pb**	**02 28 21.5**	**-0.7**
HRT	**Hereke**	**1.80**	**17**	*e*PN	**Pb**	**02 28 21.8**	**-0.7**
HRT	**Hereke**	**1.80**	**17**	*e*Pn	**Pb**	**02 28 21.8**	**-0.7**
SPNC	**Sapanca-Adapaz**	**1.89**	**32**	*e*PN	**Pb**	**02 28 23.1**	**-0.8**
SPNC	**Sapanca-Adapaz**	**1.89**	**32**	*e*Pn	**Pb**	**02 28 23.1**	**-0.8**
ISK	**Istanbul-Kandi**	**1.97**	**1**	*e*PN	**Pn**	**02 28 23.9**	**+1.0**
ISK	**Istanbul-Kandi**	**1.97**	**1**	*e*Pn	**Pn**	**02 28 23.9**	**+1.0**
SVRH	**Sivrihisar-ESK**	**2.00**	**79**	*e*PN	**Pn**	**02 28 24.7**	**+1.4**
SVRH	**Sivrihisar-ESK**	**2.00**	**79**	*e*Pn	**Pn**	**02 28 24.7**	**+1.4**
SILT	**Sile**	**2.12**	**13**	*e*PN	**Pn**	**02 28 25.5**	**+0.6**
SILT	**Sile**	**2.12**	**13**	*e*Pn	**Pn**	**02 28 25.5**	**+0.6**

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*NIED **29** 02:27:00,36°.80N×140°.60E,h41km,Mw3.5 Best double couple: M0=2.06000×10^14 NP1:φs=320.00000°,δ36.00000°, λ-161.00000°. NP2:φs=215.00000°,δ79.00000°, λ-55.00000°.*
JMA 29 02:27:50.5,36°.80N×140°.57E,h17km±1km,M3.6,3C-3D Broadband fault plane solution: P waves. NP1: φs=217.00000°,δ89.00000°,λ-56.00000°. **NP2:** φs=308.00000°,δ34.00000°,λ-178.00000°. **Principal axes:** T Plg35.0000°, Azm278.0000°; N Plg34.0000°, Azm36.0000°; P Plg37.0000°, Azm156.0000°; **Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.19**	**180**	⇑P	Pg	02 27 54.9	-0.3
JHO				S	Sg	02 27 58.0	-0.3
ONAJ	**Iwakimizuishiy**	**0.35**	**31**	⇓P	Pg	02 27 57.7	-0.2
ONAJ				S	Sg	02 28 02.8	-0.1
JSB	**Shiboa**	**0.55**	**288**	P	Pb	02 28 01.7	0.0
JFK	**Kawauchi**	**0.62**	**23**	⇓P	Pg	02 28 02.0	-0.7
JYT	**Yasato**	**0.65**	**208**	P	Pg	02 28 02.7	-0.5
JYT				S	Sg	02 28 11.5	-0.3
JFT	**Otama**	**0.74**	**345**	⇓P	Pb	02 28 04.6	-0.4
JFT				S	Sb	02 28 14.5	-0.3
JFY	**Yanaizu**	**0.92**	**311**	P	Pb	02 28 07.7	-0.3
JFY				S	Sb	02 28 20.0	0.0
JAG	**Ashikaga**	**0.97**	**248**	⇑P	Pb	02 28 08.0	-0.9
JKT	**Katashina**	**1.06**	**269**	⇑P	Pb	02 28 09.8	-0.7
JMM	**Marumori**	**1.08**	**9**	P	Pb	02 28 10.0	-0.7
JMM				S	Sb	02 28 24.1	-0.4
MAT	**Matsushiro**	**1.92**	**263**	P	Pn	02 28 23.3	+0.9
MAT				S	Sb	02 28 48.4	-0.3

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*ISK **29** 02:28:05.8,38°.48N×33°.87E,h5km,MD3.0*
*ISCJB **29** 02:28:06.1±0.7,38°.47N±0°.03×33°.86E±0°.04,h1km±7km, Error ellipse: s-maj=5.7km s-min=4.7km az=40.5*
*CSEM **29** 02:28:06.5±0.1,38°.48N×33°.86E,h5km,MD2.9,Error ellipse: s-maj=3.5km s-min=3.2km az=51.0*
*DDA **29** 02:28:06.6,38°.50N×33°.85E,h7km,Md2.9*
ISC 29 02:28:06.2±1.0,38°.48N±0°.03×33°.90E±0°.03,h10km±8km, n36,σ0°36/48,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKSY	**AKSARAY - Alti**	**0.20**	**327**	P	**Pg**	**02 28 10.5**	**0.0**
AKSY				S	**Sg**	**02 28 13.2**	**-0.2**
AKSY	**AKSARAY - Alti**	**0.20**	**327**	*i* P	**Pg**	**02 28 10.5**	**0.0**
AKSY				*i* S	**Sg**	**02 28 13.2**	**-0.2**
SERE	**Sereflikochisa**	**0.53**	**331**	*e*PG	**Pg**	**02 28 16.5**	**-0.1**
SERE				*e*SG	**Sg**	**02 28 24.3**	**+0.7**
SERE	**Sereflikochisa**	**0.53**	**331**	*e*Pg	**Pg**	**02 28 16.5**	**-0.1**
SERE				*e*Sg	**Sg**	**02 28 24.3**	**+0.7**
YESY	**Yesilyurt**	**0.71**	**190**	*e*PG	**Pg**	**02 28 19.7**	**-0.2**
YESY	**Yesilyurt**	**0.71**	**190**	*e*Pg	**Pg**	**02 28 19.7**	**-0.2**
CHBY	**Cihanbeyli**	**0.80**	**277**	*e*PG	**Pg**	**02 28 21.4**	**-0.2**
CHBY	**Cihanbeyli**	**0.80**	**277**	*e*Pg	**Pg**	**02 28 21.4**	**-0.2**
AVNS	**Nevsehir-Avano**	**0.81**	**66**	P	**Pg**	**02 28 21.9**	**+0.1**
AVNS				S	**Sn**	**02 28 34.9**	**-0.9**
AVNS	**Nevsehir-Avano**	**0.81**	**66**	*i* P	**Pg**	**02 28 21.9**	**+0.1**
AVNS				*i* S	**Sn**	**02 28 34.9**	**-0.9**
KAMT	**Kaman**	**0.90**	**351**	*e*PG	**Pg**	**02 28 23.5**	**0.0**
KAMT	**Kaman**	**0.90**	**351**	*e*Pg	**Pg**	**02 28 23.5**	**0.0**
KKUL	**Konya-Kulu**	**1.03**	**312**	P	**Pb**	**02 28 26.2**	**+0.1**
KKUL				S	**Sg**	**02 28 39.0**	**-0.4**
KKUL	**Konya-Kulu**	**1.03**	**312**	*i* P	**Pb**	**02 28 26.2**	**+0.1**
KKUL				*i* S	**Sg**	**02 28 39.0**	**-0.4**
KERG	**Konya-Eregli**	**1.08**	**170**	P	**Pn**	**02 28 28.2**	**+0.7**
KERG	**Konya-Eregli**	**1.08**	**170**	*i* P	**Pn**	**02 28 28.2**	**+0.7**
AFSR	**Af´ar-Bala (A**	**1.16**	**326**	*e*PN	**Pb**	**02 28 28.3**	**0.0**
AFSR	**Af´ar-Bala (A**	**1.16**	**326**	*e*Pn	**Pb**	**02 28 28.3**	**0.0**
BBAL	**Bala**	**1.22**	**330**	P	**Pg**	**02 28 29.6**	**0.0**
BBAL				S	**Sn**	**02 28 46.5**	**+0.5**
BBAL	**Bala**	**1.22**	**330**	*i* P	**Pg**	**02 28 29.6**	**0.0**
BBAL				*i* S	**Sn**	**02 28 46.5**	**+0.5**
LADK	**Ladik-KONYA**	**1.24**	**257**	*e*PN	**Pn**	**02 28 29.4**	**-0.2**
LADK	**Ladik-KONYA**	**1.24**	**257**	*e*Pn	**Pn**	**02 28 29.4**	**-0.2**
KONT	**Konya--Tatoy**	**1.33**	**247**	*e*PN	**Pb**	**02 28 31.1**	**0.0**
KONT	**Konya--Tatoy**	**1.33**	**247**	*e*Pn	**Pb**	**02 28 31.1**	**0.0**
KDHN	**Kadinhani**	**1.40**	**272**	P	**Pn**	**02 28 31.9**	**+0.1**
KDHN				S	**Sg**	**02 28 51.2**	**0.0**
KDHN	**Kadinhani**	**1.40**	**272**	*i* P	**Pn**	**02 28 31.9**	**+0.1**
KDHN				*i* S	**Sg**	**02 28 51.2**	**0.0**
KMER	**Konya-Meram**	**1.40**	**240**	P	**Pg**	**02 28 33.2**	**+0.1**
KMER	**Konya-Meram**	**1.40**	**240**	*i* P	**Pg**	**02 28 33.2**	**+0.1**
KARA	**Karaisali**	**1.52**	**143**	*e*PN	**Pb**	**02 28 34.3**	**-0.2**
KARA	**Karaisali**	**1.52**	**143**	*e*Pn	**Pb**	**02 28 34.3**	**-0.2**
BNN	**Bunyan**	**1.57**	**76**	*e*PN	**Pb**	**02 28 35.4**	**+0.1**
BNN	**Bunyan**	**1.57**	**76**	*e*Pn	**Pb**	**02 28 35.4**	**+0.1**
CORM	**Corum**	**1.79**	**18**	*e*PN	**Pb**	**02 28 38.5**	**-0.5**
CORM	**Corum**	**1.79**	**18**	*e*Pn	**Pb**	**02 28 38.5**	**-0.5**
CUSAR	**Sarkisla-SIVAS**	**2.05**	**62**	P	**Pb**	**02 28 43.7**	**+0.1**
CUSAR	**Sarkisla-SIVAS**	**2.05**	**62**	*i* P	**Pb**	**02 28 43.7**	**+0.1**

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*ISCJB **29** 02:43:08.7±0.5,39°.11N±0°.04×29°.10E±0°.04,h9km,Error ellipse: s-maj=5.7km s-min=4.0km az=155.9*
*DDA **29** 02:43:08.4,39°.11N×29°.09E,h7km,Ml2.6*
*CSEM **29** 02:43:08.7±0.1,39°.13N×29°.10E,h5km,ML2.6,Error ellipse: s-maj=2.6km s-min=2.2km az=125.0*
*ISK **29** 02:43:08.3,39°.13N×29°.11E,h5km,MD2.8*
ISC 29 02:43:08.9±0.9,39°.13N±0°.03×29°.10E±0°.02,h9km,n34, σ0°30/40,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.30**	**97**	P	**Pg**	**02 43 14.9**	**0.0**
GDZ				S	**Sg**	**02 43 19.3**	**+0.4**
GDZ	**Gediz**	**0.30**	**97**	*i* P	**Pg**	**02 43 14.9**	**0.0**
GDZ				*i* S	**Sg**	**02 43 19.3**	**+0.4**
DEMI	**Demirci**	**0.31**	**255**	P	**Pg**	**02 43 15.0**	**-0.1**
DEMI				S	**Sg**	**02 43 19.3**	**+0.1**
DEMI	**Demirci**	**0.31**	**255**	*i* P	**Pg**	**02 43 15.0**	**-0.1**
DEMI				*i* S	**Sg**	**02 43 19.3**	**+0.1**
TVSB	**Tavsanli**	**0.43**	**41**	*e*PG	**Pg**	**02 43 17.2**	**-0.1**
TVSB				*e*SG	**Sg**	**02 43 22.8**	**-0.2**
TVSB	**Tavsanli**	**0.43**	**41**	*e*Pg	**Pg**	**02 43 17.2**	**-0.1**
TVSB				*e*Sg	**Sg**	**02 43 22.8**	**-0.2**
KULA	**Kula-Manisa**	**0.70**	**209**	*e*PG	**Pg**	**02 43 22.2**	**-0.2**
KULA	**Kula-Manisa**	**0.70**	**209**	*e*Pg	**Pg**	**02 43 22.2**	**-0.2**
KHAL	**Karahalli**	**0.81**	**158**	P	**Pg**	**02 43 24.5**	**-0.1**
KHAL	**Karahalli**	**0.81**	**158**	*i* P	**Pg**	**02 43 24.5**	**-0.1**
KHL	**Karahalli**	**0.87**	**157**	*e*PG	**Pg**	**02 43 25.7**	**+0.1**
KHL	**Karahalli**	**0.87**	**157**	*e*Pg	**Pg**	**02 43 25.7**	**+0.1**
AKS	**Akhisar**	**1.03**	**257**	*e*PG	**Pg**	**02 43 28.5**	**-0.2**
AKS	**Akhisar**	**1.03**	**257**	*e*Pg	**Pg**	**02 43 28.5**	**-0.2**
BALB	**Balikesir**	**1.07**	**299**	*e*PN	**Pg**	**02 43 29.6**	**0.0**
BALB	**Balikesir**	**1.07**	**299**	*e*Pn	**Pg**	**02 43 29.6**	**0.0**
CAVI	**Cavuskoy**	**1.22**	**28**	*e*PN	**Pb**	**02 43 31.7**	**-0.5**
CAVI	**Cavuskoy**	**1.22**	**28**	*e*Pn	**Pb**	**02 43 31.7**	**-0.5**
MDNY	**Mudanya-Bursa**	**1.25**	**352**	*e*PN	**Pn**	**02 43 32.7**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.25**	**352**	*e*Pn	**Pn**	**02 43 32.7**	**+0.1**
KCTX	**Karacabey (Bur**	**1.27**	**334**	*e*PN	**Pb**	**02 43 33.2**	**+0.1**
KCTX	**Karacabey (Bur**	**1.27**	**334**	*e*Pn	**Pb**	**02 43 33.2**	**+0.1**
BORA	**Eskisehir**	**1.29**	**54**	P	**Pn**	**02 43 32.7**	**-0.5**
BORA	**Eskisehir**	**1.29**	**54**	*i* P	**Pn**	**02 43 32.7**	**-0.5**
ADVT	**Abdulvahap**	**1.40**	**20**	*e*PN	**Pb**	**02 43 35.4**	**+0.2**
ADVT	**Abdulvahap**	**1.40**	**20**	*e*Pn	**Pb**	**02 43 35.4**	**+0.2**
ARMT	**Armutlu**	**1.45**	**353**	*e*PN	**Pb**	**02 43 35.9**	**-0.2**
ARMT	**Armutlu**	**1.45**	**353**	*e*Pn	**Pb**	**02 43 35.9**	**-0.2**
EDC	**Edincik**	**1.55**	**322**	*e*PN	**Pb**	**02 43 37.5**	**-0.2**
EDC	**Edincik**	**1.55**	**322**	*e*Pn	**Pb**	**02 43 37.5**	**-0.2**
GULT	**Gulveren**	**1.70**	**39**	*e*PN	**Pn**	**02 43 39.3**	**+0.5**
GULT	**Gulveren**	**1.70**	**39**	*e*Pn	**Pn**	**02 43 39.3**	**+0.5**
HRT	**Hereke**	**1.75**	**14**	*e*PN	**Pn**	**02 43 40.2**	**+0.7**
HRT	**Hereke**	**1.75**	**14**	*e*Pn	**Pn**

CAVI	**Cavuskoy**	**1.25**	**25**	*e*PN	**Pn**	**02 53 21.5**	**0.0**
CAVI	**Cavuskoy**	**1.25**	**25**	*e*Pn	**Pn**	**02 53 21.5**	**0.0**
BORA	**Eskisehir**	**1.29**	**51**	P	**Pn**	**02 53 21.2**	**-1.0**
BORA	**Eskisehir**	**1.29**	**51**	*i* P	**Pn**	**02 53 21.2**	**-1.0**
KCTX	**Karacabey (Bur**	**1.34**	**333**	*e*PN	**Pb**	**02 53 23.4**	**+0.3**
KCTX	**Karacabey (Bur**	**1.34**	**333**	*e*Pn	**Pb**	**02 53 23.4**	**+0.3**
ADVT	**Abdulvahap**	**1.43**	**18**	*e*PN	**Pb**	**02 53 25.0**	**+0.3**
ADVT	**Abdulvahap**	**1.43**	**18**	*e*Pn	**Pb**	**02 53 25.0**	**+0.3**
ARMT	**Armutlu**	**1.51**	**352**	*e*PN	**Pb**	**02 53 25.8**	**-0.2**
ARMT	**Armutlu**	**1.51**	**352**	*e*Pn	**Pb**	**02 53 25.8**	**-0.2**
EDC	**Edincik**	**1.61**	**323**	*e*PN	**Pb**	**02 53 27.4**	**-0.4**
EDC	**Edincik**	**1.61**	**323**	*e*Pn	**Pb**	**02 53 27.4**	**-0.4**
GULT	**Gulveren**	**1.72**	**37**	*e*PN	**Pn**	**02 53 28.8**	**+0.8**
GULT	**Gulveren**	**1.72**	**37**	*e*Pn	**Pn**	**02 53 28.8**	**+0.8**
HRT	**Hereke**	**1.79**	**13**	*e*PN	**Pn**	**02 53 29.7**	**+0.7**
HRT	**Hereke**	**1.79**	**13**	*e*Pn	**Pn**	**02 53 29.7**	**+0.7**

NIED ***29*** *02:55:00, 36.°60N×141.°10E, h8km, Mw3.7 Best double couple: M0=4.57000×1014 NP1:φ=229.00000°, δ=48.00000°, λ=-24.00000°. NP2:φ=336.00000°, δ=73.00000°, λ=-135.00000°.*
ISCJB ***29*** *02:55:50.3±1.0, 36.°54N±0.°04×141.°15E±0.°07, h28km±5km, mb3.6/7, Error ellipse: s-maj=9.6km s-min=6.5km az=18.9*
JMA ***29*** *02:55:51.5±0.1, 36.°57N×141.°06E, h36km±1km, M3.8*
JMA Felt II J1.
IDC ***29*** *02:55:52.9±0.9, 35.°88N×140.°76E, h0km, mb3.6/8, mb1 3.7/10, mb1mx3.6/35, mbtmp3.6/10, ML3.3/2, Error ellipse: s-maj=22.9km s-min=18.8km az=92.0*
ISC 29 02:55:50.7±1.7, 36.°57N±0.°05×141.°13E±0.°08, h20km±13km, n26, σ0.°67/21, mb3.6/7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.46**	**276**	P	**Pb**	**02 56 00.4**	**+0.4**
JHO				*e*S	**Sb**	**02 56 06.8**	**+0.4**
ONAJ	**Iwakimizuishiy**	**0.60**	**333**	P	**Pb**	**02 56 02.8**	**+0.2**
ONAJ				*e*S	**Sb**	**02 56 11.5**	**+0.9**
JFK	**Kawauchi**	**0.83**	**346**	P	**Pb**	**02 56 05.9**	**-0.5**
JYT	**Yasato**	**0.83**	**246**	P	**Pb**	**02 56 06.0**	**-0.4**
JYT				S	**Sb**	**02 56 16.4**	**-0.7**
JSB	**Shiboa**	**1.05**	**293**	P	**Pn**	**02 56 10.4**	**0.0**
JFT	**Otama**	**1.15**	**326**	P	**Pb**	**02 56 11.8**	**0.0**
JFT				S	**Sb**	**02 56 25.9**	**-0.4**
JMM	**Marumori**	**1.33**	**348**	P	**Pn**	**02 56 13.7**	**-0.4**
JAG	**Ashikaga**	**1.36**	**265**	P	**Pn**	**02 56 14.0**	**-0.5**
JAG				S	**Sn**	**02 56 30.4**	**-1.6**
JFY	**Yanaizu**	**1.42**	**307**	P	**Pn**	**02 56 15.7**	**+0.3**
MJAR	**Matsushiro Arr**	**2.35**	**270**	Pn	**Pn**	**02 56 28.8**	**+0.6**
	9.3nm,0.3s,baz=88,slow=10.0,SNR=104						
MJAR				Sn	**Sn**	**02 56 56.8**	**+0.2**
	11nm,0.3s,baz=97,slow=12,SNR=7.1						
MAT	**Matsushiro**	**2.36**	**270**	P	**Pn**	**02 56 29.2**	**+0.9**
MAT				S	**Sn**	**02 56 56.6**	**0.0**
JHJ	**Hachijo jima 2**	**3.61**	**198**	Pn	Pn	02 56 41.0	-4.5
	9.1nm,0.3s,baz=76,slow=23,SNR=2.1						
JHJ				Sn	**Sn**	**02 57 28.3**	**+0.8**
	18nm,0.3s,baz=346,slow=21,SNR=3.5						
PETK	**Petropavlovsk-**	**20.20**	**30**	P	Pn	03 00 38.2	+12
	0.9nm,0.7s,baz=228,slow=8.7,SNR=3.0						
SONM	**Songino Array**	**27.86**	**305**	P	P	03 01 45.4	+6.4
	0.3nm,0.5s,baz=90,slow=8.9,SNR=2.5						
H11N2	**WAKE ISLAND Hy 28.11**	**120**		T	T	03 31 11.7	
	baz=313,slow=75,SNR=160						
H11N1	**WAKE ISLAND Hy 28.11**	**120**		T	T	03 31 11.1	
	baz=313,slow=75,SNR=162						
H11N3	**WAKE ISLAND Hy 28.12**	**120**		T	T	03 31 12.3	
	baz=313,slow=75,SNR=136						
H11S1	**WAKE ISLAND Hy 28.80**	**122**		T	T	03 32 04.1	
	baz=314,slow=76,SNR=359						
H11S3	**WAKE ISLAND Hy 28.80**	**122**		T	T	03 32 05.2	
	baz=314,slow=76,SNR=181						
H11S2	**WAKE ISLAND Hy 28.82**	**122**		T	T	03 32 04.6	
	baz=314,slow=76,SNR=164						
ZALV	**Zalesovo Beam**	**42.07**	**313**	P	P	03 03 48.0	+7.2
	1.9nm,0.6s,baz=97,slow=7.7,SNR=7.6						
MKAR	**Makanchi Array**	**44.18**	**302**	P	P	03 04 05.3	+7.3
	0.5nm,0.5s,baz=90,slow=9.3,SNR=4.6						
ILAR	**Eielson Array**	**50.01**	**32**	P	P	03 04 52.6	+9.4
	0.3nm,0.7s,baz=275,slow=5.8,SNR=4.1						
WRA	**Warramunga Arr**	**56.57**	**188**	P	**P**	**03 05 31.4**	**-0.5**
	1.4nm,0.9s,baz=3.9,slow=7.4,SNR=7.6						
ASAR	**Alice Springs**	**60.30**	**188**	P	**P**	**03 05 58.4**	**+0.5**
	0.5nm,0.8s,baz=17,slow=9.1,SNR=4.6						
PDAR	**Pinedale Array**	**78.15**	**45**	P	P	03 07 58.7	+10
	0.2nm,0.5s,baz=298,slow=3.9,SNR=2.5						

ISCJB ***29*** *02:57:21.6±0.7, 38.°45N±0.°03×33.°79E±0.°04, h0km±7km, Error ellipse: s-maj=5.7km s-min=5.0km az=149.7*
DDA ***29*** *02:57:22.2, 38.°49N×33.°84E, h7km, Md2.8*
CSEM ***29*** *02:57:22.4±0.2, 38.°47N×33.°70E, h5km, MD2.8, Error ellipse: s-maj=4.9km s-min=4.0km az=115.0*
ISK ***29*** *02:57:22.3, 38.°48N×33.°67E, h13km, MD2.9*
ISC 29 02:57:22.3±1.0, 38.°48N±0.°03×33.°76E±0.°03, h9km±8km, n35, σ0.°80/44, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKSY	**AKSARAY - Alti**	**0.17**	**359**	P	**Pg**	**02 57 26.0**	**-0.1**
AKSY				S	**Sg**	**02 57 28.4**	**-0.2**
AKSY	**AKSARAY - Alti**	**0.17**	**359**	*i* P	**Pg**	**02 57 26.0**	**-0.1**
AKSY				*i* S	**Sg**	**02 57 28.4**	**-0.2**
SERE	**Sereflichosia**	**0.49**	**342**	*e*PG	**Pg**	**02 57 32.6**	**+0.6**
SERE				*e*SG	**Sg**	**02 57 39.3**	**+0.8**
SERE	**Sereflichosia**	**0.49**	**342**	*e*Pg	**Pg**	**02 57 32.6**	**+0.6**
SERE				*e*Sg	**Sg**	**02 57 39.3**	**+0.8**
YESY	**Yesilyurt**	**0.69**	**181**	*e*PG	**Pg**	**02 57 36.5**	**+0.7**
YESY	**Yesilyurt**	**0.69**	**181**	*e*Pg	**Pg**	**02 57 36.5**	**+0.7**
CHBY	**Cihanbeyli**	**0.69**	**279**	*e*PG	**Pg**	**02 57 34.9**	**-0.9**
CHBY	**Cihanbeyli**	**0.69**	**279**	*e*Pg	**Pg**	**02 57 34.9**	**-0.9**
NIG	**Nigde**	**0.76**	**119**	*e*PG	**Pb**	**02 57 38.5**	**+0.6**
NIG	**Nigde**	**0.76**	**119**	*e*Pg	**Pb**	**02 57 38.5**	**+0.6**
KAMT	**Kaman**	**0.89**	**357**	*e*PG	**Pg**	**02 57 39.9**	**+0.4**
KAMT	**Kaman**	**0.89**	**357**	*e*Pg	**Pg**	**02 57 39.9**	**+0.4**
AVNS	**Nevsehir-Avano**	**0.91**	**68**	*i* P	**Pg**	**02 57 38.8**	**-1.1**
AVNS				*i* S	**Sg**	**02 57 50.7**	**-1.1**
KKUL	**Konya-Kulu**	**0.96**	**317**	P	**Pb**	**02 57 41.4**	**+0.2**
KKUL	**Konya-Kulu**	**0.96**	**317**	*i* P	**Pb**	**02 57 41.4**	**+0.2**
KKUL				*i* S	**Sb**	**02 57 55.5**	**+1.4**
AFSR	**Af´ar-Bala (A**	**1.11**	**331**	*e*PG	**Pb**	**02 57 43.4**	**-0.4**
AFSR	**Af´ar-Bala (A**	**1.11**	**331**	*e*Pg	**Pb**	**02 57 43.4**	**-0.4**
LADK	**Ladik-KONYA**	**1.14**	**256**	*e*PG	**Pb**	**02 57 43.1**	**-1.1**
LADK	**Ladik-KONYA**	**1.14**	**256**	*e*Pg	**Pb**	**02 57 43.1**	**-1.1**
BBAL	**Bala**	**1.18**	**335**	P	**Pn**	**02 57 45.6**	**+0.5**
BBAL	**Bala**	**1.18**	**335**	*i* P	**Pn**	**02 57 45.6**	**+0.5**
KONT	**Konya--Tatoy**	**1.23**	**245**	*e*PN	**Pn**	**02 57 44.7**	**-1.0**
KONT	**Konya--Tatoy**	**1.23**	**245**	*e*Pn	**Pn**	**02 57 44.7**	**-1.0**
CDAG	**Cicekdag**	**1.24**	**22**	P	**Pn**	**02 57 45.6**	**-0.4**
CDAG				S	**Sn**	**02 58 02.4**	**-0.5**
CDAG	**Cicekdag**	**1.24**	**22**	*i* P	**Pn**	**02 57 45.6**	**-0.4**
CDAG				*i* S	**Sn**	**02 58 02.4**	**-0.5**
KDHN	**Kadinhani**	**1.29**	**272**	P	**Pn**	**02 57 47.4**	**+0.7**
KDHN	**Kadinhani**	**1.29**	**272**	*i* P	**Pn**	**02 57 47.4**	**+0.7**
KDHN				*i* S	**Sg**	**02 58 06.0**	**+2.0**
KIZT	**Kizilcal**	**1.53**	**286**	*e*PN	**Pn**	**02 57 48.9**	**-1.1**
KIZT	**Kizilcal**	**1.53**	**286**	*e*Pn	**Pn**	**02 57 48.9**	**-1.1**
CORM	**Corum**	**1.83**	**21**	*e*PN	**Pn**	**02 57 54.8**	**+0.7**
CORM	**Corum**	**1.83**	**21**	*e*Pn	**Pn**	**02 57 54.8**	**+0.7**
COAL	**Corum-Alaca**	**2.01**	**28**	P	**Pb**	**02 57 58.4**	**-0.8**
COAL	**Corum-Alaca**	**2.01**	**28**	*i* P	**Pb**	**02 57 58.4**	**-0.8**
SUTC	**Sutluce-Ispart**	**2.40**	**246**	*e*PN	**Pn**	**02 58 01.7**	**-0.3**
SUTC	**Sutluce-Ispart**	**2.40**	**246**	*e*Pn	**Pn**	**02 58 01.7**	**-0.3**

ISK ***29*** *03:04:31.8, 38.°80N×31.°75E, h5km, MD2.6*
CSEM ***29*** *03:04:32.9±0.1, 38.°83N×31.°77E, h2km, MD2.6, Error ellipse: s-maj=3.5km s-min=2.0km az=46.0*
DDA ***29*** *03:04:32.3, 38.°87N×31.°79E, h7km, Md2.6*
ISC 29 03:04:32.6±1.1, 38.°83N±0.°03×31.°73E±0.°04, h8km±11km, n24, σ0.°40/30, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KIZT	**Kizilcal**	**0.13**	**65**	*e*PG	**Pg**	**03 04 35.1**	**-0.3**
KIZT	**Kizilcal**	**0.13**	**65**	*e*Pg	**Pg**	**03 04 35.1**	**-0.3**
KDHN	**Kadinhani**	**0.43**	**135**	P	**Pg**	**03 04 40.7**	**-0.3**
KDHN				S	**Sg**	**03 04 47.2**	**+0.6**
KDHN	**Kadinhani**	**0.43**	**135**	*i* P	**Pg**	**03 04 40.7**	**-0.3**
KDHN				*i* S	**Sg**	**03 04 47.2**	**+0.6**
BOLV	**Bolvadin**	**0.62**	**260**	P	**Pb**	**03 04 45.5**	**-0.4**
BOLV	**Bolvadin**	**0.62**	**260**	*i* P	**Pb**	**03 04 45.5**	**-0.4**
SVRH	**Sivrihisar-ESK**	**0.64**	**345**	*e*PG	**Pb**	**03 04 45.8**	**-0.4**
SVRH	**Sivrihisar-ESK**	**0.64**	**345**	*e*Pg	**Pb**	**03 04 45.8**	**-0.4**
LADK	**Ladik-KONYA**	**0.80**	**141**	*e*PG	**Pg**	**03 04 47.9**	**-0.1**
LADK				*e*SG	**Sb**	**03 04 59.4**	**-0.5**
LADK	**Ladik-KONYA**	**0.80**	**141**	*e*Pg	**Pg**	**03 04 47.9**	**-0.1**
LADK				*e*Sg	**Sb**	**03 04 59.4**	**-0.5**
CHBY	**Cihanbeyli**	**0.94**	**105**	*e*PG	**Pg**	**03 04 50.4**	**-0.2**
CHBY	**Cihanbeyli**	**0.94**	**105**	*e*Pg	**Pg**	**03 04 50.4**	**-0.2**
ESKT	**Eskisehir**	**0.97**	**316**	*i* P	**Pb**	**03 04 51.7**	**-0.2**
SEYT	**Eskypehyr**	**0.97**	**316**	P	**Pb**	**03 04 51.7**	**-0.2**
KONT	**Konya--Tatoy**	**1.01**	**151**	*e*PG	**Pg**	**03 04 51.6**	**-0.4**
KONT	**Konya--Tatoy**	**1.01**	**151**	*e*Pg	**Pg**	**03 04 51.6**	**-0.4**
KMER	**Konya-Meram**	**1.17**	**155**	P	**Pn**	**03 04 55.9**	**+0.5**
KMER	**Konya-Meram**	**1.17**	**155**	*i* P	**Pn**	**03 04 55.9**	**+0.5**
AFSR	**Af´ar-Bala (A**	**1.21**	**59**	*e*PN	**Pn**	**03 04 56.3**	**+0.3**
AFSR	**Af´ar-Bala (A**	**1.21**	**59**	*e*Pn	**Pn**	**03 04 56.3**	**+0.3**
SERE	**Sereflikochisa**	**1.43**	**85**	*e*PN	**Pg**	**03 04 60.0**	**-0.1**
SERE	**Sereflikochisa**	**1.43**	**85**	*e*Pn	**Pg**	**03 05 00.0**	**-0.1**
BORA	**Eskisehir**	**1.45**	**317**	P	**Pg**	**03 05 00.1**	**-0.3**
BORA				S	**Sg**	**03 05 19.7**	**+0.6**
BORA	**Eskisehir**	**1.45**	**317**	*i* P	**Pg**	**03 05 00.1**	**-0.3**
BORA				*i* S	**Sg**	**03 05 19.7**	**+0.6**

ISCJB ***29*** *03:08:37.3±0.5, 2.°54S±0.°05×39.°58E±0.°05, h10km, mb3.9/14, MS3.3/3, Error ellipse: s-maj=8.3km s-min=6.1km az=137.4*
IDC ***29*** *03:08:38.1±1.0, 2.°50S×39.°57E, h0km, mb3.8/11, mb1 3.9/15, mb1mx3.7/58, mbtmp3.9/15, ML4.0/4, MS3.4/6, Ms1 3.4/6, ms1mx3.0/38, Error ellipse: s-maj=23.3km s-min=20.5km az=122.0*
NEIC ***29*** *03:08:39.7±0.4, 2.°51S×39.°50E, h10km, mb4.0/4, Error ellipse: s-maj=11.5km s-min=7.6km az=104.0*
ISC 29 03:08:40.2±0.7, 2.°41S±0.°06×39.°51E±0.°06, h10km, n23, σ1.°58/28, mb4.0/14, MS3.3/3, Kenya

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KMBO	**Kilima Mbogo**	**2.59**	**299**	Pn	**Pn**	**03 09 20.9**	**-1.4**
	10nm,0.3s,baz=213,slow=22,SNR=101						
KMBO				Sn	**Sb**	**03 09 57.7**	**-1.1**
	563nm,0.3s,baz=28,slow=21,SNR=17						
KMBO	**Kilima Mbogo**	**2.59**	**299**	Pn	**Pn**	**03 09 20.9**	**-1.4**
KMBO				*e*Pb	**Pb**	**03 09 25.9**	**-0.9**
KMBO				*e*Pg	**Pg**	**03 09 29.0**	**-0.8**
KMBO				Sn	**Sb**	**03 09 57.7**	**-1.1**
KMBO				*e*Sb	**Sn**	**03 09 58.6**	**+4.6**
KMBO				*e*Sg	**Sg**	**03 10 02.4**	**-1.0**
DODT	**Dodoma, Tanzan**	**5.31**	**225**	*i* P	**Pn**	**03 09 58.0**	**-1.6**
DODT				*i* S	**Sb**	**03 11 20.8**	**+3.8**
ATD	**Arta Tunnel**	**14.24**	**13**	Pn	**Pn**	**03 12 03.7**	**+1.6**
	1.2nm,0.3s,baz=238,slow=20,SNR=2.8						
ATD				LR	LR	03 17 38.6	
	comp=Z,93nm,21.2s,baz=298,slow=38						
LSZ	**Lusaka**	**16.97**	**220**	Pn	**Pn**	**03 12 37.2**	**-0.8**
	0.3nm,0.3s,baz=68,slow=10,SNR=3.6						
LSZ				Lg	Lg	03 17 26.5	
	1.2nm,0.3s,baz=116,slow=7.9,SNR=11						
LSZ				LR	LR	03 19 18.7	
	comp=Z,128nm,20.8s,baz=101,slow=38						
OPO	**Ambohidratompo**	**17.74**	**155**	P	**Pn**	**03 12 46.0**	**-1.6**
	0.3nm,0.3s,baz=332,slow=4.9,SNR=2.6						
OPO				S	Sn	03 15 56.4	-9.2
	0.3nm,0.3s,baz=170,slow=0.6,SNR=2.2						
OPO				LR	LR	03 19 12.0	
	comp=Z,181nm,18.4s,baz=359,slow=36						
MATP	**Matopo**	**20.88**	**210**	P	**P**	**03 13 21.1**	**-1.8**
	5.2nm,1.0s,baz=28,slow=14,SNR=3.8						
MATP				Lg	Lg	03 19 27.8	
	5.0nm,0.8s,baz=95,slow=16,SNR=3.3						
MATP				LR	LR	03 20 53.0	
	comp=Z,167nm,19.5s,baz=78,slow=35						
LBTB	**Lobatse**	**26.18**	**210**	Lg	Lg	03 22 06.9	
	5.2nm,0.9s,baz=102,slow=20,SNR=2.5						
TSUM	**Tsumeb**	**27.18**	**231**	Lg	Lg	03 22 45.2	
	2.7nm,1.0s,baz=300,slow=22,SNR=2.4						
TSUM				LR	LR	03 24 31.4	
	comp=Z,51nm,18.5s,baz=10,slow=35						
CSS	**Mathiatis**	**37.62**	**352**	*e*P	**P**	**03 15 55.9**	**+0.6**
	0.6nm,0.3s						
TORD	**Torodi Ar. Bea**	**40.58**	**293**	P	**P**	**03 16 21.5**	**+1.1**
	0.3nm,0.8s,baz=118,slow=7.3,SNR=2.7						
TORD				LR	LR	03 32 52.8	
	comp=Z,43nm,19.1s,baz=160,slow=36						
BRTR	**Keskin Array B**	**42.27**	**353**	P	**P**	**03 16 35.4**	**+1.4**
	1.2nm,0.8s,baz=178,slow=10,SNR=8.3						
AKASG	**Malin Array Be**	**53.63**	**352**	P	**P**	**03 18 00.5**	**-1.1**
	0.1nm,0.2s,baz=167,slow=5.6,SNR=1.9						
ABKAR	**Akbulak array**	**54.41**	**16**	*e*P	**P**	**03 18 07.5**	**+0.1**
	0.4nm,0.4s						
AKTO	**Aktyubinsk**	**54.98**	**14**	P	**P**	**03 18 11.4**	**-0.1**
	1.3nm,0.8s,baz=196,slow=9.4,SNR=3.8						
TKM2	**Tokmak 2**	**55.61**	**32**	*e*P	**P**	**03 18 16.5**	**0.0**
	1.5nm,0.7s						
GERES	**GERESS Array B**	**55.74**	**340**	P	**P**	**03 18 17.6**	**+0.5**
	0.6nm,0.8s,baz=126,slow=6.8,SNR=6.1						
ESDC	**Sonseca Array**	**57.78**	**321**	P	**P**	**03 18 32.8**	**+1.0**
	1.2nm,0.8s,baz=120,slow=4.7,SNR=8.9						
ARU	**Arti**	**60.66**	**12**	*e*P	**P**	**03 18 51.0**	**-0.3**
	2.1nm,0.6s						
MKAR	**Makanchi Array**	**61.74**	**32**	P	**P**	**03 18 59.0**	**+0.2**
	1.1nm,0.6s,baz=227,slow=7.3,SNR=9.2						
HFS	**Hagfors**	**65.54**	**346**	P	**P**	**03 19 23.8**	**+0.2**
	1.7nm,0.6s,baz=120,slow=8.8,SNR=6.1						
ZALV	**Zalesovo Beam**	**67.56**	**27**	P	**P**	**03 19 36.2**	**-0.5**
	0.5nm,0.3s,baz=242,slow=3.1,SNR=2.6						
ARCES	**ARCESS Array B**	**72.43**	**355**	P	**P**	**03 20 06.2**	**-0.1**
	1.8nm,0.7s,baz=171,slow=7.3,SNR=5.8						

IDC ***29*** *03:09:58.1±1.2, 37.°64N×143.°27E, h0km, mb3.5/4, mb1 3.7/7, mb1mx3.4/63, mbtmp3.6/7, ML3.3/3, MS2.7/1, Ms1 2.7/1, ms1mx2.2/39, Error ellipse: s-maj=33.9km s-min=21.0km az=104.0*
ISCJB ***29*** *03:09:59.5±0.8, 37.°79N±0.°05×143.°02E±0.°07, h24km, mb3.6/4, MS2.6/1, Error ellipse: s-maj=8.4km s-min=7.6km az=175.3*
NIED ***29*** *03:10:00, 37.°80N×143.°00E, h11km, Mw3.6 Best double couple: M0=2.78000×1014 NP1:φ=357.00000°, δ=44.00000°, λ=-64.00000°. NP2:φ=143.00000°, δ=51.00000°, λ=-113.00000°.*
JMA ***29*** *03:10:00.1±0.2, 37.°78N×142.°99E, h39km, M3.6*
ISC 29 03:10:01.4±1.1, 37.°77N±0.°06×142.°98E±0.°09, h24km, n18, σ2.°01/22, mb3.6/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.46**	**299**	P	**Pn**	**03 10 24.9**	**-1.3**
JIO				*e*S	**Sn**	**03 10 42.5**	**-2.1**
OFUJ	**Ofunato**	**1.67**	**322**	P	**Pn**	**03 10 27.5**	**-1.6**
OFUJ				S	**Sn**	**03 10 48.2**	**-1.6**
JFK	**Kawauchi**	**1.72**	**257**	P	**Pn**	**03 10 28.5**	**-1.4**
JMM	**Marumori**	**1.74**	**274**	P	**Pn**	**03 10 28.6**	**-1.4**
JMM				*e*S	**Sn**	**03 10 49.3**	**-2.1**
JMK	**Ichinoseki**	**1.82**	**311**	P	**Pn**	**03 10 29.9**	**-1.3**
JOU	**Okura**	**1.93**	**289**	P	**Pn**	**03 10 32.0**	**-0.7**
JFT	**Otama**	**2.12**	**264**	P	**Pn**	**03 10 34.6**	**-0.7**
JOM	**Ohasama**	**2.16**	**323**	P	**Pn**	**03 10 35.2**	**-0.7**
JYK	**Kaneyama**	**2.36**	**300**	P	**Pn**	**03 10 38.2**	**-0.5**
MJAR	**Matsushiro Arr**	**4.00**	**254**	Pn	**Pn**	**03 11 03.1**	**+1.9**
	1.7nm,0.3s,baz=75,slow=14,SNR=13						
MAT	**Matsushiro**	**4.01**	**254**	P	**Pn**	**03 11 02.7**	**+1.4**
MAT				S	**Sn**	**03 11 50.5**	**+3.0**
JHJ	**Hachijo jima 2**	**5.32**	**210**	Pn	**Pn**	**03 11 18.7**	**-0.6**
	2.7nm,0.3s,baz=73,slow=23,SNR=2.2						
JHJ				Sn	**Sn**	**03 12 14.3**	**-5.5**
	8.0nm,0.3s,baz=72,slow=19,SNR=2.3						
ASAJ	**Asahikawa**	**6.35**	**357**	Pn	**Pn**	**03 11 33.2**	**-0.2**
	0.6nm,0.3s,baz=222,slow=9.5,SNR=4.8						
YAK	**Yakutsk**	**25.65**	**345**	LR	LR	03 27 44.6	
	comp=Z,19nm,20.4s,baz=42,slow=41						
MKAR	**Makanchi Array**	**44.79**	**302**	P	**P**	**03 18 15.7**	**+2.6**
	0.3nm,0.5s,baz=90,slow=9.8,SNR=3.4						
ILAR	**Eielson Array**	**48.21**	**33**	P	**P**	**03 18 40.1**	**+0.6**
	0.6nm,0.8s,baz=257,slow=5.5,SNR=8.0						
WRA	**Warramunga Arr**	**57.97**	**190**	P	**P**	**03 19 51.3**	**-0.6**
	0.7nm,0.6s,baz=11,slow=7.7,SNR=7.6						
ASAR	**Alice Springs**	**61.70**	**189**	P	**P**	**03 20 17.8**	**+0.3**
	0.3nm,0.7s,baz=17,slow=6.8,SNR=4.8						

NIED ***29*** *03:12:00, 38.°20N×141.°70E, h50km, Mw4.0 Best double couple: M0=1.17000×1015 NP1:φ=202.00000°, δ=22.00000°, λ=92.00000°. NP2:φ=20.00000°, δ=68.00000°, λ=89.00000°.*
ISCJB ***29*** *03:12:18.1±0.7, 38.°17N±0.°04×141.°70E±0.°08, h58km±4km, mb3.8/20, MS2.3/1, Error ellipse: s-maj=11.5km s-min=5.3km az=22.2*
JMA ***29*** *03:12:18.6±0.1, 38.°17N×141.°70E, h50km±1km, M3.8*
JMA Felt I J1.
IDC ***29*** *03:12:21.8±2.3, 38.°13N×141.°60E, h77km±20km, mb3.6/20, mb1 3.7/24, mb1mx3.6/61, mbtmp3.9/24, MS2.8/4, Ms1 2.8/4, ms1mx2.5/39, Error ellipse: s-maj=17.8km s-min=14.3km az=95.0*
ISC 29 03:12:18.4±1.2, 38.°17N±0.°05×141.°75E±0.°08, h45km±10km, n45, σ1.°06/46, mb3.8/20, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.43**	**312**	P	**Pn**	**03 12 28.9**	**+0.4**
JIO				S	**Sn**	**03 12 35.7**	**+0.1**
JMM	**Marumori**	**0.81**	**249**	P	**Pn**	**03 12 33.1**	**-0.4**
JMM				*e*S	**Sn**	**03 12 43.7**	**-0.8**
JOU	**Okura**	**0.88**	**283**	P	**Pn**	**03 12 34.5**	**+0.1**
JMK	**Ichinoseki**	**0.89**	**332**	P	**Pn**	**03 12 34.8**	**+0.3**
JMK				*e*S	**Sn**	**03 12 46.2**	**0.0**
OFUJ	**Ofunato**	**0.91**	**356**	P	**Pn**	**03 12 35.0**	**+0.1**
OFUJ				*e*S	**Sn**	**03 12 46.5**	**-0.4**
JFK	**Kawauchi**	**1.06**	**221**	P	**Pn**	**03 12 36.7**	**-0.2**
JFK				*e*S	**Sn**	**03 12 50.0**	**-0.5**
JFT	**Otama**	**1.29**	**240**	P	**Pn**	**03 12 40.4**	**+0.3**
JFT				*e*S	**Sn**	**03 12 56.0**	**-0.2**
JYK	**Kaneyama**	**1.32**	**305**	P	**Pn**	**03 12 40.6**	**+0.1**
JYS	**Shirataka**	**1.33**	**273**	P	**Pn**	**03 12 40.7**	**+0.2**
JYS				*e*S	**Sn**	**03 12 56.6**	**-0.5**
JOM	**Ohasama**	**1.35**	**345**	P	**Pn**	**03 12 41.3**	**+0.4**
JRG	**Rokugo**	**1.50**	**325**	P	**Pn**	**03 12 43.7**	**+0.7**
JYA	**Atsumi**	**1.66**	**285**	P	**Pn**	**03 12 45.3**	**+0.3**
MJAR	**Matsushiro Arr**	**3.25**	**241**	P	**Pn**	**03 13 08.7**	**+1.7**
	3.4nm,0.3s,baz=41,slow=12,SNR=14						
MJAR				S	Sn	03 13 52.0	+7.5
	3.4nm,0.3s,baz=14,slow=19,SNR=4.8						
MJAR				LR	LR	03 14 37.7	
	comp=Z,129nm,20.9s,baz=80,slow=44						
MAT	**Matsushiro**	**3.26**	**241**	P	**Pn**	**03 13 08.7**	**+1.7**
MAT				S	**Sn**	**03 13 49.2**	**+4.7**
JHJ	**Hachijo jima 2**	**5.29**	**198**	P	**Pn**	**03 13 36.7**	**+1.8**
	7.0nm,0.3s,baz=124,slow=23,SNR=3.8						
JHJ				S	**Sn**	**03 14 32.4**	**-2.1**
	6.2nm,0.3s,baz=48,slow=23,SNR=3.8						
USRK	**Ussuriysk Ar.**	**9.51**	**312**	P	**Pn**	**03 14 34.0**	**+1.3**
	0.6nm,0.3s,baz=123,slow=14,SNR=13						
USRK				LR	LR	03 17 52.1	
	comp=Z,58nm,21.8s,baz=120,slow=35						
KLR	**Kul´dur**	**13.20**	**330**	P	P	03 15 27.5	-4.4
	0.1nm,0.3s,baz=170,slow=21,SNR=2.1						
KLR				LR	LR	03 20 11.3	
	comp=Z,68nm,18.1s,baz=57,slow=36			

ellipse: s-maj=6.8km s-min=2.0km az=7.0
ISCJB ***29*** *03:16:09.1±0.7, 34°.54N±0°.06×24°.38E±0°.04, h68km±5km, mb3.5/8, Error ellipse: s-maj=9.6km s-min=4.7km az=11.7*
ISK ***29*** *03:16:09.5, 34°.72N×24°.40E, h29km, ML3.3*
THE ***29*** *03:16:10.9, 34°.54N×24°.34E, h44km±3km, ML3.1/11, Error ellipse: s-maj=3.8km s-min=1.2km az=7.0*
IDC ***29*** *03:16:10.5±1.6, 34°.52N×24°.50E, h65km±11km, mb3.5/8, mb1 3.5/11, mb1mx3.3/56, mbtmp3.7/11, Error ellipse: s-maj=23.9km s-min=18.0km az=148.0*
CSEM ***29*** *03:16:10.1±0.5, 34°.55N×24°.37E, h60km, ML3.1, Error ellipse: s-maj=11.8km s-min=4.3km az=14.0*

ISC 29 03:16:10.1±0.9, 34°.56N±0°.07×24°.37E±0°.03, h54km±6km, n96, σ1§15/126, mb3.6/8, Crete

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GVD	**Gavdhos**	**0.36**	**320**	P	**Pn**	**03 16 19.3**	**-0.9**
GVD				S	**Sn**	**03 16 26.3**	**-1.1**
GVD	**Gavdhos**	**0.36**	**320**	P	**Pn**	**03 16 19.3**	**-0.9**
GVD				S	**Sn**	**03 16 28.6**	**+1.2**
GVD	**Gavdhos**	**0.36**	**320**	P	**Pn**	**03 16 19.1**	**-1.1**
GVD				S	**Sn**	**03 16 28.6**	**+1.2**
GVD				AML	AML	03 16 29.8	
	comp=N,20103μm,0.4s						
GVD				AML	AML	03 16 32.4	
	comp=E,19446μm,0.4s						
SIVA	**Sivas**	**0.58**	**39**	P	**Pn**	**03 16 22.2**	**-0.3**
SIVA				S	**Sn**	**03 16 32.6**	**+1.0**
SIVA	**Sivas**	**0.58**	**39**	P	**Pn**	**03 16 22.2**	**-0.3**
SIVA				S	**Sn**	**03 16 32.6**	**+1.0**
SIVA	**Sivas**	**0.58**	**39**	P	**Pn**	**03 16 21.7**	**-0.8**
SIVA				S	**Sn**	**03 16 32.5**	**+1.0**
SIVA				AML	AML	03 16 37.7	
	comp=N,14830μm,0.6s						
SIVA				AML	AML	03 16 38.2	
	comp=E,17404μm,0.5s						
IDI	**Anoyia**	**0.84**	**30**	P	**Pn**	**03 16 26.3**	**+0.5**
	comp=E,26nm,0.3s,baz=217,slow=14,SNR=138						
IDI				S	**Sn**	**03 16 39.8**	**+2.3**
	comp=E,47nm,0.3s,baz=204,slow=20,SNR=12						
IDI	**Anoyia**	**0.84**	**30**	P	**Pn**	**03 16 26.4**	**+0.5**
IDI				S	**Sn**	**03 16 39.4**	**+1.9**
IDI	**Anoyia**	**0.84**	**30**	P	**Pn**	**03 16 26.4**	**+0.5**
IDI				S	**Sn**	**03 16 39.4**	**+1.9**
IDI	**Anoyia**	**0.84**	**30**	P	**Pn**	**03 16 26.4**	**+0.5**
IACM	**Heraklion**	**0.94**	**38**	P	**Pn**	**03 16 28.8**	**+1.7**
IACM	**Heraklion**	**0.94**	**38**	P	**Pn**	**03 16 28.8**	**+1.7**
IACM	**Heraklion**	**0.94**	**38**	P	**Pn**	**03 16 29.4**	**+2.3**
IMMV	**Iera Moni Meta**	**0.95**	**341**	P	**Pn**	**03 16 28.2**	**+0.9**
IMMV				S	**Sn**	**03 16 41.4**	**+1.5**
IMMV	**Iera Moni Meta**	**0.95**	**341**	P	**Pn**	**03 16 28.2**	**+0.9**
IMMV				S	**Sn**	**03 16 41.4**	**+1.5**
IMMV	**Iera Moni Meta**	**0.95**	**341**	P	**Pn**	**03 16 28.4**	**+1.1**
LAST	**Lasithi**	**1.09**	**57**	P	**Pn**	**03 16 29.9**	**+0.7**
LAST				S	**Sn**	**03 16 44.9**	**+1.5**
LAST	**Lasithi**	**1.09**	**57**	P	**Pn**	**03 16 29.9**	**+0.7**
LAST				S	**Sn**	**03 16 44.9**	**+1.5**
LAST	**Lasithi**	**1.09**	**57**	P	**Pn**	**03 16 30.2**	**+1.0**
NPS	**Neapolis**	**1.24**	**55**	P	**Pn**	**03 16 32.0**	**+0.9**
NPS				S	**Sn**	**03 16 48.0**	**+1.2**
NPS	**Neapolis**	**1.24**	**55**	P	**Pn**	**03 16 32.0**	**+0.9**
NPS				S	**Sn**	**03 16 48.0**	**+1.2**
NPS	**Neapolis**	**1.24**	**55**	P	**Pn**	**03 16 32.2**	**+1.1**
ANKY	**Antikythira Is**	**1.57**	**326**	P	**Pn**	**03 16 37.0**	**+1.4**
ANKY	**Antikythira Is**	**1.57**	**326**	P	**Pn**	**03 16 37.0**	**+1.4**
ANKY	**Antikythira Is**	**1.57**	**326**	P	**Pn**	**03 16 37.4**	**+1.9**
ZKR	**Zakros**	**1.62**	**70**	P	**Pn**	**03 16 37.1**	**+0.9**
ZKR				S	**Sn**	**03 16 57.9**	**+1.9**
ZKR	**Zakros**	**1.62**	**70**	P	**Pn**	**03 16 37.1**	**+0.9**
ZKR				S	**Sn**	**03 16 57.9**	**+1.9**
ZKR	**Zakros**	**1.62**	**70**	P	**Pn**	**03 16 35.2**	**-1.1**
SANT	**Santorini**	**2.01**	**26**	P	**Pn**	**03 16 41.0**	**-0.7**
SANT	**Santorini**	**2.01**	**26**	P	**Pn**	**03 16 41.0**	**-0.7**
THR5	**Thira Island,**	**2.01**	**23**	*e*PN	**Pn**	**03 16 41.0**	**-0.6**
THR5	**Thira Island,**	**2.01**	**23**	*e*Pn	**Pn**	**03 16 41.1**	**-0.6**
MHLO	**Agia Marina, M**	**2.12**	**1**	P	**Pn**	**03 16 43.9**	**+0.8**
MHLO				S	**Sn**	**03 17 08.8**	**+0.5**
MHLO	**Agia Marina, M**	**2.12**	**1**	P	**Pn**	**03 16 43.9**	**+0.8**
MHLO				S	**Sn**	**03 17 08.8**	**+0.5**
MHLO	**Agia Marina, M**	**2.12**	**1**	P	**Pn**	**03 16 42.9**	**-0.2**
VLI	**Veliai**	**2.45**	**332**	P	**Pn**	**03 16 48.5**	**+0.9**
VLI				S	**Sn**	**03 17 17.9**	**+1.6**
VLI	**Veliai**	**2.45**	**332**	P	**Pn**	**03 16 48.4**	**+0.9**
VLI				S	**Sn**	**03 17 17.9**	**+1.6**
VLI	**Veliai**	**2.45**	**332**	P	**Pn**	**03 16 48.4**	**+0.9**
KARP	**Karpathos**	**2.49**	**66**	*e*PN	**Pn**	**03 16 48.0**	**-0.2**
KARP				*e*SN	**Sn**	**03 17 16.4**	**-1.0**
KARP	**Karpathos**	**2.49**	**66**	P	**Pn**	**03 16 49.6**	**+1.4**
KARP	**Karpathos**	**2.49**	**66**	*e*Pn	**Pn**	**03 16 48.0**	**-0.2**
KARP	**Karpathos**	**2.49**	**66**	P	**Pn**	**03 16 49.6**	**+1.4**
KARP				*e*Sn	**Sn**	**03 17 16.4**	**-1.0**
KARP	**Karpathos**	**2.49**	**66**	P	**Pn**	**03 16 49.6**	**+1.4**
APE	**Apeiranthos**	**2.67**	**20**	*e*PN	**Pn**	**03 16 49.4**	**-1.3**
APE				*e*SN	**Sn**	**03 17 18.4**	**-3.5**
APE	**Apeiranthos**	**2.67**	**20**	P	**Pn**	**03 16 50.3**	**-0.4**
APE				S	**Sn**	**03 17 22.1**	**+0.2**
APE	**Apeiranthos**	**2.67**	**20**	*e*Pn	**Pn**	**03 16 49.4**	**-1.3**
APE	**Apeiranthos**	**2.67**	**20**	P	**Pn**	**03 16 50.3**	**-0.4**
APE				*e*Sn	**Sn**	**03 17 18.4**	**-3.5**
APE				S	**Sn**	**03 17 22.1**	**+0.2**
APE	**Apeiranthos**	**2.67**	**20**	P	**Pn**	**03 16 48.9**	**-1.8**
KRND	**KRANIDI**	**2.98**	**341**	P	**Pn**	**03 16 54.6**	**-0.3**
KRND	**KRANIDI**	**2.98**	**341**	P	**Pn**	**03 16 54.6**	**-0.3**
NIS1	**Nisyros lsl.**	**3.06**	**48**	*e*PN	**Pn**	**03 16 55.6**	**-0.4**
NIS1	**Nisyros lsl.**	**3.06**	**48**	*e*Pn	**Pn**	**03 16 55.6**	**-0.4**
DID	**Didima**	**3.08**	**343**	P	**Pn**	**03 16 56.1**	**-0.1**
DID				S	**Sn**	**03 17 32.4**	**+0.6**
DID	**Didima**	**3.08**	**343**	P	**Pn**	**03 16 56.1**	**-0.1**
DID				S	**Sn**	**03 17 32.4**	**+0.6**
DID	**Didima**	**3.08**	**343**	P	**Pn**	**03 16 55.0**	**-1.3**
PYL	**PYLOS**	**3.16**	**318**	P	**Pn**	**03 16 58.0**	**+0.7**
PYL	**PYLOS**	**3.16**	**318**	P	**Pn**	**03 16 58.0**	**+0.7**
PYL	**PYLOS**	**3.16**	**318**	P	**Pn**	**03 16 56.9**	**-0.5**
VLX	**Vlachokerasia**	**3.23**	**331**	P	**Pn**	**03 16 59.7**	**+1.3**
VLX	**Vlachokerasia**	**3.23**	**331**	P	**Pn**	**03 16 59.7**	**+1.3**
ITM	**Ithomi**	**3.28**	**323**	P	**Pn**	**03 16 59.5**	**+0.5**
ITM	**Ithomi**	**3.28**	**323**	P	**Pn**	**03 16 59.5**	**+0.5**
ITM	**Ithomi**	**3.28**	**323**	P	**Pn**	**03 16 59.2**	**+0.3**
BODT	**Bodrum**	**3.45**	**43**	*e*PN	**Pn**	**03 17 01.4**	**0.0**
BODT	**Bodrum**	**3.45**	**43**	*e*Pn	**Pn**	**03 17 01.4**	**0.0**
ARG	**Arkhangelos**	**3.48**	**61**	P	**Pn**	**03 17 02.2**	**+0.4**
ARG				S	**Sn**	**03 17 42.6**	**+0.8**
ARG	**Arkhangelos**	**3.48**	**61**	P	**Pn**	**03 17 02.2**	**+0.4**
ARG				S	**Sn**	**03 17 42.6**	**+0.8**
YER	**Yerkesik**	**4.08**	**50**	*e*PN	**Pn**	**03 17 10.3**	**+0.2**
YER	**Yerkesik**	**4.08**	**50**	*e*Pn	**Pn**	**03 17 10.3**	**+0.2**
DALY	**Dalyan (Mu¨la**	**4.15**	**56**	*e*PN	**Pn**	**03 17 11.0**	**+0.2**
DALY	**Dalyan (Mu¨la**	**4.15**	**56**	*e*Pn	**Pn**	**03 17 11.0**	**+0.2**
FETY	**Fethiye**	**4.36**	**60**	*e*PN	**Pn**	**03 17 13.8**	**0.0**
FETY	**Fethiye**	**4.36**	**60**	*e*Pn	**Pn**	**03 17 13.8**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**4.42**	**39**	*e*PN	**Pn**	**03 17 14.8**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**4.42**	**39**	*e*Pn	**Pn**	**03 17 14.8**	**+0.1**
KSL	**Kastellorizon**	**4.54**	**68**	P	**Pn**	**03 17 14.4**	**-1.9**
AGG	**Agios Georgios**	**4.74**	**340**	*e*PN	**Pn**	**03 17 19.2**	**+0.2**
AGG	**Agios Georgios**	**4.74**	**340**	*e*Pn	**Pn**	**03 17 19.2**	**+0.2**
GLHS	**Glhisar (BURDU**	**4.90**	**57**	*e*PN	**Pn**	**03 17 22.7**	**+1.4**
GLHS	**Glhisar (BURDU**	**4.90**	**57**	*e*Pn	**Pn**	**03 17 22.7**	**+1.4**
ELL	**Elmali**	**5.01**	**63**	*e*PN	**Pn**	**03 17 23.1**	**+0.3**
ELL	**Elmali**	**5.01**	**63**	*e*Pn	**Pn**	**03 17 23.1**	**+0.3**
BCK	**Bucak**	**5.81**	**58**	*e*PN	**Pn**	**03 17 35.4**	**+1.6**
BCK	**Bucak**	**5.81**	**58**	*e*Pn	**Pn**	**03 17 35.4**	**+1.7**
BRTR	**Keskin Array B**	**9.01**	**52**	P	**Pn**	**03 18 17.5**	**-0.1**
	comp=E,0.1nm,0.3s,baz=220,slow=13,SNR=3.5						
EIL	**Elat**	**10.21**	**116**	S	Sn	03 20 16.3	-11
	comp=E,0.5nm,0.3s,baz=288,slow=6.4,SNR=5.1						
GERES	**GERESS Array B**	**16.32**	**334**	P	**P**	**03 19 58.1**	**+0.4**
	comp=E,0.1nm,0.3s,baz=138,slow=12,SNR=4.9						
AKASG	**Malin Array Be**	**16.51**	**11**	P	**Pn**	**03 19 58.4**	**+0.5**
	comp=E,1.2nm,0.3s,baz=197,slow=11,SNR=5.4						
ESDC	**Sonseca Array**	**23.11**	**291**	P	**P**	**03 21 11.5**	**+0.1**
	comp=E,0.5nm,0.6s,baz=88,slow=8.7,SNR=5.4						
HFS	**Hagfors**	**26.52**	**348**	P	**P**	**03 21 42.2**	**-0.1**
	comp=E,1.6nm,0.5s,baz=154,slow=11,SNR=9.8						
FINES	**FINESS Array B**	**26.92**	**2**	P	**P**	**03 21 45.4**	**-0.4**
	comp=E,1.2nm,0.7s,baz=168,slow=10.0,SNR=3.6						
GEYT	**Alibeck**	**27.34**	**73**	P	**P**	**03 21 46.7**	**-3.3**
	comp=E,0.8nm,0.4s,baz=282,slow=7.2,SNR=1.9						
NOA	**NORSAR Array B**	**27.82**	**346**	P	**P**	**03 21 53.7**	**-0.3**
	comp=E,0.5nm,0.6s,baz=148,slow=8.9,SNR=5.9						
TORD	**Torodi Ar. Bea**	**29.61**	**229**	P	**P**	**03 22 10.7**	**+0.5**
	comp=E,0.3nm,0.3s,baz=36,slow=8.4,SNR=24						
ARCES	**ARCESS Array B**	**35.03**	**1**	P	**P**	**03 22 56.2**	**-1.0**
	comp=E,1.3nm,0.8s,baz=168,slow=9.2,SNR=5.5						
MKAR	**Makanchi Array**	**44.65**	**56**	P	**P**	**03 24 17.7**	**+0.5**
	comp=E,1.4nm,0.6s,baz=284,slow=6.2,SNR=14						

DDA ***29*** *03:16:50.5, 40°.09N×29°.25E, h7km, Md2.7*
ISCJB ***29*** *03:16:51.3±0.6, 40°.13N±0°.05×29°.28E±0°.04, h8km±6km, Error ellipse: s-maj=8.0km s-min=5.0km az=14.8*
ISK ***29*** *03:16:51.3, 40°.12N×29°.26E, h10km, MD2.6*
CSEM ***29*** *03:16:51.6±0.1, 40°.12N×29°.27E, h12km, MD2.6, Error ellipse: s-maj=2.7km s-min=1.9km az=3.0*

ISC 29 03:16:51.5±1.2, 40°.12N±0°.03×29°.26E±0°.02, h19km±2km, n35, σ0§26/40, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IGD	**Bursa**	**0.15**	**343**	*i* P	**Pb**	**03 16 54.0**	**-0.3**
IGD				*i* S	**Sb**	**03 16 56.5**	**+0.4**
ORLT	**Orhaneli**	**0.29**	**254**	*e*PG	**Pg**	**03 16 57.6**	**-0.3**
ORLT	**Orhaneli**	**0.29**	**254**	*e*Pg	**Pg**	**03 16 57.6**	**-0.3**
MDNY	**Mudanya-Bursa**	**0.38**	**311**	*e*PG	**Pg**	**03 16 59.4**	**+0.1**
MDNY				*e*SG	**Sb**	**03 17 05.5**	**+0.3**
MDNY	**Mudanya-Bursa**	**0.38**	**311**	*e*Pg	**Pg**	**03 16 59.4**	**+0.1**
MDNY				*e*Sg	**Sb**	**03 17 05.5**	**+0.3**
CAVI	**Cavuskoy**	**0.46**	**80**	*e*PG	**Pg**	**03 17 00.5**	**-0.3**
CAVI	**Cavuskoy**	**0.46**	**80**	*e*Pg	**Pg**	**03 17 00.5**	**-0.3**
ADVT	**Abdulvahap**	**0.48**	**50**	*e*PG	**Pb**	**03 17 01.8**	**+0.4**
ADVT	**Abdulvahap**	**0.48**	**50**	*e*Pg	**Pb**	**03 17 01.8**	**+0.4**
ARMT	**Armutlu**	**0.53**	**326**	*e*PG	**Pg**	**03 17 02.1**	**-0.1**
ARMT	**Armutlu**	**0.53**	**326**	*e*Pg	**Pg**	**03 17 02.1**	**-0.1**
TVSB	**Tavsanli**	**0.69**	**167**	*e*PG	**Pg**	**03 17 05.2**	**+0.1**
TVSB	**Tavsanli**	**0.69**	**167**	*e*Pg	**Pg**	**03 17 05.2**	**+0.1**
KCTX	**Karacabey (Bur**	**0.70**	**282**	*e*PG	**Pg**	**03 17 05.5**	**+0.2**
KCTX	**Karacabey (Bur**	**0.70**	**282**	*e*Pg	**Pg**	**03 17 05.5**	**+0.2**
HRT	**Hereke**	**0.76**	**24**	*e*PG	**Pb**	**03 17 06.3**	**+0.1**
HRT	**Hereke**	**0.76**	**24**	*e*Pg	**Pb**	**03 17 06.3**	**+0.1**
BORA	**Eskisehir**	**0.95**	**104**	P	**Pb**	**03 17 09.0**	**-0.4**
BORA				S	**Sb**	**03 17 21.8**	**+0.1**
BORA	**Eskisehir**	**0.95**	**104**	*i* P	**Pb**	**03 17 09.0**	**-0.4**
BORA				*i* S	**Sb**	**03 17 21.8**	**+0.1**
ISK	**Istanbul-Kandi**	**0.95**	**351**	*e*PG	**Pn**	**03 17 09.8**	**-0.1**
ISK	**Istanbul-Kandi**	**0.95**	**351**	*e*Pg	**Pn**	**03 17 09.8**	**-0.1**
SPNC	**Sapanca-Adapaz**	**0.98**	**55**	*e*PG	**Pg**	**03 17 10.5**	**0.0**
SPNC	**Sapanca-Adapaz**	**0.98**	**55**	*e*Pg	**Pg**	**03 17 10.5**	**0.0**
GULT	**Gulveren**	**1.01**	**72**	*e*PG	**Pg**	**03 17 11.2**	**+0.1**
GULT	**Gulveren**	**1.01**	**72**	*e*Pg	**Pg**	**03 17 11.2**	**+0.1**
EDC	**Edincik**	**1.09**	**282**	*e*PN	**Pg**	**03 17 12.7**	**+0.1**
EDC	**Edincik**	**1.09**	**282**	*e*Pn	**Pg**	**03 17 12.7**	**+0.1**
KLYT	**Kilyos**	**1.14**	**352**	*e*PN	**Pg**	**03 17 13.4**	**-0.1**
KLYT	**Kilyos**	**1.14**	**352**	*e*Pn	**Pg**	**03 17 13.4**	**-0.1**
BALB	**Balikesir**	**1.16**	**246**	*e*PN	**Pg**	**03 17 14.0**	**0.0**
BALB	**Balikesir**	**1.16**	**246**	*e*Pn	**Pg**	**03 17 14.0**	**0.0**
CTKS	**Kestanelik-??a**	**1.25**	**333**	*e*PN	**Pg**	**03 17 15.4**	**-0.2**
CTKS	**Kestanelik-??a**	**1.25**	**333**	*e*Pn	**Pg**	**03 17 15.4**	**-0.2**
MRMT	**Marmara Adasi**	**1.36**	**291**	*e*PN	**Pg**	**03 17 17.1**	**-0.5**
MRMT	**Marmara Adasi**	**1.36**	**291**	*e*Pn	**Pg**	**03 17 17.2**	**-0.5**

IDC 29 03:18:10.4±1.5, 0°.91N×123°.62E, h0km, mb3.6/4, mb1 3.8/5, mb1mx3.5/41, mbtmp3.7/5, ML3.9/1, Error ellipse: s-maj=56.3km s-min=24.1km az=65.0, Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAPI	**Kappang**	**7.04**	**213**	Pn	Pn	03 19 54.8	0.0
	2.1nm,0.3s,baz=21,slow=6.7,SNR=12						
WRA	**Warramunga Arr**	**23.23**	**154**	P	P	03 23 19.1	-0.4
	0.6nm,0.5s,baz=332,slow=10,SNR=9.0						
ASAR	**Alice Springs**	**26.39**	**158**	P	P	03 23 49.0	+0.3
	0.3nm,0.4s,baz=331,slow=9.8,SNR=5.6						
STKA	**Stephens Creek**	**36.78**	**154**	P	P	03 25 19.8	-0.2
	1.7nm,0.8s,baz=331,slow=14,SNR=4.5						
MKAR	**Makanchi Array**	**58.18**	**328**	P	P	03 28 06.2	0.0
	0.6nm,0.5s,baz=127,slow=8.5,SNR=5.8						

NIED ***29*** *03:22:00, 38°.10N×143°.80E, h29km, Mw3.7 Best double couple: M₀=4.16000×10¹⁴ NP1:φs=335.00000°, δ71.00000°, λ175.00000°. NP2:φs=66.00000°, δ85.00000°, λ19.00000°.*
IDC ***29*** *03:22:02.1±1.6, 37°.91N×143°.89E, h0km, mb3.8/4, mb1 3.9/8, mb1mx3.6/45, mbtmp3.8/8, ML3.5/3, Error ellipse: s-maj=37.0km s-min=20.4km az=74.0*
ISCJB ***29*** *03:22:05.1±1.0, 38°.03N±0°.04×143°.81E±0°.07, h35km±10km, mb3.9/6, Error ellipse: s-maj=10.2km s-min=6.6km az=24.3*
JMA ***29*** *03:22:05.9±0.2, 38°.07N×143°.77E, h46km, M4.1*
NEIC ***29*** *03:22:06.9±0.7, 38°.03N×143°.89E, h35km, mb4.2/2, Error ellipse: s-maj=14.0km s-min=8.6km az=93.0*

ISC 29 03:22:05.9±3.6, 38°.08N±0°.05×143°.83E±0°.07, h25km±26km, n29, σ1§50/38, mb4.0/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**1.97**	**301**	P	Pn	03 22 37.2	-0.4
OFUJ				*e*S	**Sn**	**03 23 00.9**	**-0.6**
JIO	**Ouri**	**1.99**	**282**	P	**Pn**	**03 22 37.5**	**-0.4**
JIO				S	**Sn**	**03 23 00.1**	**-1.8**
JMK	**Ichinoseki**	**2.22**	**294**	P	**Pn**	**03 22 41.0**	**-0.2**
JOM	**Ohasama**	**2.42**	**306**	P	**Pn**	**03 22 43.9**	**0.0**
JOM				*e*S	**Sn**	**03 23 12.2**	**-0.6**
JFT	**Otama**	**2.82**	**260**	P	**Pn**	**03 22 49.6**	**+0.2**
JFT				S	**Sn**	**03 23 21.6**	**-1.0**
JYK	**Kaneyama**	**2.85**	**288**	P	**Pn**	**03 22 50.2**	**+0.5**
JANG	**Nango**	**2.91**	**323**	P	**Pn**	**03 22 50.4**	**-0.3**
JANG				*e*S	**Sn**	**03 23 23.3**	**-1.6**
JAW	**Awa shima**	**3.62**	**277**	P	**Pn**	**03 23 01.2**	**+0.8**
JAG	**Ashikaga**	**3.86**	**246**	P	**Pn**	**03 23 03.0**	**-0.6**
JAG				S	**Sn**	**03 23 45.4**	**-2.8**
JOT	**Ohata**	**3.94**	**328**	P	**Pn**	**03 23 05.7**	**+1.0**
ERM	**Erimo**	**3.97**	**353**	*e*Pn	**Pn**	**03 23 05.1**	**0.0**
ERM				*e*Sn	**Sn**	**03 23 48.1**	**-2.7**
JKB	**Kayabe**	**4.37**	**331**	P	**Pn**	**03 23 11.5**	**+0.8**
JRY	**Ryogami san**	**4.44**	**244**	P	**Pn**	**03 23 11.3**	**-0.4**
JRY				S	**Sn**	**03 23 58.5**	**-4.1**
JCH	**Churui**	**4.55**	**356**	S	**Sn**	**03 24 02.1**	**-3.0**
JOD2	**Odawara 2**	**4.73**	**235**	P	**Pn**	**03 23 14.7**	**-1.0**
MJAR	**Matsushiro Arr**	**4.73**	**253**	Pn	**Pn**	**03 23 15.7**	**0.0**
	1.2nm,0.3s,baz=85,slow=14,SNR=8.7						
MJAR				Sn	**Sn**	**03 24 09.7**	**-0.1**
	2.4nm,0.3s,baz=84,slow=14,SNR=6.9						
MAJO	**Matsushiro**	**4.73**	**253**	*e*Pn	**Pn**	**03 23 16.1**	**+0.4**
MAJO				*e*Sn	Sn	03 24 05.2	-4.6
MAT	**Matsushiro**	**4.73**	**253**	P	**Pn**	**03 23 17.2**	**+1.5**
MAT				S	**Sn**	**03 24 09.9**	**+0.1**
JHJ	**Hachijo jima 2**	**5.94**	**215**	Pn	Pn	03 23 28.3	-4.0
	11nm,0.3s,baz=76,slow=19,SNR=5.4						
JHJ				Sn	Sn	03 24 30.3	-9.2
	16nm,0.3s,baz=279,slow=23,SNR=2.9						
ASAJ	**Asahikawa**	**6.11**	**352**	Pn	**Pn**	**03 23 34.8**	**+0.2**
	baz=207,slow=12						
ASAJ				Sn	**Sn**	**03 24 39.9**	**-3.7**
	1.1nm,0.3s,baz=250,slow=16,SNR=3.9						
KLR	**Kul'dur**	**14.15**	**326**	Pn	**Pn**	**03 25 24.9**	**+0.4**
	0.1nm,0.3s,baz=137,slow=12,SNR=3.7						
SONM	**Songino Array**	**28.83**	**302**	P	**P**	**03 28 03.8**	**+1.6**
	0.4nm,0.4s,baz=110,slow=8.6,SNR=3.8						
MKAR	**Makanchi Array**	**45.20**	**302**	P	**P**	**03 30 21.9**	**+1.2**
	0.4nm,0.7s,baz=97,slow=7.4,SNR=3.3						
TKM2	**Tokmak 2**	**50.82**	**298**	*e*P	**P**	**03 31 04.9**	**+0.4**
	1.0nm,0.4s						
WRAB	**Tennant Creek**	**58.38**	**190**	*e*P	**P**	**03 31 58.1**	**-1.1**
	1.7nm,0.6s						
WRA	**Warramunga Arr**	**58.39**	**190**	P	**P**	**03 31 58.1**	**-1.2**
	3.3nm,0.7s,baz=11,slow=7.1,SNR=22						
ABKAR	**Akbulak array**	**58.73**	**310**	*e*P	**P**	**03 32 02.1**	**+0.7**
ASAR	**Alice Springs**	**62.12**	**190**	P	**P**	**03 32 24.1**	**-0.6**
	0.6nm,0.6s,baz=12,slow=7.7,SNR=9.3						
SAML	**Samuel**	**142.15**	**47**	*e*PKPdf	**PKPdf**	**03 41 36.6**	**+0.1**

NIED ***29*** *03:26:00, 37°.60N×143°.80E, h5km, Mw4.3 Best double couple: M₀=3.25000×10¹⁵ NP1:φs=56.00000°, δ49.00000°, λ-49.00000°. NP2:φs=183.00000°, δ56.00000°, λ-127.00000°.*
IDC ***29*** *03:26:41.9±0.5, 37°.44N×144°.00E, h0km, mb4.3/24, mb1 4.5/29, mb1mx4.4/40, mbtmp4.3/29, ML3.6/4, MS3.6/24, Ms1 3.6/24, ms1mx3.4/45, Error ellipse: s-maj=14.9km s-min=12.3km az=121.0*
NEIC ***29*** *03:26:45.8±1.8, 37°.53N×143°.93E, h20km±11km, mb4.7/56, Error ellipse: s-maj=5.3km s-min=3.2km az=141.0*
JMA ***29*** *03:26:46.1±0.3, 37°.58N×143°.79E, h48km, M4.4*
ISCJB ***29*** *03:26:46.9±0.2, 37°.69N±0°.03×143°.82E±0°.03, h33km, mb4.5/105, MS3.7/28, Error ellipse: s-maj=4.5km s-min=2.9km az=170.6*
MOS ***29*** *03:26:48.1±1.1, 37°.87N×143°.84E, h37km, mb4.8/56, Error ellipse: s-maj=8.3km s-min=4.7km az=101.5*

ISC 29 03:26:47.9±0.5, 37°.66N±0°.05×143°.98E±0°.05, h35km, n294, σ1§55/298, mb4.6/109, MS3.8/28, 32C-22D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.23**	**292**	P	**Pn**	**03 27 20.5**	**-1.8**
JIO				*e*S	**Sn**	**03 27 45.1**	**-3.5**
OFUJ	**Ofunato**	**2.31**	**309**	P	**Pn**	**03 27 21.8**	**-1.6**
OFUJ				S	**Sn**	**03 27 47.9**	**-2.7**
JMK	**Ichinoseki**	**2.53**	**302**	P	**Pn**	**03 27 24.9**	**-1.6**
JMK				*e*S	**Sn**	**03 27 53.5**	**-2.5**
JOM	**Ohasama**	**2.78**	**312**	S	**Sn**	**03 28 00.6**	**-1.7**
JFT	**Otama**	**2.90**	**268**	P	**Pn**	**03 27 29.6**	**-2.0**
JFT				*e*S	**Sn**	**03 28 01.7**	**-3.5**
JYK	**Kaneyama**	**3.12**	**295**	P	**Pn**	**03 27 33.1**	**-1.5**
JANG	**Nango**	**3.32**	**325**	P	**Pn**	**03 27 36.7**	**-0.7**
JANG				*e*S	**Sn**	**03 28 12.8**	**-2.9**
JAW	**Awa shima**	**3.82**	**283**	P	**Pn**	**03 27 43.2**	**-1.0**
JAG	**Ashikaga**	**3.83**	**253**	P	**Pn**	**03 27 41.4**	**-2.9**
JOT	**Ohata**	**4.36**	**330**	P	**Pn**	**03 27 51.6**	**0.0**
ERM	**Erimo**	**4.40**	**352**	*c i*P	**Pn**	**03 27 50.6**	**-1.6**
ERM				pmax	pmax		
	comp=Z,227nm,1.2s						
ERM	**Erimo**	**4.40**	**352**	*e*Pn	**Pn**	**03 27 51.1**	**-1.1**
ERM				*e*Sn	**Sn**	**03 28 37.7**	**-4.4**
MJAR	**Matsushiro Arr**	**4.75**	**258**	Pn	**Pn**	**03 27 55.6**	**-1.4**
	comp=Z,13nm,0.3s,baz=89,slow=15,SNR=106						
MJAR				Sn	**Sn**	**03 28 49.6**	**-1.2**
	comp=Z,8.6nm,0.3s,baz=79,slow=27,SNR=8.4						
MJAR				LR	LR	03 29 52.8	
	comp=Z,410nm,19.7s,baz=100,slow=41						
MAJO	**Matsushiro**	**4.75**	**258**	*c i*P	**Pn**	**03 27 56.0**	**-1.0**
MAJO	**Matsushiro**	**4.75**	**258**	*e*Pn	**Pn**	**03 27 56.3**	**-0.8**
MAT	**Matsushiro**	**4.75**	**258**	P	**Pn**	**03 27 55.7**	**-1.3**
MAT				S	**Sn**	**03 28 47.6**	**-3.3**
MJB9	**Matsu-Tunnel

baz=322,slow=75,SNR=12
H11N1 WAKE ISLAND Hy 26.78 126 T T 03 59 16.1
SNR=5.7
H11N3 WAKE ISLAND Hy 26.79 125 T T 04 00 16.9
baz=312,slow=75,SNR=8.4
H11S1 WAKE ISLAND Hy 27.55 128 T T 04 00 13.6
baz=323,slow=74,SNR=4.0
H11S2 WAKE ISLAND Hy 27.56 128 T T 04 00 18.8
baz=7.0,slow=74,SNR=3.7
ULN Ulaanbaatar 28.72 303⇑ *i*P **P 03 32 43.3 +1.3**
ULN pmax pmax
comp=Z,4.0nm,0.8s
ULN Ulaanbaatar 28.72 303 *e*P **P 03 32 42.5 +0.5**
comp=Z,18nm,1.6s
SONA1 Songino Array 29.15 303 *e*P **P 03 32 46.6 +0.8**
SONM Songino Array 29.16 302 P **P 03 32 46.7 +0.9**
comp=Z,3.0nm,0.8s,baz=90,slow=8.3,SNR=15
SONM LR LR 03 45 44.0
comp=Z,119nm,18.6s,baz=74,slow=39
TLY Talaya 31.49 310 LR LR 03 46 31.6
comp=Z,145nm,18.5s,baz=96,slow=38
TLY Talaya 31.49 310 *e*P **P 03 33 08.1 +1.8**
TLY pmax pmax
comp=Z,5.0nm,0.9s
TLY MLR MLR
comp=Z,221nm,15.0s
TLY Talaya 31.49 310 *e*P **P 03 33 06.9 +0.6**
comp=Z,4.8nm,0.7s
ZAK Zakamensk 31.51 307 *e*P **P 03 33 06.5 0.0**
ZAK pmax pmax
comp=Z,5.0nm,1.0s
LZH Lanzhou 31.98 280 *e*P **P 03 33 10.5 -0.4**
LZH pP pP 03 33 17.5 -3.5
LZH sP sP 03 33 21.8 -3.4
LZH pmax pmax
comp=Z,14nm,0.8s
BILL Bilibino 32.87 15⇑ *i*P **P 03 33 17.9 -0.2**
BILL *e* 03 34 26.7
BILL pmax pmax
comp=Z,16nm,1.0s
BILL MLR MLR
comp=Z,116nm,23.0s
BILL Bilibino 32.87 15 *e*P **P 03 33 18.5 +0.4**
comp=Z,13nm,0.9s
CD2 Chengdu 33.72 271 P **P 03 33 24.5 -1.5**
CD2 pmax pmax
comp=Z,21nm,0.8s
GTA Gaotai 34.34 287 *e*P **P 03 33 32.0 +0.6**
GTA pP pP 03 33 41.5 0.0
GTA sP sP 03 33 45.8 +0.1
GTA S **S 03 38 54.3 -2.3**
GTA sS sS 03 39 10.5 -2.8
GTA SS **SnSn 03 41 02.0 -5.7**
GTA pmax pmax
comp=Z,5.0nm,0.8s
GTA pmax pmax
comp=Z,160nm,5.0s
GTA LR LR
comp=N,130nm,14.0s
GTA LR LR
comp=E,210nm,14.5s
GTA LR LR
comp=Z,170nm,13.3s
TIXI Tiksi 34.94 352 P **P 03 33 35.6 -0.4**
comp=Z,1.5nm,0.6s,baz=158,slow=7.0,SNR=5.3
TIXI LR LR 03 48 11.3
comp=Z,45nm,19.0s,baz=164,slow=37
TIXI Tiksi 34.94 352⇑ *i*P **P 03 33 35.9 -0.1**
TIXI pmax pmax
comp=Z,2.0nm,0.8s
KMI Kunming 37.08 262 P **P 03 33 55.5 +0.4**
KMI pmax pmax
comp=Z,25nm,0.5s
KMI pmax pmax
comp=Z,160nm,6.6s
KMI LR LR
comp=N,160nm,5.2s
KMI LR LR
comp=E,180nm,6.2s
KMI LR LR
comp=Z,100nm,4.8s
WMQ Urumqi 42.39 297 *e*P **P 03 34 40.0 +1.1**
ZAA0 Zalesovo Array 43.02 312 *e*P **P 03 34 43.7 -0.1**
ZALV Zalesovo Beam 43.02 312 P **P 03 34 44.2 +0.5**
comp=Z,2.9nm,0.4s,baz=80,slow=5.9,SNR=15
ZALV PcP **PcP 03 36 33.4 0.0**
comp=Z,7.3nm,0.7s,baz=96,slow=2.9,SNR=11
ZALV LR LR 03 53 27.4
comp=Z,98nm,18.3s,baz=69,slow=37
CHTO Chiang Mai 43.43 257 *e*P **P 03 34 47.0 -0.5**
CHTO pmax pmax
comp=Z,7.0nm,0.9s
CHTO Chiang Mai 43.43 257 *e*P **P 03 34 47.0 -0.5**
comp=Z,6.9nm,0.9s
NRIK Noril'sk 43.57 335 P **P 03 34 48.4 +0.4**
comp=Z,5.0nm,0.8s,baz=126,slow=7.4,SNR=7.2
NRIK LR LR 03 54 03.7
comp=Z,113nm,18.0s,baz=102,slow=38
CMAR Chiang Mai Arr 43.63 257 P **P 03 34 49.0 -0.2**
comp=Z,3.6nm,0.7s,baz=45,slow=7.0,SNR=17
CMAR LR LR 03 55 57.9
comp=Z,54nm,18.9s,baz=32,slow=40
CMAR Chiang Mai Arr 43.63 257 P **P 03 34 49.0 -0.2**
CMAR pmax pmax
comp=Z,4.0nm,0.7s
CMAR MLR MLR
comp=Z,54nm,18.9s
CM01 Chiang Mai Arr 43.64 257 *e*P **P 03 34 48.6 -0.7**
TT01 Tatalina 43.73 35 *e*P **P 03 34 50.9 +1.5**
TTA Tatalina 43.74 35 *e*P **P 03 34 51.1 +1.5**
TTA pmax pmax
comp=Z,6.0nm,1.1s
TTA Tatalina 43.74 35 *e*P **P 03 34 51.1 +1.5**
comp=Z,6.2nm,1.1s
NVS Novosibirsk 43.90 313 *e*P **P 03 34 49.5 -1.3**
KDAK Kodiak Island 45.26 42 *ce*P **P 03 35 01.9 +0.2**
PPLA Purkeypile 45.48 35 *e*P **P 03 35 06.0 +2.4**
comp=Z,29nm,1.5s
SPU Mount Spurr 45.49 38 *e*P **P 03 35 05.3 +1.8**
MK01 Makanchi Array 45.52 302 *e*P **P 03 35 04.0 0.0**
MK31 Makanchi Array 45.52 302 *e*P **P 03 35 04.5 +0.5**
MK31 Makanchi Array 45.52 302 *e*P **P 03 35 04.5 +0.5**
MKAR Makanchi Array 45.52 302 P **P 03 35 04.2 +0.2**
comp=Z,5.1nm,0.8s,baz=82,slow=9.2,SNR=25
MKAR LR LR 03 54 00.2
comp=Z,48nm,20.9s,baz=38,slow=36
MKAR Makanchi Array 45.52 302 *e*P **P 03 35 04.5 +0.5**
CAST Castle Rocks 45.56 34 *e*P **P 03 35 05.5 +1.5**
comp=Z,7.1nm,0.8s
BPAW Bear Paw Mtn. 46.08 34 *e*P **P 03 35 09.3 +1.2**
comp=Z,7.1nm,1.1s
KTH Kantishna Hill 46.08 34 *e*P **P 03 35 10.0 +1.8**
comp=Z,14nm,1.0s
MLY Manley 46.23 32 *e*P **P 03 35 11.2 +1.8**
comp=Z,19nm,1.2s
TRF Thorofare Moun 46.36 34 *e*P **P 03 35 11.8 +1.2**
comp=Z,3.8nm,0.8s
COLD Coldfoot 46.61 29 *e*P **P 03 35 13.5 +1.3**
comp=Z,0.8nm,0.5s
BWN Browne 46.75 33 *e*P **P 03 35 15.7 +2.4**
comp=Z,59nm,1.2s
PMR Palmer 46.90 37 *e*P **P 03 35 14.6 +0.1**
PMR pmax pmax
comp=Z,12nm,1.0s
PMR Palmer 46.90 37 *e*P **P 03 35 14.6 +0.1**
comp=Z,12nm,1.0s
MCK McKinley 46.97 34 *e*P **P 03 35 15.8 +0.7**
MCK pmax pmax
comp=Z,7.0nm,0.9s
MCK McKinley 46.97 34 *e*P **P 03 35 15.8 +0.7**
comp=Z,6.9nm,0.9s
RND Reindeer 47.01 35 *e*P **P 03 35 16.1 +0.6**
RND pmax pmax
comp=Z,18nm,1.1s
RND Reindeer 47.01 35 *e*P **P 03 35 16.1 +0.6**
comp=Z,18nm,1.1s
KURK Kurchatov 47.16 308 *e*P **P 03 35 16.7 0.0**
KURK pmax pmax
comp=Z,15nm,0.9s
KURK Kurchatov 47.16 308 *e*P **P 03 35 16.7 0.0**
comp=Z,15nm,0.9s
MDM Murphy Dome 47.30 32 *e*P **P 03 35 19.2 +1.6**
comp=Z,22nm,1.1s
WRH Wood River Hil 47.35 33 *e*P **P 03 35 19.2 +1.2**
comp=Z,4.1nm,0.8s
COLA College 47.46 33 *d i*P **P 03 35 19.8 +1.0**
COLA pmax pmax
comp=Z,22nm,2.2s
COLA College 47.46 33 *e*P **P 03 35 20.2 +1.4**
comp=Z,7.0nm,0.9s
CCB Clear Creek Bu 47.48 33 *e*P **P 03 35 20.0 +1.1**
comp=Z,4.3nm,1.1s
SCM Sheep Creek Mo 47.75 37 *e*P **P 03 35 22.7 +1.4**
SCM pmax pmax
comp=Z,16nm,1.1s
SCM Sheep Creek Mo 47.75 37 *e*P **P 03 35 22.7 +1.4**
comp=Z,16nm,1.1s
IL1 Eielson Array 47.87 33 *e*P **P 03 35 21.9 -0.1**
ILAR Eielson Array 47.87 33 P **P 03 35 22.6 +0.6**
comp=Z,5.7nm,0.7s,baz=264,slow=6.5,SNR=60
ILB Eielson Array 47.87 33 *e*P **P 03 35 22.8 +0.8**
KLU Klutina 48.44 37 *e*P **P 03 35 28.2 +1.7**
comp=Z,20nm,1.4s
DIV Divide 48.54 38 *e*P **P 03 35 28.4 +1.0**
comp=Z,39nm,1.5s
FYU Fort Yukon 48.54 30 *e*P **P 03 35 29.7 +2.5**
comp=Z,48nm,1.6s
DOT Dot Lake 49.15 34 *e*P **P 03 35 32.8 +0.9**
comp=Z,9.0nm,0.9s
MENT Mentasta 49.35 35 *e*P **P 03 35 35.2 +1.7**
comp=Z,6.3nm,1.0s
EGAK Eagle 50.32 33 *e*P **P 03 35 41.3 +0.5**
comp=Z,1.4nm,0.6s
TKM2 Tokmak 2 51.13 299 *e*P **P 03 35 48.4 +0.9**
TKM2 pmax pmax
comp=Z,15nm,1.2s
TKM2 Tokmak 2 51.13 299 *e*P **P 03 35 48.4 +0.9**
comp=Z,15nm,1.2s
FRU Bishkek 51.84 299 *e*P **P 03 35 53.0 +0.4**
AAK Ala-Archa 51.99 299 LR LR 03 59 45.8
comp=Z,70nm,18.2s,baz=62,slow=38
AAK Ala-Archa 51.99 299⇓ *e*P **P 03 35 54.1 +0.2**
AAK Ala-Archa 51.99 299 *e*P **P 03 35 53.9 0.0**
comp=Z,2.1nm,0.8s
KSH Kashi 52.02 294 *e*P P 03 35 59.8 +5.8
KSH *e*pP sP 03 36 09.8 +1.1
KSH *e*sP pP 03 36 13.5 +9.0
KSH *e*PP PP 03 37 59.8 +7.7
KSH S **S 03 43 21.0 +5.8**
KSH ScS **ScS 03 45 44.3 +2.8**
KSH Kashi 52.02 294 SS **SS 03 46 59.8 +7.6**
KSH pmax pmax
comp=Z,82nm,4.4s
KSH LR LR
comp=N,77nm,6.9s
KSH LR LR
comp=E,110nm,6.7s
KSH LR LR
comp=Z,120nm,9.2s
EKS2 Erkin-Say 52.48 299 *e*P **P 03 35 57.6 +0.1**
EKS2 pmax pmax
comp=Z,2.0nm,0.8s
EKS2 Erkin-Say 52.48 299 *e*P **P 03 35 57.5 +0.1**
comp=Z,2.0nm,0.8s
ZRNK Zerenda 52.49 313 *e*P **P 03 35 57.7 +0.5**
ZRNK pmax pmax
comp=Z,11nm,1.1s
ZRNK Zerenda 52.49 313 *e*P **P 03 35 57.7 +0.5**
comp=Z,11nm,1.1s
INK Inuvik 52.90 28 P **P 03 36 01.1 +1.1**
comp=Z,3.9nm,0.8s,baz=288,slow=6.4,SNR=15
INK Inuvik 52.90 28 *e*P **P 03 36 01.0 +1.1**
INK pmax pmax
comp=Z,5.0nm,0.9s
INK Inuvik 52.90 28 *e*P **P 03 36 01.0 +1.1**
comp=Z,5.0nm,0.9s
KKAR Karatay Array 54.58 301 *e*P **P 03 36 12.9 +0.2**
KKAR pmax pmax
comp=Z,5.0nm,0.9s
KKAR Karatay Array 54.58 301 *e*P **P 03 36 12.9 +0.2**
comp=Z,4.6nm,0.9s
SVE Sverdlovsk 56.03 319 *e*P **P 03 36 23.9 +1.0**
SVE pmax pmax
comp=Z,21nm,1.0s
SVE MLR MLR
comp=Z,180nm,15.0s
DLBC Dease Lake 56.87 39 *e*P **P 03 36 30.6 +1.7**
comp=Z,14nm,1.6s
ARU Arti 57.24 319 *d i*P **P 03 36 31.8 +0.3**
ARU 03 38 37.1
ARU S **S 03 44 28.1 +3.4**
ARU SS **SS 03 48 15.5 +1.9**
ARU pmax pmax
comp=Z,22nm,1.2s
ARU MLR MLR
comp=Z,166nm,17.0s
ARU Arti 57.24 319 *e*P **P 03 36 31.8 +0.3**
comp=Z,15nm,0.9s
WRAB Tennant Creek 57.99 191⇓ *e*P **P 03 36 34.5 -2.6**
WRAB pmax pmax
comp=Z,18nm,1.0s
WRAB Tennant Creek 57.99 191 *e*P **P 03 36 36.5 -0.6**
comp=Z,8.8nm,0.7s
WB2 Warramunga Arr 58.01 191 *e*P **P 03 36 36.5 -0.7**
comp=Z,9.2nm,0.7s
WRA Warramunga Arr 58.01 191 P **P 03 36 34.1 -3.1**
comp=Z,2.1nm,0.5s,baz=11,slow=7.3,SNR=14
FITZ Fitzroy Crossi 58.09 201 *e*P **P 03 36 38.0 +0.2**
comp=Z,5.2nm,1.0s
ABKAR Akbulak array 59.10 311 *e*P **P 03 36 44.6 0.0**
comp=Z,6.2nm,0.7s
SPITS Spitsbergen Ar 60.30 349 LR LR 04 03 50.0
comp=Z,30nm,20.1s,baz=80,slow=37
AS01 Alice Springs 61.72 190 *e*P **P 03 37 02.1 -0.6**
ASAR Alice Springs 61.73 190 P **P 03 37 00.2 -2.6**
comp=Z,1.8nm,0.8s,baz=12,slow=6.6,SNR=15
YKA Yellowknife Ar 62.23 31 P **P 03 37 05.9 +0.2**
comp=Z,1.1nm,0.7s,baz=300,slow=6.5,SNR=14
YKB5 Yellowknife Ar 62.23 31 *e*P **P 03 37 06.2 +0.5**
ARCES ARCESS Array B 64.12 340 P **P 03 37 18.4 +0.2**
comp=Z,1.5nm,0.8s,baz=45,slow=7.7,SNR=7.6
KLMR Klimovskoe 64.31 328 *e*P **P 03 37 18.9 -0.6**
KLMR pmax pmax
comp=Z,13nm,1.5s
GEYT Alibeck 65.31 300 P **P 03 37 26.1 -0.4**
comp=Z,2.6nm,0.8s,baz=1.8,slow=4.6,SNR=6.2
GEYT LR LR 04 09 06.8
comp=Z,61nm,18.0s,baz=180,slow=39
DAG Danmarks Havn 65.32 356 *i*P **P 03 37 25.5 -0.3**
comp=Z,7.6nm,1.0s
DAG Danmarks Havn 65.32 356 *i*P **P 03 37 25.5 -0.3**
DAG pmax pmax
comp=Z,8.0nm,1.0s
AFI Afiamalu 66.00 132 LR LR 03 59 14.2
comp=Z,44nm,21.6s,baz=64,slow=30
VRH Novokhopyorsk 68.48 319 *e*P **P 03 37 44.8 -1.5**
VRH pmax pmax
comp=Z,10.0nm,1.5s
OBN Obninsk 68.81 324⇑ *e*P **P 03 37 48.2 -0.1**
OBN *e* 03 40 19.7
OBN pmax pmax
comp=Z,8.0nm,0.7s
OBN MLR MLR
comp=Z,74nm,15.0s
LPSR Galich'ya Gora 69.12 321 *e*P **P 03 37 49.2 -1.1**
LPSR pmax pmax
comp=Z,8.0nm,1.0s
FINES FINESS Array B 69.20 333 P **P 03 37 50.9 +0.3**
comp=Z,4.4nm,0.7s,baz=38,slow=9.6,SNR=13
FINES LR LR 04 12 02.7
comp=Z,56nm,18.4s,baz=58,slow=39
STKA Stephens Creek 69.21 182 P **P 03 37 49.7 -1.2**
comp=Z,1.9nm,0.9s,baz=326,slow=12,SNR=5.3
MOD Modoc Plateau 69.77 52 *e*P **P 03 37 55.5 +0.8**
comp=Z,2.2nm,0.5s
VSR Storozhevoye 69.80 320 *e*P **P 03 37 52.8 -1.7**
VSR pmax pmax
comp=Z,7.0nm,1.0s
SUMG Summit 70.05 1⇑ *i*P **P 03 37 57.4 +1.2**
comp=Z,7.6nm,0.8s
SUMG Summit 70.05 1⇑ *i*P **P 03 37 57.4 +1.2**
SUMG pmax pmax
comp=Z,8.0nm,0.8s
SUMG Summit 70.05 1 *e*P **P 03 37 57.2 +1.0**
comp=Z,38nm,1.6s
VSU Vasula 70.94 330⇓ *e*P **P 03 38 01.3 0.0**
VSU pmax pmax
comp=Z,36nm,1.1s
NCK Nalchik 71.75 311⇓ *e*P **P 03 38 05.9 -0.7**
NCK pmax pmax
comp=Z,9.0nm,0.6s
ZEI Tsey 71.97 310 *e*P **P 03 38 05.8 -2.3**
ZEI pmax pmax
comp=Z,21nm,1.4s
KIV Kislovodsk 72.03 312 *e*P **P 03 38 09.8 +1.5**
KIV pmax pmax
comp=Z,16nm,0.9s
KIV MLR MLR
comp=Z,64nm,17.0s
KIV Kislovodsk 72.03 312 *e*P **P 03 38 09.4 +1.1**
comp=Z,15nm,0.9s
KBZ Khabaz 72.03 312 P **P 03 38 09.3 +1.2**
comp=Z,7.9nm,0.9s,baz=75,slow=4.2,SNR=14
FFC Flin Flon 72.06 34 *e*P **P 03 38 08.3 +0.1**
FFC pmax pmax
comp=Z,4.0nm,0.8s
FFC Flin Flon 72.06 34 *e*P **P 03 38 08.3 +0.1**
comp=Z,3.8nm,0.8s
LRM Limekiln Ridge 72.26 46 *e*P **P 03 38 10.8 +0.9**
NEY Neytrino 72.42 311⇑ *e*P **P 03 38 12.2 +1.5**
NEY pmax pmax
comp=Z,1.0nm,0.8s
DLMT Dillon 72.45 46 *e*P **P 03 38 12.1 +1.2**
comp=Z,8.5nm,1.3s
BOZ Bozeman (W) 72.83 45 *e*P **P 03 38 13.9 +0.8**
BOZ pmax pmax
comp=Z,3.0nm,0.8s
BOZ Bozeman (W) 72.83 45 *e*P **P 03 38 13.9 +0.8**
comp=Z,2.6nm,0.8s
GNI Garni 72.96 308⇑ *e*P **P 03 38 16.2 +2.2**
GNI pmax pmax
comp=Z,32nm,1.4s
NV01 Mina Array Sit 72.97 54 *e*P **P 03 38 15.0 +0.8**
NVAR Mina Array Bea 72.97 54 P **P 03 38 15.4 +1.2**
comp=Z,2.0nm,0.9s,baz=286,slow=6.7,SNR=7.3
H17A Grant Village 74.18 46 *e*P **P 03 38 23.5 +2.3**
comp=Z,8.6nm,1.0s
IMW Indian Meadow 74.27 46 *e*P **P 03 38 22.9 +1.1**
comp=Z,3.4nm,0.8s
NC204 NORSAR Array S 74.33 339 *e*P **P 03 38 22.2 +0.7**
FXWY Fox Creek 74.38 47 *e*P **P 03 38 24.0 +1.6**
comp=Z,3.4nm,1.1s
NB2 NORSAR Subarra 74.39 338 P **P 03 38 21.9 +0.1**
comp=Z,2.3nm,0.7s,baz=38,slow=5.9
NOA NORSAR Array B 74.39 338 P **P 03 38 22.2 +0.4**
comp=Z,3.0nm,0.7s,baz=39,slow=5.8,SNR=12
NOA LR LR 04 16 13.5
comp=Z,48nm,18.9s,baz=280,slow=40
R11A Troy Canyon, C 74.76 53 *e*P **P 03 38 24.8 +0.2**
comp=Z,3.1nm,1.2s
AKASG Malin Array Be 75.04 323 P **P 03 38 25.8 +0.1**
comp=Z,3.0nm,0.5s,baz=44,slow=5.9,SNR=16
KIEV Kiev 75.05 323⇓ *i*P **P 03 38 25.6 -0.2**
KIEV pmax pmax
comp=Z,7.0nm,1.0s
KIEV Kiev 75.05 323 *e*P **P 03 38 25.8 0.0**
comp=Z,7.6nm,1.0s
AK11 Malin Array Si 75.08 323 *e*P **P 03 38 26.2 +0.2**
BW06 Boulder Array 75.76 47 *e*P **P 03 38 30.4 +0.1**
PD31 Pinedale Array 75.76 47 *e*P **P 03 38 30.7 +0.3**
PDAR Pinedale Array 75.76 47 P **P 03 38 30.4 +0.1**
comp=Z,1.1nm,0.6s,baz=250,slow=1.9,SNR=11
SORM Soroca 77.19 322⇑ *i*P **P 03 38 38.2 +0.2**
SORM Soroca 77.19 322⇑ P **P 03 38 38.2 +0.2**
RSSD Black Hills 77.99 43 *e*P **P 03 38 43.0 +0.1**
RSSD pmax pmax
comp=Z,3.0nm,0.8s
RSSD Black Hills 77.99 43 *e*P **P 03 38 43.0 +0.1**
comp=Z,2.8nm,0.8s
PV09 Paradox Valley 78.68 50 *e*P **P 03 38 47.8 +0.9**
KWP Kalwaria Pacla 78.80 325 *e*P **P 03 38 47.7 +0.8**
KWP Kalwaria Pacla 78.80 325 *e*P **P 03 38 47.7 +0.8**
BUR08 Bucovina Ar. S 79.06 323 *e*P **P 03 38 49.5 +1.0**
BURAR Bucovina Array 79.07 323⇑ *i*P **P 03 38 49.6 +1.0**
BURAR Bucovina Array 79.07 323⇑ P **P 03 38 49.6 +1.0**
TESR Tescani 79.15 321⇑ *i*P **P 03 38 49.7 +0.8**
VRI Vrincioaia 79.56 321⇓ *i*P **P 03 38 52.6 +1.4**
VRI Vrincioaia 79.56 321⇓ P **P 03 38 52.6 +1.4**
STHS Stebnicka Huta 79.61 326 *e*P **P 03 38 52.8 +1.4**
STHS pmax pmax
comp=Z,5.0nm,1.0s
STHS Stebnicka Huta 79.61 326 *e*P **P 03 38 52.8 +1.4**
OJC Ojcow 79.64 327 *e*P **P 03 38 52.4 +0.8**
OJC Ojcow 79.64 327 *e*P **P 03 38 52.3 +0.8**
OJC Ojcow 79.64 327 *e*P **P 03 38 52.2 +0.8**
HARR Harsova 79.76 319⇑ *i*P **P 03 38 55.3 +3.0**
HARR Harsova 79.76 319⇑ P **P 03 38 55.3 +3.0**
CRVS Cervenica-Dubn 79.89 326 *e*P **P 03 38 54.1 +1.2**
CRVS Cervenica-Dubn 79.89 326 *e*P **P 03 38 54.1 +1.2**
BRTR Keskin Array B 79.95 313 P **P 03 38 54.1 +0.5**
comp=Z,1.4nm,0.9s,baz=108,slow=4.0,SNR=6.8
BRTR LR LR 04 18 55.3
comp=Z,20nm,18.2s,baz=54,slow=39
NIE Niedzica 80.02 327 *e*P **P 03 38 55.3 +1.6**
NIE Niedzica 80.02 327 *e*P **P 03 38 55.3 +1.6**
DOPR Dopca 80.15 322⇓ *i*P **P 03 38 56.5 +2.1**
ISR Istrita 80.17 320⇑ *i*P **P 03 38 56.3 +1.7**
ISR Istrita 80.17 320⇑ P **P 03 38 56.3 +1.7**
MLR Muntele Rosu 80.21 321⇑ *i*P **P 03 38 56.6 +1.7**
MLR Muntele Rosu 80.21 321⇑ P **P 03 38 56.6 +1.7**
BR231 Keskin MP Arra 80.38 313 *e*P **P 03 38 54.9 -0.9**
LANS Liptovska Anna 80.58 327 *e*P **P 03 38 58.4 +1.7**
LANS Liptovska Anna 80.58 327 *e*P **P 03 38 58.4 +1.7**
OKC Ostrava-Krasne 80.63 328 *e*P **P 03 38 58.1 +1.2**
OKC Ostrava-Krasne 80.63 328 *e*P **P 03 38 58.1 +1.2**
KECS Kecovo 80.63 326 *e*P **P 03 38 58.5 +1.5**
KECS pmax pmax
comp=Z,2.0nm,1.0s
KECS Kecovo 80.63 326 *e*P **P 03 38 58.4 +1.5**
VOIR 80.70 321⇑ *i*P **P 03 38 58.9 +1.5**
VOIR 80.70 321⇑ P **P 03 38 58.9 +1.5**
DRGR 80.85 323⇑ *i*P **P 03 38 59.3 +1.1**
DRGR 80.85 323⇑ P **P 03 38 59.3 +1.1**
MORC Moravsky Berou 80.93 328⇑ *i*P **P 03 38 59.8 +1.2**
MORC Moravsky Berou 80.93 328⇑ P **P 03 38 59.8 +1.2**
MORC Moravsky Berou 80.93 328 *e*P **P 03 38 59.6 +1.1**
ARR Arges 80.95 322⇑ *i*P **P 03 39 00.6 +1.8**
DPC Dobruska-Polom 81.00 329 *e*P **P 03 38 59.6 +0.7**
DPC Dobruska-Polom 81.00 329 *e*P **P 03 38 59.6 +0.7**
KRLC Kraliky 81.02 329 *e*P **P 03 38 59.9 +0.9**
KRLC *e*pP **PcP 03 39 03.1 -2.3**
KRLC Kraliky 81.02 329 *e*P **P 03 38 59.9 +0.9**
PSZ Piszkesteto 81.32 326⇓ *i*P **P 03 39 01.7 +1.0**
PSZ Piszkesteto 81.32 326⇓ P **P 03 39 01.7 +1.0**
PSZ Piszkesteto 81.32 326 *e*P **P 03 39 01.6 +1.0**
SDCO Great Sand Dun 81.35 49 *e*P **P 03 39 01.8 +0.5**
comp=Z,1.4nm,0.8s
BRG Berggiesshubel 81.54 331 *e*P **P 03 39 02.3 +0.6**
comp=Z,12nm,1.6s
BRG Berggiesshubel 81.54 331 *e*P **P 03 39 02.3 +0.6**
BRG pmax pmax
comp=Z,12nm,1.6s
CLL Collm 81.55 331⇓ *i*P **P 03 39 01.8 +0.1**
comp=Z,11nm,1.2s
CLL *e* 03 39 14.0
CLL Collm 81.55 331⇓ *i*P **P 03 39 01.8 +0.1**
CLL *e* 03 39 14.0
CLL pmax pmax
comp=Z,11nm,1.2s
CLL Collm 81.55 331 *e*P **P 03 39 02.2 +0.5**
VRAC Vranov 81.69 328⇓ *i*P **P 03 39 03.3 +0.8**
VRAC Vranov 81.69 328⇓ P **P 03 39 03.4 +0.9**
SIRR Siria 81.73 324⇓ *i*P **P 03 39 04.0 +1.2**
PRU Pruhonice 82.00 330 *e*P **P 03 39 04.8 +0.7**
PRU Pruhonice 82.00 330 *e*P **P 03 39 04.8 +0.7**
TREC Trest 82.16 329 *e*P **P 03 39 05.9 +0.9**
TREC Trest 82.16 329 *e*P **P 03 39 05.9 +0.9**
SRE Strehaia 82.16 322⇓ *i*P **P 03 39 06.7 +1.6**
SRE Strehaia 82.16 322⇓ P **P 03 39 06.7 +1.6**
ANMO Albuquerque 82.61 51⇓ *e*P **P 03 39 08.3 +0.4**
ANMO pmax pmax
comp=Z,6.0nm,2.5s
NKC Novy Kostel 82.62 331 *e*P **P 03 39 08.2 +0.8**
NKC Novy Kostel 82.62 331 *e*P **P 03 39 08.2 +0.8**
MDVR Moldovita 82.80 323⇑ *i*P **P 03 39 08.7 +0.2**
KHC Kasperske Hory 83.06 330 *e*P **P 03 39 10.4 +0.7**
KHC Kasperske Hory 83.06 330 *e*P **P 03 39 09.6 -0.1**
KHC pmax pmax
comp=Z,2.0nm,1.0s
KHC Kasperske Hory 83.06 330 *e*P **P 03 39 09.6 -0.1**
comp=Z,2.5nm,1.0s
PPT Papeete 83.10 118 LR LR 04 10 47.8
comp=Z,30nm,21.0s,baz=150,slow=32
GERES GERESS Array B 83.24 330 P **P 03 39 10.8 +0.1**
comp=Z,0.8nm,0.5s,baz=28,slow=6.0,SNR=13
GERES LR LR 04 18 27.4

comp=Z,42nm,20.3s,baz=18,slow=37
GEA0 GERESS Array S 83.24 329 *e*P **P 03 39 10.8 +0.1**
ARSA Arzberg 83.74 328 *i* P **P 03 39 13.8 +0.6**
comp=Z,2.9nm,0.7s
SOKA Soboth 84.39 327 *i* P **P 03 39 17.1 +0.4**
comp=Z,6.3nm,0.7s
KBA Koelnbreinsper 84.79 329 *i* PcP **P 03 39 19.7 +1.0**
comp=Z,5.6nm,0.9s
MOTA Moosalm 85.48 330 *i* P **P 03 39 22.5 +0.3**
comp=Z,2.9nm,0.7s
RETA Reutte 85.50 330 *i* PcP **P 03 39 22.6 +0.4**
comp=Z,8.8nm,0.7s
BFO Black Forest 85.74 332 *e*P **P 03 39 22.9 -0.4**
BFO pmax pmax
comp=Z,10.0nm,0.9s
BFO Black Forest 85.74 332 *e*P **P 03 39 22.9 -0.4**
comp=Z,9.6nm,0.9s
PDG Podgorica 85.74 322⇑*i*P **P 03 39 23.7 +0.3**
FETA Feichten 85.89 330 *i* PcP **P 03 39 24.6 +0.3**
comp=Z,4.7nm,0.8s
DAVA Damuels 86.01 331 *e*PcP **P 03 39 25.1 +0.3**
comp=Z,6.4nm,0.7s
FUORN Ofenpass-Fuorn 86.41 330 *e*P **P 03 39 26.6 -0.3**
TX31 Lajitas Ar. Si 88.11 54 *e*P **P 03 39 35.5 +0.3**
TXAR Lajitas Array 88.11 54 P **P 03 39 35.4 +0.1**
comp=Z,0.8nm,0.7s,baz=301,slow=3.5,SNR=14
ESDC Sonseca Array 97.60 336 LR LR 04 31 21.5
comp=Z,34nm,18.0s,baz=285,slow=40
TORD Torodi Ar. Bea 118.30 317 PKP **PKPdf 03 45 30.8 -1.3**
comp=Z,0.2nm,0.8s,baz=28,slow=2.2,SNR=3.8
SNAA Sanae 141.93 196 PKP PKPpre 03 46 08.2
VNA3 Neumayer Olymp 143.68 194 PKP PKPab 03 46 13.1 -1.6
LPAZ La Paz 144.60 62 PKP **PKPab 03 46 21.0 +0.5**
comp=Z,0.8nm,0.5s,baz=310,slow=1.9,SNR=7.4
LPAZ La Paz 144.60 62 PKIKP **PKPab 03 46 21.0 +0.5**
LPAZ pmax pmax
comp=Z,1.0nm,0.5s

MEX 29 03:29:22.5±0.9, 13°.90N×92°.06W, h83km±21km, MD4.2, Off coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THIG		**1.02**	**349**	*i* P	Pn	03 29 40.2	-1.8
THIG				*e*S	Sn	03 29 55.2	-1.3
PCIG		**2.11**	**328**	*e*P	Pn	03 29 55.6	-0.3
PCIG				*e*S	Sn	03 30 19.4	-2.1
CCIG	**Comitan**	**2.37**	**358**	*e*P	Pn	03 29 59.3	-0.3
CCIG				*e*S	Sn	03 30 26.5	-1.4
TGIG		**3.04**	**340**	*e*P	Pn	03 30 06.8	-1.7
TGIG				*e*S	Sn	03 30 41.7	-2.2

ISCJB ***29*** *03:48:24.2±0.7, 6°.81N±0°.05×73°.07W±0°.05, h162km±6km, Error ellipse: s-maj=10.8km s-min=5.1km az=135.7*
FUNV ***29*** *03:48:24.7, 6°.68N×73°.11W, h160km, MW2.5*
RSNC ***29*** *03:48:26.3±0.8, 6°.77N×73°.09W, h150km±5km, ML2.5*
ISC 29 03:48:24.2±1.5, 6°.78N±0°.06×73°.05W±0°.05, h163km±9km, n18, σ1°00/31, 1C, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BARC	**Barichara**	**0.23**	**214**	*e*P	**Pn**	**03 48 46.3**	**-0.1**
BARC				*e*S	**Sn**	**03 49 01.8**	**-1.5**
BARC				*i*		03 49 03.1
comp=Z,92nm,0.2s
PAMC Pamplona, Colo 0.66 32 *e*P **Pn 03 48 49.1 +0.7**
PAMC *i* 03 48 49.3
comp=Z,24nm,0.3s
PAMC *e*S **Sn 03 49 06.5 -0.4**
BRRC Barranca, Sant 0.73 296 *e*P **Pn 03 48 48.2 0.0**
BRRC *i* 03 48 48.5
comp=Z,164nm,0.1s
BRRC *e*S **Sn 03 49 06.1 -0.5**
RUSC La Rusia 0.88 182 *e*P **Pn 03 48 50.2 +0.3**
RUSC *e*S **Sn 03 49 08.8 -0.8**
RUSC *i* 03 49 10.2
comp=Z,42nm,0.4s
CBRI Barrientos, No 0.96 15 *e*P **Pn 03 48 50.8 +0.7**
CBRI *e*S **Sn 03 49 09.4 -0.7**
GRMC Gramalote, San 0.96 15 *e*P **Pn 03 48 52.1 +2.0**
GRMC *e*S **Sn 03 49 12.0 +2.0**
GRMC *i* 03 49 12.8
comp=Z,60nm,0.3s
CAPV Capacho 1.30 34⇑*i*P **Pn 03 48 54.1 +1.0**
CAPV *e*S **Sn 03 49 15.1 -0.2**
OCAC Ocana 1.47 350 *e*P **Pn 03 48 54.8 +0.1**
OCAC *e*S **Sn 03 49 17.4 -0.7**
OCAC *i* 03 49 22.8
comp=Z,47nm,0.4s
NORC Norcasia 2.17 236 *e*P **Pn 03 49 02.1 -0.1**
NORC *e*S **Sn 03 49 30.5 -1.0**
HELC Santa Helena 2.53 257 *e*P **Pn 03 49 08.0 +1.4**
HELC *e*S **Sn 03 49 39.1 -0.3**
HELC *i* 03 49 44.6
comp=Z,16nm,0.4s
SOCV Socops 2.64 55 *e*P **Pn 03 49 08.3 +0.7**
SOCV *e*S **Sn 03 49 39.8 -1.6**
VIGV El Vigia 2.64 39 *e*P **Pn 03 49 08.9 +1.2**
VIGV *e*S **Sn 03 49 41.5 +0.1**
DBBC Dabeiba 3.14 274 *e*P **Pn 03 49 14.4 +0.4**
DBBC *i* 03 49 54.6
comp=Z,4.2nm,0.5s
PRAC Prado 3.55 211 *e*P **Pn 03 49 20.5 +1.4**
VIRV Villa del Rosa 3.75 10 *e*P **Pn 03 49 21.3 -0.3**
VIRV *e*S **Sn 03 50 04.9 -1.5**
CURV Curarigua 4.43 43 *e*P **Pn 03 49 30.5 0.0**
TEPV Terepaima 4.96 50 *e*P **Pn 03 49 38.0 +0.7**
BAUV El Baul 5.41 66 *e*P **Pn 03 49 43.2 0.0**

ISCJB ***29*** *03:53:50.3±0.5, 39°.11N±0°.04×29°.05E±0°.04, h7km±6km, Error ellipse: s-maj=5.9km s-min=4.8km az=7.4*
CSEM ***29*** *03:53:50.4±0.1, 39°.12N×29°.06E, h8km, MD2.6, Error ellipse: s-maj=2.9km s-min=2.7km az=141.0*
ISK ***29*** *03:53:50.0, 39°.12N×29°.06E, h11km, MD2.7*
DDA ***29*** *03:53:50.4, 39°.09N×29°.08E, h7km, Md2.6*
ISC 29 03:53:50.4±0.9, 39°.10N±0°.03×29°.06E±0°.02, h13km±8km, n30, σ0°33/40, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**257**	P	**Pg**	**03 53 56.2**	**+0.1**
DEMI				S	**Sg**	**03 54 00.2**	**+0.2**
DEMI	**Demirci**	**0.27**	**257**	*i* P	**Pg**	**03 53 56.2**	**+0.1**
DEMI				*i* S	**Sg**	**03 54 00.2**	**+0.2**
GDZ	**Gediz**	**0.33**	**93**	P	**Pg**	**03 53 56.8**	**-0.4**
GDZ				S	**Sg**	**03 54 01.8**	**+0.1**
GDZ	**Gediz**	**0.33**	**93**	*i* P	**Pg**	**03 53 56.9**	**-0.4**
GDZ				*i* S	**Sg**	**03 54 01.8**	**+0.1**
TVSB	**Tavsanli**	**0.47**	**42**	*e*PG	**Pg**	**03 53 59.5**	**-0.2**
TVSB	**Tavsanli**	**0.47**	**42**	*e*Pg	**Pg**	**03 53 59.5**	**-0.2**
KULA	**Kula-Manisa**	**0.67**	**208**	*e*PG	**Pb**	**03 54 03.8**	**-0.2**
KULA	**Kula-Manisa**	**0.67**	**208**	*e*Pg	**Pb**	**03 54 03.8**	**-0.2**
KHAL	**Karahalli**	**0.81**	**155**	P	**Pb**	**03 54 06.5**	**+0.1**
KHAL				S	**Sb**	**03 54 17.0**	**-0.3**
KHAL	**Karahalli**	**0.81**	**155**	*i* P	**Pb**	**03 54 06.5**	**+0.1**
KHAL				*i* S	**Sb**	**03 54 17.0**	**-0.3**
ORLT	**Orhaneli**	**0.95**	**353**	*e*PG	**Pg**	**03 54 08.3**	**-0.5**
ORLT	**Orhaneli**	**0.95**	**353**	*e*Pg	**Pg**	**03 54 08.3**	**-0.5**
AKS	**Akhisar**	**0.99**	**257**	*e*PG	**Pb**	**03 54 09.2**	**-0.4**
AKS	**Akhisar**	**0.99**	**257**	*e*Pg	**Pb**	**03 54 09.2**	**-0.4**
BALB	**Balikesir**	**1.06**	**301**	*e*PG	**Pb**	**03 54 10.7**	**+0.1**
BALB				*e*SG	**Sn**	**03 54 26.0**	**+0.4**
BALB	**Balikesir**	**1.06**	**301**	*e*Pg	**Pb**	**03 54 10.7**	**+0.1**
BALB				*e*Sg	**Sn**	**03 54 26.0**	**+0.4**
CAVI	**Cavuskoy**	**1.25**	**29**	*e*PN	**Pn**	**03 54 13.4**	**-0.3**
CAVI	**Cavuskoy**	**1.25**	**29**	*e*Pn	**Pn**	**03 54 13.4**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.27**	**354**	*e*PN	**Pb**	**03 54 14.1**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.27**	**354**	*e*Pn	**Pb**	**03 54 14.1**	**-0.1**
IZI	**Iznik**	**1.27**	**14**	*e*PN	**Pn**	**03 54 13.8**	**-0.2**
IZI	**Iznik**	**1.27**	**14**	*e*Pn	**Pn**	**03 54 13.8**	**-0.2**
KCTX	**Karacabey (Bur**	**1.28**	**335**	*e*PN	**Pb**	**03 54 14.4**	**0.0**
KCTX	**Karacabey (Bur**	**1.28**	**335**	*e*Pn	**Pb**	**03 54 14.4**	**0.0**
BORA	**Eskisehir**	**1.33**	**54**	P	**Pg**	**03 54 15.9**	**-0.1**
BORA				S	**Sg**	**03 54 34.1**	**+0.8**
BORA	**Eskisehir**	**1.33**	**54**	*i* P	**Pg**	**03 54 15.9**	**-0.1**
BORA				*i* S	**Sg**	**03 54 34.1**	**+0.8**
ARMT	**Armutlu**	**1.47**	**354**	*e*PN	**Pb**	**03 54 17.4**	**-0.2**
ARMT	**Armutlu**	**1.47**	**354**	*e*Pn	**Pb**	**03 54 17.4**	**-0.2**
GULT	**Gulveren**	**1.74**	**40**	*e*PN	**Pn**	**03 54 20.9**	**+0.4**
GULT	**Gulveren**	**1.74**	**40**	*e*Pn	**Pn**	**03 54 20.9**	**+0.4**

CASC 29 03:55:08.0±4.7, 8°.57N×82°.93W, h0km±10km, MD3.9, 1C, Panama-Costa Rica border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BRU2	**Volcan**	**0.32**	**47**	*i* P	Pb	03 55 16.3	-0.5
BRU2				*e*S	Sb	03 55 22.9	+0.3
BRU	**Baru**	**0.43**	**57**⇑*i*P		Pb	03 55 17.9	-0.9
BUS	**Buena Vista**	**1.28**	**320**	*e*P	Pn	03 55 35.0	+1.5
BUS				*e*S	Sn	03 55 51.8	+0.2
QCR	**Quepos**	**1.49**	**305**	*e*P	Pn	03 55 34.7	-1.3
QCR				*e*S	Sn	03 55 56.6	+0.5
URSC	**Urasca**	**1.51**	**326**	*e*P	Pn	03 55 35.1	-1.4
URSC				*e*S	Sn	03 55 57.9	+0.9
HDC	**Heredia**	**1.84**	**321**	*e*S	Sg	03 56 08.6	+1.3
CGA2	**Cerro Gallo 2**	**2.09**	**314**	*e*P	Pn	03 55 45.0	+0.6
PNME	**Penonome**	**2.58**	**92**	*e*P	Pn	03 55 49.5	-1.5
PNME				*e*S	Sn	03 56 21.9	-1.2
AZU	**Azuero**	**2.74**	**106**	*e*P	Pn	03 55 50.7	-2.6
AZU				*e*S	Sn	03 56 25.4	-1.7
BCIP	**Isla Barro Col**	**3.11**	**79**	*e*P	Pn	03 55 54.8	-3.6
BCIP				*e*S	Sn	03 56 38.1	+1.8

ISCJB ***29*** *03:57:49.5±0.4, 39°.09N±0°.04×29°.02E±0°.03, h9km, Error ellipse: s-maj=5.1km s-min=3.8km az=0.1*
CSEM ***29*** *03:57:49.4±0.1, 39°.12N×29°.04E, h2km, MD2.9, Error ellipse: s-maj=2.0km s-min=2.0km az=171.0*
ISK ***29*** *03:57:49.1, 39°.12N×29°.02E, h5km, MD2.9*
DDA ***29*** *03:57:49.4, 39°.11N×29°.03E, h7km, Md2.9*
ISC 29 03:57:49.7±0.9, 39°.12N±0°.03×29°.03E±0°.02, h9km, n46, σ0°40/52, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**254**	P	**Pg**	**03 57 54.6**	**-0.3**
DEMI				S	**Sg**	**03 57 58.2**	**-0.2**
DEMI	**Demirci**	**0.26**	**254**	*i* P	**Pg**	**03 57 54.6**	**-0.3**
DEMI				*i* S	**Sg**	**03 57 58.2**	**-0.2**
GDZ	**Gediz**	**0.35**	**94**	P	**Pg**	**03 57 56.5**	**-0.2**
GDZ				S	**Sg**	**03 58 01.5**	**+0.1**
GDZ	**Gediz**	**0.35**	**94**	*i* P	**Pg**	**03 57 56.5**	**-0.2**
GDZ				*i* S	**Sg**	**03 58 01.5**	**+0.1**
TVSB	**Tavsanli**	**0.47**	**45**	*e*PG	**Pg**	**03 57 58.5**	**-0.4**
TVSB	**Tavsanli**	**0.47**	**45**	*e*Pg	**Pg**	**03 57 58.5**	**-0.4**
KULA	**Kula-Manisa**	**0.67**	**206**	*e*PG	**Pg**	**03 58 02.2**	**-0.4**
KULA	**Kula-Manisa**	**0.67**	**206**	*e*Pg	**Pg**	**03 58 02.2**	**-0.4**
KHAL	**Karahalli**	**0.83**	**154**	P	**Pg**	**03 58 05.5**	**-0.2**
KHAL	**Karahalli**	**0.83**	**154**	*i* P	**Pg**	**03 58 05.5**	**-0.2**
KHL	**Karahalli**	**0.88**	**154**	*e*PG	**Pg**	**03 58 06.8**	**+0.1**
KHL	**Karahalli**	**0.88**	**154**	*e*Pg	**Pg**	**03 58 06.8**	**+0.1**
ORLT	**Orhaneli**	**0.94**	**354**	*e*PG	**Pg**	**03 58 07.2**	**-0.6**
ORLT	**Orhaneli**	**0.94**	**354**	*e*Pg	**Pg**	**03 58 07.2**	**-0.6**
AKHS	**Akhisar**	**0.98**	**256**	P	**Pg**	**03 58 08.4**	**-0.1**
AKHS	**Akhisar**	**0.98**	**256**	*i* P	**Pg**	**03 58 08.4**	**-0.1**
AKS	**Akhisar**	**0.98**	**256**	*e*PG	**Pg**	**03 58 08.1**	**-0.4**
AKS	**Akhisar**	**0.98**	**256**	*e*Pg	**Pg**	**03 58 08.1**	**-0.4**
BALB	**Balikesir**	**1.03**	**301**	*e*PG	**Pg**	**03 58 09.7**	**+0.1**
BALB				*e*SG	**Sb**	**03 58 23.5**	**0.0**
BALB	**Balikesir**	**1.03**	**301**	*e*Pg	**Pg**	**03 58 09.7**	**+0.1**
BALB				*e*Sg	**Sb**	**03 58 23.5**	**0.0**
CAVI	**Cavuskoy**	**1.25**	**30**	*e*PN	**Pb**	**03 58 13.6**	**0.0**
CAVI	**Cavuskoy**	**1.25**	**30**	*e*Pn	**Pb**	**03 58 13.6**	**0.0**
MDNY	**Mudanya-Bursa**	**1.26**	**355**	*e*PN	**Pn**	**03 58 13.2**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.26**	**355**	*e*Pn	**Pn**	**03 58 13.2**	**-0.3**
BALY	**Balya**	**1.26**	**300**	P	**Pg**	**03 58 13.9**	**0.0**
BALY	**Balya**	**1.26**	**300**	*i* P	**Pg**	**03 58 13.9**	**0.0**
KCTX	**Karacabey (Bur**	**1.26**	**336**	*e*PN	**Pn**	**03 58 13.4**	**-0.2**
KCTX	**Karacabey (Bur**	**1.26**	**336**	*e*Pn	**Pn**	**03 58 13.4**	**-0.2**
GEMT	**Gemlik**	**1.32**	**5**	*e*PN	**Pg**	**03 58 15.2**	**+0.1**
GEMT	**Gemlik**	**1.32**	**5**	*e*Pn	**Pg**	**03 58 15.2**	**+0.1**
GONE	**Gonen-Balikesi**	**1.40**	**312**	*e*PN	**Pb**	**03 58 16.1**	**+0.1**
GONE	**Gonen-Balikesi**	**1.40**	**312**	*e*Pn	**Pb**	**03 58 16.1**	**+0.1**
ADVT	**Abdulvahap**	**1.42**	**22**	*e*PN	**Pb**	**03 58 16.4**	**-0.1**
ADVT	**Abdulvahap**	**1.42**	**22**	*e*Pn	**Pb**	**03 58 16.4**	**-0.1**
ARMT	**Armutlu**	**1.45**	**355**	*e*PN	**Pn**	**03 58 16.6**	**+0.4**
ARMT	**Armutlu**	**1.45**	**355**	*e*Pn	**Pn**	**03 58 16.6**	**+0.4**
EDC	**Edincik**	**1.52**	**324**	*e*PN	**Pn**	**03 58 17.7**	**+0.5**
EDC	**Edincik**	**1.52**	**324**	*e*Pn	**Pn**	**03 58 17.7**	**+0.5**
GULT	**Gulveren**	**1.74**	**41**	*e*PN	**Pn**	**03 58 20.9**	**+0.6**
GULT	**Gulveren**	**1.74**	**41**	*e*Pn	**Pn**	**03 58 20.9**	**+0.6**
HRT	**Hereke**	**1.77**	**16**	*e*PN	**Pb**	**03 58 21.7**	**-0.8**
HRT	**Hereke**	**1.77**	**16**	*e*Pn	**Pb**	**03 58 21.7**	**-0.8**
ISK	**Istanbul-Kandi**	**1.95**	**1**	*e*PN	**Pn**	**03 58 24.1**	**+1.1**
ISK	**Istanbul-Kandi**	**1.95**	**1**	*e*Pn	**Pn**	**03 58 24.1**	**+1.1**
SVRH	**Sivrihisar-ESK**	**1.96**	**80**	*e*PN	**Pn**	**03 58 23.3**	**0.0**
SVRH	**Sivrihisar-ESK**	**1.96**	**80**	*e*Pn	**Pn**	**03 58 23.3**	**0.0**

NIED ***29*** *03:58:00, 39°.60N×142°.10E, h68km, Mw3.7 Best double couple: M0=4.34000×10^14 NP1:φs=138.00000°, δ33.00000°, λ-4.00000°. NP2:φs=232.00000°, δ88.00000°, λ-123.00000°.*
JMA 29 03:58:13.7, 39°.63N×142°.12E, h48km±1km, M3.9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**0.24**	**257**	P	Pn	03 58 22.2	+0.1
MIYJ				S	Sn	03 58 28.0	-0.1
JTH	**Tanohata**	**0.37**	**327**	P	Pn	03 58 23.3	0.0
JTH				S	Sn	03 58 30.0	-0.2
OFUJ	**Ofunato**	**0.65**	**213**	P	Pn	03 58 26.6	-0.1
OFUJ				*e*S	Sn	03 58 35.7	-0.4
JOM	**Ohasama**	**0.66**	**256**	P	Pn	03 58 27.1	+0.3
JOM				*e*S	Sn	03 58 36.7	+0.4
JKZ	**Kuzumaki**	**0.70**	**300**	P	Pn	03 58 27.6	+0.1
JKZ				S	Sn	03 58 37.4	0.0
JANG	**Nango**	**0.88**	**328**	P	Pn	03 58 29.5	-0.2
JMK	**Ichinoseki**	**0.97**	**226**	P	Pn	03 58 31.1	+0.1
JMK				S	Sn	03 58 43.6	-0.1
JRG	**Rokugo**	**1.17**	**259**	P	Pn	03 58 33.9	+0.2
JRG				*e*S	Sn	03 58 48.4	-0.2
JAH	**Hinai**	**1.27**	**297**	P	Pn	03 58 35.5	+0.5
JAH				*e*S	Sn	03 58 51.2	+0.2
JIO	**Ouri**	**1.32**	**207**	*e*S	Sn	03 58 51.3	-0.8
JTM	**Tenmabayashi**	**1.41**	**325**	P	Pn	03 58 37.1	+0.2
JTM				*e*S	Sn	03 58 54.1	-0.2
MAT	**Matsushiro**	**4.36**	**226**	P	Pn	03 59 20.5	+3.1
MAT				*e*S	Sn	04 00 10.5	+3.5

NIED ***29*** *04:00:00, 38°.10N×144°.00E, h8km, Mw3.5 Best double couple: M0=2.22000×10^14 NP1:φs=358.00000°, δ23.00000°, λ-88.00000°. NP2:φs=176.00000°, δ67.00000°, λ-91.00000°.*
JMA 29 04:00:26.8±0.2, 38°.15N×144°.04E, h3km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.08**	**297**	P	Pn	04 01 03.4	+0.9
OFUJ				*e*S	Sn	04 01 29.6	+0.7
JIO	**Ouri**	**2.14**	**279**	S	Sn	04 01 31.0	+0.6
JMK	**Ichinoseki**	**2.35**	**291**	P	Pn	04 01 07.4	+1.1
JOM	**Ohasama**	**2.52**	**302**	P	Pn	04 01 09.9	+1.3
JYK	**Kaneyama**	**2.99**	**286**	P	Pn	04 01 16.8	+1.7

ISCJB ***29*** *04:10:45.8±0.5, 39°.13N±0°.04×29°.00E±0°.04, h9km, Error ellipse: s-maj=5.6km s-min=4.4km az=167.9*
CSEM ***29*** *04:10:45.8±0.1, 39°.12N×28°.98E, h12km, MD2.6, Error ellipse: s-maj=3.9km s-min=3.1km az=31.0*
ISK ***29*** *04:10:45.4, 39°.15N×28°.96E, h9km, MD2.7*
DDA ***29*** *04:10:46.3, 39°.07N×29°.04E, h7km, Md2.6*
ISC 29 04:10:45.7±0.9, 39°.15N±0°.04×29°.01E±0°.03, h9km, n19, σ0°67/26, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**245**	P	**Pg**	**04 10 51.9**	**+1.0**
DEMI				S	**Sg**	**04 10 55.6**	**+1.2**
DEMI	**Demirci**	**0.25**	**245**	*i* P	**Pg**	**04 10 51.9**	**+1.0**
DEMI				*i* S	**Sg**	**04 10 55.6**	**+1.2**
GDZ	**Gediz**	**0.37**	**99**	P	**Pg**	**04 10 53.4**	**+0.3**
GDZ				S	**Sg**	**04 10 58.3**	**+0.4**
GDZ	**Gediz**	**0.37**	**99**	*i* P	**Pg**	**04 10 53.4**	**+0.3**
GDZ				*i* S	**Sg**	**04 10 58.3**	**+0.4**
TVSB	**Tavsanli**	**0.46**	**49**	*e*PG	**Pb**	**04 10 56.0**	**-0.1**
TVSB				*e*SG	**Sb**	**04 11 02.6**	**-0.5**
KHAL	**Karahalli**	**0.86**	**154**	P	**Pb**	**04 11 02.4**	**-0.5**
KHAL				S	**Sg**	**04 11 12.9**	**-0.7**
KHAL	**Karahalli**	**0.86**	**154**	*i* P	**Pb**	**04 11 02.4**	**-0.5**
KHAL				*i* S	**Sg**	**04 11 12.9**	**-0.7**
KHL	**Karahalli**	**0.92**	**154**	*e*PG	**Pb**	**04 11 03.7**	**-0.1**
KHL	**Karahalli**	**0.92**	**154**	*e*Pg	**Pb**	**04 11 03.7**	**-0.1**
AKS	**Akhisar**	**0.97**	**254**	*e*PG	**Pg**	**04 11 03.5**	**-0.9**
AKS	**Akhisar**	**0.97**	**254**	*e*Pg	**Pg**	**04 11 03.5**	**-0.9**
BALB	**Balikesir**	**1.01**	**300**	*e*PG	**Pg**	**04 11 04.5**	**-0.5**
BALB	**Balikesir**	**1.01**	**300**	*e*Pg	**Pg**	**04 11 04.5**	**-0.5**
KCTX	**Karacabey (Bur**	**1.23**	**336**	*e*PN	**Pn**	**04 11 08.9**	**-0.2**
KCTX	**Karacabey (Bur**	**1.23**	**336**	*e*Pn	**Pn**	**04 11 08.9**	**-0.2**
ARMT	**Armutlu**	**1.42**	**355**	*e*PN	**Pb**	**04 11 12.3**	**-0.1**
ARMT	**Armutlu**	**1.42**	**355**	*e*Pn	**Pb**	**04 11 12.3**	**-0.1**
GULT	**Gulveren**	**1.73**	**42**	*e*PN	**Pn**	**04 11 16.6**	**+0.6**
GULT	**Gulveren**	**1.73**	**42**	*e*Pn	**Pn**	**04 11 16.6**	**+0.6**

NIED ***29*** *04:23:00, 37°.00N×140°.60E, h8km, Mw3.9 Best double couple: M0=6.96000×10^14 NP1:φs=276.00000°, δ53.00000°, λ-134.00000°. NP2:φs=154.00000°, δ55.00000°, λ-48.00000°.*
ISCJB ***29*** *04:23:32.2±0.5, 36°.97N±0°.03×140°.66E±0°.05, h18km±4km, mb3.7/10, MS2.9/2, Error ellipse: s-maj=6.4km s-min=4.3km az=24.1*
JMA ***29*** *04:23:32.5, 36°.98N×140°.60E, h10km±1km, M4.2 Broadband fault plane solution: P waves. NP1: φs=276.00000°, δ52.00000°, λ-129.00000°. NP2: φs=150.00000°, δ52.00000°, λ-51.00000°. Principal axes: T Plg0.0000°, Azm33.0000°; N Plg30.0000°, Azm303.0000°; P Plg60.0000°, Azm123.0000°;*
JMA Felt II J1.
IDC ***29*** *04:23:40.9±2.8, 36°.83N×140°.18E, h76km±24km, mb3.4/10, mb1 3.6/11, mb1mx3.4/43, mbtmp3.7/11, MS2.9/4, Ms1 2.9/4, ms1mx2.6/29 Error ellipse: s-maj=26.3km s-min=16.7km az=83.0*
ISC 29 04:23:31.4±1.3, 36°.95N±0°.03×140°.54E±0°.04, h3km±9km, n31, σ0°84/30, mb3.8/10, 7C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.26**	**53**⇑P		**Pg**	**04 23 36.8**	**+0.4**
JHO	**Hitachi**	**0.34**	**176**⇑P		**Pb**	**04 23 39.7**	**-0.4**
JHO				*e*S	**Sb**	**04 23 45.2**	**-0.7**
JFK	**Kawauchi**	**0.50**	**32**⇑P		**Pg**	**04 23 41.0**	**0.0**
JFK				*e*S	**Sg**	**04 23 47.4**	**0.0**
JSB	**Shiboa**	**0.50**	**273**⇑P		**Pb**	**04 23 43.7**	**+0.9**
JSB				S	**Sb**	**04 23 51.4**	**+0.9**
JFT	**Otama**	**0.59**	**344**⇑P		**Pb**	**04 23 43.7**	**-0.8**
JFT				*e*S	**Sg**	**04 23 51.6**	**+1.1**
JYT	**Yasato**	**0.77**	**201**⇑P		**Pb**	**04 23 47.7**	**+0.3**
JYT				S	**Sb**	**04 23 58.7**	**+0.4**
JFY	**Yanaizu**	**0.81**	**305**⇓P		**Pb**	**04 23 48.2**	**0.0**
JFY				S	**Sb**	**04 23 58.9**	**-0.6**
JMM	**Marumori**	**0.94**	**12**⇑P		**Pg**	**04 23 48.8**	**-0.5**
JMM				S	**Sg**	**04 24 00.9**	**-0.7**
MJAR	**Matsushiro Arr**	**1.92**	**259**	P	**Pb**	**04 24 06.5**	**-0.6**
36nm,0.3s,baz=78,slow=16,SNR=245
MJAR S **Sb 04 24 31.6 +0.2**
132nm,0.3s,baz=55,slow=26,SNR=23
MAT Matsushiro 1.92 259 P **Pb 04 24 06.8 -0.2**
MAT S **Sg 04 24 32.7 -0.3**
USRK Ussuriysk Ar. 9.73 321 P Pn 04 25 58.2 +5.9
0.2nm,0.3s,baz=132,slow=13,SNR=6.9
USRK LR LR 04 29 27.6
comp=Z,64nm,20.4s,baz=25,slow=36
KLR Kul'dur 13.84 335 LR LR 04 32 16.9
comp=Z,44nm,18.1s,baz=252,slow=37
PETK Petropavlovsk- 20.12 31 LR LR 04 37 37.9
comp=Z,12nm,18.2s,baz=163,slow=41
SONM Songino Array 27.25 304 P **P 04 29 16.2 -0.7**
1.4nm,0.7s,baz=114,slow=9.8,SNR=7.5
H11N2 WAKE ISLAND Hy 28.71 119 T T 04 59 20.0
baz=313,slow=75,SNR=178
H11N1 WAKE ISLAND Hy 28.72 120 T T 04 59 20.6
baz=313,slow=75,SNR=241
H11N3 WAKE ISLAND Hy 28.73 119 T T 04 59 21.3
baz=313,slow=75,SNR=196
H11S1 WAKE ISLAND Hy 29.41 122 T T 05 00 08.7
baz=314,slow=76,SNR=321
H11S3 WAKE ISLAND Hy 29.41 122 T T 05 00 11.0
baz=314,slow=76,SNR=198
H11S2 WAKE ISLAND Hy 29.42 122 T T 05 00 09.9
baz=314,slow=76,SNR=147
ZALV Zalesovo Beam 41.46 312 P **P 04 31 19.1 -0.2**
1.0nm,0.6s,baz=87,slow=5.0,SNR=3.7
MKAR Makanchi Array 43.57 302 P **P 04 31 35.7 -0.9**
0.5nm,0.7s,baz=90,slow=11,SNR=3.6
ILAR Eielson Array 49.94 32 P **P 04 32 28.0 +1.8**
0.4nm,0.8s,baz=283,slow=5.4,SNR=4.4
WRA Warramunga Arr 56.88 187 P **P 04 33 16.5 -1.1**
2.1nm,0.7s,baz=4.6,slow=7.4,SNR=17
ASAR Alice Springs 60.61 187 P **P 04 33 43.2 -0.4**
1.0nm,0.8s,baz=8.6,slow=6.5,SNR=9.8
YKA Yellowknife Ar 64.23 30 P **P 04 34 09.3 +1.9**
0.2nm,0.8s,baz=288,slow=5.1,SNR=3.9
FINES FINESS Array B 68.56 332 P **P 04 34 35.2 +0.1**
1.4nm,0.7s,baz=64,slow=7.9,SNR=3.5
AKASG Malin Array Be 73.94 322 P **P 04 35 06.2 -1.6**
0.4nm,0.4s,baz=51,slow=6.2,SNR=4.1
MMAI Mount Meron Ar 81.44 305 LR LR 05 14 26.6
comp=Z,18nm,18.4s,baz=210,slow=38
TXAR Lajitas Array 90.73 52 P **P 04 36 36.4 +0.3**
0.3

GULT	Gulveren	1.67	38	*e*Pn	Pn	04 28 01.6	-0.2	

*ISCJB **29** 04:31:37.8±1.0, 37°.93N±0°.07×143°.79E±0°.08, h19km, mb3.5/2, Error ellipse: s-maj=9.9km s-min=8.5km az=2.4*
*IDC **29** 04:31:37.1±1.9, 37°.89N×143°.86E, h0km, mb3.4/2, mb1 3.6/5, mb1mx3.4/36, mbtmp3.6/5, ML3.5/3, Error ellipse: s-maj=38.9km s-min=32.0km az=96.0*
*JMA **29** 04:31:40.6±0.1, 38°.13N×143°.57E, h14km, M3.4*

ISC 29 04:31:39.4±1.7, 37°.96N±0°.07×143°.8E±0°.1, h19km, n14, σ1°37/19, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.97**	**285**	*e*S	**Sn**	**04 32 34.0**	**-1.9**
OFUJ	**Ofunato**	**1.99**	**305**	P	**Pn**	**04 32 11.3**	**-0.8**
JMK	**Ichinoseki**	**2.23**	**297**	P	**Pn**	**04 32 15.1**	**-0.3**
JMM	**Marumori**	**2.35**	**269**	P	**Pn**	**04 32 17.2**	**+0.1**
JMM				*e*S	**Sn**	**04 32 44.3**	**-1.1**
JOM	**Ohasama**	**2.46**	**309**	P	**Pn**	**04 32 18.1**	**-0.4**
JOU	**Okura**	**2.48**	**280**	P	**Pn**	**04 32 19.5**	**+0.7**
JOU				S	**Sn**	**04 32 47.9**	**-0.7**
JFT	**Otama**	**2.76**	**262**	P	**Pn**	**04 32 24.0**	**+1.4**
JFT				*e*S	**Sn**	**04 32 55.1**	**-0.3**
JRG	**Rokugo**	**2.84**	**301**	P	**Pn**	**04 32 24.2**	**+0.4**
JYK	**Kaneyama**	**2.84**	**291**	P	**Pn**	**04 32 24.2**	**+0.4**
MJAR	**Matsushiro Arr**	**4.66**	**254**	Pn	**Pn**	**04 32 50.0**	**+1.3**
	0.7nm,0.3s,baz=85,slow=15,SNR=8.8						
MJAR				Sn	**Sn**	**04 33 44.9**	**+2.6**
	0.3nm,0.3s,baz=154,slow=12,SNR=3.5						
JHJ	**Hachijo jima 2**	**5.82**	**215**	Pn	**Pn**	**04 33 03.4**	**-1.3**
	13nm,0.3s,baz=68,slow=19,SNR=2.7						
JHJ				Sn	**Sn**	**04 34 07.8**	**-3.1**
	7.2nm,0.3s,baz=115,slow=19,SNR=2.5						
ASAJ	**Asahikawa**	**6.22**	**352**	Pn	**Pn**	**04 33 10.7**	**+0.5**
	0.9nm,0.3s,baz=221,slow=13,SNR=6.6						
WRA	**Warramunga Arr**	**58.27**	**190**	P	**P**	**04 41 32.8**	**0.0**
	0.7nm,0.9s,baz=9.9,slow=9.1,SNR=3.3						
ASAR	**Alice Springs**	**61.99**	**190**	P	**P**	**04 41 59.0**	**+0.7**
	0.1nm,0.5s,baz=2.5,slow=6.7,SNR=2.6						

JMA 29 04:35:02.4±0.2, 38°.80N×143°.89E, h25km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**1.75**	**280**	P	Pn	04 35 32.2	+1.0
MIYJ	**Miyakonagasawa**	**1.79**	**296**	P	Pn	04 35 32.5	+0.9
MIYJ				*e*S	Sn	04 35 54.4	+0.9
JMK	**Ichinoseki**	**2.09**	**275**	P	Pn	04 35 37.3	+1.5
JMK				S	Sb	04 36 03.1	-2.0
JOM	**Ohasama**	**2.13**	**289**	P	Pn	04 35 37.8	+1.4
JOM				S	Sb	04 36 04.3	-2.0
JANG	**Nango**	**2.42**	**311**	P	Pn	04 35 41.3	+1.0
JOU	**Okura**	**2.56**	**261**	P	Pn	04 35 43.7	+1.3
JOU				*e*S	Sn	04 36 14.7	+1.9
JRG	**Rokugo**	**2.60**	**284**	P	Pn	04 35 45.0	+2.1
JRG				*e*S	Sn	04 36 16.7	+3.0
JYK	**Kaneyama**	**2.76**	**274**	P	Pn	04 35 47.2	+2.2
JAH	**Hinai**	**2.87**	**300**	P	Pn	04 35 48.5	+1.9
JFT	**Otama**	**3.08**	**247**	P	Pn	04 35 50.9	+1.5
JFT				*e*S	Sn	04 36 27.0	+1.5

*MOS **29** 04:35:35.0±2.4, 50°.61N×157°.70E, h41km, mb4.2/1, Error ellipse: s-maj=28.3km s-min=5.8km az=83.0*

KRSC 29 04:35:35.0±1.9, 50°.61N×157°.70E, h41km±16km, ML4.1, 1D, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**1.01**	**275**	*i* P	Pn	04 35 52.6	-0.1
SKR				*e*S	Sn	04 36 04.6	-1.1
SKR	**Severo-Kuril's**	**1.01**	**275**	⇓*i* PN	Pn	04 35 41.5	-11
SKR				pmax	pmax		
	comp=Z,140nm,0.6s						
SKR				pmax	pmax		
	comp=E,140nm,0.2s						
PAU	**Pauzhetka**	**1.02**	**327**	*e*P	Pn	04 35 54.4	+1.5
PAU				*e*S	Sn	04 36 07.6	+1.6
PAU	**Pauzhetka**	**1.02**	**327**	PN	Pn	04 35 54.4	+1.5
PAU				S	Sn	04 36 07.6	+1.6
ASAK	**Asacha**	**1.78**	**4**	*e*P	Pn	04 36 05.8	+2.5
ASAK				*e*S	Sn	04 36 27.1	+2.4
ASAK	**Asacha**	**1.78**	**4**	PN	Pn	04 36 05.8	+2.5
ASAK				S	Sn	04 36 27.1	+2.4
RUS	**Russkaya**	**1.89**	**15**	*e*P	Pn	04 36 06.8	+2.0
RUS				*e*S	Sn	04 36 29.0	+1.6
RUS	**Russkaya**	**1.89**	**15**	PN	Pn	04 36 06.8	+2.0
RUS				S	Sn	04 36 29.0	+1.6
MTVR	**Mutnovka**	**1.90**	**9**	*e*P	Pn	04 36 07.7	+2.7
MTVR				*e*S	Sn	04 36 30.6	+2.8
MTVR	**Mutnovka**	**1.90**	**9**	PN	Pn	04 36 07.7	+2.7
MTVR				S	Sn	04 36 30.6	+2.8
KRMR	**Karymshinskiy**	**2.24**	**7**	*e*P	Pn	04 36 12.7	+3.2
KRMR				*e*S	Sn	04 36 40.2	+4.3
KRMR	**Karymshinskiy**	**2.24**	**7**	PN	Pn	04 36 12.7	+3.2
KRMR				S	Sn	04 36 40.2	+4.3
PET	**Petropavlovsk**	**2.49**	**13**	*e*P	Pn	04 36 16.2	+3.3
PET				*e*S	Sn	04 36 45.0	+3.0
PET	**Petropavlovsk**	**2.49**	**13**	*e*PN	Pn	04 36 16.4	+3.5
PET				*e*S	Sn	04 36 45.7	+3.7
PET				pmax	pmax		
	comp=Z,10.0nm,0.4s						
PET				smax	smax		
	comp=N,87nm,0.5s						
PET				smax	smax		
	comp=E,53nm,0.6s						
DALK	**Dalny**	**2.51**	**15**	*e*P	Pn	04 36 16.6	+3.4
DALK				*e*S	Sn	04 36 45.5	+2.9
DALK	**Dalny**	**2.51**	**15**	PN	Pn	04 36 16.6	+3.4
DALK				S	Sn	04 36 45.5	+2.9
UGLR	**Uglovaya**	**2.69**	**15**	*e*P	Pn	04 36 19.7	+3.8
UGLR	**Uglovaya**	**2.69**	**15**	PN	Pn	04 36 19.7	+3.8
AVH	**Avacha**	**2.73**	**13**	*e*P	Pn	04 36 20.5	+4.1
AVH	**Avacha**	**2.73**	**13**	PN	Pn	04 36 20.5	+4.1
SMAR	**Somma**	**2.74**	**14**	*e*P	Pn	04 36 20.1	+3.4
SMAR	**Somma**	**2.74**	**14**	PN	Pn	04 36 20.1	+3.4
KOK	**Koryaka**	**2.75**	**12**	*e*P	Pn	04 36 20.9	+4.3
KOK	**Koryaka**	**2.75**	**12**	PN	Pn	04 36 20.9	+4.3
NLC	**Nalytchevo**	**2.76**	**21**	*e*P	Pn	04 36 18.8	+2.1
NLC				*e*S	Sn	04 36 49.7	+1.0
NLC	**Nalytchevo**	**2.76**	**21**	PN	Pn	04 36 18.8	+2.1
NLC				S	Sn	04 36 49.7	+1.0
SDLR	**Sedlovina**	**2.77**	**15**	*e*P	Pn	04 36 19.9	+3.0
SDLR	**Sedlovina**	**2.77**	**15**	PN	Pn	04 36 19.9	+3.0
KRER	**Koryakskii**	**2.77**	**13**	*e*P	Pn	04 36 21.2	+4.1
KRER	**Koryakskii**	**2.77**	**13**	PN	Pn	04 36 21.2	+4.1
KRX	**Arik**	**2.81**	**12**	*e*P	Pn	04 36 21.6	+4.0
KRX	**Arik**	**2.81**	**12**	PN	Pn	04 36 21.6	+4.0
GNL	**Ganaly**	**3.09**	**3**	*e*P	Pn	04 36 26.3	+4.9
GNL	**Ganaly**	**3.09**	**3**	PN	Pn	04 36 26.3	+4.9
MKZ	**Mys Kozlova**	**4.65**	**30**	*e*P	Pn	04 36 45.6	+3.0
MKZ	**Mys Kozlova**	**4.65**	**30**	PN	Pn	04 36 45.6	+3.0

WEL 29 04:36:52.8±0.1, 39°.53S×177°.31E, h27km±1km, ML3.8/28, 9C-12D, Error ellipse: s-maj=1.2km s-min=0.8km az=90.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CKHZ	**Cape Kidnapper**	**0.22**	**234**	⇓P*	Pb	04 36 59.1	+0.2
CKHZ				S*	Sb	04 37 04.7	+1.7
ARHZ	**Aropaoanui**	**0.36**	**317**	⇓P*	Pb	04 36 59.4	-1.4
KAHZ	**Kahuranaki**	**0.43**	**231**	⇓P*	Pn	04 37 02.8	-0.4
WHHZ	**Waihua**	**0.46**	**353**	⇓P*	Pb	04 37 01.6	-0.7
WHHZ				S*	Sb	04 37 09.2	+0.4
MCHZ	**McNeill Hill**	**0.48**	**280**	⇓P*	Pb	04 37 02.1	-0.7
MCHZ				S*	Sb	04 37 09.8	+0.3
KNZ	**Kokohu**	**0.58**	**29**	⇓P*	Pb	04 37 04.4	+0.1
KNZ				AML	AML	04 37 14.6	
KNZ				AML	AML	04 37 14.8	
NMHZ	**Naumai**	**0.58**	**318**	⇓P*	Pb	04 37 03.4	-1.1
NMHZ				S*	Sb	04 37 11.9	-0.5
MHGZ	**Mahia Peninsul**	**0.60**	**51**	P*	Pn	04 37 05.4	-0.1
PXZ	**Pawanui**	**0.61**	**214**	P*	Pb	04 37 05.1	+0.3
PXZ				AML	AML	04 37 20.2	
PXZ				AML	AML	04 37 20.2	
PXZ				AML	AML	04 37 21.0	
PXZ				AML	AML	04 37 21.0	
RAHZ	**Arahi**	**0.64**	**344**	⇓P*	Pb	04 37 04.5	-0.8
KWHZ	**Kaweka Forest**	**0.69**	**278**	⇓P*	Pb	04 37 05.6	-0.7
BKZ	**Black Stump Fm**	**0.73**	**300**	⇓P*	Pb	04 37 05.7	-1.2
BKZ				AML	AML	04 37 16.7	
BKZ				AML	AML	04 37 17.6	
KRHZ	**Kereru**	**0.73**	**261**	P*	Pb	04 37 06.4	-0.5
SNGZ	**Shannon Statio**	**0.75**	**2**	P*	Pb	04 37 06.7	-0.4
PRGZ	**Paritu Road**	**0.75**	**37**	⇓P*	Pb	04 37 07.2	0.0
RIGZ	**Rimuhau**	**0.89**	**23**	PN	Pn	04 37 09.2	-0.4
PRHZ	**Porangahau**	**0.90**	**215**	PN	Pn	04 37 09.0	-0.7
PNHZ	**Pukenui**	**0.94**	**245**	PN	Pn	04 37 09.3	-0.9
RTZ	**Ruatahuna**	**0.95**	**344**	⇑PN	Pn	04 37 09.4	-0.9
BHHZ	**Black Hill Sta**	**0.96**	**272**	PN	Pn	04 37 09.6	-0.9
MRHZ	**Matea Rd**	**0.98**	**315**	⇑PN	Pn	04 37 09.9	-0.9
RAGZ	**Rawiri**	**1.03**	**5**	PN	Pn	04 37 10.7	-0.8
ANWZ	**Angora Road**	**1.13**	**214**	PN	Pn	04 37 12.4	-0.4
MUGZ	**Murupara**	**1.13**	**338**	PN	Pn	04 37 12.0	-0.8
HATZ	**Hinemaiaia**	**1.14**	**304**	PN	Pn	04 37 12.6	-0.4
HATZ				AML	AML	04 37 30.8	
HATZ				AML	AML	04 37 32.3	
TSZ	**Takapari Road**	**1.17**	**243**	⇑PN	Pn	04 37 12.3	-1.0
TSZ				AML	AML	04 37 33.3	
TSZ				AML	AML	04 37 33.6	
DVHZ	**Dannevirke**	**1.17**	**228**	PN	Pn	04 37 12.4	-0.9
MWZ	**Matawai**	**1.21**	**8**	⇑PN	Pn	04 37 12.7	-1.1
MWZ				AML	AML	04 37 32.4	
MWZ				AML	AML	04 37 32.4	
MWZ				AML	AML	04 37 35.5	
MWZ				AML	AML	04 37 44.2	
MOVZ	**Moawhango**	**1.21**	**275**	PN	Pn	04 37 13.6	-0.4
MOVZ				AML	AML	04 37 32.1	
MOVZ				AML	AML	04 37 32.2	
ALRZ	**Allen Road**	**1.22**	**322**	PN	Pn	04 37 13.5	-0.6
PRRZ	**Plateau Road**	**1.25**	**325**	PN	Pn	04 37 13.7	-0.8
CNGZ	**Carnagh Statio**	**1.26**	**34**	PN	Pn	04 37 14.2	-0.3
URZ	**Urewera**	**1.28**	**353**	PN	Pn	04 37 13.9	-0.9
URZ				AML	AML	04 37 44.2	
URZ				AML	AML	04 37 47.1	
TUVZ	**Tukino**	**1.31**	**281**	PN	Pn	04 37 15.3	-0.1
TUVZ				AML	AML	04 37 36.6	
TUVZ				AML	AML	04 37 38.0	
OTVZ	**Oturere**	**1.33**	**285**	PN	Pn	04 37 15.4	-0.2
OTVZ				AML	AML	04 37 37.9	
OTVZ				AML	AML	04 37 40.4	
RRRZ	**Republican Roa**	**1.34**	**332**	PN	Pn	04 37 15.3	-0.5
WNVZ	**Wahianoa**	**1.34**	**278**	⇑PN	Pn	04 37 15.6	-0.2
WPRZ	**Whakapapatarin**	**1.35**	**318**	⇓PN	Pn	04 37 15.3	-0.5
WHVZ	**Whangaehu Hut**	**1.36**	**280**	PN	Pn	04 37 15.8	-0.3
WHTZ	**Whakaora**	**1.36**	**309**	PN	Pn	04 37 15.7	-0.3
KRVZ	**Karewarewa**	**1.36**	**288**	PN	Pn	04 37 15.8	-0.3
KRVZ				AML	AML	04 37 38.5	
KRVZ				AML	AML	04 37 46.8	
RATZ	**Rangitukua**	**1.37**	**298**	PN	Pn	04 37 16.2	+0.1
RATZ				AML	AML	04 37 27.5	
RATZ				AML	AML	04 37 31.7	
KATZ	**Kakaramea**	**1.37**	**293**	PN	Pn	04 37 15.8	-0.4
KATZ				AML	AML	04 37 37.1	
NGZ	**Ngauruhoe**	**1.37**	**284**	⇑PN	Pn	04 37 16.0	-0.3
NGZ				AML	AML	04 37 38.4	
NGZ				AML	AML	04 37 39.3	
DRZ	**Dome Shelter**	**1.38**	**280**	AML	AML	04 37 38.6	
DRZ				AML	AML	04 37 38.7	
TRVZ	**Turoa**	**1.38**	**279**	⇑PN	Pn	04 37 16.2	-0.3
TRVZ				AML	AML	04 37 38.0	
TRVZ				AML	AML	04 37 38.1	
FWVZ	**Far West T-bar**	**1.39**	**281**	⇑PN	Pn	04 37 16.2	-0.4
FWVZ				AML	AML	04 37 39.0	
FWVZ				AML	AML	04 37 40.0	
HRRZ	**Handcock Road**	**1.39**	**325**	PN	Pn	04 37 16.0	-0.4
WTVZ	**West Tongariro**	**1.40**	**287**	PN	Pn	04 37 16.4	-0.1
WTVZ				AML	AML	04 37 25.4	
WTVZ				AML	AML	04 37 52.1	
BFZ	**Birch Farm**	**1.41**	**215**	PN	Pn	04 37 15.5	-1.2
BFZ				AML	AML	04 37 50.5	
BFZ				AML	AML	04 37 50.5	
BFZ				AML	AML	04 37 54.5	
MTVZ	**Mangateitei**	**1.43**	**275**	PN	Pn	04 37 16.9	-0.1
MTVZ				AML	AML	04 37 40.4	
MTVZ				AML	AML	04 37 43.9	
TARZ	**Mount Tarawera**	**1.44**	**334**	PN	Pn	04 37 16.7	-0.4
PRWZ	**Pori Road**	**1.45**	**225**	PN	Pn	04 37 16.5	-0.7
POWZ	**Post Office Ro**	**1.47**	**233**	PN	Pn	04 37 16.8	-0.6
HSRZ	**Hossack Road**	**1.47**	**325**	PN	Pn	04 37 17.3	-0.3
HLRZ	**Highlands Stat**	**1.48**	**329**	PN	Pb	04 37 18.7	-0.8
EDRZ	**Edgecumbe**	**1.49**	**342**	PN	Pn	04 37 16.9	-0.9
EDRZ				AML	AML	04 37 49.1	
EDRZ				AML	AML	04 38 01.9	
TWVZ	**Taurewa**	**1.52**	**287**	PN	Pn	04 37 17.7	-0.6
TWVZ				AML	AML	04 37 44.0	
PKVZ	**Pokaka**	**1.54**	**278**	AML	AML	04 37 45.8	
PKVZ				AML	AML	04 37 46.8	
KUTZ	**Kaahu Road**	**1.56**	**311**	PN	Pn	04 37 18.2	-0.5
OMRZ	**Omania**	**1.60**	**332**	PN	Pn	04 37 18.9	-0.4
TIWZ	**Tintock**	**1.66**	**221**	PN	Pn	04 37 18.8	-1.3
TIWZ				AML	AML	04 38 02.0	
TIWZ				AML	AML	04 38 12.4	
MRZ	**Mangatainoka R**	**1.74**	**229**	⇑PN	Pn	04 37 19.9	-1.3
PKGZ	**Pakihiroa**	**1.75**	**20**	PN	Pn	04 37 20.5	-0.8
HAZ	**Te Kaha**	**1.81**	**12**	PN	Pn	04 37 21.6	-0.5
WAZ	**Wanganui**	**1.81**	**262**	PN	Pn	04 37 22.7	+0.6
WAZ				AML	AML	04 38 01.6	
WAZ				AML	AML	04 38 02.9	
TLZ	**Tolley Road**	**1.83**	**310**	PN	Pn	04 37 21.4	-1.1
TMWZ	**Te Maipa**	**1.91**	**214**	PN	Pn	04 37 22.1	-1.5
HOWZ	**Holdsworth Sta**	**1.94**	**225**	PN	Pn	04 37 22.3	-1.7
OGWZ	**Otaki Gorge**	**2.08**	**231**	PN	Pn	04 37 24.4	-1.5
MXZ	**Matakaoa Point**	**2.11**	**22**	PN	Pn	04 37 25.7	-0.6
TRWZ	**Traveller**	**2.24**	**213**	PN	Pn	04 37 25.8	-2.3
TRWZ				AML	AML	04 38 21.9	
PAWZ	**Paruwai Farm**	**2.34**	**217**	PN	Pn	04 37 27.5	-2.1
PAWZ				AML	AML	04 38 28.7	
PAWZ				AML	AML	04 38 29.2	
NEZ	**North Egmont**	**2.50**	**275**	PN	Pn	04 37 32.4	+0.7
KHEZ	**Kahui Hut**	**2.56**	**274**	PN	Pn	04 37 33.6	+1.1
PLWZ	**Palliser**	**2.57**	**217**	PN	Pn	04 37 30.2	-2.5
PKE	**Pukeiti**	**2.60**	**276**	PN	Pn	04 37 32.9	-0.2
TCW	**Tory Channel**	**2.86**	**233**	PN	Pn	04 37 34.4	-2.2
DUWZ	**D'Urville Isla**	**2.89**	**243**	PN	Pn	04 37 35.8	-1.2
DUWZ				AML	AML	04 38 32.7	
TUWZ	**Tuamarina**	**3.19**	**232**	PN	Pn	04 37 38.3	-2.9
BSWZ	**Blackbirch Sta**	**3.41**	**229**	PN	Pn	04 37 41.5	-2.5
KHZ	**Kahutara**	**4.06**	**223**	PN	Pn	04 37 49.6	-3.4

*DDA **29** 04:37:29.0, 39°.09N×29°.14E, h7km, Ml2.1*
*CSEM **29** 04:37:29.5±0.2, 39°.13N×29°.17E, h2km, MD2.6, Error ellipse: s-maj=4.5km s-min=3.4km az=95.0*
*ISK **29** 04:37:31.7, 39°.31N×29°.26E, h5km, MD2.6*

ISC 29 04:37:29.3±0.9, 39°.11N±0°.03×29°.16E±0°.03, h11km±10km, n21, σ0°64/30, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.25**	**94**	P	**Pg**	**04 37 34.6**	**+0.2**
GDZ				S	**Sg**	**04 37 38.6**	**+0.7**
GDZ	**Gediz**	**0.25**	**94**	*i* P	**Pg**	**04 37 34.6**	**+0.2**
GDZ				*i* S	**Sg**	**04 37 38.6**	**+0.7**
DEMI	**Demirci**	**0.35**	**260**	P	**Pg**	**04 37 36.3**	**-0.1**
DEMI				S	**Sg**	**04 37 40.4**	**-0.7**
DEMI	**Demirci**	**0.35**	**260**	*i* P	**Pg**	**04 37 36.3**	**-0.1**
DEMI				*i* S	**Sg**	**04 37 40.4**	**-0.7**
TVSB	**Tavsanli**	**0.41**	**34**	*e*PG	**Pg**	**04 37 36.8**	**-0.7**
TVSB	**Tavsanli**	**0.41**	**34**	*e*Pg	**Pg**	**04 37 36.8**	**-0.7**
KHAL	**Karahalli**	**0.78**	**161**	P	**Pb**	**04 37 45.2**	**+0.3**
KHAL				S	**Sb**	**04 37 54.9**	**-0.6**
KHAL	**Karahalli**	**0.78**	**161**	*i* P	**Pb**	**04 37 45.2**	**+0.3**
KHAL				*i* S	**Sb**	**04 37 54.9**	**-0.6**
KHL	**Karahalli**	**0.83**	**160**	*e*PG	Pn	04 37 52.2	+5.1
CAVI	**Cavuskoy**	**1.21**	**25**	*e*PG	**Pb**	**04 37 52.1**	**-0.2**
CAVI	**Cavuskoy**	**1.21**	**25**	*e*Pg	**Pb**	**04 37 52.1**	**-0.2**
IZI	**Iznik**	**1.25**	**11**	*e*PG	**Pn**	**04 37 52.9**	**+0.1**
IZI				*e*SG	**Sg**	**04 38 08.4**	**-1.2**
IZI	**Iznik**	**1.25**	**11**	*e*Pg	**Pn**	**04 37 52.9**	**+0.1**
IZI				*e*Sg	**Sg**	**04 38 08.4**	**-1.2**
MDNY	**Mudanya-Bursa**	**1.28**	**350**	*e*PN	**Pg**	**04 37 53.9**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.28**	**350**	*e*Pn	**Pg**	**04 37 53.9**	**+0.1**
KCTX	**Karacabey (Bur**	**1.31**	**332**	*e*PN	**Pg**	**04 37 55.6**	**+1.1**
KCTX	**Karacabey (Bur**	**1.31**	**332**	*e*Pn	**Pg**	**04 37 55.6**	**+1.1**
ARMT	**Armutlu**	**1.48**	**351**	*e*PN	**Pg**	**04 37 57.6**	**0.0**
ARMT				*e*SN	**Sb**	**04 38 16.4**	**+0.8**
ARMT	**Armutlu**	**1.48**	**351**	*e*Pn	**Pg**	**04 37 57.6**	**0.0**
ARMT				*e*Sn	**Sb**	**04 38 16.4**	**+0.8**
GULT	**Gulveren**	**1.68**	**38**	*e*PN	**Pb**	**04 38 00.5**	**+0.2**
GULT	**Gulveren**	**1.68**	**38**	*e*Pn	**Pb**	**04 38 00.5**	**+0.2**

*ISCJB **29** 04:39:58.8±0.5, 49°.84N±0°.04×18°.46E±0°.03, h0km, Error ellipse: s-maj=5.8km s-min=2.5km az=7.3*
*CSEM **29** 04:39:59.9±0.2, 49°.83N×18°.49E, h2km, ML2.6/7, Error ellipse: s-maj=7.4km s-min=3.0km az=6.0*
*IPEC **29** 04:39:59.8±0.2, 49°.83N×18°.59E, h0km±3km, ML1.6/3, Error ellipse: s-maj=2.2km s-min=1.1km az=161.0*
*PRU **29** 04:40:01.0, 49°.85N×18°.47E, h0km*

ISC 29 04:39:59.5±0.8, 49°.81N±0°.04×18°.50E±0°.02, h0km, n29, σ0°93/52, Czech and Slovak Republics

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OKC	**Ostrava-Krasne**	**0.23**	**277**	*e*PG	**Pg**	**04 40 05.8**	**+1.9**
OKC				*e*SG	**Sg**	**04 40 09.1**	**+2.3**
	comp=Z,15nm,0.3s						
OKC	**Ostrava-Krasne**	**0.23**	**277**	Pg	**Pg**	**04 40 05.8**	**+1.9**
OKC				Sg	**Sg**	**04 40 09.1**	**+2.3**
	15nm,0.3s						
MORC	**Moravsky Berou**	**0.62**	**267**	*e*Pg	**Pb**	**04 40 12.8**	**-0.5**
MORC				*e*Sg	**Sb**	**04 40 21.0**	**-1.5**
	9.7nm,0.2s						
LANS	**Liptovska Anna**	**0.91**	**136**	*e*Pg	**Pg**	**04 40 17.3**	**+0.3**
LANS				*e*Sg	**Sb**	**04 40 30.2**	**-0.8**
LANS	**Liptovska Anna**	**0.91**	**136**	*e*PG	**Pg**	**04 40 17.3**	**+0.3**
LANS				*e*SG	**Sb**	**04 40 30.2**	**-0.8**
OJC	**Ojcow**	**0.93**	**63**	*e*Pg	**Pg**	**04 40 16.9**	**-0.5**
OJC				*e*Sg	**Sg**	**04 40 30.0**	**+0.5**
OJC	**Ojcow**	**0.93**	**63**	*e*Pg	**Pg**	**04 40 16.9**	**-0.5**
OJC				*e*Sg	**Sg**	**04 40 30.0**	**+0.5**
KRLC	**Kraliky**	**1.14**	**284**	*e*PG	**Pb**	**04 40 21.8**	**-0.3**
KRLC				*e*SG	**Sb**	**04 40 37.2**	**-0.3**
KRLC	**Kraliky**	**1.14**	**284**	Pg	**Pb**	**04 40 21.8**	**-0.3**
KRLC				Sg	**Sb**	**04 40 37.2**	**-0.3**
NIE	**Niedzica**	**1.24**	**108**	*e*Pg	**Pg**	**04 40 23.2**	**0.0**
NIE				*e*Sg	**Sn**	**04 40 41.3**	**-0.1**
NIE	**Niedzica**	**1.24**	**108**	*e*Pg	**Pg**	**04 40 23.2**	**0.0**
NIE				*e*Sg	**Sn**	**04 40 41.3**	**-0.2**
VRAC	**Vranov**	**1.34**	**249**	*e*Pg	**Pn**	**04 40 25.8**	**+0.3**
VRAC				*e*Sg	**Sn**	**04 40 43.5**	**-0.5**
	7.2nm,0.2s						
DPC	**Dobruska-Polom**	**1.50**	**292**	*e*PG	**Pg**	**04 40 28.1**	**-0.2**
DPC				*e*SG	**Sn**	**04 40 48.5**	**+0.4**
	comp=Z,4.7nm,0.3s						
DPC	**Dobruska-Polom**	**1.50**	**292**	Pg	**Pg**	**04 40 28.1**	**-0.2**
DPC				Sg	**Sn**	**04 40 48.5**	**+0.4**
	4.7nm,0.3s						
KRUC	**Moravsky**	**1.56**	**242**	*e*Pg	**Pb**	**04 40 29.2**	**-0.1**
KRUC				*e*Sg	**Sg**	**04 40 50.7**	**+1.0**
	6.4nm,0.2s						
UPC	**Upice**	**1.75**	**295**	*e*PG	**Pb**	**04 40 32.3**	**-0.1**
UPC				*e*SG	**Sg**	**04 40 55.5**	**0.0**
UPC	**Upice**	**1.75**	**295**	Pg	**Pb**	**04 40 32.3**	**-0.1**
UPC				Sg	**Sg**	**04 40 55.5**	**0.0**
STHS	**Stebnicka Huta**	**1.83**	**101**	*e*Pn	**Pg**	**04 40 34.5**	**0.0**
STHS				*e*Sn	**Sg**	**04 41 00.5**	**+2.3**
STHS	**Stebnicka Huta**	**1.83**	**101**	*e*PN	**Pg**	**04 40 34.5**	**0.0**
STHS				*e*SN	**Sg**	**04 41 00.5**	**+2.3**
STHS				*e*LG	Lg	04 41 11.2	
TREC	**Trest**	**2.03**	**256**	*e*SG	**Sg**	**04 41 04.8**	**+0.2**
	comp=Z,3.8nm,0.3s						
TREC	**Trest**	**2.03**	**256**	Sg	**Sg**	**04 41 04.8**	**+0.2**
	3.8nm,0.3s						
GOPC	**GO Pecny, Ondr**	**2.40**	**274**	*e*SG	**Sg**	**04 41 16.3**	**-0.4**
GOPC	**GO Pecny, Ondr**	**2.40**	**274**	Sg	**Sg**	**04 41 16.3**	**-0.4**
PRU	**Pruhonice**	**2.56**	**275**	*e*PG	**Pg**	**04 40 49.2**	**+0.6**
PR

*IDC **29** 05:02:04.2±1.4, 35°.03S×72°.62W, h0km, mb3.9/4, mb1 4.0/6, mb1mx3.8/31, mbtmp3.9/6, ML3.9/2, MS3.2/1, Ms1 3.2/1, ms1mx2.8/21, Error ellipse: s-maj=48.7km s-min=19.7km az=79.0*
*GUC **29** 05:02:08.0±0.6, 35°.08S×72°.83W, h49km±10km, ML4.5*
*NEIC **29** 05:02:08.0, 35°.08S×72°.83W, h49km, MG4.5(GUC), After GUC.*

ISC 29 05:02:04.5±2.3, 35°.01S±0°.04×72°.86W±0°.08, h5km±14km, n30, σ2°01/43, mb3.9/4, 4C-1D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
COCH	**Cobquecura**	**1.12**	**177**	*i* P	**Pn**	**05 02 27.2**	**+0.4**
COCH				*i* S	**Sb**	**05 02 41.1**	**-0.2**
COCH				AML	AML	05 02 46.2	
	comp=E,15μm,0.6s						
CCHI	**Chillan**	**1.71**	**158**	*i* P	**Pb**	**05 02 35.5**	**-1.0**
CCHI				*e*S	**Sn**	**05 02 56.1**	**-1.2**
CCHI				AML	AML	05 03 05.3	
	comp=E,8μm,0.6s						
CCSP	**San Pedro de C**	**1.84**	**186**	*e*P	**Pn**	**05 02 36.8**	**0.0**
CCSP				*e*S	**Sn**	**05 02 59.7**	**-0.7**
CCSP				AML	AML	05 03 12.6	
	comp=N,6μm,0.5s						
RCDM	**Rinconada Maip**	**2.28**	**49**	*i* P	**Pn**	**05 02 42.5**	**-0.4**
RCDM				*e*S	**Sb**	**05 03 14.4**	**-0.2**
RCDM				AML	AML	05 03 20.4	
	comp=E,3μm,0.6s						
ANTU	**Antumapu**	**2.34**	**53**	*e*P	**Pn**	**05 02 45.5**	**+1.8**
ANTU				*e*S	**Sn**	**05 03 14.1**	**+1.2**
ANTU				AML	AML	05 03 24.5	
	comp=E,4μm,0.6s						
ROC1	**El Roble**	**2.54**	**38**	*e*P	**Pn**	**05 02 44.3**	**-2.4**
ROC1				*e*S	**Sg**	**05 03 29.5**	**+3.3**
ROCH	**El Roble**	**2.55**	**38**	*i* P	**Pn**	**05 02 47.8**	**+1.1**
ROCH				*i* S	**Sn**	**05 03 20.4**	**+2.1**
PEL	**Peldehue**	**2.59**	**45**	*i* P	**Pb**	**05 02 50.9**	**-0.6**
PEL				*e*S	**Sn**	**05 03 20.6**	**+1.4**
CANA	**Caviahue**	**3.22**	**154**	*e*P	**Pb**	**05 03 01.8**	**-0.4**
AUSP	**Uspallata**	**4.02**	**47**	*e*P	**Pn**	**05 03 09.4**	**+2.5**
AUSP				*e*S	**Sg**	**05 04 10.3**	**-3.2**
RTLS	**Leoncito**	**4.38**	**44**	*e*P	**Pn**	**05 03 13.7**	**+1.8**
RTLS				*e*S	**Sb**	**05 04 19.0**	**+3.7**
RTCV	**Cerro Valdivia**	**4.79**	**50**	*e*P	**Pn**	**05 03 18.9**	**+1.6**
RTLL	**Cerro Villicun**	**5.20**	**46**	*e*P	**Pn**	**05 03 23.9**	**+0.9**
RTLL				*e*S	**Sb**	**05 04 34.7**	**-4.0**
AMOG	**MOGNA**	**5.47**	**43**	*e*P	**Pn**	**05 03 27.4**	**+0.6**
AMOG				*e*S	**Sb**	**05 04 50.1**	**+3.5**
PLCA	**Paso Flores**	**6.00**	**163**	Pn	**Pn**	**05 03 34.8**	**+0.8**
	comp=E,0.7nm,0.3s,baz=352,slow=11,SNR=18						
PLCA				Lg	Lg	05 05 12.3	
	comp=E,2.7nm,0.3s,baz=86,slow=20,SNR=5.8						
LCO	**Las Campanas**	**6.26**	**18**	*e*Pn	**Pn**	**05 03 36.1**	**-1.6**
	comp=E,19nm,0.6s						
LCO				*e*Sn	**Sn**	**05 04 44.2**	**-5.6**
MRA	**San Martin**	**6.49**	**69**	*e*P	**Pn**	**05 03 40.7**	**0.0**
MRA				*e*S	**Sb**	**05 05 13.2**	**-2.7**
MRA				IAML		05 05 31.1	
	comp=Z,52nm,0.6s						
AGUA	**GUANDACOL**	**6.63**	**35**	*e*P	**Pn**	**05 03 43.7**	**+0.9**
CYA	**Choya**	**8.89**	**44**	*e*P	**Pn**	**05 04 10.2**	**-3.4**
CYA				*e*S	Sn	05 06 03.6	+9.4
CYA				IAML		05 06 12.7	
	comp=Z,20nm,0.7s						
TRQA	**Tornquist**	**9.27**	**112**	*e*Pn	**Pn**	**05 04 18.6**	**-0.2**
	comp=Z,9.3nm,0.8s						
CPUP	**Villa Florida**	**15.91**	**61**	LR	LR	05 11 54.3	
	comp=Z,96nm,21.8s,baz=238,slow=38						
LPAZ	**La Paz**	**19.12**	**14**	P	**Pn**	**05 06 30.4**	**+0.6**
	comp=Z,0.2nm,0.3s,baz=192,slow=7.1,SNR=14						
SIV	**San Ignacio**	**21.69**	**32**	P	**P**	**05 06 56.0**	**-0.3**
	comp=Z,2.4nm,0.7s,baz=217,slow=9.4,SNR=5.9						
VNA3	**Neumayer Olymp**	**48.69**	**157**	P	**P**	**05 10 50.4**	**+1.1**
SNAA	**Sanae**	**50.91**	**157**	P	**P**	**05 11 06.8**	**+0.5**
TXAR	**Lajitas Array**	**70.29**	**332**	P	**P**	**05 13 19.9**	**+1.0**
	comp=Z,0.4nm,0.6s,baz=160,slow=9.3,SNR=6.3						
BOSA	**Boshof**	**80.20**	**118**	P	**P**	**05 14 15.6**	**-0.8**
	comp=Z,3.8nm,0.9s,baz=240,slow=4.4,SNR=5.3						
TORD	**Torodi Ar. Bea**	**85.19**	**70**	P	**P**	**05 14 41.6**	**-0.7**
	comp=Z,0.8nm,0.6s,baz=233,slow=8.9,SNR=8.0						
KURBB	**Kurchatov Arra**	**154.07**	**44**	PKPbc	**PKPbc**	**05 22 05.3**	**+0.5**
	comp=Z,0.3nm,0.5s,baz=299,slow=2.9,SNR=5.0						
KURK	**Kurchatov**	**154.08**	**44**	PKPbc	**PKPbc**	**05 22 05.3**	**+0.5**

*DDA **29** 05:03:14.2, 39°.10N×29°.04E, h7km, Ml2.6*
*ISK **29** 05:03:14.4, 39°.05N×29°.17E, h5km, MD2.7*
*CSEM **29** 05:03:14.8±0.1, 39°.07N×29°.07E, h2km, ML2.6, Error ellipse: s-maj=3.9km s-min=3.2km az=111.0*

ISC 29 05:03:15.0±1.1, 39°.07N±0°.03×29°.07E±0°.03, h4km±12km, n24, σ0°58/34, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**264**	P	**Pg**	**05 03 19.8**	**-0.5**
DEMI				S	**Sg**	**05 03 23.6**	**-0.3**
DEMI	**Demirci**	**0.27**	**264**	*i* P	**Pg**	**05 03 19.8**	**-0.5**
DEMI				*i* S	**Sg**	**05 03 23.6**	**-0.3**
GDZ	**Gediz**	**0.32**	**87**	P	**Pg**	**05 03 21.3**	**0.0**
GDZ				S	**Sg**	**05 03 26.5**	**+0.9**
GDZ	**Gediz**	**0.32**	**87**	*i* P	**Pg**	**05 03 21.3**	**0.0**
GDZ				*i* S	**Sg**	**05 03 26.5**	**+0.9**
TVSB	**Tavsanli**	**0.48**	**39**	*e*PG	**Pg**	**05 03 24.0**	**-0.3**
TVSB				*e*SG	**Sg**	**05 03 30.4**	**-0.2**
TVSB	**Tavsanli**	**0.48**	**39**	*e*Pg	**Pg**	**05 03 24.0**	**-0.3**
TVSB				*e*Sg	**Sg**	**05 03 30.5**	**-0.2**
KULA	**Kula-Manisa**	**0.64**	**210**	*e*PG	**Pg**	**05 03 27.3**	**0.0**
KULA	**Kula-Manisa**	**0.64**	**210**	*e*Pg	**Pg**	**05 03 27.3**	**0.0**
KHAL	**Karahalli**	**0.78**	**154**	P	**Pg**	**05 03 30.2**	**+0.3**
KHAL				S	**Sb**	**05 03 41.2**	**-0.9**
KHAL	**Karahalli**	**0.78**	**154**	*i* P	**Pg**	**05 03 30.2**	**+0.3**
KHAL				*i* S	**Sb**	**05 03 41.2**	**-0.9**
KHL	**Karahalli**	**0.83**	**154**	*e*PG	**Pg**	**05 03 30.1**	**-0.7**
KHL	**Karahalli**	**0.83**	**154**	*e*Pg	**Pg**	**05 03 30.2**	**-0.7**
BALB	**Balikesir**	**1.08**	**302**	*e*PN	**Pn**	**05 03 37.4**	**+0.6**
BALB	**Balikesir**	**1.08**	**302**	*e*Pn	**Pn**	**05 03 37.4**	**+0.6**
CAVI	**Cavuskoy**	**1.28**	**28**	*e*PN	**Pg**	**05 03 39.3**	**-0.1**
CAVI	**Cavuskoy**	**1.28**	**28**	*e*Pn	**Pg**	**05 03 39.3**	**-0.1**
KCTX	**Karacabey (Bur**	**1.31**	**336**	*e*PN	**Pb**	**05 03 40.7**	**+0.5**
KCTX	**Karacabey (Bur**	**1.31**	**336**	*e*Pn	**Pb**	**05 03 40.7**	**+0.5**
BORA	**Eskisehir**	**1.34**	**53**	P	**Pg**	**05 03 39.5**	**-1.2**
BORA				S	**Sb**	**05 03 58.5**	**+0.3**
BORA	**Eskisehir**	**1.34**	**53**	*i* P	**Pg**	**05 03 39.5**	**-1.2**
BORA				*i* S	**Sb**	**05 03 58.6**	**+0.3**
ARMT	**Armutlu**	**1.50**	**354**	*e*PN	**Pg**	**05 03 43.5**	**-0.2**
ARMT	**Armutlu**	**1.50**	**354**	*e*Pn	**Pg**	**05 03 43.5**	**-0.2**
GULT	**Gulveren**	**1.76**	**39**	*e*PN	**Pn**	**05 03 45.9**	**-0.4**
GULT	**Gulveren**	**1.76**	**39**	*e*Pn	**Pn**	**05 03 45.9**	**-0.4**

*CSEM **29** 05:08:25.4±0.2, 38°.47N×33°.77E, h0km±1km, ML3.2, Error ellipse: s-maj=3.5km s-min=3.0km az=75.0*
*ISK **29** 05:08:25.5, 38°.47N×33°.75E, h8km, MD3.2*
*DDA **29** 05:08:25.5, 38°.50N×33°.86E, h7km, Ml3.2*

ISC 29 05:08:25.7±1.1, 38°.48N±0°.02×33°.78E±0°.02, h1km±11km, n57, σ0°65/79, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKSY	**AKSARAY - Alti**	**0.17**	**354**	P	**Pg**	**05 08 29.0**	**-0.1**
AKSY				S	**Sg**	**05 08 31.9**	**+0.4**
AKSY	**AKSARAY - Alti**	**0.17**	**354**	*i* P	**Pg**	**05 08 29.0**	**-0.1**
AKSY				*i* S	**Sg**	**05 08 31.9**	**+0.4**
SERE	**Sereflikochisa**	**0.50**	**340**	*e*PG	**Pg**	**05 08 36.0**	**+0.6**
SERE				*e*SG	**Sg**	**05 08 43.4**	**+1.5**
SERE	**Sereflikochisa**	**0.50**	**340**	*e*Pg	**Pg**	**05 08 36.0**	**+0.6**
SERE				*e*Sg	**Sg**	**05 08 43.4**	**+1.5**
BSTP	**Nigde**	**0.58**	**154**	*i* P	**Pg**	**05 08 37.5**	**+0.6**
BSTP				*i* S	**Sb**	**05 08 49.1**	**+1.6**
YESY	**Yesilyurt**	**0.69**	**183**	*e*PG	**Pg**	**05 08 39.1**	**+0.1**
YESY	**Yesilyurt**	**0.69**	**183**	*e*Pg	**Pg**	**05 08 39.1**	**+0.1**
CHBY	**Cihanbeyli**	**0.71**	**279**	*e*PG	**Pg**	**05 08 39.4**	**+0.1**
CHBY	**Cihanbeyli**	**0.71**	**279**	*e*Pg	**Pg**	**05 08 39.4**	**+0.1**
NIG	**Nigde**	**0.75**	**119**	*e*PG	**Pg**	**05 08 40.7**	**+0.6**
NIG	**Nigde**	**0.75**	**119**	*e*Pg	**Pg**	**05 08 40.7**	**+0.6**
KAMT	**Kaman**	**0.89**	**357**	*e*PG	**Pg**	**05 08 41.8**	**-1.1**
KAMT	**Kaman**	**0.89**	**357**	*e*Pg	**Pg**	**05 08 41.8**	**-1.1**
AVNS	**Nevsehir-Avano**	**0.90**	**68**	P	**Pg**	**05 08 41.7**	**-1.2**
AVNS				S	**Sg**	**05 08 53.4**	**-1.2**
AVNS	**Nevsehir-Avano**	**0.90**	**68**	*i* P	**Pg**	**05 08 41.7**	**-1.2**
AVNS				*i* S	**Sg**	**05 08 53.4**	**-1.2**
KKUL	**Konya-Kulu**	**0.97**	**316**	P	**Pg**	**05 08 44.3**	**0.0**
KKUL	**Konya-Kulu**	**0.97**	**316**	*i* P	**Pg**	**05 08 44.3**	**0.0**
KKUL				*i* S	**Sn**	**05 09 01.7**	**+0.7**
KERG	**Konya-Eregli**	**1.09**	**166**	P	**Pg**	**05 08 46.3**	**-0.4**
KERG				S	**Sb**	**05 09 02.8**	**+0.5**
KERG	**Konya-Eregli**	**1.09**	**166**	*i* P	**Pg**	**05 08 46.3**	**-0.4**
KERG				*i* S	**Sb**	**05 09 02.8**	**+0.5**
AFSR	**Af¨ar-Bala (A**	**1.12**	**330**	*e*PN	**Pg**	**05 08 47.0**	**-0.2**
AFSR	**Af¨ar-Bala (A**	**1.12**	**330**	*e*Pn	**Pg**	**05 08 47.0**	**-0.2**
LADK	**Ladik-KONYA**	**1.15**	**257**	*e*PN	**Pg**	**05 08 47.2**	**-0.5**
LADK	**Ladik-KONYA**	**1.15**	**257**	*e*Pn	**Pg**	**05 08 47.2**	**-0.5**
BBAL	**Bala**	**1.18**	**334**	P	**Pb**	**05 08 48.7**	**-0.3**
BBAL				S	**Sb**	**05 09 04.9**	**0.0**
BBAL	**Bala**	**1.18**	**334**	*i* P	**Pb**	**05 08 48.7**	**-0.3**
BBAL				*i* S	**Sb**	**05 09 04.9**	**0.0**
CDAG	**Cicekdag**	**1.23**	**22**	P	**Pg**	**05 08 49.2**	**-0.2**
CDAG				S	**Sg**	**05 09 05.9**	**+0.5**
CDAG	**Cicekdag**	**1.23**	**22**	*i* P	**Pg**	**05 08 49.1**	**-0.2**
CDAG				*i* S	**Sg**	**05 09 05.9**	**+0.5**
KDHN	**Kadinhani**	**1.31**	**273**	P	**Pg**	**05 08 50.2**	**-0.6**
KDHN				S	**Sb**	**05 09 08.1**	**-0.4**
KDHN	**Kadinhani**	**1.31**	**273**	*i* P	**Pg**	**05 08 50.2**	**-0.6**
KDHN				*i* S	**Sb**	**05 09 08.1**	**-0.4**
KIZT	**Kizilcal**	**1.54**	**286**	*e*PN	**Pn**	**05 08 53.6**	**-0.8**
KIZT	**Kizilcal**	**1.54**	**286**	*e*Pn	**Pn**	**05 08 53.6**	**-0.8**
KARA	**Karaisali**	**1.58**	**140**	*e*PN	**Pn**	**05 08 54.8**	**0.0**
KARA	**Karaisali**	**1.58**	**140**	*e*Pn	**Pn**	**05 08 54.8**	**0.0**
AKO	**Adana**	**1.66**	**127**	*i* P	**Pn**	**05 08 56.1**	**+0.2**
AKO				*i* S	**Sg**	**05 09 19.0**	**-0.1**
BNN	**Bunyan**	**1.66**	**76**	*e*PN	**Pn**	**05 08 56.0**	**0.0**
BNN	**Bunyan**	**1.66**	**76**	*e*Pn	**Pn**	**05 08 56.0**	**0.0**
MERS	**Mersin**	**1.71**	**160**	*e*PN	**Pn**	**05 08 56.6**	**-0.1**
MERS	**Mersin**	**1.71**	**160**	*e*Pn	**Pn**	**05 08 56.6**	**-0.1**
CORM	**Corum**	**1.82**	**21**	*e*PN	**Pn**	**05 08 58.1**	**-0.2**
CORM	**Corum**	**1.82**	**21**	*e*Pn	**Pn**	**05 08 58.1**	**-0.2**
COAL	**Corum-Alaca**	**2.01**	**27**	P	**Pn**	**05 09 01.4**	**+0.6**
COAL				S	**Sb**	**05 09 29.1**	**+0.5**
COAL	**Corum-Alaca**	**2.01**	**27**	*i* P	**Pn**	**05 09 01.4**	**+0.6**
COAL				*i* S	**Sb**	**05 09 29.1**	**+0.5**
SVRH	**Sivrihisar-ESK**	**2.01**	**300**	*e*PN	**Pn**	**05 09 01.0**	**+0.2**
SVRH	**Sivrihisar-ESK**	**2.01**	**300**	*e*Pn	**Pn**	**05 09 01.0**	**+0.2**
ELDT	**Eldivan**	**2.03**	**352**	P	**Pb**	**05 09 02.5**	**-1.0**
ELDT	**Eldivan**	**2.03**	**352**	*i* P	**Pb**	**05 09 02.5**	**-1.0**
ELDT				*i* S	**Sg**	**05 09 33.0**	**+2.0**
CANT	**Cankiri**	**2.13**	**357**	*e*PN	**Pn**	**05 09 02.5**	**0.0**
CUSAR	**Sarkisla-SIVAS**	**2.14**	**63**	P	**Pn**	**05 09 02.9**	**+0.3**
CUSAR				S	**Sb**	**05 09 32.6**	**+0.2**
CUSAR	**Sarkisla-SIVAS**	**2.14**	**63**	*i* P	**Pn**	**05 09 02.9**	**+0.3**
CUSAR				*i* S	**Sb**	**05 09 32.6**	**+0.2**
IKL	**Isikli**	**2.23**	**182**	*e*PN	**Pn**	**05 09 03.5**	**-0.3**
IKL	**Isikli**	**2.23**	**182**	*e*Pn	**Pn**	**05 09 03.5**	**-0.3**
SUTC	**Sutluce-Ispart**	**2.42**	**246**	*e*PN	**Pn**	**05 09 05.9**	**-0.6**
SUTC	**Sutluce-Ispart**	**2.42**	**246**	*e*Pn	**Pn**	**05 09 05.9**	**-0.6**
TOS	**Tosya**	**2.56**	**4**	*e*PN	**Pn**	**05 09 08.5**	**0.0**
TOS	**Tosya**	**2.56**	**4**	*e*Pn	**Pn**	**05 09 08.5**	**0.0**
SVSK	**Karacayir**	**2.88**	**59**	*e*PN	**Pn**	**05 09 13.2**	**+0.5**
SVSK	**Karacayir**	**2.88**	**59**	*e*Pn	**Pn**	**05 09 13.2**	**+0.5**

*ISCJB **29** 05:08:47.5±0.5, 39°.10N±0°.03×28°.99E±0°.04, h9km, Error ellipse: s-maj=5.1km s-min=4.5km az=142.2*
*CSEM **29** 05:08:47.5±0.2, 39°.11N×28°.99E, h2km, ML2.4, Error ellipse: s-maj=4.4km s-min=3.1km az=86.0*
*ISK **29** 05:08:47.2, 39°.09N×29°.08E, h8km, MD2.6*
*DDA **29** 05:08:47.6, 39°.09N×28°.96E, h7km, Ml2.4*

ISC 29 05:08:47.6±0.9, 39°.10N±0°.03×28°.99E±0°.03, h9km, n24, σ0°45/32, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.22**	**257**	P	**Pg**	**05 08 51.9**	**-0.3**
DEMI				S	**Sg**	**05 08 55.1**	**-0.2**
DEMI	**Demirci**	**0.22**	**257**	*i* P	**Pg**	**05 08 51.9**	**-0.3**
DEMI				*i* S	**Sg**	**05 08 55.1**	**-0.2**
GDZ	**Gediz**	**0.38**	**91**	P	**Pg**	**05 08 55.4**	**+0.3**
GDZ				S	**Sg**	**05 09 00.8**	**+0.7**
GDZ	**Gediz**	**0.38**	**91**	*i* P	**Pg**	**05 08 55.4**	**+0.3**
GDZ				*i* S	**Sg**	**05 09 00.8**	**+0.7**
TVSB	**Tavsanli**	**0.51**	**46**	*e*PG	**Pg**	**05 08 57.2**	**-0.3**
TVSB				*e*SG	**Sg**	**05 09 03.5**	**-0.7**
TVSB	**Tavsanli**	**0.51**	**46**	*e*Pg	**Pg**	**05 08 57.2**	**-0.3**
TVSB				*e*Sg	**Sg**	**05 09 03.5**	**-0.7**
KULA	**Kula-Manisa**	**0.64**	**204**	*e*PG	**Pg**	**05 09 00.3**	**+0.4**
KULA	**Kula-Manisa**	**0.64**	**204**	*e*Pg	**Pg**	**05 09 00.3**	**+0.4**
KHAL	**Karahalli**	**0.82**	**152**	P	**Pb**	**05 09 04.3**	**+0.2**
KHAL				S	**Sb**	**05 09 15.5**	**+0.2**
KHAL	**Karahalli**	**0.82**	**152**	*i* P	**Pb**	**05 09 04.3**	**+0.2**
KHAL				*i* S	**Sb**	**05 09 15.5**	**+0.2**
KHL	**Karahalli**	**0.88**	**152**	*e*PG	**Pg**	**05 09 03.5**	**-1.0**
KHL	**Karahalli**	**0.88**	**152**	*e*Pg	**Pg**	**05 09 03.5**	**-1.0**
ORLT	**Orhaneli**	**0.95**	**355**	*e*PG	**Pg**	**05 09 05.7**	**-0.3**
ORLT	**Orhaneli**	**0.95**	**355**	*e*Pg	**Pg**	**05 09 05.7**	**-0.3**
KCTX	**Karacabey (Bur**	**1.27**	**337**	*e*PN	**Pg**	**05 09 12.6**	**+0.6**
KCTX	**Karacabey (Bur**	**1.27**	**337**	*e*Pn	**Pg**	**05 09 12.6**	**+0.6**
MDNY	**Mudanya-Bursa**	**1.27**	**356**	*e*PN	**Pb**	**05 09 12.0**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.27**	**356**	*e*Pn	**Pb**	**05 09 12.0**	**+0.2**
CAVI	**Cavuskoy**	**1.28**	**30**	*e*PN	**Pn**	**05 09 12.0**	**+0.2**
CAVI	**Cavuskoy**	**1.28**	**30**	*e*Pn	**Pn**	**05 09 12.0**	**+0.2**
IZI	**Iznik**	**1.29**	**16**	*e*PN	**Pn**	**05 09 11.7**	**-0.3**
IZI	**Iznik**	**1.29**	**16**	*e*Pn	**Pn**	**05 09 11.7**	**-0.3**
ARMT	**Armutlu**	**1.47**	**356**	*e*PN	**Pb**	**05 09 15.0**	**-0.2**
ARMT	**Armutlu**	**1.47**	**356**	*e*Pn	**Pb**	**05 09 15.0**	**-0.2**

IDC 29 05:23:28.9±2.6, 54°.19N×86°.33E, h0km, mb1 2.9/2, mb1mx2.8/49, mbtmp2.9/2, ML2.8/2, Error ellipse: s-maj=19.9km s-min=12.3km az=60.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**0.92**	**255**	*i*		05 29 50.0	
	baz=73,slow=320,SNR=1.4						
ZALV	**Zalesovo Beam**	**0.92**	**255**	Pg	Pg	05 23 44.9	-1.7
	2.1nm,0.3s,baz=74,slow=17,SNR=18						
ZALV				Lg	Lg	05 23 59.7	
	5.8nm,0.3s,baz=78,slow=30,SNR=35						
ZALV				Rg	Rg	05 24 04.8	
	3.8nm,0.5s,baz=79,slow=32,SNR=7.9						
KURBB	**Kurchatov Arra**	**5.96**	**236**	Pn	Pn	05 24 59.2	+0.9
	0.1nm,0.3s,baz=52,slow=13,SNR=9.3						
KURBB				Lg	Lg	05 26 41.9	
	0.1nm,0.3s,baz=46,slow=30,SNR=4.4						
MKAR	**Makanchi Array**	**7.84**	**201**	Pn	Pn	05 25 25.4	+1.2
	0.2nm,0.3s,baz=13,slow=11,SNR=4.3						

*IASPEI **29** 05:25:06.9±0.9, 39°.03N±0°.02×41°.09E±0°.03, h15km±6km, Error ellipse: s-maj=4.2km s-min=3.3km az=94.7, GT5 selection from ISC bulletin GT5 identified by Bond¨jr and McLaughlin (2009) selection criteria Bond¨jr and McLaughlin, A new ground truth data set for seismic studies, Seism. Res. Let., 80, 465-472, 2009*
*CSEM **29** 05:25:06.9±0.1, 39°.02N×41°.11E, h5km, ML3.3, Error ellipse: s-maj=3.3km s-min=3.0km az=90.0*
*ISK **29** 05:25:06.6, 39°.02N×41°.10E, h5km, MD2.9*
*DDA **29** 05:25:06.6, 39°.03N×41°.11E, h18km, Ml3.3*
*ISCJB **29** 05:25:07.4±0.4, 39°.03N±0°.02×41°.09E±0°.03, h8km±4km, Error ellipse: s-maj=4.1km s-min=3.7km az=8.6*

ISC 29 05:25:06.8±0.8, 39°.02N±0°.02×41°.11E±0°.02, h16km±6km, n44, σ0°49/59, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BNGL	**BINGOL**	**0.08**	**156**	*i* P	**Pg**	**05 25 10.0**	**-0.2**
BNGL				*i* S	**Sg**	**05 25 12.7**	**+0.3**
BGOL	**Bingol**	**0.34**	**264**	P	**Pg**	**05 25 13.7**	**-0.3**
BGOL				S	**Sb**	**05 25 20.0**	**+0.1**
BGOL	**Bingol**	**0.34**	**264**	*i* P	**Pg**	**05 25 13.7**	**-0.3**
BGOL				*i* S	**Sb**	**05 25 20.0**	**+0.1**
ECAT	**Cat-ERZURUM**	**0.59**	**350**	P	**Pg**	**05 25 18.3**	**-0.2**
ECAT				S	**Sb**	**05 25 27.7**	**+0.6**
ECAT	**Cat-ERZURUM**	**0.59**	**350**	*i* P	**Pg**	**05 25 18.3**	**-0.2**
ECAT				*i* S	**Sb**	**05 25 27.7**	**+0.6**
YEDI	**Yedisu-Bingol**	**0.60**	**313**	*e*PG	**Pg**	**05 25 18.6**	**-0.1**
YEDI	**Yedisu-Bingol**	**0.60**	**313**	*e*Pg	**Pg**	**05 25 18.6**	**-0.1**
EKAR	**Karacoban**	**0.78**	**72**	P	**Pg**	**05 25 22.4**	**+0.4**
EKAR				*i* S	**Sn**	**05 25 36.2**	**+1.4**
SVAN	**Silvan-Diyarba**	**0.87**	**175**	*e*PG	**Pg**	**05 25 23.9**	**+0.2**
SVAN				*e*SG	**Sn**	**05 25 36.2**	**-0.6**
SVAN	**Silvan-Diyarba**	**0.87**	**175**	*e*Pg	**Pg**	**05 25 23.9**	**+0.2**
SVAN				*e*Sg	**Sn**	**05 25 36.3**	**-0.6**
ERZM	**Erzurum**	**0.90**	**13**	P	**Pb**	**05 25 23.7**	**-0.5**
ERZM				S	**Sn**	**05 25 38.2**	**+0.2**
ERZM	**Erzurum**	**0.90**	**13**	*i* P	**Pb**	**05 25 23.7**	**-0.5**
ERZM				*i* S	**Sn**	**05 25 38.1**	**+0.2**
EZM	**Erzurum**	**0.90**	**12**	*e*PG	**Pn**	**05 25 24.6**	**-0.5**
BTMN	**Batman**	**1.14**	**174**	P	**Pg**	**05 25 28.8**	**0.0**
BTMN				S	**Sg**	**05 25 44.9**	**+1.3**
BTMN	**Batman**	**1.14**	**174**	*i* P	**Pg**	**05 25 28.8**	**0.0**
BTMN				*i* S	**Sg**	**05 25 44.9**	**+1.3**
HOMI	**Horasan**	**1.19**	**31**	*i* P	**Pg**	**05 25 29.7**	**-0.1**
HOMI				*i* S	**Sg**	**05 25 46.3**	**+0.9**
ERZN	**Erzincan**	**1.21**	**298**	*e*PN	**Pg**	**05 25 30.3**	**+0.1**
TNCL	**Tunceli-Merkez**	**1.22**	**275**	P	**Pn**	**05 25 29.0**	**-0.4**
TNCL				S	**Sg**	**05 25 46.5**	**+0.1**
TNCL	**Tunceli-Merkez**	**1.22**	**275**	*i* P	**Pn**	**05 25 29.0**	**-0.4**
TNCL				*i* S	**Sg**	**05 25 46.5**	**+0.1**
DYBB	**Diyarbakir**	**1.31**	**216**	*e*PN	**Pg**	**05 25 32.0**	**-0.1**
DIY	**Diyarbakir**	**1.32**	**212**	*e*Pn	**Pg**	**05 25 32.0**	**-0.3**
PTK	**Pertek**	**1.35**	**265**	*e*PN	**Pg**	**05 25 32.6**	**-0.1**
PTK	**Pertek**	**1.35**	**265**	*e*Pn	**Pg**	**05 25 32.6**	**-0.1**
TUTA	**Tutak**	**1.38**	**74**	P	**Pn**	**05 25 31.4**	**-0.2**
TUTA				S	**Sg**	**05 25 51.1**	**-0.2**
TUTA	**Tutak**	**1.38**	**74**	*i* P	**Pn**	**05 25 31.4**	**-0.2**
TUTA				*i* S	**Sg**	**05 25 51.1**	**-0.2**
EZC	**Erzincan**	**1.54**	**299**	*e*Pn	Pn	05 25 30.3	-3.5
SVRC	**Sivrice-ELAZID**	**1.55**	**246**	*e*PN	**Pb**	**05 25 35.4**	**+0.2**
SVRC	**Sivrice-ELAZID**	**1.55**	**246**	*e*Pn	**Pb**	**05 25 35.4**	**+0.2**
BAYT	**Ayd¨–ntepe-Bay**	**1.56**	**332**	*e*PN	**Pb**	**05 25 35.8**	**+0.4**
BAYT	**Ayd¨–ntepe-Bay**	**1.56**	**332**	*e*Pn	**Pb**	**05 25 35.8**	**+0.4**
AGRB	**Hanur-Agry**	**1.56**	**69**	*e*PN	**Pg**	**05 25 36.0**	**-0.8**
AGRB	**Hanur-Agry**	**1.56**	**69**	*e*Pn	**Pg**	**05 25 36.0**	**-0.8**
MAZI	**Mazidag**	**1.65**	**199**	*e*PN	**Pb**	**05 25 36.6**	**-0.2**
MAZI	**Mazidag**	**1.65**	**199**	*e*Pn	**Pb**	**05 25 36.6**	**-0.2**
VANB	**Van**	**1.83**	**103**	*e*PN	**Pb**	**05 25 39.6**	**-0.4**
VANB	**Van**	**1.83**	**103**	*e*Pn	**Pb**	**05 25 39.6**	**-0.4**
SIRT	**Sirnak**	**1.85**	**145**	*e*PN	**Pb**	**05 25 39.6**	**-0.6**
SIRT	**Sirnak**	**1.85**	**145**	*e*Pn	**Pb**	**05 25 39.6**	**-0.6**
GUMT	**Gumushane**	**1.91**	**319**	*e*PN	**Pb**	**05 25 41.1**	**-0.2**
GUMT	**Gumushane**	**1.91**	**319**	*e*Pn	**Pb**	**05 25 41.1**	**-0.2**
ILIC	**ilic

6.1nm,0.9s,baz=97,slow=8.5,SNR=33
DAV Davao City (W) 65.72 287 LR LR 06 13 13.2
comp=Z,22nm,21.5s,baz=297,slow=32
MJAR Matsushiro Arr 71.92 321 P **P 05 49 17.1 +1.7**
1.3nm,0.7s,baz=145,slow=6.8,SNR=4.3
JNU Nakatsue 74.51 314 LR LR 06 14 30.7
comp=Z,69nm,21.2s,baz=118,slow=29
NVAR Mina Array Bea 76.91 41 P **P 05 49 44.2 -0.5**
2.1nm,1.1s,baz=223,slow=6.6,SNR=5.3
NVAR LR LR 06 20 23.6
comp=Z,55nm,18.4s,baz=258,slow=33
USRK Ussuriysk Ar. 80.48 323 LR LR 06 19 12.2
comp=Z,58nm,20.8s,baz=117,slow=31
TXAR Lajitas Array 82.47 56 P **P 05 50 15.4 +0.5**
1.0nm,1.0s,baz=216,slow=7.7,SNR=8.2
TXAR LR LR 06 19 51.3
comp=Z,31nm,20.2s,baz=0.0,slow=31
PDAR Pinedale Array 84.85 41 P **P 05 50 27.2 +0.2**
0.2nm,0.5s,baz=224,slow=3.8,SNR=3.3
PDAR LR LR 06 25 53.3
comp=Z,50nm,19.1s,baz=245,slow=34
ILAR Eielson Array 86.01 11 P **P 05 50 32.7 +0.7**
1.0nm,0.9s,baz=212,slow=5.8,SNR=6.7
SEY Seymchan 86.13 345 P **P 05 50 34.2 +1.7**
0.5nm,0.4s,baz=170,slow=8.6,SNR=5.2
YKA Yellowknife Ar 93.37 23 P **P 05 51 06.9 +0.2**
0.1nm,0.6s,baz=231,slow=4.4,SNR=3.8
CMAR Chiang Mai Arr 94.00 288 LR LR 06 34 25.2
comp=Z,7.0nm,18.0s,baz=265,slow=36
SONM Songino Array 97.75 318 LR LR 06 30 29.1
comp=Z,23nm,21.6s,baz=272,slow=32
LPAZ La Paz 98.31 110 LR LR 06 25 24.7
comp=Z,62nm,21.4s,baz=258,slow=29
TKM2 Tokmak 2 118.20 309 *e*PKPdf **PKPdf 05 56 39.8 +0.2**
ABKAR Abkulak array 128.16 318 *e*PKPdf **PKPdf 05 56 59.0 +0.8**
AKASG Malin Array Be 143.81 336 PKP PKPbc 05 57 25.5 +0.8
0.1nm,0.3s,baz=40,slow=3.1,SNR=5.0
CLL Collm 147.49 353 *i* (P) **PKPab 05 57 37.2 -0.7**
comp=Z,22nm,2.0s
DPC Dobruska-Polom 147.92 349 *e*PKPDF **PKPdf 05 57 32.9 -1.3**
DPC *e*PKPAB **PKiKP 05 57 39.2 +0.1**
DPC *ex* x 05 58 05.4
BRTR Keskin Array B 149.10 317 PKPbc **PKPbc 05 57 40.0 -0.7**
comp=Z,1.2nm,1.1s,baz=45,slow=4.0,SNR=6.5
KHC Kasperske Hory 149.55 351 *e*PKPAB **PKPbc 05 57 43.8 +2.4**
GERES GERESS Array B 149.81 351 PKPbc **PKPbc 05 57 41.2 -0.9**
comp=Z,0.1nm,0.3s,baz=23,slow=4.4,SNR=4.9

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*IDC **29** 05:45:50.8±3.9, 6°.90N×126°.42E, h28km±27km, mb3.8/10, mb1 3.9/10, mb1mx3.7/42, mbtmp4.0/10, MS3.2/4, Ms1 3.3/4, ms1mx2.7/37, Error ellipse: s-maj=38.8km s-min=14.9km az=69.0*
*NEIC **29** 05:45:51.0±2.7, 6°.89N×126°.39E, h31km±20km, mb4.5/2, Error ellipse: s-maj=29.9km s-min=8.3km az=74.0*
*ISCJB **29** 05:45:52.7±0.6, 6°.72N±0°.05×126°.21E±0°.05, h59km±5km, mb4.0/11, MS3.2/4, Error ellipse: s-maj=9.1km s-min=7.6km az=29.6*
*MAN **29** 05:45:53, 6°.75N×126°.15E, h36km, mb4.6, ML3.5, MS3.5*
ISC 29 05:45:53.2±0.9, 6°.72N±0°.07×126°.20E±0°.06, h51km±7km, n27, σ1°.16/33, mb3.9/11, MS3.4/4, 1C-4D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MATI	**Mati**	**0.23**	**14**	*e*P	**Pn**	**05 46 01.9**	**-0.1**
MATI				*e*S	**Sn**	**05 46 08.0**	**-0.2**
DAV	**Davao City (W)**	**0.71**	**300**	Pg	**Pn**	**05 46 07.0**	**-0.2**
	1μm,0.3s,baz=177,slow=1.1,SNR=82						
DAV				Lg	Lg	05 46 18.7	
	2μm,0.3s,baz=47,slow=19,SNR=96						
DAV				LR	LR	05 46 23.6	
	comp=Z,316nm,18.3s,baz=353,slow=39						
DAV	**Davao City (W)**	**0.71**	**300**	Pg	**Pn**	**05 46 07.0**	**-0.2**
DAV				Lg	Lg	05 46 18.7	
DAV				*e*S	**Sn**	**05 46 19.9**	**+2.6**
DMPH	**Davao City--Mi**	**0.78**	**298**	||*i*P	**Pn**	**05 46 08.6**	**+0.6**
DMPH				*i* S	**Sn**	**05 46 19.6**	**+0.7**
KCP	**Kidapawan**	**1.14**	**285**	||*i*P	**Pn**	**05 46 12.6**	**-0.4**
KCP				*i* S	**Sn**	**05 46 25.8**	**-1.7**
BIPH	**Bislig**	**1.47**	**6**	||*i*P	**Pn**	**05 46 18.0**	**+0.7**
BIPH				*i* S	**Sn**	**05 46 36.3**	**+0.9**
BUKP	**Musuan**	**1.61**	**316**	*e*P	**Pn**	**05 46 19.0**	**-0.4**
BUKP				*e*S	**Sn**	**05 46 40.9**	**+1.8**
CTBH	**Cotabato--PC H**	**2.00**	**285**	||*i*P	**Pn**	**05 46 24.6**	**-0.1**
CTBH				*i* S	**Sn**	**05 46 47.8**	**-0.8**
CGP	**Cagayan de Oro**	**2.28**	**319**	||*e*P	**Pn**	**05 46 28.4**	**-0.1**
CGP				*i* S	**Sn**	**05 46 55.6**	**+0.1**
PAGZ	**Pagadian**	**3.01**	**292**	*e*P	**Pn**	**05 46 39.5**	**+1.0**
DCPH	**Dipolog City**	**3.38**	**303**	*e*P	**Pn**	**05 46 45.4**	**+1.8**
TBP	**Tagbilaran**	**3.75**	**322**	*i* P	**Pn**	**05 46 50.4**	**+1.7**
SOEI	**Soe**	**16.48**	**187**	*e*P	**P**	**05 49 42.9**	**-0.2**
	42nm,0.8s						
WRAB	**Tennant Creek**	**27.67**	**163**	*e*P	**P**	**05 51 36.6**	**0.0**
	12nm,1.6s						
WRA	**Warramunga Arr**	**27.68**	**163**	P	**P**	**05 51 37.1**	**+0.5**
	0.5nm,0.5s,baz=340,slow=10,SNR=12						
CMAR	**Chiang Mai Arr**	**29.00**	**296**	LR	LR	06 04 24.2	
	comp=Z,14nm,18.6s,baz=215,slow=38						
ASAR	**Alice Springs**	**31.12**	**166**	P	**P**	**05 52 07.8**	**+0.6**
	0.6nm,0.3s,baz=342,slow=7.4,SNR=18						
ASAR				PcP	**PcP**	**05 55 03.4**	**+1.7**
	0.6nm,0.6s,baz=340,slow=2.1,SNR=5.9						
MJAR	**Matsushiro Arr**	**31.65**	**19**	P	**P**	**05 52 09.7**	**-2.0**
	1.2nm,0.7s,baz=204,slow=12,SNR=3.4						
STKA	**Stephens Creek**	**41.09**	**160**	P	**P**	**05 53 33.4**	**+1.2**
	0.5nm,0.3s,baz=344,slow=8.2,SNR=4.2						
SONM	**Songino Array**	**44.32**	**341**	P	**P**	**05 53 55.8**	**-2.5**
	0.6nm,0.3s,baz=116,slow=3.4,SNR=3.7						
MKAR	**Makanchi Array**	**54.83**	**324**	P	**P**	**05 55 18.1**	**-0.2**
	1.6nm,0.7s,baz=113,slow=9.3,SNR=8.8						
AAK	**Ala-Archa**	**57.82**	**317**	LR	LR	06 21 31.6	
	comp=Z,22nm,18.8s,baz=203,slow=37						
ARU	**Arti**	**72.15**	**327**	P	**P**	**05 57 12.6**	**+0.1**
	3.7nm,0.5s,baz=115,slow=3.6,SNR=8.4						
ARU				LR	LR	06 31 51.6	
	comp=Z,24nm,18.5s,baz=291,slow=38						
ARCES	**ARCESS Array B**	**87.48**	**340**	P	**P**	**05 58 35.5**	**+0.4**
	0.7nm,0.5s,baz=87,slow=6.2,SNR=7.5						
FINES	**FINESS Array B**	**88.97**	**332**	P	**P**	**05 58 42.5**	**+0.3**
	1.1nm,0.9s,baz=66,slow=6.5,SNR=5.6						
NOA	**NORSAR Array B**	**95.89**	**334**	LR	LR	06 46 26.9	
	comp=Z,14nm,18.0s,baz=280,slow=38						
YKA	**Yellowknife Ar**	**97.01**	**24**	P	**P**	**05 59 19.4**	**+0.1**
	0.3nm,0.8s,baz=298,slow=5.0,SNR=3.7						

IDC 29 05:46:42.8±1.6, 41°.75N×130°.90E, h577km±16km, mb2.5/3, mb1 2.8/7, mb1mx2.5/40, mbtmp3.5/7, Error ellipse: s-maj=37.3km s-min=22.6km az=2.0, North Korea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
USRK	**Ussuriysk Ar.**	**2.58**	**18**	P	P	05 47 57.8	+0.4
	3.4nm,0.3s,baz=204,slow=36,SNR=36						
KLR	**Kul'dur**	**7.51**	**4**	P	P	05 48 35.5	-0.8
	0.3nm,0.3s,baz=195,slow=10,SNR=5.2						
MJAR	**Matsushiro Arr**	**7.69**	**130**	P	P	05 48 38.7	+0.2
	0.3nm,0.3s,baz=320,slow=10,SNR=4.3						
SONM	**Songino Array**	**18.39**	**298**	P	P	05 50 24.0	+1.1
	0.3nm,0.3s,baz=69,slow=9.4,SNR=4.0						
MKAR	**Makanchi Array**	**34.73**	**295**	P	P	05 52 44.7	-0.8
	0.5nm,0.5s,baz=75,slow=12,SNR=3.7						
ILAR	**Eielson Array**	**50.00**	**34**	P	P	05 54 44.9	+0.5
	0.3nm,0.6s,baz=289,slow=8.7,SNR=4.8						
YKA	**Yellowknife Ar**	**63.67**	**28**	P	P	05 56 17.5	-0.3
	0.3nm,0.5s,baz=312,slow=6.0,SNR=12						

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*ISCJB **29** 05:48:49.5±0.5, 39°.10N±0°.03×29°.05E±0°.04, h4km±7km, Error ellipse: s-maj=6.0km s-min=4.0km az=145.2*
*CSEM **29** 05:48:49.7±0.1, 39°.10N×29°.05E, h5km, ML2.6, Error ellipse: s-maj=3.0km s-min=2.2km az=109.0*
*ISK **29** 05:48:49.0, 39°.08N×29°.08E, h6km, MD2.6*
*DDA **29** 05:48:49.6, 39°.08N×29°.05E, h7km, Ml2.6*
ISC 29 05:48:49.7±1.0, 39°.09N±0°.02×29°.06E±0°.02, h9km±9km, n32, σ0°.29/46, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**259**	P	**Pg**	**05 48 55.1**	**-0.1**
DEMI				S	**Sg**	**05 48 58.8**	**0.0**
DEMI	**Demirci**	**0.27**	**259**	*i* P	**Pg**	**05 48 55.1**	**-0.1**
DEMI				*i* S	**Sg**	**05 48 58.8**	**0.0**
GDZ	**Gediz**	**0.33**	**91**	P	**Pg**	**05 48 56.4**	**+0.1**
GDZ				S	**Sg**	**05 49 01.4**	**+0.7**
GDZ	**Gediz**	**0.33**	**91**	*i* P	**Pg**	**05 48 56.4**	**+0.1**
GDZ				*i* S	**Sg**	**05 49 01.4**	**+0.7**
TVSB	**Tavsanli**	**0.47**	**41**	*e*PG	**Pg**	**05 48 58.8**	**-0.1**
TVSB				*e*SG	**Sg**	**05 49 05.0**	**-0.2**
TVSB	**Tavsanli**	**0.47**	**41**	*e*Pg	**Pg**	**05 48 58.8**	**-0.1**
TVSB				*e*Sg	**Sg**	**05 49 05.0**	**-0.2**
KULA	**Kula-Manisa**	**0.66**	**208**	*e*PG	**Pg**	**05 49 02.3**	**-0.1**
KULA				*e*SG	**Sg**	**05 49 10.8**	**-0.1**
KULA	**Kula-Manisa**	**0.66**	**208**	*e*Pg	**Pg**	**05 49 02.3**	**-0.1**
KULA				*e*Sg	**Sg**	**05 49 10.9**	**-0.1**
MANT	**Manisa**	**0.72**	**213**	P	**Pb**	**05 49 04.9**	**+0.4**
MANT				S	**Sb**	**05 49 14.3**	**-0.2**
MANT	**Manisa**	**0.72**	**213**	*i* P	**Pb**	**05 49 04.9**	**+0.4**
MANT				*i* S	**Sb**	**05 49 14.3**	**-0.2**
KHAL	**Karahalli**	**0.80**	**155**	P	**Pb**	**05 49 05.7**	**-0.1**
KHAL				S	**Sg**	**05 49 15.5**	**0.0**
KHAL	**Karahalli**	**0.80**	**155**	*i* P	**Pb**	**05 49 05.7**	**-0.1**
KHAL				*i* S	**Sg**	**05 49 15.5**	**0.0**
KHL	**Karahalli**	**0.85**	**155**	*e*PG	**Pg**	**05 49 05.6**	**-0.5**
KHL	**Karahalli**	**0.85**	**155**	*e*Pg	**Pg**	**05 49 05.6**	**-0.5**
ORLT	**Orhaneli**	**0.96**	**353**	*e*PG	**Pg**	**05 49 08.2**	**+0.1**
ORLT	**Orhaneli**	**0.96**	**353**	*e*Pg	**Pg**	**05 49 08.2**	**+0.1**
AKS	**Akhisar**	**0.99**	**258**	*e*PG	**Pg**	**05 49 08.7**	**-0.1**
AKS	**Akhisar**	**0.99**	**258**	*e*Pg	**Pg**	**05 49 08.7**	**-0.1**
BALB	**Balikesir**	**1.06**	**301**	*e*PN	**Pg**	**05 49 09.9**	**-0.2**
BALB				*e*SN	**Sn**	**05 49 25.9**	**+0.3**
BALB	**Balikesir**	**1.06**	**301**	*e*Pn	**Pg**	**05 49 09.9**	**-0.2**
BALB				*e*Sn	**Sn**	**05 49 26.0**	**+0.3**
CAVI	**Cavuskoy**	**1.26**	**28**	*e*PN	**Pg**	**05 49 14.1**	**+0.2**
CAVI	**Cavuskoy**	**1.26**	**28**	*e*Pn	**Pg**	**05 49 14.1**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.28**	**354**	*e*PN	**Pg**	**05 49 14.2**	**0.0**
MDNY	**Mudanya-Bursa**	**1.28**	**354**	*e*Pn	**Pg**	**05 49 14.2**	**0.0**
IZI	**Iznik**	**1.28**	**14**	*e*PN	**Pg**	**05 49 14.6**	**+0.3**
IZI	**Iznik**	**1.28**	**14**	*e*Pn	**Pg**	**05 49 14.6**	**+0.3**
KCTX	**Karacabey (Bur**	**1.29**	**335**	*e*PN	**Pg**	**05 49 14.4**	**0.0**
KCTX	**Karacabey (Bur**	**1.29**	**335**	*e*Pn	**Pg**	**05 49 14.4**	**0.0**
ARMT	**Armutlu**	**1.48**	**354**	*e*PN	**Pb**	**05 49 17.3**	**0.0**
ARMT	**Armutlu**	**1.48**	**354**	*e*Pn	**Pb**	**05 49 17.3**	**0.0**
GULT	**Gulveren**	**1.75**	**40**	*e*PN	**Pb**	**05 49 21.2**	**-0.7**
GULT	**Gulveren**	**1.75**	**40**	*e*Pn	**Pb**	**05 49 21.3**	**-0.7**

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*ISCJB **29** 05:49:60.0±0.5, 39°.13N±0°.03×29°.03E±0°.04, h9km, Error ellipse: s-maj=5.0km s-min=4.1km az=150.4*
*ISK **29** 05:49:59.5, 39°.12N×29°.09E, h5km, ML2.3*
*DDA **29** 05:49:59.6, 39°.12N×29°.01E, h7km, Ml2.6*
*CSEM **29** 05:50:00.1±0.1, 39°.13N×29°.05E, h5km, ML2.6, Error ellipse: s-maj=2.4km s-min=2.1km az=123.0*
ISC 29 05:49:59.9±0.8, 39°.11N±0°.03×29°.07E±0°.03, h9km, n27, σ0°.36/35, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.29**	**257**	P	**Pg**	**05 50 05.4**	**-0.2**
DEMI				S	**Sg**	**05 50 09.0**	**-0.5**
DEMI	**Demirci**	**0.29**	**257**	*i* P	**Pg**	**05 50 05.4**	**-0.2**
DEMI				*i* S	**Sg**	**05 50 09.0**	**-0.5**
GDZ	**Gediz**	**0.32**	**94**	P	**Pb**	**05 50 07.3**	**-0.5**
GDZ				S	**Sb**	**05 50 12.6**	**-0.6**
GDZ	**Gediz**	**0.32**	**94**	*i* P	**Pb**	**05 50 07.3**	**-0.5**
GDZ				*i* S	**Sb**	**05 50 12.6**	**-0.6**
TVSB	**Tavsanli**	**0.46**	**41**	*e*PG	**Pg**	**05 50 08.6**	**-0.2**
TVSB				*e*SG	**Sg**	**05 50 15.2**	**+0.4**
TVSB	**Tavsanli**	**0.46**	**41**	*e*Pg	**Pg**	**05 50 08.6**	**-0.2**
TVSB				*e*Sg	**Sg**	**05 50 15.2**	**+0.4**
KULA	**Kula-Manisa**	**0.68**	**209**	*e*PG	**Pg**	**05 50 13.2**	**+0.3**
KULA	**Kula-Manisa**	**0.68**	**209**	*e*Pg	**Pg**	**05 50 13.2**	**+0.3**
KHAL	**Karahalli**	**0.81**	**156**	P	**Pb**	**05 50 16.1**	**0.0**
KHAL				S	**Sb**	**05 50 27.2**	**0.0**
KHAL	**Karahalli**	**0.81**	**156**	*i* P	**Pb**	**05 50 16.1**	**0.0**
KHAL				*i* S	**Sb**	**05 50 27.2**	**0.0**
ORLT	**Orhaneli**	**0.95**	**352**	*e*PG	**Pg**	**05 50 18.1**	**0.0**
ORLT	**Orhaneli**	**0.95**	**352**	*e*Pg	**Pg**	**05 50 18.1**	**0.0**
AKS	**Akhisar**	**1.01**	**257**	*e*PG	**Pb**	**05 50 19.5**	**0.0**
AKS	**Akhisar**	**1.01**	**257**	*e*Pg	**Pb**	**05 50 19.5**	**0.0**
BALB	**Balikesir**	**1.07**	**300**	*e*PG	**Pg**	**05 50 20.4**	**0.0**
BALB	**Balikesir**	**1.07**	**300**	*e*Pg	**Pg**	**05 50 20.4**	**0.0**
IGD	**Bursa**	**1.16**	**5**	*i* P	**Pb**	**05 50 21.2**	**-0.9**
CAVI	**Cavuskoy**	**1.24**	**28**	*e*PN	**Pb**	**05 50 23.6**	**+0.1**
CAVI	**Cavuskoy**	**1.24**	**28**	*e*Pn	**Pb**	**05 50 23.6**	**+0.1**
IZI	**Iznik**	**1.26**	**14**	*e*PN	**Pb**	**05 50 24.1**	**+0.2**
IZI	**Iznik**	**1.26**	**14**	*e*Pn	**Pb**	**05 50 24.1**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.27**	**353**	*e*PN	**Pn**	**05 50 23.9**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.27**	**353**	*e*Pn	**Pn**	**05 50 23.9**	**+0.1**
ARMT	**Armutlu**	**1.46**	**354**	*e*PN	**Pb**	**05 50 27.4**	**+0.1**
ARMT	**Armutlu**	**1.46**	**354**	*e*Pn	**Pb**	**05 50 27.4**	**+0.1**
GULT	**Gulveren**	**1.73**	**40**	*e*PN	**Pn**	**05 50 30.8**	**+0.6**
GULT	**Gulveren**	**1.73**	**40**	*e*Pn	**Pn**	**05 50 30.8**	**+0.6**

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*CSEM **29** 05:51:44.6±0.1, 39°.11N×29°.08E, h6km, ML2.7, Error ellipse: s-maj=1.6km s-min=1.4km az=137.0*
*ISK **29** 05:51:44.0, 39°.10N×29°.08E, h6km, ML2.3*
*DDA **29** 05:51:44.3, 39°.12N×29°.08E, h7km, Ml2.7*
ISC 29 05:51:44.3±1.1, 39°.11N±0°.02×29°.09E±0°.03, h19km±2km, n38, σ0°.34/50, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.30**	**257**	P	**Pb**	**05 51 51.0**	**0.0**
DEMI				S	**Sb**	**05 51 55.4**	**-0.1**
DEMI	**Demirci**	**0.30**	**257**	*i* P	**Pb**	**05 51 51.0**	**0.0**
DEMI				*i* S	**Sb**	**05 51 55.4**	**-0.1**
GDZ	**Gediz**	**0.31**	**94**	P	**Pg**	**05 51 51.1**	**0.0**
GDZ				S	**Sg**	**05 51 55.7**	**-0.1**
GDZ	**Gediz**	**0.31**	**94**	*i* P	**Pg**	**05 51 51.1**	**0.0**
GDZ				*i* S	**Sg**	**05 51 55.7**	**-0.1**
TVSB	**Tavsanli**	**0.45**	**40**	*e*PG	**Pg**	**05 51 53.4**	**-0.2**
TVSB				*e*SG	**Sg**	**05 51 59.2**	**-0.6**
TVSB	**Tavsanli**	**0.45**	**40**	*e*Pg	**Pg**	**05 51 53.4**	**-0.2**
KULA	**Kula-Manisa**	**0.68**	**209**	*e*PG	**Pg**	**05 51 57.7**	**-0.1**
KULA				*e*SG	**Sg**	**05 52 06.7**	**-0.2**
KULA	**Kula-Manisa**	**0.68**	**209**	*e*Pg	**Pg**	**05 51 57.7**	**-0.1**
KULA				*e*Sg	**Sg**	**05 52 06.7**	**-0.2**
KHAL	**Karahalli**	**0.80**	**157**	P	**Pg**	**05 52 00.3**	**+0.3**
KHAL				S	**Sb**	**05 52 10.1**	**0.0**
KHAL	**Karahalli**	**0.80**	**157**	*i* P	**Pg**	**05 52 00.3**	**+0.3**
KHAL				*i* S	**Sb**	**05 52 10.2**	**0.0**
KHL	**Karahalli**	**0.85**	**156**	*e*PG	**Pn**	**05 52 01.3**	**-0.1**
KHL	**Karahalli**	**0.85**	**156**	*e*Pg	**Pn**	**05 52 01.3**	**-0.1**
ORLT	**Orhaneli**	**0.95**	**351**	*e*PG	**Pg**	**05 52 02.7**	**-0.1**
ORLT	**Orhaneli**	**0.95**	**351**	*e*Pg	**Pg**	**05 52 02.7**	**-0.1**
AKS	**Akhisar**	**1.02**	**257**	*e*PG	**Pg**	**05 52 03.8**	**-0.3**
AKS	**Akhisar**	**1.02**	**257**	*e*Pg	**Pg**	**05 52 03.8**	**-0.3**
BALB	**Balikesir**	**1.08**	**300**	*e*PG	**Pg**	**05 52 04.9**	**-0.3**
IGD	**Bursa**	**1.16**	**4**	*i* P	**Pb**	**05 52 05.8**	**+0.1**
IGD				*i* S	**Sg**	**05 52 23.0**	**+1.1**
CAVI	**Cavuskoy**	**1.24**	**28**	*e*PN	**Pg**	**05 52 08.3**	**+0.1**
CAVI	**Cavuskoy**	**1.24**	**28**	*e*Pn	**Pg**	**05 52 08.3**	**+0.1**
IZI	**Iznik**	**1.26**	**13**	*e*PN	**Pg**	**05 52 08.7**	**0.0**
IZI	**Iznik**	**1.26**	**13**	*e*Pn	**Pg**	**05 52 08.7**	**0.0**
MDNY	**Mudanya-Bursa**	**1.27**	**353**	*e*PN	**Pg**	**05 52 08.8**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.27**	**353**	*e*Pn	**Pg**	**05 52 08.8**	**-0.1**
KCTX	**Karacabey (Bur**	**1.29**	**334**	*e*PN	**Pg**	**05 52 09.1**	**-0.1**
BORA	**Eskisehir**	**1.31**	**53**	P	**Pg**	**05 52 09.4**	**-0.2**
BORA				S	**Sg**	**05 52 27.0**	**+0.3**
BORA	**Eskisehir**	**1.31**	**53**	*i* P	**Pg**	**05 52 09.4**	**-0.2**
BORA				*i* S	**Sg**	**05 52 27.0**	**+0.3**
ADVT	**Abdulvahap**	**1.41**	**21**	*e*PN	**Pg**	**05 52 11.1**	**-0.5**
ADVT	**Abdulvahap**	**1.41**	**21**	*e*Pn	**Pg**	**05 52 11.1**	**-0.5**
ARMT	**Armutlu**	**1.47**	**353**	*e*PN	**Pg**	**05 52 12.1**	**-0.5**
GPA	**Golpazari**	**1.51**	**38**	*e*PN	**Pg**	**05 52 12.6**	**-0.8**
GPA	**Golpazari**	**1.51**	**38**	*e*Pn	**Pg**	**05 52 12.6**	**-0.8**
EDC	**Edincik**	**1.56**	**323**	*e*PN	**Pb**	**05 52 13.1**	**+0.6**
EDC	**Edincik**	**1.56**	**323**	*e*Pn	**Pb**	**05 52 13.1**	**+0.6**
GULT	**Gulveren**	**1.72**	**39**	*e*PN	**Pb**	**05 52 15.3**	**0.0**
GULT	**Gulveren**	**1.72**	**39**	*e*Pn	**Pb**	**05 52 15.3**	**0.0**
HRT	**Hereke**	**1.77**	**14**	*e*PN	**Pb**	**05 52 16.1**	**0.0**
HRT	**Hereke**	**1.77**	**14**	*e*Pn	**Pb**	**05 52 16.1**	**0.0**

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*ISCJB **29** 06:11:35.3±0.5, 39°.12N±0°.04×29°.00E±0°.03, h1km±8km, Error ellipse: s-maj=6.1km s-min=4.4km az=170.6*
*CSEM **29** 06:11:35.6±0.1, 39°.12N×29°.00E, h5km, ML2.6, Error ellipse: s-maj=1.4km s-min=1.3km az=104.0*
*ISK **29** 06:11:35.1, 39°.11N×29°.03E, h6km, ML2.3*
*DDA **29** 06:11:35.3, 39°.14N×29°.01E, h7km, Ml2.6*

ISC 29 06:11:35.8±1.0, 39°.12N±0°.03×29°.02E±0°.02, h7km±10km, n37, σ0°.34/48, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**252**	P	**Pg**	**06 11 40.9**	**+0.2**
DEMI				S	**Sg**	**06 11 44.2**	**+0.2**
DEMI	**Demirci**	**0.24**	**252**	*i* P	**Pg**	**06 11 40.9**	**+0.2**
DEMI				*i* S	**Sg**	**06 11 44.2**	**+0.2**
GDZ	**Gediz**	**0.36**	**95**	P	**Pg**	**06 11 43.0**	**0.0**
GDZ				S	**Sg**	**06 11 48.1**	**+0.3**
GDZ	**Gediz**	**0.36**	**95**	*i* P	**Pg**	**06 11 43.0**	**0.0**
GDZ				*i* S	**Sg**	**06 11 48.1**	**+0.3**
TVSB	**Tavsanli**	**0.48**	**46**	*e*PG	**Pg**	**06 11 45.0**	**-0.1**
TVSB				*e*SG	**Sg**	**06 11 51.3**	**0.0**
TVSB	**Tavsanli**	**0.48**	**46**	*e*Pg	**Pg**	**06 11 45.0**	**-0.1**
TVSB				*e*Sg	**Sg**	**06 11 51.3**	**0.0**
KULA	**Kula-Manisa**	**0.67**	**205**	*e*PG	**Pg**	**06 11 48.2**	**-0.4**
KULA	**Kula-Manisa**	**0.67**	**205**	*e*Pg	**Pg**	**06 11 48.2**	**-0.4**
KHAL	**Karahalli**	**0.84**	**153**	P	**Pb**	**06 11 52.4**	**-0.4**
KHAL				S	**Sg**	**06 12 02.8**	**0.0**
KHAL	**Karahalli**	**0.84**	**153**	*i* P	**Pb**	**06 11 52.4**	**-0.4**
KHAL				*i* S	**Sg**	**06 12 02.8**	**0.0**
KHL	**Karahalli**	**0.89**	**153**	*e*PG	**Pg**	**06 11 52.5**	**-0.3**
KHL	**Karahalli**	**0.89**	**153**	*e*Pg	**Pg**	**06 11 52.6**	**-0.3**
ORLT	**Orhaneli**	**0.93**	**354**	*e*PG	**Pg**	**06 11 53.6**	**-0.1**
ORLT	**Orhaneli**	**0.93**	**354**	*e*Pg	**Pg**	**06 11 53.6**	**-0.1**
AKS	**Akhisar**	**0.97**	**256**	*e*PG	**Pg**	**06 11 54.1**	**-0.2**
AKS	**Akhisar**	**0.97**	**256**	*e*Pg	**Pg**	**06 11 54.2**	**-0.2**
BALB	**Balikesir**	**1.02**	**301**	*e*PG	**Pg**	**06 11 55.3**	**-0.1**
BALB	**Balikesir**	**1.02**	**301**	*e*Pg	**Pg**	**06 11 55.3**	**-0.1**
IGD	**Bursa**	**1.15**	**7**	*i* P	**Pg**	**06 11 56.5**	**-1.4**
IGD				*i* S	**Sn**	**06 12 14.3**	**0.0**
KCTX	**Karacabey (Bur**	**1.25**	**336**	*e*PN	**Pg**	**06 11 59.6**	**-0.2**
KCTX	**Karacabey (Bur**	**1.25**	**336**	*e*Pn	**Pg**	**06 11 59.6**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.25**	**355**	*e*PN	**Pn**	**06 11 59.7**	**0.0**
MDNY	**Mudanya-Bursa**	**1.25**	**355**	*e*Pn	**Pn**	**06 11 59.7**	**0.0**
CAVI	**Cavuskoy**	**1.25**	**30**	*e*PN	**Pg**	**06 11 59.6**	**-0.2**
CAVI	**Cavuskoy**	**1.25**	**30**	*e*Pn	**Pg**	**06 11 59.7**	**-0.2**
BORA	**Eskisehir**	**1.35**	**55**	P	**Pn**	**06 12 01.3**	**+0.1**
BORA				S	**Sn**	**06 12 20.1**	**+0.8**
BORA	**Eskisehir**	**1.35**	**55**	*i* P	**Pn**	**06 12 01.3**	**+0.1**
BORA				*i* S	**Sn**	**06 12 20.1**	**+0.8**
GONE	**Gonen-Balikesi**	**1.38**	**312**	*e*PN	**Pn**	**06 12 01.6**	**+0.1**
GONE	**Gonen-Balikesi**	**1.38**	**312**	*e*Pn	**Pn**	**06 12 01.6**	**+0.1**
ADVT	**Abdulvahap**	**1.42**	**23**	*e*PN	**Pn**	**06 12 02.2**	**+0.1**
ADVT	**Abdulvahap**	**1.42**	**23**	*e*Pn	**Pn**	**06 12 02.2**	**+0.1**
ARMT	**Armutlu**	**1.45**	**355**	*e*PN	**Pn**	**06 12 02.6**	**+0.1**
ARMT	**Armutlu**	**1.45**	**355**	*e*Pn	**Pn**	**06 12 02.6**	**+0.1**
EDC	**Edincik**	**1.51**	**324**	*e*PN	**Pn**	**06 12 03.4**	**+0.1**
EDC	**Edincik**	**1.51**	**324**	*e*Pn	**Pn**	**06 12 03.4**	**+0.1**
GULT	**Gulveren**	**1.75**	**41**	*e*PN	**Pn**	**06 12 06.8**	**+0.1**
GULT

ISFR				*e*AMB	AMB	06 17 10.2	
	comp=Z,2μm,0.3s						
ISFR	**Sfrayin**	**3.11**	**93**	*e*Pn	**Pn**	**06 16 11.4**	**+0.6**
GEYT	**Alibeck**	**3.24**	**77**	Pn	**Pn**	**06 16 14.2**	**+1.7**
	comp=Z,2.9nm,0.3s,baz=255,slow=16,SNR=8.3						
GEYT				Pg	**Pb**	**06 16 21.2**	**+2.1**
	comp=Z,6.2nm,0.3s,baz=264,slow=14,SNR=22						
GEYT				Lg	Lg	06 17 09.7	
	comp=Z,7.3nm,0.3s,baz=262,slow=31,SNR=5.2						
IKRD	**Kardeh**	**3.55**	**97**	*e*Pn	**Pg**	**06 16 28.8**	**-0.7**
IKRD				*e*AMB	AMB	06 17 02.0	
	comp=E,511nm,0.3s						
IEMG	**Emamgholi**	**3.62**	**86**	*e*Pn	**Pn**	**06 16 18.1**	**+0.3**
IEMG				*e*AMB	AMB	06 16 42.1	
	comp=Z,773nm,0.1s						
IEMG	**Emamgholi**	**3.62**	**86**	*e*Pn	**Pn**	**06 16 18.1**	**+0.3**
IAKL	**Akhelmad**	**3.77**	**99**	*e*Pn	**Pn**	**06 16 20.6**	**+0.7**
IAKL				*e*AMB	AMB	06 16 41.5	
	comp=Z,527nm,0.2s						
IMOG	**Moghan**	**4.35**	**104**	*e*Pn	**Pn**	**06 16 27.0**	**-0.9**
IMOG				*e*AMB	AMB	06 17 41.7	
	comp=Z,364nm,0.3s						
IMOG	**Moghan**	**4.35**	**104**	*e*Pn	**Pn**	**06 16 27.0**	**-0.9**
TABS	**Tabas**	**4.36**	**145**	*e*Pn	**Pn**	**06 16 28.4**	**+0.5**
ASTR	**Astara**	**4.41**	**289**	⇑P	**Pn**	**06 16 28.6**	**+0.2**
	SNR=12						
ASTR				⇑S	**Sn**	**06 17 18.7**	**-1.1**
ASTR	**Astara**	**4.41**	**289**	P	**Pn**	**06 16 28.6**	**+0.2**
	SNR=12						
ASTR				S	**Sn**	**06 17 18.7**	**-1.1**
IKLH	**Kolahrood**	**4.45**	**209**	*e*Pn	**Pn**	**06 16 30.5**	**+1.2**
IKLH				*e*AMB	AMB	06 17 53.4	
	comp=Z,680nm,0.3s						
IKLH	**Kolahrood**	**4.45**	**209**	*e*Pn	**Pn**	**06 16 30.5**	**+1.2**
LKRN	**Lenkeran, Azer**	**4.46**	**290**	P	**Pn**	**06 16 29.5**	**+0.4**
	SNR=18						
LKRN				⇓S	**Sn**	**06 17 19.2**	**-1.8**
LKRN	**Lenkeran, Azer**	**4.46**	**290**	P	**Pn**	**06 16 29.5**	**+0.4**
	SNR=18						
LKRN				S	**Sn**	**06 17 19.2**	**-1.8**
NASN	**Na'in**	**4.59**	**194**	*e*Pn	**Pn**	**06 16 31.9**	**+0.7**
IZEF	**Zefreh**	**4.60**	**199**	*e*Pn	**Pn**	**06 16 32.2**	**+0.9**
IZEF				*e*AMB	AMB	06 17 55.4	
	comp=Z,354nm,0.3s						
IZEF	**Zefreh**	**4.60**	**199**	*e*Pn	**Pn**	**06 16 32.2**	**+0.9**
NDR	**Nardaran**	**4.62**	**317**	⇑S	**Sn**	**06 17 25.3**	**+0.3**
NDR	**Nardaran**	**4.62**	**317**	S	**Sn**	**06 17 25.3**	**+0.3**
GOBA	**Gobu**	**4.64**	**314**	⇓S	**Sn**	**06 17 26.9**	**+1.4**
GOBA	**Gobu**	**4.64**	**314**	S	**Sn**	**06 17 26.9**	**+1.4**
LRK	**Lerik**	**4.77**	**288**	⇓P	**Pn**	**06 16 33.6**	**+0.1**
	SNR=17						
LRK				⇓S	**Sn**	**06 17 27.5**	**-1.5**
LRK	**Lerik**	**4.77**	**288**	P	**Pn**	**06 16 33.6**	**+0.1**
	SNR=17						
LRK				S	**Sn**	**06 17 27.5**	**-1.5**
ALIB	**Äli-Bayra**	**4.82**	**305**	⇓P	**Pn**	**06 16 35.5**	**+1.4**
	SNR=3.0						
ALIB				⇑S	**Sn**	**06 17 31.0**	**+1.0**
ALIB	**Äli-Bayra**	**4.82**	**305**	P	**Pn**	**06 16 35.5**	**+1.4**
	SNR=3.0						
ALIB				S	**Sn**	**06 17 31.0**	**+1.0**
GLBA	**Cliilabad**	**4.92**	**295**	P	**Pn**	**06 16 35.8**	**+0.4**
	SNR=27						
GLBA				⇓S	**Sn**	**06 17 31.8**	**-0.6**
GLBA	**Cliilabad**	**4.92**	**295**	P	**Pn**	**06 16 35.8**	**+0.4**
	SNR=27						
GLBA				S	**Sn**	**06 17 31.8**	**-0.6**
ICHK	**Chekchek**	**5.02**	**177**	*e*Pn	**Pn**	**06 16 37.8**	**+0.8**
ICHK				*e*AMB	AMB	06 16 49.3	
	comp=Z,607nm,0.1s						
ICHK	**Chekchek**	**5.02**	**177**	*e*Pn	**Pn**	**06 16 37.8**	**+0.8**
GRMI	**Germi**	**5.15**	**289**	*e*Pn	**Pn**	**06 16 39.2**	**+0.5**
GBS	**Qobustan**	**5.19**	**311**	⇑S	**Sn**	**06 17 40.0**	**+0.8**
GBS	**Qobustan**	**5.19**	**311**	S	**Sn**	**06 17 40.0**	**+0.8**
IPIR	**Pirpir**	**5.28**	**211**	*e*Pn	**Pn**	**06 16 44.4**	**+3.7**
IPIR				*e*AMB	AMB	06 17 15.2	
	comp=Z,223nm,0.3s						
ATGJ	**Altiaghaj**	**5.40**	**313**	P	**Pn**	**06 16 44.1**	**+2.0**
	SNR=3.7						
ATGJ				⇑S	**Sn**	**06 17 46.6**	**+2.3**
ATGJ	**Altiaghaj**	**5.40**	**313**	P	**Pn**	**06 16 44.1**	**+2.0**
	SNR=3.7						
ATGJ				S	**Sn**	**06 17 46.6**	**+2.3**
PQL	**Pirkuli**	**5.56**	**311**	P	**Pn**	**06 16 46.1**	**+1.8**
	SNR=5.6						
PQL	**Pirkuli**	**5.56**	**311**	P	**Pn**	**06 16 46.1**	**+1.8**
	SNR=5.6						
SIZA	**Siyzn**	**5.56**	**315**	P	**Pn**	**06 16 46.3**	**+2.0**
	SNR=2.9						
SIZA	**Siyzn**	**5.56**	**315**	P	**Pn**	**06 16 46.3**	**+2.0**
	SNR=2.9						
IRAM	**Ramesheh**	**5.63**	**195**	*e*Pn	**Pn**	**06 16 47.1**	**+1.7**
IRAM				*e*AMB	AMB	06 17 10.2	
	comp=Z,174nm,0.3s						
IRAM	**Ramesheh**	**5.63**	**195**	*e*Pn	**Pn**	**06 16 47.1**	**+1.7**
IBAF	**Bafgh**	**5.79**	**168**	*e*Pn	**Pn**	**06 16 48.5**	**+1.0**
IBAF				*e*AMB	AMB	06 16 49.6	
	comp=Z,644nm,0.1s						
IBAF	**Bafgh**	**5.79**	**168**	*e*Pn	**Pn**	**06 16 48.5**	**+1.0**
IML	**Ismayilli**	**5.81**	**309**	⇓S	**Sn**	**06 17 52.8**	**-1.6**
IML	**Ismayilli**	**5.81**	**309**	S	**Sn**	**06 17 52.8**	**-1.6**
XNQ	**Khinaliq**	**6.06**	**312**	P	**Pn**	**06 16 53.0**	**+1.7**
	SNR=24						
XNQ				⇓S	**Sn**	**06 18 02.0**	**+1.1**
XNQ	**Khinaliq**	**6.06**	**312**	P	**Pn**	**06 16 53.0**	**+1.7**
	SNR=24						
XNQ				S	**Sn**	**06 18 02.0**	**+1.1**
QBL	**Gabala**	**6.11**	**309**	⇑S	**Sn**	**06 18 01.3**	**-0.5**
SHRT	**Shahrakht**	**6.20**	**124**	*e*Pn	**Pn**	**06 16 52.9**	**-0.2**
QSAR	**Qusar**	**6.21**	**315**	⇓P	**Pn**	**06 16 54.4**	**+1.2**
QSAR				⇓S	**Sn**	**06 18 04.4**	**+0.1**
GANJ	**Ganja**	**6.95**	**301**	P	**Pn**	**06 17 03.9**	**+0.6**
	SNR=3.2						
GANJ				⇓S	**Sn**	**06 18 20.9**	**-1.5**
GANJ	**Ganja**	**6.95**	**301**	P	**Pn**	**06 17 03.9**	**+0.6**
	SNR=3.2						
GANJ				S	**Sn**	**06 18 20.9**	**-1.5**
ZKTA	**Zakatala**	**7.26**	**309**	P	**Pn**	**06 17 09.3**	**+1.7**
	SNR=7.0						
ZKTA				⇓S	**Sn**	**06 18 29.5**	**-0.6**
GDB	**GEDABAY**	**7.37**	**300**	P	**Pn**	**06 17 09.8**	**+0.5**
	SNR=13						
GDB				⇑S	**Sn**	**06 18 31.0**	**-2.1**
GDB	**GEDABAY**	**7.37**	**300**	P	**Pn**	**06 17 09.8**	**+0.5**
	SNR=13						
GDB				S	**Sn**	**06 18 31.0**	**-2.1**
QZX	**Qazax, Azerbai**	**7.78**	**302**	P	**Pn**	**06 17 15.9**	**+1.2**
	SNR=2.7						
QZX				⇓S	**Sn**	**06 18 43.2**	**+0.4**
DGRG	**David-gareji**	**7.96**	**304**	P	**Pn**	**06 17 18.3**	**+1.1**
DGRG				S	**Sn**	**06 18 46.3**	**-1.0**
KBZ	**Khabaz**	**10.70**	**311**	Pn	**Pn**	**06 17 53.0**	**-1.8**
	comp=Z,0.2nm,0.3s,baz=130,slow=8.5,SNR=2.9						
KBZ				Sn	**Sn**	**06 19 50.5**	**-4.0**
	comp=Z,0.4nm,0.3s,baz=291,slow=14,SNR=3.2						
KVAR	**Kislovodsk Arr**	**10.95**	**311**	Pn	**Pn**	**06 17 56.3**	**-2.0**
	baz=215,slow=9.6,SNR=3.1						
AKTO	**Aktyubinsk**	**13.46**	**11**	Pn	**Pn**	**06 18 31.8**	**-0.6**
	comp=Z,0.3nm,0.3s,baz=184,slow=15,SNR=3.6						
ARU	**Arti**	**19.40**	**7**	P	**P**	**06 19 48.1**	**+0.7**
	comp=Z,0.0nm,0.3s,baz=222,slow=6.5,SNR=3.7						
BVAR	**Borovoye Array**	**19.42**	**31**	P	**P**	**06 19 47.5**	**-0.1**
	comp=Z,0.0nm,0.3s,baz=236,slow=6.6,SNR=3.3						
KURBB	**Kurchatov Arra**	**21.95**	**45**	P	**P**	**06 20 15.0**	**0.0**
	comp=Z,0.3nm,0.8s,baz=243,slow=10,SNR=2.8						
AKASG	**Malin Array Be**	**22.25**	**315**	P	**P**	**06 20 18.1**	**-0.3**
	comp=Z,0.7nm,0.4s,baz=122,slow=9.3,SNR=7.0						
MKAR	**Makanchi Array**	**22.88**	**57**	P	**P**	**06 20 27.4**	**+2.3**
	comp=Z,0.1nm,0.3s,baz=270,slow=8.6,SNR=2.8						
FINES	**FINESS Array B**	**29.88**	**333**	P	**P**	**06 21 29.2**	**+0.4**
	comp=Z,0.6nm,0.6s,baz=157,slow=10,SNR=3.5						
ESDC	**Sonseca Array**	**44.85**	**292**	P	**P**	**06 23 34.0**	**-1.9**
	comp=Z,0.2nm,0.5s,baz=69,slow=7.7,SNR=3.4						
YKA	**Yellowknife Ar**	**80.17**	**355**	P	**P**	**06 27 31.4**	**0.0**
	comp=Z,0.3nm,0.9s,baz=7.0,slow=5.6,SNR=3.4						

*ISCJB **29** 06:21:04.0±1.1,4°.1S±0°.1×152°.2E±0°.1, h250km, mb4.1/6, Error ellipse: s-maj=17.7km s-min=13.7km az=30.8*
*IDC **29** 06:21:05.6±2.1,4°.11S×152°.13E, h252km±19km, mb3.5/5, mb1 3.5/7, mb1mx3.2/36, mbtmp4.0/7, Error ellipse: s-maj=18.5km s-min=16.3km az=90.0*
ISC 29 06:21:05.4±1.2,4°.1S±0°.1×152°.1E±0°.2, h250km, n9, σ0°97/11, mb3.8/6, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**7.19**	**222**	P	**Pn**	**06 22 48.5**	**+0.1**
	0.7nm,0.3s,baz=338,slow=24,SNR=3.2						
PMG				S	**S**	**06 24 10.1**	**-1.1**
	1.8nm,0.3s,baz=176,slow=19,SNR=3.6						
JAY	**Jayapura**	**11.43**	**277**	P	**P**	**06 23 45.2**	**-0.6**
	0.2nm,0.3s,baz=269,slow=21,SNR=6.3						
DZM	**Mont Dzumac**	**22.69**	**143**	P	**P**	**06 25 45.4**	**-0.5**
	18nm,0.6s,baz=312,slow=7.3,SNR=24						
WRA	**Warramunga Arr**	**23.38**	**226**	P	**P**	**06 25 52.5**	**+0.3**
	76nm,0.6s,baz=51,slow=11,SNR=146						
ASAR	**Alice Springs**	**26.20**	**220**	P	**P**	**06 26 17.9**	**+0.3**
	1.8nm,0.6s,baz=53,slow=8.6,SNR=46						
ASAR				S	**S**	**06 30 31.8**	**+1.0**
	0.5nm,0.8s,baz=45,slow=16,SNR=4.4						
STKA	**Stephens Creek**	**29.35**	**198**	P	**P**	**06 26 45.8**	**+0.5**
	1.0nm,0.7s,baz=10.0,slow=15,SNR=3.2						
CMAR	**Chiang Mai Arr**	**56.90**	**295**	P	**P**	**06 30 26.6**	**+1.7**
	0.8nm,0.4s,baz=120,slow=6.2,SNR=5.6						
MKAR	**Makanchi Array**	**79.29**	**319**	P	**P**	**06 32 42.2**	**-1.1**
	0.4nm,0.7s,baz=110,slow=7.8,SNR=3.0						
TORD	**Torodi Ar. Bea**	**149.37**	**289**	PKPbc	**PKPbc**	**06 40 25.2**	**-0.6**
	0.5nm,0.6s,baz=78,slow=2.4,SNR=6.0						

*NIED **29** 06:53:00,37°.40N×142°.40E, h5km, Mw3.6 Best double couple: M0=3.10000×10^14 NP1:φs=184.00000°, δ54.00000°, λ-150.00000°. NP2:φs=75.00000°, δ66.00000°, λ-40.00000°.*
*IDC **29** 06:53:58.0±1.3,37°.42N×142°.56E, h0km, mb3.6/5, mb1 3.7/7, mb1mx3.5/40, mbtmp3.6/7, ML3.4/2, MS2.8/3, Ms1 2.8/3, ms1mx2.4/44, Error ellipse: s-maj=32.4km s-min=22.5km az=112.0*
*JMA **29** 06:53:58.8±0.2,37°.42N×142°.43E, h12km±3km, M4.0*
*ISCJB **29** 06:53:59.5±0.8,37°.44N±0°.06×142°.47E±0°.06, h21km, mb3.5/5, Error ellipse: s-maj=8.3km s-min=6.5km az=158.9*
ISC 29 06:54:01.4±1.1,37°.48N±0°.07×142°.39E±0°.07, h21km, n26, σ1°00/22, mb3.6/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.22**	**265**	P	**Pn**	**06 54 21.5**	**-1.7**
JFK				*e*S	**Sb**	**06 54 37.6**	**-1.3**
JIO	**Ouri**	**1.27**	**320**	*e*S	**Sn**	**06 54 40.2**	**-0.2**
JMM	**Marumori**	**1.33**	**287**	P	**Pn**	**06 54 23.4**	**-1.2**
JMM				*e*S	**Sn**	**06 54 41.0**	**-0.7**
JOU	**Okura**	**1.63**	**303**	P	**Pn**	**06 54 28.8**	**0.0**
JOU				*e*S	**Sb**	**06 54 50.7**	**-0.1**
JFT	**Otama**	**1.64**	**272**	P	**Pn**	**06 54 28.5**	**-0.4**
JFT				*e*S	**Sn**	**06 54 49.9**	**+0.5**
JMK	**Ichinoseki**	**1.73**	**328**	P	**Pn**	**06 54 30.3**	**+0.1**
JYK	**Kaneyama**	**2.15**	**312**	P	**Pn**	**06 54 36.8**	**+0.8**
JOM	**Ohasama**	**2.17**	**337**	P	**Pn**	**06 54 36.3**	**+0.1**
JAG	**Ashikaga**	**2.58**	**247**	P	**Pn**	**06 54 41.2**	**-0.7**
MJAR	**Matsushiro Arr**	**3.48**	**256**	Pn	**Pn**	**06 54 55.0**	**+0.7**
	1.7nm,0.3s,baz=78,slow=15,SNR=15						
MAT	**Matsushiro**	**3.48**	**256**	P	**Pn**	**06 54 56.7**	**+2.4**
MAT				S	**Sn**	**06 55 35.5**	**+0.6**
ASAJ	**Asahikawa**	**6.63**	**1**	Pn	**Pn**	**06 55 36.5**	**-1.0**
	1.1nm,0.3s,baz=193,slow=15,SNR=7.1						
JCJ	**Chichijima**	**10.36**	**181**	LR	LR	07 02 49.3	
	comp=Z,156nm,19.9s,baz=336,slow=52						
KSRS	**Korea Array**	**11.50**	**274**	LR	LR	07 01 01.9	
	comp=Z,28nm,19.7s,baz=105,slow=36						
KLR	**Kul'dur**	**14.04**	**330**	LR	LR	07 02 03.6	
	comp=Z,23nm,21.7s,baz=146,slow=34						
SEY	**Seymchan**	**26.20**	**10**	P	**P**	**06 59 35.5**	**+1.2**
	1.6nm,0.6s,baz=346,slow=22,SNR=5.3						
H11N2	**WAKE ISLAND Hy**	**27.72**	**123**	T	T	07 28 34.7	
	baz=315,slow=75,SNR=187						
H11N1	**WAKE ISLAND Hy**	**27.73**	**123**	T	T	07 28 38.2	
	baz=315,slow=75,SNR=168						
H11N3	**WAKE ISLAND Hy**	**27.74**	**123**	T	T	07 28 36.3	
	baz=315,slow=75,SNR=145						
H11S1	**WAKE ISLAND Hy**	**28.46**	**125**	T	T	07 29 32.0	
	baz=317,slow=76,SNR=122						
H11S3	**WAKE ISLAND Hy**	**28.46**	**125**	T	T	07 29 29.7	
	baz=317,slow=76,SNR=136						
H11S2	**WAKE ISLAND Hy**	**28.48**	**125**	T	T	07 29 35.0	
	baz=317,slow=76,SNR=140						
ZALV	**Zalesovo Beam**	**42.19**	**312**	P	**P**	**07 01 53.3**	**+0.9**
	0.5nm,0.4s,baz=90,slow=13,SNR=2.7						
MKAR	**Makanchi Array**	**44.54**	**302**	P	**P**	**07 02 11.9**	**+0.4**
	0.5nm,0.7s,baz=90,slow=6.1,SNR=3.5						
ILAR	**Eielson Array**	**48.70**	**33**	P	**P**	**07 02 43.0**	**-0.7**
	0.2nm,0.7s,baz=254,slow=6.5,SNR=3.4						
WRA	**Warramunga Arr**	**57.62**	**189**	P	**P**	**07 03 49.6**	**-0.3**
	0.4nm,0.5s,baz=7.0,slow=7.1,SNR=3.9						

*ISCJB **29** 07:03:46.3±0.5,39°.13N±0°.02×29°.10E±0°.03, h2km±5km, Error ellipse: s-maj=4.5km s-min=3.1km az=34.7*
*DDA **29** 07:03:46.2,39°.14N×29°.10E, h7km, Ml3.1*
*ISK **29** 07:03:46.1,39°.11N×29°.11E, h8km, ML2.9*
*CSEM **29** 07:03:46.7±0.1,39°.13N×29°.11E, h5km, ML3.1, Error ellipse: s-maj=2.5km s-min=1.7km az=113.0*
ISC 29 07:03:46.8±0.9,39°.12N±0°.02×29°.11E±0°.02, h10km±9km, n57, σ0°36/76, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.29**	**97**	P	**Pg**	**07 03 52.6**	**-0.2**
GDZ				S	**Sg**	**07 03 57.1**	**+0.4**
GDZ	**Gediz**	**0.29**	**97**	*i* P	**Pg**	**07 03 52.6**	**-0.2**
GDZ				*i* S	**Sg**	**07 03 57.1**	**+0.4**
DEMI	**Demirci**	**0.32**	**255**	P	**Pg**	**07 03 53.3**	**+0.1**
DEMI				S	**Sg**	**07 03 57.4**	**0.0**
DEMI	**Demirci**	**0.32**	**255**	*i* P	**Pg**	**07 03 53.3**	**+0.1**
DEMI				*i* S	**Sg**	**07 03 57.4**	**0.0**
TVSB	**Tavsanli**	**0.42**	**40**	PG	**Pg**	**07 03 55.2**	**-0.1**
TVSB				*e*SG	**Sg**	**07 04 01.2**	**+0.3**
TVSB	**Tavsanli**	**0.42**	**40**	*i* Pg	**Pg**	**07 03 55.2**	**-0.1**
TVSB				*e*Sg	**Sg**	**07 04 01.2**	**+0.3**
KULA	**Kula-Manisa**	**0.70**	**210**	PG	**Pg**	**07 04 00.1**	**-0.3**
KULA				*e*SG	**Sg**	**07 04 09.5**	**-0.1**
KULA	**Kula-Manisa**	**0.70**	**210**	*i* Pg	**Pg**	**07 04 00.1**	**-0.3**
KULA				*e*Sg	**Sg**	**07 04 09.5**	**-0.1**
KHAL	**Karahalli**	**0.81**	**158**	P	**Pg**	**07 04 02.4**	**-0.1**
KHAL				S	**Sg**	**07 04 13.3**	**+0.3**
KHAL	**Karahalli**	**0.81**	**158**	*i* P	**Pg**	**07 04 02.4**	**-0.1**
KHAL				*i* S	**Sg**	**07 04 13.3**	**+0.3**
KHL	**Karahalli**	**0.86**	**158**	*e*PG	**Pg**	**07 04 02.8**	**-0.7**
KHL	**Karahalli**	**0.86**	**158**	*e*Pg	**Pg**	**07 04 02.8**	**-0.7**
ORLT	**Orhaneli**	**0.94**	**350**	*e*PG	**Pg**	**07 04 04.7**	**-0.2**
ORLT	**Orhaneli**	**0.94**	**350**	*e*Pg	**Pg**	**07 04 04.7**	**-0.2**
AKHS	**Akhisar**	**1.04**	**257**	P	**Pg**	**07 04 06.6**	**-0.2**
AKHS				S	**Sb**	**07 04 21.0**	**+0.4**
AKHS	**Akhisar**	**1.04**	**257**	*i* P	**Pg**	**07 04 06.6**	**-0.2**
AKHS				*i* S	**Sb**	**07 04 21.0**	**+0.4**
AKS	**Akhisar**	**1.04**	**257**	*e*PG	**Pg**	**07 04 06.6**	**-0.2**
AKS	**Akhisar**	**1.04**	**257**	*e*Pg	**Pg**	**07 04 06.6**	**-0.2**
BALB	**Balikesir**	**1.08**	**299**	*e*PN	**Pb**	**07 04 07.1**	**-0.6**
BALB	**Balikesir**	**1.08**	**299**	*e*Pn	**Pb**	**07 04 07.1**	**-0.6**
IGD	**Bursa**	**1.14**	**4**	*i* P	**Pb**	**07 04 06.9**	**-1.8**
IGD				*i* S	**Sb**	**07 04 23.5**	**-0.1**
CAVI	**Cavuskoy**	**1.22**	**28**	*e*PN	**Pn**	**07 04 09.8**	**-0.2**
CAVI	**Cavuskoy**	**1.22**	**28**	*e*Pn	**Pn**	**07 04 09.8**	**-0.2**
IZI	**Iznik**	**1.24**	**13**	*e*PN	**Pn**	**07 04 10.3**	**-0.1**
IZI	**Iznik**	**1.24**	**13**	*e*Pn	**Pn**	**07 04 10.3**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.26**	**352**	*e*PN	**Pg**	**07 04 11.0**	**0.0**
MDNY	**Mudanya-Bursa**	**1.26**	**352**	*e*Pn	**Pg**	**07 04 11.0**	**0.0**
KCTX	**Karacabey (Bur**	**1.28**	**333**	*e*PN	**Pn**	**07 04 10.6**	**-0.2**
KCTX	**Karacabey (Bur**	**1.28**	**333**	*e*Pn	**Pn**	**07 04 10.6**	**-0.2**
BORA	**Eskisehir**	**1.29**	**54**	P	**Pn**	**07 04 11.0**	**0.0**
BORA				S	**Sg**	**07 04 28.5**	**+0.2**
BORA	**Eskisehir**	**1.29**	**54**	*i* P	**Pn**	**07 04 11.0**	**0.0**
BORA				*i* S	**Sg**	**07 04 28.5**	**+0.2**
GEMT	**Gemlik**	**1.31**	**3**	*e*PN	**Pn**	**07 04 10.9**	**-0.4**
GEMT	**Gemlik**	**1.31**	**3**	*e*Pn	**Pn**	**07 04 10.9**	**-0.4**
DENT	**Denizli**	**1.37**	**183**	*e*PN	**Pn**	**07 04 12.2**	**+0.1**
DENT	**Denizli**	**1.37**	**183**	*e*Pn	**Pn**	**07 04 12.2**	**+0.1**
ADVT	**Abdulvahap**	**1.40**	**20**	*e*PN	**Pn**	**07 04 12.7**	**+0.3**
ADVT	**Abdulvahap**	**1.40**	**20**	*e*Pn	**Pn**	**07 04 12.7**	**+0.3**
DNZL	**Cakiroluk**	**1.43**	**182**	P	**Pg**	**07 04 14.3**	**0.0**
DNZL				S	**Sb**	**07 04 32.4**	**+0.3**
DNZL	**Cakiroluk**	**1.43**	**182**	*i* P	**Pg**	**07 04 14.3**	**0.0**
DNZL				*i* S	**Sb**	**07 04 32.4**	**+0.3**
GONE	**Gonen-Balikesi**	**1.43**	**310**	*e*PN	**Pb**	**07 04 13.8**	**+0.1**
GONE	**Gonen-Balikesi**	**1.43**	**310**	*e*Pn	**Pb**	**07 04 13.8**	**+0.1**
ARMT	**Armutlu**	**1.45**	**353**	*e*PN	**Pb**	**07 04 13.8**	**-0.2**
ARMT	**Armutlu**	**1.45**	**353**	*e*Pn	**Pb**	**07 04 13.8**	**-0.2**
GPA	**Golpazari**	**1.49**	**38**	*e*PN	**Pb**	**07 04 14.3**	**-0.2**
GPA	**Golpazari**	**1.49**	**38**	*e*Pn	**Pb**	**07 04 14.4**	**-0.2**
EDC	**Edincik**	**1.55**	**322**	*e*PN	**Pn**	**07 04 14.9**	**+0.3**
EDC	**Edincik**	**1.55**	**322**	*e*Pn	**Pn**	**07 04 14.9**	**+0.3**
GULT	**Gulveren**	**1.70**	**39**	*e*PN	**Pn**	**07 04 17.2**	**+0.6**
GULT	**Gulveren**	**1.70**	**39**	*e*Pn	**Pn**	**07 04 17.2**	**+0.6**
HRT	**Hereke**	**1.75**	**14**	*e*PN	**Pn**	**07 04 17.7**	**+0.4**
HRT	**Hereke**	**1.75**	**14**	*e*Pn	**Pn**	**07 04 17.7**	**+0.4**
AYDN	**Tasoluk**	**1.75**	**214**	P	**Pb**	**07 04 19.0**	**-0.1**
AYDN				S	**Sb**	**07 04 41.3**	**+0.1**
AYDN	**Tasoluk**	**1.75**	**214**	*i* P	**Pb**	**07 04 19.0**	**-0.1**
AYDN				*i* S	**Sb**	**07 04 41.3**	**+0.1**
ISK	**Istanbul-Kandi**	**1.94**	**359**	*e*PN	**Pn**	**07 04 20.3**	**+0.5**
ISK	**Istanbul-Kandi**	**1.94**	**359**	*e*Pn	**Pn**	**07 04 20.3**	**+0.5**
SILT	**Sile**	**2.07**	**11**	*e*PN	**Pn**	**07 04 21.9**	**+0.3**
SILT	**Sile**	**2.07**	**11**	*e*Pn	**Pn**	**07 04 21.9**	**+0.3**

*ISCJB **29** 07:05:59.8±0.9, 16°.9N±0°.1×147°.7E±0°.2, h41km, mb3.6/9, Error ellipse: s-maj=25.5km s-min=9.2km az=29.5*
*IDC **29** 07:06:02.0±4.3, 16°.96N×147°.74E, h44km±41km, mb3.4/9, mb1 3.7/10, mb1mx3.4/45, mbtmp3.7/10, ML4.0/1, Error ellipse: s-maj=26.6km s-min=22.9km az=84.0*
ISC 29 07:06:01.9±1.0, 16°.9N±0°.1×147°.7E±0°.2, h41km, n11, σ0°62/11, mb3.7/9, Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**4.30**	**220**	P	**Pn**	**07 07 05.4**	**+0.6**
	7.3nm,0.3s,baz=339,slow=17,SNR=5.8						
GUMO				S	**Sn**	**07 07 53.6**	**-0.2**
	2.0nm,0.3s,baz=180,slow=20,SNR=2.7						
MJAR	**Matsushiro Arr**	**21.27**	**339**	P	**P**	**07 10 45.8**	**+1.0**
	1.7nm,0.7s,baz=165,slow=9.2,SNR=4.6						
WRA	**Warramunga Arr**	**38.92**	**200**	P	**P**	**07 13 23.6**	**-0.3**
	0.4nm,0.5s,baz=24,slow=9.1,SNR=4.4						
CMAR	**Chiang Mai Arr**	**46.37**	**280**	P	**P**	**07 14 24.1**	**-0.5**
	0.5nm,0.5s,baz=67,slow=7.5,SNR=4.5						
MKAR	**Makanchi Array**	**61.06**	**314**	P	**P**	**07 16 11.4**	**-0.2**
	0.3nm,0.7s,baz=92,slow=7.2,SNR=2.6						
KURBB	**Kurchatov Arra**	**63.91**	**318**	P	**P**	**07 16 30.4**	**-0.1**
	0.7nm,0.5s,baz=98,slow=7.3,SNR=15						
ILAR	**Eielson Array**	**64.39**	**26**	P	P	07 16 31.7	-1.8
	0.2nm,0.4s,baz=252,slow=6.4,SNR=7.8						
BVAR	**Borovoye Array**	**69.05**	**321**	P	**P**	**07 17 03.3**	**-0.1**
	0.3nm,0.3s,baz=106,slow=11,SNR=3.4						
YKA	**Yellowknife Ar**	**78.65**	**28**	P	**P**	**07 17 58.6**	**-0.7**
	0.4nm,0.5s,baz=282,slow=5.7,SNR=9.0						
NVAR	**Mina Array Bea**	**82.71**	**52**	P	**P**	**07 18 22.1**	**+0.2**
	0.5nm,0.6s,baz=280,slow=5.4,SNR=2.9						
LPAZ	**La Paz**	**145.68**	**94**	PKPbc	**PKPdf**	**07 25 38.4**	**+0.9**

67nm,1.1s
BDI Bagni Di Lucca 0.98 342 Pg Pn 07 25 44.1 -0.1
BDI Bagni Di Lucca 0.98 342 Pg Pn 07 25 44.1 -0.1
SFI Santa Sofia 0.98 38 Pg Pg 07 25 44.3 -0.1
76nm,1.5s
SFI Santa Sofia 0.98 38 Pg Pg 07 25 44.3 -0.1
76nm,1.5s
PARC Parchiule 1.03 60 Pg Pn 07 25 44.9 0.0
28nm,0.7s
PARC Parchiule 1.03 60 Pg Pn 07 25 44.9 0.0
28nm,0.7s
FNVD Fontana Vidola 1.04 4 Pg Pg 07 25 45.8 +0.3
23nm,0.5s
FNVD Fontana Vidola 1.04 4 Pg Pg 07 25 45.8 +0.3
23nm,0.5s
ATPC Poggio Castell 1.11 71 Pg Pg 07 25 46.5 -0.3
167nm,2.1s
ATPC Poggio Castell 1.11 71 Pg Pg 07 25 46.5 -0.3
167nm,2.1s
SARO Sassorosso 1.14 337 P Pb 07 25 46.5 -0.1
PGF Pioggiola 1.59 249 *e*Pn Pn 07 25 52.9 +0.3
PGF *e*Sn Sb 07 26 14.3 +0.3
4.6nm,0.2s
PGF Pioggiola 1.59 249 *e*Pn Pn 07 25 52.9 +0.3
PGF *e*Sn Sb 07 26 14.3 +0.3
2.3nm,0.2s
SBF Sospel 2.70 287 *e*Pn Pn 07 26 07.8 -0.1
SBF Sospel 2.70 287 *e*Pn Pn 07 26 07.8 -0.1
FRF La Foret Royal 3.21 279 *e*Pn Pn 07 26 14.6 -0.2
FRF *e*Sn Sn 07 26 51.7 -0.9
1.3nm,0.3s
FRF La Foret Royal 3.21 279 *e*Pn Pn 07 26 14.6 -0.2
FRF *e*Sn Sn 07 26 51.7 -0.9
0.6nm,0.3s
LMR La Mourre 3.30 275 *e*Pn Pn 07 26 15.7 -0.3
LMR La Mourre 3.30 275 *e*Pn Pn 07 26 15.7 -0.3

NEIC ***29*** *07:27:20.0, 14°.45N×92°.51W, h42km, MD4.0(MEX), After MEX.*

MEX 29 07:27:20.0±0.6, 14°.45N×92°.51W, h42km±15km, MD4.0, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THIG		**0.51**	**28**	*i* P	Pn	07 27 29.1	-1.9
THIG				*i* S	Sn	07 27 37.0	-1.7
THIG		**0.51**	**28**	*i* P	Pn	07 27 29.1	-1.9
THIG				*i* S	Sn	07 27 37.0	-1.7
PCIG		**1.42**	**331**	*i* P	Pn	07 27 42.1	-1.3
PCIG				*e*S	Sn	07 27 58.4	-2.4
PCIG		**1.42**	**331**	*i* P	Pn	07 27 42.1	-1.3
PCIG				*e*S	Sn	07 27 58.4	-2.4
CCIG	**Comitan**	**1.85**	**11**	*e*P	Pn	07 27 48.4	-1.1
CCIG				*e*S	Sn	07 28 09.6	-2.2
CCIG	**Comitan**	**1.85**	**11**	*e*P	Pn	07 27 48.4	-1.1
CCIG				*e*S	Sn	07 28 09.6	-2.2
TGIG		**2.38**	**346**	*e*P	Pn	07 27 54.9	-1.8
TGIG				*e*S	Sn	07 28 22.3	-2.4
TGIG		**2.38**	**346**	*e*P	Pn	07 27 54.9	-1.8
TGIG				*e*S	Sn	07 28 22.3	-2.4

CSEM ***29*** *07:32:57.9±0.2, 37°.26N×28°.21E, h10km, ML2.2, Error ellipse: s-maj=5.0km s-min=4.3km az=29.0*
ISCJB ***29*** *07:32:58.2±0.4, 37°.23N±0°.03×28°.18E±0°.03, h11km±5km, Error ellipse: s-maj=5.4km s-min=4.0km az=37.2*
ISK ***29*** *07:32:58.1, 37°.21N×28°.19E, h13km, ML2.2*
DDA ***29*** *07:32:58.2, 37°.24N×28°.18E, h7km, Md2.8*

ISC 29 07:32:57.7±0.9, 37°.26N±0°.03×28°.20E±0°.03, h12km±6km, n25, σ0°48/39, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.14**	**153**	PG	**Pg**	**07 33 00.4**	**-0.7**
YER				*e*SG	**Sg**	**07 33 04.5**	**+0.9**
YER	**Yerkesik**	**0.14**	**153**	*i* Pg	**Pg**	**07 33 00.4**	**-0.7**
YER				*e*Sg	**Sg**	**07 33 04.5**	**+0.9**
AYDN	**Tasoluk**	**0.48**	**327**	P	**Pb**	**07 33 07.6**	**-0.5**
AYDN				S	**Sb**	**07 33 15.4**	**+0.2**
AYDN	**Tasoluk**	**0.48**	**327**	*i* P	**Pb**	**07 33 07.6**	**-0.5**
AYDN				*i* S	**Sb**	**07 33 15.4**	**+0.2**
TURN	**Turunc**	**0.50**	**140**	*i* P	**Pg**	**07 33 06.3**	**-1.2**
TURN				*i* S	**Sb**	**07 33 16.1**	**+0.4**
DALY	**Dalyan (Mu¨la**	**0.57**	**141**	*e*PG	**Pg**	**07 33 08.6**	**-0.2**
DALY				*e*SG	**Sb**	**07 33 17.6**	**-0.1**
DALY	**Dalyan (Mu¨la**	**0.57**	**141**	*e*Pg	**Pg**	**07 33 08.6**	**-0.2**
DALY				*e*Sg	**Sb**	**07 33 17.6**	**-0.1**
BDRM	**Kayabasi**	**0.64**	**253**	P	**Pg**	**07 33 09.4**	**-0.7**
BDRM				S	**Sb**	**07 33 20.0**	**+0.3**
BDRM	**Kayabasi**	**0.64**	**253**	*i* P	**Pg**	**07 33 09.4**	**-0.7**
BDRM				*i* S	**Sb**	**07 33 19.9**	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**0.73**	**340**	*e*PG	**Pb**	**07 33 12.9**	**+0.4**
AYDB				*e*SG	**Sn**	**07 33 25.6**	**+0.4**
AYDB	**Zeytinkoy-Aydi**	**0.73**	**340**	*e*Pg	**Pb**	**07 33 12.9**	**+0.4**
BODT	**Bodrum**	**0.74**	**255**	*e*PG	**Pb**	**07 33 12.2**	**-0.4**
BODT				*e*SG	**Sb**	**07 33 23.1**	**+0.4**
BODT	**Bodrum**	**0.74**	**255**	*e*Pg	**Pb**	**07 33 12.2**	**-0.4**
BODT				*e*Sg	**Sb**	**07 33 23.1**	**+0.4**
DNZL	**Cakiroluk**	**0.80**	**57**	P	**Pg**	**07 33 12.9**	**-0.3**
DNZL				S	**Sn**	**07 33 26.9**	**0.0**
DNZL	**Cakiroluk**	**0.80**	**57**	*i* P	**Pg**	**07 33 12.9**	**-0.3**
DNZL				*i* S	**Sn**	**07 33 26.9**	**0.0**
FETY	**Fethiye**	**0.94**	**131**	*e*PG	**Pn**	**07 33 16.7**	**-0.1**
FETY	**Fethiye**	**0.94**	**131**	*e*Pg	**Pn**	**07 33 16.7**	**-0.1**
NIS1	**Nisyros Isl.**	**1.05**	**232**	*e*PG	**Pn**	**07 33 18.5**	**+0.2**
NIS1	**Nisyros Isl.**	**1.05**	**232**	*e*Pg	**Pn**	**07 33 18.5**	**+0.2**
KHAL	**Karahalli**	**1.51**	**42**	P	**Pn**	**07 33 24.2**	**-0.5**
KHAL	**Karahalli**	**1.51**	**42**	*i* P	**Pn**	**07 33 24.2**	**-0.5**
AKAS	**Kas**	**1.52**	**132**	P	**Pg**	**07 33 26.7**	**-0.2**
AKAS	**Kas**	**1.52**	**132**	*i* P	**Pg**	**07 33 26.7**	**-0.2**
AKAS				*i* S	Sg	07 33 52.9	+6.2
KARP	**Karpathos**	**1.90**	**207**	*e*PN	**Pn**	**07 33 30.2**	**+0.1**
KARP	**Karpathos**	**1.90**	**207**	*e*Pn	**Pn**	**07 33 30.2**	**+0.1**

BJI ***29*** *07:33:07.8, 6°.24S×149°.62E, h115km, mb5.3/63, mB5.1/43*
ISCJB ***29*** *07:33:11.7±0.7, 5°.82S±0°.02×149°.26E±0°.03, h118km±6km, mb5.2/128, Error ellipse: s-maj=5.6km s-min=3.8km az=172.2*
IDC ***29*** *07:33:11.8±0.5, 5°.86S×149°.27E, h102km±3km, mb4.9/30, mb1 5.0/33, mb1mx4.8/45, mbtmp5.2/33, MS3.7/18, Ms1 3.7/18, ms1mx3.5/36, Error ellipse: s-maj=11.8km s-min=6.1km az=103.0*
MOS ***29*** *07:33:14.1±1.3, 5°.83S×149°.15E, h135km, mb5.0/40, Error ellipse: s-maj=10.6km s-min=5.8km az=98.2*
NEIC ***29*** *07:33:16.2±1.6, 5°.85S×149°.31E, h146km±15km, mb5.3/64, Error ellipse: s-maj=6.4km s-min=3.8km az=70.0*
GCMT ***29*** *07:33:16.2±0.2, 5°.92S×149°.33E, h106km±2km, MW5.2/97, Moment Tensor Solution. s61,c92; s97,c149; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr-2.69±.18; Mθθ3.79±.20; Mφφ-1.10±.21; Mrθ-4.81±.11; Mφθ0.71±.18; Mφr-2.89±.11; Best double couple: M0 6.56700×10^16 NP1:φ61.00000°, δ76.00000°, λ-105.00000°. NP2: φ289.00000°, δ20.00000°, λ-43.00000°. Principal axes: T 6.8700, Plg30.0000°, Azm163.0000°; N -0.6060, Plg15.0000°, Azm65.0000°; P -6.2640, Plg56.0000°, Azm312.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
DJA ***29*** *07:33:17.2±1.0, 6°.5±4°×14°.9E±°, h145km±10km, M5.4/27, mb5.4/27, mB5.8/8, Mw(mB)5.4/8*

ISC 29 07:33:11.7±0.4, 5°.85S±0°.03×149°.34E±0°.04, h106km±2km, h105km:pP-P, n335, σ1°.63/403, mb5.2/128, 14C-6D, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RABL	**Rabaul**	**3.26**	**60**	*e*Pn	**Pn**	**07 34 02.3**	**+1.1**
PMG	**Port Moresby**	**4.14**	**211**	P	**Pn**	**07 34 14.1**	**+1.1**
199nm,0.3s,baz=19,slow=5.2,SNR=196							
PMG				LR	LR	07 35 00.6	
comp=Z,257nm,21.6s,baz=33,slow=26							
PMG				S	**Sn**	**07 35 00.8**	**+0.4**
705nm,0.3s,baz=156,slow=22,SNR=31							
PMG	**Port Moresby**	**4.14**	**211**	*ce*P	**Pn**	**07 34 14.0**	**+1.1**
PMG				pmax	pmax		
comp=Z,6μm,0.8s							
PMG	**Port Moresby**	**4.14**	**211**	*e*Pn	**Pn**	**07 34 14.1**	**+1.1**
PMG				*e*Sn	**Sn**	**07 35 02.3**	**+1.9**

MANU	**Manus Island**	**4.26**	**332**	*e*Pn	**Pn**	**07 34 16.7**	**+2.1**
JAY	**Jayapura**	**9.23**	**291**	P	**Pn**	**07 35 22.0**	**0.0**
comp=Z,0.6nm,0.3s,baz=90,slow=22,SNR=13							
JAY				LR	LR	07 39 16.0	
comp=Z,20nm,18.5s,baz=140,slow=40							
GENI	**Genyem**	**9.70**	**289**	P	**Pn**	**07 35 32.7**	**+4.3**
COEN	**Coen**	**10.09**	**217**	P	**Pn**	**07 35 33.8**	**+0.2**
baz=10,SNR=11							
COEN	**Coen**	**10.09**	**217**	*e*Pn	**Pn**	**07 35 33.8**	**+0.2**
COEN				*e*Sn	**Sn**	**07 37 18.5**	**-6.4**
CTA	**Charters Tower**	**14.47**	**192**	P	**Pn**	**07 36 33.2**	**+1.7**
baz=14							
CTAO	**Charters Tower**	**14.47**	**192**	*e*P	**Pn**	**07 36 32.8**	**+1.3**
CTAO	**Charters Tower**	**14.47**	**192**	*e*Pn	**Pn**	**07 36 32.8**	**+1.3**
QIS	**Mount Isa**	**17.41**	**212**	P	**Pn**	**07 37 09.3**	**+1.1**
baz=18,SNR=39							
KDU	**Kakadu**	**17.97**	**247**	P	**P**	**07 37 13.9**	**-0.2**
baz=18,SNR=128							
SIJI	**Sorong**	**18.70**	**285**	P	**P**	**07 37 22.0**	**-0.1**
comp=Z,9.7nm,0.3s,baz=179,slow=5.2,SNR=2.5							
SWI	**Sorong**	**18.71**	**285**	P	**P**	**07 37 22.8**	**+0.6**
MTN	**Manton Dam**	**19.25**	**248**	P	**P**	**07 37 28.5**	**+0.4**
baz=19,SNR=128							
MTN	**Manton Dam**	**19.25**	**248**	*e*P	**P**	**07 37 28.5**	**+0.4**
comp=Z,604nm,0.8s							
BNDI	**Bandanaira**	**19.40**	**273**	P	**P**	**07 37 28.7**	**-1.0**
comp=Z,405nm,1.1s							
EIDS	**Eidsvold**	**19.48**	**175**	P	**Pn**	**07 37 32.7**	**-0.1**
baz=20,SNR=353							
EIDS	**Eidsvold**	**19.48**	**175**	*e*P	**Pn**	**07 37 32.6**	**-0.1**
comp=Z,760nm,0.7s							
PALU	**Palau**	**19.79**	**311**	P	**P**	**07 37 34.9**	**+0.9**
baz=20,SNR=35							
GUMO	**Guam**	**19.82**	**347**	P	**P**	**07 37 34.7**	**+0.6**
comp=Z,15nm,0.3s,baz=168,slow=13,SNR=13							
GUMO				LR	LR	07 43 48.4	
comp=Z,188nm,20.8s,baz=174,slow=32							
GUMO	**Guam**	**19.82**	**347**	*e*P	**P**	**07 37 35.2**	**+1.0**
comp=Z,1μm,1.8s							
WR0	**Warramunga Arr**	**20.09**	**224**	P	**P**	**07 37 38.1**	**+1.0**
baz=20							
WRAB	**Tennant Creek**	**20.21**	**225**	*ce*P	**P**	**07 37 39.4**	**+1.0**
WRAB				pmax	pmax		
comp=Z,409nm,0.8s							
WRAB	**Tennant Creek**	**20.21**	**225**	*e*P	**P**	**07 37 39.6**	**+1.2**
comp=Z,162nm,0.6s							
WRAB				*e*S	**S**	**07 41 16.5**	**-3.0**
WRAB				*e*ScP	**ScP**	**07 45 16.5**	**+0.8**
WB2	**Warramunga Arr**	**20.21**	**225**	*e*P	**P**	**07 37 39.7**	**+1.3**
comp=Z,142nm,0.6s							
WRA	**Warramunga Arr**	**20.22**	**225**	P	**P**	**07 37 39.2**	**+0.7**
comp=Z,120nm,0.7s,baz=49,slow=10,SNR=180							
WRA				pP	**pP**	**07 37 58.5**	**+0.1**
comp=Z,112nm,0.5s,baz=53,slow=10,SNR=8.0							
WRA				S	**S**	**07 41 18.9**	**-0.8**
comp=Z,37nm,1.1s,baz=47,slow=21,SNR=26							
WRA				ScP	**ScP**	**07 45 16.3**	**+0.5**
comp=Z,22nm,0.9s,baz=41,slow=2.5,SNR=15							
WRA				LR	LR	07 46 32.9	
comp=Z,311nm,18.3s,baz=70,slow=40							
WRA				PKiKP	**PKiKP**	**07 49 36.5**	**-1.1**
comp=Z,0.5nm,0.5s,baz=314,slow=1.2,SNR=5.5							
WRA	**Warramunga Arr**	**20.22**	**225**	*ce*P	**P**	**07 37 37.7**	**-0.8**
WRA				pmax	pmax		
comp=Z,120nm,0.6s							
RMQ	**Roma**	**20.53**	**181**	P	Pn	07 37 44.1	-0.8
baz=21,SNR=76							
LBMI	**Labuha**	**22.40**	**283**	P	**P**	**07 37 59.9**	**-1.9**
KNRA	**Kununurra**	**22.43**	**243**	P	**P**	**07 38 01.4**	**-0.6**
baz=22							
AS01	**Alice Springs**	**23.09**	**218**	*e*P	**P**	**07 38 09.4**	**+0.8**
DZM	**Mont Dzumac**	**23.10**	**136**	*e*P	**P**	**07 38 08.4**	**-0.3**
comp=Z,830nm,1.2s							
DZM				*ep*P	**pP**	**07 38 29.9**	**+0.2**
comp=Z,148nm,1.0s							
DZM				*e*LR	LR	07 44 09.7	
comp=Z,2μm,28.8s							
DZM	**Mont Dzumac**	**23.10**	**136**	P	**P**	**07 38 09.4**	**+0.7**
comp=Z,223nm,0.9s,baz=297,slow=8.5,SNR=121							
AS31	**Alice Springs**	**23.12**	**218**	*e*P	**P**	**07 38 09.8**	**+1.0**
comp=Z,26nm,0.6s							
ASAR	**Alice Springs**	**23.12**	**218**	P	**P**	**07 38 09.8**	**+0.9**
comp=Z,49nm,0.6s,baz=54,slow=8.6,SNR=446							
ASAR				S	**S**	**07 42 14.4**	**+2.3**
comp=Z,37nm,1.0s,baz=32,slow=20,SNR=16							
ASAR				ScP	**ScP**	**07 45 23.8**	**+0.8**
comp=Z,8.1nm,0.7s,baz=47,slow=2.5,SNR=10.0							
ASAR	**Alice Springs**	**23.12**	**218**	P	**P**	**07 38 09.8**	**+0.9**
ASAR				S	**S**	**07 42 14.4**	**+2.3**
ASAR				pmax	pmax		
comp=Z,55nm,0.6s							
ASAR				smax	smax		
comp=N,37nm,1.0s							
ASAR				pmax	pmax		
comp=N,8.0nm,0.7s							
SANI	**Sanana**	**23.59**	**278**	P	**P**	**07 38 10.2**	**-3.1**
ARMA	**Armidale**	**24.53**	**175**	P	**P**	**07 38 23.1**	**+1.4**
baz=25,SNR=16							
ARMA	**Armidale**	**24.53**	**175**	*e*P	**P**	**07 38 21.6**	**-0.1**
comp=N,220nm,1.4s							
SOEI	**Soe**	**25.14**	**260**	P	**P**	**07 38 34.3**	**+6.9**
SOEI	**Soe**	**25.14**	**260**	*e*P	**P**	**07 38 27.8**	**+0.4**
comp=N,102nm,0.7s							
CMSA	**Cobar Meteorol**	**25.78**	**187**	P	**P**	**07 38 33.7**	**+0.8**
baz=26,SNR=119							
FITZ	**Fitzroy Crossi**	**26.14**	**240**	P	**P**	**07 38 36.8**	**+0.6**
baz=26,SNR=214							
FITZ	**Fitzroy Crossi**	**26.14**	**240**	*e*P	**P**	**07 38 36.9**	**+0.6**
comp=N,328nm,0.9s							
STKA	**Stephens Creek**	**26.89**	**195**	P	**P**	**07 38 43.1**	**+0.2**
comp=N,28nm,0.6s,baz=0.6,slow=8.1,SNR=44							
STKA				ScP	**ScP**	**07 45 35.5**	**+2.1**
comp=N,13nm,1.1s,baz=73,slow=3.2,SNR=6.2							
STKA				LR	LR	07 48 54.8	
comp=N,216nm,20.0s,baz=25,slow=35							
STKA	**Stephens Creek**	**26.89**	**195**	P	**P**	**07 38 43.0**	**+0.2**
baz=27,SNR=81							
STKA	**Stephens Creek**	**26.89**	**195**	*e*P	**P**	**07 38 43.0**	**+0.2**
comp=N,19nm,1.2s							
STKA				ScP	**ScP**	**07 45 35.5**	**+2.1**
DAV	**Davao City (W)**	**26.96**	**298**	LR	LR	07 48 59.8	
comp=N,73nm,20.3s,baz=176,slow=35							
MMRI	**Maumere**	**27.02**	**263**	P	**P**	**07 38 44.6**	**+0.3**
MMRI	**Maumere**	**27.02**	**263**	*e*P	**P**	**07 38 42.1**	**-2.2**
comp=N,93nm,0.7s							
MGCD	**Mangrove Creek**	**27.27**	**177**	P	**P**	**07 38 47.6**	**+1.4**
baz=27,SNR=25							
WRKA	**Warkarna**	**27.76**	**224**	P	**P**	**07 38 51.3**	**+0.5**
baz=28,SNR=32							
YNG	**Young**	**28.32**	**182**	P	**P**	**07 38 56.8**	**+1.2**
baz=28,SNR=15							
HTT	**Hallett**	**29.10**	**198**	P	**P**	**07 39 03.2**	**+0.6**
baz=29,SNR=39							
CNB	**Canberra Magne**	**29.32**	**180**	P	**P**	**07 39 05.9**	**+1.4**
baz=30,SNR=20							
CAN	**Canberra**	**29.33**	**181**	P	**P**	**07 39 06.1**	**+1.5**
baz=30							
CAN	**Canberra**	**29.33**	**181**	*e*P	**P**	**07 39 05.4**	**+0.8**
CAN				pmax	pmax		
comp=Z,184nm,1.9s							
CAN	**Canberra**	**29.33**	**181**	*e*P	**P**	**07 39 05.4**	**+0.8**
comp=Z,184nm,1.9s							
KAPI	**Kappang**	**29.46**	**270**	P	**P**	**07 39 04.4**	**-1.5**
comp=Z,5.6nm,0.6s,baz=310,slow=20,SNR=4.4							
KAPI				LR	LR	07 53 50.7	
comp=Z,48nm,21.0s,baz=99,slow=42							
KAPI	**Kappang**	**29.46**	**270**	*e*P	**P**	**07 39 06.0**	**+0.1**
comp=Z,14nm,0.8s							
BBOO	**Buckleboo**	**29.54**	**203**	P	**P**	**07 39 06.7**	**+0.2**
baz=30,SNR=42							
BBOO	**Buckleboo**	**29.54**	**203**	*e*P	**P**	**07 39 06.5**	**+0.1**
comp=Z,24nm,0.8s							
PCI	**Palu**	**29.85**	**278**	P	**P**	**07 39 09.7**	**+0.3**
comp=Z,67nm,0.9s							
MSVF	**Nonsavu**	**30.43**	**115**	*e*P	**P**	**07 39 16.0**	**+1.4**
MSVF				pmax	pmax		
comp=Z,33nm,0.9s							
MSVF	**Nonsavu**	**30.43**	**115**	*e*P	**P**	**07 39 16.0**	**+1.4**
comp=Z,34nm,0.9s							
MILA	**Mila**	**31.06**	**180**	P	**P**	**07 39 21.3**	**+1.5**
baz=31,SNR=5.9							
PLAI	**Plampang**	**31.44**	**263**	P	**P**	**07 39 19.7**	**-3.7**
comp=Z,54nm,0.6s							
ARPS	**Mount Arapiles**	**31.53**	**192**	P	**P**	**07 39 25.2**	**+1.3**
baz=32,SNR=88							
TOO	**Toolangi**	**31.77**	**186**	P	**P**	**07 39 27.6**	**+1.5**
baz=32,SNR=43							

TWSI	**Taliwang, Sumb**	**32.31**	**263**	P	**P**	**07 39 26.6**	**-4.5**
MBWA	**Marble Bar**	**32.47**	**239**	*e*P	**P**	**07 39 32.5**	**+0.1**
comp=Z,648nm,0.6s							
CBIJ	**Chichi jima**	**33.48**	**348**	P	**P**	**07 39 40.0**	**-1.0**
JCJ	**Chichijima**	**33.48**	**348**	P	**P**	**07 39 40.0**	**-1.0**
comp=Z,47nm,0.4s,baz=275,slow=22,SNR=6.3							
JCJ				LR	LR	07 52 08.0	
comp=Z,67nm,20.6s,baz=126,slow=34							
KMBL	**Kambalda**	**36.14**	**222**	P	**P**	**07 40 04.4**	**+0.5**
baz=36,SNR=14							
MOO	**Moorlands**	**36.49**	**183**	P	**P**	**07 40 09.0**	**+2.3**
baz=37,SNR=15							
OUZ	**Omahuta**	**36.80**	**146**	*e*P	**P**	**07 40 11.1**	**+1.7**
comp=Z,30nm,0.7s							
TAU	**Tasmania Unive**	**36.95**	**182**	*e*P	**P**	**07 40 10.7**	**+0.1**
TAU				pmax	pmax		
comp=Z,119nm,1.4s							
TAU	**Tasmania Unive**	**36.95**	**182**	*e*P	**P**	**07 40 10.7**	**+0.1**
comp=Z,119nm,1.4s							
PWJI	**Pagerwojo**	**37.31**	**264**	P	**P**	**07 40 13.0**	**-1.1**
GIRL	**Giralia**	**37.75**	**240**	P	**P**	**07 40 19.2**	**+1.5**
baz=38,SNR=43							
MORW	**Morawa**	**39.02**	**230**	P	**P**	**07 40 28.6**	**+0.4**
baz=39,SNR=7.7							
AFI	**Afiamalu**	**39.09**	**105**	*e*P	**P**	**07 40 27.8**	**-1.3**
AFI	**Afiamalu**	**39.09**	**105**	*e*P	**P**	**07 40 27.8**	**-1.3**
AFI				*ep*P	**pP**	**07 40 51.8**	**-1.4**
KLBR	**Kellerberrin**	**39.10**	**225**	P	**P**	**07 40 28.9**	**0.0**
baz=39,SNR=27							
BLDU	**Ballidu**	**39.32**	**227**	P	**P**	**07 40 31.0**	**+0.3**
baz=39,SNR=9.0							
YOJ	**Yonaguni jima**	**39.57**	**321**	*e*P	**P**	**07 40 33.6**	**+0.8**
YOJ				pmax	pmax		
comp=Z,196nm,0.7s							
YOJ	**Yonaguni jima**	**39.57**	**321**	*e*P	**P**	**07 40 33.6**	**+0.8**
comp=Z,196nm,0.7s							
YULB	**Yu-li**	**39.94**	**318**	*e*P	**P**	**07 40 35.5**	**-0.4**
comp=Z,37nm,0.9s							
NWAO	**Narrogin (SRO)**	**40.22**	**224**	P	**P**	**07 40 38.5**	**+0.3**
baz=40,SNR=7.9							
NWAO	**Narrogin (SRO)**	**40.22**	**224**	*e*P	**P**	**07 40 38.4**	**+0.2**
NWAO				pmax	pmax		
comp=Z,24nm,0.9s							
NWAO	**Narrogin (SRO)**	**40.22**	**224**	*e*P	**P**	**07 40 38.4**	**+0.2**
comp=Z,24nm,0.9s							
NACB	**Ninganchiao**	**40.28**	**319**	*e*P	**P**	**07 40 39.4**	**+0.7**
comp=Z,56nm,0.6s							
TPUB	**Ta-pu**	**40.32**	**317**	*e*P	**P**	**07 40 38.0**	**-1.1**
comp=Z,36nm,0.6s							
SSLB	**Suanglung**	**40.43**	**318**	*e*P	**P**	**07 40 39.6**	**-0.4**
comp=Z,25nm,0.6s							
CMJI	**Cimerak**	**40.64**	**265**	P	**P**	**07 40 39.4**	**-2.4**
YHNB	**Yeheng**	**40.76**	**319**	*e*P	**P**	**07 40 43.2**	**+0.5**
comp=Z,93nm,0.8s							
TATO	**Taipei**	**40.91**	**320**	*e*P	**P**	**07 40 44.0**	**+0.1**
comp=Z,140nm,0.8s							
CISI	**Cisompet, Garu**	**41.26**	**265**	P	**P**	**07 40 44.9**	**-2.2**
CISI	**Cisompet, Garu**	**41.26**	**265**	*e*P	**P**	**07 40 44.4**	**-2.7**
comp=Z,68nm,0.6s							
RKGY	**Rocky Gully**	**41.38**	**222**	P	**P**	**07 40 48.8**	**+1.2**
baz=41,SNR=6.5							
THZ	**Tophouse**	**41.46**	**153**	*e*P	**P**	**07 40 48.6**	**+0.3**
comp=Z,48nm,1.0s							
LEM	**Lembang**	**41.47**	**266**	LR	LR	08 01 49.5	
comp=Z,61nm,19.5s,baz=355,slow=42							
LEM	**Lembang**	**41.47**	**266**	P	**P**	**07 40 51.8**	**+2.9**
SNZO	**South Karori**	**41.94**	**151**	*e*P	**P**	**07 40 52.6**	**+0.5**
comp=Z,127nm,1.3s							
CNJI	**Cibinong**	**41.95**	**266**	P	**P**	**07 40 49.2**	**-3.3**
LTZ	**Lake Taylor**	**42.01**	**155**	*e*P	**P**	**07 40 53.9**	**+1.3**
comp=Z,155nm,1.3s							
BFZ	**Birch Farm**	**42.23**	**149**	*e*P	**P**	**07 40 55.4**	**+0.9**
comp=Z,195nm,1.6s							
KHZ	**Kahutara**	**42.27**	**153**	*e*P	**P**	**07 40 54.9**	**+0.2**
comp=Z,48nm,1.1s							
RPZ	**Rata Peaks**	**42.28**	**156**	P	**P**	**07 40 55.0**	**+0.2**
comp=Z,38nm,0.6s,baz=332,slow=1.6,SNR=21							
RPZ	**Rata Peaks**	**42.28**	**156**	*e*P	**P**	**07 40 56.3**	**+1.5**
comp=Z,46nm,0.8s							
OXZ	**Oxford**	**42.35**	**155**	*e*P	**P**	**07 40 55.6**	**+0.1**
comp=Z,52nm,1.0s							
JNU	**Nakatsue**	**42.54**	**337**	P	**P**	**07 40 57.3**	**+0.2**
comp=Z,111nm,0.9s,baz=168,slow=2.6,SNR=39							
JNU				pP	**pP**	**07 41 20.8**	**-0.7**
comp=Z,124nm,1.0s,baz=146,slow=6.9,SNR=6.6							
JNU	**Nakatsue**	**42.54**	**337**	*e*P	**P**	**07 40 58.3**	**+1.2**
comp=Z,122nm,0.9s							
JNU				*ep*P	**pP**	**07 41 21.7**	**+0.2**
INU	**Inuyama**	**42.59**	**345**	*e*P	**P**	**07 40 58.5**	**+1.1**
comp=Z,111nm,1.0s							
MLZ	**Mavora Lakes**	**42.62**	**160**	*e*P	**P**	**07 40 58.7**	**+1.1**
comp=Z,97nm,1.2s							
QZH	**Quanzhou**	**42.80**	**317⇑**	*i*P	P	07 40 54.3	-5.0
QZH				pmax	pmax		
comp=Z,130nm,0.6s							
MQZ	**McQueen's Vall**	**42.92**	**155**	*e*P	**P**	**07 41 01.2**	**+1.2**
comp=Z,116nm,1.1s							
CGJI	**Cibinong**	**43.38**	**267**	P	**P**	**07 41 00.9**	**-3.3**
MJAR	**Matsushiro Arr**	**43.44**	**347**	P	**P**	**07 41 04.9**	**+0.6**
comp=Z,39nm,0.8s,baz=164,slow=7.4,SNR=67							
MJAR				PcP	**PcP**	**07 42 51.0**	**

GYA	**Guiyang**	**52.35 310**	*e*P	**P**	**07 42 15.3 +2.0**
GYA			pP	pP	07 42 42.5 +3.9
GYA			sP	sP	07 42 56.0 +5.6
GYA			PP	**PP**	**07 44 16.8 +3.7**
GYA			ScP	**ScP**	**07 47 10.3 -0.4**
GYA			S	**S**	**07 49 31.5 +0.2**
GYA			sS	sS	07 50 19.0 +4.3
GYA			pmax	pmax	
	comp=Z,20nm,1.0s				
GYA			pmax	pmax	
	comp=Z,130nm,6.2s				
ENH	**Enshi**	**52.41 316**	*e*P	**P**	**07 42 14.1 +0.5**
	comp=Z,15nm,0.7s				
PBKT	**Sadao Pong**	**52.76 296**	P	**P**	**07 42 17.6 +1.3**
	comp=Z,6.9nm,0.9s				
YSS	**Yuzh-Sakhalins**	**52.90 354**	⇓*i*P	**P**	**07 42 17.9 +1.1**
YSS			*e*		07 42 52.0
YSS			pmax	pmax	
	comp=Z,110nm,0.8s				
YSS			pmax	pmax	
	comp=N,50nm,0.6s				
YSS	**Yuzh-Sakhalins**	**52.90 354**	*e*P	**P**	**07 42 17.7 +1.0**
	comp=N,96nm,0.8s				
MDJ	**Mudanjiang**	**53.28 342**	P	**P**	**07 42 21.3 +1.6**
MDJ			pP	pP	07 42 47.3 +2.2
MDJ			sP	sP	07 43 00.0 +3.2
MDJ			PcP	**PcP**	**07 43 27.0 +1.0**
MDJ			ScP	**ScP**	**07 47 14.8 +0.6**
MDJ			PcS	**PcS**	**07 47 26.5 +1.6**
MDJ			S	**S**	**07 49 44.0 +0.9**
MDJ			pmax	pmax	
	comp=N,67nm,0.8s				
MDJ			pmax	pmax	
	comp=N,100nm,5.6s				
MDJ			LR	LR	
	comp=N,200nm,35.4s				
MDJ			LR	LR	
	comp=N,140nm,32.2s				
MDJ			LR	LR	
	comp=N,270nm,32.9s				
MDJ	**Mudanjiang**	**53.28 342**	*e*P	**P**	**07 42 21.2 +1.5**
	comp=N,61nm,0.9s				
LHMI	**Lhok Sumawe**	**53.45 281**	P	**P**	**07 42 21.4 -0.1**
UTTA	**Uttaradit**	**53.56 297**	P	**P**	**07 42 20.8 -1.3**
	comp=N,7.6nm,0.8s,comp=N,76nm				
NANT	**Nan**	**53.82 298**	P	**P**	**07 42 22.7 -1.4**
	comp=N,8.0nm,0.8s				
CN2	**Changchun**	**53.93 339**	*e*P	**P**	**07 42 25.3 +0.9**
CN2			pmax	pmax	
	comp=N,10.0nm,1.0s				
UMPA	**Umpang Tak**	**54.54 295**	P	P	07 42 35.9 +6.5
CRAI	**Chiangrai**	**54.65 300**	P	**P**	**07 42 29.1 -1.0**
	comp=N,99nm,0.9s				
LAMP	**Lampang**	**54.66 297**	P	**P**	**07 42 31.4 +1.2**
	comp=N,74nm,0.8s				
KMI	**Kunming**	**54.77 306**	P	**P**	**07 42 33.3 +2.2**
KMI			pP	pP	07 43 02.0 +5.4
KMI			PP	**PP**	**07 44 38.8 +3.8**
KMI			S	**S**	**07 50 03.8 -0.4**
KMI			sS	sS	07 50 51.5 +3.5
KMI			SS	**SS**	**07 53 51.0 +2.0**
KMI			pmax	pmax	
	comp=N,24nm,0.6s				
KMI			pmax	pmax	
	comp=N,150nm,4.1s				
KMI			LR	LR	
	comp=N,150nm,5.6s				
KMI			LR	LR	
	comp=N,110nm,4.9s				
KMI			LR	LR	
	comp=N,100nm,7.0s				
BJT	**Baijiatuau**	**54.92 329**	*e*P	**P**	**07 42 32.0 +0.3**
BJT			pmax	pmax	
	comp=Z,11nm,0.4s				
BJT	**Baijiatuau**	**54.92 329**	*e*P	**P**	**07 42 32.0 +0.3**
	comp=Z,11nm,0.4s				
BJI	**Beijing**	**54.94 329**	P	**P**	**07 42 32.5 +0.7**
BJI			PP	**PP**	**07 44 35.5 -0.5**
BJI			S	**S**	**07 50 07.3 +1.9**
BJI			SS	**SS**	**07 53 54.3 +3.6**
BJI			pmax	pmax	
	comp=Z,25nm,0.8s				
BJI			LR	LR	
	comp=Z,78nm,34.8s				
XAN	**Xi'an**	**55.07 319**	P	**P**	**07 42 32.3 -0.7**
XAN			pP	pP	07 42 57.0 -1.5
XAN			PcP	**PcP**	**07 43 31.5 -1.7**
XAN			pmax	pmax	
	comp=Z,43nm,0.8s				
XAN			pmax	pmax	
	comp=Z,150nm,9.3s				
CMAR	**Chiang Mai Arr**	**55.24 297**	P	**P**	**07 42 33.4 -1.0**
	comp=Z,5.6nm,0.8s,baz=120,slow=5.8,SNR=24				
CMAR			LR	LR	08 08 37.8
	comp=Z,35nm,18.2s,baz=118,slow=38				
CMMT	**Chiang Mai**	**55.37 298**	P	**P**	**07 42 34.6 -0.7**
	comp=Z,9.0nm,0.8s				
CHTO	**Chiang Mai**	**55.37 298**	P	**P**	**07 42 34.7 -0.6**
	comp=Z,39nm,1.0s				
CHTO	**Chiang Mai**	**55.37 298**	*e*P	**P**	**07 42 34.3 -1.0**
CHTO			pmax	pmax	
	comp=Z,13nm,1.0s				
CHTO	**Chiang Mai**	**55.37 298**	*e*P	**P**	**07 42 34.3 -1.0**
	comp=Z,12nm,1.0s				
HABR	**Khabarovsk**	**55.53 349**	*de*P	**P**	**07 42 34.4 -1.4**
HABR			*e**SP	**sP**	**07 43 10.2 -2.9**
HABR			*e*		07 44 39.5
HABR			*e*S	**S**	**07 50 12.3 -0.7**
HABR			*e*		07 52 13.7
HABR			*e*SS	**SS**	**07 54 00.1 +0.4**
HABR			pmax	pmax	
	comp=N,20nm,1.0s				
HABR			pmax	pmax	
	comp=Z,60nm,1.0s				
HABR			pmax	pmax	
	comp=E,8.0nm,1.0s				
HABR			MLR	MLR	
	comp=Z,42nm,15.0s				
SKR	**Severo-Kuril's**	**56.61 5**	*e*P	P	07 42 34.0 -9.5
SKR			pmax	pmax	
	comp=E,70nm,0.8s				
SKR			pmax	pmax	
	comp=Z,120nm,0.8s				
TYV	**Tymovskoe**	**56.78 355**	*e*P	**P**	**07 42 45.0 +0.3**
TYV			pmax	pmax	
	comp=E,53nm,0.8s				
TYV			pmax	pmax	
	comp=Z,145nm,0.8s				
CD2	**Chengdu**	**56.86 313**	P	**P**	**07 42 46.3 +0.5**
CD2			pP	pP	07 43 13.5 +2.1
CD2			sP	sP	07 43 26.3 +3.2
CD2			PP	**PP**	**07 44 54.0 +0.6**
CD2			S	**S**	**07 50 32.0 +0.6**
CD2			sS	sS	07 51 19.5 +4.0
CD2			SS	**SS**	**07 54 23.5 +2.0**
CD2			pmax	pmax	
	comp=Z,40nm,0.7s				
CD2			pmax	pmax	
	comp=Z,130nm,6.6s				
CD2			LR	LR	
	comp=Z,490nm,5.7s				
CD2			LR	LR	
	comp=Z,300nm,6.6s				
KLR	**Kul'dur**	**56.96 346**	P	**P**	**07 42 47.1 +1.1**
	comp=Z,20nm,0.6s,baz=176,slow=5.2,SNR=98				
KLR			pP	**pP**	**07 43 11.6 -0.1**
	comp=Z,13nm,0.7s,baz=164,slow=4.9,SNR=4.0				
KLR			PcP	**PcP**	**07 43 40.5 +0.3**
	comp=Z,12nm,0.6s,baz=145,slow=3.8,SNR=13				
KLR	**Kul'dur**	**56.96 346**	P	**P**	**07 42 47.1 +1.1**
KLR					07 43 40.5
KLR			pmax	pmax	
	comp=Z,31nm,0.8s				
KLR			pmax	pmax	
	comp=Z,13nm,0.7s				
KLR			pmax	pmax	
	comp=Z,12nm,0.6s				
HHC	**Hu-ho-hao-te**	**57.96 327**	*e*P	**P**	**07 42 56.0 +2.6**
HHC			pmax	pmax	
	comp=Z,100nm,1.1s				
HHC			pmax	pmax	
	comp=Z,230nm,6.9s				
HHC			LR	LR	
	comp=Z,1μm,16.7s				
HHC			LR	LR	
	comp=Z,1μm,16.4s				
HHC			LR	LR	
	comp=Z,1μm,16.7s				
PETK	**Petropavlovsk-**	**59.16 6**	P	**P**	**07 43 02.5 +1.2**
	comp=Z,160nm,0.5s,baz=156,slow=6.2,SNR=523				
PETK			pP	**pP**	**07 43 27.1 0.0**
	comp=Z,29nm,1.1s,baz=138,slow=11,SNR=1.9				
PET	**Petropavlovsk**	**59.18 7**	*d i*P	**P**	**07 43 02.0 +0.6**
PET			*e**SP	**sP**	**07 43 38.4 -0.5**
PET			*e*S	**S**	**07 51 02.2 +1.5**
PET			pmax	pmax	
	comp=Z,200nm,7.1s				
PET			pmax	pmax	
	comp=Z,158nm,0.8s				
PET			pmax	pmax	
	comp=Z,100nm,13.1s				
PET	**Petropavlovsk**	**59.18 7**	*e*P	**P**	**07 43 02.6 +1.2**
NKL	**Nikolayevsk**	**59.23 354**	*e*P	**P**	**07 43 03.0 +1.2**
NKL			pmax	pmax	
	comp=Z,100nm,0.8s				
LZH	**Lanzhou**	**59.64 318**	*e*P	**P**	**07 43 05.8 +0.7**
LZH			pP	pP	07 43 31.3 +0.3
LZH			sP	sP	07 43 42.8 +0.2
LZH			PP	**PP**	**07 45 16.0 -2.1**
LZH			S	**S**	**07 51 02.0 -5.6**
LZH			sS	sS	07 51 58.3 +6.3
LZH			SS	**SS**	**07 55 04.0 -1.2**
LZH			pmax	pmax	
	comp=Z,37nm,1.0s				
LZH			pmax	pmax	
	comp=Z,270nm,4.2s				
HIA	**Hailar**	**60.65 338**	*e*P	**P**	**07 43 13.0 +1.4**
HIA			pmax	pmax	
	comp=Z,25nm,0.6s				
HIA	**Hailar**	**60.65 338**	*e*P	**P**	**07 43 13.0 +1.4**
	comp=Z,25nm,0.6s				
PPT2	**Papeete2**	**60.71 107**	*e*S	**S**	**07 51 20.6 -1.2**
	comp=Z,72nm,25.2s				
TBI	**Tubuai**	**61.29 113**	*e*S	**S**	**07 51 27.8 -1.0**
	comp=Z,177nm,28.0s				
TBI	**Tubuai**	**61.29 113**	*e*LR	LR	08 01 39.5
	comp=Z,496nm,39.2s				
GTA	**Gaotai**	**64.13 319**	*e*P	**P**	**07 43 36.3 +1.1**
GTA			pP	pP	07 44 01.0 -0.4
GTA			sP	sP	07 44 13.0 +0.1
GTA			pmax	pmax	
	comp=Z,18nm,0.9s				
ULN	**Ulaanbaatar**	**65.12 330**	*de*P	**P**	**07 43 41.3 -0.2**
ULN			pmax	pmax	
	comp=Z,13nm,0.8s				
ULN	**Ulaanbaatar**	**65.12 330**	*e*P	**P**	**07 43 41.5 +0.1**
MA2	**Magadan**	**65.23 1**	P	**P**	**07 43 43.0 +1.3**
	comp=Z,21nm,0.7s,baz=204,slow=5.4,SNR=12				
MA2	**Magadan**	**65.23 1**	*e*P	**P**	**07 43 42.4 +0.7**
MA2			pmax	pmax	
	comp=Z,79nm,0.7s				
MA2	**Magadan**	**65.23 1**	*e*P	**P**	**07 43 42.4 +0.7**
	comp=Z,79nm,0.7s				
SONM	**Songino Array**	**65.43 330**	P	**P**	**07 43 44.3 +0.9**
	comp=Z,19nm,0.5s,baz=143,slow=5.6,SNR=47				
SONM			pP	**pP**	**07 44 08.7 -1.0**
	comp=Z,10nm,0.7s,baz=144,slow=6.9,SNR=5.9				
SONM			LR	LR	08 09 32.9
	comp=Z,82nm,20.6s,baz=98,slow=33				
SONM	**Songino Array**	**65.43 330**	P	**P**	**07 43 44.3 +0.9**
SONM			*PP	**pP**	**07 44 08.7 -1.0**
SONM			pmax	pmax	
	comp=Z,13nm,0.4s				
SONM			pmax	pmax	
	comp=Z,10.0nm,0.7s				
SONA1	**Songino Array**	**65.43 330**	*e*P	**P**	**07 43 43.3 -0.2**
CASY	**Casey**	**66.03 196**	*e*P	**P**	**07 43 47.4 +0.6**
SEY	**Seymchan**	**68.63 1**	P	**P**	**07 44 04.3 +1.1**
	comp=Z,28nm,0.9s,baz=174,slow=5.5,SNR=70				
ZAK	**Zakamensk**	**68.64 330**	*e*P	**P**	**07 44 02.3 -1.4**
ZAK			*e*		07 44 29.6
ZAK			pmax	pmax	
	comp=Z,33nm,0.9s				
ZAK			pmax	pmax	
	comp=Z,24nm,1.0s				
TLY	**Talaya**	**69.31 332**	P	**P**	**07 44 08.9 +1.3**
	comp=Z,10.0nm,0.7s,baz=188,slow=3.8,SNR=15				
TLY			pP	**pP**	**07 44 32.9 -1.3**
	comp=Z,7.1nm,0.8s,baz=181,slow=6.3,SNR=3.7				
TLY	**Talaya**	**69.31 332**	*e*P	**P**	**07 44 09.0 +1.4**
TLY			*e*		07 44 33.7
TLY			pmax	pmax	
	comp=Z,15nm,0.9s				
YAK	**Yakutsk**	**69.37 350**	P	**P**	**07 44 08.7 +1.0**
	comp=Z,2.1nm,0.4s,baz=342,slow=23,SNR=4.9				
YAK	**Yakutsk**	**69.37 350**	*e*P	**P**	**07 44 08.7 +1.0**
YAK			*e*		07 44 30.2
YAK			*e*		07 46 41.4
YAK			*e*S	**S**	**07 53 03.0 -3.0**
YAK			*e**SS	**SKiKP**	**07 53 40.5 -6.2**
YAK			*i*		07 53 56.7
YAK			pmax	pmax	
	comp=Z,14nm,0.9s				
YAK			pmax	pmax	
	comp=N,7.0nm,1.4s				
YAK			pmax	pmax	
	comp=N,6.0nm,0.4s				
YAK			pmax	pmax	
	comp=Z,17nm,0.4s				
YAK			smax	smax	
	comp=N,42nm,15.8s				
YAK			smax	smax	
	comp=E,12nm,14.8s				
GUN	**Gumba**	**69.74 302**	*e*P	**P**	**07 44 09.7 -1.5**
PKIN	**Phulchoki**	**70.05 302**	*e*P	**P**	**07 44 11.8 -1.2**
	comp=E,8.0nm,0.6s				
KKN	**Kakani**	**70.21 302**	*e*P	**P**	**07 44 12.2 -1.7**
DMN	**Daman**	**70.30 302**	*e*P	**P**	**07 44 12.9 -1.6**
	comp=E,18nm,0.5s				
AKUT	**Akutan**	**70.56 26**	*e*P	**P**	**07 44 12.2 -3.0**
	comp=E,38nm,0.6s				
MOY	**Mondy**	**70.58 330**	*e*P	**P**	**07 44 16.8 +1.3**
MOY			pmax	pmax	
	comp=Z,29nm,1.9s				
GKN	**Gorkha**	**70.81 302**	*e*P	**P**	**07 44 15.8 -1.8**
	comp=Z,11nm,0.3s				
KOLN	**Koldanda**	**71.62 302**	*e*P	**P**	**07 44 20.6 -1.9**
	comp=Z,9.5nm,0.4s				
MIR	**Mirnyy**	**71.73 201**	*i* P	**P**	**07 44 23.0 +0.9**
MIR			pmax	pmax	
	comp=Z,4.0nm,1.0s				
VNDA	**Vanda**	**71.93 177**	P	**P**	**07 44 24.6 +1.4**
	comp=Z,13nm,0.6s,baz=333,slow=6.7,SNR=98				
VNDA			pP	**pP**	**07 44 48.3 -1.6**
	comp=Z,24nm,0.9s,baz=328,slow=7.1,SNR=15				
PYUN	**Piuthan**	**72.23 302**	*e*P	**P**	**07 44 23.8 -2.3**
	comp=Z,20nm,0.6s				
SBA	**Scott Base**	**72.54 176**	*e*P	**P**	**07 44 28.6 +1.9**
SBA			pmax	pmax	
	comp=Z,16nm,1.0s				
SBA	**Scott Base**	**72.54 176**	*e*P	**P**	**07 44 28.6 +1.9**
	comp=Z,16nm,1.0s				
SDPT	**Sand Point**	**73.70 27**	*e*P	**P**	**07 44 33.7 -0.2**
WMQ	**Urumqi**	**74.21 319**	P	**P**	**07 44 38.5 +1.3**
WMQ			pP	pP	07 45 04.3 +0.2
WMQ			sP	sP	07 45 22.5 +7.0
WMQ			PP	**PP**	**07 47 25.8 +1.4**
WMQ			pmax	pmax	
	comp=Z,10.0nm,0.6s				
WMQ			pmax	pmax	
	comp=Z,63nm,5.6s				
WMQ			LR	LR	
	comp=Z,74nm,38.2s				
RKT	**Rikitea**	**74.58 112**	*e*LR	LR	08 07 48.7
	comp=Z,296nm,38.8s				
BILL	**Bilibino**	**74.68 7**	*ce*P	**P**	**07 44 40.2 +0.9**
BILL			*e*		07 44 50.0
BILL			pmax	pmax	
	comp=Z,7.0nm,0.6s				
BILL	**Bilibino**	**74.68 7**	*e*P	**P**	**07 44 40.3 +0.9**
	comp=Z,6.1nm,0.5s				
KRAR	**Krasnoyarsk**	**77.00 331**	*e*P	**P**	**07 44 54.2 +1.4**
KRAR			pmax	pmax	
	comp=Z,7.0nm,0.7s				
TIXI	**Tiksi**	**78.51 354**	P	**P**	**07 45 00.5 -0.3**
	comp=Z,5.0nm,0.3s,baz=138,slow=6.0,SNR=19				
TIXI	**Tiksi**	**78.51 354**	*de*P	**P**	**07 45 01.1 +0.3**
TIXI			pmax	pmax	
	comp=Z,20nm,1.9s				
TIXI	**Tiksi**	**78.51 354**	*e*P	**P**	**07 44 59.6 -1.2**
	comp=Z,8.1nm,0.6s				
KDAK	**Kodiak Island**	**78.68 28**	*ce*P	**P**	**07 45 03.1 +1.1**
MKAR	**Makanchi Array**	**78.87 320**	P	**P**	**07 45 03.2 -0.2**
	comp=Z,5.4nm,0.4s,baz=99,slow=7.2,SNR=119				
MKAR			pP	**pP**	**07 45 29.0 -1.5**
	comp=Z,3.1nm,0.7s,baz=92,slow=8.5,SNR=2.5				
MKAR			PKP2bc		08 12 05.0
	comp=Z,0.3nm,0.7s,baz=335,slow=5.4,SNR=3.6				
MKAR			LR	LR	08 19 24.1
	comp=Z,49nm,19.4s,baz=85,slow=35				
MKAR	**Makanchi Array**	**78.87 320**	*i* P	**P**	**07 45 02.0 -1.4**
MKAR			pmax	pmax	
	comp=Z,6.0nm,0.4s				
ZALV	**Zalesovo Beam**	**80.14 327**	P	**P**	**07 45 08.8 -1.2**
	comp=Z,7.6nm,0.3s,baz=114,slow=5.4,SNR=31				
KSH	**Kashi**	**81.02 311**	P	**P**	**07 45 16.8 +1.5**
KSH			*es*P	sP	07 45 57.3 +3.5
KSH			*e*PP	**PP**	**07 48 25.5 +3.9**
KSH			S	**S**	**07 55 15.0 -1.2**
KSH			SKS	**SKSac**	**07 55 20.3 -4.5**
KSH			pmax	pmax	
	comp=Z,79nm,5.5s				
KSH			LR	LR	
	comp=Z,440nm,14.5s				
KSH			LR	LR	
	comp=Z,210nm,9.5s				
KSH			LR	LR	
	comp=Z,130nm,6.5s				
SEW	**Seward**	**81.24 26**	*e*P	**P**	**07 45 15.5 -0.3**
	comp=Z,15nm,1.1s				
NVS	**Novosibirsk**	**81.34 328**	*e*P	**P**	**07 45 15.1 -1.4**
RC01	**Rabbit Creek A**	**81.58 25**	*e*P	**P**	**07 45 17.3 -0.3**
	comp=Z,7.0nm,0.5s				
TKM2	**Tokmak 2**	**82.19 315**	*e*P	**P**	**07 45 21.2 -0.3**
TKM2			pmax	pmax	
	comp=Z,12nm,0.5s				
TKM2	**Tokmak 2**	**82.19 315**	*e*P	**P**	**07 45 21.2 -0.3**
	comp=Z,12nm,0.5s				
KTH	**Kantishna Hill**	**82.30 23**	*e*P	**P**	**07 45 20.0 -1.4**
	comp=Z,13nm,0.9s				
KURK	**Kurchatov**	**82.49 323**	*e*P	**P**	**07 45 21.0 -1.6**
KURK					07 48 35.9
KURK			pmax	pmax	
	comp=Z,26nm,0.8s				
KURK	**Kurchatov**	**82.49 323**	*e*P	**P**	**07 45 21.0 -1.6**
	comp=Z,26nm,0.8s				
KURK			PP	**PP**	**07 48 35.9 +2.7**
KURK			PKKPbc	**PKKPbc**	**08 03 48.2 -2.3**
TRF	**Thorofare Moun**	**82.50 23**	*e*P	**P**	**07 45 21.0 -1.6**
	comp=Z,7.7nm,0.7s				
SML	**Sawmill**	**82.51 25**	*e*P	**P**	**07 45 21.5 -1.0**
SML			pmax	pmax	
	comp=Z,3.0nm,0.8s				
SML	**Sawmill**	**82.51 25**	*e*P	**P**	**07 45 21.5 -1.0**
	comp=Z,2.8nm,0.8s				
KURBB	**Kurchatov Arra**	**82.52 323**	P	**P**	**07 45 21.1 -1.6**
	comp=Z,5.4nm,0.7s,baz=110,slow=4.4,SNR=41				
KURBB			PP	**PP**	**07 48 35.9 +2.5**
	comp=Z,1.7nm,0.8s,baz=103,slow=8.6,SNR=4.1				
KURBB			PKKPbc	**PKKPbc**	**08 03 48.2 -2.2**
	comp=Z,0.3nm,0.4s,baz=272,slow=2.9,SNR=7.4				
BPAW	**Bear Paw Mtn.**	**82.55 22**	*e*P	**P**	**07 45 21.1 -1.5**
	comp=Z,1.0nm,0.8s				
AAK	**Ala-Archa**	**82.90 314**	P	**P**	**07 45 24.6 -0.6**
	comp=Z,6.7nm,0.5s,baz=110,slow=4.8,SNR=20				
AAK	**Ala-Archa**	**82.90 314**	*c i*P	**P**	**07 45 25.3 +0.2**
AAK			pmax	pmax	
	comp=Z,14nm,0.6s				
AAK	**Ala-Archa**	**82.90 314**	*e*P	**P**	**07 45 23.6 -1.6**
	comp=Z,6.3nm,0.6s				
MCK	**McKinley**	**83.17 23**	*e*P	**P**	**07 45 24.2 -1.6**
MCK			pmax	pmax	
	comp=Z,35nm,1.0s				
MCK	**McKinley**	**83.17 23**	*e*P	**P**	**07 45 24.2 -1.6**
	comp=Z,36nm,1.0s				
EKS2	**Erkin-Say**	**83.42 314**	*e*P	**P**	**07 45 26.8 -1.0**
EKS2			pmax	pmax	
	comp=Z,10.0nm,0.8s				
EKS2	**Erkin-Say**	**83.42 314**	*e*P	**P**	**07 45 26.8 -1.0**
	comp=Z,10.0nm,0.8s				
COLA	**College**	**84.11 22**	*c i*P	**P**	**07 45 29.5 -1.1**
COLA			pmax	pmax	
	comp=Z,18nm,0.9s				
COLA	**College**	**84.11 22**	*e*P	**P**	**07 45 29.4 -1.1**
	comp=Z,15nm,0.8s				
QSPA	**South Pole Qui**	**84.12 180**	*e*P	**P**	**07 45 31.3 +0.4**
	comp=Z,88nm,0.7s				
PAX	**Paxson**	**84.22 25**	*e*P	**P**	**07 45 31.2 -0.1**
PAX			pmax	pmax	
	comp=Z,2.0nm,0.6s				
PAX	**Paxson**	**84.22 25**	*e*P	**P**	**07 45 31.2 -0.1**
	comp=Z,2.0nm,0.6s				
COLD	**Coldfoot**	**84.39 20**	*e*P	**P**	**07 45 32.1 +0.1**
	comp=Z,8.6nm,1.1s				
ILAR	**Eielson Array**	**84.44 23**	P	**P**	**07 45 30.4 -1.9**
	comp=Z,11nm,0.7s,baz=252,slow=5.1,SNR=104				
ILAR			PKKPbc	**PKKPdf**	**08 03 42.5 +4.4**
	comp=Z,0.5nm,0.6s,baz=344,slow=1.5,SNR=7.2				
DOT	**Dot Lake**	**85.08 24**	*e*P	**P**	**07 45 35.0 -0.6**
	comp=Z,36nm,1.0s				
NRIK	**Noril'sk**	**85.86 342**	P	**P**	**07 45 38.4 -0.9**
	comp=Z,20nm,0.7s,baz=127,slow=3.1,SNR=23				
EGAK	**Eagle**	**86.69 24**	*e*P	**P**	**07 45 42.9 -0.5**
	comp=Z,20nm,1.0s				
DAWY	**Dawson**	**87.16 25**	*e*P	**P**	**07 45 45.6 -0.2**
	comp=Z,14nm,1.0s				
BVAR	**Borovoye Array**	**88.02 324**	P	**P**	**07 45 48.4 -1.7**
	comp=Z,5.4nm,0.6s,baz=106,slow=5.4,SNR=40				
INK	**Inuvik**	**90.67 21**	*e*P	**P**	**07 46 01.6 -0.5**
INK			pmax	pmax	
	comp=Z,9.0nm,0.9s				
INK	**Inuvik**	**90.67 21**	*e*P	**P**	**07 46 01.6 -0.5**
	comp=Z,8.8nm,0.9s				
SYO	**Syowa Base**	**91.53 200**⇑	*e*P	**P**	**07 46 07.0 +0.9**
SYO	**Syowa Base**	**91.53 200**⇑	*e*PcP	**P**	**07 46 08.6 +2.5**
ABKAR	**Akbulak array**	**93.99 319**	*e*P	**P**	**07 46 16.3 -1.6**
	comp=Z,1.8nm,0.6s				
GEYT	**Alibeck**	**94.52 308**	P	**P**	**07 46 19.3 -1.4**
	comp=Z,1.7nm,0.7s,baz=160,slow=4.7,SNR=4.3				
GEYT			LR	LR	08 30 41.1
	comp=Z,67nm,21.5s,baz=80,slow=36				
ARU	**Arti**	**95.26 326**	LR	LR	08 28 42.5
	comp=Z,111nm,21.9s,baz=96,slow=35				
ARU	**Arti**	**95.26 326**	*c i*P	**P**	**07 46 20.3 -3.2**
ARU					07 50 12.6
ARU			S	**SKSac**	**07 56 46.8 -2.8**
ARU			PS	**PS**	**07 58 51.0 -10**
ARU			pmax	pmax	
	comp=Z,4.0nm,1.0s				
AKTO	**Aktyubinsk**	**95.31 320**	LR	LR	08 29 39.3
	comp=Z,62nm,22.0s,slow=36				
NVAR	**Mina Array Bea**	**95.44 52**	P	**P**	**07 46 24.6 -0.5**
	comp=Z,1.2nm,0.6s,baz=251,slow=7.5,SNR=7.4				
NVAR			LR	LR	08 24 33.1
	comp=Z,65nm,20.2s,baz=266,slow=32				
YKA	**Yellowknife Ar**	**97.96 28**	P	**P**	**07 46 35.0 -0.6**
	comp=Z,1.3nm,0.8s,baz=276,slow=4.8,SNR=14				
YKA			PKKPbc	**PKKPbc**	**08 03 08.4 -3.4**
	comp=Z,1.2nm,0.6s,baz=87,slow=2.8,SNR=27				
YKA	**Yellowknife Ar**	**97.96 28**	P	**P**	**07 46 35.0 -0.6**
YKA			pmax	pmax	
	comp=Z,1.0nm,0.8s				
YKA			pmax	pmax	
	comp=Z,1.0nm,0.6s				
PDAR	**Pinedale Array**	**102.10 48**	P	**Pdif**	**07 46 54.0 -0.8**
	comp=Z,0.5nm,0.7s,baz=248,slow=1.6,SNR=6.8				
PDAR			PKKPbc	**PKKPbc**	**08 02 57.9 -1.7**
	comp=Z,0.3nm,0.4s,baz=68,slow=5.3,SNR=4.3				
KLMR	**Klimovskoe**	**104.68 332**	*e*P	**Pdif**	**07 47 04.2 -1.4**
KLMR			pmax	pmax	
	comp=Z,2.0nm,0.7s				
ARCES	**ARCESS Array B**	**106.83 342**	Pdiff	**Pdif**	**07 47 13.5 -1.5**
	comp=Z,2.7nm,0.6s,baz=223,slow=10.0,SNR=5.5				
ARCES			PKiKP	**PKiKP**	**07 51 24.8 +0.3**
	comp=Z,1.4nm,0.6s,baz=97,slow=1.4,SNR=30				
ARCES			PKKPbc	**PKKPbc**	**08 02 42.8 -3.2**
	comp=Z,0.8nm,0.6s,baz=262,slow=1.8,SNR=10				
TXAR	**Lajitas Array**	**107.65 61**	PKKP	**PKKPdf**	**08 02 55.7 +0.2**
	comp=Z,1.0nm,0.8s,baz=93,slow=3.6,SNR=11				
OBN	**Obninsk**	**107.70 326**	*i* P	**Pdif**	**07 47 20.3 +1.2**
OBN			pmax	pmax	
	comp=Z,3.0nm,0.8s				
FINES	**FINESS Array B**	**110.55 335**	Pdiff	**Pdif**	**07 47 30.3 -1.3**
	comp=Z,1.1nm,0.5s,baz=48,slow=4.1,SNR=12				
FINES			PKiKP	**PKiKP**	**07 51 30.6 -0.9**
	comp=Z,0.8nm,0.3s,baz=117,slow=2.1,SNR=7.3				
FINES			PP	**PP**	**07 52 10.6 +1.8**
	comp=Z,2.4nm,0.8s,baz=119,slow=6.7,SNR=4.5				

AKASG	**Malin Array Be**	**113.30 323**	PKiKP	**PKiKP**	**07 51 36.1**	**-1.0**	
	comp=Z,0.7nm,0.5s,baz=51,slow=2.5,SNR=4.8						
AKASG			PP	**PP**	**07 52 31.4**	**+2.6**	
	comp=Z,0.5nm,0.5s,baz=60,slow=6.7,SNR=4.4						
AKASG			PKKP	**PKKPdf**	**08 02 47.2**	**+2.0**	
	comp=Z,0.5nm,0.4s,baz=266,slow=3.7,SNR=4.7						
AKASG	**Malin Array Be**	**113.30 323**	*i* PKiKP	**PKiKP**	**07 51 36.1**	**-1.0**	
AKASG					07 52 31.4		
AKASG			pmax	pmax			
	comp=Z,1.0nm,0.5s						
AKASG			pmax	pmax			
	comp=Z,1.0nm,0.5s						
AKASG			pmax	pmax			
	comp=Z,1.0nm,0.4s						
BOSA	**Boshof**	**116.23 234**	PKP	**PKPdf**	**07 51 43.9**	**+0.2**	
	comp=Z,1.5nm,0.4s,baz=155,slow=1.2,SNR=7.5						
NOA	**NORSAR Array B**	**116.68 339**	PKP	**PKPdf**	**07 51 43.0**	**-0.4**	
	comp=Z,0.5nm,0.6s,baz=263,slow=3.5,SNR=3.1						
KRLC	**Kraliky**	**120.73 326**	*e*PKPdf	**PKPdf**	**07 51 52.0**	**+0.5**	
KRLC	**Kraliky**	**120.73 326**	*e*PKiKP	**PKPdf**	**07 51 52.0**	**+0.5**	
PLCA	**Paso Flores**	**120.95 145**	PKP	**PKPdf**	**07 51 52.4**	**+0.1**	
	comp=Z,2.8nm,0.5s,baz=280,slow=3.1,SNR=22						
PLCA			PKKPbc	**PKKPbc**	**08 01 55.1**	**-2.1**	
	comp=Z,1.2nm,0.7s,baz=24,slow=4.0,SNR=5.3						
PVCC	**Panska Ves**	**121.68 328**	*e*PKPdf	**PKPdf**	**07 51 54.4**	**+1.1**	
PVCC	**Panska Ves**	**121.68 328**	*e*PKiKP	**PKPdf**	**07 51 54.4**	**+1.1**	
BRG	**Berggiesshubel**	**121.81 328**	*e*PKP	**PKPdf**	**07 51 54.2**	**+0.7**	
	comp=Z,4.5nm,0.8s						
BRG	**Berggiesshubel**	**121.81 328**	*e*PKiKP	**PKPdf**	**07 51 54.2**	**+0.7**	
BRG			pmax	pmax			
	comp=Z,5.0nm,0.8s						
PRU	**Pruhonice**	**121.99 327**	*e*PKPdf	**PKPdf**	**07 51 54.7**	**+0.8**	
PRU	**Pruhonice**	**121.99 327**	*e*PKiKP	**PKPdf**	**07 51 54.7**	**+0.8**	
CLL	**Collm**	**122.04 329**	*e*PKPdf	**PKPdf**	**07 51 54.0**	**+0.1**	
	comp=Z,5.0nm,0.7s						
CLL			Lm	MLR	08 45 00.0		
	comp=Z,100nm,21.0s						
CLL	**Collm**	**122.04 329**	*e*PKiKP	**PKPdf**	**07 51 54.0**	**+0.1**	
CLL			pmax	pmax			
	comp=Z,5.0nm,0.7s						
NKC	**Novy Kostel**	**122.96 328**	*e*PKPdf	**PKPdf**	**07 51 56.5**	**+0.7**	
NKC	**Novy Kostel**	**122.96 328**	*e*PKiKP	**PKPdf**	**07 51 56.5**	**+0.7**	
KHC	**Kasperske Hory**	**122.99 327**	*e*PKPdf	**PKPdf**	**07 51 56.3**	**+0.4**	
KHC	**Kasperske Hory**	**122.99 327**	*e*PKiKP	**PKPdf**	**07 51 56.3**	**+0.4**	
GERES	**GERESS Array B**	**123.08 327**	PKP	**PKPdf**	**07 51 55.9**	**-0.3**	
	comp=Z,3.3nm,0.5s,baz=63,slow=1.8,SNR=36						
SCHQ	**Schefferville**	**123.18 24**	PKP	**PKPdf**	**07 51 56.4**	**+0.4**	
	comp=Z,1.1nm,0.6s,baz=30,slow=6.1,SNR=4.0						
MOA	**Molln**	**123.32 325**	*i* PKiKP	**PKiKP**	**07 51 56.9**	**+0.1**	
	comp=Z,1.5nm,0.5s						
ABTA	**Abfaltersbach**	**124.92 325**	*i* PKiKP	**PKPdf**	**07 51 59.7**	**0.0**	
	comp=Z,4.5nm,0.7s						
WTTA	**Wattenberg**	**125.12 326**	*i* PKiKP	**PKiKP**	**07 52 00.9**	**+0.3**	
	comp=Z,4.3nm,0.7s						
MOTA	**Moosalm**	**125.37 326**	*i* PKiKP	**PKiKP**	**07 52 01.0**	**0.0**	
	comp=Z,5.0nm,0.5s						
RETA	**Reutte**	**125.48 327**	*i* PKiKP	**PKiKP**	**07 52 01.7**	**+0.6**	
	comp=Z,0.6nm,0.4s						
MEM	**Membach**	**125.91 332**	PKP	**PKPdf**	**07 52 02.2**	**+0.8**	
EKA	**Eskdalemuir Ar**	**125.97 341**	PKP	**PKPdf**	**07 52 00.9**	**-0.4**	
	comp=Z,1.7nm,0.3s,baz=17,slow=3.7,SNR=19						
EKA	**Eskdalemuir Ar**	**125.97 341**	PKiKP	**PKPdf**	**07 52 01.0**	**-0.4**	
EKA			pmax	pmax			
	comp=Z,2.0nm,0.3s						
DAVA	**Damuels**	**126.08 327**	*i* PKiKP	**PKiKP**	**07 52 02.8**	**+0.4**	
	comp=Z,2.6nm,0.5s						
DAVOX	**Davos/Dischmat**	**126.38 326**	PKP	**PKPdf**	**07 52 02.5**	**-0.2**	
	comp=Z,4.9nm,0.4s,baz=205,slow=1.7,SNR=14						
MOTC	**Monteria, Cord**	**135.29 83**	*e*P	**SKPdf**	**07 55 44.5**	**-1.3**	
HELC	**Santa Helena**	**135.39 87**	*e*P	**PKPdf**	**07 52 22.8**	**+2.0**	
HELC	**Santa Helena**	**135.39 87**	*e*P	**SKPdf**	**07 55 44.5**	**-2.0**	
PRAC	**Prado**	**135.89 91**	*e*P	**PKPdf**	**07 52 20.4**	**-1.0**	
ROSC	**El Rosal**	**136.53 89**	PKhKP	PKPpre	07 52 17.9		
	comp=Z,9.3nm,0.5s,baz=310,slow=23,SNR=9.6						
ROSC			PKP	**PKiKP**	**07 52 24.1**	**-0.7**	
	comp=Z,12nm,0.5s,baz=128,slow=20,SNR=8.6						
ROSC	**El Rosal**	**136.53 89**	*e*P	PKPpre	07 52 17.9		
ROSC	**El Rosal**	**136.53 89**	*e*P	**SKPdf**	**07 55 47.0**	**-1.6**	
LPAZ	**La Paz**	**136.89 121**	PKhKP	PKPpre	07 52 16.7		
	comp=Z,1.2nm,0.6s,baz=257,slow=2.6,SNR=10						
LPAZ			PKP	**PKiKP**	**07 52 24.9**	**-0.7**	
	comp=Z,3.8nm,0.6s,baz=266,slow=1.5,SNR=9.9						
LPAZ			SKPbc	**SKPbc**	**07 55 47.9**	**+0.6**	
	comp=Z,5.7nm,1.0s,baz=265,slow=3.1,SNR=9.2						
BRRC	**Barranca, Sant**	**137.22 86**	*e*P	PKPpre	07 52 20.4		
BRRC	**Barranca, Sant**	**137.22 86**	*e*P	**SKPdf**	**07 55 46.5**	**-2.8**	
OCAC	**Ocana**	**137.61 84**	*e*P	**PKPdf**	**07 52 21.9**	**-2.8**	
BARC	**Barichara**	**137.73 87**	*e*P	PKPpre	07 52 19.4		
BARC	**Barichara**	**137.73 87**	*e*P	**SKPdf**	**07 55 52.4**	**+1.9**	
RUSC	**La Rusia**	**137.81 88**	*e*P	PKPpre	07 52 18.9		
RUSC	**La Rusia**	**137.81 88**	*e*P	**SKPdf**	**07 55 50.9**	**-0.1**	
CBRI	**Barrientos, No**	**138.13 85**	*e*P	PKPpre	07 52 21.9		
CBRI	**Barrientos, No**	**138.13 85**	*e*P	**SKPdf**	**07 55 52.4**	**+1.2**	
ESDC	**Sonseca Array**	**138.62 328**	PP	PP	07 55 17.8	+1.1	
	comp=Z,1.2nm,0.9s,baz=26,slow=7.4,SNR=4.6						
CPUP	**Villa Florida**	**138.87 142**	PKP	**PKPdf**	**07 52 27.0**	**+0.5**	
	comp=Z,1.8nm,0.5s,baz=294,slow=5.1,SNR=4.6						
CPUP			SKPbc	**SKPbc**	**07 55 52.2**	**+0.2**	
	comp=Z,4.4nm,0.9s,baz=207,slow=2.3,SNR=5.8						
SDV	**Santo Domingo**	**140.26 83**	*e*PKPdf	**PKPdf**	**07 52 30.2**	**+0.7**	
SAML	**Samuel**	**144.40 114**	*e*PKPdf	**PKPab**	**07 52 35.2**	**+0.1**	
SHEL	**Horse Pasture**	**147.17 228**	*i* PKP2	**PKPab**	**07 52 48.5**	**+3.0**	
TORD	**Torodi Ar. Bea**	**147.30 285**	PKPbc	**PKPbc**	**07 52 43.2**	**-0.8**	
	comp=Z,14nm,0.3s,baz=90,slow=2.9,SNR=343						
TORD			SKPbc	**SKPbc**	**07 56 11.2**	**-1.7**	
	comp=Z,0.9nm,0.6s,baz=37,slow=1.9,SNR=3.3						
SVB	**Belmont**	**148.97 74**	*e*P	**PKPbc**	**07 52 48.1**	**-0.3**	
DBIC	**Dimbokro**	**154.34 273**	PKPbc	**PKPbc**	**07 52 60.0**	**-0.9**	
	comp=Z,3.1nm,0.4s,baz=71,slow=5.0,SNR=12						
DBIC	**Dimbokro**	**154.34 273**	PKiKP	**PKPbc**	**07 53 00.0**	**-0.9**	
DBIC			pmax	pmax			
	comp=Z,3.0nm,0.4s						

WEL 29 07:39:55.8±0.1, 38°.54S×177°.90E, h24km±1km, ML3.6/8, 6C-9D, Error ellipse: s-maj=1.5km s-min=0.9km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
TKGZ	**Te Karaka**	**0.10**	**338**	⇓P*		Pb	07 39 59.4	-0.8
TKGZ				S*		Sb	07 40 03.3	+0.1
RIGZ	**Rimuhau**	**0.20**	**212**	⇓P*		Pb	07 40 00.9	-0.5
RIGZ				S*		Sb	07 40 05.9	+0.8
CNGZ	**Carnagh Statio**	**0.25**	**78**	⇑P*		Pb	07 40 02.6	+0.6
MWZ	**Matawai**	**0.35**	**305**	⇑P*		Pb	07 40 02.7	-0.8
MWZ					AML	AML	07 40 09.1	
MWZ					AML	AML	07 40 09.2	
MWZ					AML	AML	07 40 12.3	
MWZ					AML	AML	07 40 12.3	
TWGZ	**Tauwhareparae**	**0.36**	**10**	⇓P*		Pb	07 40 03.9	+0.2
RAGZ	**Rawiri**	**0.38**	**276**	⇓P*		Pb	07 40 03.5	-0.5
PRGZ	**Paritu Road**	**0.39**	**182**	⇑P*		Pb	07 40 04.1	0.0
SNGZ	**Shannon Statio**	**0.50**	**241**	P*		Pb	07 40 05.8	-0.1
KNZ	**Kokohu**	**0.52**	**200**	⇓P*		Pb	07 40 06.0	-0.2
KNZ					AML	AML	07 40 22.0	
KNZ					AML	AML	07 40 24.1	
PUZ	**Puketiti**	**0.54**	**31**	⇓P*		Pb	07 40 06.7	0.0
PUZ					AML	AML	07 40 17.1	
PUZ					AML	AML	07 40 18.4	
MHGZ	**Mahia Peninsul**	**0.61**	**179**	P*		Pb	07 40 07.8	-0.1
PKGZ	**Pakihiroa**	**0.66**	**12**	P*		Pb	07 40 08.6	-0.1
URZ	**Urewera**	**0.68**	**294**	P*		Pb	07 40 08.2	-0.7
URZ					AML	AML	07 40 20.1	
URZ					AML	AML	07 40 21.1	
RTZ	**Ruatahuna**	**0.72**	**263**	⇓P*		Pb	07 40 09.5	-0.3
RAHZ	**Arahi**	**0.74**	**239**	P*		Pb	07 40 10.0	0.0
WHHZ	**Waihua**	**0.75**	**224**	⇑P*		Pb	07 40 10.0	-0.2
HAZ	**Te Kaha**	**0.78**	**353**	P*		Pb	07 40 10.0	-0.7
WMGZ	**Waiomatatini S**	**0.82**	**30**	P*		Pb	07 40 11.0	-0.4
MUGZ	**Murupara**	**0.89**	**273**	⇓P*		Pb	07 40 12.2	-0.3
ARHZ	**Aropaoanui**	**1.01**	**224**	PN		Pn	07 40 13.5	-1.0
NMHZ	**Naumai**	**1.02**	**236**	PN		Pn	07 40 14.0	-0.7
MXZ	**Matakaoa Point**	**1.02**	**18**	⇑PN		Pn	07 40 14.1	-0.6
MXZ					AML	AML	07 40 30.9	
MXZ					AML	AML	07 40 32.2	
MXZ					AML	AML	07 40 32.3	
RRRZ	**Republican Roa**	**1.10**	**280**	PN		Pn	07 40 15.3	-0.4
TARZ	**Mount Tarawera**	**1.13**	**285**	PN		Pn	07 40 16.3	0.0
PRRZ	**Plateau Road**	**1.18**	**271**	PN		Pn	07 40 16.3	-0.5
MRHZ	**Matea Rd**	**1.20**	**255**	PN		Pn	07 40 16.3	-0.8
HLRZ	**Highlands Stat**	**1.25**	**283**	⇓PN		Pn	07 40 17.9	+0.1
OPRZ	**Ohinepanea**	**1.26**	**303**	⇑PN		Pn	07 40 16.9	-1.0
BKZ	**Black Stump Fm**	**1.27**	**240**	AML		AML	07 40 43.5	
BKZ					AML	AML	07 40 45.7	
CKHZ	**Cape Kidnapper**	**1.29**	**209**	PN		Pn	07 40 16.1	-2.2
MCHZ	**McNeill Hill**	**1.30**	**226**	PN		Pn	07 40 17.5	-1.0
HSRZ	**Hossack Road**	**1.32**	**279**	PN		Pn	07 40 18.6	-0.1
WPRZ	**Whakapapatarin**	**1.36**	**270**	PN		Pb	07 40 20.2	-0.4
KRHZ	**Kereru**	**1.62**	**227**	PN		Pn	07 40 21.6	-1.4
PXZ	**Pawanui**	**1.69**	**208**	PN		Pn	07 40 21.3	-2.6
PXZ					AML	AML	07 41 20.8	
BHHZ	**Black Hill Sta**	**1.72**	**236**	PN		Pn	07 40 23.3	-1.0
PNHZ	**Pukenui**	**1.91**	**223**	PN		Pn	07 40 24.7	-2.2
TSZ	**Takapari Road**	**2.14**	**224**	PN		Pn	07 40 27.5	-2.5
WAZ	**Wanganui**	**2.57**	**241**	PN		Pn	07 40 36.8	+0.8
MRZ	**Mangatainoka R**	**2.78**	**219**	PN		Pn	07 40 35.5	-3.3
LBZ	**Lake Benmore**	**8.22**	**222**	AML		AML	07 40 59.4	

IDC 29 07:45:30.6±1.5, 1°.24S×123°.51E, h0km, mb3.4/4, mb1 3.6/4, mb1mx3.3/54, mbtmp3.4/4, Error ellipse: s-maj=402.5km s-min=22.3km az=62.0, Sulawesi

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**21.39**	**151**	P		P	07 50 20.8	+0.8
	1.3nm,0.6s,baz=332,slow=12,SNR=7.9							
ASAR	**Alice Springs**	**24.46**	**156**	P		P	07 50 50.9	-0.5
	0.3nm,0.8s,baz=331,slow=9.5,SNR=2.7							
MKAR	**Makanchi Array**	**59.93**	**328**	P		P	07 55 39.1	+0.5
	0.3nm,0.5s,baz=123,slow=8.6,SNR=5.6							
KURBB	**Kurchatov Arra**	**64.29**	**330**	P		P	07 56 07.3	-0.5
	0.3nm,0.5s,baz=138,slow=6.5,SNR=5.8							

*IDC **29** 07:46:40.3±1.3, 14°.85S×176°.86W, h0km, mb4.0/8, mb1 4.4/8, mb1mx4.1/32, mbtmp4.0/8, MS4.0/24, Ms1 4.0/24, ms1mx3.9/35, Error ellipse: s-maj=87.7km s-min=18.7km az=147.0*
*ISCJB **29** 07:46:41.2±0.6, 15°.3S±0°.2×176°.5W±0°.1, h17km, mb4.7/26, MS4.0/21, Error ellipse: s-maj=25.0km s-min=11.6km az=147.2*
*NEIC **29** 07:46:44.7±0.6, 15°.38S×176°.45W, h35km, mb4.9/7, Error ellipse: s-maj=25.4km s-min=11.8km az=152.0*
ISC 29 07:46:42.3±0.7, 15°.3S±0°.2×176°.4W±0°.1, h17km, n66, σ1°.28/32, mb5.0/26, MS4.1/21, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**4.67**	**73**	Pn		**Pn**	**07 47 50.3**	**-1.8**
	7.2nm,0.3s,baz=105,slow=0.6,SNR=12							
AFI					LR	LR	07 49 27.1	
	comp=Z,1μm,19.1s,baz=254,slow=33							
AFI	**Afiamalu**	**4.67**	**73**	*e*Pn		**Pn**	**07 47 51.7**	**-0.4**
RAO	**Raoul Island**	**13.93**	**186**	LR		LR	07 54 36.5	
	comp=Z,2μm,21.8s,baz=4.5,slow=33							
DZM	**Mont Dzumac**	**17.59**	**245**	*e*P		**P**	**07 50 49.7**	**+1.8**
	88nm,1.8s							
DZM					*e*LR	LR	07 54 56.3	
	714nm,24.6s							
DZM	**Mont Dzumac**	**17.59**	**245**	LR		LR	07 56 28.0	
	comp=Z,453nm,18.1s,baz=72,slow=34							
URZ	**Urewera**	**23.55**	**193**	LR		LR	07 59 44.6	
	comp=Z,2μm,21.4s,baz=30,slow=33							
PAE	**Paea**	**25.79**	**99**	*e*T		T	08 18 54.8	
	1.8nm,0.4s							
PPT	**Papeete**	**25.79**	**99**	LR		LR	08 00 48.4	
	comp=Z,132nm,18.2s,baz=268,slow=32							
PPT2	**Papeete2**	**25.79**	**99**	*e*LQ		LQ	07 57 33.6	
	373nm,28.5s							
PPT2					*e*LR	LR	07 58 45.9	
	637nm,25.5s,baz=288							
PPT2	**Papeete2**	**25.79**	**99**	*e*T		T	08 18 56.3	
	1.8nm,0.3s							
TVO	**Taravao**	**26.10**	**99**	*e*T		T	08 19 19.0	
	1.2nm,0.4s							
TBI	**Tubuai**	**26.58**	**112**	*e*LQ		LQ	07 57 42.9	
	608nm,30.5s							
TBI					*e*LR	LR	07 59 05.5	
	594nm,28.8s,baz=294							
TBI	**Tubuai**	**26.58**	**112**	*e*T		T	08 19 57.5	
	5.1nm,0.3s							
TAOE	**Nuku Hiva Isla**	**35.96**	**84**	*e*LR		LR	08 03 18.9	
	421nm,28.1s							
PMG	**Port Moresby**	**36.07**	**275**	P		**P**	**07 53 44.2**	**+0.9**
	28nm,1.1s,baz=224,slow=10,SNR=3.6							
PMG					LR	LR	08 05 53.6	
	comp=Z,151nm,21.2s,baz=158,slow=32							
H11S2	**WAKE ISLAND Hy**	**37.52**	**333**	T		T	08 33 06.8	
	baz=154,slow=76,SNR=16							
H11S3	**WAKE ISLAND Hy**	**37.53**	**333**	T		T	08 33 06.9	
	baz=154,slow=76,SNR=19							
H11S1	**WAKE ISLAND Hy**	**37.53**	**333**	T		T	08 33 08.2	
	baz=154,slow=76,SNR=17							
H11N3	**WAKE ISLAND Hy**	**38.52**	**334**	T		T	08 34 32.6	
	baz=154,slow=76,SNR=16							
H11N1	**WAKE ISLAND Hy**	**38.52**	**334**	T		T	08 34 20.1	
	baz=154,slow=76,SNR=19							
H11N2	**WAKE ISLAND Hy**	**38.53**	**334**	T		T	08 34 19.3	
	baz=154,slow=76,SNR=25							
RKT	**Rikitea**	**39.74**	**108**	*e*LR		LR	08 05 17.5	
	399nm,28.2s,baz=289							
STKA	**Stephens Creek**	**41.60**	**239**	P		**P**	**07 54 29.7**	**+0.1**
	3.5nm,1.1s,baz=66,slow=12,SNR=2.2							
WRAB	**Tennant Creek**	**47.06**	**257**	*e*P		P	07 55 08.0	-5.4
	20nm,1.5s							
WRA	**Warramunga Arr**	**47.07**	**257**	P		**P**	**07 55 11.4**	**-2.2**
	4.4nm,1.1s,baz=89,slow=7.6,SNR=8.5							
WRA					LR	LR	08 12 56.0	
	comp=Z,319nm,22.0s,baz=100,slow=34							
ASAR	**Alice Springs**	**47.41**	**252**	P		**P**	**07 55 13.7**	**-2.5**
	2.4nm,0.6s,baz=84,slow=8.3,SNR=38							
ASAR					LR	LR	08 13 25.5	
	comp=Z,293nm,18.6s,baz=92,slow=34							
JCJ	**Chichijima**	**58.28**	**316**	LR		LR	08 18 06.3	
	comp=Z,173nm,18.4s,baz=118,slow=33							
VNDA	**Vanda**	**63.17**	**185**	LR		LR	08 19 58.7	
	comp=Z,83nm,20.7s,baz=21,slow=31							
MJAR	**Matsushiro Arr**	**67.07**	**321**	LR		LR	08 21 22.8	
	comp=Z,33nm,21.6s,baz=155,slow=31							
JNU	**Nakatsue**	**69.68**	**315**	LR		LR	08 25 12.7	
	comp=Z,62nm,19.4s,baz=116,slow=34							
PETK	**Petropavlovsk-**	**71.73**	**344**	LR		LR	08 22 54.4	
	comp=Z,126nm,21.5s,baz=147,slow=31							
NACB	**Ninganchiao**	**72.17**	**302**	*e*P		**P**	**07 58 06.3**	**-0.2**
	67nm,0.3s							
KSRS	**Korea Array**	**74.13**	**317**	LR		LR	08 27 31.9	
	comp=Z,55nm,18.6s,baz=127,slow=33							
QSPA	**South Pole Qui**	**74.71**	**180**	*e*P		**P**	**07 58 21.8**	**+0.8**
	52nm,1.1s							
USRK	**Ussurijsk Ar.**	**75.63**	**324**	LR		LR	08 27 33.3	
	comp=Z,149nm,19.7s,baz=137,slow=33							
NVAR	**Mina Array Bea**	**76.22**	**43**	P		**P**	**07 58 30.8**	**+0.5**
	0.9nm,0.6s,baz=234,slow=8.3,SNR=9.8							
SEW	**Seward**	**78.26**	**13**	*e*P		**P**	**07 58 42.3**	**+1.5**
	15nm,1.3s							
KLR	**Kul'dur**	**78.93**	**328**	LR		LR	08 27 26.8	
	comp=Z,209nm,21.5s,slow=31							
RC01	**Rabbit Creek A**	**79.08**	**13**	*e*P		P	07 58 49.2	+3.9
	16nm,1.3s							
BMRM	**Bremner River**	**80.17**	**15**	*e*P		**P**	**07 58 53.8**	**+2.5**
	17nm,1.1s							
KTH	**Kantishna Hill**	**81.08**	**11**	*e*P		**P**	**07 58 56.5**	**+0.3**
	21nm,1.5s							
TRF	**Thorofare Moun**	**81.10**	**12**	P		**P**	**07 58 56.8**	**+0.3**
	27nm,1.6s							
HLID	**Hailey**	**81.42**	**40**	*e*P		**P**	**07 58 59.9**	**+1.3**
	4.4nm,1.0s							
MCK	**McKinley**	**81.62**	**12**	*e*P		**P**	**07 58 58.3**	**-0.7**
	28nm,1.3s							
DOT	**Dot Lake**	**82.60**	**14**	*e*P		**P**	**07 59 03.2**	**-1.0**
	29nm,1.1s							
COLA	**College**	**82.86**	**12**	*e*P		**P**	**07 59 04.5**	**-0.9**
	21nm,1.3s							
ILAR	**Eielson Array**	**82.96**	**12**	P		**P**	**07 59 04.5**	**-1.4**
	3.0nm,0.9s,baz=223,slow=5.4,SNR=17							
ILAR					LR	LR	08 28 50.5	
	comp=Z,120nm,21.9s,baz=230,slow=31							
TXAR	**Lajitas Array**	**82.97**	**57**	P		**P**	**07 59 08.0**	**+1.0**
	1.7nm,1.1s,baz=238,slow=4.3,SNR=7.9							
TXAR					LR	LR	08 30 28.5	
	comp=Z,71nm,18.5s,baz=0.0,slow=32							
REDW	**Red Top Meadow**	**83.58**	**42**	*e*P		**P**	**07 59 11.2**	**+1.2**
	14nm,1.4s							
DAWY	**Dawson**	**84.09**	**15**	*e*P		**P**	**07 59 12.0**	**+0.1**
	18nm,1.2s							
PDAR	**Pinedale Array**	**84.15**	**43**	P		**P**	**07 59 14.8**	**+2.0**
	0.4nm,0.5s,baz=196,slow=2.6,SNR=5.9							
EGAK	**Eagle**	**84.24**	**14**	*e*P		**P**	**07 59 12.4**	**-0.2**
	19nm,1.3s							
LKWY	**Lake**	**84.43**	**41**	*e*P		**P**	**07 59 15.8**	**+1.5**
	7.9nm,1.2s							
COLD	**Coldfoot**	**84.55**	**10**	*e*P		**P**	**07 59 14.1**	**+0.1**
	16nm,1.2s							
YAK	**Yakutsk**	**87.94**	**338**	LR		LR	08 31 24.2	
	comp=Z,56nm,21.9s,baz=106,slow=31							
CMAR	**Chiang Mai Arr**	**89.88**	**289**	LR		LR	08 33 43.8	
	comp=Z,18nm,21.9s,baz=200,slow=32							
YKA	**Yellowknife Ar**	**91.19**	**24**	P		**P**	**07 59 45.8**	**-0.2**
	0.4nm,0.8s,baz=244,slow=4.5,SNR=9.8							
YKA					LR	LR	08 33 14.1	
	comp=Z,28nm,21.4s,baz=180,slow=31							
PLCA	**Paso Flores**	**91.67**	**133**	LR		LR	08 32 25.2	
	comp=Z,68nm,21.2s,baz=294,slow=30							
SONM	**Songino Array**	**92.90**	**319**	LR		LR	08 36 48.9	
	comp=Z,56nm,20.3s,baz=58,slow=33							
ULM	**Lac du Bonnet**	**95.69**	**40**	LR		LR	08 38 25.1	
	comp=Z,76nm,18.4s,baz=55,slow=32							
BRTR	**Keskin Array B**	**144.26**	**319**	PKP		**PKPab**	**08 06 15.9**	**+0.2**
	3.3nm,1.1s,baz=141,slow=0.8,SNR=11							
KHC	**Kasperske Hory**	**145.32**	**348**	*e*PKP		**PKPbc**	**08 06 18.6**	**-0.5**
KHC	**Kasperske Hory**	**145.32**	**348**	*e*PKPbc		**PKPbc**	**08 06 18.4**	**-0.6**
GERES	**GERESS Array B**	**145.57**	**348**	PKPbc		**PKPdf**	**08 06 18.5**	**-1.3**
	1.1nm,0.8s,baz=356,slow=1.9,SNR=8.8							
DAVOX	**Davos/Dischmat**	**148.22**	**352**	PKPbc		**PKPbc**	**08 06 26.4**	**-1.4**
	1.6nm,0.8s,baz=207,slow=4.5,SNR=2.8							
TORD	**Torodi Ar. Bea**	**177.13**	**139**	PKPab		PKPab	08 08 40.5	+3.9
	1.8nm,1.2s,baz=223,slow=3.2,SNR=4.7							

*ISK **29** 07:49:16.7, 39°.06N×29°.09E, h6km, ML1.8*
*ISCJB **29** 07:49:17.2±0.5, 39°.08N±0°.03×29°.05E±0°.04, h5km±10km, Error ellipse: s-maj=6.2km s-min=4.9km az=141.0*
*CSEM **29** 07:49:17.4±0.1, 39°.08N×29°.05E, h5km, ML2.7, Error ellipse: s-maj=3.4km s-min=2.3km az=100.0*
*DDA **29** 07:49:17.1, 39°.07N×29°.04E, h7km, Ml2.7*
ISC 29 07:49:17.4±0.9, 39°.08N±0°.03×29°.05E±0°.03, h11km±10km, n20, σ0°.25/30, Turkey

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**263**	P		**Pg**	**07 49 22.7**	**-0.1**
DEMI				S		**Sg**	**07 49 26.3**	**-0.1**
DEMI	**Demirci**	**0.26**	**263**	*i* P		**Pg**	**07 49 22.7**	**-0.1**
DEMI				*i* S		**Sg**	**07 49 26.3**	**-0.1**
GDZ	**Gediz**	**0.33**	**88**	P		**Pg**	**07 49 24.2**	**+0.1**
GDZ				S		**Sg**	**07 49 29.0**	**+0.4**
GDZ	**Gediz**	**0.33**	**88**	*i* P		**Pg**	**07 49 24.2**	**+0.1**
GDZ				*i* S		**Sg**	**07 49 29.0**	**+0.4**
TVSB	**Tavsanli**	**0.49**	**40**	PG		**Pg**	**07 49 26.5**	**-0.5**
TVSB				*e*SG		**Sg**	**07 49 33.4**	**-0.1**
TVSB	**Tavsanli**	**0.49**	**40**	*i* Pg		**Pg**	**07 49 26.5**	**-0.5**
TVSB				*e*Sg		**Sg**	**07 49 33.4**	**-0.1**
KULA	**Kula-Manisa**	**0.64**	**209**	*e*PG		**Pg**	**07 49 29.8**	**0

SMG	**Samos**	**1.32**	**332**	P	**Pn**	**08 04 49.0**	**-1.2**
SMG				S	**Sb**	**08 05 06.7**	**-0.9**
SMG	**Samos**	**1.32**	**332**	P	**Pn**	**08 04 49.0**	**-1.2**
SMG				S	**Sb**	**08 05 06.7**	**-0.9**
SMG	**Samos**	**1.32**	**332**	P	**Pn**	**08 04 48.1**	**-2.1**
SMG				S	**Sb**	**08 05 06.6**	**-0.9**
SMG				AML	AML	08 05 11.4	
	comp=E,205μm,0.3s						
SMG				AML	AML	08 05 15.4	
	comp=N,177μm,0.2s						
AYDB	**Zeytinkoy-Aydi**	**1.42**	**9**	*e*PN	**Pn**	**08 04 50.8**	**-0.8**
AYDB	**Zeytinkoy-Aydi**	**1.42**	**9**	*e*Pn	**Pn**	**08 04 50.8**	**-0.8**
DNZL	**Cakiroluk**	**1.61**	**44**	P	**Pb**	**08 04 55.2**	**-0.6**
DNZL				S	**Sg**	**08 05 18.8**	**+0.7**
DNZL	**Cakiroluk**	**1.61**	**44**	*i* P	**Pb**	**08 04 55.2**	**-0.6**
DNZL				*i* S	**Sg**	**08 05 18.8**	**+0.7**
GLHS	**Glhisar (BURDU**	**1.62**	**67**	*e*PN	**Pn**	**08 04 54.4**	**0.0**
GLHS	**Glhisar (BURDU**	**1.62**	**67**	*e*Pn	**Pn**	**08 04 54.4**	**0.0**
AKAS	**Kas**	**1.63**	**100**	P	**Pn**	**08 04 55.4**	**+0.9**
AKAS	**Kas**	**1.63**	**100**	*i* P	**Pn**	**08 04 55.4**	**+0.9**
AKAS				*i* S	**Sg**	**08 05 19.8**	**+1.2**
GOLH	**Golhisar**	**1.70**	**65**	P	**Pb**	**08 04 56.8**	**-0.4**
GOLH	**Golhisar**	**1.70**	**65**	*i* P	**Pb**	**08 04 56.8**	**-0.4**
GOLH				*i* S	**Sg**	**08 05 21.8**	**+0.9**
APE	**Apeiranthos**	**1.76**	**288**	P	**Pn**	**08 04 55.8**	**-0.5**
APE	**Apeiranthos**	**1.76**	**288**	P	**Pn**	**08 04 55.8**	**-0.5**
ZKR	**Zakros**	**1.83**	**219**	P	**Pn**	**08 04 56.1**	**-1.1**
ZKR	**Zakros**	**1.83**	**219**	P	**Pn**	**08 04 56.1**	**-1.1**
LAST	**Lasithi**	**2.22**	**232**	P	**Pn**	**08 05 01.3**	**-1.3**
LAST	**Lasithi**	**2.22**	**232**	P	**Pn**	**08 05 01.3**	**-1.3**
KORT	**Korkueli**	**2.23**	**77**	P	**Pb**	**08 05 06.4**	**0.0**
KORT	**Korkueli**	**2.23**	**77**	*i* P	**Pb**	**08 05 06.4**	**0.0**
KORT				*i* S	**Sg**	**08 05 39.6**	**+1.6**
IDI	**Anoyia**	**2.55**	**241**	P	**Pn**	**08 05 06.0**	**-1.1**
IDI	**Anoyia**	**2.55**	**241**	P	**Pn**	**08 05 06.0**	**-1.1**

*BER **29** 08:07:04.6±0.9, 80.55N×8.79W, h10km, MD2.7, ML1.8*
*CSEM **29** 08:07:07.8±0.9, 79.06N×7.36W, h10km, ML1.8, Error ellipse: s-maj=63.6km s-min=19.7km az=178.0*
ISC 29 08:07:04.0±2.9, **81.7N**±0.2×**4.25W**±0.07, **h10**km, **n8, σ1s30**/15, **1C, North of Svalbard**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KBS	**Kingsbay**	**3.85**	**127**	*e*P	**Pn**	**08 08 04.6**	**+1.4**
KBS				*e*S	**Sn**	**08 08 48.2**	**-0.3**
KBS				IAML		08 08 55.5	
	comp=Z,4.9nm,0.5s						
KBS	**Kingsbay**	**3.85**	**127**	*e*P	**Pn**	**08 08 04.6**	**+1.4**
	SNR=49						
KBS				*e*S	**Sn**	**08 08 48.2**	**-0.3**
	SNR=49						
SPA0	**Spitsbergen Ar**	**4.99**	**123**	*e*P	**Pn**	**08 08 20.0**	**+1.2**
SPA0				*e*S	**Sn**	**08 09 15.8**	**-0.6**
SPA0				IAML		08 09 21.2	
	comp=Z,3.1nm,0.5s						
SPA0	**Spitsbergen Ar**	**4.99**	**123**	*e*P	**Pn**	**08 08 20.0**	**+1.2**
	SNR=49						
SPA0				*e*S	**Sn**	**08 09 15.8**	**-0.6**
	SNR=49						
DAG	**Danmarks Havn**	**5.57**	**216⇑**	*i* P	**Pn**	**08 08 28.5**	**+1.7**
DAG				*i* S	**Sn**	**08 09 30.8**	**+0.1**
HOPEN	**Hopen**	**7.45**	**118**	*e*P	**Pn**	**08 08 53.5**	**+0.9**
HOPEN				*e*S	**Sn**	**08 10 15.1**	**-1.8**
HOPEN	**Hopen**	**7.45**	**118**	*e*P	**Pn**	**08 08 53.5**	**+0.9**
	SNR=47						
HOPEN				*e*S	**Sn**	**08 10 15.1**	**-1.8**
	SNR=47						
SUMG	**Summit**	**11.56**	**238**	*i* P	**Pn**	**08 09 48.0**	**-1.1**
SUMG				*e*S	Sn	08 11 47.9	-10

*ISK **29** 08:19:36.6, 39.15N×28.94E, h8km, ML2.0*
*ISCJB **29** 08:19:37.4±0.6, 39.12N±0.04×29.00E±0.05, h12km±5km, Error ellipse: s-maj=6.8km s-min=4.9km az=135.4*
*CSEM **29** 08:19:37.2±0.1, 39.13N×28.98E, h10km, ML2.7, Error ellipse: s-maj=3.4km s-min=2.6km az=109.0*
*DDA **29** 08:19:37.2, 39.13N×29.03E, h7km, Ml2.7*
ISC 29 08:19:36.9±1.1, **39.14N**±0.03×**28.99E**±0.04, **h16**km±11km, **n18, σ1s19**/28, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.23**	**247**	P	**Pb**	**08 19 43.0**	**+0.2**
DEMI				S	**Sb**	**08 19 46.5**	**-0.3**
DEMI	**Demirci**	**0.23**	**247**	*i* P	**Pb**	**08 19 43.0**	**+0.2**
DEMI				*i* S	**Sb**	**08 19 46.5**	**-0.3**
GDZ	**Gediz**	**0.39**	**97**	P	**Pg**	**08 19 45.0**	**+0.2**
GDZ				S	**Sg**	**08 19 50.0**	**-0.3**
GDZ	**Gediz**	**0.39**	**97**	*i* P	**Pg**	**08 19 45.0**	**+0.2**
GDZ				*i* S	**Sg**	**08 19 50.0**	**-0.3**
TVSB	**Tavsanli**	**0.48**	**49**	PG	**Pb**	**08 19 47.2**	**0.0**
TVSB				*e*SG	**Sb**	**08 19 54.0**	**-0.1**
TVSB	**Tavsanli**	**0.48**	**49**	*i* Pg	**Pb**	**08 19 47.2**	**0.0**
TVSB				*e*Sg	**Sb**	**08 19 54.0**	**-0.1**
KULA	**Kula-Manisa**	**0.67**	**203**	*e*PG	**Pb**	**08 19 50.3**	**0.0**
KULA				*e*SG	**Sb**	**08 19 59.2**	**-0.3**
KULA	**Kula-Manisa**	**0.67**	**203**	*e*Pg	**Pb**	**08 19 50.3**	**0.0**
KULA				*e*Sg	**Sb**	**08 19 59.2**	**-0.3**
KHAL	**Karahalli**	**0.86**	**153**	P	**Pg**	**08 19 53.9**	**+0.2**
KHAL				S	**Sb**	**08 20 04.9**	**0.0**
KHAL	**Karahalli**	**0.86**	**153**	*i* P	**Pg**	**08 19 53.9**	**+0.2**
KHAL				*i* S	**Sb**	**08 20 04.9**	**0.0**
KCTX	**Karacabey (Bur**	**1.23**	**337**	*e*PN	**Pn**	**08 19 59.6**	**+0.1**
KCTX	**Karacabey (Bur**	**1.23**	**337**	*e*Pn	**Pn**	**08 19 59.6**	**+0.1**
CAVI	**Cavuskoy**	**1.25**	**31**	*e*PN	**Pg**	**08 20 01.2**	**+0.1**
CAVI	**Cavuskoy**	**1.25**	**31**	*e*Pn	**Pg**	**08 20 01.2**	**+0.1**
IZI	**Iznik**	**1.26**	**17**	*e*PN	**Pg**	**08 20 01.4**	**+0.2**
IZI	**Iznik**	**1.26**	**17**	*e*Pn	**Pg**	**08 20 01.4**	**+0.2**
ARMT	**Armutlu**	**1.43**	**356**	*e*PN	**Pb**	**08 20 03.2**	**-0.1**
ARMT	**Armutlu**	**1.43**	**356**	*e*Pn	**Pb**	**08 20 03.2**	**-0.1**

*ISK **29** 08:24:35.7, 39.09N×29.03E, h5km, ML2.6*
*DDA **29** 08:24:36.2, 39.10N×29.04E, h7km, Ml2.9*
*CSEM **29** 08:24:36.3±0.1, 39.10N×29.02E, h5km, ML2.9, Error ellipse: s-maj=2.7km s-min=1.9km az=93.0*
ISC 29 08:24:36.5±0.9, **39.11N**±0.02×**29.03E**±0.02, **h10**km±10km, **n33, σ0s74**/46, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**255**	P	**Pg**	**08 24 41.7**	**0.0**
DEMI				S	**Sg**	**08 24 45.5**	**+0.2**
DEMI	**Demirci**	**0.26**	**255**	*i* P	**Pg**	**08 24 41.7**	**0.0**
DEMI				*i* S	**Sg**	**08 24 45.5**	**+0.2**
GDZ	**Gediz**	**0.35**	**93**	P	**Pg**	**08 24 43.3**	**-0.2**
GDZ				S	**Sg**	**08 24 48.4**	**+0.3**
GDZ	**Gediz**	**0.35**	**93**	*i* P	**Pg**	**08 24 43.3**	**-0.2**
GDZ				*i* S	**Sg**	**08 24 48.4**	**+0.3**
TVSB	**Tavsanli**	**0.48**	**44**	*e*PG	**Pg**	**08 24 46.0**	**+0.2**
TVSB				*e*SG	**Sg**	**08 24 52.6**	**+0.5**
TVSB	**Tavsanli**	**0.48**	**44**	*e*Pg	**Pg**	**08 24 46.0**	**+0.2**
TVSB				*e*Sg	**Sg**	**08 24 52.6**	**+0.5**
KULA	**Kula-Manisa**	**0.66**	**206**	*e*PG	**Pg**	**08 24 48.7**	**-0.6**
KULA				*e*SG	**Sg**	**08 24 57.6**	**-0.4**
KULA	**Kula-Manisa**	**0.66**	**206**	*e*Pg	**Pg**	**08 24 48.7**	**-0.6**
KULA				*e*Sg	**Sg**	**08 24 57.6**	**-0.4**
KHAL	**Karahalli**	**0.82**	**154**	P	**Pb**	**08 24 52.3**	**-0.6**
KHAL				S	**Sg**	**08 25 03.1**	**+0.1**
KHAL	**Karahalli**	**0.82**	**154**	*i* P	**Pb**	**08 24 52.3**	**-0.6**
KHAL				*i* S	**Sg**	**08 25 03.1**	**+0.1**
KHL	**Karahalli**	**0.87**	**154**	PG	**Pg**	**08 24 52.5**	**-0.8**
KHL	**Karahalli**	**0.87**	**154**	*i* Pg	**Pg**	**08 24 52.5**	**-0.8**
ORLT	**Orhaneli**	**0.94**	**354**	*e*PG	**Pg**	**08 24 53.6**	**-1.0**
ORLT	**Orhaneli**	**0.94**	**354**	*e*Pg	**Pg**	**08 24 53.7**	**-1.0**
BALB	**Balikesir**	**1.04**	**301**	*e*PG	**Pb**	**08 24 56.6**	**+0.1**
BALB	**Balikesir**	**1.04**	**301**	*e*Pg	**Pb**	**08 24 56.6**	**+0.1**
IGD	**Bursa**	**1.16**	**6**	*i* P	**Pg**	**08 24 57.7**	**-1.1**
IGD				*i* S	**Sg**	**08 25 13.8**	**-0.1**
CAVI	**Cavuskoy**	**1.26**	**30**	*e*PN	**Pg**	**08 25 00.8**	**+0.2**
CAVI	**Cavuskoy**	**1.26**	**30**	*e*Pn	**Pg**	**08 25 00.8**	**+0.2**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*PN	**Pn**	**08 25 00.4**	**+0.1**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*Pn	**Pn**	**08 25 00.4**	**+0.1**
IZI	**Iznik**	**1.27**	**15**	*e*PN	**Pg**	**08 25 00.8**	**-0.1**
IZI	**Iznik**	**1.27**	**15**	*e*Pn	**Pg**	**08 25 00.8**	**-0.1**
GEMT	**Gemlik**	**1.33**	**5**	*e*PN	**Pg**	**08 25 01.8**	**-0.2**
GEMT	**Gemlik**	**1.33**	**5**	*e*Pn	**Pg**	**08 25 01.8**	**-0.2**
DNZL	**Cakiroluk**	**1.42**	**180**	P	**Pg**	**08 25 03.1**	**-0.6**

DNZL				S	**Sg**	**08 25 24.7**	**+2.6**
DNZL	**Cakiroluk**	**1.42**	**180**	*i* P	**Pg**	**08 25 03.1**	**-0.6**
DNZL				*i* S	**Sg**	**08 25 24.7**	**+2.6**
ADVT	**Abdulvahap**	**1.43**	**22**	*e*PN	**Pg**	**08 25 03.6**	**-0.3**
ADVT	**Abdulvahap**	**1.43**	**22**	*e*Pn	**Pg**	**08 25 03.6**	**-0.3**
ARMT	**Armutlu**	**1.46**	**355**	*e*PN	**Pn**	**08 25 03.5**	**+0.5**
ARMT	**Armutlu**	**1.46**	**355**	*e*Pn	**Pn**	**08 25 03.5**	**+0.5**
GULT	**Gulveren**	**1.75**	**40**	*e*PN	**Pb**	**08 25 08.0**	**-0.7**
GULT	**Gulveren**	**1.75**	**40**	*e*Pn	**Pb**	**08 25 08.0**	**-0.7**

IDC 29 08:31:07.8±1.5, **36.72N**×**33.14W**, **h0**km, **mb3.4**/4, **mb1 3.7**/4, **mb1mx3.3**/55, **mbtmp3.4**/4, **Error ellipse: s-maj=60.3km s-min=24.6km az=19.0, Azores Islands region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H07S1	**FLORES T-PHASE**	**3.06**	**29**	Pn	Pn	08 31 55.5	-2.0
	SNR=49						
H07N1	**FLORES T-PHASE**	**3.36**	**28**	Pn	Pn	08 32 00.4	-1.2
	SNR=21						
ESDC	**Sonseca Array**	**23.07**	**74**	P	P	08 36 14.6	-0.3
	0.7nm,0.7s,baz=277,slow=9.8,SNR=5.1						
TORD	**Torodi Ar. Bea**	**39.01**	**118**	P	P	08 38 36.3	+0.1
	0.8nm,0.7s,baz=311,slow=7.8,SNR=4.8						
YKA	**Yellowknife Ar**	**54.36**	**326**	P	P	08 40 36.2	+0.2
	0.3nm,0.9s,baz=70,slow=7.3,SNR=3.4						
TXAR	**Lajitas Array**	**58.40**	**285**	P	P	08 41 05.0	-0.4
	0.4nm,0.8s,baz=74,slow=9.2,SNR=5.1						

*DDA **29** 08:32:09.9, 39.11N×29.00E, h7km, Ml3.0*
*ISCJB **29** 08:32:10.4±0.5, 39.12N±0.02×29.02E±0.03, h3km±5km, Error ellipse: s-maj=4.3km s-min=3.9km az=26.2*
*CSEM **29** 08:32:10.8±0.1, 39.11N×29.02E, h5km, ML3.0, Error ellipse: s-maj=1.8km s-min=1.5km az=95.0*
*ISK **29** 08:32:10.3, 39.12N×29.03E, h5km, ML2.8*
ISC 29 08:32:10.5±0.9, **39.12N**±0.02×**29.02E**±0.02, **h12**km±8km, **n59, σ0s50**/72, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**253**	P	**Pg**	**08 32 15.7**	**-0.1**
DEMI				S	**Sg**	**08 32 19.0**	**-0.3**
DEMI	**Demirci**	**0.25**	**253**	*i* P	**Pg**	**08 32 15.7**	**-0.1**
DEMI				*i* S	**Sg**	**08 32 19.0**	**-0.3**
GDZ	**Gediz**	**0.36**	**94**	P	**Pg**	**08 32 17.9**	**+0.1**
GDZ				S	**Sg**	**08 32 23.2**	**+0.5**
GDZ	**Gediz**	**0.36**	**94**	*i* P	**Pg**	**08 32 17.9**	**+0.1**
GDZ				*i* S	**Sg**	**08 32 23.2**	**+0.5**
TVSB	**Tavsanli**	**0.48**	**46**	*e*PG	**Pg**	**08 32 20.0**	**0.0**
TVSB				*e*SG	**Sg**	**08 32 26.4**	**0.0**
TVSB	**Tavsanli**	**0.48**	**46**	*e*Pg	**Pg**	**08 32 20.0**	**0.0**
TVSB				*e*Sg	**Sg**	**08 32 26.4**	**0.0**
KULA	**Kula-Manisa**	**0.66**	**205**	*e*PG	**Pg**	**08 32 23.4**	**+0.1**
KULA	**Kula-Manisa**	**0.66**	**205**	*e*Pg	**Pg**	**08 32 23.5**	**+0.1**
KHAL	**Karahalli**	**0.83**	**153**	P	**Pb**	**08 32 26.9**	**-0.1**
KHAL				S	**Sg**	**08 32 37.3**	**-0.2**
KHAL	**Karahalli**	**0.83**	**153**	*i* P	**Pb**	**08 32 26.9**	**-0.1**
KHAL				*i* S	**Sg**	**08 32 37.3**	**-0.2**
KHL	**Karahalli**	**0.88**	**153**	*e*PG	**Pb**	**08 32 27.8**	**-0.1**
KHL	**Karahalli**	**0.88**	**153**	*e*Pg	**Pb**	**08 32 27.8**	**-0.1**
ORLT	**Orhaneli**	**0.94**	**354**	*e*PG	**Pg**	**08 32 28.7**	**+0.1**
ORLT	**Orhaneli**	**0.94**	**354**	*e*Pg	**Pg**	**08 32 28.7**	**+0.1**
AKS	**Akhisar**	**0.97**	**256**	*e*PG	**Pg**	**08 32 29.3**	**+0.1**
AKS	**Akhisar**	**0.97**	**256**	*e*Pg	**Pg**	**08 32 29.3**	**+0.1**
BALB	**Balikesir**	**1.03**	**301**	*e*PG	**Pb**	**08 32 30.4**	**+0.1**
BALB	**Balikesir**	**1.03**	**301**	*e*Pg	**Pb**	**08 32 30.4**	**+0.1**
IGD	**Bursa**	**1.16**	**7**	*i* P	**Pb**	**08 32 30.8**	**-1.7**
IGD				*i* S	**Sb**	**08 32 46.1**	**-1.3**
MDNY	**Mudanya-Bursa**	**1.26**	**355**	*e*PN	**Pg**	**08 32 34.8**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.26**	**355**	*e*Pn	**Pg**	**08 32 34.8**	**+0.1**
CAVI	**Cavuskoy**	**1.26**	**30**	*e*PN	**Pg**	**08 32 34.8**	**0.0**
CAVI	**Cavuskoy**	**1.26**	**30**	*e*Pn	**Pg**	**08 32 34.8**	**0.0**
KCTX	**Karacabey (Bur**	**1.26**	**336**	*e*PN	**Pg**	**08 32 34.9**	**+0.2**
KCTX	**Karacabey (Bur**	**1.26**	**336**	*e*Pn	**Pg**	**08 32 34.9**	**+0.2**
IZI	**Iznik**	**1.27**	**16**	*e*PN	**Pg**	**08 32 35.1**	**+0.1**
IZI	**Iznik**	**1.27**	**16**	*e*Pn	**Pg**	**08 32 35.1**	**+0.1**
GEMT	**Gemlik**	**1.32**	**6**	*e*PN	**Pg**	**08 32 36.1**	**+0.1**
GEMT	**Gemlik**	**1.32**	**6**	*e*Pn	**Pg**	**08 32 36.1**	**+0.1**
DENT	**Denizli**	**1.36**	**180**	*e*PN	**Pg**	**08 32 36.5**	**-0.1**
DENT	**Denizli**	**1.36**	**180**	*e*Pn	**Pg**	**08 32 36.5**	**-0.1**
GONE	**Gonen-Balikesi**	**1.39**	**312**	*e*PN	**Pg**	**08 32 37.2**	**0.0**
GONE	**Gonen-Balikesi**	**1.39**	**312**	*e*Pn	**Pg**	**08 32 37.2**	**0.0**
DNZL	**Cakiroluk**	**1.42**	**179**	P	**Pb**	**08 32 37.1**	**0.0**
DNZL				S	**Sg**	**08 32 55.8**	**-0.6**
DNZL	**Cakiroluk**	**1.42**	**179**	*i* P	**Pb**	**08 32 37.1**	**0.0**
DNZL				*i* S	**Sg**	**08 32 55.8**	**-0.6**
ADVT	**Abdulvahap**	**1.43**	**23**	*e*PN	**Pb**	**08 32 37.5**	**+0.4**
ADVT	**Abdulvahap**	**1.43**	**23**	*e*Pn	**Pb**	**08 32 37.5**	**+0.4**
ARMT	**Armutlu**	**1.45**	**355**	*e*PN	**Pn**	**08 32 37.2**	**+0.5**
ARMT	**Armutlu**	**1.45**	**355**	*e*Pn	**Pn**	**08 32 37.2**	**+0.5**
ESKT	**Eskisehir**	**1.48**	**74**	*i* P	**Pg**	**08 32 38.6**	**-0.2**
ESKT				*i* S	**Sn**	**08 32 56.3**	**-0.1**
SEYT	**Eskypehyr**	**1.48**	**74**	P	**Pg**	**08 32 38.7**	**-0.2**
SEYT				S	**Sn**	**08 32 56.3**	**-0.1**
EDC	**Edincik**	**1.52**	**324**	*e*PN	**Pb**	**08 32 38.9**	**+0.2**
EDC	**Edincik**	**1.52**	**324**	*e*Pn	**Pb**	**08 32 38.9**	**+0.2**
GPA	**Golpazari**	**1.54**	**40**	*e*PN	**Pb**	**08 32 39.1**	**+0.1**
GPA	**Golpazari**	**1.54**	**40**	*e*Pn	**Pb**	**08 32 39.1**	**+0.1**
AYDN	**Tasoluk**	**1.71**	**212**	P	**Pb**	**08 32 42.0**	**+0.1**
AYDN	**Tasoluk**	**1.71**	**212**	*i* P	**Pb**	**08 32 42.0**	**+0.1**
GULT	**Gulveren**	**1.75**	**41**	*e*PN	**Pb**	**08 32 42.0**	**-0.6**
GULT	**Gulveren**	**1.75**	**41**	*e*Pn	**Pb**	**08 32 42.0**	**-0.6**
HRT	**Hereke**	**1.78**	**16**	*e*PN	**Pb**	**08 32 42.7**	**-0.4**
HRT	**Hereke**	**1.78**	**16**	*e*Pn	**Pb**	**08 32 42.7**	**-0.4**
ISK	**Istanbul-Kandi**	**1.95**	**1**	*e*PN	**Pb**	**08 32 45.0**	**-1.0**
ISK	**Istanbul-Kandi**	**1.95**	**1**	*e*Pn	**Pb**	**08 32 45.0**	**-1.0**
SVRH	**Sivrihisar-ESK**	**1.97**	**80**	*e*PN	**Pn**	**08 32 45.1**	**+1.2**
SVRH	**Sivrihisar-ESK**	**1.97**	**80**	*e*Pn	**Pn**	**08 32 45.1**	**+1.2**
SILT	**Sile**	**2.09**	**13**	*e*PN	**Pn**	**08 32 46.8**	**+1.4**
SILT	**Sile**	**2.09**	**13**	*e*Pn	**Pn**	**08 32 46.8**	**+1.4**
KDHN	**Kadinhani**	**2.49**	**103**	P	**Pn**	**08 32 51.1**	**0.0**
KDHN	**Kadinhani**	**2.49**	**103**	*i* P	**Pn**	**08 32 51.1**	**0.0**

*CSEM **29** 08:34:52.8±0.1, 39.12N×28.99E, h5km, ML2.8, Error ellipse: s-maj=1.8km s-min=1.6km az=105.0*
*ISK **29** 08:34:52.1, 39.11N×29.01E, h6km, MD2.6*
*DDA **29** 08:34:52.6, 39.10N×29.02E, h7km, Ml2.8*
ISC 29 08:34:52.5±0.9, **39.11N**±0.02×**29.01E**±0.02, **h17**km±8km, **n37, σ0s27**/50, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**254**	P	**Pg**	**08 34 58.0**	**0.0**
DEMI				S	**Sg**	**08 35 01.5**	**-0.2**
DEMI	**Demirci**	**0.24**	**254**	*i* P	**Pg**	**08 34 58.0**	**0.0**
DEMI				*i* S	**Sg**	**08 35 01.5**	**-0.2**
GDZ	**Gediz**	**0.37**	**93**	P	**Pg**	**08 35 00.3**	**+0.2**
GDZ				S	**Sg**	**08 35 05.5**	**+0.1**
GDZ	**Gediz**	**0.37**	**93**	*i* P	**Pg**	**08 35 00.3**	**+0.2**
GDZ				*i* S	**Sg**	**08 35 05.5**	**+0.1**
TVSB	**Tavsanli**	**0.49**	**46**	PG	**Pg**	**08 35 02.2**	**-0.1**
TVSB				*e*SG	**Sg**	**08 35 08.6**	**-0.3**
TVSB	**Tavsanli**	**0.49**	**46**	*i* Pg	**Pg**	**08 35 02.2**	**-0.1**
TVSB				*e*Sg	**Sg**	**08 35 08.6**	**-0.3**
KULA	**Kula-Manisa**	**0.65**	**205**	*e*PG	**Pb**	**08 35 05.5**	**0.0**
KULA				*e*SG	**Sg**	**08 35 14.2**	**+0.1**
KULA	**Kula-Manisa**	**0.65**	**205**	*e*Pg	**Pb**	**08 35 05.5**	**0.0**
KULA				*e*Sg	**Sg**	**08 35 14.2**	**+0.1**
KHAL	**Karahalli**	**0.83**	**153**	P	**Pn**	**08 35 09.5**	**0.0**
KHAL				S	**Sg**	**08 35 19.7**	**+0.2**
KHAL	**Karahalli**	**0.83**	**153**	*i* P	**Pn**	**08 35 09.5**	**0.0**
KHAL				*i* S	**Sg**	**08 35 19.7**	**+0.2**
KHL	**Karahalli**	**0.88**	**153**	*e*PG	**Pn**	**08 35 10.2**	**0.0**
KHL	**Karahalli**	**0.88**	**153**	*e*Pg	**Pn**	**08 35 10.2**	**0.0**
ORLT	**Orhaneli**	**0.94**	**355**	*e*PG	**Pg**	**08 35 10.8**	**0.0**
ORLT	**Orhaneli**	**0.94**	**355**	*e*Pg	**Pg**	**08 35 10.8**	**0.0**
AKS	**Akhisar**	**0.96**	**257**	*e*PG	**Pb**	**08 35 10.7**	**0.0**
AKS	**Akhisar**	**0.96**	**257**	*e*Pg	**Pb**	**08 35 10.7**	**0.0**
BALB	**Balikesir**	**1.02**	**302**	*e*PG	**Pg**	**08 35 12.3**	**0.0**
BALB	**Balikesir**	**1.02**	**302**	*e*Pg	**Pg**	**08 35 12.3**	**0.0**
IGD	**Bursa**	**1.16**	**7**	*i* P	**Pn**	**08 35 13.7**	**-0.3**
IGD				*i* S	**Sg**	**08 35 31.3**	**+1.1**
KCTX	**Karacabey (Bur**	**1.26**	**337**	*e*PN	**Pb**	**08 35 16.2**	**+0.3**
KCTX	**Karacabey (Bur**	**1.26**	**337**	*e*Pn	**Pb**	**08 35 16.2**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.26**	**356**	*e*PN	**Pg**	**08 35 16.8**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.26**	**356**	*e*Pn	**Pg**	**08 35 16.8**	**-0.1**

CAVI	**Cavuskoy**	**1.27**	**30**	*e*PN	**Pg**	**08 35 17.1**	**+0.1**
CAVI	**Cavuskoy**	**1.27**	**30**	*e*Pn	**Pg**	**08 35 17.1**	**+0.1**
IZI	**Iznik**	**1.28**	**16**	*e*PN	**Pg**	**08 35 17.2**	**+0.1**
IZI	**Iznik**	**1.28**	**16**	*e*Pn	**Pg**	**08 35 17.2**	**+0.1**
GONE	**Gonen-Balikesi**	**1.39**	**313**	*e*PN	**Pg**	**08 35 18.9**	**-0.3**
GONE	**Gonen-Balikesi**	**1.39**	**313**	*e*Pn	**Pg**	**08 35 18.9**	**-0.3**
ADVT	**Abdulvahap**	**1.44**	**23**	*e*PN	**Pb**	**08 35 18.8**	**0.0**
ADVT	**Abdulvahap**	**1.44**	**23**	*e*Pn	**Pb**	**08 35 18.8**	**0.0**
ARMT	**Armutlu**	**1.46**	**356**	*e*PN	**Pb**	**08 35 19.7**	**+0.5**
ARMT	**Armutlu**	**1.46**	**356**	*e*Pn	**Pb**	**08 35 19.7**	**+0.5**
ESKT	**Eskisehir**	**1.48**	**73**	*i* P	**Pg**	**08 35 21.0**	**-0.1**
ESKT				*i* S	**Sg**	**08 35 39.9**	**-0.5**
SEYT	**Eskypehyr**	**1.48**	**73**	P	**Pg**	**08 35 21.0**	**-0.1**
SEYT				S	**Sg**	**08 35 39.9**	**-0.5**
GULT	**Gulveren**	**1.76**	**41**	*e*PN	**Pb**	**08 35 24.3**	**-0.1**
GULT	**Gulveren**	**1.76**	**41**	*e*Pn	**Pb**	**08 35 24.3**	**-0.1**

KRSC 29 08:38:01.1±0.8, **60.78N**×**166.60E**, **h4**km±2km, **ML3.5, Eastern Siberia**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TILK	**Tilichiki**	**0.40**	**214**	*e*P	Pg	08 38 09.6	+0.8
TILK				*e*S	Sb	08 38 15.9	-1.3
KMSK	**Kamenskaya**	**1.71**	**354**	*e*P	Pb	08 38 32.4	-0.6
KMSK				*e*S	Sb	08 38 55.0	+0.2
OSSR	**Ossora**	**2.34**	**231**	*e*P	Pb	08 38 43.0	-0.9
OSSR				*e*S	Sb	08 39 12.6	-0.6
PALN	**Palana**	**3.74**	**246**	*e*S	Sn	08 39 48.3	+4.3

*ISK **29** 08:53:26.8, 39.11N×28.97E, h9km, ML2.0*
*ISCJB **29** 08:53:27.2±0.5, 39.11N±0.03×29.00E±0.04, h8km±6km, Error ellipse: s-maj=5.9km s-min=5.4km az=21.8*
*CSEM **29** 08:53:27.3±0.1, 39.12N×28.98E, h8km, ML2.7, Error ellipse: s-maj=3.7km s-min=2.6km az=92.0*
*DDA **29** 08:53:27.3, 39.09N×29.02E, h7km, Ml2.7*
ISC 29 08:53:27.4±0.9, **39.12N**±0.03×**29.00E**±0.03, **h12**km±10km, **n25, σ0s34**/34, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.23**	**251**	P	**Pg**	**08 53 32.5**	**+0.1**
DEMI				S	**Sg**	**08 53 35.7**	**-0.1**
DEMI	**Demirci**	**0.23**	**251**	*i* P	**Pg**	**08 53 32.5**	**+0.1**
DEMI				*i* S	**Sg**	**08 53 35.7**	**-0.1**
GDZ	**Gediz**	**

ASAR ScP **ScP** **09 14 39.3 +8.2**
0.3nm,0.9s,baz=104,slow=4.0,SNR=3.3
WB2 Warramunga Arr 43.13 264 *e*P **P** 09 09 59.0 -1.4
7.7nm,0.8s
WRAB Tennant Creek 43.14 264 *e*P **P** **09 09 59.0 -1.4**
6.8nm,0.8s
WRA Warramunga Arr 43.15 264 P **P** **09 09 59.0 -1.5**
3.8nm,0.3s,baz=95,slow=8.0,SNR=242
WRA ScP **ScP** **09 14 40.6 +8.6**
0.2nm,0.5s,baz=93,slow=3.4,SNR=3.8
MTN Manton Dam 47.95 273 *e*P **P** **09 10 35.9 -1.1**
75nm,1.8s
FITZ Fitzroy Crossi 51.58 264 *e*P **P** **09 11 02.8 -0.6**
14nm,1.4s
SBA Scott Base 56.07 184 *e*P **P** **09 11 36.4 +2.4**
34nm,1.9s
VNDA Vanda 56.09 185 P **P** **09 11 35.3 +1.2**
1.8nm,0.7s,baz=12,slow=7.1,SNR=26
VNDA PcP **PcP** **09 12 24.0 +0.6**
1.4nm,0.7s,baz=27,slow=2.3,SNR=5.1
CASY Casey 61.87 206 *e*P **P** **09 12 13.0 +0.1**
6.8nm,0.9s
JAGI Jajag, Banyuwa 65.13 271 *e*P **P** **09 12 33.7 -1.0**
74nm,1.4s
QSPA South Pole Qui 67.84 180 *e*P **P** **09 12 51.5 +1.0**
UGM Wanagama 68.69 270 *e*P **P** **09 12 55.8 -0.7**
328nm,1.6s
KSM Kuching 72.42 279 *e*P **P** **09 13 18.5 +0.1**
7.0nm,0.6s
CN2 Changchun 82.91 323 *e*P **P** **09 14 14.0 -0.1**
NVAR Mina Array Bea 83.14 44 P **P** **09 14 14.6 -1.0**
0.5nm,0.5s,baz=229,slow=8.0,SNR=3.5
SYO Syowa Base 84.77 193⇓*e*P **P** **09 14 21.2 -1.6**
BJI Beijing 86.25 316 P **P** **09 14 31.0 +0.6**
BJI pmax pmax
comp=Z,6.0nm,1.1s
SNAA Sanae 86.32 179 P **P** **09 14 29.5 -0.9**
SNAA Sanae 86.32 179 *e*P **P** **09 14 29.3 -1.0**
comp=Z,24nm,2.0s
GYA Guiyang 86.42 300 *e*P **P** **09 14 32.0 +0.3**
GYA pP pP 09 16 29.8 -9.0
GYA sP sP 09 17 21.3 -17
GYA PP **PP** **09 18 05.0 +0.3**
GYA SKS **SKSac** **09 24 05.5 +2.9**
GYA S **ScS** **09 24 23.5 -1.2**
GYA pmax pmax
comp=Z,10.0nm,1.0s
VNA3 Neumayer Olymp 86.50 177 P **P** **09 14 30.5 -0.6**
SUA Susitna One 86.52 13 *e*P **P** **09 14 30.0 -1.3**
comp=Z,38nm,2.0s
TT01 Tatalina 86.84 10 *e*P **P** **09 14 32.2 -0.4**
PMR Palmer 86.99 14 *e*P **P** **09 14 31.9 -1.4**
comp=Z,18nm,1.9s
VNA1 Neumayer--Stat 87.16 177 P **P** **09 14 34.2 0.0**
SCM Sheep Creek Mo 87.61 15 *e*P **P** **09 14 35.5 -0.9**
comp=Z,6.0nm,0.6s
TRF Thorofare Moun 88.40 13 *e*P **P** **09 14 38.3 -1.9**
comp=Z,3.9nm,0.8s
RND Reindeer 88.66 13 *e*P **P** **09 14 39.8 -1.4**
comp=Z,3.3nm,0.8s
TXAR Lajitas Array 89.04 58 P **P** **09 14 44.7 +0.8**
comp=Z,0.5nm,1.0s,baz=212,slow=3.2,SNR=3.3
CMAR Chiang Mai Arr 89.52 290 P **P** **09 14 48.0 +1.8**
comp=Z,1.7nm,0.7s,baz=130,slow=3.2,SNR=10
HHC Hu-ho-hao-te 89.67 315 *e*P **P** **09 14 46.5 0.0**
HHC pmax pmax
comp=Z,20nm,1.3s
HHC pmax pmax
comp=Z,88nm,7.4s
CCB Clear Creek Bu 89.97 13 *e*P **P** **09 14 45.6 -1.5**
comp=Z,10nm,1.9s
ILAR Eielson Array 90.28 13 P **P** **09 14 46.6 -2.0**
comp=Z,0.3nm,0.5s,baz=223,slow=5.6,SNR=5.9
CD2 Chengdu 90.67 303 P **P** **09 14 51.0 -0.3**
CD2 pmax pmax
comp=Z,33nm,0.9s
DAWY Dawson 91.46 16 *e*P **P** **09 14 53.3 -0.9**
comp=Z,6.8nm,1.5s
EGAK Eagle 91.59 15 *e*P **P** **09 14 53.5 -1.1**
comp=Z,14nm,1.9s
SONM Songino Array 96.23 319 P **P** **09 15 16.1 -0.3**
comp=Z,0.9nm,0.8s,baz=132,slow=6.3,SNR=3.2
BVAR Borovoye Array 119.58 319 PKP **PKPdf** **09 20 33.0 -0.7**
comp=Z,1.0nm,0.3s,baz=102,slow=3.0,SNR=8.7
ARU Arti 125.89 324 *e*PKPdf **PKPdf** **09 20 45.4 -0.2**
ARCES ARCESS Array B 130.38 349 PKP **PKPdf** **09 20 53.0 -0.8**
comp=Z,0.6nm,0.4s,baz=42,slow=2.0,SNR=9.1
ARCES SKPbc **SKPab** **09 23 28.3 +5.1**
comp=Z,4.5nm,0.9s,baz=46,slow=3.9,SNR=5.5
FINES FINESS Array B 137.05 342 PKP **PKPdf** **09 21 07.6 +1.1**
comp=Z,1.3nm,0.8s,baz=131,slow=5.3,SNR=5.0
FINES SKPbc **SKiKP** **09 23 50.1 +1.1**
comp=Z,1.1nm,0.7s,baz=61,slow=3.1,SNR=5.2
AKASG Malin Array Be 143.88 329 PKP PKPbc 09 21 17.1 -1.3
comp=Z,0.1nm,0.2s,baz=42,slow=4.5,SNR=6.0
BRTR Keskin Array B 147.02 310 PKPbc **PKPbc** **09 21 27.4 -0.6**
comp=Z,1.1nm,0.7s,baz=136,slow=3.3,SNR=7.0
BR231 Keskin MP Arra 147.59 310 *e*PKPdf **PKPbc** **09 21 28.4 -1.1**
BR231 *e*PKPbc **PKPbc** **09 21 28.6 -0.9**
BUR08 Bucovina Ar. S 147.89 328 *e*PKPbc **PKPbc** **09 21 31.1 +1.1**
OJC Ojcow 148.27 336 *e*PKPbc **PKPbc** **09 21 30.7 0.0**
DPC Dobruska-Polom 149.36 340⇑*e*PKP **PKPbc** **09 21 33.9 +0.5**
KHC Kasperske Hory 151.26 342⇑*e*PKP **PKPbc** **09 21 37.9 0.0**
KHC Kasperske Hory 151.26 342 *e*PKPbc **PKPbc** **09 21 37.5 -0.4**
GERES GERESS Array B 151.48 342 PKPbc **PKPbc** **09 21 38.0 -0.4**
comp=Z,0.5nm,0.4s,baz=46,slow=3.9,SNR=4.6
GEA0 GERESS Array S 151.49 342 *e*PKPbc **PKPbc** **09 21 38.3 -0.1**
TOA0 Torodi Ar. Sit 170.91 186 *e*PKPdf **PKPdf** **09 21 51.2 -1.2**
TOA0 *e*PKPab **PKPab** **09 23 14.8 -0.3**
TORD Torodi Ar. Bea 170.91 186 PKP **PKPdf** **09 21 51.2 -1.3**
comp=Z,0.9nm,0.7s,baz=92,slow=3.1,SNR=6.4
TORD PKPab **PKPab** **09 23 14.4 -0.8**
comp=Z,1.5nm,0.7s,baz=173,slow=4.3,SNR=8.3

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*ISCJB **29** 09:02:51.9±0.6, 38°.37N±0°.03×28°.08E±0°.04, h10km±5km, Error ellipse: s-maj=5.3km s-min=4.7km az=24.8*
*ISK **29** 09:02:51.3, 38°.37N×28°.09E, h13km, ML2.1*
*CSEM **29** 09:02:52.0±0.1, 38°.36N×28°.09E, h12km, ML2.7, Error ellipse: s-maj=1.8km s-min=1.5km az=114.0*
*DDA **29** 09:02:52.6, 38°.43N×28°.14E, h7km, ML2.7*
ISC 29 09:02:51.9±0.9, 38°.37N±0°.02×28°.09E±0°.03, h17km±9km, n22, σ0s29/38, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MANT	**Manisa**	**0.39**	**72**	P	**Pg**	**09 03 00.1**	**+0.1**
MANT				S	**Sg**	09 03 05.2	-0.2
MANT	**Manisa**	**0.39**	**72**	*i* P	**Pg**	**09 03 00.1**	**+0.1**
MANT				*i* S	**Sg**	09 03 05.2	-0.2
AYDB	**Zeytinkoy-Aydi**	**0.46**	**200**	*e*Pg	**Pg**	**09 03 01.2**	**+0.1**
AYDB				*e*Sg	**Sg**	09 03 07.2	-0.1
AYDB	**Zeytinkoy-Aydi**	**0.46**	**200**	*e*Pg	**Pg**	**09 03 01.2**	**+0.1**
AYDB				*e*Sg	**Sg**	09 03 07.2	-0.1
KULA	**Kula-Manisa**	**0.47**	**72**	*e*PG	**Pg**	**09 03 01.4**	**0.0**
KULA				*e*SG	**Sg**	09 03 07.8	0.0
KULA	**Kula-Manisa**	**0.47**	**72**	*e*Pg	**Pg**	**09 03 01.4**	**0.0**
KULA				*e*Sg	**Sg**	09 03 07.8	0.0
AKHS	**Akhisar**	**0.55**	**337**	P	**Pg**	**09 03 03.0**	**+0.2**
AKHS				S	**Sg**	**09 03 10.3**	**+0.1**
AKHS	**Akhisar**	**0.55**	**337**	*i* P	**Pg**	**09 03 03.0**	**+0.2**
AKHS				*i* S	**Sg**	**09 03 10.3**	**+0.1**
AKS	**Akhisar**	**0.55**	**337**	*e*PG	**Pb**	**09 03 03.3**	**+0.2**
AKS				*e*SG	**Sg**	**09 03 09.9**	**-0.3**
AKS	**Akhisar**	**0.55**	**337**	*e*Pg	**Pb**	**09 03 03.3**	**+0.2**
AKS				*e*Sg	**Sg**	**09 03 09.9**	**-0.3**
DEMI	**Demirci**	**0.83**	**36**	P	**Pg**	**09 03 08.4**	**+0.3**
DEMI				S	**Sb**	**09 03 18.1**	**-0.8**
DEMI	**Demirci**	**0.83**	**36**	*i* P	**Pg**	**09 03 08.4**	**+0.3**
DEMI				*i* S	**Sb**	**09 03 18.1**	**-0.8**
KHAL	**Karahalli**	**1.10**	**90**	P	**Pg**	**09 03 13.2**	**0.0**
KHAL				S	**Sb**	**09 03 27.0**	**+0.2**
KHAL	**Karahalli**	**1.10**	**90**	*i* P	**Pg**	**09 03 13.2**	**0.0**
KHAL				*i* S	**Sb**	**09 03 27.0**	**+0.2**
YER	**Yerkesik**	**1.25**	**173**	*e*PN	**Pb**	**09 03 15.2**	**+0.1**
YER	**Yerkesik**	**1.25**	**173**	*e*Pn	**Pb**	**09 03 15.2**	**+0.1**
GDZ	**Gediz**	**1.30**	**56**	P	**Pb**	**09 03 16.5**	**+0.4**
GDZ				S	**Sg**	**09 03 33.7**	**-0.4**
GDZ	**Gediz**	**1.30**	**56**	*i* P	**Pb**	**09 03 16.5**	**+0.4**
GDZ				*i* S	**Sg**	**09 03 33.7**	**-0.4**
BALY	**Balya**	**1.41**	**345**	P	**Pb**	**09 03 18.1**	**+0.2**
BALY	**Balya**	**1.41**	**345**	*i* P	**Pb**	**09 03 18.1**	**+0.2**
BODT	**Bodrum**	**1.45**	**206**	*e*PN	**Pn**	**09 03 17.4**	**0.0**
BODT	**Bodrum**	**1.45**	**206**	*e*Pn	**Pn**	**09 03 17.4**	**0.0**

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*ISK **29** 09:04:04.4, 39°.10N×29°.10E, h5km, ML1.9*
*ISCJB **29** 09:04:05.1±0.5, 39°.10N±0°.03×29°.09E±0°.04, h9km±5km, Error ellipse: s-maj=6.3km s-min=4.3km az=42.8*
*CSEM **29** 09:04:05.1±0.1, 39°.11N×29°.09E, h8km±1km, ML2.6, Error ellipse: s-maj=3.7km s-min=2.5km az=127.0*
*DDA **29** 09:04:05.2, 39°.09N×29°.10E, h7km, Ml2.6*
ISC 29 09:04:04.8±1.0, 39°.12N±0°.03×29°.10E±0°.03, h19km±3km, n22, σ0s19/34, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.30**	**95**	P	**Pg**	**09 04 11.4**	**-0.1**
GDZ				S	**Sg**	**09 04 16.1**	**0.0**
GDZ	**Gediz**	**0.30**	**95**	*i* P	**Pg**	**09 04 11.4**	**-0.1**
GDZ				*i* S	**Sg**	**09 04 16.1**	**0.0**
DEMI	**Demirci**	**0.30**	**256**	P	**Pg**	**09 04 11.5**	**0.0**
DEMI				S	**Sg**	**09 04 15.9**	**-0.2**
DEMI	**Demirci**	**0.30**	**256**	*i* P	**Pg**	**09 04 11.5**	**0.0**
DEMI				*i* S	**Sg**	**09 04 15.9**	**-0.2**
TVSB	**Tavsanli**	**0.44**	**40**	*e*PG	**Pb**	**09 04 14.1**	**0.0**
TVSB				*e*SG	**Sg**	**09 04 19.7**	**-0.2**
TVSB	**Tavsanli**	**0.44**	**40**	*e*Pg	**Pb**	**09 04 14.1**	**0.0**
TVSB				*e*Sg	**Sg**	**09 04 19.7**	**-0.2**
KULA	**Kula-Manisa**	**0.69**	**210**	*e*PG	**Pg**	**09 04 18.5**	**+0.1**
KULA				*e*SG	**Sb**	**09 04 27.3**	**-0.1**
KULA	**Kula-Manisa**	**0.69**	**210**	*e*Pg	**Pg**	**09 04 18.5**	**+0.1**
KULA				*e*Sg	**Sb**	**09 04 27.3**	**-0.1**
MANT	**Manisa**	**0.75**	**214**	P	**Pb**	**09 04 19.4**	**-0.1**
MANT				S	**Sb**	**09 04 29.2**	**-0.2**
MANT	**Manisa**	**0.75**	**214**	*i* P	**Pb**	**09 04 19.4**	**-0.1**
MANT				*i* S	**Sb**	**09 04 29.2**	**-0.2**
KHAL	**Karahalli**	**0.81**	**157**	P	**Pn**	**09 04 21.4**	**+0.1**
KHAL				S	**Sg**	**09 04 31.5**	**+0.2**
KHAL	**Karahalli**	**0.81**	**157**	*i* P	**Pn**	**09 04 21.4**	**+0.1**
KHAL				*i* S	**Sg**	**09 04 31.5**	**+0.2**
KHL	**Karahalli**	**0.86**	**157**	*e*PG	**Pg**	**09 04 21.5**	**-0.1**
KHL	**Karahalli**	**0.86**	**157**	*e*Pg	**Pg**	**09 04 21.5**	**-0.1**
CAVI	**Cavuskoy**	**1.23**	**28**	*e*PN	**Pg**	**09 04 28.5**	**0.0**
CAVI	**Cavuskoy**	**1.23**	**28**	*e*Pn	**Pg**	**09 04 28.5**	**0.0**
IZI	**Iznik**	**1.25**	**13**	*e*PN	**Pb**	**09 04 28.3**	**+0.4**
IZI	**Iznik**	**1.25**	**13**	*e*Pn	**Pb**	**09 04 28.3**	**+0.4**
KCTX	**Karacabey (Bur**	**1.28**	**334**	*e*PN	**Pg**	**09 04 29.7**	**+0.2**
KCTX	**Karacabey (Bur**	**1.28**	**334**	*e*Pn	**Pg**	**09 04 29.7**	**+0.2**
ARMT	**Armutlu**	**1.46**	**353**	*e*PN	**Pg**	**09 04 32.5**	**-0.4**
ARMT	**Armutlu**	**1.46**	**353**	*e*Pn	**Pg**	**09 04 32.5**	**-0.4**

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*ISCJB **29** 09:11:19.7±0.6, 39°.09N±0°.04×29°.04E±0°.04, h8km±13km, Error ellipse: s-maj=7.3km s-min=4.4km az=144.4*
*CSEM **29** 09:11:19.8±0.2, 39°.13N×29°.01E, h5km, ML2.6, Error ellipse: s-maj=6.9km s-min=4.2km az=124.0*
*ISK **29** 09:11:19.0, 39°.06N×29°.11E, h10km, ML1.7*
*DDA **29** 09:11:19.5, 39°.08N×29°.05E, h7km, Ml2.6*
ISC 29 09:11:19.9±1.0, 39°.10N±0°.03×29°.04E±0°.03, h10km±11km, n16, σ0s24/28, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**256**	P	**Pg**	**09 11 25.1**	**0.0**
DEMI				S	**Sg**	**09 11 28.9**	**+0.2**
DEMI	**Demirci**	**0.26**	**256**	*i* P	**Pg**	**09 11 25.1**	**0.0**
DEMI				*i* S	**Sg**	**09 11 28.9**	**+0.2**
GDZ	**Gediz**	**0.34**	**92**	P	**Pg**	**09 11 26.6**	**-0.2**
GDZ				S	**Sg**	**09 11 31.4**	**0.0**
GDZ	**Gediz**	**0.34**	**92**	*i* P	**Pg**	**09 11 26.6**	**-0.2**
GDZ				*i* S	**Sg**	**09 11 31.4**	**0.0**
TVSB	**Tavsanli**	**0.48**	**43**	*e*PG	**Pg**	**09 11 29.0**	**-0.2**
TVSB				*e*SG	**Sg**	**09 11 35.8**	**+0.3**
TVSB	**Tavsanli**	**0.48**	**43**	*e*Pg	**Pg**	**09 11 29.0**	**-0.2**
TVSB				*e*Sg	**Sg**	**09 11 35.8**	**+0.3**
KULA	**Kula-Manisa**	**0.66**	**207**	*e*PG	**Pg**	**09 11 32.4**	**-0.2**
KULA				*e*SG	**Sg**	**09 11 41.1**	**-0.2**
KULA	**Kula-Manisa**	**0.66**	**207**	*e*Pg	**Pg**	**09 11 32.4**	**-0.2**
KULA				*e*Sg	**Sg**	**09 11 41.1**	**-0.2**
MANT	**Manisa**	**0.72**	**212**	P	**Pg**	**09 11 33.6**	**-0.2**
MANT				S	**Sg**	**09 11 42.9**	**-0.3**
MANT	**Manisa**	**0.72**	**212**	*i* P	**Pg**	**09 11 33.6**	**-0.2**
MANT				*i* S	**Sg**	**09 11 42.9**	**-0.3**
KHAL	**Karahalli**	**0.81**	**154**	P	**Pn**	**09 11 37.8**	**+0.3**
KHAL				S	**Sg**	**09 11 46.3**	**+0.1**
KHAL	**Karahalli**	**0.81**	**154**	*i* P	**Pn**	**09 11 37.8**	**+0.3**
KHAL				*i* S	**Sg**	**09 11 46.3**	**+0.1**
CAVI	**Cavuskoy**	**1.26**	**29**	*e*PN	**Pn**	**09 11 43.2**	**-0.3**
CAVI	**Cavuskoy**	**1.26**	**29**	*e*Pn	**Pn**	**09 11 43.2**	**-0.3**
ARMT	**Armutlu**	**1.47**	**355**	*e*PN	**Pb**	**09 11 47.4**	**+0.2**
ARMT	**Armutlu**	**1.47**	**355**	*e*Pn	**Pb**	**09 11 47.4**	**+0.2**

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*IDC **29** 09:15:16.9±0.4, 10°.62N×122°.27E, h0km, mb4.3/34, mb1 4.4/35, mb1mx4.4/50, mbtmp4.3/35, ML4.9/1, MS3.9/26, Ms1 3.8/26, ms1mx3.7/47, Error ellipse: s-maj=17.9km s-min=10.9km az=74.0*
*MAN **29** 09:15:21, 10°.60N×122°.10E, h21km, mb5.6, ML4.6, MS5.0*
MAN INTENSITY IV - SIBALOM ANTIQUE; INTENSITY III - ILOILO CITY; SAN JOSE PATNOGON AND HAMTIC ANTIQUE.
*ISCJB **29** 09:15:23.0±0.3, 10°.72N±0°.02×122°.28E±0°.03, h49km±3km, mb4.5/70, MS3.9/31, Error ellipse: s-maj=4.5km s-min=3.5km az=162.2*
*NEIC **29** 09:15:23.1±0.8, 10°.66N×122°.39E, h44km±7km, mb4.7/26, Error ellipse: s-maj=6.8km s-min=4.4km az=73.0*
NEIC Felt [V PIVS] at Tubungan, [IV PIVS] at Sibalom and [III PIVS] at Hamtic, Iloilo, Patnongon and San Jose. Also felt at Tigbauan.
*KLM **29** 09:15:27.7, 10°.41N×122°.30E, h48km, mb4.6, MS5.9*
*DJA **29** 09:15:34.7±1.3, 10°.N±6°.×12°.2E±°, h62km±15km, M4.7/22, mb4.5/22, mB5.5/4, Mw(mB)4.9/4*
ISC 29 09:15:24.7±0.7, 10°.65N±0°.03×122°.18E±0°.03, h47km±6km, n174, σ2s37/188, mb4.5/70, MS3.8/31, 9C-16D, Panay

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAP	**San Jose, Anti**	**0.25**	**292**⇑	*i*P	**Pn**	**09 15 28.8**	**-4.3**
JAP				*i* S	**Sn**	**09 15 38.4**	**-0.6**
KALP	**Kalibo**	**1.03**	**8**⇑	*e*P	**Pn**	**09 15 40.3**	**-2.5**
RCP	**Roxas**	**1.06**	**31**⇓	*e*P	**Pn**	**09 15 39.3**	**-3.8**
RCP				*e*S	**Sn**	**09 15 56.7**	**-0.1**
SNPH	**Sibulan**	**1.66**	**141**⇓	*i*P	**Pn**	**09 15 49.8**	**-1.7**
SNPH				*i* S	**Sn**	**09 16 13.8**	**+2.1**
OTRP	**Odiongan**	**1.71**	**355**	*e*P	**Pn**	**09 15 49.0**	**-3.0**
LLP	**Lapu-Lapu**	**1.79**	**101**⇓	*e*P	**Pn**	**09 15 51.3**	**-1.8**
LLP				*e*S	**Sn**	**09 16 16.4**	**+1.8**
TBP	**Tagbilaran**	**1.91**	**120**⇑	*i*P	**Pn**	**09 15 57.6**	**+2.8**
MMPH	**Masbate**	**2.21**	**40**⇑	*e*P	**Pn**	**09 15 59.6**	**+0.8**
MMPH				*i* S	**Sn**	**09 16 29.1**	**+4.1**
DCPH	**Dipolog City**	**2.36**	**151**⇓	*e*P	**Pn**	**09 15 59.9**	**-1.0**
DCPH				*e*S	**Sn**	**09 16 28.3**	**-0.4**
BUSP	**Coron**	**2.36**	**305**	*e*P	**Pn**	**09 15 58.1**	**-2.9**
BUSP				*e*S	**Sn**	**09 16 28.1**	**-0.8**
OCLP	**Ormoc**	**2.42**	**80**	*e*P	**Pn**	**09 16 00.8**	**-1.0**
OCLP				*e*S	**Sn**	**09 16 37.5**	**+7.3**
AUQP	**San Andres**	**2.70**	**10**	*e*P	**Pn**	**09 16 01.3**	**-4.3**
ENPP	**El Nido**	**2.76**	**282**	*e*P	**Pn**	**09 16 04.1**	**-2.4**
ENPP				*e*S	Sn	09 16 17.7	-21
PLP	**Palo**	**2.79**	**79**⇓	*e*P	**Pn**	**09 16 06.2**	**-0.7**
PLP				*e*S	**Sn**	**09 16 33.9**	**-5.5**
IPIL	**Ipil**	**2.87**	**172**	*e*P	**Pn**	**09 16 06.9**	**-1.1**
IPIL				*e*S	**Sn**	**09 16 39.5**	**-1.8**
PGP	**Puerto Galera**	**3.08**	**337**⇓	*e*P	**Pn**	**09 16 09.4**	**-1.5**
PGP				*e*S	**Sn**	**09 16 45.0**	**-1.4**
GQP	**Guinayangan**	**3.24**	**5**⇓	*e*P	**Pn**	**09 16 12.5**	**-0.6**
CGP	**Cagayan de Oro**	**3.30**	**131**⇓	*e*P	**Pn**	**09 16 13.4**	**-0.5**
BESP	**Borongan**	**3.33**	**73**	*e*P	**Pn**	**09 16 13.8**	**-0.5**
BESP				*e*S	**Sn**	**09 16 56.5**	**+3.9**
LQP	**Lukban**	**3.50**	**350**⇑	*e*P	**Pn**	**09 16 17.0**	**+0.2**
PPR	**Puerto Princes**	**3.51**	**256**⇓	*e*P	**Pn**	**09 16 17.4**	**+0.6**
TGY	**Tagaytay City**	**3.64**	**341**	Pn	**Pn**	**09 16 17.3**	**-1.3**
100nm,0.3s,baz=249,slow=8.6,SNR=12							
TGY				Sn	**Sn**	**09 16 56.5**	**-3.9**
45nm,0.3s,baz=98,slow=11,SNR=3.3							
TGY				LR	LR	09 17 58.5	
comp=Z,3μm,18.0s,baz=151,slow=44							
BUKP	**Musuan**	**3.96**	**134**	*e*P	**Pn**	**09 16 23.4**	**+0.4**
CTBH	**Cotabato--PC H**	**3.97**	**149**⇑	*i*P	**Pn**	**09 16 23.8**	**+0.7**
DAV	**Davao City (W)**	**4.89**	**136**	Pn	**Pn**	**09 16 35.0**	**-0.8**
24nm,0.3s,baz=4.4,slow=13,SNR=2.3							
DAV				Lg	Lg	09 17 50.8	
53nm,0.3s,baz=270,slow=20,SNR=2.3							
DAV				LR	LR	09 18 28.7	
comp=Z,1μm,18.9s,baz=242,slow=40							
DAV	**Davao City (W)**	**4.89**	**136**	*e*Pn	Pn	09 16 30.4	-5.4
DAV				Lg	Lg	09 17 50.8	
KDM	**Kudat**	**6.46**	**235**⇑	P	**Pn**	**09 17 00.1**	**+2.9**
MYLDM	**Lahad Datu**	**6.55**	**214**⇓	P	**Pn**	**09 17 00.2**	**+1.7**
MYLDM	**Lahad Datu**	**6.55**	**214**	*e*Pn	**Pn**	**09 17 00.1**	**+1.7**
SDKM	**Sandakan**	**7.01**	**225**⇓	P	**Pn**	**09 17 07.1**	**+2.2**
KKM	**Kota Kinabalu**	**7.47**	**233**⇓	P	**Pn**	**09 17 13.9**	**+2.7**
TSM	**Tawau**	**7.62**	**214**⇑	P	**Pn**	**09 17 13.8**	**+0.5**
LUWI	**Luwuk**	**11.63**	**177**	P	**Pn**	**09 18 12.4**	**+4.3**
191nm,0.9s,10μm							
BTM	**Bintulu**	**11.67**	**231**⇓	P	**Pn**	**09 18 11.6**	**+2.9**
SANI	**Sanana**	**13.17**	**163**	P	**P**	**09 18 34.6**	**-3.5**
18nm,1.0s							
TTSI	**Tana Toraja**	**13.81**	**190**	P	**Pn**	**09 18 41.1**	**+3.2**
29nm,0.7s							
QIZ	**Qiongzhong**	**14.54**	**306**	P	**Pn**	**09 18 47.8**	**+0.1**
QIZ				S	**Sn**	**09 21 32.5**	**+4.8**
QIZ				pmax	pmax		
comp=Z,11nm,1.2s							
QIZ				LR	LR		
comp=N,410nm,15.8s							
QIZ				LR	LR		
comp=E,620nm,17.4s							
QIZ				LR	LR		
comp=Z,920nm,15.8s							
QZH	**Quanzhou**	**14.62**	**347**	*e*P	**P**	**09 18 55.8**	**+1.7**
QZH				LR	LR		
comp=Z,1μm,17.2s							
KSM	**Kuching**	**14.91**	**233**⇓	P	**P**	**09 18 55.8**	**-1.6**
KSM	**Kuching**	**14.91**	**233**	*e*Pn	**Pn**	**09 18 54.5**	**+1.9**
comp=Z,25nm,1.2s							
KAPI	**Kappang**	**15.75**	**189**	Pn	**P**	**09 19 08.1**	**+1.4**
comp=Z,1.3nm,0.3s,baz=53,slow=3.0,SNR=4.8							
KAPI				LR	LR	09 25 02.5	
comp=Z,367nm,21.3s,baz=17,slow=37							
KAPI	**Kappang**	**15.75**	**189**	*e*Pn	**Pn**	**09 19 03.6**	**+0.1**
comp=Z,79nm,1.6s							
MMRI	**Maumere**	**19.16**	**180**	P	**Pn**	**09 19 48.9**	**+3.3**
comp=Z,70nm,1.6s							
CHBT	**CHBT**	**19.55**	**278**	P	**Pn**	**09 19 57.2**	**+6.9**
comp=Z,46nm,1.0s,comp=Z,3μm							
KTGM	**Kuala Trenggan**	**19.59**	**256**⇑	P	**Pn**	**09 19 51.2**	**+0.5**
KHON	**Khomkaen**	**19.65**	**289**	P	**Pn**	**09 19 58.2**	**+6.8**
comp=Z,10nm,1.0s,comp=Z,1μm							
PLAI	**Plampang**	**19.84**	**193**	P	**Pn**	**09 19 53.2**	**-0.5**
comp=Z,67nm,1.2s							
TWSI	**Taliwang, Sumb**	**19.97**	**196**	P	**Pn**	**09 19 54.7**	**-0.5**
comp=Z,27nm,1.4s							
NGJI	**Ngawi**	**20.84**	**211**	P	Pn	09 20 09.9	+4.3
comp=Z,82nm,1.0s							
WHN	**Wuhan**	**21.09**	**341**	P	P	09 20 15.5	+10
WHN				S	Sn	09 24 07.5	+1.6
WHN				LR	LR		
comp=Z,2μm,15.8s							
PWJI	**Pagerwojo**	**21.23**	**210**	P	**P**	**09 20 10.8**	**+3.9**
comp=Z,38nm,1.1s							
PBKT	**Sadao Pong**	**21.43**	**288**	P	**P**	**09 20 15.8**	**+6.8**
comp=Z,18nm,2.1s,comp=Z,1μm							
GYA	**Guiyang**	**21.49**	**319**	*e*P	**P**	**09 20 12.0**	**+2.3**
GYA				pmax	pmax		
comp=Z,10.0nm,0.8s							
KULM	**Kulim**	**21.97**	**258**⇓	P	**P**	**09 20 16.1**	**+1.3**
KULM	**Kulim**	**21.97**	**258**	*e*P	**P**	**09 20 15.8**	**+1.0**
comp=Z,16nm,0.9s							
UTTA	**Uttaradit**	**22.11**	**291**	P	**P**	**09 20 18.9**	**+2.6**
comp=Z,2.2nm,0.9s							
GENI	**Genyem**	**22.22**	**125**	P	P	09 20 30.0	+13
comp=Z,74nm,1.2s							
JAY	**Jayapura**	**22.60**	**124**	LR	LR	09 27 50.3	
comp=Z,15nm,21.1s,baz=234,slow=34							
LEM	**Lembang**	**22.62**	**220**	P	P	09 20 30.9	+9.0
comp=Z,29nm,0.7s,baz=93,slow=19,SNR=5.8							
LEM	**Lembang**	**22.62**	**220**	P	P	09 20 32.1	+10
SUKH	**Sukhothai**	**22.89**	**290**	P	**P**	**09 20 26.7**	**+2.1**
comp=Z,3.5nm,1.1s							
CRAI	**Chiangrai**	**23.05**	**297**	P	**P**	**09 20 27.9**	**+1.7**
comp=Z,62nm,1.1s,comp=Z,7μm							
LAMP	**Lampang**	**23.16**	**292**	P	P	09 20 36.2	+8.8
BKNI	**Bangkinang**	**23.39**	**245**	*e*P	**P**	**09 20 31.1**	**+1.5**
comp=Z,86nm,0.4s							
KMI	**Kunming**	**23.39**	**311**	P	**P**	**09 20 31.3**	**+1.5**
KMI				pmax	pmax		
comp=Z,24nm,1.2s							
KMI				pmax	pmax		
comp=Z,130nm,4.0s							
CM01	**Chiang Mai Arr**	**23.75**	**292**	*e*P	**P**	**09 20 33.2**	**+0.2**
JNU	**Nakatsue**	**23.75**	**18**	LR	LR	09 31 51.4	
comp=Z,192nm,18.0s,baz=281,slow=42							
CM31	**Chiang Mai Arr**	**23.77**	**292**	*e*P	**P**	**09 20 33.8**	**+0.6**
**CMA

WB2 Warramunga Arr 32.68 158 *eP* **P 09 21 49.5 -3.2**
comp=Z,15nm,1.5s
CN2 Changchun 33.15 4 *eP* **P 09 21 58.5 +2.0**
MDJ Mudanjiang 34.44 9 P **P 09 22 07.3 -0.5**
MDJ PP **PP 09 23 27.0 +0.5**
MDJ S **S 09 27 37.5 +4.8**
MDJ SS **SS 09 30 10.3 +6.9**
MDJ pmax pmax
comp=Z,9.0nm,0.8s
MDJ pmax pmax
comp=Z,42nm,4.5s
MDJ LR LR
comp=N,79nm,28.2s
MDJ LR LR
comp=E,130nm,25.7s
MDJ LR LR
comp=Z,130nm,23.7s
USRK Ussuriysk Ar. 34.49 12 P **P 09 22 07.7 -0.4**
comp=Z,3.5nm,0.6s,baz=199,slow=7.5,SNR=8.9
USRK LR LR 09 36 17.4
comp=Z,144nm,20.3s,baz=173,slow=36
GTA Gaotai 34.88 329 *eP* **P 09 22 12.8 +1.0**
GTA pP sP 09 22 28.0 -1.8
GTA sP pP 09 22 35.0 +11
GTA pmax pmax
comp=Z,8.0nm,1.3s
AS31 Alice Springs 35.98 162 *eP* **P 09 22 19.0 -2.3**
comp=Z,1.5nm,0.9s
ASAR Alice Springs 35.98 162 P **P 09 22 19.1 -2.2**
comp=Z,2.3nm,0.5s,baz=342,slow=7.0,SNR=70
ASAR PcP **PcP 09 24 46.1 -1.2**
comp=Z,2.2nm,0.6s,baz=345,slow=3.0,SNR=14
ASAR LR LR 09 40 07.3
comp=Z,80nm,18.9s,baz=8.5,slow=42
AS01 Alice Springs 35.99 161 *eP* **P 09 22 19.3 -2.1**
GUN Gumba 38.13 302 *eP* **P 09 22 40.3 +0.3**
PKIN Phulchoki 38.43 301 *eP* **P 09 22 42.5 +0.1**
comp=Z,12nm,0.7s
KKN Kakani 38.59 301 *eP* **P 09 22 43.8 +0.1**
comp=Z,17nm,0.6s
DMN Daman 38.68 301 *eP* **P 09 22 44.6 +0.1**
ULN Ulaanbaatar 39.22 344 *eP* **P 09 22 47.6 -0.9**
comp=Z,13nm,1.1s
KLR Kul'dur 39.28 10 P **P 09 22 48.0 -0.8**
comp=Z,4.8nm,0.8s,baz=206,slow=7.2,SNR=16
KLR PcP **PcP 09 24 55.9 -1.0**
comp=Z,1.8nm,0.9s,baz=242,slow=4.4,SNR=3.5
KLR LR LR 09 39 51.8
comp=Z,127nm,20.1s,baz=198,slow=38
SONM Songino Array 39.38 343 P **P 09 22 48.9 -1.0**
comp=Z,4.0nm,0.8s,baz=160,slow=10,SNR=10
SONM LR LR 09 40 15.8
comp=Z,359nm,20.0s,baz=120,slow=38
SONA1 Songino Array 39.38 343 *eP* **P 09 22 49.5 -0.4**
KOLN Koldanda 40.00 301 *eP* **P 09 22 55.5 +0.1**
comp=Z,19nm,0.8s
PYUN Piuthan 40.62 301 *eP* **P 09 23 01.0 +0.5**
comp=Z,74nm,0.9s
PALK Pallekele 41.09 269 LR LR 09 40 22.4
comp=Z,71nm,18.4s,baz=116,slow=37
NWAO Narrogin (SRO) 43.59 186 *eP* **P 09 23 24.0 -0.3**
comp=Z,20nm,0.8s
TLY Talaya 43.62 343 P **P 09 23 24.8 +0.4**
comp=Z,1.5nm,0.5s,baz=182,slow=10,SNR=4.9
TLY LR LR 09 42 53.4
comp=Z,260nm,20.2s,baz=142,slow=38
TLY Talaya 43.62 343 *eP* **P 09 23 24.8 +0.4**
comp=Z,13nm,1.3s
WMQ Urumqi 44.51 324 P **P 09 23 30.8 -0.9**
WMQ pP sP 09 23 48.0 -2.0
WMQ sP pP 09 23 53.5 +9.0
WMQ pmax pmax
comp=Z,6.0nm,0.6s
WMQ pmax pmax
comp=Z,63nm,4.8s
WMQ LR LR
comp=N,160nm,17.2s
WMQ LR LR
comp=E,250nm,13.0s
WMQ LR LR
comp=Z,110nm,17.2s
BBOO Buckleboo 45.20 163 *eP* **P 09 23 35.7 -1.5**
comp=Z,8.6nm,0.8s
STKA Stephens Creek 46.19 157 P **P 09 23 43.5 -1.5**
comp=Z,2.7nm,0.7s,baz=320,slow=9.4,SNR=9.0
STKA LR LR 09 44 40.9
comp=Z,76nm,19.1s,baz=20,slow=38
STKA Stephens Creek 46.19 157 *eP* **P 09 23 43.9 -1.1**
comp=Z,1.0nm,0.9s
MK01 Makanchi Array 49.32 324 *eP* **P 09 24 08.5 -0.7**
MKAR Makanchi Array 49.34 324 P **P 09 24 09.1 -0.2**
comp=Z,1.3nm,0.7s,baz=120,slow=7.0,SNR=9.5
MKAR PcP **PcP 09 25 30.9 -0.6**
comp=Z,1.0nm,0.7s,baz=137,slow=4.2,SNR=2.3
MKAR LR LR 09 45 59.0
comp=Z,71nm,19.1s,baz=90,slow=37
KSH Kashi 50.02 313 *eP* **P 09 24 18.0 +3.2**
KSH *e*pP sP 09 24 33.8 +0.7
KSH *es*P pP 09 24 40.5 +13
KSH PcS **PcS 09 29 31.0 -0.3**
KSH S **S 09 31 26.8 +4.3**
KSH pmax pmax
comp=Z,91nm,6.7s
KSH LR LR
comp=N,510nm,12.9s
KSH LR LR
comp=E,310nm,10.2s
KSH LR LR
comp=Z,150nm,11.7s
PEA0 Petropavlovsk- 51.03 27 *eP* **P 09 24 21.0 -1.0**
PETK Petropavlovsk- 51.03 27 P **P 09 24 21.3 -0.7**
comp=Z,2.7nm,0.6s,baz=171,slow=2.0,SNR=4.3
YAK Yakutsk 51.58 5 LR LR 09 48 02.6
comp=Z,77nm,19.3s,baz=138,slow=38
ZALV Zalesovo Beam 52.41 333 P **P 09 24 30.7 -1.6**
comp=Z,1.1nm,0.5s,baz=111,slow=6.3,SNR=3.4
ZALV LR LR 09 48 26.8
comp=Z,107nm,18.4s,baz=70,slow=38
KURBB Kurchatov Arra 53.52 327 P **P 09 24 39.7 -0.8**
comp=Z,3.2nm,1.1s,baz=134,slow=6.7,SNR=14
KURK Kurchatov 53.52 327 *eP* **P 09 24 39.6 -0.8**
comp=Z,7.0nm,0.9s
KBL Kabul 53.81 305 *eP* **P 09 24 43.5 +0.3**
comp=Z,10nm,0.8s
SEY Seymchan 56.50 16 P **P 09 25 01.2 -0.6**
comp=Z,0.6nm,0.4s,baz=221,slow=11,SNR=3.2
BVAR Borovoye Array 59.10 326 P **P 09 25 19.2 -1.0**
comp=Z,0.8nm,0.7s,baz=86,slow=9.1,SNR=5.8
TIXI Tiksi 61.09 2 P **P 09 25 32.0 -1.6**
comp=Z,16nm,1.0s,baz=156,slow=4.9,SNR=44
TIXI Tiksi 61.09 2 *eP* **P 09 25 31.8 -1.8**
comp=Z,18nm,1.0s
NRIK Noril'sk 62.69 347 P **P 09 25 43.2 -1.1**
comp=Z,3.5nm,0.6s,baz=137,slow=9.0,SNR=5.7
NRIK LR LR 09 55 13.5
comp=Z,244nm,18.7s,baz=132,slow=38
GEYT Alibeck 63.10 307 P **P 09 25 48.4 +0.7**
comp=Z,4.7nm,0.7s,baz=129,slow=4.0,SNR=9.9
GEYT LR LR 09 55 50.9
comp=Z,66nm,19.6s,baz=80,slow=38
ABKAR Akbulak array 63.98 320 *eP* **P 09 25 52.7 -0.5**
AKTO Aktyubinsk 65.47 321 P **P 09 26 02.2 -0.7**
comp=Z,0.8nm,0.3s,baz=108,slow=4.4,SNR=4.2
ARU Arti 66.71 327 P **P 09 26 08.6 -2.2**
comp=Z,2.0nm,0.4s,baz=126,slow=7.4,SNR=5.6
AFI Afiamalu 69.89 109 LR LR 09 51 59.8
comp=Z,86nm,21.4s,baz=79,slow=32
KBZ Khabaz 74.99 312 P **P 09 27 00.1 -1.2**
comp=Z,2.4nm,0.8s,baz=71,slow=4.2,SNR=5.9
KBZ LR LR 10 03 14.4
comp=Z,34nm,19.1s,baz=104,slow=38
CASY Casey 77.20 185 *eP* **P 09 27 12.6 -0.7**
comp=Z,7.3nm,1.1s
BPAW Bear Paw Mtn. 79.11 27 *eP* **P 09 27 23.7 -0.4**
comp=Z,17nm,1.4s
ILAR Eielson Array 80.85 26 P **P 09 27 32.5 -0.9**
comp=Z,0.5nm,0.8s,baz=246,slow=5.5,SNR=6.0
BR131 Keskin Array S 82.17 309 *eP* **P 09 27 40.9 -0.2**
BRTR Keskin Array B 82.17 309 P **P 09 27 40.2 -0.9**
comp=Z,2.3nm,0.8s,baz=116,slow=5.6,SNR=14
BRTR LR LR 10 10 24.6
comp=Z,15nm,18.1s,baz=77,slow=40
DOT Dot Lake 82.21 27 *eP* **P 09 27 40.3 -0.4**
comp=Z,30nm,1.6s
RAGM Ragged Mountai 82.38 30 *eP* **P 09 27 43.8 +2.1**
comp=Z,75nm,0.8s
ARA0 ARCESS Array S 82.43 339 *eP* **P 09 27 41.3 -0.4**
ARCES ARCESS Array B 82.43 339 P **P 09 27 40.4 -1.3**
comp=Z,4.7nm,0.7s,baz=79,slow=6.3,SNR=13
ARCES LR LR 10 07 33.2
comp=Z,90nm,18.5s,baz=84,slow=38
BR231 Keskin MP Arra 82.82 309 *eP* **P 09 27 41.2 -3.2**
SPITS Spitsbergen Ar 82.85 348 P **P 09 27 42.7 -1.1**
comp=Z,8.2nm,0.9s,baz=112,slow=4.4,SNR=3.8
FIA1 FINESS Array S 83.64 331 *eP* **P 09 27 47.3 -0.7**
comp=Z,62nm,1.8s
FINES FINESS Array B 83.64 331 P **P 09 27 46.9 -1.1**
comp=Z,6.2nm,0.9s,baz=60,slow=5.5,SNR=23
FINES LR LR 10 08 43.9
comp=Z,158nm,18.6s,baz=128,slow=38
AKASG Malin Array Be 83.72 320 P **P 09 27 47.2 -1.4**
comp=Z,0.3nm,0.3s,baz=66,slow=5.4,SNR=10
AK11 Malin Array Si 83.75 320 *eP* **P 09 27 47.6 -1.2**
ISP Isparta 84.86 307 *eP* **P 09 27 53.6 -1.3**
comp=Z,18nm,1.0s
KMBO Kilima Mbogo 85.22 268 P **P 09 27 58.0 +0.7**
comp=Z,4.7nm,1.0s,baz=59,slow=7.5,SNR=7.5
KMBO Kilima Mbogo 85.22 268 *eP* **P 09 27 57.1 -0.3**
comp=Z,3.8nm,0.9s
INK Inuvik 85.40 21 P **P 09 27 56.0 -0.8**
comp=Z,9.3nm,1.0s,baz=285,slow=6.4,SNR=23
INK Inuvik 85.40 21 *eP* **P 09 27 56.2 -0.6**
MLR Muntele Rosu 86.82 316 *eP* **P 09 28 03.5 -1.0**
comp=Z,5.9nm,0.8s
BUR08 Bucovina Ar. S 86.88 318 *eP* **P 09 28 04.6 -0.1**
CRVS Cervenica-Dubn 89.01 320 *eP* **P 09 28 14.7 0.0**
NOA NORSAR Array B 90.62 333 P **P 09 28 20.2 -1.8**
comp=Z,1.0nm,0.7s,baz=66,slow=5.1,SNR=2.9
NOA LR LR 10 13 44.8
comp=Z,131nm,18.2s,baz=70,slow=39
VNDA Vanda 90.84 172 P **P 09 28 21.4 -1.1**
comp=Z,3.1nm,0.9s,baz=305,slow=6.0,SNR=15
VNDA LR LR 10 10 20.5
comp=Z,35nm,18.4s,baz=336,slow=36
VNDA Vanda 90.84 172 *eP* **P 09 28 21.7 -0.8**
comp=Z,6.5nm,1.2s
BRG Berggiesshubel 93.03 323 *eP* **P 09 28 32.6 -0.7**
comp=Z,3.6nm,0.8s
GEC2 GERESS Array S 93.90 321 *eP* **P 09 28 37.5 0.0**
comp=Z,4.0nm,1.0s
GERES GERESS Array B 93.90 321 P **P 09 28 36.5 -1.0**
comp=Z,1.4nm,0.9s,baz=75,slow=5.7,SNR=6.8
GERES LR LR 10 13 46.7
comp=Z,36nm,19.7s,baz=51,slow=37
GEA0 GERESS Array S 93.90 321 *eP* **P 09 28 36.6 -0.9**
YKA Yellowknife Ar 95.01 23 P **P 09 28 40.6 -1.6**
comp=Z,1.1nm,0.8s,baz=304,slow=4.3,SNR=16
YKB5 Yellowknife Ar 95.01 23 *eP* **P 09 28 40.8 -1.3**
TORD Torodi Ar. Bea 116.38 290 PKP **PKPdf 09 34 02.9 -1.3**
comp=Z,1.2nm,0.9s,baz=58,slow=2.1,SNR=6.0
TXAR Lajitas Array 120.56 47 PKP **PKPdf 09 34 11.4 -0.7**
comp=Z,0.5nm,0.8s,baz=278,slow=3.5,SNR=6.9
TKL Tuckaleechee C 127.82 27 PKP **PKPdf 09 34 24.9 -0.9**
comp=Z,2.2nm,0.8s,baz=238,slow=2.5,SNR=3.5
PLCA Paso Flores 147.99 162 PKPbc **PKPbc 09 35 05.2 -0.2**
comp=Z,6.9nm,0.7s,baz=241,slow=3.2,SNR=14
PLCA Paso Flores 147.99 162 *e*PKPbc **PKPbc 09 35 05.0 -0.4**
STVI Saint Thomas 150.33 14 *e*PKPbc **PKPbc 09 35 09.6 -2.2**
MTP Monte Pirata 150.43 15 *e*PKPdf **PKPdf 09 35 04.3 -2.5**
TRQA Tornquist 152.46 173 *e*PKPbc **PKPbc 09 35 15.5 -0.7**
LPAZ La Paz 168.51 120 PKP **PKPdf 09 35 27.9 -0.2**
comp=Z,1.7nm,1.0s,baz=232,slow=0.9,SNR=5.0
SIV San Ignacio 173.82 150 PKP **PKPdf 09 35 29.1 -1.0**
comp=Z,3.3nm,1.1s,baz=240,slow=1.7,SNR=4.3

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*ISCJB **29** 09:20:11.7±0.5, 39.°11N±0.°03×29.°03E±0.°04, h4km±7km, Error ellipse: s-maj=5.7km s-min=3.9km az=143.1*
*CSEM **29** 09:20:11.9±0.1, 39.°11N×29.°04E, h8km, ML2.6, Error ellipse: s-maj=2.7km s-min=2.2km az=119.0*
*ISK **29** 09:20:11.4, 39.°10N×29.°03E, h9km, ML2.1*
*DDA **29** 09:20:12.1, 39.°07N×29.°04E, h7km, Ml2.6*

ISC 29 09:20:11.9±0.9, 39.°10N±0.°02×29.°03E±0.°02, h14km±7km, n30, σ0°23/44, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**257**	P	**Pg**	**09 20 17.5**	**+0.1**
DEMI				S	**Sg**	**09 20 21.0**	**-0.1**
DEMI	**Demirci**	**0.25**	**257**	*i* P	**Pg**	**09 20 17.5**	**+0.1**
DEMI				*i* S	**Sg**	**09 20 21.0**	**-0.1**
GDZ	**Gediz**	**0.35**	**91**	P	**Pg**	**09 20 18.9**	**-0.1**
GDZ				S	**Sg**	**09 20 24.0**	**+0.2**
GDZ	**Gediz**	**0.35**	**91**	*i* P	**Pg**	**09 20 18.9**	**-0.1**
GDZ				*i* S	**Sg**	**09 20 24.0**	**+0.2**
TVSB	**Tavsanli**	**0.48**	**43**	PG	**Pg**	**09 20 21.4**	**-0.1**
TVSB				*e*SG	**Sg**	**09 20 28.1**	**+0.1**
TVSB	**Tavsanli**	**0.48**	**43**	*i* Pg	**Pg**	**09 20 21.4**	**-0.1**
TVSB				*e*Sg	**Sg**	**09 20 28.1**	**+0.1**
KULA	**Kula-Manisa**	**0.65**	**207**	PG	**Pg**	**09 20 24.6**	**0.0**
KULA				*e*SG	**Sg**	**09 20 33.3**	**0.0**
KULA	**Kula-Manisa**	**0.65**	**207**	*i* Pg	**Pg**	**09 20 24.6**	**0.0**
KULA				*e*Sg	**Sg**	**09 20 33.3**	**0.0**
MANT	**Manisa**	**0.71**	**212**	P	**Pg**	**09 20 25.6**	**-0.2**
MANT				S	**Sg**	**09 20 35.1**	**-0.1**
MANT	**Manisa**	**0.71**	**212**	*i* P	**Pg**	**09 20 25.6**	**-0.2**
MANT				*i* S	**Sg**	**09 20 35.1**	**-0.1**
KHAL	**Karahalli**	**0.81**	**154**	P	**Pb**	**09 20 27.8**	**0.0**
KHAL				S	**Sb**	**09 20 39.1**	**+0.4**
KHAL	**Karahalli**	**0.81**	**154**	*i* P	**Pb**	**09 20 27.8**	**0.0**
KHAL				*i* S	**Sb**	**09 20 39.1**	**+0.4**
KHL	**Karahalli**	**0.86**	**154**	*e*PG	**Pn**	**09 20 29.5**	**-0.3**
KHL	**Karahalli**	**0.86**	**154**	*e*Pg	**Pn**	**09 20 29.5**	**-0.3**
ORLT	**Orhaneli**	**0.95**	**354**	*e*PG	**Pb**	**09 20 29.6**	**-0.7**
ORLT	**Orhaneli**	**0.95**	**354**	*e*Pg	**Pb**	**09 20 29.6**	**-0.7**
AKHS	**Akhisar**	**0.98**	**257**	P	**Pn**	**09 20 31.6**	**+0.4**
AKHS				S	**Sn**	**09 20 44.9**	**0.0**
AKHS	**Akhisar**	**0.98**	**257**	*i* P	**Pn**	**09 20 31.6**	**+0.4**
AKHS				*i* S	**Sn**	**09 20 44.9**	**0.0**
AKS	**Akhisar**	**0.98**	**257**	*e*PG	**Pn**	**09 20 31.1**	**-0.1**
AKS	**Akhisar**	**0.98**	**257**	*e*Pg	**Pn**	**09 20 31.1**	**-0.1**
BALB	**Balikesir**	**1.04**	**302**	*e*PG	**Pn**	**09 20 32.1**	**-0.1**
BALB	**Balikesir**	**1.04**	**302**	*e*Pg	**Pn**	**09 20 32.1**	**-0.1**
CAVI	**Cavuskoy**	**1.27**	**29**	*e*PN	**Pb**	**09 20 35.7**	**+0.1**
CAVI	**Cavuskoy**	**1.27**	**29**	*e*Pn	**Pb**	**09 20 35.7**	**+0.1**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*PN	**Pb**	**09 20 35.7**	**-0.1**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*Pn	**Pb**	**09 20 35.7**	**-0.1**
IZI	**Iznik**	**1.28**	**15**	*e*PN	**Pg**	**09 20 36.9**	**+0.3**
IZI	**Iznik**	**1.28**	**15**	*e*Pn	**Pg**	**09 20 36.9**	**+0.3**
ARMT	**Armutlu**	**1.47**	**355**	*e*PN	**Pn**	**09 20 37.9**	**-0.2**
ARMT	**Armutlu**	**1.47**	**355**	*e*Pn	**Pn**	**09 20 37.9**	**-0.2**

NNC 29 09:21:30.6±10.0, 37.°70N×72.°05E, h5km±146km, mb4.0, mpv3.6, 5C-3D, Error ellipse: s-maj=174.6km s-min=26.3km az=153.0, Tajikistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**2.76**	**294**	⇑Pn	Pn	09 22 15.1	-0.6
	35nm,0.3s						
DZET				⇑Sn	Sn	09 22 50.4	+0.9
	83nm,0.7s						
MNAS	**Manas**	**4.79**	**4**	⇑Pn	Pn	09 22 44.4	+0.8
	4.8nm,0.3s						
MNAS				⇓Sn	Sn	09 23 41.5	+2.0
	17nm,0.6s						
AAK	**Ala-Archa**	**5.27**	**20**	⇑Pn	Pn	09 22 51.4	+1.2
	1.2nm,0.5s						
AAK				⇑Sn	Sn	09 23 54.1	+2.7
	11nm,0.7s						
KK31	**Karatay Array**	**5.52**	**348**	⇓Pn	Pn	09 22 53.0	-0.5
	2.2nm,0.6s,baz=160,slow=11,SNR=18						
KK31				⇓Sn	Sn	09 23 55.9	-1.4
	4.4nm,0.5s,baz=159,slow=30,SNR=4.4						

IDC 29 09:24:39.4±2.5, 54.°49N×86.°41E, h0km, mb1 3.3/3, mb1mx3.1/53, mbtmp3.3/3, ML3.1/3, Error ellipse: s-maj=20.0km s-min=12.6km az=54.0, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**1.08**	**240**	*i*		09 32 40.0	
	baz=58,slow=318,SNR=0.5						
ZALV	**Zalesovo Beam**	**1.08**	**240**	Pg	Pg	09 24 58.9	-1.2
	4.5nm,0.3s,baz=57,slow=16,SNR=18						
ZALV				Lg	Lg	09 25 15.6	
	4.3nm,0.3s,baz=58,slow=26,SNR=14						
KURBB	**Kurchatov Arra**	**6.17**	**234**	Pn	Pn	09 26 12.5	+0.8
	0.3nm,0.3s,baz=49,slow=14,SNR=22						
KURBB				Sn	Sn	09 27 22.1	-0.7
	0.1nm,0.3s,baz=46,slow=22,SNR=5.3						
KURBB				Lg	Lg	09 27 56.7	
	0.1nm,0.3s,baz=47,slow=30,SNR=3.5						
MKAR	**Makanchi Array**	**8.14**	**200**	Pn	Pn	09 26 39.1	+0.4
	0.3nm,0.3s,baz=21,slow=14,SNR=6.1						
MKAR				Sn	Sn	09 28 10.3	-1.1
	0.2nm,0.3s,baz=19,slow=27,SNR=3.7						
MKAR				Lg	Lg	09 28 58.8	
	0.1nm,0.3s,baz=24,slow=32,SNR=2.3						
BVAR	**Borovoye Array**	**9.60**	**268**	Pn	Pn	09 26 59.0	+0.2
	0.2nm,0.3s,baz=80,slow=15,SNR=2.3						
BVAR				Sn	Sn	09 28 42.0	-5.2
	0.3nm,0.3s,baz=77,slow=26,SNR=4.6						

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*NEIC **29** 09:30:44.8, 38.°24S×177.°03E, h64km, ML4.1 (WEL), After WEL.*
NEIC Felt at Taneatua.

WEL 29 09:30:44.8±0.1, 38.°23S×177.°02E, h63km±1km, ML4.1/19, 21C-32D, Error ellipse: s-maj=0.6km s-min=0.6km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
URZ	**Urewera**	**0.08**	**110**	⇑P*	Pn	09 30 53.7	-0.5
URZ				S*	Sn	09 31 00.5	-0.4
URZ				AML	AML	09 31 01.4	
URZ	**Urewera**	**0.08**	**110**	P*	Pn	09 30 53.7	-0.5
URZ				S*	Sn	09 31 00.5	-0.4
EDRZ	**Edgecumbe**	**0.25**	**300**	⇓P*	Pn	09 30 54.9	-0.1
EDRZ	**Edgecumbe**	**0.25**	**300**	P*	Pn	09 30 54.9	-0.1
MUGZ	**Murupara**	**0.31**	**219**	⇑P*	Pn	09 30 55.1	-0.3
MUGZ				S*	Sn	09 31 03.2	+0.1
MARZ	**Manawahe**	**0.37**	**312**	⇓P*	Pn	09 30 55.6	-0.3
MARZ	**Manawahe**	**0.37**	**312**	P*	Pn	09 30 55.6	-0.3
RTZ	**Ruatahuna**	**0.38**	**185**	⇑P*	Pn	09 30 55.6	-0.5
TARZ	**Mount Tarawera**	**0.40**	**269**	⇓P*	Pn	09 30 56.4	+0.1
TARZ	**Mount Tarawera**	**0.40**	**269**	P*	Pn	09 30 56.4	+0.1
RAGZ	**Rawiri**	**0.41**	**130**	⇑P*	Pn	09 30 56.1	-0.2
RAGZ	**Rawiri**	**0.41**	**130**	P*	Pn	09 30 56.1	-0.2
RRRZ	**Republican Roa**	**0.41**	**255**	P*	Pn	09 30 56.1	-0.1
RRRZ	**Republican Roa**	**0.41**	**255**	P*	Pn	09 30 56.1	-0.1
MWZ	**Matawai**	**0.41**	**104**	⇑P*	Pn	09 30 55.8	-0.4
MWZ				AML	AML	09 31 04.6	
MWZ				AML	AML	09 31 04.7	
MWZ				AML	AML	09 31 06.2	
MWZ				AML	AML	09 31 06.2	
MWZ	**Matawai**	**0.41**	**104**	P*	Pn	09 30 55.5	-0.8
HLRZ	**Highlands Stat**	**0.53**	**268**	P*	Pn	09 30 57.4	0.0
OMRZ	**Omania**	**0.53**	**284**	⇓P*	Pn	09 30 57.3	0.0
OMRZ	**Omania**	**0.53**	**284**	P*	Pn	09 30 57.4	0.0
OPRZ	**Ohinepanea**	**0.53**	**316**	⇓P*	Pn	09 30 57.0	-0.4
OPRZ				S*	Sn	09 31 06.8	+0.3
OPRZ	**Ohinepanea**	**0.53**	**316**	P*	Pn	09 30 56.7	-0.7
LIRZ	**Lichensteins R**	**0.55**	**294**	⇓P*	Pn	09 30 57.6	0.0
LIRZ	**Lichensteins R**	**0.55**	**294**	P*	Pn	09 30 57.6	0.0
PRRZ	**Plateau Road**	**0.56**	**241**	⇑P*	Pn	09 30 57.5	-0.2
PRRZ	**Plateau Road**	**0.56**	**241**	P*	Pn	09 30 57.5	-0.2
HRRZ	**Handcock Road**	**0.60**	**255**	P*	Pn	09 30 58.0	-0.2
HRRZ	**Handcock Road**	**0.60**	**255**	P*	Pn	09 30 58.0	-0.2
SNGZ	**Shannon Statio**	**0.60**	**155**	⇑PN	Pn	09 30 58.4	+0.2
SNGZ	**Shannon Statio**	**0.60**	**155**	Pn	Pn	09 30 58.5	+0.2
HSRZ	**Hossack Road**	**0.61**	**262**	⇓P*	Pn	09 30 58.5	+0.2
ALRZ	**Allen Road**	**0.62**	**238**	⇑P*	Pn	09 30 58.3	-0.2
ALRZ	**Allen Road**	**0.62**	**238**	P*	Pn	09 30 58.3	-0.2
UTU	**Utuhina**	**0.65**	**275**	⇓P*	Pn	09 30 59.2	+0.4
UTU	**Utuhina**	**0.65**	**275**	P*	Pn	09 30 59.2	+0.4
TKGZ	**Te Karaka**	**0.68**	**108**	⇑PN	Pn	09 30 59.3	+0.2
TKGZ	**Te Karaka**	**0.68**	**108**	Pn	Pn	09 30 59.3	+0.2
RAHZ	**Arahi**	**0.69**	**176**	⇑PN	Pn	09 30 59.3	+0.2
RAHZ	**Arahi**	**0.69**	**176**	Pn	Pn	09 30 59.3	+0.2
WIZ	**White Island**	**0.72**	**11**	⇓P*	Pn	09 30 58.8	-0.7
WIZ	**White Island**	**0.72**	**11**	P*	Pn	09 30 58.8	-0.7
WPRZ	**Whakapapatarin**	**0.73**	**247**	P*	Pn	09 30 59.8	+0.2
WPRZ	**Whakapapatarin**	**0.73**	**247**	P*	Pn	09 30 59.8	+0.2
RIGZ	**Rimuhau**	**0.75**	**129**	⇑PN	Pn	09 31 00.0	+0.1
TWGZ	**Tauwhareparae**	**0.76**	**86**	⇑PN	Pn	09 31 00.5	+0.5
TWGZ	**Tauwhareparae**	**0.76**	**86**	Pn	Pn	09 31 00.5	+0.5
MRHZ	**Matea Rd**	**0.76**	**218**	⇑P*	Pn	09 30 59.6	-0.5
HAZ	**Te Kaha**	**0.77**	**52**	⇓P*	Pn	09 30 59.4	-0.7
TGRZ	**Tauranga**	**0.78**	**310**	⇓P*	Pn	09 30 59.9	-0.4
TGRZ	**Tauranga**	**0.78**	**310**	P*	Pn	09 30 59.9	-0.4
WHHZ	**Waihua**	**0.86**	**169**	PN	Pn	09 31 01.4	+0.2
NMHZ	**Naumai**	**0.88**	**191**	⇑PN	Pn	09 31 02.0	+0.5
NMHZ	**Naumai**	**0.88**	**191**	Pn	Pn	09 31 02.0	+0.5
PKGZ	**Pakihiroa**	**0.90**	**68**	⇓PN	Pn	09 31 01.8	0.0
KMRZ	**Kaimai**	**0.93**	**294**	⇓P*	Pn	09 31 02.0	-0.2
WHTZ	**Whakaora**	**0.94**	**242**	P*	Pn	09 31 02.6	+0.3
KNZ	**Kokohu**	**0.94**	**147**	⇑PN	Pn	09 31 01.6	-0.6
KNZ				AML	AML	09 31 22.9	
KNZ				AML	AML	09 31 24.6	
KNZ	**Kokohu**	**0.94**	**147**	Pn	Pn	09 31 01.6	-0.6
PRGZ	**Paritu Road**	**0.97**	**136**	⇑PN	Pn	09 31 02.0	-0.6
PRGZ	**Paritu Road**	**0.97**	**136**	Pn	Pn	09 31 02.0	-0.6
CNGZ	**Carnagh Statio**	**0.97**	**105**	PN	Pn	09 31 02.7	+0.2
CNGZ	**Carnagh Statio**	**0.97**	**105**	Pn	Pn	09 31 02.7	+0.2
KUTZ	**Kaahu Road**	**0.97**	**254**	⇓P*	Pn	09 31 02.7	0.0
KUTZ	**Kaahu Road**	**0.97**	**254**	P*	Pn	09 31 02.7	0.0
HATZ	**Hinemaiaia**	**0.98**	**228**	P*	Pn	09 31 02.5	-0.3
HATZ	**Hinemaiaia**	**0.98**	**228**	P*	Pn	09 31 02.5	-0.3
PUZ	**Puketiti**	**0.99**	**81**	PN	Pn	09 31 02.7	-0.2
PUZ				AML	AML	09 31 22.6	
PUZ				AML	AML	09 31 23.2	
PUZ	**Puketiti**	**0.99**	**81**	Pn	Pn	09 31 02.7	-0.2
BKZ	**Black Stump Fm**	**1.02**	**204**	P*	Pn	09 31 02.9	-0.4
BKZ				AML	AML	09 31 20.3	
BKZ				AML	AML	09 31 20.9	
BKZ	**Black Stump Fm**	**1.02**	**204**	P*	Pn	09 31 02.9	-0.4
ARHZ	**Aropaoanui**	**1.03**	**181**	⇓PN	Pn	09 31 03.4	+0.1
ARHZ	**Aropaoanui**	**1.03**	**181**	Pn	Pn	09 31 03.4	0.0
MYRZ	**Mayor Island**	**1.13**	**327**	⇓P*	Pn	09 31 04.5	-0.3
MHGZ	**Mahia Peninsul**	**1.15**	**143**	⇑PN	Pn	09 31 04.4	-0.6
MHGZ	**Mahia Peninsul**	**1.15**	**143**	Pn	Pn	09 31 04.4	-0.6
RATZ	**Rangitukua**	**1.17**	**237**	P*	Pn	09 31 05.2	0.0
RATZ	**Rangitukua**	**1.17**	**237**	P*	Pn	09 31 05.2	0.0
TLZ	**Tolley Road**	**1.17**	**265**	P*	Pn	09 31 05.1	-0.1
TLZ	**Tolley Road**	**1.17**	**265**	P*	Pn	09 31 05.1	-0.1
RITZ	**Rihia Road**	**1.18**	**230**	⇓P*	Pn	09 31 05.5	+0.2
RITZ	**Rihia Road**	**1.18**	**230**	P*	Pn	09 31 05.5	+0.2
**WMGZ

WNVZ	Wahianoa	1.56 225	P*	Pn	09 31 10.4	-0.1
KAHZ	Kahuranaki	1.56 184	⇓PN	Pn	09 31 09.4	-1.1
KAHZ	Kahuranaki	1.56 184	Pn	Pn	09 31 09.4	-1.1
TRVZ	Turoa	1.57 227	⇑P*	Pn	09 31 10.7	0.0
TRVZ	Turoa	1.57 227	P*	Pn	09 31 10.7	0.0
MTVZ	Mangateitei	1.67 226	P*	Pn	09 31 12.0	0.0
MTVZ	Mangateitei	1.67 226	P*	Pn	09 31 12.0	0.0
PKVZ	Pokaka	1.68 231	P*	Pn	09 31 12.3	+0.2
PKVZ	Pokaka	1.68 231	P*	Pn	09 31 12.3	+0.2
HIZ	Hauiti	1.72 260	⇓PN	Pn	09 31 13.1	+0.5
HIZ	Hauiti	1.72 260	Pn	Pn	09 31 13.1	+0.5
PNHZ	Pukenui	1.80 201	⇓PN	Pn	09 31 12.0	-1.6
PNHZ	Pukenui	1.80 201	Pn	Pn	09 31 12.0	-1.6
PXZ	Pawanui	1.80 184	⇓PN	Pn	09 31 11.5	-2.1
PXZ			AML	AML	09 32 00.4	
PXZ			AML	AML	09 32 00.4	
PXZ			AML	AML	09 32 01.7	
PXZ			AML	AML	09 32 01.7	
PXZ	Pawanui	1.80 184	Pn	Pn	09 31 11.5	-2.1
KUZ	Kuaotunu	1.81 325	⇑PN	Pn	09 31 13.2	-0.5
KUZ	Kuaotunu	1.81 325	Pn	Pn	09 31 13.2	-0.5
MKAZ	Moumakai	1.85 307	PN	Pn	09 31 14.4	0.0
MKAZ	Moumakai	1.85 307	Pn	Pn	09 31 14.4	0.0
WPHZ	Waipukurau	1.88 194	PN	Pn	09 31 12.8	-2.0
WPHZ	Waipukurau	1.88 194	Pn	Pn	09 31 12.8	-1.9
VRZ	Vera Road	1.98 243	⇓P*	Pn	09 31 16.6	+0.5
VRZ	Vera Road	1.98 243	P*	Pn	09 31 16.6	+0.5
TSZ	Takapari Road	2.00 204	⇓PN	Pn	09 31 14.5	-1.9
TSZ			AML	AML	09 31 47.7	
TSZ			AML	AML	09 31 48.1	
TSZ	Takapari Road	2.00 204	Pn	Pn	09 31 14.5	-1.9
KBAZ	Karaka Road Bo	2.04 303	PN	Pn	09 31 17.7	+0.9
KBAZ	Karaka Road Bo	2.04 303	Pn	Pn	09 31 17.7	+0.9
PRHZ	Porangahau	2.05 188	PN	Pn	09 31 14.8	-2.3
PRHZ	Porangahau	2.05 188	Pn	Pn	09 31 14.8	-2.3
WIAZ	Waiheke Island	2.08 313	⇓PN	Pn	09 31 17.5	+0.1
ETAZ	East Tamaki Re	2.10 307	PN	Pn	09 31 18.1	+0.5
ETAZ	East Tamaki Re	2.10 307	Pn	Pn	09 31 18.1	+0.5
DVHZ	Dannevirke	2.17 198	⇑PN	Pn	09 31 16.2	-2.5
DVHZ	Dannevirke	2.17 198	Pn	Pn	09 31 16.2	-2.5
WAZ	Wanganui	2.20 226	⇓PN	Pn	09 31 19.3	+0.3
WAZ	Wanganui	2.20 226	Pn	Pn	09 31 19.3	+0.3
AWAZ	Awhitu Peninsu	2.22 301	PN	Pn	09 31 19.7	+0.4
ANWZ	Angora Road	2.26 191	PN	Pn	09 31 17.4	-2.5
GRZ	Great Barrier	2.34 327	PN	Pn	09 31 20.7	-0.2
OHWZ	Ohakea	2.37 213	PN	Pn	09 31 20.7	-0.7
LREZ	Lake Rotokare	2.38 238	PN	Pn	09 31 22.6	+1.1
ABAZ	Army Bay	2.38 312	PN	Pn	09 31 22.2	+0.6
ABAZ	Army Bay	2.38 312	Pn	Pn	09 31 22.2	+0.6
RVAZ	Riverhead Bore	2.43 306	PN	Pn	09 31 22.3	+0.1
RVAZ	Riverhead Bore	2.43 306	Pn	Pn	09 31 23.2	+1.0
PRWZ	Pori Road	2.46 199	PN	Pn	09 31 20.2	-2.3
PRWZ	Pori Road	2.46 199	Pn	Pn	09 31 20.2	-2.3
NEZ	North Egmont	2.51 245	PN	Pn	09 31 25.1	+1.7
NEZ	North Egmont	2.51 245	Pn	Pn	09 31 25.1	+1.7
BFZ	Birch Farm	2.52 194	PN	Pn	09 31 20.2	-3.2
BFZ			AML	AML	09 31 51.8	
BFZ			AML	AML	09 31 51.8	
BFZ			AML	AML	09 32 14.0	
BFZ			AML	AML	09 32 14.0	
BFZ	Birch Farm	2.52 194	Pn	Pn	09 31 20.2	-3.2
KHEZ	Kahui Hut	2.58 245	PN	Pn	09 31 26.3	+2.0
KHEZ	Kahui Hut	2.58 245	Pn	Pn	09 31 26.1	+1.9
MRZ	Mangatainoka R	2.67 204	PN	Pn	09 31 22.5	-3.0
MRZ	Mangatainoka R	2.67 204	Pn	Pn	09 31 22.4	-3.1
TIWZ	Tintock	2.69 199	PN	Pn	09 31 22.9	-2.8
TIWZ			AML	AML	09 31 56.4	
TIWZ			AML	AML	09 32 12.7	
TIWZ	Tintock	2.69 199	Pn	Pn	09 31 22.9	-2.8
HOWZ	Holdsworth Sta	2.90 203	PN	Pn	09 31 25.1	-3.6
HOWZ	Holdsworth Sta	2.90 203	Pn	Pn	09 31 25.1	-3.6
OGWZ	Otaki Gorge	2.95 208	PN	Pn	09 31 26.3	-2.9
OGWZ	Otaki Gorge	2.95 208	Pn	Pn	09 31 26.3	-2.9
TMWZ	Te Maipa	3.00 197	PN	Pn	09 31 26.4	-3.6
TMWZ	Te Maipa	3.00 197	Pn	Pn	09 31 26.4	-3.6
KIW	Kapiti Island	3.09 211	PN	Pn	09 31 28.4	-2.8
KIW			AML	AML	09 32 21.6	
KIW			AML	AML	09 32 21.6	
KIW	Kapiti Island	3.09 211	Pn	Pn	09 31 28.3	-2.9
WCZ	Waipu Caves	3.13 316	PN	Pn	09 31 32.2	+0.5
WCZ	Waipu Caves	3.13 316	Pn	Pn	09 31 32.2	+0.5
MTW	Mount Morrison	3.15 201	PN	Pn	09 31 28.0	-4.0
MTW			AML	AML	09 32 29.7	
MTW			AML	AML	09 32 30.8	
MTW	Mount Morrison	3.15 201	Pn	Pn	09 31 28.0	-4.0
CAW	Cannon Point	3.24 207	PN	Pn	09 31 29.7	-3.6
CAW			AML	AML	09 32 28.0	
CAW			AML	AML	09 32 28.8	
CAW	Cannon Point	3.24 207	Pn	Pn	09 31 29.7	-3.6
TRWZ	Traveller	3.32 198	PN	Pn	09 31 30.5	-3.9
TRWZ			AML	AML	09 32 08.5	
TRWZ	Traveller	3.32 198	Pn	Pn	09 31 30.5	-3.9
PAWZ	Paruwai Farm	3.38 201	AML	AML	09 32 09.8	
PAWZ			AML	AML	09 32 13.7	
PAWZ	Paruwai Farm	3.38 201	Pn	Pn	09 31 30.9	-4.3
MSWZ	Moikau Station	3.46 203	PN	Pn	09 31 31.9	-4.3
MSWZ			AML	AML	09 32 36.4	
MSWZ	Moikau Station	3.46 203	Pn	Pn	09 31 31.9	-4.3
WEL	Wellington	3.51 209	PN	Pn	09 31 33.3	-3.5
WEL	Wellington	3.51 209	Pn	Pn	09 31 33.2	-3.6
DUWZ	D'Urville Isla	3.51 222	PN	Pn	09 31 34.2	-2.8
DUWZ	D'Urville Isla	3.51 222	Pn	Pn	09 31 34.2	-2.8
BHW	Baring Head	3.58 207	PN	Pn	09 31 34.3	-3.5
BHW			AML	AML	09 32 37.1	
BHW			AML	AML	09 32 43.1	
BHW	Baring Head	3.58 207	Pn	Pn	09 31 34.3	-3.5
PLWZ	Palliser	3.60 202	PN	Pn	09 31 33.5	-4.7
PLWZ	Palliser	3.60 202	Pn	Pn	09 31 33.5	-4.7
TCW	Tory Channel	3.65 215	PN	Pn	09 31 35.1	-3.7
TCW			AML	AML	09 32 33.5	
TCW			AML	AML	09 32 34.8	
TCW	Tory Channel	3.65 215	Pn	Pn	09 31 35.1	-3.7
TUWZ	Tuamarina	3.98 216	PN	Pn	09 31 39.3	-4.0
TUWZ			AML	AML	09 32 40.2	
TUWZ			AML	AML	09 32 41.3	
TUWZ	Tuamarina	3.98 216	Pn	Pn	09 31 39.3	-4.0
NNZ	Nelson	4.09 222	PN	Pn	09 31 41.2	-3.7
NNZ	Nelson	4.09 222	Pn	Pn	09 31 41.2	-3.7
BSWZ	Blackbirch Sta	4.23 214	PN	Pn	09 31 42.6	-4.2
BSWZ	Blackbirch Sta	4.23 214	Pn	Pn	09 31 42.6	-4.2
QRZ	Quartz Range	4.33 232	PN	Pn	09 31 45.1	-3.0
QRZ	Quartz Range	4.33 232	Pn	Pn	09 31 45.1	-3.0
THZ	Tophouse	4.73 221	PN	Pn	09 31 49.6	-4.1
THZ	Tophouse	4.73 221	Pn	Pn	09 31 49.6	-4.1
KHZ	Kahutara	4.95 211	PN	Pn	09 31 51.8	-4.8
KHZ	Kahutara	4.95 211	Pn	Pn	09 31 52.0	-4.6
DSZ	Denniston Nort	5.32 227	PN	Pn	09 31 57.1	-4.7
DSZ	Denniston Nort	5.32 227	Pn	Pn	09 31 57.1	-4.7
LTZ	Lake Taylor	5.81 217	PN	Pn	09 32 02.9	-5.5
LTZ	Lake Taylor	5.81 217	Pn	Pn	09 32 02.9	-5.4
INZ	Inchbonnie	6.18 222	PN	Pn	09 32 08.3	-5.1
OXZ	Oxford	6.34 215	PN	Pn	09 32 08.7	-6.8
OXZ	Oxford	6.34 215	Pn	Pn	09 32 08.8	-6.8
MQZ	McQueen's Vall	6.39 210	PN	Pn	09 32 09.6	-6.6
MQZ	McQueen's Vall	6.39 210	Pn	Pn	09 32 09.6	-6.6
CTZ	Chatham Island	7.30 141	PN	Pn	09 32 26.6	-2.2
CTZ	Chatham Island	7.30 141	Pn	Pn	09 32 26.6	-2.2
ODZ	Otahua Downs	8.31 213	PN	Pn	09 32 36.3	-6.2
ODZ	Otahua Downs	8.31 213	Pn	Pn	09 32 36.3	-6.2

KRSC 29 09:31:30.7±1.2, 49°.38N×156°.73E, h18km±1.8km, ML3.7, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	Severo-Kuril's	1.37	343	eP	Pn	09 31 54.5	-0.3
SKR				eS	Sb	09 32 13.2	+0.4
PAU	Pauzhetka	2.09	1	eP	Pn	09 32 05.9	+1.1
PAU				eS	Sb	09 32 33.0	-0.7
ASAK	Asacha	3.10	13	eP	Pb	09 32 22.7	-2.6
RUS	Russkaya	3.26	20	eP	Pn	09 32 24.0	+3.1
RUS				eS	Sn	09 33 02.8	+3.6
UGLR	Uglovaya	4.06	18	eP	Pn	09 32 35.8	+3.9
AVH	Avacha	4.09	17	eP	Pn	09 32 37.2	+4.8
KRER	Koryakskii	4.13	17	eP	Pn	09 32 37.3	+4.3
SDLR	Sedlovina	4.13	18	eP	Pn	09 32 36.3	+3.3
GNL	Ganaly	4.39	9	eP	Pn	09 32 40.8	+4.3

NIED ***29*** *09:38:00, 37°.80N×141°.80E, h44km, Mw3.7 Best double couple: M₀4.18000×10¹⁴ NP1:φs332.00000°, δ22.00000°, λ91.00000°. NP2:φs151.00000°, δ68.00000°, λ90.00000°.*
IDC ***29*** *09:38:34.0±0.9, 37°.68N×142°.07E, h0km, mb3.5/5, mb1 3.8/8, mb1mx3.5/50, mbtmp3.5/8, ML2.7/2, Error ellipse: s-maj=27.2km s-min=21.5km az=100.0*
ISCJB ***29*** *09:38:39.7±1.0, 37°.77N±0°.04×141°.83E±0°.09, h51km±10km, mb3.5/5, Error ellipse: s-maj=12.3km s-min=6.3km az=17.9*
JMA ***29*** *09:38:40.5±0.1, 37°.78N×141°.76E, h48km±2km, M3.8*
JMA Felt I J1.
ISC 29 09:38:39.5±1.5, 37°.79N±0°.06×141°.9E±0°.1, h35km±16km, n22, σ1°.27/35, mb3.4/5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.81	325	P	Pn	09 38 54.8	+0.4
JIO				S	Sn	09 39 04.7	-0.5
JMM	Marumori	0.91	275	P	Pn	09 38 55.2	-0.6
JMM				S	Sn	09 39 05.6	-2.1
JFK	Kawauchi	0.94	244	P	Pn	09 38 55.7	-0.6
JFK				S	Sn	09 39 06.6	-2.0
JOU	Okura	1.16	300	P	Pn	09 38 59.2	0.0
JOU				S	Sn	09 39 12.8	-1.1
JMK	Ichinoseki	1.29	334	P	Pn	09 39 01.8	+0.8
JMK				S	Sn	09 39 17.3	+0.2
JFT	Otama	1.30	258	P	Pn	09 39 01.3	+0.1
JFT				S	Sn	09 39 16.2	-1.1
JYS	Shiratake	1.54	287	P	Pn	09 39 04.4	-0.1
JYS				eS	Sn	09 39 21.7	-1.6
JYK	Kaneyama	1.68	313	P	Pn	09 39 06.6	+0.2
JYK				S	Sn	09 39 26.4	-0.2
JOM	Ohasama	1.75	343	P	Pn	09 39 09.0	+1.6
JFY	Yanaizu	1.81	259	P	Pn	09 39 08.2	-0.1
JRG	Rokugo	1.90	328	P	Pn	09 39 10.7	+1.2
JRG				S	Sn	09 39 33.0	+0.8
JYA	Atsumi	1.93	295	P	Pn	09 39 09.8	0.0
JYA				S	Sn	09 39 32.4	-0.4
MJAR	Matsushiro Arr	3.23	248	Pn	Pn	09 39 28.4	+0.7
	3.8nm,0.3s,baz=55,slow=10,SNR=32						
MJAR				Sn	Sn	09 40 08.7	+3.8
	2.4nm,0.3s,baz=73,slow=18,SNR=4.6						
MAT	Matsushiro	3.23	248	P	Pn	09 39 28.7	+1.0
MAT				S	Sn	09 40 07.7	+2.7
ASAJ	Asahikawa	6.34	4	Pn	Pn	09 40 09.3	-1.2
	baz=218,slow=19						
ASAJ				Sn	Sn	09 41 20.1	-1.4
	0.4nm,0.3s,baz=259,slow=17,SNR=2.1						
USRK	Ussuriysk Ar.	9.87	314	Pn	Pn	09 40 59.5	+0.6
	0.2nm,0.3s,baz=131,slow=14,SNR=3.3						
MKAR	Makanchi Array	44.08	302	P	P	09 46 44.1	+0.1
	0.2nm,0.3s,baz=81,slow=6.4,SNR=3.4						
WRA	Warramunga Arr	57.87	188	P	P	09 48 26.4	-1.4
	0.8nm,0.5s,baz=5.7,slow=6.9,SNR=17						
ASAR	Alice Springs	61.59	188	P	P	09 48 52.5	-0.9
	0.2nm,0.8s,baz=8.6,slow=6.8,SNR=3.8						
PDAR	Pinedale Array	76.84	46	P	P	09 50 28.6	+0.6
	0.2nm,0.5s,baz=343,slow=1.5,SNR=3.7						
TXAR	Lajitas Array	89.33	53	P	P	09 51 33.0	+0.4
	0.2nm,0.5s,baz=260,slow=3.7,SNR=5.2						
LPAZ	La Paz	145.95	59	PKPbc	PKPdf	09 58 15.8	0.0
	0.8nm,0.8s,baz=31,slow=5.9,SNR=4.4						

NIED ***29*** *09:40:00, 38°.40N×141°.80E, h56km, Mw4.2 Best double couple: M₀2.24000×10¹⁵ NP1:φs16.00000°, δ46.00000°, λ71.00000°. NP2:φs223.00000°, δ47.00000°, λ109.00000°.*
MOS ***29*** *09:40:41.8±1.3, 38°.31N×141°.91E, h75km, mb4.2/21, Error ellipse: s-maj=11.7km s-min=7.1km az=90.0*
ISCJB ***29*** *09:40:41.0±0.5, 38°.34N±0°.03×141°.83E±0°.05, h61km±3km, mb4.2/38, Error ellipse: s-maj=7.5km s-min=4.1km az=20.7*
IDC ***29*** *09:40:42.1±0.7, 38°.34N×141°.82E, h57km±5km, mb3.7/19, mb1 4.0/24, mb1mx3.8/49, mbtmp4.1/24, MS3.0/5, Ms1 3.0/5, ms1mx2.7/39, Error ellipse: s-maj=15.4km s-min=11.6km az=113.0*
JMA ***29*** *09:40:42.1±0.1, 38°.37N×141°.77E, h54km±1km, M4.2*
JMA Felt II J1.
NEIC ***29*** *09:40:44.0±0.8, 38°.32N×141°.75E, h72km±7km, mb4.6/7, Error ellipse: s-maj=11.2km s-min=7.1km az=108.0*
NEIC Recorded [2 JMA] in Iwate and Miyagi.
ISC 29 09:40:41.8±0.6, 38°.32N±0°.04×141°.84E±0°.05, h54km±4km, h54km:pP-P, n107, σ1°.55/116, mb4.2/38, 4C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	0.41	289	P	Pn	09 40 52.0	-0.3
JIO				S	Sn	09 40 58.8	-1.1
OFUJ	Ofunato	0.77	350	P	Pn	09 40 56.2	-0.4
OFUJ				S	Sn	09 41 06.1	-1.4
JMK	Ichinoseki	0.79	323	P	Pn	09 40 56.6	-0.3
JMK				S	Sn	09 41 06.9	-1.1
JOU	Okura	0.92	273	P	Pn	09 40 58.3	-0.3
JOU				S	Sn	09 41 10.1	-0.9
JMM	Marumori	0.94	241	P	Pn	09 40 58.5	-0.3
JFK	Kawauchi	1.22	219	P	Pn	09 41 02.9	+0.3
JFK				S	Sn	09 41 18.1	0.0
JOM	Ohasama	1.23	340	P	Pn	09 41 02.7	0.0
JOM				S	Sn	09 41 17.6	-0.6
JYK	Kaneyama	1.30	298	P	Pn	09 41 03.3	-0.4
JYK				eS	Sn	09 41 19.1	-1.0
JYS	Shiratake	1.40	266	P	Pn	09 41 05.0	0.0
JYS				S	Sn	09 41 22.3	-0.1
JRG	Rokugo	1.43	319	P	Pn	09 41 05.1	-0.3
JFT	Otama	1.43	236	P	Pn	09 41 05.9	+0.4
JFT				S	Sn	09 41 23.1	-0.1
MJAR	Matsushiro Arr	3.39	240	P	Pn	09 41 34.1	+1.9
	10nm,0.3s,baz=40,slow=11,SNR=26						
MJAR				LR	LR	09 43 15.5	
	comp=Z,162nm,21.7s,baz=35,slow=46						
MAJO	Matsushiro	3.39	240	c P	Pn	09 41 34.3	+2.1
MAJO	Matsushiro	3.39	240	ePn	Pn	09 41 34.4	+2.2
MAT	Matsushiro	3.39	240	P	Pn	09 41 33.9	+1.7
MAT				S	Sn	09 42 15.1	+3.9
MJB9	Matsu-Tunnel	3.39	240	ePn	Pn	09 41 34.8	+2.6
ERM	Erimo	3.83	15	eP	Pn	09 41 41.0	+2.8
ERM				e		09 42 26.7	
ERM	Erimo	3.83	15	ePn	Pn	09 41 41.0	+2.8
ERM				eSn	Sn	09 42 26.7	+4.8
INU	Inuyama	4.87	234	ePn	Pn	09 41 54.5	+2.0
JHJ2	Mitsune	5.45	198	ePn	Pn	09 42 00.9	+0.5
JHJ	Hachijo jima 2	5.45	198	P	Pn	09 42 00.3	-0.2
	22nm,0.3s,baz=72,slow=20,SNR=4.6						
JHJ				S	Sn	09 42 59.0	-2.8
	16nm,0.3s,baz=108,slow=20,SNR=3.2						
ASAJ	Asahikawa	5.82	5	P	Pn	09 42 05.2	-0.3
	1.2nm,0.3s,baz=187,slow=19,SNR=7.4						
ASAJ				S	Sn	09 43 06.8	-4.0
	baz=229,slow=19						
ASAJ	Asahikawa	5.82	5	ePn	Pn	09 42 06.6	+1.1
ASAJ				eSn	Sn	09 43 13.7	+2.9
KUR	Kuril'sk	8.24	31	P	Pn	09 42 38.8	+0.1
KUR				eS	Sn	09 44 05.3	-5.0
KUR				smax	smax		
	comp=E,28nm,0.9s						
KUR				smax	smax		
	comp=N,19nm,0.6s						
YSS	Yuzh-Sakhalins	8.65	4	P	Pn	09 42 52.2	+7.9
USRK	Ussuriysk Ar.	9.46	312	P	Pn	09 42 55.8	+0.5
	comp=N,0.8nm,0.3s,baz=117,slow=14,SNR=13						
JNU	Nakatsue	10.30	243	P	Pn	09 43 09.1	+2.1
	comp=N,0.4nm,0.3s,baz=15,slow=20,SNR=3.6						
JNU				LR	LR	09 47 35.5	
	comp=N,89nm,21.4s,baz=112,slow=40						
KSRS	Korea Array	11.03	270	P	Pn	09 43 20.8	+3.9
	comp=N,0.8nm,0.3s,baz=78,slow=14,SNR=7.8						
KSRS				LR	LR	09 47 06.9	
	comp=N,75nm,18.4s,baz=89,slow=35						
KS01	Wonju Array Si	11.05	270	ePn	Pn	09 43 18.0	+0.9
MDJ	Mudanjiang	11.13	308	P	Pn	09 43 21.3	+3.2
KLR	Kul'dur	13.10	330	P	Pn	09 43 48.7	+3.7
	comp=N,0.1nm,0.3s,baz=128,slow=13,SNR=4.8						
KLR				LR	LR	09 48 36.9	
	comp=N,84nm,18.9s,baz=192,slow=36						
CN2	Changchun	13.52	299	eP	Pn	09 43 52.3	+1.6
MA2	Magadan	22.03	12	P	P	09 45 30.1	-1.3
	comp=N,5.4nm,0.6s,baz=211,slow=13,SNR=4.2						

HHC	Hu-ho-hao-te	23.41	286	eP	P	09 45 44.3	-1.8
HHC				pmax	pmax		
	comp=Z,26nm,0.8s						
HHC				pmax	pmax		
	comp=Z,120nm,4.1s						
YAK	Yakutsk	24.89	346	eP	P	09 45 59.8	+0.6
YAK				pmax	pmax		
	comp=Z,5.0nm,0.5s						
SEY	Seymchan	25.46	11	P	P	09 46 03.9	-0.5
	comp=Z,2.6nm,0.9s,baz=242,slow=2.5,SNR=6.4						
ULN	Ulaanbaatar	26.93	302	eP	P	09 46 18.9	+0.8
ULN				pmax	pmax		
	comp=Z,4.0nm,1.5s						
SONM	Songino Array	27.37	302	P	P	09 46 23.6	+1.6
	comp=Z,1.0nm,0.4s,baz=92,slow=7.2,SNR=2.9						
H11N2	WAKE ISLAND Hy	28.55	123	T	T	10 16 49.6	
	baz=316,slow=75,SNR=58						
H11N1	WAKE ISLAND Hy	28.55	123	T	T	10 16 51.2	
	baz=316,slow=75,SNR=67						
H11N3	WAKE ISLAND Hy	28.56	123	T	T	10 16 51.8	
	baz=316,slow=75,SNR=63						
H11S1	WAKE ISLAND Hy	29.30	125	T	T	10 17 49.8	
	baz=318,slow=76,SNR=54						
H11S3	WAKE ISLAND Hy	29.30	125	T	T	10 17 47.9	
	baz=318,slow=76,SNR=432						
H11S2	WAKE ISLAND Hy	29.32	125	T	T	10 17 49.1	
	baz=318,slow=76,SNR=167						
LZH	Lanzhou	30.20	278	eP	P	09 46 53.0	+5.7
LZH				pP	sP	09 47 09.8	+2.4
LZH				sP	pP	09 47 16.5	+16
LZH				pmax	pmax		
	comp=Z,18nm,1.0s						
CD2	Chengdu	32.03	268	P	P	09 47 01.8	-1.4
CD2				pmax	pmax		
	comp=Z,110nm,0.6s						
BILL	Bilibino	32.70	17	eP	P	09 47 10.6	+2.0
BILL				pmax	pmax		
	comp=Z,2.0nm,1.7s						
TIXI	Tiksi	34.06	353	eP	P	09 47 18.3	-2.1
TIXI				pmax	pmax		
	comp=Z,1.0nm,1.0s						
KMI	Kunming	35.50	260	P	P	09 47 32.8	-0.9
KMI				pmax	pmax		
	comp=Z,15nm,0.5s						
KMI				pmax	pmax		
	comp=Z,210nm,4.9s						
WMQ	Urumqi	40.57	296	eP	P	09 48 16.0	0.0
WMQ				pmax	pmax		
	comp=Z,5.0nm,1.0s						
WMQ				pmax	pmax		
	comp=Z,73nm,4.6s						
WMQ				LR	LR		
	comp=Z,16nm,21.2s						
ZAA0	Zalesovo Array	41.31	311	eP	P	09 48 21.1	-0.7
ZALV	Zalesovo Beam	41.31	311	P	P	09 48 21.4	-0.4
	comp=Z,1.9nm,0.5s,baz=77,slow=6.7,SNR=5.9						
MK01	Makanchi Array	43.73	301	eP	P	09 48 40.5	-1.1
MK31	Makanchi Array	43.73	301	eP	P	09 48 41.8	+0.2
MK31	Makanchi Array	43.73	301	eP	P	09 48 41.8	+0.2
MKAR	Makanchi Array	43.73	301	P	P	09 48 41.3	-0.3
	comp=Z,1.5nm,0.6s,baz=85,slow=9.2,SNR=12						
MKAR	Makanchi Array	43.73	301	eP	P	09 48 41.8	+0.1
KURK	Kurchatov	45.41	307	eP	P	09 48 54.3	-0.6
KURK				pmax	pmax		
	comp=Z,8.0nm,0.7s						
KURK	Kurchatov	45.41	307	eP	P	09 48 54.3	-0.6
	comp=Z,8.1nm,0.7s						
ILAR	Eielson Array	48.23	33	P	P	09 49 17.1	+0.4
	comp=Z,0.7nm,0.7s,baz=263,slow=6.5,SNR=8.7						
ILAR				pP	pP	09 49 31.5	+0.4
	comp=Z,0.8nm,0.6s,baz=263,slow=6.5,SNR=6.9						
INK	Inuvik	53.09	28	P	P	09 49 53.9	+0.7
	comp=Z,1.0nm,0.7s,baz=269,slow=11,SNR=4.3						
SVE	Sverdlovsk	54.41	318	eP	P	09 50 02.6	-0.5
SVE				pmax	pmax		
	comp=Z,8.0nm,0.7s						
ARU	Arti	55.62	318	c iP	P	09 50 11.2	-0.6
ARU				*PP	sP	09 50 30.8	-1.8
ARU						09 51 08.5	
ARU						09 52 12.4	
ARU				S	S	09 57 56.2	+2.7
ARU				SS	SS	10 01 36.6	-2.1
ARU				pmax	pmax		
	comp=Z,8.0nm,1.7s						
ARU	Arti	55.62	318	eP	P	09 50 11.4	-0.4
	comp=Z,7.2nm,0.8s						
ABKAR	Akbulak array	57.37	310	eP	P	09 50 23.7	-0.6
WRAB	Tennant Creek	58.37	188	ceP	P	09 50 30.5	-1.1
WRAB				pmax	pmax		
	comp=Z,15nm,1.2s						
WRAB	Tennant Creek	58.37	188	eP	P	09 50 31.2	-0.4
	comp=Z,5.5nm,0.8s						
WB2	Warramunga Arr	58.38	188	eP	P	09 50 31.5	-0.2
	comp=Z,5.0nm,0.7s						
WRA	Warramunga Arr	58.38	188	P	P	09 50 31.1	-0.5
	comp=Z,5.3nm,0.7s,baz=5.8,slow=7.1,SNR=36						
WRA	Warramunga Arr	58.38	188	ceP	P	09 50 31.3	-0.3
WRA				pmax	pmax		
	comp=Z,5.0nm,0.7s						
AS01	Alice Springs	62.10	188	eP	P	09 50 57.5	+0.4
AS31	Alice Springs	62.11	188	eP	P	09 50 57.8	+0.7
	comp=Z,1.0nm,0.6s						
ASAR	Alice Springs	62.11	188	P	P	09 50 57.2	+0.1
	comp=Z,3.2nm,0.8s,

LPAZ	**La Paz**	**145.74**	**58**	PKPbc	**PKPdf**	**10 00 15.4**	**0.0**
	comp=Z,2.5nm,0.8s,baz=334,slow=2.0,SNR=11						
LPAZ	**La Paz**	**145.74**	**58**	*e*PKPdf	**PKPdf**	**10 00 16.5**	**+1.1**
PMSA	**Palmer Station**	**149.45**	**158**	*e*PKPbc	**PKPbc**	**10 00 23.5**	**-0.3**

*ISK **29** 09:43:36.4, 39.°07N×29.°07E, h9km, ML2.3*
*ISCJB **29** 09:43:37.2±0.5, 39.°10N±0.°03×29.°02E±0.°04, h7km±6km, Error ellipse: s-maj=5.8km s-min=4.0km az=39.5*
*CSEM **29** 09:43:37.3±0.1, 39.°09N×29.°02E, h10km, ML2.7, Error ellipse: s-maj=3.7km s-min=2.4km az=109.0*
*DDA **29** 09:43:37.3, 39.°14N×29.°02E, h7km, Ml2.7*
ISC 29 09:43:36.7±1.1, 39.°07N±0.°03×29.°02E±0.°03, h14km±10km, n30, σ0°38/44, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**263**	P	**Pb**	**09 43 43.2**	**+0.3**
DEMI				S	**Sb**	**09 43 46.7**	**-0.4**
DEMI	**Demirci**	**0.24**	**263**	*i* P	**Pb**	**09 43 43.2**	**+0.3**
DEMI				*i* S	**Sb**	**09 43 46.7**	**-0.4**
GDZ	**Gediz**	**0.36**	**87**	P	**Pb**	**09 43 45.0**	**0.0**
GDZ				S	**Sb**	**09 43 50.1**	**-0.4**
GDZ	**Gediz**	**0.36**	**87**	*i* P	**Pb**	**09 43 45.0**	**0.0**
GDZ				*i* S	**Sb**	**09 43 50.1**	**-0.4**
TVSB	**Tavsanli**	**0.51**	**42**	*e*PG	**Pg**	**09 43 47.1**	**+0.3**
TVSB				*e*SG	**Sg**	**09 43 53.3**	**-0.3**
TVSB	**Tavsanli**	**0.51**	**42**	*e*Pg	**Pg**	**09 43 47.1**	**+0.3**
TVSB				*e*Sg	**Sg**	**09 43 53.3**	**-0.3**
KULA	**Kula-Manisa**	**0.62**	**207**	*e*PG	**Pg**	**09 43 49.1**	**+0.1**
KULA				*e*SG	**Sb**	**09 43 58.5**	**+0.4**
KULA	**Kula-Manisa**	**0.62**	**207**	*e*Pg	**Pg**	**09 43 49.1**	**+0.1**
KULA				*e*Sg	**Sb**	**09 43 58.6**	**+0.4**
MANT	**Manisa**	**0.69**	**212**	P	**Pn**	**09 43 51.7**	**-0.5**
MANT				S	**Sb**	**09 44 00.9**	**+0.9**
MANT	**Manisa**	**0.69**	**212**	*i* P	**Pn**	**09 43 51.7**	**-0.5**
MANT				*i* S	**Sb**	**09 44 00.9**	**+0.9**
KHAL	**Karahalli**	**0.79**	**152**	P	**Pn**	**09 43 53.8**	**+0.2**
KHAL				S	**Sn**	**09 44 05.1**	**-0.2**
KHAL	**Karahalli**	**0.79**	**152**	*i* P	**Pn**	**09 43 53.8**	**+0.2**
KHAL				*i* S	**Sn**	**09 44 05.0**	**-0.2**
KHL	**Karahalli**	**0.84**	**152**	*e*PG	**Pg**	**09 43 52.7**	**-0.4**
KHL	**Karahalli**	**0.84**	**152**	*e*Pg	**Pg**	**09 43 52.7**	**-0.4**
ORLT	**Orhaneli**	**0.98**	**354**	*e*PG	**Pg**	**09 43 55.6**	**0.0**
ORLT	**Orhaneli**	**0.98**	**354**	*e*Pg	**Pg**	**09 43 55.7**	**0.0**
CAVI	**Cavuskoy**	**1.29**	**29**	*e*PN	**Pb**	**09 44 00.9**	**0.0**
CAVI	**Cavuskoy**	**1.29**	**29**	*e*Pn	**Pb**	**09 44 00.9**	**0.0**
KCTX	**Karacabey (Bur**	**1.30**	**337**	*e*PN	**Pg**	**09 44 01.5**	**-0.2**
KCTX	**Karacabey (Bur**	**1.30**	**337**	*e*PN	**Pg**	**09 44 01.5**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.30**	**355**	*e*PN	**Pg**	**09 44 01.4**	**-0.4**
MDNY	**Mudanya-Bursa**	**1.30**	**355**	*e*Pn	**Pg**	**09 44 01.4**	**-0.4**
IZI	**Iznik**	**1.31**	**15**	*e*PN	**Pb**	**09 44 01.3**	**+0.1**
IZI	**Iznik**	**1.31**	**15**	*e*Pn	**Pb**	**09 44 01.3**	**+0.1**
BORA	**Eskisehir**	**1.37**	**53**	P	**Pb**	**09 44 02.4**	**+0.2**
BORA				S	**Sg**	**09 44 21.1**	**+0.1**
BORA	**Eskisehir**	**1.37**	**53**	*i* P	**Pb**	**09 44 02.4**	**+0.2**
BORA				*i* S	**Sg**	**09 44 21.1**	**+0.1**
ARMT	**Armutlu**	**1.50**	**355**	*e*PN	**Pb**	**09 44 04.2**	**-0.1**
ARMT	**Armutlu**	**1.50**	**355**	*e*Pn	**Pb**	**09 44 04.2**	**-0.1**
GULT	**Gulveren**	**1.78**	**40**	*e*PN	**Pn**	**09 44 07.8**	**+0.6**
GULT	**Gulveren**	**1.78**	**40**	*e*Pn	**Pn**	**09 44 07.8**	**+0.6**

*NEIC **29** 09:44:46.6, 18.°48N×101.°48W, h64km, MD4.2(MEX), After MEX.*
MEX 29 09:44:46.6±0.5, 18.°48N×101.°48W, h64km±10km, MD4.2, Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZIIG	**Zihuatanejo**	**0.87**	**179**	*i* P	Pn	09 45 01.3	-1.9
ZIIG				*e*S	Sn	09 45 13.9	-1.5
ZIIG	**Zihuatanejo**	**0.87**	**179**	*i* P	Pn	09 45 01.3	-1.9
ZIIG				*e*S	Sn	09 45 13.9	-1.5
ARIG	**Puente Sto Nin**	**1.09**	**100**	*i* P	Pn	09 45 04.8	-1.2
ARIG				*e*S	Sn	09 45 17.9	-2.5
URUA	**Uruapan**	**1.10**	**329**	*e*P	Pn	09 45 05.0	-1.3
URUA				*e*S	Sn	09 45 19.4	-1.5
MOIG	**Morelia**	**1.22**	**13**	*e*P	Pn	09 45 06.5	-1.5
MOIG				*i* S	Sn	09 45 21.6	-2.4
MOIG	**Morelia**	**1.22**	**13**	*e*P	Pn	09 45 06.5	-1.5
MOIG				*i* S	Sn	09 45 21.6	-2.4
MMIG	**Aquila**	**1.79**	**264**	*e*P	Pn	09 45 14.1	-1.2
MMIG	**Aquila**	**1.79**	**264**	*e*P	Pn	09 45 14.1	-1.2
CAIG	**El Cayaco**	**1.83**	**141**	*e*P	Pn	09 45 14.5	-1.3
CAIG				*e*S	Sn	09 45 36.4	-1.6
CAIG	**El Cayaco**	**1.83**	**141**	*e*P	Pn	09 45 14.5	-1.3
CAIG				*e*S	Sn	09 45 36.4	-1.6
MEIG	**Mezcala**	**1.85**	**107**	*e*P	Pn	09 45 15.5	-0.7
MEIG	**Mezcala**	**1.85**	**107**	*e*P	Pn	09 45 15.5	-0.7
PLIG	**Platanillo**	**1.88**	**92**	*e*P	Pn	09 45 15.4	-1.2
PLIG				*i* S	Sn	09 45 37.3	-2.0
PLIG	**Platanillo**	**1.88**	**92**	*e*P	Pn	09 45 15.4	-1.2
PLIG				*i* S	Sn	09 45 37.3	-2.0
MAVM	**Malinalco, Edo**	**1.94**	**75**	*i* P	Pn	09 45 16.1	-1.4
MAVM				*i* S	Sn	09 45 39.8	-1.1
YAIG	**Yautepec**	**2.31**	**80**	*e*P	Pn	09 45 21.8	-0.8
YAIG				*e*S	Sn	09 45 48.8	-1.2
YAIG	**Yautepec**	**2.31**	**80**	*e*P	Pn	09 45 21.8	-0.8
YAIG				*e*S	Sn	09 45 48.8	-1.2
PNIG	**Pinotepa**	**3.81**	**122**	*e*P	Pn	09 45 42.4	-0.4
PNIG				*i* S	Sn	09 46 25.2	-1.3
PNIG	**Pinotepa**	**3.81**	**122**	*e*P	Pn	09 45 42.4	-0.4
PNIG				*i* S	Sn	09 46 25.2	-1.3

*NIED **29** 09:49:00, 36.°40N×141.°00E, h47km, Mw4.1 Best double couple: M0 1.39000×10^15 NP1:φs=326.00000°, δ49.00000°, λ2.00000°. NP2:φs=235.00000°, δ89.00000°, λ139.00000°.*
*ISCJB **29** 09:49:16.7±0.7, 36.°36N±0.°03×141.°13E±0.°06, h46km±6km, mb3.7/12, Error ellipse: s-maj=8.7km s-min=5.4km az=15.6*
*JMA **29** 09:49:18.3±0.1, 36.°42N×141.°01E, h50km±1km, M4.1*
JMA Felt II J1.
*IDC **29** 09:49:21.5±2.3, 36.°34N×140.°85E, h75km±22km, mb3.5/12, mb1 3.7/15, mb1mx3.5/47, mbtmp3.9/15, MS2.6/2, Ms1 2.6/2, ms1mx2.3/32, Error ellipse: s-maj=22.4km s-min=14.9km az=82.0*
ISC 29 09:49:17.1±1.2, 36.°35N±0.°04×141.°20E±0.°05, h35km±3km, n34, σ1°79/42, mb3.8/12, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.57**	**298**	P	**Pb**	**09 49 28.4**	**-0.6**
JHO				S	**Sb**	**09 49 35.5**	**-1.7**
ONAJ	**Iwakimizuishiy**	**0.82**	**337**	P	**Pn**	**09 49 31.8**	**-0.5**
ONAJ				S	**Sn**	**09 49 41.2**	**-2.0**
JYT	**Yasato**	**0.82**	**262**	P	**Pn**	**09 49 31.9**	**-0.3**
JYT				S	**Sn**	**09 49 41.5**	**-1.7**
JFK	**Kawauchi**	**1.05**	**346**	P	**Pn**	**09 49 35.0**	**-0.5**
JFK				S	**Sn**	**09 49 47.1**	**-1.8**
JFT	**Otama**	**1.36**	**330**	P	**Pn**	**09 49 40.3**	**+0.6**
JFT				S	**Sn**	**09 49 55.9**	**-0.6**
JAG	**Ashikaga**	**1.41**	**274**	P	**Pn**	**09 49 39.9**	**-0.5**
JAG				S	**Sn**	**09 49 56.1**	**-1.7**
JMM	**Marumori**	**1.55**	**348**	P	**Pn**	**09 49 42.4**	**+0.1**
JMM				S	**Sn**	**09 50 00.4**	**-0.8**
JFY	**Yanaizu**	**1.60**	**312**	P	**Pn**	**09 49 42.9**	**-0.1**
JFY				*e*S	**Sn**	**09 50 01.4**	**-1.0**
JKT	**Katashina**	**1.63**	**286**	P	**Pn**	**09 49 43.4**	**0.0**
JKT				S	**Sn**	**09 50 02.0**	**-1.2**
MJAR	**Matsushiro Arr**	**2.42**	**275**	P	**Pn**	**09 49 54.2**	**0.0**
	36nm,0.3s,baz=95,slow=9.3,SNR=228						
MJAR				S	**Sn**	**09 50 19.2**	**-3.4**
	21nm,0.3s,baz=79,slow=25,SNR=7.5						
MAT	**Matsushiro**	**2.42**	**276**	P	**Pn**	**09 49 54.7**	**+0.4**
MAT				S	**Sn**	**09 50 24.2**	**+1.5**
JHJ	**Hachijo jima 2**	**3.42**	**200**	P	**Pn**	**09 50 10.2**	**+2.1**
	62nm,0.3s,baz=76,slow=15,SNR=7.3						
JHJ				S	**Sn**	**09 50 47.7**	**+0.3**
	62nm,0.3s,baz=66,slow=23,SNR=6.1						
ASAJ	**Asahikawa**	**7.83**	**7**	P	**Pn**	**09 51 06.8**	**-1.7**
	1.3nm,0.3s,baz=210,slow=13,SNR=7.6						
ASAJ				S	**Sn**	**09 52 34.5**	**-1.4**
	baz=105,slow=20						
JCJ	**Chichijima**	**9.26**	**175**	P	**Pn**	**09 51 28.6**	**+0.4**
	26nm,0.3s,baz=287,slow=16,SNR=7.9						
JCJ				S	**Sn**	**09 53 05.7**	**-5.5**
	14nm,0.3s,baz=253,slow=20,SNR=4.1						
USRK	**Ussuriysk Ar.**	**10.53**	**321**	P	**Pn**	**09 51 48.7**	**+3.1**
	0.4nm,0.3s,baz=139,slow=13,SNR=6.5						
USRK				LR	LR	09 55 21.5	
	comp=Z,57nm,22.0s,baz=128,slow=35						
KSRS	**Korea Array**	**10.69**	**280**	P	**Pn**	**09 51 51.6**	**+3.9**
	0.4nm,0.3s,baz=98,slow=14,SNR=17						
KSRS				LR	LR	09 55 52.5	
	comp=Z,23nm,21.1s,baz=80,slow=38						
SEY	**Seymchan**	**27.50**	**11**	P	**P**	**09 55 02.4**	**+2.5**
	0.5nm,0.5s,baz=197,slow=14,SNR=3.5						
H11N2	**WAKE ISLAND Hy**	**27.95**	**119**	T	T	10 24 33.3	
	baz=312,slow=75,SNR=43						
H11N1	**WAKE ISLAND Hy**	**27.96**	**119**	T	T	10 24 28.0	
	baz=312,slow=75,SNR=39						
H11N3	**WAKE ISLAND Hy**	**27.97**	**119**	T	T	10 24 33.3	
	baz=312,slow=75,SNR=41						
SONM	**Songino Array**	**28.03**	**305**	P	**P**	**09 55 03.7**	**-1.4**
	2.5nm,0.8s,baz=97,slow=12,SNR=3.3						
H11S1	**WAKE ISLAND Hy**	**28.64**	**122**	T	T	10 25 21.3	
	baz=314,slow=75,SNR=124						
H11S3	**WAKE ISLAND Hy**	**28.64**	**122**	T	T	10 25 21.0	
	baz=314,slow=75,SNR=73						
H11S2	**WAKE ISLAND Hy**	**28.65**	**122**	T	T	10 25 14.6	
	baz=314,slow=75,SNR=69						
ZALV	**Zalesovo Beam**	**42.25**	**313**	P	**P**	**09 57 05.5**	**-1.4**
	3.2nm,0.5s,baz=94,slow=7.6,SNR=9.9						
MKAR	**Makanchi Array**	**44.34**	**303**	P	**P**	**09 57 22.7**	**-1.2**
	1.4nm,0.7s,baz=79,slow=10,SNR=9.9						
ILAR	**Eielson Array**	**50.16**	**32**	P	**P**	**09 58 09.5**	**+0.6**
	0.4nm,0.6s,baz=272,slow=5.5,SNR=6.2						
WRA	**Warramunga Arr**	**56.36**	**188**	P	**P**	**09 58 54.5**	**-0.4**
	1.7nm,0.5s,baz=7.8,slow=7.7,SNR=4.8						
ASAR	**Alice Springs**	**60.09**	**188**	P	**P**	**09 59 21.2**	**+0.4**
	0.8nm,0.7s,baz=14,slow=6.7,SNR=7.3						
YKA	**Yellowknife Ar**	**64.49**	**30**	P	**P**	**09 59 50.7**	**+0.8**
	0.2nm,0.7s,baz=306,slow=6.2,SNR=4.8						
STKA	**Stephens Creek**	**67.87**	**180**	P	**P**	**10 00 12.2**	**+0.4**
	0.8nm,0.6s,baz=321,slow=8.2,SNR=2.9						
AKASG	**Malin Array Be**	**74.73**	**322**	P	**P**	**10 00 50.5**	**-2.7**
	0.3nm,0.3s,baz=49,slow=5.8,SNR=2.9						
PDAR	**Pinedale Array**	**78.27**	**45**	P	**P**	**10 01 14.6**	**+0.8**
	0.2nm,0.6s,baz=37,slow=0.7,SNR=3.6						
TXAR	**Lajitas Array**	**90.67**	**52**	P	**P**	**10 02 17.3**	**+0.7**
	0.2nm,0.8s,baz=333,slow=3.4,SNR=2.3						

*IDC **29** 09:51:20.9±2.0, 18.°64S×179.°02W, h527km±23km, mb3.2/8, mb1 3.5/11, mb1mx3.2/39, mbtmp4.1/11, Error ellipse: s-maj=22.3km s-min=13.6km az=145.0*
*ISCJB **29** 09:51:21.2±0.6, 18.°75±0.°2×179.°0W±0.°1, h548km, mb3.6/8, Error ellipse: s-maj=25.2km s-min=11.9km az=145.3*
ISC 29 09:51:22.1±0.7, 18.°65±0.°2×179.°1W±0.°1, h548km, n13, σ1°38/16, mb3.6/8, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**8.43**	**57**	P	**P**	**09 53 22.7**	**-1.6**
	1.7nm,0.3s,baz=187,slow=16,SNR=3.0						
AFI				S	S	09 54 53.3	-11
	1.1nm,0.3s,baz=216,slow=19,SNR=2.4						
DZM	**Mont Dzumac**	**14.00**	**253**	P	**P**	**09 54 21.6**	**+0.1**
	0.4nm,0.3s,baz=90,slow=20,SNR=3.8						
URZ	**Urewera**	**19.86**	**189**	P	**P**	**09 55 14.5**	**-2.4**
	1.7nm,0.3s,baz=69,slow=11,SNR=8.9						
STKA	**Stephens Creek**	**37.73**	**242**	P	**P**	**09 57 52.8**	**+1.1**
	2.2nm,0.5s,baz=88,slow=9.9,SNR=13						
WRA	**Warramunga Arr**	**43.88**	**260**	P	**P**	**09 58 40.4**	**-0.3**
	1.1nm,0.5s,baz=98,slow=6.8,SNR=46						
WRA				PcP	**PcP**	**10 00 15.5**	**+0.8**
	0.3nm,0.4s,baz=91,slow=3.2,SNR=2.8						
ASAR	**Alice Springs**	**43.99**	**255**	P	**P**	**09 58 42.2**	**+0.7**
	11nm,0.5s,baz=90,slow=8.6,SNR=335						
ASAR				PcP	**PcP**	**10 00 15.6**	**+0.5**
	0.7nm,0.5s,baz=107,slow=3.8,SNR=5.5						
ASAR				S	**S**	**10 04 31.6**	**-2.5**
	0.7nm,1.0s,baz=93,slow=15,SNR=4.7						
VNDA	**Vanda**	**59.70**	**185**	P	**P**	**10 00 34.6**	**+1.2**
	0.7nm,0.5s,baz=358,slow=6.9,SNR=9.2						
NVAR	**Mina Array Bea**	**80.37**	**44**	P	**P**	**10 02 37.9**	**+0.8**
	0.8nm,0.7s,baz=231,slow=8.2,SNR=4.3						
ILAR	**Eielson Array**	**86.71**	**13**	P	**P**	**10 03 06.5**	**-1.1**
	0.4nm,0.7s,baz=230,slow=5.9,SNR=5.1						
TXAR	**Lajitas Array**	**86.91**	**58**	P	**P**	**10 03 10.9**	**+1.4**
	1.2nm,0.8s,baz=221,slow=6.6,SNR=14						
PDAR	**Pinedale Array**	**88.30**	**44**	P	**P**	**10 03 16.1**	**+0.3**
	0.4nm,0.5s,baz=226,slow=4.0,SNR=4.7						
FINES	**FINESS Array B**	**133.68**	**344**	SKPbc	**SKPbc**	**10 12 15.2**	**+1.3**
	1.8nm,1.0s,baz=90,slow=2.8,SNR=5.2						
BRTR	**Keskin Array B**	**144.81**	**314**	PKP	**PKPdf**	**10 09 56.4**	**-0.9**
	0.4nm,0.6s,baz=328,slow=4.5,SNR=3.6						

*ISCJB **29** 10:12:17.7±1.1, 36.°46N±0.°08×70.°9E±0.°1, h188km, mb3.0/2, Error ellipse: s-maj=14.5km s-min=10.6km az=171.9*
*IDC **29** 10:12:20.0±10.0, 36.°48N×70.°81E, h212km±59km, mb2.9/2, mb1 3.1/6, mb1mx2.7/45, mbtmp3.6/6, Error ellipse: s-maj=207.5km s-min=44.2km az=87.0*
*NNC **29** 10:12:25.1±3.6, 37.°04N×71.°17E, h0km, mb4.0, mpv3.6, Error ellipse: s-maj=28.5km s-min=13.8km az=169.0*
ISC 29 10:12:18.7±1.5, 36.°5N±0.°1×70.°9E±0.°1, h188km, n10, σ1°94/15, 2C-2D, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**2.81**	**325**	⇑Pn	**Pn**	**10 13 07.8**	**+2.2**
	25nm,0.4s						
DZET				⇓Sn	**Sn**	**10 13 41.3**	**-0.8**
	159nm,0.6s						
MNAS	**Manas**	**6.10**	**11**	⇓Pn	**Pn**	**10 13 49.3**	**+2.2**
	2.0nm,0.7s						
MNAS				⇑Sn	**Sn**	**10 14 55.6**	**-1.4**
	74nm,1.0s						
KK31	**Karatay Array**	**6.59**	**358**	Pn	**Pn**	**10 13 54.8**	**+1.4**
	3.4nm,0.5s,baz=185,slow=12,SNR=60						
KK31				Sn	**Sn**	**10 15 04.9**	**-3.4**
	11nm,0.5s,baz=184,slow=20,SNR=21						
AAK	**Ala-Archa**	**6.72**	**23**	P	**Pn**	**10 13 57.9**	**+2.5**
	1.2nm,0.3s,baz=194,slow=6.0,SNR=12						
AAK				S	**Sn**	**10 15 11.5**	**-0.2**
	0.5nm,0.3s,baz=353,slow=19,SNR=3.5						
AAK	**Ala-Archa**	**6.72**	**23**	Pn	**Pn**	**10 13 57.8**	**+2.5**
	4.1nm,0.7s						
AAK				Sn	**Sn**	**10 15 11.1**	**-0.6**
	15nm,0.7s						
MKAR	**Makanchi Array**	**13.34**	**36**	P	**Pn**	**10 15 21.6**	**+0.9**
	0.3nm,0.3s,baz=216,slow=13,SNR=10						
KURBB	**Kurchatov Arra**	**15.14**	**19**	P	**P**	**10 15 42.5**	**-1.2**
	0.1nm,0.3s,baz=206,slow=11,SNR=5.2						
ZALV	**Zalesovo Beam**	**19.95**	**25**	P	**P**	**10 16 36.6**	**+0.5**
	baz=221,slow=12,SNR=6.3						
WRA	**Warramunga Arr**	**82.08**	**122**	P	**P**	**10 24 17.0**	**-1.3**
	0.5nm,1.0s,baz=320,slow=5.2,SNR=3.5						
ASAR	**Alice Springs**	**84.34**	**125**	P	**P**	**10 24 28.6**	**-1.2**
	0.3nm,1.0s,baz=303,slow=5.2,SNR=3.0						

*ISCJB **29** 10:31:42.4±0.6, 39.°10N±0.°03×29.°02E±0.°03, h4km±7km, Error ellipse: s-maj=6.0km s-min=4.1km az=158.0*
*CSEM **29** 10:31:42.6±0.1, 39.°10N×29.°00E, h8km, ML2.7, Error ellipse: s-maj=3.4km s-min=2.6km az=116.0*
*ISK **29** 10:31:42.4, 39.°07N×28.°90E, h16km, ML2.2*
*DDA **29** 10:31:42.0, 39.°14N×29.°02E, h7km, Ml2.7*
ISC 29 10:31:42.1±0.9, 39.°09N±0.°02×29.°01E±0.°02, h14km±8km, n32, σ0°37/46, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.23**	**258**	P	**Pg**	**10 31 47.4**	**+0.3**
DEMI				S	**Sb**	**10 31 51.4**	**-0.8**
DEMI	**Demirci**	**0.23**	**258**	*i* P	**Pg**	**10 31 47.4**	**+0.3**
DEMI				*i* S	**Sb**	**10 31 51.4**	**-0.8**
GDZ	**Gediz**	**0.37**	**90**	P	**Pg**	**10 31 49.4**	**-0.2**
GDZ				S	**Sg**	**10 31 54.5**	**-0.2**
GDZ	**Gediz**	**0.37**	**90**	*i* P	**Pg**	**10 31 49.4**	**-0.2**
GDZ				*i* S	**Sg**	**10 31 54.5**	**-0.2**
KULA	**Kula-Manisa**	**0.64**	**205**	*e*PG	**Pg**	**10 31 54.5**	**0.0**
KULA				*e*SG	**Sg**	**10 32 03.0**	**+0.1**
KULA	**Kula-Manisa**	**0.64**	**205**	*e*Pg	**Pg**	**10 31 54.5**	**0.0**
KULA				*e*Sg	**Sg**	**10 32 03.0**	**+0.1**
MANT	**Manisa**	**0.69**	**211**	P	**Pb**	**10 31 56.2**	**+0.1**
MANT				S	**Sb**	**10 32 05.5**	**-0.2**
MANT	**Manisa**	**0.69**	**211**	*i* P	**Pb**	**10 31 56.2**	**+0.1**
MANT				*i* S	**Sb**	**10 32 05.5**	**-0.2**
KHAL	**Karahalli**	**0.81**	**152**	P	**Pn**	**10 31 59.5**	**+0.2**
KHAL				S	**Sb**	**10 32 09.6**	**+0.6**
KHAL	**Karahalli**	**0.81**	**152**	*i* P	**Pn**	**10 31 59.5**	**+0.2**
KHAL				*i* S	**Sb**	**10 32 09.6**	**+0.6**
KHL	**Karahalli**	**0.87**	**152**	*e*PG	**Pn**	**10 32 00.1**	**+0.1**
KHL	**Karahalli**	**0.87**	**152**	*e*Pg	**Pn**	**10 32 00.1**	**+0.1**
AKHS	**Akhisar**	**0.95**	**258**	P	**Pn**	**10 32 00.8**	**-0.4**
AKHS				S	**Sn**	**10 32 14.8**	**+0.2**
AKHS	**Akhisar**	**0.95**	**258**	*i* P	**Pn**	**10 32 00.8**	**-0.4**
AKHS				*i* S	**Sn**	**10 32 14.8**	**+0.2**
ORLT	**Orhaneli**	**0.96**	**355**	*e*PG	**Pn**	**10 32 01.8**	**+0.6**
ORLT	**Orhaneli**	**0.96**	**355**	*e*Pg	**Pn**	**10 32 01.8**	**+0.6**
KCTX	**Karacabey (Bur**	**1.28**	**337**	*e*PN	**Pb**	**10 32 06.0**	**0.0**
KCTX	**Karacabey (Bur**	**1.28**	**337**	*e*PN	**Pb**	**10 32 06.0**	**0.0**
MDNY	**Mudanya-Bursa**	**1.28**	**356**	*e*PN	**Pg**	**10 32 06.5**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.28**	**356**	*e*Pn	**Pg**	**10 32 06.5**	**-0.3**
CAVI	**Cavuskoy**	**1.28**	**30**	*e*PN	**Pg**	**10 32 07.1**	**+0.3**
CAVI	**Cavuskoy**	**1.28**	**30**	*e*Pn	**Pg**	**10 32 07.1**	**+0.3**
IZI	**Iznik**	**1.30**	**16**	*e*PN	**Pg**	**10 32 07.1**	**0.0**
IZI	**Iznik**	**1.30**	**16**	*e*Pn	**Pg**	**10 32 07.1**	**0.0**
BORA	**Eskisehir**	**1.37**	**54**	P	**Pn**	**10 32 07.2**	**+0.3**
BORA				S	**Sg**	**10 32 26.6**	**+0.3**
BORA	**Eskisehir**	**1.37**	**54**	*i* P	**Pn**	**10 32 07.2**	**+0.3**
BORA				*i* S	**Sg**	**10 32 26.6**	**+0.3**
ARMT	**Armutlu**	**1.48**	**356**	*e*PN	**Pb**	**10 32 09.3**	**-0.1**
ARMT	**Armutlu**	**1.48**	**356**	*e*Pn	**Pb**	**10 32 09.3**	**-0.1**
GULT	**Gulveren**	**1.77**	**40**	*e*PN	**Pb**	**10 32 14.2**	**-0.3**
GULT	**Gulveren**	**1.77**	**40**	*e*Pn	**Pb**	**10 32 14.2**	**-0.3**
SVRH	**Sivrihisar-ESK**	**1.98**	**79**	*e*PN	**Pb**	**10 32 17.3**	**-0.8**
SVRH	**Sivrihisar-ESK**	**1.98**	**79**	*e*Pn	**Pb**	**10 32 17.3**	**-0.8**

*SOF **29** 10:36:11.9, 40.°25N×22.°22E, h9km, MD2.8*
*ATH **29** 10:36:13.2, 40.°38N×22.°24E, h22km±2km, ML2.6/5, Error ellipse: s-maj=2.4km s-min=0.8km az=230.0*
*CSEM **29** 10:36:13.9±0.1, 40.°39N×22.°28E, h2km, ML2.7, Error ellipse: s-maj=2.8km s-min=2.5km az=159.0*
*ISCJB **29** 10:36:13.6±0.3, 40.°40N±0.°02×22.°28E±0.°02, h1km±3km, Error ellipse: s-maj=2.9km s-min=2.2km az=149.5*
*THE **29** 10:36:14.2, 40.°38N×22.°30E, h0km±2km, ML2.7/27, Error ellipse: s-maj=2.3km s-min=0.8km az=352.0*
*SKO **29** 10:36:14.2, 40.°36N×22.°26E, h12km*
ISC 29 10:36:13.9±0.9, 40.°39N±0.°01×22.°26E±0.°01, h9km±8km, n93, σ0°68/160, Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LIT	**Litokhoron**	**0.34**	**149**	P	**Pg**	**10 36 20.3**	**-0.3**
LIT				S	**Sg**	**10 36 25.8**	**+0.8**
LIT	**Litokhoron**	**0.34**	**149**	P	**Pg**	**10 36 20.3**	**-0.3**
LIT				S	**Sg**	**10 36 25.8**	**+0.8**
LIT	**Litokhoron**	**0.34**	**149**	P	**Pg**	**10 36 20.2**	**-0.3**
LIT				S	**Sb**	**10 36 26.5**	**-1.0**
LIT				AML	AML	10 36 29.4	
	comp=N,2229μm,0.2s						
LIT				AML	AML	10 36 29.4	
	comp=E,2464μm,0.2s						
KZN	**Kozani**	**0.39**	**258**	P	**Pg**	**10 36 20.8**	**-0.7**
KZN				S	**Sg**	**10 36 26.6**	**0.0**
KZN	**Kozani**	**0.39**	**258**	P	**Pg**	**10 36 20.6**	**-0.9**
KZN				S	**Sg**	**10 36 26.8**	**+0.2**
GRG	**Griva**	**0.58**	**10**	P	**Pg**	**10 36 24.9**	**-0.3**
GRG				S	**Sg**	**10 36 33.8**	**+1.0**
GRG	**Griva**	**0.58**	**10**	P	**Pg**	**10 36 24.9**	**-0.3**
GRG				S	**Sg**	**10 36 32.8**	**0.0**
GRG	**Griva**	**0.58**	**10**	P	**Pg**	**10 36 24.4**	**-0.7**
GRG				S	**Sg**	**10 36 32.8**	**0.0**
GRG				AML	AML	10 36 34.8	
	comp=N,1118μm,0.4s						
GRG				AML	AML	10 36 36.0	
	comp=E,993μm,0.3s						
THE	**Thessaloniki**	**0.

OUR	**Ouranopolis**	**1.31**	**92**	P	**Pb**	**10 36 38.7**	**-0.1**
OUR				S	**Sb**	**10 36 55.6**	**-0.1**
OUR	**Ouranopolis**	**1.31**	**92**	P	**Pg**	**10 36 39.0**	**-0.2**
OUR				S	**Sb**	**10 36 55.6**	**-0.1**
OUR				AML	AML	10 36 58.5	
	comp=N,509μm,0.4s						
OUR				AML	AML	10 36 59.0	
	comp=E,239μm,0.3s						
OHR	**Ohrid**	**1.33**	**304**	*e*Pg	**Pn**	**10 36 38.5**	**-0.2**
OHR	**Ohrid**	**1.33**	**304**	*e*Pg	**Pn**	**10 36 38.4**	**-0.3**
AGG	**Agios Georgios**	**1.36**	**178**	P	**Pb**	**10 36 39.4**	**-0.2**
AGG				S	**Sg**	**10 36 59.3**	**+1.5**
AGG	**Agios Georgios**	**1.36**	**178**	P	**Pb**	**10 36 39.4**	**-0.2**
AGG				S	**Sg**	**10 36 59.3**	**+1.5**
EVR	**Evrytania**	**1.51**	**194**	P	**Pn**	**10 36 41.4**	**+0.2**
EVR				S	**Sg**	**10 37 02.0**	**-0.5**
EVR	**Evrytania**	**1.51**	**194**	P	**Pn**	**10 36 41.4**	**+0.2**
EVR				S	**Sg**	**10 37 02.0**	**-0.5**
EVR	**Evrytania**	**1.51**	**194**	P	**Pb**	**10 36 41.6**	**-0.6**
DSL	**Palaion Diasel**	**1.54**	**216**	P	**Pg**	**10 36 43.2**	**-0.3**
DSL				S	**Sg**	**10 37 04.9**	**+1.4**
DSL	**Palaion Diasel**	**1.54**	**216**	P	**Pg**	**10 36 43.2**	**-0.3**
DSL				S	**Sg**	**10 37 04.9**	**+1.4**
NVR	**Nevrokopi**	**1.55**	**51**	P	**Pn**	**10 36 41.7**	**0.0**
NVR				S	**Sg**	**10 37 03.7**	**0.0**
NVR	**Nevrokopi**	**1.55**	**51**	P	**Pn**	**10 36 41.4**	**-0.3**
NVR				S	**Sg**	**10 37 03.7**	**0.0**
KKB	**Krupnik**	**1.60**	**22**	P	**Pn**	**10 36 42.9**	**+0.5**
MMB	**Musomiste**	**1.63**	**42**	P	**Pn**	**10 36 42.1**	**-0.8**
SMIA	**Simia**	**1.67**	**154**	P	**Pn**	**10 36 43.4**	**0.0**
SMIA				S	**Sg**	**10 37 07.9**	**+0.1**
SMIA	**Simia**	**1.67**	**154**	P	**Pn**	**10 36 43.4**	**0.0**
SMIA				S	**Sg**	**10 37 07.9**	**+0.1**
SKO	**Skopje**	**1.70**	**339**	*e*Pn	**Pn**	**10 36 44.0**	**+0.2**
SKO	**Skopje**	**1.70**	**339**	*e*Pn	**Pn**	**10 36 44.0**	**+0.2**
IGT	**Igoumenitsa**	**1.71**	**241**	P	**Pg**	**10 36 47.2**	**+0.4**
IGT				S	**Sg**	**10 37 11.2**	**+2.2**
IGT	**Igoumenitsa**	**1.71**	**241**	P	**Pg**	**10 36 47.2**	**+0.4**
IGT				S	**Sg**	**10 37 11.2**	**+2.2**
SGD	**Sagiada**	**1.74**	**244**	P	**Pg**	**10 36 47.4**	**+0.1**
SGD				S	**Sg**	**10 37 10.7**	**+0.8**
SGD	**Sagiada**	**1.74**	**244**	P	**Pg**	**10 36 47.4**	**+0.1**
SGD				S	**Sg**	**10 37 10.7**	**+0.8**
AOS	**Alonnisos**	**1.74**	**134**	P	**Pn**	**10 36 43.6**	**-0.7**
AOS				S	**Sb**	**10 37 07.9**	**-0.1**
AOS	**Alonnisos**	**1.74**	**134**	P	**Pn**	**10 36 43.6**	**-0.7**
AOS				S	**Sb**	**10 37 07.9**	**-0.1**
KAVA	**Kavala**	**1.82**	**70**	P	**Pn**	**10 36 45.4**	**+0.1**
KAVA				S	**Sn**	**10 37 08.5**	**0.0**
KAVA	**Kavala**	**1.82**	**70**	P	**Pn**	**10 36 45.4**	**+0.1**
KAVA				S	**Sn**	**10 37 08.5**	**0.0**
PVO	**Paravola**	**1.86**	**198**	P	Pn	10 36 40.7	-5.2
PVO	**Paravola**	**1.86**	**198**	P	Pn	10 36 40.7	-5.2
PDO	**Prodromos**	**1.97**	**205**	P	**Pb**	**10 36 50.5**	**+0.5**
PDO	**Prodromos**	**1.97**	**205**	P	**Pb**	**10 36 50.5**	**+0.5**
DSF	**Desfina**	**1.98**	**174**	P	**Pn**	**10 36 48.1**	**+0.4**
DSF				S	**Sb**	**10 37 15.5**	**+0.5**
DSF	**Desfina**	**1.98**	**174**	P	**Pn**	**10 36 48.1**	**+0.4**
DSF				S	**Sb**	**10 37 15.5**	**+0.5**
LAKA	**Lakka**	**2.16**	**186**	P	**Pn**	**10 36 51.3**	**+1.3**
LAKA				S	**Sn**	**10 37 16.4**	**-0.5**
LAKA	**Lakka**	**2.16**	**186**	P	**Pn**	**10 36 51.3**	**+1.3**
LAKA				S	**Sn**	**10 37 16.4**	**-0.5**
RZN	**Rozhen**	**2.27**	**54**	P	**Pn**	**10 36 52.2**	**+0.5**
KLV	**Kalavryta, Ach**	**2.34**	**182**	P	**Pn**	**10 36 53.3**	**+0.7**
KLV	**Kalavryta, Ach**	**2.34**	**182**	P	**Pn**	**10 36 53.3**	**+0.7**
KDZ	**Kurdzhali**	**2.70**	**61**	P	**Pn**	**10 36 56.7**	**-0.8**
DID	**Didima**	**2.98**	**165**	P	**Pn**	**10 37 01.8**	**+0.5**
DID	**Didima**	**2.98**	**165**	P	**Pn**	**10 37 01.8**	**+0.5**
MPEP	**Malo Peshtene**	**3.17**	**20**	P	**Pn**	**10 36 07.4**	**+2.5**

NIED ***29*** *10:39:00,39°.70N×143°.60E,h23km,Mw4.0 Best double couple: M₀1.23000×10¹⁵ NP1:φ₀169.00000°,δ32.00000°, λ46.00000°. NP2:φ₀37.00000°,δ68.00000°,λ113.00000°.*
ISCJB ***29*** *10:39:39.8±0.5,39°.54N±0°.05×143°.62E±0°.05,h11km, mb4.1/32,MS2.9/3,Error ellipse: s-maj=7.1km s-min=5.0km az=146.0*
IDC ***29*** *10:39:40.2±0.7,39°.55N×143°.45E,h0km,mb4.0/25, mb1 4.1/28,mb1mx4.0/55,mbtmp4.0/28,ML3.6/3,MS3.1/8, Ms1 3.1/8,ms1mx2.9/43,Error ellipse: s-maj=17.2km s-min=15.2km az=118.0*
JMA ***29*** *10:39:40.6±0.2,39°.66N×143°.64E,h20km,M4.1*
NEIC ***29*** *10:39:42.4±2.6,39°.56N×143°.44E,h13km±16km,mb4.5/9, Error ellipse: s-maj=8.4km s-min=5.6km az=123.0*

ISC 29 10:39:42.0±0.6,39°.60N±0°.05×143°.49E±0°.06,h11km,n68,σ1§48/64,mb4.2/32,MS3.1/3,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**1.29**	**270**	P	**Pn**	**10 40 05.5**	**-0.4**
JTH	**Tanohata**	**1.30**	**286**	P	**Pn**	**10 40 05.1**	**-1.0**
JTH				*e*S	**Sg**	**10 40 23.5**	**-0.3**
JOM	**Ohasama**	**1.71**	**267**	P	**Pn**	**10 40 12.0**	**+0.4**
JOM				*e*S	**Sb**	**10 40 35.0**	**+0.3**
JANG	**Nango**	**1.71**	**298**	P	**Pn**	**10 40 10.6**	**-1.0**
JMK	**Ichinoseki**	**1.88**	**251**	P	**Pn**	**10 40 14.3**	**+0.3**
JTM	**Tenmabayashi**	**2.21**	**303**	P	**Pn**	**10 40 18.3**	**-0.2**
JRG	**Rokugo**	**2.22**	**266**	P	**Pn**	**10 40 19.1**	**+0.4**
JAH	**Hinai**	**2.27**	**286**	P	**Pn**	**10 40 19.8**	**+0.3**
ERM	**Erimo**	**2.43**	**354**	*e*Pn	**Pn**	**10 40 21.4**	**-0.2**
ERM				*e*Sn	**Sb**	**10 40 54.2**	**-1.4**
JYK	**Kaneyama**	**2.52**	**255**	P	**Pn**	**10 40 23.5**	**+0.6**
JNBK	**Urakawa-nobuka**	**2.74**	**348**	P	**Pn**	**10 40 25.8**	**0.0**
JCH	**Churui**	**3.02**	**358**	P	**Pn**	**10 40 28.6**	**-1.1**
JAK	**Akkeshi**	**3.52**	**15**	P	**Pn**	**10 40 35.0**	**-1.5**
ASAJ	**Asahikawa**	**4.57**	**352**	Pn	**Pn**	**10 40 50.9**	**-0.1**
	3.6nm,0.3s,baz=197,slow=15,SNR=34						
ASAJ				Sn	**Sn**	**10 41 39.4**	**-4.6**
	3.5nm,0.3s,baz=185,slow=23,SNR=4.8						
MJAR	**Matsushiro Arr**	**5.16**	**235**	Pn	**Pn**	**10 40 59.4**	**+0.2**
	4.2nm,0.3s,baz=37,slow=12,SNR=42						
MAJO	**Matsushiro**	**5.16**	**235**	*e*Pn	Pn	10 40 48.8	-10
	44nm,0.6s						
JHJ	**Hachijo jima 2**	**7.12**	**206**	Sn	**Sn**	**10 42 40.0**	**-7.0**
	18nm,0.3s,baz=73,slow=19,SNR=2.4						
YSS	**Yuzh-Sakhalins**	**7.38**	**356**	*e*Pn	**Pn**	**10 41 30.7**	**+1.3**
USRK	**Ussuriysk Ar.**	**9.73**	**302**	Pn	**Pn**	**10 42 04.8**	**+3.0**
	0.5nm,0.3s,baz=98,slow=12,SNR=12						
USRK				LR	LR	10 45 47.2	
	comp=Z,114nm,18.8s,baz=108,slow=38						
JNU	**Nakatsue**	**12.04**	**241**	LR	LR	10 47 22.0	
	comp=Z,104nm,21.0s,baz=286,slow=38						
KSRS	**Korea Array**	**12.38**	**265**	Pn	**Pn**	**10 42 42.1**	**+4.1**
	0.2nm,0.3s,baz=83,slow=13,SNR=6.5						
KSRS				LR	LR	10 46 55.8	
	comp=Z,97nm,18.2s,baz=86,slow=35						
KSAR	**Wonju Array Be**	**12.41**	**265**	Pn	**Pn**	**10 42 42.1**	**+3.6**
KLR	**Kul'dur**	**12.76**	**323**	Pn	**Pn**	**10 42 43.0**	**-0.2**
	0.1nm,0.3s,baz=128,slow=14,SNR=3.5						
KLR				LR	LR	10 47 56.5	
	comp=Z,127nm,18.7s,baz=90,slow=39						
PETK	**Petropavlovsk-**	**16.66**	**31**	LR	LR	10 49 38.0	
	comp=Z,30nm,21.0s,baz=145,slow=36						
MA2	**Magadan**	**20.52**	**11**	P	**P**	**10 44 20.4**	**+0.4**
	8.9nm,0.8s,baz=204,slow=9.7,SNR=5.2						
MA2				LR	LR	10 52 09.2	
	comp=Z,23nm,18.5s,baz=198,slow=36						
SEY	**Seymchan**	**23.98**	**10**	P	**P**	**10 44 55.5**	**-0.6**
	6.2nm,0.8s,baz=195,slow=6.6,SNR=21						
ULN	**Ulaanbaatar**	**27.39**	**300**	*e*P	**P**	**10 45 27.5**	**0.0**
	2.5nm,0.8s						
SONM	**Songino Array**	**27.83**	**299**	P	**P**	**10 45 31.6**	**+0.3**
	3.2nm,0.7s,baz=98,slow=8.7,SNR=9.0						
H11N2	**WAKE ISLAND Hy**	**28.24**	**128**	T	T	11 16 31.0	
	baz=318,slow=75,SNR=42						
H11N1	**WAKE ISLAND Hy**	**28.25**	**128**	T	T	11 16 32.4	
	baz=318,slow=75,SNR=11						
H11N3	**WAKE ISLAND Hy**	**28.25**	**128**	T	T	11 16 32.6	
	baz=318,slow=75,SNR=18						
H11S1	**WAKE ISLAND Hy**	**29.05**	**130**	T	T	11 16 44.8	
	baz=321,slow=76,SNR=7.1						
H11S3	**WAKE ISLAND Hy**	**29.06**	**130**	T	T	11 16 42.5	
	baz=321,slow=76,SNR=4.1						
H11S2	**WAKE ISLAND Hy**	**29.07**	**130**	T	T	11 16 45.1	
	baz=321,slow=76,SNR=6.9						
ENH	**Enshi**	**29.24**	**262**	*e*P	**P**	**10 45 43.8**	**-0.2**
	8.6nm,0.4s						
TLY	**Talaya**	**29.99**	**307**	P	**P**	**10 45 51.9**	**+1.6**
	5.1nm,0.5s,baz=24,slow=20,SNR=5.6						
ZALV	**Zalesovo Beam**	**41.45**	**310**	P	**P**	**10 47 28.6**	**+0.1**
	1.8nm,0.4s,baz=83,slow=7.9,SNR=10						
ZALV				PcP	**PcP**	**10 49 25.8**	**-0.3**
	0.9nm,0.4s,baz=82,slow=3.1,SNR=4.0						
ZALV				LR	LR	11 05 02.2	
	comp=Z,22nm,18.4s,baz=68,slow=37						
CMAR	**Chiang Mai Arr**	**43.74**	**254**	P	**P**	**10 47 46.9**	**-0.6**
	0.5nm,0.4s,baz=50,slow=7.3,SNR=6.1						
MKAR	**Makanchi Array**	**44.19**	**300**	P	**P**	**10 47 50.8**	**-0.1**
	3.2nm,0.8s,baz=83,slow=8.6,SNR=24						
KURK	**Kurchatov**	**45.68**	**306**	*e*P	**P**	**10 48 02.0**	**-0.5**
	14nm,0.8s						
KURBB	**Kurchatov Arra**	**45.76**	**306**	P	**P**	**10 48 02.8**	**-0.4**
	5.0nm,0.7s,baz=82,slow=8.1,SNR=63						
ILAR	**Eielson Array**	**46.46**	**34**	P	**P**	**10 48 09.8**	**+1.3**
	0.6nm,0.7s,baz=258,slow=6.5,SNR=7.9						
TKM2	**Tokmak 2**	**49.88**	**297**	*e*P	**P**	**10 48 36.0**	**+0.4**
	8.0nm,0.8s						
BVAR	**Borovoye Array**	**50.09**	**311**	P	**P**	**10 48 36.9**	**+0.2**
	1.7nm,0.5s,baz=87,slow=8.2,SNR=8.9						
AAK	**Ala-Archa**	**50.74**	**297**	*e*P	**P**	**10 48 41.5**	**-0.5**
	0.9nm,0.4s						
EKS2	**Erkin-Say**	**51.23**	**297**	*e*P	**P**	**10 48 46.0**	**+0.4**
	3.1nm,0.7s						
INK	**Inuvik**	**51.36**	**28**	*e*P	**P**	**10 48 47.2**	**+1.2**
	0.9nm,0.6s						
ARU	**Arti**	**55.54**	**318**	P	**P**	**10 49 17.0**	**0.0**
	1.8nm,0.3s,baz=48,slow=3.3,SNR=6.6						
ARU	**Arti**	**55.54**	**318**	*e*P	**P**	**10 49 16.9**	**0.0**
	5.5nm,0.9s						
ABKAR	**Akbulak array**	**57.56**	**310**	*e*P	**P**	**10 49 30.9**	**-0.4**
AKTO	**Aktyubinsk**	**58.20**	**311**	P	**P**	**10 49 36.1**	**+0.3**
	2.4nm,0.6s,baz=64,slow=9.9,SNR=8.0						
WRAB	**Tennant Creek**	**59.83**	**190**	*e*P	**P**	**10 49 46.8**	**-0.6**
	13nm,1.5s						
WRA	**Warramunga Arr**	**59.84**	**190**	P	**P**	**10 49 46.0**	**-1.5**
	1.1nm,0.9s,baz=6.6,slow=7.0,SNR=6.7						
YKA	**Yellowknife Ar**	**60.77**	**31**	P	**P**	**10 49 54.0**	**+0.6**
	0.2nm,0.8s,baz=303,slow=6.2,SNR=3.8						
YKA	**Yellowknife Ar**	**60.77**	**31**	P	**P**	**10 49 54.0**	**+0.6**
ASAR	**Alice Springs**	**63.57**	**190**	P	**P**	**10 50 12.5**	**-0.1**
	0.3nm,0.6s,baz=12,slow=7.5,SNR=7.9						
GEYT	**Alibeck**	**64.03**	**299**	P	**P**	**10 50 15.9**	**+0.2**
	1.1nm,0.5s,baz=72,slow=9.5,SNR=2.8						
FINES	**FINESS Array B**	**67.31**	**332**	P	**P**	**10 50 35.7**	**-0.6**
	2.3nm,0.7s,baz=28,slow=4.5,SNR=7.0						
KBZ	**Khabaz**	**70.47**	**311**	P	**P**	**10 50 57.1**	**+0.7**
	2.9nm,0.7s,baz=26,slow=5.2,SNR=6.2						
HFS	**Hagfors**	**72.42**	**336**	P	**P**	**10 51 08.0**	**+0.2**
	1.8nm,0.5s,baz=52,slow=7.7,SNR=12						
NB2	**NORSAR Subarra**	**72.45**	**338**	P	**P**	**10 51 07.9**	**-0.2**
	comp=Z,1.6nm,0.7s,baz=37,slow=6.2						
NOA	**NORSAR Array B**	**72.45**	**338**	P	**P**	**10 51 08.2**	**+0.1**
	comp=Z,3.3nm,0.8s,baz=38,slow=6.0,SNR=8.1						
NOA				LR	LR	11 30 45.0	
	comp=Z,12nm,19.2s,baz=140,slow=42						
AKASG	**Malin Array Be**	**73.26**	**323**	P	**P**	**10 51 12.2**	**-0.8**
	comp=Z,0.9nm,0.4s,baz=44,slow=6.1,SNR=8.6						
PDAR	**Pinedale Array**	**74.72**	**47**	P	**P**	**10 51 22.9**	**+0.9**
	comp=Z,0.2nm,0.6s,baz=306,slow=3.3,SNR=3.2						
BRTR	**Keskin Array B**	**78.36**	**312**	P	**P**	**10 51 42.7**	**+0.1**
	comp=Z,0.4nm,0.7s,baz=66,slow=3.6,SNR=3.2						
KHC	**Kasperske Hory**	**81.20**	**329**	*e*P	**P**	**10 51 58.4**	**+0.8**
GERES	**GERESS Array B**	**81.38**	**329**	P	**P**	**10 51 58.6**	**-0.1**
	comp=Z,0.2nm,0.3s,baz=36,slow=3.7,SNR=2.9						
TXAR	**Lajitas Array**	**87.28**	**54**	P	**P**	**10 52 30.2**	**+1.2**
	comp=Z,0.1nm,0.6s,baz=268,slow=3.5,SNR=2.3						

IDC ***29*** *10:44:32.4±1.1,41°.10N×47°.19E,h0km,mb3.4/5, mb1 3.5/10,mb1mx3.3/44,mbtmp3.3/10,ML2.4/3,Error ellipse: s-maj=18.3km s-min=13.6km az=163.0*
NSSP ***29*** *10:44:34.1,41°.05N×46°.88E,h10km,Ms3.4*
MOS ***29*** *10:44:35.6±1.0,41°.08N×46°.95E,h10km,mb3.9/1,Error ellipse: s-maj=8.2km s-min=5.4km az=109.0*
AZER ***29*** *10:44:36.6±0.1,41°.16N×47°.00E,h35km,Error ellipse: s-maj=0.5km s-min=0.3km az=346.0*
ISCJB ***29*** *10:44:38.7±0.2,41°.11N±0°.02×47°.00E±0°.02,h49km±4km, mb3.3/5,Error ellipse: s-maj=3.0km s-min=2.2km az=37.4*
CSEM ***29*** *10:44:38.1±0.1,41°.11N×47°.03E,h20km,ML3.5/4,Error ellipse: s-maj=3.4km s-min=2.7km az=30.0*

ISC 29 10:44:38.1±0.9,41°.15N±0°.02×47°.05E±0°.02,h33km±2km,n120,σ1§43/204,mb3.3/5,28C-30D,Eastern Caucasus

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SEKA	**Sheki**	**0.13**	**60**	⇑P	**Pb**	**10 44 44.4**	**+0.2**
	SNR=626						
SEKA				⇑S	**Sb**	**10 44 49.9**	**+1.5**
SEKA	**Sheki**	**0.13**	**60**	P	**Pb**	**10 44 44.4**	**+0.2**
	SNR=626						
SEKA				S	**Sb**	**10 44 49.9**	**+1.5**
MNGR	**Mingechevir, A**	**0.37**	**176**	⇓P	**Pn**	**10 44 47.8**	**+0.6**
	SNR=44						
MNGR				⇓S	**Sb**	**10 44 54.8**	**+2.0**
MNGR	**Mingechevir, A**	**0.37**	**176**	P	**Pn**	**10 44 47.8**	**+0.6**
	SNR=44						
ZKTA	**Zakatala**	**0.59**	**327**	⇓P	**Pn**	**10 44 49.5**	**-0.6**
	SNR=227						
ZKTA				⇓S	**Sn**	**10 44 58.8**	**+0.2**
AKT	**Akhty**	**0.61**	**57**	⇓*i*Pg	**Pn**	**10 44 49.8**	**-0.7**
AKT				*e*		10 44 59.7	
AKT				pmax	pmax		
	comp=Z,530nm,0.2s						
AKT				smax	smax		
	comp=E,1μm,0.3s						
AKT				smax	smax		
	comp=E,1μm,0.3s						
AKT				smax	smax		
	comp=N,2μm,0.6s						
AKT	**Akhty**	**0.61**	**57**	*i* Pg	**Pn**	**10 44 49.8**	**-0.7**
	comp=N,530nm,0.2s						
AKT				*e*Sg	**Sb**	**10 44 59.7**	**+0.5**
	comp=N,2μm,0.6s						
QBL	**Gabala**	**0.63**	**108**	⇑P	**Pn**	**10 44 50.4**	**-0.2**
QBL				⇓S	**Sb**	**10 45 00.5**	**+1.0**
QBL	**Gabala**	**0.63**	**108**	P	**Pn**	**10 44 50.4**	**-0.2**
QBL				S	**Sb**	**10 45 00.5**	**+1.0**
GANJ	**Ganja**	**0.74**	**228**	⇑P	**Pn**	**10 44 51.8**	**-0.5**
	SNR=91						
GANJ				⇑S	**Sb**	**10 45 02.8**	**+0.2**
GANJ	**Ganja**	**0.74**	**228**	P	**Pn**	**10 44 51.8**	**-0.5**
	SNR=91						
GANJ				S	**Sb**	**10 45 02.8**	**+0.2**
XNQ	**Khinaliq**	**0.82**	**88**	⇑P	**Pn**	**10 44 53.2**	**-0.3**
	SNR=68						
XNQ				⇑S	**Sb**	**10 45 06.0**	**+0.9**
XNQ	**Khinaliq**	**0.82**	**88**	P	**Pn**	**10 44 53.2**	**-0.3**
	SNR=68						
XNQ				S	**Sb**	**10 45 06.0**	**+0.9**
BRDA	**Brd**	**0.89**	**174**	⇓P	**Pb**	**10 44 55.3**	**+0.2**
	SNR=18						
BRDA				⇑S	**Sb**	**10 45 08.5**	**+1.9**
BRDA	**Brd**	**0.89**	**174**	P	**Pb**	**10 44 55.3**	**+0.2**
	SNR=18						
IML	**Ismayilli**	**0.93**	**112**	⇓P	**Pn**	**10 44 54.6**	**-0.2**
	SNR=21						
IML				⇑S	**Sb**	**10 45 08.4**	**+0.6**
IML	**Ismayilli**	**0.93**	**112**	P	**Pn**	**10 44 54.6**	**-0.2**
	SNR=21						
IML				S	**Sb**	**10 45 08.4**	**+0.6**
KSMR	**Kasumkent**	**0.93**	**60**	⇑*i*PG	**Pn**	**10 44 55.0**	**+0.1**
KSMR				*e*S	**Sb**	**10 45 10.0**	**+2.0**
KSMR				pmax	pmax		
	comp=Z,804nm,0.2s						
KSMR	**Kasumkent**	**0.93**	**60**	*i* Pg	**Pn**	**10 44 55.0**	**+0.1**
	comp=Z,804nm,0.2s						
KSMR				*e*Sg	**Sb**	**10 45 10.0**	**+2.0**
KMKR	**Kumukh**	**0.99**	**2**	⇑*i*PG	**Pn**	**10 44 56.0**	**+0.2**
KMKR				*i* S	**Sb**	**10 45 10.0**	**+0.3**
KMKR				pmax	pmax		
	comp=Z,117nm,0.2s						
KMKR	**Kumukh**	**0.99**	**2**	*i* Pg	**Pn**	**10 44 56.0**	**+0.2**
	comp=Z,117nm,0.2s						
KMKR				*i* Sg	**Sb**	**10 45 10.0**	**+0.3**
QSAR	**Qusar**	**0.99**	**68**	⇑P	**Pb**	**10 44 57.0**	**+0.2**
QSAR				⇑S	**Sb**	**10 45 12.2**	**+2.7**
ZRD	**Zardab**	**0.99**	**151**	⇓P	**Pb**	**10 44 56.3**	**-0.5**
	SNR=8.2						
ZRD				⇓S	**Sb**	**10 45 11.6**	**+2.1**
ZRD	**Zardab**	**0.99**	**151**	P	**Pb**	**10 44 56.3**	**-0.5**
	SNR=8.2						
GDB	**GEDABAY**	**1.07**	**247**	⇓P	**Pn**	**10 44 56.3**	**-0.6**
	SNR=49						
GDB				⇓S	**Sn**	**10 45 10.8**	**+0.1**
GDB	**GEDABAY**	**1.07**	**247**	P	**Pn**	**10 44 56.3**	**-0.6**
	SNR=49						
GDB				S	**Sn**	**10 45 10.8**	**+0.1**
QUBA	**Quba, Azerbaij**	**1.11**	**79**	⇓P	**Pb**	**10 44 58.6**	**-0.2**
	SNR=56						
QUBA				⇓S	**Sb**	**10 45 15.5**	**+2.5**
QUBA	**Quba, Azerbaij**	**1.11**	**79**	P	**Pb**	**10 44 58.6**	**-0.2**
	SNR=56						
QUBA				S	**Sb**	**10 45 15.5**	**+2.5**
URKR	**Urkarakh**	**1.11**	**23**	⇑*i*PG	**Pn**	**10 44 58.0**	**+0.6**
URKR				*i* S	**Sb**	**10 45 14.5**	**+1.4**
URKR				pmax	pmax		
	comp=Z,315nm,0.3s						
URKR	**Urkarakh**	**1.11**	**23**	*i* Pg	**Pn**	**10 44 58.0**	**+0.6**
	comp=Z,315nm,0.3s						
URKR				*i* Sg	**Sb**	**10 45 14.5**	**+1.4**
KDMR	**Kurdemir**	**1.16**	**131**	⇑P	**Pn**	**10 44 58.4**	**+0.5**
	SNR=3.0						
KDMR				⇑S	**Sb**	**10 45 15.3**	**+1.1**
KDMR	**Kurdemir**	**1.16**	**131**	P	**Pn**	**10 44 58.4**	**+0.5**
	SNR=3.0						
KDMR				S	**Sb**	**10 45 15.3**	**+1.1**
PQL	**Pirkuli**	**1.22**	**106**	⇑P	**Pn**	**10 44 59.6**	**+0.6**
	SNR=18						
PQL				⇓S	**Sb**	**10 45 17.5**	**+1.2**
PQL	**Pirkuli**	**1.22**	**106**	P	**Pn**	**10 44 59.6**	**+0.6**
	SNR=18						
PQL				S	**Sb**	**10 45 17.5**	**+1.2**
GNBR	**Gunib**	**1.25**	**357**	*e*PG	**Pn**	**10 45 00.4**	**+1.2**
GNBR				*e*		10 45 17.3	
GNBR				pmax	pmax		
	comp=Z,63nm,0.3s						
GNBR				smax	smax		
	comp=E,281nm,0.3s						
GNBR				smax	smax		
	comp=N,362nm,0.6s						
GNBR				smax	smax		
	comp=N,338nm,0.6s						
GNBR	**Gunib**	**1.25**	**357**	*e*Pg	**Pn**	**10 45 00.4**	**+1.2**
	comp=N,63nm,0.3s						
GNBR				*e*Sg	**Sb**	**10 45 17.3**	**+0.4**
	comp=N,338nm,0.6s						
QZX	**Qazax, Azerbai**	**1.27**	**267**	⇑P	**Pn**	**10 44 59.8**	**+0.3**
	SNR=26						
QZX				⇓S	**Sn**	**10 45 16.1**	**+0.7**
QZX	**Qazax, Azerbai**	**1.27**	**267**	P	**Pn**	**10 44 59.8**	**+0.3**
	SNR=26						
QZX				S	**Sn**	**10 45 16.1**	**+0.7**
DGRG	**David-gareji**	**1.30**	**284**	P	**Pn**	**10 45 00.4**	**+0.5**
DGRG				S	**Sb**	**10 45 19.1**	**+0.7**
DGRG	**David-gareji**	**1.30**	**284**	*e*PG	**Pn**	**10 45 00.4**	**+0.5**
DGRG				*e*S	**Sb**	**10 45 19.1**	**+0.7**
DGRG	**David-gareji**	**1.30**	**284**	*e*Pg	**Pn**	**10 45 00.4**	**+0.5**
DGRG				*e*Sg	**Sb**	**10 45 19.1**	**+0.7**
DRN	**Derbent**	**1.31**	**47**	⇓*i*PG	**Pn**	**10 45 01.3**	**+1.4**
DRN				*e*		10 45 20.2	
DRN				pmax	pmax		
	comp=Z,68nm,0.1s						
DRN				smax	smax		
	comp=N,228nm,1.6s						
DRN				smax	smax		
	comp=E,200nm,0.2s						
DRN	**Derbent**	**1.31**	**47**	*i* Pg	**Pn**	**10 45 01.3**	**+1.4**
	comp=E,68nm,0.1s						
DRN				*e*Sg	**Sb**	**10 45 20.2**	**+1.7**
	comp=E,228nm,1.6s						
STKZ		**1.35**	**190**	⇓*i*P	**Pb**	**10 45 07.3**	**+4.4**
STKZ				⇑*i*S	**Sb**	**10 45 24.9**	**+5.0**
VADZ	**Vardenis**	**1.39**	**226**	*e*P	**Pn**	**10 45 02.0**	**+0.7**
VADZ				⇓S	**Sb**	**10 45 22.0**	**+0.9**
VADZ	**Vardenis**	**1.39**	**226**	P	**Pn**	**10 45 02.0**	**+0.7**
VADZ				S	**Sb**	**10 45 22.0**	**+0.9**
SGKR	**Sergokala**	**1.39**	**19**	*e*PG	**Pb**	**10 45 03.0**	**-0.5**
SGKR				*e*S	**Sb**	**10 45 23.0**	**+2.0**
SGKR	**Sergokala**	**1.39**	**19**	*e*Pg	**Pb**	**10 45 03.0**	**-0.5**
SGKR				*e*Sg	**Sb**	**10 45 23.0**	**+2.0**
SIZA	**Siyzn**	**1.40**	**92**	⇓P	**Pb**	**10 45 02.8**	**-0.9**
	SNR=43						

SNR=52
LRK Sn Sn 10 45 51.5 +0.9
AKH Akhalkalaki 2.69 277 P Sn 10 45 52.1 +1.3
LKRN Lenkeran, Azer 2.77 151 ⇓Pn **Pn 10 45 20.6 +0.5**
SNR=4.7
LKRN ⇑Sn **Sn 10 45 52.5 +0.1**
LKRN Lenkeran, Azer 2.77 151 Pn **Pn 10 45 20.6 +0.5**
SNR=4.7
LKRN Sn **Sn 10 45 52.5 +0.1**
ZEI Tsey 2.86 306 *e*PN **Pn 10 45 22.5 +0.9**
ZEI *e*S **Sn 10 45 56.5 +1.5**
ASTR Astara 2.91 152 ⇓Pn **Pn 10 45 22.6 +0.6**
SNR=8.8
ASTR ⇑Sn **Sn 10 45 56.7 +0.9**
ASTR Astara 2.91 152 Pn **Pn 10 45 22.6 +0.6**
SNR=8.8
ASTR Sn **Sn 10 45 56.7 +0.9**
ONI Oni 3.05 299 P **Pn 10 45 24.8 +0.8**
ONI S **Sb 10 46 10.8 +2.3**
ONI Oni 3.05 299 *e*PN **Pn 10 45 24.8 +0.8**
ONI *e*S **Sb 10 46 10.8 +2.3**
ONI Oni 3.05 299 *e*Pn **Pn 10 45 24.8 +0.8**
ONI *e*Sb **Sb 10 46 10.8 +2.3**
DIGR Digorskoe uzhe 3.12 305 *e*PN **Pn 10 45 26.3 +1.2**
DIGR *e*S **Sn 10 46 03.0 +1.6**
DIGR Digorskoe uzhe 3.12 305 *e*Pn **Pn 10 45 26.3 +1.2**
DIGR *e*Sn **Sn 10 46 03.0 +1.6**
NCK Nalchik 3.48 314 *e*PN **Pn 10 45 27.7 -2.1**
NCK Nalchik 3.48 314 *e*Pn **Pn 10 45 27.7 -2.1**
NEY Neytrino 3.84 305 *e*PN **Pn 10 45 33.6 -1.4**
NEY Neytrino 3.84 305 *e*Pn **Pn 10 45 33.6 -1.4**
KBZ Khabaz 4.01 311 Pn **Pn 10 45 40.6 +3.5**
comp=Z,1.0nm,0.3s,baz=144,slow=4.3,SNR=8.5
KBZ Sn **Sn 10 46 23.6 +0.7**
comp=Z,0.7nm,0.3s,baz=75,slow=16,SNR=4.0
KVAR Kislovodsk Arr 4.27 313 Pn **Pn 10 45 41.5 +0.7**
baz=146,slow=7.3,SNR=1.8
KVAR Sn **Sn 10 46 29.4 -0.1**
baz=195,slow=16,SNR=2.6
GEYT Alibeck 9.13 107 Pn **Pn 10 46 44.4 -3.1**
comp=Z,0.8nm,0.3s,baz=278,slow=13,SNR=4.3
GEYT Sn **Sn 10 48 24.3 -4.8**
comp=Z,0.7nm,0.3s,baz=270,slow=15,SNR=3.7
BRTR Keskin Array B 10.32 266 Pn **Pn 10 47 05.7 +1.8**
comp=Z,0.1nm,0.3s,baz=90,slow=13,SNR=2.6
OBN Obninsk 15.60 337 *e*P **Pn 10 48 12.8 -2.5**
OBN pmax pmax
comp=Z,8.0nm,0.3s
OBN Obninsk 15.60 337 *e*P **Pn 10 48 12.8 -2.5**
comp=Z,8.0nm,0.3s
AKASG Malin Array Be 15.62 314 Pn **Pn 10 48 17.6 +2.0**
comp=Z,0.5nm,0.3s,baz=120,slow=12,SNR=4.1
KIEV Kiev 15.63 314 *e*P **Pn 10 48 15.8 +0.2**
KIEV pmax pmax
comp=Z,2.0nm,1.0s
KIEV Kiev 15.63 314 *e*P **Pn 10 48 15.8 +0.2**
comp=Z,2.0nm,1.0s
KURBB Kurchatov Arra 23.72 56 P **P 10 49 44.8 -2.0**
comp=Z,0.3nm,0.5s,baz=259,slow=8.4,SNR=2.4
KURK Kurchatov 23.79 56 P **P 10 49 44.8 -2.7**
FINES FINESS Array B 23.98 335 P **P 10 49 50.3 +1.1**
comp=Z,0.9nm,0.6s,baz=150,slow=12,SNR=4.0
GERES GERESS Array B 24.66 299 P **P 10 49 55.3 -0.3**
comp=Z,0.8nm,0.5s,baz=101,slow=11,SNR=7.4
MKAR Makanchi Array 25.84 65 P **P 10 50 04.1 -2.1**
comp=Z,0.4nm,0.5s,baz=280,slow=6.9,SNR=4.3
TORD Torodi Ar. Bea 48.31 248 P **P 10 53 16.3 0.0**
comp=Z,0.2nm,0.7s,baz=43,slow=8.7,SNR=2.8

NSSC ***29*** *11:02:04.8±1.8, 37°.50N×42°.50E, h0km±17km, MD2.4, ML4.4*
IDC ***29*** *11:02:04.1±0.7, 37°.21N×42°.49E, h0km, mb4.2/29, mb1 4.3/39, mb1mx4.2/56, mbtmp4.3/39, ML4.0/7, MS3.5/26, Ms1 3.5/26, ms1mx3.3/56, Error ellipse: s-maj=14.9km s-min=10.4km az=5.0*
AZER ***29*** *11:02:05.1±0.4, 37°.35N×42°.49E, h24km±15km, Error ellipse: s-maj=12.3km s-min=2.3km az=52.0*
ISCJB ***29*** *11:02:05.0±0.6, 37°.26N±0°.02×42°.68E±0°.02, h13km±3km, mb4.3/76, MS3.5/21, Error ellipse: s-maj=3.2km s-min=2.1km az=162.4*
NEIC ***29*** *11:02:05.5, 37°.41N×42°.58E, h11km, mb4.5/32, ML4.6(ISK), After ISK.*
NEIC Felt at Sirnak, Turkey.
MOS ***29*** *11:02:05.4±1.2, 37°.28N×42°.57E, h12km, mb4.5/38, Error ellipse: s-maj=6.3km s-min=4.0km az=98.3*
ISK ***29*** *11:02:05.5, 37°.41N×42°.57E, h11km, ML4.6*
CSEM ***29*** *11:02:06.3±0.1, 37°.36N×42°.66E, h10km, mb4.5/35, Error ellipse: s-maj=3.9km s-min=2.7km az=166.0*
TEH ***29*** *11:02:11.2, 37°.31N×42°.75E, h20km, ML4.6*
ISN ***29*** *11:02:18.4±1.2, 36°.79N×42°.97E, h0km±3km, ML4.5*
DDA ***29*** *11:02:29.6, 37°.22N×42°.56E, h11km, Ml4.6*
ISC 29 11:02:06.3±0.6, 37°.32N±0°.02×42°.60E±0°.02, h10km±3km, n503, σ1§60/574, mb4.4/76, MS3.4/22, 61C-29D, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SIRT	**Sirnak**	**0.22**	**325**	PG	**Pg**	**11 02 09.3**	**-1.7**
SIRT				*e*SG	**Sg**	**11 02 11.8**	**-2.3**
SIRT	**Sirnak**	**0.22**	**325**	*i* Pg	**Pg**	**11 02 09.3**	**-1.7**
SIRT				*e*Sg	**Sg**	**11 02 11.8**	**-2.3**
CUKT	**Cukurca**	**0.81**	**95**	*e*PG	**Pg**	**11 02 22.2**	**+0.2**
CUKT				*e*SG	**Sb**	**11 02 34.4**	**+0.7**
CUKT	**Cukurca**	**0.81**	**95**	*e*Pg	**Pg**	**11 02 22.2**	**+0.2**
CUKT				*e*Sg	**Sb**	**11 02 34.4**	**+0.7**
HAKT	**HAKKARI**	**0.92**	**75**	P	**Pg**	**11 02 23.6**	**-0.4**
HAKT				S	**Sb**	**11 02 36.7**	**-0.2**
HAKT	**HAKKARI**	**0.92**	**75**	⇑*i*P	**Pg**	**11 02 23.6**	**-0.4**
HAKT				*i* S	**Sb**	**11 02 36.6**	**-0.2**
HKR	**Hakkari**	**0.95**	**74**	*e*PG	**Pg**	**11 02 23.9**	**-0.7**
HKR	**Hakkari**	**0.95**	**74**	*e*Pg	**Pg**	**11 02 23.9**	**-0.7**
GEVA	**Gevas**	**1.06**	**20**	P	**Pg**	**11 02 24.9**	**-1.8**
GEVA				S	**Sg**	**11 02 39.8**	**-0.6**
GEVA	**Gevas**	**1.06**	**20**	⇓*i*P	**Pg**	**11 02 24.9**	**-1.8**
GEVA				*i* S	**Sg**	**11 02 39.8**	**-0.6**
BTMN	**Batman**	**1.20**	**299**	P	**Pb**	**11 02 27.6**	**-1.6**
BTMN				S	**Sn**	**11 02 45.9**	**+0.2**
BTMN	**Batman**	**1.20**	**299**	⇑*i*P	**Pb**	**11 02 27.6**	**-1.6**
BTMN				*i* S	**Sn**	**11 02 45.9**	**+0.2**
TVAN	**Van**	**1.37**	**28**	P	**Pn**	**11 02 31.1**	**-0.7**
TVAN				S	**Sg**	**11 02 51.8**	**+1.4**
TVAN	**Van**	**1.37**	**28**	⇓*i*P	**Pn**	**11 02 31.1**	**-0.7**
TVAN				*i* S	**Sg**	**11 02 51.8**	**+1.4**
SVAN	**Silvan-Diyarba**	**1.38**	**307**	*e*PN	**Pn**	**11 02 30.3**	**-1.5**
SVAN				*e*SN	**Sb**	**11 02 48.6**	**-1.6**
SVAN	**Silvan-Diyarba**	**1.38**	**307**	*e*Pn	**Pn**	**11 02 30.3**	**-1.5**
SVAN				*e*Sn	**Sb**	**11 02 48.6**	**-1.6**
VANB	**Van**	**1.42**	**26**	*e*PN	**Pn**	**11 02 30.9**	**-1.5**
VANB				*e*SN	**Sn**	**11 02 49.2**	**-2.0**
VANB	**Van**	**1.42**	**26**	*e*Pn	**Pn**	**11 02 30.9**	**-1.5**
VANB				*e*Sn	**Sn**	**11 02 49.2**	**-2.0**
MARD	**Mardin**	**1.45**	**270**	⇑*i*P	**Pn**	**11 02 32.1**	**-0.6**
MARD				*i* S	**Sg**	**11 02 52.4**	**-0.6**
KBSD	**Kabsdagh**	**1.67**	**260**	*e*P	**Pn**	**11 02 35.7**	**-0.1**
KBSD				*e*S	**Sn**	**11 02 55.7**	**-1.6**
KBSD				AML	AML	11 02 59.6	
comp=E,20μm,0.6s							
KBSD				AML	AML	11 02 59.6	
comp=N,13μm,0.6s							
KBSD	**Kabsdagh**	**1.67**	**260**	*e*P	**Pn**	**11 02 35.7**	**-0.1**
KBSD				*e*S	**Sn**	**11 02 55.7**	**-1.6**
MAZI	**Mazidag**	**1.72**	**275**	*e*PN	**Pn**	**11 02 35.9**	**-0.6**
MAZI	**Mazidag**	**1.72**	**275**	*e*Pn	**Pn**	**11 02 35.9**	**-0.6**
VMUR	**Van-Muradiye**	**1.83**	**24**	P	**Pb**	**11 02 39.4**	**-0.8**
VMUR	**Van-Muradiye**	**1.83**	**24**	⇓*i*P	**Pb**	**11 02 39.4**	**-0.8**
VMUR				*i* S	**Sg**	**11 03 05.3**	**-0.1**
DIY	**Diyarbakir**	**1.97**	**288**	*e*Pn	**Pn**	**11 02 39.9**	**0.0**
EKAR	**Karacoban**	**1.98**	**348**	P	**Pn**	**11 02 40.9**	**+0.8**
EKAR	**Karacoban**	**1.98**	**348**	⇓*i*P	**Pn**	**11 02 40.9**	**+0.8**
EKAR				*i* S	**Sg**	**11 03 10.2**	**+0.3**
BNGL	**BINGOL**	**1.99**	**325**	⇑*i*P	**Pn**	**11 02 40.3**	**0.0**
BNGL				*i* S	**Sn**	**11 03 05.0**	**-0.4**
DYBB	**Diyarbakir**	**2.05**	**289**	*e*PN	**Pn**	**11 02 39.9**	**-1.1**
DIYA	**Diyarbakir**	**2.06**	**288**	P	**Pn**	**11 02 42.1**	**+1.0**
DIYA				S	**Sn**	**11 03 04.6**	**-2.2**
DIYA	**Diyarbakir**	**2.06**	**288**	*i* P	**Pn**	**11 02 42.1**	**+1.0**
DIYA				*i* S	**Sn**	**11 03 04.6**	**-2.2**
TUTA	**Tutak**	**2.08**	**5**	P	**Pn**	**11 02 42.2**	**+0.5**
TUTA	**Tutak**	**2.08**	**5**	⇓*i*P	**Pn**	**11 02 42.2**	**+0.5**
TUTA				*i* S	**Sg**	**11 03 12.6**	**-0.8**
MZRK	**Al-Mazaregh**	**2.16**	**227**	*e*P	**Pb**	**11 02 44.4**	**-1.2**
MZRK				*e*S	**Sb**	**11 03 11.2**	**-1.3**
MZRK				AML	AML	11 03 18.1	
comp=E,2μm,0.6s							
MZRK				AML	AML	11 03 20.6	
comp=N,5μm,0.7s							
MZRK	**Al-Mazaregh**	**2.16**	**227**	*e*P	**Pb**	**11 02 44.4**	**-1.2**
MZRK				*e*S	**Sb**	**11 03 11.2**	**-1.3**
SFNV	**Sufian**	**2.19**	**246**	*e*P	**Pn**	**11 02 42.9**	**0.0**
SFNV				*e*S	**Sn**	**11 03 10.5**	**+0.4**
SFNV				AML	AML	11 03 19.2	
comp=N,5μm,0.4s							
SFNV				AML	AML	11 03 25.3	
comp=E,6μm,0.5s							
SFNV	**Sufian**	**2.19**	**246**	*e*P	**Pn**	**11 02 42.9**	**0.0**
SFNV				*e*S	**Sn**	**11 03 10.5**	**+0.4**
BGOL	**Bingol**	**2.25**	**318**	P	**Pn**	**11 02 43.3**	**-0.5**
BGOL				S	**Sn**	**11 03 11.6**	**-0.2**
BGOL	**Bingol**	**2.25**	**318**	⇑*i*P	**Pn**	**11 02 43.3**	**-0.5**
BGOL				*i* S	**Sn**	**11 03 11.6**	**-0.2**
AGRB	**Hanur-Agry**	**2.27**	**8**	*e*PN	**Pn**	**11 02 42.6**	**-1.5**
AGRB	**Hanur-Agry**	**2.27**	**8**	*e*Pn	**Pn**	**11 02 42.7**	**-1.5**
DYDN	**Diyadin**	**2.38**	**21**	P	**Pn**	**11 02 46.7**	**+1.0**
DYDN	**Diyadin**	**2.38**	**21**	⇓*i*P	**Pn**	**11 02 46.7**	**+1.0**
DYDN				*i* S	**Sg**	**11 03 22.6**	**-0.2**
EATA	**Eleskirt**	**2.54**	**358**	P	**Pn**	**11 02 48.8**	**+0.9**
EATA	**Eleskirt**	**2.54**	**358**	⇓*i*P	**Pn**	**11 02 48.8**	**+0.9**
EATA				*i* S	**Sg**	**11 03 26.3**	**-1.7**
ISHB	**Shabestar**	**2.58**	**67**	*e*Pn	**Pb**	**11 02 50.6**	**-2.3**
ISHB				*e*AMB	AMB	11 03 04.0	
comp=Z,14μm,0.2s							
ECAT	**Cat-ERZURUM**	**2.61**	**331**	P	**Pn**	**11 02 50.3**	**+1.4**
ECAT				S	**Sb**	**11 03 25.4**	**-0.3**
ECAT	**Cat-ERZURUM**	**2.61**	**331**	*i* P	**Pn**	**11 02 50.3**	**+1.4**
ECAT				*i* S	**Sb**	**11 03 25.4**	**-0.3**
YEDI	**Yedisu-Bingol**	**2.66**	**323**	*e*PN	**Pn**	**11 02 48.8**	**-0.6**
YEDI	**Yedisu-Bingol**	**2.66**	**323**	*e*Pn	**Pn**	**11 02 48.8**	**-0.6**
ERZM	**Erzurum**	**2.75**	**340**	P	**Pn**	**11 02 51.8**	**+0.9**
ERZM				S	**Sb**	**11 03 28.6**	**-1.2**
ERZM	**Erzurum**	**2.75**	**340**	⇓*i*P	**Pn**	**11 02 51.8**	**+0.9**
ERZM				*i* S	**Sb**	**11 03 28.6**	**-1.2**
EZM	**Erzurum**	**2.76**	**340**	*e*PN	**Pn**	**11 02 49.6**	**-1.3**
HOMI	**Horasan**	**2.77**	**349**	*i* P	**Pn**	**11 02 52.1**	**+1.0**
HOMI				*i* S	**Sg**	**11 03 33.2**	**-2.2**
SVRC	**Sivrice-ELAZID**	**2.81**	**293**	*e*PN	**Pn**	**11 02 50.2**	**-1.4**
SVRC	**Sivrice-ELAZID**	**2.81**	**293**	*e*Pn	**Pn**	**11 02 50.2**	**-1.4**
IMRD	**Marand**	**2.82**	**60**	*e*Pn	**Pn**	**11 02 53.4**	**+1.7**
IMRD				*e*AMB	AMB	11 03 55.7	
comp=Z,26μm,0.4s							
IMRD	**Marand**	**2.82**	**60**	*e*Pn	**Pn**	**11 02 53.4**	**+1.7**
NAX	**Nakhchivan**	**2.94**	**50**	⇓P	**Pn**	**11 02 50.9**	**-2.3**
SNR=4.2							
NAX				⇓S	**Sn**	**11 03 26.7**	**-1.9**
NAX	**Nakhchivan**	**2.94**	**50**	P	**Pn**	**11 02 50.9**	**-2.3**
SNR=4.2							
NAX				S	**Sn**	**11 03 26.7**	**-1.9**
TNCL	**Tunceli-Merkez**	**3.00**	**308**	P	**Pn**	**11 02 52.9**	**-1.2**
TNCL	**Tunceli-Merkez**	**3.00**	**308**	⇑*i*P	**Pn**	**11 02 52.9**	**-1.2**
TNCL				*i* S	**Sg**	**11 03 39.3**	**-3.4**
MNKR	**ALMNKUR**	**3.01**	**244**	*e*P	**Pn**	**11 02 55.0**	**+0.9**
MNKR				*e*S	**Sn**	**11 03 29.4**	**-0.9**
MNKR				AML	AML	11 03 48.5	
comp=N,4μm,0.2s							
MNKR				AML	AML	11 03 52.4	
comp=E,6μm,0.7s							
MNKR	**ALMNKUR**	**3.01**	**244**	*e*P	**Pn**	**11 02 55.0**	**+0.9**
MNKR				*e*S	**Sn**	**11 03 29.4**	**-0.9**
ELZG	**Elazig**	**3.09**	**293**	P	**Pn**	**11 02 53.9**	**-1.5**
ELZG	**Elazig**	**3.09**	**293**	⇑*i*P	**Pn**	**11 02 53.9**	**-1.5**
ELZG				*i* S	**Sb**	**11 03 42.0**	**+2.7**
KOPT	**Kop Dagi**	**3.15**	**329**	P	**Pn**	**11 02 58.6**	**+2.2**
KOPT	**Kop Dagi**	**3.15**	**329**	*i* P	**Pn**	**11 02 58.6**	**+2.2**
KOPT				*i* S	**Sg**	**11 03 50.4**	**+2.7**
SURC	**SANLIURFA_SURC**	**3.21**	**263**	P	**Pn**	**11 02 56.3**	**-0.7**
SURC	**SANLIURFA_SURC**	**3.21**	**263**	⇑*i*P	**Pn**	**11 02 56.3**	**-0.7**
SURC				*i* S	**Sb**	**11 03 44.4**	**+1.6**
SENK	**Senkaya-Erzuru**	**3.24**	**357**	*e*PN	**Pn**	**11 02 56.7**	**-0.8**
SENK	**Senkaya-Erzuru**	**3.24**	**357**	*e*Pn	**Pn**	**11 02 56.7**	**-0.8**
GNI	**Garni**	**3.29**	**30**	Pn	**Pn**	**11 02 59.7**	**+1.6**
comp=E,13nm,0.3s,baz=208,slow=3.3,SNR=30							
GNI				Lg	Lg	11 03 48.3	
comp=E,16nm,0.3s,baz=199,slow=23,SNR=3.1							
GNI	**Garni**	**3.29**	**30**	*de*P	**Pn**	**11 03 00.0**	**+1.9**
GNI				pmax	pmax		
comp=Z,355nm,1.0s							
GNI	**Garni**	**3.29**	**30**	*e*P	**Pn**	**11 03 00.0**	**+1.9**
comp=Z,355nm,1.0s							
GNI				Lg	Lg	11 03 48.3	
GNI	**Garni**	**3.29**	**30**	*e*Pn	**Pn**	**11 03 00.2**	**+2.2**
GNI				Lg	Lg	11 03 48.3	
KARS	**Kars**	**3.32**	**6**	*e*PN	**Pn**	**11 02 58.1**	**-0.5**
KARS	**Kars**	**3.32**	**6**	*e*Pn	**Pn**	**11 02 58.1**	**-0.5**
IBST	**Bostanabad**	**3.44**	**82**	*e*AMB	AMB	11 03 58.2	
comp=Z,7μm,0.3s							
EAK	**Akyaka**	**3.45**	**13**	P	**Pn**	**11 03 02.4**	**+2.0**
EAK	**Akyaka**	**3.45**	**13**	*i* P	**Pn**	**11 03 02.4**	**+2.0**
EAK				*i* S	**Sg**	**11 03 54.3**	**-2.9**
IHRS	**Heris**	**3.66**	**73**	*e*Pn	**Pn**	**11 03 05.0**	**+1.7**
IHRS				*e*Sg	**Sg**	**11 04 01.7**	**-2.2**
IHRS				*e*AMB	AMB	11 04 12.8	
comp=Z,20μm,0.7s							
IHRS	**Heris**	**3.66**	**73**	*e*Pn	**Pn**	**11 03 05.0**	**+1.7**
IHRS				*e*Sg	**Sg**	**11 04 01.7**	**-2.2**
AKCD	**Akcadag**	**3.83**	**286**	P	**Pn**	**11 03 03.6**	**-1.9**
AKCD	**Akcadag**	**3.83**	**286**	*i* P	**Pn**	**11 03 03.6**	**-1.9**
AKCD				*i* S	**Sg**	**11 04 05.2**	**-4.0**
BGD	**Bogdanovka**	**4.01**	**11**	P	**Pn**	**11 03 10.2**	**+2.0**
IDHR	**Dehrash**	**4.04**	**129**	*e*Pn	**Pn**	**11 03 10.1**	**+1.7**
IDHR				*e*AMB	AMB	11 03 24.1	
comp=Z,21μm,0.3s							
IDHR	**Dehrash**	**4.04**	**129**	*e*Pn	**Pn**	**11 03 10.1**	**+1.7**
AKH	**Akhalkalaki**	**4.14**	**9**	P	**Pb**	**11 03 19.7**	**+0.2**
AKH	**Akhalkalaki**	**4.14**	**9**	*e*P	**Pb**	**11 03 19.7**	**+0.2**
GDB	**GEDABAY**	**4.19**	**35**	⇓P	**Pn**	**11 03 07.9**	**-2.6**
SNR=2.8							
GDB				⇓S	**Sn**	**11 03 57.4**	**-2.3**
GDB	**GEDABAY**	**4.19**	**35**	P	**Pn**	**11 03 07.9**	**-2.6**
SNR=2.8							
GDB				S	**Sn**	**11 03 57.4**	**-2.3**
ILIN	**Lien**	**4.27**	**123**	*e*Pn	**Pn**	**11 03 13.3**	**+1.6**
ILIN				*e*AMB	AMB	11 03 27.3	
comp=Z,15μm,0.3s							
ILIN	**Lien**	**4.27**	**123**	*e*Pn	**Pn**	**11 03 13.3**	**+1.6**
QZX	**Qazax, Azerbai**	**4.31**	**29**	⇓P	**Pn**	**11 03 09.4**	**-2.6**
SNR=7.0							
QZX				⇓S	**Sn**	**11 04 00.2**	**-2.2**
QZX	**Qazax, Azerbai**	**4.31**	**29**	P	**Pn**	**11 03 09.4**	**-2.6**
SNR=7.0							
QZX				S	**Sn**	**11 04 00.2**	**-2.2**
IGHG	**Ghaleghazi**	**4.40**	**132**	*e*Pn	**Pn**	**11 03 15.1**	**+1.7**
IGHG				*e*AMB	AMB	11 04 46.3	
comp=Z,17μm,0.3s							
IGHG	**Ghaleghazi**	**4.40**	**132**	*e*Pn	**Pn**	**11 03 15.1**	**+1.7**
GANJ	**Ganja**	**4.41**	**40**	⇑P	**Pn**	**11 03 11.2**	**-2.2**
SNR=143							
GANJ				⇓S	**Sn**	**11 04 02.9**	**-2.0**
GANJ	**Ganja**	**4.41**	**40**	P	**Pn**	**11 03 11.2**	**-2.2**
SNR=143							
GANJ				S	**Sn**	**11 04 02.9**	**-2.0**
BRDA	**Brd**	**4.63**	**49**	⇓P	**Pn**	**11 03 14.3**	**-2.1**
SNR=4.6							
BRDA				⇓S	**Sn**	**11 04 08.5**	**-1.7**
BRDA	**Brd**	**4.63**	**49**	P	**Pn**	**11 03 14.3**	**-2.1**
SNR=4.6							
BRDA				S	**Sn**	**11 04 08.5**	**-1.7**
DGRG	**David-gareji**	**4.65**	**27**	P	**Pn**	**11 03 20.1**	**+3.4**
DGRG	**David-gareji**	**4.65**	**27**	*e*P	**Pn**	**11 03 20.1**	**+3.4**
DGRG	**David-gareji**	**4.65**	**27**	*e*Pn	**Pn**	**11 03 20.1**	**+3.4**
TBLG	**Delisi**	**4.71**	**20**	P	**Pn**	**11 03 19.6**	**+2.2**
TBLG	**Delisi**	**4.71**	**20**	*e*P	**Pn**	**11 03 19.6**	**+2.2**
TBLG	**Delisi**	**4.71**	**20**	*e*P	**Pn**	**11 03 19.6**	**+2.2**
LRK	**Lerik**	**4.73**	**72**	⇑P	**Pn**	**11 03 15.8**	**-2.1**
SNR=5.2							
LRK				⇓S	**Sn**	**11 04 11.4**	**-1.4**
LRK	**Lerik**	**4.73**	**72**	P	**Pn**	**11 03 15.8**	**-2.1**
SNR=5.2							
LRK				S	**Sn**	**11 04 11.4**	**-1.4**
DRWC	**Darouich**	**4.80**	**263**	*e*P	**Pn**	**11 03 17.7**	**-1.1**
DRWC				*e*S	**Sn**	**11 04 11.8**	**-2.7**
DRWC				AML	AML	11 04 47.3	
comp=N,1μm,0.6s							
DRWC				AML	AML	11 04 51.1	
comp=E,831nm,0.6s							
DRWC	**Darouich**	**4.80**	**263**	*e*P	**Pn**	**11 03 17.7**	**-1.1**
DRWC				*e*S	**Sn**	**11 04 11.8**	**-2.7**
MNGR	**Mingechevir, A**	**4.91**	**44**	⇓P	**Pn**	**11 03 17.8**	**-2.4**
SNR=14							
MNGR	**Mingechevir, A**	**4.91**	**44**	P	**Pn**	**11 03 17.8**	**-2.4**
SNR=14							
GLBA	**Cilabad**	**4.95**	**65**	⇑P	**Pn**	**11 03 18.9**	**-1.9**
SNR=6.3							
GLBA	**Cilabad**	**4.95**	**65**	P	**Pn**	**11 03 18.9**	**-1.9**
SNR=6.3							
ASTR	**Astara**	**5.05**	**74**	⇑P	**Pn**	**11 03 20.7**	**-1.4**
SNR=3.6							
ASTR				⇑S	**Sn**	**11 04 19.6**	**-1.0**
ASTR	**Astara**	**5.05**	**74**	P	**Pn**	**11 03 20.7**	**-1.4**
SNR=3.6							
ASTR				S	**Sn**	**11 04 19.6**	**-1.0**
LKRN	**Lenkeran, Azer**	**5.08**	**72**	⇓P	**Pn**	**11 03 20.5**	**-2.0**
SNR=4.9							
LKRN	**Lenkeran, Azer**	**5.08**	**72**	P	**Pn**	**11 03 20.5**	**-2.0**
SNR=4.9							
BTCH	**Batrach**	**5.10**	**257**	*e*P	**Pn**	**11 03 22.5**	**-0.4**
BTCH				*e*S	**Sn**	**11 04 19.1**	**-2.7**
BTCH				AML	AML	11 04 52.5	
comp=N,3μm,0.7s							
BTCH				AML	AML	11 04 58.4	
comp=E,2μm,0.6s							
BTCH	**Batrach**	**5.10**	**257**	*e*P	**Pn**	**11 03 22.5**	**-0.4**
BTCH				*e*S	**Sn**	**11 04 19.1**	**-2.7**
SEKA	**Sheki**	**5.28**	**41**	⇑P	**Pn**	**11 03 23.1**	**-2.2**
SNR=45							
SEKA	**Sheki**	**5.28**	**41**	P	**Pn**	**11 03 23.1**	**-2.2**
SNR=45							
ZKTA	**Zakatala**	**5.32**	**35**	⇓P	**Pn**	**11 03 23.1**	**-2.7**
SNR=13							
QBL	**Gabala**	**5.45**	**47**	⇑P	**Pn**	**11 03 25.7**	**-2.0**
QBL	**Gabala**	**5.45**	**47**	P	**Pn**	**11 03 25.7**	**-2.0**
ARNB	**Al Arnab**	**5.53**	**257**	*e*P	**Pn**	**11 03 28.2**	**-0.6**
ARNB				*e*S	**Sn**	**11 04 28.9**	**-3.5**
ARNB				AML	AML	11 05 13.9	
comp=N,903nm,0.7s							
ARNB				AML	AML	11 05 15.3	
comp=E,800nm,0.9s							
ARNB	**Al Arnab**	**5.53**	**257**	*e*P	**Pn**	**11 03 28.2**	**-0.6**
ZEI	**Tsey**	**5.55**	**10**	*e*P	**Pn**	**11 03 31.0**	**+1.8**
ZEI				*e*S	**Sn**	**11 04 40.2**	**+7.0**
ZEI				pmax	pmax		
comp=Z,50nm,0.7s							
IML	**Ismayilli**	**5.56**	**50**	⇑P	**Pn**	**11 03 27.0**	**-2.2**
SNR=5.5							
IML	**Ismayilli**	**5.56**	**50**	P	**Pn**	**11 03 27.0**	**-2.2**
SNR=5.5							
XNQ	**Khinaliq**	**5.77**	**46**	⇓P	**Pn**	**11 03 29.9**	**-2.4**
SNR=12							
XNQ	**Khinaliq**	**5.77**	**46**	P	**Pn**	**11 03 29.9**	**-2.4**
SNR=12							
PQL	**Pirkuli**	**5.81**	**52**	⇓P	**Pn**	**11 03 30.5**	**-2.3**
PQL	**Pirkuli**	**5.81**	**52**	P	**Pn**	**11 03 30.5**	**-2.3**
NEY	**Neytrino**	**5.92**	**1**	*e*P	**Pn**	**11 03 37.1**	**+2.8**
MARH	**Ras Al Marh**	**5.96**	**238**	*e*P	**Pn**	**11 03 35.9**	**+0.8**
MARH				*e*S	**Sn**	**11 04 41.5**	**-2.0**
MARH	**Ras Al Marh**	**5.96**	**238**	*e*P	**Pn**	**11 03 35.8**	**+0.8**
QSAR	**Qusar**	**6.07**	**45**	⇑P	**Pn**	**11 03 33.6**	**-2.6**
ATGJ	**Altiaghaj**	**6.07**	**52**	⇑P	**Pn**	**11 03 34.2**	**-2.1**
SNR=21							
ATGJ	**Altiaghaj**	**6.07**	**52**	P	**Pn**	**11 03 34.2**	**-2.1**
SNR=21							
QUBA	**Quba, Azerbaij**	**6.09**	**47**	⇑P	**Pn**	**11 03 34.1**	**-2.4**
SNR=29							
QUBA	**Quba, Azerbaij**	**6.09**	**47**	P	**Pn**	**11 03 34.1**	**-2.4**
SNR=29							
ZALF	**Zalf**	**6.15**	**226**	*e*P	**Pn**	**11 03 37.7**	**+0.3**
ZALF				*e*S	**Sn**	**11 04 46.8**	**-1.0**
ZALF				AML	AML	11 05 29.7	
comp=E,409nm,0.7s							
ZALF				AML	AML	11 05 39.2	
comp=N,556nm,0.7s							
ZALF	**Zalf**	**6.15**	**226**	*e*P	**Pn**	**11 03 37.7**	**+0.3**
ZALF				*e*S	**Sn**	**11 04 46.8**	**-1.0**
SIZA	**Siyzn**	**6.17**	**51**	⇓P	**Pn**	**11 03 35.2**	**-2.4**
SNR=13

IRAM Ramesheh 9.76 121 *e*Pn **Pn 11 04 25.6 -1.4**
IRAM *e*AMB AMB 11 06 22.1
comp=Z,273nm,0.3s
IRAM Ramesheh 9.76 121 *e*Pn **Pn 11 04 25.6 -1.4**
EIL Elat 9.94 222 Pn **Pn 11 04 29.6 +0.3**
comp=Z,0.3nm,0.3s,baz=15,slow=9.8,SNR=1.9
EIL Lg Lg 11 07 22.2
comp=Z,1.4nm,0.3s,baz=6.8,slow=20,SNR=3.6
EIL LR LR 11 08 33.1
comp=Z,382nm,19.8s,baz=52,slow=40
GEYT Alibeck 12.32 82 Pn **Pn 11 05 04.1 +2.1**
baz=294,slow=11,SNR=4.5
GEYT LR LR 11 10 23.0
comp=Z,161nm,20.8s,baz=290,slow=40
TIRR Tirgusor 12.87 308⇑ *i*P **Pn 11 05 10.9 +1.6**
TIRR Tirgusor 12.87 308 *e*P **Pn 11 05 10.3 +1.0**
TIRR Tirgusor 12.87 308 *e*P **Pn 11 05 10.3 +1.0**
TIRR Tirgusor 12.87 308 *e*Pn **Pn 11 05 10.3 +1.0**
CFR Carcaliu 13.40 310⇑ *i*P **Pn 11 05 19.5 +3.0**
CFR Carcaliu 13.40 310⇑ *i*P **Pn 11 05 19.5 +3.0**
SMTH Samothraki Isl 13.66 289 P **P 11 05 30.1 +1.1**
VRH Novokhopyorsk 13.89 358 *e*P **Pn 11 05 23.1 -0.1**
VRH pmax pmax
comp=Z,30nm,0.9s
VRH Novokhopyorsk 13.89 358 *e*P **Pn 11 05 23.1 -0.1**
comp=Z,30nm,0.9s
KDZ Kurdzhali 13.95 293 *i*P **P 11 05 34.9 +2.6**
SZH Strazhica 14.03 300 *i*P **P 11 05 34.3 +1.2**
VSR Storozhevoye 14.11 351 *e*P **Pn 11 05 26.6 +0.5**
VSR pmax pmax
comp=Z,8.0nm,0.6s
VSR Storozhevoye 14.11 351 *e*P **Pn 11 05 26.6 +0.5**
comp=Z,8.0nm,0.6s
ISR Istrita 14.36 308⇑ *i*P **Pn 11 05 27.6 -2.1**
IDI Anoyia 14.42 267 Pn **Pn 11 05 30.1 -0.6**
comp=Z,0.2nm,0.3s,baz=43,slow=7.7,SNR=2.7
IDI Anoyia 14.42 267⇑ *i*P **Pn 11 05 30.4 -0.3**
VRI Vrincioaia 14.61 311⇓ *i*P **P 11 05 37.8 -1.7**
VRI Vrincioaia 14.61 311⇓ *i*P **P 11 05 37.8 -1.7**
PLOR Plostina 14.64 311⇑ *i*P **Pn 11 05 34.3 +0.7**
MLR Muntele Rosu 14.90 308⇑ *i*P **P 11 05 40.9 -2.1**
MLR Muntele Rosu 14.90 308 *e*P **P 11 05 40.0 -3.0**
MLR Muntele Rosu 14.90 308 *e*Pn **P 11 05 40.0 -3.0**
MLR Muntele Rosu 14.90 308⇑ *i*P **P 11 05 40.9 -2.1**
MLR Muntele Rosu 14.90 308 *e*Pn **P 11 05 40.0 -3.0**
TESR Tescani 14.99 313⇑ *i*P **P 11 05 42.4 -1.3**
TESR Tescani 14.99 313⇑ *i*P **P 11 05 42.4 -1.3**
SORM Soroca 15.02 320⇑ *i*P **P 11 05 44.6 +0.6**
SORM Soroca 15.02 320⇑ *i*P **P 11 05 44.6 +0.6**
NVR Nevrokopi 15.04 291 P **P 11 05 45.6 +1.2**
NVR Nevrokopi 15.04 291 P **P 11 05 45.6 +1.2**
NVR Nevrokopi 15.04 291 P **P 11 05 45.6 +1.2**
PGB Panagyurishte 15.06 296 *i*P **P 11 05 46.2 +1.5**
MMB Musomiste 15.18 292 *i*P **P 11 05 47.1 +1.1**
SRS Serrai 15.21 290 P **P 11 05 47.5 +1.3**
SRS Serrai 15.21 290 P **P 11 05 47.5 +1.3**
SRS Serrai 15.21 290 P **P 11 05 47.5 +1.3**
SRS Serrai 15.21 290 P **P 11 05 47.5 +1.3**
SOH Sokhos 15.35 289 P **P 11 05 49.8 +2.0**
SOH Sokhos 15.35 289 P **P 11 05 49.8 +2.0**
SOH Sokhos 15.35 289 P **P 11 05 49.8 +2.0**
SOH Sokhos 15.35 289 P **P 11 05 49.8 +2.0**
VOIR 15.45 307⇑ *i*P **P 11 05 48.3 -0.6**
VOIR 15.45 307⇑ *i*P **P 11 05 48.3 -0.6**
LPSR Galich'ya Gora 15.49 352 *e*P **P 11 05 46.9 -2.4**
LPSR pmax pmax
comp=Z,100nm,0.8s
LPSR Galich'ya Gora 15.49 352 *e*P **P 11 05 46.9 -2.4**
comp=Z,100nm,0.8s
MPEP Malo Peshtene 15.58 299 *i*P **P 11 05 52.0 +1.7**
ARR Arges 15.68 306⇑ *i*P **P 11 05 50.7 -0.8**
ARR Arges 15.68 306⇑ *i*P **P 11 05 50.7 -0.8**
KKB Krupnik 15.71 293 *i*P **P 11 05 52.3 +0.5**
DSF Desfina 15.89 280 P **P 11 05 54.6 +0.8**
DSF Desfina 15.89 280 P **P 11 05 54.6 +0.8**
DSF Desfina 15.89 280 P **P 11 05 54.6 +0.8**
AGG Agios Georgios 16.03 282 P **P 11 05 56.0 +0.6**
AGG Agios Georgios 16.03 282 *e*P **P 11 05 55.6 +0.2**
AGG pmax pmax
comp=Z,87nm,1.2s
AGG Agios Georgios 16.03 282 *e*P **P 11 05 55.6 +0.2**
comp=Z,87nm,1.2s
AGG Agios Georgios 16.03 282 *e*Pn **P 11 05 55.6 +0.2**
comp=Z,87nm,1.2s
LOT Lotru 16.27 306⇑ *i*P **P 11 05 58.5 +0.4**
LOT Lotru 16.27 306⇑ *i*P **P 11 05 58.5 +0.4**
THL Klokotos Trika 16.28 284 P **P 11 05 58.4 +0.3**
THL Klokotos Trika 16.28 284 P **P 11 05 58.4 +0.3**
ANX Ano Chora 16.36 281 P **P 11 06 03.3 +4.2**
BURAR Bucovina Array 16.40 314⇑ *i*P **P 11 06 01.5 +2.0**
BURAR Bucovina Array 16.40 314⇑ *i*P **P 11 06 01.5 +2.0**
BUR08 Bucovina Ar. S 16.43 314 *e*Pn **Pn 11 05 57.8 +0.8**
BUR08 Bucovina Ar. S 16.43 314 *e*Pn **Pn 11 05 57.8 +0.8**
AKASG Malin Array Be 16.44 329 Pn **Pn 11 05 55.9 -1.1**
comp=Z,0.4nm,0.3s,baz=136,slow=12,SNR=19
AKASG LR LR 11 13 13.7
comp=Z,102nm,20.9s,baz=165,slow=41
AKASG Malin Array Be 16.44 329 *ce*P **Pn 11 05 56.4 -0.6**
AKASG pmax pmax
comp=Z,6.0nm,0.8s
KIEV Kiev 16.44 329 *e*P **Pn 11 05 56.5 -0.5**
KIEV pmax pmax
comp=Z,16nm,1.0s
KIEV Kiev 16.44 329 *e*Pn **Pn 11 05 56.5 -0.5**
comp=Z,16nm,1.0s
KIEV Kiev 16.44 329 *e*Pn **Pn 11 05 56.5 -0.5**
comp=Z,16nm,1.0s
AK11 Malin Array Si 16.45 329 *e*Pn **Pn 11 05 56.9 -0.2**
AK11 Malin Array Si 16.45 329 *e*Pn **Pn 11 05 56.9 -0.2**
PVO Paravola 16.67 281 P **P 11 06 04.8 +2.4**
PVO Paravola 16.67 281 P **P 11 06 04.8 +2.4**
GZR Gura Zlata 16.90 305⇑ *i*P **P 11 06 05.5 +0.5**
GZR Gura Zlata 16.90 305⇑ *i*P **P 11 06 05.5 +0.5**
PDO Prodromos 16.94 281 P **P 11 06 04.9 -0.5**
PDO Prodromos 16.94 281 P **P 11 06 04.9 -0.5**
UOSS Minazif 16.94 133 *e*Pn **Pn 11 06 02.2 -1.4**
comp=Z,2.8nm,0.9s
UOSS Minazif 16.94 133 *e*Pn **Pn 11 06 02.2 -1.4**
comp=Z,2.8nm,0.9s
UOSS *e*Sn **Sn 11 09 05.5 -6.5**
AKTK Aktyubinsk 17.14 35 P **Pn 11 06 04.6 -1.3**
comp=Z,2.0nm,0.3s
AKTO Aktyubinsk 17.14 35 Pn **Pn 11 06 04.6 -1.3**
comp=Z,1.5nm,0.3s,baz=221,slow=14,SNR=37
ABKAR Akbulak array 17.32 41 *e*Pn **Pn 11 06 06.1 -2.1**
ABKAR Akbulak array 17.32 41 *e*Pn **Pn 11 06 06.1 -2.1**
MDVR Moldovita 17.40 302⇑ *i*P **P 11 06 11.3 +0.8**
MDVR Moldovita 17.40 302⇑ *i*P **P 11 06 11.3 +0.8**
DRGR 17.50 309⇑ *i*P **P 11 06 14.4 +2.8**
DRGR 17.50 309⇑ *i*P **P 11 06 14.4 +2.8**
BZS Buzias 17.74 304⇑ *i*P **P 11 06 14.3 +0.1**
BZS Buzias 17.74 304⇑ *i*P **P 11 06 14.3 +0.1**
OBN Obninsk 18.27 349 P **P 11 06 20.1 +0.2**
comp=Z,4.4nm,0.3s,baz=341,slow=22,SNR=7.6
OBN LR LR 11 14 10.9
comp=Z,112nm,19.2s,baz=272,slow=40
OBN Obninsk 18.27 349 *ce*P **P 11 06 20.3 +0.4**
OBN pmax pmax
comp=Z,46nm,1.7s
OBN MLR MLR
comp=Z,138nm,17.0s
OBN Obninsk 18.27 349 *e*P **P 11 06 20.3 +0.4**
comp=Z,138nm,17.0s
OBN Obninsk 18.27 349 *e*P **P 11 06 19.7 -0.2**
comp=Z,30nm,1.1s
LVV L'vov 18.30 319 *e*P Pn 11 06 10.7 -9.5
UZH Uzhgorod 18.61 314 *e*P **Pn 11 06 26.2 +2.2**
UZH Uzhgorod 18.61 314 *e*P **Pn 11 06 26.2 +2.2**
MOS Moscow 18.73 351 *e*P **P 11 06 23.0 -2.0**
MOS pmax pmax
comp=Z,62nm,1.0s
MOS Moscow 18.73 351 *e*P **P 11 06 23.0 -2.0**
comp=Z,62nm,1.0s
KOLS Kolonicke sedl 18.77 315 *e*P **Pn 11 06 30.1 +4.1**
KOLS pmax pmax
comp=Z,15nm,1.4s
KOLS Kolonicke sedl 18.77 315 *e*P **Pn 11 06 30.0 +4.1**
KWP Kalwaria Pacla 18.90 317 *e*P **Pn 11 06 27.9 +0.4**
KWP Kalwaria Pacla 18.90 317 *e*P **Pn 11 06 27.9 +0.4**
KWP Kalwaria Pacla 18.90 317 *e*P **Pn 11 06 27.9 +0.4**
CRVS Cervenica-Dubn 19.22 314 *e*P **Pn 11 06 32.0 +0.6**
CRVS Cervenica-Dubn 19.22 314 *e*P **Pn 11 06 32.0 +0.6**
CRVS Cervenica-Dubn 19.22 314 *e*P **Pn 11 06 32.0 +0.6**
CRVS *e* 11 06 41.9
KECS Kecovo 19.59 312 *e*P **Pn 11 06 37.4 +1.5**
KECS pmax pmax
comp=Z,3.0nm,1.0s
KECS Kecovo 19.59 312 *e*P **Pn 11 06 37.4 +1.5**
comp=Z,3.0nm,1.0s
KECS Kecovo 19.59 312 *e*P **Pn 11 06 37.4 +1.5**
STHS Stebnicka Huta 19.60 315 *e*P **Pn 11 06 36.2 +0.2**
STHS pmax pmax
comp=Z,5.0nm,1.0s
STHS Stebnicka Huta 19.60 315 *e*P **Pn 11 06 36.2 +0.2**
comp=Z,5.0nm,1.0s
STHS Stebnicka Huta 19.60 315 *e*P **Pn 11 06 36.2 +0.2**
STHS *e* 11 06 40.7
WSAR Wadi Sarin 19.68 131 P **P 11 06 35.1 -0.5**
comp=Z,0.4nm,0.3s,baz=316,slow=11,SNR=3.9
WSAR LR LR 11 15 39.9
comp=Z,315nm,20.5s,baz=330,slow=42
PSZ Piszkesteto 19.71 310⇑ *i*P **Pn 11 06 37.7 +0.3**
PSZ Piszkesteto 19.71 310 *e*P **Pn 11 06 37.4 0.0**
PSZ pmax pmax
comp=Z,14nm,1.1s
PSZ Piszkesteto 19.71 310 *e*P **Pn 11 06 37.4 0.0**
comp=Z,14nm,1.1s
PSZ Piszkesteto 19.71 310 *e*P **Pn 11 06 37.4 0.0**
comp=Z,14nm,1.1s
NIE Niedzica 20.14 314 *e*P Pn 11 06 43.0 +0.7
NIE Niedzica 20.14 314 *e*P Pn 11 06 43.0 +0.6
NIE Niedzica 20.14 314 *e*P Pn 11 06 43.0 +0.6
TIP Timpagrande 20.36 283⇑ *i*P **P 11 06 43.7 +0.6**
TIP Timpagrande 20.36 283 *e*P **P 11 06 43.3 +0.3**
comp=Z,61nm,1.0s
TIP Timpagrande 20.36 283 *e*P **P 11 06 43.3 +0.3**
comp=Z,61nm,1.0s
MATE Matera 20.38 287⇑ *i*P **P 11 06 42.8 -0.3**
MATE Matera 20.38 287⇑ *i*P **P 11 06 42.8 -0.3**
CUC Castrocucco 21.06 286 *e*P **P 11 06 51.4 +0.8**
comp=Z,57nm,1.4s
CUC Castrocucco 21.06 286 *e*P **P 11 06 51.4 +0.8**
comp=Z,57nm,1.4s
SUW Suwalki 21.39 327 *e*P **P 11 06 57.0 +3.0**
SUW Suwalki 21.39 327 *e*P **P 11 06 57.0 +3.0**
KOGS Kog 21.55 303 *e*P **P 11 06 57.0 +1.2**
KOGS Kog 21.55 303 P **P 11 06 57.0 +1.2**
OKC Ostrava-Krasne 21.57 313 *e*P **P 11 07 00.2 +4.2**
OKC *ep*P **sP 11 07 03.1 +3.1**
OKC *e*S Sn 11 11 02.7 -0.6
OKC AMS AMS 11 17 40.0
comp=Z,200nm,15.6s
OKC Ostrava-Krasne 21.57 313 *e*P **P 11 07 00.2 +4.2**
OKC *e* 11 07 03.1
OKC *e*S Sn 11 11 02.7 -0.6
OKC MLR MLR
comp=Z,200nm,15.6s
KBL Kabul 21.57 89 *e*P **P 11 06 57.8 +1.4**
KBL pmax pmax
comp=Z,14nm,1.1s
KBL Kabul 21.57 89 *e*P **P 11 06 57.8 +1.4**
comp=Z,14nm,1.1s
KBL Kabul 21.57 89 *e*P **P 11 06 57.8 +1.4**
comp=Z,14nm,1.1s
MORC Moravsky Berou 21.90 313⇑ *i*P **P 11 07 02.6 +3.1**
MORC Moravsky Berou 21.90 313 *e*P **P 11 07 00.8 +1.2**
MORC pmax pmax
comp=Z,33nm,1.0s
MORC Moravsky Berou 21.90 313 *e*P **P 11 07 00.8 +1.2**
comp=Z,33nm,1.0s
MORC Moravsky Berou 21.90 313 *e*P **P 11 07 00.8 +1.2**
comp=Z,33nm,1.0s
ARU Arti 21.91 24 P **P 11 06 59.4 -0.1**
comp=Z,34nm,0.6s,baz=227,slow=5.8,SNR=68
ARU LR LR 11 17 40.8
comp=Z,108nm,18.7s,baz=128,slow=42
ARU Arti 21.91 24 *d*i*P* **P 11 06 59.0 -0.5**
ARU 11 07 20.8
ARU S **S 11 10 59.9 -1.5**
ARU pmax pmax
comp=Z,97nm,1.2s
ARU Arti 21.91 24 *i*P **P 11 06 59.0 -0.5**
comp=Z,97nm,1.2s
ARU Arti 21.91 24 *e*P **P 11 06 59.3 -0.2**
comp=Z,55nm,0.7s
ARSA Arzberg 22.25 305 *es*P **P 11 07 05.6 +2.2**
comp=Z,8.9nm,1.6s
ARSA Arzberg 22.25 305 P **P 11 07 05.6 +2.2**
comp=Z,8.9nm,1.6s
VRAC Vranov 22.27 311 P **P 11 07 05.0 +1.4**
comp=Z,3.7nm,0.8s,baz=95,slow=11,SNR=5.2
VRAC LR LR 11 17 01.8
comp=Z,67nm,19.8s,baz=100,slow=40
VRAC Vranov 22.27 311⇑ *i*P **P 11 07 06.3 +2.8**
VRAC Vranov 22.27 311 P **P 11 07 05.0 +1.4**
VRAC pmax pmax
comp=Z,4.0nm,0.8s
VRAC MLR MLR
comp=Z,67nm,19.8s
VRAC Vranov 22.27 311 *e*P **P 11 07 05.2 +1.7**
VNDS Vrh nad Dolski 22.50 302 *i*P **P 11 07 08.3 +2.2**
VNDS Vrh nad Dolski 22.50 302 *i*P **P 11 07 08.3 +2.2**
LJU Ljubljana 22.61 302 *e*P **P 11 07 09.3 +2.1**
LJU Ljubljana 22.61 302 *e*P **P 11 07 09.3 +2.1**
DPC Dobruska-Polom 22.85 313 *e*P **P 11 07 10.3 +0.6**
DPC *ep*P **sP 11 07 15.3 +1.5**
DPC Dobruska-Polom 22.85 313 *e*P **P 11 07 10.3 +0.6**
DPC *e* 11 07 15.3
DPC Dobruska-Polom 22.85 313 P **P 11 07 10.3 +0.6**
AQU L'Aquila 22.91 292 *e*P **P 11 07 11.6 +1.1**
AQU pmax pmax
comp=Z,57nm,1.3s
AQU L'Aquila 22.91 292 *e*P **P 11 07 11.6 +1.1**
comp=Z,56nm,1.3s
SVE Sverdlovsk 22.93 26⇓ *e*P **P 11 07 10.4 0.0**
SVE pmax pmax
comp=Z,34nm,1.2s
UPC Upice 23.10 313 *e*P **P 11 07 13.9 +1.7**
UPC *ep*P **sP 11 07 17.7 +1.4**
UPC Upice 23.10 313 *e*P **P 11 07 13.9 +1.7**
UPC *e* 11 07 17.7
UPC Upice 23.10 313 P **P 11 07 13.9 +1.7**
MOA Molln 23.24 306 *i*pP **P 11 07 14.8 +1.1**
comp=Z,14nm,0.9s
MOA Molln 23.24 306 P **P 11 07 14.8 +1.1**
comp=Z,14nm,0.9s
VSU Vasula 23.56 339 *ce*P **P 11 07 16.5 -0.2**
VSU pmax pmax
comp=Z,30nm,0.7s
KLMR Klimovskoe 23.64 356 *e*P **P 11 07 14.3 -3.2**
KLMR *e* 11 10 59.5
KLMR pmax pmax
comp=Z,22nm,0.9s
KBA Koelnbreinsper 23.64 304 *i*pP **P 11 07 18.4 +0.5**
comp=Z,11nm,0.9s
KBA Koelnbreinsper 23.64 304 P **P 11 07 18.4 +0.5**
comp=Z,11nm,0.9s
GEA0 GERESS Array S 23.89 308 *e*P **P 11 07 19.6 -0.6**
GEC2 GERESS Array S 23.89 308 *e*P **P 11 07 20.4 +0.2**
GEC2 pmax pmax
comp=Z,9.0nm,1.3s
GEC2 GERESS Array S 23.89 308 *e*P **P 11 07 20.4 +0.2**
comp=Z,9.1nm,1.3s
GERES GERESS Array B 23.89 308 P **P 11 07 19.5 -0.7**
comp=Z,5.5nm,1.2s,baz=123,slow=9.7,SNR=12
KHC Kasperske Hory 24.06 309 *e*P **P 11 07 21.4 -0.3**
KHC Kasperske Hory 24.06 309 *e*P **P 11 07 21.2 -0.6**
KHC pmax pmax
comp=Z,3.0nm,1.3s
KHC Kasperske Hory 24.06 309 P **P 11 07 21.4 -0.3**
KHC Kasperske Hory 24.06 309 *e*P **P 11 07 21.1 -0.6**
comp=Z,3.3nm,1.3s
SOKR Solikamsk 24.09 18 *c*i*P* **P 11 07 20.4 -1.4**
SOKR pmax pmax
comp=Z,71nm,0.9s
SOKR MLR MLR
comp=Z,268nm,24.0s
ABTA Abfaltersbach 24.12 302 *ep*P **P 11 07 22.6 +0.2**
comp=Z,7.3nm,1.1s
ABTA Abfaltersbach 24.12 302 P **P 11 07 22.6 +0.2**
comp=Z,7.3nm,1.1s
EKS2 Erkin-Say 24.39 68 *e*P **P 11 07 26.7 +1.7**
EKS2 pmax pmax
comp=Z,12nm,0.8s
EKS2 Erkin-Say 24.39 68 *e*P **P 11 07 26.7 +1.7**
comp=Z,12nm,0.8s
BRG Berggiesshubel 24.45 313 *e*P **P 11 07 26.3 +1.1**
comp=Z,2.9nm,0.8s
BRG Berggiesshubel 24.45 313 *e*P **P 11 07 26.3 +1.1**
BRG pmax pmax
comp=Z,3.0nm,0.8s
BRG Berggiesshubel 24.45 313 *e*P **P 11 07 26.3 +1.1**
comp=Z,3.0nm,0.8s
WTTA Wattenberg 24.82 303 *i*P **P 11 07 28.5 -0.3**
comp=Z,12nm,1.1s
WTTA Wattenberg 24.82 303 P **P 11 07 28.5 -0.3**
comp=Z,12nm,1.1s
BVAR Borovoye Array 24.89 42 P **P 11 07 28.9 -0.3**
comp=Z,4.2nm,0.7s,baz=234,slow=9.0,SNR=22
AAK Ala-Archa 24.92 68 P **P 11 07 31.2 +1.4**
comp=Z,2.3nm,0.6s,baz=233,slow=9.5,SNR=6.6
AAK LR LR 11 17 42.4
comp=Z,84nm,20.5s,baz=244,slow=38
AAK Ala-Archa 24.92 68 *e*P **P 11 07 31.6 +1.8**
AAK pmax pmax
comp=Z,7.0nm,1.0s
AAK Ala-Archa 24.92 68 *e*P **P 11 07 31.0 +1.2**
comp=Z,5.0nm,0.9s
AAK Ala-Archa 24.92 68 *e*P **P 11 07 31.0 +1.2**
comp=Z,5.0nm,0.9s
FRU Bishkek 25.02 67 *e*P **P 11 07 32.5 +2.0**
NKC Novy Kostel 25.11 311 *e*P **P 11 07 32.2 +0.9**
NKC Novy Kostel 25.11 311 *e*P **P 11 07 32.2 +0.9**
NKC Novy Kostel 25.11 311 *e*P **P 11 07 32.2 +0.9**
CLL Collm 25.17 313 *e*P **P 11 07 32.0 +0.3**
comp=Z,9.0nm,1.5s
CLL *i* 11 07 34.8
comp=Z,11nm,1.1s
CLL *e* 11 07 47.0
CLL *e*S **S 11 12 05.0 +8.4**
CLL *e*SSS SSS 11 12 54.0
CLL Collm 25.17 313 *e*P **P 11 07 32.0 +0.3**
CLL *i* 11 07 34.8
CLL pmax pmax
comp=Z,9.0nm,1.5s
CLL Collm 25.17 313 *e*P **P 11 07 32.0 +0.3**
comp=Z,15nm,1.2s
CLL Collm 25.17 313 *e*P **P 11 07 32.0 +0.3**
comp=Z,15nm,1.2s
MOTA Moosalm 25.19 303 *i*P **P 11 07 31.1 -1.0**
comp=Z,13nm,0.9s
MOTA Moosalm 25.19 303 P **P 11 07 31.1 -1.0**
comp=Z,13nm,0.9s
FETA Feichten 25.38 303 *i*P **P 11 07 33.7 -0.1**
comp=Z,7.5nm,0.8s
FETA Feichten 25.38 303 P **P 11 07 33.7 -0.1**
comp=Z,7.5nm,0.8s
FUORN Ofenpass-Fuorn 25.62 302 *e*P **P 11 07 36.4 +0.2**
comp=Z,8.5nm,1.0s
ATD Arta Tunnel 25.68 179 LR LR 11 17 24.9
comp=Z,76nm,18.5s,baz=352,slow=36
TKM2 Tokmak 2 25.74 67 *e*P **P 11 07 38.6 +1.3**
TKM2 pmax pmax
comp=Z,8.0nm,0.8s
TKM2 Tokmak 2 25.74 67 *e*P **P 11 07 38.6 +1.3**
comp=Z,8.2nm,0.8s
DAVOX Davos/Dischmat 25.91 302 P **P 11 07 37.9 -0.8**
comp=Z,1.9nm,0.6s,baz=119,slow=12,SNR=4.8
DAVOX LR LR 11 20 13.9
comp=Z,110nm,19.5s,baz=87,slow=42
DAVA Damuels 26.00 303 *e*P **P 11 07 38.5 -1.0**
comp=Z,9.7nm,0.8s
DAVA Damuels 26.00 303 P **P 11 07 38.5 -1.0**
comp=Z,9.7nm,0.8s
VSL Villasalto 26.04 285 *e*P **P 11 07 41.7 +1.9**
comp=Z,16nm,1.1s
KSH Kashi 26.16 75 *e*P **P 11 07 42.3 +1.3**
KSH *ep*P sP 11 07 46.8 +1.6
KSH *es*P pP 11 07 49.3 +5.4
KSH S **S 11 12 11.5 -1.4**
KSH pmax pmax
comp=Z,82nm,4.9s
KSH LR LR
comp=N,450nm,11.1s
KSH LR LR
comp=E,290nm,11.3s
FIA1 FINESS Array S 26.27 342 *e*P **P 11 07 41.7 +0.1**
FINES FINESS Array B 26.27 342 P **P 11 07 40.9 -0.8**
comp=E,2.9nm,0.6s,baz=143,slow=10.0,SNR=10
FINES LR LR 11 18 51.7
comp=E,80nm,21.1s,baz=127,slow=38
FINES FINESS Array B 26.27 342 *ce*P **P 11 07 41.7 +0.1**
FINES pmax pmax
comp=Z,3.0nm,0.6s
KEST Kesra 26.69 277 P **P 11 07 47.5 +1.7**
comp=Z,5.9nm,1.0s,baz=27,slow=14,SNR=4.9
KURBB Kurchatov Arra 28.77 51 P **P 11 08 05.0 +0.8**
comp=Z,2.3nm,0.7s,baz=262,slow=9.1,SNR=16
KURBB PcP **PcP 11 11 13.1 -0.8**
comp=Z,0.5nm,0.8s,baz=266,slow=3.2,SNR=3.6
KURK Kurchatov 28.85 51 P **P 11 08 05.0 +0.2**
KURK 11 11 13.1
KURK pmax pmax
comp=Z,2.0nm,0.7s
KURK pmax pmax
comp=Z,1.0nm,0.8s
KURK Kurchatov 28.85 51 PcP **PcP 11 11 13.1 -1.0**
comp=Z,1.0nm,0.8s
KURK Kurchatov 28.85 51 *e*P **P 11 08 05.9 +1.1**
comp=Z,5.0nm,0.9s
KURK PcP **PcP 11 11 13.1 -1.0**
HFS Hagfors 29.31 330 P **P 11 08 07.8 -1.0**
comp=Z,5.7nm,0.8s,baz=156,slow=15,SNR=4.7
HFS LR LR 11 20 19.9
comp=Z,111nm,18.4s,baz=130,slow=37
HFS Hagfors 29.31 330 P **P 11 08 07.8 -1.0**
HFS pmax pmax
comp=Z,10.0nm,1.0s
HFS MLR MLR
comp=Z,111nm,18.4s
MK31 Makanchi Array 30.67 59 *e*P **P 11 08 21.6 +0.5**
MK31 Makanchi Array 30.67 59 *e*P **P 11 08 21.6 +0.5**
MKAR Makanchi Array 30.67 59 P **P 11 08 21.7 +0.6**
comp=Z,1.2nm,0.6s,baz=262,slow=6.3,SNR=11
MKAR Makanchi Array 30.67 59 *e*P **P 11 08 21.6 +0.5**
MK01 Makanchi Array 30.68 59 *e*P **P 11 08 21.5 +0.4**
NOA NORSAR Array B 30.84 330 P **P 11 08 24.0 +1.6**
comp=Z,1.2nm,0.8s,baz=127,slow=8.6,SNR=3.5
NOA LR LR 11 21 03.0
comp=Z,72nm,20.0s,baz=135,slow=37
NVS Novosibirsk 32.61 44 *e*P **P 11 08 38.8 +0.9**
NVS pmax pmax
comp=Z,9.0nm,0.8s
NVS pmax pmax
comp=N,4.0nm,0.9s
NVS pmax pmax
comp=E,5.0nm,0.8s
ZAA0 Zalesovo Array 33.29 46 *e*P **P 11 08 44.0 +0.2**
ZALV Zalesovo Beam 33.29 46 P **P 11 08 43.9 0.0**
comp=E,2.5nm,0.6s,baz=257,slow=9.8,SNR=10
ZALV LR LR 11 23 04.0
comp=E,44nm,18.2s,baz=250,slow=38
ARA0 ARCESS Array S 33.58 349 *e*P **P 11 08 45.9 -0.4**
ARCES ARCESS Array B 33.58 349 P **P 11 08 46.0 -0.3**
comp=E,5.8nm,0.7s,baz=161,slow=7.7,SNR=22
ARCES LR LR 11 23 15.0
comp=E,97nm,19.8s,baz=116,slow=38
WMQ Urumqi 34.53 65 P **P 11 08 55.5 +0.6**
WMQ pP sP 11 08 59.3 +0.2
WMQ sP pP 11 09 01.0 +3.1
WMQ pmax pmax
comp=Z,6.0nm,0.6s
WMQ pmax pmax
comp=Z,87nm,5.0s
WMQ LR LR
comp=N,48nm,32.6s
WMQ LR LR
comp=Z,22nm,22.8s
TAM Tamanrasset 34.96 256 *e*P **P 11 09 00.4 +1.5**
TAM pmax pmax
comp=Z,11nm,1.2s
TAM Tamanrasset 34.96 256 *e*P **P 11 09 00.4 +1.5**
comp=Z,11nm,1.2s
ES19 SONSECA Array 36.15 288 *e*P **P 11 09 07.9 -1.0**
ESDC Sonseca Array 36.20 288 P **P 11 09 08.2 -1.1**
comp=Z,1.5nm,0.6s,baz=71,slow=8.7,SNR=12
ESDC LR LR 11 26 39.1
comp=Z,26nm,18.1s,baz=30,slow=41
KMBO Kilima Mbogo 38.57 189 LR LR 11 25 38.0
comp=Z,103nm,19.5s,baz=88,slow=37
NRIK Noril'sk 40.13 23 P **P 11 09 42.3 +0.4**
comp=Z,1.8nm,0.4s,baz=244,slow=4.9,SNR=5.6
NRIK LR LR 11 30 19.7
comp=Z,86nm,18.5s,baz=138,slow=42

SPITS	Spitsbergen Ar	42.42	352	P		P	11 10 00.9	+0.2
	comp=Z,3.2nm,0.6s,baz=194,slow=10,SNR=3.3							
SPITS				LR		LR	11 28 44.3	
	comp=Z,43nm,18.6s,baz=135,slow=38							
TOA0	Torodi Ar. Sit	43.66	247	*e*P		P	11 10 10.5	-1.0
TORD	Torodi Ar. Bea	43.66	247	P		P	11 10 10.1	-1.4
	comp=Z,1.5nm,1.0s,baz=26,slow=6.3,SNR=5.6							
GTA	Gaotai	44.26	69	*e*P		P	11 10 17.5	+1.3
GTA				pP		sP	11 10 22.0	+1.5
GTA				sP		pP	11 10 25.5	+6.2
GTA				pmax		pmax		
	comp=Z,4.0nm,1.0s							
ZAK	Zakamensk	44.47	53	*e*P		P	11 10 18.9	+1.2
ZAK				pmax		pmax		
	comp=Z,5.0nm,1.1s							
TLY	Talaya	44.55	51	P		P	11 10 19.6	+1.4
	comp=Z,1.7nm,0.5s,baz=249,slow=8.6,SNR=5.1							
TLY	Talaya	44.55	51	*e*P		P	11 10 20.1	+1.9
TLY				pmax		pmax		
	comp=Z,6.0nm,1.3s							
SONM	Songino Array	46.90	56	P		P	11 10 37.7	+0.7
	comp=Z,1.2nm,0.8s,baz=303,slow=6.4,SNR=2.7							
ULN	Ulaanbaatar	47.33	56	*c*eP		P	11 10 41.5	+1.1
ULN				pmax		pmax		
	comp=Z,25nm,1.7s							
ULN	Ulaanbaatar	47.33	56	*e*P		P	11 10 41.0	+0.6
	comp=Z,14nm,1.0s							
CD2	Chengdu	50.28	78	P		P	11 11 00.5	-2.6
CD2				pmax		pmax		
	comp=Z,3.0nm,0.7s							
HHC	Hu-ho-hao-te	52.38	63	*e*P		P	11 11 17.5	-1.4
HHC				pmax		pmax		
	comp=Z,30nm,1.1s							
HHC				pmax		pmax		
	comp=Z,78nm,6.7s							
CMAR	Chiang Mai Arr	52.46	95	P		P	11 11 20.0	+0.4
	comp=Z,1.5nm,0.6s,baz=293,slow=8.4,SNR=10.0							
CMAR				LR		LR	11 35 54.9	
	comp=Z,28nm,20.1s,baz=350,slow=39							
CMAR	Chiang Mai Arr	52.46	95	*i* P		P	11 11 23.0	+3.4
CMAR				pmax		pmax		
	comp=Z,2.0nm,0.6s							
TIXI	Tiksi	53.91	23	P		P	11 11 29.4	-0.1
	comp=Z,4.5nm,0.9s,baz=331,slow=4.0,SNR=7.6							
TIXI	Tiksi	53.91	23	*e*P		P	11 11 29.4	-0.1
	comp=Z,4.4nm,1.0s							
HIA	Hailar	55.09	51	*e*P		P	11 11 36.6	-1.8
HIA				pmax		pmax		
	comp=Z,103nm,0.3s							
HIA	Hailar	55.09	51	*e*P		P	11 11 36.6	-1.8
	comp=Z,103nm,0.3s							
HIA	Hailar	55.09	51	*e*P		P	11 11 36.6	-1.8
	comp=Z,103nm,0.3s							
YAK	Yakutsk	56.53	34	*e*P		P	11 11 47.7	-0.8
YAK				pmax		pmax		
	comp=Z,10.0nm,0.9s							
YAK	Yakutsk	56.53	34	*e*P		P	11 11 47.7	-0.8
	comp=Z,10.0nm,0.9s							
CN2	Changchun	60.78	55	*e*P		P	11 12 18.5	+0.1
PSI	Prapat	61.91	110	LR		LR	11 42 14.0	
	comp=Z,56nm,18.4s,baz=273,slow=39							
KLR	Kul'dur	62.38	48	P		P	11 12 29.2	+0.1
	comp=Z,6.2nm,0.9s,baz=293,slow=8.4,SNR=8.3							
KS01	Wonju Array Si	65.31	61	*e*P		P	11 12 47.9	-0.7
KS01	Wonju Array Si	65.31	61	*e*P		P	11 12 47.9	-0.7
KSAR	Wonju Array Be	65.32	61	P		P	11 12 48.3	-0.4
KSAR	Wonju Array Be	65.32	61	P		P	11 12 48.3	-0.4
KSAR	Wonju Array Be	65.32	61	P		P	11 12 48.3	-0.4
KSRS	Korea Array	65.34	61	P		P	11 12 48.3	-0.5
	comp=Z,4.2nm,0.7s,baz=288,slow=5.4,SNR=12							
SEY	Seymchan	65.58	28	P		P	11 12 50.8	+0.9
	comp=Z,12nm,0.8s,baz=293,slow=5.5,SNR=44							
BILL	Bilibino	66.85	20	*c*eP		P	11 12 58.5	+0.5
BILL				pmax		pmax		
	comp=Z,3.0nm,1.2s							
BILL	Bilibino	66.85	20	*e*P		P	11 12 58.5	+0.5
	comp=Z,3.0nm,1.2s							
BOSA	Boshof	67.58	196	LR		LR	11 43 15.0	
	comp=Z,140nm,18.9s,baz=360,slow=37							
MJAR	Matsushiro Arr	72.84	57	P		P	11 13 35.6	+0.1
	comp=Z,1.8nm,0.8s,baz=317,slow=3.7,SNR=3.9							
PETK	Petropavlovsk-	73.87	35	P		P	11 13 40.1	-1.1
	comp=Z,1.8nm,0.7s,baz=273,slow=5.6,SNR=3.2							
INK	Inuvik	74.65	359	P		P	11 13 44.1	-1.3
	comp=Z,2.1nm,1.1s,baz=360,slow=4.3,SNR=3.7							
COLD	Coldfoot	75.32	5	*e*P		P	11 13 50.4	+1.0
	comp=Z,2.5nm,1.0s							
COLD	Coldfoot	75.32	5	*e*P		P	11 13 50.4	+1.0
	comp=Z,2.6nm,1.0s							
MDM	Murphy Dome	77.70	5	*e*P		P	11 14 03.9	+1.0
MDM	Murphy Dome	77.70	5	*e*P		P	11 14 03.9	+1.0
COLA	College	77.81	5	*e*P		P	11 14 03.8	+0.4
COLA				pmax		pmax		
	comp=Z,7.0nm,1.1s							
COLA	College	77.81	5	*e*P		P	11 14 03.8	+0.4
	comp=Z,7.1nm,1.1s							
COLA	College	77.81	5	*e*P		P	11 14 03.8	+0.4
	comp=Z,7.1nm,1.1s							
IL1	Eielson Array	77.97	4	*e*P		P	11 14 04.1	-0.3
IL1	Eielson Array	77.97	4	*e*P		P	11 14 04.1	-0.3
ILAR	Eielson Array	77.97	4	P		P	11 14 03.9	-0.5
	comp=Z,0.9nm,1.0s,baz=336,slow=3.8,SNR=6.0							
CCB	Clear Creek Bu	78.04	5	*e*P		P	11 14 05.1	+0.3
	comp=Z,3.8nm,1.0s							
CCB	Clear Creek Bu	78.04	5	*e*P		P	11 14 05.0	+0.3
	comp=Z,3.8nm,1.0s							
EGAK	Eagle	78.19	2	*e*P		P	11 14 06.4	+0.8
	comp=Z,5.3nm,1.0s							
EGAK	Eagle	78.19	2	*e*P		P	11 14 06.4	+0.8
	comp=Z,5.3nm,1.0s							
WRH	Wood River Hil	78.19	5	*e*P		P	11 14 08.8	+3.1
	comp=Z,2.6nm,0.6s							
YKW3	Yellowknife Ar	78.78	349	*e*P		P	11 14 09.1	+0.2
	comp=Z,3.2nm,0.7s							
YKW3	Yellowknife Ar	78.78	349	*e*P		P	11 14 09.1	+0.2
	comp=Z,3.2nm,0.7s							
YKA	Yellowknife Ar	78.84	349	P		P	11 14 09.1	-0.1
	comp=Z,2.4nm,0.8s,baz=19,slow=6.2,SNR=28							
YKB5	Yellowknife Ar	78.84	349	*e*P		P	11 14 09.2	0.0
YKB5	Yellowknife Ar	78.84	349	*e*P		P	11 14 09.2	0.0
KTH	Kantishna Hill	78.89	6	*e*P		P	11 14 10.1	+0.5
KTH	Kantishna Hill	78.89	6	*e*P		P	11 14 10.1	+0.5
DAWY	Dawson	78.94	1	*e*P		P	11 14 10.1	+0.3
	comp=Z,5.2nm,1.1s							
DAWY	Dawson	78.94	1	*e*P		P	11 14 10.1	+0.3
	comp=Z,5.2nm,1.1s							
TRF	Thorofare Moun	79.04	6	*e*P		P	11 14 11.7	+1.1
	comp=Z,22nm,1.9s							
TRF	Thorofare Moun	79.04	6	*e*P		P	11 14 11.7	+1.1
	comp=Z,22nm,1.9s							
DOT	Dot Lake	79.23	3	*e*P		P	11 14 12.1	+0.7
	comp=Z,9.5nm,1.1s							
DOT	Dot Lake	79.23	3	*e*P		P	11 14 12.1	+0.7
	comp=Z,9.5nm,1.1s							
SEW	Seward	82.42	6	*e*P		P	11 14 28.4	0.0
	comp=Z,8.2nm,1.0s							
SEW	Seward	82.42	6	*e*P		P	11 14 28.4	0.0
	comp=Z,8.2nm,1.0s							
FFC	Flin Flon	83.40	340	*e*P		P	11 14 35.3	+1.6
FFC	Flin Flon	83.40	340	*e*P		P	11 14 35.3	+1.6
ULM	Lac du Bonnet	85.43	335	P		P	11 14 43.7	-0.3
	comp=Z,1.2nm,0.4s,baz=26,slow=7.1,SNR=3.1							
GCMT	Greycliff	93.58	341	*e*P		P	11 15 22.6	-0.2
GCMT	Greycliff	93.58	341	*e*P		P	11 15 22.6	-0.2
PDAR	Pinedale Array	96.35	340	LR		LR	11 59 12.1	
	comp=Z,38nm,18.9s,baz=58,slow=36							

CSEM ***29*** *11:04:07.7, 39.°11N×29.°10E, h7km, ML2.6*

DDA 29 11:04:07.7, 39.°11N±29.°10E, h7km, Ml2.6, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	Gediz	0.30	94	P	Pg	11 04 14.1	+0.5
GDZ				S	Sg	11 04 18.5	+0.9
GDZ	Gediz	0.30	94	*i* P	Pg	11 04 14.1	+0.4
GDZ				*i* S	Sg	11 04 18.5	+0.8
DEMI	Demirci	0.31	257	P	Pg	11 04 14.6	+0.8
DEMI				S	Sg	11 04 18.9	+1.1
DEMI	Demirci	0.31	257	*i* P	Pg	11 04 14.6	+0.9
DEMI				*i* S	Sg	11 04 18.9	+1.1
MANT	Manisa	0.75	214	P	Pg	11 04 22.6	+0.4
MANT				S	Sg	11 04 32.7	+0.8
MANT	Manisa	0.75	214	*i* P	Pg	11 04 22.6	+0.5
MANT				*i* S	Sg	11 04 32.7	+0.7
KHAL	Karahalli	0.80	157	P	Pb	11 04 23.8	-0.2
KHAL				S	Sg	11 04 34.3	+0.8
KHAL	Karahalli	0.80	157	*i* P	Pb	11 04 23.8	-0.3
KHAL				*i* S	Sg	11 04 34.3	+0.7

ISCJB ***29*** *11:15:33.1±0.6, 16.°96N±0.°09×147.°6E±0.°1, h41km, mb3.7/13, Error ellipse: s-maj=21.6km s-min=8.2km az=28.4*

IDC ***29*** *11:15:35.1±0.8, 16.°95N×147.°76E, h45km±6km, mb3.5/13, mb1 3.8/14, mb1mx3.6/50, mbtmp3.8/14, ML4.2/1, MS2.4/1, Ms1 2.4/1, ms1mx2.2/40, Error ellipse: s-maj=23.2km s-min=14.1km az=113.0*

ISC 29 11:15:34.8±0.7, 16.°9N±0.°1×147.°7E±0.°2, h41km, n14, σ0§79/19, mb3.8/13, Mariana Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	Guam	4.33	220	P	Pn	11 16 38.8	+0.7
GUMO				S	Sn	11 17 26.0	-1.3
	12nm,0.3s,baz=76,slow=19,SNR=6.6						
GUMO				LR	LR	11 18 37.7	
	11nm,0.3s,baz=60,slow=20,SNR=3.2						
GUMO							
	comp=Z,43nm,18.9s,baz=41,slow=42						
MJAR	Matsushiro Arr	21.27	338	P	P	11 20 17.8	+0.1
	2.9nm,0.6s,baz=170,slow=9.7,SNR=7.5						
KLR	Kul'dur	34.72	342	P	P	11 22 21.1	+0.3
	0.8nm,0.5s,baz=79,slow=6.5,SNR=4.2						
WRA	Warramunga Arr	38.94	200	P	P	11 22 56.9	-0.2
	0.3nm,0.5s,baz=30,slow=9.1,SNR=8.6						
WRA				pP	pP	11 23 09.1	+0.7
	0.8nm,0.6s,baz=23,slow=9.3,SNR=3.9						
ASAR	Alice Springs	42.56	199	P	P	11 23 26.4	-0.4
	0.2nm,0.7s,baz=14,slow=11,SNR=3.1						
CMAR	Chiang Mai Arr	46.38	280	P	P	11 23 57.8	+0.2
	1.2nm,0.5s,baz=81,slow=6.8,SNR=8.6						
CMAR				pP	pP	11 24 10.4	+1.2
	1.9nm,0.9s,baz=72,slow=6.5,SNR=4.2						
MKAR	Makanchi Array	61.06	314	P	P	11 25 44.2	-0.4
	0.3nm,0.4s,baz=104,slow=7.6,SNR=4.6						
NRIK	Noril'sk	63.91	340	P	P	11 26 02.4	-0.8
	2.2nm,0.6s,baz=118,slow=6.4,SNR=3.5						
ILAR	Eielson Array	64.37	26	P	P	11 26 04.8	-1.5
	0.3nm,0.5s,baz=247,slow=6.9,SNR=6.1						
INK	Inuvik	70.23	23	P	P	11 26 42.7	-0.6
	1.0nm,1.0s,baz=292,slow=5.4,SNR=2.3						
INK				pP	pP	11 26 56.6	+1.1
	0.6nm,0.6s,baz=274,slow=5.9,SNR=2.5						
YKA	Yellowknife Ar	78.63	28	P	P	11 27 31.9	-0.3
	0.5nm,0.6s,baz=280,slow=5.6,SNR=8.5						
YKA				pP	pP	11 27 44.5	0.0
	0.3nm,0.5s,baz=283,slow=5.5,SNR=4.6						
NVAR	Mina Array Bea	82.69	52	P	P	11 27 55.6	+0.8
	0.2nm,0.3s,baz=283,slow=4.5,SNR=3.8						
PDAR	Pinedale Array	87.66	46	P	P	11 28 20.1	+0.5
	0.1nm,0.3s,baz=266,slow=8.0,SNR=3.1						
FINES	FINESS Array B	89.27	336	P	P	11 28 26.3	-0.1
	1.4nm,0.8s,baz=104,slow=5.9,SNR=3.9						

CSEM ***29*** *11:18:56.8±0.1, 39.°11N×29.°03E, h8km, ML2.7, Error ellipse: s-maj=3.8km s-min=2.1km az=130.0*

ISK ***29*** *11:18:56.0, 39.°02N×29.°18E, h5km, MD2.2*

DDA ***29*** *11:18:56.9, 39.°08N×29.°05E, h7km, Ml2.7*

ISC 29 11:18:56.7±0.9, 39.°10N±0.°04×29.°05E±0.°03, h16km±9km, n15, σ0§31/27, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.27	258	P	Pg	11 19 02.7	+0.2
DEMI				S	Sg	11 19 06.3	-0.2
DEMI	Demirci	0.27	258	*i* P	Pg	11 19 02.7	+0.2
DEMI				*i* S	Sg	11 19 06.3	-0.2
GDZ	Gediz	0.34	91	P	Pg	11 19 03.8	0.0
GDZ				S	Sg	11 19 08.7	+0.1
GDZ	Gediz	0.34	91	*i* P	Pg	11 19 03.8	0.0
GDZ				*i* S	Sg	11 19 08.7	+0.1
TVSB	Tavsanli	0.47	42	*e*Pg	Pg	11 19 05.8	-0.4
TVSB				*e*Sg	Sg	11 19 12.6	-0.1
TVSB	Tavsanli	0.47	42	*e*Pg	Pg	11 19 05.9	-0.4
TVSB				*e*Sg	Sg	11 19 12.6	-0.1
KULA	Kula-Manisa	0.66	208	*e*PG	Pg	11 19 09.0	-0.6
KULA				*e*SG	Sg	11 19 18.4	+0.1
KULA	Kula-Manisa	0.66	208	*e*Pg	Pg	11 19 09.0	-0.6
KULA				*e*Sg	Sg	11 19 18.4	+0.1
MANT	Manisa	0.72	213	P	Pb	11 19 11.0	0.0
MANT				S	Sg	11 19 20.6	+0.3
MANT	Manisa	0.72	213	*i* P	Pb	11 19 11.0	0.0
MANT				*i* S	Sg	11 19 20.6	+0.3
KHAL	Karahalli	0.80	154	P	Pn	11 19 13.3	-0.2
KHAL				S	Sb	11 19 23.6	+0.5
KHAL	Karahalli	0.80	154	*i* P	Pn	11 19 13.3	-0.2
KHAL				*i* S	Sb	11 19 23.6	+0.5
CAVI	Cavuskoy	1.26	29	*e*PN	Pg	11 19 21.0	0.0
CAVI	Cavuskoy	1.26	29	*e*Pn	Pg	11 19 21.0	0.0
ARMT	Armutlu	1.47	354	*e*PN	Pg	11 19 25.2	+0.1

ISK ***29*** *11:21:07.1, 38.°93N×29.°37E, h5km, MD2.1*

CSEM ***29*** *11:21:09.3±0.3, 39.°08N×29.°06E, h2km, ML2.6, Error ellipse: s-maj=10.9km s-min=5.4km az=127.0*

DDA ***29*** *11:21:09.4, 39.°06N×29.°02E, h7km, Ml2.6*

ISC 29 11:21:09.4±0.9, 39.°05N±0.°03×29.°05E±0.°03, h12km±9km, n18, σ0§81/28, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.26	269	P	Pg	11 21 14.5	-0.3
DEMI				S	Sg	11 21 18.3	-0.2
DEMI	Demirci	0.26	269	*i* P	Pg	11 21 14.5	-0.3
DEMI				*i* S	Sg	11 21 18.3	-0.2
GDZ	Gediz	0.34	83	P	Pg	11 21 16.8	+0.5
GDZ				S	Sg	11 21 22.2	+1.2
GDZ	Gediz	0.34	83	*i* P	Pg	11 21 16.8	+0.5
GDZ				*i* S	Sg	11 21 22.2	+1.2
TVSB	Tavsanli	0.51	39	*e*PG	Pg	11 21 17.8	-1.7
TVSB				*e*SG	Sg	11 21 25.5	-0.8
TVSB	Tavsanli	0.51	39	*e*Pg	Pg	11 21 17.8	-1.7
TVSB				*e*Sg	Sg	11 21 25.5	-0.8
KULA	Kula-Manisa	0.61	210	*e*PG	Pg	11 21 20.9	-0.5
KULA				*e*SG	Sb	11 21 30.9	+0.2
KULA	Kula-Manisa	0.61	210	*e*Pg	Pg	11 21 20.9	-0.5
KULA				*e*Sg	Sb	11 21 30.9	+0.2
MANT	Manisa	0.68	215	P	Pb	11 21 23.4	+0.2
MANT				S	Sb	11 21 32.4	-0.2
MANT	Manisa	0.68	215	*i* P	Pb	11 21 23.4	+0.2
MANT				*i* S	Sb	11 21 32.4	-0.2
CAVI	Cavuskoy	1.30	28	*e*PN	Pn	11 21 32.7	-0.7
CAVI	Cavuskoy	1.30	28	*e*Pn	Pn	11 21 32.7	-0.7
KCTX	Karacabey (Bur	1.33	337	*e*PN	Pg	11 21 36.0	+1.2
KCTX	Karacabey (Bur	1.33	337	*e*Pn	Pg	11 21 36.1	+1.2
IZI	Iznik	1.33	14	*e*PN	Pn	11 21 34.0	+0.2
IZI	Iznik	1.33	14	*e*Pn	Pn	11 21 34.0	+0.2
ARMT	Armutlu	1.52	355	*e*PN	Pb	11 21 37.9	+0.4
ARMT	Armutlu	1.52	355	*e*Pn	Pb	11 21 37.9	+0.4

ISK ***29*** *11:21:29.2, 39.°18N×28.°87E, h11km, ML2.5*

ISCJB ***29*** *11:21:30.6±0.5, 39.°17N±0.°05×28.°93E±0.°06, h20km±9km, Error ellipse: s-maj=9.5km s-min=5.4km az=139.0*

CSEM ***29*** *11:21:30.2±0.1, 39.°18N×28.°91E, h15km, ML2.7, Error ellipse: s-maj=4.8km s-min=2.8km az=108.0*

DDA ***29*** *11:21:31.5, 39.°09N×28.°98E, h7km, Ml2.7*

ISC 29 11:21:30.0±1.1, 39.°18N±0.°03×28.°91E±0.°04, h14km±12km, n24, σ0§33/31, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.20	227	P	Pb	11 21 36.3	+0.7
DEMI	Demirci	0.20	227	*i* P	Pb	11 21 36.3	+0.7
DEMI				*i* S	Sb	11 21 39.4	+0.1
GDZ	Gediz	0.46	102	P	Pg	11 21 39.3	+0.3
GDZ	Gediz	0.46	102	*i* P	Pg	11 21 39.4	+0.3
GDZ				*i* S	Sg	11 21 45.0	-0.3
TVSB	Tavsanli	0.51	58	*e*PG	Pg	11 21 40.0	+0.1
TVSB				*e*SG	Sb	11 21 48.0	-0.1
TVSB	Tavsanli	0.51	58	*e*Pg	Pg	11 21 40.1	+0.1
TVSB				*e*Sg	Sb	11 21 48.0	-0.1
KULA	Kula-Manisa	0.69	196	*e*PG	Pg	11 21 42.8	-0.7
KULA				*e*SG	Sg	11 21 52.8	+0.1
KULA	Kula-Manisa	0.69	196	*e*Pg	Pg	11 21 42.8	-0.7
KULA				*e*Sg	Sg	11 21 52.8	+0.1
MANT	Manisa	0.74	202	P	Pb	11 21 45.2	+0.4
MANT	Manisa	0.74	202	*i* P	Pb	11 21 45.2	+0.4
MANT				*i* S	Sb	11 21 54.5	-0.5
KHAL	Karahalli	0.93	150	P	Pn	11 21 48.6	-0.2
KHAL	Karahalli	0.93	150	*i* P	Pn	11 21 48.6	-0.2
KCTX	Karacabey (Bur	1.16	339	*e*PN	Pn	11 21 51.9	0.0
KCTX	Karacabey (Bur	1.16	339	*e*Pn	Pn	11 21 51.9	0.0
MDNY	Mudanya-Bursa	1.19	359	*e*PN	Pb	11 21 52.3	0.0
MDNY	Mudanya-Bursa	1.19	359	*e*Pn	Pb	11 21 52.3	0.0
IZI	Iznik	1.23	20	*e*PN	Pb	11 21 53.0	-0.1
IZI	Iznik	1.23	20	*e*Pn	Pb	11 21 53.1	-0.1
CAVI	Cavuskoy	1.25	35	*e*PN	Pb	11 21 53.4	0.0
CAVI	Cavuskoy	1.25	35	*e*Pn	Pb	11 21 53.4	0.0
ARMT	Armutlu	1.38	359	*e*PN	Pn	11 21 55.2	+0.3
ARMT	Armutlu	1.38	359	*e*Pn	Pn	11 21 55.2	+0.3
ADVT	Abdulvahap	1.41	27	*e*PN	Pn	11 21 55.2	0.0
ADVT	Abdulvahap	1.41	27	*e*Pn	Pn	11 21 55.2	0.0

ISCJB ***29*** *11:24:53.7±0.5, 9.°14S±0.°06×118.°95E±0.°03, h102km, mb3.4/1, Error ellipse: s-maj=8.9km s-min=4.8km az=3.9*

DJA ***29*** *11:24:54.6±0.5, 9.°5±.°7×11.°9E±.°, h105km±6km, M4.0/10, mb4.0/1, MLv4.0/10*

IDC ***29*** *11:25:01.2±7.3, 8.°73S×119.°55E, h159km±67km, mb2.9/2, mb1 2.8/4, mb1mx2.7/46, mbtmp3.3/4, Error ellipse: s-maj=136.0km s-min=18.7km az=61.0*

ISC 29 11:24:55.1±1.0, 9.°17S±0.°07×118.°94E±0.°04, h102km, n17, σ1§23/19, Sumbawa region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLAI	Plampang	1.20	286	P	Pn	11 25 17.6	-0.3
PLAI				S	Sn	11 25 34.7	-0.4
WSI	Waingapu	1.43	111	P	Pn	11 25 19.6	-1.0
BASI	Baing, Sumba	1.92	123	P	Pn	11 25 26.4	-0.3
TWSI	Taliwang, Sumb	2.08	282	P	Pn	11 25 29.6	+0.9
TWSI				S	Sn	11 25 54.6	+0.1
MMRI	Maumere	3.30	81	P	Pn	11 25 44.5	-0.4
BSSI	Bau Bau, Buton	3.37	27	P	Pn	11 25 45.5	-0.4
DNP	Denpasar	3.72	277	P	Pn	11 25 54.0	+3.5
SRBI	Singaraja	3.84	286	P	Pn	11 25 52.3	+0.2
KAPI	Kappang	4.20	11	P	Pn	11 25 57.1	+0.1
	2.4nm,0.3s,baz=212,slow=5.2,SNR=10						
KAPI				S	Sn	11 26 42.7	-2.5
	19nm,0.3s,baz=126,slow=23,SNR=22						
JAGI	Jajag, Banyuwa	4.78	278	P	Pn	11 26 03.9	-1.0
GMJI	Gumukmas	5.51	279	P	Pn	11 26 13.9	-0.8
PCJI	Pacitan	7.74	277	S	Sn	11 28 10.9	-0.2
UGM	Wanagama	8.42	278	S	Sn	11 28 28.3	+0.6
SANI	Sanana	9.96	45	S	Sn	11 29 08.6	+3.5
WRA	Warramunga Arr	18.34	127	P	P	11 29 01.6	-0.1
	0.0nm,0.3s,baz=305,slow=12,SNR=2.6						
WRA				S	S	11 32 12.8	-13
	0.1nm,0.3s,baz=310,slow=24,SNR=3.7						
ASAR	Alice Springs	20.31	137	P	P	11 29 24.2	+1.0
	0.3nm,0.7s,baz=321,slow=11,SNR=5.7						
MKAR	Makanchi Array	64.58	333	P	P	11 35 20.7	-0.8
	0.2nm,0.3s,baz=132,slow=7.0,SNR=5.0						

NIED ***29*** *11:26:00, 39.°70N×143.°60E, h17km, Mw3.7 Best double couple: M0=4.02000×10^14 NP1:φ=187.00000°, δ=18.00000°, λ=54.00000°. NP2:φ=44.00000°, δ=76.00000°, λ=101.00000°.*

ISCJB ***29*** *11:26:52.9±1.0, 39.°66N±0.°06×143.°6E±0.°1, h11km, mb3.5/6, Error ellipse: s-maj=13.5km s-min=7.0km az=31.8*

IDC ***29*** *11:26:52.1±1.2, 39.°53N×143.°68E, h0km, mb3.7/6, mb1 3.7/10, mb1mx3.5/58, mbtmp3.6/10, ML3.3/3, Error ellipse: s-maj=27.1km s-min=21.3km az=105.0*

JMA ***29*** *11:26:53.0±0.3, 39.°65N×143.°60E, h17km±5km, M3.8*

ISC 29 11:26:54.5±1.1, 39.°63N±0.°07×143.°5E±0.°1, h11km, n25, σ1§25/23, mb3.7/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	Tanohata	1.31	284	P	Pn	11 27 17.1	-1.7
MIYJ	Miyakonagasawa	1.32	268	P	Pn	11 27 17.6	-1.2
OFUJ	Ofunato	1.54	250	P	Pn	11 27 20.8	-1.0
JANG	Nango	1.71	296	P	Pn	11 27 22.9	-1.3
JOM	Ohasama	1.73	266	P	Pn	11 27 24.0	-0.5
JMK	Ichinoseki	1.91	250	P	Pn	11 27 26.5	-0.4
JTM	Tenmabayashi	2.21	302	P	Pn	11 27 30.4	-0.6
JRG	Rokugo	2.25	265	P	Pn	11 27 31.9	+0.3
JAH	Hinai	2.29	285	P	Pn	11 27 32.0	-0.2
JYK	Kaneyama	2.56	255	P	Pn	11 27 35.8	0.0
JOU	Okura	2.56	241	P	Pn	11 27 36.2	+0.3
JCH	Churui	2.99	358	P	Pn	11 27 41.1	-0.6
ASAJ	Asahikawa	4.54	352	Pn	Pn	11 28 03.5	+0.4
	1.6nm,0.3s,baz=200,slow=11,SNR=15						
ASAJ				Sn	Sn

MIYJ	**Miyakonagasawa**	**1.22 265**	P	**Pn**	**11 28 59.8**	**-0.1**
JANG	**Nango**	**1.59 296**	P	**Pn**	**11 29 04.5**	**-0.5**
JOM	**Ohasama**	**1.64 263**	P	**Pn**	**11 29 06.0**	**+0.3**
JMK	**Ichinoseki**	**1.84 247**	P	**Pn**	**11 29 08.4**	**-0.1**
JTM	**Tenmabayashi**	**2.08 302**	P	**Pn**	**11 29 12.6**	**+0.8**
JRG	**Rokugo**	**2.15 263**	P	**Pn**	**11 29 13.6**	**+0.9**
JAH	**Hinai**	**2.17 284**	P	**Pn**	**11 29 14.0**	**+1.0**
ERM	**Erimo**	**2.32 356**	*e*P	**Pn**	**11 29 16.0**	**+0.9**
ERM	**Erimo**	**2.32 356**	*e*Pn	**Pn**	**11 29 16.6**	**+1.5**
JOT	**Ohata**	**2.45 314**	P	**Pn**	**11 29 17.7**	**+0.8**
JYK	**Kaneyama**	**2.48 253**	P	**Pn**	**11 29 17.9**	**+0.7**
JOU	**Okura**	**2.50 239**	P	**Pn**	**11 29 17.6**	**0.0**
JNBK	**Urakawa-nobuka**	**2.62 350**	P	**Pn**	**11 29 20.2**	**+1.0**
ASAJ	**Asahikawa**	**4.45 353**	Pn	**Pn**	**11 29 45.9**	**+1.5**
	6.2nm,0.3s,baz=196,slow=16,SNR=20					
ASAJ	**Asahikawa**	**4.45 353**	*e*Pn	**Pn**	**11 29 46.2**	**+1.8**
ASAJ			*e*Sn	Sn	11 30 23.2	-13
YUK	**Yuzh-Kuril'sk**	**4.71 22**	*e*P	**Pn**	**11 29 47.2**	**-0.7**
MAJO	**Matsushiro**	**5.16 234**	*c i*P	**Pn**	**11 29 55.0**	**+0.9**
MAJO	**Matsushiro**	**5.16 234**	*e*Pn	**Pn**	**11 29 55.3**	**+1.2**
MAT	**Matsushiro**	**5.16 234**	P	**Pn**	**11 29 54.9**	**+0.8**
MAT			S	**Sn**	**11 30 56.0**	**+2.4**
MJAR	**Matsushiro Arr**	**5.16 234**	Pn	**Pn**	**11 29 54.7**	**+0.6**
	7.0nm,0.3s,baz=38,slow=12,SNR=42					
MJAR			LR	LR	11 32 07.8	
	comp=Z,375nm,18.6s,baz=35,slow=42					
MJB9	**Matsu-Tunnel**	**5.16 234**	*e*Pn	**Pn**	**11 29 55.7**	**+1.5**
KUR	**Kuril'sk**	**6.45 29**	*e*P	**Pn**	**11 30 11.8**	**+0.1**
KUR			*e*S	**Sn**	**11 31 20.4**	**-4.8**
KUR			pmax	pmax		
	comp=Z,28nm,0.6s					
KUR			smax	smax		
	comp=N,87nm,0.5s					
KUR			smax	smax		
	comp=E,70nm,0.5s					
INU	**Inuyama**	**6.67 231**	*e*Pn	**Pn**	**11 30 16.4**	**+1.6**
JHJ2	**Mitsune**	**7.18 205**	*e*Pn	**Pn**	**11 30 21.2**	**-0.6**
JHJ	**Hachijo jima 2**	**7.18 205**	Pn	**Pn**	**11 30 20.6**	**-1.3**
	comp=E,44nm,0.3s,baz=89,slow=22,SNR=7.2					
JHJ			Sn	Sn	11 31 32.7	-11
	comp=E,54nm,0.3s,baz=74,slow=20,SNR=4.9					
YSS	**Yuzh-Sakhalins**	**7.27 357**	⇓*e*P	**Pn**	**11 30 23.8**	**+0.8**
YSS			*e*S	Sn	11 31 38.2	-7.3
YSS			pmax	pmax		
	comp=Z,30nm,0.9s					
YSS			pmax	pmax		
	comp=N,20nm,1.0s					
YSS			MLR	MLR		
	comp=Z,600nm,15.0s					
YSS	**Yuzh-Sakhalins**	**7.27 357**	*e*Pn	**Pn**	**11 30 24.4**	**+1.4**
VLA	**Vladivostok**	**9.29 295**	*ce*P	Pn	11 30 54.9	+4.1
VLA			pmax	pmax		
	comp=Z,21nm,0.9s					
USRK	**Ussuriysk Ar.**	**9.61 302**	Pn	Pn	11 30 59.5	+4.4
	comp=Z,0.8nm,0.3s,baz=99,slow=13,SNR=21					
USRK			LR	LR	11 34 41.1	
	comp=Z,421nm,18.8s,baz=101,slow=38					
TYV	**Tymovskoe**	**11.18 358**	*e*P	**Pn**	**11 31 16.5**	**-0.1**
TYV			pmax	pmax		
	comp=Z,13nm,0.8s					
MDJ	**Mudanjiang**	**11.35 300**	P	**Pn**	**11 31 19.8**	**+0.8**
MDJ			S	**Sn**	**11 33 24.8**	**-1.1**
MDJ			pmax	pmax		
	comp=Z,8.0nm,1.1s					
MDJ			pmax	pmax		
	comp=Z,71nm,8.7s					
MDJ			LR	LR		
	comp=N,230nm,10.3s					
MDJ			LR	LR		
	comp=E,380nm,13.4s					
MDJ			LR	LR		
	comp=Z,590nm,13.8s					
JNU	**Nakatsue**	**12.02 241**	Pn	**Pn**	**11 31 28.6**	**+0.3**
	comp=Z,0.3nm,0.3s,baz=96,slow=9.2,SNR=2.5					
JNU			LR	LR	11 36 34.3	
	comp=Z,416nm,19.1s,baz=98,slow=40					
KSRS	**Korea Array**	**12.31 264**	Pn	Pn	11 31 36.0	+3.9
	comp=Z,0.3nm,0.3s,baz=89,slow=13,SNR=13					
KS15	**Wonju Array Si**	**12.34 264**	*e*Pn	**Pn**	**11 31 31.2**	**-1.4**
KSAR	**Wonju Array Be**	**12.34 264**	P	Pn	11 31 36.0	+3.4
KSAR	**Wonju Array Be**	**12.34 264**	Pn	Pn	11 31 36.0	+3.4
KLR	**Kul'dur**	**12.63 323**	Pn	**Pn**	**11 31 36.3**	**-0.2**
	comp=Z,0.1nm,0.3s,baz=126,slow=10,SNR=8.4					
KLR			LR	LR	11 36 41.9	
	comp=Z,260nm,20.6s,baz=109,slow=38					
CN2	**Changchun**	**14.00 293**	*e*P	**Pn**	**11 31 58.0**	**+2.8**
SNY	**Shenyang**	**15.16 284**	⇑P	Pn	11 32 03.0	-8.0
SNY			S	**Sn**	**11 34 55.5**	**-3.3**
SNY			pmax	pmax		
	comp=Z,250nm,7.0s					
SNY			LR	LR		
	comp=N,350nm,17.0s					
SNY			LR	LR		
	comp=E,520nm,17.8s					
SNY			LR	LR		
	comp=Z,690nm,13.6s					
PEA0	**Petropavlovsk-**	**16.61 31**	*e*Pn	**P**	**11 32 32.0**	**-0.1**
PETK	**Petropavlovsk-**	**16.61 31**	Pn	**P**	**11 32 33.0**	**+1.0**
	comp=Z,0.1nm,0.3s,baz=224,slow=6.2,SNR=5.1					
PETK			LR	LR	11 40 14.1	
	comp=Z,93nm,18.1s,baz=216,slow=42					
DL2	**Dalian**	**16.86 274**	P	P	11 32 43.0	+8.1
DL2			S	**S**	**11 35 57.3**	**+6.6**
DL2			pmax	pmax		
	comp=Z,26nm,0.8s					
DL2			pmax	pmax		
	comp=Z,220nm,4.9s					
DL2			LR	LR		
	comp=N,390nm,12.0s					
DL2			LR	LR		
	comp=Z,400nm,14.7s					
PET	**Petropavlovsk**	**16.94 33**	*e*P	**P**	**11 32 36.3**	**+0.6**
PET			*e*S	**Sn**	**11 35 42.0**	**+0.2**
PET			pmax	pmax		
	comp=Z,18nm,1.1s					
PET			MLR	MLR		
	comp=Z,100nm,20.0s					
PET			MLR	MLR		
	comp=Z,100nm,18.0s					
PET	**Petropavlovsk**	**16.94 33**	*e*Pn	**P**	**11 32 36.9**	**+1.2**
	comp=Z,18nm,1.1s					
MA2	**Magadan**	**20.44 11**	P	**P**	**11 33 14.6**	**+0.5**
	comp=Z,26nm,0.8s,baz=213,slow=8.9,SNR=16					
BJI	**Beijing**	**20.86 280**	P	**P**	**11 33 17.0**	**-1.8**
BJI			sP	sP	11 33 31.0	+7.6
BJI			S	**S**	**11 37 09.5**	**-1.8**
BJI			sS	Sn	11 37 22.8	+6.0
BJI			pmax	pmax		
	comp=Z,9.0nm,1.0s					
BJI			pmax	pmax		
	comp=Z,160nm,5.5s					
BJI			LR	LR		
	comp=N,230nm,14.2s					
BJI			LR	LR		
	comp=E,350nm,12.7s					
BJI			LR	LR		
	comp=Z,180nm,16.5s					
TIA	**Tai'an**	**20.97 269**	⇓P	**P**	**11 33 19.3**	**-0.8**
TIA			S	S	11 36 37.0	-37
TIA			pmax	pmax		
	comp=Z,30nm,0.9s					
TIA			pmax	pmax		
	comp=Z,180nm,3.9s					
TIA			LR	LR		
	comp=N,330nm,4.2s					
TIA			LR	LR		
	comp=E,720nm,14.3s					
TIA			LR	LR		
	comp=Z,710nm,14.3s					
YAK	**Yakutsk**	**23.87 344**	P	**P**	**11 33 48.9**	**-1.2**
	comp=Z,0.9nm,0.3s,baz=131,slow=19,SNR=3.7					
YAK	**Yakutsk**	**23.87 344**	*e*P	**P**	**11 33 48.2**	**-1.9**
YAK			*e**PP	**sP**	**11 33 59.3**	**+4.5**
YAK			*e*PPP	PPP	11 34 25.2	
YAK			*e*S	**S**	**11 38 01.9**	**-3.9**
YAK			pmax	pmax		
	comp=Z,15nm,0.9s					
YAK			pmax	pmax		
	comp=N,10.0nm,1.0s					
YAK			pmax	pmax		
	comp=Z,8.0nm,0.4s					
YAK			smax	smax		
	comp=E,39nm,14.7s					
YAK	**Yakutsk**	**23.87 344**	*e*P	**P**	**11 33 48.9**	**-1.2**
	comp=E,26nm,0.8s					
SEY	**Seymchan**	**23.89 10**	P	**P**	**11 33 50.2**	**-0.1**
	comp=E,19nm,0.9s,baz=195,slow=6.9,SNR=34					
SEY	**Seymchan**	**23.89 10**	⇑*i*P	**P**	**11 33 51.5**	**+1.2**
NACB	**Ninganchiao**	**24.02 236**	*e*P	**P**	**11 33 51.8**	**-0.1**
	comp=E,28nm,1.1s					
HHC	**Hu-ho-hao-te**	**24.24 283**	*e*P	**P**	**11 33 54.0**	**0.0**
HHC			S	S	11 38 02.3	-10
HHC			pmax	pmax		
	comp=Z,32nm,0.9s					
HHC			pmax	pmax		
	comp=Z,150nm,4.2s					
HHC			LR	LR		
	comp=N,560nm,11.2s					
HHC			LR	LR		
	comp=E,470nm,12.4s					
HHC			LR	LR		
	comp=Z,700nm,12.7s					
WHN	**Wuhan**	**25.36 258**	⇓*i*P	**P**	**11 34 04.0**	**0.0**
WHN			pmax	pmax		
	comp=Z,76nm,0.7s					
BOD	**Bodaibo**	**26.21 324**	*e*P	**P**	**11 34 11.2**	**-0.3**
BOD			pmax	pmax		
	comp=Z,22nm,0.8s					
ULN	**Ulaanbaatar**	**27.27 299**	*ce*P	**P**	**11 34 21.7**	**+0.3**
ULN			pmax	pmax		
	comp=Z,16nm,1.2s					
ULN	**Ulaanbaatar**	**27.27 299**	*e*P	**P**	**11 34 22.0**	**+0.6**
	comp=Z,12nm,1.0s					
SONA1	**Songino Array**	**27.70 299**	*e*P	**P**	**11 34 25.8**	**+0.6**
SONM	**Songino Array**	**27.71 299**	P	**P**	**11 34 25.9**	**+0.6**
	comp=Z,6.9nm,0.8s,baz=93,slow=8.6,SNR=14					
H11N2	**WAKE ISLAND Hy**	**28.36 128**	T	T	12 04 07.9	
	baz=320					
H11N1	**WAKE ISLAND Hy**	**28.37 128**	T	T	12 04 02.1	
	baz=320,slow=74					
H11N3	**WAKE ISLAND Hy**	**28.38 128**	T	T	12 04 00.5	
	baz=320,slow=74					
H11S1	**WAKE ISLAND Hy**	**29.18 130**	T	T	12 04 59.6	
	baz=321					
H11S3	**WAKE ISLAND Hy**	**29.18 130**	T	T	12 04 39.1	
	baz=321,slow=74					
H11S2	**WAKE ISLAND Hy**	**29.20 130**	T	T	12 04 45.5	
	baz=321,slow=74					
TLY	**Talaya**	**29.86 307**	P	P	11 34 48.4	+4.2
	comp=Z,2.0nm,0.4s,baz=126,slow=14,SNR=3.5					
TLY	**Talaya**	**29.86 307**	*e*P	**P**	**11 34 45.7**	**+1.4**
TLY			pmax	pmax		
	comp=Z,4.0nm,0.9s					
TLY			MLR	MLR		
	comp=Z,110nm,14.0s					
ZAK	**Zakamensk**	**29.94 304**	*e*P	**P**	**11 34 43.8**	**-1.3**
ZAK			pmax	pmax		
	comp=Z,4.0nm,1.5s					
BILL	**Bilibino**	**31.04 16**	*e*P	**P**	**11 34 54.6**	**+0.2**
BILL			*e*		11 35 53.6	
BILL			*e*PPP	PPP	11 36 09.3	
BILL			pmax	pmax		
	comp=Z,3.0nm,1.0s					
BILL			MLR	MLR		
	comp=Z,59nm,17.0s					
LZH	**Lanzhou**	**31.24 276**	*e*P	**P**	**11 34 57.0**	**+0.3**
LZH			pP	sP	11 35 05.5	+4.0
LZH			sP	pP	11 35 08.5	+8.4
LZH			pmax	pmax		
	comp=Z,21nm,1.0s					
TIXI	**Tiksi**	**32.86 352**	P	**P**	**11 35 09.8**	**-0.5**
	comp=Z,0.7nm,0.4s,baz=132,slow=3.2,SNR=3.1					
TIXI	**Tiksi**	**32.86 352**	*e*P	**P**	**11 35 09.9**	**-0.5**
TIXI			pmax	pmax		
	comp=Z,6.0nm,2.5s					
TIXI	**Tiksi**	**32.86 352**	*e*P	**P**	**11 35 09.7**	**-0.5**
	comp=Z,4.9nm,1.2s					
CD2	**Chengdu**	**33.29 267**	P	**P**	**11 35 13.0**	**-1.6**
CD2			pmax	pmax		
	comp=Z,10.0nm,0.8s					
GTA	**Gaotai**	**33.35 284**	*e*P	**P**	**11 35 16.3**	**+1.1**
GTA			pP	sP	11 35 25.8	+5.9
GTA			sP	pP	11 35 30.3	+12
GTA			S	**S**	**11 40 32.3**	**-3.6**
GTA			sS	sS	11 40 48.8	+7.3
GTA			SS	**SnSn**	**11 42 34.0**	**-2.5**
GTA			pmax	pmax		
	comp=Z,11nm,0.8s					
GTA			pmax	pmax		
	comp=Z,140nm,6.2s					
GTA			LR	LR		
	comp=N,98nm,11.4s					
GTA			LR	LR		
	comp=E,370nm,15.2s					
GTA			LR	LR		
	comp=Z,400nm,16.2s					
KMI	**Kunming**	**36.94 259**	P	**P**	**11 35 47.0**	**+0.7**
KMI			pmax	pmax		
	comp=Z,15nm,0.5s					
KMI			pmax	pmax		
	comp=Z,130nm,4.9s					
WMQ	**Urumqi**	**41.09 295**	P	**P**	**11 36 21.8**	**+1.1**
WMQ			pP	sP	11 36 29.5	+4.0
WMQ			sP	pP	11 36 34.3	+10
WMQ			pmax	pmax		
	comp=Z,10.0nm,0.6s					
WMQ			pmax	pmax		
	comp=Z,60nm,4.0s					
WMQ			LR	LR		
	comp=N,17nm,14.6s					
WMQ			LR	LR		
	comp=Z,25nm,14.8s					
ZAA0	**Zalesovo Array**	**41.33 310**	*e*P	**P**	**11 36 22.4**	**0.0**
ZALV	**Zalesovo Beam**	**41.33 310**	P	**P**	**11 36 22.5**	**+0.1**
	comp=Z,5.6nm,0.5s,baz=90,slow=7.8,SNR=8.3					
ZALV			PcP	**PcP**	**11 38 20.4**	**-0.3**
	comp=Z,2.8nm,0.7s,baz=102,slow=2.1,SNR=4.4					
ZALV	**Zalesovo Beam**	**41.33 310**	P	**P**	**11 36 22.5**	**+0.1**
ZALV					11 38 20.4	
ZALV			pmax	pmax		
	comp=Z,5.0nm,0.5s					
ZALV			pmax	pmax		
	comp=Z,3.0nm,0.7s					
NVS	**Novosibirsk**	**42.18 312**	*e*P	**P**	**11 36 29.7**	**+0.4**
NVS			pmax	pmax		
	comp=Z,4.0nm,0.8s					
CHTO	**Chiang Mai**	**43.47 255**	*e*P	**P**	**11 36 41.0**	**+0.7**
CHTO			pmax	pmax		
	comp=Z,4.0nm,0.7s					
CHTO	**Chiang Mai**	**43.47 255**	*e*P	**P**	**11 36 41.0**	**+0.7**
	comp=Z,4.4nm,0.7s					
CMAR	**Chiang Mai Arr**	**43.70 254**	P	**P**	**11 36 41.5**	**-0.5**
	comp=Z,2.1nm,0.8s,baz=45,slow=7.3,SNR=13					
CMAR	**Chiang Mai Arr**	**43.70 254**	*ce*P	**P**	**11 36 42.5**	**+0.4**
CMAR			pmax	pmax		
	comp=Z,2.0nm,0.7s					
CM01	**Chiang Mai Arr**	**43.71 254**	*e*P	**P**	**11 36 42.2**	**0.0**
MK01	**Makanchi Array**	**44.07 300**	*e*P	**P**	**11 36 44.9**	**0.0**
MK31	**Makanchi Array**	**44.07 300**	*e*P	**P**	**11 36 45.1**	**+0.2**
MK31	**Makanchi Array**	**44.07 300**	*e*P	**P**	**11 36 45.1**	**+0.2**
MKAR	**Makanchi Array**	**44.07 300**	P	**P**	**11 36 44.9**	**0.0**
	comp=Z,7.4nm,0.8s,baz=80,slow=11,SNR=40					
MKAR	**Makanchi Array**	**44.07 300**	*e*P	**P**	**11 36 45.1**	**+0.2**
MAKZ	**Makanchi**	**44.28 300**	*e*P	**P**	**11 36 46.8**	**+0.3**
MAKZ			pmax	pmax		
	comp=Z,11nm,1.0s					
MAKZ	**Makanchi**	**44.28 300**	*e*P	**P**	**11 36 46.8**	**+0.3**
	comp=Z,10nm,1.0s					
KTH	**Kantishna Hill**	**44.68 35**	*e*P	**P**	**11 36 51.1**	**+1.6**
	comp=Z,8.1nm,1.3s					
KURK	**Kurchatov**	**45.56 306**	*e*P	**P**	**11 36 56.5**	**-0.1**
KURK			pmax	pmax		
	comp=Z,17nm,0.9s					
KURK	**Kurchatov**	**45.56 306**	*e*P	**P**	**11 36 56.5**	**-0.1**
	comp=Z,17nm,0.9s					
MDM	**Murphy Dome**	**45.84 33**	*e*P	**P**	**11 37 00.2**	**+1.5**
	comp=Z,3.7nm,1.0s					
IL1	**Eielson Array**	**46.42 34**	*e*P	**P**	**11 37 03.3**	**+0.1**
ILAR	**Eielson Array**	**46.42 34**	P	**P**	**11 37 03.3**	**+0.1**
	comp=Z,1.4nm,0.8s,baz=262,slow=6.6,SNR=17					
ILB	**Eielson Array**	**46.42 34**	*e*P	**P**	**11 37 03.5**	**+0.3**
DOT	**Dot Lake**	**47.73 35**	*e*P	**P**	**11 37 14.5**	**+1.0**
	comp=Z,10nm,1.2s					
GUN	**Gumba**	**48.47 274**	*e*P	**P**	**11 37 20.3**	**+0.2**
	comp=Z,44nm,0.7s					
KKN	**Kakani**	**48.99 275**	*e*P	**P**	**11 37 24.2**	**+0.3**
	comp=Z,38nm,0.6s					
PKIN	**Phulchoki**	**49.01 274**	*e*P	**P**	**11 37 24.0**	**-0.1**
DMN	**Daman**	**49.21 274**	*e*P	**P**	**11 37 25.5**	**-0.2**
GKN	**Gorkha**	**49.38 275**	*e*P	**P**	**11 37 26.7**	**-0.1**
TKM2	**Tokmak 2**	**49.77 297**	*e*P	**P**	**11 37 30.4**	**+0.8**
TKM2			pmax	pmax		
	comp=Z,18nm,0.8s					
TKM2	**Tokmak 2**	**49.77 297**	*e*P	**P**	**11 37 30.4**	**+0.8**
	comp=Z,18nm,0.8s					
KOLN	**Koldanda**	**50.29 276**	*e*P	**P**	**11 37 33.8**	**0.0**
	comp=Z,6.8nm,0.4s					
AAK	**Ala-Archa**	**50.63 297**	*e*P	**P**	**11 37 35.4**	**-0.7**
AAK			pmax	pmax		
	comp=Z,6.0nm,0.9s					
AAK	**Ala-Archa**	**50.63 297**	*e*P	**P**	**11 37 36.2**	**+0.1**
	comp=Z,3.6nm,0.8s					
EKS2	**Erkin-Say**	**51.11 297**	*e*P	**P**	**11 37 40.2**	**+0.5**
EKS2			pmax	pmax		
	comp=Z,7.0nm,0.8s					
EKS2	**Erkin-Say**	**51.11 297**	*e*P	**P**	**11 37 40.2**	**+0.5**
	comp=Z,6.6nm,0.8s					
INK	**Inuvik**	**51.31 28**	P	**P**	**11 37 41.3**	**+0.6**
	comp=Z,1.7nm,0.9s,baz=272,slow=10,SNR=4.4					
INK	**Inuvik**	**51.31 28**	*e*P	**P**	**11 37 42.0**	**+1.3**
INK			pmax	pmax		
	comp=Z,3.0nm,0.6s					
INK	**Inuvik**	**51.31 28**	*e*P	**P**	**11 37 42.0**	**+1.3**
	comp=Z,2.5nm,0.6s					
SVE	**Sverdlovsk**	**54.20 318**	⇓*i*P	**P**	**11 38 02.8**	**+0.6**
SVE			pmax	pmax		
	comp=Z,16nm,0.9s					
SVE			MLR	MLR		
	comp=Z,364nm,16.0s					
ARU	**Arti**	**55.41 318**	*c i*P	**P**	**11 38 11.1**	**+0.1**
ARU					11 40 13.8	
ARU			S	**S**	**11 45 56.0**	**+0.7**
ARU			SS	**SS**	**11 49 41.1**	**+1.8**
ARU			pmax	pmax		
	comp=Z,16nm,1.0s					
ARU	**Arti**	**55.41 318**	*e*P	**P**	**11 38 11.3**	**+0.3**
	comp=Z,11nm,0.8s					
ABKAR	**Akbulak array**	**57.43 309**	*e*P	**P**	**11 38 25.5**	**0.0**
KBL	**Kabul**	**57.93 290**	*e*P	**P**	**11 38 28.9**	**-0.6**
KBL			pmax	pmax		
	comp=Z,10.0nm,1.0s					
KBL	**Kabul**	**57.93 290**	*e*P	**P**	**11 38 28.9**	**-0.6**
	comp=Z,9.9nm,1.0s					
WB2	**Warramunga Arr**	**59.93 190**	*e*P	**P**	**11 38 42.7**	**-0.3**
	comp=Z,8.4nm,1.1s					
WRA	**Warramunga Arr**	**59.93 190**	P	**P**	**11 38 41.5**	**-1.6**
	comp=Z,2.9nm,0.8s,baz=8.3,slow=7.3,SNR=18					
WRA	**Warramunga Arr**	**59.93 190**	*ce*P	**P**	**11 38 42.0**	**-1.1**
WRA			pmax	pmax		
	comp=Z,3.0nm,0.8s					
YKA	**Yellowknife Ar**	**60.73 31**	P	**P**	**11 38 47.6**	**-0.5**
	comp=Z,0.5nm,0.7s,baz=296,slow=6.3,SNR=7.9					
ARA0	**ARCESS Array S**	**62.05 339**	*e*P	**P**	**11 38 57.5**	**+0.5**
ARCES	**ARCESS Array B**	**62.05 339**	P	**P**	**11 38 57.3**	**+0.3**
	comp=Z,2.3nm,1.0s,baz=50,slow=9.9,SNR=3.9					
ARCES	**ARCESS Array B**	**62.05 339**	P	**P**	**11 38 57.3**	**+0.3**
ARCES			pmax	pmax		
	comp=Z,3.0nm,0.9s					
KLMR	**Klimovskoe**	**62.34 328**	*e*P	**P**	**11 38 57.3**	**-1.7**
KLMR			*e**SP	sP	11 39 11.4	+7.5
KLMR			*e*		11 41 13.4	
KLMR			pmax	pmax		
	comp=Z,9.0nm,1.0s					
DAG	**Danmarks Havn**	**63.25 355**	⇑*i*P	**P**	**11 39 04.7**	**-0.2**
	comp=Z,4.6nm,0.9s					
DAG	**Danmarks Havn**	**63.25 355**	⇑*i*P	**P**	**11 39 04.7**	**-0.2**
DAG			pmax	pmax		
	comp=Z,4.0nm,0.9s					
AS01	**Alice Springs**	**63.65 190**	*e*P	**P**	**11 39 07.5**	**-0.6**
ASAR	**Alice Springs**	**63.66 190**	P	**P**	**11 39 06.7**	**-1.5**
	comp=Z,1.1nm,0.8s,baz=13,slow=6.5,SNR=11					
GEYT	**Alibeck**	**63.91 299**	P	**P**	**11 39 08.9**	**-1.0**
	comp=Z,3.3nm,0.7s,baz=36,slow=2.8,SNR=7.1					
VRH	**Novokhopyorsk**	**66.65 318**	*e*P	**P**	**11 39 26.0**	**-1.3**
VRH			pmax	pmax		
	comp=Z,5.0nm,0.5s					
OBN	**Obninsk**	**66.89 323**	*e*P	**P**	**11 39 27.9**	**-0.9**
OBN			*e*		11 39 55.2	
OBN			*e*		11 41 58.1	
OBN			pmax	pmax		
	comp=Z,4.0nm,0.9s					
OBN			MLR	MLR		
	comp=Z,141nm,16.0s					
FIA1	**FINESS Array S**	**67.18 332**	*e*P	**P**	**11 39 30.7**	**+0.2**
	comp=Z,13nm,0.8s					
FINES	**FINESS Array B**	**67.18 332**	P	**P**	**11 39 30.3**	**-0.2**
	comp=Z,7.4nm,0.7s,baz=46,slow=8.2,SNR=21					
FINES	**FINESS Array B**	**67.18 332**	*ce*P	**P**	**11 39 30.6**	**+0.1**
FINES			pmax	pmax		
	comp=Z,7.0nm,0.7s					
LPSR	**Galich'ya Gora**	**67.25 320**	*e*P	**P**	**11 39 29.9**	**-1.3**
LPSR			pmax	pmax		
	comp=Z,5.0nm,0.7s					
VSR	**Storozhevoye**	**67.95 319**	*e*P	**P**	**11 39 34.6**	**-1.0**
VSR			pmax	pmax		
	comp=Z,10.0nm,1.5s					
SUMG	**Summit**	**68.02 1**	*i* P	**P**	**11 39 36.9**	**+0.7**
	comp=Z,37nm,0.8s					
SUMG			*i*		11 39 46.5	
SUMG	**Summit**	**68.02 1**	*i* P	**P**	**11 39 36.9**	**+0.7**
SUMG			*i*		11 39 46.5	
SUMG			pmax	pmax		
	comp=Z,37nm,0.8s					
SUMG	**Summit**	**68.02 1**	*e*P	**P**	**11 39 37.3**	**+1.1**
	comp=Z,6.6nm,0.8s					
ZEI	**Tsey**	**70.31 310**	*e*P	**P**	**11 39 49.6**	**-1.1**
ZEI			*e*		11 40 02.6	
ZEI			pmax	pmax		
	comp=Z,12nm,0.8s					
KIV	**Kislovodsk**	**70.33 311**	*e*P	**P**	**11 39 52.2**	**+1.5**
KIV			pmax	pmax		
	comp=Z,19nm,0.9s					
KIV			MLR	MLR		
	comp=Z,92nm,18.0s					
KIV	**Kislovodsk**	**70.33 311**	*e*P	**P**	**11 39 52.5**	**+1.9**
	comp=Z,20nm,1.0s					
KBZ	**Khabaz**	**70.34 311**	P	**P**	**11 39 51.1**	**+0.5**
	comp=Z,7.9nm,0.8s,baz=67,slow=3.8,SNR=19					
FFC	**Flin Flon**	**70.63 34**	⇑*e*P	**P**	**11 39 54.8**	**+2.6**
LRM	**Limekiln Ridge**	**71.17 46**	*e*P	**P**	**11 39 57.3**	**+1.4**
STKA	**Stephens Creek**	**71.23 182**	P	**P**	**11 39 55.0**	**-0.9**
	comp=Z,1.1nm,0.8s,baz=348,slow=11,SNR=3.3					
NC405	**NORSAR Array S**	**72.12 338**	*e*P	**P**	**11 40 01.4**	**+0.3**
NC303	**NORSAR Array S**	**72.13 338**	*e*P	**P**	**11 40 01.5**	**+0.4**
NVAR	**Mina Array Bea**	**72.17 55**	P	**P**	**11 40 03.5**	**+1.5**
	comp=Z,0.3nm,0.3s,baz=308,slow=4.4,SNR=2.6					
NC204	**NORSAR Array S**	**72.26 338**	*e*P	**P**	**11 40 02.4**	**+0.4**
NB201	**NORSAR Array S**	**72.29 338**	*e*P	**P**	**11 40 02.8**	**+0.7**
NB2	**NORSAR Subarra**	**72.32 338**	P	**P**	**11 40 01.9**	**-0.4**
	comp=Z,5.9nm,0.8s,baz=37,slow=6.2					
NOA	**NORSAR Array B**	**72.32 338**	P	**P**	**11 40 02.3**	**0.0**
	comp=Z,5.7nm,0.8s,baz=39,slow=6.0,SNR=17					
NBO02	**NORSAR Array S**	**72.42 338**	*e*P	**P**	**11 40 03.2**	**+0.4**
AKASG	**Malin Array Be**	**73.13 323**	P	**P**	**11 40 06.8**	**-0.4**
	comp=Z,5.0nm,0.8s,baz=43,slow=6.0,SNR=17					
AKASG	**Malin Array Be**	**73.13 323**	*ce*P	**P**	**11 40 07.0**	**-0.2**
AKASG	

comp=Z,18nm,1.0s
DPC Dobruska-Polom 79.01 329 *e*P **P 11 40 41.7 +0.9**
DPC Dobruska-Polom 79.01 329 *e*P **P 11 40 41.7 +0.9**
PSZ Piszkesteto 79.38 325 *e*P **P 11 40 42.7 -0.2**
PSZ pmax pmax
comp=Z,7.0nm,0.9s
PSZ Piszkesteto 79.38 325 *e*P **P 11 40 42.7 -0.2**
comp=Z,7.1nm,0.9s
CLL Collm 79.54 331 *i* P **P 11 40 43.6 0.0**
comp=Z,6.0nm,0.9s
CLL Collm 79.54 331 *i* P **P 11 40 43.6 0.0**
CLL pmax pmax
comp=Z,6.0nm,0.9s
CLL Collm 79.54 331 *e*P **P 11 40 44.0 +0.3**
comp=Z,5.3nm,0.9s
PRU Pruhonice 80.00 329 *e*P **P 11 40 46.8 +0.6**
PRU Pruhonice 80.00 329 *e*P **P 11 40 46.8 +0.6**
KHC Kasperske Hory 81.07 329 *e*P **P 11 40 52.4 +0.4**
KHC Kasperske Hory 81.07 329 *e*P **P 11 40 52.0 0.0**
KHC pmax pmax
comp=Z,2.0nm,0.8s
KHC Kasperske Hory 81.07 329 *e*P **P 11 40 52.0 0.0**
comp=Z,1.6nm,0.8s
GERES GERESS Array B 81.25 329 P **P 11 40 52.8 -0.2**
comp=Z,1.3nm,0.8s,baz=57,slow=4.9,SNR=7.9
GEA0 GERESS Array S 81.25 329 *e*P **P 11 40 52.9 -0.1**
FUORN Ofenpass-Fuorn 84.41 330 *e*P **P 11 41 10.4 +0.8**
comp=Z,8.3nm,0.9s
TXAR Lajitas Array 87.28 54 P **P 11 41 24.1 +0.1**
comp=Z,0.2nm,0.5s,baz=295,slow=3.5,SNR=4.0
SNAA Sanae 143.75 197 PKP PKPab 11 48 07.9 +0.1
VNA3 Neumayer Olymp 145.54 195 PKP **PKPdf 11 48 12.1 -1.8**
RCBR Riachuelo 146.27 359 *e*PKPdf **PKPbc 11 48 17.8 -0.3**

ISCJB ***29*** *11:29:45.7±0.6, 42°.09N±0°.05×141°.51E±0°.07, h99km±4km, mb3.8/6, Error ellipse: s-maj=10.2km s-min=6.4km az=33.9*
JMA ***29*** *11:29:47.1±0.1, 42°.12N×141°.50E, h88km±2km, M3.8*
JMA Felt II J1.
IDC ***29*** *11:29:49.5±7.0, 42°.83N×140°.35E, h62km±49km, mb3.7/6, mb1 3.9/7, mb1mx3.5/53, mbtmp4.0/7, MS3.8/1, Ms1 3.8/1, ms1mx2.7/41, Error ellipse: s-maj=118.4km s-min=41.0km az=155.0*
ISC 29 11:29:46.5±0.9,**42°.09N**±0°.05×**141°.52E**±0°.06,**h93**km±6km,
n25, σ0**°44**/25,**mb3.9**/6,**3C-3D,Hokkaido region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JKB	**Kayabe**	**0.42**	**241**	⇓P	**Pn**	**11 30 00.9**	**0.0**
JKB				*e*S	**Sn**	**11 30 11.6**	**0.0**
JNB	**Noboribetsu**	**0.52**	**317**	⇓P	**Pn**	**11 30 01.5**	**-0.1**
JNB				*e*S	**Sn**	**11 30 12.6**	**-0.3**
JEW	**Eniwo**	**0.75**	**356**	⇑P	**Pn**	**11 30 03.9**	**+0.2**
JEW				*e*S	**Sn**	**11 30 16.4**	**-0.2**
JOT	**Ohata**	**0.79**	**207**	P	**Pn**	**11 30 04.8**	**+0.7**
JOT				*e*S	**Sn**	**11 30 17.7**	**+0.4**
JYM2	**Yakumo 2**	**0.86**	**272**	⇓P	**Pn**	**11 30 05.3**	**+0.5**
JBT2	**Biratori 2**	**0.93**	**42**	P	**Pn**	**11 30 05.7**	**+0.2**
JBT2				*e*S	**Sn**	**11 30 19.7**	**-0.1**
JNBK	**Urakawa-nobuka**	**0.93**	**78**	⇑P	**Pn**	**11 30 05.7**	**+0.1**
JSR	**Shiriuchi**	**1.00**	**236**	P	**Pn**	**11 30 06.5**	**+0.2**
JCH	**Churui**	**1.46**	**68**	*e*S	**Sn**	**11 30 31.4**	**+0.4**
JSK	**Shakotan**	**1.48**	**329**	⇑P	**Pn**	**11 30 12.6**	**+0.5**
JSK				*e*S	**Sn**	**11 30 32.0**	**+0.6**
JHR	**Hokuryu**	**1.66**	**5**	P	**Pn**	**11 30 14.8**	**+0.4**
JHR				*e*S	**Sn**	**11 30 35.7**	**+0.2**
ASAJ	**Asahikawa**	**2.17**	**21**	P	**Pn**	**11 30 21.9**	**+0.9**
baz=214,slow=9.1							
ASAJ				S	**Sn**	**11 30 47.6**	**+0.1**
baz=195,slow=20							
JHJ	**Hachijo jima 2**	**9.06**	**189**	LR	LR	11 36 06.2	
comp=Z,639nm,21.3s,baz=90,slow=39							
H11N2	**WAKE ISLAND Hy**	**30.95**	**128**	T	T	12 08 33.6	
baz=321							
H11N1	**WAKE ISLAND Hy**	**30.96**	**128**	T	T	12 08 39.6	
baz=321,slow=74							
H11N3	**WAKE ISLAND Hy**	**30.97**	**128**	T	T	12 08 34.3	
baz=321,slow=74							
H11S1	**WAKE ISLAND Hy**	**31.80**	**130**	T	T	12 09 35.9	
baz=323,slow=76,SNR=0.8							
H11S3	**WAKE ISLAND Hy**	**31.80**	**130**	T	T	12 09 35.9	
baz=323,slow=76,SNR=0.5							
H11S2	**WAKE ISLAND Hy**	**31.82**	**130**	T	T	12 09 37.4	
baz=323,slow=76,SNR=4.5							
ILAR	**Eielson Array**	**45.24**	**35**	P	P	11 37 59.3	+5.2
0.8nm,0.9s,baz=249,slow=6.4,SNR=4.2							
FINES	**FINESS Array B**	**64.41**	**331**	P	**P**	**11 40 11.8**	**-0.5**
4.4nm,0.5s,baz=57,slow=7.1,SNR=11							
NOA	**NORSAR Array B**	**69.57**	**337**	P	**P**	**11 40 44.6**	**-0.5**
1.3nm,0.7s,baz=38,slow=6.0,SNR=2.5							
AKASG	**Malin Array Be**	**70.38**	**321**	P	**P**	**11 40 49.6**	**-0.6**
0.6nm,0.3s,baz=44,slow=6.5,SNR=4.9							
BRTR	**Keskin Array B**	**75.59**	**311**	P	**P**	**11 41 21.4**	**+0.1**
1.0nm,0.6s,baz=84,slow=3.7,SNR=4.8							
GERES	**GERESS Array B**	**78.47**	**328**	P	**P**	**11 41 37.5**	**+0.3**
0.5nm,0.6s,baz=38,slow=5.0,SNR=2.7							

ISK ***29*** *11:31:21.5, 39°.08N×29°.06E, h6km, ML2.4*
ISCJB ***29*** *11:31:22.1±0.5, 39°.10N±0°.03×29°.04E±0°.04, h5km±7km, Error ellipse: s-maj=5.6km s-min=4.7km az=141.1*
DDA ***29*** *11:31:22.3, 39°.09N×29°.04E, h7km, Ml2.6*
CSEM ***29*** *11:31:22.2±0.1, 39°.10N×29°.04E, h5km, ML2.6, Error ellipse: s-maj=2.1km s-min=1.6km az=88.0*
ISC 29 11:31:21.9±0.9,**39°.08N**±0°.03×**29°.06E**±0°.03,**h16**km±8km,
n26, σ0**°29**/36,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**262**	P	**Pg**	**11 31 27.8**	**0.0**
DEMI				S	**Sg**	**11 31 31.5**	**-0.3**
DEMI	**Demirci**	**0.27**	**262**	*i* P	**Pg**	**11 31 27.8**	**0.0**
DEMI				*i* S	**Sg**	**11 31 31.6**	**-0.3**
GDZ	**Gediz**	**0.33**	**88**	P	**Pb**	**11 31 29.6**	**+0.2**
GDZ				S	**Sb**	**11 31 34.5**	**0.0**
GDZ	**Gediz**	**0.33**	**88**	*i* P	**Pb**	**11 31 29.6**	**+0.2**
GDZ				*i* S	**Sb**	**11 31 34.5**	**0.0**
TVSB	**Tavsanli**	**0.48**	**40**	*e*PG	**Pg**	**11 31 31.4**	**-0.1**
TVSB				*e*SG	**Sg**	**11 31 38.1**	**0.0**
TVSB	**Tavsanli**	**0.48**	**40**	*e*Pg	**Pg**	**11 31 31.4**	**-0.1**
TVSB				*e*Sg	**Sg**	**11 31 38.1**	**0.0**
KULA	**Kula-Manisa**	**0.65**	**209**	*e*PG	**Pg**	**11 31 34.5**	**-0.1**
KULA				*e*SG	**Sb**	**11 31 43.5**	**0.0**
KULA	**Kula-Manisa**	**0.65**	**209**	*e*Pg	**Pg**	**11 31 34.5**	**-0.1**
KULA				*e*Sg	**Sb**	**11 31 43.6**	**0.0**
KHAL	**Karahalli**	**0.78**	**154**	P	**Pb**	**11 31 37.9**	**+0.7**
KHAL				S	**Sn**	**11 31 49.4**	**-0.5**
KHAL	**Karahalli**	**0.78**	**154**	*i* P	**Pb**	**11 31 37.9**	**+0.7**
KHAL				*i* S	**Sn**	**11 31 49.4**	**-0.5**
KHL	**Karahalli**	**0.84**	**154**	*e*PG	**Pb**	**11 31 38.4**	**+0.3**
KHL	**Karahalli**	**0.84**	**154**	*e*Pg	**Pb**	**11 31 38.4**	**+0.3**
ORLT	**Orhaneli**	**0.97**	**353**	*e*PG	**Pb**	**11 31 40.7**	**+0.3**
ORLT	**Orhaneli**	**0.97**	**353**	*e*Pg	**Pb**	**11 31 40.7**	**+0.3**
BALB	**Balikesir**	**1.07**	**302**	*e*PG	**Pb**	**11 31 42.4**	**+0.3**
BALB	**Balikesir**	**1.07**	**302**	*e*Pg	**Pb**	**11 31 42.4**	**+0.3**
CAVI	**Cavuskoy**	**1.27**	**28**	*e*PN	**Pg**	**11 31 46.5**	**+0.1**
CAVI	**Cavuskoy**	**1.27**	**28**	*e*Pn	**Pg**	**11 31 46.5**	**+0.1**
IZI	**Iznik**	**1.30**	**14**	*e*PN	**Pg**	**11 31 46.8**	**0.0**
IZI	**Iznik**	**1.30**	**14**	*e*Pn	**Pg**	**11 31 46.8**	**0.0**
MDNY	**Mudanya-Bursa**	**1.30**	**354**	*e*PN	**Pg**	**11 31 46.8**	**0.0**
MDNY	**Mudanya-Bursa**	**1.30**	**354**	*e*Pn	**Pg**	**11 31 46.8**	**0.0**
KCTX	**Karacabey (Bur**	**1.30**	**336**	*e*PN	**Pg**	**11 31 46.9**	**-0.1**
KCTX	**Karacabey (Bur**	**1.30**	**336**	*e*Pn	**Pg**	**11 31 46.9**	**-0.1**
ARMT	**Armutlu**	**1.49**	**354**	*e*PN	**Pb**	**11 31 49.6**	**+0.4**
ARMT	**Armutlu**	**1.49**	**354**	*e*Pn	**Pb**	**11 31 49.7**	**+0.4**

NIED ***29*** *11:41:00, 36°.80N×140°.60E, h5km, Mw3.8 Best double couple: M0=5.13000×10^14 NP1:φs=350.00000°, δ16.00000°, λ-124.00000°. NP2:φs=205.00000°, δ77.00000°, λ-81.00000°.*
ISCJB ***29*** *11:41:38.8±0.6, 36°.78N±0°.03×140°.65E±0°.05, h14km±4km, mb3.5/10, Error ellipse: s-maj=8.0km s-min=4.4km az=28.4*
IDC ***29*** *11:41:38.2±0.8, 36°.64N×140°.61E, h0km, mb3.5/10, mb1 3.8/11, mb1mx3.6/48, mbtmp3.6/11, Error ellipse: s-maj=21.6km s-min=17.7km az=120.0*
JMA ***29*** *11:41:39.3, 36°.81N×140°.57E, h6km±1km, M3.6*
Broadband fault plane solution: P waves. NP1:
φs=202.00000°, δ74.00000°, λ-80.00000°. NP2: φs=350.00000°, δ19.00000°, λ-121.00000°. Principal axes: T Plg28.0000°, Azm284.0000°; N Plg10.0000°, Azm19.0000°; P Plg60.0000°, Azm126.0000°;
JMA Felt II J1.
ISC 29 11:41:39.5±1.1,**36°.80N**±0°.03×**140°.60E**±0°.04,**h6**km±7km,
n25, σ0**°91**/27,**mb3.6**/10,**5C-1D,Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.19**	**186**	⇓P	**Pg**	**11 41 43.3**	**+0.1**
JHO				S	**Sg**	**11 41 46.2**	**+0.5**
ONAJ	**Iwakimizuishiy**	**0.34**	**28**	⇑P	**Pg**	**11 41 46.0**	**-0.2**
ONAJ				S	**Sg**	**11 41 51.1**	**+0.3**
JSB	**Shiboa**	**0.57**	**288**	⇑P	**Pg**	**11 41 50.5**	**+0.1**
JSB				S	**Sg**	**11 41 58.4**	**+0.6**
JFK	**Kawauchi**	**0.61**	**21**	⇑P	**Pg**	**11 41 50.6**	**-0.7**
JYT	**Yasato**	**0.65**	**210**	⇑P	**Pg**	**11 41 51.7**	**-0.3**
JYT				S	**Sg**	**11 42 00.5**	**0.0**
JFT	**Otama**	**0.75**	**344**	⇑P	**Pg**	**11 41 53.3**	**-0.6**
JFT				S	**Sg**	**11 42 03.2**	**-0.4**
MJAR	**Matsushiro Arr**	**1.94**	**263**	Pn	**Pn**	**11 42 12.7**	**-0.3**
44nm,0.3s,baz=87,slow=15,SNR=306							
MJAR				Sn	**Sn**	**11 42 37.1**	**-0.6**
30nm,0.3s,baz=99,slow=28,SNR=11							
MJAR				LR	LR	11 43 13.4	
comp=Z,99nm,21.7s,baz=115,slow=50							
MAT	**Matsushiro**	**1.94**	**263**	P	**Pn**	**11 42 12.7**	**-0.3**
MAT				S	**Sn**	**11 42 38.4**	**+0.7**
ASAJ	**Asahikawa**	**7.47**	**11**	Pn	**Pn**	**11 43 28.5**	**-0.5**
baz=232,slow=19							
ASAJ				Sn	**Sn**	**11 44 55.1**	**+1.1**
0.2nm,0.3s,baz=195,slow=20,SNR=3.1							
SEY	**Seymchan**	**27.15**	**12**	P	**P**	**11 47 25.9**	**+2.6**
0.5nm,0.4s,baz=230,slow=7.9,SNR=3.3							
H11N2	**WAKE ISLAND Hy**	**28.60**	**119**	T	T	12 17 21.3	
baz=313,slow=75,SNR=580							
H11N1	**WAKE ISLAND Hy**	**28.61**	**119**	T	T	12 17 21.8	
baz=313,slow=75,SNR=1032							
H11N3	**WAKE ISLAND Hy**	**28.61**	**119**	T	T	12 17 22.6	
baz=313,slow=75,SNR=629							
H11S1	**WAKE ISLAND Hy**	**29.29**	**121**	T	T	12 18 13.0	
baz=314,slow=76,SNR=1755							
H11S3	**WAKE ISLAND Hy**	**29.29**	**121**	T	T	12 18 13.1	
baz=314,slow=76,SNR=1354							
H11S2	**WAKE ISLAND Hy**	**29.30**	**121**	T	T	12 18 14.9	
baz=314,slow=76,SNR=757							
ZALV	**Zalesovo Beam**	**41.59**	**313**	P	**P**	**11 49 29.1**	**+1.1**
0.4nm,0.4s,baz=93,slow=7.3,SNR=2.5							
MKAR	**Makanchi Array**	**43.69**	**302**	P	**P**	**11 49 44.8**	**-0.4**
0.1nm,0.3s,baz=101,slow=7.6,SNR=3.1							
KURBB	**Kurchatov Arra**	**45.63**	**308**	P	**P**	**11 49 59.9**	**-0.7**
0.6nm,0.4s,baz=82,slow=7.6,SNR=7.7							
ILAR	**Eielson Array**	**50.05**	**32**	P	**P**	**11 50 35.7**	**+1.1**
0.2nm,0.5s,baz=280,slow=6.9,SNR=3.4							
WRA	**Warramunga Arr**	**56.74**	**187**	P	**P**	**11 51 22.5**	**-1.7**
0.9nm,0.7s,baz=4.1,slow=7.3,SNR=12							
ASAR	**Alice Springs**	**60.47**	**187**	P	**P**	**11 51 48.9**	**-1.3**
0.5nm,0.9s,baz=11,slow=8.7,SNR=5.8							
YKA	**Yellowknife Ar**	**64.34**	**30**	P	**P**	**11 52 15.2**	**-0.5**
0.2nm,0.8s,baz=303,slow=6.1,SNR=3.0							
PDAR	**Pinedale Array**	**78.30**	**45**	P	**P**	**11 53 41.0**	**+0.2**
0.2nm,0.5s,baz=305,slow=2.8,SNR=3.0							
TXAR	**Lajitas Array**	**90.78**	**52**	P	**P**	**11 54 43.8**	**-0.2**
0.2nm,0.6s,baz=310,slow=3.3,SNR=4.3							

IDC ***29*** *11:48:19.9±1.6, 0°.05S×125°.86E, h0km, mb3.4/3, mb1 3.6/3, mb1mx3.3/36, mbtmp3.4/3, MS3.0/1, Ms1 3.0/1, ms1mx2.4/24, Error ellipse: s-maj=175.2km s-min=24.9km az=64.0*
DJA ***29*** *11:48:21.3±1.3, 0°N±10°×12°6E±°, h86km±21km, M4.2/2, mb3.9/1, MLv4.3/2*
ISCJB ***29*** *11:48:23.3±1.0, 0°.12S±0°.06×125°.47E±0°.07, h49km, mb3.4/3, Error ellipse: s-maj=9.9km s-min=7.5km az=150.8*
ISC 29 11:48:25.5±1.3,**0°.11S**±0°.08×**125°.49E**±0°.08,**h49**km,**n13,**
σ2**°01**/15,**mb3.0**/3,**Southern Molucca Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KMSI	**Cibinong**	**1.65**	**294**	P	**Pn**	**11 48 49.9**	**-2.2**
KMSI				S	**Sn**	**11 49 12.0**	**-0.1**
SANI	**Sanana**	**2.00**	**165**	P	**Pn**	**11 48 54.2**	**-2.6**
LUWI	**Luwuk**	**2.87**	**251**	P	**Pn**	**11 49 07.1**	**-1.7**
MRSI	**Marisa**	**3.59**	**279**	P	**Pn**	**11 49 16.2**	**-2.5**
TTSI	**Tana Toraja**	**6.37**	**243**	P	**Pn**	**11 49 54.2**	**-2.7**
DAV	**Davao City (W)**	**7.13**	**1**	LR	LR	11 53 04.8	
comp=Z,108nm,18.4s,baz=224,slow=40							
WSI	**Waingapu**	**10.81**	**208**	S	**Sn**	**11 53 00.1**	**+2.7**
BBKI	**Banjar Baru**	**11.15**	**252**	S	**Sn**	**11 53 06.3**	**+0.6**
BASI	**Baing, Sumba**	**11.17**	**206**	S	**Sn**	**11 53 07.7**	**+1.5**
PLAI	**Plampang**	**11.58**	**221**	P	**Pn**	**11 51 08.2**	**0.0**
PLAI				S	**Sn**	**11 53 16.5**	**+0.3**
WRA	**Warramunga Arr**	**21.54**	**157**	P	**P**	**11 53 09.0**	**-1.8**
0.4nm,0.6s,baz=336,slow=12,SNR=3.6							
ASAR	**Alice Springs**	**24.81**	**161**	P	**P**	**11 53 43.9**	**+0.7**
0.4nm,0.8s,baz=340,slow=9.1,SNR=5.3							
ASAR				PcP	**PcP**	**11 57 20.4**	**+1.6**
0.2nm,0.6s,baz=353,slow=2.1,SNR=7.2							
MKAR	**Makanchi Array**	**60.03**	**327**	P	**P**	**11 58 29.5**	**+2.1**
1.0nm,0.6s,baz=117,slow=7.9,SNR=12							

ISK ***29*** *12:02:00.9, 38°.56N×39°.26E, h27km, MD2.8*
DDA ***29*** *12:02:01.5, 38°.54N×39°.53E, h7km, Ml2.8*
CSEM ***29*** *12:02:02.0±0.3, 38°.52N×39°.54E, h2km, ML2.8, Error ellipse: s-maj=6.8km s-min=5.3km az=64.0*
ISC 29 12:02:01.8±1.0,**38°.54N**±0°.02×**39°.48E**±0°.03,**h13**km±8km,
n17, σ0**°71**/31,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SVRC	**Sivrice-ELAZID**	**0.21**	**220**	PG	**Pg**	**12 02 06.8**	**+0.2**
SVRC				*e*SG	**Sb**	**12 02 11.5**	**-0.1**
SVRC	**Sivrice-ELAZID**	**0.21**	**220**	*i* Pg	**Pg**	**12 02 06.9**	**+0.2**
SVRC				*e*Sg	**Sb**	**12 02 11.5**	**-0.1**
PTK	**Pertek**	**0.36**	**348**	*e*PG	**Pg**	**12 02 09.6**	**+0.4**
PTK				*e*SG	**Sb**	**12 02 15.5**	**-0.2**
PTK	**Pertek**	**0.36**	**348**	*e*Pg	**Pg**	**12 02 09.6**	**+0.4**
PTK				*e*Sg	**Sb**	**12 02 15.5**	**-0.2**
ELZG	**Elazig**	**0.39**	**264**	P	**Pg**	**12 02 09.8**	**0.0**
ELZG				S	**Sb**	**12 02 16.4**	**-0.4**
ELZG	**Elazig**	**0.39**	**264**	*i* P	**Pg**	**12 02 09.8**	**0.0**
ELZG				*i* S	**Sb**	**12 02 16.4**	**-0.4**
TNCL	**Tunceli-Merkez**	**0.57**	**5**	P	**Pg**	**12 02 12.1**	**-1.0**
TNCL				S	**Sg**	**12 02 20.8**	**0.0**
TNCL	**Tunceli-Merkez**	**0.57**	**5**	*i* P	**Pg**	**12 02 12.1**	**-1.0**
TNCL				*i* S	**Sg**	**12 02 20.8**	**0.0**
DIYA	**Diyarbakir**	**0.80**	**141**	P	**Pg**	**12 02 16.8**	**-0.5**
DIYA	**Diyarbakir**	**0.80**	**141**	*i* P	**Pg**	**12 02 16.8**	**-0.5**
DIYA				*i* S	**Sn**	**12 02 32.0**	**+1.5**
KEMA	**Kemaliye**	**1.06**	**314**	*i* P	**Pb**	**12 02 20.3**	**-1.7**
KEMA				*i* S	**Sn**	**12 02 38.2**	**+1.1**
MAZI	**Mazidag**	**1.32**	**145**	*e*PN	**Pn**	**12 02 25.8**	**-0.2**
MAZI	**Mazidag**	**1.32**	**145**	*e*Pn	**Pn**	**12 02 25.8**	**-0.2**
BTMN	**Batman**	**1.55**	**114**	P	**Pb**	**12 02 30.3**	**-0.1**
BTMN				S	**Sg**	**12 02 51.9**	**+0.1**
BTMN	**Batman**	**1.55**	**114**	*i* P	**Pb**	**12 02 30.3**	**-0.1**
BTMN				*i* S	**Sg**	**12 02 51.9**	**+0.1**
KELT	**Kelkit**	**1.61**	**354**	P	**Pg**	**12 02 33.5**	**+0.7**
KELT				S	**Sg**	**12 02 55.0**	**+1.1**
KELT	**Kelkit**	**1.61**	**354**	*i* P	**Pg**	**12 02 33.5**	**+0.7**
KELT				*i* S	**Sg**	**12 02 55.0**	**+1.1**

ISCJB ***29*** *12:04:04.6±0.5, 39°.08N±0°.03×29°.10E±0°.04, h4km±8km, Error ellipse: s-maj=5.8km s-min=4.6km az=176.6*
CSEM ***29*** *12:04:04.7±0.1, 39°.09N×29°.11E, h5km, ML2.6, Error ellipse: s-maj=2.1km s-min=1.7km az=105.0*
ISK ***29*** *12:04:04.2, 39°.07N×29°.12E, h5km, MD2.4, ML2.3*
DDA ***29*** *12:04:04.6, 39°.12N×29°.11E, h7km, Ml2.6*
ISC 29 12:04:04.9±0.9,**39°.08N**±0°.02×**29°.11E**±0°.02,**h12**km±9km,
n34, σ0**°31**/46,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.29**	**89**	P	**Pg**	**12 04 10.6**	**-0.2**
GDZ				S	**Sg**	**12 04 15.2**	**+0.3**
GDZ	**Gediz**	**0.29**	**89**	*i* P	**Pg**	**12 04 10.7**	**-0.2**
GDZ				*i* S	**Sg**	**12 04 15.2**	**+0.3**
DEMI	**Demirci**	**0.31**	**263**	P	**Pg**	**12 04 11.2**	**-0.1**
DEMI				S	**Sg**	**12 04 15.7**	**+0.2**
DEMI	**Demirci**	**0.31**	**263**	*i* P	**Pg**	**12 04 11.2**	**-0.1**
DEMI				*i* S	**Sg**	**12 04 15.7**	**+0.2**
TVSB	**Tavsanli**	**0.46**	**36**	*e*PG	**Pg**	**12 04 13.3**	**-0.6**
TVSB	**Tavsanli**	**0.46**	**36**	*e*Pg	**Pg**	**12 04 13.3**	**-0.6**
KULA	**Kula-Manisa**	**0.67**	**212**	*e*PG	**Pg**	**12 04 17.6**	**-0.3**
KULA				*e*SG	**Sg**	**12 04 26.7**	**0.0**
KULA	**Kula-Manisa**	**0.67**	**212**	*e*Pg	**Pg**	**12 04 17.6**	**-0.3**
KULA				*e*Sg	**Sg**	**12 04 26.7**	**0.0**
KHAL	**Karahalli**	**0.77**	**157**	P	**Pb**	**12 04 20.5**	**+0.1**
KHAL				S	**Sg**	**12 04 30.3**	**+0.3**
KHAL	**Karahalli**	**0.77**	**157**	*i* P	**Pb**	**12 04 20.5**	**+0.1**
KHAL				*i* S	**Sg**	**12 04 30.3**	**+0.3**
KHL	**Karahalli**	**0.82**	**157**	*e*PG	**Pg**	**12 04 20.3**	**-0.5**
KHL				*e*SG	**Sb**	**12 04 32.2**	**-0.1**
KHL	**Karahalli**	**0.82**	**157**	*e*Pg	**Pg**	**12 04 20.3**	**-0.5**
KHL				*e*Sg	**Sb**	**12 04 32.2**	**-0.1**
ORLT	**Orhaneli**	**0.98**	**350**	*e*PG	**Pg**	**12 04 23.4**	**-0.3**
ORLT	**Orhaneli**	**0.98**	**350**	*e*Pg	**Pg**	**12 04 23.5**	**-0.3**
AKS	**Akhisar**	**1.03**	**259**	*e*PG	**Pg**	**12 04 24.6**	**-0.2**
AKS	**Akhisar**	**1.03**	**259**	*e*Pg	**Pg**	**12 04 24.6**	**-0.2**
BALB	**Balikesir**	**1.11**	**301**	*e*PN	**Pn**	**12 04 26.1**	**-0.1**
BALB	**Balikesir**	**1.11**	**301**	*e*Pn	**Pn**	**12 04 26.1**	**-0.1**
CAVI	**Cavuskoy**	**1.25**	**27**	*e*PN	**Pb**	**12 04 28.6**	**+0.1**
CAVI	**Cavuskoy**	**1.25**	**27**	*e*Pn	**Pb**	**12 04 28.6**	**+0.1**
IZI	**Iznik**	**1.28**	**12**	*e*PN	**Pg**	**12 04 29.4**	**-0.2**
IZI	**Iznik**	**1.28**	**12**	*e*Pn	**Pg**	**12 04 29.4**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.30**	**352**	*e*PN	**Pg**	**12 04 29.6**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.30**	**352**	*e*Pn	**Pg**	**12 04 29.7**	**-0.2**
BORA	**Eskisehir**	**1.31**	**52**	P	**Pn**	**12 04 29.2**	**+0.1**
BORA				S	**Sg**	**12 04 47.1**	**0.0**
BORA	**Eskisehir**	**1.31**	**52**	*i* P	**Pn**	**12 04 29.2**	**+0.1**
BORA				*i* S	**Sg**	**12 04 47.1**	**0.0**
KCTX	**Karacabey (Bur**	**1.32**	**334**	*e*PN	**Pg**	**12 04 30.1**	**-0.1**
KCTX	**Karacabey (Bur**	**1.32**	**334**	*e*Pn	**Pg**	**12 04 30.1**	**-0.1**
ADVT	**Abdulvahap**	**1.43**	**19**	*e*PN	**Pb**	**12 04 31.5**	**-0.1**
ADVT	**Abdulvahap**	**1.43**	**19**	*e*Pn	**Pb**	**12 04 31.5**	**-0.1**
ARMT	**Armutlu**	**1.49**	**353**	*e*PN	**Pb**	**12 04 32.4**	**-0.2**
ARMT	**Armutlu**	**1.49**	**353**	*e*Pn	**Pb**	**12 04 32.4**	**-0.2**
GULT	**Gulveren**	**1.73**	**38**	*e*PN	**Pn**	**12 04 35.6**	**+0.7**
GULT	**Gulveren**	**1.73**	**38**	*e*Pn	**Pn**	**12 04 35.6**	**+0.7**

ISK ***29*** *12:10:51.8, 39°.10N×29°.06E, h5km, ML2.5*
CSEM ***29*** *12:10:52.5±0.1, 39°.11N×29°.05E, h5km, ML2.8, Error ellipse: s-maj=2.2km s-min=2.0km az=112.0*
DDA ***29*** *12:10:52.1, 39°.08N×29°.06E, h7km, Ml2.8*
ISC 29 12:10:52.1±0.9,**39°.10N**±0°.02×**29°.06E**±0°.02,**h15**km±9km,
n40, σ0**°29**/52,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**259**	P	**Pg**	**12 10 58.3**	**+0.2**
DEMI				S	**Sg**	**12 11 01.8**	**-0.3**
DEMI	**Demirci**	**0.27**	**259**	*i* P	**Pg**	**12 10 58.3**	**+0.2**
DEMI				*i* S	**Sg**	**12 11 01.8**	**-0.3**
GDZ	**Gediz**	**0.33**	**91**	P	**Pg**	**12 10 59.2**	**+0.2**
GDZ				S	**Sg**	**12 11 03.8**	**+0.1**
GDZ	**Gediz**	**0.33**	**91**	*i* P	**Pg**	**12 10 59.2**	**+0.2**
GDZ				*i* S	**Sg**	**12 11 03.8**	**+0.1**
TVSB	**Tavsanli**	**0.47**	**41**	PG	**Pg**	**12 11 01.7**	**+0.1**
TVSB				*e*SG	**Sg**	**12 11 07.7**	**-0.3**
TVSB	**Tavsanli**	**0.47**	**41**	*i* Pg	**Pg**	**12 11 01.7**	**+0.1**
TVSB				*e*Sg	**Sg**	**12 11 07.7**	**-0.3**
KULA	**Kula-Manisa**	**0.66**	**208**	*e*PG	**Pg**	**12 11 04.9**	**-0.2**
KULA				*e*SG	**Sg**	**12 11 13.7**	**-0.2**
KULA	**Kula-Manisa**	**0.66**	**208**	*e*Pg	**Pg**	**12 11 04.9**	**-0.2**
KULA				*e*Sg	**Sg**	**12 11 13.7**	**-0.2**
KHAL	**Karahalli**	**0.80**	**155**	P	**Pg**	**12 11 08.0**	**+0.3**
KHAL				S	**Sg**	**12 11 18.7**	**+0.4**
KHAL	**Karahalli**	**0.80**	**155**	*i* P	**Pg**	**12 11 08.0**

*CSEM **29** 12:20:03.6±0.1,39°.12N×29°.03E,h6km±2km,ML2.6,Error ellipse: s-maj=3.5km s-min=2.8km az=141.0*
*DDA **29** 12:20:03.5,39°.08N×29°.06E,h7km,Ml2.6*
ISC 29 12:20:03.1±1.0,39°.11N±0°.03×29°.02E±0°.03,h14km±11km, n20,σ0s25/30,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**254**	P	**Pb**	**12 20 09.4**	**-0.1**
DEMI				S	**Sb**	**12 20 13.2**	**-0.5**
DEMI	**Demirci**	**0.25**	**254**	*i* P	**Pb**	**12 20 09.3**	**-0.1**
DEMI				*i* S	**Sb**	**12 20 13.2**	**-0.5**
GDZ	**Gediz**	**0.36**	**94**	P	**Pg**	**12 20 10.4**	**-0.1**
GDZ				S	**Sg**	**12 20 15.2**	**-0.2**
GDZ	**Gediz**	**0.36**	**94**	*i* P	**Pg**	**12 20 10.4**	**-0.1**
GDZ				*i* S	**Sg**	**12 20 15.2**	**-0.2**
TVSB	**Tavsanli**	**0.48**	**45**	PG	**Pg**	**12 20 13.0**	**+0.3**
TVSB				*e*SG	**Sg**	**12 20 18.9**	**-0.2**
TVSB	**Tavsanli**	**0.48**	**45**	*i* Pg	**Pg**	**12 20 13.0**	**+0.3**
TVSB				*e*Sg	**Sg**	**12 20 18.9**	**-0.2**
KULA	**Kula-Manisa**	**0.66**	**206**	*e*PG	**Pg**	**12 20 16.3**	**+0.3**
KULA				*e*SG	**Sg**	**12 20 24.7**	**-0.1**
KULA	**Kula-Manisa**	**0.66**	**206**	*e*Pg	**Pg**	**12 20 16.3**	**+0.3**
KULA				*e*Sg	**Sg**	**12 20 24.7**	**-0.1**
KHAL	**Karahalli**	**0.83**	**154**	P	**Pn**	**12 20 20.5**	**+0.1**
KHAL				S	**Sg**	**12 20 30.1**	**+0.1**
KHAL	**Karahalli**	**0.83**	**154**	*i* P	**Pn**	**12 20 20.5**	**+0.1**
KHAL				*i* S	**Sg**	**12 20 30.1**	**+0.1**
KHL	**Karahalli**	**0.88**	**153**	*e*PG	**Pg**	**12 20 20.5**	**+0.3**
KHL	**Karahalli**	**0.88**	**153**	*e*Pg	**Pg**	**12 20 20.5**	**+0.3**
AKS	**Akhisar**	**0.97**	**257**	*e*PG	**Pg**	**12 20 22.2**	**+0.3**
AKS	**Akhisar**	**0.97**	**257**	*e*Pg	**Pg**	**12 20 22.2**	**+0.3**
CAVI	**Cavuskoy**	**1.26**	**30**	*e*PN	**Pg**	**12 20 27.7**	**+0.3**
CAVI	**Cavuskoy**	**1.26**	**30**	*e*Pn	**Pg**	**12 20 27.7**	**+0.3**
ARMT	**Armutlu**	**1.46**	**355**	*e*PN	**Pb**	**12 20 30.0**	**0.0**
ARMT	**Armutlu**	**1.46**	**355**	*e*Pn	**Pb**	**12 20 30.0**	**0.0**
GULT	**Gulveren**	**1.75**	**41**	*e*PN	**Pb**	**12 20 35.1**	**+0.1**
GULT	**Gulveren**	**1.75**	**41**	*e*Pn	**Pb**	**12 20 35.1**	**+0.1**

*ISK **29** 12:25:04.6,39°.08N×29°.10E,h5km,ML2.4*
*ISCJB **29** 12:25:05.1±0.5,39°.10N±0°.03×29°.05E±0°.04,h3km±8km, Error ellipse: s-maj=6.1km s-min=4.5km az=150.1*
*CSEM **29** 12:25:05.4±0.1,39°.10N×29°.05E,h5km,ML2.7,Error ellipse: s-maj=2.6km s-min=2.0km az=104.0*
*DDA **29** 12:25:05.3,39°.08N×29°.05E,h7km,Ml2.7*
ISC 29 12:25:05.4±1.0,39°.09N±0°.02×29°.06E±0°.02,h8km±10km, n34,σ0s30/44,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**261**	P	**Pg**	**12 25 10.9**	**0.0**
DEMI				S	**Sg**	**12 25 14.5**	**-0.1**
DEMI	**Demirci**	**0.27**	**261**	*i* P	**Pg**	**12 25 10.9**	**0.0**
DEMI				*i* S	**Sg**	**12 25 14.5**	**-0.1**
GDZ	**Gediz**	**0.33**	**90**	P	**Pg**	**12 25 12.1**	**+0.2**
GDZ				S	**Sg**	**12 25 16.8**	**+0.6**
GDZ	**Gediz**	**0.33**	**90**	*i* P	**Pg**	**12 25 12.1**	**+0.2**
GDZ				*i* S	**Sg**	**12 25 16.8**	**+0.6**
TVSB	**Tavsanli**	**0.48**	**40**	*e*PG	**Pg**	**12 25 14.4**	**-0.3**
TVSB				*e*SG	**Sg**	**12 25 20.3**	**-0.7**
TVSB	**Tavsanli**	**0.48**	**40**	*e*Pg	**Pg**	**12 25 14.4**	**-0.3**
TVSB				*e*Sg	**Sg**	**12 25 20.3**	**-0.7**
KULA	**Kula-Manisa**	**0.65**	**209**	*e*PG	**Pg**	**12 25 18.1**	**+0.1**
KULA				*e*SG	**Sg**	**12 25 26.5**	**0.0**
KULA	**Kula-Manisa**	**0.65**	**209**	*e*Pg	**Pg**	**12 25 18.1**	**+0.1**
KULA				*e*Sg	**Sg**	**12 25 26.5**	**0.0**
KHAL	**Karahalli**	**0.79**	**155**	P	**Pb**	**12 25 21.4**	**-0.1**
KHAL				S	**Sb**	**12 25 31.9**	**-0.5**
KHAL	**Karahalli**	**0.79**	**155**	*i* P	**Pb**	**12 25 21.4**	**-0.1**
KHAL				*i* S	**Sb**	**12 25 31.9**	**-0.5**
KHL	**Karahalli**	**0.84**	**155**	*e*PG	**Pg**	**12 25 21.6**	**-0.1**
KHL	**Karahalli**	**0.84**	**155**	*e*Pg	**Pg**	**12 25 21.6**	**-0.1**
ORLT	**Orhaneli**	**0.97**	**352**	*e*PG	**Pg**	**12 25 24.0**	**0.0**
ORLT	**Orhaneli**	**0.97**	**352**	*e*Pg	**Pg**	**12 25 24.0**	**0.0**
AKS	**Akhisar**	**1.00**	**258**	*e*PG	**Pg**	**12 25 24.5**	**0.0**
AKS	**Akhisar**	**1.00**	**258**	*e*Pg	**Pg**	**12 25 24.5**	**0.0**
BALB	**Balikesir**	**1.07**	**301**	*e*PN	**Pg**	**12 25 26.0**	**0.0**
BALB	**Balikesir**	**1.07**	**301**	*e*Pn	**Pg**	**12 25 26.0**	**0.0**
CAVI	**Cavuskoy**	**1.27**	**28**	*e*PN	**Pn**	**12 25 29.4**	**0.0**
CAVI	**Cavuskoy**	**1.27**	**28**	*e*Pn	**Pn**	**12 25 29.4**	**0.0**
IZI	**Iznik**	**1.29**	**14**	*e*PN	**Pn**	**12 25 29.7**	**-0.1**
IZI	**Iznik**	**1.29**	**14**	*e*Pn	**Pn**	**12 25 29.7**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.29**	**354**	*e*PN	**Pb**	**12 25 29.9**	**0.0**
MDNY	**Mudanya-Bursa**	**1.29**	**354**	*e*Pn	**Pb**	**12 25 29.9**	**0.0**
KCTX	**Karacabey (Bur**	**1.30**	**335**	*e*PN	**Pg**	**12 25 30.7**	**+0.4**
KCTX	**Karacabey (Bur**	**1.30**	**335**	*e*Pn	**Pg**	**12 25 30.7**	**+0.4**
GEMT	**Gemlik**	**1.35**	**4**	*e*PN	**Pn**	**12 25 30.6**	**+0.1**
GEMT	**Gemlik**	**1.35**	**4**	*e*Pn	**Pn**	**12 25 30.6**	**+0.1**
ADVT	**Abdulvahap**	**1.44**	**21**	*e*PN	**Pn**	**12 25 31.9**	**+0.1**
ADVT	**Abdulvahap**	**1.44**	**21**	*e*Pn	**Pn**	**12 25 31.9**	**+0.1**
ARMT	**Armutlu**	**1.48**	**354**	*e*PN	**Pb**	**12 25 33.5**	**+0.2**
ARMT	**Armutlu**	**1.48**	**354**	*e*Pn	**Pb**	**12 25 33.5**	**+0.2**
GULT	**Gulveren**	**1.75**	**39**	*e*PN	**Pn**	**12 25 36.8**	**+0.7**
GULT	**Gulveren**	**1.75**	**39**	*e*Pn	**Pn**	**12 25 36.8**	**+0.7**

*ISCJB **29** 12:28:16.4±0.5,39°.10N±0°.03×29°.04E±0°.03,h7km±5km, Error ellipse: s-maj=5.3km s-min=3.9km az=139.8*
*CSEM **29** 12:28:16.6±0.1,39°.11N×29°.04E,h5km,ML2.7,Error ellipse: s-maj=1.9km s-min=1.5km az=132.0*
*DDA **29** 12:28:16.2,39°.12N×29°.06E,h7km,Ml2.7*
*ISK **29** 12:28:16.0,39°.08N×29°.07E,h7km,ML2.5*
ISC 29 12:28:16.1±1.0,39°.11N±0°.03×29°.05E±0°.03,h18km±3km, n33,σ0s29/46,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**257**	P	**Pg**	**12 28 22.2**	**-0.1**
DEMI				S	**Sg**	**12 28 26.2**	**-0.2**
DEMI	**Demirci**	**0.27**	**257**	*i* P	**Pg**	**12 28 22.2**	**-0.1**
DEMI				*i* S	**Sg**	**12 28 26.2**	**-0.2**
GDZ	**Gediz**	**0.33**	**93**	P	**Pg**	**12 28 23.5**	**+0.1**
GDZ				S	**Sg**	**12 28 28.3**	**0.0**
GDZ	**Gediz**	**0.33**	**93**	*i* P	**Pg**	**12 28 23.5**	**+0.1**
GDZ				*i* S	**Sg**	**12 28 28.3**	**0.0**
TVSB	**Tavsanli**	**0.47**	**43**	PG	**Pb**	**12 28 25.9**	**0.0**
TVSB				*e*SG	**Sg**	**12 28 32.1**	**-0.1**
TVSB	**Tavsanli**	**0.47**	**43**	*i* Pg	**Pb**	**12 28 25.9**	**0.0**
TVSB				*e*Sg	**Sg**	**12 28 32.1**	**-0.1**
KULA	**Kula-Manisa**	**0.67**	**208**	*e*PG	**Pg**	**12 28 29.4**	**+0.1**
KULA				*e*SG	**Sb**	**12 28 37.9**	**-0.2**
KULA	**Kula-Manisa**	**0.67**	**208**	*e*Pg	**Pg**	**12 28 29.4**	**+0.1**
KULA				*e*Sg	**Sb**	**12 28 37.9**	**-0.2**
KHAL	**Karahalli**	**0.81**	**155**	P	**Pn**	**12 28 32.6**	**-0.1**
KHAL				S	**Sg**	**12 28 43.0**	**+0.2**
KHAL	**Karahalli**	**0.81**	**155**	*i* P	**Pn**	**12 28 32.6**	**-0.1**
KHAL				*i* S	**Sg**	**12 28 43.0**	**+0.2**
ORLT	**Orhaneli**	**0.95**	**353**	*e*PG	**Pg**	**12 28 34.8**	**+0.2**
ORLT	**Orhaneli**	**0.95**	**353**	*e*Pg	**Pg**	**12 28 34.8**	**+0.2**
AKHS	**Akhisar**	**0.99**	**257**	P	**Pg**	**12 28 35.6**	**+0.2**
AKHS				S	**Sb**	**12 28 47.5**	**0.0**
AKHS	**Akhisar**	**0.99**	**257**	*i* P	**Pg**	**12 28 35.6**	**+0.2**
AKHS				*i* S	**Sb**	**12 28 47.5**	**0.0**
AKS	**Akhisar**	**0.99**	**257**	*e*PG	**Pg**	**12 28 35.7**	**+0.3**
AKS	**Akhisar**	**0.99**	**257**	*e*Pg	**Pg**	**12 28 35.7**	**+0.3**
BALB	**Balikesir**	**1.05**	**301**	*e*PG	**Pg**	**12 28 37.3**	**+0.7**
BALB	**Balikesir**	**1.05**	**301**	*e*Pg	**Pg**	**12 28 37.3**	**+0.7**
IGD	**Bursa**	**1.16**	**6**	*i* P	**Pb**	**12 28 37.8**	**+0.1**
IGD				*i* S	**Sg**	**12 28 54.3**	**+0.4**
CAVI	**Cavuskoy**	**1.25**	**29**	*e*PN	**Pg**	**12 28 41.1**	**+0.7**
CAVI	**Cavuskoy**	**1.25**	**29**	*e*Pn	**Pg**	**12 28 41.1**	**+0.7**
MDNY	**Mudanya-Bursa**	**1.27**	**354**	*e*PN	**Pg**	**12 28 40.5**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.27**	**354**	*e*Pn	**Pg**	**12 28 40.5**	**-0.2**
KCTX	**Karacabey (Bur**	**1.28**	**335**	*e*PN	**Pg**	**12 28 40.5**	**-0.3**
KCTX	**Karacabey (Bur**	**1.28**	**335**	*e*Pn	**Pg**	**12 28 40.5**	**-0.3**
GEMT	**Gemlik**	**1.33**	**4**	*e*PN	**Pg**	**12 28 41.9**	**0.0**
GEMT	**Gemlik**	**1.33**	**4**	*e*Pn	**Pg**	**12 28 41.9**	**0.0**
ADVT	**Abdulvahap**	**1.43**	**22**	*e*PN	**Pg**	**12 28 43.3**	**-0.4**
ADVT	**Abdulvahap**	**1.43**	**22**	*e*Pn	**Pg**	**12 28 43.3**	**-0.4**
ARMT	**Armutlu**	**1.47**	**354**	*e*PN	**Pg**	**12 28 44.3**	**-0.1**
ARMT	**Armutlu**	**1.47**	**354**	*e*Pn	**Pg**	**12 28 44.3**	**-0.1**
GULT	**Gulveren**	**1.74**	**40**	*e*PN	**Pb**	**12 28 47.6**	**0.0**
GULT	**Gulveren**	**1.74**	**40**	*e*Pn	**Pb**	**12 28 47.6**	**0.0**

*ISCJB **29** 12:35:20.6±0.5,39°.14N±0°.03×29°.02E±0°.04,h7km±6km, Error ellipse: s-maj=5.4km s-min=4.6km az=139.1*
*CSEM **29** 12:35:20.7±0.1,39°.14N×29°.04E,h8km,ML2.8,Error ellipse: s-maj=2.2km s-min=1.9km az=94.0*
*ISK **29** 12:35:20.3,39°.13N×29°.04E,h10km,ML2.4*
*DDA **29** 12:35:20.2,39°.13N×29°.02E,h7km,Ml2.8*
ISC 29 12:35:20.8±0.9,39°.14N±0°.03×29°.03E±0°.03,h9km±11km, n28,σ0s32/38,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**248**	P	**Pg**	**12 35 26.3**	**+0.1**
DEMI				S	**Sg**	**12 35 29.7**	**-0.2**
DEMI	**Demirci**	**0.27**	**248**	*i* P	**Pg**	**12 35 26.3**	**+0.1**
DEMI				*i* S	**Sg**	**12 35 29.7**	**-0.2**
GDZ	**Gediz**	**0.35**	**98**	P	**Pg**	**12 35 27.1**	**-0.8**
GDZ				S	**Sg**	**12 35 33.4**	**+0.8**
GDZ	**Gediz**	**0.35**	**98**	*i* P	**Pg**	**12 35 27.1**	**-0.8**
GDZ				*i* S	**Sg**	**12 35 33.4**	**+0.8**
TVSB	**Tavsanli**	**0.45**	**47**	*e*PG	**Pg**	**12 35 29.6**	**-0.1**
TVSB				*e*SG	**Sg**	**12 35 36.2**	**+0.4**
TVSB	**Tavsanli**	**0.45**	**47**	*e*Pg	**Pg**	**12 35 29.6**	**-0.1**
TVSB				*e*Sg	**Sg**	**12 35 36.2**	**+0.4**
KULA	**Kula-Manisa**	**0.69**	**205**	*e*PG	**Pg**	**12 35 34.3**	**+0.1**
KULA				*e*SG	**Sg**	**12 35 43.1**	**-0.1**
KULA	**Kula-Manisa**	**0.69**	**205**	*e*Pg	**Pg**	**12 35 34.3**	**+0.1**
KULA				*e*Sg	**Sg**	**12 35 43.1**	**-0.1**
KHAL	**Karahalli**	**0.85**	**155**	P	**Pg**	**12 35 37.3**	**+0.1**
KHAL				S	**Sg**	**12 35 48.6**	**+0.3**
KHAL	**Karahalli**	**0.85**	**155**	*i* P	**Pg**	**12 35 37.3**	**+0.1**
KHAL				*i* S	**Sg**	**12 35 48.6**	**+0.3**
KHL	**Karahalli**	**0.90**	**155**	*e*PG	**Pb**	**12 35 38.6**	**-0.1**
KHL	**Karahalli**	**0.90**	**155**	*e*Pg	**Pb**	**12 35 38.6**	**-0.1**
ORLT	**Orhaneli**	**0.91**	**353**	*e*PG	**Pb**	**12 35 38.8**	**0.0**
ORLT	**Orhaneli**	**0.91**	**353**	*e*Pg	**Pb**	**12 35 38.8**	**0.0**
AKS	**Akhisar**	**0.98**	**255**	*e*PG	**Pb**	**12 35 40.1**	**0.0**
AKS	**Akhisar**	**0.98**	**255**	*e*Pg	**Pb**	**12 35 40.1**	**0.0**
BALB	**Balikesir**	**1.02**	**300**	*e*PG	**Pb**	**12 35 40.6**	**-0.1**
BALB	**Balikesir**	**1.02**	**300**	*e*Pg	**Pb**	**12 35 40.6**	**-0.1**
CAVI	**Cavuskoy**	**1.23**	**30**	*e*PN	**Pg**	**12 35 44.5**	**0.0**
CAVI	**Cavuskoy**	**1.23**	**30**	*e*Pn	**Pg**	**12 35 44.5**	**0.0**
MDNY	**Mudanya-Bursa**	**1.23**	**355**	*e*PN	**Pn**	**12 35 44.0**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.23**	**355**	*e*Pn	**Pn**	**12 35 44.0**	**-0.2**
KCTX	**Karacabey (Bur**	**1.24**	**335**	*e*PN	**Pn**	**12 35 44.2**	**-0.1**
KCTX	**Karacabey (Bur**	**1.24**	**335**	*e*Pn	**Pn**	**12 35 44.2**	**-0.1**
IZI	**Iznik**	**1.24**	**16**	*e*PN	**Pb**	**12 35 44.5**	**0.0**
IZI	**Iznik**	**1.24**	**16**	*e*Pn	**Pb**	**12 35 44.5**	**0.0**
GONE	**Gonen-Balikesi**	**1.38**	**311**	*e*PN	**Pn**	**12 35 46.1**	**0.0**
GONE	**Gonen-Balikesi**	**1.38**	**311**	*e*Pn	**Pn**	**12 35 46.2**	**0.0**

*ISK **29** 12:36:36.2,39°.16N×28°.98E,h5km,ML2.1*
*ISCJB **29** 12:36:37.2±0.5,39°.13N±0°.03×29°.07E±0°.04,h12km±5km, Error ellipse: s-maj=6.3km s-min=4.8km az=39.7*
*CSEM **29** 12:36:37.0±0.2,39°.16N×29°.04E,h5km,ML2.8,Error ellipse: s-maj=5.9km s-min=4.1km az=102.0*
*DDA **29** 12:36:37.2,39°.15N×29°.09E,h7km,Ml2.8*
ISC 29 12:36:36.7±1.0,39°.15N±0°.03×29°.04E±0°.03,h12km±12km, n24,σ0s33/34,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**246**	P	**Pb**	**12 36 43.9**	**+0.4**
DEMI				S	**Sb**	**12 36 48.1**	**0.0**
DEMI	**Demirci**	**0.27**	**246**	*i* P	**Pb**	**12 36 43.9**	**+0.4**
DEMI				*i* S	**Sb**	**12 36 48.1**	**0.0**
GDZ	**Gediz**	**0.35**	**100**	P	**Pg**	**12 36 44.0**	**+0.2**
GDZ				S	**Sg**	**12 36 48.3**	**-0.3**
GDZ	**Gediz**	**0.35**	**100**	*i* P	**Pg**	**12 36 44.0**	**+0.2**
GDZ				*i* S	**Sg**	**12 36 48.3**	**-0.3**
TVSB	**Tavsanli**	**0.44**	**48**	*e*PG	**Pb**	**12 36 46.4**	**-0.1**
TVSB				*e*SG	**Sg**	**12 36 52.0**	**+0.5**
TVSB	**Tavsanli**	**0.44**	**48**	*e*Pg	**Pb**	**12 36 46.4**	**-0.1**
TVSB				*e*Sg	**Sg**	**12 36 52.0**	**+0.5**
KULA	**Kula-Manisa**	**0.70**	**205**	*e*PG	**Pg**	**12 36 50.4**	**+0.1**
KULA				*e*SG	**Sg**	**12 36 59.4**	**-0.1**
KULA	**Kula-Manisa**	**0.70**	**205**	*e*Pg	**Pg**	**12 36 50.4**	**+0.1**
KULA				*e*Sg	**Sg**	**12 36 59.4**	**-0.1**
KHAL	**Karahalli**	**0.86**	**155**	P	**Pg**	**12 36 53.3**	**0.0**
KHAL				S	**Sg**	**12 37 03.7**	**-0.8**
KHAL	**Karahalli**	**0.86**	**155**	*i* P	**Pg**	**12 36 53.3**	**0.0**
KHAL				*i* S	**Sg**	**12 37 03.7**	**-0.8**
KHL	**Karahalli**	**0.91**	**155**	*e*PG	**Pn**	**12 36 55.6**	**+0.3**
KHL	**Karahalli**	**0.91**	**155**	*e*Pg	**Pn**	**12 36 55.6**	**+0.3**
CAVI	**Cavuskoy**	**1.22**	**30**	*e*PN	**Pg**	**12 37 00.3**	**+0.2**
CAVI	**Cavuskoy**	**1.22**	**30**	*e*Pn	**Pg**	**12 37 00.4**	**+0.2**
KCTX	**Karacabey (Bur**	**1.23**	**335**	*e*PN	**Pn**	**12 36 59.6**	**-0.1**
KCTX	**Karacabey (Bur**	**1.23**	**335**	*e*Pn	**Pn**	**12 36 59.6**	**-0.1**
IZI	**Iznik**	**1.23**	**16**	*e*PN	**Pg**	**12 37 00.6**	**+0.1**
IZI	**Iznik**	**1.23**	**16**	*e*Pn	**Pg**	**12 37 00.5**	**+0.1**
GEMT	**Gemlik**	**1.29**	**5**	*e*PN	**Pb**	**12 37 00.8**	**0.0**
GEMT	**Gemlik**	**1.29**	**5**	*e*Pn	**Pb**	**12 37 00.8**	**0.0**
ARMT	**Armutlu**	**1.42**	**355**	*e*PN	**Pg**	**12 37 03.5**	**-0.5**
ARMT	**Armutlu**	**1.42**	**355**	*e*Pn	**Pg**	**12 37 03.5**	**-0.5**
GULT	**Gulveren**	**1.71**	**41**	*e*PN	**Pb**	**12 37 08.2**	**+0.1**
GULT	**Gulveren**	**1.71**	**41**	*e*Pn	**Pb**	**12 37 08.2**	**+0.1**

IDC 29 12:46:54.6±428.0,47°.05N×47°.48E,h0km,Error ellipse: s-maj=176.0km s-min=143.8km az=15.0, Ukraine-Moldova-Southwestern Russia region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I31KZ	**AKTYUBINSK INF**	**7.74**	**60**	*i*		13 38 05.0	
	baz=247,slow=318,SNR=2.1						
I43RU	**DUBNA INFRASONI**	**1.56**	**331**	*i*		13 55 30.0	
	baz=140,slow=313,SNR=2.3						
I26DE	**FREYUNG INFRAS**	**22.58**	**287**	*i*		15 05 10.0	
	baz=82,slow=325,SNR=1.6						

*ISCJB **29** 12:46:54.1±0.5,41°.48N±0°.03×141°.95E±0°.07,h72km±5km, mb3.7/6,Error ellipse: s-maj=9.5km s-min=5.0km az=21.2*
*JMA **29** 12:46:54.7±0.1,41°.49N×141°.98E,h62km±2km,M3.1*
*IDC **29** 12:46:57.4±2.2,41°.49N×142°.11E,h92km±20km,mb3.4/6, mb1 3.4/9,mb1mx3.1/61,mbtmp3.6/9,Error ellipse: s-maj=27.3km s-min=18.3km az=103.0*
ISC 29 12:46:54.8±1.0,41°.48N±0°.04×141°.96E±0°.05,h62km±10km, n30,σ0s65/29,mb3.8/6,Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JOT	**Ohata**	**0.69**	**263**	P	**Pn**	**12 47 09.2**	**+0.1**
JOT				S	**Sn**	**12 47 19.9**	**+0.4**
JKB	**Kayabe**	**0.81**	**301**	P	**Pn**	**12 47 10.2**	**-0.3**
JTM	**Tenmabayashi**	**0.96**	**225**	P	**Pn**	**12 47 12.8**	**+0.4**
JTM				S	**Sn**	**12 47 25.6**	**+0.1**
JNBK	**Urakawa-nobuka**	**1.00**	**36**	P	**Pn**	**12 47 12.4**	**-0.5**
JEM	**Erimo**	**1.05**	**59**	P	**Pn**	**12 47 13.4**	**-0.1**
JANG	**Nango**	**1.15**	**197**	P	**Pn**	**12 47 14.8**	**-0.1**
JANG				S	**Sn**	**12 47 29.6**	**-0.3**
JSR	**Shiriuchi**	**1.16**	**273**	P	**Pn**	**12 47 15.4**	**+0.4**
JNB	**Noboribetsu**	**1.21**	**326**	P	**Pn**	**12 47 15.1**	**-0.5**
JNB				S	**Sn**	**12 47 30.3**	**-0.9**
JBT2	**Biratori 2**	**1.34**	**13**	P	**Pn**	**12 47 17.6**	**+0.2**
JYM2	**Yakumo 2**	**1.35**	**299**	P	**Pn**	**12 47 18.1**	**+0.6**
JEW	**Eniwo**	**1.42**	**345**	P	**Pn**	**12 47 18.5**	**+0.1**
JEW				S	**Sn**	**12 47 36.4**	**+0.3**
JCH	**Churui**	**1.54**	**42**	P	**Pn**	**12 47 20.9**	**+0.8**
JAH	**Hinai**	**1.63**	**218**	P	**Pn**	**12 47 22.2**	**+0.9**
JAH				S	**Sn**	**12 47 42.6**	**+1.3**
JFR	**Furan**	**1.75**	**15**	P	**Pn**	**12 47 23.0**	**+0.1**
JOSM	**Okushiri--Mats**	**1.95**	**289**	P	**Pn**	**12 47 25.6**	**0.0**
ASAJ	**Asahikawa**	**2.68**	**10**	P	**Pn**	**12 47 36.6**	**+1.0**
	2.4nm,0.3s,baz=217,slow=17,SNR=21						
ASAJ				S	**Sn**	**12 48 08.2**	**+1.3**
	1.7nm,0.3s,baz=351,slow=29,SNR=7.3						
MJAR	**Matsushiro Arr**	**5.73**	**212**	P	Pn	12 48 22.9	+5.6
	0.3nm,0.3s,baz=39,slow=18,SNR=2.8						
KSRS	**Korea Array**	**11.57**	**254**	P	Pn	12 49 42.6	+5.6
	0.1nm,0.3s,baz=66,slow=14,SNR=3.4						
H11N2	**WAKE ISLAND Hy**	**30.31**	**128**	T	T	13 25 28.9	
	baz=320						
H11N1	**WAKE ISLAND Hy**	**30.32**	**128**	T	T	13 25 33.7	
	baz=320						
H11N3	**WAKE ISLAND Hy**	**30.33**	**128**	T	T	13 25 35.5	
	baz=320						
H11S1	**WAKE ISLAND Hy**	**31.15**	**130**	T	T	13 26 29.3	
	baz=323						
H11S3	**WAKE ISLAND Hy**	**31.16**	**130**	T	T	13 26 29.3	
	baz=323						
H11S2	**WAKE ISLAND Hy**	**31.17**	**130**	T	T	13 26 31.8	
	baz=323						
ZALV	**Zalesovo Beam**	**39.36**	**308**	P	**P**	**12 54 18.0**	**+0.2**
	0.4nm,0.3s,baz=90,slow=5.8,SNR=2.3						
MKAR	**Makanchi Array**	**42.26**	**298**	P	**P**	**12 54 41.8**	**0.0**
	0.3nm,0.5s,baz=84,slow=10,SNR=3.0						
KURBB	**Kurchatov Arra**	**43.72**	**304**	P	**P**	**12 54 53.5**	**-0.1**
	0.7nm,0.5s,baz=78,slow=8.8,SNR=8.8						
INK	**Inuvik**	**50.27**	**29**	P	**P**	**12 55 44.7**	**+0.5**
	1.0nm,0.8s,baz=292,slow=7.2,SNR=6.1						
WRA	**Warramunga Arr**	**61.51**	**188**	P	**P**	**12 57 03.7**	**-1.5**
	0.7nm,1.1s,baz=6.6,slow=7.5,SNR=3.2						
FINES	**FINESS Array B**	**65.10**	**332**	P	**P**	**12 57 28.5**	**+0.1**
	4.9nm,1.2s,baz=54,slow=7.1,SNR=3.7						

IDC 29 12:55:46.6±8.2,42°.67S×125°.22E,h0km,mb3.4/3, mb1 3.8/3,mb1mx3.6/35,mbtmp3.5/3,Error ellipse: s-maj=425.2km s-min=26.2km az=97.0,South of Australia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H01W1	**Cape Leeuwin H**	**11.61**	**308**	T	T	13 09 58.4	
	baz=139						
H01W2	**Cape Leeuwin H**	**11.62**	**308**	T	T	13 10 06.2	
	baz=139						
H01W3	**Cape Leeuwin H**	**11.62**	**308**	T	T	13 10 11.4	
	baz=139						
ASAR	**Alice Springs**	**20.28**	**24**	P	P	13 00 24.4	+0.5
	0.7nm,0.7s,baz=199,slow=12,SNR=13						
ASAR				S	S	13 04 00.3	-12
	0.3nm,0.9s,baz=208,slow=22,SNR=2.8						
WRA	**Warramunga Arr**	**23.93**	**22**	P	P	13 01 02.0	-0.3
	1.2nm,0.7s,baz=198,slow=11,SNR=7.7						
VNDA	**Vanda**	**38.01**	**168**	P	P	13 03 05.6	-0.2
	0.6nm,0.7s,baz=322,slow=8.4,SNR=5.6						

IDC 29 12:56:49.1±4.1,30°.23N×140°.75E,h0km,mb3.4/2, mb1 3.6/3,mb1mx3.2/63,mbtmp3.4/3,ML3.4/1,Error ellipse: s-maj=245.1km s-min=33.3km az=81.0, Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**6.65**	**342**	Pn	Pn	12 58 27.9	-0.2
	0.8nm,0.3s,baz=162,slow=11,SNR=7.9						
WRA	**Warramunga Arr**	**50.26**	**188**	P	P	13 05 47.0	-0.4
	0.4nm,0.3s,baz=5.8,slow=7.5,SNR=9.6						
ASAR	**Alice Springs**	**53.99**	**188**	P	P	13 06 15.2	+0.1
	0.2nm,0.7s,baz=9.6,slow=5.9,SNR=5.6						

*IDC **29** 13:07:29.7±1.2,4°.27S×122°.92E,h0km,mb3.7/3, mb1 3.8/5,mb1mx3.5/36,mbtmp3.7/5,ML3.4/2,MS2.7/2, Ms1 2.8/2,ms1mx2.5/34,Error ellipse: s-maj=25.0km s-min=20.2km az=21.0*
*ISCJB **29** 13:07:33.0±0.6,4°.33S±0°.05×122°.93E±0°.05,h33km, mb3.7/3,MS2.7/1,Error ellipse: s-maj=7.2km s-min=6.1km az=138.2*
*DJA **29** 13:07:33.1±0.6,4°.S±6°.×12°.3E±°.,h10km,M3.9/7,MLv3.9

mb1 3.7/3, mb1mx3.4/32, mbtmp3.4/3, ML3.1/1, Error ellipse: s-maj=193.6km s-min=46.4km az=31.0
ISCJB ***29*** *13:11:21.6±1.1, 36°.56N±0°.05×143°.18E±0°.08, h33km, mb3.7/2, Error ellipse: s-maj=8.8km s-min=7.3km az=167.6*
JMA ***29*** *13:11:22.0±0.4, 36°.58N×143°.10E, h26km, M3.2*

ISC 29 13:11:23.4±1.6, 36°.59N±0°.06×143°.2E±0°.1, h35km, n12, σ0°.88/16, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**1.97**	**286**	*e*S	**Sn**	**13 12 18.0**	**+0.1**
JFK	**Kawauchi**	**2.00**	**294**	P	**Pn**	**13 11 54.4**	**-0.3**
JFK				S	**Sn**	**13 12 18.2**	**-0.3**
JHO	**Hitachi**	**2.10**	**271**	*e*S	**Sn**	**13 12 20.1**	**-0.8**
JFT	**Otama**	**2.45**	**293**	S	**Sn**	**13 12 30.1**	**+0.4**
BSO1	**Boso 1**	**2.63**	**223**	P	**Pn**	**13 12 03.7**	**+0.8**
BSO1				S	**Sn**	**13 12 33.4**	**+0.1**
JAG	**Ashikaga**	**3.00**	**268**	P	**Pn**	**13 12 09.2**	**+0.7**
JAG				*e*S	**Sn**	**13 12 42.8**	**-0.4**
JOM	**Ohasama**	**3.24**	**333**	P	**Pn**	**13 12 12.9**	**+1.1**
JOM				*e*S	**Sn**	**13 12 48.4**	**-0.7**
JRY	**Ryogami san**	**3.50**	**262**	*e*S	**Sn**	**13 12 54.5**	**-1.0**
JYN	**Shimob**	**3.91**	**255**	*e*S	**Sn**	**13 13 05.5**	**-0.2**
MJAR	**Matsushiro Arr**	**4.00**	**271**	Pn	**Pn**	**13 12 23.8**	**+1.6**
	1.1nm,0.3s,baz=87,slow=16,SNR=7.8						
WRA	**Warramunga Arr**	**56.84**	**190**	P	**P**	**13 21 03.0**	**-1.5**
	0.7nm,0.7s,baz=7.1,slow=7.1,SNR=5.3						
ASAR	**Alice Springs**	**60.56**	**190**	P	**P**	**13 21 30.5**	**+0.2**
	0.4nm,0.8s,baz=4.9,slow=6.6,SNR=6.4						

NIED ***29*** *13:17:00, 38°.20N×142°.40E, h14km, Mw3.6 Best double couple: M₀2.72000×10¹⁴ NP1:ϕs=263.00000°, δ30.00000°, λ13.00000°. NP2:ϕs=162.00000°, δ84.00000°, λ119.00000°.*

JMA 29 13:17:04.3±0.1, 38°.18N×142°.42E, h32km±2km, M3.7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.89**	**288**	P	Pn	13 17 20.6	+0.1
JIO				S	Sn	13 17 31.9	-0.4
OFUJ	**Ofunato**	**1.07**	**327**	P	Pn	13 17 23.4	+0.3
OFUJ				S	Sn	13 17 37.3	+0.4
JMK	**Ichinoseki**	**1.22**	**310**	P	Pn	13 17 25.7	+0.6
JMK				S	Sb	13 17 41.9	-0.2
JOU	**Okura**	**1.39**	**278**	P	Pn	13 17 28.6	+1.1
JOU				S	Sb	13 17 46.4	-0.8
JFK	**Kawauchi**	**1.47**	**237**	P	Pn	13 17 28.5	-0.1
JOM	**Ohasama**	**1.56**	**326**	P	Pn	13 17 31.1	+1.2
JOM				S	Sb	13 17 50.8	-1.2
JYK	**Kaneyama**	**1.78**	**295**	P	Pn	13 17 34.3	+1.5
JFT	**Otama**	**1.78**	**249**	P	Pn	13 17 34.3	+1.5
JFT				*e*S	Sn	13 17 54.8	+0.5
JRG	**Rokugo**	**1.85**	**312**	P	Pb	13 17 36.1	-1.4
JYS	**Shiratake**	**1.85**	**272**	P	Pb	13 17 36.4	-1.2
JYS				S	Sn	13 17 57.7	+1.5

IDC 29 13:23:46.5±8.9, 36°.58N×143°.54E, h0km, mb3.6/2, mb1 3.8/3, mb1mx3.3/39, mbtmp3.5/3, ML3.3/1, Error ellipse: s-maj=193.1km s-min=46.0km az=31.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**4.29**	**271**	Pn	Pn	13 24 52.8	-0.3
	1.6nm,0.3s,baz=88,slow=16,SNR=11						
WRA	**Warramunga Arr**	**56.89**	**190**	P	P	13 33 33.4	+0.1
	0.7nm,0.9s,baz=9.7,slow=7.3,SNR=5.5						
ASAR	**Alice Springs**	**60.61**	**190**	P	P	13 33 58.9	-0.2
	0.3nm,0.8s,baz=0.7,slow=6.7,SNR=7.6						

JMA 29 13:39:54.8±0.1, 35°.71N×140°.67E, h48km±1km, M3.1, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.15**	**93**	P	Pn	13 40 02.6	0.0
JYT	**Yasato**	**0.65**	**323**	P	Pn	13 40 07.8	+0.1
JYT				S	Sn	13 40 16.9	-0.2
BSO3	**Boso 3**	**0.92**	**188**	P	Pn	13 40 11.8	+0.7
BSO3				*e*S	Sn	13 40 25.1	+2.1
BSO1	**Boso 1**	**1.08**	**166**	P	Pn	13 40 13.9	+0.8
MAT	**Matsushiro**	**2.16**	**293**	P	Pn	13 40 30.3	+2.0
MAT				S	Sn	13 40 56.3	+2.4

BJI ***29*** *13:44:17.6, 6°.89S×129°.78E, h147km, mb5.0/51, mB4.9/35*
ISCJB ***29*** *13:44:19.4±0.1, 6°.64S±0°.02×129°.83E±0°.02, h146km, mb4.9/111, Error ellipse: s-maj=3.4km s-min=2.6km az=143.3*
MOS ***29*** *13:44:19.8±0.8, 6°.58S×129°.76E, h148km, mb5.0/40, Error ellipse: s-maj=11.7km s-min=6.4km az=118.7*
IDC ***29*** *13:44:21.3±1.7, 6°.60S×129°.78E, h146km±15km, mb4.5/30, mb1 4.6/33, mb1mx4.5/47, mbtmp4.9/33, MS3.6/12, Ms1 3.6/12, ms1mx3.2/36, Error ellipse: s-maj=12.9km s-min=8.2km az=60.0*
NEIC ***29*** *13:44:21.2±0.3, 6°.60S×129°.79E, h149km±3km, mb5.2/51, Error ellipse: s-maj=5.0km s-min=3.6km az=221.0*
NEIC Felt at Darwin, Australia.
GCMT ***29*** *13:44:21.2±0.3, 6°.55S×129°.89E, h162km±3km, MW5.0/65, Moment Tensor Solution. s20,c22; s65,c96; Duration: 0 Moment tensor: Scale 10¹⁶Nm; M_rr0.41±.18; M_θθ-3.83±.16; M_φφ3.42±.18; M_rθ0.83±.14; M_θφ0.63±.18; M_φr2.16±.15; Best double couple: M₀4.32300×10¹⁶ NP1:ϕs52.00000°, δ78.00000°, λ27.00000°. NP2: ϕs316.00000°, δ63.00000°, λ166.00000°. Principal axes: T 4.6530, Plg28.0000°, Azm277.0000°; N -0.6590, Plg60.0000°, Azm75.0000°; P -3.9930, Plg10.0000°, Azm182.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
DJA ***29*** *13:44:23.4±0.3, 7°.5S±3°.5×13°.0E±°, h164km±3km, M5.0/51, mb5.4/51, mB5.5/41, MLv5.8/8, Mw(mB)4.9/41*

ISC 29 13:44:20.6±0.2, 6°.59S±0°.03×129°.89E±0°.04, h146km, n327, σ1°.88/368, mb5.0/110, 21C-8D, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SAUI	**Saumlaki**	**1.97**	**135**	P	**Pn**	**13 44 57.7**	**+2.6**
SAUI				S	**Sn**	**13 45 19.5**	**-2.1**
SAUI	**Saumlaki**	**1.97**	**135**	*e*Pn	**Pn**	**13 44 57.9**	**+2.8**
BNDI	**Bandanaira**	**2.05**	**0**	P	**Pn**	**13 45 00.0**	**+3.9**
MSAI	**Masohi**	**3.36**	**343**	P	**Pn**	**13 45 16.3**	**+3.9**
FAKI	**Fak Fak**	**4.33**	**33**	P	**Pn**	**13 45 25.6**	**+0.4**
FAKI	**Fak Fak**	**4.33**	**33**	*e*Pn	**Pn**	**13 45 25.4**	**+0.3**
SIJI	**Sorong**	**5.84**	**14**	P	**Pn**	**13 45 46.2**	**+1.1**
	6.9nm,0.3s,baz=270,slow=24,SNR=22						
SIJI				S	**Sn**	**13 46 48.7**	**-2.6**
	20nm,0.3s,baz=270,slow=23,SNR=10						
SWI	**Sorong**	**5.85**	**14**	P	**Pn**	**13 45 45.3**	**+0.1**
SWI				S	**Sn**	**13 46 48.8**	**-2.6**
SANI	**Sanana**	**5.95**	**319**	P	**Pn**	**13 45 49.7**	**+3.0**
MTN	**Manton Dam**	**6.34**	**169**	P	**Pn**	**13 45 51.4**	**-0.4**
	baz=6.4,SNR=1000						
MTN	**Manton Dam**	**6.34**	**169**	*e*Pn	**Pn**	**13 45 51.6**	**-0.2**
LBMI	**Labuha**	**6.37**	**338**	P	**Pn**	**13 45 55.4**	**+3.1**
	4μm,0.9s,39μm12nm						
SOEI	**Soe**	**6.40**	**240**	P	**Pn**	**13 45 53.4**	**+0.7**
	2μm,0.9s,22μm12nm						
SOEI	**Soe**	**6.40**	**240**	*e*Pn	**Pn**	**13 45 53.1**	**+0.4**
KDU	**Kakadu**	**6.58**	**157**	P	**Pn**	**13 45 54.7**	**-0.2**
	baz=6.6,SNR=481						
RKPI	**Ransiki, Papua**	**6.61**	**40**	P	**Pn**	**13 45 56.9**	**+1.5**
KDI	**Kendari**	**7.70**	**289**	P	**Pn**	**13 46 13.5**	**+3.5**
	236nm,1.2s,3μm0.8nm						
MMRI	**Maumere**	**7.86**	**254**	P	**Pn**	**13 46 12.7**	**+0.6**
	496nm,0.7s,5μm1.6nm						
MMRI	**Maumere**	**7.86**	**254**	*e*Pn	**Pn**	**13 46 12.9**	**+0.8**
LUWI	**Luwuk**	**8.99**	**307**	*e*Pn	**Pn**	**13 46 26.4**	**-0.8**
BSSI	**Bau Bau, Buton**	**9.35**	**272**	P	**Pn**	**13 46 34.3**	**+2.2**
	328nm,1.4s,4μm						
BASI	**Baing, Sumba**	**9.89**	**248**	P	**Pn**	**13 46 39.0**	**-0.3**
WSI	**Waingapu**	**9.98**	**251**	P	**Pn**	**13 46 38.1**	**-2.3**
	2μm,0.5s,22μm						
KAPI	**Kappang**	**10.21**	**278**	P	**Pn**	**13 46 44.1**	**+0.6**
	3.0nm,0.3s,baz=139,slow=5.1,SNR=27						
KAPI				LR	LR	13 51 07.5	
	comp=Z,130nm,19.6s,baz=110,slow=40						
KAPI	**Kappang**	**10.21**	**278**	*e*Pn	**Pn**	**13 46 44.8**	**+1.3**
SPSI	**Sidrap Palu**	**10.41**	**284**	P	**Pn**	**13 46 48.1**	**+1.9**
	353nm,0.8s,3μm						
MRSI	**Marisa**	**10.59**	**311**	P	**Pn**	**13 46 52.2**	**+3.6**
	198nm,1.1s,2μm						
TTSI	**Tana Toraja**	**10.63**	**289**	P	Pn	13 46 54.0	+4.9
GENI	**Genyem**	**10.98**	**69**	P	**Pn**	**13 46 56.0**	**+2.3**
SGSI	**Sangihe**	**11.09**	**337**	P	**P**	**13 47 00.7**	**-3.0**
PCI	**Palu**	**11.51**	**299**	P	**P**	**13 47 04.9**	**-3.5**
JAY	**Jayapura**	**11.51**	**70**	P	**Pn**	**13 47 01.4**	**+0.7**
	0.1nm,0.3s,baz=263,slow=21,SNR=7.3						
JAY				S	**Sn**	**13 49 05.2**	**-2.8**
	0.2nm,0.3s,baz=94,slow=24,SNR=3.4						
JAY	**Jayapura**	**11.51**	**70**	P	**Pn**	**13 47 01.3**	**+0.6**
FITZ	**Fitzroy Crossi**	**12.18**	**200**	*e*Pn	**Pn**	**13 47 05.6**	**-3.7**
PLAI	**Plampang**	**12.21**	**259**	P	**Pn**	**13 47 06.8**	**-3.0**
	337nm,0.7s,5μm						
TWSI	**Taliwang, Sumb**	**13.07**	**260**	P	**Pn**	**13 47 18.2**	**-2.7**
	140nm,0.7s,1μm						
WRAB	**Tennant Creek**	**13.96**	**162**	*d*P	**Pn**	**13 47 28.7**	**-3.5**
WRAB	**Tennant Creek**	**13.96**	**162**	*e*Pn	**Pn**	**13 47 28.3**	**-3.9**
WRA	**Warramunga Arr**	**13.96**	**162**	P	**Pn**	**13 47 29.5**	**-2.8**
	16nm,0.3s,baz=340,slow=12,SNR=388						
WRA				S	Sn	13 49 55.3	-12
	60nm,0.3s,baz=337,slow=22,SNR=11						
WB2	**Warramunga Arr**	**13.97**	**162**	*e*Pn	**Pn**	**13 47 28.7**	**-3.6**
BKB	**Balikpapan**	**14.00**	**292**	P	**P**	**13 47 38.1**	**+2.1**
PALU	**Palau**	**14.57**	**18**	P	**P**	**13 47 42.4**	**0.0**
	baz=15,SNR=25						
SRBI	**Singaraja**	**14.63**	**263**	P	**Pn**	**13 47 40.2**	**-0.5**
	193nm,0.9s,2μm						
DNP	**Denpasar**	**14.70**	**261**	P	**P**	**13 47 46.0**	**+2.2**
CTBH	**Cotabato--PC H**	**14.83**	**338**	||*i*P	**P**	**13 47 44.2**	**-1.0**
COEN	**Coen**	**14.98**	**120**	*e*Pn	**Pn**	**13 47 43.6**	**-1.4**
	155nm,0.8s						
BUKP	**Musuan**	**15.15**	**341**	*e*P	**P**	**13 47 50.7**	**+1.8**
BBKI	**Banjar Baru**	**15.31**	**281**	P	**P**	**13 47 51.9**	**+1.3**
ABJI	**Asem Bagus**	**15.58**	**265**	P	**Pn**	**13 47 50.6**	**-1.9**
	396nm,0.8s,3μm						
JAGI	**Jajag, Banyuwa**	**15.72**	**262**	P	**Pn**	**13 47 50.0**	**-4.2**
JAGI	**Jajag, Banyuwa**	**15.72**	**262**	*e*Pn	**Pn**	**13 47 49.1**	**-5.1**
	177nm,0.4s						
TSM	**Tawau**	**16.15**	**312**	||P	**P**	**13 48 01.9**	**+2.1**
MYLDM	**Lahad Datu**	**16.31**	**316**	||P	**P**	**13 48 04.2**	**+2.5**
MYLDM	**Lahad Datu**	**16.31**	**316**	*e*Pn	**P**	**13 48 01.6**	**0.0**
	131nm,1.1s						
GMJI	**Gumukmas**	**16.40**	**263**	P	**Pn**	**13 48 00.5**	**-2.0**
	128nm,1.1s,1μm						
QIS	**Mount Isa**	**16.78**	**147**	P	**P**	**13 48 06.5**	**-0.4**
	baz=17,SNR=287						
PMG	**Port Moresby**	**17.33**	**100**	P	**Pn**	**13 48 16.0**	**+2.3**
	1.5nm,0.3s,baz=277,slow=9.1,SNR=12						
PMG				S	**S**	**13 51 22.2**	**-3.9**
	2.6nm,0.3s,baz=185,slow=21,SNR=5.9						
PMG				LR	LR	13 55 26.8	
	comp=Z,274nm,20.2s,baz=251,slow=38						
PMG	**Port Moresby**	**17.33**	**100**	*c*eP	**Pn**	**13 48 16.3**	**+2.6**
PMG				pmax	pmax		
	comp=Z,736nm,1.2s						
PMG	**Port Moresby**	**17.33**	**100**	*e*P	**Pn**	**13 48 16.6**	**+2.8**
	comp=Z,178nm,1.1s						
PMG				S	**S**	**13 51 22.2**	**-3.9**
AS31	**Alice Springs**	**17.41**	**168**	*e*P	**P**	**13 48 13.8**	**0.0**
	comp=Z,111nm,0.6s						
ASAR	**Alice Springs**	**17.42**	**168**	P	**Pn**	**13 48 14.7**	**-0.1**
	comp=Z,25nm,0.3s,baz=343,slow=8.2,SNR=1117						
ASAR				S	**S**	**13 51 20.8**	**-7.1**
	comp=Z,17nm,0.3s,baz=355,slow=25,SNR=6.7						
ASAR				LR	LR	13 55 53.9	
	comp=Z,522nm,19.0s,baz=1.5,slow=40						
AS01	**Alice Springs**	**17.42**	**167**	*e*P	**P**	**13 48 13.8**	**-0.1**
MBWA	**Marble Bar**	**17.51**	**213**	*e*P	**P**	**13 48 14.8**	**-0.1**
	comp=Z,1.0nm,1.2s						
MBWA				*e*S	S	13 51 12.4	-17
SDKM	**Sandakan**	**17.55**	**314**	||P	**Pn**	**13 48 19.0**	**+2.5**
TBJI	**Tambak Boyo**	**17.92**	**268**	P	**Pn**	**13 48 22.8**	**+2.0**
MANU	**Manus Island**	**18.00**	**76**	*e*P	**Pn**	**13 48 21.5**	**-0.2**
	comp=Z,42nm,0.8s						
PWJI	**Pagerwojo**	**18.00**	**264**	P	**P**	**13 48 19.5**	**-0.7**
	comp=Z,133nm,0.8s						
NGJI	**Ngawi**	**18.31**	**266**	P	**Pn**	**13 48 28.6**	**+3.2**
WRKA	**Warakurna**	**18.41**	**185**	P	**P**	**13 48 25.3**	**+0.6**
	baz=18,SNR=298						
KKM	**Kota Kinabalu**	**18.54**	**312**	*e*Pn	**P**	**13 48 27.1**	**+0.8**
	comp=Z,170nm,1.2s						
PCJI	**Pacitan**	**18.63**	**264**	P	**P**	**13 48 25.3**	**-1.8**
KDM	**Kudat**	**18.70**	**316**	||P	**Pn**	**13 48 32.6**	**+2.7**
UGM	**Wanagama**	**19.26**	**265**	*e*P	**P**	**13 48 31.6**	**-2.4**
	comp=Z,184nm,1.1s						
SMRI	**Semarang**	**19.32**	**267**	P	**Pn**	**13 48 39.4**	**+2.1**
SMRI	**Semarang**	**19.32**	**267**	*e*P	**P**	**13 48 33.0**	**-1.6**
	comp=Z,577nm,1.6s						
BTM	**Bintulu**	**19.39**	**300**	||P	**Pn**	**13 48 37.6**	**-0.5**
CUYO	**Cuyo Island**	**19.44**	**333**	*e*P	**Pn**	**13 48 38.8**	**+0.1**
BATP	**Bataraza**	**19.46**	**322**	*e*P	**P**	**13 48 36.7**	**+0.6**
STKI	**Sintang**	**19.53**	**289**	P	**Pn**	**13 48 38.4**	**-1.3**
SBUM	**Sibu**	**19.79**	**296**	||P	**Pn**	**13 48 42.4**	**-0.4**
SBUM	**Sibu**	**19.79**	**296**	*e*P	**P**	**13 48 41.0**	**+1.3**
	comp=Z,197nm,0.9s						
CTAO	**Charters Tower**	**20.79**	**132**	*e*P	**P**	**13 48 52.0**	**+1.5**
CTAO				pmax	pmax		
	comp=Z,83nm,0.9s						
CTAO	**Charters Tower**	**20.79**	**132**	*e*P	**P**	**13 48 52.0**	**+1.5**
	comp=Z,83nm,0.9s						
PVCP	**Virac**	**20.84**	**344**	*e*P	Pn	13 48 53.3	-1.9
KSM	**Kuching**	**21.12**	**292**	||P	**P**	**13 48 56.3**	**+2.2**
KSM	**Kuching**	**21.12**	**292**	*e*P	**P**	**13 48 52.4**	**-1.6**
	comp=Z,52nm,0.8s						
CMJI	**Cimerak**	**21.31**	**265**	P	**P**	**13 48 56.0**	**0.0**
JCJI	**Jatiwangi**	**21.48**	**269**	P	**P**	**13 48 59.8**	**+1.9**
CISI	**Cisompet, Garu**	**21.93**	**266**	P	**P**	**13 49 00.9**	**-1.8**
	comp=Z,890nm,0.9s,comp=Z,7μm						
CISI	**Cisompet, Garu**	**21.93**	**266**	*e*P	**P**	**13 49 00.1**	**-2.5**
	comp=Z,681nm,0.8s						
GIRL	**Giralia**	**21.97**	**222**	P	**P**	**13 49 03.5**	**+0.6**
	baz=22,SNR=15						
LEM	**Lembang**	**22.12**	**268**	P	**P**	**13 49 07.5**	**+2.8**
LUBP	**Lubang**	**22.34**	**335**	*e*P	**P**	**13 49 08.5**	**+1.8**
CNJI	**Cibinong**	**22.61**	**267**	P	**P**	**13 49 04.9**	**-4.3**
	comp=Z,1μm,0.9s,comp=Z,8μm						
CBJI	**Citeko**	**22.89**	**269**	P	**P**	**13 49 09.0**	**-2.9**
SKJI	**Sukabumi**	**23.18**	**268**	P	**P**	**13 49 13.2**	**-1.3**
CGJI	**Cibinong**	**24.04**	**269**	P	**P**	**13 49 20.3**	**-2.1**
	comp=Z,360nm,0.7s,comp=Z,4μm						
XMIS	**Christmas Isla**	**24.28**	**259**	*e*P	**P**	**13 49 22.5**	**-2.1**
	comp=Z,90nm,0.8s						
CAUP	**Cauayan**	**24.70**	**341**	*e*P	**P**	**13 49 33.7**	**+5.4**
KASI	**Kota Agung**	**25.27**	**271**	P	**P**	**13 49 31.7**	**-1.9**
	comp=Z,162nm,0.9s,comp=Z,1μm						
KMBL	**Kambalda**	**25.77**	**196**	P	**P**	**13 49 38.2**	**+0.3**
	baz=26,SNR=73						
MORW	**Morawa**	**25.91**	**209**	P	**P**	**13 49 39.3**	**+0.2**
	baz=26,SNR=11						
TPRI	**Tanjung Pinang**	**26.39**	**285**	P	**P**	**13 49 45.8**	**+2.1**
BBOO	**Buckleboo**	**26.72**	**168**	P	**P**	**13 49 46.5**	**+0.1**
	baz=27,SNR=70						
BBOO	**Buckleboo**	**26.72**	**168**	*e*P	**P**	**13 49 46.2**	**-0.1**
	comp=Z,75nm,0.6s						
RMQ	**Roma**	**26.73**	**140**	P	**P**	**13 49 47.9**	**+1.3**
	baz=27,SNR=13						
BLDU	**Ballidu**	**26.92**	**206**	P	**P**	**13 49 48.2**	**0.0**
	baz=27,SNR=12						
MYKOM	**Kota Tinggi**	**27.30**	**287**	||P	**P**	**13 49 54.3**	**+2.6**
MYKOM	**Kota Tinggi**	**27.30**	**287**	*e*P	**P**	**13 49 51.1**	**-0.6**
	comp=Z,73nm,0.7s						
KLBR	**Kellerberrin**	**27.34**	**203**	P	**P**	**13 49 52.4**	**+0.4**
	baz=27,SNR=9.0						
STKA	**Stephens Creek**	**27.43**	**158**	P	**P**	**13 49 53.4**	**+0.6**
	comp=Z,34nm,0.6s,baz=333,slow=8.9,SNR=106						
STKA				LR	LR	14 02 26.5	
	comp=Z,172nm,21.5s,baz=341,slow=40						
STKA	**Stephens Creek**	**27.43**	**158**	P	**P**	**13 49 53.4**	**+0.6**
	baz=28,SNR=102						
STKA	**Stephens Creek**	**27.43**	**158**	*e*P	**P**	**13 49 53.2**	**+0.4**
	comp=Z,20nm,0.8s						
EIDS	**Eidsvold**	**27.56**	**135**	P	**P**	**13 49 54.4**	**+0.5**
	baz=28,SNR=4.6						
EIDS	**Eidsvold**	**27.56**	**135**	*e*P	**P**	**13 49 53.9**	**0.0**
	comp=Z,15nm,0.8s						
HTT	**Hallett**	**28.00**	**164**	P	**P**	**13 49 58.5**	**+0.7**
	baz=28,SNR=22						
NWAO	**Narrogin (SRO)**	**28.73**	**203**	P	**P**	**13 50 04.8**	**+0.5**
	baz=29,SNR=12						
NWAO	**Narrogin (SRO)**	**28.73**	**203**	*es*P	sP	13 50 51.8	-0.3
CMSA	**Cobar Meteorol**	**28.89**	**151**	P	**P**	**13 50 06.8**	**+1.1**
	baz=29,SNR=120						
KTGM	**Kuala Trenggan**	**29.21**	**293**	||P	**P**	**13 50 12.6**	**+3.8**
BKNI	**Bangkinang**	**29.60**	**282**	P	**P**	**13 50 14.1**	**+1.9**
BKNI	**Bangkinang**	**29.60**	**282**	*e*P	**P**	**13 50 12.8**	**+0.6**
	comp=Z,94nm,0.8s						
FRIM	**Kepong**	**29.86**	**288**	||P	**P**	**13 50 17.4**	**+2.9**
HNR	**Honiara**	**29.89**	**97**	LR	LR	14 03 47.5	
	comp=Z,60nm,20.4s,baz=256,slow=39						
PPI	**Padang Panjang**	**30.05**	**281**	P	**P**	**13 50 14.6**	**-1.6**
	comp=Z,154nm,1.0s,comp=Z,1μm						
RKGY	**Rocky Gully**	**30.33**	**201**	P	**P**	**13 50 20.2**	**+1.8**
	baz=30,SNR=13						
MNSI	**Mandailing Nat**	**31.13**	**283**	P	**P**	**13 50 24.4**	**-1.3**
	comp=Z,125nm,0.9s,comp=Z,1μm						
ARMA	**Armidale**	**31.29**	**142**	P	**P**	**13 50 28.8**	**+1.7**
	baz=31,SNR=24						
ARMA	**Armidale**	**31.29**	**142**	*e*P	**P**	**13 50 27.8**	**+0.7**
	comp=Z,22nm,0.8s						
KULM	**Kulim**	**31.48**	**291**	||P	**P**	**13 50 31.7**	**+3.0**
KULM	**Kulim**	**31.48**	**291**	*e*P	**P**	**13 50 27.5**	**-1.3**
	comp=Z,24nm,0.7s						
ARPS	**Mount Arapiles**	**31.97**	**162**	P	**P**	**13 50 34.2**	**+1.4**
	baz=32,SNR=67						
QIZ	**Qiongzhong**	**32.22**	**323**	P	**P**	**13 50 34.0**	**-1.2**
QIZ				S	**S**	**13 55 31.5**	**-6.2**
QIZ				sS	**sS**	**13 56 33.0**	**+0.5**
PSI	**Prapat**	**32.29**	**286**	P	**P**	**13 50 34.6**	**-1.5**
	comp=Z,95nm,0.9s,baz=124,slow=3.6,SNR=39						
PSI	**Prapat**	**32.29**	**286**	*e*P	**P**	**13 50 34.3**	**-1.8**
PSI				pmax	pmax		
	comp=Z,119nm,0.9s						
PSI	**Prapat**	**32.29**	**286**	*e*P	**P**	**13 50 34.2**	**-1.8**
	comp=Z,118nm,0.9s						
YNG	**Young**	**32.45**	**151**	P	**P**	**13 50 38.8**	**+1.8**
	baz=33,SNR=36						
UBPT	**Khong Chiam**	**32.52**	**312**	P	**P**	**13 50 37.9**	**+0.1**
	comp=Z,61nm,0.9s						
MGCD	**Mangrove Creek**	**33.01**	**146**	P	**P**	**13 50 43.9**	**+1.9**
	baz=33,SNR=17						
GSI	**Gunungsitoli**	**33.19**	**283**	P	**P**	**13 50 44.0**	**+0.2**
	comp=Z,103nm,0.8s						
GSI	**Gunungsitoli**	**33.19**	**283**	*e*P	**P**	**13 50 42.2**	**-1.5**
	comp=Z,63nm,0.7s						
TRTT	**Trang**	**33.35**	**295**	P	P	13 50 52.3	+7.2
CHBT	**CHBT**	**33.46**	**305**	P	**P**	**13 50 46.2**	**+0.2**
	comp=Z,44nm,0.7s						
CAN	**Canberra**	**33.57**	**151**	*e*P	**P**	**13 50 48.2**	**+1.4**
CAN				pmax	pmax		
	comp=Z,85nm,0.7s						
CAN	**Canberra**	**33.57**	**151**	*e*P	**P**	**13 50 48.2**	**+1.4**
	comp=Z,85nm,0.7s						
KCSI	**Kotacane, Aceh**	**33.60**	**286**	P	**P**	**13 50 47.6**	**+0.3**
	comp=Z,44nm,0.7s						
CNB	**Canberra Magne**	**33.74**	**151**	P	**P**	**13 50 50.1**	**+1.8**
	baz=34,SNR=18						
TOO	**Toolangi**	**33.95**	**158**	P	**P**	**13 50 52.4**	**+2.3**
	baz=34,SNR=18						
PANO	**Nakornpanom**	**34.36**	**314**	P	**P**	**13 50 53.9**	**+0.2**
	comp=Z,32nm,1.5s						
SRAK	**Srakaew**	**34.39**	**307**	P	P	13 51 00.7	+6.7
	comp=Z,38nm,0.8s						
SKNT	**Sakolnakorn**	**34.70**	**313**	P	**P**	**13 50 56.6**	**-0.1**
	comp=Z,29nm,1.2s,comp=Z,2μm						
LHMI	**Lhok Sumawe**	**34.92**	**289**	P	**P**	**13 50 58.5**	**-0.1**
	comp=Z,338nm,0.8s						
LHMI	**Lhok Sumawe**	**34.92**	**289**	*e*P	**P**	**13 50 57.9**	**-0.7**
	comp=Z,232nm,0.8s						
MILA	**Mila**	**35.05**	**153**	P	**P**	**13 51 02.0**	**+2.5**
	baz=35,SNR=5.7						
KHON	**Khomkaen**	**35.16**	**311**	P	**P**	**13 51 00.9**	**+0.3**
	comp=Z,21nm,1.0s,comp=Z,716nm						
CHAI	**Chaiyaphum**	**35.53**	**309**	P	**P**	**13 51 03.6**	**-0.2**
	comp=Z,17nm,0.8s,comp=Z,137nm						
JCJ	**Chichijima**	**35.54**	**19**	LR	LR	14 03 04.2	
	comp=Z,154nm,21.6s,baz=104,slow=32						
PBKT	**Sadao Pong**	**36.71**	**309**	P	**P**	**13 51 13.8**	**0.0**
	comp=Z,14nm,1.0s						
SRDT	**SRDT**	**36.94**	**304**	P	**P**	**13 51 16.5**	**+0.7**
	comp=Z,121nm,1.0s						
KHLT	**Khaolaem Dam**	**37.61**	**305**	P	**P

CD2 PP **PP** **13 54 10.0 +1.2**
CD2 S **S** **13 58 50.3 +2.5**
CD2 sS sS 13 59 47.3 +2.6
CD2 pmax pmax
comp=Z,40nm,0.7s
CD2 pmax pmax
comp=Z,120nm,6.2s
XAN Xi'an 45.02 335 P **P** **13 52 21.3 -0.4**
XAN PcP **PcP** **13 54 02.0 +1.7**
XAN PP **PP** **13 54 09.3 -0.7**
XAN S **S** **13 58 43.0 -6.5**
XAN pmax pmax
comp=Z,20nm,1.0s
XAN pmax pmax
comp=Z,84nm,6.0s
BJI Beijing 48.09 346 P **P** **13 52 45.8 +0.4**
BJI pmax pmax
comp=Z,18nm,0.6s
BJI LR LR
comp=Z,52nm,17.8s
LZH Lanzhou 48.99 332 ⇓P **P** **13 52 54.0 +1.4**
LZH pP pP 13 53 25.0 -0.9
LZH sP sP 13 53 38.3 -3.9
LZH PP **PP** **13 54 51.0 +3.4**
LZH S **S** **13 59 42.0 -4.0**
LZH SS **SS** **14 03 17.3 -1.8**
LZH pmax pmax
comp=Z,43nm,1.0s
LZH pmax pmax
comp=Z,170nm,4.8s
HHC Hu-ho-hao-te 50.12 342 *e*P **P** **13 53 05.3 +4.3**
HHC sP sP 13 53 53.8 +3.2
HHC PP **PP** **13 55 04.8 +7.1**
HHC S **S** **14 00 07.0 +5.5**
HHC sS sS 14 01 02.0 +2.6
HHC SS **SS** **14 03 37.0 +0.2**
HHC pmax pmax
comp=Z,87nm,1.0s
HHC pmax pmax
comp=Z,620nm,6.5s
CN2 Changchun 50.31 356 *e*P P 13 53 07.5 +5.2
USRK Ussuriysk Ar. 50.59 2 P **P** **13 53 05.3 +1.0**
comp=Z,2.4nm,0.6s,baz=170,slow=5.1,SNR=6.2
PALK Pallekele 50.96 285 P **P** **13 53 06.7 -1.0**
comp=Z,14nm,0.7s,baz=116,slow=4.9,SNR=6.2
RPZ Rata Peaks 51.63 142 P **P** **13 53 13.7 +1.5**
comp=Z,50nm,0.6s,baz=289,slow=2.6,SNR=27
RPZ Rata Peaks 51.63 142 *e*P **P** **13 53 13.8 +1.5**
comp=Z,52nm,0.6s
ASAJ Asahikawa 51.76 12 P **P** **13 53 14.2 +1.1**
comp=Z,5.8nm,0.3s,baz=220,slow=9.6,SNR=23
LSA Lhasa 51.83 316 P **P** **13 53 15.0 +0.6**
LSA pmax pmax
comp=Z,17nm,0.7s
LSA Lhasa 51.83 316 *e*P **P** **13 53 14.8 +0.4**
LSA pmax pmax
comp=Z,14nm,0.7s
LSA Lhasa 51.83 316 *e*P **P** **13 53 14.8 +0.4**
comp=Z,14nm,0.7s
BKZ Black Stump Fm 52.96 135 *e*P **P** **13 53 22.6 +0.4**
comp=Z,15nm,0.7s
URZ Urewera 53.03 134 P **P** **13 53 23.1 +0.5**
comp=Z,6.1nm,0.6s,baz=234,slow=1.0,SNR=5.2
GTA Gaotai 53.56 331 P **P** **13 53 27.5 +0.9**
GTA pP pP 13 54 00.0 -0.4
GTA sP sP 13 54 16.0 -0.5
GTA S **S** **14 00 46.0 -2.6**
GTA SS **SKiKP** **14 04 27.5 +0.9**
GTA pmax pmax
comp=Z,31nm,0.9s
GTA pmax pmax
comp=Z,100nm,6.4s
GTA LR LR
comp=Z,52nm,8.3s
GTA LR LR
comp=Z,72nm,11.2s
GTA LR LR
comp=Z,110nm,12.1s
GUN Gumba 54.60 311 *e*P **P** **13 53 34.4 -0.2**
PKIN Phulchoki 54.79 310 *e*P **P** **13 53 35.2 -0.7**
KKN Kakani 54.99 311 ⇑*i*P **P** **13 53 37.0 -0.3**
comp=Z,47nm,0.6s
DMN Daman 55.03 310 ⇑*i*P **P** **13 53 37.3 -0.3**
comp=Z,70nm,0.9s
GKN Gorkha 55.58 310 ⇑*i*P **P** **13 53 41.2 -0.3**
comp=Z,89nm,0.6s
KLR Kul'dur 55.60 1 P **P** **13 53 41.5 +0.5**
comp=Z,0.6nm,0.3s,baz=230,slow=4.9,SNR=4.8
KLR Kul'dur 55.60 1 P **P** **13 53 41.5 +0.5**
KLR pmax pmax
comp=Z,2.0nm,0.5s
HYB Hyderabad 56.04 296 *i* P **P** **13 53 43.0 -1.7**
KOLN Koldanda 56.26 310 ⇑*i*P **P** **13 53 46.2 -0.1**
comp=Z,98nm,0.7s
PYUN Piuthan 56.89 310 ⇑*i*P **P** **13 53 50.8 0.0**
comp=Z,182nm,0.8s
ULN Ulaanbaatar 57.84 342 *ce*P **P** **13 53 58.2 +1.2**
ULN pmax pmax
comp=Z,12nm,0.7s
ULN Ulaanbaatar 57.84 342 *e*P **P** **13 53 57.8 +0.8**
comp=Z,12nm,0.7s
SONM Songino Array 58.02 342 P **P** **13 53 59.6 +1.4**
comp=Z,3.4nm,0.7s,baz=157,slow=6.1,SNR=11
SONA1 Songino Array 58.02 342 *e*P **P** **13 53 59.0 +0.7**
CASY Casey 61.09 189 *e*P **P** **13 54 19.0 +0.2**
comp=Z,7.6nm,0.8s
NDI New Delhi 61.65 307 *e*P P 13 54 15.0 -8.2
TLY Talaya 62.25 342 P **P** **13 54 28.2 +1.4**
comp=Z,1.7nm,0.4s,baz=73,slow=5.5,SNR=3.4
TLY Talaya 62.25 342 *e*P **P** **13 54 27.3 +0.5**
TLY pmax pmax
comp=Z,3.0nm,0.7s
WMQ Urumqi 62.99 327 ⇓*i*P **P** **13 54 33.3 +1.4**
WMQ sP sP 13 55 25.3 +2.7
WMQ pmax pmax
comp=Z,33nm,0.8s
WMQ pmax pmax
comp=Z,61nm,3.6s
WMQ LR LR
comp=Z,14nm,32.8s
WMQ LR LR
comp=Z,20nm,23.0s
WMQ LR LR
comp=Z,16nm,23.0s
MOY Mondy 63.09 340 *e*P **P** **13 54 34.2 +1.7**
MOY pmax pmax
comp=Z,21nm,2.3s
PETK Petropavlovsk- 63.97 18 P **P** **13 54 39.6 +1.5**
comp=Z,3.5nm,0.6s,baz=167,slow=5.0,SNR=9.0
KSH Kashi 67.64 317 P **P** **13 55 03.5 +1.4**
KSH *e*PcP **PcP** **13 55 29.3 +1.3**
KSH *e*pP pP 13 55 36.8 -0.5
KSH *e*sP sP 13 55 53.0 -0.1
KSH PcS 13 59 34.0
KSH S **S** **14 03 46.3 -1.4**
KSH ScS **SKiKP** **14 04 44.8 -0.2**
KSH pmax pmax
comp=Z,11nm,0.6s
KSH pmax pmax
comp=Z,130nm,5.4s
KSH LR LR
comp=Z,260nm,10.2s
KSH LR LR
comp=Z,170nm,8.8s
KSH LR LR
comp=Z,94nm,6.5s
MK01 Makanchi Array 67.80 327 *e*P **P** **13 55 03.3 +0.5**
MK31 Makanchi Array 67.82 327 *e*P **P** **13 55 03.6 +0.7**
MK31 Makanchi Array 67.82 327 *e*P **P** **13 55 03.6 +0.7**
MKAR Makanchi Array 67.82 327 P **P** **13 55 03.8 +0.8**
comp=Z,77nm,0.7s,baz=125,slow=7.9,SNR=615
MKAR S **S** **14 03 48.9 -0.5**
comp=Z,0.2nm,0.4s,baz=130,slow=11,SNR=3.8
MKAR LR LR 14 27 26.1
comp=Z,19nm,20.6s,baz=112,slow=38
MKAR Makanchi Array 67.82 327 *ce*P **P** **13 55 03.7 +0.8**
MKAR pmax pmax
comp=Z,78nm,0.7s
MAKZ Makanchi 68.00 327 *e*P **P** **13 55 04.6 +0.6**
MAKZ pmax pmax
comp=Z,57nm,0.8s
MAKZ Makanchi 68.00 327 *e*P **P** **13 55 04.6 +0.6**
comp=Z,56nm,0.8s
YAK Yakutsk 68.41 360 P **P** **13 55 06.4 +0.2**
comp=Z,1.6nm,0.6s,baz=200,slow=20,SNR=7.0
YAK S **S** **14 03 54.7 -1.0**
comp=Z,0.6nm,0.3s,baz=116,slow=24,SNR=8.1
YAK Yakutsk 68.41 360 *e*P **P** **13 55 06.6 +0.4**
YAK *e* 13 55 28.0
YAK *e**PP **pP** **13 55 42.7 +1.2**
YAK *e* 13 57 37.2
YAK *e*S **S** **14 03 53.0 -2.7**
YAK *e* 14 04 46.3
YAK *e*SSS SSS 14 11 31.4
YAK pmax pmax
comp=N,4.0nm,1.1s
YAK pmax pmax
comp=Z,21nm,0.8s
YAK pmax pmax
comp=Z,4.0nm,0.4s
YAK smax smax
comp=N,80nm,2.0s
YAK smax smax
comp=E,77nm,1.8s
YAK Yakutsk 68.41 360 *e*P **P** **13 55 05.8 -0.4**
comp=E,27nm,0.8s
YAK S **S** **14 03 54.7 -1.0**
TKM2 Tokmak 2 69.60 320 *e*P **P** **13 55 14.8 +0.6**
TKM2 pmax pmax
comp=Z,27nm,0.9s
TKM2 Tokmak 2 69.60 320 *e*P **P** **13 55 14.8 +0.6**
comp=Z,27nm,0.9s
AAK Ala-Archa 70.16 320 P **P** **13 55 18.3 +0.8**
comp=Z,22nm,0.9s,baz=129,slow=4.6,SNR=41
AAK Ala-Archa 70.16 320 *ce*P **P** **13 55 18.5 +0.9**
AAK pmax pmax
comp=Z,76nm,1.0s
AAK Ala-Archa 70.16 320 *e*P **P** **13 55 18.4 +0.8**
comp=Z,34nm,1.1s
FRU Bishkek 70.18 320 *e*P **P** **13 55 17.5 -0.1**
FRU *e* 13 55 44.0
FRU pmax pmax
comp=Z,37nm,1.9s
KBL Kabul 70.42 310 *e*P **P** **13 55 19.2 -0.2**
KBL pmax pmax
comp=Z,11nm,0.8s
KBL Kabul 70.42 310 *e*P **P** **13 55 19.2 -0.2**
comp=Z,11nm,0.8s
EKS2 Erkin-Say 70.63 320 *e*P **P** **13 55 21.4 +0.9**
EKS2 pmax pmax
comp=Z,36nm,0.9s
EKS2 Erkin-Say 70.63 320 *e*P **P** **13 55 21.4 +0.9**
comp=Z,36nm,0.9s
ZAA0 Zalesovo Array 71.17 334 *e*P **P** **13 55 22.7 -0.5**
ZALV Zalesovo Beam 71.17 334 P **P** **13 55 23.1 -0.2**
comp=Z,12nm,0.7s,baz=125,slow=5.1,SNR=52
ZALV S **S** **14 04 24.4 -3.8**
comp=Z,2.2nm,0.8s,baz=129,slow=12,SNR=5.5
MRIV Mauritius Mete 71.26 251 *e*P **P** **13 55 25.2 +0.6**
MNAS Manas 71.37 319 P **P** **13 55 25.8 +0.9**
MNAS pmax pmax
comp=Z,48nm,1.0s
SEY Seymchan 71.42 11 P **P** **13 55 25.9 +1.3**
comp=Z,2.3nm,0.6s,baz=221,slow=4.1,SNR=8.1
KURBB Kurchatov Arra 72.10 328 P **P** **13 55 29.4 +0.6**
comp=Z,28nm,0.6s,baz=128,slow=4.8,SNR=296
KURBB S **S** **14 04 36.6 -2.4**
comp=Z,0.7nm,0.6s,baz=137,slow=11,SNR=10
KURK Kurchatov 72.11 329 P **P** **13 55 29.5 +0.6**
KURK S **S** **14 04 36.7 -2.5**
KURK pmax pmax
comp=Z,28nm,0.6s
KURK smax smax
comp=N,1.0nm,0.6s
KURK Kurchatov 72.11 329 *e*P **P** **13 55 29.4 +0.5**
comp=N,61nm,1.1s
KURK S **S** **14 04 36.6 -2.5**
NVS Novosibirsk 72.45 334 *e*P **P** **13 55 31.0 +0.1**
NVS *e**PP **pP** **13 56 07.8 +1.2**
NVS *e*S **S** **14 04 39.2 -3.6**
NVS pmax pmax
comp=Z,17nm,1.0s
NVS pmax pmax
comp=N,8.0nm,1.1s
NVS pmax pmax
comp=E,8.0nm,1.0s
NVS smax smax
comp=E,21nm,1.5s
VNDA Vanda 72.87 173 P **P** **13 55 33.6 +0.6**
comp=E,7.5nm,0.8s,baz=318,slow=5.3,SNR=44
VNDA LR LR 14 28 07.8
comp=E,66nm,18.2s,baz=353,slow=36
VNDA Vanda 72.87 173 *e*P **P** **13 55 33.7 +0.6**
comp=E,6.5nm,0.8s
RER Riviere de l'E 72.89 250 *e*P **P** **13 55 35.1 +0.8**
comp=E,112nm,0.8s
KK31 Karatay Array 72.96 319 *i* P **P** **13 55 34.5 +0.3**
KK31 pmax pmax
comp=Z,26nm,1.1s
KKAR Karatay Array 72.96 319 *e*P **P** **13 55 34.6 +0.4**
KKAR Karatay Array 72.96 319 *e*P **P** **13 55 34.6 +0.4**
SBA Scott Base 73.76 172 *e*P **P** **13 55 39.6 +1.4**
SBA pmax pmax
comp=Z,6.0nm,0.8s
SBA Scott Base 73.76 172 *e*P **P** **13 55 39.6 +1.4**
comp=Z,5.6nm,0.8s
BVA0 Borovoye Array 77.66 328 *i* P **P** **13 56 00.7 -0.1**
BVA0 pmax pmax
comp=Z,30nm,1.1s
BVAR Borovoye Array 77.66 328 P **P** **13 56 01.1 +0.3**
comp=Z,21nm,0.9s,baz=129,slow=5.9,SNR=113
BVAR S **S** **14 05 38.4 -2.2**
comp=Z,0.2nm,0.3s,baz=357,slow=22,SNR=2.7
BRVK Borovoye 77.73 328 *e*P **P** **13 56 01.4 +0.2**
BRVK pmax pmax
comp=Z,68nm,0.8s
BRVK Borovoye 77.73 328 *e*P **P** **13 56 01.4 +0.2**
comp=Z,68nm,0.8s
CHKZ Chkalovo 77.85 328 P **P** **13 56 01.3 -0.5**
CHKZ pmax pmax
comp=Z,23nm,1.0s
TIXI Tiksi 78.08 360 P **P** **13 56 02.5 -0.2**
comp=Z,4.5nm,0.5s,baz=175,slow=4.3,SNR=33
TIXI S **S** **14 05 40.2 -4.1**
comp=Z,0.5nm,0.3s,baz=66,slow=21,SNR=9.6
TIXI LR LR 14 30 24.1
comp=Z,31nm,18.8s,baz=166,slow=35
TIXI Tiksi 78.08 360 *ce*P **P** **13 56 02.7 0.0**
TIXI pmax pmax
comp=Z,5.0nm,0.6s
TIXI Tiksi 78.08 360 *e*P **P** **13 56 02.3 -0.4**
comp=Z,6.1nm,0.6s
TIXI S **S** **14 05 40.2 -4.1**
UOSS Minazif 78.14 297 *e*P **P** **13 56 03.9 -0.2**
comp=Z,1.4nm,0.8s
HATD Hatta, Dubai 78.18 297 *i* P **P** **13 56 04.7 +0.4**
SNR=9.2
HATD Hatta, Dubai 78.18 297 *i* P **P** **13 56 04.7 +0.4**
SNR=9.2
ZRNK Zerenda 78.36 327 *e*P **P** **13 56 04.9 +0.2**
ZRNK pmax pmax
comp=Z,32nm,0.8s
ZRNK Zerenda 78.36 327 *e*P **P** **13 56 04.9 +0.2**
comp=Z,32nm,0.8s
FAQ Al Faqa, Dubai 78.64 297 *i* P **P** **13 56 06.9 +0.1**
SNR=16
FAQ Al Faqa, Dubai 78.64 297 *i* P **P** **13 56 06.9 +0.1**
SNR=16
BILL Bilibino 78.74 13 *e*P **P** **13 56 06.0 -0.4**
BILL *e* 13 56 13.0
BILL pmax pmax
comp=Z,2.0nm,0.9s
GEYT Alibeck 79.86 310 P **P** **13 56 13.9 +0.7**
comp=Z,15nm,0.7s,baz=151,slow=3.4,SNR=36
NRIK Noril'sk 81.13 346 LR LR 14 33 47.8
comp=Z,38nm,21.9s,baz=120,slow=37
AB31 Akbulak array 82.12 322 *i* P **P** **13 56 24.5 -0.4**
AB31 pmax pmax
comp=Z,9.0nm,0.6s
ABKAR Akbulak array 82.12 322 *e*P **P** **13 56 24.6 -0.3**
QSPA South Pole Qui 83.39 180 *e*P **P** **13 56 31.3 0.0**
AKTO Aktyubinsk 83.68 322 P **P** **13 56 33.1 +0.2**
comp=Z,16nm,0.8s,baz=105,slow=6.7,SNR=35
AKTO S **S** **14 06 39.6 -3.7**
comp=Z,0.7nm,0.6s,baz=355,slow=23,SNR=6.6
SVE Sverdlovsk 84.36 329 *e*P **P** **13 56 36.7 +0.5**
SVE pmax pmax
comp=Z,35nm,1.3s
ARU Arti 85.30 328 P **P** **13 56 40.8 -0.1**
comp=Z,14nm,0.7s,baz=121,slow=0.8,SNR=30
ARU Arti 85.30 328 *c i*P **P** **13 56 40.8 -0.1**
ARU *PP **pP** **13 57 17.6 -0.1**
ARU S **S** **14 06 51.9 -7.1**
ARU SS **SS** **14 12 31.5 -5.6**
ARU pmax pmax
comp=Z,34nm,1.2s
ARU Arti 85.30 328 *e*P **P** **13 56 40.3 -0.6**
comp=Z,20nm,0.8s
DAMY Dhamar 87.31 285 *e*P **P** **13 56 51.5 -0.5**
comp=Z,30nm,0.9s
GNI Garni 90.50 310 *ce*P **P** **13 57 06.7 +0.4**
GNI pmax pmax
comp=Z,21nm,0.9s
ZEI Tsey 91.49 313 *e*P **P** **13 57 10.1 -0.8**
ZEI pmax pmax
comp=Z,15nm,0.4s
RND Reindeer 91.94 26 *e*P **P** **13 57 11.8 -0.5**
RND pmax pmax
comp=Z,4.0nm,0.9s
RND Reindeer 91.94 26 *e*P **P** **13 57 11.8 -0.5**
comp=Z,4.4nm,0.9s
KBZ Khabaz 92.33 314 P **P** **13 57 13.9 -0.5**
comp=Z,3.6nm,0.7s,baz=55,slow=2.5,SNR=10.0
KBZ Khabaz 92.33 314 P **P** **13 57 14.0 -0.5**
KBZ pmax pmax
comp=Z,4.0nm,0.7s
KMBO Kilima Mbogo 92.49 269 P **P** **13 57 16.8 +0.6**
comp=Z,4.6nm,0.8s,baz=55,slow=6.9,SNR=10.0
KMBO Kilima Mbogo 92.49 269 *ce*P **P** **13 57 17.1 +0.9**
KMBO pmax pmax
comp=Z,5.0nm,0.8s
KMBO Kilima Mbogo 92.49 269 *e*P **P** **13 57 15.7 -0.6**
comp=Z,9.9nm,1.2s
KIV Kislovodsk 92.51 314 *e*P **P** **13 57 17.7 +2.2**
KIV pmax pmax
comp=Z,5.0nm,1.0s
ILAR Eielson Array 93.02 25 P **P** **13 57 16.8 -0.4**
comp=Z,0.8nm,0.6s,baz=258,slow=4.3,SNR=4.5
KLMR Klimovskoe 95.88 331 *e*P P 13 57 25.0 -5.3
KLMR pmax pmax
comp=Z,5.0nm,0.8s
DAWY Dawson 96.19 26 *e*P **P** **13 57 33.2 +1.4**
comp=Z,3.4nm,1.0s
OBN Obninsk 97.26 325 *e*P **P** **13 57 34.2 -2.5**
OBN pmax pmax
comp=Z,6.0nm,1.2s
BR131 Keskin Array S 98.97 309 *e*P **P** **13 57 43.8 -1.1**
BRTR Keskin Array B 98.97 309 P **P** **13 57 43.9 -1.1**
comp=Z,1.3nm,0.7s,baz=136,slow=6.8,SNR=10
BRTR Keskin Array B 98.97 309 *ce*P **P** **13 57 43.5 -1.5**
BRTR pmax pmax
comp=Z,2.0nm,0.8s
BOSA Boshof 99.58 240 P **Pdif** **13 57 47.6 -0.4**
comp=Z,4.1nm,1.0s,baz=55,slow=2.2,SNR=4.3
ARCES ARCESS Array B 101.16 340 P **Pdif** **13 57 53.3 -0.5**
comp=Z,1.1nm,0.7s,baz=87,slow=5.5,SNR=4.0
BUR08 Bucovina Ar. S 104.73 317 *e*Pdif **Pdif** **13 58 10.0 -0.4**
YKA Yellowknife Ar 107.43 26 PKiKP **PKiKP** **14 02 29.5 0.0**
comp=Z,0.6nm,0.7s,baz=291,slow=1.7,SNR=8.5
YKA PKKPbc **PKKPbc** **14 13 44.5 -3.3**
comp=Z,0.5nm,0.7s,baz=102,slow=2.9,SNR=5.8
CLL Collm 111.76 323 *e*PKiKP **PKiKP** **14 02 40.0 +2.0**
CLL *e*PP **PP** **14 03 22.0 -0.4**
CLL Collm 111.76 323 *e*PKiKP **PKiKP** **14 02 40.0 +2.0**
GERES GERESS Array B 112.04 320 PKiKP **PKiKP** **14 02 38.6 -0.2**
comp=Z,1.0nm,0.6s,baz=64,slow=2.2,SNR=10.0
PDAR Pinedale Array 116.68 45 PKP **PKPdf** **14 02 48.6 +0.6**
comp=Z,0.4nm,0.8s,baz=186,slow=1.5,SNR=4.2
PDAR PKKPbc **PKKPbc** **14 13 15.7 -1.2**
comp=Z,0.3nm,0.5s,baz=92,slow=3.4,SNR=4.1
TXAR Lajitas Array 124.81 59 PKP **PKPdf** **14 03 04.9 +1.0**
comp=Z,0.1nm,0.4s,baz=268,slow=2.7,SNR=2.6
ESDC Sonseca Array 127.13 316 PP PP 14 05 08.3 +0.1
comp=Z,0.4nm,0.6s,baz=60,slow=6.8,SNR=4.6
TOA0 Torodi Ar. Sit 128.62 282 *e*PKPdf **PKPdf** **14 03 11.3 -0.1**
TORD Torodi Ar. Bea 128.62 282 PKP **PKPdf** **14 03 11.6 +0.2**
comp=Z,3.0nm,0.7s,baz=83,slow=1.9,SNR=18
TORD SKPbc SKPbc 14 06 15.9
comp=Z,2.0nm,0.7s,baz=71,slow=3.5,SNR=7.3
PLCA Paso Flores 129.30 160 PKP **PKPdf** **14 03 13.3 +1.1**
comp=Z,1.8nm,1.0s,baz=215,slow=7.1,SNR=2.4
PLCA SKPbc SKPab 14 06 18.6 -0.9
comp=Z,1.7nm,0.7s,baz=280,slow=3.9,SNR=4.4
SCHQ Schefferville 130.05 13 SKPbc **SKPab** **14 06 20.9 -1.3**
comp=Z,14nm,0.8s,baz=3.7,slow=3.2,SNR=7.6
KIC Kosan Boka 134.93 272 *e*P **SKPbc** **14 06 37.9 -2.7**
comp=Z,39nm,1.0s
DBIC Dimbokro 135.06 273 SKPbc **SKPbc** **14 06 38.8 -2.2**
comp=Z,12nm,0.7s,baz=79,slow=4.6,SNR=10
LIC Lamto 135.21 272 *e*P **SKPbc** **14 06 39.8 -1.6**
TIC Toumodi 135.22 273 *e*P **SKPbc** **14 06 38.9 -2.6**
LVC Limon Verde 145.64 148 *e*PKPdf **PKPab** **14 03 45.4 +1.5**
CPUP Villa Florida 146.54 168 PKPbc **PKPab** **14 03 46.4 -0.4**
comp=Z,6.2nm,0.7s,baz=184,slow=2.7,SNR=11
CPUP SKPbc **SKPbc** **14 07 09.3 -1.6**
comp=Z,3.3nm,0.8s,baz=150,slow=1.2,SNR=3.9
LPAZ La Paz 151.11 142 PKPbc **PKPbc** **14 03 59.5 +1.3**
comp=Z,2.0nm,0.4s,baz=36,slow=3.6,SNR=16
LPAZ La Paz 151.11 142 *e*PKPbc **PKPbc** **14 03 59.2 +1.0**

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*DDA **29** 13:46:38.7, 37.°17N×28.°16E, h7km, Ml2.5*
*ISK **29** 13:46:38.3, 37.°32N×28.°24E, h4km, ML2.1*
*ISCJB **29** 13:46:39.8±0.6, 37.°24N±0.°04×28.°17E±0.°05, h9km±9km, Error ellipse: s-maj=8.3km s-min=4.8km az=33.2*
*CSEM **29** 13:46:39.7±0.2, 37.°25N×28.°19E, h5km, ML2.1, Error ellipse: s-maj=6.0km s-min=4.5km az=31.0*
ISC 29 13:46:39.3±1.2, 37.°30N±0.°03×28.°20E±0.°03, h4km±11km, n19, σ1§04/30, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.17**	**159**	*e*PG	**Pg**	**13 46 42.4**	**-0.3**
YER				*e*SG	**Sg**	**13 46 45.7**	**+0.7**
YER	**Yerkesik**	**0.17**	**159**	*e*Pg	**Pg**	**13 46 42.4**	**-0.3**
YER				*e*Sg	**Sg**	**13 46 45.7**	**+0.7**
AYDN	**Tasoluk**	**0.44**	**325**	P	**Pb**	**13 46 49.7**	**0.0**
AYDN				S	**Sb**	**13 46 57.2**	**+0.5**
AYDN	**Tasoluk**	**0.44**	**325**	*i* P	**Pb**	**13 46 49.7**	**0.0**
AYDN				*i* S	**Sb**	**13 46 57.2**	**+0.5**
DALY	**Dalyan (Mu¨la**	**0.60**	**143**	*e*PG	**Pg**	**13 46 50.7**	**-0.1**
DALY				*e*SG	**Sb**	**13 47 00.2**	**-0.9**
DALY	**Dalyan (Mu¨la**	**0.60**	**143**	*e*Pg	**Pg**	**13 46 50.7**	**-0.1**
DALY				*e*Sg	**Sb**	**13 47 00.2**	**-0.9**
BDRM	**Kayabasi**	**0.65**	**249**	P	**Pg**	**13 46 51.0**	**-0.7**
BDRM				S	**Sb**	**13 47 01.5**	**-1.1**
BDRM	**Kayabasi**	**0.65**	**249**	*i* P	**Pg**	**13 46 51.0**	**-0.7**
BDRM				*i* S	**Sb**	**13 47 01.4**	**-1.1**
AYDB	**Zeytinkoy-Aydi**	**0.69**	**339**	*e*PG	**Pg**	**13 46 52.9**	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**0.69**	**339**	*e*Pg	**Pg**	**13 46 52.9**	**+0.3**
BODT	**Bodrum**	**0.75**	**252**	*e*PG	**Pg**	**13 46 53.9**	**+0.2**
BODT	**Bodrum**	**0.75**	**252**	*e*Pg	**Pg**	**13 46 53.9**	**+0.2**
DNZL	**Cakiroluk**	**0.78**	**60**	P	**Pb**	**13 46 55.3**	**-0.1**
DNZL				S	**Sn**	**13 47 08.2**	**-1.2**
DNZL	**Cakiroluk**	**0.78**	**60**	*i* P	**Pb**	**13 46 55.3**	**-0.1**
DNZL				*i* S	**Sn**	**13 47 08.2**	**-1.2**
DENT	**Denizli**	**0.80**	**55**	*e*PG	**Pg**	**13 46 52.8**	**-1.9**
FETY	**Fethiye**	**0.97**	**133**	*e*PG	**Pg**	**13 46 57.9**	**+0.1**
FETY	**Fethiye**	**0.97**	**133**	*e*Pg	**Pg**	**13 46 57.9**	**+0.1**
GOLH	**Golhisar**	**1.08**	**93**	P	**Pg**	**13 47 00.3**	**+0.2**
GOLH	**Golhisar**	**1.08**	**93**	*i* P	**Pg**	**13 47 00.3**	**+0.2**
GOLH				*i* S	**Sn**	**13 47 20.7**	**+3.8**

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*NEIC **29** 13:49:21.9, 52.°10N×169.°88W, h6km, ML3.6(AEIC), After AEIC.*
*ISCJB **29** 13:49:22.0±0.6, 52.°00N±0.°08×169.°89W±0.°07, h29km, mb3.9/23, MS3.5/2, Error ellipse: s-maj=12.6km s-min=3.4km az=155.0*
*IDC **29** 13:49:26.5±4.4, 52.°24N×170.°01W, h51km±40km, mb3.6/23, mb1 3.8/25, mb1mx3.7/60, mbtmp3.9/25, ML3.7/2, MS3.6/2, Ms1 3.6/2, ms1mx2.6/49, Error ellipse: s-maj=25.1km s-min=12.5km az=2.0*
ISC 29 13:49:23.9±0.8, 52.°2N±0.°1×169.°94W±0.°06, h29km, n57, σ1§23/54, mb4.0/23, Fox Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NIKH	**Nikolski High**	**1.06**	**38**	P	**Pn**	**13 49 41.5**	**-1.2**
NIKH				S	**Sb**	**13 49 58.1**	**+1.0**
OKTU	**Okmok Mt. Tuli**	**1.69**	**42**	P	**Pn**	**13 49 51.7**	**+0.2**
OKTU				S	**Sn**	**13 50 14.4**	**+2.2**
OKAK	**Okmok**	**1.73**	**33**	P	**Pn**	**13 49 50.9**	**-1.0**
OKER	**Okmok East Rim**	**1.74**	**40**	P	**Pn**	**13 49 52.7**	**+0.5**

MSOM	Makushin Julie	2.46	46	P	Pn	13 50 03.4	+1.4
MGOD	Makushin Gods	2.48	47	P	Pn	13 50 02.5	+0.2
KOSE	Korovin Southe	2.54	276	P	Pn	13 50 05.0	+2.0
KOFP	Korovin Flat P	2.56	274	P	Pn	13 50 04.8	+1.3
MCIR	Makushin Cirqu	2.58	44	P	Pn	13 50 04.6	+1.0
KOKL	Mount Kliuchef	2.63	276	P	Pn	13 50 06.4	+2.1
KOWE	Korovin West	2.66	276	P	Pn	13 50 06.5	+1.7
MTBL	Makushin Table	2.68	46	P	Pn	13 50 06.4	+1.3
UNV	Unalaska Valle	2.69	49	P	Pn	13 50 05.1	+0.1
UNV				S	Sn	13 50 38.6	+2.1
AKRB	Akutan Reef Bi	3.06	48	P	Pn	13 50 11.7	+1.4
AKRB				S	Sn	13 50 49.3	+3.5
AKGG	Akutan Green G	3.14	48	P	Pn	13 50 12.6	+1.2
AKUT	Akutan	3.20	50	P	Pn	13 50 13.1	+1.0
GSMY	Great Sitkin M	3.77	271	P	Pn	13 50 20.8	+0.7
GSTD	Great Sitkin T	3.83	271	P	Pn	13 50 21.4	+0.6
GSCK	Great Sitkin C	3.84	270	P	Pn	13 50 21.8	+0.8
ETKA	Kagalaska Isla	4.01	268	P	Pn	13 50 23.6	+0.4
ADAG	Mount Adagdak	4.12	270	P	Pn	13 50 26.0	+1.2
KIKV	Kanaga Island	4.48	269	P	Pn	13 50 30.4	+0.7
FALS	False Pass	4.75	53	P	Pn	13 50 34.9	+1.6
TAFP	Tanaga Falls P	4.97	270	P	Pn	13 50 37.2	+0.6
GAEA	Gareloi East	5.46	270	P	Pn	13 50 45.9	+2.7
ILAR	Eielson Array	17.33	34	P	Pn	13 53 23.5	+0.2
	0.1nm,0.3s,baz=232,slow=11,SNR=4.4						
PETK	Petropavlovsk-	19.58	286	P	P	13 53 49.4	+0.1
	2.3nm,0.3s,baz=84,slow=14,SNR=63						
SEY	Seymchan	22.57	313	P	P	13 54 21.2	-0.1
	0.9nm,0.6s,baz=106,slow=9.3,SNR=5.2						
MA2	Magadan	22.98	304	P	P	13 54 26.9	+1.2
	4.4nm,0.7s,baz=97,slow=14,SNR=5.3						
DLBC	Dease Lake	23.30	59	LR	LR	14 02 49.3	
	comp=Z,64nm,18.0s,baz=360,slow=34						
INK	Inuvik	23.73	33	P	P	13 54 32.2	-0.7
	0.6nm,0.5s,baz=258,slow=4.8,SNR=7.4						
YKA	Yellowknife Ar	30.65	49	P	P	13 55 36.1	+0.9
	0.3nm,0.6s,baz=273,slow=7.9,SNR=8.2						
KLR	Kul'dur	36.20	289	P	P	13 56 22.4	-1.3
	1.6nm,0.5s,baz=48,slow=6.6,SNR=5.8						
H11N2	WAKE ISLAND Hy 37.06	218		T	T	14 36 23.1	
	baz=23,slow=75,SNR=6.8						
H11N3	WAKE ISLAND Hy 37.07	218		T	T	14 35 59.0	
	baz=23,slow=75,SNR=5.2						
H11N1	WAKE ISLAND Hy 37.08	218		T	T	14 36 03.5	
	baz=23,slow=75,SNR=6.9						
NVAR	Mina Array Bea	38.01	90	P	P	13 56 39.8	+0.4
	0.3nm,0.4s,baz=323,slow=9.3,SNR=3.8						
H11S1	WAKE ISLAND Hy 38.25	217		T	T	14 37 41.5	
	baz=23,slow=76,SNR=66						
H11S2	WAKE ISLAND Hy 38.27	217		T	T	14 37 45.6	
	baz=23,slow=76,SNR=49						
H11S3	WAKE ISLAND Hy 38.27	217		T	T	14 37 46.1	
	baz=23,slow=76,SNR=30						
PDAR	Pinedale Array	40.79	78	P	P	13 57 03.1	+0.5
	0.9nm,0.5s,baz=285,slow=4.1,SNR=12						
KSRS	Korea Array	45.08	277	P	P	13 57 37.3	+0.2
	0.9nm,0.8s,baz=56,slow=6.6,SNR=4.6						
TXAR	Lajitas Array	53.10	88	P	P	13 58 38.5	-0.2
	0.6nm,0.6s,baz=304,slow=5.1,SNR=9.4						
ZALV	Zalesovo Beam	57.35	317	P	P	13 59 07.3	-1.5
	0.4nm,0.3s,baz=70,slow=4.7,SNR=2.2						
ARCES	ARCESS Array B	58.10	354	P	P	13 59 13.0	-0.9
	1.1nm,0.6s,baz=35,slow=6.6,SNR=3.7						
KURBB	Kurchatov Arra	62.41	318	P	P	13 59 42.5	-1.2
	1.4nm,0.7s,baz=45,slow=6.9,SNR=4.8						
BVAR	Borovoye Array	63.68	324	P	P	13 59 51.5	-0.5
	3.4nm,0.5s,baz=54,slow=5.7,SNR=14						
BVAR				LR	LR	14 30 49.2	
	comp=Z,80nm,18.2s,baz=253,slow=39						
MKAR	Makanchi Array	63.70	313	P	P	13 59 50.7	-1.6
	0.5nm,0.5s,baz=61,slow=8.9,SNR=4.5						
FINES	FINESS Array B	66.04	352	P	P	14 00 05.9	-1.3
	1.4nm,0.9s,baz=14,slow=7.8,SNR=5.4						
NOA	NORSAR Array B	67.16	359	P	P	14 00 14.1	-0.4
	1.1nm,0.7s,baz=0.8,slow=6.2,SNR=2.9						
AKTO	Aktyubinsk	70.03	330	P	P	14 00 32.0	-0.4
	1.5nm,0.5s,baz=46,slow=7.0,SNR=4.5						
AKASG	Malin Array Be	76.25	348	P	P	14 01 08.2	-1.0
	1.0nm,0.6s,baz=18,slow=6.4,SNR=5.7						
CMAR	Chiang Mai Arr	76.32	282	P	P	14 01 10.3	+0.2
	1.7nm,0.6s,baz=27,slow=7.0,SNR=13						
GERES	GERESS Array B	79.34	358	P	P	14 01 26.7	+0.1
	0.4nm,0.7s,baz=358,slow=4.9,SNR=3.8						
BRTR	Keskin Array B	86.23	342	P	P	14 02 03.2	+0.6
	0.7nm,0.7s,baz=73,slow=3.3,SNR=3.2						
ESDC	Sonseca Array	87.74	11	P	P	14 02 09.5	-0.3
	0.1nm,0.3s,baz=352,slow=4.8,SNR=4.8						
ASAR	Alice Springs	89.98	230	P	P	14 02 19.9	-0.4
	1.0nm,0.6s,baz=28,slow=5.1,SNR=5.8						

DJA 29 13:50:46.8±1.1, 9°S±5°×11°0E±°, h33km±12km, M3.8/16, MLv3.8/16, Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
UGM	Wanagama	0.88	47	P	Pb	13 51 03.3	-0.3
UGM				S	Sb	13 51 15.2	+0.1
WOJI	Wonogiri, Jawa	1.24	57	P	Pn	13 51 07.3	-0.5
WOJI				S	Sn	13 51 22.3	-1.0
PCJI	Pacitan	1.32	76	P	Pn	13 51 09.4	+0.4
PCJI				S	Sn	13 51 26.0	+0.5
SMRI	Semarang	1.56	21	P	Pn	13 51 12.9	+0.6
CMJI	Cimerak	1.59	297	P	Pn	13 51 12.6	-0.1
NGJI	Ngawi	1.94	54	P	Pn	13 51 18.5	+1.0
PWJI	Pagerwojo	1.97	76	P	Pn	13 51 17.8	0.0
CISI	Cisompet, Garu	2.26	295	P	Pn	13 51 22.2	+0.3
CNJI	Cibinong	2.98	294	P	Pn	13 51 31.8	0.0
GMJI	Gumukmas	3.54	86	P	Pn	13 51 39.9	+0.5
JAGI	Jajag, Banyuwa	4.23	90	P	Pn	13 51 49.4	+0.5
ABJI	Asem Bagus	4.37	81	P	Pn	13 51 51.8	+0.9

*ISCJB **29** 13:51:16.0±0.5, 39°08N±0°03×29°05E±0°03, h6km±6km, Error ellipse: s-maj=5.3km s-min=4.2km az=2.2*
*ISK **29** 13:51:15.8, 39°06N×29°05E, h11km, ML2.8*
*DDA **29** 13:51:15.8, 39°10N×29°05E, h10km, Ml3.0*
*CSEM **29** 13:51:16.2±0.1, 39°07N×29°05E, h8km, ML3.0, Error ellipse: s-maj=1.9km s-min=1.7km az=106.0*

ISC 29 13:51:16.3±1.1, 39°10N±0°03×29°04E±0°02, h5km±10km, n41, σ0§95/53, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.26	258	P	Pg	13 51 21.5	+0.2
DEMI				S	Sg	13 51 25.1	+0.5
DEMI	Demirci	0.26	258	*i* P	Pg	13 51 21.5	+0.2
DEMI				*i* S	Sg	13 51 25.1	+0.5
GDZ	Gediz	0.35	91	P	Pg	13 51 22.9	-0.1
GDZ				S	Sg	13 51 27.9	+0.3
GDZ	Gediz	0.35	91	*i* P	Pg	13 51 22.9	-0.1
GDZ				*i* S	Sg	13 51 27.9	+0.3
KULA	Kula-Manisa	0.65	207	PG	Pg	13 51 28.6	-0.2
KULA				*e*SG	Sg	13 51 37.1	-0.1
KULA	Kula-Manisa	0.65	207	*i* Pg	Pg	13 51 28.6	-0.2
KULA				*e*Sg	Sg	13 51 37.1	-0.1
KHAL	Karahalli	0.81	154	P	Pg	13 51 31.8	0.0
KHAL				S	Sg	13 51 42.6	+0.3
KHAL	Karahalli	0.81	154	*i* P	Pg	13 51 31.8	0.0
KHAL				*i* S	Sg	13 51 42.6	+0.3
KHL	Karahalli	0.86	154	*e*PG	Pg	13 51 32.0	-0.8
KHL	Karahalli	0.86	154	*e*Pg	Pg	13 51 32.0	-0.8
ORLT	Orhaneli	0.96	353	*e*PG	Pb	13 51 35.2	-0.2
ORLT	Orhaneli	0.96	353	*e*Pg	Pb	13 51 35.2	-0.2
AKHS	Akhisar	0.98	258	P	Pg	13 51 34.6	-0.4
AKHS				S	Sb	13 51 48.9	-0.1
AKHS	Akhisar	0.98	258	*i* P	Pg	13 51 34.6	-0.4
AKHS				*i* S	Sb	13 51 48.9	-0.1
AKS	Akhisar	0.98	258	*e*PG	Pg	13 51 35.0	-0.1
AKS	Akhisar	0.98	258	*e*Pg	Pg	13 51 35.0	-0.1
BALB	Balikesir	1.05	302	*e*PG	Pb	13 51 36.7	-0.3
BALB				*e*SG	Sn	13 51 52.2	-0.6
BALB	Balikesir	1.05	302	*e*Pg	Pb	13 51 36.7	-0.3
BALB				*e*Sg	Sn	13 51 52.2	-0.6
CAVI	Cavuskoy	1.27	29	*e*PN	Pb	13 51 40.5	-0.3
CAVI	Cavuskoy	1.27	29	*e*Pn	Pb	13 51 40.5	-0.3
KCTX	Karacabey (Bur	1.28	336	*e*PN	Pb	13 51 40.8	-0.2
KCTX	Karacabey (Bur	1.28	336	*e*Pn	Pb	13 51 40.8	-0.2
IZI	Iznik	1.28	15	*e*PN	Pb	13 51 40.9	-0.2
IZI	Iznik	1.28	15	*e*Pn	Pb	13 51 40.9	-0.2
GEMT	Gemlik	1.34	5	*e*PN	Pg	13 51 41.9	-0.1
GEMT	Gemlik	1.34	5	*e*Pn	Pg	13 51 41.9	-0.1
GONE	Gonen-Balikesi	1.41	313	*e*Pn	Pn	13 51 42.5	-0.2
GONE	Gonen-Balikesi	1.41	313	*e*Pn	Pn	13 51 42.5	-0.2
ADVT	Abdulvahap	1.44	22	*e*PN	Pn	13 51 42.8	-0.3
ADVT	Abdulvahap	1.44	22	*e*Pn	Pn	13 51 42.8	-0.3
ARMT	Armutlu	1.48	355	*e*PN	Pn	13 51 43.1	-0.4
ARMT	Armutlu	1.48	355	*e*Pn	Pn	13 51 43.2	-0.4
EDC	Edincik	1.54	324	*e*PN	Pn	13 51 44.3	-0.2
EDC	Edincik	1.54	324	*e*Pn	Pn	13 51 44.3	-0.2
GULT	Gulveren	1.75	40	*e*PN	Pn	13 51 47.8	+0.3
GULT	Gulveren	1.75	40	*e*Pn	Pn	13 51 47.8	+0.3
HRT	Hereke	1.79	16	*e*PN	Pn	13 51 47.7	-0.3
HRT	Hereke	1.79	16	*e*Pn	Pn	13 51 47.7	-0.3
SPNC	Sapanca-Adapaz	1.87	31	*e*PN	Pn	13 51 48.7	-0.3
SPNC	Sapanca-Adapaz	1.87	31	*e*Pn	Pn	13 51 48.7	-0.3
SNAA	Sanae	112.75	190	P	Pdif	14 06 04.6	+6.3

*NIED **29** 13:52:00, 36°50N×143°30E, h5km, Mw3.8 Best double couple: M0:5.99000×10^14 NP1:φ=69.00000°, δ=31.00000°, λ=-50.00000°. NP2:φ=204.00000°, δ=67.00000°, λ=-111.00000°.*
*IDC **29** 13:52:13.1±0.8, 36°40N×143°58E, h0km, mb3.9/12, mb1 4.1/15, mb1mx3.8/53, mbtmp3.9/15, ML3.4/3, MS3.0/1, Ms1 3.0/1, ms1mx2.3/4, Error ellipse: s-maj=25.1km s-min=18.9km az=141.0*
*ISCJB **29** 13:52:17.3±0.6, 36°62N±0°05×143°44E±0°04, h33km, mb4.0/14, Error ellipse: s-maj=6.9km s-min=4.8km az=163.9*
*JMA **29** 13:52:17.9±0.3, 36°53N×143°34E, h81km, M3.7*
*NEIC **29** 13:52:18.8±0.6, 36°54N×143°54E, h35km, mb4.3/2, Error ellipse: s-maj=12.8km s-min=9.1km az=153.0*

ISC 29 13:52:18.6±0.7, 36°52N±0°05×143°46E±0°07, h35km, n40, σ1§36/43, mb4.0/14, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	2.21	286	*e*S	Sn	13 53 18.5	-0.5
JFK	Kawauchi	2.24	293	P	Pn	13 52 52.2	-1.0
JFK				S	Sn	13 53 18.3	-1.3
CHOJ	Chosi	2.26	250	P	Pn	13 52 52.9	-0.6
JHO	Hitachi	2.33	273	P	Pn	13 52 53.3	-1.1
JHO				S	Sn	13 53 19.9	-1.9
JFT	Otama	2.69	293	P	Pn	13 52 59.5	+0.1
JFT				*e*S	Sn	13 53 30.2	-0.6
JMK	Ichinoseki	3.01	324	P	Pn	13 53 02.8	-0.9
JMK				*e*S	Sn	13 53 36.8	-1.7
JAG	Ashikaga	3.23	269	P	Pn	13 53 06.4	-0.4
JAG				S	Sn	13 53 42.3	-1.8
JOM	Ohasama	3.41	330	P	Pn	13 53 09.2	0.0
JOM				S	Sn	13 53 47.3	-1.1
JYK	Kaneyama	3.43	315	P	Pn	13 53 09.3	-0.2
JRY	Ryogami san	3.72	264	P	Pn	13 53 13.2	-0.3
MJAR	Matsushiro Arr	4.23	272	Pn	Pn	13 53 21.9	+1.4
	2.9nm,0.3s,baz=165,slow=3.2,SNR=16						
MAJO	Matsushiro	4.23	272	*e*P	Pn	13 53 21.6	+1.0
MAT	Matsushiro	4.23	272	P	Pn	13 53 21.4	+0.8
MAT				S	Sn	13 54 08.7	-0.1
JHJ	Hachijo jima 2	4.55	223	Pn	Pn	13 53 22.8	-2.1
	14nm,0.3s,baz=93,slow=3.3,SNR=3.7						
JHJ				Sn	Sn	13 54 13.2	-3.4
	34nm,0.3s,baz=73,slow=19,SNR=3.9						
ERM	Erimo	5.49	358	*e*P	Pn	13 53 36.5	-1.3
JKB	Kayabe	5.68	341	P	Pn	13 53 40.7	+0.3
JKB				*e*S	Sn	13 54 40.2	-4.1
JCH	Churui	6.08	359	P	Pn	13 53 43.0	-2.9
JCH				*e*S	Sn	13 54 46.5	-7.8
ASAJ	Asahikawa	7.61	355	Pn	Pn	13 54 05.9	-1.0
	0.3nm,0.3s,baz=143,slow=6.9,SNR=3.6						
ASAJ				Sn	Sn	13 55 30.7	-1.3
	1.1nm,0.3s,baz=282,slow=19,SNR=3.5						
USRK	Ussuriysk Ar.	11.63	315	LR	LR	14 00 02.4	
	comp=Z,68nm,19.0s,baz=177,slow=40						
H11N2	WAKE ISLAND Hy 26.48	123		T	T	14 25 21.0	
	baz=314,slow=75,SNR=15						
H11N1	WAKE ISLAND Hy 26.49	123		T	T	14 25 23.1	
	baz=314,slow=75,SNR=12						
H11N3	WAKE ISLAND Hy 26.50	123		T	T	14 25 20.5	
	baz=314,slow=75,SNR=11						
H11S1	WAKE ISLAND Hy 27.21	125		T	T	14 26 18.7	
	baz=316,slow=76,SNR=16						
H11S3	WAKE ISLAND Hy 27.21	125		T	T	14 26 18.9	
	baz=316,slow=76,SNR=11						
H11S2	WAKE ISLAND Hy 27.23	125		T	T	14 26 19.5	
	baz=316,slow=76,SNR=12						
KURK	Kurchatov	47.54	309	*e*P	P	14 00 51.1	+0.8
	4.4nm,0.7s						
KURBB	Kurchatov Arra	47.61	309	P	P	14 00 51.8	+1.0
	1.8nm,0.7s,baz=83,slow=8.2,SNR=5.8						
ILAR	Eielson Array	49.05	32	P	P	14 01 01.9	+0.1
	1.5nm,0.8s,baz=268,slow=6.2,SNR=10						
INK	Inuvik	54.09	27	P	P	14 01 39.9	+0.5
	1.2nm,0.6s,baz=303,slow=5.3,SNR=8.3						
WRA	Warramunga Arr	56.82	190	P	P	14 01 58.0	-1.5
	2.2nm,0.9s,baz=9.7,slow=7.2,SNR=4.6						
ABKAR	Akbulak array	59.52	311	*e*P	P	14 02 19.1	+0.9
	0.8nm,0.6s						
YKA	Yellowknife Ar	63.42	31	P	P	14 02 44.3	+0.1
	0.8nm,0.7s,baz=301,slow=6.4,SNR=9.4						
FINES	FINESS Array B	70.02	333	P	P	14 03 26.4	0.0
	1.7nm,0.9s,baz=22,slow=11,SNR=4.3						
NVAR	Mina Array Bea	73.97	54	P	P	14 03 51.2	+0.5
	0.7nm,0.7s,baz=293,slow=8.6,SNR=3.4						
NB2	NORSAR Subarra	75.28	338	P	P	14 03 58.5	+0.8
	comp=Z,0.9nm,0.6s,baz=39,slow=6.2						
NOA	NORSAR Array B	75.28	338	P	P	14 03 58.5	+0.8
	comp=Z,1.6nm,0.8s,baz=40,slow=5.7,SNR=5.2						
AKASG	Malin Array Be	75.70	323	P	P	14 04 00.8	+0.7
	comp=Z,1.0nm,0.6s,baz=45,slow=5.9,SNR=4.8						
PDAR	Pinedale Array	76.84	46	P	P	14 04 07.3	+0.1
	comp=Z,0.3nm,0.6s,baz=286,slow=2.8,SNR=2.8						
BRTR	Keskin Array B	80.41	313	P	P	14 04 27.6	+0.8
	comp=Z,0.8nm,0.7s,baz=26,slow=6.9,SNR=3.6						
TXAR	Lajitas Array	89.11	54	P	P	14 05 10.8	+0.1
	comp=Z,0.5nm,0.6s,baz=319,slow=3.4,SNR=5.6						

JMA 29 13:54:16.0±0.3, 36°51N×143°38E, h64km, M3.7, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	2.15	287	S	Sn	13 55 16.6	+1.3
JFK	Kawauchi	2.18	294	P	Pn	13 54 50.6	+0.6
JFK				*e*S	Sn	13 55 16.6	+0.6
CHOJ	Chosi	2.19	249	P	Pn	13 54 51.1	+1.0
JHO	Hitachi	2.27	273	P	Pn	13 54 51.8	+0.7
JHO				S	Sn	13 55 18.1	+0.1
JFT	Otama	2.63	293	P	Pn	13 54 57.9	+1.7
JFT				S	Sn	13 55 28.8	+1.8
BSO1	Boso 1	2.69	227	P	Pn	13 54 57.2	+0.7
JMK	Ichinoseki	2.98	326	P	Pn	13 55 01.2	+0.4
JMK				S	Sn	13 55 35.2	-0.1
JAG	Ashikaga	3.17	270	P	Pn	13 55 04.7	+1.3
JAG				*e*S	Sn	13 55 40.3	+0.3
JOM	Ohasama	3.39	331	S	Sn	13 55 45.8	+0.5
JYK	Kaneyama	3.39	316	P	Pn	13 55 07.8	+1.3
JYK				*e*S	Sn	13 55 47.5	+2.0

DJA 29 13:54:16.0±0.4, 2°S±5°×12°1E±°, h10km, M3.6/6, MLv3.6/6, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TTSI	Tana Toraja	1.36	232	P	Pn	13 54 38.0	-3.1
TTSI				S	Sg	13 55 04.1	+4.3
PCI	Palu	1.66	321	P	Pn	13 54 45.2	0.0
PCI				S	Sg	13 55 14.5	+5.0
SPSI	Sidrap Palu	2.08	213	P	Pn	13 54 51.2	+0.2
LUWI	Luwuk	2.21	59	P	Pn	13 54 51.8	-0.9
LUWI				S	Sg	13 55 31.6	+4.7
KDI	Kendari	2.46	135	P	Pn	13 54 56.3	+0.2
MRSI	Marisa	2.86	22	P	Pn	13 55 02.6	+0.9

KRSC 29 14:03:22.0±1.4, 48°88N×156°34E, h8km±27km, ML3.6, East of Kuril Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SKR	Severo-Kuril's	1.81	356	*e*P	Pn	14 03 54.1	+0.6
SKR				*e*S	Sb	14 04 18.4	+0.2
PAU	Pauzhetka	2.61	7	*e*P	Pn	14 04 06.5	+2.1
PAU				*e*S	Sb	14 04 39.2	-1.9
RUS	Russkaya	3.82	20	*e*P	Pn	14 04 23.6	+2.6
UGLR	Uglovaya	4.61	19	*e*P	Pn	14 04 36.5	+4.5
AVH	Avacha	4.64	18	*e*P	Pn	14 04 37.4	+4.9
AVH				*e*S	Sn	14 05 31.0	+4.4
SMAR	Somma	4.66	19	*e*P	Pn	14 04 36.6	+3.8
KRER	Koryakskii	4.68	18	*e*P	Pn	14 04 37.6	+4.5
SDLR	Sedlovina	4.69	19	*e*P	Pn	14 04 37.1	+4.0
KRX	Arik	4.71	17	P	Pn	14 04 38.7	+5.2
GNL	Ganaly	4.92	11	*e*P	Pn	14 04 40.1	+3.7

*IDC **29** 14:17:54.0±9.3, 14°03N×91°34W, h104km±58km, mb3.1/5, mb1 3.5/7, mb1mx3.3/42, mbtmp3.5/7, MS3.0/3, Ms1 3.0/3, ms1mx2.8/12, Error ellipse: s-maj=89.0km s-min=48.7km az=158.0*
*NEIC **29** 14:17:54.3, 14°15N×92°14W, h15km, MD4.1(MEX), After MEX.*
*MEX **29** 14:17:54.3±0.9, 14°15N×92°14W, h15km, MD4.1*

ISC 29 14:17:51.7±2.3, 14°29N±0°09×91°97W±0°07, h23km±16km, n33, σ1§05/44, mb3.4/5, MS2.9/3, Guatemala

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THIG		0.68	335	*e*P	Pn	14 18 06.0	0.0
THIG				*i* S	Sn	14 18 15.5	-0.3
THIG		0.68	335	*e*P	Pn	14 18 06.0	0.0
THIG				*i* S	Sn	14 18 15.5	-0.3
PCIG		1.85	320	*e*P	Pn	14 18 22.5	+0.4
PCIG				*i* S	Sn	14 18 44.7	-0.1
PCIG		1.85	320	*e*P	Pn	14 18 22.5	+0.4
PCIG				*i* S	Sn	14 18 44.7	-0.1
CCIG	Comitan	1.99	355	*e*P	Pb	14 18 27.1	-0.2
CCIG				*e*S	Sb	14 18 51.5	-0.3
CCIG	Comitan	1.99	355	*e*P	Pb	14 18 27.1	-0.2
CCIG				*e*S	Sb	14 18 51.5	-0.3
CUS1	Cusmapa	2.00	101	*e*P	Pn	14 18 23.5	-0.7
CUS1				*e*S	Sn	14 18 48.6	+0.1
RBDL	Robledal	2.22	94	*e*P	Pn	14 18 27.5	+0.2
RTR	El Retiro	2.29	100	*e*P	Pn	14 18 29.1	+0.8
MONT	Ecomontaæa	2.29	101	*e*P	Pn	14 18 29.0	+0.6
MONT				*e*S	Sn	14 18 57.1	+1.0
SBLS	San Blas	2.32	101	*i* P	Pn	14 18 29.3	+0.5
SBLS				*e*S	Sn	14 18 56.8	0.0
SNJE	San Jose	2.33	100	*e*P	Pn	14 18 29.6	+0.7
COLS	Colinas	2.67	103	*e*P	Pn	14 18 35.2	+1.8
BOQS	Boqueron	2.67	102	*e*P	Pn	14 18 34.0	+0.4
BOQS				*e*S	Sn	14 19 05.0	-0.3
TGIG		2.71	336	*e*P	Pn	14 18 35.1	+1.1
TGIG				*e*S	Sn	14 19 08.2	+2.0
TGIG		2.71	336	*e*P	Pn	14 18 35.1	+1.1
TGIG				*e*S	Sn	14 19 08.2	+2.0
SNET	Serv Nac Est T	2.73	102	*e*P	Pn	14 18 34.6	+0.4
SNET				*e*S	Sn	14 19 05.5	-1.0
SNET				AML	AML	14 19 09.8	
	comp=Z,854nm,0.3s						
LFU	La Fuente	2.82	101	*e*P	Pn	14 18 35.8	+0.2
LBRS	Las Brisas	2.89	101	*e*P	Pn	14 18 36.6	+0.1
LFRS	El Faro	2.90	103	*i* P	Pn	14 18 37.3	+0.7
LFRS				*e*S	Sn	14 19 10.1	-0.9
PACA	Pacayal	3.63	103	*e*P	Pn	14 18 49.2	+2.4
LCY	Lacayo	3.67	103	*e*P	Pn	14 18 50.0	+2.7
VSM	San Miguel	3.69	103	*e*P	Pn	14 18 50.5	+2.8
CNCH	Conchagua	4.14	104	*e*P	Pn	14 18 53.6	-0.1
TEIG	Tepich	6.88	30	P	Pn	14 19 31.9	+0.7
	comp=Z,17nm,0.3s,baz=90,slow=24,SNR=127						
TEIG				S	Sn	14 20 48.3	-0.5
	baz=203,slow=23,SNR=4.2						
TXAR	Lajitas Array	18.47	326	P	Pn	14 22 06.8	+0.3
	comp=Z,0.0nm,0.3s,baz=149,slow=12,SNR=5.7						
TKL	Tuckaleechee C	22.52	18	LR	LR	14 32 29.7	
	comp=Z,46nm,20.1s,baz=248,slow=39						
ANMO	Albuquerque	24.36	330	P	P	14 23 07.5	-0.9
	comp=Z,0.4nm,0.4s,baz=169,slow=16,SNR=3.9						
ANMO				LR	LR	14 34 31.5	
	comp=Z,27nm,20.5s,baz=104,slow=40						
SJG	San Juan	25.07	78	LR	LR	14 33 25.7	
	comp=Z,38nm,18.4s,baz=248,slow=38						
PDAR	Pinedale Array	32.17	335	P	P	14 24 17.9	-0.2
	comp=Z,0.1nm,0.4s,baz=142,slow=8.9,SNR=2.4						
NVAR	Mina Array Bea	33.47	321	P	P	14 24 28.6	-0.9
	comp=Z,0.7nm,0.6s,baz=140,slow=7.1,SNR=4.4						
YKA	Yellowknife Ar	50.75	347	P	P	14 26 45.1	-4.6
	comp=Z,0.6nm,0.5s,baz=150,slow=7.4,SNR=13						

MAZI	**Mazidag**	**1.69**	**273**	*e*Pn	**Pn**	**14 30 42.4**	**0.0**
VMUR	**Van-Muradiye**	**1.80**	**26**	P	**Pb**	**14 30 45.1**	**-0.8**
VMUR	**Van-Muradiye**	**1.80**	**26**	*i* P	**Pb**	**14 30 45.1**	**-0.8**
VMUR				*i* S	**Sg**	**14 31 12.2**	**+1.7**
EKAR	**Karacoban**	**1.92**	**348**	P	**Pg**	**14 30 48.7**	**-0.7**
EKAR	**Karacoban**	**1.92**	**348**	*i* P	**Pg**	**14 30 48.7**	**-0.7**
EKAR				*i* S	**Sg**	**14 31 16.8**	**+2.5**
DIY	**Diyarbakir**	**1.92**	**286**	*e*Pn	**Pb**	**14 30 47.1**	**-0.9**
BNGL	**BIÑGOL**	**1.93**	**325**	*i* P	**Pn**	**14 30 46.7**	**+0.8**
BNGL				*i* S	**Sg**	**14 31 13.9**	**-0.7**
DYBB	**Diyarbakir**	**2.01**	**287**	*e*PN	**Pn**	**14 30 47.1**	**+0.2**
BNGB	**Bing¶ll**	**2.19**	**318**	*e*PN	**Pn**	**14 30 49.4**	**0.0**
BGOL	**Bingol**	**2.19**	**318**	P	**Pn**	**14 30 50.0**	**+0.5**
BGOL	**Bingol**	**2.19**	**318**	*i* P	**Pn**	**14 30 50.0**	**+0.5**
BINT	**Bingol**	**2.22**	**313**	*e*Pn	**Pn**	**14 30 49.4**	**-0.4**
AGRB	**Hanur-Agry**	**2.22**	**9**	*e*PN	**Pn**	**14 30 50.1**	**+0.2**
AGRB	**Hanur-Agry**	**2.22**	**9**	*e*Pn	**Pn**	**14 30 50.1**	**+0.2**
ISHB	**Shabestar**	**2.58**	**69**	*e*Pn	**Pb**	**14 30 57.1**	**-2.2**
ISHB				*e*AMB	AMB	14 31 08.2	
	comp=Z,858nm,0.2s						
EZM	**Erzurum**	**2.69**	**340**	*e*PN	**Pn**	**14 30 56.4**	**-0.1**
SVRC	**Sivrice-ELAZID**	**2.76**	**292**	*e*PN	**Pn**	**14 30 56.9**	**-0.4**
SVRC	**Sivrice-ELAZID**	**2.76**	**292**	*e*Pn	**Pn**	**14 30 56.9**	**-0.4**
PTK	**Pertek**	**2.92**	**302**	*e*PN	**Pn**	**14 30 59.5**	**0.0**
PTK	**Pertek**	**2.92**	**302**	*e*Pn	**Pn**	**14 30 59.5**	**0.0**
IBST	**Bostanabad**	**3.46**	**83**	*e*AMB	AMB	14 31 20.9	
	comp=Z,351nm,0.2s						
IBST				*e*Sg	**Sg**	**14 32 00.6**	**-3.1**
IHRS	**Heris**	**3.67**	**74**	*e*Pn	**Pn**	**14 31 12.1**	**+2.2**
IHRS				*e*AMB	AMB	14 31 27.9	
	comp=Z,315nm,0.2s						
IHRS	**Heris**	**3.67**	**74**	*e*Pn	**Pn**	**14 31 12.1**	**+2.2**
IDHR	**Dehrash**	**4.09**	**130**	*e*Pn	**Pn**	**14 31 16.5**	**+0.9**
IDHR				*e*AMB	AMB	14 31 30.3	
	comp=Z,1μm,0.2s						
IDHR	**Dehrash**	**4.09**	**130**	*e*Pn	**Pn**	**14 31 16.5**	**+0.9**
ILIN	**Lien**	**4.32**	**123**	*e*Pn	**Pn**	**14 31 20.5**	**+1.6**
ILIN				*e*AMB	AMB	14 31 34.1	
	comp=Z,561nm,0.2s						
ILIN	**Lien**	**4.32**	**123**	*e*Pn	**Pn**	**14 31 20.5**	**+1.6**
IGHG	**Ghaleghazi**	**4.45**	**132**	*e*Pn	**Pn**	**14 31 20.9**	**+0.3**
IGHG				*e*AMB	AMB	14 31 41.4	
	comp=Z,726nm,0.4s						
IGHG	**Ghaleghazi**	**4.45**	**132**	*e*Pn	**Pn**	**14 31 20.9**	**+0.3**
IVIS	**Veis**	**4.49**	**128**	*e*AMB	AMB	14 31 40.7	
	comp=Z,401nm,0.3s						

DJA ***29*** *14:34:12.7±0.4, 10°.5±4°×10°.8E±°, h10km, M4.3/14, mb4.5/1, MLv4.3/14*
ISCJB ***29*** *14:34:13.4±0.6, 9°.87S±0°.05×107°.81E±0°.04, h22km, mb4.0/11, MS2.7/1, Error ellipse: s-maj=8.0km s-min=5.4km az=12.9*
NEIC ***29*** *14:34:13.4±0.5, 9°.93S×107°.75E, h10km, mb4.2/5, Error ellipse: s-maj=12.4km s-min=7.5km az=43.0*
IDC ***29*** *14:34:13.3±2.9, 9°.75S×107°.95E, h0km, mb4.0/6, mb1 4.1/6, mb1mx3.8/26, mbtmp4.0/6, MS2.8/1, Ms1 3.0/1, ms1mx2.4/30, Error ellipse: s-maj=137.3km s-min=17.9km az=52.0*

ISC 29 14:34:16.3±0.9, 9°.80S±0°.08×107°.84E±0°.06, h22km, n29, σ1°.07/31, mb4.1/11, South of Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMJI	**Cimerak**	**2.10**	**17**	P	**Pn**	**14 34 49.5**	**-0.6**
CISI	**Cisompet, Garu**	**2.23**	**359**	P	**Pn**	**14 34 51.6**	**-0.5**
CISI	**Cisompet, Garu**	**2.23**	**359**	*e*Pn	**Pn**	**14 34 50.8**	**-1.3**
XMIS	**Christmas Isla**	**2.25**	**252**	*e*Pn	Pn	14 34 48.0	-4.4
CNJI	**Cibinong**	**2.58**	**344**	P	**Pn**	**14 34 55.5**	**-1.2**
LEM	**Lembang**	**2.96**	**356**	Pn	**Pb**	**14 35 08.9**	**+0.3**
	84nm,0.3s,baz=222,slow=3.4,SNR=35						
LEM				Sn	**Sb**	**14 35 46.0**	**+1.6**
	26nm,0.3s,baz=333,slow=22,SNR=7.6						
LEM	**Lembang**	**2.96**	**356**	P	**Pb**	**14 35 09.2**	**+0.6**
SKJI	**Sukabumi**	**3.06**	**335**	P	**Pn**	**14 35 04.1**	**+0.8**
UGM	**Wanagama**	**3.25**	**55**	P	**Pn**	**14 35 05.4**	**-0.7**
UGM				S	**Sn**	**14 35 43.4**	**-0.7**
PCJI	**Pacitan**	**3.67**	**64**	P	**Pn**	**14 35 10.4**	**-1.3**
PCJI				S	**Sn**	**14 35 54.4**	**+0.1**
CGJI	**Cibinong**	**3.81**	**326**	P	**Pn**	**14 35 13.2**	**-0.6**
CGJI				S	**Sn**	**14 35 56.4**	**-1.6**
PWJI	**Pagerwojo**	**4.30**	**66**	P	**Pn**	**14 35 19.7**	**-0.7**
PWJI				S	**Sn**	**14 36 07.4**	**-2.6**
NGJI	**Ngawi**	**4.32**	**56**	P	**Pn**	**14 35 21.9**	**+1.1**
GMJI	**Gumukmas**	**5.74**	**75**	P	**Pn**	**14 35 42.6**	**+2.3**
JAGI	**Jajag, Banyuwa**	**6.37**	**79**	Pn	**Pn**	**14 35 47.8**	**-1.2**
	40nm,0.5s						
MNAI	**Manna**	**7.26**	**318**	*e*Pn	Pn	14 35 59.6	-1.6
MBWA	**Marble Bar**	**16.08**	**136**	Pn	Pn	14 37 57.8	-3.3
WRA	**Warramunga Arr**	**27.48**	**115**	P	**P**	**14 40 00.5**	**-0.8**
	1.2nm,0.9s,baz=285,slow=11,SNR=9.5						
ASAR	**Alice Springs**	**28.45**	**122**	P	**P**	**14 40 09.6**	**-0.3**
	1.1nm,0.7s,baz=298,slow=8.5,SNR=16						
CMAR	**Chiang Mai Arr**	**29.42**	**343**	P	**P**	**14 40 18.6**	**+0.1**
	1.2nm,0.8s,baz=179,slow=8.2,SNR=9.6						
CMAR				LR	LR	14 52 13.3	
	comp=Z,15nm,18.1s,baz=100,slow=37						
CHTO	**Chiang Mai**	**29.76**	**343**	*e*P	**P**	**14 40 21.5**	**+0.1**
	3.1nm,1.0s						
STKA	**Stephens Creek**	**38.18**	**130**	P	**P**	**14 41 34.5**	**0.0**
	4.0nm,0.9s,baz=308,slow=8.8,SNR=8.8						
LSA	**Lhasa**	**42.44**	**338**	*e*P	**P**	**14 42 10.2**	**0.0**
	6.5nm,1.0s						
SONM	**Songino Array**	**57.40**	**359**	P	**P**	**14 44 03.7**	**+0.5**
	1.1nm,0.7s,baz=175,slow=7.8,SNR=4.9						
ULN	**Ulaanbaatar**	**57.42**	**359**	*e*P	**P**	**14 44 03.2**	**-0.2**
	1.3nm,0.6s						
TKM2	**Tokmak 2**	**60.16**	**333**	*e*P	**P**	**14 44 22.2**	**-0.5**
	3.9nm,0.8s						
MKAR	**Makanchi Array**	**60.79**	**340**	P	**P**	**14 44 26.6**	**0.0**
	1.8nm,0.7s,baz=151,slow=8.1,SNR=14						
ABKAR	**Akbulak array**	**72.23**	**329**	*e*P	**P**	**14 45 39.7**	**0.0**
	1.2nm,0.5s						
TXAR	**Lajitas Array**	**144.71**	**52**	PKP	**PKPab**	**14 53 52.5**	**+1.6**
	0.2nm,0.7s,baz=298,slow=1.9,SNR=2.5						

ISK 29 14:59:57.5, 39°.62N×39°.66E, h5km, MD2.3, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ERZN	**Erzincan**	**0.06**	**129**	*e*PG	Pg	14 59 59.2	+0.1
ERZN				*e*SG	Sg	15 00 00.5	+0.4
YEDI	**Yedisu-Bingol**	**0.71**	**105**	*e*PG	Pg	15 00 11.7	+0.6
PTK	**Pertek**	**0.76**	**196**	*e*PG	Pg	15 00 12.7	+0.6
PTK				*e*SG	Sb	15 00 23.7	-0.3

IDC ***29*** *15:00:45.5±2.5, 16°.50S×174°.47W, h132km±23km, mb3.7/11, mb1 4.0/12, mb1mx3.8/24, mbtmp4.1/12, Error ellipse: s-maj=35.0km s-min=13.6km az=139.0*
ISCJB ***29*** *15:00:51.4±0.7, 16°.6S±0°.2×174°.6W±0°.2, h200km, mb3.7/11, Error ellipse: s-maj=31.3km s-min=14.8km az=44.7*

ISC 29 15:00:52.7±0.9, 16°.6S±0°.2×174°.5W±0°.2, h200km, n16, σ0°.78/15, mb3.8/11, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**3.75**	**44**	P	Pn	15 01 41.3	-10
	56nm,0.3s,baz=206,slow=2.6,SNR=82						
AFI				S	Sn	15 02 19.8	-18
	414nm,0.3s,baz=92,slow=19,SNR=30						
URZ	**Urewera**	**22.78**	**197**	P	**P**	**15 05 37.5**	**-0.5**
	3.5nm,0.3s,baz=265,slow=1.9,SNR=7.2						
STKA	**Stephens Creek**	**42.54**	**241**	P	**P**	**15 08 29.0**	**+0.1**
	3.2nm,0.8s,baz=97,slow=10,SNR=11						
WRA	**Warramunga Arr**	**48.58**	**258**	P	**P**	**15 09 15.5**	**-0.8**
	0.6nm,0.3s,baz=96,slow=6.7,SNR=33						
ASAR	**Alice Springs**	**48.77**	**253**	P	**P**	**15 09 17.4**	**-0.4**
	6.9nm,0.7s,baz=88,slow=8.3,SNR=116						
PETK	**Petropavlovsk-**	**73.49**	**343**	P	**P**	**15 12 02.4**	**-0.8**
	2.0nm,0.6s,baz=128,slow=9.0,SNR=6.2						
NVAR	**Mina Array Bea**	**75.92**	**42**	P	**P**	**15 12 17.6**	**-0.1**
	0.8nm,0.6s,baz=232,slow=7.6,SNR=3.9						
TXAR	**Lajitas Array**	**82.14**	**56**	P	**P**	**15 12 52.1**	**+0.6**
	0.7nm,1.1s,baz=232,slow=4.4,SNR=3.7						
ILAR	**Eielson Array**	**83.85**	**12**	P	**P**	**15 12 58.3**	**-1.0**
	0.5nm,0.6s,baz=227,slow=5.7,SNR=24						
PDAR	**Pinedale Array**	**83.86**	**42**	P	**P**	**15 12 59.8**	**-0.4**
	0.9nm,0.5s,baz=209,slow=3.8,SNR=12						
YKA	**Yellowknife Ar**	**91.63**	**24**	P	**P**	**15 13 36.9**	**+0.4**
	0.3nm,0.8s,baz=226,slow=3.8,SNR=5.0						
CMAR	**Chiang Mai Arr**	**92.03**	**289**	P	**P**	**15 13 41.2**	**+1.7**
	0.9nm,0.8s,baz=87,slow=3.1,SNR=5.7						
DPC	**Dobruska-Polom**	**145.26**	**348**	*e*P	**PKPab**	**15 20 07.6**	**+0.6**
BRTR	**Keskin Array B**	**146.44**	**319**	PKPbc	**PKPbc**	**15 20 11.1**	**+0.4**
	1.5nm,0.7s,baz=110,slow=2.0,SNR=11						
KHC	**Kasperske Hory**	**146.93**	**350**	*e*P	**PKPbc**	**15 20 11.1**	**-0.5**
GERES	**GERESS Array B**	**147.19**	**350**	PKPbc	**PKPbc**	**15 20 12.6**	**+0.2**
	0.6nm,0.8s,baz=340,slow=7.3,SNR=6.3						

ISK ***29*** *15:00:55.8, 40°.88N×34°.01E, h16km, MD2.8*
ISCJB ***29*** *15:00:56.3±0.6, 40°.86N±0°.04×34°.03E±0°.05, h7km±9km, Error ellipse: s-maj=8.1km s-min=4.7km az=40.2*
DDA ***29*** *15:00:56.8, 40°.89N×33°.93E, h10km, Ml2.8*
CSEM ***29*** *15:00:56.3±0.3, 40°.87N×34°.01E, h10km, MD2.8, Error ellipse: s-maj=8.0km s-min=5.9km az=118.0*

ISC 29 15:00:56.8±0.9, 40°.88N±0°.03×33°.95E±0°.03, h15km±8km, n28, σ1°.24/39, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TOS	**Tosya**	**0.17**	**21**	*e*PG	**Pg**	**15 01 00.1**	**-0.9**
TOS	**Tosya**	**0.17**	**21**	*e*Pg	**Pg**	**15 01 00.1**	**-0.9**
ILGA	**Ilgaz**	**0.24**	**315**	P	**Pg**	**15 01 01.9**	**-0.3**
ILGA				S	**Sb**	**15 01 07.5**	**+0.2**
ILGA	**Ilgaz**	**0.24**	**315**	*i* P	**Pg**	**15 01 01.9**	**-0.3**
ILGA				*i* S	**Sb**	**15 01 07.5**	**+0.2**
CANT	**Cankiri**	**0.37**	**222**	*e*PG	**Pg**	**15 01 04.2**	**-0.2**
CANT				*e*SG	**Sb**	**15 01 10.8**	**+0.1**
ELDT	**Eldivan**	**0.56**	**225**	*i* P	**Pg**	**15 01 07.4**	**-0.4**
ELDT				*i* S	**Sb**	**15 01 16.4**	**+0.2**
BYBT	**Boyabat**	**0.85**	**46**	*e*PG	**Pb**	**15 01 12.2**	**-1.1**
BYBT	**Boyabat**	**0.85**	**46**	*e*Pg	**Pb**	**15 01 12.2**	**-1.1**
CORM	**Corum**	**0.88**	**143**	*e*PG	**Pb**	**15 01 12.7**	**-1.0**
CORM	**Corum**	**0.88**	**143**	*e*Pg	**Pb**	**15 01 12.7**	**-1.1**
BOYT	**Boyabat**	**0.90**	**53**	P	**Pb**	**15 01 13.5**	**-0.7**
BOYT				S	**Sn**	**15 01 28.3**	**+0.4**
BOYT	**Boyabat**	**0.90**	**53**	*i* P	**Pb**	**15 01 13.5**	**-0.7**
BOYT				*i* S	**Sn**	**15 01 28.3**	**+0.4**
COAL	**Corum-Alaca**	**1.01**	**128**	P	**Pb**	**15 01 15.0**	**-1.1**
COAL	**Corum-Alaca**	**1.01**	**128**	*i* P	**Pb**	**15 01 15.0**	**-1.1**
COAL				*i* S	**Sn**	**15 01 32.7**	**+2.1**
BZK	**Bozkurt**	**1.08**	**2**	*e*PG	**Pb**	**15 01 17.1**	**-0.1**
BZK	**Bozkurt**	**1.08**	**2**	*e*Pg	**Pb**	**15 01 17.1**	**-0.1**
CDAG	**Cicekdag**	**1.30**	**165**	P	**Pn**	**15 01 18.1**	**-2.4**
CDAG	**Cicekdag**	**1.30**	**165**	*i* P	**Pn**	**15 01 18.1**	**-2.4**
CDAG				*i* S	**Sg**	**15 01 41.4**	**+2.7**
HAVZ	**Havza**	**1.36**	**81**	P	**Pg**	**15 01 22.8**	**-0.1**
HAVZ	**Havza**	**1.36**	**81**	*i* P	**Pg**	**15 01 22.8**	**-0.1**
HAVZ				*i* S	**Sg**	**15 01 44.4**	**+3.9**
KAMT	**Kaman**	**1.52**	**187**	*e*PN	**Pn**	**15 01 23.0**	**-0.6**
KAMT	**Kaman**	**1.52**	**187**	*e*Pn	**Pn**	**15 01 23.0**	**-0.6**
AFSR	**Af¨ar-Bala (A**	**1.58**	**205**	*e*PN	**Pn**	**15 01 24.1**	**-0.3**
AFSR	**Af¨ar-Bala (A**	**1.58**	**205**	*e*Pn	**Pn**	**15 01 24.1**	**-0.3**
KVT	**Kavak**	**1.60**	**82**	*e*PN	**Pn**	**15 01 23.6**	**-1.1**
KVT	**Kavak**	**1.60**	**82**	*e*Pn	**Pn**	**15 01 23.6**	**-1.1**
KKUL	**Konya-Kulu**	**1.88**	**205**	P	**Pb**	**15 01 30.7**	**-0.3**
KKUL				S	**Sg**	**15 01 58.0**	**+0.7**
KKUL	**Konya-Kulu**	**1.88**	**205**	*i* P	**Pb**	**15 01 30.7**	**-0.3**
KKUL				*i* S	**Sg**	**15 01 58.0**	**+0.7**

ISK ***29*** *15:01:12.7, 39°.13N×29°.00E, h7km, MD2.1*
ISCJB ***29*** *15:01:13.5±0.6, 39°.10N±0°.05×29°.05E±0°.05, h12km±7km, Error ellipse: s-maj=9.5km s-min=4.8km az=142.3*
CSEM ***29*** *15:01:13.5±0.0, 39°.11N×29°.04E, h10km, ML2.7, Error ellipse: s-maj=1.3km s-min=0.6km az=132.0*
DDA ***29*** *15:01:13.7, 39°.09N×29°.05E, h7km, Ml2.7*

ISC 29 15:01:13.3±1.1, 39°.11N±0°.05×29°.04E±0°.04, h18km±5km, n12, σ0°.13/22, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**254**	P	**Pb**	**15 01 19.5**	**+0.1**
DEMI				S	**Sg**	**15 01 23.1**	**-0.2**
DEMI	**Demirci**	**0.26**	**254**	*i* P	**Pb**	**15 01 19.5**	**+0.1**
DEMI				*i* S	**Sg**	**15 01 23.1**	**-0.2**
GDZ	**Gediz**	**0.34**	**94**	P	**Pg**	**15 01 20.7**	**+0.1**
GDZ				S	**Sg**	**15 01 25.6**	**0.0**
GDZ	**Gediz**	**0.34**	**94**	*i* P	**Pg**	**15 01 20.7**	**+0.1**
GDZ				*i* S	**Sg**	**15 01 25.6**	**0.0**
TVSB	**Tavsanli**	**0.47**	**44**	*e*PG	**Pb**	**15 01 23.0**	**-0.1**
TVSB				*e*SG	**Sg**	**15 01 29.2**	**0.0**
TVSB	**Tavsanli**	**0.47**	**44**	*e*Pg	**Pb**	**15 01 23.0**	**-0.1**
TVSB				*e*Sg	**Sg**	**15 01 29.2**	**0.0**
KULA	**Kula-Manisa**	**0.67**	**207**	*e*PG	**Pg**	**15 01 26.6**	**+0.1**
KULA				*e*SG	**Sg**	**15 01 35.3**	**-0.1**
KULA	**Kula-Manisa**	**0.67**	**207**	*e*Pg	**Pg**	**15 01 26.6**	**+0.1**
KULA				*e*Sg	**Sg**	**15 01 35.3**	**-0.1**
MANT	**Manisa**	**0.73**	**211**	P	**Pg**	**15 01 27.8**	**+0.2**
MANT				S	**Sb**	**15 01 37.1**	**-0.2**
MANT	**Manisa**	**0.73**	**211**	*i* P	**Pg**	**15 01 27.8**	**+0.2**
MANT				*i* S	**Sb**	**15 01 37.1**	**-0.2**
ARMT	**Armutlu**	**1.46**	**355**	*e*PN	**Pb**	**15 01 39.9**	**+0.1**
ARMT	**Armutlu**	**1.46**	**355**	*e*Pn	**Pb**	**15 01 39.9**	**+0.1**

ISK ***29*** *15:03:47.2, 39°.11N×29°.22E, h10km, MD2.7*
ISCJB ***29*** *15:03:48.1±0.6, 39°.16N±0°.04×29°.11E±0°.04, h9km±6km, Error ellipse: s-maj=6.8km s-min=5.0km az=140.6*
CSEM ***29*** *15:03:48.1±0.1, 39°.16N×29°.12E, h8km, ML2.6, Error ellipse: s-maj=3.9km s-min=2.6km az=119.0*
DDA ***29*** *15:03:48.5, 39°.12N×29°.12E, h7km, Ml2.6*

ISC 29 15:03:47.7±1.0, 39°.17N±0°.03×29°.13E±0°.03, h18km±5km, n18, σ0°.30/28, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.29**	**106**	P	**Pb**	**15 03 54.4**	**0.0**
GDZ				S	**Sg**	**15 03 58.8**	**+0.3**
GDZ	**Gediz**	**0.29**	**106**	*i* P	**Pb**	**15 03 54.4**	**0.0**
GDZ				*i* S	**Sg**	**15 03 58.8**	**+0.3**
DEMI	**Demirci**	**0.34**	**249**	P	**Pb**	**15 03 55.3**	**-0.1**
DEMI				S	**Sg**	**15 03 59.8**	**-0.2**
DEMI	**Demirci**	**0.34**	**249**	*i* P	**Pb**	**15 03 55.3**	**-0.1**
DEMI				*i* S	**Sg**	**15 03 59.8**	**-0.2**
TVSB	**Tavsanli**	**0.38**	**43**	*e*PG	**Pg**	**15 03 55.4**	**-0.4**
TVSB				*e*SG	**Sg**	**15 04 01.4**	**+0.2**
TVSB	**Tavsanli**	**0.38**	**43**	*e*Pg	**Pg**	**15 03 55.4**	**-0.4**
TVSB				*e*Sg	**Sg**	**15 04 01.4**	**+0.2**
KULA	**Kula-Manisa**	**0.75**	**209**	*e*PG	**Pb**	**15 04 01.9**	**-0.3**
KULA	**Kula-Manisa**	**0.75**	**209**	*e*Pg	**Pb**	**15 04 01.9**	**-0.3**
MANT	**Manisa**	**0.81**	**214**	P	**Pg**	**15 04 03.7**	**+0.1**
MANT				S	**Sb**	**15 04 13.8**	**-0.2**
MANT	**Manisa**	**0.81**	**214**	*i* P	**Pg**	**15 04 03.7**	**+0.1**
MANT				*i* S	**Sb**	**15 04 13.8**	**-0.2**
KHAL	**Karahalli**	**0.84**	**160**	P	**Pn**	**15 04 04.9**	**+0.1**
KHAL				S	**Sg**	**15 04 15.7**	**+0.3**
KHAL	**Karahalli**	**0.84**	**160**	*i* P	**Pn**	**15 04 05.0**	**+0.1**
KHAL				*i* S	**Sg**	**15 04 15.7**	**+0.3**
CAVI	**Cavuskoy**	**1.17**	**28**	*e*PN	**Pg**	**15 04 10.4**	**0.0**
CAVI	**Cavuskoy**	**1.17**	**28**	*e*Pn	**Pg**	**15 04 10.4**	**0.0**
KCTX	**Karacabey (Bur**	**1.25**	**332**	*e*PN	**Pg**	**15 04 12.5**	**+0.7**
KCTX	**Karacabey (Bur**	**1.25**	**332**	*e*Pn	**Pg**	**15 04 12.5**	**+0.7**
ARMT	**Armutlu**	**1.41**	**352**	*e*PN	**Pg**	**15 04 14.7**	**-0.3**
ARMT	**Armutlu**	**1.41**	**352**	*e*Pn	**Pg**	**15 04 14.7**	**-0.3**

ISCJB ***29*** *15:45:05.9±0.5, 39°.14N±0°.03×29°.01E±0°.03, h6km±5km, Error ellipse: s-maj=4.9km s-min=4.0km az=163.4*
ISK ***29*** *15:45:05.5, 39°.15N×29°.01E, h8km, MD2.7*
DDA ***29*** *15:45:06.1, 39°.11N×29°.00E, h7km, Ml2.8*
CSEM ***29*** *15:45:06.1±0.1, 39°.13N×29°.01E, h10km, ML2.8, Error ellipse: s-maj=1.6km s-min=1.6km az=147.0*

ISC 29 15:45:05.7±0.9, 39°.13N±0°.02×29°.03E±0°.03, h14km±9km, n32, σ0°.20/46, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**251**	P	**Pg**	**15 45 11.5**	**+0.2**
DEMI				S	**Sg**	**15 45 14.9**	**-0.2**
DEMI	**Demirci**	**0.26**	**251**	*i* P	**Pg**	**15 45 11.5**	**+0.2**
DEMI				*i* S	**Sg**	**15 45 14.9**	**-0.2**
GDZ	**Gediz**	**0.35**	**96**	P	**Pb**	**15 45 13.7**	**-0.1**
GDZ				S	**Sb**	**15 45 19.2**	**-0.1**
GDZ	**Gediz**	**0.35**	**96**	*i* P	**Pb**	**15 45 13.7**	**-0.1**
GDZ				*i* S	**Sb**	**15 45 19.2**	**-0.1**
TVSB	**Tavsanli**	**0.46**	**46**	*e*PG	**Pb**	**15 45 15.6**	**-0.2**
TVSB				*e*SG	**Sg**	**15 45 21.2**	**+0.1**
TVSB	**Tavsanli**	**0.46**	**46**	*e*Pg	**Pb**	**15 45 15.6**	**-0.2**
TVSB				*e*Sg	**Sg**	**15 45 21.3**	**+0.1**
KULA	**Kula-Manisa**	**0.68**	**206**	*e*PG	**Pg**	**15 45 18.8**	**-0.1**
KULA	**Kula-Manisa**	**0.68**	**206**	*e*Pg	**Pg**	**15 45 18.8**	**-0.1**
MANT	**Manisa**	**0.74**	**210**	P	**Pb**	**15 45 20.4**	**-0.1**
MANT				S	**Sg**	**15 45 29.7**	**-0.1**
MANT	**Manisa**	**0.74**	**210**	*i* P	**Pb**	**15 45 20.4**	**-0.1**
MANT				*i* S	**Sg**	**15 45 29.7**	**-0.1**
KHAL	**Karahalli**	**0.84**	**154**	P	**Pn**	**15 45 23.3**	**+0.1**
KHAL				S	**Sb**	**15 45 33.8**	**+0.5**
KHAL	**Karahalli**	**0.84**	**154**	*i* P	**Pn**	**15 45 23.3**	**+0.1**
KHAL				*i* S	**Sb**	**15 45 33.8**	**+0.5**
KHL	**Karahalli**	**0.89**	**154**	*e*PG	**Pn**	**15 45 23.9**	**0.0**
KHL	**Karahalli**	**0.89**	**154**	*e*Pg	**Pn**	**15 45 23.9**	**0.0**
AKHS	**Akhisar**	**0.98**	**256**	P	**Pn**	**15 45 25.0**	**-0.1**
AKHS				S	**Sg**	**15 45 37.6**	**+0.1**
AKHS	**Akhisar**	**0.98**	**256**	*i* P	**Pn**	**15 45 25.0**	**-0.1**
AKHS				*i* S	**Sg**	**15 45 37.6**	**+0.1**
AKS	**Akhisar**	**0.98**	**256**	*e*PG	**Pn**	**15 45 25.0**	**-0.2**
AKS	**Akhisar**	**0.98**	**256**	*e*Pg	**Pn**	**15 45 25.0**	**-0.2**
BALB	**Balikesir**	**1.03**	**300**	*e*PG	**Pb**	**15 45 25.2**	**-0.1**
BALB				*e*SG	**Sg**	**15 45 39.4**	**+0.3**
BALB	**Balikesir**	**1.03**	**300**	*e*Pg	**Pb**	**15 45 25.2**	**-0.1**
BALB				*e*Sg	**Sg**	**15 45 39.4**	**+0.3**
CAVI	**Cavuskoy**	**1.24**	**30**	*e*PN	**Pg**	**15 45 29.6**	**0.0**
CAVI	**Cavuskoy**	**1.24**	**30**	*e*Pn	**Pg**	**15 45 29.6**	**0.0**
KCTX	**Karacabey (Bur**	**1.25**	**336**	*e*PN	**Pg**	**15 45 29.5**	**-0.3**
KCTX	**Karacabey (Bur**	**1.25**	**336**	*e*Pn	**Pg**	**15 45 29.5**	**-0.3**
BALY	**Balya**	**1.25**	**300**	P	**Pg**	**15 45 29.8**	**-0.1**
BALY	**Balya**	**1.25**	**300**	*i* P	**Pg**	**15 45 29.8**	**-0.1**
IZI	**Iznik**	**1.25**	**16**	*e*PN	**Pb**	**15 45 29.5**	**+0.3**
IZI	**Iznik**	**1.25**	**16**	*e*Pn	**Pb**	**15 45 29.5**	**+0.3**
GONE	**Gonen-Balikesi**	**1.39**	**312**	*e*PN	**Pb**	**15 45 31.4**	**-0.1**
GONE	**Gonen-Balikesi**	**1.39**	**312**	*e*Pn	**Pb**	**15 45 31.4**	**-0.1**
ARMT	**Armutlu**	**1.44**	**355**	*e*PN	**Pb**	**15 45 32.5**	**+0.1**
ARMT	**Armutlu**	**1.44**	**355**	*e*Pn	**Pb**	**15 45 32.5**	**+0.1**

ISCJB ***29*** *15:47:09.5±0.6, 39°.11N±0°.04×29°.02E±0°.04, h4km±9km, Error ellipse: s-maj=7.1km s-min=4.6km az=152.6*
DDA ***29*** *15:47:09.4, 39°.10N×29°.02E, h7km, Ml2.6*
ISK ***29*** *15:47:09.3, 39°.10N×29°.09E, h9km, MD2.6*
CSEM ***29*** *15:47:09.5±0.1, 39°.12N×29°.02E, h5km, ML2.6, Error ellipse: s-maj=4.4km s-min=3.0km az=120.0*

ISC 29 15:47:09.8±1.0, 39°.12N±0°.03×29°.02E±0°.03, h7km±10km, n22, σ0°.60/34, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**253**	P	**Pg**	**15 47 14.9**	**+0.1**
DEMI				S	**Sg**	**15 47 18.3**	**+0.1**
DEMI	**Demirci**	**0.25**	**253**	*i* P	**Pg**	**15 47 14.9**	**+0.1**
DEMI				*i* S	**Sg**	**15 47 18.3**	**+0.1**
GDZ	**Gediz**	**0.36**	**94**	P	**Pg**	**15 47 17.0**	**+0.2**
GDZ				S	**Sg**	**

GDZ				*i* S	**Sb**	15 54 22.9	0.0		
DEMI	**Demirci**	**0.32**	**255**	P	**Pb**	15 54 19.4	+0.6		
DEMI				S	**Sb**	15 54 23.4	-0.4		
DEMI	**Demirci**	**0.32**	**255**	*i* P	**Pb**	15 54 19.4	+0.6		
DEMI				*i* S	**Sb**	15 54 23.4	-0.4		
TVSB	**Tavsanli**	**0.42**	**40**	*e*PG	**Pg**	15 54 20.0	-0.1		
TVSB				*e*SG	**Sb**	15 54 26.5	-0.2		
TVSB	**Tavsanli**	**0.42**	**40**	*e*Pg	**Pg**	15 54 20.0	-0.1		
TVSB				*e*Sg	**Sb**	15 54 26.5	-0.2		
KULA	**Kula-Manisa**	**0.71**	**210**	*e*PG	**Pg**	15 54 24.9	-0.4		
KULA	**Kula-Manisa**	**0.71**	**210**	*e*Pg	**Pg**	15 54 25.0	-0.4		
MANT	**Manisa**	**0.77**	**215**	P	**Pb**	15 54 26.8	+0.2		
MANT				S	**Sb**	15 54 37.5	+0.7		
MANT	**Manisa**	**0.77**	**215**	*i* P	**Pb**	15 54 26.8	+0.2		
MANT				*i* S	**Sb**	15 54 37.5	+0.7		
KHAL	**Karahalli**	**0.81**	**159**	P	**Pn**	15 54 28.2	0.0		
KHAL				S	**Sn**	15 54 39.6	-0.3		
KHAL	**Karahalli**	**0.81**	**159**	*i* P	**Pn**	15 54 28.2	0.0		
KHAL				*i* S	**Sn**	15 54 39.6	-0.3		
CAVI	**Cavuskoy**	**1.21**	**27**	*e*PN	**Pg**	15 54 35.0	+0.1		
CAVI	**Cavuskoy**	**1.21**	**27**	*e*Pn	**Pg**	15 54 35.0	+0.1		
MDNY	**Mudanya-Bursa**	**1.25**	**352**	*e*PN	**Pg**	15 54 35.5	-0.1		
MDNY	**Mudanya-Bursa**	**1.25**	**352**	*e*Pn	**Pg**	15 54 35.6	-0.1		
KCTX	**Karacabey (Bur**	**1.28**	**333**	*e*PN	**Pg**	15 54 35.9	-0.3		
KCTX	**Karacabey (Bur**	**1.28**	**333**	*e*Pn	**Pg**	15 54 35.9	-0.3		
ARMT	**Armutlu**	**1.45**	**352**	*e*PN	**Pb**	15 54 38.4	+0.3		
ARMT	**Armutlu**	**1.45**	**352**	*e*Pn	**Pb**	15 54 38.4	+0.3		

MAN 29 16:02:58, 10°.91N×124°.61E, h12km, mb4.3, ML3.2, MS3.0, Leyte

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OCLP	**Ormoc**	**0.14**	**358**	*e*P	Pb	16 03 03.4	+0.7
OCLP				*e*S	Sg	16 03 06.5	+2.6
LLP	**Lapu-Lapu**	**0.86**	**227**	*e*P	Pb	16 03 15.2	+0.3
LLP				*e*S	Sn	16 03 29.5	+1.0
GUIM	**Jordan**	**2.01**	**262**	*e*P	Pb	16 03 33.2	-1.3
GUIM				*e*S	Sb	16 03 58.6	-0.8

*ISK **29** 16:04:02.8, 37°.33N×35°.39E, h5km, MD2.9*
*ISCJB **29** 16:04:03.8±0.5, 37°.33N±0°.03×35°.41E±0°.03, h3km±5km, Error ellipse: s-maj=4.6km s-min=3.9km az=172.9*
*CSEM **29** 16:04:03.8±0.2, 37°.33N×35°.43E, h5km, MD2.9, Error ellipse: s-maj=5.6km s-min=3.7km az=33.0*
*DDA **29** 16:04:03.2, 37°.34N×35°.42E, h14km, Md3.2*
ISC 29 16:04:03.7±0.9, 37°.35N±0°.03×35°.41E±0°.02, h10km±7km, n34, σ0s88/50, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKO	**Adana**	**0.12**	**14**	*i* P	**Pg**	16 04 06.5	-0.1
AKO				*i* S	**Sg**	16 04 08.8	+0.1
KARA	**Karaisali**	**0.30**	**253**	*e*PG	**Pg**	16 04 09.2	-0.5
KARA	**Karaisali**	**0.30**	**253**	*e*Pg	**Pg**	16 04 09.2	-0.5
CEYT	**Ceyhan**	**0.43**	**141**	*e*PG	**Pg**	16 04 11.6	-0.6
CEYT	**Ceyhan**	**0.43**	**141**	*e*Pg	**Pg**	16 04 11.6	-0.6
GULE	**Gulek**	**0.51**	**263**	P	**Pb**	16 04 14.8	0.0
GULE				S	**Sb**	16 04 24.0	+1.7
GULE	**Gulek**	**0.51**	**263**	*i* P	**Pb**	16 04 14.8	0.0
GULE				*i* S	**Sb**	16 04 24.1	+1.7
YURE	**YUREGIR**	**0.55**	**161**	*i* P	**Pb**	16 04 15.1	-0.3
YURE				*i* S	**Sn**	16 04 28.3	+1.4
DED	**Mersin**	**0.62**	**232**	*i* P	**Pg**	16 04 15.2	-0.6
DED				*i* S	**Sb**	16 04 24.2	-1.2
KRTS	**Karatas**	**0.78**	**182**	*e*PG	**Pb**	16 04 18.7	-0.5
KRTS				*e*SG	**Sb**	16 04 30.4	+0.6
KRTS	**Karatas**	**0.78**	**182**	*e*Pg	**Pb**	16 04 18.7	-0.5
KRTS				*e*Sg	**Sb**	16 04 30.4	+0.6
NIG	**Nigde**	**0.99**	**320**	*e*PG	**Pn**	16 04 23.2	-0.7
NIG	**Nigde**	**0.99**	**320**	*e*Pg	**Pn**	16 04 23.2	-0.7
KAMA	**Osmaniye**	**1.02**	**99**	*i* P	**Pb**	16 04 23.4	-0.1
KAMA				*i* S	**Sn**	16 04 38.0	-0.4
KERG	**Konya-Eregli**	**1.02**	**274**	*i* P	**Pg**	16 04 22.7	-0.7
KERG				*i* S	**Sn**	16 04 38.1	-0.6
TAHT	**Tahtakopru-Hat**	**1.15**	**147**	*e*PN	**Pg**	16 04 26.4	+0.5
TAHT	**Tahtakopru-Hat**	**1.15**	**147**	*e*Pn	**Pg**	16 04 26.4	+0.5
KIZK	**Mersin**	**1.33**	**230**	P	**Pn**	16 04 28.0	-0.4
KIZK	**Mersin**	**1.33**	**230**	*i* P	**Pn**	16 04 27.9	-0.4
KIZK				*i* S	**Sn**	16 04 45.5	-0.6
GULA	**Gulagac**	**1.36**	**317**	*e*PN	**Pg**	16 04 29.9	+0.1
GULA	**Gulagac**	**1.36**	**317**	*e*Pn	**Pg**	16 04 29.9	+0.1
YESY	**Yesilyurt**	**1.39**	**289**	*e*PN	**Pg**	16 04 30.4	-0.1
YESY	**Yesilyurt**	**1.39**	**289**	*e*Pn	**Pg**	16 04 30.4	-0.1
YAYL	**Yayladag**	**1.43**	**157**	P	**Pn**	16 04 29.0	-0.7
YAYL				S	**Sb**	16 04 48.7	0.0
YAYL	**Yayladag**	**1.43**	**157**	*i* P	**Pn**	16 04 29.0	-0.7
YAYL				*i* S	**Sb**	16 04 48.7	0.0
KUZU	**Kuzuini**	**1.45**	**113**	P	**Pn**	16 04 29.8	-0.2
KUZU				S	**Sn**	16 04 48.7	-0.4
KUZU	**Kuzuini**	**1.45**	**113**	*i* P	**Pn**	16 04 29.8	-0.2
KUZU				*i* S	**Sn**	16 04 48.7	-0.4
GZT	**Gaziantep**	**1.72**	**89**	*i* P	**Pn**	16 04 34.2	+0.4
GZT				*i* S	**Sg**	16 04 59.8	+0.8
IKL	**Isikli**	**1.77**	**232**	*e*PN	**Pb**	16 04 35.4	-0.8
IKL	**Isikli**	**1.77**	**232**	*e*Pn	**Pb**	16 04 35.4	-0.8
DARE	**Darende-Malaty**	**2.04**	**53**	*e*PN	**Pb**	16 04 40.2	-0.7
DARE	**Darende-Malaty**	**2.04**	**53**	*e*Pn	**Pb**	16 04 40.2	-0.7
ERMK	**Ermenek**	**2.12**	**251**	P	**Pg**	16 04 43.3	-1.1
ERMK	**Ermenek**	**2.12**	**251**	*i* P	**Pg**	16 04 43.3	-1.1
ERMK				*i* S	**Sg**	16 05 15.5	+3.6

*DJA **29** 16:19:48.5±0.8, 0°.N±8°.×12°.5E±°, h10km, M3.9/3, MLv3.9/3*
*IDC **29** 16:19:55.7±1.7, 0°.11S×125°.38E, h0km, mb3.5/4, mb1 3.6/4, mb1mx3.4/26, mbtmp3.5/4, Error ellipse: s-maj=183.7km s-min=23.3km az=63.0*
ISC 29 16:19:48.5±1.5, 0°.5N±0°.1×124°.96E±0°.06, h10km, n8, σ2s80/10, mb3.5/4, Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LUWI	**Luwuk**	**2.65**	**236**	P	**Pn**	16 20 30.6	-0.8
LUWI				S	**Sg**	16 21 15.4	+1.5
SANI	**Sanana**	**2.70**	**158**	P	**Pn**	16 20 31.3	-0.8
SANI				S	**Sn**	16 21 00.6	-4.3
LBMI	**Labuha**	**2.77**	**113**	P	**Pg**	16 20 39.6	-2.0
LBMI				S	**Sn**	16 21 07.4	+0.9
MRSI	**Marisa**	**3.02**	**270**	P	**Pn**	16 20 33.7	-2.7
WRA	**Warramunga Arr**	**22.27**	**156**	P	**P**	16 24 45.7	-0.3
0.5nm,0.5s,baz=335,slow=11,SNR=12							
ASAR	**Alice Springs**	**25.52**	**161**	P	**P**	16 25 20.8	+3.3
0.3nm,0.5s,baz=341,slow=8.6,SNR=12							
STKA	**Stephens Creek**	**35.82**	**155**	P	**P**	16 26 51.4	+3.1
0.5nm,0.5s,baz=323,slow=10,SNR=4.0							
MKAR	**Makanchi Array**	**59.27**	**327**	P	P	16 30 03.9	+14
0.6nm,0.4s,baz=139,slow=7.5,SNR=8.2							

MEX 29 16:30:25.2±0.6, 16°.98N×100°.03W, h36km±5km, MD3.5, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ACP2	**Acapulco**	**0.17**	**129**	*e*P	Pn	16 30 30.6	-3.9
ACP2				*e*S	Sn	16 30 35.1	-8.0
ACX	**Acapulco**	**0.20**	**125**	*i* P	Pn	16 30 32.6	-1.3
ACX				*e*S	Sn	16 30 36.6	-5.4
CAIG	**El Cayaco**	**0.24**	**285**	*i* P	Pn	16 30 30.9	-2.5
CAIG				*e*S	Sn	16 30 35.8	-4.9
MEIG	**Mezcala**	**1.01**	**22**	*e*P	Pn	16 30 41.0	-2.0
MEIG				*e*S	Sn	16 30 53.2	-2.8
ARIG	**Puente Sto Nin**	**1.32**	**347**	*e*P	Pn	16 30 45.8	-1.5
ARIG				*i* S	Sn	16 31 01.9	-1.8
PLIG	**Platanillo**	**1.49**	**20**	*e*P	Pn	16 30 48.1	-1.4
PLIG				*e*S	Sn	16 31 06.2	-1.5
ZIIG	**Zihuatanejo**	**1.51**	**294**	*i* P	Pn	16 30 48.6	-1.1
ZIIG				*e*S	Sn	16 31 05.8	-2.3
TLIG	**Tlapa**	**1.51**	**67**	*e*P	Pn	16 30 48.5	-1.3
TLIG				*e*S	Sn	16 31 07.1	-1.2
PNIG	**Pinotepa**	**1.91**	**108**	*i* P	Pn	16 30 54.2	-1.1
PNIG				*i* S	Sn	16 31 15.6	-2.6
YAIG	**Yautepec**	**2.08**	**26**	*i* P	Pn	16 30 57.0	-0.7
YAIG				*i* S	Sn	16 31 20.3	-2.1

*ISCJB **29** 16:32:24.9±0.5, 39°.05N±0°.03×29°.02E±0°.04, h6km±7km, Error ellipse: s-maj=5.6km s-min=5.2km az=174.8*

*DDA **29** 16:32:24.6, 39°.08N×29°.02E, h7km, Md2.4*
*CSEM **29** 16:32:25.1±0.1, 39°.06N×29°.02E, h5km, MD2.4, Error ellipse: s-maj=2.9km s-min=2.0km az=95.0*
*ISK **29** 16:32:25.0, 39°.03N×29°.01E, h15km, MD2.7*
ISC 29 16:32:25.1±1.0, 39°.06N±0°.03×29°.03E±0°.03, h7km±11km, n30, σ0s22/40, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**267**	P	**Pg**	16 32 29.9	0.0
DEMI				S	**Sg**	16 32 33.2	0.0
DEMI	**Demirci**	**0.24**	**267**	*i* P	**Pg**	16 32 29.9	0.0
DEMI				*i* S	**Sg**	16 32 33.2	0.0
GDZ	**Gediz**	**0.35**	**84**	P	**Pg**	16 32 31.9	-0.2
GDZ				S	**Sg**	16 32 37.1	+0.3
GDZ	**Gediz**	**0.35**	**84**	*i* P	**Pg**	16 32 31.9	-0.2
GDZ				*i* S	**Sg**	16 32 37.1	+0.3
KULA	**Kula-Manisa**	**0.61**	**208**	*e*PG	**Pg**	16 32 36.9	0.0
KULA				*e*SG	**Sg**	16 32 45.3	+0.4
KULA	**Kula-Manisa**	**0.61**	**208**	*e*Pg	**Pg**	16 32 36.9	0.0
KULA				*e*Sg	**Sg**	16 32 45.3	+0.4
MANT	**Manisa**	**0.67**	**213**	P	**Pg**	16 32 38.2	+0.1
MANT				S	**Sg**	16 32 46.7	-0.2
MANT	**Manisa**	**0.67**	**213**	*i* P	**Pg**	16 32 38.2	+0.1
MANT				*i* S	**Sg**	16 32 46.7	-0.2
KHAL	**Karahalli**	**0.78**	**152**	P	**Pb**	16 32 40.7	-0.3
KHAL				S	**Sb**	16 32 51.5	-0.2
KHAL	**Karahalli**	**0.78**	**152**	*i* P	**Pb**	16 32 40.7	-0.3
KHAL				*i* S	**Sb**	16 32 51.5	-0.2
KHL	**Karahalli**	**0.83**	**152**	*e*PG	**Pg**	16 32 41.2	+0.2
KHL	**Karahalli**	**0.83**	**152**	*e*Pg	**Pg**	16 32 41.2	+0.2
ORLT	**Orhaneli**	**0.99**	**354**	*e*PG	**Pn**	16 32 45.3	-0.2
ORLT	**Orhaneli**	**0.99**	**354**	*e*Pg	**Pn**	16 32 45.3	-0.2
BALB	**Balikesir**	**1.06**	**304**	*e*PG	**Pb**	16 32 45.8	0.0
BALB	**Balikesir**	**1.06**	**304**	*e*Pg	**Pb**	16 32 45.8	0.0
CAVI	**Cavuskoy**	**1.31**	**29**	*e*PN	**Pn**	16 32 49.6	-0.2
CAVI	**Cavuskoy**	**1.31**	**29**	*e*Pn	**Pn**	16 32 49.6	-0.2
KCTX	**Karacabey (Bur**	**1.31**	**337**	*e*PN	**Pn**	16 32 49.9	0.0
KCTX	**Karacabey (Bur**	**1.31**	**337**	*e*Pn	**Pn**	16 32 49.9	0.0
MDNY	**Mudanya-Bursa**	**1.32**	**355**	*e*PN	**Pn**	16 32 49.9	0.0
MDNY	**Mudanya-Bursa**	**1.32**	**355**	*e*Pn	**Pn**	16 32 49.9	0.0
IZI	**Iznik**	**1.32**	**15**	*e*PN	**Pn**	16 32 50.2	+0.1
IZI	**Iznik**	**1.32**	**15**	*e*Pn	**Pn**	16 32 50.2	+0.1
ARMT	**Armutlu**	**1.51**	**355**	*e*PN	**Pn**	16 32 52.9	+0.3
ARMT	**Armutlu**	**1.51**	**355**	*e*Pn	**Pn**	16 32 52.9	+0.3
GULT	**Gulveren**	**1.79**	**39**	*e*PN	**Pn**	16 32 56.6	+0.1
GULT	**Gulveren**	**1.79**	**39**	*e*Pn	**Pn**	16 32 56.6	+0.1
HRT	**Hereke**	**1.83**	**15**	*e*PN	**Pn**	16 32 57.5	+0.5
HRT	**Hereke**	**1.83**	**15**	*e*Pn	**Pn**	16 32 57.5	+0.5

*DDA **29** 16:33:51.9, 39°.11N×29°.13E, h7km, Md2.6*
*ISCJB **29** 16:33:52.3±0.5, 39°.12N±0°.04×29°.12E±0°.04, h2km±6km, Error ellipse: s-maj=6.9km s-min=3.7km az=150.3*
*CSEM **29** 16:33:52.7±0.1, 39°.11N×29°.13E, h5km, MD2.6, Error ellipse: s-maj=2.4km s-min=1.7km az=141.0*
*ISK **29** 16:33:52.5, 39°.13N×29°.15E, h6km, MD2.9*
ISC 29 16:33:52.7±1.0, 39°.13N±0°.03×29°.11E±0°.02, h5km±10km, n45, σ0s39/58, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.29**	**98**	P	**Pg**	16 33 58.3	-0.1
GDZ				S	**Sg**	16 34 02.1	-0.1
GDZ	**Gediz**	**0.29**	**98**	*i* P	**Pg**	16 33 58.3	-0.1
GDZ				*i* S	**Sg**	16 34 02.1	-0.1
DEMI	**Demirci**	**0.32**	**255**	P	**Pg**	16 33 59.1	+0.2
DEMI				S	**Sg**	16 34 03.6	+0.5
DEMI	**Demirci**	**0.32**	**255**	*i* P	**Pg**	16 33 59.1	+0.2
DEMI				*i* S	**Sg**	16 34 03.6	+0.5
TVSB	**Tavsanli**	**0.42**	**40**	PG	**Pg**	16 34 00.9	+0.1
TVSB				SG	**Sg**	16 34 06.1	-0.2
TVSB	**Tavsanli**	**0.42**	**40**	*i* Pg	**Pg**	16 34 00.9	+0.1
TVSB				*i* Sg	**Sg**	16 34 06.1	-0.2
MANT	**Manisa**	**0.77**	**214**	P	**Pg**	16 34 06.9	-0.5
MANT				S	**Sg**	16 34 16.7	-0.8
MANT	**Manisa**	**0.77**	**214**	*i* P	**Pg**	16 34 06.9	-0.5
MANT				*i* S	**Sg**	16 34 16.7	-0.8
KHL	**Karahalli**	**0.87**	**158**	*e*PG	**Pg**	16 34 09.5	+0.2
KHL	**Karahalli**	**0.87**	**158**	*e*Pg	**Pg**	16 34 09.5	+0.2
ORLT	**Orhaneli**	**0.93**	**350**	*e*PG	**Pb**	16 34 11.1	-0.2
ORLT	**Orhaneli**	**0.93**	**350**	*e*Pg	**Pb**	16 34 11.1	-0.2
AKHS	**Akhisar**	**1.04**	**257**	P	**Pb**	16 34 13.3	+0.1
AKHS				S	**Sb**	16 34 27.0	-0.1
AKHS	**Akhisar**	**1.04**	**257**	*i* P	**Pb**	16 34 13.3	+0.1
AKHS				*i* S	**Sb**	16 34 27.0	-0.1
AKS	**Akhisar**	**1.04**	**257**	*e*PG	**Pb**	16 34 13.2	0.0
AKS	**Akhisar**	**1.04**	**257**	*e*Pg	**Pb**	16 34 13.2	0.0
BALB	**Balikesir**	**1.08**	**299**	*e*PN	**Pb**	16 34 14.2	+0.3
BALB				*e*SN	**Sn**	16 34 29.6	-0.2
BALB	**Balikesir**	**1.08**	**299**	*e*Pn	**Pb**	16 34 14.2	+0.3
BALB				*e*Sn	**Sn**	16 34 29.6	-0.2
IGD	**Bursa**	**1.14**	**3**	*i* P	**Pg**	16 34 12.7	-1.8
IGD				*i* S	**Sb**	16 34 30.2	+0.4
CAVI	**Cavuskoy**	**1.21**	**28**	*e*PN	**Pg**	16 34 16.0	+0.1
CAVI	**Cavuskoy**	**1.21**	**28**	*e*Pn	**Pg**	16 34 16.0	+0.1
IZI	**Iznik**	**1.24**	**13**	*e*PN	**Pg**	16 34 16.4	0.0
IZI	**Iznik**	**1.24**	**13**	*e*Pn	**Pg**	16 34 16.4	0.0
MDNY	**Mudanya-Bursa**	**1.25**	**352**	*e*PN	**Pg**	16 34 16.7	0.0
MDNY	**Mudanya-Bursa**	**1.25**	**352**	*e*Pn	**Pg**	16 34 16.7	0.0
KCTX	**Karacabey (Bur**	**1.28**	**333**	*e*PN	**Pn**	16 34 17.6	+0.4
KCTX	**Karacabey (Bur**	**1.28**	**333**	*e*Pn	**Pn**	16 34 17.6	+0.4
ADVT	**Abdulvahap**	**1.39**	**20**	*e*PN	**Pn**	16 34 18.9	+0.2
ADVT	**Abdulvahap**	**1.39**	**20**	*e*Pn	**Pn**	16 34 18.9	+0.2
GONE	**Gonen-Balikesi**	**1.43**	**310**	*e*PN	**Pb**	16 34 20.0	+0.1
GONE	**Gonen-Balikesi**	**1.43**	**310**	*e*Pn	**Pb**	16 34 20.0	+0.1
ARMT	**Armutlu**	**1.45**	**352**	*e*PN	**Pb**	16 34 20.1	0.0
ARMT	**Armutlu**	**1.45**	**352**	*e*Pn	**Pb**	16 34 20.1	0.0
GPA	**Golpazari**	**1.48**	**38**	*e*PN	**Pn**	16 34 20.4	+0.4
GPA	**Golpazari**	**1.48**	**38**	*e*Pn	**Pn**	16 34 20.4	+0.4
EDC	**Edincik**	**1.55**	**322**	*e*PN	**Pb**	16 34 21.6	-0.3
EDC	**Edincik**	**1.55**	**322**	*e*Pn	**Pb**	16 34 21.6	-0.3
GULT	**Gulveren**	**1.69**	**39**	*e*PN	**Pn**	16 34 23.2	+0.3
GULT	**Gulveren**	**1.69**	**39**	*e*Pn	**Pn**	16 34 23.2	+0.3
SPNC	**Sapanca-Adapaz**	**1.81**	**30**	*e*PN	**Pn**	16 34 24.8	+0.3
SPNC	**Sapanca-Adapaz**	**1.81**	**30**	*e*Pn	**Pn**	16 34 24.8	+0.3
SVRH	**Sivrihisar-ESK**	**1.90**	**80**	*e*PN	**Pn**	16 34 26.1	+0.3
SVRH	**Sivrihisar-ESK**	**1.90**	**80**	*e*Pn	**Pn**	16 34 26.1	+0.3
ISK	**Istanbul-Kandi**	**1.94**	**359**	*e*PN	**Pn**	16 34 26.6	+0.4
ISK	**Istanbul-Kandi**	**1.94**	**359**	*e*Pn	**Pn**	16 34 26.6	+0.4

*ISK **29** 16:35:43.9, 39°.10N×29°.05E, h7km, MD2.8*
*ISCJB **29** 16:35:44.2±0.5, 39°.10N±0°.04×29°.03E±0°.04, h5km±8km, Error ellipse: s-maj=6.0km s-min=4.5km az=11.7*
*CSEM **29** 16:35:44.4±0.1, 39°.11N×29°.04E, h5km, MD2.6, Error ellipse: s-maj=1.8km s-min=1.6km az=80.0*
*DDA **29** 16:35:44.2, 39°.10N×29°.04E, h7km, Md2.6*
ISC 29 16:35:44.5±0.9, 39°.10N±0°.03×29°.04E±0°.02, h10km±10km, n34, σ0s25/44, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**257**	P	**Pg**	16 35 49.8	0.0
DEMI				S	**Sg**	16 35 53.2	-0.1
DEMI	**Demirci**	**0.26**	**257**	*i* P	**Pg**	16 35 49.8	0.0
DEMI				*i* S	**Sg**	16 35 53.2	-0.1
GDZ	**Gediz**	**0.34**	**92**	P	**Pg**	16 35 51.5	+0.1
GDZ				S	**Sg**	16 35 56.4	+0.4
GDZ	**Gediz**	**0.34**	**92**	*i* P	**Pg**	16 35 51.5	+0.1
GDZ				*i* S	**Sg**	16 35 56.4	+0.4
TVSB	**Tavsanli**	**0.48**	**43**	*e*PG	**Pg**	16 35 53.4	-0.5
TVSB	**Tavsanli**	**0.48**	**43**	*e*Pg	**Pg**	16 35 53.4	-0.5
MANT	**Manisa**	**0.71**	**212**	P	**Pg**	16 35 58.3	-0.1
MANT				S	**Sg**	16 36 07.6	-0.1
MANT	**Manisa**	**0.71**	**212**	*i* P	**Pg**	16 35 58.3	-0.1
MANT				*i* S	**Sg**	16 36 07.6	-0.1
KHAL	**Karahalli**	**0.81**	**154**	P	**Pb**	16 36 00.9	+0.1
KHAL				S	**Sb**	16 36 11.4	-0.4
KHAL	**Karahalli**	**0.81**	**154**	*i* P	**Pb**	16 36 00.8	+0.1
KHAL				*i* S	**Sb**	16 36 11.4	-0.4
KHL	**Karahalli**	**0.86**	**154**	*e*PG	**Pg**	16 36 01.0	-0.2
KHL	**Karahalli**	**0.86**	**154**	*e*Pg	**Pg**	16 36 01.0	-0.2
ORLT	**Orhaneli**	**0.95**	**353**	*e*PG	**Pg**	16 36 02.6	-0.3
ORLT	**Orhaneli**	**0.95**	**353**	*e*Pg	**Pg**	16 36 02.6	-0.3
AKS	**Akhisar**	**0.98**	**257**	*e*PG	**Pg**	16 36 03.1	-0.3
AKS	**Akhisar**	**0.98**	**257**	*e*Pg	**Pg**	16 36 03.1	-0.3
BALB	**Balikesir**	**1.05**	**301**	*e*PG	**Pb**	16 36 04.7	-0.1
BALB				*e*SG	**Sb**	16 36 19.0	+0.4
BALB	**Balikesir**	**1.05**	**301**	*e*Pg	**Pb**	16 36 04.7	-0.1
BALB				*e*Sg	**Sb**	16 36 19.0	+0.4
CAVI	**Cavuskoy**	**1.26**	**29**	*e*PN	**Pn**	16 36 08.4	+0.1
CAVI	**Cavuskoy**	**1.26**	**29**	*e*Pn	**Pn**	16 36 08.4	+0.1
MDNY	**Mudanya-Bursa**	**1.27**	**355**	*e*PN	**Pg**	16 36 08.9	-0.1
MDNY	**Mudanya-Bursa**	**1.27**	**355**	*e*Pn	**Pg**	16 36 08.9	-0.1
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*PN	**Pg**	16 36 09.0	-0.1
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*Pn	**Pg**	16 36 09.0	-0.1
IZI	**Iznik**	**1.28**	**15**	*e*PN	**Pn**	16 36 08.4	-0.2
IZI	**Iznik**	**1.28**	**15**	*e*Pn	**Pn**	16 36 08.4	-0.2
GONE	**Gonen-Balikesi**	**1.41**	**313**	*e*PN	**Pb**	16 36 10.8	-0.1
GONE	**Gonen-Balikesi**	**1.41**	**313**	*e*Pn	**Pb**	16 36 10.8	-0.1
ARMT	**Armutlu**	**1.47**	**355**	*e*PN	**Pn**	16 36 11.3	+0.2
ARMT	**Armutlu**	**1.47**	**355**	*e*Pn	**Pn**	16 36 11.3	+0.2
EDC	**Edincik**	**1.54**	**324**	*e*PN	**Pn**	16 36 12.4	+0.3
EDC	**Edincik**	**1.54**	**324**	*e*Pn	**Pn**	16 36 12.4	+0.3
GULT	**Gulveren**	**1.75**	**40**	*e*PN	**Pn**	16 36 15.3	+0.2
GULT	**Gulveren**	**1.75**	**40**	*e*Pn	**Pn**	16 36 15.3	+0.2

*ISCJB **29** 16:44:39.1±0.9, 37°.93N±0°.05×144°.91E±0°.07, h26km, mb3.8/5, Error ellipse: s-maj=8.1km s-min=7.5km az=135.8*
*JMA **29** 16:44:42.5±0.2, 37°.92N×144°.73E, h47km, M4.0*
*IDC **29** 16:44:45.5±1.8, 36°.59N×144°.58E, h0km, mb3.7/5, mb1 3.8/6, mb1mx3.4/49, mbtmp3.7/6, ML3.6/1, Error ellipse: s-maj=50.1km s-min=21.6km az=62.0*
ISC 29 16:44:39.6±1.4, 37°.92N±0°.07×144°.97E±0°.08, h26km, n24, σ2s08/25, mb3.8/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.83**	**295**	P	**Pn**	16 45 24.3	+1.1
JIO	**Ouri**	**2.90**	**282**	P	**Pn**	16 45 25.0	+0.9
JIO				S	**Sn**	16 45 56.6	-1.5
MIYJ	**Miyakonagasawa**	**2.96**	**305**	P	**Pn**	16 45 26.1	+1.2
MIYJ				*e*S	**Sn**	16 45 58.9	-0.8
JMK	**Ichinoseki**	**3.12**	**290**	P	**Pn**	16 45 28.5	+1.5
JOM	**Ohasama**	**3.27**	**299**	P	**Pn**	16 45 30.7	+1.6
JOM				*e*S	**Sn**	16 46 06.8	-0.3
JANG	**Nango**	**3.63**	**313**	P	**Pn**	16 45 36.2	+2.1
JANG				*e*S	**Sn**	16 46 15.6	-0.5
JFT	**Otama**	**3.70**	**265**	P	**Pn**	16 45 36.8	+1.8
JFT				S	**Sn**	16 46 16.4	-1.3
JCH	**Churui**	**4.84**	**346**	P	**Pn**	16 45 52.3	+1.6
JRY	**Ryogami san**	**5.22**	**250**	P	**Pn**	16 45 56.5	+0.5
JRY				S	**Sn**	16 46 51.1	-4.2
NEM2	**Nemuro 2**	**5.47**	**6**	P	**Pn

0.3nm,0.7s,baz=305,slow=2.1,SNR=4.4
CMAR Chiang Mai Arr 28.81 340 LR LR 17 08 00.1
comp=Z,45nm,18.6s,baz=200,slow=36
H08S2 Diego Garcia H 35.96 269 T T 17 35 28.5
baz=93,slow=76,SNR=4.1
H08S3 Diego Garcia H 35.97 269 T T 17 35 31.7
baz=93,slow=76,SNR=2.8
H08S1 Diego Garcia H 35.98 269 T T 17 35 27.9
baz=93,slow=76,SNR=3.8
STKA Stephens Creek 38.09 132 P **P 16 57 55.2 +1.0**
7.1nm,0.7s,baz=303,slow=8.6,SNR=29
STKA LR LR 17 16 05.6
comp=Z,29nm,19.7s,baz=18,slow=40
JNU Nakatsue 46.70 26 LR LR 17 21 58.5
comp=Z,54nm,18.1s,baz=122,slow=40
TKM2 Tokmak 2 59.74 332 *eP* **P 17 00 39.4 -0.9**
2.0nm,0.6s
MKAR Makanchi Array 60.21 339 P **P 17 00 42.9 -0.4**
1.0nm,0.5s,baz=150,slow=7.9,SNR=16
KLR Kul'dur 61.21 17 P **P 17 00 48.5 -1.5**
0.5nm,0.2s,baz=185,slow=5.5,SNR=4.1
KURBB Kurchatov Arra 64.78 339 P **P 17 01 13.1 -0.6**
0.6nm,0.6s,baz=153,slow=5.5,SNR=5.0
KURK Kurchatov 64.83 339 P **P 17 01 13.1 -0.9**
ZALV Zalesovo Beam 65.75 345 P **P 17 01 19.0 -0.8**
0.5nm,0.4s,baz=141,slow=5.5,SNR=3.0
BVAR Borovoye Array 69.75 336 P **P 17 01 45.0 -0.2**
1.6nm,0.6s,baz=136,slow=9.1,SNR=10.0
ABKAR Akbulak array 71.90 329 *eP* **P 17 01 57.6 -0.7**
1.1nm,0.4s
VNDA Vanda 73.85 170 P **P 17 02 09.0 -0.5**
0.6nm,0.9s,baz=272,slow=9.3,SNR=4.3
KBZ Khabaz 79.21 318 LR LR 17 41 27.1
comp=Z,14nm,18.3s,baz=123,slow=39

*CSEM **29** 17:01:30.9,37°.36N×42°.47E,h7km,MD2.9*
ISK 29 17:01:30.9,37°.36N×42°.47E,h7km,MD2.9,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SIRT	**Sirnak**	**0.14**	**351**	*e*PG	Pg	17 01 34.4	+0.5
SIRT	**Sirnak**	**0.14**	**351**	*e*Pg	Pg	17 01 34.4	+0.5
SVAN	**Silvan-Diyarba**	**1.28**	**308**	*e*PN	Pg	17 01 55.7	+0.3
SVAN				*e*SN	Sn	17 02 13.8	+1.2
SVAN	**Silvan-Diyarba**	**1.28**	**308**	*e*Pn	Pg	17 01 55.7	+0.3
SVAN				*e*Sn	Sn	17 02 13.8	+1.2
MAZI	**Mazidag**	**1.61**	**274**	*e*PN	Pn	17 02 00.4	+0.6
MAZI	**Mazidag**	**1.61**	**274**	*e*Pn	Pn	17 02 00.4	+0.5
DIY	**Diyarbakir**	**1.86**	**287**	*e*Pn	Pb	17 02 05.2	0.0
DYBB	**Diyarbakir**	**1.94**	**288**	*e*PN	Pn	17 02 05.2	+0.9
BNGB	**Bing¨¶l**	**2.15**	**320**	*e*PN	Pn	17 02 08.2	+0.9
BINT	**Bingol**	**2.17**	**315**	*e*Pn	Pn	17 02 08.2	+0.6

*ISCJB **29** 17:04:14.4±0.4,37°.81N±0°.02×26°.94E±0°.03,h4km±4km,*
Error ellipse: s-maj=4.2km s-min=2.9km az=43.2
*ATH **29** 17:04:14.2,37°.71N×26°.81E,h22km±1km,ML2.7/3,Error*
ellipse: s-maj=4.2km s-min=1.2km az=226.0
*CSEM **29** 17:04:14.5±0.1,37°.80N×26°.92E,h5km,ML2.7,Error*
ellipse: s-maj=3.5km s-min=2.7km az=41.0
*ISK **29** 17:04:14.1,37°.81N×26°.95E,h5km,MD3.0*
*DDA **29** 17:04:14.0,37°.81N×26°.93E,h7km,Md3.0*
ISC 29 17:04:14.4±0.8,37°.80N±0°.02×26°.91E±0°.02,h14km±6km,
n60,σ0°61/82,Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SMG	**Samos**	**0.11**	**213**	P	**Pg**	**17 04 17.8**	**+0.1**
SMG				S	**Sb**	**17 04 21.0**	**+0.1**
SMG	**Samos**	**0.11**	**213**	P	**Pg**	**17 04 17.8**	**+0.1**
SMG				AML	AML	17 04 20.9	
	comp=N,25279μm,0.2s						
SMG				S	**Sb**	**17 04 21.0**	**+0.1**
SMG				AML	AML	17 04 21.1	
	comp=E,21996μm,0.2s						
DGB	**¯zmir**	**0.25**	**355**	*i* P	**Pg**	**17 04 19.6**	**-0.3**
DGB				*i* S	**Sg**	**17 04 22.8**	**-0.8**
GCAM	**G?zelcaml?**	**0.27**	**111**	P	**Pg**	**17 04 19.9**	**-0.3**
GCAM				S	**Sg**	**17 04 24.4**	**+0.3**
GCAM	**G?zelcaml?**	**0.27**	**111**	*i* P	**Pg**	**17 04 19.9**	**-0.3**
GCAM				*i* S	**Sg**	**17 04 24.4**	**+0.3**
ZEY	**¯zmir**	**0.54**	**324**	*i* P	**Pg**	**17 04 24.8**	**-0.4**
ZEY				*i* S	**Sg**	**17 04 32.8**	**+0.4**
URLA	**Izmir**	**0.61**	**336**	P	**Pg**	**17 04 25.8**	**-0.7**
URLA				S	**Sb**	**17 04 35.3**	**-0.1**
URLA	**Izmir**	**0.61**	**336**	*i* P	**Pg**	**17 04 25.8**	**-0.7**
URLA				*i* S	**Sb**	**17 04 35.3**	**-0.1**
AYDN	**Tasoluk**	**0.78**	**100**	P	**Pg**	**17 04 29.4**	**-0.2**
AYDN				S	**Sg**	**17 04 38.6**	**-1.2**
AYDN	**Tasoluk**	**0.78**	**100**	*i* P	**Pg**	**17 04 29.4**	**-0.2**
AYDN				*i* S	**Sg**	**17 04 38.6**	**-1.2**
AYDB	**Zeytinkoy-Aydi**	**0.79**	**79**	*e*PG	**Pg**	**17 04 29.5**	**-0.3**
AYDB				*e*SG	**Sb**	**17 04 40.1**	**-0.5**
AYDB	**Zeytinkoy-Aydi**	**0.79**	**79**	*e*Pg	**Pg**	**17 04 29.5**	**-0.3**
AYDB				*e*Sg	**Sb**	**17 04 40.1**	**-0.5**
BODT	**Bodrum**	**0.80**	**157**	*e*PG	**Pb**	**17 04 30.3**	**+0.1**
BODT	**Bodrum**	**0.80**	**157**	*e*Pg	**Pb**	**17 04 30.3**	**+0.1**
BDRM	**Kayabasi**	**0.85**	**150**	P	**Pg**	**17 04 30.8**	**0.0**
BDRM				S	**Sb**	**17 04 42.2**	**+0.1**
BDRM	**Kayabasi**	**0.85**	**150**	*i* P	**Pg**	**17 04 30.8**	**0.0**
BDRM				*i* S	**Sb**	**17 04 42.2**	**+0.1**
CHOS	**Chios island**	**0.90**	**311**	*e*PG	**Pb**	**17 04 32.2**	**+0.4**
CHOS	**Chios island**	**0.90**	**311**	P	**Pg**	**17 04 31.1**	**-0.7**
CHOS	**Chios island**	**0.90**	**311**	*e*Pg	**Pb**	**17 04 32.2**	**+0.4**
CHOS				S	**Sn**	**17 04 45.2**	**-0.2**
CHOS	**Chios island**	**0.90**	**311**	P	**Pg**	**17 04 31.1**	**-0.7**
CHOS				AML	AML	17 04 45.1	
	comp=E,979μm,0.3s						
CHOS				S	**Sn**	**17 04 45.2**	**-0.2**
CHOS				AML	AML	17 04 46.1	
	comp=N,580μm,0.3s						
NIS1	**Nisyros Isl.**	**1.21**	**170**	*e*PN	**Pn**	**17 04 37.2**	**+0.3**
NIS1	**Nisyros Isl.**	**1.21**	**170**	*e*Pn	**Pn**	**17 04 37.3**	**+0.3**
DKL	**Dikili**	**1.27**	**360**	*e*PN	**Pb**	**17 04 38.2**	**+0.1**
DKL	**Dikili**	**1.27**	**360**	*e*Pn	**Pb**	**17 04 38.2**	**+0.1**
YER	**Yerkesik**	**1.28**	**121**	*e*PN	**Pb**	**17 04 38.5**	**+0.2**
YER	**Yerkesik**	**1.28**	**121**	*e*Pn	**Pb**	**17 04 38.5**	**+0.2**
AKS	**Akhisar**	**1.29**	**33**	*e*PN	**Pg**	**17 04 38.7**	**-0.5**
AKS	**Akhisar**	**1.29**	**33**	*e*Pn	**Pg**	**17 04 38.7**	**-0.5**
AKHS	**Akhisar**	**1.29**	**33**	P	**Pn**	**17 04 38.1**	**+0.1**
AKHS				S	**Sg**	**17 04 56.3**	**+0.2**
AKHS	**Akhisar**	**1.29**	**33**	*i* P	**Pn**	**17 04 38.1**	**+0.1**
AKHS				*i* S	**Sg**	**17 04 56.3**	**+0.2**
APE	**Apeiranthos**	**1.32**	**237**	*e*PN	**Pg**	**17 04 40.0**	**+0.2**
APE	**Apeiranthos**	**1.32**	**237**	P	**Pn**	**17 04 37.6**	**-0.9**
APE	**Apeiranthos**	**1.32**	**237**	*e*Pn	**Pg**	**17 04 40.0**	**+0.2**
APE	**Apeiranthos**	**1.32**	**237**	P	**Pn**	**17 04 37.6**	**-0.9**
MANT	**Manisa**	**1.47**	**62**	P	**Pb**	**17 04 41.6**	**-0.1**
MANT	**Manisa**	**1.47**	**62**	*i* P	**Pb**	**17 04 41.6**	**-0.1**
PRK	**Paraskevi**	**1.53**	**341**	P	**Pg**	**17 04 43.7**	**-0.1**
PRK	**Paraskevi**	**1.53**	**341**	P	**Pg**	**17 04 43.7**	**-0.1**
KULA	**Kula-Manisa**	**1.55**	**62**	*e*PN	**Pb**	**17 04 42.7**	**-0.3**
KULA	**Kula-Manisa**	**1.55**	**62**	*e*Pn	**Pb**	**17 04 42.7**	**-0.3**
SIGR	**SIGRI**	**1.64**	**330**	*e*PN	**Pb**	**17 04 44.6**	**+0.3**
SIGR	**SIGRI**	**1.64**	**330**	P	**Pn**	**17 04 42.9**	**+0.1**
SIGR	**SIGRI**	**1.64**	**330**	*e*Pn	**Pb**	**17 04 44.6**	**+0.3**
SIGR				S	**Sg**	**17 05 07.3**	**+0.2**
SIGR	**SIGRI**	**1.64**	**330**	P	**Pn**	**17 04 42.9**	**+0.1**
SIGR				S	**Sg**	**17 05 07.3**	**+0.2**
SIGR				AML	AML	17 05 09.5	
	comp=N,210μm,0.6s						
SIGR				AML	AML	17 05 11.5	
	comp=E,145μm,0.5s						
DENT	**Denizli**	**1.68**	**91**	*e*PN	**Pb**	**17 04 44.6**	**-0.6**
DENT	**Denizli**	**1.68**	**91**	*e*Pn	**Pb**	**17 04 44.6**	**-0.6**
DNZL	**Cakiroluk**	**1.70**	**93**	P	**Pb**	**17 04 45.7**	**+0.2**
DNZL				S	**Sg**	**17 05 08.2**	**-0.8**
DNZL	**Cakiroluk**	**1.70**	**93**	*i* P	**Pb**	**17 04 45.7**	**+0.2**
DNZL				*i* S	**Sg**	**17 05 08.2**	**-0.8**
DALY	**Dalyan (Mu¨la**	**1.70**	**125**	*e*PN	**Pb**	**17 04 45.1**	**-0.3**
DALY	**Dalyan (Mu¨la**	**1.70**	**125**	*e*Pn	**Pb**	**17 04 45.1**	**-0.3**
THR5	**Thira Island,**	**1.86**	**223**	*e*PN	**Pb**	**17 04 48.1**	**-0.1**
THR5	**Thira Island,**	**1.86**	**223**	*e*Pn	**Pb**	**17 04 48.1**	**-0.1**
BALB	**Balikesir**	**1.99**	**22**	*e*PN	**Pn**	**17 04 48.9**	**+1.3**
BALB	**Balikesir**	**1.99**	**22**	*e*Pn	**Pn**	**17 04 48.9**	**+1.3**
FETY	**Fethiye**	**2.09**	**123**	*e*PN	**Pn**	**17 04 50.2**	**+1.2**
FETY	**Fethiye**	**2.09**	**123**	*e*Pn	**Pn**	**17 04 50.2**	**+1.2**
KHL	**Karahalli**	**2.13**	**75**	*e*PN	**Pn**	**17 04 50.5**	**+0.9**
KHL	**Karahalli**	**2.13**	**75**	*e*Pn	**Pn**	**17 04 50.5**	**+0.9**
TVSB	**Tavsanli**	**2.59**	**50**	*e*PN	**Pn**	**17 04 58.0**	**+2.0**
TVSB	**Tavsanli**	**2.59**	**50**	*e*Pn	**Pn**	**17 04 58.0**	**+2.0**

MEX 29 17:28:56.4±0.4,15°.20N×93°.34W,h85km±6km,MD3.7,
Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		**0.51**	**13**	*i* P	Pn	17 29 09.6	-1.2
PCIG				*e*S	Sn	17 29 19.6	-1.8
THIG		**1.08**	**106**	*i* P	Pn	17 29 06.8	-10
THIG				*i* S	Sn	17 29 21.8	-10
CCIG	**Comitan**	**1.58**	**47**	*i* P	Pn	17 29 21.8	-1.4
CCIG				*i* S	Sn	17 29 42.5	-0.8
TGIG		**1.58**	**8**	*e*P	Pn	17 29 22.1	-0.9
TGIG				*e*S	Sn	17 29 41.5	-1.7

*ISCJB **29** 17:32:48.1±1.3,37°.06N±0°.04×141°.52E±0°.06,h8km±7km,*
mb3.3/3,Error ellipse: s-maj=8.5km s-min=6.2km az=13.3
*IDC **29** 17:32:48.2±2.2,37°.10N×141°.55E,h0km,mb3.4/3,*
mb1 3.5/4,mb1mx3.2/44,mbtmp3.3/4,ML2.9/1,Error
ellipse: s-maj=47.1km s-min=28.2km az=44.0
*JMA **29** 17:32:50.7±0.1,37°.07N×141°.37E,h26km±1km,M3.6*
ISC 29 17:32:48.3±2.0,37°.08N±0°.05×141°.47E±0°.07,h1km±12km,
n19,σ0°72/22,mb3.3/3,Near east coast of eastern
Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.54**	**272**	P	**Pb**	**17 32 59.9**	**-0.7**
JFK	**Kawauchi**	**0.56**	**301**	P	**Pb**	**17 33 00.5**	**-0.4**
JFK				*e*S	**Sg**	**17 33 07.4**	**+1.3**
JHO	**Hitachi**	**0.86**	**237**	P	**Pg**	**17 33 05.1**	**+0.3**
JHO				*e*S	**Sg**	**17 33 15.8**	**-0.2**
JMM	**Marumori**	**0.95**	**326**	P	**Pb**	**17 33 07.5**	**-0.1**
JMM				*e*S	**Sg**	**17 33 19.6**	**+0.7**
JFT	**Otama**	**1.00**	**296**	P	**Pb**	**17 33 08.6**	**+0.1**
JFT				*e*S	**Sg**	**17 33 21.2**	**+0.6**
JIO	**Ouri**	**1.37**	**356**	P	**Pg**	**17 33 14.4**	**-0.2**
JIO				*e*S	**Sg**	**17 33 31.7**	**-0.8**
JOU	**Okura**	**1.43**	**334**	P	**Pb**	**17 33 15.8**	**0.0**
JOU				*e*S	**Sg**	**17 33 34.3**	**0.0**
JFY	**Yanaizu**	**1.45**	**284**	P	**Pn**	**17 33 15.8**	**+0.1**
JFY				*e*S	**Sg**	**17 33 34.1**	**-0.7**
MJAR	**Matsushiro Arr**	**2.67**	**259**	Pn	**Pn**	**17 33 33.0**	**+0.5**
	2.2nm,0.3s,baz=81,slow=16,SNR=18						
MJAR				Sn	**Sb**	**17 34 08.4**	**-1.9**
	4.2nm,0.3s,baz=60,slow=4.9,SNR=6.2						
MAT	**Matsushiro**	**2.67**	**259**	P	**Pn**	**17 33 33.2**	**+0.7**
MAT				S	**Sn**	**17 34 06.1**	**+0.5**
H11N2	**WAKE ISLAND Hy**	**28.13**	**121**	T	T	18 08 09.8	
	baz=314,slow=75,SNR=85						
H11N1	**WAKE ISLAND Hy**	**28.14**	**121**	T	T	18 08 12.4	
	baz=314,slow=75,SNR=123						
H11N3	**WAKE ISLAND Hy**	**28.15**	**121**	T	T	18 08 13.1	
	baz=314,slow=75,SNR=101						
H11S1	**WAKE ISLAND Hy**	**28.85**	**123**	T	T	18 09 07.0	
	baz=315,slow=76,SNR=30						
H11S3	**WAKE ISLAND Hy**	**28.85**	**123**	T	T	18 09 09.5	
	baz=315,slow=76,SNR=21						
H11S2	**WAKE ISLAND Hy**	**28.86**	**123**	T	T	18 09 08.0	
	baz=315,slow=76,SNR=24						
MKAR	**Makanchi Array**	**44.13**	**302**	P	**P**	**17 40 58.4**	**+0.1**
	0.1nm,0.2s,baz=95,slow=9.3,SNR=2.0						
WRA	**Warramunga Arr**	**57.11**	**188**	P	**P**	**17 42 36.4**	**-0.1**
	0.4nm,0.7s,baz=4.7,slow=7.3,SNR=4.7						
ASAR	**Alice Springs**	**60.84**	**188**	P	**P**	**17 43 02.8**	**+0.5**
	0.2nm,0.8s,baz=14,slow=8.6,SNR=3.0						

*CSEM **29** 17:49:36.9±0.1,39°.08N×29°.05E,h5km,MD2.8,Error*
ellipse: s-maj=1.8km s-min=1.6km az=19.0
*ISK **29** 17:49:36.6,39°.09N×29°.04E,h6km,MD2.9*
*DDA **29** 17:49:36.5,39°.12N×29°.04E,h7km,Md2.8*
ISC 29 17:49:36.7±0.9,39°.08N±0°.02×29°.04E±0°.02,h14km±7km,
n37,σ0°34/50,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**262**	P	**Pg**	**17 49 42.3**	**0.0**
DEMI				S	**Sg**	**17 49 46.2**	**+0.1**
DEMI	**Demirci**	**0.26**	**262**	*i* P	**Pg**	**17 49 42.3**	**0.0**
DEMI				*i* S	**Sg**	**17 49 46.2**	**+0.1**
GDZ	**Gediz**	**0.34**	**88**	P	**Pg**	**17 49 43.7**	**-0.1**
GDZ				S	**Sg**	**17 49 48.7**	**+0.1**
GDZ	**Gediz**	**0.34**	**88**	*i* P	**Pg**	**17 49 43.7**	**-0.1**
GDZ				*i* S	**Sg**	**17 49 48.7**	**+0.1**
TVSB	**Tavsanli**	**0.49**	**41**	*e*PG	**Pg**	**17 49 46.2**	**-0.3**
TVSB	**Tavsanli**	**0.49**	**41**	*e*Pg	**Pg**	**17 49 46.2**	**-0.3**
KHAL	**Karahalli**	**0.79**	**154**	P	**Pg**	**17 49 52.1**	**0.0**
KHAL				S	**Sb**	**17 50 02.8**	**-0.1**
KHAL	**Karahalli**	**0.79**	**154**	*i* P	**Pg**	**17 49 52.1**	**0.0**
KHAL				*i* S	**Sb**	**17 50 02.8**	**-0.1**
KHL	**Karahalli**	**0.84**	**153**	*e*PG	**Pb**	**17 49 53.6**	**+0.4**
KHL	**Karahalli**	**0.84**	**153**	*e*Pg	**Pb**	**17 49 53.6**	**+0.4**
ORLT	**Orhaneli**	**0.97**	**353**	*e*PG	**Pb**	**17 49 55.5**	**+0.2**
ORLT	**Orhaneli**	**0.97**	**353**	*e*Pg	**Pb**	**17 49 55.5**	**+0.2**
AKHS	**Akhisar**	**0.98**	**259**	P	**Pb**	**17 49 55.5**	**0.0**
AKHS				S	**Sn**	**17 50 09.3**	**-0.4**
AKHS	**Akhisar**	**0.98**	**259**	*i* P	**Pb**	**17 49 55.5**	**0.0**
AKHS				*i* S	**Sn**	**17 50 09.3**	**-0.4**
AKS	**Akhisar**	**0.98**	**259**	*e*PG	**Pb**	**17 49 55.5**	**0.0**
BALB	**Balikesir**	**1.06**	**302**	*e*PG	**Pg**	**17 49 57.4**	**+0.2**
BALB				*e*SG	**Sn**	**17 50 12.4**	**+0.7**
BALB	**Balikesir**	**1.06**	**302**	*e*Pg	**Pg**	**17 49 57.4**	**+0.2**
BALB				*e*Sg	**Sn**	**17 50 12.4**	**+0.7**
IGD	**Bursa**	**1.19**	**6**	*i* P	**Pn**	**17 49 58.1**	**-0.8**
IGD				*i* S	**Sg**	**17 50 15.3**	**+0.1**
CAVI	**Cavuskoy**	**1.28**	**29**	*e*PN	**Pg**	**17 50 01.6**	**+0.3**
CAVI	**Cavuskoy**	**1.28**	**29**	*e*Pn	**Pg**	**17 50 01.6**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.29**	**355**	*e*PN	**Pg**	**17 50 01.6**	**0.0**
MDNY	**Mudanya-Bursa**	**1.29**	**355**	*e*Pn	**Pg**	**17 50 01.6**	**0.0**
IZI	**Iznik**	**1.30**	**15**	*e*PN	**Pg**	**17 50 02.2**	**+0.5**
KCTX	**Karacabey (Bur**	**1.30**	**336**	*e*PN	**Pg**	**17 50 01.6**	**-0.1**
KCTX	**Karacabey (Bur**	**1.30**	**336**	*e*Pn	**Pg**	**17 50 01.6**	**-0.1**
BORA	**Eskisehir**	**1.35**	**53**	P	**Pb**	**17 50 02.2**	**+0.4**
BORA				S	**Sg**	**17 50 21.0**	**+0.6**
BORA	**Eskisehir**	**1.35**	**53**	*i* P	**Pb**	**17 50 02.2**	**+0.4**
BORA				*i* S	**Sg**	**17 50 20.9**	**+0.6**
GONE	**Gonen-Balikesi**	**1.43**	**313**	*e*PN	**Pb**	**17 50 03.4**	**+0.4**
GONE	**Gonen-Balikesi**	**1.43**	**313**	*e*Pn	**Pb**	**17 50 03.4**	**+0.4**
ADVT	**Abdulvahap**	**1.45**	**21**	*e*PN	**Pb**	**17 50 04.0**	**+0.4**
ARMT	**Armutlu**	**1.49**	**355**	*e*PN	**Pb**	**17 50 04.2**	**0.0**
ARMT	**Armutlu**	**1.49**	**355**	*e*Pn	**Pb**	**17 50 04.2**	**0.0**
EDC	**Edincik**	**1.56**	**325**	*e*PN	**Pb**	**17 50 05.5**	**+0.2**
EDC	**Edincik**	**1.56**	**325**	*e*Pn	**Pb**	**17 50 05.5**	**+0.2**
GULT	**Gulveren**	**1.76**	**40**	*e*PN	**Pb**	**17 50 08.6**	**-0.3**
GULT	**Gulveren**	**1.76**	**40**	*e*Pn	**Pb**	**17 50 08.6**	**-0.3**
SPNC	**Sapanca-Adapaz**	**1.88**	**31**	*e*PN	**Pb**	**17 50 10.0**	**-0.7**

*IDC **29** 18:00:25.1±1.3,14°.53S×76°.28W,h0km,mb4.0/6,*
mb1 4.2/9,mb1mx4.0/32,mbtmp4.1/9,ML3.5/2,MS3.5/5,
Ms1 3.5/5,ms1mx3.2/24,Error ellipse: s-maj=38.3km
s-min=15.0km az=60.0
*ISCJB **29** 18:00:26.7±1.0,14°.56S±0°.10×76°.2W±0°.2,h23km,mb3.9/6,*
MS4.0/2,Error ellipse: s-maj=25.8km s-min=6.6km
az=149.4
ISC 29 18:00:28.7±1.1,14°.5S±0°.1×76°.2W±0°.2,h23km,n20,
σ1°17/13,mb3.9/6,Near coast of Peru

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NNA	**Nana**	**2.58**	**345**	Pn	**Pn**	**18 01 08.2**	**-1.0**
	7.7nm,0.3s,baz=152,slow=15,SNR=22						
NNA				Sn	**Sn**	**18 01 40.5**	**+0.6**
	91nm,0.3s,baz=256,slow=23,SNR=7.8						
NNA				Lg	Lg	18 01 48.2	
	345nm,0.3s,baz=210,slow=11,SNR=18						
NNA				LR	LR	18 02 09.5	
	comp=Z,274nm,18.8s,baz=150,slow=40						
ATAH	**Atahualpa**	**7.64**	**343**	Pn	Pn	18 02 24.8	+5.7
	2.0nm,0.3s,baz=121,slow=5.8,SNR=6.2						
LPAZ	**La Paz**	**7.96**	**104**	Pn	Pn	18 02 28.5	+4.9
	3.1nm,0.3s,baz=294,slow=7.0,SNR=74						
LPAZ				LR	LR	18 05 42.4	
	comp=Z,183nm,18.7s,baz=322,slow=39						
LVC	**Limon Verde**	**10.60**	**141**	Pn	**Pn**	**18 03 00.9**	**+1.3**
	40nm,0.3s,baz=309,slow=8.8,SNR=8.5						
LVC				Sn	**Sn**	**18 04 56.4**	**-1.5**
	38nm,0.3s,baz=250,slow=8.2,SNR=3.0						
LVC				Lg	Lg	18 06 00.6	
	6.1nm,0.3s,baz=108,slow=23,SNR=5.8						
LVC				LR	LR	18 06 33.8	
	comp=Z,523nm,20.3s,baz=310,slow=35						
SIV	**San Ignacio**	**14.65**	**98**	Pn	**Pn**	**18 03 53.8**	**-1.0**
	0.3nm,0.3s,baz=284,slow=14,SNR=5.6						
SIV				LR	LR	18 10 20.6	
	comp=Z,432nm,20.0s,baz=311,slow=40						
PTGA	**Pitinga**	**21.08**	**51**	P	**P**	**18 05 12.8**	**+1.3**
	2.4nm,0.3s,baz=227,slow=16,SNR=7.0						
CPUP	**Villa Florida**	**21.19**	**127**	P	**P**	**18 05 13.6**	**+0.8**
	4.1nm,0.9s,baz=329,slow=11,SNR=4.9						
CPUP				LR	LR	18 13 39.3	
	comp=Z,80nm,18.3s,baz=252,slow=37						
TXAR	**Lajitas Array**	**51.03**	**329**	P	**P**	**18 09 30.6**	**+1.3**
	0.3nm,0.7s,baz=146,slow=7.6,SNR=5.6						
ULM	**Lac du Bonnet**	**66.76**	**346**	P	**P**	**18 11 17.3**	**-0.7**
	2.1nm,0.5s,baz=132,slow=3.3,SNR=3.5						
RAR	**Rarotonga**	**79.03**	**251**	LR	LR	18 40 08.5	
	comp=Z,594nm,19.9s,baz=19,slow=30						
TORD	**Torodi Ar. Bea**	**81.84**	**74**	P	**P**	**18 12 47.4**	**+0.7**
	5.1nm,0.8s,baz=268,slow=4.2,SNR=24						
YKA	**Yellowknife Ar**	**82.42**	**343**	P	**P**	**18 12 48.2**	**-0.5**
	0.5nm,0.7s,baz=141,slow=5.1,SNR=4.5						
H11N3	**WAKE ISLAND Hy**	**19.77**	**285**	T	T	20 30 15.9	
	baz=96,slow=74,SNR=41						
H11N2	**WAKE ISLAND Hy**	**19.78**	**285**	T	T	20 30 16.7	
	baz=96,slow=74,SNR=29						
H11N1	**WAKE ISLAND Hy**	**19.78**	**285**	T	T	20 30 16.4	
	baz=96,slow=74,SNR=13						
H11S2	**WAKE ISLAND Hy**	**19.83**	**283**	T	T	20 30 24.5	
	baz=97,slow=75,SNR=13						
H11S1	**WAKE ISLAND Hy**	**19.84**	**283**	T	T	20 30 16.9	
	baz=97,slow=75,SNR=16						
H11S3	**WAKE ISLAND Hy**	**19.85**	**283**	T	T	20 30 09.4	
	baz=97,slow=75,SNR=17						
MKAR	**Makanchi Array**	**143.12**	**25**	PKP	**PKPdf**	**18 19 59.6**	**-1.4**
	0.2nm,0.6s,baz=330,slow=5.2,SNR=2.5						
SONM	**Songino Array**	**146.70**	**357**	PKPbc	**PKPbc**	**18 20 08.4**	**-0.4**
	0.6nm,0.5s,baz=332,slow=3.0,SNR=6.7						

*ISCJB **29** 18:12:38.9±0.5,39°.12N±0°.03×29°.11E±0°.03,h3km±6km,*
Error ellipse: s-maj=5.5km s-min=3.6km az=164.4
*DDA **29** 18:12:38.6,39°.12N×29°.11E,h7km,Md3.0*
*CSEM **29** 18:12:39.3±0.1,39°.12N×29°.11E,h5km,ML3.0,Error*
ellipse: s-maj=2.9km s-min=2.4km az=162.0
*ISK **29** 18:12:39.4,39°.16N×29°.13E,h5km,MD2.9*
ISC 29 18:12:38.9±0.9,39°.12N±0°.02×29°.12E±0°.02,h11km±8km,
n45,σ0°34/62,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.28**	**96**	P	**Pg**	**18 12 44.7**	**0.0**
GDZ				S	**Sg**	**18 12 49.0**	**+0.4**
GDZ	**Gediz**	**0.28**	**96**	*i* P	**Pg**	**18 12 44.7**	**0.0**
GDZ				*i* S	**Sg**	**18 12 49.0**	**+0.4**
DEMI	**Demirci**	**0.33**	**257**	P	**Pg**	**18 12 45.4**	**-0.1**
DEMI				S	**Sg**	**18 12 49.9**	**0.0**
DEMI	**Demirci**	**0.33**	**257**	*i* P	**Pg**	**18 12 45.4**	**-0.1**
DEMI				*i* S	**Sg**	**18 12 49.9**	**0.0**
TVSB	**Tavsanli**	**0.42**	**38**	*e*PG	**Pg**	**18 12 47.3**	**0.0**
TVSB				*e*SG	**Sg**	**18 12 52.9**	**0.0**
TVSB	**Tavsanli**	**0.42**	**38**	*e*Pg	**Pg**	**18 12 47.3**	**0.0**
TVSB				*e*Sg	**Sg**	**18 12 52.9**	**0.0**
KHAL	**Karahalli**	**0.80**	**159**	P	**Pg**	**18 12 54.4**	**0.0**
KHAL				S	**Sg**	**18 13 05.0**	**+0.1**
KHAL	**Karahalli**	**0.80**	**159**	*i* P	**Pg**	**18 12 54.4**	**0.0**
KHAL				*i* S	**Sg**	**18 13 05.0**	**+0.1**
KHL	**Karahalli**	**0.85**	**158**	*e*PG	**Pn**	**18 12 56.9**	**-0.1**
KHL	**Karahalli**	**0.85**	**158**	*e*Pg	**Pn**	**18 12 56.9**	**-0.1**
ORLT	**Orhaneli**	**0.94**	**349**	*e*PG	**Pn**

Moment tensor: Scale 10^{17}Nm; M_{rr}0.55; $M_{\theta\theta}$5.26; $M_{\phi\phi}$-5.82; $M_{r\theta}$0.88; $M_{r\phi}$2.67; $M_{\theta\phi}$0.71; Best double couple: $M_0$6.30000×10^{17} NP1:ϕ_s123.00000°,δ80.00000°, λ5.00000°. NP2:ϕ_s32.00000°,δ86.00000°,λ170.00000°. Principal axes: T 6.0600, Plg11.0000°, Azm347.0000°; N 0.4000, Plg79.0000°, Azm188.0000°; P -6.4600, Plg4.0000°, Azm77.0000°; Broadband fault plane solution: P waves. NP1:ϕ_s228.00000°,δ62.00000°, λ139.00000°. NP2:ϕ_s340.00000°,δ55.00000°,λ35.00000°. Principal axes: T Plg48.0000°, Azm191.0000°; N Plg0.0000°, Azm0.0000°; P Plg4.0000°, Azm286.0000°; Depth from synthetics of broadband displacement seismograms. Energy computed from CMT mechanism.

NEIC Felt (II) at Lampung.

NEIC **29** 18:24:01.0±0.0, 7.75S×101.75E, h15km, Moment Tensor Solution. s20 Moment tensor: Scale 10^{17}Nm; M_{rr}0.40; $M_{\theta\theta}$0.40; $M_{\phi\phi}$-0.80; $M_{r\theta}$-2.70; $M_{r\phi}$-6.60; $M_{\theta\phi}$4.10; Best double couple: $M_0$8.00000×10^{17} NP1:ϕ_s359.00000°, δ78.00000°,λ29.00000°. NP2:ϕ_s263.00000°,δ60.00000°, λ167.00000°. Principal axes: T 9.1000, Plg28.0000°, Azm224.0000°; N -1.9000, Plg58.0000°, Azm18.0000°; P -7.1000, Plg11.0000°, Azm128.0000°;

DJA **29** 18:24:01.8±0.3, 8.8°S×3.3°×10.2E±.°, h10km, M5.7/72, mb5.8/72, mB6.0/71, MLv6.6/22, Mw(mB)5.6/71, Mwp5.8/15

MOS **29** 18:24:04.0±1.4, 7.46S×101.87E, h33km, mb5.4/69, MS5.2/59, Error ellipse: s-maj=8.7km s-min=4.6km az=109.2

KLM **29** 18:24:06.3, 7.60S×101.64E, h42km, mb6.0, MS6.5

ISC 29 18:24:02.8±0.4, 7.72S±0.03×101.78E±0.03, h21km±4km, h21km:pP-P, n803, σ2°17/803, mb5.4/184, MS5.4/214, 48C-17D, Southwest of Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KASI	**Kota Agung**	**3.47**	**51**	P	**Pn**	**18 24 56.4**	**+0.8**
KASI				S	**Sn**	**18 25 34.7**	**-1.4**
LWLI	**Liwa**	**3.51**	**40**	P	**Pn**	**18 24 57.1**	**+0.8**
LWLI				S	**Sn**	**18 25 37.1**	**-0.2**
CGJI	**Cibinong**	**4.04**	**74**	P	**Pn**	**18 25 04.5**	**+1.1**
CGJI				S	**Sn**	**18 25 49.4**	**-0.7**
BLSI	**Bandar Lampung**	**4.16**	**56**	P	**Pn**	**18 25 06.5**	**+1.4**
KLI	**Kotabumi**	**4.17**	**47**	P	**Pn**	**18 25 07.0**	**+1.7**
LHSI	**Lahat**	**4.24**	**24**	P	**Pn**	**18 25 06.8**	**+0.6**
LHSI				S	**Sn**	**18 25 53.1**	**-1.9**
MASI	**Maura Aman, Be**	**4.57**	**6**	P	**Pn**	**18 25 09.5**	**-1.3**
MASI				S	**Sn**	**18 25 59.0**	**-4.3**
SBJI	**Serang**	**4.60**	**70**	P	**Pn**	**18 25 12.9**	**+1.7**
XMIS	**Christmas Isla**	**4.71**	**126**	*e*Pn	**Pn**	**18 25 08.9**	**-3.8**
XMIS				*e*Sn	**Sn**	**18 26 00.4**	**-6.4**
SKJI	**Sukabumi**	**4.79**	**82**	P	**Pn**	**18 25 15.0**	**+1.2**
SKJI				S	**Sn**	**18 26 05.2**	**-3.6**
CBJI	**Citeko**	**5.20**	**76**	P	**Pn**	**18 25 22.1**	**+2.7**
	23µm,0.8s,483µm206nm						
CBJI				S	**Sn**	**18 26 17.3**	**-1.4**
	23µm,0.8s,483µm206nm						
PPSI	**Pulau Pagai**	**5.23**	**340**	P	**Pn**	**18 25 17.5**	**-2.3**
	5µm,1.0s,57µm62nm						
PPSI				S	**Sn**	**18 26 17.1**	**-2.3**
	5µm,1.0s,57µm62nm						
CNJI	**Cibinong**	**5.32**	**86**	P	**Pn**	**18 25 21.3**	**+0.2**
	4µm,0.8s,135µm67nm						
PMBI	**Palembang**	**5.62**	**32**	P	**Pn**	**18 25 25.7**	**+0.6**
	11µm,0.9s,97µm129µm31nm						
LEM	**Lembang**	**5.86**	**82**	Pn	Pb	18 25 37.3	-7.1
	196nm,0.3s,baz=227,slow=4.2,SNR=186						
LEM				Sn	**Sn**	**18 26 38.6**	**+3.3**
	515nm,0.3s,baz=158,slow=22,SNR=4.5						
LEM				LR	LR	18 28 03.9	
	comp=Z,37µm,20.9s,baz=240,slow=42						
LEM	**Lembang**	**5.86**	**82**	P	Pn	18 25 36.4	+7.8
CISI	**Cisompet, Garu**	**5.99**	**89**	P	**Pn**	**18 25 30.9**	**+0.6**
	4µm,0.9s,155µm35µm71nm						
CISI	**Cisompet, Garu**	**5.99**	**89**	*e*Pn	**Pn**	**18 25 30.9**	**+0.6**
CISI				*e*Sn	**Sn**	**18 26 43.0**	**+4.6**
JCJI	**Jatiwangi**	**6.56**	**80**	P	**Pn**	**18 25 41.2**	**+3.1**
COCO	**West Island**	**6.59**	**227**	*e*P	**Pn**	**18 25 35.5**	**-3.0**
COCO	**West Island**	**6.59**	**227**	*e*Pn	**Pn**	**18 25 35.5**	**-3.0**
	36µm,0.6s						
CMJI	**Cimerak**	**6.61**	**91**	P	**Pn**	**18 25 39.2**	**+0.4**
	3µm,0.5s,103µm39nm						
CMJI				S	**Sn**	**18 26 48.3**	**-5.3**
	3µm,0.5s,103µm39nm						
PDSI	**Padang**	**6.89**	**349**	P	**Pn**	**18 25 39.8**	**-2.8**
	745nm,0.5s,94µm31nm						
PPBI	**Pangkal Pinang**	**7.02**	**38**	P	**Pn**	**18 25 45.1**	**+0.6**
	763nm,0.8s,7µm2.2nm						
RGRI	**Rengat**	**7.34**	**4**	P	**Pn**	**18 25 51.5**	**+2.7**
PPI	**Padang Panjang**	**7.34**	**349**	P	**Pn**	**18 25 47.0**	**-1.8**
	1µm,1.0s,38µm64µm16nm						
DSRI	**Dabo**	**7.71**	**21**	P	Pn	18 25 59.1	+5.2
BKNI	**Bangkinang**	**8.02**	**355**	P	**Pn**	**18 25 58.9**	**+0.7**
	1µm,1.2s,27µm44µm19nm						
BKNI	**Bangkinang**	**8.02**	**355**	*e*Pn	**Pn**	**18 25 56.6**	**-1.6**
BKNI				*e*Sn	**Sn**	**18 27 24.9**	**-3.5**
PBSI	**Pulau Batu**	**8.37**	**335**	P	**Pn**	**18 25 59.9**	**-3.1**
	884nm,1.2s,13µm						
UGM	**Wanagama**	**8.67**	**92**	P	**Pn**	**18 26 08.3**	**+1.2**
	1µm,0.7s,15µm						
UGM	**Wanagama**	**8.67**	**92**	*e*Pn	**Pn**	**18 26 07.4**	**+0.3**
UGM				*e*Sn	**Sn**	**18 27 37.4**	**-6.9**
MNSI	**Mandailing Nat**	**8.73**	**345**	P	**Pn**	**18 26 05.8**	**-2.2**
	582nm,1.1s,7µm						
TPRI	**Tanjung Pinang**	**9.01**	**18**	P	**Pn**	**18 26 12.4**	**+0.7**
WOJI	**Wonogiri, Jawa**	**9.06**	**91**	P	**Pn**	**18 26 14.4**	**+1.9**
NGJI	**Ngawi**	**9.61**	**89**	P	Pn	18 26 26.1	+6.2
MYKOM	**Kota Tinggi**	**9.67**	**12**	*e*Pn	**Pn**	**18 26 19.9**	**-0.9**
MYKOM				*e*Sn	**Sn**	**18 28 04.8**	**-4.0**
GSI	**Gunungsitoli**	**9.89**	**335**	P	**Pn**	**18 26 20.9**	**-3.0**
	1µm,0.7s,11µm						
GSI	**Gunungsitoli**	**9.89**	**335**	*e*Pn	**Pn**	**18 26 20.7**	**-3.2**
GSI				*e*Sn	Sn	18 28 04.9	-10
PWJI	**Pagerwojo**	**9.94**	**92**	P	**Pn**	**18 26 25.6**	**+1.1**
	1µm,0.8s,12µm23µm						
TBJI	**Tambak Boyo**	**10.03**	**86**	P	**Pn**	**18 26 27.3**	**+1.5**
PSI	**Prapat**	**10.83**	**345**	Pn	**Pn**	**18 26 33.0**	**-3.8**
	8.7nm,0.3s,baz=164,slow=12,SNR=23						
PSI	**Prapat**	**10.83**	**345**	P	**Pn**	**18 26 33.0**	**-3.8**
PSI				pmax	pmax		
	comp=Z,9.0nm,0.3s						
PSI	**Prapat**	**10.83**	**345**	*e*Pn	**Pn**	**18 26 32.6**	**-4.2**
PBKI	**Pangkalan Bun**	**11.04**	**64**	P	**Pn**	**18 26 42.2**	**+2.7**
	comp=Z,4µm,0.9s,comp=Z,27µm						
GMJI	**Gumukmas**	**11.57**	**94**	P	**Pn**	**18 26 48.2**	**+1.4**
	comp=Z,289nm,1.0s,comp=Z,4µm						
TSI	**Tuntungan**	**11.60**	**344**	P	**Pn**	**18 26 45.9**	**-1.3**
	comp=Z,485nm,0.9s,comp=Z,4µm						
KCSI	**Kotacane, Aceh**	**11.86**	**340**	P	**Pn**	**18 26 48.2**	**-2.6**
	comp=Z,213nm,0.8s,comp=Z,3µm						
JAGI	**Jajag, Banyuwa**	**12.28**	**94**	P	**Pn**	**18 26 56.4**	**-0.1**
	comp=Z,481nm,0.7s,comp=Z,5µmcomp=Z,21µm						
JAGI	**Jajag, Banyuwa**	**12.28**	**94**	*e*Pn	**Pn**	**18 26 55.2**	**-1.3**
JAGI				*e*Sn	**Sn**	**18 29 15.9**	**+3.0**
ABJI	**Asem Bagus**	**12.35**	**91**	P	**Pn**	**18 26 58.6**	**+1.2**
	comp=Z,582nm,0.7s,comp=Z,6µm						
STKI	**Sintang**	**12.38**	**52**	P	**Pn**	**18 27 00.7**	**+2.7**
	comp=Z,1µm,1.0s,comp=Z,8µmcomp=Z,21µm						
KSM	**Kuching**	**12.48**	**43**	⇑P	**Pn**	**18 27 01.1**	**+1.8**
KSM	**Kuching**	**12.48**	**43**	*e*Pn	**Pn**	**18 27 00.1**	**+0.7**
KSM				*e*Sn	**Sn**	**18 29 18.7**	**+0.8**
KULM	**Kulim**	**12.97**	**355**	⇓P	**Pn**	**18 27 05.2**	**-0.8**
KULM	**Kulim**	**12.97**	**355**	*e*Pn	**Pn**	**18 27 02.8**	**-3.2**
KTGM	**Kuala Trenggan**	**13.03**	**6**	⇓P	**Pn**	**18 27 05.7**	**-1.1**
MLSI	**Meulaboh, Aceh**	**13.06**	**336**	P	**Pn**	**18 27 05.0**	**-2.2**
	comp=Z,3µm,1.2s,comp=Z,20µm						
DNP	**Denpasar**	**13.33**	**95**	P	**Pn**	**18 27 14.2**	**+3.3**
BBKI	**Banjar Baru**	**13.67**	**73**	P	**Pn**	**18 27 17.1**	**+1.5**
	comp=Z,252nm,1.1s,comp=Z,3µm						
LHMI	**Lhok Sumawe**	**13.73**	**339**	P	**Pn**	**18 27 14.1**	**-2.3**
	comp=Z,455nm,0.8s,comp=Z,6µm						
LHMI	**Lhok Sumawe**	**13.73**	**339**	*e*Pn	**Pn**	**18 27 13.1**	**-3.4**
LHMI				*e*Sn	**Sn**	**18 29 44.1**	**-4.4**
SBUM	**Sibu**	**14.51**	**46**	⇓P	**Pn**	**18 27 30.4**	**+3.3**
MTKI	**Muara Teweh, K**	**14.71**	**63**	P	**Pn**	**18 27 29.9**	**+0.2**
	comp=Z,266nm,1.2s,comp=Z,8µm						
TWSI	**Taliwang, Sumb**	**14.98**	**95**	P	**Pn**	**18 27 32.0**	**-1.5**
	comp=Z,298nm,0.9s,comp=Z,3µm						
TRTT	**Trang**	**15.59**	**352**	P	**Pn**	**18 27 40.6**	**-0.8**
	comp=Z,84nm,1.0s,comp=Z,1µm						
BTM	**Bintulu**	**15.65**	**47**	⇑P	**Pn**	**18 27 44.1**	**+1.9**
PLAI	**Plampang**	**15.87**	**95**	P	**Pn**	**18 27 45.6**	**+0.5**
	comp=Z,465nm,0.8s,comp=Z,5µmcomp=Z,17µm						
PKDT	**Phuket**	**15.88**	**347**	P	**P**	**18 27 53.7**	**+4.9**
BKB	**Balikpapan**	**16.37**	**68**	P	**P**	**18 27 54.2**	**-0.1**
	comp=Z,709nm,1.1s,comp=Z,7µm						
SURT	**Suratani**	**16.83**	**350**	P	**P**	**18 27 59.5**	**+0.2**
	comp=Z,48nm,0.9s						
KAPI	**Kappang**	**18.06**	**83**	P	**P**	**18 28 14.0**	**+1.0**
	comp=Z,2.9nm,0.3s,baz=274,slow=10,SNR=21						
KAPI				LR	LR	18 36 18.8	
	comp=Z,8µm,19.5s,baz=276,slow=41						
KAPI	**Kappang**	**18.06**	**83**	*e*Pn	**Pn**	**18 28 10.1**	**-2.5**
	comp=Z,64nm,0.8s						
SPSI	**Sidrap Palu**	**18.28**	**79**	P	**Pn**	**18 28 15.2**	**-0.1**
	comp=Z,62nm,0.8s,comp=Z,1µm						
WSI	**Waingapu**	**18.41**	**97**	P	**Pn**	**18 28 18.2**	**+1.3**
	comp=Z,748nm,0.8s,comp=Z,9µm						
TTSI	**Tana Toraja**	**18.55**	**76**	P	**Pn**	**18 28 19.7**	**+1.1**
	comp=Z,102nm,1.0s,comp=Z,2µm						
BSSI	**Bau Bau, Buton**	**18.64**	**86**	P	**Pn**	**18 28 21.1**	**+1.3**
	comp=Z,316nm,1.6s,comp=Z,5µm						
BASI	**Baing, Sumba**	**18.74**	**99**	P	Pn	18 28 29.4	+8.5
PCI	**Palu**	**19.23**	**70**	P	**Pn**	**18 28 27.8**	**+1.0**
	comp=Z,759nm,1.2s,comp=Z,10µm						
KKM	**Kota Kinabalu**	**19.86**	**47**	⇑P	**Pn**	**18 28 34.9**	**+0.5**
KKM	**Kota Kinabalu**	**19.86**	**47**	*e*P	**P**	**18 28 32.8**	**0.0**
	comp=Z,2µm,1.9s						
MMRI	**Maumere**	**20.27**	**94**	P	**P**	**18 28 37.3**	**+0.1**
	comp=Z,906nm,1.1s,comp=Z,8µmcomp=Z,11µm						
MMRI	**Maumere**	**20.27**	**94**	*e*P	**P**	**18 28 36.0**	**-1.2**
	comp=Z,555nm,0.7s						
MMRI				*e*S	Sn	18 32 27.9	+0.7
SDKM	**Sandakan**	**20.31**	**50**	⇓P	Pn	18 28 40.5	+0.7
CHBT	**CHBT**	**20.34**	**2**	P	Pn	18 28 39.4	-0.6
	comp=Z,547nm,1.0s,comp=Z,6µm						
PHET	**Kaeng Krachan**	**20.60**	**354**	P	Pn	18 28 42.7	-0.4
	comp=Z,98nm,0.8s,comp=Z,697nm						
KDM	**Kudat**	**20.90**	**46**	⇓P	**P**	**18 28 45.4**	**+1.4**
KDI	**Kendari**	**21.06**	**81**	P	**P**	**18 28 47.1**	**+1.3**
	comp=Z,91nm,1.2s,comp=Z,1µm						
PBA	**Port Blair**	**21.24**	**335**	*e*P	**P**	18 28 46.8	-0.8
PBA				IAmb	IAmb	18 29 00.7	
	comp=Z,185nm,0.5s						
MRSI	**Marisa**	**21.69**	**69**	P	**P**	**18 28 52.2**	**-0.3**
	comp=Z,193nm,1.1s,comp=Z,4µm						
MBWA	**Marble Bar**	**21.89**	**130**	*e*P	**P**	**18 28 55.1**	**+0.4**
	comp=Z,2µm,1.3s						
MBWA				LR	LR		
	comp=Z,8µm,19.0s						
LUWI	**Luwuk**	**21.95**	**73**	P	**P**	**18 28 55.3**	**0.0**
	comp=Z,454nm,1.2s,comp=Z,4µm						
LUWI	**Luwuk**	**21.95**	**73**	*e*P	**P**	**18 28 54.2**	**-1.0**
	comp=Z,372nm,0.9s						
SOEI	**Soe**	**22.32**	**97**	P	**P**	**18 29 00.6**	**+1.2**
	comp=Z,920nm,1.3s,comp=Z,9µm						
SOEI	**Soe**	**22.32**	**97**	*e*P	**P**	**18 28 57.9**	**-1.6**
	comp=Z,667nm,0.8s						
DGPR	**DIGLIPUR**	**22.54**	**337**	*e*P	**P**	**18 28 59.5**	**-2.0**
DGPR				IAmb	IAmb	18 29 04.4	
	comp=Z,82nm,0.5s						
BATP	**Bataraza**	**22.89**	**45**	*e*P	**P**	**18 29 05.1**	**-0.3**
BATP				*e*S	**S**	**18 33 17.2**	**+3.0**
UBPT	**Khong Chiam**	**23.14**	**9**	P	**P**	**18 29 07.6**	**-0.2**
	comp=Z,350nm,1.1s,comp=Z,3µm						
CHAI	**Chaiyaphum**	**23.47**	**1**	P	**P**	**18 29 12.8**	**+1.7**
	comp=Z,74nm,0.9s,comp=Z,543nm						
KHON	**Khomkaen**	**23.92**	**2**	P	**P**	**18 29 16.7**	**+1.2**
	comp=Z,97nm,1.3s,comp=Z,787nm						
PBKT	**Sadao Pong**	**24.14**	**358**	P	**P**	**18 29 19.4**	**+1.9**
	comp=Z,149nm,0.8s,comp=Z,2µm						
SKNT	**Sakolnakorn**	**24.63**	**5**	P	**P**	**18 29 23.0**	**+1.0**
	comp=Z,224nm,0.8s,comp=Z,2µm						
SANI	**Sanana**	**24.76**	**78**	P	**P**	**18 29 23.9**	**+0.6**
	comp=Z,235nm,1.4s,comp=Z,3µmcomp=Z,7µm						
PANO	**Nakornpanom**	**24.86**	**6**	P	**P**	**18 29 25.3**	**+1.2**
	comp=Z,166nm,1.1s						
MORW	**Morawa**	**25.13**	**149**	P	**P**	**18 29 27.9**	**+1.4**
	baz=25,SNR=4.9						
UTTA	**Uttaradit**	**25.33**	**357**	P	**P**	**18 29 30.4**	**+2.1**
	comp=Z,49nm,0.8s,comp=Z,350nm						
FITZ	**Fitzroy Crossi**	**25.41**	**116**	P	**P**	**18 29 30.0**	**+0.9**
	baz=26,SNR=19						
FITZ	**Fitzroy Crossi**	**25.41**	**116**	*e*P	**P**	**18 29 29.6**	**+0.5**
ENPP	**El Nido**	**25.73**	**43**	*e*P	**P**	**18 29 33.0**	**+1.1**
PALK	**Pallekele**	**25.76**	**305**	P	**P**	**18 29 35.8**	**+3.5**
	comp=Z,19nm,0.7s,baz=115,slow=7.5,SNR=8.4						
PALK				LR	LR	18 38 12.8	
	comp=Z,8µm,18.8s,baz=115,slow=33						
IPIL	**Ipil**	**25.83**	**54**	*e*P	**P**	**18 29 34.6**	**+1.7**
MHMT	**Maesarieng**	**26.01**	**352**	P	**P**	**18 29 36.8**	**+2.3**
	comp=Z,86nm,0.9s,comp=Z,976nm						
CM01	**Chiang Mai Arr**	**26.12**	**354**	*e*P	**P**	**18 29 36.5**	**+1.0**
CM31	**Chiang Mai Arr**	**26.16**	**354**	*e*P	**P**	**18 29 37.2**	**+1.3**
CMAR	**Chiang Mai Arr**	**26.16**	**354**	P	**P**	**18 29 37.1**	**+1.3**
	comp=Z,22nm,0.7s,baz=186,slow=8.2,SNR=219						
CMAR				LR	LR	18 41 32.0	
	comp=Z,6µm,18.3s,baz=176,slow=40						
CMAR	**Chiang Mai Arr**	**26.16**	**354**	P	**P**	**18 29 37.2**	**+1.3**
CMAR				pmax	pmax		
	comp=Z,24nm,0.7s						
CMAR				MLR	MLR		
	comp=Z,6µm,18.3s						
CMMT	**Chiang Mai**	**26.51**	**354**	P	**P**	**18 29 40.5**	**+1.5**
	comp=Z,118nm,0.9s,comp=Z,1µm						
CHTO	**Chiang Mai**	**26.51**	**354**	P	**P**	**18 29 40.6**	**+1.5**
	comp=Z,307nm,1.0s,comp=Z,6µm						
CHTO	**Chiang Mai**	**26.51**	**354**	*e*P	**P**	**18 29 40.5**	**+1.5**
CHTO				pmax	pmax		
	comp=Z,84nm,0.9s						
CHTO	**Chiang Mai**	**26.51**	**354**	*e*P	**P**	**18 29 40.5**	**+1.5**
	comp=Z,84nm,0.8s						
CHTO				LR	LR		
	comp=Z,6µm,19.0s						
PAGZ	**Pagadian**	**26.51**	**55**	*e*P	**P**	**18 29 40.8**	**+1.6**
PAGZ				*e*S	**S**	**18 34 10.1**	**-2.4**
CUYO	**Cuyo Island**	**26.59**	**46**	*e*P	**P**	**18 29 40.2**	**+0.4**
BUSP	**Coron**	**26.82**	**43**	*e*P	**P**	**18 29 43.4**	**+1.5**
CTBH	**Cotabato--PC H**	**26.87**	**57**	⇑*e*P	**P**	**18 29 43.3**	**+0.9**
GUIM	**Jordan**	**27.59**	**49**	*e*P	**P**	**18 29 48.8**	**-0.1**
GUIM				*e*S	S	18 34 53.6	+24
QIZ	**Qiongzhong**	**27.74**	**17**	P	**P**	**18 29 52.5**	**+2.4**
QIZ				S	**S**	**18 34 36.0**	**+4.3**
QIZ				pmax	pmax		
	comp=Z,41nm,1.2s						
QIZ				pmax	pmax		
	comp=Z,620nm,7.7s						
QIZ				LR	LR		
	comp=Z,8µm,20.7s						
QIZ				LR	LR		
	comp=Z,16µm,20.7s						
QIZ				LR	LR		
	comp=Z,10µm,16.7s						
QIZ	**Qiongzhong**	**27.74**	**17**	PFAKE		18 30 00.0	+10
QIZ				LR	LR		
	comp=Z,6µm,19.0s						
SJMP	**San Jose**	**27.77**	**44**	*e*P	**P**	**18 29 51.8**	**+1.4**
CRAI	**Chiangrai**	**27.80**	**357**	P	**P**	**18 29 52.2**	**+1.5**
	comp=Z,372nm,1.3s,comp=Z,15µm						
BUKP	**Musuan**	**27.91**	**57**	*e*P	**P**	**18 29 53.1**	**+1.3**
DAV	**Davao City (W)**	**27.91**	**59**	P	**P**	**18 29 56.3**	**+4.6**
	comp=Z,88nm,0.4s,baz=132,slow=3.9,SNR=7.0						
DAV				LR	LR	18 41 11.7	
	comp=Z,5µm,21.4s,baz=240,slow=37						
DAV	**Davao City (W)**	**27.91**	**59**	⇑*e*P	**P**	**18 29 51.7**	**-0.1**
DAV	**Davao City (W)**	**27.91**	**59**	*e*P	**P**	**18 29 52.4**	**+0.6**
	comp=Z,378nm,1.3s						
LUBP	**Lubang**	**28.11**	**41**	*e*P	**P**	**18 29 54.1**	**+0.7**
LUBP				*e*S	**S**	**18 34 37.5**	**-0.1**
MATI	**Mati**	**28.43**	**60**	*e*P	**P**	**18 29 58.0**	**+1.7**
TGY	**Tagaytay City**	**28.84**	**41**	P	**P**	**18 29 58.5**	**-1.5**
	comp=Z,26nm,0.4s						
TGY				LR	LR	18 43 21.5	
	comp=Z,4µm,18.4s,slow=40						
NWAO	**Narrogin (SRO)**	**28.89**	**152**	P	**P**	**18 30 00.0**	**-0.3**
	baz=29,SNR=7.5						
NWAO	**Narrogin (SRO)**	**28.89**	**152**	PFAKE		18 30 10.0	+10
NWAO				LR	LR		
	comp=Z,6µm,19.0s						
H08S2	**Diego Garcia H**	**29.02**	**268**	T	T	19 01 54.0	
	baz=87,slow=75,SNR=24						
H08S3	**Diego Garcia H**	**29.03**	**268**	T	T	19 01 53.3	
	baz=87,slow=75,SNR=35						
H08S1	**Diego Carcia H**	**29.04**	**268**	T	T	19 01 54.5	
	baz=87,slow=75,SNR=41						
DGAR	**Diego Garcia**	**29.07**	**269**	PFAKE		18 30 10.0	+8.0
DGAR				LR	LR		
	comp=Z,5µm,21.0s						
SAUI	**Saumlaki**	**29.25**	**93**	*e*P	**P**	**18 30 03.8**	**+0.2**
	comp=Z,459nm,0.9s						
MTN	**Manton Dam**	**29.32**	**102**	P	**P**	**18 30 05.8**	**+1.6**
	baz=29,SNR=12						
MTN	**Manton Dam**	**29.32**	**102**	*e*P	**P**	**18 30 05.3**	**+1.1**
	comp=Z,82nm,0.6s						
H01W3	**Cape Leeuwin H**	**29.33**	**159**	T	T	19 01 01.0	
	baz=326						
H01W2	**Cape Leeuwin H**	**29.34**	**159**	T	T	19 01 03.6	
	baz=326,slow=74						
H01W1	**Cape Leeuwin H**	**29.34**	**159**	T	T	19 01 02.6	
	baz=326,slow=74						
OCLP	**Ormoc**	**29.39**	**51**	*e*P	**P**	**18 30 08.2**	**+3.4**
SCZP	**Santa Cruz**	**29.45**	**38**	*e*P	**P**	**18 30 05.7**	**+0.3**
AUQP	**San Andres**	**29.46**	**45**	*e*P	P	18 30 13.4	+8.0
MDRS	**Chennai**	**29.73**	**314**	*e*P	**P**	**18 30 07.5**	**-0.4**
MDRS				IAmb	IAmb	18 30 17.3	
	comp=Z,125nm,1.4s						
KMBL	**Kambalda**	**30.10**	**144**	P	**P**	**18 30 10.8**	**-0.2**
	baz=30,SNR=14						
SWI	**Sorong**	**30.16**	**78**	P	**P**	**18 30 12.0**	**+0.3**
	comp=Z,90nm,1.0s,comp=Z,1µm						
SKHT	**Srikalahasti**	**30.57**	**314**	*e*P	**P**	**18 30 16.9**	**+1.6**
SKHT				IAmb	IAmb	18 30 24.7	
	comp=Z,65nm,1.0s						
SKHT				*e*S	**S**	**18 35 18.1**	**+1.9**
SKHT				IVMs_BB	IVMs_BB	18 40 11.9	
	comp=Z,3µm,19.4s						
KDU	**Kakadu**	**30.60**	**102**	P	**P**	**18 30 14.8**	**-0.7**
	baz=31,SNR=5.4						
WRKA	**Warakurna**	**30.62**	**127**	P	**P**	**18 30 16.7**	**+1.0**
	baz=31,SNR=35						
FAKI	**Fak Fak**	**30.70**	**83**	P	**P**	**18 30 18.2**	**+1.7**
	comp=Z,121nm,1.4s,comp=Z,1µm						
FAKI	**Fak Fak**	**30.70**	**83**	*e*P	**P**	**18 30 16.1**	**-0.4**
	comp=Z,117nm,1.0s						
VIS	**Vishakhapatnam**	**31.16**	**324**	*e*P	**P**	**18 30 20.5**	**+0.1**
CHLP	**Challavanipeta**	**31.38**	**326**	*e*P	**P**	**18 30 22.6**	**+0.3**
CHLP				IAmb	IAmb	18 30 30.9	
	comp=Z,84nm,1.4s						
CHLP				*e*S	**S**	**18 35 27.9**	**-1.0**
CHLP				IVMs_BB	IVMs_BB	18 44 34.0	
	comp=Z,2µm,14.3s						
ABRA	**Dolores**	**31.39**	**36**	*e*P	**P**	**18 30 22.9**	**+0.4**
CAUP	**Cauayan**	**31.52**	**39**	*e*P	**P**	**18 30 24.5**	**+0.9**
PVM	**Polavaram**	**31.82**	**321**	*e*P	**P**	**18 30 26.7**	**+0.5**
PVM				IAmb	IAmb	18 30 34.8	
	comp=Z,171nm,1.4s						
PVM				*e*S	**S**	**18 35 36.1**	**+0.4**
PVM				IVMs_BB	IVMs_BB	18 44 26.2	
	comp=Z,1µm,14.0s						
ADKI	**Addanki**	**31.85**	**317**	*e*P	**P**	**18 30 27.6**	**+1.0**
ADKI				IAmb	IAmb	18 30 34.8	
	comp=Z,66nm,1.1s						
ADKI				*e*S	**S**	**18 35 37.2**	**+0.9**
ADKI				IVMs_BB	IVMs_BB	18 41 10.0	
	comp=Z,3µm,17.7s						
APYP	**Conner**	**31.87**	**37**	*e*P	**P**	**18 30 26.9**	**+0.2**
HKC	**Hong Kong Obse**	**32.21**	**22**	P	**P**	**18 30 32.0**	**+2.4**
RCLA	**Racherla**	**32.27**	**316**	*e*P	**P**	**18 30 31.1**	**+0.8**
RCLA				IAmb	IAmb	18 30 38.9	
	comp=Z,163nm,1.4s						
RCLA				*e*S	**S**	**18 35 42.8**	**-0.1**
RCLA				IVMs_BB	IVMs_BB	18 41 23.2	
	comp=Z,4µm,20.0s						
GZH	**Guangzhou**	**32.64**	**20**	⇑*i*P	P	18 30 39.5	+6.1
GZH				pmax	pmax		
	comp=Z,2µm,5.3s						
KMI	**Kunming**	**32.66**	**2**	P	**P**	**18 30 36.0**	**+2.2**
KMI				pP	pP	18 30 38.8	-1.3
KMI				sP	sP	18 30 40.0	-2.7
KMI				PP	**PP**	**18 31 47.8**	**0.0**
KMI				S	**S**	**18 35 52.8**	**+3.7**
KMI				SS

SRSP				IAmb	IAmb	18 31 02.6
	comp=Z,111nm,1.2s					
SRSP				*e*S	**S**	**18 36 26.0 -1.3**
SRSP				IVMs_BB	IVMs_BB	18 44 39.5
	comp=Z,1μm,20.4s					
KLRI	**Killari**	**35.70**	**316**	*e*P	**P**	**18 31 00.7 +0.5**
KLRI				IAmb	IAmb	18 31 07.8
	comp=Z,168nm,1.2s					
KLRI				*e*S	**S**	**18 36 36.0 0.0**
KLRI				IVMs_BB	IVMs_BB	18 43 15.9
	comp=Z,3μm,19.3s					
TWG	**Pinlang**	**35.75**	**31**	*e*P	**P**	**18 30 59.8 -0.6**
	comp=Z,140nm,0.8s					
TPUB	**Ta-pu**	**35.92**	**30**	*e*P	**P**	**18 31 03.4 +1.5**
	comp=Z,69nm,1.1s					
GOA	**Goa**	**36.04**	**310**	*e*P	**P**	**18 31 02.6 -0.4**
NGP	**Nagpur**	**36.35**	**323**	*e*P	**P**	**18 31 05.0 -0.6**
NGP				IAmb	IAmb	18 31 13.8
	comp=Z,71nm,0.9s					
QZH	**Quanzhou**	**36.36**	**26⇑**	*i*P	P	18 31 01.0 -4.6
QZH				PP	**PnPn**	**18 32 26.0 -2.1**
QZH				S	S	18 36 36.8 -9.1
SSLB	**Suanglung**	**36.49**	**30**	*e*P	**P**	**18 31 08.3 +1.5**
	comp=Z,38nm,0.9s					
YHNB	**Yeheng**	**37.43**	**30**	*e*P	**P**	**18 31 16.0 +1.2**
	comp=Z,58nm,0.8s					
YHNB				LR	LR	
	comp=Z,4μm,20.0s					
TATO	**Taipei**	**37.74**	**30**	PFAKE		18 31 30.0 +13
TATO				LR	LR	
	comp=Z,4μm,20.0s					
POO	**Poona**	**37.94**	**314**	*e*P	**P**	**18 31 18.6 -0.6**
POO				IAmb	IAmb	18 31 27.9
	comp=Z,93nm,0.4s					
CD2	**Chengdu**	**38.45**	**3**	P	**P**	**18 31 25.0 +1.7**
CD2				sP	pP	18 31 29.5 -0.3
CD2				PP	**PnPn**	**18 32 53.8 +0.3**
CD2				S	**S**	**18 37 22.8 +5.2**
CD2				sS	sS	18 37 28.0 -0.2
CD2				pmax	pmax	
	comp=Z,90nm,1.1s					
CD2				pmax	pmax	
	comp=Z,370nm,5.4s					
CD2				LR	LR	
	comp=Z,26μm,22.8s					
CD2				LR	LR	
	comp=Z,8μm,15.2s					
ENH	**Enshi**	**38.49**	**11**	*e*P	**P**	**18 31 24.1 +0.5**
	comp=Z,171nm,1.1s					
ENH				LR	LR	
	comp=Z,6μm,19.0s					
PKIN	**Phulchoki**	**38.50**	**336**	*e*P	**P**	**18 31 25.3 +1.2**
	comp=Z,26nm,1.0s					
GENI	**Genyem**	**38.56**	**84**	P	**P**	**18 31 25.4 +1.0**
LSA	**Lhasa**	**38.58**	**345**	P	**P**	**18 31 26.8 +1.9**
LSA				pP	**pP**	**18 31 30.5 -0.8**
LSA				S	**S**	**18 37 15.5 -4.9**
LSA				pmax	pmax	
	comp=Z,24nm,0.7s					
LSA				pmax	pmax	
	comp=Z,430nm,10.5s					
LSA				LR	LR	
	comp=Z,1μm,28.9s					
LSA				LR	LR	
	comp=Z,3μm,23.6s					
LSA				LR	LR	
	comp=Z,3μm,28.9s					
LSA	**Lhasa**	**38.58**	**345**	*e*P	**P**	**18 31 25.6 +0.7**
LSA				pmax	pmax	
	comp=Z,89nm,0.8s					
LSA				MLR	MLR	
	comp=Z,3μm,20.0s					
LSA	**Lhasa**	**38.58**	**345**	*e*P	**P**	**18 31 25.6 +0.7**
	comp=Z,89nm,0.8s					
LSA				LR	LR	
	comp=Z,3μm,20.0s					
GUN	**Gumba**	**38.61**	**337**	*e*P	**P**	**18 31 26.0 +0.9**
	comp=Z,83nm,0.6s					
DMN	**Daman**	**38.65**	**336**	*e*P	**P**	**18 31 26.3 +1.0**
	comp=Z,220nm,1.2s					
QIS	**Mount Isa**	**38.73**	**113**	P	**P**	**18 31 27.0 +1.1**
	baz=39,SNR=77					
KKN	**Kakani**	**38.74**	**336**	*e*P	**P**	**18 31 27.0 +1.0**
	comp=Z,392nm,1.2s					
BHPL	**Bhopal**	**38.91**	**323**	*e*P	**P**	**18 31 28.1 +0.9**
BHPL				IAmb	IAmb	18 31 35.1
	comp=Z,95nm,1.6s					
BOM	**Bombay**	**38.92**	**313**	*e*P	**P**	**18 31 25.4 -1.9**
BOM				AMb	AMB	18 31 40.5
	comp=Z,91nm,10.1s					
BOM				*ex*	x	18 37 22.1
BOM				AMS	AMS	18 45 58.7
	comp=Z,6μm,20.4s					
JAY	**Jayapura**	**39.10**	**84**	P	**P**	**18 31 30.1 +1.1**
GKN	**Gorkha**	**39.19**	**336**	*e*P	**P**	**18 31 30.7 +1.0**
	comp=Z,474nm,1.3s					
KOLN	**Koldanda**	**39.42**	**334**	*e*P	**P**	**18 31 32.9 +1.2**
	comp=Z,175nm,0.7s					
WHN	**Wuhan**	**39.91**	**17**	P	**P**	**18 31 37.3 +1.9**
WHN				pP	**pP**	**18 31 41.8 -0.1**
WHN				S	**S**	**18 37 38.3 -1.1**
WHN				pmax	pmax	
	comp=Z,1μm,8.3s					
WHN				LR	LR	
	comp=Z,16μm,17.6s					
WHN				LR	LR	
	comp=Z,34μm,18.2s					
WHN				LR	LR	
	comp=Z,18μm,14.5s					
PYUN	**Piuthan**	**39.97**	**334**	*e*P	**P**	**18 31 37.2 +0.9**
	comp=Z,493nm,1.2s					
BBOO	**Buckleboo**	**40.40**	**133**	P	**P**	**18 31 39.4 -0.2**
	baz=40,SNR=33					
BBOO	**Buckleboo**	**40.40**	**133**	*e*P	**P**	**18 31 36.9 -2.7**
	comp=Z,90nm,1.0s					
COEN	**Coen**	**41.09**	**102**	P	**P**	**18 31 46.1 +0.6**
	baz=41,SNR=21					
COEN	**Coen**	**41.09**	**102**	*e*P	**P**	**18 31 43.6 -1.9**
	comp=Z,54nm,0.9s					
XAN	**Xi'an**	**42.08**	**9**	P	**P**	**18 31 53.8 +0.5**
XAN				PP	**PP**	**18 33 33.3 +2.3**
XAN				S	**S**	**18 38 11.0 -0.7**
XAN				SS	**SS**	**18 41 11.0 -8.7**
XAN				ScS	**ScS**	**18 41 52.5 -2.5**
XAN				pmax	pmax	
	comp=Z,160nm,0.7s					
XAN				pmax	pmax	
	comp=Z,420nm,7.5s					
XAN				LR	LR	
	comp=Z,3μm,22.5s					
XAN				LR	LR	
	comp=Z,12μm,23.8s					
XAN				LR	LR	
	comp=Z,7μm,14.8s					
NJ2	**Nanjing**	**42.77**	**22**	*e*P	**P**	**18 32 00.5 +1.5**
NJ2				pP	**pP**	**18 32 05.5 +0.1**
NJ2				PP	**PP**	**18 33 43.3 +4.8**
NJ2				S	**S**	**18 38 26.3 +4.4**
NJ2				pmax	pmax	
	comp=Z,24nm,1.2s					
NJ2				pmax	pmax	
	comp=Z,740nm,5.9s					
NJ2				LR	LR	
	comp=Z,5μm,17.4s					
NJ2				LR	LR	
	comp=Z,3μm,16.3s					
NJ2				LR	LR	
	comp=Z,5μm,14.1s					
HTT	**Hallett**	**42.80**	**132**	P	**P**	**18 31 59.8 +0.5**
	baz=43,SNR=56					
SSE	**Sheshan**	**42.84**	**25**	P	**P**	**18 32 01.3 +1.8**
SSE				S	**S**	**18 38 25.5 +2.6**
SSE				sS	**sS**	**18 38 33.0 -0.5**
SSE				pmax	pmax	
	comp=Z,50nm,0.7s					
SSE				pmax	pmax	
	comp=Z,480nm,5.4s					
SSE				LR	LR	
	comp=Z,5μm,19.2s					
SSE				LR	LR	
	comp=Z,4μm,19.5s					
SSE				LR	LR	
	comp=Z,3μm,15.0s					
NDI	**New Delhi**	**43.26**	**328**	*ex*	P	18 31 56.0 -6.9
NDI				*ex*	x	18 39 01.5
LZH	**Lanzhou**	**43.61**	**2**	*e*P	**P**	**18 32 08.3 +2.4**
LZH				pP	pP	18 32 12.5 +0.1
LZH				sP	sP	18 32 15.5 +0.5
LZH				S	**S**	**18 38 34.0 -0.5**
LZH				sS	sS	18 38 44.0 -1.2
LZH				pmax	pmax	
	comp=Z,180nm,1.2s					
LZH				pmax	pmax	
	comp=Z,330nm,5.0s					
LZH				LR	LR	
	comp=Z,7μm,14.3s					
LZH				LR	LR	
	comp=Z,7μm,14.4s					
LZH				LR	LR	
	comp=Z,10μm,14.7s					
BHJ	**Bhuj**	**43.98**	**315**	*e*P	**P**	**18 32 07.8 -1.1**
BHJ				IAmb	IAmb	18 32 18.5
	comp=Z,64nm,0.9s					
STKA	**Stephens Creek**	**44.13**	**129**	P	**P**	**18 32 10.7 +0.7**
	comp=Z,55nm,0.6s,baz=301,slow=7.6,SNR=134					
STKA				LR	LR	18 50 16.6
	comp=Z,2μm,21.1s,baz=285,slow=36					
STKA	**Stephens Creek**	**44.13**	**129**	P	**P**	**18 32 10.7 +0.7**
	baz=44,SNR=224					
STKA	**Stephens Creek**	**44.13**	**129**	*e*P	**P**	**18 32 10.8 +0.7**
	comp=Z,19nm,0.7s					
DDI	**Dehra Dun**	**44.15**	**330**	*e*P	**P**	**18 32 10.4 +0.2**
CTAO	**Charters Tower**	**44.75**	**111**	*e*P	**P**	**18 32 16.3 +1.1**
CTAO				pmax	pmax	
	comp=Z,750nm,1.8s					
CTAO	**Charters Tower**	**44.75**	**111**	*e*P	**P**	**18 32 16.3 +1.1**
	comp=Z,747nm,1.8s					
CTAO				LR	LR	
	comp=Z,6μm,22.0s					
PMG	**Port Moresby**	**44.88**	**96**	LR	LR	18 53 20.0
	comp=Z,2μm,21.2s,baz=224,slow=39					
PMG	**Port Moresby**	**44.88**	**96**	*d*P	**P**	**18 32 17.1 +0.8**
PMG				pmax	pmax	
	comp=Z,658nm,1.5s					
PMG	**Port Moresby**	**44.88**	**96**	*e*P	**P**	**18 32 15.8 -0.5**
	comp=Z,148nm,1.0s					
SMLA	**Simla**	**45.25**	**330**	*e*P	**P**	**18 32 18.4 -0.5**
TIA	**Tai'an**	**46.02**	**17**	⇓P	**P**	**18 32 25.8 +0.9**
TIA				PP	**PP**	**18 34 12.0 -1.1**
TIA				S	**S**	**18 39 07.8 -1.2**
TIA				sS	**sS**	**18 39 17.5 -2.3**
TIA				pmax	pmax	
	comp=Z,40nm,0.8s					
TIA				pmax	pmax	
	comp=Z,560nm,6.8s					
TIA				LR	LR	
	comp=Z,7μm,19.6s					
TIA				LR	LR	
	comp=Z,13μm,18.4s					
TIA				LR	LR	
	comp=Z,3μm,22.0s					
TIY	**Taiyuan**	**46.28**	**12**	*e*P	**P**	**18 32 26.0 -1.0**
TIY				S	**S**	**18 39 14.5 +1.6**
TIY				pmax	pmax	
	comp=Z,38nm,1.0s					
TIY				pmax	pmax	
	comp=Z,490nm,5.8s					
TIY				LR	LR	
	comp=Z,5μm,16.6s					
TIY				LR	LR	
	comp=Z,3μm,13.4s					
TIY				LR	LR	
	comp=Z,5μm,15.1s					
RER	**Riviere de l'E**	**46.36**	**248**	PFAKE		18 32 40.0 +12
RER				LR	LR	
	comp=Z,3μm,19.0s					
ARPS	**Mount Arapiles**	**46.48**	**135**	P	**P**	**18 32 29.8 +1.2**
	baz=47,SNR=67					
DHRM	**DHARAMSHALA**	**46.59**	**330**	*e*P	**P**	**18 32 31.4 +1.7**
DHRM				IAmb	IAmb	18 32 36.6
	comp=Z,53nm,0.6s					
GTA	**Gaotai**	**46.92**	**358**	P	**P**	**18 32 34.0 +1.9**
GTA				pP	pP	18 32 38.3 -0.3
GTA				sP	sP	18 32 41.5 +0.3
GTA				S	**S**	**18 39 21.5 -0.7**
GTA				SS	**SS**	**18 42 39.0 -10**
GTA				pmax	pmax	
	comp=Z,31nm,0.8s					
GTA				pmax	pmax	
	comp=Z,300nm,6.2s					
GTA				LR	LR	
	comp=Z,5μm,21.9s					
GTA				LR	LR	
	comp=Z,8μm,18.8s					
GTA				LR	LR	
	comp=Z,6μm,17.3s					
THN	**Thein Dam**	**47.02**	**329**	*ex*	P	18 32 28.0 -4.8
THN				*ex*	x	18 39 54.8
CMSA	**Cobar Meteorol**	**47.23**	**126**	P	**P**	**18 32 35.7 +1.1**
	baz=47,SNR=252					
GUMO	**Guam**	**47.73**	**64**	P	**P**	**18 32 40.3 +1.6**
	comp=Z,32nm,0.6s,baz=249,slow=2.7,SNR=3.2					
GUMO				LR	LR	18 54 01.9
	comp=Z,770nm,20.7s,baz=248,slow=38					
RMQ	**Roma**	**48.31**	**119**	P	**P**	**18 32 44.9 +1.9**
	baz=48,SNR=49					
BTO	**Baotou**	**48.68**	**8**	*e*P	**P**	**18 32 45.8 +0.2**
BTO				pmax	pmax	
	comp=Z,5.0nm,0.4s					
JNU	**Nakatsue**	**49.15**	**33**	P	**P**	**18 32 48.9 -0.4**
	comp=Z,56nm,0.9s,baz=227,slow=4.7,SNR=14					
JNU	**Nakatsue**	**49.15**	**33**	*e*P	**P**	**18 32 49.6 +0.3**
HHC	**Hu-ho-hao-te**	**49.16**	**10**	*e*P	**P**	**18 32 51.0 +1.7**
HHC				pP	pP	18 32 56.5 +0.6
HHC				sP	sP	18 32 58.0 -0.4
HHC				PP	**PP**	**18 34 41.5 -1.8**
HHC				S	**S**	**18 39 57.5 +3.7**
HHC				pmax	pmax	
	comp=Z,140nm,1.1s					
HHC				pmax	pmax	
	comp=Z,1μm,6.1s					
HHC				LR	LR	
	comp=Z,4μm,15.1s					
HHC				LR	LR	
	comp=Z,7μm,15.7s					
HHC				LR	LR	
	comp=Z,4μm,16.5s					
BJT	**Baijiatuan**	**49.32**	**15**	*e*P	**P**	**18 32 47.2 -3.3**
BJT				pmax	pmax	
	comp=Z,67nm,0.9s					
BJT				MLR	MLR	
	comp=Z,5μm,19.0s					
BJT	**Baijiatuan**	**49.32**	**15**	*e*P	**P**	**18 32 47.2 -3.3**
	comp=Z,67nm,0.9s					
BJT				LR	LR	
	comp=Z,5μm,19.0s					
BJI	**Beijing**	**49.35**	**15**	P	**P**	**18 32 51.5 +0.9**
BJI				PP	**PP**	**18 34 48.3 +3.4**
BJI				S	**S**	**18 39 56.8 +0.6**
BJI				pmax	pmax	
	comp=Z,44nm,0.7s					
BJI				pmax	pmax	
	comp=Z,650nm,6.4s					
BJI				LR	LR	
	comp=Z,5μm,21.2s					
BJI				LR	LR	
	comp=Z,9μm,21.2s					
BJI				LR	LR	
	comp=Z,6μm,18.6s					
TOO	**Toolangi**	**49.45**	**134**	P	**P**	**18 32 53.5 +1.9**
	baz=50,SNR=21					
DL2	**Dalian**	**49.92**	**20**	P	**P**	**18 32 56.0 +1.0**
DL2				S	**S**	**18 40 06.5 +2.3**
DL2				pmax	pmax	
	comp=Z,39nm,1.1s					
DL2				pmax	pmax	
	comp=Z,540nm,6.3s					
DL2				LR	LR	
	comp=Z,7μm,17.7s					
DL2				LR	LR	
	comp=Z,5μm,19.4s					
TJN	**Taejon**	**50.01**	**27**	*e*P	**P**	**18 32 57.2 +1.4**
EIDS	**Eidsvold**	**50.10**	**117**	P	**P**	**18 32 58.1 +1.4**
	baz=50,SNR=11					
EIDS	**Eidsvold**	**50.10**	**117**	*e*P	**P**	**18 32 56.1 -0.6**
	comp=Z,118nm,1.6s					
YNG	**Young**	**50.33**	**129**	P	**P**	**18 33 00.0 +1.6**
	baz=50,SNR=39					
INCN	**Inchon**	**50.62**	**26**	PFAKE		18 33 10.0 +10
INCN				LR	LR	
	comp=Z,2μm,20.0s					
KS15	**Wonju Array Si**	**51.13**	**27**	*e*P	**P**	**18 33 05.8 +1.6**
KSAR	**Wonju Array Be**	**51.13**	**27**	P	**P**	**18 33 05.4 +1.2**
KSAR	**Wonju Array Be**	**51.13**	**27**	P	**P**	**18 33 05.4 +1.2**
KSRS	**Korea Array**	**51.16**	**27**	P	**P**	**18 33 05.4 +1.0**
	comp=Z,13nm,1.0s,baz=244,slow=6.9,SNR=40					
KSRS				LR	LR	18 55 32.2
	comp=Z,1μm,19.6s,baz=222,slow=37					
CAN	**Canberra**	**51.16**	**130**	PFAKE		18 33 20.0 +15
CAN				LR	LR	
	comp=Z,7μm,19.0s					
CNB	**Canberra Magne**	**51.43**	**129**	P	**P**	**18 33 08.0 +1.3**
	baz=52,SNR=10					
ARMA	**Armidale**	**51.74**	**123**	P	**P**	**18 33 08.3 -0.8**
	baz=52,SNR=18					
ARMA	**Armidale**	**51.74**	**123**	P	**P**	**18 33 10.3 +1.1**
MGCD	**Mangrove Creek**	**52.11**	**126**	P	**P**	**18 33 13.5 +1.8**
	baz=52,SNR=22					
WSAR	**Wadi Sarin**	**52.21**	**307**	P	**P**	**18 33 12.9 +0.4**
	comp=Z,12nm,0.9s,baz=125,slow=8.4,SNR=8.0					
JCJ	**Chichijima**	**52.24**	**47**	LR	LR	18 55 06.6
	comp=Z,1μm,21.5s,baz=266,slow=36					
KSH	**Kashi**	**52.73**	**335**	P	**P**	**18 33 14.8 -1.4**
KSH				*es*P	pP	18 33 22.0 -0.8
KSH				*e*PP	**PP**	**18 35 14.5 -1.3**
KSH				*e*ScP	**ScP**	**18 38 21.0 -1.2**
KSH				PcS	**PcS**	**18 38 23.0 -1.5**
KSH				S	**S**	**18 40 38.8 -4.5**
KSH				ScS	**ScS**	**18 43 01.0 -4.2**
KSH				pmax	pmax	
	comp=Z,33nm,1.0s					
KSH				pmax	pmax	
	comp=Z,400nm,8.6s					
KSH				LR	LR	
	comp=Z,2μm,14.0s					
KSH				LR	LR	
	comp=Z,830nm,12.5s					
KSH				LR	LR	
	comp=Z,3μm,17.6s					
MOO	**Moorlands**	**52.80**	**139**	P	**P**	**18 33 18.4 +1.8**
	baz=53,SNR=5.7					
WMQ	**Urumqi**	**52.86**	**347**	P	**P**	**18 33 19.5 +2.4**
WMQ				pP	pP	18 33 22.5 -1.2
WMQ				PP	**PP**	**18 35 18.8 +2.0**
WMQ				S	**S**	**18 40 44.3 -0.6**
WMQ				SS	**SS**	**18 44 19.0 -5.2**
WMQ				pmax	pmax	
	comp=Z,87nm,0.8s					
WMQ				pmax	pmax	
	comp=Z,370nm,5.4s					
WMQ				LR	LR	
	comp=Z,2μm,20.4s					
WMQ				LR	LR	
	comp=Z,1μm,17.6s					
WMQ				LR	LR	
	comp=Z,1μm,26.4s					
TAU	**Tasmania Unive**	**53.10**	**139**	*e*P	**P**	**18 33 20.4 +1.6**
TAU	**Tasmania Unive**	**53.10**	**139**	*e*P	**P**	**18 33 20.4 +1.6**
TAU				LR	LR	
	comp=Z,4μm,19.0s					
SNY	**Shenyang**	**53.20**	**20⇑**	P	**P**	**18 33 19.0 -0.5**
SNY				PP	**PP**	**18 35 18.8 -1.0**
SNY				pmax	pmax	
	comp=Z,23nm,1.7s					
SNY				pmax	pmax	
	comp=Z,620nm,6.2s					
SNY				LR	LR	
	comp=Z,4μm,18.0s					
SNY				LR	LR	
	comp=Z,7μm,19.1s					
SNY				LR	LR	
	comp=Z,6μm,19.2s					
OPO	**Ambohidratompo**	**54.06**	**253**	LR	LR	18 53 03.4
	comp=Z,1μm,18.4s,baz=82,slow=32					
HATD	**Hatta, Dubai**	**54.98**	**308**	P	**P**	**18 33 33.6 +0.7**
FAQ	**Al Faqa, Dubai**	**55.37**	**307**	*i* P	**P**	**18 33 37.0 +1.3**
	SNR=27					
NAZ	**Nazwa, Dubai**	**55.43**	**307**	*i* P	**P**	**18 33 37.5 +1.4**
	SNR=9.9					
SONM	**Songino Array**	**55.46**	**4**	P	**P**	**18 33 38.1 +2.1**
	comp=Z,60nm,1.0s,baz=184,slow=9.1,SNR=132					
SONM				LR	LR	18 57 49.5
	comp=Z,3μm,22.0s,baz=178,slow=37					
SONA1	**Songino Array**	**55.47**	**4**	*e*P	**P**	**18 33 37.0 +0.8**
DZET	**Dzherino**	**55.49**	**329**	P	**P**	**18 33 34.9 -1.5**
DZET				pmax	pmax	
	comp=Z,13nm,0.8s					
ULN	**Ulaanbaatar**	**55.54**	**4**	*ce*P	**P**	**18 33 37.7 +1.1**
ULN				pmax	pmax	
	comp=Z,35nm,1.0s					
ULN	**Ulaanbaatar**	**55.54**	**4**	*e*P	**P**	**18 33 37.9 +1.3**
ULN				LR	LR	
	comp=Z,3μm,20.0s					
AAA	**Alma-Ata**	**55.54**	**338**	*i* P	P	18 33 41.7 +5.1
AAA				*i* S	**S**	**18 41 22.4 +1.4**
AAA				pmax	pmax	
	comp=Z,700nm,6.7s					
AAA				smax	smax	
	comp=E,1μm,9.3s					
AAA				MLR	MLR	
	comp=Z,1μm,19.0s					
CN2	**Changchun**	**55.58**	**21⇑**	*i*P	**P**	**18 33 37.0 +0.2**
CN2				*ep*P	pP	18 33 41.5 -2.0
CN2				*e*S	**S**	**18 41 15.8 -5.7**
CN2				pmax	pmax	
	comp=Z,50nm,1.2s					
CN2				pmax	pmax	
	comp=Z,200nm,3.0s					
CN2				LR	LR	
	comp=Z,4μm,20.0s					
CN2				LR	LR	
	comp=Z,3μm,20.0s					
CN2				LR	LR	
	comp=Z,900nm,18.0s					
MAJO	**Matsushiro**	**55.73**	**35**	PFAKE		18 33 50.0 +12
MAJO				LR	LR	
	comp=Z,1μm,19.0s					
MJAR	**Matsushiro Arr**	**55.73**	**35**	P	**P**	**18 33 41.2 +3.1**
	comp=Z,13nm,0.8s,baz=217,slow=7.2,SNR=7.7					
MJAR	**Matsushiro Arr**	**55.73**	**35**	P	**P**	**18 33 41.2 +3.1**
MJAR				pmax	pmax	
	comp=Z,10.0nm,0.7s					
TKM2	**Tokmak 2**	**55.75**	**337**	*e*P	**P**	**18 33 38.4 +0.1**
TKM2	**Tokmak 2**	**55.75**	**337**	*e*P	**P**	**18 33 38.4 +0.1**
TKM2				LR	LR	
	comp=Z,2μm,19.0s					
AAK	**Ala-Archa**	**55.95**	**336**	P	**P**	**18 33 39.2 -0.5**
	comp=Z,4.3nm,0.7s,baz=148,slow=6.0,SNR=14					
AAK				LR	LR	18 59 41.8
	comp=Z,3μm,20.6s,baz=122,slow=38					
AAK	**Ala-Archa**	**55.95**	**336**	*d*P	**P**	**18 33 39.3 -0.4**
AAK				pmax	pmax	
	comp=Z,58nm,1.3s					
AAK	**Ala-Archa**	**55.95**	**336**	*e*P	**P**	**18 33 40.3 +0.6**
FRU	**Bishkek**	**56.06**	**336**	*i* P	**P**	**18 33 40.0 -0.4**
FRU				*e*		18 34 42.0
FRU				*e*S	**S**	**18 41 26.0 -2.0**
FRU				pmax	pmax	
	comp=Z,80nm,1.8s					
FRU				MLR	MLR	
	comp=E,2μm,19.5s					
EKS2	**Erkin-Say**	**56.26**	**335**	*e*P	**P**	**18 33 41.9 0.0**
EKS2	**Erkin-Say**	**56.26**	**335**	*e*P	**P**	**18 33 41.9 0.0**
EKS2				LR	LR	
	comp=Z,3μm,20.0s					
MNAS	**Manas**	**56.65**	**334**	P	**P**	**18 33 43.7 -1.0**
MNAS				pmax	pmax	
	comp=Z,51nm,1.2s					
MK01	**Makanchi Array**	**56.95**	**344**	*e*P	**P**	**18 33 46.0 -0.5**
MK31	**Makanchi Array**	**56.98**	**344**	*i* P	**P**	**18 33 45.6 -1.2**
MK31				pmax	pmax	
	comp=Z,34nm,0.9s					
MK31	**Makanchi Array**	**56.98**	**344**	*e*P	**P**	**18 33 46.9 +0.1**
MKAR	**Makanchi Array**	**56.98**	**344**	P	**P**	**18 33 46.4 -0.3**
	comp=Z,8.1nm,0.8s,baz=144,slow=7.2,SNR=48					
MKAR				LR	LR	19 00 16.1
	comp=Z,1μm,20.8s,baz=137,slow=38					
MKAR	**Makanchi Array**	**56.98**	**344**	*e*P	**P**	**18 33 46.9 +0.1**
MAKZ	**Makanchi**	**57.07**	**344**	P	**P**	**18 33 46.9 -0.6**
MAKZ				pmax	pmax	
	comp=Z,27nm,1.2s					
MAKZ	**Makanchi**	**57.07**	**344**	*e*P	**P**	**18 33 47.7 +0.2**
HNR	**Honiara**	**57.49**	**96**	LR	LR	19 01 55.2
	comp=Z,801nm,18.4s,baz=271,slow=40					
HNR	**Honiara**	**57.49**	**96**	*e*P	**P**	**18 33 52.2 +1.2**
HNR	**Honiara**	**57.49**	**96**	*e*P	**P**	**18 33 52.2 +1.2**
VLA	**Vladivostok**	**57.53**	**26**	*e*P	**P**	**18 33 51.1 +0.5**

VLA pmax pmax
comp=Z,51nm,1.3s
MDJ Mudanjiang 57.82 23 P P 18 33 54.3 +1.6
MDJ PP **PP 18 36 05.3 +4.2**
MDJ S **S 18 41 54.5 +3.5**
MDJ pmax pmax
comp=Z,17nm,2.1s
MDJ pmax pmax
comp=Z,320nm,5.9s
MDJ LR LR
comp=Z,3μm,20.0s
MDJ LR LR
comp=Z,3μm,19.2s
MDJ LR LR
comp=Z,3μm,15.4s
MDJ Mudanjiang 57.82 23 PFAKE 18 34 00.0 +7.3
MDJ LR LR
comp=Z,1μm,20.0s
ZAK Zakamensk 57.87 1 *e*P **P 18 33 53.4 +0.3**
ZAK pmax pmax
comp=Z,16nm,0.9s
KK31 Karatay Array 58.02 333 *i* P **P 18 33 52.6 -1.6**
KK31 pmax pmax
comp=Z,6.0nm,0.8s
KKAR Karatay Array 58.02 333 *e*P **P 18 33 52.2 -2.0**
KKAR pmax pmax
comp=Z,6.0nm,0.7s
KKAR Karatay Array 58.02 333 *e*P **P 18 33 52.2 -2.0**
comp=Z,5.7nm,0.7s
USRK Ussuriysk Ar. 58.45 25 P **P 18 33 58.3 +1.2**
comp=Z,18nm,0.6s,baz=217,slow=4.7,SNR=41
CASY Casey 58.78 176 *e*P **P 18 33 58.8 -0.3**
CASY LR LR
comp=Z,370nm,21.0s
HIA Hailar 58.88 14 P **P 18 33 58.0 -2.1**
HIA pmax pmax
comp=Z,25nm,0.8s
HIA MLR MLR
comp=Z,5μm,19.0s
HIA Hailar 58.88 14 P **P 18 33 58.0 -2.1**
comp=Z,26nm,0.8s
HIA LR LR
comp=Z,5μm,19.0s
MOY Mondy 59.15 359 *e*P **P 18 34 03.8 +1.8**
MOY pmax pmax
comp=Z,47nm,2.9s
TLY Talaya 59.18 1 P **P 18 34 03.2 +1.1**
comp=Z,6.3nm,0.9s,baz=248,slow=3.9,SNR=5.9
TLY LR LR 19 00 54.6
comp=Z,3μm,19.5s,baz=160,slow=37
TLY Talaya 59.18 1*c i*P **P 18 34 03.5 +1.4**
TLY *e* 18 36 10.9
TLY *e*S **S 18 42 10.2 +1.6**
TLY *e*SS **SS 18 45 57.3 -6.1**
TLY pmax pmax
comp=Z,28nm,1.0s
TLY MLR MLR
comp=Z,3μm,14.0s
TLY Talaya 59.18 1 *e*P **P 18 34 02.5 +0.4**
IRK Irkutsk 59.76 2 *e*P **P 18 34 04.1 -2.0**
IRK pmax pmax
comp=Z,81nm,1.9s
GEYT Alibeck 60.97 321 P **P 18 34 14.2 -0.4**
comp=Z,12nm,0.9s,baz=134,slow=6.4,SNR=15
GEYT LR LR 19 01 10.0
comp=Z,3μm,19.9s,baz=115,slow=37
KURBB Kurchatov Arra 61.50 343 P **P 18 34 18.0 +0.1**
comp=Z,12nm,0.9s,baz=164,slow=6.2,SNR=88
KURK Kurchatov 61.56 343 P **P 18 34 18.0 -0.3**
KURK pmax pmax
comp=Z,12nm,0.9s
KURK Kurchatov 61.56 343 *e*P **P 18 34 18.2 -0.1**
KURK LR LR
comp=Z,4μm,21.0s
ATD Arta Tunnel 61.65 287 P **P 18 34 21.3 +1.5**
comp=Z,26nm,1.2s,baz=156,slow=6.1,SNR=4.6
ERM Erimo 62.28 34 PFAKE 18 34 40.0 +17
ERM LR LR
comp=Z,1μm,20.0s
KLR Kul'dur 62.48 22 P **P 18 34 24.9 +0.3**
comp=Z,40nm,0.6s,baz=218,slow=5.3,SNR=180
KLR LR LR 19 02 54.1
comp=Z,2μm,18.7s,baz=223,slow=37
ZALV Zalesovo Beam 63.08 349 P **P 18 34 28.5 +0.1**
comp=Z,43nm,0.9s,baz=155,slow=5.6,SNR=109
ZALV LR LR 19 05 14.5
comp=Z,2μm,20.0s,baz=150,slow=39
ZALV Zalesovo Beam 63.08 349 P **P 18 34 28.5 +0.1**
ZALV pmax pmax
comp=Z,42nm,0.9s
ZALV MLR MLR
comp=Z,2μm,20.0s
HABR Khabarovsk 63.14 24*de*P **P 18 34 27.0 -1.9**
HABR *e* 18 35 04.6
HABR 18 36 45.7
HABR *e*PPP PPP 18 38 13.8
HABR *e*S **S 18 42 58.3 -0.7**
HABR *e* 18 44 19.7
HABR *e*SS **SS 18 47 04.8 -0.6**
HABR pmax pmax
comp=E,38nm,2.5s
HABR pmax pmax
comp=N,15nm,1.3s
HABR pmax pmax
comp=Z,38nm,2.5s
HABR MLR MLR
comp=Z,1μm,20.0s
ASAJ Asahikawa 63.41 32 P **P 18 34 31.6 +0.8**
comp=Z,25nm,0.7s,baz=213,slow=7.5
DZM Mont Dzumac 63.69 111 *e*S **S 18 43 02.1 -5.1**
DZM comp=Z,4μm,36.4s *e*LQ LQ 18 50 12.5
DZM comp=Z,10μm,30.2s *e*LR LR 18 53 28.0
comp=Z,5μm,23.5s
KRAR Krasnoyarsk 63.93 354⇑ *i*P **P 18 34 34.3 +0.3**
KRAR pmax pmax
comp=Z,27nm,1.1s
NVS Novosibirsk 64.23 348 *e*P **P 18 34 36.8 +0.8**
NVS *e*S **S 18 43 08.5 -3.9**
NVS pmax pmax
comp=Z,57nm,1.7s
NVS pmax pmax
comp=N,38nm,1.6s
NVS pmax pmax
comp=E,17nm,1.4s
NVS smax smax
comp=E,33nm,1.9s
NVS smax smax
comp=N,24nm,1.8s
KMBO Kilima Mbogo 64.61 272 P **P 18 34 40.5 +0.8**
comp=N,7.5nm,0.9s,baz=59,slow=10,SNR=16
KMBO LR LR 18 56 34.3
comp=N,3μm,21.8s,baz=96,slow=30
KMBO Kilima Mbogo 64.61 272 *i* P **P 18 34 41.7 +2.0**
KMBO pmax pmax
comp=Z,8.0nm,0.9s
KMBO Kilima Mbogo 64.61 272 *e*P **P 18 34 41.2 +1.5**
YSS Yuzh-Sakhalins 65.46 30*oe*P **P 18 34 45.0 +0.8**
YSS *e* 18 35 12.5
YSS *e* 18 37 07.0
YSS *e*S **S 18 43 26.9 -0.8**
YSS *e* 18 44 36.0
YSS *e*SS **SS 18 47 36.0 -5.7**
YSS pmax pmax
comp=Z,50nm,0.5s
YSS pmax pmax
comp=Z,500nm,8.0s
YSS MLR MLR
comp=E,1μm,18.0s
YSS MLR MLR
comp=Z,1μm,18.0s
YSS Yuzh-Sakhalins 65.46 30 *e*P **P 18 34 42.4 -1.7**
comp=Z,206nm,1.3s
YSS LR LR
comp=Z,548nm,19.0s
BOD Bodaibo 66.07 7 *e*P **P 18 34 48.5 +0.6**
BOD pmax pmax
comp=Z,29nm,1.3s
BVA0 Borovoye Array 66.13 340 *i* P **P 18 34 47.6 -0.8**
BVA0 pmax pmax
comp=Z,39nm,1.1s
BVAR Borovoye Array 66.13 340 P **P 18 34 47.8 -0.7**
comp=Z,17nm,0.8s,baz=141,slow=8.0,SNR=67
BVAR LR LR 19 07 56.8
comp=Z,2μm,19.4s,baz=136,slow=40

BRVK Borovoye 66.19 340 *e*P **P 18 34 48.3 -0.5**
BRVK Borovoye 66.19 340 *e*P **P 18 34 48.3 -0.5**
BRVK LR LR
comp=Z,1μm,20.0s
CHKZ Chkalovo 66.59 340 P **P 18 34 50.0 -1.3**
CHKZ pmax pmax
comp=Z,84nm,1.2s
KUR Kuril'sk 66.97 34 *e*P **P 18 34 58.0 +4.1**
KUR *e*S **S 18 43 47.0 +0.9**
KUR pmax pmax
comp=Z,132nm,1.1s
KUR pmax pmax
comp=Z,270nm,2.5s
KUR MLR MLR
comp=N,801nm,15.0s
KUR MLR MLR
comp=E,409nm,15.0s
KUR MLR MLR
comp=Z,457nm,15.0s
AB31 Akbulak array 67.48 332 *i* P **P 18 34 56.1 -1.0**
AB31 pmax pmax
comp=Z,64nm,1.0s
ABKAR Akbulak array 67.48 332 *e*P **P 18 34 56.5 -0.6**
comp=Z,22nm,0.6s
TYV Tymovskoe 68.18 27 *e*P **P 18 35 03.0 +1.5**
TYV *e*S **S 18 44 04.0 +3.5**
TYV pmax pmax
comp=Z,500nm,6.0s
TYV pmax pmax
comp=Z,56nm,1.2s
TYV smax smax
comp=E,1μm,10.0s
TYV MLR MLR
comp=Z,3μm,16.0s
NKL Nikolayevsk 69.02 24 *e*P **P 18 35 05.0 -1.6**
NKL *e* 18 44 13.0
NKL pmax pmax
comp=Z,220nm,1.8s
NKL pmax pmax
comp=Z,500nm,6.0s
NKL MLR MLR
comp=Z,4μm,16.0s
NKL MLR MLR
comp=N,2μm,16.0s
NKL MLR MLR
comp=E,2μm,16.0s
AKTO Aktyubinsk 69.19 332 P **P 18 35 08.0 +0.1**
comp=E,24nm,1.2s,baz=133,slow=6.5,SNR=25
AKTO Aktyubinsk 69.19 332 P **P 18 35 07.1 -0.7**
AKTO pmax pmax
comp=Z,51nm,1.4s
GNI Garni 70.87 317 P **P 18 35 20.6 +2.0**
comp=Z,6.4nm,0.8s,baz=105,slow=2.1,SNR=3.6
GNI Garni 70.87 317 *e*P **P 18 35 18.7 +0.1**
GNI pmax pmax
comp=Z,65nm,1.2s
DGRG David-gareji 71.08 319 P **P 18 35 22.0 +2.4**
DGRG David-gareji 71.08 319 *e*P **P 18 35 22.0 +2.4**
TARA Tarawa 71.52 86 PFAKE 18 35 30.0 +7.2
TARA LR LR
comp=Z,89nm,22.0s
TBLG Delisi 71.63 319 P **P 18 35 23.8 +0.8**
TBLG Delisi 71.63 319 *e*P **P 18 35 23.8 +0.8**
MZRK Al-Mazaregh 71.87 312 *e*P **P 18 35 27.2 +2.7**
SNZO South Karori 72.13 131 PFAKE 18 35 40.0 +14
SNZO LR LR
comp=Z,5μm,19.0s
GUDG Gudauri 72.16 319 P P 18 35 33.1 +6.8
BGD Bogdanovka 72.16 318 P **P 18 35 28.0 +1.5**
LSZ Lusaka 72.23 256 P **P 18 35 23.8 -3.4**
LSZ pmax pmax
comp=Z,19nm,0.7s
LSZ MLR MLR
comp=Z,2μm,20.0s
LSZ Lusaka 72.23 256 P **P 18 35 23.8 -3.4**
comp=Z,19nm,0.7s
LSZ LR LR
comp=Z,2μm,20.0s
AKH Akhalkalaki 72.30 318⇑ *i*P P 18 35 32.1 +4.9
AKH Akhalkalaki 72.30 318 P **P 18 35 29.2 +2.0**
AKH Akhalkalaki 72.30 318 *e*P **P 18 35 29.1 +2.0**
SFNV Sufian 72.51 312 *e*P **P 18 35 28.9 +0.5**
SVE Sverdlovsk 72.61 338*d i*P **P 18 35 29.2 +0.8**
SVE *e* 18 38 07.8
SVE *e*S **S 18 44 48.3 -3.7**
SVE pmax pmax
comp=Z,92nm,1.3s
SVE MLR MLR
comp=Z,2μm,18.0s
ZEI Tsey 72.68 319 *e*P **P 18 35 26.0 -3.5**
ZEI *e* 18 35 43.4
ZEI *e* 18 38 11.0
ZEI *e*PPP PPP 18 40 00.0
ZEI *e*S **S 18 44 50.5 -3.4**
ZEI *e*SS **SS 18 49 33.8 0.0**
ZEI pmax pmax
comp=Z,21nm,0.5s
YAK Yakutsk 72.83 13 P **P 18 35 30.0 +0.5**
comp=Z,1.5nm,0.4s,baz=196,slow=8.1,SNR=15
YAK LR LR 19 09 22.3
comp=Z,3μm,19.9s,baz=216,slow=37
YAK Yakutsk 72.83 13*c i*P **P 18 35 29.1 -0.5**
YAK *e**PP **pP 18 35 35.5 -0.9**
YAK *e* 18 35 48.2
YAK *e* 18 38 08.9
YAK *e*S **S 18 44 51.4 -2.9**
YAK *e* 18 45 27.2
YAK *e*SS **SS 18 49 38.2 +3.4**
YAK pmax pmax
comp=Z,58nm,1.2s
YAK pmax pmax
comp=E,19nm,1.3s
YAK pmax pmax
comp=N,24nm,1.3s
YAK pmax pmax
comp=E,6.0nm,0.8s
YAK pmax pmax
comp=N,35nm,1.8s
YAK pmax pmax
comp=Z,19nm,1.3s
YAK smax smax
comp=E,34nm,2.0s
YAK smax smax
comp=N,233nm,4.9s
YAK MLR MLR
comp=N,2μm,22.0s
YAK MLR MLR
comp=E,2μm,17.0s
YAK MLR MLR
comp=Z,3μm,16.0s
ONI Oni 72.88 319 P **P 18 35 29.4 -1.0**
ONI Oni 72.88 319 *e*P **P 18 35 29.4 -1.0**
MNKR ALMNKUR 72.94 311 *e*P **P 18 35 26.8 -4.1**
SYO Syowa Base 73.08 199‖ *e*P **P 18 35 29.6 -1.5**
SYO Syowa Base 73.08 199‖ *e*pP **P 18 35 35.0 +3.9**
KSRV Kasrt alli 73.11 311 *e*P **P 18 35 32.1 +0.2**
ARU Arti 73.12 337 P **P 18 35 31.9 +0.4**
comp=Z,14nm,0.6s,baz=127,slow=2.8,SNR=40
ARU LR LR 19 09 09.7
comp=Z,2μm,21.9s,baz=120,slow=37
ARU Arti 73.12 337*c i*P **P 18 35 31.7 +0.2**
ARU 18 38 16.6
ARU PPP PPP 18 39 57.0
ARU S **SKiKP 18 45 02.1 -0.7**
ARU SSS SSS 18 52 48.9
ARU pmax pmax
comp=Z,75nm,1.7s
ARU MLR MLR
comp=Z,2μm,22.0s
NCK Nalchik 73.22 320 *e*P **P 18 35 32.4 0.0**
NCK pmax pmax
comp=Z,13nm,0.7s
ZALF Zalf 73.30 308 *e*P **P 18 35 34.3 +1.2**
ASF Jabal al Asfar 73.38 307 P **P 18 35 34.5 +0.8**
comp=Z,8.1nm,0.8s,baz=77,slow=3.2,SNR=14
NEY Neytrino 73.66 319 *e*P **P 18 35 37.1 +1.9**
NEY pmax pmax
comp=Z,2.0nm,1.0s
SALA Sala 73.69 307 *e*P **P 18 35 32.9 -2.8**
URZ Urewera 73.75 128 P **P 18 35 36.0 +0.3**
comp=Z,7.2nm,0.6s,baz=234,slow=9.5,SNR=5.7
KBZ Khabaz 73.77 320 P **P 18 35 36.7 +1.2**
comp=Z,14nm,0.9s,baz=100,slow=5.2,SNR=20
KBZ LR LR 19 10 05.3
comp=Z,474nm,20.7s,baz=98,slow=38

ROOS tl_alroos 73.78 309 *e*P P 18 35 29.5 -6.5
CHVG Ch'k'valeri 73.83 319⇑ *i*P **P 18 35 39.0 +3.0**
CHVG Ch'k'valeri 73.83 319 P **P 18 35 36.6 +0.6**
RABH Abou Rabah 73.94 309 *e*P P 18 35 29.8 -7.1
KVAR Kislovodsk Arr 74.01 320 P **P 18 35 38.3 +1.1**
comp=Z,11nm,0.8s,baz=283,slow=4.2,SNR=9.3
KIV Kislovodsk 74.01 320 *e*P **P 18 35 37.3 +0.1**
KIV *e*S **S 18 45 09.4 +0.7**
KIV pmax pmax
comp=Z,24nm,1.0s
KIV MLR MLR
comp=Z,777nm,18.0s
KIV Kislovodsk 74.01 320 PFAKE 18 35 50.0 +13
KIV LR LR
comp=Z,1μm,22.0s
EIL Elat 74.11 304 P **P 18 35 37.8 -0.1**
comp=Z,9.7nm,0.7s,baz=196,slow=2.3,SNR=8.3
BOSA Boshof 74.53 243 P **P 18 35 41.1 +0.5**
comp=Z,28nm,0.8s,baz=99,slow=5.6,SNR=51
BOSA LR LR 19 03 59.3
comp=Z,1μm,18.1s,baz=88,slow=32
SKR Severo-Kuril's 74.66 32 *e*P P 18 35 22.5 -18
SKR *e* 18 38 26.0
SKR *e*PPP PPP 18 40 09.0
SKR *e*S **SKiKP 18 45 01.5 -3.8**
SKR *e*PS **PnS 18 45 43.0 -8.3**
SKR *e*SS SS 18 49 52.0 -11
SKR *e*SSS SSS 18 53 10.0
SKR pmax pmax
comp=Z,180nm,1.0s
SKR pmax pmax
comp=E,1μm,6.0s
SKR pmax pmax
comp=Z,1μm,6.0s
SKR MLR MLR
comp=N,1μm,18.0s
SKR MLR MLR
comp=E,1μm,18.0s
SKR MLR MLR
comp=Z,2μm,18.0s
MSVF Nonsavu 74.66 106 PFAKE 18 35 50.0 +8.5
MSVF LR LR
comp=Z,1μm,19.0s
MMAI Mount Meron Ar 74.85 307 P **P 18 35 43.7 +1.5**
comp=Z,5.9nm,0.7s,baz=95,slow=7.6,SNR=7.3
SOC Sochi 75.77 319 *e*P **P 18 35 46.5 -0.7**
SOC *e* 18 35 58.0
SOC *e* 18 38 44.3
SOC *e*PPP PPP 18 40 19.5
SOC *e*S **S 18 45 28.9 +0.8**
SOC *e* 18 45 57.4
SOC *e*SS **SS 18 50 25.5 +5.1**
SOC pmax pmax
comp=Z,15nm,0.8s
SOC MLR MLR
comp=Z,982nm,20.0s
SOKR Solikamsk 76.02 338*d i*P **P 18 35 48.2 0.0**
SOKR S S 18 45 19.3 -11
SOKR pmax pmax
comp=Z,39nm,0.7s
SOKR MLR MLR
comp=Z,1μm,20.0s
VNDA Vanda 76.25 169 P **P 18 35 49.2 -0.1**
comp=Z,11nm,0.7s,baz=310,slow=5.5,SNR=41
VNDA LR LR 19 05 58.2
comp=Z,362nm,20.8s,baz=310,slow=33
FUNA Funafuti 76.52 97 PFAKE 18 36 00.0 +7.9
FUNA LR LR
comp=Z,2μm,19.0s
PETK Petropavlovsk- 76.80 31 P **P 18 35 52.7 -0.2**
comp=Z,4.4nm,0.9s,baz=104,slow=1.3,SNR=6.1
PETK LR LR 19 12 25.2
comp=Z,1μm,19.5s,baz=241,slow=38
PET Petropavlovsk 77.24 31 *e*P **P 18 35 55.6 +0.3**
PET *e*S **S 18 45 43.0 -0.8**
PET *e*PS **PnS 18 46 32.1 +7.6**
PET *e*SS **SS 18 50 44.9 +2.7**
PET pmax pmax
comp=Z,200nm,14.3s
PET pmax pmax
comp=Z,79nm,0.8s
PET MLR MLR
comp=Z,2μm,20.0s
PET MLR MLR
comp=Z,1μm,20.0s
NRIK Noril'sk 77.51 355 P **P 18 35 56.1 -0.4**
comp=Z,32nm,1.1s,baz=165,slow=4.9,SNR=24
NRIK LR LR 19 13 26.5
comp=Z,2μm,18.3s,baz=164,slow=38
MA2 Magadan 77.52 23 P **P 18 35 57.2 +0.5**
comp=Z,14nm,0.9s,baz=237,slow=6.7,SNR=8.0
MA2 LR LR 19 11 33.7
comp=Z,1μm,18.7s,baz=258,slow=37
ANN Anapa 77.77 319 *e*P **P 18 36 00.1 +1.7**
ANN *e**PP **pP 18 36 03.3 -2.0**
ANN *e* 18 39 02.8
ANN *e*S **S 18 45 57.8 +7.9**
ANN pmax pmax
comp=Z,15nm,1.4s
ANN MLR MLR
comp=N,1μm,20.0s
ANN MLR MLR
comp=Z,770nm,20.0s
ANN MLR MLR
comp=E,326nm,20.0s
RAO Raoul Island 77.84 118 PFAKE 18 36 10.0 +11
RAO LR LR
comp=Z,3μm,20.0s
VRH Novokhopyorsk 78.02 326 *e*P **P 18 35 59.4 -0.3**
VRH pmax pmax
comp=Z,10.0nm,0.6s
SUR Sutherland 78.30 239 PFAKE 18 36 10.0 +8.0
SUR LR LR
comp=Z,2μm,20.0s
BRTR Keskin Array B 78.48 313 P **P 18 36 01.8 -0.9**
comp=Z,5.8nm,0.7s,baz=137,slow=6.6,SNR=43
BRTR LR LR 19 09 49.5
comp=Z,1μm,21.7s,baz=106,slow=35
ANTO Ankara 79.14 313 PFAKE 18 36 20.0 +14
ANTO LR LR
comp=Z,7.0nm,19.0s
VSR Storozhevoye 79.45 325 *e*P **P 18 36 07.6 0.0**
VSR pmax pmax
comp=Z,20nm,0.8s
VSR MLR MLR
comp=Z,1μm,17.0s
SIM Simferopol' 80.00 318 *e*P **P 18 36 11.1 +0.4**
SIM *e*S S 18 46 23.2 +9.4
SIM *e*PS **PnS 18 47 06.0 +6.2**
SIM pmax pmax
comp=Z,23nm,0.8s
SIM MLR MLR
comp=N,500nm,17.0s
ISP Isparta 80.17 310 PFAKE 18 36 20.0 +8.1
ISP LR LR
comp=Z,2μm,20.0s
LPSR Galich'ya Gora 80.20 327 *e*P **P 18 36 11.7 +0.1**
LPSR pmax pmax
comp=Z,20nm,1.1s
SEY Seymchan 80.26 21 P **P 18 36 12.7 +1.0**
comp=Z,5.8nm,0.7s,baz=240,slow=6.8,SNR=23
SEY Seymchan 80.26 21⇑ *e*P **P 18 36 12.4 +0.7**
TIXI Tiksi 81.20 8 P **P 18 36 16.5 -0.1**
comp=Z,6.3nm,0.5s,baz=227,slow=3.6,SNR=49
TIXI Tiksi 81.20 8*c i*P **P 18 36 15.5 -1.0**
TIXI pmax pmax
comp=Z,38nm,1.6s
TIXI Tiksi 81.20 8 *e*P **P 18 36 13.9 -2.6**
comp=Z,11nm,0.6s
TIXI LR LR
comp=Z,5μm,19.0s
MOS Moscow 82.28 329 *e*P **P 18 36 21.2 -1.3**
MOS *e* 18 36 27.9
MOS *e* 18 39 32.5
MOS *e*S **S 18 46 32.3 -4.6**
MOS pmax pmax
comp=Z,91nm,1.4s
MOS pmax pmax
comp=Z,300nm,2.2s
MOS MLR MLR
comp=Z,2μm,21.0s
MOS MLR MLR
comp=N,1μm,20.0s
MOS MLR MLR
comp=E,1μm,21.0s
OBN Obninsk 82.56 328 P **P 18 36 25.2 +1.2**

comp=E,27nm,0.9s,baz=81,slow=1.5,SNR=15
OBN Obninsk 82.56 328 *ce*P **P 18 36 24.5 +0.5**
OBN *e* 18 39 39.5
OBN *e*PPP PPP 18 41 21.2
OBN *e*S **S 18 46 34.8 -4.9**
OBN *e*SS **SS 18 52 04.1 +2.5**
OBN pmax pmax
comp=Z,40nm,1.1s
OBN MLR MLR
comp=Z,1μm,21.0s
OBN Obninsk 82.56 328 P **P 18 36 25.2 +1.2**
OBN LR LR
comp=Z,2μm,19.0s
NVL N'lazarevskaya 82.75 200 *e*P **P 18 36 27.6 +2.8**
LAST Lasithi 83.35 307⇓ *i*P **P 18 36 29.0 +0.3**
SANT Santorini 83.66 308 PFAKE 18 36 40.0 +10
SANT LR LR
comp=Z,969nm,20.0s
TIRR Tirgusor 83.68 316⇑ *i*P **P 18 36 30.0 -0.1**
KLMR Klimovskoe 83.71 334 *e*P **P 18 36 27.7 -2.2**
KLMR *e* 18 39 40.4
KLMR pmax pmax
comp=Z,70nm,1.2s
IDI Anoyia 83.84 307 P **P 18 36 31.8 +0.5**
comp=Z,11nm,0.8s,baz=61,slow=6.4,SNR=6.9
IDI Anoyia 83.84 307⇑ *i*P **P 18 36 32.2 +0.9**
MSAB Monastry St. A 83.98 316⇑ *i*P **P 18 36 31.8 +0.2**
HARR Harsova 84.08 316⇑ *i*P **P 18 36 33.5 +1.4**
CFR Carcaliu 84.08 317⇑ *i*P **P 18 36 32.8 +0.7**
KIS Kishinev 84.17 319⇑ *i*P P 18 36 42.0 +9.5
comp=Z,500nm,5.0s
KIS *e*S **S 18 47 05.0 +8.5**
KIS *e*LR LR 19 09 50.0
comp=Z,1μm,20.0s
KIS Kishinev 84.17 319 *c i*P P 18 36 42.0 +9.5
KIS *e* 18 46 52.0
KIS pmax pmax
comp=Z,500nm,5.0s
KIS MLR MLR
comp=Z,1μm,18.0s
KIS MLR MLR
comp=N,500nm,17.0s
KIS MLR MLR
comp=Z,1μm,20.0s
LEOM Leova 84.39 318⇑ *i*P **P 18 36 33.2 -0.4**
AFI Afiamalu 84.75 103 PFAKE 18 36 50.0 +14
AFI LR LR
comp=Z,890nm,21.0s
SORM Soroca 84.82 320⇑ *i*P **P 18 36 35.2 -0.6**
AKASG Malin Array Be 85.07 322 P **P 18 36 36.0 -0.9**
comp=Z,2.0nm,0.6s,baz=87,slow=4.6,SNR=16
AKASG LR LR 19 16 06.6
comp=Z,735nm,22.0s,baz=70,slow=37
SZH Strazhica 85.07 315 P **P 18 36 37.0 -0.2**
KIEV Kiev 85.07 322 *e*P **P 18 36 36.7 -0.3**
KIEV pmax pmax
comp=Z,4.0nm,1.0s
KIEV Kiev 85.07 322 *e*P **P 18 36 34.3 -2.7**
comp=Z,9.0nm,0.9s
KIEV LR LR
comp=Z,1μm,22.0s
VRI Vrincioaia 85.23 317⇑ *i*P **P 18 36 38.8 +0.9**
PLOR Plostina 85.27 317⇑ *i*P **P 18 36 39.3 +1.1**
TESR Tescani 85.46 318⇓ *i*P **P 18 36 40.0 +0.9**
RZN Rozhen 85.54 313 P **P 18 36 40.0 +0.2**
MLR Muntele Rosu 85.65 317⇑ *i*P **P 18 36 40.6 +0.4**
TMCR Tamitsa 85.86 337 *e*P **P 18 36 40.6 0.0**
TMCR pmax pmax
comp=Z,75nm,1.1s
DOPR Dopca 86.15 317⇑ *i*P **P 18 36 43.0 +0.4**
MMB Musomiste 86.23 313 P **P 18 36 43.0 -0.1**
VOIR 86.25 317⇑ *i*P **P 18 36 43.1 0.0**
MPEP Malo Peshtene 86.64 314 P **P 18 36 45.0 0.0**
BURAR Bucovina Array 86.70 319⇑ *i*P **P 18 36 46.6 +1.3**
KKB Krupnik 86.77 313 P **P 18 36 44.0 -1.6**
MICGM Minsk 87.02 326 *e*P **P 18 36 48.0 +1.5**
MICGM *e*LR LR 19 16 35.0
MNK Minsk 87.02 326 *e*P **P 18 36 48.0 +1.5**
SNAA Sanae 87.28 198 P **P 18 36 48.5 +0.8**
NACGM Naroch 87.75 326 *e* **P 18 36 51.0 +1.0**
NACGM *e*LQ LQ 19 08 29.0
NACGM *e*LR LR 19 17 21.0
DEV Deva 87.81 317⇑ *i*P **P 18 36 52.0 +1.4**
BILL Bilibino 87.88 20 *ce*P **P 18 36 50.2 -0.2**
BILL *e*S **SKSac 18 47 18.8 +1.5**
BILL *e*SS **SS 18 53 24.6 +5.0**
BILL pmax pmax
comp=Z,18nm,1.2s
BILL MLR MLR
comp=Z,1μm,18.0s
BILL Bilibino 87.88 20 *e*P **P 18 36 49.2 -1.2**
comp=Z,20nm,1.0s
BILL LR LR
comp=Z,2μm,20.0s
IDID Didziasalis 87.89 326 *e*P **P 18 36 52.1 +1.4**
IDID IAmb IAmb 18 37 00.3
comp=Z,25nm,1.1s
LVV L'vov 88.02 321 *e*P **P 18 36 51.9 +0.4**
LVV *e* 18 47 21.5
LVV *e*S **S 18 47 31.9 -2.1**
LVV *e* 18 56 51.9
LVV MLR MLR
comp=Z,600nm,21.0s
LVV MLR MLR
comp=N,500nm,20.0s
LVV MLR MLR
comp=E,700nm,20.0s
DRGR 88.15 318⇑ *i*P **P 18 36 53.4 +1.1**
IZAR Zarasai 88.28 327 *e*P **P 18 36 53.8 +1.3**
IZAR IAmb IAmb 18 37 06.5
comp=Z,14nm,0.8s
ISAL Salakas 88.30 327 *e*P **P 18 36 54.0 +1.3**
ISAL IAmb IAmb 18 37 01.1
comp=Z,20nm,0.9s
MDVR Moldovita 88.39 315⇑ *i*P **P 18 36 54.5 +1.1**
BZS Buzias 88.63 316⇑ *i*P **P 18 36 54.8 +0.3**
LVZ Lovozero 88.72 340 *e*P **P 18 36 53.4 -1.1**
LVZ pmax pmax
comp=Z,71nm,1.1s
LVZ MLR MLR
comp=Z,2μm,21.0s
LVZ Lovozero 88.72 340 *e*P **P 18 36 53.4 -1.1**
comp=Z,71nm,1.1s
LVZ LR LR
comp=Z,2μm,21.0s
SIRR Siria 88.74 317⇑ *i*P **P 18 36 55.1 +0.1**
VSU Vasula 88.80 329 *ce*P **P 18 36 55.4 +0.5**
VSU pmax pmax
comp=Z,94nm,1.0s
KWP Kalwaria Pacla 88.81 320 *e*P **P 18 36 56.5 +1.3**
KWP Kalwaria Pacla 88.81 320 *e*P **P 18 36 56.5 +1.3**
UZH Uzhgorod 88.84 319 *e*P **P 18 36 56.6 +1.2**
UZH *e* 18 37 12.2
UZH *e*S **S 18 47 40.0 -1.9**
UZH *e*PS PS 18 49 18.6 +30
UZH MLR MLR
comp=E,1μm,19.0s
KOLS Kolonicke sedl 88.92 320 *e*P **P 18 36 57.2 +1.4**
KOLS pmax pmax
comp=Z,57nm,1.4s
KOLS Kolonicke sedl 88.92 320 *e*P **P 18 36 57.2 +1.4**
KOLS Kolonicke sedl 88.92 320 *e*S **S 18 47 41.0 -1.7**
TIR Tirane 89.02 312 PFAKE 18 37 10.0 +14
TIR LR LR
comp=Z,1μm,21.0s
APA Apatity 89.03 339⇓ *i*P **P 18 36 56.4 +0.6**
APA MLR MLR
comp=Z,3μm,20.0s
VNA1 Neumayer--Stat 89.28 198 P **P 18 36 58.8 +1.8**
CRVS Cervenica-Dubn 89.44 319 *e*P **P 18 36 59.4 +1.2**
CRVS *e* 18 40 31.8
CRVS Cervenica-Dubn 89.44 319 *e*P **P 18 36 59.4 +1.2**
CRVS *e*PP **PP 18 40 31.8 +2.2**
VNA3 Neumayer Olymp 89.48 198 P **P 18 36 59.0 +0.9**
SUW Suwalki 89.54 325 *e*P **P 18 36 59.0 +0.5**
SUW Suwalki 89.54 325 *e*P **P 18 36 59.0 +0.5**
PDG Podgorica 89.67 313⇓ *i*P **P 18 37 00.2 +0.8**
STHS Stebnicka Huta 89.69 320 *e*P **P 18 37 00.8 +1.4**
STHS pmax pmax
comp=Z,11nm,0.9s
STHS Stebnicka Huta 89.69 320 *e*P **P 18 37 00.8 +1.4**
FINES FINESS Array B 89.96 332 P **P 18 37 00.2 -0.1**
comp=Z,3.5nm,0.6s,baz=131,slow=5.9,SNR=13
FINES LR LR 19 21 53.8
comp=Z,1μm,19.8s,baz=93,slow=39
FINES FINESS Array B 89.96 332 *i* P **P 18 37 01.2 +0.9**
FINES pmax pmax
comp=Z,4.0nm,0.6s
KECS Kecovo 89.99 319 *e*P **P 18 37 01.9 +1.1**
KECS *e* 18 37 07.6
KECS pmax pmax
comp=Z,6.0nm,1.2s
KECS Kecovo 89.99 319 *e*P **P 18 37 01.9 +1.1**
KECS *e* 18 37 07.6
PSZ Piszkesteto 90.26 318⇑ *i*P **P 18 37 03.0 +0.8**
PSZ Piszkesteto 90.26 318 PFAKE 18 37 10.0 +7.8
PSZ LR LR
comp=Z,1μm,19.0s
NIE Niedzica 90.29 320 *e*P **P 18 37 04.0 +1.8**
NIE Niedzica 90.29 320 *e*P **P 18 37 04.0 +1.8**
OJC Ojcow 90.77 320 *e*P **P 18 37 05.3 +0.9**
OJC Ojcow 90.77 320 *e*P **P 18 37 05.3 +0.9**
TIP Timpagrande 90.98 309 PFAKE 18 37 20.0 +14
TIP LR LR
comp=Z,882nm,20.0s
BLY Banja Luka 91.55 315⇑ *i*P **P 18 37 08.8 +0.7**
OKC Ostrava-Krasne 91.75 320 *e*P **P 18 37 10.0 +1.1**
OKC AMS AMS 19 27 00.0
comp=Z,900nm,15.4s
OKC Ostrava-Krasne 91.75 320 *e*P **P 18 37 10.0 +1.1**
OKC MLR MLR
comp=Z,900nm,15.4s
CUC Castrocucco 91.82 310 PFAKE 18 37 20.0 +10
CUC LR LR
comp=Z,599nm,20.0s
KEV Kevo 91.97 340 PFAKE 18 37 20.0 +11
KEV LR LR
comp=Z,2μm,21.0s
MORC Moravsky Berou 92.12 320⇑ *i*P **P 18 37 10.4 -0.3**
WDD Wied Dalam 92.25 306 PFAKE 18 37 20.0 +8.4
WDD LR LR
comp=Z,742nm,21.0s
ARCES ARCESS Array B 92.42 340 P **P 18 37 11.7 +0.1**
comp=Z,9.1nm,0.9s,baz=108,slow=4.0,SNR=22
ARCES LR LR 19 23 07.2
comp=Z,2μm,20.2s,baz=93,slow=38
ARCES ARCESS Array B 92.42 340 P **P 18 37 11.7 +0.1**
ARCES pmax pmax
comp=Z,16nm,1.0s
ARCES MLR MLR
comp=Z,2μm,20.3s
GOLS Golise 92.83 316 *i* P **P 18 37 14.3 +0.3**
DPC Dobruska-Polom 92.99 320 *e*P **P 18 37 15.9 +1.2**
DPC *e*sP **pP 18 37 22.6 +0.9**
DPC *e*PP **PP 18 41 01.6 +3.9**
DPC *e*SKS **SKSac 18 47 54.4 +6.8**
DPC *e*PS PnS 18 49 39.7 +3.7
DPC *e*PKKP **PKKPdf 18 54 24.4 -0.5**
DPC AMS AMS 19 26 40.0
comp=Z,1μm,21.0s
DPC Dobruska-Polom 92.99 320 *e*P **P 18 37 15.9 +1.2**
DPC *e* 18 37 22.6
DPC *e* 18 41 01.6
DPC *e*PS PnS 18 49 39.7 +3.7
DPC MLR MLR
comp=Z,1μm,21.0s
ARSA Arzberg 93.07 317 *i* PcP **PcP 18 37 15.9 +0.2**
comp=Z,4.7nm,0.8s
UPC Upice 93.21 320 *e*SKS **SKSac 18 47 55.0 +6.3**
UPC *e*PS PS 18 49 39.2 +2.3
UPC AMS AMS 19 26 10.0
comp=Z,1μm,17.6s
SOKA Soboth 93.32 316 *i* PcP **PcP 18 37 17.2 +0.2**
comp=Z,8.3nm,0.9s
VISS Visnje 93.34 316 *e*P **P 18 37 16.1 -0.3**
TREC Trest 93.37 319 *e*PP PP 18 41 06.1 +5.4
TREC *e*SKS **SKSac 18 47 53.4 +3.7**
TREC *e*PS PS 18 49 44.2 +5.3
TREC *e*SS **SS 18 54 40.5 +0.7**
TREC AMS AMS 19 25 10.0
comp=Z,1μm,21.0s
CLTB Caltabellotta 93.51 307 PFAKE 18 37 30.0 +13
CLTB LR LR
comp=Z,311nm,20.0s
GOPC GO Pecny, Ondr 93.91 320 *e*SKS **SKSac 18 47 57.6 +5.0**
GOPC *e*PS PS 18 49 46.1 +1.4
GOPC AMS AMS 19 26 20.0
comp=Z,1μm,20.3s
AQU L'Aquila 93.94 312 PFAKE 18 37 30.0 +11
AQU LR LR
comp=Z,766nm,20.0s
PRU Pruhonice 94.07 320 *e*P **P 18 37 19.8 +0.1**
PRU *e*PP **PP 18 41 11.3 +5.2**
PRU *e*SKS **SKSac 18 48 02.6 +9.1**
PRU *e*PS **PS 18 49 40.9 -5.6**
PRU *e*SS **SS 18 54 39.2 -11**
PRU AMS AMS 19 30 00.0
comp=Z,1μm,20.1s
PRU Pruhonice 94.07 320 *e*P **P 18 37 19.8 +0.1**
PRU *e* 18 41 11.3
PRU *e*PS **PS 18 49 40.9 -5.6**
PRU MLR MLR
comp=Z,1μm,20.1s
PVCC Panska Ves 94.12 320 *e*PP PP 18 41 13.3 +6.8
PVCC AMS AMS 19 26 40.0
comp=Z,1μm,20.0s
GERES GERESS Array B 94.48 319 P **P 18 37 21.9 +0.2**
comp=Z,1.6nm,0.7s,baz=97,slow=4.4,SNR=17
GERES LR LR 19 25 53.9
comp=Z,742nm,18.4s,baz=66,slow=39
BRG Berggiesshubel 94.56 321 *e*P **P 18 37 22.6 +0.8**
comp=Z,3.8nm,0.8s
BRG *e* 18 37 29.3
comp=Z,5.4nm,1.1s
BRG PP PP 18 41 20.0 +10
BRG S **S 18 48 42.0 +8.5**
BRG PS **PS 18 49 59.0 +7.2**
BRG SS SS 18 55 11.0 +14
BRG Berggiesshubel 94.56 321 *e*P **P 18 37 22.6 +0.8**
BRG *e* 18 37 29.3
BRG PS **PS 18 49 59.0 +7.2**
BRG pmax pmax
comp=Z,4.0nm,0.8s
BRG pmax pmax
comp=Z,5.0nm,1.1s
BRG MLR MLR
comp=N,1μm,20.1s
BRG MLR MLR
comp=E,1μm,24.1s
BRG MLR MLR
comp=Z,2μm,18.8s
KHC Kasperske Hory 94.60 319 *e*P **P 18 37 23.1 +1.0**
KHC *e*pP **pP 18 37 28.2 -0.9**
KHC *e*x x 18 37 47.3
KHC *e*PP **PP 18 41 09.4 -0.9**
KHC *e*SKS **SKSac 18 48 02.9 +6.5**
KHC *e*PS **PS 18 49 52.5 +0.1**
KHC *e*SS **SS 18 54 50.9 -6.4**
KHC AMS AMS 19 27 40.0
comp=Z,1μm,15.8s
KHC Kasperske Hory 94.60 319 *e*P **P 18 37 23.1 +1.0**
KHC *e* 18 41 09.4
KHC *e*PS **PS 18 49 52.5 +0.1**
KHC *e*SS SS 18 54 50.9 -6.4
KHC MLR MLR
comp=Z,1μm,15.8s
CLL Collm 95.19 321 *e*P **P 18 37 29.0 +4.3**
comp=Z,17nm,1.7s
CLL *e*PP PP 18 41 24.0 +9.2
CLL *e*PPP PPP 18 43 18.0
CLL *e*PPPP 18 44 54.0
CLL *e*SKSac **SKSac 18 48 02.0 +2.6**
CLL *e*S **ScS 18 48 42.0 +2.1**
CLL *e*PS **PS 18 49 51.0 -7.7**
CLL *e*SS **SS 18 55 13.0 +7.4**
CLL *e*SSS SSS 18 58 54.0
CLL *e* 19 02 42.0
CLL LmV 19 25 00.0
comp=Z,1μm,20.0s
CLL Collm 95.19 321 *e*P **P 18 37 29.0 +4.3**
CLL *e* 18 48 02.0
CLL *e*S **ScS 18 48 42.0 +2.1**
CLL pmax pmax
comp=Z,17nm,1.7s
CLL MLR MLR
comp=Z,1μm,20.0s
NKC Novy Kostel 95.44 320 *e*SKS **SKSac 18 48 06.2 +5.3**
NKC AMS AMS 19 27 50.0
comp=Z,1μm,21.2s
MOTA Moosalm 96.07 317 *i* PcP **PcP 18 37 29.9 +0.7**
comp=Z,1.6nm,0.6s
VLC Villacollemand 96.31 314 PFAKE 18 37 40.0 +10
VLC LR LR
comp=Z,487nm,21.0s
KEST Kesra 96.42 305 P **P 18 37 31.4 +0.6**
comp=Z,2.3nm,0.7s,baz=64,slow=5.0,SNR=2.8
KEST LR LR 19 22 46.3
comp=Z,424nm,18.5s,baz=30,slow=37
VSL Villasalto 96.70 309 PFAKE 18 37 40.0 +8.1
VSL LR LR
comp=Z,407nm,19.0s
DAVOX Davos/Dischmat 96.86 316 P **P 18 37 32.6 -0.1**
comp=Z,1.5nm,0.6s,baz=307,slow=11,SNR=6.6
NB2 NORSAR Subarra 96.97 331 P **P 18 37 32.3 -0.4**
comp=Z,1.6nm,0.7s,baz=90,slow=5.1
NOA NORSAR Array B 96.97 331 P **P 18 37 31.4 -1.2**
comp=Z,1.1nm,0.9s,baz=145,slow=20,SNR=3.5
NOA LR LR 19 24 56.8
comp=Z,712nm,19.3s,baz=90,slow=38
TUE Stuetta 97.21 316 PFAKE 18 37 50.0 +16
TUE LR LR
comp=Z,803nm,20.0s
KBS Kingsbay 97.49 349 PFAKE 18 37 50.0 +15
KBS LR LR
comp=Z,2μm,20.0s
KONO Kongsberg 97.70 329 PFAKE 18 37 50.0 +14
KONO LR LR
comp=Z,1μm,20.0s
BFO Black Forest 98.00 318 PFAKE 18 37 50.0 +12
BFO LR LR
comp=Z,1μm,22.0s
TAM Tamanrasset 98.69 292 PFAKE 18 37 50.0 +8.6
TAM LR LR
comp=Z,926nm,19.0s
BNI Bardonecchia 99.00 314 PFAKE 18 37 50.0 +7.7
BNI LR LR
comp=Z,1μm,22.0s
WLF Walferdange 99.47 319 PFAKE 18 37 50.0 +5.9
WLF LR LR
comp=Z,1μm,21.0s
SSB Saint Sauveur 100.52 315 PFAKE 18 38 00.0 +11
SSB LR LR
comp=Z,806nm,22.0s
XMAS Kiritimati 100.95 89 PFAKE 18 38 00.0 +8.5
XMAS LR LR
comp=Z,2.0nm,20.0s
TORD Torodi Ar. Bea 101.49 282 P **Pdif 18 37 54.0 +0.2**
comp=Z,0.4nm,0.6s,baz=87,slow=5.6,SNR=3.1
TBI Tubuai 103.91 116 *e*SKSac **SKSac 18 48 34.9 -9.0**
comp=Z,422nm,26.0s
TBI Tubuai 103.91 116 *e*PS **SP 18 51 29.8 -0.8**
comp=Z,742nm,28.8s
TBI *e*SS **SS 18 57 04.0 -4.5**
comp=Z,1μm,28.5s
TBI Tubuai 103.91 116 *e*LQ LQ 19 07 45.4
comp=Z,1μm,32.0s
TBI *e*LR LR 19 12 14.4
comp=Z,2μm,23.2s
SHEL Horse Pasture 104.51 251 PFAKE 18 38 20.0 +13
SHEL LR LR
comp=Z,671nm,21.0s
KDAK Kodiak Island 104.82 32 PFAKE 18 38 20.0 +12
KDAK LR LR
comp=Z,1μm,21.0s
ESK Eskdalemuir 104.83 325 PFAKE 18 38 20.0 +12
ESK LR LR
comp=Z,2μm,22.0s
PPT2 Papeete2 105.20 111 *e*PP **PKiKP 18 42 25.4 +0.6**
comp=Z,105nm,27.0s
PPT2 *e*SKSac **SKSac 18 48 43.1 -7.0**
comp=Z,382nm,28.2s
PPT2 Papeete2 105.20 111 *e*PS **SP 18 51 41.4 -3.0**
comp=Z,378nm,26.0s
PPT2 *e*SS **SS 18 57 20.0 -6.6**
comp=Z,1μm,26.8s
PPT2 Papeete2 105.20 111 *e*LQ LQ 19 08 17.3
comp=Z,3μm,38.2s
PPT2 *e*LR LR 19 12 51.8
comp=Z,2μm,29.0s
COLA College 105.54 25 PFAKE 18 42 40.0
COLA LR LR
comp=Z,909nm,20.0s
ILAR Eielson Array 105.97 25 PP PP 18 42 40.8 +4.9
comp=Z,1.6nm,1.0s,baz=291,slow=5.9,SNR=5.7
ILAR PKKPbc PKKPbc 18 53 49.0 -1.1
comp=Z,0.7nm,0.8s,baz=129,slow=2.8,SNR=6.4
ESDC Sonseca Array 107.00 309 PP PP 18 42 48.4 +4.0
comp=Z,2.0nm,0.8s,baz=79,slow=7.2,SNR=6.0
PAB San Pablo 107.30 309 PFAKE 18 42 40.0
PAB LR LR
comp=Z,876nm,21.0s
INK Inuvik 109.49 19 PP PP 18 43 00.1 -1.3
comp=Z,2.5nm,1.0s,baz=288,slow=10,SNR=3.5
MTE Manteigas 109.67 310 PFAKE 18 42 40.0
MTE LR LR
comp=Z,697nm,21.0s
RTC Rabat Centre 109.72 303 PFAKE 18 42 40.0
RTC LR LR
comp=Z,3μm,19.0s
BORG Borgarnes 110.65 337 PFAKE 18 42 40.0
BORG LR LR
comp=Z,2μm,19.0s
ASCN Ascension 114.47 258 PFAKE 18 42 50.0 +7.7
ASCN LR LR
comp=Z,866nm,19.0s
WRAK Wrangell Islan 115.70 30 PFAKE 18 43 00.0 +17
WRAK LR LR
comp=Z,776nm,21.0s
DLBC Dease Lake 115.84 27 PP PP 18 43 54.9 +7.9
comp=Z,0.9nm,0.4s,baz=342,slow=10.0,SNR=4.7
TAOE Nuku Hiva Isla 116.14 104 *e*PS **SP 18 53 28.3 -2.1**
comp=Z,432nm,25.7s
TAOE *e*SS **SS 18 59 49.7 -3.7**
comp=Z,699nm,30.8s
RKT Rikitea 116.63 121 *e*PS **SP 18 53 32.5 -1.6**
comp=Z,719nm,28.5s
RKT *e*SS **SS 18 59 54.6 -4.1**
comp=Z,836nm,32.5s
RKT Rikitea 116.63 121 *e*LQ LQ 19 13 10.7
comp=Z,835nm,43.0s
RKT *e*LR LR 19 17 57.9
comp=Z,1μm,39.2s
SFJD Kangerlussuaq 117.89 348 PFAKE 18 43 00.0 +13
SFJD LR LR
comp=Z,1μm,20.0s
YKA Yellowknife Ar 119.25 18 PKP **PKPdf 18 42 49.7 -0.4**
comp=Z,0.9nm,0.8s,baz=321,slow=2.0,SNR=7.5
YKA PKKPbc **PKKPab 18 53 04.5 -0.6**
comp=Z,0.8nm,0.8s,baz=135,slow=3.7,SNR=6.5
CMLA Cha da Macela 123.87 311 PFAKE 18 43 10.0 +10
CMLA LR LR
comp=Z,943nm,19.0s
NLWA Neilton Lookou 124.65 36 PFAKE 18 43 10.0 +9.0
NLWA LR LR
comp=Z,789nm,20.0s
HAWA Hanford 127.70 35 PFAKE 18 43 20.0 +13
HAWA LR LR
comp=Z,658nm,20.0s
NEW Newport 127.92 32 PFAKE 18 43 20.0 +13
NEW LR LR
comp=Z,941nm,22.0s
FFC Flin Flon 129.41 18 *i* PKIKP **PKPdf 18 43 11.3 +1.5**
FFC Flin Flon 129.41 18 PFAKE 18 43 20.0 +10
FFC LR LR
comp=Z,2μm,22.0s
BMO Blue Mountains 129.86 36 PFAKE 18 43 20.0 +8.9
BMO LR LR
comp=Z,786nm,20.0s
WVOR Wild Horse Val 130.41 39 PFAKE 18 43 20.0 +7.7
WVOR LR LR
comp=Z,723nm,20.0s
PLCA Paso Flores 131.28 188 PKP **PKPdf 18 43 15.8 +1.8**
comp=Z,2.5nm,1.0s,baz=352,slow=3.8,SNR=3.3
PLCA SKPbc **SKPab 18 46 39.9 +1.7**
comp=Z,7.2nm,1.0s,baz=194,slow=2.0,SNR=8.0
TRQA Tornquist 132.01 197 PFAKE 18 43 30.0 +15
TRQA LR LR
comp=Z,602nm,19.0s
HLID Hailey 132.30 35 PFAKE 18 43 30.0 +14
HLID LR LR
comp=Z,951nm,21.0s
BOZ Bozeman (W) 132.49 32 *e*PKIKP **PKPdf 18 43 13.5 -2.7**
BOZ MLR MLR
comp=Z,818nm,21.0s
BOZ Bozeman (W) 132.49 32 *e*PKPdf **PKPdf 18 43 13.5 -2.7**

BOZ				LR	LR			
	comp=Z,818nm,21.0s							
DGMT	**Dagmar**	**133.83**	**24**	PFAKE		18 43 30.0	+12	
DGMT				LR	LR			
	comp=Z,1μm,22.0s							
LKWY	**Lake**	**133.86**	**32**	PFAKE		18 43 30.0	+11	
LKWY				LR	LR			
	comp=Z,2μm,20.0s							
RLMT	**Red Lodge**	**134.06**	**31**	PFAKE		18 43 30.0	+11	
RLMT				LR	LR			
	comp=Z,1μm,22.0s							
LAO	**LASA Array**	**134.36**	**27**	PFAKE		18 43 30.0	+10	
LAO				LR	LR			
	comp=Z,694nm,19.0s							
AHID	**Auburn Hatcher**	**134.68**	**34**	PFAKE		18 43 30.0	+10	
AHID				LR	LR			
	comp=Z,895nm,19.0s							
ULM	**Lac du Bonnet**	**135.12**	**16**	PKP	**PKPdf**	**18 43 21.0**	**+0.3**	
	comp=Z,2.6nm,0.6s,baz=345,slow=7.7,SNR=3.5							
HWUT	**Hardware Ranch**	**135.16**	**36**	PFAKE		18 43 30.0	+8.6	
HWUT				LR	LR			
	comp=Z,925nm,22.0s							
DUG	**Dugway, Tooele**	**135.29**	**38**	PFAKE		18 43 30.0	+8.4	
DUG				LR	LR			
	comp=Z,751nm,22.0s							
BW06	**Boulder Array**	**135.53**	**33**	PFAKE		18 43 30.0	+7.9	
BW06				LR	LR			
	comp=Z,1μm,22.0s							
PDAR	**Pinedale Array**	**135.53**	**33**	PKhKP	PKPpre	18 43 17.9		
	comp=Z,0.6nm,0.5s,baz=190,slow=1.1,SNR=7.3							
PDAR				PKP	**PKiKP**	**18 43 23.2**	**-0.5**	
	comp=Z,0.6nm,0.6s,baz=215,slow=1.1,SNR=7.4							
RCBR	**Riachuelo**	**135.69**	**254**	PFAKE		18 43 30.0	+7.1	
RCBR				LR	LR			
	comp=Z,888nm,20.0s							
PFO	**Pinyon Flats O**	**136.31**	**48**	PFAKE		18 43 40.0	+16	
PFO				LR	LR			
	comp=Z,834nm,20.0s							
EYMN	**Ely**	**138.35**	**13**	PFAKE		18 43 40.0	+13	
EYMN				LR	LR			
	comp=Z,1μm,21.0s							
WUAZ	**Wupatki**	**138.94**	**43**	PFAKE		18 43 40.0	+12	
WUAZ				LR	LR			
	comp=Z,634nm,19.0s							
TCA	**Tanti**	**139.03**	**198**	*e*P	**PKPdf**	**18 43 28.3**	**-0.4**	
ISCO	**Idaho Springs**	**139.73**	**33**	PFAKE		18 43 40.0	+10	
ISCO				LR	LR			
	comp=Z,728nm,21.0s							
MVCO	**Mesa Verde**	**139.79**	**39**	PFAKE		18 43 40.0	+10	
MVCO				LR	LR			
	comp=Z,817nm,19.0s							
CPUP	**Villa Florida**	**140.54**	**210**	PKhKP	PKPpre	18 43 24.7		
	comp=Z,1.9nm,0.7s,baz=124,slow=4.5,SNR=3.9							
CPUP				PKP	**PKPdf**	**18 43 32.5**	**+1.0**	
	comp=Z,2.5nm,0.7s,baz=171,slow=1.8,SNR=5.2							
COWI	**Conover**	**140.62**	**12**	PFAKE		18 43 40.0	+9.0	
COWI				LR	LR			
	comp=Z,1μm,21.0s							
ECSD	**EROS Data Cent**	**140.68**	**21**	*e*PKPdf	**PKPdf**	**18 43 28.4**	**-2.8**	
ECSD				LR	LR			
	comp=Z,847nm,20.0s							
OGNE	**Ogallala**	**140.71**	**29**	PFAKE		18 43 40.0	+8.6	
OGNE				LR	LR			
	comp=Z,926nm,20.0s							
TUC	**Tucson**	**141.10**	**47**	PFAKE		18 43 40.0	+7.6	
TUC				LR	LR			
	comp=Z,652nm,20.0s							
SDCO	**Great Sand Dun**	**141.22**	**35**	PFAKE		18 43 40.0	+7.3	
SDCO				LR	LR			
	comp=Z,735nm,19.0s							
PKME	**Peaks-Kenny Pk**	**141.80**	**350**	PFAKE		18 43 40.0	+6.9	
PKME				LR	LR			
	comp=Z,1μm,21.0s							
ANMO	**Albuquerque**	**142.50**	**40**	*e*PKIKP	**PKPdf**	**18 43 32.5**	**-2.5**	
ANMO				MLR	MLR			
	comp=Z,621nm,20.0s							
ANMO	**Albuquerque**	**142.50**	**40**	*e*PKPdf	**PKPdf**	**18 43 32.5**	**-2.5**	
ANMO				LR	LR			
	comp=Z,621nm,20.0s							
LONY	**Lake Ozonia**	**143.10**	**356**	*e*PKPdf	PKPbc	18 43 31.9	-0.4	
LONY				LR	LR			
	comp=Z,1μm,20.0s							
JFWS	**Jewell Farm**	**143.38**	**15**	PFAKE		18 43 50.0	+14	
JFWS				LR	LR			
	comp=Z,1μm,20.0s							
O33A	**Hebron**	**143.42**	**25**	P	PKPbc	18 43 34.0	+0.7	
	baz=327							
SCIA	**State Center**	**143.45**	**19**	PFAKE		18 43 50.0	+14	
SCIA				LR	LR			
	comp=Z,1μm,22.0s							
CBKS	**Cedar Bluff**	**143.47**	**29**	PFAKE		18 43 50.0	+14	
CBKS				LR	LR			
	comp=Z,1μm,22.0s							
AHML	**Horco Molle**	**143.50**	**200**	*e*P	PKPab	18 43 31.1	-2.0	
M37A	**Trindle Farm,**	**143.62**	**20**	P	PKPbc	18 43 33.8	0.0	
	baz=333							
O34A	**Beatrice**	**143.70**	**24**	P	PKPab	18 43 33.8	+0.4	
	baz=328							
N36A	**Muff Farm, Cla**	**143.82**	**22**	P	PKPbc	18 43 34.6	+0.2	
	baz=331							
M38A	**Pleasantville**	**143.90**	**19**	P	PKPab	18 43 34.5	+0.4	
	baz=334							
O35A	**Humboldt**	**143.94**	**23**	P	PKPbc	18 43 35.0	+0.2	
	baz=329							
N37A	**Lee Faris, Mou**	**144.14**	**21**	P	**PKPab**	**18 43 35.0**	**0.0**	
	baz=332							
P34A	**Walnut Farm, R**	**144.18**	**25**	P	**PKPab**	**18 43 35.0**	**-0.2**	
	baz=327							
Q33A	**Connelly Farm,**	**144.20**	**27**	P	**PKPab**	**18 43 35.4**	**+0.1**	
	baz=326							
R32A	**Long Quarter,**	**144.27**	**28**	P	PKPbc	18 43 36.1	+0.2	
	baz=324							
FSA	**Cafayete**	**144.33**	**199**	*e*P	**PKPdf**	**18 43 38.1**	**-0.4**	
O36A	**Bolckow**	**144.42**	**22**	P	**PKPab**	**18 43 36.2**	**+0.2**	
	baz=331							
N38A	**Joes South For**	**144.45**	**20**	P	**PKPab**	**18 43 35.9**	**-0.3**	
	baz=334							
P35A	**Duane Minner,**	**144.53**	**24**	P	**PKPab**	**18 43 36.1**	**-0.4**	
	baz=329							
N39A	**Derby Farms, D**	**144.61**	**19**	P	**PKPab**	**18 43 36.3**	**-0.4**	
	baz=335							
KSU1	**Kansas State U**	**144.64**	**25**	P	**PKPab**	**18 43 36.8**	**-0.1**	
	baz=327							
KSU1	**Kansas State U**	**144.64**	**25**	*e*PKPdf	**PKPab**	**18 43 36.4**	**-0.5**	
KSU1				LR	LR			
	comp=Z,1μm,19.0s							
Q34A	**Chapman**	**144.65**	**26**	P	**PKPab**	**18 43 36.9**	**-0.1**	
	baz=327							
O37A	**Wolven Farm, M**	**144.69**	**21**	P	**PKPab**	**18 43 36.7**	**-0.3**	
	baz=332							
R33A	**Olander Ranch,**	**144.70**	**27**	P	PKPbc	18 43 37.4	+0.1	
	baz=325							
S32A	**Newby Ranch, P**	**144.74**	**29**	P	**PKPab**	**18 43 37.6**	**+0.2**	
	baz=323							
P36A	**Good Intent, A**	**144.77**	**23**	P	**PKPab**	**18 43 37.0**	**-0.4**	
	baz=330							
HRV	**Adam Dziewonsk**	**144.85**	**351**	*e*PKIKP	**PKPab**	**18 43 35.3**	**-2.3**	
HRV	**Adam Dziewonsk**	**144.85**	**351**	*e*PKPdf	**PKPab**	**18 43 35.3**	**-2.3**	
O38A	**Galt**	**144.97**	**21**	P	**PKPab**	**18 43 37.4**	**-0.7**	
	baz=333							
R34A	**Isabella, Hill**	**145.03**	**27**	P	**PKPbc**	**18 43 38.5**	**+0.1**	
	baz=326							
Q35A	**Mercer Eighty,**	**145.09**	**25**	P	**PKPbc**	**18 43 38.1**	**-0.4**	
	baz=328							
P37A	**Lathrop**	**145.12**	**22**	P	**PKPbc**	**18 43 38.3**	**-0.3**	
	baz=331							
T32A	**Huddler Ranch,**	**145.16**	**30**	P	**PKPbc**	**18 43 39.0**	**+0.1**	
	baz=322							
O39A	**Kirksville**	**145.16**	**19**	P	**PKPbc**	**18 43 38.0**	**-0.7**	
	baz=335							
AAM	**Ann Arbor**	**145.22**	**7**	PFAKE		18 43 50.0	+11	
AAM				LR	LR			
	comp=Z,1μm,19.0s							
MNTX	**Cornudas Mount**	**145.22**	**43**	P	**PKPdf**	**18 43 40.3**	**+0.7**	
	baz=308							
MNTX	**Cornudas Mount**	**145.22**	**43**	*e*PKPdf	**PKPdf**	**18 43 40.0**	**+0.4**	
MNTX				LR	LR			
	comp=Z,779nm,19.0s							
Q36A	**Arnold C. Orve**	**145.24**	**24**	P	**PKPbc**	**18 43 38.3**	**-0.7**	
	baz=329							
LPIG	**La Paz**	**145.24**	**58**	PKPbc	**PKPdf**	**18 43 41.0**	**+1.2**	
	baz=211,slow=2.7							
S33A	**Kaszmaul Farm,**	**145.27**	**28**	P	**PKPab**	**18 43 39.4**	**+0.1**	
	baz=324							
P38A	**Dawn**	**145.39**	**21**	P	**PKPbc**	**18 43 39.1**	**-0.3**	
	baz=333							
AMTX	**Amarillo**	**145.42**	**35**	P	**PKPab**	**18 43 40.3**	**+0.2**	
	baz=316							
MSTX	**Muleshoe**	**145.42**	**37**	P	**PKPab**	**18 43 40.3**	**+0.2**	
	baz=314							
MSTX	**Muleshoe**	**145.42**	**37**	*e*PKPdf	**PKPbc**	**18 43 40.1**	**+0.2**	
R35A	**Emporia Munici**	**145.47**	**25**	P	**PKPbc**	**18 43 39.6**	**-0.1**	
	baz=328							
O40A	**La Belle**	**145.50**	**19**	P	**PKPdf**	**18 43 39.3**	**-0.5**	
	baz=336							
S34A	**Willow Spring**	**145.59**	**27**	P	**PKPdf**	**18 43 40.1**	**+0.1**	
	baz=326							
BINY	**Binghamton**	**145.60**	**357**	*e*PKPdf	**PKPdf**	**18 43 37.6**	**-2.3**	
BINY				LR	LR			
	comp=Z,858nm,20.0s							
Q37A	**Longview Farm,**	**145.70**	**23**	P	**PKPdf**	**18 43 40.1**	**0.0**	
	baz=331							
ALOL	**LOMAS DE OLMED**	**145.71**	**204**	*e*P	**PKPdf**	**18 43 40.4**	**-0.3**	
AZAP	**Zapla**	**145.75**	**202**	*e*P	**PKPdf**	**18 43 40.4**	**-0.6**	
R36A	**Gordon, Harris**	**145.76**	**25**	P	**PKPdf**	**18 43 40.1**	**-0.2**	
	baz=329							
P39B	**Salisbury**	**145.78**	**20**	P	**PKPdf**	**18 43 40.1**	**-0.2**	
	baz=334							
HDIL	**Hopedale**	**145.84**	**15**	P	**PKPdf**	**18 43 40.5**	**+0.1**	
	baz=340							
HDIL	**Hopedale**	**145.84**	**15**	PFAKE		18 43 50.0	+8.8	
HDIL				LR	LR			
	comp=Z,1μm,19.0s							
Q38A	**Cooks Store, C**	**145.94**	**22**	P	**PKPdf**	**18 43 40.6**	**0.0**	
	baz=332							
S35A	**Otter Creek Ra**	**145.96**	**26**	P	**PKPdf**	**18 43 41.1**	**+0.4**	
	baz=327							
P40A	**Paris**	**145.98**	**19**	P	**PKPdf**	**18 43 40.8**	**+0.2**	
	baz=335							
R37A	**Teagarden Farm**	**146.04**	**24**	P	**PKPdf**	**18 43 40.8**	**0.0**	
	baz=330							
Q39A	**Willow Grove F**	**146.10**	**21**	P	**PKPbc**	**18 43 41.6**	**-0.1**	
	baz=333							
T34A	**McClaskey Farm**	**146.11**	**28**	P	**PKPbc**	**18 43 41.8**	**0.0**	
	baz=325							
S36A	**Lake Cedric, C**	**146.23**	**25**	P	**PKPdf**	**18 43 41.7**	**+0.6**	
	baz=328							
M54A	**Oil Creek Stat**	**146.32**	**2**	P	**PKPbc**	**18 43 41.9**	**-0.4**	
	baz=358							
U34A	**Anderson Ranch**	**146.42**	**29**	*e*PKPbc	**PKPdf**	**18 43 40.7**	**-0.8**	
R38A	**Fenwick Farm,**	**146.51**	**23**	P	**PKPdf**	**18 43 40.9**	**-0.6**	
	baz=331							
S37A	**Fort Scott**	**146.52**	**24**	P	**PKPdf**	**18 43 41.9**	**+0.2**	
	baz=329							
SFIN	**Lafayette**	**146.52**	**12**	P	**PKPdf**	**18 43 42.1**	**+0.6**	
	baz=344							
SFIN	**Lafayette**	**146.52**	**12**	*e*PKPbc	**PKPdf**	**18 43 41.5**	**0.0**	
T36A	**Boggs Farm, Ca**	**146.67**	**26**	P	**PKPdf**	**18 43 42.5**	**+0.6**	
	baz=327							
R39A	**Chumby, Stover**	**146.73**	**22**	P	**PKPdf**	**18 43 42.5**	**+0.6**	
	baz=333							
HJA	**Humahuaca**	**146.81**	**202**	*e*P	**PKPbc**	**18 43 44.9**	**+0.1**	
U35A	**Pawnee**	**146.85**	**28**	P	**PKPbc**	**18 43 43.9**	**-0.1**	
	baz=325							
N54A	**Moraine State**	**146.86**	**2**	P	**PKPdf**	**18 43 43.1**	**+1.0**	
	baz=357							
N59A	**State Game Lan**	**146.87**	**357**	P	**PKPbc**	**18 43 44.0**	**0.0**	
	baz=4.5							
V34A	**Guthrie**	**146.91**	**29**	P	**PKPbc**	**18 43 43.9**	**-0.3**	
	baz=323							
V34A	**Guthrie**	**146.91**	**29**	*e*PKPab	**PKPbc**	**18 43 43.9**	**-0.3**	
S38A	**Stockton**	**147.00**	**23**	P	**PKPdf**	**18 43 43.4**	**+1.0**	
	baz=331							
R40A	**Medies Statio**	**147.02**	**21**	P	**PKPbc**	**18 43 43.7**	**-0.8**	
	baz=334							
T37A	**Cheneyville 18**	**147.03**	**25**	P	**PKPbc**	**18 43 44.1**	**-0.4**	
	baz=329							
WMOK	**Wichita Mounta**	**147.13**	**32**	*e*PKP2	**PKPbc**	**18 43 44.8**	**-0.1**	
WMOK				MLR	MLR			
	comp=Z,1μm,20.0s							
WMOK	**Wichita Mounta**	**147.13**	**32**	*e*PKPab	**PKPbc**	**18 43 44.8**	**-0.1**	
WMOK				LR	LR			
	comp=Z,1μm,20.0s							
S39A	**Bolivar**	**147.17**	**22**	P	**PKPbc**	**18 43 44.2**	**-0.6**	
	baz=332							
SSPA	**Standing Stone**	**147.22**	**360**	*e*PKPab	**PKPbc**	**18 43 44.7**	**-0.2**	
Q43A	**New Douglas**	**147.24**	**17**	P	**PKPbc**	**18 43 44.9**	**-0.1**	
	baz=339							
W34A	**Bridge Creek,**	**147.26**	**30**	*e*PKPab	**PKPbc**	**18 43 45.9**	**+0.7**	
ACSO	**Alum Creek Sta**	**147.34**	**7**	*e*PKPbc	**PKPdf**	**18 43 44.0**	**+1.1**	
ACSO				LR	LR			
	comp=Z,1μm,20.0s							
T38A	**Diamond**	**147.36**	**24**	P	**PKPdf**	**18 43 44.2**	**+1.1**	
	baz=330							
U37A	**Salina**	**147.55**	**26**	P	**PKPbc**	**18 43 45.3**	**-0.6**	
	baz=328							
S40A	**Lebanon**	**147.56**	**21**	P	**PKPbc**	**18 43 45.0**	**-1.0**	
	baz=333							
O56A	**Blue Knob Stat**	**147.59**	**0**	P	**PKPbc**	**18 43 45.6**	**-0.4**	
	baz=359							
TUL1	**Leonard**	**147.66**	**27**	*e*PKPab	**PKPbc**	**18 43 47.0**	**+0.8**	
V36A	**Jenks**	**147.70**	**28**	P	**PKPbc**	**18 43 45.6**	**-0.7**	
	baz=326							
T39A	**Vever**	**147.73**	**23**	P	**PKPbc**	**18 43 45.7**	**-0.8**	
	baz=331							
YJA	**Yavi**	**147.79**	**202**	*e*P	**PKPbc**	**18 43 46.4**	**-1.2**	
TXAR	**Lajitas Array**	**147.83**	**45**	PKPbc	**PKPbc**	**18 43 47.5**	**+0.5**	
	comp=Z,10nm,0.9s,baz=259,slow=1.0,SNR=39							
T40A	**Mansfield**	**147.95**	**22**	P	**PKPbc**	**18 43 46.3**	**-0.8**	
	baz=333							
V37A	**Hulbert**	**147.98**	**26**	P	**PKPbc**	**18 43 46.5**	**-0.6**	
	baz=327							
ABTX	**Abilene, Hawle**	**148.23**	**36**	P	**PKPbc**	**18 43 48.0**	**0.0**	
	baz=317							
ABTX	**Abilene, Hawle**	**148.23**	**36**	*e*PKPab	**PKPbc**	**18 43 48.2**	**+0.3**	
U39A	**Green Forest**	**148.25**	**24**	P	**PKPbc**	**18 43 47.2**	**-0.7**	
	baz=330							
Y34A	**Reagan Ranch,**	**148.27**	**32**	P	**PKPbc**	**18 43 47.7**	**-0.3**	
	baz=321							
V38A	**Canehill**	**148.31**	**26**	P	**PKPbc**	**18 43 47.5**	**-0.5**	
	baz=328							
T41A	**Mountain View**	**148.31**	**21**	P	**PKPbc**	**18 43 47.2**	**-0.8**	
	baz=334							
S43A	**Fulton Ridge,**	**148.39**	**18**	P	**PKPbc**	**18 43 47.8**	**-0.3**	
	baz=337							
W37B	**Quinton**	**148.47**	**28**	P	**PKPbc**	**18 43 48.2**	**-0.2**	
	baz=326							
LVC	**Limon Verde**	**148.51**	**197**	PKPbc	**PKPbc**	**18 43 50.8**	**+1.4**	
	comp=Z,136nm,0.6s,baz=268,slow=1.9,SNR=44							
U40A	**Yellville**	**148.52**	**23**	P	**PKPbc**	**18 43 48.0**	**-0.6**	
	baz=332							
V39A	**Pettigrew**	**148.65**	**25**	P	**PKPbc**	**18 43 48.6**	**-0.4**	
	baz=330							
133A	**Hamilton Ranch**	**148.66**	**35**	P	**PKPbc**	**18 43 49.4**	**+0.3**	
	baz=318							
S45A	**Carrier Mills**	**148.73**	**16**	P	**PKPbc**	**18 43 49.0**	**0.0**	
	baz=340							
WCI	**Wyandotte Cave**	**148.76**	**12**	*e*PKP2	**PKPbc**	**18 43 48.1**	**-1.1**	
WCI	**Wyandotte Cave**	**148.76**	**12**	*e*PKPbc	**PKPbc**	**18 43 48.1**	**-1.1**	
X37A	**Clayton**	**148.95**	**28**	P	**PKPbc**	**18 43 49.3**	**-0.4**	
	baz=326							
V40A	**Witts Springs**	**149.01**	**23**	P	**PKPbc**	**18 43 49.4**	**-0.5**	
	baz=327							
X38A	**Whitesboro**	**149.13**	**27**	P	**PKPbc**	**18 43 50.0**	**-0.1**	
	baz=327							
W39A	**Magazine**	**149.15**	**25**	P	**PKPbc**	**18 43 49.7**	**-0.5**	
	baz=329							
V41A	**Mountainview**	**149.29**	**23**	P	**PKPbc**	**18 43 49.9**	**-0.6**	
	baz=332							
W40A	**Ferguson Farm,**	**149.45**	**24**	P	**PKPbc**	**18 43 50.8**	**-0.1**	
	baz=330							
135A	**Vickery Place,**	**149.53**	**33**	P	**PKPbc**	**18 43 51.5**	**+0.2**	
	baz=320							
333A	**Richland Sprin**	**149.55**	**37**	P	**PKPbc**	**18 43 50.9**	**-0.5**	
	baz=316							
V42A	**Cord**	**149.56**	**21**	P	**PKPbc**	**18 43 51.1**	**-0.1**	
	baz=334							
X39A	**Fountain Ranch**	**149.58**	**27**	P	**PKPbc**	**18 43 50.9**	**-0.4**	
	baz=328							
CBN	**Corbin Frederi**	**149.64**	**359**	PFAKE		18 44 00.0	+3.7	
CBN				LR	LR			
	comp=Z,780nm,20.0s							
JCT	**Junction City**	**149.65**	**39**	P	**PKPbc**	**18 43 51.3**	**-0.4**	
	baz=314							
JCT	**Junction City**	**149.65**	**39**	*e*PKHKP	**PKPdf**	**18 43 48.6**	**+1.6**	
JCT				MLR	MLR			
	comp=Z,744nm,20.0s							
JCT	**Junction City**	**149.65**	**39**	*e*PKPbc	**PKPdf**	**18 43 48.6**	**+1.6**	
JCT				LR	LR			
	comp=Z,744nm,20.0s							
MIAR	**Mount Ida**	**149.79**	**26**	P	**PKPbc**	**18 43 52.2**	**+0.4**	
	baz=329							
MIAR	**Mount Ida**	**149.79**	**26**	*e*PKHKP	**PKPdf**	**18 43 48.7**	**+1.7**	
MIAR				MLR	MLR			
	comp=Z,1μm,21.0s							
MIAR	**Mount Ida**	**149.79**	**26**	*e*PKPbc	**PKPdf**	**18 43 48.7**	**+1.7**	
MIAR				LR	LR			
	comp=Z,1μm,21.0s							
W41B	**Gary Mavity, V**	**149.79**	**23**	P	**PKPbc**	**18 43 50.9**	**-0.8**	
	baz=332							
433A	**Art**	**149.89**	**38**	P	**PKPbc**	**18 43 51.8**	**-0.4**	
	baz=315							
Y39A	**Lockesburg**	**150.07**	**27**	P	**PKPbc**	**18 43 52.7**	**+0.2**	
	baz=327							
X41A	**Kaden, Bauxite**	**150.28**	**24**	P	**PKPbc**	**18 43 53.2**	**+0.2**	
	baz=331							
434A	**Burnet**	**150.34**	**37**	P	**PKPbc**	**18 43 52.9**	**-0.4**	
	baz=317							
137A	**Heron Place, G**	**150.37**	**31**	P	**PKPbc**	**18 43 54.6**	**+1.4**	
	baz=323							
533A	**Kerrville**	**150.41**	**39**	P	**PKPbc**	**18 43 53.6**	**+0.1**	
	baz=315							
236A	**Katherine and**	**150.43**	**33**	P	**PKPbc**	**18 43 54.1**	**+0.7**	
	baz=321							
BLA	**Blacksburg**	**150.57**	**4**	PFAKE		18 44 00.0	-0.2	
BLA				LR	LR			
	comp=Z,1μm,19.0s							
138A	**Matatall Enter**	**150.65**	**30**	P	**PKPbc**	**18 43 54.8**	**+0.9**	
	baz=324							
336A	**Riesel**	**150.73**	**34**	P	**PKPbc**	**18 43 54.4**	**+0.2**	
	baz=320							
435B	**Jarrell**	**150.76**	**36**	P	**PKPbc**	**18 43 54.6**	**+0.3**	
	baz=318							
Y41A	**Eaglette Beard**	**150.77**	**25**	P	**PKPbc**	**18 43 54.3**	**+0.1**	
	baz=330							
534A	**Blanco**	**150.78**	**38**	P	**PKPbc**	**18 43 54.3**	**-0.1**	
	baz=316							
237A	**Washetta, Mont**	**150.81**	**32**	P	**PKPbc**	**18 43 54.6**	**+0.3**	
	baz=322							
SIV	**San Ignacio**	**150.96**	**216**	PKP	**PKPdf**	**18 43 49.7**	**+0.2**	
	comp=Z,0.9nm,0.5s,baz=91,slow=1.5,SNR=4.8							
SIV				PKPbc	**PKiKP**	**18 43 55.8**	**+0.1**	
	comp=Z,34nm,0.7s,baz=123,slow=4.6,SNR=60							
SIV				PKPab	**PKPab**	**18 44 03.7**	**+1.3**	
	comp=Z,20nm,0.8s,baz=48,slow=8.5,SNR=9.5							
337A	**Centerville**	**151.31**	**33**	P	**PKPbc**	**18 43 56.0**	**+0.5**	
	baz=321							
NATX	**Nacogdoches**	**151.59**	**30**	P	**PKPbc**	**18 43 56.2**	**0.0**	
	baz=324							
NATX	**Nacogdoches**	**151.59**	**30**	PFAKE		18 44 00.0	+3.9	
NATX				LR	LR			
	comp=Z,1μm,22.0s							
Y44A	**Strider, Charl**	**151.63**	**21**	P	**PKPbc**	**18 43 56.4**	**+0.3**	
	baz=334							
636A	**Smothers Creek**	**152.03**	**37**	P	**PKPbc**	**18 43 57.0**	**-0.2**	
	baz=317							
Y46A	**Houston**	**152.17**	**19**	P	**PKPbc**	**18 43 56.9**	**-0.5**	
	baz=337							
BBSR	**BB Station**	**152.43**	**335**	PFAKE		18 44 00.0	+2.0	
BBSR				LR	LR			
	comp=Z,776nm,20.0s							
Y47A	**UCPARC, Winfie**	**152.47**	**18**	P	**PKPbc**	**18 43 57.8**	**-0.3**	
	baz=339							
KMSC	**Kings Mountain**	**152.56**	**6**	P	**PKPbc**	**18 43 58.5**	**+0.2**	
	baz=353							
CNNC	**Cliffs of the**	**152.61**	**359**	PFAKE		18 44 00.0	+1.7	
CNNC				LR	LR			
	comp=Z,1μm,22.0s							
Z48A	**Northport**	**153.04**	**17**	P	**PKPbc**	**18 43 59.1**	**-0.3**	
	baz=339							
Z47A	**Carrollton**	**153.05**	**18**	P	**PKPbc**	**18 43 59.8**	**+0.4**	
	baz=338							
GOGA	**Godfrey**	**153.97**	**10**	PFAKE		18 44 00.0	-1.4	
GOGA				LR	LR			
	comp=Z,1μm,21.0s							
LPAZ	**La Paz**	**154.14**	**203**	PKP	**PKPdf**	**18 43 56.2**	**+1.3**	
	comp=Z,4.6nm,1.1s,baz=68,slow=3.9,SNR=10							
LPAZ				PKPbc	**PKiKP**	**18 44 04.3**	**+1.3**	
	comp=Z,7.0nm,1.0s,baz=96,slow=2.0,SNR=11							
LPAZ				PKPab	**PKPab**	**18 44 17.2**	**+0.8**	
	comp=Z,4.5nm,0.7s,baz=198,slow=9.1,SNR=7.2							
NHSC	**New Hope**	**154.67**	**4**	PFAKE		18 44 10.0	+7.2	
NHSC				LR	LR			
	comp=Z,974nm,22.0s							
BRAL	**Brewton**	**155.25**	**18**	PFAKE		18 44 10.0	-10	
BRAL				LR	LR			
	comp=Z,1μm,21.0s							
SAML	**Samuel**	**157.67**	**222**	PFAKE		18 44 10.0	+11	
SAML				LR	LR			
	comp=Z,988nm,19.0s							
PTGA	**Pitinga**	**159.95**	**246**	PKPab	**PKPab**	**18 44 41.4**	**+0.4**	
	comp=Z,6.2nm,0.6s,baz=91,slow=3.9,SNR=8.5							
PTGA	**Pitinga**	**159.95**	**246**	PKPab	**PKPab**	**18 44 41.4**	**+0.4**	
PTGA				LR	LR			
	comp=Z,36μm,20.0s							
NNA	**Nana**	**160.38**	**184**	PFAKE		18 44 10.0	+7.9	
NNA				LR	LR			
	comp=Z,489nm,20.0s							
BBGH	**Gun Hill**	**160.87**	**288**	PFAKE		18 44 10.0	+7.5	
BBGH				LR	LR			
	comp=Z,1μm,20.0s							
ANWB	**Willy Bob**	**161.18**	**303**	PFAKE		18 44 10.0	+7.3	
ANWB				LR	LR			
	comp=Z,662nm,22.0s							
FDF	**Fort de France**	**161.87**	**294**	PFAKE		18 44 10.0	+6.4	
FDF				LR	LR			
	comp=Z,545nm,20.0s							
GRGR	**Grenville**	**163.10**	**

BALB	Balikesir	1.06	300	*e*PG		Pb	18 29 50.9	+0.4
BALB	Balikesir	1.06	300	*e*Pg		Pb	18 29 50.9	+0.4
IGD	Bursa	1.16	5	*i* P		Pb	18 29 51.4	-0.8
CAVI	Cavuskoy	1.24	29	*e*PN		Pn	18 29 53.5	-0.1
CAVI	Cavuskoy	1.24	29	*e*Pn		Pn	18 29 53.5	-0.1
IZI	Iznik	1.26	14	*e*PN		Pn	18 29 53.3	-0.7
IZI	Iznik	1.26	14	*e*Pn		Pn	18 29 53.3	-0.7
KCTX	Karacabey (Bur	1.27	335	*e*PN		Pg	18 29 54.6	+0.1
KCTX	Karacabey (Bur	1.27	335	*e*Pn		Pg	18 29 54.6	+0.1
BORA	Eskisehir	1.32	54	P		Pb	18 29 55.1	+0.1
BORA	Eskisehir	1.32	54	*i* P		Pb	18 29 55.1	+0.1
ARMT	Armutlu	1.46	354	*e*PN		Pn	18 29 57.0	+0.4
ARMT	Armutlu	1.46	354	*e*Pn		Pn	18 29 57.0	+0.4
GULT	Gulveren	1.73	40	*e*PN		Pn	18 30 00.9	+0.6
GULT	Gulveren	1.73	40	*e*Pn		Pn	18 30 01.0	+0.6

NIED ***29*** *18:32:00,39.°10N×142.°50E,h29km,Mw3.9 Best double couple: M0=7.68000×10^14 NP1:φs=327.00000°,δ30.00000°, λ-104.00000°. NP2:φs=163.00000°,δ61.00000°, λ-82.00000°.*
JMA ***29*** *18:32:14.2±0.1,39.°12N×142.°47E,h32km±1km,M4.3*
JMA Felt I J1.
IDC ***29*** *18:32:19.2±3.8,38.°97N×142.°38E,h75km±35km,mb3.7/15, mb1 3.8/16,mb1mx3.5/70,mbtmp4.0/16,ML3.6/1,Error ellipse: s-maj=19.3km s-min=16.5km az=96.0*
ISC 29 18:32:13.0±1.5,39.°06N±0.°04×142.°44E±0.°06,h18km±7km, n34,σ1§03/35,mb4.1/15,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.60	272	P	Pn	18 32 26.5	0.0
OFUJ				S	Sn	18 32 35.1	-0.7
MIYJ	Miyakonagasawa	0.70	317	P	Pg	18 32 27.2	+0.5
MIYJ				S	Sb	18 32 36.1	+0.2
JMK	Ichinoseki	0.95	264	P	Pg	18 32 32.0	+0.5
JMK				S	Sn	18 32 44.6	+0.1
JOM	Ohasama	0.98	295	P	Pg	18 32 32.1	+0.2
JOM				S	Sn	18 32 45.0	-0.2
JTH	Tanohata	0.98	333	P	Pb	18 32 31.3	-0.1
JIO	Ouri	1.04	235	P	Pg	18 32 32.9	-0.3
JIO				S	Sn	18 32 46.3	-0.5
JKZ	Kuzumaki	1.26	317	P	Pb	18 32 36.2	+0.1
JKZ				*e*S	Sn	18 32 52.2	+0.1
JRG	Rokugo	1.44	284	P	Pb	18 32 38.7	-0.5
JANG	Nango	1.49	332	P	Pn	18 32 39.5	+0.7
JANG				*e*S	Sn	18 32 57.3	-0.5
JOU	Okura	1.55	244	P	Pb	18 32 41.1	0.0
JOU				S	Sb	18 33 01.2	+0.8
MJAR	Matsushiro Arr	4.19	234	P	Pn	18 33 19.4	+3.5
	3.8nm,0.3s,baz=38,slow=12,SNR=55						
MAT	Matsushiro	4.19	234	P	Pn	18 33 19.1	+3.1
MAT				*e*S	Sn	18 34 08.9	+4.5
ASAJ	Asahikawa	5.05	1	P	Pn	18 33 28.9	+1.2
	baz=209,slow=9.3						
SONM	Songino Array	27.39	300	P	P	18 37 57.3	0.0
	0.7nm,0.6s,baz=123,slow=5.3,SNR=3.4						
H11N2	WAKE ISLAND Hy 28.58	125		T	T	19 08 38.4	
	baz=318,slow=75,SNR=196						
H11N1	WAKE ISLAND Hy 28.59	125		T	T	19 08 33.9	
	baz=318,slow=75,SNR=207						
H11N3	WAKE ISLAND Hy 28.60	125		T	T	19 08 39.8	
	baz=318,slow=75,SNR=179						
H11S1	WAKE ISLAND Hy 29.36	127		T	T	19 09 45.0	
	baz=319,slow=76,SNR=38						
H11S3	WAKE ISLAND Hy 29.37	127		T	T	19 09 31.7	
	baz=319,slow=76,SNR=36						
H11S2	WAKE ISLAND Hy 29.38	127		T	T	19 09 45.0	
	baz=319,slow=76,SNR=37						
ZALV	Zalesovo Beam	41.17	311	P	P	18 39 56.4	+0.3
	1.3nm,0.6s,baz=93,slow=7.9,SNR=4.1						
CMAR	Chiang Mai Arr	42.81	254	P	P	18 40 10.5	+0.7
	0.3nm,0.3s,baz=42,slow=9.6,SNR=3.3						
MKAR	Makanchi Array	43.76	300	P	P	18 40 16.2	-1.0
	1.3nm,0.7s,baz=82,slow=9.9,SNR=3.9						
KURBB	Kurchatov Arra	45.42	307	P	P	18 40 30.4	+0.1
	4.6nm,0.5s,baz=80,slow=8.4,SNR=18						
ILAR	Eielson Array	47.35	33	P	P	18 40 45.6	+0.2
	0.9nm,0.8s,baz=270,slow=6.0,SNR=7.8						
BVAR	Borovoye Array	49.82	311	P	P	18 41 04.6	0.0
	1.4nm,0.5s,baz=75,slow=7.2,SNR=6.7						
INK	Inuvik	52.22	28	P	P	18 41 22.6	+0.3
	0.8nm,0.5s,baz=301,slow=6.0,SNR=4.7						
ARU	Arti	55.39	318	P	P	18 41 45.3	-0.4
	2.0nm,0.4s,baz=90,slow=12,SNR=4.5						
DLBC	Dease Lake	56.54	39	P	P	18 41 55.0	+1.0
	0.7nm,0.4s,baz=320,slow=16,SNR=2.2						
WRA	Warramunga Arr	59.18	189	P	P	18 42 10.9	-1.9
	1.0nm,0.5s,baz=5.7,slow=7.0,SNR=8.2						
ASAR	Alice Springs	62.91	189	P	P	18 42 37.0	-1.1
	0.5nm,0.7s,baz=15,slow=5.1,SNR=3.6						
GEYT	Alibeck	63.57	299	P	P	18 42 41.8	-0.7
	0.6nm,0.3s,baz=1.9,slow=4.3,SNR=3.2						
FINES	FINESS Array B	67.40	332	P	P	18 43 06.7	-0.1
	2.2nm,1.0s,baz=163,slow=1.5,SNR=3.0						
AKASG	Malin Array Be	73.19	322	P	P	18 43 41.9	-0.5
	0.7nm,0.4s,baz=44,slow=6.7,SNR=12						

IDC ***29*** *18:41:06.6±2.5,48.°96S×121.°65E,h0km,mb3.9/4, mb1 4.1/4,mb1mx3.9/32,mbtmp3.9/4,Error ellipse: s-maj=105.0km s-min=25.2km az=99.0*
ISC 29 18:41:08.6±2.5,49.°0S±0.°2×121.°7E±0.°6,h13km,n9, σ0§23/6,mb3.9/4,Western Indian-Antarctic Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H01W1	Cape Leeuwin H	15.10	336	T	T	19 00 12.7	
	baz=164						
H01W2	Cape Leeuwin H	15.10	336	T	T	19 00 13.1	
	baz=164,slow=74						
H01W3	Cape Leeuwin H	15.12	336	T	T	19 00 15.5	
	baz=164,slow=74						
STKA	Stephens Creek	22.72	49	P	P	18 46 10.1	0.0
	4.8nm,1.1s,baz=192,slow=14,SNR=2.9						
ASAR	Alice Springs	27.03	25	P	P	18 46 50.4	0.0
	2.5nm,0.9s,baz=192,slow=9.6,SNR=12						
WRA	Warramunga Arr	30.69	24	P	P	18 47 22.8	-0.1
	2.0nm,1.1s,baz=197,slow=8.6,SNR=4.3						
VNDA	Vanda	32.49	165	P	P	18 47 38.1	-0.1
	0.6nm,0.7s,baz=329,slow=4.4,SNR=3.5						
PDAR	Pinedale Array	144.38	80	PKP	PKPab	19 00 42.6	+0.4
	0.8nm,1.1s,baz=260,slow=1.1,SNR=4.0						
YKA	Yellowknife Ar	146.72	45	PKPbc	PKPbc	19 00 48.9	0.0
	1.1nm,1.1s,baz=274,slow=3.0,SNR=7.7						

IDC 29 18:41:40.9±64.0,19.°09S×179.°29W,h0km,mb3.5/3, mb1 3.7/3,mb1mx3.4/37,mbtmp3.5/3,Error ellipse: s-maj=1154.0km s-min=151.6km az=80.0,Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	Stephens Creek	37.34	242	P	P	18 48 55.0	-0.3
	0.4nm,0.5s,baz=95,slow=12,SNR=2.0						
WRA	Warramunga Arr	43.61	261	P	P	18 49 48.0	+0.7
	0.5nm,0.9s,baz=96,slow=7.6,SNR=9.4						
ASAR	Alice Springs	43.68	255	P	P	18 49 47.0	-0.8
	0.3nm,0.5s,baz=87,slow=7.9,SNR=8.2						

ISCJB ***29*** *18:51:43.8±0.5,39.°09N±0.°04×29.°03E±0.°04,h9km,Error ellipse: s-maj=5.5km s-min=4.5km az=150.5*
CSEM ***29*** *18:51:43.8±0.1,39.°11N×29.°03E,h5km,ML2.3,Error ellipse: s-maj=3.7km s-min=2.9km az=105.0*
ISK ***29*** *18:51:43.5,39.°07N×29.°12E,h10km,MD2.7*
DDA ***29*** *18:51:43.5,39.°07N×29.°01E,h7km,Ml2.3*
ISC 29 18:51:43.7±0.9,39.°07N±0.°04×29.°03E±0.°03,h9km,n22, σ0§37/30,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.25	263	P	Pg	18 51 48.7	-0.1
DEMI				S	Sg	18 51 52.2	+0.1
DEMI	Demirci	0.25	263	*i* P	Pg	18 51 48.7	-0.1
DEMI				*i* S	Sg	18 51 52.2	+0.1
GDZ	Gediz	0.35	88	P	Pg	18 51 50.9	+0.2
GDZ				S	Sg	18 51 56.2	+0.8
GDZ	Gediz	0.35	88	*i* P	Pg	18 51 50.9	+0.2
GDZ				*i* S	Sg	18 51 56.2	+0.8
TVSB	Tavsanli	0.50	42	*e*PG	Pg	18 51 53.1	-0.4
TVSB				*e*SG	Sg	18 51 59.9	-0.3
TVSB	Tavsanli	0.50	42	*e*Pg	Pg	18 51 53.1	-0.4
TVSB				*e*Sg	Sg	18 51 59.9	-0.3
KULA	Kula-Manisa	0.63	207	*e*PG	Pb	18 51 56.6	-0.3
KULA	Kula-Manisa	0.63	207	*e*Pg	Pb	18 51 56.7	-0.3
KHAL	Karahalli	0.79	153	P	Pb	18 51 59.9	+0.2
KHAL				S	Sb	18 52 10.3	-0.3
KHAL	Karahalli	0.79	153	*i* P	Pb	18 51 59.9	+0.2
KHAL				*i* S	Sb	18 52 10.3	-0.3
CAVI	Cavuskoy	1.29	29	*e*PN	Pn	18 52 07.8	-0.2
CAVI	Cavuskoy	1.29	29	*e*Pn	Pn	18 52 07.8	-0.2
KCTX	Karacabey (Bur	1.30	337	*e*PN	Pg	18 52 09.2	+0.5
KCTX	Karacabey (Bur	1.30	337	*e*Pn	Pg	18 52 09.2	+0.5
MDNY	Mudanya-Bursa	1.30	355	*e*PN	Pn	18 52 08.4	+0.3
MDNY	Mudanya-Bursa	1.30	355	*e*Pn	Pn	18 52 08.4	+0.3
IZI	Iznik	1.31	15	*e*PN	Pn	18 52 07.8	-0.4
IZI	Iznik	1.31	15	*e*Pn	Pn	18 52 07.8	-0.4
ARMT	Armutlu	1.50	355	*e*PN	Pn	18 52 11.1	+0.3
ARMT	Armutlu	1.50	355	*e*Pn	Pn	18 52 11.1	+0.3
GULT	Gulveren	1.77	40	*e*PN	Pn	18 52 14.5	-0.2
GULT	Gulveren	1.77	40	*e*Pn	Pn	18 52 14.5	-0.2

ISCJB ***29*** *18:54:56.0±0.6,37.°01N±0.°04×142.°59E±0.°05,h9km, mb3.8/9,Error ellipse: s-maj=6.3km s-min=5.4km az=173.0*
JMA ***29*** *18:54:57.6±0.3,37.°03N×142.°56E,h23km,M3.6*
IDC ***29*** *18:55:01.5±6.9,37.°15N×142.°50E,h32km±51km,mb3.6/9, mb1 3.7/12,mb1mx3.4/50,mbtmp3.8/12,ML3.2/3,MS4.0/1, Ms1 4.0/1,ms1mx3.3/41,Error ellipse: s-maj=28.1km s-min=19.1km az=83.0*
ISC 29 18:54:58.0±1.0,37.°06N±0.°05×142.°52E±0.°07,h9km,n36, σ1§17/38,mb3.7/9,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	Kawauchi	1.35	284	P	Pn	18 55 21.8	-1.3
JFK				*e*S	Sb	18 55 39.1	-1.7
ONAJ	Iwakimizuishiy	1.38	272	P	Pn	18 55 22.6	-0.9
JMM	Marumori	1.59	301	P	Pn	18 55 25.5	-0.9
JMM				*e*S	Sn	18 55 45.5	-1.5
JHO	Hitachi	1.62	255	P	Pn	18 55 25.7	-1.1
JIO	Ouri	1.67	327	P	Pn	18 55 26.4	-1.1
JFT	Otama	1.80	285	P	Pn	18 55 29.1	-0.1
JFT				S	Sn	18 55 52.2	0.0
JOU	Okura	1.96	312	P	Pn	18 55 31.9	+0.4
JOU				*e*S	Sb	18 55 57.5	-1.1
JMK	Ichinoseki	2.15	332	P	Pn	18 55 33.9	-0.2
JMK				*e*S	Sn	18 56 01.8	+1.0
JYS	Shiratake	2.27	302	P	Pn	18 55 36.0	+0.3
JYS				*e*S	Sn	18 56 04.8	+1.1
JFY	Yanaizu	2.27	280	P	Pn	18 55 36.1	+0.3
JYK	Kaneyama	2.52	318	P	Pn	18 55 39.3	+0.1
JAG	Ashikaga	2.54	257	P	Pn	18 55 39.4	0.0
JAG				*e*S	Sn	18 56 09.9	-0.6
JOM	Ohasama	2.60	339	P	Pn	18 55 40.3	+0.1
JNS	Sasagawa	2.66	288	P	Pn	18 55 41.8	+0.8
BSO1	Boso 1	2.71	208	P	Pn	18 55 40.9	-0.3
BSO1				*e*S	Sn	18 56 12.2	-1.6
MJAR	Matsushiro Arr	3.50	263	Pn	Pn	18 55 53.2	+0.6
	3.5nm,0.3s,baz=85,slow=15,SNR=28						
MAT	Matsushiro	3.50	263	P	Pn	18 55 53.5	+0.9
MAT				S	Sn	18 56 34.4	+0.3
JHJ	Hachijo jima 2	4.52	210	LR	LR	18 57 47.0	
	comp=Z,2μm,21.2s,baz=108,slow=36						
ASAJ	Asahikawa	7.05	0	Pn	Pn	18 56 39.9	-1.5
	0.6nm,0.3s,baz=258,slow=14,SNR=1.5						
USRK	Ussuriysk Ar.	10.71	315	Pn	Pn	18 57 35.7	+4.1
	0.1nm,0.3s,baz=114,slow=18,SNR=3.9						
KSRS	Korea Array	11.64	276	Pn	Pn	18 57 46.7	+2.4
	0.0nm,0.3s,baz=88,slow=13,SNR=7.1						
H11N2	WAKE ISLAND Hy 27.41	122		T	T	19 29 29.1	
	baz=314,slow=75,SNR=13						
H11N1	WAKE ISLAND Hy 27.42	122		T	T	19 29 36.4	
	baz=314,slow=75,SNR=9.3						
H11N3	WAKE ISLAND Hy 27.43	122		T	T	19 29 37.1	
	baz=314,slow=75,SNR=9.2						
H11S1	WAKE ISLAND Hy 28.14	124		T	T	19 30 32.6	
	baz=316,slow=76,SNR=7.5						
H11S3	WAKE ISLAND Hy 28.16	125		T	T	19 30 30.0	
	baz=316,slow=76,SNR=7.6						
H11S2	WAKE ISLAND Hy 28.16	125		T	T	19 30 33.8	
	baz=316,slow=76,SNR=6.3						
SONM	Songino Array	28.50	304	P	P	19 00 53.8	0.0
	1.6nm,0.9s,baz=104,slow=6.3,SNR=4.1						
ZALV	Zalesovo Beam	42.55	312	P	P	19 02 52.7	-1.1
	0.9nm,0.6s,baz=97,slow=7.8,SNR=5.9						
MKAR	Makanchi Array	44.85	302	P	P	19 03 12.2	-0.3
	0.9nm,0.7s,baz=90,slow=10.0,SNR=11						
KURBB	Kurchatov Arra	46.68	308	P	P	19 03 26.4	-0.4
	2.6nm,0.6s,baz=83,slow=8.4,SNR=36						
ILAR	Eielson Array	49.00	32	P	P	19 03 44.7	0.0
	0.3nm,0.8s,baz=253,slow=6.3,SNR=3.7						
BVAR	Borovoye Array	51.21	312	P	P	19 04 00.7	-0.8
	0.4nm,0.5s,baz=85,slow=7.7,SNR=2.7						
ARU	Arti	56.92	319	P	P	19 04 42.6	-0.7
	1.7nm,0.6s,baz=124,slow=11,SNR=4.0						
WRA	Warramunga Arr	57.22	189	P	P	19 04 46.6	+1.0
	0.7nm,1.1s,baz=7.3,slow=7.1,SNR=2.9						
ASAR	Alice Springs	60.94	189	P	P	19 05 11.3	-0.1
	0.3nm,0.8s,baz=8.8,slow=6.7,SNR=3.8						

IDC 29 18:59:12.4±2.0,36.°92N×144.°57E,h0km,mb3.3/4, mb1 3.5/6,mb1mx3.2/45,mbtmp3.4/6,ML3.2/2,Error ellipse: s-maj=57.5km s-min=23.2km az=71.0,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	Matsushiro Arr	5.13	268	Pn	Pn	19 00 30.1	-0.3
	1.3nm,0.3s,baz=88,slow=15,SNR=7.7						
ASAJ	Asahikawa	7.35	349	Pn	Pn	19 01 00.5	-0.5
	0.4nm,0.3s,baz=188,slow=15,SNR=3.7						
H11N2	WAKE ISLAND Hy 25.96	125		T	T	19 31 37.7	
	baz=317,slow=75,SNR=35						
H11N1	WAKE ISLAND Hy 25.97	125		T	T	19 31 38.3	
	baz=317,slow=75,SNR=18						
H11N3	WAKE ISLAND Hy 25.98	125		T	T	19 31 39.0	
	baz=317,slow=75,SNR=16						
H11S1	WAKE ISLAND Hy 26.72	127		T	T	19 32 43.9	
	baz=318,slow=76,SNR=10.0						
H11S3	WAKE ISLAND Hy 26.72	127		T	T	19 32 41.4	
	baz=318,slow=76,SNR=6.3						
H11S2	WAKE ISLAND Hy 26.74	127		T	T	19 32 38.9	
	baz=318,slow=76,SNR=9.3						
MKAR	Makanchi Array	46.32	303	P	P	19 07 40.3	+0.4
	0.2nm,0.7s,baz=70,slow=6.3,SNR=2.9						
KURBB	Kurchatov Arra	48.06	309	P	P	19 07 52.9	-0.5
	0.4nm,0.5s,baz=83,slow=8.2,SNR=7.1						
WRA	Warramunga Arr	57.37	191	P	P	19 09 02.5	0.0
	0.3nm,0.7s,baz=10,slow=7.1,SNR=5.3						
ASAR	Alice Springs	61.09	191	P	P	19 09 28.1	-0.2
	0.2nm,0.8s,baz=21,slow=10,SNR=3.7						

IDC ***29*** *18:59:27.3±1.4,33.°63N×81.°83E,h0km,mb3.3/3, mb1 3.4/4,mb1mx3.1/46,mbtmp3.2/4,ML2.5/1,MS4.0/1, Ms1 4.0/1,ms1mx3.4/37,Error ellipse: s-maj=53.3km s-min=28.4km az=40.0*
ISCJB ***29*** *18:59:29.8±0.9,33.°67N±0.°10×81.°9E±0.°3,h33km,mb3.2/3, MS4.0/1,Error ellipse: s-maj=31.4km s-min=11.0km az=163.6*
ISC 29 18:59:32.1±1.1,33.°7N±0.°1×81.°8E±0.°2,h35km,n10, σ0§69/9,mb3.3/3,Xizang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PYUN	Piuthan	5.63	170	*e*P	Pn	19 00 52.5	-1.0
KOLN	Koldanda	6.07	165	*e*P	Pn	19 00 58.9	-0.6
	7.4nm,0.6s						
GKN	Gorkha	6.13	156	*e*P	Pn	19 01 00.6	+0.2
	6.6nm,0.4s						
KKN	Kakani	6.56	152	*e*P	Pn	19 01 06.3	0.0
	5.7nm,0.5s						
PKIN	Phulchoki	6.79	152	*e*P	Pn	19 01 09.1	-0.5
	3.3nm,0.4s						
MKAR	Makanchi Array	13.12	1	Pn	Pn	19 02 35.4	-0.6
	0.0nm,0.3s,baz=176,slow=12,SNR=2.1						
CMAR	Chiang Mai Arr	21.52	130	P	P	19 04 18.6	+0.4
	0.8nm,0.7s,baz=311,slow=10,SNR=7.1						
DAV	Davao City (W)	48.28	113	LR	LR	19 30 36.2	
	comp=Z,149nm,18.5s,baz=318,slow=39						
TORD	Torodi Ar. Bea	74.70	276	P	P	19 11 09.4	+0.8
	0.2nm,0.7s,baz=52,slow=5.9,SNR=2.6						
ASAR	Alice Springs	75.53	132	P	P	19 11 13.2	0.0
	0.2nm,0.6s,baz=316,slow=6.2,SNR=4.4						

ISCJB ***29*** *19:13:08.6±1.4,36.°74N±0.°07×141.°72E±0.°09, h34km±12km,mb3.5/9,Error ellipse: s-maj=13.4km s-min=9.3km az=42.0*
JMA ***29*** *19:13:10.1±0.2,36.°74N×141.°51E,h48km±3km,M3.4*
IDC ***29*** *19:13:11.9±2.8,36.°71N×141.°62E,h47km±26km,mb3.4/9, mb1 3.5/11,mb1mx3.3/37,mbtmp3.6/11,ML3.6/2,Error ellipse: s-maj=23.4km s-min=15.7km az=117.0*
ISC 29 19:13:07.6±2.3,36.°64N±0.°07×141.°49E±0.°07,h16km±13km, n25,σ0§93/24,mb3.6/9,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.73	310	P	Pn	19 13 23.2	-0.1
ONAJ				*e*S	Sb	19 13 32.8	+1.1
JHO	Hitachi	0.74	268	P	Pn	19 13 24.5	+1.0
JFK	Kawauchi	0.88	326	P	Pb	19 13 24.8	+0.2
JFT	Otama	1.28	314	P	Pg	19 13 32.2	-0.1
JMM	Marumori	1.35	336	P	Pn	19 13 31.6	-0.2
JMM				S	Sn	19 13 47.5	-1.8
JFY	Yanaizu	1.62	299	P	Pb	19 13 38.0	+0.8
JFY				S	Sb	19 13 58.6	+1.1
JAG	Ashikaga	1.66	263	P	Pb	19 13 38.1	+0.3
MJAR	Matsushiro Arr	2.65	269	P	Pb	19 13 52.9	-1.8
	13nm,0.3s,baz=89,slow=15,SNR=55						
MJAR				S	Sb	19 14 25.8	-1.1
	5.8nm,0.3s,baz=92,slow=12,SNR=5.9						
MAT	Matsushiro	2.65	269	P	Pb	19 13 53.2	-1.5
MAT				S	Sb	19 14 27.3	+0.4
ASAJ	Asahikawa	7.52	6	P	Pn	19 14 56.3	-0.2
	0.9nm,0.3s,baz=205,slow=15,SNR=8.0						
YAK	Yakutsk	26.47	347	P	P	19 18 43.7	0.0
	0.7nm,0.4s,baz=336,slow=15,SNR=3.0						
SEY	Seymchan	27.17	11	P	P	19 18 50.8	+0.9
	0.5nm,0.2s,baz=204,slow=6.0,SNR=4.1						
H11N2	WAKE ISLAND Hy 27.89	120		T	T	19 48 23.0	
	baz=313,slow=75,SNR=32						
H11N1	WAKE ISLAND Hy 27.90	120		T	T	19 48 18.6	
	baz=313,slow=75,SNR=26						
H11N3	WAKE ISLAND Hy 27.91	120		T	T	19 48 26.2	
	baz=313,slow=75,SNR=26						
H11S1	WAKE ISLAND Hy 28.59	122		T	T	19 49 22.6	
	baz=314,slow=76,SNR=20						
H11S3	WAKE ISLAND Hy 28.59	122		T	T	19 49 22.5	
	baz=314,slow=76,SNR=25						
H11S2	WAKE ISLAND Hy 28.61	122		T	T	19 49 17.7	
	baz=314,slow=76,SNR=18						
ZALV	Zalesovo Beam	42.23	313	P	P	19 21 00.2	+0.5
	1.1nm,0.6s,baz=102,slow=7.0,SNR=5.2						
MKAR	Makanchi Array	44.38	302	P	P	19 21 17.9	+0.6
	0.5nm,0.7s,baz=90,slow=11,SNR=6.5						
ILAR	Eielson Array	49.80	32	P	P	19 21 58.6	-0.6
	0.3nm,0.8s,baz=266,slow=6.3,SNR=3.6						
WRA	Warramunga Arr	56.68	188	P	P	19 22 50.6	+0.3
	0.3nm,0.8s,baz=5.1,slow=7.2,SNR=3.1						
ASAR	Alice Springs	60.41	188	P	P	19 23 17.1	+0.9
	0.6nm,0.9s,baz=353,slow=5.3,SNR=3.7						
AKASG	Malin Array Be	74.65	322	P	P	19 24 45.4	-0.6
	0.4nm,0.4s,baz=46,slow=6.4,SNR=3.9						
TXAR	Lajitas Array	90.31	52	P	P	19 26 08.1	-0.1
	0.2nm,0.8s,baz=319,slow=2.6,SNR=2.6						

ISCJB ***29*** *19:13:31.8±0.6,39.°11N±0.°03×29.°11E±0.°04,h7km±5km, Error ellipse: s-maj=5.7km s-min=4.5km az=153.0*
CSEM ***29*** *19:13:31.9±0.1,39.°12N×29.°12E,h8km,ML2.6,Error ellipse: s-maj=2.6km s-min=2.1km az=139.0*
ISK ***29*** *19:13:31.5,39.°13N×29.°13E,h8km,MD2.7*
DDA ***29*** *19:13:31.7,39.°11N×29.°11E,h9km,Ml2.6*
ISC 29 19:13:31.9±0.9,39.°12N±0.°03×29.°12E±0.°02,h13km±8km, n29,σ0§27/40,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	Gediz	0.28	96	P	Pg	19 13 37.8	-0.1
GDZ				S	Sg	19 13 42.1	+0.2
GDZ	Gediz	0.28	96	*i* P	Pg	19 13 37.8	-0.1
GDZ				*i* S	Sg	19 13 42.1	+0.2
DEMI	Demirci	0.32	257	P	Pg	19 13 38.5	0.0
DEMI				S	Sg	19 13 43.0	0.0
DEMI	Demirci	0.32	257	*i* P	Pg	19 13 38.5	0.0
DEMI				*i* S	Sg	19 13 43.0	0.0
TVSB	Tavsanli	0.42	39	*e*PG	Pg	19 13 40.2	-0.3
TVSB				*e*SG	Sg	19 13 46.1	-0.1
TVSB	Tavsanli	0.42	39	*e*Pg	Pg	19 13 40.2	-0.3
TVSB				*e*Sg	Sg	19 13 46.1	-0.1
KULA	Kula-Manisa	0.70	211	*e*PG	Pb	19 13 45.9	-0.2
KULA	Kula-Manisa	0.70	211	*e*Pg	Pb	19 13 45.9	-0.2
KHAL	Karahalli	0.80	159	P	Pg	19 13 47.4	-0.1
KHAL				S	Sb	19 13 58.4	-0.2
KHAL	Karahalli	0.80	159	*i* P	Pg	19 13 47.4	-0.1
KHAL				*i* S	Sb	19 13 58.4	-0.2
AKS	Akhisar	1.04	257	*e*PG	Pg	19 13 52.0	-0.1
AKS	Akhisar	1.04	257	*e*

BRBR				eS	Sg	19 17 46.2 +0.3
	comp=N,3μm,0.2s					
TOTH	**TOTAH**	**0.49**	**45**	eP	Pg	19 17 42.8 +0.6
TOTH				eS	Sg	19 17 49.2 +0.6
TOTH				AML	AML	19 17 50.7
	comp=N,1μm,0.6s					
TOTH				AML	AML	19 17 55.8
	comp=E,1μm,0.5s					
TOTH	**TOTAH**	**0.49**	**45**	eP	Pg	19 17 42.8 +0.6
TOTH				eS	Sg	19 17 49.2 +0.6
	comp=E,1μm,0.5s					
RCY	**Rachaya**	**0.50**	**343**	eP	Pg	19 17 42.6 +0.2
RCY				eS	Sg	19 17 49.1 +0.1
RCY	**Rachaya**	**0.50**	**343**	eP	Pg	19 17 42.6 +0.2
RCY				eS	Sg	19 17 49.2 +0.1
MMA0B	**Mount Meron ar**	**0.51**	**270**	Pg	Pg	19 17 42.0 -0.6
MMA0B				Sg	Sg	19 17 48.7 -0.8
MMC7	**Mount Meron ar**	**0.52**	**271**	Pg	Pg	19 17 42.3 -0.5
QASN	**Qassioun**	**0.56**	**23**	eP	Pg	19 17 42.9 -0.6
QASN				eS	Sg	19 17 50.6 -0.3
QASN				AML	AML	19 17 52.4
	comp=E,2μm,0.3s					
QASN				AML	AML	19 17 57.3
	comp=N,3μm,0.3s					
QASN	**Qassioun**	**0.56**	**23**	eP	Pg	19 17 42.9 -0.6
QASN				eS	Sg	19 17 50.6 -0.3
	comp=N,3μm,0.3s					
SALA	**Sala**	**0.68**	**117**	eP	Pg	19 17 44.3 -1.4
SALA				eS	Sg	19 17 52.9 -1.8
SALA				AML	AML	19 17 55.4
	comp=N,3μm,0.3s					
SALA				AML	AML	19 17 58.7
	comp=E,209nm,0.4s					
SALA	**Sala**	**0.68**	**117**	eP	Pg	19 17 44.3 -1.4
SALA				eS	Sg	19 17 52.9 -1.8
	comp=E,209nm,0.4s					
AJLJ	**Ajlon**	**0.73**	**200**	eP	Pg	19 17 47.3 +0.6
MMLI	**Mount Malkishu**	**0.76**	**221**	Pg	Pg	19 17 47.1 -0.2
MMLI				Sg	Sg	19 17 56.8 -0.5
MMLI	**Mount Malkishu**	**0.76**	**221**	Pg	Pg	19 17 47.1 -0.2
MMLI				Sg	Sg	19 17 56.8 -0.5
DQRL	**Deir Qamar**	**0.78**	**332**	eP	Pg	19 17 47.4 -0.3
DQRL				eS	Sg	19 17 57.4 -0.6
DQRL	**Deir Qamar**	**0.78**	**332**	eP	Pg	19 17 47.4 -0.3
DQRL				eS	Sg	19 17 57.4 -0.6
HMDT	**Nahal Hemdat**	**0.87**	**209**	Pg	Pg	19 17 49.2 -0.1
HMDT				Sg	Sb	19 18 01.4 +0.2
HMDT	**Nahal Hemdat**	**0.87**	**209**	Pg	Pg	19 17 49.2 -0.1
HMDT				Sg	Sb	19 18 01.4 +0.2
BHL	**Bhannes**	**0.94**	**341**	eP	Pg	19 17 50.2 -0.4
BHL				eS	Sg	19 18 02.5 -0.3
BHL	**Bhannes**	**0.94**	**341**	eP	Pg	19 17 50.2 -0.4
BHL				eS	Sg	19 18 02.5 -0.3
OFRI	**'Ofer**	**0.95**	**246**	Pg	Pg	19 17 50.1 -0.8
OFRI	**'Ofer**	**0.95**	**246**	Pg	Pg	19 17 50.1 -0.8
BEYL	**Beirut**	**0.96**	**333**	eP	Pg	19 17 50.6 -0.4
BEYL	**Beirut**	**0.96**	**333**	eP	Pg	19 17 50.6 -0.4
MARH	**Ras Al Marh**	**1.08**	**21**	eP	Pb	19 17 53.9 +0.4
MARH				eS	Sb	19 18 08.6 +0.9
MARH				AML	AML	19 18 13.7
	comp=E,573nm,0.2s					
MARH				AML	AML	19 18 13.7
	comp=N,2μm,0.5s					
MARH	**Ras Al Marh**	**1.08**	**21**	eP	Pb	19 17 53.9 +0.4
MARH				eS	Sb	19 18 08.6 +0.9
	comp=N,573nm,0.2s					
ZALF	**Zalf**	**1.11**	**95**	eP	Pg	19 17 54.5 +0.5
ZALF				eS	Sg	19 18 06.8 -1.7
ZALF				AML	AML	19 18 11.1
	comp=E,1μm,0.3s					
ZALF				AML	AML	19 18 11.1
	comp=N,2μm,0.3s					
ZALF	**Zalf**	**1.11**	**95**	eP	Pg	19 17 54.5 +0.5
ZALF				eS	Sg	19 18 06.8 -1.7
	comp=N,2μm,0.3s					
SLTI	**Sal'it**	**1.13**	**227**	Pg	Pg	19 17 53.2 -1.1
SLTI				Sg	Sg	19 18 08.4 -0.6
SLTI	**Sal'it**	**1.13**	**227**	Pg	Pg	19 17 53.2 -1.1
SLTI				Sg	Sg	19 18 08.4 -0.6
HWQ	**Hawqa**	**1.26**	**357**	eP	Pg	19 17 56.5 -0.3
HWQ				eS	Sg	19 18 12.5 -0.7
HWQ	**Hawqa**	**1.26**	**357**	eP	Pg	19 17 56.5 -0.3
HWQ				eS	Sg	19 18 12.5 -0.7
FKH	**Fakeheh**	**1.27**	**15**	eP	Pg	19 17 56.7 -0.3
FKH				eS	Sb	19 18 13.6 +0.6
WALJ	**Wala**	**1.46**	**187**	eP	Pn	19 17 59.4 +0.5
DSI	**Dead Sea**	**1.54**	**201**	Pn	Pn	19 17 59.9 -0.1
DSI				Sn	Sn	19 18 20.4 +0.4
DSI	**Dead Sea**	**1.54**	**201**	Pn	Pn	19 17 59.9 -0.1
DSI				Sn	Sn	19 18 20.4 +0.4
ROOS	**tl_alroos**	**1.57**	**42**	eP	Pb	19 18 02.0 +0.3
ROOS				eS	Sn	19 18 21.2 +0.4
ROOS				AML	AML	19 18 26.0
	comp=E,1μm,0.7s					
ROOS				AML	AML	19 18 29.9
	comp=N,836nm,0.7s					
ROOS	**tl_alroos**	**1.57**	**42**	eP	Pb	19 18 02.0 +0.3
ROOS				eS	Sn	19 18 21.2 +0.4
	comp=N,836nm,0.7s					
RABH	**Abou Rabah**	**1.73**	**35**	eP	Pb	19 18 04.5 +0.1
RABH				eS	Sn	19 18 24.6 -0.2
RABH				AML	AML	19 18 30.8
	comp=N,510nm,0.3s					
RABH				AML	AML	19 18 30.8
	comp=E,377nm,0.4s					
RABH	**Abou Rabah**	**1.73**	**35**	eP	Pb	19 18 04.5 +0.1
RABH				eS	Sn	19 18 24.6 -0.2
	comp=E,377nm,0.4s					
SWQJ	**Swaqa**	**1.77**	**179**	eP	Pn	19 18 01.9 -1.4
MZDA	**Masada**	**1.79**	**198**	Pn	Pn	19 18 03.7 +0.3
MZDA				Sn	Sn	19 18 27.1 +1.0
MZDA	**Masada**	**1.79**	**198**	Pn	Pn	19 18 03.7 +0.3
MZDA				Sn	Sn	19 18 27.1 +1.0
LISJ	**El Lisan**	**1.83**	**194**	eP	Pn	19 18 05.1 +1.2
KARJ		**1.92**	**189**	eP	Pn	19 17 53.5 -12
JDRJ	**Daraweish**	**2.30**	**188**	eP	Pn	19 18 10.8 +0.2
BYRJ	**Bayer**	**2.41**	**170**	eP	Pn	19 18 13.0 +1.0
KZIT	**Kziot**	**2.51**	**214**	Pn	Pn	19 18 14.4 +1.0
KZIT	**Kziot**	**2.51**	**214**	Pn	Pn	19 18 14.4 +1.0
ZFRI	**Zfri**	**2.56**	**196**	Pn	Pn	19 18 14.2 +0.2
ZFRI	**Zfri**	**2.56**	**196**	Pn	Pn	19 18 14.2 +0.2
PHNC	**Paralimni**	**2.58**	**321**	P	Pn	19 18 14.1 -0.2
	baz=140					
PHNC				S	Sn	19 18 45.7 +0.1
PHNC	**Paralimni**	**2.58**	**321**	P	Pn	19 18 14.1 -0.2
PHNC				S	Sn	19 18 45.7 +0.1
PRNI	**Paran**	**2.79**	**198**	Pn	Pn	19 18 18.2 +0.9
PRNI	**Paran**	**2.79**	**198**	Pn	Pn	19 18 18.2 +0.9
RSH		**2.83**	**224**	P	Pn	19 18 17.9 +0.2
	baz=221					
RSH				S	Sn	19 18 52.5 +0.7
	baz=221					
RSH		**2.83**	**224**	P	Pn	19 18 17.9 +0.2
RSH				S	Sn	19 18 52.5 +0.7
CSS	**Mathiatis**	**2.96**	**312**	Pn	Pn	19 18 19.3 -0.2
CSS	**Mathiatis**	**2.96**	**312**	Pn	Pn	19 18 19.3 -0.2
YAYL	**Yayladag**	**3.01**	**1**	P	Pn	19 18 19.8 -0.6
YAYL				S	Sn	19 18 57.4 +0.9
YAYL	**Yayladag**	**3.01**	**1**	*i* P	Pn	19 18 19.8 -0.6
YAYL				*i* S	Sn	19 18 57.4 +0.9
LFK	**Lefkose**	**3.06**	**318**	*e*PN	Pn	19 18 20.0 -0.9
LFK				*e*SN	Sn	19 18 51.2 -6.2
LFK	**Lefkose**	**3.06**	**318**	*e*Pn	Pn	19 18 20.0 -0.9
KRMI	**Paran Flat**	**3.09**	**201**	Pn	Pn	19 18 22.8 +1.4
KRMI	**Paran Flat**	**3.09**	**201**	Pn	Pn	19 18 22.8 +1.4
SZAC	**Souni**	**3.13**	**305**	P	Pn	19 18 21.8 -0.1
	baz=122					
SZAC				S	Sn	19 18 59.2 -0.1
SZAC	**Souni**	**3.13**	**305**	P	Pn	19 18 21.8 -0.1
SZAC				S	Sn	19 18 59.2 -0.1
HITJ	**Hittiya**	**3.27**	**183**	eP	Pn	19 18 25.2 +1.3
LEF	**Lefka**	**3.33**	**310**	*e*PN	Pn	19 18 24.0 -0.7
LEF	**Lefka**	**3.33**	**310**	*e*Pn	Pn	19 18 24.0 -0.7
MBRI	**Mt Berech**	**3.35**	**197**	Pn	Pn	19 18 25.7 +0.7
MBRI	**Mt Berech**	**3.35**	**197**	Pn	Pn	19 18 25.7 +0.7
TAHT	**Tahtakopru-Hat**	**3.35**	**2**	*e*PN	Pn	19 18 26.4 +1.4
TAHT				*e*SN	Sn	19 19 03.3 -1.5
TAHT	**Tahtakopru-Hat**	**3.35**	**2**	*e*Pn	Pn	19 18 26.4 +1.4
TAHT				*e*Sn	Sn	19 19 03.3 -1.5
AQBJ	**Aqaba**	**3.38**	**194**	eP	Pg	19 18 35.4 -2.0
AKDN	**Akdeniz- K¨–br**	**3.40**	**313**	*e*PN	Pn	19 18 24.3 -1.3
AKDN	**Akdeniz- K¨–br**	**3.40**	**313**	*e*Pn	Pn	19 18 24.3 -1.3
EIL	**Elat**	**3.46**	**196**	Pn	Pn	19 18 27.3 +0.9
EIL	**Elat**	**3.46**	**196**	Pn	Pn	19 18 27.3 +0.9
HNKL	**Nakhl**	**3.54**	**210**	P	Pn	19 18 27.8 +0.3
	baz=209					
HNKL				AMP		19 19 00.0
	comp=E,120μm,0.5s,logA/T=5.4,baz=209					
HNKL				S	Sn	19 19 10.4 +1.1
	baz=209					
HNKL	**Nakhl**	**3.54**	**210**	P	Pn	19 18 27.8 +0.3
HNKL				S	Sn	19 19 10.4 +1.1
ALFC	**Alefka**	**3.55**	**308**	P	Pn	19 18 28.2 +0.5
	baz=126					
ALFC				S	Sn	19 19 10.0 +0.4
ALFC	**Alefka**	**3.55**	**308**	P	Pn	19 18 28.2 +0.5
ALFC				S	Sn	19 19 10.0 +0.4
PPCY	**Paphos**	**3.57**	**302**	P	Pn	19 18 28.4 +0.4
	baz=120					
PPCY	**Paphos**	**3.57**	**302**	P	Pn	19 18 28.4 +0.4
KRTS	**Karatas**	**3.59**	**352**	*e*PN	Pn	19 18 28.6 +0.4
KRTS	**Karatas**	**3.59**	**352**	*e*Pn	Pn	19 18 28.6 +0.4
AKMC	**Akamas**	**3.66**	**304**	P	Pn	19 18 29.6 +0.4
	baz=122					
AKMC	**Akamas**	**3.66**	**304**	P	Pn	19 18 29.6 +0.4
KIZK	**Mersin**	**3.78**	**336**	P	Pn	19 18 28.0 -2.9
KIZK				S	Sn	19 19 14.4 -1.0
KIZK	**Mersin**	**3.78**	**336**	*i* P	Pn	19 18 28.0 -2.9
KIZK				*i* S	Sn	19 19 14.4 -1.0
CEYT	**Ceyhan**	**3.99**	**357**	*e*PN	Pn	19 18 35.2 +1.5
CEYT	**Ceyhan**	**3.99**	**357**	*e*Pn	Pn	19 18 35.2 +1.5
MERS	**Mersin**	**4.03**	**343**	*e*PN	Pn	19 18 34.4 +0.1
MERS	**Mersin**	**4.03**	**343**	*e*Pn	Pn	19 18 34.4 +0.1
DED	**Mersin**	**4.06**	**346**	*i* P	Pn	19 18 35.6 +0.9
DED				*i* S	Sn	19 19 20.7 -1.5
NUB		**4.15**	**197**	P	Pn	19 18 36.6 +0.8
	baz=197					
SUZ	**Suez**	**4.17**	**222**	P	Pn	19 18 36.5 +0.3
	baz=220					
SUZ	**Suez**	**4.17**	**222**	P	Pn	19 18 36.5 +0.3
GAZ	**Gaziantep**	**4.26**	**13**	*e*PN	Pn	19 18 41.1 +3.6
GAZ	**Gaziantep**	**4.26**	**13**	*e*Pn	Pn	19 18 41.1 +3.6
KARA	**Karaisali**	**4.31**	**350**	*e*PN	Pn	19 18 38.7 +0.6
KARA	**Karaisali**	**4.31**	**350**	*e*Pn	Pn	19 18 38.7 +0.6
ERMK	**Ermenek**	**4.42**	**326**	P	Pn	19 18 41.3 +1.4
ERMK				S	Sn	19 19 34.6 +3.1
ERMK	**Ermenek**	**4.42**	**326**	*i* P	Pn	19 18 41.3 +1.4
ERMK				*i* S	Sn	19 19 34.6 +3.1
KERG	**Konya-Eregli**	**4.65**	**341**	P	Pn	19 18 44.4 +1.5
KERG				S	Sn	19 19 37.8 +0.8
KERG	**Konya-Eregli**	**4.65**	**341**	*i* P	Pn	19 18 44.4 +1.5
KERG				*i* S	Sn	19 19 37.8 +0.8
ZAF	**Zafarana**	**4.76**	**220**	P	Pn	19 18 44.9 +0.5
	baz=218					
ZAF	**Zafarana**	**4.76**	**220**	P	Pn	19 18 44.9 +0.5
TR2	**Tor 2**	**5.02**	**204**	P	Pn	19 18 48.5 +0.6
	baz=204					
TR2	**Tor 2**	**5.02**	**204**	P	Pn	19 18 48.5 +0.6
GLL	**Jalalah**	**5.03**	**228**	P	Pn	19 18 47.8 -0.3
	baz=227					
GLL	**Jalalah**	**5.03**	**228**	P	Pn	19 18 47.8 -0.3
NIG	**Nigde**	**5.21**	**348**	*e*PN	Pn	19 18 51.6 +0.9
NIG	**Nigde**	**5.21**	**348**	*e*Pn	Pn	19 18 51.6 +0.9
GRB	**Gharib**	**5.49**	**211**	P	Pn	19 18 54.0 -0.3
	baz=211					
GRB	**Gharib**	**5.49**	**211**	P	Pn	19 18 54.0 -0.3
DARE	**Darende-Malaty**	**5.67**	**12**	*e*PN	Pn	19 19 00.4 +3.5
MAZI	**Mazidag**	**5.73**	**38**	*e*PN	Pn	19 19 04.7 +7.0
KONT	**Konya--Tatoy**	**5.75**	**330**	*e*PN	Pn	19 18 58.4 +0.5
KONT	**Konya--Tatoy**	**5.75**	**330**	*e*Pn	Pn	19 18 58.4 +0.5
DYBB	**Diyarbakir**	**5.96**	**33**	*e*PN	Pn	19 19 07.1 +6.2
SVRC	**Sivrice-ELAZID**	**5.98**	**26**	*e*PN	Pn	19 19 06.3 +5.0
ELL	**Elmali**	**6.25**	**308**	*e*PN	Pn	19 19 04.7 -0.1
ELL	**Elmali**	**6.25**	**308**	*e*Pn	Pn	19 19 04.7 -0.1
FETY	**Fethiye**	**6.75**	**304**	*e*PN	Pn	19 19 11.9 +0.3
FETY	**Fethiye**	**6.75**	**304**	*e*Pn	Pn	19 19 11.9 +0.3
GLHS	**Gihisar (BURDU**	**6.75**	**310**	*e*PN	Pn	19 19 12.0 +0.2
GLHS	**Gihisar (BURDU**	**6.75**	**310**	*e*Pn	Pn	19 19 12.0 +0.2
DALY	**Dalyan (Mu¨la**	**7.14**	**304**	*e*PN	Pn	19 19 17.3 +0.4
DALY	**Dalyan (Mu¨la**	**7.14**	**304**	*e*Pn	Pn	19 19 17.3 +0.4
KARP	**Karpathos**	**7.75**	**291**	*e*PN	Pn	19 19 25.9 +0.5
KARP	**Karpathos**	**7.75**	**291**	*e*Pn	Pn	19 19 25.9 +0.5
BODT	**Bodrum**	**8.20**	**302**	*e*PN	Pn	19 19 31.2 -0.3
BODT	**Bodrum**	**8.20**	**302**	*e*Pn	Pn	19 19 31.2 -0.3
AYDB	**Zeytinkoy-Aydi**	**8.25**	**309**	*e*PN	Pn	19 19 31.4 -0.9
AYDB	**Zeytinkoy-Aydi**	**8.25**	**309**	*e*Pn	Pn	19 19 31.5 -0.9
SLUM	**Salum**	**9.27**	**263**	P	Pn	19 19 45.1 -1.2
	baz=262					
SLUM	**Salum**	**9.27**	**263**	P	Pn	19 19 45.1 -1.2

*IDC **29** 19:18:21.8±2.2, 70.˚04N×22.˚91E, h0km, mb1 3.3/2, mb1mx2.9/47, mbtmp3.2/2, ML3.1/1, Error ellipse: s-maj=21.2km s-min=9.0km az=177.0*
*ISCJB **29** 19:18:22.7±0.5, 69.˚92N±0.˚03×23.˚1E±0.˚1, h0km, Error ellipse: s-maj=5.5km s-min=4.2km az=19.2*
*CSEM **29** 19:18:23.4±0.3, 69.˚92N×23.˚14E, h2km, ML1.2, Error ellipse: s-maj=6.8km s-min=5.7km az=123.0, Mining explosion.*
*HEL **29** 19:18:23.9±0.3, 69.˚95N×23.˚04E, h0km, ML1.6, Explosion*
*BER **29** 19:18:24.8±2.6, 69.˚93N×23.˚07E, h0km±10km, MD2.2, ML1.2*

ISC 29 19:18:22.3±0.9, 69.˚94N±0.˚03×23.˚10E±0.˚04, h0km, n31, σ0s71/42, Northern Norway

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HAMF	**Hammerfest**	**0.74**	**15**	*e*P	**Pb**	**19 18 37.6**	**-0.3**
HAMF				*e*S	**Sb**	**19 18 48.0**	**-0.6**
HAMF				IAML		19 18 48.9	
	comp=Z,12nm,0.2s						
HAMF	**Hammerfest**	**0.74**	**15**	*e*P	**Pb**	**19 18 37.7**	**-0.3**
	SNR=90						
HAMF				*e*S	**Sb**	**19 18 48.0**	**-0.6**
	SNR=90						
ARCES	**ARCESS Array B**	**0.93**	**114**	Pg	**Pb**	**19 18 41.0**	**-0.2**
	comp=Z,1.6nm,0.3s,baz=296,slow=16,SNR=81						
ARCES				Lg	Lg	19 18 54.9	
	comp=Z,2.1nm,0.3s,baz=299,slow=27,SNR=16						
ARE0	**ARCESS Array S**	**0.93**	**114**	*e*P	**Pb**	**19 18 41.0**	**-0.2**
ARE0	**ARCESS Array S**	**0.93**	**114**	*e*P	**Pb**	**19 18 41.1**	**-0.2**
ARE0	**ARCESS Array S**	**0.93**	**114**	*e*P	**Pb**	**19 18 41.0**	**-0.2**
	SNR=90						
KTK1	**Kautokeino**	**0.93**	**177**	*e*P	**Pb**	**19 18 41.3**	**+0.1**
KTK1				*e*S	**Sb**	**19 18 54.1**	**+0.1**
KTK1				IAML		19 18 54.8	
	comp=Z,7.3nm,0.2s						
KTK1	**Kautokeino**	**0.93**	**177**	*e*P	**Pb**	**19 18 41.1**	**-0.1**
KTK1	**Kautokeino**	**0.93**	**177**	*e*P	**Pb**	**19 18 41.3**	**+0.1**
	SNR=90						
KTK1				*e*S	**Sb**	**19 18 54.1**	**+0.1**
	SNR=90						
KIF	**Kilpisjarvi**	**1.24**	**222**	*e*P	**Pg**	**19 18 45.6**	**-0.3**
KIF				*e*S	**Sg**	**19 19 00.7**	**-1.3**
KIF	**Kilpisjarvi**	**1.24**	**222**	*e*P	**Pg**	**19 18 45.6**	**-0.3**
KIF				*e*S	**Sg**	**19 19 00.5**	**-1.4**
KIF	**Kilpisjarvi**	**1.24**	**222**	*e*P	**Pg**	**19 18 45.6**	**-0.3**
	SNR=90						
KIF				S	**Sg**	**19 19 00.5**	**-1.4**
KEV	**Kevo**	**1.36**	**96**	*e*P	**Pb**	**19 18 48.5**	**0.0**
KEV	**Kevo**	**1.36**	**96**	*e*P	**Pb**	**19 18 48.6**	**0.0**
KEV	**Kevo**	**1.36**	**96**	P	**Pb**	**19 18 48.6**	**0.0**
TRO	**Tromso**	**1.48**	**260**	*e*P	**Pg**	**19 18 51.4**	**+0.8**
TRO				*e*S	**Sn**	**19 19 10.8**	**+0.7**
TRO				IAML		19 19 14.0	
	comp=Z,6.2nm,0.4s						
TRO	**Tromso**	**1.48**	**260**	*e*P	**Pg**	**19 18 51.4**	**+0.8**
	SNR=50						
TRO				*e*S	**Sn**	**19 19 10.8**	**+0.7**
	SNR=50						
HEF	**Hetta**	**1.55**	**172**	*e*P	**Pg**	**19 18 52.0**	**+0.1**
HEF				*e*S	**Sg**	**19 19 12.7**	**+0.9**
HEF	**Hetta**	**1.55**	**172**	*e*P	**Pg**	**19 18 52.1**	**+0.2**
HEF				*e*S	**Sg**	**19 19 12.2**	**+0.3**
HEF	**Hetta**	**1.55**	**172**	*e*P	**Pg**	**19 18 52.0**	**+0.1**
	SNR=50						
HEF				S	**Sg**	**19 19 12.1**	**+0.3**
LANU	**Lannavaara**	**1.94**	**192**	*e*P	**Pb**	**19 18 58.7**	**+0.2**
LANU				*e*S	**Sb**	**19 19 22.8**	**-0.3**
LANU	**Lannavaara**	**1.94**	**192**	P	**Pb**	**19 18 58.6**	**+0.2**
LANU				S	**Sb**	**19 19 22.7**	**-0.3**
SGF	**Sodankyl**	**2.80**	**152**	*e*PB	**Pb**	**19 19 12.1**	**-0.9**
SGF	**Sodankyl**	**2.80**	**152**	Pb	**Pb**	**19 19 12.1**	**-0.9**
VRF	**Varrio**	**3.22**	**130**	MSG		19 20 04.2	
	comp=Z,1.8nm,0.2s						
LOF	**Lofoten**	**3.88**	**247**	*e*P	**Pn**	**19 19 24.3**	**+1.2**
LOF	**Lofoten**	**3.88**	**247**	*e*P	**Pn**	**19 19 24.3**	**+1.2**
	SNR=50						
TOF	**Tornio**	**3.90**	**173**	MSG		19 20 26.9	
	comp=Z,0.7nm,0.2s						
KU6	**Riekki**	**4.68**	**144**	MSG		19 20 49.5	
	comp=Z,0.6nm,0.2s						
FINES	**FINESS Array B**	**8.61**	**170**	Pn	**Pn**	**19 20 28.9**	**+1.0**
	baz=357,slow=14,SNR=5.5						
NOA	**NORSAR Array B**	**10.18**	**215**	Pn	**Pn**	**19 20 47.6**	**-1.8**
	comp=Z,0.1nm,0.3s,baz=11,slow=8.0,SNR=2.7						

*ISCJB **29** 19:19:33.4±0.8, 33.˚04N±0.˚02×35.˚91E±0.˚07, h8km±5km, Error ellipse: s-maj=10.4km s-min=3.4km az=8.7*
*CSEM **29** 19:19:33.6±0.2, 33.˚04N×35.˚93E, h8km, MD2.8, Error ellipse: s-maj=3.8km s-min=1.5km az=103.0*
*GII **29** 19:19:34.3±0.2, 33.˚02N×35.˚85E, h11km, MD2.8/5*
*GRAL **29** 19:19:35.8±0.2, 33.˚09N×35.˚85E, h0km±4km, MD3.1*

ISC 29 19:19:33.6±1.1, 33.˚04N±0.˚02×35.˚90E±0.˚05, h8km±8km, n37, σ0s42/54, Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KSHT	**Keshet**	**0.10**	**234**	Pg	**Pg**	**19 19 36.3**	**+0.3**
KSHT	**Keshet**	**0.10**	**234**	Pg	**Pg**	**19 19 36.3**	**+0.3**
KSDI	**Kefar Szold**	**0.26**	**307**	Pg	**Pg**	**19 19 39.4**	**+0.7**
KSDI	**Kefar Szold**	**0.26**	**307**	Pg	**Pg**	**19 19 39.4**	**+0.7**
MMA0B	**Mount Meron ar**	**0.42**	**267**	Pg	**Pg**	**19 19 42.5**	**+0.7**
MMA0B	**Mount Meron ar**	**0.42**	**267**	Pg	**Pg**	**19 19 42.5**	**+0.7**
MMC7	**Mount Meron ar**	**0.43**	**268**	Pg	**Pb**	**19 19 42.8**	**-0.7**
MMC7	**Mount Meron ar**	**0.43**	**268**	Pg	**Pb**	**19 19 42.8**	**-0.7**
RCY	**Rachaya**	**0.46**	**353**	*e*P	**Pg**	**19 19 43.1**	**+0.4**
RCY				*e*S	**Sg**	**19 19 48.6**	**0.0**
HNTI	**Hanita**	**0.61**	**274**	Pg	**Pg**	**19 19 45.8**	**+0.3**
HNTI				Sg	**Sb**	**19 19 55.3**	**-0.1**
HNTI	**Hanita**	**0.61**	**274**	Pg	**Pg**	**19 19 45.8**	**+0.3**
HNTI				Sg	**Sb**	**19 19 55.3**	**-0.1**
BLGI	**Bet Lehem HaGe**	**0.67**	**243**	Pg	**Pb**	**19 19 47.5**	**-0.1**
BLGI	**Bet Lehem HaGe**	**0.67**	**243**	Pg	**Pb**	**19 19 47.5**	**-0.1**
DQRL	**Deir Qamar**	**0.72**	**337**	*e*P	**Pg**	**19 19 47.6**	**+0.1**
DQRL				*e*S	**Sg**	**19 19 56.4**	**-0.6**
DQRL	**Deir Qamar**	**0.72**	**337**	*e*P	**Pg**	**19 19 47.6**	**+0.1**
DQRL				*e*S	**Sg**	**19 19 56.4**	**-0.6**
MMLI	**Mount Malkishu**	**0.72**	**214**	Pg	**Pg**	**19 19 47.6**	**0.0**
MMLI				Sg	**Sg**	**19 19 56.3**	**-0.7**
MMLI	**Mount Malkishu**	**0.72**	**214**	Pg	**Pg**	**19 19 47.6**	**0.0**
MMLI				Sg	**Sg**	**19 19 56.3**	**-0.7**
HMDT	**Nahal Hemdat**	**0.84**	**202**	Pg	**Pg**	**19 19 50.3**	**+0.4**
HMDT				Sg	**Sb**	**19 20 02.1**	**0.0**
HMDT	**Nahal Hemdat**	**0.84**	**202**	Pg	**Pg**	**19 19 50.3**	**+0.4**
HMDT				Sg	**Sb**	**19 20 02.1**	**0.0**
OFRI	**'Ofer**	**0.88**	**242**	Pg	**Pg**	**19 19 50.8**	**+0.3**
OFRI	**'Ofer**	**0.88**	**242**	Pg	**Pg**	**19 19 50.8**	**+0.3**
BHL	**Bhannes**	**0.89**	**347**	*e*P	**Pg**	**19 19 50.6**	**-0.1**
BHL				*e*S	**Sg**	**19 20 01.8**	**-0.5**
BHL	**Bhannes**	**0.89**	**347**	*e*P	**Pg**	**19 19 50.6**	**-0.1**
BHL				*e*S	**Sg**	**19 20 01.8**	**-0.5**
BEYL	**Beirut**	**0.90**	**338**	*e*P	**Pg**	**19 19 50.8**	**-0.1**
BEYL	**Beirut**	**0.90**	**338**	*e*P	**Pg**	**19 19 50.8**	**-0.1**
SLTI	**Sal'it**	**1.08**	**223**	Pg	**Pg**	**19 19 53.8**	**-0.5**
SLTI				Sg	**Sb**	**19 20 09.3**	**+0.5**
SLTI	**Sal'it**	**1.08**	**223**	Pg	**Pg**	**19 19 53.8**	**-0.5**
SLTI				Sg	**Sb**	**19 20 09.3**	**+0.5**
HWQ	**Hawqa**	**1.24**	**2**	*e*P	**Pb**	**19 19 57.2**	**-0.2**
HWQ				*e*S	**Sg**	**19 20 13.0**	**-0.5**
HWQ	**Hawqa**	**1.24**	**2**	*e*P	**Pb**	**19 19 57.2**	**-0.2**
HWQ				*e*S	**Sg**	**19 20 13.0**	**-0.5**
FKH	**Fakeheh**	**1.27**	**19**	*e*P	**Pn**	**19 19 58.2**	**+0.3**
FKH	**Fakeheh**	**1.27**	**19**	*e*P	**Pn**	**19 19 58.2**	**+0.3**
DSI	**Dead Sea**	**1.53**	**197**	Pn	**Pn**	**19 20 01.3**	**0.0**
DSI				Sn	**Sn**	**19 20 21.9**	**+0.5**
DSI	**Dead Sea**	**1.53**	**197**	Pn

BORA	**Eskisehir**	**1.32**	**54**	P	**Pg**	**19 36 40.4**	**-0.8**
BORA				S	**Sb**	**19 36 58.8**	**-0.1**
BORA	**Eskisehir**	**1.32**	**54**	*i* P	**Pg**	**19 36 40.4**	**-0.8**
BORA				*i* S	**Sb**	**19 36 58.8**	**-0.1**
ADVT	**Abdulvahap**	**1.42**	**21**	*e*PN	**Pn**	**19 36 42.8**	**+0.1**
ADVT	**Abdulvahap**	**1.42**	**21**	*e*Pn	**Pn**	**19 36 42.8**	**+0.1**
ARMT	**Armutlu**	**1.46**	**354**	*e*PN	**Pn**	**19 36 43.4**	**+0.1**
ARMT	**Armutlu**	**1.46**	**354**	*e*Pn	**Pn**	**19 36 43.4**	**+0.1**
GULT	**Gulveren**	**1.73**	**40**	*e*PN	**Pn**	**19 36 46.9**	**-0.1**
GULT	**Gulveren**	**1.73**	**40**	*e*Pn	**Pn**	**19 36 46.9**	**-0.1**

JMA 29 19:40:53.0±0.2, 39°.15N×143°.74E, h32km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**1.55**	**287**	P	Pn	19 41 19.0	+0.7
MIYJ				*e*S	Sb	19 41 39.1	-1.2
OFUJ	**Ofunato**	**1.61**	**268**	P	Pn	19 41 20.2	+1.0
JTH	**Tanohata**	**1.65**	**299**	P	Pn	19 41 20.6	+0.8
JTH				*e*S	Sn	19 41 40.1	+0.2
JOM	**Ohasama**	**1.93**	**280**	P	Pn	19 41 24.9	+1.4
JOM				*e*S	Sn	19 41 47.3	+0.6
JMK	**Ichinoseki**	**1.97**	**265**	P	Pn	19 41 25.6	+1.4
JIO	**Ouri**	**1.99**	**250**	P	Pn	19 41 25.5	+1.1
JIO				*e*S	Sn	19 41 48.8	+0.5
JRG	**Rokugo**	**2.42**	**277**	P	Pn	19 41 32.4	+2.0
JOU	**Okura**	**2.53**	**253**	P	Pn	19 41 33.7	+1.9
JOU				*e*S	Sn	19 42 03.1	+1.5
JAH	**Hinai**	**2.61**	**294**	P	Pn	19 41 34.6	+1.7
JYK	**Kaneyama**	**2.64**	**266**	P	Pn	19 41 35.3	+1.9

*ISCJB **29** 19:46:11.8±0.4, 39°.10N±0°.02×29°.00E±0°.02, h11km±3km, Error ellipse: s-maj=2.9km s-min=2.8km az=162.5*
*DDA **29** 19:46:11.5, 39°.11N×29°.04E, h7km, Ml3.7*
*ISK **29** 19:46:11.4, 39°.12N×29°.03E, h7km, ML3.7*
*CSEM **29** 19:46:12.2±0.1, 39°.10N×29°.03E, h10km, ML3.7, Error ellipse: s-maj=2.0km s-min=1.8km az=98.0*
*THE **29** 19:46:14.6, 39°.04N×28°.91E, h12km±2km, ML3.3/8, Error ellipse: s-maj=2.4km s-min=0.9km az=115.0*
ISC 29 19:46:12.1±0.9, 39°.10N±0°.02×29°.02E±0°.02, h10km±7km, n113, σ0°73/155, 12C-9D, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**256**	P	**Pg**	**19 46 17.1**	**-0.1**
DEMI				S	**Sg**	**19 46 20.4**	**-0.3**
DEMI	**Demirci**	**0.24**	**256**	*i* P	**Pg**	**19 46 17.1**	**-0.1**
DEMI				*i* S	**Sg**	**19 46 20.4**	**-0.3**
GDZ	**Gediz**	**0.36**	**92**	P	**Pg**	**19 46 19.6**	**+0.3**
GDZ				S	**Sg**	**19 46 24.0**	**-0.1**
GDZ	**Gediz**	**0.36**	**92**	*i* P	**Pg**	**19 46 19.6**	**+0.3**
GDZ				*i* S	**Sg**	**19 46 23.9**	**-0.1**
TVSB	**Tavsanli**	**0.49**	**45**	*e*PG	**Pg**	**19 46 20.9**	**-0.8**
TVSB	**Tavsanli**	**0.49**	**45**	*e*Pg	**Pg**	**19 46 20.9**	**-0.8**
KULA	**Kula-Manisa**	**0.65**	**206**	*e*PG	**Pg**	**19 46 24.6**	**-0.2**
KULA	**Kula-Manisa**	**0.65**	**206**	P	**Pg**	**19 46 24.6**	**-0.2**
KULA				S	**Sg**	**19 46 33.4**	**0.0**
KULA	**Kula-Manisa**	**0.65**	**206**	P	**Pg**	**19 46 24.6**	**-0.2**
KULA				S	**Sg**	**19 46 33.4**	**0.0**
KHAL	**Karahalli**	**0.82**	**153**	P	**Pg**	**19 46 27.9**	**-0.1**
KHAL				S	**Sg**	**19 46 38.5**	**-0.2**
KHAL	**Karahalli**	**0.82**	**153**	*i* P	**Pg**	**19 46 27.9**	**-0.1**
KHAL				*i* S	**Sg**	**19 46 38.5**	**-0.2**
KHL	**Karahalli**	**0.87**	**153**	*e*PG	**Pg**	**19 46 28.8**	**-0.2**
KHL	**Karahalli**	**0.87**	**153**	*e*Pg	**Pg**	**19 46 28.8**	**-0.2**
ORLT	**Orhaneli**	**0.95**	**354**	*e*PG	**Pg**	**19 46 29.7**	**-0.7**
ORLT	**Orhaneli**	**0.95**	**354**	*e*Pg	**Pg**	**19 46 29.7**	**-0.7**
AKHS	**Akhisar**	**0.97**	**257**	P	**Pg**	**19 46 30.8**	**0.0**
AKHS				S	**Sg**	**19 46 43.6**	**+0.3**
AKHS	**Akhisar**	**0.97**	**257**	*i* P	**Pg**	**19 46 30.8**	**0.0**
AKHS				*i* S	**Sg**	**19 46 43.6**	**+0.3**
AKS	**Akhisar**	**0.97**	**257**	*e*PG	**Pb**	**19 46 31.0**	**+0.1**
AKS	**Akhisar**	**0.97**	**257**	*e*Pg	**Pb**	**19 46 31.0**	**+0.1**
BALB	**Balikesir**	**1.03**	**302**	*e*PG	**Pg**	**19 46 31.6**	**-0.4**
BALB				*e*SG	**Sb**	**19 46 46.2**	**+0.5**
BALB	**Balikesir**	**1.03**	**302**	*e*Pg	**Pg**	**19 46 31.6**	**-0.4**
BALB				*e*Sg	**Sb**	**19 46 46.2**	**+0.5**
CAVI	**Cavuskoy**	**1.27**	**30**	*e*PN	**Pn**	**19 46 35.8**	**-0.1**
CAVI	**Cavuskoy**	**1.27**	**30**	*e*Pn	**Pn**	**19 46 35.8**	**-0.1**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*PN	**Pb**	**19 46 36.1**	**0.0**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*Pn	**Pb**	**19 46 36.1**	**0.0**
MDNY	**Mudanya-Bursa**	**1.27**	**355**	*e*PN	**Pn**	**19 46 35.3**	**-0.6**
MDNY	**Mudanya-Bursa**	**1.27**	**355**	*e*Pn	**Pn**	**19 46 35.3**	**-0.6**
IZI	**Iznik**	**1.28**	**16**	*e*PN	**Pn**	**19 46 36.1**	**0.0**
IZI	**Iznik**	**1.28**	**16**	*e*Pn	**Pn**	**19 46 36.1**	**0.0**
GEMT	**Gemlik**	**1.34**	**6**	*e*PN	**Pb**	**19 46 37.0**	**-0.2**
GEMT	**Gemlik**	**1.34**	**6**	*e*Pn	**Pb**	**19 46 37.0**	**-0.2**
DENT	**Denizli**	**1.35**	**180**	*e*PN	**Pn**	**19 46 37.3**	**+0.3**
DENT	**Denizli**	**1.35**	**180**	*e*Pn	**Pn**	**19 46 37.3**	**+0.3**
BORA	**Eskisehir**	**1.35**	**55**	P	**Pn**	**19 46 36.9**	**-0.2**
BORA				S	**Sg**	**19 46 55.1**	**-0.6**
BORA	**Eskisehir**	**1.35**	**55**	*i* P	**Pn**	**19 46 36.9**	**-0.2**
BORA				*i* S	**Sg**	**19 46 55.1**	**-0.6**
GONE	**Gonen-Balikesi**	**1.40**	**313**	*e*PN	**Pn**	**19 46 37.8**	**+0.2**
GONE	**Gonen-Balikesi**	**1.40**	**313**	*e*Pn	**Pn**	**19 46 37.8**	**+0.2**
ADVT	**Abdulvahap**	**1.44**	**22**	*e*PN	**Pn**	**19 46 38.4**	**+0.2**
ADVT	**Abdulvahap**	**1.44**	**22**	*e*Pn	**Pn**	**19 46 38.4**	**+0.2**
ARMT	**Armutlu**	**1.47**	**355**	*e*PN	**Pn**	**19 46 38.9**	**+0.3**
ARMT	**Armutlu**	**1.47**	**355**	*e*Pn	**Pn**	**19 46 38.9**	**+0.3**
EDC	**Edincik**	**1.53**	**325**	*e*PN	**Pn**	**19 46 39.4**	**-0.1**
EDC	**Edincik**	**1.53**	**325**	*e*Pn	**Pn**	**19 46 39.4**	**-0.1**
GPA	**Golpazari**	**1.54**	**40**	*e*PN	**Pn**	**19 46 39.7**	**0.0**
GPA	**Golpazari**	**1.54**	**40**	*e*Pn	**Pn**	**19 46 39.7**	**0.0**
KNL	**Bal¨–kesir**	**1.64**	**316**	*i* P	**Pn**	**19 46 41.3**	**+0.3**
KNL				*i* S	**Sb**	**19 47 03.8**	**+0.7**
ISP	**Isparta**	**1.74**	**137**	S	**Sg**	**19 47 10.3**	**+2.2**
ISP	**Isparta**	**1.74**	**137**	P	**Pn**	**19 46 42.4**	**0.0**
ISP				S	**Sn**	**19 47 05.2**	**+0.5**
ISP	**Isparta**	**1.74**	**137**	P	**Pn**	**19 46 42.4**	**0.0**
ISP				S	**Sn**	**19 47 05.2**	**+0.5**
GULT	**Gulveren**	**1.76**	**40**	*e*PN	**Pn**	**19 46 42.7**	**0.0**
GULT	**Gulveren**	**1.76**	**40**	*e*Pn	**Pn**	**19 46 42.7**	**0.0**
HRT	**Hereke**	**1.79**	**16**	*e*PN	**Pn**	**19 46 43.2**	**+0.2**
HRT	**Hereke**	**1.79**	**16**	*e*Pn	**Pn**	**19 46 43.2**	**+0.2**
SPNC	**Sapanca-Adapaz**	**1.86**	**32**	*e*PN	**Pn**	**19 46 44.5**	**+0.4**
SPNC	**Sapanca-Adapaz**	**1.86**	**32**	*e*Pn	**Pn**	**19 46 44.5**	**+0.4**
ISK	**Istanbul-Kandi**	**1.96**	**1**	*e*PN	**Pn**	**19 46 45.6**	**+0.3**
ISK	**Istanbul-Kandi**	**1.96**	**1**	P	**Pb**	**19 46 48.3**	**+0.4**
ISK				S	**Sb**	**19 47 12.6**	**+0.3**
ISK	**Istanbul-Kandi**	**1.96**	**1**	*e*Pn	**Pn**	**19 46 45.6**	**+0.3**
ISK	**Istanbul-Kandi**	**1.96**	**1**	P	**Pb**	**19 46 48.3**	**+0.4**
ISK				S	**Sb**	**19 47 12.6**	**+0.3**
SVRH	**Sivrihisar-ESK**	**1.97**	**79**	*e*PN	**Pn**	**19 46 45.6**	**0.0**
SVRH	**Sivrihisar-ESK**	**1.97**	**79**	*e*Pn	**Pn**	**19 46 45.6**	**0.0**
YER	**Yerkesik**	**2.05**	**197**	P	**Pn**	**19 46 46.8**	**+0.1**
YER				S	**Sn**	**19 47 10.9**	**-1.4**
YER	**Yerkesik**	**2.05**	**197**	P	**Pn**	**19 46 46.8**	**+0.1**
YER				S	**Sn**	**19 47 10.9**	**-1.4**
SILT	**Sile**	**2.10**	**13**	*e*PN	**Pn**	**19 46 47.9**	**+0.6**
SILT	**Sile**	**2.10**	**13**	*e*Pn	**Pn**	**19 46 47.9**	**+0.6**
PRK	**Paraskevi**	**2.14**	**275**	P	**Pn**	**19 46 48.0**	**+0.1**
PRK				S	**Sn**	**19 47 13.0**	**-1.4**
PRK	**Paraskevi**	**2.14**	**275**	P	**Pn**	**19 46 48.0**	**+0.1**
PRK				S	**Sn**	**19 47 13.0**	**-1.4**
EZN	**Ezine**	**2.21**	**290**	P	**Pn**	**19 46 49.2**	**+0.4**
EZN	**Ezine**	**2.21**	**290**	P	**Pn**	**19 46 49.2**	**+0.4**
SMG	**Samos**	**2.21**	**232**	P	**Pn**	**19 46 49.0**	**+0.2**
SMG				S	**Sn**	**19 47 14.5**	**-1.7**
SMG	**Samos**	**2.21**	**232**	P	**Pn**	**19 46 49.0**	**+0.2**
SMG				S	**Sn**	**19 47 14.5**	**-1.7**
CHOS	**Chios island**	**2.43**	**254**	P	**Pn**	**19 46 51.9**	**0.0**
CHOS				S	**Sn**	**19 47 20.7**	**-0.9**
CHOS	**Chios island**	**2.43**	**254**	P	**Pn**	**19 46 51.9**	**0.0**
CHOS				S	**Sn**	**19 47 20.7**	**-0.9**
BODT	**Bodrum**	**2.44**	**214**	P	**Pn**	**19 46 52.3**	**+0.2**
BODT				S	**Sn**	**19 47 21.3**	**-0.7**
BODT	**Bodrum**	**2.44**	**214**	P	**Pn**	**19 46 52.3**	**+0.2**
BODT				S	**Sn**	**19 47 21.3**	**-0.7**
SIGR	**SIGRI**	**2.46**	**273**	P	**Pn**	**19 46 52.3**	**0.0**
SIGR				S	**Sn**	**19 47 22.3**	**-0.1**
SIGR	**SIGRI**	**2.46**	**273**	P	**Pn**	**19 46 52.3**	**0.0**
SIGR				S	**Sn**	**19 47 22.3**	**-0.1**
FETY	**Fethiye**	**2.46**	**179**	P	**Pn**	**19 46 53.8**	**+1.4**
FETY				S	**Sn**	**19 47 22.0**	**-0.5**
FETY	**Fethiye**	**2.46**	**179**	P	**Pn**	**19 46 53.8**	**+1.4**
FETY				S	**Sn**	**19 47 22.0**	**-0.5**
GADA	**Gvkgeada**	**2.64**	**295**	P	**Pn**	**19 46 55.2**	**+0.4**
GADA				S	**Sn**	**19 47 28.1**	**+1.3**
GADA	**Gvkgeada**	**2.64**	**295**	P	**Pn**	**19 46 55.2**	**+0.4**
GADA				S	**Sn**	**19 47 28.1**	**+1.3**
ENEZ	**Enez**	**2.74**	**307**	P	**Pn**	**19 46 56.7**	**+0.6**
ENEZ				S	**Sn**	**19 47 30.4**	**+1.1**
ENEZ	**Enez**	**2.74**	**307**	P	**Pn**	**19 46 56.7**	**+0.6**
ENEZ				S	**Sn**	**19 47 30.4**	**+1.1**
ALN	**Alexandroupoli**	**2.90**	**309**	P	**Pn**	**19 46 58.6**	**+0.3**
ALN				S	**Sn**	**19 47 33.2**	**0.0**
ALN	**Alexandroupoli**	**2.90**	**309**	P	**Pn**	**19 46 58.6**	**+0.3**
ALN				S	**Sn**	**19 47 33.2**	**0.0**
KSL	**Kastellorizon**	**2.98**	**171**	P	**Pn**	**19 47 01.3**	**+1.9**
KSL				S	**Sn**	**19 47 34.5**	**-0.7**
SMTH	**Samothraki Isl**	**3.02**	**298**	P	**Pn**	**19 47 00.3**	**+0.4**
SMTH				S	**Sn**	**19 47 36.1**	**0.0**
SMTH	**Samothraki Isl**	**3.02**	**298**	P	**Pn**	**19 47 00.3**	**+0.4**
SMTH				S	**Sn**	**19 47 36.1**	**0.0**
LIA	**Limnos Island**	**3.07**	**286**	P	**Pn**	**19 47 01.3**	**+0.6**
LIA				S	**Sn**	**19 47 36.0**	**-1.4**
LIA	**Limnos Island**	**3.07**	**286**	P	**Pn**	**19 47 01.3**	**+0.6**
LIA				S	**Sn**	**19 47 36.0**	**-1.4**
EDRB	**Edirne**	**3.24**	**328**	P	**Pn**	**19 47 04.0**	**+1.0**
EDRB				S	**Sn**	**19 47 41.7**	**0.0**
EDRB	**Edirne**	**3.24**	**328**	P	**Pn**	**19 47 04.0**	**+1.0**
EDRB				S	**Sn**	**19 47 41.7**	**0.0**
APE	**Apeiranthos**	**3.42**	**235**	↓*i*P	Pb	19 47 09.6	-3.2
APE	**Apeiranthos**	**3.42**	**235**	↓*i*P	Pb	19 47 09.6	-3.2
LAST	**Lasithi**	**4.85**	**217**	↓*i*P	Pn	19 47 29.0	+3.8
LAST	**Lasithi**	**4.85**	**217**	↓*i*P	Pn	19 47 29.0	+3.8
LAST				S	**Sn**	**19 48 17.8**	**-3.5**
MSAB	**Monastry St. A**	**5.06**	**350**	↓*i*P	**Pn**	**19 47 28.0**	**0.0**
MSAB	**Monastry St. A**	**5.06**	**350**	↓*i*P	**Pn**	**19 47 28.0**	**0.0**
TIRR	**Tirgusor**	**5.37**	**355**	↑*i*P	**Pn**	**19 47 32.1**	**-0.1**
TIRR	**Tirgusor**	**5.37**	**355**	↑*i*P	**Pn**	**19 47 32.1**	**-0.1**
CFR	**Carcaliu**	**6.11**	**354**	↑*i*P	**Pn**	**19 47 41.6**	**-0.7**
CFR	**Carcaliu**	**6.11**	**354**	↑*i*P	**Pn**	**19 47 41.6**	**-0.7**
HUMR	**Humele**	**6.20**	**332**	↓*i*P	Pn	19 47 50.2	+6.5
MLR	**Muntele Rosu**	**6.78**	**341**	↑*i*P	**Pn**	**19 47 52.3**	**+0.6**
MLR	**Muntele Rosu**	**6.78**	**341**	↑*i*P	**Pn**	**19 47 52.3**	**+0.6**
VRI	**Vrincioaia**	**6.97**	**347**	↑*i*P	**Pn**	**19 47 54.8**	**+0.6**
VRI	**Vrincioaia**	**6.97**	**347**	↑*i*P	**Pn**	**19 47 54.8**	**+0.6**
VOIR		**6.98**	**336**	↑*i*P	**Pn**	**19 47 55.3**	**+0.9**
VOIR		**6.98**	**336**	↑*i*P	**Pn**	**19 47 55.3**	**+0.9**
TESR	**Tescani**	**7.61**	**348**	↑*i*P	**Pn**	**19 48 02.6**	**-0.3**
TESR	**Tescani**	**7.61**	**348**	↑*i*P	**Pn**	**19 48 02.6**	**-0.3**
MDVR	**Moldovita**	**7.86**	**319**	↓*i*P	**Pn**	**19 48 08.7**	**+2.2**
MDVR	**Moldovita**	**7.86**	**319**	↓*i*P	**Pn**	**19 48 08.7**	**+2.2**

*IDC **29** 19:52:45.9±5.3, 6°.47S×128°.94E, h300km±59km, mb3.4/6, mb1 3.3/8, mb1mx3.1/30, mbtmp4.0/8, Error ellipse: s-maj=52.4km s-min=13.7km az=80.0*
ISC 29 19:52:45.9±0.9, 6°.4S±0°.2×129°.2E±0°.5, h300km, n8, σ0°99/10, mb3.6/6, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**14.35**	**160**	P	**P**	**19 55 54.3**	**-1.6**
	0.3nm,0.3s,baz=340,slow=12,SNR=19						
WRA				S	**S**	**19 58 34.3**	**+0.6**
	0.8nm,0.3s,baz=336,slow=22,SNR=7.1						
ASAR	**Alice Springs**	**17.74**	**166**	P	**P**	**19 56 33.6**	**+0.8**
	0.3nm,0.3s,baz=345,slow=12,SNR=18						
ASAR				S	**S**	**19 59 42.5**	**+1.2**
	0.1nm,0.3s,baz=346,slow=24,SNR=7.8						
MJAR	**Matsushiro Arr**	**43.58**	**11**	P	**P**	**20 00 20.8**	**-0.1**
	0.8nm,0.4s,baz=198,slow=7.7,SNR=4.8						
KSRS	**Korea Array**	**43.67**	**359**	P	**P**	**20 00 22.2**	**+0.6**
	0.5nm,0.5s,baz=172,slow=9.2,SNR=3.4						
USRK	**Ussurisyk Ar.**	**50.46**	**3**	P	**P**	**20 01 14.6**	**+0.9**
	1.6nm,0.4s,baz=188,slow=6.7,SNR=5.4						
MKAR	**Makanchi Array**	**67.29**	**327**	P	**P**	**20 03 08.5**	**-0.2**
	0.9nm,0.3s,baz=114,slow=8.5,SNR=23						
ZALV	**Zalesovo Beam**	**70.70**	**334**	P	**P**	**20 03 28.6**	**-0.8**
	1.8nm,0.7s,baz=127,slow=5.9,SNR=6.3						
BVAR	**Borovoye Array**	**77.13**	**328**	P	**P**	**20 04 06.3**	**-0.3**
	0.4nm,0.4s,baz=134,slow=6.2,SNR=5.4						

*ISCJB **29** 19:57:24.5±0.5, 6°.79N±0°.05×73°.07W±0°.05, h157km±5km, Error ellipse: s-maj=9.9km s-min=4.4km az=135.5*
*FUNV **29** 19:57:26.1, 6°.80N×73°.14W, h160km, MW3.6*
*RSNC **29** 19:57:27.4±1.1, 6°.77N×73°.12W, h140km±6km, ML3.4*
ISC 29 19:57:24.2±1.4, 6°.79N±0°.05×73°.08W±0°.05, h162km±9km, n28, σ1°24/42, 1D, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BARC	**Barichara**	**0.22**	**208**	*i* P	**Pn**	**19 57 46.5**	**+0.3**
BARC				*i*		19 57 46.8	
	comp=Z,579nm,0.2s						
BARC				*e*S	**Sn**	**19 58 00.6**	**-2.5**
PAMC	**Pamplona, Colo**	**0.66**	**35**	*e*P	**Pn**	**19 57 49.5**	**+1.1**
PAMC				*e*S	**Sn**	**19 58 06.3**	**-0.5**
BRRC	**Barranca, Sant**	**0.70**	**297**	*i* P	**Pn**	**19 57 48.5**	**+0.5**
BRRC				*i*		19 57 48.9	
	comp=Z,586nm,0.1s						
BRRC				*e*S	**Sn**	**19 58 05.1**	**-1.1**
RUSC	**La Rusia**	**0.89**	**180**	*e*P	**Pn**	**19 57 50.4**	**+0.5**
RUSC				*e*S	**Sn**	**19 58 08.0**	**-1.6**
RUSC				*i*		19 58 10.2	
	comp=Z,382nm,0.4s						
GRMC	**Gramalote, San**	**0.96**	**16**	*e*P	**Pn**	**19 57 52.6**	**+2.6**
GRMC				*e*S	**Sn**	**19 58 11.1**	**+1.2**
GRMC				*i*		19 58 13.5	
	comp=Z,460nm,0.3s						
CBRI	**Barrientos, No**	**0.96**	**17**	*e*P	**Pn**	**19 57 51.3**	**+1.2**
CBRI				*e*S	**Sn**	**19 58 08.6**	**-1.3**
CAPV	**Capacho**	**1.31**	**35**	↓*e*P	**Pn**	**19 57 54.7**	**+1.6**
CAPV				*e*S	**Sn**	**19 58 15.4**	**+0.1**
OCAC	**Ocana**	**1.46**	**351**	*e*P	**Pn**	**19 57 55.3**	**+0.9**
OCAC				*e*S	**Sn**	**19 58 17.2**	**-0.6**
OCAC				*i*		19 58 20.5	
	comp=Z,438nm,0.2s						
NORC	**Norcasia**	**2.16**	**236**	*e*P	**Pn**	**19 58 02.4**	**+0.5**
NORC				*e*S	**Sn**	**19 58 30.2**	**-0.8**
HELC	**Santa Helena**	**2.50**	**256**	*e*P	**Pn**	**19 58 08.1**	**+1.8**
HELC				*e*S	**Sn**	**19 58 38.6**	**-0.3**
HELC				*i*		19 58 47.1	
	comp=Z,114nm,0.4s						
VIGV	**El Vigia**	**2.65**	**40**	*e*P	**Pn**	**19 58 08.5**	**+0.7**
VIGV				*e*S	**Sn**	**19 58 40.5**	**-1.2**
SOCV	**Socops**	**2.66**	**56**	*e*P	**Pn**	**19 58 09.2**	**+1.4**
SOCV				*e*S	**Sn**	**19 58 40.8**	**-0.9**
DBBC	**Dabeiba**	**3.12**	**274**	*e*P	**Pn**	**19 58 14.0**	**+0.5**
TOLC	**Tolima**	**3.12**	**226**	*e*P	**Pn**	**19 58 16.1**	**+2.1**
PRAC	**Prado**	**3.54**	**211**	*e*P	**Pn**	**19 58 20.2**	**+1.2**
PRAC				*e*S	**Sn**	**19 59 01.3**	**-0.3**
ELOV	**Elorza**	**3.58**	**86**	*e*P	**Pn**	**19 58 19.9**	**+0.6**
VIRV	**Villa del Rosa**	**3.75**	**10**	*e*P	**Pn**	**19 58 21.7**	**+0.2**
VIRV				*e*S	**Sn**	**19 59 03.5**	**-2.8**
QARV	**Quebrada Arrib**	**4.23**	**36**	*e*P	**Pn**	**19 58 29.2**	**+1.4**
SANV	**Sanarito**	**4.42**	**52**	*e*P	**Pn**	**19 58 30.5**	**+0.1**
CURV	**Curarigua**	**4.45**	**44**	*e*P	**Pn**	**19 58 31.4**	**+0.7**
DABV	**Dabajuro**	**4.76**	**30**	*e*P	**Pn**	**19 58 34.9**	**+0.2**
TEPV	**Terepaima**	**4.97**	**50**	*e*P	**Pn**	**19 58 39.0**	**+1.5**
SIQV	**Siquisique**	**5.02**	**40**	*e*P	**Pn**	**19 58 37.9**	**-0.2**
BAUV	**El Baul**	**5.43**	**66**	*e*P	**Pn**	**19 58 44.2**	**+0.7**
MAPV	**Macapo**	**5.48**	**56**	*e*P	**Pn**	**19 58 45.2**	**+1.0**
MONV	**Montecano**	**5.98**	**31**	*e*P	**Pn**	**19 58 50.9**	**+0.1**
TURV	**Turiamo**	**6.33**	**55**	*e*P	**Pn**	**19 58 56.6**	**+1.2**
CUPV	**Cœpira**	**7.91**	**65**	*e*P	**Pn**	**19 59 16.3**	**-0.1**

*ISK **29** 19:59:17.8, 39°.12N×29°.04E, h5km, MD3.0*
*ISCJB **29** 19:59:18.4±0.4, 39°.11N±0°.03×29°.03E±0°.03, h9km, Error ellipse: s-maj=4.9km s-min=3.4km az=150.3*
*DDA **29** 19:59:18.7, 39°.07N×29°.00E, h7km, Ml3.0*
*CSEM **29** 19:59:18.1±0.1, 39°.11N×29°.04E, h2km, MD3.0, Error ellipse: s-maj=2.5km s-min=2.0km az=135.0*
ISC 29 19:59:18.5±0.8, 39°.12N±0°.03×29°.03E±0°.02, h9km, n66, σ0°63/74, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**253**	P	**Pg**	**19 59 23.3**	**-0.4**
DEMI				S	**Sg**	**19 59 26.8**	**-0.4**
DEMI	**Demirci**	**0.26**	**253**	*i* P	**Pg**	**19 59 23.3**	**-0.4**
DEMI				*i* S	**Sg**	**19 59 26.8**	**-0.4**
TVSB	**Tavsanli**	**0.47**	**45**	PG	**Pg**	**19 59 27.1**	**-0.7**
TVSB				SG	**Sg**	**19 59 33.4**	**-0.6**
TVSB	**Tavsanli**	**0.47**	**45**	*i* Pg	**Pg**	**19 59 27.1**	**-0.7**
TVSB				*i* Sg	**Sg**	**19 59 33.4**	**-0.6**
KULA	**Kula-Manisa**	**0.67**	**206**	*e*PG	**Pg**	**19 59 30.7**	**-0.7**
KULA	**Kula-Manisa**	**0.67**	**206**	*e*Pg	**Pg**	**19 59 30.7**	**-0.7**
KHL	**Karahalli**	**0.88**	**154**	*e*PG	**Pg**	**19 59 35.2**	**-0.3**
KHL	**Karahalli**	**0.88**	**154**	*e*Pg	**Pg**	**19 59 35.2**	**-0.3**
ORLT	**Orhaneli**	**0.93**	**354**	*e*PG	**Pg**	**19 59 36.0**	**-0.5**
ORLT	**Orhaneli**	**0.93**	**354**	*e*Pg	**Pg**	**19 59 36.0**	**-0.5**
AKHS	**Akhisar**	**0.98**	**256**	P	**Pg**	**19 59 37.1**	**-0.2**
AKHS				S	**Sb**	**19 59 50.5**	**-0.1**
AKHS	**Akhisar**	**0.98**	**256**	*i* P	**Pg**	**19 59 37.1**	**-0.2**
AKHS				*i* S	**Sb**	**19 59 50.5**	**-0.1**
AKS	**Akhisar**	**0.98**	**256**	*e*PG	**Pg**	**19 59 37.0**	**-0.3**
AKS	**Akhisar**	**0.98**	**256**	*e*Pg	**Pg**	**19 59 37.0**	**-0.3**
BALB	**Balikesir**	**1.03**	**301**	*e*PG	**Pg**	**19 59 37.9**	**-0.5**
BALB				*e*SG	**Sb**	**19 59 53.0**	**+0.8**
BALB	**Balikesir**	**1.03**	**301**	*e*Pg	**Pg**	**19 59 37.9**	**-0.5**
BALB				*e*Sg	**Sb**	**19 59 53.0**	**+0.8**
CAVI	**Cavuskoy**	**1.25**	**30**	*e*PN	**Pn**	**19 59 42.1**	**-0.1**
CAVI	**Cavuskoy**	**1.25**	**30**	*e*Pn	**Pn**	**19 59 42.1**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.25**	**355**	*e*PN	**Pn**	**19 59 42.2**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.25**	**355**	*e*Pn	**Pn**	**19 59 42.2**	**-0.1**
KCTX	**Karacabey (Bur**	**1.26**	**336**	*e*PN	**Pn**	**19 59 42.4**	**+0.1**
KCTX	**Karacabey (Bur**	**1.26**	**336**	*e*Pn	**Pn**	**19 59 42.4**	**+0.1**
IZI	**Iznik**	**1.27**	**16**	*e*PN	**Pn**	**19 59 42.4**	**-0.1**
IZI	**Iznik**	**1.27**	**16**	*e*Pn	**Pn**	**19 59 42.4**	**-0.1**
GEMT	**Gemlik**	**1.32**	**5**	*e*PN	**Pn**	**19 59 42.9**	**-0.3**
GEMT	**Gemlik**	**1.32**	**5**	*e*Pn	**Pn**	**19 59 42.9**	**-0.3**
GONE	**Gonen-Balikesi**	**1.39**	**312**	*e*PN	**Pn**	**19 59 44.3**	**+0.2**
GONE	**Gonen-Balikesi**	**1.39**	**312**	*e*Pn	**Pn**	**19 59 44.3**	**+0.2**
ADVT	**Abdulvahap**	**1.42**	**22**	*e*PN	**Pb**	**19 59 45.1**	**-0.1**
ADVT	**Abdulvahap**	**1.42**	**22**	*e*Pn	**Pb**	**19 59 45.1**	**-0.1**
ARMT	**Armutlu**	**1.45**	**355**	*e*PN	**Pn**	**19 59 44.6**	**-0.4**
ARMT	**Armutlu**	**1.45**	**355**	*e*Pn	**Pn**	**19 59 44.6**	**-0.4**
AYDB	**Zeytinkoy-Aydi**	**1.47**	**218

	1.5nm,0.8s,baz=346,slow=15,SNR=2.9						
CMAR	**Chiang Mai Arr**	**37.08 306**	P	**P**	**20 18 23.1**	**+1.0**
	1.6nm,1.1s,baz=136,slow=7.4,SNR=6.9					
KSRS	**Korea Array**	**40.11 358**	LR	LR	20 34 18.2	
	comp=Z,15nm,21.4s,baz=30,slow=34					
PETK	**Petropavlovsk-**	**60.43 19**	P	**P**	**20 21 24.0**	**+3.0**
	2.5nm,0.8s,baz=203,slow=14,SNR=3.0					
MKAR	**Makanchi Array**	**64.70 326**	P	**P**	**20 21 50.0**	**+0.3**
	1.0nm,0.7s,baz=117,slow=7.7,SNR=7.4					
TKM2	**Tokmak 2**	**66.72 320**	*e*P	**P**	**20 22 03.4**	**+0.4**
	1.9nm,0.9s					
EKS2	**Erkin-Say**	**67.79 319**	P	**P**	**20 22 10.8**	**+1.0**
	3.3nm,1.1s					
ZALV	**Zalesovo Beam**	**67.81 333**	P	**P**	**20 22 09.5**	**0.0**
	0.6nm,0.4s,baz=120,slow=5.7,SNR=8.4					
KURK	**Kurchatov**	**68.92 328**	*e*P	**P**	**20 22 15.2**	**-1.2**
	22nm,1.0s					
VNDA	**Vanda**	**76.58 173**	P	**P**	**20 23 01.9**	**+0.4**
	0.6nm,0.8s,baz=315,slow=10,SNR=3.4					
CPUP	**Villa Florida**	**150.19 167**	PKPbc	**PKPbc**	**20 31 03.8**	**+0.5**
	3.9nm,1.0s,baz=225,slow=2.9,SNR=3.7					

*IDC **29** 20:11:38.4±1.1,57°.42S×25°.88W,h0km,mb3.9/4, mb1 4.1/4,mb1mx3.8/24,mbtmp3.9/4,Error ellipse: s-maj=36.2km s-min=30.5km az=89.0*
*NEIC **29** 20:11:43.7±0.6,57°.38S×25°.94W,h35km,mb4.5/2,Error ellipse: s-maj=18.9km s-min=12.5km az=68.0*
*ISCJB **29** 20:11:45.5±1.0,57°.5S±0°.1×26°.1W±0°.3,h65km,mb4.0/5, Error ellipse: s-maj=23.9km s-min=15.5km az=150.4*
ISC 29 20:11:47.0±1.0,57°.5S±0°.1×26°.0W±0°.2,h65km,n16, σ0^{s}47/10,mb4.1/5,South Sandwich Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SNAA	**Sanae**	**17.16**	**155**	*e*P	**Pn**	**20 15 42.3**	**+0.1**
	18nm,0.3s						
PMSA	**Palmer Station**	**19.51**	**232**	*e*P	**P**	**20 16 08.3**	**-0.2**
	22nm,0.9s						
QSPA	**South Pole Qui**	**32.77**	**180**	*e*P	**P**	**20 18 13.3**	**-0.2**
	18nm,1.1s						
PLCA	**Paso Flores**	**32.92**	**281**	P	**P**	**20 18 15.7**	**+0.7**
	0.7nm,0.7s,baz=120,slow=5.0,SNR=3.6						
VNDA	**Vanda**	**45.18**	**182**	P	**P**	**20 19 56.7**	**+0.2**
	1.0nm,0.7s,baz=183,slow=4.9,SNR=8.8						
H10S2	**ASCENSION HYDR**	**49.19**	**15**	T	T	21 14 12.6	
	baz=188,slow=75,SNR=12						
H10S3	**ASCENSION HYDR**	**49.19**	**15**	T	T	21 14 10.9	
	baz=188,slow=75,SNR=14						
H10S1	**ASCENSION HYDR**	**49.21**	**15**	T	T	21 14 11.5	
	baz=188,slow=75,SNR=12						
H10N1	**ASCENSION HYDR**	**50.31**	**15**	T	T	21 15 34.5	
	baz=190,slow=72,SNR=5.4						
H10N3	**ASCENSION HYDR**	**50.31**	**15**	T	T	21 15 36.9	
	baz=190,slow=72,SNR=8.0						
H10N2	**ASCENSION HYDR**	**50.33**	**15**	T	T	21 15 36.3	
	baz=190,slow=72,SNR=9.4						
LPAZ	**La Paz**	**51.74**	**305**	P	**P**	**20 20 48.0**	**-0.4**
	1.7nm,0.6s,baz=190,slow=8.3,SNR=7.7						
TORD	**Torodi Ar. Bea**	**73.98**	**28**	P	**P**	**20 23 15.7**	**+0.4**
	1.3nm,0.5s,baz=198,slow=6.8,SNR=16						
YKA	**Yellowknife Ar**	**137.67**	**316**	PKP	**PKPdf**	**20 31 01.6**	**-0.4**
	0.6nm,0.7s,baz=134,slow=2.3,SNR=5.5						
INK	**Inuvik**	**147.32**	**319**	PKPbc	**PKPbc**	**20 31 21.0**	**-0.4**
	1.3nm,0.5s,baz=55,slow=2.8,SNR=5.0						
ILAR	**Eielson Array**	**151.55**	**309**	PKPbc	**PKPbc**	**20 31 31.5**	**-0.5**
	1.4nm,0.7s,baz=140,slow=1.7,SNR=13						

*ISK **29** 20:16:30.5,39°.11N×29°.02E,h7km,MD2.7*
*ISCJB **29** 20:16:31.3±0.6,39°.11N±0°.03×29°.02E±0°.04,h6km±6km, Error ellipse: s-maj=6.1km s-min=4.9km az=139.1*
*DDA **29** 20:16:31.4,39°.07N×29°.02E,h7km,Md2.3*
*CSEM **29** 20:16:31.4±0.1,39°.13N×28°.99E,h5km,MD2.3,Error ellipse: s-maj=2.7km s-min=2.1km az=104.0*
ISC 29 20:16:31.1±1.0,39°.09N±0°.03×29°.05E±0°.04,h12km±10km, n16,σ0^{s}42/28,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**260**	P	**Pg**	**20 16 36.7**	**+0.1**
DEMI				S	**Sg**	**20 16 40.0**	**-0.2**
DEMI	**Demirci**	**0.26**	**260**	*i* P	**Pg**	**20 16 36.7**	**+0.1**
DEMI				*i* S	**Sg**	**20 16 40.0**	**-0.2**
GDZ	**Gediz**	**0.34**	**90**	P	**Pb**	**20 16 38.9**	**-0.3**
GDZ				S	**Sb**	**20 16 43.8**	**-0.8**
GDZ	**Gediz**	**0.34**	**90**	*i* P	**Pb**	**20 16 38.9**	**-0.3**
GDZ				*i* S	**Sb**	**20 16 43.9**	**-0.8**
TVSB	**Tavsanli**	**0.48**	**42**	*e*PG	**Pg**	**20 16 40.8**	**+0.1**
TVSB				*e*SG	**Sg**	**20 16 47.2**	**+0.1**
TVSB	**Tavsanli**	**0.48**	**42**	*e*Pg	**Pg**	**20 16 40.8**	**+0.1**
TVSB				*e*Sg	**Sg**	**20 16 47.2**	**+0.1**
KULA	**Kula-Manisa**	**0.65**	**208**	*e*PG	**Pg**	**20 16 43.8**	**+0.1**
KULA				*e*SG	**Sb**	**20 16 53.0**	**-0.5**
KULA	**Kula-Manisa**	**0.65**	**208**	*e*Pg	**Pg**	**20 16 43.8**	**+0.1**
KULA				*e*Sg	**Sb**	**20 16 53.0**	**-0.5**
KHAL	**Karahalli**	**0.80**	**154**	P	**Pn**	**20 16 48.5**	**+0.2**
KHAL				S	**Sb**	**20 16 58.7**	**+0.9**
KHAL	**Karahalli**	**0.80**	**154**	*i* P	**Pn**	**20 16 48.5**	**+0.2**
KHAL				*i* S	**Sb**	**20 16 58.7**	**+0.9**
IZI	**Iznik**	**1.29**	**15**	*e*PN	**Pg**	**20 16 56.1**	**+0.2**
IZI	**Iznik**	**1.29**	**15**	*e*Pn	**Pg**	**20 16 56.1**	**+0.2**
KCTX	**Karacabey (Bur**	**1.29**	**336**	*e*PN	**Pn**	**20 16 55.2**	**+0.1**
KCTX				*e*SN	**Sg**	**20 17 13.0**	**+0.3**
KCTX	**Karacabey (Bur**	**1.29**	**336**	*e*Pn	**Pn**	**20 16 55.2**	**+0.1**
KCTX				*e*Sn	**Sg**	**20 17 13.0**	**+0.3**
ARMT	**Armutlu**	**1.48**	**355**	*e*PN	**Pn**	**20 16 57.9**	**+0.2**
ARMT	**Armutlu**	**1.48**	**355**	*e*Pn	**Pn**	**20 16 57.9**	**+0.2**

*ISCJB **29** 20:23:56.4±0.6,39°.11N±0°.04×29°.05E±0°.04,h6km±8km, Error ellipse: s-maj=6.9km s-min=5.4km az=157.8*
*CSEM **29** 20:23:56.4±0.1,39°.12N×29°.04E,h5km,MD2.3,Error ellipse: s-maj=2.1km s-min=1.5km az=126.0*
*ISK **29** 20:23:56.0,39°.11N×29°.07E,h8km,MD2.5*
*DDA **29** 20:23:56.3,39°.10N×29°.04E,h7km,Md2.3*
ISC 29 20:23:56.6±1.0,39°.10N±0°.03×29°.06E±0°.03,h10km±10km, n14,σ0^{s}30/23,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**258**	P	**Pg**	**20 24 02.0**	**-0.1**
DEMI				S	**Sg**	**20 24 05.7**	**-0.1**
DEMI	**Demirci**	**0.27**	**258**	*i* P	**Pg**	**20 24 02.0**	**-0.1**
DEMI				*i* S	**Sg**	**20 24 05.7**	**-0.1**
GDZ	**Gediz**	**0.33**	**92**	P	**Pg**	**20 24 03.2**	**0.0**
GDZ				S	**Sg**	**20 24 08.2**	**+0.6**
GDZ	**Gediz**	**0.33**	**92**	*i* P	**Pg**	**20 24 03.2**	**0.0**
GDZ				*i* S	**Sg**	**20 24 08.2**	**+0.6**
TVSB	**Tavsanli**	**0.47**	**42**	*e*PG	**Pg**	**20 24 05.5**	**-0.3**
TVSB				*e*SG	**Sg**	**20 24 11.9**	**-0.1**
TVSB	**Tavsanli**	**0.47**	**42**	*e*Pg	**Pg**	**20 24 05.5**	**-0.3**
TVSB				*e*Sg	**Sg**	**20 24 11.9**	**-0.1**
KULA	**Kula-Manisa**	**0.66**	**208**	*e*PG	**Pg**	**20 24 09.5**	**+0.1**
KULA	**Kula-Manisa**	**0.66**	**208**	*e*Pg	**Pg**	**20 24 09.5**	**+0.1**
KHAL	**Karahalli**	**0.81**	**155**	P	**Pb**	**20 24 12.6**	**-0.2**
KHAL				S	**Sb**	**20 24 23.7**	**-0.1**
KHAL	**Karahalli**	**0.81**	**155**	*i* P	**Pb**	**20 24 12.6**	**-0.2**
KHAL				*i* S	**Sb**	**20 24 23.7**	**-0.1**
KCTX	**Karacabey (Bur**	**1.28**	**335**	*e*PN	**Pb**	**20 24 20.9**	**0.0**
KCTX				*e*SN	**Sg**	**20 24 38.7**	**+0.8**
ARMT	**Armutlu**	**1.47**	**354**	*e*PN	**Pn**	**20 24 23.4**	**+0.1**
GULT	**Gulveren**	**1.74**	**40**	*e*PN	**Pn**	**20 24 27.1**	**0.0**
GULT	**Gulveren**	**1.74**	**40**	*e*Pn	**Pn**	**20 24 27.1**	**0.0**

*ISCJB **29** 20:28:24.0±0.3,44°.84N±0°.05×141°.60E±0°.07, h271km±3km,mb3.5/12,Error ellipse: s-maj=8.3km s-min=7.7km az=159.6*
*JMA **29** 20:28:24.3±0.2,44°.90N×141°.57E,h271km±2km,M3.4*
*IDC **29** 20:28:24.9±0.5,44°.91N×141°.54E,h265km±5km,mb3.3/12, mb1 3.5/18,mb1mx3.3/39,mbtmp3.9/18,Error ellipse: s-maj=13.1km s-min=10.4km az=117.0*
ISC 29 20:28:24.8±0.6,44°.80N±0°.06×141°.59E±0°.06,h268km±5km, n39,σ1^{s}07/50,mb3.6/12,Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JYG	**Yagishiri**	**0.39**	**197**	P	**Pn**	**20 28 59.8**	**+0.3**
JYG				*e*S	**S**	**20 29 26.5**	**-0.4**
JRR	**Rishiri**	**0.39**	**330**	P	**Pn**	**20 28 59.4**	**0.0**
JSS	**Shosan**	**0.44**	**155**	P	**Pn**	**20 29 00.1**	**+0.5**
JSS				*e*S	**S**	**20 29 27.9**	**+0.8**
JWK2	**Keihoku**	**0.56**	**23**	P	**Pn**	**20 28 59.4**	**-0.4**
JWK2				*e*S	**S**	**20 29 26.2**	**-1.3**
JSE	**Soyaes**	**0.72**	**77**	P	**Pn**	**20 29 00.2**	**-0.2**
JSE				*e*S	**S**	**20 29 27.4**	**-1.1**
ASAJ	**Asahikawa**	**0.99**	**133**	P	**Pn**	**20 29 02.0**	**+0.3**
	19nm,0.3s,baz=277,slow=8.2,SNR=113						
ASAJ				S	**S**	**20 29 31.6**	**+0.7**
	1.0nm,0.3s,baz=150,slow=33,SNR=6.0						
ASAJ	**Asahikawa**	**0.99**	**133**	P	**Pn**	**20 29 01.9**	**+0.2**
ASAJ				*e*S	**S**	**20 29 31.4**	**+0.5**
JHR	**Hokuryu**	**1.06**	**175**	P	**Pn**	**20 29 03.0**	**+0.9**
JKK2	**Kamakawa 2**	**1.24**	**138**	P	**Pn**	**20 29 03.6**	**+0.4**
JAB	**Ashibetsu**	**1.37**	**160**	P	**Pn**	**20 29 04.6**	**+0.6**
JMP	**Maruseppu**	**1.50**	**121**	P	**Pn**	**20 29 05.5**	**+0.7**
JSK	**Shakotan**	**1.65**	**209**	P	**Pn**	**20 29 06.4**	**+0.4**
JTKR	**Abashiri--Toko**	**1.86**	**116**	P	**Pn**	**20 29 08.2**	**+0.7**
JTKR				*e*S	**S**	**20 29 42.6**	**+1.2**
JEW	**Eniwo**	**1.96**	**183**	P	**Pn**	**20 29 09.4**	**+0.9**
JAR	**Ashorobuto**	**2.17**	**133**	P	**Pn**	**20 29 11.1**	**+0.8**
JAR				*e*S	**S**	**20 29 47.6**	**+1.2**
JCH	**Churui**	**2.53**	**149**	P	**Pn**	**20 29 12.7**	**-1.0**
JCH				*e*S	**S**	**20 29 49.6**	**-2.9**
JNBK	**Urakawa-nobuka**	**2.66**	**161**	P	**Pn**	**20 29 15.4**	**+0.5**
JNBK				*e*S	**S**	**20 29 53.8**	**-0.9**
JAK	**Akkeshi**	**2.88**	**128**	*e*S	**S**	**20 29 56.7**	**-2.0**
JKB	**Kayabe**	**2.94**	**188**	P	**Pn**	**20 29 17.5**	**-0.3**
JKB				*e*S	**S**	**20 29 57.7**	**-2.2**
JOSM	**Okushiri--Mats**	**3.12**	**210**	P	**Pn**	**20 29 19.7**	**0.0**
NEM2	**Nemuro 2**	**3.32**	**114**	*e*S	**S**	**20 30 04.5**	**-2.6**
USRK	**Ussuriysk Ar.**	**6.89**	**268**	P	**Pn**	**20 30 04.2**	**-0.1**
	1.0nm,0.3s,baz=79,slow=14,SNR=14						
KLR	**Kul'dur**	**8.05**	**307**	P	**Pn**	**20 30 18.4**	**-0.3**
	0.2nm,0.3s,baz=118,slow=14,SNR=4.8						
MJAR	**Matsushiro Arr**	**8.64**	**198**	P	**Pn**	**20 30 27.2**	**+1.0**
	0.4nm,0.3s,baz=13,slow=12,SNR=5.3						
PETK	**Petropavlovsk-**	**13.44**	**46**	P	**P**	**20 31 26.5**	**+0.4**
	0.7nm,0.3s,baz=230,slow=7.3,SNR=16						
MA2	**Magadan**	**15.81**	**17**	P	**P**	**20 31 51.9**	**-0.2**
	0.8nm,0.3s,baz=252,slow=10,SNR=5.8						
SEY	**Seymchan**	**19.20**	**15**	P	**P**	**20 32 27.8**	**-1.0**
	1.2nm,0.3s,baz=205,slow=7.9,SNR=34						
SONM	**Songino Array**	**24.37**	**290**	P	**P**	**20 33 19.9**	**+1.1**
	0.3nm,0.4s,baz=118,slow=8.3,SNR=3.0						
MKAR	**Makanchi Array**	**40.54**	**295**	P	**P**	**20 35 38.0**	**0.0**
	0.2nm,0.3s,baz=92,slow=11,SNR=3.6						
ILAR	**Eielson Array**	**43.02**	**37**	P	**P**	**20 35 56.8**	**-1.0**
	1.4nm,0.7s,baz=283,slow=7.9,SNR=19						
YKA	**Yellowknife Ar**	**57.11**	**32**	P	**P**	**20 37 42.8**	**-0.2**
	1.2nm,0.6s,baz=305,slow=6.7,SNR=15						
FINES	**FINESS Array B**	**62.06**	**331**	P	**P**	**20 38 15.5**	**-1.2**
	2.4nm,1.0s,baz=43,slow=6.5,SNR=4.5						
WRA	**Warramunga Arr**	**64.77**	**188**	P	**P**	**20 38 35.1**	**+0.3**
	0.6nm,0.5s,baz=4.7,slow=6.8,SNR=18						
AKASG	**Malin Array Be**	**68.30**	**321**	P	**P**	**20 38 55.7**	**-1.1**
	0.5nm,0.4s,baz=40,slow=5.8,SNR=3.5						
ASAR	**Alice Springs**	**68.49**	**188**	P	**P**	**20 38 59.9**	**+1.6**
	1.1nm,0.6s,baz=6.5,slow=6.0,SNR=20						
NVAR	**Mina Array Bea**	**70.33**	**55**	P	**P**	**20 39 11.7**	**+1.9**
	1.1nm,0.6s,baz=318,slow=5.5,SNR=4.7						
PDAR	**Pinedale Array**	**72.20**	**47**	P	**P**	**20 39 21.4**	**+0.5**
	1.2nm,0.6s,baz=260,slow=1.5,SNR=16						
ULM	**Lac du Bonnet**	**72.99**	**34**	P	**P**	**20 39 24.8**	**-0.2**
	3.0nm,0.5s,baz=315,slow=7.1,SNR=4.0						
TXAR	**Lajitas Array**	**85.29**	**53**	P	**P**	**20 40 33.0**	**+1.1**
	0.2nm,0.7s,baz=339,slow=2.2,SNR=2.9						

SJA 29 20:29:05.7±0.8,32°.94S×67°.71W,h170km±6km,ML3.4, MW3.5,4D,Mendoza Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ACAN	**Cantantal**	**0.80**	**33**	*e*P	Pn	20 29 31.9	+0.8
RTCV	**Cerro Valdivia**	**1.29**	**326**	*e*P	Pn	20 29 35.5	+0.6
RTCV				*e*S	Sn	20 29 57.2	-0.2
SJA	**San Juan**	**1.58**	**333**	‖*e*P	Pn	20 29 38.5	+0.7
SJA				‖*e*S	Sn	20 30 02.6	+0.1
AUSP	**Uspallata**	**1.59**	**296**	*e*P	Pn	20 29 39.3	+1.3
AUSP				‖*e*S	Sn	20 30 03.3	+0.3
RTLL	**Cerro Villicun**	**1.73**	**338**	*e*P	Pn	20 29 39.7	+0.4
RTLL				‖*e*S	Sn	20 30 05.2	0.0
MRA	**San Martin**	**1.75**	**73**	*e*P	Pn	20 29 39.9	+0.3
MRA				IAML		20 30 09.2	
	comp=Z,57nm,0.5s						
RTLS	**Leoncito**	**1.76**	**310**	*e*P	Pn	20 29 41.1	+1.2
RTLS				*e*S	Sn	20 30 06.8	+0.6
AMOG	**MOGNA**	**2.11**	**341**	*e*P	Pn	20 29 44.0	+0.6
ROC1	**El Roble**	**2.78**	**268**	*e*P	Pn	20 29 51.8	+0.3
ROC1				*e*S	Sn	20 30 27.2	+0.3
TCA	**Tanti**	**3.08**	**60**	*e*P	Pn	20 29 54.4	-0.6
TCA				*e*S	Sn	20 30 29.1	-4.3
TCA				IAML		20 30 30.4	
	comp=Z,35nm,0.3s						
AGUA	**GUANDACOL**	**3.51**	**349**	*e*P	Pn	20 30 01.2	+0.8
VCA	**Vinchina**	**4.21**	**354**	*e*P	Pn	20 30 11.1	+1.6
VCA				*e*S	Sn	20 30 58.0	-1.3
VCA				IAML		20 31 01.7	
	comp=Z,117nm,0.6s						
CYA	**Choya**	**4.78**	**21**	*e*P	Pn	20 30 14.7	-1.9
CYA				IAML		20 31 10.0	
	comp=Z,40nm,0.5s						

*CSEM **29** 20:38:02.6,38°.00N×22°.78E,h25km,ML1.4/14*
ATH 29 20:38:02.6,38°.00N×22°.78E,h25km±1km,ML1.4/14,Error ellipse: s-maj=1.1km s-min=0.7km az=155.0,Southern Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LTK	**Loutraki**	**0.15**	**79**	P	Pb	20 38 07.2	-0.5
LTK				S	Sb	20 38 09.5	-1.7
LTK	**Loutraki**	**0.15**	**79**	P	Pb	20 38 07.2	-0.5
LTK				S	Sb	20 38 09.5	-1.7
LTK				AML	AML	20 38 11.2	
	comp=E,243μm,0.3s						
LTK				AML	AML	20 38 12.4	
	comp=N,240μm,0.2s						
DSF	**Desfina**	**0.46**	**334**	P	Pb	20 38 12.2	0.0
DSF				S	Sb	20 38 18.5	-0.3
DSF	**Desfina**	**0.46**	**334**	P	Pb	20 38 12.2	0.0
DSF				S	Sb	20 38 18.4	-0.3
DSF				AML	AML	20 38 20.4	
	comp=E,129μm,0.1s						
DSF				AML	AML	20 38 21.8	
	comp=N,147μm,0.1s						
KLV	**Kalavryta, Ach**	**0.50**	**276**	P	Pb	20 38 12.0	-0.8
KLV				S	Sb	20 38 19.6	-0.2
KLV	**Kalavryta, Ach**	**0.50**	**276**	P	Pb	20 38 12.0	-0.8
KLV				S	Sb	20 38 19.6	-0.2
DID	**Didima**	**0.61**	**143**	P	Pn	20 38 15.5	-0.2
DID				S	Sn	20 38 24.0	-0.7
DID	**Didima**	**0.61**	**143**	P	Pn	20 38 15.5	-0.2
DID				S	Sn	20 38 24.0	-0.7
DID				AML	AML	20 38 25.9	
	comp=E,123μm,0.3s						
DID				AML	AML	20 38 26.6	
	comp=N,68μm,0.3s						
LKR	**Lokris**	**0.68**	**15**	P	Pn	20 38 16.5	-0.1
LKR				S	Sn	20 38 26.9	+0.5
LKR	**Lokris**	**0.68**	**15**	P	Pn	20 38 16.5	-0.1
LKR				S	Sn	20 38 26.9	+0.5
LKR				AML	AML	20 38 29.9	
	comp=E,397μm,0.3s						
LKR				AML	AML	20 38 30.6	
	comp=N,227μm,0.2s						
KRND	**KRANIDI**	**0.68**	**154**	P	Pn	20 38 16.6	0.0
KRND				S	Sb	20 38 25.5	+0.7
KRND	**KRANIDI**	**0.68**	**154**	P	Pn	20 38 16.6	0.0
KRND				S	Sb	20 38 25.4	+0.7
KRND				AML	AML	20 38 27.5	
	comp=N,97μm,0.4s						
KRND				AML	AML	20 38 30.7	
	comp=E,91μm,0.3s						
VLX	**Vlachokerasia**	**0.70**	**207**	P	Pn	20 38 16.7	-0.3
VLX				S	Sb	20 38 25.4	-0.1
VLX	**Vlachokerasia**	**0.70**	**207**	P	Pn	20 38 16.7	-0.3
VLX				S	Sb	20 38 25.4	-0.2
VLX				AML	AML	20 38 27.9	
	comp=N,73μm,0.4s						
VLX				AML	AML	20 38 28.0	
	comp=E,102μm,0.3s						
SERG	**Sergoula**	**0.71**	**306**	P	Pb	20 38 16.5	+0.2
EFP	**Efpalio**	**0.81**	**302**	P	Pn	20 38 19.2	+0.7
EFP	**Efpalio**	**0.81**	**302**	P	Pn	20 38 19.2	+0.8
VLY	**Voula,Athens**	**0.81**	**100**	P	Pn	20 38 18.9	+0.4
VLY				S	Sn	20 38 30.6	+0.8
VLY	**Voula,Athens**	**0.81**	**100**	P	Pn	20 38 18.9	+0.4
VLY				S	Sn	20 38 30.6	+0.8
VLY				AML	AML	20 38 34.4	
	comp=E,45μm,0.4s						
VLY				AML	AML	20 38 34.7	
	comp=N,38μm,0.4s						
DRO	**Drossia**	**0.85**	**267**	P	Pn	20 38 19.7	+0.7
DRO				S	Sn	20 38 31.2	+0.6
DRO	**Drossia**	**0.85**	**267**	P	Pn	20 38 19.7	+0.8
DRO				S	Sn	20 38 31.2	+0.6
DRO				AML	AML	20 38 34.6	
	comp=N,60μm,0.2s						
DRO				AML	AML	20 38 38.0	
	comp=E,49μm,0.3s						
ANX	**Ano Chora**	**0.90**	**312**	P	Pn	20 38 20.8	+1.0
ANX	**Ano Chora**	**0.90**	**312**	P	Pn	20 38 20.8	+0.9
AMT	**Artemida-Makis**	**0.97**	**242**	P	Pn	20 38 19.6	-1.0
AMT				S	Sn	20 38 34.8	+1.2
AMT	**Artemida-Makis**	**0.97**	**242**	P	Pn	20 38 19.6	-1.0
AMT				S	Sn	20 38 34.8	+1.2
AMT				AML	AML	20 38 39.6	
	comp=E,32μm,0.6s						
AMT				AML	AML	20 38 42.1	
	comp=N,37μm,0.4s						
ITM	**Ithomi**	**1.06**	**220**	P	Pb	20 38 22.9	+0.6
ITM				S	Sn	20 38 37.8	+2.0
ITM	**Ithomi**	**1.06**	**220**	P	Pb	20 38 22.9	+0.6
ITM				S	Sn	20 38 37.8	+2.0
ITM				AML	AML	20 38 42.5	
	comp=E,25μm,1.1s						
ITM				AML	AML	20 38 42.8	
	comp=N,17μm,0.4s						
AGG	**Agios Georgios**	**1.08**	**341**	P	Pb	20 38 24.0	+1.3
AGG				S	Sn	20 38 38.5	+2.0
AGG	**Agios Georgios**	**1.08**	**341**	P	Pb	20 38 24.0	+1.3
AGG				S	Sn	20 38 38.5	+1.9
AXS	**Araxos**	**1.12**	**281**	P	Pb	20 38 25.0	+1.6
AXS				S	Sb	20 38 41.4	+3.8
AXS	**Araxos**	**1.12**	**281**	P	Pb	20 38 25.0	+1.7
AXS				S	Sb	20 38 41.4	+3.8
VLI	**Veliai**	**1.28**	**174**	P	Pb	20 38 26.4	+0.4
VLI				S	Sb	20 38 44.2	+2.2
VLI	**Veliai**	**1.28**	**174**	P	Pb	20 38 26.4	+0.4
VLI				S	Sb	20 38 44.2	+2.2
VLI				AML	AML	20 38 47.7	
	comp=E,19μm,0.7s						
VLI				AML	AML	20 38 50.3	
	comp=N,17μm,0.7s						
PYL	**PYLOS**	**1.37**	**217**	P	Pb	20 38 28.6	+1.0
PYL	**PYLOS**	**1.37**	**217**	P	Pb	20 38 28.6	+1.0
PDO	**Prodromos**	**1.39**	**296**	P	Pb	20 38 28.6	+0.7
PDO				S	Sb	20 38 46.5	+1.2
PDO	**Prodromos**	**1.39**	**296**	P	Pb	20 38 28.6	+0.6
PDO				S	Sb	20 38 46.5	+1.1
PDO				AML	AML	20 38 55.7	
	comp=E,19μm,0.4s						
PDO				AML	AML	20 38 56.2	
	comp=N,19μm,0.6s						
XOR	**Xorichti**	**1.41**	**13**	P	Pb	20 38 28.7	+0.5
XOR				S	Sb	20 38 47.3	+1.6
XOR	**Xorichti**	**1.41**	**13**	P	Pb	20 38 28.7	+0.5
XOR				S	Sb	20 38 47.3	+1.6
XOR				AML	AML	20 38 53.6	
	comp=E,14μm,0.7s						
XOR				AML	AML	20 38 53.9	
	comp=N,18μm,0.6s						
AOS	**Alonnisos**	**1.46**	**36**	P	Pb	20 38 28.2	-0.8
AOS				S	Sb	20 38 48.5	+1.4
AOS	**Alonnisos**	**1.46**	**36**	P	Pn	20 38 28.2	+0.8
AOS				S	Sb	20 38 48.5	+1.4
AOS				AML	AML	20 38 56.0	
	comp=N,22μm,1.0s						
AOS				AML	AML	20 38 56.0	
	comp=E,11μm,0.6s						

DDA 29 20:38:03.8,39°.08N×29°.03E,h7km,Md2.1,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**261**	*i* P	Pg	20 38 09.2	+0.5
DEMI				*i* S	Sg	20 38 12.7	+0.6
GDZ	**Gediz**	**0.35**	**89**	*i* P	Pg	20 38 11.0	+0.3
GDZ				*i* S	Sg	20 38 16.0	+0.7
KHAL	**Karahalli**	**0.80**	**153**	*i* P	Pb	20 38 20.1	+0.1
KHAL				*i* S	Sb	20 38 30.4	-0.6

*DDA **29** 20:41:09.7,39°.13N×29°.10E,h7km,Md2.4*
*ISK **29** 20:41:09.4,39°.07N×29°.20E,h6km,MD2.6*
*ISCJB **29** 20:41:10.1±0.6,39°.10N±0°.04×29°.12E±0°.04,h9km,Error ellipse: s-maj=5.8km s-min=4.6km az=152.5*
*CSEM **29** 20:41:10.1±0.1,39°.10N×29°.12E,h5km,MD2.4,Error ellipse: s-maj=3.2km s-min=2.5km az=115.0*
**ISC 29 20:41:10.2

BALB				*e*SN		**Sn**	**20 48 34.6 +0.6**
BALB	**Balikesir**	**1.06**	**301**	*e*Pn		**Pn**	**20 48 19.3 +0.1**
IGD	**Bursa**	**1.17**	**5**	*i* P		**Pn**	**20 48 20.7 0.0**
IGD				*i* S		**Sn**	**20 48 36.3 -0.3**
CAVI	**Cavuskoy**	**1.26**	**28**	*e*PN		**Pn**	**20 48 21.8 0.0**
CAVI	**Cavuskoy**	**1.26**	**28**	*e*Pn		**Pn**	**20 48 21.8 0.0**
MDNY	**Mudanya-Bursa**	**1.27**	**354**	*e*PN		**Pg**	**20 48 22.7 -0.1**
MDNY	**Mudanya-Bursa**	**1.27**	**354**	*e*Pn		**Pg**	**20 48 22.7 -0.1**
IZI	**Iznik**	**1.28**	**14**	*e*PN		**Pb**	**20 48 22.5 0.0**
IZI	**Iznik**	**1.28**	**14**	*e*Pn		**Pb**	**20 48 22.5 0.0**
KCTX	**Karacabey (Bur**	**1.28**	**335**	*e*PN		**Pg**	**20 48 23.1 +0.2**
KCTX	**Karacabey (Bur**	**1.28**	**335**	*e*Pn		**Pg**	**20 48 23.2 +0.2**
BORA	**Eskisehir**	**1.33**	**54**	P		**Pn**	**20 48 23.0 0.0**
BORA				S		**Sg**	**20 48 41.6 +0.4**
BORA	**Eskisehir**	**1.33**	**54**	*i* P		**Pn**	**20 48 23.0 0.0**
BORA				*i* S		**Sg**	**20 48 41.6 +0.4**
GONE	**Gonen-Balikesi**	**1.42**	**312**	*e*PN		**Pg**	**20 48 25.3 -0.3**
GONE	**Gonen-Balikesi**	**1.42**	**312**	*e*Pn		**Pg**	**20 48 25.3 -0.3**
ESKT	**Eskisehir**	**1.45**	**73**	*i* P		**Pn**	**20 48 24.2 -0.4**
ESKT				*i* S		**Sg**	**20 48 45.0 0.0**
SEYT	**Eskypehyr**	**1.45**	**73**	P		**Pn**	**20 48 24.2 -0.4**
SEYT				S		**Sg**	**20 48 45.0 0.0**
ARMT	**Armutlu**	**1.47**	**354**	*e*PN		**Pb**	**20 48 25.7 0.0**
ARMT	**Armutlu**	**1.47**	**354**	*e*Pn		**Pb**	**20 48 25.7 0.0**
EDC	**Edincik**	**1.55**	**324**	*e*PN		**Pb**	**20 48 27.1 0.0**
EDC	**Edincik**	**1.55**	**324**	*e*Pn		**Pb**	**20 48 27.1 0.0**
GULT	**Gulveren**	**1.74**	**40**	*e*PN		**Pn**	**20 48 29.3 +0.7**
GULT	**Gulveren**	**1.74**	**40**	*e*Pn		**Pn**	**20 48 29.3 +0.7**
HRT	**Hereke**	**1.78**	**15**	*e*PN		**Pb**	**20 48 30.2 -0.8**
HRT	**Hereke**	**1.78**	**15**	*e*Pn		**Pb**	**20 48 30.2 -0.8**
SVRH	**Sivrihisar-ESK**	**1.94**	**79**	*e*PN		**Pn**	**20 48 32.4 +1.0**
SVRH	**Sivrihisar-ESK**	**1.94**	**79**	*e*Pn		**Pn**	**20 48 32.4 +1.0**

IDC 29 20:48:15.0±1.8, 0°.75N×126°.66E, h0km, mb3.6/4, mb1 3.7/4, mb1mx3.4/39, mbtmp3.6/4, MS3.7/1, Ms1 3.7/1, ms1mx2.6/33, Error ellipse: s-maj=166.8km s-min=22.3km az=65.0, Northern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**21.90**	**160**	P	P	20 53 09.6	-0.3
	0.4nm,0.4s,baz=340,slow=10,SNR=9.0						
ASAR	**Alice Springs**	**25.27**	**164**	P	P	20 53 42.4	-0.8
	0.4nm,0.5s,baz=343,slow=11,SNR=6.0						
STKA	**Stephens Creek**	**35.40**	**158**	P	P	20 55 13.9	+1.2
	1.0nm,0.7s,baz=324,slow=8.9,SNR=3.7						
RPZ	**Rata Peaks**	**59.40**	**144**	LR	LR	21 27 45.7	
	comp=Z,58nm,18.6s,baz=197,slow=40						
MKAR	**Makanchi Array**	**59.96**	**326**	P	P	20 58 23.1	-0.1
	0.8nm,0.4s,baz=126,slow=8.0,SNR=18						

IDC 29 20:52:14.0±2.9, 30°.42N×139°.04E, h0km, mb3.6/3, mb1 3.8/4, mb1mx3.4/46, mbtmp3.7/4, ML4.0/1, Error ellipse: s-maj=108.7km s-min=27.6km az=74.0, Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KLR	**Kul'dur**	**19.59**	**346**	P	Pn	20 56 44.5	-0.3
	0.4nm,0.3s,baz=158,slow=11,SNR=5.5						
SONM	**Songino Array**	**30.42**	**314**	P	P	20 58 28.2	0.0
	0.5nm,0.6s,baz=98,slow=7.4,SNR=4.0						
MKAR	**Makanchi Array**	**46.26**	**307**	P	P	21 00 40.5	-0.6
	0.8nm,0.6s,baz=88,slow=9.5,SNR=7.2						
WRA	**Warramunga Arr**	**50.27**	**186**	P	P	21 01 12.3	0.0
	0.2nm,0.4s,baz=6.6,slow=7.7,SNR=6.4						

*ISCJB **29** 20:58:07.7±0.5, 39°.09N±0°.04×29°.02E±0°.04, h3km±8km, Error ellipse: s-maj=6.7km s-min=4.6km az=171.3*
*DDA **29** 20:58:07.5, 39°.10N×29°.02E, h7km, Md2.4*
*ISK **29** 20:58:07.4, 39°.09N×29°.06E, h6km, MD2.8*
*CSEM **29** 20:58:07.9±0.1, 39°.10N×29°.02E, h5km, MD2.4, Error ellipse: s-maj=2.1km s-min=1.8km az=143.0*

ISC 29 20:58:07.9±0.9, 39°.10N±0°.03×29°.02E±0°.02, h10km±9km, n33, σ0°30/44, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**257**	P	**Pg**	**20 58 12.8**	**0.0**
DEMI				S	**Sg**	**20 58 16.3**	**+0.2**
DEMI	**Demirci**	**0.24**	**257**	*i* P	**Pg**	**20 58 12.8**	**0.0**
DEMI				*i* S	**Sg**	**20 58 16.3**	**+0.2**
GDZ	**Gediz**	**0.36**	**91**	P	**Pg**	**20 58 15.1**	**0.0**
GDZ				S	**Sg**	**20 58 20.2**	**+0.3**
GDZ	**Gediz**	**0.36**	**91**	*i* P	**Pg**	**20 58 15.1**	**0.0**
GDZ				*i* S	**Sg**	**20 58 20.2**	**+0.3**
TVSB	**Tavsanli**	**0.49**	**44**	*e*PG	**Pg**	**20 58 17.3**	**-0.3**
TVSB				*e*SG	**Sg**	**20 58 24.0**	**-0.1**
TVSB	**Tavsanli**	**0.49**	**44**	*e*Pg	**Pg**	**20 58 17.3**	**-0.3**
TVSB				*e*Sg	**Sg**	**20 58 24.0**	**-0.1**
KULA	**Kula-Manisa**	**0.64**	**206**	*e*PG	**Pg**	**20 58 20.5**	**+0.1**
KULA	**Kula-Manisa**	**0.64**	**206**	*e*Pg	**Pg**	**20 58 20.5**	**+0.1**
KHAL	**Karahalli**	**0.81**	**153**	P	**Pb**	**20 58 23.8**	**-0.4**
KHAL				S	**Sg**	**20 58 34.5**	**+0.2**
KHAL	**Karahalli**	**0.81**	**153**	*i* P	**Pb**	**20 58 23.8**	**-0.4**
KHAL				*i* S	**Sg**	**20 58 34.5**	**+0.2**
AKS	**Akhisar**	**0.96**	**257**	*e*PG	**Pg**	**20 58 26.4**	**0.0**
AKS	**Akhisar**	**0.96**	**257**	*e*Pg	**Pg**	**20 58 26.4**	**0.0**
BALB	**Balikesir**	**1.03**	**302**	*e*PG	**Pn**	**20 58 28.4**	**-0.1**
BALB	**Balikesir**	**1.03**	**302**	*e*Pg	**Pn**	**20 58 28.4**	**-0.1**
IGD	**Bursa**	**1.18**	**7**	*i* P	**Pb**	**20 58 29.5**	**-0.8**
IGD				*i* S	**Sn**	**20 58 46.6**	**+0.1**
KCTX	**Karacabey (Bur**	**1.27**	**337**	*e*PN	**Pg**	**20 58 32.7**	**+0.3**
KCTX	**Karacabey (Bur**	**1.27**	**337**	*e*Pn	**Pg**	**20 58 32.7**	**+0.3**
CAVI	**Cavuskoy**	**1.27**	**30**	*e*PN	**Pn**	**20 58 31.7**	**-0.2**
CAVI	**Cavuskoy**	**1.27**	**30**	*e*Pn	**Pn**	**20 58 31.7**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.27**	**355**	*e*PN	**Pg**	**20 58 32.4**	**0.0**
MDNY	**Mudanya-Bursa**	**1.27**	**355**	*e*Pn	**Pg**	**20 58 32.4**	**0.0**
IZI	**Iznik**	**1.29**	**16**	*e*PN	**Pg**	**20 58 32.6**	**0.0**
IZI	**Iznik**	**1.29**	**16**	*e*Pn	**Pg**	**20 58 32.7**	**0.0**
BORA	**Eskisehir**	**1.36**	**54**	P	**Pb**	**20 58 33.4**	**-0.1**
BORA				S	**Sg**	**20 58 52.4**	**+0.7**
BORA	**Eskisehir**	**1.36**	**54**	*i* P	**Pb**	**20 58 33.4**	**-0.1**
BORA				*i* S	**Sg**	**20 58 52.4**	**+0.7**
ADVT	**Abdulvahap**	**1.45**	**22**	*e*PN	**Pb**	**20 58 34.7**	**-0.3**
ADVT	**Abdulvahap**	**1.45**	**22**	*e*Pn	**Pb**	**20 58 34.7**	**-0.3**
ARMT	**Armutlu**	**1.47**	**355**	*e*PN	**Pb**	**20 58 34.9**	**-0.5**
ARMT	**Armutlu**	**1.47**	**355**	*e*Pn	**Pb**	**20 58 34.9**	**-0.5**
EDC	**Edincik**	**1.53**	**325**	*e*PN	**Pb**	**20 58 36.4**	**0.0**
EDC	**Edincik**	**1.53**	**325**	*e*Pn	**Pb**	**20 58 36.4**	**0.0**
GULT	**Gulveren**	**1.77**	**40**	*e*PN	**Pn**	**20 58 39.0**	**+0.3**
GULT	**Gulveren**	**1.77**	**40**	*e*Pn	**Pn**	**20 58 39.0**	**+0.3**

*ISCJB **29** 20:59:04.1±0.3, 5°.02S±0°.05×68°.53E±0°.04, h13km, mb4.6/84, MS4.5/49, Error ellipse: s-maj=6.9km s-min=5.5km az=21.2*
*IDC **29** 20:59:04.6±0.5, 4°.89S×68°.53E, h0km, mb4.2/31, mb1 4.3/32, mb1mx4.2/54, mbtmp4.2/32, ML5.0/1, MS4.5/32, Ms1 4.5/32, ms1mx4.5/34, Error ellipse: s-maj=16.3km s-min=13.0km az=10.0*
*MOS **29** 20:59:04.7±1.5, 4°.81S×68°.62E, h10km, mb5.1/31, MS4.5/7, Error ellipse: s-maj=9.9km s-min=6.4km az=94.2*
*NEIC **29** 20:59:05.8±0.3, 4°.91S×68°.61E, h10km, mb4.9/24, Error ellipse: s-maj=9.7km s-min=7.8km az=192.0*
*GCMT **29** 20:59:05.8±0.1, 4°.93S×68°.51E, h12km, MW5.3/119, Moment Tensor Solution. s81,c116; s119,c232; Duration: 1s1 Moment tensor: Scale 1017Nm; Mrr-0.28±.02; Mθθ-1.06±.02; Mφφ1.34±.02; Mrθ-0.26±.05; Mθφ-0.22±.02; Mφr0.04±.04; Best double couple: Mo1.25900×1017 NP1:φs131.00000°, δ80.00000°, λ-167.00000°. NP2:φs39.00000°, δ77.00000°, λ-10.00000°. Principal axes: T 1.3620, Plg2.0000°, Azm265.0000°; N -0.2090, Plg73.0000°, Azm167.0000°; P -1.1550, Plg16.0000°, Azm355.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*

ISC 29 20:59:06.3±0.4, 4°.91S±0°.05×68°.61E±0°.05, h13km, n222, σ2°10/214, mb4.7/88, MS4.6/50, 17C-5D, Chagos Archipelago region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08N2	**Diego Garcia H**	**2.76**	**121**	T	T	21 02 53.3	
	baz=303,slow=75						
H08N3	**Diego Garcia H**	**2.77**	**121**	T	T	21 02 41.4	
	baz=303,slow=75						
H08N1	**Diego Garcia H**	**2.78**	**121**	T	T	21 02 43.9	
	baz=303,slow=75,SNR=178						
DGAR	**Diego Garcia**	**4.56**	**123**	*e*P	**Pn**	**21 00 11.6**	**-3.4**
DGAR				*e*		21 01 06.5	
DGAR	**Diego Garcia**	**4.56**	**123**	*e*Pn	**Pn**	**21 00 11.6**	**-3.4**
DGAR				*e*Sn	**Sn**	**21 01 06.5**	**-1.4**
H08S3	**Diego Garcia H**	**4.70**	**125**	T	T	21 05 04.0	
	baz=311,slow=74,SNR=265						
H08S1	**Diego Garcia H**	**4.70**	**125**	T	T	21 05 03.7	
	baz=311,slow=74,SNR=352						
H08S2	**Diego Garcia H**	**4.72**	**125**	T	T	21 05 03.0	
	baz=311,slow=74,SNR=371						
PALK	**Pallekele**	**17.09**	**45**	Pn	**P**	**21 03 07.3**	**+0.4**
	5.6nm,0.3s,baz=296,slow=7.0,SNR=52						
PALK				Sn	**Sn**	**21 06 06.3**	**-9.0**
	0.5nm,0.3s,baz=116,slow=12,SNR=4.5						
PALK				LR	LR	21 08 13.1	
	comp=Z,4μm,18.9s,baz=118,slow=32						
BOM	**Bombay**	**24.02**	**10**	*e*P	**P**	**21 04 17.3**	**-3.8**
BOM				*e*S	**S**	**21 08 33.1**	**-4.9**
BOM				AMS	AMS	21 11 22.1	
	comp=Z,216nm,17.8s						
HYB	**Hyderabad**	**24.26**	**24**	*i* P	**P**	**21 04 25.0**	**+1.5**
HYB				*e*S	**S**	**21 08 44.0**	**+1.9**
OPO	**Ambohidratompo**	**24.94**	**235**	LR	LR	21 12 10.8	
	comp=Z,1μm,20.2s,baz=53,slow=32						
WSAR	**Wadi Sarin**	**29.63**	**341**	LR	LR	21 14 14.8	
	comp=Z,2μm,21.4s,baz=167,slow=31						
ATD	**Arta Tunnel**	**30.39**	**303**	LR	LR	21 14 47.3	
	comp=Z,1μm,21.5s,baz=112,slow=31						
KMBO	**Kilima Mbogo**	**31.53**	**276**	P	**P**	**21 05 27.1**	**-1.8**
	comp=Z,0.5nm,0.3s,baz=47,slow=12,SNR=4.5						
KMBO				LR	LR	21 15 49.3	
	comp=Z,1μm,21.6s,baz=90,slow=32						
KMBO	**Kilima Mbogo**	**31.53**	**276**	*ce*P	**P**	**21 05 29.6**	**+0.7**
KMBO				pmax	pmax		
	comp=Z,1.0nm,0.3s						
KOLN	**Koldanda**	**35.57**	**23**	*e*P	**P**	**21 06 03.9**	**+0.1**
	comp=Z,27nm,1.2s						
PYUN	**Piuthan**	**35.63**	**22**	*e*P	**P**	**21 06 04.9**	**+0.5**
	comp=Z,94nm,1.2s						
MYKOM	**Kota Tinggi**	**35.83**	**80**	*e*P	**P**	**21 06 07.6**	**+1.6**
	comp=Z,7.5nm,0.9s						
DMN	**Daman**	**36.04**	**25**	*e*P	**P**	**21 06 08.7**	**+0.7**
	comp=Z,72nm,0.9s						
PKIN	**Phulchoki**	**36.14**	**26**	*e*P	**P**	**21 06 08.7**	**-0.1**
	comp=Z,15nm,0.8s						
GKN	**Gorkha**	**36.19**	**24**	*e*P	**P**	**21 06 08.5**	**-0.6**
	comp=Z,98nm,1.1s						
KKN	**Kakani**	**36.28**	**25**	*e*P	**P**	**21 06 10.4**	**+0.5**
	comp=Z,48nm,1.0s						
GUN	**Gumba**	**36.64**	**26**	*e*P	**P**	**21 06 12.7**	**-0.5**
	comp=Z,87nm,1.0s						
THN	**Thein Dam**	**37.75**	**10**	*e*P	**P**	**21 06 20.2**	**-1.9**
CM01	**Chiang Mai Arr**	**37.85**	**51**	*e*P	**P**	**21 06 23.4**	**+0.2**
CMAR	**Chiang Mai Arr**	**37.86**	**51**	P	**P**	**21 06 23.7**	**+0.4**
	comp=Z,1.6nm,0.8s,baz=242,slow=9.0,SNR=7.6						
CMAR				PcP	**PcP**	**21 08 39.8**	**+0.1**
	comp=Z,0.6nm,0.8s,baz=246,slow=3.8,SNR=3.5						
CMAR				LR	LR	21 21 23.0	
	comp=Z,814nm,18.2s,baz=234,slow=35						
CHTO	**Chiang Mai**	**38.06**	**51**	P	**P**	**21 06 27.2**	**+2.2**
	comp=Z,42nm,2.0s						
CHTO	**Chiang Mai**	**38.06**	**51**	*e*P	**P**	**21 06 24.0**	**-1.0**
CHTO				pmax	pmax		
	comp=Z,14nm,1.1s						
CHTO	**Chiang Mai**	**38.06**	**51**	*e*P	**P**	**21 06 24.0**	**-1.0**
	comp=Z,14nm,1.1s						
CMMT	**Chiang Mai**	**38.07**	**51**	P	**P**	**21 06 27.1**	**+2.1**
	comp=Z,13nm,1.0s						
LEM	**Lembang**	**38.84**	**95**	P	P	21 06 39.7	+7.9
	comp=Z,24nm,0.9s,baz=174,slow=16,SNR=5.3						
CHAI	**Chaiyaphum**	**38.97**	**57**	P	**P**	**21 06 37.0**	**+4.3**
	comp=Z,4.6nm,0.9s						
KBL	**Kabul**	**39.24**	**1**	*e*P	**P**	**21 06 37.6**	**+2.7**
KBL				pmax	pmax		
	comp=Z,14nm,1.2s						
KBL	**Kabul**	**39.24**	**1**	*e*P	**P**	**21 06 37.6**	**+2.7**
	comp=Z,14nm,1.2s						
LSA	**Lhasa**	**40.65**	**31**	P	**P**	**21 06 48.3**	**+1.4**
LSA				pmax	pmax		
	comp=Z,9.0nm,3.4s						
LSA	**Lhasa**	**40.65**	**31**	*e*P	**P**	**21 06 45.4**	**-1.5**
LSA				pmax	pmax		
	comp=Z,48nm,1.7s						
LSA	**Lhasa**	**40.65**	**31**	*e*P	**P**	**21 06 45.4**	**-1.5**
	comp=Z,48nm,1.7s						
LSZ	**Lusaka**	**41.03**	**252**	P	**P**	**21 06 49.2**	**-0.7**
	comp=Z,3.1nm,0.9s,baz=62,slow=9.9,SNR=4.2						
MATP	**Matopo**	**41.91**	**245**	P	**P**	**21 06 56.4**	**-0.7**
	comp=Z,7.2nm,1.1s,baz=74,slow=9.8,SNR=5.6						
KSM	**Kuching**	**42.14**	**82**	*e*P	**P**	**21 06 55.9**	**-3.0**
	comp=Z,27nm,1.6s						
GEYT	**Alibeck**	**43.73**	**348**	P	**P**	**21 07 12.0**	**+0.5**
	comp=Z,1.6nm,0.8s,baz=150,slow=6.8,SNR=6.2						
GEYT				LR	LR	21 24 13.3	
	comp=Z,1μm,20.5s,baz=165,slow=34						
SBUM	**Sibu**	**44.18**	**81**	*e*P	**P**	**21 07 16.4**	**+0.9**
	comp=Z,17nm,1.4s						
KMI	**Kunming**	**44.63**	**46**	P	**P**	**21 07 22.0**	**+2.9**
KMI				pP	sP	21 07 25.5	+0.7
KMI				PP	**PP**	**21 09 04.0**	**+0.6**
KMI				S	**S**	**21 13 57.8**	**+2.5**
KMI				SS	**SS**	**21 17 11.0**	**-4.7**
KMI				pmax	pmax		
	comp=Z,14nm,0.5s						
KMI				pmax	pmax		
	comp=Z,110nm,5.3s						
KMI				LR	LR		
	comp=N,520nm,23.9s						
KMI				LR	LR		
	comp=E,630nm,24.4s						
KMI				LR	LR		
	comp=Z,810nm,27.0s						
KSH	**Kashi**	**44.73**	**8**	*e*P	**P**	**21 07 19.0**	**-0.6**
KSH				*ep*P	pP	21 07 23.3	-0.3
KSH				*es*P	sP	21 07 26.0	+0.8
KSH				*e*PP	**PP**	**21 09 03.8**	**-0.4**
KSH				PcS	**PcS**	**21 12 55.5**	**+0.1**
KSH				S	**S**	**21 13 54.3**	**-1.9**
KSH				ScS	**SS**	**21 17 15.5**	**-1.6**
KSH				pmax	pmax		
	comp=Z,81nm,1.9s						
KSH				LR	LR		
	comp=N,790nm,12.6s						
KSH				LR	LR		
	comp=E,710nm,9.7s						
KSH				LR	LR		
	comp=Z,960nm,11.8s						
QIZ	**Qiongzhong**	**47.06**	**58**	P	**P**	**21 07 40.0**	**+1.9**
QIZ				S	**S**	**21 14 33.5**	**+3.4**
QIZ	**Qiongzhong**	**47.06**	**58**	SS	SS	21 18 04.8	+7.5
QIZ				pmax	pmax		
	comp=Z,11nm,1.5s						
QIZ				LR	LR		
	comp=N,640nm,18.1s						
QIZ				LR	LR		
	comp=Z,900nm,17.0s						
BOSA	**Boshof**	**47.35**	**235**	P	**P**	**21 07 43.2**	**+2.8**
	comp=Z,6.4nm,0.9s,baz=92,slow=8.3,SNR=6.8						
BOSA				LR	LR	21 24 48.4	
	comp=Z,552nm,21.2s,baz=72,slow=33						
EKS2	**Erkin-Say**	**47.58**	**5**	*e*P	**P**	**21 07 41.1**	**-0.9**
EKS2				pmax	pmax		
	comp=Z,51nm,1.5s						
EKS2	**Erkin-Say**	**47.58**	**5**	*e*P	**P**	**21 07 41.1**	**-0.9**
	comp=Z,51nm,1.5s						
AAK	**Ala-Archa**	**47.62**	**6**	P	**P**	**21 07 43.5**	**+1.2**
	comp=Z,4.9nm,0.9s,baz=188,slow=8.2,SNR=16						
AAK	**Ala-Archa**	**47.62**	**6**	*d* P	**P**	**21 07 44.1**	**+1.7**
AAK				pmax	pmax		
	comp=Z,55nm,2.0s						
AAK	**Ala-Archa**	**47.62**	**6**	*e*P	**P**	**21 07 43.7**	**+1.4**
	comp=Z,3.0nm,1.3s						
ASF	**Jabal al Asfar**	**47.64**	**323**	P	**P**	**21 07 42.3**	**-0.3**
	comp=Z,0.6nm,0.3s,baz=123,slow=7.1,SNR=3.4						
KKAR	**Karatay Array**	**47.82**	**2**	*e*P	**P**	**21 07 43.0**	**-0.7**
KKAR				pmax	pmax		
	comp=Z,4.0nm,0.9s						
KKAR	**Karatay Array**	**47.82**	**2**	*e*P	**P**	**21 07 43.0**	**-0.7**
	comp=Z,3.5nm,0.9s						
FRU	**Bishkek**	**47.83**	**6**	*e*P	**P**	**21 07 46.0**	**+2.2**
FRU				*e*S	**S**	**21 14 44.0**	**+3.5**
FRU				*e*		21 17 28.0	
FRU				pmax	pmax		
	comp=Z,80nm,1.9s						
FRU				MLR	MLR		
	comp=E,1μm,10.0s						
TKM2	**Tokmak 2**	**48.03**	**7**	*e*P	**P**	**21 07 45.1**	**-0.5**
TKM2				pmax	pmax		
	comp=Z,27nm,1.1s						
TKM2	**Tokmak 2**	**48.03**	**7**	*e*P	**P**	**21 07 45.0**	**-0.5**
	comp=Z,27nm,1.1s						
CD2	**Chengdu**	**48.95**	**41**	P	**P**	**21 07 52.8**	**+0.1**
CD2				sP	pP	21 07 57.3	+0.5
CD2				PP	**PP**	**21 09 46.5**	**+0.3**
CD2				S	**S**	**21 14 58.8**	**+2.1**
CD2				sS	sS	21 15 04.0	+0.6
CD2	**Chengdu**	**48.95**	**41**	SS	SS	21 18 31.5	+3.7
CD2				pmax	pmax		
	comp=Z,190nm,7.6s						
CD2				LR	LR		
	comp=E,740nm,19.0s						
CD2				LR	LR		
	comp=Z,530nm,19.9s						
GNI	**Garni**	**49.93**	**336**	P	**P**	**21 08 01.4**	**+1.3**
	comp=Z,9.3nm,1.0s,baz=216,slow=4.1,SNR=5.2						
GNI	**Garni**	**49.93**	**336**	*ce*P	**P**	**21 08 01.3**	**+1.2**
GNI				pmax	pmax		
	comp=Z,33nm,1.0s						
GNI	**Garni**	**49.93**	**336**	*e*P	**P**	**21 07 58.5**	**-1.7**
	comp=Z,21nm,1.1s						
WMQ	**Urumqi**	**51.48**	**18**	P	**P**	**21 08 14.8**	**+3.2**
WMQ				pP	sP	21 08 19.0	+1.7
WMQ				sP	pP	21 08 26.5	+11
WMQ				PcP	PcP	21 09 35.0	+9.1
WMQ				S	**S**	**21 15 32.5**	**+1.0**
WMQ	**Urumqi**	**51.48**	**18**	SS	**SS**	**21 19 09.8**	**+2.0**
WMQ				pmax	pmax		
	comp=Z,8.0nm,1.2s						
WMQ				pmax	pmax		
	comp=Z,170nm,7.6s						
WMQ				LR	LR		
	comp=N,300nm,16.8s						
WMQ				LR	LR		
	comp=E,430nm,16.8s						
WMQ				LR	LR		
	comp=Z,150nm,37.2s						
H01W3	**Cape Leeuwin H**	**51.52**	**131**	T	T	22 03 33.6	
	baz=296,slow=75,SNR=31						
H01W2	**Cape Leeuwin H**	**51.52**	**131**	T	T	22 03 36.1	
	baz=296,slow=75,SNR=31						
H01W1	**Cape Leeuwin H**	**51.53**	**131**	T	T	22 03 34.9	
	baz=296,slow=75,SNR=33						
LZH	**Lanzhou**	**52.46**	**36**	*e*P	**P**	**21 08 21.3**	**+2.1**
LZH				pP	sP	21 08 26.3	+1.4
LZH				sP	pP	21 08 28.8	+5.4
LZH				pmax	pmax		
	comp=Z,18nm,1.0s						
ENH	**Enshi**	**52.48**	**46**	*e*P	**P**	**21 08 18.7**	**-0.6**
	comp=Z,8.1nm,0.9s						
ZEI	**Tsey**	**52.50**	**337**	*e*P	**P**	**21 08 18.3**	**-1.1**
ZEI				pmax	pmax		
	comp=Z,31nm,1.2s						
GTA	**Gaotai**	**52.67**	**30**	*e*P	**P**	**21 08 22.3**	**+1.6**
GTA				pP	sP	21 08 26.8	+0.4
GTA				sP	pP	21 08 30.0	+5.2
GTA				S	**S**	**21 15 50.0**	**+1.8**
GTA				sS	sS	21 15 59.0	+4.0
GTA	**Gaotai**	**52.67**	**30**	SS	**SS**	**21 19 26.5**	**-0.4**
GTA				pmax	pmax		
	comp=Z,7.0nm,1.1s						
GTA				pmax	pmax		
	comp=Z,130nm,4.8s						
GTA				LR	LR		
	comp=N,250nm,15.9s						
GTA				LR	LR		
	comp=E,420nm,16.9s						
GTA				LR	LR		
	comp=Z,380nm,16.4s						
MAKZ	**Makanchi**	**52.84**	**11**	*e*P	**P**	**21 08 21.8**	**+0.1**
MAKZ				pmax	pmax		
	comp=Z,12nm,1.1s						
MAKZ	**Makanchi**	**52.84**	**11**	*e*P	**P**	**21 08 21.8**	**+0.1**
	comp=Z,12nm,1.1s						
MK01	**Makanchi Array**	**52.87**	**12**	*e*P	**P**	**21 08 20.2**	**-1.6**
MK31	**Makanchi Array**	**52.89**	**12**	*e*P	**P**	**21 08 21.1**	**-0.9**
MK31	**Makanchi Array**	**52.89**	**12**	*e*P	**P**	**21 08 21.1**	**-0.9**
MKAR	**Makanchi Array**	**52.89**	**12**	P	**P**	**21 08 20.6**	**-1.4**
	comp=Z,3.8nm,0.6s,baz=198,slow=7.6,SNR=26						
MKAR				LR	LR	21 29 20.9	
	comp=Z,316nm,22.0s,baz=190,slow=34						
MKAR	**Makanchi Array**	**52.89**	**12**	*e*P	**P**	**21 08 21.0**	**-1.0**
NEY	**Neytrino**	**53.35**	**337**	*e*P	**P**	**21 08 27.6**	**+1.9**
KBZ	**Khabaz**	**53.69**	**337**	P	**P**	**21 08 28.1**	**+0.3**
	comp=Z,8.8nm,1.0s,baz=152,slow=5.2,SNR=12						
KBZ				LR	LR	21 32 01.5	
	comp=Z,296nm,18.4s,baz=154,slow=37						
KIV	**Kislovodsk**	**53.96**	**337**	*e*P	**P**	**21 08 29.6**	**-0.4**
KIV				*e*S	**S**	**21 16 06.4**	**+0.9**
KIV				pmax	pmax		
	comp=Z,6.0nm,1.0s						
KIV				MLR	MLR		
	comp=Z,216nm,16.0s						
KIV	**Kislovodsk**	**53.96**	**337**	*e*P	**P**	**21 08 29.3**	**-0.7**
	comp=Z,10.0nm,1.1s						
XAN	**Xi'an**	**54.30**	**41**	P	**P**	**21 08 33.3**	**+0.6**
XAN				sP	sP	21 08 39.5	+1.1
XAN				PcP	**PcP**	**21 09 37.5**	**+0.8**
XAN				PP	**PP**	**21 10 36.3**	**+1.6**
XAN				S	**S

NJ2	**Nanjing**	**60.25**	**49**	*e*P	**P**	**21 09 16.5**	**+1.8**
NJ2				pmax	pmax		
comp=Z,13nm,0.5s							
NJ2				LR	LR		
comp=N,950nm,16.3s							
NJ2				LR	LR		
comp=E,670nm,21.7s							
NJ2				LR	LR		
comp=Z,970nm,17.4s							
VRH	**Novokhopyorsk**	**60.47**	**341**	*e*P	**P**	**21 09 14.0**	**-1.7**
VRH				pmax	pmax		
comp=Z,4.0nm,0.5s							
NVS	**Novosibirsk**	**60.77**	**10**	*e*P	**P**	**21 09 17.3**	**-0.5**
NVS				pmax	pmax		
comp=Z,38nm,2.0s							
NVS				pmax	pmax		
comp=N,20nm,2.1s							
NVS				pmax	pmax		
comp=E,5.0nm,1.1s							
VSR	**Storozhevoye**	**61.34**	**339**	*e*P	**P**	**21 09 19.6**	**-2.1**
VSR				pmax	pmax		
comp=Z,8.0nm,1.0s							
SSE	**Sheshan**	**61.60**	**51**	P	**P**	**21 09 24.8**	**+1.0**
SSE				S	**S**	**21 17 52.0**	**+6.1**
SSE				pmax	pmax		
comp=Z,51nm,0.8s							
SSE				pmax	pmax		
comp=Z,190nm,5.0s							
SSE				LR	LR		
comp=N,130nm,23.6s							
SSE				LR	LR		
comp=E,420nm,23.0s							
SSE				LR	LR		
comp=Z,550nm,19.9s							
ARU	**Arti**	**61.69**	**354**	*d i*P	**P**	**21 09 24.4**	**+0.5**
ARU						21 10 05.2	
ARU						21 11 34.9	
ARU				PPP	PPP	21 13 09.6	
ARU				S	**S**	**21 17 48.2**	**+2.1**
ARU				SS	**SS**	**21 21 40.9**	**-7.1**
ARU				pmax	pmax		
comp=Z,10.0nm,1.2s							
ARU	**Arti**	**61.69**	**354**	*e*P	**P**	**21 09 19.8**	**-4.2**
comp=Z,17nm,1.2s							
SVE	**Sverdlovsk**	**61.88**	**355⇓**	*e*P	**P**	**21 09 25.1**	**-0.1**
SVE				pmax	pmax		
comp=Z,25nm,1.8s							
SONM	**Songino Array**	**62.12**	**28**	P	**P**	**21 09 27.4**	**+0.2**
comp=Z,5.4nm,0.8s,baz=221,slow=6.4,SNR=24							
SONM				LR	LR	21 36 01.2	
comp=Z,743nm,21.9s,baz=215,slow=36							
SONA1	**Songino Array**	**62.13**	**28**	*e*P	**P**	**21 09 27.4**	**+0.1**
ULN	**Ulaanbaatar**	**62.45**	**28**	*ce*P	**P**	**21 09 31.1**	**+1.6**
ULN				pmax	pmax		
comp=Z,14nm,2.5s							
ULN	**Ulaanbaatar**	**62.45**	**28**	P	**P**	**21 09 26.0**	**-3.5**
comp=Z,28nm,2.0s							
BJI	**Beijing**	**62.51**	**40**	P	**P**	**21 09 31.3**	**+1.5**
BJI				PP	**PP**	**21 11 47.0**	**-0.5**
BJI				S	**S**	**21 18 00.8**	**+3.7**
BJI	**Beijing**	**62.51**	**40**	SS	SS	21 22 05.3	+3.9
BJI				pmax	pmax		
comp=Z,9.0nm,0.7s							
BJI				pmax	pmax		
comp=Z,110nm,4.5s							
BJI				LR	LR		
comp=N,440nm,17.6s							
BJI				LR	LR		
comp=E,280nm,17.6s							
BJI				LR	LR		
comp=Z,380nm,21.1s							
LPSR	**Galich'ya Gora**	**62.58**	**340**	*e*P	P	21 09 24.7	-5.3
LPSR				pmax	pmax		
comp=Z,3.0nm,0.5s							
VRI	**Vrincioaia**	**62.78**	**328⇑**	*i*P	**P**	**21 09 31.9**	**+0.4**
VRI	**Vrincioaia**	**62.78**	**328**	⇑P	**P**	**21 09 31.9**	**+0.4**
PLOR	**Plostina**	**62.81**	**328⇑**	*i*P	**P**	**21 09 32.6**	**+0.9**
PLOR	**Plostina**	**62.81**	**328**	⇑P	**P**	**21 09 32.6**	**+0.9**
MLR	**Muntele Rosu**	**62.94**	**328⇑**	*i*P	**P**	**21 09 30.7**	**-2.1**
MLR	**Muntele Rosu**	**62.94**	**328**	⇑P	**P**	**21 09 30.7**	**-2.1**
MLR	**Muntele Rosu**	**62.94**	**328**	*e*P	**P**	**21 09 32.5**	**-0.3**
comp=Z,23nm,1.6s							
TESR	**Tescani**	**63.25**	**329⇑**	*i*P	**P**	**21 09 35.6**	**+1.0**
ARR	**Arges**	**63.57**	**327⇓**	*i*P	**P**	**21 09 38.0**	**+1.1**
BURAR	**Bucovina Array**	**64.71**	**329⇑**	*i*P	P	21 09 53.4	+9.1
BURAR	**Bucovina Array**	**64.71**	**329**	⇑P	P	21 09 53.4	+9.1
MDVR	**Moldovita**	**64.84**	**325**	*i*P	**P**	**21 09 45.5**	**+0.3**
AKASG	**Malin Array Be**	**64.91**	**334**	P	**P**	**21 09 45.0**	**-0.4**
comp=Z,1.0nm,0.5s,baz=128,slow=5.3,SNR=5.1							
AKASG				LR	LR	21 38 58.4	
comp=Z,122nm,21.2s,baz=165,slow=37							
AKASG	**Malin Array Be**	**64.91**	**334**	*ce*P	**P**	**21 09 46.5**	**+1.1**
AKASG				pmax	pmax		
comp=Z,2.0nm,0.6s							
KIEV	**Kiev**	**64.91**	**334**	*e*P	**P**	**21 09 46.6**	**+1.2**
KIEV				pmax	pmax		
comp=Z,3.0nm,1.0s							
SOKR	**Solikamsk**	**64.99**	**353**	*e*P	P	21 09 51.8	+6.1
SOKR				pmax	pmax		
comp=Z,10.0nm,0.6s							
SOKR				MLR	MLR		
comp=Z,224nm,18.0s							
ASAR	**Alice Springs**	**65.43**	**114**	P	**P**	**21 09 50.0**	**+0.6**
comp=Z,1.5nm,0.7s,baz=278,slow=5.6,SNR=23							
ASAR				LR	LR	21 35 18.3	
comp=Z,850nm,20.9s,baz=276,slow=33							
OBN	**Obninsk**	**65.44**	**340**	*e*P	**P**	**21 09 49.4**	**+0.6**
OBN				*e*		21 10 15.6	
OBN				*e*		21 12 12.9	
OBN				pmax	pmax		
comp=Z,4.0nm,1.1s							
OBN				MLR	MLR		
comp=Z,195nm,20.0s							
AS01	**Alice Springs**	**65.47**	**114**	*e*P	**P**	**21 09 50.5**	**+0.7**
DRGR		**65.50**	**327⇑**	*i*P	**P**	**21 09 47.7**	**-1.8**
DRGR		**65.50**	**327**	⇑P	**P**	**21 09 47.7**	**-1.8**
WRA	**Warramunga Arr**	**65.53**	**110**	P	**P**	**21 09 51.2**	**+1.1**
comp=Z,3.6nm,0.6s,baz=283,slow=6.3,SNR=28							
WRA				LR	LR	21 34 38.9	
comp=Z,596nm,21.9s,baz=280,slow=32							
WRAB	**Tennant Creek**	**65.54**	**110**	*e*P	**P**	**21 09 48.7**	**-1.5**
WRAB				pmax	pmax		
comp=Z,17nm,1.2s							
WRAB	**Tennant Creek**	**65.54**	**110**	*e*P	**P**	**21 09 47.9**	**-2.3**
comp=Z,27nm,1.4s							
WB2	**Warramunga Arr**	**65.55**	**110**	*e*P	**P**	**21 09 51.3**	**+1.0**
comp=Z,20nm,1.3s							
MOS	**Moscow**	**65.61**	**341**	*e*P	P	21 09 56.3	+6.4
MOS				pmax	pmax		
comp=Z,50nm,1.3s							
SYO	**Syowa Base**	**66.84**	**191⇑**	*e*PcP	**PcP**	**21 10 30.8**	**+4.6**
STHS	**Stebnicka Huta**	**67.90**	**329**	*e*P	**P**	**21 10 08.0**	**+3.4**
STHS	**Stebnicka Huta**	**67.90**	**329**	*e*P	**P**	**21 10 08.0**	**+3.4**
KEST	**Kesra**	**68.60**	**311**	LR	LR	21 40 27.0	
comp=Z,194nm,18.6s,baz=328,slow=36							
LANS	**Liptovska Anna**	**68.67**	**328**	*e*P	P	21 10 14.5	+5.0
LANS	**Liptovska Anna**	**68.67**	**328**	*e*P	P	21 10 14.5	+5.0
TOA0	**Torodi Ar. Sit**	**68.82**	**286**	*e*P	**P**	**21 10 09.9**	**-1.1**
TORD	**Torodi Ar. Bea**	**68.82**	**286**	P	**P**	**21 10 10.4**	**-0.7**
comp=Z,1.2nm,1.1s,baz=111,slow=6.3,SNR=3.8							
TORD				LR	LR	21 39 49.7	
comp=Z,189nm,20.1s,baz=90,slow=36							
KSAR	**Wonju Array Be**	**69.29**	**47**	P	**P**	**21 10 13.5**	**0.0**
KSAR	**Wonju Array Be**	**69.29**	**47**	P	**P**	**21 10 13.5**	**0.0**
KSRS	**Korea Array**	**69.32**	**47**	P	**P**	**21 10 13.5**	**-0.2**
comp=Z,1.3nm,0.7s,baz=260,slow=7.2,SNR=5.0							
KSRS				LR	LR	21 42 18.8	
comp=Z,629nm,18.1s,baz=241,slow=37							
KLMR	**Klimovskoe**	**69.39**	**345**	*e*P	**P**	**21 10 11.9**	**-1.7**
KLMR				pmax	pmax		
comp=Z,39nm,1.5s							
CN2	**Changchun**	**70.37**	**40**	*e*P	**P**	**21 10 22.3**	**+2.2**
TREC	**Trest**	**70.91**	**326**	AMS	AMS	21 45 10.0	
KBA	**Koelnbreinsper**	**70.98**	**324**	*es*P	P	21 10 29.6	+5.6
comp=Z,6.0nm,1.4s							
GERES	**GERESS Array B**	**71.67**	**325**	P	**P**	**21 10 29.5**	**+1.5**
comp=Z,0.1nm,0.3s,baz=104,slow=4.1,SNR=2.6							
GERES				LR	LR	21 42 55.7	
comp=Z,79nm,18.9s,baz=124,slow=37							
PVCC	**Panska Ves**	**72.07**	**327**	AMS	AMS	21 45 50.0	
comp=Z,200nm,17.0s							
MOTA	**Moosalm**	**72.44**	**323**	*i*pP	**P**	**21 10 35.5**	**+2.7**
comp=Z,2.0nm,0.6s							
FETA	**Feichten**	**72.52**	**323**	*es*P	**P**	**21 10 37.7**	**+4.5**
comp=Z,7.4nm,1.0s							
TMCR	**Tamitsa**	**72.58**	**346**	*e*P	**pP**	**21 10 37.4**	**+0.2**
TMCR				pmax	pmax		
comp=Z,23nm,1.4s							
STKA	**Stephens Creek**	**72.98**	**122**	P	**P**	**21 10 38.7**	**+2.6**
comp=Z,1.7nm,0.6s,baz=281,slow=5.9,SNR=10							
STKA				LR	LR	21 39 45.3	
comp=Z,644nm,19.8s,baz=263,slow=33							
NKC	**Novy Kostel**	**73.08**	**326**	*e*P	**P**	**21 10 38.5**	**+2.2**
NKC				*ex*	x	21 10 44.8	
NKC	**Novy Kostel**	**73.08**	**326**	*e*P	**P**	**21 10 38.5**	**+2.2**
NKC				*e*		21 10 44.8	
DAVA	**Damuels**	**73.16**	**323**	*i*pP	**P**	**21 10 40.6**	**+3.6**
comp=Z,11nm,0.8s							
CLL	**Collm**	**73.32**	**327**	*e*P	**P**	**21 10 42.0**	**+4.4**
CLL				*e*		21 10 44.0	
CLL				*i*		21 10 49.2	
comp=Z,7.0nm,1.1s							
CLL				*e*S	**S**	**21 20 07.0**	**+0.9**
CLL				*e*SS	**SS**	**21 24 45.0**	**-3.3**
CLL				*e*SSS	SSS	21 28 12.0	
CLL				*e*SSSS		21 29 48.0	
CLL				LmV		21 42 00.0	
comp=Z,200nm,22.0s							
CLL	**Collm**	**73.32**	**327**	*e*P	**P**	**21 10 42.0**	**+4.4**
CLL				*e*		21 10 44.0	
CLL				*i*		21 10 49.2	
CLL				*e*S	**S**	**21 20 07.0**	**+0.9**
FINES	**FINESS Array B**	**73.85**	**340**	P	**P**	**21 10 41.6**	**+1.1**
comp=Z,2.7nm,0.9s,baz=103,slow=6.1,SNR=3.7							
FINES				LR	LR	21 45 08.1	
comp=Z,197nm,19.9s,baz=134,slow=37							
FINES	**FINESS Array B**	**73.85**	**340**	*i* P	P	21 10 45.5	+5.0
FINES				pmax	pmax		
comp=Z,1.0nm,0.8s							
DBIC	**Dimbokro**	**74.23**	**278**	P	**P**	**21 10 43.1**	**-0.7**
comp=Z,7.0nm,1.0s,baz=54,slow=7.0,SNR=3.7							
SENIN	**Lac Senin/Sane**	**74.34**	**321**	*e*P	**P**	**21 10 44.6**	**+0.5**
comp=Z,6.6nm,0.7s							
BFO	**Black Forest**	**74.56**	**323**	*i* P	**P**	**21 10 48.0**	**+3.0**
USRK	**Ussuriysk Ar.**	**74.81**	**42**	P	**P**	**21 10 47.1**	**+0.5**
comp=Z,2.4nm,0.8s,baz=253,slow=6.6,SNR=4.8							
USRK				LR	LR	21 48 04.2	
comp=Z,272nm,18.0s,baz=227,slow=39							
NRIK	**Noril'sk**	**75.23**	**7**	LR	LR	21 46 12.9	
comp=Z,415nm,18.1s,baz=185,slow=38							
KLR	**Kul'dur**	**76.65**	**37**	P	**P**	**21 10 57.9**	**+1.0**
comp=Z,2.7nm,0.8s,baz=285,slow=6.8,SNR=7.6							
CTAO	**Charters Tower**	**76.74**	**109**	*e*P	**P**	**21 10 56.9**	**-1.2**
CTAO	**Charters Tower**	**76.74**	**109**	*e*P	**P**	**21 10 56.9**	**-1.2**
MJAR	**Matsushiro Arr**	**76.75**	**51**	P	**P**	**21 10 58.0**	**+0.2**
comp=Z,1.7nm,0.7s,baz=245,slow=6.4,SNR=4.5							
MJAR				LR	LR	21 46 51.6	
comp=Z,370nm,18.2s,baz=255,slow=37							
NOA	**NORSAR Array B**	**79.22**	**335**	P	**P**	**21 11 13.1**	**+2.0**
comp=Z,0.8nm,0.7s,baz=156,slow=11,SNR=2.5							
NOA				LR	LR	21 46 32.6	
comp=Z,160nm,21.5s,baz=135,slow=36							
SNAA	**Sanae**	**79.57**	**198**	P	**P**	**21 11 09.2**	**-3.7**
ARCES	**ARCESS Array B**	**79.85**	**346**	P	**P**	**21 11 15.0**	**+0.7**
comp=Z,1.2nm,0.7s,baz=139,slow=5.8,SNR=4.6							
ARCES				LR	LR	21 47 34.9	
comp=Z,276nm,20.9s,baz=114,slow=36							
ESDC	**Sonseca Array**	**79.85**	**312**	P	**P**	**21 11 14.1**	**-0.9**
comp=Z,1.0nm,0.7s,baz=85,slow=4.5,SNR=6.2							
ESDC				LR	LR	21 46 07.4	
comp=Z,52nm,20.0s,baz=130,slow=35							
YAK	**Yakutsk**	**81.25**	**25**	LR	LR	21 47 56.0	
comp=Z,364nm,20.2s,baz=241,slow=36							
VNA3	**Neumayer Olymp**	**81.61**	**199**	P	**P**	**21 11 20.9**	**-2.8**
YSS	**Yuzh-Sakhalins**	**82.85**	**42**	*e*P	P	21 11 36.8	+6.2
YSS				*e*		21 11 43.2	
YSS				pmax	pmax		
comp=Z,20nm,1.2s							
YSS				MLR	MLR		
comp=Z,200nm,16.0s							
TIXI	**Tiksi**	**85.65**	**16**	P	**P**	**21 11 43.2**	**-1.1**
comp=Z,4.3nm,1.1s,baz=241,slow=2.4,SNR=16							
TIXI	**Tiksi**	**85.65**	**16**	*e*P	**P**	**21 11 44.3**	**0.0**
TIXI				pmax	pmax		
comp=Z,5.0nm,1.2s							
TIXI	**Tiksi**	**85.65**	**16**	*e*P	**P**	**21 11 42.9**	**-1.4**
comp=Z,12nm,0.9s							
VNDA	**Vanda**	**85.94**	**167**	LR	LR	21 45 32.7	
comp=Z,305nm,19.3s,baz=266,slow=32							
MA2	**Magadan**	**90.23**	**30**	LR	LR	21 53 41.9	
comp=Z,221nm,18.7s,baz=285,slow=36							
SEY	**Seymchan**	**91.50**	**27**	P	**P**	**21 12 12.4**	**+0.1**
comp=Z,0.7nm,0.5s,baz=250,slow=13,SNR=3.5							
PETK	**Petropavlovsk-**	**93.34**	**37**	P	**P**	**21 12 22.4**	**+1.3**
comp=Z,1.4nm,0.7s,baz=297,slow=6.3,SNR=3.3							
PETK				LR	LR	21 56 51.5	
comp=Z,205nm,19.8s,baz=260,slow=37							
DZM	**Mont Dzumac**	**95.41**	**113**	*e*SS	SS	21 30 21.1	+5.5
comp=Z,430nm,29.9s							
DZM	**Mont Dzumac**	**95.41**	**113**	*e*LR	LR	21 43 27.7	
comp=Z,2μm,22.2s							
BILL	**Bilibino**	**97.40**	**22**	*e*P	**P**	**21 12 36.5**	**-2.8**
BILL				*e*		21 16 31.3	
BILL				pmax	pmax		
comp=Z,1.0nm,1.1s							
BILL				MLR	MLR		
comp=Z,329nm,21.0s							
YKA	**Yellowknife Ar**	**122.50**	**2**	PKP	**PKPdf**	**21 18 01.1**	**-0.2**
comp=Z,0.3nm,0.7s,baz=337,slow=2.3,SNR=3.1							
YKA				PP	**PP**	**21 19 40.5**	**+3.4**
comp=Z,0.5nm,0.9s,baz=353,slow=6.7,SNR=5.4							
LPAZ	**La Paz**	**132.31**	**243**	PKP	**PKPdf**	**21 18 21.9**	**-0.1**
comp=Z,0.6nm,0.7s,baz=18,slow=3.2,SNR=2.7							
LPAZ	**La Paz**	**132.31**	**243**	PKIKP	**PKPdf**	**21 18 22.0**	**-0.1**
TBI	**Tubuai**	**133.42**	**129**	*e*LR	LR	22 00 48.8	
comp=Z,223nm,28.8s							
PPT2	**Papeete2**	**136.17**	**122**	*e*SS	SS	21 39 14.5	+5.4
comp=Z,147nm,27.8s							
PPT2	**Papeete2**	**136.17**	**122**	*e*LR	LR	22 02 15.8	
comp=Z,492nm,23.2s							
REDW	**Red Top Meadow**	**141.71**	**359**	*e*PKPdf	**PKPdf**	**21 18 37.8**	**-0.5**
PDAR	**Pinedale Array**	**142.27**	**358**	PKP	**PKPdf**	**21 18 37.8**	**-1.5**
comp=Z,0.4nm,0.6s,baz=63,slow=2.6,SNR=4.9							
RKT	**Rikitea**	**143.85**	**141**	*e*LR	LR	22 05 35.4	
comp=Z,189nm,29.8s							
LRAL	**Lakeview Retre**	**143.94**	**324**	*e*PKPdf	**PKPdf**	**21 18 41.7**	**-0.6**
DUG	**Dugway, Tooele**	**144.85**	**2**	*e*PKIKP	**PKPdf**	**21 18 43.8**	**0.0**
DUG	**Dugway, Tooele**	**144.85**	**2**	*e*PKPdf	**PKPdf**	**21 18 43.8**	**0.0**
ISCO	**Idaho Springs**	**144.88**	**352**	*e*PKIKP	**PKPab**	**21 18 42.5**	**-0.6**
ISCO	**Idaho Springs**	**144.88**	**352**	*e*PKPdf	**PKPab**	**21 18 42.5**	**-0.6**
CMB	**Columbia Colle**	**146.03**	**13**	*e*PKP2	**PKPdf**	**21 18 45.1**	**-0.7**
CMB	**Columbia Colle**	**146.03**	**13**	*e*PKPdf	**PKPdf**	**21 18 45.1**	**-0.7**
NVAR	**Mina Array Bea**	**146.05**	**10**	PKPbc	**PKPab**	**21 18 47.2**	**-0.1**
comp=Z,4.7nm,0.9s,baz=339,slow=1.8,SNR=4.6							
MIAR	**Mount Ida**	**146.21**	**333**	*e*PKP2	**PKPbc**	**21 18 46.9**	**-0.2**
MIAR	**Mount Ida**	**146.21**	**333**	*e*PKPdf	**PKPbc**	**21 18 46.9**	**-0.2**
OTAV	**Otavalo**	**146.78**	**263**	*e*PKPdf	**PKPbc**	**21 18 49.4**	**-0.5**
LCMT	**Little Creek M**	**148.01**	**3**	*e*PKPdf	**PKPdf**	**21 18 49.8**	**+0.5**
TAOE	**Nuku Hiva Isla**	**148.23**	**115**	*e*LR	LR	22 07 51.9	
comp=Z,245nm,29.2s							
MNTX	**Cornudas Mount**	**152.76**	**349**	*e*PKPbc	**PKPbc**	**21 19 04.2**	**+0.4**
TXAR	**Lajitas Array**	**154.63**	**344**	PKPbc	**PKPbc**	**21 19 09.7**	**+1.8**
comp=Z,0.6nm,0.8s,baz=38,slow=0.8,SNR=5.8							

MEX 29 21:10:55.1±0.8, 16°11N×92°93W, h218km±9km, MD3.7, Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		**0.49**	**215**	*e*P	Pn	21 11 22.2	-2.0
PCIG				*e*S	S	21 11 44.7	-2.3
TGIG		**0.69**	**344**	*i* P	Pn	21 11 23.9	-1.2
TGIG				*e*S	S	21 11 45.5	-3.1
HUIG	**Huatulco**	**3.08**	**264**	*e*P	Pn	21 11 45.7	-0.9
HUIG				*e*S	S	21 12 24.1	-2.6
VHO	**Vista Hermosa**	**3.77**	**285**	*i* P	Pn	21 11 54.2	-0.8
VHO				*e*S	S	21 12 40.0	-1.8

*NEIC **29** 21:15:32.3, 40°32S×173°40E, h202km, MG4.0(WEL), After WEL.*

WEL 29 21:15:32.7±0.3, 40°32S×173°42E, h200km±3km, ML4.0/14, 16C-17D, Error ellipse: s-maj=1.9km s-min=1.0km az=90.0, Cook Strait

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DUWZ	**D'Urville Isla**	**0.61**	**141**	⇑PN	Pn	21 16 00.3	0.0
DUWZ				SN	Sn	21 16 20.1	-1.6
QRZ	**Quartz Range**	**0.84**	**233**	PN	PN	21 16 01.1	-0.3
QRZ	**Quartz Range**	**0.84**	**233**	Pn	Pn	21 16 01.1	-0.3
NNZ	**Nelson**	**0.89**	**182**	⇑PN	Pn	21 16 01.5	-0.2
NNZ				SN	Sn	21 16 22.7	-1.7
NNZ	**Nelson**	**0.89**	**182**	Pn	Pn	21 16 01.5	-0.2
NNZ				Sn	Sn	21 16 22.7	-1.7
TCW	**Tory Channel**	**1.10**	**144**	PN	Pn	21 16 03.4	+0.3
TCW				SN	Sn	21 16 25.2	-1.6
TCW				AML	AML	21 16 26.9	
TCW	**Tory Channel**	**1.10**	**144**	Pn	Pn	21 16 03.4	+0.3
KHEZ	**Kahui Hut**	**1.13**	**24**	PN	Pn	21 16 03.3	-0.2
KHEZ				SN	Sn	21 16 26.3	-1.0
KHEZ	**Kahui Hut**	**1.13**	**24**	Pn	Pn	21 16 03.3	-0.2
KHEZ				Sn	Sn	21 16 26.3	-1.0
LREZ	**Lake Rotokare**	**1.15**	**42**	⇑PN	Pn	21 16 03.5	0.0
NEZ	**North Egmont**	**1.17**	**27**	PN	Pn	21 16 03.2	-0.6
NEZ	**North Egmont**	**1.17**	**27**	Pn	Pn	21 16 03.2	-0.6
TUWZ	**Tuamarina**	**1.17**	**160**	PN	Pn	21 16 03.5	-0.1
TUWZ				AML	AML	21 16 27.4	
TUWZ				AML	AML	21 16 27.4	
TUWZ	**Tuamarina**	**1.17**	**160**	Pn	Pn	21 16 03.5	-0.1
KIW	**Kapiti Island**	**1.26**	**116**	PN	Pn	21 16 04.3	0.0
KIW				AML	AML	21 16 27.6	
KIW				AML	AML	21 16 27.9	
KIW	**Kapiti Island**	**1.26**	**116**	Pn	Pn	21 16 04.3	0.0
WAZ	**Wanganui**	**1.33**	**65**	⇓PN	Pn	21 16 05.3	+0.3
WAZ	**Wanganui**	**1.33**	**65**	Pn	Pn	21 16 05.3	+0.4
WEL	**Wellington**	**1.40**	**134**	PN	Pn	21 16 05.5	0.0
OGWZ	**Otaki Gorge**	**1.42**	**111**	⇓PN	Pn	21 16 05.8	+0.1
OGWZ	**Otaki Gorge**	**1.42**	**111**	Pn	Pn	21 16 05.8	+0.1
MHEZ	**Mangahewa**	**1.43**	**30**	PN	Pn	21 16 05.8	+0.1
BSWZ	**Blackbirch Sta**	**1.43**	**166**	PN	Pn	21 16 05.8	+0.1
BSWZ				AML	AML	21 16 31.0	
BSWZ				AML	AML	21 16 32.4	
BSWZ	**Blackbirch Sta**	**1.43**	**166**	Pn	Pn	21 16 05.8	+0.1
OHWZ	**Ohakea**	**1.46**	**86**	PN	Pn	21 16 06.4	+0.4
CAW	**Cannon Point**	**1.48**	**123**	PN	Pn	21 16 06.1	-0.1
CAW				AML	AML	21 16 31.3	
CAW				AML	AML	21 16 31.4	
CAW	**Cannon Point**	**1.48**	**123**	Pn	Pn	21 16 06.1	-0.1
THZ	**Tophouse**	**1.49**	**195**	⇑PN	Pn	21 16 06.0	-0.3
THZ	**Tophouse**	**1.49**	**195**	Pn	Pn	21 16 06.0	-0.3
BHW	**Baring Head**	**1.55**	**135**	PN	Pn	21 16 06.6	-0.1
BHW				AML	AML	21 16 32.3	
BHW				AML	AML	21 16 33.0	
BHW	**Baring Head**	**1.55**	**135**	Pn	Pn	21 16 06.6	-0.1
CMWZ	**Cape Campbell**	**1.55**	**157**	PN	Pn	21 16 07.1	+0.4
CMWZ				AML	AML	21 16 38.1	
CMWZ	**Cape Campbell**	**1.55**	**157**	Pn	Pn	21 16 07.1	+0.4
VRZ	**Vera Road**	**1.58**	**41**	PN	Pn	21 16 06.2	-0.9
VRZ	**Vera Road**	**1.58**	**41**	Pn	Pn	21 16 06.2	-0.9
MRZ	**Mangatainoka R**	**1.68**	**102**	⇓PN	Pn	21 16 07.8	-0.2
MRZ	**Mangatainoka R**	**1.68**	**102**	Pn	Pn	21 16 07.8	-0.2
HOWZ	**Holdsworth Sta**	**1.70**	**110**	⇓PN	Pn	21 16 07.9	-0.3
HOWZ	**Holdsworth Sta**	**1.70**	**110**	Pn	Pn	21 16 07.9	-0.3
MSWZ	**Moikau Station**	**1.77**	**129**	PN	Pn	21 16 08.5	-0.3
MSWZ				AML	AML	21 16 35.6	
MSWZ				AML	AML	21 16 36.7	
MSWZ	**Moikau Station**	**1.77**	**129**	Pn	Pn	21 16 08.5	-0.3
MTW	**Mount Morrison**	**1.79**	**118**	PN	Pn	21 16 08.7	-0.3
MTW				AML	AML	21 16 36.8	
MTW				AML	AML	21 16 37.3	
MTW	**Mount Morrison**	**1.79**	**118**	Pn	Pn	21 16 08.7	-0.3
POWZ	**Post Office Ro**	**1.80**	**93**	PN	Pn	21 16 08.9	-0.2
POWZ	**Post Office Ro**	**1.80**	**93**	Pn	Pn	21 16 08.9	-0.2
PKVZ	**Pokaka**	**1.81**	**56**	⇓PN	Pn	21 16 08.7	-0.7
PKVZ	**Pokaka**	**1.81**	**56**	Pn	Pn	21 16 08.7	-0.7
MTVZ	**Mangateitei**	**1.84**	**60**	⇑PN	Pn	21 16 09.0	-0.7
MTVZ	**Mangateitei**	**1.84**	**60**	Pn	Pn	21 16 09.0	-0.7
PAWZ	**Paruwai Farm**	**1.85**	**125**	PN	Pn	21 16 09.4	-0.3
PAWZ				AML	AML	21 16 38.0	
PAWZ				AML	AML	21 16 38.3	
PAWZ	**Paruwai Farm**	**1.85**	**125**	Pn	Pn	21 16 09.4	-0.3
PLWZ	**Palliser**	**1.87**	**132**	PN	Pn	21 16 09.3	-0.5
PLWZ	**Palliser**	**1.87**	**132**	Pn	Pn	21 16 09.3	-0.5
DSZ	**Denniston Nort**	**1.87**	**220**	⇑PN	Pn	21 16 09.4	-0.5
DSZ	**Denniston Nort**	**1.87**	**220**	Pn	Pn	21 16 09.4	-0.5
TRVZ	**Turoa**	**1.93**	**59**	⇓PN	Pn	21 16 09.9	-0.9
TRVZ	**Turoa**	**1.93**	**59**	Pn	Pn	21 16 09.9	-0.9
TIWZ	**Tintock**	**1.93**	**104**	PN	Pn	21 16 10

OXZ	Oxford	3.17	199	⇑PN	Pn	21 16 22.7	-1.6
OXZ	Oxford	3.17	199	Pn	Pn	21 16 22.7	-1.6
MUGZ	Murupara	3.19	56	PN	Pn	21 16 23.2	-1.3
WHHZ	Waihua	3.20	68	PN	Pn	21 16 23.9	-0.7
RTZ	Ruatahuna	3.24	59	⇑PN	Pn	21 16 23.5	-1.8
SNGZ	Shannon Statio	3.40	64	PN	Pn	21 16 26.1	-1.0
SNGZ	Shannon Statio	3.40	64	Pn	Pn	21 16 26.1	-1.0
WVZ	Waitaha Valley	3.40	215	PN	Pn	21 16 25.5	-1.5
WVZ	Waitaha Valley	3.40	215	Pn	Pn	21 16 25.6	-1.5
MQZ	McQueen's Vall	3.43	189	PN	Pn	21 16 24.9	-2.4
MQZ	McQueen's Vall	3.43	189	Pn	Pn	21 16 24.9	-2.4
URZ	Urewera	3.53	55	⇓PN	Pn	21 16 26.7	-1.9
URZ	Urewera	3.53	55	Pn	Pn	21 16 26.7	-1.9
URZ				Sn	Sn	21 17 07.6	-4.9
KNZ	Kokohu	3.53	70	⇑PN	Pn	21 16 27.4	-1.2
KNZ	Kokohu	3.53	70	Pn	Pn	21 16 27.4	-1.2
MHGZ	Mahia Peninsul	3.65	73	PN	Pn	21 16 29.6	-0.6
MHGZ	Mahia Peninsul	3.65	73	Pn	Pn	21 16 29.6	-0.6
PRGZ	Paritu Road	3.72	69	PN	Pn	21 16 29.7	-1.3
PRGZ	Paritu Road	3.72	69	Pn	Pn	21 16 29.8	-1.3
RIGZ	Rimuhau	3.73	66	⇑PN	Pn	21 16 29.9	-1.2
MWZ	Matawai	3.75	59	PN	Pn	21 16 29.5	-2.0
MWZ	Matawai	3.75	59	Pn	Pn	21 16 29.5	-2.0
RPZ	Rata Peaks	3.82	207	PN	Pn	21 16 30.7	-1.5
TKGZ	Te Karaka	3.92	63	PN	Pn	21 16 32.1	-1.3
TKGZ	Te Karaka	3.92	63	Pn	Pn	21 16 32.1	-1.3
CNGZ	Carnagh Statio	4.14	65	PN	Pn	21 16 35.1	-1.1
CNGZ	Carnagh Statio	4.14	65	Pn	Pn	21 16 35.1	-1.1
TWGZ	Tauwhareparae	4.14	60	PN	Pn	21 16 34.7	-1.5
TWGZ	Tauwhareparae	4.14	60	Pn	Pn	21 16 34.7	-1.5
FOZ	Fox Glacier	4.18	219	PN	Pn	21 16 35.1	-1.6
FOZ	Fox Glacier	4.18	219	Pn	Pn	21 16 35.1	-1.6
HAZ	Te Kaha	4.26	54	PN	Pn	21 16 35.0	-2.6
PUZ	Puketiti	4.38	61	PN	Pn	21 16 36.9	-2.3
PUZ	Puketiti	4.38	61	Pn	Pn	21 16 36.9	-2.3
WMGZ	Waiomatatini S	4.62	59	PN	Pn	21 16 39.8	-2.5
WMGZ	Waiomatatini S	4.62	59	Pn	Pn	21 16 39.8	-2.5
MXZ	Matakaoa Point	4.70	56	PN	Pn	21 16 40.9	-2.4
MXZ	Matakaoa Point	4.70	56	Pn	Pn	21 16 40.9	-2.4
LBZ	Lake Benmore	4.71	209	PN	Pn	21 16 41.5	-1.8
LBZ	Lake Benmore	4.71	209	Pn	Pn	21 16 41.5	-1.8
JCZ	Jackson Bay	5.09	221	PN	Pn	21 16 46.4	-1.8
JCZ	Jackson Bay	5.09	221	Pn	Pn	21 16 46.4	-1.8
ODZ	Otahua Downs	5.14	203	⇑PN	Pn	21 16 47.5	-1.3
ODZ	Otahua Downs	5.14	203	Pn	Pn	21 16 47.5	-1.3
WKZ	Wanaka	5.55	214	PN	Pn	21 16 51.5	-2.5
WKZ	Wanaka	5.55	214	Pn	Pn	21 16 51.5	-2.5

DDA ***29*** *21:17:36.7, 39.°17N×29.°02E, h7km, Md2.6*
ISCJB ***29*** *21:17:37.6±0.6, 39.°11N±0.°04×29.°03E±0.°04, h9km±6km, Error ellipse: s-maj=6.7km s-min=5.1km az=16.4*
CSEM ***29*** *21:17:37.6±0.1, 39.°14N×29.°04E, h5km, MD2.6, Error ellipse: s-maj=2.6km s-min=2.2km az=71.0*
ISK ***29*** *21:17:37.7, 39.°14N×29.°02E, h10km, MD2.7*

ISC 29 21:17:37.6±0.9, 39.°10N±0.°03×29.°03E±0.°03, h10km±9km, n26, σ0°20/36, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**258**	P	**Pg**	**21 17 42.8**	**0.0**
DEMI				S	**Sg**	**21 17 46.1**	**-0.1**
DEMI	**Demirci**	**0.25**	**258**	*i* P	**Pg**	**21 17 42.8**	**0.0**
DEMI				*i* S	**Sg**	**21 17 46.1**	**-0.1**
GDZ	**Gediz**	**0.35**	**91**	P	**Pg**	**21 17 44.6**	**0.0**
GDZ				S	**Sg**	**21 17 49.6**	**+0.3**
GDZ	**Gediz**	**0.35**	**91**	*i* P	**Pg**	**21 17 44.6**	**0.0**
GDZ				*i* S	**Sg**	**21 17 49.6**	**+0.3**
KULA	**Kula-Manisa**	**0.65**	**207**	*e*PG	**Pb**	**21 17 51.3**	**+0.2**
KULA	**Kula-Manisa**	**0.65**	**207**	*e*Pg	**Pb**	**21 17 51.3**	**+0.2**
KHAL	**Karahalli**	**0.81**	**153**	P	**Pb**	**21 17 53.7**	**-0.1**
KHAL				S	**Sg**	**21 18 03.6**	**-0.1**
KHAL	**Karahalli**	**0.81**	**153**	*i* P	**Pb**	**21 17 53.6**	**-0.1**
KHAL				*i* S	**Sg**	**21 18 03.6**	**-0.1**
KHL	**Karahalli**	**0.86**	**153**	*e*PG	**Pn**	**21 17 55.9**	**+0.1**
KHL	**Karahalli**	**0.86**	**153**	*e*Pg	**Pn**	**21 17 55.9**	**+0.1**
BALB	**Balikesir**	**1.04**	**302**	*e*PG	**Pg**	**21 17 57.6**	**-0.1**
BALB	**Balikesir**	**1.04**	**302**	*e*Pg	**Pg**	**21 17 57.6**	**-0.1**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*PN	**Pb**	**21 18 01.8**	**0.0**
KCTX				*e*SN	**Sn**	**21 18 18.9**	**+0.2**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*Pn	**Pb**	**21 18 01.8**	**0.0**
KCTX				*e*Sn	**Sn**	**21 18 18.9**	**+0.2**
IZI	**Iznik**	**1.28**	**15**	*e*PN	**Pb**	**21 18 01.9**	**0.0**
IZI	**Iznik**	**1.28**	**15**	*e*Pn	**Pb**	**21 18 01.9**	**0.0**
BORA	**Eskisehir**	**1.35**	**54**	P	**Pn**	**21 18 02.4**	**-0.2**
BORA				S	**Sb**	**21 18 20.0**	**-0.4**
BORA	**Eskisehir**	**1.35**	**54**	*i* P	**Pn**	**21 18 02.4**	**-0.2**
BORA				*i* S	**Sb**	**21 18 20.0**	**-0.4**
ARMT	**Armutlu**	**1.47**	**355**	*e*PN	**Pn**	**21 18 04.0**	**-0.1**
ARMT	**Armutlu**	**1.47**	**355**	*e*Pn	**Pn**	**21 18 04.1**	**-0.1**
EDC	**Edincik**	**1.54**	**325**	*e*PN	**Pn**	**21 18 05.3**	**+0.2**
EDC	**Edincik**	**1.54**	**325**	*e*Pn	**Pn**	**21 18 05.3**	**+0.2**
GULT	**Gulveren**	**1.76**	**40**	*e*PN	**Pn**	**21 18 08.4**	**+0.2**
GULT	**Gulveren**	**1.76**	**40**	*e*Pn	**Pn**	**21 18 08.4**	**+0.2**
SPNC	**Sapanca-Adapaz**	**1.87**	**31**	*e*PN	**Pn**	**21 18 09.9**	**+0.3**
SPNC	**Sapanca-Adapaz**	**1.87**	**31**	*e*Pn	**Pn**	**21 18 09.9**	**+0.3**

CSEM ***29*** *21:20:19.6±0.3, 33.°03N×35.°99E, h2km, ML2.8, Error ellipse: s-maj=7.6km s-min=2.9km az=44.0*
ISCJB ***29*** *21:20:20.3±1.8, 32.°90N±0.°09×35.°8E±0.°1, h15km±22km, Error ellipse: s-maj=22.1km s-min=5.7km az=136.3*
NSSC ***29*** *21:20:20.2±0.8, 33.°01N×36.°03E, h7km±8km, MD1.3, ML1.6*
GRAL ***29*** *21:20:25.0±0.3, 33.°29N×35.°96E, h2km±13km, MD2.8*

ISC 29 21:20:18.8±1.5, 33.°03N±0.°06×35.°96E±0.°07, h8km±11km, n18, σ0°82/31, Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RCY	**Rachaya**	**0.48**	**348**	*e*P	**Pg**	**21 20 29.2**	**+1.1**
RCY				*e*S	**Sg**	**21 20 32.3**	**-2.1**
RCY	**Rachaya**	**0.48**	**348**	*e*P	**Pg**	**21 20 29.2**	**+1.1**
SALA	**Sala**	**0.73**	**116**	*e*P	**Pb**	**21 20 33.6**	**-0.2**
SALA				*e*S	**Sg**	**21 20 42.4**	**+0.1**
SALA				AML	AML	21 20 46.2	
	comp=N,31nm,0.2s						
SALA				AML	AML	21 20 47.1	
	comp=E,5.3nm,0.3s						
SALA	**Sala**	**0.73**	**116**	*e*P	**Pb**	**21 20 33.6**	**-0.2**
SALA				*e*S	**Sg**	**21 20 42.4**	**+0.1**
	comp=E,5.0nm,0.3s						
DQRL	**Deir Qamar**	**0.75**	**335**	*e*P	**Pb**	**21 20 34.5**	**+0.4**
DQRL				*e*S	**Sg**	**21 20 41.6**	**-1.4**
DQRL	**Deir Qamar**	**0.75**	**335**	*e*P	**Pb**	**21 20 34.5**	**+0.4**
BHL	**Bhannes**	**0.91**	**344**	*e*P	**Pg**	**21 20 37.0**	**+0.7**
BHL				*e*S	**Sg**	**21 20 45.8**	**-2.3**
BHL	**Bhannes**	**0.91**	**344**	*e*P	**Pg**	**21 20 37.0**	**+0.7**
MARH	**Ras Al Marh**	**1.09**	**24**	*e*P	**Pn**	**21 20 40.8**	**+0.2**
MARH				*e*S	**Sn**	**21 20 56.0**	**0.0**
MARH				AML	AML	21 21 00.2	
	comp=E,34nm,0.5s						
MARH				AML	AML	21 21 02.0	
	comp=N,24nm,0.2s						
MARH	**Ras Al Marh**	**1.09**	**24**	*e*P	**Pn**	**21 20 40.8**	**+0.2**
MARH				*e*S	**Sn**	**21 20 56.0**	**0.0**
	comp=N,24nm,0.2s						
ZALF	**Zalf**	**1.16**	**95**	*e*P	**Pn**	**21 20 41.2**	**-0.2**
ZALF				*e*S	**Sb**	**21 20 55.4**	**-1.0**
ZALF				AML	AML	21 20 57.7	
	comp=E,18nm,0.3s						
ZALF				AML	AML	21 20 59.5	
	comp=N,20nm,0.5s						
ZALF	**Zalf**	**1.16**	**95**	*e*P	**Pn**	**21 20 41.2**	**-0.2**
ZALF				*e*S	**Sb**	**21 20 55.4**	**-1.0**
	comp=N,20nm,0.5s						
HWQ	**Hawqa**	**1.25**	**360**	*e*P	**Pn**	**21 20 42.8**	**+0.2**
HWQ	**Hawqa**	**1.25**	**360**	*e*P	**Pn**	**21 20 42.8**	**+0.2**
HAWK	**Haweek**	**1.54**	**14**	*e*P	**Pb**	**21 20 48.0**	**+0.4**
HAWK				*e*S	**Sb**	**21 21 07.4**	**+0.2**
HAWK				AML	AML	21 21 10.7	
	comp=N,10nm,0.3s						
HAWK				AML	AML	21 21 13.6	
	comp=E,13nm,0.5s						
HAWK	**Haweek**	**1.54**	**14**	*e*P	**Pb**	**21 20 48.0**	**+0.4**
HAWK				*e*S	**Sb**	**21 21 07.4**	**+0.2**
	comp=E,13nm,0.5s						
RABH	**Abou Rabah**	**1.75**	**36**	*e*P	**Pb**	**21 20 51.4**	**+0.3**
RABH				*e*S	**Sb**	**21 21 13.2**	**-0.1**
RABH				AML	AML	21 21 17.2	
	comp=E,10nm,0.4s						
RABH				AML	AML	21 21 17.4	
	comp=N,12nm,0.3s						
RABH	**Abou Rabah**	**1.75**	**36**	*e*P	**Pb**	**21 20 51.4**	**+0.3**
RABH				*e*S	**Sb**	**21 21 13.2**	**-0.1**
	comp=N,12nm,0.3s						

MEX 29 21:34:03.4±0.8, 30.°71N×105.°57W, h10km, MD4.0, Texas-Mexico border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CGIG		**2.10**	**261**	*e*P	Pn	21 34 35.9	-3.0
CGIG				*e*S	Sn	21 35 00.8	-4.3
121A	**Cookes Peak, D**	**2.62**	**314**	*e*P	Pn	21 34 42.2	-3.7
121A				*e*S	Sn	21 35 14.2	-3.7
319A	**Douglas**	**3.25**	**283**	*e*P	Pn	21 34 53.2	-1.4
319A				*e*S	Sn	21 35 29.3	-4.1

MAN 29 21:43:25, 9.°82N×126.°19E, h66km, mb4.7, ML3.6, MS3.6, 4C-4D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BIPH	**Bislig**	**1.63**	**174**	⇓*i*P	Pn	21 43 51.7	+0.1
BIPH				*i* S	Sn	21 44 12.5	+0.8
PLP	**Palo**	**1.79**	**318**	⇓*e*P	Pn	21 43 54.6	+0.8
PLP				*e*S	Sn	21 44 16.8	+1.1
BESP	**Borongan**	**1.92**	**337**	*e*P	Pn	21 43 56.6	+1.1
BESP				*e*S	Sn	21 44 24.7	+6.0
OCLP	**Ormoc**	**1.98**	**308**	*e*P	Pn	21 43 57.7	+1.4
CGP	**Cagayan de Oro**	**2.00**	**228**	⇑*e*P	Pn	21 43 57.6	+1.0
CGP				*e*S	Sn	21 44 21.9	+1.2
LLP	**Lapu-Lapu**	**2.25**	**283**	⇓*e*P	Pn	21 44 01.4	+1.4
LLP				*e*S	Sn	21 44 28.9	+2.3
TBP	**Tagbilaran**	**2.30**	**267**	⇓*i*P	Pn	21 44 05.1	+4.4
DCPH	**Dipolog City**	**3.06**	**247**	⇑*e*P	Pn	21 44 11.9	+0.9
DCPH				*e*S	Sn	21 44 47.8	+1.4
CTBH	**Cotabato--PC H**	**3.22**	**217**	⇑*i*P	Pn	21 44 15.6	+2.5
RCP	**Roxas**	**3.81**	**297**	⇑*e*P	Pn	21 44 23.2	+2.0

ISCJB ***29*** *21:54:18.3±1.0, 36.°58N±0.°05×71.°2E±0.°1, h188km, Error ellipse: s-maj=12.3km s-min=6.8km az=159.7*
NNC ***29*** *21:54:24.5±1.5, 37.°00N×71.°00E, h197km±27km, mb2.7, mpv3.8, Error ellipse: s-maj=24.0km s-min=9.5km az=129.0*

ISC 29 21:54:18.5±1.5, 36.°59N±0.°08×71.°2E±0.°1, h188km, n6, σ1°92/11, 3C-3D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**2.90**	**321**	⇑P	Pn	21 55 08.4	+2.0
	66nm,0.5s						
DZET				⇓S	**Sn**	**21 55 42.7**	**-1.1**
	71nm,0.5s						
THN	**Thein Dam**	**5.58**	**137**	*e*P	**Pn**	**21 55 40.7**	**+0.5**
THN				*e*S	**Sn**	**21 56 42.5**	**-2.0**
MNAS	**Manas**	**5.98**	**9**	⇓P	**Pn**	**21 55 46.9**	**+1.6**
	3.9nm,0.6s						
MNAS				⇑S	**Sn**	**21 56 52.4**	**-1.6**
	9.8nm,0.4s						
KK31	**Karatay Array**	**6.53**	**356**	P	**Pn**	**21 55 53.8**	**+1.3**
	2.9nm,0.3s,baz=180,slow=12,SNR=238						
KK31				S	**Sn**	**21 57 03.2**	**-3.5**
	4.2nm,0.7s,baz=180,slow=25,SNR=7.2						
AAK	**Ala-Archa**	**6.56**	**22**	P	**Pn**	**21 55 54.3**	**+1.3**
	2.5nm,0.5s						
AAK				S	**Sn**	**21 57 08.0**	**+0.4**
	3.9nm,0.6s						
TKM2	**Tokmak 2**	**7.18**	**27**	⇓P	**Pn**	**21 56 02.5**	**+1.4**
	7.7nm,0.7s						
TKM2				⇑S	**Sn**	**21 57 21.4**	**-1.0**
	1.7nm,0.8s						

NIED ***29*** *21:55:00, 37.°70N×139.°90E, h5km, Mw3.8 Best double couple: M=4.97000×10^14 NP1:φs=253.00000°, δ36.00000°, λ148.00000°. NP2:φs10.00000°, δ71.00000°, λ58.00000°.*
ISCJB ***29*** *21:55:14.8±0.6, 37.°70N±0.°04×139.°94E±0.°03, h12km±4km, mb3.5/8, Error ellipse: s-maj=6.0km s-min=4.0km az=166.6*
JMA ***29*** *21:55:15.5, 37.°67N×139.°94E, h8km±1km, M3.6 Broadband fault plane solution: P waves. NP1: φs8.00000°, δ66.00000°, λ55.00000°. NP2:φs247.00000°, δ41.00000°, λ142.00000°. Principal axes: T Plg55.0000°, Azm233.0000°; N Plg31.0000°, Azm23.0000°; P Plg14.0000°, Azm122.0000°;*
JMA Felt II J1.
IDC ***29*** *21:55:22.3±2.9, 37.°64N×139.°75E, h66km±27km, mb3.3/8, mb1 3.5/9, mb1mx3.2/41, mbtmp3.6/9, ML3.5/1, MS3.4/1, Ms1 3.4/1, ms1mx2.6/25 Error ellipse: s-maj=28.1km s-min=16.2km az=88.0*

ISC 29 21:55:15.4±1.0, 37.°67N±0.°04×139.°94E±0.°03, h11km±7km, n19, σ0°57/26, mb3.6/8, 2C-4D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFY	**Yanaizu**	**0.32**	**215**	⇑P	**Pg**	**21 55 22.0**	**+0.2**
JFY				S	**Sg**	**21 55 26.4**	**+0.4**
JFT	**Otama**	**0.35**	**115**	⇓P	**Pg**	**21 55 22.5**	**+0.1**
JFT				S	**Sg**	**21 55 27.3**	**+0.2**
JNS	**Sasagawa**	**0.51**	**287**	⇓P	**Pg**	**21 55 25.4**	**0.0**
JNS				S	**Sg**	**21 55 32.1**	**-0.1**
JYS	**Shirataka**	**0.56**	**10**	⇓P	**Pg**	**21 55 26.3**	**0.0**
JYS				S	**Sg**	**21 55 34.0**	**+0.2**
JMM	**Marumori**	**0.71**	**73**	P	**Pg**	**21 55 28.9**	**-0.2**
JMM				S	**Sg**	**21 55 38.2**	**-0.1**
JFK	**Kawauchi**	**0.80**	**112**	⇓P	**Pg**	**21 55 30.6**	**-0.3**
JFK				S	**Sg**	**21 55 41.0**	**-0.4**
JHK	**Hiroka**	**0.84**	**241**	⇑P	**Pg**	**21 55 31.4**	**-0.2**
JHK				S	**Sg**	**21 55 42.3**	**-0.3**
MJAR	**Matsushiro Arr**	**1.78**	**231**	P	**Pb**	**21 55 47.5**	**-0.5**
	40nm,0.3s,baz=47,slow=12,SNR=394						
MJAR				S	**Sb**	**21 56 09.8**	**-0.6**
	8.5nm,0.3s,baz=43,slow=21,SNR=5.9						
MAT	**Matsushiro**	**1.78**	**231**	P	**Pn**	**21 55 46.8**	**+0.7**
MAT				S	**Sb**	**21 56 11.0**	**+0.6**
KSRS	**Korea Array**	**9.54**	**272**	P	Pn	21 57 35.8	+3.1
	0.5nm,0.3s,baz=80,slow=14,SNR=3.4						
JCJ	**Chichijima**	**10.71**	**169**	LR	LR	22 01 09.9	
	comp=Z,176nm,19.3s,baz=10.0,slow=32						
TIXI	**Tiksi**	**34.53**	**354**	P	**P**	**22 02 02.9**	**-0.4**
	0.3nm,0.3s,baz=159,slow=8.6,SNR=3.9						
ZALV	**Zalesovo Beam**	**40.62**	**312**	P	**P**	**22 02 53.8**	**-1.2**
	0.5nm,0.4s,baz=99,slow=8.9,SNR=3.4						
MKAR	**Makanchi Array**	**42.78**	**301**	P	**P**	**22 03 12.5**	**-0.4**
	0.1nm,0.3s,baz=86,slow=8.6,SNR=4.1						
BVAR	**Borovoye Array**	**49.27**	**312**	P	**P**	**22 04 03.9**	**0.0**
	0.3nm,0.4s,baz=98,slow=8.9,SNR=4.0						
WRA	**Warramunga Arr**	**57.54**	**186**	P	**P**	**22 05 04.4**	**-0.5**
	0.7nm,0.5s,baz=1.9,slow=7.6,SNR=13						
ASAR	**Alice Springs**	**61.27**	**186**	P	**P**	**22 05 30.0**	**-0.6**
	0.4nm,0.7s,baz=15,slow=12,SNR=4.3						
YKA	**Yellowknife Ar**	**63.85**	**30**	P	**P**	**22 05 48.5**	**+1.0**
	0.3nm,0.8s,baz=302,slow=6.3,SNR=3.0						
PDAR	**Pinedale Array**	**78.06**	**45**	P	**P**	**22 07 15.6**	**+1.2**
	0.2nm,0.4s,baz=269,slow=5.3,SNR=3.4						

JMA 29 22:12:49.0±0.3, 25.°66N×128.°75E, h53km, M3.8, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JJT2	**Tamagusuku 2**	**1.02**	**298**	P	Pn	22 13 07.6	+0.5
JNTH	**Nagotoyohara**	**1.08**	**323**	P	Pn	22 13 07.9	+0.1
JNTH				S	Sn	22 13 21.7	-0.1
JIH	**Iheya**	**1.54**	**333**	P	Pn	22 13 15.2	+1.1
JIH				S	Sn	22 13 33.6	+0.6
JAGN	**Aguni-jima**	**1.64**	**305**	P	Pn	22 13 16.3	+0.8
JAGN				*e*S	Sn	22 13 35.6	+0.2
JOKE	**Okinoerabujima**	**1.70**	**355**	P	Pn	22 13 17.4	+1.1
JOKE				S	Sn	22 13 36.8	-0.2
JKE	**Kume jima 2**	**1.89**	**291**	P	Pn	22 13 19.1	+0.3
JKE				S	Sn	22 13 40.7	-0.8
JTK	**Tokunoshima**	**2.12**	**5**	P	Pn	22 13 23.1	+1.0
JTK				*e*S	Sn	22 13 46.9	-0.4
JMZ	**Minamidaito 2**	**2.23**	**85**	P	Pn	22 13 23.3	-0.3
JMZ				S	Sn	22 13 47.8	-2.2
JAMN	**Amaminishikomi**	**2.60**	**8**	P	Pn	22 13 30.3	+1.7
JAMN				*e*S	Sn	22 13 58.8	-0.2
JAM	**Amami Oshima**	**2.84**	**15**	P	Pn	22 13 34.0	+2.1
JOGS	**Gusukube**	**3.16**	**254**	P	Pn	22 13 36.9	+0.7
JOGS				S	Sn	22 14 11.5	-1.2
JIKM	**Ikemajima**	**3.25**	**258**	P	Pn	22 13 38.1	+0.6
JIRB	**Irabujima**	**3.34**	**256**	P	Pn	22 13 39.0	+0.2
JIRB				S	Sn	22 14 15.5	-1.7
JTJ	**Tarama**	**3.81**	**255**	P	Pn	22 13 45.2	+0.1
JTJ				S	Sn	22 14 26.3	-2.3
JISG	**Ishigakijimahi**	**4.16**	**256**	P	Pn	22 13 49.6	-0.4
JISG				S	Sn	22 14 33.8	-3.6

ISCJB ***29*** *22:22:19.4±0.7, 27.°6N±0.°1×92.°9E±0.°2, h17km, mb3.6/11, Error ellipse: s-maj=27.6km s-min=10.8km az=148.9*
IDC ***29*** *22:22:23.8±6.8, 27.°60N×92.°93E, h33km±54km, mb3.5/12, mb1 3.6/13, mb1mx3.4/37, mbtmp3.6/13, ML3.7/1, Error ellipse: s-maj=34.9km s-min=15.8km az=56.0*

ISC 29 22:22:21.6±0.8, 27.°6N±0.°1×92.°9E±0.°2, h17km, n13, σ0°85/13, mb3.8/11, Eastern Xizang-India border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CMAR	**Chiang Mai Arr**	**10.66**	**147**	P	**Pn**	**22 24 54.0**	**+0.4**
	0.2nm,0.3s,baz=334,slow=12,SNR=4.0						
MKAR	**Makanchi Array**	**20.90**	**339**	P	**P**	**22 27 03.6**	**+0.5**
	2.3nm,0.7s,baz=149,slow=12,SNR=13						
AAK	**Ala-Archa**	**21.19**	**320**	P	**P**	**22 27 08.3**	**+1.9**
	0.7nm,0.3s,baz=108,slow=7.7,SNR=4.8						
SONM	**Songino Array**	**22.76**	**24**	P	**P**	**22 27 22.4**	**-0.7**
	1.1nm,0.7s,baz=215,slow=13,SNR=4.9						
KURBB	**Kurchatov Arra**	**25.46**	**338**	P	**P**	**22 27 48.4**	**-0.1**
	2.3nm,0.7s,baz=148,slow=10.0,SNR=15						
ZALV	**Zalesovo Beam**	**26.98**	**349**	P	**P**	**22 28 02.1**	**-0.1**
	0.9nm,0.4s,baz=167,slow=7.6,SNR=6.1						
BVAR	**Borovoye Array**	**30.40**	**333**	P	**P**	**22 28 32.9**	**+0.1**
	0.2nm,0.3s,baz=140,slow=11,SNR=3.4						
AKTO	**Aktyubinsk**	**34.93**	**320**	P	**P**	**22 29 12.6**	**+0.1**
	0.8nm,0.6s,baz=138,slow=15,SNR=3.2						
WRA	**Warramunga Arr**	**61.98**	**135**	P	**P**	**22 32 40.6**	**-0.3**
	0.5nm,0.8s,baz=323,slow=7.3,SNR=4.5						
GERES	**GERESS Array B**	**62.89**	**313**	P	**P**	**22 32 45.6**	**-1.2**
	0.3nm,0.5s,baz=65,slow=9.6,SNR=4.6						
ASAR	**Alice Springs**	**64.52**	**138**	P	**P**	**22 32 57.8**	**0.0**
	0.4nm,0.6s,baz=324,slow=6.6,SNR=4.5						
ILAR	**Eielson Array**	**76.97**	**22**	P	**P**	**22 34 13.8**	**+0.8**
	0.3nm,0.7s,baz=299,slow=4.7,SNR=4.4						
TORD	**Torodi Ar. Bea**	**85.09**	**282**	P	**P**	**22 34 56.5**	**-0.6**
	0.8nm,1.1s,baz=46,slow=6.2,SNR=3.2						

ISCJB ***29*** *22:23:19.7±0.4, 38.°18N±0.°01×23.°96E±0.°01, h5km±3km, Error ellipse: s-maj=2.1km s-min=1.8km az=176.7*
ATH ***29*** *22:23:19.5, 38.°16N×23.°95E, h18km, ML3.2/32, Error ellipse: s-maj=0.7km s-min=0.5km az=246.0*
ISK ***29*** *22:23:20.6, 38.°24N×23.°97E, h12km, ML3.1*
THE ***29*** *22:23:20.4, 38.°18N×23.°92E, h1km±1km, ML3.5/18, Error ellipse: s-maj=1.4km s-min=0.6km az=58.0*
CSEM ***29*** *22:23:20.1±0.1, 38.°18N×23.°94E, h2km, ML3.2, Error ellipse: s-maj=1.8km s-min=1.6km az=7.0*

ISC 29 22:23:20.2±0.9, 38.°18N±0.°01×23.°95E±0.°01, h6km±7km, n260, σ0°90/363, 5C-4D, Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PTL	**Penteli**	**0.15**	**206**	P	**Pg**	**22 23 23.6**	**+0.4**
PTL				S	**Sg**	**22 23 25.3**	**+0.1**
PTL	**Penteli**	**0.15**	**206**	P	**Pg**	**22 23 23.6**	**+0.4**
PTL				S	**Sg**	**22 23 25.3**	**+0.1**
PTL	**Penteli**	**0.15**	**206**	P	**Pg**	**22 23 23.7**	**+0.4**
PTL				S	**Sg**	**22 23 24.1**	**-1.1**
PTL				AML	AML	22 23 25.4	
	comp=E,59408μm,0.4s						
PTL				AML	AML	22 23 25.5	
	comp=N,75823μm,0.3s						
ATH	**Athens Observa**	**0.28**	**221**	P	**Pg**	**22 23 25.7**	**+0.1**
ATH				S	**Sg**	**22 23 29.3**	**+0.1**
ATH	**Athens Observa**	**0.28**	**221**	P	**Pg**	**22 23 25.7**	**+0.1**
ATH				S	**Sg**	**22 23 29.3**	**+0.1**
VLY	**Voula,Athens**	**0.35**	**200**	P	**Pg**	**22 23 27.0**	**0.0**
VLY				S	**Sg**	**22 23 31.1**	**-0.5**
VLY	**Voula,Athens**	**0.35**	**200**	P	**Pg**	**22 23 27.0**	**0.0**
VLY				S	**Sg**	**22 23 31.1**	**-0.5**
VLY	**Voula,Athens**	**0.35**	**200**	P	**Pg**	**22 23 27.5**	**+0.5**
VLY				S	**Sg**	**22 23 30.3**	**-1.2**
VLY				AML	AML	22 23 31

XOR			S	Sn	22 24 03.1	0.0
XOR	**Xorichti**	**1.32 334**	P	Pn	22 23 45.1	-0.1
XOR			S	Sn	22 24 03.1	0.0
XOR	**Xorichti**	**1.32 334**	P	Pn	22 23 45.1	-0.1
XOR			S	Sn	22 24 03.1	0.0
XOR			AML	AML	22 24 06.5	
	comp=E,845μm,0.3s					
XOR			AML	AML	22 24 06.9	
	comp=N,1686μm,0.4s					
KLV	**Kalavryta, Ach**	**1.42 265**	P	Pn	22 23 45.8	-0.8
KLV	**Kalavryta, Ach**	**1.42 265**	P	Pn	22 23 45.8	-0.8
KLV			S	Sb	22 24 04.9	-0.6
KLV	**Kalavryta, Ach**	**1.42 265**	P	Pn	22 23 45.3	-1.3
KLV			S	Sb	22 24 04.9	-0.6
KLV			AML	AML	22 24 07.0	
	comp=E,902μm,0.3s					
KLV			AML	AML	22 24 11.1	
	comp=N,717μm,0.4s					
VLX	**Vlachokerasia**	**1.48 237**	P	Pn	22 23 46.8	-0.6
VLX	**Vlachokerasia**	**1.48 237**	P	Pn	22 23 46.8	-0.6
VLX			S	Sb	22 24 07.5	+0.2
VLX	**Vlachokerasia**	**1.48 237**	P	Pn	22 23 46.6	-0.8
VLX			S	Sb	22 24 07.5	+0.2
VLX			AML	AML	22 24 13.4	
	comp=E,2642μm,0.5s					
VLX			AML	AML	22 24 13.4	
	comp=N,1793μm,0.5s					
SERG	**Sergoula**	**1.50 279**	P	Pn	22 23 46.8	-0.9
SERG			S	Sn	22 24 07.7	+0.1
AGG	**Agios Georgios**	**1.52 304**	*e*PN	Pn	22 23 48.1	+0.3
AGG	**Agios Georgios**	**1.52 304**	P	Pn	22 23 48.0	+0.1
AGG	**Agios Georgios**	**1.52 304**	P	Pn	22 23 48.2	+0.3
AGG			S	Sb	22 24 08.6	+0.3
AGG	**Agios Georgios**	**1.52 304**	P	Pn	22 23 48.2	+0.3
AGG			S	Sb	22 24 08.6	+0.3
AGG			AML	AML	22 24 17.5	
	comp=E,1295μm,0.6s					
AGG			AML	AML	22 24 21.0	
	comp=N,1260μm,0.8s					
MHLO	**Agia Marina, M**	**1.53 166**	P	Pn	22 23 48.1	+0.1
MHLO			S	Sn	22 24 08.4	+0.1
MHLO	**Agia Marina, M**	**1.53 166**	P	Pn	22 23 48.2	+0.2
MHLO			S	Sn	22 24 08.4	+0.1
MHLO	**Agia Marina, M**	**1.53 166**	P	Pn	22 23 48.2	+0.2
MHLO			S	Sn	22 24 08.0	-0.3
MHLO			AML	AML	22 24 15.1	
	comp=N,3428μm,0.3s					
MHLO			AML	AML	22 24 15.2	
	comp=E,5056μm,0.6s					
LAKA	**Lakka**	**1.55 273**	P	Pn	22 23 48.1	-0.2
LAKA			S	Sg	22 24 09.7	-0.3
LAKA	**Lakka**	**1.55 273**	P	Pn	22 23 48.1	-0.2
LAKA			S	Sg	22 24 09.7	-0.3
EFP	**Efpalio**	**1.62 279**	P	Pn	22 23 49.6	+0.3
EFP			S	Sg	22 24 12.0	-0.3
EFP	**Efpalio**	**1.62 279**	P	Pn	22 23 49.6	+0.3
EFP			S	Sn	22 24 10.8	+0.3
EFP	**Efpalio**	**1.62 279**	P	Pn	22 23 48.8	-0.4
EFP			S	Sn	22 24 10.8	+0.3
EFP			AML	AML	22 24 16.6	
	comp=N,1228μm,0.5s					
EFP			AML	AML	22 24 19.6	
	comp=E,1152μm,0.4s					
VLI	**Veliai**	**1.67 209**	P	Pn	22 23 49.0	-0.9
VLI			S	Sb	22 24 12.4	-0.1
VLI	**Veliai**	**1.67 209**	P	Pn	22 23 49.0	-0.9
VLI			S	Sb	22 24 12.4	-0.1
VLI	**Veliai**	**1.67 209**	P	Pn	22 23 48.5	-1.4
VLI			S	Sn	22 24 11.0	-0.6
VLI			AML	AML	22 24 19.5	
	comp=N,697μm,0.5s					
VLI			AML	AML	22 24 20.5	
	comp=E,911μm,0.4s					
CHOS	**Chios island**	**1.67 82**	*e*PN	Pn	22 23 50.2	+0.1
CHOS	**Chios island**	**1.67 82**	P	Pn	22 23 50.2	+0.1
CHOS			S	Sg	22 24 13.9	0.0
CHOS	**Chios island**	**1.67 82**	*e*Pn	Pn	22 23 50.2	+0.1
CHOS	**Chios island**	**1.67 82**	P	Pn	22 23 50.6	+0.6
CHOS			S	Sg	22 24 13.5	-0.4
CHOS	**Chios island**	**1.67 82**	P	Pn	22 23 50.6	+0.6
CHOS			S	Sg	22 24 13.5	-0.4
CHOS			AML	AML	22 24 20.4	
	comp=E,1212μm,0.5s					
CHOS			AML	AML	22 24 20.5	
	comp=N,997μm,0.6s					
APE	**Apeiranthos**	**1.68 131**	*e*PN	Pn	22 23 50.9	+0.8
APE			*e*SN	Sb	22 24 13.5	+0.5
APE	**Apeiranthos**	**1.68 131**	P	Pn	22 23 49.8	-0.3
APE			S	Sb	22 24 13.4	+0.5
APE	**Apeiranthos**	**1.68 131**	P	Pn	22 23 50.0	-0.1
APE	**Apeiranthos**	**1.68 131**	*e*Pn	Pn	22 23 50.9	+0.8
APE			S	Sb	22 24 13.4	+0.5
APE	**Apeiranthos**	**1.68 131**	P	Pn	22 23 50.0	-0.1
APE			S	Sn	22 24 11.9	-0.1
APE			AML	AML	22 24 15.3	
	comp=E,1556μm,0.2s					
APE			AML	AML	22 24 16.9	
	comp=N,1401μm,0.3s					
UPR	**University Cam**	**1.70 274**	P	Pn	22 23 49.9	-0.5
UPR			S	Sn	22 24 13.0	+0.5
UPR	**University Cam**	**1.70 274**	P	Pn	22 23 49.9	-0.5
UPR			S	Sn	22 24 13.0	+0.5
PAIG	**Paliouri**	**1.75 353**	P	Pn	22 23 50.8	-0.3
PAIG	**Paliouri**	**1.75 353**	P	Pn	22 23 50.8	-0.3
PAIG	**Paliouri**	**1.75 353**	P	Pn	22 23 50.2	-0.9
DRO	**Drossia**	**1.78 263**	P	Pn	22 23 51.6	+0.1
DRO			S	Sn	22 24 14.7	+0.3
DRO	**Drossia**	**1.78 263**	P	Pn	22 23 51.6	+0.1
DRO			S	Sb	22 24 15.3	-0.5
DRO	**Drossia**	**1.78 263**	P	Pn	22 23 51.5	+0.1
DRO			S	Sb	22 24 15.3	-0.5
DRO			AML	AML	22 24 21.2	
	comp=E,2470μm,0.5s					
DRO			AML	AML	22 24 24.4	
	comp=N,1829μm,0.5s					
SIGR	**SIGRI**	**1.81 55**	*e*PN	Pn	22 23 51.8	-0.1
SIGR	**SIGRI**	**1.81 55**	P	Pn	22 23 51.9	0.0
SIGR	**SIGRI**	**1.81 55**	P	Pn	22 23 51.9	0.0
SIGR	**SIGRI**	**1.81 55**	P	Pn	22 23 51.6	-0.3
EVR	**Evrytania**	**1.83 294**	P	Pn	22 23 53.0	+0.8
EVR	**Evrytania**	**1.83 294**	P	Pn	22 23 53.0	+0.8
EVR			S	Sb	22 24 17.8	+0.5
EVR	**Evrytania**	**1.83 294**	P	Pb	22 23 53.7	-0.4
EVR			S	Sb	22 24 17.8	+0.5
EVR			AML	AML	22 24 26.1	
	comp=N,386μm,0.5s					
AMT	**Artemida-Makis**	**1.89 251**	P	Pn	22 23 53.4	+0.5
AMT			S	Sn	22 24 17.4	+0.4
AMT	**Artemida-Makis**	**1.89 251**	P	Pn	22 23 53.4	+0.5
AMT			S	Sn	22 24 17.4	+0.4
AMT	**Artemida-Makis**	**1.89 251**	P	Pn	22 23 53.6	+0.7
AMT			S	Sn	22 24 17.2	+0.2
AMT			AML	AML	22 24 21.8	
	comp=N,1397μm,0.9s					
AMT			AML	AML	22 24 24.0	
	comp=E,1010μm,0.4s					
ITM	**Ithomi**	**1.89 239**	P	Pn	22 23 53.1	+0.1
ITM	**Ithomi**	**1.89 239**	P	Pn	22 23 53.7	+0.7
ITM			S	Sn	22 24 18.1	+1.0
ITM	**Ithomi**	**1.89 239**	P	Pn	22 23 53.7	+0.7
ITM			S	Sn	22 24 18.1	+1.0
ITM			AML	AML	22 24 25.3	
	comp=E,471μm,0.6s					
ITM			AML	AML	22 24 27.6	
	comp=N,417μm,0.8s					
PVO	**Paravola**	**1.95 284**	P	Pb	22 23 55.0	-1.1
PVO	**Paravola**	**1.95 284**	P	Pb	22 23 55.0	-1.1
PVO	**Paravola**	**1.95 284**	P	Pb	22 23 55.2	-0.9
RLS	**Riolos of Patr**	**1.96 267**	P	Pn	22 23 54.2	+0.3
RLS			S	Sb	22 24 20.1	-0.8
RLS	**Riolos of Patr**	**1.96 267**	S	Sb	22 24 20.1	-0.8
RLS			AML	AML	22 24 24.9	
	comp=E,460μm,0.8s					
RLS			AML	AML	22 24 30.1	
	comp=N,545μm,0.7s					
LIA	**Limnos Island**	**1.97 29**	P	Pn	22 23 53.5	-0.5
LIA	**Limnos Island**	**1.97 29**	P	Pn	22 23 53.5	-0.5
LIA			S	Sb	22 24 21.6	+0.5
ZEY	**˜zmir**	**2.02 88**	*i* P	Pn	22 23 54.8	+0.1
ZEY			*i* S	Sg	22 24 24.7	-0.2
AXS	**Araxos**	**2.02 271**	P	Pn	22 23 55.8	+1.0
AXS			S	Sn	22 24 21.5	+1.1
AXS	**Araxos**	**2.02 271**	P	Pn	22 23 55.8	+1.0
AXS			S	Sn	22 24 21.5	+1.1
THL	**Klokotos Trika**	**2.04 313**	P	Pn	22 23 55.3	+0.2
CMBO	**Columbo, Santo**	**2.07 145**	P	Pn	22 23 55.7	+0.3
CMBO			S	Sn	22 24 21.7	+0.3
CMBO	**Columbo, Santo**	**2.07 145**	P	Pn	22 23 55.7	+0.3
CMBO			S	Sn	22 24 21.7	+0.3
CMBO			AML	AML	22 24 35.4	
	comp=E,2221μm,0.7s					
CMBO			AML	AML	22 24 35.5	
	comp=N,3422μm,0.5s					
THR5	**Thira Island,**	**2.09 147**	*e*PN	Pn	22 23 56.1	+0.5
THR5	**Thira Island,**	**2.09 147**	*e*Pn	Pn	22 23 56.2	+0.5
URLA	**Izmir**	**2.09 84**	P	Pn	22 23 56.2	+0.4
URLA			S	Sn	22 24 21.6	-0.6
URLA	**Izmir**	**2.09 84**	*i* P	Pn	22 23 56.1	+0.4
URLA			*i* S	Sn	22 24 21.6	-0.6
PRK	**Paraskevi**	**2.11 59**	P	Pn	22 23 56.0	+0.1
PRK	**Paraskevi**	**2.11 59**	P	Pn	22 23 56.0	+0.1
OUR	**Ouranopolis**	**2.15 1**	*e*PN	Pn	22 23 56.7	+0.2
OUR	**Ouranopolis**	**2.15 1**	P	Pn	22 23 56.5	0.0
OUR	**Ouranopolis**	**2.15 1**	*e*Pn	Pn	22 23 56.7	+0.2
OUR	**Ouranopolis**	**2.15 1**	P	Pn	22 23 56.4	-0.2
PYL	**PYLOS**	**2.17 234**	P	Pn	22 23 57.5	+0.7
PYL	**PYLOS**	**2.17 234**	P	Pn	22 23 57.5	+0.7
PYL	**PYLOS**	**2.17 234**	P	Pn	22 23 58.1	+1.3
SANT	**Santorini**	**2.17 146**	P	Pn	22 23 55.6	-1.3
SANT			S	Sn	22 24 24.9	+0.8
SANT	**Santorini**	**2.17 146**	P	Pn	22 23 55.6	-1.3
SANT			S	Sn	22 24 24.9	+0.8
SANT			AML	AML	22 24 33.9	
	comp=N,439μm,0.4s					
SANT			AML	AML	22 24 37.0	
	comp=E,663μm,0.3s					
THR1	**Thera Island**	**2.17 146**	*e*PN	Pn	22 23 58.4	+1.5
THR1	**Thera Island**	**2.17 146**	*e*Pn	Pn	22 23 58.4	+1.5
VTN	**Vitineika**	**2.19 264**	P	Pn	22 23 56.3	-0.8
VTN			S	Sn	22 24 25.1	+0.5
VTN	**Vitineika**	**2.19 264**	P	Pn	22 23 56.3	-0.8
VTN			S	Sn	22 24 25.1	+0.5
PDO	**Prodromos**	**2.21 282**	P	Pn	22 23 58.2	+0.9
PDO			S	Sn	22 24 26.5	+1.5
PDO	**Prodromos**	**2.21 282**	P	Pn	22 23 58.2	+0.9
PDO			S	Sn	22 24 26.5	+1.5
PDO			AML	AML	22 24 34.3	
	comp=E,718μm,0.4s					
PDO			AML	AML	22 24 36.5	
	comp=N,742μm,0.3s					
PLG	**Polygyros**	**2.22 350**	P	Pn	22 23 56.6	-1.0
PLG	**Polygyros**	**2.22 350**	P	Pn	22 23 56.6	-1.0
LIT	**Litokhoron**	**2.23 330**	P	Pn	22 23 57.2	-0.4
LIT	**Litokhoron**	**2.23 330**	P	Pn	22 23 57.2	-0.4
DGB	**˜zmir**	**2.32 92**	*i* P	Pn	22 23 59.4	+0.5
DGB			*i* S	Sn	22 24 26.2	-1.5
BOZC	**Bozcaada**	**2.33 44**	*i* P	Pn	22 23 59.4	+0.3
BOZC			*i* S	Sn	22 24 26.8	-1.3
SMG	**Samos**	**2.33 101**	P	Pn	22 23 59.2	+0.1
SMG	**Samos**	**2.33 101**	P	Pn	22 23 59.5	+0.4
SMG	**Samos**	**2.33 101**	P	Pn	22 23 59.5	+0.4
ANKY	**Antikythira Is**	**2.37 193**	P	Pn	22 23 58.7	-0.8
ANKY	**Antikythira Is**	**2.37 193**	P	Pn	22 23 58.7	-0.8
ANKY			S	Sn	22 24 27.1	-1.8
ANKY	**Antikythira Is**	**2.37 193**	P	Pn	22 23 58.1	-1.5
ANKY			S	Sn	22 24 27.1	-1.8
ANKY			AML	AML	22 24 34.9	
	comp=N,321μm,0.4s					
ANKY			AML	AML	22 24 39.4	
	comp=E,448μm,0.7s					
AYVA	**Ayvalik**	**2.42 61**	P	Pn	22 24 02.1	+1.8
AYVA	**Ayvalik**	**2.42 61**	*i* P	Pn	22 24 02.1	+1.8
DSL	**Palaion Diasel**	**2.42 294**	P	Pn	22 24 01.2	+0.8
DSL			S	Sn	22 24 31.7	+1.3
DSL	**Palaion Diasel**	**2.42 294**	P	Pn	22 24 01.2	+0.8
DSL			S	Sn	22 24 31.7	+1.3
DSL			AML	AML	22 24 38.3	
	comp=N,263μm,0.5s					
DSL			AML	AML	22 24 44.8	
	comp=E,232μm,0.5s					
EZN	**Ezine**	**2.48 48**	*e*PN	Pn	22 24 00.9	-0.1
EZN	**Ezine**	**2.48 48**	*e*Pn	Pn	22 24 00.9	-0.1
DKL	**Dikili**	**2.48 68**	*e*PN	Pn	22 24 01.7	+0.6
DKL	**Dikili**	**2.48 68**	*e*Pn	Pn	22 24 01.7	+0.6
KFL	**Anninata**	**2.49 269**	P	Pn	22 24 02.1	+0.9
KFL			S	Sn	22 24 33.2	+1.2
KFL	**Anninata**	**2.49 269**	P	Pn	22 24 02.1	+0.9
KFL			S	Sn	22 24 33.1	+1.2
HORT	**Hortiatis**	**2.50 345**	*e*PN	Pn	22 24 01.3	-0.1
HORT	**Hortiatis**	**2.50 345**	*e*Pn	Pn	22 24 01.3	-0.1
HORT	**Hortiatis**	**2.50 345**	P	Pn	22 24 02.0	+0.6
HORT			S	Sn	22 24 31.5	-0.8
HORT	**Hortiatis**	**2.50 345**	P	Pn	22 24 02.0	+0.6
HORT			S	Sn	22 24 31.5	-0.8
HORT			AML	AML	22 24 34.3	
	comp=N,139μm,0.4s					
HORT			AML	AML	22 24 39.4	
	comp=E,128μm,0.5s					
GADA	**Gvkgeada**	**2.52 36**	*e*PN	Pn	22 24 02.0	+0.4
GADA	**Gvkgeada**	**2.52 36**	*e*Pn	Pn	22 24 02.0	+0.4
ZKS	**Zakynthos**	**2.54 260**	P	Pn	22 24 02.2	+0.2
ZKS			S	Sn	22 24 35.5	+2.2
ZKS	**Zakynthos**	**2.54 260**	P	Pn	22 24 02.1	+0.2
ZKS			S	Sn	22 24 35.5	+2.2
ZKS			AML	AML	22 24 55.7	
	comp=N,893μm,1.2s					
ZKS			AML	AML	22 24 56.4	
	comp=E,980μm,0.9s					
THE	**Thessaloniki**	**2.56 343**	P	Pn	22 24 02.2	0.0
THE	**Thessaloniki**	**2.56 343**	P	Pn	22 24 02.2	0.0
SMTH	**Samothraki Isl**	**2.60 28**	P	Pn	22 24 00.1	-2.6
VLS	**Valsamata**	**2.64 271**	P	Pn	22 24 03.2	-0.2
VLS			S	Sn	22 24 36.6	+0.8
SOH	**Sokhos**	**2.68 350**	P	Pn	22 24 04.2	+0.4
SOH	**Sokhos**	**2.68 350**	P	Pn	22 24 04.2	+0.4
KZN	**Kozani**	**2.71 322**	P	Pn	22 24 04.3	-0.1
IMMV	**Iera Moni Meta**	**2.72 179**	P	Pn	22 24 03.5	-0.8
IMMV	**Iera Moni Meta**	**2.72 179**	P	Pn	22 24 03.5	-0.8
VAM	**Vamos**	**2.78 176**	P	Pn	22 24 05.7	+0.5
VAM			S	Sn	22 24 38.3	-0.7
JAN	**Janina**	**2.83 302**	P	Pn	22 24 07.5	+1.6
KAVA	**Kavala**	**2.84 9**	P	Pn	22 24 04.6	-1.5
KAVA	**Kavala**	**2.84 9**	P	Pn	22 24 04.6	-1.5
BODT	**Bodrum**	**2.90 112**	*e*PN	Pn	22 24 07.6	+0.8
BODT	**Bodrum**	**2.90 112**	*e*Pn	Pn	22 24 07.6	+0.8
SRS	**Serrai**	**2.94 355**	P	Pn	22 24 06.9	-0.6
SRS	**Serrai**	**2.94 355**	P	Pn	22 24 06.9	-0.6
GELI	**Tayfur-Gelibol**	**2.96 41**	*e*PN	Pn	22 24 08.4	+0.7
GELI	**Tayfur-Gelibol**	**2.96 41**	*e*Pn	Pn	22 24 08.4	+0.7
PENT	**Pentalofos**	**2.97 314**	P	Pn	22 24 09.6	+1.7
PENT	**Pentalofos**	**2.97 314**	P	Pn	22 24 09.6	+1.7
IDI	**Anoyia**	**2.99 165** ⇑	*i* P	Sn	22 24 42.4	-1.9
IDI	**Anoyia**	**2.99 165**	P	Pn	22 24 07.5	-0.6
IDI			S	Sn	22 24 45.1	+0.9
IDI	**Anoyia**	**2.99 165**	P	Pn	22 24 07.5	-0.6
IDI			S	Sn	22 24 45.1	+0.9
IDI			AML	AML	22 24 55.4	
	comp=E,147μm,0.5s					
IDI			AML	AML	22 24 57.1	
	comp=N,108μm,0.5s					
BDRM	**Kayabasi**	**2.99 111**	P	Pn	22 24 08.7	+0.6
BDRM	**Kayabasi**	**2.99 111**	*i* P	Pn	22 24 08.7	+0.6
GRG	**Griva**	**3.02 337**	P	Pn	22 24 08.9	+0.4
GRG			S	Sn	22 24 43.9	-1.1
GRG	**Griva**	**3.02 337**	P	Pn	22 24 08.8	+0.4
GRG			S	Sn	22 24 43.9	-1.1
GRG			AML	AML	22 24 51.4	
	comp=N,87μm,0.5s					
GRG			AML	AML	22 24 51.8	
	comp=E,48μm,0.6s					
NIS1	**Nisyros Isl.**	**3.02 120**	*e*PN	Pn	22 24 10.4	+1.9
NIS1	**Nisyros Isl.**	**3.02 120**	P	Pn	22 24 09.4	+0.9
NIS1	**Nisyros Isl.**	**3.02 120**	*e*Pn	Pn	22 24 10.4	+1.9
NIS1	**Nisyros Isl.**	**3.02 120**	P	Pn	22 24 09.4	+0.9
LPK	**Lapseki**	**3.09 44**	*e*PN	Pn	22 24 09.6	+0.1
LPK	**Lapseki**	**3.09 44**	*e*Pn	Pn	22 24 09.6	+0.1
AKS	**Akhisar**	**3.11 76**	*e*PN	Pn	22 24 10.5	+0.7
AKS	**Akhisar**	**3.11 76**	*e*Pn	Pn	22 24 10.5	+0.7
AYDB	**Zeytinkoy-Aydi**	**3.12 93**	*e*PN	Pn	22 24 11.0	+1.0
AYDB	**Zeytinkoy-Aydi**	**3.12 93**	*e*Pn	Pn	22 24 11.0	+1.0
IGT	**Igoumenitsa**	**3.13 297**	P	Pn	22 24 11.0	+1.0
IGT	**Igoumenitsa**	**3.13 297**	P	Pn	22 24 11.0	+1.0
AYDN	**Tasoluk**	**3.15 98**	P	Pn	22 24 11.3	+0.9
AYDN	**Tasoluk**	**3.15 98**	*i* P	Pn	22 24 11.3	+0.9
ALN	**Alexandroupoli**	**3.16 30**	*e*PN	Pn	22 24 10.3	-0.1
ALN	**Alexandroupoli**	**3.16 30**	P	Pn	22 24 10.0	-0.4
ALN	**Alexandroupoli**	**3.16 30**	P	Pn	22 24 10.0	-0.4
ALN	**Alexandroupoli**	**3.16 30**	*e*Pn	Pn	22 24 10.3	-0.1
ALN	**Alexandroupoli**	**3.16 30**	P	Pn	22 24 08.8	-1.6
NVR	**Nevrokopi**	**3.17 359**	P	Pn	22 24 10.2	-0.3
NVR			S	Sn	22 24 48.7	+0.1
NEST	**Nestorio**	**3.17 316**	P	Pn	22 24 11.7	+1.1
NEST	**Nestorio**	**3.17 316**	P	Pn	22 24 11.7	+1.1
ERIK	**Erikli-Kesan**	**3.18 38**	*e*PN	Pn	22 24 11.3	+0.6
ERIK	**Erikli-Kesan**	**3.18 38**	*e*Pn	Pn	22 24 11.3	+0.6
NPS	**Neapolis**	**3.21 155**	P	Pn	22 24 09.3	-1.8
NPS	**Neapolis**	**3.21 155**	P	Pn	22 24 09.3	-1.8
SGD	**Sagiada**	**3.23 297**	P	Pn	22 24 12.0	+0.6
SGD	**Sagiada**	**3.23 297**	P	Pn	22 24 12.0	+0.6
SIVA	**Sivas**	**3.23 167**	P	Pn	22 24 11.6	+0.2
SIVA	**Sivas**	**3.23 167**	P	Pn	22 24 11.6	+0.2
LAST	**Lasithi**	**3.26 157**	P	Pn	22 24 11.4	-0.5
LAST	**Lasithi**	**3.26 157**	P	Pn	22 24 11.4	-0.5
BALY	**Balya**	**3.26 60**	P	Pn	22 24 14.5	+2.7
BALY	**Balya**	**3.26 60**	*i* P	Pn	22 24 14.5	+2.7
FNA	**Florina**	**3.27 323**	P	Pn	22 24 13.8	+1.8
FNA	**Florina**	**3.27 323**	P	Pn	22 24 13.8	+1.8
GVD	**Gavdhos**	**3.34 178**	P	Pn	22 24 14.3	+1.4
GVD	**Gavdhos**	**3.34 178**	P	Pn	22 24 14.3	+1.4
KESN	**Edirne-Kesan**	**3.38 38**	P	Pn	22 24 13.5	-0.4
KESN	**Edirne-Kesan**	**3.38 38**	*i* P	Pn	22 24 13.5	-0.4
BALB	**Balikesir**	**3.40 63**	*e*PN	Pn	22 24 14.8	+1.1
BALB	**Balikesir**	**3.40 63**	*e*Pn	Pn	22 24 14.8	+1.1
SART	**Tekirdag**	**3.54 44**	P	Pn	22 24 16.5	+0.8
SART	**Tekirdag**	**3.54 44**	*i* P	Pn	22 24 16.5	+0.8
ZKR	**Zakros**	**3.56 148**	P	Pn	22 24 17.2	+1.2
ZKR	**Zakros**	**3.56 148**	P	Pn	22 24 17.2	+1.2
KEK	**Kerkira**	**3.58 297**	P	Pn	22 24 18.2	+2.0
YER	**Yerkesik**	**3.60 106**	*e*PN	Pn	22 24 17.7	+1.2
YER	**Yerkesik**	**3.60 106**	*e*Pn	Pn	22 24 17.7	+1.2
MRMT	**Marmara Adasi**	**3.72 48**	*e*PN	Pn	22 24 19.0	+0.8
MRMT	**Marmara Adasi**	**3.72 48**	*e*Pn	Pn	22 24 19.0	+0.8
KULA	**Kula-Manisa**	**3.72 83**	*e*PN	Pn	22 24 19.0	+0.8
KULA	**Kula-Manisa**	**3.72 83**	*e*Pn	Pn	22 24 19.0	+0.8
EDC	**Edincik**	**3.73 53**	*e*PN	Pn	22 24 19.3	+1.0
EDC	**Edincik**	**3.73 53**	*e*Pn	Pn	22 24 19.3	+1.0
TURN	**Turunc**	**3.93 108**	*i* P	Pn	22 24 17.7	-3.3
DALY	**Dalyan (Mu¨la**	**3.98 109**	*e*PN	Pn	22 24 23.8	+2.1
DALY	**Dalyan (Mu¨la**	**3.98 109**	*e*Pn	Pn	22 24 23.8	+2.1
KCTX	**Karacabey (Bur**	**4.01 57**	*e*PN	Pn	22 24 22.7	+0.6
KCTX	**Karacabey (Bur**	**4.01 57**	*e*Pn	Pn	22 24 22.7	+0.6
KHAL	**Karahalli**	**4.37 86**	P	Pn	22 24 28.1	+1.0
KHAL	**Karahalli**	**4.37 86**	*i* P	Pn	22 24 28.1	+1.0
FETY	**Fethiye**	**4.37 109**	*e*PN	Pn	22 24 29.1	+2.0
FETY	**Fethiye**	**4.37 109**	*e*Pn	Pn	22 24 29.1	+2.0
ARMT	**Armutlu**	**4.49 56**	*e*PN	Pn	22 24 30.2	+1.4
ARMT	**Armutlu**	**4.49 56**	*e*Pn	Pn	22 24 30.2	+1.4
TIP	**Timpagrande**	**5.71 282**	P	Pn	22 24 47.4	+1.9
TIP	**Timpagrande**	**5.71 282**	P	Pn	22 24 47.4	+1.9
NOCI	**Noci**	**5.92 298**	P	Pn	22 24 47.9	-0.5
NOCI	**Noci**	**5.92 298**	P	Pn	22 24 47.9	-0.5
CUC	**Castrocucco**	**6.58 288**	P	Pn	22 25 00.6	+3.2
ARR	**Arges**	**7.20 4** ⇓	*i*P	Pn	22 25 06.4	+0.4
ARR	**Arges**	**7.20 4** ⇓	*i*P	Pn	22 25 06.4	+0.4
VOIR		**7.30 6** ⇓	*i*P	Pn	22 25 08.1	+0.8
VOIR		**7.30 6** ⇓	*i*P	Pn	22 25 08.1	+0.8
MLR	**Muntele Rosu**	**7.45 11** ⇑	*i*P	Pn	22 25 11.3	+1.8
MLR	**Muntele Rosu**	**7.45 11** ⇑	*i*P	Pn	22 25 11.3	+1.8
VRI	**Vrincioaia**	**7.95 14** ⇑	*i*P	Pn	22 25 17.7	+1.4
VRI	**Vrincioaia**	**7.95 14** ⇑	*i*P	Pn	22 25 17.7	+1.4
UDBI	**Udbina**	**8.83 318**	*e*Pn	Pn	22 25 30.3	+1.9
UDBI	**Udbina**	**8.83 318**	*e*Pn	Pn	22 25 30.2	+1.9

MEX 29 22:34:30.2±0.6, 19°.07N×104°.20W, h5km, MD3.7, Near coast of Jalisco

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
R15V		**0.23**	**64**	*i* P	Pg	22 34 34.3	-0.4
R15V				*i* S	Sg	22 34 37.5	-0.3
EZ5V		**0.70**	**54**	*i* P	Pg	22 34 42.7	-1.0
EZ5V				*i* S	Sg	22 34 53.5	+0.7
MMIG	**Aquila**	**1.12**	**134**	*i* P	Pg	22 34 48.7	-3.1
MMIG				*e*S	Sg	22 35 03.3	-3.0
SFJM	**Santa Fe**	**1.79**	**38**	*e*P	Pn	22 34 58.8	-3.1
SFJM				*i* S	Sn	22 35 20.1	-4.9

n40,σ0°35/51,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**259**	P	**Pg**	**22 42 28.9**	**+0.1**
DEMI				S	**Sg**	**22 42 32.7**	**+0.4**
DEMI	**Demirci**	**0.26**	**259**	*i* P	**Pg**	**22 42 28.9**	**+0.1**
DEMI				*i* S	**Sg**	**22 42 32.7**	**+0.4**
GDZ	**Gediz**	**0.34**	**91**	P	**Pg**	**22 42 30.2**	**-0.1**
GDZ				S	**Sg**	**22 42 34.9**	**+0.1**
GDZ	**Gediz**	**0.34**	**91**	*i* P	**Pg**	**22 42 30.2**	**-0.1**
GDZ				*i* S	**Sg**	**22 42 34.9**	**+0.1**
TVSB	**Tavsanli**	**0.48**	**42**	PG	**Pg**	**22 42 32.6**	**-0.3**
TVSB	**Tavsanli**	**0.48**	**42**	*i* Pg	**Pg**	**22 42 32.6**	**-0.3**
KULA	**Kula-Manisa**	**0.65**	**207**	*e*PG	**Pg**	**22 42 36.0**	**-0.1**
KULA	**Kula-Manisa**	**0.65**	**207**	*e*Pg	**Pg**	**22 42 36.0**	**-0.1**
KHAL	**Karahalli**	**0.80**	**154**	P	**Pg**	**22 42 39.0**	**0.0**
KHAL				S	**Sg**	**22 42 49.5**	**0.0**
KHAL	**Karahalli**	**0.80**	**154**	*i* P	**Pg**	**22 42 39.0**	**0.0**
KHAL				*i* S	**Sg**	**22 42 49.5**	**0.0**
KHL	**Karahalli**	**0.86**	**154**	*e*PG	**Pg**	**22 42 40.3**	**+0.3**
KHL	**Karahalli**	**0.86**	**154**	*e*Pg	**Pg**	**22 42 40.3**	**+0.3**
AKHS	**Akhisar**	**0.98**	**258**	P	**Pn**	**22 42 43.3**	**-0.2**
AKHS	**Akhisar**	**0.98**	**258**	*i* P	**Pn**	**22 42 43.3**	**-0.2**
AKS	**Akhisar**	**0.98**	**258**	*e*PG	**Pg**	**22 42 42.4**	**0.0**
AKS	**Akhisar**	**0.98**	**258**	*e*Pg	**Pg**	**22 42 42.4**	**0.0**
BALB	**Balikesir**	**1.05**	**302**	*e*PG	**Pg**	**22 42 43.7**	**0.0**
BALB				*e*SG	**Sb**	**22 42 58.2**	**+0.4**
BALB	**Balikesir**	**1.05**	**302**	*e*Pg	**Pg**	**22 42 43.7**	**0.0**
BALB				*e*Sg	**Sb**	**22 42 58.2**	**+0.4**
IGD	**Bursa**	**1.18**	**6**	*i* P	**Pb**	**22 42 45.0**	**-1.0**
IGD				*i* S	**Sb**	**22 43 01.4**	**+0.1**
CAVI	**Cavuskoy**	**1.27**	**29**	*e*PN	**Pn**	**22 42 47.3**	**-0.1**
CAVI	**Cavuskoy**	**1.27**	**29**	*e*Pn	**Pn**	**22 42 47.3**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.28**	**355**	*e*PN	**Pn**	**22 42 47.6**	**0.0**
MDNY	**Mudanya-Bursa**	**1.28**	**355**	*e*Pn	**Pn**	**22 42 47.6**	**0.0**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*PN	**Pn**	**22 42 47.8**	**+0.1**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*Pn	**Pn**	**22 42 47.8**	**+0.1**
BORA	**Eskisehir**	**1.34**	**54**	P	**Pn**	**22 42 48.7**	**+0.1**
BORA				S	**Sg**	**22 43 07.1**	**+0.3**
BORA	**Eskisehir**	**1.34**	**54**	*i* P	**Pn**	**22 42 48.7**	**+0.1**
BORA				*i* S	**Sg**	**22 43 07.1**	**+0.3**
GONE	**Gonen-Balikesi**	**1.42**	**313**	*e*PN	**Pn**	**22 42 49.8**	**+0.3**
GONE	**Gonen-Balikesi**	**1.42**	**313**	*e*Pn	**Pn**	**22 42 49.8**	**+0.3**
ADVT	**Abdulvahap**	**1.44**	**22**	*e*PN	**Pn**	**22 42 49.6**	**-0.2**
ADVT	**Abdulvahap**	**1.44**	**22**	*e*Pn	**Pn**	**22 42 49.6**	**-0.2**
ESKT	**Eskisehir**	**1.47**	**73**	*i* P	**Pg**	**22 42 53.0**	**+1.3**
ARMT	**Armutlu**	**1.48**	**355**	*e*PN	**Pn**	**22 42 50.2**	**-0.1**
ARMT	**Armutlu**	**1.48**	**355**	*e*Pn	**Pn**	**22 42 50.2**	**-0.1**
EDC	**Edincik**	**1.55**	**324**	*e*PN	**Pn**	**22 42 51.3**	**0.0**
EDC	**Edincik**	**1.55**	**324**	*e*Pn	**Pn**	**22 42 51.3**	**0.0**
GULT	**Gulveren**	**1.75**	**40**	*e*PN	**Pn**	**22 42 54.3**	**+0.1**
GULT	**Gulveren**	**1.75**	**40**	*e*Pn	**Pn**	**22 42 54.3**	**+0.1**
ISK	**Istanbul-Kandi**	**1.97**	**0**	*e*PN	**Pn**	**22 42 57.8**	**+0.7**
ISK	**Istanbul-Kandi**	**1.97**	**0**	*e*Pn	**Pn**	**22 42 57.8**	**+0.7**

IDC 29 22:47:36.4±3.3,5°58S×153°41E,h0km,mb3.6/5, mb1 3.8/5,mb1mx3.6/27,mbtmp3.6/5,Error ellipse: s-maj=97.5km s-min=32.0km az=108.0,New Ireland region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**23.40**	**231**	P	P	22 52 46.6	-0.6
	0.9nm,0.8s,baz=54,slow=10,SNR=4.5						
ASAR	**Alice Springs**	**26.00**	**224**	P	P	22 53 11.8	+0.5
	0.8nm,0.9s,baz=55,slow=9.4,SNR=4.4						
CMAR	**Chiang Mai Arr**	**58.75**	**295**	P	P	22 57 36.5	-0.2
	0.3nm,0.4s,baz=122,slow=6.6,SNR=3.9						
MKAR	**Makanchi Array**	**81.30**	**319**	P	P	22 59 56.3	+1.6
	0.1nm,0.3s,baz=91,slow=5.8,SNR=2.8						
ZALV	**Zalesovo Beam**	**82.13**	**326**	P	P	22 59 57.4	-1.5
	1.2nm,0.7s,baz=113,slow=3.7,SNR=5.2						
TORD	**Torodi Ar. Bea**	**151.12**	**287**	PKPbc	PKPbc	23 07 32.2	-0.4
	0.8nm,0.7s,baz=97,slow=2.0,SNR=6.4						

ISK 29 22:53:22.8,39°14N×28°98E,h6km,MD2.8
ISCJB 29 22:53:23.2±0.4,39°14N±0°03×28°99E±0°04,h9km,Error ellipse: s-maj=4.4km s-min=4.0km az=149.8
DDA 29 22:53:23.6,39°11N×29°00E,h7km,Ml2.6
CSEM 29 22:53:23.3±0.1,39°14N×28°98E,h8km,ML2.6,Error ellipse: s-maj=1.7km s-min=1.5km az=75.0

ISC 29 22:53:23.3±0.8,39°14N±0°02×28°98E±0°02,h9km,n38, σ0°48/45,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.23**	**244**	P	**Pg**	**22 53 28.6**	**+0.6**
DEMI				S	**Sg**	**22 53 32.1**	**+0.9**
DEMI	**Demirci**	**0.23**	**244**	*i* P	**Pg**	**22 53 28.6**	**+0.6**
DEMI				*i* S	**Sg**	**22 53 32.1**	**+0.9**
GDZ	**Gediz**	**0.39**	**98**	P	**Pg**	**22 53 31.4**	**+0.4**
GDZ				S	**Sg**	**22 53 36.6**	**+0.3**
GDZ	**Gediz**	**0.39**	**98**	*i* P	**Pg**	**22 53 31.4**	**+0.4**
GDZ				*i* S	**Sg**	**22 53 36.6**	**+0.3**
TVSB	**Tavsanli**	**0.48**	**50**	*e*PG	**Pg**	**22 53 32.9**	**+0.2**
TVSB				*e*SG	**Sg**	**22 53 39.1**	**0.0**
TVSB	**Tavsanli**	**0.48**	**50**	*e*Pg	**Pg**	**22 53 32.9**	**+0.2**
TVSB				*e*Sg	**Sg**	**22 53 39.1**	**0.0**
KULA	**Kula-Manisa**	**0.68**	**202**	*e*PG	**Pg**	**22 53 36.1**	**-0.3**
KULA	**Kula-Manisa**	**0.68**	**202**	*e*Pg	**Pg**	**22 53 36.1**	**-0.3**
KHAL	**Karahalli**	**0.87**	**153**	P	**Pb**	**22 53 40.3**	**-0.3**
KHAL				S	**Sb**	**22 53 51.4**	**-1.0**
KHAL	**Karahalli**	**0.87**	**153**	*i* P	**Pb**	**22 53 40.3**	**-0.3**
KHAL				*i* S	**Sb**	**22 53 51.4**	**-1.0**
ORLT	**Orhaneli**	**0.90**	**356**	*e*PG	**Pb**	**22 53 40.7**	**-0.5**
ORLT	**Orhaneli**	**0.90**	**356**	*e*Pg	**Pb**	**22 53 40.7**	**-0.5**
KHL	**Karahalli**	**0.92**	**153**	*e*PG	**Pb**	**22 53 41.2**	**-0.3**
KHL	**Karahalli**	**0.92**	**153**	*e*Pg	**Pb**	**22 53 41.2**	**-0.3**
AKHS	**Akhisar**	**0.95**	**254**	*i* S	Sg	22 53 42.1	-12
AKS	**Akhisar**	**0.95**	**254**	*e*PG	**Pg**	**22 53 41.2**	**-0.3**
AKS	**Akhisar**	**0.95**	**254**	*e*Pg	**Pg**	**22 53 41.2**	**-0.3**
BALB	**Balikesir**	**0.99**	**300**	*e*PG	**Pb**	**22 53 42.3**	**-0.3**
BALB	**Balikesir**	**0.99**	**300**	*e*Pg	**Pb**	**22 53 42.3**	**-0.3**
IGD	**Bursa**	**1.13**	**9**	*i* P	**Pb**	**22 53 44.5**	**-0.6**
KCTX	**Karacabey (Bur**	**1.22**	**337**	*e*PN	**Pb**	**22 53 46.3**	**-0.3**
KCTX	**Karacabey (Bur**	**1.22**	**337**	*e*Pn	**Pb**	**22 53 46.3**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.23**	**356**	*e*PN	**Pg**	**22 53 46.8**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.23**	**356**	*e*Pn	**Pg**	**22 53 46.8**	**-0.1**
CAVI	**Cavuskoy**	**1.25**	**32**	*e*PN	**Pb**	**22 53 46.8**	**-0.3**
CAVI	**Cavuskoy**	**1.25**	**32**	*e*Pn	**Pb**	**22 53 46.8**	**-0.3**
IZI	**Iznik**	**1.25**	**17**	*e*PN	**Pg**	**22 53 47.4**	**0.0**
IZI	**Iznik**	**1.25**	**17**	*e*Pn	**Pg**	**22 53 47.4**	**0.0**
GONE	**Gonen-Balikesi**	**1.35**	**312**	*e*PN	**Pg**	**22 53 48.7**	**-0.5**
GONE	**Gonen-Balikesi**	**1.35**	**312**	*e*Pn	**Pg**	**22 53 48.7**	**-0.5**
ARMT	**Armutlu**	**1.42**	**356**	*e*PN	**Pb**	**22 53 50.0**	**0.0**
ARMT	**Armutlu**	**1.42**	**356**	*e*Pn	**Pb**	**22 53 50.0**	**0.0**
EDC	**Edincik**	**1.48**	**325**	*e*PN	**Pb**	**22 53 50.6**	**-0.4**
EDC	**Edincik**	**1.48**	**325**	*e*Pn	**Pb**	**22 53 50.6**	**-0.4**
GULT	**Gulveren**	**1.75**	**42**	*e*PN	**Pn**	**22 53 54.3**	**+0.4**
GULT	**Gulveren**	**1.75**	**42**	*e*Pn	**Pn**	**22 53 54.3**	**+0.4**
ISK	**Istanbul-Kandi**	**1.92**	**2**	*e*PN	**Pn**	**22 53 57.0**	**+0.8**
ISK	**Istanbul-Kandi**	**1.92**	**2**	*e*Pn	**Pn**	**22 53 57.0**	**+0.8**

DDA 29 22:59:27.9,39°10N×29°06E,h7km,Ml2.8
ISK 29 22:59:27.4,39°04N×29°17E,h9km,MD2.8
ISCJB 29 22:59:28.1±0.4,39°07N±0°03×29°09E±0°03,h9km,Error ellipse: s-maj=4.4km s-min=3.7km az=158.7
CSEM 29 22:59:28.1±0.1,39°06N×29°11E,h8km,ML2.8,Error ellipse: s-maj=3.1km s-min=2.8km az=120.0

ISC 29 22:59:27.3±0.8,39°01N±0°03×29°13E±0°02,h9km,n49, σ0°42/57,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.28**	**74**	P	**Pb**	**22 59 34.8**	**+0.1**
GDZ				S	**Sb**	**22 59 39.6**	**0.0**
GDZ	**Gediz**	**0.28**	**74**	*i* P	**Pb**	**22 59 34.8**	**+0.1**
GDZ				*i* S	**Sb**	**22 59 39.6**	**0.0**
DEMI	**Demirci**	**0.33**	**276**	P	**Pg**	**22 59 33.7**	**-0.1**
DEMI				S	**Sg**	**22 59 37.2**	**-0.9**
DEMI	**Demirci**	**0.33**	**276**	*i* P	**Pg**	**22 59 33.7**	**-0.1**
DEMI				*i* S	**Sg**	**22 59 37.2**	**-0.9**
TVSB	**Tavsanli**	**0.51**	**30**	*e*PG	**Pg**	**22 59 37.4**	**+0.2**
TVSB				*e*SG	**Sg**	**22 59 43.4**	**-0.5**
TVSB	**Tavsanli**	**0.51**	**30**	*e*Pg	**Pg**	**22 59 37.4**	**+0.2**
TVSB				*e*Sg	**Sg**	**22 59 43.4**	**-0.5**
KULA	**Kula-Manisa**	**0.62**	**217**	*e*PG	**Pb**	**22 59 40.6**	**+0.2**
KULA	**Kula-Manisa**	**0.62**	**217**	*e*Pg	**Pb**	**22 59 40.6**	**+0.2**
KHAL	**Karahalli**	**0.70**	**156**	P	**Pn**	**22 59 43.7**	**+0.2**
KHAL				S	**Sn**	**22 59 54.5**	**0.0**
KHAL	**Karahalli**	**0.70**	**156**	*i* P	**Pn**	**22 59 43.7**	**+0.2**
KHAL				*i* S	**Sn**	**22 59 54.5**	**0.0**
KHL	**Karahalli**	**0.75**	**156**	*e*PG	**Pb**	**22 59 42.7**	**0.0**
KHL	**Karahalli**	**0.75**	**156**	*e*Pg	**Pb**	**22 59 42.7**	**0.0**
AKHS	**Akhisar**	**1.04**	**263**	P	**Pb**	**22 59 47.9**	**+0.5**
AKHS	**Akhisar**	**1.04**	**263**	*i* P	**Pb**	**22 59 47.9**	**+0.5**
AKS	**Akhisar**	**1.04**	**263**	*e*PG	**Pn**	**22 59 48.3**	**+0.2**
AKS	**Akhisar**	**1.04**	**263**	*e*Pg	**Pn**	**22 59 48.3**	**+0.2**
ORLT	**Orhaneli**	**1.05**	**350**	*e*PG	**Pg**	**22 59 47.6**	**+0.1**
ORLT	**Orhaneli**	**1.05**	**350**	*e*Pg	**Pg**	**22 59 47.6**	**+0.1**
BALB	**Balikesir**	**1.16**	**303**	*e*PN	**Pg**	**22 59 49.8**	**+0.3**
BALB	**Balikesir**	**1.16**	**303**	*e*Pn	**Pg**	**22 59 49.8**	**+0.3**
IGD	**Bursa**	**1.25**	**2**	*i* P	**Pn**	**22 59 49.5**	**-1.5**
CAVI	**Cavuskoy**	**1.31**	**25**	*e*PN	**Pn**	**22 59 51.8**	**-0.1**
CAVI	**Cavuskoy**	**1.31**	**25**	*e*Pn	**Pn**	**22 59 51.8**	**-0.1**
IZI	**Iznik**	**1.35**	**11**	*e*PN	**Pn**	**22 59 52.8**	**+0.4**
IZI	**Iznik**	**1.35**	**11**	*e*Pn	**Pn**	**22 59 52.8**	**+0.4**
MDNY	**Mudanya-Bursa**	**1.37**	**352**	*e*PN	**Pb**	**22 59 53.1**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.37**	**352**	*e*Pn	**Pb**	**22 59 53.2**	**+0.1**
BALY	**Balya**	**1.38**	**302**	P	**Pn**	**22 59 53.0**	**+0.2**
BALY	**Balya**	**1.38**	**302**	*i* P	**Pn**	**22 59 53.0**	**+0.2**
KCTX	**Karacabey (Bur**	**1.39**	**335**	*e*PN	**Pb**	**22 59 53.6**	**+0.2**
KCTX	**Karacabey (Bur**	**1.39**	**335**	*e*Pn	**Pb**	**22 59 53.7**	**+0.2**
ADVT	**Abdulvahap**	**1.49**	**18**	*e*PN	**Pn**	**22 59 54.7**	**+0.3**
ADVT	**Abdulvahap**	**1.49**	**18**	*e*Pn	**Pn**	**22 59 54.7**	**+0.3**
GONE	**Gonen-Balikesi**	**1.52**	**313**	*e*PN	**Pb**	**22 59 55.5**	**-0.2**
GONE	**Gonen-Balikesi**	**1.52**	**313**	*e*Pn	**Pb**	**22 59 55.5**	**-0.2**
ARMT	**Armutlu**	**1.56**	**352**	*e*PN	**Pn**	**22 59 55.8**	**+0.4**
ARMT	**Armutlu**	**1.56**	**352**	*e*Pn	**Pn**	**22 59 55.8**	**+0.4**
GPA	**Golpazari**	**1.57**	**35**	*e*PN	**Pn**	**22 59 55.5**	**+0.1**
GPA	**Golpazari**	**1.57**	**35**	*e*Pn	**Pn**	**22 59 55.5**	**+0.1**
EDC	**Edincik**	**1.65**	**324**	*e*PN	**Pn**	**22 59 57.4**	**+0.8**
EDC	**Edincik**	**1.65**	**324**	*e*Pn	**Pn**	**22 59 57.4**	**+0.8**
GULT	**Gulveren**	**1.77**	**37**	*e*PN	**Pn**	**22 59 58.5**	**+0.2**
GULT	**Gulveren**	**1.77**	**37**	*e*Pn	**Pn**	**22 59 58.5**	**+0.2**
HRT	**Hereke**	**1.85**	**13**	*e*PN	**Pn**	**22 59 59.9**	**+0.5**
HRT	**Hereke**	**1.85**	**13**	*e*Pn	**Pn**	**22 59 59.9**	**+0.5**
SVRH	**Sivrihisar-ESK**	**1.91**	**76**	*e*PN	**Pn**	**23 00 00.4**	**+0.3**
SVRH	**Sivrihisar-ESK**	**1.91**	**76**	*e*Pn	**Pn**	**23 00 00.4**	**+0.3**
ISK	**Istanbul-Kandi**	**2.05**	**358**	*e*PN	**Pn**	**23 00 02.6**	**+0.6**
ISK	**Istanbul-Kandi**	**2.05**	**358**	*e*Pn	**Pn**	**23 00 02.6**	**+0.6**

IDC 29 23:29:43.8±4.4,40°45N×77°26E,h0km,mb3.8/1, mb1 3.4/3,mb1mx3.1/46,mbtmp3.4/3,ML2.8/2,Error ellipse: s-maj=136.7km s-min=21.3km az=133.0
KRNET 29 23:29:46.4±0.1,40°60N×77°38E,h12km,mb3.3
NNC 29 23:29:46.7±2.6,40°60N×77°43E,h0km,mb4.1,mpv3.8, Error ellipse: s-maj=19.9km s-min=11.0km az=165.0
SOME 29 23:29:48.1,40°73N×77°35E,h15km
ISCJB 29 23:29:49.1±0.7,40°46N±0°04×77°31E±0°04,h10km, mb3.6/2,Error ellipse: s-maj=5.8km s-min=3.6km az=156.8

ISC 29 23:29:44.9±1.1,40°50N±0°05×77°37E±0°03,h10km,n51, σ2°24/88,32C-22D,Kyrgyzstan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NRN	**Naryn**	**1.40**	**312**	⇓*i*P	**Pb**	**23 30 11.7**	**+0.3**
	baz=308						
NRN				⇓*i*S	**Sg**	**23 30 30.6**	**+0.6**
	baz=308						
KDJ	**Kajisay**	**1.64**	**355**	⇓*e*P	**Pg**	**23 30 15.8**	**-0.6**
	baz=355						
KDJ				⇓*i*S	**Sg**	**23 30 37.9**	**+0.2**
	baz=355						
ULHL	**Ulahol**	**1.94**	**334**	⇓*i*P	**Pb**	**23 30 21.0**	**+0.4**
	baz=332						
ULHL				⇓*i*S	**Sg**	**23 30 46.8**	**-0.7**
	baz=332						
PRZ	**Przheval'sk**	**2.13**	**21**	⇓*e*P	**Pb**	**23 30 24.2**	**+0.5**
	baz=22						
PRZ				⇓*i*S	**Sg**	**23 30 50.7**	**-2.7**
	baz=22						
KZA	**Kyzart**	**2.25**	**315**	⇑*i*P	**Pb**	**23 30 26.4**	**+0.5**
	baz=313						
KZA				⇑*i*S	**Sg**	**23 30 56.5**	**-0.8**
	baz=313						
BOOM	**Boomskoye usch**	**2.26**	**332**	⇑*e*P	**Pb**	**23 30 25.8**	**-0.2**
	baz=331						
BOOM				⇑*e*S	**Sb**	**23 30 54.1**	**-0.1**
	baz=331						
ANVS	**Anan'yevo**	**2.30**	**5**	⇑*e*P	**Pb**	**23 30 26.4**	**-0.2**
	baz=5.0						
ANVS				⇑*e*S	**Sg**	**23 30 55.9**	**-2.8**
	baz=5.0						
TNSS	**Tian-Shan**	**2.56**	**353**	*e*P	**Pg**	**23 30 32.7**	**-1.4**
	166nm,0.5s						
TNSS				*e*S	**Sg**	**23 31 04.9**	**-2.5**
	81nm,0.4s						
IZV	**Izvestkoviy**	**2.60**	**348**	*e*P	**Pg**	**23 30 33.6**	**-1.1**
	58nm,0.6s						
IZV				*e*S	**Sg**	**23 31 06.4**	**-2.1**
	160nm,0.6s						
SATY	**Saty**	**2.67**	**16**	*e*P	**Pb**	**23 30 33.4**	**+0.4**
	66nm,1.1s						
SATY				*e*S	**Sb**	**23 31 05.8**	**-0.2**
	166nm,1.1s						
ARLS	**Aral**	**2.68**	**302**	⇑*e*P	**Pb**	**23 30 32.5**	**-0.5**
	baz=300						
ARLS				⇑*e*S	**Sb**	**23 31 06.6**	**+0.6**
	baz=300						
MDOK	**Medeo**	**2.68**	**355**	*e*P	**Pg**	**23 30 34.5**	**-1.8**
	69nm,0.4s						
MDOK				*e*S	**Sg**	**23 31 06.8**	**-4.1**
	168nm,0.8s						
MTBS	**Maitube**	**2.73**	**345**	*e*P	**Pg**	**23 30 35.2**	**-2.0**
	24nm,0.3s						
MTBS				⇑*i*S	**Sg**	**23 31 08.4**	**-4.0**
	108nm,0.5s						
KNDC	**Almaty**	**2.74**	**354**	⇓Pg	**Pg**	**23 30 36.5**	**-0.9**
	70nm,0.7s						
KNDC				⇓Lg	Lg	23 31 08.7	
	210nm,0.6s						
KOTS	**Kotyrbulak**	**2.74**	**356**	*e*P	**Pb**	**23 30 34.4**	**+0.2**
KOTS				*e*S	**Sb**	**23 31 07.1**	**-0.8**
KST	**Kastek**	**2.75**	**338**	⇑*i*P	**Pg**	**23 30 36.2**	**-1.5**
	8.6nm,0.4s						
KST				⇑*i*S	**Sg**	**23 31 10.5**	**-2.9**
	114nm,0.8s						
UCH	**Uchtor**	**2.76**	**310**	⇑*i*P	**Pb**	**23 30 33.1**	**-1.6**
	baz=308						
UCH				⇑*i*S	**Sb**	**23 31 07.9**	**-0.8**
	baz=308						
TKM2	**Tokmak 2**	**2.76**	**332**	⇑*i*P	**Pb**	**23 30 33.3**	**-1.3**
	baz=331						
TKM2				⇑*i*S	**Sb**	**23 31 08.1**	**-0.5**
	baz=331						
TKM2	**Tokmak 2**	**2.76**	**332**	⇑Pg	**Pg**	**23 30 36.1**	**-1.8**
	31nm,0.5s						
TKM2				⇓Lg	Lg	23 31 14.3	
	75nm,0.9s						
ZHN	**Zhinishke**	**2.79**	**16**	*e*P	**Pb**	**23 30 35.7**	**+0.8**
	36nm,0.4s						
ZHN				*e*S	**Sb**	**23 31 09.5**	**+0.4**
	167nm,0.3s						
AAA	**Alma-Ata**	**2.79**	**354**	*e*P	**Pb**	**23 30 36.2**	**+1.3**
	287nm,0.4s						
AAA				*e*S	**Sg**	**23 31 11.6**	**-3.0**
	207nm,0.6s						
KBK	**Karagaybulak**	**2.82**	**321**	⇑*i*P	**Pb**	**23 30 34.7**	**-0.8**
	baz=319						
KBK				⇑*i*S	**Sb**	**23 31 09.7**	**-0.5**
	baz=319						
DGS	**Degeres**	**2.99**	**337**	*e*P	**Pb**	**23 30 39.3**	**+0.9**
	17nm,0.6s						
DGS				*e*S	**Sb**	**23 31 16.2**	**+1.2**
	73nm,0.7s						
AAK	**Ala-Archa**	**3.04**	**316**	⇑*i*P	**Pb**	**23 30 37.5**	**-1.7**
	baz=314						
AAK				⇑*i*S	**Sb**	**23 31 14.7**	**-1.7**
	baz=314						
AAK	**Ala-Archa**	**3.04**	**316**	⇑Pg	**Pb**	**23 30 41.1**	**+1.9**
	40nm,0.6s						
AAK				⇑Lg	Lg	23 31 21.3	
	166nm,1.1s						
KURS	**Kuram**	**3.05**	**11**	*e*P	**Pb**	**23 30 40.3**	**+0.9**
	31nm,0.7s						
KURS				*e*S	**Sb**	**23 31 17.6**	**+1.0**
	38nm,1.1s						
FRU1	**Bishkek**	**3.09**	**319**	⇓*e*P	**Pb**	**23 30 37.9**	**-2.2**
	baz=318						
FRU1				⇓*e*S	**Sb**	**23 31 14.2**	**-3.7**
	baz=318						
KPKS	**Kokpek**	**3.12**	**18**	*e*P	**Pb**	**23 30 41.3**	**+0.6**
	61nm,1.1s						
KPKS				*e*S	**Sb**	**23 31 18.4**	**-0.5**
	138nm,1.1s						
CHMS	**Chumysh**	**3.18**	**323**	⇑*i*P	**Pb**	**23 30 39.2**	**-2.3**
	baz=322						
CHMS				⇑*i*S	**Sb**	**23 31 17.4**	**-2.9**
	baz=322						
PDGK	**Podgornoye**	**3.24**	**28**	⇑*e*P	**Pb**	**23 30 39.7**	**-2.8**
	baz=29						
PDGK				⇑*e*S	**Sb**	**23 31 17.7**	**-4.3**
	baz=29						
PDGK	**Podgornoye**	**3.24**	**28**	⇓Pg	**Pb**	**23 30 43.1**	**+0.6**
	13nm,0.4s						
PDGK				⇑Lg	Lg	23 31 25.4	
	119nm,0.7s						
SHLS	**Shalkode**	**3.25**	**34**	*e*P	**Pb**	**23 30 42.5**	**-0.5**
	23nm,0.5s						
SHLS				*e*S	**Sb**	**23 31 21.7**	**-1.0**
	172nm,0.5s						
CHKK	**Chushkaly**	**3.38**	**355**	*e*P	**Pb**	**23 30 44.9**	**-0.1**
	39nm,0.6s						
CHKK				*e*S	**Sb**	**23 31 26.3**	**+0.1**
	45nm,0.8s						
ARSB	**Arslanbob**	**3.43**	**285**	⇓*e*P	**Pb**	**23 30 43.5**	**-2.4**
	baz=284						
ARSB				⇓*e*S	**Sb**	**23 31 24.3**	**-3.3**
	baz=284						
KUU	**Kurty**	**3.48**	**348**	*e*P	**Pb**	**23 30 47.8**	**+1.2**
	44nm,0.9s						
KUU				*e*S	**Sb**	**23 31 31.2**	**+2.2**
	43nm,0.6s						
OHH	**Osh**	**3.50**	**272**	⇑*e*P	**Pb**	**23 30 44.8**	**-2.2**
	baz=270						
OHH				⇑*e*S	**Sb**	**23 31 27.1**	**-2.5**
	baz=270						
MNBS	**Baschi**	**3.66**	**12**	*e*P	**Pb**	**23 30 48.5**	**-1.3**
	4.3nm,0.6s						
MNBS				*e*S	**Sb**	**23 31 32.5**	**-1.7**
	86nm,0.8s						
ARXS	**Arharly**	**3.73**	**5**	*e*P	**Pb**	**23 30 52.9**	**+2.0**
	20nm,0.6s						
ARXS				*e*S	**Sg**	**23 31 39.0**	**-5.7**
	37nm,0.7s						
MRKS	**Merke**	**3.84**	**307**	*e*P	**Pg**	**23 30 56.0**	**-2.4**
	17nm,0.5s						
MRKS				*e*S	**Sg**	**23 31 44.2**	**-3.9**
	30nm,0.3s						
MNAS	**Manas**	**4.16**	**300**	⇓*e*P	**Pn**	**23 30 53.0**	**+4.3**
	baz=299						
MNAS				⇓*e*S	**Sn**	**23 31 41.0**	**+3.6**
	baz=299						
MNAS	**Manas**	**4.16**	**300**	⇓Pg	**Pb**	**23 31 01.7**	**+3.3**
	8.8nm,0.7s						
MNAS				⇑Lg	Lg	23 31 55.0	
	19nm,1.2s						
DJR	**Jarkent**	**4.23**	**24**	⇓*i*P	**Pb**	**23 31 01.9**	**+2.5**
	13nm,0.5s						
DJR				*e*S	**Sg**	**23 31 55.6**	**-5.1**
	47nm,0.3s						
TDK	**Taldyqorghan**	**4.57**	**9**	*e*P	**Pg**	**23 31 09.4**	**-3.1**
	42nm,0.6s						
TDK				*e*S	**Sg**	**23 32 07.3**	**-4.4**
	92nm,1.1s						
KAPS	**Kapalarasan**	**5.00**	**16**	*e*P	**Pg**	**23 31 18.1**	**-2.6**
	4.6nm,0.5s						
KAPS				*e*S	**Sg**	**23 32 22.3**	**-3.2**
	20nm,0.7s						
KK31	**Karatay Array**	**5.75**	**299**	⇑Pg	**Pg**	**23 31 32.1**	**-3.0**
	1.6nm,0.5s,baz=118,slow=16,SNR=13						
KK31				⇑

0.1nm,0.4s,baz=291,slow=3.5,SNR=2.6
TXAR Lajitas Array 94.70 51 P **P 23 47 06.6 +1.3**
0.3nm,0.6s,baz=271,slow=1.9,SNR=6.0
LPAZ La Paz 150.61 65 PKPbc **PKPbc 23 53 38.0 +2.0**
1.1nm,0.7s,baz=302,slow=1.8,SNR=7.5

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*IDC **29** 23:35:18.2±1.4,5.°18S×153.°08E,h0km,mb3.9/9, mb1 4.1/9,mb1mx3.9/34,mbtmp3.9/9,MS3.4/4,Ms1 3.4/4, ms1mx2.9/31,Error ellipse: s-maj=51.5km s-min=21.2km az=111.0*
*ISCJB **29** 23:35:23.0±0.6,5.°19S±0.°09×153.°0E±0.°1,h43km, mb4.1/15,MS3.2/4,Error ellipse: s-maj=15.5km s-min=12.9km az=170.3*
*NEIC **29** 23:35:24.3±0.4,5.°18S×152.°91E,h35km,mb4.6/7,Error ellipse: s-maj=12.0km s-min=10.0km az=84.0*
ISC 29 23:35:25.1±0.7,5.°2S±0.°1×153.°0E±0.°1,h43km,n20, σ0°71/18,mb4.0/15,MS3.3/4,New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	**Honiara**	**8.12**	**122**	*e*Pn	**Pn**	**23 37 20.8**	**+0.3**
GUMO	**Guam**	**20.30**	**337**	LR	LR	23 48 27.5	
comp=Z,67nm,18.1s,baz=114,slow=39							
DZM	**Mont Dzumac**	**21.27**	**143**	LR	LR	23 46 27.9	
comp=Z,132nm,21.0s,baz=62,slow=32							
WRA	**Warramunga Arr**	**23.31**	**229**	P	**P**	**23 40 28.2**	**-1.3**
1.4nm,0.8s,baz=55,slow=9.9,SNR=5.2							
ASAR	**Alice Springs**	**25.97**	**223**	P	**P**	**23 40 53.8**	**-0.1**
0.7nm,0.9s,baz=65,slow=8.8,SNR=4.4							
ASAR				LR	LR	23 50 31.9	
comp=Z,75nm,19.0s,baz=70,slow=35							
STKA	**Stephens Creek**	**28.61**	**200**	P	**P**	**23 41 18.0**	**+0.6**
0.8nm,0.2s,baz=18,slow=11,SNR=3.0							
STKA				LR	LR	23 52 21.3	
comp=Z,73nm,19.5s,baz=24,slow=36							
ENH	**Enshi**	**54.52**	**313**	P	**P**	**23 44 49.3**	**+0.2**
1.2nm,0.5s							
COCO	**West Island**	**55.83**	**259**	*e*P	**P**	**23 44 58.9**	**+0.3**
29nm,0.6s							
BJT	**Baijiatuau**	**56.28**	**326**	*e*P	**P**	**23 45 02.1**	**+0.7**
2.0nm,0.5s							
CMAR	**Chiang Mai Arr**	**58.18**	**295**	P	**P**	**23 45 14.8**	**-0.4**
0.6nm,0.5s,baz=118,slow=5.6,SNR=4.7							
MA2	**Magadan**	**64.58**	**359**	P	**P**	**23 45 57.7**	**0.0**
5.0nm,0.4s,baz=181,slow=4.3,SNR=4.9							
MA2	**Magadan**	**64.58**	**359**	*e*P	**P**	**23 45 57.7**	**0.0**
22nm,0.4s							
ULN	**Ulaanbaatar**	**66.40**	**328**	P	**P**	**23 46 09.7**	**-0.2**
0.5nm,0.5s							
SONM	**Songino Array**	**66.73**	**328**	P	**P**	**23 46 13.3**	**+1.3**
0.5nm,0.3s,baz=126,slow=7.3,SNR=3.5							
YAK	**Yakutsk**	**69.38**	**349**	*e*P	**P**	**23 46 28.4**	**+0.2**
14nm,0.6s							
BILL	**Bilibino**	**73.66**	**5**	*e*P	**P**	**23 46 54.0**	**+0.1**
1.0nm,0.5s							
MKAR	**Makanchi Array**	**80.71**	**319**	P	**P**	**23 47 34.1**	**+0.2**
0.4nm,0.7s,baz=114,slow=6.0,SNR=4.4							
ZALV	**Zalesovo Beam**	**81.55**	**326**	P	**P**	**23 47 37.8**	**-0.3**
3.0nm,0.8s,baz=106,slow=4.9,SNR=12							
ILAR	**Eielson Array**	**82.46**	**22**	P	**P**	**23 47 41.2**	**-1.4**
0.4nm,0.8s,baz=247,slow=5.8,SNR=3.9							
TORD	**Torodi Ar. Bea**	**150.57**	**288**	PKPbc	**PKPbc**	**23 55 12.7**	**-0.7**
1.3nm,0.8s,baz=78,slow=2.0,SNR=15							

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*ISK **29** 23:48:23.9,39.°10N×29.°05E,h5km,MD2.8*
*ISCJB **29** 23:48:24.4±0.5,39.°10N±0.°04×29.°02E±0.°04,h9km,Error ellipse: s-maj=5.6km s-min=4.2km az=161.2*
*CSEM **29** 23:48:24.5±0.1,39.°11N×29.°02E,h5km,ML2.5,Error ellipse: s-maj=2.5km s-min=2.3km az=84.0*
*DDA **29** 23:48:24.5,39.°09N×29.°03E,h7km,Ml2.5*
ISC 29 23:48:24.6±0.9,39.°11N±0.°03×29.°02E±0.°02,h9km,n30, σ0°28/36,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**255**	P	**Pg**	**23 48 29.6**	**0.0**
DEMI				S	**Sg**	**23 48 33.1**	**+0.2**
DEMI	**Demirci**	**0.24**	**255**	*i* P	**Pg**	**23 48 29.6**	**0.0**
DEMI				*i* S	**Sg**	**23 48 33.1**	**+0.2**
GDZ	**Gediz**	**0.36**	**92**	P	**Pg**	**23 48 31.9**	**+0.1**
GDZ				S	**Sg**	**23 48 37.2**	**+0.7**
GDZ	**Gediz**	**0.36**	**92**	*i* P	**Pg**	**23 48 31.9**	**+0.1**
GDZ				*i* S	**Sg**	**23 48 37.2**	**+0.7**
TVSB	**Tavsanli**	**0.49**	**45**	*e*PG	**Pg**	**23 48 33.9**	**-0.2**
TVSB				*e*SG	**Sg**	**23 48 40.1**	**-0.3**
TVSB	**Tavsanli**	**0.49**	**45**	*e*Pg	**Pg**	**23 48 33.9**	**-0.2**
TVSB				*e*Sg	**Sg**	**23 48 40.2**	**-0.3**
KULA	**Kula-Manisa**	**0.65**	**205**	*e*PG	**Pg**	**23 48 36.7**	**-0.5**
KULA	**Kula-Manisa**	**0.65**	**205**	*e*Pg	**Pg**	**23 48 36.7**	**-0.5**
KHAL	**Karahalli**	**0.82**	**153**	P	**Pb**	**23 48 41.2**	**+0.1**
KHAL	**Karahalli**	**0.82**	**153**	*i* P	**Pb**	**23 48 41.2**	**+0.1**
KHL	**Karahalli**	**0.88**	**153**	*e*PG	**Pg**	**23 48 41.0**	**-0.4**
KHL	**Karahalli**	**0.88**	**153**	*e*Pg	**Pg**	**23 48 41.0**	**-0.4**
ORLT	**Orhaneli**	**0.94**	**354**	*e*PG	**Pg**	**23 48 42.6**	**-0.2**
ORLT	**Orhaneli**	**0.94**	**354**	*e*Pg	**Pg**	**23 48 42.6**	**-0.2**
BALB	**Balikesir**	**1.03**	**302**	*e*PG	**Pg**	**23 48 44.5**	**+0.1**
BALB	**Balikesir**	**1.03**	**302**	*e*Pg	**Pg**	**23 48 44.5**	**+0.1**
CAVI	**Cavuskoy**	**1.27**	**30**	*e*PN	**Pn**	**23 48 48.5**	**0.0**
CAVI	**Cavuskoy**	**1.27**	**30**	*e*Pn	**Pn**	**23 48 48.5**	**0.0**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*PN	**Pb**	**23 48 48.8**	**+0.1**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*Pn	**Pb**	**23 48 48.8**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.27**	**355**	*e*PN	**Pn**	**23 48 48.5**	**0.0**
MDNY	**Mudanya-Bursa**	**1.27**	**355**	*e*Pn	**Pn**	**23 48 48.5**	**0.0**
BORA	**Eskisehir**	**1.35**	**55**	P	**Pb**	**23 48 50.1**	**-0.1**
BORA	**Eskisehir**	**1.35**	**55**	*i* P	**Pb**	**23 48 50.1**	**-0.1**
ARMT	**Armutlu**	**1.46**	**355**	*e*PN	**Pb**	**23 48 51.7**	**-0.3**
ARMT	**Armutlu**	**1.46**	**355**	*e*Pn	**Pb**	**23 48 51.7**	**-0.3**
EDC	**Edincik**	**1.53**	**325**	*e*PN	**Pb**	**23 48 53.0**	**0.0**
EDC	**Edincik**	**1.53**	**325**	*e*Pn	**Pb**	**23 48 53.1**	**0.0**
GULT	**Gulveren**	**1.76**	**41**	*e*PN	**Pn**	**23 48 55.5**	**+0.2**
GULT	**Gulveren**	**1.76**	**41**	*e*Pn	**Pn**	**23 48 55.5**	**+0.2**

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*ISK **29** 23:49:05.8,39.°06N×29.°07E,h9km,MD2.7*
*ISCJB **29** 23:49:06.7±0.5,39.°09N±0.°04×29.°00E±0.°04,h9km,Error ellipse: s-maj=5.6km s-min=4.0km az=159.0*
*DDA **29** 23:49:06.8,39.°10N×28.°99E,h7km,Ml2.6*
*CSEM **29** 23:49:07.1±0.1,39.°12N×28.°99E,h8km,ML2.6,Error ellipse: s-maj=3.6km s-min=3.1km az=155.0*
ISC 29 23:49:06.5±0.9,39.°07N±0.°03×29.°04E±0.°02,h9km,n32, σ0°24/38,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**264**	P	**Pg**	**23 49 11.7**	**+0.1**
DEMI				S	**Sg**	**23 49 15.0**	**-0.1**
DEMI	**Demirci**	**0.26**	**264**	*i* P	**Pg**	**23 49 11.7**	**+0.1**
DEMI				*i* S	**Sg**	**23 49 15.0**	**-0.1**
GDZ	**Gediz**	**0.34**	**87**	P	**Pb**	**23 49 14.9**	**+0.1**
GDZ				S	**Sb**	**23 49 20.4**	**-0.1**
GDZ	**Gediz**	**0.34**	**87**	*i* P	**Pb**	**23 49 14.9**	**+0.1**
GDZ				*i* S	**Sb**	**23 49 20.4**	**-0.1**
TVSB	**Tavsanli**	**0.50**	**41**	*e*PG	**Pg**	**23 49 16.0**	**-0.2**
TVSB				*e*SG	**Sg**	**23 49 23.2**	**+0.4**
TVSB	**Tavsanli**	**0.50**	**41**	*e*Pg	**Pg**	**23 49 16.0**	**-0.2**
TVSB				*e*Sg	**Sg**	**23 49 23.2**	**+0.4**
KULA	**Kula-Manisa**	**0.63**	**208**	*e*PG	**Pg**	**23 49 18.9**	**+0.3**
KHAL	**Karahalli**	**0.78**	**153**	P	**Pn**	**23 49 24.0**	**+0.2**
KHAL	**Karahalli**	**0.78**	**153**	*i* P	**Pn**	**23 49 24.0**	**+0.2**
KHL	**Karahalli**	**0.83**	**153**	*e*PG	**Pg**	**23 49 21.9**	**-0.7**
AKS	**Akhisar**	**0.98**	**259**	*e*PG	**Pg**	**23 49 25.3**	**+0.1**
AKS	**Akhisar**	**0.98**	**259**	*e*Pg	**Pg**	**23 49 25.3**	**+0.1**
ORLT	**Orhaneli**	**0.98**	**353**	*e*PG	**Pb**	**23 49 25.6**	**-0.1**
ORLT	**Orhaneli**	**0.98**	**353**	*e*Pg	**Pb**	**23 49 25.6**	**-0.1**
BALB	**Balikesir**	**1.07**	**303**	*e*PN	**Pg**	**23 49 27.0**	**0.0**
IGD	**Bursa**	**1.20**	**6**	*i* P	**Pb**	**23 49 28.6**	**-0.8**
CAVI	**Cavuskoy**	**1.29**	**28**	*e*PN	**Pn**	**23 49 30.6**	**-0.1**
CAVI	**Cavuskoy**	**1.29**	**28**	*e*Pn	**Pn**	**23 49 30.6**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.30**	**355**	*e*PN	**Pn**	**23 49 30.9**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.30**	**355**	*e*Pn	**Pn**	**23 49 30.9**	**+0.1**
KCTX	**Karacabey (Bur**	**1.31**	**336**	*e*PN	**Pb**	**23 49 31.1**	**0.0**
KCTX	**Karacabey (Bur**	**1.31**	**336**	*e*Pn	**Pb**	**23 49 31.2**	**0.0**
IZI	**Iznik**	**1.31**	**15**	*e*PN	**Pn**	**23 49 31.0**	**0.0**
IZI	**Iznik**	**1.31**	**15**	*e*Pn	**Pn**	**23 49 31.0**	**0.0**
BORA	**Eskisehir**	**1.36**	**53**	P	**Pg**	**23 49 32.8**	**+0.3**
BORA	**Eskisehir**	**1.36**	**53**	*i* P	**Pg**	**23 49 32.9**	**+0.3**
GONE	**Gonen-Balikesi**	**1.43**	**313**	*e*PN	**Pb**	**23 49 33.0**	**-0.3**
ARMT	**Armutlu**	**1.50**	**355**	*e*PN	**Pn**	**23 49 33.7**	**+0.1**
ARMT	**Armutlu**	**1.50**	**355**	*e*Pn	**Pn**	**23 49 33.7**	**+0.1**
EDC	**Edincik**	**1.57**	**325**	*e*PN	**Pn**	**23 49 34.6**	**+0.1**
GULT	**Gulveren**	**1.77**	**39**	*e*PN	**Pn**	**23 49 37.5**	**+0.1**
GULT	**Gulveren**	**1.77**	**39**	*e*Pn	**Pn**	**23 49 37.5**	**+0.1**

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*ISCJB **29** 23:52:45.8±0.4,38.°17N±0.°04×73.°64E±0.°06,h140km, mb3.5/5,Error ellipse: s-maj=7.1km s-min=4.5km az=155.0*
*IDC **29** 23:52:45.1±4.1,37.°98N×73.°61E,h118km±28km,mb3.4/6, mb1 3.4/12,mb1mx3.1/40,mbtmp3.7/12,MS3.1/2, Ms1 3.1/2,ms1mx2.4/33,Error ellipse: s-maj=45.7km s-min=24.1km az=143.0*
*NNC **29** 23:52:50.8±6.9,38.°45N×73.°52E,h29km±97km,mb4.0, mpv3.5,Error ellipse: s-maj=71.2km s-min=16.7km az=144.0*
ISC 29 23:52:45.9±0.6,38.°10N±0.°05×73.°71E±0.°06,h140km,n28, σ2°73/36,mb3.6/5,6C-3D,Tajikistan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**3.90**	**282**	⇓P	**Pn**	**23 53 44.2**	**-0.4**
DZET				⇓S	**Sn**	**23 54 29.4**	**-0.7**
12nm,0.5s							
MNAS	**Manas**	**4.48**	**349**	⇑P	**Pn**	**23 53 52.2**	**-0.2**
MNAS				⇑S	**Sn**	**23 54 40.0**	**-4.1**
2.7nm,0.4s							
AAK	**Ala-Archa**	**4.57**	**7**	P	**Pn**	**23 53 54.9**	**+1.3**
82nm,0.8s							
AAK	**Ala-Archa**	**4.57**	**7**	⇑P	**Pn**	**23 53 54.9**	**+1.3**
1.5nm,0.3s,baz=176,slow=6.2,SNR=7.4							
AAK				S	**Sn**	**23 54 43.2**	**-3.0**
5.0nm,0.3s,baz=67,slow=20,SNR=15							
AAK	**Ala-Archa**	**4.57**	**7**	⇑P	**Pn**	**23 53 55.2**	**+1.6**
2.8nm,0.5s							
AAK				⇑S	**Sn**	**23 54 44.0**	**-2.2**
16nm,0.5s							
TKM2	**Tokmak 2**	**5.03**	**16**	⇓P	**Pn**	**23 54 00.1**	**+0.4**
5.3nm,0.5s							
TKM2				⇑S	**Sn**	**23 54 54.4**	**-2.7**
7.2nm,0.5s							
KK31	**Karatay Array**	**5.56**	**335**	P	**Pn**	**23 54 06.3**	**-0.3**
2.2nm,0.3s,baz=138,slow=12,SNR=170							
KK31				S	**Sn**	**23 55 03.4**	**-6.2**
35nm,0.4s,baz=145,slow=21,SNR=26							
THN	**Thein Dam**	**5.88**	**163**	*e*P	**Pn**	**23 54 13.2**	**+2.3**
THN				*e*S	**Sn**	**23 55 18.8**	**+1.5**
NDI	**New Delhi**	**9.83**	**162**	*ex*	**Sn**	**23 56 46.0**	**-6.7**
MKAR	**Makanchi Array**	**10.75**	**33**	P	**Pn**	**23 55 17.1**	**+1.2**
0.1nm,0.3s,baz=208,slow=14,SNR=2.8							
GEYT	**Alibeck**	**12.30**	**274**	P	**Pn**	**23 55 34.9**	**-1.5**
0.5nm,0.3s,baz=101,slow=12,SNR=6.7							
PYUN	**Piuthan**	**12.64**	**139**	*e*P	**Pn**	**23 55 42.6**	**+1.6**
37nm,0.4s							
PYUN				*e*S	**Sn**	**23 57 55.1**	**-5.5**
KURBB	**Kurchatov Arra**	**12.98**	**14**	P	**P**	**23 55 51.0**	**+0.8**
0.1nm,0.3s,baz=207,slow=10,SNR=12							
KOLN	**Koldanda**	**13.22**	**138**	*e*P	**Pn**	**23 55 50.5**	**+2.0**
17nm,0.4s							
GKN	**Gorkha**	**13.60**	**135**	*e*P	**Pn**	**23 55 55.0**	**+1.7**
12nm,0.3s							
GKN				*e*S	**Sn**	**23 58 17.7**	**-6.1**
KKN	**Kakani**	**14.13**	**133**	*e*P	**Pn**	**23 56 01.6**	**+1.5**
4.1nm,0.3s							
PKIN	**Phulchoki**	**14.36**	**134**	*e*P	**Pn**	**23 56 04.9**	**+1.9**
4.7nm,0.3s							
GUN	**Gumba**	**14.39**	**131**	*e*P	**Pn**	**23 56 04.5**	**+1.0**
7.1nm,0.3s							
AB31	**Akbulak array**	**14.93**	**323**	P	**Pn**	**23 56 07.6**	**-2.1**
1.0nm,0.5s,baz=132,slow=12,SNR=24							
AB31				⇑S	Sn	23 58 39.1	-16
1.2nm,0.6s,baz=134,slow=24,SNR=6.4							
BVAR	**Borovoye Array**	**15.11**	**352**	P	**P**	**23 56 15.3**	**+1.5**
0.5nm,0.3s,baz=153,slow=10.0,SNR=12							
AKTO	**Aktyubinsk**	**16.64**	**323**	P	**Pn**	**23 56 30.5**	**-0.3**
0.4nm,0.3s,baz=127,slow=12,SNR=8.6							
AKTO				LR	LR	00 03 05.7	
comp=Z,50nm,19.2s,baz=234,slow=37							
ZALV	**Zalesovo Beam**	**17.59**	**22**	P	**Pn**	**23 56 42.5**	**+0.4**
0.6nm,0.3s,baz=210,slow=11,SNR=11							
ARU	**Arti**	**20.94**	**336**	P	**P**	**23 57 18.3**	**+1.0**
1.2nm,0.3s,baz=126,slow=9.9,SNR=3.6							
KBZ	**Khabaz**	**23.87**	**293**	LR	LR	00 08 52.7	
comp=Z,75nm,21.8s,baz=147,slow=41							
FINES	**FINESS Array B**	**37.41**	**324**	P	**P**	**23 59 46.9**	**+1.9**
1.0nm,0.4s,baz=114,slow=9.7,SNR=14							
ARCES	**ARCESS Array B**	**40.53**	**336**	P	**P**	**00 00 12.7**	**+1.9**
0.8nm,0.5s,baz=109,slow=7.9,SNR=14							
NOA	**NORSAR Array B**	**44.43**	**322**	P	**P**	**00 00 44.0**	**+1.6**
0.7nm,0.6s,baz=93,slow=7.8,SNR=2.6							
TORD	**Torodi Ar. Bea**	**67.90**	**270**	P	**P**	**00 03 30.9**	**+1.2**
0.4nm,0.5s,baz=48,slow=5.5,SNR=15							
YKA	**Yellowknife Ar**	**79.53**	**4**	P	**P**	**00 04 39.0**	**+2.3**
0.2nm,0.6s,baz=352,slow=5.5,SNR=5.2							

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*ISK **30** 00:03:52.7,36.°96N×28.°21E,h5km,MD2.6*
*CSEM **30** 00:03:53.6±0.4,36.°95N×28.°18E,h5km,MD2.6,Error ellipse: s-maj=10.0km s-min=5.7km az=20.0*
*DDA **30** 00:03:53.8,36.°99N×28.°21E,h7km,Md2.6*
ISC 30 00:03:53.4±1.2,36.°95N±0.°04×28.°21E±0.°03,h2km±11km, n19,σ1°01/30,Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.20**	**16**	*e*PG	**Pg**	**00 03 57.4**	**+0.2**
YER				*e*SG	**Sg**	**00 04 00.0**	**+0.2**
YER	**Yerkesik**	**0.20**	**16**	*e*Pg	**Pg**	**00 03 57.4**	**+0.2**
YER				*e*Sg	**Sg**	**00 04 00.0**	**+0.2**
TURN	**Turunc**	**0.32**	**103**	*i* P	**Pg**	**00 03 57.9**	**-1.7**
TURN				*i* S	**Sg**	**00 04 01.4**	**-2.3**
DALY	**Dalyan (Mu¨la**	**0.38**	**110**	*e*PG	**Pg**	**00 04 00.3**	**-0.3**
DALY				*e*SG	**Sg**	**00 04 06.8**	**+1.3**
DALY	**Dalyan (Mu¨la**	**0.38**	**110**	*e*Pg	**Pg**	**00 04 00.3**	**-0.3**
DALY				*e*Sg	**Sg**	**00 04 06.8**	**+1.3**
BDRM	**Kayabasi**	**0.63**	**281**	P	**Pg**	**00 04 05.6**	**+0.2**
BDRM				S	**Sb**	**00 04 15.5**	**-0.9**
BDRM	**Kayabasi**	**0.63**	**281**	*i* P	**Pg**	**00 04 05.6**	**+0.2**
BDRM				*i* S	**Sb**	**00 04 15.5**	**-0.9**
BODT	**Bodrum**	**0.73**	**279**	*e*PG	**Pg**	**00 04 07.2**	**-0.2**
BODT	**Bodrum**	**0.73**	**279**	*e*Pg	**Pg**	**00 04 07.2**	**-0.2**
AYDN	**Tasoluk**	**0.76**	**340**	P	**Pg**	**00 04 07.8**	**-0.2**
AYDN				S	**Sg**	**00 04 17.5**	**-0.4**
AYDN	**Tasoluk**	**0.76**	**340**	*i* P	**Pg**	**00 04 07.8**	**-0.2**
AYDN				*i* S	**Sg**	**00 04 17.5**	**-0.4**
FETY	**Fethiye**	**0.77**	**114**	*e*PG	**Pg**	**00 04 08.3**	**+0.3**
FETY	**Fethiye**	**0.77**	**114**	*e*Pg	**Pg**	**00 04 08.3**	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**1.03**	**346**	*e*PG	**Pg**	**00 04 12.7**	**-0.5**
AYDB	**Zeytinkoy-Aydi**	**1.03**	**346**	*e*Pg	**Pg**	**00 04 12.7**	**-0.5**
GOLH	**Golhisar**	**1.12**	**75**	P	**Pn**	**00 04 18.3**	**+2.1**
GOLH				S	**Sn**	**00 04 31.2**	**-1.0**
GOLH	**Golhisar**	**1.12**	**75**	*i* P	**Pn**	**00 04 18.3**	**+2.1**
GOLH				*i* S	**Sn**	**00 04 31.2**	**-1.0**
ELL	**Elmali**	**1.37**	**98**	*e*PN	**Pb**	**00 04 19.4**	**-0.5**
ELL	**Elmali**	**1.37**	**98**	*e*Pn	**Pb**	**00 04 19.4**	**-0.5**

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*NIED **30** 00:05:00,36.°60N×142.°70E,h8km,Mw4.8 Best double couple: M0:1.55000×10¹⁶ NP1:φ=215.00000°,δ=43.00000°, λ=103.00000°. NP2:φ=18.00000°,δ=49.00000°,λ=78.00000°.*
*ISCJB **30** 00:05:33.5±0.8,36.°62N±0.°03×142.°68E±0.°03,h5km±5km, mb4.7/122,MS4.5/49,Error ellipse: s-maj=4.9km s-min=3.2km az=154.4*
*IDC **30** 00:05:34.0±0.8,36.°59N×142.°71E,h0km,mb4.4/33, mb1 4.4/41,mb1mx4.3/70,mbtmp4.3/41,ML3.8/6,MS4.1/24, Ms1 4.1/24,ms1mx4.0/47,Error ellipse: s-maj=21.1km s-min=11.9km az=165.0*
*JMA **30** 00:05:35.7±0.4,36.°56N×142.°72E,h64km,M4.2*
*MOS **30** 00:05:37.2±1.0,36.°70N×142.°66E,h28km,mb4.9/51, MS4.5/21,Error ellipse: s-maj=7.9km s-min=5.0km az=110.7*
*NEIC **30** 00:05:38.2±1.4,36.°63N×142.°67E,h24km±10km,mb4.8/62, Error ellipse: s-maj=5.8km s-min=3.6km az=141.0*
ISC 30 00:05:38.0±0.5,36.°59N±0.°04×142.°68E±0.°04,h26km±3km, h25km:pP-P,n292,σ1°78/324,mb4.7/122,MS4.6/49, 19C-2D,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**1.59**	**289**	P	**Pn**	**00 06 02.6**	**-2.0**
JFK	**Kawauchi**	**1.64**	**299**	P	**Pn**	**00 06 03.2**	**-2.0**
JFK				S	**Sn**	**00 06 24.7**	**-0.8**
JHO	**Hitachi**	**1.70**	**271**	P	**Pn**	**00 06 03.9**	**-2.0**
CHOJ	**Chosi**	**1.72**	**240**	P	**Pn**	**00 06 04.3**	**-1.9**
CHOJ				*e*S	**Sn**	**00 06 25.9**	**-1.4**
JYT	**Yasato**	**2.04**	**261**	P	**Pn**	**00 06 08.5**	**-2.1**
JFT	**Otama**	**2.09**	**297**	P	**Pn**	**00 06 10.6**	**-0.8**
BSO1	**Boso 1**	**2.38**	**216**	P	**Pn**	**00 06 12.4**	**-2.4**
BSO4	**Boso 4**	**2.48**	**231**	P	**Pn**	**00 06 14.9**	**-1.7**
BSO3	**Boso 3**	**2.51**	**225**	P	**Pn**	**00 06 14.9**	**-1.9**
JAG	**Ashikaga**	**2.60**	**267**	P	**Pn**	**00 06 17.0**	**-1.4**
JHU	**Hanno**	**2.84**	**256**	P	**Pn**	**00 06 19.8**	**-1.9**
JYK	**Kaneyama**	**2.96**	**322**	P	**Pn**	**00 06 22.2**	**-1.2**
MJAR	**Matsushiro Arr**	**3.60**	**271**	Pn	**Pn**	**00 06 31.4**	**-0.7**
12nm,0.3s,baz=88,slow=11,SNR=122							
MAJO	**Matsushiro**	**3.60**	**271**	*c i*P	**Pn**	**00 06 32.0**	**-0.1**
MAJO	**Matsushiro**	**3.60**	**271**	*e*Pn	**Pn**	**00 06 32.1**	**0.0**
MAT	**Matsushiro**	**3.60**	**271**	P	**Pn**	**00 06 31.9**	**-0.2**
MAT				*e*S	**Sn**	**00 07 16.7**	**+2.9**
MJB9	**Matsu-Tunnel**	**3.60**	**271**	*e*Pn	**Pn**	**00 06 32.2**	**+0.1**
JHJ2	**Mitsune**	**4.19**	**215**	*e*Pn	**Pn**	**00 06 41.4**	**+1.2**
JHJ	**Hachijo jima 2**	**4.20**	**215**	Pn	**Pn**	**00 06 38.3**	**-2.0**
40nm,0.3s,baz=84,slow=23,SNR=6.4							
JHJ				Sn	**Sn**	**00 07 20.8**	**-7.8**
55nm,0.3s,baz=59,slow=20,SNR=5.4							
INU	**Inuyama**	**4.76**	**257**	*e*Pn	**Pn**	**00 06 49.2**	**+1.2**
ERM	**Erimo**	**5.43**	**4**	*e*P	**Pn**	**00 06 56.7**	**-0.5**
ERM	**Erimo**	**5.43**	**4**	*e*Pn	**Pn**	**00 06 56.7**	**-0.5**
ASAJ	**Asahikawa**	**7.52**	**360**	Pn	**Pn**	**00 07 23.9**	**-2.0**
2.4nm,0.3s,baz=209,slow=11,SNR=6.8							
ASAJ				Sn	**Sn**	**00 08 49.4**	**-0.8**
1.0nm,0.3s,baz=343,slow=20,SNR=3.2							
ASAJ	**Asahikawa**	**7.52**	**360**	*e*Pn	**Pn**	**00 07 24.6**	**-1.3**
ASAJ				Sn	**Sn**	**00 08 49.4**	**-0.8**
JCJ	**Chichijima**	**9.47**	**183**	LR	LR	00 11 02.4	
comp=Z,209nm,21.8s,baz=318,slow=35							
KUR	**Kuril'sk**	**9.48**	**23**	P	Pn	00 07 40.4	-12
KUR				*e*S	**Sn**	**00 09 33.2**	**-5.3**
KUR				MLR	MLR		
comp=N,515nm,15.0s							
KUR				MLR	MLR		
comp=E,815nm,15.0s							
KUR				MLR	MLR		
comp=Z,577nm,15.0s							
JNU	**Nakatsue**	**10.29**	**254**	Pn	**Pn**	**00 08 03.3**	**-0.8**
comp=Z,0.5nm,0.3s,baz=76,slow=4.2,SNR=3.7							
JNU				LR	LR	00 12 41.4	
comp=Z,1μm,18.2s,baz=72,slow=41							
YSS	**Yuzh-Sakhalins**	**10.36**	**0**	*e*P	**Pn**	**00 08 03.7**	**-1.1**
YSS				*e*S	**Sn**	**00 09 55.3**	**-4.6**
YSS				pmax	pmax		
comp=Z,30nm,0.9s							
YSS				MLR	MLR		
comp=Z,2μm,16.0s							
YSS				MLR	MLR		
comp=N,1μm,15.0s							
YSS				MLR	MLR		
comp=E,900nm,12.0s							
YSS	**Yuzh-Sakhalins**	**10.36**	**0**	*e*Pn	**Pn**	**00 08 03.9**	**-0.9**
VLA	**Vladivostok**	**10.55**	**311**	⇓*i*P	**Pn**	**00 08 10.8**	**+3.4**
VLA				*i* S	**Sn**	**00 10 08.0**	**+3.3**
VLA				pmax	pmax		
comp=Z,23nm,0.7s							
USRK	**Ussuriysk Ar.**	**11.14**	**316**	Pn	**Pn**	**00 08 14.0**	**-1.5**
comp=Z,0.2nm,0.3s,baz=125,slow=12,SNR=3.1							
USRK				LR	LR	00 11 44.9	
comp=Z,435nm,20.1s,baz=119,slow=33							
KSRS	**Korea Array**	**11.83**	**279**	Pn	**Pn**	**00 08 24.4**	**-0.5**
comp=Z,0.2nm,0.3s,baz=93,slow=13,SNR=21							
KSRS				LR	LR	00 12 43.2	
comp=Z,516nm,18.0s,baz=92,slow=36			

BJI LR LR
comp=E,1μm,12.3s
BJI LR LR
comp=Z,520nm,14.8s
YHNB Yeheng 21.79 243 *eP* **P 00 10 27.9 -0.2**
comp=Z,43nm,1.3s
NACB Ninganchiao 21.94 242 *eP* **P 00 10 30.3 +0.7**
comp=Z,15nm,0.9s
SSLB Suanglung 22.64 242 *eP* **P 00 10 38.1 +1.0**
comp=Z,93nm,1.9s
GUMO Guam 22.99 175 LR LR 00 19 05.0
comp=Z,222nm,20.6s,baz=355,slow=35
TWG Pinlang 23.18 240 *eP* **P 00 10 43.8 +1.1**
comp=Z,289nm,1.6s
CLNS Chul'man 23.51 335 *eP* **P 00 10 43.8 -1.9**
CLNS pmax pmax
comp=Z,13nm,1.2s
CLNS pmax pmax
comp=N,14nm,1.1s
CLNS pmax pmax
comp=E,7.0nm,1.0s
CLNS MLR MLR
comp=E,845nm,15.0s
CLNS MLR MLR
comp=Z,2μm,15.0s
CLNS MLR MLR
comp=N,2μm,14.0s
MA2 Magadan 23.59 10 P **P 00 10 46.1 -0.3**
comp=N,12nm,0.7s,baz=213,slow=7.3,SNR=11
MA2 LR LR 00 21 03.4
comp=N,582nm,18.6s,baz=220,slow=39
QZH Quanzhou 23.66 247⇑ *iP* **P 00 10 48.5 +1.1**
QZH S **S 00 14 59.3 -1.3**
QZH pmax pmax
comp=Z,760nm,6.3s
QZH LR LR
comp=N,900nm,11.2s
QZH LR LR
comp=E,1μm,10.0s
QZH LR LR
comp=Z,1μm,12.5s
WHN Wuhan 24.31 264 P **P 00 10 52.0 -1.4**
WHN S **S 00 15 13.5 +2.5**
WHN pmax pmax
comp=Z,850nm,6.8s
WHN LR LR
comp=N,1μm,12.1s
WHN LR LR
comp=E,3μm,13.0s
WHN LR LR
comp=Z,4μm,16.0s
HHC Hu-ho-hao-te 24.58 290 *eP* **P 00 10 56.3 +0.4**
HHC S **S 00 15 15.5 +0.1**
HHC sS sS 00 15 25.5 -2.5
HHC pmax pmax
comp=Z,41nm,0.9s
HHC pmax pmax
comp=Z,230nm,4.5s
HHC LR LR
comp=N,900nm,12.2s
HHC LR LR
comp=E,640nm,11.1s
HHC LR LR
comp=Z,860nm,11.6s
CIT Chita 25.70 316 *eP* **P 00 11 07.0 +1.1**
CIT *e* 00 11 41.0
CIT pmax pmax
comp=Z,159nm,2.1s
YAK Yakutsk 26.73 346 P **P 00 11 14.7 -0.4**
comp=Z,2.9nm,0.3s,baz=332,slow=22,SNR=4.7
YAK LR LR 00 22 07.9
comp=Z,580nm,19.8s,baz=156,slow=37
YAK Yakutsk 26.73 346 *eP* **P 00 11 15.2 +0.2**
YAK *e**PP **sP 00 11 24.3 -1.6**
YAK *e* 00 11 52.1
YAK *e* 00 14 37.1
YAK *e*S **S 00 15 49.5 +0.6**
YAK *e**SS **sS 00 16 07.4 +5.8**
YAK pmax pmax
comp=E,12nm,1.3s
YAK pmax pmax
comp=N,26nm,1.2s
YAK pmax pmax
comp=Z,45nm,1.0s
YAK pmax pmax
comp=E,79nm,3.6s
YAK pmax pmax
comp=Z,205nm,4.3s
YAK pmax pmax
comp=N,192nm,4.7s
YAK smax smax
comp=E,229nm,6.3s
YAK smax smax
comp=N,199nm,6.1s
YAK MLR MLR
comp=Z,1μm,13.0s
YAK MLR MLR
comp=E,395nm,11.0s
YAK MLR MLR
comp=N,1μm,13.0s
YAK Yakutsk 26.73 346 *eP* **P 00 11 15.7 +0.7**
comp=N,39nm,0.8s
SEY Seymchan 27.04 10 P **P 00 11 18.6 +0.8**
comp=N,3.4nm,0.7s,baz=204,slow=7.6,SNR=15
SEY Seymchan 27.04 10 *ceP* **P 00 11 18.8 +1.0**
H11N2 WAKE ISLAND Hy 27.05 122 T T 00 39 21.8
baz=313,slow=75,SNR=21
H11N1 WAKE ISLAND Hy 27.06 122 T T 00 39 28.8
baz=313,slow=75,SNR=21
H11N3 WAKE ISLAND Hy 27.07 122 T T 00 39 30.9
baz=313,slow=75,SNR=12
XAN Xi'an 27.59 275 P **P 00 11 22.0 -1.1**
XAN sP sP 00 11 35.8 +1.8
XAN PP **PnPn 00 12 09.3 +0.7**
XAN PcP **PcP 00 14 41.8 +1.5**
XAN S **S 00 15 58.0 -5.0**
XAN SS **SnSn 00 17 12.0 -2.8**
XAN pmax pmax
comp=Z,13nm,0.8s
XAN pmax pmax
comp=Z,260nm,9.4s
XAN LR LR
comp=N,220nm,12.7s
XAN LR LR
comp=E,820nm,13.1s
XAN LR LR
comp=Z,1μm,13.0s
H11S1 WAKE ISLAND Hy 27.77 124 T T 00 40 17.4
baz=316,slow=76,SNR=14
H11S3 WAKE ISLAND Hy 27.77 124 T T 00 40 17.5
baz=316,slow=76,SNR=16
H11S2 WAKE ISLAND Hy 27.78 124 T T 00 40 15.8
baz=316,slow=76,SNR=11
ULN Ulaanbaatar 28.45 305 *ceP* **P 00 11 31.6 +0.9**
ULN pmax pmax
comp=Z,20nm,1.2s
ULN Ulaanbaatar 28.45 305 *eP* **P 00 11 31.3 +0.5**
comp=Z,20nm,1.2s
SONA1 Songino Array 28.87 304 *eP* **P 00 11 34.5 0.0**
SONM Songino Array 28.88 304 P **P 00 11 35.3 +0.8**
comp=Z,10nm,0.9s,baz=105,slow=9.4,SNR=39
SONM LR LR 00 23 02.8
comp=Z,108nm,18.3s,baz=72,slow=36
LZH Lanzhou 31.15 281 *eP* **P 00 11 55.0 +0.2**
LZH pP sP 00 12 03.5 -2.2
LZH sP pP 00 12 07.5 +5.0
LZH PP **PP 00 13 00.8 -4.4**
LZH *e*S **S 00 16 54.5 -4.7**
LZH sS sS 00 17 09.3 -2.6
LZH SS **ScP 00 18 30.0 -0.6**
LZH pmax pmax
comp=Z,42nm,1.2s
LZH pmax pmax
comp=Z,220nm,5.5s
LZH LR LR
comp=N,800nm,14.2s
LZH LR LR
comp=E,1μm,12.8s
LZH LR LR
comp=Z,2μm,15.2s
ZAK Zakamensk 31.34 309 *eP* **P 00 11 56.0 -0.3**
ZAK pmax pmax
comp=Z,9.0nm,1.4s
TLY Talaya 31.39 311 LR LR 00 26 16.8
comp=Z,410nm,18.1s,baz=100,slow=40
TLY Talaya 31.39 311 *c iP* **P 00 11 57.0 +0.4**

TLY *e* 00 13 07.0
TLY *e*PPP PPP 00 13 17.3
TLY pmax pmax
comp=Z,5.0nm,0.6s
TLY MLR MLR
comp=Z,562nm,14.0s
TLY Talaya 31.39 311 *eP* **P 00 11 56.7 +0.1**
comp=Z,8.4nm,0.8s
GYA Guiyang 32.16 262⇑ *iP* **P 00 12 02.0 -1.7**
GYA pP sP 00 12 14.3 -0.4
GYA PP **PnPn 00 13 12.0 +2.2**
GYA PcP **PcP 00 14 53.5 +1.2**
GYA S **S 00 17 14.0 -1.0**
GYA sS sS 00 17 29.0 +1.2
GYA ScP **ScP 00 18 33.5 -0.6**
GYA SS **SnSn 00 19 06.8 +0.4**
GYA pmax pmax
comp=Z,20nm,0.8s
GYA pmax pmax
comp=Z,120nm,5.0s
GYA LR LR
comp=N,540nm,17.5s
GYA LR LR
comp=E,520nm,18.0s
GYA LR LR
comp=Z,500nm,17.9s
CD2 Chengdu 32.70 272 P **P 00 12 07.5 -0.8**
CD2 sP sP 00 12 21.0 +1.7
CD2 PP **PP 00 13 21.5 -0.8**
CD2 S **S 00 17 22.0 -1.2**
CD2 sS sS 00 17 37.8 +1.8
CD2 SS **SS 00 19 43.5 -0.7**
CD2 pmax pmax
comp=Z,30nm,0.4s
CD2 pmax pmax
comp=Z,200nm,6.0s
CD2 LR LR
comp=N,1μm,14.2s
CD2 LR LR
comp=Z,1μm,14.2s
PATS Pohnpei 32.88 150 *eP* **P 00 12 11.2 +1.3**
comp=Z,106nm,1.4s
MOY Mondy 33.00 310 *eP* **P 00 12 12.1 +1.3**
GTA Gaotai 33.67 288 *eP* **P 00 12 17.0 +0.2**
GTA pP sP 00 12 26.5 -1.3
GTA sP pP 00 12 30.5 +5.9
GTA S **S 00 17 38.3 0.0**
GTA sS sS 00 17 56.0 +4.9
GTA SS **SnSn 00 19 43.5 +0.8**
GTA pmax pmax
comp=Z,12nm,1.3s
GTA pmax pmax
comp=Z,180nm,5.7s
GTA LR LR
comp=N,500nm,15.0s
GTA LR LR
comp=E,280nm,14.5s
GTA LR LR
comp=Z,800nm,13.1s
QIZ Qiongzhong 33.69 248 P **P 00 12 17.0 0.0**
QIZ PP **PP 00 13 36.0 +2.6**
QIZ S **S 00 17 40.8 +2.2**
QIZ SS **SS 00 20 06.5 +2.0**
QIZ pmax pmax
comp=Z,8.0nm,1.0s
QIZ LR LR
comp=E,490nm,17.1s
QIZ LR LR
comp=Z,620nm,14.6s
BILL Bilibino 34.17 16 *eP* **P 00 12 19.6 -1.1**
BILL *i* 00 12 27.2
BILL *i* 00 13 40.4
BILL *i* 00 15 02.1
BILL pmax pmax
comp=Z,1.0nm,1.0s
BILL MLR MLR
comp=Z,290nm,17.0s
BILL Biilibino 34.17 16 *eP* **P 00 12 19.6 -1.1**
comp=Z,6.2nm,1.0s
MIDW Midway 34.55 92 *eP* **P 00 12 24.8 +0.4**
comp=Z,132nm,1.0s
TIXI Tiksi 35.86 353 P **P 00 12 34.5 -0.6**
comp=Z,0.8nm,0.3s,baz=154,slow=6.6,SNR=4.0
TIXI Tiksi 35.86 353 *eP* **P 00 12 35.2 +0.1**
TIXI pmax pmax
comp=Z,2.0nm,0.6s
TIXI Tiksi 35.86 353 *eP* **P 00 12 35.8 +0.7**
comp=Z,19nm,2.0s
KMI Kunming 35.91 263 P **P 00 12 33.5 -2.9**
KMI pP pP 00 12 40.0 -4.2
KMI sP sP 00 12 43.8 -3.6
KMI PP **PP 00 13 58.8 +0.7**
KMI S **S 00 18 08.0 -5.2**
KMI sS sS 00 18 20.8 -5.3
KMI SS **SnSn 00 20 33.5 -4.0**
KMI pmax pmax
comp=Z,21nm,0.6s
KMI pmax pmax
comp=Z,64nm,3.6s
KMI LR LR
comp=N,470nm,13.1s
KMI LR LR
comp=E,870nm,13.1s
KMI LR LR
comp=Z,730nm,12.4s
NIKH Nikolski High 37.31 48 *eP* **P 00 12 47.4 -0.3**
comp=Z,66nm,1.2s
MYLDM Lahad Datu 38.33 221 *eP* **P 00 12 57.2 +0.6**
comp=Z,48nm,1.4s
KRAR Krasnoyarsk 38.49 316 *i* P **P 00 12 59.1 +1.5**
KRAR pmax pmax
comp=Z,13nm,0.9s
GAMB Gambell 38.58 31 *eP* **P 00 12 59.2 +0.9**
comp=Z,28nm,1.1s
PANO Nakornpanom 38.76 250 P **P 00 13 01.8 +1.4**
comp=Z,84nm,0.8s,comp=Z,6μm
UBPT Khong Chiam 39.28 247 P **P 00 13 05.7 +1.0**
comp=Z,18nm,1.4s
SKNT Sakolnakorn 39.35 251 P **P 00 13 06.2 +0.9**
comp=Z,18nm,1.4s
CRAI Chiangrai 40.27 258 P **P 00 13 14.1 +1.1**
comp=Z,660nm,1.0s,comp=Z,58μm
CHAI Chaiyaphum 41.52 251 P **P 00 13 24.1 +0.9**
comp=Z,4.1nm,1.3s
PBKT Sadao Pong 41.89 253 P **P 00 13 27.0 +0.7**
comp=Z,20nm,1.2s
WMQ Urumqi 41.95 298 P **P 00 13 30.5 +3.9**
WMQ pP sP 00 13 38.3 +0.7
WMQ sP pP 00 13 42.5 +8.0
WMQ PP **PP 00 15 05.0 +1.3**
WMQ S **S 00 19 49.8 +6.3**
WMQ sS sS 00 19 58.3 +1.8
WMQ SS **SS 00 22 43.0 -7.4**
WMQ pmax pmax
comp=Z,5.0nm,1.0s
WMQ pmax pmax
comp=Z,150nm,12.0s
CHTO Chiang Mai 42.18 257 *eP* **P 00 13 28.5 -0.1**
CHTO pmax pmax
comp=Z,7.0nm,1.1s
CHTO Chiang Mai 42.18 257 *eP* **P 00 13 28.5 -0.1**
comp=Z,6.6nm,1.1s
CMAR Chiang Mai Arr 42.38 257 P **P 00 13 30.3 +0.1**
comp=Z,0.6nm,0.4s,baz=42,slow=8.5,SNR=5.7
CMAR LR LR 00 33 25.0
comp=Z,236nm,20.3s,baz=75,slow=39
CMAR Chiang Mai Arr 42.38 257 *i* P **P 00 13 34.5 +4.2**
CMAR pmax pmax
comp=Z,1.0nm,0.4s
CM01 Chiang Mai Arr 42.38 257 *eP* **P 00 13 30.2 -0.1**
SRAK Srakaew 42.64 249 P **P 00 13 32.6 +0.2**
comp=Z,30nm,1.1s
ZAA0 Zalesovo Array 42.96 313 *eP* **P 00 13 34.8 +0.2**
ZALV Zalesovo Beam 42.96 313 P **P 00 13 34.9 +0.3**
comp=Z,7.4nm,0.9s,baz=93,slow=7.5,SNR=21
ZALV LR LR 00 31 07.5
comp=Z,168nm,18.2s,baz=68,slow=36
CHGN Chignik 43.58 44 *eP* **P 00 13 40.4 +0.9**
NVS Novosibirsk 43.88 314 *eP* **P 00 13 42.4 +0.4**
SBUM Sibu 44.08 227 *eP* **P 00 13 44.2 +0.1**
comp=Z,6.9nm,1.0s
NRIK Noril'sk 44.10 335 P **P 00 13 44.1 +0.6**
comp=Z,1.1nm,0.6s,baz=96,slow=7.9,SNR=3.5
NRIK LR LR 00 34 21.8
comp=Z,496nm,20.7s,baz=98,slow=39

TT01 Tatalina 45.20 34 *eP* **P 00 13 52.2 -0.2**
TTA Tatalina 45.21 34 *eP* **P 00 13 53.2 +0.6**
TTA pmax pmax
comp=Z,6.0nm,1.4s
TTA Tatalina 45.21 34 *eP* **P 00 13 53.2 +0.6**
comp=Z,6.4nm,1.4s
MK01 Makanchi Array 45.21 303 *eP* **P 00 13 52.5 -0.2**
MK31 Makanchi Array 45.22 303 *eP* **P 00 13 53.1 +0.3**
MK31 Makanchi Array 45.22 303 *eP* **P 00 13 53.1 +0.3**
MKAR Makanchi Array 45.22 303 P **P 00 13 53.0 +0.2**
comp=Z,3.1nm,0.7s,baz=91,slow=10,SNR=20
MAKZ Makanchi 45.42 303 *eP* **P 00 13 54.9 +0.4**
MAKZ pmax pmax
comp=Z,7.0nm,0.8s
MAKZ Makanchi 45.42 303 *eP* **P 00 13 54.9 +0.4**
comp=Z,7.0nm,0.8s
SAUI Saumlaki 45.60 196 *eP* **P 00 13 57.0 +0.9**
comp=Z,328nm,0.9s
PMG Port Moresby 45.94 174 *eP* **P 00 13 59.6 +0.9**
comp=Z,40nm,1.0s
KAPI Kappang 46.61 212 *eP* **P 00 14 07.9 +3.9**
comp=Z,40nm,1.4s
KDAK Kodiak Island 46.75 42 *ceP* **P 00 14 04.6 -0.1**
SPU Mount Spurr 46.97 37 *eP* **P 00 14 07.4 +0.9**
KURK Kurchatov 47.01 309 *eP* **P 00 14 06.3 -0.5**
KURK pmax pmax
comp=Z,21nm,0.9s
KURK Kurchatov 47.01 309 *eP* **P 00 14 06.3 -0.5**
comp=Z,22nm,0.9s
KURBB Kurchatov Arra 47.08 308 P **P 00 14 07.1 -0.2**
comp=Z,12nm,0.8s,baz=83,slow=8.0,SNR=79
KTH Kantishna Hill 47.55 34 *eP* **P 00 14 12.1 +1.2**
comp=Z,10nm,1.1s
PMR Palmer 48.38 36 *eP* **P 00 14 16.9 -0.3**
PMR pmax pmax
comp=Z,7.0nm,1.0s
PMR Palmer 48.38 36 *eP* **P 00 14 16.9 -0.3**
comp=Z,7.1nm,1.0s
MCK McKinley 48.44 34 *eP* **P 00 14 18.2 +0.4**
MCK pmax pmax
comp=Z,6.0nm,0.9s
MCK McKinley 48.44 34 *eP* **P 00 14 18.2 +0.4**
comp=Z,6.1nm,0.9s
RND Reindeer 48.48 34 *eP* **P 00 14 17.5 -0.6**
RND pmax pmax
comp=Z,7.0nm,1.0s
RND Reindeer 48.48 34 *eP* **P 00 14 17.5 -0.6**
comp=Z,7.1nm,1.0s
MDM Murphy Dome 48.75 32 *eP* **P 00 14 20.8 +0.7**
comp=Z,14nm,0.8s
WRH Wood River Hil 48.81 33 *eP* **P 00 14 21.2 +0.7**
comp=Z,4.6nm,0.8s
CCB Clear Creek Bu 48.93 32 *eP* **P 00 14 24.0 +2.6**
comp=Z,5.4nm,1.3s
IL1 Eielson Array 49.33 32 *eP* **P 00 14 23.4 -1.1**
ILAR Eielson Array 49.33 32 P **P 00 14 24.1 -0.5**
comp=Z,6.4nm,0.8s,baz=265,slow=6.4,SNR=65
ILAR Eielson Array 49.33 32 P **P 00 14 24.1 -0.5**
ILAR pmax pmax
comp=Z,7.0nm,0.8s
ILB Eielson Array 49.33 32 *eP* **P 00 14 24.5 0.0**
DIV Divide 50.02 37 *eP* **P 00 14 31.3 +1.4**
comp=Z,14nm,1.0s
PAX Paxson 50.02 35 *eP* **P 00 14 31.9 +1.9**
PAX pmax pmax
comp=Z,33nm,0.6s
PAX Paxson 50.02 35 *eP* **P 00 14 31.9 +1.9**
comp=Z,32nm,0.6s
COEN Coen 50.27 179 *eP* **P 00 14 29.5 -2.7**
comp=Z,26nm,1.2s
BMRM Bremner River 50.60 37 *eP* **P 00 14 35.2 +0.9**
comp=Z,11nm,1.0s
TKM2 Tokmak 2 50.73 299 *eP* **P 00 14 36.5 +0.7**
TKM2 pmax pmax
comp=Z,10.0nm,1.1s
TKM2 Tokmak 2 50.73 299 *eP* **P 00 14 36.5 +0.7**
comp=Z,10nm,1.1s
FRU Bishkek 51.45 299 *eP* **P 00 14 43.0 +2.0**
KSH Kashi 51.52 295 P **P 00 14 45.5 +3.9**
KSH *e*pP sP 00 14 55.5 +2.7
KSH *e*sP pP 00 14 59.8 +10
KSH *e*PP **PP 00 16 44.5 +5.7**
KSH S **S 00 22 04.0 +3.5**
KSH ScS **ScS 00 24 30.5 +0.2**
KSH Kashi 51.52 295 SS **SS 00 25 39.0 +2.7**
KSH pmax pmax
comp=Z,73nm,5.4s
KSH LR LR
comp=N,220nm,10.6s
KSH LR LR
comp=E,410nm,14.7s
KSH LR LR
comp=Z,590nm,13.1s
AAK Ala-Archa 51.59 299 P **P 00 14 42.8 +0.6**
comp=Z,1.6nm,0.6s,baz=53,slow=2.5,SNR=3.6
AAK Ala-Archa 51.59 299 *eP* **P 00 14 42.0 -0.2**
AAK pmax pmax
comp=Z,10.0nm,1.4s
AAK Ala-Archa 51.59 299 *eP* **P 00 14 42.8 +0.6**
comp=Z,5.5nm,1.1s
BVAR Borovoye Array 51.62 313 P **P 00 14 42.3 +0.2**
comp=Z,3.4nm,0.9s,baz=67,slow=11,SNR=11
BRVK Borovoye 51.68 313 *eP* **P 00 14 42.8 +0.4**
BRVK pmax pmax
comp=Z,22nm,1.3s
BRVK Borovoye 51.68 313 *eP* **P 00 14 42.8 +0.4**
comp=Z,22nm,1.3s
EGAK Eagle 51.78 32 *eP* **P 00 14 43.0 0.0**
comp=Z,22nm,1.9s
KKAR Karatay Array 54.23 301 *eP* **P 00 15 02.4 +1.0**
KKAR Karatay Array 54.23 301 *eP* **P 00 15 02.4 +1.0**
INK Inuvik 54.32 27 P **P 00 15 01.6 0.0**
comp=Z,5.2nm,0.8s,baz=302,slow=5.3,SNR=11
INK Inuvik 54.32 27 *eP* **P 00 15 02.0 +0.4**
INK pmax pmax
comp=Z,7.0nm,0.8s
INK Inuvik 54.32 27 *eP* **P 00 15 02.0 +0.4**
comp=Z,6.6nm,0.8s
SVE Sverdlovsk 56.15 319‖ *eP* **P 00 15 15.5 +0.5**
SVE pmax pmax
comp=Z,19nm,1.0s
ARU Arti 57.37 319 P **P 00 15 23.6 0.0**
comp=Z,7.6nm,0.8s,baz=60,slow=3.4,SNR=10
ARU Arti 57.37 319 *c iP* **P 00 15 23.5 -0.2**
ARU 00 16 14.9
ARU 00 17 29.8
ARU S **S 00 23 18.3 -0.1**
ARU 00 25 09.4
ARU SS **SS 00 27 09.7 +2.2**
ARU pmax pmax
comp=Z,24nm,1.2s
ARU MLR MLR
comp=Z,450nm,16.0s
ARU Arti 57.37 319 *eP* **P 00 15 23.5 -0.2**
comp=Z,15nm,0.9s
DLBC Dease Lake 58.35 38 P **P 00 15 29.8 -0.8**
comp=Z,2.5nm,0.8s,baz=257,slow=13,SNR=4.8
DLBC Dease Lake 58.35 38 *eP* **P 00 15 32.3 +1.7**
comp=Z,5.2nm,1.1s
ABKAR Akbulak array 59.00 311 *eP* **P 00 15 35.1 -0.2**
comp=Z,3.7nm,0.6s
AKTO Aktyubinsk 59.73 313 P **P 00 15 39.6 -0.6**
comp=Z,4.1nm,0.8s,baz=78,slow=13,SNR=10
DZM Mont Dzumac 62.51 155 *e*LR LR 00 34 45.7
comp=Z,337nm,20.1s
TMCR Tamitsa 63.62 332 *eP* **P 00 16 05.6 -0.6**
TMCR pmax pmax
comp=Z,14nm,1.1s
YKW3 Yellowknife Ar 63.64 30 *eP* **P 00 16 06.1 -0.3**
comp=Z,5.1nm,0.9s
YKA Yellowknife Ar 63.68 30 P **P 00 16 06.3 -0.3**
comp=Z,3.1nm,0.8s,baz=300,slow=6.6,SNR=39
YKB5 Yellowknife Ar 63.68 30 *eP* **P 00 16 05.2 -1.4**
KLMR Klimovskoe 64.67 328 *eP* **P 00 16 11.8 -1.4**
KLMR *e* 00 18 35.1
KLMR pmax pmax
comp=Z,4.0nm,0.6s
ARCES ARCESS Array B 64.77 340 LR LR 00 46 34.4
comp=Z,96nm,21.3s,baz=50,slow=38
GEYT Alibeck 64.94 300 P **P 00 16 15.5 +0.1**
comp=Z,4.5nm,1.1s,baz=43,slow=3.0,SNR=7.3
GEYT LR LR 00 48 34.7
comp=Z,66nm,19.6s,baz=195,slow=40
B06A Marblemount 67.11 46 *eP* **P 00 16 29.6 +0.5**
comp=Z,20nm,1.5s
MOS Moscow 68.21 324 *eP* **P 00 16 32.0 -3.9**

MOS				MLR	MLR		
	comp=N,500nm,15.0s						
MOS				MLR	MLR		
	comp=Z,500nm,15.0s						
VRH	**Novokhopyorsk**	**68.59**	**318**	*e*P	**P**	**00 16 37.2**	**-1.1**
VRH				pmax	pmax		
	comp=Z,10.0nm,0.7s						
VRH				MLR	MLR		
	comp=Z,500nm,14.0s						
OBN	**Obninsk**	**69.06**	**324**	*i* P	**P**	**00 16 38.0**	**-3.2**
OBN				*i*		00 17 02.7	
OBN				*i*		00 19 14.1	
OBN				pmax	pmax		
	comp=Z,11nm,1.1s						
OBN				MLR	MLR		
	comp=Z,519nm,15.0s						
LPSR	**Galich'ya Gora**	**69.29**	**321**	*e*P	**P**	**00 16 42.0**	**-0.7**
LPSR				pmax	pmax		
	comp=Z,10.0nm,0.9s						
LPSR				MLR	MLR		
	comp=Z,530nm,16.0s						
FINES	**FINESS Array B**	**69.68**	**333**	P	**P**	**00 16 45.1**	**+0.2**
	comp=Z,6.5nm,0.9s,baz=49,slow=8.6,SNR=12						
VSR	**Storozhevoye**	**69.93**	**319**	*e*P	**P**	**00 16 45.5**	**-1.2**
VSR				pmax	pmax		
	comp=Z,10.0nm,1.0s						
VSR				MLR	MLR		
	comp=Z,700nm,18.0s						
GOF	**Gofitskoye**	**71.14**	**312⇑**	*e*P	**P**	**00 16 53.6**	**-0.6**
GOF				pmax	pmax		
	comp=Z,32nm,1.4s						
VSU	**Vasula**	**71.35**	**330**	*e*P	**P**	**00 16 55.4**	**+0.3**
VSU				pmax	pmax		
	comp=Z,34nm,0.9s						
KBZ	**Khabaz**	**71.96**	**311**	P	**P**	**00 16 59.6**	**+0.5**
	comp=Z,7.0nm,0.9s,baz=42,slow=2.1,SNR=13						
KIV	**Kislovodsk**	**71.96**	**312**	*e*P	**P**	**00 16 59.8**	**+0.5**
KIV				pmax	pmax		
	comp=Z,13nm,0.9s						
KIV	**Kislovodsk**	**71.96**	**312**	*e*P	**P**	**00 17 00.1**	**+0.8**
	comp=Z,13nm,0.9s						
FFC	**Flin Flon**	**73.53**	**33**	*e*P	**P**	**00 17 08.3**	**+0.1**
FFC				pmax	pmax		
	comp=Z,6.0nm,0.8s						
FFC	**Flin Flon**	**73.53**	**33**	*e*P	**P**	**00 17 08.3**	**+0.1**
	comp=Z,6.0nm,0.8s						
LRM	**Limekiln Ridge**	**73.75**	**45**	*e*P	**P**	**00 17 10.5**	**+0.5**
FCC	**Fort Churchill**	**73.94**	**27**	*e*P	**P**	**00 17 09.9**	**-0.6**
FCC				pmax	pmax		
	comp=Z,8.0nm,1.2s						
FCC	**Fort Churchill**	**73.94**	**27**	*e*P	**P**	**00 17 09.9**	**-0.6**
	comp=Z,8.4nm,1.2s						
BOZ	**Bozeman (W)**	**74.32**	**45**	*e*P	**P**	**00 17 13.5**	**+0.3**
BOZ				pmax	pmax		
	comp=Z,37nm,1.3s						
BOZ	**Bozeman (W)**	**74.32**	**45**	*e*P	**P**	**00 17 13.5**	**+0.3**
	comp=Z,37nm,1.3s						
NV01	**Mina Array Sit**	**74.44**	**54**	*e*P	**P**	**00 17 14.3**	**+0.2**
NVAR	**Mina Array Bea**	**74.44**	**54**	P	**P**	**00 17 15.2**	**+1.1**
	comp=Z,2.3nm,0.6s,baz=289,slow=6.3,SNR=10						
ANN	**Anapa**	**74.57**	**315**	*e*P	**P**	**00 17 13.7**	**-0.8**
ANN				pmax	pmax		
	comp=Z,26nm,1.3s						
HFS	**Hagfors**	**74.91**	**336**	P	**P**	**00 17 15.5**	**-0.6**
	comp=Z,4.2nm,0.8s,baz=263,slow=3.9,SNR=4.4						
NB2	**NORSAR Subarra**	**74.98**	**338**	P	**P**	**00 17 16.4**	**-0.3**
	comp=Z,4.7nm,0.8s,baz=40,slow=5.9						
NOA	**NORSAR Array B**	**74.98**	**338**	P	**P**	**00 17 16.7**	**0.0**
	comp=Z,2.8nm,0.8s,baz=39,slow=5.8,SNR=6.6						
NOA				LR	LR	00 54 30.0	
	comp=Z,315nm,18.8s,baz=45,slow=39						
AKASG	**Malin Array Be**	**75.27**	**323**	P	**P**	**00 17 18.1**	**-0.4**
	comp=Z,3.1nm,0.7s,baz=45,slow=6.2,SNR=20						
AKASG				LR	LR	00 55 15.2	
	comp=Z,148nm,19.4s,baz=50,slow=40						
KIEV	**Kiev**	**75.28**	**323**	*e*P	**P**	**00 17 18.5**	**0.0**
KIEV				pmax	pmax		
	comp=Z,7.0nm,1.0s						
KIEV	**Kiev**	**75.28**	**323**	*e*P	**P**	**00 17 18.5**	**0.0**
	comp=Z,7.1nm,1.0s						
AK11	**Malin Array Si**	**75.31**	**323**	*e*P	**P**	**00 17 18.6**	**-0.1**
H17A	**Grant Village**	**75.67**	**45**	*e*P	**P**	**00 17 23.3**	**+2.1**
	comp=Z,18nm,0.8s						
IMW	**Indian Meadow**	**75.76**	**46**	*e*P	**P**	**00 17 23.1**	**+1.4**
	comp=Z,35nm,0.9s						
MOOW	**Moose Ponds**	**75.96**	**46**	*e*P	**P**	**00 17 23.4**	**+0.6**
R11A	**Troy Canyon, C**	**76.23**	**52**	*e*P	**P**	**00 17 25.0**	**+0.6**
	comp=Z,12nm,1.0s						
SIM	**Simferopol'**	**76.36**	**316**	*e*P	P	00 17 35.6	+11
SIM				pmax	pmax		
	comp=Z,6.0nm,0.9s						
DUG	**Dugway, Tooele**	**76.87**	**50**	*e*P	**P**	**00 17 29.2**	**+1.2**
DUG				pmax	pmax		
	comp=Z,22nm,0.9s						
DUG	**Dugway, Tooele**	**76.87**	**50**	*e*P	**P**	**00 17 29.2**	**+1.2**
	comp=Z,22nm,0.9s						
PDAR	**Pinedale Array**	**77.25**	**46**	P	**P**	**00 17 29.8**	**-0.3**
	comp=Z,0.8nm,0.8s,baz=298,slow=3.2,SNR=5.7						
SORM	**Soroca**	**77.38**	**321⇑**	*i*P	**P**	**00 17 29.3**	**-1.1**
CCUT	**Cedar City**	**78.12**	**52**	*e*P	**P**	**00 17 36.4**	**+1.3**
	comp=Z,31nm,1.3s						
KWP	**Kalwaria Pacla**	**79.08**	**325**	*e*P	**P**	**00 17 40.4**	**+0.5**
KWP	**Kalwaria Pacla**	**79.08**	**325⇑**	*i*P	**P**	**00 17 40.7**	**+0.8**
KWP	**Kalwaria Pacla**	**79.08**	**325**	*e*P	**P**	**00 17 40.3**	**+0.5**
BUR08	**Bucovina Ar. S**	**79.28**	**322**	*e*P	**P**	**00 17 41.8**	**+0.6**
BURAR	**Bucovina Array**	**79.29**	**322⇑**	*i*P	**P**	**00 17 41.3**	**+0.1**
STHS	**Stebnicka Huta**	**79.90**	**326**	*e*P	**P**	**00 17 45.7**	**+1.3**
STHS				*e*		00 17 50.8	
STHS				pmax	pmax		
	comp=Z,3.0nm,1.0s						
STHS	**Stebnicka Huta**	**79.90**	**326**	*e*P	**P**	**00 17 45.7**	**+1.3**
STHS				*e*		00 17 50.8	
BR131	**Keskin Array S**	**79.91**	**312**	*e*P	**P**	**00 17 45.7**	**+1.0**
BRTR	**Keskin Array B**	**79.91**	**312**	P	**P**	**00 17 45.2**	**+0.5**
	comp=Z,1.9nm,1.0s,baz=103,slow=3.9,SNR=14						
BRTR				LR	LR	00 56 26.3	
	comp=Z,72nm,18.1s,baz=22,slow=38						
OJC	**Ojcow**	**79.97**	**327**	*e*P	**P**	**00 17 45.5**	**+0.8**
OJC	**Ojcow**	**79.97**	**327**	*e*P	**P**	**00 17 45.0**	**+0.3**
OJC				*e**PP	**pP**	**00 17 52.9**	**-0.2**
OJC				pmax	pmax		
	comp=Z,22nm,1.5s						
OJC	**Ojcow**	**79.97**	**327**	*e*P	**P**	**00 17 45.0**	**+0.3**
	comp=Z,22nm,1.5s						
OJC				*e*pP	**pP**	**00 17 52.9**	**-0.2**
NIE	**Niedzica**	**80.33**	**326**	*e*P	**P**	**00 17 47.2**	**+0.5**
NIE	**Niedzica**	**80.33**	**326**	*e*P	**P**	**00 17 47.2**	**+0.5**
BR231	**Keskin MP Arra**	**80.34**	**313**	*e*P	**P**	**00 17 45.9**	**-1.2**
MLR	**Muntele Rosu**	**80.38**	**320⇑**	*i*P	**P**	**00 17 48.4**	**+1.3**
Y14A	**Wickenburg**	**80.54**	**55**	*e*P	**P**	**00 17 44.9**	**-3.3**
	comp=Z,105nm,1.0s						
OKC	**Ostrava-Krasne**	**80.97**	**327**	AMS	AMS	00 58 20.0	
	comp=Z,500nm,15.9s						
SMCO	**Snowmass**	**81.03**	**48**	*e*P	**P**	**00 17 47.6**	**-3.5**
	comp=Z,32nm,1.2s						
ARR	**Arges**	**81.13**	**321⇑**	*i*P	**P**	**00 17 52.2**	**+1.1**
MORC	**Moravsky Berou**	**81.28**	**328⇑**	*i*P	**P**	**00 17 49.9**	**-1.9**
DPC	**Dobruska-Polom**	**81.37**	**329**	*e*P	**P**	**00 17 52.9**	**+0.7**
DPC				*e*pP	**sP**	**00 18 03.0**	**-0.7**
DPC				AMS	AMS	00 59 00.0	
	comp=Z,500nm,11.6s						
DPC	**Dobruska-Polom**	**81.37**	**329**	*e*P	**P**	**00 17 52.9**	**+0.7**
DPC				*e*		00 18 03.0	
DPC				MLR	MLR		
	comp=Z,500nm,11.6s						
UPC	**Upice**	**81.38**	**329**	AMS	AMS	00 59 10.0	
	comp=Z,600nm,13.9s						
BRG	**Berggiesshubel**	**81.95**	**330**	*e*P	**P**	**00 17 55.0**	**-0.2**
	comp=Z,4.8nm,1.2s						
BRG	**Berggiesshubel**	**81.95**	**330**	*e*P	**P**	**00 17 55.0**	**-0.2**
BRG				pmax	pmax		
	comp=Z,5.0nm,1.2s						
PVCC	**Panska Ves**	**81.96**	**330**	*e*P	**P**	**00 17 55.8**	**+0.5**
PVCC				*e*pP	**sP**	**00 18 06.0**	**-0.8**
PVCC				AMS	AMS	00 59 10.0	
	comp=Z,400nm,11.6s						
PVCC	**Panska Ves**	**81.96**	**330**	*e*P	**P**	**00 17 55.8**	**+0.5**
PVCC				*e*		00 18 06.0	
PVCC				MLR	MLR		
	comp=Z,400nm,11.6s						
CLL	**Collm**	**81.98**	**331**	*e*P	**P**	**00 17 55.0**	**-0.4**
	comp=Z,5.0nm,0.9s						
CLL				*e*		00 18 00.0	
CLL				*e*		00 18 05.0	
CLL				LmH		00 54 00.0	
	comp=N,300nm,18.6s						
CLL				LmH		00 54 00.0	
	comp=E,400nm,19.0s						
CLL	**Collm**	**81.98**	**331**	*e*P	**P**	**00 17 55.0**	**-0.4**
CLL				*e*		00 18 00.0	
CLL				pmax	pmax		
	comp=Z,5.0nm,0.9s						
CLL	**Collm**	**81.98**	**331**	*e*P	**P**	**00 17 54.6**	**-0.7**
	comp=Z,4.0nm,0.8s						
VRAC	**Vranov**	**82.04**	**328**	P	**P**	**00 17 56.2**	**+0.4**
	comp=Z,0.8nm,0.4s,baz=264,slow=4.9,SNR=4.5						
VRAC				LR	LR	00 57 08.1	
	comp=Z,243nm,19.1s,baz=7.0,slow=38						
GOPC	**GO Pecny, Ondr**	**82.34**	**329**	AMS	AMS	00 59 50.0	
	comp=Z,600nm,14.3s						
PRU	**Pruhonice**	**82.39**	**329**	*e*P	**P**	**00 17 57.5**	**0.0**
PRU				AMS	AMS	00 59 50.0	
	comp=Z,400nm,10.7s						
PRU	**Pruhonice**	**82.39**	**329**	*e*P	**P**	**00 17 57.5**	**0.0**
PRU				MLR	MLR		
	comp=Z,400nm,10.7s						
TREC	**Trest**	**82.53**	**328**	*e*P	**P**	**00 17 58.5**	**+0.2**
TREC				AMS	AMS	01 00 00.0	
	comp=Z,400nm,16.8s						
TREC	**Trest**	**82.53**	**328**	*e*P	**P**	**00 17 58.5**	**+0.2**
TREC				MLR	MLR		
	comp=Z,400nm,16.8s						
ASF	**Jabal al Asfar**	**82.60**	**305**	P	**P**	**00 17 59.5**	**+0.4**
	comp=Z,0.6nm,0.4s,baz=63,slow=2.3,SNR=2.7						
NKC	**Novy Kostel**	**83.05**	**330**	AMS	AMS	00 59 20.0	
	comp=Z,500nm,14.5s						
MMAI	**Mount Meron Ar**	**83.05**	**306**	P	**P**	**00 18 02.2**	**+0.8**
	comp=Z,4.8nm,0.9s,baz=27,slow=7.5,SNR=7.7						
MMAI				LR	LR	00 59 51.8	
	comp=Z,167nm,18.1s,baz=55,slow=39						
PMOR	**Pomariorio Ree**	**83.07**	**114**	*e*T	T	01 49 24.8	
	comp=Z,1.6nm,0.3s						
KHC	**Kasperske Hory**	**83.45**	**329**	*e*P	**P**	**00 18 03.0**	**-0.1**
KHC				*e*pP	**sP**	**00 18 13.4**	**-1.2**
KHC				AMS	AMS	00 58 50.0	
	comp=Z,400nm,15.4s						
KHC	**Kasperske Hory**	**83.45**	**329**	*e*P	**P**	**00 18 03.0**	**-0.1**
KHC				*e*		00 18 13.4	
KHC				MLR	MLR		
	comp=Z,400nm,15.4s						
KHC	**Kasperske Hory**	**83.45**	**329**	*e*P	**P**	**00 18 03.0**	**-0.1**
	comp=Z,1.7nm,1.0s						
PPT	**Papeete**	**83.53**	**117**	LR	LR	00 50 32.3	
	comp=Z,147nm,20.2s,baz=304,slow=32						
PPT2	**Papete2**	**83.54**	**117**	*e*LR	LR	00 43 27.5	
	comp=Z,117nm,21.0s						
GERES	**GERESS Array B**	**83.62**	**329**	P	**P**	**00 18 03.7**	**-0.4**
	comp=Z,1.3nm,0.8s,baz=38,slow=6.8,SNR=11						
ANMO	**Albuquerque**	**84.09**	**51**	*c*e*P	**P**	**00 18 08.2**	**+1.3**
ANMO				pmax	pmax		
	comp=Z,4.0nm,1.2s						
ANMO	**Albuquerque**	**84.09**	**51**	*e*P	**P**	**00 18 08.1**	**+1.3**
	comp=Z,45nm,1.4s						
319A	**Douglas**	**84.59**	**55**	*e*P	**P**	**00 18 12.2**	**+2.8**
	comp=Z,67nm,0.9s						
TAOE	**Nuku Hiva Isla**	**85.08**	**105**	*e*LR	LR	00 44 32.6	
	comp=Z,166nm,21.7s						
EIL	**Elat**	**85.47**	**304**	LR	LR	01 02 22.2	
	comp=Z,89nm,18.3s,baz=56,slow=40						
SCHQ	**Schefferville**	**85.48**	**17**	P	**P**	**00 18 13.0**	**-0.3**
	comp=Z,1.9nm,0.4s,baz=230,slow=14,SNR=7.9						
BFO	**Black Forest**	**86.18**	**331**	*c*e*P	**P**	**00 18 17.3**	**+0.4**
DAVOX	**Davos/Dischmat**	**86.83**	**330**	LR	LR	01 01 14.1	
	comp=Z,261nm,18.1s,baz=12,slow=38						
TBI	**Tubuai**	**87.43**	**122**	*e*LR	LR	00 45 25.9	
	comp=Z,119nm,29.2s						
TX31	**Lajitas Ar. Si**	**89.58**	**53**	*e*P	**P**	**00 18 33.3**	**-0.3**
TXAR	**Lajitas Array**	**89.58**	**53**	P	**P**	**00 18 33.5**	**-0.1**
	comp=Z,2.6nm,0.9s,baz=318,slow=2.4,SNR=15						
VAE	**Valguarnera**	**92.12**	**321**	LR	LR	01 06 49.4	
	comp=Z,92nm,18.3s,baz=22,slow=40						
RKT	**Rikitea**	**97.64**	**113**	*e*LR	LR	00 50 38.6	
	comp=Z,108nm,28.5s						
LPAZ	**La Paz**	**146.03**	**62**	PKPbc	**PKPbc**	**00 25 16.2**	**-0.4**
	comp=Z,2.9nm,0.8s,baz=333,slow=4.0,SNR=12						
CPUP	**Villa Florida**	**160.14**	**65**	PKPab	**PKPab**	**00 26 15.8**	**+0.6**
	comp=Z,1.7nm,0.9s,baz=0.0,slow=2.0,SNR=2.8						

AZER ***30*** *00:05:54.5±0.1, 41°.50N×46°.52E, h3km, Error ellipse: s-maj=0.7km s-min=0.5km az=322.0*
TIF ***30*** *00:05:56.4, 41°.52N×46°.58E, h6km±1km*
MOS ***30*** *00:05:56.7±1.3, 41°.42N×46°.73E, h12km, mb4.2/7, Error ellipse: s-maj=6.5km s-min=4.3km az=110.6*
CSEM ***30*** *00:05:57.2±0.1, 41°.61N×46°.54E, h10km, mb4.0/10, ML4.4/4, Error ellipse: s-maj=3.4km s-min=3.0km az=95.0*
NSSP ***30*** *00:05:57.7, 41°.62N×46°.45E, h10km, Ms4.1*
ISCJB ***30*** *00:05:57.4±0.4, 41°.53N±0°.01×46°.61E±0°.02, h2km±3km, mb3.7/15, Error ellipse: s-maj=2.7km s-min=2.0km az=39.5*
IDC ***30*** *00:05:59.0±3.4, 41°.47N×46°.53E, h26km±25km, mb3.6/13, mb1 3.7/19, mb1mx3.6/52, mbtmp3.7/19, ML3.6/6, MS2.9/4, Ms1 2.9/4, ms1mx2.4/50, Error ellipse: s-maj=12.9km s-min=9.9km az=152.0*
NNC ***30*** *00:05:59.4±11.0, 41°.69N×46°.47E, h26km±89km, mb3.9, Error ellipse: s-maj=84.3km s-min=43.5km az=105.0*

ISC 30 00:05:57.4±0.8, 41°.58N±0°.01×46°.55E±0°.01, h13km±5km, n189, σ1§55/282, mb3.9/15, 39C-50D, Eastern Caucasus

Code	Station Name	Δ°	AZ°	Phase ID	Op	ISC	Time h m s	ISC	Res
ZKTA	**Zakatala**	**0.08**	**43**	P	⇑	**Pg**	**00 05 59.9**	**-0.3**	
ZKTA				S	⇓	**Sg**	**00 06 02.1**	**-0.2**	
SEKA	**Sheki**	**0.61**	**127**	P	⇓	**Pg**	**00 06 08.8**	**-0.6**	
	SNR=800								
SEKA	**Sheki**	**0.61**	**127**	P		**Pg**	**00 06 08.8**	**-0.6**	
	SNR=800								
KMKR	**Kumukh**	**0.69**	**36**	*i*PG	⇓	**Pb**	**00 06 11.0**	**-0.4**	
KMKR				*i* S		**Sb**	**00 06 21.8**	**+1.0**	
KMKR	**Kumukh**	**0.69**	**36**	*i* Pg		**Pb**	**00 06 11.0**	**-0.4**	
KMKR				*i* Sg		**Sb**	**00 06 21.8**	**+1.0**	
GNBR	**Gunib**	**0.86**	**21**	*i*PG	⇓	**Pb**	**00 06 14.4**	**+0.1**	
GNBR				*e*			00 06 27.8		
GNBR				pmax	pmax				
	comp=Z,1μm,0.5s								
GNBR				smax	smax				
	comp=N,3μm,0.4s								
GNBR				smax	smax				
	comp=E,4μm,0.8s								
GNBR				smax	smax				
	comp=E,5μm,0.8s								
GNBR	**Gunib**	**0.86**	**21**	*i* Pg		**Pb**	**00 06 14.4**	**+0.1**	
	comp=E,1μm,0.5s								
GNBR				*e*Sg		**Sn**	**00 06 27.8**	**-0.1**	
	comp=E,3μm,0.4s								
AKT	**Akhty**	**0.89**	**96**	*e*PG		**Pg**	**00 06 13.5**	**-1.2**	
AKT				*e*			00 06 26.3		
AKT				pmax	pmax				
	comp=Z,609nm,0.4s								
AKT				smax	smax				
	comp=N,3μm,0.3s								
AKT				smax	smax				
	comp=E,3μm,0.5s								
AKT				smax	smax				
	comp=E,4μm,0.4s								
AKT	**Akhty**	**0.89**	**96**	*e*Pg		**Pg**	**00 06 13.5**	**-1.2**	
	comp=E,609nm,0.4s								
AKT				*e*Sg		**Sg**	**00 06 26.3**	**0.0**	
	comp=E,3μm,0.3s								
DGRG	**David-gareji**	**0.90**	**262**	P		**Pn**	**00 06 15.9**	**+0.2**	
DGRG				S		**Sn**	**00 06 31.1**	**+2.5**	
DGRG	**David-gareji**	**0.90**	**262**	*e*PG		**Pn**	**00 06 15.8**	**0.0**	
DGRG	**David-gareji**	**0.90**	**262**	*e*Pg		**Pn**	**00 06 15.8**	**0.0**	
MNGR	**Mingechevir, A**	**0.90**	**153**	⇓P		**Pb**	**00 06 15.0**	**+0.1**	
	SNR=101								
MNGR				⇑S		**Sb**	**00 06 28.1**	**+1.3**	
MNGR	**Mingechevir, A**	**0.90**	**153**	P		**Pb**	**00 06 15.0**	**+0.1**	
	SNR=101								
MNGR				S		**Sb**	**00 06 28.1**	**+1.3**	
GANJ	**Ganja**	**0.95**	**191**	⇑P		**Pb**	**00 06 14.8**	**-0.9**	
	SNR=511								
GANJ				⇑S		**Sb**	**00 06 28.5**	**+0.2**	
GANJ	**Ganja**	**0.95**	**191**	P		**Pb**	**00 06 14.9**	**-0.9**	
	SNR=511								
GANJ				S		**Sb**	**00 06 28.5**	**+0.2**	
XNZR	**Khunzakh**	**0.97**	**7**	*i*PG	⇓	**Pn**	**00 06 16.5**	**-0.4**	
XNZR				*e*S		**Sn**	**00 06 31.7**	**+1.1**	
XNZR				pmax	pmax				
	comp=Z,726nm,0.2s								
XNZR	**Khunzakh**	**0.97**	**7**	*i* Pg		**Pn**	**00 06 16.5**	**-0.4**	
	comp=Z,726nm,0.2s								
XNZR				*e*Sg		**Sn**	**00 06 31.7**	**+1.1**	
URKR	**Urkarakh**	**1.00**	**54**	*i*PG	⇑	**Pb**	**00 06 16.0**	**-0.6**	
URKR				*i* S		**Sn**	**00 06 32.0**	**+0.8**	
URKR				pmax	pmax				
	comp=Z,2μm,0.2s								
URKR	**Urkarakh**	**1.00**	**54**	*i* Pg		**Pb**	**00 06 16.0**	**-0.6**	
	comp=Z,2μm,0.2s								
URKR				*i* Sg		**Sn**	**00 06 32.0**	**+0.8**	
QZX	**Qazax, Azerbai**	**1.03**	**240**	⇑P		**Pb**	**00 06 16.5**	**-0.7**	
	SNR=1585								
QZX				⇑S		**Sg**	**00 06 31.8**	**+1.0**	
QZX	**Qazax, Azerbai**	**1.03**	**240**	P		**Pb**	**00 06 16.5**	**-0.7**	
	SNR=1000								
QZX				S		**Sg**	**00 06 31.8**	**+1.0**	
GDB	**GEDABAY**	**1.05**	**215**	⇑P		**Pb**	**00 06 16.4**	**-1.2**	
GDB				⇓S		**Sb**	**00 06 31.0**	**-0.3**	
GDB	**GEDABAY**	**1.05**	**215**	P		**Pb**	**00 06 16.4**	**-1.2**	
	SNR=1000								
GDB				S		**Sb**	**00 06 31.0**	**-0.3**	
QBL	**Gabala**	**1.16**	**123**	⇑P		**Pb**	**00 06 19.0**	**-0.3**	
QBL				⇑S		**Sn**	**00 06 36.5**	**+1.4**	
QBL	**Gabala**	**1.16**	**123**	P		**Pb**	**00 06 19.0**	**-0.3**	
QBL				S		**Sn**	**00 06 36.5**	**+1.4**	
KSMR	**Kasumkent**	**1.18**	**88**	*i* PG		**Pg**	**00 06 20.0**	**-0.2**	
KSMR				pmax	pmax				
	comp=Z,1μm,0.2s								
KSMR	**Kasumkent**	**1.18**	**88**	*i* Pg		**Pg**	**00 06 20.0**	**-0.2**	
	comp=Z,1μm,0.2s								
XNQ	**Khinaliq**	**1.26**	**108**	⇓P		**Pn**	**00 06 20.6**	**-0.4**	
	SNR=123								
XNQ				⇑S		**Sg**	**00 06 42.2**	**+4.0**	
XNQ	**Khinaliq**	**1.26**	**108**	P		**Pn**	**00 06 20.6**	**-0.4**	
	SNR=123								
KRNR	**Karanay**	**1.27**	**12**	*i*PG	⇓	**Pg**	**00 06 22.0**	**+0.1**	
KRNR				*i* S		**Sg**	**00 06 40.5**	**+2.0**	
KRNR				pmax	pmax				
	comp=Z,724nm,0.2s								
KRNR	**Karanay**	**1.27**	**12**	*i* Pg		**Pg**	**00 06 22.0**	**+0.1**	
	comp=Z,724nm,0.2s								
KRNR				*i* Sg		**Sg**	**00 06 40.5**	**+2.0**	
QSAR	**Qusar**	**1.29**	**92**	⇓P		**Pb**	**00 06 21.6**	**+0.1**	
QSAR				⇓S		**Sg**	**00 06 43.4**	**+4.5**	
BUJR	**Buynaksk**	**1.31**	**18**	*i*PG	⇑	**Pg**	**00 06 23.0**	**+0.4**	
BUJR				*e*S		**Sg**	**00 06 44.0**	**+4.3**	
BUJR				pmax	pmax				
	comp=Z,343nm,0.3s								
BUJR	**Buynaksk**	**1.31**	**18**	*i* Pg		**Pg**	**00 06 23.0**	**+0.4**	
	comp=Z,343nm,0.3s								
TBLG	**Delisi**	**1.37**	**277**	P		**Pn**	**00 06 22.5**	**+0.3**	
TBLG				S		**Sg**	**00 06 43.1**	**+1.6**	
TBLG	**Delisi**	**1.37**	**277**	P		**Pb**	**00 06 23.4**	**+0.5**	
TBLG				S		**Sg**	**00 06 43.0**	**+1.6**	
TBLG	**Delisi**	**1.37**	**277**	*e*PG		**Pn**	**00 06 22.5**	**+0.3**	
TBLG	**Delisi**	**1.37**	**277**	P		**Pn**	**00 06 22.5**	**+0.3**	
TBLG				S		**Sg**	**00 06 43.1**	**+1.6**	
MTKZ	**Martakert**	**1.40**	**172**	⇓*i*P		**Pg**	**00 06 27.6**	**+3.4**	
MTKZ				⇓*i*S		**Sg**	**00 06 47.9**	**+5.6**	
MTKZ	**Martakert**	**1.40**	**172**	⇓P		**Pg**	**00 06 27.6**	**+3.4**	
BRDA	**Brd**	**1.40**	**160**	⇑P		**Pb**	**00 06 23.4**	**0.0**	
	SNR=388								
BRDA				⇑S		**Sg**	**00 06 43.9**	**+1.4**	
BRDA	**Brd**	**1.40**	**160**	P		**Pb**	**00 06 23.4**	**0.0**	
	SNR=388								
BRDA				S		**Sg**	**00 06 43.9**	**+1.4**	
DRN	**Derbent**	**1.40**	**71**	*e*PG		**Pb**	**00 06 23.7**	**+0.3**	
DRN				*e*			00 06 43.3		
DRN	**Derbent**	**1.40**	**71**	*e*Pg		**Pb**	**00 06 23.7**	**+0.3**	
DRN				*e*Sg		**Sg**	**00 06 43.3**	**+0.7**	
DBC	**Dubki**	**1.45**	**8**	⇑*i*PG		**Pg**	**00 06 29.8**	**+4.4**	
DBC				*i* S		**Sg**	**00 06 51.3**	**+7.0**	
DBC				pmax	pmax				
	comp=Z,368nm,0.7s								
IML	**Ismayilli**	**1.46**	**122**	⇓P		**Pn**	**00 06 23.6**	**+0.1**	
	SNR=344								
IML				⇓S		**Sg**	**00 06 45.7**	**+1.2**	
IML	**Ismayilli**	**1.46**	**122**	P		**Pn**	**00 06 23.6**	**+0.1**	
	SNR=344								
IML				S		**Sg**	**00 06 45.7**	**+1.2**	
DUS	**Dusheti**	**1.47**	**291**	P		**Pg**	**00 06 26.8**	**+1.0**	
DUS				S		**Sg**	**00 06 46.7**	**+1.8**	
DUS	**Dusheti**	**1.47**	**291**	*e*PN		**Pg**	**00 06 26.7**	**+1.0**	
DUS	**Dusheti**	**1.47**	**291**	*e*Pn		**Pg**	**00 06 26.7**	**+1.0**	
QUBA	**Quba, Azerbaij**	**1.48**	**98**	⇓P		**Pb**	**00 06 24.8**	**0.0**	
	SNR=88								
QUBA				⇑S		**Sg**	**00 06 48.3**	**+3.4**	
QUBA	**Quba, Azerbaij**	**1.48**	**98**	P		**Pb**	**00 06 24.8**	**0.0**	
	SNR=88								
DLMR	**Dylym**	**1.49**	**2**	*e*PN		**Pg**	**00 06 26.0**	**-0.1**	
DLMR				*e*S		**Sg**

SAAT Sn **Sn** **00 07 02.7 +1.3**
BGD Bogdanovka 2.24 263 P **Pn** **00 06 36.2 +1.7**
BGD S **Sb** **00 07 05.8 +0.1**
AKH Akhalkalaki 2.31 267 P **Pb** **00 06 37.4 -1.6**
AKH S **Sb** **00 07 08.2 +0.8**
AKH Akhalkalaki 2.31 267 *e*PN **Pb** **00 06 37.3 -1.6**
AKH *e*S **Sb** **00 07 08.2 +0.8**
ZEI Tsey 2.31 302 ⇑*i*PN **Pb** **00 06 38.7 -0.4**
ZEI *e*S **Sb** **00 07 09.6 +2.0**
ZEI Tsey 2.31 302 *i* Pn **Pb** **00 06 38.7 -0.4**
ARNR Ardon 2.32 314 *e*PN **Pb** **00 06 40.3 +1.2**
ARNR *e*S **Sg** **00 07 11.3 -0.7**
ARNR pmax pmax
comp=Z,43nm,0.4s
ARNR smax smax
comp=N,64nm,0.5s
KORR Kora 2.38 310 *e*PN **Pg** **00 06 43.5 +0.5**
KORR *e*S **Sg** **00 07 14.8 +0.9**
KORR pmax pmax
comp=Z,66nm,0.4s
KORR smax smax
comp=E,195nm,0.6s
ALIB Äli-Bayra 2.47 130 ⇓Pn **Pn** **00 06 38.7 +1.3**
SNR=3.8
ALIB ⇑Sn **Sb** **00 07 12.0 0.0**
ALIB Äli-Bayra 2.47 130 Pn **Pn** **00 06 38.7 +1.3**
SNR=3.8
ONI Oni 2.52 295 P **Pb** **00 06 40.9 -1.6**
ONI S **Sg** **00 07 17.3 -1.0**
ONI Oni 2.52 295 *e*PN **Pb** **00 06 40.9 -1.6**
ONI *e*S **Sg** **00 07 17.3 -1.0**
TRKR Terskaya 2.53 329*c i*PN **Pb** **00 06 40.9 -1.7**
TRKR Terskaya 2.53 329 *i* Pn **Pb** **00 06 40.9 -1.7**
NAX Nakhchivan 2.54 199 ⇓Pn **Pn** **00 06 39.4 +1.0**
SNR=16
NAX ⇓Sn **Sn** **00 07 11.1 +2.0**
NAX Nakhchivan 2.54 199 Pn **Pn** **00 06 39.4 +1.0**
SNR=16
NAX Sn **Sn** **00 07 11.1 +2.0**
DIGR Digorskoe uzhe 2.57 302 *e*PN **Pb** **00 06 42.7 -0.8**
DIGR *e*S **Sb** **00 07 15.9 +0.8**
LSNR Lesken 2.64 311 *e*PN **Pb** **00 06 45.0 +0.5**
LSNR *e*S **Sg** **00 07 19.8 -2.3**
GOBA Gobu 2.68 115 ⇑Pn **Pn** **00 06 42.0 +1.7**
SNR=3.8
GOBA ⇑Sn **Sb** **00 07 16.9 -1.1**
GOBA Gobu 2.68 115 Pn **Pn** **00 06 42.0 +1.7**
SNR=3.8
GLBA Clilabad 2.73 148 ⇑Pn **Pn** **00 06 41.7 +0.8**
SNR=31
GLBA ⇑Sn **Sn** **00 07 15.0 +1.3**
GLBA Clilabad 2.73 148 Pn **Pn** **00 06 41.7 +0.8**
SNR=31
GLBA Sn **Sn** **00 07 15.0 +1.3**
PRTR Priterechnaya 2.74 323 *e*PN **Pb** **00 06 44.3 -2.0**
PRTR *e*S **Sb** **00 07 19.6 -0.1**
PRTR Priterechnaya 2.74 323 *e*Pn **Pb** **00 06 44.3 -2.0**
NDR Nardaran 2.78 110 ⇓Pn **Pn** **00 06 44.1 +2.5**
NDR ⇓Sn **Sn** **00 07 16.8 +1.8**
NDR Nardaran 2.78 110 Pn **Pn** **00 06 44.1 +2.5**
NDR Sn **Sn** **00 07 16.8 +1.8**
NCK Nalchik 2.90 312 *e*PN **Pb** **00 06 46.7 -2.4**
LRK Lerik 3.24 154 ⇓Pn **Pn** **00 06 48.4 +0.3**
SNR=32
LRK ⇓Sn **Sn** **00 07 28.8 +2.2**
LRK Lerik 3.24 154 Pn **Pn** **00 06 48.4 +0.3**
SNR=32
LRK Sn **Sn** **00 07 28.8 +2.2**
NEY Neytrino 3.29 302 *e*PN **Pb** **00 06 55.1 -0.6**
LKRN Lenkeran, Azer 3.34 149 ⇓Pn **Pn** **00 06 49.8 +0.5**
SNR=8.5
LKRN ⇑Sn **Sn** **00 07 30.6 +1.9**
LKRN Lenkeran, Azer 3.34 149 Pn **Pn** **00 06 49.8 +0.5**
SNR=8.5
LKRN Sn **Sn** **00 07 30.6 +1.9**
KBZ Khabaz 3.45 310 Pn **Pb** **00 06 54.9 -3.4**
comp=E,0.6nm,0.3s,baz=135,slow=10.0,SNR=7.2
KBZ Lg Lg 00 07 51.0
comp=E,4.3nm,0.3s,baz=340,slow=21,SNR=8.2
ASTR Astara 3.47 150 ⇓Pn **Pn** **00 06 51.7 +0.6**
SNR=41
ASTR ⇑Sn **Sn** **00 07 33.8 +1.7**
ASTR Astara 3.47 150 Pn **Pn** **00 06 51.7 +0.6**
SNR=41
ASTR Sn **Sn** **00 07 33.8 +1.7**
CHVG Ch'k'valeri 3.51 290 P **Pb** **00 07 01.2 +1.8**
CHVG S **Sg** **00 07 51.2 +1.0**
KVAR Kislovodsk Arr 3.70 311 Pn **Pn** **00 06 57.5 +3.1**
baz=126,slow=8.1,SNR=8.0
KVAR LR LR 00 08 59.1
comp=E,70nm,20.0s,baz=139,slow=48
GOF Gofitskoye 4.32 325⇑*e*PN **Pn** **00 07 04.8 +2.1**
GOF *e*S **Sn** **00 07 55.4 +2.5**
GOF pmax pmax
comp=Z,9.0nm,0.3s
GOF smax smax
comp=E,57nm,0.8s
GOF Gofitskoye 4.32 325 *e*Pn **Pn** **00 07 04.8 +2.1**
comp=E,9.0nm,0.3s
GOF *e*Sn **Sn** **00 07 55.4 +2.5**
GEYT Alibeck 9.62 108 Pn **Pn** **00 08 15.6 0.0**
comp=E,1.0nm,0.3s,baz=289,slow=14,SNR=8.9
GEYT Sn **Sn** **00 09 58.7 -4.8**
comp=E,0.5nm,0.3s,baz=301,slow=20,SNR=3.5
AKTK Aktyubinsk 11.90 38 P **Pn** **00 08 46.5 -0.2**
comp=E,1.0nm,0.3s
AKTO Aktyubinsk 11.90 38 Pn **Pn** **00 08 46.5 -0.2**
comp=E,0.5nm,0.3s,baz=230,slow=12,SNR=7.7
AKTO Sn **Sn** **00 10 56.2 -3.1**
comp=E,0.4nm,0.3s,baz=304,slow=18,SNR=2.5
AKTO LR LR 00 14 36.0
comp=E,76nm,18.2s,baz=257,slow=43
AKTO Aktyubinsk 11.90 38 ⇑Pn **Pn** **00 08 45.8 -0.9**
comp=E,5.2nm,0.7s
AKTO ⇑Sn **Sn** **00 10 59.8 +0.6**
comp=E,5.7nm,0.7s
AKTO Aktyubinsk 11.90 38 Pn **Pn** **00 08 45.8 -0.9**
comp=E,5.2nm,0.7s
AKTO Sn **Sn** **00 10 59.8 +0.6**
comp=E,5.7nm,0.7s
AB31 Akbulak array 12.13 46 ⇓Pn **Pn** **00 08 48.9 -0.9**
comp=E,1.5nm,0.5s,baz=249,slow=11,SNR=9.3
AB31 ⇑Sn **Sn** **00 11 02.6 -2.2**
comp=E,7.8nm,1.0s,baz=239,slow=21,SNR=3.2
AB31 Akbulak array 12.13 46 Pn **Pn** **00 08 48.9 -0.9**
comp=E,1.5nm,0.5s,SNR=9.3
AB31 Sn **Sn** **00 11 02.6 -2.2**
comp=E,7.8nm,1.0s,SNR=3.2
AKASG Malin Array Be 15.05 313 Pn **Pn** **00 09 26.1 -3.5**
comp=E,0.6nm,0.3s,baz=122,slow=15,SNR=3.8
AKASG Malin Array Be 15.05 313 *e*P **P** **00 09 34.9 0.0**
AKASG pmax pmax
comp=Z,1.0nm,0.3s
AKASG Malin Array Be 15.05 313 *e*P **P** **00 09 34.9 0.0**
comp=Z,1.0nm,0.3s
KIEV Kiev 15.05 313 *e*P **P** **00 09 33.3 -1.7**
KIEV pmax pmax
comp=Z,3.0nm,1.0s
KIEV Kiev 15.05 313 *e*P **P** **00 09 33.3 -1.7**
comp=Z,3.0nm,1.0s
OBN Obninsk 15.06 337 LR LR 00 15 40.5
comp=Z,44nm,20.1s,baz=93,slow=38
OBN Obninsk 15.06 337 *i* P **P** **00 09 32.9 -2.1**
OBN pmax pmax
comp=Z,5.0nm,0.9s
OBN MLR MLR
comp=Z,54nm,16.0s
OBN Obninsk 15.06 337 *i* P **P** **00 09 32.9 -2.1**
comp=Z,54nm,16.0s
ARU Arti 16.78 24 Pn **Pn** **00 09 52.6 +0.7**
comp=Z,0.0nm,0.3s,baz=224,slow=5.9,SNR=17
ARU LR LR 00 18 53.3
comp=Z,63nm,19.0s,baz=216,slow=46
ARU Arti 16.78 24*c i*P **P** **00 09 53.1 -1.0**
ARU S **Sn** **00 13 01.6 +3.6**
ARU pmax pmax
comp=Z,10.0nm,1.2s
ARU Arti 16.78 24 *i* P **P** **00 09 53.1 -1.0**
comp=Z,10.0nm,1.2s
DZET Dzherino 17.24 92 ⇓P **P** **00 10 00.8 +1.4**
comp=Z,2.0nm,0.3s
SVE Sverdlovsk 17.76 26 *e*P **Pn** **00 10 02.4 -1.8**
SVE *e*S **Sn** **00 13 15.5 -6.3**
SVE pmax pmax
comp=Z,16nm,0.9s
SVE Sverdlovsk 17.76 26 *e*P **Pn** **00 10 02.4 -1.8**
comp=Z,16nm,0.9s
KK31 Karatay Array 17.77 77 P **Pn** **00 10 02.4 -2.0**
comp=Z,1.2nm,0.5s,baz=282,slow=16,SNR=14
ZRNK Zerenda 18.92 45 ⇓P **P** **00 10 17.9 +0.1**
comp=Z,2.5nm,0.4s
ZRNK Zerenda 18.92 45 P **P** **00 10 17.9 +0.1**
comp=Z,2.5nm,0.4s
OTUK Ortayu 19.38 61 ⇓P **P** **00 10 23.3 +0.4**
comp=Z,1.8nm,0.6s
OTUK Ortayu 19.38 61 P **P** **00 10 23.3 +0.4**
comp=Z,1.8nm,0.6s
BVA0 Borovoye Array 19.70 46 ⇓P **P** **00 10 26.4 +0.1**
comp=Z,3.4nm,0.6s,baz=231,slow=8.3,SNR=37
BVA0 Borovoye Array 19.70 46 P **P** **00 10 26.4 +0.1**
comp=Z,3.4nm,0.6s,SNR=37
BVAR Borovoye Array 19.70 46 P **P** **00 10 26.0 -0.3**
comp=Z,0.8nm,0.3s,baz=233,slow=11,SNR=16
BVAR Borovoye Array 19.70 46 P **P** **00 10 26.0 -0.3**
BVAR pmax pmax
comp=Z,1.0nm,0.3s
BVAR Borovoye Array 19.70 46 P **P** **00 10 26.0 -0.3**
comp=Z,1.0nm,0.3s
KLMR Klimovskoe 19.77 350 *e*P **P** **00 10 26.3 -0.7**
KLMR pmax pmax
comp=Z,3.0nm,0.6s
KLMR Klimovskoe 19.77 350 *e*P **P** **00 10 26.3 -0.7**
comp=Z,3.0nm,0.6s
VOSK Vostochnaya 19.90 48 ⇓P **Pn** **00 10 30.2 +0.1**
comp=Z,3.8nm,0.8s
CHKZ Chkalovo 20.12 45 ⇑P **P** **00 10 29.7 -1.1**
comp=Z,9.2nm,1.1s
CHKZ Chkalovo 20.12 45 P **P** **00 10 29.7 -1.1**
comp=Z,9.2nm,1.1s
AAK Ala-Archa 20.73 78 P **P** **00 10 37.6 -0.1**
comp=Z,1.8nm,0.5s,baz=250,slow=7.1,SNR=6.5
AAK Ala-Archa 20.73 78 *e*P **P** **00 10 36.9 -0.8**
AAK pmax pmax
comp=Z,6.0nm,0.9s
AAK Ala-Archa 20.73 78 *e*P **P** **00 10 36.9 -0.8**
comp=Z,6.0nm,0.9s
FINES FINESS Array B 23.43 335 P **P** **00 11 05.2 -0.8**
comp=Z,2.2nm,0.7s,baz=154,slow=16,SNR=7.3
FINES FINESS Array B 23.43 335 *e*P **P** **00 11 07.2 +1.2**
FINES pmax pmax
comp=Z,2.0nm,0.5s
FINES FINESS Array B 23.43 335 *e*P **P** **00 11 07.2 +1.2**
comp=Z,2.0nm,0.5s
KURBB Kurchatov Arra 23.79 57 P **P** **00 11 09.5 -0.1**
comp=Z,2.7nm,0.6s,baz=264,slow=12,SNR=8.6
KURBB Kurchatov Arra 23.79 57 ⇓P **P** **00 11 10.9 +1.3**
comp=Z,3.3nm,0.6s
KURBB Kurchatov Arra 23.79 57 P **P** **00 11 10.9 +1.3**
comp=Z,3.3nm,0.6s
KURK Kurchatov 23.86 57 ⇓P **P** **00 11 10.5 +0.2**
comp=Z,6.3nm,0.6s
KURK Kurchatov 23.86 57 P **P** **00 11 09.5 -0.8**
KURK Kurchatov 23.86 57 P **P** **00 11 10.5 +0.2**
comp=Z,6.3nm,0.6s
GERES GERESS Array B 24.12 299 P **P** **00 11 13.6 +0.7**
comp=Z,0.3nm,0.4s,baz=100,slow=9.8,SNR=6.7
GERES GERESS Array B 24.12 299 *e*P **P** **00 11 14.0 +1.1**
GERES GERESS Array B 24.12 299 *e*P **P** **00 11 14.0 +1.1**
MAKZ Makanchi 25.78 66 ⇑P **P** **00 11 26.2 -1.7**
comp=Z,3.8nm,1.4s
MAKZ Makanchi 25.78 66 P **P** **00 11 26.2 -1.7**
comp=Z,3.8nm,1.4s
MK31 Makanchi Array 26.00 66 P **P** **00 11 30.1 +0.2**
comp=Z,1.7nm,0.6s,baz=272,slow=7.0,SNR=17
MK31 Makanchi Array 26.00 66 P **P** **00 11 30.1 +0.2**
comp=Z,1.7nm,0.6s,SNR=17
MKAR Makanchi Array 26.00 66 P **P** **00 11 30.4 +0.5**
comp=Z,3.1nm,0.7s,baz=275,slow=7.2,SNR=20
DAVOX Davos/Dischmat 26.64 294 P **P** **00 11 35.9 0.0**
comp=Z,1.0nm,0.8s,baz=166,slow=16,SNR=1.9
ZALV Zalesovo Beam 28.18 51 P **P** **00 11 48.8 -0.5**
comp=Z,0.5nm,0.4s,baz=262,slow=11,SNR=2.6
ARCES ARCESS Array B 30.09 345 P **P** **00 12 06.5 +0.2**
comp=Z,1.5nm,0.9s,baz=165,slow=10,SNR=5.3
ARCES ARCESS Array B 30.09 345 *e*P **P** **00 12 06.4 +0.2**
ARCES pmax pmax
comp=Z,1.0nm,0.9s
ARCES ARCESS Array B 30.09 345 *e*P **P** **00 12 06.4 +0.2**
comp=Z,1.0nm,0.9s
ESDC Sonseca Array 37.94 284 P **P** **00 13 14.1 -0.6**
comp=Z,0.2nm,0.4s,baz=61,slow=8.7,SNR=7.9
PALK Pallekele 45.65 129 *i* P P 00 14 11.8 -6.0
TORD Torodi Ar. Bea 48.13 247 P **P** **00 14 36.5 -0.7**
comp=Z,0.3nm,0.7s,baz=54,slow=7.4,SNR=4.3
CMAR Chiang Mai Arr 50.01 101 P **P** **00 14 52.3 +0.7**
comp=Z,0.6nm,0.3s,baz=307,slow=8.9,SNR=3.0
SEY Seymchan 60.38 30 P **P** **00 16 06.7 +0.9**
comp=Z,1.6nm,0.5s,baz=5.7,slow=22,SNR=3.2
YKA Yellowknife Ar 75.17 351 P **P** **00 17 38.7 -0.3**
comp=Z,0.6nm,0.7s,baz=13,slow=5.4,SNR=5.3

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*IDC **30** 00:06:23.1±0.4, 15°.24S×173°.44W, h0km, mb4.7/25, mb1 4.9/25, mb1mx4.8/37, mbtmp4.7/25, MS4.3/17, Ms1 4.3/17, ms1mx4.1/31, Error ellipse: s-maj=18.4km s-min=12.3km az=128.0*
*GCMT **30** 00:06:24.7±0.3, 15°.14S×173°.35W, h12km, MW5.3/76, Moment Tensor Solution. s13,c13; s76,c95; Duration: 1s1 Moment tensor: Scale 10^{17}Nm; M_{rr}-0.00±.01; $M_{\theta\theta}$0.15±.01; $M_{\phi\phi}$-0.14±.01; $M_{r\theta}$-0.92±.04; $M_{\theta\phi}$0.02±.01; $M_{\phi r}$0.53±.03; Best double couple: $M_0$1.07000×10^{17} NP1:ϕ_s121.00000°, δ89.00000°, λ-83.00000°. NP2: ϕ_s216.00000°, δ8.00000°, λ-174.00000°. Principal axes: T 1.0960, Plg44.0000°, Azm203.0000°; N -0.0510, Plg7.0000°, Azm300.0000°; P -1.0450, Plg45.0000°, Azm38.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*NEIC **30** 00:06:24.7±0.1, 15°.18S×173°.56W, h10km, mb5.3/141 Error ellipse: s-maj=7.7km s-min=3.5km az=125.0*
NEIC Felt at Afono, American Samoa and at Apia, Samoa.
*MOS **30** 00:06:26.5±1.0, 15°.16S×173°.54W, h32km, mb5.3/48, MS4.7/12, Error ellipse: s-maj=13.7km s-min=7.9km az=61.9*
*ISCJB **30** 00:06:26.1±0.1, 15°.26S±0°.04×173°.56W±0°.04, h30km, mb5.1/167, MS4.6/75, Error ellipse: s-maj=6.8km s-min=3.2km az=135.4*
*BJI **30** 00:06:27.1, 15°.27S×173°.57W, h30km, mb4.8/19, mB5.5/16, Ms5.4/10, Ms7 4.9/9*
ISC 30 00:06:27.8±0.3, 15°.19S±0°.06×173°.41W±0°.07, h30km, n720, σ1$02/661, mb5.2/167, MS4.7/75, 31C-16D, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**2.03**	**51**	Pn	Pn	00 06 56.1	-3.9
1μm,0.3s,baz=187,slow=2.9,SNR=496							
AFI				Sn	Sn	00 07 16.2	-8.2
4μm,0.3s,baz=210,slow=20,SNR=34							
AFI				LR	LR	00 07 30.3	
comp=Z,3μm,19.5s,baz=216,slow=32							
NIUE	**Niue**	**5.10**	**140**	P	**Pn**	**00 07 39.1**	**-3.1**
baz=5.0,SNR=321							
KNTN	**Kanton**	**12.45**	**8**	*e*Pn	**Pn**	**00 09 19.7**	**-3.3**
KNTN				*e*Sn	Sn	00 11 27.1	-14
RAR	**Rarotonga**	**14.27**	**117**	Pn	Pn	00 09 44.0	-3.9
9.0nm,0.3s,baz=255,slow=8.3,SNR=13							
RAR				Sn	Sn	00 12 11.5	-14
4.0nm,0.3s,baz=324,slow=19,SNR=4.3							
RAR				LR	LR	00 13 31.8	
comp=Z,375nm,21.9s,baz=283,slow=30							
RAR	**Rarotonga**	**14.27**	**117**	P	Pn	00 09 44.0	-3.9
RAR				pmax	pmax		
comp=Z,9.0nm,0.3s							
RAR				MLR	MLR		
comp=Z,375nm,21.9s							
RAO	**Raoul Island**	**14.60**	**196**	LR	LR	00 14 42.5	
comp=Z,1μm,21.5s,baz=59,slow=34							
RAO	**Raoul Island**	**14.60**	**196**	*e*P	**Pn**	**00 09 53.9**	**+1.5**
RAO	**Raoul Island**	**14.60**	**196**	*e*Pn	**Pn**	**00 09 53.9**	**+1.5**
DZM	**Mont Dzumac**	**20.27**	**247**	*e*P	Pn	00 11 05.4	+2.2
comp=Z,346nm,1.4s							
DZM				*e*LR	LR	00 16 00.2	
comp=Z,4μm,25.7s							
DZM	**Mont Dzumac**	**20.27**	**247**	P	**P**	**00 11 01.2**	**0.0**
comp=Z,13nm,0.6s,baz=78,slow=17,SNR=14							
DZM				LR	LR	00 17 44.8	
comp=Z,2μm,20.0s,baz=100,slow=34							
PAE	**Paea**	**22.99**	**99**	*e*T	T	00 34 47.4	
comp=Z,6.0nm,0.3s							
PPT	**Papeete**	**22.99**	**99**	LR	LR	00 17 54.3	
comp=Z,239nm,20.6s,baz=272,slow=30							
PPT2	**Papeete2**	**22.99**	**99**	*e*LQ	LQ	00 16 07.6	
comp=Z,514nm,28.0s							
PPT2				*e*LR	LR	00 16 49.7	
comp=Z,1μm,26.5s,baz=274							
PPT2	**Papeete2**	**22.99**	**99**	*e*T	T	00 34 48.4	
comp=Z,8.0nm,0.3s							
OUZ	**Omahuta**	**23.11**	**208**	*e*P	**P**	**00 11 31.3**	**0.0**
comp=Z,49nm,1.3s							
TIAR	**Tiarei**	**23.21**	**99**	*e*T	T	00 35 03.9	
comp=Z,4.5nm,0.3s							
TVO	**Taravao**	**23.30**	**100**	*e*T	T	00 35 11.1	
comp=Z,2.5nm,0.3s							
MXZ	**Matakaoa Point**	**23.47**	**197**	*e*P	**P**	**00 11 31.9**	**-2.9**
comp=Z,135nm,1.5s							
TBI	**Tubuai**	**24.00**	**113**	*e*LR	LR	00 17 22.8	
comp=Z,836nm,27.8s,baz=288							
TBI	**Tubuai**	**24.00**	**113**	*e*T	T	00 36 06.3	
comp=Z,19nm,0.2s							
URZ	**Urewera**	**24.46**	**198**	P	**P**	**00 11 42.4**	**-1.6**
comp=Z,14nm,0.4s,baz=293,slow=2.5,SNR=16							
URZ				LR	LR	00 20 01.6	
comp=Z,1μm,19.6s,baz=22,slow=34							
URZ	**Urewera**	**24.46**	**198**	*e*P	**P**	**00 11 43.0**	**-1.1**
comp=Z,28nm,0.6s							
PMOR	**Pomariorio Ree**	**24.63**	**93**	*e*T	T	00 36 50.0	
comp=Z,7.4nm,0.3s							
HIZ	**Hauiti**	**25.44**	**202**	*e*P	**P**	**00 11 51.6**	**-1.3**
comp=Z,140nm,1.2s							
BKZ	**Black Stump Fm**	**25.48**	**198**	*e*P	**P**	**00 11 51.2**	**-2.2**
comp=Z,71nm,1.8s							
HNR	**Honiara**	**26.64**	**279**	LR	LR	00 21 08.9	
comp=Z,429nm,19.9s,baz=122,slow=33							
HNR	**Honiara**	**26.64**	**279**	PFAKE		00 12 10.0	+6.0
HNR				LR	LR		
comp=Z,441nm,22.0s							
BFZ	**Birch Farm**	**26.95**	**198**	*e*P	**P**	**00 12 05.2**	**-1.5**
comp=Z,44nm,1.1s							
KHZ	**Kahutara**	**29.37**	**200**	*e*P	**P**	**00 12 26.2**	**-1.9**
comp=Z,74nm,1.5s							
LHI	**Lord Howe Isla**	**29.93**	**232**	*e*P	**P**	**00 12 32.9**	**-0.4**
comp=Z,182nm,1.3s							
LTZ	**Lake Taylor**	**30.12**	**201**	*e*P	**P**	**00 12 33.2**	**-1.7**
comp=Z,129nm,1.9s							
KWAJ	**Kwajalein Atol**	**30.36**	**321**	*e*P	**P**	**00 12 33.4**	**-3.8**
comp=Z,81nm,0.9s							
OXZ	**Oxford**	**30.68**	**201**	*e*P	**P**	**00 12 36.9**	**-2.9**
comp=Z,29nm,0.8s							
RPZ	**Rata Peaks**	**31.37**	**202**	P	**P**	**00 12 45.3**	**-0.6**
comp=Z,12nm,0.5s,baz=10,slow=5.9,SNR=5.1							
RPZ				LR	LR	00 24 10.0	
comp=Z,1μm,21.1s,baz=25,slow=34							
RPZ	**Rata Peaks**	**31.37**	**202**	*e*P	**P**	**00 12 44.5**	**-1.4**
comp=Z,60nm,1.4s							
FOZ	**Fox Glacier**	**31.68**	**204**	*e*P	**P**	**00 12 48.2**	**-0.3**
comp=Z,60nm,1.1s							
LBZ	**Lake Benmore**	**32.27**	**202**	*e*P	**P**	**00 12 51.2**	**-2.5**
comp=Z,102nm,1.7s							
WKZ	**Wanaka**	**33.08**	**203**	*e*P	**P**	**00 13 01.1**	**+0.2**
comp=Z,196nm,1.6s							
TAOE	**Nuku Hiva Isla**	**33.11**	**83**	*e*LR	LR	00 21 39.1	
comp=Z,1μm,25.1s							
TAOE	**Nuku Hiva Isla**	**33.11**	**83**	*e*T	T	00 47 23.9	
comp=Z,69nm,0.2s							
MLZ	**Mavora Lakes**	**33.88**	**204**	*e*P	**P**	**00 13 07.8**	**0.0**
comp=Z,145nm,1.8s							
DCZ	**Deep Cove**	**34.34**	**205**	*e*P	**P**	**00 13 12.6**	**+0.9**
comp=Z,272nm,2.0s							
WHZ	**Wether Hill Ro**	**34.38**	**203**	*e*P	**P**	**00 13 12.2**	**0.0**
comp=Z,63nm,1.0s							
EIDS	**Eidsvold**	**34.72**	**247**	*e*P	**P**	**00 13 17.9**	**+2.6**
comp=Z,42nm,1.6s							
ARMA	**Armidale**	**35.44**	**239**	P	**P**	**00 13 20.3**	**-1.3**
baz=36,SNR=5.3							
ARMA	**Armidale**	**35.44**	**239**	*e*P	**P**	**00 13 21.6**	**-0.1**
comp=Z,105nm,2.0s							
MGCD	**Mangrove Creek**	**36.77**	**234**	P	**P**	**00 13 32.7**	**-0.1**
baz=37							
RMQ	**Roma**	**36.97**	**246**	P	**P**	**00 13 33.8**	**-0.8**
baz=37,SNR=7.9							
RKT	**Rikitea**	**37.07**	**108**	*e*LR	LR	00 23 21.5	
comp=Z,549nm,27.5s,baz=283							
RKT	**Rikitea**	**37.07**	**108**	*e*T	T	00 52 24.6	
comp=Z,9.8nm,0.3s							
CTAO	**Charters Tower**	**38.68**	**257**	PFAKE		00 14 00.0	+11
CTAO				LR	LR		
comp=Z,860nm,22.0s							
H11S2	**WAKE ISLAND Hy**	**38.78**	**329**	T	T	00 54 10.7	
baz=146,slow=76,SNR=74							
H11S3	**WAKE ISLAND Hy**	**38.79**	**329**	T	T	00 54 36.1	
baz=146,slow=76,SNR=12							
H11S1	**WAKE ISLAND Hy**	**38.79**	**329**	T	T	00 54 35.3	
baz=146,slow=76,SNR=11							
CNB	**Canberra Magne**	**38.87**	**232**	P	**P**	**00 13 49.2**	**-1.5**
baz=39,SNR=8.1							
CAN	**Canberra**	**39.15**	**232**	PFAKE		00 14 00.0	+7.0
CAN				LR	LR		
comp=Z,674nm,19.0s							
H11N3	**WAKE ISLAND Hy**	**39.72**	**330**	T	T	00 56 19.4	
baz=150,slow=76,SNR=20							
H11N1	**WAKE ISLAND Hy**	**39.73**	**330**	T	T	00 56 24.6	
baz=150,slow=76,SNR=15							
H11N2	**WAKE ISLAND Hy**	**39.74**	**330**	T	T	00 56 20.7	
baz=150,slow=76,SNR=13							
CMSA	**Cobar Meteorol**	**40.65**	**239**	P	**P**	**00 14 03.7**	**-1.8**
baz=41,SNR=22							
PTCN	**Pitcairn Islan**	**41.69**	**111**	*e*P	**P**	**00 14 11.0**	**-3.0**
comp=Z,787nm,1.9s							
COEN	**Coen**	**41.99**	**266**	P	**P**	**00 14 16.4**	**-0.2**
baz=42,SNR=9.2							
TOO	**Toolangi**	**42.59**	**231**	P	**P**	**00 14 19.6**	**-1.7**
baz=43,SNR=8.7							
STKA	**Stephens Creek**	**44.13**	**240**	P	**P**	**00 14 32.6**	**-1.2**
comp=Z,13nm,0.9s,baz=86,slow=9.9,SNR=22							
STKA				LR	LR	00 30 32.7	
comp=Z,426nm,21.8s,baz=44,slow=33							
STKA	**Stephens Creek**	**44.13**	**240**	P	**P**	**00 14 32.5**	**-1.2**
baz=44,SNR=17							
STKA	**Stephens Creek**	**44.13**	**240**	*e*P	**P**	**00 14 33.1**	**-0.7**
comp=Z,4.4nm,0.9s							
QIS	**Mount Isa**	**44.92**	**256**	P	**P**	**00 14 39.5**	**-0.7**
baz=45,SNR=3.5							
ARPS	**Mount Arapiles**	**45.11**	**233**	P	**P**	**00 14 39.5**	**-2.0**
baz=45,SNR=7.9							
HTT	**Hallett**	**46.65**	**238**	P	**P**	**00 14 52.2**	**-1.6**
baz=47,SNR=9.5							
JAY	**Jayapura**	**46.94**	**281**	P	**P**	**00 14 55.1**	**-1.2**
comp=Z,3.8nm,0.8s,baz=268,slow=23,SNR=7.3							
BBOO	**Buckleboo**	**48.91**	**240**	P	**P**	**00 15 09.4**	**-1.8**
baz=49,SNR=23							
BBOO	**Buckleboo**	**48.91**	**240**	*e*P	**P**	**00 15 09.6**	**-1.7**
comp=Z,17nm,0.9s							
WR0	**Warramunga Arr**	**49.69**	**257**	P	**P**	**00 15 16.7**	**-0.8**
baz=50							
WR9	**Warramunga Arr**	**49.72**	**257**	P	**P**	**00 15 16.3**	**-1.3**
baz=50							
WB2	**Warramunga Arr**	**49.87**	**257**	*e*P	**P**	**00 15 17.4**	**-1.4**
comp=Z,42nm,1.4s							
WRAB	**Tennant Creek**	**49.87**	**257**	*e*P	**P**	**00 15 16.4**	**-2.4**
comp=Z,9.0nm,0.6s							
WRAB				LR	LR		
comp=Z,696nm,22.0s							
WRA	**Warramunga Arr**	**49.88**	**257**	P	**P**	**00 15 16.6**	**-2.2**
comp=Z,8.7nm,0.5s,baz=92,slow=6.8,SNR=111							
WRA				LR	LR	00 34 27.6	
comp=Z,377nm,21.6s,baz=30,slow=34							
AS01	**Alice Springs**	**50.12**	**252**	*e*P	**P**	**00 15 18.2**	**-2.5**
AS31	**Alice Springs**	**50.16**	**252**	*e*P	**P**	**00 15 19.0**	**-2.0**
comp=Z,7.8nm,0.6s							
ASAR	**Alice Springs**	**50.17**	**252**	P	**P**	**00 15 19.0**	**-2.0**
comp=Z,21nm,0.5s,baz=88,slow=7.9,SNR=225							
ASAR				LR	LR	00 34 48.9	
comp=Z,972nm,21.6s,baz=92,slow=34							
WRKA	**Warakurna**	**55.26**	**250**	P	**P**	**00 15 57.1**	**-1.6**
baz=55,SNR=66							
FITZ	**Fitzroy Crossi**	**58.24**	**258**	P	**P**	**00 16 19.1**	**-0.8**
baz=58,SNR=3.8							
FITZ	**Fitzroy Crossi**	**58.24**	**258**	*e*P	**P**	**00 16 22.3**	**+2.4**
comp=Z,27nm,1.8s							
MBWA	**Marble Bar**	**63.41**	**254**	PFAKE		00 17 10.0	+15
MBWA				LR	LR		

comp=Z,20nm,0.9s
VNDA Vanda 63.59 186 P P 00 16 56.2 +1.0
comp=Z,10nm,0.9s,baz=6.4,slow=6.2,SNR=63
VNDA PcP PcP 00 17 31.3 -0.1
comp=Z,5.3nm,0.9s,baz=23,slow=3.1,SNR=4.1
VNDA LR LR 00 39 06.3
comp=Z,50nm,21.9s,baz=15,slow=31
VNDA Vanda 63.59 186 eP P 00 16 56.3 +1.1
comp=Z,16nm,1.0s
VNDA PcP PcP 00 17 31.3 -0.1
KLBR Kellerberrin 64.33 242 P P 00 17 00.3 -0.7
baz=64,SNR=6.4
NWAO Narrogin (SRO) 64.71 241 P P 00 17 04.0 +0.6
baz=65,SNR=3.7
KAPI Kappang 66.36 271 PFAKE 00 17 30.0 +16
KAPI LR LR
comp=Z,159nm,19.0s
MJAR Matsushiro Arr 68.77 320 P P 00 17 30.1 +1.0
comp=Z,2.8nm,0.9s,baz=128,slow=7.9,SNR=3.6
MJAR Matsushiro Arr 68.77 320 P P 00 17 30.1 +1.0
MJAR pmax pmax
comp=Z,2.0nm,0.6s
CASY Casey 70.60 205 eP P 00 17 39.3 -0.6
comp=Z,26nm,1.4s
SCI2 San Clemente I 70.97 47 P P 00 17 43.5 +0.8
baz=237
SBC Santa Barbara 70.98 45 P P 00 17 43.5 +0.8
baz=235
PKM Mcpherson Peak 71.17 44 P P 00 17 44.9 +0.8
baz=235
KMRM Mail Ridge 71.90 38 eP P 00 17 48.6 +0.3
comp=Z,89nm,0.8s
ARVC Arvin 71.97 45 P P 00 17 48.9 +0.2
baz=236
PET Petropavlovsk 72.07 343 PFAKE 00 18 00.0 +11
PET LR LR
comp=Z,337nm,22.0s
VES Vestal, Richgr 72.20 44 P P 00 17 50.3 +0.3
baz=236
MURC Murrieta 72.26 47 P P 00 17 50.9 +0.4
baz=237
BFSC Mount Baldy Ra 72.28 46 P P 00 17 51.3 +0.5
baz=237
KHMM Horse Mountain 72.30 37 eP P 00 17 50.5 -0.2
comp=Z,49nm,1.2s
EDW2 Edwards Air Fo 72.40 45 P P 00 17 52.1 +0.7
baz=236
PEA0 Petropavlovsk- 72.42 342 eP P 00 17 51.5 +0.4
PEA0B Petropavlovsk- 72.42 342 eP P 00 17 51.8 +0.8
PETK Petropavlovsk- 72.42 342 P P 00 17 51.5 +0.5
comp=Z,13nm,0.7s,baz=129,slow=8.8,SNR=18
PETK LR LR 00 41 44.6
comp=Z,89nm,21.9s,baz=180,slow=29
MONP2 Monument Peak 72.43 48 P P 00 17 52.1 +0.3
baz=238
ISA Isabella, Lake 72.51 44 P P 00 17 52.9 +0.9
baz=236
ISA Isabella, Lake 72.51 44 eP P 00 17 51.4 -0.6
ISA pmax pmax
comp=Z,16nm,1.0s
ISA Isabella, Lake 72.51 44 eP P 00 17 51.4 -0.6
comp=Z,16nm,1.0s
IKP In-Ko-Pah, Jac 72.53 48 P P 00 17 52.8 +0.6
baz=238
CMB Columbia Colle 72.61 41 eP P 00 17 51.7 -0.8
CMB pmax pmax
comp=Z,17nm,0.8s
CMB Columbia Colle 72.61 41 eP P 00 17 51.7 -0.8
comp=Z,17nm,0.8s
AFDM Forest Hills D 72.78 40 eP P 00 17 52.8 -0.8
comp=Z,21nm,1.0s
PFO Pinyon Flats O 72.78 47 PFAKE 00 18 10.0 +16
PFO LR LR
comp=Z,663nm,20.0s
TPFO Pinon Flats 72.78 47 P P 00 17 54.2 +0.5
baz=238
WDC Whiskeytown Da 72.82 38 eP P 00 17 52.8 -0.8
WDC pmax pmax
comp=Z,66nm,1.6s
WDC Whiskeytown Da 72.82 38 eP P 00 17 52.8 -0.8
comp=Z,66nm,1.6s
ORV Oroville 72.82 40 eP P 00 17 51.3 -2.4
ORV pmax pmax
comp=Z,18nm,1.0s
ORV Oroville 72.82 40 eP P 00 17 51.3 -2.4
comp=Z,18nm,1.0s
KKM Kota Kinabalu 72.83 281 PFAKE 00 18 10.0 +16
KKM LR LR
comp=Z,85nm,21.0s
N02D Trinity Center 72.97 38 P P 00 17 55.9 +1.3
baz=231,SNR=6.3
O03D Paynes Creek 73.09 39 P P 00 17 56.0 +0.7
baz=232
M02C Callahan 73.14 37 P P 00 17 57.0 +1.3
baz=231,SNR=8.6
L02D Cave Junction, 73.19 36 P P 00 17 56.8 +1.0
baz=230
CWC Cottonwood Cre 73.21 44 P P 00 17 56.8 +0.5
baz=236
YSS Yuzh-Sakhalins 73.30 330 eP P 00 17 54.9 -1.4
YSS e 00 18 02.3
BELC Belle Mtn. Jos 73.31 47 P P 00 17 57.2 +0.3
baz=238
MPMC Manual Prospec 73.39 44 P P 00 17 57.9 +0.5
baz=237
YBH Yreka Blue Hor 73.44 37 eP P 00 17 56.3 -1.1
YBH pmax pmax
comp=Z,40nm,0.8s
YBH Yreka Blue Hor 73.44 37 eP P 00 17 56.3 -1.1
comp=Z,40nm,0.8s
DAC Darwin (Calif) 73.44 44 eP P 00 17 56.4 -1.3
DAC pmax pmax
comp=Z,6.0nm,0.8s
DAC Darwin (Calif) 73.44 44 eP P 00 17 56.4 -1.3
comp=Z,6.2nm,0.8s
GSC Goldstone, Bar 73.45 45 P P 00 17 58.4 +0.8
baz=237
GSC Goldstone, Bar 73.45 45 eP P 00 17 56.4 -1.2
GSC pmax pmax
comp=Z,17nm,1.1s
GSC Goldstone, Bar 73.45 45 eP P 00 17 56.4 -1.2
comp=Z,17nm,1.1s
TIN Tinemaha, Big 73.45 43 P P 00 17 58.8 +1.2
baz=236
WAKR Walker 73.49 41 eP P 00 17 57.7 -0.2
BC3 Big Chuckawall 73.52 48 P P 00 17 58.3 +0.2
baz=239
GLA Glamis 73.66 48 P P 00 17 59.4 +0.5
baz=239
HUMO Hull Mountain 73.84 36 eP P 00 18 01.4 +1.7
comp=Z,52nm,1.3s
GMRC Granite Mounta 73.97 46 P P 00 18 01.1 +0.4
baz=238
M04C Macdoel 73.98 38 P P 00 18 01.5 +0.9
baz=232,SNR=12
GRAC Grapevine Rang 73.99 44 P P 00 18 01.5 +0.8
baz=236
IRM Iron Mountain 74.00 47 P P 00 18 01.9 +1.1
baz=239
FURC Furnace Creek, 74.04 44 P P 00 18 01.3 +0.4
baz=237
TUQ Turquoise Moun 74.13 46 P P 00 18 01.9 +0.2
baz=238
SHOC Shoshone, Teco 74.13 45 P P 00 18 01.8 +0.3
baz=238
NVAR Mina Array Bea 74.18 42 P P 00 18 02.9 +0.9
comp=Z,19nm,0.7s,baz=233,slow=9.7,SNR=44
PAHR Pah Rah Range 74.22 40 eP P 00 18 03.2 +1.1
comp=Z,28nm,1.0s
Y12C Blythe 74.23 48 P P 00 18 02.7 +0.6
baz=239
Y12C Blythe 74.23 48 eP P 00 18 03.7 +1.6
comp=Z,18nm,0.9s
NV11 Mina Array Sit 74.28 42 eP P 00 18 03.1 +0.7
113A Mohawk Valley, 74.28 49 eP P 00 18 03.3 +0.9
comp=Z,20nm,0.9s
I03D Drain, OR 74.31 35 P P 00 18 03.2 +0.9
baz=230
HOG Hogback Mounta 74.34 37 P P 00 18 04.1 +1.3
LDFC Landfair 74.50 46 eP P 00 18 05.2 +1.4
comp=Z,68nm,1.1s
K04D Chiloquin, OR 74.55 37 P P 00 18 04.6 +0.7
baz=232
214A Organ Pipe Nat 74.59 50 P P 00 18 04.9 +0.6
baz=241
214A Organ Pipe Nat 74.59 50 eP P 00 18 03.9 -0.4
comp=Z,159nm,1.4s

TPNV Topopah Spring 74.72 44 P P 00 18 05.7 +0.6
baz=237
TPNV Topopah Spring 74.72 44 eP P 00 18 06.1 +1.0
TPNV pmax pmax
comp=Z,15nm,0.9s
TPNV Topopah Spring 74.72 44 eP P 00 18 06.0 +1.0
comp=Z,15nm,0.9s
KDAK Kodiak Island 74.72 11 eP P 00 18 05.1 +0.8
KDAK pmax pmax
comp=Z,19nm,0.8s
KDAK MLR MLR
comp=Z,599nm,20.0s
KDAK Kodiak Island 74.72 11 eP P 00 18 05.1 +0.8
comp=Z,19nm,0.8s
KDAK LR LR
comp=Z,599nm,20.0s
PDMCI Parker Dam,Lak 74.79 48 P P 00 18 05.8 +0.5
baz=239
QSPA South Pole Qui 74.86 180 eP P 00 18 06.0 +0.6
comp=Z,179nm,0.9s
QSPA LR LR
comp=Z,301nm,20.0s
I04A Tendick Farm, 74.90 36 P P 00 18 06.5 +0.7
baz=231
MOD Modoc Plateau 74.96 38 eP P 00 18 07.1 +0.7
comp=Z,44nm,0.9s
HBO Huckleberry Mo 74.98 36 P P 00 18 07.5 +1.0
K05A Summer Lake 75.11 37 eP P 00 18 08.5 +1.2
comp=Z,87nm,1.0s
SHPR Sheep Range 75.22 45 eP P 00 18 09.2 +1.2
comp=Z,21nm,1.1s
J05D Fort Rock, OR 75.25 37 P P 00 18 09.3 +1.2
baz=232,SNR=19
G03D McMinnville, O 75.33 34 P P 00 18 09.4 +1.2
baz=230
H04A Detroit Lake 75.59 35 eP P 00 18 10.1 +0.3
comp=Z,42nm,0.8s
I05D Terrebonne, OR 75.84 36 P P 00 18 11.8 +0.5
baz=232
R11A Troy Canyon, C 75.91 43 P P 00 18 12.2 +0.2
baz=237
R11A Troy Canyon, C 75.91 43 eP P 00 18 11.8 -0.1
comp=Z,14nm,1.1s
BMN Battle Mountai 76.00 41 eP P 00 18 13.2 +0.8
BMN pmax pmax
comp=Z,32nm,0.8s
BMN Battle Mountai 76.00 41 eP P 00 18 13.2 +0.8
comp=Z,32nm,0.8s
KSRS Korea Array 76.00 316 P P 00 18 13.4 +1.2
comp=Z,1.0nm,0.6s,baz=124,slow=10,SNR=4.9
KSAR Wonju Array Be 76.02 316 P P 00 18 13.4 +1.1
KSAR Wonju Array Be 76.02 316 P P 00 18 13.4 +1.1
F04D Rainier, OR 76.03 34 P P 00 18 13.3 +1.2
baz=230
F04A Amboy 76.25 34 eP P 00 18 14.3 +0.9
comp=Z,43nm,1.3s
TUC Tucson 76.26 51 P P 00 18 14.7 +0.8
baz=242
TUC Tucson 76.26 51 eP P 00 18 14.9 +0.9
TUC pmax pmax
comp=Z,29nm,0.8s
TUC MLR MLR
comp=Z,364nm,20.0s
TUC Tucson 76.26 51 eP P 00 18 14.9 +0.9
comp=Z,29nm,0.8s
TUC LR LR
comp=Z,364nm,20.0s
WVOR Wild Horse Val 76.27 38 eP P 00 18 14.6 +0.8
WVOR pmax pmax
comp=Z,41nm,1.0s
WVOR MLR MLR
comp=Z,548nm,19.0s
WVOR Wild Horse Val 76.27 38 eP P 00 18 14.6 +0.8
comp=Z,41nm,1.0s
WVOR LR LR
comp=Z,548nm,19.0s
LVP Lakeview Peak 76.34 34 P P 00 18 14.9 +0.8
G05D Wamic, OR 76.42 35 P P 00 18 15.3 +0.8
baz=232
NLWA Neilton Lookou 76.43 32 PFAKE 00 18 30.0 +16
NLWA LR LR
comp=Z,308nm,19.0s
CROR Criterion Ridg 76.44 35 P P 00 18 15.0 +0.3
BRLK Bradley Lake 76.89 11 eP P 00 18 17.4 +0.7
comp=Z,30nm,1.2s
CCUT Cedar City 76.99 45 eP P 00 18 19.1 +1.0
comp=Z,31nm,1.3s
KNB Kanab 77.09 46 eP P 00 18 20.1 +1.5
KNB pmax pmax
comp=Z,99nm,2.0s
KNB Kanab 77.09 46 eP P 00 18 20.1 +1.5
comp=Z,99nm,2.0s
LON Longmire 77.09 34 eP P 00 18 18.8 +0.5
LON pmax pmax
comp=Z,32nm,1.6s
LON Longmire 77.09 34 eP P 00 18 18.8 +0.5
comp=Z,32nm,1.6s
PSUT Pine Spring 77.16 44 eP P 00 18 20.1 +1.0
comp=Z,18nm,0.9s
U15A North Rim 77.16 46 eP P 00 18 20.2 +1.0
RSO Redoubt South 77.20 10 eP P 00 18 20.1 +1.4
USRK Ussuriysk Ar. 77.21 323 P P 00 18 20.3 +1.5
comp=Z,2.1nm,0.7s,baz=138,slow=2.9,SNR=3.1
WUAZ Wupatki 77.36 48 P P 00 18 21.4 +1.2
baz=241
WUAZ Wupatki 77.36 48 PFAKE 00 18 30.0 +10
WUAZ LR LR
comp=Z,409nm,19.0s
ELK Elko 77.43 41 eP P 00 18 21.0 +0.5
ELK pmax pmax
comp=Z,24nm,1.1s
ELK Elko 77.43 41 eP P 00 18 21.0 +0.5
comp=Z,24nm,1.1s
PKCU Pink Cliffs 77.66 46 eP P 00 18 24.7 +2.7
comp=Z,21nm,0.8s
G08A Pilot Rock 77.77 36 eP P 00 18 23.1 +0.9
comp=Z,44nm,1.1s
A04D Lummi Island 77.89 32 P P 00 18 23.0 +0.5
baz=230
B05A Bryant 77.90 32 P P 00 18 23.3 +0.7
baz=230
X18A Snowflake 77.92 49 eP P 00 18 24.8 +1.4
MTPU Mount Pierson 78.04 45 eP P 00 18 26.2 +2.0
comp=Z,63nm,1.5s
HAWA Hanford 78.11 35 eP P 00 18 24.9 +1.0
comp=Z,32nm,1.3s
HAWA LR LR
comp=Z,383nm,21.0s
CRAG Craig 78.15 22 eP P 00 18 25.2 +1.4
comp=Z,18nm,1.0s
MSU Marysvale 78.28 45 eP P 00 18 28.8 +3.5
MSU Marysvale 78.28 45 eP P 00 18 28.8 +3.5
RC01 Rabbit Creek A 78.34 11 eP P 00 18 25.8 +1.0
comp=Z,39nm,1.4s
W18A Petrified Fore 78.35 49 P P 00 18 26.4 +0.7
baz=242
BMO Blue Mountains 78.46 37 eP P 00 18 26.6 +0.6
comp=Z,24nm,1.0s
BMO LR LR
comp=Z,339nm,19.0s
MFID Camas Ranch 78.53 39 eP P 00 18 26.9 +0.5
comp=Z,30nm,0.9s
121A Cookes Peak, D 78.62 52 P P 00 18 28.2 +0.9
baz=244
121A Cookes Peak, D 78.62 52 eP P 00 18 28.0 +0.7
comp=Z,14nm,0.8s
DUG Dugway, Tooele 78.71 43 P P 00 18 28.1 +0.5
baz=239
DUG Dugway, Tooele 78.71 43 eP P 00 18 28.1 +0.5
DUG pmax pmax
comp=Z,22nm,0.9s
DUG MLR MLR
comp=Z,501nm,22.0s
DUG Dugway, Tooele 78.71 43 eP P 00 18 28.1 +0.5
comp=Z,22nm,0.9s
DUG LR LR
comp=Z,501nm,22.0s
MDJ Mudanjiang 78.85 322 PFAKE 00 18 40.0 +12
MDJ LR LR
comp=Z,262nm,19.0s
PMR Palmer 78.92 12 eP P 00 18 27.8 -0.2
PMR pmax pmax
comp=Z,38nm,1.4s
PMR Palmer 78.92 12 eP P 00 18 27.8 -0.2
comp=Z,38nm,1.4s
ZAIG Zacatecas 78.92 63 eP P 00 18 30.2 +1.0
comp=Z,25nm,1.3s

BGU Big Grassy Mou 78.95 42 eP P 00 18 29.6 +0.8
comp=Z,9.2nm,0.8s
TT01 Tatalina 79.02 8 eP P 00 18 29.4 +0.9
TTA Tatalina 79.05 8 eP P 00 18 29.7 +0.9
TTA pmax pmax
comp=Z,14nm,1.2s
TTA Tatalina 79.05 8 eP P 00 18 29.7 +0.9
comp=Z,14nm,1.2s
F10A Beach Ranch, E 79.15 36 eP P 00 18 30.1 +0.4
comp=Z,26nm,0.9s
WRAK Wrangell Islan 79.16 22 PFAKE 00 18 40.0 +11
WRAK LR LR
comp=Z,526nm,21.0s
Q16A Castle Valley 79.17 45 eP P 00 18 31.8 +1.7
comp=Z,16nm,0.9s
DIV Divide 79.19 13 eP P 00 18 29.8 +0.2
comp=Z,43nm,1.1s
BMRM Bremner River 79.31 14 eP P 00 18 30.7 +0.4
comp=Z,47nm,1.1s
TMUT Trail Mountain 79.33 44 eP P 00 18 32.9 +1.7
comp=Z,54nm,1.0s
B08A Colville Reser 79.41 33 eP P 00 18 31.6 +0.6
comp=Z,12nm,0.8s
HLID Hailey 79.47 39 P P 00 18 32.5 +0.8
baz=237,SNR=57
HLID Hailey 79.47 39 eP P 00 18 32.5 +0.8
comp=Z,46nm,0.9s
HLID LR LR
comp=Z,288nm,20.0s
KLU Klutina 79.49 13 eP P 00 18 32.4 +1.2
comp=Z,12nm,1.0s
SCM Sheep Creek Mo 79.50 12 eP P 00 18 31.6 +0.4
SCM Sheep Creek Mo 79.50 12 eP P 00 18 31.6 +0.4
HVU Hansel Valley 79.55 42 eP P 00 18 32.8 +0.7
HVU pmax pmax
comp=Z,32nm,0.8s
HVU Hansel Valley 79.55 42 eP P 00 18 32.8 +0.7
comp=Z,32nm,0.8s
C09A Chrisman Ranch 79.64 34 eP P 00 18 32.9 +0.6
comp=Z,17nm,0.8s
SRU San Rafael Swe 79.70 45 eP P 00 18 34.6 +1.5
SRU pmax pmax
comp=Z,38nm,1.2s
SRU San Rafael Swe 79.70 45 eP P 00 18 34.5 +1.5
comp=Z,38nm,1.2s
P17A Butcher Ranch, 79.73 44 eP P 00 18 34.6 +1.4
comp=Z,49nm,1.3s
JLU Jordanelle 79.82 43 eP P 00 18 34.3 +0.6
comp=Z,27nm,0.9s
NPI North Pocatell 79.91 41 eP P 00 18 34.7 +0.6
BALM Baldy 79.91 15 eP P 00 18 34.0 +0.4
BALM pmax pmax
comp=Z,21nm,1.1s
BALM Baldy 79.91 15 eP P 00 18 34.0 +0.4
comp=Z,21nm,1.1s
LAZ Ladron 79.93 50 eP P 00 18 35.6 +1.2
Y22D IRIS PASSCAL I 79.95 51 P P 00 18 35.6 +1.1
baz=244
MA2 Magadan 79.96 342 P P 00 18 34.1 +0.4
comp=Z,1.9nm,0.3s,baz=184,slow=23,SNR=2.5
MA2 Magadan 79.96 342 P P 00 18 34.1 +0.4
MA2 LR LR
comp=Z,208nm,19.0s
NJ2 Nanjing 80.03 307 eP P 00 18 35.5 +0.8
NJ2 pmax pmax
comp=Z,9.0nm,0.8s
CAST Castle Rocks 80.09 10 eP P 00 18 33.2 -1.1
comp=Z,7.3nm,0.8s
TCUT Toone Canyon 80.10 43 eP P 00 18 36.1 +0.9
comp=Z,124nm,0.8s
MNTX Cornudas Mount 80.11 53 P P 00 18 35.8 +0.6
baz=245
MNTX Cornudas Mount 80.11 53 eP P 00 18 35.9 +0.7
comp=Z,32nm,1.1s
MNTX LR LR
comp=Z,240nm,19.0s
P18A Preston Nutter 80.14 44 eP P 00 18 36.7 +1.1
comp=Z,40nm,1.5s
BNM Barren Site 80.20 51 eP P 00 18 37.3 +1.4
MVCO Mesa Verde 80.21 47 P P 00 18 36.9 +1.0
baz=243
MVCO Mesa Verde 80.21 47 PFAKE 00 18 50.0 +14
MVCO LR LR
comp=Z,400nm,20.0s
HWUT Hardware Ranch 80.25 42 eP P 00 18 36.1 +0.2
comp=Z,19nm,0.8s
HWUT LR LR
comp=Z,446nm,19.0s
LPM Los Pinos Moun 80.27 51 eP P 00 18 37.3 +1.1
KTH Kantishna Hill 80.41 10 eP P 00 18 35.5 -0.7
comp=Z,14nm,1.0s
TRF Thorofare Moun 80.42 10 eP P 00 18 35.7 -0.6
comp=Z,18nm,0.9s
TXAR Lajitas Array 80.50 56 P P 00 18 38.5 +1.1
comp=Z,16nm,0.9s,baz=226,slow=6.1,SNR=73
TXAR LR LR 00 48 30.2
comp=Z,197nm,19.0s,baz=0.0,slow=31
NEW Newport 80.54 34 P P 00 18 37.5 +0.4
comp=Z,4.3nm,0.6s,baz=194,slow=4.6,SNR=5.5
NEW Newport 80.54 34 P P 00 18 37.1 0.0
baz=235
NEW Newport 80.54 34 eP P 00 18 37.4 +0.2
NEW pmax pmax
comp=Z,7.0nm,0.8s
NEW MLR MLR
comp=Z,312nm,22.0s
NEW Newport 80.54 34 eP P 00 18 37.4 +0.2
comp=Z,7.4nm,0.8s
NEW LR LR
comp=Z,312nm,22.0s
SKAG Skagway 80.55 19 eP P 00 18 38.5 +1.7
comp=Z,34nm,1.4s
ANMO Albuquerque 80.67 50 P P 00 18 39.1 +0.7
baz=244
ANMO Albuquerque 80.67 50d iP P 00 18 39.1 +0.7
ANMO pmax pmax
comp=Z,35nm,1.4s
ANMO Albuquerque 80.67 50 eP P 00 18 39.2 +0.8
comp=Z,45nm,1.4s
ANMO LR LR
comp=Z,427nm,20.0s
BPAW Bear Paw Mtn. 80.91 10 eP P 00 18 38.6 -0.1
comp=Z,9.9nm,1.3s
MCK McKinley 80.92 11 eP P 00 18 39.0 +0.2
MCK pmax pmax
comp=Z,33nm,0.8s
MCK McKinley 80.92 11 eP P 00 18 39.0 +0.2
comp=Z,33nm,0.8s
CN2 Changchun 80.92 320 eP P 00 18 40.5 +1.3
CN2 pmax pmax
comp=Z,10.0nm,0.9s
MCMT McKenzie Canyo 81.10 39 eP P 00 18 41.6 +1.1
AHID Auburn Hatcher 81.13 41 eP P 00 18 41.4 +0.8
comp=Z,40nm,1.1s
AHID LR LR
comp=Z,300nm,19.0s
BWN Browne 81.23 10 eP P 00 18 41.3 +0.9
comp=Z,37nm,1.0s
DLBC Dease Lake 81.51 21 P P 00 18 41.8 -0.3
comp=Z,2.9nm,0.8s,baz=212,slow=4.5,SNR=5.8
DLBC Dease Lake 81.51 21 eP P 00 18 42.9 +0.8
MSO Missoula 81.52 37 P P 00 18 42.7 +0.2
baz=237
MSO Missoula 81.52 37 eP P 00 18 42.5 +0.1
comp=Z,40nm,1.2s
REDW Red Top Meadow 81.58 41 eP P 00 18 44.0 +0.9
comp=Z,57nm,1.3s
TPAW Teton Pass 81.58 41 eP P 00 18 43.9 +0.8
comp=Z,39nm,0.8s
BSMT Bassoo Peak 81.60 36 eP P 00 18 42.8 -0.2
FXWY Fox Creek 81.61 41 eP P 00 18 43.9 +0.6
comp=Z,26nm,1.0s
S22A 4UR Ranch, Cre 81.63 47 P P 00 18 44.3 +0.7
baz=244
S22A 4UR Ranch, Cre 81.63 47 eP P 00 18 44.7 +1.2
comp=Z,37nm,1.0s
SNOW Snow King Moun 81.69 41 eP P 00 18 44.5 +0.9
comp=Z,44nm,0.9s
O20A White River Ci 81.74 45 P P 00 18 44.3 +0.3
baz=242
WRH Wood River Hil 81.75 11 eP P 00 18 43.1 -0.1
comp=Z,47nm,1.1s
IMW Indian Meadow 81.80 40 eP P 00 18 45.0 +0.7
comp=Z,35nm,0.9s
DOT Dot Lake 81.80 13 eP P 00 18 43.9 +0.4
comp=Z,43nm,0.9s
MLY Manley 81.81 10 eP P 00 18 43.5 -0.1

	comp=Z,14nm,0.9s						
MOOW	**Moose Ponds**	81.84	41	*e*P	P	00 18 45.2	+0.8
	comp=Z,24nm,1.3s						
SWMT	**Swartz Lake**	81.85	36	*e*P	P	00 18 44.6	+0.3
LRM	**Limekiln Ridge**	81.86	38	*e*P	P	00 18 45.1	+0.7
LOHW	**Long Hollow**	81.86	41	*e*P	P	00 18 45.1	+0.6
	comp=Z,28nm,1.1s						
CCB	**Clear Creek Bu**	81.96	11	*e*P	P	00 18 44.0	-0.3
	comp=Z,34nm,0.8s						
CHMT	**Chamberlain Mo**	81.96	37	*e*P	P	00 18 44.8	-0.2
QLMT	**Earthquake Lak**	81.96	39	*e*P	P	00 18 46.6	+1.6
FLWY	**Flagg Ranch**	82.04	40	*e*P	P	00 18 46.8	+1.4
	comp=Z,47nm,1.0s						
BW06	**Boulder Array**	82.11	42	P	P	00 18 45.6	-0.3
	baz=241,SNR=21						
BW06	**Boulder Array**	82.11	42	*e*P	P	00 18 45.1	-0.8
BW06				*e*P	P	00 18 45.9	0.0
BW06				LR	LR		
	comp=Z,426nm,20.0s						
PD31	**Pinedale Array**	82.11	42	*e*P	P	00 18 46.3	+0.4
PDAR	**Pinedale Array**	82.11	42	P	P	00 18 45.8	-0.1
	comp=Z,11nm,0.8s,baz=215,slow=3.5,SNR=53						
YFT	**Old Faithful**	82.14	40	*e*P	P	00 18 48.4	+2.4
	comp=Z,18nm,0.9s						
COLA	**College**	82.16	11	*e*P	P	00 18 45.5	+0.2
COLA				pmax	pmax		
	comp=Z,53nm,0.8s						
COLA				MLR	MLR		
	comp=Z,442nm,22.0s						
COLA	**College**	82.16	11	*e*P	P	00 18 45.5	+0.2
	comp=Z,53nm,0.8s						
COLA				LR	LR		
	comp=Z,442nm,22.0s						
MDM	**Murphy Dome**	82.17	11	*e*P	P	00 18 45.1	-0.3
	comp=Z,29nm,1.2s						
SMCO	**Snowmass**	82.17	46	*e*P	P	00 18 47.6	+1.1
	comp=Z,32nm,1.2s						
IL1	**Eielson Array**	82.24	11	*e*P	P	00 18 45.0	-0.7
ILAR	**Eielson Array**	82.24	11	P	P	00 18 45.3	-0.4
	comp=Z,6.8nm,0.7s,baz=221,slow=6.1,SNR=50						
ILAR				LR	LR	00 48 29.9	
	comp=Z,156nm,21.2s,baz=220,slow=31						
ILB	**Eielson Array**	82.24	11	*e*P	P	00 18 45.6	-0.1
BOZ	**Bozeman (W)**	82.26	39	P	P	00 18 46.6	+0.2
	baz=239						
BOZ	**Bozeman (W)**	82.26	39	*e*P	P	00 18 47.3	+0.8
BOZ				pmax	pmax		
	comp=Z,37nm,1.3s						
BOZ				MLR	MLR		
	comp=Z,374nm,20.0s						
BOZ	**Bozeman (W)**	82.26	39	*e*P	P	00 18 47.2	+0.8
	comp=Z,37nm,1.3s						
BOZ				LR	LR		
	comp=Z,374nm,20.0s						
H17A	**Grant Village**	82.27	40	P	P	00 18 47.7	+1.0
	baz=240,SNR=11						
H17A	**Grant Village**	82.27	40	*e*P	P	00 18 48.9	+2.2
	comp=Z,18nm,0.8s						
SEY	**Seymchan**	82.31	345	P	P	00 18 46.0	-0.1
	comp=Z,5.4nm,0.8s,baz=136,slow=5.8,SNR=17						
LKWY	**Lake**	82.46	40	*e*P	P	00 18 46.4	-1.3
LKWY				pmax	pmax		
	comp=Z,47nm,1.2s						
LKWY				MLR	MLR		
	comp=Z,303nm,19.0s						
LKWY	**Lake**	82.46	40	*e*P	P	00 18 46.4	-1.3
	comp=Z,47nm,1.2s						
LKWY				*e*PcP	**PcP**	00 18 50.1	-2.7
LKWY				LR	LR		
	comp=Z,303nm,19.0s						
SDCO	**Great Sand Dun**	82.58	48	P	P	00 18 48.9	+0.3
	baz=244						
SDCO	**Great Sand Dun**	82.58	48	PFAKE		00 19 00.0	+11
SDCO				LR	LR		
	comp=Z,288nm,20.0s						
HRY	**Holter Researc**	82.69	38	*e*P	P	00 18 49.4	+0.7
WALA	**Waterton Lakes**	82.75	35	*e*P	P	00 18 46.9	-2.0
	comp=Z,11nm,0.9s						
MSTX	**Muleshoe**	83.04	52	P	P	00 18 50.8	+0.1
	baz=247						
MSTX	**Muleshoe**	83.04	52	*e*P	P	00 18 51.5	+0.8
832A	**Faith Ranch, C**	83.11	58	P	P	00 18 51.1	0.0
	baz=249,SNR=9.6						
T25A	**Trinidad**	83.11	49	P	P	00 18 51.3	+0.1
	baz=245						
T25A	**Trinidad**	83.11	49	*e*P	P	00 18 51.9	+0.7
DAWY	**Dawson**	83.22	14	*e*P	P	00 18 51.4	+0.5
Q24A	**Divide**	83.35	47	P	P	00 18 52.8	+0.3
	baz=245						
ISCO	**Idaho Springs**	83.39	46	P	P	00 18 53.0	+0.3
	baz=244,SNR=7.1						
ISCO	**Idaho Springs**	83.39	46	*e*P	P	00 18 53.3	+0.6
ISCO				pmax	pmax		
	comp=Z,13nm,1.2s						
ISCO				MLR	MLR		
	comp=Z,324nm,20.0s						
ISCO	**Idaho Springs**	83.39	46	*e*P	P	00 18 53.3	+0.6
	comp=Z,13nm,1.2s						
ISCO				LR	LR		
	comp=Z,324nm,20.0s						
EGAK	**Eagle**	83.42	13	*e*P	P	00 18 52.4	+0.6
	comp=Z,12nm,0.9s						
EGAK				LR	LR		
	comp=Z,484nm,22.0s						
RLMT	**Red Lodge**	83.44	40	P	P	00 18 53.2	+0.5
	baz=241						
RLMT	**Red Lodge**	83.44	40	*e*P	P	00 18 53.5	+0.8
	comp=Z,28nm,1.1s						
RLMT				LR	LR		
	comp=Z,343nm,19.0s						
933A	**Laredo**	83.44	59	P	P	00 18 53.3	+0.5
	baz=249,SNR=6.9						
GCMT	**Greycliff**	83.52	39	*e*P	P	00 18 54.1	+1.1
833A	**Chaparral WMA,**	83.60	59	P	P	00 18 53.5	-0.1
	baz=249						
N23A	**Red Feather La**	83.64	45	P	P	00 18 54.5	+0.5
	baz=244,SNR=7.2						
N23A	**Red Feather La**	83.64	45	*e*P	P	00 18 54.9	+1.0
034A	**Hebbronville**	83.74	60	P	P	00 18 55.2	+0.8
	baz=250						
733A	**Divot King Ran**	83.82	58	P	P	00 18 55.1	+0.4
	baz=249						
COLD	**Coldfoot**	83.94	9	*e*P	P	00 18 55.6	+1.2
	comp=Z,12nm,1.0s						
K22A	**Casper**	84.04	43	P	P	00 18 56.1	+0.3
	baz=243						
K22A	**Casper**	84.04	43	*e*P	P	00 18 56.8	+1.0
JCT	**Junction City**	84.04	56	P	P	00 18 55.5	-0.4
	baz=249						
JCT	**Junction City**	84.04	56	*e*P	P	00 18 55.8	-0.1
JCT				pmax	pmax		
	comp=Z,12nm,0.9s						
JCT				MLR	MLR		
	comp=Z,283nm,20.0s						
JCT	**Junction City**	84.04	56	*e*P	P	00 18 55.8	-0.1
	comp=Z,12nm,0.9s						
JCT				LR	LR		
	comp=Z,283nm,20.0s						
934A	**Benavides**	84.07	59	P	P	00 18 55.9	-0.2
	baz=250						
633A	**Saathoff Ranch**	84.18	58	P	P	00 18 57.1	+0.5
	baz=249,SNR=5.4						
035A	**Encino**	84.19	60	P	P	00 18 56.6	0.0
	baz=250						
834A	**Tilden**	84.22	59	P	P	00 18 57.6	+0.8
	baz=250,SNR=9.4						
AMTX	**Amarillo**	84.22	52	P	P	00 18 56.9	0.0
	baz=247						
AMTX	**Amarillo**	84.22	52	*e*P	P	00 18 56.8	0.0
	comp=Z,53nm,0.9s						
BILL	**Bilibino**	84.30	352	*c i*P	P	00 18 56.6	+0.3
BILL				pmax	pmax		
	comp=Z,6.0nm,0.9s						
BILL	**Bilibino**	84.30	352	*e*P	P	00 18 56.7	+0.5
	comp=Z,6.1nm,0.7s						
BILL				LR	LR		
	comp=Z,302nm,21.0s						
533A	**Kerrville**	84.51	57	P	P	00 18 58.3	0.0
	baz=249,SNR=12						
EGMT	**Eagleton**	84.57	37	*e*P	P	00 18 58.8	+0.5
	comp=Z,61nm,0.8s						
EGMT				LR	LR		
	comp=Z,1μm,20.0s						
433A	**Art**	84.71	56	P	P	00 18 59.1	-0.1
	baz=249,SNR=13						
ABTX	**Abilene, Hawle**	84.95	54	P	P	00 19 00.5	+0.1
	baz=248,SNR=22						
ABTX	**Abilene, Hawle**	84.95	54	*e*P	P	00 19 00.5	+0.1
534A	**Blanco**	84.95	57	P	P	00 19 00.6	+0.1
	baz=249,SNR=11						
333A	**Richland Sprin**	85.00	56	P	P	00 19 00.6	-0.1
	baz=249,SNR=8.7						
936A	**North Padre Is**	85.02	60	P	P	00 19 02.1	+1.3
	baz=250						
735A	**Kenedy**	85.09	59	P	P	00 19 02.1	+1.0
	baz=250						
KSCO	**Kaye Shedlock'**	85.16	48	P	P	00 19 02.6	+1.1
	baz=246						
KSCO	**Kaye Shedlock'**	85.16	48	*e*P	P	00 19 03.5	+2.0
635A	**Leesville**	85.30	58	P	P	00 19 02.8	+0.6
	baz=250						
BJT	**Baijiatuau**	85.31	313	PFAKE		00 19 10.0	+8.0
BJT				LR	LR		
	comp=Z,209nm,19.0s						
233A	**Rising Star**	85.31	55	P	P	00 19 02.4	+0.1
	baz=249,SNR=11						
434A	**Burnet**	85.39	57	P	P	00 19 02.7	0.0
	baz=249,SNR=15						
133A	**Hamilton Ranch**	85.51	55	P	P	00 19 03.4	+0.2
	baz=249,SNR=15						
334A	**Lometa**	85.60	56	P	P	00 19 03.7	0.0
	baz=249,SNR=15						
535A	**Dale**	85.69	57	P	P	00 19 04.5	+0.4
	baz=250						
Z33A	**Whitaker Ranch**	85.88	54	P	P	00 19 05.3	+0.3
	baz=249,SNR=8.9						
X32A	**Elmer**	85.88	53	P	P	00 19 05.1	+0.1
	baz=249,SNR=8.4						
234A	**Clairette**	85.92	55	P	P	00 19 05.5	+0.3
	baz=249,SNR=8.9						
636A	**Smothers Creek**	85.92	58	P	P	00 19 06.4	+1.1
	baz=250						
435B	**Jarrell**	85.93	57	P	P	00 19 05.7	+0.4
	baz=250						
LAO	**LASA Array**	86.05	39	P	P	00 19 06.4	+0.8
	baz=243						
LAO	**LASA Array**	86.05	39	*e*P	P	00 19 06.3	+0.6
	comp=Z,82nm,1.5s						
LAO				LR	LR		
	comp=Z,415nm,19.0s						
CCIG	**Comitan**	86.09	72	*e*P	P	00 19 07.7	+1.1
	comp=Z,9.2nm,0.9s						
536A	**Bastrop**	86.11	58	P	P	00 19 07.0	+0.7
	baz=250						
134A	**White-Moore Ra**	86.16	55	P	P	00 19 06.8	+0.4
	baz=249,SNR=12						
W32A	**Sentinel**	86.17	52	P	P	00 19 06.9	+0.5
	baz=249,SNR=5.6						
335A	**Moody**	86.23	56	P	P	00 19 06.6	-0.2
	baz=250,SNR=9.9						
Y33A	**Hilltop Ranch,**	86.24	53	P	P	00 19 06.6	-0.2
	baz=249,SNR=7.1						
RSSD	**Black Hills**	86.31	42	P	P	00 19 06.7	-0.5
	baz=245						
RSSD	**Black Hills**	86.31	42	*e*P	P	00 19 06.9	-0.3
RSSD				pmax	pmax		
	comp=Z,32nm,1.4s						
RSSD	**Black Hills**	86.31	42	*e*P	P	00 19 06.9	-0.3
	comp=Z,32nm,1.4s						
OGNE	**Ogallala**	86.35	46	P	P	00 19 07.6	+0.3
	baz=246						
OGNE	**Ogallala**	86.35	46	PFAKE		00 19 20.0	+13
OGNE				LR	LR		
	comp=Z,324nm,20.0s						
WMOK	**Wichita Mounta**	86.38	53	P	P	00 19 07.2	-0.3
	baz=249						
WMOK	**Wichita Mounta**	86.38	53	PFAKE		00 19 20.0	+12
WMOK				LR	LR		
	comp=Z,255nm,19.0s						
WHTX	**Lake Whitney,**	86.45	56	P	P	00 19 07.9	0.0
	baz=250						
WHTX	**Lake Whitney,**	86.45	56	*e*P	P	00 19 07.7	-0.2
	comp=Z,69nm,1.5s						
637A	**Eagle Lake**	86.50	58	P	P	00 19 08.7	+0.6
	baz=250						
V32A	**Arapaho**	86.54	52	P	P	00 19 09.1	+0.8
	baz=249						
436A	**Wall Ranch, Ga**	86.57	57	P	P	00 19 08.8	+0.4
	baz=250						
Z34A	**Collier Ranch,**	86.57	54	P	P	00 19 08.5	0.0
	baz=250						
J26A	**Sides Ranch, S**	86.61	44	P	P	00 19 08.6	+0.1
	baz=246						
135A	**Vickery Place,**	86.69	55	P	P	00 19 09.0	0.0
	baz=250,SNR=5.1						
537A	**Green Hill Far**	86.73	58	P	P	00 19 09.8	+0.6
	baz=250						
336A	**Riesel**	86.74	56	P	P	00 19 09.0	-0.2
	baz=250						
W33A	**Caddo, Fort Co**	86.77	52	P	P	00 19 10.2	+0.8
	baz=249						
H25A	**Fruitdale**	86.81	42	P	P	00 19 10.0	+0.5
	baz=245						
U32A	**Winter Ranch,**	86.81	51	P	P	00 19 09.9	+0.3
	baz=249						
Y34A	**Reagan Ranch,**	86.90	54	P	P	00 19 10.9	+0.9
	baz=250						
HIA	**Hailar**	87.02	323	PFAKE		00 19 20.0	+10
HIA				LR	LR		
	comp=Z,219nm,19.0s						
X34A	**Smith Ranch, M**	87.06	53	P	P	00 19 12.1	+1.3
	baz=249						
Z35A	**Perchaven, San**	87.08	54	P	P	00 19 11.0	+0.2
	baz=250,SNR=6.0						
437A	**Phantom Ranch,**	87.12	57	P	P	00 19 12.1	+1.0
	baz=251						
V33A	**Lossen Ranch,**	87.15	52	P	P	00 19 11.7	+0.5
	baz=249						
236A	**Katherine and**	87.20	56	P	P	00 19 11.6	+0.1
	baz=250						
W34A	**Bridge Creek,**	87.33	53	P	P	00 19 13.0	+0.9
	baz=249						
136A	**Ennis**	87.36	55	P	P	00 19 12.4	+0.1
	baz=250						
Y35A	**Marietta**	87.44	54	P	P	00 19 13.2	+0.5
	baz=250						
KULM	**Kulim**	87.46	276	PFAKE		00 19 20.0	+6.8
KULM				LR	LR		
	comp=Z,172nm,20.0s						
337A	**Centerville**	87.49	57	P	P	00 19 13.7	+0.8
	baz=251,SNR=5.1						
438A	**Sam Houston St**	87.64	57	P	P	00 19 15.1	+1.4
	baz=251						
X35A	**Drake**	87.66	54	P	P	00 19 13.8	+0.1
	baz=250						
Z36A	**Blue Ridge**	87.70	55	P	P	00 19 13.4	-0.5
	baz=250						
R32A	**Long Quarter,**	87.77	49	P	P	00 19 14.7	+0.6
	baz=249						
237A	**Washetta, Mont**	87.78	56	P	P	00 19 15.1	+0.8
	baz=251						
F26A	**Lodgepole**	87.91	41	P	P	00 19 15.6	+0.9
	baz=246						
U34A	**Anderson Ranch**	87.93	51	P	P	00 19 15.3	+0.3
	baz=250						
GYA	**Guiyang**	87.94	298	*e*P	P	00 19 16.3	+1.0
GYA				pP	pP	00 19 25.0	0.0
GYA				PP	**PP**	00 22 45.0	+3.0
GYA				SKS	**SKSac**	00 29 40.5	-1.6
GYA				S	**S**	00 29 56.5	-0.6
GYA				pmax	pmax		
	comp=Z,20nm,1.0s						
GYA				pmax	pmax		
	comp=Z,120nm,6.3s						
O31A	**Woolen Ranch,**	87.95	48	P	P	00 19 15.8	+0.8
	baz=248						
338A	**Crockett**	87.97	57	P	P	00 19 16.0	+0.8
	baz=251						
W35A	**Tecumseh**	88.00	53	P	P	00 19 16.2	+0.9
	baz=250						
137A	**Heron Place, G**	88.01	56	P	P	00 19 16.4	+1.0
	baz=251						
D25A	**Fairfield**	88.04	40	P	P	00 19 16.7	+1.4
	baz=245						
INK	**Inuvik**	88.07	14	P	P	00 19 15.1	+0.3
	comp=Z,3.9nm,0.8s,baz=203,slow=5.0,SNR=7.3						
INK	**Inuvik**	88.07	14	*e*P	P	00 19 15.3	+0.5
DGMT	**Dagmar**	88.07	39	P	P	00 19 15.7	+0.4
	baz=245						
DGMT	**Dagmar**	88.07	39	*e*P	P	00 19 17.2	+1.9
	comp=Z,26nm,0.8s						
DGMT				LR	LR		
	comp=Z,521nm,20.0s						
Q32A	**Meitler Ranch,**	88.08	49	P	P	00 19 16.4	+0.7
	baz=249						
R33A	**Olander Ranch,**	88.26	50	P	P	00 19 17.1	+0.6
	baz=249						
P32A	**Huiting Farm,**	88.28	48	P	P	00 19 17.5	+1.0
	baz=249						
E26A	**Carlson Angus**	88.30	41	P	P	00 19 17.7	+1.2
	baz=246						
Z37A	**Pogue Cattle C**	88.32	55	P	P	00 19 17.2	+0.4
	baz=251						
C25A	**Freed Ranch, W**	88.32	39	P	P	00 19 18.1	+1.6
	baz=245						
238A	**Jacksonville**	88.33	56	P	P	00 19 18.3	+1.4
	baz=251						
T34A	**McClaskey Farm**	88.40	51	P	P	00 19 18.0	+0.8
	baz=250						
W36A	**Wetumka**	88.49	53	P	P	00 19 18.7	+1.1
	baz=250						
D26A	**Manning**	88.54	40	P	P	00 19 18.7	+1.1
	baz=246						
339A	**Huntington**	88.57	57	P	P	00 19 19.7	+1.7
	baz=251						
Y37A	**Hugo**	88.58	54	P	P	00 19 19.0	+1.0
	baz=251						
Q33A	**Connelly Farm,**	88.61	49	P	P	00 19 18.7	+0.6
	baz=249						
NATX	**Nacogdoches**	88.62	57	P	P	00 19 18.7	+0.4
	baz=251						
NATX	**Nacogdoches**	88.62	57	PFAKE		00 19 30.0	+12
NATX				LR	LR		
	comp=Z,378nm,20.0s						
M31A	**Lambtecht Ranc**	88.64	47	P	P	00 19 19.9	+1.6
	baz=248						
K30A	**Basset**	88.69	45	P	P	00 19 19.0	+0.6
	baz=248						
S34A	**Willow Spring**	88.69	50	P	P	00 19 19.0	+0.5
	baz=250						
I29A	**Vivian Onida**	88.73	44	P	P	00 19 19.3	+0.7
	baz=248						
O32A	**Brockman Farm,**	88.74	48	P	P	00 19 19.7	+1.0
	baz=249						
R34A	**Isabella, Hill**	88.80	50	P	P	00 19 19.8	+0.8
	baz=250						
E27A	**Carson**	88.85	41	P	P	00 19 19.1	0.0
	baz=247						
239A	**Gary**	88.86	56	P	P	00 19 19.8	+0.4
	baz=251						
P33A	**Williams Farm,**	88.87	49	P	P	00 19 19.9	+0.6
	baz=249						
T35A	**Sooner Cattle**	88.87	51	P	P	00 19 19.3	-0.1
	baz=250						
HHC	**Hu-ho-hao-te**	88.88	313	*e*P	P	00 19 20.8	+1.4
HHC				pmax	pmax		
	comp=Z,39nm,1.3s						
HHC				pmax	pmax		
	comp=Z,160nm,7.8s						
YAK	**Yakutsk**	88.92	337	PFAKE		00 19 30.0	+11
YAK				LR	LR		
	comp=Z,176nm,21.0s						
X37A	**Clayton**	88.97	54	P	P	00 19 21.1	+1.2
	baz=251						
J30A	**Dallas**	89.02	45	P	P	00 19 20.4	+0.5
	baz=248						
H29A	**Onida**	89.02	43	P	P	00 19 20.7	+0.8
	baz=248						
C26A	**Wahner Farm, P**	89.08	40	P	P	00 19 21.0	+0.8
	baz=246						
TUL1	**Leonard**	89.08	52	P	P	00 19 21.0	+0.7
	baz=251						
W37B	**Quinton**	89.10	53	P	P	00 19 21.6	+1.1
	baz=251						
340A	**Bronson**	89.14	57	P	P	00 19 21.7	+1.0
	baz=252						
Q34A	**Chapman**	89.24	49	P	P	00 19 21.2	+0.1
	baz=250						
S35A	**Otter Creek Ra**	89.28	51	P	P	00 19 21.7	+0.4
	baz=250						
T36A	**Boggs Farm, Ca**	89.40	51	P	P	00 19 22.6	+0.8
	baz=250						
X38A	**Whitesboro**	89.42	54	P	P	00 19 23.0	+1.0
	baz=251						
240A	**Hunter Patters**	89.43	57	P	P	00 19 22.9	+0.8
	baz=252						
E28A	**Huff**	89.46	41	P	P	00 19 22.2	+0.3
	baz=247						
KSU1	**Kansas State U**	89.54	49	PFAKE		00 19 30.0	+7.5
KSU1				LR	LR		
	comp=Z,371nm,20.0s						
V37A	**Hulbert**	89.57	53	P	P	00 19 23.3	+0.6
	baz=251						
R35A	**Emporia Munici**	89.58	50	P	P	00 19 24.1	+1.4
	baz=250						
U37A	**Salina**	89.76	52	P	P	00 19 24.4	+0.9
	baz=251						
140A	**Cam and Jess,**	89.77	56	P	P	00 19 24.5	+0.8
	baz=252						
W38A	**Poteau**	89.79	54	P	P	00 19 24.6	+0.9
	baz=251						
S36A	**Lake Cedric, C**	89.83	51	P	P	00 19 24.5	+0.7
	baz=251						
542A	**Morse**	89.83	59	P	P	00 19 24.7	+0.7
	baz=252						
YKA	**Yellowknife Ar**	89.91	23	P	P	00 19 23.6	0.0
	comp=Z,5.9nm,0.9s,baz=240,slow=4.6,SNR=33						
YKA	**Yellowknife Ar**	89.91	23	P	P	00 19 23.6	0.0
YKA				pmax	pmax		
	comp=Z,5.0nm,0.9s						
YKB5	**Yellowknife Ar**	89.91	23	*e*P	P	00 19 22.8	-0.7
YKW3	**Yellowknife Ar**	89.94	23	*e*P	P	00 19 23.9	+0.2
V38A	**Canehill**	90.13	53	P	P	00 19 25.8	+0.5
	baz=251						
T37A	**Cheneyville 18**	90.14	52	P	P	00 19 26.0	+0.7
	baz=251						
Q36A	**Arnold C. Orve**	90.34	50	P	P	00 19 26.9	+0.7
	baz=251						
MIAR	**Mount Ida**	90.36	54	PFAKE		00 19 40.0	+14
MIAR				LR	LR		
	comp=Z,274nm,19.0s						
W39A	**Magazine**	90.40	54	P	P	00 19 27.3	+0.7
	baz=252						
S37A	**Fort Scott**	90.42	51	P	P	00 19 27.2	+0.7
	baz=251						
T38A	**Diamond**	90.59	52	P	P	00 19 27.5	+0.1
	baz=252						
R37A	**Teagarden Farm**	90.59	50	P	P	00 19 28.2	+0.8
	baz=251						
A28A	**Rude Farm, Bot**	90.63	39	P	P	00 19 28.0	+0.7
	baz=248						
V39A	**Pettigrew**	90.71	53	P	P	00 19 28.3	+0.3
	baz=252						
TEIG	**Tepich**	90.72	69	PFAKE		00 19 40.0	+12
TEIG				LR	LR		
	comp=Z,147nm,19.0s						
Y41A	**Eaglette Beard**	90.92	55	P	P	00 19 29.9	+0.9
	baz=252						
W40A	**Ferguson Farm,**	90.96	54	P	P	00 19 30.2	+1.1
	baz=252						
ECSD	**EROS Data Cent**	91.12	45	P	P	00 19 30.3	+0.6
	baz=250						
ECSD	**EROS Data Cent**	91.12	45	*e*P	P	00 19 30.4	+0.6
ECSD				LR	LR		
	comp=Z,545nm,21.0s						
R38A	**Fenwick Farm,**	91.24	51	P	P	00 19 30.1	-0.3
	baz=252						
V40A	**Witts Springs**	91.33	53	P	P	00 19 31.0	0.0
	baz=252						
P37A	**Lathrop**	91.36	49	P	P	00 19 30.9	0.0
	baz=252						
X301	**Greenbrier Sit**	91.49	54	*e*P	P	00 19 32.7	+1.1
S39A	**Bolivar**	91.53	51	P	P	00 19 32.1	+0.4
	baz=252						
X201	**Greenbrier Sit**	91.54	54	*e*P	P	00 19 34.2	+2.4
W41B	**Gary Mavity, V**	91.59	54	P	P	00 19 32.5	+0.5
	baz=253						
WHAR	**Wooly Hollow**	91.59	54	*e*P	P	00 19 34.0	+1.9
CD2	**Chengdu**	91.69	301	P	P	00 19 31.8	-0.9
CD2				PP	**PP**	00 23 10.3	-1.5
CD2				SKS	**SKSac**	00 30 02.0	-1.7
CD2				S	**S**	00 30 30.8	-0.8
CD2				sS	sS	00 30 45.8	-1.9
CD2				SS	**SS**	00 36 39.5	-0.1
CD2				pmax	pmax		
	comp=Z,20nm,0.5s						
CD2				pmax	pmax		
	comp=Z,270nm,5.6s						
CD2				LR	LR		
	comp=Z,1μm,14.2s						
CD2				LR	LR		
	comp=Z,240nm,12.3s						

Q38A	Cooks Store, C	91.70	50	P	P	00 19 31.9	-0.6
	baz=252						
C31A	Landman Farms,	91.79	41	P	P	00 19 32.9	+0.2
	baz=249						
N37A	Lee Fairs, Mou	91.83	48	P	P	00 19 33.9	+0.8
	baz=252						
A30A	Hoffart Farm,	91.84	40	P	P	00 19 33.5	+0.6
	baz=249						
V41A	Mountainview	91.85	54	P	P	00 19 33.7	+0.4
	baz=253						
FFC	Flin Flon	91.93	33	PFAKE		00 19 40.0	+6.8
FFC				LR	LR		
	comp=Z,290nm,21.0s						
R39A	Chumby, Stover	91.93	51	P	P	00 19 33.4	-0.2
	baz=252						
P38A	Dawn	91.97	50	P	P	00 19 33.7	-0.1
	baz=252						
T40A	Mansfield	91.97	52	P	P	00 19 34.1	+0.2
	baz=253						
F33A	5 Mile Ranch,	92.04	43	P	P	00 19 34.4	+0.5
	baz=250						
S40A	Lebanon	92.12	52	P	P	00 19 35.0	+0.5
	baz=253						
M37A	Trindle Farm,	92.14	48	P	P	00 19 35.1	+0.6
	baz=252						
O38A	Galt	92.16	49	P	P	00 19 35.3	+0.7
	baz=252						
V42A	Cord	92.45	54	P	P	00 19 36.7	+0.7
	baz=253						
P39B	Salisbury	92.50	50	P	P	00 19 36.2	+0.1
	baz=252						
T41A	Mountain View	92.52	52	P	P	00 19 36.9	+0.6
	baz=253						
CMAR	Chiang Mai Arr	92.54	288	P	P	00 19 37.7	+0.8
	comp=Z,0.8nm,0.4s,baz=86,slow=2.0,SNR=7.0						
CMAR	Chiang Mai Arr	92.54	288	*i* P	P	00 19 40.5	+3.7
CMAR				pmax	pmax		
	comp=Z,1.0nm,0.4s						
B32A	Ashes, Strandq	92.75	41	P	P	00 19 37.7	+0.5
	baz=250						
M38A	Pleasantville	92.76	48	P	P	00 19 37.9	+0.6
	baz=252						
SYO	Syowa Base	92.80	191	⇑*i* P	P	00 19 35.0	-2.1
SYO	Syowa Base	92.80	191	⇓*ep*P	P	00 19 40.6	+3.5
Q40A	Laux Farm, Aux	92.86	50	P	P	00 19 38.2	+0.4
	baz=253						
A32A	Rocking H Ranc	92.95	40	P	P	00 19 38.5	+0.4
	baz=250						
P40A	Paris	93.03	50	P	P	00 19 38.9	+0.3
	baz=253						
VNA3	Neumayer Olymp	93.07	175	P	P	00 19 38.3	0.0
N39A	Derby Farms, D	93.10	49	P	P	00 19 39.6	+0.7
	baz=253						
SNAA	Sanae	93.12	177	P	P	00 19 38.3	-0.3
SNAA	Sanae	93.12	177	*e*P	P	00 19 38.7	+0.1
SNAA	Sanae	93.12	177	*e*P	P	00 19 38.7	+0.1
O40A	La Belle	93.33	49	P	P	00 19 40.4	+0.4
	baz=253						
I37A	Lemond, Waseca	93.41	45	P	P	00 19 41.3	+1.0
	baz=252						
A33A	Warroad	93.64	40	P	P	00 19 40.9	-0.4
	baz=251						
VNA1	Neumayer--Stat	93.76	175	P	P	00 19 41.9	+0.4
ULM	Lac du Bonnet	93.77	39	P	P	00 19 40.5	-1.3
	comp=Z,2.0nm,0.6s,baz=264,slow=6.2,SNR=2.8						
ULM				LR	LR	00 56 27.0	
	comp=Z,396nm,19.9s,baz=282,slow=32						
F36A	Milaca	93.89	44	P	P	00 19 42.7	+0.3
	baz=252						
Y46A	Houston	93.91	56	P	P	00 19 43.5	+0.7
	baz=254						
B34A	Aery, Baudette	93.97	41	P	P	00 19 41.7	-1.0
	baz=252						
C35A	Jirik Farms, M	94.15	42	P	P	00 19 42.6	-1.0
	baz=252						
I38A	Scanlan Farm,	94.15	46	P	P	00 19 43.3	-0.4
	baz=253						
SPMN	Marine on St.	94.18	44	P	P	00 19 43.8	0.0
	baz=253						
ULN	Ulaanbaatar	94.27	318	*e*P	P	00 19 43.4	-0.9
ULN				pmax	pmax		
	comp=Z,1.0nm,1.0s						
B35A	Bob, Littlefor	94.51	41	P	P	00 19 45.0	-0.3
	baz=252						
D36A	Goodland	94.52	42	P	P	00 19 44.9	-0.5
	baz=253						
SONM	Songino Array	94.68	318	P	P	00 19 47.6	+1.4
	comp=Z,0.4nm,0.5s,baz=92,slow=4.3,SNR=2.3						
TIXI	Tiksi	94.80	344	*e*P	P	00 19 44.6	-1.4
TIXI				pmax	pmax		
	comp=Z,2.0nm,1.0s						
PLAL	Pickwick Lake	94.83	55	*e*P	P	00 19 48.6	+1.7
C36A	Pine Crest Far	94.90	42	P	P	00 19 46.2	-0.8
	baz=253						
D37A	Cotton	94.99	43	P	P	00 19 47.4	-0.1
	baz=253						
HDIL	Hopedale	95.35	50	P	P	00 19 49.5	+0.2
	baz=255						
EYMN	Ely	95.82	42	P	P	00 19 51.1	-0.1
	baz=254						
C39A	Grand Marais	96.67	42	P	P	00 19 54.3	-0.8
	baz=255						
COWI	Conover	96.89	44	*e*P	P	00 19 55.5	-0.7
COWI				LR	LR		
	comp=Z,496nm,20.0s						
TLY	Talaya	97.46	321	PFAKE		00 20 10.0	+11
TLY				LR	LR		
	comp=Z,102nm,19.0s						
TKL	Tuckaleechee C	98.40	55	LR	LR	00 57 02.9	
	comp=Z,149nm,21.3s,baz=260,slow=31						
MKAR	Makanchi Array	110.67	315	PKiKP	PKiKP	00 24 57.2	-0.5
	comp=Z,0.3nm,0.6s,baz=34,slow=0.5,SNR=3.5						
KSH	Kashi	115.34	307	*e*PKP	PKPdf	00 25 09.3	+2.4
KSH				*es*PKP		00 25 23.8	
KSH				PKS	PKSdf	00 28 45.0	+1.3
KSH				SKS	SKSdf	00 32 16.5	-0.7
KSH				AMB	AMB		
	comp=Z,45nm,4.6s						
KSH				LR	LR		
	comp=Z,120nm,6.0s						
KSH				LR	LR		
	comp=Z,71nm,4.2s						
KSH				LR	LR		
	comp=Z,130nm,5.7s						
ARCES	ARCESS Array B	124.40	352	PKP	PKPdf	00 25 23.6	+0.3
	comp=Z,3.0nm,0.8s,baz=38,slow=1.6,SNR=9.4						
GEYT	Alibeck	129.37	307	PKP	PKPdf	00 25 35.0	+1.2
	comp=Z,0.9nm,0.8s,baz=150,slow=3.3,SNR=3.9						
FINES	FINESS Array B	131.73	348	PKP	PKPdf	00 25 37.5	0.0
	comp=Z,1.4nm,0.7s,baz=20,slow=6.1,SNR=5.6						
FINES	FINESS Array B	131.73	348	PKIKP	PKPdf	00 25 37.5	0.0
FINES				pmax	pmax		
	comp=Z,2.0nm,0.8s						
OBN	Obninsk	133.91	337	*e*PKIKP	PKPdf	00 25 43.5	+1.8
OBN				*i*		00 28 12.9	
OBN				pmax	pmax		
	comp=Z,3.0nm,0.9s						
KIV	Kislovodsk	138.03	320	*e*PKIKP	PKPdf	00 25 51.8	+1.9
KIV				pmax	pmax		
	comp=Z,4.0nm,1.0s						
AKASG	Malin Array Be	140.14	338	PKP	PKPdf	00 25 55.3	+1.9
	comp=Z,2.3nm,0.9s,baz=26,slow=2.5,SNR=5.6						
AKASG	Malin Array Be	140.14	338	PKIKP	PKPdf	00 25 55.3	+1.9
AKASG				pmax	pmax		
	comp=Z,1.0nm,0.6s						
KWP	Kalwaria Pacla	143.22	342	⇑*i* P	PKPab	00 25 54.5	-0.2
KWP	Kalwaria Pacla	143.22	342	⇑PKIKP	PKPab	00 25 54.5	-0.2
CLL	Collm	143.60	353	*i* PKPdf	PKPbc	00 25 57.0	0.0
	comp=Z,5.0nm,0.8s						
CLL				*i*		00 25 58.7	
CLL				*i*		00 26 08.6	
CLL				LmV		01 27 00.0	
	comp=Z,100nm,18.6s						
CLL	Collm	143.60	353	*i* PKIKP	PKPbc	00 25 57.0	0.0
CLL				pmax	pmax		
	comp=Z,5.0nm,0.8s						
STHS	Stebnicka Huta	143.82	344	*e*PKIKP	PKPbc	00 25 58.0	+0.3
STHS	Stebnicka Huta	143.82	344	*e*PKP	PKPbc	00 25 57.9	+0.2
BRG	Berggiesshubel	143.91	352	*e*PKP	PKPbc	00 25 58.2	+0.3
	comp=Z,2.8nm,0.9s						
BRG	Berggiesshubel	143.91	352	*e*PKIKP	PKPbc	00 25 58.2	+0.3
BRG				pmax	pmax		
	comp=Z,3.0nm,0.9s						
DPC	Dobruska-Polom	144.05	349	*e*PKP	PKPbc	00 25 59.6	+1.2
DPC				*ex*	x	00 26 13.8	
DPC	Dobruska-Polom	144.05	349	*e*PKIKP	PKPbc	00 25 59.6	+1.2
DPC				*e*		00 26 13.8	
PVCC	Panska Ves	144.16	351	*e*PKP	PKPbc	00 25 59.6	+0.9
PVCC	Panska Ves	144.16	351	*e*PKIKP	PKPbc	00 25 59.6	+0.9
BURAR	Bucovina Array	144.17	338	⇓*i* P	PKPdf	00 26 00.7	-0.2
BURAR	Bucovina Array	144.17	338	⇓PKIKP	PKPdf	00 26 00.7	-0.2
OKC	Ostrava-Krasne	144.18	347	*e*PKP	PKPbc	00 25 59.8	+1.0
OKC	Ostrava-Krasne	144.18	347	*e*PKIKP	PKPbc	00 25 59.8	+1.0
CRVS	Cervenica-Dubn	144.23	343	*e*PKIKP	PKPbc	00 25 59.5	+0.5
CRVS	Cervenica-Dubn	144.23	343	*e*PKP	PKPbc	00 25 59.5	+0.5
UZH	Uzhgorod	144.24	342	*e*PKIKP	PKPbc	00 25 59.0	0.0
UZH				*e*		00 26 07.4	
UZH				*e*		00 26 14.2	
MORC	Moravsky Berou	144.37	348	⇑*i* P	PKPab	00 25 59.4	+0.3
MORC	Moravsky Berou	144.37	348	⇑PKIKP	PKPab	00 25 59.4	+0.3
BEBN	Eben Emael	144.47	1	PKP	PKPbc	00 26 00.0	+0.4
LANS	Liptovska Anna	144.52	345	*e*PKIKP	PKPdf	00 26 01.3	-0.1
LANS	Liptovska Anna	144.52	345	*e*PKP	PKPdf	00 26 01.3	-0.1
TESR	Tescani	144.55	336	⇑*i* P	PKPdf	00 26 01.2	-0.2
MEM	Membach	144.67	1	PKP	PKPab	00 26 00.4	+0.2
PRU	Pruhonice	144.69	351	*e*PKP	PKPbc	00 26 00.8	+0.4
PRU				*ex*	x	00 26 16.2	
PRU	Pruhonice	144.69	351	*e*PKIKP	PKPbc	00 26 00.8	+0.4
PRU				*e*		00 26 16.2	
TLCR		144.70	332	⇑*i* P	PKPdf	00 26 02.3	+0.6
TLCR		144.70	332	⇑PKIKP	PKPdf	00 26 02.4	+0.7
SNF	Seneffe	144.72	3	PKP	PKPbc	00 26 00.8	+0.3
NKC	Novy Kostel	144.72	353	*e*PKP	PKPdf	00 26 01.5	-0.1
NKC	Novy Kostel	144.72	353	*e*PKIKP	PKPdf	00 26 01.5	-0.1
GOPC	GO Pecny, Ondr	144.73	351	*e*PKP	PKPbc	00 26 01.0	+0.4
GOPC	GO Pecny, Ondr	144.73	351	*e*PKIKP	PKPbc	00 26 01.0	+0.4
BCLA	Clavier	144.84	1	PKP	PKPbc	00 26 01.3	+0.4
KECS	Kecovo	144.88	344	*e*PKIKP	PKPdf	00 26 02.1	+0.2
KECS	Kecovo	144.88	344	*e*PKP	PKPdf	00 26 02.1	+0.2
ARCR	ARCALIA	144.93	339	⇑*i* P	PKPdf	00 26 02.0	-0.1
VRAC	Vranov	145.00	349	⇑*i* P	PKPab	00 26 01.4	0.0
VRAC	Vranov	145.00	349	⇑PKIKP	PKPab	00 26 01.4	0.0
CFR	Carcaliu	145.01	333	⇑*i* P	PKPdf	00 26 02.8	+0.6
CFR	Carcaliu	145.01	333	⇑PKIKP	PKPdf	00 26 02.8	+0.6
VRI	Vrincioaia	145.05	335	⇑*i* P	PKPdf	00 26 03.0	+0.7
VRI	Vrincioaia	145.05	335	⇑PKIKP	PKPdf	00 26 03.0	+0.7
PLOR	Plostina	145.09	335	⇓*i* P	PKPdf	00 26 03.5	+1.1
PLOR	Plostina	145.09	335	⇓PKIKP	PKPdf	00 26 03.5	+1.1
DOU	Dourbes	145.15	2	PKP	PKPbc	00 26 02.1	+0.3
TREC	Trest	145.21	350	*e*PKP	PKPab	00 26 02.6	+0.4
TREC	Trest	145.21	350	*e*PKIKP	PKPab	00 26 02.6	+0.4
TIRR	Tirgusor	145.44	332	⇑*i* P	PKPab	00 26 04.6	+1.4
TIRR	Tirgusor	145.44	332	⇑PKIKP	PKPab	00 26 04.6	+1.4
DOPR	Dopca	145.49	337	⇓*i* P	PKPab	00 26 04.1	+0.7
PSZ	Piszkesteto	145.56	344	⇓*i* P	PKPab	00 26 04.4	+0.8
PSZ	Piszkesteto	145.56	344	*e*PKPbc	PKPab	00 26 04.1	+0.5
PSZ	Piszkesteto	145.56	344	⇓PKIKP	PKPab	00 26 04.4	+0.8
PSZ	Piszkesteto	145.56	344	*e*PKPdf	PKPdf	00 26 00.8	-2.4
PSZ				LR	LR		
	comp=Z,164nm,22.0s						
SMOL	Smolenice	145.59	347	*e*PKP2	PKPab	00 26 04.5	+0.9
SMOL	Smolenice	145.59	347	*e*PKP	PKPab	00 26 04.5	+0.9
WLF	Walferdange	145.61	1	PKP	PKPab	00 26 04.0	+0.4
WLF	Walferdange	145.61	1	*e*PKP2	PKPab	00 26 04.0	+0.4
WLF				MLR	MLR		
	comp=Z,192nm,20.0s						
WLF	Walferdange	145.61	1	*e*PKPab	PKPab	00 26 04.0	+0.4
WLF				LR	LR		
	comp=Z,192nm,20.0s						
KMBO	Kilima Mbogo	145.62	245	PKPbc	PKPbc	00 26 04.8	0.0
	comp=Z,3.7nm,0.7s,baz=67,slow=4.6,SNR=7.6						
KMBO	Kilima Mbogo	145.62	245	PKPbc	PKPbc	00 26 04.8	0.0
KMBO				LR	LR		
	comp=Z,204nm,21.0s						
KHC	Kasperske Hory	145.67	352	*e*PKP	PKPbc	00 26 04.1	+0.5
KHC				*ex*	x	00 26 12.6	
KHC	Kasperske Hory	145.67	352	*e*PKP2	PKPbc	00 26 04.1	+0.5
KHC	Kasperske Hory	145.67	352	*e*PKPab	PKPdf	00 26 03.4	+0.1
MLR	Muntele Rosu	145.67	336	⇑*i* P	PKPdf	00 26 03.5	-0.1
MLR	Muntele Rosu	145.67	336	⇑PKP2	PKPdf	00 26 03.5	-0.1
ISR	Istrita	145.73	335	⇑*i* P	PKPbc	00 26 04.1	+0.1
ISR	Istrita	145.73	335	⇑PKP2	PKPbc	00 26 04.1	+0.1
DRGR		145.74	340	⇑*i* P	PKPdf	00 26 03.6	0.0
DRGR		145.74	340	⇑PKP2	PKPdf	00 26 03.6	0.0
GERES	GERESS Array B	145.93	352	PKPbc	PKPbc	00 26 04.8	+0.3
	comp=Z,6.8nm,0.7s,baz=23,slow=3.6,SNR=86						
BRTR	Keskin Array B	145.99	321	PKPbc	PKPbc	00 26 05.1	0.0
	comp=Z,9.3nm,0.8s,baz=114,slow=2.1,SNR=34						
MSAB	Monastry St. A	146.00	332	⇑*i* P	PKPab	00 26 06.5	+1.2
VOIR		146.07	336	⇓*i* P	PKPbc	00 26 05.1	+0.1
VOIR		146.07	336	⇓PKP2	PKPbc	00 26 05.1	+0.1
SULR		146.21	334	⇓*i* P	PKPbc	00 26 05.8	+0.5
ARR	Arges	146.28	337	⇑*i* P	PKPab	00 26 06.9	+0.5
LANF	Langenberg	146.28	359	PKP	PKPbc	00 26 05.4	-0.1
STU	Stuttgart	146.44	357	*e*PKIKP	PKPdf	00 26 02.7	-1.9
STU	Stuttgart	146.44	357	*e*PKPdf	PKPdf	00 26 02.7	-1.9
LOT	Lotru	146.54	338	⇑*i* P	PKPab	00 26 07.3	-0.2
SOP	Sopron	146.56	348	*e*PKPdf	PKPbc	00 26 07.0	+0.7
MOA	Molln	146.82	351	*i* pPKPdf	PKPbc	00 26 07.7	+0.6
	comp=Z,12nm,1.1s						
WLS	Welschbruch	146.86	359	PKP	PKPbc	00 26 07.5	+0.3
BFO	Black Forest	146.92	358	*i* PKP2	PKPbc	00 26 07.8	+0.4
BFO	Black Forest	146.92	358	*e*PKPab	PKPbc	00 26 06.8	-0.5
BFO				LR	LR		
	comp=Z,137nm,21.0s						
ECH	Echery	147.06	359	PKP	PKPbc	00 26 08.1	+0.3
BZS	Buzias	147.13	340	⇓*i* P	PKPdf	00 26 04.9	-1.0
BZS	Buzias	147.13	340	⇓PKIKP	PKPdf	00 26 04.9	-1.0
ARSA	Arzberg	147.18	349	*i* pPKPdf	PKPbc	00 26 08.4	+0.2
	comp=Z,13nm,1.5s						
MOF	Molkenrain	147.43	359	PKP	PKPdf	00 26 07.3	+0.9
RETA	Reutte	147.61	355	*i* sPKPdf	PKPbc	00 26 09.8	+0.5
	comp=Z,16nm,1.2s,SNR=6.2						
KBA	Koelnbreinsper	147.71	351	*i* pPKPdf	PKPbc	00 26 09.7	-0.1
	comp=Z,4.9nm,0.5s						
MOTA	Moosalm	147.72	354	*i* pPKPdf	PKPbc	00 26 09.9	+0.1
	comp=Z,9.4nm,0.9s,SNR=9.7						
SOKA	Soboth	147.82	349	*i* pPKPdf	PKPbc	00 26 09.9	-0.1
	comp=Z,14nm,1.0s,SNR=8.9						
MDVR	Moldovita	147.84	340	⇑*i* P	PKPbc	00 26 11.1	+1.0
DAVA	Damuels	147.88	356	*i* sPKPdf	PKPbc	00 26 10.8	+0.5
	comp=Z,18nm,1.0s,SNR=8.9						
LOMF	Lomont	147.93	360	PKP	PKPbc	00 26 10.3	0.0
FETA	Feichten	148.07	355	*i* sPKPdf	PKPbc	00 26 11.3	+0.6
	comp=Z,15nm,1.2s,SNR=9.3						
MYKA	Terra Mystica	148.10	351	*i* pPKPdf	PKPbc	00 26 10.3	-0.4
	comp=Z,12nm,1.2s,SNR=5.1						
ABTA	Abfaltersbach	148.15	352	*i* pPKPdf	PKPbc	00 26 10.7	-0.2
	comp=Z,19nm,1.0s,SNR=8.2						
LJU	Ljubljana	148.52	349	*i* PKPdf	PKPbc	00 26 12.1	+0.3
VISS	Visnje	148.70	349	*i* PKPdf	PKPbc	00 26 12.3	+0.1
TUE	Stuetta	148.72	356	*e*PKPab	PKPbc	00 26 12.6	+0.1
TUE				LR	LR		
	comp=Z,147nm,21.0s						
JAVS	Javornik	148.75	350	*i* PKPdf	PKPbc	00 26 11.4	-1.1
BOJS	Bojanci	148.91	348	*i* PKPdf	PKPdf	00 26 09.1	+0.4
ISP	Isparta	149.07	321	⇓*i* P	PKPbc	00 26 13.4	-0.2
ISP	Isparta	149.07	321	⇓PKP2	PKPbc	00 26 13.4	-0.2
AGO	Saint Agoulin	149.09	5	PKP	PKPbc	00 26 13.7	+0.5
BLY	Banja Luka	149.19	345	⇑*i* P	PKPbc	00 26 14.0	+0.5
PLDF	La Plantade	149.21	4	PKP	PKPbc	00 26 14.0	+0.4
PYM	Petit Puy Mans	149.38	5	PKP	PKPbc	00 26 14.6	+0.6
LBL	Lubilhac	149.92	5	PKP	PKPbc	00 26 15.8	+0.4
SSB	Saint Sauveur	149.95	3	*e*PKHKP	PKPbc	00 26 13.2	-2.2
SSB				*e*		00 26 16.4	
SSB				MLR	MLR		
	comp=Z,306nm,19.0s						
SSB	Saint Sauveur	149.95	3	*e*PKPbc	PKPbc	00 26 13.2	-2.2
SSB				*e*PKPab	PKiKP	00 26 16.4	0.0
SSB				LR	LR		
	comp=Z,306nm,19.0s						
OG26	St.-Nazaire-De	150.68	2	PKP	PKPbc	00 26 18.2	+1.0
CALN	Calern	151.53	360	PKP	PKPbc	00 26 19.3	0.0
REVF	Revere	151.53	359	PKP	PKPbc	00 26 19.6	+0.4
ESDC	Sonseca Array	153.91	19	PKPbc	PKPbc	00 26 24.8	+0.1
	comp=Z,0.2nm,0.4s,baz=328,slow=2.7,SNR=5.6						
ESDC				PKPab	PKPab	00 26 36.6	-1.1
	comp=Z,2.0nm,0.7s,baz=327,slow=3.3,SNR=14						
KEST	Kesra	159.39	354	PKPab	PKPab	00 27 02.0	+0.7
	comp=Z,2.0nm,0.9s,baz=1.2,slow=3.4,SNR=7.0						
DBIC	Dimbokro	165.94	126	PKPab	PKPab	00 27 30.4	-0.3
	comp=Z,4.5nm,1.1s,baz=261,slow=3.7,SNR=3.6						
TORD	Torodi Ar. Bea	174.84	113	PKP	PKPdf	00 26 34.5	-1.2
	comp=Z,1.0nm,1.0s,baz=39,slow=2.2,SNR=4.6						
TORD				PKPab	PKPab	00 28 09.2	-0.9
	comp=Z,2.6nm,0.8s,baz=256,slow=4.6,SNR=11						
TORD				PP	PP	00 32 06.9	+4.2
	comp=Z,1.3nm,1.0s,baz=238,slow=8.5,SNR=3.9						

JMA 30 00:18:41.5±0.2, 39°.75N×143°.51E, h19km±4km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	Tanohata	1.28	279	P	Pn	00 19 04.5	+0.1
JTH				*e*S	Sn	00 19 21.0	0.0
MIYJ	Miyakonagasawa	1.32	263	P	Pn	00 19 05.0	+0.1
MIYJ				*e*S	Sb	00 19 22.1	0.0
JOM	Ohasama	1.73	262	P	Pb	00 19 11.7	-1.0
JOM				*e*S	Sb	00 19 33.2	-0.9
JMK	Ichinoseki	1.95	247	P	Pn	00 19 14.2	+0.7
JTM	Tenmabayashi	2.14	300	*e*S	Sn	00 19 43.2	+1.1
JRG	Rokugo	2.25	262	P	Pn	00 19 19.1	+1.4
JAH	Hinai	2.25	282	P	Pn	00 19 19.1	+1.4
JAH				*e*S	Sn	00 19 45.8	+0.8
JOT	Ohata	2.48	312	*e*S	Sn	00 19 53.2	+2.5
JYK	Kaneyama	2.58	252	P	Pn	00 19 24.0	+1.7
JNBK	Urakawa-nobuka	2.59	347	*e*S	Sn	00 19 53.7	+0.4

ISCJB ***30*** *00:19:29.0±0.5, 39°.17N±0°.03×28°.93E±0°.04, h12km±5km, Error ellipse: s-maj=6.0km s-min=5.0km az=34.0*
ISK ***30*** *00:19:28.1, 39°.15N×28°.92E, h9km, MD2.6*
CSEM ***30*** *00:19:29.0±0.1, 39°.17N×28°.92E, h12km, MD2.6, Error ellipse: s-maj=3.4km s-min=2.8km az=85.0*
DDA ***30*** *00:19:30.3, 39°.08N×28°.99E, h7km, Md2.6*

ISC 30 00:19:28.6±1.1, 39°.16N±0°.03×28°.95E±0°.03, h13km±12km, n22, σ0s24/32, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.22	236	P	Pb	00 19 35.0	+0.6
DEMI				S	Sb	00 19 38.3	-0.1
DEMI	Demirci	0.22	236	*i* P	Pb	00 19 35.0	+0.6
DEMI				*i* S	Sb	00 19 38.3	-0.1
GDZ	Gediz	0.42	100	P	Pb	00 19 38.0	0.0
GDZ				S	Sb	00 19 44.0	-0.3
GDZ	Gediz	0.42	100	*i* P	Pb	00 19 38.0	0.0
GDZ				*i* S	Sb	00 19 44.0	-0.3
TVSB	Tavsanli	0.49	54	*e*PG	Pg	00 19 38.6	+0.3
TVSB				*e*SG	Sb	00 19 46.2	-0.1
TVSB	Tavsanli	0.49	54	*e*Pg	Pg	00 19 38.6	+0.3
TVSB				*e*Sg	Sb	00 19 46.2	-0.1
KULA	Kula-Manisa	0.69	199	*e*PG	Pg	00 19 41.6	-0.4
KULA				*e*SG	Sg	00 19 51.1	+0.1
KULA	Kula-Manisa	0.69	199	*e*Pg	Pg	00 19 41.6	-0.4
KULA				*e*Sg	Sg	00 19 51.1	+0.1
ORLT	Orhaneli	0.88	357	*e*PG	Pg	00 19 45.7	0.0
ORLT	Orhaneli	0.88	357	*e*Pg	Pg	00 19 45.7	0.0
KHAL	Karahalli	0.90	152	P	Pn	00 19 47.2	+0.2
KHAL				S	Sg	00 19 57.7	-0.1
KHAL	Karahalli	0.90	152	*i* P	Pn	00 19 47.2	+0.2
KHAL				*i* S	Sg	00 19 57.7	-0.1
BALB	Balikesir	0.95	300	*e*PG	Pb	00 19 46.7	-0.3
BALB	Balikesir	0.95	300	*e*Pg	Pb	00 19 46.7	-0.3
KCTX	Karacabey (Bur	1.19	338	*e*PN	Pg	00 19 51.4	-0.1
KCTX	Karacabey (Bur	1.19	338	*e*Pn	Pg	00 19 51.4	-0.1
MDNY	Mudanya-Bursa	1.20	358	*e*PN	Pg	00 19 51.7	-0.1
MDNY	Mudanya-Bursa	1.20	358	*e*Pn	Pg	00 19 51.7	-0.1
IZI	Iznik	1.24	19	*e*PN	Pg	00 19 52.3	-0.2
IZI	Iznik	1.24	19	*e*Pn	Pg	00 19 52.3	-0.2
ARMT	Armutlu	1.40	357	*e*PN	Pb	00 19 54.7	+0.1
ARMT	Armutlu	1.40	357	*e*Pn	Pb	00 19 54.7	+0.1

ISCJB ***30*** *00:23:12.3±0.5, 39°.10N±0°.02×29°.10E±0°.02, h4km±4km, Error ellipse: s-maj=2.9km s-min=2.7km az=36.7*
DDA ***30*** *00:23:12.4, 39°.09N×29°.13E, h9km, Ml3.3*
CSEM ***30*** *00:23:12.9±0.1, 39°.08N×29°.11E, h10km, ML3.3, Error ellipse: s-maj=1.9km s-min=1.7km az=106.0*
ISK ***30*** *00:23:12.2, 39°.07N×29°.12E, h13km, ML3.3*
THE ***30*** *00:23:15.9, 39°.02N×28°.87E, h9km±3km, ML2.5/2, Error ellipse: s-maj=3.8km s-min=1.0km az=207.0*

**ISC 30 00:23:12.7±0.9, 39°.09

KNL	Bal¯–kesir	1.70	314	*i* P	Pn	00 23 42.1	-0.1
KNL				*i* S	Sb	00 24 06.1	+0.8
BAGO	Egridir - ISPA	1.71	130	*i* P	Pb	00 23 44.3	+0.2
GULT	Gulveren	1.71	38	*e*PN	Pn	00 23 43.2	+0.8
GULT	Gulveren	1.71	38	*e*Pn	Pn	00 23 43.2	+0.8
DKL	Dikili	1.73	270	*e*PN	Pn	00 23 42.6	+0.1
DKL	Dikili	1.73	270	*e*Pn	Pn	00 23 42.6	+0.1
AYDN	Tasoluk	1.73	215	*i* P	Pg	00 23 45.7	-0.3
AYDN				*i* S	Sg	00 24 07.3	-1.2
BUY	Buyukada	1.76	360	P	Pn	00 23 43.4	+0.5
BUY				S	Sg	00 24 08.4	-0.9
BUY	Buyukada	1.76	360	*i* P	Pn	00 23 43.4	+0.5
BUY				*i* S	Sg	00 24 08.4	-0.9
HRT	Hereke	1.78	13	*e*PN	Pn	00 23 43.6	+0.4
HRT	Hereke	1.78	13	*e*Pn	Pn	00 23 43.6	+0.4
SPNC	Sapanca-Adapaz	1.83	29	*e*PN	Pn	00 23 44.4	+0.5
SPNC	Sapanca-Adapaz	1.83	29	*e*Pn	Pn	00 23 44.4	+0.5
GOLH	Golhisar	1.89	169	P	Pb	00 23 46.0	-1.1
GOLH	Golhisar	1.89	169	*i* P	Pb	00 23 46.0	-1.1
GOLH				*i* S	Sg	00 24 17.2	+3.8
SVRH	Sivrihisar-ESK	1.90	79	*e*PN	Pn	00 23 45.5	+0.6
SVRH	Sivrihisar-ESK	1.90	79	*e*Pn	Pn	00 23 45.5	+0.6
AYVA	Ayvalik	1.90	277	P	Pn	00 23 45.4	+0.5
AYVA	Ayvalik	1.90	277	*i* P	Pn	00 23 45.4	+0.5
AYVA				*i* S	Sg	00 24 14.6	+0.6
MRMT	Marmara Adasi	1.91	323	*e*PN	Pn	00 23 45.5	+0.5
MRMT	Marmara Adasi	1.91	323	*e*Pn	Pn	00 23 45.6	+0.5
ISK	Istanbul-Kandi	1.97	359	*e*PN	Pn	00 23 46.3	+0.5
ISK	Istanbul-Kandi	1.97	359	P	Pg	00 23 49.6	-0.9
ISK				S	Sg	00 24 15.1	-1.0
ISK	Istanbul-Kandi	1.97	359	*e*Pn	Pn	00 23 46.3	+0.5
ISK	Istanbul-Kandi	1.97	359	P	Pg	00 23 49.6	-0.9
ISK				S	Sg	00 24 15.1	-1.0
BCK	Bucak	2.00	144	*e*PN	Pn	00 23 46.3	0.0
BCK	Bucak	2.00	144	*e*Pn	Pn	00 23 46.3	0.0
GCAM	G?zelcaml?	2.04	227	*i* P	Pb	00 23 50.0	+0.4
DGB	¯zmir	2.04	240	*i* P	Pg	00 23 50.9	-1.0
DGB				*i* S	Sg	00 24 17.2	-1.1
BTAS	Taskesti	2.06	44	P	Pn	00 23 48.0	+0.8
BTAS	Taskesti	2.06	44	*i* P	Pn	00 23 48.0	+0.8
YER	Yerkesik	2.06	199	*e*PN	Pn	00 23 47.6	+0.4
YER	Yerkesik	2.06	199	P	Pn	00 23 47.4	+0.2
YER	Yerkesik	2.06	199	*e*Pn	Pn	00 23 47.6	+0.4
SILT	Sile	2.10	11	*e*PN	Pn	00 23 48.3	+0.8
SILT	Sile	2.10	11	*e*Pn	Pn	00 23 48.3	+0.8
BGKT	Bogazkoy	2.10	353	*e*PN	Pn	00 23 48.2	+0.6
BGKT	Bogazkoy	2.10	353	*e*Pn	Pn	00 23 48.2	+0.6
URLA	Izmir	2.11	250	*i* P	Pg	00 23 54.3	+1.1
URLA				*i* S	Sb	00 24 16.7	-0.2
KLYT	Kilyos	2.16	358	*e*PN	Pn	00 23 48.9	+0.5
KLYT	Kilyos	2.16	358	*e*Pn	Pn	00 23 48.9	+0.5
KIZT	Kizilcal	2.16	95	*e*PN	Pn	00 23 48.9	+0.4
KIZT	Kizilcal	2.16	95	*e*Pn	Pn	00 23 48.9	+0.4
KAND	Kocaeli-Kandir	2.16	22	P	Pn	00 23 49.2	+0.8
KAND	Kocaeli-Kandir	2.16	22	*i* P	Pn	00 23 49.2	+0.8
SART	Tekirdag	2.19	317	*i* P	Pg	00 23 54.2	-0.5
SUTC	Sutluce-Ispart	2.19	137	*e*PN	Pn	00 23 49.1	+0.2
SUTC	Sutluce-Ispart	2.19	137	*e*Pn	Pn	00 23 49.1	+0.2
CTKS	Kestanelik-??a	2.19	348	*e*PN	Pn	00 23 49.5	+0.7
CTKS	Kestanelik-??a	2.19	348	*e*Pn	Pn	00 23 49.6	+0.7
SAHE	Sakarya_HENDEK	2.20	37	P	Pn	00 23 50.0	+1.0
SAHE	Sakarya_HENDEK	2.20	37	*i* P	Pn	00 23 50.0	+1.0
ZEY	¯zmir	2.22	248	*i* P	Pg	00 23 55.2	-0.1
ZEY				*i* S	Sg	00 24 24.4	+0.3
PRK	Paraskevi	2.22	275	P	Pn	00 23 50.0	+0.7
PRK				S	Sn	00 24 14.2	-2.4
PRK	Paraskevi	2.22	275	P	Pn	00 23 50.0	+0.7
PRK				S	Sn	00 24 14.2	-2.4
LPK	Lapseki	2.23	306	*e*PN	Pn	00 23 50.0	+0.7
LPK	Lapseki	2.23	306	*e*Pn	Pn	00 23 50.0	+0.7
TKR	Tekirdag	2.25	328	*e*PN	Pn	00 23 50.5	+0.8
TKR	Tekirdag	2.25	328	*e*Pn	Pn	00 23 50.5	+0.8
EZN	Ezine	2.29	290	*e*PN	Pn	00 23 50.7	+0.6
EZN	Ezine	2.29	290	P	Pn	00 23 51.0	+0.9
EZN	Ezine	2.29	290	*e*Pn	Pn	00 23 50.7	+0.6
EZN	Ezine	2.29	290	P	Pn	00 23 51.0	+0.9
KORT	Korkueli	2.30	155	P	Pn	00 23 52.1	+1.6
KORT	Korkueli	2.30	155	*i* P	Pn	00 23 52.1	+1.6
BDRM	Kayabasi	2.42	214	P	Pn	00 23 51.4	-0.6
BDRM	Kayabasi	2.42	214	*i* P	Pn	00 23 51.4	-0.6
GELI	Tayfur-Gelibol	2.42	303	*e*PN	Pn	00 23 52.8	+0.8
GELI	Tayfur-Gelibol	2.42	303	*e*Pn	Pn	00 23 52.8	+0.8
CTYL	Yalikoy Yolu	2.46	345	*e*PN	Pn	00 23 53.5	+0.9
CTYL	Yalikoy Yolu	2.46	345	*e*Pn	Pn	00 23 53.5	+0.9
ERIK	Erikli-Kesan	2.55	309	*e*PN	Pn	00 23 54.6	+0.8
ERIK	Erikli-Kesan	2.55	309	*e*Pn	Pn	00 23 54.6	+0.8
KESN	Edirne-Kesan	2.55	313	P	Pn	00 23 54.3	+0.1
KESN	Edirne-Kesan	2.55	313	*i* P	Pn	00 23 54.3	+0.1
ALN	Alexandroupoli	2.97	308	P	Pn	00 24 00.6	+1.0
ALN				S	Sn	00 24 35.7	+0.6
ALN	Alexandroupoli	2.97	308	P	Pn	00 24 00.6	+1.0
ALN				S	Sn	00 24 35.7	+0.6
SMTH	Samothraki Isl	3.09	298	P	Pn	00 24 02.2	+1.0
SMTH				S	Sn	00 24 37.5	-0.6
SMTH	Samothraki Isl	3.09	298	P	Pn	00 24 02.2	+1.0
SMTH				S	Sn	00 24 37.5	-0.6
EDRB	Edirne	3.29	327	P	Pn	00 24 05.3	+1.3
EDRB				S	Sn	00 24 43.7	+0.6
EDRB	Edirne	3.29	327	P	Pn	00 24 05.3	+1.3
EDRB				S	Sn	00 24 43.7	+0.6

CSEM ***30*** *00:24:10.7, 38°.12N×23°.89E, h9km, ML1.2/3*
ATH 30 00:24:10.7, 38°.12N×23°.89E, h9km±3km, ML1.2/2, Error ellipse: s-maj=3.8km s-min=1.9km az=126.0, Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PTL	**Penteli**	**0.07**	**196**	P	Pg	00 24 12.8	-0.1
PTL				S	Sg	00 24 14.3	-0.1
PTL	**Penteli**	**0.07**	**196**	P	Pg	00 24 12.8	-0.1
PTL				S	Sg	00 24 14.3	-0.1
PTL				AML	AML	00 24 14.7	
	comp=N,536μm,0.2s						
PTL				AML	AML	00 24 14.7	
	comp=E,231μm,0.1s						
ATH	**Athens Observa**	**0.20**	**223**	P	Pg	00 24 15.1	+0.2
ATH				S	Sg	00 24 18.7	+1.0
VLY	**Voula,Athens**	**0.28**	**196**	P	Pg	00 24 16.4	+0.1
VLY				S	Sg	00 24 19.7	-0.3
VLY	**Voula,Athens**	**0.28**	**196**	P	Pg	00 24 16.4	+0.1
VLY				S	Sg	00 24 19.7	-0.3
LTK	**Loutraki**	**0.73**	**263**	P	Pg	00 24 25.2	+0.3
LTK				S	Sg	00 24 34.3	-0.2
LTK	**Loutraki**	**0.73**	**263**	P	Pg	00 24 25.2	+0.3
LTK				S	Sg	00 24 34.4	-0.2
LTK				AML	AML	00 24 37.6	
	comp=N,43μm,0.4s						
LTK				AML	AML	00 24 37.8	
	comp=E,57μm,0.3s						
DID	**Didima**	**0.80**	**220**	P	Pg	00 24 25.8	-0.4
DID				S	Sg	00 24 37.1	+0.4
DID	**Didima**	**0.80**	**220**	P	Pg	00 24 25.8	-0.4
DID				S	Sg	00 24 37.1	+0.4

DDA ***30*** *00:24:43.9, 39°.13N×29°.01E, h8km, Md2.5*
ISK ***30*** *00:24:43.8, 39°.14N×29°.03E, h6km, MD2.7*
ISCJB ***30*** *00:24:44.0±0.5, 39°.13N±0°.03×29°.01E±0°.04, h9km, Error ellipse: s-maj=5.0km s-min=4.0km az=147.6*
CSEM ***30*** *00:24:44.2±0.1, 39°.13N×29°.01E, h5km, MD2.7, Error ellipse: s-maj=2.1km s-min=1.9km az=138.0*
ISC 30 00:24:44.2±0.9, 39°.14N±0°.03×29°.01E±0°.02, h9km, n30, σ0°.28/37, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**248**	P	Pg	00 24 49.0	-0.1
DEMI				S	Sg	00 24 52.4	0.0
DEMI	**Demirci**	**0.24**	**248**	*i* P	Pg	00 24 49.0	-0.1
DEMI				*i* S	Sg	00 24 52.4	0.0
GDZ	**Gediz**	**0.37**	**97**	P	Pg	00 24 51.5	-0.1
GDZ				S	Sg	00 24 56.8	+0.3
GDZ	**Gediz**	**0.37**	**97**	*i* P	Pg	00 24 51.5	-0.1
GDZ				*i* S	Sg	00 24 56.8	+0.3
TVSB	**Tavsanli**	**0.47**	**48**	*e*PG	Pg	00 24 53.5	+0.1
TVSB				*e*SG	Sg	00 24 59.3	-0.4
TVSB	**Tavsanli**	**0.47**	**48**	*e*Pg	Pg	00 24 53.5	+0.1
TVSB				*e*Sg	Sg	00 24 59.3	-0.4
KULA	**Kula-Manisa**	**0.68**	**204**	*e*PG	Pg	00 24 57.0	-0.2
KULA	**Kula-Manisa**	**0.68**	**204**	*e*Pg	Pg	00 24 57.0	-0.2
KHAL	**Karahalli**	**0.85**	**153**	*i* P	Pg	00 25 00.7	+0.1
KHL	**Karahalli**	**0.91**	**153**	*e*PG	Pg	00 25 01.9	+0.4
KHL	**Karahalli**	**0.91**	**153**	*e*Pg	Pg	00 25 02.0	+0.4
ORLT	**Orhaneli**	**0.91**	**355**	*e*PG	Pg	00 25 01.9	+0.2
ORLT	**Orhaneli**	**0.91**	**355**	*e*Pg	Pg	00 25 02.0	+0.2
AKS	**Akhisar**	**0.96**	**255**	*e*PG	Pg	00 25 03.0	+0.3
AKS	**Akhisar**	**0.96**	**255**	*e*Pg	Pg	00 25 03.0	+0.3
BALB	**Balikesir**	**1.01**	**300**	*e*PG	Pg	00 25 03.8	+0.3
BALB	**Balikesir**	**1.01**	**300**	*e*Pg	Pg	00 25 03.8	+0.3
IGD	**Bursa**	**1.14**	**8**	*i* P	Pb	00 25 05.2	-0.8
IGD				*i* S	Sg	00 25 20.4	-0.4
KCTX	**Karacabey (Bur**	**1.23**	**336**	*e*PN	Pg	00 25 08.0	+0.1
KCTX	**Karacabey (Bur**	**1.23**	**336**	*e*Pn	Pg	00 25 08.0	+0.1
MDNY	**Mudanya-Bursa**	**1.23**	**356**	*e*PN	Pn	00 25 07.6	0.0
MDNY	**Mudanya-Bursa**	**1.23**	**356**	*e*Pn	Pn	00 25 07.6	0.0
CAVI	**Cavuskoy**	**1.25**	**31**	*e*PN	Pg	00 25 08.2	+0.1
CAVI	**Cavuskoy**	**1.25**	**31**	*e*Pn	Pg	00 25 08.2	+0.1
GONE	**Gonen-Balikesi**	**1.37**	**312**	*e*PN	Pg	00 25 10.5	+0.1
GONE	**Gonen-Balikesi**	**1.37**	**312**	*e*Pn	Pg	00 25 10.5	+0.1
ADVT	**Abdulvahap**	**1.41**	**23**	*e*PN	Pn	00 25 10.5	+0.4
ADVT	**Abdulvahap**	**1.41**	**23**	*e*Pn	Pn	00 25 10.5	+0.4
ARMT	**Armutlu**	**1.43**	**356**	*e*PN	Pb	00 25 11.1	0.0
ARMT	**Armutlu**	**1.43**	**356**	*e*Pn	Pb	00 25 11.1	0.0

IDC 30 00:29:07.9±3.8, 33°.88N×137°.04E, h332km±106km, mb2.7/2, mb1 2.9/3, mb1mx2.5/35, mbtmp3.3/3, Error ellipse: s-maj=225.6km s-min=30.2km az=60.0, Near south coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**2.82**	**19**	P	Pn	00 30 04.2	0.0
	1.0nm,0.3s,baz=198,slow=9.6,SNR=6.7						
MKAR	**Makanchi Array**	**42.86**	**304**	P	P	00 36 34.2	-0.2
	0.2nm,0.5s,baz=79,slow=9.3,SNR=3.7						
WRA	**Warramunga Arr**	**53.58**	**183**	P	P	00 37 55.7	-0.1
	0.3nm,0.3s,baz=359,slow=7.5,SNR=4.6						

DDA ***30*** *00:29:21.7, 39°.13N×29°.01E, h6km, Md2.8*
ISCJB ***30*** *00:29:22.9±0.5, 39°.12N±0°.04×29°.07E±0°.04, h9km, Error ellipse: s-maj=5.7km s-min=4.1km az=174.8*
ISK ***30*** *00:29:22.6, 39°.14N×29°.07E, h6km, MD2.6*
CSEM ***30*** *00:29:23.1±0.1, 39°.12N×29°.08E, h7km±1km, MD2.6, Error ellipse: s-maj=2.0km s-min=1.8km az=5.0*
ISC 30 00:29:23.3±1.0, 39°.13N±0°.03×29°.07E±0°.02, h9km, n20, σ0°.27/28, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.29**	**253**	P	Pg	00 29 29.1	0.0
DEMI				S	Sg	00 29 33.1	+0.1
DEMI	**Demirci**	**0.29**	**253**	*i* P	Pg	00 29 29.1	0.0
DEMI				*i* S	Sg	00 29 33.1	+0.1
GDZ	**Gediz**	**0.32**	**97**	P	Pg	00 29 30.0	+0.3
GDZ				S	Sg	00 29 33.5	-0.5
GDZ	**Gediz**	**0.32**	**97**	*i* P	Pg	00 29 30.0	+0.3
GDZ				*i* S	Sg	00 29 33.5	-0.5
TVSB	**Tavsanli**	**0.44**	**43**	*e*PG	Pg	00 29 31.7	-0.2
TVSB				*e*SG	Sg	00 29 37.8	0.0
TVSB	**Tavsanli**	**0.44**	**43**	*e*Pg	Pg	00 29 31.7	-0.2
TVSB				*e*Sg	Sg	00 29 37.8	0.0
KULA	**Kula-Manisa**	**0.69**	**208**	*e*PG	Pg	00 29 36.5	-0.2
KULA	**Kula-Manisa**	**0.69**	**208**	*e*Pg	Pg	00 29 36.5	-0.2
KHAL	**Karahalli**	**0.82**	**156**	P	Pg	00 29 38.6	-0.6
KHAL	**Karahalli**	**0.82**	**156**	*i* P	Pg	00 29 38.6	-0.6
KHL	**Karahalli**	**0.88**	**156**	*e*PG	Pg	00 29 40.4	+0.3
KHL	**Karahalli**	**0.88**	**156**	*e*Pg	Pg	00 29 40.4	+0.3
BALB	**Balikesir**	**1.06**	**299**	*e*PG	Pg	00 29 43.3	-0.3
BALB				*e*SG	Sb	00 29 57.8	+0.1
BALB	**Balikesir**	**1.06**	**299**	*e*Pg	Pg	00 29 43.3	-0.3
BALB				*e*Sg	Sb	00 29 57.8	+0.1
KCTX	**Karacabey (Bur**	**1.26**	**334**	*e*PN	Pn	00 29 47.3	+0.1
KCTX	**Karacabey (Bur**	**1.26**	**334**	*e*Pn	Pn	00 29 47.3	+0.1
ARMT	**Armutlu**	**1.45**	**354**	*e*PN	Pn	00 29 49.8	+0.2
ARMT	**Armutlu**	**1.45**	**354**	*e*Pn	Pn	00 29 49.8	+0.2
GULT	**Gulveren**	**1.71**	**40**	*e*PN	Pn	00 29 53.5	+0.1
GULT	**Gulveren**	**1.71**	**40**	*e*Pn	Pn	00 29 53.5	+0.1

IDC 30 00:37:10.4±3.2, 37°.24S×50°.91E, h0km, mb3.7/4, mb1 3.8/4, mb1mx3.4/38, mbtmp3.7/4, MS3.4/4, Ms1 3.4/4, ms1mx3.1/27, Error ellipse: s-maj=285.0km s-min=24.5km az=27.0, Southwest Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OPO	**Ambohidratompo**	**18.88**	**349**	LR	LR	00 47 18.0	
	comp=Z,121nm,20.7s,baz=180,slow=32						
BOSA	**Boshof**	**23.13**	**284**	LR	LR	00 49 52.6	
	comp=Z,54nm,19.0s,baz=88,slow=33						
MATP	**Matopo**	**25.70**	**304**	P	P	00 42 42.3	-0.2
	1.8nm,0.8s,baz=189,slow=6.9,SNR=4.3						
MATP				LR	LR	00 51 09.5	
	comp=Z,134nm,21.2s,baz=170,slow=33						
KMBO	**Kilima Mbogo**	**38.08**	**337**	LR	LR	00 58 47.5	
	comp=Z,72nm,19.7s,baz=174,slow=34						
H01W2	**Cape Leeuwin H**	**50.31**	**108**	T	T	01 40 23.2	
	baz=247,slow=75,SNR=28						
H01W3	**Cape Leeuwin H**	**50.31**	**107**	T	T	01 40 23.8	
	baz=247,slow=75,SNR=25						
H01W1	**Cape Leeuwin H**	**50.33**	**108**	T	T	01 40 24.5	
	baz=247,slow=75,SNR=21						
TORD	**Torodi Ar. Bea**	**68.18**	**307**	P	P	00 48 13.2	+0.5
	1.1nm,1.2s,baz=122,slow=5.2,SNR=3.0						
ASAR	**Alice Springs**	**70.75**	**105**	P	P	00 48 28.6	-0.1
	0.3nm,0.6s,baz=232,slow=5.8,SNR=3.1						
WRA	**Warramunga Arr**	**73.13**	**102**	P	P	00 48 43.3	+0.3
	0.3nm,0.3s,baz=226,slow=5.1,SNR=11						
ILAR	**Eielson Array**	**150.47**	**15**	PKPbc	PKPbc	00 57 02.4	-0.5
	1.0nm,0.9s,baz=329,slow=3.6,SNR=7.4						
YKA	**Yellowknife Ar**	**153.18**	**345**	PKPbc	PKPbc	00 57 08.8	-0.3
	0.3nm,1.0s,baz=33,slow=2.4,SNR=5.2						

IDC ***30*** *00:42:27.3±6.5, 37°.49S×177°.98E, h32km±45km, mb4.4/10, mb1 4.5/10, mb1mx4.2/31, mbtmp4.5/10, MS3.7/4, Ms1 3.7/4, ms1mx3.3/25, Error ellipse: s-maj=27.8km s-min=17.7km az=55.0*
ISCJB ***30*** *00:42:29.1±0.3, 38°.14S±0°.02×178°.12E±0°.04, h73km±2km, mb4.5/20, Error ellipse: s-maj=5.7km s-min=3.9km az=5.9*
NEIC ***30*** *00:42:30.6, 38°.04S×178°.07E, h66km, mb4.7/10, MW4.8, Moment Tensor Solution. s25 Moment tensor: Scale 10^{16}Nm; M_{rr}=0.12; $M_{\theta\theta}$=-1.47; $M_{\phi\phi}$1.59; $M_{r\theta}$=0.85; $M_{\theta\phi}$0.97; $M_{\phi r}$0.54; Best double couple: $M_0$2.10000×10^{16} NP1: ϕ_s153.00000°, δ79.00000°, λ-155.00000°. NP2: ϕ_s58.00000°, δ66.00000°, λ-12.00000°. Principal axes: T 1.9200, Plg9.0000°, Azm284.0000°; N 0.2800, Plg63.0000°, Azm176.0000°; P -2.2000, Plg25.0000°, Azm18.0000°; After WEL.*
NEIC Felt at Gisborne and in the Bay of Plenty area.
WEL ***30*** *00:42:30.5±0.2, 38°.04S×178°.08E, h67km±2km, ML5.5/22 Error ellipse: s-maj=1.7km s-min=1.0km az=90.0, intensity MM 5.*
WEL Felt between Bay of Plenty, Wellington and Gisborne, maximum reported.
ISC 30 00:42:30.7±0.6, 38°.14S±0°.04×178°.07E±0°.04, h69km±5km, n272, σ1°.63/245, mb4.7/19, 13C-72D, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWGZ	**Tauwhareparae**	**0.08**	**244**	⇑PN	Pn	00 42 40.4	-0.6
PUZ	**Puketiti**	**0.17**	**64**	⇓PN	Pn	00 42 40.0	-1.2
PUZ				SN	Sn	00 42 46.7	-2.1
PUZ				AML	AML	00 42 47.5	
PKGZ	**Pakihiroa**	**0.26**	**1**	⇑PN	Pn	00 42 40.1	-1.6
PKGZ				SN	Sn	00 42 46.9	-2.7
TKGZ	**Te Karaka**	**0.34**	**210**	PN	Pn	00 42 42.1	0.0
CNGZ	**Carnagh Statio**	**0.36**	**162**	⇑PN	Pn	00 42 42.8	+0.6
WMGZ	**Waiomatatini S**	**0.42**	**40**	⇓PN	Pn	00 42 41.7	-1.1
HAZ	**Te Kaha**	**0.45**	**330**	⇓PN	Pn	00 42 41.7	-1.3
MWZ	**Matawai**	**0.47**	**246**	⇓PN	Pn	00 42 42.9	-0.3
MWZ				SN	Sn	00 42 52.0	-0.4
MWZ				AML	AML	00 42 52.7	
MWZ				AML	AML	00 42 52.7	
MWZ				AML	AML	00 42 52.8	
MXZ	**Matakaoa Point**	**0.61**	**18**	⇑*e*PN	Pn	00 42 43.4	-1.2
MXZ				AML	AML	00 42 53.5	
MXZ				AML	AML	00 42 53.5	
MXZ				AML	AML	00 42 53.9	
MXZ				AML	AML	00 42 53.9	
MXZ	**Matakaoa Point**	**0.61**	**18**	*e*PN	Pn	00 42 43.4	-1.2
MXZ				*e*Sn	Sn	00 42 54.0	-0.8
RIGZ	**Rimuhau**	**0.61**	**203**	⇓PN	Pn	00 42 45.1	+0.5
RAGZ	**Rawiri**	**0.62**	**235**	⇓PN	Pn	00 42 45.0	+0.2
URZ	**Urewera**	**0.76**	**261**	Pn	Pn	00 42 46.1	-0.2
	10μm,0.3s,baz=96,slow=0.8						
URZ				Sn	Sn	00 42 58.5	+0.7
	15μm,0.3s,baz=12,slow=20,SNR=63						
URZ				LR	LR	00 43 14.5	
	comp=Z,4μm,18.2s,baz=160,slow=46						
URZ	**Urewera**	**0.76**	**261**	⇑PN	Pn	00 42 46.3	+0.1
URZ				AML	AML	00 42 59.3	
URZ	**Urewera**	**0.76**	**261**	*e*Pn	Pn	00 42 46.4	+0.1
URZ				*e*Sn	Sn	00 42 58.0	+0.2
PRGZ	**Paritu Road**	**0.79**	**191**	⇓PN	Pn	00 42 47.0	+0.3
SNGZ	**Shannon Statio**	**0.86**	**222**	⇓PN	Pn	00 42 48.0	+0.5
KNZ	**Kokohu**	**0.93**	**199**	PN	Pn	00 42 48.1	-0.2
KNZ				AML	AML	00 43 02.9	
KNZ				AML	AML	00 43 03.0	
WIZ	**White Island**	**0.93**	**311**	⇑PN	Pn	00 42 46.6	-1.7
RTZ	**Ruatahuna**	**0.98**	**241**	⇓PN	Pn	00 42 49.3	+0.4
MHGZ	**Mahia Peninsul**	**1.01**	**187**	⇓PN	Pn	00 42 49.9	+0.5
EDRZ	**Edgecumbe**	**1.05**	**272**	⇓PN	Pn	00 42 49.5	-0.3
MUGZ	**Murupara**	**1.07**	**252**	⇓PN	Pn	00 42 50.1	0.0
RAHZ	**Arahi**	**1.09**	**225**	⇓PN	Pn	00 42 51.1	+0.7
MARZ	**Manawahe**	**1.11**	**278**	⇓PN	Pn	00 42 49.8	-0.9
WHHZ	**Waihua**	**1.14**	**215**	⇓PN	Pn	00 42 51.5	+0.5
OPRZ	**Ohinepanea**	**1.23**	**284**	PN	Pn	00 42 50.7	-1.4
TARZ	**Mount Tarawera**	**1.23**	**265**	⇓PN	Pn	00 42 52.1	-0.1
RRRZ	**Republican Roa**	**1.24**	**260**	⇓PN	Pn	00 42 52.1	-0.2
LIRZ	**Lichensteins R**	**1.34**	**275**	⇓PN	Pn	00 42 53.0	-0.5
OMRZ	**Omania**	**1.34**	**271**	PN	Pn	00 42 53.1	-0.5
HLRZ	**Highlands Stat**	**1.36**	**265**	⇓PN	Pn	00 42 53.6	-0.3
PRRZ	**Plateau Road**	**1.36**	**254**	⇓PN	Pn	00 42 53.8	-0.1
NMHZ	**Naumai**	**1.37**	**226**	⇓PN	Pn	00 42 55.1	+1.0
ARHZ	**Aropaoanui**	**1.40**	**217**	⇓PN	Pn	00 42 54.9	+0.6
ALRZ	**Allen Road**	**1.42**	**252**	⇓PN	Pn	00 42 54.6	0.0
HRRZ	**Handcock Road**	**1.43**	**260**	⇓PN	Pn	00 42 54.5	-0.2
KARZ	**Kaharoa**	**1.45**	**274**	⇓PN	Pn	00 42 54.3	-0.6
HSRZ	**Hossack Road**	**1.45**	**263**	⇓PN	Pn	00 42 55.0	0.0
MRHZ	**Matea Rd**	**1.47**	**241**	PN	Pn	00 42 55.3	0.0
UTU	**Utuhina**	**1.48**	**268**	PN	Pn	00 42 55.4	0.0
TGRZ	**Tauranga**	**1.49**	**286**	⇓PN	Pn	00 42 54.4	-1.1
WPRZ	**Whakapapatarin**	**1.54**	**255**	PN	Pn	00 42 56.4	+0.1
GRRZ	**Galatos Road**	**1.56**	**262**	⇓PN	Pn	00 42 56.5	+0.1
BKZ	**Black Stump Fm**	**1.60**	**230**	PN	Pn	00 42 56.9	-0.2
BKZ				AML	AML	00 43 20.5	
BKZ				AML	AML	00 43 28.3	
BKZ	**Black Stump Fm**	**1.60**	**230**	*e*Pn	Pn	00 42 57.7	+0.6
MCHZ	**McNeill Hill**	**1.68**	**219**	PN	Pn	00 42 58.7	+0.6
MYRZ	**Mayor Island**	**1.69**	**300**	PN	Pn	00 42 56.8	-1.3
CKHZ	**Cape Kidnapper**	**1.70**	**207**	⇓PN	Pn	00 42 58.2	-0.1
KMRZ	**Kaimai**	**1.71**	**279**	⇓PN	Pn	00 42 57.5	-0.9
HATZ	**Hinemaiaia**	**1.72**	**244**	⇓PN	Pn	00 42 58.6	0.0
WHTZ	**Whakaora**	**1.74**	**252**	PN	Pn	00 42 59.4	+0.5
KUTZ	**Kaahu Road**	**1.80**	**258**	⇓PN	Pn	00 42 59.7	0.0
KWHZ	**Ka

BHW Baring Head 4.09 216 ⇓PN **Pn 00 43 27.1 -3.6**
BHW AML AML 00 44 15.0
BHW AML AML 00 44 15.1
SNZO South Karori 4.09 218 *e*Pn **Pn 00 43 27.4 -3.4**
TCW Tory Channel 4.24 223 ⇓PN **Pn 00 43 29.5 -3.3**
TCW AML AML 00 44 20.7
TCW AML AML 00 44 24.4
TUWZ Tuamarina 4.57 223 PN **Pn 00 43 33.6 -3.7**
TUWZ AML AML 00 44 28.2
TUWZ AML AML 00 44 28.4
OUZ Omahuta 4.63 308 PN **Pn 00 43 38.1 0.0**
OUZ Omahuta 4.63 308 *e*Pn **Pn 00 43 38.2 0.0**
CMWZ Cape Campbell 4.66 218 PN **Pn 00 43 35.1 -3.5**
CMWZ AML AML 00 44 34.9
CMWZ AML AML 00 44 40.0
NNZ Nelson 4.74 228 ⇓PN **Pn 00 43 36.6 -3.1**
BSWZ Blackbirch Sta 4.81 221 PN **Pn 00 43 36.8 -3.8**
BSWZ AML AML 00 44 34.0
BSWZ AML AML 00 44 36.8
QRZ Quartz Range 5.05 236 PN **Pn 00 43 40.7 -3.2**
THZ Tophouse 5.37 226 ⇑PN **Pn 00 43 44.4 -3.9**
THZ Tophouse 5.37 226 *e*Pn **Pn 00 43 44.8 -3.5**
KHZ Kahutara 5.50 218 ⇓PN Pn 00 43 45.1 -4.8
KHZ Kahutara 5.50 218 *e*Pn Pn 00 43 45.2 -4.7
DSZ Denniston Nort 6.01 231 PN **Pn 00 43 52.8 -4.2**
LTZ Lake Taylor 6.40 222 PN Pn 00 43 57.6 -4.8
LTZ Lake Taylor 6.40 222 *e*Pn Pn 00 43 57.6 -4.8
CRLZ Canterbury Las 6.82 216 PN **Pn 00 44 04.1 -3.9**
CRLZ Canterbury Las 6.82 216 *e*Pn **Pn 00 44 03.9 -4.1**
CTZ Chatham Island 6.88 146 PN **Pn 00 44 09.9 +0.9**
MQZ McQueen's Vall 6.90 215 PN Pn 00 44 03.0 -6.2
MQZ McQueen's Vall 6.90 215 *e*Pn Pn 00 44 02.4 -6.8
OXZ Oxford 6.91 220 PN Pn 00 44 03.7 -5.6
OXZ Oxford 6.91 220 *e*Pn Pn 00 44 03.3 -6.1
WVZ Waitaha Valley 7.44 226 PN **Pn 00 44 12.3 -4.3**
RPZ Rata Peaks 7.69 221 Pn **Pn 00 44 16.5 -3.4**
42nm,0.3s,baz=275,slow=1.4,SNR=43
RPZ Sn **Sn 00 45 37.8 -7.7**
95nm,0.3s,baz=25,slow=20,SNR=25
RPZ LR LR 00 48 20.9
comp=Z,1μm,20.2s,baz=30,slow=43
RPZ Rata Peaks 7.69 221 PN **Pn 00 44 16.6 -3.4**
RPZ Rata Peaks 7.69 221 *e*Pn Pn 00 44 13.4 -6.6
FOZ Fox Glacier 8.25 227 PN Pn 00 44 22.6 -5.0
FOZ Fox Glacier 8.25 227 *e*Pn Pn 00 44 22.6 -5.0
LBZ Lake Benmore 8.61 221 PN Pn 00 44 27.2 -5.3
LBZ Lake Benmore 8.61 221 *e*Pn **Pn 00 44 28.1 -4.4**
ODZ Otahua Downs 8.86 217 ⇓PN Pn 00 44 30.6 -5.2
ODZ Otahua Downs 8.86 217 *e*Pn Pn 00 44 30.5 -5.4
JCZ Jackson Bay 9.17 227 PN Pn 00 44 34.5 -5.8
WKZ Wanaka 9.52 223 *e*Pn Pn 00 44 39.4 -5.6
HHSZ Highcliff Hill 9.52 213 PN **Pn 00 44 41.1 -3.9**
EAZ Earnscleugh 9.64 220 PN Pn 00 44 41.5 -5.2
TUZ Tuapeka 10.01 216 PN Pn 00 44 46.5 -5.1
MLZ Mavora Lakes 10.35 223 PN Pn 00 44 51.2 -5.1
MLZ Mavora Lakes 10.35 223 *e*Pn Pn 00 44 50.9 -5.5
SYZ Scrubby Hill 10.67 215 PN **Pn 00 44 57.4 -3.3**
WHZ Wether Hill Ro 10.79 221 *e*Pn Pn 00 44 57.6 -4.7
DCZ Deep Cove 10.94 225 *e*Pn Pn 00 44 59.6 -4.7
DZM Mont Dzumac 18.89 325 *e*LR LR 00 51 08.1
346nm,26.9s
DZM Mont Dzumac 18.89 325 P **Pn 00 46 47.1 +0.1**
1.1nm,0.3s,baz=165,slow=10,SNR=9.7
TAU Tasmania Unive 23.78 249 *e*P **P 00 47 36.6 -0.2**
18nm,0.6s
EIDS Eidsvold 26.14 291 P **P 00 47 60.0 +1.6**
baz=26,SNR=4.5
EIDS Eidsvold 26.14 291 *e*P **P 00 47 59.5 +1.1**
25nm,1.6s
CMSA Cobar Meteorol 27.29 274 P **P 00 48 10.5 +1.8**
baz=28,SNR=32
STKA Stephens Creek 30.38 271 P **P 00 48 37.2 +1.0**
2.4nm,0.5s,baz=110,slow=11,SNR=12
STKA LR LR 00 59 51.8
comp=Z,157nm,20.0s,baz=55,slow=34
STKA Stephens Creek 30.38 271 P **P 00 48 37.6 +1.4**
baz=31,SNR=6.9
STKA Stephens Creek 30.38 271 *e*P **P 00 48 37.9 +1.7**
1.0nm,0.8s
TBI Tubuai 31.38 71 *e*LR LR 00 56 48.1
248nm,28.0s
TBI Tubuai 31.38 71 *e*T T 01 20 44.6
17nm,0.3s
HTT Hallett 31.94 266 P **P 00 48 49.7 -0.3**
baz=32,SNR=4.0
CTA Charters Tower 32.89 294 P **P 00 48 59.9 +1.6**
baz=33
CTAO Charters Tower 32.89 294 *e*P **P 00 48 59.7 +1.4**
BBOO Buckleboo 34.41 266 P **P 00 49 12.0 +0.6**
baz=35,SNR=12
BBOO Buckleboo 34.41 266 *e*P **P 00 49 11.3 -0.1**
28nm,1.4s
PAE Paea 34.86 63 *e*T T 01 25 06.3
2.6nm,0.3s
PPT2 Papeete2 34.91 63 *e*LR LR 00 58 30.7
260nm,29.5s
PPT2 Papeete2 34.91 63 *e*T T 01 25 10.6
3.5nm,0.3s
PPT Papeete 34.92 63 LR LR 01 01 20.1
comp=Z,72nm,20.7s,baz=230,slow=33
TVO Taravao 35.01 64 *e*T T 01 25 17.5
1.2nm,0.3s
QIS Mount Isa 37.51 287 P **P 00 49 38.7 +0.7**
baz=38
PMOR Pomariorio Ree 37.85 62 *e*T T 01 28 50.4
4.6nm,0.3s
COEN Coen 39.17 298 P **P 00 49 52.8 +0.9**
baz=40,SNR=29
COEN Coen 39.17 298 *e*P **P 00 49 52.5 +0.5**
28nm,0.8s
PMG Port Moresby 39.88 308 P **P 00 49 55.9 -1.9**
20nm,0.8s,baz=144,slow=15
VNDA Vanda 40.09 185 P **P 00 50 03.0 +4.1**
0.5nm,0.3s,baz=30,slow=0.8,SNR=12
AS01 Alice Springs 40.14 278 *e*P **P 00 49 59.2 -0.8**
AS31 Alice Springs 40.17 278 *e*P **P 00 50 00.4 +0.1**
4.4nm,0.7s
ASAR Alice Springs 40.17 278 P **P 00 50 00.5 +0.1**
6.9nm,0.6s,baz=125,slow=8.3,SNR=78
ASAR PcP **PcP 00 52 02.1 -1.3**
1.1nm,0.5s,baz=119,slow=4.2,SNR=3.2
ASAR S **S 00 55 58.3 -3.9**
1.9nm,0.9s,baz=126,slow=14,SNR=11
ASAR LR LR 01 05 52.4
comp=Z,97nm,21.2s,baz=122,slow=35
WR6 Warramunga Arr 41.78 283 P **P 00 50 13.5 0.0**
baz=42
WC3 Warramunga Arr 41.84 283 *e*P **P 00 50 13.6 -0.5**
11nm,0.8s
WB2 Warramunga Arr 41.87 283 *e*P **P 00 50 13.6 -0.6**
14nm,0.8s
WRAB Tennant Creek 41.88 283 *e*P **P 00 50 13.9 -0.4**
7.9nm,0.6s
WRA Warramunga Arr 41.88 283 P **P 00 50 14.3 0.0**
11nm,0.8s,baz=122,slow=7.4,SNR=46
RKT Rikitea 42.64 83 *e*LR LR 01 01 48.9
193nm,31.0s
WRKA Warakurna 43.88 272 P **P 00 50 29.7 -0.8**
baz=44,SNR=41
KMBL Kambalda 46.06 261 P **P 00 50 47.3 -0.4**
baz=46,SNR=7.9
CASY Casey 46.81 211 *e*P **P 00 50 52.0 -1.1**
7.1nm,0.8s
TAOE Nuku Hiva Isla 47.54 63 *e*LR LR 01 04 07.2
175nm,30.1s
KDU Kakadu 47.73 290 P **P 00 51 01.3 +0.5**
baz=48
MTN Manton Dam 48.63 288 P **P 00 51 07.5 -0.3**
baz=49,SNR=5.7
KNRA Kununurra 48.67 283 P **P 00 51 08.3 +0.3**
baz=49
KLBR Kellerberrin 49.17 258 P **P 00 51 11.3 -0.5**
baz=49,SNR=8.6
FITZ Fitzroy Crossi 49.67 279 P **P 00 51 15.8 +0.1**
baz=50,SNR=4.0
FITZ Fitzroy Crossi 49.67 279 *e*P **P 00 51 15.4 -0.2**
BLDU Ballidu 50.40 259 P **P 00 51 20.7 -0.4**
baz=50,SNR=6.0
MORW Morawa 51.61 261 P **P 00 51 29.9 -0.3**
baz=52,SNR=9.8
GIRL Giralia 56.18 266 P **P 00 52 04.7 +1.2**
baz=56,SNR=3.3
SYO Syowa Base 68.84 195 ⇑*i*P **P 00 53 28.0 +0.8**
SNAA Sanae 70.49 180 P **P 00 53 39.2 +1.8**
SNAA Sanae 70.49 180 *e*P **P 00 53 39.7 +2.2**
13nm,1.3s
VNA3 Neumayer Olymp 70.78 177 P **P 00 53 41.4 +2.3**
PLCA Paso Flores 79.55 134 P **P 00 54 33.4 +3.2**
2.4nm,0.8s,baz=240,slow=8.1,SNR=5.8
KSRS Korea Array 88.30 322 P **P 00 55 12.8 -1.5**
2.0nm,0.7s,baz=141,slow=6.0,SNR=6.7
KSAR Wonju Array Be 88.31 322 P **P 00 55 12.8 -1.6**
KS01 Wonju Array Si 88.33 322 *e*P **P 00 55 15.4 +0.9**
PETK Petropavlovsk- 92.58 348 P **P 00 55 33.2 -0.7**
2.0nm,0.7s,baz=114,slow=5.4,SNR=4.2
CM01 Chiang Mai Arr 92.97 291 *e*P **P 00 55 36.3 -0.2**
CMAR Chiang Mai Arr 93.00 291 P **P 00 55 37.3 +0.6**
1.9nm,0.5s,baz=149,slow=3.5,SNR=12
LPAZ La Paz 97.71 118 P Pdif 00 56 03.2 +4.0
0.7nm,0.7s,baz=240,slow=6.9,SNR=5.6
YKA Yellowknife Ar 113.81 28 PKiKP **PKiKP 01 01 00.8 +0.4**
0.5nm,0.5s,baz=246,slow=1.6,SNR=13
TIXI Tiksi 114.85 345 PKP PKPdf 01 01 01.8 -0.4
1.0nm,0.3s,baz=136,slow=2.8,SNR=4.0
MKAR Makanchi Array 120.10 308 PKP **PKPdf 01 01 12.2 -0.8**
0.5nm,0.5s,baz=101,slow=1.5,SNR=6.2
FCC Fort Churchill 120.63 37 *e*PKPdf **PKPdf 01 01 13.6 0.0**
ZALV Zalesovo Beam 121.50 316 PKP **PKPdf 01 01 14.8 -0.7**
0.6nm,0.6s,baz=126,slow=2.0,SNR=3.6
KURK Kurchatov 123.85 311 PKP **PKPdf 01 01 19.1 -1.0**
KURBB Kurchatov Arra 123.87 311 PKP **PKPdf 01 01 19.1 -1.0**
1.7nm,0.8s,baz=117,slow=1.9,SNR=12
NRIK Noril'sk 125.28 334 PKP **PKPdf 01 01 21.6 -0.7**
2.8nm,0.6s,baz=98,slow=6.4,SNR=4.8
KKAR Karatay Array 126.37 308 *e*PKPdf **PKPdf 01 01 24.6 -0.6**
BVAR Borovoye Array 129.41 312 PKP **PKPdf 01 01 29.7 -1.0**
0.7nm,0.5s,baz=90,slow=0.1,SNR=4.7
GEYT Alibeck 133.46 289 PKP **PKPdf 01 01 39.1 +0.2**
0.9nm,0.7s,baz=144,slow=2.7,SNR=3.5
AKTO Aktyubinsk 136.50 306 PKP **PKPdf 01 01 45.1 +1.0**
1.0nm,0.6s,baz=94,slow=10,SNR=3.3
SPITS Spitsbergen Ar 139.13 354 PKP **PKPdf 01 01 48.5 +0.3**
4.4nm,0.5s,baz=112,slow=6.4,SNR=18
ARA0 ARCESS Array S 145.27 343 *e*PKPbc **PKPbc 01 01 58.7 -0.5**
ARCES ARCESS Array B 145.27 343 PKP **PKPbc 01 01 58.6 -0.6**
9.3nm,0.5s,baz=58,slow=2.7,SNR=109
ARE0 ARCESS Array S 145.27 343 *e*PKPbc **PKPab 01 01 59.1 -0.3**
KBZ Khabaz 146.00 294 PKPbc **PKPbc 01 02 01.7 -0.5**
3.7nm,0.9s,baz=141,slow=1.5,SNR=6.0
ASF Jabal al Asfar 147.87 271 PKPbc **PKPbc 01 02 08.7 +0.7**
0.7nm,0.4s,baz=124,slow=3.6,SNR=2.7
LIC Lamto 148.10 174 *e*PKIKP **PKPbc 01 02 10.3 +1.3**
30nm,0.9s
KIC Kosan Boka 148.26 175 *e*PKIKP **PKPbc 01 02 10.7 +1.3**
28nm,0.8s
EIL Elat 148.41 266 PKPbc **PKPbc 01 02 09.5 +0.2**
1.5nm,0.4s,baz=100,slow=5.7,SNR=3.8
TIC Toumodi 148.52 174 *e*PKIKP **PKPbc 01 02 11.0 +0.9**
DBIC Dimbokro 148.56 174 PKPbc **PKPbc 01 02 11.8 +1.6**
6.5nm,0.8s,baz=171,slow=4.0,SNR=7.4
MMAI Mount Meron Ar 149.35 272 PKPbc **PKPbc 01 02 12.2 +0.5**
1.8nm,0.5s,baz=90,slow=7.5,SNR=11
FIA1 FINESS Array S 150.91 332 *e*PKPbc **PKPbc 01 02 13.5 -1.0**
FINES FINESS Array B 150.91 332 PKPbc **PKPbc 01 02 13.6 -0.9**
5.7nm,0.6s,baz=21,slow=3.7,SNR=46
BORG Borgarnes 151.00 17 PKPbc **PKPbc 01 02 15.5 +0.9**
18nm,0.7s,baz=331,slow=1.9,SNR=5.3
BR131 Keskin Array S 152.39 285 *e*PKPbc **PKPbc 01 02 18.1 -0.7**
BRTR Keskin Array B 152.39 285 PKPbc **PKPbc 01 02 18.1 -0.7**
2.8nm,0.8s,baz=138,slow=4.8,SNR=23
BR231 Keskin MP Arra 153.07 285 *e*PKPbc **PKPbc 01 02 18.8 -1.4**
AKASG Malin Array Be 154.66 310 PKPbc **PKPbc 01 02 22.3 -0.8**
2.0nm,0.7s,baz=59,slow=2.7,SNR=7.6
TOA0 Torodi Ar. Sit 154.90 188 *e*PKPdf **PKPdf 01 02 16.9 +0.8**
TORD Torodi Ar. Bea 154.90 188 PKP **PKPdf 01 02 16.0 0.0**
1.5nm,0.8s,baz=177,slow=0.1,SNR=10
TORD PKPbc **PKiKP 01 02 26.4 +1.7**
0.8nm,0.5s,baz=146,slow=3.3,SNR=21
TORD PKPab **PKPab 01 02 41.5 +1.5**
1.9nm,0.5s,baz=159,slow=2.8,SNR=14
NB2 NORSAR Subarra 155.64 344 PKP PKPdf 01 02 24.3 +8.7
comp=Z,0.6nm,0.5s,baz=17,slow=2.6
NOA NORSAR Array B 155.64 344 PKPbc PKPdf 01 02 24.6 +8.9
comp=Z,1.1nm,0.6s,baz=31,slow=2.0,SNR=4.4
HFS Hagfors 155.86 341 PKPbc PKPdf 01 02 24.5 +8.6
comp=Z,1.1nm,0.4s,baz=73,slow=5.1,SNR=6.4
HFS PKPab **PKPab 01 02 41.4 -1.7**
comp=Z,1.6nm,0.6s,baz=64,slow=6.7,SNR=3.2
BUR08 Bucovina Ar. S 158.07 304 *e*PKPab **PKPab 01 02 53.5 +0.3**
EKA Eskdalemuir Ar 162.78 2 PKPab **PKPab 01 03 11.5 -1.8**
comp=Z,0.7nm,0.5s,baz=331,slow=2.4,SNR=4.9
GERES GERESS Array B 164.44 318 PKP **PKPdf 01 02 26.6 +0.7**
comp=Z,0.1nm,0.3s,baz=225,slow=0.9,SNR=3.8
DAVOX Davos/Dischmat 167.74 319 PKP **PKPdf 01 02 28.9 +0.2**
comp=Z,1.9nm,0.8s,baz=86,slow=5.4,SNR=4.8
ESDC Sonseca Array 177.80 45 PKPab PKPab 01 04 21.1 +0.8
comp=Z,0.9nm,0.8s,baz=317,slow=4.9,SNR=6.5

ISCJB ***30*** *00:51:12.0±0.9, 35°.61N±0°.05×140°.3E±0°.1, h50km, mb4.0/6, Error ellipse: s-maj=12.9km s-min=6.3km az=168.7*
JMA ***30*** *00:51:13.1±0.2, 35°.67N×140°.21E, h63km±2km, M2.9*
IDC ***30*** *00:51:14.4±4.1, 35°.52N×140°.19E, h74km±27km, mb3.5/5, mb1 3.6/6, mb1mx3.2/59, mbtmp3.9/6, Error ellipse: s-maj=59.4km s-min=7.3km az=66.0*
ISC 30 00:51:12.1±1.0,**35°.64N**±0°.05×**140°.24E**±0°.09,**h50**km,**n14,** σ=**31**/18,**mb3.9/6,Near east coast of eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCN	**Nagara**	**0.22**	**188**	P	**Pn**	**00 51 23.8**	**+3.2**
TOK	**Tokyo**	**0.40**	**277**	P	**Pn**	**00 51 24.9**	**+2.8**
JYT	**Yasato**	**0.59**	**356**	P	**Pn**	**00 51 25.9**	**+1.4**
JYT				S	**Sn**	**00 51 35.4**	**+2.0**
JOD2	**Odawara 2**	**1.01**	**249**	P	**Pn**	**00 51 31.0**	**+1.0**
JAG	**Ashikaga**	**1.01**	**321**	P	**Pn**	**00 51 31.2**	**+1.2**
MJAR	**Matsushiro Arr**	**1.88**	**299**	P	**Pn**	**00 51 43.3**	**+1.5**
MJAR	21nm,0.3s,baz=122,slow=13,SNR=45			S	**Sn**	**00 52 07.6**	**+3.3**
MAT	**Matsushiro**	**1.88**	**299**	P	**Pn**	**00 51 43.4**	**+1.6**
MAT	15nm,0.3s,baz=194,slow=28,SNR=7.0			S	**Sn**	**00 52 05.7**	**+1.4**
JHJ	**Hachijo jima 2**	**2.54**	**189**	P	**Pn**	**00 51 52.7**	**+1.9**
JHJ	39nm,0.3s,baz=71,slow=18,SNR=7.6			S	**Sn**	**00 52 21.1**	**+0.6**
HHC	**Hu-ho-hao-te**	**23.06**	**292**	*e*P	**P**	**00 56 08.0**	**-5.3**
HHC				pmax	pmax		
HHC	comp=Z,36nm,1.4s			pmax	pmax		
ZALV	**Zalesovo Beam**	**42.17**	**314**	P	**P**	**00 59 00.5**	**+0.9**
MKAR	**Makanchi Array**	**44.07**	**303**	P	**P**	**00 59 15.3**	**+0.2**
KURBB	**Kurchatov Arra**	**46.13**	**309**	P	**P**	**00 59 31.2**	**0.0**
WRA	**Warramunga Arr**	**55.56**	**187**	P	**P**	**01 00 41.0**	**-1.4**
ARU	**Arti**	**56.78**	**319**	P	**P**	**01 00 50.2**	**-0.6**

comp=Z,0.4nm,0.3s,baz=103,slow=8.8,SNR=3.4
comp=Z,0.6nm,0.8s,baz=86,slow=7.9,SNR=6.2
comp=Z,0.9nm,0.5s,baz=87,slow=7.6,SNR=9.2
comp=Z,0.8nm,0.6s,baz=2.3,slow=7.6,SNR=7.9
comp=Z,1.9nm,0.6s,baz=83,slow=8.1,SNR=5.0

ATH ***30*** *00:53:54.5, 40°.28N×27°.94E, h15km±2km, ML2.7/4, Error ellipse: s-maj=5.0km s-min=1.8km az=51.0*
ISK ***30*** *00:53:54.7, 40°.26N×27°.96E, h14km, ML2.9*
DDA ***30*** *00:53:55.1, 40°.25N×27°.95E, h18km, Md3.2*
ISCJB ***30*** *00:53:55.3±0.3, 40°.29N±0°.02×27°.98E±0°.02, h6km±2km, Error ellipse: s-maj=2.8km s-min=2.2km az=170.6*
CSEM ***30*** *00:53:55.6±0.1, 40°.29N×27°.98E, h10km, ML2.9, Error ellipse: s-maj=2.5km s-min=2.1km az=164.0*
THE ***30*** *00:53:56.9, 40°.28N×28°.03E, h12km±3km, ML3.0/3, Error ellipse: s-maj=4.0km s-min=1.3km az=125.0*
ISC 30 00:53:55.7±0.8,**40°.28N**±0°.01×**27°.98E**±0°.01,**h10**km±6km, **n139,** σ=**96**/196,**7C-4D,Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
EDC	**Edincik**	**0.11**	**309**	PG	**Pg**	**00 53 58.2**	**-0.3**
EDC				*e*SG	**Sg**	**00 54 00.5**	**+0.1**
EDC	**Edincik**	**0.11**	**309**	*i* Pg	**Pg**	**00 53 58.2**	**-0.3**
EDC				*e*Sg	**Sg**	**00 54 00.5**	**+0.1**
KCTX	**Karacabey (Bur**	**0.29**	**92**	PG	**Pg**	**00 54 01.5**	**-0.1**
KCTX				*e*SG	**Sg**	**00 54 05.7**	**+0.2**
KCTX	**Karacabey (Bur**	**0.29**	**92**	*i* Pg	**Pg**	**00 54 01.5**	**-0.1**
KCTX				*e*Sg	**Sg**	**00 54 05.7**	**+0.2**
GONE	**Gonen-Balikesi**	**0.32**	**224**	*e*PG	**Pg**	**00 54 01.4**	**-0.7**
GONE				*e*SG	**Sg**	**00 54 06.4**	**0.0**
GONE	**Gonen-Balikesi**	**0.32**	**224**	*e*Pg	**Pg**	**00 54 01.4**	**-0.7**
GONE				*e*Sg	**Sg**	**00 54 06.4**	**0.0**
KNL	**Bal¨–kesir**	**0.34**	**269**	*i* P	**Pg**	**00 54 01.4**	**-1.2**
KNL				*i* S	**Sg**	**00 54 06.5**	**-0.6**
MRMT	**Marmara Adasi**	**0.44**	**318**	*e*PG	**Pg**	**00 54 04.4**	**+0.1**
MRMT				*e*SG	**Sg**	**00 54 10.8**	**+0.7**
MRMT	**Marmara Adasi**	**0.44**	**318**	*e*Pg	**Pg**	**00 54 04.4**	**+0.1**
MRMT				*e*Sg	**Sg**	**00 54 10.8**	**+0.7**
BALY	**Balya**	**0.60**	**207**	P	**Pg**	**00 54 07.0**	**-0.4**
BALY	**Balya**	**0.60**	**207**	*i* P	**Pg**	**00 54 07.0**	**-0.4**
BALB	**Balikesir**	**0.64**	**187**	*e*PG	**Pg**	**00 54 07.5**	**-0.6**
BALB	**Balikesir**	**0.64**	**187**	*e*Pg	**Pg**	**00 54 07.5**	**-0.6**
MDNY	**Mudanya-Bursa**	**0.70**	**82**	*e*PG	**Pg**	**00 54 09.0**	**-0.2**
MDNY	**Mudanya-Bursa**	**0.70**	**82**	*e*Pg	**Pg**	**00 54 09.0**	**-0.2**
SART	**Tekirdag**	**0.73**	**304**	P	**Pg**	**00 54 09.7**	**-0.2**
SART	**Tekirdag**	**0.73**	**304**	*i* P	**Pg**	**00 54 09.7**	**-0.2**
ARMT	**Armutlu**	**0.73**	**67**	*e*PG	**Pg**	**00 54 09.9**	**0.0**
ARMT				*e*SG	**Sb**	**00 54 20.8**	**0.0**
ARMT	**Armutlu**	**0.73**	**67**	*e*Pg	**Pg**	**00 54 09.9**	**0.0**
ARMT				*e*Sg	**Sb**	**00 54 20.8**	**0.0**
TKR	**Tekirdag**	**0.79**	**335**	*e*PG	**Pg**	**00 54 10.8**	**-0.1**
TKR	**Tekirdag**	**0.79**	**335**	*e*Pg	**Pg**	**00 54 10.8**	**-0.1**
CRLT	**Corlu**	**0.87**	**348**	*e*PG	**Pg**	**00 54 12.3**	**-0.2**
CRLT	**Corlu**	**0.87**	**348**	*e*Pg	**Pg**	**00 54 12.3**	**-0.2**
IGD	**Bursa**	**0.94**	**90**	*i* P	**Pg**	**00 54 12.3**	**-1.5**
GEMT	**Gemlik**	**0.94**	**80**	*e*PG	**Pg**	**00 54 12.9**	**-0.9**
GEMT	**Gemlik**	**0.94**	**80**	*e*Pg	**Pg**	**00 54 12.9**	**-0.9**
SLVT	**Silivri**	**0.97**	**10**	P	**Pg**	**00 54 12.0**	**-2.4**
SLVT				S	**Sg**	**00 54 24.5**	**-2.5**
CTKS	**Kestanelik-??a**	**1.04**	**23**	*e*PG	**Pg**	**00 54 15.6**	**-0.2**
CTKS	**Kestanelik-??a**	**1.04**	**23**	*e*Pg	**Pg**	**00 54 15.6**	**-0.2**
BUY	**Buyukada**	**1.04**	**56**	P	**Pg**	**00 54 15.8**	**0.0**
BUY				S	**Sb**	**00 54 36.6**	**+0.9**
BUY	**Buyukada**	**1.04**	**56**	*i* P	**Pg**	**00 54 15.8**	**0.0**
BUY				*i* S	**Sb**	**00 54 30.6**	**+0.9**
BGKT	**Bogazkoy**	**1.09**	**34**	*e*PN	**Pg**	**00 54 16.2**	**-0.5**
BGKT	**Bogazkoy**	**1.09**	**34**	*e*Pn	**Pg**	**00 54 16.2**	**-0.5**
KESN	**Edirne-Kesan**	**1.13**	**299**	P	**Pg**	**00 54 17.3**	**-0.2**
KESN				S	**Sg**	**00 54 31.9**	**-0.3**
KESN	**Edirne-Kesan**	**1.13**	**299**	*i* P	**Pg**	**00 54 17.3**	**-0.2**
KESN				*i* S	**Sg**	**00 54 31.9**	**-0.3**
ISK	**Istanbul-Kandi**	**1.14**	**46**	*e*PN	**Pb**	**00 54 16.6**	**-1.0**
ISK	**Istanbul-Kandi**	**1.14**	**46**	P	**Pb**	**00 54 17.2**	**-0.4**
ISK				S	**Sg**	**00 54 32.6**	**+0.1**
ISK	**Istanbul-Kandi**	**1.14**	**46**	*e*Pn	**Pb**	**00 54 16.6**	**-1.0**
ISK	**Istanbul-Kandi**	**1.14**	**46**	P	**Pb**	**00 54 17.2**	**-0.4**
ISK				S	**Sg**	**00 54 32.6**	**+0.1**
IZI	**Iznik**	**1.15**	**87**	*e*PN	**Pg**	**00 54 16.8**	**-0.9**
IZI	**Iznik**	**1.15**	**87**	*e*Pn	**Pg**	**00 54 16.8**	**-0.9**
CTYL	**Yalikoy Yolu**	**1.22**	**11**	*e*PN	**Pn**	**00 54 18.2**	**-0.7**
CTYL	**Yalikoy Yolu**	**1.22**	**11**	*e*Pn	**Pn**	**00 54 18.2**	**-0.7**
KLYT	**Kilyos**	**1.27**	**39**	*e*PN	**Pn**	**00 54 18.8**	**-0.8**
KLYT	**Kilyos**	**1.27**	**39**	*e*Pn	**Pn**	**00 54 18.8**	**-0.8**
EZN	**Ezine**	**1.34**	**251**	P	**Pn**	**00 54 20.6**	**0.0**
EZN				S	**Sg**	**00 54 39.5**	**+0.5**
EZN	**Ezine**	**1.34**	**251**	P	**Pn**	**00 54 20.6**	**0.0**
EZN				S	**Sg**	**00 54 39.5**	**+0.5**
ADVT	**Abdulvahap**	**1.35**	**83**	*e*PN	**Pn**	**00 54 20.1**	**-0.7**
ADVT	**Abdulvahap**	**1.35**	**83**	*e*Pn	**Pn**	**00 54 20.1**	**-0.7**
DEMI	**Demirci**	**1.36**	**155**	P	**Pn**	**00 54 21.2**	**+0.3**
DEMI				S	**Sg**	**00 54 39.9**	**+0.4**
DEMI	**Demirci**	**1.36**	**155**	*i* P	**Pn**	**00 54 21.2**	**+0.3**
DEMI				*i* S	**Sg**	**00 54 39.9**	**+0.4**
DEMI	**Demirci**	**1.36**	**155**	*i* P	**Pn**	**00 54 21.2**	**+0.3**
DEMI				*i* S	**Sg**	**00 54 40.5**	**+1.0**
AYVA	**Ayvalik**	**1.39**	**226**	P	**Pb**	**00 54 21.6**	**-0.1**
AYVA				S	**Sg**	**00 54 39.9**	**-0.4**
AYVA	**Ayvalik**	**1.39**	**226**	*i* P	**Pn**	**00 54 20.9**	**-0.3**
AYVA				*i* S	**Sg**	**00 54 39.9**	**-0.4**
AYVA	**Ayvalik**	**1.39**	**226**	*i* P	**Pb**	**00 54 21.6**	**-0.1**
AYVA				*i* S	**Sg**	**00 54 40.5**	**+0.2**
HRT	**Hereke**	**1.40**	**67**	*e*PN	**Pn**	**00 54 20.7**	**-0.8**
HRT	**Hereke**	**1.40**	**67**	*e*Pn	**Pn**	**00 54 20.7**	**-0.8**
AKHS	**Akhisar**	**1.40**	**185**	P	**Pn**	**00 54 21.7**	**+0.3**
AKHS				S	**Sg**	**00 54 41.3**	**+0.5**
AKHS	**Akhisar**	**1.40**	**185**	*i* P	**Pn**	**00 54 21.3**	**-0.2**
AKHS				*i* S	**Sg**	**00 54 41.4**	**+0.5**
AKHS	**Akhisar**	**1.40**	**185**	*i* P	**Pn**	**00 54 21.7**	**+0.3**
AKHS				*i* S	**Sg**	**00 54 41.6**	**+0.8**
AKS	**Akhisar**	**1.40**	**185**	*e*PN	**Pn**	**00 54 20.6**	**-0.8**
AKS	**Akhisar**	**1.40**	**185**	*e*Pn	**Pn**	**00 54 20.6**	**-0.8**
TVSB	**Tavsanli**	**1.41**	**125**	*e*PN	**Pn**	**00 54 20.8**	**-0.8**
TVSB	**Tavsanli**	**1.41**	**125**	*e*Pn	**Pn**	**00 54 20.8**	**-0.8**
CAVI	**Cavuskoy**	**1.43**	**92**	*e*PN	**Pn**	**00 54 20.6**	**-1.2**
CAVI	**Cavuskoy**	**1.43**	**92**	*e*Pn	**Pn**	**00 54 20.6**	**-1.2**
DKL	**Dikili**	**1.46**	**215**	*e*PN	**Pn**	**00 54 21.1**	**-1.1**
DKL	**Dikili**	**1.46**	**215**	*e*Pn	**Pn**	**00 54 21.1**	**-1.1**
BOZC	**Bozcaada**	**1.54**	**254**	*i* P	**Pn**	**00 54 23.8**	**+0.5**
BOZC				*i* S	**Sg**	**00 54 45.0**	**-0.2**
SILT	**Sile**	**1.54**	**55**	*e*PN	**Pn**	**00 54 22.6**	**-0.7**
SILT	**Sile**	**1.54**	**55**	*e*Pn	**Pn**	**00 54 22.6**	**-0.7**
GADA	**Gvkgeada**	**1.59**	**268**	P	**Pn**	**00 54 24.4**	**+0.4**
GADA				S	**Sb**	**00 54 46.2**	**+0.7**
GADA	**Gvkgeada**	**1.59**	**268**	P	**Pn**	**00 54 24.4**	**+0.4**
GADA				S	**Sb**	**00 54 46.2**	**+0.7**
ALN	**Alexandroupoli**	**1.60**	**293**	P	**Pn**	**00 54 24.2**	**+0.1**
ALN				S	**Sg**	**00 54 46.7**	**-0.4**
ALN	**Alexandroupoli**	**1.60**	**293**	P	**Pn**	**00 54 24.2**	**+0.1**
ALN				S	**Sg**	**00 54 46.7**	**-0.4**
ALN	**Alexandroupoli**	**1.60**	**293**	P	**Pn**	**00 54 24.5**	**+0.4**
ALN				S	**Sg**	**00 54 46.7**	**-0.4**
ALN				AML	AML	00 54 49.2	
ALN	comp=N,492μm,0.3s			AML	AML	00 54 50.8	
GDZ	**Gediz**	**1.66**	**135**	P	**Pn**	**00 54 25.9**	**+0.8**
GDZ				S	**Sg**	**00 54 48.8**

URLA	**Izmir**	**2.19 210**	P	**Pb**	**00 54 35.6**	**0.0**
URLA	**Izmir**	**2.19 210**	*i* P	**Pb**	**00 54 35.6**	**0.0**
URLA			*i* S	**Sg**	**00 55 06.3**	**+0.1**
KHAL	**Karahalli**	**2.24 148**	P	**Pn**	**00 54 33.5**	**+0.5**
KHAL	**Karahalli**	**2.24 148**	*i* P	**Pn**	**00 54 33.5**	**+0.5**
SAHE	**Sakarya_HENDEK**	**2.27 74**	P	**Pn**	**00 54 34.2**	**+0.9**
SAHE	**Sakarya_HENDEK**	**2.27 74**	*i* P	**Pn**	**00 54 34.2**	**+0.9**
SAHE			*i* S	**Sg**	**00 55 08.3**	**-0.2**
KHL	**Karahalli**	**2.29 148**	*e*PN	**Pn**	**00 54 32.7**	**-1.0**
KHL	**Karahalli**	**2.29 148**	*e*Pn	**Pn**	**00 54 32.7**	**-1.0**
BTAS	**Taskesti**	**2.33 82**	P	**Pn**	**00 54 36.3**	**+2.1**
BTAS	**Taskesti**	**2.33 82**	*i* P	**Pn**	**00 54 36.4**	**+2.1**
BTAS			*i* S	**Sg**	**00 55 10.8**	**+0.4**
AYDB	**Zeytinkoy-Aydi**	**2.33 182**	*e*PN	**Pn**	**00 54 33.4**	**-0.9**
AYDB	**Zeytinkoy-Aydi**	**2.33 182**	*e*Pn	**Pn**	**00 54 33.4**	**-0.9**
ESKT	**Eskisehir**	**2.34 108**	*i* P	**Pn**	**00 54 35.4**	**+1.0**
SEYT	**Eskypehyr**	**2.34 108**	P	**Pn**	**00 54 35.4**	**+1.0**
DGB	**¨zmir**	**2.38 201**	*i* P	**Pg**	**00 54 41.6**	**+0.2**
DGB			*i* S	**Sb**	**00 55 09.7**	**+1.6**
CHOS	**Chios island**	**2.41 219**	P	**Pn**	**00 54 34.6**	**-0.7**
CHOS	**Chios island**	**2.41 219**	P	**Pn**	**00 54 34.6**	**-0.7**
AYDN	**Tasoluk**	**2.61 182**	P	**Pn**	**00 54 37.7**	**-0.4**
AYDN	**Tasoluk**	**2.61 182**	*i* P	**Pn**	**00 54 37.7**	**-0.4**
KAVA	**Kavala**	**2.73 286**	P	**Pn**	**00 54 39.4**	**-0.3**
KAVA			S	**Sn**	**00 55 10.3**	**-2.5**
KAVA	**Kavala**	**2.73 286**	P	**Pn**	**00 54 39.4**	**-0.3**
BOLV	**Bolvadin**	**2.78 123**	P	**Pn**	**00 54 42.1**	**+1.6**
BOLV	**Bolvadin**	**2.78 123**	*i* P	**Pn**	**00 54 42.1**	**+1.6**
ISP	**Isparta**	**3.15 140** ⇑	*i* P	**Pg**	**00 54 55.8**	**-0.3**
NVR	**Nevrokopi**	**3.30 290**	P	**Pn**	**00 54 47.9**	**+0.3**
NVR	**Nevrokopi**	**3.30 290**	P	**Pn**	**00 54 47.9**	**+0.3**
NVR			S	**Sn**	**00 55 25.9**	**-1.0**
MSAB	**Monastry St. A**	**3.81 358** ⇓	*i* P	**Pn**	**00 54 57.0**	**+2.4**
CFR	**Carcaliu**	**4.90 1** ⇑	*i* P	**Pn**	**00 55 05.5**	**-4.0**
MLR	**Muntele Rosu**	**5.42 345** ⇓	*i* P	**Pn**	**00 55 20.5**	**+3.7**
VOIR		**5.59 338** ⇓	*i* P	**Pn**	**00 55 21.9**	**+2.9**
PLOR	**Plostina**	**5.66 351** ⇑	*i* P	**Pn**	**00 55 24.0**	**+4.1**
VRI	**Vrincioaia**	**5.66 351** ⇑	*i* P	**Pn**	**00 55 21.8**	**+1.8**
GZR	**Gura Zlata**	**6.38 325** ⇑	*i* P	**Pn**	**00 55 30.8**	**+0.9**
MDVR	**Moldovita**	**6.46 316** ⇓	*i* P	**Pn**	**00 55 32.4**	**+1.5**
BZS	**Buzias**	**7.09 321** ⇑	*i* P	**Pn**	**00 55 40.5**	**+1.0**
BURAR	**Bucovina Array**	**7.60 346** ⇑	*i* P	**Pn**	**00 55 50.1**	**+3.4**

SJA 30 01:04:35.6±0.8, 31°.55S×68°.70W, h112km±4km, ML3.1, MW3.6, San Juan Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SJA	**San Juan**	**0.12**	**80**	*e*P	Pn	01 04 51.8	+0.6
SJA				*e*S	Sn	01 05 03.3	+0.5
RTLL	**Cerro Villicun**	**0.29**	**42**	*e*P	Pn	01 04 52.1	+0.4
RTCV	**Cerro Valdivia**	**0.34**	**156**	*e*P	Pn	01 04 52.6	+0.7
RTLS	**Leoncito**	**0.56**	**244**	*e*P	Pn	01 04 54.4	+0.9
AMOG	**MOGNA**	**0.64**	**17**	*e*P	Pn	01 04 54.7	+0.9
AUSP	**Uspallata**	**0.89**	**221**	*e*P	Pn	01 04 57.2	+1.0
ACAN	**Cantantal**	**1.48**	**120**	*e*P	Pn	01 05 03.6	+1.3
AGUA	**GUANDACOL**	**2.06**	**5**	*e*P	Pn	01 05 11.2	+1.5
ROC1	**El Roble**	**2.42**	**233**	*e*P	Pn	01 05 14.9	+0.6
MRA	**San Martin**	**2.68**	**110**	*e*P	Pn	01 05 18.4	+0.9
MRA				IAML		01 05 50.4	
	comp=Z,81nm,0.2s						
VCA	**Vinchina**	**2.84**	**9**	*e*P	Pn	01 05 20.6	+0.9
VCA				IAML		01 05 58.4	
	comp=Z,50nm,0.2s						
CYA	**Choya**	**3.99**	**40**	IAML		01 06 20.2	
	comp=Z,14nm,0.2s						

NIED ***30*** *01:04:00, 36°.50N×142°.80E, h8km, Mw4.6 Best double couple: M0=8.85000×10^15 NP1:φ=208.00000°, δ=40.00000°, λ=101.00000° NP2:φ=15.00000°, δ=50.00000°, λ=81.00000°.*
ISCJB ***30*** *01:04:35.5±0.2, 36°.42N±0°.03×142°.69E±0°.03, h15km, mb4.6/116, MS4.4/41, Error ellipse: s-maj=4.3km s-min=2.8km az=163.2*
JMA ***30*** *01:04:36.8±0.4, 36°.51N×142°.76E, h64km, M4.5*
NEIC ***30*** *01:04:37.9±2.2, 36°.51N×142°.69E, h19km±13km, mb4.8/62, Error ellipse: s-maj=6.8km s-min=4.3km az=144.0*
MOS ***30*** *01:04:38.0±1.0, 36°.38N×142°.70E, h33km, mb4.9/64, MS4.3/14, Error ellipse: s-maj=8.8km s-min=5.2km az=124.2*
IDC ***30*** *01:04:40.8±2.4, 36°.48N×142°.61E, h39km±20km, mb4.0/30, mb1 4.2/36, mb1mx4.1/51, mbtmp4.3/36, ML3.7/5, MS3.9/16, Ms1 3.9/16, ms1mx3.7/37, Error ellipse: s-maj=13.8km s-min=11.3km az=112.0*
ISC 30 01:04:37.2±0.4, 36°.48N±0°.04×142°.70E±0°.04, h15km, n281, σ1°.55/300, **mb4.7**/116, **MS4.5**/41, **10C-3D, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**1.65**	**293**	P	**Pn**	**01 05 04.7**	**-1.0**
CHOJ	**Chosi**	**1.68**	**243**	P	**Pn**	**01 05 05.1**	**-0.9**
CHOJ				*e*S	**Sn**	**01 05 27.2**	**-0.1**
JFK	**Kawauchi**	**1.71**	**302**	P	**Pn**	**01 05 05.2**	**-1.3**
JHO	**Hitachi**	**1.72**	**275**	P	**Pn**	**01 05 05.4**	**-1.2**
JMM	**Marumori**	**2.06**	**313**	P	**Pn**	**01 05 10.5**	**-0.8**
JFT	**Otama**	**2.16**	**299**	P	**Pn**	**01 05 12.2**	**-0.5**
BSO1	**Boso 1**	**2.30**	**218**	P	**Pn**	**01 05 13.7**	**-0.4**
JAG	**Ashikaga**	**2.62**	**270**	P	**Pn**	**01 05 18.2**	**-0.8**
JAG				*e*S	**Sn**	**01 05 48.1**	**-2.4**
JMK	**Ichinoseki**	**2.73**	**335**	P	**Pn**	**01 05 19.1**	**-1.4**
MJAR	**Matsushiro Arr**	**3.62**	**272**	Pn	**Pn**	**01 05 33.1**	**+0.3**
	5.8nm,0.3s,baz=94,slow=8.7,SNR=43						
MJAR				LR	LR	01 07 16.4	
	comp=Z,1μm,21.1s,baz=100,slow=44						
MAJO	**Matsushiro**	**3.62**	**272**	*e*/*i*P	**Pn**	**01 05 33.8**	**+1.0**
MAJO	**Matsushiro**	**3.62**	**272**	*e*Pn	**Pn**	**01 05 33.0**	**+0.2**
MAJO				*e*S	**Sn**	**01 06 13.1**	**-2.1**
MAT	**Matsushiro**	**3.62**	**272**	P	**Pn**	**01 05 33.2**	**+0.4**
MAT				*e*S	**Sn**	**01 06 16.5**	**+1.3**
MJB9	**Matsu-Tunnel**	**3.62**	**272**	*e*Pn	**Pn**	**01 05 33.9**	**+1.0**
JHJ2	**Mitsune**	**4.11**	**216**	*e*Pn	**Pn**	**01 05 38.8**	**-0.7**
JHJ2				*e*S	**Sn**	**01 06 23.3**	**-4.1**
JHJ	**Hachijo jima 2**	**4.12**	**216**	Pn	**Pn**	**01 05 39.4**	**-0.3**
	67nm,0.3s,baz=246,slow=18,SNR=8.2						
JHJ				Sn	**Sn**	**01 06 24.4**	**-3.2**
	56nm,0.3s,baz=238,slow=23,SNR=7.8						
INU	**Inuyama**	**4.75**	**258**	*e*Pn	**Pn**	**01 05 47.7**	**-0.6**
ERM	**Erimo**	**5.54**	**4**	*e*P	**Pn**	**01 05 56.9**	**-2.2**
ERM	**Erimo**	**5.54**	**4**	*e*Pn	**Pn**	**01 05 56.9**	**-2.2**
ERM				*e*S	Sn	01 06 53.4	-9.1
ASAJ	**Asahikawa**	**7.63**	**359**	Pn	**Pn**	**01 06 28.0**	**+0.2**
ASAJ				Sn	**Sn**	**01 07 52.2**	**-1.8**
	1.1nm,0.3s,baz=63,slow=31,SNR=3.2						
ASAJ	**Asahikawa**	**7.63**	**359**	*e*Pn	**Pn**	**01 06 25.3**	**-2.5**
ASAJ				*e*S	**Sn**	**01 07 49.5**	**-4.5**
CBIJ	**Chichi jima**	**9.37**	**183**	*e*Pn	Pn	01 06 48.5	-3.2
CBIJ				Sn	Sn	01 08 27.1	-10
JCJ	**Chichijima**	**9.37**	**183**	Sn	Sn	01 08 27.2	-10
	15nm,0.3s,baz=277,slow=23,SNR=3.1						
JNU	**Nakatsue**	**10.28**	**254**	Pn	**Pn**	**01 07 05.1**	**+0.8**
	0.4nm,0.3s,baz=84,slow=15,SNR=3.1						
JNU				LR	LR	01 11 40.9	
	comp=Z,866nm,19.3s,baz=86,slow=41						
JNU	**Nakatsue**	**10.28**	**254**	*e*Pn	**Pn**	**01 07 06.7**	**+2.5**
YSS	**Yuzh-Sakhalins**	**10.47**	**0**	*e*P	**Pn**	**01 07 05.2**	**-1.5**
YSS				*e*S	**Sn**	**01 08 59.8**	**-3.8**
YSS				pmax	pmax		
	comp=Z,60nm,0.4s						
YSS				MLR	MLR		
	comp=Z,1μm,15.0s						
YSS				MLR	MLR		
	comp=N,1μm,20.0s						
YSS				MLR	MLR		
	comp=E,2μm,16.0s						
YSS	**Yuzh-Sakhalins**	**10.47**	**0**	*e*Pn	**Pn**	**01 07 04.0**	**-2.6**
YSS				*e*S	Sn	01 08 56.8	-6.8
VLA	**Vladivostok**	**10.63**	**312**	⇓ *i*P	Pn	01 07 12.6	+3.6
VLA				*e*S	**Sn**	**01 09 11.8**	**+4.1**
VLA				pmax	pmax		
	comp=Z,14nm,0.6s						
USRK	**Ussuriysk Ar.**	**11.23**	**317**	Pn	Pn	01 07 21.8	+4.7
	comp=Z,0.2nm,0.3s,baz=123,slow=14,SNR=4.5						
USRK				LR	LR	01 10 47.0	
	comp=Z,376nm,18.2s,baz=125,slow=33						
KSRS	**Korea Array**	**11.86**	**279**	Pn	**Pn**	**01 07 27.8**	**+2.0**
	comp=Z,0.4nm,0.3s,baz=94,slow=14,SNR=14						
KSRS				LR	LR	01 11 24.1	
	comp=Z,310nm,19.8s,baz=92,slow=34						
KS01	**Wonju Array Si**	**11.88**	**279**	*e*Pn	**Pn**	**01 07 27.2**	**+1.1**
KS15	**Wonju Array Si**	**11.89**	**279**	*e*Pn	**Pn**	**01 07 25.3**	**-1.0**
KSAR	**Wonju Array Be**	**11.89**	**279**	P	**Pn**	**01 07 27.8**	**+1.6**
KSAR	**Wonju Array Be**	**11.89**	**279**	Pn	**Pn**	**01 07 27.8**	**+1.6**
TJN	**Taejon**	**12.36**	**274**	*e*P	**Pn**	**01 07 34.7**	**+2.2**
MDJ	**Mudanjiang**	**12.85**	**313**	P	**Pn**	**01 07 39.0**	**-0.3**
MDJ				S	**Sn**	**01 10 05.8**	**+3.8**
MDJ				PcP	**PcP**	**01 13 14.0**	**0.0**
MDJ				ScP	**ScP**	**01 16 44.0**	**-2.6**
MDJ				PcS	**PcS**	**01 16 48.0**	**-0.3**
MDJ	**Mudanjiang**	**12.85**	**313**	ScS	ScS	01 20 21.8	-1.1
MDJ				pmax	pmax		
	comp=Z,8.0nm,0.7s						
MDJ				pmax	pmax		
	comp=Z,290nm,8.7s						
MDJ				LR	LR		
	comp=N,1μm,11.6s						
MDJ				LR	LR		
	comp=E,170nm,11.6s						
MDJ				LR	LR		
	comp=Z,850nm,11.4s						
KLR	**Kul'dur**	**15.04**	**331**	Pn	**Pn**	**01 08 11.1**	**+2.0**
	comp=Z,0.1nm,0.3s,baz=142,slow=12,SNR=6.3						
CN2	**Changchun**	**15.07**	**304**	*e*P	**Pn**	**01 08 11.5**	**+2.0**
CN2				*e*S	**Sn**	**01 10 56.5**	**+0.4**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.7s						
CN2				pmax	pmax		
	comp=Z,200nm,4.0s						
CN2				LR	LR		
	comp=N,1μm,14.0s						
CN2				LR	LR		
	comp=E,1μm,14.0s						
CN2				LR	LR		
	comp=Z,400nm,14.0s						
SNY	**Shenyang**	**15.76**	**296**	⇓ P	**P**	**01 08 20.8**	**-1.6**
SNY				S	**Sn**	**01 11 07.8**	**-5.0**
SNY				pmax	pmax		
	comp=Z,14nm,1.6s						
SNY				pmax	pmax		
	comp=Z,420nm,12.0s						
SNY				LR	LR		
	comp=N,1μm,16.1s						
SNY				LR	LR		
	comp=E,2μm,15.2s						
SNY				LR	LR		
	comp=Z,3μm,15.2s						
DL2	**Dalian**	**16.85**	**285**	P	**Pn**	**01 08 31.5**	**-1.0**
DL2				*e*S	**Sn**	**01 11 36.0**	**-3.5**
DL2				SS	**SnSn**	**01 11 53.0**	**+0.5**
DL2				pmax	pmax		
	comp=Z,29nm,1.1s						
DL2				pmax	pmax		
	comp=Z,390nm,5.1s						
DL2				LR	LR		
	comp=N,2μm,12.1s						
DL2				LR	LR		
	comp=E,790nm,12.2s						
DL2				LR	LR		
	comp=Z,1μm,14.5s						
PEA0	**Petropavlovsk-**	**19.67**	**28**	*e*P	**P**	**01 09 05.6**	**+0.1**
PETK	**Petropavlovsk-**	**19.67**	**28**	P	**Pn**	**01 09 07.2**	**+0.2**
	baz=220,slow=14,SNR=5.6						
PET	**Petropavlovsk**	**19.97**	**29**	*e*P	**P**	**01 09 07.6**	**-1.2**
PET				pmax	pmax		
	comp=Z,42nm,1.5s						
PET	**Petropavlovsk**	**19.97**	**29**	*e*P	**P**	**01 09 07.6**	**-1.2**
	comp=Z,42nm,1.5s						
NJ2	**Nanjing**	**20.18**	**264**	*e*P	Pn	01 09 13.5	+0.4
NJ2				pmax	pmax		
	comp=Z,17nm,0.9s						
TIA	**Tai'an**	**20.59**	**277**	⇑ P	**P**	**01 09 15.8**	**+0.1**
TIA				S	Sn	01 13 19.5	+10
TIA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
TIA				pmax	pmax		
	comp=Z,380nm,5.4s						
TIA				LR	LR		
	comp=N,930nm,13.1s						
TIA				LR	LR		
	comp=E,1μm,10.7s						
TIA				LR	LR		
	comp=Z,880nm,12.5s						
BJI	**Beijing**	**21.10**	**288**	P	**P**	**01 09 21.0**	**-0.1**
BJI				S	**S**	**01 13 15.3**	**-0.1**
BJI				sS	sS	01 13 28.8	+6.5
BJI				pmax	pmax		
	comp=Z,6.0nm,1.2s						
BJI				pmax	pmax		
	comp=Z,220nm,7.3s						
BJI				LR	LR		
	comp=N,520nm,13.9s						
BJI				LR	LR		
	comp=E,730nm,12.3s						
BJI				LR	LR		
	comp=Z,280nm,14.3s						
BJT	**Baijiatuau**	**21.11**	**288**	*e*P	**P**	**01 09 18.8**	**-2.4**
BJT				pmax	pmax		
	comp=Z,90nm,2.6s						
BJT	**Baijiatuau**	**21.11**	**288**	*e*P	**P**	**01 09 18.8**	**-2.4**
	comp=Z,90nm,2.6s						
CLNS	**Chul'man**	**23.61**	**335**	*e*P	**P**	**01 09 46.8**	**-0.7**
CLNS				pmax	pmax		
	comp=E,12nm,0.9s						
CLNS				pmax	pmax		
	comp=Z,14nm,1.1s						
CLNS				pmax	pmax		
	comp=N,19nm,1.1s						
CLNS				MLR	MLR		
	comp=Z,1μm,13.0s						
CLNS				MLR	MLR		
	comp=N,1μm,12.0s						
CLNS				MLR	MLR		
	comp=E,681nm,11.0s						
QZH	**Quanzhou**	**23.64**	**248**	*e*P	**P**	**01 09 48.5**	**+0.6**
QZH				S	**S**	**01 13 57.0**	**-5.0**
QZH				LR	LR		
	comp=N,730nm,10.4s						
QZH				LR	LR		
	comp=E,1μm,13.3s						
QZH				LR	LR		
	comp=Z,1μm,13.2s						
MA2	**Magadan**	**23.70**	**10**	P	**P**	**01 09 48.9**	**+0.7**
	comp=Z,4.3nm,0.3s,baz=228,slow=10,SNR=5.8						
WHN	**Wuhan**	**24.32**	**264**	⇑ P	**P**	**01 09 53.8**	**-0.5**
WHN				pP	**sP**	**01 10 04.0**	**+3.3**
WHN				sP	pP	01 10 12.5	+14
WHN				S	**S**	**01 14 13.0**	**+0.2**
WHN				LR	LR		
	comp=N,3μm,13.4s						
WHN				LR	LR		
	comp=E,2μm,11.7s						
WHN				LR	LR		
	comp=Z,3μm,14.2s						
HHC	**Hu-ho-hao-te**	**24.63**	**290**	*e*P	**P**	**01 09 56.3**	**-0.9**
HHC				sP	sP	01 10 09.8	+6.2
HHC				S	**S**	**01 14 12.5**	**-5.5**
HHC				pmax	pmax		
	comp=Z,22nm,0.9s						
HHC				pmax	pmax		
	comp=Z,210nm,4.2s						
HHC				LR	LR		
	comp=N,630nm,11.1s						
HHC				LR	LR		
	comp=E,610nm,11.1s						
HHC				LR	LR		
	comp=Z,700nm,12.7s						
CIT	**Chita**	**25.79**	**316**	*e*P	**P**	**01 10 08.6**	**+1.1**
CIT				*e*		01 10 19.8	
CIT				*e*		01 10 26.7	
CIT				*e*		01 11 00.3	
CIT				pmax	pmax		
	comp=Z,134nm,2.1s						
YAK	**Yakutsk**	**26.84**	**346**	*e*P	**P**	**01 10 18.1**	**+1.3**
YAK				*e**PP	**sP**	**01 10 25.9**	**+2.6**
YAK				*e*		01 10 59.7	
YAK				*e*S	**S**	**01 14 52.1**	**-0.3**
YAK				*e**SS	sS	01 15 09.8	+10
YAK				*e*SSS	SSS	01 16 09.7	
YAK				pmax	pmax		
	comp=N,30nm,1.4s						
YAK				pmax	pmax		
	comp=E,11nm,1.2s						
YAK				pmax	pmax		
	comp=Z,44nm,1.4s						
YAK				pmax	pmax		
	comp=Z,38nm,1.0s						
YAK				pmax	pmax		
	comp=N,59nm,1.3s						
YAK				pmax	pmax		
	comp=E,35nm,1.5s						
YAK				smax	smax		
	comp=E,62nm,2.8s						
YAK				smax	smax		
	comp=N,150nm,2.3s						
YAK				MLR	MLR		
	comp=N,964nm,17.0s						
YAK				MLR	MLR		
	comp=Z,952nm,13.0s						
YAK				MLR	MLR		
	comp=E,378nm,14.0s						
H11N2	**WAKE ISLAND Hy**	**26.98**	**122**	T	T	01 38 25.4	
	baz=313,slow=75,SNR=21						
H11N1	**WAKE ISLAND Hy**	**26.99**	**122**	T	T	01 38 29.4	
	baz=313,slow=75,SNR=21						
H11N3	**WAKE ISLAND Hy**	**27.00**	**122**	T	T	01 38 25.6	
	baz=313,slow=75,SNR=24						
SEY	**Seymchan**	**27.15**	**10**	P	**P**	**01 10 20.3**	**+0.7**
	comp=E,4.7nm,1.0s,baz=194,slow=7.9,SNR=10						
SEY	**Seymchan**	**27.15**	**10**	*ce*P	**P**	**01 10 20.9**	**+1.3**
XAN	**Xi'an**	**27.61**	**275**	P	**P**	**01 10 23.0**	**-1.1**
XAN				sP	sP	01 10 36.0	+5.5
XAN				PP	**PnPn**	**01 11 09.8**	**+0.5**
XAN				S	**S**	**01 15 05.5**	**+0.3**
XAN				SS	**SnSn**	**01 16 14.8**	**-1.6**
XAN				pmax	pmax		
	comp=Z,16nm,1.3s						
XAN				pmax	pmax		
	comp=Z,180nm,10.9s						
XAN				LR	LR		
	comp=N,420nm,12.8s						
XAN				LR	LR		
	comp=E,490nm,13.2s						
XAN				LR	LR		
	comp=Z,850nm,13.0s						
H11S1	**WAKE ISLAND Hy**	**27.69**	**124**	T	T	01 39 21.2	
	baz=316,slow=76,SNR=15						
H11S3	**WAKE ISLAND Hy**	**27.69**	**124**	T	T	01 39 25.1	
	baz=316,slow=76,SNR=11						
H11S2	**WAKE ISLAND Hy**	**27.71**	**124**	T	T	01 39 23.3	
	baz=316,slow=76,SNR=15						
ENH	**Enshi**	**28.32**	**267**	*e*P	**P**	**01 10 29.8**	**-0.7**
	comp=Z,32nm,0.9s						
ULN	**Ulaanbaatar**	**28.52**	**305**	*ce*P	**P**	**01 10 33.3**	**+1.1**
ULN				pmax	pmax		
	comp=Z,12nm,1.0s						
ULN	**Ulaanbaatar**	**28.52**	**305**	*e*P	**P**	**01 10 33.0**	**+0.8**
	comp=Z,15nm,1.1s						
SONA1	**Songino Array**	**28.95**	**305**	*e*P	**P**	**01 10 36.0**	**0.0**
SONM	**Songino Array**	**28.95**	**305**	P	**P**	**01 10 36.3**	**+0.3**
	comp=Z,6.8nm,0.9s,baz=106,slow=6.5,SNR=25						
SONM				LR	LR	01 21 21.7	
	comp=Z,69nm,20.5s,baz=93,slow=35						
LZH	**Lanzhou**	**31.18**	**281**	*e*P	**P**	**01 10 56.0**	**+0.1**
LZH				pP	sP	01 11 03.0	+0.6
LZH				sP	pP	01 11 06.8	+6.3
LZH				PP	**PP**	**01 12 03.5**	**-2.8**
LZH				PcP	PcP	01 13 57.0	+6.4
LZH				*e*S	**S**	**01 15 59.0**	**-2.5**
LZH				sS	sS	01 16 16.3	+7.2
LZH				SS	**SnSn**	**01 17 44.3**	**+0.7**
LZH				pmax	pmax		
	comp=Z,36nm,1.1s						
LZH				pmax	pmax		
	comp=Z,130nm,4.0s						
LZH				LR	LR		
	comp=N,420nm,13.4s						
LZH				LR	LR		
	comp=E,880nm,14.0s						
LZH				LR	LR		
	comp=Z,1μm,15.1s						
ZAK	**Zakamensk**	**31.42**	**309**	*e*P	**P**	**01 10 57.7**	**-0.1**
ZAK				pmax	pmax		
	comp=Z,14nm,1.3s						
TLY	**Talaya**	**31.47**	**311**	P	**P**	**01 10 58.1**	**0.0**
	comp=Z,3.6nm,0.7s,baz=154,slow=2.5,SNR=5.8						
TLY	**Talaya**	**31.47**	**311**	*c*/*i*P	**P**	**01 11 00.8**	**+2.7**
TLY				*e*S	**S**	**01 16 08.7**	**+3.2**
TLY				pmax	pmax		
	comp=Z,16nm,1.5s						
TLY				MLR	MLR		
	comp=Z,477nm,14.0s						
TLY	**Talaya**	**31.47**	**311**	*e*P	**P**	**01 10 59.5**	**+1.3**
	comp=Z,9.4nm,1.0s						
GYA	**Guiyang**	**32.16**	**262**	⇑ *i*P	**P**	**01 11 03.5**	**-1.0**
GYA				pP	sP	01 11 16.0	+5.0
GYA				PP	**PnPn**	**01 12 13.3**	**+3.0**
GYA				PcP	**PcP**	**01 13 54.5**	**+1.2**
GYA				S	**S**	**01 16 15.5**	**-1.3**
GYA				sS	sS	01 16 32.0	+7.6
GYA				ScP	**ScP**	**01 17 34.3**	**-2.1**
GYA				SS	**SnSn**	**01 18 09.5**	**+2.1**
GYA				pmax	pmax		
	comp=Z,20nm,0.8s						
GYA				pmax	pmax		
	comp=Z,120nm,5.0s						
GYA				LR	LR		
	comp=N,510nm,17.5s						
GYA				LR	LR		
	comp=E,520nm,18.0s						
GYA				LR	LR		
	comp=Z,500nm,17.9s						
CD2	**Chengdu**	**32.71**	**272**	P	**P**	**01 11 08.5**	**-0.8**
CD2				pmax	pmax		
	comp=Z,11nm,0.6s						
MOY	**Mondy**	**33.08**	**311**	*e*P	P	01 11 21.1	+8.7
QIZ	**Qiongzhong**	**33.66**	**248**	P	**P**	**01 11 18.0**	**+0.5**
QIZ				S	**S**	**01 16 37.5**	**-2.5**
QIZ				SS	**SS**	**01 19 07.5**	**+2.0**
QIZ				LR	LR		
	comp=E,330nm,14.7s						
QIZ				LR	LR		
	comp=Z,340nm,11.8s						
GTA	**Gaotai**	**33.72**	**288**	*e*P	**P**	**01 11 18.5**	**+0.5**
GTA				pP	sP	01 11 27.5	+3.0
GTA				sP	pP	01 11 31.5	+8.9
GTA				S	**S**	**01 16 38.0**	**-2.9**
GTA				sS	sS	01 16 54.8	+6.3
GTA				SS	**SnSn**	**01 18 42.8**	**-2.1**
GTA				pmax	pmax		
	comp=Z,7.0nm,1.2s						
GTA				pmax	pmax		
	comp=Z,160nm,6.9s						
GTA				LR	LR		
	comp=N,360nm,14.7s						
GTA				LR	LR		
	comp=E,600nm,12.4s						
GTA				LR	LR		
	comp=Z,480nm,12.8s						
BILL	**Bilibino**	**34.28**	**15**	*i* P	**P**	**01 11 21.6**	**-0.8**
BILL				*i*		01 12 40.1	
BILL				*i*		01 13 59.6	
BILL				pmax	pmax		
	comp=Z,8.0nm,1.1s						
BILL				MLR	MLR		
	comp=Z,199nm,17.0s						
BILL	**Bilibino**	**34.28**	**15**	*e*P	**P**	**01 11 21.4**	**-1.0**
	comp=Z,9.1nm,1.0s						
KMI	**Kunming**	**35.91**	**263**	P	**P**	**01 11 39.3**	**+2.1**
KMI				pP	sP	01 11 47.8	+4.1
KMI				sP	pP	01 11 52.5	+11
KMI				PP	**PnPn**	**01 12 57.8**	**+0.1**
KMI				S	**S**	**01 17 10.5**	**-4.6**
KMI				sS	sS	01 17 24.0	+1.3
KMI				SS	**SnSn**	**01 19 37.0**	**

KMI pmax pmax
comp=Z,140nm,3.9s
KMI LR LR
comp=N,350nm,11.8s
KMI LR LR
comp=E,580nm,12.5s
KMI LR LR
comp=Z,500nm,13.4s
TIXI Tiksi 35.97 353 P **P 01 11 37.0 +0.1**
comp=Z,1.3nm,0.3s,baz=128,slow=10,SNR=3.6
TIXI Tiksi 35.97 353 *e*P **P 01 11 37.7 +0.8**
TIXI pmax pmax
comp=Z,3.0nm,1.2s
TIXI Tiksi 35.97 353 *e*P **P 01 11 36.5 -0.4**
comp=Z,2.2nm,0.5s
WMQ Urumqi 42.01 298 P **P 01 12 29.8 +1.8**
WMQ pP sP 01 12 39.0 +4.5
WMQ sP pP 01 12 42.8 +10
WMQ S S 01 18 53.8 +7.5
WMQ ScS ScS 01 22 18.3 -12
WMQ pmax pmax
comp=Z,10.0nm,1.8s
WMQ pmax pmax
comp=Z,100nm,8.0s
WMQ LR LR
comp=N,250nm,13.2s
WMQ LR LR
comp=E,140nm,17.4s
WMQ LR LR
comp=Z,43nm,38.6s
CHTO Chiang Mai 42.17 257 *e*P **P 01 12 29.8 +0.4**
CHTO pmax pmax
comp=Z,14nm,1.4s
CHTO Chiang Mai 42.17 257 *e*P **P 01 12 29.8 +0.4**
comp=Z,14nm,1.4s
CMAR Chiang Mai Arr 42.37 257 P **P 01 12 30.8 -0.2**
comp=Z,0.8nm,0.3s,baz=42,slow=8.5,SNR=3.5
CMAR LR LR 01 31 54.1
comp=Z,150nm,18.8s,baz=60,slow=39
ZAA0 Zalesovo Array 43.05 313 *e*P **P 01 12 35.4 -0.7**
ZALV Zalesovo Beam 43.05 313 P **P 01 12 35.9 -0.2**
comp=Z,3.6nm,0.7s,baz=101,slow=7.5,SNR=9.9
NVS Novosibirsk 43.97 314 *e*P **P 01 12 44.1 +0.6**
NVS pmax pmax
comp=Z,23nm,1.6s
NVS pmax pmax
comp=E,18nm,1.5s
SBUM Sibu 44.02 227 *e*P **P 01 12 45.1 +0.7**
comp=E,14nm,1.1s
NRIK Noril'sk 44.20 335 P **P 01 12 45.6 +0.4**
comp=E,1.3nm,0.4s,baz=129,slow=8.1,SNR=5.0
NRIK LR LR 01 33 22.8
comp=E,405nm,19.1s,baz=105,slow=39
MK01 Makanchi Array 45.28 303 *e*P **P 01 12 54.0 -0.2**
TT01 Tatalina 45.29 34 *e*P **P 01 12 56.7 +2.8**
MK31 Makanchi Array 45.29 303 *e*P **P 01 12 54.6 +0.3**
MK31 Makanchi Array 45.29 303 *e*P **P 01 12 54.5 +0.3**
MKAR Makanchi Array 45.29 303 P **P 01 12 54.0 -0.3**
comp=E,1.0nm,0.7s,baz=80,slow=9.5,SNR=8.1
MKAR LR LR 01 30 51.0
comp=E,88nm,20.4s,baz=90,slow=35
MKAR Makanchi Array 45.29 303*ce*P P 01 12 58.0 +3.8
MKAR pmax pmax
comp=Z,3.0nm,0.8s
MKAR Makanchi Array 45.29 303 *e*P **P 01 12 54.5 +0.3**
MAKZ Makanchi 45.50 303 *e*P **P 01 12 56.4 +0.5**
MAKZ pmax pmax
comp=Z,18nm,1.1s
MAKZ Makanchi 45.50 303 *e*P **P 01 12 56.4 +0.5**
comp=Z,18nm,1.1s
KAPI Kappang 46.53 212 P **P 01 13 04.8 +0.6**
comp=Z,9.7nm,0.9s,baz=11,slow=5.2,SNR=4.0
KAPI Kappang 46.53 212 *e*P **P 01 13 06.3 +2.0**
PPLA Purkeypile 47.04 35 *e*P **P 01 13 08.8 +0.9**
comp=Z,23nm,1.4s
SPU Mount Spurr 47.05 37 *e*P **P 01 13 09.5 +1.5**
KURK Kurchatov 47.09 309 *e*P **P 01 13 08.0 -0.3**
KURK pmax pmax
comp=Z,56nm,1.0s
KURK Kurchatov 47.09 309 *e*P **P 01 13 08.0 -0.3**
comp=Z,56nm,1.0s
CAST Castle Rocks 47.11 34 *e*P **P 01 13 08.6 +0.3**
comp=Z,15nm,1.7s
KURBB Kurchatov Arra 47.16 309 P **P 01 13 08.6 -0.3**
comp=Z,4.5nm,0.8s,baz=83,slow=7.9,SNR=32
KTH Kantishna Hill 47.63 34 *e*P **P 01 13 12.8 +0.3**
comp=Z,12nm,1.1s
PMR Palmer 48.46 36 *e*P P 01 13 15.0 -3.7
PMR pmax pmax
comp=Z,8.0nm,1.0s
PMR Palmer 48.46 36 *e*P P 01 13 15.0 -3.7
comp=Z,7.6nm,1.0s
RND Reindeer 48.56 34 *e*P **P 01 13 19.2 -0.4**
RND pmax pmax
comp=Z,11nm,1.2s
RND Reindeer 48.56 34 *e*P **P 01 13 19.2 -0.4**
comp=Z,10nm,1.2s
MDM Murphy Dome 48.84 32 *e*P **P 01 13 22.6 +0.9**
comp=Z,14nm,1.1s
ILAR Eielson Array 49.41 32 P **P 01 13 25.8 -0.2**
comp=Z,2.8nm,0.8s,baz=266,slow=5.8,SNR=19
ILB Eielson Array 49.41 32 *e*P **P 01 13 26.3 +0.2**
IL1 Eielson Array 49.41 32 *e*P **P 01 13 25.3 -0.7**
KLU Klutina 50.00 36 *e*P **P 01 13 32.6 +2.0**
comp=Z,12nm,1.2s
DIV Divide 50.10 37 *e*P **P 01 13 31.5 +0.1**
comp=Z,16nm,1.1s
BMRM Bremner River 50.68 37 *e*P **P 01 13 35.5 -0.3**
comp=Z,13nm,1.0s
TKM2 Tokmak 2 50.80 299 *e*P **P 01 13 37.1 -0.1**
TKM2 pmax pmax
comp=Z,16nm,1.1s
TKM2 Tokmak 2 50.80 299 *e*P **P 01 13 37.1 -0.1**
comp=Z,16nm,1.1s
CHKZ Chkalovo 51.44 314 *i*P **P 01 13 40.0 -1.5**
CHKZ pmax pmax
comp=Z,12nm,1.5s
FRU Bishkek 51.52 299 *e*P **P 01 13 43.0 +0.7**
KSH Kashi 51.58 295 P P 01 13 47.5 +4.6
KSH *ep*P sP 01 13 58.0 +8.5
KSH *e*PP PP 01 15 46.5 +6.3
KSH PcS **PcS 01 18 56.8 +2.0**
KSH S **S 01 21 07.3 +4.1**
KSH pmax pmax
comp=Z,130nm,4.5s
KSH LR LR
comp=N,330nm,13.1s
KSH LR LR
comp=E,250nm,11.0s
KSH LR LR
comp=Z,570nm,14.3s
AAK Ala-Archa 51.66 299 P **P 01 13 43.2 -0.4**
comp=Z,0.6nm,0.3s,baz=118,slow=7.4,SNR=4.5
AAK Ala-Archa 51.66 299 *i*P **P 01 13 43.8 +0.2**
AAK pmax pmax
comp=Z,15nm,1.7s
AAK Ala-Archa 51.66 299 *e*P **P 01 13 43.7 +0.1**
comp=Z,6.4nm,0.9s
BVAR Borovoye Array 51.71 313 P **P 01 13 43.7 +0.1**
comp=Z,1.3nm,0.9s,baz=76,slow=6.3,SNR=6.0
BVAR Borovoye Array 51.71 313 P **P 01 13 43.7 +0.1**
BVAR pmax pmax
comp=Z,3.0nm,1.2s
BRVK Borovoye 51.76 313 *e*P **P 01 13 43.9 -0.1**
BRVK pmax pmax
comp=Z,11nm,0.8s
BRVK Borovoye 51.76 313 *e*P **P 01 13 43.9 -0.1**
comp=Z,11nm,0.8s
EKS2 Erkin-Say 52.16 299 *e*P **P 01 13 47.3 +0.1**
EKS2 pmax pmax
comp=Z,9.0nm,1.4s
EKS2 Erkin-Say 52.16 299 *e*P **P 01 13 47.3 +0.1**
comp=Z,9.3nm,1.4s
ZRNK Zerenda 52.54 313 *e*P **P 01 13 50.1 +0.3**
ZRNK pmax pmax
comp=Z,12nm,1.3s
ZRNK Zerenda 52.54 313 *e*P **P 01 13 50.1 +0.3**
comp=Z,12nm,1.3s
MNAS Manas 53.11 300 *i*P **P 01 13 54.0 -0.3**
MNAS pmax pmax
comp=Z,12nm,1.1s
KKAR Karatay Array 54.30 301 *e*P **P 01 14 02.6 -0.2**
KKAR Karatay Array 54.30 301 *e*P **P 01 14 02.6 -0.2**
INK Inuvik 54.41 27 P **P 01 14 03.2 +0.1**
comp=Z,3.2nm,0.8s,baz=258,slow=5.8,SNR=6.6
INK Inuvik 54.41 27 *e*P **P 01 14 02.9 -0.3**
comp=Z,5.4nm,0.9s
SVE Sverdlovsk 56.24 319 *e*P **P 01 14 17.1 +0.5**
SVE pmax pmax
comp=Z,21nm,1.2s
WRAB Tennant Creek 56.66 189 *e*P **P 01 14 18.2 -1.7**
WRAB pmax pmax
comp=Z,8.0nm,1.0s
WRAB Tennant Creek 56.66 189 *e*P **P 01 14 18.2 -1.7**
comp=Z,8.4nm,1.0s
WB2 Warramunga Arr 56.67 189 *e*P **P 01 14 19.8 -0.2**
comp=Z,15nm,1.0s
WRA Warramunga Arr 56.67 189 P **P 01 14 19.9 -0.1**
comp=Z,6.4nm,1.0s,baz=8.9,slow=7.5,SNR=14
DZET Dzherino 57.02 297 *i*P **P 01 14 22.3 -0.3**
DZET pmax pmax
comp=Z,23nm,1.0s
ARU Arti 57.46 319*c i*P **P 01 14 25.1 -0.1**
ARU 01 15 13.3
ARU 01 16 29.1
ARU S **S 01 22 21.6 0.0**
ARU SS **SS 01 26 08.4 -2.4**
ARU pmax pmax
comp=Z,22nm,1.7s
ARU MLR MLR
comp=Z,394nm,16.0s
ARU Arti 57.46 319 *e*P **P 01 14 25.0 -0.2**
comp=Z,20nm,1.1s
DLBC Dease Lake 58.43 38 P **P 01 14 34.3 +2.2**
comp=Z,2.9nm,1.0s,baz=282,slow=7.7,SNR=3.5
ABKAR Akbulak array 59.08 311 *e*P **P 01 14 36.4 -0.3**
comp=Z,10nm,1.0s
ASAR Alice Springs 60.39 189 P **P 01 14 45.5 -0.5**
comp=Z,2.0nm,1.0s,baz=5.9,slow=5.4,SNR=9.8
DZM Mont Dzumac 62.41 155 *e*LR LR 01 33 16.9
comp=Z,286nm,22.3s
TMCR Tamitsa 63.72 332 *e*P **P 01 15 09.3 +1.5**
TMCR pmax pmax
comp=Z,20nm,1.0s
YKA Yellowknife Ar 63.77 30 P **P 01 15 07.5 -0.6**
comp=Z,1.9nm,0.8s,baz=299,slow=6.5,SNR=15
YKB5 Yellowknife Ar 63.77 30 *e*P **P 01 15 08.2 +0.1**
KLMR Klimovskoe 64.77 328 *e*P **P 01 15 13.9 -0.8**
KLMR pmax pmax
comp=Z,18nm,1.4s
ARCES ARCESS Array B 64.88 340 LR LR 01 45 36.8
comp=Z,42nm,21.6s,baz=45,slow=38
GEYT Alibeck 65.01 300 P **P 01 15 15.7 -1.0**
comp=Z,0.7nm,0.4s,baz=62,slow=3.4,SNR=5.7
STKA Stephens Creek 68.01 181 P **P 01 15 35.1 -0.6**
comp=Z,1.1nm,0.6s,baz=315,slow=7.1,SNR=2.5
MOS Moscow 68.31 324 *e*P **P 01 15 35.4 -2.0**
MOS MLR MLR
comp=Z,700nm,19.0s
VRH Novokhopyorsk 68.68 318 *e*P **P 01 15 40.1 +0.3**
VRH pmax pmax
comp=Z,9.0nm,0.6s
OBN Obninsk 69.16 324 *i*P **P 01 15 43.0 +0.3**
OBN *i* 01 16 08.4
OBN pmax pmax
comp=Z,12nm,1.2s
OBN MLR MLR
comp=Z,325nm,14.0s
LPSR Galich'ya Gora 69.39 321 *e*P **P 01 15 44.3 +0.1**
LPSR pmax pmax
comp=Z,10.0nm,1.4s
FINES FINESS Array B 69.78 333 P **P 01 15 45.9 -0.6**
comp=Z,5.0nm,0.9s,baz=54,slow=9.7,SNR=8.3
FINES LR LR 01 49 22.1
comp=Z,360nm,18.1s,baz=36,slow=38
FINES FINESS Array B 69.78 333*ce*P **P 01 15 48.0 +1.5**
FINES pmax pmax
comp=Z,5.0nm,0.9s
VSR Storozhevoye 70.03 319 *e*P **P 01 15 47.6 -0.6**
VSR pmax pmax
comp=Z,10.0nm,1.4s
SUMG Summit 71.24 0 *i*P P 01 15 59.0 +3.3
comp=Z,5.4nm,0.9s
SUMG Summit 71.24 0 *e*P P 01 15 59.0 +3.3
SUMG pmax pmax
comp=Z,5.0nm,0.9s
SUMG Summit 71.24 0 *e*P **P 01 15 56.6 +0.9**
comp=Z,17nm,1.4s
VSU Vasula 71.45 330 *e*P **P 01 15 58.1 +1.4**
VSU pmax pmax
comp=Z,41nm,1.2s
ZEI Tsey 71.95 310 *e*P **P 01 15 58.6 -1.7**
ZEI pmax pmax
comp=Z,26nm,1.2s
SWMT Swartz Lake 71.97 44 *e*P **P 01 15 59.4 -0.8**
KBZ Khabaz 72.05 311 P **P 01 16 00.4 -0.1**
comp=Z,6.9nm,1.0s,baz=61,slow=8.0,SNR=7.2
KBZ LR LR 01 48 22.2
comp=Z,61nm,18.5s,baz=42,slow=36
KIV Kislovodsk 72.05 312 *e*P **P 01 16 01.2 +0.5**
KIV pmax pmax
comp=Z,20nm,1.0s
KIV Kislovodsk 72.05 312 *e*P **P 01 16 02.0 +1.3**
comp=Z,24nm,1.0s
GNI Garni 72.86 307 *e*P **P 01 16 07.4 +1.7**
GNI pmax pmax
comp=Z,47nm,1.2s
GNI Garni 72.86 307 *e*P **P 01 16 06.3 +0.6**
comp=Z,23nm,1.4s
FFC Flin Flon 73.61 33 *e*P **P 01 16 09.7 0.0**
FFC pmax pmax
comp=Z,6.0nm,1.0s
FFC Flin Flon 73.61 33 *e*P **P 01 16 09.7 0.0**
comp=Z,5.7nm,1.0s
LRM Limekiln Ridge 73.82 45 *e*P **P 01 16 11.9 +0.6**
FCC Fort Churchill 74.03 27 *e*P **P 01 16 11.6 -0.4**
FCC pmax pmax
comp=Z,16nm,1.5s
FCC Fort Churchill 74.03 27 *e*P **P 01 16 11.6 -0.4**
comp=Z,16nm,1.5s
BOZ Bozeman (W) 74.39 45 *e*P **P 01 16 14.6 0.0**
BOZ pmax pmax
comp=Z,4.0nm,1.0s
BOZ Bozeman (W) 74.39 45 *e*P **P 01 16 14.6 0.0**
comp=Z,3.8nm,1.0s
NV01 Mina Array Sit 74.49 54 *e*P **P 01 16 16.8 +1.4**
NVAR Mina Array Bea 74.49 54 P **P 01 16 16.1 +0.7**
comp=Z,1.7nm,0.8s,baz=297,slow=6.5,SNR=5.1
NB2 NORSAR Subarra 75.09 338 P **P 01 16 18.0 -0.2**
comp=Z,41nm,2.0s,baz=38,slow=5.9
NB2 NORSAR Subarra 75.09 338 P **P 01 16 18.0 -0.2**
baz=38,slow=5.9
NOA NORSAR Array B 75.09 338 P **P 01 16 17.3 -0.9**
comp=Z,5.7nm,1.0s,baz=39,slow=5.7,SNR=5.5
NOA LR LR 01 53 31.7
comp=Z,218nm,18.1s,baz=50,slow=39
AKASG Malin Array Be 75.36 323 P **P 01 16 19.4 -0.5**
comp=Z,3.8nm,0.9s,baz=44,slow=6.4,SNR=16
AKASG LR LR 01 54 25.8
comp=Z,131nm,18.5s,baz=35,slow=40
AKASG Malin Array Be 75.36 323 *i*P **P 01 16 20.0 +0.1**
AKASG pmax pmax
comp=Z,4.0nm,0.9s
KIEV Kiev 75.38 323 *e*P **P 01 16 18.3 -1.7**
KIEV pmax pmax
comp=Z,8.0nm,1.3s
KIEV Kiev 75.38 323 *e*P **P 01 16 19.4 -0.5**
comp=Z,12nm,1.2s
AK11 Malin Array Si 75.41 323 *e*P **P 01 16 19.6 -0.6**
IMW Indian Meadow 75.83 46 *e*P **P 01 16 23.2 +0.1**
comp=Z,5.3nm,1.2s
FXWY Fox Creek 75.93 46 *e*P **P 01 16 23.5 -0.1**
comp=Z,5.0nm,1.3s
MOOW Moose Ponds 76.03 46 *e*P **P 01 16 24.7 +0.6**
comp=Z,9.1nm,1.6s
RLMT Red Lodge 76.03 44 *e*P **P 01 16 24.1 0.0**
comp=Z,6.9nm,1.4s
R11A Troy Canyon, C 76.29 52 *e*P **P 01 16 25.3 -0.4**
comp=Z,8.1nm,1.4s
SIM Simferopol' 76.44 316 *e*P **P 01 16 26.8 +0.6**
SIM pmax pmax
comp=Z,5.0nm,1.1s
HWUT Hardware Ranch 76.84 48 *e*P **P 01 16 27.7 -1.0**
comp=Z,9.9nm,1.4s
DUG Dugway, Tooele 76.93 50 *e*P **P 01 16 29.9 +0.6**
DUG pmax pmax
comp=Z,4.0nm,0.8s
DUG Dugway, Tooele 76.93 50 *e*P **P 01 16 29.9 +0.6**
comp=Z,4.4nm,0.8s
PDAR Pinedale Array 77.31 46 P **P 01 16 31.6 +0.1**
comp=Z,0.3nm,0.6s,baz=333,slow=1.7,SNR=4.2
CCUT Cedar City 78.17 52 *e*P **P 01 16 35.2 -1.2**
comp=Z,9.3nm,1.4s
BEL Belsk 78.47 327 *e*P **P 01 16 39.1 +1.7**
BEL Belsk 78.47 327 *e*P **P 01 16 39.1 +1.7**
SRU San Rafael Swe 79.00 49 *e*P **P 01 16 40.7 -0.1**
SRU pmax pmax
comp=Z,15nm,1.3s
SRU San Rafael Swe 79.00 49 *e*P **P 01 16 40.7 -0.1**
comp=Z,15nm,1.3s
BUR08 Bucovina Ar. S 79.37 322 *e*P **P 01 16 40.5 -2.1**
BR131 Keskin Array S 79.99 312 *e*P **P 01 16 45.4 -0.7**
BRTR Keskin Array B 79.99 312 P **P 01 16 46.1 0.0**
comp=Z,2.6nm,1.0s,baz=73,slow=4.3,SNR=14
BRTR LR LR 01 56 44.2
comp=Z,54nm,18.1s,baz=318,slow=39
STHS Stebnicka Huta 80.00 326 *e*P **P 01 16 47.3 +1.4**
STHS pmax pmax
comp=Z,4.0nm,1.2s
STHS Stebnicka Huta 80.00 326 *e*P **P 01 16 47.3 +1.4**
OJC Ojcow 80.07 327 *e*P **P 01 16 47.1 +0.9**
OJC Ojcow 80.07 327 *e*P **P 01 16 46.8 +0.6**
OJC pmax pmax
comp=Z,14nm,1.2s
OJC Ojcow 80.07 327 *e*P **P 01 16 46.8 +0.6**
comp=Z,14nm,1.2s
UZH Uzhgorod 80.08 324 *e*P P 01 16 42.0 -4.2
UZH *e* 01 16 51.8
UZH *e*S S 01 26 40.5 -9.5
UZH *e*PS **PnS 01 27 43.9 +9.3**
CRVS Cervenica-Dubn 80.27 325 *e*P **P 01 16 47.4 +0.1**
CRVS Cervenica-Dubn 80.27 325 *e*P **P 01 16 47.4 +0.1**
BR231 Keskin MP Arra 80.43 313 *e*P **P 01 16 47.1 -1.3**
NIE Niedzica 80.43 326 *e*P **P 01 16 49.8 +1.6**
NIE Niedzica 80.43 326 *e*P **P 01 16 49.8 +1.6**
MLR Muntele Rosu 80.47 320 *e*P **P 01 16 48.0 -0.6**
MLR pmax pmax
comp=Z,10.0nm,1.4s
MLR Muntele Rosu 80.47 320 *e*P **P 01 16 48.0 -0.6**
comp=Z,9.6nm,1.4s
N23A Red Feather La 80.59 46 *e*P **P 01 16 47.7 -1.8**
comp=Z,12nm,1.3s
LANS Liptovska Anna 81.00 326 *e*P **P 01 16 53.1 +1.9**
LANS Liptovska Anna 81.00 326 *e*P **P 01 16 53.1 +1.9**
OKC Ostrava-Krasne 81.08 327 AMS AMS 01 57 20.0
comp=Z,500nm,15.8s
SMCO Snowmass 81.09 48 *e*P **P 01 16 51.4 -1.1**
comp=Z,5.8nm,1.4s
MORC Moravsky Berou 81.38 328 *e*P **P 01 16 52.6 -0.7**
MORC pmax pmax
comp=Z,39nm,1.3s
MORC Moravsky Berou 81.38 328 *e*P **P 01 16 52.5 -0.7**
comp=Z,39nm,1.3s
DPC Dobruska-Polom 81.47 329 *e*P **P 01 16 54.8 +1.1**
DPC *es*P **sP 01 17 04.5 +4.0**
DPC *ex* x 01 17 21.2
DPC AMS AMS 01 58 00.0
comp=Z,400nm,15.0s
DPC Dobruska-Polom 81.47 329 *e*P **P 01 16 54.8 +1.1**
DPC *e* 01 17 04.5
DPC MLR MLR
comp=Z,400nm,15.0s
UPC Upice 81.48 329 AMS AMS 01 59 20.0
comp=Z,400nm,13.1s
PSZ Piszkesteto 81.70 325 *e*P **P 01 16 53.4 -1.7**
PSZ pmax pmax
comp=Z,16nm,1.4s
PSZ Piszkesteto 81.70 325 *e*P **P 01 16 53.4 -1.7**
comp=Z,16nm,1.4s
BRG Berggiesshubel 82.05 330 *e*P **P 01 16 56.7 0.0**
comp=Z,17nm,1.9s
comp=N,295nm,17.1s
comp=E,265nm,10.0s
comp=Z,405nm,15.7s
BRG Berggiesshubel 82.05 330 *e*P **P 01 16 56.7 0.0**
BRG pmax pmax
comp=Z,17nm,1.9s
BRG MLR MLR
comp=N,295nm,17.1s
BRG MLR MLR
comp=E,265nm,10.0s
BRG MLR MLR
comp=Z,405nm,15.7s
PVCC Panska Ves 82.06 330 AMS AMS 01 58 10.0
comp=Z,300nm,12.8s
CLL Collm 82.09 331 *i*P **P 01 16 56.2 -0.7**
comp=Z,9.0nm,1.2s
CLL *e* 01 17 03.0
CLL *e* 01 17 08.0
CLL *e* 01 18 30.0
CLL Collm 82.09 331 *i*P **P 01 16 56.2 -0.7**
CLL *e* 01 17 03.0
CLL pmax pmax
comp=Z,9.0nm,1.2s
GOPC GO Pecny, Ondr 82.45 329 AMS AMS 01 58 50.0
comp=Z,400nm,11.0s
PRU Pruhonice 82.49 329 AMS AMS 01 57 20.0
comp=Z,300nm,16.3s
TREC Trest 82.63 328 *e*P **P 01 16 58.4 -1.4**
TREC AMS AMS 01 59 20.0
comp=Z,400nm,18.0s
TREC Trest 82.63 328 *e*P **P 01 16 58.4 -1.4**
TREC MLR MLR
comp=Z,400nm,18.0s
PPT Papeete 83.46 117 LR LR 01 53 11.4
comp=Z,65nm,19.4s,baz=308,slow=35
PPT2 Papeete2 83.48 117 *e*LR LR 01 42 50.8
comp=Z,139nm,30.8s
KHC Kasperske Hory 83.55 329 *e*P **P 01 17 05.2 +0.6**
KHC *ex* x 01 17 16.1
KHC *ex* x 01 17 34.4
KHC AMS AMS 01 58 10.0
comp=Z,300nm,16.4s
KHC Kasperske Hory 83.55 329 *e*P **P 01 17 05.2 +0.6**
KHC *e* 01 17 16.1
KHC MLR MLR
comp=Z,300nm,16.4s
KHC Kasperske Hory 83.55 329 *e*P **P 01 17 04.8 +0.1**
comp=Z,3.9nm,1.3s
ECSD EROS Data Cent 83.71 39 *e*P **P 01 17 06.4 +0.9**
comp=Z,5.5nm,1.2s
GEC2 GERESS Array S 83.72 329 *e*P **P 01 17 05.1 -0.5**
GEC2 pmax pmax
comp=Z,9.0nm,1.5s
GEC2 GERESS Array S 83.72 329 *e*P **P 01 17 05.1 -0.5**
comp=Z,8.5nm,1.5s
GERES GERESS Array B 83.72 329 P **P 01 17 05.5 -0.1**
comp=Z,1.3nm,0.9s,baz=38,slow=5.0,SNR=10
GERES LR LR 02 00 39.4
comp=Z,78nm,21.0s,baz=12,slow=40
GEA0 GERESS Array S 83.73 329 *e*P **P 01 17 05.8 +0.2**
T25A Trinidad 83.95 48 *e*P **P 01 17 07.2 +0.1**
comp=Z,13nm,1.4s
ANMO Albuquerque 84.15 51*ce*P **P 01 17 09.7 +1.6**
ANMO pmax pmax
comp=Z,7.0nm,1.2s
ANMO Albuquerque 84.15 51 *e*P **P 01 17 08.8 +0.6**
comp=Z,7.7nm,1.3s
TAOE Nuku Hiva Isla 85.03 105 *e*LR LR 01 43 28.0
comp=Z,113nm,26.3s
BFO Black Forest 86.29 331 *e*P **P 01 17 17.8 -0.6**
BFO pmax pmax
comp=Z,9.0nm,1.1s
BFO Black Forest 86.29 331 *e*P **P 01 17 17.8 -0.6**
comp=Z,8.6nm,1.1s
FUORN Ofenpass-Fuorn 86.90 329 *e*P **P 01 17 20.0 -1.7**
comp=Z,8.0nm,1.1s
MNTX Cornudas Mount 86.96 52 *e*P **P 01 17 21.5 -0.4**
comp=Z,9.5nm,1.8s
TBI Tubuai 87.36 122 *e*LR LR 01 44 40.0
comp=Z,119nm,29.2s
TX31 Lajitas Ar. Si 89.63 53 *e*P **P 01 17 34.2 -0.6**
TXAR Lajitas Array 89.64 53 P **P 01 17 35.5 +0.7**
comp=Z,2.2nm,1.0s,baz=298,slow=2.7,SNR=11
MIAR Mount Ida 92.02 43 *e*P **P 01 17 46.1 +0.4**
MIAR pmax pmax
comp=Z,7.0nm,1.0s
MIAR Mount Ida 92.02 43 *e*P **P 01 17 46.0 +0.4**
comp=Z,7.1nm,1.0s
WHAR Wooly Hollow 92.17 42 *e*P **P 01 17 44.4 -1.9**
comp=Z,18nm,1.5s
RKT Rikitea 97.59 113 *e*LR LR 01 49 20.8
comp=Z,82nm,25.8s
QSPA South Pole Qui 126.22 180 *e*PKPdf **PKPdf 01 23 39.0 +0.8**
LPAZ La Paz 146.06 62 PKPbc **PKPbc 01 24 17.5 -0.3**
comp=Z,9.0nm,1.2s,baz=346,slow=4.3,SNR=13
PLCA Paso Flores 153.76 110 PKPbc **PKPbc 01 24 36.4 +0.8**
comp=Z,1.9nm,1.0s,baz=316,slow=4.8,SNR=2.9
PLCA PKPab **PKPab 01 24 49.5 +0.9**

comp=Z,4.4nm,1.0s,baz=280,slow=7.3,SNR=5.4

JMA 30 01:12:42.5±0.1, 38.74N×142.24E, h33km±2km, M4.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	0.56	308	P	Pb	01 12 53.9	-0.1
OFUJ				eS	Sb	01 13 01.5	-0.5
JIO	Ouri	0.75	248	P	Pn	01 12 56.4	-0.4
JIO				eS	Sn	01 13 05.7	-1.4
JMK	Ichinoseki	0.82	285	P	Pn	01 12 57.8	0.0
JMK				eS	Sn	01 13 08.3	-0.5
JOM	Ohasama	1.04	315	P	Pn	01 13 01.2	+0.4
JOM				eS	Sn	01 13 14.5	+0.4
JTH	Tanohata	1.23	346	P	Pn	01 13 03.6	+0.2
JTH				eS	Sn	01 13 18.9	0.0
JOU	Okura	1.29	254	P	Pn	01 13 04.6	+0.4
JOU				eS	Sn	01 13 21.1	+0.7
JRG	Rokugo	1.41	298	P	Pn	01 13 06.7	+0.8
JRG				eS	Sn	01 13 24.5	+1.2
JMM	Marumori	1.43	233	P	Pn	01 13 06.1	-0.1
JMM				eS	Sn	01 13 23.8	-0.1
JYK	Kaneyama	1.48	277	P	Pn	01 13 07.5	+0.7

ISK 30 01:15:42.9, 39.17N×28.99E, h6km, MD2.8
ISCJB 30 01:15:43.2±0.5, 39.13N±0.03×29.01E±0.03, h7km±5km, Error ellipse: s-maj=5.1km s-min=4.4km az=4.6
CSEM 30 01:15:43.3±0.1, 39.14N×28.99E, h8km, MD2.8, Error ellipse: s-maj=3.5km s-min=3.0km az=60.0
DDA 30 01:15:43.2, 39.10N×29.05E, h10km, Md2.6
ISC 30 01:15:42.9±0.9, 39.14N±0.03×29.00E±0.03, h13km±8km, n31, σ0s37/43, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.24	248	iP	Pb	01 15 49.3	+0.1
DEMI				iS	Sb	01 15 52.8	-0.6
GDZ	Gediz	0.37	97	P	Pg	01 15 50.5	0.0
GDZ				S	Sg	01 15 55.3	-0.2
GDZ	Gediz	0.37	97	iP	Pg	01 15 50.5	0.0
GDZ				iS	Sg	01 15 55.3	-0.2
TVSB	Tavsanli	0.47	48	ePG	Pb	01 15 52.7	-0.5
TVSB				eSG	Sg	01 15 58.8	+0.2
TVSB	Tavsanli	0.47	48	ePg	Pb	01 15 52.7	-0.5
TVSB				eSg	Sg	01 15 58.8	+0.2
KULA	Kula-Manisa	0.68	203	ePG	Pb	01 15 56.7	+0.1
KULA	Kula-Manisa	0.68	203	ePg	Pb	01 15 56.7	+0.1
KHAL	Karahalli	0.85	153	P	Pb	01 15 59.7	0.0
KHAL				S	Sg	01 16 09.9	-0.7
KHAL	Karahalli	0.85	153	iP	Pb	01 15 59.7	0.0
KHAL				iS	Sg	01 16 09.9	-0.7
KHL	Karahalli	0.91	153	ePG	Pn	01 16 01.7	+0.3
KHL	Karahalli	0.91	153	ePg	Pn	01 16 01.7	+0.3
BALB	Balikesir	1.01	300	ePG	Pb	01 16 01.7	-0.5
BALB				eSG	Sn	01 16 16.5	-0.3
BALB	Balikesir	1.01	300	ePg	Pb	01 16 01.7	-0.5
BALB				eSg	Sn	01 16 16.5	-0.3
IGD	Bursa	1.14	8	iP	Pg	01 16 04.7	-0.1
IGD				iS	Sn	01 16 21.1	+1.1
IGD	Bursa	1.14	8	iP	Pg	01 16 04.9	+0.1
KCTX	Karacabey (Bur	1.23	336	ePN	Pg	01 16 06.7	+0.1
KCTX	Karacabey (Bur	1.23	336	ePn	Pg	01 16 06.7	+0.1
MDNY	Mudanya-Bursa	1.23	356	ePN	Pg	01 16 06.6	-0.1
MDNY	Mudanya-Bursa	1.23	356	ePn	Pg	01 16 06.6	-0.1
IZI	Iznik	1.25	17	ePN	Pb	01 16 06.6	+0.1
IZI	Iznik	1.25	17	ePn	Pb	01 16 06.6	+0.1
BORA	Eskisehir	1.34	56	P	Pg	01 16 08.7	0.0
BORA	Eskisehir	1.34	56	iP	Pg	01 16 08.7	0.0
BORA				iS	Sg	01 16 26.2	0.0
ARMT	Armutlu	1.43	356	ePN	Pb	01 16 09.4	-0.1
ARMT	Armutlu	1.43	356	ePn	Pb	01 16 09.4	-0.1
ESKT	Eskisehir	1.48	74	iP	Pb	01 16 10.8	+0.4
ESKT				iS	Sg	01 16 30.4	-0.2
SEYT	Eskypehyr	1.48	74	S	Sg	01 16 30.4	-0.2
GULT	Gulveren	1.74	41	ePN	Pb	01 16 14.2	-0.6
GULT	Gulveren	1.74	41	ePn	Pb	01 16 14.2	-0.6
SVRH	Sivrihisar-ESK	1.98	80	ePN	Pb	01 16 18.4	-0.4
SVRH	Sivrihisar-ESK	1.98	80	ePn	Pb	01 16 18.4	-0.4

JMA 30 01:18:33.5±0.3, 36.62N×142.03E, h39km, M3.3
IDC 30 01:18:43.1±2.3, 36.38N×141.17E, h0km, mb3.4/2, mb1 3.5/4, mb1mx3.2/30, mbtmp3.3/4, ML2.6/2, Error ellipse: s-maj=50.1km s-min=26.4km az=50.0
ISC 30 01:18:39.8±3.4, 36.9N±0.1×141.5E±0.2, h33km, n10, σ2s22/10, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.61	289	P	Pn	01 18 53.4	+1.2
JHO	Hitachi	0.82	249	P	Pn	01 18 53.8	-1.3
JHO				S	Sb	01 19 08.3	+1.9
JMM	Marumori	1.12	329	P	Pb	01 18 59.5	-1.2
JFT	Otama	1.12	303	P	Pb	01 19 01.0	+0.2
JAG	Ashikaga	1.73	254	P	Pn	01 19 07.7	+0.1
MJAR	Matsushiro Arr	2.69	263	Pn	Pn	01 19 22.4	+1.7
	3.9nm,0.3s,baz=97,slow=9.3,SNR=32						
MJAR				Sn	Sb	01 19 55.5	-4.3
	baz=119,slow=28,SNR=2.7						
MAT	Matsushiro	2.69	263	P	Pn	01 19 23.1	+2.3
MAT				S	Sb	01 20 00.2	+0.4
USRK	Ussuriysk Ar.	10.27	318	Pn	Pn	01 21 12.9	+8.1
	0.2nm,0.3s,baz=132,slow=20,SNR=2.6						
ZALV	Zalesovo Beam	42.06	312	P	P	01 26 38.2	+10
	0.3nm,0.4s,baz=81,slow=8.9,SNR=2.3						
WRA	Warramunga Arr	56.95	188	P	P	01 28 26.1	+4.1
	0.6nm,0.3s,baz=3.0,slow=7.3,SNR=13						

ISCJB 30 01:39:41.5±0.6, 39.09N±0.04×29.05E±0.04, h5km±8km, Error ellipse: s-maj=7.1km s-min=4.5km az=167.9
DDA 30 01:39:41.2, 39.13N×29.04E, h7km, Ml2.6
ISK 30 01:39:41.2, 39.07N×29.12E, h9km, MD2.7
CSEM 30 01:39:41.6±0.1, 39.11N×29.04E, h2km, ML2.6, Error ellipse: s-maj=1.9km s-min=1.8km az=162.0
ISC 30 01:39:41.7±0.9, 39.10N±0.03×29.04E±0.02, h10km±10km, n26, σ0s16/37, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.26	257	P	Pg	01 39 46.9	-0.1
DEMI				S	Sg	01 39 50.6	+0.1
DEMI	Demirci	0.26	257	iP	Pg	01 39 46.9	-0.1
DEMI				iS	Sg	01 39 50.6	+0.1
GDZ	Gediz	0.34	92	P	Pg	01 39 48.7	+0.1
GDZ				S	Sg	01 39 53.0	-0.1
GDZ	Gediz	0.34	92	iP	Pg	01 39 48.7	+0.1
GDZ				iS	Sg	01 39 53.0	-0.1
TVSB	Tavsanli	0.48	43	ePG	Pg	01 39 51.0	0.0
TVSB				eSG	Sg	01 39 57.3	-0.1
TVSB	Tavsanli	0.48	43	ePg	Pg	01 39 51.0	0.0
TVSB				eSg	Sg	01 39 57.3	-0.1
KULA	Kula-Manisa	0.66	207	ePG	Pg	01 39 54.4	0.0
KULA	Kula-Manisa	0.66	207	ePg	Pg	01 39 54.4	0.0
KHAL	Karahalli	0.81	154	P	Pg	01 39 57.4	+0.1
KHAL				S	Sg	01 40 07.9	+0.1
KHAL	Karahalli	0.81	154	iP	Pg	01 39 57.4	+0.1
KHAL				iS	Sg	01 40 07.9	+0.1
IGD	Bursa	1.17	6	iP	Pb	01 40 03.6	-0.4
BALY	Balya	1.27	301	P	Pn	01 40 05.4	-0.1
BALY				S	Sb	01 40 22.0	-0.2
BALY	Balya	1.27	301	iP	Pn	01 40 05.5	-0.1
BALY				iS	Sb	01 40 21.9	-0.2
MDNY	Mudanya-Bursa	1.27	355	ePN	Pg	01 40 06.3	+0.2
MDNY	Mudanya-Bursa	1.27	355	ePn	Pg	01 40 06.3	+0.2
KCTX	Karacabey (Bur	1.28	336	ePN	Pg	01 40 06.5	+0.3
KCTX	Karacabey (Bur	1.28	336	ePn	Pg	01 40 06.5	+0.3
BORA	Eskisehir	1.34	54	P	Pn	01 40 06.7	+0.1
BORA				S	Sg	01 40 24.9	0.0
BORA	Eskisehir	1.34	54	iP	Pn	01 40 06.7	+0.1
BORA				iS	Sg	01 40 24.9	0.0
ARMT	Armutlu	1.47	355	ePN	Pb	01 40 09.0	-0.1
ARMT	Armutlu	1.47	355	ePn	Pb	01 40 09.0	-0.1
EDC	Edincik	1.54	324	ePN	Pb	01 40 10.5	+0.2
EDC	Edincik	1.54	324	ePn	Pb	01 40 10.5	+0.2
GULT	Gulveren	1.75	40	ePN	Pn	01 40 12.3	+0.1
GULT	Gulveren	1.75	40	ePn	Pn	01 40 12.3	+0.1
BTIN	Bart¨–n	3.53	43	iP	Pn	01 40 31.1	-5.4

ISK 30 01:49:09.8, 39.14N×28.97E, h5km, MD2.6
ISCJB 30 01:49:10.3±0.5, 39.12N±0.04×28.98E±0.04, h9km, Error ellipse: s-maj=5.7km s-min=4.5km az=150.5
CSEM 30 01:49:10.2±0.1, 39.13N×28.97E, h8km, MD2.6, Error ellipse: s-maj=3.3km s-min=2.7km az=106.0
DDA 30 01:49:10.2, 39.08N×28.99E, h7km, Md2.6
ISC 30 01:49:10.4±0.9, 39.12N±0.04×28.99E±0.03, h9km, n20, σ0s28/28, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.22	250	P	Pg	01 49 15.0	+0.1
DEMI				S	Sg	01 49 18.1	+0.1
DEMI	Demirci	0.22	250	iP	Pg	01 49 15.0	+0.1
DEMI				iS	Sg	01 49 18.1	+0.1
GDZ	Gediz	0.39	94	P	Pg	01 49 17.9	-0.1
GDZ				S	Sg	01 49 23.6	+0.5
GDZ	Gediz	0.39	94	iP	Pg	01 49 17.9	-0.1
GDZ				iS	Sg	01 49 23.6	+0.5
TVSB	Tavsanli	0.50	48	ePG	Pg	01 49 19.8	-0.2
TVSB				eSG	Sg	01 49 27.0	+0.4
TVSB	Tavsanli	0.50	48	ePg	Pg	01 49 19.8	-0.2
TVSB				eSg	Sg	01 49 27.0	+0.4
KULA	Kula-Manisa	0.65	203	ePG	Pg	01 49 23.2	+0.2
KULA	Kula-Manisa	0.65	203	ePg	Pg	01 49 23.2	+0.2
KHAL	Karahalli	0.85	152	P	Pb	01 49 27.3	0.0
KHAL				S	Sg	01 49 37.4	-0.3
KHAL	Karahalli	0.85	152	iP	Pb	01 49 27.3	0.0
KHAL				iS	Sg	01 49 37.4	-0.3
KCTX	Karacabey (Bur	1.24	337	ePN	Pn	01 49 33.6	-0.4
KCTX	Karacabey (Bur	1.24	337	ePn	Pn	01 49 33.6	-0.4
MDNY	Mudanya-Bursa	1.25	356	ePN	Pn	01 49 33.6	-0.4
MDNY	Mudanya-Bursa	1.25	356	ePn	Pn	01 49 33.6	-0.4
CAVI	Cavuskoy	1.27	31	ePN	Pn	01 49 34.2	-0.1
CAVI	Cavuskoy	1.27	31	ePn	Pn	01 49 34.2	-0.1
BORA	Eskisehir	1.37	56	P	Pg	01 49 36.6	0.0
BORA	Eskisehir	1.37	56	iP	Pg	01 49 36.6	0.0
ARMT	Armutlu	1.45	356	ePN	Pn	01 49 37.0	+0.3
ARMT	Armutlu	1.45	356	ePn	Pn	01 49 37.1	+0.3

IDC 30 01:52:29.0±1.8, 24.70S×179.81E, h489km±17km, mb3.6/4, mb1 3.9/7, mb1mx3.5/26, mbtmp4.6/7, Error ellipse: s-maj=31.1km s-min=18.6km az=9.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	Raoul Island	4.97	156	P	P	01 53 55.6	+0.6
	44nm,0.3s,baz=91,slow=11,SNR=5.3						
RAO				S	S	01 55 06.9	+1.6
	69nm,0.3s,baz=96,slow=19,SNR=3.2						
DZM	Mont Dzumac	12.55	279	P	P	01 55 13.4	-0.3
	0.1nm,0.3s,baz=94,slow=18,SNR=2.7						
URZ	Urewera	13.71	189	P	P	01 55 23.7	-1.9
	1.0nm,0.3s,baz=255,slow=3.3,SNR=4.3						
URZ				S	S	01 57 48.6	-2.8
	0.4nm,0.3s,baz=354,slow=13,SNR=2.5						
STKA	Stephens Creek	34.27	249	P	P	01 58 34.0	+0.4
	2.5nm,0.4s,baz=92,slow=11,SNR=8.0						
ASAR	Alice Springs	41.74	262	P	P	01 59 34.8	-0.1
	2.5nm,0.4s,baz=100,slow=7.6,SNR=48						
ASAR				ScP	ScP	02 04 24.0	+0.6
	0.4nm,0.8s,baz=48,slow=2.8,SNR=3.1						
WRA	Warramunga Arr	42.19	267	P	P	01 59 38.0	-0.4
	7.5nm,0.3s,baz=100,slow=8.2,SNR=194						
WRA				ScP	ScP	02 04 26.4	+1.1
	1.8nm,0.9s,baz=94,slow=3.8,SNR=6.9						
TXAR	Lajitas Array	91.00	58	P	P	02 04 40.6	-0.1
	0.9nm,0.8s,baz=211,slow=7.4,SNR=8.7						
BRTR	Keskin Array B	147.91	306	PKPbc	PKPbc	02 11 17.8	-1.2
	0.3nm,0.4s,baz=112,slow=1.6,SNR=3.8						
TORD	Torodi Ar. Bea	168.38	189	PKPab	PKPab	02 12 50.7	-1.2
	0.7nm,1.1s,baz=186,slow=4.2,SNR=3.5						

DDA 30 01:58:53.9, 39.11N×28.97E, h7km, Md2.4
CSEM 30 01:58:54.6±0.1, 39.12N×28.97E, h5km, MD2.4, Error ellipse: s-maj=2.1km s-min=1.9km az=77.0
ISK 30 01:58:54.3, 39.13N×28.98E, h5km, MD2.8
ISC 30 01:58:54.3±1.2, 39.12N±0.02×28.98E±0.03, h19km±2km, n37, σ0s30/48, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.22	249	P	Pb	01 58 59.2	-0.1
DEMI				S	Sb	01 59 02.5	-0.1
DEMI	Demirci	0.22	249	iP	Pb	01 58 59.2	-0.1
DEMI				iS	Sb	01 59 02.5	-0.1
GDZ	Gediz	0.39	95	P	Pg	01 59 02.5	-0.1
GDZ				S	Sg	01 59 07.9	-0.3
GDZ	Gediz	0.39	95	iP	Pg	01 59 02.5	-0.1
GDZ				iS	Sg	01 59 07.9	-0.3
TVSB	Tavsanli	0.50	49	ePG	Pb	01 59 04.6	+0.1
TVSB				eSG	Sg	01 59 10.9	-0.3
TVSB	Tavsanli	0.50	49	ePg	Pb	01 59 04.6	+0.1
TVSB				eSg	Sg	01 59 10.9	-0.3
KULA	Kula-Manisa	0.66	202	ePG	Pg	01 59 07.2	-0.1
KULA	Kula-Manisa	0.66	202	ePg	Pg	01 59 07.2	-0.1
KHAL	Karahalli	0.85	152	P	Pg	01 59 10.9	-0.1
KHAL				S	Sb	01 59 21.4	-0.2
KHAL	Karahalli	0.85	152	iP	Pg	01 59 10.9	-0.1
KHAL				iS	Sb	01 59 21.4	-0.2
KHL	Karahalli	0.91	152	ePG	Pn	01 59 12.5	+0.4
KHL	Karahalli	0.91	152	ePg	Pn	01 59 12.5	+0.4
BALB	Balikesir	1.00	302	ePG	Pg	01 59 13.8	+0.1
BALB	Balikesir	1.00	302	ePg	Pg	01 59 13.8	+0.1
IGD	Bursa	1.15	8	iP	Pb	01 59 15.6	0.0
IGD				iS	Sb	01 59 30.1	-0.1
KCTX	Karacabey (Bur	1.24	337	ePN	Pg	01 59 18.3	0.0
KCTX	Karacabey (Bur	1.24	337	ePn	Pg	01 59 18.3	0.0
MDNY	Mudanya-Bursa	1.25	357	ePN	Pg	01 59 18.6	+0.2
MDNY	Mudanya-Bursa	1.25	357	ePn	Pg	01 59 18.6	+0.2
CAVI	Cavuskoy	1.27	31	ePN	Pg	01 59 18.8	0.0
CAVI	Cavuskoy	1.27	31	ePn	Pg	01 59 18.8	0.0
IZI	Iznik	1.27	17	ePN	Pg	01 59 18.6	-0.3
IZI	Iznik	1.27	17	ePn	Pg	01 59 18.6	-0.3
BORA	Eskisehir	1.37	56	P	Pg	01 59 20.3	-0.4
BORA				S	Sg	01 59 39.3	+0.6
BORA	Eskisehir	1.37	56	iP	Pg	01 59 20.3	-0.4
BORA				iS	Sg	01 59 39.3	+0.6
ADVT	Abdulvahap	1.43	24	ePN	Pg	01 59 21.7	-0.3
ADVT	Abdulvahap	1.43	24	ePn	Pg	01 59 21.7	-0.3
ARMT	Armutlu	1.44	356	ePN	Pg	01 59 21.7	-0.5
ARMT	Armutlu	1.44	356	ePn	Pg	01 59 21.7	-0.5
EDC	Edincik	1.49	325	ePN	Pg	01 59 22.5	-0.6
EDC	Edincik	1.49	325	ePn	Pg	01 59 22.5	-0.6
GULT	Gulveren	1.76	42	ePN	Pb	01 59 26.2	+0.1
GULT	Gulveren	1.76	42	ePn	Pb	01 59 26.2	+0.1
ISK	Istanbul-Kandi	1.94	2	ePN	Pb	01 59 28.9	-0.2
ISK	Istanbul-Kandi	1.94	2	ePn	Pb	01 59 28.9	-0.2
SVRH	Sivrihisar-ESK	2.00	80	ePN	Pb	01 59 29.9	-0.2
SVRH	Sivrihisar-ESK	2.00	80	ePn	Pb	01 59 29.9	-0.2

JMA 30 02:00:02.3±0.1, 36.99N×140.94E, h51km±1km, M2.9, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	Iwakimizuishiy	0.16	315	P	Pn	02 00 10.5	-0.1
ONAJ				S	Sn	02 00 16.2	-0.3
JFK	Kawauchi	0.38	352	P	Pn	02 00 12.0	-0.4
JFK				S	Sn	02 00 18.9	-0.6
JHO	Hitachi	0.48	218	P	Pn	02 00 13.2	-0.2
JHO				S	Sn	02 00 20.8	-0.6
JFT	Otama	0.71	318	P	Pn	02 00 16.7	+0.4
JFT				S	Sn	02 00 26.9	+0.4
MAT	Matsushiro	2.24	259	P	Pn	02 00 38.1	+1.2
MAT				S	Sn	02 01 06.3	+2.9

KRSC 30 02:04:04.9±0.8, 55.83N×162.69E, h45km±16km, ML3.8, Near east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KBG	Krutoberegovo	0.43	1	eP	Pn	02 04 15.1	+0.2
KBG				eS	Sn	02 04 22.8	+0.7
SMKR	Semkarok	1.02	319	eP	Pn	02 04 23.9	+1.1
SMKR				eS	Sn	02 04 37.0	+1.0
ZLN	Zelenaya	1.08	281	eP	Pn	02 04 24.7	+1.1
ZLN				eS	Sn	02 04 37.5	+0.1
BDR	Baidarnaya	1.11	313	eP	Pn	02 04 25.5	+1.4
BDR				eS	Sn	02 04 40.7	+2.4
CIRR	Tsirk	1.13	286	eP	Pn	02 04 25.4	+1.1
CIRR				eS	Sn	02 04 38.3	-0.4
LGNR	Loginova	1.15	284	eP	Pn	02 04 25.6	+0.8
SRKR	Sorokina	1.19	315	eP	Pn	02 04 26.6	+1.5
SRKR				eS	Sn	02 04 41.8	+1.7
BZWR	Bezymyannyi-We	1.24	277	eP	Pn	02 04 27.1	+1.2
KLY	Klyuchi	1.24	294	eP	Pn	02 04 25.3	-0.4
KLY				eS	Sn	02 04 40.7	-0.6
BZMR	Bezymyannaya	1.24	276	eP	Pn	02 04 27.0	+1.1
KRSR	Krestovskiy	1.25	289	eP	Pn	02 04 26.8	+0.8
KRSR				eS	Sn	02 04 42.5	+0.7
KIRR	Kirishev	1.33	277	eP	Pn	02 04 28.3	+1.2
KIRR				eS	Sn	02 04 45.3	+1.7
KMNR	Kamenistaya	1.39	268	eP	Pn	02 04 29.6	+1.8
KMNR				eS	Sn	02 04 48.2	+3.2
MKZ	Mys Kozlova	1.39	204	eP	Pn	02 04 29.5	+1.8
MKZ				eS	Sn	02 04 47.0	+2.2
KPT	Kopyto	1.40	277	eP	Pn	02 04 29.5	+1.6
KPT				eS	Sn	02 04 48.7	+3.5
TUMR	Tumrok	1.54	250	eP	Pn	02 04 32.6	+2.6
TUMR				eS	Sn	02 04 51.8	+3.0
KOZ	Kozyrevsk	1.60	280	eP	Pn	02 04 33.5	+2.8
KOZ				eS	Sn	02 04 54.5	+4.4
BKI	Bering	1.97	107	eP	Pn	02 04 38.3	+2.6
BKI				eS	Sn	02 05 02.3	+3.2
SDLR	Sedlovina	3.38	223	eP	Pn	02 04 58.2	+3.0
SDLR				eS	Sn	02 05 36.8	+2.8
KRX	Arik	3.41	225	eP	Pn	02 05 00.1	+4.5
KRX				eS	Sn	02 05 40.4	+5.6
SMAR	Somma	3.42	223	eP	Pn	02 04 59.0	+3.2
AVH	Avacha	3.44	224	eP	Pn	02 04 59.7	+3.7
AVH				eS	Sn	02 05 39.5	+3.9
UGLR	Uglovaya	3.46	222	eP	Pn	02 04 59.4	+3.2
UGLR				eS	Sn	02 05 38.8	+2.9
KOK	Koryaka	3.46	225	eP	Pn	02 05 01.2	+4.9
GNL	Ganaly	3.48	234	eP	Pn	02 05 00.0	+3.4
PET	Petropavlovsk	3.66	222	eS	Sn	02 05 44.4	+3.6
KRMR	Karymshinskiy	4.01	224	eP	Pn	02 05 08.3	+4.5
KRMR				eS	Sn	02 05 54.2	+4.7
RUS	Russkaya	4.19	218	eP	Pn	02 05 08.9	+2.7
ASAK	Asacha	4.45	221	eP	Pn	02 05 14.7	+4.8

ISK 30 02:05:28.3, 38.40N×28.06E, h17km, MD2.2
ISCJB 30 02:05:29.6±0.5, 38.41N±0.03×28.04E±0.04, h10km, Error ellipse: s-maj=4.8km s-min=3.9km az=28.0
CSEM 30 02:05:29.4±0.3, 38.41N×28.01E, h12km, MD2.2, Error ellipse: s-maj=7.3km s-min=5.3km az=103.0
DDA 30 02:05:30.2, 38.39N×28.10E, h7km, Md2.6
ISC 30 02:05:30.0±0.8, 38.42N±0.02×28.02E±0.03, h10km, n19, σ1s71/34, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AYDB	Zeytinkoy-Aydi	0.48	192	ePG	Pg	02 05 38.3	-1.1
AYDB				eSG	Sg	02 05 45.3	-0.5
AYDB	Zeytinkoy-Aydi	0.48	192	ePg	Pg	02 05 38.3	-1.1
AYDB				eSg	Sg	02 05 45.3	-0.5
AKS	Akhisar	0.49	341	ePG	Pg	02 05 39.4	-0.1
AKS				eSG	Sg	02 05 46.3	+0.4
AKS	Akhisar	0.49	341	ePg	Pg	02 05 39.4	-0.1
AKS				eSg	Sg	02 05 46.3	+0.4
KULA	Kula-Manisa	0.51	79	ePG	Pg	02 05 38.5	-1.5
KULA				eSG	Sg	02 05 45.8	-1.0
KULA	Kula-Manisa	0.51	79	ePg	Pg	02 05 38.5	-1.5
KULA				eSg	Sg	02 05 45.8	-1.0
AYDN	Tasoluk	0.77	188	P	Pg	02 05 44.7	-0.1
AYDN				S	Sg	02 05 55.0	+0.2
AYDN	Tasoluk	0.77	188	iP	Pg	02 05 44.7	-0.1
AYDN				iS	Sg	02 05 55.0	+0.2
DEMI	Demirci	0.83	41	P	Pb	02 05 46.7	+0.2
DEMI				S	Sg	02 05 56.7	-0.1
DEMI	Demirci	0.83	41	iP	Pb	02 05 46.7	+0.2
DEMI				iS	Sg	02 05 56.7	-0.1
DKL	Dikili	1.09	307	ePN	Pb	02 05 49.8	-1.1
DKL	Dikili	1.09	307	ePn	Pb	02 05 49.8	-1.1
DNZL	Cakiroluk	1.09	132	P	Pn	02 05 51.9	+0.4
DNZL				S	Sn	02 06 12.2	+5.4
DNZL	Cakiroluk	1.09	132	iP	Pn	02 05 51.9	+0.4
DNZL				iS	Sn	02 06 12.2	+5.4
KHAL	Karahalli	1.16	92	P	Pb	02 05 52.1	-0.1
KHAL				S	Sb	02 06 05.9	-1.4
KHAL	Karahalli	1.16	92	iP	Pb	02 05 52.1	-0.1
KHAL				iS	Sb	02 06 05.9	-1.4
ZEY	¯zmir	1.21	262	iP	Pg	02 05 53.4	+0.3
ZEY				iS	Sn	02 06 11.3	+2.0
YER	Yerkesik	1.30	171	ePN	Pn	02 05 52.0	-2.3
YER	Yerkesik	1.30	171	ePn	Pn	02 05 52.0	-2.3

ISCJB 30 02:21:07.0±0.6, 39.09N±0.04×29.06E±0.04, h1km±9km, Error ellipse: s-maj=7.0km s-min=4.9km az=163.8
DDA 30 02:21:07.0, 39.08N×29.06E, h7km, Ml2.3
ISK 30 02:21:06.6, 39.09N×29.10E, h5km, MD2.7
CSEM 30 02:21:07.2±0.1, 39.09N×29.05E, h5km, ML2.3, Error ellipse: s-maj=2.6km s-min=2.0km az=99.0
ISC 30 02:21:07.2±0.9, 39.07N±0.03×29.07E±0.03, h10km±10km, n24, σ0s47/36, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.28	264	P	Pg	02 21 12.9	0.0
DEMI

DEMI				*i* S	**Sg**	02 25 52.4	-0.2
GDZ	**Gediz**	0.32	83	P	**Pb**	02 25 50.5	-0.1
GDZ				S	**Sb**	02 25 55.6	-0.2
GDZ	**Gediz**	0.32	83	*i* P	**Pb**	02 25 50.5	-0.1
GDZ				*i* S	**Sb**	02 25 55.6	-0.2
TVSB	**Tavsanli**	0.50	37	*e*PG	**Pg**	02 25 52.3	-0.3
TVSB				*e*SG	**Sg**	02 25 58.8	-0.5
TVSB	**Tavsanli**	0.50	37	*e*Pg	**Pg**	02 25 52.3	-0.3
TVSB				*e*Sg	**Sg**	02 25 58.8	-0.5
KULA	**Kula-Manisa**	0.63	211	*e*PG	**Pb**	02 25 55.8	0.0
KULA	**Kula-Manisa**	0.63	211	*e*Pg	**Pb**	02 25 55.8	0.0
KHAL	**Karahalli**	0.75	154	P	**Pn**	02 25 59.9	+0.4
KHAL				S	**Sn**	02 26 10.3	-0.6
KHAL	**Karahalli**	0.75	154	*i* P	**Pn**	02 25 59.9	+0.4
KHAL				*i* S	**Sn**	02 26 10.3	-0.6
KHL	**Karahalli**	0.81	154	*e*PG	**Pb**	02 25 58.7	-0.2
KHL	**Karahalli**	0.81	154	*e*Pg	**Pb**	02 25 58.7	-0.2
IGD	**Bursa**	1.22	4	*i* P	**Pn**	02 26 05.5	-0.3
IGD				*i* S	**Sg**	02 26 22.2	+0.2
MDNY	**Mudanya-Bursa**	1.32	354	*e*PN	**Pn**	02 26 07.2	0.0
MDNY	**Mudanya-Bursa**	1.32	354	*e*Pn	**Pn**	02 26 07.2	0.0
KCTX	**Karacabey (Bur**	1.33	336	*e*PN	**Pn**	02 26 07.8	+0.4
KCTX				*e*SN	**Sg**	02 26 26.1	+0.2
KCTX	**Karacabey (Bur**	1.33	336	*e*Pn	**Pn**	02 26 07.8	+0.4
KCTX				*e*Sn	**Sg**	02 26 26.1	+0.2
BORA	**Eskisehir**	1.35	52	P	**Pg**	02 26 09.4	+0.6
BORA				S	**Sg**	02 26 27.2	+0.8
BORA	**Eskisehir**	1.35	52	*i* P	**Pg**	02 26 09.3	+0.6
BORA				*i* S	**Sg**	02 26 27.2	+0.8
ARMT	**Armutlu**	1.52	354	*e*PN	**Pn**	02 26 10.2	+0.2
ARMT	**Armutlu**	1.52	354	*e*Pn	**Pn**	02 26 10.2	+0.2
EDC	**Edincik**	1.60	324	*e*PN	**Pn**	02 26 11.5	+0.5
EDC	**Edincik**	1.60	324	*e*Pn	**Pn**	02 26 11.5	+0.5
GULT	**Gulveren**	1.77	38	*e*PN	**Pn**	02 26 13.6	+0.2
GULT	**Gulveren**	1.77	38	*e*Pn	**Pn**	02 26 13.6	+0.2

*ISK **30** 02:29:50.7, 39°.58N×43°.54E, h8km, MD2.9*
*CSEM **30** 02:29:50.9±0.4, 39°.53N×43°.53E, h12km, MD2.9, Error ellipse: s-maj=8.9km s-min=6.7km az=78.0*
*DDA **30** 02:29:51.3, 39°.50N×43°.48E, h23km, Md2.8*

ISC 30 02:29:51.1±1.4, 39°.48N±0°.03×43°.53E±0°.04, h10km±10km, n26, σ1s12/40, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AGRB	**Hanur-Agry**	0.42	283	*e*PG	**Pg**	02 29 59.3	-0.1
AGRB				*e*SG	**Sb**	02 30 05.9	-1.4
AGRB	**Hanur-Agry**	0.42	283	*e*Pg	**Pg**	02 29 59.3	-0.1
AGRB				*e*Sg	**Sb**	02 30 05.9	-1.4
TUTA	**Tutak**	0.56	262	P	**Pg**	02 30 01.6	-0.3
TUTA				S	**Sb**	02 30 10.3	-0.9
TUTA	**Tutak**	0.56	262	*i* P	**Pg**	02 30 01.6	-0.3
TUTA				*i* S	**Sb**	02 30 10.3	-0.9
EATA	**Eleskirt**	0.88	296	P	**Pg**	02 30 07.5	-0.6
EATA				S	**Sb**	02 30 20.4	-0.2
EATA	**Eleskirt**	0.88	296	*i* P	**Pg**	02 30 07.5	-0.6
EATA				*i* S	**Sb**	02 30 20.4	-0.2
VANB	**Van**	0.89	187	*e*PG	**Pn**	02 30 10.1	+0.3
VANB	**Van**	0.89	187	*e*Pg	**Pn**	02 30 10.1	+0.3
TVAN	**Van**	0.96	186	P	**Pg**	02 30 09.6	+0.1
TVAN				S	**Sn**	02 30 24.8	+0.2
TVAN	**Van**	0.96	186	*i* P	**Pg**	02 30 09.6	+0.1
TVAN				*i* S	**Sn**	02 30 24.8	+0.2
EKAR	**Karacoban**	1.16	259	P	**Pb**	02 30 12.4	-0.9
EKAR				S	**Sn**	02 30 30.1	+0.6
EKAR	**Karacoban**	1.16	259	*i* P	**Pb**	02 30 12.4	-0.9
EKAR				*i* S	**Sn**	02 30 30.1	+0.6
KARS	**Kars**	1.19	343	*e*PN	**Pb**	02 30 12.0	-1.9
KARS	**Kars**	1.19	343	*e*Pn	**Pb**	02 30 12.0	-1.9
EAK	**Akyaka**	1.20	3	P	**Pg**	02 30 14.1	-0.1
EAK	**Akyaka**	1.20	3	*i* P	**Pg**	02 30 14.1	-0.1
EAK				*i* S	**Sn**	02 30 33.5	+2.9
HOMI	**Horasan**	1.37	295	*i* P	**Pb**	02 30 16.2	-0.7
HOMI				*i* S	**Sg**	02 30 37.9	+2.8
SENK	**Senkaya-Erzuru**	1.40	320	*e*PN	**Pb**	02 30 16.3	-1.2
SENK	**Senkaya-Erzuru**	1.40	320	*e*Pn	**Pb**	02 30 16.3	-1.2
EZM	**Erzurum**	1.72	285	*e*PN	**Pb**	02 30 21.6	-1.3
BNGL	**BINGOL**	1.92	255	*i* P	**Pb**	02 30 25.7	-0.6
BNGL				*i* S	**Sb**	02 30 50.5	+0.1
DAGI	**Agillar**	2.01	323	*i* P	**Pb**	02 30 26.6	-1.3
DAGI				*i* S	**Sg**	02 30 56.4	+0.7
BNGB	**Bing˚¶||**	2.26	258	*e*PN	**Pn**	02 30 29.6	+0.9
YEDI	**Yedisu-Bingol**	2.31	270	*e*PN	**Pn**	02 30 30.4	+1.1
YEDI	**Yedisu-Bingol**	2.31	270	*e*Pn	**Pn**	02 30 30.4	+1.1
BINT	**Bingol**	2.44	257	*e*Pn	**Pn**	02 30 29.6	-1.4

*ISN **30** 02:44:18.6±18.0, 37°.56N×44°.79E, h0km±999km, ML2.6*
*CSEM **30** 02:44:34.5, 37°.58N×44°.75E, h9km, ML2.6*

TEH 30 02:44:34.5, 37°.58N×44°.75E, h9km, ML2.6, Turkey-Iran border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ISHB	**Shabestar**	0.98	44	*e*Pg	Pg	02 44 52.4	-1.0
ISHB				*e*AMB	AMB	02 45 10.5	
	comp=Z,1μm,0.1s						
IMRD	**Marand**	1.36	33	*e*Pn	Pn	02 44 59.5	-0.3
IMRD				*e*AMB	AMB	02 45 29.9	
	comp=N,2μm,0.3s						
IMRD	**Marand**	1.36	33	*e*Pn	Pn	02 44 59.5	-0.3
IBST	**Bostanabad**	1.70	85	*e*AMB	AMB	02 45 07.6	
	comp=Z,460nm,0.1s						
IBST				*e*Pn	Pn	02 45 03.9	-0.7
IBST				*e*Sg	Sb	02 45 27.6	-0.1
IHRS	**Heris**	1.96	67	*e*AMB	AMB	02 45 14.6	
	comp=Z,408nm,0.1s						
IHRS				*e*Pn	Pn	02 45 08.4	+0.4
ISRB	**Sarab**	2.32	83	*e*Pn	Pn	02 45 13.3	+0.2
ISRB				*e*AMB	AMB	02 45 18.3	
	comp=Z,256nm,0.2s						
ISRB	**Sarab**	2.32	83	*e*Pn	Pn	02 45 13.3	+0.2

*ISK **30** 02:58:41.8, 39°.69N×28°.73E, h5km, MD2.5*
*ISCJB **30** 02:58:42.2±0.5, 39°.71N±0°.03×28°.74E±0°.04, h2km±7km, Error ellipse: s-maj=6.1km s-min=4.1km az=150.0*
*DDA **30** 02:58:42.5, 39°.67N×28°.77E, h7km, Md2.7*
*CSEM **30** 02:58:42.6±0.2, 39°.71N×28°.73E, h8km, MD2.5, Error ellipse: s-maj=4.4km s-min=2.9km az=58.0*

ISC 30 02:58:42.3±1.1, 39°.71N±0°.02×28°.71E±0°.03, h12km±10km, n25, σ0s27/40, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KCTX	**Karacabey (Bur**	0.62	334	*e*PG	**Pg**	02 58 54.2	-0.1
KCTX				*e*SG	**Sb**	02 59 04.1	+0.3
KCTX	**Karacabey (Bur**	0.62	334	*e*Pg	**Pg**	02 58 54.2	-0.1
KCTX				*e*Sg	**Sb**	02 59 04.1	+0.3
TVSB	**Tavsanli**	0.63	114	*e*PG	**Pg**	02 58 54.3	-0.3
TVSB				*e*SG	**Sg**	02 59 03.2	+0.2
TVSB	**Tavsanli**	0.63	114	*e*Pg	**Pg**	02 58 54.3	-0.3
TVSB				*e*Sg	**Sg**	02 59 03.2	+0.2
DEMI	**Demirci**	0.67	180	*i* P	**Pg**	02 58 55.5	+0.3
DEMI				*i* S	**Sb**	02 59 05.2	0.0
MDNY	**Mudanya-Bursa**	0.67	11	*e*PG	**Pg**	02 58 55.5	+0.2
MDNY	**Mudanya-Bursa**	0.67	11	*e*Pg	**Pg**	02 58 55.6	+0.2
IZI	**Iznik**	0.86	43	*e*PG	**Pb**	02 58 59.0	-0.2
IZI	**Iznik**	0.86	43	*e*Pg	**Pb**	02 58 59.0	-0.2
GDZ	**Gediz**	0.86	136	P	**Pb**	02 58 59.4	+0.1
GDZ				S	**Sg**	02 59 09.9	-0.3
GDZ	**Gediz**	0.86	136	*i* P	**Pb**	02 58 59.4	+0.1
GDZ				*i* S	**Sg**	02 59 09.9	-0.3
EDC	**Edincik**	0.91	315	*e*PG	**Pb**	02 59 00.1	0.0
EDC				*e*SG	**Sn**	02 59 13.8	-0.3
EDC	**Edincik**	0.91	315	*e*Pg	**Pb**	02 59 00.1	0.0
EDC				*e*Sg	**Sn**	02 59 13.8	-0.3
CAVI	**Cavuskoy**	1.00	60	*e*PG	**Pg**	02 59 00.9	-0.6
CAVI	**Cavuskoy**	1.00	60	*e*Pg	**Pg**	02 59 00.9	-0.6
ADVT	**Abdulvahap**	1.07	47	*e*PG	**Pg**	02 59 02.7	-0.2
ADVT	**Abdulvahap**	1.07	47	*e*Pg	**Pg**	02 59 02.7	-0.2
KULA	**Kula-Manisa**	1.19	182	*e*PN	**Pb**	02 59 04.8	-0.1
KULA	**Kula-Manisa**	1.19	182	*e*Pn	**Pb**	02 59 04.8	-0.1
BORA	**Eskisehir**	1.35	82	P	**Pb**	02 59 07.9	+0.2
BORA				S	**Sg**	02 59 26.2	+0.3
BORA	**Eskisehir**	1.35	82	*i* P	**Pb**	02 59 07.9	+0.2
BORA				*i* S	**Sg**	02 59 26.2	+0.3
KHAL	**Karahalli**	1.47	155	P	**Pb**	02 59 09.6	0.0
KHAL				S	**Sb**	02 59 28.5	+0.2
KHAL	**Karahalli**	1.47	155	*i* P	**Pb**	02 59 09.6	0.0
KHAL				*i* S	**Sb**	02 59 28.5	+0.2
ESKT	**Eskisehir**	1.66	96	*i* P	**Pb**	02 59 13.3	+0.3
ESKT				*i* S	**Sn**	02 59 32.8	0.0
SEYT	**Eskypehyr**	1.66	96	P	**Pb**	02 59 13.3	+0.3
SEYT				S	**Sn**	02 59 32.8	0.0

IDC 30 03:00:13.8±1.3, 54°.08S×119°.12W, h0km, mb3.8/4, mb1 4.0/4, mb1mx3.8/15, mbtmp3.8/4, MS3.8/7, Ms1 3.7/7, ms1mx3.5/16, Error ellipse: s-maj=65.9km s-min=29.0km az=155.0, Southern East Pacific Rise

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RKT	**Rikitea**	33.14	333	*e*LR	LR	03 15 55.0	
	310nm,28.8s						
RKT	**Rikitea**	33.14	333	*e*T	T	03 42 21.8	
	1.7nm,0.3s						
PLCA	**Paso Flores**	34.77	88	LR	LR	03 17 40.8	
	comp=Z,80nm,21.2s,baz=226,slow=30						
VNDA	**Vanda**	35.61	202	P	P	03 07 12.6	+0.1
	0.7nm,0.9s,baz=94,slow=9.2,SNR=3.9						
TBI	**Tubuai**	38.20	311	*e*LR	LR	03 18 16.7	
	215nm,27.8s						
TBI	**Tubuai**	38.20	311	*e*T	T	03 48 38.8	
	5.4nm,0.3s						
MEH	**Mehetia**	42.47	317	*e*T	T	03 54 00.2	
	11nm,0.3s						
PPT2	**Papeete2**	43.35	315	*e*LR	LR	03 20 41.6	
	271nm,25.5s						
PPT	**Papeete**	43.37	315	LR	LR	03 21 47.3	
	comp=Z,114nm,18.0s,baz=138,slow=30						
VAH	**Vaihoa**	44.69	319	*e*T	T	03 56 46.8	
	13nm,0.3s						
TAOE	**Nuku Hiva Isla**	48.15	332	*e*LR	LR	03 22 53.9	
	177nm,24.7s						
CPUP	**Villa Florida**	52.67	84	P	P	03 09 28.8	-1.0
	1.3nm,0.9s,baz=176,slow=6.3,SNR=2.9						
CPUP				LR	LR	03 28 56.9	
	comp=Z,74nm,18.4s,baz=223,slow=33						
MAW	**Mawson**	58.63	181	LR	LR	03 34 43.6	
	comp=Z,53nm,18.1s,baz=244,slow=35						
STKA	**Stephens Creek**	69.90	243	LR	LR	03 35 53.4	
	comp=Z,62nm,20.4s,baz=200,slow=31						
H01W1	**Cape Leeuwin H**	80.19	222	T	T	04 41 06.9	
	baz=151,slow=76,SNR=46						
H01W2	**Cape Leeuwin H**	80.19	222	T	T	04 41 10.6	
	baz=151,slow=76,SNR=41						
H01W3	**Cape Leeuwin H**	80.20	222	T	T	04 41 13.0	
	baz=151,slow=76,SNR=38						
ASAR	**Alice Springs**	80.52	243	P	P	03 12 27.9	+0.1
	1.0nm,1.0s,baz=179,slow=4.4,SNR=3.3						
WRA	**Warramunga Arr**	83.33	245	P	P	03 12 42.0	-0.6
	3.2nm,0.9s,baz=145,slow=4.6,SNR=7.2						
BOSA	**Boshof**	92.08	149	LR	LR	03 48 33.5	
	comp=Z,53nm,18.5s,baz=163,slow=32						
NVAR	**Mina Array Bea**	92.14	1	LR	LR	03 46 21.5	
	comp=Z,54nm,18.8s,baz=92,slow=30						
H11S2	**WAKE ISLAND Hy**	95.86	293	T	T	05 00 55.3	
	baz=147,slow=76,SNR=52						
H11S3	**WAKE ISLAND Hy**	95.88	293	T	T	05 00 51.8	
	baz=147,slow=76,SNR=43						
H11S1	**WAKE ISLAND Hy**	95.88	293	T	T	05 00 56.9	
	baz=147,slow=76,SNR=32						
H11N3	**WAKE ISLAND Hy**	96.76	294	T	T	05 02 04.3	
	baz=145,slow=76,SNR=18						
H11N1	**WAKE ISLAND Hy**	96.76	294	T	T	05 02 04.1	
	baz=145,slow=76,SNR=16						
H11N2	**WAKE ISLAND Hy**	96.77	294	T	T	05 02 05.6	
	baz=145,slow=76,SNR=14						
GERES	**GERESS Array B**	150.59	81	PKPbc	PKPbc	03 20 07.5	+0.8
	0.2nm,0.4s,baz=180,slow=0.4,SNR=5.8						
BRTR	**Keskin Array B**	156.69	117	PKPab	PKPab	03 20 39.2	-0.5
	0.4nm,0.7s,baz=207,slow=4.4,SNR=3.7						

GUC 30 03:07:08.2±1.3, 22°.32S×70°.04W, h81km±11km, ML3.5, 2C-5D, Near coast of northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB04	**IPOC Station P**	0.11	260	⇓*i* P	Pn	03 07 20.6	+0.5
PB04				*i* S	Sn	03 07 28.4	-0.4
PB04				AML	AML	03 07 29.0	
	comp=N,3μm,0.4s						
PB06	**IPOC Station P**	0.58	132	⇑*i* P	Pn	03 07 25.0	+2.0
PB06				*i* S	Sn	03 07 36.4	+2.6
PB06				AML	AML	03 07 37.2	
	comp=N,2μm,0.5s						
PB07	**IPOC Station P**	0.60	13	⇓*i* P	Pn	03 07 23.4	+0.2
PB07				*i* S	Sn	03 07 33.1	-1.1
PB07				AML	AML	03 07 33.6	
	comp=N,1μm,0.7s						
PB09	**IPOC Station P**	0.90	55	⇓*i* P	Pn	03 07 28.6	+2.3
PB09				*i* S	Sn	03 07 42.4	+2.6
PB09				AML	AML	03 07 42.9	
	comp=E,8μm,0.3s						
PB10	**IPOC Station P**	1.28	202	⇑*i* P	Pn	03 07 31.4	+0.6
PB10				*i* S	Sn	03 07 48.5	+0.7
PB10				AML	AML	03 07 50.4	
	comp=N,2μm,0.6s						
PB01	**IPOC Station P**	1.36	22	⇓*i* P	Pn	03 07 32.6	+0.7
PB01				*i* S	Sn	03 07 49.8	0.0
PB08	**IPOC Station P**	2.31	21	⇓*i* P	Pn	03 07 45.9	+1.1
PB08				*i* S	Sn	03 08 13.0	+0.4

*ISCJB **30** 03:10:41.9±0.7, 6°.81N±0°.05×73°.08W±0°.07, h160km±6km, Error ellipse: s-maj=12.6km s-min=5.7km az=34.4*
*RSNC **30** 03:10:44.6±0.5, 6°.78N×73°.12W, h145km±3km, ML2.6*
*FUNV **30** 03:10:46.3, 6°.95N×72°.98W, h142km, MW3.2*

ISC 30 03:10:41.0±1.5, 6°.83N±0°.05×73°.05W±0°.06, h167km±9km, n21, σ1s93/34, 1D, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BARC	**Barichara**	0.27	210	*e*P	**Pn**	03 11 04.0	+0.1
BARC				*e*S	**Sn**	03 11 19.0	-2.4
BARC				*i*		03 11 20.3	
	comp=Z,99nm,0.2s						
PAMC	**Pamplona, Colo**	0.61	34	*e*P	**Pn**	03 11 07.0	+1.5
PAMC				*e*S	**Sn**	03 11 23.8	-0.4
PAMC				*i*		03 11 25.9	
	comp=Z,32nm,0.4s						
BRRC	**Barranca, Sant**	0.71	293	*e*P	**Pn**	03 11 05.8	+0.4
BRRC				*e*S	**Sn**	03 11 22.9	-1.3
BRRC				*i*		03 11 24.0	
	comp=Z,75nm,0.1s						
CBRI	**Barrientos, No**	0.92	16	*e*P	**Pn**	03 11 08.6	+1.6
CBRI				*e*S	**Sn**	03 11 27.0	-0.1
CBRI				*i*		03 11 33.5	
	comp=Z,62nm,0.4s						
GRMC	**Gramalote, San**	0.92	15	*i* P	**Pn**	03 11 09.8	+2.8
GRMC				*e*S	**Sn**	03 11 29.5	+2.5
GRMC				*i*		03 11 30.8	
	comp=Z,66nm,0.3s						
RUSC	**La Rusia**	0.93	182	*e*P	**Pn**	03 11 08.3	+0.7
RUSC				*e*S	**Sn**	03 11 26.4	-1.5
RUSC				*i*		03 11 27.6	
	comp=Z,58nm,0.2s						
CAPV	**Capacho**	1.26	35	*e*P	**Pn**	03 11 10.7	+0.7
CAPV				*e*S	**Sn**	03 11 29.6	-2.6
OCAC	**Ocana**	1.43	349	*e*P	**Pn**	03 11 12.6	+1.2
OCAC				*e*S	**Sn**	03 11 35.2	+0.4
OCAC				*i*		03 11 39.3	
	comp=Z,59nm,0.3s						
NORC	**Norcasia**	2.21	235	*e*P	**Pn**	03 11 20.5	+0.9
NORC				*e*S	**Sn**	03 11 48.0	-1.5
SOCV	**Socops**	2.61	56	*e*P	**Pn**	03 11 25.6	+1.2
SOCV				*e*S	**Sn**	03 11 55.5	-2.5
ELOV	**Elorza**	3.54	87	*e*P	**Pn**	03 11 38.1	+2.1
PRAC	**Prado**	3.60	211	*e*P	**Pn**	03 11 37.9	+1.3
PRAC				*e*S	**Sn**	03 12 19.9	-0.1
VIRV	**Villa del Rosa**	3.70	10	*e*P	**Pn**	03 11 38.6	+0.6
VIRV				*e*S	**Sn**	03 12 18.9	-3.5
QARV	**Quebrada Arrib**	4.18	36	*e*P	**Pn**	03 11 45.9	+1.7
SANV	**Sanarito**	4.37	52	*e*P	**Pn**	03 11 49.0	+2.3
CURV	**Curarigua**	4.40	44	*e*P	**Pn**	03 11 49.0	+2.0
CURV				*e*S	**Sn**	03 12 33.9	-4.6
DABV	**Dabajuro**	4.71	30	*e*P	**Pn**	03 11 52.7	+1.7
TEPV	**Terepaima**	4.92	51	*e*P	**Pn**	03 11 55.2	+1.4
TEPV				*e*S	Sn	03 12 45.8	-5.0
BAUV	**El Baul**	5.38	67	⇓*e*P	**Pn**	03 12 00.5	+0.6
MAPV	**Macapo**	5.43	56	*e*P	**Pn**	03 12 02.3	+1.8
MONV	**Montecano**	5.93	31	*e*P	**Pn**	03 12 08.4	+1.4

JMA 30 03:11:42.0±0.2, 38°.45N×144°.55E, h36km, M4.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	2.34	287	P	Pn	03 12 19.3	+1.4
OFUJ				S	Sn	03 12 46.8	+1.5
MIYJ	**Miyakonagasawa**	2.41	299	P	Pn	03 12 20.3	+1.5
MIYJ				S	Sn	03 12 48.5	+1.5
JTH	**Tanohata**	2.56	306	P	Pn	03 12 22.6	+1.6
JMK	**Ichinoseki**	2.65	282	P	Pn	03 12 23.8	+1.6
JOM	**Ohasama**	2.74	293	P	Pn	03 12 25.2	+1.8
JOM				*e*S	Sn	03 12 57.5	+2.3
JYK	**Kaneyama**	3.31	279	P	Pn	03 12 33.2	+1.9
JYK				*e*S	Sn	03 13 11.7	+2.3
JNBK	**Urakawa-nobuka**	4.07	341	P	Pn	03 12 43.3	+1.7
JNBK				S	Sn	03 13 29.2	+1.3
JCH	**Churui**	4.26	348	P	Pn	03 12 45.6	+1.4
JCH				S	Sn	03 13 31.9	-0.7
JKB	**Kayabe**	4.36	323	P	Pn	03 12 48.7	+3.0

*ISCJB **30** 03:14:21.5±0.8, 35°.50N±0°.06×140°.1E±0°.1, h77km±7km, mb3.5/4, Error ellipse: s-maj=14.9km s-min=8.6km az=157.3*
*JMA **30** 03:14:22.2±0.2, 35°.59N×140°.12E, h63km±2km, M2.8*
JMA Felt I J1.
*IDC **30** 03:14:24.2±1.9, 35°.42N×140°.07E, h82km±16km, mb3.1/4, mb1 3.4/5, mb1mx3.1/34, mbtmp3.5/5, Error ellipse: s-maj=31.5km s-min=7.2km az=69.0*

ISC 30 03:14:22.4±1.1, 35°.54N±0°.06×140°.11E±0°.08, h65km±9km, n18, σ1s66/16, mb3.4/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCN	**Nagara**	0.14	147	P	**Pn**	03 14 32.5	+0.3
BSO3	**Boso 3**	0.81	156	P	**Pn**	03 14 37.9	-0.1
BSO3				X		03 14 50.9	
JOD2	**Odawara 2**	0.88	252	P	**Pn**	03 14 39.1	0.0
JOD2				S	**Sn**	03 14 51.6	+0.1
JAG	**Ashikaga**	1.03	329	P	**Pn**	03 14 40.6	-0.5
JYN	**Shimob**	1.27	269	P	**Pn**	03 14 44.5	+0.2
MJAR	**Matsushiro Arr**	1.83	304	P	**Pn**	03 14 52.3	+0.5
	8.1nm,0.3s,baz=100,slow=15,SNR=52						
MJAR				S	**Sn**	03 15 17.5	+3.5
	9.2nm,0.3s,baz=143,slow=19,SNR=7.6						
MAT	**Matsushiro**	1.83	304	P	**Pn**	03 14 52.2	+0.4
MAT				S	**Sn**	03 15 10.0	-4.0
JHJ	**Hachijo jima 2**	2.43	186	P	**Pn**	03 15 00.5	+0.6
	25nm,0.3s,baz=322,slow=21,SNR=6.0						
JHJ				S	**Sn**	03 15 28.5	0.0
	89nm,0.3s,baz=188,slow=22,SNR=6.9						
H11N2	**WAKE ISLAND Hy**	28.36	117	T	T	03 49 58.1	
	baz=311						
H11N1	**WAKE ISLAND Hy**	28.37	117	T	T	03 49 34.4	
	baz=311						
H11N3	**WAKE ISLAND Hy**	28.38	117	T	T	03 49 59.6	
	baz=311						
H11S1	**WAKE ISLAND Hy**	29.00	119	T	T	03 50 12.1	
	baz=313						
H11S3	**WAKE ISLAND Hy**	29.00	119	T	T	03 50 16.7	
	baz=313						
H11S2	**WAKE ISLAND Hy**	29.02	119	T	T	03 50 16.2	
	baz=313						
MKAR	**Makanchi Array**	44.03	303	P	**P**	03 22 23.9	+0.3
	0.2nm,0.3s,baz=90,slow=7.4,SNR=3.4						
ILAR	**Eielson Array**	51.32	32	P	**P**	03 23 20.5	+0.9
	0.3nm,0.9s,baz=270,slow=8.0,SNR=3.9						
WRA	**Warramunga Arr**	55.45	187	P	**P**	03 23 49.2	-1.1
	0.6nm,0.5s,baz=0.7,slow=7.4,SNR=17						
ASAR	**Alice Springs**	59.18	187	P	**P**	03 24 15.5	-1.1
	0.1nm,0.3s,baz=14,slow=8.1,SNR=3.0						

*ISCJB **30** 03:18:32.0±0.6, 39°.13N±0°.04×29°.02E±0°.04, h9km, Error ellipse: s-maj=6.2km s-min=4.6km az=155.0*
*CSEM **30** 03:18:31.9±0.1, 39°.12N×29°.01E, h10km, ML2.1, Error ellipse: s-maj=3.2km s-min=2.7km az=112.0*
*ISK **30** 03:18:31.1, 39°.12N×29°.00E, h5km, MD2.5*
*DDA **30** 03:18:32.4, 39°.09N×29°.03E, h7km, ML2.1*

ISC 30 03:18:31.8±0.9, 39°.10N±0°.04×29°.06E±0°.04, h9km, n14, σ0s50/22, Turkey

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

*THE **30** 03:29:55.0, 39.50N×26.00E, h1km±2km, ML1.7/5, Error ellipse: s-maj=2.1km s-min=0.6km az=183.0*
*DDA **30** 03:30:34.8, 39.19N×29.01E, h7km, Ml2.0*
ISC 30 03:29:54.4±0.9, 39.50N±0.02×26.04E±0.03, h13km±8km, n47, σ0.35/67, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PRK	**Paraskevi**	**0.31**	**145**	P	**Pg**	**03 30 01.1**	**+0.3**
PRK				S	**Sb**	**03 30 06.3**	**-0.7**
PRK	**Paraskevi**	**0.31**	**145**	P	**Pg**	**03 30 01.1**	**+0.3**
PRK				S	**Sb**	**03 30 06.2**	**-0.7**
PRK	**Paraskevi**	**0.31**	**145**	P	**Pg**	**03 30 00.4**	**-0.4**
PRK				S	**Sb**	**03 30 06.2**	**-0.7**
PRK				AML	AML	03 30 07.5	
	comp=E,363μm,0.5s						
PRK				AML	AML	03 30 08.2	
	comp=N,340μm,0.5s						
SIGR	**SIGRI**	**0.33**	**206**	PG	**Pb**	**03 30 02.0**	**0.0**
SIGR	**SIGRI**	**0.33**	**206**	P	**Pg**	**03 30 01.0**	**+0.1**
SIGR				S	**Sg**	**03 30 05.3**	**-0.1**
SIGR	**SIGRI**	**0.33**	**206**	P	**Pg**	**03 30 01.0**	**+0.1**
SIGR	**SIGRI**	**0.33**	**206**	*i* Pg	**Pb**	**03 30 02.0**	**0.0**
SIGR				S	**Sg**	**03 30 05.3**	**-0.1**
SIGR	**SIGRI**	**0.33**	**206**	P	**Pg**	**03 30 01.1**	**+0.1**
SIGR				S	**Sg**	**03 30 04.9**	**-0.5**
SIGR				AML	AML	03 30 05.7	
	comp=E,905μm,0.3s						
SIGR				AML	AML	03 30 06.1	
	comp=N,882μm,0.4s						
EZN	**Ezine**	**0.39**	**34**	PG	**Pb**	**03 30 03.2**	**+0.1**
EZN				SG	**Sb**	**03 30 08.9**	**-0.2**
EZN	**Ezine**	**0.39**	**34**	P	**Pb**	**03 30 03.1**	**-0.1**
EZN				S	**Sb**	**03 30 09.3**	**+0.2**
EZN	**Ezine**	**0.39**	**34**	P	**Pb**	**03 30 03.1**	**-0.1**
EZN				*i* Sg	**Sb**	**03 30 08.9**	**-0.2**
EZN				S	**Sb**	**03 30 09.3**	**+0.2**
GADA	**Gvkgeada**	**0.69**	**351**	*e*PG	**Pb**	**03 30 08.4**	**0.0**
GADA	**Gvkgeada**	**0.69**	**351**	P	**Pb**	**03 30 08.3**	**0.0**
GADA				S	**Sb**	**03 30 18.1**	**+0.2**
GADA	**Gvkgeada**	**0.69**	**351**	*e*Pg	**Pb**	**03 30 08.4**	**0.0**
GADA				S	**Sb**	**03 30 18.1**	**+0.2**
LIA	**Limnos Island**	**0.77**	**301**	P	**Pb**	**03 30 09.6**	**-0.1**
LIA				S	**Sb**	**03 30 20.5**	**+0.5**
LIA	**Limnos Island**	**0.77**	**301**	P	**Pb**	**03 30 09.5**	**-0.1**
LIA				S	**Sb**	**03 30 20.1**	**+0.1**
DKL	**Dikili**	**0.80**	**122**	*e*PG	**Pb**	**03 30 10.2**	**+0.1**
DKL	**Dikili**	**0.80**	**122**	*e*Pg	**Pb**	**03 30 10.2**	**+0.1**
GELI	**Tayfur-Gelibol**	**0.95**	**20**	*e*PG	**Pn**	**03 30 13.4**	**-0.1**
GELI	**Tayfur-Gelibol**	**0.95**	**20**	*e*Pg	**Pn**	**03 30 13.4**	**-0.1**
LPK	**Lapseki**	**1.03**	**32**	*e*PG	**Pn**	**03 30 14.7**	**+0.1**
LPK	**Lapseki**	**1.03**	**32**	*e*Pg	**Pn**	**03 30 14.7**	**+0.1**
SMTH	**Samothraki Isl**	**1.04**	**338**	P	**Pn**	**03 30 14.7**	**-0.1**
SMTH				S	**Sn**	**03 30 28.9**	**-0.3**
SMTH	**Samothraki Isl**	**1.04**	**338**	P	**Pn**	**03 30 14.7**	**-0.1**
SMTH				S	**Sn**	**03 30 28.9**	**-0.3**
SMTH	**Samothraki Isl**	**1.04**	**338**	P	**Pb**	**03 30 14.2**	**-0.1**
SMTH				S	**Sb**	**03 30 27.7**	**-0.2**
SMTH				AML	AML	03 30 30.2	
	comp=N,76μm,0.1s						
SMTH				AML	AML	03 30 30.5	
	comp=E,64μm,0.2s						
CHOS	**Chios island**	**1.11**	**179**	*e*PN	**Pg**	**03 30 15.9**	**+0.1**
CHOS	**Chios island**	**1.11**	**179**	P	**Pn**	**03 30 15.8**	**0.0**
CHOS				S	**Sb**	**03 30 30.2**	**+0.2**
CHOS	**Chios island**	**1.11**	**179**	P	**Pn**	**03 30 15.8**	**0.0**
CHOS				S	**Sb**	**03 30 30.2**	**+0.2**
ERIK	**Erikli-Kesan**	**1.22**	**17**	*e*PN	**Pg**	**03 30 18.2**	**+0.3**
ERIK	**Erikli-Kesan**	**1.22**	**17**	*e*Pn	**Pg**	**03 30 18.2**	**+0.3**
GONE	**Gonen-Balikesi**	**1.38**	**66**	*e*PN	**Pg**	**03 30 20.8**	**-0.1**
GONE	**Gonen-Balikesi**	**1.38**	**66**	*e*Pn	**Pg**	**03 30 20.8**	**-0.1**
ALN	**Alexandroupoli**	**1.39**	**0**	*e*PN	**Pb**	**03 30 20.5**	**+0.2**
ALN	**Alexandroupoli**	**1.39**	**0**	P	**Pg**	**03 30 21.2**	**+0.1**
ALN				S	**Sg**	**03 30 39.9**	**+0.7**
ALN	**Alexandroupoli**	**1.39**	**0**	*e*Pn	**Pb**	**03 30 20.5**	**+0.2**
ALN	**Alexandroupoli**	**1.39**	**0**	P	**Pg**	**03 30 21.2**	**+0.1**
ALN				S	**Sg**	**03 30 38.7**	**-0.5**
ALN	**Alexandroupoli**	**1.39**	**0**	P	**Pb**	**03 30 20.0**	**-0.3**
ALN				S	**Sg**	**03 30 38.7**	**-0.5**
ALN				AML	AML	03 30 41.1	
	comp=N,41μm,0.3s						
ALN				AML	AML	03 30 41.4	
	comp=E,33μm,0.3s						
BALB	**Balikesir**	**1.43**	**84**	*e*PN	**Pg**	**03 30 21.4**	**-0.4**
BALB	**Balikesir**	**1.43**	**84**	*e*Pn	**Pg**	**03 30 21.4**	**-0.4**
SMG	**Samos**	**1.90**	**161**	P	**Pb**	**03 30 28.9**	**0.0**
SMG	**Samos**	**1.90**	**161**	P	**Pb**	**03 30 28.9**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**2.12**	**136**	*e*PN	**Pn**	**03 30 30.9**	**+1.2**
AYDB	**Zeytinkoy-Aydi**	**2.12**	**136**	*e*Pn	**Pn**	**03 30 30.9**	**+1.2**
DEMI	**Demirci**	**2.13**	**102**	*i* P	Pg	03 30 41.0	+5.9
DEMI				*i* S	Sn	03 30 44.6	-12
GDZ	**Gediz**	**2.70**	**98**	P	**Pb**	**03 30 42.9**	**+0.2**
GDZ	**Gediz**	**2.70**	**98**	*i* P	**Pb**	**03 30 42.9**	**+0.2**
GDZ				*i* S	Sn	03 30 48.0	-22
KHAL	**Karahalli**	**2.92**	**112**	*i* P	Pg	03 30 53.8	+3.5
KHAL				*i* S	Sn	03 31 02.8	-13

*ISCJB **30** 03:31:13.7±0.6, 39.11N±0.04×29.03E±0.04, h5km±7km, Error ellipse: s-maj=6.8km s-min=4.4km az=156.6*
*CSEM **30** 03:31:13.8±0.1, 39.13N×29.03E, h5km, ML2.4, Error ellipse: s-maj=3.5km s-min=2.7km az=146.0*
*ISK **30** 03:31:13.1, 39.07N×29.12E, h10km, MD2.7*
*DDA **30** 03:31:14.0, 39.08N×29.00E, h7km, Ml2.4*
ISC 30 03:31:13.1±1.0, 39.05N±0.03×29.08E±0.03, h10km±9km, n26, σ0.33/36, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**269**	P	**Pg**	**03 31 18.8**	**0.0**
DEMI				S	**Sg**	**03 31 22.2**	**-0.4**
DEMI	**Demirci**	**0.28**	**269**	*i* P	**Pg**	**03 31 18.8**	**0.0**
DEMI				*i* S	**Sg**	**03 31 22.2**	**-0.4**
GDZ	**Gediz**	**0.32**	**83**	P	**Pb**	**03 31 21.0**	**0.0**
GDZ				S	**Sb**	**03 31 25.9**	**-0.4**
GDZ	**Gediz**	**0.32**	**83**	*i* P	**Pb**	**03 31 21.0**	**0.0**
GDZ				*i* S	**Sb**	**03 31 25.9**	**-0.4**
TVSB	**Tavsanli**	**0.50**	**37**	*e*PG	**Pg**	**03 31 22.9**	**0.0**
TVSB				*e*SG	**Sg**	**03 31 29.7**	**+0.2**
TVSB	**Tavsanli**	**0.50**	**37**	*e*Pg	**Pg**	**03 31 22.9**	**0.0**
TVSB				*e*Sg	**Sg**	**03 31 29.7**	**+0.2**
KULA	**Kula-Manisa**	**0.63**	**211**	*e*PG	**Pb**	**03 31 26.2**	**0.0**
KULA	**Kula-Manisa**	**0.63**	**211**	*e*Pg	**Pb**	**03 31 26.2**	**0.0**
KHAL	**Karahalli**	**0.75**	**154**	P	**Pn**	**03 31 30.5**	**+0.6**
KHAL				S	**Sn**	**03 31 41.1**	**-0.3**
KHAL	**Karahalli**	**0.75**	**154**	*i* P	**Pn**	**03 31 30.5**	**+0.6**
KHAL				*i* S	**Sn**	**03 31 41.1**	**-0.3**
AKHS	**Akhisar**	**1.00**	**261**	P	**Pb**	**03 31 32.6**	**0.0**
AKHS				S	**Sb**	**03 31 45.7**	**-0.1**
AKHS	**Akhisar**	**1.00**	**261**	*i* P	**Pb**	**03 31 32.6**	**0.0**
AKHS				*i* S	**Sb**	**03 31 45.7**	**-0.1**
AKS	**Akhisar**	**1.00**	**261**	*e*PG	**Pn**	**03 31 33.5**	**+0.3**
AKS	**Akhisar**	**1.00**	**261**	*e*Pg	**Pn**	**03 31 33.6**	**+0.3**
BALB	**Balikesir**	**1.10**	**303**	*e*PN	**Pn**	**03 31 35.0**	**+0.4**
BALB	**Balikesir**	**1.10**	**303**	*e*Pn	**Pn**	**03 31 35.0**	**+0.4**
CAVI	**Cavuskoy**	**1.29**	**27**	*e*PN	**Pn**	**03 31 36.9**	**-0.4**
CAVI	**Cavuskoy**	**1.29**	**27**	*e*Pn	**Pn**	**03 31 36.9**	**-0.4**
MDNY	**Mudanya-Bursa**	**1.33**	**354**	*e*PN	**Pb**	**03 31 38.2**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.33**	**354**	*e*Pn	**Pb**	**03 31 38.2**	**+0.1**
KCTX	**Karacabey (Bur**	**1.33**	**336**	*e*PN	**Pb**	**03 31 38.5**	**+0.2**
KCTX	**Karacabey (Bur**	**1.33**	**336**	*e*Pn	**Pb**	**03 31 38.5**	**+0.2**
ARMT	**Armutlu**	**1.52**	**354**	*e*PN	**Pn**	**03 31 40.6**	**+0.1**
ARMT	**Armutlu**	**1.52**	**354**	*e*Pn	**Pn**	**03 31 40.6**	**+0.1**
GULT	**Gulveren**	**1.77**	**38**	*e*PN	**Pn**	**03 31 44.6**	**+0.7**
GULT	**Gulveren**	**1.77**	**38**	*e*Pn	**Pn**	**03 31 44.6**	**+0.7**

*ISCJB **30** 03:34:12.1±0.5, 39.10N±0.03×29.02E±0.03, h4km±6km, Error ellipse: s-maj=5.2km s-min=3.9km az=166.3*
*CSEM **30** 03:34:12.2±0.1, 39.11N×29.02E, h5km, ML2.6, Error ellipse: s-maj=1.8km s-min=1.7km az=162.0*
*ISK **30** 03:34:12.0, 39.11N×29.03E, h8km, MD2.8*
*DDA **30** 03:34:12.1, 39.09N×29.02E, h7km, Ml2.6*
ISC 30 03:34:12.1±0.9, 39.11N±0.02×29.03E±0.02, h12km±8km, n41, σ0.31/54, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**254**	P	**Pg**	**03 34 17.3**	**-0.1**
DEMI				S	**Sg**	**03 34 20.6**	**-0.3**
DEMI	**Demirci**	**0.25**	**254**	*i* P	**Pg**	**03 34 17.3**	**-0.1**
DEMI				*i* S	**Sg**	**03 34 20.6**	**-0.3**
GDZ	**Gediz**	**0.36**	**94**	P	**Pg**	**03 34 19.6**	**+0.3**
GDZ				S	**Sg**	**03 34 24.6**	**+0.5**
GDZ	**Gediz**	**0.36**	**94**	*i* P	**Pg**	**03 34 19.6**	**+0.3**
GDZ				*i* S	**Sg**	**03 34 24.6**	**+0.5**
TVSB	**Tavsanli**	**0.48**	**45**	*e*PG	**Pg**	**03 34 21.8**	**+0.3**
TVSB				*e*SG	**Sb**	**03 34 29.0**	**-0.6**
TVSB	**Tavsanli**	**0.48**	**45**	*e*Pg	**Pg**	**03 34 21.8**	**+0.3**
TVSB				*e*Sg	**Sb**	**03 34 29.0**	**-0.6**
KULA	**Kula-Manisa**	**0.66**	**206**	*e*PG	**Pg**	**03 34 24.9**	**-0.1**
KULA	**Kula-Manisa**	**0.66**	**206**	*e*Pg	**Pg**	**03 34 24.9**	**-0.1**
KHAL	**Karahalli**	**0.83**	**154**	P	**Pg**	**03 34 27.9**	**-0.2**
KHAL				S	**Sb**	**03 34 39.5**	**-0.1**
KHAL	**Karahalli**	**0.83**	**154**	*i* P	**Pg**	**03 34 27.9**	**-0.2**
KHAL				*i* S	**Sb**	**03 34 39.5**	**-0.1**
KHL	**Karahalli**	**0.88**	**154**	*e*PG	**Pb**	**03 34 29.3**	**-0.1**
KHL	**Karahalli**	**0.88**	**154**	*e*Pg	**Pb**	**03 34 29.3**	**-0.1**
ORLT	**Orhaneli**	**0.94**	**354**	*e*PG	**Pg**	**03 34 29.7**	**-0.5**
ORLT	**Orhaneli**	**0.94**	**354**	*e*Pg	**Pg**	**03 34 29.7**	**-0.5**
AKHS	**Akhisar**	**0.97**	**256**	P	**Pg**	**03 34 30.7**	**-0.2**
AKHS				S	**Sb**	**03 34 44.3**	**+0.5**
AKHS	**Akhisar**	**0.97**	**256**	*i* P	**Pg**	**03 34 30.7**	**-0.2**
AKHS				*i* S	**Sb**	**03 34 44.3**	**+0.5**
AKS	**Akhisar**	**0.97**	**256**	*e*PG	**Pb**	**03 34 31.2**	**+0.2**
AKS	**Akhisar**	**0.97**	**256**	*e*Pg	**Pb**	**03 34 31.2**	**+0.2**
BALB	**Balikesir**	**1.03**	**301**	*e*PG	**Pn**	**03 34 32.2**	**-0.2**
BALB				*e*SG	**Sn**	**03 34 46.9**	**+0.1**
BALB	**Balikesir**	**1.03**	**301**	*e*Pg	**Pn**	**03 34 32.2**	**-0.2**
BALB				*e*Sg	**Sn**	**03 34 46.9**	**+0.1**
IGD	**Bursa**	**1.16**	**7**	*i* P	**Pg**	**03 34 34.3**	**-0.1**
IGD				*i* S	**Sn**	**03 34 50.7**	**+0.8**
BALY	**Balya**	**1.26**	**300**	P	**Pg**	**03 34 36.3**	**0.0**
BALY	**Balya**	**1.26**	**300**	*i* P	**Pg**	**03 34 36.3**	**0.0**
CAVI	**Cavuskoy**	**1.26**	**30**	*e*PN	**Pg**	**03 34 36.3**	**0.0**
CAVI	**Cavuskoy**	**1.26**	**30**	*e*Pn	**Pg**	**03 34 36.3**	**0.0**
MDNY	**Mudanya-Bursa**	**1.26**	**355**	*e*PN	**Pg**	**03 34 36.5**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.26**	**355**	*e*Pn	**Pg**	**03 34 36.5**	**+0.2**
KCTX	**Karacabey (Bur**	**1.26**	**336**	*e*PN	**Pg**	**03 34 36.5**	**+0.2**
KCTX	**Karacabey (Bur**	**1.26**	**336**	*e*Pn	**Pg**	**03 34 36.5**	**+0.2**
IZI	**Iznik**	**1.27**	**16**	*e*PN	**Pg**	**03 34 36.5**	**0.0**
IZI	**Iznik**	**1.27**	**16**	*e*Pn	**Pg**	**03 34 36.5**	**0.0**
GONE	**Gonen-Balikesi**	**1.39**	**312**	*e*PN	**Pb**	**03 34 38.4**	**+0.3**
GONE	**Gonen-Balikesi**	**1.39**	**312**	*e*Pn	**Pb**	**03 34 38.4**	**+0.3**
ADVT	**Abdulvahap**	**1.43**	**22**	*e*PN	**Pb**	**03 34 38.7**	**0.0**
ADVT	**Abdulvahap**	**1.43**	**22**	*e*Pn	**Pb**	**03 34 38.7**	**0.0**
ARMT	**Armutlu**	**1.46**	**355**	*e*PN	**Pg**	**03 34 39.7**	**-0.4**
ARMT	**Armutlu**	**1.46**	**355**	*e*Pn	**Pg**	**03 34 39.7**	**-0.4**
EDC	**Edincik**	**1.52**	**324**	*e*PN	**Pb**	**03 34 40.3**	**0.0**
EDC	**Edincik**	**1.52**	**324**	*e*Pn	**Pb**	**03 34 40.3**	**0.0**
GULT	**Gulveren**	**1.75**	**41**	*e*PN	**Pb**	**03 34 43.8**	**-0.4**
GULT	**Gulveren**	**1.75**	**41**	*e*Pn	**Pb**	**03 34 43.8**	**-0.4**

*DDA **30** 03:44:04.9, 37.01N×30.77E, h7km, Ml2.8*
*ISK **30** 03:44:06.5, 37.19N×30.55E, h10km, MD2.9*
*ISCJB **30** 03:44:07.1±0.5, 37.21N±0.05×30.52E±0.06, h10km, Error ellipse: s-maj=9.2km s-min=3.8km az=136.7*
*CSEM **30** 03:44:07.0±0.1, 37.20N×30.53E, h8km, MD2.9, Error ellipse: s-maj=5.0km s-min=2.3km az=141.0*
ISC 30 03:44:07.8±0.9, 37.21N±0.04×30.53E±0.04, h10km, n31, σ1.26/38, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KORT	**Korkueli**	**0.25**	**215**	P	**Pg**	**03 44 11.6**	**-1.5**
KORT				S	**Sg**	**03 44 16.9**	**+0.3**
KORT	**Korkueli**	**0.25**	**215**	*i* P	**Pg**	**03 44 11.6**	**-1.5**
KORT				*i* S	**Sg**	**03 44 16.9**	**+0.3**
BCK	**Bucak**	**0.26**	**10**	*e*PG	**Pg**	**03 44 12.4**	**-0.7**
BCK	**Bucak**	**0.26**	**10**	*e*Pg	**Pg**	**03 44 12.4**	**-0.7**
SUTC	**Sutluce-Ispart**	**0.46**	**54**	*e*PG	**Pg**	**03 44 16.1**	**-0.7**
SUTC				*e*SG	**Sg**	**03 44 22.6**	**-0.3**
SUTC	**Sutluce-Ispart**	**0.46**	**54**	*e*Pg	**Pg**	**03 44 16.2**	**-0.7**
SUTC				*e*Sg	**Sg**	**03 44 22.6**	**-0.3**
ISP	**Isparta**	**0.61**	**359**	*e*PG	**Pg**	**03 44 19.2**	**-0.6**
ISP	**Isparta**	**0.61**	**359**	*e*Pg	**Pg**	**03 44 19.2**	**-0.6**
ELL	**Elmali**	**0.68**	**228**	*e*PG	**Pg**	**03 44 20.4**	**-0.6**
ELL	**Elmali**	**0.68**	**228**	*e*Pg	**Pg**	**03 44 20.4**	**-0.6**
GOLH	**Golhisar**	**0.78**	**272**	P	**Pg**	**03 44 21.5**	**-1.3**
GOLH	**Golhisar**	**0.78**	**272**	*i* P	**Pg**	**03 44 21.6**	**-1.3**
GOLH				*i* S	**Sn**	**03 44 38.3**	**+1.6**
BAGO	**Egridir - ISPA**	**0.81**	**15**	*i* P	**Pg**	**03 44 23.6**	**+0.2**
BAGO				*i* S	**Sn**	**03 44 37.6**	**+0.2**
GLHS	**Glhisar (BURDU**	**0.83**	**267**	*e*PG	**Pg**	**03 44 22.8**	**-1.0**
GLHS	**Glhisar (BURDU**	**0.83**	**267**	*e*Pg	**Pg**	**03 44 22.8**	**-1.0**
AKAS	**Kas**	**1.23**	**218**	P	**Pb**	**03 44 30.8**	**-0.4**
AKAS	**Kas**	**1.23**	**218**	*i* P	**Pb**	**03 44 30.8**	**-0.4**
AKAS				*i* S	**Sn**	**03 44 53.6**	**+5.8**
FETY	**Fethiye**	**1.29**	**244**	*e*PN	**Pn**	**03 44 31.2**	**-0.8**
FETY	**Fethiye**	**1.29**	**244**	*e*Pn	**Pn**	**03 44 31.2**	**-0.8**
KHL	**Karahalli**	**1.37**	**325**	*e*PN	**Pn**	**03 44 32.9**	**-0.2**
KHL	**Karahalli**	**1.37**	**325**	*e*Pn	**Pn**	**03 44 32.9**	**-0.2**
DALY	**Dalyan (Mu¨la**	**1.55**	**256**	*e*PN	**Pn**	**03 44 34.9**	**-0.6**
DALY	**Dalyan (Mu¨la**	**1.55**	**256**	*e*Pn	**Pn**	**03 44 34.9**	**-0.6**
KONT	**Konya--Tatoy**	**1.63**	**63**	*e*PN	**Pn**	**03 44 35.5**	**-1.1**
KONT	**Konya--Tatoy**	**1.63**	**63**	*e*Pn	**Pn**	**03 44 35.5**	**-1.1**
LADK	**Ladik-KONYA**	**1.76**	**55**	*e*PN	**Pn**	**03 44 37.9**	**-0.6**
LADK	**Ladik-KONYA**	**1.76**	**55**	*e*Pn	**Pn**	**03 44 37.9**	**-0.6**
YER	**Yerkesik**	**1.80**	**268**	*e*PN	**Pn**	**03 44 38.5**	**-0.5**
YER	**Yerkesik**	**1.80**	**268**	*e*Pn	**Pn**	**03 44 38.5**	**-0.5**
KDHN	**Kadinhani**	**1.81**	**43**	P	**Pn**	**03 44 39.6**	**+0.4**
KDHN	**Kadinhani**	**1.81**	**43**	*i* P	**Pn**	**03 44 39.6**	**+0.4**

*ISK **30** 03:44:59.8, 39.08N×29.21E, h6km, MD2.7*
*ISCJB **30** 03:45:00.7±0.5, 39.10N±0.04×29.14E±0.04, h7km±7km, Error ellipse: s-maj=8.0km s-min=4.6km az=150.8*
*CSEM **30** 03:45:00.7±0.1, 39.08N×29.17E, h8km, ML2.6, Error ellipse: s-maj=3.8km s-min=2.5km az=126.0*
*DDA **30** 03:45:00.6, 39.14N×29.13E, h7km, Ml2.6*
ISC 30 03:45:00.5±0.9, 39.07N±0.03×29.18E±0.03, h14km±7km, n25, σ0.33/36, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.24**	**86**	P	**Pb**	**03 45 06.7**	**0.0**
GDZ				S	**Sb**	**03 45 10.6**	**-0.2**
GDZ	**Gediz**	**0.24**	**86**	*i* P	**Pb**	**03 45 06.7**	**0.0**
GDZ				*i* S	**Sb**	**03 45 10.6**	**-0.2**
DEMI	**Demirci**	**0.36**	**265**	P	**Pg**	**03 45 07.9**	**+0.1**
DEMI				S	**Sg**	**03 45 12.6**	**-0.2**
DEMI	**Demirci**	**0.36**	**265**	*i* P	**Pg**	**03 45 07.9**	**+0.1**
DEMI				*i* S	**Sg**	**03 45 12.6**	**-0.2**
TVSB	**Tavsanli**	**0.43**	**30**	*e*PG	**Pg**	**03 45 08.8**	**-0.4**
TVSB				*e*SG	**Sg**	**03 45 14.3**	**-0.8**
TVSB	**Tavsanli**	**0.43**	**30**	*e*Pg	**Pg**	**03 45 08.8**	**-0.4**
TVSB				*e*Sg	**Sg**	**03 45 14.3**	**-0.8**
KULA	**Kula-Manisa**	**0.69**	**216**	*e*PG	**Pb**	**03 45 14.2**	**-0.2**
KULA				*e*SG	**Sb**	**03 45 24.1**	**+0.3**
KULA	**Kula-Manisa**	**0.69**	**216**	*e*Pg	**Pb**	**03 45 14.2**	**-0.2**
KULA				*e*Sg	**Sb**	**03 45 24.1**	**+0.3**
KHL	**Karahalli**	**0.80**	**160**	*e*PG	**Pg**	**03 45 15.7**	**-0.3**
KHL	**Karahalli**	**0.80**	**160**	*e*Pg	**Pg**	**03 45 15.7**	**-0.3**
IGD	**Bursa**	**1.19**	**1**	*i* P	**Pn**	**03 45 22.3**	**-0.5**
IGD				*i* S	**Sb**	**03 45 37.9**	**-0.2**
CAVI	**Cavuskoy**	**1.24**	**24**	*e*PN	**Pb**	**03 45 23.7**	**0.0**
CAVI	**Cavuskoy**	**1.24**	**24**	*e*Pn	**Pb**	**03 45 23.7**	**0.0**
BORA	**Eskisehir**	**1.27**	**50**	P	**Pg**	**03 45 25.2**	**+0.2**
BORA				S	**Sg**	**03 45 41.9**	**+0.3**
BORA	**Eskisehir**	**1.27**	**50**	*i* P	**Pg**	**03 45 25.2**	**+0.2**
BORA				*i* S	**Sg**	**03 45 41.9**	**+0.3**
IZI	**Iznik**	**1.28**	**10**	*e*PN	**Pb**	**03 45 24.5**	**0.0**
IZI	**Iznik**	**1.28**	**10**	*e*Pn	**Pb**	**03 45 24.5**	**0.0**
MDNY	**Mudanya-Bursa**	**1.31**	**350**	*e*PN	**Pb**	**03 45 25.3**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.31**	**350**	*e*Pn	**Pb**	**03 45 25.3**	**+0.3**
KCTX	**Karacabey (Bur**	**1.35**	**332**	*e*PN	**Pb**	**03 45 25.9**	**+0.3**
KCTX	**Karacabey (Bur**	**1.35**	**332**	*e*Pn	**Pb**	**03 45 25.9**	**+0.3**
ARMT	**Armutlu**	**1.51**	**351**	*e*PN	**Pb**	**03 45 28.3**	**-0.1**
ARMT	**Armutlu**	**1.51**	**351**	*e*Pn	**Pb**	**03 45 28.3**	**-0.1**
GULT	**Gulveren**	**1.70**	**37**	*e*PN	**Pn**	**03 45 30.4**	**+0.5**
GULT	**Gulveren**	**1.70**	**37**	*e*Pn	**Pn**	**03 45 30.4**	**+0.5**

*IDC **30** 03:45:03.5±0.5, 32.17N×69.90E, h0km, mb4.1/24, mb1 4.3/28, mb1mx4.2/46, mbtmp4.1/28, ML3.9/4, MS3.5/28, Ms1 3.5/28, ms1mx3.3/59, Error ellipse: s-maj=13.0km s-min=12.5km az=41.0*

*ISCJB **30** 03:45:06.3±0.2, 32.17N±0.02×70.15E±0.03, h29km, mb4.2/41, MS3.5/29, Error ellipse: s-maj=4.0km s-min=2.4km az=154.8*
*MOS **30** 03:45:08.4±1.3, 32.24N×70.17E, h36km, mb4.4/31, Error ellipse: s-maj=9.1km s-min=5.3km az=91.0*
*NNC **30** 03:45:09.9±2.5, 32.15N×70.26E, h53km±20km, mb4.2, mpv4.5, Error ellipse: s-maj=20.1km s-min=17.5km az=75.0*
*NEIC **30** 03:45:09.1±1.1, 32.16N×70.01E, h40km±10km, mb4.5/10, Error ellipse: s-maj=8.8km s-min=7.2km az=165.0*
ISC 30 03:45:07.4±0.3, 32.03N±0.04×70.06E±0.04, h29km, n166, σ1.90/183, mb4.3/42, MS3.5/29, 11C-7D, Pakistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KBL	**Kabul**	**2.64**	**342**	*e*P	**Pn**	**03 45 49.2**	**+0.9**
KBL	**Kabul**	**2.64**	**342**	*e*Pn	**Pn**	**03 45 49.2**	**+0.9**
THN	**Thein Dam**	**4.81**	**84**	*e*P	**Pn**	**03 46 19.2**	**+1.3**
THN				*e*S	**Sn**	**03 47 14.2**	**+1.5**
SMLA	**Simla**	**6.13**	**97**	*e*P	**Pn**	**03 46 38.8**	**+2.8**
SMLA				*e*S	**Sn**	**03 47 50.1**	**+4.9**
SMLA				IAML		03 48 31.7	
	comp=E,364nm,0.5s						
SMLA				IAML		03 48 32.1	
	comp=N,436nm,0.3s						
KKR	**Kurukshetra**	**6.16**	**108**	*e*P	**Pn**	**03 46 38.5**	**+2.1**
KKR				*e*S	**Sn**	**03 47 46.5**	**+0.5**
RTK	**Rohtak**	**6.24**	**117**	*e*P	**Pn**	**03 46 38.5**	**+0.9**
RTK				*e*S	**Sn**	**03 47 46.0**	**-2.0**
KUDL	**Kundal**	**6.79**	**123**	*e*P	**Pn**	**03 46 45.7**	**+0.6**
KUDL				*e*S	**Sn**	**03 48 00.4**	**-0.9**
KUDL				IAML		03 49 00.5	
	comp=N,334nm,0.7s						
KUDL				IAML		03 49 01.5	
	comp=E,291nm,1.0s						
BHGR	**Bahadurgarh**	**6.81**	**117**	*e*P	**Pn**	**03 46 47.1**	**+1.7**
DZET	**Dzherino**	**6.83**	**352**	⇑P	**Pn**	**03 46 46.0**	**+0.2**
	comp=E,14nm,0.4s						
DZET				⇓S	**Sn**	**03 48 03.6**	**+1.0**
	comp=E,43nm,0.7s						
NDI	**New Delhi**	**7.03**	**116**	*e*P	**Pn**	**03 46 45.0**	**-3.4**
NDI				*e*S	**Sn**	**03 48 02.0**	**-5.3**
KSH	**Kashi**	**8.88**	**31**	Pn	**Pn**	**03 47 09.8**	**-4.1**
KSH				*e*P		03 47 23.5	
KSH				Sn	Sn	03 48 38.8	-14
KSH				pmax	pmax		
	comp=Z,77nm,0.7s						
KSH				smax	smax		
	comp=N,110nm,0.7s						
KSH				smax	smax		
	comp=E,95nm,0.8s						
MNAS	**Manas**	**10.62**	**10**	⇓P	**Pn**	**03 47 38.2**	**+0.5**
	comp=E,17nm,1.0s						
MNAS				⇓S	**Sn**	**03 49 33.5**	**-2.1**
	comp=E,46nm,1.2s						
EKS2	**Erkin-Say**	**11.02**

SRLM	**Srisailam**	**17.78**	**151**	*e*Pn	**P**	**03 49 14.3**	**+0.9**
SRLM				IAmb	IAmb	03 49 17.9	
comp=Z,33nm,1.6s							
SRLM				Sn	**Sn**	**03 52 31.7**	**+1.5**
SRLM				IVMs_BB	IVMs_BB	03 55 25.9	
comp=Z,528nm,4.0s							
PVM	**Polavaram**	**18.06**	**142**	*e*Pn	**P**	**03 49 18.2**	**+1.6**
PVM				IAmb	IAmb	03 49 22.1	
comp=Z,10nm,0.7s							
PVM				*e*		03 52 28.7	
PVM				IVMs_BB	IVMs_BB	03 55 19.8	
comp=Z,333nm,3.9s							
WMQ	**Urumqi**	**18.18**	**45**	P	**P**	**03 49 22.0**	**+4.2**
WMQ				pP	pP	03 49 25.0	-0.5
WMQ				sP	sP	03 49 36.5	+7.3
WMQ				S	**Sn**	**03 52 33.0**	**-6.7**
WMQ				pmax	pmax		
comp=Z,10.0nm,1.0s							
WMQ				pmax	pmax		
comp=Z,47nm,5.8s							
WMQ				LR	LR		
comp=N,200nm,14.0s							
WMQ				LR	LR		
comp=E,140nm,11.8s							
WMQ				LR	LR		
comp=Z,140nm,20.0s							
LSA	**Lhasa**	**18.26**	**92**	*e*P	**P**	**03 49 18.2**	**-0.9**
LSA	**Lhasa**	**18.26**	**92**	*e*Pn	**P**	**03 49 18.2**	**-0.9**
RCLA	**Racherla**	**18.38**	**152**	*e*Pn	**Pn**	**03 49 21.8**	**+1.5**
RCLA				IAmb	IAmb	03 49 29.0	
comp=Z,55nm,1.9s							
RCLA				Sn	**S**	**03 52 49.6**	**+0.9**
RCLA				IVMs_BB	IVMs_BB	03 57 37.0	
comp=Z,545nm,7.6s							
CHLP	**Challavanipeta**	**18.46**	**134**	*e*Pn	**Pn**	**03 49 21.0**	**-0.1**
CHLP				IAmb	IAmb	03 49 24.7	
comp=Z,8.9nm,0.8s							
CHLP				*e*		03 52 41.5	
CHLP				IVMs_BB	IVMs_BB	03 55 41.2	
comp=Z,422nm,4.0s							
ADKI	**Addanki**	**18.47**	**148**	*e*Pn	**Pn**	**03 49 21.5**	**+0.3**
ADKI				IAmb	IAmb	03 49 23.5	
comp=Z,13nm,1.0s							
ADKI				Sn	**Sn**	**03 52 45.8**	**-0.9**
ADKI				IVMs_BB	IVMs_BB	03 56 00.5	
comp=Z,431nm,3.8s							
AB31	**Akbulak array**	**18.81**	**339**	⇑P	**P**	**03 49 23.8**	**-0.7**
comp=Z,2.5nm,0.6s,baz=154,slow=12,SNR=40							
ABKAR	**Akbulak array**	**18.81**	**339**	*e*Pn	**P**	**03 49 24.0**	**-0.5**
comp=Z,3.0nm,0.6s							
KURBB	**Kurchatov Arra**	**19.61**	**16**	P	**P**	**03 49 31.6**	**-1.7**
comp=Z,0.1nm,0.3s,baz=207,slow=10,SNR=11							
KURBB	**Kurchatov Arra**	**19.61**	**16**	⇑P	**P**	**03 49 31.9**	**-1.3**
comp=Z,5.8nm,1.2s							
KURK	**Kurchatov**	**19.72**	**16**	*e*P	**P**	**03 49 33.5**	**-0.9**
KURK	**Kurchatov**	**19.72**	**16**	*e*P	**P**	**03 49 33.5**	**-0.9**
KURK				*e*PcP	**PcP**	**03 53 47.1**	**-5.1**
SKHT	**Srikalahasti**	**20.24**	**152**	*e*Pn	Pn	03 49 44.2	+1.7
SKHT				IAmb	IAmb	03 49 45.1	
comp=Z,11nm,0.9s							
SKHT				Sn	**S**	**03 53 26.2**	**+0.2**
SKHT				IVMs_BB	IVMs_BB	03 56 24.1	
comp=Z,452nm,4.1s							
AKTO	**Aktyubinsk**	**20.45**	**338**	P	Pn	03 49 43.0	-1.6
comp=Z,9.3nm,0.6s,baz=152,slow=12,SNR=11							
AKTO	**Aktyubinsk**	**20.45**	**338**	⇑P	Pn	03 49 43.1	-1.6
comp=Z,24nm,1.2s							
AKTO	**Aktyubinsk**	**20.45**	**338**	P	Pn	03 49 43.0	-1.6
AKTO				pmax	pmax		
comp=Z,15nm,1.0s							
ZRNK	**Zerenda**	**20.92**	**358**	*e*P	**P**	**03 49 46.1**	**-1.4**
ZRNK				pmax	pmax		
comp=Z,6.0nm,0.8s							
ZRNK	**Zerenda**	**20.92**	**358**	*e*P	**P**	**03 49 46.1**	**-1.4**
comp=Z,6.1nm,0.8s							
BVA0	**Borovoye Array**	**20.98**	**1**	⇑P	**P**	**03 49 47.9**	**-0.3**
comp=Z,11nm,1.2s,baz=154,slow=15,SNR=17							
BVAR	**Borovoye Array**	**20.98**	**1**	P	**P**	**03 49 47.9**	**-0.3**
comp=Z,2.8nm,0.6s,baz=169,slow=9.0,SNR=8.9							
BRVK	**Borovoye**	**21.02**	**0**	*e*P	**P**	**03 49 48.2**	**-0.3**
BRVK				pmax	pmax		
comp=Z,14nm,0.6s							
BRVK	**Borovoye**	**21.02**	**0**	*e*P	**P**	**03 49 48.2**	**-0.3**
comp=Z,14nm,0.6s							
CHKZ	**Chkalovo**	**21.64**	**1**	⇓P	**P**	**03 49 53.8**	**-1.4**
comp=Z,4.8nm,0.8s							
GNI	**Garni**	**21.95**	**299**	P	**P**	**03 50 00.4**	**+1.5**
comp=Z,2.6nm,0.3s,baz=231,slow=12,SNR=4.5							
GNI				LR	LR	03 59 24.7	
comp=Z,35nm,21.5s,baz=138,slow=40							
GNI	**Garni**	**21.95**	**299**	*e*P	**P**	**03 49 56.7**	**-2.2**
comp=Z,19nm,0.4s							
ZEI	**Tsey**	**23.30**	**305**	*e*P	**P**	**03 50 14.2**	**+1.2**
ZEI				pmax	pmax		
comp=Z,17nm,0.9s							
KBZ	**Khabaz**	**24.30**	**306**	P	**P**	**03 50 22.0**	**-0.2**
comp=Z,1.5nm,0.7s,baz=109,slow=10,SNR=3.5							
ZAA0	**Zalesovo Array**	**24.32**	**21**	*e*P	**P**	**03 50 22.0**	**-0.4**
ZALV	**Zalesovo Beam**	**24.32**	**21**	P	**P**	**03 50 21.1**	**-1.3**
comp=Z,1.4nm,0.4s,baz=236,slow=10,SNR=7.2							
ZALV				LR	LR	03 59 23.2	
comp=Z,20nm,21.8s,baz=294,slow=35							
ZALV	**Zalesovo Beam**	**24.32**	**21**	*e*P	**P**	**03 50 21.1**	**-1.3**
ZALV				pmax	pmax		
comp=Z,2.0nm,0.5s							
KVAR	**Kislovodsk Arr**	**24.51**	**307**	P	**P**	**03 50 26.6**	**+2.2**
comp=Z,3.9nm,0.6s,baz=340,slow=8.7,SNR=2.9							
KIV	**Kislovodsk**	**24.52**	**307**	*e*P	**P**	**03 50 26.3**	**+1.9**
KIV				pmax	pmax		
comp=Z,8.0nm,1.0s							
KIV				MLR	MLR		
comp=Z,44nm,14.0s							
NVS	**Novosibirsk**	**24.64**	**18**	*e*P	**P**	**03 50 25.6**	**+0.4**
ARU	**Arti**	**25.68**	**345**	P	**P**	**03 50 36.4**	**+1.8**
comp=Z,3.7nm,0.2s,baz=158,slow=5.9,SNR=3.8							
ARU				LR	LR	04 01 36.2	
comp=Z,104nm,19.6s,baz=156,slow=39							
ARU	**Arti**	**25.68**	**345**	*c i*P	**P**	**03 50 36.3**	**+1.7**
ARU						03 51 09.5	
ARU				S	**S**	**03 55 04.2**	**+3.1**
ARU				SS	**SnSn**	**03 55 59.0**	**+2.2**
ARU				pmax	pmax		
comp=Z,5.0nm,1.2s							
ARU				MLR	MLR		
comp=Z,182nm,14.0s							
ARU	**Arti**	**25.68**	**345**	*e*P	**P**	**03 50 33.6**	**-0.9**
PALK	**Pallekele**	**26.56**	**156**	P	**P**	**03 50 45.8**	**+2.8**
comp=Z,10nm,0.8s,baz=292,slow=2.4,SNR=2.8							
PALK				LR	LR	04 01 02.9	
comp=Z,132nm,19.6s,baz=296,slow=36							
CD2	**Chengdu**	**28.70**	**83**	P	**P**	**03 51 00.3**	**-1.8**
CD2				pmax	pmax		
comp=Z,30nm,0.5s							
MMAI	**Mount Meron Ar**	**29.16**	**281**	P	**P**	**03 51 08.0**	**+1.8**
comp=Z,0.5nm,0.2s,baz=91,slow=13,SNR=4.0							
MMAI	**Mount Meron Ar**	**29.16**	**281**	P	**P**	**03 51 08.0**	**+1.8**
CMAR	**Chiang Mai Arr**	**29.31**	**110**	P	**P**	**03 51 10.6**	**+3.0**
comp=Z,3.0nm,0.3s,baz=297,slow=9.6,SNR=4.3							
CMAR				LR	LR	04 03 52.6	
comp=Z,63nm,18.1s,baz=318,slow=38							
CMAR	**Chiang Mai Arr**	**29.31**	**110**	*e*P	**P**	**03 51 10.5**	**+3.0**
CMAR				pmax	pmax		
comp=Z,2.0nm,0.3s							
BRTR	**Keskin Array B**	**30.33**	**295**	P	**P**	**03 51 15.5**	**-1.1**
comp=Z,0.5nm,0.5s,baz=125,slow=10,SNR=5.6							
BRTR				LR	LR	04 06 06.2	
comp=Z,30nm,20.2s,baz=115,slow=42							
BRTR	**Keskin Array B**	**30.33**	**295**	*e*P	**P**	**03 51 17.4**	**+0.8**
BRTR				pmax	pmax		
comp=Z,1.0nm,0.5s							
TLY	**Talaya**	**31.40**	**41**	LR	LR	04 05 55.5	
comp=Z,209nm,20.7s,baz=236,slow=40							
SONM	**Songino Array**	**31.68**	**49**	P	**P**	**03 51 29.5**	**+1.1**
comp=Z,0.6nm,0.5s,baz=250,slow=8.6,SNR=2.6							
SONM				LR	LR	04 06 10.8	
comp=Z,246nm,19.5s,baz=251,slow=40							
ULN	**Ulaanbaatar**	**32.11**	**50**	*c e*P	**P**	**03 51 34.1**	**+1.9**
ULN				pmax	pmax		
comp=Z,1.0nm,0.9s							
OBN	**Obninsk**	**32.97**	**324**	LR	LR	04 07 53.3	
comp=Z,90nm,20.0s,baz=92,slow=42							
HHC	**Hu-ho-hao-te**	**34.27**	**63**	*e*P	**P**	**03 51 50.3**	**-0.7**
HHC				pmax	pmax		
comp=Z,11nm,0.9s							
HHC				pmax	pmax		
comp=Z,110nm,5.0s							
AKASG	**Malin Array Be**	**35.31**	**314**	P	**P**	**03 51 58.9**	**-0.9**
comp=Z,3.8nm,0.6s,baz=99,slow=7.3,SNR=20							
AKASG				LR	LR	04 09 15.8	
comp=Z,64nm,18.5s,baz=100,slow=41							
AKASG	**Malin Array Be**	**35.31**	**314**	*e*P	**P**	**03 51 58.8**	**-0.9**
AKASG				pmax	pmax		
comp=Z,7.0nm,0.7s							
KIEV	**Kiev**	**35.32**	**314**	*e*P	**P**	**03 52 00.9**	**+1.1**
KIEV				pmax	pmax		
comp=Z,8.0nm,0.9s							
KIEV	**Kiev**	**35.32**	**314**	*e*P	**P**	**03 51 58.9**	**-1.0**
comp=Z,8.7nm,0.9s							
AK11	**Malin Array Si**	**35.34**	**314**	*e*P	**P**	**03 51 58.9**	**-1.1**
MLR	**Muntele Rosu**	**36.48**	**305**	*e*P	**P**	**03 52 12.8**	**+2.8**
MLR				pmax	pmax		
comp=Z,13nm,1.2s							
MLR	**Muntele Rosu**	**36.48**	**305**	*e*P	**P**	**03 52 12.8**	**+2.8**
comp=Z,13nm,1.2s							
BUR08	**Bucovina Ar. S**	**37.25**	**308**	*e*P	**P**	**03 52 15.2**	**-1.3**
BJI	**Beijing**	**37.79**	**65**	P	**P**	**03 52 19.0**	**-2.1**
BJI				pmax	pmax		
comp=Z,8.0nm,0.8s							
BJI				pmax	pmax		
comp=Z,190nm,4.3s							
BJI				LR	LR		
comp=Z,61nm,17.4s							
NRIK	**Noril'sk**	**38.65**	**10**	P	**P**	**03 52 28.5**	**+0.6**
comp=Z,2.2nm,0.5s,baz=179,slow=6.8,SNR=2.8							
NRIK				LR	LR	04 10 30.3	
comp=Z,64nm,19.8s,baz=141,slow=40							
CRVS	**Cervenica-Dubn**	**39.89**	**309**	*e*P	**P**	**03 52 40.4**	**+1.8**
CRVS	**Cervenica-Dubn**	**39.89**	**309**	*e*P	**P**	**03 52 40.4**	**+1.8**
FINES	**FINESS Array B**	**40.84**	**329**	LR	LR	04 11 42.2	
comp=Z,55nm,22.0s,baz=89,slow=39							
MORC	**Moravsky Berou**	**42.53**	**310**	*e*P	**P**	**03 53 00.3**	**0.0**
MORC				pmax	pmax		
comp=Z,13nm,0.8s							
MORC	**Moravsky Berou**	**42.53**	**310**	*e*P	**P**	**03 53 00.3**	**0.0**
comp=Z,13nm,0.8s							
VRAC	**Vranov**	**43.11**	**310**	LR	LR	04 13 36.0	
comp=Z,21nm,18.6s,baz=96,slow=40							
BRG	**Berggiesshubel**	**44.90**	**312**	*e*P	**P**	**03 53 21.4**	**+2.2**
comp=Z,5.0nm,1.2s							
BRG	**Berggiesshubel**	**44.90**	**312**	*e*P	**P**	**03 53 21.4**	**+2.2**
BRG				pmax	pmax		
comp=Z,5.0nm,1.2s							
GEA0	**GERESS Array S**	**45.00**	**309**	*e*P	**P**	**03 53 21.1**	**+0.9**
GERES	**GERESS Array B**	**45.00**	**309**	P	**P**	**03 53 19.8**	**-0.4**
comp=Z,1.3nm,0.8s,baz=99,slow=8.2,SNR=12							
GERES				LR	LR	04 15 07.7	
comp=Z,41nm,19.6s,baz=146,slow=40							
GERES	**GERESS Array B**	**45.00**	**309**	*e*P	**P**	**03 53 21.5**	**+1.3**
GERES				pmax	pmax		
comp=Z,1.0nm,0.8s							
ARCES	**ARCESS Array B**	**45.01**	**340**	P	**P**	**03 53 19.7**	**-0.2**
comp=Z,2.1nm,0.6s,baz=115,slow=8.2,SNR=18							
ARCES				LR	LR	04 12 47.2	
comp=Z,47nm,18.8s,baz=98,slow=37							
ARCES	**ARCESS Array B**	**45.01**	**340**	*e*P	**P**	**03 53 22.6**	**+2.7**
ARCES				pmax	pmax		
comp=Z,2.0nm,0.6s							
KMBO	**Kilima Mbogo**	**45.30**	**230**	P	**P**	**03 53 24.9**	**+1.8**
comp=Z,0.8nm,0.3s,baz=54,slow=18,SNR=3.2							
KMBO	**Kilima Mbogo**	**45.30**	**230**	*c e*P	P	03 53 29.7	+6.6
KMBO				pmax	pmax		
comp=Z,1.0nm,0.2s							
CLL	**Collm**	**45.51**	**312**	*e*P	**P**	**03 53 27.0**	**+2.9**
CLL	**Collm**	**45.51**	**312**	*e*P	**P**	**03 53 27.0**	**+2.9**
HFS	**Hagfors**	**46.18**	**325**	LR	LR	04 16 04.2	
comp=Z,92nm,18.6s,baz=104,slow=40							
TJN	**Taejon**	**47.01**	**68**	*e*P	**P**	**03 53 36.1**	**+0.1**
KSAR	**Wonju Array Be**	**47.20**	**67**	P	**P**	**03 53 39.8**	**+2.3**
KSAR	**Wonju Array Be**	**47.20**	**67**	P	**P**	**03 53 39.8**	**+2.3**
KSRS	**Korea Array**	**47.22**	**67**	P	**P**	**03 53 39.8**	**+2.0**
comp=Z,1.6nm,0.8s,baz=270,slow=7.5,SNR=5.2							
KSRS				LR	LR	04 17 13.7	
comp=Z,26nm,20.9s,baz=260,slow=41							
NB2	**NORSAR Subarra**	**47.55**	**326**	P	**P**	**03 53 40.1**	**+0.1**
comp=Z,3.8nm,1.2s,baz=105,slow=7.9							
NOA	**NORSAR Array B**	**47.55**	**326**	P	**P**	**03 53 39.7**	**-0.3**
comp=Z,0.9nm,0.7s,baz=103,slow=7.8,SNR=3.3							
NOA				LR	LR	04 16 58.3	
comp=Z,69nm,18.8s,baz=95,slow=40							
NOA	**NORSAR Array B**	**47.55**	**326**	P	**P**	**03 53 39.7**	**-0.3**
NOA				pmax	pmax		
comp=Z,2.0nm,1.0s							
NOA				MLR	MLR		
comp=Z,69nm,18.8s							
YAK	**Yakutsk**	**48.09**	**33**	LR	LR	04 15 41.7	
comp=Z,88nm,18.2s,baz=14,slow=38							
KONO	**Kongsberg**	**48.14**	**324**	*e*P	**P**	**03 53 47.8**	**+3.3**
KONO				pmax	pmax		
comp=Z,334nm,2.5s							
KLR	**Kul'dur**	**48.50**	**50**	LR	LR	04 17 04.7	
comp=Z,98nm,19.4s,slow=40							
USRK	**Ussuriysk Ar.**	**49.15**	**57**	LR	LR	04 17 18.1	
comp=Z,107nm,18.3s,baz=299,slow=39							
SENIN	**Lac Senin/Sane**	**49.46**	**306**	*e*P	**P**	**03 53 53.8**	**-1.3**
comp=Z,3.0nm,0.6s							
KEST	**Kesra**	**49.84**	**292**	P	**P**	**03 53 57.7**	**-0.3**
comp=Z,5.9nm,0.7s,baz=182,slow=6.5,SNR=11							
KEST	**Kesra**	**49.84**	**292**	*e*P	**P**	**03 53 58.1**	**+0.1**
TIXI	**Tiksi**	**50.21**	**21**	*e*P	**P**	**03 54 00.1**	**-0.1**
TIXI				pmax	pmax		
comp=Z,4.0nm,0.8s							
TIXI	**Tiksi**	**50.21**	**21**	*e*P	**P**	**03 53 58.9**	**-1.2**
comp=Z,3.5nm,0.7s							
JNU	**Nakatsue**	**50.61**	**71**	LR	LR	04 16 18.8	
comp=Z,36nm,19.4s,baz=110,slow=37							
SPITS	**Spitsbergen Ar**	**51.67**	**348**	LR	LR	04 22 33.1	
comp=Z,30nm,19.8s,baz=110,slow=44							
MA2	**Magadan**	**58.39**	**36**	LR	LR	04 21 58.7	
comp=Z,55nm,20.1s,baz=144,slow=38							
SEY	**Seymchan**	**58.58**	**32**	*e*P	**P**	**03 55 03.0**	**+1.8**
ESDC	**Sonseca Array**	**58.93**	**300**	P	**P**	**03 55 05.1**	**+1.0**
comp=Z,0.3nm,0.6s,baz=70,slow=6.8,SNR=3.7							
BILL	**Bilibino**	**62.97**	**25**	*i* P	**P**	**03 55 29.2**	**-1.7**
BILL				pmax	pmax		
comp=Z,1.0nm,1.0s							
BILL				MLR	MLR		
comp=Z,56nm,17.0s							
PETK	**Petropavlovsk-**	**63.76**	**42**	LR	LR	04 25 58.5	
comp=Z,90nm,18.4s,baz=289,slow=38							
TOA0	**Torodi Ar. Sit**	**64.89**	**270**	*e*P	**P**	**03 55 42.3**	**-2.1**
TORD	**Torodi Ar. Bea**	**64.89**	**270**	P	**P**	**03 55 42.2**	**-2.2**
comp=Z,1.5nm,0.7s,baz=53,slow=5.4,SNR=16							
DBIC	**Dimbokro**	**73.71**	**268**	P	**P**	**03 56 38.0**	**-1.0**
comp=Z,3.8nm,0.8s,baz=63,slow=4.5,SNR=2.6							
DBIC				LR	LR	04 32 26.2	
comp=Z,29nm,18.8s,baz=144,slow=39							
BOSA	**Boshof**	**73.83**	**220**	P	**P**	**03 56 38.7**	**-0.8**
comp=Z,3.1nm,0.8s,baz=59,slow=5.9,SNR=3.9							
INK	**Inuvik**	**78.43**	**9**	P	**P**	**03 57 04.8**	**-0.2**
INK	**Inuvik**	**78.43**	**9**	P	**P**	**03 57 04.8**	**-0.2**
IL1	**Eielson Array**	**79.28**	**15**	*e*P	**P**	**03 57 06.9**	**-2.8**
ILAR	**Eielson Array**	**79.28**	**15**	P	**P**	**03 57 10.1**	**+0.4**
comp=Z,1.2nm,1.1s,baz=322,slow=4.5,SNR=7.8							
ILAR	**Eielson Array**	**79.28**	**15**	*e*P	**P**	**03 57 10.0**	**+0.3**
ILAR				pmax	pmax		
comp=Z,1.0nm,1.1s							
WRA	**Warramunga Arr**	**80.34**	**121**	P	**P**	**03 57 17.4**	**+1.3**
comp=Z,3.5nm,0.8s,baz=321,slow=5.0,SNR=23							
WRA	**Warramunga Arr**	**80.34**	**121**	P	**P**	**03 57 17.4**	**+1.3**
WRA				pmax	pmax		
comp=Z,3.0nm,0.8s							
ASAR	**Alice Springs**	**82.38**	**124**	P	**P**	**03 57 27.9**	**+1.1**
comp=Z,1.3nm,0.7s,baz=312,slow=5.2,SNR=12							
ASAR	**Alice Springs**	**82.38**	**124**	P	**P**	**03 57 28.0**	**+1.1**
ASAR				pmax	pmax		
comp=Z,1.0nm,0.7s							
YKA	**Yellowknife Ar**	**85.73**	**2**	P	**P**	**03 57 43.4**	**0.0**
comp=Z,0.6nm,0.5s,baz=346,slow=4.9,SNR=10							

*ISN **30** 03:56:37.9±0.5, 37°.25N×45°.09E, h0km±2km, ML3.4*
*DDA **30** 03:56:42.1, 36°.93N×45°.20E, h5km, Ml3.4*
*TEH **30** 03:56:44.8, 37°.16N×45°.09E, h3km, ML3.1*
*CSEM **30** 03:56:45.5±0.2, 37°.16N×45°.33E, h2km, MD3.4, Error ellipse: s-maj=7.3km s-min=5.3km az=169.0*
*ISK **30** 03:56:51.4, 37°.49N×44°.74E, h5km, MD3.4*

ISC 30 03:56:44.4±1.4, **37°.13N**±0°.04×**45°.28E**±0°.02, **h0**km±11km, **n36**, σ1°**40**/51, **2C-1D, Northwestern Iran**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
ISHB	**Shabestar**	**1.18**	**13**	*e*AMB	AMB	03 57 10.1	
comp=Z,6μm,0.1s							
ISHB				⇓*e*Pg	**Pg**	**03 57 06.4**	**-0.7**
ITBZ	**Tabriz**	**1.30**	**32**	*e*AMB	AMB	03 57 10.0	
comp=Z,3μm,0.1s							
ITBZ				*e*Pg	**Pg**	**03 57 09.0**	**-0.3**
ITBZ				*e*Sg	**Sn**	**03 57 27.3**	**-0.9**
ITBZ	**Tabriz**	**1.30**	**32**	*e*Pg	**Pg**	**03 57 09.0**	**-0.3**
ITBZ				*e*Sg	**Sn**	**03 57 27.3**	**-0.9**
HKR	**Hakkari**	**1.31**	**291**	*e*PG	**Pg**	**03 57 07.9**	**-1.6**
HKR	**Hakkari**	**1.31**	**291**	*e*Pg	**Pg**	**03 57 07.9**	**-1.6**
HAKT	**HAKKARI**	**1.33**	**289**	P	**Pg**	**03 57 07.2**	**-2.6**
HAKT				S	**Sg**	**03 57 28.2**	**+1.1**
HAKT	**HAKKARI**	**1.33**	**289**	*i* P	**Pg**	**03 57 07.2**	**-2.6**
HAKT				*i* S	**Sg**	**03 57 27.5**	**+0.4**
HAKT				*i* S	**Sg**	**03 57 28.2**	**+1.1**
IBST	**Bostanabad**	**1.40**	**65**	⇑*e*Pn	**Pg**	**03 57 10.5**	**-0.8**
IBST				*e*AMB	AMB	03 57 11.4	
comp=Z,3μm,0.1s							
IBST	**Bostanabad**	**1.40**	**65**	⇑*e*Pn	**Pg**	**03 57 10.5**	**-0.8**
IMRD	**Marand**	**1.62**	**12**	*e*Pn	**Pn**	**03 57 14.2**	**-0.2**
IMRD				*e*AMB	AMB	03 57 40.7	
comp=Z,2μm,0.1s							
IMRD	**Marand**	**1.62**	**12**	*e*Pn	**Pn**	**03 57 14.2**	**-0.2**
IHRS	**Heris**	**1.83**	**49**	*e*Pn	**Pb**	**03 57 18.9**	**-0.1**
IHRS				*e*AMB	AMB	03 57 52.3	
comp=Z,1μm,0.2s							
IHRS	**Heris**	**1.83**	**49**	*e*Pn	**Pb**	**03 57 18.9**	**-0.1**
ISRB	**Sarab**	**2.02**	**69**	*e*Pn	**Pb**	**03 57 21.4**	**-0.7**
ISRB				*e*AMB	AMB	03 57 23.9	
comp=Z,1μm,0.1s							
ISRB	**Sarab**	**2.02**	**69**	*e*Pn	**Pb**	**03 57 21.4**	**-0.7**
TVAN	**Van**	**2.04**	**314**	P	**Pn**	**03 57 22.2**	**+2.0**
TVAN				S	**Sg**	**03 57 52.3**	**+2.3**
TVAN	**Van**	**2.04**	**314**	*i* P	**Pn**	**03 57 22.2**	**+2.0**
TVAN				*i* S	**Sg**	**03 57 52.3**	**+2.3**
VANB	**Van**	**2.10**	**315**	*e*PN	**Pn**	**03 57 21.1**	**+0.2**
VANB	**Van**	**2.10**	**315**	*e*Pn	**Pn**	**03 57 21.1**	**+0.2**
SIRT	**Sirnak**	**2.30**	**280**	*e*PN	**Pn**	**03 57 25.3**	**+1.7**
SIRT				*e*SN	**Sn**	**03 57 50.1**	**-2.6**
SIRT	**Sirnak**	**2.30**	**280**	*e*Pn	**Pn**	**03 57 25.3**	**+1.7**
SIRT				*e*Sn	**Sn**	**03 57 50.1**	**-2.6**
SIRN	**S¨–rnak**	**2.32**	**280**	P	**Pn**	**03 57 25.2**	**+1.3**
SIRN				S	**Sn**	**03 57 54.1**	**+1.0**
SIRN	**S¨–rnak**	**2.32**	**280**	*i* P	**Pn**	**03 57 25.2**	**+1.3**
SIRN				*i* S	**Sn**	**03 57 54.1**	**+1.0**
SIRN				*i* S	**Sb**	**03 57 56.2**	**-0.1**
IVIS	**Veis**	**2.89**	**153**	*e*Pn	**Pn**	**03 57 32.3**	**+0.5**
IVIS				*e*AMB	AMB	03 58 23.9	
comp=Z,245nm,0.2s							
IVIS	**Veis**	**2.89**	**153**	*e*Pn	**Pn**	**03 57 32.3**	**+0.5**
IGHG	**Ghaleghazi**	**2.98**	**159**	*e*Pn	**Pn**	**03 57 34.6**	**+1.4**
IGHG				*e*AMB	AMB	03 58 35.2	
comp=Z,639nm,0.3s							
IGHG	**Ghaleghazi**	**2.98**	**159**	*e*Pn	**Pn**	**03 57 34.6**	**+1.4**
AGRB	**Hanur-Agry**	**3.04**	**324**	*e*PN	**Pn**	**03 57 34.7**	**+0.8**
AGRB	**Hanur-Agry**	**3.04**	**324**	*e*Pn	**Pn**	**03 57 34.7**	**+0.8**
BTMN	**Batman**	**3.28**	**285**	P	**Pb**	**03 57 43.0**	**-0.6**
BTMN				S	**Sb**	**03 58 24.0**	**0.0**
BTMN	**Batman**	**3.28**	**285**	*i* P	**Pb**	**03 57 43.0**	**-0.6**
BTMN				*i* S	**Sb**	**03 58 24.0**	**0.0**
SVAN	**Silvan-Diyarba**	**3.40**	**289**	*e*PN	**Pn**	**03 57 40.0**	**+1.3**
SVAN	**Silvan-Diyarba**	**3.40**	**289**	*e*Pn	**Pn**	**03 57 40.0**	**+1.3**
MARD	**Mardin**	**3.60**	**274**	*i* P	**Pb**	**03 57 48.7**	**-0.3**
MARD				*i* S	**Sb**	**03 58 33.4**	**+0.1**
MAZI	**Mazidag**	**3.87**	**276**	*e*PN	**Pn**	**03 57 47.9**	**+2.6**
MAZI	**Mazidag**	**3.87**	**276**	*e*Pn	**Pn**	**03 57 47.9**	**+2.6**

*ISCJB **30** 04:13:16.7±0.5, 39°.15N±0°.03×29°.09E±0°.03, h4km±7km,*
Error ellipse: s-maj=6.0km s-min=4.0km az=151.6
*ISK **30** 04:13:16.6, 39°.16N×29°.13E, h7km, MD2.7*
*DDA **30** 04:13:16.5, 39°.14N×29°.07E, h7km, Md3.0*
*CSEM **30** 04:13:17.0±0.1, 39°.16N×29°.09E, h5km, MD3.0, Error ellipse: s-maj=2.3km s-min=1.9km az=128.0*

ISC 30 04:13:16.8±0.9, **39°.15N**±0°.02×**29°.08E**±0°.02, **h11**km±9km, **n35**, σ0°**29**/48, **Turkey**

Code	Station Name	Δ°	AZ°	Phase	ID	Time	Res
				Op	ISC	h m s	ISC
DEMI	**Demirci**	**0.30**	**249**	P	**Pg**	**04 13 22.9**	**-0.1**
DEMI				S	**Sg**	**04 13 27.3**	**+0.

IGD	**Bursa**	1.16	7	*i* P		**Pb**	04 19 09.8	-0.7
IGD				*i* S		**Sn**	04 19 26.6	+0.5
KCTX	**Karacabey (Bur**	1.25	337	*e*PN		**Pg**	04 19 12.8	0.0
MDNY	**Mudanya-Bursa**	1.25	356	*e*PN		**Pg**	04 19 12.8	0.0
MDNY	**Mudanya-Bursa**	1.25	356	*e*Pn		**Pg**	04 19 12.8	0.0
CAVI	**Cavuskoy**	1.26	31	*e*PN		**Pb**	04 19 12.3	-0.1
CAVI	**Cavuskoy**	1.26	31	*e*Pn		**Pb**	04 19 12.3	-0.1
IZI	**Iznik**	1.27	16	*e*PN		**Pn**	04 19 11.9	-0.3
IZI	**Iznik**	1.27	16	*e*Pn		**Pn**	04 19 11.9	-0.3
BORA	**Eskisehir**	1.35	55	P		**Pb**	04 19 14.2	+0.2
BORA				S		**Sg**	04 19 32.8	+0.4
BORA	**Eskisehir**	1.35	55	*i* P		**Pb**	04 19 14.2	+0.2
BORA				*i* S		**Sg**	04 19 32.8	+0.4
ARMT	**Armutlu**	1.45	356	*e*PN		**Pb**	04 19 15.5	-0.1
GULT	**Gulveren**	1.75	41	*e*PN		**Pn**	04 19 19.0	+0.1
GULT	**Gulveren**	1.75	41	*e*Pn		**Pn**	04 19 19.0	+0.1

MAN 30 04:18:55, 17°.19N×121°.85E, h21km, mb4.2, ML3.1, MS2.8, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CAUP	**Cauayan**	0.24	187	*e*P	Pb	04 19 03.5	+2.4
CAUP				*e*S	Sb	04 19 10.2	+4.9
CVP	**Callao Caves**	0.52	357	*i* P	Pb	04 19 05.8	+0.4
CVP				*i* S	Sb	04 19 12.0	-0.5
APYP	**Conner**	0.89	319	*e*P	Pn	04 19 13.0	+0.7
APYP				*e*S	Sn	04 19 26.8	+2.2
ABRA	**Dolores**	1.18	293	*e*P	Pn	04 19 15.7	-0.6
ABRA				*e*S	Sn	04 19 33.3	+1.5
BALP	**Baler**	1.46	191	*e*P	Pb	04 19 21.3	-0.2
BALP				*e*S	Sb	04 19 40.3	+0.7

*ISCJB **30** 04:24:55.3±0.5, 39°.10N±0°.04×29°.02E±0°.05, h9km, Error ellipse: s-maj=7.2km s-min=3.7km az=145.2*
*ISK **30** 04:24:55.1, 39°.11N×29°.02E, h8km, ML2.8*
*CSEM **30** 04:24:55.5±0.1, 39°.11N×29°.00E, h8km, ML2.8, Error ellipse: s-maj=2.4km s-min=1.7km az=135.0*
*DDA **30** 04:24:55.7, 39°.11N×28°.96E, h7km, Ml3.0*
ISC 30 04:24:55.6±0.9, 39°.11N±0°.03×29°.00E±0°.03, h9km, n42, σ0°26/48, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	0.23	252	P	**Pg**	04 25 00.4	+0.1
DEMI				S	**Sg**	04 25 03.5	0.0
DEMI	**Demirci**	0.23	252	*i* P	**Pg**	04 25 00.4	+0.1
DEMI				*i* S	**Sg**	04 25 03.5	0.0
TVSB	**Tavsanli**	0.49	47	*e*PG	**Pg**	04 25 04.9	-0.2
TVSB				*e*SG	**Sg**	04 25 12.0	+0.4
TVSB	**Tavsanli**	0.49	47	*e*Pg	**Pg**	04 25 04.9	-0.2
TVSB				*e*Sg	**Sg**	04 25 12.0	+0.4
KULA	**Kula-Manisa**	0.66	204	*e*PG	**Pg**	04 25 08.3	+0.1
KULA	**Kula-Manisa**	0.66	204	*e*Pg	**Pg**	04 25 08.3	+0.1
KHL	**Karahalli**	0.89	152	*e*PG	**Pg**	04 25 12.4	-0.3
KHL	**Karahalli**	0.89	152	*e*Pg	**Pg**	04 25 12.4	-0.3
ORLT	**Orhaneli**	0.93	355	*e*PG	**Pg**	04 25 13.5	-0.1
ORLT	**Orhaneli**	0.93	355	*e*Pg	**Pg**	04 25 13.5	-0.1
AKHS	**Akhisar**	0.95	256	P	**Pg**	04 25 13.9	0.0
AKHS				S	**Sb**	04 25 26.8	-0.2
AKHS	**Akhisar**	0.95	256	*i* P	**Pg**	04 25 13.9	0.0
AKHS				*i* S	**Sb**	04 25 26.8	-0.2
AKS	**Akhisar**	0.95	256	*e*PG	**Pb**	04 25 14.1	-0.1
AKS	**Akhisar**	0.95	256	*e*Pg	**Pb**	04 25 14.1	-0.1
KCTX	**Karacabey (Bur**	1.25	337	*e*PN	**Pn**	04 25 19.1	-0.2
KCTX	**Karacabey (Bur**	1.25	337	*e*Pn	**Pn**	04 25 19.1	-0.2
MDNY	**Mudanya-Bursa**	1.26	356	*e*PN	**Pg**	04 25 19.5	-0.2
MDNY	**Mudanya-Bursa**	1.26	356	*e*Pn	**Pg**	04 25 19.5	-0.2
CAVI	**Cavuskoy**	1.27	31	*e*PN	**Pn**	04 25 19.4	-0.1
CAVI	**Cavuskoy**	1.27	31	*e*Pn	**Pn**	04 25 19.4	-0.1
IZI	**Iznik**	1.27	16	*e*PN	**Pb**	04 25 19.7	-0.1
IZI	**Iznik**	1.27	16	*e*Pn	**Pb**	04 25 19.7	-0.1
GONE	**Gonen-Balikesi**	1.38	313	*e*PN	**Pb**	04 25 21.5	0.0
GONE	**Gonen-Balikesi**	1.38	313	*e*Pn	**Pb**	04 25 21.5	0.0
ADVT	**Abdulvahap**	1.44	23	*e*PN	**Pn**	04 25 21.9	+0.1
ADVT	**Abdulvahap**	1.44	23	*e*Pn	**Pn**	04 25 21.9	+0.1
ARMT	**Armutlu**	1.45	356	*e*PN	**Pn**	04 25 22.3	+0.3
ARMT	**Armutlu**	1.45	356	*e*Pn	**Pn**	04 25 22.3	+0.3
EDC	**Edincik**	1.51	325	*e*PN	**Pb**	04 25 23.3	-0.5
EDC	**Edincik**	1.51	325	*e*Pn	**Pb**	04 25 23.3	-0.5
GPA	**Golpazari**	1.55	40	*e*PN	**Pn**	04 25 23.7	+0.3
GPA	**Golpazari**	1.55	40	*e*Pn	**Pn**	04 25 23.7	+0.3
GULT	**Gulveren**	1.76	41	*e*PN	**Pn**	04 25 26.5	+0.2
GULT	**Gulveren**	1.76	41	*e*Pn	**Pn**	04 25 26.5	+0.2
HRT	**Hereke**	1.78	17	*e*PN	**Pn**	04 25 26.8	+0.2
HRT	**Hereke**	1.78	17	*e*Pn	**Pn**	04 25 26.8	+0.2
ISK	**Istanbul-Kandi**	1.95	1	*e*PN	**Pn**	04 25 29.3	+0.5
ISK	**Istanbul-Kandi**	1.95	1	*e*Pn	**Pn**	04 25 29.3	+0.5
SVRH	**Sivrihisar-ESK**	1.99	80	*e*PN	**Pn**	04 25 29.6	+0.2
SVRH	**Sivrihisar-ESK**	1.99	80	*e*Pn	**Pn**	04 25 29.6	+0.2
SILT	**Sile**	2.10	13	*e*PN	**Pn**	04 25 31.4	+0.6
SILT	**Sile**	2.10	13	*e*Pn	**Pn**	04 25 31.4	+0.6

IDC 30 04:32:07.2±11.0, 21°.99S×177°.42W, h538km±122km, mb2.9/4, mb1 3.2/4, mb1mx2.9/21, mbtmp3.8/4, Error ellipse: s-maj=55.7km s-min=31.8km az=56.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	44.72	258	P	P	04 39 33.6	+0.7
	1.7nm,0.5s,baz=95,slow=7.5,SNR=24						
WRA	**Warramunga Arr**	44.95	263	P	P	04 39 33.6	-1.0
	0.8nm,0.3s,baz=97,slow=7.6,SNR=31						
VNDA	**Vanda**	56.49	185	P	P	04 40 57.5	-0.1
	0.4nm,0.5s,baz=9.5,slow=6.1,SNR=5.1						
ILAR	**Eielson Array**	89.64	13	P	P	04 44 07.2	0.0
	0.2nm,0.5s,baz=215,slow=5.5,SNR=3.7						
AKASG	**Malin Array Be**	144.57	331	PKP	PKPdf	04 50 40.8	-1.5
	0.7nm,0.4s,baz=40,slow=4.4,SNR=6.0						
BRTR	**Keskin Array B**	148.22	311	PKPbc	PKPbc	04 50 52.9	-0.2
	0.4nm,0.6s,baz=142,slow=2.6,SNR=3.4						

*SOME **30** 04:54:53.5, 41°.72N×82°.13E, h0km*
*NNC **30** 04:55:01.4±1.9, 42°.08N×82°.15E, h0km, mb3.3, mpv2.9, Error ellipse: s-maj=14.9km s-min=7.9km az=149.0*
ISC 30 04:54:56.8±2.4, 41°.7N±0°.1×81°.97E±0°.08, h18km, n16, σ1°88/31, 4C-3D, Southern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHLS	**Shalkode**	2.15	315	*e*P	**Pg**	04 55 37.2	-0.8
	23nm,0.1s						
SHLS				*e*S	**Sg**	04 56 08.3	+2.5
	117nm,0.4s						
PDGK	**Podgornoye**	2.48	313	⇓Pg	**Pg**	04 55 43.6	-0.6
	3.4nm,0.3s						
PDGK				⇑Lg	Lg	04 56 16.1	
	28nm,0.4s						
UZB	**Uzynbulak**	2.64	305	*e*P	**Pb**	04 55 45.0	+1.4
	1.9nm,0.1s						
UZB				*e*S	**Sg**	04 56 22.1	+0.6
	34nm,0.4s						
SATY	**Saty**	2.98	299	*e*P	**Pb**	04 55 49.9	+0.4
	7.9nm,0.3s						
SATY				*e*S	**Sg**	04 56 30.5	-2.2
	24nm,0.2s						
ZHN	**Zhinishke**	3.02	301	*e*P	**Pg**	04 55 52.3	-2.3
	6.9nm,0.1s						
ZHN				*e*S	**Sg**	04 56 34.8	+1.1
	22nm,0.2s						
KPKS	**Kokpek**	3.02	308	*e*P	**Pb**	04 55 49.6	-0.4
	9.2nm,0.1s						
KPKS				*e*S	**Sb**	04 56 30.0	+3.4
	85nm,0.4s						
DJR	**Jarkent**	3.10	330	*e*P	**Pb**	04 55 50.9	-0.6
	8.0nm,0.4s						
DJR				*e*S	**Sb**	04 56 31.3	+2.2
	12nm,0.2s						
KURS	**Kuram**	3.34	304	*e*P	**Pb**	04 55 56.1	+0.5
	3.9nm,0.5s						
KURS				*e*S	**Sg**	04 56 41.6	-2.5
	6.7nm,0.3s						
MNBS	**Baschi**	3.56	314	*e*P	**Pb**	04 55 57.0	-2.3
	0.3nm,0.2s						
MNBS				*e*S	**Sb**	04 56 43.0	+0.8
	24nm,0.6s						
ARXS	**Arharly**	3.96	311	*e*P	**Pb**	04 56 07.7	+1.5
	5.4nm,0.4s						
ARXS				*e*S	**Sg**	04 57 01.7	-2.3
	9.2nm,0.4s						
TNSS	**Tian-Shan**	3.97	292	*e*P	**Pb**	04 56 08.6	+2.2
	2.8nm,0.3s						
TNSS				*e*S	**Sg**	04 57 03.7	-0.6
	4.8nm,0.5s						
KAPS	**Kapalarasan**	4.08	333	*e*P	**Pg**	04 56 12.2	-2.8
	6.3nm,0.4s						
KAPS				*e*S	**Sg**	04 57 08.5	+0.6
	11nm,0.7s						
CHKK	**Chushkaly**	4.27	303	*e*P	**Pb**	04 56 13.7	+2.4
	1.4nm,0.3s						
CHKK				*e*S	**Sg**	04 57 11.5	-2.3
	7.7nm,0.2s						
DGS	**Degeres**	4.85	291	*e*P	**Pg**	04 56 26.0	-3.6
	2.0nm,0.3s						
DGS				*e*S	**Sg**	04 57 32.6	+0.3
	5.9nm,0.3s						
MK31	**Makanchi Array**	5.13	2	Pn	**Pn**	04 56 13.7	+1.0
	0.3nm,0.2s,baz=189,slow=13,SNR=34						
MK31				⇓Sn	**Sn**	04 57 10.8	-0.6
	0.6nm,0.3s,baz=18,slow=31,SNR=5.1						
MK31				⇑Lg	Lg	04 57 28.6	
	4.2nm,0.7s,baz=182,slow=28,SNR=4.9						
MAKZ	**Makanchi**	5.14	0	⇓Pn	**Pn**	04 56 14.1	+1.3
	1.4nm,0.5s						
MAKZ				⇑Sn	**Sn**	04 57 10.8	-0.8
	1.0nm,0.5s						
MAKZ				⇑Lg	Lg	04 57 29.8	
	5.7nm,0.9s						

*SOME **30** 04:57:46.1, 41°.83N×82°.23E, h5km*
*NNC **30** 04:57:50.6±4.1, 42°.09N×82°.14E, h0km, mb3.2, mpv2.7, Error ellipse: s-maj=31.7km s-min=16.5km az=148.0*
ISC 30 04:57:51.7±3.3, 42°.05N±0°.09×82°.06E±0°.09, h7km±20km, n14, σ1°71/26, 6C-2D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHLS	**Shalkode**	1.95	305	*e*P	**Pb**	04 58 27.8	0.0
	14nm,0.1s						
SHLS				*e*S	**Sg**	04 58 57.8	+3.3
	52nm,0.4s						
PDGK	**Podgornoye**	2.29	305	⇑Pg	**Pb**	04 58 32.1	-1.3
	2.3nm,0.4s						
PDGK				⇑Lg	Lg	04 59 05.8	
	13nm,0.4s						
UZB	**Uzynbulak**	2.50	297	*e*P	**Pb**	04 58 36.5	-0.5
	5.8nm,0.2s						
UZB				*e*S	**Sg**	04 59 12.8	+0.8
	15nm,0.5s						
DJR	**Jarkent**	2.83	325	*e*P	**Pb**	04 58 42.5	0.0
	4.5nm,0.4s						
DJR				*e*S	**Sg**	04 59 22.7	+0.3
	6.7nm,0.5s						
KPKS	**Kokpek**	2.86	301	*e*P	**Pb**	04 58 42.5	-0.7
	14nm,0.4s						
KPKS				*e*S	**Sg**	04 59 23.3	-0.3
	44nm,0.5s						
SATY	**Saty**	2.88	292	*e*P	**Pb**	04 58 44.0	+0.4
	5.8nm,0.1s						
SATY				*e*S	**Sg**	04 59 25.4	+1.1
	17nm,0.2s						
MNBS	**Baschi**	3.36	308	*e*P	**Pb**	04 58 48.6	-3.1
	0.6nm,0.2s						
MNBS				*e*S	**Sb**	04 59 33.7	+0.7
	11nm,0.5s						
KAPS	**Kapalarasan**	3.79	330	*e*P	**Pb**	04 58 59.5	+0.5
	3.4nm,0.4s						
KAPS				*e*S	**Sg**	04 59 51.9	-1.4
	4.1nm,0.3s						
TNSS	**Tian-Shan**	3.91	286	*e*P	**Pb**	04 58 59.5	-1.7
	3.0nm,0.4s						
TNSS				*e*S	**Sg**	04 59 53.2	-4.0
	2.3nm,0.2s						
CHKK	**Chushkaly**	4.14	298	*e*P	**Pb**	04 59 07.0	+2.1
	2.1nm,0.3s						
CHKK				*e*S	**Sg**	05 00 05.2	+0.7
	5.6nm,0.2s						
WMQ	**Urumqi**	4.50	65	*e*P	**Sn**	04 59 53.8	+0.7
MK31	**Makanchi Array**	4.75	2	⇑Pn	**Pn**	04 59 04.4	+0.7
	0.2nm,0.2s,baz=189,slow=13,SNR=7.7						
MK31				⇓Sn	**Sn**	04 59 57.9	-1.2
	0.7nm,0.6s,baz=17,slow=30,SNR=5.3						
MK31				⇑Lg	Lg	05 00 19.0	
	2.2nm,0.6s,baz=181,slow=28,SNR=4.4						
MAKZ	**Makanchi**	4.76	359	⇑Pn	**Pn**	04 59 02.3	-1.6
	1.4nm,0.6s						
MAKZ				⇓Sn	**Sn**	05 00 00.8	+1.4
	0.8nm,0.6s						
MAKZ				⇑Lg	Lg	05 00 17.4	
	3.1nm,0.9s						
DGS	**Degeres**	4.79	287	*e*P	**Pb**	04 59 18.4	+2.3
	1.3nm,0.4s						
DGS				*e*S	**Sg**	05 00 25.1	-0.4
	2.5nm,0.3s						

*CSEM **30** 04:58:19.6±0.2, 38°.54N×39°.54E, h5km, MD2.7, Error ellipse: s-maj=5.8km s-min=4.7km az=54.0*
*ISK **30** 04:58:19.6, 38°.56N×39°.51E, h8km, MD2.7*
*DDA **30** 04:58:21.0, 38°.60N×39°.45E, h7km, Md2.9*
ISC 30 04:58:19.8±1.0, 38°.56N±0°.02×39°.54E±0°.03, h13km±9km, n25, σ0°61/38, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SVRC	**Sivrice-ELAZID**	0.26	225	*e*PG	**Pg**	04 58 25.1	-0.2
SVRC	**Sivrice-ELAZID**	0.26	225	*e*Pg	**Pg**	04 58 25.1	-0.2
PTK	**Pertek**	0.35	341	*e*PG	**Pg**	04 58 26.9	0.0
PTK				*e*SG	**Sg**	04 58 32.2	+0.5
PTK	**Pertek**	0.35	341	*e*Pg	**Pg**	04 58 26.9	0.0
PTK				*e*Sg	**Sg**	04 58 32.2	+0.5
ELZG	**Elazig**	0.44	262	P	**Pg**	04 58 28.1	-0.4
ELZG				S	**Sb**	04 58 35.4	-0.7
ELZG	**Elazig**	0.44	262	*i* P	**Pg**	04 58 28.1	-0.4
ELZG				*i* S	**Sb**	04 58 35.4	-0.7
TNCL	**Tunceli-Merkez**	0.55	0	P	**Pb**	04 58 31.3	-0.1
TNCL				S	**Sb**	04 58 39.7	+0.5
TNCL	**Tunceli-Merkez**	0.55	0	*i* P	**Pb**	04 58 31.3	-0.1
TNCL				*i* S	**Sb**	04 58 39.7	+0.5
DYBB	**Diyarbakir**	0.77	142	*e*PG	**Pg**	04 58 34.8	+0.1
DIY	**Diyarbakir**	0.86	141	*e*Pg	**Pg**	04 58 34.8	-1.6
BNGB	**Bing˘ll**	0.99	64	*e*PG	**Pn**	04 58 39.8	+0.3
ERZN	**Erzincan**	1.03	8	*e*PG	**Pn**	04 58 40.0	-0.1
KEMA	**Kemaliye**	1.08	311	P	**Pb**	04 58 39.5	-0.9
KEMA				S	**Sb**	04 58 54.1	-0.3
KEMA	**Kemaliye**	1.08	311	*i* P	**Pb**	04 58 39.5	-0.9
KEMA				*i* S	**Sb**	04 58 54.1	-0.3
ILIC	**ilic-Erzincan**	1.17	320	*e*PN	**Pg**	04 58 42.1	-0.1
ILIC	**ilic-Erzincan**	1.17	320	*e*Pn	**Pg**	04 58 42.1	-0.1
AKCD	**Akcadag**	1.30	259	P	**Pb**	04 58 43.8	-0.3
AKCD				S	**Sg**	04 59 02.7	+1.1
AKCD	**Akcadag**	1.30	259	*i* P	**Pb**	04 58 43.9	-0.3
AKCD				*i* S	**Sg**	04 59 02.7	+1.1
MAZI	**Mazidag**	1.31	147	*e*PN	**Pg**	04 58 45.0	-0.1
MAZI	**Mazidag**	1.31	147	*e*Pn	**Pg**	04 58 45.0	-0.1
SVAN	**Silvan-Diyarba**	1.37	107	*e*PN	**Pg**	04 58 46.0	0.0
SVAN	**Silvan-Diyarba**	1.37	107	*e*Pn	**Pg**	04 58 46.1	0.0
MARD	**Mardin**	1.59	141	*i* P	**Pb**	04 58 49.3	+0.3
MARD				*i* S	**Sg**	04 59 10.1	-0.7
SURC	**SANLIURFA_SURC**	1.83	204	P	**Pg**	04 58 56.1	+1.2
SURC				S	**Sg**	04 59 18.9	+0.1
SURC	**SANLIURFA_SURC**	1.83	204	*i* P	**Pg**	04 58 56.1	+1.2
SURC				*i* S	**Sg**	04 59 18.9	+0.1

*ISCJB **30** 05:01:10.3±0.6, 39°.11N±0°.04×29°.01E±0°.04, h5km±7km, Error ellipse: s-maj=6.2km s-min=5.0km az=153.9*
*CSEM **30** 05:01:10.5±0.1, 39°.12N×29°.01E, h5km, MD2.7, Error ellipse: s-maj=2.3km s-min=1.7km az=101.0*
*ISK **30** 05:01:10.2, 39°.12N×29°.05E, h6km, MD2.7*
*DDA **30** 05:01:10.1, 39°.10N×29°.01E, h7km, Md2.7*
ISC 30 05:01:10.5±1.0, 39°.12N±0°.03×29°.01E±0°.03, h8km±10km, n24, σ0°35/36, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	0.24	252	P	**Pg**	05 01 15.4	0.0
DEMI				S	**Sg**	05 01 18.6	0.0
DEMI	**Demirci**	0.24	252	*i* P	**Pg**	05 01 15.4	0.0
DEMI				*i* S	**Sg**	05 01 18.6	0.0
GDZ	**Gediz**	0.37	94	P	**Pg**	05 01 17.8	+0.1
GDZ				S	**Sg**	05 01 23.2	+0.6
GDZ	**Gediz**	0.37	94	*i* P	**Pg**	05 01 17.8	+0.1
GDZ				*i* S	**Sg**	05 01 23.2	+0.6
TVSB	**Tavsanli**	0.48	46	*e*PG	**Pg**	05 01 19.9	0.0
TVSB				*e*SG	**Sg**	05 01 26.3	+0.1
TVSB	**Tavsanli**	0.48	46	*e*Pg	**Pg**	05 01 19.9	0.0
TVSB				*e*Sg	**Sg**	05 01 26.3	+0.1
KULA	**Kula-Manisa**	0.66	205	*e*PG	**Pg**	05 01 23.4	+0.2
KULA	**Kula-Manisa**	0.66	205	*e*Pg	**Pg**	05 01 23.4	+0.2
KHAL	**Karahalli**	0.83	153	P	**Pg**	05 01 26.6	0.0
KHAL				S	**Sg**	05 01 37.8	+0.4
KHAL	**Karahalli**	0.83	153	*i* P	**Pg**	05 01 26.6	0.0
KHAL				*i* S	**Sg**	05 01 37.8	+0.4
KHL	**Karahalli**	0.89	153	*e*PG	**Pg**	05 01 27.8	+0.2
KHL	**Karahalli**	0.89	153	*e*Pg	**Pg**	05 01 27.8	+0.2
ORLT	**Orhaneli**	0.93	355	*e*PG	**Pg**	05 01 28.6	+0.2
ORLT	**Orhaneli**	0.93	355	*e*Pg	**Pg**	05 01 28.6	+0.2
KCTX	**Karacabey (Bur**	1.25	336	*e*PN	**Pg**	05 01 34.9	+0.4
KCTX	**Karacabey (Bur**	1.25	336	*e*Pn	**Pg**	05 01 34.9	+0.4
CAVI	**Cavuskoy**	1.26	30	*e*PN	**Pn**	05 01 34.2	-0.2
CAVI				*e*SN	**Sn**	05 01 52.2	+0.7
CAVI	**Cavuskoy**	1.26	30	*e*Pn	**Pn**	05 01 34.2	-0.2
CAVI				*e*Sn	**Sn**	05 01 52.2	+0.7
BORA	**Eskisehir**	1.35	55	P	**Pn**	05 01 35.4	-0.3
BORA				S	**Sb**	05 01 53.4	-0.2
BORA	**Eskisehir**	1.35	55	*i* P	**Pn**	05 01 35.4	-0.3
BORA				*i* S	**Sb**	05 01 53.4	-0.2
ARMT	**Armutlu**	1.45	355	*e*PN	**Pb**	05 01 37.6	-0.1
ARMT	**Armutlu**	1.45	355	*e*Pn	**Pb**	05 01 37.7	-0.1
GULT	**Gulveren**	1.75	41	*e*PN	**Pb**	05 01 42.2	-0.7
GULT	**Gulveren**	1.75	41	*e*Pn	**Pb**	05 01 42.2	-0.7

*NIED **30** 05:09:00, 22°.60N×121°.00E, h5km, Mw3.9 Best double couple: M0 9.44000×10^14 NP1:φ=90.00000°, δ=63.00000°, λ=162.00000°. NP2:φ=189.00000°, δ=74.00000°, λ=28.00000°.*
*JMA **30** 05:09:47.5±0.9, 22°.61N×120°.96E, h17km, M3.9*
*IDC **30** 05:09:50.0±1.7, 22°.46N×121°.07E, h0km, mb3.8/5, mb1 3.9/5, mb1mx3.5/54, mbtmp3.8/5, MS3.1/9, Ms1 3.2/9, ms1mx2.8/47, Error ellipse: s-maj=141.1km s-min=23.5km az=64.0*
*ISCJB **30** 05:09:50.8±0.3, 22°.72N±0°.01×121°.17E±0°.02, h0km±3km, mb3.7/5, MS3.1/5, Error ellipse: s-maj=2.9km s-min=2.5km az=1.7*
*TAP **30** 05:09:51.8, 22°.76N×121°.04E, h7km, ML4.2, B*
*BJI **30** 05:09:51.0, 22°.75N×121°.05E, h10km, ML3.7/5, Ms3.7/1, Ms7 3.7/2*
ISC 30 05:09:51.8±0.8, 22°.71N±0°.02×121°.12E±0°.02, h15km±5km, n96, σ1°05/129, mb3.7/5, MS2.9/5, 19C-8D, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TTN	**Taitung**	0.05	28	⇑*i* P	**Pg**	05 09 55.2	+0.6
	baz=98						
TTN				*i* S	**Sg**	05 09 58.0	+1.5
	baz=98						
TWG	**Pinlang**	0.12	338	⇑*i* P	**Pg**	05 09 54.0	-1.3
	baz=32						
ECL	**Taimali**	0.19	234	⇓*i* P	**Pg**	05 09 55.8	-0.5
	baz=204						
TAW	**Tawu**	0.41	211	⇓*i* P	**Pb**	05 10 00.5	-0.2
	baz=209						
TAW				*i* S	**Sb**	05 10 06.2	-0.5
	baz=209						
EAST	**Anshuo**	0.41	218	⇓*i* P	**Pb**	05 10 00.4	-0.4
	baz=215						
EAST				*i* S	**Sb**	05 10 06.0	-0.8
	baz=215						
CHKT	**Chengkung**	0.45	30	⇓*i* P	**Pb**	05 10 01.3	-0.1
	baz=42						
CHKT				*i* S	**Sb**	05 10 08.7	+0.8
	baz=42						
ELDTW	**Lidau**	0.49	349	⇑*i* P	**Pg**	05 10 00.4	-1.1
	baz=356						
ELDTW				*i* S	**Sg**	05 10 05.6	-2.5
	baz=356						
STYT	**Tauyuan**	0.56	323	⇑*i* P	**Pg**	05 10 01.8	-1.1
	baz=325						
STYT				*i* S	**Sg**	05 10 08.0	-2.5
	baz=325						
SCZT	**Fangliau**	0.57	234	⇓*i* P	**Pb**	05 10 03.1	-0.4
	baz=225						
SCZT				*e*S	**Sb**	05 10 10.3	-1.2
	baz=225						
SGLT	**Jiouru**	0.58	272	P	**Pb**	05 10 03.0	-0.6
	baz=268						
SGLT				*e*S	**Sg**	05 10 10.1	-0.9
	baz=268						
SGST	**Jiashian**	0.62	307	⇑*i* P	**Pg**	05 10 03.2	-0.8
	baz=305						
SGST				S	**S

CHY					*e*S		**Sb**	05 10 24.4	+0.2
	baz=334								
WDT	**Danda**	**1.04**		1⇑	*i*P		**Pg**	05 10 10.4	-1.6
	baz=3.0								
WDT					*e*S		**Sg**	05 10 24.7	-1.0
	baz=3.0								
CHN8	**Yiju**	**1.05**	**307**		*e*P		**Pn**	05 10 11.8	-0.2
	baz=307								
CHN8					*e*S		**Sn**	05 10 27.1	+0.7
	baz=307								
WGK	**Gukeng**	**1.10**	**332**	⇑	*i*P		**Pn**	05 10 13.0	+0.3
	baz=333								
WGK					*i* S		**Sn**	05 10 28.1	+0.5
	baz=333								
ESL	**Shilin**	**1.14**	**15**		*e*P		**Pg**	05 10 12.2	-1.5
	baz=39								
SMLT	**Sun Moon Lake**	**1.19**	**350**		*e*P		**Pb**	05 10 13.5	-0.5
SMLT					*e*S		**Sn**	05 10 30.8	+0.9
TYC	**Yuchr**	**1.21**	**348**		P		**Pb**	05 10 14.1	-0.4
	baz=358								
TYC					S		**Sn**	05 10 31.8	+1.4
	baz=358								
WNT	**Mingjian**	**1.23**	**341**	⇑	P		**Pg**	05 10 15.2	-0.4
	baz=342								
WNT					S		**Sn**	05 10 31.9	+1.1
	baz=342								
WSF	**Szhu**	**1.24**	**318**		P		**Pb**	05 10 14.7	-0.2
	baz=318								
WSF					S		**Sn**	05 10 31.9	+0.9
	baz=318								
HWA	**Hwalien**	**1.34**	**19**		*e*P		**Pg**	05 10 16.7	-0.9
	baz=38								
WTCT	**Ta-ch'eng**	**1.39**	**326**		*e*P		**Pb**	05 10 17.1	-0.3
	baz=327								
WTCT					*e*S		**Sb**	05 10 34.6	-0.3
	baz=327								
TWD	**Chiawan**	**1.43**	**18**		*e*P		**Pn**	05 10 17.2	0.0
	baz=20								
TWD					*e*S		**Sg**	05 10 37.3	-0.7
	baz=20								
WHF	**Hehuan Shan**	**1.44**	**5**		*e*P		**Pn**	05 10 16.6	-1.1
	baz=18								
WHF					*e*S		**Sg**	05 10 38.1	-0.1
	baz=18								
WDGT	**Dungji**	**1.45**	**292**	⇑	*i*P		**Pn**	05 10 17.1	-0.4
	baz=291								
WDGT					*e*S		**Sn**	05 10 34.9	-1.4
	baz=291								
TCU	**Taichung**	**1.49**	**344**	⇑	*i*P		**Pg**	05 10 19.6	-0.9
	baz=346								
TCU					*i* S		**Sg**	05 10 40.1	+0.3
	baz=346								
TWT	**Tachien**	**1.54**	**2**		*e*P		**Pn**	05 10 18.9	+0.1
	baz=18								
TWQ1	**Liyutan**	**1.66**	**349**	⇓	*i*P		**Pg**	05 10 22.6	-1.2
	baz=333								
TWQ1					S		**Sg**	05 10 44.9	-0.5
	baz=333								
PNG	**Penghu**	**1.68**	**301**		P		**Pn**	05 10 20.4	-0.2
	baz=300								
PNG					*e*S		**Sn**	05 10 40.3	-1.5
	baz=300								
NSY	**Sanyi**	**1.73**	**349**		P		**Pg**	05 10 23.7	-1.4
	baz=333								
NSY					S		**Sg**	05 10 47.6	+0.1
	baz=333								
NNS	**Nan Shan**	**1.74**	**8**		*e*P		**Pn**	05 10 22.4	+0.8
	baz=14								
ENA	**Nanau**	**1.80**	**18**		*e*P		**Pn**	05 10 23.2	+0.9
	baz=40								
NSTT	**Nanjuang**	**1.92**	**357**		P		**Pb**	05 10 26.0	-0.5
	baz=342								
NSTT					*e*S		**Sg**	05 10 51.9	-1.5
	baz=342								
ENTT	**Nioudou**	**1.96**	**12**		*e*P		**Pn**	05 10 23.3	-1.3
	baz=36								
NSK	**Sanguang**	**1.97**	**6**		*e*P		**Pn**	05 10 24.8	+0.1
	baz=15								
TWC	**Suao**	**2.00**	**19**		*e*P		**Pn**	05 10 25.8	+0.7
	baz=36								
TWC					*e*S		**Sb**	05 10 52.9	+0.2
	baz=36								
TWE	**Neicheng**	**2.06**	**14**		*e*P		**Pb**	05 10 27.9	-1.0
	baz=38								
HSN	**Hsinchu**	**2.09**	**356**		*e*P		**Pg**	05 10 30.7	-1.2
	baz=8.0								
TWA	**Mucha**	**2.30**	**11**		*e*P		**Pb**	05 10 33.8	+0.8
	baz=38								
TAP	**Taipei**	**2.35**	**9**		*e*P		**Pb**	05 10 32.7	-1.0
	baz=38								
TAP1	**Taipei**	**2.35**	**9**		*e*P		**Pb**	05 10 32.8	-1.0
	baz=31								
TAP1					*e*S		**Sb**	05 11 01.1	-1.5
	baz=31								
TWS1	**Kuangyinshan**	**2.40**	**6**		*e*P		**Pb**	05 10 34.5	-0.2
	baz=352								
TWS1					*e*S		**Sb**	05 11 06.1	+2.1
	baz=352								
TWB1	**Santiao Chiao**	**2.42**	**19**		*e*P		**Pn**	05 10 32.1	+1.3
	baz=37								
TWB1					*e*S		**Sn**	05 11 02.8	+2.5
	baz=37								
NWF	**Wu-fen Shan**	**2.43**	**14**		*e*P		**Pn**	05 10 32.2	+1.2
	baz=37								
YOJ	**Yonaguni jima**	**2.46**	**44**		P		**Pn**	05 10 31.3	0.0
YOJ					*e*S		**Sn**	05 11 01.7	+0.6
YOJ	**Yonaguni jima**	**2.46**	**44**		P		**Pn**	05 10 31.6	+0.2
	baz=44								
YOJ					*e*S		**Sn**	05 11 02.1	+1.0
	baz=44								
TWY	**Chenhua**	**2.59**	**10**		*e*P		**Pb**	05 10 35.6	-2.4
	baz=38								
HATJ	**Hateruma jima**	**2.81**	**61**		P		**Pn**	05 10 35.9	-0.2
HATJ					S		**Sn**	05 11 09.4	-0.3
IRIF	**Iriomote-Funau**	**2.89**	**55**		P		**Pn**	05 10 37.3	0.0
KNM	**Kinmen**	**3.00**	**305**		*e*P		**Pn**	05 10 41.0	+2.2
	baz=304								
JKRS	**Kuro-shima**	**3.06**	**60**		P		**Pn**	05 10 39.6	0.0
QZH	**Quanzhou**	**3.21**	**314**		Pn		Pn	05 10 36.3	-5.4
QZH					Pg		Pb	05 10 44.0	-4.5
QZH					Sn		Sn	05 11 11.5	-8.2
QZH					smax		smax		
	comp=N,310nm,0.6s								
QZH					smax		smax		
	comp=E,250nm,0.8s								
QZH	**Quanzhou**	**3.21**	**314**		Pn		Pn	05 10 37.3	-4.4
QZH					Pg		Pb	05 10 44.0	-4.5
QZH					Sn		Sn	05 11 11.5	-8.2
QZH					smax		smax		
	comp=E,310nm,0.6s								
QZH					smax		smax		
	comp=E,250nm,0.8s								
JIJ	**Ishigaki jima**	**3.23**	**59**		P		**Pn**	05 10 41.5	-0.4
JIJ					*e*S		**Sn**	05 11 19.4	-0.7
JISG	**Ishigakijimahi**	**3.47**	**57**		P		**Pn**	05 10 44.5	-0.8
JISG					S		**Sn**	05 11 24.2	-1.9
JTJ	**Tarama**	**3.80**	**59**		P		**Pn**	05 10 49.7	-0.1
TGY	**Tagaytay City**	**8.56**	**181**		LR		LR	05 16 00.2	
	comp=E,157nm,20.3s,baz=323,slow=44								
JNU	**Nakatsue**	**13.48**	**38**		LR		LR	05 19 18.3	
	comp=E,66nm,18.3s,baz=302,slow=42								
KSRS	**Korea Array**	**15.82**	**20**		LR		LR	05 20 06.1	
	comp=E,243nm,20.5s,baz=305,slow=38								
JCJ	**Chichijima**	**19.59**	**73**		LR		LR	05 20 49.9	
	comp=E,243nm,20.5s,baz=114,slow=34								
CMAR	**Chiang Mai Arr**	**21.18**	**263**		LR		LR	05 23 55.5	
	comp=E,27nm,19.2s,baz=210,slow=40								
SONM	**Songino Array**	**27.70**	**338**		P		**P**	**05 15 42.2**	**+2.7**
	comp=E,1.1nm,0.6s,baz=169,slow=8.5,SNR=2.9								
MKAR	**Makanchi Array**	**39.36**	**317**		P		**P**	**05 17 22.7**	**+2.1**
	comp=E,0.8nm,0.6s,baz=110,slow=10,SNR=8.3								
PETK	**Petropavlovsk-**	**41.12**	**33**		LR		LR	05 35 11.2	
	comp=E,18nm,20.9s,baz=224,slow=37								
ZALV	**Zalesovo Beam**	**41.45**	**328**		P		**P**	**05 17 39.1**	**+1.3**
	comp=E,2.3nm,0.7s,baz=114,slow=8.2,SNR=4.2								
MA2	**Magadan**	**42.37**	**22**		LR		LR	05 36 47.2	
	comp=E,16nm,20.3s,baz=70,slow=38								
H11N1	**WAKE ISLAND Hy**	**42.65**	**85**		T		T	06 03 14.8	
	baz=284								
H11N2	**WAKE ISLAND Hy**	**42.65**	**85**		T		T	06 03 14.3	
	baz=284								
H11N3	**WAKE ISLAND Hy**	**42.66**	**85**		T		T	06 03 13.7	
	baz=284								
H11S3	**WAKE ISLAND Hy**	**42.73**	**87**		T		T	06 03 25.2	
	baz=287								
H11S1	**WAKE ISLAND Hy**	**42.74**	**87**		T		T	06 03 25.9	
	baz=287								
H11S2	**WAKE ISLAND Hy**	**42.75**	**87**		T		T	06 03 26.7	
	baz=287								
KURBB	**Kurchatov Arra**	**43.20**	**321**		P		**P**	**05 17 54.0**	**+2.0**
	comp=E,1.4nm,0.8s,baz=120,slow=6.9,SNR=5.9								
WRA	**Warramunga Arr**	**44.31**	**162**		P		**P**	**05 18 00.0**	**-1.3**
	comp=E,0.5nm,0.8s,baz=342,slow=8.4,SNR=3.0								
FINES	**FINESS Array B**	**72.69**	**330**		LR		LR	05 54 06.8	
	comp=E,35nm,20.1s,baz=34,slow=36								
NOA	**NORSAR Array B**	**79.50**	**332**		LR		LR	05 59 26.5	
	comp=E,18nm,18.7s,baz=290,slow=37								

*SOME **30** 05:16:53.7, 41.°80N×82.°18E, h15km*
*IDC **30** 05:16:54.9±1.2, 41.°86N×82.°27E, h0km, mb3.7/4, mb1 3.7/8, mb1mx3.5/55, mbtmp3.6/8, ML3.2/4, Error ellipse: s-maj=22.0km s-min=14.8km az=84.0*
*NNC **30** 05:16:59.8±1.5, 42.°11N×82.°08E, h0km, mb4.1, mpv3.7, Error ellipse: s-maj=12.4km s-min=6.1km az=139.0*

ISC 30 05:16:55.9±1.0, 41.°85N±0.°05×82.°12E±0.°05, h14km, n36, σ2°51/54, mb3.6/4, 13C-9D, Southern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHLS	**Shalkode**	**2.11**	**309**	*e*P	**Pg**	**05 17 35.2**	**-1.2**
	186nm,0.2s						
SHLS				*e*S	**Sg**	**05 18 05.2**	**+1.5**
	686nm,0.3s						
PDGK	**Podgornoye**	**2.44**	**308**	⇓Pg	**Pb**	**05 17 39.8**	**+0.2**
	30nm,0.4s						
PDGK				⇓Lg	Lg	05 18 13.3	
	159nm,0.5s						
UZB	**Uzynbulak**	**2.63**	**301**	*e*P	**Pg**	**05 17 43.8**	**-2.6**
	75nm,0.3s						
UZB				*e*S	**Sg**	**05 18 20.1**	**-0.4**
	186nm,0.3s						
SATY	**Saty**	**3.00**	**295**	*e*P	**Pb**	**05 17 47.9**	**-1.3**
	125nm,0.4s						
SATY				*e*S	**Sb**	**05 18 28.0**	**+2.2**
	160nm,0.2s						
KPKS	**Kokpek**	**3.00**	**304**	*e*P	**Pg**	**05 17 50.6**	**-2.9**
	158nm,0.4s						
KPKS				*e*S	**Sg**	**05 18 31.2**	**-1.2**
	657nm,0.5s						
DJR	**Jarkent**	**3.01**	**326**	*e*P	**Pb**	**05 17 47.0**	**-2.4**
	34nm,0.3s						
DJR				*e*S	**Sb**	**05 18 25.4**	**-0.7**
	56nm,0.3s						
ZHN	**Zhinishke**	**3.02**	**297**	*e*P	**Pg**	**05 17 50.7**	**-3.2**
	46nm,0.3s						
ZHN				*e*S	**Sg**	**05 18 32.0**	**-1.1**
	464nm,0.2s						
KURS	**Kuram**	**3.34**	**301**	*e*P	**Pg**	**05 17 56.9**	**-3.0**
	29nm,0.6s						
KURS				*e*S	**Sg**	**05 18 42.7**	**-0.5**
	39nm,0.6s						
MNBS	**Baschi**	**3.52**	**311**	*e*P	**Pb**	**05 17 56.3**	**-1.8**
	11nm,0.4s						
MNBS				*e*S	**Sb**	**05 18 41.6**	**+0.8**
	150nm,0.4s						
ARXS	**Arharly**	**3.94**	**308**	*e*P	**Pb**	**05 18 06.7**	**+1.6**
	43nm,0.4s						
ARXS				*e*S	**Sg**	**05 19 00.3**	**-1.9**
	47nm,0.3s						
KOTS	**Kotyrbulak**	**3.95**	**292**	*e*P	**Pb**	**05 18 04.7**	**-0.7**
	37nm,0.3s						
KOTS				*e*S	**Sb**	**05 18 56.9**	**+3.8**
	63nm,0.7s						
MDOK	**Medeo**	**3.97**	**291**	*e*P	**Pb**	**05 18 07.1**	**+1.3**
	14nm,0.5s						
MDOK				*e*S	**Sg**	**05 18 59.9**	**-3.6**
	57nm,0.7s						
KAPS	**Kapalarasan**	**3.98**	**331**	*e*P	**Pb**	**05 18 07.5**	**+1.7**
	35nm,0.4s						
KAPS				*e*S	**Sg**	**05 18 59.9**	**-3.7**
	47nm,0.3s						
TNSS	**Tian-Shan**	**4.01**	**289**	*e*P	**Pb**	**05 18 07.9**	**+1.4**
	28nm,0.5s						
TNSS				*e*S	**Sg**	**05 19 02.2**	**-2.5**
	33nm,0.7s						
CHKK	**Chushkaly**	**4.27**	**300**	*e*P	**Pg**	**05 18 13.8**	**-3.9**
	17nm,0.3s						
CHKK				*e*S	**Sg**	**05 19 11.7**	**-1.3**
	50nm,0.2s						
MTBS	**Maitube**	**4.40**	**289**	*e*P	**Pb**	**05 18 13.2**	**+0.3**
	27nm,0.5s						
MTBS				*e*S	**Sb**	**05 19 10.5**	**+4.6**
	38nm,0.4s						
DGS	**Degeres**	**4.89**	**289**	*e*P	Pg	05 18 24.4	-5.1
	12nm,0.4s						
DGS				*e*S	**Sg**	**05 19 30.2**	**-2.7**
	40nm,0.4s						
TKM2	**Tokmak 2**	**4.95**	**285**	⇓Pn	Pn	05 18 14.3	+4.3
	7.5nm,0.6s						
TKM2				⇓Lg	Lg	05 19 34.6	
	30nm,0.7s						
MK31	**Makanchi Array**	**4.95**	**1**	⇑Pn	**Pn**	**05 18 11.6**	**+1.8**
	1.8nm,0.2s,baz=188,slow=13,SNR=201						
MK31				Pg	Pg	05 18 25.0	-5.6
	3.1nm,0.3s,baz=165,slow=16,SNR=7.5						
MK31				⇑Sn	**Sn**	**05 19 08.1**	**+1.2**
	13nm,0.6s						
MK31				⇑Lg	Lg	05 19 27.0	
	19nm,0.6s,baz=180,slow=28,SNR=5.7						
MKAR	**Makanchi Array**	**4.95**	**1**	Pn	**Pn**	**05 18 11.7**	**+1.8**
	3.7nm,0.3s,baz=187,slow=13,SNR=72						
MKAR				Sn	**Sn**	**05 19 10.8**	**+3.9**
	3.9nm,0.3s,baz=188,slow=26,SNR=6.2						
MKAR				Lg	Lg	05 19 29.1	
	7.2nm,0.3s,baz=183,slow=28,SNR=8.0						
MAKZ	**Makanchi**	**4.96**	**359**	⇓Pn	**Pn**	**05 18 11.8**	**+1.7**
	6.2nm,0.3s						
MAKZ				⇑Sn	**Sn**	**05 19 09.2**	**+2.0**
	11nm,0.3s						
MAKZ				⇑Lg	Lg	05 19 26.5	
	31nm,0.8s						
KSH	**Kashi**	**5.22**	**246**	Pn	**Pn**	**05 18 16.0**	**+2.4**
KSH				Sn	**Sb**	**05 19 24.8**	**-4.7**
KSH				smax	smax		
	comp=N,31nm,0.8s						
KSH				smax	smax		
	comp=E,48nm,1.1s						
AAK	**Ala-Archa**	**5.71**	**280**	Pn	Pb	05 18 26.5	-8.9
	comp=E,0.5nm,0.3s,baz=5.0,slow=23,SNR=3.0						
AAK				Sn	**Sn**	**05 19 30.9**	**+5.0**
	comp=E,0.7nm,0.3s,baz=90,slow=13,SNR=3.6						
AAK	**Ala-Archa**	**5.71**	**280**	⇑Pg	**Pg**	**05 18 44.2**	**-1.1**
	comp=E,4.1nm,0.5s						
AAK				⇑Lg	Lg	05 19 59.1	
	comp=E,20nm,0.9s						
ZSN	**Zaisan**	**5.84**	**15**	*e*P	Pg	05 18 41.7	-6.0
	comp=E,7.2nm,0.3s						
ZSN				*e*S	**Sg**	**05 19 58.2**	**-5.0**
	comp=E,32nm,0.9s						
MNAS	**Manas**	**7.17**	**278**	⇑Pn	Pn	05 18 45.5	+5.0
	comp=E,0.8nm,0.5s						
MNAS				⇑Lg	Lg	05 20 47.1	
	comp=E,11nm,1.2s						
KK31	**Karatay Array**	**8.67**	**282**	⇓Pg	**Pg**	**05 19 37.3**	**-4.5**
	comp=E,1.0nm,0.6s,baz=87,slow=16,SNR=4.7						
KK31				⇓Lg	Lg	05 21 32.6	
	comp=E,1.9nm,0.6s,baz=94,slow=29,SNR=5.1						
KURBB	**Kurchatov Arra**	**9.12**	**345**	Pn	**Pn**	**05 19 09.0**	**+2.0**
	comp=E,0.1nm,0.3s,baz=170,slow=12,SNR=5.6						
KURBB				Sn	**Sn**	**05 20 52.2**	**+2.7**
	comp=E,0.1nm,0.3s,baz=162,slow=20,SNR=4.0						
KURBB				Lg	Lg	05 21 45.6	
	comp=E,0.2nm,0.3s,baz=160,slow=32,SNR=5.8						
KURBB	**Kurchatov Arra**	**9.12**	**345**	⇑Pn	**Pn**	**05 19 09.9**	**+2.9**
	comp=E,3.7nm,0.6s						
KURBB				⇑Sn	**Sn**	**05 20 51.1**	**+1.7**
	comp=E,11nm,0.6s						
KURBB				⇓Lg	Lg	05 21 42.5	
	comp=E,26nm,0.7s						
KURK	**Kurchatov**	**9.20**	**346**	⇑Pn	Pn	05 19 12.0	+4.0
	comp=E,9.3nm,0.6s						
KURK				⇑Sn	**Sn**	**05 20 51.5**	**+0.3**
	comp=E,7.9nm,0.8s						
KURK				⇓Lg	Lg	05 21 42.1	
	comp=E,52nm,1.1s						
ZALV	**Zalesovo Beam**	**12.24**	**8**	Pn	**Pn**	**05 19 50.5**	**+0.7**
	comp=E,0.3nm,0.3s,baz=198,slow=13,SNR=3.9						
ZALV				Lg	Lg	05 23 17.0	
	comp=E,1.2nm,0.3s,baz=196,slow=24,SNR=5.1						
BVAR	**Borovoye Array**	**13.69**	**329**	Pn	**P**	**05 20 16.8**	**-1.4**
	comp=E,0.2nm,0.3s,baz=129,slow=12,SNR=4.0						
BVAR				Lg	Lg	05 24 10.4	
	comp=E,0.1nm,0.3s,baz=131,slow=31,SNR=2.5						
ARCES	**ARCESS Array B**	**39.93**	**333**	P	**P**	**05 24 30.4**	**+1.2**
	comp=E,1.6nm,0.9s,baz=91,slow=7.5,SNR=4.3						
NOA	**NORSAR Array B**	**45.61**	**320**	P	P	05 25 18.6	+3.3
	comp=E,1.1nm,0.9s,baz=90,slow=9.1,SNR=2.4						
TORD	**Torodi Ar. Bea**	**74.26**	**274**	P	**P**	**05 28 34.2**	**+1.4**
	comp=E,0.3nm,0.5s,baz=51,slow=4.9,SNR=6.1						
WRA	**Warramunga Arr**	**78.16**	**131**	P	**P**	**05 28 55.6**	**+0.8**
	comp=E,0.3nm,0.7s,baz=325,slow=5.3,SNR=3.2						

*IDC **30** 05:21:33.9±2.1, 37.°37N×141.°52E, h0km, mb3.4/3, mb1 3.5/4, mb1mx3.3/44, mbtmp3.3/4, ML3.1/1, MS3.0/1, Ms1 3.0/1, ms1mx2.1/31, Error ellipse: s-maj=42.3km s-min=31.5km az=61.0*
*ISCJB **30** 05:21:36.3±1.3, 37.°31N±0.°04×141.°37E±0.°08, h17km±8km, mb3.3/3, MS3.0/1, Error ellipse: s-maj=11.5km s-min=5.9km az=11.9*
*JMA **30** 05:21:39.4±0.1, 37.°34N×141.°14E, h27km±1km, M3.7*
JMA Felt II J1.

ISC 30 05:21:35.9±2.0, 37.°32N±0.°04×141.°32E±0.°08, h6km±11km, n20, σ0°87/23, mb3.6/3, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.35**	**277**	P	**Pb**	**05 21 45.3**	**+0.7**
JFK				S	**Sb**	**05 21 49.3**	**-1.1**
ONAJ	**Iwakimizuishiy**	**0.47**	**242**	P	**Pb**	**05 21 47.2**	**+0.7**
ONAJ				S	**Sb**	**05 21 52.8**	**-0.9**
JMM	**Marumori**	**0.68**	**323**	P	**Pb**	**05 21 50.6**	**+0.4**
JMM				S	**Sb**	**05 21 58.8**	**-1.1**
JFT	**Otama**	**0.80**	**284**	P	**Pb**	**05 21 52.5**	**+0.3**
JFT				S	**Sg**	**05 22 01.6**	**-0.1**
JHO	**Hitachi**	**0.93**	**220**	P	**Pg**	**05 21 53.9**	**+0.2**
JHO				S	**Sg**	**05 22 04.8**	**-0.9**
JOU	**Okura**	**1.16**	**334**	P	**Pn**	**05 21 59.0**	**+0.3**
JOU				S	**Sg**	**05 22 13.7**	**+0.4**
JSB	**Shiboa**	**1.17**	**253**	P	**Pn**	**05 21 59.1**	**+0.3**
JSB				*e*S	**Sg**	**05 22 12.9**	**-0.6**
JYS	**Shiratake**	**1.34**	**313**	P	**Pb**	**05 22 01.3**	**0.0**
JYS				S	**Sb**	**05 22 17.9**	**-0.8**
MJAR	**Matsushiro Arr**	**2.61**	**254**	Pn	**Pn**	**05 22 19.6**	**+1.1**
	2.8nm,0.3s,baz=81,slow=17,SNR=11						
MJAR				Sn	**Sb**	**05 22 53.9**	**-1.4**
	5.5nm,0.3s,baz=355,slow=26,SNR=4.6						
MAT	**Matsushiro**	**2.61**	**254**	P	**Pn**	**05 22 19.8**	**+1.2**
MAT				S	**Sn**	**05 22 52.1**	**+1.5**
H11N2	**WAKE ISLAND Hy**	**28.36**	**121**	T	T	05 57 42.9	
	baz=314,slow=75,SNR=15						
H11N1	**WAKE ISLAND Hy**	**28.37**	**121**	T	T	05 57 31.5	
	baz=314,slow=75,SNR=22						
H11N3	**WAKE ISLAND Hy**	**28.38**	**121**	T	T	05 57 34.2	
	baz=314,slow=75,SNR=19						
H11S1	**WAKE ISLAND Hy**	**29.08**	**123**	T	T	05 58 37.7	
	baz=316,slow=76,SNR=18						
H11S3	**WAKE ISLAND Hy**	**29.08**	**123**	T	T	05 58 37.5	
	baz=316,slow=76,SNR=14						
H11S2	**WAKE ISLAND Hy**	**29.10**	**123**	T	T	05 58 39.5	
	baz=316,slow=76,SNR=6.8						
MKAR	**Makanchi Array**	**43.90**	**302**	P	**P**	**05 29 43.2**	**+0.1**
	0.1nm,0.6s,baz=73,slow=5.0,SNR=2.4						
KURBB	**Kurchatov Arra**	**45.76**	**308**	P	**P**	**05 29 57.3**	**-0.6**
	0.5nm,0.6s,baz=86,slow=8.3,SNR=5.8						
AAK	**Ala-Archa**	**50.28**	**298**	LR	LR	05 51 48.3	
	comp=Z,13nm,18.1s,baz=66,slow=36						
WRA	**Warramunga Arr**	**57.34**	**188**	P	**P**	**05 31 24.1**	**-0.6**
	0.3nm,0.4s,baz=5.5,slow=7.3,SNR=6.8						

JMA 30 05:28:14.6±0.1, 35.°51N×140.°12E, h23km±1km, M3.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCN	**Nagara**	**0.11**	**144**	P	Pb	05 28 19.3	+0.2
KTR	**Katsuura**	**0.40**	**156**	P	Pb	05 28 22.6	-0.4
KTR				S	Sb	05 28 28.6	0.0
BSO4	**Boso 4**	**0.55**	**161**	P	Pb	05 28 25.5	0.0
BSO3	**Boso 3**	**0.78**	**156**	P	Pb	05 28 29.0	-0.3
JOD2	**Odawara 2**	**0.88**	**254**	P	Pb	05 28 30.7	-0.5
JAG	**Ashikaga**	**1.06**	**330**	P	Pn	05 28 33.6	-0.5
BSO1	**Boso 1**	**1.11**	**140**	P	Pn	05 28 32.8	-1.4
JRY	**Ryogami san**	**1.11**	**297**	P	Pn	05 28 34.4	-0.4
MAT	**Matsushiro**	**1.86**	**304**	P	Pb	05 28 47.2	-0.7
MAT				*e*S	Sn	05 29 07.4	-0.5

DJA 30 05:28:22.8±0.6, 0.°N±3.°×12.°4E±.°, h15km±5km, M3.6/2, MLv3.6/2, Minahassa Peninsula, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KMSI	**Cibinong**	**0.55**	**43**	P	Pg	05 28 32.7	-0.9
LUWI	**Luwuk**	**1.47**	**215**	P	Pn	05 28 48.5	-0.2
LUWI				S	Sn	05 29 06.8	-0.9
MRSI	**Marisa**	**1.70**	**280**	P	Pn	05 28 51.9	0.0
MRSI				S	Sn	05 29 12.7	-0.7
SANI	**Sanana**	**3.24**	**133**	P	Pn	05 29 12.6	-0.6
SANI				S	Sn	05 29 48.2	-3.4
PCI	**Palu**	**3.92**	**254**	P	Pn	05 29 22.5	0.0
LBMI	**Labuha**	**3.97**	**102**	P	Pn	05 29 23.4	+0.2
LBMI				S	Sn	05 30 11.6	+2.0
SGSI	**Sangihe**	**3.98**	**29**	P	Pn	05 29 23.3	-0.1
KDI	**Kendari**	**4.22**	**194**	P	Pn	05 29 26.2	-0.4
NLAI	**Namlea**	**4.86**	**134**	P	Pn	05 29 35.1	-0.4
TTSI	**Tana Toraja**	**4.96**	**230**	P	Pn	05 29 36.8	0.0

*IDC **30** 05:28:34.0±1.4, 37.°02N×140.°99E, h0km, mb3.2/3, mb1 3.5/4, mb1mx3.4/34, mbtmp3.3/4, ML3.8/1, MS2.8/1, Ms1 2.8/1, ms1mx2.1/19, Error ellipse: s-maj=34.9km s-min=24.8km az=151.0*
*ISCJB **30** 05:28:36.4±0.8, 36.°

YKA	**Yellowknife Ar**	**64.13**	**30**	P		**P**	**05 39 08.5**	**-1.4**
	0.1nm,0.7s,baz=291,slow=5.2,SNR=3.0							

*ISCJB **30** 05:34:01.7±0.5,39°.12N±0°.03×29°.05E±0°.04, h7km±6km, Error ellipse: s-maj=6.1km s-min=4.5km az=42.7*
*ISK **30** 05:34:01.1,39°.10N×29°.06E, h7km, MD2.7*
*CSEM **30** 05:34:01.8±0.1,39°.11N×29°.04E, h8km, MD2.8, Error ellipse: s-maj=2.2km s-min=1.6km az=110.0*
*DDA **30** 05:34:02.1,39°.09N×29°.05E, h7km, Md2.8*

ISC 30 05:34:01.5±0.9,39°.10N±0°.03×29°.08E±0°.03, h17km±8km, n26,σ0°21/36, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.29**	**259**	P	**Pg**	**05 34 07.8**	**+0.1**
DEMI				S	**Sg**	**05 34 11.7**	**-0.3**
DEMI	**Demirci**	**0.29**	**259**	*i* P	**Pg**	**05 34 07.8**	**+0.1**
DEMI				*i* S	**Sg**	**05 34 11.7**	**-0.3**
GDZ	**Gediz**	**0.32**	**91**	P	**Pb**	**05 34 09.0**	**+0.2**
GDZ				S	**Sb**	**05 34 13.9**	**+0.2**
GDZ	**Gediz**	**0.32**	**91**	*i* P	**Pb**	**05 34 09.0**	**+0.2**
GDZ				*i* S	**Sb**	**05 34 13.9**	**+0.2**
TVSB	**Tavsanli**	**0.46**	**40**	*e*PG	**Pg**	**05 34 10.9**	**+0.1**
TVSB				*e*SG	**Sg**	**05 34 17.0**	**-0.2**
TVSB	**Tavsanli**	**0.46**	**40**	*e*Pg	**Pg**	**05 34 11.0**	**+0.1**
TVSB				*e*Sg	**Sg**	**05 34 17.0**	**-0.2**
KULA	**Kula-Manisa**	**0.67**	**209**	*e*PG	**Pb**	**05 34 14.8**	**+0.1**
KULA				*e*SG	**Sb**	**05 34 23.9**	**+0.2**
KULA	**Kula-Manisa**	**0.67**	**209**	*e*Pg	**Pb**	**05 34 14.8**	**+0.1**
KULA				*e*Sg	**Sb**	**05 34 23.9**	**+0.2**
KHAL	**Karahalli**	**0.79**	**156**	P	**Pn**	**05 34 18.2**	**+0.2**
KHAL				S	**Sn**	**05 34 29.1**	**-0.5**
KHAL	**Karahalli**	**0.79**	**156**	*i* P	**Pn**	**05 34 18.2**	**+0.2**
KHAL				*i* S	**Sn**	**05 34 29.1**	**-0.5**
KHL	**Karahalli**	**0.85**	**156**	*e*PG	**Pg**	**05 34 18.0**	**0.0**
KHL	**Karahalli**	**0.85**	**156**	*e*Pg	**Pg**	**05 34 18.0**	**0.0**
ORLT	**Orhaneli**	**0.96**	**352**	*e*PG	**Pb**	**05 34 19.8**	**+0.1**
ORLT	**Orhaneli**	**0.96**	**352**	*e*Pg	**Pb**	**05 34 19.8**	**+0.1**
AKS	**Akhisar**	**1.01**	**258**	*e*PG	**Pb**	**05 34 20.6**	**+0.1**
AKS	**Akhisar**	**1.01**	**258**	*e*Pg	**Pb**	**05 34 20.6**	**+0.1**
CAVI	**Cavuskoy**	**1.25**	**28**	*e*PN	**Pg**	**05 34 25.6**	**-0.1**
CAVI	**Cavuskoy**	**1.25**	**28**	*e*Pn	**Pg**	**05 34 25.6**	**-0.1**
IZI	**Iznik**	**1.28**	**14**	*e*PN	**Pg**	**05 34 26.2**	**+0.1**
IZI	**Iznik**	**1.28**	**14**	*e*Pn	**Pg**	**05 34 26.2**	**+0.1**
ADVT	**Abdulvahap**	**1.43**	**21**	*e*PN	**Pb**	**05 34 27.8**	**+0.1**
ADVT	**Abdulvahap**	**1.43**	**21**	*e*Pn	**Pb**	**05 34 27.8**	**+0.1**
ARMT	**Armutlu**	**1.48**	**354**	*e*PN	**Pb**	**05 34 28.6**	**+0.1**
ARMT	**Armutlu**	**1.48**	**354**	*e*Pn	**Pb**	**05 34 28.6**	**+0.1**
GULT	**Gulveren**	**1.73**	**39**	*e*PN	**Pb**	**05 34 32.6**	**-0.3**
GULT	**Gulveren**	**1.73**	**39**	*e*Pn	**Pb**	**05 34 32.6**	**-0.3**

WEL 30 05:41:44.6±0.3,40°.44S×176°.81E, h14km±2km, ML3.6/24, 7C-6D, Error ellipse: s-maj=3.1km s-min=1.6km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PRHZ	**Porangahau**	**0.22**	**323**	⇓PG	Pg	05 41 49.0	-0.4
PRHZ				SG	Sg	05 41 51.9	-0.8
ANWZ	**Angora Road**	**0.26**	**265**	⇑PG	Pb	05 41 51.1	+0.1
PXZ	**Pawanui**	**0.41**	**6**	PG	Pb	05 41 53.4	-0.3
PXZ				AML	AML	05 42 00.8	
PXZ				AML	AML	05 42 00.9	
PXZ				AML	AML	05 42 01.4	
PXZ				AML	AML	05 42 01.4	
WPHZ	**Waipukurau**	**0.47**	**323**	⇓PG	Pg	05 41 53.2	-0.7
BFZ	**Birch Farm**	**0.49**	**240**	P*	Pb	05 41 55.7	+0.6
BFZ				AML	AML	05 42 05.8	
BFZ				AML	AML	05 42 05.8	
BFZ				AML	AML	05 42 06.5	
BFZ				AML	AML	05 42 06.5	
DVHZ	**Dannevirke**	**0.51**	**286**	⇓P*	Pg	05 41 54.3	-0.4
KAHZ	**Kahuranaki**	**0.65**	**5**	⇑P*	Pb	05 41 57.8	0.0
PRWZ	**Pori Road**	**0.65**	**260**	⇑P*	Pb	05 41 58.0	+0.2
CPWZ	**Castlepoint**	**0.66**	**224**	P*	Pn	05 41 59.2	-0.4
PNHZ	**Pukenui**	**0.70**	**318**	⇓P*	Pg	05 41 57.2	-1.1
TSZ	**Takapari Road**	**0.75**	**300**	⇑P*	Pg	05 41 58.0	-1.2
TSZ				AML	AML	05 42 09.6	
TSZ				AML	AML	05 42 09.6	
TIWZ	**Tintock**	**0.78**	**244**	⇑P*	Pb	05 42 00.1	+0.1
TIWZ				AML	AML	05 42 13.9	
TIWZ				AML	AML	05 42 20.6	
POWZ	**Post Office Ro**	**0.80**	**273**	⇑P*	Pg	05 41 59.7	-0.4
CKHZ	**Cape Kidnapper**	**0.81**	**15**	P*	Pb	05 42 00.5	+0.1
KRHZ	**Kereru**	**0.86**	**337**	P*	Pg	05 42 00.2	-1.1
MRZ	**Mangatainoka R**	**0.96**	**256**	P*	Pb	05 42 01.8	-1.4
TMWZ	**Te Maipa**	**0.96**	**226**	P*	Pb	05 42 02.6	-0.6
MCHZ	**McNeill Hill**	**1.00**	**355**	P*	Pb	05 42 03.3	-0.4
KWHZ	**Kaweka Forest**	**1.06**	**344**	P*	Pb	05 42 03.4	-1.4
HOWZ	**Holdsworth Sta**	**1.08**	**245**	⇑P*	Pb	05 42 03.9	-1.3
BHHZ	**Black Hill Sta**	**1.11**	**329**	P*	Pb	05 42 03.8	-1.9
OHWZ	**Ohakea**	**1.17**	**281**	P*	Pn	05 42 06.2	-0.3
ARHZ	**Aropaoanui**	**1.18**	**7**	P*	Pn	05 42 05.4	-1.4
MTW	**Mount Morrison**	**1.22**	**234**	P*	Pn	05 42 05.8	-1.6
MTW				AML	AML	05 42 22.3	
MTW				AML	AML	05 42 22.3	
TRWZ	**Traveller**	**1.28**	**221**	P*	Pn	05 42 06.7	-1.5
TRWZ				AML	AML	05 42 45.0	
TRWZ				AML	AML	05 42 45.6	
BKZ	**Black Stump Fm**	**1.30**	**349**	PN	Pn	05 42 06.5	-1.9
BKZ				AML	AML	05 42 34.2	
BKZ				AML	AML	05 42 35.0	
OGWZ	**Otaki Gorge**	**1.30**	**253**	P*	Pn	05 42 06.7	-1.8
MOVZ	**Moawhango**	**1.31**	**321**	PN	Pn	05 42 07.4	-1.3
MOVZ				AML	AML	05 42 26.6	
MOVZ				AML	AML	05 42 27.0	
NMHZ	**Naumai**	**1.34**	**360**	PN	Pn	05 42 07.9	-1.2
PAWZ	**Paruwai Farm**	**1.41**	**228**	P*	Pn	05 42 08.2	-1.8
PAWZ				AML	AML	05 42 42.0	
PAWZ				AML	AML	05 42 47.3	
WNVZ	**Wahianoa**	**1.45**	**320**	PN	Pn	05 42 10.1	-0.6
TUVZ	**Tukino**	**1.47**	**322**	PN	Pn	05 42 10.4	-0.5
TUVZ				AML	AML	05 42 33.2	
TUVZ				AML	AML	05 42 33.3	
MTVZ	**Mangateitei**	**1.47**	**315**	PN	Pn	05 42 10.3	-0.5
MTVZ				AML	AML	05 42 38.0	
MTVZ				AML	AML	05 42 40.8	
CAW	**Cannon Point**	**1.48**	**243**	P*	Pn	05 42 09.1	-1.9
CAW				AML	AML	05 42 28.7	
CAW				AML	AML	05 42 38.7	
WHVZ	**Whangaehu Hut**	**1.49**	**321**	PN	Pn	05 42 10.4	-0.8
TRVZ	**Turoa**	**1.50**	**319**	PN	Pn	05 42 10.5	-0.8
TRVZ				AML	AML	05 42 33.5	
TRVZ				AML	AML	05 42 34.4	
KIW	**Kapiti Island**	**1.50**	**253**	PN	Pn	05 42 09.6	-1.6
KIW				AML	AML	05 42 29.2	
KIW				AML	AML	05 42 34.2	
FWVZ	**Far West T-bar**	**1.53**	**320**	PN	Pn	05 42 11.2	-0.5
FWVZ				AML	AML	05 42 33.9	
FWVZ				AML	AML	05 42 44.8	
MSWZ	**Moikau Station**	**1.53**	**230**	PN	Pn	05 42 09.5	-2.1
MSWZ				AML	AML	05 42 29.6	
OTVZ	**Oturere**	**1.55**	**325**	PN	Pn	05 42 11.5	-0.5
OTVZ				AML	AML	05 42 39.5	
OTVZ				AML	AML	05 42 40.3	
WAZ	**Wanganui**	**1.56**	**295**	⇓PN	Pn	05 42 11.5	-0.5
WAZ				AML	AML	05 42 36.6	
WAZ				AML	AML	05 42 49.6	
NGZ	**Ngauruhoe**	**1.57**	**323**	PN	Pn	05 42 12.0	-0.3
NGZ				AML	AML	05 42 36.7	
NGZ				AML	AML	05 42 41.5	
PKVZ	**Pokaka**	**1.61**	**315**	PN	Pn	05 42 12.3	-0.4
PKVZ				AML	AML	05 42 39.9	
PKVZ				AML	AML	05 42 41.9	
KRVZ	**Karewarewa**	**1.62**	**326**	PN	Pn	05 42 13.0	+0.1
KRVZ				AML	AML	05 42 36.1	
KRVZ				AML	AML	05 42 40.8	
WTVZ	**West Tongariro**	**1.62**	**324**	PN	Pn	05 42 12.8	-0.2
WTVZ				AML	AML	05 42 38.8	
WTVZ				AML	AML	05 42 44.4	
PLWZ	**Palliser**	**1.63**	**226**	PN	Pn	05 42 11.0	-2.0
MRHZ	**Matea Rd**	**1.63**	**349**	PN	Pn	05 42 12.2	-0.9
SNGZ	**Shannon Statio**	**1.71**	**14**	PN	Pn	05 42 12.7	-1.4
TWVZ	**Taurewa**	**1.73**	**322**	PN	Pn	05 42 14.3	-0.1
RTZ	**Ruatahuna**	**1.83**	**4**	PN	Pn	05 42 14.4	-1.3
VRZ	**Vera Road**	**2.06**	**309**	PN	Pn	05 42 17.8	-1.0
TCW	**Tory Channel**	**2.07**	**247**	PN	Pn	05 42 16.9	-2.1
TCW				AML	AML	05 42 43.7	
TCW				AML	AML	05 42 52.1	
MWZ	**Matawai**	**2.17**	**15**	PN	Pn	05 42 18.3	-2.2
URZ	**Urewera**	**2.19**	**6**	PN	Pn	05 42 18.6	-2.1
DUWZ	**D'Urville Isla**	**2.23**	**260**	PN	Pn	05 42 18.4	-2.7
DUWZ				AML	AML	05 42 56.9	
DUWZ				AML	AML	05 42 57.8	
TUWZ	**Tuamarina**	**2.38**	**245**	PN	Pn	05 42 20.6	-2.8
NEZ	**North Egmont**	**2.39**	**298**	PN	Pn	05 42 24.1	+0.6
HIZ	**Hauiti**	**2.45**	**321**	PN	Pn	05 42 25.8	+1.7
BSWZ	**Blackbirch Sta**	**2.56**	**239**	PN	Pn	05 42 23.1	-2.6
NNZ	**Nelson**	**2.71**	**252**	PN	Pn	05 42 25.8	-2.1
HAZ	**Te Kaha**	**2.79**	**16**	PN	Pn	05 42 27.2	-1.6
KHZ	**Kahutara**	**3.15**	**230**	PN	Pn	05 42 30.8	-3.0
THZ	**Tophouse**	**3.23**	**245**	⇓PN	Pn	05 42 32.0	-3.0
QRZ	**Quartz Range**	**3.28**	**262**	PN	Pn	05 42 33.5	-2.1
DSZ	**Dennistoon Nort**	**4.00**	**249**	PN	Pn	05 42 42.7	-2.9
LTZ	**Lake Taylor**	**4.13**	**234**	PN	Pn	05 42 44.0	-3.4
MQZ	**McQueen's Vall**	**4.50**	**222**	PN	Pn	05 42 48.7	-3.6
INZ	**Inchbonnie**	**4.63**	**239**	PN	Pn	05 42 50.6	-3.5

*ISCJB **30** 05:44:14.7±0.6,39°.14N±0°.04×29°.08E±0°.04, h9km±6km, Error ellipse: s-maj=6.9km s-min=4.7km az=140.3*
*ISK **30** 05:44:14.0,39°.11N×29°.14E, h9km, MD2.5*
*CSEM **30** 05:44:14.8±0.1,39°.14N×29°.09E, h10km, MD2.6, Error ellipse: s-maj=2.3km s-min=1.6km az=127.0*
*DDA **30** 05:44:15.2,39°.11N×29°.08E, h7km, Md2.6*

ISC 30 05:44:14.7±1.0,39°.14N±0°.03×29°.11E±0°.04, h13km±12km, n18,σ0°24/28, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.29**	**99**	P	**Pb**	**05 44 21.6**	**-0.2**
GDZ				S	**Sb**	**05 44 26.2**	**-0.4**
GDZ	**Gediz**	**0.29**	**99**	*i* P	**Pb**	**05 44 21.6**	**-0.2**
GDZ				*i* S	**Sb**	**05 44 26.2**	**-0.4**
DEMI	**Demirci**	**0.32**	**253**	P	**Pg**	**05 44 21.5**	**+0.1**
DEMI				S	**Sg**	**05 44 25.5**	**-0.3**
DEMI	**Demirci**	**0.32**	**253**	*i* P	**Pg**	**05 44 21.5**	**+0.1**
DEMI				*i* S	**Sg**	**05 44 25.5**	**-0.3**
TVSB	**Tavsanli**	**0.41**	**41**	*e*PG	**Pg**	**05 44 23.0**	**0.0**
TVSB				*e*SG	**Sg**	**05 44 28.8**	**+0.2**
TVSB	**Tavsanli**	**0.41**	**41**	*e*Pg	**Pg**	**05 44 23.0**	**0.0**
TVSB				*e*Sg	**Sg**	**05 44 28.8**	**+0.2**
KULA	**Kula-Manisa**	**0.71**	**210**	*e*PG	**Pg**	**05 44 28.2**	**-0.3**
KULA				*e*SG	**Sg**	**05 44 38.1**	**+0.1**
KULA	**Kula-Manisa**	**0.71**	**210**	*e*Pg	**Pg**	**05 44 28.3**	**-0.3**
KULA				*e*Sg	**Sg**	**05 44 38.1**	**+0.1**
KHAL	**Karahalli**	**0.82**	**159**	P	**Pb**	**05 44 31.2**	**+0.4**
KHAL				S	**Sb**	**05 44 42.1**	**+0.3**
KHAL	**Karahalli**	**0.82**	**159**	*i* P	**Pb**	**05 44 31.2**	**+0.4**
KHAL				*i* S	**Sb**	**05 44 42.1**	**+0.3**
AKS	**Akhisar**	**1.05**	**256**	*e*PG	**Pg**	**05 44 34.8**	**-0.1**
AKS	**Akhisar**	**1.05**	**256**	*e*Pg	**Pg**	**05 44 34.8**	**-0.1**
CAVI	**Cavuskoy**	**1.20**	**28**	*e*PN	**Pg**	**05 44 38.0**	**+0.1**
CAVI	**Cavuskoy**	**1.20**	**28**	*e*Pn	**Pg**	**05 44 38.0**	**+0.1**
IZI	**Iznik**	**1.23**	**13**	*e*PN	**Pb**	**05 44 37.9**	**+0.1**
IZI	**Iznik**	**1.23**	**13**	*e*Pn	**Pb**	**05 44 37.9**	**+0.1**
ARMT	**Armutlu**	**1.44**	**352**	*e*PN	**Pb**	**05 44 41.4**	**0.0**
ARMT	**Armutlu**	**1.44**	**352**	*e*Pn	**Pb**	**05 44 41.4**	**0.0**

MAN 30 05:47:53,8°.72N×123°.34E, h17km, mb4.1, ML2.9, MS2.5, 3C-1D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DCPH	**Dipolog City**	**0.13**	**177**	⇑*i*P	Pb	05 47 57.7	+0.6
DCPH				*i* S	Sb	05 47 59.7	0.0
SNPH	**Sibulan**	**0.63**	**350**	⇑*i*P	Pn	05 48 08.7	+1.5
SNPH				*i* S	Sn	05 48 20.1	+3.1
IPIL	**Ipil**	**1.20**	**220**	*e*P	Pg	05 48 16.1	-0.1
IPIL				*e*S	Sn	05 48 31.3	+0.4
CGP	**Cagayan de Oro**	**1.36**	**101**	⇑*e*P	Pn	05 48 17.1	-0.2
CGP				*i* S	Sb	05 48 35.3	+0.1
LLP	**Lapu-Lapu**	**1.71**	**21**	*e*P	Pn	05 48 21.5	-0.5
LLP				*e*S	Sg	05 48 50.5	+2.5
CTBH	**Cotabato--PC H**	**1.73**	**149**	⇓*i*P	Pb	05 48 25.0	+0.6

IDC 30 05:52:55.7±3.4,10°.80S×119°.05E, h0km, mb4.0/1, mb1 3.6/3, mb1mx3.4/45, mbtmp3.5/3, ML3.2/2, MS2.6/1, Ms1 2.6/1, ms1mx2.2/28, Error ellipse: s-maj=255.5km s-min=28.2km az=48.0, Sumba region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAPI	**Kappang**	**5.79**	**7**	LR	LR	05 57 09.3	
	comp=Z,55nm,19.6s,baz=130,slow=44						
WRA	**Warramunga Arr**	**17.30**	**123**	P	Pn	05 56 57.9	-1.0
	0.1nm,0.3s,baz=291,slow=14,SNR=3.5						
ASAR	**Alice Springs**	**19.08**	**134**	P	Pn	05 57 20.8	0.0
	0.1nm,0.3s,baz=319,slow=14,SNR=6.2						
MKAR	**Makanchi Array**	**66.08**	**333**	P	P	06 03 44.5	0.0
	0.9nm,0.5s,baz=150,slow=6.7,SNR=12						

*ISCJB **30** 05:53:09.4±1.1,5°.9S±0°.2×150°.4E±0°.3, h100km, mb3.7/5, Error ellipse: s-maj=44.0km s-min=10.2km az=31.2*
*IDC **30** 05:53:15.9±3.7,5°.89S×149°.99E, h142km±30km, mb3.5/6, mb1 3.6/7, mb1mx3.3/39, mbtmp3.9/7, MS2.7/1, Ms1 2.7/1, ms1mx2.3/15, Error ellipse: s-maj=63.4km s-min=18.2km az=108.0*

ISC 30 05:53:11.7±1.6,5°.8S±0°.2×150°.3E±0°.4, h100km, n8, σ1°69/8, mb3.6/5, New Britain region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**4.72**	**221**	P	**Pn**	**05 54 22.3**	**+1.6**
	4.2nm,0.3s,baz=29,slow=14,SNR=5.0						
PMG				S	**Sn**	**05 55 14.8**	**+0.4**
	26nm,0.3s,baz=152,slow=22,SNR=18						
PMG				LR	LR	05 56 19.8	
	comp=Z,78nm,18.5s,baz=216,slow=41						
WRA	**Warramunga Arr**	**20.92**	**226**	P	**P**	**05 57 43.8**	**-2.7**
	0.9nm,0.3s,baz=46,slow=11,SNR=15						
ASAR	**Alice Springs**	**23.74**	**220**	P	**P**	**05 58 13.8**	**-1.1**
	1.1nm,0.5s,baz=49,slow=8.2,SNR=14						
STKA	**Stephens Creek**	**27.16**	**196**	P	**P**	**05 58 44.9**	**-0.8**
	0.6nm,0.3s,baz=57,slow=14,SNR=3.7						
MJAR	**Matsushiro Arr**	**43.66**	**346**	P	**P**	**06 01 05.8**	**-0.8**
	0.8nm,0.4s,baz=174,slow=12,SNR=3.3						
PETK	**Petropavlovsk-**	**59.06**	**5**	P	**P**	**06 03 02.1**	**+0.9**
	2.5nm,0.5s,baz=161,slow=6.2,SNR=11						
ILAR	**Eielson Array**	**84.06**	**23**	P	P	06 05 30.1	-0.8
	0.6nm,0.8s,baz=255,slow=3.8,SNR=4.5						
TORD	**Torodi Ar. Bea**	**148.24**	**286**	PKPbc	**PKPdf**	**06 12 44.8**	**+1.0**
	0.3nm,0.4s,baz=37,slow=3.4,SNR=6.7						

*DDA **30** 05:58:48.5,39°.11N×29°.12E, h7km, Ml3.4*
*ISK **30** 05:58:48.5,39°.13N×29°.15E, h5km, ML3.3*
*CSEM **30** 05:58:49.6±0.1,39°.13N×29°.14E, h2km, ML3.4, Error ellipse: s-maj=3.1km s-min=2.5km az=84.0*

ISC 30 05:58:48.8±1.1,39°.14N±0°.02×29°.11E±0°.02, h3km±10km, n77,σ0°97/92, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.29**	**99**	P	**Pg**	**05 58 54.6**	**+0.2**
GDZ				S	**Sg**	**05 58 58.8**	**+0.6**
GDZ	**Gediz**	**0.29**	**99**	*i* P	**Pg**	**05 58 54.6**	**+0.2**
GDZ				*i* S	**Sg**	**05 58 58.8**	**+0.6**
DEMI	**Demirci**	**0.32**	**254**	P	**Pg**	**05 58 55.5**	**+0.5**
DEMI				S	**Sg**	**05 58 59.8**	**+0.6**
DEMI	**Demirci**	**0.32**	**254**	*i* P	**Pg**	**05 58 55.5**	**+0.5**
DEMI				*i* S	**Sg**	**05 58 59.8**	**+0.6**
TVSB	**Tavsanli**	**0.41**	**41**	PG	**Pg**	**05 58 57.2**	**+0.4**
TVSB	**Tavsanli**	**0.41**	**41**	*i* Pg	**Pg**	**05 58 57.2**	**+0.4**
KHAL	**Karahalli**	**0.82**	**159**	P	**Pg**	**05 59 04.3**	**-0.2**
KHAL				S	**Sg**	**05 59 14.2**	**-0.9**
KHAL	**Karahalli**	**0.82**	**159**	*i* P	**Pg**	**05 59 04.3**	**-0.2**
KHAL				*i* S	**Sg**	**05 59 14.2**	**-0.9**
KHL	**Karahalli**	**0.87**	**158**	PG	**Pb**	**05 59 05.6**	**-1.0**
ORLT	**Orhaneli**	**0.93**	**350**	PG	**Pg**	**05 59 06.6**	**+0.1**
ORLT	**Orhaneli**	**0.93**	**350**	*i* Pg	**Pg**	**05 59 06.6**	**+0.1**
AKHS	**Akhisar**	**1.04**	**256**	P	**Pb**	**05 59 09.1**	**-0.4**
AKHS				S	**Sb**	**05 59 22.9**	**-0.6**
AKHS	**Akhisar**	**1.04**	**256**	*i* P	**Pb**	**05 59 09.1**	**-0.4**
AKHS				*i* S	**Sb**	**05 59 22.9**	**-0.6**
IGD	**Bursa**	**1.13**	**3**	*i* P	**Pg**	**05 59 09.5**	**-0.9**
IGD				*i* S	**Sn**	**05 59 26.8**	**-0.6**
CAVI	**Cavuskoy**	**1.21**	**28**	PN	**Pn**	**05 59 12.5**	**-0.1**
CAVI				SN	**Sn**	**05 59 30.0**	**+0.6**
IZI	**Iznik**	**1.23**	**13**	PN	**Pg**	**05 59 13.6**	**+1.2**
IZI	**Iznik**	**1.23**	**13**	*i* Pn	**Pg**	**05 59 13.6**	**+1.2**
MDNY	**Mudanya-Bursa**	**1.25**	**352**	PN	**Pg**	**05 59 13.4**	**+0.7**
MDNY	**Mudanya-Bursa**	**1.25**	**352**	*i* Pn	**Pg**	**05 59 13.4**	**+0.7**
KCTX	**Karacabey (Bur**	**1.27**	**333**	PN	**Pg**	**05 59 13.3**	**+0.2**
KCTX	**Karacabey (Bur**	**1.27**	**333**	*i* Pn	**Pg**	**05 59 13.4**	**+0.2**
BALY	**Balya**	**1.30**	**298**	P	**Pg**	**05 59 14.2**	**+0.4**
BALY	**Balya**	**1.30**	**298**	*i* P	**Pg**	**05 59 14.2**	**+0.4**
BALY				*i* S	**Sb**	**05 59 29.8**	**-1.3**
DENT	**Denizli**	**1.38**	**183**	PN	**Pg**	**05 59 14.9**	**-0.3**
DENT				SN	**Sn**	**05 59 36.0**	**+2.3**
DENT	**Denizli**	**1.38**	**183**	*i* Pn	**Pg**	**05 59 14.9**	**-0.3**
DENT				*i* Sn	**Sn**	**05 59 36.0**	**+2.3**
ADVT	**Abdulvahap**	**1.38**	**20**	PN	**Pg**	**05 59 15.7**	**+0.4**
ADVT	**Abdulvahap**	**1.38**	**20**	*i* Pn	**Pg**	**05 59 15.7**	**+0.4**
GONE	**Gonen-Balikesi**	**1.43**	**310**	PN	**Pg**	**05 59 16.9**	**+0.8**
GONE	**Gonen-Balikesi**	**1.43**	**310**	*i* Pn	**Pg**	**05 59 17.0**	**+0.8**
ARMT	**Armutlu**	**1.44**	**352**	PN	**Pg**	**05 59 16.9**	**+0.6**
ARMT	**Armutlu**	**1.44**	**352**	*i* Pn	**Pg**	**05 59 17.0**	**+0.6**
DNZL	**Cakiroluk**	**1.44**	**182**	P	**Pg**	**05 59 16.5**	**0.0**
DNZL				S	**Sg**	**05 59 36.6**	**+1.4**
DNZL	**Cakiroluk**	**1.44**	**182**	*i* P	**Pg**	**05 59 16.5**	**0.0**
DNZL				*i* S	**Sg**	**05 59 36.6**	**+1.4**
GPA	**Golpazari**	**1.48**	**38**	PN	**Pg**	**05 59 17.3**	**+0.2**
AYDB	**Zeytinkoy-Aydi**	**1.53**	**219**	PN	**Pg**	**05 59 18.3**	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**1.53**	**219**	*i* Pn	**Pg**	**05 59 18.3**	**+0.3**
EDC	**Edincik**	**1.55**	**322**	PN	**Pg**	**05 59 18.7**	**+0.3**
EDC	**Edincik**	**1.55**	**322**	*i* Pn	**Pg**	**05 59 18.7**	**+0.3**
GULT	**Gulveren**	**1.69**	**39**	PN	**Pb**	**05 59 20.2**	**-0.3**
ISP	**Isparta**	**1.71**	**139**	PN	**Pb**	**05 59 20.5**	**-0.4**
ISP	**Isparta**	**1.71**	**139**	*i* Pn	**Pb**	**05 59 20.5**	**-0.4**
DKL	**Dikili**	**1.72**	**269**	PN	**Pg**	**05 59 21.1**	**-0.6**
DKL	**Dikili**	**1.72**	**269**	*i* Pn	**Pg**	**05 59 21.1**	**-0.6**
HRT	**Hereke**	**1.74**	**14**	PN	**Pb**	**05 59 21.0**	**-0.3**
HRT	**Hereke**	**1.74**	**14**	*i* Pn	**Pb**	**05 59 21.0**	**-0.3**
SPNC	**Sapanca-Adapaz**	**1.80**	**30**	PN	**Pb**	**05 59 21.9**	**-0.5**
SPNC	**Sapanca-Adapaz**	**1.80**	**30**	*i* Pn	**Pb**	**05 59 21.9**	**-0.5**
MRMT	**Marmara Adasi**	**1.88**	**322**	PN	**Pb**	**05 59 23.9**	**+0.2**
MRMT	**Marmara Adasi**	**1.88**	**322**	*i* Pn	**Pb**	**05 59 23.9**	**+0.2**
SVRH	**Sivrihisar-ESK**	**1.90**	**80**	PN	**Pb**	**05 59 23.0**	**-1.1**
SVRH	**Sivrihisar-ESK**	**1.90**	**80**	*i* Pn	**Pb**	**05 59 23.0**	**-1.1**
ISK	**Istanbul-Kandi**	**1.93**	**359**	PN	**Pb**	**05 59 23.6**	**-0.9**
ISK	**Istanbul-Kandi**	**1.93**	**359**	*i* Pn	**Pb**	**05 59 23.6**	**-0.9**
GLHS	**Glhisar (BURDU**	**2.00**	**171**	PN	**Pb**	**05 59 24.8**	**-1.0**
GLHS	**Glhisar (BURDU**	**2.00**	**171**	*i* Pn	**Pb**	**05 59 24.8**	**-1.0**
SILT	**Sile**	**2.06**	**11**	PN	**Pb**	**05 59 25.4**	**-1.2**
SILT	**Sile**	**2.06**	**11**	*i* Pn	**Pb**	**05 59 25.5**	**-1.2**
BGKT	**Bogazkoy**	**2.06**	**353**	PN	**Pb**	**05 59 25.7**	**-1.1**
BGKT	**Bogazkoy**	**2.06**	**353**	*i* Pn	**Pb**	**05 59 25.7**	**-1.1**
YER	**Yerkesik**	**2.10**	**198**	PN	**Pb**	**05 59 27.0**	**-0.5**
YER	**Yerkesik**	**2.10**	**198**	*i* Pn	**Pb**	**05 59 27.0**	**-0.5**
KLYT	**Kilyos**	**2.12**	**359**	PN	**Pn**	**05 59 25.8**	**+0.8**
KLYT	**Kilyos**	**2.12**	**359**	*i* Pn	**Pn**	**05 59 25.8**	**+0.8**
**CT

YUK					A	A	06 16 39.7		
	560nm,0.2s								
SHO	**Shikotan**	**1.54**	**30**	*e*P		**Pn**	**06 16 20.8**	**+0.1**	
SHO				AMB		AMB	06 16 23.9		
	110nm,0.2s								
SHO				*i* S		**Sn**	**06 16 38.6**	**-1.0**	
SHO				A		A	06 16 39.1		
	80nm,0.3s								
SHO				A		A	06 16 39.1		
	160nm,0.3s								
JAR	**Ashorobuto**	**1.65**	**298**	P		**Pn**	**06 16 22.4**	**+0.2**	
JAR				*e*S		**Sn**	**06 16 41.7**	**-0.6**	
JCH	**Churui**	**1.78**	**273**	*e*S		**Sn**	**06 16 44.8**	**-0.6**	
JTKR	**Abashiri--Toko**	**1.97**	**317**	P		**Pn**	**06 16 27.5**	**+1.0**	
KUR	**Kuril'sk**	**3.08**	**29**	*e*P		Pn	06 16 26.8	-15	
KUR				AMB		AMB	06 16 27.4		
	100nm,0.2s								

*ISCJB **30** 06:20:32.4±0.6, 39°.20N±0°.04×28°.94E±0°.05, h8km±7km, Error ellipse: s-maj=7.6km s-min=5.9km az=155.0*
*CSEM **30** 06:20:32.2±0.2, 39°.18N×28°.93E, h10km, ML2.2, Error ellipse: s-maj=4.3km s-min=4.0km az=3.0*
*DDA **30** 06:20:32.9, 39°.07N×28°.99E, h7km, Ml2.2*
*ISK **30** 06:20:34.4, 39°.30N×29°.02E, h20km, MD2.6*
ISC 30 06:20:32.5±1.0, 39°.18N±0°.04×28°.95E±0°.03, h13km±11km, n20, σ0s31/30, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.23**	**234**	P	**Pg**	**06 20 37.7**	**+0.2**
DEMI				S	**Sg**	**06 20 40.8**	**-0.1**
DEMI	**Demirci**	**0.23**	**234**	*i* P	**Pg**	**06 20 37.7**	**+0.2**
DEMI				*i* S	**Sg**	**06 20 40.9**	**-0.1**
GDZ	**Gediz**	**0.42**	**102**	P	**Pg**	**06 20 40.8**	**-0.1**
GDZ				S	**Sg**	**06 20 46.3**	**-0.4**
GDZ	**Gediz**	**0.42**	**102**	*i* P	**Pg**	**06 20 40.9**	**-0.1**
GDZ				*i* S	**Sg**	**06 20 46.3**	**-0.4**
TVSB	**Tavsanli**	**0.48**	**55**	*e*PG	**Pb**	**06 20 42.6**	**-0.3**
TVSB				*e*SG	**Sg**	**06 20 48.7**	**+0.2**
TVSB	**Tavsanli**	**0.48**	**55**	*e*Pg	**Pb**	**06 20 42.6**	**-0.3**
TVSB				*e*Sg	**Sg**	**06 20 48.7**	**+0.2**
ORLT	**Orhaneli**	**0.87**	**357**	*e*PG	**Pg**	**06 20 49.5**	**+0.1**
ORLT				*e*SG	**Sg**	**06 21 00.4**	**-0.4**
ORLT	**Orhaneli**	**0.87**	**357**	*e*Pg	**Pg**	**06 20 49.5**	**+0.1**
ORLT				*e*Sg	**Sg**	**06 21 00.4**	**-0.4**
IZI	**Iznik**	**1.23**	**19**	*e*PN	**Pn**	**06 20 55.1**	**-0.3**
IZI	**Iznik**	**1.23**	**19**	*e*Pn	**Pn**	**06 20 55.1**	**-0.3**
CAVI	**Cavuskoy**	**1.23**	**34**	*e*PN	**Pn**	**06 20 55.3**	**-0.2**
CAVI	**Cavuskoy**	**1.23**	**34**	*e*Pn	**Pn**	**06 20 55.3**	**-0.2**
BORA	**Eskisehir**	**1.36**	**58**	P	**Pb**	**06 20 58.0**	**+0.2**
BORA				S	**Sg**	**06 21 16.7**	**+0.4**
BORA	**Eskisehir**	**1.36**	**58**	*i* P	**Pb**	**06 20 58.0**	**+0.2**
BORA				*i* S	**Sg**	**06 21 16.7**	**+0.4**
ARMT	**Armutlu**	**1.39**	**357**	*e*PN	**Pn**	**06 20 57.5**	**-0.1**
ARMT	**Armutlu**	**1.39**	**357**	*e*Pn	**Pn**	**06 20 57.5**	**-0.1**
ADVT	**Abdulvahap**	**1.39**	**26**	*e*PN	**Pn**	**06 20 57.5**	**-0.1**
ADVT	**Abdulvahap**	**1.39**	**26**	*e*Pn	**Pn**	**06 20 57.5**	**-0.1**
GULT	**Gulveren**	**1.74**	**43**	*e*PN	**Pn**	**06 21 03.1**	**+0.7**
GULT	**Gulveren**	**1.74**	**43**	*e*Pn	**Pn**	**06 21 03.1**	**+0.7**

*ISCJB **30** 06:22:21.8±0.5, 39°.14N±0°.03×29°.04E±0°.04, h10km±6km, Error ellipse: s-maj=6.1km s-min=4.5km az=28.9*
*ISK **30** 06:22:21.1, 39°.15N×28°.99E, h6km, MD2.6*
*CSEM **30** 06:22:21.9±0.1, 39°.14N×29°.04E, h10km, ML2.6, Error ellipse: s-maj=3.5km s-min=2.4km az=105.0*
*DDA **30** 06:22:22.4, 39°.10N×29°.07E, h7km, Ml2.6*
ISC 30 06:22:21.6±1.0, 39°.14N±0°.03×29°.05E±0°.03, h17km±12km, n18, σ0s15/30, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**250**	P	**Pb**	**06 22 28.4**	**+0.2**
DEMI				S	**Sb**	**06 22 32.5**	**-0.1**
DEMI	**Demirci**	**0.28**	**250**	*i* P	**Pb**	**06 22 28.4**	**+0.2**
DEMI				*i* S	**Sb**	**06 22 32.5**	**-0.1**
GDZ	**Gediz**	**0.34**	**98**	P	**Pb**	**06 22 29.1**	**-0.1**
GDZ				S	**Sg**	**06 22 33.7**	**0.0**
GDZ	**Gediz**	**0.34**	**98**	*i* P	**Pb**	**06 22 29.1**	**-0.1**
GDZ				*i* S	**Sg**	**06 22 33.7**	**0.0**
TVSB	**Tavsanli**	**0.44**	**46**	*e*PG	**Pb**	**06 22 31.0**	**0.0**
TVSB				*e*SG	**Sb**	**06 22 37.5**	**+0.1**
TVSB	**Tavsanli**	**0.44**	**46**	*e*Pg	**Pb**	**06 22 31.0**	**0.0**
TVSB				*e*Sg	**Sb**	**06 22 37.5**	**+0.1**
KULA	**Kula-Manisa**	**0.69**	**206**	*e*PG	**Pg**	**06 22 35.0**	**-0.2**
KULA				*e*SG	**Sg**	**06 22 44.5**	**0.0**
KULA	**Kula-Manisa**	**0.69**	**206**	*e*Pg	**Pg**	**06 22 35.0**	**-0.2**
KULA				*e*Sg	**Sg**	**06 22 44.5**	**0.0**
KHAL	**Karahalli**	**0.84**	**156**	P	**Pg**	**06 22 38.2**	**+0.2**
KHAL				S	**Sg**	**06 22 49.1**	**0.0**
KHAL	**Karahalli**	**0.84**	**156**	*i* P	**Pg**	**06 22 38.1**	**+0.2**
KHAL				*i* S	**Sg**	**06 22 49.1**	**0.0**
ORLT	**Orhaneli**	**0.91**	**352**	*e*PG	**Pb**	**06 22 38.8**	**-0.2**
ORLT				*e*SG	**Sg**	**06 22 51.6**	**+0.2**
ORLT	**Orhaneli**	**0.91**	**352**	*e*Pg	**Pb**	**06 22 38.8**	**-0.2**
ORLT				*e*Sg	**Sg**	**06 22 51.6**	**+0.2**
CAVI	**Cavuskoy**	**1.23**	**30**	*e*PN	**Pg**	**06 22 45.2**	**0.0**
CAVI	**Cavuskoy**	**1.23**	**30**	*e*Pn	**Pg**	**06 22 45.2**	**0.0**
ARMT	**Armutlu**	**1.43**	**354**	*e*PN	**Pb**	**06 22 47.9**	**0.0**
ARMT	**Armutlu**	**1.43**	**354**	*e*Pn	**Pb**	**06 22 47.9**	**0.0**
GULT	**Gulveren**	**1.71**	**41**	*e*PN	**Pb**	**06 22 52.8**	**+0.1**
GULT	**Gulveren**	**1.71**	**41**	*e*Pn	**Pb**	**06 22 52.8**	**+0.1**

IDC 30 06:27:05.4±1.6, 5°.79S×123°.20E, h0km, mb3.3/2, mb1 3.9/4, mb1mx3.6/42, mbtmp3.6/4, ML4.0/1, Error ellipse: s-maj=132.0km s-min=24.3km az=62.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**12.47**	**169**	Pn	Pn	06 30 03.7	-0.5
WRA	**Warramunga Arr**	**17.76**	**143**	P	Pn	06 31 13.2	-1.0
	0.5nm,0.3s,baz=316,slow=13,SNR=32						
ASAR	**Alice Springs**	**20.55**	**151**	P	P	06 31 46.5	+0.8
	0.8nm,0.6s,baz=329,slow=12,SNR=9.6						
MKAR	**Makanchi Array**	**63.65**	**330**	P	P	06 37 38.4	0.0
	0.2nm,0.5s,baz=146,slow=8.9,SNR=3.2						

*ISK **30** 06:32:10.9, 38°.35N×28°.08E, h6km, ML3.1*
*ISCJB **30** 06:32:11.1±0.5, 38°.37N±0°.02×28°.06E±0°.03, h8km±4km, Error ellipse: s-maj=3.7km s-min=2.9km az=9.7*
*DDA **30** 06:32:11.0, 38°.39N×28°.12E, h7km, Ml3.3*
*CSEM **30** 06:32:11.2±0.1, 38°.36N×28°.07E, h5km, ML3.1, Error ellipse: s-maj=2.0km s-min=1.7km az=95.0*
*THE **30** 06:32:12.3, 38°.38N×28°.14E, h15km±5km, ML3.0/6, Error ellipse: s-maj=6.1km s-min=1.4km az=74.0*
ISC 30 06:32:11.0±1.0, 38°.36N±0°.02×28°.08E±0°.02, h9km±9km, n84, σ0s71/113, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AYDB	**Zeytinkoy-Aydi**	**0.44**	**199**	*e*PG	**Pg**	**06 32 19.7**	**0.0**
AYDB				*e*SG	**Sg**	**06 32 26.1**	**+0.7**
AYDB	**Zeytinkoy-Aydi**	**0.44**	**199**	*e*Pg	**Pg**	**06 32 19.7**	**0.0**
AYDB				*e*Sg	**Sg**	**06 32 26.1**	**+0.7**
KULA	**Kula-Manisa**	**0.48**	**71**	*e*PG	**Pg**	**06 32 20.6**	**+0.1**
KULA	**Kula-Manisa**	**0.48**	**71**	P	**Pg**	**06 32 20.3**	**-0.2**
KULA				S	**Sg**	**06 32 26.4**	**-0.5**
KULA	**Kula-Manisa**	**0.48**	**71**	P	**Pg**	**06 32 20.3**	**-0.2**
KULA	**Kula-Manisa**	**0.48**	**71**	*e*Pg	**Pg**	**06 32 20.6**	**+0.1**
KULA				S	**Sg**	**06 32 26.4**	**-0.5**
AKHS	**Akhisar**	**0.56**	**338**	P	**Pg**	**06 32 22.0**	**+0.1**
AKHS				S	**Sg**	**06 32 29.5**	**+0.3**
AKHS	**Akhisar**	**0.56**	**338**	*i* P	**Pg**	**06 32 22.0**	**+0.1**
AKHS				*i* S	**Sg**	**06 32 29.4**	**+0.3**
AKS	**Akhisar**	**0.56**	**338**	*e*PG	**Pg**	**06 32 22.4**	**+0.5**
AKS	**Akhisar**	**0.56**	**338**	*e*Pg	**Pg**	**06 32 22.4**	**+0.5**
AYDN	**Tasoluk**	**0.72**	**193**	P	**Pg**	**06 32 25.0**	**+0.1**
AYDN				S	**Sb**	**06 32 35.8**	**+0.1**
AYDN	**Tasoluk**	**0.72**	**193**	*i* P	**Pg**	**06 32 25.0**	**+0.1**
AYDN				*i* S	**Sb**	**06 32 35.8**	**+0.1**
DEMI	**Demirci**	**0.84**	**36**	P	**Pg**	**06 32 27.0**	**-0.3**
DEMI				S	**Sg**	**06 32 37.5**	**-0.9**
DEMI	**Demirci**	**0.84**	**36**	*i* P	**Pg**	**06 32 27.0**	**-0.3**
DEMI				*i* S	**Sg**	**06 32 37.5**	**-0.9**
GCAM	**G?zelcaml?**	**0.94**	**225**	P	**Pb**	**06 32 29.8**	**+0.4**
GCAM				S	**Sg**	**06 32 40.9**	**-0.4**
GCAM	**G?zelcaml?**	**0.94**	**225**	*i* P	**Pb**	**06 32 29.8**	**+0.4**
GCAM				*i* S	**Sg**	**06 32 40.9**	**-0.4**
DENT	**Denizli**	**0.97**	**128**	*e*PG	**Pb**	**06 32 30.0**	**0.0**
DENT	**Denizli**	**0.97**	**128**	*e*Pg	**Pb**	**06 32 30.0**	**0.0**
DGB	**¯zmir**	**0.99**	**252**	*i* P	**Pb**	**06 32 30.5**	**+0.2**
DGB				*i* S	**Sg**	**06 32 42.2**	**-0.8**
DNZL	**Cakiroluk**	**1.02**	**131**	P	**Pb**	**06 32 31.3**	**+0.4**
DNZL	**Cakiroluk**	**1.02**	**131**	*i* P	**Pb**	**06 32 31.3**	**+0.4**
KHAL	**Karahalli**	**1.11**	**89**	P	**Pg**	**06 32 32.2**	**-0.2**
KHAL	**Karahalli**	**1.11**	**89**	*i* P	**Pg**	**06 32 32.2**	**-0.2**
DKL	**Dikili**	**1.16**	**308**	*e*PN	**Pn**	**06 32 33.5**	**+0.1**
DKL	**Dikili**	**1.16**	**308**	*e*Pn	**Pn**	**06 32 33.5**	**+0.1**
URLA	**Izmir**	**1.16**	**270**	P	**Pn**	**06 32 34.1**	**+0.6**
URLA	**Izmir**	**1.16**	**270**	*i* P	**Pn**	**06 32 34.1**	**+0.6**
SMG	**Samos**	**1.18**	**237**	P	**Pb**	**06 32 33.2**	**-0.3**
SMG				S	**Sb**	**06 32 48.6**	**-0.3**
SMG	**Samos**	**1.18**	**237**	P	**Pb**	**06 32 33.2**	**-0.3**
SMG				S	**Sb**	**06 32 48.6**	**-0.3**
YER	**Yerkesik**	**1.24**	**172**	*e*PN	**Pb**	**06 32 34.7**	**+0.1**
YER	**Yerkesik**	**1.24**	**172**	P	**Pn**	**06 32 34.6**	**+0.1**
YER				S	**Sb**	**06 32 50.6**	**0.0**
YER	**Yerkesik**	**1.24**	**172**	P	**Pn**	**06 32 34.6**	**+0.1**
YER				S	**Sb**	**06 32 50.6**	**0.0**
BALB	**Balikesir**	**1.28**	**353**	*e*PN	**Pg**	**06 32 36.4**	**+0.7**
BALB	**Balikesir**	**1.28**	**353**	*e*Pn	**Pg**	**06 32 36.4**	**+0.7**
BODT	**Bodrum**	**1.43**	**205**	*e*PN	**Pn**	**06 32 37.6**	**+0.4**
BODT	**Bodrum**	**1.43**	**205**	P	**Pn**	**06 32 36.8**	**-0.4**
BODT				S	**Sn**	**06 32 55.7**	**-0.4**
BODT	**Bodrum**	**1.43**	**205**	P	**Pn**	**06 32 36.8**	**-0.4**
BODT	**Bodrum**	**1.43**	**205**	*e*Pn	**Pn**	**06 32 37.6**	**+0.4**
BODT				S	**Sn**	**06 32 55.7**	**-0.4**
TVSB	**Tavsanli**	**1.53**	**44**	*e*PN	**Pn**	**06 32 39.4**	**+0.7**
TVSB	**Tavsanli**	**1.53**	**44**	*e*Pn	**Pn**	**06 32 39.4**	**+0.7**
CHOS	**Chios island**	**1.59**	**272**	*e*PN	**Pb**	**06 32 40.7**	**+0.1**
CHOS	**Chios island**	**1.59**	**272**	P	**Pn**	**06 32 39.8**	**+0.4**
CHOS				S	**Sn**	**06 33 00.2**	**+0.1**
CHOS	**Chios island**	**1.59**	**272**	P	**Pn**	**06 32 39.8**	**+0.4**
CHOS	**Chios island**	**1.59**	**272**	*e*Pn	**Pb**	**06 32 40.7**	**+0.1**
CHOS				S	**Sn**	**06 33 00.2**	**+0.1**
DALY	**Dalyan (Mu¨la**	**1.61**	**163**	*e*PN	**Pn**	**06 32 39.9**	**+0.3**
DALY	**Dalyan (Mu¨la**	**1.61**	**163**	*e*Pn	**Pn**	**06 32 39.9**	**+0.3**
GLHS	**Glhisar (BURDU**	**1.65**	**136**	*e*PN	**Pb**	**06 32 41.1**	**-0.5**
GLHS	**Glhisar (BURDU**	**1.65**	**136**	*e*Pn	**Pb**	**06 32 41.1**	**-0.5**
PRK	**Paraskevi**	**1.66**	**303**	P	**Pn**	**06 32 40.7**	**+0.3**
PRK				S	**Sn**	**06 33 01.6**	**-0.2**
PRK	**Paraskevi**	**1.66**	**303**	P	**Pn**	**06 32 40.7**	**+0.3**
PRK				S	**Sn**	**06 33 01.6**	**-0.2**
GONE	**Gonen-Balikesi**	**1.71**	**350**	*e*PN	**Pb**	**06 32 42.1**	**-0.5**
GONE	**Gonen-Balikesi**	**1.71**	**350**	*e*Pn	**Pb**	**06 32 42.1**	**-0.5**
NIS1	**Nisyros Isl.**	**1.90**	**202**	*e*PN	**Pn**	**06 32 44.7**	**+1.1**
NIS1	**Nisyros Isl.**	**1.90**	**202**	*e*Pn	**Pn**	**06 32 44.7**	**+1.1**
FETY	**Fethiye**	**1.90**	**155**	*e*PN	**Pn**	**06 32 44.4**	**+0.8**
FETY	**Fethiye**	**1.90**	**155**	P	**Pb**	**06 32 44.9**	**-1.0**
FETY	**Fethiye**	**1.90**	**155**	*e*Pn	**Pn**	**06 32 44.4**	**+0.8**
FETY	**Fethiye**	**1.90**	**155**	P	**Pb**	**06 32 44.9**	**-1.0**
KCTX	**Karacabey (Bur**	**1.91**	**6**	*e*PN	**Pn**	**06 32 44.7**	**+0.9**
KCTX	**Karacabey (Bur**	**1.91**	**6**	*e*Pn	**Pn**	**06 32 44.7**	**+0.9**
SIGR	**SIGRI**	**1.93**	**297**	P	**Pn**	**06 32 44.1**	**+0.1**
SIGR				S	**Sn**	**06 33 09.3**	**+0.9**
SIGR	**SIGRI**	**1.93**	**297**	P	**Pn**	**06 32 44.1**	**+0.1**
SIGR				S	**Sn**	**06 33 09.3**	**+0.9**
EDC	**Edincik**	**1.99**	**355**	*e*PN	**Pn**	**06 32 46.1**	**+1.3**
EDC	**Edincik**	**1.99**	**355**	*e*Pn	**Pn**	**06 32 46.1**	**+1.3**
EZN	**Ezine**	**2.00**	**318**	*e*PN	**Pb**	**06 32 46.4**	**-1.1**
EZN	**Ezine**	**2.00**	**318**	*e*Pn	**Pb**	**06 32 46.4**	**-1.1**
MDNY	**Mudanya-Bursa**	**2.10**	**17**	*e*PN	**Pn**	**06 32 48.0**	**+1.6**
MDNY	**Mudanya-Bursa**	**2.10**	**17**	*e*Pn	**Pn**	**06 32 48.0**	**+1.6**
ELL	**Elmali**	**2.17**	**137**	*e*PN	**Pn**	**06 32 48.2**	**+0.7**
ELL	**Elmali**	**2.17**	**137**	*e*Pn	**Pn**	**06 32 48.2**	**+0.7**
IZI	**Iznik**	**2.25**	**28**	*e*PN	**Pn**	**06 32 50.2**	**+1.7**
IZI	**Iznik**	**2.25**	**28**	*e*Pn	**Pn**	**06 32 50.2**	**+1.7**
ARMT	**Armutlu**	**2.28**	**15**	*e*PN	**Pn**	**06 32 50.4**	**+1.5**
ARMT	**Armutlu**	**2.28**	**15**	*e*Pn	**Pn**	**06 32 50.4**	**+1.5**
CAVI	**Cavuskoy**	**2.29**	**36**	*e*PN	**Pn**	**06 32 50.5**	**+1.5**
CAVI	**Cavuskoy**	**2.29**	**36**	*e*Pn	**Pn**	**06 32 50.5**	**+1.5**
ADVT	**Abdulvahap**	**2.44**	**31**	*e*PN	**Pn**	**06 32 52.5**	**+1.5**
ADVT	**Abdulvahap**	**2.44**	**31**	*e*Pn	**Pn**	**06 32 52.5**	**+1.5**
GADA	**Gvkgeada**	**2.49**	**318**	P	**Pn**	**06 32 51.7**	**0.0**
GADA	**Gvkgeada**	**2.49**	**318**	P	**Pn**	**06 32 51.7**	**0.0**
SMTH	**Samothraki Isl**	**2.88**	**318**	P	**Pn**	**06 32 57.5**	**+0.3**
SMTH				S	**Sn**	**06 33 30.7**	**-1.3**
SMTH	**Samothraki Isl**	**2.88**	**318**	P	**Pn**	**06 32 57.5**	**+0.3**
SMTH				S	**Sn**	**06 33 30.7**	**-1.3**
ALN	**Alexandroupoli**	**2.98**	**329**	P	**Pn**	**06 32 58.4**	**0.0**
ALN				S	**Sn**	**06 33 33.7**	**-0.5**
ALN	**Alexandroupoli**	**2.98**	**329**	P	**Pn**	**06 32 58.4**	**0.0**
ALN				S	**Sn**	**06 33 33.7**	**-0.5**

*ISK **30** 06:33:10.5, 40°.92N×33°.80E, h6km, MD3.1*
CSEM 30 06:33:10.5±0.5, 40°.92N×33°.80E, h6km, MD3.1, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TOS	**Tosya**	**0.21**	**55**	*e*PG	Pg	06 33 15.8	+1.1
TOS				*e*SG	Sg	06 33 18.7	+1.1
TOS	**Tosya**	**0.21**	**55**	*e*Pg	Pg	06 33 15.8	+1.1
TOS				*e*Sg	Sg	06 33 18.7	+1.2
CANT	**Cankiri**	**0.34**	**203**	*e*PG	Pb	06 33 18.1	-0.8
CANT				*e*SG	Sg	06 33 22.6	+1.1
SAFT	**Safranbolu**	**0.90**	**292**	*e*PG	Pg	06 33 27.9	+0.1
SAFT				*e*SG	Sb	06 33 41.1	+0.4
SAFT	**Safranbolu**	**0.90**	**292**	*e*Pg	Pg	06 33 27.9	+0.2
SAFT				*e*Sg	Sb	06 33 41.2	+0.5
BYBT	**Boyabat**	**0.92**	**53**	*e*PG	Pg	06 33 28.3	+0.2
BYBT	**Boyabat**	**0.92**	**53**	*e*Pg	Pg	06 33 28.3	+0.2
CORM	**Corum**	**0.97**	**139**	*e*PG	Pg	06 33 29.2	0.0
CORM	**Corum**	**0.97**	**139**	*e*Pg	Pg	06 33 29.2	0.0
BZK	**Bozkurt**	**1.06**	**8**	*e*PG	Pb	06 33 31.1	0.0
BZK	**Bozkurt**	**1.06**	**8**	*e*Pg	Pb	06 33 31.2	0.0
DIKM	**Dikmen**	**1.32**	**56**	*e*PN	Pg	06 33 35.9	0.0
DIKM	**Dikmen**	**1.32**	**56**	*e*Pn	Pg	06 33 35.9	0.0
SNOP	**Sinop**	**1.53**	**43**	*e*PN	Pb	06 33 39.3	0.0
SNOP	**Sinop**	**1.53**	**43**	*e*Pn	Pb	06 33 39.3	0.0
AFSR	**Af¨ar-Bala (A**	**1.57**	**201**	*e*PN	Pn	06 33 39.2	+0.3
AFSR	**Af¨ar-Bala (A**	**1.57**	**201**	*e*Pn	Pn	06 33 39.2	+0.2
KVT	**Kavak**	**1.71**	**84**	*e*PN	Pn	06 33 41.4	+0.5
KVT	**Kavak**	**1.71**	**84**	*e*Pn	Pn	06 33 41.4	+0.5
SERE	**Sereflikochisa**	**1.97**	**185**	*e*PN	Pn	06 33 45.5	+0.9
SERE	**Sereflikochisa**	**1.97**	**185**	*e*Pn	Pn	06 33 45.5	+0.9
TOKT	**Tokat**	**2.18**	**105**	*e*PN	Pn	06 33 48.5	+1.2
TOKT	**Tokat**	**2.18**	**105**	*e*Pn	Pn	06 33 48.5	+1.2
CHBY	**Cihanbeyli**	**2.43**	**197**	*e*PN	Pn	06 33 52.1	+1.2
CHBY	**Cihanbeyli**	**2.43**	**197**	*e*Pn	Pn	06 33 52.1	+1.2
BNN	**Bunyan**	**2.59**	**142**	*e*PN	Pn	06 33 54.5	+1.3
BNN	**Bunyan**	**2.59**	**142**	*e*Pn	Pn	06 33 54.5	+1.4
SVSK	**Karacayir**	**2.64**	**111**	*e*PN	Pn	06 33 54.9	+1.3
SVSK	**Karacayir**	**2.64**	**111**	*e*Pn	Pn	06 33 54.9	+1.3
RSDY	**Resadiye-TOKAT**	**2.74**	**100**	*e*PN	Pn	06 33 56.4	+1.4
RSDY	**Resadiye-TOKAT**	**2.74**	**100**	*e*Pn	Pn	06 33 56.4	+1.4

JMA 30 06:34:56.2±0.1, 38°.66N×142°.07E, h43km±1km, M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.52**	**323**	P	Pn	06 35 07.5	+0.1
OFUJ				*e*S	Sn	06 35 15.1	-0.2
JIO	**Ouri**	**0.60**	**250**	P	Pn	06 35 08.2	-0.2
JIO				*e*S	Sn	06 35 16.4	-0.7
JMK	**Ichinoseki**	**0.72**	**294**	P	Pn	06 35 10.1	+0.1
JOM	**Ohasama**	**1.01**	**324**	P	Pn	06 35 14.2	+0.2
JOU	**Okura**	**1.14**	**256**	P	Pn	06 35 16.0	+0.3
JMM	**Marumori**	**1.28**	**232**	P	Pn	06 35 17.4	-0.2
JMM				*e*S	Sn	06 35 32.7	-0.9
JRG	**Rokugo**	**1.34**	**304**	P	Pn	06 35 19.0	+0.6
JYK	**Kaneyama**	**1.36**	**281**	P	Pn	06 35 19.0	+0.3

JMA 30 06:41:51.9±0.1, 38°.35N×141°.94E, h15km±1km, M4.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.48**	**283**	P	Pg	06 42 01.4	0.0
JIO				S	Sg	06 42 07.6	-0.2
OFUJ	**Ofunato**	**0.76**	**344**	P	Pg	06 42 06.4	-0.3
OFUJ				*e*S	Sg	06 42 16.5	-0.2
JMK	**Ichinoseki**	**0.82**	**317**	P	Pg	06 42 07.6	-0.3
JMK				*e*S	Sg	06 42 18.5	-0.3
JOU	**Okura**	**1.00**	**271**	P	Pb	06 42 10.8	-0.2
JOU				*e*S	Sg	06 42 24.3	-0.1
JMM	**Marumori**	**1.03**	**242**	P	Pb	06 42 10.5	-0.8
JMM				*e*S	Sb	06 42 23.8	-0.8
JOM	**Ohasama**	**1.23**	**336**	P	Pn	06 42 14.2	-0.4
JOM				*e*S	Sb	06 42 30.3	-0.2

*ISCJB **30** 06:50:34.9±0.5, 39°.12N±0°.03×29°.11E±0°.03, h3km±6km, Error ellipse: s-maj=4.9km s-min=3.7km az=140.2*
*ISK **30** 06:50:34.4, 39°.12N×29°.12E, h8km, MD2.8*
*DDA **30** 06:50:35.1, 39°.14N×29°.12E, h7km, Ml2.7*
*CSEM **30** 06:50:35.1±0.1, 39°.12N×29°.12E, h8km, ML2.7, Error ellipse: s-maj=2.0km s-min=1.6km az=122.0*
ISC 30 06:50:34.7±1.1, 39°.12N±0°.02×29°.08E±0°.03, h8km±10km, n39, σ0s29/56, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.29**	**256**	P	**Pb**	**06 50 42.0**	**-0.2**
DEMI				S	**Sb**	**06 50 46.8**	**-0.5**
DEMI	**Demirci**	**0.29**	**256**	*i* P	**Pb**	**06 50 42.0**	**-0.2**
DEMI				*i* S	**Sb**	**06 50 46.8**	**-0.5**
GDZ	**Gediz**	**0.32**	**95**	P	**Pg**	**06 50 41.3**	**+0.3**
GDZ				S	**Sg**	**06 50 45.3**	**+0.1**
GDZ	**Gediz**	**0.32**	**95**	*i* P	**Pg**	**06 50 41.3**	**+0.3**
GDZ				*i* S	**Sg**	**06 50 45.3**	**+0.1**
TVSB	**Tavsanli**	**0.45**	**42**	*e*PG	**Pg**	**06 50 43.3**	**-0.1**
TVSB				*e*SG	**Sg**	**06 50 49.2**	**-0.1**
TVSB	**Tavsanli**	**0.45**	**42**	*e*Pg	**Pg**	**06 50 43.3**	**-0.1**
TVSB				*e*Sg	**Sg**	**06 50 49.2**	**-0.1**
KULA	**Kula-Manisa**	**0.68**	**209**	*e*PG	**Pb**	**06 50 48.8**	**-0.1**
KULA				*e*SG	**Sb**	**06 50 58.1**	**-0.5**
KULA	**Kula-Manisa**	**0.68**	**209**	*e*Pg	**Pb**	**06 50 48.8**	**-0.1**
KULA				*e*Sg	**Sb**	**06 50 58.1**	**-0.5**
KHAL	**Karahalli**	**0.81**	**156**	P	**Pg**	**06 50 50.6**	**+0.3**
KHAL				S	**Sb**	**06 51 01.7**	**-0.6**
KHAL	**Karahalli**	**0.81**	**156**	*i* P	**Pg**	**06 50 50.6**	**+0.3**
KHAL				*i* S	**Sb**	**06 51 01.7**	**-0.6**
KHL	**Karahalli**	**0.86**	**156**	*e*PG	**Pg**	**06 50 51.0**	**-0.3**
KHL	**Karahalli**	**0.86**	**156**	*e*Pg	**Pg**	**06 50 51.0**	**-0.3**
ORLT	**Orhaneli**	**0.94**	**352**	*e*PG	**Pg**	**06 50 52.9**	**+0.1**
ORLT				*e*SG	**Sb**	**06 51 06.0**	**0.0**
ORLT	**Orhaneli**	**0.94**	**352**	*e*Pg	**Pg**	**06 50 52.9**	**+0.1**
ORLT				*e*Sg	**Sb**	**06 51 06.0**	**0.0**
AKHS	**Akhisar**	**1.01**	**257**	P	**Pn**	**06 50 55.6**	**+0.4**
AKHS				S	**Sn**	**06 51 10.1**	**+0.4**
AKHS	**Akhisar**	**1.01**	**257**	*i* P	**Pn**	**06 50 55.6**	**+0.4**
AKHS				*i* S	**Sn**	**06 51 10.1**	**+0.4**
AKS	**Akhisar**	**1.01**	**257

KULA				*e*SG	**Sg**	**06 56 59.3**	**+0.5**
KULA	**Kula-Manisa**	**0.65**	**204**	*e*Pg	**Pg**	**06 56 50.5**	**+0.2**
KULA				*e*Sg	**Sg**	**06 56 59.3**	**+0.5**
KHAL	**Karahalli**	**0.84**	**152**	P	**Pg**	**06 56 53.9**	**+0.2**
KHAL				S	**Sb**	**06 57 05.4**	**-0.3**
KHAL	**Karahalli**	**0.84**	**152**	*i* P	**Pg**	**06 56 53.9**	**+0.2**
KHAL				*i* S	**Sb**	**06 57 05.4**	**-0.3**
KHL	**Karahalli**	**0.89**	**152**	*e*PG	**Pb**	**06 56 54.3**	**-0.9**
KHL				*e*SG	**Sg**	**06 57 07.1**	**+0.8**
KHL	**Karahalli**	**0.89**	**152**	*e*Pg	**Pb**	**06 56 54.3**	**-0.9**
KHL				*e*Sg	**Sg**	**06 57 07.1**	**+0.8**
ORLT	**Orhaneli**	**0.94**	**355**	*e*PG	**Pb**	**06 56 55.2**	**-0.8**
ORLT				*e*SG	**Sb**	**06 57 08.6**	**+0.1**
ORLT	**Orhaneli**	**0.94**	**355**	*e*Pg	**Pb**	**06 56 55.2**	**-0.8**
ORLT				*e*Sg	**Sb**	**06 57 08.6**	**+0.1**
AKHS	**Akhisar**	**0.95**	**256**	P	**Pb**	**06 56 56.0**	**-0.2**
AKHS				S	**Sb**	**06 57 08.5**	**-0.4**
AKHS	**Akhisar**	**0.95**	**256**	*i* P	**Pb**	**06 56 56.0**	**-0.2**
AKHS				*i* S	**Sb**	**06 57 08.5**	**-0.4**
AKS	**Akhisar**	**0.95**	**256**	*e*PG	**Pb**	**06 56 56.0**	**-0.2**
AKS	**Akhisar**	**0.95**	**256**	*e*Pg	**Pb**	**06 56 56.0**	**-0.2**
BALB	**Balikesir**	**1.01**	**302**	*e*PG	**Pb**	**06 56 57.3**	**0.0**
BALB	**Balikesir**	**1.01**	**302**	*e*Pg	**Pb**	**06 56 57.3**	**0.0**
IGD	**Bursa**	**1.16**	**8**	*i* P	**Pn**	**06 56 58.7**	**-1.3**
IGD				*i* S	**Sb**	**06 57 13.5**	**-1.4**
KCTX	**Karacabey (Bur**	**1.25**	**337**	*e*PN	**Pb**	**06 57 01.7**	**+0.3**
KCTX	**Karacabey (Bur**	**1.25**	**337**	*e*Pn	**Pb**	**06 57 01.7**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.26**	**356**	*e*PN	**Pn**	**06 57 00.9**	**-0.4**
MDNY	**Mudanya-Bursa**	**1.26**	**356**	*e*Pn	**Pn**	**06 57 00.9**	**-0.4**
CAVI	**Cavuskoy**	**1.27**	**31**	*e*PN	**Pb**	**06 57 01.6**	**0.0**
CAVI	**Cavuskoy**	**1.27**	**31**	*e*Pn	**Pb**	**06 57 01.6**	**0.0**
IZI	**Iznik**	**1.28**	**17**	*e*PN	**Pb**	**06 57 01.9**	**+0.1**
IZI	**Iznik**	**1.28**	**17**	*e*Pn	**Pb**	**06 57 01.9**	**+0.1**
GEMT	**Gemlik**	**1.33**	**6**	*e*PN	**Pb**	**06 57 02.9**	**+0.2**
GEMT	**Gemlik**	**1.33**	**6**	*e*Pn	**Pb**	**06 57 02.9**	**+0.2**
BORA	**Eskisehir**	**1.36**	**55**	P	**Pn**	**06 57 02.0**	**-0.8**
BORA				S	**Sg**	**06 57 21.8**	**+0.3**
BORA	**Eskisehir**	**1.36**	**55**	*i* P	**Pn**	**06 57 02.0**	**-0.8**
BORA				*i* S	**Sg**	**06 57 21.8**	**+0.3**
GONE	**Gonen-Balikesi**	**1.38**	**313**	*e*PN	**Pb**	**06 57 03.7**	**+0.2**
GONE	**Gonen-Balikesi**	**1.38**	**313**	*e*Pn	**Pb**	**06 57 03.7**	**+0.2**
DNZL	**Cakiroluk**	**1.42**	**178**	P	**Pb**	**06 57 04.1**	**-0.2**
DNZL	**Cakiroluk**	**1.42**	**178**	*i* P	**Pb**	**06 57 04.1**	**-0.2**
ADVT	**Abdulvahap**	**1.44**	**23**	*e*PN	**Pb**	**06 57 04.5**	**0.0**
ADVT	**Abdulvahap**	**1.44**	**23**	*e*Pn	**Pb**	**06 57 04.5**	**0.0**
ARMT	**Armutlu**	**1.46**	**356**	*e*PN	**Pb**	**06 57 04.9**	**+0.1**
ARMT	**Armutlu**	**1.46**	**356**	*e*Pn	**Pb**	**06 57 04.9**	**+0.1**
EDC	**Edincik**	**1.51**	**325**	*e*PN	**Pb**	**06 57 05.6**	**-0.2**
EDC	**Edincik**	**1.51**	**325**	*e*Pn	**Pb**	**06 57 05.6**	**-0.2**
GPA	**Golpazari**	**1.55**	**40**	*e*PN	**Pb**	**06 57 05.8**	**-0.7**
GPA	**Golpazari**	**1.55**	**40**	*e*Pn	**Pb**	**06 57 05.8**	**-0.7**
GULT	**Gulveren**	**1.76**	**41**	*e*PN	**Pb**	**06 57 09.3**	**-0.8**
GULT	**Gulveren**	**1.76**	**41**	*e*Pn	**Pb**	**06 57 09.3**	**-0.8**
HRT	**Hereke**	**1.78**	**17**	*e*PN	**Pn**	**06 57 09.3**	**+0.7**
HRT	**Hereke**	**1.78**	**17**	*e*Pn	**Pn**	**06 57 09.3**	**+0.7**
SPNC	**Sapanca-Adapaz**	**1.87**	**32**	*e*PN	**Pn**	**06 57 10.2**	**+0.5**
SPNC	**Sapanca-Adapaz**	**1.87**	**32**	*e*Pn	**Pn**	**06 57 10.2**	**+0.5**
ISK	**Istanbul-Kandi**	**1.95**	**1**	*e*PN	**Pn**	**06 57 11.8**	**+1.0**
ISK	**Istanbul-Kandi**	**1.95**	**1**	*e*Pn	**Pn**	**06 57 11.8**	**+1.0**
SVRH	**Sivrihisar-ESK**	**1.99**	**80**	*e*PN	**Pn**	**06 57 11.8**	**+0.4**
SVRH	**Sivrihisar-ESK**	**1.99**	**80**	*e*Pn	**Pn**	**06 57 11.8**	**+0.4**
SILT	**Sile**	**2.10**	**13**	*e*PN	**Pn**	**06 57 13.9**	**+1.1**
SILT	**Sile**	**2.10**	**13**	*e*Pn	**Pn**	**06 57 13.9**	**+1.1**

JMA 30 06:57:45.3±0.2, 38°.84N×142°.44E, h31km±3km, M3.6, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.65**	**292**	P	Pb	06 57 58.0	-0.2
OFUJ				*e*S	Sb	06 58 06.9	-0.1
JIO	**Ouri**	**0.94**	**246**	*e*S	Sn	06 58 13.1	-1.5
JMK	**Ichinoseki**	**0.96**	**277**	P	Pn	06 58 02.7	+0.1
JMK				*e*S	Sn	06 58 14.8	-0.4
JOM	**Ohasama**	**1.09**	**306**	P	Pn	06 58 04.8	+0.3
JOM				*e*S	Sn	06 58 18.8	+0.2
JRG	**Rokugo**	**1.51**	**292**	P	Pb	06 58 11.7	-1.0
JRG				*e*S	Sb	06 58 31.4	-0.1
JYK	**Kaneyama**	**1.63**	**273**	P	Pb	06 58 13.9	-0.8

IDC 30 07:18:28.1±6.3, 21°.46S×170°.89E, h0km, mb4.3/2, mb1 4.6/2, mb1mx3.8/23, mbtmp4.3/2, Error ellipse: s-maj=250.3km s-min=95.1km az=159.0, Southeast of Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ASAR	**Alice Springs**	**34.16**	**259**	P	P	07 25 15.7	+0.4
	5.8nm,0.7s,baz=88,slow=8.7,SNR=56						
WRA	**Warramunga Arr**	**34.18**	**266**	P	P	07 25 14.8	-0.5
	1.0nm,0.4s,baz=98,slow=5.9,SNR=24						
AKASG	**Malin Array Be**	**138.19**	**324**	PKP	PKPdf	07 37 54.7	-0.3
	0.9nm,0.6s,baz=79,slow=2.4,SNR=4.3						

JMA 30 07:20:25.0±0.1, 38°.19N×144°.36E, h12km, M3.6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.29**	**294**	P	Pn	07 21 03.5	+0.9
OFUJ				*e*S	Sn	07 21 32.2	+1.6
MIYJ	**Miyakonagasawa**	**2.42**	**306**	P	Pn	07 21 05.0	+0.6
MIYJ				*e*S	Sn	07 21 34.9	+1.0
JMK	**Ichinoseki**	**2.58**	**288**	P	Pn	07 21 07.8	+1.3
JOM	**Ohasama**	**2.72**	**299**	P	Pn	07 21 10.0	+1.5
JOM				*e*S	Sn	07 21 43.3	+2.1
JOU	**Okura**	**2.91**	**275**	*e*S	Sn	07 21 47.8	+1.7
JRG	**Rokugo**	**3.15**	**294**	P	Pn	07 21 16.4	+2.0
JYK	**Kaneyama**	**3.22**	**284**	P	Pn	07 21 17.1	+1.7
JFT	**Otama**	**3.25**	**259**	P	Pn	07 21 17.1	+1.2
JFT				*e*S	Sn	07 21 55.4	+0.9

*CSEM **30** 07:33:29.7±0.1, 39°.11N×29°.04E, h5km, ML3.0, Error ellipse: s-maj=2.0km s-min=1.8km az=119.0*
*ISK **30** 07:33:29.2, 39°.11N×29°.03E, h7km, MD2.6*
*DDA **30** 07:33:29.6, 39°.09N×29°.05E, h7km, Ml3.0*
ISC 30 07:33:29.4±0.9, 39°.10N±0°.02×29°.04E±0°.02, h13km±7km, n42, σ0s44/56, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**258**	P	**Pg**	**07 33 35.1**	**+0.1**
DEMI				S	**Sg**	**07 33 38.8**	**+0.1**
DEMI	**Demirci**	**0.26**	**258**	*i* P	**Pg**	**07 33 35.1**	**+0.1**
DEMI				*i* S	**Sg**	**07 33 38.8**	**+0.1**
GDZ	**Gediz**	**0.34**	**91**	P	**Pg**	**07 33 36.5**	**+0.1**
GDZ				S	**Sg**	**07 33 41.2**	**+0.1**
GDZ	**Gediz**	**0.34**	**91**	*i* P	**Pg**	**07 33 36.5**	**+0.1**
GDZ				*i* S	**Sg**	**07 33 41.2**	**+0.1**
TVSB	**Tavsanli**	**0.48**	**42**	PG	**Pg**	**07 33 38.5**	**-0.5**
TVSB	**Tavsanli**	**0.48**	**42**	*i* Pg	**Pg**	**07 33 38.5**	**-0.5**
KULA	**Kula-Manisa**	**0.65**	**207**	PG	**Pg**	**07 33 42.2**	**0.0**
KULA	**Kula-Manisa**	**0.65**	**207**	*i* Pg	**Pg**	**07 33 42.2**	**0.0**
KHAL	**Karahalli**	**0.81**	**154**	P	**Pn**	**07 33 46.3**	**-0.3**
KHAL				S	**Sb**	**07 33 56.2**	**+0.1**
KHAL	**Karahalli**	**0.81**	**154**	*i* P	**Pn**	**07 33 46.3**	**-0.3**
KHAL				*i* S	**Sb**	**07 33 56.2**	**+0.1**
KHL	**Karahalli**	**0.86**	**154**	*e*PG	**Pn**	**07 33 47.1**	**-0.1**
KHL	**Karahalli**	**0.86**	**154**	*e*Pg	**Pn**	**07 33 47.1**	**-0.1**
ORLT	**Orhaneli**	**0.96**	**353**	*e*PG	**Pb**	**07 33 47.8**	**-0.1**
ORLT				*e*SG	**Sg**	**07 34 00.6**	**+0.2**
ORLT	**Orhaneli**	**0.96**	**353**	*e*Pg	**Pb**	**07 33 47.8**	**-0.1**
ORLT				*e*Sg	**Sg**	**07 34 00.6**	**+0.2**
AKHS	**Akhisar**	**0.98**	**258**	P	**Pg**	**07 33 48.5**	**+0.1**
AKHS				S	**Sn**	**07 34 03.2**	**+0.5**
AKHS	**Akhisar**	**0.98**	**258**	*i* P	**Pg**	**07 33 48.5**	**+0.1**
AKHS				*i* S	**Sn**	**07 34 03.2**	**+0.5**
AKS	**Akhisar**	**0.98**	**258**	*e*PG	**Pb**	**07 33 48.2**	**-0.1**
AKS	**Akhisar**	**0.98**	**258**	*e*Pg	**Pb**	**07 33 48.2**	**-0.1**
BALB	**Balikesir**	**1.05**	**301**	*e*PG	**Pn**	**07 33 49.6**	**-0.2**
BALB				*e*SG	**Sn**	**07 34 04.3**	**-0.1**
BALB	**Balikesir**	**1.05**	**301**	*e*Pg	**Pn**	**07 33 49.6**	**-0.2**
BALB				*e*Sg	**Sn**	**07 34 04.3**	**-0.1**
CAVI	**Cavuskoy**	**1.27**	**29**	*e*PN	**Pg**	**07 33 53.8**	**0.0**
CAVI				*e*SN	**Sg**	**07 34 12.0**	**+1.7**
CAVI	**Cavuskoy**	**1.27**	**29**	*e*Pn	**Pg**	**07 33 53.8**	**0.0**
CAVI				*e*Sn	**Sg**	**07 34 12.0**	**+1.7**
BALY	**Balya**	**1.28**	**301**	S	**Sg**	**07 34 10.5**	**-0.2**
BALY	**Balya**	**1.28**	**301**	*i* S	**Sg**	**07 34 10.5**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.28**	**355**	*e*PN	**Pg**	**07 33 54.2**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.28**	**355**	*e*Pn	**Pg**	**07 33 54.2**	**+0.2**
IZI	**Iznik**	**1.28**	**15**	*e*PN	**Pg**	**07 33 53.8**	**-0.4**
IZI	**Iznik**	**1.28**	**15**	*e*Pn	**Pg**	**07 33 53.8**	**-0.4**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*PN	**Pg**	**07 33 54.2**	**+0.1**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*Pn	**Pg**	**07 33 54.2**	**+0.1**
ADVT	**Abdulvahap**	**1.44**	**22**	*e*PN	**Pb**	**07 33 56.2**	**+0.1**
ADVT	**Abdulvahap**	**1.44**	**22**	*e*Pn	**Pb**	**07 33 56.2**	**+0.1**
ARMT	**Armutlu**	**1.48**	**355**	*e*PN	**Pb**	**07 33 56.6**	**0.0**
ARMT	**Armutlu**	**1.48**	**355**	*e*Pn	**Pb**	**07 33 56.7**	**0.0**
GPA	**Golpazari**	**1.54**	**39**	*e*PN	**Pb**	**07 33 57.5**	**-0.3**
GPA	**Golpazari**	**1.54**	**39**	*e*Pn	**Pb**	**07 33 57.5**	**-0.3**
EDC	**Edincik**	**1.55**	**324**	*e*PN	**Pb**	**07 33 57.3**	**-0.6**
EDC	**Edincik**	**1.55**	**324**	*e*Pn	**Pb**	**07 33 57.3**	**-0.6**
GULT	**Gulveren**	**1.75**	**40**	*e*PN	**Pb**	**07 34 00.8**	**-0.7**
GULT	**Gulveren**	**1.75**	**40**	*e*Pn	**Pb**	**07 34 00.8**	**-0.7**
HRT	**Hereke**	**1.79**	**15**	*e*PN	**Pb**	**07 34 01.7**	**-0.4**
HRT	**Hereke**	**1.79**	**15**	*e*Pn	**Pb**	**07 34 01.7**	**-0.4**

GUC 30 07:35:54.5±0.3, 16°.35S×72°.15W, h182km±17km, ML4.3, 3C-2D, Near coast of Peru

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res
PB12	**IPOC Station P**	**2.84**	**143**	⇓*i* P	Pn	07 36 43.0	+1.5
PB12				*i* S	Sn	07 37 19.9	+1.8
PB13	**IPOC Station P**	**3.21**	**128**	⇑*i* P	Pn	07 36 48.8	+2.4
PB13				*e*S	Sn	07 37 30.0	+3.2
MNMC	**Minye Minye**	**3.68**	**139**	⇓*i* P	Pn	07 36 53.9	+2.0
MNMC				*e*S	Sn	07 37 38.8	+1.8
MNMC				AML	AML	07 37 45.4	
	comp=E,270nm,0.3s						
PSGC	**Pisagua**	**3.76**	**149**	⇑*i* P	Pn	07 36 54.8	+2.0
PSGC				*i* S	Sn	07 37 40.7	+2.3
PSGC				AML	AML	07 37 43.6	
	comp=E,89nm,0.2s						
PB08	**IPOC Station P**	**4.72**	**143**	⇑*i* P	Pn	07 37 08.3	+3.0
PB08				*i* S	Sn	07 38 04.9	+4.1
PB08				AML	AML	07 38 06.9	
	comp=E,89nm,0.2s						

*ISCJB **30** 07:37:33.4±0.8, 29°.7N±0°.1×69°.5E±0°.1, h10km, mb3.8/12, MS3.1/5, Error ellipse: s-maj=15.9km s-min=12.2km az=152.4*
*IDC **30** 07:37:33.8±0.9, 29°.69N×69°.43E, h0km, mb3.9/12, mb1 4.0/15, mb1mx3.8/61, mbtmp3.9/15, ML3.7/3, MS3.1/5, Ms1 3.1/5, ms1mx2.5/46, Error ellipse: s-maj=20.3km s-min=19.3km az=108.0*
ISC 30 07:37:35.2±0.8, 29.7N±0°.1×69°.38E±0°.07, h10km, n21, σ1s04/18, mb3.8/12, MS3.2/5, Pakistan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
THN	**Thein Dam**	**6.06**	**62**	*e*P	**Pn**	**07 39 03.6**	**-1.3**
NDI	**New Delhi**	**6.93**	**97**	*e*P	Pn	07 39 10.0	-6.9
NDI				*e*S	**Sg**	**07 41 19.0**	**+1.3**
WSAR	**Wadi Sarin**	**11.60**	**239**	Pn	**Pn**	**07 40 19.5**	**-1.4**
	0.4nm,0.3s,baz=135,slow=2.9,SNR=2.9						
AAK	**Ala-Archa**	**13.52**	**16**	Pn	**Pn**	**07 40 46.2**	**-0.9**
	0.8nm,0.3s,baz=172,slow=13,SNR=7.1						
MKAR	**Makanchi Array**	**19.77**	**27**	P	**Pn**	**07 42 05.3**	**-1.6**
	0.2nm,0.3s,baz=205,slow=12,SNR=14						
KURBB	**Kurchatov Arra**	**21.97**	**16**	P	**P**	**07 42 28.6**	**-0.5**
	2.3nm,0.7s,baz=208,slow=9.4,SNR=13						
AKTO	**Aktyubinsk**	**22.38**	**341**	P	**P**	**07 42 34.8**	**+1.3**
	0.8nm,0.4s,baz=214,slow=3.6,SNR=2.7						
BVAR	**Borovoye Array**	**23.28**	**2**	P	**P**	**07 42 42.7**	**-0.2**
	1.2nm,0.7s,baz=174,slow=14,SNR=4.2						
ATD	**Arta Tunnel**	**30.61**	**239**	LR	LR	07 57 01.5	
	comp=Z,21nm,20.2s,baz=98,slow=38						
BRTR	**Keskin Array B**	**30.84**	**299**	P	**P**	**07 43 53.0**	**+1.4**
	1.3nm,0.7s,baz=112,slow=9.0,SNR=8.4						
IDI	**Anoyia**	**37.68**	**290**	P	**P**	**07 44 51.6**	**+0.7**
	4.2nm,0.6s,baz=45,slow=11,SNR=4.2						
NRIK	**Noril'sk**	**41.00**	**10**	P	**P**	**07 45 19.2**	**+1.1**
	1.5nm,0.3s,baz=155,slow=3.3,SNR=4.1						
FINES	**FINESS Array B**	**42.53**	**331**	P	**P**	**07 45 30.8**	**+0.1**
	1.4nm,0.7s,baz=158,slow=11,SNR=3.7						
FINES				LR	LR	08 05 33.8	
	comp=Z,34nm,21.6s,baz=234,slow=39						
ARCES	**ARCESS Array B**	**46.96**	**341**	P	**P**	**07 46 06.3**	**+0.4**
	2.1nm,1.0s,baz=119,slow=7.3,SNR=3.9						
ARCES				LR	LR	08 07 34.2	
	comp=Z,40nm,18.0s,baz=258,slow=38						
NOA	**NORSAR Array B**	**49.13**	**327**	LR	LR	08 11 22.7	
	comp=Z,12nm,18.5s,baz=100,slow=41						
TORD	**Torodi Ar. Bea**	**64.33**	**271**	P	**P**	**07 48 11.0**	**-0.5**
	0.3nm,0.5s,baz=55,slow=4.6,SNR=3.4						
BOSA	**Boshof**	**71.71**	**220**	LR	LR	08 19 49.6	
	comp=Z,14nm,18.1s,baz=15,slow=35						
WRA	**Warramunga Arr**	**79.69**	**120**	P	**P**	**07 49 43.3**	**-0.1**
	0.8nm,0.9s,baz=322,slow=5.0,SNR=6.0						
ASAR	**Alice Springs**	**81.60**	**123**	P	**P**	**07 49 53.7**	**0.0**
	0.9nm,0.8s,baz=304,slow=5.8,SNR=5.9						
YKA	**Yellowknife Ar**	**88.04**	**2**	P	**P**	**07 50 26.2**	**+0.8**
	0.8nm,0.6s,baz=348,slow=4.9,SNR=21						
TXAR	**Lajitas Array**	**120.89**	**353**	PKP	**PKPdf**	**07 56 29.2**	**+0.9**
	0.1nm,0.4s,baz=306,slow=3.0,SNR=3.3						

*DDA **30** 07:43:10.9, 39°.14N×29°.03E, h7km, Ml3.0*
*ISCJB **30** 07:43:11.2±0.5, 39°.13N±0°.03×29°.06E±0°.03, h1km±6km, Error ellipse: s-maj=4.3km s-min=4.2km az=166.9*
*ISK **30** 07:43:11.1, 39°.11N×29°.07E, h8km, MD2.9*
*CSEM **30** 07:43:11.6±0.1, 39°.12N×29°.06E, h5km, ML3.0, Error ellipse: s-maj=2.3km s-min=1.9km az=86.0*
ISC 30 07:43:11.3±1.0, 39°.15N±0°.02×29°.04E±0°.02, h7km±10km, n47, σ0s68/60, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**248**	P	**Pg**	**07 43 16.6**	**-0.1**
DEMI				S	**Sg**	**07 43 20.6**	**+0.3**
DEMI	**Demirci**	**0.27**	**248**	*i* P	**Pg**	**07 43 16.6**	**-0.1**
DEMI				*i* S	**Sg**	**07 43 20.6**	**+0.3**
GDZ	**Gediz**	**0.35**	**99**	P	**Pg**	**07 43 18.2**	**0.0**
GDZ				S	**Sg**	**07 43 23.2**	**+0.4**
GDZ	**Gediz**	**0.35**	**99**	*i* P	**Pg**	**07 43 18.2**	**0.0**
GDZ				*i* S	**Sg**	**07 43 23.2**	**+0.4**
TVSB	**Tavsanli**	**0.45**	**47**	PG	**Pg**	**07 43 20.4**	**+0.4**
TVSB				*e*SG	**Sg**	**07 43 26.4**	**+0.6**
TVSB	**Tavsanli**	**0.45**	**47**	*i* Pg	**Pg**	**07 43 20.4**	**+0.4**
TVSB				*e*Sg	**Sg**	**07 43 26.4**	**+0.6**
KULA	**Kula-Manisa**	**0.70**	**205**	*e*PG	**Pg**	**07 43 24.2**	**-0.5**
KULA	**Kula-Manisa**	**0.70**	**205**	*e*Pg	**Pg**	**07 43 24.2**	**-0.5**
KHAL	**Karahalli**	**0.85**	**155**	P	**Pg**	**07 43 27.5**	**-0.1**
KHAL				S	**Sg**	**07 43 37.9**	**-0.8**
KHAL	**Karahalli**	**0.85**	**155**	*i* P	**Pg**	**07 43 27.5**	**-0.1**
KHAL				*i* S	**Sg**	**07 43 37.9**	**-0.8**
KHL	**Karahalli**	**0.90**	**155**	*e*PG	**Pg**	**07 43 28.2**	**-0.4**
KHL	**Karahalli**	**0.90**	**155**	*e*Pg	**Pg**	**07 43 28.2**	**-0.4**
BALB	**Balikesir**	**1.02**	**299**	*e*PG	**Pn**	**07 43 32.1**	**+0.1**
BALB				*e*SG	**Sn**	**07 43 47.3**	**+0.7**
BALB	**Balikesir**	**1.02**	**299**	*e*Pg	**Pn**	**07 43 32.1**	**+0.1**
BALB				*e*Sg	**Sn**	**07 43 47.3**	**+0.7**
IGD	**Bursa**	**1.12**	**6**	*i* P	**Pg**	**07 43 32.4**	**-0.4**
IGD				*i* S	**Sn**	**07 43 48.5**	**-0.6**
CAVI	**Cavuskoy**	**1.22**	**30**	*e*PN	**Pn**	**07 43 35.6**	**+0.8**
CAVI	**Cavuskoy**	**1.22**	**30**	*e*Pn	**Pn**	**07 43 35.6**	**+0.8**
MDNY	**Mudanya-Bursa**	**1.23**	**354**	*e*PN	**Pg**	**07 43 35.3**	**+0.5**
MDNY	**Mudanya-Bursa**	**1.23**	**354**	*e*Pn	**Pg**	**07 43 35.3**	**+0.5**
IZI	**Iznik**	**1.24**	**16**	*e*PN	**Pn**	**07 43 36.1**	**+1.1**
IZI	**Iznik**	**1.24**	**16**	*e*Pn	**Pn**	**07 43 36.1**	**+1.1**
KCTX	**Karacabey (Bur**	**1.24**	**335**	*e*PN	**Pg**	**07 43 35.5**	**+0.5**
KCTX	**Karacabey (Bur**	**1.24**	**335**	*e*Pn	**Pg**	**07 43 35.5**	**+0.5**
ADVT	**Abdulvahap**	**1.39**	**23**	*e*PN	**Pg**	**07 43 38.0**	**0.0**
ADVT	**Abdulvahap**	**1.39**	**23**	*e*Pn	**Pg**	**07 43 38.0**	**0.0**
ARMT	**Armutlu**	**1.43**	**355**	*e*PN	**Pg**	**07 43 38.6**	**0.0**
ARMT	**Armutlu**	**1.43**	**355**	*e*Pn	**Pg**	**07 43 38.6**	**0.0**
DNZL	**Cakiroluk**	**1.45**	**180**	P	**Pb**	**07 43 38.5**	**-0.2**
DNZL				S	**Sg**	**07 43 59.1**	**+1.1**
DNZL	**Cakiroluk**	**1.45**	**180**	*i* P	**Pb**	**07 43 38.5**	**-0.2**
DNZL				*i* S	**Sg**	**07 43 59.1**	**+1.1**
AYDB	**Zeytinkoy-Aydi**	**1.50**	**217**	*e*PN	**Pb**	**07 43 39.2**	**-0.3**
AYDB	**Zeytinkoy-Aydi**	**1.50**	**217**	*e*Pn	**Pb**	**07 43 39.2**	**-0.3**
EDC	**Edincik**	**1.50**	**323**	*e*PN	**Pg**	**07 43 39.7**	**-0.4**
EDC	**Edincik**	**1.50**	**323**	*e*Pn	**Pg**	**07 43 39.7**	**-0.4**
GPA	**Golpazari**	**1.50**	**40**	*e*PN	**Pg**	**07 43 39.7**	**-0.4**
GPA	**Golpazari**	**1.50**	**40**	*e*Pn	**Pg**	**07 43 39.7**	**-0.4**
GULT	**Gulveren**	**1.72**	**41**	*e*PN	**Pb**	**07 43 42.3**	**-0.9**
GULT	**Gulveren**	**1.72**	**41**	*e*Pn	**Pb**	**07 43 42.3**	**-0.9**
MRMT	**Marmara Adasi**	**1.83**	**323**	*e*PN	**Pb**	**07 43 44.3**	**-0.8**
MRMT	**Marmara Adasi**	**1.83**	**323**	*e*Pn	**Pb**	**07 43 44.3**	**-0.8**
SVRH	**Sivrihisar-ESK**	**1.95**	**80**	*e*PN	**Pn**	**07 43 45.4**	**+0.5**
SVRH	**Sivrihisar-ESK**	**1.95**	**80**	*e*Pn	**Pn**	**07 43 45.4**	**+0.5**
SILT	**Sile**	**2.06**	**13**	*e*PN	**Pb**	**07 43 47.5**	**-1.4**
SILT	**Sile**	**2.06**	**13**	*e*Pn	**Pb**	**07 43 47.5**	**-1.4**
CTKS	**Kestanelik-??a**	**2.13**	**349**	*e*PN	**Pb**	**07 43 48.5**	**-1.6**
CTKS	**Kestanelik-??a**	**2.13**	**349**	*e*Pn	**Pb**	**07 43 48.5**	**-1.6**
KIZT	**Kizilcal**	**2.23**	**96**	*e*PN	**Pn**	**07 43 49.0**	**+0.3**
KIZT	**Kizilcal**	**2.23**	**96**	*e*Pn	**Pn**	**07 43 49.0**	**+0.3**

*AZER **30** 07:43:08.3±4.0, 33°.78N×50°.51E, h5km, Error ellipse: s-maj=320.8km s-min=29.6km az=76.0*
*ISN **30** 07:43:23.7±2.0, 34°.96N×50°.33E, h0km±38km, ML4.1*
*THR **30** 07:43:25.7±0.9, 34°.96N×49°.88E, h14km±8km, ML3.9*
*CSEM **30** 07:43:26.8±0.2, 35°.00N×49°.98E, h2km, ML4.1, Error ellipse: s-maj=5.5km s-min=3.9km az=170.0*
*ISCJB **30** 07:43:26.7±0.3, 34°.98N±0°.03×49°.96E±0°.03, h10km, Error ellipse: s-maj=5.0km s-min=3.6km az=159.4*
*TEH **30** 07:43:27.7, 34°.97N×50°.00E, h5km, ML4.1*
ISC 30 07:43:26.5±0.8, 34°.98N±0°.03×49°.98E±0°.03, h10km, n60, σ1s44/67, 2C-6D, Western Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IMHD	**Mahdasht**	**0.90**	**38**	*e*Pg	**Pg**	**07 43 43.9**	**0.0**
IMHD	**Mahdasht**	**0.90**	**38**	*e*Pg	**Pg**	**07 43 43.9**	**0.0**
IR3	**Iran Long-Peri**	**0.99**	**60**	*e*Pg	**Pb**	**07 43 45.8**	**0.0**
IR3	**Iran Long-Peri**	**0.99**	**60**	*e*Pg	**Pb**	**07 43 45.8**	**0.0**
THKV	**Tehran--Karaj**	**1.19**	**38**	*e*Pg	**Pn**	**07 43 49.6**	**+0.2**
THKV	**Tehran--Karaj**	**1.19**	**38**	*e*Pg	**Pn**	**07 43 49.6**	**+0.2**
GHVR	**GHOM**	**1.19**	**114**	*e*Pg	**Pb**	**07 43 48.2**	**-1.1**
GHVR				AML	AML	07 44 14.6	
	comp=N,2μm,0.4s						
GHVR	**GHOM**	**1.19**	**114**	*e*Pg	**Pb**	**07 43 48.2**	**-1.1**
CHTH	**Charan**	**1.32**	**45**	*e*Pg	**Pn**	**07 43 51.3**	**0.0**
CHTH	**Charan**	**1.32**	**45**	*e*Pg	**Pn**	**07 43 51.3**	**0.0**
IVRN	**Varamin**	**1.44**	**89**	*e*Pg	**

SHLS				*e*S	**Sg**	**07 45 26.1 +1.9**
	2μm,0.6s					
PDGK	**Podgornoye**	**2.45 314**	⇑Pg		**Pb**	**07 45 00.1 +0.3**
	248nm,1.0s					
PDGK			⇓Lg		Lg	07 45 33.4
	882nm,0.8s					
UZB	**Uzynbulak**	**2.61 306**		*e*P	**Pb**	**07 45 04.4 +1.8**
	235nm,0.2s					
UZB				*e*S	**Sg**	**07 45 40.2 +0.4**
	581nm,0.5s					
SATY	**Saty**	**2.96 299**		*e*P	**Pg**	**07 45 12.6 +0.1**
	418nm,0.3s					
SATY				*e*S	**Sg**	**07 45 54.0 +3.2**
	602nm,0.5s					
ZHN	**Zhinishke**	**2.99 301**		*e*P	**Pg**	**07 45 12.3 -0.8**
	139nm,0.4s					
ZHN				*e*S	**Sg**	**07 45 53.7 +1.9**
	466nm,0.3s					
KPKS	**Kokpek**	**3.00 308**		*e*P	**Pb**	**07 45 09.7 +0.6**
	434nm,0.4s					
KPKS				*e*S	**Sb**	**07 45 47.7 +2.0**
	648nm,0.5s					
DJR	**Jarkent**	**3.09 330**		*e*P	**Pb**	**07 45 10.9 +0.1**
	146nm,0.3s					
DJR				*e*S	**Sb**	**07 45 50.7 +2.2**
	229nm,0.5s					
MDOK	**Medeo**	**3.91 294**		*e*P	**Pg**	**07 45 28.5 -2.2**
	82nm,0.8s					
MDOK				*e*S	**Sg**	**07 46 21.1 -0.2**
	219nm,0.8s					
TNSS	**Tian-Shan**	**3.94 292**		*e*P	**Pb**	**07 45 28.4 +3.0**
TNSS				*e*S	**Sg**	**07 46 21.9 -0.5**
KNDC	**Almaty**	**3.98 295**	⇑Pn		**Pb**	**07 45 21.7 -4.3**
	92nm,0.8s					
KNDC			⇑Pg		**Pg**	**07 45 32.9 +0.7**
	159nm,0.7s					
KNDC			⇑Lg		Lg	07 46 23.0
	400nm,1.0s					
AAA	**Alma-Ata**	**4.02 295**		*e*P	**Pg**	**07 45 30.8 -2.0**
	161nm,0.4s					
AAA				*e*S	**Sg**	**07 46 25.0 +0.2**
	310nm,0.7s					
KAPS	**Kapalarasan**	**4.07 334**		*e*P	**Pb**	**07 45 27.9 +0.4**
	86nm,0.5s					
KAPS				*e*S	**Sb**	**07 46 19.3 +2.6**
	140nm,0.7s					
TDK	**Taldyqorghan**	**4.21 324**		*e*P	**Pb**	**07 45 30.2 +0.3**
	124nm,0.3s					
TDK				*e*S	**Sb**	**07 46 24.3 +3.6**
	261nm,0.6s					
MTBS	**Maitube**	**4.33 292**		*e*P	**Pb**	**07 45 34.4 +2.6**
	45nm,0.5s					
MTBS				*e*S	**Sg**	**07 46 30.6 -4.1**
	69nm,0.5s					
KST	**Kastek**	**4.63 289**		*e*P	**Pb**	**07 45 38.5 +1.5**
	32nm,0.6s					
KST				*e*S	**Sg**	**07 46 38.8 -5.5**
	27nm,0.9s					
KUU	**Kurty**	**4.68 300**		*e*P	**Pg**	**07 45 43.0 -2.3**
	96nm,0.6s					
KUU				*e*S	**Sg**	**07 46 44.3 -1.6**
	92nm,0.6s					
WMQ	**Urumqi**	**4.77 61**	Pg		**Pb**	**07 45 39.8 +0.5**
WMQ			Sg		**Sb**	**07 46 40.3 +3.7**
WMQ			smax		smax	
	comp=N,140nm,0.6s					
WMQ			smax		smax	
	comp=E,180nm,0.3s					
TKM2	**Tokmak 2**	**4.86 287**	⇑Pn		Pb	07 45 34.9 -6.0
	35nm,0.7s					
TKM2			⇑Lg		Lg	07 46 54.7
	143nm,0.8s					
KSH	**Kashi**	**5.01 247**	Pn		**Pb**	**07 45 45.5 +2.0**
KSH			Sn		**Sg**	**07 46 54.3 -2.4**
KSH			smax		smax	
	comp=N,120nm,1.0s					
KSH			smax		smax	
	comp=E,140nm,0.9s					
MK31	**Makanchi Array**	**5.14 3**	Pn		**Pn**	**07 45 31.9 -0.6**
	4.5nm,0.3s,baz=186,slow=13,SNR=387					
MK31			⇓Pg		**Pb**	**07 45 46.2 +0.6**
	11nm,0.4s,baz=164,slow=16,SNR=8.9					
MK31			⇓Sn		**Sn**	**07 46 29.2 -2.6**
	97nm,1.1s,baz=176,slow=15,SNR=3.8					
MK31			⇓Lg		Lg	07 46 49.4
	77nm,0.6s,baz=180,slow=28,SNR=6.0					
MKAR	**Makanchi Array**	**5.14 3**	Pn		**Pn**	**07 45 31.9 -0.6**
	8.0nm,0.3s,baz=189,slow=13,SNR=122					
MKAR			Pg		**Pb**	**07 45 45.6 0.0**
	12nm,0.3s,baz=173,slow=14,SNR=18					
MKAR			Lg		Lg	07 46 47.7
	20nm,0.3s,baz=182,slow=29,SNR=7.7					
MAKZ	**Makanchi**	**5.14 0**	⇓Pn		**Pn**	**07 45 32.0 -0.6**
	40nm,0.6s					
MAKZ			⇑Sn		**Sn**	**07 46 29.0 -2.9**
	37nm,0.9s					
MAKZ			⇓Lg		Lg	07 46 47.0
	112nm,0.9s					
AAK	**Ala-Archa**	**5.61 282**	Pn		Pb	07 45 47.1 -6.6
	1.6nm,0.3s,baz=104,slow=8.9,SNR=8.0					
AAK			Pg		**Pg**	**07 46 03.2 0.0**
	1.5nm,0.3s,baz=93,slow=4.7,SNR=5.9					
AAK			Lg		Lg	07 47 22.2
	4.4nm,0.3s,baz=310,slow=18,SNR=7.2					
AAK	**Ala-Archa**	**5.61 282**	⇑Pn		Pb	07 45 46.6 -7.1
	6.4nm,0.6s					
AAK			⇓Pg		**Pg**	**07 46 02.1 -1.1**
AAK			⇓Lg		Lg	07 47 19.3
	64nm,0.8s					
ZSN	**Zaisan**	**6.05 16**		*e*P	**Pb**	**07 46 01.5 +0.4**
	17nm,0.3s					
ZSN				*e*S	**Sb**	**07 47 18.3 +4.8**
	106nm,0.8s					
MRKS	**Merke**	**6.55 282**		*e*P	**Pg**	**07 46 19.9 -1.3**
	26nm,0.4s					
MRKS				*e*S	**Sg**	**07 47 49.3 +3.3**
	26nm,0.4s					
MNAS	**Manas**	**7.06 280**	⇓Pn		Pn	07 46 05.9 +6.9
	2.1nm,0.5s					
MNAS			⇓Pg		**Pg**	**07 46 29.1 -1.8**
	6.7nm,0.7s					
MNAS			⇓Lg		Lg	07 48 07.8
	24nm,0.8s					
KURBB	**Kurchatov Arra**	**9.27 346**	Pn		**Pn**	**07 46 27.4 -1.7**
	0.4nm,0.3s,baz=165,slow=13,SNR=16					
KURBB			Sn		**Sn**	**07 48 11.2 -1.9**
	0.4nm,0.3s,baz=170,slow=22,SNR=4.0					
KURBB			Lg		Lg	07 48 58.8
	0.4nm,0.3s,baz=160,slow=33,SNR=6.4					
KURBB	**Kurchatov Arra**	**9.27 346**	⇑Pn		**Pn**	**07 46 28.4 -0.7**
	18nm,0.8s					
KURBB			⇑Sn		**Sn**	**07 48 09.1 -4.1**
	13nm,0.6s					
KURBB			⇑Lg		Lg	07 49 01.2
	58nm,0.7s					
KURK	**Kurchatov**	**9.34 347**	⇑Pn		**Pn**	**07 46 27.6 -2.5**
	32nm,0.6s					
CEP	**Cherat**	**11.13 229**	P		Pn	07 47 02.9 +8.0
ZALV	**Zalesovo Beam**	**12.45 8**	Pn		**Pn**	**07 47 08.1 -4.5**
	0.9nm,0.3s,baz=195,slow=13,SNR=9.2					
BVA0	**Borovoye Array**	**13.78 330**	⇓Pn		**Pn**	**07 47 33.6 +2.9**
	3.9nm,0.7s,baz=127,slow=10,SNR=13					
BVAR	**Borovoye Array**	**13.78 330**	Pn		**Pn**	**07 47 32.0 +1.3**
	0.5nm,0.3s,baz=150,slow=15,SNR=5.0					
ZRNK	**Zerenda**	**14.27 327**	⇓Pn		**Pn**	**07 47 37.9 +0.4**
	4.3nm,0.6s					
ZRNK			⇓Lg		Lg	07 51 39.2
	19nm,1.4s					
AB31	**Akbulak array**	**17.15 304**	⇓Pn		**P**	**07 48 16.2 -0.5**
	1.1nm,0.6s,baz=111,slow=9.4,SNR=8.7					
AKTO	**Aktyubinsk**	**18.70 306**	⇑Pn		**Pn**	**07 48 36.2 +1.9**
	2.6nm,0.8s					
KBZ	**Khabaz**	**28.58 287**	LR		LR	08 03 16.8
	comp=Z,25nm,20.9s,baz=232,slow=40					
FINES	**FINESS Array B**	**38.47 320**	P		**P**	**07 51 38.3 +1.1**
	0.8nm,0.6s,baz=102,slow=10,SNR=3.3					
ARCES	**ARCESS Array B**	**40.03 333**	P		**P**	**07 51 50.5 +0.3**
	1.0nm,0.5s,baz=87,slow=9.8,SNR=11					
NOA	**NORSAR Array B**	**45.65 320**	P		**P**	**07 52 37.3 +1.4**
	0.7nm,0.6s,baz=83,slow=7.2,SNR=2.5					
ILAR	**Eielson Array**	**67.24 20**	P		**P**	**07 55 06.8 -2.8**
	0.3nm,0.5s,baz=323,slow=5.3,SNR=5.4					
TORD	**Torodi Ar. Bea**	**74.12 274**	P		**P**	**07 55 54.6 +2.4**
	0.8nm,0.4s,baz=49,slow=4.4,SNR=11					
YKA	**Yellowknife Ar**	**75.34 8**	P		**P**	**07 55 56.1 -2.4**
	0.2nm,0.5s,baz=340,slow=5.9,SNR=4.6					
WRA	**Warramunga Arr**	**78.15 130**	P		**P**	**07 56 16.0 +1.1**
	0.8nm,0.7s,baz=328,slow=5.4,SNR=6.0					
ASAR	**Alice Springs**	**80.86 133**	P		**P**	**07 56 30.9 +1.2**
	0.4nm,0.6s,baz=330,slow=5.7,SNR=6.2					

DDA ***30*** *07:52:49.5, 39.°14N×28.°99E, h7km, Ml2.7*
ISCJB ***30*** *07:52:50.4±0.6, 39.°12N±0.°04×28.°99E±0.°04, h5km±7km, Error ellipse: s-maj=6.4km s-min=5.3km az=147.5*
CSEM ***30*** *07:52:50.6±0.1, 39.°12N×28.°97E, h5km, ML2.7, Error ellipse: s-maj=2.4km s-min=1.8km az=98.0*
ISK ***30*** *07:52:50.2, 39.°10N×29.°00E, h7km, MD2.1*

ISC 30 07:52:50.5±1.1, 39.°12N±0.°02×28.°97E±0.°03, h13km±11km, n19, σ0°58/30, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.21**	**249**	P	**Pg**	**07 52 55.3**	**0.0**
DEMI				S	**Sg**	**07 52 58.5**	**-0.1**
DEMI	**Demirci**	**0.21**	**249**	*i* P	**Pg**	**07 52 55.3**	**0.0**
DEMI				*i* S	**Sg**	**07 52 58.5**	**-0.1**
GDZ	**Gediz**	**0.40**	**94**	P	**Pg**	**07 52 58.5**	**0.0**
GDZ				S	**Sg**	**07 53 04.2**	**+0.3**
GDZ	**Gediz**	**0.40**	**94**	*i* P	**Pg**	**07 52 58.5**	**0.0**
GDZ				*i* S	**Sg**	**07 53 04.2**	**+0.3**
TVSB	**Tavsanli**	**0.50**	**49**	PG	**Pg**	**07 53 00.3**	**-0.2**
TVSB				*e*SG	**Sg**	**07 53 07.0**	**-0.2**
TVSB	**Tavsanli**	**0.50**	**49**	*i* Pg	**Pg**	**07 53 00.3**	**-0.2**
TVSB				*e*Sg	**Sg**	**07 53 07.0**	**-0.2**
KULA	**Kula-Manisa**	**0.65**	**202**	*e*PG	**Pg**	**07 53 03.1**	**-0.2**
KULA	**Kula-Manisa**	**0.65**	**202**	*e*Pg	**Pg**	**07 53 03.1**	**-0.2**
KHAL	**Karahalli**	**0.85**	**151**	P	**Pb**	**07 53 07.4**	**+0.2**
KHAL				S	**Sg**	**07 53 17.8**	**-0.4**
KHAL	**Karahalli**	**0.85**	**151**	*i* P	**Pb**	**07 53 07.4**	**+0.2**
KHAL				*i* S	**Sg**	**07 53 17.8**	**-0.4**
ORLT	**Orhaneli**	**0.93**	**356**	*e*PG	**Pb**	**07 53 08.6**	**+0.1**
ORLT	**Orhaneli**	**0.93**	**356**	*e*Pg	**Pb**	**07 53 08.6**	**+0.1**
IGD	**Bursa**	**1.16**	**9**	*i* P	**Pg**	**07 53 11.4**	**-1.4**
IGD				*i* S	**Sg**	**07 53 26.1**	**-1.7**
CAVI	**Cavuskoy**	**1.27**	**32**	*e*PN	**Pg**	**07 53 15.2**	**+0.2**
CAVI	**Cavuskoy**	**1.27**	**32**	*e*Pn	**Pg**	**07 53 15.2**	**+0.2**
IZI	**Iznik**	**1.27**	**17**	*e*PN	**Pg**	**07 53 15.0**	**-0.1**
IZI	**Iznik**	**1.27**	**17**	*e*Pn	**Pg**	**07 53 15.0**	**-0.1**
ARMT	**Armutlu**	**1.45**	**357**	*e*PN	**Pb**	**07 53 17.6**	**+0.3**
ARMT				*e*SN	**Sg**	**07 53 38.3**	**+1.2**
ARMT	**Armutlu**	**1.45**	**357**	*e*Pn	**Pb**	**07 53 17.6**	**+0.3**
ARMT				*e*Sn	**Sg**	**07 53 38.3**	**+1.2**

ISCJB ***30*** *07:53:40.5±1.0, 39.°09N±0.°09×29.°03E±0.°09, h9km, Error ellipse: s-maj=16.2km s-min=5.3km az=144.0*
ISK ***30*** *07:53:40.1, 39.°13N×28.°99E, h8km, MD2.6*
CSEM ***30*** *07:53:40.6±0.2, 39.°12N×28.°99E, h8km, MD2.6, Error ellipse: s-maj=9.5km s-min=3.4km az=128.0*
DDA ***30*** *07:53:43.3, 39.°02N×28.°79E, h16km, Ml2.2*

ISC 30 07:53:41.8±1.1, 39.°19N±0.°05×28.°91E±0.°05, h9km, n11, σ1°52/16, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.21**	**226**	P	**Pg**	**07 53 45.9**	**-0.3**
DEMI				S	**Sg**	**07 53 49.2**	**+0.1**
DEMI	**Demirci**	**0.21**	**226**	*i* P	**Pg**	**07 53 45.9**	**-0.3**
DEMI				*i* S	**Sg**	**07 53 49.2**	**+0.1**
GDZ	**Gediz**	**0.46**	**103**	*i* P	**Pn**	**07 53 54.5**	**-0.1**
GDZ				*i* S	**Sb**	**07 54 03.0**	**+4.0**
TVSB	**Tavsanli**	**0.50**	**59**	PG	**Pg**	**07 53 49.9**	**-1.6**
TVSB				*e*SG	**Sg**	**07 53 57.6**	**-0.4**
TVSB	**Tavsanli**	**0.50**	**59**	*i* Pg	**Pg**	**07 53 49.9**	**-1.6**
TVSB				*e*Sg	**Sg**	**07 53 57.6**	**-0.4**
KULA	**Kula-Manisa**	**0.70**	**196**	*e*PG	**Pg**	**07 53 53.4**	**-2.0**
KULA	**Kula-Manisa**	**0.70**	**196**	*e*Pg	**Pg**	**07 53 53.4**	**-2.0**
CAVI	**Cavuskoy**	**1.24**	**35**	*e*PN	**Pg**	**07 54 05.0**	**-0.6**
CAVI	**Cavuskoy**	**1.24**	**35**	*e*Pn	**Pg**	**07 54 05.0**	**-0.6**
ARMT	**Armutlu**	**1.37**	**358**	*e*PN	**Pn**	**07 54 07.0**	**-0.1**
ARMT	**Armutlu**	**1.37**	**358**	*e*Pn	**Pn**	**07 54 07.0**	**-0.1**

IDC ***30*** *08:02:58.2±1.1, 12.°33S×165.°66E, h0km, mb3.9/6, mb1 4.1/7, mb1mx3.8/40, mbtmp3.9/7, ML3.7/1, Error ellipse: s-maj=40.5km s-min=22.0km az=123.0*
NEIC ***30*** *08:02:59.6±0.7, 12.°32S×165.°68E, h10km, mb4.2/2, Error ellipse: s-maj=16.9km s-min=14.2km az=101.0*
ISCJB ***30*** *08:03:01.1±0.8, 12.°42S±0.°07×165.°55E±0.°09, h33km, mb3.9/8, Error ellipse: s-maj=14.5km s-min=8.1km az=150.7*

ISC 30 08:03:03.2±0.9, 12.°34S±0.°09×165.°6E±0.°1, h35km, n11, σ1°25/13, mb3.9/8, Santa Cruz Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	**Honiara**	**6.29**	**297**	*e*Pn	**Pn**	**08 04 32.2**	**-1.3**
HNR				*e*Sn	**Sn**	**08 05 43.9**	**-0.3**
DZM	**Mont Dzumac**	**9.71**	**176**	Pn	**Pn**	**08 05 18.8**	**-1.7**
	0.6nm,0.3s,baz=180,slow=20,SNR=7.1						
DZM				Sn	**Sn**	**08 07 08.6**	**+0.2**
	0.3nm,0.3s,baz=71,slow=16,SNR=3.7						
STKA	**Stephens Creek**	**29.44**	**225**	P	**P**	**08 09 05.9**	**+2.1**
	1.2nm,0.6s,baz=68,slow=12,SNR=4.1						
WRA	**Warramunga Arr**	**30.96**	**252**	P	**P**	**08 09 17.1**	**-0.2**
	0.4nm,0.5s,baz=84,slow=9.7,SNR=7.7						
ASAR	**Alice Springs**	**32.13**	**245**	P	**P**	**08 09 26.9**	**-0.8**
	1.4nm,0.7s,baz=74,slow=9.5,SNR=16						
FITZ	**Fitzroy Crossi**	**38.96**	**256**	*e*P	**P**	**08 10 27.6**	**+1.3**
	6.0nm,1.1s						
PMR	**Palmer**	**81.80**	**20**	*e*P	**P**	**08 15 18.0**	**-0.2**
	1.4nm,0.6s						
ILAR	**Eielson Array**	**84.77**	**18**	P	**P**	**08 15 34.3**	**+0.8**
	0.9nm,0.5s,baz=238,slow=5.4,SNR=19						
MKAR	**Makanchi Array**	**94.39**	**317**	P	**P**	**08 16 20.1**	**+0.5**
	0.3nm,0.6s,baz=101,slow=6.3,SNR=3.7						
YKA	**Yellowknife Ar**	**96.17**	**27**	P	**P**	**08 16 26.2**	**-1.0**
	0.2nm,0.6s,baz=257,slow=4.7,SNR=6.2						
ARCES	**ARCESS Array B**	**117.55**	**345**	PKP	**PKPdf**	**08 21 46.2**	**+1.3**
	2.0nm,1.1s,baz=113,slow=2.2,SNR=6.2						

TRN 30 08:22:11.1, 14.°01N×60.°59W, h3km, MD3.6, Windward Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MCLT	**Moule a Chique**	**0.45**	**229**	*e*P	Pn	08 22 23.7	-0.8
MCLT				*e*S	Sb	08 22 32.9	+4.1
MVM	**Montagne Vaucl**	**0.62**	**331**	*e*P	Pn	08 22 26.5	-0.4
LPMF	**Morne Lapointe**	**0.68**	**327**	*e*P	Pn	08 22 27.4	-0.2
BIM	**Bigot**	**0.69**	**317**	*e*P	Pn	08 22 28.6	+0.7
TRMF	**Trois Ilets**	**0.69**	**320**	*e*P	Pn	08 22 28.2	+0.4
ZAM	**Aeronautique**	**0.71**	**323**	*e*P	Pn	08 22 28.1	0.0
ZAM				*e*S	Sn	08 22 38.1	-1.3
FDF	**Fort de France**	**0.91**	**323**	*e*P	Pn	08 22 32.4	+1.6
GBMF	**Grand Be**	**0.97**	**325**	*e*P	Pn	08 22 32.5	+0.9
SVB	**Belmont**	**0.97**	**222**	*e*P	Pn	08 22 33.2	+1.5
SVB				*e*S	Sn	08 22 49.2	+3.2
PCM	**Pelee Case Pet**	**1.01**	**323**	*e*P	Pn	08 22 31.8	-0.4
PCM	**Pelee Case Pet**	**1.01**	**323**	*e*P	Pn	08 22 33.4	+1.2
FCV	**Fort Charlotte**	**1.06**	**217**	*e*P	Pn	08 22 35.0	+2.1
FCV				*e*S	Sn	08 22 51.2	+3.1
DWS	**Wesley**	**1.71**	**336**	*e*P	Pg	08 22 44.1	+0.3
DWS	**Wesley**	**1.71**	**336**	*e*	Sb	08 23 07.0	+2.1
DWS				*e*S	Sb	08 23 07.6	+2.7
BBL	**Barber's Block**	**1.74**	**331**	*e*P	Pg	08 22 44.9	+0.5
BBL				*e*S	Sg	08 23 09.0	+2.0
BBL	**Barber's Block**	**1.74**	**331**	*e*	Sg	08 23 09.8	+2.8
MGG	**Marie-Galante**	**2.03**	**340**	*e*	Pg	08 22 57.3	+7.2
TBG	**Guadaloupe-3**	**2.10**	**331**	*e*	Pg	08 22 56.2	+4.7
DEG	**La Desirade**	**2.34**	**349**	*e*	Pg	08 23 08.3	+12

ISK ***30*** *08:33:59.5, 39.°11N×28.°96E, h7km, MD2.7*
ISCJB ***30*** *08:34:00.2±0.5, 39.°10N±0.°03×28.°99E±0.°05, h8km±6km, Error ellipse: s-maj=6.1km s-min=5.3km az=21.1*
CSEM ***30*** *08:34:00.2±0.1, 39.°11N×28.°97E, h8km, MD2.7, Error ellipse: s-maj=3.2km s-min=2.1km az=89.0*
DDA ***30*** *08:34:00.4, 39.°09N×28.°99E, h7km, Md2.7*

ISC 30 08:34:00.4±0.9, 39.°10N±0.°02×28.°98E±0.°03, h15km±8km, n26, σ0°39/35, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.21**	**255**	P	**Pg**	**08 34 05.4**	**+0.1**
DEMI				S	**Sg**	**08 34 08.5**	**0.0**
DEMI	**Demirci**	**0.21**	**255**	*i* P	**Pg**	**08 34 05.4**	**+0.1**
DEMI				*i* S	**Sg**	**08 34 08.5**	**0.0**
GDZ	**Gediz**	**0.39**	**91**	P	**Pg**	**08 34 08.4**	**0.0**
GDZ				S	**Sg**	**08 34 13.9**	**0.0**
GDZ	**Gediz**	**0.39**	**91**	*i* P	**Pg**	**08 34 08.4**	**0.0**
GDZ				*i* S	**Sg**	**08 34 13.8**	**0.0**
TVSB	**Tavsanli**	**0.52**	**47**	*e*PG	**Pg**	**08 34 10.4**	**-0.2**
TVSB	**Tavsanli**	**0.52**	**47**	*e*Pg	**Pg**	**08 34 10.4**	**-0.2**
KULA	**Kula-Manisa**	**0.63**	**203**	*e*PG	**Pb**	**08 34 13.1**	**0.0**
KULA				*e*SG	**Sb**	**08 34 21.6**	**-0.2**
KULA	**Kula-Manisa**	**0.63**	**203**	*e*Pg	**Pb**	**08 34 13.1**	**0.0**
KHAL	**Karahalli**	**0.83**	**151**	P	**Pg**	**08 34 16.5**	**0.0**
KHAL				S	**Sg**	**08 34 27.4**	**-0.1**
KHAL	**Karahalli**	**0.83**	**151**	*i* P	**Pg**	**08 34 16.5**	**0.0**
KHAL				*i* S	**Sg**	**08 34 27.4**	**-0.1**
KHL	**Karahalli**	**0.88**	**151**	*e*PG	**Pb**	**08 34 17.1**	**-0.3**
KHL	**Karahalli**	**0.88**	**151**	*e*Pg	**Pb**	**08 34 17.1**	**-0.3**
ORLT	**Orhaneli**	**0.95**	**356**	*e*PG	**Pb**	**08 34 17.6**	**-1.0**
ORLT	**Orhaneli**	**0.95**	**356**	*e*Pg	**Pb**	**08 34 17.6**	**-1.0**
MDNY	**Mudanya-Bursa**	**1.27**	**357**	*e*PN	**Pb**	**08 34 23.8**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.27**	**357**	*e*Pn	**Pb**	**08 34 23.8**	**-0.2**
CAVI	**Cavuskoy**	**1.29**	**31**	*e*PN	**Pb**	**08 34 24.2**	**-0.1**
CAVI	**Cavuskoy**	**1.29**	**31**	*e*Pn	**Pb**	**08 34 24.2**	**-0.1**
IZI	**Iznik**	**1.30**	**17**	*e*PN	**Pb**	**08 34 24.6**	**+0.1**
IZI				*e*SN	**Sg**	**08 34 43.1**	**+0.8**
IZI	**Iznik**	**1.30**	**17**	*e*Pn	**Pb**	**08 34 24.6**	**+0.1**
IZI				*e*Sn	**Sg**	**08 34 43.1**	**+0.8**
ADVT	**Abdulvahap**	**1.46**	**24**	*e*PN	**Pb**	**08 34 27.0**	**-0.2**
ADVT	**Abdulvahap**	**1.46**	**24**	*e*Pn	**Pb**	**08 34 27.0**	**-0.2**
ARMT	**Armutlu**	**1.47**	**357**	*e*PN	**Pb**	**08 34 26.8**	**-0.6**
ARMT	**Armutlu**	**1.47**	**357**	*e*Pn	**Pb**	**08 34 26.8**	**-0.6**
GULT	**Gulveren**	**1.79**	**41**	*e*PN	**Pn**	**08 34 31.0**	**+0.3**
GULT	**Gulveren**	**1.79**	**41**	*e*Pn	**Pn**	**08 34 31.0**	**+0.3**

ISK ***30*** *08:35:54.6, 39.°13N×28.°93E, h6km, MD2.8*
ISCJB ***30*** *08:35:55.3±0.5, 39.°12N±0.°03×28.°97E±0.°04, h9km±6km, Error ellipse: s-maj=5.8km s-min=5.2km az=175.4*
CSEM ***30*** *08:35:55.3±0.1, 39.°13N×28.°95E, h8km, MD2.4, Error ellipse: s-maj=3.3km s-min=2.1km az=88.0*
DDA ***30*** *08:35:55.5, 39.°09N×28.°98E, h7km, Md2.4*

ISC 30 08:35:54.9±1.0, 39.°13N±0.°03×28.°95E±0.°03, h16km±9km, n26, σ0°22/36, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.20**	**246**	P	**Pb**	**08 36 00.3**	**+0.1**
DEMI				S	**Sb**	**08 36 03.5**	**-0.3**
DEMI	**Demirci**	**0.20**	**246**	*i* P	**Pb**	**08 36 00.3**	**+0.1**
DEMI				*i* S	**Sb**	**08 36 03.5**	**-0.3**
GDZ	**Gediz**	**0.41**	**95**	P	**Pg**	**08 36 03.3**	**0.0**
GDZ				S	**Sg**	**08 36 09.2**	**+0.1**
GDZ	**Gediz**	**0.41**	**95**	*i* P	**Pg**	**08 36 03.3**	**0.0**
GDZ				*i* S	**Sg**	**08 36 09.2**	**+0.1**
TVSB	**Tavsanli**	**0.51**	**51**	*e*PG	**Pg**	**08 36 05.0**	**-0.1**
TVSB	**Tavsanli**	**0.51**	**51**	*e*Pg	**Pg**	**08 36 05.0**	**-0.1**
KULA	**Kula-Manisa**	**0.65**	**200**	*e*PG	**Pb**	**08 36 07.9**	**0.0**
KULA				*e*SG	**Sg**	**08 36 16.2**	**-0.1**
KULA	**Kula-Manisa**	**0.65**	**200**	*e*Pg	**Pb**	**08 36 07.9**	**0.0**
KULA				*e*Sg	**Sg**	**08 36 16.2**	**-0.1**
KHAL	**Karahalli**	**0.86**	**151**	P	**Pg**	**08 36 11.9**	**+0.2**
KHAL				S	**Sb**	**08 36 22.4**	**-0.5**
KHAL	**Karahalli**	**0.86**	**151**	*i* P	**Pg**	**08 36 11.9**	**+0.2**
KHAL				*i* S	**Sb**	**08 36 22.4**	**-0.5**
KHL	**Karahalli**	**0.92**	**151**	*e*PG	**Pn**	**08 36 13.3**	**+0.1**
KHL				*e*SG	**Sn**	**08 36 26.3**	**+0.2**
KHL	**Karahalli**	**0.92**	**151**	*e*Pg	**Pn**	**08 36 13.3**	**+0.1**
KHL				*e*Sg	**Sn**	**08 36 26.3**	**+0.2**
ORLT	**Orhaneli**	**0.92**	**357**	*e*PG	**Pg**	**08 36 12.8**	**+0.1**
ORLT	**Orhaneli**	**0.92**	**357**	*e*Pg	**Pg**	**08 36 12.8**	**+0.1**
KCTX	**Karacabey (Bur**	**1.23**	**338**	*e*PN	**Pg**	**08 36 18.4**	**-0.2**
KCTX	**Karacabey (Bur**	**1.23**	**338**	*e*Pn	**Pg**	**08 36 18.4**	**-0.2**
IZI	**Iznik**	**1.27**	**18**	*e*PN	**Pg**	**08 36 19.8**	**+0.3**
IZI	**Iznik**	**1.27**	**18**	*e*Pn	**Pg**	**08 36 19.8**	**+0.3**
CAVI	**Cavuskoy**	**1.28**	**32**	*e*PN	**Pg**	**08 36 19.6**	**+0.1**
CAVI	**Cavuskoy**	**1.28**	**32**	*e*Pn	**Pg**	**08 36 19.6**	**+0.1**
ADVT	**Abdulvahap**	**1.44**	**25**	*e*PN	**Pg**	**08 36 22.5**	**-0.1**
ADVT	**Abdulvahap**	**1.44**	**25**	*e*Pn	**Pg**	**08 36 22.5**	**-0.1**
ARMT	**Armutlu**	**1.44**	**357**	*e*PN	**Pb**	**08 36 21.6**	**+0.2**
ARMT	**Armutlu**	**1.44**	**357**	*e*Pn	**Pb**	**08 36 21.6**	**+0.2**
GULT	**Gulveren

ALN			S	Sb	08 43 09.2	-0.5
ALN			AML	AML	08 43 12.7	
	comp=E,1565μm,0.5s					
ALN			AML	AML	08 43 13.1	
	comp=N,1426μm,0.7s					
GADA	**Gvkgeada**	**1.24 263**	P	**Pn**	**08 42 53.6**	**-0.1**
GADA			S	**Sn**	**08 43 10.5**	**+0.2**
CTYL	**Yalikoy Yolu**	**1.26 28**	*e*PN	**Pn**	**08 42 54.0**	**0.0**
CTYL	**Yalikoy Yolu**	**1.26 28**	*e*PN	**Pn**	**08 42 54.0**	**0.0**
BGKT	**Bogazkoy**	**1.27 49**	*e*PN	**Pn**	**08 42 54.4**	**+0.3**
BGKT	**Bogazkoy**	**1.27 49**	*e*Pn	**Pn**	**08 42 54.4**	**+0.3**
GEMT	**Gemlik**	**1.29 86**	*e*PN	**Pn**	**08 42 54.4**	**0.0**
GEMT	**Gemlik**	**1.29 86**	*e*Pn	**Pn**	**08 42 54.4**	**0.0**
IGD	**Bursa**	**1.30 94**	*i* P	**Pn**	**08 42 53.4**	**-1.1**
BUY	**Buyukada**	**1.32 68**	P	**Pn**	**08 42 54.6**	**-0.3**
BUY	**Buyukada**	**1.32 68**	*i* P	**Pn**	**08 42 54.6**	**-0.3**
DKL	**Dikili**	**1.37 200**	*e*PN	**Pn**	**08 42 55.6**	**+0.2**
DKL	**Dikili**	**1.37 200**	*e*Pn	**Pn**	**08 42 55.6**	**+0.2**
ISK	**Istanbul-Kandi**	**1.38 59**	*e*PN	**Pg**	**08 42 56.8**	**-0.4**
ISK	**Istanbul-Kandi**	**1.38 59**	P	**Pn**	**08 42 55.2**	**-0.4**
ISK			S	**Sb**	**08 43 12.9**	**-0.8**
ISK	**Istanbul-Kandi**	**1.38 59**	P	**Pn**	**08 42 55.2**	**-0.4**
ISK	**Istanbul-Kandi**	**1.38 59**	*e*Pn	**Pg**	**08 42 56.8**	**-0.4**
ISK			S	**Sb**	**08 43 12.9**	**-0.8**
PRK	**Paraskevi**	**1.46 221**	P	**Pn**	**08 42 57.0**	**+0.2**
PRK			S	**Sb**	**08 43 16.6**	**+0.4**
PRK	**Paraskevi**	**1.46 221**	P	**Pn**	**08 42 57.0**	**+0.2**
PRK			S	**Sb**	**08 43 16.6**	**+0.4**
PRK	**Paraskevi**	**1.46 221**	P	**Pn**	**08 42 56.8**	**0.0**
PRK			S	**Sg**	**08 43 16.9**	**-0.9**
PRK			AML	AML	08 43 20.8	
	comp=N,2101μm,0.5s					
PRK			AML	AML	08 43 21.3	
	comp=E,3346μm,0.7s					
KLYT	**Kilyos**	**1.47 52**	*e*PN	**Pb**	**08 42 57.8**	**0.0**
KLYT	**Kilyos**	**1.47 52**	*e*Pn	**Pb**	**08 42 57.8**	**0.0**
AKHS	**Akhisar**	**1.50 171**	P	**Pn**	**08 42 57.5**	**+0.3**
AKHS			S	**Sn**	**08 43 17.0**	**+0.3**
AKHS	**Akhisar**	**1.50 171**	*i* P	**Pn**	**08 42 57.5**	**+0.3**
AKHS			*i* S	**Sn**	**08 43 16.9**	**+0.3**
AKS	**Akhisar**	**1.50 171**	*e*PN	**Pn**	**08 42 57.4**	**+0.1**
AKS	**Akhisar**	**1.50 171**	*e*Pn	**Pn**	**08 42 57.4**	**+0.1**
IZI	**Iznik**	**1.50 90**	*e*PN	**Pn**	**08 42 57.4**	**0.0**
IZI	**Iznik**	**1.50 90**	*e*Pn	**Pn**	**08 42 57.4**	**0.0**
SMTH	**Samothraki Isl**	**1.51 275**	P	**Pn**	**08 42 57.5**	**0.0**
SMTH			S	**Sn**	**08 43 17.2**	**+0.2**
SMTH	**Samothraki Isl**	**1.51 275**	P	**Pn**	**08 42 57.5**	**0.0**
SMTH			S	**Sn**	**08 43 17.2**	**+0.2**
SMTH	**Samothraki Isl**	**1.51 275**	P	**Pn**	**08 42 57.5**	**0.0**
SMTH			S	**Sn**	**08 43 17.0**	**0.0**
SMTH			AML	AML	08 43 18.8	
	comp=E,1404μm,0.4s					
SMTH			AML	AML	08 43 20.8	
	comp=N,2461μm,0.3s					
EDRB	**Edirne**	**1.59 339**	P	**Pb**	**08 42 59.5**	**-0.5**
EDRB			S	**Sn**	**08 43 17.9**	**-1.1**
EDRB	**Edirne**	**1.59 339**	P	**Pb**	**08 42 59.5**	**-0.5**
EDRB			S	**Sn**	**08 43 17.9**	**-1.1**
DEMI	**Demirci**	**1.61 144**	P	**Pn**	**08 42 59.2**	**+0.3**
DEMI	**Demirci**	**1.61 144**	*i* P	**Pn**	**08 42 59.2**	**+0.3**
ADVT	**Abdulvahap**	**1.71 87**	*e*PN	**Pn**	**08 43 00.8**	**+0.7**
ADVT	**Abdulvahap**	**1.71 87**	*e*Pn	**Pn**	**08 43 00.8**	**+0.7**
HRT	**Hereke**	**1.71 74**	*e*PN	**Pn**	**08 43 00.7**	**+0.5**
HRT	**Hereke**	**1.71 74**	*e*Pn	**Pn**	**08 43 00.7**	**+0.5**
SIGR	**SIGRI**	**1.71 229**	P	**Pn**	**08 43 00.0**	**-0.2**
SIGR			S	**Sn**	**08 43 22.5**	**+0.6**
SIGR	**SIGRI**	**1.71 229**	P	**Pn**	**08 43 00.0**	**-0.2**
SIGR			S	**Sn**	**08 43 22.5**	**+0.6**
SIGR	**SIGRI**	**1.71 229**	P	**Pn**	**08 42 59.8**	**-0.4**
SIGR			S	**Sb**	**08 43 23.3**	**-0.1**
SIGR			AML	AML	08 43 25.9	
	comp=E,1230μm,0.5s					
SIGR			AML	AML	08 43 27.6	
	comp=N,1163μm,0.2s					
TVSB	**Tavsanli**	**1.76 120**	PN	**Pn**	**08 43 01.8**	**+0.9**
TVSB	**Tavsanli**	**1.76 120**	*i* Pn	**Pn**	**08 43 01.8**	**+0.9**
CAVI	**Cavuskoy**	**1.79 94**	*e*PN	**Pn**	**08 43 02.0**	**+0.6**
CAVI	**Cavuskoy**	**1.79 94**	*e*Pn	**Pn**	**08 43 02.0**	**+0.6**
SILT	**Sile**	**1.81 63**	*e*PN	**Pn**	**08 43 01.8**	**+0.3**
SILT	**Sile**	**1.81 63**	*e*Pn	**Pn**	**08 43 01.8**	**+0.3**
LIA	**Limnos Island**	**1.84 256**	P	**Pn**	**08 43 02.6**	**+0.7**
LIA			S	**Sn**	**08 43 24.5**	**-0.5**
LIA	**Limnos Island**	**1.84 256**	P	**Pb**	**08 43 03.5**	**-0.7**
LIA			S	**Sb**	**08 43 26.3**	**-0.8**
GDZ	**Gediz**	**1.98 129**	P	**Pn**	**08 43 04.7**	**+0.7**
GDZ	**Gediz**	**1.98 129**	*i* P	**Pn**	**08 43 04.7**	**+0.7**
KDZ	**Kurdzhali**	**2.04 310**	*i* P	**Pn**	**08 43 06.1**	**+1.3**
KULA	**Kula-Manisa**	**2.05 154**	*e*PN	**Pn**	**08 43 05.8**	**+0.9**
KULA	**Kula-Manisa**	**2.05 154**	P	**Pn**	**08 43 05.2**	**+0.3**
KULA			S	**Sn**	**08 43 31.2**	**+0.9**
KULA	**Kula-Manisa**	**2.05 154**	P	**Pn**	**08 43 05.2**	**+0.3**
KULA	**Kula-Manisa**	**2.05 154**	*e*Pn	**Pn**	**08 43 05.8**	**+0.9**
KULA			S	**Sn**	**08 43 31.2**	**+0.9**
URLA	**Izmir**	**2.12 200**	P	**Pn**	**08 43 05.7**	**-0.1**
URLA	**Izmir**	**2.12 200**	*i* P	**Pn**	**08 43 05.7**	**-0.1**
GPA	**Golpazari**	**2.14 91**	*e*PN	**Pn**	**08 43 07.3**	**+1.1**
GPA	**Golpazari**	**2.14 91**	*e*Pn	**Pn**	**08 43 07.3**	**+1.1**
SPNC	**Sapanca-Adapaz**	**2.16 80**	*e*PN	**Pn**	**08 43 07.4**	**+1.0**
SPNC	**Sapanca-Adapaz**	**2.16 80**	*e*Pn	**Pn**	**08 43 07.4**	**+1.0**
KAND	**Kocaeli-Kandir**	**2.17 69**	P	**Pn**	**08 43 07.2**	**+0.7**
KAND	**Kocaeli-Kandir**	**2.17 69**	*i* P	**Pn**	**08 43 07.2**	**+0.7**
JMB	**Yambol**	**2.22 342**	*i* P	**Pb**	**08 43 11.6**	**+1.0**
ZEY	**¨zmir**	**2.25 201**	*i* P	**Pn**	**08 43 07.1**	**-0.6**
CHOS	**Chios island**	**2.27 210**	P	**Pn**	**08 43 07.8**	**-0.1**
CHOS			S	**Sn**	**08 43 36.5**	**+0.7**
CHOS	**Chios island**	**2.27 210**	P	**Pn**	**08 43 07.8**	**-0.1**
CHOS			S	**Sn**	**08 43 36.5**	**+0.7**
CHOS	**Chios island**	**2.27 210**	P	**Pn**	**08 43 07.1**	**-0.8**
GULT	**Gulveren**	**2.30 87**	*e*PN	**Pn**	**08 43 09.6**	**+1.2**
GULT	**Gulveren**	**2.30 87**	*e*Pn	**Pn**	**08 43 09.6**	**+1.2**
DGB	**¨zmir**	**2.35 192**	*i* P	**Pn**	**08 43 08.9**	**-0.2**
KAVA	**Kavala**	**2.36 287**	P	**Pn**	**08 43 09.7**	**+0.5**
KAVA			S	**Sn**	**08 43 37.2**	**-0.8**
KAVA	**Kavala**	**2.36 287**	P	**Pn**	**08 43 09.7**	**+0.5**
KAVA			S	**Sn**	**08 43 37.2**	**-0.8**
KAVA	**Kavala**	**2.36 287**	P	**Pn**	**08 43 10.9**	**+1.7**
AYDB	**Zeytinkoy-Aydi**	**2.43 173**	*e*PN	**Pn**	**08 43 10.5**	**+0.4**
AYDB	**Zeytinkoy-Aydi**	**2.43 173**	*e*Pn	**Pn**	**08 43 10.5**	**+0.4**
RZN	**Rozhen**	**2.49 303**	*i* P	**Pn**	**08 43 12.2**	**+1.1**
KHAL	**Karahalli**	**2.51 142**	P	**Pn**	**08 43 12.0**	**+0.7**
KHAL	**Karahalli**	**2.51 142**	*i* P	**Pn**	**08 43 12.0**	**+0.7**
KHL	**Karahalli**	**2.56 142**	*e*PN	**Pn**	**08 43 12.1**	**+0.1**
KHL	**Karahalli**	**2.56 142**	*e*Pn	**Pn**	**08 43 12.1**	**+0.1**
SAHE	**Sakarya_HENDEK**	**2.59 78**	P	**Pn**	**08 43 13.1**	**+0.7**
SAHE	**Sakarya_HENDEK**	**2.59 78**	*i* P	**Pn**	**08 43 13.1**	**+0.7**
OUR	**Ouranopolis**	**2.69 271**	P	**Pn**	**08 43 13.7**	**0.0**
OUR	**Ouranopolis**	**2.69 271**	P	**Pn**	**08 43 13.7**	**0.0**
OUR	**Ouranopolis**	**2.69 271**	P	**Pn**	**08 43 12.9**	**-0.8**
ESKT	**Eskisehir**	**2.70 107**	*i* P	**Pg**	**08 43 21.2**	**-1.4**
AYDN	**Tasoluk**	**2.71 174**	P	**Pn**	**08 43 13.8**	**-0.2**
AYDN	**Tasoluk**	**2.71 174**	*i* P	**Pn**	**08 43 13.8**	**-0.2**
NVR	**Nevrokopi**	**2.94 291**	P	**Pn**	**08 43 18.4**	**+1.3**
SRS	**Serrai**	**3.07 286**	P	**Pn**	**08 43 19.0**	**+0.1**
MMB	**Musomiste**	**3.11 294**	*i* P	**Pn**	**08 43 20.3**	**+0.8**
BOLV	**Bolvadin**	**3.13 120**	P	**Pn**	**08 43 21.5**	**+1.7**
BOLV	**Bolvadin**	**3.13 120**	*i* P	**Pn**	**08 43 21.5**	**+1.7**
SVRH	**Sivrihisar-ESK**	**3.22 105**	*e*PN	**Pn**	**08 43 22.4**	**+1.4**
SVRH	**Sivrihisar-ESK**	**3.22 105**	*e*Pn	**Pn**	**08 43 22.4**	**+1.4**
MPEP	**Malo Peshtene**	**4.11 318**	*i* P	**Pn**	**08 43 34.8**	**+1.6**
BARS	**Barje**	**4.92 302** ⇑	*i*Pn	**Pn**	**08 43 46.3**	**+1.9**
IVAS	**Ivanjica**	**6.35 303**	*e*Pn	**Pn**	**08 44 05.1**	**+1.0**

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*IDC **30** 08:52:39.7±1.4, 39°.11N×29°.13E, h0km, mb3.5/4, mb1 3.5/7, mb1mx3.3/42, mbtmp3.5/7, ML3.3/3, MS2.4/2, Ms1 2.4/2, ms1mx2.1/34, Error ellipse: s-maj=41.0km s-min=16.7km az=150.0*
*DDA **30** 08:52:40.2, 39°.10N×29°.06E, h12km, Ml3.8*
*ISK **30** 08:52:40.2, 39°.09N×29°.04E, h4km, ML3.8*
*ISCJB **30** 08:52:40.4±0.4, 39°.09N±0°.02×29°.02E±0°.02, h6km±3km, mb3.4/4, Error ellipse: s-maj=2.6km s-min=2.4km az=9.4*
*CSEM **30** 08:52:40.9±0.1, 39°.08N×29°.04E, h5km, ML3.8, Error ellipse: s-maj=2.2km s-min=2.1km az=64.0*
*THE **30** 08:52:42.4, 39°.05N×28°.93E, h4km±4km, ML3.6/3, Error ellipse: s-maj=5.1km s-min=1.6km az=117.0*
ISC 30 08:52:40.8±0.9, 39°.10N±0°.01×29°.04E±0°.01, h9km±7km, n167, σ0°97/223, mb3.3/4, 9C-4D, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**258**	P	**Pg**	**08 52 45.9**	**-0.1**
DEMI				S	**Sg**	**08 52 49.6**	**+0.2**
DEMI	**Demirci**	**0.25**	**258**	*i* P	**Pg**	**08 52 45.9**	**-0.1**
DEMI				*i* S	**Sg**	**08 52 49.6**	**+0.2**
GDZ	**Gediz**	**0.35**	**91**	P	**Pg**	**08 52 47.2**	**-0.5**
GDZ				S	**Sg**	**08 52 52.2**	**-0.1**
GDZ	**Gediz**	**0.35**	**91**	*i* P	**Pg**	**08 52 47.2**	**-0.5**
GDZ				*i* S	**Sg**	**08 52 52.2**	**-0.1**
KULA	**Kula-Manisa**	**0.65**	**207**	*e*PG	**Pg**	**08 52 53.1**	**-0.3**
KULA				*e*SG	**Sg**	**08 53 02.0**	**+0.1**
KULA	**Kula-Manisa**	**0.65**	**207**	P	**Pg**	**08 52 53.0**	**-0.3**
KULA				S	**Sg**	**08 53 01.5**	**-0.4**
KULA	**Kula-Manisa**	**0.65**	**207**	*e*Pg	**Pg**	**08 52 53.1**	**-0.3**
KULA				S	**Sg**	**08 53 01.5**	**-0.4**
KULA				*e*Sg	**Sg**	**08 53 02.0**	**+0.1**
KHAL	**Karahalli**	**0.81**	**154**	P	**Pg**	**08 52 56.1**	**-0.3**
KHAL				S	**Sg**	**08 53 06.5**	**-0.4**
KHAL	**Karahalli**	**0.81**	**154**	*i* P	**Pg**	**08 52 56.1**	**-0.3**
KHAL				*i* S	**Sg**	**08 53 06.5**	**-0.4**
KHL	**Karahalli**	**0.86**	**153**	*e*PG	**Pg**	**08 52 57.6**	**+0.2**
KHL	**Karahalli**	**0.86**	**153**	*e*Pg	**Pg**	**08 52 57.6**	**+0.2**
ORLT	**Orhaneli**	**0.96**	**354**	*e*PG	**Pg**	**08 52 58.4**	**-0.8**
ORLT	**Orhaneli**	**0.96**	**354**	*e*Pg	**Pg**	**08 52 58.4**	**-0.8**
AKHS	**Akhisar**	**0.98**	**258**	P	**Pg**	**08 52 59.4**	**-0.2**
AKHS				S	**Sb**	**08 53 12.8**	**-0.2**
AKHS	**Akhisar**	**0.98**	**258**	*i* P	**Pg**	**08 52 59.4**	**-0.2**
AKHS				*i* S	**Sb**	**08 53 12.8**	**-0.2**
AKS	**Akhisar**	**0.98**	**258**	*e*PG	**Pg**	**08 52 59.5**	**-0.1**
AKS	**Akhisar**	**0.98**	**258**	*e*Pg	**Pg**	**08 52 59.5**	**-0.1**
BALB	**Balikesir**	**1.05**	**302**	*e*PG	**Pb**	**08 53 01.3**	**+0.1**
BALB				*e*SG	**Sb**	**08 53 15.4**	**+0.4**
BALB	**Balikesir**	**1.05**	**302**	*e*Pg	**Pb**	**08 53 01.3**	**+0.1**
BALB				*e*Sg	**Sb**	**08 53 15.4**	**+0.4**
IGD	**Bursa**	**1.18**	**6**	*i* P	**Pb**	**08 53 01.2**	**-2.1**
IGD				*i* S	**Sn**	**08 53 19.4**	**-0.3**
CAVI	**Cavuskoy**	**1.27**	**29**	*e*PN	**Pn**	**08 53 04.9**	**+0.1**
CAVI				*e*SN	**Sn**	**08 53 23.6**	**+1.6**
CAVI	**Cavuskoy**	**1.27**	**29**	*e*Pn	**Pn**	**08 53 04.9**	**+0.1**
CAVI				*e*Sn	**Sn**	**08 53 23.6**	**+1.6**
BALY	**Balya**	**1.27**	**301**	P	**Pn**	**08 53 04.5**	**-0.4**
BALY				S	**Sn**	**08 53 24.0**	**+1.9**
BALY	**Balya**	**1.27**	**301**	*i* P	**Pn**	**08 53 04.5**	**-0.4**
BALY				*i* S	**Sn**	**08 53 24.0**	**+1.9**
MDNY	**Mudanya-Bursa**	**1.28**	**355**	*e*PN	**Pg**	**08 53 05.3**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.28**	**355**	*e*Pn	**Pg**	**08 53 05.3**	**-0.1**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*PN	**Pg**	**08 53 05.9**	**+0.5**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*Pn	**Pg**	**08 53 05.9**	**+0.5**
IZI	**Iznik**	**1.29**	**15**	*e*PN	**Pg**	**08 53 05.5**	**0.0**
IZI	**Iznik**	**1.29**	**15**	*e*Pn	**Pg**	**08 53 05.5**	**0.0**
DENT	**Denizli**	**1.34**	**180**	*e*PN	**Pb**	**08 53 06.3**	**+0.1**
DENT	**Denizli**	**1.34**	**180**	*e*Pn	**Pb**	**08 53 06.3**	**+0.1**
GEMT	**Gemlik**	**1.34**	**5**	*e*PN	**Pb**	**08 53 06.4**	**+0.2**
GEMT				*e*SN	**Sg**	**08 53 26.1**	**+2.0**
GEMT	**Gemlik**	**1.34**	**5**	*e*Pn	**Pb**	**08 53 06.4**	**+0.2**
GEMT				*e*Sn	**Sg**	**08 53 26.1**	**+2.0**
DNZL	**Cakiroluk**	**1.40**	**180**	P	**Pn**	**08 53 06.8**	**0.0**
DNZL	**Cakiroluk**	**1.40**	**180**	*i* P	**Pn**	**08 53 06.8**	**0.0**
DNZL				*i* S	**Sg**	**08 53 27.9**	**+1.9**
ADVT	**Abdulvahap**	**1.44**	**22**	*e*PN	**Pb**	**08 53 08.2**	**+0.3**
ADVT	**Abdulvahap**	**1.44**	**22**	*e*Pn	**Pb**	**08 53 08.2**	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**1.46**	**218**	*e*PN	**Pb**	**08 53 08.2**	**0.0**
AYDB				*e*SN	**Sg**	**08 53 28.6**	**+0.9**
AYDB	**Zeytinkoy-Aydi**	**1.46**	**218**	*e*Pn	**Pb**	**08 53 08.2**	**0.0**
AYDB				*e*Sn	**Sg**	**08 53 28.6**	**+0.9**
ESKT	**Eskisehir**	**1.47**	**73**	*i* P	**Pn**	**08 53 07.2**	**-0.5**
ESKT				*i* S	**Sn**	**08 53 26.7**	**-0.5**
SEYT	**Eskypehyr**	**1.47**	**73**	P	**Pn**	**08 53 07.2**	**-0.5**
SEYT				S	**Sn**	**08 53 26.7**	**-0.4**
ARMT	**Armutlu**	**1.48**	**355**	*e*PN	**Pb**	**08 53 08.6**	**+0.1**
ARMT	**Armutlu**	**1.48**	**355**	*e*Pn	**Pb**	**08 53 08.6**	**+0.1**
BOLV	**Bolvadin**	**1.54**	**104**	P	**Pn**	**08 53 08.8**	**+0.2**
BOLV				S	**Sb**	**08 53 29.8**	**+0.5**
BOLV	**Bolvadin**	**1.54**	**104**	*i* P	**Pn**	**08 53 08.8**	**+0.2**
BOLV				*i* S	**Sb**	**08 53 29.8**	**+0.5**
EDC	**Edincik**	**1.54**	**325**	*e*PN	**Pb**	**08 53 09.2**	**-0.4**
EDC	**Edincik**	**1.54**	**325**	*e*Pn	**Pb**	**08 53 09.3**	**-0.4**
GPA	**Golpazari**	**1.54**	**39**	*e*PN	**Pb**	**08 53 09.3**	**-0.4**
GPA	**Golpazari**	**1.54**	**39**	*e*Pn	**Pb**	**08 53 09.3**	**-0.4**
KNL	**Bal¨–kesir**	**1.65**	**316**	*i* P	**Pn**	**08 53 08.6**	**-1.5**
KNL				*i* S	**Sb**	**08 53 32.2**	**-0.3**
DKL	**Dikili**	**1.66**	**270**	*e*PN	**Pb**	**08 53 11.3**	**-0.2**
DKL	**Dikili**	**1.66**	**270**	*e*Pn	**Pb**	**08 53 11.3**	**-0.2**
AYDN	**Tasoluk**	**1.70**	**213**	P	**Pn**	**08 53 10.2**	**-0.5**
AYDN	**Tasoluk**	**1.70**	**213**	*i* P	**Pn**	**08 53 10.2**	**-0.5**
AYDN				*i* S	**Sg**	**08 53 39.1**	**+3.7**
ISP	**Isparta**	**1.73**	**137**	*e*PN	**Pn**	**08 53 11.3**	**+0.1**
ISP	**Isparta**	**1.73**	**137** ⇑	*i*P	**Pn**	**08 53 10.5**	**-0.7**
ISP	**Isparta**	**1.73**	**137**	S	**Sb**	**08 53 35.2**	**+0.6**
ISP	**Isparta**	**1.73**	**137**	P	**Pn**	**08 53 10.5**	**-0.7**
ISP				S	**Sn**	**08 53 33.2**	**-0.2**
ISP	**Isparta**	**1.73**	**137**	P	**Pn**	**08 53 10.5**	**-0.7**
ISP	**Isparta**	**1.73**	**137**	*e*Pn	**Pn**	**08 53 11.3**	**+0.1**
ISP				S	**Sn**	**08 53 33.2**	**-0.2**
GULT	**Gulveren**	**1.76**	**40**	*e*PN	**Pb**	**08 53 13.0**	**-0.3**
GULT	**Gulveren**	**1.76**	**40**	*e*Pn	**Pb**	**08 53 13.0**	**-0.3**
BUY	**Buyukada**	**1.76**	**2**	P	**Pn**	**08 53 10.3**	**-1.2**
BUY				S	**Sn**	**08 53 32.9**	**-1.1**
BUY	**Buyukada**	**1.76**	**2**	*i* P	**Pn**	**08 53 10.3**	**-1.2**
BUY				*i* S	**Sn**	**08 53 32.9**	**-1.1**
BAGO	**Egridir - ISPA**	**1.76**	**128**	*i* P	**Pn**	**08 53 11.4**	**-0.2**
BAGO				*i* S	**Sg**	**08 53 39.6**	**+2.1**
HRT	**Hereke**	**1.79**	**16**	*e*PN	**Pn**	**08 53 13.0**	**+0.9**
HRT	**Hereke**	**1.79**	**16**	*e*Pn	**Pn**	**08 53 13.0**	**+0.9**
AYVA	**Ayvalik**	**1.83**	**277**	P	**Pg**	**08 53 15.5**	**-0.5**
AYVA	**Ayvalik**	**1.83**	**277**	*i* P	**Pg**	**08 53 15.5**	**-0.5**
AYVA				*i* S	**Sg**	**08 53 39.4**	**-0.4**
MRMT	**Marmara Adasi**	**1.87**	**324**	*e*PN	**Pn**	**08 53 13.8**	**+0.7**
MRMT	**Marmara Adasi**	**1.87**	**324**	*e*Pn	**Pn**	**08 53 13.8**	**+0.7**
GOLH	**Golhisar**	**1.90**	**167**	P	**Pn**	**08 53 13.8**	**+0.2**
GOLH	**Golhisar**	**1.90**	**167**	*i* P	**Pn**	**08 53 13.8**	**+0.2**
GOLH				*i* S	**Sg**	**08 53 44.1**	**+2.2**
SVRH	**Sivrihisar-ESK**	**1.96**	**79**	*e*PN	**Pn**	**08 53 15.5**	**+1.1**
SVRH	**Sivrihisar-ESK**	**1.96**	**79**	*e*Pn	**Pn**	**08 53 15.5**	**+1.1**
ISK	**Istanbul-Kandi**	**1.97**	**1**	*e*PN	**Pb**	**08 53 15.9**	**-1.0**
ISK	**Istanbul-Kandi**	**1.97**	**1**	P	**Pn**	**08 53 13.7**	**-0.7**
ISK				S	**Sg**	**08 53 43.2**	**-0.9**
ISK	**Istanbul-Kandi**	**1.97**	**1**	P	**Pn**	**08 53 13.7**	**-0.7**
ISK	**Istanbul-Kandi**	**1.97**	**1**	*e*Pn	**Pb**	**08 53 15.9**	**-1.0**
ISK				S	**Sg**	**08 53 43.2**	**-0.9**
GLHS	**Glhisar (BURDU**	**1.97**	**169**	*e*PN	**Pn**	**08 53 14.8**	**+0.2**
GLHS	**Glhisar (BURDU**	**1.97**	**169**	*e*Pn	**Pn**	**08 53 14.8**	**+0.2**
YER	**Yerkesik**	**2.04**	**197**	*e*PN	**Pb**	**08 53 17.0**	**-1.2**
YER	**Yerkesik**	**2.04**	**197**	P	**Pn**	**08 53 15.7**	**+0.2**
YER	**Yerkesik**	**2.04**	**197**	P	**Pn**	**08 53 15.7**	**+0.2**
YER	**Yerkesik**	**2.04**	**197**	*e*Pn	**Pb**	**08 53 17.0**	**-1.2**
BGKT	**Bogazkoy**	**2.09**	**355**	*e*PN	**Pb**	**08 53 18.0**	**-1.0**
BGKT	**Bogazkoy**	**2.09**	**355**	*e*Pn	**Pb**	**08 53 18.0**	**-1.0**
SILT	**Sile**	**2.11**	**13**	*e*PN	**Pn**	**08 53 17.1**	**+0.7**
SILT	**Sile**	**2.11**	**13**	*e*Pn	**Pn**	**08 53 17.1**	**+0.7**
BTAS	**Taskesti**	**2.11**	**45**	P	**Pb**	**08 53 18.0**	**-1.4**
BTAS	**Taskesti**	**2.11**	**45**	*i* P	**Pb**	**08 53 18.0**	**-1.4**
BTAS				*i* S	**Sg**	**08 53 50.8**	**+2.1**
PRK	**Paraskevi**	**2.15**	**275**	P	**Pn**	**08 53 17.6**	**+0.7**
PRK				S	**Sn**	**08 53 44.9**	**+1.1**
PRK	**Paraskevi**	**2.15**	**275**	P	**Pn**	**08 53 17.6**	**+0.7**
PRK				S	**Sn**	**08 53 44.9**	**+1.1**
KLYT	**Kilyos**	**2.16**	**0**	*e*PN	**Pn**	**08 53 18.2**	**+1.2**
KLYT	**Kilyos**	**2.16**	**0**	*e*Pn	**Pn**	**08 53 18.2**	**+1.2**
LPK	**Lapseki**	**2.17**	**307**	*e*PN	**Pn**	**08 53 18.6**	**+1.4**
LPK	**Lapseki**	**2.17**	**307**	*e*Pn	**Pn**	**08 53 18.6**	**+1.4**
CTKS	**Kestanelik-??a**	**2.18**	**349**	*e*PN	**Pn**	**08 53 18.4**	**+1.1**
CTKS	**Kestanelik-??a**	**2.18**	**349**	*e*Pn	**Pn**	**08 53 18.4**	**+1.1**
KAND	**Kocaeli-Kandir**	**2.19**	**24**	P	**Pn**	**08 53 17.0**	**-0.4**
KAND	**Kocaeli-Kandir**	**2.19**	**24**	*i* P	**Pn**	**08 53 16.9**	**-0.4**
KAND				*i* S	**Sn**	**08 53 40.7**	**-3.9**
SMG	**Samos**	**2.21**	**232**	P	**Pn**	**08 53 18.9**	**+1.1**
SMG	**Samos**	**2.21**	**232**	P	**Pn**	**08 53 18.9**	**+1.1**
EZN	**Ezine**	**2.22**	**290**	*e*PN	**Pn**	**08 53 19.1**	**+1.2**
EZN	**Ezine**	**2.22**	**290**	P	**Pn**	**08 53 18.1**	**+0.2**
EZN				S	**Sn**	**08 53 45.2**	**-0.3**
EZN	**Ezine**	**2.22**	**290**	P	**Pn**	**08 53 18.1**	**+0.2**
EZN	**Ezine**	**2.22**	**290**	*e*Pn	**Pn**	**08 53 19.1**	**+1.2**
EZN				S	**Sn**	**08 53 45.2**	**-0.3**
KIZT	**Kizilcal**	**2.23**	**95**	*e*PN	**Pn**	**08 53 18.5**	**+0.4**
KIZT	**Kizilcal**	**2.23**	**95**	*e*Pn	**Pn**	**08 53 18.5**	**+0.4**
SUTC	**Sutluce-Ispart**	**2.24**	**136**	*e*PN	**Pn**	**08 53 19.1**	**+0.9**
SUTC	**Sutluce-Ispart**	**2.24**	**136**	*e*Pn	**Pn**	**08 53 19.1**	**+0.9**
SAHE	**Sakarya_HENDEK**	**2.24 38**	P	**Pn**	**08 53 17.9**	**-0.3**
SAHE	**Sakarya_HENDEK**	**2.24 38**	*i* P	**Pn**	**08 53 17.9**	**-0.3**
SAHE			*i* S	**Sb**	**08 53 50.8**	**+1.3**
GELI	**Tayfur-Gelibol**	**2.37 304**	*e*PN	**Pn**	**08 53 21.1**	**+1.3**
GELI	**Tayfur-Gelibol**	**2.37 304**	*e*Pn	**Pn**	**08 53 21.1**	**+1.3**
CHOS	**Chios island**	**2.44 254**	P	**Pn**	**08 53 21.0**	**+0.1**
CHOS			S	**Sn**	**08 53 48.9**	**-2.0**
CHOS	**Chios island**	**2.44 254**	P	**Pn**	**08 53 21.0**	**+0.1**
CHOS			S	**Sn**	**08 53 48.9**	**-2.0**
BODT	**Bodrum**	**2.44 214**	P	**Pn**	**08 53 21.4**	**+0.4**
BODT			S	**Sn**	**08 53 50.1**	**-0.9**
BODT	**Bodrum**	**2.44 214**	P	**Pn**	**08 53 21.4**	**+0.4**
BODT			S	**Sn**	**08 53 50.1**	**-0.9**
CTYL	**Yalikoy Yolu**	**2.44 347**	*e*PN	**Pn**	**08 53 21.9**	**+1.0**
CTYL	**Yalikoy Yolu**	**2.44 347**	*e*Pn	**Pn**	**08 53 22.0**	**+1.0**
FETY	**Fethiye**	**2.46 179**	P	**Pn**	**08 53 21.8**	**+0.7**
FETY	**Fethiye**	**2.46 179**	P	**Pn**	**08 53 21.8**	**+0.7**
KDHN	**Kadinhani**	**2.47 102**	P	**Pn**	**08 53 20.9**	**-0.6**
KDHN	**K

*ISCJB **30** 09:15:44.5±1.8, 34°.17N±0°.05×23°.65E±0°.08, h10km±11km, mb3.4/2, MS2.8/2, Error ellipse: s-maj=11.1km s-min=8.6km az=18.9*
*IDC **30** 09:15:44.2±1.7, 34°.31N×23°.65E, h0km, mb3.5/2, mb1 3.6/4, mb1mx3.4/45, mbtmp3.5/4, ML4.0/2, MS2.8/3, Ms1 2.8/3, ms1mx2.4/42, Error ellipse: s-maj=48.6km s-min=26.6km az=126.0*
*CSEM **30** 09:15:45.2±0.4, 34°.22N×23°.66E, h5km, ML3.2, Error ellipse: s-maj=7.3km s-min=5.9km az=38.0*
*ATH **30** 09:15:46.2, 34°.24N×23°.75E, h24km±5km, ML3.2/2, Error ellipse: s-maj=8.9km s-min=2.6km az=14.0*
*THE **30** 09:15:47.5, 34°.32N×23°.72E, h3km±3km, ML3.2/5, Error ellipse: s-maj=3.3km s-min=1.7km az=93.0*

ISC 30 09:15:46.0±1.9, 34°.28N±0°.07×23°.74E±0°.05, h5km±10km, n35, σ1§05/45, Crete

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GVD	**Gavdhos**	**0.62**	**27**	P	**Pg**	**09 15 58.6**	**+0.6**
GVD				S	**Sb**	**09 16 08.5**	**0.0**
GVD	**Gavdhos**	**0.62**	**27**	P	**Pg**	**09 15 58.6**	**+0.6**
GVD				S	**Sb**	**09 16 08.5**	**0.0**
GVD	**Gavdhos**	**0.62**	**27**	P	**Pg**	**09 15 57.9**	**-0.1**
GVD				S	**Sn**	**09 16 10.9**	**-1.1**
GVD				AML	AML	09 16 15.3	
	comp=N,6144μm,0.4s						
GVD				AML	AML	09 16 16.9	
	comp=E,2405μm,0.4s						
SIVA	**Sivas**	**1.15**	**50**	P	**Pn**	**09 16 09.3**	**+0.6**
SIVA				S	**Sn**	**09 16 25.2**	**+0.3**
SIVA	**Sivas**	**1.15**	**50**	P	**Pn**	**09 16 09.3**	**+0.6**
SIVA				S	**Sn**	**09 16 25.2**	**+0.3**
SIVA	**Sivas**	**1.15**	**50**	P	**Pn**	**09 16 09.8**	**+1.1**
SIVA				S	**Sg**	**09 16 22.5**	**-0.4**
SIVA				AML	AML	09 16 35.7	
	comp=E,1814μm,0.5s						
SIVA				AML	AML	09 16 45.6	
	comp=N,2310μm,0.8s						
VAM	**Vamos**	**1.18**	**19**	P	**Pg**	**09 16 08.8**	**+0.1**
VAM				S	**Sn**	**09 16 25.5**	**-0.3**
VAM	**Vamos**	**1.18**	**19**	P	**Pg**	**09 16 08.8**	**+0.1**
VAM				S	**Sn**	**09 16 25.5**	**-0.3**
IMMV	**Iera Moni Meta**	**1.19**	**10**	P	**Pn**	**09 16 09.7**	**+0.3**
IMMV				S	**Sn**	**09 16 25.1**	**-0.9**
IMMV	**Iera Moni Meta**	**1.19**	**10**	P	**Pn**	**09 16 09.1**	**-0.2**
IMMV				S	**Sn**	**09 16 25.1**	**-0.9**
IMMV	**Iera Moni Meta**	**1.19**	**10**	P	**Pn**	**09 16 09.2**	**-0.2**
IDI	**Anoyia**	**1.38**	**43**	P	**Pb**	**09 16 12.2**	**-0.1**
IDI	**Anoyia**	**1.38**	**43**	P	**Pb**	**09 16 12.5**	**+0.1**
IDI	**Anoyia**	**1.38**	**43**	P	**Pb**	**09 16 12.5**	**+0.1**
ANKY	**Antikythira Is**	**1.62**	**347**	P	**Pn**	**09 16 14.8**	**-0.4**
ANKY				S	**Sg**	**09 16 37.4**	**-0.7**
ANKY	**Antikythira Is**	**1.62**	**347**	P	**Pn**	**09 16 14.8**	**-0.4**
ANKY				S	**Sg**	**09 16 37.4**	**-0.7**
ANKY	**Antikythira Is**	**1.62**	**347**	P	**Pb**	**09 16 16.4**	**0.0**
NPS	**Neapolis**	**1.83**	**57**	P	**Pb**	**09 16 19.0**	**-0.9**
NPS	**Neapolis**	**1.83**	**57**	P	**Pb**	**09 16 19.0**	**-0.9**
ZKR	**Zakros**	**2.21**	**67**	P	**Pn**	**09 16 22.8**	**-0.5**
ZKR	**Zakros**	**2.21**	**67**	P	**Pn**	**09 16 22.8**	**-0.5**
THR5	**Thira Island,**	**2.50**	**31**	P	**Pn**	**09 16 27.2**	**-0.2**
THR5	**Thira Island,**	**2.50**	**31**	P	**Pn**	**09 16 27.2**	**-0.2**
VLI	**Veliai**	**2.52**	**345**	P	**Pn**	**09 16 28.1**	**+0.5**
VLI	**Veliai**	**2.52**	**345**	P	**Pn**	**09 16 28.1**	**+0.5**
KARP	**Karpathos**	**3.08**	**65**	P	**Pn**	**09 16 36.1**	**+0.7**
KARP	**Karpathos**	**3.08**	**65**	P	**Pn**	**09 16 36.1**	**+0.7**
KARP	**Karpathos**	**3.08**	**65**	P	**Pn**	**09 16 36.4**	**+1.0**
GERES	**GERESS Array B**	**16.35**	**336**	Pn	**Pn**	**09 19 36.0**	**-0.3**
	comp=N,0.2nm,0.3s,baz=151,slow=12,SNR=2.3						
GERES				LR	LR	09 28 11.5	
	comp=N,26nm,18.1s,baz=23,slow=46						
KHC	**Kasperske Hory**	**16.64**	**336**	*e*P	**P**	**09 19 47.9**	**+5.5**
AKASG	**Malin Array Be**	**16.89**	**12**	Pn	**Pn**	**09 19 42.4**	**-0.7**
	comp=N,0.8nm,0.3s,baz=200,slow=11,SNR=4.6						
HFS	**Hagfors**	**26.68**	**349**	LR	LR	09 33 34.7	
	comp=N,40nm,20.6s,baz=26,slow=40						
NOA	**NORSAR Array B**	**27.97**	**347**	LR	LR	09 33 43.5	
	comp=N,12nm,18.4s,baz=95,slow=39						
TORD	**Torodi Ar. Bea**	**29.03**	**229**	P	**P**	**09 21 45.9**	**-1.3**
	comp=N,0.5nm,0.9s,baz=27,slow=9.9,SNR=2.7						
MKAR	**Makanchi Array**	**45.23**	**56**	P	**P**	**09 24 03.2**	**-1.0**
	comp=N,0.5nm,0.5s,baz=272,slow=8.1,SNR=4.9						

IDC 30 09:16:15.4±51.0, 17°.35S×179°.62E, h0km, mb3.9/3, mb1 4.0/3, mb1mx3.6/39, mbtmp3.9/3, Error ellipse: s-maj=923.2km s-min=144.7km az=77.0, Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**37.27**	**240**	P	P	09 23 29.6	+0.5
	0.7nm,0.4s,baz=95,slow=12,SNR=6.6						
WRA	**Warramunga Arr**	**42.89**	**259**	P	P	09 24 15.6	-0.4
	0.2nm,0.5s,baz=95,slow=8.0,SNR=12						
ASAR	**Alice Springs**	**43.14**	**254**	P	P	09 24 17.6	-0.4
	3.2nm,0.6s,baz=88,slow=8.3,SNR=66						

*CSEM **30** 09:21:52.4, 45°.94N×14°.30E, h0km, ML0.5, Suspected Mining explosion.*

LJU 30 09:21:52.4, 45°.94N×14°.29E, h0km, ML0.6, 2C Artificial, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GBAS	**Gorenja Brezov**	**0.10**	**93**	⇑*i*Pg	Pg	09 21 54.2	-0.1
GBAS				*i* Sg	Sg	09 21 55.8	0.0
	comp=Z,18nm,0.1s						
GBAS	**Gorenja Brezov**	**0.10**	**93**	⇑*i*Pg	Pg	09 21 54.2	-0.2
GBAS				*i* Sg	Sg	09 21 55.8	+0.1
CRNS	**Crni Vrh**	**0.14**	**351**	*i* Pg	Pg	09 21 55.2	+0.1
CRNS	**Crni Vrh**	**0.14**	**351**	*i* Pg	Pg	09 21 55.2	+0.1
JAVS	**Javornik**	**0.17**	**254**	*i* Pg	Pg	09 21 55.9	+0.3
JAVS	**Javornik**	**0.17**	**254**	*i* Pg	Pg	09 21 55.9	+0.3
CEY	**Cerknica**	**0.22**	**155**	*i* Pg	Pg	09 21 56.5	-0.1
CEY				*i* Sg	Sg	09 22 00.4	+0.9
	comp=Z,11nm,0.2s						
CEY	**Cerknica**	**0.22**	**155**	*i* Pg	Pg	09 21 56.5	-0.1
CEY				*i* Sg	Sg	09 22 00.4	+0.9
	comp=Z,11nm,0.2s						
VOJS	**Vojsko**	**0.30**	**288**	*i* Pg	Pg	09 21 58.1	0.0
VOJS	**Vojsko**	**0.30**	**288**	*i* Pg	Pg	09 21 58.1	-0.1
VNDS	**Vrh nad Dolski**	**0.33**	**60**	*i* Pg	Pg	09 21 59.1	+0.5
VNDS				*e*Sg	Sg	09 22 03.7	+0.8
	comp=Z,2.0nm,0.1s						
VNDS	**Vrh nad Dolski**	**0.33**	**60**	*i* Pg	Pg	09 21 59.1	+0.5
VNDS				*e*Sg	Sg	09 22 03.7	+0.8
	comp=Z,2.0nm,0.1s						
VISS	**Visnje**	**0.41**	**110**	*e*Pg	Pg	09 22 00.3	+0.1
VISS				*i* Sg	Sg	09 22 05.9	+0.5
VISS	**Visnje**	**0.41**	**110**	*e*Pg	Pg	09 22 00.3	+0.2
VISS				*i* Sg	Sg	09 22 05.9	+0.5

IDC 30 09:24:26.9±1.0, 3°.02N×128°.94E, h0km, mb3.9/6, mb1 4.0/6, mb1mx3.7/40, mbtmp3.9/6, Error ellipse: s-maj=63.8km s-min=17.7km az=76.0, North of Halmahera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**23.43**	**167**	P	P	09 29 37.9	0.0
	2.9nm,0.5s,baz=348,slow=10,SNR=27						
ASAR	**Alice Springs**	**26.96**	**170**	P	P	09 30 10.7	+0.3
	0.7nm,0.5s,baz=354,slow=7.6,SNR=17						
MJAR	**Matsushiro Arr**	**34.44**	**13**	P	P	09 31 16.3	0.0
	1.2nm,0.6s,baz=186,slow=9.6,SNR=3.8						
STKA	**Stephens Creek**	**36.73**	**162**	P	P	09 31 35.6	-0.4
	2.4nm,0.9s,baz=332,slow=10.0,SNR=5.8						
MKAR	**Makanchi Array**	**59.40**	**325**	P	P	09 34 31.2	-0.1
	0.5nm,0.4s,baz=114,slow=8.4,SNR=5.8						
KURBB	**Kurchatov Arra**	**63.53**	**327**	P	P	09 34 59.0	-0.1
	0.4nm,0.5s,baz=128,slow=5.7,SNR=4.7						

BUC 30 09:26:04.5±0.1, 44°.37N×28°.32E, h12km, MD2.2/2, 6C-4D, Error ellipse: s-maj=1.1km s-min=0.4km az=317.0, Romania

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TIRR	**Tirgusor**	**0.11**	**37**	⇑*i*P	Pg	09 26 06.8	-0.7
TIRR				S	Sg	09 26 08.9	-0.8
TIRR	**Tirgusor**	**0.11**	**37**	⇑*i*P	Pg	09 26 06.8	-0.7
TIRR				*i* S	Sg	09 26 08.9	-0.8
CVDA	**Cernavoda**	**0.20**	**261**	⇑*i*P	Pg	09 26 09.1	+0.2
CVDA	**Cernavoda**	**0.20**	**261**	⇑*i*P	Pg	09 26 09.1	+0.2
CVDA				*i* S	Sg	09 26 12.4	+0.5
HARR	**Harsova**	**0.42**	**320**	⇓*i*P	Pg	09 26 13.0	+0.1
HARR	**Harsova**	**0.42**	**320**	⇓*i*P	Pg	09 26 13.0	+0.1
MSAB	**Monastry St. A**	**0.45**	**232**	⇓*i*P	Pg	09 26 13.8	+0.5
MSAB	**Monastry St. A**	**0.45**	**232**	S	Sb	09 26 20.5	-0.5
MSAB	**Monastry St. A**	**0.45**	**232**	⇓*i*P	Pg	09 26 13.8	+0.5
MSAB				*i* S	Sb	09 26 20.5	-0.5
CFR	**Carcaliu**	**0.82**	**351**	⇑*i*P	Pb	09 26 20.9	+0.2
CFR	**Carcaliu**	**0.82**	**351**	⇑*i*P	Pb	09 26 20.9	+0.2
CFR				*i* S	Sb	09 26 31.9	+0.2

*IDC **30** 09:45:54.0±1.4, 3°.98S×122°.70E, h0km, mb4.1/3, mb1 4.2/6, mb1mx3.8/56, mbtmp4.1/6, ML3.5/3, MS3.2/7, Ms1 3.3/7, ms1mx2.8/33, Error ellipse: s-maj=34.7km s-min=21.1km az=46.0*
*ISCJB **30** 09:45:54.7±0.9, 4°.05S±0°.05×122°.63E±0°.06, h17km±8km, mb4.1/5, MS3.2/5, Error ellipse: s-maj=9.5km s-min=8.2km az=160.0*
*DJA **30** 09:45:55.9±0.3, 4°.5±3°×12°.3E±°, h10km, M4.3/4, MLv4.3/4*
*NEIC **30** 09:45:56.9±3.3, 4°.01S×122°.63E, h20km±27km, mb4.0/3, Error ellipse: s-maj=17.1km s-min=8.9km az=64.0*
NEIC Felt [II] at Kendari.

ISC 30 09:45:55.2±1.3, 4°.04S±0°.06×122°.60E±0°.06, h10km±9km, n26, σ0§91/23, mb4.2/5, MS3.1/5, Sulawesi

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KDI	**Kendari**	**0.09**	**11**	P	**Pg**	**09 45 57.6**	**-0.1**
SPSI	**Sidrap Palu**	**2.83**	**271**	P	**Pn**	**09 46 41.1**	**+0.6**
TTSI	**Tana Toraja**	**2.95**	**290**	P	**Pn**	**09 46 42.3**	**+0.1**
BSSI	**Bau Bau, Buton**	**2.96**	**225**	P	**Pn**	**09 46 42.5**	**+0.2**
LUWI	**Luwuk**	**2.99**	**3**	P	**Pn**	**09 46 43.6**	**+0.9**
LUWI	**Luwuk**	**2.99**	**3**	*e*Pn	**Pn**	**09 46 42.5**	**-0.2**
KAPI	**Kappang**	**3.00**	**251**	Pn	**Pn**	**09 46 44.2**	**+1.3**
	18nm,0.3s,baz=79,slow=4.2,SNR=64						
KAPI				Sn	**Sb**	**09 47 24.5**	**-1.0**
	16nm,0.3s,baz=99,slow=23,SNR=6.6						
SANI	**Sanana**	**3.92**	**60**	P	**Pn**	**09 46 56.1**	**+0.6**
MRSI	**Marisa**	**4.54**	**352**	P	**Pn**	**09 47 04.6**	**+0.6**
MMRI	**Maumere**	**4.58**	**185**	P	**Pn**	**09 47 04.8**	**+0.2**
SOEI	**Soe**	**5.91**	**164**	P	**Pn**	**09 47 23.7**	**+0.7**
SOEI	**Soe**	**5.91**	**164**	*e*Pn	**Pn**	**09 47 24.9**	**+1.9**
LBMI	**Labuha**	**5.95**	**55**	P	**Pn**	**09 47 24.6**	**+1.2**
BKB	**Balikpapan**	**6.33**	**296**	P	**Pn**	**09 47 29.9**	**+1.2**
FITZ	**Fitzroy Crossi**	**14.29**	**168**	Pn	**Pn**	**09 49 16.5**	**-1.2**
	0.1nm,0.3s,baz=339,slow=8.6,SNR=4.2						
FITZ				LR	LR	09 54 44.1	
	comp=Z,70nm,19.1s,baz=359,slow=37						
LEM	**Lembang**	**15.17**	**259**	LR	LR	09 56 29.3	
	comp=Z,117nm,18.1s,baz=172,slow=42						
WRAB	**Tennant Creek**	**19.51**	**145**	*e*P	**Pn**	**09 50 23.2**	**-0.9**
	8.5nm,0.9s						
WRA	**Warramunga Arr**	**19.51**	**145**	P	**Pn**	**09 50 23.8**	**-0.3**
	0.2nm,0.3s,baz=315,slow=13,SNR=23						
ASAR	**Alice Springs**	**22.35**	**152**	P	**P**	**09 50 54.8**	**+1.2**
	4.7nm,0.6s,baz=344,slow=16,SNR=32						
ASAR				LR	LR	09 59 22.3	
	comp=Z,85nm,21.0s,baz=314,slow=36						
PMG	**Port Moresby**	**24.95**	**104**	LR	LR	10 02 59.7	
	comp=Z,42nm,18.4s,baz=230,slow=41						
CMAR	**Chiang Mai Arr**	**32.30**	**315**	LR	LR	10 06 12.3	
	comp=Z,39nm,21.3s,baz=152,slow=38						
STKA	**Stephens Creek**	**32.94**	**149**	P	**P**	**09 52 29.6**	**-0.5**
	3.4nm,0.9s,baz=344,slow=7.4,SNR=5.9						
STKA				LR	LR	10 06 15.5	
	comp=Z,82nm,19.6s,baz=22,slow=37						
MKAR	**Makanchi Array**	**61.85**	**330**	P	**P**	**09 56 15.0**	**+0.3**
	1.5nm,0.8s,baz=141,slow=4.8,SNR=2.0						
EKS2	**Erkin-Say**	**64.08**	**322**	P	**P**	**09 56 29.1**	**-0.6**
	1.0nm,0.6s						
ZALV	**Zalesovo Beam**	**65.83**	**337**	LR	LR	10 26 30.9	
	comp=Z,18nm,21.5s,baz=244,slow=37						
ABKAR	**Akbulak array**	**75.68**	**323**	*e*P	**P**	**09 57 40.7**	**-0.1**
	1.0nm,0.6s						

IDC 30 09:50:16.4±62.0, 19°.72S×179°.09E, h0km, mb3.7/3, mb1 3.9/3, mb1mx3.5/38, mbtmp3.7/3, Error ellipse: s-maj=1115.0km s-min=157.1km az=81.0, South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**35.69**	**243**	P	P	09 57 16.9	+0.2
	1.8nm,1.0s,baz=63,slow=6.8,SNR=2.9						
WRA	**Warramunga Arr**	**42.00**	**262**	P	P	09 58 09.7	0.0
	0.6nm,0.6s,baz=98,slow=7.7,SNR=11						
ASAR	**Alice Springs**	**42.04**	**256**	P	P	09 58 09.6	-0.5
	0.6nm,0.7s,baz=90,slow=8.5,SNR=9.7						

*IDC **30** 09:50:21.6±3.4, 53°.77N×90°.79E, h0km, mb1 3.5/3, mb1mx3.2/56, mbtmp3.5/3, ML3.3/2, Error ellipse: s-maj=30.0km s-min=25.6km az=72.0*
*NNC **30** 09:50:23.8±2.4, 53°.74N×90°.39E, h0km, mb4.0, mpv3.8, Error ellipse: s-maj=18.5km s-min=17.2km az=168.0*

ISC 30 09:50:20.1±4.2, 54°.0N±0°.1×90°.6E±0°.2, h10km, n8, σ1§68/14, 4C-8D, Southwestern Siberia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
I46RU	**ZALESOVO INFRA**	**3.43**	**271**	*i*		10 12 30.0	
	baz=92,slow=314,SNR=28						
ZALV	**Zalesovo Beam**	**3.43**	**271**	Pn	**Pb**	**09 51 19.2**	**-1.7**
	0.4nm,0.3s,baz=98,slow=11,SNR=2.8						
ZALV				Pg	**Pg**	**09 51 24.6**	**-1.3**
	2.9nm,0.3s,baz=99,slow=18,SNR=18						
ZALV				Lg	Lg	09 52 10.3	
	1.6nm,0.3s,baz=104,slow=18,SNR=4.3						
KURK	**Kurchatov**	**8.05**	**251**	⇑Pn	**Pn**	**09 52 19.5**	**+2.4**
	12nm,1.0s						
KURK				⇓Sn	**Sn**	**09 53 48.3**	**+0.1**
	40nm,0.9s						
KURK				⇓Lg	Lg	09 54 37.1	
	99nm,1.1s						
KURBB	**Kurchatov Arra**	**8.15**	**250**	Pn	**Pn**	**09 52 21.3**	**+2.9**
	0.2nm,0.3s,baz=65,slow=14,SNR=14						
KURBB				Sn	**Sn**	**09 53 51.5**	**+1.1**
	0.1nm,0.3s,baz=66,slow=24,SNR=7.5						
KURBB				Lg	Lg	09 54 41.6	
	0.1nm,0.3s,baz=69,slow=30,SNR=5.5						
KURBB	**Kurchatov Arra**	**8.15**	**250**	⇓Pn	**Pn**	**09 52 20.7**	**+2.3**
	6.1nm,0.7s						
KURBB				⇑Sn	**Sn**	**09 53 51.4**	**+0.9**
	102nm,1.2s						
KURBB				⇑Lg	Lg	09 54 39.4	
	30nm,0.9s						
MK31	**Makanchi Array**	**8.96**	**220**	⇑Pn	**Pn**	**09 52 30.8**	**+1.2**
	1.3nm,0.7s,baz=34,slow=12,SNR=17						
MK31				⇓Sn	**Sn**	**09 54 10.7**	**+0.1**
	7.7nm,1.1s,baz=41,slow=28,SNR=4.8						
MK31				⇓Lg	Lg	09 54 58.7	
	19nm,1.1s,baz=25,slow=35,SNR=4.6						
MKAR	**Makanchi Array**	**8.96**	**220**	Pn	**Pn**	**09 52 31.1**	**+1.5**
	0.6nm,0.3s,baz=42,slow=14,SNR=16						
MKAR				Sn	**Sn**	**09 54 11.1**	**+0.6**
	0.2nm,0.3s,baz=40,slow=25,SNR=7.7						
MKAR				Lg	Lg	09 54 57.7	
	0.1nm,0.3s,baz=32,slow=29,SNR=5.0						
MAKZ	**Makanchi**	**9.07**	**221**	⇓Pn	**Pn**	**09 52 30.8**	**-0.3**
	0.8nm,0.5s						
MAKZ				⇓Sn	**Sn**	**09 54 12.3**	**-1.0**
	9.5nm,1.1s						
MAKZ				⇓Lg	Lg	09 55 04.9	
	12nm,1.1s						

*IDC **30** 09:50:22.7±1.3, 38°.05N×144°.80E, h0km, mb3.7/5, mb1 3.8/7, mb1mx3.5/60, mbtmp3.7/7, ML3.7/2, Error ellipse: s-maj=39.0km s-min=20.7km az=86.0*
*ISCJB **30** 09:50:26.4±0.8, 38°.27N±0°.05×144°.60E±0°.06, h33km, mb3.7/5, Error ellipse: s-maj=7.2km s-min=6.3km az=176.9*
*JMA **30** 09:50:27.9±0.1, 38°.27N×144°.43E, h28km, M4.2*

ISC 30 09:50:27.2±1.2, 38°.23N±0°.06×144°.69E±0°.08, h35km, n26, σ1§87/36, mb3.7/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.51**	**291**	P	**Pn**	**09 51 05.2**	**-0.4**
OFUJ				*e*S	**Sn**	**09 51 33.1**	**-1.9**
MIYJ	**Miyakonagasawa**	**2.61**	**302**	P	**Pn**	**09 51 06.7**	**-0.2**
MIYJ				*e*S	**Sn**	**09 51 35.5**	**-1.9**
JIO	**Ouri**	**2.64**	**276**	*e*S	**Sn**	**09 51 35.8**	**-2.2**
JMK	**Ichinoseki**	**2.81**	**286**	P	**Pn**	**09 51 09.8**	**+0.1**
JMK				*e*S	**Sn**	**09 51 40.9**	**-1.5**
JOM	**Ohasama**	**2.93**	**296**	P	**Pn**	**09 51 11.6**	**+0.3**
JOM				*e*S	**Sn**	**09 51 44.0**	**-1.2**
JOU	**Okura**	**3.17**	**274**	P	**Pn**	**09 51 14.8**	**+0.1**
JOU				*e*S	**Sn**	**09 51 49.9**	**-1.4**
JRG	**Rokugo**	**3.38**	**291**	P	**Pn**	**09 51 18.4**	**+1.0**
JRG				*e*S	**Sn**	**09 51 55.9**	**-0.4**
JYK	**Kaneyama**	**3.46**	**283**	P	**Pn**	**09 51 19.2**	**+0.6**
JYK				*e*S	**Sn**	**09 51 57.6**	**-0.8**
JFT	**Otama**	**3.52**	**260**	P	**Pn**	**09 51 19.6**	**+0.2**
JFT				*e*S	**Sn**	**09 51 58.0**	**-1.8**
JAH	**Hinai**	**3.71**	**303**	P	**Pn**	**09 51 22.8**	**+0.8**
JAH				*e*S	**Sn**	**09 52 03.7**	**-0.7**
JTM	**Tenmabayashi**	**3.79**	**313**	*e*S	**Sn**	**09 52 04.8**	**-1.6**
JCH	**Churui**	**4.49**	**347**	*e*S	**Sn**	**09 52 21.5**	**-2.3**
JRY	**Ryogami san**	**5.13**	**246**	P	**Pn**	**09 51 40.8**	**-0.8**
JRY				*e*S	**Sn**	**09 52 34.5**	**-5.0**
NEM2	**Nemuro 2**	**5.19**	**9**	P	**Pn**	**09 51 40.1**	**-2.2**
MJAR	**Matsushiro Arr**	**5.43**	**254**	Pn	**Pn**	**09 51 46.4**	**+0.7**
	2.5nm,0.3s,baz=79,slow=15,SNR=15						
MAT	**Matsushiro**	**5.43**	**254**	P	**Pn**	**09 51 46.4**	**+0.7**
MAT				*e*S	**Sn**	**09 52 43.6**	**-3.4**
JTKR	**Abashiri--Toko**	**5.76**	**354**	P	**Pn**	**09 51 49.6**	**-0.6**
JTKR				*e*S	**Sn**	**09 52 51.0**	**-4.0**
ASAJ	**Asahikawa**	**6.09**	**346**	Pn	**Pn**	**09 51 55.2**	**+0.5**
	1.5nm,0.3s,baz=202,slow=10,SNR=9.9						
ASAJ				Sn	**Sn**	**09 53 00.3**	**-2.7**
	0.8nm,0.3s,baz=102,slow=20,SNR=3.3						
SEY	**Seymchan**	**25.17**	**8**	P	**P**	**09 55 51.8**	**+2.8**
	1.3nm,0.6s,baz=158,slow=6.4,SNR=6.7						
H11N2	**WAKE ISLAND Hy**	**26.66**	**128**	T	T	10 23 53.3	
	baz=319,slow=74,SNR=3.0						
H11N1	**WAKE ISLAND Hy**	**26.67**	**128**	T	T	10 23 38.4	
	baz=319,slow=74,SNR=3.4						
H11N3	**WAKE ISLAND Hy**	**26.68**	**128**	T	T	10 23 52.2	
	baz=319,slow=74,SNR=3.4						
MKAR	**Makanchi Array**	**45.70**	**302**	P	**P**	**09 58 46.3**	**+1.7**
	0.4nm,0.6s,baz=89,slow=7.5,SNR=2.8						
KURBB	**Kurchatov Arra**	**47.33**	**308**	P	**P**	**09 58 59.2**	**+1.9**
	1.4nm,0.6s,baz=81,slow=8.0,SNR=8.4						
WRA	**Warramunga Arr**	**58.68**	**191**	P	**P**	**10 00 20.4**	**-0.8**
	0.4nm,0.5s,baz=8.6,slow=7.0,SNR=6.0						
ASAR	**Alice Springs**	**62.40**	**191**	P	**P**	**10 00 46.4**	**-0.2**
	0.3nm,0.7s,baz=7.8,slow=6.3,SNR=3.0						

*NIED **30** 09:52:00.37°.40N×142°.20E, h23km, Mw3.9 Best double couple: M0:8.92000×10^14 NP1:φ0=171.00000°, δ21.00000°, λ87.00000°. NP2:φ0=354.00000°, δ69.00000°, λ91.00000°.*
*JMA **30** 09:52:52.4±0.2, 37°.38N×142°.21E, h11km±3km, M4.5*
*NEIC **30** 09:52:54.9±0.5, 37°.24N×142°.39E, h35km, mb4.0/2, Error ellipse: s-maj=11.5km s-min=8.6km az=130.0*
*IDC **30** 09:52:55.6±3.2, 37°.24N×142°.26E, h38km±27km, mb3.9/15, mb1 4.0/18, mb1mx3.8/53, mbtmp4.1/18, ML3.8/3, MS2.9/7, Ms1 2.9/7, ms1mx2.7/41, Error ellipse: s-maj=22.3km s-min=15.0km az=90.0*

ISC 30 09:52:51.3±2.9, 37°.31N±0°.04×142°.27E±0°.07, h8km±17km, n46, σ1§48/43, mb4.2/19, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**1.11**	**273**	P	**Pb**	**09 53 12.5**	**-0.3**
JFK				*e*S	**Sg**	**09 53 26.6**	**-0.4**
ONAJ	**Iwakimizuishiy**	**1.19**	**260**	P	**Pb**	**09 53 13.7**	**-0.5**
JMM	**Marumori**	**1.30**	**296**	*e*S	**Sb**	**09 53 31.1**	**-1.6**
JIO	**Ouri**	**1.35**	**328**	P	**Pn**	**09 53 15.5**	**-1.1**
JIO				*e*S	**Sb**	**09 53 32.0**	**-2.5**
JFT	**Otama**	**1.55**	**278**	P	**Pb**	**09 53 19.8**	**-0.5**
JFT				*e*S	**Sb**	**09 53 39.1**	**-1.0**
JOU	**Okura**	**1.65**	**310**	P	**Pb**	**09 53 20.9**	**-1.1**
JOU				*e*S	**Sb**	**09 53 41.2**	**-1.8**
JMK	**Ichinoseki**	**1.84**	**334**	P	**Pn**	**09 53 23.2**	**0.0**
JMK				*e*S	**Sn**	**09 53 45.4**	**-1.2**
JYS	**Shiratake**	**1.97**	**298**	P	**Pb**	**09 53 26.0**	**-1.4**
JYS				*e*S	**Sb**	**09 53 51.0**	**-1.1**
JFY	**Yanaizu**	**2.04**	**274**	P	**Pn**	**09 53 26.8**	**+0.8**
JFY				*e*S	**Sn**	**09 53 52.1**	**+0.3**
JOM	**Ohasama**	**2.29**	**341**	*e*S	**Sn**	**09 53 57.6**	**-0.3**
MJAR	**Matsushiro Arr**	**3.34**	**258**	Pn	**Pn**	**09 53 45.2**	**+1.4**
	9.4nm,0.3s,baz=88,slow=15,SNR=23						
MAJO	**Matsushiro**	**3.34**	**258**	*e*Pn	**Pn**	**09 53 47.1**	**+3.2**
JHJ	**Hachijo jima 2**	**4.65**	**207**	Pn

comp=Z,9.6nm,19.8s,baz=130,slow=38

*ISCJB **30** 09:59:11.5±1.4,34°.25S±0°.06×72°.34W±0°.09,h24km±8km, mb3.9/1,Error ellipse: s-maj=15.6km s-min=6.2km az=36.2*
*GUC **30** 09:59:11.9±0.5,34°.21S×72°.31W,h25km±21km,ML3.6*
*IDC **30** 09:59:13.0±4.7,34°.31S×71°.26W,h0km,mb3.9/1, mb1 3.8/3,mb1mx3.6/16,mbtmp3.7/3,ML3.7/2,MS2.8/1, Ms1 2.8/1,ms1mx2.6/23,Error ellipse: s-maj=173.6km s-min=23.7km az=93.0*
*SJA **30** 09:59:39.6±0.6,31°.53S×68°.98W,h107km±5km,ML3.0, MW3.7*

ISC 30 09:59:13.0±1.8,34°.25S±0°.09×72°.2W±0°.1,h25km±11km, n12,σ0s94/19,5C,Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHPI	**Pichilemu**	**0.22**	**129**	⇑*i*P	**Pb**	**09 59 18.8**	**-0.2**
CHPI				*i* S	**Sb**	**09 59 23.5**	**+0.5**
ANTU	**Antumapu**	**1.48**	**63**	*e*P	**Pn**	**09 59 38.0**	**0.0**
ANTU				*i* S	**Sb**	**09 59 58.4**	**+0.1**
ANTU				AML	AML	10 00 01.3	
	comp=E,1μm,0.9s						
STL	**Santa Lucia**	**1.54**	**59**	*e*P	**Pn**	**09 59 37.4**	**-1.5**
STL				*i* S	**Sn**	**09 59 58.3**	**+0.2**
FSR	**Penalolen**	**1.60**	**62**	⇑*i*P	**Pn**	**09 59 40.5**	**+0.8**
FSR				*i* S	**Sb**	**10 00 02.0**	**+0.3**
ROCH	**El Roble**	**1.62**	**39**	⇑*i*P	**Pn**	**09 59 40.1**	**-0.2**
ROCH				*e*S	**Sb**	**10 00 01.7**	**-0.8**
ROCH				AML	AML	10 00 09.6	
	comp=N,1μm,0.3s						
SJCH	**San Jose de Ma**	**1.66**	**69**	⇑*i*P	**Pb**	**09 59 42.0**	**-1.0**
SJCH				*e*S	**Sb**	**10 00 03.8**	**+0.3**
COCH	**Cobquecura**	**1.94**	**194**	⇑*i*P	**Pn**	**09 59 43.9**	**-0.5**
COCH				*i* S	**Sn**	**10 00 06.3**	**-1.6**
COCH				AML	AML	10 00 22.4	
	comp=E,810nm,0.5s						
AUSP	**Uspallata**	**3.11**	**50**	*e*P	**Pn**	**09 59 59.9**	**-0.9**
PLCA	**Paso Flores**	**6.61**	**169**	Pn	**Pn**	**10 00 50.1**	**+1.5**
	comp=E,0.4nm,0.3s,baz=5.0,slow=10,SNR=15						
PLCA				Lg	Lg	10 02 35.9	
	comp=E,0.2nm,0.3s,baz=280,slow=17,SNR=2.5						
PLCA				LR	LR	10 03 36.7	
	comp=E,94nm,21.4s,baz=16,slow=41						
TCA	**Tanti**	**7.04**	**66**	*e*P	**Pn**	**10 00 55.5**	**+0.8**
LPAZ	**La Paz**	**18.26**	**13**	P	**P**	**10 03 26.6**	**+1.2**
	comp=E,0.1nm,0.3s,baz=188,slow=6.5,SNR=8.7						
TORD	**Torodi Ar. Bea**	**84.43**	**70**	P	**P**	**10 11 44.2**	**+0.5**
	comp=E,0.8nm,0.8s,baz=235,slow=5.1,SNR=4.4						

*ISK **30** 10:00:28.7,39°.17N×28°.93E,h12km, MD2.5*
*ISCJB **30** 10:00:29.9±0.5,39°.15N±0°.05×29°.01E±0°.06,h21km±9km, Error ellipse: s-maj=9.4km s-min=5.0km az=137.9*
*CSEM **30** 10:00:29.6±0.2,39°.19N×28°.97E,h10km,MD2.5,Error ellipse: s-maj=5.0km s-min=3.2km az=119.0*
*DDA **30** 10:00:30.6,39°.10N×29°.04E,h7km,Md2.5*

ISC 30 10:00:29.4±1.1,39°.18N±0°.05×28°.98E±0°.05,h13km±13km, n20,σ0s30/30,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**237**	P	**Pb**	**10 00 36.4**	**+0.6**
DEMI				S	**Sb**	**10 00 39.9**	**-0.1**
DEMI	**Demirci**	**0.24**	**237**	*i* P	**Pb**	**10 00 36.4**	**+0.6**
DEMI				*i* S	**Sb**	**10 00 39.9**	**-0.1**
GDZ	**Gediz**	**0.40**	**102**	P	**Pg**	**10 00 37.7**	**+0.2**
GDZ				S	**Sg**	**10 00 42.6**	**-0.3**
GDZ	**Gediz**	**0.40**	**102**	*i* P	**Pg**	**10 00 37.7**	**+0.2**
GDZ				*i* S	**Sg**	**10 00 42.6**	**-0.3**
TVSB	**Tavsanli**	**0.46**	**54**	*e*PG	**Pg**	**10 00 39.0**	**+0.4**
TVSB				*e*SG	**Sb**	**10 00 46.3**	**-0.1**
TVSB	**Tavsanli**	**0.46**	**54**	*e*Pg	**Pg**	**10 00 39.0**	**+0.4**
TVSB				*e*Sg	**Sb**	**10 00 46.3**	**-0.1**
KULA	**Kula-Manisa**	**0.71**	**201**	*e*PG	**Pg**	**10 00 43.3**	**+0.2**
KULA				*e*SG	**Sg**	**10 00 52.0**	**-0.4**
KULA	**Kula-Manisa**	**0.71**	**201**	*e*Pg	**Pg**	**10 00 43.3**	**+0.2**
KULA				*e*Sg	**Sg**	**10 00 52.0**	**-0.4**
MANT	**Manisa**	**0.76**	**206**	P	**Pb**	**10 00 44.7**	**+0.1**
MANT				S	**Sg**	**10 00 54.0**	**-0.2**
MANT	**Manisa**	**0.76**	**206**	*i* P	**Pb**	**10 00 44.7**	**+0.1**
MANT				*i* S	**Sg**	**10 00 54.0**	**-0.2**
ORLT	**Orhaneli**	**0.87**	**356**	*e*PG	**Pb**	**10 00 46.4**	**-0.1**
ORLT	**Orhaneli**	**0.87**	**356**	*e*Pg	**Pb**	**10 00 46.4**	**-0.1**
IZI	**Iznik**	**1.22**	**18**	*e*PN	**Pn**	**10 00 52.3**	**0.0**
IZI	**Iznik**	**1.22**	**18**	*e*Pn	**Pn**	**10 00 52.3**	**0.0**
CAVI	**Cavuskoy**	**1.22**	**33**	*e*PN	**Pb**	**10 00 52.6**	**+0.2**
CAVI	**Cavuskoy**	**1.22**	**33**	*e*Pn	**Pb**	**10 00 52.6**	**+0.2**
GONE	**Gonen-Balikesi**	**1.32**	**311**	*e*PN	**Pn**	**10 00 53.2**	**-0.4**
GONE	**Gonen-Balikesi**	**1.32**	**311**	*e*Pn	**Pn**	**10 00 53.2**	**-0.4**
ARMT	**Armutlu**	**1.39**	**356**	*e*PN	**Pn**	**10 00 54.8**	**+0.2**
ARMT	**Armutlu**	**1.39**	**356**	*e*Pn	**Pn**	**10 00 54.8**	**+0.2**

*ISCJB **30** 10:03:39.0±0.5,39°.10N±0°.03×29°.04E±0°.03,h3km±6km, Error ellipse: s-maj=5.9km s-min=4.3km az=166.2*
*DDA **30** 10:03:38.7,39°.12N×29°.05E,h7km,Md2.6*
*ISK **30** 10:03:39.2,39°.13N×29°.04E,h6km,MD2.9*
*CSEM **30** 10:03:39.2±0.1,39°.11N×29°.04E,h2km,MD2.6,Error ellipse: s-maj=3.0km s-min=2.6km az=128.0*

ISC 30 10:03:39.1±0.9,39°.08N±0°.02×29°.06E±0°.02,h10km±9km, n36,σ0s32/48,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**261**	P	**Pg**	**10 03 44.6**	**+0.1**
DEMI				S	**Sg**	**10 03 48.3**	**+0.1**
DEMI	**Demirci**	**0.27**	**261**	*i* P	**Pg**	**10 03 44.6**	**+0.1**
DEMI				*i* S	**Sg**	**10 03 48.3**	**+0.1**
GDZ	**Gediz**	**0.33**	**89**	P	**Pg**	**10 03 45.8**	**+0.1**
GDZ				S	**Sg**	**10 03 50.7**	**+0.5**
GDZ	**Gediz**	**0.33**	**89**	*i* P	**Pg**	**10 03 45.8**	**+0.1**
GDZ				*i* S	**Sg**	**10 03 50.7**	**+0.5**
TVSB	**Tavsanli**	**0.48**	**41**	PG	**Pg**	**10 03 48.4**	**-0.1**
TVSB				*e*SG	**Sg**	**10 03 54.6**	**-0.3**
TVSB	**Tavsanli**	**0.48**	**41**	*i* Pg	**Pg**	**10 03 48.4**	**-0.1**
TVSB				*e*Sg	**Sg**	**10 03 54.6**	**-0.3**
MANT	**Manisa**	**0.71**	**213**	P	**Pg**	**10 03 52.8**	**0.0**
MANT				S	**Sg**	**10 04 02.0**	**0.0**
MANT	**Manisa**	**0.71**	**213**	*i* P	**Pg**	**10 03 52.8**	**0.0**
MANT				*i* S	**Sg**	**10 04 02.0**	**0.0**
KHAL	**Karahalli**	**0.79**	**154**	P	**Pb**	**10 03 55.0**	**0.0**
KHAL	**Karahalli**	**0.79**	**154**	*i* P	**Pb**	**10 03 55.0**	**0.0**
KHL	**Karahalli**	**0.84**	**154**	PG	**Pn**	**10 03 57.1**	**0.0**
KHL	**Karahalli**	**0.84**	**154**	*i* Pg	**Pn**	**10 03 57.1**	**0.0**
ORLT	**Orhaneli**	**0.97**	**353**	*e*PG	**Pg**	**10 03 57.6**	**-0.1**
ORLT	**Orhaneli**	**0.97**	**353**	*e*Pg	**Pg**	**10 03 57.6**	**-0.1**
AKS	**Akhisar**	**0.99**	**258**	PG	**Pg**	**10 03 57.8**	**-0.3**
AKS	**Akhisar**	**0.99**	**258**	*i* Pg	**Pg**	**10 03 57.8**	**-0.3**
BALB	**Balikesir**	**1.07**	**302**	*e*PG	**Pg**	**10 03 59.5**	**-0.1**
BALB				*e*SG	**Sn**	**10 04 15.0**	**0.0**
BALB	**Balikesir**	**1.07**	**302**	*e*Pg	**Pg**	**10 03 59.5**	**-0.1**
BALB				*e*Sg	**Sn**	**10 04 15.0**	**0.0**
CAVI	**Cavuskoy**	**1.27**	**28**	*e*PN	**Pn**	**10 04 02.7**	**-0.3**
CAVI				*e*SN	**Sn**	**10 04 20.8**	**+0.6**
CAVI	**Cavuskoy**	**1.27**	**28**	*e*Pn	**Pn**	**10 04 02.7**	**-0.3**
CAVI				*e*Sn	**Sn**	**10 04 20.8**	**+0.6**
MDNY	**Mudanya-Bursa**	**1.29**	**354**	*e*PN	**Pg**	**10 04 04.4**	**+0.5**
MDNY	**Mudanya-Bursa**	**1.29**	**354**	*e*Pn	**Pg**	**10 04 04.4**	**+0.5**
IZI	**Iznik**	**1.29**	**14**	*e*PN	**Pg**	**10 04 03.9**	**0.0**
IZI	**Iznik**	**1.29**	**14**	*e*Pn	**Pg**	**10 04 03.9**	**0.0**
KCTX	**Karacabey (Bur**	**1.30**	**336**	*e*PN	**Pg**	**10 04 03.9**	**-0.1**
KCTX	**Karacabey (Bur**	**1.30**	**336**	*e*Pn	**Pg**	**10 04 03.9**	**-0.1**
GONE	**Gonen-Balikesi**	**1.43**	**313**	*e*PN	**Pb**	**10 04 05.7**	**-0.1**
GONE	**Gonen-Balikesi**	**1.43**	**313**	*e*Pn	**Pb**	**10 04 05.7**	**-0.1**
ADVT	**Abdulvahap**	**1.45**	**21**	*e*PN	**Pb**	**10 04 06.2**	**+0.1**
ADVT	**Abdulvahap**	**1.45**	**21**	*e*Pn	**Pb**	**10 04 06.2**	**+0.1**
ARMT	**Armutlu**	**1.49**	**354**	*e*PN	**Pn**	**10 04 06.3**	**+0.3**
ARMT	**Armutlu**	**1.49**	**354**	*e*Pn	**Pn**	**10 04 06.3**	**+0.3**
GULT	**Gulveren**	**1.75**	**39**	*e*PN	**Pb**	**10 04 10.8**	**-0.6**
GULT	**Gulveren**	**1.75**	**39**	*e*Pn	**Pb**	**10 04 10.9**	**-0.6**
SVRH	**Sivrihisar-ESK**	**1.95**	**78**	*e*PN	**Pb**	**10 04 14.1**	**-0.7**
SVRH	**Sivrihisar-ESK**	**1.95**	**78**	*e*Pn	**Pb**	**10 04 14.1**	**-0.7**

*ISCJB **30** 10:09:41.8±0.5,37°.12N±0°.03×28°.72E±0°.03,h1km±9km, Error ellipse: s-maj=5.1km s-min=4.2km az=19.5*
*DDA **30** 10:09:41.9,37°.13N×28°.72E,h7km,Md2.7*

*ISK **30** 10:09:41.4,37°.12N×28°.74E,h10km,MD2.6*
*CSEM **30** 10:09:42.0±0.1,37°.13N×28°.73E,h10km,MD2.6,Error ellipse: s-maj=2.8km s-min=2.3km az=17.0*

ISC 30 10:09:41.9±1.2,37°.14N±0°.02×28°.73E±0°.02,h1km±11km, n29,σ0s95/46,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TURN	**Turunc**	**0.29**	**201**	*i* P	**Pn**	**10 09 51.4**	**-1.8**
TURN				*i* S	**Sb**	**10 09 59.4**	**+4.2**
DALY	**Dalyan (Mu¨la**	**0.33**	**191**	PG	**Pg**	**10 09 48.0**	**-0.3**
DALY				*e*SG	**Sg**	**10 09 52.7**	**+0.1**
DALY	**Dalyan (Mu¨la**	**0.33**	**191**	*i* Pg	**Pg**	**10 09 48.0**	**-0.3**
DALY				*e*Sg	**Sg**	**10 09 52.7**	**+0.1**
YER	**Yerkesik**	**0.36**	**269**	*e*PG	**Pg**	**10 09 49.2**	**+0.3**
YER	**Yerkesik**	**0.36**	**269**	*e*Pg	**Pg**	**10 09 49.2**	**+0.3**
FETY	**Fethiye**	**0.58**	**151**	*e*PG	**Pg**	**10 09 52.6**	**-0.4**
FETY	**Fethiye**	**0.58**	**151**	*e*Pg	**Pg**	**10 09 52.6**	**-0.4**
DNZL	**Cakiroluk**	**0.60**	**24**	P	**Pg**	**10 09 53.7**	**+0.2**
DNZL				S	**Sb**	**10 10 04.5**	**+0.1**
DNZL	**Cakiroluk**	**0.60**	**24**	*i* P	**Pg**	**10 09 53.7**	**+0.2**
DNZL				*i* S	**Sb**	**10 10 04.5**	**+0.1**
GLHS	**Glhisar (BURDU**	**0.61**	**88**	*e*PG	**Pg**	**10 09 53.8**	**+0.2**
GLHS				*e*SG	**Sg**	**10 10 02.6**	**+1.0**
GLHS	**Glhisar (BURDU**	**0.61**	**88**	*e*Pg	**Pg**	**10 09 53.8**	**+0.2**
GLHS				*e*Sg	**Sg**	**10 10 02.6**	**+1.0**
DENT	**Denizli**	**0.66**	**21**	*e*PG	**Pg**	**10 09 54.8**	**+0.3**
DENT	**Denizli**	**0.66**	**21**	*e*Pg	**Pg**	**10 09 54.8**	**+0.3**
GOLH	**Golhisar**	**0.67**	**82**	P	**Pg**	**10 09 55.2**	**+0.5**
GOLH				S	**Sb**	**10 10 05.3**	**-0.9**
GOLH	**Golhisar**	**0.67**	**82**	*i* P	**Pg**	**10 09 55.2**	**+0.5**
GOLH				*i* S	**Sb**	**10 10 05.3**	**-0.9**
AYDN	**Tasoluk**	**0.86**	**307**	P	**Pg**	**10 09 58.5**	**+0.2**
AYDN				S	**Sb**	**10 10 11.2**	**-0.4**
AYDN	**Tasoluk**	**0.86**	**307**	*i* P	**Pg**	**10 09 58.5**	**+0.2**
AYDN				*i* S	**Sb**	**10 10 11.2**	**-0.4**
ELL	**Elmali**	**1.02**	**112**	*e*PG	**Pg**	**10 10 01.5**	**0.0**
ELL				*e*SG	**Sb**	**10 10 15.6**	**-0.8**
ELL	**Elmali**	**1.02**	**112**	*e*Pg	**Pg**	**10 10 01.5**	**0.0**
ELL				*e*Sg	**Sb**	**10 10 15.6**	**-0.8**
BDRM	**Kayabasi**	**1.03**	**266**	P	**Pb**	**10 10 02.3**	**-0.3**
BDRM				S	**Sb**	**10 10 16.3**	**-0.4**
BDRM	**Kayabasi**	**1.03**	**266**	*i* P	**Pb**	**10 10 02.3**	**-0.3**
BDRM				*i* S	**Sb**	**10 10 16.3**	**-0.4**
AYDB	**Zeytinkoy-Aydi**	**1.05**	**320**	*e*PG	**Pg**	**10 10 02.1**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**1.05**	**320**	*e*Pg	**Pg**	**10 10 02.1**	**+0.1**
BODT	**Bodrum**	**1.14**	**266**	*e*PN	**Pn**	**10 10 04.2**	**-0.8**
BODT	**Bodrum**	**1.14**	**266**	*e*Pn	**Pn**	**10 10 04.2**	**-0.8**
AKAS	**Kas**	**1.15**	**142**	P	**Pn**	**10 10 04.3**	**-0.9**
AKAS				S	**Sn**	**10 10 23.2**	**+1.6**
AKAS	**Kas**	**1.15**	**142**	*i* P	**Pn**	**10 10 04.3**	**-0.9**
AKAS				*i* S	**Sn**	**10 10 23.2**	**+1.6**
KULA	**Kula-Manisa**	**1.37**	**358**	*e*PN	**Pn**	**10 10 07.5**	**-0.8**
KULA	**Kula-Manisa**	**1.37**	**358**	*e*Pn	**Pn**	**10 10 07.5**	**-0.8**

IDC 30 10:12:52.9±3.5,0°.14S×125°.18E,h0km,mb4.1/3, mb1 4.4/3,mb1mx3.7/26,mbtmp4.2/3,Error ellipse: s-maj=266.2km s-min=37.6km az=65.0,Southern Molucca Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**21.63**	**156**	P	P	10 17 46.5	+1.6
	3.4nm,0.7s,baz=337,slow=9.1,SNR=19						
WRA				S	S	10 21 46.5	+1.0
	0.5nm,0.8s,baz=313,slow=28,SNR=4.1						
ASAR	**Alice Springs**	**24.88**	**161**	P	P	10 18 15.8	-1.8
	5.2nm,0.6s,baz=345,slow=15,SNR=100						
STKA	**Stephens Creek**	**35.18**	**155**	P	P	10 19 49.6	+0.9
	1.3nm,0.4s,baz=338,slow=10,SNR=6.7						

IDC 30 10:14:29.9±8.4,7°.80S×127°.35E,h650km±138km,mb3.0/3, mb1 3.0/6,mb1mx2.7/24,mbtmp3.9/6,Error ellipse: s-maj=162.8km s-min=30.5km az=48.0,Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**10.38**	**189**	P	P	10 16 52.1	-1.2
	0.6nm,0.3s,baz=19,slow=9.3,SNR=21						
WRA	**Warramunga Arr**	**13.84**	**151**	P	P	10 17 27.6	+2.0
	0.4nm,0.3s,baz=334,slow=10.0,SNR=45						
ASAR	**Alice Springs**	**16.99**	**159**	P	P	10 17 56.6	+2.3
	0.1nm,0.3s,baz=339,slow=9.1,SNR=16						
STKA	**Stephens Creek**	**27.39**	**153**	P	P	10 19 26.1	-0.5
	1.5nm,0.4s,baz=329,slow=9.0,SNR=9.2						
MKAR	**Makanchi Array**	**67.48**	**328**	P	P	10 24 23.1	-0.2
	0.5nm,0.4s,baz=135,slow=6.8,SNR=6.7						
ZALV	**Zalesovo Beam**	**71.16**	**335**	P	P	10 24 45.5	+0.6
	1.1nm,0.3s,baz=149,slow=7.0,SNR=2.7						

WEL 30 10:31:15.9±0.2,40°.34S×176°.78E,h30km±1km,ML3.7/28, 9C-10D,Error ellipse: s-maj=1.9km s-min=1.0km az=90.0,North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PRHZ	**Porangahau**	**0.13**	**304**	⇑P*	Pb	10 31 20.3	-1.1
PRHZ				S*	Sb	10 31 23.9	-1.3
ANWZ	**Angora Road**	**0.26**	**242**	⇑P*	Pb	10 31 23.2	+0.4
ANWZ				S*	Sn	10 31 29.1	+0.4
PXZ	**Pawanui**	**0.32**	**12**	P*	Pb	10 31 23.4	-0.1
PXZ				S*	Sn	10 31 29.7	-0.3
PXZ				AML	AML	10 31 31.1	
WPHZ	**Waipukurau**	**0.38**	**317**	⇓P*	Pb	10 31 21.3	-3.1
DVHZ	**Dannevirke**	**0.47**	**275**	⇓P*	Pb	10 31 23.7	-2.1
BFZ	**Birch Farm**	**0.53**	**230**	⇓P*	Pn	10 31 27.6	+0.1
BFZ				AML	AML	10 31 38.7	
BFZ				AML	AML	10 31 38.7	
BFZ				AML	AML	10 31 39.2	
BFZ				AML	AML	10 31 39.2	
KAHZ	**Kahuranaki**	**0.55**	**8**	⇓P*	Pb	10 31 27.0	-0.2
PNHZ	**Pukenui**	**0.61**	**314**	⇑P*	Pb	10 31 25.1	-3.1
PRWZ	**Pori Road**	**0.65**	**250**	⇓P*	Pb	10 31 28.7	-0.1
TSZ	**Takapari Road**	**0.68**	**294**	⇑P*	Pb	10 31 26.3	-3.0
TSZ				AML	AML	10 31 34.2	
TSZ				AML	AML	10 31 35.4	
CKHZ	**Cape Kidnapper**	**0.72**	**19**	PN	Pb	10 31 29.5	-0.4
CPWZ	**Castlepoint**	**0.72**	**217**	P*	Pn	10 31 31.2	+1.2
KRHZ	**Kereru**	**0.76**	**336**	⇑PN	Pn	10 31 28.3	-2.4
POWZ	**Post Office Ro**	**0.77**	**266**	P*	Pn	10 31 29.5	-1.2
TIWZ	**Tintock**	**0.81**	**237**	P*	Pn	10 31 31.3	0.0
TIWZ				AML	AML	10 31 45.4	
TIWZ				AML	AML	10 31 47.7	
MCHZ	**McNeill Hill**	**0.90**	**356**	PN	Pn	10 31 31.8	-0.6
KWHZ	**Kaweka Forest**	**0.95**	**343**	⇑PN	Pn	10 31 32.1	-1.2
MRZ	**Mangatainoka R**	**0.97**	**250**	P*	Pn	10 31 32.7	-0.7
BHHZ	**Black Hill Sta**	**1.01**	**327**	⇑PN	Pn	10 31 32.2	-1.9
TMWZ	**Te Maipa**	**1.02**	**221**	P*	Pn	10 31 34.5	+0.3
ARHZ	**Aropaoanui**	**1.09**	**9**	PN	Pn	10 31 34.9	-0.2
HOWZ	**Holdsworth Sta**	**1.11**	**239**	P*	Pn	10 31 35.0	-0.5
OHWZ	**Ohakea**	**1.13**	**276**	P*	Pn	10 31 35.6	+0.1
BKZ	**Black Stump Fm**	**1.19**	**349**	⇓PN	Pn	10 31 35.4	-1.2
BKZ				AML	AML	10 31 54.7	
BKZ				AML	AML	10 31 55.5	
MOVZ	**Moawhango**	**1.22**	**319**	PN	Pn	10 31 35.7	-1.3
MOVZ				AML	AML	10 31 51.4	
MOVZ				AML	AML	10 31 51.7	
NMHZ	**Naumai**	**1.24**	**1**	PN	Pn	10 31 36.9	-0.4
MTW	**Mount Morrison**	**1.27**	**229**	P*	Pn	10 31 36.9	-0.6
MTW				AML	AML	10 31 58.2	
MTW				AML	AML	10 32 04.7	
OGWZ	**Otaki Gorge**	**1.31**	**248**	P*	Pn	10 31 37.6	-0.6
TRWZ	**Traveller**	**1.34**	**218**	AML	AML	10 32 12.9	
TRWZ				AML	AML	10 32 13.6	
WNVZ	**Wahianoa**	**1.36**	**318**	⇓PN	Pn	10 31 38.3	-0.6
TUVZ	**Tukino**	**1.38**	**321**	PN	Pn	10 31 38.6	-0.6
TUVZ				AML	AML	10 31 59.9	
TUVZ				AML	AML	10 32 05.8	
MTVZ	**Mangateitei**	**1.39**	**313**	PN	Pn	10 31 38.7	-0.6
MTVZ				AML	AML	10 31 57.2	
MTVZ				AML	AML	10 32 00.7	
WHVZ	**Whangaehu Hut**	**1.40**	**319**	PN	Pn	10 31 38.9	-0.7
TRVZ	**Turoa**	**1.41**	**317**	PN	Pn	10 31 38.9	-0.7
TRVZ				AML	AML	10 31 57.5	
TRVZ				AML	AML	10 31 57.6	
FWVZ	**Far West T-bar**	**1.44**	**319**	⇓PN	Pn	10 31 39.4	-0.7
FWVZ				AML	AML	10 31 57.9	
FWVZ				AML	AML	10 32 01.5	
RAHZ	**Arahi**	**1.44**	**10**	PN	Pn	10 31 39.5	-0.5
PAWZ	**Paruwai Farm**	**1.46**	**224**	PN	Pn	10 31 39.8	-0.4
PAWZ				AML	AML	10 32 09.4	
PAWZ				AML	AML	10 32 20.8	
MHGZ	**Mahia Peninsul**	**1.47**	**37**	PN	Pn	10 31 40.3	-0.1
NGZ	**Ngauruhoe**	**1.47**	**322**	PN	Pn	10 31 40.4	-0.1
NGZ				AML	AML	10 32 01.7	
NGZ				AML	AML	10 32 02.4	
KNZ	**Kokohu**	**1.49**	**28**	⇑PN	Pn	10 31 40.1	-0.4
WAZ	**Wanganui**	**1.49**	**292**	PN	Pn	10 31 40.8	+0.1
WAZ				AML	AML	10 32 01.2	
WAZ				AML	AML	10 32 02.8	
CAW	**Cannon Point**	**1.51**	**239**	PN	Pn	10 31 40.1	-0.8
CAW				AML	AML	10 32 06.7	
CAW				AML	AML	10 32 10.9	
KIW	**Kapiti Island**	**1.51**	**249**	PN	Pn	10 31 40.5	-0.5
KIW				AML	AML	10 32 04.9	
KIW				AML	AML	10 32 06.3	
PKVZ	**Pokaka**	**1.52**	**313**	PN	Pn	10 31 40.7	-0.4
PKVZ				AML	AML	10 32 06.0	
PKVZ				AML	AML	10 32 06.2	
WTVZ	**West Tongariro**	**1.53**	**323**	PN	Pn	10 31 41.2	-0.1
WTVZ				AML	AML	10 32 03.3	
WTVZ				AML	AML	10 32 13.9	
MRHZ	**Matea Rd**	**1.53**	**349**	PN	Pn	10 31 40.6	-0.6
RITZ	**Rihia Road**	**1.53**	**332**	PN	Pn	10 31 41.4	+0.2
RITZ				AML	AML	10 32 07.7	
RITZ				AML	AML	10 32 10.7	
MSWZ	**Moikau Station**	**1.58**	**227**	PN	Pn	10 31 41.0	-0.9
MSWZ				AML	AML	10 32 28.7	
SNGZ	**Shannon Statio**	**1.61**	**16**	PN	Pn	10 31 41.7	-0.6
TWVZ	**Taurewa**	**1.63**	**320**	PN	Pn	10 31 42.5	-0.2
TWVZ				AML	AML	10 32 05.4	
TWVZ				AML	AML	10 32 06.9	
PRGZ	**Paritu Road**	**1.65**	**31**	PN	Pn	10 31 42.4	-0.4
RATZ	**Rangitukua**	**1.66**	**332**	PN	Pn	10 31 43.8	+0.7
RATZ				AML	AML	10 32 12.0	
RATZ				AML	AML	10 32 14.2	
PLWZ	**Palliser**	**1.69**	**223**	PN	Pn	10 31 42.4	-1.0
RTZ	**Ruatahuna**	**1.73**	**5**	PN	Pn	10 31 43.5	-0.5
RIGZ	**Rimuhau**	**1.80**	**25**	PN	Pn	10 31 44.0	-0.9
WATZ	**Wairara**	**1.82**	**333**	PN	Pn	10 31 45.5	+0.3
PRRZ	**Plateau Road**	**1.86**	**351**	PN	Pn	10 31 44.8	-1.0
RAGZ	**Rawiri**	**1.91**	**15**	PN	Pn	10 31 45.5	-0.9
VRZ	**Vera Road**	**1.97**	**307**	PN	Pn	10 31 47.2	0.0
VRZ				AML	AML	10 32 18.1	
VRZ				AML	AML	10 32 24.3	
TKGZ	**Te Karaka**	**2.07**	**24**	⇑PN	Pn	10 31 47.5	-1.1
MWZ	**Matawai**	**2.08**	**16**	⇓PN	Pn	10 31 47.5	-1.3
MWZ				AML	AML	10 32 38.7	
MWZ				AML	AML	10 32 39.8	
URZ	**Urewera**	**2.09**	**7**	⇓PN	Pn	10 31 47.5	-1.4
URZ				AML	AML	10 32 34.8	
URZ				AML	AML	10 32 35.4	
TLZ	**Tolley Road**	**2.23**	**334**	PN	Pn	10 31 49.7	-1.1
MHEZ	**Mangahewa**	**2.27**	**303**	PN	Pb	10 31 54.6	-1.6
DREZ	**Durham Road**	**2.29**	**299**	PN	Pn	10 31 53.1	+1.4
NEZ	**North Egmont**	**2.32**	**296**	PN	Pn	10 31 54.0	+1.8
HIZ	**Hauiti**	**2.35**	**320**	PN	Pn	10 31 52.0	-0.4
HIZ				AML	AML	10 32 25.8	
HIZ				AML	AML	10 32 30.5	
TWGZ	**Tauwhareparae**	**2.35**	**24**	PN	Pn	10 31 51.6	-1.0
TUWZ	**Tuamarina**	**2.41**	**242**	PN	Pn	10 31 51.8	-1.4
TUWZ				AML	AML	10 32 39.0	
PUZ	**Puketiti**	**2.54**	**27**	PN	Pn	10 31 53.0	-2.0
HAZ	**Te Kaha**	**2.69**	**17**	PN	Pn	10 31 56.5	-0.6
WMGZ	**Waiomatatini S**	**2.82**	**27**	PN	Pn	10 31 57.4	-1.5

*ISCJB **30** 10:34:49.9±0.5,39°.12N±0°.03×28°.92E±0°.04,h12

ASTB Santa Barbara 2.60 84 *e*P **Pn 10 48 52.8 +0.7**
PB06 IPOC Station P 2.61 306⇑*i*P **Pn 10 48 53.9 +1.7**
PB06 *i* S **Sn 10 49 26.5 +0.5**
PB06 AML AML 10 49 28.8
comp=E,7μm,0.3s
YJA Yavi 2.62 39 *e*P **Pn 10 48 54.3 +1.5**
PB14 IPOC Station P 2.87 262 *e*P **Pn 10 48 56.1 +0.5**
PB14 *i* S **Sn 10 49 30.8 -1.1**
PB09 IPOC Station P 3.04 323⇓*e*P **Pn 10 48 59.5 +2.0**
PB09 *e*S **Sn 10 49 37.1 +1.6**
PB09 AML AML 10 49 39.1
comp=E,9μm,0.6s
AHML Horco Molle 3.08 146 *e*P **Pn 10 48 57.9 +0.1**
PB10 IPOC Station P 3.09 283⇑*i*P **Pn 10 48 59.0 +1.2**
PB10 *i* S **Sn 10 49 35.3 -0.9**
PB10 AML AML 10 49 41.1
comp=E,8μm,0.6s
PB10 IPOC Station P 3.09 283 *e*Pn **Pn 10 48 59.1 +1.2**
PB10 *e*Sn **Sn 10 49 34.1 -2.1**
PB04 IPOC Station P 3.26 305 *e*P **Pn 10 49 01.2 +1.0**
PB04 *e*S **Sn 10 49 39.4 -0.8**
PB04 AML AML 10 49 44.4
comp=E,3μm,0.3s
PB04 IPOC Station P 3.26 305 *e*Pn **Pn 10 49 00.8 +0.6**
PB04 *e*Sn **Sn 10 49 37.5 -2.8**
MOCB Mochara 3.35 27⇑*i*Pn **Pn 10 49 01.5 -0.1**
MOCB *e*Sn **Sn 10 49 44.8 +2.1**
comp=E,328nm,1.1s
PB07 IPOC Station P 3.48 316⇑*e*P **Pn 10 49 04.0 +1.1**
PB07 *i* S **Sn 10 49 44.3 -1.0**
PB07 AML AML 10 49 46.3
comp=E,5μm,0.5s
PB01 IPOC Station P 3.79 327⇓*e*P **Pn 10 49 07.4 +0.5**
PB01 *i* S **Sn 10 49 51.1 -1.1**
PB01 *e*S **Sn 10 49 51.9 -0.3**
PB01 AML AML 10 49 53.1
comp=E,2μm,0.2s
PB01 IPOC Station P 3.79 327 *e*Pn **Pn 10 49 07.4 +0.5**
CYA Choya 4.38 163 *e*P **Pn 10 49 14.6 +0.2**
PB08 IPOC Station P 4.44 337⇓*e*P **Pn 10 49 16.8 +1.2**
VCA Vinchina 4.55 190 *e*P **Pn 10 49 17.2 +0.6**
VCA IAML 10 50 20.4
comp=Z,71nm,0.3s
PB11 IPOC Station P 4.98 333 *e*Pn **Pn 10 49 21.4 -1.0**
AGUA GUANDACOL 5.33 191 *e*P **Pn 10 49 27.0 +0.2**
MNMC Minye Minye 5.53 337 *e*P **Pn 10 49 29.6 -0.1**
LCO Las Campanas 5.65 212 *e*Pn Pn 10 49 29.0 -2.1
BBOJ La Paz, Jacaqu 7.29 353⇑*i*Pn **Pn 10 49 54.9 +1.8**
BBOE La Paz, Chanca 7.43 355⇑*i*Pn **Pn 10 49 56.3 +1.3**
TCA Tanti 7.45 162 IAML 10 49 53.6
comp=Z,44nm,0.5s
BBOD La Paz, Gloria 7.67 350⇑*i*Pn **Pn 10 49 59.4 +1.1**
LPAZ La Paz 7.96 354 P **Pn 10 50 03.0 +0.9**
comp=Z,5.2nm,0.3s,baz=142,slow=4.6,SNR=163
LPAZ S **Sn 10 51 27.6 -3.9**
comp=Z,0.3nm,0.3s,baz=348,slow=20,SNR=2.4
LPAZ La Paz 7.96 354⇑*i*Pn **Pn 10 50 03.1 +0.9**
LPAZ *e*Sn **Sn 10 51 30.4 -1.2**
LPAZ La Paz 7.96 354 *e*Pn **Pn 10 50 03.0 +0.9**
ACAN Cantantal 8.00 179 *e*P **Pn 10 49 58.3 -3.7**
BBOB La Paz, Bander 8.11 354⇓*i*Pn **Pn 10 50 04.6 +0.6**
MRA San Martin 8.26 171 IAML 10 51 48.5
comp=Z,21nm,0.6s
CPUP Villa Florida 9.24 105 P **Pn 10 50 15.9 -2.4**
comp=Z,0.1nm,0.3s,baz=291,slow=13,SNR=8.2
CPUP Villa Florida 9.24 105 *e*Pn **Pn 10 50 16.7 -1.6**
ROC1 El Roble 9.29 200 *e*Pn Pn 10 50 15.7 -3.6
SIV San Ignacio 10.07 36 P **Pn 10 50 27.5 -1.9**
comp=Z,3.8nm,0.3s,baz=226,slow=14,SNR=34
SIV S Sn 10 52 06.7 -15
baz=232,slow=18,SNR=6.1
TRQA Tornquist 14.49 163 *e*Pn **Pn 10 51 22.9 -2.9**
SAML Samuel 15.71 15 *e*Pn **Pn 10 51 40.0 -1.0**
comp=Z,27nm,1.4s
PLCA Paso Flores 16.66 189 P **P 10 51 52.5 +0.6**
comp=Z,0.4nm,0.3s,baz=35,slow=14,SNR=15
PLCA LR LR 10 59 44.6
comp=Z,90nm,18.9s,baz=308,slow=42
PLCA Paso Flores 16.66 189 *e*P **P 10 51 52.1 +0.2**
comp=Z,16nm,0.6s
PTGA Pitinga 24.43 18 P **P 10 53 09.7 -2.1**
comp=Z,5.6nm,0.8s,baz=208,slow=7.8,SNR=6.9
PTGA Pitinga 24.43 18 *e*P **P 10 53 10.7 -1.2**
comp=Z,10nm,1.1s
RCBR Riachuelo 35.26 64 *e*P **P 10 54 46.3 -1.1**
comp=Z,35nm,1.3s
TEIG Tepich 48.71 333 LR LR 11 19 08.2
comp=Z,81nm,18.3s,baz=54,slow=38
SNAA Sanae 59.20 161 *e*P **P 10 57 52.1 +0.5**
comp=Z,17nm,1.8s
TXAR Lajitas Array 63.73 325 P **P 10 58 23.6 +1.1**
comp=Z,0.2nm,0.7s,baz=182,slow=5.4,SNR=3.5
TX31 Lajitas Ar. Si 63.73 325 *e*P **P 10 58 23.9 +1.4**
QSPA South Pole Qui 65.96 180 *e*P **P 10 58 37.6 +1.2**
comp=Z,21nm,1.9s
DBIC Dimbokro 68.12 72 P **P 10 58 48.0 -2.7**
comp=Z,2.2nm,0.6s,baz=220,slow=6.1,SNR=4.8
ANMO Albuquerque 69.61 326 P **P 10 59 01.8 +2.0**
comp=Z,0.4nm,0.6s,baz=117,slow=9.0,SNR=3.0
VNDA Vanda 74.41 190 P **P 10 59 29.1 +1.6**
comp=Z,1.6nm,0.9s,baz=95,slow=2.9,SNR=7.0
TORD Torodi Ar. Bea 76.89 69 P **P 10 59 42.2 -0.4**
comp=Z,7.3nm,0.8s,baz=259,slow=4.9,SNR=33
PDAR Pinedale Array 77.23 329 P **P 10 59 46.3 +2.1**
comp=Z,0.2nm,0.5s,baz=123,slow=6.7,SNR=3.3
BOSA Boshof 80.84 117 P **P 11 00 04.6 +0.4**
comp=Z,4.1nm,0.6s,baz=244,slow=2.6,SNR=10
TAM Tamanrasset 84.73 62 *e*P **P 11 00 23.9 -0.3**
comp=Z,6.0nm,1.1s
ESDC Sonseca Array 86.75 44 P **P 11 00 35.2 +1.6**
comp=Z,0.7nm,0.6s,baz=247,slow=6.7,SNR=4.3
YKA Yellowknife Ar 94.27 340 P **P 11 01 09.3 +1.2**
comp=Z,0.5nm,0.6s,baz=128,slow=4.6,SNR=11
ASAR Alice Springs 128.12 205 PKP **PKPdf 11 06 55.7 +0.3**
comp=Z,0.2nm,0.5s,baz=132,slow=1.5,SNR=9.9
WRA Warramunga Arr 131.29 207 PKP **PKPdf 11 07 02.4 +1.0**
comp=Z,0.3nm,0.4s,baz=157,slow=1.7,SNR=16
KURBB Kurchatov Arra 142.73 36 PKP **PKPdf 11 07 19.3 -2.2**
comp=Z,0.4nm,0.6s,baz=306,slow=3.5,SNR=4.4
ZALV Zalesovo Beam 143.73 28 PKP PKPbc 11 07 22.1 +0.9
comp=Z,3.0nm,0.5s,baz=300,slow=3.7,SNR=11
MKAR Makanchi Array 146.88 40 PKPbc **PKPdf 11 07 30.2 +1.3**
comp=Z,5.6nm,0.6s,baz=325,slow=1.0,SNR=55

MAN 30 10:58:26, 11.˙15N×124.˙88E, h113km, mb4.6, ML3.5, MS3.4, Leyte

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NIED ***30*** *11:00:00, 29.˚30N×142.˚30E, h5km, Mw4.8 Best double couple: M0 1.84000×10^16 NP1:φ=212.00000°, δ=18.00000°, λ=107.00000°. NP2:φ=14.00000°, δ=73.00000°, λ=85.00000°.*
IDC ***30*** *11:00:35.2±0.5, 29.˚24N×142.˚22E, h0km, mb4.7/26, mb1 4.8/30, mb1mx4.7/38, mbtmp4.7/30, ML3.8/5, MS4.1/36, Ms1 4.1/36, ms1mx3.9/60, Error ellipse: s-maj=15.6km s-min=10.6km az=82.0*
ISCJB ***30*** *11:00:36.3±0.9, 29.˚26N±0.˚02×142.˚07E±0.˚03, h15km±6km, mb4.9/136, MS4.2/53, Error ellipse: s-maj=4.3km s-min=3.1km az=5.5*
JMA ***30*** *11:00:37.6±0.2, 29.˚30N×142.˚33E, h53km, M4.8*
MOS ***30*** *11:00:39.6±1.1, 29.˚28N×142.˚03E, h38km, mb5.1/61, MS4.2/18, Error ellipse: s-maj=8.9km s-min=4.6km az=111.1*
NEIC ***30*** *11:00:42.8±1.0, 29.˚27N×142.˚01E, h46km±9km, mb4.8/65, Error ellipse: s-maj=6.6km s-min=5.2km az=122.0*
ISC 30 11:00:41.1±0.5, 29.˚30N±0.˚03×142.˚19E±0.˚04, h41km±4km, n363, σ1§98/382, mb4.9/136, MS4.2/53, 10C-12D, Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time h m s	Res ISC
CBIJ	**Chichi jima**	**2.19**	**180**		*e*S	**Sn**	**11 01 38.0**	**-3.0**
CBIJ	**Chichi jima**	**2.19**	**180**		*e*Pn	**Pn**	**11 01 16.3**	**+1.2**
CBIJ					Sn	**Sn**	**11 01 38.3**	**-2.7**
JCJ	**Chichijima**	**2.19**	**180**		Pn	**Pn**	**11 01 13.2**	**-1.9**
	23nm,0.3s,baz=288,slow=20,SNR=3.4							
JCJ					Sn	**Sn**	**11 01 38.3**	**-2.7**
	186nm,0.3s,baz=273,slow=22,SNR=9.8							
JHJ2	**Mitsune**	**4.31**	**333**		P	**Pn**	**11 01 43.6**	**-0.6**
JHJ2					*e*S	**Sn**	**11 02 32.9**	**-0.3**
JHJ	**Hachijo jima 2**	**4.33**	**332**		Pn	**Pn**	**11 01 42.7**	**-1.7**
	21nm,0.3s,baz=92,slow=23,SNR=7.8							
JHJ					Sn	**Sn**	**11 02 32.1**	**-1.6**
	64nm,0.3s,baz=251,slow=21,SNR=5.7							
JHJ					LR	LR	11 03 28.9	
	comp=Z,3μm,19.1s,baz=148,slow=40							
BSO1	**Boso 1**	**5.44**	**349**		P	**Pn**	**11 01 58.1**	**-1.0**
BSO1					*e*S	**Sn**	**11 02 58.4**	**-1.8**
BSO3	**Boso 3**	**5.67**	**346**		P	**Pn**	**11 02 02.3**	**-0.3**
BSO4	**Boso 4**	**5.89**	**345**		P	**Pn**	**11 02 04.9**	**-0.8**
JOD2	**Odawara 2**	**6.50**	**337**		P	**Pn**	**11 02 14.3**	**0.0**
JHU	**Hanno**	**6.98**	**340**		P	**Pn**	**11 02 20.0**	**-0.8**
JHU					*e*S	**Sn**	**11 03 36.2**	**-2.7**
JRY	**Ryogami san**	**7.25**	**338**		P	**Pn**	**11 02 24.3**	**-0.2**
JRY					*e*S	**Sn**	**11 03 44.1**	**-1.5**
INU	**Inuyama**	**7.45**	**325**		*e*Pn	Pn	11 02 37.0	+10
JAG	**Ashikaga**	**7.47**	**343**		P	**Pn**	**11 02 25.8**	**-1.7**
JAG					*e*S	**Sn**	**11 03 48.2**	**-2.8**
MJAR	**Matsushiro Arr**	**7.96**	**336**		Pn	**Pn**	**11 02 33.9**	**-0.3**
	7.6nm,0.3s,baz=155,slow=9.4,SNR=72							
MJAR					Sn	**Sn**	**11 04 00.5**	**-2.5**
	1.3nm,0.3s,baz=155,slow=14,SNR=3.2							
MJAR					LR	LR	11 05 50.2	
	comp=Z,810nm,19.0s,baz=165,slow=39							
MAJO	**Matsushiro**	**7.96**	**336**	*i*	*i*P	**Pn**	**11 02 35.7**	**+1.4**
MAJO	**Matsushiro**	**7.96**	**336**		*e*Pn	**Pn**	**11 02 34.4**	**+0.1**
MAT	**Matsushiro**	**7.96**	**336**		P	**Pn**	**11 02 34.1**	**-0.2**
MAT					S	**Sn**	**11 04 00.1**	**-3.0**
MJB9	**Matsu-Tunnel**	**7.96**	**336**		*e*Pn	**Pn**	**11 02 34.5**	**+0.1**
JNU	**Nakatsue**	**10.40**	**294**		Pn	**Pn**	**11 03 10.2**	**+2.3**
	0.3nm,0.3s,baz=123,slow=6.5,SNR=6.9							
JNU					LR	LR	11 07 03.4	
	comp=Z,2μm,18.5s,baz=116,slow=37							
JNU	**Nakatsue**	**10.40**	**294**		*e*Pn	Pn	11 03 13.0	+5.2
TJN	**Taejon**	**14.31**	**303**	⇑	*e*P	**P**	**11 04 05.0**	**-2.4**
KSRS	**Korea Array**	**14.42**	**308**		Pn	**Pn**	**11 04 03.5**	**+1.0**
	0.7nm,0.3s,baz=112,slow=13,SNR=20							
KSRS					LR	LR	11 09 39.2	
	comp=Z,872nm,18.1s,baz=121,slow=38							
KS15	**Wonju Array Si**	**14.44**	**308**		*e*Pn	**P**	**11 04 08.0**	**-0.8**
KSAR	**Wonju Array Be**	**14.44**	**308**		P	**Pn**	**11 04 03.5**	**+0.7**
KSAR	**Wonju Array Be**	**14.44**	**308**		Pn	**Pn**	**11 04 03.5**	**+0.7**
KS01	**Wonju Array Si**	**14.45**	**308**		*e*Pn	**Pn**	**11 04 05.8**	**+2.9**
ASAJ	**Asahikawa**	**14.79**	**1**		Pn	Pn	11 04 02.7	-4.8
	1.1nm,0.3s,baz=217,slow=15,SNR=7.6							
ASAJ					Sn	Sn	11 06 38.8	-11
	0.6nm,0.3s,baz=233,slow=20,SNR=5.2							
INCN	**Inchon**	**15.33**	**306**		*e*Pn	**P**	**11 04 19.2**	**+0.5**
	68nm,0.9s							
GUMO	**Guam**	**15.83**	**170**		LR	LR	11 09 16.7	
	comp=Z,237nm,18.4s,baz=5.0,slow=33							
GUMO	**Guam**	**15.83**	**170**		P	**P**	**11 04 23.0**	**-1.4**
GUMO	**Guam**	**15.83**	**170**		Pn	**P**	**11 04 23.0**	**-1.4**
VLA	**Vladivostok**	**16.09**	**332**	⇑	*i*P	**Pn**	**11 04 23.8**	**-0.4**
VLA					pmax	pmax		
	comp=Z,33nm,0.8s							
USRK	**Ussuriysk Ar.**	**16.95**	**334**		P	**Pn**	**11 04 34.6**	**-0.5**
	comp=Z,0.4nm,0.3s,baz=141,slow=11,SNR=9.0							
USRK					LR	LR	11 10 45.9	
	comp=Z,397nm,19.1s,baz=141,slow=36							
YSS	**Yuzh-Sakhalins**	**17.64**	**1**	⇑	*e*P	**Pn**	**11 04 44.0**	**+0.4**
YSS					*e*S	**Sn**	**11 07 55.8**	**-3.1**
YSS					pmax	pmax		
	comp=Z,30nm,0.8s							
YSS					MLR	MLR		
	comp=Z,200nm,15.0s							
YSS					MLR	MLR		
	comp=N,600nm,16.0s							
YSS					MLR	MLR		
	comp=E,400nm,14.0s							
YSS	**Yuzh-Sakhalins**	**17.64**	**1**		*e*Pn	**Pn**	**11 04 44.2**	**+0.6**
	comp=E,206nm,2.0s							
YOJ	**Yonaguni jima**	**17.77**	**259**		*e*P	**P**	**11 04 47.3**	**+1.5**
YOJ					pmax	pmax		
	comp=Z,94nm,1.1s							
YOJ	**Yonaguni jima**	**17.77**	**259**		*e*Pn	**P**	**11 04 47.3**	**+1.5**
	comp=Z,94nm,1.1s							
SSE	**Sheshan**	**18.24**	**281**		P	**Pn**	**11 04 51.8**	**+0.7**
SSE					S	**Sn**	**11 08 11.0**	**-2.9**
SSE					pmax	pmax		
	comp=Z,38nm,0.7s							
SSE					pmax	pmax		
	comp=Z,160nm,4.7s							
SSE					LR	LR		
	comp=N,220nm,19.2s							
SSE					LR	LR		
	comp=E,230nm,19.2s							
SSE					LR	LR		
	comp=Z,270nm,19.1s							
MDJ	**Mudanjiang**	**18.27**	**330**		P	**P**	**11 04 50.5**	**-0.7**
MDJ					pP	pP	11 05 00.5	-0.8
MDJ					sP	sP	11 05 06.3	-0.2
MDJ					S	**Sn**	**11 08 11.0**	**-3.4**
MDJ					sS	sS	11 08 39.5	+5.4
MDJ					PcP	**PcP**	**11 09 23.8**	**+1.8**
MDJ					ScP	**ScP**	**11 12 54.8**	**+0.7**
MDJ					PcS	**PcS**	**11 12 59.8**	**+1.3**
MDJ	**Mudanjiang**	**18.27**	**330**		ScS	ScS	11 16 35.0	+0.2
MDJ					pmax	pmax		
	comp=Z,25nm,0.8s							
MDJ					pmax	pmax		
	comp=Z,110nm,5.7s							
MDJ					LR	LR		
	comp=N,600nm,15.8s							
MDJ					LR	LR		
	comp=E,450nm,16.8s							
MDJ					LR	LR		
	comp=Z,1μm,16.8s							
MDJ	**Mudanjiang**	**18.27**	**330**		*e*P	**Pn**	**11 04 51.8**	**+0.4**
	comp=Z,23nm,0.7s							
TATO	**Taipei**	**18.91**	**262**		*e*P	**Pn**	**11 04 59.8**	**+0.4**
	comp=Z,160nm,0.9s							
NACB	**Ninganchiao**	**19.08**	**259**		*e*P	**Pn**	**11 05 04.6**	**+3.3**
	comp=Z,63nm,1.2s							
YHNB	**Yeheng**	**19.11**	**261**		*e*P	**Pn**	**11 05 01.8**	**0.0**
	comp=Z,66nm,1.1s							
YULB	**Yu-li**	**19.61**	**257**		*e*P	**Pn**	**11 05 10.7**	**+3.0**
	comp=Z,153nm,1.4s							
CN2	**Changchun**	**19.70**	**322**		*e*P	**P**	**11 05 06.8**	**-0.1**
CN2					*e*S	**S**	**11 08 47.3**	**+0.5**
CN2					pmax	pmax		
	comp=Z,10.0nm,0.8s							
CN2					pmax	pmax		
	comp=Z,200nm,4.0s							
CN2					LR	LR		
	comp=N,700nm,16.0s							
CN2					LR	LR		
	comp=E,700nm,16.0s							
CN2					LR	LR		
	comp=Z,600nm,17.0s							
SSLB	**Suanglung**	**19.76**	**259**		*e*P	**Pn**	**11 05 10.0**	**+0.4**
	comp=Z,196nm,1.3s							
HABR	**Khabarovsk**	**19.92**	**346**	*c*	*e*P	**P**	**11 05 08.1**	**-1.1**
HABR					*e*S	**S**	**11 08 51.8**	**+0.8**
HABR					pmax	pmax		
	comp=N,10.0nm,1.5s							
HABR					pmax	pmax		
	comp=Z,25nm,1.5s							
HABR					pmax	pmax		
	comp=E,4.0nm,0.7s							
HABR					MLR	MLR		
	comp=Z,200nm,18.0s							
TWG	**Pinlang**	**20.02**	**256**		*e*P	**Pn**	**11 05 12.8**	**+0.3**
	comp=Z,252nm,1.1s							
TPUB	**Ta-pu**	**20.22**	**258**		*e*P	Pn	11 05 14.0	-0.9
	comp=Z,57nm,0.9s							
NJ2	**Nanjing**	**20.25**	**284**		*e*P	**P**	**11 05 12.3**	**-0.6**
NJ2					pmax	pmax		
	comp=Z,30nm,1.0s							
QZH	**Quanzhou**	**21.43**	**264**	⇓	*i*P	**P**	**11 05 24.0**	**-1.7**
QZH					*e*S	**S**	**11 09 13.3**	**-8.1**
QZH					LR	LR		
	comp=N,1μm,16.0s							
QZH					LR	LR		
	comp=E,1μm,13.6s							
QZH					LR	LR		
	comp=Z,1μm,19.4s							
KLR	**Kul'dur**	**21.44**	**341**		P	**P**	**11 05 25.3**	**-0.3**
	comp=Z,12nm,0.8s,baz=144,slow=6.3,SNR=20							
KLR					LR	LR	11 13 30.7	
	comp=Z,117nm,18.3s,baz=154,slow=36							
TYV	**Tymovskoe**	**21.54**	**1**		*e*P	**P**	**11 05 28.2**	**+1.5**
TYV					*e*S	**S**	**11 09 22.0**	**-1.2**
TYV					pmax	pmax		
	comp=Z,15nm,0.8s							
TYV					smax	smax		
	comp=N,1μm,12.0s							
TIA	**Tai'an**	**22.14**	**295**	⇓	P	P	11 05 43.3	+10
TIA					S	Sn	11 10 03.3	+16
TIA					pmax	pmax		
	comp=Z,10.0nm,0.8s							
TIA					pmax	pmax		
	comp=Z,190nm,5.6s							
TIA					LR	LR		
	comp=N,630nm,16.7s							
TIA					LR	LR		
	comp=E,290nm,13.7s							
TIA					LR	LR		
	comp=Z,500nm,14.8s							
BJI	**Beijing**	**23.85**	**304**		P	**P**	**11 05 51.0**	**+0.5**
BJI					sP	**sP**	**11 06 08.0**	**+1.5**
BJI					S	**S**	**11 10 05.8**	**+2.2**
BJI					pmax	pmax		
	comp=Z,16nm,1.1s							
BJI					pmax	pmax		
	comp=Z,130nm,5.5s							
BJI					LR	LR		
	comp=N,520nm,14.8s							
BJI					LR	LR		
	comp=E,980nm,15.6s							
BJI					LR	LR		
	comp=Z,670nm,16.8s							
NKL	**Nikolayevsk**	**23.86**	**358**		*e*P	**P**	**11 05 49.0**	**-1.4**
H11N2	**WAKE ISLAND Hy**	**24.37**	**107**		T	T	11 31 43.1	
	baz=297,slow=74,SNR=35							
H11N1	**WAKE ISLAND Hy**	**24.38**	**107**		T	T	11 31 29.7	
	baz=297,slow=74,SNR=42							
H11N3	**WAKE ISLAND Hy**	**24.39**	**107**		T	T	11 31 47.0	
	baz=297,slow=74,SNR=52							
TGY	**Tagaytay City**	**24.80**	**237**		P	**P**	**11 05 59.1**	**-0.4**
	comp=Z,167nm,0.4s,baz=155,slow=2.9,SNR=4.3							
TGY					LR	LR	11 15 30.0	
	comp=Z,414nm,18.2s,baz=50,slow=36							
LLP	**Lapu-Lapu**	**25.43**	**226**	⇓	*e*P	**P**	**11 06 03.0**	**-2.2**
HIA	**Hailar**	**26.27**	**326**		*e*P	**P**	**11 06 13.6**	**+1.0**
HIA					pmax	pmax		
	comp=Z,39nm,0.8s							
HIA	**Hailar**	**26.27**	**326**		*e*P	**P**	**11 06 13.6**	**+1.0**
	comp=Z,39nm,0.8s							
PETK	**Petropavlovsk-**	**26.38**	**21**		LR	LR	11 19 16.0	
	comp=Z,139nm,18.7s,baz=207,slow=42							
PET	**Petropavlovsk**	**26.62**	**22**		*e*P	**P**	**11 06 09.3**	**-6.2**
PET					*e*S	**S**	**11 10 39.3**	**-8.2**
PET					MLR	MLR		
	comp=Z,300nm,14.0s							
PET					MLR	MLR		
	comp=Z,300nm,17.0s							
DAV	**Davao City (W)**	**27.09**	**219**		LR	LR	11 16 47.3	
	comp=Z,240nm,20.4s,baz=3.5,slow=36							
HHC	**Hu-ho-hao-te**	**27.45**	**303**		*e*P	**P**	**11 06 26.0**	**+2.7**
HHC					pP	sP	11 06 37.8	-1.6
HHC					sP	pP	11 06 43.5	+9.0
HHC					S	**S**	**11 11 02.0**	**+0.9**
HHC					SS	**SnSn**	**11 12 20.3**	**+7.0**
HHC					pmax	pmax		
	comp=Z,38nm,0.8s							
HHC					pmax	pmax		
	comp=Z,220nm,4.1s							
HHC					LR	LR		
	comp=N,680nm,12.4s							
HHC					LR	LR		
	comp=E,770nm,11.9s							
HHC					LR	LR		
	comp=Z,930nm,11.8s							
ENH	**Enshi**	**28.35**	**280**		*e*P	**P**	**11 06 30.3**	**-1.0**
	comp=Z,14nm,0.6s							
XAN	**Xi'an**	**28.63**	**288**		P	**P**	**11 06 33.0**	**-0.8**
XAN					sP	sP	11 06 50.3	+0.3
XAN					PP	**PnPn**	**11 07 29.0**	**+3.9**
XAN					PcP	**PcP**	**11 09 39.5**	**-4.5**
XAN					S	**S**	**11 11 21.0**	**+1.3**
XAN					SS	**SnSn**	**11 12 54.8**	**+13**
XAN					pmax	pmax		
	comp=Z,15nm,0.9s							
XAN					pmax	pmax		
	comp=Z,45nm,6.0s							
XAN					LR	LR		
	comp=N,220nm,18.3s							
XAN					LR	LR		
	comp=E,510nm,18.2s							
XAN					LR	LR		
	comp=Z,580nm,18.5s							
QIZ	**Qiongzhong**	**31.14**	**258**		P	**P**	**11 06 56.8**	**+0.7**
QIZ					PP	**PP**	**11 08 10.3**	**+3.4**
QIZ					S	**S**	**11 11 59.0**	**-0.2**
QIZ					SS	**SS**	**11 14 14.8**	**+1.5**
QIZ					pmax	pmax		
	comp=Z,15nm,1.6s							
QIZ					LR	LR		
	comp=E,360nm,18.0s							
QIZ					LR	LR		
	comp=Z,350nm,18.8s							
GYA	**Guiyang**	**31.45**	**274**	⇑	*i*P	**P**	**11 07 00.8**	**+1.8**
GYA					pP	sP	11 07 13.5	-1.7
GYA					PP	**PnPn**	**11 08 06.0**	**+3.2**
GYA					PcP	**PcP**	**11 09 53.8**	**+2.2**
GYA					S	**S**	**11 12 04.0**	**-0.3**
GYA					sS	sS	11 12 25.5	+2.4
GYA					ScP	**ScP**	**11 13 32.3**	**+0.9**
GYA					SS	**SnSn**	**11 13 52.8**	**+1.7**
GYA					pmax	pmax		
	comp=Z,20nm,0.8s							
GYA					pmax	pmax		
	comp=Z,120nm,5.4s							
GYA					LR	LR		
	comp=N,510nm,17.7s							
GYA					LR	LR		
	comp=E,520nm,18.0s							
GYA					LR	LR		
	comp=Z,500nm,17.8s							
SWI	**Sorong**	**31.76**	**201**		P	**P**	**11 06 59.5**	**-2.0**
ULN	**Ulaanbaatar**	**32.76**	**314**	*c*	*i*P	**P**	**11 07 10.2**	**0.0**
ULN					*e**PP	**pP**	**11 07 18.7**	**-2.8**
ULN					pmax	pmax		
	comp=Z,17nm,1.0s							
ULN	**Ulaanbaatar**	**32.76**	**314**		*e*P	**P**	**11 07 11.1**	**+0.8**
	comp=Z,23nm,1.1s							
LZH	**Lanzhou**	**32.81**	**292**		*e*P	P	11 07 18.0	+7.1
LZH					pP	sP	11 07 29.8	+2.7
LZH					sP	pP	11 07 33.8	+12
LZH					PP	PP	11 08 36.3	+11
LZH					*e*S	**S**	**11 12 26.5**	**+1.1**
LZH					sS	sS	11 12 46.8	+2.6
LZH					SS	**SnSn**	**11 14 28.0**	**+4.0**
LZH					pmax	pmax		
	comp=Z,16nm,1.0s							
LZH					pmax	pmax		
	comp=Z,62nm,4.2s							
LZH					LR	LR		
	comp=N,350nm,15.0s							
LZH					LR	LR		
	comp=E,970nm,15.8s							
LZH					LR	LR		
	comp=Z,910nm,15.9s							
MYLDM	**Lahad Datu**	**32.82**	**228**		*e*P	**P**	**11 07 12.9**	**+2.0**
	comp=Z,54nm,1.1s							
LBMI	**Labuha**	**32.91**	**208**		P	**P**	**11 07 10.8**	**-0.8**
SONA1	**Songino Array**	**33.16**	**314**		*e*P	**P**	**11 07 13.7**	**-0.1**
SONM	**Songino Array**	**33.16**	**314**		P	**P**	**11 07 14.0**	**+0.3**
	comp=Z,12nm,0.9s,baz=120,slow=7.9,SNR=34							
SONM					LR	LR	11 21 22.0	
	comp=Z,328nm,18.7s,baz=93,slow=38							
CD2	**Chengdu**	**33.18**	**283**		P	**P**	**11 07 13.5**	**-0.5**
CD2					sP	sP	11 07 31.0	+0.8
CD2					PP	**PP**	**11 08 28.8**	**-0.6**
CD2					S	**S**	**11 12 30.0**	**-0.9**
CD2					sS	sS	11 12 50.8	+1.

comp=Z,17nm,0.8s
SEY Seymchan 34.29 8 P **P 11 07 22.8 -0.4**
comp=Z,5.4nm,0.7s,baz=197,slow=7.6,SNR=11
SEY Seymchan 34.29 8 ‖ *i* P **P 11 07 24.0 +0.9**
SEY *i* *PP **pP 11 07 36.3 +1.8**
MRSI Marisa 34.56 218 P **P 11 07 26.4 +0.4**
comp=Z,62nm,1.0s
BOD Bodaibo 34.58 334 *e*P **P 11 07 25.7 0.0**
BOD pmax pmax
comp=Z,13nm,0.9s
SANI Sanana 34.82 209 P **P 11 07 24.2 -4.0**
KMI Kunming 35.21 273 P **P 11 07 31.5 -0.4**
KMI pP pP 11 07 41.8 -1.4
KMI PP **PP 11 08 56.3 +4.1**
KMI S **S 11 13 07.0 +4.2**
KMI sS sS 11 13 28.3 +6.6
KMI SS **SnSn 11 15 24.0 +1.5**
KMI pmax pmax
comp=Z,21nm,0.5s
KMI pmax pmax
comp=Z,85nm,3.7s
KMI LR LR
comp=N,210nm,16.1s
KMI LR LR
comp=E,260nm,21.4s
KMI LR LR
comp=Z,370nm,18.6s
BNDI Bandanaira 35.63 201 P **P 11 07 33.9 -1.3**
ZAK Zakamensk 35.99 317 *e*P **P 11 07 38.1 0.0**
ZAK pmax pmax
comp=Z,15nm,1.3s
TLY Talaya 36.26 319 P **P 11 07 42.0 +1.7**
comp=Z,9.5nm,0.6s,baz=134,slow=4.9,SNR=16
TLY LR LR 11 23 19.6
comp=Z,615nm,18.2s,baz=114,slow=38
TLY Talaya 36.26 319 *e*P **P 11 07 41.7 +1.4**
TLY pmax pmax
comp=Z,44nm,1.5s
TLY MLR MLR
comp=Z,713nm,15.0s
TLY Talaya 36.26 319 *e*P **P 11 07 41.6 +1.4**
comp=Z,17nm,0.8s
PANO Nakornpanom 36.43 259 P **P 11 07 42.6 +0.5**
comp=Z,24nm,1.2s
UBPT Khong Chiam 36.56 256 P **P 11 07 43.8 +0.6**
comp=Z,24nm,1.2s
SKNT Sakolnakorn 37.05 259 P **P 11 07 47.3 -0.1**
comp=Z,66nm,0.9s
MMPI Merauke 37.58 183 P **P 11 07 51.1 -0.7**
MOY Mondy 37.79 318 *e*P **P 11 07 53.9 +0.5**
MOY pmax pmax
comp=Z,30nm,1.7s
KDI Kendari 38.03 213 P **P 11 07 55.9 +0.3**
comp=Z,28nm,0.9s
KHON Khomkaen 38.33 259 P **P 11 07 58.5 +0.4**
comp=Z,19nm,1.0s
CRAI Chiangrai 38.86 266 P **P 11 08 02.5 -0.1**
comp=Z,237nm,1.0s
SBUM Sibu 39.04 232 *e*P **P 11 08 04.3 +0.1**
comp=Z,6.9nm,0.9s
CHAI Chaiyaphum 39.24 259 P **P 11 08 05.3 -0.5**
comp=Z,56nm,0.9s,comp=Z,406nm
UTTA Uttaradit 39.68 263 P **P 11 08 08.8 -0.6**
comp=Z,16nm,0.9s,comp=Z,132nm
MTKI Muara Teweh, K 39.81 226 P **P 11 08 11.5 +1.0**
comp=Z,62nm,0.8s,comp=Z,8μm
PBKT Sadao Pong 39.82 261 P **P 11 08 10.4 -0.2**
comp=Z,47nm,0.9s
SRAK Srakaew 40.07 256 P **P 11 08 08.8 -3.9**
comp=Z,212nm,0.9s,comp=Z,2μm
LAMP Lampang 40.16 264 P **P 11 08 13.7 +0.2**
comp=Z,7.7nm,0.9s
KAPI Kappang 40.35 216 LR LR 11 24 36.4
comp=Z,84nm,20.4s,baz=45,slow=36
CMMT Chiang Mai 40.64 265 P **P 11 08 16.8 -0.7**
comp=Z,54nm,0.9s,comp=Z,505nm
CHTO Chiang Mai 40.64 265 P **P 11 08 16.8 -0.7**
comp=Z,200nm,1.1s,comp=Z,2μm
CHTO Chiang Mai 40.64 265 *e*P **P 11 08 16.5 -1.0**
CHTO pmax pmax
comp=Z,36nm,0.8s
CHTO Chiang Mai 40.64 265 *e*P **P 11 08 16.5 -1.0**
comp=Z,36nm,0.8s
CM31 Chiang Mai Arr 40.78 265 *e*P **P 11 08 18.8 +0.2**
CMAR Chiang Mai Arr 40.78 265 P **P 11 08 17.8 -0.9**
comp=Z,8.0nm,0.8s,baz=50,slow=8.3,SNR=57
CMAR PcP **PcP 11 10 20.8 +1.5**
comp=Z,1.3nm,0.6s,baz=62,slow=1.4,SNR=5.2
CMAR LR LR 11 25 35.8
comp=Z,365nm,20.4s,baz=82,slow=37
CM01 Chiang Mai Arr 40.79 265 *e*P **P 11 08 17.5 -1.1**
STKI Sintang 41.27 231 P **P 11 08 24.4 +1.8**
BILL Bilibino 41.32 13 *i* P **P 11 08 22.7 +0.3**
BILL *i* 11 09 59.8
BILL pmax pmax
comp=Z,5.0nm,0.9s
BILL MLR MLR
comp=Z,156nm,16.0s
BILL Bilibino 41.32 13 *e*P **P 11 08 22.1 -0.2**
comp=Z,8.8nm,0.9s
MHMT Maesarieng 41.78 265 P **P 11 08 26.9 +0.1**
comp=Z,18nm,1.1s
MMRI Maumere 42.33 210 P **P 11 08 29.8 -1.4**
SRDT SRDT 42.41 259 P **P 11 08 33.4 +1.5**
comp=Z,50nm,1.2s
PHET Kaeng Krachan 42.66 257 P **P 11 08 34.9 +1.0**
comp=Z,13nm,1.0s,comp=Z,194nm
KHLT Khaolaem Dam 42.66 260 P **P 11 08 35.2 +1.3**
comp=Z,11nm,1.1s
COEN Coen 43.01 179 *e*P **P 11 08 37.0 +0.3**
comp=Z,48nm,1.5s
TIXI Tiksi 43.03 354 P **P 11 08 35.8 -0.4**
comp=Z,2.6nm,0.5s,baz=137,slow=4.5,SNR=7.2
TIXI Tiksi 43.03 354 *d* *i* P **P 11 08 36.5 +0.3**
TIXI pmax pmax
comp=Z,3.0nm,0.8s
TIXI Tiksi 43.03 354 *e*P **P 11 08 36.0 -0.2**
comp=Z,8.7nm,1.3s
PLAI Plampang 44.61 216 P **P 11 08 47.0 -2.6**
TWSI Taliwang, Sumb 45.00 217 P **P 11 08 51.3 -1.4**
comp=Z,21nm,1.1s,comp=Z,753nm
TRTT Trang 45.25 250 P **P 11 08 55.5 +0.8**
comp=Z,24nm,1.2s
WMQ Urumqi 45.32 304 P **P 11 08 55.5 +0.4**
WMQ pP pP 11 09 07.8 +1.1
WMQ sP sP 11 09 14.5 +2.9
WMQ SS SS 11 18 51.8 -4.7
WMQ pmax pmax
comp=Z,9.0nm,0.8s
WMQ pmax pmax
comp=Z,67nm,4.6s
WMQ LR LR
comp=N,110nm,15.8s
WMQ LR LR
comp=E,150nm,19.6s
WMQ LR LR
comp=Z,110nm,19.6s
KULM Kulim 45.92 247 *e*P **P 11 09 00.6 +0.5**
comp=Z,21nm,0.8s
IPM Ipoh 46.10 246 *e*P **P 11 09 01.5 0.0**
comp=Z,19nm,0.9s
PWJI Pagerwojo 47.25 223 P **P 11 09 08.0 -2.4**
ZAA0 Zalesovo Array 47.85 318 *e*P **P 11 09 14.9 +0.3**
ZALV Zalesovo Beam 47.85 318 P **P 11 09 15.2 +0.6**
comp=Z,27nm,1.0s,baz=104,slow=6.3,SNR=40
ZALV PcP **PcP 11 10 43.3 +0.5**
comp=Z,2.0nm,0.5s,baz=92,slow=4.3,SNR=2.2
ZALV LR LR 11 30 11.8
comp=Z,379nm,18.2s,baz=70,slow=37
ZALV Zalesovo Beam 47.85 318 P **P 11 09 15.2 +0.6**
ZALV 11 10 43.3
ZALV pmax pmax
comp=Z,18nm,0.9s
ZALV pmax pmax
comp=Z,2.0nm,0.5s
ZALV MLR MLR
comp=Z,379nm,18.2s
UGM Wanagama 47.94 224 P **P 11 09 16.6 +0.8**
PSI Prapat 48.78 246 LR LR 11 28 26.8
comp=Z,138nm,19.3s,slow=34
NVS Novosibirsk 48.87 319 ‖ *i* P **P 11 09 23.2 +0.7**
LEM Lembang 48.95 228 P **P 11 09 21.9 -1.8**
LHMI Lhok Sumawe 48.96 250 P **P 11 09 23.0 -0.7**
MK01 Makanchi Array 49.09 308 *e*P **P 11 09 24.1 -0.2**
MK31 Makanchi Array 49.10 308 *e*P **P 11 09 24.5 0.0**
MK31 Makanchi Array 49.10 308 *e*P **P 11 09 24.4 0.0**

MKAR Makanchi Array 49.10 308 P **P 11 09 24.3 -0.1**
comp=Z,13nm,0.8s,baz=92,slow=9.8,SNR=61
MKAR LR LR 11 31 10.7
comp=Z,318nm,18.1s,baz=90,slow=37
MKAR Makanchi Array 49.10 308 *e*P **P 11 09 24.4 0.0**
CMJI Cimerak 49.13 227 P **P 11 09 25.2 +0.2**
comp=Z,54nm,1.3s
KCSI Kotacane, Aceh 49.27 247 P P 11 09 36.2 +10
MAKZ Makanchi 49.31 308 *e*P **P 11 09 26.1 0.0**
MAKZ pmax pmax
comp=Z,25nm,1.5s
MAKZ Makanchi 49.31 308 *e*P **P 11 09 26.1 0.0**
comp=Z,25nm,1.5s
WRAB Tennant Creek 49.52 190 *d* *i* P **P 11 09 27.3 -0.5**
WRAB pmax pmax
comp=Z,113nm,1.0s
WRAB Tennant Creek 49.52 190 *e*P **P 11 09 26.9 -1.0**
comp=Z,33nm,0.8s
WB2 Warramunga Arr 49.53 190 *e*P **P 11 09 27.0 -0.9**
comp=Z,34nm,0.7s
WRA Warramunga Arr 49.53 190 P **P 11 09 26.9 -1.1**
comp=Z,35nm,0.8s,baz=9.8,slow=8.2,SNR=110
WRA PcP **PcP 11 10 50.1 +0.7**
comp=Z,4.2nm,0.6s,baz=0.1,slow=3.8,SNR=5.5
WRA S **S 11 16 29.6 -3.3**
comp=Z,1.5nm,1.1s,baz=3.9,slow=15,SNR=5.2
WRA Warramunga Arr 49.53 190 *c* *e*P **P 11 09 26.8 -1.1**
WRA pmax pmax
comp=Z,36nm,0.8s
LHSI Lahat 49.59 235 P **P 11 09 28.4 -0.1**
FITZ Fitzroy Crossi 49.76 201 *e*P **P 11 09 29.3 -0.3**
MLSI Meulaboh, Aceh 49.95 249 P **P 11 09 30.5 -0.8**
LWLI Liwa 50.04 233 P **P 11 09 31.1 -1.0**
CGJI Cibinong 50.07 230 P **P 11 09 33.2 +1.1**
comp=Z,24nm,1.6s
NRIK Noril'sk 50.61 338 P **P 11 09 35.3 -0.2**
comp=Z,17nm,0.9s,baz=109,slow=8.4,SNR=17
NRIK LR LR 11 32 15.1
comp=Z,306nm,18.0s,baz=110,slow=38
GSI Gunungsitoli 50.75 245 P **P 11 09 37.5 +0.2**
PBSI Pulau Batu 51.03 243 P **P 11 09 39.7 +0.3**
PDGK Podgornoye 51.30 304 *i* P **P 11 09 40.5 -0.6**
PDGK pmax pmax
comp=Z,25nm,1.0s
KURK Kurchatov 51.47 313 *e*P **P 11 09 43.0 +0.8**
KURK pmax pmax
comp=Z,67nm,0.8s
KURK Kurchatov 51.47 313 *e*P **P 11 09 43.0 +0.8**
comp=Z,67nm,0.8s
TTA Tatalina 51.56 31 *e*P **P 11 09 46.2 +3.4**
TTA pmax pmax
comp=Z,15nm,1.8s
TTA Tatalina 51.56 31 *e*P **P 11 09 46.2 +3.4**
comp=Z,15nm,1.8s
KDAK Kodiak Island 52.62 38 *i* P **P 11 09 50.2 -0.4**
KDAK Kodiak Island 52.62 38 *e*P **P 11 09 53.7 +3.1**
comp=Z,52nm,1.4s
AS01 Alice Springs 53.25 189 *e*P **P 11 09 54.3 -1.4**
AS31 Alice Springs 53.26 189 *e*P **P 11 09 55.0 -0.8**
comp=Z,2.3nm,0.5s
ASAR Alice Springs 53.26 189 P **P 11 09 55.0 -0.8**
comp=Z,3.6nm,0.4s,baz=3.1,slow=5.6,SNR=130
ASAR LR LR 11 32 36.0
comp=Z,85nm,18.2s,baz=42,slow=36
ASAR Alice Springs 53.26 189 P **P 11 09 55.0 -0.8**
ASAR pmax pmax
comp=Z,4.0nm,0.5s
ASAR MLR MLR
comp=Z,85nm,18.2s
PPLA Purkeypile 53.28 31 *e*P **P 11 09 58.9 +3.2**
comp=Z,11nm,1.1s
CAST Castle Rocks 53.39 31 *e*P **P 11 09 57.2 +0.9**
comp=Z,7.2nm,0.9s
TKM2 Tokmak 2 54.18 304 *i* P **P 11 10 02.7 0.0**
TKM2 pmax pmax
comp=Z,10.0nm,1.0s
TKM2 Tokmak 2 54.18 304 *e*P **P 11 10 03.0 +0.4**
comp=Z,8.0nm,0.9s
TRF Thorofare Moun 54.20 31 *e*P **P 11 10 06.2 +3.8**
comp=Z,6.0nm,1.0s
KSH Kashi 54.48 300 P **P 11 10 08.0 +3.2**
KSH *e*pP sP 11 10 20.3 -1.1
KSH *e*PP **PP 11 12 12.0 +4.9**
KSH *e*ScP **ScP 11 15 04.0 +1.0**
KSH PcS **PcS 11 15 09.3 +1.7**
KSH S **S 11 17 41.0 +0.1**
KSH pmax pmax
comp=Z,10.0nm,1.0s
KSH pmax pmax
comp=Z,77nm,5.4s
KSH LR LR
comp=N,670nm,16.7s
KSH LR LR
comp=E,240nm,9.4s
KSH LR LR
comp=Z,230nm,17.5s
PMR Palmer 54.59 33 *e*P **P 11 10 07.2 +2.2**
PMR pmax pmax
comp=Z,6.0nm,0.8s
PMR Palmer 54.59 33 *e*P **P 11 10 07.2 +2.2**
comp=Z,5.7nm,0.8s
MBWA Marble Bar 54.63 206 *e*P **P 11 10 05.0 -0.8**
COLD Coldfoot 54.69 26 *e*P **P 11 10 09.1 +3.3**
comp=Z,4.7nm,0.9s
MCK McKinley 54.83 31 *e*P **P 11 10 10.2 +3.4**
MCK pmax pmax
comp=Z,8.0nm,0.9s
MCK McKinley 54.83 31 *e*P **P 11 10 10.2 +3.4**
comp=Z,7.7nm,0.9s
RND Reindeer 54.84 31 *e*P **P 11 10 08.2 +1.2**
RND pmax pmax
comp=Z,9.0nm,1.0s
RND Reindeer 54.84 31 *e*P **P 11 10 08.2 +1.2**
comp=Z,8.7nm,1.0s
FRU Bishkek 54.90 304 *e*P **P 11 10 07.5 -0.2**
SML Sawmill 54.98 33 *e*P **P 11 10 10.7 +2.8**
SML pmax pmax
comp=Z,10.0nm,0.8s
SML Sawmill 54.98 33 *e*P **P 11 10 10.7 +2.8**
comp=Z,9.9nm,0.8s
EIDS Eidsvold 55.02 170 *e*P **P 11 10 08.8 +0.3**
comp=Z,19nm,1.2s
AAK Ala-Archa 55.02 304 ‖ *i* P **P 11 10 08.3 -0.4**
AAK pmax pmax
comp=Z,6.0nm,0.7s
AAK Ala-Archa 55.02 304 *e*P **P 11 10 09.1 +0.4**
comp=Z,6.2nm,0.8s
MDM Murphy Dome 55.23 29 *e*P **P 11 10 10.5 +0.8**
comp=Z,14nm,1.3s
CCB Clear Creek Bu 55.39 29 *e*P **P 11 10 12.0 +1.2**
comp=Z,2.8nm,0.8s
SCM Sheep Creek Mo 55.46 33 *e*P **P 11 10 11.8 +0.4**
SCM pmax pmax
comp=Z,13nm,0.8s
SCM Sheep Creek Mo 55.46 33 *e*P **P 11 10 11.8 +0.4**
comp=Z,13nm,0.8s
EKS2 Erkin-Say 55.54 304 *e*P **P 11 10 12.8 +0.4**
EKS2 pmax pmax
comp=Z,5.0nm,0.8s
EKS2 Erkin-Say 55.54 304 *e*P **P 11 10 12.8 +0.4**
comp=Z,5.2nm,0.8s
OTUK Ortayu 55.72 311 *i* P **P 11 10 13.9 +0.4**
OTUK pmax pmax
comp=Z,75nm,1.5s
IL1 Eielson Array 55.79 29 *e*P **P 11 10 12.8 -0.9**
ILAR Eielson Array 55.79 29 P **P 11 10 13.2 -0.5**
comp=Z,3.4nm,0.9s,baz=257,slow=6.1,SNR=19
ILB Eielson Array 55.79 29 *e*P **P 11 10 13.8 +0.1**
KLU Klutina 56.12 33 *e*P **P 11 10 17.3 +1.1**
comp=Z,19nm,1.6s
CHKZ Chkalovo 56.25 317 *i* P **P 11 10 16.9 -0.2**
CHKZ pmax pmax
comp=Z,32nm,0.9s
BVAR Borovoye Array 56.44 316 P **P 11 10 19.0 +0.5**
comp=Z,31nm,0.9s,baz=93,slow=7.7,SNR=4.5
BVAR Borovoye Array 56.44 316 P **P 11 10 19.0 +0.5**
BVAR pmax pmax
comp=Z,31nm,0.9s
MNAS Manas 56.50 304 *i* P **P 11 10 19.8 +0.5**
MNAS pmax pmax
comp=Z,5.0nm,0.9s
BMRM Bremner River 56.77 34 *e*P **P 11 10 22.3 +1.6**
comp=Z,14nm,1.1s
DOT Dot Lake 56.99 31 *e*P **P 11 10 23.9 +1.6**
comp=Z,35nm,1.5s
MENT Mentasta 57.15 32 *e*P **P 11 10 25.6 +2.2**

comp=Z,7.1nm,1.0s
ZRNK Zerenda 57.28 316 *i* P **P 11 10 24.8 +0.3**
ZRNK pmax pmax
comp=Z,43nm,1.5s
ZRNK Zerenda 57.28 316 *e*P **P 11 10 25.3 +0.9**
comp=Z,27nm,1.0s
KKAR Karatay Array 57.82 305 *e*P **P 11 10 28.8 +0.4**
KKAR Karatay Array 57.82 305 *e*P **P 11 10 28.8 +0.4**
BALM Baldy 57.86 34 *e*P **P 11 10 31.1 +2.6**
BALM pmax pmax
comp=Z,5.0nm,0.8s
BALM Baldy 57.86 34 *e*P **P 11 10 31.1 +2.6**
comp=Z,4.9nm,0.8s
EGAK Eagle 58.25 29 *e*P **P 11 10 31.4 +0.4**
comp=Z,4.8nm,1.0s
DAWY Dawson 59.05 30 *e*P **P 11 10 39.4 +2.7**
comp=Z,8.2nm,1.0s
DZET Dzherino 60.05 300 *i* P **P 11 10 44.1 0.0**
DZET pmax pmax
comp=Z,25nm,0.5s
STKA Stephens Creek 60.84 181 P **P 11 10 48.5 -0.8**
comp=Z,4.4nm,0.7s,baz=339,slow=6.9,SNR=11
STKA Stephens Creek 60.84 181 *e*P **P 11 10 49.5 +0.3**
comp=Z,1.2nm,0.8s
INK Inuvik 61.04 25 *e*P **P 11 10 50.7 +0.6**
INK Inuvik 61.04 25 *e*P **P 11 10 50.7 +0.6**
KBL Kabul 61.06 295 *e*P **P 11 10 51.1 -0.1**
KBL pmax pmax
comp=Z,10.0nm,0.8s
KBL Kabul 61.06 295 *e*P **P 11 10 51.1 -0.1**
comp=Z,9.8nm,0.8s
SVE Sverdlovsk 61.49 322 *e*P **P 11 10 54.3 +0.8**
SVE pmax pmax
comp=Z,32nm,1.2s
POO Poona 62.63 277 *e*P **P 11 10 58.0 -3.8**
ARU Arti 62.70 322 *c* *i* P **P 11 11 02.0 +0.5**
ARU 11 11 38.1
ARU S **S 11 19 30.8 +3.8**
ARU SS **SS 11 23 30.4 -1.1**
ARU pmax pmax
comp=Z,49nm,1.2s
ARU MLR MLR
comp=Z,251nm,18.0s
ARU Arti 62.70 322 *e*P **P 11 11 01.7 +0.2**
comp=Z,29nm,0.7s
ABKAR Akbulak array 63.58 314 *e*P **P 11 11 07.9 +0.4**
comp=Z,9.0nm,0.5s
DLBC Dease Lake 64.42 36 LR LR 11 35 12.0
comp=Z,130nm,20.2s,baz=310,slow=32
GEYT Alibeck 68.32 302 P **P 11 11 39.6 +1.3**
comp=Z,5.6nm,0.7s,baz=46,slow=4.3,SNR=11
GEYT LR LR 11 44 25.1
comp=Z,250nm,18.5s,baz=30,slow=38
TMCR Tamitsa 69.88 333 *e*P **P 11 11 47.8 +0.5**
TMCR pmax pmax
comp=Z,18nm,0.5s
YKA Yellowknife Ar 70.21 29 P **P 11 11 49.5 +0.1**
comp=Z,1.8nm,0.7s,baz=295,slow=6.4,SNR=19
YKB5 Yellowknife Ar 70.21 29 *e*P **P 11 11 49.0 -0.4**
KLMR Klimovskoe 70.69 330 *e*P **P 11 11 50.6 -1.7**
KLMR *e* 11 14 26.1
KLMR pmax pmax
comp=Z,10.0nm,0.8s
ARA0 ARCESS Array S 71.47 341 *e*P **P 11 11 57.7 +0.7**
ARCES ARCESS Array B 71.47 341 P **P 11 11 58.0 +1.0**
comp=Z,7.0nm,0.9s,baz=50,slow=8.1,SNR=9.9
ARCES ARCESS Array B 71.47 341 P **P 11 11 58.0 +1.0**
ARCES pmax pmax
comp=Z,7.0nm,0.9s
DAG Danmarks Havn 73.52 355 *i* P **P 11 12 08.2 -0.8**
comp=Z,9.9nm,1.1s
DAG Danmarks Havn 73.52 355 *i* P **P 11 12 08.2 -0.8**
DAG pmax pmax
comp=Z,13nm,1.1s
VRH Novokhopyorsk 73.82 320 *e*P **P 11 12 10.3 -1.0**
VRH pmax pmax
comp=Z,10.0nm,0.4s
LPSR Galich'ya Gora 74.72 322 *e*P **P 11 12 14.4 -2.0**
LPSR pmax pmax
comp=Z,9.0nm,0.8s
OBN Obninsk 74.73 325 *i* P **P 11 12 15.3 -1.1**
OBN *i* 11 12 31.2
OBN pmax pmax
comp=Z,14nm,1.5s
OBN MLR MLR
comp=Z,436nm,17.0s
RAR Rarotonga 75.15 125 LR LR 11 38 24.6
comp=Z,109nm,20.6s,baz=228,slow=30
VSR Storozhevoye 75.24 321 *e*P **P 11 12 19.6 +0.1**
VSR pmax pmax
comp=Z,20nm,1.1s
K05A Summer Lake 75.43 49 *e*P P 11 12 25.8 +4.8
FINES FINESS Array B 75.98 334 P **P 11 12 23.8 +0.3**
comp=Z,7.3nm,0.8s,baz=71,slow=4.9,SNR=17
FINES LR LR 11 49 57.3
comp=Z,98nm,18.0s,baz=89,slow=39
FINES FINESS Array B 75.98 334 *i* P **P 11 12 23.7 +0.2**
FINES pmax pmax
comp=Z,7.0nm,0.8s
ZEI Tsey 76.30 311 *e*P **P 11 12 23.7 -2.3**
ZEI pmax pmax
comp=Z,15nm,0.5s
KBZ Khabaz 76.52 313 P **P 11 12 28.1 +1.2**
comp=Z,24nm,0.8s,baz=89,slow=4.1,SNR=62
KBZ LR LR 11 49 13.2
comp=Z,146nm,18.6s,baz=53,slow=38
KVAR Kislovodsk Arr 76.54 313 LR LR 11 49 59.4
comp=Z,136nm,18.5s,baz=97,slow=39
KIV Kislovodsk 76.55 313 *e*P **P 11 12 28.6 +1.3**
KIV pmax pmax
comp=Z,21nm,0.9s
KIV MLR MLR
comp=Z,110nm,18.0s
KIV Kislovodsk 76.55 313 *e*P **P 11 12 28.5 +1.3**
WALA Waterton Lakes 76.78 41 *e*P **P 11 12 30.4 +1.8**
comp=Z,6.1nm,0.8s
GNI Garni 76.94 309 ‖ *i* P **P 11 12 31.5 +1.9**
GNI pmax pmax
comp=Z,43nm,1.2s
GNI Garni 76.94 309 *e*P **P 11 12 30.2 +0.5**
WVOR Wild Horse Val 77.05 49 *e*P **P 11 12 33.2 +3.1**
WVOR Wild Horse Val 77.05 49 *e*P **P 11 12 33.2 +3.1**
SWMT Swartz Lake 77.50 42 *e*P **P 11 12 34.9 +2.4**
PAHR Pah Rah Range 77.82 51 *e*P **P 11 12 36.8 +2.3**
CMB Columbia Colle 77.90 53 *e*P **P 11 12 36.0 +1.1**
CMB Columbia Colle 77.90 53 *e*P **P 11 12 36.0 +1.1**
MFID Camas Ranch 78.39 47 *e*P **P 11 12 40.1 +2.5**
SUMG Summit 78.40 0 *i* P **P 11 12 38.1 +0.7**
comp=Z,7.6nm,0.8s
SUMG Summit 78.40 0 *i* P **P 11 12 38.1 +0.7**
SUMG pmax pmax
comp=Z,8.0nm,0.8s
SUMG Summit 78.40 0 *e*P **P 11 12 39.0 +1.6**
NVAR Mina Array Bea 79.16 52 P **P 11 12 43.0 +0.9**
comp=Z,2.8nm,0.7s,baz=298,slow=6.6,SNR=15
NVAR LR LR 11 40 56.5
comp=Z,98nm,21.0s,baz=304,slow=30
HLID Hailey 79.21 46 *e*P **P 11 12 46.5 +4.3**
LRM Limekiln Ridge 79.27 43 *e*P **P 11 12 43.9 +1.3**
DLMT Dillon 79.42 44 *e*P **P 11 12 45.5 +2.3**
ANN Anapa 79.43 316 *e*P **P 11 12 43.1 +0.1**
ANN *e*S **S 11 22 43.5 +2.5**
ANN pmax pmax
comp=Z,29nm,1.1s
EGMT Eagleton 79.69 40 *e*P **P 11 12 47.5 +3.0**
comp=Z,5.7nm,0.8s
BOZ Bozeman (W) 79.85 43 *e*P **P 11 12 47.1 +1.5**
BOZ pmax pmax
comp=Z,3.0nm,0.8s
BOZ Bozeman (W) 79.85 43 *e*P **P 11 12 47.1 +1.5**
comp=Z,2.6nm,0.8s
FFC Flin Flon 79.88 32 *e*P **P 11 12 46.2 +0.9**
FFC Flin Flon 79.88 32 *e*P **P 11 12 46.2 +0.9**
FCC Fort Churchill 80.63 26 *e*P **P 11 12 50.0 +0.7**
FCC pmax pmax
comp=Z,10.0nm,1.2s
FCC Fort Churchill 80.63 26 *e*P **P 11 12 50.0 +0.7**
comp=Z,9.7nm,1.2s
PPT2 Papeete2 80.64 116 *e*LR LR 11 37 56.4
comp=Z,116nm,25.0s
AKASG Malin Array Be 80.85 324 P **P 11 12 50.5 -0.1**
comp=Z,2.4nm,0.6s,baz=46,slow=6.1,SNR=15
AKASG LR LR 11 51 14.1
comp=Z,337nm,19.4s,baz=50,slow=38
AKASG Malin Array Be 80.85 324 P **P 11 12 50.5 -0.1**

AKASG pmax pmax
comp=Z,1.0nm,0.4s
AKASG MLR MLR
comp=Z,337nm,19.4s
KIEV Kiev 80.86 324 eP **P 11 12 50.9 +0.2**
KIEV pmax pmax
comp=Z,5.0nm,0.7s
KIEV Kiev 80.86 324 eP **P 11 12 50.5 -0.1**
KIEV ePcP **PcP 11 12 55.6 -1.6**
GCMT Greycliff 80.94 42 eP P 11 12 56.7 +5.3
R11A Troy Canyon, C 81.06 51 eP **P 11 12 54.0 +1.8**
H17A Grant Village 81.15 44 eP **P 11 12 55.8 +3.1**
HVU Hansel Valley 81.16 47 eP P 11 12 57.5 +4.8
HVU Hansel Valley 81.16 47 eP P 11 12 57.5 +4.8
LKWY Lake 81.16 44 eP **P 11 12 56.0 +3.2**
LKWY pmax pmax
comp=Z,7.0nm,0.9s
LKWY Lake 81.16 44 eP **P 11 12 56.0 +3.2**
comp=Z,6.9nm,0.9s
IMW Indian Meadow 81.19 44 eP **P 11 12 56.8 +3.8**
FLWY Flagg Ranch 81.24 44 eP P 11 12 58.7 +5.6
SIM Simferopol' 81.35 317 eP **P 11 12 53.7 +0.3**
SIM pmax pmax
comp=Z,13nm,0.8s
MOOW Moose Ponds 81.39 44 eP P 11 12 59.4 +5.5
TPAW Teton Pass 81.40 45 eP P 11 12 59.1 +5.0
RLMT Red Lodge 81.54 43 eP **P 11 12 56.4 +1.7**
LOHW Long Hollow 81.55 45 eP **P 11 12 58.1 +3.3**
NB2 NORSAR Subarra 81.57 338 P **P 11 12 54.2 -0.1**
comp=Z,2.1nm,0.7s,baz=42,slow=5.3
NOA NORSAR Array B 81.57 338 P **P 11 12 54.3 -0.1**
comp=Z,3.3nm,0.7s,baz=41,slow=5.2,SNR=6.6
NOA LR LR 11 53 36.1
comp=Z,61nm,20.1s,baz=40,slow=39
NOA NORSAR Array B 81.57 338 P **P 11 12 54.3 -0.1**
NOA pmax pmax
comp=Z,5.0nm,0.9s
NOA MLR MLR
comp=Z,61nm,20.2s
AHID Auburn Hatcher 81.70 45 eP **P 11 13 00.2 +4.6**
DUG Dugway, Tooele 81.96 48 eP **P 11 12 59.1 +2.1**
DUG Dugway, Tooele 81.96 48 eP **P 11 12 59.1 +2.1**
HWUT Hardware Ranch 82.02 47 eP **P 11 13 01.2 +3.9**
SHPR Sheep Range 82.29 52 eP **P 11 13 03.1 +4.3**
PD31 Pinedale Array 82.65 45 eP **P 11 13 05.2 +4.5**
PDAR Pinedale Array 82.65 45 P **P 11 13 02.3 +1.7**
comp=Z,1.9nm,0.8s,baz=272,slow=4.2,SNR=13
PDAR LR LR 11 43 41.9
comp=Z,35nm,21.8s,baz=268,slow=31
CCUT Cedar City 82.98 51 eP **P 11 13 05.5 +3.1**
LCMT Little Creek M 83.34 51 eP **P 11 13 06.8 +2.6**
MTPU Mount Pierson 83.52 50 eP **P 11 13 09.5 +4.2**
TAOE Nuku Hiva Isla 83.69 104 eLR LR 11 39 19.1
comp=Z,115nm,23.3s
TBI Tubuai 84.01 121 eLR LR 11 39 31.3
comp=Z,154nm,30.8s
SRU San Rafael Swe 84.04 48 eP **P 11 13 12.1 +4.3**
SRU San Rafael Swe 84.04 48 eP **P 11 13 12.1 +4.3**
BR131 Keskin Array S 84.51 313 eP **P 11 13 10.9 +0.7**
BRTR Keskin Array B 84.51 313 P **P 11 13 10.7 +0.6**
comp=Z,15nm,0.9s,baz=103,slow=3.3,SNR=46
BRTR LR LR 11 55 18.5
comp=Z,56nm,19.1s,baz=64,slow=39
BRTR Keskin Array B 84.51 313 ceP **P 11 13 10.8 +0.7**
BRTR pmax pmax
comp=Z,16nm,1.0s
K22A Casper 84.57 44 eP **P 11 13 12.2 +1.8**
comp=Z,6.2nm,0.7s
BUR08 Bucovina Ar. S 84.80 323 eP **P 11 13 11.9 +0.6**
ANTO Ankara 84.97 313 eP **P 11 13 14.0 +1.7**
ANTO Ankara 84.97 313 eP **P 11 13 14.0 +1.7**
BR231 Keskin MP Arra 85.00 313 eP **P 11 13 09.8 -2.7**
ULM Lac du Bonnet 85.61 33 LR LR 11 49 29.3
comp=Z,62nm,21.9s,baz=312,slow=34
UZH Uzhgorod 85.67 325 eP **P 11 13 16.3 +0.8**
UZH e 11 13 36.9
UZH eS **S 11 23 43.0 -1.7**
UZH e 11 24 40.3
UZH eSSS SSS 11 32 50.9
STHS Stebnicka Huta 85.68 326 eP **P 11 13 16.2 +0.6**
STHS pmax pmax
comp=Z,3.0nm,1.0s
STHS Stebnicka Huta 85.68 326 eP **P 11 13 16.2 +0.6**
CRVS Cervenica-Dubn 85.91 325 eP **P 11 13 16.9 +0.2**
CRVS Cervenica-Dubn 85.91 325 eP **P 11 13 16.9 +0.2**
N23A Red Feather La 85.94 45 eP **P 11 13 19.1 +1.7**
SMCO Snowmass 86.29 47 eP P 11 13 24.0 +4.8
ISCO Idaho Springs 86.78 46 eP P 11 13 26.5 +4.9
ISCO Idaho Springs 86.78 46 eP P 11 13 26.4 +4.9
OKC Ostrava-Krasne 86.88 327 AMS AMS 11 55 20.0
comp=Z,300nm,16.6s
MMAI Mount Meron Ar 87.01 306 LR LR 11 56 58.8
comp=Z,132nm,18.4s,baz=55,slow=39
DPC Dobruska-Polom 87.36 329 eP **P 11 13 24.3 +0.5**
DPC AMS AMS 11 56 30.0
comp=Z,300nm,18.0s
DPC Dobruska-Polom 87.36 329 eP **P 11 13 24.3 +0.5**
DPC MLR MLR
comp=Z,300nm,18.0s
UPC Upice 87.39 329 AMS AMS 11 56 50.0
CLL Collm 88.13 331 eP **P 11 13 28.0 +0.6**
CLL Collm 88.13 331 eP **P 11 13 28.0 +0.6**
GOPC GO Pecny, Ondr 88.37 329 AMS AMS 11 57 20.0
comp=Z,300nm,17.2s
PRU Pruhonice 88.43 329 AMS AMS 11 57 30.0
comp=Z,200nm,15.1s
TREC Trest 88.50 328 AMS AMS 11 57 10.0
comp=Z,400nm,18.4s
ANMO Albuquerque 89.07 50 eP **P 11 13 33.5 +1.1**
ANMO pmax pmax
comp=Z,13nm,4.1s
EIL Elat 89.17 304 LR LR 11 58 42.9
comp=Z,81nm,18.3s,baz=52,slow=39
KHC Kasperske Hory 89.48 329 eP **P 11 13 33.8 -0.1**
KHC AMS AMS 11 58 10.0
comp=Z,400nm,15.8s
KHC Kasperske Hory 89.48 329 eP **P 11 13 33.8 -0.1**
KHC MLR MLR
comp=Z,400nm,15.8s
ECSD EROS Data Cent 89.58 38 eP **P 11 13 35.6 +1.2**
comp=Z,6.8nm,1.2s
GERES GERESS Array B 89.63 329 P **P 11 13 33.8 -0.9**
comp=Z,0.7nm,0.5s,baz=26,slow=6.5,SNR=5.3
GERES LR LR 11 58 00.3
comp=Z,188nm,18.5s,baz=50,slow=38
TXAR Lajitas Array 94.28 53 P **P 11 13 57.2 +0.6**
comp=Z,2.7nm,0.9s,baz=305,slow=2.4,SNR=19
TXAR LR LR 11 55 34.0
comp=Z,45nm,18.9s,baz=0.0,slow=35
TXAR Lajitas Array 94.28 53 P **P 11 13 57.2 +0.6**
TXAR pmax pmax
comp=Z,2.0nm,0.8s
TXAR MLR MLR
comp=Z,45nm,18.9s
SYO Syowa Base 121.52 204 eP **PKPdf 11 19 34.0 +4.8**
TORD Torodi Ar. Bea 123.12 312 PKP **PKPdf 11 19 33.6 -0.4**
comp=Z,0.8nm,0.9s,baz=40,slow=2.9,SNR=4.5
TORD PP PP 11 21 05.2 -7.9
comp=Z,0.5nm,0.9s,baz=46,slow=5.0,SNR=2.4
PTGA Pitinga 144.60 41 PKP **PKPab 11 20 12.7 +0.2**
comp=Z,5.0nm,0.8s,baz=300,slow=4.0,SNR=6.7
LPAZ La Paz 149.30 72 PKPbc **PKPbc 11 20 27.3 +0.5**
comp=Z,2.0nm,0.8s,baz=208,slow=4.6,SNR=4.1
PLCA Paso Flores 151.02 122 PKPbc **PKPbc 11 20 30.7 +1.0**
comp=Z,5.0nm,0.8s,baz=252,slow=3.1,SNR=8.7

MEX 30 11:00:44.5±0.8, 16°.87N×95°.25W, h127km±23km, MD3.7, Oaxaca

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
HUIG	**Huatulco**	**1.37**	**217**	eP		Pn	11 01 09.0	-2.0
HUIG				eS		Sn	11 01 29.7	-1.4
VHO	**Vista Hermosa**	**1.43**	**278**	i P		Pn	11 01 11.0	-0.8
VHO				eS		Sn	11 01 30.1	-2.5
PCIG		**2.27**	**120**	eP		Pn	11 01 21.3	-0.4
PCIG				eS		Sn	11 01 48.2	-2.0
TPIG	**Tehuac#an**	**2.53**	**308**	i P		Pn	11 01 23.4	-1.8
TPIG				eS		Sn	11 01 55.2	-1.3
PNIG	**Pinotepa**	**2.79**	**261**	eP		Pn	11 01 26.4	-2.0
PNIG				eS		Sn	11 02 00.4	-1.8
CCIG	**Comitan**	**3.05**	**101**	i P		Pn	11 01 30.5	-1.3
CCIG				eS		Sn	11 02 06.0	-2.3

*ISCJB **30** 11:14:24.2±1.2, 13°.9N±0°.1×91°.2W±0°.2, h73km, mb3.7/5, Error ellipse: s-maj=25.4km s-min=18.6km az=150.3*
*IDC **30** 11:14:29.8±4.9, 14°.13N×90°.93W, h106km±41km, mb3.4/5, mb1 3.7/7, mb1mx3.4/49, mbtmp3.8/7, MS3.2/3, Ms1 3.2/3, ms1mx2.8/27, Error ellipse: s-maj=49.2km s-min=20.0km az=52.0*
ISC 30 11:14:25.5±1.0, 13°.9N±0°.1×91°.2W±0°.2, h73km, n12, σ1°.69/12, mb3.9/5, Near coast of Guatemala

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
TEIG	**Tepich**	**6.85**	**23**	P		**Pn**	**11 16 04.1**	**+0.8**
	6.6nm,0.3s,baz=10,slow=22,SNR=51							
TXAR	**Lajitas Array**	**19.23**	**325**	P		**Pn**	**11 18 45.2**	**-0.5**
	0.1nm,0.3s,baz=151,slow=11,SNR=9.7							
TKL	**Tuckaleechee C**	**22.64**	**16**	P		**P**	**11 19 20.3**	**-0.3**
	3.3nm,0.7s,baz=176,slow=9.3,SNR=6.6							
TKL				LR		LR	11 28 40.4	
	comp=Z,44nm,20.1s,baz=192,slow=38							
SJG	**San Juan**	**24.38**	**77**	LR		LR	11 28 14.5	
	comp=Z,39nm,20.3s,baz=224,slow=34							
NVAR	**Mina Array Bea**	**34.26**	**320**	P		**P**	**11 21 06.3**	**+1.4**
	1.7nm,0.8s,baz=132,slow=8.3,SNR=12							
NVAR				PcP		PcP	11 23 38.5	-1.4
	0.6nm,0.7s,baz=97,slow=4.6,SNR=4.2							
LPAZ	**La Paz**	**37.66**	**142**	ScP		**ScP**	**11 27 28.5**	**-3.4**
	0.8nm,0.4s,baz=333,slow=4.5,SNR=8.7							
SIV	**San Ignacio**	**42.03**	**134**	P		**P**	**11 22 10.9**	**+0.7**
	1.6nm,0.6s,baz=324,slow=5.0,SNR=3.4							
YKA	**Yellowknife Ar**	**51.30**	**346**	P		**P**	**11 23 20.3**	**-1.6**
	0.5nm,0.6s,baz=147,slow=7.7,SNR=10.0							
YKA				PcP		PcP	11 24 35.7	-0.2
	0.3nm,0.7s,baz=146,slow=4.4,SNR=6.9							
ILAR	**Eielson Array**	**63.24**	**337**	P		**P**	**11 24 46.2**	**+0.1**
	0.3nm,0.8s,baz=116,slow=6.2,SNR=4.2							
BORG	**Borgarnes**	**68.93**	**26**	LR		LR	11 54 41.7	
	comp=Z,35nm,18.1s,baz=338,slow=35							
ASAR	**Alice Springs**	**136.41**	**250**	PKP		**PKPdf**	**11 33 42.2**	**+2.5**
	0.4nm,0.9s,baz=102,slow=2.9,SNR=4.6							
CMAR	**Chiang Mai Arr**	**146.33**	**343**	PKPbc		**PKPbc**	**11 33 58.9**	**0.0**
	2.0nm,0.6s,baz=331,slow=3.7,SNR=8.8							

*IDC **30** 11:16:49.9±0.9, 20°.97N×121°.97E, h0km, mb3.8/10, mb1 3.9/11, mb1mx3.7/60, mbtmp3.8/11, ML3.6/1, MS3.0/1, Ms1 3.0/1, ms1mx2.4/49, Error ellipse: s-maj=35.6km s-min=17.5km az=70.0*
*TAP **30** 11:16:51.8, 21°.08N×121°.99E, h64km±1km, ML4.2, D*
*JMA **30** 11:16:52.4±0.5, 21°.19N×121°.98E, h105km, M3.3*
ISC 30 11:16:50.7±3.5, 21°.13N±0°.07×122°.08E±0°.04, h3km±22km, n69, σ1°.43/97, mb3.7/10, Taiwan region

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
LAY	**Lan-yu**	**1.03**	**331**	eP		**Pb**	**11 17 09.9**	**-1.2**
	baz=337							
LAY				eS		**Sb**	**11 17 24.8**	**-0.2**
	baz=337							
TSEB	**Hengchuen, Pin**	**1.34**	**305**	eP		**Pn**	**11 17 15.6**	**-0.6**
	baz=308							
TSEB				eS		**Sn**	**11 17 33.1**	**-1.4**
	baz=308							
TWK1	**Hengchun**	**1.44**	**304**	P		**Pn**	**11 17 15.9**	**-1.6**
	baz=308							
TWK1				S		**Sn**	**11 17 33.8**	**-3.2**
	baz=308							
HEN	**Hengchun**	**1.52**	**305**	eP		**Pn**	**11 17 17.2**	**-1.5**
	baz=309							
HEN				eS		**Sn**	**11 17 37.2**	**-1.8**
	baz=309							
TAW	**Tawu**	**1.64**	**318**	eP		**Pn**	**11 17 18.4**	**-2.0**
	baz=322							
EAST	**Anshuo**	**1.69**	**318**	eP		**Pn**	**11 17 19.6**	**-1.5**
	baz=321							
EAST				eS		**Sn**	**11 17 41.1**	**-2.2**
	baz=321							
TTN	**Taitung**	**1.83**	**332**	eP		**Pn**	**11 17 23.2**	**+0.3**
	baz=341							
SCZT	**Fangliau**	**1.83**	**313**	eP		**Pn**	**11 17 21.9**	**-1.1**
	baz=321							
SCZT				eS		**Sn**	**11 17 45.1**	**-1.7**
	baz=321							
TWG	**Pinlang**	**1.92**	**331**	eP		**Pn**	**11 17 23.4**	**-0.9**
	baz=324							
TWG				eS		**Sn**	**11 17 47.9**	**-1.1**
	baz=324							
CHKT	**Chengkung**	**2.07**	**341**	eP		**Pn**	**11 17 24.1**	**-2.1**
	baz=350							
CHKT				eS		**Sn**	**11 17 48.1**	**-4.3**
	baz=350							
ELDTW	**Lidau**	**2.27**	**334**	eP		**Pn**	**11 17 28.1**	**-1.1**
	baz=330							
TWM1	**Shoushan**	**2.28**	**318**	eP		**Pn**	**11 17 30.2**	**+1.0**
	baz=320							
TWF1	**Yuli**	**2.33**	**342**	eP		**Pn**	**11 17 28.0**	**-1.8**
	baz=351							
TWF1				eS		**Sn**	**11 17 56.9**	**-2.1**
	baz=351							
STYT	**Tauyuan**	**2.37**	**329**	eP		**Pn**	**11 17 30.7**	**+0.3**
	baz=337							
STYT				eS		**Sn**	**11 17 59.2**	**-0.8**
	baz=337							
SGST	**Jiashian**	**2.39**	**325**	eP		**Pn**	**11 17 31.1**	**+0.5**
	baz=327							
SGST				eS		**Sn**	**11 18 00.9**	**+0.5**
	baz=327							
EHY	**Hungye**	**2.46**	**344**	eP		**Pn**	**11 17 30.7**	**-1.0**
	baz=334							
EHY				eS		**Sn**	**11 18 00.1**	**-2.2**
	baz=334							
CHN1	**Nanshi**	**2.50**	**325**	eP		**Pn**	**11 17 34.0**	**+1.8**
	baz=327							
CHN1				eS		**Sn**	**11 18 02.5**	**-0.7**
	baz=327							
WTP	**Ta-pu**	**2.50**	**327**	eP		**Pn**	**11 17 32.4**	**0.0**
	baz=317							
WTP				eS		**Sn**	**11 18 03.9**	**+0.5**
	baz=317							
WTP	**Ta-pu**	**2.50**	**327**	eS		**Pn**	**11 17 32.2**	**-0.1**
	baz=175							
YUS	**Yu-Shan**	**2.57**	**336**	eP		**Pn**	**11 17 33.4**	**-0.2**
	baz=338							
YUS				eS		**Sn**	**11 18 04.6**	**-0.9**
	baz=338							
TWK	**Hsinying**	**2.59**	**326**	eP		**Pn**	**11 17 33.5**	**0.0**
	baz=328							
TWK				eS		**Sn**	**11 18 04.4**	**-1.1**
	baz=328							
CHN4	**Tsaushan**	**2.60**	**328**	eP		**Pn**	**11 17 34.5**	**+0.9**
	baz=318							
CHN4				eS		**Sn**	**11 18 05.2**	**-0.5**
	baz=318							
ALS	**Alishan**	**2.65**	**334**	eP		**Pn**	**11 17 35.1**	**+0.6**
	baz=323							
ALS				eS		**Sn**	**11 18 06.6**	**-0.6**
	baz=323							
ESL	**Shilin**	**2.74**	**347**	eP		**Pn**	**11 17 33.7**	**-1.7**
	baz=338							
ESL				eS		**Sn**	**11 18 05.5**	**-3.5**
	baz=338							
WDT	**Danda**	**2.75**	**342**	eP		**Pn**	**11 17 35.7**	**-0.3**
	baz=352							
CHN5	**Tsauling**	**2.78**	**332**	eP		**Pn**	**11 17 37.5**	**+1.4**
	baz=322							
SMLT	**Sun Moon Lake**	**2.95**	**338**	eP		**Pn**	**11 17 39.8**	**+1.3**
	baz=327							
SMLT				eS		**Sn**	**11 18 15.8**	**+1.4**
	baz=327							
TWD	**Chiawan**	**2.97**	**351**	eP		**Pn**	**11 17 37.3**	**-1.3**
	baz=359							
TYC	**Yuchr**	**2.98**	**338**	eP		**Pn**	**11 17 40.6**	**+1.8**
	baz=327							
TYC				eS		**Sn**	**11 18 13.9**	**-1.1**
	baz=327							
WNT	**Mingjian**	**3.02**	**335**	eP		**Pn**	**11 17 41.2**	**+1.8**
	baz=325							
TWT	**Tachien**	**3.22**	**345**	eP		**Pn**	**11 17 42.5**	**+0.3**
	baz=346							
ENA	**Nanau**	**3.30**	**355**	eP		**Pn**	**11 17 42.8**	**-0.3**
	baz=3.0							
HATJ	**Hateruma jima**	**3.32**	**28**	P		**Pn**	**11 17 42.8**	**-0.6**
HATJ				S		**Sn**	**11 18 21.8**	**-1.6**
NNS	**Nan Shan**	**3.36**	**349**	eP		**Pn**	**11 17 43.9**	**-0.2**
	baz=357							
NNS				eS		**Sn**	**11 18 23.3**	**-1.3**
	baz=357							
PNG	**Penghu**	**3.37**	**317**	eP		**Pn**	**11 17 43.8**	**-0.3**
	baz=318							
JYNG	**Yonaguni jima**	**3.40**	**13**	P		**Pn**	**11 17 44.0**	**-0.5**
JYNG				S		**Sn**	**11 18 23.0**	**-2.4**
TWQ1	**Liyutan**	**3.42**	**340**	eP		**Pn**	**11 17 46.5**	**+1.6**
	baz=330							
TWQ1				eS		**Sn**	**11 18 27.1**	**+1.2**
	baz=330							
YOJ	**Yonaguni jima**	**3.42**	**14**	P		**Pn**	**11 17 45.0**	**+0.1**
YOJ				S		**Sn**	**11 18 24.7**	**-1.3**
TWC	**Suao**	**3.47**	**357**	eP		**Pn**	**11 17 45.4**	**-0.1**
	baz=5.0							
TWC				eS		**Sn**	**11 18 24.8**	**-2.3**
	baz=5.0							
NSY	**Sanyi**	**3.49**	**340**	eP		**Pn**	**11 17 46.5**	**+0.7**
	baz=330							
ENTT	**Nioudou**	**3.52**	**352**	eP		**Pn**	**11 17 46.5**	**+0.2**
	baz=354							
IRIF	**Iriomote-Funau**	**3.53**	**25**	P		**Pn**	**11 17 46.8**	**+0.4**
IRIF				S		**Sn**	**11 18 26.4**	**-2.3**
JKRS	**Kuro-shima**	**3.57**	**30**	P		**Pn**	**11 17 47.3**	**+0.4**
JKRS				S		**Sn**	**11 18 29.1**	**-0.4**
NSK	**Sanguang**	**3.59**	**349**	eP		**Pn**	**11 17 47.4**	**+0.2**
	baz=359							
NSK				S		**Sn**	**11 18 28.2**	**-2.0**
	baz=359							
TWE	**Neicheng**	**3.59**	**354**	eP		**Pn**	**11 17 47.9**	**+0.7**
	baz=2.0							
NSTT	**Nanjuang**	**3.62**	**344**	eP		**Pn**	**11 17 49.3**	**+1.6**
	baz=333							
NSTT				eS		**Sn**	**11 18 30.4**	**-0.5**
	baz=333							
JIJ	**Ishigaki jima**	**3.74**	**30**	P		**Pn**	**11 17 49.0**	**-0.2**
JIJ				S		**Sn**	**11 18 30.6**	**-3.1**
TWB1	**Santiao Chiao**	**3.86**	**359**	eP		**Pn**	**11 17 50.6**	**-0.3**
	baz=360							
NWF	**Wu-fen Shan**	**3.93**	**356**	eP		**Pn**	**11 17 53.2**	**+1.2**
	baz=8.0							
NWF				eS		**Sn**	**11 18 38.0**	**-0.7**
	baz=8.0							
JISG	**Ishigakijimahi**	**4.01**	**30**	P		**Pn**	**11 17 52.6**	**-0.3**
JISG				S		**Sn**	**11 18 37.8**	**-2.6**
JTJ	**Tarama**	**4.25**	**34**	P		**Pn**	**11 17 57.2**	**+1.0**
JTJ				eS		**Sn**	**11 18 44.1**	**-2.2**
KSRS	**Korea Array**	**17.04**	**16**	P		**Pn**	**11 20 51.6**	**+1.8**
	0.2nm,0.3s,baz=199,slow=11,SNR=6.3							
GUMO	**Guam**	**22.99**	**105**	LR		LR	11 30 46.5	
	comp=Z,34nm,19.1s,baz=233,slow=36							
KLR	**Kul'dur**	**29.08**	**13**	P		**P**	**11 22 54.4**	**+2.2**
	0.9nm,0.7s,baz=245,slow=7.9,SNR=3.8							
SONM	**Songino Array**	**29.49**	**338**	P		**P**	**11 22 55.9**	**-0.1**
	0.5nm,0.5s,baz=151,slow=9.9,SNR=2.6							
MKAR	**Makanchi Array**	**41.12**	**318**	P		**P**	**11 24 36.5**	**+0.6**
	0.9nm,0.5s,baz=110,slow=10.0,SNR=9.4							
H11N1	**WAKE ISLAND Hy**	**41.91**	**84**	T		T	12 09 36.8	
	baz=280,slow=75,SNR=44							
H11N2	**WAKE ISLAND Hy**	**41.92**	**84**	T		T	12 09 33.8	
	baz=280,slow=75,SNR=41							
H11N3	**WAKE ISLAND Hy**	**41.93**	**84**	T		T	12 09 34.6	
	baz=280,slow=75,SNR=30							
H11S3	**WAKE ISLAND Hy**	**41.95**	**86**	T		T	12 09 35.9	
	baz=282,slow=75,SNR=54							
H11S1	**WAKE ISLAND Hy**	**41.96**	**85**	T		T	12 09 38.5	
	baz=282,slow=75,SNR=61							
H11S2	**WAKE ISLAND Hy**	**41.97**	**86**	T		T	12 09 36.1	
	baz=282,slow=75,SNR=64							
WRA	**Warramunga Arr**	**42.55**	**163**	P		**P**	**11 24 46.0**	**-1.8**
	0.3nm,0.5s,baz=344,slow=9.0,SNR=5.0							
ZALV	**Zalesovo Beam**	**43.26**	**329**	P		**P**	**11 24 52.6**	**-0.6**
	1.3nm,0.6s,baz=110,slow=9.1,SNR=4.6							
KURBB	**Kurchatov Arra**	**44.99**	**322**	P		**P**	**11 25 07.3**	**+0.2**
	0.6nm,0.6s,baz=113,slow=8.4,SNR=5.8							
ASAR	**Alice Springs**	**45.99**	**165**	P		**P**	**11 25 14.3**	**-1.0**
	0.3nm,0.4s,baz=344,slow=7.1,SNR=12							
BVAR	**Borovoye Array**	**50.56**	**322**	P		**P**	**11 25 51.2**	**+0.9**
	0.7nm,0.5s,baz=101,slow=7.5,SNR=4.1							
ILAR	**Eielson Array**	**71.54**	**27**	P		**P**	**11 28 13.7**	**+1.0**
	0.3nm,0.8s,baz=270,slow=5.0,SNR=3.6							
YKA	**Yellowknife Ar**	**85.45**	**23**	P		**P**	**11 29 29.9**	**+0.5**
	0.6nm,0.6s,baz=310,slow=4.5,SNR=11							

TAP 30 11:17:22.0, 23°.49N×120°.60E, h4km±1km, ML0.9, D, Taiwan

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
CHN5	**Tsauling**	**0.13**	**35**	eP		Pg	11 17 25.3	+0.7
	baz=34							
CHN5				S		Sg	11 17 27.8	+1.6
	baz=34							
CHN4	**Tsaushan**	**0.14**	**182**	eP		Pg	11 17 25.6	+0.8
	baz=181							
CHN4				eS		Sg	11 17 28.4	+1.7
	baz=181							
ALS	**Alishan**	**0.19**	**85**	i P		Pg	11 17 26.8	+1.0
	baz=85							
ALS				S		Sg	11 17 30.4	+2.1
	baz=85							
WTP	**Ta-pu**	**0.25**	**177**	eP		Pg	11 17 28.6	+1.8
	baz=175							

*ISCJB **30** 11:20:24.5±0.5, 38°.59N±0°.03×28°.64E±0°.04, h6km±7km, Error ellipse: s-maj=5.3km s-min=5.1km az=3.6*
*CSEM **30** 11:20:24.6±0.1, 38°.59N×28°.64E, h2km, MD2.4, Error ellipse: s-maj=2.6km s-min=2.4km az=59.0*
*ISK **30** 11:20:24.5, 38°.57N×28°.62E, h9km, MD2.4*
*DDA **30** 11:20:24.4, 38°.59N×28°.66E, h7km, Md2.6*
ISC 30 11:20:24.8±0.9, 38°.59N±0°.03×28°.62E±0°.03, h5km±9km, n22, σ0°.42/34, Turkey

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
KULA	**Kula-Manisa**	**0.08**	**157**	eP	G	**Pg**	**11 20 26.3**	**-0.3**
KULA				eS	G	**Sg**	**11 20 28.6**	**+0.8**
KULA	**Kula-Manisa**	**0.08**	**157**	eP	g	**Pg**	**11 20 26.3**	**-0.3**
KULA				eS	g	**Sg**	**11 20 28.7**	**+0.8**
MANT	**Manisa**	**0.11**	**207**	P		**Pg**	**11 20 26.7**	**-0.5**
MANT				S		**Sg**	**11 20 28.4**	**-0.4**
MANT	**Manisa**	**0.11**	**207**	i P		**Pg**	**11 20 26.7**	**-0.5**
MANT				i S		**Sg**	**11 20 28.4**	**-0.4**
DEMI	**Demirci**	**0.46**	**9**	P		**Pg**	**11 20 33.6**	**-0.2**
DEMI				S		**Sg**	**11 20 40.0**	**+0.2**
DEMI	**Demirci**	**0.46**	**9**	i P		**Pg**	**11 20 33.6**	**-0.2**
DEMI				i S		**Sg**	**11 20 40.0**	**+0.2**
AKS	**Akhisar**	**0.70**	**295**	eP	G	**Pg**	**11 20 38.3**	**+0.1**
AKS				eS	G	**Sb**	**11 20 48.7**	**-0.7**
AKS	**Akhisar**	**0.70**	**295**	eP	g	**Pg**	**11 20 38.3**	**+0.1**
AKS				eS	g	**Sb**	**11 20 48.7**	**-0.7**
KHAL	**Karahalli**	**0.72**	**107**	P		**Pg**	**11 20 38.6**	**0.0**
KHAL				S		**Sg**	**11 20 47.6**	**-0.3**
KHAL	**Karahalli**	**0.72**	**107**	i P		**Pg**	**11 20 38.6**	**0.0**
KHAL				i S		**Sg**	**11 20 47.6**	**-0.3**
KHL	**Karahalli**	**0.76**	**110**	eP	G	**Pg**	**11 20 39.2**	**-0.1**
KHL	**Karahalli**	**0.76**	**110**	eP	g	**Pg**	**11 20 39.2**	**-0.1**
GDZ	**Gediz**	**0.84**	**53**	P		**Pg**	**11 20 40.2**	**-0.8**
GDZ				S		**Sg**	**11 20 51.9**	**+0.1**
GDZ	**Gediz**	**0.84**	**53**	i P		**Pg**	**11 20 40.1**	**-0.8**
GDZ				i S		**Sg**	**11 20 51.9**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**0.86**	**222**	eP	G	**Pg**	**11 20 41.3**	**0.0**
AYDB	**Zeytinkoy-Aydi**	**0.86**	**222**	eP	g	**Pg**	**11 20 41.3**	**0.0**
DNZL	**Cakiroluk**	**0.96**	**159**	P		**Pg**	**11 20 43.1**	**-0.1**
DNZL	**Cakiroluk**	**0.96**	**159**	i P		**Pg**	**11 20 43.1**	**-0.1**
TVSB	**Tavsanli**	**1.08**	**37**	ePN		**Pb**	**11 20 46.5**	**+0.4**
TVSB	**Tavsanli**	**1.08**	**37**	ePn	

*NIED **30** 11:25:00, 37°.80N×144°.00E, h5km, Mw4.0 Best double couple: Mt1.15000×1015 NP1:φs14.00000°, δ31.00000°, λ-82.00000°. NP2:φs185.00000°, δ60.00000°, λ-95.00000°.*
*IDC **30** 11:25:18.9±0.7, 37°.65N×144°.21E, h0km, mb4.0/17, mb1 4.2/23, mb1mx4.1/55, mbtmp4.1/23, ML3.4/5, MS3.0/3, Ms1 3.0/3, ms1mx2.6/40, Error ellipse: s-maj=16.5km s-min=14.1km az=135.0*
*ISCJB **30** 11:25:22.7±0.5, 37°.78N±0°.04×144°.01E±0°.04, h33km, mb4.0/19, Error ellipse: s-maj=5.4km s-min=4.8km az=178.6*
*JMA **30** 11:25:22.8±0.2, 37°.82N×143°.97E, h38km, M4.3*
*NEIC **30** 11:25:24.4±0.4, 37°.73N×144°.14E, h35km, mb4.0/1, Error ellipse: s-maj=9.3km s-min=6.8km az=123.0*

ISC 30 11:25:24.7±0.6, 37°.82N±0°.05×144°.09E±0°.07, h35km, n52, σ2°.00/61, mb4.1/19, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.25**	**287**	P	**Pn**	**11 25 57.6**	**-1.9**
JIO				*e*S	**Sn**	**11 26 23.5**	**-2.5**
OFUJ	**Ofunato**	**2.28**	**304**	P	**Pn**	**11 25 58.2**	**-1.6**
JMK	**Ichinoseki**	**2.52**	**298**	P	**Pn**	**11 26 01.9**	**-1.3**
JOM	**Ohasama**	**2.75**	**308**	P	**Pn**	**11 26 05.2**	**-1.0**
JOM				*e*S	**Sn**	**11 26 36.5**	**-1.7**
JFT	**Otama**	**3.00**	**265**	P	**Pn**	**11 26 08.4**	**-1.3**
JFT				*e*S	**Sn**	**11 26 42.0**	**-2.4**
JYK	**Kaneyama**	**3.13**	**292**	P	**Pn**	**11 26 10.9**	**-0.7**
JYK				*e*S	**Sn**	**11 26 46.8**	**-0.9**
JRG	**Rokugo**	**3.13**	**301**	P	**Pn**	**11 26 11.6**	**0.0**
JRG				*e*S	**Sn**	**11 26 47.2**	**-0.6**
JANG	**Nango**	**3.25**	**323**	*e*S	**Sn**	**11 26 47.8**	**-2.7**
JAH	**Hinai**	**3.58**	**312**	P	**Pn**	**11 26 18.1**	**+0.3**
JAH				*e*S	**Sn**	**11 26 58.9**	**0.0**
JTM	**Tenmabayashi**	**3.78**	**323**	*e*S	**Sn**	**11 27 00.9**	**-2.8**
ERM	**Erimo**	**4.25**	**351**	*e*Pn	**Pn**	**11 26 27.0**	**+0.1**
JOT	**Ohata**	**4.27**	**327**	*e*S	**Sn**	**11 27 12.3**	**-3.3**
JRY	**Ryogami san**	**4.53**	**248**	P	**Pn**	**11 26 28.6**	**-2.2**
JRY				*e*S	**Sn**	**11 27 18.1**	**-4.2**
JKB	**Kayabe**	**4.70**	**331**	P	**Pn**	**11 26 32.6**	**-0.4**
JKB				*e*S	**Sn**	**11 27 23.2**	**-3.0**
JOD2	**Odawara 2**	**4.77**	**239**	*e*S	**Sn**	**11 27 22.8**	**-5.3**
JCH	**Churui**	**4.82**	**354**	P	**Pn**	**11 26 32.6**	**-2.2**
JCH				*e*S	**Sn**	**11 27 24.2**	**-5.2**
MJAR	**Matsushiro Arr**	**4.87**	**257**	Pn	**Pn**	**11 26 34.9**	**-0.5**
	7.6nm,0.3s,baz=82,slow=14,SNR=51						
MJAR				Sn	**Sn**	**11 27 31.8**	**+1.3**
	4.0nm,0.3s,baz=87,slow=27,SNR=6.0						
MJAR				LR	LR	11 28 34.8	
	comp=Z,194nm,19.6s,baz=55,slow=40						
MAJO	**Matsushiro**	**4.87**	**257**	*e*Pn	**Pn**	**11 26 35.1**	**-0.3**
MAT	**Matsushiro**	**4.87**	**257**	P	**Pn**	**11 26 34.9**	**-0.5**
MAT				S	**Sn**	**11 27 27.5**	**-3.1**
NEM2	**Nemuro 2**	**5.68**	**12**	P	**Pn**	**11 26 42.3**	**-4.2**
JHJ2	**Mitsune**	**5.85**	**218**	Pn	**Pn**	**11 26 47.1**	**-1.8**
JHJ	**Hachijo jima 2**	**5.86**	**218**	Pn	**Pn**	**11 26 45.3**	**-3.8**
	15nm,0.3s,baz=90,slow=20,SNR=4.8						
JHJ				Sn	Sn	11 27 45.5	-9.4
	13nm,0.3s,baz=54,slow=19,SNR=3.9						
ASAJ	**Asahikawa**	**6.39**	**350**	Pn	**Pn**	**11 26 55.3**	**-1.0**
	baz=90,slow=20						
ASAJ				Sn	**Sn**	**11 28 04.2**	**-3.8**
	1.4nm,0.3s,baz=55,slow=26,SNR=4.9						
USRK	**Ussuriysk Ar.**	**11.14**	**309**	Pn	**Pn**	**11 28 03.2**	**+1.8**
	0.3nm,0.3s,baz=106,slow=12,SNR=5.2						
JNU	**Nakatsue**	**11.75**	**250**	LR	LR	11 32 37.3	
	comp=Z,56nm,19.6s,baz=126,slow=37						
KSRS	**Korea Array**	**12.83**	**273**	Pn	**Pn**	**11 28 26.1**	**+1.6**
	0.1nm,0.3s,baz=84,slow=13,SNR=14						
KSRS				LR	LR	11 33 02.5	
	comp=Z,76nm,20.1s,baz=88,slow=36						
KSAR	**Wonju Array Be**	**12.86**	**273**	Pn	**Pn**	**11 28 26.1**	**+1.2**
KLR	**Kul'dur**	**14.48**	**326**	Pn	**Pn**	**11 28 48.5**	**+1.5**
	0.1nm,0.3s,baz=131,slow=19,SNR=2.7						
SEY	**Seymchan**	**25.65**	**9**	P	**P**	**11 30 51.5**	**+0.8**
	2.7nm,0.7s,baz=174,slow=5.4,SNR=13						
H11N2	**WAKE ISLAND Hy 26.80**	**126**		T	T	11 58 49.5	
	baz=317,slow=73,SNR=5.1						
H11N1	**WAKE ISLAND Hy 26.80**	**126**		T	T	11 58 50.5	
	baz=317,slow=73,SNR=7.1						
H11N3	**WAKE ISLAND Hy 26.81**	**126**		T	T	11 58 49.1	
	baz=317,slow=73,SNR=4.7						
SONM	**Songino Array**	**29.14**	**302**	P	**P**	**11 31 23.6**	**+1.2**
	0.8nm,0.5s,baz=97,slow=7.8,SNR=4.5						
ZALV	**Zalesovo Beam**	**42.97**	**312**	P	**P**	**11 33 21.1**	**+0.9**
	0.5nm,0.4s,baz=82,slow=3.2,SNR=2.9						
ZALV				PcP	**PcP**	**11 35 09.9**	**-0.2**
	1.0nm,0.6s,baz=82,slow=3.1,SNR=4.2						
CMAR	**Chiang Mai Arr**	**43.76**	**257**	P	**P**	**11 33 27.8**	**+0.9**
	1.6nm,0.7s,baz=46,slow=6.7,SNR=11						
MKAR	**Makanchi Array**	**45.51**	**302**	P	**P**	**11 33 41.1**	**+0.4**
	1.6nm,0.6s,baz=83,slow=10.0,SNR=15						
KURK	**Kurchatov**	**47.13**	**308**	P	**P**	**11 33 54.0**	**+0.7**
KURBB	**Kurchatov Arra**	**47.20**	**308**	P	**P**	**11 33 54.0**	**+0.2**
	3.2nm,0.5s,baz=80,slow=8.0,SNR=21						
ILAR	**Eielson Array**	**47.69**	**33**	P	**P**	**11 33 57.3**	**-0.1**
	1.5nm,0.7s,baz=261,slow=6.7,SNR=19						
TKM2	**Tokmak 2**	**51.13**	**299**	*e*P	**P**	**11 34 24.4**	**+0.2**
	8.3nm,1.0s						
WRA	**Warramunga Arr**	**58.18**	**191**	P	**P**	**11 35 13.1**	**-2.1**
	6.7nm,0.7s,baz=12,slow=7.3,SNR=48						
ABKAR	**Akbulak array**	**59.06**	**311**	*e*P	**P**	**11 35 21.1**	**+0.1**
	0.5nm,0.4s						
ASAR	**Alice Springs**	**61.90**	**191**	P	**P**	**11 35 39.0**	**-1.7**
	1.1nm,0.6s,baz=5.9,slow=7.2,SNR=29						
YKA	**Yellowknife Ar**	**62.05**	**31**	P	**P**	**11 35 41.1**	**-0.1**
	0.3nm,0.6s,baz=300,slow=6.4,SNR=5.6						
MBWA	**Marble Bar**	**62.98**	**206**	*e*P	**P**	**11 35 48.0**	**+0.1**
GEYT	**Alibeck**	**65.31**	**300**	P	**P**	**11 36 04.1**	**+0.8**
	1.7nm,0.4s,baz=72,slow=14,SNR=3.4						
FINES	**FINESS Array B**	**69.10**	**333**	P	**P**	**11 36 26.4**	**-0.4**
	2.8nm,0.9s,baz=339,slow=10,SNR=3.9						
KBZ	**Khabaz**	**71.99**	**312**	P	**P**	**11 36 45.9**	**+1.2**
	2.4nm,0.9s,baz=34,slow=6.9,SNR=4.1						
NVAR	**Mina Array Bea**	**72.80**	**55**	P	**P**	**11 36 50.8**	**+0.8**
	1.7nm,0.9s,baz=297,slow=6.0,SNR=1.7						
AKASG	**Malin Array Be**	**74.96**	**323**	P	**P**	**11 37 02.1**	**+0.1**
	1.1nm,0.5s,baz=43,slow=5.9,SNR=5.8						
PDAR	**Pinedale Array**	**75.59**	**47**	P	**P**	**11 37 06.3**	**+0.2**
	0.2nm,0.3s,baz=222,slow=2.0,SNR=3.9						
TXAR	**Lajitas Array**	**87.94**	**54**	P	**P**	**11 38 12.3**	**+1.0**
	0.3nm,0.9s,baz=308,slow=4.4,SNR=3.4						

*ISCJB **30** 11:30:01.3±0.4, 37°.79N±0°.02×26°.92E±0°.02, h0km±3km, Error ellipse: s-maj=3.2km s-min=2.6km az=137.0*
*DDA **30** 11:30:01.1, 37°.81N×26°.92E, h8km, Md2.7*
*CSEM **30** 11:30:01.7±0.2, 37°.78N×26°.92E, h2km, ML2.8, Error ellipse: s-maj=4.5km s-min=3.8km az=42.0*
*ATH **30** 11:30:01.0, 37°.81N×26°.93E, h12km±1km, ML2.8/6, Error ellipse: s-maj=3.0km s-min=1.0km az=96.0*
*ISK **30** 11:30:01.3, 37°.75N×26°.94E, h6km, MD2.9*

ISC 30 11:30:01.4±0.8, 37°.80N±0°.02×26°.91E±0°.02, h14km±5km, n68, σ0°.57/107, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SMG	**Samos**	**0.11**	**214**	P	**Pg**	**11 30 04.5**	**-0.1**
SMG				S	**Sg**	**11 30 06.9**	**+0.1**
SMG	**Samos**	**0.11**	**214**	P	**Pg**	**11 30 04.5**	**-0.1**
SMG				S	**Sg**	**11 30 06.9**	**+0.1**
SMG				AML	AML	11 30 07.0	
	comp=N,45160μm,0.3s						
SMG				AML	AML	11 30 07.4	
	comp=E,34234μm,0.2s						
DGB	**˜zmir**	**0.25**	**354**	*i* P	**Pg**	**11 30 06.5**	**-0.3**
DGB				*i* S	**Sg**	**11 30 10.3**	**-0.2**
GCAM	**G?zelcaml?**	**0.27**	**111**	P	**Pg**	**11 30 06.9**	**-0.2**
GCAM				S	**Sg**	**11 30 11.8**	**-0.7**
GCAM	**G?zelcaml?**	**0.27**	**111**	*i* P	**Pg**	**11 30 06.9**	**-0.2**
GCAM				*i* S	**Sg**	**11 30 11.8**	**-0.7**
ZEY	**˜zmir**	**0.55**	**324**	*i* P	**Pg**	**11 30 11.7**	**-0.4**
ZEY				*i* S	**Sg**	**11 30 20.1**	**-0.3**
URLA	**Izmir**	**0.61**	**336**	P	**Pg**	**11 30 12.9**	**-0.5**
URLA				S	**Sg**	**11 30 21.9**	**+0.3**
URLA	**Izmir**	**0.61**	**336**	*i* P	**Pg**	**11 30 12.9**	**-0.5**
URLA				*i* S	**Sg**	**11 30 21.9**	**+0.3**
AYDN	**Tasoluk**	**0.78**	**100**	P	**Pg**	**11 30 16.1**	**-0.4**
AYDN				S	**Sg**	**11 30 26.0**	**-0.7**
AYDN	**Tasoluk**	**0.78**	**100**	*i* P	**Pg**	**11 30 16.1**	**-0.4**
AYDN				*i* S	**Sg**	**11 30 26.0**	**-0.7**
AYDB	**Zeytinkoy-Aydi**	**0.79**	**79**	*e*PG	**Pg**	**11 30 16.5**	**-0.2**
AYDB				*e*SG	**Sb**	**11 30 27.9**	**+0.4**
AYDB	**Zeytinkoy-Aydi**	**0.79**	**79**	*e*Pg	**Pg**	**11 30 16.5**	**-0.2**
AYDB				*e*Sg	**Sb**	**11 30 27.9**	**+0.4**
BODT	**Bodrum**	**0.80**	**157**	*e*PG	**Pg**	**11 30 16.3**	**-0.6**
BODT				*e*SG	**Sg**	**11 30 27.0**	**-0.4**
BODT	**Bodrum**	**0.80**	**157**	*e*Pg	**Pg**	**11 30 16.3**	**-0.6**
BODT				*e*Sg	**Sg**	**11 30 27.0**	**-0.4**
BDRM	**Kayabasi**	**0.84**	**150**	P	**Pb**	**11 30 17.9**	**+0.1**
BDRM				S	**Sg**	**11 30 28.9**	**+0.1**
BDRM	**Kayabasi**	**0.84**	**150**	*i* P	**Pb**	**11 30 17.9**	**+0.1**
BDRM				*i* S	**Sg**	**11 30 28.9**	**+0.1**
CHOS	**Chios island**	**0.90**	**311**	*e*PG	**Pn**	**11 30 19.9**	**+0.2**
CHOS	**Chios island**	**0.90**	**311**	P	**Pg**	**11 30 18.6**	**-0.1**
CHOS	**Chios island**	**0.90**	**311**	*e*Pg	**Pn**	**11 30 19.9**	**+0.3**
CHOS				S	**Sb**	**11 30 30.7**	**+0.1**
CHOS	**Chios island**	**0.90**	**311**	P	**Pg**	**11 30 18.6**	**-0.1**
CHOS				S	**Sb**	**11 30 30.7**	**+0.1**
CHOS				AML	AML	11 30 32.0	
	comp=E,1830μm,0.2s						
CHOS				AML	AML	11 30 34.2	
	comp=N,1208μm,0.3s						
NIS1	**Nisyros Isl.**	**1.21**	**170**	*e*PN	**Pb**	**11 30 24.0**	**-0.1**
NIS1	**Nisyros Isl.**	**1.21**	**170**	*e*Pn	**Pb**	**11 30 24.0**	**-0.1**
DKL	**Dikili**	**1.27**	**360**	*e*PN	**Pg**	**11 30 26.0**	**+0.2**
DKL	**Dikili**	**1.27**	**360**	*e*Pn	**Pg**	**11 30 26.0**	**+0.2**
YER	**Yerkesik**	**1.27**	**121**	*e*PN	**Pn**	**11 30 24.9**	**+0.1**
YER	**Yerkesik**	**1.27**	**121**	*e*Pn	**Pn**	**11 30 24.9**	**+0.1**
AKHS	**Akhisar**	**1.29**	**33**	P	**Pg**	**11 30 25.9**	**-0.3**
AKHS				S	**Sg**	**11 30 43.0**	**0.0**
AKHS	**Akhisar**	**1.29**	**33**	*i* P	**Pg**	**11 30 25.9**	**-0.3**
AKHS				*i* S	**Sg**	**11 30 43.0**	**0.0**
APE	**Apeiranthos**	**1.32**	**237**	*e*PN	**Pb**	**11 30 26.1**	**+0.2**
APE	**Apeiranthos**	**1.32**	**237**	P	**Pn**	**11 30 24.9**	**-0.5**
APE	**Apeiranthos**	**1.32**	**237**	*e*Pn	**Pb**	**11 30 26.1**	**+0.2**
APE				S	**Sg**	**11 30 44.2**	**+0.2**
APE	**Apeiranthos**	**1.32**	**237**	P	**Pn**	**11 30 24.9**	**-0.5**
APE				S	**Sg**	**11 30 44.2**	**+0.2**
APE				AML	AML	11 30 47.3	
	comp=N,315μm,0.2s						
APE				AML	AML	11 30 47.6	
	comp=E,281μm,0.2s						
MANT	**Manisa**	**1.47**	**61**	P	**Pb**	**11 30 28.8**	**+0.2**
MANT				S	**Sn**	**11 30 46.0**	**-0.8**
MANT	**Manisa**	**1.47**	**61**	*i* P	**Pb**	**11 30 28.8**	**+0.2**
MANT				*i* S	**Sn**	**11 30 46.0**	**-0.8**
PRK	**Paraskevi**	**1.53**	**341**	P	**Pn**	**11 30 28.0**	**-0.3**
PRK				S	**Sg**	**11 30 50.4**	**-0.3**
PRK	**Paraskevi**	**1.53**	**341**	P	**Pn**	**11 30 28.0**	**-0.3**
PRK				S	**Sg**	**11 30 50.4**	**-0.3**
PRK				AML	AML	11 30 54.6	
	comp=E,507μm,0.7s						
PRK				AML	AML	11 30 56.3	
	comp=N,426μm,0.5s						
KULA	**Kula-Manisa**	**1.55**	**62**	*e*PN	**Pb**	**11 30 30.5**	**+0.6**
KULA	**Kula-Manisa**	**1.55**	**62**	*e*Pn	**Pb**	**11 30 30.5**	**+0.6**
TURN	**Turunc**	**1.63**	**124**	*i* P	**Pb**	**11 30 31.0**	**-0.3**
TURN				*i* S	**Sn**	**11 30 50.9**	**+0.5**
SIGR	**SIGRI**	**1.64**	**330**	*e*PN	**Pg**	**11 30 32.7**	**-0.1**
SIGR	**SIGRI**	**1.64**	**330**	*e*Pn	**Pg**	**11 30 32.7**	**-0.1**
SIGR	**SIGRI**	**1.64**	**330**	P	**Pg**	**11 30 33.1**	**+0.3**
SIGR				S	**Sg**	**11 30 54.7**	**+0.6**
SIGR	**SIGRI**	**1.64**	**330**	P	**Pg**	**11 30 33.1**	**+0.3**
SIGR				S	**Sg**	**11 30 54.7**	**+0.6**
SIGR				AML	AML	11 30 58.3	
	comp=E,396μm,0.5s						
SIGR				AML	AML	11 30 59.0	
	comp=N,216μm,0.3s						
DNZL	**Cakiroluk**	**1.69**	**93**	P	**Pg**	**11 30 33.2**	**-0.7**
DNZL				S	**Sg**	**11 30 57.1**	**+1.1**
DNZL	**Cakiroluk**	**1.69**	**93**	*i* P	**Pg**	**11 30 33.2**	**-0.7**
DNZL				*i* S	**Sg**	**11 30 57.1**	**+1.1**
DALY	**Dalyan (Mu¨la**	**1.70**	**125**	*e*PN	**Pb**	**11 30 32.2**	**-0.2**
DALY	**Dalyan (Mu¨la**	**1.70**	**125**	*e*Pn	**Pb**	**11 30 32.2**	**-0.2**
DEMI	**Demirci**	**1.88**	**48**	P	**Pg**	**11 30 37.4**	**-0.1**
DEMI				S	**Sb**	**11 30 58.9**	**-0.1**
DEMI	**Demirci**	**1.88**	**48**	*i* P	**Pg**	**11 30 37.4**	**-0.1**
DEMI				*i* S	**Sb**	**11 30 58.9**	**-0.1**
BALB	**Balikesir**	**1.99**	**22**	*e*PN	**Pb**	**11 30 37.2**	**-0.1**
BALB	**Balikesir**	**1.99**	**22**	*e*Pn	**Pb**	**11 30 37.2**	**-0.1**
BALY	**Balya**	**2.02**	**16**	P	**Pb**	**11 30 37.5**	**-0.3**
BALY				S	**Sg**	**11 31 06.0**	**-0.2**
BALY	**Balya**	**2.02**	**16**	*i* P	**Pb**	**11 30 37.5**	**-0.3**
BALY				*i* S	**Sg**	**11 31 06.0**	**-0.2**
EZN	**Ezine**	**2.08**	**347**	*e*PN	**Pb**	**11 30 38.9**	**+0.1**
EZN	**Ezine**	**2.08**	**347**	*e*Pn	**Pb**	**11 30 38.9**	**+0.1**
FETY	**Fethiye**	**2.08**	**123**	*e*PN	**Pn**	**11 30 37.3**	**+1.4**
FETY	**Fethiye**	**2.08**	**123**	*e*Pn	**Pn**	**11 30 37.3**	**+1.4**
KHAL	**Karahalli**	**2.11**	**74**	P	**Pb**	**11 30 39.8**	**+0.3**
KHAL				S	**Sg**	**11 31 08.4**	**-0.9**
KHAL	**Karahalli**	**2.11**	**74**	*i* P	**Pb**	**11 30 39.8**	**+0.3**
KHAL				*i* S	**Sg**	**11 31 08.4**	**-0.9**
MHLO	**Agia Marina, M**	**2.29**	**242**	P	**Pb**	**11 30 42.9**	**+0.4**
MHLO				S	**Sb**	**11 31 09.6**	**-1.0**
MHLO	**Agia Marina, M**	**2.29**	**242**	P	**Pb**	**11 30 42.9**	**+0.4**
MHLO				S	**Sb**	**11 31 09.6**	**-1.0**
MHLO				AML	AML	11 31 20.2	
	comp=E,443μm,0.6s						
MHLO				AML	AML	11 31 27.9	
	comp=N,404μm,0.7s						
LIA	**Limnos Island**	**2.49**	**328**	P	**Pb**	**11 30 45.0**	**-0.9**
TVSB	**Tavsanli**	**2.59**	**50**	*e*PN	**Pn**	**11 30 44.2**	**+1.3**
TVSB	**Tavsanli**	**2.59**	**50**	*e*Pn	**Pn**	**11 30 44.2**	**+1.3**
SMTH	**Samothraki Isl**	**2.88**	**338**	P	**Pn**	**11 30 47.1**	**+0.3**
SMTH	**Samothraki Isl**	**2.88**	**338**	P	**Pn**	**11 30 47.1**	**+0.3**
IDI	**Anoyia**	**2.99**	**214**	P	**Pn**	**11 30 50.3**	**+1.9**
IDI	**Anoyia**	**2.99**	**214**	P	**Pn**	**11 30 50.3**	**+1.9**

*IDC **30** 11:33:48.8±1.3, 10°.82S×164°.33E, h0km, mb3.7/5, mb1 4.0/7, mb1mx3.7/36, mbtmp3.9/7, ML3.9/2, MS3.1/4, Ms1 3.1/4, ms1mx2.8/27, Error ellipse: s-maj=31.6km s-min=28.1km az=86.0*

ISC 30 11:33:53.8±1.1, 11°.0S±0°.1×164°.2E±0°.1, h29km, n11, σ2°.66/11, mb3.9/5, Santa Cruz Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	**Honiara**	**4.46**	**290**	Pn	**Pn**	**11 35 00.6**	**+1.0**
	5.9nm,0.3s,baz=127,slow=6.0,SNR=4.5						
HNR				Sn	**Sb**	**11 35 59.8**	**-5.1**
	4.7nm,0.3s,baz=198,slow=19,SNR=2.6						
HNR				LR	LR	11 36 10.1	
	comp=Z,83nm,21.2s,baz=357,slow=31						
HNR	**Honiara**	**4.46**	**290**	*e*P	**Pn**	**11 35 04.0**	**+4.4**
HNR				*e*S	**Sb**	**11 36 05.0**	**+0.1**
DZM	**Mont Dzumac**	**11.22**	**169**	Pn	**Pn**	**11 36 32.3**	**-0.1**
	1.0nm,0.3s,baz=309,slow=12,SNR=20						
DZM				Sn	**Sn**	**11 38 35.0**	**-1.8**
	0.2nm,0.3s,baz=74,slow=19,SNR=2.3						
PMG	**Port Moresby**	**16.84**	**274**	LR	LR	11 44 18.0	
	comp=Z,178nm,18.2s,baz=47,slow=37						
WRA	**Warramunga Arr**	**30.07**	**249**	P	**P**	**11 40 01.0**	**+0.1**
	0.5nm,0.8s,baz=80,slow=9.5,SNR=3.7						
GUMO	**Guam**	**31.06**	**321**	LR	LR	11 52 23.1	
	comp=Z,47nm,18.3s,baz=149,slow=36						
ASAR	**Alice Springs**	**31.46**	**242**	P	**P**	**11 40 13.4**	**+0.3**
	0.9nm,1.0s,baz=79,slow=6.9,SNR=3.2						
VNDA	**Vanda**	**66.52**	**181**	P	**P**	**11 44 41.9**	**+1.4**
	1.0nm,1.0s,baz=343,slow=7.5,SNR=4.1						
CMAR	**Chiang Mai Arr**	**70.70**	**294**	LR	LR	12 13 52.3	
	comp=Z,8.3nm,21.8s,baz=305,slow=34						
ILAR	**Eielson Array**	**83.96**	**19**	P	**P**	**11 46 18.8**	**-2.1**
	0.9nm,0.9s,baz=235,slow=5.2,SNR=6.5						
MKAR	**Makanchi Array**	**92.45**	**317**	P	**P**	**11 47 02.2**	**+0.1**
	0.6nm,0.7s,baz=99,slow=7.5,SNR=4.2						

*ISCJB **30** 11:35:05.8±0.5, 37°.76N±0°.04×26°.97E±0°.04, h10km±5km, Error ellipse: s-maj=7.2km s-min=5.4km az=12.6*
*ATH **30** 11:35:05.9, 37°.78N×26°.93E, h14km±2km, ML2.7/1, Error ellipse: s-maj=5.2km s-min=1.3km az=249.0*
*CSEM **30** 11:35:05.9±0.2, 37°.76N×26°.95E, h8km, ML2.7, Error ellipse: s-maj=4.9km s-min=3.4km az=40.0*
*ISK **30** 11:35:05.3, 37°.76N×26°.96E, h10km, MD2.7*

ISC 30 11:35:05.7±0.9, 37°.78N±0°.03×26°.95E±0°.03, h14km±7km, n25, σ0°.25/33, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SMG	**Samos**	**0.12**	**234**	P	**Pg**	**11 35 09.1**	**0.0**
SMG				S	**Sg**	**11 35 11.4**	**0.0**
SMG	**Samos**	**0.12**	**234**	P	**Pg**	**11 35 09.1**	**0.0**
SMG				S	**Sg**	**11 35 11.4**	**0.0**
SMG				AML	AML	11 35 11.7	
	comp=N,11309μm,0.2s						
SMG				AML	AML	11 35 12.1	
	comp=E,9334μm,0.2s						
AYDB	**Zeytinkoy-Aydi**	**0.76**	**77**	*e*PG	**Pb**	**11 35 21.0**	**+0.2**
AYDB				*e*SG	**Sb**	**11 35 31.1**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**0.76**	**77**	*e*Pg	**Pb**	**11 35 21.0**	**+0.2**
AYDB				*e*Sg	**Sb**	**11 35 31.1**	**+0.1**
BODT	**Bodrum**	**0.77**	**158**	*e*PG	**Pb**	**11 35 20.8**	**0.0**
BODT				*e*SG	**Sg**	**11 35 30.7**	**0.0**
BODT	**Bodrum**	**0.77**	**158**	*e*Pg	**Pb**	**11 35 20.8**	**0.0**
BODT				*e*Sg	**Sg**	**11 35 30.7**	**0.0**
CHOS	**Chios island**	**0.94**	**311**	*e*PG	**Pb**	**11 35 23.4**	**-0.3**
CHOS	**Chios island**	**0.94**	**311**	*e*Pg	**Pb**	**11 35 23.4**	**-0.3**
CHOS	**Chios island**	**0.94**	**311**	P	**Pg**	**11 35 23.8**	**0.0**
CHOS				S	**Sb**	**11 35 36.0**	**-0.1**
CHOS	**Chios island**	**0.94**	**311**	P	**Pg**	**11 35 23.8**	**0.0**
CHOS				S	**Sb**	**11 35 36.0**	**-0.1**
YER	**Yerkesik**	**1.24**	**121**	*e*PN	**Pn**	**11 35 28.6**	**0.0**
YER	**Yerkesik**	**1.24**	**121**	*e*Pn	**Pn**	**11 35 28.6**	**0.0**
DKL	**Dikili**	**1.29**	**358**	*e*PN	**Pg**	**11 35 30.7**	**+0.1**
DKL	**Dikili**	**1.29**	**358**	*e*Pn	**Pg**	**11 35 30.7**	**+0.1**
APE	**Apeiranthos**	**1.33**	**239**	*e*PN	**Pb**	**11 35 30.6**	**+0.1**
APE	**Apeiranthos**	**1.33**	**239**	P	**Pb**	**11 35 30.6**	**+0.1**
APE	**Apeiranthos**	**1.33**	**239**	P	**Pb**	**11 35 30.6**	**+0.1**
KULA	**Kula-Manisa**	**1.53**	**61**	*e*PN	**Pb**	**11 35 33.5**	**-0.5**
KULA	**Kula-Manisa**	**1.53**	**61**	*e*Pn	**Pb**	**11 35 33.5**	**-0.5**
PRK	**Paraskevi**	**1.56**	**340**	P	**Pb**	**11 35 34.6**	**+0.2**
PRK	**Paraskevi**	**1.56**	**340**	P	**Pb**	**11 35 34.6**	**+0.2**
SIGR	**SIGRI**	**1.67**	**329**	*e*PN	**Pb**	**11 35 36.0**	**-0.3**
SIGR	**SIGRI**	**1.67**	**329**	*e*Pn	**Pb**	**11 35 36.0**	**-0.3**
SIGR	**SIGRI**	**1.67**	**329**	P	**Pb**	**11 35 36.9**	**+0.6**
SIGR	**SIGRI**	**1.67**	**329**	P	**Pb**	**11 35 36.9**	**+0.6**

*IDC **30** 11:35:35.2±1.6, 32°.94S×71°.88W, h0km, mb3.7/2, mb1 3.9/5, mb1mx3.8/31, mbtmp3.8/5, ML4.1/3, MS3.3/1, Ms1 3.3/1, ms1mx2.8/24, Error ellipse: s-maj=53.5km s-min=30.3km az=82.0*
*GUC **30** 11:35:38.2±0.5, 33°.00S×71°.94W, h10km±21km, ML3.8*

ISC 30 11:35:35.3±2.3, 32°.92S±0°.09×72°.05W±0°.09, h2km±14km, n14, σ0°.96/17, 3C-1D, Off coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ROCH	**El Roble**	**0.88**	**94**	⇓*i* P	**Pn**	**11 35 54.4**	**-0.5**
ROCH				*i* S	**Sn**	**11 36 06.5**	**-1.9**
ROCH				AML	AML	11 36 08.0	
	comp=E,6μm,0.5s						
PEL	**Peldehue**	**1.17**	**101**	*e*P	**Pn**	**11 35 59.3**	**+0.5**
PEL				*i* S	**Sn**	**11 36 14.8**	**-0.6**
STL	**Santa Lucia**	**1.29**	**114**	⇑*i* P	**Pn**	**11 36 01.0**	**+0.6**
STL				*i* S	**Sn**	**11 36 18.4**	**+0.1**
ANTU	**Antumapu**	**1.36**	**119**	*e*P	**Pb**	**11 36 01.6**	**+0.1**
ANTU				*i* S	**Sn**	**11 36 19.8**	**-0.1**
ANTU				AML	AML	11 36 26.2	
	comp=E,5μm,0.5s						
FSR	**Penalolen**	**1.40**	**114**	⇑*i* P	**Pn**	**11 36 02.5**	**+0.7**
FSR				*i* S	**Sn**	**11 36 21.2**	**+0.2**
SJCH	**San Jose de Ma**	**1.60**	**

PDAR	Pinedale Array	98.17	48	LR	LR	12 38 53.5	
	comp=Z,32nm,19.6s,baz=208,slow=32						
TXAR	Lajitas Array	98.25	62	LR	LR	12 38 42.3	
	comp=Z,38nm,18.0s,baz=0.0,slow=32						
GERES	GERESS Array B	144.95	330	PKP	PKPab	12 05 50.6	-0.3
	0.7nm,0.6s,baz=131,slow=7.3,SNR=6.0						
TORD	Torodi Ar. Bea	165.13	243	PKPab	PKPab	12 07 16.8	+0.1
	1.6nm,1.2s,baz=125,slow=4.2,SNR=3.8						

*THE **30** 11:46:58.5, 37°.82N×26°.89E, h0km±1km, ML3.6/4, Error ellipse: s-maj=1.3km s-min=0.6km az=249.0*
*DDA **30** 11:46:58.5, 37°.81N×26°.92E, h17km, Ml3.4*
*ISK **30** 11:46:58.0, 37°.81N×26°.94E, h11km, ML3.3*
*ISCJB **30** 11:46:58.6±0.3, 37°.81N±0°.02×26°.89E±0°.02, h10km±2km, Error ellipse: s-maj=3.3km s-min=2.4km az=144.4*
*CSEM **30** 11:46:58.8±0.1, 37°.80N×26°.88E, h10km, ML3.6, Error ellipse: s-maj=3.0km s-min=2.2km az=59.0*
*ATH **30** 11:46:58.0, 37°.81N×26°.85E, h19km±1km, ML3.6/3, Error ellipse: s-maj=2.3km s-min=1.1km az=237.0*

ISC 30 11:46:58.8±0.8, 37°.80N±0°.02×26°.89E±0°.02, h16km±5km, n139, σ0°73/171, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SMG	**Samos**	**0.10**	**204**	P	**Pg**	**11 47 02.2**	**0.0**
SMG				S	**Sg**	**11 47 04.5**	**+0.1**
SMG	**Samos**	**0.10**	**204**	P	**Pg**	**11 47 02.2**	**0.0**
SMG				S	**Sg**	**11 47 04.5**	**+0.1**
SMG	**Samos**	**0.10**	**204**	P	**Pb**	**11 47 02.5**	**0.0**
SMG				S	**Sg**	**11 47 03.5**	**-0.9**
SMG				AML	AML	11 47 04.7	
SMG				AML	AML	11 47 05.0	
DGB	**˜zmir**	**0.25**	**359**	*i* P	**Pg**	**11 47 04.3**	**+0.1**
DGB				*i* S	**Sg**	**11 47 07.7**	**-0.2**
GCAM	**G?zelcaml?**	**0.29**	**111**	P	**Pg**	**11 47 05.0**	**+0.1**
GCAM				S	**Sg**	**11 47 09.6**	**+0.5**
GCAM	**G?zelcaml?**	**0.29**	**111**	*i* P	**Pg**	**11 47 05.0**	**+0.1**
GCAM				*i* S	**Sg**	**11 47 09.6**	**+0.5**
ZEY	**˜zmir**	**0.53**	**325**	*i* P	**Pg**	**11 47 09.2**	**0.0**
URLA	**Izmir**	**0.60**	**337**	P	**Pg**	**11 47 10.8**	**+0.1**
URLA	**Izmir**	**0.60**	**337**	*i* P	**Pg**	**11 47 10.8**	**+0.1**
AYDN	**Tasoluk**	**0.80**	**100**	*i* P	**Pg**	**11 47 14.0**	**-0.3**
AYDN				*i* S	**Sg**	**11 47 24.4**	**-0.4**
AYDB	**Zeytinkoy-Aydi**	**0.80**	**79**	*e*P	**Pg**	**11 47 13.7**	**-0.7**
AYDB				*e*S	**Sg**	**11 47 24.1**	**-1.0**
BODT	**Bodrum**	**0.81**	**156**	*e*P	**Pg**	**11 47 14.3**	**-0.2**
BODT				*e*S	**Sg**	**11 47 25.2**	**-0.1**
BODT	**Bodrum**	**0.81**	**156**	P	**Pg**	**11 47 14.0**	**-0.6**
BODT				S	**Sn**	**11 47 26.6**	**-0.7**
BODT	**Bodrum**	**0.81**	**156**	P	**Pg**	**11 47 14.0**	**-0.6**
BODT	**Bodrum**	**0.81**	**156**	*e*Pg	**Pg**	**11 47 14.4**	**-0.2**
BODT				*e*Sg	**Sg**	**11 47 25.2**	**-0.1**
BODT				S	**Sn**	**11 47 26.6**	**-0.7**
BDRM	**Kayabasi**	**0.86**	**149**	P	**Pb**	**11 47 15.1**	**-0.2**
BDRM				S	**Sg**	**11 47 26.9**	**+0.2**
BDRM	**Kayabasi**	**0.86**	**149**	*i* P	**Pb**	**11 47 15.1**	**-0.2**
BDRM				*i* S	**Sg**	**11 47 26.9**	**+0.2**
CHOS	**Chios island**	**0.88**	**312**	*e*PG	**Pb**	**11 47 15.7**	**0.0**
CHOS				*e*SG	**Sn**	**11 47 29.1**	**0.0**
CHOS	**Chios island**	**0.88**	**312**	P	**Pg**	**11 47 16.1**	**+0.2**
CHOS				S	**Sn**	**11 47 28.6**	**-0.5**
CHOS	**Chios island**	**0.88**	**312**	*e*Pg	**Pb**	**11 47 15.7**	**0.0**
CHOS	**Chios island**	**0.88**	**312**	P	**Pg**	**11 47 16.1**	**+0.2**
CHOS				S	**Sb**	**11 47 26.8**	**-0.5**
CHOS				*e*Sg	**Sn**	**11 47 29.1**	**0.0**
CHOS	**Chios island**	**0.88**	**312**	P	**Pb**	**11 47 15.7**	**0.0**
CHOS				S	**Sb**	**11 47 26.8**	**-0.5**
CHOS				AML	AML	11 47 29.5	
	comp=N,7027μm,0.4s						
CHOS				AML	AML	11 47 30.0	
	comp=E,10559μm,0.3s						
NISR	**Nisiros**	**1.21**	**171**	P	**Pg**	**11 47 22.5**	**+0.5**
NISR	**Nisiros**	**1.21**	**171**	P	**Pg**	**11 47 22.5**	**+0.5**
NIS1	**Nisyros Isl.**	**1.22**	**169**	*e*PN	**Pn**	**11 47 21.4**	**+0.2**
NIS1	**Nisyros Isl.**	**1.22**	**169**	P	**Pn**	**11 47 21.5**	**+0.2**
NIS1	**Nisyros Isl.**	**1.22**	**169**	*e*Pn	**Pn**	**11 47 21.4**	**+0.2**
NIS1	**Nisyros Isl.**	**1.22**	**169**	P	**Pb**	**11 47 21.9**	**+0.4**
NIS1	**Nisyros Isl.**	**1.22**	**169**	P	**Pb**	**11 47 21.9**	**+0.4**
DKL	**Dikili**	**1.27**	**1**	*e*PN	**Pn**	**11 47 21.7**	**-0.1**
DKL	**Dikili**	**1.27**	**1**	*e*Pn	**Pn**	**11 47 21.7**	**-0.1**
YER	**Yerkesik**	**1.29**	**121**	*e*PN	**Pn**	**11 47 22.2**	**-0.1**
YER	**Yerkesik**	**1.29**	**121**	P	**Pn**	**11 47 22.5**	**+0.2**
YER				S	**Sg**	**11 47 41.3**	**+0.7**
AKHS	**Akhisar**	**1.30**	**34**	P	**Pb**	**11 47 23.3**	**+0.5**
AKHS	**Akhisar**	**1.30**	**34**	*i* P	**Pb**	**11 47 23.3**	**+0.5**
AKS	**Akhisar**	**1.30**	**34**	*e*PN	**Pn**	**11 47 22.4**	**+0.1**
AKS	**Akhisar**	**1.30**	**34**	*e*Pn	**Pn**	**11 47 22.4**	**+0.1**
APE	**Apeiranthos**	**1.31**	**236**	*e*PN	**Pn**	**11 47 22.7**	**+0.3**
APE	**Apeiranthos**	**1.31**	**236**	P	**Pn**	**11 47 22.0**	**-0.4**
APE				S	**Sg**	**11 47 41.1**	**+0.1**
APE	**Apeiranthos**	**1.31**	**236**	P	**Pn**	**11 47 21.6**	**-0.8**
APE				S	**Sg**	**11 47 40.7**	**-0.3**
APE	**Apeiranthos**	**1.31**	**236**	P	**Pn**	**11 47 21.6**	**-0.8**
APE				S	**Sg**	**11 47 40.7**	**-0.3**
APE				AML	AML	11 47 43.6	
	comp=N,1756μm,0.4s						
APE				AML	AML	11 47 46.3	
	comp=E,1537μm,0.2s						
MANT	**Manisa**	**1.48**	**62**	P	**Pb**	**11 47 26.7**	**+0.6**
MANT	**Manisa**	**1.48**	**62**	*i* P	**Pb**	**11 47 26.7**	**+0.6**
AYVA	**Ayvalik**	**1.51**	**354**	P	**Pb**	**11 47 26.8**	**+0.4**
AYVA	**Ayvalik**	**1.51**	**354**	*i* P	**Pb**	**11 47 26.8**	**+0.4**
PRK	**Paraskevi**	**1.52**	**342**	P	**Pn**	**11 47 25.3**	**0.0**
PRK				S	**Sg**	**11 47 47.0**	**-0.8**
PRK	**Paraskevi**	**1.52**	**342**	P	**Pn**	**11 47 25.3**	**0.0**
PRK				S	**Sg**	**11 47 47.0**	**-0.8**
PRK	**Paraskevi**	**1.52**	**342**	P	**Pn**	**11 47 25.0**	**-0.4**
PRK				S	**Sg**	**11 47 48.4**	**+0.6**
KULA	**Kula-Manisa**	**1.57**	**63**	*e*PN	**Pn**	**11 47 26.3**	**+0.3**
KULA	**Kula-Manisa**	**1.57**	**63**	P	**Pn**	**11 47 26.3**	**+0.3**
KULA				S	**Sb**	**11 47 47.2**	**+0.2**
KULA	**Kula-Manisa**	**1.57**	**63**	P	**Pn**	**11 47 26.3**	**+0.3**
KULA				S	**Sb**	**11 47 47.2**	**+0.2**
SIGR	**SIGRI**	**1.62**	**330**	*e*PN	**Pb**	**11 47 27.7**	**-0.6**
SIGR	**SIGRI**	**1.62**	**330**	P	**Pn**	**11 47 26.8**	**+0.1**
SIGR				S	**Sb**	**11 47 49.5**	**+0.9**
SIGR	**SIGRI**	**1.62**	**330**	P	**Pn**	**11 47 26.8**	**+0.1**
SIGR	**SIGRI**	**1.62**	**330**	*e*Pn	**Pb**	**11 47 27.7**	**-0.6**
SIGR				S	**Sb**	**11 47 49.5**	**+0.9**
SIGR	**SIGRI**	**1.62**	**330**	P	**Pn**	**11 47 26.5**	**-0.2**
TURN	**Turunc**	**1.65**	**124**	*i* P	**Pn**	**11 47 24.4**	**-2.7**
DENT	**Denizli**	**1.70**	**91**	*e*PN	**Pn**	**11 47 27.9**	**+0.1**
DENT	**Denizli**	**1.70**	**91**	*e*Pn	**Pn**	**11 47 27.9**	**+0.1**
DNZL	**Cakiroluk**	**1.71**	**93**	P	**Pn**	**11 47 28.9**	**+0.8**
DNZL	**Cakiroluk**	**1.71**	**93**	*i* P	**Pn**	**11 47 28.9**	**+0.8**
DALY	**Dalyan (Mu˜la**	**1.72**	**124**	*e*PN	**Pn**	**11 47 28.2**	**+0.2**
SANT	**Santorini**	**1.83**	**219**	P	**Pb**	**11 47 32.1**	**+0.2**
SANT	**Santorini**	**1.83**	**219**	P	**Pb**	**11 47 32.1**	**+0.2**
THR1	**Thera Island**	**1.83**	**219**	*e*PN	**Pn**	**11 47 30.5**	**+0.8**
THR5	**Thira Island,**	**1.85**	**222**	*e*PN	**Pn**	**11 47 31.1**	**+1.2**
THR5	**Thira Island,**	**1.85**	**222**	*e*Pn	**Pn**	**11 47 31.1**	**+1.2**
ARG	**Arkhangelos**	**1.87**	**148**	P	**Pn**	**11 47 30.9**	**+0.8**
DEMI	**Demirci**	**1.89**	**49**	P	**Pg**	**11 47 35.0**	**-0.2**
DEMI	**Demirci**	**1.89**	**49**	*i* P	**Pg**	**11 47 35.0**	**-0.2**
BALB	**Balikesir**	**1.99**	**23**	*e*PN	**Pn**	**11 47 32.3**	**+0.5**
BALB	**Balikesir**	**1.99**	**23**	*e*Pn	**Pn**	**11 47 32.3**	**+0.5**
BALY	**Balya**	**2.02**	**16**	P	**Pb**	**11 47 35.4**	**+0.3**
BALY	**Balya**	**2.02**	**16**	*i* P	**Pb**	**11 47 35.4**	**+0.3**
EZN	**Ezine**	**2.07**	**348**	*e*PN	**Pn**	**11 47 33.7**	**+0.9**
EZN	**Ezine**	**2.07**	**348**	*e*Pn	**Pn**	**11 47 33.7**	**+0.9**
FETY	**Fethiye**	**2.10**	**123**	*e*PN	**Pn**	**11 47 33.9**	**+0.5**
FETY	**Fethiye**	**2.10**	**123**	P	**Pn**	**11 47 34.2**	**+0.8**
FETY				S	**Sb**	**11 48 02.1**	**-0.4**
FETY	**Fethiye**	**2.10**	**123**	*e*Pn	**Pn**	**11 47 33.9**	**+0.5**
FETY	**Fethiye**	**2.10**	**123**	P	**Pn**	**11 47 34.2**	**+0.8**
FETY				S	**Sb**	**11 48 02.1**	**-0.4**
KHAL	**Karahalli**	**2.13**	**74**	P	**Pb**	**11 47 36.7**	**-0.3**
KHAL	**Karahalli**	**2.13**	**74**	*i* P	**Pb**	**11 47 36.7**	**-0.3**
BOZC	**Bozcaada**	**2.14**	**342**	*i* P	**Pn**	**11 47 34.3**	**+0.5**
GLHS	**Glhisar (BURDU**	**2.17**	**107**	*e*PN	**Pn**	**11 47 34.5**	**+0.1**
GLHS	**Glhisar (BURDU**	**2.17**	**107**	*e*Pn	**Pn**	**11 47 34.5**	**+0.1**
GOLH	**Golhisar**	**2.20**	**104**	P	**Pn**	**11 47 36.4**	**+1.7**
GOLH	**Golhisar**	**2.20**	**104**	*i* P	**Pn**	**11 47 36.4**	**+1.7**
KARP	**Karpathos**	**2.26**	**174**	*e*PN	**Pn**	**11 47 36.4**	**+0.8**
KARP	**Karpathos**	**2.26**	**174**	P	**Pn**	**11 47 34.5**	**-1.1**
KARP	**Karpathos**	**2.26**	**174**	P	**Pn**	**11 47 34.5**	**-1.1**
GONE	**Gonen-Balikesi**	**2.32**	**15**	*e*PN	**Pn**	**11 47 37.1**	**+0.7**
GONE	**Gonen-Balikesi**	**2.32**	**15**	*e*Pn	**Pn**	**11 47 37.1**	**+0.7**
GDZ	**Gediz**	**2.41**	**57**	P	**Pb**	**11 47 42.1**	**+0.3**
GDZ	**Gediz**	**2.41**	**57**	*i* P	**Pb**	**11 47 42.1**	**+0.3**
VLY	**Voula,Athens**	**2.45**	**272**	P	**Pn**	**11 47 38.0**	**-0.1**
VLY	**Voula,Athens**	**2.45**	**272**	P	**Pn**	**11 47 38.7**	**+0.6**
VLY	**Voula,Athens**	**2.45**	**272**	P	**Pn**	**11 47 38.7**	**+0.6**
LIA	**Limnos Island**	**2.48**	**328**	P	**Pn**	**11 47 39.2**	**+0.7**
LIA	**Limnos Island**	**2.48**	**328**	P	**Pn**	**11 47 39.2**	**+0.7**
GADA	**Gvkgeada**	**2.51**	**342**	P	**Pn**	**11 47 39.4**	**+0.5**
GADA	**Gvkgeada**	**2.51**	**342**	P	**Pn**	**11 47 39.4**	**+0.5**
KNL	**Bal˜kesir**	**2.51**	**11**	*i* P	**Pb**	**11 47 42.1**	**-1.4**
LPK	**Lapseki**	**2.57**	**358**	*e*PN	**Pn**	**11 47 40.7**	**+1.0**
LPK	**Lapseki**	**2.57**	**358**	*e*Pn	**Pn**	**11 47 40.7**	**+1.0**
GELI	**Tayfur-Gelibol**	**2.61**	**353**	*e*PN	**Pn**	**11 47 41.3**	**+1.0**
GELI	**Tayfur-Gelibol**	**2.61**	**353**	*e*Pn	**Pn**	**11 47 41.3**	**+1.0**
ELL	**Elmali**	**2.63**	**113**	*e*PN	**Pn**	**11 47 41.0**	**+0.3**
ELL	**Elmali**	**2.63**	**113**	*e*Pn	**Pn**	**11 47 41.0**	**+0.3**
EDC	**Edincik**	**2.65**	**16**	*e*PN	**Pn**	**11 47 41.7**	**+0.8**
EDC	**Edincik**	**2.65**	**16**	*e*Pn	**Pn**	**11 47 41.7**	**+0.8**
AKAS	**Kas**	**2.68**	**125**	*i* P	**Pb**	**11 47 46.8**	**+0.4**
AKAS				*i* S	**Sg**	**11 48 27.2**	**+2.3**
KCTX	**Karacabey (Bur**	**2.71**	**24**	*e*PN	**Pn**	**11 47 42.6**	**+0.9**
KCTX	**Karacabey (Bur**	**2.71**	**24**	*e*Pn	**Pn**	**11 47 42.6**	**+0.9**
KSL	**Kastellorizon**	**2.72**	**127**	P	**Pb**	**11 47 45.5**	**-1.5**
ORLT	**Orhaneli**	**2.73**	**34**	*e*PN	**Pn**	**11 47 42.8**	**+0.8**
ORLT	**Orhaneli**	**2.73**	**34**	*e*Pn	**Pn**	**11 47 42.8**	**+0.8**
MRMT	**Marmara Adasi**	**2.85**	**11**	*e*PN	**Pn**	**11 47 44.6**	**+0.9**
MRMT	**Marmara Adasi**	**2.85**	**11**	*e*Pn	**Pn**	**11 47 44.6**	**+0.9**
SMTH	**Samothraki Isl**	**2.87**	**339**	P	**Pn**	**11 47 44.2**	**+0.4**
SMTH	**Samothraki Isl**	**2.87**	**339**	P	**Pn**	**11 47 44.2**	**+0.4**
SMTH	**Samothraki Isl**	**2.87**	**339**	P	**Pn**	**11 47 43.5**	**-0.3**
KORT	**Korkueli**	**2.87**	**105**	*i* P	Pn	11 47 34.3	-10
SART	**Tekirdag**	**2.89**	**4**	P	**Pn**	**11 47 42.1**	**-2.1**
SART	**Tekirdag**	**2.89**	**4**	*i* P	**Pn**	**11 47 42.1**	**-2.1**
DID	**Didima**	**2.92**	**265**	P	**Pn**	**11 47 44.2**	**-0.3**
DID	**Didima**	**2.92**	**265**	P	**Pn**	**11 47 44.2**	**-0.3**
KESN	**Edirne-Kesan**	**3.02**	**357**	P	**Pn**	**11 47 44.7**	**-1.6**
KESN	**Edirne-Kesan**	**3.02**	**357**	*i* P	**Pn**	**11 47 44.7**	**-1.6**
IGD	**Bursa**	**3.04**	**36**	*i* P	**Pb**	**11 47 52.5**	**-0.1**
LTK	**Loutraki**	**3.11**	**275**	P	**Pn**	**11 47 48.1**	**+0.9**
LTK	**Loutraki**	**3.11**	**275**	P	**Pn**	**11 47 48.1**	**+0.9**
ALN	**Alexandroupoli**	**3.16**	**348**	P	**Pn**	**11 47 48.4**	**+0.6**
ALN	**Alexandroupoli**	**3.16**	**348**	P	**Pn**	**11 47 48.4**	**+0.6**
ALN	**Alexandroupoli**	**3.16**	**348**	P	**Pn**	**11 47 47.4**	**-0.5**
IZI	**Iznik**	**3.23**	**38**	*e*PN	**Pn**	**11 47 49.9**	**+1.0**
IZI	**Iznik**	**3.23**	**38**	*e*Pn	**Pn**	**11 47 49.9**	**+1.0**
BORA	**Eskisehir**	**3.47**	**52**	*i* P	**Pg**	**11 48 04.2**	**-1.1**
KLV	**Kalavryta, Ach**	**3.76**	**275**	P	**Pn**	**11 47 57.5**	**+1.4**
KLV	**Kalavryta, Ach**	**3.76**	**275**	P	**Pn**	**11 47 57.5**	**+1.4**

*ISCJB **30** 11:49:27.9±0.4, 39°.15N±0°.02×28°.98E±0°.03, h7km±4km, Error ellipse: s-maj=4.6km s-min=3.4km az=34.7*
*ISK **30** 11:49:27.4, 39°.11N×28°.98E, h12km, ML3.0*
*DDA **30** 11:49:28.9, 39°.09N×28°.99E, h7km, Md2.7*
*CSEM **30** 11:49:28.2±0.1, 39°.14N×28°.98E, h10km, MD2.7, Error ellipse: s-maj=2.4km s-min=1.8km az=111.0*

ISC 30 11:49:28.2±0.9, 39°.13N±0°.02×29°.00E±0°.02, h14km±8km, n57, σ0°51/74, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.23**	**250**	P	**Pg**	**11 49 33.5**	**+0.2**
DEMI				S	**Sg**	**11 49 36.8**	**0.0**
DEMI	**Demirci**	**0.23**	**250**	*i* P	**Pg**	**11 49 33.5**	**+0.2**
DEMI				*i* S	**Sg**	**11 49 36.8**	**0.0**
GDZ	**Gediz**	**0.38**	**95**	P	**Pb**	**11 49 36.7**	**-0.1**
GDZ				S	**Sb**	**11 49 42.1**	**-0.5**
GDZ	**Gediz**	**0.38**	**95**	*i* P	**Pb**	**11 49 36.7**	**-0.1**
GDZ				*i* S	**Sb**	**11 49 42.1**	**-0.5**
TVSB	**Tavsanli**	**0.48**	**48**	*e*PG	**Pg**	**11 49 37.8**	**0.0**
TVSB				*e*SG	**Sb**	**11 49 45.4**	**-0.3**
TVSB	**Tavsanli**	**0.48**	**48**	*e*Pg	**Pg**	**11 49 37.8**	**0.0**
TVSB				*e*Sg	**Sb**	**11 49 45.4**	**-0.3**
KULA	**Kula-Manisa**	**0.66**	**203**	*e*PG	**Pg**	**11 49 40.9**	**-0.3**
KULA				*e*SG	**Sg**	**11 49 49.7**	**-0.3**
KULA	**Kula-Manisa**	**0.66**	**203**	*e*Pg	**Pg**	**11 49 40.9**	**-0.3**
KULA				*e*Sg	**Sg**	**11 49 49.7**	**-0.3**
MANT	**Manisa**	**0.72**	**209**	P	**Pb**	**11 49 42.5**	**-0.2**
MANT				S	**Sg**	**11 49 50.8**	**-1.0**
MANT	**Manisa**	**0.72**	**209**	*i* P	**Pb**	**11 49 42.5**	**-0.2**
MANT				*i* S	**Sg**	**11 49 50.8**	**-1.0**
KHAL	**Karahalli**	**0.85**	**153**	P	**Pb**	**11 49 45.3**	**+0.5**
KHAL				S	**Sb**	**11 49 56.0**	**-0.1**
KHAL	**Karahalli**	**0.85**	**153**	*i* P	**Pb**	**11 49 45.3**	**+0.5**
KHAL				*i* S	**Sb**	**11 49 56.0**	**-0.1**
KHL	**Karahalli**	**0.90**	**153**	*e*PG	**Pg**	**11 49 44.9**	**-0.7**
KHL	**Karahalli**	**0.90**	**153**	*e*Pg	**Pg**	**11 49 44.9**	**-0.7**
ORLT	**Orhaneli**	**0.92**	**355**	*e*PG	**Pg**	**11 49 45.6**	**-0.5**
ORLT	**Orhaneli**	**0.92**	**355**	*e*Pg	**Pg**	**11 49 45.6**	**-0.5**
AKHS	**Akhisar**	**0.95**	**255**	P	**Pn**	**11 49 47.2**	**0.0**
AKHS				S	**Sb**	**11 49 59.5**	**+0.5**
AKHS	**Akhisar**	**0.95**	**255**	*i* P	**Pn**	**11 49 47.2**	**0.0**
AKHS				*i* S	**Sb**	**11 49 59.5**	**+0.5**
AKS	**Akhisar**	**0.95**	**255**	*e*PG	**Pg**	**11 49 45.9**	**-0.8**
AKS	**Akhisar**	**0.95**	**255**	*e*Pg	**Pg**	**11 49 45.9**	**-0.8**
BALB	**Balikesir**	**1.01**	**301**	*e*PG	**Pb**	**11 49 47.2**	**-0.3**
BALB	**Balikesir**	**1.01**	**301**	*e*Pg	**Pb**	**11 49 47.2**	**-0.3**
KCTX	**Karacabey (Bur**	**1.24**	**337**	*e*PN	**Pn**	**11 49 51.2**	**0.0**
KCTX	**Karacabey (Bur**	**1.24**	**337**	*e*Pn	**Pn**	**11 49 51.2**	**0.0**
MDNY	**Mudanya-Bursa**	**1.25**	**356**	*e*PN	**Pn**	**11 49 51.3**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.25**	**356**	*e*Pn	**Pn**	**11 49 51.3**	**+0.1**
CAVI	**Cavuskoy**	**1.26**	**31**	*e*PN	**Pb**	**11 49 51.9**	**+0.1**
CAVI	**Cavuskoy**	**1.26**	**31**	*e*Pn	**Pb**	**11 49 51.9**	**+0.1**
IZI	**Iznik**	**1.27**	**17**	*e*PN	**Pn**	**11 49 51.5**	**-0.1**
IZI	**Iznik**	**1.27**	**17**	*e*Pn	**Pn**	**11 49 51.5**	**-0.1**
GEMT	**Gemlik**	**1.32**	**6**	*e*PN	**Pb**	**11 49 52.9**	**+0.1**
GEMT	**Gemlik**	**1.32**	**6**	*e*Pn	**Pb**	**11 49 52.9**	**+0.1**
GONE	**Gonen-Balikesi**	**1.37**	**313**	*e*PN	**Pn**	**11 49 52.8**	**-0.1**
GONE	**Gonen-Balikesi**	**1.37**	**313**	*e*Pn	**Pn**	**11 49 52.8**	**-0.1**
ADVT	**Abdulvahap**	**1.43**	**23**	*e*PN	**Pn**	**11 49 54.0**	**+0.3**
ADVT	**Abdulvahap**	**1.43**	**23**	*e*Pn	**Pn**	**11 49 54.0**	**+0.3**
DNZL	**Cakiroluk**	**1.43**	**178**	P	**Pg**	**11 49 55.5**	**-0.3**
DNZL				S	**Sg**	**11 50 15.0**	**+0.6**
DNZL	**Cakiroluk**	**1.43**	**178**	*i* P	**Pg**	**11 49 55.5**	**-0.3**
DNZL				*i* S	**Sg**	**11 50 15.0**	**+0.6**
ARMT	**Armutlu**	**1.44**	**356**	*e*PN	**Pn**	**11 49 54.5**	**+0.5**
ARMT	**Armutlu**	**1.44**	**356**	*e*Pn	**Pn**	**11 49 54.5**	**+0.5**
EDC	**Edincik**	**1.50**	**325**	*e*PN	**Pn**	**11 49 54.9**	**+0.2**
EDC	**Edincik**	**1.50**	**325**	*e*Pn	**Pn**	**11 49 54.9**	**+0.2**
GPA	**Golpazari**	**1.54**	**41**	*e*PN	**Pn**	**11 49 55.9**	**+0.5**
GPA	**Golpazari**	**1.54**	**41**	*e*Pn	**Pn**	**11 49 55.9**	**+0.5**
AYDN	**Tasoluk**	**1.71**	**211**	*i* P	**Pg**	**11 50 01.3**	**+0.3**
AYDN				*i* S	**Sg**	**11 50 25.4**	**+2.3**
GULT	**Gulveren**	**1.75**	**41**	*e*PN	**Pn**	**11 49 58.7**	**+0.4**
GULT	**Gulveren**	**1.75**	**41**	*e*Pn	**Pn**	**11 49 58.7**	**+0.4**
HRT	**Hereke**	**1.77**	**17**	*e*PN	**Pn**	**11 49 59.1**	**+0.6**
HRT	**Hereke**	**1.77**	**17**	*e*Pn	**Pn**	**11 49 59.1**	**+0.6**
SPNC	**Sapanca-Adapaz**	**1.86**	**32**	*e*PN	**Pn**	**11 50 00.1**	**+0.4**
SPNC	**Sapanca-Adapaz**	**1.86**	**32**	*e*Pn	**Pn**	**11 50 00.1**	**+0.4**
ISK	**Istanbul-Kandi**	**1.94**	**1**	*e*PN	**Pn**	**11 50 01.6**	**+0.9**
ISK	**Istanbul-Kandi**	**1.94**	**1**	*e*Pn	**Pn**	**11 50 01.7**	**+0.9**
SVRH	**Sivrihisar-ESK**	**1.99**	**80**	*e*PN	**Pn**	**11 50 01.4**	**-0.1**
SVRH	**Sivrihisar-ESK**	**1.99**	**80**	*e*Pn	**Pn**	**11 50 01.4**	**-0.1**
SILT	**Sile**	**2.09**	**14**	*e*PN	**Pn**	**11 50 03.0**	**+0.3**
SILT	**Sile**	**2.09**	**14**	*e*Pn	**Pn**	**11 50 03.0**	**+0.3**

IDC 30 11:59:15.1±1.9, 20°.28S×167°.87E, h36km±9km, mb3.8/4, mb1 4.0/5, mb1mx3.6/22, mbtmp4.0/5, ML3.5/1, MS3.5/3, Ms1 3.5/3, ms1mx2.9/31, Error ellipse: s-maj=49.2km s-min=25.2km az=137.0, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.22**	**216**	Pn	Pn	11 59 47.7	-1.8
	13nm,0.3s,baz=124,slow=13,SNR=102						
DZM				Sn	Sn	12 00 15.1	-0.7
	43nm,0.3s,baz=14,slow=14,SNR=7.9						
STKA	**Stephens Creek**	**26.20**	**239**	P	P	12 04 47.8	+1.3
	1.8nm,0.6s,baz=63,slow=11,SNR=5.9						
STKA				pP	pP	12 04 58.1	+1.3
	2.1nm,0.6s,baz=45,slow=12,SNR=3.1						
STKA				LR	LR	12 14 07.7	
	comp=Z,70nm,18.6s,baz=32,slow=34						
WRA	**Warramunga Arr**	**31.46**	**265**	P	P	12 05 33.0	-0.5
	0.3nm,0.4s,baz=100,slow=9.0,SNR=12						
WRA				pP	pP	12 05 43.0	-0.9
	0.5nm,0.4s,baz=90,slow=8.5,SNR=4.0						
ASAR	**Alice Springs**	**31.63**	**258**	P	P	12 05 35.1	+0.1
	3.3nm,0.6s,baz=87,slow=9.0,SNR=62						
ASAR				pP	pP	12 05 45.5	+0.1
	4.7nm,0.7s,baz=83,slow=9.1,SNR=19						
ASAR				LR	LR	12 17 01.8	
	comp=Z,52nm,18.6s,baz=96,slow=34						
JNU	**Nakatsue**	**63.78**	**326**	LR	LR	12 31 53.2	
	comp=Z,103nm,20.7s,baz=120,slow=31						
NVAR	**Mina Array Bea**	**90.45**	**49**	P	P	12 12 13.2	-0.2
	0.4nm,0.7s,baz=228,slow=10,SNR=3.6						

MAN 30 12:00:48, 12°.90N×121°.28E, h1km, mb3.7, ML2.4, MS2.0, 1C, Mindoro

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SJMP	**San Jose**	**0.47**	**200**	*e*P	Pg	12 00 57.6	+0.7
SJMP				*e*S	Sb	12 01 05.0	-1.4
PGP	**Puerto Galera**	**0.68**	**332⇑**	*e*P	Pg	12 01 01.8	+0.8
PGP				*e*S	Sb	12 01 11.1	-1.4
LUBP	**Lubang**	**1.30**	**309**	*e*P	Pg	12 01 13.1	+0.1
LUBP				*e*S	Sn	12 01 32.1	+0.7

*ROM **30** 12:01:03.9±0.2, 46°.28N×8°.69E, h11km, Md1.8/4, Ml1.4/1, Error ellipse: s-maj=2.5km s-min=2.0km az=158.0*
*CSEM **30** 12:01:04.5±0.2, 46°.27N×8°.66E, h10km, MD1.8, Error ellipse: s-maj=4.0km s-min=3.3km az=117.0*
*ZUR **30** 12:01:04.8, 46°.28N×8°.70E, h5km±2km, ML1.8/9*

ISC 30 12:01:03.4±1.1, 46°.28N±0°.03×8°.71E±0°.03, h33km±2km, n25, σ0°46/39, 8C-4D, Switzerland

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

ISC 30 12:10:38.5±0.7,37°.78N±0°.02×26°.90E±0°.02,h16km±3km, n87,σ0°67/123,Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SMG	**Samos**	**0.09**	**215**	P	**Pb**	**12 10 42.0**	**+0.2**
SMG				S	**Sg**	**12 10 44.1**	**+0.1**
SMG	**Samos**	**0.09**	**215**	P	**Pb**	**12 10 42.0**	**+0.2**
SMG				S	**Sg**	**12 10 44.1**	**+0.1**
SMG	**Samos**	**0.09**	**215**	P	**Pb**	**12 10 42.3**	**+0.5**
SMG				S	**Sg**	**12 10 43.5**	**-0.5**
SMG				AML	AML	12 10 44.6	
	comp=E,28875μm,0.2s						
SMG				AML	AML	12 10 44.6	
	comp=N,48924μm,0.2s						
DGB	**¨zmir**	**0.27**	**357**	*i* P	**Pg**	**12 10 44.1**	**-0.3**
GCAM	**G?zelcaml?**	**0.28**	**107**	P	**Pb**	**12 10 44.8**	**-0.3**
GCAM				S	**Sb**	**12 10 49.6**	**+0.2**
GCAM	**G?zelcaml?**	**0.28**	**107**	*i* P	**Pb**	**12 10 44.8**	**-0.3**
GCAM				*i* S	**Sb**	**12 10 49.6**	**+0.2**
ZEY	**¨zmir**	**0.56**	**326**	*i* P	**Pg**	**12 10 49.0**	**-0.5**
ZEY				*i* S	**Sg**	**12 10 57.1**	**+0.1**
URLA	**Izmir**	**0.63**	**338**	P	**Pg**	**12 10 50.3**	**-0.6**
URLA				S	**Sg**	**12 10 59.3**	**+0.1**
URLA	**Izmir**	**0.63**	**338**	*i* P	**Pg**	**12 10 50.3**	**-0.6**
URLA				*i* S	**Sg**	**12 10 59.3**	**+0.1**
AYDN	**Tasoluk**	**0.79**	**98**	P	**Pb**	**12 10 53.8**	**0.0**
AYDN				S	**Sb**	**12 11 04.0**	**-0.2**
AYDN	**Tasoluk**	**0.79**	**98**	*i* P	**Pb**	**12 10 53.8**	**0.0**
AYDN				*i* S	**Sb**	**12 11 04.0**	**-0.2**
BODT	**Bodrum**	**0.79**	**155**	*e*PG	**Pg**	**12 10 53.3**	**-0.5**
BODT				*e*SG	**Sb**	**12 11 04.6**	**+0.4**
BODT	**Bodrum**	**0.79**	**155**	P	**Pn**	**12 10 54.1**	**+0.3**
BODT				S	**Sn**	**12 11 05.8**	**-0.5**
BODT	**Bodrum**	**0.79**	**155**	*e*Pg	**Pg**	**12 10 53.3**	**-0.5**
BODT	**Bodrum**	**0.79**	**155**	P	**Pb**	**12 10 54.1**	**+0.3**
BODT				*e*Sg	**Sb**	**12 11 04.6**	**+0.4**
BODT				S	**Sn**	**12 11 05.8**	**-0.5**
AYDB	**Zeytinkoy-Aydi**	**0.80**	**78**	*e*PG	**Pg**	**12 10 53.6**	**-0.5**
AYDB				*e*SG	**Sb**	**12 11 05.3**	**+0.6**
AYDB	**Zeytinkoy-Aydi**	**0.80**	**78**	*e*Pg	**Pg**	**12 10 53.6**	**-0.5**
AYDB				*e*Sg	**Sb**	**12 11 05.3**	**+0.6**
BDRM	**Kayabasi**	**0.83**	**149**	P	**Pg**	**12 10 51.7**	**-3.0**
BDRM	**Kayabasi**	**0.83**	**149**	*i* P	**Pg**	**12 10 51.7**	**-3.0**
CHOS	**Chios island**	**0.90**	**313**	*e*PG	**Pg**	**12 10 56.0**	**0.0**
CHOS	**Chios island**	**0.90**	**313**	P	**Pb**	**12 10 55.9**	**+0.1**
CHOS				S	**Sg**	**12 11 08.3**	**+0.4**
CHOS	**Chios island**	**0.90**	**313**	*e*Pg	**Pg**	**12 10 56.0**	**0.0**
CHOS				S	**Sg**	**12 11 08.3**	**+0.4**
CHOS	**Chios island**	**0.90**	**313**	P	**Pn**	**12 10 56.9**	**+0.3**
CHOS				S	**Sg**	**12 11 08.6**	**+0.7**
CHOS				AML	AML	12 11 09.5	
	comp=E,1392μm,0.3s						
CHOS				AML	AML	12 11 10.1	
	comp=N,910μm,0.4s						
NISR	**Nisiros**	**1.18**	**171**	P	**Pg**	**12 11 01.6**	**+0.3**
NISR	**Nisiros**	**1.18**	**171**	P	**Pg**	**12 11 01.6**	**+0.3**
NIS1	**Nisyros Isl.**	**1.20**	**169**	*e*PN	**Pn**	**12 11 00.1**	**-0.4**
NIS1	**Nisyros Isl.**	**1.20**	**169**	*e*Pn	**Pn**	**12 11 00.1**	**-0.4**
YER	**Yerkesik**	**1.27**	**120**	*e*PN	**Pn**	**12 11 01.2**	**-0.5**
YER	**Yerkesik**	**1.27**	**120**	P	**Pg**	**12 11 02.5**	**-0.6**
YER				S	**Sg**	**12 11 21.0**	**+1.2**
YER	**Yerkesik**	**1.27**	**120**	*e*Pn	**Pn**	**12 11 01.2**	**-0.5**
YER	**Yerkesik**	**1.27**	**120**	P	**Pg**	**12 11 02.5**	**-0.6**
YER				S	**Sg**	**12 11 21.0**	**+1.2**
DKL	**Dikili**	**1.29**	**0**	*e*PN	**Pn**	**12 11 01.6**	**-0.2**
DKL	**Dikili**	**1.29**	**0**	*e*Pn	**Pn**	**12 11 01.6**	**-0.2**
APE	**Apeiranthos**	**1.30**	**237**	*e*PN	**Pn**	**12 11 01.9**	**-0.1**
APE	**Apeiranthos**	**1.30**	**237**	*e*Pn	**Pn**	**12 11 01.9**	**-0.1**
APE	**Apeiranthos**	**1.30**	**237**	P	**Pb**	**12 11 02.7**	**+0.1**
APE				S	**Sb**	**12 11 18.2**	**-0.8**
APE	**Apeiranthos**	**1.30**	**237**	P	**Pb**	**12 11 02.7**	**+0.1**
APE				S	**Sb**	**12 11 18.2**	**-0.8**
APE				AML	AML	12 11 24.0	
	comp=E,281μm,0.3s						
APE				AML	AML	12 11 25.4	
	comp=N,451μm,0.2s						
AKHS	**Akhisar**	**1.31**	**33**	P	**Pb**	**12 11 02.8**	**+0.1**
AKHS				S	**Sg**	**12 11 21.5**	**+0.6**
AKHS	**Akhisar**	**1.31**	**33**	*i* P	**Pb**	**12 11 02.8**	**+0.1**
AKHS				*i* S	**Sg**	**12 11 21.5**	**+0.6**
AKS	**Akhisar**	**1.31**	**33**	*e*PN	**Pn**	**12 11 01.8**	**-0.3**
AKS	**Akhisar**	**1.31**	**33**	*e*Pn	**Pn**	**12 11 01.8**	**-0.3**
MANT	**Manisa**	**1.49**	**61**	P	**Pg**	**12 11 06.6**	**-0.6**
MANT	**Manisa**	**1.49**	**61**	*i* P	**Pg**	**12 11 06.6**	**-0.6**
MANT				*i* S	**Sb**	**12 11 24.4**	**-0.2**
PRK	**Paraskevi**	**1.54**	**342**	P	**Pb**	**12 11 06.2**	**-0.5**
PRK				S	**Sg**	**12 11 27.4**	**-0.9**
PRK	**Paraskevi**	**1.54**	**342**	P	**Pb**	**12 11 06.2**	**-0.5**
PRK				S	**Sn**	**12 11 25.2**	**+0.2**
PRK	**Paraskevi**	**1.54**	**342**	P	**Pb**	**12 11 06.7**	**0.0**
PRK				S	**Sn**	**12 11 25.2**	**+0.2**
PRK				AML	AML	12 11 33.8	
	comp=E,414μm,0.4s						
PRK				AML	AML	12 11 37.5	
	comp=N,297μm,0.5s						
KULA	**Kula-Manisa**	**1.57**	**62**	*e*PN	**Pn**	**12 11 05.4**	**-0.3**
KULA	**Kula-Manisa**	**1.57**	**62**	P	**Pg**	**12 11 08.3**	**-0.4**
KULA	**Kula-Manisa**	**1.57**	**62**	*e*Pn	**Pn**	**12 11 05.4**	**-0.3**
KULA	**Kula-Manisa**	**1.57**	**62**	P	**Pg**	**12 11 08.3**	**-0.4**
SIGR	**SIGRI**	**1.65**	**330**	*e*PN	**Pn**	**12 11 06.8**	**+0.1**
SIGR	**SIGRI**	**1.65**	**330**	P	**Pn**	**12 11 07.2**	**+0.5**
SIGR				S	**Sb**	**12 11 28.7**	**-0.2**
SIGR	**SIGRI**	**1.65**	**330**	*e*Pn	**Pn**	**12 11 06.8**	**+0.1**
SIGR	**SIGRI**	**1.65**	**330**	P	**Pn**	**12 11 07.2**	**+0.5**
SIGR				S	**Sb**	**12 11 28.7**	**-0.2**
SIGR	**SIGRI**	**1.65**	**330**	P	**Pn**	**12 11 06.2**	**-0.5**
SIGR				S	**Sn**	**12 11 27.7**	**+0.2**
SIGR				AML	AML	12 11 34.9	
	comp=N,186μm,0.2s						
SIGR				AML	AML	12 11 35.8	
	comp=E,327μm,0.5s						
DALY	**Dalyan (Mu¨la**	**1.70**	**124**	*e*PN	**Pn**	**12 11 07.2**	**-0.2**
DALY	**Dalyan (Mu¨la**	**1.70**	**124**	*e*Pn	**Pn**	**12 11 07.2**	**-0.2**
DNZL	**Cakiroluk**	**1.70**	**92**	P	**Pg**	**12 11 11.1**	**-0.2**
DNZL	**Cakiroluk**	**1.70**	**92**	*i* P	**Pg**	**12 11 11.1**	**-0.2**
DNZL				*i* S	**Sg**	**12 11 35.3**	**+1.8**
THR5	**Thira Island,**	**1.84**	**223**	*e*PN	**Pn**	**12 11 09.4**	**+0.1**
THR5	**Thira Island,**	**1.84**	**223**	*e*Pn	**Pn**	**12 11 09.5**	**+0.1**
DEMI	**Demirci**	**1.90**	**48**	P	**Pg**	**12 11 14.6**	**-0.5**
DEMI				S	**Sb**	**12 11 37.2**	**+0.8**
DEMI	**Demirci**	**1.90**	**48**	*i* P	**Pg**	**12 11 14.6**	**-0.5**
DEMI				*i* S	**Sb**	**12 11 37.2**	**+0.8**
BALB	**Balikesir**	**2.01**	**22**	*e*PN	**Pn**	**12 11 11.9**	**+0.2**
BALB	**Balikesir**	**2.01**	**22**	*e*Pn	**Pn**	**12 11 11.9**	**+0.2**
BALY	**Balya**	**2.04**	**16**	P	**Pb**	**12 11 15.8**	**+0.7**
BALY	**Balya**	**2.04**	**16**	*i* P	**Pb**	**12 11 15.8**	**+0.7**
FETY	**Fethiye**	**2.08**	**123**	*e*PN	**Pn**	**12 11 12.7**	**-0.1**
FETY	**Fethiye**	**2.08**	**123**	*e*Pn	**Pn**	**12 11 12.7**	**-0.1**
BOZC	**Bozcaada**	**2.16**	**342**	*i* P	**Pg**	**12 11 18.6**	**-1.4**
BOZC				*i* S	**Sg**	**12 11 47.8**	**-0.2**
KARP	**Karpathos**	**2.24**	**175**	*e*PN	**Pn**	**12 11 15.2**	**+0.3**
KARP	**Karpathos**	**2.24**	**175**	*e*Pn	**Pn**	**12 11 15.2**	**+0.3**
KARP	**Karpathos**	**2.24**	**175**	P	**Pn**	**12 11 15.1**	**+0.3**
MHLO	**Agia Marina, M**	**2.27**	**242**	P	**Pn**	**12 11 16.5**	**+1.2**
MHLO	**Agia Marina, M**	**2.27**	**242**	P	**Pn**	**12 11 16.5**	**+1.2**
VLY	**Voula,Athens**	**2.46**	**273**	P	**Pn**	**12 11 18.6**	**+0.7**
VLY	**Voula,Athens**	**2.46**	**273**	P	**Pn**	**12 11 18.6**	**+0.7**
LPK	**Lapseki**	**2.59**	**358**	*e*PN	**Pn**	**12 11 20.1**	**+0.4**
LPK	**Lapseki**	**2.59**	**358**	*e*Pn	**Pn**	**12 11 20.1**	**+0.4**
TVSB	**Tavsanli**	**2.61**	**49**	*e*PN	**Pn**	**12 11 20.1**	**0.0**
TVSB	**Tavsanli**	**2.61**	**49**	*e*Pn	**Pn**	**12 11 20.1**	**0.0**
LAST	**Lasithi**	**2.85**	**204**	P	**Pn**	**12 11 24.7**	**+1.3**
LAST	**Lasithi**	**2.85**	**204**	P	**Pn**	**12 11 24.7**	**+1.3**
SMTH	**Samothraki Isl**	**2.89**	**339**	P	**Pn**	**12 11 23.3**	**-0.5**
SMTH	**Samothraki Isl**	**2.89**	**339**	P	**Pn**	**12 11 23.3**	**-0.5**
ALN	**Alexandroupoli**	**3.18**	**348**	P	**Pn**	**12 11 27.0**	**-0.8**
ALN	**Alexandroupoli**	**3.18**	**348**	P	**Pn**	**12 11 27.0**	**-0.8**

*ISCJB **30** 12:14:11.8±1.2,20°.4S±0°.2×168°.2E±0°.3,h32km,mb4.0/7, MS3.0/2,Error ellipse: s-maj=44.0km s-min=10.2km az=40.0*

*IDC **30** 12:14:13.7±1.3,20°.37S×168°.22E,h33km±6km,mb3.9/7, mb1 4.1/8,mb1mx3.7/32,mbtmp4.0/8,ML3.3/1,MS3.1/3, Ms1 3.1/3,ms1mx2.7/32,Error ellipse: s-maj=50.3km s-min=17.0km az=143.0*

ISC 30 12:14:13.0±1.2,20°.5S±0°.2×168°.3E±0°.2,h32km,n12, σ1§21/15,mb3.9/7,Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.31**	**227**	*e*Pn	**Pn**	**12 14 47.9**	**-1.0**
	46nm,0.2s						
DZM				*e*Sn	**Sn**	**12 15 16.2**	**-0.2**
	196nm,0.3s						
DZM	**Mont Dzumac**	**2.31**	**227**	Pn	**Pn**	**12 14 48.7**	**-0.3**
	7.6nm,0.3s,baz=110,slow=19,SNR=11						
DZM				Sn	**Sn**	**12 15 17.0**	**+0.6**
	43nm,0.3s,baz=102,slow=22,SNR=14						
DZM				LR	LR	12 15 38.5	
	comp=Z,392nm,19.1s,baz=23,slow=36						
AFI	**Afiamalu**	**20.14**	**74**	LR	LR	12 25 25.7	
	comp=Z,34nm,20.5s,baz=90,slow=33						
STKA	**Stephens Creek**	**26.41**	**239**	P	**P**	**12 19 49.0**	**+2.1**
	3.8nm,1.0s,baz=85,slow=11,SNR=10						
STKA				pP	**sP**	**12 19 58.6**	**-1.4**
	2.4nm,0.7s,baz=88,slow=5.9,SNR=3.6						
WRA	**Warramunga Arr**	**31.82**	**265**	P	**P**	**12 20 33.9**	**-1.1**
	0.5nm,0.5s,baz=90,slow=8.5,SNR=14						
WRA				pP	**pP**	**12 20 43.5**	**-0.8**
	0.3nm,0.5s,baz=161,slow=20,SNR=2.4						
ASAR	**Alice Springs**	**31.96**	**258**	P	**P**	**12 20 36.4**	**+0.1**
	3.9nm,0.7s,baz=87,slow=9.1,SNR=69						
ASAR				pP	**pP**	**12 20 45.9**	**+0.3**
	6.4nm,0.7s,baz=84,slow=9.1,SNR=26						
ASAR				LR	LR	12 33 52.8	
	comp=Z,64nm,18.9s,baz=97,slow=37						
TBI	**Tubuai**	**39.21**	**102**	*e*LR	LR	12 32 31.3	
	70nm,29.0s						
PPT2	**Papeete2**	**39.87**	**93**	*e*LR	LR	12 32 44.8	
	60nm,26.5s						
CMAR	**Chiang Mai Arr**	**78.21**	**295**	P	**P**	**12 26 11.7**	**+1.8**
	0.5nm,0.4s,baz=148,slow=3.9,SNR=6.6						
NVAR	**Mina Array Bea**	**90.31**	**49**	P	**P**	**12 27 11.5**	**+0.4**
	0.5nm,0.7s,baz=230,slow=8.1,SNR=3.7						
NVAR				pP	**pP**	**12 27 22.3**	**+0.9**
	0.5nm,0.7s,baz=234,slow=7.7,SNR=3.8						
ILAR	**Eielson Array**	**91.71**	**18**	P	**P**	**12 27 14.9**	**-1.8**
	0.2nm,0.4s,baz=243,slow=4.0,SNR=3.4						
TIXI	**Tiksi**	**95.80**	**348**	P	**P**	**12 27 35.4**	**0.0**
	0.8nm,0.4s,baz=108,slow=6.4,SNR=1.9						

*CSEM **30** 12:19:25.2,44°.42N×21°.92E,h0km,ML1.4,Mining explosion.*

BEO 30 12:19:25.2±0.4,44°.42N×21°.92E,h0km,M1.4/6,3D, Mining explosion.,Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUBS	**Kucevo**	**0.18**	**268**	*e*Pg	Pg	12 19 26.6	-2.0
KUBS				*e*Sg	Sg	12 19 29.9	-0.9
KUBS	**Kucevo**	**0.18**	**268**	*e*Pg	Pg	12 19 26.6	-2.0
KUBS				*e*Sg	Sg	12 19 29.9	-0.9
MDVR	**Moldovita**	**0.39**	**338**	*i* P	Pg	12 19 32.1	-0.6
MDVR				S	Sg	12 19 37.9	+0.1
GRUS	**Gruza**	**1.02**	**239**	*e*Pg	Pg	12 19 45.0	+0.3
GRUS				*e*Sg	Sb	12 19 59.3	-0.3
GRUS	**Gruza**	**1.02**	**239**	*e*Pg	Pg	12 19 45.0	+0.3
GRUS				*e*Sg	Sb	12 19 59.3	-0.3
GZR	**Gura Zlata**	**1.15**	**32**	*i* P	Pg	12 19 45.8	-1.4
GZR	**Gura Zlata**	**1.15**	**32**	S	Sg	12 20 02.5	+0.4
BZS	**Buzias**	**1.22**	**350**	*i* P	Pg	12 19 47.3	-1.2
BZS	**Buzias**	**1.22**	**350**	S	Sg	12 20 04.2	-0.1
BZS	**Buzias**	**1.22**	**350**	*e*Pg	Pg	12 19 47.0	-1.5
BZS				*e*Sg	Sg	12 20 04.3	0.0
BZS	**Buzias**	**1.22**	**350**	*e*Pg	Pg	12 19 47.0	-1.5
BZS				*e*Sg	Sg	12 20 04.3	0.0
ZAPS	**Zavoj**	**1.26**	**156**	*e*Pg	Pg	12 19 47.9	-1.4
ZAPS				*e*Sg	Sg	12 20 05.4	-0.1
IVAS	**Ivanjica**	**1.53**	**237**	*e*Pg	Pn	12 19 52.8	-1.0
IVAS	**Ivanjica**	**1.53**	**237**	*e*Pg	Pn	12 19 52.8	-1.0
BARS	**Barje**	**1.60**	**183**	*e*Pg	Pn	12 19 53.1	-1.7
BARS				*e*Sg	Sn	12 20 15.8	-0.4
BARS	**Barje**	**1.60**	**183**	*e*Pg	Pn	12 19 53.1	-1.7
BARS				*e*Sg	Sn	12 20 15.8	-0.4

*ISCJB **30** 12:20:34.8±0.4,39°.15N±0°.02×28°.95E±0°.03,h6km±4km, Error ellipse: s-maj=4.6km s-min=3.5km az=44.8*

*ISK **30** 12:20:34.4,39°.13N×28°.98E,h14km,ML2.9*

*DDA **30** 12:20:35.2,39°.11N×28°.99E,h10km,Ml3.2*

*CSEM **30** 12:20:35.0±0.1,39°.13N×28°.96E,h10km,ML3.2,Error ellipse: s-maj=3.0km s-min=2.5km az=124.0*

ISC 30 12:20:35.1±0.9,39°.13N±0°.02×28°.97E±0°.02,h14km±9km, n65,σ0°62/81,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.21**	**248**	P	**Pb**	**12 20 40.4**	**-0.5**
DEMI				S	**Sg**	**12 20 43.5**	**+0.3**
DEMI	**Demirci**	**0.21**	**248**	*i* P	**Pb**	**12 20 40.4**	**-0.5**
DEMI				*i* S	**Sg**	**12 20 43.5**	**+0.3**
GDZ	**Gediz**	**0.40**	**95**	P	**Pb**	**12 20 43.5**	**-0.5**
GDZ				S	**Sb**	**12 20 49.2**	**-0.8**
GDZ	**Gediz**	**0.40**	**95**	*i* P	**Pb**	**12 20 43.5**	**-0.5**
GDZ				*i* S	**Sb**	**12 20 49.2**	**-0.8**
TVSB	**Tavsanli**	**0.50**	**49**	*e*PG	**Pg**	**12 20 44.6**	**-0.4**
TVSB				*e*SG	**Sg**	**12 20 52.2**	**+0.5**
TVSB	**Tavsanli**	**0.50**	**49**	*e*Pg	**Pg**	**12 20 44.6**	**-0.4**
TVSB				*e*Sg	**Sg**	**12 20 52.2**	**+0.5**
KULA	**Kula-Manisa**	**0.66**	**202**	*e*PG	**Pg**	**12 20 47.8**	**-0.2**
KULA				*e*SG	**Sg**	**12 20 56.5**	**-0.1**
KULA	**Kula-Manisa**	**0.66**	**202**	*e*Pg	**Pg**	**12 20 47.8**	**-0.2**
KULA				*e*Sg	**Sg**	**12 20 56.5**	**-0.1**
MANT	**Manisa**	**0.71**	**207**	P	**Pg**	**12 20 49.2**	**+0.2**
MANT				S	**Sg**	**12 20 57.8**	**-0.6**
MANT	**Manisa**	**0.71**	**207**	*i* P	**Pg**	**12 20 49.2**	**+0.2**
MANT				*i* S	**Sg**	**12 20 57.8**	**-0.6**
KHAL	**Karahalli**	**0.86**	**151**	P	**Pb**	**12 20 52.0**	**+0.2**
KHAL	**Karahalli**	**0.86**	**151**	*i* P	**Pb**	**12 20 52.0**	**+0.2**
KHL	**Karahalli**	**0.91**	**152**	*e*PG	**Pg**	**12 20 52.4**	**-0.3**
KHL	**Karahalli**	**0.91**	**152**	*e*Pg	**Pg**	**12 20 52.4**	**-0.3**
ORLT	**Orhaneli**	**0.92**	**356**	*e*PG	**Pg**	**12 20 52.6**	**-0.3**
ORLT	**Orhaneli**	**0.92**	**356**	*e*Pg	**Pg**	**12 20 52.6**	**-0.3**
AKHS	**Akhisar**	**0.94**	**255**	P	**Pb**	**12 20 53.7**	**+0.6**
AKHS	**Akhisar**	**0.94**	**255**	*i* P	**Pb**	**12 20 53.7**	**+0.6**
AKS	**Akhisar**	**0.94**	**255**	*e*PG	**Pg**	**12 20 53.0**	**-0.2**
AKS	**Akhisar**	**0.94**	**255**	*e*Pg	**Pg**	**12 20 53.0**	**-0.2**
BALB	**Balikesir**	**0.99**	**302**	*e*PG	**Pg**	**12 20 54.1**	**-0.1**
BALB	**Balikesir**	**0.99**	**302**	*e*Pg	**Pg**	**12 20 54.1**	**-0.1**
IGD	**Bursa**	**1.15**	**9**	*i* P	**Pb**	**12 20 56.5**	**-0.3**
BALY	**Balya**	**1.21**	**301**	P	**Pg**	**12 20 59.1**	**+0.6**
BALY	**Balya**	**1.21**	**301**	*i* P	**Pg**	**12 20 59.1**	**+0.6**
KCTX	**Karacabey (Bur**	**1.23**	**338**	*e*PN	**Pn**	**12 20 58.0**	**0.0**
KCTX	**Karacabey (Bur**	**1.23**	**338**	*e*Pn	**Pn**	**12 20 58.0**	**0.0**
MDNY	**Mudanya-Bursa**	**1.25**	**357**	*e*PN	**Pn**	**12 20 57.9**	**-0.1**
CAVI	**Cavuskoy**	**1.27**	**32**	*e*PN	**Pn**	**12 20 58.2**	**-0.2**
CAVI	**Cavuskoy**	**1.27**	**32**	*e*Pn	**Pn**	**12 20 58.2**	**-0.2**
IZI	**Iznik**	**1.27**	**18**	*e*PN	**Pn**	**12 20 58.4**	**-0.2**
IZI	**Iznik**	**1.27**	**18**	*e*Pn	**Pn**	**12 20 58.4**	**-0.2**
GEMT	**Gemlik**	**1.32**	**7**	*e*PN	**Pn**	**12 20 59.0**	**-0.1**
GONE	**Gonen-Balikesi**	**1.35**	**313**	*e*PN	**Pn**	**12 20 59.6**	**0.0**
GONE	**Gonen-Balikesi**	**1.35**	**313**	*e*Pn	**Pn**	**12 20 59.6**	**0.0**
BORA	**Eskisehir**	**1.37**	**56**	P	**Pb**	**12 21 00.9**	**+0.3**
BORA				S	**Sg**	**12 21 19.2**	**-0.2**
BORA	**Eskisehir**	**1.37**	**56**	*i* P	**Pb**	**12 21 00.9**	**+0.3**
BORA				*i* S	**Sg**	**12 21 19.2**	**-0.2**
ADVT	**Abdulvahap**	**1.43**	**24**	*e*PN	**Pn**	**12 21 00.6**	**-0.1**
ADVT	**Abdulvahap**	**1.43**	**24**	*e*Pn	**Pn**	**12 21 00.6**	**-0.1**
DNZL	**Cakiroluk**	**1.43**	**178**	P	**Pn**	**12 21 00.1**	**-0.8**
DNZL				S	**Sg**	**12 21 21.8**	**+0.5**
DNZL	**Cakiroluk**	**1.43**	**178**	*i* P	**Pn**	**12 21 00.1**	**-0.8**
DNZL				*i* S	**Sg**	**12 21 21.8**	**+0.5**
ARMT	**Armutlu**	**1.44**	**357**	*e*PN	**Pn**	**12 21 00.8**	**-0.1**
ARMT	**Armutlu**	**1.44**	**357**	*e*Pn	**Pn**	**12 21 00.8**	**0.0**
EDC	**Edincik**	**1.49**	**325**	*e*PN	**Pn**	**12 21 01.5**	**0.0**
EDC	**Edincik**	**1.49**	**325**	*e*Pn	**Pn**	**12 21 01.5**	**0.0**
ESKT	**Eskisehir**	**1.51**	**74**	*i* P	**Pg**	**12 21 04.3**	**+0.2**
ESKT				*i* S	**Sg**	**12 21 24.0**	**+0.3**
SEYT	**Eskypehyr**	**1.51**	**74**	P	**Pg**	**12 21 04.3**	**+0.2**
SEYT				S	**Sg**	**12 21 24.0**	**+0.3**
GPA	**Golpazari**	**1.56**	**41**	*e*PN	**Pn**	**12 21 02.4**	**0.0**
GPA	**Golpazari**	**1.56**	**41**	*e*Pn	**Pn**	**12 21 02.4**	**0.0**
AYDN	**Tasoluk**	**1.69**	**211**	*i* P	**Pg**	**12 21 07.5**	**-0.1**
GULT	**Gulveren**	**1.77**	**42**	*e*PN	**Pn**	**12 21 05.3**	**0.0**
GULT	**Gulveren**	**1.77**	**42**	*e*Pn	**Pn**	**12 21 05.3**	**0.0**
HRT	**Hereke**	**1.78**	**17**	*e*PN	**Pn**	**12 21 05.5**	**0.0**
HRT	**Hereke**	**1.78**	**17**	*e*Pn	**Pn**	**12 21 05.5**	**0.0**
SPNC	**Sapanca-Adapaz**	**1.87**	**33**	*e*PN	**Pn**	**12 21 06.7**	**+0.1**
ISK	**Istanbul-Kandi**	**1.94**	**2**	*e*PN	**Pn**	**12 21 07.8**	**+0.2**
ISK	**Istanbul-Kandi**	**1.94**	**2**	*e*Pn	**Pn**	**12 21 07.8**	**+0.2**
GOLH	**Golhisar**	**1.94**	**166**	*i* S	**Sg**	**12 21 41.9**	**+4.4**
SVRH	**Sivrihisar-ESK**	**2.01**	**80**	*e*PN	**Pn**	**12 21 08.9**	**+0.3**
SVRH	**Sivrihisar-ESK**	**2.01**	**80**	*e*Pn	**Pn**	**12 21 09.0**	**+0.3**
SART	**Tekirdag**	**2.08**	**319**	*i* P	**Pg**	**12 21 14.7**	**-0.4**
SILT	**Sile**	**2.09**	**14**	*e*PN	**Pn**	**12 21 10.0**	**+0.3**
SILT	**Sile**	**2.09**	**14**	*e*Pn	**Pn**	**12 21 10.0**	**+0.3**
KAND	**Kocaeli-Kandir**	**2.18**	**25**	*i* P	**Pg**	**12 21 16.8**	**-0.1**
SAHE	**Sakarya_HENDEK**	**2.25**	**39**	*i* P	**Pb**	**12 21 16.6**	**+1.1**

*NIED **30** 12:24:00,37°.30N×141°.40E,h14km,Mw3.9 Best double couple: M0:9.43000×10^14 NP1:φ=40.00000°,δ=28.00000°, λ=-101.00000°. NP2:φ=232.00000°,δ=63.00000°, λ=-84.00000°.*

*IDC **30** 12:24:03.3±0.6,37°.28N×141°.45E,h0km,mb3.8/16, mb1 4.1/18,mb1mx3.9/39,mbtmp3.9/18,ML3.8/3,Error ellipse: s-maj=18.8km s-min=14.7km az=113.0*

*ISCJB **30** 12:24:04.8±1.0,37°.30N±0°.03×141°.45E±0°.06,h19km±6km, mb3.9/21,Error ellipse: s-maj=8.6km s-min=4.9km az=21.6*

*JMA **30** 12:24:06.3±0.1,37°.33N×141°.36E,h30km±1km,M3.8*

JMA Felt I J1.

*NEIC **30** 12:24:08.7±0.5,37°.31N×141°.41E,h35km,mb4.3/5,Error ellipse: s-maj=12.3km s-min=8.4km az=135.0*

NEIC Recorded [1 JMA] in Fukushima.

ISC 30 12:24:04.2±1.6,37°.34N±0°.04×141°.38E±0°.06,h5km±9km, n43,σ0°95/44,mb4.0/21,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.40**	**274**	P	**Pb**	**12 24 14.8**	**+0.9**
JFK				S	**Sb**	**12 24 20.6**	**+0.2**
ONAJ	**Iwakimizuishiy**	**0.52**	**243**	P	**Pb**	**12 24 16.4**	**+0.5**
ONAJ				S	**Sb**	**12 24 23.3**	**-0.5**
JMM	**Marumori**	**0.70**	**319**	P	**Pb**	**12 24 19.4**	**+0.4**
JMM				S	**Sb**	**12 24 28.8**	**-0.2**
JFT	**Otama**	**0.85**	**283**	P	**Pn**	**12 24 22.4**	**-0.5**
JFT				S	**Sb**	**12 24 33.6**	**+0.4**
JHO	**Hitachi**	**0.97**	**222**	P	**Pg**	**12 24 22.9**	**0.0**
JHO				*e*S	**Sg**	**12 24 34.4**	**-1.1**
JIO	**Ouri**	**1.11**	**359**	P	**Pg**	**12 24 25.6**	**0.0**
JIO				*e*S	**Sg**	**12 24 39.2**	**-0.9**
JOU	**Okura**	**1.17**	**331**	P	**Pn**	**12 24 27.4**	**+0.1**
JOU				*e*S	**Sb**	**12 24 42.6**	**+0.1**
JFY	**Yanaizu**	**1.34**	**273**	P	**Pb**	**12 24 29.9**	**+0.1**
JFY				*e*S	**Sg**	**12 24 47.0**	**-0.2**
MJAR	**Matsushiro Arr**	**2.66**	**254**	Pn	**Pn**	**12 24 48.8**	**+0.9**

JHJ Hachijo jima 2 4.62 227 Pn **Pn 12 25 55.8 -1.7**
60nm,0.3s,baz=150,slow=24,SNR=10
JHJ Sn **Sn 12 26 44.0 -5.9**
149nm,0.3s,baz=264,slow=23,SNR=7.4
ERM Erimo 5.67 355⇑ *i* P **Pn 12 26 10.2 -1.8**
ASAJ Asahikawa 7.80 354 Pn **Pn 12 26 39.0 -2.2**
7.2nm,0.3s,baz=209,slow=10,SNR=11
ASAJ Sn **Sn 12 28 03.9 -4.4**
3.4nm,0.3s,baz=245,slow=27,SNR=4.6
CBIJ Chichi jima 9.33 189 Sn Sn 12 28 34.6 -11
JCJ Chichijima 9.33 189 Sn Sn 12 28 34.6 -11
38nm,0.3s,baz=287,slow=19,SNR=3.7
KUR Kuril'sk 9.39 18 *e*P Pn 12 26 57.4 -5.6
KUR *e*S Sn 12 28 37.8 -9.5
KUR pmax pmax
comp=Z,16nm,0.6s
KUR pmax pmax
comp=N,11nm,0.4s
KUR pmax pmax
comp=E,8.0nm,0.3s
KUR smax smax
comp=E,31nm,0.5s
YSS Yuzh-Sakhalins 10.62 356 *e*P **Pn 12 27 18.3 -1.5**
YSS pmax pmax
comp=Z,20nm,0.7s
JNU Nakatsue 11.10 257 Pn **Pn 12 27 26.6 +0.1**
comp=Z,1.2nm,0.3s,baz=110,slow=2.1,SNR=9.5
VLA Vladivostok 11.38 310⇓ *e*P Pn 12 27 34.3 +4.1
VLA pmax pmax
comp=Z,45nm,1.6s
USRK Ussuriysk Ar. 11.93 315 Pn Pn 12 27 41.7 +3.9
comp=Z,0.7nm,0.3s,baz=122,slow=14,SNR=10
KSRS Korea Array 12.75 280 Pn Pn 12 27 51.9 +2.9
comp=Z,0.2nm,0.3s,baz=94,slow=14,SNR=5.3
KSRS LR LR 12 32 10.7
comp=Z,154nm,21.5s,baz=90,slow=34
KSAR Wonju Array Be 12.78 280 P Pn 12 27 51.9 +2.5
KSAR Wonju Array Be 12.78 280 Pn Pn 12 27 51.9 +2.5
KLR Kul'dur 15.58 329 Pn **Pn 12 28 26.6 -0.6**
comp=Z,0.1nm,0.3s,baz=125,slow=12,SNR=4.9
KLR LR LR 12 33 59.6
comp=Z,129nm,21.3s,baz=154,slow=35
PETK Petropavlovsk- 19.39 26 P **P 12 29 11.8 -1.2**
comp=Z,0.1nm,0.3s,baz=184,slow=9.4,SNR=3.3
YULB Yu-li 23.33 243 *e*P **P 12 29 54.1 -1.2**
comp=Z,45nm,0.4s
SSLB Suanglung 23.33 244 *e*P **P 12 29 53.2 -2.2**
comp=Z,34nm,0.6s
MA2 Magadan 23.67 9 P **P 12 29 58.0 -0.4**
comp=Z,5.7nm,0.8s,baz=218,slow=18,SNR=4.1
MA2 Magadan 23.67 9 P **P 12 29 58.0 -0.4**
MA2 pmax pmax
comp=Z,5.0nm,0.9s
H11N2 WAKE ISLAND Hy 26.17 123 T T 12 57 25.4
baz=314,slow=75,SNR=81
H11N1 WAKE ISLAND Hy 26.18 123 T T 12 57 34.3
baz=314,slow=75,SNR=39
H11N3 WAKE ISLAND Hy 26.19 123 T T 12 57 27.9
baz=314,slow=75,SNR=62
H11S1 WAKE ISLAND Hy 26.90 125 T T 12 58 26.9
baz=316,slow=76,SNR=46
H11S3 WAKE ISLAND Hy 26.90 125 T T 12 58 27.0
baz=316,slow=76,SNR=36
H11S2 WAKE ISLAND Hy 26.91 125 T T 12 58 27.9
baz=316,slow=76,SNR=31
SEY Seymchan 27.13 9 P **P 12 30 30.2 +0.5**
comp=Z,6.7nm,0.9s,baz=178,slow=8.8,SNR=9.9
SEY Seymchan 27.13 9⇑ P **P 12 30 30.8 +1.1**
YAK Yakutsk 27.18 345 P **P 12 30 30.1 0.0**
comp=Z,1.9nm,0.6s,baz=328,slow=19,SNR=6.7
YAK LR LR 12 41 45.6
comp=Z,73nm,19.9s,baz=150,slow=37
YAK Yakutsk 27.18 345 *e*P **P 12 30 30.0 -0.1**
YAK pmax pmax
comp=Z,26nm,0.8s
YAK pmax pmax
comp=E,7.0nm,1.2s
YAK pmax pmax
comp=N,17nm,1.1s
ULN Ulaanbaatar 29.31 305⇑ *e*P P 12 30 52.4 +2.8
ULN pmax pmax
comp=Z,4.0nm,0.7s
SONM Songino Array 29.75 304 P P 12 30 55.9 +2.6
comp=Z,4.3nm,0.8s,baz=102,slow=9.2,SNR=13
SONM LR LR 12 44 09.6
comp=Z,63nm,19.0s,baz=110,slow=39
ZAK Zakamensk 32.19 309 *e*P **P 12 31 15.8 +1.0**
ZAK pmax pmax
comp=Z,3.0nm,1.1s
TLY Talaya 32.22 311 LR LR 12 44 03.2
comp=Z,56nm,21.9s,baz=84,slow=36
BILL Bilibino 34.16 15⇑ *i*P **P 12 31 30.2 -1.5**
BILL pmax pmax
comp=Z,5.0nm,1.1s
GTA Gaotai 34.59 289 *e*P P 12 31 38.3 +2.4
GTA pP pP 12 31 42.3 -3.7
GTA sP sP 12 31 45.5 -4.7
GTA pmax pmax
comp=Z,5.0nm,1.0s
TIXI Tiksi 36.21 352 P **P 12 31 48.7 -0.5**
comp=Z,3.3nm,0.6s,baz=132,slow=3.4,SNR=9.3
TIXI Tiksi 36.21 352⇓ *i*P **P 12 31 49.2 0.0**
TIXI pmax pmax
comp=Z,10.0nm,2.5s
SIJI Sorong 38.83 200 LR LR 12 48 29.5
comp=Z,150nm,19.1s,slow=37
CMAR Chiang Mai Arr 43.20 258 P **P 12 32 49.2 +1.2**
comp=Z,0.5nm,0.5s,baz=56,slow=8.8,SNR=3.5
ZALV Zalesovo Beam 43.78 313 P **P 12 32 53.8 +1.5**
comp=Z,14nm,0.7s,baz=92,slow=6.7,SNR=42
ZALV PcP **PcP 12 34 38.7 +0.3**
comp=Z,2.6nm,0.7s,baz=83,slow=3.2,SNR=5.2
NRIK Noril'sk 44.68 335 P **P 12 33 00.4 +1.1**
comp=Z,3.0nm,0.5s,baz=116,slow=8.8,SNR=3.6
NVS Novosibirsk 44.68 314 *i* P **P 12 33 00.5 +1.0**
MKAR Makanchi Array 46.09 303 P **P 12 33 12.3 +1.5**
comp=Z,3.3nm,0.8s,baz=88,slow=10,SNR=11
KDAK Kodiak Island 46.33 42 *ce*P **P 12 33 12.0 -0.4**
PPLA Purkeypile 46.64 34 *e*P **P 12 33 15.6 +0.6**
comp=Z,20nm,1.2s
KTH Kantishna Hill 47.25 34 *e*P **P 12 33 19.9 +0.3**
comp=Z,17nm,1.2s
BPAW Bear Paw Mtn. 47.25 33 *e*P **P 12 33 19.8 +0.2**
comp=Z,0.9nm,0.8s
TRF Thorofare Moun 47.53 34 *e*P **P 12 33 21.8 -0.1**
comp=Z,4.1nm,0.7s
RC01 Rabbit Creek A 47.75 37 *e*P **P 12 33 23.1 -0.4**
comp=Z,42nm,1.7s
KURK Kurchatov 47.85 309 *e*P **P 12 33 25.3 +0.9**
KURK pmax pmax
comp=Z,54nm,0.9s
KURK Kurchatov 47.85 309 *e*P **P 12 33 25.3 +0.9**
comp=Z,54nm,0.9s
PMR Palmer 48.03 36 *e*P **P 12 33 25.3 -0.3**
PMR pmax pmax
comp=Z,32nm,1.1s
PMR Palmer 48.03 36 *e*P **P 12 33 25.3 -0.3**
comp=Z,32nm,1.1s
SML Sawmill 48.41 36 *e*P **P 12 33 28.8 +0.1**
SML pmax pmax
comp=Z,4.0nm,0.7s
SML Sawmill 48.41 36 *e*P **P 12 33 28.8 +0.1**
comp=Z,4.0nm,0.7s
COLA College 48.64 32 P **P 12 33 30.2 -0.1**
COLA pmax pmax
comp=Z,9.0nm,0.8s
COLA College 48.64 32 P **P 12 33 30.1 -0.1**
comp=Z,8.8nm,0.8s
ILAR Eielson Array 49.05 32 P **P 12 33 33.1 -0.4**
comp=Z,7.6nm,0.7s,baz=258,slow=6.1,SNR=44
DIV Divide 49.67 37 *e*P **P 12 33 38.3 0.0**
comp=Z,51nm,1.1s
PAX Paxson 49.71 34 *e*P **P 12 33 39.0 +0.4**
PAX pmax pmax
comp=Z,12nm,0.7s
PAX Paxson 49.71 34 *e*P **P 12 33 39.0 +0.4**
comp=Z,12nm,0.7s
BMRM Bremner River 50.25 37 *e*P **P 12 33 42.9 +0.2**
comp=Z,24nm,1.1s
DOT Dot Lake 50.31 34 *e*P **P 12 33 42.7 -0.5**
comp=Z,13nm,0.6s
TKM2 Tokmak 2 51.63 300 *e*P **P 12 33 55.1 +1.5**
TKM2 pmax pmax
comp=Z,15nm,1.2s
TKM2 Tokmak 2 51.63 300 *e*P **P 12 33 55.1 +1.5**
comp=Z,15nm,1.2s
AAK Ala-Archa 52.49 300 *e*P **P 12 34 01.3 +1.4**
AAK pmax pmax
comp=Z,3.0nm,0.9s
AAK Ala-Archa 52.49 300 *e*P **P 12 34 01.3 +1.4**
comp=Z,2.9nm,0.9s
INK Inuvik 54.12 27 *e*P **P 12 34 11.8 +0.5**
comp=Z,7.2nm,0.6s,baz=295,slow=5.8,SNR=14
KKAR Karatay Array 55.11 301 *e*P **P 12 34 19.7 +0.8**
KKAR pmax pmax
comp=Z,1.0nm,0.6s
KKAR Karatay Array 55.11 301 *e*P **P 12 34 19.7 +0.8**
comp=Z,1.4nm,0.6s
WRA Warramunga Arr 56.70 191 P **P 12 34 29.1 -1.3**
comp=Z,2.1nm,0.5s,baz=11,slow=7.3,SNR=22
SVE Sverdlovsk 56.91 319⇑ *e*P **P 12 34 33.0 +1.5**
SVE pmax pmax
comp=Z,22nm,0.9s
DLBC Dease Lake 57.98 38 P **P 12 34 40.2 +1.1**
comp=Z,1.3nm,0.8s,baz=317,slow=8.7,SNR=4.3
ARU Arti 58.12 319 *d i*P **P 12 34 41.0 +1.0**
ARU 12 35 26.0
ARU 12 36 44.8
ARU S **S 12 42 40.4 +1.8**
ARU SS **SS 12 46 23.9 -5.9**
ARU pmax pmax
comp=Z,34nm,1.7s
ARU Arti 58.12 319 *e*P **P 12 34 40.5 +0.5**
comp=Z,16nm,0.9s
ASAR Alice Springs 60.42 190 P **P 12 34 55.1 -1.1**
comp=Z,1.1nm,0.6s,baz=6.1,slow=7.0,SNR=15
YKA Yellowknife Ar 63.43 31 P **P 12 35 15.7 -0.2**
comp=Z,2.8nm,0.8s,baz=298,slow=6.6,SNR=23
YKA PcP **PcP 12 35 52.3 -0.2**
comp=Z,0.5nm,0.6s,baz=299,slow=4.3,SNR=4.7
TMCR Tamitsa 64.25 332 *e*P **P 12 35 21.9 +0.6**
TMCR pmax pmax
comp=Z,14nm,0.4s
GEYT Alibeck 65.83 300 P **P 12 35 33.7 +1.5**
comp=Z,4.4nm,0.8s,baz=35,slow=5.4,SNR=7.7
OBN Obninsk 69.77 324 *i* P **P 12 35 56.3 -0.3**
OBN pmax pmax
comp=Z,10.0nm,1.1s
FINES FINESS Array B 70.29 333 P **P 12 36 00.6 +0.9**
comp=Z,11nm,0.8s,baz=72,slow=8.2,SNR=22
CMB Columbia Colle 72.69 55 *e*P **P 12 36 14.7 0.0**
CMB pmax pmax
comp=Z,31nm,1.1s
CMB Columbia Colle 72.69 55 *e*P **P 12 36 14.7 0.0**
comp=Z,31nm,1.1s
KBZ Khabaz 72.78 312 P **P 12 36 16.5 +1.5**
comp=Z,4.1nm,0.9s,baz=240,slow=1.5,SNR=6.9
KBZ LR LR 13 10 33.3
comp=Z,26nm,18.3s,baz=68,slow=38
KIV Kislovodsk 72.78 312 *e*P P 12 36 18.0 +2.8
KIV pmax pmax
comp=Z,8.0nm,0.9s
FFC Flin Flon 73.23 34 *e*P **P 12 36 17.1 -0.4**
FFC pmax pmax
comp=Z,16nm,1.1s
FFC Flin Flon 73.23 34 *e*P **P 12 36 17.1 -0.4**
comp=Z,16nm,1.1s
BMN Battle Mountai 73.44 52 *e*P **P 12 36 19.8 +0.6**
BMN pmax pmax
comp=Z,11nm,1.2s
BMN Battle Mountai 73.44 52 *e*P **P 12 36 19.8 +0.6**
comp=Z,11nm,1.2s
DLMT Dillon 73.46 46 *e*P **P 12 36 19.7 +0.4**
comp=Z,3.1nm,0.8s
FCC Fort Churchill 73.74 27 *e*P **P 12 36 19.6 -0.8**
FCC pmax pmax
comp=Z,13nm,1.1s
FCC Fort Churchill 73.74 27 *e*P **P 12 36 19.6 -0.8**
comp=Z,13nm,1.1s
NVAR Mina Array Bea 73.85 54 P **P 12 36 22.3 +0.6**
comp=Z,5.4nm,0.7s,baz=292,slow=6.8,SNR=26
BOZ Bozeman (W) 73.85 45 *e*P **P 12 36 21.6 0.0**
BOZ pmax pmax
comp=Z,5.0nm,1.0s
BOZ Bozeman (W) 73.85 45 *e*P **P 12 36 21.6 0.0**
comp=Z,5.5nm,1.0s
H17A Grant Village 75.19 46 *e*P P 12 36 31.3 +1.8
comp=Z,11nm,1.0s
NB2 NORSAR Subarra 75.53 338 P **P 12 36 31.3 +0.5**
comp=Z,6.2nm,0.8s,baz=38,slow=5.9
NOA NORSAR Array B 75.53 338 P **P 12 36 31.6 +0.8**
comp=Z,4.9nm,0.7s,baz=39,slow=5.7,SNR=12
R11A Troy Canyon, C 75.66 53 *e*P **P 12 36 31.9 -0.2**
comp=Z,5.7nm,1.0s
AKASG Malin Array Be 75.99 323 P **P 12 36 34.2 +0.7**
comp=Z,2.9nm,0.7s,baz=44,slow=5.9,SNR=11
AKASG Malin Array Be 75.99 323 *i* P **P 12 36 34.0 +0.5**
AKASG pmax pmax
comp=Z,3.0nm,0.7s
PDAR Pinedale Array 76.76 46 P **P 12 36 38.4 -0.1**
comp=Z,1.1nm,0.5s,baz=290,slow=1.4,SNR=11
BRTR Keskin Array B 80.72 313 P **P 12 37 01.9 +1.8**
comp=Z,1.9nm,0.9s,baz=116,slow=2.9,SNR=5.1
BRTR Keskin Array B 80.72 313 *i* P **P 12 37 01.6 +1.5**
BRTR pmax pmax
comp=Z,2.0nm,0.9s
MVCO Mesa Verde 80.83 50 *e*P **P 12 37 00.7 -0.2**
comp=Z,8.4nm,1.2s
ISCO Idaho Springs 80.94 47 *e*P **P 12 37 01.6 +0.1**
ISCO pmax pmax
comp=Z,5.0nm,1.1s
ISCO Idaho Springs 80.94 47 *e*P **P 12 37 01.6 +0.1**
comp=Z,4.9nm,1.1s
DPC Dobruska-Polom 82.03 329 *e*P **P 12 37 08.0 +1.3**
DPC Dobruska-Polom 82.03 329 *e*P **P 12 37 08.0 +1.3**
CLL Collm 82.62 331 *i* P **P 12 37 10.1 +0.4**
comp=Z,5.0nm,0.7s
CLL *e*PP PP 12 40 23.0 +4.3
CLL Collm 82.62 331 *i* P **P 12 37 10.1 +0.4**
CLL pmax pmax
comp=Z,5.0nm,0.7s
ECSD EROS Data Cent 83.25 39 *e*P **P 12 37 12.1 -1.0**
comp=Z,2.8nm,0.8s
ANMO Albuquerque 83.55 51 *ce*P **P 12 37 16.1 +1.0**
ANMO pmax pmax
comp=Z,7.0nm,1.2s
ANMO Albuquerque 83.55 51 *e*P **P 12 37 14.8 -0.3**
comp=Z,6.0nm,1.1s
KHC Kasperske Hory 84.11 330 *e*P **P 12 37 18.4 +1.0**
KHC Kasperske Hory 84.11 330 *e*P **P 12 37 18.4 +1.0**
121A Cookes Peak, D 84.24 54 *e*P **P 12 37 18.6 -0.1**
comp=Z,8.1nm,1.1s
GERES GERESS Array B 84.28 329 P **P 12 37 18.8 +0.4**
comp=Z,0.4nm,0.4s,baz=64,slow=3.1,SNR=5.6
BFO Black Forest 86.81 332 *ce*P **P 12 37 32.5 +1.6**
TXAR Lajitas Array 89.00 54 P **P 12 37 41.6 -0.2**
comp=Z,1.9nm,0.8s,baz=309,slow=3.4,SNR=13
GOGA Godfrey 97.75 38 *e*P Pdif 12 38 21.9 0.0
GOGA pmax pmax
comp=Z,13nm,0.6s
GOGA Godfrey 97.75 38 *e*P Pdif 12 38 21.9 0.0
comp=Z,13nm,0.6s
LPAZ La Paz 145.34 63 PKPbc **PKPdf 12 44 25.3 -0.3**
comp=Z,3.1nm,0.8s,baz=1.8,slow=3.7,SNR=6.9

*ATH **30** 12:27:28.4, 37.°74N×26.°92E, h29km±1km, ML2.6/5, Error ellipse: s-maj=4.0km s-min=1.4km az=94.0*
*ISCJB **30** 12:27:30.7±0.5, 37.°79N±0.°03×26.°86E±0.°03, h12km±4km, Error ellipse: s-maj=5.2km s-min=3.9km az=34.5*
*CSEM **30** 12:27:30.3±0.2, 37.°76N×26.°84E, h15km, ML2.6, Error ellipse: s-maj=6.8km s-min=4.5km az=41.0*
*DDA **30** 12:27:30.5, 37.°79N×26.°87E, h7km, Md2.8*
ISC 30 12:27:30.0±0.9, 37.°76N±0.°03×26.°88E±0.°03, h19km±2km, n33, σ0°74/57, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
SMG	**Samos**	**0.06**	**213**	P	**Pg**		**12 27 34.5**	**+0.9**
SMG				S	**Sg**		**12 27 35.5**	**-0.5**
SMG	**Samos**	**0.06**	**213**	P	**Pg**		**12 27 34.5**	**+0.9**
SMG				S	**Sg**		**12 27 35.5**	**-0.5**
SMG				AML	AML		12 27 36.5	
	comp=E,25726μm,0.2s							
SMG				AML	AML		12 27 36.5	
	comp=N,35886μm,0.2s							
GCAM	**G?zelcaml?**	**0.29**	**101**	P	**Pg**		**12 27 36.7**	**+0.2**
GCAM				S	**Sb**		**12 27 41.4**	**+0.5**
GCAM	**G?zelcaml?**	**0.29**	**101**	*i* P	**Pg**		**12 27 36.7**	**+0.2**
GCAM				*i* S	**Sb**		**12 27 41.4**	**+0.5**
DGB	**˜zmir**	**0.30**	**1**	*i* P	**Pg**		**12 27 36.0**	**-0.6**
ZEY	**˜zmir**	**0.57**	**329**	*i* P	**Pb**		**12 27 41.0**	**-0.3**
ZEY				*i* S	**Sg**		**12 27 49.2**	**+0.2**
URLA	**Izmir**	**0.64**	**340**	P	**Pb**		**12 27 42.4**	**-0.2**
URLA				S	**Sg**		**12 27 51.8**	**+0.3**
URLA	**Izmir**	**0.64**	**340**	*i* P	**Pb**		**12 27 42.4**	**-0.2**
URLA				*i* S	**Sg**		**12 27 51.8**	**+0.3**
AYDN	**Tasoluk**	**0.80**	**96**	P	**Pg**		**12 27 46.0**	**+0.2**
AYDN				S	**Sb**		**12 27 56.1**	**+0.3**
AYDN	**Tasoluk**	**0.80**	**96**	*i* P	**Pg**		**12 27 46.0**	**+0.2**
AYDN				*i* S	**Sb**		**12 27 56.1**	**+0.3**
BDRM	**Kayabasi**	**0.82**	**146**	P	**Pn**		**12 27 47.0**	**+0.4**
BDRM				S	**Sn**		**12 27 58.8**	**+0.6**
BDRM	**Kayabasi**	**0.82**	**146**	*i* P	**Pn**		**12 27 47.0**	**+0.4**
BDRM				*i* S	**Sn**		**12 27 58.8**	**+0.6**
CHOS	**Chios island**	**0.90**	**315**	P	**Pn**		**12 27 48.5**	**+0.8**
CHOS				S	**Sn**		**12 28 00.0**	**-0.3**
CHOS	**Chios island**	**0.90**	**315**	P	**Pn**		**12 27 48.5**	**+0.8**
CHOS				S	**Sn**		**12 28 00.0**	**-0.3**
CHOS				AML	AML		12 28 03.2	
	comp=E,977μm,0.2s							
CHOS				AML	AML		12 28 03.6	
	comp=N,602μm,0.3s							
APE	**Apeiranthos**	**1.27**	**238**	P	**Pn**		**12 27 52.3**	**-0.4**
APE				S	**Sg**		**12 28 10.4**	**-0.9**
APE	**Apeiranthos**	**1.27**	**238**	P	**Pn**		**12 27 52.3**	**-0.4**
APE				S	**Sg**		**12 28 10.4**	**-0.9**
APE				AML	AML		12 28 15.9	
	comp=E,155μm,0.3s							
APE				AML	AML		12 28 17.4	
	comp=N,272μm,0.2s							
AKHS	**Akhisar**	**1.34**	**33**	P	**Pg**		**12 27 56.0**	**0.0**
AKHS				S	**Sb**		**12 28 12.0**	**+0.6**
AKHS	**Akhisar**	**1.34**	**33**	*i* P	**Pg**		**12 27 56.0**	**0.0**
AKHS				*i* S	**Sb**		**12 28 12.0**	**+0.6**
MANT	**Manisa**	**1.52**	**61**	P	**Pg**		**12 27 58.9**	**-0.4**
MANT				S	**Sb**		**12 28 16.6**	**0.0**
MANT	**Manisa**	**1.52**	**61**	*i* P	**Pg**		**12 27 58.9**	**-0.4**
MANT				*i* S	**Sb**		**12 28 16.6**	**0.0**
PRK	**Paraskevi**	**1.56**	**343**	P	**Pb**		**12 27 57.5**	**-0.8**
PRK				S	**Sn**		**12 28 16.2**	**-0.2**
PRK	**Paraskevi**	**1.56**	**343**	P	**Pb**		**12 27 57.5**	**-0.8**
PRK				S	**Sn**		**12 28 16.2**	**-0.2**
PRK				AML	AML		12 28 22.6	
	comp=E,283μm,0.7s							
PRK				AML	AML		12 28 29.5	
	comp=N,249μm,0.5s							
TURN	**Turunc**	**1.64**	**122**	*i* P	**Pn**		**12 27 55.2**	**-2.5**
SIGR	**SIGRI**	**1.66**	**331**	P	**Pn**		**12 27 57.2**	**-0.9**
SIGR				S	**Sb**		**12 28 21.5**	**+1.1**
SIGR	**SIGRI**	**1.66**	**331**	P	**Pn**		**12 27 57.2**	**-0.9**
SIGR				S	**Sb**		**12 28 21.6**	**+1.1**
SIGR				AML	AML		12 28 28.2	
	comp=N,143μm,0.5s							
SIGR				AML	AML		12 28 28.2	
	comp=E,218μm,0.6s							
DNZL	**Cakiroluk**	**1.72**	**92**	P	**Pg**		**12 28 03.7**	**+0.5**
DNZL	**Cakiroluk**	**1.72**	**92**	*i* P	**Pg**		**12 28 03.7**	**+0.5**
DNZL				*i* S	**Sg**		**12 28 27.4**	**+1.7**
KHAL	**Karahalli**	**2.15**	**73**	P	**Pg**		**12 28 10.8**	**-0.6**
KHAL	**Karahalli**	**2.15**	**73**	*i* P	**Pg**		**12 28 10.8**	**-0.6**
GDZ	**Gediz**	**2.44**	**56**	*i* P	**Pg**		**12 28 17.7**	**+0.8**
GDZ				*i* S	Sn		12 28 21.6	-17
LIA	**Limnos Island**	**2.52**	**329**	P	**Pn**		**12 28 08.8**	**-1.0**
SMTH	**Samothraki Isl**	**2.91**	**339**	P	**Pn**		**12 28 16.4**	**+1.2**
SMTH	**Samothraki Isl**	**2.91**	**339**	P	**Pn**		**12 28 16.4**	**+1.2**

IDC 30 12:30:49.3±3.2, 36.°07N×142.°93E, h0km, mb3.4/3, mb1 3.5/4, mb1mx3.3/37, mbtmp3.3/4, ML2.9/1, Error ellipse: s-maj=91.0km s-min=30.2km az=57.0, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**3.84**	**278**	Pn	Pn		12 31 49.3	-0.3
	0.9nm,0.3s,baz=89,slow=15,SNR=6.0							
KURBB	**Kurchatov Arra**	**47.55**	**309**	P	P		12 39 26.2	-0.1
	0.4nm,0.6s,baz=81,slow=8.0,SNR=4.5							
WRA	**Warramunga Arr**	**56.30**	**190**	P	P		12 40 31.4	-0.4
	0.3nm,0.5s,baz=7.2,slow=7.0,SNR=5.4							
ASAR	**Alice Springs**	**60.02**	**190**	P	P		12 40 58.1	+0.2
	0.2nm,0.8s,baz=2.2,slow=7.3,SNR=3.8							

*ATH **30** 12:33:56.4, 37.°77N×26.°81E, h22km±1km, ML2.5/5, Error ellipse: s-maj=2.7km s-min=1.2km az=119.0*
*DDA **30** 12:33:57.0, 37.°80N×26.°88E, h7km, Md2.4*
*ISCJB **30** 12:33:57.1±0.5, 37.°80N±0.°03×26.°88E±0.°03, h12km±3km, Error ellipse: s-maj=5.1km s-min=3.7km az=141.5*
*CSEM **30** 12:33:57.2±0.3, 37.°78N×26.°85E, h10km, ML2.5, Error ellipse: s-maj=8.2km s-min=4.8km az=47.0*
ISC 30 12:33:56.9±0.8, 37.°79N±0.°02×26.°89E±0.°03, h15km±5km, n28, σ0°51/49, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
SMG	**Samos**	**0.10**	**206**	P	**Pg**		**12 34 00.2**	**+0.1**
SMG				S	**Sg**		**12 34 02.1**	**-0.1**
SMG	**Samos**	**0.10**	**206**	P	**Pg**		**12 34 00.2**	**+0.1**
SMG				S	**Sg**		**12 34 02.1**	**-0.1**
SMG				AML	AML		12 34 02.9	
	comp=E,23284μm,0.2s							
SMG				AML	AML		12 34 02.9	
	comp=N,31110μm,0.2s							
DGB	**˜zmir**	**0.26**	**359**	*i* P	**Pg**		**12 34 02.4**	**-0.1**
DGB				*i* S	**Sg**		**12 34 06.2**	**-0.1**
GCAM	**G?zelcaml?**	**0.29**	**109**	P	**Pg**		**12 34 03.0**	**0.0**
GCAM				S	**Sg**		**12 34 07.6**	**+0.5**
GCAM	**G?zelcaml?**	**0.29**	**109**	*i* P	**Pg**		**12 34 03.0**	**0.0**
GCAM				*i* S	**Sg**		**12 34 07.6**	**+0.5**
ZEY	**˜zmir**	**0.54**	**326**	*i* P	**Pg**		**12 34 07.5**	**-0.1**
ZEY				*i* S	**Sb**		**12 34 15.4**	**-0.2**
URLA	**Izmir**	**0.61**	**338**	P	**Pg**		**12 34 08.9**	**0.0**
URLA				S	**Sg**		**12 34 17.2**	**+0.2**
URLA	**Izmir**	**0.61**	**338**	*i* P	**Pg**		**12 34 08.8**	**0.0**
URLA				*i* S	**Sg**		**12 34 17.2**	**+0.2**
AYDN	**Tasoluk**	**0.80**	**99**	P	**Pg**		**12 34 12.1**	**-0.3**
AYDN				S	**Sg**		**12 34 22.7**	**-0.2**
AYDN	**Tasoluk**	**0.80**	**99**	*i* P	**Pg**		**12 34 12.1**	**-0.3**
AYDN				*i* S	**Sg**		**12 34 22.7**	**-0.2**
BDRM	**Kayabasi**	**0.85**	**149**	P	**Pb**		**12 34 13.8**	**+0.4**
BDRM				S	**Sg**		**12 34 24.7**	**+0.1**
BDRM	**Kayabasi**	**0.85**	**149**	*i* P	**Pb**		**12 34 13.8**	**+0.4**
BDRM				*i* S	**Sg**		**12 34 24.7**	**+0.1**
CHOS	**Chios island**	**0.89**	**312**	P	**Pb**		**12 34 14.6**	**+0.6**
CHOS				S	**Sb**		**12 34 26.0**	**+0.3**
CHOS	**Chios island**	**0.89**	**312**	P	**Pb**		**12 34 14.6**	**+0.6**
CHOS				S	**Sb**		**12 34 26.0**	**+0.3**
CHOS				AML	AML		12 34 28.4	
	comp=N,478μm,0.4s							
CHOS				AML	AML		12 34 30.0	
	comp=E,854μm,0.3s							
NIS1	**Nisyros Isl.**	**1.21**	**169**	P	**Pg**		**12 34 20.6**	**+0.3**
NIS1	**Nisyros Isl.**	**1.21**	**169**	P	**Pg**		**12 34 20.6**	**+0.3**
APE	**Apeiranthos**	**1.30**	**237**	P	**Pn**		**12 34 20.4**	**-0.2**
APE	**Apeiranthos**	**1.30**	**237**	P	**Pn**		**12 34 20.4**	**-0.2**
APE				S	**Sb**		**12 34 36.0**	**-1.6**
APE				AML	AML		12 34 42.3	
	comp=E,144μm,0.3s							
APE				AML	AML		12 34 43.3	
	comp=N,200μm,0.2s							
MANT	**Manisa**	**1.49**	**62**	P	**Pg**		**12 34 25.9**	**+0.3**
MANT				S	**Sn**		**12 34 42.1**	**-0.5**
MANT	**Manisa**	**1.49**	**62**	*i* P	**Pg**		**12 34 25.9**	**+0.3**
MANT				*i* S	**Sn**		**12 34 42.1**	**-0.5**
PRK	**Paraskevi**	**1.53**	**342**	P	**Pb**		**12 34 25.7**	**+0.8**
PRK				S	**Sn**		**12 34 43.2**	**-0.1**
PRK	**Paraskevi**	**1.53**	**342**	P	**Pb**		**12 34 25.7**	**+0.8**
PRK				S	**Sn**		**12 34 43.2**	**-0.1**
PRK				AML	AML		12 34 49.8	
	comp=N,200μm,0.3s							
PRK				AML	AML		12 34 51.0	
	comp=E,261μm,0.5s							
SIGR	**SIGRI**	**1.63**	**330**	P	**Pb**		**12 34 26.5**	**-0.2**
SIGR				S	**Sn**		**12 34 46.8**	**+1.0**
SIGR	**SIGRI**	**1.63**	**330**	P	**Pb**		**12 34 26.5**	**-0.2**
SIGR				S	**Sn**		**12 34 46.8**	**+1.0**
SIGR				AML	AML		12 34 53.2	
	comp=N,129μm,0.2s							
SIGR				AML	AML		12 34 54.1	
	comp=E,192μm,0.5s							
DNZL	**Cakiroluk**	**1.71**	**93**	P	**Pg**		**12 34 30.3**	**+0.5**
DNZL	**Cakiroluk**	**1.71**	**93**	*i* P	**Pg**		**12 34 30.3**	**+0.5**

SMTH	**Samothraki Isl**	**2.87 339**	P	**Pn**	**12 34 41.2**	**-1.0**
SMTH	**Samothraki Isl**	**2.87 339**	P	**Pn**	**12 34 41.2**	**-1.0**

IDC 30 12:35:13.4±8.3, 36°61′N×141°96′E, h0km, mb3.4/2, mb1 3.5/3, mb1mx3.2/47, mbtmp3.2/3, ML2.3/1, Error ellipse: s-maj=180.4km s-min=43.5km az=30.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**3.02**	**270**	Pn	Pn	12 36 02.4	-0.1
	0.4nm,0.3s,baz=84,slow=13,SNR=6.8						
WRA	**Warramunga Arr**	**56.70**	**189**	P	P	12 44 58.6	-0.1
	0.3nm,0.7s,baz=3.1,slow=7.4,SNR=5.8						
ASAR	**Alice Springs**	**60.43**	**188**	P	P	12 45 24.6	-0.1
	0.5nm,1.0s,baz=21,slow=12,SNR=6.4						

*ISCJB **30** 12:35:25.2±0.5, 37°.83N±0°.03×26°.93E±0°.04, h1km±7km, Error ellipse: s-maj=6.5km s-min=3.5km az=142.1*
*ATH **30** 12:35:25.5, 37°.83N×26°.83E, h7km±17km, ML2.3/4, Error ellipse: s-maj=17.6km s-min=0.9km az=192.0*
*CSEM **30** 12:35:25.4±0.3, 37°.83N×26°.90E, h2km, ML2.3, Error ellipse: s-maj=9.2km s-min=4.2km az=47.0*
*DDA **30** 12:35:25.2, 37°.82N×26°.90E, h7km, Md2.7*
ISC 30 12:35:24.7±0.9, 37°81N±0°.03×26°89E±0°.03, h17km±8km, n20, σ0§48/38, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SMG	**Samos**	**0.11**	**201**	P	**Pb**	**12 35 28.2**	**-0.1**
SMG				S	**Sb**	**12 35 30.4**	**-0.4**
SMG	**Samos**	**0.11**	**201**	P	**Pb**	**12 35 28.2**	**-0.1**
SMG				S	**Sb**	**12 35 30.4**	**-0.4**
SMG				AML	AML	12 35 30.8	
	comp=N,17145μm,0.2s						
SMG				AML	AML	12 35 31.2	
	comp=E,12017μm,0.2s						
DGB	**˜zmir**	**0.24**	**359**	*i* P	**Pg**	**12 35 30.2**	**+0.1**
DGB				*i* S	**Sg**	**12 35 33.6**	**-0.2**
GCAM	**G?zelcaml?**	**0.30**	**112**	P	**Pg**	**12 35 31.2**	**+0.2**
GCAM				S	**Sg**	**12 35 35.3**	**-0.1**
GCAM	**G?zelcaml?**	**0.30**	**112**	*i* P	**Pg**	**12 35 31.2**	**+0.2**
GCAM				*i* S	**Sg**	**12 35 35.3**	**-0.1**
ZEY	**˜zmir**	**0.52**	**325**	*i* P	**Pb**	**12 35 35.3**	**-0.1**
ZEY				*i* S	**Sb**	**12 35 43.6**	**+0.9**
URLA	**Izmir**	**0.59**	**337**	P	**Pb**	**12 35 36.8**	**+0.1**
URLA				S	**Sb**	**12 35 45.5**	**+0.7**
URLA	**Izmir**	**0.59**	**337**	*i* P	**Pb**	**12 35 36.8**	**+0.1**
URLA				*i* S	**Sb**	**12 35 45.5**	**+0.7**
AYDN	**Tasoluk**	**0.80**	**100**	P	**Pb**	**12 35 40.1**	**-0.1**
AYDN	**Tasoluk**	**0.80**	**100**	*i* P	**Pb**	**12 35 40.1**	**-0.1**
BDRM	**Kayabasi**	**0.87**	**149**	P	**Pn**	**12 35 42.4**	**+0.3**
BDRM				S	**Sg**	**12 35 53.2**	**+0.2**
BDRM	**Kayabasi**	**0.87**	**149**	*i* P	**Pn**	**12 35 42.4**	**+0.3**
BDRM				*i* S	**Sg**	**12 35 53.2**	**+0.2**
CHOS	**Chios island**	**0.87**	**312**	P	**Pb**	**12 35 40.3**	**-1.1**
CHOS				S	**Sb**	**12 35 52.8**	**-0.1**
CHOS	**Chios island**	**0.87**	**312**	P	**Pb**	**12 35 40.3**	**-1.1**
CHOS				S	**Sb**	**12 35 52.8**	**-0.1**
CHOS				AML	AML	12 35 58.0	
	comp=N,260μm,0.3s						
CHOS				AML	AML	12 35 58.0	
	comp=E,514μm,0.3s						
MANT	**Manisa**	**1.48**	**62**	P	**Pg**	**12 35 53.1**	**-0.1**
MANT				S	**Sb**	**12 36 10.2**	**-0.4**
MANT	**Manisa**	**1.48**	**62**	*i* P	**Pg**	**12 35 53.1**	**-0.1**
MANT				*i* S	**Sb**	**12 36 10.2**	**-0.4**
PRK	**Paraskevi**	**1.51**	**342**	P	**Pg**	**12 35 53.2**	**-0.6**
PRK				S	**Sg**	**12 36 12.9**	**-0.5**
PRK	**Paraskevi**	**1.51**	**342**	P	**Pg**	**12 35 53.2**	**-0.6**
PRK				S	**Sg**	**12 36 12.9**	**-0.5**
PRK				AML	AML	12 36 19.0	
	comp=E,161μm,0.5s						
PRK				AML	AML	12 36 20.1	
	comp=N,116μm,0.5s						
SIGR	**SIGRI**	**1.61**	**330**	P	**Pg**	**12 35 56.3**	**+0.6**
SIGR				S	**Sg**	**12 36 17.3**	**+0.6**
SIGR	**SIGRI**	**1.61**	**330**	P	**Pg**	**12 35 56.4**	**+0.6**
SIGR				S	**Sg**	**12 36 17.3**	**+0.6**
SIGR				AML	AML	12 36 21.2	
	comp=N,78μm,0.3s						
SIGR				AML	AML	12 36 22.0	
	comp=E,115μm,0.5s						

*IDC **30** 12:46:55.2±1.0, 4°.46S×139°.70E, h0km, mb3.9/3, mb1 4.2/7, mb1mx3.9/24, mbtmp4.1/7, ML4.0/3, MS3.0/2, Ms1 3.1/2, ms1mx2.4/23, Error ellipse: s-maj=31.3km s-min=18.8km az=107.0*
*ISCJB **30** 12:46:56.3±0.7, 4°.61S±0°.06×139°.8E±0°.1, h27km, mb3.8/3, MS2.8/1, Error ellipse: s-maj=17.7km s-min=6.9km az=20.1*
ISC 30 12:46:58.8±0.8, 4°50S±0°.09×139°8E±0°.1, h27km, n10, σ1§42/10, mb4.0/3, Irian Jaya

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAY	**Jayapura**	**2.19**	**25**	Pn	**Pn**	**12 47 31.2**	**-2.2**
	2.5nm,0.3s,baz=171,slow=23,SNR=23						
JAY				Sn	**Sn**	**12 48 00.2**	**+0.6**
	5.6nm,0.3s,baz=277,slow=23,SNR=8.1						
PMG	**Port Moresby**	**8.80**	**124**	Pn	**Pn**	**12 49 04.3**	**-0.1**
	1.3nm,0.3s,baz=315,slow=5.7,SNR=4.3						
PMG				LR	LR	12 53 44.6	
	comp=Z,175nm,18.6s,baz=51,slow=46						
WRA	**Warramunga Arr**	**16.23**	**199**	Pn	**Pn**	**12 50 44.5**	**-0.6**
	0.7nm,0.3s,baz=23,slow=12,SNR=22						
WRA				Sn	Sn	12 53 33.7	-11
	0.2nm,0.3s,baz=12,slow=22,SNR=4.8						
WRA				Lg	Lg	12 55 27.8	
	0.4nm,0.3s,baz=16,slow=30,SNR=6.0						
FITZ	**Fitzroy Crossi**	**19.33**	**225**	P	**P**	**12 51 20.9**	**-1.3**
	0.2nm,0.3s,baz=51,slow=16,SNR=5.2						
FITZ				S	Sn	12 54 43.6	-16
	0.4nm,0.3s,baz=158,slow=13,SNR=5.0						
ASAR	**Alice Springs**	**19.88**	**196**	P	**P**	**12 51 28.5**	**+0.4**
	0.5nm,0.3s,baz=26,slow=9.4,SNR=38						
ASAR				S	S	12 55 01.2	-9.5
	0.1nm,0.3s,baz=5.9,slow=28,SNR=4.0						
ASAR				Lg	Lg	12 57 21.4	
	baz=12,slow=30,SNR=3.7						
CMAR	**Chiang Mai Arr**	**46.25**	**301**	LR	LR	13 15 41.2	
	comp=Z,9.7nm,19.4s,baz=120,slow=37						
MKAR	**Makanchi Array**	**71.84**	**322**	P	**P**	**12 58 20.6**	**+1.3**
	1.1nm,0.7s,baz=118,slow=8.2,SNR=7.1						
ZALV	**Zalesovo Beam**	**74.01**	**330**	P	**P**	**12 58 31.2**	**-0.6**
	0.5nm,0.3s,baz=98,slow=6.0,SNR=3.0						
ILAR	**Eielson Array**	**87.02**	**24**	P	**P**	**12 59 43.5**	**+2.1**
	0.3nm,0.8s,baz=290,slow=2.6,SNR=2.9						
LPAZ	**La Paz**	**145.53**	**127**	PKPbc	**PKPab**	**13 06 37.3**	**+0.6**
	1.5nm,0.8s,baz=184,slow=5.3,SNR=4.6						

*ISCJB **30** 13:08:14.6±0.5, 39°.10N±0°.03×28°.98E±0°.03, h7km±5km, Error ellipse: s-maj=4.5km s-min=4.1km az=164.1*
*DDA **30** 13:08:14.7, 39°.08N×28°.97E, h7km, Md2.7*
*ISK **30** 13:08:14.4, 39°.09N×28°.98E, h9km, ML2.7*
*CSEM **30** 13:08:14.7±0.1, 39°.10N×28°.98E, h5km, MD2.7, Error ellipse: s-maj=1.6km s-min=1.4km az=86.0*
ISC 30 13:08:14.5±0.8, 39°09N±0°.02×28°98E±0°.02, h17km±6km, n37, σ0§44/55, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.21**	**257**	P	**Pg**	**13 08 19.5**	**0.0**
DEMI				S	**Sg**	**13 08 22.7**	**-0.2**
DEMI	**Demirci**	**0.21**	**257**	*i* P	**Pg**	**13 08 19.5**	**0.0**
DEMI				*i* S	**Sg**	**13 08 22.7**	**-0.2**
GDZ	**Gediz**	**0.39**	**90**	P	**Pg**	**13 08 22.6**	**0.0**
GDZ				S	**Sg**	**13 08 28.4**	**+0.2**
GDZ	**Gediz**	**0.39**	**90**	*i* P	**Pg**	**13 08 22.6**	**0.0**
GDZ				*i* S	**Sg**	**13 08 28.4**	**+0.2**
KULA	**Kula-Manisa**	**0.63**	**203**	PG	**Pg**	**13 08 26.8**	**-0.1**
KULA				*e*SG	**Sb**	**13 08 35.6**	**+0.1**
KULA	**Kula-Manisa**	**0.63**	**203**	*i* Pg	**Pg**	**13 08 26.8**	**-0.1**
KULA				*e*Sg	**Sb**	**13 08 35.6**	**+0.1**
MANT	**Manisa**	**0.68**	**209**	P	**Pb**	**13 08 28.1**	**+0.1**
MANT				S	**Sg**	**13 08 37.1**	**0.0**
MANT	**Manisa**	**0.68**	**209**	*i* P	**Pb**	**13 08 28.1**	**+0.1**
MANT				*i* S	**Sg**	**13 08 37.1**	**0.0**
KHAL	**Karahalli**	**0.82**	**151**	P	**Pn**	**13 08 31.1**	**-0.3**
KHAL				S	**Sg**	**13 08 42.1**	**+0.6**
KHAL	**Karahalli**	**0.82**	**151**	*i* P	**Pn**	**13 08 31.1**	**-0.3**
KHAL				*i* S	**Sg**	**13 08 42.1**	**+0.6**
KHL	**Karahalli**	**0.88**	**151**	PG	**Pg**	**13 08 31.7**	**+0.1**
KHL				*e*SG	**Sn**	**13 08 44.4**	**-0.1**
KHL	**Karahalli**	**0.88**	**151**	*i* Pg	**Pg**	**13 08 31.7**	**+0.1**
KHL				*e*Sg	**Sn**	**13 08 44.4**	**-0.1**
AKHS	**Akhisar**	**0.93**	**257**	P	**Pn**	**13 08 32.9**	**+0.1**
AKHS				S	**Sg**	**13 08 44.7**	**-0.1**
AKHS	**Akhisar**	**0.93**	**257**	*i* P	**Pn**	**13 08 32.9**	**+0.1**
AKHS				*i* S	**Sg**	**13 08 44.7**	**-0.1**
AKS	**Akhisar**	**0.93**	**257**	*e*PG	**Pn**	**13 08 32.7**	**0.0**
AKS				*e*SG	**Sn**	**13 08 46.1**	**+0.4**
ORLT	**Orhaneli**	**0.96**	**356**	*e*PG	**Pn**	**13 08 33.3**	**+0.1**
IGD	**Bursa**	**1.18**	**8**	*i* P	**Pn**	**13 08 35.1**	**-1.2**
IGD				*i* S	**Sb**	**13 08 50.3**	**-1.3**
BALY	**Balya**	**1.23**	**302**	P	**Pg**	**13 08 38.2**	**-0.1**
BALY	**Balya**	**1.23**	**302**	*i* P	**Pg**	**13 08 38.2**	**-0.1**
KCTX	**Karacabey (Bur**	**1.27**	**338**	*e*PN	**Pg**	**13 08 39.2**	**+0.3**
KCTX	**Karacabey (Bur**	**1.27**	**338**	*e*Pn	**Pg**	**13 08 39.2**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.28**	**357**	*e*PN	**Pg**	**13 08 38.7**	**-0.4**
MDNY				*e*SN	**Sg**	**13 08 57.1**	**+1.3**
MDNY	**Mudanya-Bursa**	**1.28**	**357**	*e*Pn	**Pg**	**13 08 38.7**	**-0.4**
MDNY				*e*Sn	**Sg**	**13 08 57.2**	**+1.3**
CAVI	**Cavuskoy**	**1.30**	**31**	*e*PN	**Pg**	**13 08 39.6**	**+0.1**
CAVI	**Cavuskoy**	**1.30**	**31**	*e*Pn	**Pg**	**13 08 39.6**	**+0.1**
IZI	**Iznik**	**1.30**	**17**	*e*PN	**Pb**	**13 08 38.9**	**+0.3**
GEMT	**Gemlik**	**1.35**	**7**	*e*PN	**Pb**	**13 08 39.6**	**+0.3**
GEMT	**Gemlik**	**1.35**	**7**	*e*Pn	**Pb**	**13 08 39.7**	**+0.3**
GONE	**Gonen-Balikesi**	**1.38**	**314**	*e*PN	**Pg**	**13 08 40.7**	**-0.3**
GONE	**Gonen-Balikesi**	**1.38**	**314**	*e*Pn	**Pg**	**13 08 40.7**	**-0.3**
ADVT	**Abdulvahap**	**1.46**	**23**	*e*PN	**Pb**	**13 08 41.5**	**+0.3**
ADVT	**Abdulvahap**	**1.46**	**23**	*e*Pn	**Pb**	**13 08 41.5**	**+0.3**
ARMT	**Armutlu**	**1.48**	**357**	*e*PN	**Pb**	**13 08 41.7**	**+0.2**
ARMT	**Armutlu**	**1.48**	**357**	*e*Pn	**Pb**	**13 08 41.7**	**+0.2**
EDC	**Edincik**	**1.52**	**326**	*e*PN	**Pb**	**13 08 42.6**	**+0.4**
EDC	**Edincik**	**1.52**	**326**	*e*Pn	**Pb**	**13 08 42.6**	**+0.4**
GULT	**Gulveren**	**1.79**	**41**	*e*PN	**Pb**	**13 08 46.3**	**-0.6**

SJA 30 13:24:58.9±0.7, 28°18S×71°39W, h3km±15km, ML3.4, MW3.8, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LCO	**Las Campanas**	**1.03**	**144**	*e*P	Pb	13 25 19.6	+0.1
LCO				*e*S	Sn	13 25 35.0	-0.6
AGUA	**GUANDACOL**	**2.86**	**118**	*e*P	Pb	13 25 48.3	-2.3
VCA	**Vinchina**	**2.86**	**102**	*e*P	Pb	13 25 48.4	-2.3
VCA				IAML		13 26 32.4	
	comp=Z,168nm,0.4s						
AMOG	**MOGNA**	**3.73**	**138**	*e*P	Pn	13 26 01.4	+3.8
RTLL	**Cerro Villicun**	**4.03**	**142**	*e*P	Pn	13 26 05.0	+3.3
RTLS	**Leoncito**	**4.04**	**154**	*e*P	Pn	13 26 06.1	+4.1
AUSP	**Uspallata**	**4.39**	**157**	*e*P	Pn	13 26 10.3	+3.6
CYA	**Choya**	**4.93**	**94**	*e*P	Pn	13 26 12.6	-1.4
CYA				IAML		13 27 17.4	
	comp=Z,20nm,0.5s						
MRA	**San Martin**	**6.47**	**132**	*e*P	Pn	13 26 35.9	+0.7
TCA	**Tanti**	**6.69**	**120**	IAML		13 28 01.7	
	comp=Z,9.8nm,0.5s						

*IDC **30** 13:24:57.5±1.5, 38°.59N×144°.66E, h0km, mb3.6/4, mb1 3.7/6, mb1mx3.4/52, mbtmp3.6/6, ML3.3/2, MS2.9/2, Ms1 3.0/2, ms1mx2.3/33, Error ellipse: s-maj=39.7km s-min=23.0km az=80.0*
*ISCJB **30** 13:24:59.3±1.1, 38°.65N±0°.07×144°.6E±0°.1, h29km, mb3.6/4, MS3.4/1, Error ellipse: s-maj=15.7km s-min=9.2km az=17.3*
ISC 30 13:25:01.6±1.4, 38°64N±0°.09×144°7E±0°.2, h29km, n8, σ0§72/8, mb3.7/4, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**5.54**	**250**	Pn	**Pn**	**13 26 21.4**	**-0.8**
	1.1nm,0.3s,baz=60,slow=10,SNR=14						
MJAR				Sn	**Sn**	**13 27 25.1**	**+0.2**
	0.5nm,0.3s,baz=116,slow=5.5,SNR=2.8						
ASAJ	**Asahikawa**	**5.69**	**345**	Pn	**Pn**	**13 26 23.3**	**-0.9**
	0.6nm,0.3s,baz=198,slow=15,SNR=9.2						
ASAJ				Sn	**Sn**	**13 27 28.6**	**0.0**
	0.5nm,0.3s,baz=198,slow=20,SNR=2.4						
JNU	**Nakatsue**	**12.46**	**248**	LR	LR	13 33 15.5	
	comp=Z,23nm,21.5s,baz=320,slow=40						
MKAR	**Makanchi Array**	**45.47**	**301**	P	**P**	**13 33 18.8**	**+0.7**
	0.3nm,0.7s,baz=87,slow=5.9,SNR=3.5						
WRA	**Warramunga Arr**	**59.07**	**191**	P	**P**	**13 34 58.5**	**-0.5**
	0.7nm,0.6s,baz=9.5,slow=6.8,SNR=8.1						
ASAR	**Alice Springs**	**62.79**	**191**	P	**P**	**13 35 24.5**	**+0.2**
	0.2nm,0.8s,baz=3.3,slow=16,SNR=3.6						
FINES	**FINESS Array B**	**68.58**	**333**	P	**P**	**13 36 01.8**	**+0.6**
	2.0nm,0.9s,baz=71,slow=10,SNR=3.5						
ESDC	**Sonseca Array**	**96.93**	**336**	LR	LR	14 28 01.9	
	comp=Z,13nm,18.5s,baz=230,slow=39						

IDC 30 13:28:14.6±3.7, 1°39N×98°70E, h0km, mb3.5/5, mb1 3.6/5, mb1mx3.4/45, mbtmp3.5/5, Error ellipse: s-maj=156.7km s-min=21.3km az=58.0, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**40.87**	**123**	P	P	13 35 58.1	-0.6
	0.4nm,0.3s,baz=309,slow=8.8,SNR=13						
ASAR	**Alice Springs**	**42.32**	**128**	P	P	13 36 11.1	+0.4
	0.1nm,0.4s,baz=301,slow=7.7,SNR=6.9						
SONM	**Songino Array**	**46.75**	**7**	P	P	13 36 46.0	+0.2
	0.3nm,0.4s,baz=185,slow=9.3,SNR=2.8						
MKAR	**Makanchi Array**	**47.44**	**345**	P	P	13 36 51.0	0.0
	0.1nm,0.3s,baz=161,slow=9.2,SNR=2.8						
ZALV	**Zalesovo Beam**	**53.63**	**350**	P	P	13 37 37.1	-0.6
	0.9nm,0.5s,baz=163,slow=7.1,SNR=4.5						

IDC 30 13:38:05.5±2.9, 58°11S×149°62E, h0km, mb3.7/2, mb1 3.7/3, mb1mx3.6/19, mbtmp3.5/3, ML2.9/1, Error ellipse: s-maj=215.0km s-min=27.6km az=76.0, West of Macquarie Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VNDA	**Vanda**	**19.94**	**172**	P	Pn	13 42 40.3	+0.1
	0.0nm,0.3s,baz=338,slow=10,SNR=3.7						
H01W1	**Cape Leeuwin H**	**33.07**	**299**	T	T	14 19 34.7	
	baz=146,slow=75,SNR=13						
H01W2	**Cape Leeuwin H**	**33.08**	**299**	T	T	14 19 38.0	
	baz=146,slow=75,SNR=12						
H01W3	**Cape Leeuwin H**	**33.09**	**299**	T	T	14 19 36.0	
	baz=146,slow=75,SNR=12						
ASAR	**Alice Springs**	**36.22**	**335**	P	P	13 45 10.8	+0.8
	0.7nm,0.7s,baz=158,slow=8.2,SNR=11						
WRA	**Warramunga Arr**	**39.73**	**337**	P	P	13 45 39.9	+0.3
	1.0nm,0.7s,baz=164,slow=7.1,SNR=7.2						
AKASG	**Malin Array Be**	**145.57**	**284**	PKPbc	PKPdf	13 57 42.3	-2.1
	1.7nm,0.8s,baz=99,slow=2.5,SNR=5.9						
FINES	**FINESS Array B**	**152.15**	**301**	PKPbc	PKPbc	13 58 00.2	-1.1
	3.7nm,1.0s,baz=98,slow=10,SNR=4.4						

*ISCJB **30** 13:40:07.0±0.7, 40°.87N±0°.04×142°.14E±0°.08, h57km, mb3.7/5, Error ellipse: s-maj=9.5km s-min=5.1km az=23.1*
*JMA **30** 13:40:07.9±0.1, 40°.91N×142°.13E, h50km±3km, M3.3*
JMA Felt I J1.
*IDC **30** 13:40:08.0±5.2, 40°.84N×141°.98E, h55km±59km, mb3.4/5, mb1 3.5/6, mb1mx3.1/37, mbtmp3.6/6, ML3.3/1, Error ellipse: s-maj=60.7km s-min=22.7km az=71.0*
ISC 30 13:40:08.3±1.0, 40°88N±0°.05×142°05E±0°.07, h57km, n21, σ0§67/20, mb3.6/5, 5D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JANG	**Nango**	**0.65**	**219**	⇓P	**Pn**	**13 40 21.8**	**0.0**
JANG				S	**Sn**	**13 40 31.5**	**-0.1**
JTM	**Tenmabayashi**	**0.75**	**263**	⇓P	**Pn**	**13 40 23.1**	**+0.1**
JTM				S	**Sn**	**13 40 34.0**	**+0.2**
JOT	**Ohata**	**0.91**	**304**	⇓P	**Pn**	**13 40 24.7**	**-0.3**
JKB	**Kayabe**	**1.26**	**323**	⇓P	**Pn**	**13 40 29.4**	**-0.3**
JKB				*e*S	**Sn**	**13 40 45.3**	**-0.4**
JAH	**Hinai**	**1.28**	**238**	⇓P	**Pn**	**13 40 30.7**	**+0.7**
JAH				S	**Sn**	**13 40 47.4**	**+1.2**
JSR	**Shiriuchi**	**1.39**	**298**	P	**Pn**	**13 40 31.9**	**+0.5**
JEM	**Erimo**	**1.41**	**36**	P	**Pn**	**13 40 31.7**	**+0.1**
JOM	**Ohasama**	**1.52**	**203**	*e*S	**Sn**	**13 40 52.2**	**+0.2**
JIW	**Iwasaki**	**1.58**	**260**	P	**Pn**	**13 40 34.6**	**+0.6**
ASAJ	**Asahikawa**	**3.26**	**7**	P	**Pn**	**13 40 57.5**	**+0.6**
	2.4nm,0.3s,baz=225,slow=10,SNR=19						
ASAJ				S	**Sn**	**13 41 35.9**	**+1.5**
	1.9nm,0.3s,baz=78,slow=20,SNR=4.5						
H11N2	**WAKE ISLAND Hy**	**29.89**	**127**	T	T	14 17 56.1	
	baz=321,slow=75,SNR=18						
H11N1	**WAKE ISLAND Hy**	**29.90**	**127**	T	T	14 17 55.1	
	baz=321,slow=75,SNR=23						
H11N3	**WAKE ISLAND Hy**	**29.91**	**127**	T	T	14 17 48.9	
	baz=321,slow=75,SNR=16						
H11S1	**WAKE ISLAND Hy**	**30.72**	**129**	T	T	14 18 49.5	
	baz=322,slow=76,SNR=6.2						
H11S3	**WAKE ISLAND Hy**	**30.73**	**129**	T	T	14 18 49.6	
	baz=322,slow=76,SNR=5.2						
H11S2	**WAKE ISLAND Hy**	**30.74**	**129**	T	T	14 18 52.6	
	baz=322,slow=76,SNR=5.3						
ZALV	**Zalesovo Beam**	**39.78**	**309**	P	**P**	**13 47 34.5**	**-0.9**
	0.5nm,0.3s,baz=98,slow=10,SNR=2.8						
MKAR	**Makanchi Array**	**42.60**	**299**	P	**P**	**13 47 58.8**	**+0.1**
	0.4nm,0.4s,baz=84,slow=11,SNR=7.9						
WRA	**Warramunga Arr**	**60.94**	**188**	P	**P**	**13 50 14.3**	**-1.0**
	0.2nm,0.4s,baz=4.2,slow=6.7,SNR=5.7						
ASAR	**Alice Springs**	**64.66**	**188**	P	**P**	**13 50 40.1**	**0.0**
	0.3nm,0.8s,baz=10,slow=8.3,SNR=4.8						
FINES	**FINESS Array B**	**65.66**	**332**	P	**P**	**13 50 46.2**	**+0.1**
	2.0nm,0.7s,baz=29,slow=9.6,SNR=5.3						

*IDC **30** 13:41:16.9±1.4, 34°.67S×72°.69W, h0km, mb3.6/2, mb1 4.0/4, mb1mx3.8/26, mbtmp3.7/4, ML4.0/2, MS3.2/1, Ms1 3.2/1, ms1mx2.7/22, Error ellipse: s-maj=55.6km s-min=27.4km az=94.0*
*ISCJB **30** 13:41:20.8±0.9, 34°.66S±0°.04×72°.6W±0°.1, h42km±15km, mb3.5/2, Error ellipse: s-maj=15.3km s-min=4.8km az=19.3*
*GUC **30** 13:41:20.3±0.5, 34°.67S×72°.46W, h65km±56km, ML3.8*
ISC 30 13:41:22.4±1.0, 34°68S±0°.05×72°6W±0°.1, h40km±11km, n23, σ1§38/29, 1C-2D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
COCH	**Cobquecura**	**1.46**	**187**	⇓*i*P	**Pn**	**13 41 45.6**	**-0.6**
COCH				*i* S	**Sn**	**13 42 02.6**	**-1.4**
COCH				IAML		13 42 04.5	
	comp=N,1μm,0.2s						
CCHI	**Chillan**	**1.96**	**169**	⇑*i*P	**Pn**	**13 41 52.9**	**-0.1**
CCHI				*i* S	**Sn**	**13 42 16.4**	**+0.1**
CCHI				IAML		13 42 19.2	
	comp=N,2μm,0.5s						
STL	**Santa Lucia**	**2.02**	**53**	*e*P	Pn	**13 41 52.5**	**-1.5**
STL				*i* S	**Sn**	**13 42 17.0**	**-1.0**
SJCH	**San Jose de Ma**	**2.10**	**61**	*e*P	Pn	**13 41 53.8**	**-1.4**
SJCH				*i* S	**Sn**	**13 42 18.5**	**-1.7**
ROC1	**El Roble**	**2.13**	**37**	*e*P	Pn	**13 41 54.6**	**-1.1**
ROC1				*e*S	**Sn**	**13 42 21.4**	**+0.3**
ROCH	**El Roble**	**2.14**	**37**	⇓*i*P	Pn	**13 41 54.3**	**-1.5**
ROCH				*i* S	**Sn**	**13 42 26.3**	**+5.0**
ROCH				IAML		13 42 31.5	
	comp=E,550nm,0.4s						
CANA	**Caviahue**	**3.42**	**160**	*e*P	**Pn**	**13 42 14.3**	**+1.1**
CANA				IAML		13 42 30.7	
	comp=Z,749nm,1.1s						
CANA				*e*S	**Sn**	**13 42 54.0**	**+1.3**
AUSP	**Uspallata**	**3.61**	**48**	*e*P	**Pn**	**13 42 16.7**	**+0.6**
RTLS	**Leoncito**	**3.97**	**44**	*e*P	**Pn**	**13 42 21.6**	**+0.6**
RTCV	**Cerro Valdivia**	**4.39**	**51**	*e*P	**Pn**	**13 42 27.1**	**+0.5**
RTLL	**Cerro Villicun**	**4.79**	**47**	*e*P	**Pn**	**13 42 31.7**	**-0.4**
AMOG	**MOGNA**	**5.07**	**44**	*e*P	**Pn**	**13 42 35.6**	**-0.3**
ACAN	**Cantantal**	**5.09**	**63**	*e*P	**Pn**	**13 42 36.1**	**-0.1**
MRA	**San Martin**	**6.14**	**70**	*e*P	**Pn**	**13 42 50.4**	**-0.3**
AGUA	**GUANDACOL**	**6.23**	**35**	*e*P	**Pn**	**13 42 51.1**	**-0.7**
PLCA	**Paso Flores**	**6.25**	**166**	Pn	**Pn**	**13 42 52.7**	**+0.7**
	comp=Z,0.5nm,0.3s,baz=357,slow=13,SNR=15						
SUCO	**SUCO**	**6.51**	**80**	*e*P	**Pn**	**13 42 55.8**	**+0.1**
VCA	**Vinchina**	**6.99**	**33**	*e*P	**Pn**	**13 43 01.5**	**-0.9**
VCA				IAML		13 43 04.3	
	comp=Z,67nm,0.2s						
CPUP	**Villa Florida**	**15.53**	**62**	LR	LR	13 51 28.9	
	comp=Z,87nm,19.8s,baz=240,slow=39						
LPAZ	**La Paz**	**18.75**	**13**	P	**Pn**	**13 45 40.0**	**+0.8**
	comp=Z,0.4nm,0.3s,baz=180,slow=7.2,SNR=14						
SIV	**San Ignacio**	**21.28**	**32**	P	**P**	**13 46 04.4**	**-1.2**
	comp=Z,4.2nm,0.8s,baz=224,slow=12,SNR=9.3						
TXAR	**Lajitas Array**	**70.12**	**331**	P	**P**	**13 52 31.1**	**+0.4**
	comp=Z,0.2nm,0.7s,baz=154

MANT	**Manisa**	**0.76 200**	P	**Pn**	**13 51 22.7**	**+1.0**
MANT			S	**Sb**	**13 51 31.5**	**+0.1**
MANT	**Manisa**	**0.76 200**	*i* P	**Pn**	**13 51 22.7**	**+1.0**
MANT			*i* S	**Sb**	**13 51 31.5**	**+0.1**
KHAL	**Karahalli**	**0.95 150**	P	**Pb**	**13 51 25.2**	**+0.6**
KHAL			S	**Sb**	**13 51 36.3**	**-0.6**
KHAL	**Karahalli**	**0.95 150**	*i* P	**Pb**	**13 51 25.2**	**+0.6**
KHAL			*i* S	**Sb**	**13 51 36.3**	**-0.6**
KCTX	**Karacabey (Bur**	**1.14 339**	*e*PG	**Pn**	**13 51 26.4**	**-0.4**
KCTX	**Karacabey (Bur**	**1.14 339**	*e*Pg	**Pn**	**13 51 26.4**	**-0.4**
IZI	**Iznik**	**1.22 21**	*e*PN	**Pb**	**13 51 29.3**	**+0.2**
IZI	**Iznik**	**1.22 21**	*e*Pn	**Pb**	**13 51 29.3**	**+0.2**
ARMT	**Armutlu**	**1.36 359**	*e*PN	**Pn**	**13 51 30.7**	**+0.8**
ARMT	**Armutlu**	**1.36 359**	*e*Pn	**Pn**	**13 51 30.7**	**+0.8**

*ISK **30** 13:53:21.9, 39°.07N×29°.11E, h8km, MD2.5*
*ISCJB **30** 13:53:22.7±0.5, 39°.10N±0°.04×29°.04E±0°.04, h6km±9km, Error ellipse: s-maj=6.8km s-min=4.1km az=149.8*
*CSEM **30** 13:53:22.8±0.2, 39°.12N×29°.03E, h8km, MD2.5, Error ellipse: s-maj=4.6km s-min=3.0km az=133.0*
*DDA **30** 13:53:22.8, 39°.07N×29°.06E, h7km, Md2.5*
ISC 30 13:53:22.7±0.9,**39°.10N**±0°.03×**29°.05E**±0°.03,**h15**km±8km,
n22,σ0**938**/36,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**257**	P	**Pg**	**13 53 28.6**	**+0.1**
DEMI				S	**Sg**	**13 53 32.8**	**+0.3**
DEMI	**Demirci**	**0.27**	**257**	*i* P	**Pg**	**13 53 28.6**	**+0.1**
DEMI				*i* S	**Sg**	**13 53 32.8**	**+0.3**
GDZ	**Gediz**	**0.34**	**92**	P	**Pg**	**13 53 29.5**	**-0.2**
GDZ				S	**Sg**	**13 53 34.4**	**-0.1**
GDZ	**Gediz**	**0.34**	**92**	*i* P	**Pg**	**13 53 29.5**	**-0.2**
GDZ				*i* S	**Sg**	**13 53 34.4**	**-0.1**
TVSB	**Tavsanli**	**0.47**	**42**	*e*PG	**Pg**	**13 53 31.9**	**-0.3**
TVSB				*e*SG	**Sg**	**13 53 38.1**	**-0.5**
TVSB	**Tavsanli**	**0.47**	**42**	*e*Pg	**Pg**	**13 53 31.9**	**-0.3**
TVSB				*e*Sg	**Sg**	**13 53 38.1**	**-0.5**
KULA	**Kula-Manisa**	**0.66**	**208**	*e*PG	**Pg**	**13 53 35.4**	**-0.3**
KULA				*e*SG	**Sg**	**13 53 44.1**	**-0.3**
KULA	**Kula-Manisa**	**0.66**	**208**	*e*Pg	**Pg**	**13 53 35.4**	**-0.3**
KULA				*e*Sg	**Sg**	**13 53 44.1**	**-0.3**
MANT	**Manisa**	**0.72**	**212**	P	**Pg**	**13 53 36.4**	**-0.4**
MANT				S	**Sg**	**13 53 45.8**	**-0.6**
MANT	**Manisa**	**0.72**	**212**	*i* P	**Pg**	**13 53 36.4**	**-0.4**
MANT				*i* S	**Sg**	**13 53 45.8**	**-0.6**
KHAL	**Karahalli**	**0.81**	**155**	P	**Pn**	**13 53 40.5**	**+0.8**
KHAL				S	**Sb**	**13 53 49.3**	**0.0**
KHAL	**Karahalli**	**0.81**	**155**	*i* P	**Pn**	**13 53 40.5**	**+0.8**
KHAL				*i* S	**Sb**	**13 53 49.3**	**0.0**
AKS	**Akhisar**	**0.99**	**257**	*e*PG	**Pn**	**13 53 42.1**	**0.0**
AKS	**Akhisar**	**0.99**	**257**	*e*Pg	**Pn**	**13 53 42.1**	**0.0**
BALB	**Balikesir**	**1.05**	**301**	*e*PN	**Pn**	**13 53 43.3**	**+0.3**
BALB	**Balikesir**	**1.05**	**301**	*e*Pn	**Pn**	**13 53 43.3**	**+0.3**
CAVI	**Cavuskoy**	**1.26**	**29**	*e*PN	**Pb**	**13 53 46.2**	**0.0**
CAVI	**Cavuskoy**	**1.26**	**29**	*e*Pn	**Pb**	**13 53 46.2**	**0.0**
BORA	**Eskisehir**	**1.33**	**54**	P	**Pg**	**13 53 48.1**	**-0.4**
BORA				S	**Sg**	**13 54 06.1**	**+0.2**
BORA	**Eskisehir**	**1.33**	**54**	*i* P	**Pg**	**13 53 48.1**	**-0.4**
BORA				*i* S	**Sg**	**13 54 06.1**	**+0.2**
ARMT	**Armutlu**	**1.47**	**354**	*e*PN	**Pb**	**13 53 49.9**	**+0.1**
ARMT	**Armutlu**	**1.47**	**354**	*e*Pn	**Pb**	**13 53 49.9**	**+0.1**

*SOME **30** 13:58:57.5, 41°.98N×78°.78E, h15km*
*KRNET **30** 13:58:59.4±0.1, 42°.18N×78°.64E, h30km, mb3.2*
*NNC **30** 13:59:00.4±1.7, 42°.32N×78°.60E, h0km, mb3.5, mpv3.2, Error ellipse: s-maj=19.1km s-min=4.5km az=150.0*
ISC 30 13:58:57.1±1.9,**42°.03N**±0°.05×**78°.74E**±0°.04,**h6**km±11km,
n40,σ1**962**/72,**33C-19D,Lake Issyk-Kul region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PRZ	**Przheval'sk**	**0.52**	**331**	⇑*e*P	**Pg**	**13 59 07.1**	**0.0**
PRZ	baz=328			⇑*e*S	**Sg**	**13 59 13.4**	**-0.5**
SATY	**Saty**	**1.06**	**347**	*e*P	**Pb**	**13 59 16.6**	**-1.4**
SATY	44nm,0.1s			*e*S	**Sb**	**13 59 30.3**	**-1.8**
ANVS	**Anan'yevo**	**1.09**	**314**	⇑*e*P	**Pb**	**13 59 17.4**	**-1.2**
ANVS	baz=310			⇑*e*S	**Sb**	**13 59 29.3**	**-3.9**
UZB	**Uzynbulak**	**1.14**	**11**	*e*P	**Pn**	**13 59 17.6**	**-2.2**
UZB	35nm,0.2s			*e*S	**Sb**	**13 59 32.0**	**-2.4**
ZHN	**Zhinishke**	**1.16**	**349**	⇑*i*P	**Pn**	**13 59 18.5**	**-1.6**
ZHN	36nm,0.2s			⇑*i*S	**Sb**	**13 59 33.1**	**-1.9**
KDJ	**Kajisay**	**1.17**	**275**	⇑*e*P	**Pn**	**13 59 19.1**	**-1.1**
KDJ	407nm,0.2s baz=268			⇑*i*S	**Sb**	**13 59 34.0**	**-1.3**
SHLS	**Shalkode**	**1.41**	**36**	*e*P	**Pn**	**13 59 23.2**	**-0.3**
SHLS	39nm,0.1s			*e*S	**Sn**	**13 59 41.6**	**-0.9**
PDGK	**Podgornoye**	**1.41**	**23**	⇓*e*P	**Pn**	**13 59 22.5**	**-0.8**
PDGK	84nm,0.2s baz=28			⇓*e*S	**Sn**	**13 59 40.1**	**-2.1**
PDGK	**Podgornoye**	**1.41**	**23**	⇑P	**Pn**	**13 59 22.5**	**-0.8**
PDGK	9.3nm,0.5s			⇓S	**Sn**	**13 59 40.1**	**-2.1**
KPKS	**Kokpek**	**1.44**	**358**	*e*P	**Pn**	**13 59 23.2**	**-0.6**
KPKS	321nm,0.4s			*e*S	**Sn**	**13 59 41.2**	**-1.9**
TNSS	**Tian-Shan**	**1.67**	**308**	⇑*i*P	**Pn**	**13 59 28.2**	**+0.8**
TNSS	107nm,0.2s 27nm,0.4s			*e*S	**Sb**	**13 59 50.3**	**+0.3**
MDOK	**Medeo**	**1.69**	**313**	*e*P	**Pn**	**13 59 28.2**	**+0.8**
MDOK	36nm,0.2s 105nm,0.4s			*e*S	**Sn**	**13 59 50.1**	**+0.8**
KOTS	**Kotyrbulak**	**1.70**	**316**	*e*P	**Pb**	**13 59 29.0**	**+0.1**
KOTS	86nm,0.1s 94nm,0.1s			*e*S	**Sb**	**13 59 51.6**	**+1.0**
AAA	**Alma-Ata**	**1.81**	**314**	*e*P	**Pb**	**13 59 30.5**	**-0.3**
AAA	209nm,0.2s 110nm,0.5s			*e*S	**Sb**	**13 59 53.7**	**-0.1**
IZV	**Izvestkoviy**	**1.86**	**303**	*e*P	**Pb**	**13 59 31.7**	**-0.1**
IZV	118nm,0.2s 175nm,0.2s			*e*S	**Sb**	**13 59 56.1**	**+0.7**
MNBS	**Baschi**	**2.06**	**353**	*e*P	**Pn**	**13 59 33.3**	**+0.8**
MNBS	94nm,0.1s 325nm,0.4s			*e*S	**Sn**	**13 59 58.8**	**+0.2**
BOOM	**Boomskoye usch**	**2.13**	**283**	⇓*e*P	**Pn**	**13 59 33.1**	**-0.3**
BOOM	baz=280 baz=280			⇓*e*S	**Sn**	**13 59 58.3**	**-2.0**
NRN	**Naryn**	**2.13**	**255**	⇑*e*P	**Pb**	**13 59 35.0**	**-1.4**
NRN	baz=250 baz=250			⇑*e*S	**Sn**	**14 00 01.1**	**+0.4**
CHKK	**Chushkaly**	**2.24**	**326**	⇑*i*P	**Pb**	**13 59 37.5**	**-0.5**
CHKK	38nm,0.3s 537nm,0.3s			⇑*i*S	**Sb**	**14 00 06.4**	**+0.4**
KTBS	**Karatobe**	**2.26**	**319**	*e*P	**Pb**	**13 59 39.5**	**+1.1**
KTBS	16nm,0.1s 45nm,0.3s			*e*S	**Sb**	**14 00 09.7**	**+3.0**
ARXS	**Arharly**	**2.28**	**343**	*e*P	**Pb**	**13 59 38.3**	**-0.5**
ARXS	22nm,0.2s 147nm,0.3s			*e*S	**Sb**	**14 00 07.8**	**+0.5**
KST	**Kastek**	**2.29**	**297**	⇑*i*P	**Pb**	**13 59 38.8**	**-0.1**
KST	15nm,0.2s 106nm,0.6s			⇑*i*S	**Sb**	**14 00 08.9**	**+1.3**
DJR	**Jarkent**	**2.42**	**18**	*e*P	**Pb**	**13 59 40.5**	**-0.8**
	92nm,0.1s						
DJR	48nm,0.1s			*e*S	**Sb**	**14 00 11.7**	**+0.2**
TKM2	**Tokmak 2**	**2.49**	**292**	⇑*i*P	**Pn**	**13 59 40.6**	**+2.2**
TKM2	baz=289 baz=289			⇑*i*S	**Sb**	**14 00 13.5**	**+0.1**
TKM2	**Tokmak 2**	**2.49**	**292**	⇑Pg	**Pb**	**13 59 40.9**	**-1.5**
TKM2	23nm,0.7s 33nm,0.5s			⇓Lg	Lg	14 00 15.1	
DGS	**Degeres**	**2.50**	**300**	*e*P	**Pb**	**13 59 42.9**	**+0.3**
DGS	46nm,0.3s 56nm,0.2s			*e*S	**Sb**	**14 00 15.5**	**+1.8**
KUU	**Kurty**	**2.56**	**317**	⇓*i*P	**Pb**	**13 59 42.3**	**-1.3**
KUU	27nm,0.2s 71nm,0.2s			⇑*i*S	**Sb**	**14 00 14.7**	**-0.6**
KZA	**Kyzart**	**2.60**	**272**	⇑*i*P	**Pb**	**13 59 43.0**	**-1.4**
KZA	baz=269 baz=269			⇑*i*S	**Sb**	**14 00 17.0**	**+0.2**
KBK	**Karagaybulak**	**2.88**	**284**	⇓*i*P	**Pn**	**13 59 46.4**	**+2.6**
KBK	baz=281 baz=281			⇓*i*S	**Sb**	**14 00 22.7**	**-1.9**
CHMS	**Chumysh**	**3.10**	**290**	⇑*i*P	**Pn**	**13 59 49.2**	**+2.5**
CHMS	baz=287 baz=287			⇑*i*S	**Sn**	**14 00 26.7**	**+2.6**
UCH	**Uchtor**	**3.15**	**275**	⇑*i*P	**Pn**	**13 59 50.5**	**+2.8**
UCH	baz=272 baz=272			⇑*i*S	**Sb**	**14 00 29.6**	**-3.0**
AAK	**Ala-Archa**	**3.20**	**282**	⇓Pn	**Pb**	**13 59 52.4**	**-2.2**
AAK	10nm,0.6s 19nm,0.5s			⇓Lg	Lg	14 00 35.7	
KAPS	**Kapalarasan**	**3.28**	**8**	*e*P	**Pb**	**13 59 55.3**	**-0.6**
KAPS	11nm,0.4s 16nm,0.3s			*e*S	**Sb**	**14 00 37.1**	**+1.0**
ARLS	**Aral**	**3.30**	**269**	⇑*e*P	**Pn**	**13 59 49.8**	**+0.3**
ARLS	baz=266 baz=266			⇑*e*S	**Sn**	**14 00 26.7**	**-2.4**
MNAS	**Manas**	**4.65**	**278**	⇓Pg	**Pb**	**14 00 21.3**	**+2.1**
MNAS	2.5nm,0.5s 3.4nm,0.6s			⇓Lg	Lg	14 01 23.7	
MAKZ	**Makanchi**	**5.31**	**25**	⇓Pn	**Pn**	**14 00 19.3**	**+2.3**
MAKZ	0.7nm,0.2s 0.5nm,0.3s			⇓Sn	**Sn**	**14 01 19.0**	**+0.5**
MAKZ	2.6nm,0.8s			⇓Lg	Lg	14 01 40.2	
MK31	**Makanchi Array**	**5.40**	**27**	⇑Pn	**Pn**	**14 00 20.5**	**+2.3**
MK31	0.4nm,0.2s,baz=180,slow=17,SNR=51 1.1nm,0.6s,baz=204,slow=15,SNR=4.3			⇓Pg	**Pb**	**14 00 35.5**	**+3.7**
MK31	1.5nm,0.5s,baz=207,slow=24,SNR=5.3 2.0nm,0.5s			⇑Sn	**Sn**	**14 01 22.0**	**+1.3**
MK31				⇓Lg	Lg	14 01 43.3	
KK31	**Karatay Array**	**6.17**	**283**	⇑Pg	Pb	14 00 50.5	+5.5
KK31	1.4nm,0.5s,baz=93,slow=16,SNR=9.9 3.0nm,0.6s			⇑Lg	Lg	14 02 10.2	
KURBB	**Kurchatov Arra**	**8.60**	**359**	⇑Lg	Lg	14 03 24.5	
KURK	**Kurchatov**	**8.69**	**359**	⇓Lg	Lg	14 03 26.8	
	7.8nm,1.0s						

*ISCJB **30** 14:03:02.0±0.2, 24°.27S±0°.03×179°.98E±0°.05, h505km, mb4.3/61, Error ellipse: s-maj=6.7km s-min=3.7km az=13.9*
*IDC **30** 14:03:02.8±1.0, 24°.29S×179°.91W, h505km±10km, mb3.7/22, mb1 3.8/23, mb1mx3.7/42, mbtmp4.5/23, Error ellipse: s-maj=11.6km s-min=11.3km az=96.0*
*NEIC **30** 14:03:03.4±0.5, 24°.37S×179°.99E, h518km±6km, mb4.5/44, Error ellipse: s-maj=7.8km s-min=6.0km az=124.0*
ISC 30 14:03:02.2±0.3,**24°.29S**±0°.05×**179°.79W**±0°.07,**h505**km,
n159,σ1**38**/177,**mb4.3**/60,**7C-12D,South of Fiji Islands**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**5.22**	**162**	P	**P**	**14 04 34.2**	**+2.9**
RAO	135nm,0.3s,baz=72,slow=7.8,SNR=8.5 134nm,0.3s,baz=91,slow=22,SNR=3.8			S	**S**	**14 05 45.5**	**+1.3**
MSVF	**Nonsavu**	**6.83**	**342**	*e*P	**P**	**14 04 48.1**	**+1.1**
AFI	**Afiamalu**	**12.79**	**38**	P	**P**	**14 05 47.0**	**-2.4**
AFI	5.0nm,0.3s,baz=194,slow=4.0,SNR=9.3 2.5nm,0.3s,baz=36,slow=19,SNR=3.8			S	**S**	**14 08 01.6**	**-5.4**
AFI	**Afiamalu**	**12.79**	**38**	*e*P	**P**	**14 05 46.5**	**-2.8**
DZM	**Mont Dzumac**	**12.86**	**277**	P	**P**	**14 05 52.0**	**+2.1**
DZM	1.9nm,0.3s,baz=92,slow=16,SNR=29 **Mont Dzumac**	**12.86**	**277**	*e*P	**P**	**14 05 50.3**	**+0.3**
MKAZ	**Moumakai**	**13.49**	**198**	PN	**P**	**14 05 56.9**	**+0.6**
WMGZ	**Waiomatatini S**	**13.58**	**186**	PN	**P**	**14 05 58.6**	**+1.4**
WMGZ				SN	**S**	**14 08 15.1**	**-6.5**
HAZ	**Te Kaha**	**13.59**	**188**	PN	**P**	**14 05 57.8**	**+0.5**
HAZ				SN	**S**	**14 08 20.8**	**-0.9**
PUZ	**Puketiti**	**13.84**	**186**	PN	**P**	**14 06 01.1**	**+1.0**
URZ	**Urewera**	**14.18**	**190**	P	**P**	**14 06 02.8**	**-0.7**
URZ	6.7nm,0.3s,baz=9.0,slow=0.9,SNR=29 4.2nm,0.3s,baz=64,slow=24,SNR=14			S	**S**	**14 08 32.1**	**-1.0**
URZ	**Urewera**	**14.18**	**190**	*e*P	**P**	**14 06 02.1**	**-1.4**
URZ				*e*S	**S**	**14 08 29.4**	**-3.6**
URZ	**Urewera**	**14.18**	**190**	PN	**P**	**14 06 02.6**	**-0.9**
URZ				SN	**S**	**14 08 30.4**	**-2.7**
RIGZ	**Rimuhau**	**14.53**	**188**	PN	**P**	**14 06 08.1**	**+0.8**
BKZ	**Black Stump Fm**	**15.17**	**191**	*e*P	**P**	**14 06 12.7**	**-1.3**
BKZ	22nm,0.8s			*e*S	**S**	**14 08 48.4**	**-3.7**
BHHZ	**Black Hill Sta**	**15.56**	**192**	PN	**P**	**14 06 16.4**	**-1.6**
BFZ	**Birch Farm**	**16.68**	**191**	*e*P	**P**	**14 06 27.4**	**-2.2**
BFZ	20nm,0.6s			*e*S	**S**	**14 09 16.4**	**-3.4**
BFZ	**Birch Farm**	**16.68**	**191**	PN	**P**	**14 06 27.4**	**-2.2**
MRZ	**Mangatainoka R**	**16.79**	**192**	PN	**P**	**14 06 27.4**	**-3.2**
NNZ	**Nelson**	**17.82**	**197**	PN	**P**	**14 06 38.7**	**-1.8**
TUWZ	**Tuamarina**	**17.88**	**196**	PN	**P**	**14 06 40.1**	**-0.9**
KHZ	**Kahutara**	**18.91**	**195**	*e*P	**P**	**14 06 49.4**	**-1.0**
KHZ	34nm,1.0s **Kahutara**	**18.91**	**195**	PN	**P**	**14 06 49.5**	**-0.8**
LTZ	**Lake Taylor**	**19.58**	**198**	*e*P	**P**	**14 06 56.2**	**-0.4**
INZ	102nm,1.4s **Inchbonnie**	**19.77**	**199**	PN	**P**	**14 06 57.0**	**-1.2**
OXZ	**Oxford**	**20.15**	**198**	*e*P	**P**	**14 07 00.8**	**-0.9**
OXZ	37nm,0.5s			*e*S	**S**	**14 10 18.3**	**+2.0**
RPZ	**Rata Peaks**	**20.79**	**199**	P	**P**	**14 07 07.8**	**+0.2**
RPZ	16nm,0.4s,baz=73,slow=2.7,SNR=18 **Rata Peaks**	**20.79**	**199**	*e*P	**P**	**14 07 07.6**	**+0.1**
RPZ	151nm,2.0s **Rata Peaks**	**20.79**	**199**	PN	**P**	**14 07 07.3**	**-0.2**
HNR	**Honiara**	**24.33**	**304**	P	**P**	**14 07 38.8**	**-0.9**
CTAO	34nm,0.5s,baz=318,slow=1.7,SNR=5.0 **Charters Tower**	**31.68**	**271**	*e*P	**P**	**14 08 44.3**	**+0.4**
STKA	17nm,0.6s **Stephens Creek**	**34.76**	**249**	P	**P**	**14 09 09.8**	**0.0**
PMG	1.8nm,0.4s,baz=91,slow=8.1,SNR=12 **Port Moresby**	**34.81**	**289**	P	**P**	**14 09 10.3**	**-0.1**
AS01	16nm,0.6s,baz=104,slow=8.3,SNR=4.8 **Alice Springs**	**42.12**	**261**	*e*P	**P**	**14 10 08.7**	**-1.2**
AS31	**Alice Springs**	**42.17**	**261**	*e*P	**P**	**14 10 09.5**	**-0.7**
ASAR	2.1nm,0.4s **Alice Springs**	**42.17**	**261**	P	**P**	**14 10 09.7**	**-0.5**
ASAR	2.0nm,0.3s,baz=92,slow=6.7,SNR=146 2.1nm,1.0s,baz=100,slow=4.4,SNR=7.1			ScP	**ScP**	**14 14 55.5**	**+0.1**
ASAR	0.9nm,0.9s,baz=100,slow=14,SNR=5.2			S	**S**	**14 15 50.1**	**-3.3**
WB2	**Warramunga Arr**	**42.57**	**266**	*e*P	**P**	**14 10 12.2**	**-1.2**
WRAB	9.8nm,0.6s **Tennant Creek**	**42.57**	**266**	*e*P	**P**	**14 10 12.4**	**-1.0**
WRA	7.7nm,0.8s **Warramunga Arr**	**42.58**	**266**	P	**P**	**14 10 12.5**	**-1.0**
WRA	8.0nm,0.5s,baz=102,slow=8.3,SNR=174 4.1nm,0.9s,baz=104,slow=4.0,SNR=14			ScP	**ScP**	**14 14 59.5**	**+2.4**
JAY	**Jayapura**	**43.85**	**293**	P	**P**	**14 10 23.1**	**-0.4**
	0.8nm,0.5s,baz=133,slow=21,SNR=6.8						
FITZ	**Fitzroy Crossi**	**51.00**	**266**	P	**P**	**14 11 17.2**	**0.0**
VNDA	5.0nm,0.6s,baz=116,slow=10.0,SNR=8.7 **Vanda**	**54.01**	**185**	P	**P**	**14 11 39.1**	**+1.2**
VNDA	0.7nm,0.6s,baz=8.0,slow=7.2,SNR=7.7 1.0nm,0.7s,baz=348,slow=2.5,SNR=7.9			ScP	**ScP**	**14 15 44.7**	**+0.1**
QSPA	**South Pole Qui**	**65.80**	**180**	*e*P	**P**	**14 12 57.2**	**+0.5**
MJAR	**Matsushiro Arr**	**72.33**	**326**	P	**P**	**14 13 36.0**	**-0.3**
ASAJ	2.5nm,0.7s,baz=160,slow=5.3,SNR=6.3 **Asahikawa**	**76.30**	**333**	P	**P**	**14 14 00.2**	**+1.7**
UNV	7.3nm,0.9s,baz=90,slow=3.0,SNR=3.1 **Unalaska Valle**	**78.65**	**8**	*e*P	**P**	**14 14 10.8**	**-0.2**
KSRS	**Korea Array**	**78.67**	**320**	P	**P**	**14 14 12.8**	**+1.3**
PETK	1.4nm,0.7s,baz=141,slow=5.3,SNR=6.8 **Petropavlovsk-**	**79.52**	**346**	P	**P**	**14 14 16.6**	**+0.9**
USRK	5.1nm,0.6s,baz=108,slow=7.7,SNR=14 **Ussuriysk Ar.**	**81.19**	**327**	P	**P**	**14 14 25.7**	**+1.0**
CMB	2.3nm,0.6s,baz=152,slow=2.8,SNR=5.2 **Columbia Colle**	**83.35**	**43**	*e*P	**P**	**14 14 36.5**	**+0.7**
AFDM	6.9nm,0.9s **Forest Hills D**	**83.55**	**42**	*e*P	**P**	**14 14 37.5**	**+0.7**
GLA	5.2nm,0.9s **Glamis**	**84.12**	**50**	*e*P	**P**	**14 14 41.5**	**+1.7**
YBH	13nm,0.8s **Yreka Blue Hor**	**84.26**	**39**	P	**P**	**14 14 41.9**	**+1.6**
VNA3	3.1nm,0.8s,baz=341,slow=0.9,SNR=6.3 **Neumayer Olymp**	**84.48**	**177**	P	**P**	**14 14 40.5**	**-0.4**
113A	**Mohawk Valley,**	**84.71**	**51**	*e*P	**P**	**14 14 43.9**	**+1.3**
NV01	9.2nm,1.0s **Mina Array Sit**	**84.89**	**44**	*e*P	**P**	**14 14 44.7**	**+1.0**
NVAR	**Mina Array Bea**	**84.89**	**44**	P	**P**	**14 14 45.1**	**+1.4**
KLR	2.7nm,0.8s,baz=229,slow=7.8,SNR=18 **Kul'dur**	**84.96**	**330**	P	**P**	**14 14 44.3**	**+0.9**
PAHR	2.8nm,1.1s,baz=173,slow=2.4,SNR=4.1 **Pah Rah Range**	**84.98**	**42**	*e*P	**P**	**14 14 45.5**	**+1.5**
NV11	4.4nm,1.0s **Mina Array Sit**	**84.99**	**44**	*e*P	**P**	**14 14 45.1**	**+1.1**
W13A	5.0nm,1.1s **Hualapai Mount**	**85.90**	**49**	*e*P	**P**	**14 14 50.1**	**+1.5**
TUC	9.3nm,1.4s **Tucson**	**86.60**	**52**	*e*P	**P**	**14 14 54.0**	**+2.2**
319A	10nm,0.9s **Douglas**	**87.22**	**54**	*e*P	**P**	**14 14 57.3**	**+2.5**
X16A	16nm,0.9s **Lo Mia Camp, P**	**87.23**	**50**	*e*P	**P**	**14 14 57.4**	**+2.4**
LCMT	3.9nm,0.9s **Little Creek M**	**87.38**	**47**	*e*P	**P**	**14 14 56.8**	**+1.3**
CCUT	7.9nm,1.2s **Cedar City**	**87.60**	**47**	*e*P	**P**	**14 14 57.9**	**+1.3**
U15A	5.2nm,1.0s **North Rim**	**87.71**	**48**	*e*P	**P**	**14 14 58.8**	**+1.5**
SPU	11nm,1.3s **Mount Spurr**	**88.08**	**13**	*e*P	**P**	**14 14 57.2**	**-0.9**
D05A	**Enumclaw**	**88.13**	**35**	*e*P	**P**	**14 15 00.5**	**+1.9**
X18A	23nm,1.0s **Snowflake**	**88.34**	**51**	*e*P	**P**	**14 15 01.6**	**+1.5**
MTPU	3.9nm,0.8s **Mount Pierson**	**88.65**	**47**	*e*P	**P**	**14 15 03.1**	**+1.4**
TT01	6.0nm,0.8s **Tatalina**	**88.92**	**11**	*e*P	**P**	**14 15 02.4**	**+0.5**
TTA	**Tatalina**	**88.95**	**11**	*e*P	**P**	**14 15 01.9**	**-0.2**
MFID	6.8nm,1.1s **Camas Ranch**	**89.32**	**41**	*e*P	**P**	**14 15 05.0**	**+0.6**
CMAR	7.4nm,0.9s **Chiang Mai Arr**	**89.84**	**290**	P	**P**	**14 15 08.0**	**+0.7**
TMUT	1.0nm,0.8s,baz=132,slow=2.7,SNR=6.4 **Trail Mountain**	**89.96**	**46**	*e*P	**P**	**14 15 09.3**	**+1.7**
HLID	13nm,0.7s **Hailey**	**90.25**	**41**	*e*P	**P**	**14 15 10.1**	**+1.4**
MNTX	4.3nm,0.9s **Cornudas Mount**	**90.27**	**55**	*e*P	**P**	**14 15 10.3**	**+1.4**
HVU	3.2nm,0.8s **Hansel Valley**	**90.28**	**44**	*e*P	**P**	**14 15 10.0**	**+1.1**
SRU	5.3nm,0.8s **San Rafael Swe**	**90.32**	**47**	*e*P	**P**	**14 15 10.2**	**+1.0**
P17A	7.4nm,0.7s **Butcher Ranch,**	**90.36**	**46**	*e*P	**P**	**14 15 10.2**	**+0.8**
TX31	11nm,1.4s **Lajitas Ar. Si**	**90.47**	**58**	*e*P	**P**	**14 15 11.3**	**+1.4**
TXAR	**Lajitas Array**	**90.47**	**58**	P	**P**	**14 15 12.0**	**+2.0**
TRF	4.3nm,0.8s,baz=214,slow=6.5,SNR=53 **Thorofare Moun**	**90.48**	**13**	*e*P	**P**	**14 15 08.6**	**-0.8**
RND	11nm,0.8s **Reindeer**	**90.74**	**13**	*e*P	**P**	**14 15 10.3**	**-0.1**
TCUT	5.5nm,0.7s **Toone Canyon**	**90.79**	**45**	*e*P	**P**	**14 15 12.6**	**+1.2**
HHC	24nm,1.1s **Hu-ho-hao-te**	**90.83**	**315**	*e*P	**P**	**14 15 11.0**	**-0.4**
HHC	comp=Z,16nm,1.3s			pmax	pmax		
HHC	comp=Z,97nm,7.2s			pmax	pmax		
ANMO	**Albuquerque**	**91.04**	**52**	*e*P	**P**	**14 15 13.4**	**+0.8**
CD2	comp=Z,3.0nm,1.0s **Chengdu**	**91.45**	**303**	P	**P**	**14 15 13.8**	**-0.6**
CD2	comp=Z,3.0nm,0.7s			pmax	pmax		
WRH	**Wood River Hil**	**91.84**	**13**	*e*P	**P**	**14 15 14.5**	**-0.8**
DOT	comp=Z,4.1nm,0.8s **Dot Lake**	**92.03**	**15**	*e*P	**P**	**14 15 16.3**	**+0.1**
ILAR	comp=Z,16nm,1.3s **Eielson Array**	**92.36**	**13**	P	**P**	**14 15 17.1**	**-0.6**
IL1	comp=Z,1.2nm,0.6s,baz=224,slow=5.6,SNR=14 **Eielson Array**	**92.36**	**13**	*e*P	**P**	**14 15 16.8**	**-0.9**
BILL	**Bilibino**	**92.63**	**355**	*e*P	**P**	**14 15 18.8**	**-0.1**
SMCO	comp=Z,3.1nm,0.9s **Snowmass**	**92.73**	**48**	*e*P	**P**	**14 15 21.0**	**+0.4**
BW06	comp=Z,2.6nm,0.8s **Boulder Array**	**92.83**	**44**	*e*P	**P**	**14 15 21.1**	**+0.4**
PD31	**Pinedale Array**	**92.83**	**44**	*e*P	**P**	**14 15 21.4**	**+0.6**
PDAR	**Pinedale Array**	**92.83**	**44**	P	**P**	**14 15 21.4**	**+0.6**
DAWY	comp=Z,1.4nm,0.7s,baz=210,slow=3.6,SNR=15 **Dawson**	**93.54**	**17**	*e*P	**P**	**14 15 23.6**	**+0.3**
EGAK	comp=Z,3.8nm,0.8s **Eagle**	**93.67**	**16**	*e*P	**P**	**14 15 23.9**	**+0.2**
INK	comp=Z,4.7nm,0.8s **Inuvik**	**98.34**	**16**	P	Pdif	14 15 43.5	-1.2
YKA	comp=Z,1.6nm,0.7s,baz=232,slow=1.3,SNR=3.7 **Yellowknife Ar**	**100.62**	**25**	P	**Pdif**	**14 15 55.8**	**+0.9**
ZALV	comp=Z,0.2nm,0.5s,baz=246,slow=4.5,SNR=2.7 **Zalesovo Beam**	**112.37**	**320**	PKiKP	**PKiKP**	**14 20 38.2**	**-1.8**
MKAR	comp=Z,0.8nm,0.4s,baz=116,slow=3.4,SNR=3.8 **Makanchi Array**	**112.56**	**313**	PKiKP	**PKiKP**	**14 20 39.7**	**-1.0**
KURBB	comp=Z,0.5nm,0.5s,baz=121,slow=0.4,SNR=6.3 **Kurchatov Arra**	**115.66**	**316**	PKP	**PKPdf**	**14 20 45.5**	**-0.9**
BVAR	comp=Z,1.5nm,0.6s,baz=99,slow=1.8,SNR=15 **

BURAR	Bucovina Array	149.40 326	⇓*i*P	PKPbc	14 21 54.7	+0.8
CSS	Mathiatis	149.44 298	*e*PKPbc	PKPbc	14 21 53.5	-0.8
TIRR	Tirgusor	149.47 318	⇓*i*P	PKPbc	14 21 53.6	-0.4
VRI	Vrincioaia	149.67 322	⇓*i*P	PKPbc	14 21 54.5	0.0
OJC	Ojcow	149.97 335	*e*PKPbc	PKPbc	14 21 54.3	-0.7
STHS	Stebnicka Huta	150.00 332	*e*PKP	PKPbc	14 21 55.9	+0.8
MSAB	Monastry St. A	150.03 318	⇓*i*P	PKPbc	14 21 56.0	+0.7
CRVS	Cervenica-Dubn	150.29 331	*e*PKP	PKPbc	14 21 56.7	+0.9
MLR	Muntele Rosu	150.34 322	PKPbc	PKPbc	14 21 55.5	-0.7
	comp=Z,0.8nm,0.5s,baz=8.1,slow=7.1,SNR=5.1					
MLR	Muntele Rosu	150.34 322	⇓*i*P	PKPbc	14 21 56.5	+0.3
MLR	Muntele Rosu	150.34 322	*e*PKPbc	PKPbc	14 21 55.2	-1.0
DOPR	Dopca	150.36 323	⇓*i*P	PKPbc	14 21 56.4	+0.3
OKC	Ostrava-Krasne	150.91 336	⇑*e*PKP	PKPbc	14 21 57.3	+0.1
LANS	Liptovska Anna	150.94 334	*e*PKP	PKPbc	14 21 58.9	+1.5
UPC	Upice	151.10 339	⇑*i*P	PKPbc	14 21 58.1	+0.5
UPC			*e*PKPAB	PKPab	14 22 08.7	+1.1
DPC	Dobruska-Polom	151.13 338	⇑*e*PKP	PKPbc	14 21 58.3	+0.5
DPC			*e*PKPAB	PKPab	14 22 08.8	+1.0
ARR	Arges	151.14 323	⇓*i*P	PKPbc	14 21 59.3	+1.3
TNR	Turnu Rosu	151.16 324	⇓*i*P	PKPbc	14 21 55.7	-2.3
MORC	Moravsky Berou	151.18 336	⇓*i*P	PKPbc	14 21 58.7	+0.8
MORC	Moravsky Berou	151.18 336	*e*PKPbc	PKPbc	14 21 58.0	0.0
DRGR		151.22 327	⇑*i*P	PKPbc	14 21 58.1	0.0
CLL	Collm	151.28 343	*i*PKPbc	PKPbc	14 21 58.2	+0.2
	comp=Z,18nm,0.8s					
CLL			*e*PKPab	PKPab	14 22 08.0	-0.3
CLL			*e*		14 22 24.0	
CLL	Collm	151.28 343	*e*PKPbc	PKPbc	14 21 57.7	-0.3
BRG	Berggiesshubel	151.41 342	*i* PKP	PKPbc	14 21 58.5	+0.1
	comp=Z,13nm,0.5s					
BRG			*e*		14 22 09.2	
	comp=Z,6.3nm,1.0s					
PVCC	Panska Ves	151.53 341	⇑*e*PKP	PKPbc	14 21 59.1	+0.5
SIRR	Siria	152.10 327	⇓*i*P	PKPbc	14 21 59.7	-0.3
GZR	Gura Zlata	152.13 325	⇓*i*P	PKPbc	14 21 59.9	-0.3
KHC	Kasperske Hory	153.07 340	⇑*e*PKP	PKPbc	14 22 02.2	+0.1
KHC			*ex*	x	14 22 06.2	
KHC			*e*PKPAB	PKPab	14 22 17.0	+1.0
GERES	GERESS Array B	153.28 340	PKPbc	PKPbc	14 22 02.4	-0.3
	comp=Z,0.9nm,0.5s,baz=113,slow=1.7,SNR=7.0					
GERES			PKPab	PKPab	14 22 17.5	+0.4
	comp=Z,0.7nm,0.6s,baz=17,slow=5.6,SNR=4.4					
GEA0	GERESS Array S	153.29 340	*e*PKPbc	PKPbc	14 22 01.9	-0.7
DAVOX	Davos/Dischmat	156.25 343	PKPab	PKPab	14 22 31.0	+1.0
	comp=Z,3.5nm,0.6s,baz=348,slow=16,SNR=4.3					
ES19	SONSECA Array	164.24 12	*e*PKPab	PKPab	14 23 05.6	+0.7
ESDC	Sonseca Array	164.26 12	PKPab	PKPab	14 23 04.8	-0.1
	comp=Z,0.2nm,0.3s,baz=359,slow=5.3,SNR=6.3					
TORD	Torodi Ar. Bea	168.83 187	PKP	PKPdf	14 22 10.7	-1.0
	comp=Z,1.1nm,0.8s,baz=314,slow=1.9,SNR=5.7					
TORD			PKPab	PKPab	14 23 25.6	0.0
	comp=Z,0.4nm,0.7s,baz=156,slow=3.6,SNR=2.7					

IDC 30 14:09:28.4±1.4, 12°.17N×144°.23E, h0km, mb3.7/4, mb1 3.8/4, mb1mx3.4/51, mbtmp3.7/4, Error ellipse: s-maj=112.6km s-min=21.4km az=112.0, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	Guam	1.54	24	Pn	Pn	14 09 57.2	+0.1
	65nm,0.3s,baz=288,slow=3.2,SNR=78						
GUMO				Sn	Sn	14 10 15.7	-2.2
	121nm,0.3s,baz=158,slow=23,SNR=32						
WRA	Warramunga Arr	33.36	197	P	P	14 16 09.5	+1.0
	0.4nm,0.4s,baz=17,slow=9.1,SNR=7.9						
FITZ	Fitzroy Crossi	35.23	212	P	P	14 16 25.0	+0.2
	2.3nm,1.0s,baz=38,slow=7.8,SNR=7.5						
ASAR	Alice Springs	37.02	196	P	P	14 16 39.7	-0.4
	0.2nm,0.4s,baz=17,slow=14,SNR=4.9						
STKA	Stephens Creek	43.87	183	P	P	14 17 35.0	-1.6
	0.5nm,0.4s,baz=348,slow=14,SNR=3.7						

*ATH **30** 14:12:39.9, 40°.63N×21°.68E, h4km±47km, ML1.7/2, Error ellipse: s-maj=47.6km s-min=1.2km az=0.0, Suspected Mining explosion.*
*CSEM **30** 14:12:39.7±0.2, 40°.62N×21°.69E, h1km, ML1.7, Error ellipse: s-maj=4.0km s-min=3.2km az=9.0, Suspected Mining explosion.*
*SKO **30** 14:12:40.2, 40°.56N×21°.68E, h0km*
THE 30 14:12:39.5, 40°.62N×21°.68E, h14km±1km, ML1.8/5, Error ellipse: s-maj=1.4km s-min=0.4km az=300.0, Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FNA	Florina	0.29	305	P	Pg	14 12 45.1	-0.5
FNA				S	Sg	14 12 49.5	-0.2
FNA	Florina	0.29	305	P	Pg	14 12 45.1	-0.5
FNA				S	Sg	14 12 49.5	-0.2
FNA	Florina	0.29	305	P	Pg	14 12 44.9	-0.6
FNA				S	Sg	14 12 49.5	-0.2
FNA				AML	AML	14 12 50.7	
	comp=E,754μm,0.2s						
FNA				AML	AML	14 12 50.8	
	comp=N,732μm,0.2s						
KZN	Kozani	0.32	168	P	Pg	14 12 46.0	-0.1
KZN				S	Sg	14 12 51.1	+0.5
KZN	Kozani	0.32	168	P	Pg	14 12 46.0	-0.1
KZN				S	Sg	14 12 51.1	+0.5
NEST	Nestorio	0.53	247	P	Pg	14 12 49.9	0.0
NEST				S	Sb	14 12 57.8	-0.2
NEST	Nestorio	0.53	247	P	Pg	14 12 49.9	0.0
NEST				S	Sb	14 12 57.8	-0.2
NEST	Nestorio	0.53	247	P	Pg	14 12 49.6	-0.3
NEST				S	Sb	14 12 58.5	+0.5
NEST				AML	AML	14 13 02.9	
	comp=N,111μm,0.3s						
NEST				AML	AML	14 13 03.2	
	comp=E,106μm,0.2s						
GRG	Griva	0.64	58	P	Pg	14 12 52.1	0.0
GRG				S	Sb	14 13 01.3	0.0
GRG	Griva	0.64	58	P	Pg	14 12 52.1	0.0
GRG				S	Sb	14 13 01.3	0.0
GRG	Griva	0.64	58	P	Pb	14 12 52.9	+0.4
LIT	Litokhoron	0.81	130	P	Pg	14 12 54.7	-0.4
LIT				S	Sb	14 13 06.4	+0.4
LIT	Litokhoron	0.81	130	P	Pg	14 12 54.7	-0.4
LIT				S	Sb	14 13 06.4	+0.4
LIT	Litokhoron	0.81	130	P	Pb	14 12 55.4	+0.2
OHR	Ohrid	0.83	307	*i* Pg	Pb	14 12 55.9	+0.2
OHR				*i* Sg	Sn	14 13 08.5	-0.4
OHR				*e*Lg	Lg	14 13 08.8	
	comp=N,42nm,0.5s						
OHR				*e*Lg	Lg	14 13 10.3	
	comp=E,48nm,0.4s						

*JMA **30** 14:32:25.4±0.2, 22°.62N×121°.76E, h13km, M3.1*
*TAP **30** 14:32:27.5, 22°.71N×121°.67E, h9km±1km, ML3.0, D*
ISC 30 14:32:26.0±1.2, 22°.68N±0°.03×121°.74E±0°.03, h9km±10km, n39, σ0°.64/69, 1C-3D, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHKT	Chengkung	0.55	320	⇓*i*P	Pb	14 32 37.9	+0.1
	baz=324						
CHKT				*i* S	Sb	14 32 45.0	-0.7
	baz=324						
TWG	Pinlang	0.64	283	*i* P	Pb	14 32 39.0	-0.3
	baz=280						
TWG				*i* S	Sb	14 32 47.5	-0.8
	baz=280						
LAY	Lan-yu	0.66	196	*e*P	Pg	14 32 38.7	-0.1
	baz=188						
TWF1	Yuli	0.79	329	*i* P	Pb	14 32 42.0	+0.1
	baz=332						
TWF1				*i* S	Sb	14 32 53.0	+0.3
	baz=332						
ELDTW	Lidau	0.84	307	*e*P	Pg	14 32 42.2	-0.1
	baz=308						
ELDTW				*e*S	Sg	14 32 52.3	-0.9
	baz=308						
TAW	Tawu	0.84	248	*e*P	Pg	14 32 42.5	+0.2
	baz=243						
TAW				*e*S	Sg	14 32 53.4	+0.1
	baz=243						
EAST	Anshuo	0.88	251	*e*P	Pg	14 32 42.4	-0.6
	baz=246						
EAST				*e*S	Sg	14 32 54.6	+0.2
	baz=246						

EHY	Hungye	0.91	335	S	Sb	14 32 56.5	+0.2
	baz=338					
STYT	Tauyuan	1.03	298	⇑*i*P	Pg	14 32 45.5	-0.3
	baz=298					
STYT				*e*S	Sg	14 32 58.7	-0.6
	baz=298					
SCZT	Fangliau	1.08	254	*e*P	Pg	14 32 46.8	-0.1
	baz=250					
YUS	Yu-Shan	1.09	318	*e*P	Pg	14 32 47.1	+0.1
	baz=319					
YUS				*e*S	Sg	14 33 00.5	-0.7
	baz=319					
SGST	Jiashian	1.14	291	P	Pn	14 32 48.4	+0.2
	baz=290					
SGST				*e*S	Sn	14 33 04.0	0.0
	baz=290					
ESL	Shilin	1.17	346	P	Pn	14 32 48.8	+0.2
	baz=349					
ESL				*e*S	Sb	14 33 03.0	-0.6
	baz=349					
WTP	Ta-pu	1.19	299	⇓P	Pn	14 32 49.0	+0.1
	baz=298					
WTP				S	Sg	14 33 04.2	0.0
	baz=298					
ALS	Alishan	1.20	314	P	Pb	14 32 49.1	0.0
	baz=315					
ALS				S	Sb	14 33 04.7	-0.1
	baz=315					
WDT	Danda	1.21	333	*e*P	Pb	14 32 49.1	-0.2
	baz=335					
WDT				*e*S	Sb	14 33 05.2	0.0
	baz=335					
TWM1	Shoushan	1.23	277	*e*P	Pg	14 32 50.3	+0.7
	baz=275					
TWM1				S	Sn	14 33 05.9	-0.3
	baz=275					
CHN1	Nanshi	1.23	295	P	Pg	14 32 50.2	+0.5
	baz=294					
CHN1				S	Sn	14 33 06.5	+0.3
	baz=294					
CHN4	Tsaushan	1.25	303	⇓P	Pg	14 32 50.2	+0.1
	baz=302					
CHN4				S	Sg	14 33 06.4	-0.1
	baz=302					
TWK	Hsinying	1.30	297	P	Pg	14 32 51.2	+0.2
	baz=297					
TWK				S	Sn	14 33 07.9	0.0
	baz=297					
CHN5	Tsauling	1.34	313	P	Pg	14 32 52.0	+0.2
	baz=314					
CHN5				S	Sg	14 33 09.2	-0.1
	baz=314					
SMLT	Sun Moon Lake	1.43	327	*e*P	Pg	14 32 54.1	+0.6
	baz=329					
CHY	Chiayi	1.46	304	*e*S	Sb	14 33 12.4	+0.3
	baz=304					
TYC	Yuchr	1.47	326	*e*P	Pg	14 32 54.4	+0.2
	baz=328					
TYC				S	Sb	14 33 12.7	+0.4
	baz=328					
WGK	Gukeng	1.48	313	*e*S	Sg	14 33 13.7	0.0
	baz=313					
WHF	Hehuan Shan	1.53	343	*e*P	Pn	14 32 54.0	+0.1
	baz=345					
WHF				*e*S	Sn	14 33 13.5	-0.6
	baz=345					
TWT	Tachien	1.65	342	*e*S	Sn	14 33 15.9	-0.9
	baz=343					
ENA	Nanau	1.74	360	*e*S	Sn	14 33 18.2	-0.6
	baz=2.0					
TWQ1	Liyutan	1.89	332	*e*P	Pg	14 33 01.7	-0.6
	baz=333					
TWQ1				*e*S	Sb	14 33 24.4	+0.1
	baz=333					
ENTT	Nioudou	1.96	355	*e*P	Pn	14 33 00.8	+1.3
	baz=357					
ENTT				*e*S	Sn	14 33 24.2	0.0
	baz=357					
NSK	Sanguang	2.02	350	*e*P	Pn	14 33 01.5	+1.1
	baz=352					
NSK				*e*S	Sn	14 33 26.2	+0.4
	baz=352					
JYNG	Yonagunijimaku	2.08	32	S	Sn	14 33 26.2	-1.0
HATJ	Hateruma jima	2.34	54	P	Pn	14 33 05.5	+0.8
HATJ				S	Sn	14 33 32.8	-0.7
IRIF	Iriomote-Funau	2.46	47	P	Pn	14 33 07.5	+1.2
IRIF				S	Sn	14 33 36.4	-0.1
JKRS	Kuro-shima	2.60	53	P	Pn	14 33 09.4	+1.2
JKRS				*e*S	Sn	14 33 39.0	-0.9
JIJ	Ishigaki jima	2.77	52	P	Pn	14 33 11.6	+1.0
JIJ				*e*S	Sn	14 33 42.5	-1.7
JISG	Ishigakijimahi	3.03	51	P	Pn	14 33 14.9	+0.8
JISG				S	Sn	14 33 48.7	-1.8
JTJ	Tarama	3.34	54	P	Pn	14 33 19.4	+0.9
JTJ				S	Sn	14 33 57.4	-0.9
JOGS	Gusukube	3.95	58	P	Pn	14 33 27.7	+0.9
JOGS				S	Sn	14 34 13.4	+0.2

*ISCJB **30** 14:32:36.8±0.4, 32°.19N±0°.02×115°.19W±0°.03, h16km±5km, Error ellipse: s-maj=4.4km s-min=3.6km az=174.9*
*NEIC **30** 14:32:38.7, 32°.18N×115°.29W, h3km, ML2.8(ECX), ML3.0(PAS), After ECX.*
*ECX **30** 14:32:38.7±0.6, 32°.18N×115°.29W, h6km, MD2.6, ML2.8*
*MEX **30** 14:32:39.2±0.5, 32°.24N×115°.18W, h14km±76km, MD3.9*
ISC 30 14:32:36.3±1.0, 32°.19N±0°.02×115°.27W±0°.02, h17km±8km, n41, σ0°.82/56, 7C-5D, California-Baja California border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MBIG	Mexicali	0.23	15	*e*P	Pb	14 32 42.7	+0.7
MBIG				*i* S	Sg	14 32 45.0	-0.1
CPBX	Cerro Prieto	0.23	352	*e*P	Pb	14 32 42.7	+0.6
CPBX				*e*S	Sb	14 32 47.0	+1.0
DREC	Desert Rsrch C	0.63	346	⇑*e*P	Pn	14 32 50.4	-0.2
ECBX	El Chinero	0.74	166	⇓*e*P	Pg	14 32 50.7	-0.1
ECBX				*e*S	Sb	14 33 01.0	+0.5
RMX	La Rumorosa	0.80	301	⇑*e*P	Pb	14 32 52.2	+0.3
RMX				*e*S	Sb	14 33 03.2	+0.6
RMX				AML	AML	14 33 04.4	
	comp=E,449nm,0.4s						
RMX				⇑*e*		14 33 04.4	
RMX				⇑*e*		14 33 04.4	
RMX				AML	AML	14 33 04.4	
	comp=N,367nm,0.6s						
IKP	In-Ko-Pah, Jac	0.85	303	⇑*e*P	Pn	14 32 53.6	0.0
IKP				*e*S	Sn	14 33 05.0	-0.7
GLA	Glamis	0.94	23	*e*Pg	Pb	14 32 53.6	-0.6
GLA				*e*Sn	Sb	14 33 05.3	-1.1
ZAX	El Zacaton	1.09	232	*e*P	Pg	14 32 57.6	+0.2
ZAX				*e*S	Sn	14 33 12.2	+0.5
SPIG	San Pedro Mart	1.15	189	*e*P	Pn	14 32 58.3	+0.3
SPIG				*e*S	Sg	14 33 13.6	-0.2
SPIG	San Pedro Mart	1.15	189	*e*P	Pn	14 32 58.3	+0.3
SPIG				*e*S	Sg	14 33 13.6	-0.2
SPIG	San Pedro Mart	1.15	189	⇓*e*P	Pn	14 32 58.3	+0.3
SPX	San Pedro Mart	1.15	188	⇓*e*P	Pb	14 32 58.1	+0.1
SPX				*i* S	Sb	14 33 12.8	0.0
SPX	San Pedro Mart	1.15	188	⇓*e*P	Pn	14 32 58.3	+0.3
SPX				⇓*e*		14 33 15.9	
SPX				AML	AML	14 33 15.9	
	comp=E,87nm,0.4s						
CBX	Cerro Bola	1.19	276	*e*P	Pg	14 32 59.1	-0.2
CBX				*e*S	Sb	14 33 13.3	-0.4
CBX	Cerro Bola	1.19	276	*e*P	Pg	14 32 59.1	-0.2
CBX				*e*S	Sb	14 33 13.3	-0.4
CBX	Cerro Bola	1.19	276	⇑*e*P	Pg	14 32 59.1	-0.2
CBX				*e*S	Sg	14 33 15.0	+0.1
CBX				⇓*e*		14 33 16.9	
CBX				AML	AML	14 33 16.9	
	comp=E,418nm,0.5s						
TJIG	Tijuana	1.22	282	*e*P	Pb	14 32 59.2	+0.3
TJIG				*e*S	Sb	14 33 14.2	-0.2
ECNX	Esteban Cantu	1.25	245	*e*P	Pg	14 33 00.0	-0.4
BAR	Barrett	1.29	293	*e*Pn	Pb	14 33 00.3	+0.2
BAR				*e*Pg	Pg	14 33 01.0	-0.1
BAR				*e*Sn	Sg	14 33 17.7	-0.2
BAR	Barrett	1.29	293	⇑*e*P	Pb	14 33 00.4	+0.2
PBX	Punta Banda	1.32	251	*e*P	Pb	14 33 01.0	+0.4
113A	Mohawk Valley,	1.39	65	*e*Pn	Pn	14 33 00.4	-0.6
113A				*e*Sn	Sn	14 33 17.1	-1.9
EML	El Monte Cty P	1.51	298	*e*Pn	Pg	14 33 05.1	-0.2
DPP	Dos Picos Cty	1.63	300	*e*Pn	Pg	14 33 07.3	-0.4
HWB	Hans Werner Br	1.66	301	*e*Pn	Pg	14 33 07.8	-0.4
Y12C	Blythe	1.68	22	*e*Pn	Pb	14 33 06.8	0.0
PFO	Pinyon Flats O	1.74	325	*e*Pn	Pn	14 33 05.5	-0.4
PFO				*e*Sn	Sb	14 33 30.3	+0.8
PLM	Palomar	1.78	311	*e*Pn	Pg	14 33 10.9	+0.4
BACC	Bachelor Mtn.	2.06	314	*e*Pn	Pg	14 33 15.6	-0.3
214A	Organ Pipe Nat	2.10	96	*e*Pn	Pn	14 33 09.3	-1.4
Y14A	Wickenburg	2.58	47	*e*Pn	Pn	14 33 14.6	-2.8
W13A	Hualapai Mount	3.12	21	*e*Pn	Pn	14 33 26.1	+1.1
W13A				*e*Sg	Sg	14 34 14.1	-2.6
PASC	Pasadena Art C	3.15	310	*e*Sg	Sg	14 34 16.3	-1.1
GSC	Goldstone, Bar	3.36	338	*e*Pg	Pg	14 33 46.0	+5.3
TUC	Tucson	3.80	87	*e*Pg	Pg	14 33 50.2	+1.1
TUC				*e*Lg	Lg	14 34 35.8	
X16A	Lo Mia Camp, P	3.90	54	*e*Pn	Pn	14 33 36.9	+1.3
X16A				*e*Lg	Lg	14 34 46.7	
TPNV	Topopah Spring	4.82	351	*e*Pn	Pn	14 33 51.8	+3.6
TPNV				*e*Pg	Pg	14 34 11.1	+2.5
U15A	North Rim	4.89	29	*e*Pn	Pn	14 33 51.1	+1.7
GATR	Gnd/Air Tx Cnt	4.97	300	*e*Pn	Pn	14 33 56.5	+6.2
SRIG	Santa Rosalia	5.52	151	*e*Pn	Pn	14 33 51.0	-6.8
R11A	Troy Canyon, C	6.15	358	*e*Pg	Pg	14 34 34.1	0.0

*ISK **30** 14:34:28.2, 38°.45N×28°.46E, h10km, MD2.6*
*ISCJB **30** 14:34:29.1±0.5, 38°.50N±0°.03×28°.45E±0°.03, h0km, Error ellipse: s-maj=4.1km s-min=3.7km az=4.4*
*DDA **30** 14:34:29.5, 38°.49N×28°.51E, h8km, Md2.6, Suspected Mining explosion.*
*CSEM **30** 14:34:29.1±0.3, 38°.49N×28°.46E, h1km, MD2.6, Error ellipse: s-maj=6.0km s-min=5.4km az=147.0, Suspected Mining explosion.*
ISC 30 14:34:28.4±0.8, 38°.52N±0°.03×28°.40E±0°.03, h0km, n24, σ0°.67/37, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MANT	Manisa	0.13	103	P	Pg	14 34 31.3	+0.5
MANT				S	Sg	14 34 32.8	+0.4
MANT	Manisa	0.13	103	*i* P	Pg	14 34 31.3	+0.5
MANT				*i* S	Sg	14 34 32.8	+0.4
KULA	Kula-Manisa	0.20	91	*e*PG	Pg	14 34 32.3	+0.1
KULA				*e*SG	Sg	14 34 35.4	+0.5
KULA	Kula-Manisa	0.20	91	*e*Pg	Pg	14 34 32.3	+0.1
KULA				*e*Sg	Sg	14 34 35.4	+0.5
DEMI	Demirci	0.58	25	P	Pb	14 34 41.2	-0.3
DEMI				S	Sb	14 34 49.0	-1.2
DEMI	Demirci	0.58	25	*i* P	Pb	14 34 41.1	-0.3
DEMI				*i* S	Sb	14 34 49.0	-1.2
AKS	Akhisar	0.58	308	*e*PG	Pb	14 34 41.5	0.0
AKS				*e*SG	Sb	14 34 51.2	+0.9
AKS	Akhisar	0.58	308	*e*Pg	Pb	14 34 41.5	0.0
AKS				*e*Sg	Sb	14 34 51.2	+0.9
AYDB	Zeytinkoy-Aydi	0.70	215	*e*PG	Pg	14 34 41.9	+0.1
AYDB	Zeytinkoy-Aydi	0.70	215	*e*Pg	Pg	14 34 41.9	+0.1
KHAL	Karahalli	0.87	100	P	Pg	14 34 45.3	+0.3
KHAL				S	Sg	14 34 55.8	-0.5
KHAL	Karahalli	0.87	100	*i* P	Pg	14 34 45.3	+0.3
KHAL				*i* S	Sg	14 34 55.8	-0.5
KHL	Karahalli	0.90	102	*e*PG	Pg	14 34 45.1	-0.6
KHL	Karahalli	0.90	102	*e*Pg	Pg	14 34 45.1	-0.6
AYDN	Tasoluk	0.95	206	P	Pn	14 34 49.0	-0.1
AYDN				S	Sb	14 35 01.4	+0.5
AYDN	Tasoluk	0.95	206	*i* P	Pn	14 34 49.0	-0.1
AYDN				*i* S	Sb	14 35 01.4	+0.5
DNZL	Cakiroluk	0.97	148	P	Pg	14 34 47.4	+0.4
DNZL	Cakiroluk	0.97	148	*i* P	Pg	14 34 47.4	+0.4
DNZL				*i* S	Sb	14 35 02.6	+1.0
BALB	Balikesir	1.19	340	*e*PN	Pn	14 34 52.6	+0.3
BALB	Balikesir	1.19	340	*e*Pn	Pn	14 34 52.6	+0.3
TVSB	Tavsanli	1.24	41	*e*PN	Pb	14 34 52.5	-0.2
TVSB	Tavsanli	1.24	41	*e*Pn	Pb	14 34 52.6	-0.2
YER	Yerkesik	1.39	184	*e*PN	Pg	14 34 53.2	-1.7
YER	Yerkesik	1.39	184	*e*Pn	Pg	14 34 53.2	-1.7

JMA 30 14:45:02.5±0.2, 37°.91N×144°.26E, h37km, M3.8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	2.34	301	P	Pn	14 45 40.0	+1.6
OFUJ				*e*S	Sn	14 46 08.1	+2.1
JIO	Ouri	2.36	284	P	Pn	14 45 40.4	+1.8
JIO				*e*S	Sn	14 46 08.0	+1.7
JMK	Ichinoseki	2.60	294	*e*S	Sn	14 46 15.3	+2.9
JOM	Ohasama	2.80	305	*e*S	Sn	14 46 20.1	+2.9
JFT	Otama	3.14	264	P	Pn	14 45 51.9	+2.6
JFT				*e*S	Sn	14 46 27.8	+2.3
JRG	Rokugo	3.20	299	*e*S	Sn	14 46 30.5	+3.3
JYK	Kaneyama	3.23	289	P	Pn	14 45 53.2	+2.7
JYK				*e*S	Sn	14 46 31.0	+3.3
JANG	Nango	3.26	320	P	Pn	14 45 53.2	+2.2
JAH	Hinai	3.62	310	*e*S	Sn	14 46 41.2	+3.7
JRY	Ryogami san	4.69	248	P	Pn	14 46 12.0	+1.3
JTKR	Abashiri--Toko	6.06	358	P	Pn	14 46 29.3	-0.2
JTKR				*e*S	Sn	14 47 34.8	-2.7

*DDA **30** 14:48:39.9, 39°.15N×29°.02E, h11km, Md2.7*
*ISK **30** 14:48:39.7, 39°.12N×29°.04E, h10km, MD2.7*
*ISCJB **30** 14:48:40.1±0.5, 39°.12N±0°.03×29°.00E±0°.04, h8km±5km, Error ellipse: s-maj=5.7km s-min=4.1km az=41.8*
*CSEM **30** 14:48:40.2±0.1, 39°.13N×29°.01E, h8km, MD2.7, Error ellipse: s-maj=1.7km s-min=1.2km az=124.0*
ISC 30 14:48:40.2±0.9, 39°.12N±0°.02×29°.01E±0°.03, h14km±8km, n29, σ0°.25/42, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.24	251	P	Pg	14 48 45.5	0.0
DEMI				S	Sg	14 48 49.2	0.0
DEMI	Demirci	0.24	251	*i* P	Pg	14 48 45.5	0.0
DEMI				*i* S	Sg	14 48 49.2	0.0
GDZ	Gediz	0.37	95	P	Pg	14 48 47.7	0.0
GDZ				S	Sg	14 48 52.9	+0.1
GDZ	Gediz	0.37	95	*i* P	Pg	14 48 47.7	0.0
GDZ				*i* S	Sg	14 48 52.9	+0.1
TVSB	Tavsanli	0.48	47	*e*PG	Pg	14 48 49.4	-0.3
TVSB				*e*SG	Sg	14 48 56.3	+0.1
TVSB	Tavsanli	0.48	47	*e*Pg	Pg	14 48 49.4	-0.3
TVSB	

*CSEM **30** 14:50:13.1±0.1, 39°.11N×28°.98E, h10km, MD2.8, Error ellipse: s-maj=1.7km s-min=1.5km az=95.0*
ISC 30 14:50:13.2±0.9, **39°.12N**±0°.02×**28°.98E**±0°.02, **h14**km±8km, **n36**, σ0°**47**/50, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.22**	**249**	P	**Pg**	**14 50 18.2**	**+0.1**
DEMI				S	**Sg**	**14 50 21.4**	**-0.1**
DEMI	**Demirci**	**0.22**	**249**	*i* P	**Pg**	**14 50 18.2**	**+0.1**
DEMI				*i* S	**Sg**	**14 50 21.4**	**-0.1**
GDZ	**Gediz**	**0.39**	**94**	P	**Pg**	**14 50 21.0**	**-0.1**
GDZ				S	**Sg**	**14 50 26.5**	**0.0**
GDZ	**Gediz**	**0.39**	**94**	*i* P	**Pg**	**14 50 21.0**	**-0.1**
GDZ				*i* S	**Sg**	**14 50 26.5**	**0.0**
TVSB	**Tavsanli**	**0.50**	**48**	*e*PG	**Pg**	**14 50 22.6**	**-0.5**
TVSB				*e*SG	**Sg**	**14 50 29.7**	**-0.1**
TVSB	**Tavsanli**	**0.50**	**48**	*e*Pg	**Pg**	**14 50 22.6**	**-0.5**
TVSB				*e*Sg	**Sg**	**14 50 29.7**	**-0.1**
KULA	**Kula-Manisa**	**0.66**	**203**	*e*PG	**Pg**	**14 50 25.8**	**-0.2**
KULA	**Kula-Manisa**	**0.66**	**203**	*e*Pg	**Pg**	**14 50 25.8**	**-0.2**
MANT	**Manisa**	**0.71**	**208**	P	**Pg**	**14 50 27.1**	**0.0**
MANT				S	**Sg**	**14 50 35.7**	**-0.8**
MANT	**Manisa**	**0.71**	**208**	*i* P	**Pg**	**14 50 27.1**	**0.0**
MANT				*i* S	**Sg**	**14 50 35.7**	**-0.8**
KHAL	**Karahalli**	**0.85**	**152**	P	**Pg**	**14 50 29.5**	**-0.2**
KHAL				S	**Sg**	**14 50 40.6**	**-0.2**
KHAL	**Karahalli**	**0.85**	**152**	*i* P	**Pg**	**14 50 29.6**	**-0.2**
KHAL				*i* S	**Sg**	**14 50 40.6**	**-0.2**
KHL	**Karahalli**	**0.90**	**152**	*e*PG	**Pg**	**14 50 30.1**	**-0.5**
KHL				*e*SG	**Sb**	**14 50 42.8**	**+0.1**
KHL	**Karahalli**	**0.90**	**152**	*e*Pg	**Pg**	**14 50 30.2**	**-0.5**
KHL				*e*Sg	**Sb**	**14 50 42.8**	**+0.1**
ORLT	**Orhaneli**	**0.93**	**356**	*e*PG	**Pg**	**14 50 30.9**	**-0.3**
ORLT	**Orhaneli**	**0.93**	**356**	*e*Pg	**Pg**	**14 50 30.9**	**-0.3**
AKS	**Akhisar**	**0.94**	**256**	*e*PG	**Pg**	**14 50 31.4**	**0.0**
AKS	**Akhisar**	**0.94**	**256**	*e*Pg	**Pg**	**14 50 31.4**	**0.0**
BALB	**Balikesir**	**1.00**	**302**	*e*PG	**Pg**	**14 50 32.5**	**0.0**
BALB	**Balikesir**	**1.00**	**302**	*e*Pg	**Pg**	**14 50 32.5**	**0.0**
BALY	**Balya**	**1.22**	**301**	P	**Pg**	**14 50 36.9**	**+0.1**
BALY				S	**Sb**	**14 50 50.4**	**-1.5**
BALY	**Balya**	**1.22**	**301**	*i* P	**Pg**	**14 50 36.9**	**+0.1**
BALY				*i* S	**Sb**	**14 50 50.4**	**-1.5**
KCTX	**Karacabey (Bur**	**1.24**	**337**	*e*PN	**Pb**	**14 50 36.9**	**+0.4**
KCTX	**Karacabey (Bur**	**1.24**	**337**	*e*Pn	**Pb**	**14 50 36.9**	**+0.4**
MDNY	**Mudanya-Bursa**	**1.25**	**357**	*e*PN	**Pb**	**14 50 36.9**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.25**	**357**	*e*Pn	**Pb**	**14 50 36.9**	**+0.3**
CAVI	**Cavuskoy**	**1.27**	**31**	*e*PN	**Pn**	**14 50 37.0**	**+0.4**
CAVI	**Cavuskoy**	**1.27**	**31**	*e*Pn	**Pn**	**14 50 37.0**	**+0.4**
IZI	**Iznik**	**1.27**	**17**	*e*PN	**Pn**	**14 50 37.1**	**+0.4**
IZI	**Iznik**	**1.27**	**17**	*e*Pn	**Pn**	**14 50 37.1**	**+0.4**
ADVT	**Abdulvahap**	**1.44**	**24**	*e*PN	**Pn**	**14 50 39.4**	**+0.5**
ADVT	**Abdulvahap**	**1.44**	**24**	*e*Pn	**Pn**	**14 50 39.4**	**+0.5**
ARMT	**Armutlu**	**1.45**	**356**	*e*PN	**Pn**	**14 50 39.8**	**+0.7**
ARMT	**Armutlu**	**1.45**	**356**	*e*Pn	**Pn**	**14 50 39.8**	**+0.7**
GULT	**Gulveren**	**1.77**	**42**	*e*PN	**Pn**	**14 50 44.0**	**+0.5**
GULT	**Gulveren**	**1.77**	**42**	*e*Pn	**Pn**	**14 50 44.0**	**+0.5**

*ISK **30** 14:52:05.9, 39°.13N×29°.05E, h6km, ML3.4*
*DDA **30** 14:52:05.9, 39°.13N×29°.01E, h18km, Md3.5*
*THE **30** 14:52:06.6, 39°.01N×29°.17E, h12km±2km, ML3.3/3, Error ellipse: s-maj=2.6km s-min=0.5km az=131.0*
*CSEM **30** 14:52:06.2±0.1, 39°.14N×29°.03E, h2km, MD3.5, Error ellipse: s-maj=1.9km s-min=1.7km az=133.0*
ISC 30 14:52:06.6±1.0, **39°.13N**±0°.02×**29°.03E**±0°.01, **h4**km±9km, **n101**, σ0°**66**/145, **2C-1D, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**250**	P	**Pg**	**14 52 11.8**	**+0.2**
DEMI				S	**Sg**	**14 52 15.3**	**+0.2**
DEMI	**Demirci**	**0.26**	**250**	⇑*i* P	**Pg**	**14 52 11.8**	**+0.2**
DEMI				*i* S	**Sg**	**14 52 15.3**	**+0.2**
GDZ	**Gediz**	**0.35**	**97**	P	**Pg**	**14 52 13.7**	**+0.2**
GDZ				S	**Sg**	**14 52 18.7**	**+0.5**
GDZ	**Gediz**	**0.35**	**97**	⇓*i* P	**Pg**	**14 52 13.7**	**+0.2**
GDZ				*i* S	**Sg**	**14 52 18.7**	**+0.5**
TVSB	**Tavsanli**	**0.46**	**47**	*e*PG	**Pg**	**14 52 15.4**	**-0.1**
TVSB				*e*SG	**Sg**	**14 52 21.6**	**0.0**
TVSB	**Tavsanli**	**0.46**	**47**	*e*Pg	**Pg**	**14 52 15.4**	**-0.1**
TVSB				*e*Sg	**Sg**	**14 52 21.6**	**0.0**
KULA	**Kula-Manisa**	**0.68**	**205**	*e*PG	**Pg**	**14 52 19.1**	**-0.6**
KULA	**Kula-Manisa**	**0.68**	**205**	P	**Pg**	**14 52 19.2**	**-0.5**
KULA				S	**Sg**	**14 52 28.2**	**-0.3**
KULA	**Kula-Manisa**	**0.68**	**205**	P	**Pg**	**14 52 19.2**	**-0.5**
KULA				S	**Sg**	**14 52 28.2**	**-0.3**
MANT	**Manisa**	**0.74**	**210**	P	**Pg**	**14 52 20.4**	**-0.4**
MANT				S	**Sg**	**14 52 29.8**	**-0.6**
MANT	**Manisa**	**0.74**	**210**	⇑*i* P	**Pg**	**14 52 20.4**	**-0.4**
MANT				*i* S	**Sg**	**14 52 29.8**	**-0.6**
KHAL	**Karahalli**	**0.84**	**154**	P	**Pg**	**14 52 22.5**	**-0.3**
KHAL				S	**Sg**	**14 52 33.5**	**-0.2**
KHAL	**Karahalli**	**0.84**	**154**	*i* P	**Pg**	**14 52 22.5**	**-0.3**
KHAL				*i* S	**Sg**	**14 52 33.5**	**-0.2**
KHL	**Karahalli**	**0.90**	**154**	*e*PG	**Pg**	**14 52 23.6**	**-0.2**
KHL	**Karahalli**	**0.90**	**154**	*e*Pg	**Pg**	**14 52 23.6**	**-0.2**
ORLT	**Orhaneli**	**0.92**	**354**	*e*PG	**Pg**	**14 52 24.0**	**-0.2**
ORLT	**Orhaneli**	**0.92**	**354**	*e*Pg	**Pg**	**14 52 24.0**	**-0.2**
AKHS	**Akhisar**	**0.98**	**255**	P	**Pg**	**14 52 25.3**	**-0.1**
AKHS				S	**Sg**	**14 52 37.9**	**-0.2**
AKHS	**Akhisar**	**0.98**	**255**	*i* P	**Pg**	**14 52 25.3**	**-0.1**
AKHS				*i* S	**Sg**	**14 52 37.9**	**-0.2**
AKS	**Akhisar**	**0.98**	**255**	*e*PG	**Pg**	**14 52 25.3**	**-0.1**
AKS	**Akhisar**	**0.98**	**255**	*e*Pg	**Pg**	**14 52 25.3**	**-0.1**
BALB	**Balikesir**	**1.02**	**300**	*e*PG	**Pg**	**14 52 26.3**	**0.0**
BALB	**Balikesir**	**1.02**	**300**	*e*Pg	**Pg**	**14 52 26.3**	**0.0**
IGD	**Bursa**	**1.14**	**7**	*i* P	**Pg**	**14 52 27.0**	**-1.5**
IGD				*i* S	**Sn**	**14 52 44.8**	**-0.6**
CAVI	**Cavuskoy**	**1.24**	**30**	*e*PN	**Pg**	**14 52 29.9**	**-0.5**
CAVI	**Cavuskoy**	**1.24**	**30**	*e*Pn	**Pg**	**14 52 29.9**	**-0.5**
MDNY	**Mudanya-Bursa**	**1.24**	**355**	*e*PN	**Pg**	**14 52 29.9**	**-0.5**
MDNY	**Mudanya-Bursa**	**1.24**	**355**	*e*Pn	**Pg**	**14 52 29.9**	**-0.5**
KCTX	**Karacabey (Bur**	**1.25**	**336**	*e*PN	**Pg**	**14 52 30.3**	**-0.2**
KCTX	**Karacabey (Bur**	**1.25**	**336**	*e*Pn	**Pg**	**14 52 30.3**	**-0.2**
BALY	**Balya**	**1.25**	**300**	P	**Pg**	**14 52 30.4**	**-0.2**
BALY				S	**Sb**	**14 52 47.6**	**+0.3**
BALY	**Balya**	**1.25**	**300**	*i* P	**Pg**	**14 52 30.4**	**-0.2**
BALY				*i* S	**Sb**	**14 52 47.6**	**+0.3**
IZI	**Iznik**	**1.25**	**16**	*e*PN	**Pb**	**14 52 30.8**	**-0.1**
IZI	**Iznik**	**1.25**	**16**	*e*Pn	**Pb**	**14 52 30.8**	**-0.1**
GEMT	**Gemlik**	**1.31**	**5**	*e*PN	**Pn**	**14 52 31.3**	**-0.4**
GEMT	**Gemlik**	**1.31**	**5**	*e*Pn	**Pn**	**14 52 31.3**	**-0.4**
BORA	**Eskisehir**	**1.33**	**55**	P	**Pn**	**14 52 31.2**	**-0.9**
BORA				S	**Sg**	**14 52 49.5**	**0.0**
BORA	**Eskisehir**	**1.33**	**55**	*i* P	**Pn**	**14 52 31.2**	**-0.9**
BORA				*i* S	**Sg**	**14 52 49.5**	**0.0**
DENT	**Denizli**	**1.38**	**180**	*e*PN	**Pn**	**14 52 32.2**	**-0.5**
DENT	**Denizli**	**1.38**	**180**	*e*Pn	**Pn**	**14 52 32.2**	**-0.5**
GONE	**Gonen-Balikesi**	**1.38**	**312**	*e*PN	**Pn**	**14 52 32.8**	**+0.1**
GONE	**Gonen-Balikesi**	**1.38**	**312**	*e*Pn	**Pn**	**14 52 32.8**	**+0.1**
ADVT	**Abdulvahap**	**1.41**	**23**	*e*PN	**Pn**	**14 52 32.7**	**-0.4**
ADVT	**Abdulvahap**	**1.41**	**23**	*e*Pn	**Pn**	**14 52 32.7**	**-0.4**
ARMT	**Armutlu**	**1.44**	**355**	*e*PN	**Pn**	**14 52 33.0**	**-0.5**
ARMT	**Armutlu**	**1.44**	**355**	*e*Pn	**Pn**	**14 52 33.0**	**-0.5**
DNZL	**Cakiroluk**	**1.44**	**179**	P	**Pn**	**14 52 33.4**	**-0.3**
DNZL	**Cakiroluk**	**1.44**	**179**	*i* P	**Pn**	**14 52 33.4**	**-0.3**
DNZL				*i* S	**Sn**	**14 52 54.8**	**+1.7**
ESKT	**Eskisehir**	**1.47**	**74**	*i* P	**Pn**	**14 52 33.5**	**-0.5**
ESKT				*i* S	**Sb**	**14 52 52.8**	**-0.8**
SEYT	**Eskypehyr**	**1.47**	**74**	P	**Pn**	**14 52 33.5**	**-0.5**
SEYT				S	**Sb**	**14 52 52.8**	**-0.8**
EDC	**Edincik**	**1.51**	**324**	*e*PN	**Pn**	**14 52 34.3**	**-0.2**
EDC	**Edincik**	**1.51**	**324**	*e*Pn	**Pn**	**14 52 34.3**	**-0.2**
GPA	**Golpazari**	**1.52**	**40**	*e*PN	**Pn**	**14 52 34.2**	**-0.4**
GPA	**Golpazari**	**1.52**	**40**	*e*Pn	**Pn**	**14 52 34.2**	**-0.4**
BOLV	**Bolvadin**	**1.56**	**105**	P	**Pg**	**14 52 36.5**	**0.0**
BOLV				S	**Sn**	**14 52 55.6**	**-0.3**
BOLV	**Bolvadin**	**1.56**	**105**	*i* P	**Pg**	**14 52 36.5**	**0.0**
BOLV				*i* S	**Sn**	**14 52 55.6**	**-0.3**
KNL	**Bal¯–kesir**	**1.62**	**315**	*i* P	**Pn**	**14 52 36.2**	**+0.2**
KNL				*i* S	**Sn**	**14 52 57.5**	**+0.2**
BUY	**Buyukada**	**1.72**	**2**	P	**Pn**	**14 52 36.6**	**-0.7**
BUY				S	**Sn**	**14 52 59.8**	**+0.1**
BUY	**Buyukada**	**1.72**	**2**	*i* P	**Pn**	**14 52 36.6**	**-0.7**
BUY				*i* S	**Sn**	**14 52 59.8**	**+0.1**
AYDN	**Tasoluk**	**1.73**	**212**	P	**Pn**	**14 52 36.4**	**-1.1**
AYDN				S	**Sg**	**14 53 02.3**	**+0.3**
AYDN	**Tasoluk**	**1.73**	**212**	*i* P	**Pn**	**14 52 36.4**	**-1.1**
AYDN				*i* S	**Sg**	**14 53 02.3**	**+0.3**
GULT	**Gulveren**	**1.73**	**41**	*e*PN	**Pn**	**14 52 37.2**	**-0.3**
GULT	**Gulveren**	**1.73**	**41**	*e*Pn	**Pn**	**14 52 37.3**	**-0.3**
ISP	**Isparta**	**1.76**	**138**	P	**Pb**	**14 52 39.8**	**+0.3**
ISP	**Isparta**	**1.76**	**138**	P	**Pb**	**14 52 39.8**	**+0.3**
HRT	**Hereke**	**1.76**	**16**	*e*PN	**Pn**	**14 52 37.8**	**-0.1**
HRT	**Hereke**	**1.76**	**16**	*e*Pn	**Pn**	**14 52 37.8**	**-0.1**
BAGO	**Egridir - ISPA**	**1.79**	**129**	*i* P	**Pn**	**14 52 38.6**	**+0.2**
BAGO				*i* S	**Sg**	**14 53 06.3**	**+2.1**
AYVA	**Ayvalik**	**1.82**	**276**	P	**Pn**	**14 52 38.1**	**-0.7**
AYVA				S	**Sb**	**14 53 04.1**	**+0.3**
AYVA	**Ayvalik**	**1.82**	**276**	*i* P	**Pn**	**14 52 38.1**	**-0.7**
AYVA				*i* S	**Sb**	**14 53 04.1**	**+0.3**
SPNC	**Sapanca-Adapaz**	**1.84**	**32**	*e*PN	**Pn**	**14 52 38.8**	**-0.1**
SPNC	**Sapanca-Adapaz**	**1.84**	**32**	*e*Pn	**Pn**	**14 52 38.8**	**-0.1**
ISK	**Istanbul-Kandi**	**1.93**	**1**	*e*PN	**Pn**	**14 52 40.2**	**0.0**
ISK	**Istanbul-Kandi**	**1.93**	**1**	P	**Pn**	**14 52 39.4**	**-0.8**
ISK				S	**Sn**	**14 53 05.3**	**+0.3**
ISK	**Istanbul-Kandi**	**1.93**	**1**	P	**Pn**	**14 52 39.4**	**-0.8**
ISK	**Istanbul-Kandi**	**1.93**	**1**	*e*Pn	**Pn**	**14 52 40.2**	**0.0**
ISK				S	**Sn**	**14 53 05.3**	**+0.3**
GOLH	**Golhisar**	**1.94**	**167**	P	**Pn**	**14 52 39.8**	**-0.6**
GOLH	**Golhisar**	**1.94**	**167**	*i* P	**Pn**	**14 52 39.9**	**-0.6**
GOLH				*i* S	**Sg**	**14 53 11.8**	**+2.8**
SVRH	**Sivrihisar-ESK**	**1.96**	**80**	*e*PN	**Pn**	**14 52 40.4**	**-0.4**
SVRH	**Sivrihisar-ESK**	**1.96**	**80**	*e*Pn	**Pn**	**14 52 40.4**	**-0.4**
DGB	**¯zmir**	**2.00**	**238**	*i* P	**Pb**	**14 52 43.3**	**-0.2**
DGB				*i* S	**Sb**	**14 53 09.0**	**+0.3**
URLA	**Izmir**	**2.05**	**249**	*i* P	**Pg**	**14 52 45.7**	**-0.2**
URLA				*i* S	**Sg**	**14 53 13.6**	**+1.0**
SILT	**Sile**	**2.07**	**13**	*e*PN	**Pn**	**14 52 42.2**	**0.0**
SILT	**Sile**	**2.07**	**13**	*e*Pn	**Pn**	**14 52 42.2**	**0.0**
PRK	**Paraskevi**	**2.15**	**274**	P	**Pn**	**14 52 42.8**	**-0.4**
PRK				S	**Sn**	**14 53 10.7**	**+0.5**
PRK	**Paraskevi**	**2.15**	**274**	P	**Pn**	**14 52 42.8**	**-0.4**
PRK				S	**Sn**	**14 53 10.7**	**+0.5**
ZEY	**¯zmir**	**2.17**	**246**	*i* P	**Pb**	**14 52 46.9**	**+0.5**
ZEY				*i* S	**Sg**	**14 53 15.7**	**-0.6**
CHOS	**Chios island**	**2.44**	**253**	P	**Pn**	**14 52 46.1**	**-1.2**
CHOS	**Chios island**	**2.44**	**253**	P	**Pn**	**14 52 46.1**	**-1.2**
SIGR	**SIGRI**	**2.47**	**273**	P	**Pn**	**14 52 47.0**	**-0.6**
SIGR				S	**Sn**	**14 53 18.5**	**+0.3**
SIGR	**SIGRI**	**2.47**	**273**	P	**Pn**	**14 52 47.0**	**-0.6**
SIGR				S	**Sn**	**14 53 18.5**	**+0.3**
BODT	**Bodrum**	**2.47**	**214**	P	**Pn**	**14 52 45.0**	**-2.7**
BODT	**Bodrum**	**2.47**	**214**	P	**Pn**	**14 52 45.0**	**-2.7**
GADA	**Gvkgeada**	**2.64**	**295**	P	**Pn**	**14 52 50.0**	**+0.1**
GADA	**Gvkgeada**	**2.64**	**295**	P	**Pn**	**14 52 50.0**	**+0.1**
ALN	**Alexandroupoli**	**2.89**	**309**	P	**Pn**	**14 52 53.3**	**-0.1**
ALN				S	**Sn**	**14 53 30.1**	**+1.5**
ALN	**Alexandroupoli**	**2.89**	**309**	P	**Pn**	**14 52 53.3**	**-0.1**
ALN				S	**Sn**	**14 53 30.1**	**+1.5**
SMTH	**Samothraki Isl**	**3.01**	**297**	P	**Pn**	**14 52 54.9**	**-0.2**
SMTH	**Samothraki Isl**	**3.01**	**297**	P	**Pn**	**14 52 54.9**	**-0.2**
EDRB	**Edirne**	**3.22**	**328**	P	**Pn**	**14 52 58.3**	**+0.3**
EDRB	**Edirne**	**3.22**	**328**	P	**Pn**	**14 52 58.3**	**+0.3**

*ISCJB **30** 14:53:46.9±0.4, 39°.14N±0°.02×28°.97E±0°.03, h5km±4km, Error ellipse: s-maj=4.1km s-min=3.1km az=39.9*
*ISK **30** 14:53:46.5, 39°.14N×28°.95E, h10km, ML3.3*
*DDA **30** 14:53:46.8, 39°.12N×28°.96E, h18km, Ml3.3*
*CSEM **30** 14:53:47.1±0.1, 39°.14N×28°.96E, h8km, ML3.3, Error ellipse: s-maj=1.7km s-min=1.5km az=120.0*
ISC 30 14:53:47.4±0.9, **39°.14N**±0°.02×**28°.96E**±0°.02, **h12**km±7km, **n63**, σ0°**42**/84, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.21**	**244**	P	**Pg**	**14 53 52.2**	**+0.2**
DEMI				S	**Sg**	**14 53 55.4**	**+0.3**
DEMI	**Demirci**	**0.21**	**244**	*i* P	**Pg**	**14 53 52.2**	**+0.2**
DEMI				*i* S	**Sg**	**14 53 55.4**	**+0.3**
GDZ	**Gediz**	**0.41**	**96**	P	**Pg**	**14 53 55.3**	**-0.2**
GDZ				S	**Sg**	**14 54 01.0**	**0.0**
GDZ	**Gediz**	**0.41**	**96**	*i* P	**Pg**	**14 53 55.3**	**-0.2**
GDZ				*i* S	**Sg**	**14 54 01.0**	**0.0**
TVSB	**Tavsanli**	**0.50**	**51**	*e*PG	**Pg**	**14 53 56.8**	**-0.4**
TVSB				*e*SG	**Sg**	**14 54 04.0**	**+0.1**
TVSB	**Tavsanli**	**0.50**	**51**	*e*Pg	**Pg**	**14 53 56.8**	**-0.4**
TVSB				*e*Sg	**Sg**	**14 54 04.0**	**+0.1**
KULA	**Kula-Manisa**	**0.66**	**201**	*e*PG	**Pg**	**14 53 59.7**	**-0.5**
KULA	**Kula-Manisa**	**0.66**	**201**	*e*Pg	**Pg**	**14 53 59.7**	**-0.5**
MANT	**Manisa**	**0.72**	**206**	P	**Pg**	**14 54 01.0**	**-0.3**
MANT				S	**Sg**	**14 54 09.9**	**-0.8**
MANT	**Manisa**	**0.72**	**206**	*i* P	**Pg**	**14 54 01.0**	**-0.3**
MANT				*i* S	**Sg**	**14 54 09.9**	**-0.8**
KHAL	**Karahalli**	**0.87**	**151**	P	**Pg**	**14 54 04.3**	**+0.1**
KHAL				S	**Sg**	**14 54 15.1**	**-0.4**
KHAL	**Karahalli**	**0.87**	**151**	*i* P	**Pg**	**14 54 04.3**	**+0.1**
KHAL				*i* S	**Sg**	**14 54 15.1**	**-0.4**
ORLT	**Orhaneli**	**0.91**	**357**	*e*PG	**Pg**	**14 54 04.4**	**-0.6**
ORLT				*e*SG	**Sb**	**14 54 17.7**	**+0.4**
ORLT	**Orhaneli**	**0.91**	**357**	*e*Pg	**Pg**	**14 54 04.4**	**-0.6**
ORLT				*e*Sg	**Sb**	**14 54 17.7**	**+0.4**
KHL	**Karahalli**	**0.92**	**151**	*e*PG	**Pg**	**14 54 04.9**	**-0.3**
KHL	**Karahalli**	**0.92**	**151**	*e*Pg	**Pg**	**14 54 04.9**	**-0.3**
AKHS	**Akhisar**	**0.93**	**254**	P	**Pb**	**14 54 05.6**	**+0.2**
AKHS				S	**Sb**	**14 54 18.0**	**+0.3**
AKHS	**Akhisar**	**0.93**	**254**	*i* P	**Pb**	**14 54 05.6**	**+0.2**
AKHS				*i* S	**Sb**	**14 54 18.0**	**+0.3**
AKS	**Akhisar**	**0.93**	**254**	*e*PG	**Pg**	**14 54 04.5**	**-0.7**
AKS	**Akhisar**	**0.93**	**254**	*e*Pg	**Pg**	**14 54 04.6**	**-0.7**
BALB	**Balikesir**	**0.98**	**301**	*e*PG	**Pg**	**14 54 05.5**	**-0.7**
BALB	**Balikesir**	**0.98**	**301**	*e*Pg	**Pg**	**14 54 05.5**	**-0.7**
IGD	**Bursa**	**1.14**	**9**	*i* P	**Pb**	**14 54 08.5**	**-0.6**
IGD				*i* S	**Sb**	**14 54 23.0**	**-0.9**
BALY	**Balya**	**1.20**	**301**	P	**Pg**	**14 54 11.0**	**+0.5**
BALY				S	**Sn**	**14 54 27.3**	**+1.0**
BALY	**Balya**	**1.20**	**301**	*i* P	**Pg**	**14 54 11.0**	**+0.5**
BALY				*i* S	**Sn**	**14 54 27.3**	**+1.0**
KCTX	**Karacabey (Bur**	**1.22**	**338**	*e*PN	**Pn**	**14 54 10.3**	**0.0**
KCTX	**Karacabey (Bur**	**1.22**	**338**	*e*Pn	**Pn**	**14 54 10.3**	**0.0**
MDNY	**Mudanya-Bursa**	**1.23**	**357**	*e*PN	**Pn**	**14 54 10.3**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.23**	**357**	*e*Pn	**Pn**	**14 54 10.3**	**-0.1**
IZI	**Iznik**	**1.26**	**18**	*e*PN	**Pn**	**14 54 10.8**	**-0.2**
IZI	**Iznik**	**1.26**	**18**	*e*Pn	**Pn**	**14 54 10.8**	**-0.2**
CAVI	**Cavuskoy**	**1.26**	**32**	*e*PN	**Pn**	**14 54 10.9**	**0.0**
CAVI	**Cavuskoy**	**1.26**	**32**	*e*Pn	**Pn**	**14 54 10.9**	**0.0**
GEMT	**Gemlik**	**1.31**	**8**	*e*PN	**Pn**	**14 54 11.4**	**-0.1**
GEMT	**Gemlik**	**1.31**	**8**	*e*Pn	**Pn**	**14 54 11.4**	**-0.1**
GONE	**Gonen-Balikesi**	**1.34**	**313**	*e*PN	**Pn**	**14 54 11.3**	**-0.5**
GONE	**Gonen-Balikesi**	**1.34**	**313**	*e*Pn	**Pn**	**14 54 11.4**	**-0.5**
BORA	**Eskisehir**	**1.37**	**57**	P	**Pb**	**14 54 12.8**	**-0.3**
BORA				S	**Sg**	**14 54 31.4**	**-0.2**
BORA	**Eskisehir**	**1.37**	**57**	*i* P	**Pb**	**14 54 12.8**	**-0.3**
BORA				*i* S	**Sg**	**14 54 31.4**	**-0.2**
DENT	**Denizli**	**1.38**	**178**	*e*PN	**Pn**	**14 54 12.6**	**+0.1**
DENT	**Denizli**	**1.38**	**178**	*e*Pn	**Pn**	**14 54 12.6**	**+0.1**
ADVT	**Abdulvahap**	**1.43**	**25**	*e*PN	**Pn**	**14 54 13.4**	**+0.3**
ADVT	**Abdulvahap**	**1.43**	**25**	*e*Pn	**Pn**	**14 54 13.4**	**+0.3**
ARMT	**Armutlu**	**1.43**	**357**	*e*PN	**Pn**	**14 54 13.4**	**+0.2**
ARMT	**Armutlu**	**1.43**	**357**	*e*Pn	**Pn**	**14 54 13.4**	**+0.2**
EDC	**Edincik**	**1.48**	**325**	*e*PN	**Pn**	**14 54 13.6**	**-0.2**
EDC	**Edincik**	**1.48**	**325**	*e*Pn	**Pn**	**14 54 13.6**	**-0.2**
GPA	**Golpazari**	**1.55**	**42**	*e*PN	**Pn**	**14 54 15.0**	**+0.1**
GPA	**Golpazari**	**1.55**	**42**	*e*Pn	**Pn**	**14 54 15.0**	**+0.1**
AYDN	**Tasoluk**	**1.70**	**210**	P	**Pg**	**14 54 19.4**	**-0.6**
AYDN				S	**Sb**	**14 54 40.2**	**+0.2**
AYDN	**Tasoluk**	**1.70**	**210**	*i* P	**Pg**	**14 54 19.4**	**-0.6**
AYDN				*i* S	**Sb**	**14 54 40.2**	**+0.2**
GULT	**Gulveren**	**1.76**	**42**	*e*PN	**Pn**	**14 54 18.3**	**+0.5**
GULT	**Gulveren**	**1.76**	**42**	*e*Pn	**Pn**	**14 54 18.3**	**+0.5**
HRT	**Hereke**	**1.77**	**18**	*e*PN	**Pn**	**14 54 17.9**	**0.0**
HRT	**Hereke**	**1.77**	**18**	*e*Pn	**Pn**	**14 54 17.9**	**0.0**
SPNC	**Sapanca-Adapaz**	**1.86**	**33**	*e*PN	**Pn**	**14 54 19.7**	**+0.6**
SPNC	**Sapanca-Adapaz**	**1.86**	**33**	*e*Pn	**Pn**	**14 54 19.7**	**+0.6**
ISK	**Istanbul-Kandi**	**1.93**	**2**	*e*PN	**Pn**	**14 54 20.4**	**+0.4**
ISK	**Istanbul-Kandi**	**1.93**	**2**	*e*Pn	**Pn**	**14 54 20.4**	**+0.4**
SVRH	**Sivrihisar-ESK**	**2.01**	**80**	*e*PN	**Pn**	**14 54 21.5**	**+0.2**
SVRH	**Sivrihisar-ESK**	**2.01**	**80**	*e*Pn	**Pn**	**14 54 21.5**	**+0.2**
SILT	**Sile**	**2.08**	**14**	*e*PN	**Pn**	**14 54 22.4**	**+0.3**
SILT	**Sile**	**2.08**	**14**	*e*Pn	**Pn**	**14 54 22.4**	**+0.3**

*ISK **30** 15:10:47.7, 39°.09N×29°.09E, h8km, MD2.5*
*ISCJB **30** 15:10:48.1±0.6, 39°.10N±0°.04×29°.02E±0°.04, h5km±7km, Error ellipse: s-maj=7.0km s-min=4.7km az=143.9*
*DDA **30** 15:10:48.3, 39°.06N×29°.03E, h7km, Md2.4*

*CSEM **30** 15:10:48.2±0.1, 39°.12N×29°.01E, h5km, MD2.4, Error ellipse: s-maj=3.2km s-min=2.0km az=123.0*
ISC 30 15:10:48.1±0.9, **39°.09N**±0°.03×**29°.02E**±0°.03, **h14**km±9km, **n16**, σ0°**31**/28, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**259**	P	**Pg**	**15 10 53.5**	**+0.1**
DEMI				S	**Sg**	**15 10 56.9**	**-0.1**
DEMI	**Demirci**	**0.24**	**259**	*i* P	**Pg**	**15 10 53.5**	**+0.1**
DEMI				*i* S	**Sg**	**15 10 56.9**	**-0.1**
GDZ	**Gediz**	**0.36**	**90**	P	**Pg**	**15 10 55.4**	**0.0**
GDZ				S	**Sg**	**15 11 00.7**	**+0.3**
GDZ	**Gediz**	**0.36**	**90**	*i* P	**Pg**	**15 10 55.4**	**0.0**
GDZ				*i* S	**Sg**	**15 11 00.7**	**+0.3**
TVSB	**Tavsanli**	**0.50**	**43**	*e*PG	**Pg**	**15 10 57.4**	**-0.5**
TVSB				*e*SG	**Sg**	**15 11 04.2**	**-0.4**
TVSB	**Tavsanli**	**0.50**	**43**	*e*Pg	**Pg**	**15 10 57.4**	**-0.5**
TVSB				*e*Sg	**Sg**	**15 11 04.2**	**-0.4**
KULA	**Kula-Manisa**	**0.64**	**206**	*e*PG	**Pb**	**15 11 00.9**	**-0.1**
KULA	**Kula-Manisa**	**0

CAVI	**Cavuskoy**	**1.29**	**31**	*e*PN	**Pb**	**15 22 27.9**	**+0.2**
CAVI				*e*SN	**Sg**	**15 22 45.8**	**+0.5**
CAVI	**Cavuskoy**	**1.29**	**31**	*e*Pn	**Pb**	**15 22 27.9**	**+0.2**
CAVI				*e*Sn	**Sg**	**15 22 45.8**	**+0.5**
BORA	**Eskisehir**	**1.38**	**55**	P	**Pg**	**15 22 30.4**	**+0.1**
BORA				S	**Sg**	**15 22 47.9**	**-0.4**
BORA	**Eskisehir**	**1.38**	**55**	*i* P	**Pg**	**15 22 30.4**	**+0.1**
BORA				*i* S	**Sg**	**15 22 47.9**	**-0.4**
ARMT	**Armutlu**	**1.47**	**356**	*e*PN	**Pb**	**15 22 30.9**	**+0.1**
ARMT	**Armutlu**	**1.47**	**356**	*e*Pn	**Pb**	**15 22 30.9**	**+0.1**

CSEM ***30*** *15:25:51.2±0.2, 41°.97N×20°.20E, h2km, ML2.8, Error ellipse: s-maj=4.6km s-min=3.5km az=21.0*
PDG ***30*** *15:25:52.4±0.2, 41°.92N×20°.09E, h14km, MD2.9/1, ML2.8/13, Error ellipse: s-maj=0.4km s-min=0.6km az=0.0*
SKO ***30*** *15:25:52.5, 41°.94N×20°.12E, h0km*
BEO ***30*** *15:25:52.4±0.3, 41°.98N×20°.17E, h4km±3km, M2.3/9*
ISC 30 15:25:52.2±1.0**, 41°.92N**±0°.02×**20°.13E**±0°.02**, h12**km±9km**, n56**, σ0°.95/101**, 18C-8D, Albania**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TIR	**Tirane**	**0.60**	**200**	*e*Pg	**Pg**	**15 26 03.6**	**-0.3**
TIR				*e*Sg	**Sb**	**15 26 13.6**	**+0.5**
TIR	**Tirane**	**0.60**	**200**	*e*Pg	**Pg**	**15 26 03.6**	**-0.3**
TIR				*e*Sg	**Sb**	**15 26 13.6**	**+0.5**
ULC	**Ulcinj**	**0.67**	**274**	⇓*i*Pg	**Pg**	**15 26 04.5**	**-0.6**
ULC				*e*Sg	**Sb**	**15 26 14.7**	**-0.2**
ULC	**Ulcinj**	**0.67**	**274**	⇓*i*Pg	**Pg**	**15 26 04.5**	**-0.6**
ULC				*e*Sg	**Sb**	**15 26 14.7**	**-0.2**
PVY	**Plav**	**0.69**	**349**	⇓*i*Pg	**Pg**	**15 26 05.3**	**-0.3**
PVY				*e*Sg	**Sb**	**15 26 15.9**	**+0.1**
PVY	**Plav**	**0.69**	**349**	⇓*i*Pg	**Pg**	**15 26 05.3**	**-0.3**
DRME	**Dracevica, Mon**	**0.76**	**291**	⇑*i*Pg	**Pg**	**15 26 05.8**	**-1.0**
DRME				*e*Sg	**Sb**	**15 26 17.5**	**-0.1**
DRME	**Dracevica, Mon**	**0.76**	**291**	⇑*i*Pg	**Pg**	**15 26 05.8**	**-1.0**
DRME				*e*Sg	**Sb**	**15 26 17.5**	**-0.1**
PDG	**Podgorica**	**0.83**	**308**	*e*Pg	**Pg**	**15 26 06.9**	**-1.3**
PDG				*e*Sg	**Sn**	**15 26 20.2**	**-1.7**
PDG	**Podgorica**	**0.83**	**308**	⇑*i*Pg	**Pg**	**15 26 07.1**	**-1.1**
PDG				*e*Sg	**Sn**	**15 26 20.1**	**-1.8**
TTG	**Podgorica**	**0.83**	**308**	⇑*i*Pg	**Pg**	**15 26 07.1**	**-1.1**
TTG				*e*Sg	**Sn**	**15 26 20.1**	**-1.8**
OHR	**Ohrid**	**0.95**	**148**	*i* Pg	**Pb**	**15 26 09.3**	**-1.3**
OHR				*i* Sg	**Sb**	**15 26 23.5**	**+0.5**
OHR	**Ohrid**	**0.95**	**148**	*i* Pg	**Pb**	**15 26 09.3**	**-1.3**
OHR				*i* Sg	**Sb**	**15 26 23.5**	**+0.4**
BEY	**Berane**	**0.97**	**350**	⇑*i*Pg	**Pb**	**15 26 10.4**	**-0.6**
IVA	**Berane**	**0.97**	**350**	⇑*i*Pg	**Pb**	**15 26 10.4**	**-0.6**
IVA				*e*Sg	**Sn**	**15 26 25.1**	**-0.4**
SKO	**Skopje**	**0.98**	**86**	*i* Pg	**Pb**	**15 26 10.2**	**-0.8**
SKO				*i* Sg	**Sb**	**15 26 23.6**	**-0.3**
SKO	**Skopje**	**0.98**	**86**	*e*Pg	**Pb**	**15 26 10.1**	**-0.9**
SKO				*e*Sg	**Sb**	**15 26 23.4**	**-0.5**
SKO	**Skopje**	**0.98**	**86**	*e*Pg	**Pb**	**15 26 10.1**	**-0.9**
SKO				*e*Sg	**Sb**	**15 26 23.4**	**-0.5**
BUM	**Brajici-Budva**	**1.00**	**293**	⇑*i*Pg	**Pb**	**15 26 10.8**	**-0.7**
BUM				*e*Sg	**Sn**	**15 26 25.8**	**-0.4**
BUM	**Brajici-Budva**	**1.00**	**293**	⇑*i*Pg	**Pb**	**15 26 10.8**	**-0.7**
BUM				*e*Sg	**Sn**	**15 26 25.8**	**-0.4**
CEME	**Cevo**	**1.10**	**305**	⇑*i*Pg	**Pb**	**15 26 11.8**	**-1.4**
CEME				*e*Sg	**Sn**	**15 26 29.2**	**+0.5**
CEME	**Cevo**	**1.10**	**305**	⇑*i*Pg	**Pb**	**15 26 11.8**	**-1.4**
CEME				*e*Sg	**Sn**	**15 26 29.2**	**+0.5**
NKME	**Niksic**	**1.22**	**315**	⇓*i*Pg	**Pn**	**15 26 14.7**	**-0.4**
NKME				*e*Sg	**Sg**	**15 26 33.4**	**+1.9**
NKME	**Niksic**	**1.22**	**315**	⇓*i*Pg	**Pn**	**15 26 14.7**	**-0.4**
NKY	**Niksic**	**1.23**	**317**	⇑*i*Pg	**Pn**	**15 26 14.4**	**-0.9**
NKY				*e*Sg	**Sg**	**15 26 33.9**	**+2.0**
NKY	**Niksic**	**1.23**	**317**	⇑*i*Pg	**Pn**	**15 26 14.4**	**-0.9**
HCY	**Herceg Novi**	**1.33**	**294**	⇑*i*Pg	**Pn**	**15 26 16.1**	**-0.5**
HCY				*e*Sg	**Sg**	**15 26 37.2**	**+2.2**
HCY	**Herceg Novi**	**1.33**	**294**	⇑*i*Pg	**Pn**	**15 26 16.1**	**-0.5**
PLE	**Pljevlja**	**1.52**	**339**	⇓*i*Pg	**Pb**	**15 26 20.1**	**-0.2**
PLE				*e*Sg	**Sg**	**15 26 41.9**	**+0.9**
PLE	**Pljevlja**	**1.52**	**339**	⇓*i*Pg	**Pb**	**15 26 20.1**	**-0.2**
PLE				*e*Sg	**Sg**	**15 26 41.9**	**+0.9**
BARS	**Barje**	**1.54**	**54**	*e*Pg	**Pn**	**15 26 19.7**	**+0.3**
BARS				*e*Sg	**Sn**	**15 26 39.5**	**+0.2**
BRY	**Bratogost**	**1.54**	**310**	⇑*i*Pg	**Pb**	**15 26 19.9**	**-0.8**
BRY				*e*Sg	**Sg**	**15 26 42.3**	**+0.6**
BRY	**Bratogost**	**1.54**	**310**	⇑*i*Pg	**Pb**	**15 26 19.9**	**-0.8**
BRY				*e*Sg	**Sg**	**15 26 42.3**	**+0.6**
UPM	**Unac-Piva**	**1.57**	**325**	⇑*i*Pg	**Pb**	**15 26 20.7**	**-0.6**
UPM				*e*Sg	**Sg**	**15 26 43.3**	**+0.5**
UPM	**Unac-Piva**	**1.57**	**325**	⇑*i*Pg	**Pb**	**15 26 20.7**	**-0.6**
UPM				*e*Sg	**Sg**	**15 26 43.3**	**+0.5**
IVAS	**Ivanjica**	**1.66**	**0**	*e*Pg	**Pn**	**15 26 21.7**	**+0.5**
IVAS				*e*Sg	**Sn**	**15 26 42.2**	**-0.2**
IVAS	**Ivanjica**	**1.66**	**0**	*e*Pg	**Pn**	**15 26 21.7**	**+0.5**
IVAS				*e*Sg	**Sn**	**15 26 42.2**	**-0.2**
VAY	**Valandovo**	**1.92**	**107**	*i* Pg	**Pb**	**15 26 27.6**	**+0.5**
VAY				*i* Sg	**Sg**	**15 26 54.2**	**+0.2**
VAY	**Valandovo**	**1.92**	**107**	*e*Pg	**Pb**	**15 26 27.1**	**0.0**
VAY				*e*Sg	**Sg**	**15 26 53.7**	**-0.2**
VAY	**Valandovo**	**1.92**	**107**	*e*Pg	**Pb**	**15 26 27.1**	**0.0**
VAY				*e*Sg	**Sg**	**15 26 53.7**	**-0.2**
GRUS	**Gruza**	**2.02**	**12**	*e*Pg	**Pn**	**15 26 26.9**	**+0.9**
GRUS				*e*Sg	**Sb**	**15 26 53.4**	**-0.4**
GRUS	**Gruza**	**2.02**	**12**	*e*Pg	**Pn**	**15 26 26.9**	**+0.9**
GRUS				*e*Sg	**Sb**	**15 26 53.4**	**-0.4**
BBLS	**Lazići**	**2.02**	**345**	*e*Pg	**Pb**	**15 26 27.4**	**-1.5**
BBLS				*e*Sg	**Sb**	**15 26 54.9**	**+0.9**
BBLS	**Lazići**	**2.02**	**345**	*e*Pg	**Pb**	**15 26 27.4**	**-1.5**
BBLS				*e*Sg	**Sb**	**15 26 54.9**	**+0.9**
DIVS	**Divibare**	**2.18**	**357**	*e*Pg	**Pn**	**15 26 28.7**	**+0.3**
DIVS	**Divibare**	**2.18**	**357**	*e*Pg	**Pn**	**15 26 28.7**	**+0.3**
ZAPS	**Zavoj**	**2.29**	**53**	*e*Pg	**Pn**	**15 26 31.5**	**+1.7**
ZAPS				*e*Sn	**Sn**	**15 26 58.0**	**0.0**
ZAPS	**Zavoj**	**2.29**	**53**	*e*Pg	**Pn**	**15 26 31.5**	**+1.7**
ZAPS				*e*Sn	**Sn**	**15 26 58.0**	**0.0**
TEKS	**Tekeris**	**2.67**	**351**	*e*Pn	**Pn**	**15 26 35.8**	**+0.8**
TEKS	**Tekeris**	**2.67**	**351**	*e*Pn	**Pn**	**15 26 35.8**	**+0.8**
KUBS	**Kucevo**	**2.74**	**24**	*e*Pn	**Pn**	**15 26 36.4**	**+0.5**
KUBS				*e*Sn	**Sn**	**15 27 08.1**	**-0.9**
KUBS	**Kucevo**	**2.74**	**24**	*e*Pn	**Pn**	**15 26 36.4**	**+0.5**
KUBS				*e*Sn	**Sn**	**15 27 08.1**	**-0.9**
FGSL	**Fruska Gora**	**3.25**	**356**	*e*Pn	**Pn**	**15 26 42.7**	**-0.3**
FRGS	**Fruska Gora**	**3.25**	**356**	*e*Pn	**Pn**	**15 26 42.7**	**-0.3**
UDBI	**Udbina**	**4.12**	**311**	*i* Pn	**Pn**	**15 26 57.6**	**+2.6**
UDBI				Sn	**Sn**	**15 27 45.1**	**+1.8**
UDBI	**Udbina**	**4.12**	**311**	*i* Pn	**Pn**	**15 26 57.6**	**+2.6**
UDBI				Sn	**Sn**	**15 27 45.0**	**+1.8**

TIR ***30*** *15:27:43.4, 41°.96N×20°.19E, h18km, ML3.1*
ISCJB ***30*** *15:27:43.8±0.3, 41°.95N±0°.01×20°.16E±0°.02, h2km±2km, Error ellipse: s-maj=2.9km s-min=2.0km az=137.4*
THE ***30*** *15:27:44.9, 42°.13N×20°.26E, h21km±5km, ML3.0/5, Error ellipse: s-maj=6.4km s-min=0.8km az=324.0*
CSEM ***30*** *15:27:44.4±0.1, 41°.93N×20°.16E, h2km, ML3.1, Error ellipse: s-maj=3.1km s-min=2.0km az=46.0*
BEO ***30*** *15:27:45.4±0.3, 41°.93N×20°.18E, h10km±2km, M2.6/1*
SKO ***30*** *15:27:45.2, 41°.94N×20°.11E, h0km*
PDG ***30*** *15:27:46.1±0.4, 41°.97N×20°.02E, h12km±1km, MD3.1/4, ML3.1/12, Error ellipse: s-maj=0.7km s-min=1.0km az=0.0*
ISC 30 15:27:44.4±1.1**, 41°.92N**±0°.02×**20°.16E**±0°.02**, h5**km±9km**, n100, σ0°.82/177, 12C-13D, Albania**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TIR	**Tirane**	**0.61**	**201**	*i* PG	**Pg**	**15 27 56.2**	**0.0**
TIR				*i* SG	**Sb**	**15 28 06.1**	**-0.4**
TIR	**Tirane**	**0.61**	**201**	*e*Pg	**Pg**	**15 27 56.2**	**0.0**
TIR	**Tirane**	**0.61**	**201**	P	**Pg**	**15 27 56.2**	**0.0**
TIR				*i* Sg	**Sb**	**15 28 06.1**	**-0.4**
ULC	**Ulcinj**	**0.68**	**274**	⇓*i*Pg	**Pg**	**15 27 57.3**	**-0.2**
ULC				*e*Sg	**Sg**	**15 28 07.0**	**+0.6**
ULC	**Ulcinj**	**0.68**	**274**	P	**Pg**	**15 27 57.3**	**-0.2**
ULC				*e*Sg	**Sg**	**15 28 07.0**	**+0.6**
PVY	**Plav**	**0.69**	**348**	⇑*i*Pg	**Pg**	**15 27 57.8**	**+0.1**
PVY				*e*Sg	**Sg**	**15 28 07.7**	**+1.0**
PVY	**Plav**	**0.69**	**348**	⇑*i*Pg	**Pg**	**15 27 57.8**	**+0.1**
PVY				*e*Sg	**Sg**	**15 28 07.7**	**+1.0**
PEJK	**Peje**	**0.73**	**7**	P	**Pb**	**15 27 59.1**	**-0.6**
PEJK				S	**Sn**	**15 28 12.2**	**-0.9**
DRME	**Dracevica, Mon**	**0.77**	**291**	⇑*i*Pg	**Pg**	**15 27 58.5**	**-0.8**
DRME				*e*Sg	**Sg**	**15 28 09.1**	**-0.2**
DRME	**Dracevica, Mon**	**0.77**	**291**	⇑*i*Pg	**Pg**	**15 27 58.5**	**-0.8**
DRME				*e*Sg	**Sg**	**15 28 09.1**	**-0.2**
PDG	**Podgorica**	**0.84**	**308**	P	**Pg**	**15 27 59.6**	**-1.0**
PDG				S	**Sg**	**15 28 11.2**	**-0.4**
PDG	**Podgorica**	**0.84**	**308**	⇑*i*Pg	**Pg**	**15 27 59.7**	**-0.9**
PDG				*e*Sg	**Sb**	**15 28 13.8**	**+0.6**
PDG	**Podgorica**	**0.84**	**308**	⇑*i*Pg	**Pg**	**15 27 59.7**	**-0.9**
PDG				S	**Sg**	**15 28 11.2**	**-0.4**
TTG	**Podgorica**	**0.84**	**308**	⇑*i*Pg	**Pg**	**15 27 59.7**	**-0.9**
TTG				*e*Sg	**Sg**	**15 28 11.4**	**-0.2**
OHR	**Ohrid**	**0.94**	**149**	*i* Pg	**Pg**	**15 28 02.1**	**-0.3**
OHR				*i* Sg	**Sb**	**15 28 16.4**	**+0.3**
OHR	**Ohrid**	**0.94**	**149**	*i* Pg	**Pg**	**15 28 02.1**	**-0.3**
OHR				*i* Sg	**Sb**	**15 28 16.3**	**+0.3**
SKO	**Skopje**	**0.96**	**86**	P	**Pg**	**15 28 02.6**	**-0.2**
SKO				S	**Sb**	**15 28 16.6**	**+0.1**
SKO	**Skopje**	**0.96**	**86**	*i* Pg	**Pg**	**15 28 03.0**	**+0.2**
SKO				*i* Sg	**Sb**	**15 28 16.5**	**0.0**
SKO	**Skopje**	**0.96**	**86**	*e*Pg	**Pg**	**15 28 02.5**	**-0.2**
SKO				*e*Sg	**Sb**	**15 28 16.1**	**-0.4**
SKO	**Skopje**	**0.96**	**86**	P	**Pg**	**15 28 02.6**	**-0.2**
SKO				*e*Sg	**Sb**	**15 28 16.1**	**-0.4**
BEY	**Berane**	**0.97**	**349**	⇓*i*Pg	**Pg**	**15 28 03.1**	**0.0**
BEY				*e*Sg	**Sb**	**15 28 17.1**	**0.0**
IVA	**Berane**	**0.97**	**349**	⇓*i*Pg	**Pg**	**15 28 03.1**	**0.0**
IVA				*e*Sg	**Sb**	**15 28 17.1**	**0.0**
BUM	**Brajici-Budva**	**1.01**	**293**	⇓*i*Pg	**Pg**	**15 28 03.5**	**-0.4**
BUM				*e*Sg	**Sg**	**15 28 17.3**	**+0.2**
BUM	**Brajici-Budva**	**1.01**	**293**	⇓*i*Pg	**Pg**	**15 28 03.5**	**-0.4**
BUM				*e*Sg	**Sg**	**15 28 17.3**	**+0.2**
CEME	**Cevo**	**1.11**	**305**	⇑*i*Pg	**Pg**	**15 28 04.6**	**-1.2**
CEME				*e*Sg	**Sg**	**15 28 20.3**	**0.0**
CEME	**Cevo**	**1.11**	**305**	⇑*i*Pg	**Pg**	**15 28 04.6**	**-1.2**
CEME				*e*Sg	**Sg**	**15 28 20.3**	**0.0**
NKME	**Niksic**	**1.23**	**314**	⇑*i*Pg	**Pg**	**15 28 06.6**	**-1.4**
NKME				*e*Sg	**Sb**	**15 28 24.5**	**+0.1**
NKME	**Niksic**	**1.23**	**314**	⇑*i*Pg	**Pg**	**15 28 06.6**	**-1.4**
NKME				*e*Sg	**Sb**	**15 28 24.5**	**+0.1**
NKY	**Niksic**	**1.24**	**316**	⇓*i*Pg	**Pg**	**15 28 06.9**	**-1.4**
NKY				*e*Sg	**Sb**	**15 28 24.9**	**+0.1**
NKY	**Niksic**	**1.24**	**316**	⇓*i*Pg	**Pg**	**15 28 06.9**	**-1.4**
NKY				*e*Sg	**Sb**	**15 28 24.9**	**+0.1**
HCY	**Herceg Novi**	**1.34**	**294**	⇓*i*Pg	**Pn**	**15 28 08.8**	**-1.1**
HCY				*e*Sg	**Sn**	**15 28 28.3**	**+0.2**
HCY	**Herceg Novi**	**1.34**	**294**	⇓*i*Pg	**Pn**	**15 28 08.8**	**-1.1**
HCY				*e*Sg	**Sn**	**15 28 28.3**	**+0.2**
FNA	**Florina**	**1.46**	**141**	P	**Pn**	**15 28 11.1**	**-0.4**
FNA				S	**Sg**	**15 28 31.6**	**+0.3**
FNA	**Florina**	**1.46**	**141**	P	**Pn**	**15 28 11.1**	**-0.4**
FNA				S	**Sg**	**15 28 31.6**	**+0.3**
PLE	**Pljevlja**	**1.52**	**338**	⇓*i*Pg	**Pb**	**15 28 13.2**	**0.0**
PLE				*e*Sg	**Sg**	**15 28 34.3**	**+1.0**
PLE	**Pljevlja**	**1.52**	**338**	⇓*i*Pg	**Pb**	**15 28 13.2**	**0.0**
PLE				*e*Sg	**Sg**	**15 28 34.3**	**+1.0**
BARS	**Barje**	**1.52**	**53**	*i* Pg	**Pn**	**15 28 12.2**	**-0.1**
BARS				*e*Sg	**Sn**	**15 28 32.3**	**-0.2**
BARS	**Barje**	**1.52**	**53**	*i* Pg	**Pn**	**15 28 12.2**	**-0.1**
BARS				*e*Sg	**Sn**	**15 28 32.3**	**-0.2**
BRY	**Bratogost**	**1.55**	**310**	⇓*i*Pg	**Pn**	**15 28 12.5**	**-0.3**
BRY				*e*Sg	**Sg**	**15 28 34.4**	**+0.2**
BRY	**Bratogost**	**1.55**	**310**	⇑*i*Pn	**Pn**	**15 28 12.0**	**-0.8**
BRY	**Bratogost**	**1.55**	**310**	⇓*i*Pg	**Pn**	**15 28 12.5**	**-0.3**
BRY				*e*Sg	**Sg**	**15 28 34.4**	**+0.2**
TREB	**Trebinje**	**1.56**	**301**	*e*Pn	**Pn**	**15 28 12.4**	**-0.4**
UPM	**Unac-Piva**	**1.58**	**325**	*e*Pg	**Pn**	**15 28 13.6**	**+0.3**
UPM				*e*Sg	**Sg**	**15 28 35.6**	**+0.3**
UPM	**Unac-Piva**	**1.58**	**325**	*e*Pg	**Pn**	**15 28 13.6**	**+0.3**
UPM	**Unac-Piva**	**1.58**	**325**	P	**Pb**	**15 28 13.9**	**-0.4**
UPM				*e*Sg	**Sg**	**15 28 35.6**	**+0.3**
NEST	**Nestorio**	**1.65**	**156**	P	**Pn**	**15 28 14.3**	**+0.2**
NEST				S	**Sg**	**15 28 37.4**	**+0.1**
NEST	**Nestorio**	**1.65**	**156**	P	**Pn**	**15 28 14.3**	**+0.2**
NEST				S	**Sg**	**15 28 37.4**	**+0.1**
IVAS	**Ivanjica**	**1.66**	**360**	*e*Pn	**Pn**	**15 28 14.5**	**+0.2**
IVAS				*e*Sg	**Sb**	**15 28 36.9**	**+0.2**
IVAS	**Ivanjica**	**1.66**	**360**	*e*Pn	**Pn**	**15 28 14.5**	**+0.2**
IVAS				*e*Sg	**Sb**	**15 28 36.9**	**+0.2**
PENT	**Pentalofos**	**1.87**	**156**	P	**Pn**	**15 28 17.8**	**+0.5**
PENT				S	**Sb**	**15 28 43.0**	**0.0**
PENT	**Pentalofos**	**1.87**	**156**	P	**Pn**	**15 28 17.8**	**+0.5**
PENT				S	**Sb**	**15 28 43.0**	**0.0**
VAY	**Valandovo**	**1.91**	**107**	*i* Pg	**Pg**	**15 28 20.5**	**-0.5**
VAY	**Valandovo**	**1.91**	**107**	*e*Pn	**Pn**	**15 28 18.6**	**+1.0**
VAY				*e*Sg	**Sg**	**15 28 45.5**	**-0.1**
VAY	**Valandovo**	**1.91**	**107**	*e*Pn	**Pn**	**15 28 18.6**	**+1.0**
VAY	**Valandovo**	**1.91**	**107**	*i* Pg	**Pg**	**15 28 20.4**	**-0.5**
VAY				*e*Sg	**Sg**	**15 28 45.5**	**-0.1**
GRUS	**Gruza**	**2.01**	**12**	*i* Pn	**Pn**	**15 28 19.1**	**0.0**
GRUS				*e*Sg	**Sg**	**15 28 50.9**	**+1.8**
GRUS	**Gruza**	**2.01**	**12**	*i* Pn	**Pn**	**15 28 19.1**	**0.0**
GRUS				*e*Sg	**Sg**	**15 28 50.9**	**+1.8**
KZN	**Kozani**	**2.02**	**142**	P	**Pn**	**15 28 19.7**	**+0.5**
KZN				S	**Sn**	**15 28 45.1**	**+0.2**
KZN	**Kozani**	**2.02**	**142**	P	**Pn**	**15 28 19.7**	**+0.5**
KZN				S	**Sn**	**15 28 45.1**	**+0.2**
BBLS	**Lazići**	**2.02**	**344**	*e*Pn	**Pn**	**15 28 20.3**	**+1.0**
BBLS				*e*Sg	**Sg**	**15 28 48.7**	**-0.8**
BBLS	**Lazići**	**2.02**	**344**	*e*Pn	**Pn**	**15 28 20.3**	**+1.0**
BBLS				*e*Sg	**Sg**	**15 28 48.7**	**-0.8**
BOVS	**Bovan**	**2.06**	**33**	*e*Pn	**Pn**	**15 28 20.2**	**+0.5**
BOVS				*e*Sn	**Sn**	**15 28 44.3**	**-1.5**
BOVS	**Bovan**	**2.06**	**33**	*e*Pn	**Pn**	**15 28 20.2**	**+0.5**
BOVS				*e*Sn	**Sn**	**15 28 44.3**	**-1.5**
DIVS	**Divibare**	**2.18**	**357**	*i* Pn	**Pn**	**15 28 22.0**	**+0.5**
DIVS				*e*Sn	**Sn**	**15 28 49.3**	**+0.4**
DIVS	**Divibare**	**2.18**	**357**	*i* Pn	**Pn**	**15 28 22.0**	**+0.5**
DIVS				*e*Sn	**Sn**	**15 28 49.3**	**+0.4**
KKB	**Krupnik**	**2.19**	**90**	P	**Pn**	**15 28 22.9**	**+1.4**
KEK	**Kerkira**	**2.22**	**187**	P	**Pn**	**15 28 22.2**	**+0.3**
KEK	**Kerkira**	**2.22**	**187**	P	**Pn**	**15 28 22.2**	**+0.3**
ZAPS	**Zavoj**	**2.28**	**53**	*e*Pn	**Pn**	**15 28 23.3**	**+0.6**
ZAPS				*e*Sn	**Sn**	**15 28 50.6**	**-0.6**
ZAPS	**Zavoj**	**2.28**	**53**	*e*Pn	**Pn**	**15 28 23.3**	**+0.6**
ZAPS				*e*Sn	**Sn**	**15 28 50.6**	**-0.6**
TRUS	**Trudelj**	**2.31**	**4**	*e*Pn	**Pn**	**15 28 23.7**	**+0.5**
TRUS	**Trudelj**	**2.31**	**4**	*e*Pn	**Pn**	**15 28 23.7**	**+0.5**
HAPS	**Han Pijesak,BI**	**2.34**	**338**	*e*Pn	**Pn**	**15 28 24.5**	**+0.8**
IGT	**Igoumenitsa**	**2.39**	**177**	P	**Pn**	**15 28 25.6**	**+1.4**
IGT				S	**Sb**	**15 28 57.7**	**+0.1**
IGT	**Igoumenitsa**	**2.39**	**177**	P	**Pn**	**15 28 25.6**	**+1.4**
IGT				S	**Sb**	**15 28 57.7**	**+0.1**
LIT	**Litokhoron**	**2.53**	**135**	P	**Pn**	**15 28 26.0**	**-0.2**
LIT	**Litokhoron**	**2.53**	**135**	P	**Pn**	**15 28 26.0**	**-0.2**
TEKS	**Tekeris**	**2.67**	**350**	*i* Pn	**Pn**	**15 28 28.6**	**+0.5**
TEKS	**Tekeris**	**2.67**	**350**	*i* Pn	**Pn**	**15 28 28.6**	**+0.5**
MMB	**Musomiste**	**2.69**	**96**	P	**Pb**	**15 28 32.1**	**-1.0**
KUBS	**Kucevo**	**2.73**	**23**	*e*Pn	**Pn**	**15 28 28.0**	**-0.9**
KUBS				*e*Sn	**Sn**	**15 29 01.1**	**-1.2**
KUBS	**Kucevo**	**2.73**	**23**	*e*Pn	**Pn**	**15 28 28.0**	**-0.9**
KUBS				*e*Sn	**Sn**	**15 29 01.1**	**-1.2**
MPEP	**Malo Peshtene**	**3.01**	**60**	P	**Pg**	**15 28 42.0**	**-0.1**
FGSL	**Fruska Gora**	**3.25**	**356**	*e*Pn	**Pn**	**15 28 36.3**	**+0.2**
FRGS	**Fruska Gora**	**3.25**	**356**	*e*Pn	**Pn**	**15 28 36.3**	**+0.2**
AGG	**Agios Georgios**	**3.33**	**149**	P	**Pn**	**15 28 37.8**	**+0.5**
AGG	**Agios Georgios**	**3.33**	**149**	P	**Pn**	**15 28 37.8**	**+0.5**
BLY	**Banja Luka**	**3.56**	**324**	*e*Pn	**Pn**	**15 28 42.8**	**+2.4**
UDBI	**Udbina**	**4.14**	**311**	*i* Pn	**Pn**	**15 28 50.1**	**+1.8**
UDBI				Sn	**Sn**	**15 29 36.7**	**-0.5**
UDBI	**Udbina**	**4.14**	**311**	*i* Pn	**Pn**	**15 28 50.1**	**+1.8**
UDBI				Sn	**Sn**	**15 29 36.6**	**-0.5**
NVLJ	**Novalja**	**4.68**	**306**	*i* Pn	**Pn**	**15 28 56.9**	**+1.2**
NVLJ				Sn	**Sn**	**15 29 50.2**	**-0.2**
NVLJ	**Novalja**	**4.68**	**306**	*i* Pn	**Pn**	**15 28 56.9**	**+1.2**
NVLJ				Sn	**Sn**	**15 29 50.1**	**-0.2**
BOJS	**Bojanci**	**5.05**	**317**	*i* Pn	**Pn**	**15 29 02.2**	**+1.5**
BOJS				*i* Sn	**Sn**	**15 29 59.2**	**-0.2**
BOJS	**Bojanci**	**5.05**	**317**	*i* Pn	**Pn**	**15 29 02.2**	**+1.5**
BOJS				*i* Sn	**Sn**	**15 29 59.2**	**-0.2**
CRES	**Cresnjev**	**5.18**	**321**	*i* Pn	**Pn**	**15 29 03.8**	**+1.2**
CRES				*i* Sn	**Sn**	**15 30 03.5**	**+0.8**
CRES	**Cresnjev**	**5.18**	**321**	*i* Pn	**Pn**	**15 29 03.8**	**+1.2**
CRES				*i* Sn	**Sn**	**15 30 03.5**	**+0.8**
VISS	**Visnje**	**5.46**	**317**	*i* Pn	**Pn**	**15 29 08.3**	**+1.8**
VISS				*i* Sn	**Sn**	**15 30 10.8**	**+1.1**
VISS	**Visnje**	**5.46**	**317**	*i* Pn	**Pn**	**15 29 08.3**	**+1.8**
VISS				*i* Sn	**Sn**	**15 30 10.8**	**+1.1**
SKDS	**Skadanscina**	**5.74**	**311**	*i* Pn	**Pn**	**15 29 12.9**	**+2.6**
SKDS				*i* Sn	**Sn**	**15 30 14.8**	**-1.7**
SKDS	**Skadanscina**	**5.74**	**311**	*i* Pn	**Pn**	**15 29 12.9**	**+2.6**
SKDS				*i* Sn	**Sn**	**15 30 14.9**	**-1.7**

ISCJB ***30*** *15:44:17.6±1.1, 37°.1S±0°.2×96°.9W±0°.2, h10km, mb4.2/8, MS4.1/16, Error ellipse: s-maj=25.1km s-min=18.1km az=37.5*
IDC ***30*** *15:44:17.2±2.6, 37°.14S×96°.88W, h0km, mb4.0/7, mb1 4.3/7, mb1mx4.1/25, mbtmp4.0/7, MS4.0/15, Ms1 4.0/15, ms1mx3.8/27, Error ellipse: s-maj=65.7km s-min=25.3km az=25.0*
GCMT ***30*** *15:44:19.3±0.3, 37°.03S×96°.75W, h25km±1km, MW5.0/77, Moment Tensor Solution. s32,c37; s77,c94; Duration: 0 Moment tensor: Scale 10^16Nm; Mrr-0.36±.21; Mθθ-0.10±.19; Mφφ0.45±.17; Mrθ0.92±.36; Mφφ-4.10±.14; Mrφ0.72±.34; Best double couple: Mφ4.28400×10^16 NP1:φs273.00000°, δ79.00000°, λ-167.00000°. NP2: φs181.00000°, δ77.00000°, λ-11.00000°. Principal axes: T 4.2900, Plg1.0000°, Azm47.0000°; N -0.0130, Plg73.0000°, Azm312.0000°; P -4.2770, Plg17.0000°, Azm137.0000°; nsta1 refers to body waves, cutoff=50s. nsta2 refers to surface waves, cutoff=50s.*
NEIC ***30*** *15:44:19.3±1.5, 37°.04S×96°.85W, h10km, mb4.6/2 Error ellipse: s-maj=36.7km s-min=13.9km az=209.0*
ISC 30 15:44:19.5±1.3**, 37°.0S**±0°.2×**96°.8W**±0°.2**, h10**km**, n28, σ0°.72/11, mb4.4/8, MS4.0/16, 1D, Southeast of Easter Island**

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

0.5nm,0.3s,baz=156,slow=11,SNR=7.9
AKTO Aktyubinsk 16.74 330 P **P 15 48 43.6 +1.2**
0.9nm,0.3s,baz=138,slow=8.3,SNR=10
AKTO Aktyubinsk 16.74 330 ‖P **P 15 48 43.1 +0.7**
4.0nm,0.8s
ZALV Zalesovo Beam 19.81 24 P **P 15 49 15.7 0.0**
0.5nm,0.3s,baz=211,slow=11,SNR=6.6
FINES FINESS Array B 37.45 326 P **P 15 51 54.4 0.0**
3.2nm,1.1s,baz=133,slow=11,SNR=4.8
ARCES ARCESS Array B 41.09 338 P **P 15 52 24.0 -0.4**
0.6nm,0.6s,baz=119,slow=6.6,SNR=5.9
NOA NORSAR Array B 44.35 323 P **P 15 52 49.6 -1.1**
0.6nm,0.5s,baz=97,slow=7.7,SNR=2.6
MJAR Matsushiro Arr 52.86 69 LR LR 16 19 55.7
comp=Z,98nm,19.5s,baz=60,slow=40
TORD Torodi Ar. Bea 65.78 269 P **P 15 55 23.0 -1.6**
0.7nm,0.5s,baz=56,slow=5.6,SNR=6.1

*KRSC **30** 15:55:40.1±1.1, 52°.81N×161°.52E, h50km±21km, ML3.9*
*ISCJB **30** 15:55:42.5±0.9, 52°.83N±0°.07×161°.46E±0°.07, h36km±9km, mb3.7/8, MS3.6/1, Error ellipse: s-maj=12.8km s-min=4.8km az=155.5*
*IDC **30** 15:55:46.3±3.6, 52°.36N×161°.03E, h70km±23km, mb3.4/8, mb1 3.6/9, mb1mx3.3/39, mbtmp3.7/9, MS3.6/1, Ms1 3.5/1, ms1mx2.4/30, Error ellipse: s-maj=81.2km s-min=18.0km az=9.0*
ISC 30 15:55:42.7±1.8, 52°.78N±0°.09×161°.50E±0°.06, h38km±3km, n34, σ0§83/39, mb3.8/8, Off east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
NLC	**Nalytchevo**	**1.36**	**287**	*e*P		**Pn**	**15 56 03.8**	**-1.2**
NLC				*e*S		**Sn**	**15 56 21.0**	**-0.7**
SDLR	**Sedlovina**	**1.65**	**288**	*e*P		**Pn**	**15 56 08.6**	**-0.6**
UGLR	**Uglovaya**	**1.67**	**286**	*e*P		**Pn**	**15 56 09.3**	**-0.1**
UGLR				S		**Sn**	**15 56 29.9**	**+0.2**
SMAR	**Somma**	**1.70**	**288**	*e*P		**Pn**	**15 56 09.4**	**-0.5**
AVH	**Avacha**	**1.73**	**287**	*e*P		**Pn**	**15 56 10.4**	**+0.1**
AVH				*e*S		**Sn**	**15 56 31.4**	**+0.2**
KRER	**Koryakskii**	**1.74**	**289**	*e*P		**Pn**	**15 56 10.2**	**-0.3**
KRER				S		**Sn**	**15 56 32.1**	**+0.6**
PET	**Petropavlovsk**	**1.74**	**279**	*e*P		Pn	15 56 00.1	-10
PET				*e*S		**Sn**	**15 56 30.9**	**-0.2**
MKZ	**Mys Kozlova**	**1.78**	**4**	*e*P		**Pn**	**15 56 10.5**	**-0.3**
KRX	**Arik**	**1.81**	**290**	*e*P		**Pn**	**15 56 11.1**	**-0.3**
KRX				S		**Sn**	**15 56 32.7**	**-0.5**
RUS	**Russkaya**	**1.85**	**260**	*e*P		**Pn**	**15 56 11.9**	**+0.1**
RUS				*e*S		**Sn**	**15 56 33.8**	**-0.1**
MTVR	**Mutnovka**	**2.04**	**263**	*e*P		**Pn**	**15 56 15.0**	**+0.4**
MTVR				*e*S		**Sn**	**15 56 39.4**	**+0.6**
KRMR	**Karymshinskiy**	**2.04**	**273**	*e*P		**Pn**	**15 56 14.2**	**-0.3**
KRMR				S		**Sn**	**15 56 39.0**	**+0.3**
ASAK	**Asacha**	**2.23**	**261**	*i* P		**Pn**	**15 56 17.8**	**+0.7**
ASAK				*e*S		**Sn**	**15 56 44.9**	**+1.5**
PETK	**Petropavlovsk-**	**2.32**	**280**	P		**Pn**	**15 56 18.8**	**+0.5**
	9.5nm,0.3s,baz=98,slow=18,SNR=164							
PETK				S		**Sn**	**15 56 46.9**	**+1.3**
	6.8nm,0.3s,baz=299,slow=16,SNR=8.4							
GNL	**Ganaly**	**2.32**	**295**	*e*P		**Pn**	**15 56 18.9**	**+0.5**
KMNR	**Kamenistaya**	**3.07**	**347**	*e*P		**Pn**	**15 56 30.3**	**+1.7**
ZLN	**Zelenaya**	**3.27**	**353**	P		**Pn**	**15 56 32.6**	**+1.3**
KPT	**Kopyto**	**3.27**	**347**	P		**Pn**	**15 56 32.0**	**+0.5**
KOZ	**Kozyrevsk**	**3.42**	**345**	P		**Pn**	**15 56 34.5**	**+1.2**
ESO	**Esso**	**3.55**	**334**	*e*P		**Pn**	**15 56 36.0**	**+0.9**
KLY	**Klyuchi**	**3.57**	**352**	P		**Pn**	**15 56 36.3**	**+0.9**
BKI	**Bering**	**3.59**	**46**	*i* P		**Pn**	**15 56 36.7**	**+1.1**
BKI				*i* S		**Sn**	**15 57 15.0**	**-1.6**
BDR	**Baidarnaya**	**3.80**	**358**	P		**Pn**	**15 56 38.4**	**-0.2**
SMKR	**Semkarok**	**3.81**	**360**	P		**Pn**	**15 56 39.9**	**+1.1**
SRKR	**Sorokina**	**3.88**	**357**	P		**Pn**	**15 56 39.8**	**0.0**
KURBB	**Kurchatov Arra**	**48.72**	**303**	P		**P**	**16 04 22.3**	**-0.6**
	0.7nm,0.5s,baz=59,slow=7.6,SNR=6.6							
MKAR	**Makanchi Array**	**49.05**	**297**	P		**P**	**16 04 24.8**	**-0.9**
	0.3nm,0.4s,baz=55,slow=8.2,SNR=4.0							
ARCES	**ARCESS Array B**	**53.84**	**342**	P		P	16 05 02.9	+1.8
	2.5nm,1.0s,baz=22,slow=8.1,SNR=4.2							
NVAR	**Mina Array Bea**	**55.05**	**71**	P		P	16 05 14.3	+3.8
	0.2nm,0.5s,baz=315,slow=8.9,SNR=2.9							
PDAR	**Pinedale Array**	**56.93**	**61**	P		P	16 05 27.7	+3.7
	0.2nm,0.5s,baz=322,slow=3.9,SNR=2.6							
ULM	**Lac du Bonnet**	**58.41**	**47**	LR		LR	16 32 11.0	
	comp=Z,51nm,20.0s,baz=324,slow=37							
GEYT	**Alibeck**	**67.97**	**304**	P		**P**	**16 06 38.3**	**+0.8**
	1.3nm,0.5s,baz=166,slow=3.1,SNR=3.6							
TXAR	**Lajitas Array**	**69.97**	**68**	P		P	16 06 52.7	+2.5
	0.2nm,0.5s,baz=311,slow=4.7,SNR=3.5							
KBZ	**Khabaz**	**70.34**	**317**	P		P	16 06 54.2	+2.1
	0.8nm,0.5s,baz=63,slow=2.3,SNR=3.0							

*ATH **30** 15:56:04.5, 38°.08N×22°.08E, h51km±2km, ML1.4/5, Error ellipse: s-maj=2.7km s-min=1.3km az=226.0*
*CSEM **30** 15:56:05.4±0.2, 38°.08N×22°.04E, h43km±2km, ML1.4, Error ellipse: s-maj=5.0km s-min=3.3km az=26.0*
THE 30 15:56:05.6, 38°.09N×22°.05E, h46km±1km, ML1.6/7, Error ellipse: s-maj=1.3km s-min=0.7km az=277.0, Greece

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
KLV	**Kalavryta, Ach**	**0.09**	**121**	P		Pn	15 56 12.8	-0.2
KLV				S		Sn	15 56 18.3	+0.1
KLV	**Kalavryta, Ach**	**0.09**	**121**	P		Pn	15 56 13.1	+0.1
KLV				S		Sn	15 56 18.3	+0.1
KLV	**Kalavryta, Ach**	**0.09**	**121**	P		Pn	15 56 13.1	+0.1
KLV				AML		AML	15 56 19.6	
	comp=N,70μm,0.4s							
KLV				S		Sn	15 56 19.7	+1.5
KLV				AML		AML	15 56 20.2	
	comp=E,112μm,0.2s							
LAKA	**Lakka**	**0.16**	**339**	P		Pn	15 56 13.0	-0.3
LAKA				S		Sn	15 56 18.7	-0.1
LAKA	**Lakka**	**0.16**	**339**	P		Pn	15 56 13.3	0.0
LAKA				S		Sn	15 56 18.7	-0.1
LAKA	**Lakka**	**0.16**	**339**	P		Pn	15 56 13.3	0.0
LAKA				S		Sn	15 56 18.6	-0.1
DRO	**Drossia**	**0.30**	**243**	P		Pn	15 56 13.9	-0.5
DRO				S		Sn	15 56 20.9	+0.2
DRO	**Drossia**	**0.30**	**243**	P		Pn	15 56 13.9	-0.5
DRO				S		Sn	15 56 20.9	+0.2
DRO	**Drossia**	**0.30**	**243**	P		Pn	15 56 13.3	-1.1
DRO				S		Sn	15 56 21.7	+1.0
DRO				AML		AML	15 56 22.0	
	comp=N,186μm,0.4s							
DRO				AML		AML	15 56 23.0	
	comp=E,164μm,0.4s							
SERG	**Sergoula**	**0.32**	**1**	P		Pn	15 56 14.4	-0.3
SERG				S		Sn	15 56 21.4	+0.3
EFP	**Efpalio**	**0.36**	**341**	P		Pn	15 56 14.7	-0.3
EFP				S		Sn	15 56 21.6	0.0
EFP	**Efpalio**	**0.36**	**341**	P		Pn	15 56 14.4	-0.6
EFP				S		Sn	15 56 21.6	0.0
EFP	**Efpalio**	**0.36**	**341**	P		Pn	15 56 14.4	-0.5
EFP				S		Sn	15 56 22.3	+0.8
DSF	**Desfina**	**0.49**	**49**	P		Pn	15 56 15.9	-0.7
DSF				S		Sn	15 56 24.5	+0.1
DSF	**Desfina**	**0.49**	**49**	P		Pn	15 56 15.9	-0.7
DSF				S		Sn	15 56 24.5	+0.1
DSF	**Desfina**	**0.49**	**49**	P		Pn	15 56 15.4	-1.1
DSF				S		Sn	15 56 23.8	-0.6
DSF				AML		AML	15 56 26.0	
	comp=N,76μm,0.2s							
DSF				AML		AML	15 56 27.1	
	comp=E,60μm,0.2s							
ANX	**Ano Chora**	**0.51**	**348**	P		Pn	15 56 16.8	-0.1
ANX				S		Sn	15 56 25.1	+0.1
ANX	**Ano Chora**	**0.51**	**348**	P		Pn	15 56 17.1	+0.2
ANX				S		Sn	15 56 25.1	+0.1
ANX	**Ano Chora**	**0.51**	**348**	S		Sn	15 56 27.3	+2.4
AXS	**Araxos**	**0.54**	**281**	P		Pn	15 56 16.3	-0.9
AXS	**Araxos**	**0.54**	**281**	P		Pn	15 56 16.3	-0.9
PVO	**Paravola**	**0.67**	**322**	P		Pn	15 56 18.6	-0.2
PVO	**Paravola**	**0.67**	**322**	P		Pn	15 56 18.6	-0.2
LTK	**Loutraki**	**0.72**	**95**	P		Pn	15 56 19.0	-0.5
LTK				S		Sn	15 56 29.9	+0.3
LTK	**Loutraki**	**0.72**	**95**	P		Pn	15 56 19.0	-0.6
LTK				S		Sn	15 56 29.9	+0.3
PDO	**Prodromos**	**0.85**	**307**	P		Pn	15 56 21.9	+0.7
PDO	**Prodromos**	**0.85**	**307**	P		Pn	15 56 21.9	+0.7
PDO				S		Sn	15 56 34.5	+1.9
PDO				AML		AML	15 56 36.1	
	comp=E,58μm,0.3s							
PDO				AML		AML	15 56 37.0	
	comp=N,66μm,0.3s							
DID	**Didima**	**1.10**	**121**	P		Pn	15 56 24.6	-0.1
DID	**Didima**	**1.10**	**121**	P		Pn	15 56 24.6	-0.1
DID				S		Sn	15 56 39.7	+0.9
DID	**Didima**	**1.10**	**121**	P		Pn	15 56 24.7	0.0
DID				S		Sn	15 56 39.7	+0.9
DID				AML		AML	15 56 42.4	
	comp=E,28μm,0.4s							
DID				AML		AML	15 56 45.4	
	comp=N,21μm,0.3s							

*KRSC **30** 16:05:25.0±1.5, 52°.67N×161°.67E, h47km±23km, ML4.7*
*ISCJB **30** 16:05:27.3±1.2, 52°.69N±0°.04×161°.58E±0°.04, h33km±9km, mb3.9/23, MS3.6/4, Error ellipse: s-maj=6.4km s-min=3.7km az=155.4*
*MOS **30** 16:05:29.9±0.9, 52°.84N×161°.26E, h49km, mb4.1/12, Error ellipse: s-maj=7.7km s-min=4.5km az=98.7*
*IDC **30** 16:05:31.8±0.8, 52°.96N×161°.08E, h41km±6km, mb3.5/18, mb1 3.6/22, mb1mx3.5/55, mbtmp3.8/22, ML3.3/4, MS3.4/7, Ms1 3.4/7, ms1mx3.1/44, Error ellipse: s-maj=19.7km s-min=12.0km az=169.0*
ISC 30 16:05:29.8±0.6, 52°.80N±0°.04×161°.31E±0°.04, h31km±3km, n114, σ1§26/148, mb3.9/23, MS3.6/4, 2C-3D, Off east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase	Op	ISC	Time h m s	Res ISC
NLC	**Nalytchevo**	**1.25**	**288**	*e*P		**Pn**	**16 05 50.2**	**-0.9**
NLC				*e*S		**Sb**	**16 06 08.9**	**+0.4**
NLC	**Nalytchevo**	**1.25**	**288**	PN		**Pn**	**16 05 50.2**	**-0.9**
NLC				S		**Sb**	**16 06 08.9**	**+0.4**
SDLR	**Sedlovina**	**1.54**	**289**	*e*P		**Pn**	**16 05 54.8**	**-0.5**
SDLR				*e*S		**Sb**	**16 06 16.8**	**-0.3**
SDLR	**Sedlovina**	**1.54**	**289**	PN		**Pn**	**16 05 54.8**	**-0.5**
SDLR				S		**Sb**	**16 06 16.8**	**-0.3**
UGLR	**Uglovaya**	**1.56**	**286**	*e*P		**Pn**	**16 05 55.4**	**-0.1**
UGLR				*e*S		**Sb**	**16 06 19.1**	**+1.6**
UGLR	**Uglovaya**	**1.56**	**286**	PN		**Pn**	**16 05 55.4**	**-0.1**
UGLR				S		**Sb**	**16 06 19.1**	**+1.6**
DALK	**Dalny**	**1.57**	**280**	*e*P		**Pn**	**16 05 55.6**	**+0.1**
DALK				*e*S		**Sb**	**16 06 16.1**	**-1.5**
DALK	**Dalny**	**1.57**	**280**	PN		**Pn**	**16 05 55.6**	**+0.1**
DALK				S		**Sb**	**16 06 16.1**	**-1.5**
SMAR	**Somma**	**1.59**	**288**	*e*P		**Pn**	**16 05 56.0**	**0.0**
SMAR				*e*S		**Sb**	**16 06 20.1**	**+1.7**
SMAR	**Somma**	**1.59**	**288**	PN		**Pn**	**16 05 56.0**	**0.0**
SMAR				S		**Sb**	**16 06 20.1**	**+1.7**
AVH	**Avacha**	**1.63**	**288**	*e*P		**Pn**	**16 05 56.8**	**+0.5**
AVH				*e*S		**Sb**	**16 06 21.5**	**+2.2**
AVH	**Avacha**	**1.63**	**288**	PN		**Pn**	**16 05 56.8**	**+0.5**
PET	**Petropavlovsk**	**1.63**	**279**	*e*P		**Pn**	**16 05 56.2**	**-0.1**
PET				*e*S		**Sb**	**16 06 17.7**	**-1.6**
PET	**Petropavlovsk**	**1.63**	**279**	*e*PN		**Pn**	**16 05 55.8**	**-0.5**
PET				*e*S		**Sn**	**16 06 16.9**	**+0.8**
PET				pmax		pmax		
	comp=Z,147nm,0.4s							
PET				smax		smax		
	comp=N,2μm,0.6s							
PET				smax		smax		
	comp=E,2μm,0.7s							
KRER	**Koryakskii**	**1.63**	**289**	*e*P		**Pn**	**16 05 56.4**	**-0.1**
KRER				*e*S		**Sb**	**16 06 19.8**	**+0.2**
KRER	**Koryakskii**	**1.63**	**289**	PN		**Pn**	**16 05 56.4**	**-0.1**
KRER				S		**Sb**	**16 06 19.8**	**+0.2**
INSR	**Institute**	**1.66**	**280**	*e*S		**Sb**	**16 06 18.5**	**-1.8**
KOK	**Koryaka**	**1.69**	**288**	*e*P		**Pn**	**16 05 57.4**	**+0.1**
KOK	**Koryaka**	**1.69**	**288**	PN		**Pn**	**16 05 57.4**	**+0.1**
KRX	**Arik**	**1.70**	**290**	*e*P		**Pn**	**16 05 57.2**	**-0.3**
KRX				*e*S		**Sb**	**16 06 20.5**	**-1.2**
KRX	**Arik**	**1.70**	**290**	PN		**Pn**	**16 05 57.2**	**-0.3**
KRX				S		**Sb**	**16 06 20.5**	**-1.2**
RUS	**Russkaya**	**1.75**	**259**	*e*P		**Pn**	**16 05 58.1**	**+0.2**
RUS				*e*S		**Sb**	**16 06 21.2**	**-1.5**
RUS	**Russkaya**	**1.75**	**259**	PN		**Pn**	**16 05 58.1**	**+0.2**
RUS				S		**Sb**	**16 06 21.2**	**-1.5**
MKZ	**Mys Kozlova**	**1.78**	**8**	*e*P		**Pn**	**16 05 56.8**	**-1.6**
MKZ				*e*S		**Sn**	**16 06 20.7**	**+0.8**
MKZ	**Mys Kozlova**	**1.78**	**8**	PN		**Pn**	**16 05 56.8**	**-1.6**
MKZ				S		**Sn**	**16 06 20.7**	**+0.8**
KRMR	**Karymshinskiy**	**1.93**	**272**	*e*P		**Pn**	**16 06 00.3**	**-0.2**
KRMR				*e*S		**Sb**	**16 06 22.7**	**-0.8**
KRMR	**Karymshinskiy**	**1.93**	**272**	PN		**Pn**	**16 06 00.3**	**-0.2**
KRMR				S		**Sb**	**16 06 27.2**	**-0.8**
MTVR	**Mutnovka**	**1.93**	**262**	*e*P		**Pn**	**16 06 01.1**	**+0.5**
MTVR				*e*S		**Sb**	**16 06 26.3**	**-1.9**
MTVR	**Mutnovka**	**1.93**	**262**	PN		**Pn**	**16 06 01.1**	**+0.5**
MTVR				S		**Sb**	**16 06 26.3**	**-1.9**
GRL	**Gorelyy**	**1.99**	**264**	*e*S		**Sb**	**16 06 28.5**	**-1.3**
ASAK	**Asacha**	**2.12**	**260**	*e*P		**Pn**	**16 06 04.2**	**+1.0**
ASAK				*e*S		**Sb**	**16 06 32.3**	**-1.3**
ASAK	**Asacha**	**2.12**	**260**	PN		**Pn**	**16 06 04.2**	**+1.0**
ASAK				S		**Sb**	**16 06 32.3**	**-1.3**
PETK	**Petropavlovsk-**	**2.21**	**280**	P		**Pn**	**16 06 05.0**	**+0.7**
	comp=E,36nm,0.3s,baz=97,slow=18,SNR=403							
PETK				S		**Sb**	**16 06 33.3**	**-2.7**
	comp=E,41nm,0.3s,baz=23,slow=18,SNR=7.3							
PETK				LR		LR	16 06 37.6	
	comp=E,204nm,19.9s,baz=52,slow=32							
GNL	**Ganaly**	**2.22**	**295**	*e*P		**Pn**	**16 06 05.3**	**+0.8**
GNL				*e*S		**Sb**	**16 06 35.0**	**-1.3**
GNL	**Ganaly**	**2.22**	**295**	PN		**Pn**	**16 06 05.3**	**+0.8**
GNL				S		**Sb**	**16 06 35.0**	**-1.3**
TUMR	**Tumrok**	**2.59**	**345**	*e*P		**Pn**	**16 06 10.1**	**+0.5**
TUMR	**Tumrok**	**2.59**	**345**	PN		**Pn**	**16 06 10.1**	**+0.5**
KMNR	**Kamenistaya**	**3.03**	**348**	*e*P		**Pn**	**16 06 16.6**	**+0.9**
KMNR	**Kamenistaya**	**3.03**	**348**	PN		**Pn**	**16 06 16.6**	**+0.9**
PAU	**Pauzhetka**	**3.08**	**246**	*e*P		**Pn**	**16 06 18.0**	**+1.8**
PAU	**Pauzhetka**	**3.08**	**246**	PN		**Pn**	**16 06 18.0**	**+1.8**
BZMR	**Bezymyannaya**	**3.18**	**352**	*e*P		**Pn**	**16 06 19.2**	**+1.4**
BZMR	**Bezymyannaya**	**3.18**	**352**	PN		**Pn**	**16 06 19.2**	**+1.4**
KIRR	**Kirishev**	**3.22**	**350**	*e*P		**Pn**	**16 06 19.8**	**+1.5**
KIRR	**Kirishev**	**3.22**	**350**	PN		**Pn**	**16 06 19.8**	**+1.5**
KPT	**Kopyto**	**3.24**	**349**	*e*P		**Pn**	**16 06 19.4**	**+0.8**
KPT				*e*S		**Sn**	**16 06 59.8**	**+3.7**
KPT	**Kopyto**	**3.24**	**349**	PN		**Pn**	**16 06 19.4**	**+0.8**
KPT				S		**Sn**	**16 06 59.8**	**+3.7**
ZLN	**Zelenaya**	**3.24**	**355**	*e*P		**Pn**	**16 06 19.2**	**+0.6**
ZLN	**Zelenaya**	**3.24**	**355**	PN		**Pn**	**16 06 19.2**	**+0.6**
LGNR	**Loginova**	**3.31**	**354**	*e*P		**Pn**	**16 06 20.7**	**+1.0**
LGNR	**Loginova**	**3.31**	**354**	PN		**Pn**	**16 06 20.7**	**+1.0**
CIRR	**Tsirk**	**3.34**	**355**	*e*P		**Pn**	**16 06 20.5**	**+0.5**
CIRR	**Tsirk**	**3.34**	**355**	PN		**Pn**	**16 06 20.5**	**+0.5**
KOZ	**Kozyrevsk**	**3.38**	**346**	*e*P		**Pn**	**16 06 21.0**	**+0.7**
KOZ	**Kozyrevsk**	**3.38**	**346**	PN		**Pn**	**16 06 21.0**	**+0.7**
KRSR	**Krestovskiy**	**3.46**	**353**	*e*P		**Pn**	**16 06 22.5**	**+1.0**
KRSR	**Krestovskiy**	**3.46**	**353**	PN		**Pn**	**16 06 22.5**	**+1.0**
ESO	**Esso**	**3.49**	**335**	*e*P		**Pn**	**16 06 22.1**	**+0.2**
ESO	**Esso**	**3.49**	**335**	PN		**Pn**	**16 06 22.1**	**+0.2**
KLY	**Klyuchi**	**3.55**	**354**	*e*P		**Pn**	**16 06 22.4**	**-0.2**
KLY	**Klyuchi**	**3.55**	**354**	PN		**Pn**	**16 06 22.4**	**-0.2**
KBG	**Krutoberegovo**	**3.56**	**13**	*e*P		**Pn**	**16 06 22.1**	**-0.7**
KBG	**Krutoberegovo**	**3.56**	**13**	PN		**Pn**	**16 06 22.1**	**-0.7**
BKI	**Bering**	**3.66**	**47**	*e*P		**Pn**	**16 06 22.9**	**-1.3**
BKI				*e*S		Sn	16 07 01.3	-4.9
BKI	**Bering**	**3.66**	**47**	PN		**Pn**	**16 06 22.9**	**-1.3**
BDR	**Baidarnaya**	**3.78**	**359**	*e*P		**Pn**	**16 06 26.4**	**+0.4**
BDR	**Baidarnaya**	**3.78**	**359**	PN		**Pn**	**16 06 26.4**	**+0.4**
SMKR	**Semkarok**	**3.80**	**1**	*e*P		**Pn**	**16 06 27.5**	**+1.3**
SMKR	**Semkarok**	**3.80**	**1**	PN		**Pn**	**16 06 27.5**	**+1.3**
SKR	**Severo-Kuril's**	**3.86**	**239**	*e*P		**Pn**	**16 06 27.6**	**+0.6**
SKR				*e*S		**Sn**	**16 07 12.7**	**+1.5**
SKR	**Severo-Kuril's**	**3.86**	**239**	*e*PN		Pn	16 06 17.4	-10
SKR				pmax		pmax		
	comp=Z,80nm,0.5s							
SKR				MLR		MLR		
	comp=Z,800nm,12.0s							
SRKR	**Sorokina**	**3.87**	**359**	*e*P		**Pn**	**16 06 27.4**	**+0.3**
SRKR	**Sorokina**	**3.87**	**359**	PN		**Pn**	**16 06 27.4**	**+0.3**
MA2	**Magadan**	**8.98**	**323**	LR		LR	16 11 32.4	
	comp=Z,242nm,19.4s,baz=131,slow=41							
ASAJ	**Asahikawa**	**15.12**	**242**	P		**Pn**	**16 09 00.5**	**-0.4**
	comp=Z,0.3nm,0.3s,baz=348,slow=19,SNR=4.0							
BILL	**Bilibino**	**15.48**	**7**	*i* P		**Pn**	**16 09 08.0**	**+2.5**
BILL				pmax		pmax		
	comp=Z,1.0nm,1.4s							
BILL				MLR		MLR		
	comp=Z,186nm,18.0s							
KLR	**Kul'dur**	**18.87**	**271**	P		**P**	**16 09 46.2**	**-1.1**
	comp=Z,0.1nm,0.3s,baz=132,slow=15,SNR=2.5							
KLR				LR		LR	16 17 13.5	
	comp=Z,84nm,20.1s,baz=38,slow=37							
YAK	**Yakutsk**	**19.19**	**311**	P		**P**	**16 09 48.7**	**-1.9**
	comp=Z,0.0nm,0.3s,baz=270,slow=20,SNR=4.2							
YAK	**Yakutsk**	**19.19**	**311**	*e*P		**P**	**16 09 48.5**	**-2.1**
YAK				pmax		pmax		
	comp=Z,15nm,1.4s							
VLA	**Vladivostok**	**21.82**	**255**	‖*e*P		**P**	**16 10 20.6**	**+1.4**
VLA				*e*			16 10 42.3	
VLA				*e*S		**S**	**16 14 21.7**	**+3.2**
VLA				pmax		pmax		
	comp=Z,55nm,1.4s							
MJA0	**Matsu Arr-Jizo**	**22.93**	**234**	*e*P		P	16 10 37.8	+6.6
MJA0				pmax		pmax		
	comp=Z,2.0nm,0.6s							
MJAR	**Matsushiro Arr**	**22.95**	**234**	P		**P**	**16 10 31.5**	**+0.1**
	comp=Z,2.6nm,1.0s,baz=20,slow=11,SNR=4.5							
TIXI	**Tiksi**	**23.66**	**335**	P		**P**	**16 10 36.5**	**-1.5**
	comp=Z,2.4nm,0.7s,baz=124,slow=10,SNR=13							
TIXI	**Tiksi**	**23.66**	**335**	‖*i* P		**P**	**16 10 36.0**	**-2.0**
TIXI				pmax		pmax		
	comp=Z,2.0nm,0.8s							
KSRS	**Korea Array**	**27.80**	**250**	LR		LR	16 23 34.5	
	comp=Z,79nm,18.1s,baz=46,slow=39							
ULN	**Ulaanbaatar**	**34.29**	**284**	‖*e*P		**P**	**16 12 11.7**	**-1.4**
ULN				pmax		pmax		
	comp=Z,1.0nm,1.2s							
SONM	**Songino Array**	**34.69**	**284**	P		**P**	**16 12 14.6**	**-1.9**
	comp=Z,0.5nm,0.7s,baz=98,slow=8.7,SNR=4.3							
YKA	**Yellowknife Ar**	**42.88**	**43**	P		**P**	**16 13 25.0**	**+0.2**
	comp=Z,0.2nm,0.4s,baz=293,slow=7.5,SNR=3.7							
ZALV	**Zalesovo Beam**	**43.56**	**303**	P		**P**	**16 13 28.1**	**-2.2**
	comp=Z,0.8nm,0.6s,baz=64,slow=6.8,SNR=4.6							
ZALV	**Zalesovo Beam**	**43.56**	**303**	*e*P		**P**	**16 13 29.6**	**-0.7**
ZALV				pmax		pmax		
	comp=Z,1.0nm,0.6s							
NVS	**Novosibirsk**	**43.89**	**305**	*i* P		**P**	**16 13 32.0**	**-1.0**
KURK	**Kurchatov**	**48.52**	**303**	P		**P**	**16 14 09.1**	**-0.3**
KURK				pmax		pmax		
	comp=Z,3.0nm,0.6s							
KURBB	**Kurchatov Arra**	**48.62**	**303**	P		**P**	**16 14 09.1**	**-1.1**
	comp=Z,2.7nm,0.6s,baz=56,slow=8.0,SNR=22							
MKAR	**Makanchi Array**	**48.95**	**297**	P		**P**	**16 14 11.2**	**-1.7**
	comp=Z,0.5nm,0.4s,baz=54,slow=6.8,SNR=8.3							
MKAR	**Makanchi Array**	**48.95**	**297**	*e*P		**P**	**16 14 12.1**	**-0.7**
MKAR				pmax		pmax		
	comp=Z,1.0nm,0.4s							
ARCES	**ARCESS Array B**	**53.80**	**342**	P		**P**	**16 14 47.9**	**-0.9**
	comp=Z,0.6nm,0.5s,baz=30,slow=8.6,SNR=11							
ARCES	**ARCESS Array B**	**53.80**	**342**	*e*P		**P**	**16 14 50.5**	**+1.7**
ARCES				pmax		pmax		
	comp=Z,1.0nm,0.5s							
ARU	**Arti**	**54.12**	**318***c*	*i* P		**P**	**16 14 50.9**	**-0.3**
ARU				S		**S**	**16 22 21.8**	**-3.6**
ARU				pmax		pmax		
	comp=Z,8.0nm,2.5s							
NVAR	**Mina Array Bea**	**55.15**	**71**	P		**P**	**16 15 01.2**	**+1.9**
	comp=Z,0.1nm,0.4s,baz=317,slow=6.1,SNR=2.3							
NVAR				pP		**sP**	**16 15 12.3**	**-0.2**
	comp=Z,0.5nm,0.7s,baz=308,slow=8.9,SNR=3.9							
AAK	**Ala-Archa**	**55.87**	**297**	‖*i* P		**P**	**16 15 04.6**	**+0.2**
AAK				pmax		pmax		
	comp=Z,3.0nm,0.9s							
PDAR	**Pinedale Array**	**57.02**	**61**	P		**P**	**16 15 13.5**	**+0.9**
	comp=Z,0.4nm,0.7s,baz=330,slow=5.2,SNR=3.5					

KULA Kula-Manisa 2.76 349 *e*Pn **Pn 16 13 07.7 +0.5**

*SJA **30** 16:12:30.3±0.8, 23°.40S×66°.79W, h232km±17km, ML3.0, MW3.4*
*IDC **30** 16:12:31.2±2.5, 23°.42S×66°.70W, h200km±29km, mb3.1/1, mb1 3.3/4, mb1mx3.1/32, mbtmp3.7/4, Error ellipse: s-maj=45.2km s-min=25.1km az=125.0*
*ISCJB **30** 16:12:32.8±0.5, 23°.47S±0°.05×66°.85W±0°.07, h200km, mb3.1/1, Error ellipse: s-maj=8.9km s-min=6.6km az=159.3*
ISC 30 16:12:31.8±1.1, **23°.43S**±0°.07×**66°.81W**±0°.07, **h200**km, **n15**, σ1º**66**/18, **Jujuy Province**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HJA	**Humahuaca**	**1.30**	**81**	*e*P	**Pn**	**16 13 06.2**	**+1.9**
HJA				IAML		16 13 07.2	
	comp=Z,178nm,0.6s						
YJA	**Yavi**	**1.72**	**44**	*e*P	**Pn**	**16 13 10.1**	**+2.0**
YJA				IAML		16 13 11.1	
	comp=Z,14nm,0.2s						
YJA				*e*S	**Sn**	**16 13 39.2**	**+3.0**
SLA	**San Lorenzo**	**1.75**	**138**	*e*P	**Pn**	**16 13 10.5**	**+2.4**
AZAP	**Zapla**	**1.78**	**117**	*e*P	**Pn**	**16 13 09.7**	**+1.3**
AZAP				IAML		16 13 10.2	
	comp=Z,188nm,0.3s						
LVC	**Limon Verde**	**2.10**	**292**	P	**Pn**	**16 13 13.4**	**+1.6**
	comp=Z,362nm,0.3s,baz=129,slow=6.5,SNR=182						
LVC				S	**Sn**	**16 13 43.9**	**+1.1**
	comp=Z,501nm,0.3s,baz=246,slow=23,SNR=34						
ASTB	**Santa Barbara**	**2.22**	**104**	*e*P	**Pn**	**16 13 13.9**	**+1.1**
ALOL	**LOMAS DE OLMED**	**2.62**	**99**	*e*P	**Pn**	**16 13 17.8**	**+0.8**
FSA	**Cafayete**	**2.78**	**164**	*e*P	**Pn**	**16 13 19.9**	**+0.9**
FSA				IAML		16 13 20.9	
	comp=Z,12nm,0.6s						
AHML	**Horco Molle**	**3.60**	**159**	*e*P	**Pn**	**16 13 29.4**	**+0.7**
VCA	**Vinchina**	**5.44**	**193**	*e*P	**Pn**	**16 13 52.9**	**+1.0**
AGUA	**GUANDACOL**	**6.22**	**194**	*e*P	**Pn**	**16 14 01.9**	**-0.1**
LPAZ	**La Paz**	**7.21**	**350**	P	**Pn**	**16 14 16.1**	**+0.6**
	comp=Z,1.3nm,0.3s,baz=178,slow=6.4,SNR=34						
LPAZ				S	**Sn**	**16 15 37.3**	**-0.3**
	baz=232,slow=12,SNR=2.8						
SIV	**San Ignacio**	**9.15**	**37**	P	**Pn**	**16 14 38.6**	**-1.6**
	comp=Z,0.6nm,0.3s,baz=233,slow=17,SNR=6.4						
TORD	**Torodi Ar. Bea**	**76.20**	**69**	P	**P**	**16 23 56.6**	**-1.9**
	comp=Z,0.2nm,0.4s,baz=246,slow=4.6,SNR=5.8						
MKAR	**Makanchi Array**	**145.97**	**39**	PKPbc	**PKPab**	**16 31 47.0**	**-1.8**
	comp=Z,0.1nm,0.2s,baz=318,slow=1.9,SNR=2.8						

*ISK **30** 16:14:58.2, 39°.07N×29°.12E, h12km, MD2.5*
*ISCJB **30** 16:14:59.0±0.6, 39°.11N±0°.03×29°.03E±0°.04, h9km±5km, Error ellipse: s-maj=6.4km s-min=4.2km az=39.4*
*DDA **30** 16:14:59.4, 39°.10N×29°.03E, h7km, Md2.5*
*CSEM **30** 16:14:59.0±0.1, 39°.12N×29°.02E, h10km, MD2.5, Error ellipse: s-maj=3.3km s-min=2.0km az=117.0*
ISC 30 16:14:58.6±0.9, **39°.10N**±0°.03×**29°.04E**±0°.03, **h17**km±8km, **n18**, σ0º**33**/32, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**256**	P	**Pb**	**16 15 04.8**	**-0.1**
DEMI				S	**Sg**	**16 15 08.4**	**0.0**
DEMI	**Demirci**	**0.26**	**256**	*i* P	**Pb**	**16 15 04.8**	**-0.1**
DEMI				*i* S	**Sg**	**16 15 08.4**	**0.0**
GDZ	**Gediz**	**0.34**	**92**	P	**Pb**	**16 15 06.6**	**+0.2**
GDZ				S	**Sb**	**16 15 11.7**	**+0.1**
GDZ	**Gediz**	**0.34**	**92**	*i* P	**Pb**	**16 15 06.6**	**+0.2**
GDZ				*i* S	**Sb**	**16 15 11.7**	**+0.1**
TVSB	**Tavsanli**	**0.48**	**43**	*e*PG	**Pg**	**16 15 08.2**	**-0.1**
TVSB				*e*SG	**Sg**	**16 15 14.7**	**-0.1**
TVSB	**Tavsanli**	**0.48**	**43**	*e*Pg	**Pg**	**16 15 08.2**	**-0.1**
TVSB				*e*Sg	**Sg**	**16 15 14.7**	**-0.1**
KULA	**Kula-Manisa**	**0.66**	**207**	*e*PG	**Pg**	**16 15 11.4**	**-0.2**
KULA				*e*SG	**Sb**	**16 15 20.9**	**+0.4**
KULA	**Kula-Manisa**	**0.66**	**207**	*e*Pg	**Pg**	**16 15 11.4**	**-0.2**
KULA				*e*Sg	**Sb**	**16 15 20.9**	**+0.4**
MANT	**Manisa**	**0.72**	**212**	P	**Pb**	**16 15 13.4**	**+0.6**
MANT				S	**Sb**	**16 15 22.6**	**+0.2**
MANT	**Manisa**	**0.72**	**212**	*i* P	**Pb**	**16 15 13.4**	**+0.6**
MANT				*i* S	**Sb**	**16 15 22.6**	**+0.2**
KHAL	**Karahalli**	**0.81**	**154**	P	**Pn**	**16 15 15.4**	**0.0**
KHAL				S	**Sn**	**16 15 26.5**	**-0.6**
KHAL	**Karahalli**	**0.81**	**154**	*i* P	**Pn**	**16 15 15.4**	**0.0**
KHAL				*i* S	**Sn**	**16 15 26.5**	**-0.6**
CAVI	**Cavuskoy**	**1.26**	**29**	*e*PN	**Pb**	**16 15 22.2**	**+0.3**
CAVI	**Cavuskoy**	**1.26**	**29**	*e*Pn	**Pb**	**16 15 22.2**	**+0.3**
IZI	**Iznik**	**1.28**	**15**	*e*PN	**Pb**	**16 15 22.6**	**+0.4**
IZI	**Iznik**	**1.28**	**15**	*e*Pn	**Pb**	**16 15 22.6**	**+0.4**
ARMT	**Armutlu**	**1.47**	**355**	*e*PN	**Pb**	**16 15 25.9**	**+0.5**
ARMT				*e*SN	**Sg**	**16 15 45.7**	**-0.3**
ARMT	**Armutlu**	**1.47**	**355**	*e*Pn	**Pb**	**16 15 25.9**	**+0.5**
ARMT				*e*Sn	**Sg**	**16 15 45.7**	**-0.3**

*IDC **30** 16:15:19.2±6.3, 14°.91N×91°.61W, h140km±44km, mb3.4/8, mb1 3.7/10, mb1mx3.5/37, mbtmp3.9/10, Error ellipse: s-maj=53.7km s-min=31.5km az=12.0*
*ISCJB **30** 16:15:20.6±4.7, 15°.0N±0°.6×91°.6W±0°.2, h167km, mb3.7/8, Error ellipse: s-maj=80.8km s-min=21.6km az=165.7*
ISC 30 16:15:22.4±1.9, **15°.1N**±0°.2×**91°.5W**±0°.2, **h167**km, **n12**, σ0º**90**/14, **mb3.7**/8, **Mexico-Guatemala border region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TEIG	**Tepich**	**5.99**	**30**	P	**Pn**	**16 16 47.8**	**-1.3**
	8.2nm,0.3s,baz=89,slow=23,SNR=71						
TXAR	**Lajitas Array**	**18.11**	**324**	P	**P**	**16 19 21.1**	**-0.7**
	0.1nm,0.3s,baz=153,slow=9.6,SNR=16						
TKL	**Tuckaleechee C**	**21.65**	**17**	P	**P**	**16 20 01.2**	**+1.5**
	2.2nm,0.8s,baz=211,slow=13,SNR=3.6						
ANMO	**Albuquerque**	**23.94**	**328**	P	**P**	**16 20 21.8**	**+0.4**
	0.7nm,0.4s,baz=140,slow=12,SNR=6.3						
PDAR	**Pinedale Array**	**31.67**	**334**	P	**P**	**16 21 31.1**	**+0.8**
	0.2nm,0.5s,baz=154,slow=8.6,SNR=2.7						
PDAR				PcP	**PcP**	**16 24 17.9**	**-0.3**
	0.2nm,0.7s,baz=137,slow=5.7,SNR=2.7						
NVAR	**Mina Array Bea**	**33.17**	**320**	P	**P**	**16 21 43.1**	**-0.3**
	1.0nm,0.7s,baz=133,slow=8.3,SNR=9.6						
NVAR				PcP	**PcP**	**16 24 23.0**	**+0.6**
	0.3nm,0.6s,baz=129,slow=3.6,SNR=3.3						
SCHQ	**Schefferville**	**44.07**	**20**	P	**P**	**16 23 14.3**	**+0.7**
	3.1nm,0.7s,baz=275,slow=11,SNR=4.1						
YKA	**Yellowknife Ar**	**50.11**	**346**	P	**P**	**16 24 00.6**	**+0.4**
	0.6nm,0.5s,baz=148,slow=7.5,SNR=8.9						
INK	**Inuvik**	**59.57**	**343**	P	**P**	**16 25 08.7**	**+0.7**
	1.5nm,0.7s,baz=134,slow=2.8,SNR=3.4						
ILAR	**Eielson Array**	**62.06**	**336**	P	**P**	**16 25 23.7**	**-1.3**
	1.9nm,1.1s,baz=125,slow=4.5,SNR=7.5						
WRA	**Warramunga Arr**	**136.12**	**257**	PKP	**PKPdf**	**16 34 24.3**	**-0.4**
	0.5nm,0.9s,baz=89,slow=2.7,SNR=4.1						
CMAR	**Chiang Mai Arr**	**145.14**	**342**	PKPbc	**PKPbc**	**16 34 40.4**	**-0.4**
	2.7nm,0.7s,baz=336,slow=3.4,SNR=26						

*KRSC **30** 16:17:03.2±1.4, 52°.68N×161°.63E, h51km±22km, ML4.5*
*ISCJB **30** 16:17:07.0±0.7, 52°.78N±0°.05×161°.43E±0°.06, h42km±5km, mb4.0/29, MS4.4/1, Error ellipse: s-maj=8.9km s-min=3.8km az=146.0*
*MOS **30** 16:17:08.4±0.8, 52°.89N×161°.23E, h47km, mb4.4/13, Error ellipse: s-maj=7.1km s-min=4.5km az=96.6*
*NEIC **30** 16:17:09.7±0.4, 53°.08N×161°.05E, mb4.1/1, Error ellipse: s-maj=11.1km s-min=6.1km az=156.0*
*IDC **30** 16:17:10.0±0.7, 53°.09N×161°.04E, h35km±5km, mb3.7/23, mb1 3.9/27, mb1mx3.8/45, mbtmp3.9/27, ML3.4/4, MS4.3/1, Ms1 4.3/1, ms1mx2.7/47, Error ellipse: s-maj=18.9km s-min=10.8km az=162.0*
ISC 30 16:17:08.7±0.6, **52°.89N**±0°.05×**161°.32E**±0°.04, **h34**km±1km, **h34**km:**pP-P**, **n130**, σ1º**04**/157, **mb4.0**/29, **1C-5D**, **Off east coast of Kamchatka Peninsula**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NLC	**Nalytchevo**	**1.23**	**284**	*e*P	**Pn**	**16 17 27.9**	**-1.5**
NLC	**Nalytchevo**	**1.23**	**284**	PN	**Pn**	**16 17 27.9**	**-1.5**
SDLR	**Sedlovina**	**1.52**	**286**	*e*P	**Pn**	**16 17 32.8**	**-0.7**
SDLR				*e*S	**Sb**	**16 17 54.3**	**-1.0**
SDLR	**Sedlovina**	**1.52**	**286**	PN	**Pn**	**16 17 32.8**	**-0.7**
SDLR				S	**Sb**	**16 17 54.3**	**-1.0**
UGLR	**Uglovaya**	**1.54**	**283**	*e*P	**Pn**	**16 17 33.2**	**-0.6**
UGLR				*e*S	**Sb**	**16 17 56.2**	**+0.3**
UGLR	**Uglovaya**	**1.54**	**283**	PN	**Pn**	**16 17 33.2**	**-0.6**
UGLR				S	**Sb**	**16 17 56.2**	**+0.3**
DALK	**Dalny**	**1.56**	**276**	*e*P	**Pn**	**16 17 33.7**	**-0.2**
DALK				*e*S	**Sn**	**16 17 54.3**	**+1.4**
DALK	**Dalny**	**1.56**	**276**	PN	**Pn**	**16 17 33.7**	**-0.2**
DALK				S	**Sn**	**16 17 54.3**	**+1.4**
SMAR	**Somma**	**1.56**	**285**	*e*P	**Pn**	**16 17 34.1**	**-0.1**
SMAR				*e*S	**Sb**	**16 17 57.8**	**+1.1**
SMAR	**Somma**	**1.56**	**285**	PN	**Pn**	**16 17 34.1**	**-0.1**
SMAR				S	**Sb**	**16 17 57.8**	**+1.1**
AVH	**Avacha**	**1.60**	**285**	*e*P	**Pn**	**16 17 34.5**	**-0.1**
AVH	**Avacha**	**1.60**	**285**	PN	**Pn**	**16 17 34.5**	**-0.1**
KRER	**Koryakskii**	**1.60**	**286**	*e*P	**Pn**	**16 17 34.6**	**-0.2**
KRER				*e*S	**Sb**	**16 17 57.4**	**-0.4**
KRER	**Koryakskii**	**1.60**	**286**	PN	**Pn**	**16 17 34.6**	**-0.2**
KRER				S	**Sb**	**16 17 57.4**	**-0.4**
PET	**Petropavlovsk**	**1.62**	**276**	*e*P	**Pn**	**16 17 34.1**	**-0.7**
PET				*e*S	**Sn**	**16 17 55.2**	**+0.8**
PET	**Petropavlovsk**	**1.62**	**276**	⇓*i*PN	**Pn**	**16 17 34.6**	**-0.2**
PET				*e*S	**Sn**	**16 17 54.8**	**+0.4**
PET				pmax	pmax		
	comp=Z,164nm,0.5s						
PET				smax	smax		
	comp=E,2μm,0.5s						
PET				smax	smax		
	comp=N,849nm,0.5s						
PET	**Petropavlovsk**	**1.62**	**276**	*e*Pn	**Pn**	**16 17 34.0**	**-0.7**
KOK	**Koryaka**	**1.67**	**285**	*e*P	**Pn**	**16 17 35.9**	**+0.3**
KOK	**Koryaka**	**1.67**	**285**	PN	**Pn**	**16 17 35.9**	**+0.3**
KRX	**Arik**	**1.68**	**287**	*e*P	**Pn**	**16 17 35.3**	**-0.4**
KRX	**Arik**	**1.68**	**287**	PN	**Pn**	**16 17 35.3**	**-0.4**
MKZ	**Mys Kozlova**	**1.69**	**8**	*e*P	**Pn**	**16 17 34.9**	**-0.8**
MKZ	**Mys Kozlova**	**1.69**	**8**	PN	**Pn**	**16 17 34.9**	**-0.8**
RUS	**Russkaya**	**1.77**	**256**	*e*P	**Pn**	**16 17 36.4**	**-0.4**
RUS				*e*S	**Sn**	**16 17 58.9**	**+0.8**
RUS	**Russkaya**	**1.77**	**256**	PN	**Pn**	**16 17 36.4**	**-0.4**
RUS				S	**Sn**	**16 17 58.9**	**+0.8**
KRMR	**Karymshinskiy**	**1.93**	**269**	*e*P	**Pn**	**16 17 38.5**	**-0.6**
KRMR				*e*S	**Sn**	**16 18 02.6**	**+0.4**
KRMR	**Karymshinskiy**	**1.93**	**269**	PN	**Pn**	**16 17 38.5**	**-0.6**
KRMR				S	**Sn**	**16 18 02.6**	**+0.4**
MTVR	**Mutnovka**	**1.95**	**259**	*e*P	**Pn**	**16 17 39.3**	**-0.2**
MTVR				*e*S	**Sn**	**16 18 03.7**	**+0.8**
MTVR	**Mutnovka**	**1.95**	**259**	PN	**Pn**	**16 17 39.3**	**-0.2**
MTVR				S	**Sn**	**16 18 03.7**	**+0.8**
ASAK	**Asacha**	**2.14**	**258**	*e*P	**Pn**	**16 17 42.2**	**+0.1**
ASAK				*e*S	**Sn**	**16 18 09.2**	**+1.7**
ASAK	**Asacha**	**2.14**	**258**	PN	**Pn**	**16 17 42.2**	**+0.1**
ASAK				S	**Sn**	**16 18 09.2**	**+1.7**
GNL	**Ganaly**	**2.18**	**293**	*e*P	**Pn**	**16 17 43.4**	**+0.8**
GNL				*e*S	**Sb**	**16 18 13.1**	**-1.1**
GNL	**Ganaly**	**2.18**	**293**	PN	**Pn**	**16 17 43.4**	**+0.8**
GNL				S	**Sb**	**16 18 13.1**	**-1.1**
PETK	**Petropavlovsk-**	**2.20**	**277**	Pn	**Pn**	**16 17 43.4**	**+0.7**
	comp=N,43nm,0.3s,baz=100,slow=20,SNR=752						
PETK				Sn	**Sn**	**16 18 09.9**	**+1.1**
	comp=N,31nm,0.3s,baz=94,slow=20,SNR=8.3						
KZV	**Kizimen**	**2.31**	**345**	*e*P	**Pn**	**16 17 45.0**	**+0.6**
KZV	**Kizimen**	**2.31**	**345**	PN	**Pn**	**16 17 45.0**	**+0.6**
TUMR	**Tumrok**	**2.50**	**344**	*e*P	**Pn**	**16 17 48.1**	**+1.1**
TUMR	**Tumrok**	**2.50**	**344**	PN	**Pn**	**16 17 48.1**	**+1.1**
KMNR	**Kamenistaya**	**2.94**	**348**	*e*P	**Pn**	**16 17 54.8**	**+1.7**
KMNR	**Kamenistaya**	**2.94**	**348**	PN	**Pn**	**16 17 54.8**	**+1.7**
BZMR	**Bezymyannaya**	**3.09**	**351**	*e*P	**Pn**	**16 17 57.0**	**+1.9**
BZMR	**Bezymyannaya**	**3.09**	**351**	PN	**Pn**	**16 17 57.0**	**+1.9**
PAU	**Pauzhetka**	**3.12**	**245**	*e*P	**Pn**	**16 17 56.0**	**+0.6**
PAU	**Pauzhetka**	**3.12**	**245**	PN	**Pn**	**16 17 56.0**	**+0.6**
KIRR	**Kirishev**	**3.12**	**350**	*e*P	**Pn**	**16 17 57.3**	**+1.7**
KIRR	**Kirishev**	**3.12**	**350**	PN	**Pn**	**16 17 57.3**	**+1.7**
KPT	**Kopyto**	**3.15**	**349**	*e*P	**Pn**	**16 17 57.1**	**+1.2**
KPT	**Kopyto**	**3.15**	**349**	PN	**Pn**	**16 17 57.1**	**+1.2**
ZLN	**Zelenaya**	**3.15**	**355**	*e*P	**Pn**	**16 17 57.1**	**+1.2**
ZLN	**Zelenaya**	**3.15**	**355**	PN	**Pn**	**16 17 57.1**	**+1.2**
LGNR	**Loginova**	**3.22**	**354**	*e*P	**Pn**	**16 17 58.6**	**+1.5**
LGNR	**Loginova**	**3.22**	**354**	PN	**Pn**	**16 17 58.6**	**+1.5**
CIRR	**Tsirk**	**3.25**	**354**	*e*P	**Pn**	**16 17 58.6**	**+1.3**
CIRR	**Tsirk**	**3.25**	**354**	PN	**Pn**	**16 17 58.6**	**+1.3**
KOZ	**Kozyrevsk**	**3.29**	**346**	*e*P	**Pn**	**16 17 59.1**	**+1.4**
KOZ	**Kozyrevsk**	**3.29**	**346**	PN	**Pn**	**16 17 59.1**	**+1.4**
KRSR	**Krestovskiy**	**3.36**	**353**	*e*P	**Pn**	**16 17 59.8**	**+0.9**
KRSR	**Krestovskiy**	**3.36**	**353**	PN	**Pn**	**16 17 59.8**	**+0.9**
KLY	**Klyuchi**	**3.45**	**354**	*e*P	**Pn**	**16 18 00.6**	**+0.6**
KLY	**Klyuchi**	**3.45**	**354**	PN	**Pn**	**16 18 00.6**	**+0.6**
KBG	**Krutoberegovo**	**3.47**	**13**	*e*P	**Pn**	**16 18 00.2**	**0.0**
KBG	**Krutoberegovo**	**3.47**	**13**	PN	**Pn**	**16 18 00.2**	**0.0**
BKI	**Bering**	**3.59**	**48**	*e*P	**Pn**	**16 18 01.2**	**-0.7**
BKI				*e*S	**Sn**	**16 18 39.7**	**-3.3**
BKI	**Bering**	**3.59**	**48**	PN	**Pn**	**16 18 01.2**	**-0.7**
BDR	**Baidarnaya**	**3.69**	**359**	*e*P	**Pn**	**16 18 03.9**	**+0.6**
BDR	**Baidarnaya**	**3.69**	**359**	PN	**Pn**	**16 18 03.9**	**+0.6**
SMKR	**Semkarok**	**3.70**	**1**	*e*P	**Pn**	**16 18 04.5**	**+1.0**
SMKR	**Semkarok**	**3.70**	**1**	PN	**Pn**	**16 18 04.5**	**+1.0**
SRKR	**Sorokina**	**3.77**	**359**	*e*P	**Pn**	**16 18 04.9**	**+0.4**
SRKR	**Sorokina**	**3.77**	**359**	PN	**Pn**	**16 18 04.9**	**+0.4**
SKR	**Severo-Kuril's**	**3.91**	**238**	*e*P	**Pn**	**16 18 04.3**	**-2.0**
SKR				*e*S	**Sn**	**16 18 49.9**	**-1.1**
UGL	**Uglegorsk**	**12.71**	**260**	*e*PN	**Pn**	**16 20 06.1**	**-0.7**
UGL				*e*SS	Sn	16 22 38.9	+12
ASAJ	**Asahikawa**	**15.16**	**242**	Pn	**Pn**	**16 20 39.6**	**-0.6**
	comp=N,0.4nm,0.3s,baz=292,slow=19,SNR=4.2						
ASAJ	**Asahikawa**	**15.16**	**242**	*e*P	**Pn**	**16 20 39.7**	**-0.5**
BILL	**Biiibino**	**15.38**	**7**	*e*P	**P**	**16 20 46.5**	**-0.7**
BILL				pmax	pmax		
	comp=Z,2.0nm,1.2s						
ERM	**Erimo**	**16.36**	**236**	*e*P	**P**	**16 20 59.5**	**+1.4**
HABR	**Khabarovsk**	**17.18**	**266**	*e*P	**Pn**	**16 21 04.8**	**-1.0**
HABR				*e*S	**Sn**	**16 24 13.6**	**-2.0**
HABR				pmax	pmax		
	comp=N,9.0nm,1.5s						
HABR				pmax	pmax		
	comp=E,13nm,1.5s						
HABR				pmax	pmax		
	comp=Z,12nm,1.5s						
HABR				MLR	MLR		
	comp=Z,81nm,15.0s						
KLR	**Kul'dur**	**18.88**	**271**	P	**P**	**16 21 25.7**	**-0.2**
	comp=Z,0.1nm,0.3s,baz=68,slow=8.7,SNR=4.1						
YAK	**Yakutsk**	**19.13**	**311**	P	**P**	**16 21 26.8**	**-1.7**
	comp=Z,0.0nm,0.3s,baz=276,slow=22,SNR=6.7						
YAK	**Yakutsk**	**19.13**	**311**	*e*P	**P**	**16 21 26.4**	**-2.1**
YAK				pmax	pmax		
	comp=N,4.0nm,1.1s						
YAK				pmax	pmax		
	comp=Z,16nm,1.1s						
YAK				pmax	pmax		
	comp=E,7.0nm,1.1s						
USRK	**Ussuriysk Ar.**	**21.15**	**258**	P	**P**	**16 21 50.9**	**+0.3**
	comp=E,1.3nm,0.7s,baz=32,slow=14,SNR=4.0						
VLA	**Vladivostok**	**21.84**	**255**	⇓*e*P	**P**	**16 21 57.6**	**-0.4**
VLA				*i* *SP	**sP**	**16 22 11.7**	**+0.4**
VLA				pmax	pmax		
	comp=Z,25nm,1.0s						
MJAR	**Matsushiro Arr**	**23.01**	**234**	P	**P**	**16 22 11.0**	**+0.5**
	comp=Z,1.8nm,0.7s,baz=32,slow=9.3,SNR=4.0						
TIXI	**Tiksi**	**23.58**	**335**	P	**P**	**16 22 13.6**	**-2.1**
	comp=Z,4.1nm,0.5s,baz=109,slow=13,SNR=35						
TIXI	**Tiksi**	**23.58**	**335**	⇓*i*P	**P**	**16 22 14.9**	**-0.8**
TIXI				*e*PP	**pP**	**16 22 24.4**	**-0.8**
TIXI				pmax	pmax		
	comp=Z,4.0nm,0.7s						
KSRS	**Korea Array**	**27.83**	**250**	P	**P**	**16 22 55.2**	**+0.6**
	comp=Z,0.6nm,0.6s,baz=33,slow=8.3,SNR=3.9						
KSAR	**Wonju Array Be**	**27.86**	**250**	P	**P**	**16 22 55.2**	**+0.3**
KSAR	**Wonju Array Be**	**27.86**	**250**	P	**P**	**16 22 55.2**	**+0.3**
ILAR	**Eielson Array**	**28.43**	**45**	P	**P**	**16 23 00.7**	**+0.9**
	comp=Z,0.5nm,0.8s,baz=269,slow=8.3,SNR=7.6						
ILAR	**Eielson Array**	**28.43**	**45**	*e*P	**P**	**16 23 01.4**	**+1.6**
ILAR				pmax	pmax		
	comp=Z,1.0nm,0.9s						
H11N2	**WAKE ISLAND Hy**	**33.38**	**170**	T	T	16 59 35.6	
	baz=353,slow=76,SNR=28						
H11N3	**WAKE ISLAND Hy**	**33.39**	**170**	T	T	16 59 20.3	
	baz=353,slow=76,SNR=21						
H11N1	**WAKE ISLAND Hy**	**33.40**	**170**	T	T	16 59 36.2	
	baz=353,slow=76,SNR=27						
ULN	**Ulaanbaatar**	**34.27**	**284**	⇑*i*P	**P**	**16 23 51.1**	**-0.3**
ULN				pmax	pmax		
	comp=Z,3.0nm,1.7s						
H11S1	**WAKE ISLAND Hy**	**34.57**	**171**	T	T	17 01 10.2	
	baz=352,slow=76,SNR=6.9						
H11S3	**WAKE ISLAND Hy**	**34.58**	**171**	T	T	17 00 44.3	
	baz=352,slow=76,SNR=12						
H11S2	**WAKE ISLAND Hy**	**34.59**	**171**	T	T	17 00 45.4	
	baz=352,slow=76,SNR=5.3						
SONM	**Songino Array**	**34.67**	**284**	P	**P**	**16 23 53.5**	**-1.4**
	comp=Z,0.4nm,0.4s,baz=62,slow=8.3,SNR=5.0						
SONM	**Songino Array**	**34.67**	**284**	*e*P	**P**	**16 23 54.4**	**-0.5**
YKA	**Yellowknife Ar**	**42.81**	**43**	P	**P**	**16 25 03.4**	**+0.7**
	comp=Z,0.7nm,0.6s,baz=300,slow=8.3,SNR=4.8						
ZALV	**Zalesovo Beam**	**43.51**	**303**	P	**P**	**16 25 06.3**	**-2.1**
	comp=Z,1.4nm,0.6s,baz=47,slow=8.3,SNR=5.9						
ZALV	**Zalesovo Beam**	**43.51**	**303**	*e*P	**P**	**16 25 06.7**	**-1.7**
ZALV				pmax	pmax		
	comp=Z,1.0nm,0.6s						
MKAR	**Makanchi Array**	**48.91**	**296**	P	**P**	**16 25 49.2**	**-1.8**
	comp=Z,1.0nm,0.5s,baz=54,slow=6.4,SNR=5.7						
ARCES	**ARCESS Array B**	**53.71**	**342**	P	**P**	**16 26 26.5**	**-0.1**
	comp=Z,0.8nm,0.5s,baz=35,slow=6.1,SNR=13						
ARU	**Arti**	**54.05**	**318**	*d*P	**P**	**16 26 28.6**	**-0.6**
ARU						16 28 25.9	
ARU				S	**S**	**16 34 02.2**	**-0.5**
ARU				SS	**SS**	**16 37 42.0**	**-1.6**
ARU				pmax	pmax		
	comp=Z,3.0nm,0.6s						
NVAR	**Mina Array Bea**	**55.11**	**71**	P	**P**	**16 26 40.0**	**+2.4**
	comp=Z,0.7nm,0.7s,baz=298,slow=7.2,SNR=6.2						
NVAR				pP	**sP**	**16 26 50.6**	**-1.2**
	comp=Z,0.7nm,0.8s,baz=294,slow=7.9,SNR=4.9						
AAK	**Ala-Archa**	**55.83**	**297**	LR	LR	16 49 24.1	
	comp=Z,318nm,21.3s,baz=230,slow=35						
AAK	**Ala-Archa**	**55.83**	**297**	*e*P	**P**	**16 26 42.8**	**+0.2**
AAK				pmax	pmax		
	comp=Z,4.0nm,0.8s						
PDAR	**Pinedale Array**	**56.97**	**61**	P	**P**	**16 26 52.9**	**+2.2**
	comp=Z,0.6nm,0.5s,baz=302,slow=2.0,SNR=8.7						
KLMR	**Klimovskoe**	**57.49**	**330**	*e*P	**P**	**16 26 53.0**	**-0.9**
KLMR				*e*		16 27 45.0	
KLMR				pmax	pmax		
	comp=Z,6.0nm,0.7s						
ABKAR	**Akbulak array**	**58.49**	**311**	*e*P	**P**	**16 26 59.9**	**-1.1**
CMAR	**Chiang Mai Arr**	**58.87**	**259**	P	**P**	**16 27 04.9**	**+0.8**
	comp=Z,1.6nm,0.7s,baz=27,slow=6.7,SNR=17						
CMAR				pP	**pP**	**16 27 15.4**	**+1.1**
	comp=Z,1.0nm,0.7s,baz=27,slow=6.8,SNR=6.5						
CMAR	**Chiang Mai Arr**	**58.87**	**259**	*e*P	**P**	**16 27 05.3**	**+1.3**
CMAR				pmax	pmax		
	comp=Z,2.0nm,0.7s						
FINES	**FINESS Array B**	**60.60**	**337**	P	**P**	**16 27 15.2**	**-0.1**
	comp=Z,3.2nm,0.7s,baz=23,slow=7.9,SNR=9.9						
FINES	**FINESS Array B**	**60.60**	**337**	*e*P	**P**	**16 27 16.1**	**+0.8**
FINES				pmax	pmax		
	comp=Z,3.0nm,0.7s						
NB2	**NORSAR Subarra**	**63.94**	**344**	P	**P**	**16 27 37.7**	**-0.1**
	comp=Z,2.2nm,0.7s,baz=22,slow=6.9						
NOA	**NORSAR Array B**	**63.94**	**344**	P	**P**	**16 27 37.8**	**0.0**
	comp=Z,1.6nm,0.6s,baz=21,slow=6.7,SNR=8.7						
NOA	**NORSAR Array B**	**63.94**	**344**	*e*P	**P**	**16 27 38.1**	**+0.3**
NOA				pmax	pmax		
	comp=Z,2.0nm,0.6s						
SCHQ	**Schefferville**	**65.48**	**28**	P	**P**	**16 27 48.1**	**+0.2**
	comp=Z,2.0nm,0.9s,baz=36,slow=18,SNR=2.9						
GEYT	**Alibeck**	**67.82**	**304**	P	**P**	**16 28 03.3**	**+0.2**
	com

KUU	Kurty	4.69	296	eP		Pb	16 21 18.0	+3.0
	15nm,0.7s							
KUU				eS		Sg	16 22 19.2	-4.0
	20nm,0.6s							
MK31	Makanchi Array	4.85	1	⇑Pn		Pn	16 21 06.8	+1.3
	1.3nm,0.3s,baz=184,slow=13,SNR=50							
MK31				⇓Lg		Lg	16 22 22.7	
	16nm,0.7s,baz=182,slow=29,SNR=4.8							
MKAR	Makanchi Array	4.85	1	Pn		Pn	16 21 07.0	+1.4
	2.1nm,0.3s,baz=185,slow=13,SNR=34							
MKAR				Sn		Sn	16 22 00.7	-1.0
	1.3nm,0.3s,baz=180,slow=16,SNR=6.4							
MKAR				Lg		Lg	16 22 21.8	
	2.3nm,0.3s,baz=184,slow=31,SNR=6.6							
MAKZ	Makanchi	4.86	359	⇑Pn		Pn	16 21 07.1	+1.3
	3.8nm,0.4s							
MAKZ				⇓Sn		Sn	16 22 03.5	+1.4
	4.6nm,0.5s							
MAKZ				⇑Lg		Lg	16 22 23.0	
	12nm,0.8s							
DGS	Degeres	4.89	288	eP		Pg	16 21 22.4	-3.7
	6.8nm,0.4s							
DGS				eS		Sg	16 22 27.4	-2.0
	22nm,0.3s							
TKM2	Tokmak 2	4.95	284	⇑Pn		Pn	16 21 10.0	+2.8
	4.0nm,0.6s							
TKM2				⇑Lg		Lg	16 22 29.9	
	23nm,0.8s							
AAK	Ala-Archa	5.72	279	⇓Pg		Pg	16 21 38.4	-3.8
	4.1nm,0.7s							
AAK				⇑Lg		Lg	16 22 54.7	
	9.3nm,0.7s							
KURBB	Kurchatov Arra	9.03	345	Pn		Pn	16 22 03.0	0.0
	0.1nm,0.3s,baz=166,slow=12,SNR=7.5							
KURBB	Kurchatov Arra	9.03	345	⇑Lg		Lg	16 24 37.5	
	11nm,0.7s							
ZALV	Zalesovo Beam	12.14	8	Pn		Pn	16 22 44.8	-0.7
	0.2nm,0.3s,baz=186,slow=13,SNR=3.8							
TORD	Torodi Ar. Bea	74.28	274	P		P	16 31 29.7	-0.5
	0.1nm,0.4s,baz=40,slow=6.7,SNR=3.0							

MEX 30 16:19:53.4±0.6, 17°.16N×100°.08W, h36km±6km, MD3.6, Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CAIG	El Cayaco	0.21	239	i P	Pn	16 19 58.6	-2.9
CAIG				eS	Sn	16 20 03.3	-5.1
ACP2	Acapulco	0.34	147	i P	Pn	16 20 00.1	-1.6
ACP2				eS	Sn	16 20 06.4	-1.7
ACX	Acapulco	0.36	144	i P	Pn	16 20 00.1	-1.9
ACX				eS	Sn	16 20 05.7	-2.7
MEIG	Mezcala	0.88	30	i P	Pn	16 20 07.3	-2.1
MEIG				eS	Sn	16 20 18.9	-2.1
ARIG	Puente Sto Nin	1.15	347	eP	Pn	16 20 11.2	-1.7
ARIG				eS	Sn	16 20 24.8	-2.6
PLIG	Platanillo	1.34	24	eP	Pn	16 20 14.4	-1.3
PLIG				eS	Sn	16 20 30.4	-2.0
ZIIG	Zihuatanejo	1.40	289	eP	Pn	16 20 15.4	-0.9
ZIIG				eS	Sn	16 20 32.1	-1.5
TLIG	Tlapa	1.50	74	eP	Pn	16 20 15.9	-2.0
TLIG				eS	Sn	16 20 34.6	-1.7
YAIG	Yautepec	1.95	29	eP	Pn	16 20 22.7	-1.4
YAIG				eS	Sn	16 20 45.6	-1.8
PNIG	Pinotepa	2.02	112	eP	Pn	16 20 23.8	-1.1
PNIG				eS	Sn	16 20 46.7	-2.3

*ISCJB **30** 16:22:35.7±0.5, 39°.09N±0°.03×29°.06E±0°.04, h7km±5km, Error ellipse: s-maj=5.7km s-min=4.4km az=147.2*
*DDA **30** 16:22:35.5, 39°.10N×29°.04E, h7km, Md2.7*
*CSEM **30** 16:22:35.7±0.1, 39°.10N×29°.04E, h8km, MD2.7, Error ellipse: s-maj=2.4km s-min=1.9km az=120.0*
*ISK **30** 16:22:35.1, 39°.10N×29°.06E, h8km, MD2.5*
ISC 30 16:22:35.9±0.9, 39°.08N±0°.03×29°.06E±0°.03, h13km±9km, n20, σ0°.9 30/34, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.27	261	P	Pg	16 22 41.6	0.0
DEMI				S	Sg	16 22 45.5	+0.1
DEMI	Demirci	0.27	261	i P	Pg	16 22 41.6	0.0
DEMI				i S	Sg	16 22 45.5	+0.1
GDZ	Gediz	0.33	89	P	Pg	16 22 42.7	0.0
GDZ				S	Sg	16 22 47.4	+0.1
GDZ	Gediz	0.33	89	i P	Pg	16 22 42.7	0.0
GDZ				i S	Sg	16 22 47.4	+0.1
TVSB	Tavsanli	0.48	41	ePG	Pg	16 22 44.9	-0.6
TVSB				eSG	Sg	16 22 51.7	-0.2
TVSB	Tavsanli	0.48	41	ePg	Pg	16 22 44.9	-0.6
TVSB				eSg	Sg	16 22 51.7	-0.2
KULA	Kula-Manisa	0.65	209	ePG	Pg	16 22 48.3	-0.2
KULA	Kula-Manisa	0.65	209	ePg	Pg	16 22 48.3	-0.2
MANT	Manisa	0.71	213	P	Pg	16 22 49.8	0.0
MANT				S	Sg	16 22 59.0	-0.1
MANT	Manisa	0.71	213	i P	Pg	16 22 49.8	0.0
MANT				i S	Sg	16 22 59.0	-0.1
KHAL	Karahalli	0.79	154	P	Pb	16 22 51.8	+0.2
KHAL				S	Sb	16 23 02.1	-0.1
KHAL	Karahalli	0.79	154	i P	Pb	16 22 51.8	+0.2
KHAL				i S	Sb	16 23 02.1	-0.1
CAVI	Cavuskoy	1.27	28	ePN	Pn	16 22 59.4	0.0
CAVI				eSN	Sg	16 23 17.6	+0.7
CAVI	Cavuskoy	1.27	28	ePn	Pn	16 22 59.4	0.0
CAVI				eSn	Sg	16 23 17.6	+0.7
BALY	Balya	1.29	301	P	Pn	16 22 59.2	-0.5
BALY				S	Sg	16 23 17.8	+0.2
BALY	Balya	1.29	301	i P	Pn	16 22 59.2	-0.5
BALY				i S	Sg	16 23 17.8	+0.2
IZI	Iznik	1.29	14	ePN	Pn	16 22 59.9	+0.1
IZI	Iznik	1.29	14	ePn	Pn	16 22 59.9	+0.1
ARMT	Armutlu	1.49	354	ePN	Pn	16 23 02.5	+0.2
ARMT	Armutlu	1.49	354	ePn	Pn	16 23 02.5	+0.2

MEX 30 16:26:59.5±0.4, 17°.73N×101°.89W, h16km±14km, MD3.5, Near coast of Guerrero

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZIIG	Zihuatanejo	0.42	107	eP	Pg	16 27 06.8	-1.2
ZIIG				eS	Sg	16 27 11.5	-2.3
MMIG	Aquila	1.50	292	eP	Pn	16 27 21.5	-4.2
ARIG	Puente Sto Nin	1.56	69	eP	Pn	16 27 23.4	-3.3
ARIG				eS	Sn	16 27 40.9	-5.7
CAIG	El Cayaco	1.69	113	eP	Pn	16 27 25.2	-3.1
CAIG				i S	Sn	16 27 44.8	-4.9

*SOME **30** 16:32:10.0, 43°.17N×83°.95E, h10km*
*NNC **30** 16:32:14.7±4.4, 43°.51N×83°.55E, h0km, mb2.9, mpv2.6, Error ellipse: s-maj=41.6km s-min=15.0km az=119.0*
ISC 30 16:32:11.5±2.7, 43°.27N±0°.10×83°.9E±0°.1, h10km, n10, σ2°.9 33/18, 5C-4D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHLS	Shalkode	2.91	269	eP	Pb	16 33 03.9	+0.2
	5.7nm,0.1s						
SHLS				eS	Sb	16 33 42.1	+2.6
	28nm,0.1s						
DJR	Jarkent	3.14	291	⇓iP	Pb	16 33 09.1	+1.7
	8.0nm,0.3s						
DJR				⇓iS	Sg	16 33 51.6	-0.6
	8.8nm,0.4s						
PDGK	Podgornoye	3.20	273	⇓Pn	Pn	16 33 03.2	+1.3
	0.8nm,0.4s						
PDGK				⇑Pg	Pb	16 33 08.2	-0.2
	2.3nm,0.4s						
PDGK				⇑Lg	Lg	16 33 49.8	
	9.4nm,0.4s						
UZB	Uzynbulak	3.54	270	eP	Pb	16 33 14.6	+0.2
	3.1nm,0.2s						
UZB				eS	Sb	16 34 01.2	+3.7
	7.2nm,0.3s						
MK31	Makanchi Array	3.70	343	⇓Pg	Pb	16 33 16.7	-0.3
	0.2nm,0.2s,baz=154,slow=17,SNR=7.4						
MK31				⇑Lg	Lg	16 34 01.4	
	2.5nm,0.6s,baz=150,slow=27,SNR=8.8						
MAKZ	Makanchi	3.79	340	⇑Pg	Pb	16 33 19.6	+1.2
	1.4nm,0.6s						
MAKZ				⇑Lg	Lg	16 34 03.8	
	3.3nm,0.6s						
KAPS	Kapalarasan	3.81	303	eP	Pg	16 33 22.2	-2.4
	1.8nm,0.4s						
KAPS				eS	Sg	16 34 14.4	+0.4
	5.8nm,0.6s						
SATY	Saty	4.00	269	eP	Pb	16 33 22.9	+0.8
	11nm,0.4s						
SATY				eS	Sg	16 34 15.7	-4.2
	15nm,0.3s						
KURS	Kuram	4.16	275	eP	Pg	16 33 27.8	-3.4
	2.4nm,0.4s						
KURS				eS	Sg	16 34 24.2	-0.8
	2.4nm,0.4s						
TNSS	Tian-Shan	5.07	270	eP	Pb	16 33 44.2	+3.6
	1.7nm,0.4s						
TNSS				eS	Sg	16 34 52.0	-2.3
	1.8nm,0.5s						

*ISCJB **30** 16:32:23.4±0.7, 39°.12N±0°.04×29°.11E±0°.04, h1km±12km, Error ellipse: s-maj=7.5km s-min=4.9km az=175.0*
*DDA **30** 16:32:23.3, 39°.11N×29°.13E, h11km, Md2.8*
*CSEM **30** 16:32:23.6±0.1, 39°.12N×29°.10E, h2km, MD2.8, Error ellipse: s-maj=3.1km s-min=2.5km az=89.0*
*ISK **30** 16:32:23.4, 39°.11N×29°.11E, h5km, MD2.7*
ISC 30 16:32:23.1±1.0, 39°.09N±0°.03×29°.09E±0°.03, h9km±11km, n27, σ0°.9 39/40, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.30	260	P	Pg	16 32 28.8	-0.3
DEMI				S	Sb	16 32 35.6	-0.1
DEMI	Demirci	0.30	260	i P	Pg	16 32 28.8	-0.3
DEMI				i S	Sb	16 32 35.6	-0.1
GDZ	Gediz	0.30	91	P	Pg	16 32 29.3	+0.2
GDZ				S	Sg	16 32 33.2	0.0
GDZ	Gediz	0.30	91	i P	Pg	16 32 29.3	+0.2
GDZ				i S	Sg	16 32 33.1	0.0
KULA	Kula-Manisa	0.67	210	ePG	Pb	16 32 37.1	+0.1
KULA				eSG	Sb	16 32 47.2	+0.8
KULA	Kula-Manisa	0.67	210	ePg	Pb	16 32 37.1	+0.1
KULA				eSg	Sb	16 32 47.2	+0.8
MANT	Manisa	0.73	215	P	Pb	16 32 38.1	0.0
MANT				S	Sb	16 32 48.1	-0.2
MANT	Manisa	0.73	215	i P	Pb	16 32 38.1	0.0
MANT				i S	Sb	16 32 48.1	-0.2
KHAL	Karahalli	0.79	156	P	Pb	16 32 39.1	+0.1
KHAL				S	Sb	16 32 49.7	-0.1
KHAL	Karahalli	0.79	156	i P	Pb	16 32 39.1	+0.1
KHAL				i S	Sb	16 32 49.7	-0.1
KHL	Karahalli	0.84	156	ePG	Pn	16 32 40.6	-0.6
KHL				eSG	Sb	16 32 52.1	+0.8
KHL	Karahalli	0.84	156	ePg	Pn	16 32 40.6	-0.6
KHL				eSg	Sb	16 32 52.1	+0.8
AKS	Akhisar	1.02	258	ePG	Pb	16 32 43.3	+0.4
AKS	Akhisar	1.02	258	ePg	Pb	16 32 43.3	+0.4
IGD	Bursa	1.17	4	i P	Pb	16 32 44.7	-0.8
IGD				i S	Sg	16 33 01.4	+0.5
IZI	Iznik	1.28	13	ePN	Pg	16 32 47.8	+0.2
IZI	Iznik	1.28	13	ePn	Pg	16 32 47.8	+0.2
KCTX	Karacabey (Bur	1.30	334	ePN	Pg	16 32 48.4	+0.3
KCTX	Karacabey (Bur	1.30	334	ePn	Pg	16 32 48.4	+0.3
GONE	Gonen-Balikesi	1.45	312	ePN	Pg	16 32 50.9	+0.1
GONE	Gonen-Balikesi	1.45	312	ePn	Pg	16 32 50.9	+0.1
ARMT	Armutlu	1.48	353	ePN	Pb	16 32 51.0	+0.2
ARMT	Armutlu	1.48	353	ePn	Pb	16 32 51.0	+0.2
EDC	Edincik	1.57	323	ePN	Pb	16 32 52.5	+0.2
EDC	Edincik	1.57	323	ePn	Pb	16 32 52.5	+0.2
GULT	Gulveren	1.73	39	ePN	Pb	16 32 54.9	-0.2
GULT	Gulveren	1.73	39	ePn	Pb	16 32 54.9	-0.2

*ISCJB **30** 16:33:36.5±0.5, 39°.09N±0°.03×29°.03E±0°.03, h7km±5km, Error ellipse: s-maj=4.8km s-min=3.9km az=177.3*
*DDA **30** 16:33:36.5, 39°.10N×29°.05E, h10km, Md2.8*
*CSEM **30** 16:33:36.6±0.1, 39°.10N×29°.03E, h8km, MD2.8, Error ellipse: s-maj=1.8km s-min=1.5km az=149.0*
*ISK **30** 16:33:36.1, 39°.08N×29°.02E, h11km, MD2.7*
ISC 30 16:33:36.7±0.9, 39°.08N±0°.03×29°.03E±0°.02, h15km±7km, n30, σ0°.9 39/48, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.25	261	P	Pg	16 33 42.2	0.0
DEMI				S	Sg	16 33 46.3	+0.3
DEMI	Demirci	0.25	261	i P	Pg	16 33 42.2	0.0
DEMI				i S	Sg	16 33 46.3	+0.3
GDZ	Gediz	0.35	89	P	Pg	16 33 43.6	-0.3
GDZ				S	Sg	16 33 48.5	-0.4
GDZ	Gediz	0.35	89	i P	Pg	16 33 43.6	-0.3
GDZ				i S	Sg	16 33 48.5	-0.4
KULA	Kula-Manisa	0.64	207	ePG	Pg	16 33 48.9	-0.3
KULA				eSG	Sb	16 33 57.9	-0.3
KULA	Kula-Manisa	0.64	207	ePg	Pg	16 33 48.9	-0.3
KULA				eSg	Sb	16 33 57.9	-0.3
MANT	Manisa	0.70	212	P	Pb	16 33 50.6	0.0
MANT				S	Sg	16 33 59.4	-0.2
MANT	Manisa	0.70	212	i P	Pb	16 33 50.6	0.0
MANT				i S	Sg	16 33 59.4	-0.2
KHAL	Karahalli	0.80	153	P	Pb	16 33 52.7	+0.5
KHAL				S	Sb	16 34 03.0	+0.1
KHAL	Karahalli	0.80	153	i P	Pb	16 33 52.7	+0.5
KHAL				i S	Sb	16 34 03.0	+0.1
KHL	Karahalli	0.85	153	ePG	Pb	16 33 53.0	-0.1
KHL				eSG	Sb	16 34 05.2	+0.9
AKHS	Akhisar	0.97	258	P	Pn	16 33 56.0	+0.3
AKHS				S	Sb	16 34 07.7	-0.1
AKHS	Akhisar	0.97	258	i P	Pn	16 33 56.0	+0.3
AKHS				i S	Sb	16 34 07.7	-0.1
AKS	Akhisar	0.97	258	ePG	Pb	16 33 55.0	-0.2
AKS				eSG	Sn	16 34 08.8	-0.5
AKS	Akhisar	0.97	258	ePg	Pb	16 33 55.0	-0.2
AKS				eSg	Sn	16 34 08.8	-0.5
BALB	Balikesir	1.05	302	ePG	Pb	16 33 56.6	0.0
BALB	Balikesir	1.05	302	ePg	Pb	16 33 56.6	0.0
IGD	Bursa	1.19	6	i P	Pn	16 33 58.2	-0.5
IGD				i S	Sn	16 34 14.9	+0.3
KCTX	Karacabey (Bur	1.29	336	ePN	Pn	16 34 00.6	+0.4
KCTX	Karacabey (Bur	1.29	336	ePn	Pn	16 34 00.6	+0.4
IZI	Iznik	1.30	15	ePN	Pb	16 34 00.8	0.0
IZI	Iznik	1.30	15	ePn	Pb	16 34 00.8	0.0
ESKT	Eskisehir	1.48	72	i P	Pb	16 34 03.8	-0.1
ESKT				i S	Sg	16 34 23.9	-0.4
SEYT	Eskypehyr	1.48	72	P	Pb	16 34 03.8	-0.1
SEYT				S	Sg	16 34 23.9	-0.4
ARMT	Armutlu	1.49	355	ePN	Pn	16 34 03.5	+0.6
ARMT	Armutlu	1.49	355	ePn	Pn	16 34 03.5	+0.6
EDC	Edincik	1.55	325	ePN	Pn	16 34 04.1	+0.3
EDC	Edincik	1.55	325	ePn	Pn	16 34 04.1	+0.3
GULT	Gulveren	1.77	40	ePN	Pn	16 34 07.6	+0.8
GULT	Gulveren	1.77	40	ePn	Pn	16 34 07.6	+0.8

*IDC **30** 16:37:02.5±0.8, 41°.98N×82°.31E, h0km, mb3.7/10, mb1 3.8/16, mb1mx3.7/53, mbtmp3.7/16, ML3.3/6, MS3.7/1, Ms1 3.7/1, ms1mx2.4/59, Error ellipse: s-maj=17.2km s-min=14.1km az=34.0*
*SOME **30** 16:37:04.3, 41°.72N×82°.03E, h5km, MS3.0*
*BJI **30** 16:37:06.6, 41°.99N×82°.27E, h10km, ML3.7/10*
*NNC **30** 16:37:08.4±1.1, 42°.13N×82°.11E, h0km, mb4.2, mpv3.8, Error ellipse: s-maj=10.3km s-min=5.6km az=139.0*
ISC 30 16:37:05.0±0.6, 42°.19N±0°.04×82°.58E±0°.03, h13km, n52, σ1°.9 89/72, mb3.7/10, 16C-10D, Northern Xinjiang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHLS	Shalkode	2.21	297	eP	Pb	16 37 44.4	-0.6
	240nm,0.4s						
SHLS				eS	Sb	16 38 13.6	+1.2
	1μm,0.5s						
PDGK	Podgornoye	2.55	298	⇓Pn	Pn	16 37 47.9	+1.8
	129nm,0.9s						
PDGK				⇑Lg	Lg	16 38 21.5	
	886nm,0.9s						
UZB	Uzynbulak	2.79	291	eP	Pb	16 37 53.5	-1.4
	58nm,0.5s						
UZB				eS	Sb	16 38 29.0	-0.1
	472nm,0.5s						
DJR	Jarkent	2.96	317	eP	Pb	16 37 58.9	+1.3
	105nm,0.4s						
DJR				⇓iS	Sg	16 38 38.9	-1.1
	145nm,0.6s						
KPKS	Kokpek	3.14	295	eP	Pb	16 37 58.6	-2.1
	158nm,0.3s						
KPKS				eS	Sb	16 38 39.5	+0.6
	695nm,0.5s						
SATY	Saty	3.20	287	eP	Pb	16 38 01.9	+0.1
	136nm,0.5s						
SATY				eS	Sb	16 38 43.1	+2.3
	391nm,0.7s						
ZHN	Zhinishke	3.21	289	eP	Pb	16 37 59.9	-2.0
	51nm,0.4s						
ZHN				⇓iS	Sb	16 38 42.2	+1.2
	366nm,0.3s						
KURS	Kuram	3.49	293	eP	Pb	16 38 05.2	-1.6
	32nm,0.4s						
KURS				eS	Sb	16 38 49.6	+0.5
	44nm,0.4s						
MNBS	Baschi	3.59	303	eP	Pb	16 38 07.6	-0.9
	25nm,0.5s						
MNBS				eS	Sb	16 38 53.4	+1.3
	373nm,0.4s						
KAPS	Kapalarasan	3.88	324	eP	Pg	16 38 16.4	-2.9
	80nm,0.4s						
KAPS				eS	Sg	16 39 06.9	-2.6
	86nm,0.5s						
ARXS	Arharly	4.02	302	eP	Pb	16 38 17.5	+1.7
	59nm,0.3s						
ARXS				eS	Sg	16 39 10.4	-3.7
	101nm,0.5s						
WMQ	Urumqi	4.09	65	Pn	Pb	16 38 15.3	-1.6
WMQ				Sn	Sb	16 39 08.5	+2.2
WMQ				smax	smax		
	comp=N,110nm,0.3s						
WMQ				smax	smax		
	comp=E,130nm,0.3s						
TDK	Taldyqorghan	4.14	314	eP	Pg	16 38 20.9	-3.3
	78nm,0.5s						
TDK				eS	Sg	16 39 17.4	-0.4
	162nm,0.6s						
KOTS	Kotyrbulak	4.16	286	eP	Pb	16 38 17.1	-1.1
	113nm,0.3s						
KOTS				eS	Sb	16 39 09.3	+0.9
	112nm,0.5s						
MDOK	Medeo	4.19	285	eP	Pb	16 38 17.6	-1.2
	35nm,0.7s						
MDOK				eS	Sb	16 39 09.2	-0.1
	117nm,0.5s						
TNSS	Tian-Shan	4.25	283	eP	Pb	16 38 16.8	-3.0
	43nm,0.6s						
TNSS				eS	Sb	16 39 10.4	-0.7
	43nm,0.6s						
KNDC	Almaty	4.26	286	⇑Pn	Pn	16 38 10.7	+1.0
	86nm,0.6s						
KNDC				⇑Lg	Lg	16 39 12.6	
	152nm,0.7s						
AAA	Alma-Ata	4.29	287	eP	Pb	16 38 18.9	-1.4
	125nm,0.6s						
AAA				eS	Sb	16 39 12.8	+0.8
	166nm,0.6s						
CHKK	Chushkaly	4.42	294	eP	Pb	16 38 23.4	+0.9
	13nm,0.4s						
CHKK				eS	Sb	16 39 19.3	+3.5
	52nm,0.4s						
IZV	Izvestkoviy	4.48	283	eP	Pb	16 38 22.4	-1.3
	38nm,0.5s						
IZV				eS	Sb	16 39 18.4	+0.7
	130nm,0.4s						
KTBS	Karatobe	4.59	291	eP	Pb	16 38 26.7	+1.3
	32nm,0.4s						
KTBS				eS	Sb	16 39 25.7	+5.1
	41nm,0.5s						
MK31	Makanchi Array	4.61	358	Pn	Pn	16 38 19.7	+5.3
	4.8nm,0.4s,baz=185,slow=13,SNR=312						
MK31				⇓Pg	Pg	16 38 32.6	-0.6
	4.7nm,0.3s,baz=163,slow=16,SNR=11						
MK31				⇑Lg	Lg	16 39 36.0	
	60nm,0.7s,baz=186,slow=31,SNR=4.1						
MKAR	Makanchi Array	4.61	358	Pn	Pn	16 38 19.8	+5.3
	5.7nm,0.3s,baz=189,slow=13,SNR=80						
MKAR				Sn	Sn	16 39 07.0	-0.8
	3.8nm,0.3s,baz=188,slow=28,SNR=5.2						
MKAR				Lg	Lg	16 39 32.7	
	7.8nm,0.3s,baz=182,slow=33,SNR=6.7						
MAKZ	Makanchi	4.64	355	⇑Pn	Pn	16 38 20.1	+5.3
	7.4nm,0.2s						
MAKZ				⇑Sn	Sb	16 39 17.8	-4.2
	18nm,0.5s						
MAKZ				⇑Lg	Lg	16 39 35.9	
	24nm,0.8s						
KUU	Kurty	4.88	293	eP	Pb	16 38 31.1	+0.7
	36nm,0.7s						
KUU				eS	Sb	16 39 34.3	+5.3
	747nm,9.2s						
DGS	Degeres	5.12	284	eP	Pb	16 38 35.2	+0.6
	20nm,0.3s						
DGS				eS	Sb	16 39 39.8	+3.7
	68nm,0.3s						
TKM2	Tokmak 2	5.21	280	⇑Pn	Pn	16 38 22.9	+0.1
	11nm,0.5s						
TKM2				⇑Lg	Lg	16 39 41.1	
	64nm,0.7s						
KSH	Kashi	5.68	244	Pg	Pg	16 38 51.3	-2.4
KSH				Sg	Sg	16 40 08.5	+1.3
KSH				smax	smax		
	comp=N,63nm,0.9s						
KSH				smax	smax		
	comp=E,55nm,0.8s						
AAK	Ala-Archa	6.00	277	Pn	Pn	16 38 33.3	-0.4
	0.8nm,0.3s,baz=89,slow=11,SNR=5.5						
AAK				Lg	Lg	16 40 06.9	
	3.6nm,0.3s,baz=8.8,slow=20,SNR=7.4						
AAK	Ala-Archa	6.00	277	⇑Pn	Pn	16 38 34.7	+1.0
	1.8nm,0.6s						
AAK				⇑Pg	Pb	16 38 53.4	+3.8
	12nm,0.7s						
AAK				⇓Lg	Lg	16 40 07.4	
	31nm,0.7s						
MRKS	Merke	6.94	278	eP	Pb	16 39 08.5	+3.0
	7.4nm,0.7s						
MRKS				eS	Sb	16 40 36.8	+8.5
	10.0nm,0.6s						
MNAS	Manas	7.47	276	⇓Pn	Pn	16 38 54.2	+0.3
	1.8nm,0.6s						
MNAS				⇓Lg	Lg	16 40 55.4	
	16nm,1.1s						
KURBB	Kurchatov Arra	8.88	343	Pn	Pn	16 39 15.0	+2.0
	0.1nm,0.3s,baz=167,slow=12,SNR=12						
KURBB				Sn	Sn	16 40 55.8	+2.9
	0.2nm,0.3s,baz=145,slow=19,SNR=5.3						
KURBB				Lg	Lg	16 41 45.3	
	0.2nm,0.3s,baz=163,slow=29,SNR=5.2						
KURBB	Kurchatov Arra	8.88	343	⇑Pn	Pn	16 39 15.9	+2.9
	7.6nm,0.7s						
KURBB				⇓Lg	Lg	16 41 52.5	
	48nm,0.7s						
KK31	Karatay Array	8.94	280	⇑Pg	Pg	16 39 44.8	-11
	0.2nm,0.3s,baz=85,slow=14,SNR=4.7						
KK31				⇑Lg	Lg	16 41 45.2	
	8.8nm,0.9s,baz=92,slow=27,SNR=6.2						
OTUK	Ortayu	9.42	313	⇓Pn	Pn	16 39 22.2	+1.7
	1.7nm,0.6s						
OTUK				⇑Sn	Sn	16 41 06.3	0.0
	2.8nm,0.5s						
OTUK				⇑Lg	Lg	16 42 01.3	
	15nm,1.0s						
ZALV	Zalesovo Beam	11.86	6

1.4nm,0.9s,baz=106,slow=11,SNR=3.5
ILAR Eielson Array 66.58 21 P **P 16 47 54.9 +0.5**
0.4nm,0.9s,baz=283,slow=4.1,SNR=4.5
TORD Torodi Ar. Bea 74.58 274 P **P 16 48 42.1 -1.9**
0.6nm,0.5s,baz=43,slow=4.9,SNR=12
YKA Yellowknife Ar 74.75 8 P **P 16 48 44.1 -0.1**
0.3nm,0.5s,baz=342,slow=5.8,SNR=3.7
WRA Warramunga Arr 78.12 131 P **P 16 49 04.6 +0.8**
0.5nm,0.6s,baz=328,slow=5.5,SNR=5.8
ASAR Alice Springs 80.87 134 P **P 16 49 18.5 -0.3**
0.4nm,0.7s,baz=323,slow=6.1,SNR=5.7

IDC 30 16:44:57.2±3.2, 11°.86S×121°.56E, h0km, mb3.3/1, mb1 3.3/3, mb1mx3.1/39, mbtmp3.2/3, ML2.9/2, Error ellipse: s-maj=241.3km s-min=33.7km az=48.0, South of Timor

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**14.68**	**125**	Pn	Pn	16 48 25.4	-0.9
	0.1nm,0.3s,baz=300,slow=15,SNR=4.9						
ASAR	**Alice Springs**	**16.60**	**137**	Pn	Pn	16 48 52.3	+0.8
	0.1nm,0.3s,baz=313,slow=12,SNR=5.4						
ASAR				Sn	Sn	16 51 50.8	-5.8
	0.0nm,0.3s,baz=315,slow=25,SNR=2.8						
MKAR	**Makanchi Array**	**68.14**	**332**	P	P	16 55 59.1	0.0
	0.2nm,0.6s,baz=122,slow=7.0,SNR=2.7						

*ISCJB **30** 16:46:29.5±0.4, 43°.83N±0°.05×139°.94E±0°.07, h254km±5km, mb3.3/14, Error ellipse: s-maj=9.7km s-min=7.1km az=44.0*
*IDC **30** 16:46:30.2±0.7, 43°.85N×139°.87E, h244km±7km, mb3.1/14, mb1 3.3/17, mb1mx3.1/57, mbtmp3.7/17, Error ellipse: s-maj=12.8km s-min=10.3km az=137.0*
*JMA **30** 16:46:30.0±0.2, 43°.89N×139°.87E, h246km±2km, M3.5*
ISC 30 16:46:30.3±0.7, 43°.80N±0°.07×139°.97E±0°.07, h249km±7km, n35, σ1°23/44, mb3.4/14, Eastern Sea of Japan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JSK	**Shakotan**	**0.58**	**141**	P	**Pn**	**16 47 03.2**	**-0.2**
JSH	**Shimam**	**1.16**	**177**	P	**Pn**	**16 47 06.3**	**+0.1**
JEW	**Eniwo**	**1.45**	**131**	P	**Pn**	**16 47 08.9**	**+0.7**
JOSM	**Okushiri--Mats**	**1.76**	**192**	P	**Pn**	**16 47 11.0**	**+0.4**
ASAJ	**Asahikawa**	**1.92**	**80**	P	**Pn**	**16 47 12.2**	**+0.2**
	5.3nm,0.3s,baz=240,slow=9.9,SNR=66						
ASAJ				S	**S**	**16 47 45.2**	**+0.4**
	0.8nm,0.3s,baz=126,slow=32,SNR=6.3						
JKK2	**Kamakawa 2**	**2.01**	**87**	P	**Pn**	**16 47 13.2**	**+0.4**
JKK2				*e*S	**S**	**16 47 46.4**	**+0.1**
JBT2	**Biratori 2**	**2.02**	**120**	P	**Pn**	**16 47 13.8**	**+0.9**
JBT2				*e*S	**S**	**16 47 47.1**	**+0.6**
JWK2	**Keihoku**	**2.05**	**42**	P	**Pn**	**16 47 12.9**	**-0.1**
JKB	**Kayabe**	**2.07**	**157**	P	**Pn**	**16 47 13.6**	**+0.3**
JSE	**Soyaes**	**2.20**	**57**	P	**Pn**	**16 47 14.4**	**-0.1**
JNBK	**Urakawa-nobuka**	**2.54**	**126**	P	**Pn**	**16 47 19.3**	**+1.3**
JNBK				*e*S	**S**	**16 47 56.7**	**+1.2**
JCH	**Churui**	**2.75**	**114**	P	**Pn**	**16 47 19.6**	**-0.5**
JCH				*e*S	**S**	**16 47 56.5**	**-2.8**
JAR	**Ashorobuto**	**2.81**	**99**	P	**Pn**	**16 47 21.4**	**+0.7**
JAR				*e*S	**S**	**16 48 01.7**	**+1.3**
JTKR	**Abashiri--Toko**	**2.85**	**85**	P	**Pn**	**16 47 21.3**	**+0.2**
JAK	**Akkeshi**	**3.54**	**102**	*e*S	**S**	**16 48 12.6**	**-2.3**
JANG	**Nango**	**3.61**	**161**	P	**Pn**	**16 47 29.2**	**-0.5**
JANG				*e*S	**S**	**16 48 14.0**	**-2.7**
JRA	**Rausu**	**3.73**	**86**	P	**Pn**	**16 47 31.9**	**+1.1**
NEM2	**Nemuro 2**	**4.22**	**94**	P	**Pn**	**16 47 35.2**	**-1.4**
NEM2				*e*S	**S**	**16 48 24.9**	**-4.3**
USRK	**Ussuriysk Ar.**	**5.77**	**277**	P	**Pn**	**16 47 54.5**	**-1.1**
	0.6nm,0.3s,baz=80,slow=14,SNR=6.2						
MJAR	**Matsushiro Arr**	**7.38**	**191**	P	**Pn**	**16 48 17.2**	**+1.4**
	0.3nm,0.3s,baz=343,slow=14,SNR=3.6						
MJAR				S	**S**	**16 49 39.2**	**-1.3**
	1.0nm,0.3s,baz=133,slow=12,SNR=8.9						
KSRS	**Korea Array**	**11.13**	**239**	P	**Pn**	**16 49 03.7**	**+0.7**
	0.1nm,0.3s,baz=56,slow=12,SNR=3.2						
ZALV	**Zalesovo Beam**	**36.78**	**306**	P	**P**	**16 53 13.5**	**-0.5**
	0.7nm,0.5s,baz=79,slow=7.7,SNR=4.0						
MKAR	**Makanchi Array**	**39.90**	**295**	P	**P**	**16 53 39.1**	**-1.0**
	0.2nm,0.6s,baz=76,slow=7.9,SNR=3.3						
KURBB	**Kurchatov Arra**	**41.22**	**302**	P	**P**	**16 53 50.6**	**-0.1**
	0.5nm,0.5s,baz=78,slow=8.8,SNR=7.7						
ILAR	**Eielson Array**	**44.51**	**36**	P	**P**	**16 54 16.6**	**-0.2**
	0.7nm,0.7s,baz=286,slow=8.4,SNR=16						
BVAR	**Borovoye Array**	**45.39**	**307**	P	**P**	**16 54 24.0**	**0.0**
	0.5nm,0.3s,baz=74,slow=9.6,SNR=5.6						
ARCES	**ARCESS Array B**	**57.30**	**338**	P	**P**	**16 55 51.4**	**-0.3**
	2.1nm,0.9s,baz=75,slow=10,SNR=3.4						
YKA	**Yellowknife Ar**	**58.57**	**32**	P	**P**	**16 56 01.0**	**+0.4**
	0.4nm,0.4s,baz=306,slow=6.7,SNR=5.9						
FINES	**FINESS Array B**	**62.36**	**330**	P	**P**	**16 56 25.2**	**-0.9**
	0.6nm,0.4s,baz=54,slow=7.1,SNR=8.1						
WRA	**Warramunga Arr**	**63.64**	**186**	P	**P**	**16 56 35.2**	**+0.2**
	0.1nm,0.4s,baz=2.4,slow=6.8,SNR=3.2						
ASAR	**Alice Springs**	**67.37**	**186**	P	**P**	**16 56 59.9**	**+1.1**
	0.2nm,0.8s,baz=8.4,slow=7.6,SNR=3.9						
HFS	**Hagfors**	**67.50**	**334**	P	**P**	**16 56 58.8**	**-0.4**
	0.6nm,0.3s,baz=55,slow=6.0,SNR=6.8						
NVAR	**Mina Array Bea**	**71.86**	**54**	P	**P**	**16 57 27.2**	**+0.8**
	0.3nm,0.5s,baz=290,slow=5.3,SNR=3.8						
PDAR	**Pinedale Array**	**73.73**	**46**	P	**P**	**16 57 38.4**	**+1.1**
	0.4nm,0.4s,baz=221,slow=1.1,SNR=6.3						
ULM	**Lac du Bonnet**	**74.46**	**33**	P	**P**	**16 57 41.3**	**+0.2**
	3.2nm,0.6s,baz=337,slow=3.0,SNR=3.2						

*ISK **30** 16:47:13.8, 39°.10N×28°.96E, h9km, MD2.7*
*ISCJB **30** 16:47:14.6±0.6, 39°.11N±0°.03×28°.98E±0°.04, h10km±5km, Error ellipse: s-maj=5.9km s-min=4.7km az=171.7*
*CSEM **30** 16:47:14.7±0.1, 39°.11N×28°.97E, h12km, MD2.6, Error ellipse: s-maj=2.6km s-min=2.4km az=137.0*
*DDA **30** 16:47:15.2, 39°.09N×29°.01E, h7km, Md2.6*
ISC 30 16:47:14.9±0.9, 39°.11N±0°.03×28°.97E±0°.02, h16km±8km, n22, σ0°51/36, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.21**	**252**	P	**Pb**	**16 47 20.4**	**0.0**
DEMI				S	**Sg**	**16 47 23.8**	**+0.8**
DEMI	**Demirci**	**0.21**	**252**	*i* P	**Pb**	**16 47 20.4**	**0.0**
DEMI				*i* S	**Sg**	**16 47 23.8**	**+0.8**
GDZ	**Gediz**	**0.40**	**93**	P	**Pg**	**16 47 22.7**	**-0.3**
GDZ				S	**Sg**	**16 47 28.2**	**-0.4**
GDZ	**Gediz**	**0.40**	**93**	*i* P	**Pg**	**16 47 22.7**	**-0.3**
GDZ				*i* S	**Sg**	**16 47 28.2**	**-0.4**
KULA	**Kula-Manisa**	**0.64**	**202**	*e*PG	**Pg**	**16 47 27.3**	**-0.2**
KULA				*e*SG	**Sg**	**16 47 35.5**	**-0.5**
KULA	**Kula-Manisa**	**0.64**	**202**	*e*Pg	**Pg**	**16 47 27.3**	**-0.2**
KULA				*e*Sg	**Sg**	**16 47 35.5**	**-0.5**
MANT	**Manisa**	**0.69**	**208**	P	**Pb**	**16 47 29.0**	**+0.2**
MANT				S	**Sg**	**16 47 37.9**	**+0.1**
MANT	**Manisa**	**0.69**	**208**	*i* P	**Pb**	**16 47 29.0**	**+0.2**
MANT				*i* S	**Sg**	**16 47 37.9**	**+0.1**
KHAL	**Karahalli**	**0.84**	**151**	P	**Pb**	**16 47 31.4**	**+0.1**
KHAL				S	**Sb**	**16 47 42.4**	**0.0**
KHAL	**Karahalli**	**0.84**	**151**	*i* P	**Pb**	**16 47 31.4**	**+0.1**
KHAL				*i* S	**Sb**	**16 47 42.4**	**0.0**
KHL	**Karahalli**	**0.90**	**151**	*e*PG	**Pg**	**16 47 31.3**	**-1.0**
KHL				*e*SG	**Sb**	**16 47 44.3**	**+0.4**
KHL	**Karahalli**	**0.90**	**151**	*e*Pg	**Pg**	**16 47 31.3**	**-1.0**
KHL				*e*Sg	**Sb**	**16 47 44.3**	**+0.4**
AKS	**Akhisar**	**0.93**	**256**	*e*PG	**Pg**	**16 47 31.9**	**-1.0**
AKS				*e*SG	**Sb**	**16 47 44.9**	**+0.1**
AKS	**Akhisar**	**0.93**	**256**	*e*Pg	**Pg**	**16 47 31.9**	**-1.0**
AKS				*e*Sg	**Sb**	**16 47 44.9**	**+0.1**
KCTX	**Karacabey (Bur**	**1.25**	**338**	*e*PN	**Pb**	**16 47 38.2**	**+0.1**
KCTX	**Karacabey (Bur**	**1.25**	**338**	*e*Pn	**Pb**	**16 47 38.2**	**+0.1**
ARMT	**Armutlu**	**1.46**	**357**	*e*PN	**Pn**	**16 47 40.8**	**+0.2**
ARMT	**Armutlu**	**1.46**	**357**	*e*Pn	**Pn**	**16 47 40.8**	**+0.2**
GULT	**Gulveren**	**1.78**	**42**	*e*PN	**Pn**	**16 47 45.5**	**+0.4**
GULT	**Gulveren**	**1.78**	**42**	*e*Pn	**Pn**	**16 47 45.5**	**+0.4**
SVRH	**Sivrihisar-ESK**	**2.01**	**80**	*e*PN	**Pn**	**16 47 49.0**	**+0.7**
SVRH	**Sivrihisar-ESK**	**2.01**	**80**	*e*Pn	**Pn**	**16 47 49.0**	**+0.7**

IDC 30 16:54:15.1±6.5, 24°.78N×122°.54E, h160km±66km, mb3.2/6, mb1 3.3/7, mb1mx3.1/52, mbtmp3.7/7, MS3.2/5, Ms1 3.2/5, ms1mx2.9/22, Error ellipse: s-maj=42.6km s-min=16.0km az=65.0, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TGY	**Tagaytay City**	**10.72**	**188**	LR	LR	17 00 40.4	
	comp=Z,79nm,22.0s,baz=94,slow=36						
KSRS	**Korea Array**	**13.45**	**19**	P	Pn	16 57 19.8	+0.3
	0.1nm,0.3s,baz=195,slow=12,SNR=7.9						
KSRS				LR	LR	17 03 04.4	
	comp=Z,88nm,18.7s,baz=189,slow=39						
MJAR	**Matsushiro Arr**	**17.84**	**45**	LR	LR	17 05 42.1	
	comp=Z,60nm,18.6s,baz=215,slow=38						
KLR	**Kul'dur**	**25.45**	**14**	LR	LR	17 09 43.0	
	comp=Z,51nm,18.8s,baz=328,slow=36						
SONM	**Songino Array**	**26.33**	**335**	P	P	16 59 35.6	-0.4
	1.1nm,0.8s,baz=144,slow=10,SNR=7.5						
MKAR	**Makanchi Array**	**38.78**	**315**	P	P	17 01 24.4	+0.3
	1.2nm,0.8s,baz=102,slow=11,SNR=11						
KURBB	**Kurchatov Arra**	**42.46**	**319**	P	P	17 01 53.6	-0.4
	0.9nm,0.9s,baz=111,slow=8.5,SNR=7.7						
WRA	**Warramunga Arr**	**45.91**	**164**	P	P	17 02 20.8	-1.0
	1.4nm,0.8s,baz=346,slow=8.5,SNR=5.8						
NRIK	**Noril'sk**	**49.16**	**344**	LR	LR	17 25 53.7	
	comp=Z,34nm,18.0s,baz=132,slow=39						
ASAR	**Alice Springs**	**49.40**	**166**	P	P	17 02 49.3	+0.6
	0.4nm,0.9s,baz=349,slow=7.7,SNR=2.9						
YKA	**Yellowknife Ar**	**81.94**	**23**	P	P	17 06 16.6	+0.1
	0.1nm,0.3s,baz=312,slow=5.7,SNR=3.9						

*CSEM **30** 16:59:02.9±0.2, 39°.16N×29°.12E, h5km, MD2.8, Error ellipse: s-maj=5.1km s-min=3.3km az=110.0*
*ISK **30** 16:59:02.4, 39°.16N×29°.03E, h4km, MD2.5*
*ISCJB **30** 16:59:03.3±0.6, 39°.13N±0°.03×29°.13E±0°.04, h11km±5km, Error ellipse: s-maj=6.6km s-min=5.0km az=135.2*
*DDA **30** 16:59:03.8, 39°.09N×29°.14E, h7km, Md2.8*
ISC 30 16:59:03.0±1.0, 39°.14N±0°.03×29°.10E±0°.04, h11km±10km, n18, σ0°40/30, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.30**	**99**	P	**Pg**	**16 59 09.4**	**+0.2**
GDZ				S	**Sg**	**16 59 13.2**	**-0.1**
GDZ	**Gediz**	**0.30**	**99**	*i* P	**Pg**	**16 59 09.4**	**+0.2**
GDZ				*i* S	**Sg**	**16 59 13.2**	**-0.1**
DEMI	**Demirci**	**0.31**	**253**	P	**Pb**	**16 59 10.6**	**0.0**
DEMI				S	**Sb**	**16 59 15.6**	**-0.2**
DEMI	**Demirci**	**0.31**	**253**	*i* P	**Pb**	**16 59 10.7**	**0.0**
DEMI				*i* S	**Sb**	**16 59 15.6**	**-0.2**
KULA	**Kula-Manisa**	**0.71**	**209**	*e*PG	**Pg**	**16 59 16.6**	**-0.1**
KULA				*e*SG	**Sb**	**16 59 27.0**	**-0.2**
KULA	**Kula-Manisa**	**0.71**	**209**	*e*Pg	**Pg**	**16 59 16.6**	**-0.1**
KULA				*e*Sg	**Sb**	**16 59 27.0**	**-0.2**
MANT	**Manisa**	**0.77**	**213**	P	**Pb**	**16 59 18.6**	**+0.1**
MANT				S	**Sg**	**16 59 28.6**	**+0.6**
MANT	**Manisa**	**0.77**	**213**	*i* P	**Pb**	**16 59 18.6**	**+0.1**
MANT				*i* S	**Sg**	**16 59 28.6**	**+0.6**
KHAL	**Karahalli**	**0.82**	**158**	P	**Pb**	**16 59 19.1**	**-0.3**
KHAL				S	**Sg**	**16 59 29.7**	**0.0**
KHAL	**Karahalli**	**0.82**	**158**	*i* P	**Pb**	**16 59 19.1**	**-0.3**
KHAL				*i* S	**Sg**	**16 59 29.7**	**0.0**
CAVI	**Cavuskoy**	**1.21**	**28**	*e*PN	**Pg**	**16 59 26.1**	**-0.1**
CAVI				*e*SN	**Sn**	**16 59 43.3**	**+1.0**
CAVI	**Cavuskoy**	**1.21**	**28**	*e*Pn	**Pg**	**16 59 26.1**	**-0.1**
CAVI				*e*Sn	**Sn**	**16 59 43.3**	**+1.0**
IZI	**Iznik**	**1.23**	**13**	*e*PN	**Pb**	**16 59 26.4**	**+0.1**
IZI	**Iznik**	**1.23**	**13**	*e*Pn	**Pb**	**16 59 26.4**	**+0.1**
KCTX	**Karacabey (Bur**	**1.26**	**333**	*e*PN	**Pn**	**16 59 26.0**	**-0.6**
KCTX	**Karacabey (Bur**	**1.26**	**333**	*e*Pn	**Pn**	**16 59 26.0**	**-0.6**
ARMT	**Armutlu**	**1.44**	**353**	*e*PN	**Pb**	**16 59 29.6**	**-0.2**
ARMT	**Armutlu**	**1.44**	**353**	*e*Pn	**Pb**	**16 59 29.6**	**-0.2**

*ISCJB **30** 17:06:08.8±0.4, 39°.14N±0°.02×29°.06E±0°.03, h9km±4km, Error ellipse: s-maj=4.6km s-min=3.5km az=32.0*
*DDA **30** 17:06:08.5, 39°.14N×29°.05E, h7km, Md2.8*
*ISK **30** 17:06:08.3, 39°.14N×29°.05E, h10km, MD2.7*
*CSEM **30** 17:06:09.0±0.1, 39°.14N×29°.06E, h10km, MD2.8, Error ellipse: s-maj=1.6km s-min=1.2km az=112.0*
ISC 30 17:06:09.1±0.9, 39°.14N±0°.02×29°.06E±0°.02, h15km±8km, n41, σ0°43/58, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**250**	P	**Pg**	**17 06 15.3**	**+0.2**
DEMI				S	**Sg**	**17 06 19.4**	**+0.1**
DEMI	**Demirci**	**0.28**	**250**	*i* P	**Pg**	**17 06 15.3**	**+0.2**
DEMI				*i* S	**Sg**	**17 06 19.4**	**+0.1**
GDZ	**Gediz**	**0.33**	**99**	P	**Pg**	**17 06 16.0**	**-0.1**
GDZ				S	**Sg**	**17 06 20.9**	**0.0**
GDZ	**Gediz**	**0.33**	**99**	*i* P	**Pg**	**17 06 16.0**	**-0.1**
GDZ				*i* S	**Sg**	**17 06 20.9**	**0.0**
TVSB	**Tavsanli**	**0.44**	**45**	*e*PG	**Pg**	**17 06 17.8**	**-0.2**
TVSB				*e*SG	**Sg**	**17 06 24.0**	**-0.1**
TVSB	**Tavsanli**	**0.44**	**45**	*e*Pg	**Pg**	**17 06 17.8**	**-0.2**
TVSB				*e*Sg	**Sg**	**17 06 24.0**	**-0.1**
KULA	**Kula-Manisa**	**0.70**	**206**	*e*PG	**Pg**	**17 06 22.3**	**-0.4**
KULA				*e*SG	**Sg**	**17 06 31.6**	**-0.3**
KULA	**Kula-Manisa**	**0.70**	**206**	*e*Pg	**Pg**	**17 06 22.3**	**-0.4**
KULA				*e*Sg	**Sg**	**17 06 31.6**	**-0.3**
MANT	**Manisa**	**0.76**	**211**	P	**Pg**	**17 06 23.8**	**-0.1**
MANT				S	**Sg**	**17 06 33.5**	**-0.4**
MANT	**Manisa**	**0.76**	**211**	*i* P	**Pg**	**17 06 23.8**	**-0.1**
MANT				*i* S	**Sg**	**17 06 33.5**	**-0.4**
KHAL	**Karahalli**	**0.84**	**156**	P	**Pg**	**17 06 25.5**	**0.0**
KHAL				S	**Sg**	**17 06 35.8**	**-0.7**
KHAL	**Karahalli**	**0.84**	**156**	*i* P	**Pg**	**17 06 25.5**	**0.0**
KHAL				*i* S	**Sg**	**17 06 35.8**	**-0.7**
KHL	**Karahalli**	**0.89**	**156**	*e*PG	**Pg**	**17 06 25.9**	**-0.6**
KHL				*e*SG	**Sb**	**17 06 38.7**	**+0.6**
KHL	**Karahalli**	**0.89**	**156**	*e*Pg	**Pg**	**17 06 25.9**	**-0.6**
KHL				*e*Sg	**Sb**	**17 06 38.7**	**+0.6**
ORLT	**Orhaneli**	**0.91**	**352**	*e*PG	**Pg**	**17 06 26.5**	**-0.4**
ORLT	**Orhaneli**	**0.91**	**352**	*e*Pg	**Pg**	**17 06 26.5**	**-0.4**
AKHS	**Akhisar**	**1.00**	**255**	P	**Pn**	**17 06 29.1**	**+0.4**
AKHS				S	**Sb**	**17 06 41.9**	**+0.7**
AKHS	**Akhisar**	**1.00**	**255**	*i* P	**Pn**	**17 06 29.1**	**+0.4**
AKHS				*i* S	**Sb**	**17 06 41.9**	**+0.7**
AKS	**Akhisar**	**1.00**	**255**	*e*PG	**Pg**	**17 06 28.1**	**-0.4**
AKS	**Akhisar**	**1.00**	**255**	*e*Pg	**Pg**	**17 06 28.1**	**-0.4**
BALB	**Balikesir**	**1.04**	**299**	*e*PG	**Pg**	**17 06 28.7**	**-0.5**
BALB	**Balikesir**	**1.04**	**299**	*e*Pg	**Pg**	**17 06 28.7**	**-0.5**
IGD	**Bursa**	**1.13**	**6**	*i* P	**Pb**	**17 06 29.8**	**-0.6**
IGD				*i* S	**Sb**	**17 06 45.2**	**+0.3**
CAVI	**Cavuskoy**	**1.22**	**29**	*e*PN	**Pn**	**17 06 32.1**	**+0.3**
CAVI	**Cavuskoy**	**1.22**	**29**	*e*Pn	**Pn**	**17 06 32.1**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.24**	**354**	*e*PN	**Pn**	**17 06 32.3**	**+0.4**
MDNY	**Mudanya-Bursa**	**1.24**	**354**	*e*Pn	**Pn**	**17 06 32.3**	**+0.4**
IZI	**Iznik**	**1.24**	**15**	*e*PN	**Pn**	**17 06 31.9**	**-0.1**
IZI	**Iznik**	**1.24**	**15**	*e*Pn	**Pn**	**17 06 31.9**	**-0.1**
KCTX	**Karacabey (Bur**	**1.25**	**335**	*e*PN	**Pn**	**17 06 32.5**	**+0.4**
KCTX	**Karacabey (Bur**	**1.25**	**335**	*e*Pn	**Pn**	**17 06 32.5**	**+0.4**
GONE	**Gonen-Balikesi**	**1.39**	**311**	*e*PN	**Pn**	**17 06 34.5**	**+0.4**
GONE	**Gonen-Balikesi**	**1.39**	**311**	*e*Pn	**Pn**	**17 06 34.5**	**+0.4**
ADVT	**Abdulvahap**	**1.40**	**22**	*e*PN	**Pn**	**17 06 34.6**	**+0.5**
ADVT	**Abdulvahap**	**1.40**	**22**	*e*Pn	**Pn**	**17 06 34.6**	**+0.5**
ARMT	**Armutlu**	**1.43**	**354**	*e*PN	**Pn**	**17 06 35.1**	**+0.5**
ARMT	**Armutlu**	**1.43**	**354**	*e*Pn	**Pn**	**17 06 35.1**	**+0.5**
GULT	**Gulveren**	**1.71**	**41**	*e*PN	**Pn**	**17 06 39.1**	**+0.6**
GULT	**Gulveren**	**1.71**	**41**	*e*Pn	**Pn**	**17 06 39.1**	**+0.6**
HRT	**Hereke**	**1.75**	**15**	*e*PN	**Pn**	**17 06 39.6**	**+0.6**
HRT	**Hereke**	**1.75**	**15**	*e*Pn	**Pn**	**17 06 39.6**	**+0.6**

*CSEM **30** 17:10:42.9±0.3, 38°.61N×25°.70E, h2km, ML2.6, Error ellipse: s-maj=5.9km s-min=5.1km az=81.0*
*ATH **30** 17:10:42.5, 38°.60N×25°.65E, h8km±3km, ML2.1/9, Error ellipse: s-maj=3.3km s-min=0.9km az=125.0*
*DDA **30** 17:10:43.6, 38°.66N×25°.85E, h7km, Md3.0*
*THE **30** 17:10:44.2, 38°.66N×25°.85E, h6km, ML2.6/4, Error ellipse: s-maj=1.3km s-min=0.3km az=262.0*
ISC 30 17:10:43.4±1.0, 38°.63N±0°.02×25°.78E±0°.03, h19km±3km, n31, σ0°55/57, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOS	**Chios island**	**0.33**	**139**	P	**Pg**	**17 10 50.5**	**0.0**
CHOS				S	**Sg**	**17 10 55.3**	**-0.1**
CHOS	**Chios island**	**0.33**	**139**	P	**Pg**	**17 10 50.5**	**0.0**
CHOS				S	**Sg**	**17 10 55.3**	**-0.1**
CHOS	**Chios island**	**0.33**	**139**	P	**Pb**	**17 10 51.1**	**+0.3**
CHOS				AML	AML	17 10 55.5	
	comp=N,2984μm,0.2s						
CHOS				S	**Sb**	**17 10 55.8**	**+0.1**
CHOS				AML	AML	17 10 55.9	
	comp=E,3546μm,0.2s						
SIGR	**SIGRI**	**0.58**	**6**	P	**Pb**	**17 10 54.6**	**-0.3**
SIGR				S	**Sg**	**17 11 03.1**	**+0.3**
SIGR	**SIGRI**	**0.58**	**6**	P	**Pb**	**17 10 54.6**	**-0.3**
SIGR				S	**Sg**	**17 11 03.1**	**+0.3**
SIGR	**SIGRI**	**0.58**	**6**	P	**Pb**	**17 10 54.9**	**0.0**
SIGR				S	**Sg**	**17 11 03.2**	**+0.3**
SIGR				AML	AML	17 11 03.7	
	comp=E,672μm,0.5s						
SIGR				AML	AML	17 11 05.6	
	comp=N,671μm,0.4s						
ZEY	**˜zmir**	**0.69**	**124**	*i* P	**Pb**	**17 10 56.9**	**+0.1**
ZEY				*i* S	**Sg**	**17 11 06.6**	**+0.3**
URLA	**Izmir**	**0.70**	**113**	P	**Pb**	**17 10 57.0**	**0.0**
URLA				S	**Sg**	**17 11 07.5**	**+1.0**
URLA	**Izmir**	**0.70**	**113**	*i* P	**Pb**	**17 10 57.0**	**0.0**
URLA				*i* S	**Sg**	**17 11 07.5**	**+1.0**
PRK	**Paraskevi**	**0.72**	**32**	P	**Pb**	**17 10 57.1**	**-0.3**
PRK				S	**Sb**	**17 11 06.9**	**-0.1**
PRK	**Paraskevi**	**0.72**	**32**	P	**Pb**	**17 10 57.1**	**-0.3**
PRK				S	**Sn**	**17 11 08.5**	**-0.8**
PRK	**Paraskevi**	**0.72**	**32**	P	**Pb**	**17 10 56.5**	**-1.0**
PRK				S	**Sn**	**17 11 08.5**	**-0.8**
PRK				AML	AML	17 11 09.1	
	comp=N,424μm,0.5s						
PRK				AML	AML	17 11 12.0	
	comp=E,448μm,0.5s						
AYVA	**Ayvalik**	**0.98**	**46**	P	**Pb**	**17 11 01.6**	**-0.2**
AYVA				S	**Sb**	**17 11 14.3**	**-0.1**
AYVA	**Ayvalik**	**0.98**	**46**	*i* P	**Pb**	**17 11 01.6**	**-0.2**
AYVA				*i* S	**Sb**	**17 11 14.3**	**-0.1**
DGB	**˜zmir**	**1.04**	**123**	*i* P	**Pn**	**17 11 03.2**	**+0.1**
DGB				*i* S	**Sn**	**17 11 17.2**	**0.0**
SMG	**Samos**	**1.24**	**138**	P	**Pb**	**17 11 06.8**	**+0.5**
SMG				S	**Sg**	**17 11 24.4**	**+0.6**
SMG	**Samos**	**1.24**	**138**	P	**Pg**	**17 11 07.5**	**0.0**
SMG				S	**Sg**	**17 11 24.4**	**+0.6**
SMG	**Samos**	**1.24**	**138**	P	**Pg**	**17 11 07.5**	**0.0**
SMG				S	**Sg**	**17 11 24.6**	**+0.9**
SMG				AML	AML	17 11 25.6	
	comp=E,294μm,0.2s						
SMG				AML	AML	17 11 25.6	
	comp=N,313μm,0.3s						
LIA	**Limnos Island**	**1.34**	**340**	P	**Pn**	**17 11 07.3**	**+0.1**
APE	**Apeiranthos**	**1.57**	**187**	P	**Pn**	**17 11 09.1**	**-1.3**
APE				S	**Sb**	**17 11 31.3**	**-0.2**
APE	**Apeiranthos**	**1.57**	**187**	P	**Pn**	**17 11 09.1**	**-1.3**
APE				S	**Sb**	**17 11 31.3**	**-0.2**
APE				AML	AML	17 11 42.7	
	comp=N,37μm,0.3s						
APE				AML	AML	17 11 50.6	
	comp=E,50μm,0.7s						
AOS	**Alonnisos**	**1.57**	**290**	P	**Pb**	**17 11 11.9**	**-0.1**
AOS	**Alonnisos**	**1.57**	**290**	P	**Pb**	**17 11 11.9**	**-0.1**
AOS				AML	AML	17 11 33.2	
	comp=N,54μm,1.0s						
AOS				AML	AML	17 11 34.0	
	comp=E,47μm,0.9s						
VLY	**Voula,Athens**	**1.75**	**244**	P	**Pn**	**17 11 12.7**	**-0.1**
VLY				S	**Sb**	**17 11 36.2**	**-0.2**
VLY	**Voula,Athens**	**1.75**	**244**	P	**Pn**	**17 11 12.7**	**-0.1**
VLY				S	**Sb**	**17 11 36.2**	**-0.2**
VLY				AML	AML	17 11 43.7	
	comp=N,101μm,0.5s						
VLY				AML	AML	17 11 43.8	
	comp=E,117μm,0.5s						
AYDN	**Tasoluk**	**1.92**	**120**	P	**Pb**	**17 11 18.0**	**+0.1**
AYDN				S	**Sg**	**17 11 44.9**	**-0.4**
AYDN

PB09 IAML 17 30 17.8
comp=N,15µm,0.8s
PSGC Pisagua 2.97 274⇑ iP Pn 17 29 37.9 -0.7
PSGC i S S 17 30 16.6 -2.8
PSGC IAML 17 30 17.2
comp=N,6µm,0.5s
BBOJ La Paz, Jacaqu 3.08 338⇑ iPn Pn 17 29 42.3 +2.0
BBOJ eSn S 17 30 23.6 +1.0
BBOE La Paz, Chanca 3.17 342⇓ ePn Pn 17 29 42.9 +1.7
LVC Limon Verde 3.28 213 eP Pn 17 29 42.5 +0.3
LVC Limon Verde 3.28 213 P Pn 17 29 42.2 0.0
comp=N,6µm,0.3s,baz=46,slow=8.7,SNR=1077
LVC S S 17 30 24.4 -1.8
comp=N,6µm,0.3s,baz=232,slow=18,SNR=36
LVC Limon Verde 3.28 213 ePn Pn 17 29 41.5 -0.7
LVC eS S 17 30 23.8 -2.4
PB07 IPOC Station P 3.30 235⇑ iP Pn 17 29 41.5 -0.7
PB07 i S S 17 30 22.7 -3.5
PB07 IAML 17 30 24.9
comp=E,5µm,0.5s
PB12 IPOC Station P 3.39 291⇑ iP Pn 17 29 42.4 -0.9
PB12 i S S 17 30 25.1 -2.8
HJA Humahuaca 3.65 157 eP Pn 17 29 46.8 +0.4
HJA IAML 17 29 47.7
comp=Z,1µm,0.5s
LPAZ La Paz 3.71 343 P Pn 17 29 48.3 +0.9
comp=Z,31nm,0.3s,baz=151,slow=7.9,SNR=350
LPAZ S S 17 30 35.2 -0.3
comp=Z,8.9nm,0.3s,baz=48,slow=22,SNR=18
LPAZ La Paz 3.71 343 eP Pn 17 29 48.0 +0.6
LPAZ La Paz 3.71 343⇑ iPn Pn 17 29 48.5 +1.1
LPAZ eSn S 17 30 35.4 -0.1
LPAZ La Paz 3.71 343 ePn Pn 17 29 48.3 +0.9
LPAZ eS S 17 30 34.8 -0.7
PB06 IPOC Station P 3.73 220⇑ iP Pn 17 29 46.6 -0.6
PB06 i S S 17 30 32.1 -2.9
BBOB La Paz, Bander 3.85 343⇓ iPn Pn 17 29 49.9 +0.9
BBOB eSn S 17 30 38.0 -0.3
comp=Z,923nm,0.9s
PB04 IPOC Station P 3.85 230⇑ iP Pn 17 29 47.9 -0.7
PB04 IPOC Station P 3.85 230 ePn Pn 17 29 48.1 -0.5
PB04 eS S 17 30 33.5 -4.2
AZAP Zapla 4.70 158 eP Pn 17 29 58.0 -0.8
AZAP IAML 17 30 55.8
comp=Z,232nm,0.5s
ASTB Santa Barbara 4.70 151 eP Pn 17 29 58.1 -0.6
ALOL LOMAS DE OLMED 4.83 145 eP Pn 17 29 59.0 -1.1
PB10 IPOC Station P 4.93 222 ePn Pn 17 29 59.7 -1.7
SLA San Lorenzo 5.04 165 eP Pn 17 30 03.2 +0.4
SLA IAML 17 31 09.7
comp=Z,205nm,0.6s
FSA Cafayete 6.30 172 eP Pn 17 30 18.8 +0.2
FSA IAML 17 30 20.5
comp=Z,47nm,0.4s
SIV San Ignacio 6.81 57 P Pn 17 30 23.3 -1.6
comp=Z,34nm,0.3s,baz=259,slow=15,SNR=374
SIV S S 17 31 33.0 -11
comp=Z,1.5nm,0.3s,baz=257,slow=18,SNR=3.3
SIV San Ignacio 6.81 57 ePn Pn 17 30 23.0 -1.9
AHML Horco Molle 7.07 168 eP Pn 17 30 27.4 -0.6
CYA Choya 8.62 173 eP Pn 17 30 46.5 -1.3
VCA Vinchina 8.92 187 eP Pn 17 30 50.0 -1.6
AGUA GUANDACOL 9.69 188 eP Pn 17 31 00.1 -1.3
LCO Las Campanas 9.73 200 ePn Pn 17 30 58.8 -3.3
CPUP Villa Florida 10.97 128 P Pn 17 31 16.1 -1.3
comp=Z,0.2nm,0.3s,baz=304,slow=12,SNR=20
CPUP Villa Florida 10.97 128 eP Pn 17 31 15.8 -1.7
CPUP Villa Florida 10.97 128 ePn Pn 17 31 15.8 -1.7
AMOG MOGNA 11.12 187 eP Pn 17 31 18.3 -1.2
SAML Samuel 11.44 19 ePn Pn 17 31 22.2 -1.3
TCA Tanti 11.64 170 eP Pn 17 31 23.1 -2.8
RTLS Leoncito 12.08 189 eP Pn 17 31 30.8 -0.7
NNA Nana 12.29 308 P Pn 17 31 34.1 0.0
comp=Z,6.5nm,0.3s,baz=158,slow=11,SNR=8.8
NNA S S 17 33 43.8 -7.1
comp=Z,3.3nm,0.3s,baz=49,slow=20,SNR=4.0
NNA Nana 12.29 308 ceP Pn 17 31 34.5 +0.4
NNA Nana 12.29 308 ePn Pn 17 31 33.7 -0.4
NNA S S 17 33 43.8 -7.1
AUSP Uspallata 12.51 189 eP Pn 17 31 38.2 +1.3
MRA San Martin 12.57 175 eP Pn 17 31 34.2 -3.2
MRA IAML 17 31 40.6
comp=Z,24nm,0.3s
ROC1 El Roble 13.56 195 ePn Pn 17 31 48.8 -0.9
ATAH Atahualpa 16.81 317 P Pn 17 32 28.5 -0.5
comp=Z,0.5nm,0.3s,baz=179,slow=8.9,SNR=4.0
SPB Sao Paulo 18.54 105 eP P 17 32 44.2 -1.2
comp=Z,62nm,0.9s
TRQA Tornquist 18.66 168 eP P 17 32 45.5 -1.0
comp=Z,30nm,1.3s
PTGA Pitinga 20.20 21 P P 17 33 01.1 -2.3
comp=Z,3.5nm,0.3s,baz=337,slow=22,SNR=24
PTGA S S 17 36 29.3 -7.0
baz=200,slow=17,SNR=12
PTGA Pitinga 20.20 21 eP P 17 33 01.4 -1.9
comp=Z,11nm,0.8s
PTGA eS S 17 36 31.8 -4.5
PLCA Paso Flores 21.04 188 P P 17 33 12.7 +0.7
comp=Z,51nm,0.7s,baz=27,slow=11,SNR=215
PLCA Paso Flores 21.04 188 eP P 17 33 12.1 +0.2
PLCA Paso Flores 21.04 188 eP P 17 33 11.0 -0.9
comp=Z,53nm,0.7s
OTAV Otavalo 22.91 329 eP P 17 33 30.8 +0.7
comp=Z,13nm,0.6s
OTAV Otavalo 22.91 329 eP P 17 33 32.9 +2.8
VILC Villavicencio, 24.71 344 eP P 17 33 45.3 -0.7
GRGC Isla de Gorgon 25.23 333 eP P 17 33 50.4 -0.2
RUSC La Rusia 26.28 346 eP P 17 34 00.6 +0.1
NORC Norcasia 26.42 342 eP P 17 34 01.7 +0.4
BARC Barichara 26.98 346 eP P 17 34 04.0 -2.5
CHRN Cochrane 27.71 188 eP P 17 34 11.5 -0.8
comp=Z,8.8nm,0.8s
CBRI Barrientos, No 27.99 348 eP P 17 34 13.6 -1.7
GRMC Gramalote, San 27.99 348 eP P 17 34 14.2 -1.2
SDV Santo Domingo 28.78 352 P P 17 34 20.5 -1.8
comp=Z,5.8nm,0.3s,baz=206,slow=5.7,SNR=4.1
RCBR Riachuelo 33.27 69 P P 17 35 01.1 -0.4
comp=Z,53nm,0.9s,baz=240,slow=9.0,SNR=24
RCBR Riachuelo 33.27 69 eP P 17 35 01.1 -0.4
comp=Z,39nm,0.8s
SJG San Juan 37.74 1 eP P 17 35 37.5 -1.7
SJG pmax pmax
comp=Z,19nm,0.7s
SJG San Juan 37.74 1 eP P 17 35 37.5 -1.7
comp=Z,19nm,0.7s
MPR Mayaguez 37.83 360 eP P 17 35 38.0 -2.0
comp=Z,19nm,0.8s
TEIG Tepich 44.96 331 P P 17 36 37.6 -0.2
comp=Z,5.0nm,0.5s,baz=264,slow=23,SNR=7.6
TLIG Tlapa 48.42 318 eP P 17 37 06.1 +1.4
comp=Z,25nm,0.7s
448A Bay Minette 54.33 338 P P 17 37 47.4 -0.7
baz=156
447A Lucedale 54.50 337 P P 17 37 48.7 -0.6
baz=155
446A Poplarville 54.76 336 P P 17 37 50.4 -0.8
baz=154
ZAIG Zacatecas 54.78 319 eP P 17 37 53.5 +1.6
comp=Z,17nm,1.0s
347A Saraland 55.00 337 P P 17 37 52.2 -0.7
baz=155
346A Big Creek Wild 55.33 337 P P 17 37 54.5 -0.8
baz=154
248A Dixon Mills 55.35 339 P P 17 37 54.3 -1.0
baz=156
035A Encino 55.44 326 P P 17 37 55.3 -0.8
baz=144
345A Thompson Farm, 55.47 336 P P 17 37 55.5 -0.8
baz=153
JSC Jenkinsville 55.52 346 eP P 17 37 56.6 0.0
JSC pmax pmax
comp=Z,15nm,1.3s
JSC Jenkinsville 55.52 346 eP P 17 37 56.6 0.0
comp=Z,15nm,1.3s
247A Quitman 55.62 338 P P 17 37 56.5 -0.7
baz=155
344A Westbrook Farm 55.87 335 P P 17 37 58.2 -0.9
baz=153
LRAL Lakeview Retre 55.96 340 eP P 17 37 58.7 -1.0
comp=Z,7.1nm,0.8s
147A Livingston 56.06 338 P P 17 37 59.4 -1.0
baz=156
245A Little AP, Sta 56.07 337 P P 17 37 59.9 -0.6
baz=154
KMSC Kings Mountain 56.36 346 P P 17 38 02.0 -0.5
baz=164
KMSC Kings Mountain 56.36 346 eP P 17 38 02.5 0.0
comp=Z,7.9nm,0.8s
244A Avery, Jackson 56.38 336 P P 17 38 01.8 -0.9
baz=153
835A Beeville 56.39 327 P P 17 38 02.5 -0.3
baz=145
342A Flagon Creek P 56.45 334 P P 17 38 03.4 +0.2
baz=151
Z48A Northport 56.46 339 P P 17 38 02.1 -1.1
baz=157,SNR=6.8
Z47A Carrollton 56.47 339 P P 17 38 02.5 -0.8
baz=156
736A Circle Diamond 56.55 328 P P 17 38 05.3 +1.4
baz=146
145A Houston Renfro 56.59 337 P P 17 38 03.9 -0.2
baz=154
637A Eagle Lake 56.59 329 P P 17 38 03.7 -0.5
baz=146
933A Laredo 56.60 325 P P 17 38 04.8 +0.5
baz=143
834A Tilden 56.63 326 P P 17 38 05.5 +1.0
baz=144
341A Kurthwood 56.76 333 P P 17 38 05.0 -0.4
baz=150
Z46A Louisville 56.77 338 P P 17 38 04.8 -0.5
baz=155
636A Smothers Creek 56.98 329 P P 17 38 07.9 +1.0
baz=146
439A Center Grove, 57.00 331 P P 17 38 06.5 -0.6
baz=148
Y47A UCPARC, Winfie 57.04 339 P P 17 38 06.1 -1.2
baz=156,SNR=7.2
537A Green Hill Far 57.12 330 P P 17 38 08.8 +0.9
baz=147
340A Bronson 57.14 333 P P 17 38 08.2 +0.2
baz=150
Z45A Winona 57.19 337 P P 17 38 07.7 -0.7
baz=154
734A La Parita Cree 57.22 327 P P 17 38 09.1 +0.5
baz=144
833A Chaparral WMA, 57.23 326 P P 17 38 09.3 +0.6
baz=143,SNR=7.6
635A Leesville 57.26 328 P P 17 38 09.1 +0.2
baz=145
142A Monroe 57.32 335 P P 17 38 09.3 +0.1
baz=152
Y46A Houston 57.36 338 P P 17 38 08.3 -1.2
baz=155
TKL Tuckaleechee C 57.45 344 P P 17 38 09.0 -1.2
comp=Z,6.9nm,0.9s,baz=163,slow=8.2,SNR=9.0
TKL Tuckaleechee C 57.45 344 eP P 17 38 09.1 -1.1
TKL pmax pmax
comp=Z,12nm,1.0s
TKL Tuckaleechee C 57.45 344 eP P 17 38 09.1 -1.1
comp=Z,12nm,1.0s
CPCT Cooper Cave 57.46 343 eP P 17 38 09.8 -0.4
comp=Z,7.6nm,1.3s
536A Bastrop 57.47 329 P P 17 38 10.2 -0.1
baz=146
733A Divot King Ran 57.49 326 P P 17 38 10.6 +0.1
baz=143
832A Faith Ranch, C 57.51 325 P P 17 38 11.1 +0.4
baz=143
634A China Grove, S 57.54 327 P P 17 38 11.4 +0.5
baz=144
Y45A Yeager Farm, C 57.59 338 P P 17 38 10.4 -0.7
baz=155
240A Hunter Patters 57.62 333 P P 17 38 11.6 +0.3
baz=150
SWET Sewanee 57.65 342 eP P 17 38 10.4 -1.1
comp=Z,5.8nm,1.1s
535A Dale 57.68 329 P P 17 38 12.9 +1.1
baz=146
338A Crockett 57.72 331 P P 17 38 12.9 +0.8
baz=148
141A Papa Simpson, 57.76 334 P P 17 38 12.7 +0.4
baz=151
NATX Nacogdoches 57.77 332 P P 17 38 13.0 +0.5
baz=149
NATX Nacogdoches 57.77 332 eP P 17 38 13.7 +1.3
comp=Z,46nm,0.8s
239A Gary 57.91 332 P P 17 38 14.0 +0.6
baz=149
Y44A Strider, Charl 57.91 337 P P 17 38 12.1 -1.2
baz=154
436A Wall Ranch, Ga 57.92 330 P P 17 38 13.8 +0.3
baz=146
337A Centerville 57.95 331 P P 17 38 14.7 +1.0
baz=148
Z42A Norrel Spur, H 57.96 335 P P 17 38 13.1 -0.6
baz=152
633A Saathoff Ranch 58.03 327 P P 17 38 14.5 +0.3
baz=144
140A Cam and Jess, 58.06 334 P P 17 38 14.7 +0.3
baz=150
PLAL Pickwick Lake 58.10 340 eP P 17 38 13.7 -0.9
comp=Z,8.9nm,0.8s
OXF Oxford 58.12 338 eP P 17 38 13.9 -0.9
OXF pmax pmax
comp=Z,27nm,0.7s
OXF Oxford 58.12 338 eP P 17 38 13.9 -0.9
comp=Z,27nm,0.7s
534A Blanco 58.13 328 P P 17 38 14.5 -0.5
baz=145
Y43A Makayla and Ka 58.13 337 P P 17 38 14.0 -0.8
baz=153
BLA Blacksburg 58.15 347 eP P 17 38 15.2 +0.1
BLA pmax pmax
comp=Z,36nm,1.7s
BLA Blacksburg 58.15 347 eP P 17 38 15.2 +0.1
comp=Z,36nm,1.7s
238A Jacksonville 58.19 332 P P 17 38 16.0 +0.7
baz=148
435B Jarrell 58.31 329 P P 17 38 16.3 +0.1
baz=146
X44A Crenshaw 58.37 338 P P 17 38 15.0 -1.5
baz=154
533A Kerrville 58.45 327 P P 17 38 17.4 +0.2
baz=144
336A Riesel 58.45 330 P P 17 38 17.3 +0.2
baz=147
237A Washetta, Mont 58.49 331 P P 17 38 17.9 +0.5
baz=148
Z40A Long Farm, Mag 58.53 334 P P 17 38 18.0 +0.3
baz=151
W45A Hickory Valley 58.63 339 P P 17 38 17.0 -1.3
baz=155
335A Moody 58.64 329 P P 17 38 18.7 +0.2
baz=146
X43A Marvell 58.66 337 P P 17 38 18.2 -0.2
baz=153
434A Burnet 58.67 328 P P 17 38 18.7 0.0
baz=145,SNR=5.4
138A Matatall Enter 58.73 332 P P 17 38 20.2 +1.2
baz=149
Y41A Eaglette Beard 58.75 335 P P 17 38 18.9 -0.3
baz=152
236A Katherine and 58.82 331 P P 17 38 20.4 +0.8
baz=147
137A Heron Place, G 58.97 332 P P 17 38 21.6 +0.9
baz=148
433A Art 59.03 328 P P 17 38 21.3 +0.2
baz=144
334A Lometa 59.08 329 P P 17 38 21.7 +0.2
baz=145,SNR=5.8
Y40A Okolona 59.14 335 P P 17 38 21.7 -0.1
baz=151
JCT Junction City 59.17 327 P P 17 38 22.3 +0.2
baz=144,SNR=5.9
JCT Junction City 59.17 327 eP P 17 38 22.8 +0.6
JCT pmax pmax
comp=Z,15nm,0.8s
JCT Junction City 59.17 327 eP P 17 38 22.8 +0.6
comp=Z,15nm,0.8s
Z38A Mt. Pleasant 59.19 333 P P 17 38 22.6 +0.5
baz=149
136A Ennis 59.22 331 P P 17 38 23.0 +0.6
baz=147
WHTX Lake Whitney, 59.24 330 P P 17 38 22.9 +0.4
baz=146
X40A Basin Creek Fa 59.37 335 P P 17 38 22.6 -0.7
baz=152
Y39A Lockesburg 59.40 334 P P 17 38 23.9 +0.3
baz=150,SNR=6.4
Z37A Pogue Cattle C 59.42 332 P P 17 38 24.4 +0.6
baz=148
UALR University of 59.44 336 eP P 17 38 23.4 -0.4
comp=Z,17nm,0.9s
333A Richland Sprin 59.44 328 P P 17 38 24.0 0.0
baz=145,SNR=11
234A Clairette 59.58 329 P P 17 38 25.2 +0.4
baz=146,SNR=11
Y38A Idabel 59.66 333 P P 17 38 25.5 +0.1
baz=149
135A Vickery Place, 59.69 330 P P 17 38 26.1 +0.5
baz=146
MIAR Mount Ida 59.72 335 P P 17 38 25.4 -0.3
baz=151,SNR=10
MIAR Mount Ida 59.72 335 eP P 17 38 25.5 -0.3
MIAR pmax pmax
comp=Z,16nm,0.8s
MIAR Mount Ida 59.72 335 eP P 17 38 25.5 -0.2
comp=Z,16nm,0.8s
Z36A Blue Ridge 59.84 332 P P 17 38 27.4 +0.7
baz=148,SNR=5.9
X301 Greenbrier Sit 59.87 336 eP P 17 38 26.3 -0.4
comp=Z,12nm,0.7s
WHAR Wooly Hollow 59.87 336 eP P 17 38 26.0 -0.8
comp=Z,13nm,0.9s
X201 Greenbrier Sit 59.90 336 eP P 17 38 26.5 -0.5
comp=Z,12nm,0.7s
X39A Fountain Ranch 59.91 334 P P 17 38 27.2 +0.1
baz=150,SNR=20
233A Rising Star 59.96 329 P P 17 38 27.8 +0.3
baz=145,SNR=8.5
V42A Cord 59.99 337 P P 17 38 26.4 -1.2
baz=153
134A White-Moore Ra 60.02 330 P P 17 38 28.0 +0.1
baz=146
W40A Ferguson Farm, 60.08 335 P P 17 38 28.5 +0.3
baz=151,SNR=10
Y37A Hugo 60.09 333 P P 17 38 29.4 +1.2
baz=149,SNR=15
V41A Mountainview 60.26 337 P P 17 38 28.7 -0.7
baz=152,SNR=21
Z35A Perchaven, San 60.27 331 P P 17 38 29.9 +0.4
baz=147
Y36A Durant 60.31 332 P P 17 38 29.8 +0.1
baz=148
X38A Whitesboro 60.34 334 P P 17 38 30.6 +0.7
baz=150,SNR=29
TX31 Lajitas Ar. Si 60.36 323 eP P 17 38 30.5 +0.1
TXAR Lajitas Array 60.36 323 P P 17 38 30.5 +0.2
comp=Z,3.0nm,0.6s,baz=150,slow=8.7,SNR=45
W39A Magazine 60.37 335 P P 17 38 30.5 +0.3
baz=151,SNR=8.3
133A Hamilton Ranch 60.45 329 P P 17 38 31.0 +0.2
baz=145,SNR=7.0
X37A Clayton 60.50 333 P P 17 38 31.3 +0.3
baz=149
V40A Witts Springs 60.53 336 P P 17 38 30.6 -0.6
baz=152,SNR=8.0
WCI Wyandotte Cave 60.55 343 eP P 17 38 30.2 -1.2
WCI pmax pmax
comp=Z,15nm,0.7s
WCI Wyandotte Cave 60.55 343 eP P 17 38 30.2 -1.2
comp=Z,15nm,0.7s
W38A Poteau 60.56 334 P P 17 38 31.7 +0.3
baz=150,SNR=13
Z34A Collier Ranch, 60.60 330 P P 17 38 32.2 +0.4
baz=146,SNR=8.4
Y35A Marietta 60.65 331 P P 17 38 32.6 +0.5
baz=147,SNR=5.5
S45A Carrier Mills 60.73 340 P P 17 38 31.5 -1.0
baz=156
O56A Blue Knob Stat 60.77 350 P P 17 38 32.9 +0.1
baz=167
ABTX Abilene, Hawle 60.82 329 P P 17 38 33.2 -0.1
baz=144
ABTX Abilene, Hawle 60.82 329 eP P 17 38 33.3 0.0
comp=Z,21nm,1.1s
V39A Pettigrew 60.88 335 P P 17 38 33.4 -0.3
baz=151,SNR=17
X36A Centrahoma 60.91 332 P P 17 38 33.7 -0.1
baz=148,SNR=9.2
Z33A Whitaker Ranch 60.93 330 P P 17 38 34.4 +0.3
baz=145,SNR=7.3
S44A Carbondale 60.96 340 P P 17 38 33.4 -0.6
baz=156
SIUC Southern Illin 60.97 340 eP P 17 38 33.2 -0.9
comp=Z,18nm,0.8s
W37B Quinton 61.00 333 P P 17 38 34.8 +0.4
baz=149,SNR=7.8
N59A State Game Lan 61.01 352 P P 17 38 33.4 -0.9
baz=170
Y34A Reagan Ranch, 61.02 331 P P 17 38 34.7 +0.1
baz=147,SNR=11
U40A Yellville 61.02 336 P P 17 38 33.5 -1.0
baz=152
X35A Drake 61.03 332 P P 17 38 34.5 -0.1
baz=147,SNR=18
VNA3 Neumayer Olymp 61.06 162 P P 17 38 35.3 +0.9
S43A Fulton Ridge, 61.12 339 P P 17 38 34.1 -1.0
baz=155,SNR=19
V38A Canehill 61.20 335 P P 17 38 35.3 -0.4
baz=150,SNR=10.0
T41A Mountain View 61.23 338 P P 17 38 35.0 -0.9
baz=153,SNR=8.3
VNA1 Neumayer–Stat 61.24 161 P P 17 38 36.9 +1.4
U39A Green Forest 61.29 336 P P 17 38 35.6 -0.7
baz=151,SNR=6.8
W36A Wetumka 61.33 333 P P 17 38 36.5 -0.2
baz=148,SNR=22
HHAR Hobbs 61.38 335 eP P 17 38 36.9 -0.1
comp=Z,20nm,0.9s
R44A Waltonville 61.41 340 P P 17 38 35.5 -1.5
baz=156
Y33A Hilltop Ranch, 61.46 330 P P 17 38 38.0 +0.4
baz=146
BLO Bloomington 61.50 343 eP P 17 38 36.6 -1.0
BLO pmax pmax
comp=Z,23nm,0.8s
BLO Bloomington 61.50 343 eP P 17 38 36.6 -1.0
comp=Z,22nm,0.8s
V37A Hulbert 61.51 334 P P 17 38 37.8 -0.1
baz=150,SNR=5.9
X34A Smith Ranch, M 61.59 331 P P 17 38 38.3 -0.1
baz=147
T40A Mansfield 61.60 337 P P 17 38 37.8 -0.6
baz=152
ACSO Alum Creek Sta 61.61 346 eP P 17 38 38.0 -0.3
comp=Z,28nm,0.8s
W35A Tecumseh 61.63 332 P P 17 38 38.2 -0.4
baz=148
U38A Gravette 61.69 335 P P 17 38 38.6 -0.4
baz=150
N54A Moraine State 61.70 349 P P 17 38 37.6 -1.3
baz=166
V36A Jenks 61.76 333 P P 17 38 39.6 +0.1
baz=149,SNR=11
TUL1 Leonard 61.81 334 P P 17 38 39.8 0.0
baz=149,SNR=6.6
T39A Clever 61.81 336 P P 17 38 39.1 -0.7
baz=152,SNR=6.3
U37A Salina 61.95 334 P P 17 38 40.6 -0.1
baz=150,SNR=6.5
S40A Lebanon 61.99 337 P P 17 38 40.4 -0.6
baz=153,SNR=14
W34A Bridge Creek, 62.09 332 P P 17 38 41.2 -0.5
baz=147
V35A Meyer Ranch, C 62.13 333 P P 17 38 41.9 0.0
baz=148,SNR=10
WMOK Wichita Mounta 62.14 331 P P 17 38 41.9 -0.1
baz=146
M54A Oil Creek Stat 62.17 349 P P 17 38 41.3 -0.8
baz=166,SNR=7.3
T38A Diamond 62.17 335 P P 17 38 41.9 -0.3
baz=151,SNR=19
U36A Oologah 62.20 334 P P 17 38 42.4 +0.1
baz=149
Q43A New Douglas 62.24 340 P P 17 38 41.4 -1.1
baz=156
BINY Binghamton 62.30 352 eP P 17 38 43.1 +0.2
comp=Z,19nm,0.8s
W33A Caddo, Fort Co 62.34 331 P P 17 38 43.9 +0.6
baz=146,SNR=11
S39A Bolivar 62.38 337 P P 17 38 42.9 -0.7
baz=152,SNR=22
ALLY Alegheny Colle 62.39 349 eP P 17 38 43.2 -0.3
comp=Z,24nm,0.8s
Q42A Golden Eagle 62.48 339 P P 17 38 43.0 -1.2
baz=155
V34A Guthrie 62.48 332 P P 17 38 44.1 -0.2
baz=147
V34A Guthrie 62.48 332 eP P 17 38 44.0 -0.2

comp=Z,32nm,0.9s
T37A Cheneyville 18 62.49 335 P P 17 38 44.4 +0.1
baz=150,SNR=13
R40A Maddies Statio 62.52 338 P P 17 38 43.7 -0.7
baz=153,SNR=15
S38A Stockton 62.54 336 P P 17 38 43.8 -0.8
baz=151
U35A Pawnee 62.60 333 P P 17 38 45.2 +0.2
baz=148,SNR=8.9
W32A Sentinel 62.67 330 P P 17 38 45.6 +0.1
baz=146,SNR=8.3
SFIN Lafayette 62.78 343 P P 17 38 44.5 -1.6
baz=159,SNR=11
SFIN Lafayette 62.78 343 eP P 17 38 44.6 -1.6
comp=Z,24nm,0.8s
V33A Lossen Ranch, 62.81 332 P P 17 38 46.3 -0.2
baz=147
ERPA Erie 62.82 349 eP P 17 38 46.3 0.0
comp=Z,42nm,0.6s
R39A Chumby, Stover 62.82 337 P P 17 38 45.6 -0.8
baz=152
T36A Boggs Farm, Ca 62.83 334 P P 17 38 46.5 0.0
baz=149,SNR=16
T35A Sooner Cattle 62.97 334 P P 17 38 47.7 +0.3
baz=149,SNR=8.4
U34A Anderson Ranch 63.00 333 P P 17 38 47.8 +0.1
baz=149,SNR=8.3
S37A Fort Scott 63.01 335 P P 17 38 47.4 -0.2
baz=150,SNR=12
R38A Fenwick Farm, 63.03 336 P P 17 38 47.4 -0.4
baz=151,SNR=19
V32A Arapaho 63.07 331 P P 17 38 48.7 +0.5
baz=146
Q40A Laux Farm, Aux 63.08 338 P P 17 38 47.1 -1.0
baz=153,SNR=6.0
MNTX Cornudas Mount 63.11 324 P P 17 38 49.3 +0.8
baz=139
MNTX Cornudas Mount 63.11 324 eP P 17 38 48.4 -0.1
comp=Z,14nm,1.3s
U33A Lingo Farm, Me 63.24 332 P P 17 38 49.0 -0.3
baz=147
SNAA Sanae 63.25 161 P P 17 38 49.6 +0.7
SNAA Sanae 63.25 161 c iP P 17 38 49.8 +0.9
SNAA pmax pmax
comp=Z,735nm,1.0s
SNAA Sanae 63.25 161 eP P 17 38 49.4 +0.4
comp=Z,13nm,0.9s
S36A Lake Cedric, C 63.28 335 P P 17 38 49.5 0.0
baz=150,SNR=18
T34A McClaskey Farm 63.34 333 P P 17 38 50.2 +0.3
baz=148,SNR=6.1
Q39A Willow Grove F 63.45 338 P P 17 38 50.0 -0.5
baz=152,SNR=16
MSTX Muleshoe 63.46 327 P P 17 38 50.8 0.0
baz=142,SNR=9.2
MSTX Muleshoe 63.46 327 eP P 17 38 51.2 +0.3
comp=Z,29nm,0.9s
R37A Teagarden Farm 63.49 336 P P 17 38 50.4 -0.4
baz=150,SNR=9.1
S35A Otter Creek Ra 63.54 334 P P 17 38 51.5 +0.4
baz=149,SNR=17
P40A Paris 63.55 339 P P 17 38 50.3 -0.9
baz=154,SNR=10.0
HDIL Hopedale 63.59 341 P P 17 38 49.9 -1.5
baz=156
U32A Winter Ranch, 63.59 331 P P 17 38 51.8 +0.2
baz=146
Q38A Cooks Store, C 63.60 337 P P 17 38 51.1 -0.5
baz=152
P39B Salisbury 63.76 338 P P 17 38 51.7 -0.8
baz=153,SNR=11
R36A Gordon, Harris 63.77 335 P P 17 38 52.4 -0.2
baz=150,SNR=8.7
Q37A Longview Farm, 63.84 336 P P 17 38 52.8 -0.3
baz=151,SNR=6.4
T33A Patterson Ranc 63.85 332 P P 17 38 53.7 +0.5
baz=147,SNR=6.2
S34A Willow Spring 63.88 334 P P 17 38 53.3 -0.2
baz=148
O40A La Belle 64.02 339 P P 17 38 53.2 -1.1
baz=154,SNR=5.5
R35A Emporia Munici 64.04 335 P P 17 38 54.3 -0.2
baz=149
P38A Dawn 64.16 337 P P 17 38 54.5 -0.6
baz=152,SNR=14
T32A Huddler Ranch, 64.22 332 P P 17 38 55.9 +0.2
baz=146
Q36A Arnold C. Orve 64.30 336 P P 17 38 55.7 -0.4
baz=150
O39A Kirksville 64.37 339 P P 17 38 55.4 -1.1
baz=153
P37A Lathrop 64.42 337 P P 17 38 56.2 -0.7
baz=151,SNR=17
Q35A Mercer Eighty, 64.44 335 P P 17 38 56.6 -0.4
baz=150,SNR=5.7
R34A Isabella, Hill 64.45 334 P P 17 38 57.1 0.0
baz=148
LONY Lake Ozonia 64.53 354 eP P 17 38 57.7 +0.3
comp=Z,5.0nm,0.7s
O38A Galt 64.58 338 P P 17 38 57.0 -0.9
baz=152
S32A Newby Ranch, P 64.66 332 P P 17 38 58.9 +0.4
baz=146
R33A Olander Ranch, 64.76 333 P P 17 38 59.1 -0.1
baz=148
P36A Good Intent, A 64.77 336 P P 17 38 58.2 -0.9
baz=150,SNR=7.1
Q34A Chapman 64.85 335 P P 17 38 59.3 -0.4
baz=149,SNR=5.9
O37A Wolven Farm, M 64.86 337 P P 17 38 59.2 -0.4
baz=152
KSU1 Kansas State U 64.87 335 P P 17 38 59.4 -0.4
baz=149,SNR=6.4
KSU1 Kansas State U 64.87 335 eP P 17 38 59.9 +0.1
comp=Z,36nm,0.9s
N39A Derby Farms, D 64.91 339 P P 17 38 59.0 -1.0
baz=153
P35A Duane Minner, 65.01 336 P P 17 38 59.9 -0.8
baz=150
121A Cookes Peak, D 65.09 323 P P 17 39 03.1 +1.5
baz=137,SNR=6.4
121A Cookes Peak, D 65.09 323 eP P 17 39 03.2 +1.6
comp=Z,4.5nm,0.6s
319A Douglas 65.13 321 eP P 17 39 03.4 +1.7
comp=Z,26nm,1.1s
O36A Bolckow 65.13 337 P P 17 39 00.4 -1.0
baz=151
R32A Long Quarter, 65.17 333 P P 17 39 01.7 0.0
baz=147
SADO Sadowa 65.26 350 P P 17 39 01.1 -1.0
comp=Z,2.3nm,0.5s,baz=168,slow=6.7,SNR=3.8
Q33A Connelly Farm, 65.28 334 P P 17 39 02.4 -0.1
baz=148
P34A Walnut Farm, R 65.34 335 P P 17 39 02.5 -0.3
baz=149,SNR=12
N37A Lee Faris, Mou 65.40 338 P P 17 39 02.4 -0.8
baz=152
Q32A Meitler Ranch, 65.58 333 P P 17 39 04.4 0.0
baz=147
M38A Pleasantville 65.63 339 P P 17 39 03.5 -1.0
baz=153
N36A Muff Farm, Cla 65.72 337 P P 17 39 05.1 -0.1
baz=151,SNR=6.6
LPM Los Pinos Moun 65.77 325 eP P 17 39 06.9 +1.0
O34A Beatrice 65.83 335 P P 17 39 05.5 -0.5
baz=149
M37A Trindle Farm, 65.91 338 P P 17 39 05.8 -0.6
baz=152
CBKS Cedar Bluff 65.94 332 P P 17 39 07.1 +0.5
baz=146
N35A Tabor 66.02 337 P P 17 39 06.6 -0.5
baz=150
JFWS Jewell Farm 66.03 341 eP P 17 39 06.5 -0.6
JFWS pmax pmax
comp=Z,20nm,0.8s
JFWS Jewell Farm 66.03 341 eP P 17 39 06.5 -0.6
comp=Z,20nm,0.8s
O33A Hebron 66.10 335 P P 17 39 07.6 0.0
baz=148
LAZ Ladron 66.11 324 eP P 17 39 09.9 +1.8
ANMO Albuquerque 66.15 325 P P 17 39 09.1 +0.9
baz=139
ANMO Albuquerque 66.15 325 c iP P 17 39 09.8 +1.5
ANMO Albuquerque 66.15 325 eP P 17 39 09.2 +0.9
comp=Z,6.4nm,0.8s
L38A Oak Wood Farm, 66.19 339 P P 17 39 07.4 -0.8
baz=153
LIC Lamto 66.19 74 eP P 17 39 06.8 -1.9
comp=Z,38nm,0.8s
M36A Felix, Anita 66.22 337 P P 17 39 07.8 -0.5
baz=151
N34A Lincoln 66.32 336 P P 17 39 08.2 -0.8
baz=150,SNR=6.0
TIC Toumodi 66.38 73 eP P 17 39 07.9 -2.0
KIC Kosan Boka 66.51 74 eP P 17 39 08.9 -1.9
comp=Z,3.3nm,0.2s
DBIC Dimbokro 66.53 73 P P 17 39 09.2 -1.6
comp=Z,16nm,0.6s,baz=221,slow=7.3,SNR=20
O32A Brockman Farm, 66.53 334 P P 17 39 10.4 0.0
baz=148
K38A Parkersburg 66.58 340 P P 17 39 09.7 -0.9
baz=153
N33A J Bar K, Exete 66.61 335 P P 17 39 10.6 -0.3
baz=149
TUC Tucson 66.69 320 P P 17 39 12.8 +1.2
baz=135
TUC Tucson 66.69 320 eP P 17 39 12.7 +1.1
TUC pmax pmax
comp=Z,9.0nm,0.9s
TUC Tucson 66.69 320 eP P 17 39 12.7 +1.1
comp=Z,9.1nm,0.9s
L36A Harm Buss Farm 66.75 338 P P 17 39 11.2 -0.4
baz=152
T25A Trinidad 66.77 328 P P 17 39 13.3 +1.1
baz=142
O31A Woolen Ranch, 66.88 334 P P 17 39 12.6 0.0
baz=147
M34A Aspy Farms, Fr 66.93 336 P P 17 39 12.6 -0.2
baz=150
K37A Belmond 66.98 339 P P 17 39 11.9 -1.2
baz=153
L35A Bielow Farm, R 67.07 337 P P 17 39 13.2 -0.5
baz=151
K36A Gilmore City 67.14 338 P P 17 39 13.1 -1.0
baz=152
N31A Bailey Ranch, 67.28 334 P P 17 39 15.4 +0.3
baz=147
KSCO Kaye Shedlock' 67.40 331 P P 17 39 16.1 +0.1
baz=144
J37A Redenius Farm, 67.43 339 P P 17 39 15.1 -0.8
baz=153
BGNE Belgrade 67.45 335 P P 17 39 16.2 0.0
baz=148
K35A Storm Lake 67.49 338 P P 17 39 15.7 -0.6
baz=151
214A Organ Pipe Nat 67.68 319 P P 17 39 19.6 +1.8
baz=133,SNR=5.5
I38A Scanlan Farm, 67.69 341 P P 17 39 16.9 -0.6
baz=154,SNR=7.0
J36A Seneca 1, Swea 67.71 339 P P 17 39 17.1 -0.6
baz=152
NVL N'lazarevskaya 67.73 159 eP P 17 39 20.3 +2.9
M31A Lambtecht Ranc 67.73 334 P P 17 39 18.2 +0.3
baz=147
SDCO Great Sand Dun 67.79 328 P P 17 39 19.8 +1.2
baz=141,SNR=8.4
SDCO Great Sand Dun 67.79 328 eP P 17 39 20.0 +1.4
comp=Z,20nm,0.7s
I37A Lemond, Waseca 68.01 340 P P 17 39 18.9 -0.6
baz=153
W18A Petrified Fore 68.08 323 P P 17 39 21.6 +1.2
baz=136
W18A Petrified Fore 68.08 323 eP P 17 39 21.5 +1.1
comp=Z,14nm,0.9s
I36A Fitzsimmons Fa 68.22 339 P P 17 39 19.8 -0.9
baz=152
J34A George 68.24 338 P P 17 39 20.6 -0.3
baz=150
H37A Dierke Farm, C 68.36 340 P P 17 39 20.7 -1.0
baz=154
L31A Butterfield Fa 68.38 335 P P 17 39 21.8 -0.1
baz=148
I35A Creekview Farm 68.40 339 P P 17 39 21.5 -0.4
baz=152
S22A 4UR Ranch, Cre 68.46 327 P P 17 39 23.7 +0.9
baz=140
Q24A Divide 68.56 329 P P 17 39 24.5 +1.1
baz=141
X16A Lo Mia Camp, P 68.56 322 eP P 17 39 25.2 +1.8
comp=Z,9.9nm,1.0s
J33A Davis 68.64 337 P P 17 39 23.3 -0.1
baz=150
H36A Jessenland, He 68.68 340 P P 17 39 23.4 -0.3
baz=153,SNR=6.0
113A Mohawk Valley, 68.83 319 eP P 17 39 26.3 +1.5
comp=Z,19nm,0.4s
ECSD EROS Data Cent 68.87 337 P P 17 39 24.4 -0.5
baz=150,SNR=12
ECSD EROS Data Cent 68.87 337 eP P 17 39 23.7 -1.2
comp=Z,27nm,1.4s
SPMN Marine on St. 68.90 341 P P 17 39 23.8 -1.1
baz=154
SPMN Marine on St. 68.90 341 eP P 17 39 24.3 -0.7
comp=Z,28nm,1.3s
MVCO Mesa Verde 68.94 325 P P 17 39 26.9 +1.2
baz=138,SNR=8.2
MVCO Mesa Verde 68.94 325 eP P 17 39 27.0 +1.2
comp=Z,30nm,1.4s
H35A Sunnyside Ranc 69.09 339 P P 17 39 25.6 -0.6
baz=152
K30A Basset 69.11 335 P P 17 39 26.2 -0.2
baz=147
Y14A Wickenburg 69.16 320 eP P 17 39 28.4 +1.5
comp=Z,51nm,0.5s
I33A Coleman 69.20 337 P P 17 39 26.5 -0.4
baz=150
G36A St. Michael 69.21 340 P P 17 39 26.4 -0.4
baz=153
J31A Geddes 69.28 336 P P 17 39 26.7 -0.7
baz=148
WUAZ Wupatki 69.30 322 P P 17 39 29.5 +1.7
baz=135,SNR=11
WUAZ Wupatki 69.30 322 eP P 17 39 29.2 +1.3
comp=Z,20nm,1.0s
H34A Spellman Lake, 69.38 338 P P 17 39 27.5 -0.5
baz=151
I32A Karley and Nic 69.43 337 P P 17 39 27.9 -0.4
baz=149
G35A Watkins 69.44 340 P P 17 39 27.5 -0.7
baz=152
ISCO Idaho Springs 69.44 329 P P 17 39 29.8 +1.0
baz=141,SNR=10.0
ISCO Idaho Springs 69.44 329 eP P 17 39 29.7 +0.9
ISCO pmax pmax
comp=Z,12nm,1.1s
ISCO Idaho Springs 69.44 329 eP P 17 39 29.7 +0.9
comp=Z,12nm,1.1s
J30A Dallas 69.61 335 P P 17 39 29.3 -0.1
baz=147,SNR=6.7
SMCO Snowmass 69.63 328 eP P 17 39 31.6 +1.6
comp=Z,9.6nm,0.8s
PV01 Paradox Valley 69.66 326 eP P 17 39 31.9 +1.8
F36A Milaca 69.70 341 P P 17 39 29.2 -0.6
baz=153,SNR=7.8
H33A Prehn Over Nor 69.73 338 P P 17 39 29.9 -0.2
baz=150,SNR=10
H32A Carlson Farm, 69.83 337 P P 17 39 30.2 -0.5
baz=149
I31A Royce, Wessing 69.83 336 P P 17 39 30.6 -0.1
baz=148
Y12C Blythe 69.96 319 P P 17 39 33.4 +1.7
baz=132
Y12C Blythe 69.96 319 eP P 17 39 33.4 +1.7
comp=Z,12nm,0.9s
E37A Wrenshall 69.99 342 P P 17 39 30.8 -0.8
baz=154
F35A Swanville 70.03 340 P P 17 39 31.2 -0.6
baz=152
G33A Ortonville 70.07 338 P P 17 39 31.3 -0.9
baz=150
I30A Oacoma 70.08 336 P P 17 39 31.9 -0.3
baz=148
PDMCI Parker Dam,Lak 70.09 320 P P 17 39 33.9 +1.4
baz=133
H31A Wolsey 70.19 337 P P 17 39 32.6 -0.3
baz=148
F34A Alexandria 70.20 339 P P 17 39 32.1 -0.7
baz=152
E36A McGregor 70.20 341 P P 17 39 32.1 -0.8
baz=154
IKP In-Ko-Pah, Jac 70.22 317 P P 17 39 35.4 +1.9
baz=131
QSPA South Pole Qui 70.33 180 eP P 17 39 34.7 +1.0
SUSD Miller 70.34 336 P P 17 39 33.1 -0.7
baz=148
N23A Red Feather La 70.45 330 P P 17 39 35.8 +0.9
baz=141,SNR=7.5
N23A Red Feather La 70.45 330 eP P 17 39 36.3 +1.5
comp=Z,14nm,1.0s
BC3 Big Chuckawall 70.47 319 P P 17 39 36.4 +1.4
baz=132,SNR=5.9
U15A North Rim 70.47 323 eP P 17 39 37.0 +1.9
comp=Z,20nm,1.1s
W13A Hualapai Mount 70.48 321 eP P 17 39 37.2 +2.1
comp=Z,8.6nm,0.7s
C39A Grand Marais 70.49 344 P P 17 39 33.6 -1.0
baz=157
I29A Vivian Onida 70.51 335 P P 17 39 34.5 -0.3
baz=147
D37A Cotton 70.53 342 P P 17 39 34.3 -0.6
baz=154
MONP2 Monument Peak 70.58 317 P P 17 39 37.5 +1.7
baz=131
F33A 5 Mile Ranch, 70.58 339 P P 17 39 34.6 -0.6
baz=151
E35A Pequot Lakes 70.59 340 P P 17 39 34.6 -0.7
baz=153
IRM Iron Mountain 70.61 319 P P 17 39 37.1 +1.4
baz=132,SNR=8.0
KOWA Kowa 70.70 66 eP P 17 39 34.8 -1.7
comp=Z,2.2nm,0.7s
D36A Goodland 70.77 341 P P 17 39 35.6 -0.7
baz=154
F32A Veblen 70.90 338 P P 17 39 36.5 -0.7
baz=150
D35A Remer 70.95 341 P P 17 39 37.2 -0.2
baz=153
C37A Embarrass 70.98 342 P P 17 39 36.8 -0.8
baz=155
H29A Onida 70.98 336 P P 17 39 37.4 -0.3
baz=147
O20A White River Ci 70.99 328 P P 17 39 39.3 +1.2
baz=139,SNR=9.3
O20A White River Ci 70.99 328 eP P 17 39 39.5 +1.4
comp=Z,17nm,0.9s
G30A Faulkton 71.00 337 P P 17 39 37.4 -0.3
baz=148
BELC Belle Mtn. Jos 71.04 318 P P 17 39 40.3 +1.9
baz=131
TPFO Pinon Flats 71.06 318 P P 17 39 40.0 +1.4
baz=131
E33A Westby DABS, E 71.07 339 P P 17 39 37.1 -1.0
baz=151
J26A Sides Ranch, S 71.07 333 P P 17 39 39.4 +1.1
baz=144,SNR=6.3
PFO Pinyon Flats O 71.07 318 eP P 17 39 40.1 +1.5
PFO pmax pmax
comp=Z,12nm,0.9s
PFO Pinyon Flats O 71.07 318 eP P 17 39 40.0 +1.5
comp=Z,12nm,0.9s
KNB Kanab 71.19 323 eP P 17 39 41.7 +2.4
KNB pmax pmax
comp=Z,42nm,0.9s
KNB Kanab 71.19 323 eP P 17 39 41.6 +2.4
comp=Z,42nm,0.9s
C36A Pine Crest Far 71.19 342 P P 17 39 37.4 -1.4
baz=154
F31A Hecla 71.29 337 P P 17 39 39.2 -0.3
baz=149,SNR=9.0
D34A Park Rapids 71.31 340 P P 17 39 38.8 -0.7
baz=152
G29A Hoven 71.34 336 P P 17 39 39.6 -0.2
baz=147
GMRC Granite Mounta 71.35 319 P P 17 39 42.1 +1.9
baz=132
SRU San Rafael Swe 71.41 326 eP P 17 39 41.9 +1.3
SRU pmax pmax
comp=Z,21nm,0.8s
SRU San Rafael Swe 71.41 326 eP P 17 39 41.9 +1.3
comp=Z,21nm,0.8s
C35A Jirik Farms, M 71.48 341 P P 17 39 39.8 -0.8
baz=153,SNR=8.8
F30A Leola 71.55 337 P P 17 39 40.8 -0.3
baz=148
D33A AnnSam, Waubun 71.57 340 P P 17 39 40.3 -0.8
baz=151
Q16A Castle Valley 71.62 325 eP P 17 39 43.1 +1.3
comp=Z,9.7nm,0.8s
P18A Preston Nutter 71.64 326 eP P 17 39 43.8 +1.7
comp=Z,24nm,0.8s
C34A RKJ Ranch, Bem 71.72 341 P P 17 39 41.2 -0.8
baz=152
E31A Nome 71.76 338 P P 17 39 41.9 -0.4
baz=149
P17A Butcher Ranch, 71.79 326 eP P 17 39 44.1 +1.3
comp=Z,23nm,0.8s
HEC Hector,Ludlow 71.79 319 P P 17 39 44.7 +1.9
baz=131,SNR=6.9
F29A Eureka 71.85 336 P P 17 39 42.8 0.0
baz=147,SNR=5.4
CCUT Cedar City 71.87 323 eP P 17 39 45.6 +2.2
comp=Z,25nm,0.8s
MSU Marysvale 71.88 324 eP P 17 39 45.3 +1.9
MSU e 17 40 02.3
MSU Marysvale 71.88 324 eP P 17 39 45.3 +1.9
MSU ePcP PcP 17 40 02.3 +1.6
TMUT Trail Mountain 71.91 325 eP P 17 39 45.5 +1.8
comp=Z,9.2nm,0.7s
TUQ Turquoise Moun 71.94 320 P P 17 39 45.6 +1.9
baz=132
D32A Dogwood Acres, 71.96 339 P P 17 39 43.0 -0.4
baz=150
B35A Bob, Littlefor 72.00 342 P P 17 39 42.8 -0.8
baz=154,SNR=7.8
H26A Fairpoint 72.00 334 P P 17 39 43.9 +0.1
baz=145
SCI2 San Clemente I 72.01 316 P P 17 39 46.0 +2.0
baz=129
E30A Jud 72.08 337 P P 17 39 44.2 +0.1
baz=148
K22A Casper 72.08 330 P P 17 39 44.8 +0.3
baz=141
C33A Trail 72.09 340 P P 17 39 43.4 -0.8
baz=152,SNR=6.4
D31A Mcclaflin, Tow 72.12 338 P P 17 39 44.0 -0.4
baz=150,SNR=5.2
RSSD Black Hills 72.13 333 P P 17 39 45.3 +0.5
baz=143
RSSD Black Hills 72.13 333 eP P 17 39 45.7 +0.9
RSSD pmax pmax
comp=Z,14nm,0.9s
RSSD Black Hills 72.13 333 eP P 17 39 45.7 +0.9
comp=Z,14nm,0.9s
SHPR Sheep Range 72.20 321 eP P 17 39 47.3 +2.0
comp=Z,10nm,0.9s
H25A Fruitdale 72.35 333 P P 17 39 46.3 +0.4
baz=144
B34A Aery, Baudette 72.39 341 P P 17 39 45.5 -0.4
baz=153,SNR=5.3
GSC Goldstone, Bar 72.39 319 P P 17 39 48.2 +1.8
baz=131
GSC Goldstone, Bar 72.39 319 eP P 17 39 48.3 +2.0
GSC pmax pmax
comp=Z,8.0nm,0.8s
GSC Goldstone, Bar 72.39 319 eP P 17 39 48.3 +2.0
comp=Z,7.6nm,0.8s
B33A Robert and Kas 72.49 340 P P 17 39 45.8 -0.7
baz=152
D30A Buchanan 72.54 338 P P 17 39 46.8 0.0
baz=149
G25A Newell 72.74 334 P P 17 39 48.5 +0.4
baz=144
C31A Landman Farms, 72.77 339 P P 17 39 48.0 -0.2
baz=150,SNR=5.6
E28A Huff 72.80 336 P P 17 39 49.0 +0.6
baz=147,SNR=5.9
D29A Pettibone, Tap 72.80 337 P P 17 39 48.4 0.0
baz=148
PSUT Pine Spring 72.83 323 eP P 17 39 50.8 +1.8
comp=Z,19nm,0.7s
EDW2 Edwards Air Fo 72.86 318 P P 17 39 50.6 +1.5
baz=130
B32A Ashes, Strandq 72.90 340 P P 17 39 48.1 -0.8
baz=151,SNR=6.6
C30A Mose, Pekin 72.95 338 P P 17 39 49.6 +0.4
baz=149
F26A Lodgepole 72.97 335 P P 17 39 49.8 +0.4
baz=145,SNR=6.6
JLU Jordanelle 72.98 326 eP P 17 39 51.5 +1.6
comp=Z,18nm,0.8s
A33A Warroad 73.01 341 P P 17 39 49.4 -0.1
baz=152,SNR=7.8
LRMC Laurel Mtn Rad 73.05 319 P P 17 39 51.6 +1.4
baz=130

TPNV	**Topopah Spring**	73.14 321	P	**P**	17 39 53.0	+2.1
	baz=132,SNR=17					
TPNV	**Topopah Spring**	73.14 321	*e*P	**P**	17 39 52.9	+2.1
TPNV			pmax	pmax		
	comp=Z,26nm,1.1s					
TPNV	**Topopah Spring**	73.14 321	*e*P	**P**	17 39 52.9	+2.0
	comp=Z,26nm,1.1s					
OSI	**Osito Audit: C**	73.15 317	P	**P**	17 39 52.2	+1.4
	baz=130					
FURC	**Furnace Creek,**	73.19 320	P	**P**	17 39 52.7	+1.9
	baz=131,SNR=10					
B31A	**Greenbush Farm**	73.29 339	P	**P**	17 39 50.9	-0.3
	baz=150					
MPMC	**Manual Prospec**	73.31 319	P	**P**	17 39 53.2	+1.3
	baz=131,SNR=5.0					
TCUT	**Toone Canyon**	73.34 326	*e*P	**P**	17 39 53.2	+1.2
	comp=Z,42nm,1.1s					
A32A	**Rocking H Ranc**	73.34 340	P	**P**	17 39 50.7	-0.8
	baz=151					
F25A	**Bowman**	73.35 334	P	**P**	17 39 52.2	+0.5
	baz=144					
E26A	**Carlson Angus**	73.39 335	P	**P**	17 39 52.0	+0.1
	baz=145					
DUG	**Dugway, Tooele**	73.42 325	P	**P**	17 39 53.9	+1.5
	baz=135,SNR=13					
DUG	**Dugway, Tooele**	73.42 325	*e*P	**P**	17 39 54.0	+1.7
DUG			pmax	pmax		
	comp=Z,14nm,0.9s					
DUG	**Dugway, Tooele**	73.42 325	*e*P	**P**	17 39 54.0	+1.7
	comp=Z,14nm,0.9s					
MDND	**Maddock**	73.47 338	P	**P**	17 39 51.8	-0.5
	baz=148,SNR=6.2					
MDND	**Maddock**	73.47 338	*e*P	**P**	17 39 53.3	+1.0
	comp=Z,104nm,0.8s					
DAC	**Darwin (Calif)**	73.51 319	*e*P	**P**	17 39 54.6	+1.6
DAC			pmax	pmax		
	comp=Z,9.0nm,0.8s					
DAC	**Darwin (Calif)**	73.51 319	*e*P	**P**	17 39 54.6	+1.6
	comp=Z,9.4nm,0.8s					
B30A	**Myrvik Farm, E**	73.54 339	P	**P**	17 39 52.0	-0.6
	baz=149					
D27A	**Center**	73.56 336	P	**P**	17 39 53.1	+0.3
	baz=146					
BW06	**Boulder Array**	73.62 329	P	**P**	17 39 54.1	+0.5
	baz=138,SNR=7.1					
BW06	**Boulder Array**	73.62 329	*e*P	**P**	17 39 54.0	+0.5
PD31	**Pinedale Array**	73.62 329	*e*P	**P**	17 39 54.0	+0.5
PDAR	**Pinedale Array**	73.62 329	P	**P**	17 39 54.1	+0.5
	comp=Z,2.8nm,0.6s,baz=120,slow=7.6,SNR=42					
ISA	**Isabella, Lake**	73.66 318	P	**P**	17 39 55.7	+2.0
	baz=130					
ISA	**Isabella, Lake**	73.66 318	*e*P	**P**	17 39 55.6	+1.8
ISA			pmax	pmax		
	comp=Z,9.0nm,0.7s					
ISA	**Isabella, Lake**	73.66 318	*e*P	**P**	17 39 55.6	+1.8
	comp=Z,9.3nm,0.7s					
R11A	**Troy Canyon, C**	73.69 322	P	**P**	17 39 56.0	+2.0
	baz=133,SNR=20					
R11A	**Troy Canyon, C**	73.69 322	*e*P	**P**	17 39 55.8	+1.7
	comp=Z,18nm,1.3s					
HWUT	**Hardware Ranch**	73.77 327	*e*P	**P**	17 39 55.3	+0.9
	comp=Z,14nm,0.8s					
E25A	**Miller Ranch,**	73.79 335	P	**P**	17 39 54.6	+0.3
	baz=144					
D26A	**Manning**	73.84 336	P	**P**	17 39 54.8	+0.3
	baz=145					
GRAC	**Grapevine Rang**	73.84 320	P	**P**	17 39 56.6	+1.9
	baz=131					
B29A	**Wagenman Farm,**	73.91 338	P	**P**	17 39 55.0	+0.2
	baz=148					
A30A	**Hoffart Farm,**	73.95 339	P	**P**	17 39 54.8	-0.2
	baz=149					
PKM	**Mcpherson Peak**	74.02 317	P	**P**	17 39 57.7	+1.7
	baz=129					
BGU	**Big Grassy Mou**	74.05 325	*e*P	**P**	17 39 57.4	+1.3
	comp=Z,16nm,0.9s					
VES	**Vestal, Richgr**	74.16 318	P	**P**	17 39 58.4	+1.8
	baz=130					
B28A	**Dugan Ranch, T**	74.25 338	P	**P**	17 39 56.9	+0.1
	baz=147					
A29A	**Manning Farm,**	74.26 339	P	**P**	17 39 56.7	-0.1
	baz=148,SNR=6.5					
D25A	**Fairfield**	74.29 335	P	**P**	17 39 57.5	+0.4
	baz=144,SNR=6.0					
ULM	**Lac du Bonnet**	74.32 341	P	**P**	17 39 56.8	-0.3
	comp=Z,17nm,0.6s,baz=141,slow=6.5,SNR=16					
ULM	**Lac du Bonnet**	74.32 341	*e*P	**P**	17 39 56.8	-0.3
	comp=Z,22nm,0.8s					
SCHQ	**Schefferville**	74.38 0	P	**P**	17 39 56.9	-0.4
	comp=Z,8.5nm,0.7s,baz=240,slow=2.1,SNR=6.6					
SCHQ	**Schefferville**	74.38 0	*e*P	**P**	17 39 57.5	+0.1
	comp=Z,13nm,0.8s					
AHID	**Auburn Hatcher**	74.38 328	*e*P	**P**	17 39 59.3	+1.4
	comp=Z,22nm,0.8s					
SMMC	**Simmler**	74.40 317	P	**P**	17 39 60.0	+2.0
	baz=129					
TIN	**Tinemaha, Big**	74.41 320	P	**P**	17 39 59.4	+1.4
	baz=130					
B27A	**Peters Farms,**	74.54 337	P	**P**	17 39 58.6	+0.2
	baz=147					
REDW	**Red Top Meadow**	74.69 328	*e*P	**P**	17 40 01.4	+1.6
	comp=Z,15nm,0.8s					
LOHW	**Long Hollow**	74.76 329	*e*P	**P**	17 40 01.4	+1.3
	comp=Z,10.0nm,0.8s					
TPAW	**Teton Pass**	74.84 328	*e*P	**P**	17 40 01.9	+1.3
	comp=Z,13nm,0.8s					
MOOW	**Moose Ponds**	74.93 329	*e*P	**P**	17 40 02.1	+1.1
	comp=Z,47nm,1.8s					
FXWY	**Fox Creek**	74.98 328	*e*P	**P**	17 40 02.7	+1.3
	comp=Z,9.1nm,0.8s					
A27A	**Ledoux Ranch,**	74.99 337	P	**P**	17 40 01.5	+0.5
	baz=147					
TOA0	**Torodi Ar. Sit**	75.10 70	*e*P	**P**	17 40 00.7	-1.7
TOA0			*ep*P	**pP**	17 40 59.3	-0.3
TORD	**Torodi Ar. Bea**	75.10 70	P	**P**	17 40 00.8	-1.5
	comp=Z,29nm,0.5s,baz=253,slow=5.2,SNR=192					
TORD			pP	**pP**	17 41 00.8	+1.2
	comp=Z,3.9nm,0.8s,baz=268,slow=5.1,SNR=2.6					
LAO	**LASA Array**	75.11 333	P	**P**	17 40 02.1	+0.3
	baz=142					
ELK	**Elko**	75.13 324	*e*P	**P**	17 40 03.7	+1.4
ELK			pmax	pmax		
	comp=Z,8.0nm,0.9s					
ELK	**Elko**	75.13 324	*e*P	**P**	17 40 03.7	+1.4
	comp=Z,8.3nm,0.9s					
IMW	**Indian Meadow**	75.13 329	*e*P	**P**	17 40 03.9	+1.6
	comp=Z,27nm,0.8s					
MLAC	**Mammoth, Mammo**	75.15 320	P	**P**	17 40 04.1	+1.7
	baz=130					
FLWY	**Flagg Ranch**	75.15 329	*e*P	**P**	17 40 04.1	+1.8
	comp=Z,36nm,0.8s					
RLMT	**Red Lodge**	75.25 330	P	**P**	17 40 04.2	+1.3
	baz=139,SNR=20					
NV11	**Mina Array Sit**	75.25 321	*e*P	**P**	17 40 04.4	+1.4
	comp=Z,8.2nm,1.0s					
H17A	**Grant Village**	75.32 329	P	**P**	17 40 05.3	+2.0
	baz=138					
H17A	**Grant Village**	75.32 329	*e*P	**P**	17 40 05.5	+2.2
	comp=Z,14nm,0.7s					
NV01	**Mina Array Sit**	75.34 321	*e*P	**P**	17 40 04.8	+1.2
NVAR	**Mina Array Bea**	75.34 321	P	**P**	17 40 04.6	+1.0
	comp=Z,5.6nm,0.8s,baz=138,slow=5.6,SNR=36					
LKWY	**Lake**	75.37 329	*e*P	**P**	17 40 06.4	+2.8
LKWY			pmax	pmax		
	comp=Z,14nm,0.7s					
LKWY	**Lake**	75.37 329	*e*P	**P**	17 40 06.4	+2.8
	comp=Z,14nm,0.7s					
YFT	**Old Faithful**	75.49 329	*e*P	**P**	17 40 06.6	+2.4
	comp=Z,14nm,0.8s					
DGMT	**Dagmar**	75.70 335	P	**P**	17 40 06.1	+1.0
	baz=144					
GCMT	**Greycliff**	75.94 331	*e*P	**P**	17 40 07.8	+1.2
WAKR	**Walker**	76.07 320	*e*P	**P**	17 40 10.1	+2.4
CMB	**Columbia Colle**	76.35 319	*e*P	**P**	17 40 10.4	+1.4
CMB			pmax	pmax		
	comp=Z,19nm,0.9s					
CMB	**Columbia Colle**	76.35 319	*e*P	**P**	17 40 10.4	+1.4
	comp=Z,19nm,0.9s					
HLID	**Hailey**	76.64 327	P	**P**	17 40 12.7	+2.0
	baz=134,SNR=28					
HLID	**Hailey**	76.64 327	*e*P	**P**	17 40 12.8	+2.0
	comp=Z,26nm,0.8s					
MCMT	**McKenzie Canyo**	76.75 328	P	**P**	17 40 13.2	+1.9
BOZ	**Bozeman (W)**	76.75 330	P	**P**	17 40 12.0	+0.8
	baz=137,SNR=9.8					
BOZ	**Bozeman (W)**	76.75 330	*e*P	**P**	17 40 12.2	+1.0
BOZ			pmax	pmax		
	comp=Z,8.0nm,1.0s					
BOZ	**Bozeman (W)**	76.75 330	*e*P	**P**	17 40 12.2	+1.0
	comp=Z,8.1nm,1.0s					
PAHR	**Pah Rah Range**	76.81 321	*e*P	**P**	17 40 13.7	+2.0
	comp=Z,36nm,0.8s					
DLMT	**Dillon**	77.01 329	*e*P	**P**	17 40 14.2	+1.6
	comp=Z,43nm,1.6s					
LRM	**Limekiln Ridge**	77.27 329	*e*P	**P**	17 40 15.6	+1.4
AFDM	**Forest Hills D**	77.28 320	*e*P	**P**	17 40 15.2	+1.0
	comp=Z,12nm,0.9s					
SYO	**Syowa Base**	77.40 159⇑	*e*P	**P**	17 40 13.8	-0.5
SYO	**Syowa Base**	77.40 159⇓	*e*X	P	17 40 19.8	+5.5
HRY	**Holter Researc**	77.63 330	*e*P	**P**	17 40 17.4	+1.4
EGMT	**Eagleton**	77.67 332	P	**P**	17 40 16.8	+0.6
	baz=139					
SUR	**Sutherland**	77.84 120	P	**P**	17 40 16.7	-1.1
	comp=Z,0.8nm,1.0s,baz=71,slow=10,SNR=2.6					
ORV	**Oroville**	77.98 320	*e*P	**P**	17 40 19.8	+1.8
ORV			pmax	pmax		
	comp=Z,36nm,1.1s					
ORV	**Oroville**	77.98 320	*e*P	**P**	17 40 19.8	+1.8
	comp=Z,36nm,1.1s					
CHMT	**Chamberlain Mo**	78.45 330	*e*P	**P**	17 40 22.1	+1.5
O03D	**Paynes Creek**	78.62 320	P	**P**	17 40 22.0	+0.5
	baz=128,SNR=7.1					
MSO	**Missoula**	78.72 329	P	**P**	17 40 23.2	+1.2
	baz=135					
MSO	**Missoula**	78.72 329	*e*P	**P**	17 40 23.7	+1.8
	comp=Z,22nm,1.5s					
MOD	**Modoc Plateau**	78.75 322	*e*P	**P**	17 40 23.8	+1.5
	comp=Z,67nm,1.7s					
VNDA	**Vanda**	78.77 190	P	**P**	17 40 23.4	+1.7
	comp=Z,1.0nm,0.9s,baz=140,slow=4.3,SNR=5.9					
VNDA	**Vanda**	78.77 190	P	**P**	17 40 23.4	+1.7
VNDA			pmax	pmax		
	comp=Z,2.0nm,0.7s					
TSUM	**Tsumeb**	78.78 106	*e*P	**P**	17 40 22.9	-0.2
	comp=Z,7.9nm,0.8s					
BMO	**Blue Mountains**	79.04 326	*e*P	**P**	17 40 25.2	+1.5
BMO			pmax	pmax		
	comp=Z,32nm,0.9s					
BMO	**Blue Mountains**	79.04 326	*e*P	**P**	17 40 25.2	+1.5
	comp=Z,32nm,0.9s					
SWMT	**Swartz Lake**	79.23 330	*e*P	**P**	17 40 25.9	+1.2
WDC	**Whiskeytown Da**	79.24 320	*e*P	**P**	17 40 24.7	-0.1
WDC			pmax	pmax		
	comp=Z,16nm,0.6s					
WDC	**Whiskeytown Da**	79.24 320	*e*P	**P**	17 40 24.7	-0.1
	comp=Z,16nm,0.6s					
YBMT	**Yellow Bay**	79.49 330	*e*P	**P**	17 40 27.8	+1.7
M04C	**Macdoel**	79.56 322	P	**P**	17 40 27.6	+1.0
	baz=128,SNR=6.9					
N02D	**Trinity Center**	79.58 320	P	**P**	17 40 27.1	+0.3
	baz=128,SNR=5.9					
K05A	**Summer Lake**	79.61 323	*e*P	**P**	17 40 29.1	+2.1
	comp=Z,48nm,0.8s					
F10A	**Beach Ranch, E**	79.75 327	*e*P	**P**	17 40 29.1	+1.5
	comp=Z,15nm,0.8s					
BLMT	**Blacktail Moun**	79.76 330	*e*P	**P**	17 40 28.6	+1.0
BSMT	**Bassoo Peak**	79.85 330	*e*P	**P**	17 40 29.5	+1.3
M02C	**Callahan**	79.92 321	P	**P**	17 40 28.8	+0.3
	baz=128					
K04D	**Chiloquin, OR**	80.04 322	P	**P**	17 40 30.1	+0.9
	baz=129					
YBH	**Yreka Blue Hor**	80.05 321	P	**P**	17 40 29.3	+0.1
	comp=Z,7.9nm,0.8s,baz=93,slow=2.4,SNR=15					
YBH	**Yreka Blue Hor**	80.05 321	*e*P	**P**	17 40 29.1	-0.2
	comp=Z,6.7nm,0.7s					
FFC	**Flin Flon**	80.08 340	*e*P	**P**	17 40 29.2	+0.3
FFC			pmax	pmax		
	comp=Z,16nm,1.5s					
FFC	**Flin Flon**	80.08 340	*e*P	**P**	17 40 29.2	+0.3
	comp=Z,16nm,1.5s					
J05D	**Fort Rock, OR**	80.16 323	P	**P**	17 40 31.5	+1.6
	baz=129,SNR=10.0					
G08A	**Pilot Rock**	80.20 326	*e*P	**P**	17 40 31.2	+1.2
	comp=Z,13nm,0.8s					
WALA	**Waterton Lakes**	80.30 331	*e*P	**P**	17 40 31.3	+0.9
	comp=Z,15nm,0.9s					
HUMO	**Hull Mountain**	80.73 322	*e*P	**P**	17 40 33.1	+0.4
	comp=Z,8.6nm,0.9s					
L02D	**Cave Junction,**	80.83 321	P	**P**	17 40 34.9	+1.6
	baz=127					
I05D	**Terrebonne, OR**	80.88 324	P	**P**	17 40 35.5	+1.9
	baz=129,SNR=18					
CROR	**Criterion Ridg**	81.10 324	P	**P**	17 40 36.9	+2.2
I04A	**Tendick Farm,**	81.14 323	P	**P**	17 40 35.5	+0.5
	baz=128					
HAWA	**Hanford**	81.23 326	*e*P	**P**	17 40 37.2	+2.0
	comp=Z,31nm,1.0s					
NEW	**Newport**	81.26 329	P	**P**	17 40 35.4	-0.1
	comp=Z,4.7nm,0.9s,baz=132,slow=4.4,SNR=3.2					
NEW	**Newport**	81.26 329	P	**P**	17 40 35.7	+0.2
	baz=133					
D08A	**Wollman Farm,**	81.35 327	*e*P	**P**	17 40 37.4	+1.5
	comp=Z,18nm,0.8s					
G05D	**Wamic, OR**	81.44 325	P	**P**	17 40 38.3	+1.9
	baz=129,SNR=6.9					
FCC	**Fort Churchill**	81.46 346	*e*P	**P**	17 40 36.0	-0.1
FCC			pmax	pmax		
	comp=Z,8.0nm,0.8s					
FCC	**Fort Churchill**	81.46 346	*e*P	**P**	17 40 36.0	-0.1
	comp=Z,8.1nm,0.8s					
C09A	**Chrisman Ranch**	81.52 328	*e*P	**P**	17 40 37.9	+1.2
	comp=Z,46nm,0.7s					
DPW	**Davenport**	81.53 328	P	**P**	17 40 38.3	+1.5
DPW	**Davenport**	81.53 328	P	**P**	17 40 38.3	+1.5
H04A	**Detroit Lake**	81.57 324	*e*P	**P**	17 40 37.9	+0.8
	comp=Z,14nm,0.8s					
I03D	**Drain, OR**	81.62 322	P	**P**	17 40 38.7	+1.4
	baz=128					
WTV	**Waterville**	82.30 327	P	**P**	17 40 42.0	+1.2
F04A	**Amboy**	82.48 325	*e*P	**P**	17 40 43.0	+1.3
	comp=Z,43nm,0.9s					
G03D	**McMinnville, O**	82.50 324	P	**P**	17 40 42.1	+0.2
	baz=128					
BOSA	**Boshof**	82.61 118	P	**P**	17 40 43.3	+0.2
	comp=Z,2.9nm,0.4s,baz=244,slow=4.7,SNR=10					
LON	**Longmire**	82.66 325	*e*P	**P**	17 40 43.4	+0.6
LON			pmax	pmax		
	comp=Z,12nm,0.9s					
LON	**Longmire**	82.66 325	*e*P	**P**	17 40 43.4	+0.6
	comp=Z,12nm,0.9s					
F04D	**Rainier, OR**	82.89 324	P	**P**	17 40 45.5	+1.6
	baz=128					
D05A	**Enumclaw**	83.03 326	*e*P	**P**	17 40 45.6	+1.1
	comp=Z,54nm,0.8s					
ESDC	**Sonseca Array**	83.40 44	P	**P**	17 40 46.9	+0.2
	comp=Z,1.6nm,0.7s,baz=241,slow=5.5,SNR=8.6					
ES19	**SONSECA Array**	83.45 44	*e*P	**P**	17 40 47.3	+0.3
JCW	**Jim Creek**	83.64 327	P	**P**	17 40 48.0	+0.3
B05A	**Bryant**	83.77 327	P	**P**	17 40 48.7	+0.5
	baz=129					
LBTB	**Lobatse**	84.06 114	P	**P**	17 40 50.7	+0.1
	comp=Z,5.2nm,0.7s,baz=259,slow=7.4,SNR=5.0					
NLWA	**Neilton Lookou**	84.16 325	*e*P	**P**	17 40 52.1	+1.8
	comp=Z,25nm,1.0s					
A04D	**Lummi Island**	84.37 327	P	**P**	17 40 51.8	+0.6
	baz=129					
MCW	**Mount Constitu**	84.41 327	P	**P**	17 40 52.8	+1.2
MCW	**Mount Constitu**	84.41 327	P	**P**	17 40 52.8	+1.2
PGC	**Sidney**	84.71 326	*e*P	**P**	17 40 54.3	+1.4
	comp=Z,41nm,0.8s					
MAW	**Mawson**	85.37 163	P	**P**	17 40 56.7	+0.6
	comp=Z,7.8nm,0.6s,baz=210,slow=5.9,SNR=22					
YKA	**Yellowknife Ar**	90.25 340	P	**P**	17 41 19.5	+0.4
	comp=Z,10nm,0.7s,baz=129,slow=4.5,SNR=94					
YKA			*ep*P	**pP**	17 42 20.8	+2.4
	comp=Z,2.5nm,1.0s,baz=130,slow=4.9,SNR=2.8					
YKB5	**Yellowknife Ar**	90.25 340	*e*P	**P**	17 41 19.3	+0.2
YKB5			*ep*P	**pP**	17 42 20.5	+2.1
YKW3	**Yellowknife Ar**	90.31 340	*e*P	**P**	17 41 19.8	+0.4
	comp=Z,26nm,1.3s					
BORG	**Borgarnes**	91.30 18	*c*e*P	**P**	17 41 23.9	0.0
DLBC	**Dease Lake**	93.59 332	*e*P	**P**	17 41 35.6	+0.8
	comp=Z,5.2nm,0.8s					
CASY	**Casey**	94.11 179	*e*P	**P**	17 41 38.2	+1.1
	comp=Z,8.7nm,1.0s					
KIP	**Kipapa**	97.96 290	⇓*i*P	Pdif	17 41 55.6	+0.3
KIP			pmax	pmax		
	comp=Z,240nm,1.1s					
ILAR	**Eielson Array**	103.55 334	PP	PP	17 46 37.0	-1.8
	comp=Z,0.4nm,0.8s,baz=109,slow=7.9,SNR=5.1					
KLMR	**Klimovskoe**	115.16 31	*e*P	**Pdif**	17 43 12.7	+1.8
KLMR			pmax	pmax		
	comp=Z,7.0nm,1.5s					
KBZ	**Khabaz**	117.68 50	PKP	**PKPdf**	17 47 03.3	-0.4
	comp=Z,1.8nm,0.8s,baz=152,slow=4.0,SNR=4.8					
BILL	**Bilibino**	121.64 339⇑	*i*PKIKP	**PKPdf**	17 47 10.9	+0.3
BILL			pmax	pmax		
	comp=Z,1.0nm,0.8s					
STKA	**Stephens Creek**	121.73 209	PKP	**PKPdf**	17 47 11.3	-0.6
	comp=Z,3.6nm,1.0s,baz=266,slow=5.6,SNR=3.8					
STKA	**Stephens Creek**	121.73 209	PKIKP	**PKPdf**	17 47 11.3	-0.6
STKA			pmax	pmax		
	comp=Z,3.0nm,1.0s					
ARU	**Arti**	125.78 34	*i* PKIKP	**PKPdf**	17 47 20.1	+1.3
ARU					17 49 11.7	
ARU					17 54 09.0	
ARU			SS	SS	18 05 47.9	-7.3
TIXI	**Tiksi**	127.37 354⇑	*e*PKIKP	**PKPdf**	17 47 22.0	+0.6
TIXI			pmax	pmax		
	comp=Z,4.0nm,2.5s					
TIXI	**Tiksi**	127.37 354	*e*P	**PKPdf**	17 47 20.7	-0.7
ABKAR	**Akbulak array**	128.72 42	*e*PKPdf	**PKPdf**	17 47 25.7	+1.0
SEY	**Seymchan**	129.28 338	*c i*PKIKP	**PKPdf**	17 47 26.9	+1.6
PET	**Petropavlovsk**	131.81 325	*e*PKIKP	**PKPdf**	17 47 30.4	0.0
AS01	**Alice Springs**	132.18 206	*e*PKPdf	**PKPdf**	17 47 31.7	-0.5
AS01			*e*SKPbc	**SKPab**	17 50 35.3	-1.4
ASAR	**Alice Springs**	132.19 206	PKhKP	PKPpre	17 47 15.4	
	comp=Z,1.1nm,1.2s,baz=131,slow=2.2,SNR=5.4					
ASAR			PKP	**PKPdf**	17 47 31.5	-0.7
	comp=Z,2.0nm,0.8s,baz=139,slow=1.6,SNR=31					
ASAR			SKPbc	**SKPab**	17 50 35.6	-1.2
	comp=Z,0.7nm,0.5s,baz=144,slow=3.6,SNR=22					
ZRNK	**Zerenda**	132.72 35	*e*PKIKP	**PKPdf**	17 47 33.6	+1.5
ZRNK	**Zerenda**	132.72 35	*e*PKPdf	**PKPdf**	17 47 33.6	+1.5
ZRNK			*e*SKPbc	**SKPab**	17 50 39.4	+1.4
WRA	**Warramunga Arr**	135.28 209	PKhKP	PKPpre	17 47 23.6	
	comp=Z,0.7nm,0.8s,baz=150,slow=3.7,SNR=4.1					
WRA			PKP	**PKPdf**	17 47 38.2	+0.2
	comp=Z,4.2nm,0.8s,baz=156,slow=1.4,SNR=21					
WRA			SKPbc	**SKPbc**	17 50 45.9	+0.1
	comp=Z,1.2nm,0.9s,baz=152,slow=2.3,SNR=5.5					
YAK	**Yakutsk**	136.29 349	*e*PKIKP	**PKPdf**	17 47 38.3	-0.2
NVS	**Novosibirsk**	138.41 26	*e*PKPdf	**PKPdf**	17 47 43.7	+1.1
ZAA0	**Zalesovo Array**	139.70 26	*e*PKPpre	PKPpre	17 47 40.1	
ZAA0			*e*PKPdf	**PKPdf**	17 47 45.1	+0.1
ZAA0			*e*PKPdf	**PKPdf**	17 47 45.4	+0.4
ZAA0			*e*SKPbc	**SKPbc**	17 50 59.4	+1.9
ZAA0			*e*SKPbc	**SKPbc**	17 50 59.6	+2.2
ZALV	**Zalesovo Beam**	139.70 26	PKP	**PKPdf**	17 47 45.3	+0.3
	comp=Z,4.4nm,0.6s,baz=290,slow=2.8,SNR=28					
ZALV			SKPbc	**SKiKP**	17 50 59.5	-0.7
	comp=Z,4.7nm,0.8s,baz=308,slow=4.3,SNR=15					
AAK	**Ala-Archa**	140.47 46	*e*PKIKP	**PKPdf**	17 47 48.3	+1.3
AAK	**Ala-Archa**	140.47 46	*e*PKPdf	**PKPdf**	17 47 48.3	+1.3
MAKZ	**Makanchi**	143.06 36	*e*PKIKP	**PKPdf**	17 47 51.9	+0.5
MAKZ	**Makanchi**	143.06 36	*e*PKPdf	**PKPdf**	17 47 51.9	+0.5
MK31	**Makanchi Array**	143.25 36	*e*PKIKP	**PKPdf**	17 47 50.0	-1.7
MK31			*e*		17 51 08.2	
MK31	**Makanchi Array**	143.25 36	*e*PKPdf	**PKPdf**	17 47 50.0	-1.7
MK31			*e*SKPdf	**SKiKP**	17 51 08.2	+0.4
MKAR	**Makanchi Array**	143.25 36	PKP	**PKPdf**	17 47 49.8	-1.9
	comp=Z,2.0nm,0.9s,baz=306,slow=2.9,SNR=13					
MKAR			SKPbc	**SKiKP**	17 51 08.5	+0.7
	comp=Z,1.3nm,0.6s,baz=309,slow=2.3,SNR=8.0					
MK01	**Makanchi Array**	143.26 36	*e*PKPpre	PKPpre	17 47 49.5	
MK01			*e*PP	**PP**	17 51 08.2	+3.3
YSS	**Yuzh-Sakhalins**	143.69 325	*e*PKIKP	**PKPdf**	17 47 51.1	-1.3
HABR	**Khabarovsk**	146.37 333	*e*PKIKP	**PKPdf**	17 47 56.5	-0.4
HABR			*i*		17 48 01.6	
HABR			*e*		17 49 00.3	
HABR			*e*		17 51 30.9	
HABR			*e*		17 54 42.8	
HABR			*e*		18 03 47.8	
HABR			*e*SS	SS	18 10 03.6	+4.4
HABR			*e*SSS	SSS	18 15 37.2	
HABR			pmax	pmax		
	comp=N,6.0nm,0.7s					
HABR			pmax	pmax		
	comp=E,6.0nm,0.7s					
HABR			pmax	pmax		
	comp=Z,6.0nm,0.7s					
MOY	**Mondy**	146.88 14	*e*PKP2	**PKPab**	17 48 01.0	-1.0
TLY	**Talaya**	147.39 11	*e*PKIKP	**PKPbc**	17 48 00.1	-1.3
TLY			pmax	pmax		
	comp=Z,5.0nm,0.9s					
SOEI	**Soe**	148.56 202	*e*PKPab	**PKPab**	17 48 10.1	+0.3
ZAK	**Zakamensk**	148.57 12	*e*PKP2	PKPab	17 48 15.8	+7.0
ZAK			pmax	pmax		
	comp=Z,6.0nm,1.1s					
HIA	**Hailar**	150.16 351	*e*PKIKP	**PKPdf**	17 48 04.2	+1.0
HIA	**Hailar**	150.16 351	*e*PKPdf	**PKPdf**	17 48 04.2	+1.0
HIA			*e*PKPbc	**PKiKP**	17 48 08.5	-0.7
USRK	**Ussuriysk Ar.**	151.02 331	PKPbc	**PKPbc**	17 48 11.4	+0.8
	comp=Z,17nm,0.8s,baz=28,slow=1.6,SNR=24					
SONA1	**Songino Array**	151.56 9	*e*PKPdf	**PKPdf**	17 48 06.5	+1.0
SONA1			*e*PKPbc	**PKiKP**	17 48 12.6	+0.3
SONM	**Songino Array**	151.57 9	PKP	**PKPdf**	17 48 06.2	+0.7
	comp=Z,2.1nm,0.8s,baz=286,slow=1.3,SNR=12					
SONM			PKPbc	**PKiKP**	17 48 12.6	+0.3
	comp=Z,8.0nm,0.6s,baz=305,slow=1.2,SNR=43					
SONM			pPKPbc	**pPKP

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
	baz=332,slow=76,SNR=9.8						
H01W2	**Cape Leeuwin H**	**40.56**	**157**	T	T	18 38 57.7	
	baz=332,slow=76,SNR=12						
H01W1	**Cape Leeuwin H**	**40.57**	**157**	T	T	18 38 57.1	
	baz=332,slow=76,SNR=9.9						
WRA	**Warramunga Arr**	**43.67**	**122**	P	P	17 56 24.0	-0.1
	0.3nm,0.8s,baz=313,slow=9.9,SNR=2.7						
MKAR	**Makanchi Array**	**46.12**	**347**	P	P	17 56 43.1	-0.1
	0.5nm,0.7s,baz=157,slow=7.8,SNR=5.7						
ZALV	**Zalesovo Beam**	**52.54**	**352**	P	P	17 57 32.0	-0.1
	1.1nm,0.7s,baz=175,slow=8.5,SNR=5.9						

*ISCJB **30** 17:55:00.4±0.2, 7°.10S±0°.03×129°.25E±0°.03, h156km, mb4.7/53, Error ellipse: s-maj=4.2km s-min=3.6km az=160.3*
*IDC **30** 17:55:01.2±2.6, 7°.13S×129°.20E, h152km±24km, mb4.1/19, mb1 4.3/22, mb1mx4.3/30, mbtmp4.7/22, MS2.7/1, Ms1 2.7/1, ms1mx2.3/29, Error ellipse: s-maj=18.6km s-min=10.1km az=86.0*
*NEIC **30** 17:55:02.6±0.6, 7°.16S×129°.28E, h169km±6km, mb4.9/23, Error ellipse: s-maj=6.8km s-min=5.8km az=56.0*
*DJA **30** 17:55:04.8±0.2, 7°.S±2°×12°.9E±°, h176km±3km, M4.8/61, mb4.9/61, mB5.3/27, MLv5.3/12, Mw(mB)4.7/27*
ISC 30 17:55:01.7±0.3,**7°.19S**±0°.04×**129°.23E**±0°.05,**h156**km,**n141,** σ1§**95**/143,**mb4.7**/53,**1D,Banda Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SAUI	**Saumlaki**	**2.20**	**111**	P	**Pn**	**17 55 44.0**	**+4.5**
SAUI				S	**Sn**	**17 56 09.6**	**+1.0**
BNDI	**Bandanaira**	**2.73**	**14**	P	Pn	17 55 50.7	+4.7
MSAI	**Masohi**	**3.83**	**355**	P	Pn	17 56 04.6	+4.6
NLAI	**Namlea**	**4.46**	**331**	P	Pn	17 56 13.4	+5.2
FAKI	**Fak Fak**	**5.20**	**35**	P	**Pn**	**17 56 17.7**	**-0.2**
	197nm,0.6s,12μm3.6nm						
FAKI	**Fak Fak**	**5.20**	**35**	*e*Pn	**Pn**	**17 56 17.4**	**-0.5**
	599nm,0.4s						
SOEI	**Soe**	**5.53**	**242**	P	**Pn**	**17 56 25.9**	**+3.5**
	570nm,0.7s,5μm5.1nm						
SOEI	**Soe**	**5.53**	**242**	*e*Pn	**Pn**	**17 56 25.3**	**+2.8**
	367nm,0.6s						
MTN	**Manton Dam**	**5.92**	**162**	P	**Pn**	**17 56 29.4**	**+1.9**
	baz=6.0,SNR=351						
SANI	**Sanana**	**6.04**	**328**	P	Pn	17 56 33.6	+4.5
	147nm,1.2s,1μm0.5nm						
KDU	**Kakadu**	**6.33**	**150**	P	**Pn**	**17 56 34.5**	**+1.6**
	baz=6.4,SNR=176						
SIJI	**Sorong**	**6.60**	**18**	P	**Pn**	**17 56 37.6**	**+1.1**
	26nm,0.3s,baz=1.4,slow=12,SNR=4.2						
SIJI				S	**Sn**	**17 57 46.6**	**-4.3**
	18nm,0.3s,baz=272,slow=23,SNR=9.0						
SWI	**Sorong**	**6.60**	**18**	P	**Pn**	**17 56 36.4**	**-0.1**
	115nm,0.8s,6μm1.4nm						
LBMI	**Labuha**	**6.73**	**345**	P	**Pn**	**17 56 42.2**	**+3.9**
	587nm,0.6s,5μm2.0nm						
MMRI	**Maumere**	**7.08**	**258**	P	**Pn**	**17 56 46.4**	**+3.5**
	172nm,0.8s,2μm0.7nm						
MMRI	**Maumere**	**7.08**	**258**	*e*Pn	**Pn**	**17 56 46.1**	**+3.2**
	105nm,0.4s						
KDI	**Kendari**	**7.32**	**296**	P	Pn	17 56 52.1	+6.0
RKPI	**Ransiki, Papua**	**7.49**	**41**	P	**Pn**	**17 56 48.8**	**+0.4**
	730nm,0.6s,17μm7.3nm						
LUWI	**Luwuk**	**8.87**	**313**	P	Pn	17 57 11.7	+4.9
	57nm,1.6s,722nm						
LUWI	**Luwuk**	**8.87**	**313**	*e*Pn	Pn	17 57 12.1	+5.3
	45nm,0.9s						
BASI	**Baing, Sumba**	**9.07**	**250**	P	**Pn**	**17 57 11.8**	**+2.4**
	477nm,0.5s						
WSI	**Waingapu**	**9.18**	**254**	P	**Pn**	**17 57 11.9**	**+1.1**
	692nm,0.6s,10μm						
KAPI	**Kappang**	**9.67**	**282**	P	**Pn**	**17 57 20.1**	**+2.7**
	1.9nm,0.3s,baz=163,slow=7.7,SNR=5.0						
SPSI	**Sidrap Palu**	**9.95**	**288**	P	**Pn**	**17 57 25.1**	**+4.1**
	20nm,1.0s						
TTSI	**Tana Toraja**	**10.24**	**293**	P	**P**	**17 57 38.3**	**+3.9**
MRSI	**Marisa**	**10.53**	**316**	P	**P**	**17 57 33.2**	**-4.5**
	28nm,1.2s,1μm						
PCI	**Palu**	**11.26**	**303**	P	**P**	**17 57 46.8**	**+0.8**
FITZ	**Fitzroy Crossi**	**11.40**	**198**	P	**Pn**	**17 57 39.5**	**-0.5**
	15nm,0.3s,baz=28,slow=10.0,SNR=248						
FITZ				S	**Sn**	**17 59 38.9**	**-7.3**
	25nm,0.3s,baz=78,slow=11,SNR=7.9						
PLAI	**Plampang**	**11.46**	**261**	P	**Pn**	**17 57 40.4**	**-0.5**
	197nm,0.8s,3μm						
GENI	**Genyem**	**11.81**	**68**	P	**Pn**	**17 57 48.4**	**+2.9**
	41nm,0.7s						
TWSI	**Taliwang, Sumb**	**12.33**	**262**	P	**Pn**	**17 57 51.9**	**-0.3**
	57nm,0.9s						
JAY	**Jayapura**	**12.34**	**68**	P	**Pn**	**17 57 52.1**	**-0.2**
	0.0nm,0.3s,baz=127,slow=20,SNR=2.6						
JAY	**Jayapura**	**12.34**	**68**	P	**Pn**	**17 57 54.4**	**+2.1**
	17nm,0.8s,234nm						
WRAB	**Tennant Creek**	**13.61**	**159**	*e*Pn	**Pn**	**17 58 06.3**	**-2.2**
	249nm,0.8s						
WRA	**Warramunga Arr**	**13.61**	**159**	P	**Pn**	**17 58 07.1**	**-1.5**
	3.7nm,0.3s,baz=335,slow=13,SNR=144						
WRA				S	Sn	18 00 30.4	-9.2
	9.6nm,0.3s,baz=331,slow=23,SNR=8.5						
BBKI	**Banjar Baru**	**14.80**	**284**	P	**P**	**17 58 29.4**	**+4.0**
	564nm,0.8s,4μm						
JAGI	**Jajag, Banyuwa**	**14.99**	**264**	*e*Pn	**Pn**	**17 58 22.2**	**-3.8**
	32nm,0.4s						
COEN	**Coen**	**15.26**	**117**	P	**Pn**	**17 58 28.1**	**-1.1**
	baz=15,SNR=17						
COEN	**Coen**	**15.26**	**117**	*e*Pn	**P**	**17 58 30.6**	**+0.1**
	40nm,0.7s						
PALU	**Palau**	**15.35**	**20**	P	**Pn**	**17 58 30.2**	**-0.2**
	baz=15,SNR=16						
BLJI	**Banyuglugur**	**15.52**	**267**	P	**P**	**17 58 35.4**	**+2.1**
	84nm,0.7s						
MTKI	**Muara Teweh, K**	**15.58**	**293**	P	**P**	**17 58 37.4**	**+3.3**
	133nm,0.7s,6μm						
MBWA	**Marble Bar**	**16.65**	**213**	*e*P	**Pn**	**17 58 46.9**	**+0.7**
	34nm,0.4s						
MBWA				*e*Sn	**S**	**18 01 46.4**	**-4.6**
QIS	**Mount Isa**	**16.66**	**144**	P	**P**	**17 58 46.9**	**+0.9**
	baz=17,SNR=65						
ASAR	**Alice Springs**	**16.99**	**165**	P	**P**	**17 58 50.5**	**+0.9**
	17nm,0.3s,baz=341,slow=9.3,SNR=1686						
ASAR				S	**S**	**18 01 54.9**	**-3.8**
	5.0nm,0.3s,baz=344,slow=23,SNR=7.4						
PWJI	**Pagerwojo**	**17.30**	**266**	P	**P**	**17 58 52.4**	**-0.6**
	67nm,0.7s,3μm						
NGJI	**Ngawi**	**17.63**	**268**	P	**Pn**	**17 59 00.2**	**+2.3**
	45nm,1.0s						
WRKA	**Warakurna**	**17.77**	**183**	P	**Pn**	**17 59 00.1**	**+0.5**
	baz=18,SNR=238						
PMG	**Port Moresby**	**17.88**	**98**	P	**Pn**	**17 59 04.4**	**+3.5**
	3.9nm,0.3s,baz=270,slow=4.0,SNR=21						
PCJI	**Pacitan**	**17.92**	**266**	P	**Pn**	**17 59 01.3**	**-0.1**
	131nm,0.8s,4μm						
PBKI	**Pangkalan Bun**	**18.05**	**283**	P	**Pn**	**17 59 05.2**	**+2.3**
	442nm,1.0s						
WOJI	**Wonogiri, Jawa**	**18.16**	**267**	P	**Pn**	**17 59 04.7**	**+0.4**
	98nm,0.8s,3μm						
KKM	**Kota Kinabalu**	**18.48**	**315**	*e*P	**P**	**17 59 06.2**	**+0.1**
	58nm,1.1s						
STKI	**Sintang**	**19.12**	**291**	P	**Pn**	**17 59 15.8**	**+0.3**
	30nm,0.8s						
KSM	**Kuching**	**20.75**	**294**	*e*P	**P**	**17 59 30.0**	**-0.4**
	66nm,0.8s						
CTAO	**Charters Tower**	**20.90**	**130**	*e*P	**P**	**17 59 33.4**	**+1.4**
	176nm,1.2s						
GIRL	**Giralia**	**21.09**	**222**	P	**P**	**17 59 37.9**	**+4.0**
	baz=21,SNR=6.0						
CISI	**Cisompet, Garu**	**21.24**	**268**	P	**P**	**17 59 34.8**	**-1.0**
	114nm,0.7s,1μm						
CISI	**Cisompet, Garu**	**21.24**	**268**	*e*P	**P**	**17 59 34.3**	**-1.5**
	80nm,0.7s						
LEM	**Lembang**	**21.46**	**270**	P	**P**	**17 59 42.9**	**+4.7**
	43nm,0.7s,baz=68,slow=6.0,SNR=9.2						
LEM	**Lembang**	**21.46**	**270**	P	**P**	**17 59 44.1**	**+5.9**
	502nm,0.8s						
CNJI	**Cibinong**	**21.93**	**268**	P	**P**	**17 59 43.2**	**+0.3**
	135nm,0.9s						
CBJI	**Citeko**	**22.24**	**271**	P	**P**	**17 59 42.8**	**-3.2**
	200nm,0.8s						
CGJI	**Cibinong**	**23.38**	**270**	P	**P**	**17 59 54.4**	**-2.2**
	50nm,0.6s						
PPBI	**Pangkal Pinang**	**23.55**	**281**	P	**P**	**17 59 58.4**	**+0.2**
	29nm,0.8s,793nm						
MORW	**Morawa**	**25.07**	**208**	P	**P**	**18 00 14.1**	**+2.3**
	baz=25,SNR=6.9						
LHSI	**Lahat**	**25.80**	**276**	P	**P**	**18 00 20.9**	**+2.3**
	32nm,0.8s						
GUMO	**Guam**	**25.83**	**37**	P	**P**	**18 00 19.1**	**+0.3**
	57nm,0.9s,baz=207,slow=14,SNR=3.2						
BBOO	**Buckleboo**	**26.27**	**167**	P	**P**	**18 00 23.4**	**+0.8**
	baz=26,SNR=19						
BBOO	**Buckleboo**	**26.27**	**167**	*e*P	**P**	**18 00 23.1**	**+0.5**
	37nm,1.2s						
RMQ	**Roma**	**26.71**	**138**	P	**P**	**18 00 27.4**	**+0.7**
	baz=27,SNR=4.3						
STKA	**Stephens Creek**	**27.14**	**156**	P	**P**	**18 00 31.2**	**+0.9**
	5.6nm,0.6s,baz=334,slow=8.5,SNR=19						
STKA	**Stephens Creek**	**27.14**	**156**	P	**P**	**18 00 31.3**	**+0.9**
	baz=27,SNR=16						
HTT	**Hallett**	**27.61**	**162**	P	**P**	**18 00 36.1**	**+1.4**
	baz=28,SNR=9.4						
CMSA	**Cobar Meteorol**	**28.69**	**150**	P	**P**	**18 00 45.5**	**+1.3**
	baz=29,SNR=15						
PPI	**Padang Panjang**	**29.52**	**282**	P	**P**	**18 00 51.5**	**-0.2**
	16nm,1.0s						
IPM	**Ipoh**	**30.44**	**292**	*e*P	**P**	**18 00 59.6**	**-0.3**
	16nm,0.8s						
MNSI	**Mandailing Nat**	**30.63**	**284**	P	**P**	**18 01 02.6**	**+1.1**
	35nm,0.9s						
ARPS	**Mount Arapiles**	**31.61**	**160**	P	**P**	**18 01 11.7**	**+1.9**
	baz=32,SNR=41						
UBPT	**Khong Chiam**	**32.45**	**314**	P	**P**	**18 01 17.8**	**+0.4**
	20nm,0.9s						
GSI	**Gunungsitoli**	**32.69**	**284**	P	**P**	**18 01 19.8**	**+0.2**
	41nm,1.0s						
TRTT	**Trang**	**33.02**	**296**	P	**P**	**18 01 24.5**	**+2.1**
	47nm,0.7s						
KRAB	**Krabi**	**33.63**	**297**	P	**P**	**18 01 30.0**	**+2.3**
	40nm,0.8s,391nm						
LHMI	**Lhok Sumawe**	**34.50**	**290**	P	**P**	**18 01 36.3**	**+1.1**
	121nm,0.9s						
SKNT	**Sakolnakorn**	**34.64**	**314**	P	**P**	**18 01 36.4**	**0.0**
	23nm,0.8s						
MLSI	**Meulaboh, Aceh**	**34.68**	**288**	P	**P**	**18 01 36.1**	**-0.7**
	121nm,0.6s						
NONG	**Nongkai**	**35.95**	**315**	P	**P**	**18 01 47.4**	**-0.2**
	17nm,1.2s						
UTTA	**Uttaradit**	**37.63**	**311**	P	**P**	**18 02 02.1**	**+0.3**
	9.8nm,0.8s,76nm						
LAMP	**Lampang**	**38.80**	**312**	P	**P**	**18 02 12.6**	**+1.0**
	8.5nm,0.9s						
CMAR	**Chiang Mai Arr**	**39.27**	**311**	P	**P**	**18 02 15.8**	**+0.2**
	11nm,0.9s,baz=141,slow=7.4,SNR=67						
CMAR				PcP	**PcP**	**18 04 22.3**	**+0.9**
	2.3nm,0.7s,baz=165,slow=2.7,SNR=11						
CRAI	**Chiangrai**	**39.34**	**314**	P	**P**	**18 02 16.2**	**+0.1**
	602nm,1.2s,82μm						
CMMT	**Chiang Mai**	**39.48**	**311**	P	**P**	**18 02 17.4**	**+0.1**
	27nm,0.9s						
CHTO	**Chiang Mai**	**39.49**	**311**	P	**P**	**18 02 17.5**	**+0.2**
	119nm,0.9s						
CHTO	**Chiang Mai**	**39.49**	**311**	*e*P	**P**	**18 02 17.5**	**+0.2**
	22nm,0.9s						
MJAR	**Matsushiro Arr**	**44.31**	**10**	P	**P**	**18 02 54.5**	**-1.6**
	7.6nm,0.9s,baz=188,slow=9.5,SNR=13						
KSAR	**Wonju Array Be**	**44.41**	**358**	P	**P**	**18 02 56.9**	**-0.1**
KSRS	**Korea Array**	**44.43**	**359**	P	**P**	**18 02 56.9**	**-0.1**
	2.2nm,0.8s,baz=172,slow=8.6,SNR=13						
KSRS				LR	LR	18 24 07.5	
	comp=Z,7.6nm,18.3s,baz=180,slow=39						
USRK	**Ussuriysk Ar.**	**51.21**	**3**	P	**P**	**18 03 48.1**	**-1.0**
	3.8nm,0.8s,baz=192,slow=1.5,SNR=5.6						
LSA	**Lhasa**	**51.81**	**317**	*e*P	**P**	**18 03 54.6**	**+0.1**
	10nm,0.6s						
ASAJ	**Asahikawa**	**52.48**	**12**	P	**P**	**18 03 58.1**	**-0.4**
	9.9nm,0.8s,baz=110,slow=6.7,SNR=4.1						
GTA	**Gaotai**	**53.77**	**332**	*e*P	**P**	**18 04 08.3**	**0.0**
GTA				pP	pP	18 04 17.5	-27
GTA				sP	sP	18 04 21.8	-40
GTA				pmax	pmax		
	comp=Z,8.0nm,1.0s						
GUN	**Gumba**	**54.51**	**312**	*e*P	**P**	**18 04 13.7**	**-0.3**
	comp=Z,98nm,0.5s						
PKIN	**Phulchoki**	**54.68**	**311**	*e*P	**P**	**18 04 14.5**	**-0.7**
	comp=Z,11nm,0.4s						
KKN	**Kakani**	**54.88**	**311**	*e*P	**P**	**18 04 16.2**	**-0.4**
	comp=Z,31nm,0.6s						
DMN	**Daman**	**54.92**	**311**	*e*P	**P**	**18 04 16.6**	**-0.3**
	comp=Z,28nm,0.6s						
GKN	**Gorkha**	**55.48**	**311**	*e*P	**P**	**18 04 20.5**	**-0.3**
	comp=Z,53nm,0.4s						
KOLN	**Koldanda**	**56.14**	**310**	*e*P	**P**	**18 04 25.4**	**-0.2**
	comp=Z,64nm,0.5s						
PYUN	**Piuthan**	**56.77**	**310**	*e*P	**P**	**18 04 29.9**	**-0.1**
SONM	**Songino Array**	**58.38**	**342**	P	**P**	**18 04 40.8**	**0.0**
	comp=Z,1.0nm,0.3s,baz=155,slow=7.1,SNR=9.5						
SONM				PcP	**PcP**	**18 05 28.4**	**-1.6**
	comp=Z,1.9nm,0.8s,baz=163,slow=5.3,SNR=5.2						
NDI	**New Delhi**	**61.50**	**308**	*e*P	P	18 04 54.0	-8.3
PETK	**Petropavlovsk-**	**64.74**	**19**	P	**P**	**18 05 23.1**	**0.0**
	comp=Z,8.0nm,0.7s,baz=172,slow=4.4,SNR=9.2						
KSH	**Kashi**	**67.64**	**318**	P	**P**	**18 05 43.0**	**+0.9**
KSH				*e*PcP	**PcP**	**18 06 09.0**	**+1.0**
KSH				*e*pP	pP	18 06 21.0	+1.4
KSH				*e*sP	sP	18 06 39.0	+2.6
KSH				*e*PP	**PP**	**18 08 14.8**	**+1.3**
KSH				S	**S**	**18 14 24.0**	**-3.0**
MKAR	**Makanchi Array**	**67.97**	**327**	P	**P**	**18 05 43.8**	**-0.1**
	comp=Z,2.6nm,0.3s,baz=126,slow=7.9,SNR=66						
MA2	**Magadan**	**68.73**	**12**	P	**P**	**18 05 48.2**	**-0.1**
	comp=Z,6.1nm,0.9s,baz=37,slow=20,SNR=2.8						
TKM2	**Tokmak 2**	**69.64**	**321**	*e*P	**P**	**18 05 54.3**	**-0.3**
	comp=Z,4.5nm,0.8s						
AAK	**Ala-Archa**	**70.19**	**320**	*e*P	**P**	**18 05 58.3**	**+0.4**
	comp=Z,6.9nm,0.9s						
EKS2	**Erkin-Say**	**70.66**	**320**	*e*P	**P**	**18 06 00.7**	**0.0**
	comp=Z,7.5nm,0.9s						
ZALV	**Zalesovo Beam**	**71.42**	**334**	P	**P**	**18 06 03.4**	**-1.4**
	comp=Z,3.2nm,0.4s,baz=116,slow=5.1,SNR=35						
SEY	**Seymchan**	**72.13**	**11**	P	**P**	**18 06 09.1**	**+0.2**
	comp=Z,13nm,0.7s,baz=206,slow=4.3,SNR=59						
KURK	**Kurchatov**	**72.28**	**329**	*e*P	**P**	**18 06 09.5**	**-0.5**
	comp=Z,38nm,1.2s						
VNDA	**Vanda**	**72.36**	**173**	P	**P**	**18 06 10.1**	**0.0**
	comp=Z,0.8nm,0.9s,baz=316,slow=6.5,SNR=4.7						
KKAR	**Karatay Array**	**72.98**	**319**	*e*P	**P**	**18 06 14.1**	**-0.3**
	comp=Z,4.1nm,0.8s						
MAW	**Mawson**	**74.50**	**201**	P	**P**	**18 06 23.2**	**+0.5**
	comp=Z,3.1nm,0.8s,baz=72,slow=6.0,SNR=6.7						
BRVK	**Borovoye**	**77.89**	**328**	*e*P	**P**	**18 06 42.1**	**0.0**
TIXI	**Tiksi**	**78.67**	**360**	*e*P	**P**	**18 06 44.4**	**-1.6**
	comp=Z,4.5nm,0.8s						
GEYT	**Alibeck**	**79.75**	**311**	P	**P**	**18 06 51.7**	**-0.9**
	comp=Z,1.6nm,0.5s,baz=160,slow=4.7,SNR=4.5						
NRIK	**Noril'sk**	**81.56**	**346**	P	**P**	**18 07 00.4**	**-1.1**
	comp=Z,17nm,1.0s,baz=138,slow=6.1,SNR=20						
ABKAR	**Akbulak array**	**82.18**	**322**	*e*P	**P**	**18 07 04.2**	**-1.0**
	comp=Z,5.3nm,0.6s						
SYO	**Syowa Base**	**83.21**	**201**↓*e*X	P		18 07 04.0	-6.2
ARU	**Arti**	**85.46**	**328**	*e*P	**P**	**18 07 20.4**	**-1.3**
	comp=Z,12nm,0.8s						
KMBO	**Kilima Mbogo**	**91.82**	**269**	P	**P**	**18 07 52.8**	**-0.4**
	comp=Z,0.5nm,0.2s,baz=225,slow=19,SNR=3.3						
ILAR	**Eielson Array**	**93.84**	**25**	P	**P**	**18 07 58.8**	**-2.2**
	comp=Z,1.3nm,1.0s,baz=270,slow=4.7,SNR=6.4						
ARCES	**ARCESS Array B**	**101.49**	**340**	P	**Pdif**	**18 08 33.5**	**-1.8**
	comp=Z,2.6nm,0.7s,baz=38,slow=4.6,SNR=7.7						
AKASG	**Malin Array Be**	**101.86**	**320**	P	**Pdif**	**18 08 34.9**	**-2.4**
	comp=Z,0.1nm,0.2s,baz=70,slow=4.3,SNR=5.2						
GERES	**GERESS Array B**	**112.08**	**320**	PKiKP	**PKiKP**	**18 13 17.8**	**-1.0**
	comp=Z,0.5nm,0.6s,baz=70,slow=1.1,SNR=5.3						
PDAR	**Pinedale Array**	**117.56**	**45**	PKP	**PKPdf**	**18 13 29.4**	**-0.3**
	comp=Z,0.4nm,0.7s,baz=204,slow=3.3,SNR=4.1						
TXAR	**Lajitas Array**	**125.68**	**59**	PKP	**PKPdf**	**18 13 45.8**	**+0.3**
	comp=Z,0.4nm,0.8s,baz=270,slow=0.1,SNR=5.7						
TORD	**Torodi Ar. Bea**	**128.10**	**281**	PKP	**PKPdf**	**18 13 49.6**	**-0.8**
	comp=Z,2.7nm,0.6s,baz=90,slow=2.1,SNR=19						
DBIC	**Dimbokro**	**134.44**	**272**	PKP	**PKPdf**	**18 14 01.6**	**-0.7**
	comp=Z,1.8nm,0.4s,baz=62,slow=3.4,SNR=6.2						
CPUP	**Ica Florida**	**146.08**	**169**	PKPbc	**PKPdf**	**18 14 23.7**	**+0.6**
	comp=Z,6.0nm,1.0s,baz=180,slow=3.5,SNR=11						
LPAZ	**La Paz**	**151.03**	**144**	PKP	**PKPdf**	**18 14 32.2**	**+0.1**
	comp=Z,1.3nm,0.8s,baz=42,slow=8.8,SNR=3.5						
LPAZ				PKPbc	**PKPbc**	**18 14 38.1**	**+0.1**
	comp=Z,2.4nm,0.4s,baz=349,slow=2.0,SNR=12						

*ISCJB **30** 17:57:33.1±0.5, 39°.14N±0°.02×29°.02E±0°.02, h0km±4km, Error ellipse: s-maj=3.6km s-min=3.1km az=144.5*
*CSEM **30** 17:57:33.5±0.1, 39°.16N×29°.03E, h2km, ML3.8, Error ellipse: s-maj=2.4km s-min=2.0km az=115.0*
*ISK **30** 17:57:33.1, 39°.15N×29°.03E, h6km, ML3.3*
*DDA **30** 17:57:33.6, 39°.14N×29°.01E, h8km, Ml3.8*

*THE **30** 17:57:37.0, 38°.96N×28°.90E, h0km, ML3.3/2, Error ellipse: s-maj=1.0km s-min=0.6km az=29.0*
ISC 30 17:57:33.6±1.0,**39°.16N**±0°.02×**29°.00E**±0°.02,**h6**km±9km,
n71, σ0§**51**/95,**Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**242**	P	**Pg**	**17 57 39.2**	**+0.7**
DEMI				S	**Sg**	**17 57 42.8**	**+0.9**
DEMI	**Demirci**	**0.25**	**242**	*i* P	**Pg**	**17 57 39.2**	**+0.7**
DEMI				*i* S	**Sg**	**17 57 42.8**	**+0.9**
GDZ	**Gediz**	**0.38**	**101**	P	**Pg**	**17 57 41.2**	**+0.2**
GDZ				S	**Sg**	**17 57 46.3**	**+0.3**
GDZ	**Gediz**	**0.38**	**101**	*i* P	**Pg**	**17 57 41.2**	**+0.2**
GDZ				*i* S	**Sg**	**17 57 46.3**	**+0.3**
TVSB	**Tavsanli**	**0.46**	**51**	*e*PG	**Pg**	**17 57 42.2**	**-0.3**
TVSB				*e*SG	**Sg**	**17 57 48.8**	**+0.3**
TVSB	**Tavsanli**	**0.46**	**51**	*e*Pg	**Pg**	**17 57 42.2**	**-0.3**
TVSB				*e*Sg	**Sg**	**17 57 48.8**	**+0.3**
KULA	**Kula-Manisa**	**0.70**	**202**	*e*PG	**Pg**	**17 57 47.0**	**0.0**
KULA	**Kula-Manisa**	**0.70**	**202**	P	**Pg**	**17 57 46.7**	**-0.3**
KULA				S	**Sg**	**17 57 54.8**	**-1.2**
KULA	**Kula-Manisa**	**0.70**	**202**	P	**Pg**	**17 57 46.7**	**-0.3**
KULA	**Kula-Manisa**	**0.70**	**202**	*e*Pg	**Pg**	**17 57 47.0**	**0.0**
KULA				S	**Sg**	**17 57 54.8**	**-1.2**
MANT	**Manisa**	**0.75**	**207**	P	**Pg**	**17 57 47.8**	**-0.2**
MANT				S	**Sg**	**17 57 57.2**	**-0.6**
MANT	**Manisa**	**0.75**	**207**	*i* P	**Pg**	**17 57 47.9**	**-0.2**
MANT				*i* S	**Sg**	**17 57 57.2**	**-0.6**
KHAL	**Karahalli**	**0.88**	**154**	P	**Pg**	**17 57 50.2**	**-0.2**
KHAL				S	**Sg**	**17 58 01.1**	**-0.7**
KHAL	**Karahalli**	**0.88**	**154**	*i* P	**Pg**	**17 57 50.2**	**-0.2**
KHAL				*i* S	**Sg**	**17 58 01.1**	**-0.7**
ORLT	**Orhaneli**	**0.89**	**355**	*e*PG	**Pb**	**17 57 51.0**	**-0.4**
ORLT	**Orhaneli**	**0.89**	**355**	*e*Pg	**Pb**	**17 57 51.0**	**-0.4**
KHL	**Karahalli**	**0.93**	**154**	*e*PG	**Pg**	**17 57 51.3**	**-0.1**
KHL				*e*SG	**Sg**	**17 58 03.4**	**-0.1**
KHL	**Karahalli**	**0.93**	**154**	*e*Pg	**Pg**	**17 57 51.3**	**-0.1**
KHL				*e*Sg	**Sg**	**17 58 03.4**	**-0.1**
AKHS	**Akhisar**	**0.97**	**253**	P	**Pb**	**17 57 52.5**	**-0.2**
AKHS				S	**Sb**	**17 58 05.2**	**-0.5**
AKHS	**Akhisar**	**0.97**	**253**	*i* P	**Pb**	**17 57 52.5**	**-0.2**
AKHS				*i* S	**Sb**	**17 58 05.2**	**-0.5**
AKS	**Akhisar**	**0.97**	**253**	*e*PG	**Pb**	**17 57 52.3**	**-0.4**
BALB	**Balikesir**	**0.99**	**299**	*e*PG	**Pb**	**17 57 52.9**	**-0.2**
IGD	**Bursa**	**1.11**	**8**	*i* P	**Pg**	**17 57 54.2**	**-0.7**
KCTX	**Karacabey (Bur**	**1.21**	**336**	*e*PN	**Pn**	**17 57 57.1**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.21**	**356**	*e*PN	**Pn**	**17 57 57.0**	**0.0**
MDNY	**Mudanya-Bursa**	**1.21**	**356**	*e*Pn	**Pn**	**17 57 57.0**	**0.0**
BALY	**Balya**	**1.22**	**299**	P	Pn	**17 57 57.4**	**+0.2**
BALY				S	**Sn**	**17 58 14.4**	**+0.5**
BALY	**Balya**	**1.22**	**299**	*i* P	Pn	**17 57 57.4**	**+0.2**
BALY				*i* S	**Sn**	**17 58 14.4**	**+0.5**
CAVI	**Cavuskoy**	**1.23**	**32**	*e*PN	**Pg**	**17 57 56.8**	**-0.3**
CAVI	**Cavuskoy**	**1.23**	**32**	*e*Pn	**Pg**	**17 57 56.8**	**-0.3**
IZI	**Iznik**	**1.23**	**17**	*e*PN	**Pg**	**17 57 56.9**	**-0.3**
IZI	**Iznik**	**1.23**	**17**	*e*Pn	**Pg**	**17 57 56.9**	**-0.3**
GEMT	**Gemlik**	**1.28**	**6**	*e*PN	**Pb**	**17 57 58.0**	**-0.1**
GEMT	**Gemlik**	**1.28**	**6**	*e*Pn	**Pb**	**17 57 58.0**	**-0.1**
GONE	**Gonen-Balikesi**	**1.35**	**311**	*e*PN	**Pb**	**17 57 59.3**	**

GDZ	**Gediz**	**0.35**	**96**	*i* P	**Pg**	**18 19 15.3**	**+0.1**
GDZ				*i* S	**Sg**	**18 19 20.6**	**+0.3**
TVSB	**Tavsanli**	**0.46**	**46**	*e*PG	**Pg**	**18 19 16.6**	**-0.5**
TVSB				*e*SG	**Sg**	**18 19 23.6**	**+0.1**
TVSB	**Tavsanli**	**0.46**	**46**	*e*Pg	**Pg**	**18 19 16.6**	**-0.5**
TVSB				*e*Sg	**Sg**	**18 19 23.6**	**+0.1**
KULA	**Kula-Manisa**	**0.68**	**206**	*e*PG	**Pb**	**18 19 20.5**	**-0.4**
KULA				*e*SG	**Sb**	**18 19 29.9**	**-0.1**
KULA	**Kula-Manisa**	**0.68**	**206**	*e*Pg	**Pb**	**18 19 20.5**	**-0.4**
KULA				*e*Sg	**Sb**	**18 19 29.9**	**-0.1**
MANT	**Manisa**	**0.74**	**211**	P	**Pb**	**18 19 22.2**	**+0.1**
MANT				S	**Sb**	**18 19 31.4**	**-0.5**
MANT	**Manisa**	**0.74**	**211**	*i* P	**Pb**	**18 19 22.2**	**+0.1**
MANT				*i* S	**Sb**	**18 19 31.4**	**-0.5**
KHAL	**Karahalli**	**0.84**	**155**	P	**Pn**	**18 19 24.7**	**+0.1**
KHAL				S	**Sg**	**18 19 35.5**	**+0.4**
KHAL	**Karahalli**	**0.84**	**155**	*i* P	**Pn**	**18 19 24.7**	**+0.1**
KHAL				*i* S	**Sg**	**18 19 35.5**	**+0.4**
ORLT	**Orhaneli**	**0.92**	**353**	*e*PG	**Pb**	**18 19 24.4**	**-0.8**
ORLT				*e*SG	**Sb**	**18 19 37.0**	**-0.1**
ORLT	**Orhaneli**	**0.92**	**353**	*e*Pg	**Pb**	**18 19 24.4**	**-0.8**
ORLT				*e*Sg	**Sb**	**18 19 37.0**	**-0.1**
AKHS	**Akhisar**	**0.98**	**256**	P	**Pn**	**18 19 27.0**	**+0.5**
AKHS				S	**Sb**	**18 19 38.8**	**0.0**
AKHS	**Akhisar**	**0.98**	**256**	*i* P	**Pn**	**18 19 27.1**	**+0.5**
AKHS				*i* S	**Sb**	**18 19 38.8**	**0.0**
AKS	**Akhisar**	**0.98**	**256**	*e*PG	**Pb**	**18 19 25.8**	**-0.4**
AKS	**Akhisar**	**0.98**	**256**	*e*Pg	**Pb**	**18 19 25.8**	**-0.4**
BALB	**Balikesir**	**1.03**	**300**	*e*PG	**Pb**	**18 19 26.0**	**-0.9**
BALB	**Balikesir**	**1.03**	**300**	*e*Pg	**Pb**	**18 19 26.0**	**-0.9**
IGD	**Bursa**	**1.14**	**6**	*i* P	**Pn**	**18 19 28.9**	**+0.1**
IGD				*i* S	**Sg**	**18 19 46.2**	**+1.4**
CAVI	**Cavuskoy**	**1.24**	**30**	*e*PN	**Pn**	**18 19 30.7**	**+0.6**
CAVI	**Cavuskoy**	**1.24**	**30**	*e*Pn	**Pn**	**18 19 30.7**	**+0.6**
MDNY	**Mudanya-Bursa**	**1.25**	**355**	*e*PN	**Pn**	**18 19 30.5**	**+0.4**
MDNY	**Mudanya-Bursa**	**1.25**	**355**	*e*Pn	**Pn**	**18 19 30.5**	**+0.4**
KCTX	**Karacabey (Bur**	**1.25**	**335**	*e*PN	**Pn**	**18 19 30.4**	**+0.1**
KCTX	**Karacabey (Bur**	**1.25**	**335**	*e*Pn	**Pn**	**18 19 30.4**	**+0.1**
IZI	**Iznik**	**1.25**	**15**	*e*PN	**Pn**	**18 19 30.7**	**+0.4**
IZI	**Iznik**	**1.25**	**15**	*e*Pn	**Pn**	**18 19 30.7**	**+0.4**
BALY	**Balya**	**1.25**	**300**	P	**Pg**	**18 19 32.5**	**+0.6**
BALY	**Balya**	**1.25**	**300**	*i* P	**Pg**	**18 19 32.5**	**+0.6**
BALY				*i* S	**Sg**	**18 19 49.4**	**+1.0**

IDC 30 18:22:12.1±1.8, 6°36′S×129°63′E, h0km, mb3.9/2, mb1 3.8/4, mb1mx3.4/37, mbtmp3.7/4, ML3.6/2, MS3.1/1, Ms1 3.1/1, ms1mx2.4/25, Error ellipse: s-maj=118.5km s-min=26.8km az=66.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**14.26**	**162**	Pn	Pn	18 25 34.7	-0.8
	0.3nm,0.3s,baz=341,slow=11,SNR=3.8						
WRA				Sn	Sn	18 27 59.0	-15
	0.6nm,0.3s,baz=335,slow=22,SNR=7.3						
ASAR	**Alice Springs**	**17.70**	**167**	P	Pn	18 26 20.6	+0.4
	0.2nm,0.3s,baz=345,slow=9.5,SNR=5.5						
ASAR				S	Sn	18 29 28.7	-9.4
	0.3nm,0.3s,baz=354,slow=28,SNR=4.7						
STKA	**Stephens Creek**	**27.75**	**158**	P	P	18 28 02.6	0.0
	1.4nm,0.9s,baz=340,slow=12,SNR=1.5						
SONM	**Songino Array**	**57.72**	**342**	LR	LR	19 01 03.4	
	comp=Z,16nm,18.3s,baz=105,slow=40						
MKAR	**Makanchi Array**	**67.49**	**327**	P	P	18 33 10.0	0.0
	0.5nm,0.4s,baz=116,slow=7.8,SNR=5.9						

*ISCJB **30** 18:23:54.1±0.9, 39°63′N±0°04′×142°1′E±0°1, h51km±6km, mb3.5/2, Error ellipse: s-maj=14.3km s-min=5.6km az=7.5*
*JMA **30** 18:23:54.2, 39°64′N×142°11′E, h48km±1km, M3.3*
JMA Felt I J1.
*IDC **30** 18:23:56.1±3.7, 40°13′N×140°89′E, h0km, mb3.7/2, mb1 3.6/4, mb1mx3.1/45, mbtmp3.6/4, ML2.8/2, Error ellipse: s-maj=75.8km s-min=33.1km az=110.0*
ISC 30 18:23:54.9±1.3, 39°62′N±0°04′×142°02′E±0°09, h45km±8km, n15, σ1°00′/23, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MIYJ	**Miyakonagasawa**	**0.16**	**255**	P	**Pn**	**18 24 02.5**	**+0.1**
MIYJ				*e*S	**Sn**	**18 24 08.3**	**+0.6**
JTH	**Tanohata**	**0.34**	**339**	P	**Pn**	**18 24 03.6**	**-0.4**
JTH				*e*S	**Sn**	**18 24 10.2**	**-0.2**
JOM	**Ohasama**	**0.58**	**256**	P	**Pn**	**18 24 07.4**	**+0.5**
JOM				*e*S	**Sn**	**18 24 16.9**	**+1.4**
OFUJ	**Ofunato**	**0.60**	**207**	P	**Pn**	**18 24 07.0**	**-0.2**
OFUJ				*e*S	**Sn**	**18 24 16.0**	**0.0**
JKZ	**Kuzumaki**	**0.65**	**304**	P	**Pn**	**18 24 07.9**	**+0.1**
JKZ				*e*S	**Sn**	**18 24 17.4**	**+0.4**
JANG	**Nango**	**0.85**	**333**	P	**Pn**	**18 24 09.8**	**-0.6**
JANG				*e*S	**Sn**	**18 24 21.2**	**-0.6**
JMK	**Ichinoseki**	**0.91**	**223**	P	**Pn**	**18 24 11.5**	**+0.2**
JMK				*e*S	**Sn**	**18 24 24.1**	**+0.8**
JRG	**Rokugo**	**1.10**	**259**	P	**Pn**	**18 24 14.3**	**+0.5**
JAH	**Hinai**	**1.21**	**298**	P	**Pn**	**18 24 15.7**	**+0.4**
JIO	**Ouri**	**1.28**	**205**	P	**Pn**	**18 24 16.3**	**+0.1**
JTM	**Tenmabayashi**	**1.38**	**328**	P	**Pn**	**18 24 17.5**	**-0.1**
JTM				*e*S	**Sn**	**18 24 34.9**	**+0.3**
MJAR	**Matsushiro Arr**	**4.30**	**226**	Pn	Pn	18 25 01.2	+3.4
	0.8nm,0.3s,baz=33,slow=14,SNR=10						
ASAJ	**Asahikawa**	**4.51**	**5**	Pn	**Pn**	**18 25 01.2**	**+0.6**
	0.4nm,0.3s,baz=204,slow=14,SNR=1.9						
ASAJ				Sn	**Sn**	**18 25 55.2**	**+3.3**
	0.2nm,0.3s,baz=97,slow=32,SNR=1.2						
ZALV	**Zalesovo Beam**	**40.57**	**310**	P	**P**	**18 31 29.2**	**-0.5**
	0.8nm,0.5s,baz=97,slow=11,SNR=4.0						
MKAR	**Makanchi Array**	**43.20**	**300**	P	**P**	**18 31 49.8**	**-1.5**
	0.4nm,0.6s,baz=82,slow=9.4,SNR=6.0						

*ISCJB **30** 18:33:43.0±0.7, 16°7N±0°1×146°6E±0°2, h33km, mb3.7/7, MS2.6/2, Error ellipse: s-maj=36.3km s-min=9.4km az=29.0*
*IDC **30** 18:33:48.2±3.9, 16°48N×146°57E, h72km±41km, mb3.4/7, mb1 3.8/8, mb1mx3.3/45, mbtmp3.7/8, ML3.6/1, MS2.7/2, Ms1 2.7/2, ms1mx2.3/20, Error ellipse: s-maj=41.4km s-min=26.5km az=128.0*
ISC 30 18:33:45.0±0.8, 16°6N±0°2×146°6E±0°3, h35km, n10, σ1°57′/10, mb3.7/7, Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**3.47**	**209**	P	**Pn**	**18 34 38.7**	**+2.2**
	5.8nm,0.3s,baz=114,slow=2.4,SNR=11						
GUMO				S	**Sn**	**18 35 16.1**	**-0.3**
	17nm,0.3s,baz=7.1,slow=22,SNR=4.1						
PMG	**Port Moresby**	**25.89**	**179**	LR	LR	18 49 41.2	
	comp=Z,13nm,18.1s,baz=187,slow=37						
KSRS	**Korea Array**	**26.49**	**325**	LR	LR	18 48 06.1	
	comp=Z,22nm,21.2s,baz=110,slow=32						
WRA	**Warramunga Arr**	**38.30**	**199**	P	**P**	**18 40 60.0**	**-2.5**
	0.4nm,0.5s,baz=31,slow=9.0,SNR=5.2						
CMAR	**Chiang Mai Arr**	**45.39**	**280**	P	**P**	**18 42 00.2**	**-0.3**
	0.7nm,0.8s,baz=76,slow=7.0,SNR=5.5						
ILAR	**Eielson Array**	**65.10**	**26**	P	**P**	**18 44 21.1**	**-0.8**
	0.4nm,0.5s,baz=249,slow=6.2,SNR=9.2						
ILAR				pP	**sP**	**18 44 38.5**	**+1.8**
	1.3nm,0.8s,baz=257,slow=4.7,SNR=7.5						
INK	**Inuvik**	**70.92**	**23**	P	**P**	**18 44 58.1**	**-0.2**
	1.1nm,0.7s,baz=236,slow=14,SNR=3.3						
YKA	**Yellowknife Ar**	**79.39**	**28**	P	**P**	**18 45 47.2**	**0.0**
	0.7nm,0.5s,baz=286,slow=5.5,SNR=5.7						
NVAR	**Mina Array Bea**	**83.72**	**52**	P	**P**	**18 46 12.2**	**+1.3**
	0.3nm,0.6s,baz=281,slow=6.3,SNR=2.9						
PDAR	**Pinedale Array**	**88.64**	**46**	P	**P**	**18 46 34.1**	**-0.9**
	0.2nm,0.4s,baz=232,slow=1.0,SNR=2.8						

*ISCJB **30** 18:34:50.8±0.5, 38°61N±0°04×141°05E±0°06, h99km±3km, mb3.5/7, Error ellipse: s-maj=8.6km s-min=5.7km az=28.4*
*JMA **30** 18:34:52.0, 38°62N×141°00E, h92km±1km, M3.3*
JMA Felt I J1.
*IDC **30** 18:34:52.8±2.2, 38°59N×141°05E, h107km±20km, mb3.3/6, mb1 3.4/10, mb1mx3.1/45, mbtmp3.6/10, MS2.9/2, Ms1 3.0/2, ms1mx2.4/15, Error ellipse: s-maj=23.9km s-min=15.9km az=90.0*
ISC 30 18:34:51.9±0.8, 38°62N±0°05×141°05E±0°06, h93km±6km, n25, σ1°02′/36, mb3.6/7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.29**	**126**	P	**Pn**	**18 35 05.8**	**+0.2**
JIO				S	**Sn**	**18 35 16.0**	**+0.2**
JMK	**Ichinoseki**	**0.35**	**22**	P	**Pn**	**18 35 06.0**	**0.0**
JMK				S	**Sn**	**18 35 16.6**	**+0.2**
JOU	**Okura**	**0.40**	**230**	P	**Pn**	**18 35 06.2**	**-0.1**
JOU				*e*S	**Sn**	**18 35 17.2**	**+0.3**
JYK	**Kaneyama**	**0.61**	**299**	P	**Pn**	**18 35 07.6**	**-0.3**
JYK				S	**Sn**	**18 35 19.4**	**-0.4**
JMM	**Marumori**	**0.78**	**195**	P	**Pn**	**18 35 09.3**	**-0.2**
JMM				*e*S	**Sn**	**18 35 22.1**	**-0.5**
JRG	**Rokugo**	**0.84**	**337**	P	**Pn**	**18 35 10.2**	**+0.2**
JRG				*e*S	**Sn**	**18 35 24.1**	**+0.5**
JOM	**Ohasama**	**0.87**	**13**	P	**Pn**	**18 35 10.9**	**+0.5**
JOM				S	**Sn**	**18 35 24.7**	**+0.5**
JYS	**Shiratake**	**0.87**	**243**	P	**Pn**	**18 35 10.2**	**-0.2**
JYS				*e*S	**Sn**	**18 35 23.5**	**-0.8**
JYA	**Atsumi**	**1.05**	**269**	P	**Pn**	**18 35 12.0**	**-0.3**
JYA				S	**Sn**	**18 35 27.1**	**-0.6**
JFT	**Otama**	**1.24**	**207**	P	**Pn**	**18 35 15.0**	**+0.4**
JFT				S	**Sn**	**18 35 32.2**	**+0.5**
JAW	**Awa shima**	**1.42**	**264**	P	**Pn**	**18 35 16.6**	**-0.2**
JAW				S	**Sn**	**18 35 34.8**	**-0.8**
JNS	**Sasagawa**	**1.58**	**240**	P	**Pn**	**18 35 18.7**	**-0.1**
JNS				S	**Sn**	**18 35 38.9**	**-0.4**
MJAR	**Matsushiro Arr**	**3.07**	**228**	P	**Pn**	**18 35 39.3**	**+0.9**
	2.2nm,0.3s,baz=34,slow=13,SNR=11						
MAT	**Matsushiro**	**3.07**	**228**	P	**Pn**	**18 35 39.1**	**+0.7**
MAT				S	**Sn**	**18 36 18.3**	**+4.0**
ASAJ	**Asahikawa**	**5.61**	**11**	P	**Pn**	**18 36 13.0**	**+0.2**
	0.5nm,0.3s,baz=200,slow=20,SNR=6.2						
USRK	**Ussuriysk Ar.**	**8.79**	**312**	P	**Pn**	**18 36 57.5**	**+1.4**
	0.5nm,0.3s,baz=119,slow=14,SNR=7.3						
KSRS	**Korea Array**	**10.42**	**268**	P	**Pn**	**18 37 20.7**	**+2.4**
	0.3nm,0.3s,baz=75,slow=14,SNR=6.6						
SONM	**Songino Array**	**26.68**	**301**	P	**P**	**18 40 22.3**	**0.0**
	0.5nm,0.8s,baz=98,slow=11,SNR=3.5						
TGY	**Tagaytay City**	**30.21**	**222**	LR	LR	18 52 36.6	
	comp=Z,38nm,20.5s,baz=174,slow=35						
ZALV	**Zalesovo Beam**	**40.64**	**311**	P	**P**	**18 42 21.9**	**-0.7**
	0.6nm,0.5s,baz=112,slow=6.7,SNR=3.4						
CMAR	**Chiang Mai Arr**	**41.65**	**253**	P	P	18 42 34.9	+3.7
	0.6nm,0.6s,baz=45,slow=8.9,SNR=5.4						
CMAR				LR	LR	19 01 15.4	
	comp=Z,11nm,20.3s,baz=80,slow=38						
MKAR	**Makanchi Array**	**43.05**	**301**	P	**P**	**18 42 41.2**	**-1.1**
	0.5nm,0.6s,baz=81,slow=9.8,SNR=6.1						
ILAR	**Eielson Array**	**48.31**	**33**	P	**P**	**18 43 23.7**	**+0.2**
	0.2nm,0.6s,baz=269,slow=5.4,SNR=3.9						
WRA	**Warramunga Arr**	**58.59**	**187**	P	**P**	**18 44 37.6**	**-1.5**
	1.1nm,0.4s,baz=4.0,slow=6.9,SNR=21						
ASAR	**Alice Springs**	**62.32**	**187**	P	**P**	**18 45 04.0**	**-0.5**
	0.7nm,0.7s,baz=3.2,slow=4.9,SNR=9.1						

*ISK **30** 18:39:58.9, 39°13′N×29°04′E, h8km, MD2.4*
*ISCJB **30** 18:39:59.4±0.6, 39°11′N±0°04×29°05′E±0°04, h10km±5km, Error ellipse: s-maj=7.1km s-min=4.6km az=137.8*
*CSEM **30** 18:39:59.3±0.1, 39°11′N×29°04′E, h9km, MD2.6, Error ellipse: s-maj=1.9km s-min=1.2km az=131.0*
*DDA **30** 18:39:59.5, 39°07′N×29°05′E, h7km, Md2.6*
ISC 30 18:39:59.6±0.9, 39°10′N±0°03×29°06′E±0°03, h13km±9km, n16, σ0°21′/28, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**258**	P	**Pg**	**18 40 05.3**	**0.0**
DEMI				S	**Sg**	**18 40 09.1**	**0.0**
DEMI	**Demirci**	**0.27**	**258**	*i* P	**Pg**	**18 40 05.3**	**0.0**
DEMI				*i* S	**Sg**	**18 40 09.1**	**0.0**
GDZ	**Gediz**	**0.33**	**92**	P	**Pg**	**18 40 06.3**	**-0.1**
GDZ				S	**Sg**	**18 40 11.3**	**+0.3**
GDZ	**Gediz**	**0.33**	**92**	*i* P	**Pg**	**18 40 06.3**	**-0.1**
GDZ				*i* S	**Sg**	**18 40 11.3**	**+0.3**
TVSB	**Tavsanli**	**0.47**	**42**	*e*PG	**Pg**	**18 40 08.6**	**-0.3**
TVSB				*e*SG	**Sg**	**18 40 15.0**	**-0.3**
TVSB	**Tavsanli**	**0.47**	**42**	*e*Pg	**Pg**	**18 40 08.6**	**-0.3**
TVSB				*e*Sg	**Sg**	**18 40 15.0**	**-0.3**
KULA	**Kula-Manisa**	**0.66**	**208**	*e*PG	**Pg**	**18 40 12.3**	**-0.1**
KULA	**Kula-Manisa**	**0.66**	**208**	*e*Pg	**Pg**	**18 40 12.3**	**-0.1**
MANT	**Manisa**	**0.72**	**213**	P	**Pg**	**18 40 13.5**	**-0.1**
MANT				S	**Sg**	**18 40 22.9**	**-0.2**
MANT	**Manisa**	**0.72**	**213**	*i* P	**Pg**	**18 40 13.5**	**-0.1**
MANT				*i* S	**Sg**	**18 40 22.9**	**-0.2**
KHAL	**Karahalli**	**0.80**	**155**	P	**Pb**	**18 40 15.6**	**+0.2**
KHAL				S	**Sb**	**18 40 26.1**	**-0.1**
KHAL	**Karahalli**	**0.80**	**155**	*i* P	**Pb**	**18 40 15.6**	**+0.2**
KHAL				*i* S	**Sb**	**18 40 26.1**	**-0.1**
CAVI	**Cavuskoy**	**1.26**	**29**	*e*PN	**Pn**	**18 40 22.9**	**+0.1**
CAVI				*e*SN	**Sg**	**18 40 40.5**	**+0.3**
CAVI	**Cavuskoy**	**1.26**	**29**	*e*Pn	**Pn**	**18 40 22.9**	**+0.1**
CAVI				*e*Sn	**Sg**	**18 40 40.5**	**+0.3**
ARMT	**Armutlu**	**1.47**	**354**	*e*PN	**Pn**	**18 40 25.9**	**+0.1**
ARMT	**Armutlu**	**1.47**	**354**	*e*Pn	**Pn**	**18 40 25.9**	**+0.1**

*ISK **30** 19:05:24.7, 39°12N×29°00E, h7km, MD2.7*
*CSEM **30** 19:05:25.6±0.1, 39°12N×29°03E, h10km, MD2.7, Error ellipse: s-maj=3.6km s-min=2.7km az=138.0*
*DDA **30** 19:05:26.0, 39°09N×29°05E, h9km, Md2.7*
ISC 30 19:05:25.9±0.9, 39°12N±0°03×29°02E±0°02, h17km±7km, n27, σ0°71′/44, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**252**	P	**Pg**	**19 05 31.9**	**+0.4**
DEMI				S	**Sg**	**19 05 35.8**	**+0.4**
DEMI	**Demirci**	**0.25**	**252**	*i* P	**Pg**	**19 05 31.9**	**+0.4**
DEMI				*i* S	**Sg**	**19 05 35.8**	**+0.4**
GDZ	**Gediz**	**0.36**	**95**	P	**Pg**	**19 05 33.1**	**-0.3**
GDZ				S	**Sg**	**19 05 37.9**	**-0.7**
GDZ	**Gediz**	**0.36**	**95**	*i* P	**Pg**	**19 05 33.1**	**-0.3**
GDZ				*i* S	**Sg**	**19 05 37.9**	**-0.7**
TVSB	**Tavsanli**	**0.47**	**46**	*e*PG	**Pg**	**19 05 35.1**	**-0.4**
TVSB				*e*SG	**Sg**	**19 05 41.2**	**-0.7**
TVSB	**Tavsanli**	**0.47**	**46**	*e*Pg	**Pg**	**19 05 35.1**	**-0.4**
TVSB				*e*Sg	**Sg**	**19 05 41.2**	**-0.7**
KULA	**Kula-Manisa**	**0.67**	**205**	*e*PG	**Pg**	**19 05 38.5**	**-0.6**
KULA				*e*SG	**Sg**	**19 05 47.1**	**-0.9**
KULA	**Kula-Manisa**	**0.67**	**205**	*e*Pg	**Pg**	**19 05 38.5**	**-0.6**
KULA				*e*Sg	**Sg**	**19 05 47.1**	**-0.9**
MANT	**Manisa**	**0.73**	**210**	P	**Pb**	**19 05 40.3**	**0.0**
MANT				S	**Sg**	**19 05 49.5**	**-0.4**
MANT	**Manisa**	**0.73**	**210**	*i* P	**Pb**	**19 05 40.3**	**0.0**
MANT				*i* S	**Sg**	**19 05 49.5**	**-0.4**
KHAL	**Karahalli**	**0.84**	**154**	P	**Pg**	**19 05 41.7**	**-0.5**
KHAL				S	**Sg**	**19 05 52.8**	**-0.5**
KHAL	**Karahalli**	**0.84**	**154**	*i* P	**Pg**	**19 05 41.7**	**-0.5**
KHAL				*i* S	**Sg**	**19 05 52.8**	**-0.5**
AKHS	**Akhisar**	**0.97**	**256**	P	**Pn**	**19 05 45.5**	**+0.7**
AKHS				S	**Sn**	**19 05 58.6**	**+0.3**
AKHS	**Akhisar**	**0.97**	**256**	*i* P	**Pn**	**19 05 45.5**	**+0.7**
AKHS				*i* S	**Sn**	**19 05 58.6**	**+0.3**
AKS	**Akhisar**	**0.97**	**256**	*e*PG	**Pg**	**19 05 43.2**	**-1.6**
AKS				*e*SG	**Sb**	**19 05 57.2**	**+0.3**
AKS	**Akhisar**	**0.97**	**256**	*e*Pg	**Pg**	**19 05 43.2**	**-1.6**
AKS				*e*Sg	**Sb**	**19 05 57.2**	**+0.3**
BALB	**Balikesir**	**1.02**	**301**	*e*PG	**Pg**	**19 05 44.5**	**-1.2**
BALB	**Balikesir**	**1.02**	**301**	*e*Pg	**Pg**	**19 05 44.5**	**-1.2**
IGD	**Bursa**	**1.15**	**7**	*i* P	**Pn**	**19 05 47.9**	**+0.6**
IGD				*i* S	**Sn**	**19 06 04.5**	**+1.8**
KCTX	**Karacabey (Bur**	**1.25**	**336**	*e*PN	**Pn**	**19 05 49.1**	**+0.4**
KCTX	**Karacabey (Bur**	**1.25**	**336**	*e*Pn	**Pn**	**19 05 49.1**	**+0.4**
IZI	**Iznik**	**1.26**	**16**	*e*PN	**Pn**	**19 05 49.3**	**+0.4**
IZI	**Iznik**	**1.26**	**16**	*e*Pn	**Pn**	**19 05 49.3**	**+0.4**
ARMT	**Armutlu**	**1.45**	**355**	*e*PN	**Pb**	**19 05 52.3**	**-0.2**
ARMT	**Armutlu**	**1.45**	**355**	*e*Pn	**Pb**	**19 05 52.3**	**-0.2**
GULT	**Gulveren**	**1.74**	**41**	*e*PN	**Pn**	**19 05 55.9**	**+0.4**
GULT	**Gulveren**	**1.74**	**41**	*e*Pn	**Pn**	**19 05 55.9**	**+0.4**

*DDA **30** 19:07:00.9, 39°10′N×29°06′E, h7km, Md2.9*
*ISK **30** 19:07:00.5, 39°10′N×29°05′E, h5km, MD2.8*
*CSEM **30** 19:07:01.1±0.1, 39°11′N×29°06′E, h5km, MD2.9, Error ellipse: s-maj=1.9km s-min=1.7km az=111.0*
ISC 30 19:07:00.6±0.9, 39°08′N±0°02×29°09′E±0°02, h16km±7km, n45, σ0°37′/64, 1C, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.29**	**263**	P	**Pg**	**19 07 06.9**	**0.0**
DEMI				S	**Sg**	**19 07 10.8**	**-0.4**
DEMI	**Demirci**	**0.29**	**263**	⇑*i* P	**Pg**	**19 07 06.9**	**0.0**
DEMI				*i* S	**Sg**	**19 07 10.8**	**-0.4**
GDZ	**Gediz**	**0.30**	**88**	P	**Pg**	**19 07 07.1**	**0.0**
GDZ				S	**Sb**	**19 07 12.9**	**+0.3**
GDZ	**Gediz**	**0.30**	**88**	*i* P	**Pg**	**19 07 07.1**	**0.0**
GDZ				*i* S	**Sb**	**19 07 12.9**	**+0.3**
TVSB	**Tavsanli**	**0.47**	**38**	*e*PG	**Pg**	**19 07 10.2**	**+0.2**
TVSB				*e*SG	**Sg**	**19 07 16.4**	**0.0**
TVSB	**Tavsanli**	**0.47**	**38**	*e*Pg	**Pg**	**19 07 10.2**	**+0.2**
TVSB				*e*Sg	**Sg**	**19 07 16.4**	**0.0**
KULA	**Kula-Manisa**	**0.66**	**211**	*e*PG	**Pb**	**19 07 13.8**	**0.0**
KULA	**Kula-Manisa**	**0.66**	**211**	*e*Pg	**Pb**	**19 07 13.8**	**0.0**
MANT	**Manisa**	**0.72**	**216**	P	**Pb**	**19 07 15.2**	**+0.2**
MANT				S	**Sb**	**19 07 24.7**	**0.0**
MANT	**Manisa**	**0.72**	**216**	*i* P	**Pb**	**19 07 15.2**	**+0.2**
MANT				*i* S	**Sb**	**19 07 24.7**	**0.0**
KHAL	**Karahalli**	**0.77**	**156**	P	**Pn**	**19 07 17.4**	**+0.4**
KHAL				S	**Sn**	**19 07 27.8**	**-0.6**
KHAL	**Karahalli**	**0.77**	**156**	*i* P	**Pn**	**19 07 17.4**	**+0.4**
KHAL				*i* S	**Sn**	**19 07 27.8**	**-0.6**
KHL	**Karahalli**	**0.83**	**156**	*e*PG	**Pn**	**19 07 17.6**	**-0.1**
KHL				*e*SG	**Sn**	**19 07 29.8**	**+0.1**
KHL	**Karahalli**	**0.83**	**156**	*e*Pg	**Pn**	**19 07 17.6**	**-0.1**
KHL				*e*Sg	**Sn**	**19 07 29.8**	**+0.1**
ORLT	**Orhaneli**	**0.98**	**351**	*e*PG	**Pb**	**19 07 19.2**	**-0.1**
ORLT				*e*SG	**Sn**	**19 07 33.0**	**-0.4**
ORLT	**Orhaneli**	**0.98**	**351**	*e*Pg	**Pb**	**19 07 19.2**	**-0.1**
ORLT				*e*Sg	**Sn**	**19 07 33.0**	**-0.4**
AKHS	**Akhisar**	**1.02**	**259**	P	**Pg**	**19 07 20.4**	**+0.1**
AKHS				S	**Sg**	**19 07 33.7**	**+0.1**
AKHS	**Akhisar**	**1.02**	**259**	*i* P	**Pg**	**19 07 20.4**	**+0.1**
AKHS				*i* S	**Sg**	**19 07 33.7**	**+0.1**
AKS	**Akhisar**	**1.02**	**259**	*e*PG	**Pb**	**19 07 19.6**	**-0.3**
AKS	**Akhisar**	**1.02**	**259**	*e*Pg	**Pb**	**19 07 19.6**	**-0.3**
BALB	**Balikesir**	**1.09**	**301**	*e*PG	**Pb**	**19 07 21.0**	**-0.2**
BALB	**Balikesir**	**1.09**	**301**	*e*Pg	**Pb**	**19 07 21.0**	**-0.2**
IGD	**Bursa**	**1.19**	**4**	*i* P	**Pn**	**19 07 22.4**	**-0.1**
IGD				*i* S	**Sg**	**19 07 39.4**	**+0.4**
CAVI	**Cavuskoy**	**1.26**	**27**	*e*PN	**Pg**	**19 07 24.9**	**-0.1**
CAVI	**Cavuskoy**	**1.26**	**27**	*e*Pn	**Pg**	**19 07 24.9**	**-0.1**
IZI	**Iznik**	**1.29**	**13**	*e*PN	**Pg**	**19 07 25.4**	**-0.1**
IZI	**Iznik**	**1.29**	**13**	*e*Pn	**Pg**	**19 07 25.4**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.30**	**353**	*e*PN	**Pb**	**19 07 25.1**	**+0.5**
MDNY	**Mudanya-Bursa**	**1.30**	**353**	*e*Pn	**Pb**	**19 07 25.1**	**+0.5**
KCTX	**Karacabey (Bur**	**1.31**	**335**	*e*PN	**Pb**	**19 07 25.4**	**+0.4**
KCTX	**Karacabey (Bur**	**1.31**	**335**	*e*Pn	**Pb**	**19 07 25.4**	**+0.4**
BALY	**Balya**	**1.32**	**301**	P	**Pg**	**19 07 25.9**	**-0.1**
BALY				S	**Sg**	**19 07 44.0**	**+0.8**
BALY	**Balya**	**1.32**	**301**	*i* P	**Pg**	**19 07 25.9**	**-0.1**
BALY				*i* S	**Sg**	**19 07 44.0**	**+0.8**
ADVT	**Abdulvahap**	**1.44**	**20**	*e*PN	**Pb**	**19 07 27.6**	**+0.5**
ADVT	**Abdulvahap**	**1.44**	**20**	*e*Pn	**Pb**	**19 07 27.6**	**+0.5**
GONE	**Gonen-Balikesi**	**1.45**	**312**	*e*PN	**Pb**	**19 07 27.3**	**0.0**
GONE	**Gonen-Balikesi**	**1.45**	**312**	*e*Pn	**Pb**	**19 07 27.3**	**0.0**

mb3.6/12, Error ellipse: s-maj=15.3km s-min=5.6km az=26.0

*NEIC **30** 19:17:34.6±1.0, 24°.22N×94°.51E, h82km±10km, mb4.0/1, Error ellipse: s-maj=25.0km s-min=7.6km az=57.0*

*IDC **30** 19:17:35.9±3.6, 24°.20N×94°.55E, h96km±36km, mb3.4/11, mb1 3.4/12, mb1mx3.2/54, mbtmp3.7/12, MS4.0/1, Ms1 4.0/1, ms1mx2.4/45, Error ellipse: s-maj=37.5km s-min=14.1km az=57.0*

ISC 30 19:17:35.6±0.8, 24°.1N±0°.1×94°.14E±0°.09, h100km, n21, σ1§51/26, mb3.6/12, Myanmar-India border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LSA	**Lhasa**	**6.22**	**335**	*e*P	**Pn**	**19 19 03.5**	**-1.8**
CMAR	**Chiang Mai Arr**	**7.15**	**140**	P	**Pn**	**19 19 16.1**	**-1.5**
	0.2nm,0.3s,baz=317,slow=14,SNR=8.2						
GUN	**Gumba**	**8.37**	**299**	*e*P	**Pn**	**19 19 34.6**	**+0.2**
	13nm,0.4s						
GUN				*e*S	**Sn**	**19 21 06.6**	**-0.8**
PKIN	**Phulchoki**	**8.62**	**296**	*e*P	**Pn**	**19 19 38.2**	**+0.3**
	5.2nm,0.3s						
PKIN				*e*S	**Sn**	**19 21 11.5**	**-2.0**
KKN	**Kakani**	**8.80**	**297**	*e*P	**Pn**	**19 19 40.2**	**0.0**
	7.0nm,0.3s						
KKN				*e*S	**Sn**	**19 21 17.0**	**-0.8**
DMN	**Daman**	**8.88**	**295**	*e*P	**Pn**	**19 19 40.7**	**-0.6**
DMN				*e*S	**Sn**	**19 21 18.5**	**-1.1**
GKN	**Gorkha**	**9.41**	**297**	*e*P	**Pn**	**19 19 48.0**	**-0.4**
	15nm,0.5s						
GKN				*e*S	**Sn**	**19 21 29.1**	**-3.4**
KOLN	**Koldanda**	**10.18**	**293**	*e*P	**Pn**	**19 19 57.1**	**-1.9**
	3.4nm,0.2s						
KOLN				*e*S	**Sn**	**19 21 49.3**	**-2.1**
MKAR	**Makanchi Array**	**24.60**	**340**	P	**P**	**19 22 47.4**	**+1.0**
	1.1nm,0.5s,baz=148,slow=10,SNR=28						
AAK	**Ala-Archa**	**24.65**	**323**	P	**P**	**19 22 49.5**	**+2.4**
	1.8nm,0.5s,baz=119,slow=7.4,SNR=6.3						
SONM	**Songino Array**	**25.65**	**19**	P	**P**	**19 22 54.3**	**-1.7**
	1.1nm,0.7s,baz=191,slow=10,SNR=8.9						
KURBB	**Kurchatov Arra**	**29.15**	**339**	P	**P**	**19 23 27.5**	**+0.4**
	1.0nm,0.6s,baz=148,slow=9.2,SNR=12						
KURK	**Kurchatov**	**29.20**	**340**	*e*P	**P**	**19 23 27.8**	**+0.2**
	2.8nm,0.7s						
ZALV	**Zalesovo Beam**	**30.66**	**349**	P	**P**	**19 23 40.7**	**+0.3**
	0.4nm,0.3s,baz=165,slow=6.2,SNR=3.9						
BVAR	**Borovoye Array**	**34.06**	**334**	P	**P**	**19 24 11.1**	**+1.0**
	0.8nm,0.6s,baz=141,slow=11,SNR=8.8						
JCJ	**Chichijima**	**43.24**	**75**	LR	LR	19 45 52.8	
	comp=Z,183nm,18.0s,baz=83,slow=40						
BRTR	**Keskin Array B**	**52.76**	**303**	P	**P**	**19 26 42.6**	**+2.1**
	0.3nm,0.5s,baz=118,slow=6.9,SNR=4.6						
FINES	**FINESS Array B**	**58.69**	**329**	P	**P**	**19 27 23.3**	**+0.9**
	1.1nm,0.5s,baz=108,slow=7.6,SNR=8.1						
WRA	**Warramunga Arr**	**58.70**	**135**	P	**P**	**19 27 22.6**	**-0.5**
	0.5nm,0.9s,baz=327,slow=7.2,SNR=4.3						
ASAR	**Alice Springs**	**61.15**	**138**	P	**P**	**19 27 39.9**	**0.0**
	0.1nm,0.5s,baz=318,slow=6.5,SNR=4.5						
GERES	**GERESS Array B**	**66.13**	**315**	P	**P**	**19 28 14.3**	**+1.9**
	0.2nm,0.4s,baz=76,slow=8.4,SNR=2.7						

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*ISCJB **30** 19:29:39.4±0.6, 6°.08N±0°.07×125°.74E±0°.08, h175km±5km, mb3.8/12, Error ellipse: s-maj=14.4km s-min=10.7km az=147.9*

*IDC **30** 19:29:39.8±0.8, 5°.98N×125°.40E, h159km±8km, mb3.6/12, mb1 3.8/12, mb1mx3.4/51, mbtmp4.1/12, Error ellipse: s-maj=42.5km s-min=10.3km az=73.0*

*MAN **30** 19:29:40, 5°.93N×125°.69E, h153km, mb4.7, ML3.6, MS3.6*

ISC 30 19:29:40.4±0.9, 6°.04N±0°.09×125°.72E±0°.09, h165km±7km, n19, σ0§99/27, mb3.9/12, 3C-1D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DAV	**Davao City (W)**	**1.03**	**352**	P	**Pn**	**19 30 07.1**	**+0.2**
	122nm,0.3s,baz=75,slow=1.3,SNR=10						
DAV				S	**Sn**	**19 30 26.6**	**-0.8**
	212nm,0.3s,baz=251,slow=23,SNR=24						
MATI	**Mati**	**1.04**	**31**	*e*P	**Pn**	**19 30 06.5**	**-0.5**
MATI				*e*S	**Sn**	**19 30 28.1**	**+0.5**
KCP	**Kidapawan**	**1.15**	**327**	⇑*e*P	**Pn**	**19 30 08.3**	**+0.3**
KCP				*e*S	**Sn**	**19 30 29.2**	**+0.1**
CTBH	**Cotabato--PC H**	**1.88**	**309**	⇑*i*P	**Pn**	**19 30 15.2**	**+0.1**
CTBH				*i* S	**Sn**	**19 30 41.2**	**-0.7**
BUKP	**Musuan**	**1.94**	**340**	*e*P	**Pn**	**19 30 16.7**	**+0.9**
BUKP				*e*S	**Sn**	**19 30 44.2**	**+0.9**
BIPH	**Bislig**	**2.22**	**17**	⇑*e*P	**Pn**	**19 30 19.6**	**+0.7**
BIPH				*i* S	**Sn**	**19 30 47.1**	**-1.8**
CGP	**Cagayan de Oro**	**2.60**	**337**	⇓*e*P	**Pn**	**19 30 24.3**	**+0.8**
CGP				*e*S	**Sn**	**19 30 58.1**	**+1.1**
FITZ	**Fitzroy Crossi**	**23.99**	**180**	P	**P**	**19 34 40.4**	**+0.5**
	7.9nm,0.5s,baz=1.7,slow=7.1,SNR=29						
WRA	**Warramunga Arr**	**27.18**	**162**	P	**P**	**19 35 07.8**	**-0.8**
	0.8nm,0.4s,baz=334,slow=11,SNR=11						
ASAR	**Alice Springs**	**30.59**	**165**	P	**P**	**19 35 38.8**	**0.0**
	2.8nm,0.5s,baz=340,slow=6.9,SNR=82						
STKA	**Stephens Creek**	**40.63**	**159**	P	**P**	**19 37 05.0**	**+0.7**
	4.4nm,0.6s,baz=333,slow=9.8,SNR=12						
MKAR	**Makanchi Array**	**55.10**	**325**	P	**P**	**19 38 55.0**	**-0.3**
	0.5nm,0.4s,baz=118,slow=7.4,SNR=14						
MKAR				PcP	**PcP**	**19 39 53.4**	**-1.2**
	0.5nm,0.6s,baz=192,slow=7.5,SNR=5.3						
KURBB	**Kurchatov Arra**	**59.26**	**327**	P	**P**	**19 39 23.6**	**-0.8**
	0.6nm,0.7s,baz=126,slow=6.1,SNR=4.9						
TIXI	**Tiksi**	**65.56**	**1**	P	**P**	**19 40 06.2**	**+0.4**
	0.7nm,0.3s,baz=176,slow=1.5,SNR=6.7						
AKTO	**Aktyubinsk**	**71.24**	**321**	P	**P**	**19 40 40.7**	**-0.8**
	0.6nm,0.5s,baz=89,slow=12						
ARU	**Arti**	**72.46**	**328**	P	**P**	**19 40 47.5**	**-1.1**
	1.1nm,0.3s,baz=258,slow=20,SNR=3.2						
ILAR	**Eielson Array**	**83.46**	**26**	P	**P**	**19 41 51.6**	**+2.5**
	0.2nm,0.8s,baz=239,slow=4.0,SNR=4.7						
VNDA	**Vanda**	**85.83**	**173**	P	**P**	**19 42 00.8**	**+0.1**
	0.2nm,0.4s,baz=348,slow=4.5,SNR=3.6						
FINES	**FINESS Array B**	**89.33**	**332**	P	**P**	**19 42 16.3**	**-1.4**
	2.3nm,0.9s,baz=94,slow=5.7,SNR=5.4						

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*IDC **30** 19:32:36.7±2.2, 12°.21N×144°.46E, h57km±23km, mb3.3/9, mb1 3.5/9, mb1mx3.3/52, mbtmp3.6/9, Error ellipse: s-maj=36.9km s-min=16.0km az=95.0*

ISC 30 19:32:33.5±1.2, 12°.2N±0°.1×144°.5E±0°.2, h29km, n10, σ0§81/11, mb3.6/9, South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**1.44**	**16**	P	**Pb**	**19 32 59.4**	**-0.3**
	52nm,0.3s,baz=160,slow=4.0,SNR=23						
GUMO				S	**Sb**	**19 33 18.3**	**+0.7**
	116nm,0.3s,baz=352,slow=23,SNR=17						
WRA	**Warramunga Arr**	**33.46**	**197**	P	**P**	**19 39 10.3**	**0.0**
	0.4nm,0.6s,baz=23,slow=9.9,SNR=5.7						
ASAR	**Alice Springs**	**37.11**	**196**	P	**P**	**19 39 42.4**	**+0.6**
	0.3nm,0.5s,baz=20,slow=11,SNR=10						
CMAR	**Chiang Mai Arr**	**44.26**	**284**	P	**P**	**19 40 41.7**	**+0.8**
	0.3nm,0.4s,baz=81,slow=6.7,SNR=5.8						
SONM	**Songino Array**	**47.65**	**326**	P	**P**	**19 41 07.9**	**+0.6**
	0.2nm,0.3s,baz=140,slow=5.4,SNR=2.5						
MKAR	**Makanchi Array**	**62.22**	**317**	P	**P**	**19 42 52.4**	**-0.2**
	0.1nm,0.4s,baz=95,slow=8.0,SNR=4.6						
KURBB	**Kurchatov Arra**	**65.43**	**320**	P	**P**	**19 43 13.0**	**-0.7**
	0.5nm,0.4s,baz=105,slow=6.6,SNR=8.5						
BVAR	**Borovoye Array**	**70.77**	**322**	P	**P**	**19 43 46.8**	**-0.4**
	0.7nm,0.5s,baz=97,slow=8.0,SNR=7.0						
YKA	**Yellowknife Ar**	**84.26**	**27**	P	**P**	**19 45 02.9**	**+0.5**
	0.2nm,0.4s,baz=287,slow=5.3,SNR=3.0						
FINES	**FINESS Array B**	**92.25**	**335**	P	**P**	**19 45 39.1**	**-1.5**
	0.5nm,0.4s,baz=71,slow=5.6,SNR=9.4						

SJA 30 19:36:07.7±8.7, 40°.94S×72°.62W, h46km±999km, ML3.2, MW3.5, Central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLCA	**Paso Flores**	**1.58**	**83**	*e*P	Pn	19 36 35.1	+1.7
	baz=270,slow=18						
PLCA				IAML		19 36 37.5	
	comp=Z,260nm,0.4s						
PLCA				*e*S	Sn	19 36 54.5	+1.8
CANA	**Caviahue**	**3.28**	**22**	*e*P	Pn	19 36 59.7	+3.0
	baz=245,slow=7.9						
CANA				IAML		19 37 06.0	
	comp=Z,54nm,0.7s						
CANA				*e*S	Sn	19 37 37.0	+2.4
CANA				*e*S	Sn	19 37 37.0	+2.4

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*NIED **30** 19:36:00, 36°.50N×140°.90E, h5km, Mw4.7 Best double couple: M₀1.48000×10¹⁶ NP1:φs18.00000°, δ33.00000°, λ-50.00000°. NP2:φs153.00000°, δ65.00000°, λ-113.00000°.*

*IDC **30** 19:36:35.1±0.4, 36°.48N×140°.85E, h0km, mb4.6/35, mb1 4.7/39, mb1mx4.6/54, mbtmp4.6/39, ML4.0/4, MS4.0/26, Ms1 4.0/26, ms1mx3.8/50, Error ellipse: s-maj=12.6km s-min=10.3km az=113.0*

*JMA **30** 19:36:36.8±0.1, 36°.51N×140°.93E, h15km±1km, M5.0 Broadband fault plane solution: P waves. NP1: φs49.00000°, δ56.00000°, λ-49.00000°. NP2:φs172.00000°, δ51.00000°, λ-134.00000°. Principal axes: T Plg3.0000°, Azm112.0000°; N Plg33.0000°, Azm204.0000°; P Plg57.0000°, Azm17.0000°;*

JMA Felt III J1.

*ISCJB **30** 19:36:37.5±0.5, 36°.48N±0°.03×140°.84E±0°.02, h23km±3km, mb4.8/199, MS4.2/47 Error ellipse: s-maj=4.5km s-min=3.0km az=154.2*

*MOS **30** 19:36:39.0±1.3, 36°.55N×140°.86E, h33km, mb5.0/77, MS4.5/11, Error ellipse: s-maj=6.3km s-min=4.4km az=104.3*

*NEIC **30** 19:36:41.5±0.6, 36°.47N×140°.76E, h42km±5km, mb4.9/132, Error ellipse: s-maj=4.8km s-min=3.3km az=143.0*

NEIC Felt at Akiruno and Tsukuba. Recorded [3 JMA] in Ibaraki and Tochigi.

ISC 30 19:36:39.4±0.5, 36°.50N±0°.03×140°.92E±0°.03, h28km±2km, h28km:pP-P, n456, σ1§95/488, mb4.9/202, MS4.2/47, 26C-23D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.30**	**291**	⇑P	**Pb**	**19 36 42.9**	**-3.8**
JHO				S	**Sb**	**19 36 47.9**	**-3.7**
ONAJ	**Iwakimizuishiy**	**0.60**	**351**	⇑P	**Pb**	**19 36 48.3**	**-3.2**
ONAJ				S	**Sb**	**19 36 57.1**	**-2.6**
JYT	**Yasato**	**0.65**	**245**	⇑P	**Pb**	**19 36 49.3**	**-2.8**
JYT				S	**Sb**	**19 36 59.2**	**-1.6**
JFK	**Kawauchi**	**0.86**	**358**	⇓P	**Pn**	**19 36 52.3**	**-3.4**
JFK				*e*S	**Sb**	**19 37 03.7**	**-3.3**
JSB	**Shiboa**	**0.93**	**300**	⇑P	**Pn**	**19 36 54.7**	**-1.8**
JSB				*e*S	**Sb**	**19 37 08.2**	**-0.6**
MJAR	**Matsushiro Arr**	**2.18**	**272**	Pn	**Pn**	**19 37 13.2**	**-0.6**
	89nm,0.3s,baz=159,slow=4.4,SNR=341						
MAJO	**Matsushiro**	**2.18**	**272**	⇑*i*P	**Pn**	**19 37 14.6**	**+0.8**
MAJO	**Matsushiro**	**2.18**	**272**	*e*Pn	**Pn**	**19 37 14.1**	**+0.3**
MAJO				*e*Sn	**Sn**	**19 37 38.0**	**-2.0**
MAT	**Matsushiro**	**2.18**	**272**	P	**Pn**	**19 37 13.5**	**-0.3**
MAT				S	**Sb**	**19 37 43.1**	**-1.7**
MJB9	**Matsu-Tunnel**	**2.19**	**272**	*e*Pn	**Pn**	**19 37 14.1**	**+0.2**
MJB9				*e*Sn	**Sn**	**19 37 39.2**	**-0.8**
INU	**Inuyama**	**3.37**	**251**	*e*Pn	**Pn**	**19 37 31.1**	**+1.0**
INU				*e*Sn	**Sn**	**19 38 02.6**	**-6.5**
JHJ	**Hachijo jima 2**	**3.50**	**196**	Pn	**Pn**	**19 37 31.9**	**0.0**
	54nm,0.3s,baz=233,slow=20,SNR=6.5						
JHJ2	**Mitsune**	**3.50**	**195**	*e*Pn	**Pn**	**19 37 30.1**	**-1.8**
ERM	**Erimo**	**5.77**	**17**	⇑*i*P	**Pn**	**19 38 03.5**	**+0.4**
ERM				pmax	pmax		
	comp=Z,113nm,1.7s						
ERM	**Erimo**	**5.77**	**17**	*e*Pn	**Pn**	**19 38 05.3**	**+2.2**
ASAJ	**Asahikawa**	**7.71**	**9**	Pn	**Pn**	**19 38 28.3**	**-1.4**
	comp=Z,2.2nm,0.3s,baz=219,slow=12,SNR=22						
ASAJ	**Asahikawa**	**7.71**	**9**	*e*Pn	**Pn**	**19 38 28.7**	**-1.0**
YUK	**Yuzh-Kuril'sk**	**8.42**	**25**	*i* P	**Pn**	**19 38 39.7**	**+0.4**
JNU	**Nakatsue**	**8.92**	**251**	Pn	**Pn**	**19 38 46.5**	**+0.2**
	comp=Z,0.9nm,0.3s,baz=122,slow=4.1,SNR=18						
JNU	**Nakatsue**	**8.92**	**251**	*e*Pn	**Pn**	**19 38 47.4**	**+1.1**
VLA	**Vladivostok**	**9.58**	**316**	⇑*e*P	**Pn**	**19 38 59.6**	**+4.2**
VLA				*e*S	**Sn**	**19 40 48.9**	**+6.8**
VLA				pmax	pmax		
	comp=Z,128nm,1.4s						
KUR	**Kuril'sk**	**10.18**	**29**	*e*P	**Pn**	**19 39 04.2**	**+0.7**
KUR				*e*S	**Sn**	**19 40 51.3**	**-5.4**
KUR				pmax	pmax		
	comp=Z,17nm,0.8s						
KUR				pmax	pmax		
	comp=E,5.0nm,0.4s						
KUR				pmax	pmax		
	comp=N,11nm,0.8s						
KUR				smax	smax		
	comp=N,12nm,0.4s						
KUR				smax	smax		
	comp=E,24nm,0.4s						
USRK	**Ussuriysk Ar.**	**10.27**	**321**	Pn	**Pn**	**19 39 09.2**	**+4.5**
	comp=E,0.7nm,0.3s,baz=135,slow=12,SNR=15						
KSRS	**Korea Array**	**10.44**	**279**	Pn	**Pn**	**19 39 10.8**	**+3.6**
	comp=E,0.6nm,0.3s,baz=92,slow=14,SNR=14						
KSRS				LR	LR	19 43 02.8	
	comp=E,1μm,19.6s,baz=80,slow=37						
KS01	**Wonju Array Si**	**10.46**	**279**	*e*Pn	Pn	19 39 12.3	+4.9
KS15	**Wonju Array Si**	**10.47**	**279**	*e*Pn	**Pn**	**19 39 10.7**	**+3.2**
KSAR	**Wonju Array Be**	**10.47**	**279**	P	**Pn**	**19 39 10.8**	**+3.2**
KSAR	**Wonju Array Be**	**10.47**	**279**	Pn	**Pn**	**19 39 10.8**	**+3.2**
YSS	**Yuzh-Sakhalins**	**10.53**	**7**	⇑*e*P	**Pn**	**19 39 09.1**	**+0.8**
YSS				*e*S	**Sn**	**19 41 02.6**	**-2.7**
YSS				pmax	pmax		
	comp=Z,10.0nm,0.9s						
YSS	**Yuzh-Sakhalins**	**10.53**	**7**	*e*Pn	**Pn**	**19 39 06.4**	**-1.9**
MDJ	**Mudanjiang**	**11.82**	**317**	P	Pn	19 39 32.5	+6.6
MDJ				S	**Sn**	**19 41 40.8**	**+4.0**
MDJ				PcP	PcP	19 45 25.0	+12
MDJ				ScP	**ScP**	**19 48 53.8**	**+10**
MDJ				PcS	PcS	19 48 58.5	+12
MDJ	**Mudanjiang**	**11.82**	**317**	ScS	ScS	19 52 28.8	+10
MDJ				pmax	pmax		
	comp=Z,27nm,1.0s						
MDJ				pmax	pmax		
	comp=Z,200nm,5.0s						
MDJ				LR	LR		
	comp=N,1μm,17.2s						
MDJ				LR	LR		
	comp=E,790nm,15.6s						
MDJ				LR	LR		
	comp=Z,740nm,12.5s						
MDJ	**Mudanjiang**	**11.82**	**317**	*e*Pn	Pn	19 39 35.2	+9.2
HABR	**Khabarovsk**	**12.71**	**342**	*e*P	**Pn**	**19 39 36.7**	**-1.5**
HABR				S	**Sn**	**19 41 57.6**	**-1.1**
HABR				pmax	pmax		
	comp=Z,4.0nm,0.3s						
HABR				MLR	MLR		
	comp=Z,228nm,12.0s						
CN2	**Changchun**	**13.88**	**306**	*e*P	**P**	**19 40 00.0**	**-2.1**
CN2				*e*S	**S**	**19 42 51.8**	**+3.1**
CN2				pmax	pmax		
	comp=Z,10.0nm,0.5s						
CN2				pmax	pmax		
	comp=Z,200nm,4.0s						
CN2				LR	LR		
	comp=N,2μm,14.0s						
CN2				LR	LR		
	comp=E,2μm,14.0s						
CN2				LR	LR		
	comp=Z,500nm,14.0s						
KLR	**Kul'dur**	**14.37**	**335**	Pn	**Pn**	**19 40 02.9**	**+2.1**
	comp=Z,0.2nm,0.3s,baz=172,slow=18,SNR=3.4						
TYV	**Tymovskoe**	**14.41**	**4**	*e*P	**Pn**	**19 39 57.0**	**-4.3**
TYV				pmax	pmax		
	comp=Z,40nm,1.0s						
TYV				MLR	MLR		
	comp=N,2μm,18.0s						
TYV				MLR	MLR		
	comp=Z,2μm,15.0s						
JOW	**Kunigami**	**14.44**	**232**	*e*Pn	Pn	19 39 55.7	-6.1
SSE	**Sheshan**	**17.25**	**258**	P	**Pn**	**19 40 35.8**	**-2.4**
SSE				S	**Sn**	**19 43 49.0**	**-0.4**
SSE				pmax	pmax		
	comp=Z,20nm,0.9s						
SSE				pmax	pmax		
	comp=Z,150nm,6.6s						
SSE				LR	LR		
	comp=N,1μm,12.3s						
SSE				LR	LR		
	comp=E,750nm,12.3s						
SSE				LR	LR		
	comp=Z,1μm,13.2s						
TIA	**Tai'an**	**19.16**	**276**	⇑P	**Pn**	**19 41 04.3**	**+2.8**
TIA				pP	**sP**	**19 41 13.0**	**+1.3**
TIA				S	S	19 44 50.3	+14
TIA				pmax	pmax		
	comp=Z,20nm,0.8s						
TIA				pmax	pmax		
	comp=Z,370nm,5.1s						
TIA				LR	LR		
	comp=N,790nm,11.3s						
TIA				LR	LR		
	comp=E,1μm,13.7s						
TIA				LR	LR		
	comp=Z,1μm,13.1s						
BJI	**Beijing**	**19.73**	**288**	P	**Pn**	**19 41 08.5**	**+0.3**
BJI				S	**Sn**	**19 44 58.8**	**+10**
BJI				pmax	pmax		
	comp=Z,15nm,0.9s						
BJI				pmax	pmax		
	comp=Z,250nm,6.3s						
BJI				LR	LR		
	comp=N,1μm,13.8s						
BJI				LR	LR		
	comp=E,430nm,15.0s						
BJT	**Baijiatuau**	**19.73**	**288**	*e*P	**P**	**19 41 04.9**	**-1.8**
BJT				pmax	pmax		
	comp=Z,23nm,1.1s						
BJT	**Baijiatuau**	**19.73**	**288**	*e*P	**P**	**19 41 04.9**	**-1.8**
	comp=Z,23nm,1.1s						
PEA0	**Petropavlovsk-**	**20.34**	**30**	*e*P	**P**	**19 41 12.2**	**-1.1**
PETK	**Petropavlovsk-**	**20.34**	**30**	P	**P**	**19 41 13.2**	**-0.1**
	comp=Z,14nm,1.1s,baz=236,slow=10,SNR=3.2						
PETK				LR	LR	19 50 09.1	
	comp=Z,276nm,18.8s,baz=217,slow=40						
PET	**Petropavlovsk**	**20.68**	**31**	⇑*i*P	**P**	**19 41 17.0**	**+0.2**
PET				*e*S	**S**	**19 44 59.4**	**-6.8**
PET				pmax	pmax		
	comp=Z,100nm,8.5s						
PET				pmax	pmax		
	comp=Z,59nm,1.2s						
PET				MLR	MLR		
	comp=Z,500nm,19.0s						
PET				MLR	MLR		
	comp=Z,400nm,16.0s						
PET	**Petropavlovsk**	**20.68**	**31**	*e*P	**P**	**19 41 16.4**	**-0.4**
	comp=Z,61nm,1.1s						
TPUB	**Ta-pu**	**21.91**	**239**	*e*P	**P**	**19 41 28.4**	**-2.0**
	comp=Z,33nm,1.1s						
TWG	**Pinlang**	**21.93**	**237**	*e*P	**P**	**19 41 30.8**	**+0.2**
	comp=Z,160nm,1.1s						
QZH	**Quanzhou**	**22.33**	**245**	P	**P**	**19 41 37.3**	**+2.4**
QZH				*e*S	**S**	**19 45 41.3**	**+2.5**
QZH				LR	LR		
	comp=N,1μm,11.9s						
QZH				LR	LR		
	comp=E,1μm,13.0s						
QZH				LR	LR		
	comp=Z,2μm,12.3s						
WHN	**Wuhan**	**22.89**	**263**	⇓P	**P**	**19 41 39.0**	**-1.8**
HHC	**Hu-ho-hao-te**	**23.27**	**290**	*e*P	**P**	**19 41 44.5**	**-0.2**
HHC				sP	sP	19 42 01.5	+5.4
HHC				S	**S**	**19 45 49.0**	**-6.2**
HHC				pmax	pmax		
	comp=Z,36nm,0.8s						
HHC				pmax	pmax		
	comp=Z,170nm,4.2s						
HHC				LR	LR		
	comp=N,980nm,12.5s						
HHC				LR	LR		
	comp=E,890nm,12.3s						
HHC				LR	LR		
	comp=Z,810nm,13.6s						
MA2	**Magadan**	**23.95**	**12**	P	**P**	**19 41 51.0**	**+0.1**
	comp=Z,22nm,0.9s,baz=217,slow=7.9,SNR=7.6						
MA2				LR	LR	19 51 37.1	
	comp=Z,214nm,18.4s,baz=214,slow=38						
CIT	**Chita**	**24.79**	**317**	*e*P	**P**	**19 41 59.2**	**+0.5**
CIT				*e*		19 42 09.4	
XAN	**Xi'an**	**26.18**	**274**	P	**P**	**19 42 07.0**	**-4.5**
XAN				pP	pP	19 42 15.5	-4.2
XAN				PP	**PnPn**	**19 42 51.5**	**+1.0**
XAN				S	**S**	**19 46 38.0**	**-3.7**
XAN				SS	**SnSn**	**19 47 48.0**	**+6.6**
XAN				pmax	pmax		
	comp=Z,34nm,5.4s						
XAN				LR	LR		
	comp=N,150nm,11.7s						
XAN				LR	LR		
	comp=E,760nm,13.2s						
XAN				LR	LR		
	comp=Z,810nm,13.6s						
YAK	**Yakutsk**	**26.50**	**348**	LR	LR	19 52 24.5	
	comp=Z,284nm,20.5s,baz=110,slow=36						
YAK	**Yakutsk**	**26.50**	**348**	*e*P	**P**	**19 42 13.2**	**-0.8**
YAK				*e**PP	**pP**	**19 42 22.3**	**0.0**
YAK				*e*		19 42 52.3	
YAK				*e*PPP	PPP	19 43 05.9	
YAK				*e*S	**S**	**19 46 47.1**	**+1.0**
YAK				*e**SS	**sS**	**19 47 02.8**	**+3.0**
YAK				*e*SS	**SnSn**	**19 47 52.0**	**+3.2**
YAK				*e*SSS	SSS	19 48 06.2	
YAK				pmax	pmax		
	comp=Z,54nm,1.2s						
YAK				pmax	pmax		
	comp=N,17nm,1.0s						
YAK				pmax	pmax		
	comp=E,12nm,1.3s						
YAK				pmax	pmax		
	comp=Z,96nm,3.3s						
YAK				smax	smax		
	comp=E,126nm,4.2s						
YAK				smax	smax		
	comp=N,241nm,5.3s						
YAK				MLR	MLR		
	comp=N,435nm,12.0s						
YAK				MLR	MLR		
	comp=Z,724nm,11.0s						
YAK				MLR	MLR		
	comp=N,703nm,12.0s						
YAK	**Yakutsk**	**26.50**	**348**	*e*P	**P**	**19 42 13.3**	**-0.8**
	comp=N,70nm,1.2s						
ENH	**Enshi**	**26.89**	**266**	*e*P	**P**	**19 42 17.9**	**0.0**
	comp=N,16nm,0.8s						
ULN	**Ulaanbaatar**	**27.33**	**305**	⇑*i*P	**P**	**19 42 22.6**	**+0.7**
ULN				pmax	pmax		
	comp=Z,12nm,1.0s						
ULN	**Ulaanbaatar**	**27.33**	**305**	*e*P	**P**	**19 42 22.2**	**+0.3**
	comp=Z,13nm,1.1s						
SEY	**Seymchan**	**27.39**	**11**	P	**P**	**19 42 22.7**	**+0.7**
	comp=Z,18nm,1.0s,baz=210,slow=9.3,SNR=13						
SEY	**Seymchan**	**27.39**	**11**	⇑*i*P	**P**	**19 42 25.2**	**+3.2**
SONA1	**Songino Array**	**27.75**	**305**	*e*P	**P**	**19 42 25.6**	**0.0**
SONM	**Songino Array**	**27.76**	**305**	P	**P**	**19 42 25.1**	**-0.5**
	comp=Z,8.5nm,1.1s,baz=112,slow=9.0,SNR=20						
SONM				LR	LR	19 53 14.7	
	comp=Z,348nm,19.8s,baz=104,slow=36						
BOD	**Bodaibo**	**27.77**	**329**	*e*P	**P**	**19 42 26.6**	**+1.1**
BOD				pmax	pmax		
	comp=Z,9.0nm,1.2s						
H11N2	**WAKE ISLAND Hy**	**28.23**	**119**

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TLY  Talaya        30.38 312 eP      P     19 42 44.7 -4.1
TLY                          eS      S     19 47 46.9 -0.6
TLY                          e             19 49 19.5
TLY                          pmax    pmax
     comp=Z,5.0nm,0.8s
TLY                          MLR     MLR
     comp=Z,375nm,13.0s
GYA  Guiyang       30.74 261⇑iP      P     19 42 50.0 -2.3
GYA                          pP      sP    19 43 05.5 +1.5
GYA                          PP      PnPn  19 43 55.0 +2.4
GYA                          PcP     PcP   19 45 50.3 +0.7
GYA                          S       S     19 47 50.8 -3.0
GYA                          sS      sS    19 48 12.3 +4.9
GYA                          ScP     ScP   19 49 28.0 -2.2
GYA                          SS      SnSn  19 49 33.0  0.0
GYA                          pmax    pmax
     comp=Z,20nm,0.8s
GYA                          pmax    pmax
     comp=Z,120nm,5.2s
GYA                          LR      LR
     comp=N,500nm,17.7s
GYA                          LR      LR
     comp=E,480nm,18.0s
GYA                          LR      LR
     comp=Z,470nm,17.8s
CD2  Chengdu       31.28 271 P       P     19 42 55.8 -1.1
CD2                          sP      sP    19 43 14.8 +6.1
CD2                          PP      PP    19 44 06.8 -0.9
CD2                          S       S     19 47 58.8 -3.2
CD2                          sS      sS    19 48 21.0 +5.3
CD2                          SS      SS    19 50 13.8 -2.4
CD2                          pmax    pmax
     comp=Z,20nm,0.5s
CD2                          pmax    pmax
     comp=Z,120nm,5.2s
CD2                          LR      LR
     comp=N,890nm,16.1s
CD2                          LR      LR
     comp=Z,690nm,14.2s
GTA  Gaotai        32.34 288 eP      P     19 43 04.8 -1.5
GTA                          pP      pP    19 43 08.8 -5.8
GTA                          sP      sP    19 43 12.8 -5.3
GTA                          pmax    pmax
     comp=Z,2.0nm,1.0s
QIZ  Qiongzhong    32.35 246 P       P     19 43 06.0 -0.4
QIZ                          S       S     19 48 21.5 +2.8
QIZ                          LR      LR
     comp=N,270nm,14.7s
QIZ                          LR      LR
     comp=E,350nm,14.2s
QIZ                          LR      LR
     comp=Z,510nm,13.2s
KMI  Kunming       34.49 262 P       P     19 43 26.3 +1.0
KMI                          pP      sP    19 43 40.5 +3.5
KMI                          sP      pP    19 43 47.3 +14
KMI                          PP      PP    19 44 43.3 -0.3
KMI                          S       S     19 48 48.5 -3.8
KMI                          sS      sS    19 49 14.5 +8.5
KMI                          SS      SnSn  19 51 05.0 +0.8
KMI                          pmax    pmax
     comp=Z,28nm,0.9s
KMI                          pmax    pmax
     comp=Z,84nm,3.1s
KMI                          LR      LR
     comp=N,430nm,13.8s
KMI                          LR      LR
     comp=E,640nm,15.9s
KMI                          LR      LR
     comp=Z,710nm,14.3s
BILL Bilibino      34.65  16⇓iP      P     19 43 23.8 -2.1
BILL                         i             19 43 29.4
BILL                         i             19 44 45.3
BILL                         i             19 46 03.5
BILL                         iSS     SS    19 51 11.2  -13
BILL                         pmax    pmax
     comp=Z,3.0nm,1.1s
BILL                         MLR     MLR
     comp=Z,131nm,16.0s
BILL Bilibino      34.65  16 eP      P     19 43 29.1 +3.2
     comp=Z,13nm,1.3s
TIXI Tiksi         35.77 354 P       P     19 43 34.3 -1.2
     comp=Z,9.9nm,0.8s,baz=145,slow=7.1,SNR=18
TIXI                         PcP     PcP   19 46 05.0 +2.4
     comp=Z,1.3nm,0.3s,baz=88,slow=3.0,SNR=3.1
TIXI Tiksi         35.77 354⇑iP      P     19 43 34.5 -1.0
TIXI                         pmax    pmax
     comp=Z,12nm,0.8s
TIXI Tiksi         35.77 354 eP      P     19 43 34.0 -1.5
     comp=Z,10nm,0.8s
TIXI                         PcP     PcP   19 46 05.0 +2.4
PANO Nakornpanom   37.40 249 P       P     19 43 58.0 +8.0
NONG Nongkai       37.96 251 P       P     19 43 55.1 +0.4
     comp=Z,57nm,1.3s
SKNT Sakolnakorn   37.98 249 P       P     19 44 01.4 +6.5
     comp=Z,11nm,1.1s
CRAI Chiangrai     38.87 257 P       P     19 44 02.4  0.0
     comp=Z,101nm,1.5s
FAKI Fak Fak       40.05 194 eP      P     19 44 11.8 -0.4
     comp=Z,80nm,1.2s
UTTA Uttaradit     40.14 253 P       P     19 44 17.1 +4.2
     comp=Z,2.9nm,1.0s
CHAI Chaiyaphum    40.15 250 P       P     19 44 14.7 +1.7
     comp=Z,4.5nm,0.9s
PBKT Sadao Pong    40.52 251 P       P     19 44 19.7 +3.7
     comp=Z,14nm,0.9s,comp=Z,1µm
WMQ  Urumqi        40.73 297 P       P     19 44 21.8 +4.2
WMQ                          pP      sP    19 44 30.5 +1.0
WMQ                          sP      pP    19 44 36.5  +10
WMQ                          S       S     19 50 21.8 -4.5
WMQ                          sS      sS    19 50 42.3 +2.1
WMQ                          SS      SS    19 53 22.5 -4.7
WMQ                          pmax    pmax
     comp=Z,7.0nm,0.8s
WMQ                          pmax    pmax
     comp=Z,67nm,3.6s
WMQ                          LR      LR
     comp=N,470nm,16.8s
WMQ                          LR      LR
     comp=E,110nm,20.2s
WMQ                          LR      LR
     comp=Z,130nm,18.6s
CHTO Chiang Mai    40.78 256 eP      P     19 44 19.1 +0.8
CHTO                         pmax    pmax
     comp=Z,9.0nm,1.4s
CHTO Chiang Mai    40.78 256 eP      P     19 44 19.1 +0.8
     comp=Z,9.3nm,1.4s
CMAR Chiang Mai Arr 40.98 255 P      P     19 44 19.1 -0.8
     comp=Z,0.7nm,0.4s,baz=43,slow=7.3,SNR=8.5
CMAR                         PcP     PcP   19 46 21.1 +1.3
     comp=Z,2.2nm,1.0s,baz=20,slow=2.4,SNR=6.7
CMAR                         LR      LR    20 03 43.5
     comp=Z,490nm,18.3s,baz=47,slow=40
CM01 Chiang Mai Arr 40.99 255 eP      P     19 44 21.6 +1.6
LSA  Lhasa         41.86 276 P       P     19 44 31.8 +4.2
LSA                          pmax    pmax
     comp=Z,14nm,1.2s
LSA  Lhasa         41.86 276 eP      P     19 44 28.4 +0.8
LSA                          pmax    pmax
     comp=Z,13nm,1.1s
LSA  Lhasa         41.86 276 eP      P     19 44 28.4 +0.8
     comp=Z,13nm,1.1s
MHMT Maesarieng    41.93 256 P       P     19 44 35.7 +8.0
ZAA0 Zalesovo Array 41.98 313 eP     P     19 44 26.3 -1.4
ZALV Zalesovo Beam 41.98 313 P       P     19 44 27.1 -0.6
     comp=Z,15nm,0.7s,baz=93,slow=6.2,SNR=22
ZALV                         PcP     PcP   19 46 24.8 +2.3
     comp=Z,5.7nm,1.0s,baz=104,slow=4.6,SNR=3.7
NVS  Novosibirsk   42.92 314⇑iP      P     19 44 34.7 -0.6
NVS                          pmax    pmax
     comp=Z,21nm,1.1s
NVS                          pmax    pmax
     comp=N,2.0nm,0.5s
NVS                          pmax    pmax
     comp=E,11nm,0.6s
NRIK Noril'sk      43.58 336 P       P     19 44 41.7 +1.2
     comp=E,2.0nm,0.3s,baz=111,slow=9.2,SNR=7.7
NRIK                         LR      LR    20 04 32.7
     comp=E,250nm,19.1s,baz=100,slow=38
MK01 Makanchi Array 44.06 302 eP     P     19 44 43.7 -1.0
MK31 Makanchi Array 44.06 302 eP     P     19 44 44.3 -0.4
MK31 Makanchi Array 44.06 302 eP     P     19 44 44.2 -0.4
MKAR Makanchi Array 44.06 302 P      P     19 44 43.7 -1.0
     comp=E,12nm,1.0s,baz=89,slow=9.1,SNR=20
MKAR Makanchi Array 44.06 302ceP     P     19 44 46.5 +1.8
MKAR                         pmax    pmax
     comp=Z,12nm,1.0s
MKAR Makanchi Array 44.06 302 eP     P     19 44 44.2 -0.5
MAKZ Makanchi      44.27 303 eP      P     19 44 46.1 -0.3
MAKZ                         pmax    pmax
     comp=Z,17nm,1.1s
MAKZ Makanchi      44.27 303 eP      P     19 44 46.1 -0.3
     comp=Z,17nm,1.1s
KURK Kurchatov     45.95 308 eP      P     19 44 58.4 -1.2
KURK                         pmax    pmax
     comp=Z,45nm,1.0s
KURK Kurchatov     45.95 308 eP      P     19 44 58.4 -1.2
     comp=Z,45nm,1.0s
KURBB Kurchatov Arra 46.02 308 P     P     19 44 59.0 -1.1
     comp=Z,35nm,1.0s,baz=84,slow=7.9,SNR=49
TT01 Tatalina      46.08  35 eP      P     19 45 01.2 +0.7
TTA  Tatalina      46.08  34 eP      P     19 45 01.6 +1.0
TTA                          pmax    pmax
     comp=Z,6.0nm,1.0s
TTA  Tatalina      46.08  34 eP      P     19 45 01.6 +1.0
     comp=Z,5.9nm,1.0s
PDGK Podgornoye    46.68 298 iP      P     19 45 05.1 -0.3
PDGK                         pmax    pmax
     comp=Z,34nm,1.1s
GUN  Gumba         46.81 276 eP      P     19 45 07.0 -0.1
     comp=Z,64nm,1.0s
PKIN Phulchoki     47.34 276 eP      P     19 45 10.1 -1.0
     comp=Z,15nm,0.9s
KKN  Kakani        47.34 276 eP      P     19 45 10.4 -0.7
     comp=Z,34nm,0.9s
DMN  Daman         47.56 276 eP      P     19 45 12.0 -0.8
     comp=Z,16nm,0.8s
KDAK Kodiak Island 47.76  42 eP      P     19 45 14.1 +0.5
KDAK                         pmax    pmax
     comp=Z,19nm,0.8s
KDAK Kodiak Island 47.76  42 eP      P     19 45 14.1 +0.5
     comp=Z,19nm,0.8s
GKN  Gorkha        47.77 277 eP      P     19 45 13.9 -0.4
     comp=Z,77nm,1.0s
PPLA Purkeypile    47.83  35 eP      P     19 45 15.8 +1.5
     comp=Z,56nm,1.7s
CAST Castle Rocks  47.89  34 eP      P     19 45 16.3 +1.7
     comp=Z,50nm,2.0s
SPU  Mount Spurr   47.90  37 eP      P     19 45 17.0 +2.2
BPAW Bear Paw Mtn. 48.39  33 eP      P     19 45 20.4 +2.0
     comp=Z,8.2nm,1.2s
KTH  Kantishna Hill 48.41 34 eP      P     19 45 20.1 +1.4
     comp=Z,37nm,1.6s
MLY  Manley        48.51  32 eP      P     19 45 21.2 +1.8
     comp=Z,18nm,1.2s
SUA  Susitna One   48.52  37 eP      P     19 45 20.0 +0.4
IPM  Ipoh          48.53 239 eP      P     19 45 19.6  -0.4
     comp=Z,18nm,1.3s
SOEI Soe           48.61 202 eP      P     19 45 19.6  -1.2
     comp=Z,91nm,1.2s
TRF  Thorofare Moun 48.69  34 eP     P     19 45 21.8 +0.8
     comp=Z,14nm,1.3s
KOLN Koldanda      48.70 277 eP      P     19 45 21.4  -0.2
     comp=Z,19nm,0.9s
COLD Coldfoot      48.81  29 eP      P     19 45 23.6 +2.0
     comp=Z,18nm,1.8s
RC01 Rabbit Creek A 49.02  37 eP     P     19 45 25.2 +1.9
     comp=Z,9.3nm,0.8s
PYUN Piuthan       49.04 278 eP      P     19 45 23.6  -0.6
     comp=Z,154nm,1.1s
BWN  Browne        49.05  33 eP      P     19 45 30.1 +6.6
     comp=Z,77nm,1.3s
PMR  Palmer        49.29  36 eP      P     19 45 30.1 +4.8
PMR                          pmax    pmax
     comp=Z,7.0nm,1.0s
PMR  Palmer        49.29  36 eP      P     19 45 30.1 +4.8
     comp=Z,7.1nm,1.0s
RND  Reindeer      49.34  34 eP      P     19 45 26.3 +0.5
RND                          pmax    pmax
     comp=Z,16nm,1.2s
RND  Reindeer      49.34  34 eP      P     19 45 26.3 +0.5
     comp=Z,16nm,1.2s
TKM2 Tokmak 2      49.53 299 eP      P     19 45 28.2 +0.4
TKM2                         pmax    pmax
     comp=Z,16nm,1.1s
TKM2 Tokmak 2      49.53 299 eP      P     19 45 28.2 +0.4
     comp=Z,16nm,1.1s
MDM  Murphy Dome   49.58  32 eP      P     19 45 29.1 +1.5
     comp=Z,27nm,1.1s
WRH  Wood River Hil 49.65  33 eP     P     19 45 29.9 +1.8
     comp=Z,11nm,0.9s
SML  Sawmill       49.66  36 eP      P     19 45 29.0 +0.8
SML                          pmax    pmax
     comp=Z,10.0nm,0.7s
SML  Sawmill       49.66  36 eP      P     19 45 29.0 +0.8
     comp=Z,10nm,0.7s
COLA College       49.74  32 P       P     19 45 30.2 +1.5
COLA                         pmax    pmax
     comp=Z,20nm,1.8s
COLA College       49.74  32 eP      P     19 45 31.3 +2.6
     comp=Z,8.0nm,0.9s
CCB  Clear Creek Bu 49.76  32 eP     P     19 45 31.3 +2.4
     comp=Z,16nm,1.7s
ILAR Eielson Array 50.15  32 P       P     19 45 32.3 +0.3
     comp=Z,6.5nm,0.8s,baz=266,slow=5.7,SNR=45
ILAR                         LR      LR    20 07 52.0
     comp=Z,88nm,20.3s,baz=280,slow=37
ILB  Eielson Array 50.15  32 eP      P     19 45 32.2 +0.3
IL1  Eielson Array 50.16  32 eP      P     19 45 31.8  -0.1
COEN Coen          50.23 177 eP      P     19 45 33.7 +0.7
     comp=Z,29nm,1.1s
FRU  Bishkek       50.25 299 eP      P     19 45 36.0 +3.0
KSH  Kashi         50.26 294 P       P     19 45 36.5 +3.3
KSH                          epP     sP    19 45 49.5 +4.3
KSH                          S       S     19 52 44.0  0.0
KSH                          sS      sS    19 53 06.0 +7.9
KSH                          pmax    pmax
     comp=Z,9.0nm,1.0s
KSH                          pmax    pmax
     comp=Z,100nm,4.5s
KSH                          LR      LR
     comp=N,360nm,14.1s
KSH                          LR      LR
     comp=E,310nm,13.2s
KSH                          LR      LR
     comp=Z,400nm,13.5s
AAK  Ala-Archa     50.39 299 P       P     19 45 34.8 +0.5
     comp=Z,1.8nm,0.4s,baz=83,slow=4.6,SNR=6.5
AAK  Ala-Archa     50.39 299⇓iP      P     19 45 36.3 +2.1
AAK                          pmax    pmax
     comp=Z,9.0nm,0.8s
AAK  Ala-Archa     50.39 299 eP      P     19 45 35.4 +1.1
     comp=Z,6.4nm,0.9s
OTUK Ortayu        50.41 306 iP      P     19 45 33.5  -0.7
OTUK                         pmax    pmax
     comp=Z,20nm,1.0s
BVAR Borovoye Array 50.63 313 P      P     19 45 35.3  -0.5
     comp=Z,8.6nm,0.9s,baz=79,slow=7.7,SNR=27
BVAR                         PcP     PcP   19 46 53.7 +0.8
     comp=Z,3.6nm,0.8s,baz=72,slow=4.8,SNR=4.8
BRVK Borovoye      50.69 313 eP      P     19 45 35.9  -0.2
BRVK                         pmax    pmax
     comp=Z,22nm,1.2s
BRVK Borovoye      50.69 313 eP      P     19 45 35.9  -0.2
     comp=Z,22nm,1.2s
FYU  Fort Yukon    50.77  30 eP      P     19 45 36.6 +0.2
     comp=Z,49nm,1.6s
KLU  Klutina       50.83  36 eP      P     19 45 42.3 +5.1
     comp=Z,6.9nm,0.7s
EKS2 Erkin-Say     50.89 299 eP      P     19 45 37.9  -0.1
EKS2                         pmax    pmax
     comp=Z,6.0nm,1.0s
EKS2 Erkin-Say     50.89 299 eP      P     19 45 37.9  -0.1
     comp=Z,5.5nm,1.0s
PAX  Paxson        50.90  34 eP      P     19 45 43.1 +5.5
PAX                          pmax    pmax
     comp=Z,7.0nm,1.1s
PAX  Paxson        50.90  34 eP      P     19 45 43.1 +5.4
     comp=Z,6.9nm,1.1s
DIV  Divide        50.94  37 eP      P     19 45 43.6 +5.7
     comp=Z,17nm,1.1s
PSI  Prapat        51.18 239 P       P     19 45 39.6  -0.7
     comp=Z,6.6nm,0.5s,baz=24,slow=2.2,SNR=6.2
PSI  Prapat        51.18 239 eP      P     19 45 40.3  -0.1
     comp=Z,8.0nm,0.6s
DOT  Dot Lake      51.47  33 eP      P     19 45 42.4 +0.5
     comp=Z,17nm,0.9s
ZRNK Zerenda       51.47 313 eP      P     19 45 40.5  -1.5
ZRNK                         pmax    pmax
     comp=Z,29nm,1.1s
ZRNK Zerenda       51.47 313 eP      P     19 45 40.5  -1.5
     comp=Z,29nm,1.1s
BMRM Bremner River 51.52  37 eP      P     19 45 44.5 +2.2
     comp=Z,12nm,0.8s
MENT Mentasta      51.70  34 eP      P     19 45 44.8 +1.2
     comp=Z,32nm,1.5s
EGAK Eagle         52.60  32 eP      P     19 45 50.8 +0.6
     comp=Z,6.7nm,0.8s
BALM Baldy         52.60  37 eP      P     19 45 51.7 +1.3
BALM                         pmax    pmax
     comp=Z,7.0nm,0.9s
BALM Baldy         52.60  37 eP      P     19 45 51.7 +1.3
     comp=Z,6.6nm,0.9s
KKAR Karatay Array 53.05 300 eP      P     19 45 54.1 +0.2
KKAR Karatay Array 53.05 300 eP      P     19 45 54.1 +0.2
GSI  Gunungsitoli  53.19 239 eP      P     19 45 55.4 +0.2
     comp=Z,140nm,1.4s
INK  Inuvik        55.04  27 P       P     19 46 08.6 +0.7
     comp=Z,10nm,0.8s,baz=290,slow=10.0,SNR=11
INK  Inuvik        55.04  27 eP      P     19 46 09.0 +1.1
     comp=Z,13nm,0.8s
SVE  Sverdlovsk    55.28 319 eP      P     19 46 10.0 +0.1
SVE                          pmax    pmax
     comp=Z,27nm,1.4s
FITZ Fitzroy Crossi 56.20 198 P      P     19 46 16.5  -0.2
     comp=Z,3.5nm,0.5s,baz=18,slow=8.0,SNR=12
WRAB Tennant Creek 56.47 187ceP      P     19 46 18.0  -0.8
WRAB                         *PP     sP    19 46 30.2  -0.6
WRAB                         pmax    pmax
     comp=Z,42nm,1.0s
WB2  Warramunga Arr 56.48 187 eP     P     19 46 18.0  -0.8
     comp=Z,15nm,0.8s
WRA  Warramunga Arr 56.48 187 P      P     19 46 17.9  -0.9
     comp=Z,11nm,0.8s,baz=5.4,slow=7.5,SNR=78
WRA  Warramunga Arr 56.48 187 P      P     19 46 18.0  -0.9
ARU  Arti          56.49 319 P       P     19 46 17.8  -0.8
     comp=Z,4.3nm,0.4s,baz=97,slow=3.5,SNR=9.5
ARU  Arti          56.49 319d iP     P     19 46 17.6  -1.0
ARU                                          19 47 15.2
ARU                                          19 48 22.6
ARU                          S       S     19 54 07.4  -0.4
ARU                          pmax    pmax
     comp=Z,14nm,0.8s
ARU  Arti          56.49 319 eP      P     19 46 17.8  -0.8
     comp=Z,14nm,0.8s
SOKR Solikamsk     56.50 323 eP      P     19 46 20.0 +1.5
SOKR                         pmax    pmax
     comp=Z,15nm,1.1s
SOKR                         MLR     MLR
     comp=Z,213nm,28.0s
KBL  Kabul         57.23 291 eP      P     19 46 23.1  -1.4
KBL                          pmax    pmax
     comp=Z,15nm,1.1s
KBL  Kabul         57.23 291 eP      P     19 46 23.1  -1.4
     comp=Z,15nm,1.1s
HYB  Hyderabad     57.79 268 iP      P     19 46 28.0  -0.3
ABKAR Akbulak array 57.98 310 eP     P     19 46 27.7  -1.4
AKTO Aktyubinsk    58.73 312 P       P     19 46 34.8 +0.3
     comp=Z,4.3nm,1.1s,baz=88,slow=8.9,SNR=8.6
DLBC Dease Lake    59.29  38 eP      P     19 46 42.2 +3.9
     comp=Z,29nm,1.5s
AS01 Alice Springs 60.20 187 eP      P     19 46 44.0  -0.8
AS31 Alice Springs 60.21 187 eP      P     19 46 44.5  -0.3
     comp=Z,1.9nm,0.7s
ASAR Alice Springs 60.21 187 P       P     19 46 44.3  -0.5
     comp=Z,6.3nm,0.7s,baz=16,slow=5.3,SNR=68
MBWA Marble Bar    60.75 203 eP      P     19 46 48.0  -0.5
     comp=Z,52nm,0.9s
POO  Poona         60.99 272 ex      P     19 46 47.0  -3.5
DZM  Mont Dzumac   63.05 153 eP      P     19 47 04.5 +0.4
     comp=Z,29nm,1.2s
GEYT Alibeck       63.74 299 P       P     19 47 08.7 +0.1
     comp=Z,3.6nm,0.7s,baz=46,slow=4.3,SNR=18
GEYT                         LR      LR    20 15 01.7
     comp=Z,172nm,20.8s,baz=95,slow=36
KLMR Klimovskoe    63.99 328 eP      P     19 47 08.0  -1.8
KLMR                         e*SP    sP    19 47 22.8 +0.9
KLMR                         e             19 49 29.3
KLMR                         pmax    pmax
     comp=Z,12nm,1.0s
ARCES ARCESS Array B 64.35 339 P     P     19 47 11.8  -0.2
     comp=Z,3.2nm,0.8s,baz=52,slow=12,SNR=4.2
ARCES                        LR      LR    20 20 28.4
     comp=Z,77nm,18.5s,baz=64,slow=41
YKW3 Yellowknife Ar 64.43  30 eP     P     19 47 13.2 +0.6
     comp=Z,18nm,1.5s
YKA  Yellowknife Ar 64.47  30 P      P     19 47 13.1 +0.3
     comp=Z,4.8nm,1.0s,baz=295,slow=6.6,SNR=18
YKA  Yellowknife Ar 64.47  30 P      P     19 47 13.1 +0.3
YKA                          pmax    pmax
     comp=Z,3.0nm,0.8s
YKB5 Yellowknife Ar 64.47  30 eP     P     19 47 13.9 +1.1
DAG  Danmarks Havn 66.27 355 iP      P     19 47 24.3  0.0
     comp=Z,3.5nm,0.9s
DAG  Danmarks Havn 66.27 355 iP      P     19 47 24.3  0.0
DAG                          pmax    pmax
     comp=Z,3.0nm,0.9s
MOS  Moscow        67.44 323 eP      P     19 47 34.4 +2.3
VRH  Novokhopyorsk 67.70 318 eP      P     19 47 32.7  -1.2
VRH                          pmax    pmax
     comp=Z,5.0nm,0.5s
STKA Stephens Creek 68.03 179 P      P     19 47 34.9  -1.1
     comp=Z,5.6nm,0.9s,baz=334,slow=6.7,SNR=9.9
OBN  Obninsk       68.28 323 iP      P     19 47 37.0  -0.4
OBN                          i             19 48 01.7
OBN                          i             19 50 09.7
OBN                          iS      SKiKP 19 57 14.0  -16
OBN                          iSS     SS    20 00 59.8 +1.2
OBN                          pmax    pmax
     comp=Z,5.0nm,0.7s
LPSR Galich'ya Gora 68.45 320 eP     P     19 47 39.2 +0.7
LPSR                         pmax    pmax
     comp=Z,10.0nm,0.8s
VSR  Storozhevoye  69.07 319 eP      P     19 47 41.4  -1.0
VSR                          pmax    pmax
     comp=Z,7.0nm,0.7s
FIA1 FINESS Array S 69.09 332 eP     P     19 47 41.3  -1.0
FINES FINESS Array B 69.10 332 P     P     19 47 42.5 +0.1
     comp=Z,4.8nm,0.7s,baz=44,slow=12,SNR=15
FINES                        LR      LR    20 22 23.9
     comp=Z,162nm,18.0s,baz=33,slow=40
FINES FINESS Array B 69.10 332ceP    P     19 47 44.0 +1.6
FINES                        pmax    pmax
     comp=Z,5.0nm,0.7s
H04A Detroit Lake  69.75  49 eP      P     19 47 48.8 +2.0
     comp=Z,29nm,1.3s
GOF  Gofitskoye    70.15 312⇑eP      P     19 47 52.6 +3.4
WSAR Wadi Sarin    70.62 285 LR      LR    20 22 59.9
     comp=Z,85nm,19.5s,baz=90,slow=40
ZEI  Tsey          70.83 309 eP      P     19 47 51.8  -1.8
ZEI                          pmax    pmax
     comp=Z,16nm,0.9s
KBZ  Khabaz        70.94 311 P       P     19 47 53.8  -0.2
     comp=Z,6.5nm,1.0s,baz=43,slow=3.9,SNR=12
KIV  Kislovodsk    70.95 311 eP      P     19 47 55.1 +0.8
KIV                          pmax    pmax
     comp=Z,32nm,1.1s
KIV  Kislovodsk    70.95 311 eP      P     19 47 55.0 +0.8
     comp=Z,27nm,1.0s
SUMG Summit        71.21 360 iP      P     19 47 56.8 +1.1
SUMG Summit        71.21 360 eP      P     19 47 56.3 +0.6
SUMG                         pmax    pmax
     comp=Z,18nm,0.9s
SUMG Summit        71.21 360 eP      P     19 47 56.3 +0.6
     comp=Z,18nm,0.9s
NEY  Neytrino      71.31 310⇑iP      P     19 47 57.8 +1.3
NEY                          pmax    pmax
     comp=Z,2.0nm,1.1s
K05A Summer Lake   71.59  50 eP      P     19 48 00.4 +2.2
     comp=Z,38nm,1.4s
GNI  Garni         71.70 307⇓iP      P     19 48 00.9 +2.0
GNI                          pmax    pmax
     comp=Z,76nm,1.7s
WDC  Whiskeytown Da 71.71  53 eP     P     19 48 00.5 +1.8
WDC                          pmax    pmax
     comp=Z,9.0nm,1.1s
WDC  Whiskeytown Da 71.71  53 eP     P     19 48 00.5 +1.8
     comp=Z,8.8nm,1.1s
WALA Waterton Lakes 72.10  42 eP     P     19 48 00.7  -0.4
     comp=Z,26nm,1.6s
JTMT Jette         72.65  43 eP      P     19 48 06.7 +2.3
SWMT Swartz Lake   72.95  43 eP      P     19 48 07.7 +1.5
MSO  Missoula      73.38  44 eP      P     19 48 09.7 +0.9
ANN  Anapa         73.61 314 eP      P     19 48 10.5 +0.6
ANN                          pmax    pmax
     comp=Z,33nm,1.4s
CHMT Chamberlain Mo 73.71  43 eP     P     19 48 15.3 +4.5
PAHR Pah Rah Range 74.21  52 eP      P     19 48 15.2 +1.4
ILULI Ilulissat    74.22   4 iP      P     19 48 17.1 +4.0
```

comp=Z,19nm,0.8s
ILULI **Ilulissat** **74.22** **4** *e*P **P** **19 48 17.1 +4.0**
ILULI pmax pmax
comp=Z,19nm,0.8s
MFID **Camas Ranch** **74.28** **47** *e*P **P** **19 48 15.7 +1.6**
comp=Z,20nm,1.4s
FFC **Flin Flon** **74.36** **32** *e*P **P** **19 48 15.0 +0.8**
FFC pmax pmax
comp=Z,26nm,1.0s
FFC **Flin Flon** **74.36** **32** *e*P **P** **19 48 15.0 +0.8**
comp=Z,26nm,1.0s
AKASG **Malin Array Be** **74.47** **322** P **P** **19 48 14.1 -0.8**
comp=Z,6.2nm,0.7s,baz=47,slow=6.0,SNR=14
NC204 **NORSAR Array S** **74.48** **337** *e*P **P** **19 48 18.2 +3.4**
KIEV **Kiev** **74.48** **322** ⇑*i*P **P** **19 48 14.4 -0.5**
KIEV pmax pmax
comp=Z,19nm,1.5s
KIEV **Kiev** **74.48** **322** *e*P **P** **19 48 14.1 -0.8**
comp=Z,10nm,0.9s
CMB **Columbia Colle** **74.50** **54** *e*P **P** **19 48 16.8 +1.4**
CMB pmax pmax
comp=Z,10.0nm,0.9s
CMB **Columbia Colle** **74.50** **54** *e*P **P** **19 48 16.8 +1.4**
comp=Z,10.0nm,0.9s
AK11 **Malin Array Si** **74.51** **322** *e*P **P** **19 48 15.0 -0.1**
NB2 **NORSAR Subarra** **74.52** **337** P **P** **19 48 14.4 -0.6**
comp=Z,8.7nm,1.0s,baz=40,slow=6.2
NOA **NORSAR Array B** **74.52** **337** P **P** **19 48 14.8 -0.3**
comp=Z,3.6nm,0.7s,baz=38,slow=5.8,SNR=14
NOA LR LR 20 23 24.2
comp=Z,110nm,21.1s,baz=35,slow=38
NBO02 **NORSAR Array S** **74.62** **337** *e*P **P** **19 48 19.5 +3.9**
FCC **Fort Churchill** **74.65** **26** *e*P **P** **19 48 16.3 +0.5**
FCC pmax pmax
comp=Z,25nm,1.0s
FCC **Fort Churchill** **74.65** **26** *e*P **P** **19 48 16.3 +0.5**
comp=Z,25nm,1.0s
LRM **Limekiln Ridge** **74.80** **44** *e*P **P** **19 48 18.3 +1.0**
WAKR **Walker** **74.85** **53** *e*P **P** **19 48 19.4 +1.8**
DLMT **Dillon** **75.00** **44** *e*P **P** **19 48 19.4 +1.1**
comp=Z,52nm,1.5s
HLID **Hailey** **75.02** **47** *e*P **P** **19 48 17.8 -0.7**
comp=Z,14nm,1.5s
BMN **Battle Mountai** **75.15** **51** *e*P **P** **19 48 21.1 +1.9**
BMN pmax pmax
comp=Z,11nm,1.0s
BMN **Battle Mountai** **75.15** **51** *e*P **P** **19 48 21.1 +1.9**
comp=Z,11nm,1.0s
MCMT **McKenzie Canyo** **75.18** **45** *e*P **P** **19 48 18.7 -0.7**
BOZ **Bozeman (W)** **75.37** **44** *e*P **P** **19 48 21.5 +1.1**
BOZ pmax pmax
comp=Z,24nm,1.4s
BOZ **Bozeman (W)** **75.37** **44** *e*P **P** **19 48 21.5 +1.1**
comp=Z,24nm,1.4s
SIM **Simferopol'** **75.42** **315** *e*P **P** **19 48 20.1 -0.4**
SIM S **S** **19 57 53.0 -5.7**
SIM pmax pmax
comp=Z,12nm,0.8s
NV01 **Mina Array Sit** **75.62** **53** *e*P **P** **19 48 23.2 +1.1**
NVAR **Mina Array Bea** **75.62** **53** P **P** **19 48 23.2 +1.1**
comp=Z,7.0nm,0.8s,baz=305,slow=6.2,SNR=33
NVAR LR LR 20 16 46.5
comp=Z,58nm,21.8s,baz=266,slow=32
NV11 **Mina Array Sit** **75.72** **53** *e*P **P** **19 48 23.7 +1.2**
comp=Z,19nm,1.6s
KLNR **Kaliningrad** **75.97** **329** *i*P **P** **19 48 25.7 +2.3**
KLNR pmax pmax
comp=Z,21nm,1.2s
KONO **Kongsberg** **76.11** **337** *i*P **P** **19 48 27.3 +3.2**
KONO pmax pmax
comp=Z,74nm,1.1s
ELK **Elko** **76.19** **49** *e*P **P** **19 48 24.2 -1.1**
ELK pmax pmax
comp=Z,6.0nm,1.1s
ELK **Elko** **76.19** **49** *e*P **P** **19 48 24.2 -1.1**
comp=Z,5.5nm,1.1s
SORM **Soroca** **76.55** **321** ⇓*i*P **P** **19 48 25.9 -0.9**
H17A **Grant Village** **76.73** **44** *e*P **P** **19 48 29.2 +0.9**
comp=Z,20nm,1.0s
IMW **Indian Meadow** **76.83** **45** *e*P **P** **19 48 31.0 +2.1**
comp=Z,28nm,1.4s
FLWY **Flagg Ranch** **76.85** **45** *e*P **P** **19 48 29.2 +0.3**
comp=Z,52nm,1.6s
FXWY **Fox Creek** **76.94** **45** *e*P **P** **19 48 31.6 +2.1**
comp=Z,17nm,1.4s
RLMT **Red Lodge** **77.00** **43** *e*P **P** **19 48 28.8 -1.0**
comp=Z,20nm,1.4s
MOOW **Moose Ponds** **77.03** **45** *e*P **P** **19 48 31.9 +1.9**
comp=Z,20nm,1.5s
TPAW **Teton Pass** **77.07** **45** *e*P **P** **19 48 32.3 +2.0**
comp=Z,10nm,1.1s
LOHW **Long Hollow** **77.20** **45** *e*P **P** **19 48 32.7 +1.9**
comp=Z,14nm,1.5s
DAC **Darwin (Calif)** **77.34** **54** *e*P **P** **19 48 32.8 +1.1**
DAC pmax pmax
comp=Z,4.0nm,0.8s
DAC **Darwin (Calif)** **77.34** **54** *e*P **P** **19 48 32.8 +1.1**
comp=Z,3.9nm,0.8s
R11A **Troy Canyon, C** **77.40** **52** *e*P **P** **19 48 33.2 +1.1**
comp=Z,10nm,1.0s
LVV **L'vov** **77.57** **324** *e*P **P** **19 48 36.0 +3.4**
LVV MLR MLR
comp=N,100nm,13.0s
LVV MLR MLR
comp=Z,200nm,13.0s
LVV MLR MLR
comp=E,100nm,11.0s
LAO **LASA Array** **77.64** **40** *e*P **P** **19 48 33.9 +0.8**
comp=E,28nm,1.1s
TPNV **Topopah Spring** **77.81** **53** *e*P **P** **19 48 35.8 +1.4**
TPNV pmax pmax
comp=Z,13nm,0.9s
TPNV **Topopah Spring** **77.81** **53** *e*P **P** **19 48 35.8 +1.4**
comp=Z,13nm,0.9s
HWUT **Hardware Ranch** **77.88** **47** *e*P **P** **19 48 36.1 +1.4**
comp=Z,33nm,1.5s
DUG **Dugway, Tooele** **78.00** **49** *e*P **P** **19 48 36.7 +1.4**
DUG pmax pmax
comp=Z,9.0nm,0.8s
DUG **Dugway, Tooele** **78.00** **49** *e*P **P** **19 48 36.7 +1.4**
comp=Z,8.7nm,0.8s
BW06 **Boulder Array** **78.32** **45** *e*P **P** **19 48 37.5 +0.3**
PD31 **Pinedale Array** **78.32** **45** *e*P **P** **19 48 38.0 +0.8**
PDAR **Pinedale Array** **78.32** **45** P **P** **19 48 38.0 +0.8**
comp=Z,2.0nm,0.6s,baz=257,slow=2.0,SNR=20
PDAR LR LR 20 21 56.9
comp=Z,28nm,19.9s,baz=338,slow=35
KWP **Kalwaria Pacla** **78.33** **324** *e*P **P** **19 48 37.6 +0.8**
KWP **Kalwaria Pacla** **78.33** **324** ⇑*i*P **P** **19 48 37.5 +0.8**
KWP **Kalwaria Pacla** **78.33** **324** *e*P **P** **19 48 37.6 +0.8**
PSUT **Pine Spring** **78.38** **51** *e*P **P** **19 48 39.0 +1.4**
comp=Z,6.9nm,1.0s
GSC **Goldstone, Bar** **78.43** **55** *e*P **P** **19 48 38.9 +1.2**
GSC pmax pmax
comp=Z,7.0nm,1.0s
GSC **Goldstone, Bar** **78.43** **55** *e*P **P** **19 48 38.9 +1.2**
comp=Z,6.9nm,1.0s
BUR08 **Bucovina Ar. S** **78.47** **322** *e*P **P** **19 48 37.9 +0.2**
BURAR **Bucovina Array** **78.48** **322** ⇓*i*P **P** **19 48 37.6 -0.2**
TESR **Tescani** **78.48** **320** ⇓*i*P **P** **19 48 37.5 -0.2**
CFR **Carcaliu** **78.58** **318** ⇓*i*P **P** **19 48 37.5 -0.7**
VRI **Vrincioaia** **78.87** **319** ⇓*i*P **P** **19 48 40.4 +0.5**
BR131 **Keskin Array S** **78.90** **311** *e*P **P** **19 48 41.0 +0.6**
BRTR **Keskin Array B** **78.90** **311** P **P** **19 48 40.4 +0.1**
comp=Z,9.4nm,1.1s,baz=103,slow=3.9,SNR=19
PLOR **Plostina** **78.92** **320** ⇑*i*P **P** **19 48 40.4 +0.2**
HARR **Harsova** **79.01** **318** ⇓*i*P **P** **19 48 39.1 -1.5**
KOLS **Kolonicke sedl** **79.02** **324** *e*P **P** **19 48 41.1 +0.5**
KOLS pmax pmax
comp=Z,12nm,1.5s
KOLS **Kolonicke sedl** **79.02** **324** *e*P **P** **19 48 41.1 +0.5**
STHS **Stebnicka Huta** **79.16** **325** *e*P **P** **19 48 41.7 +0.3**
STHS pmax pmax
comp=Z,8.0nm,1.1s
STHS **Stebnicka Huta** **79.16** **325** *e*P **P** **19 48 41.7 +0.3**
UZH **Uzhgorod** **79.22** **324** *e*P **P** **19 48 38.5 -3.1**
UZH *e* 19 48 46.5
UZH *i* 19 48 52.5
OJC **Ojcow** **79.26** **326** *e*P **P** **19 48 42.5 +0.7**
OJC **Ojcow** **79.26** **326** *e*P **P** **19 48 42.4 +0.5**
OJC pmax pmax
comp=Z,26nm,1.2s
OJC **Ojcow** **79.26** **326** *e*P **P** **19 48 42.4 +0.5**
comp=Z,26nm,1.2s
CCUT **Cedar City** **79.28** **51** *e*P **P** **19 48 42.7 +0.1**
comp=Z,6.0nm,1.0s

ANTO **Ankara** **79.32** **312** *e*P **P** **19 48 42.3 -0.2**
ANTO pmax pmax
comp=Z,11nm,0.9s
ANTO **Ankara** **79.32** **312** *e*P **P** **19 48 42.3 -0.2**
comp=Z,11nm,0.9s
BR231 **Keskin MP Arra** **79.35** **312** *e*P **P** **19 48 41.0 -1.7**
MSAB **Monastry St. A** **79.46** **318** ⇓*i*P **P** **19 48 43.9 +0.9**
DOPR **Dopca** **79.50** **320** ⇓*i*P **P** **19 48 44.2 +0.9**
MLR **Muntele Rosu** **79.53** **320** ⇓*i*P **P** **19 48 43.3 -0.3**
TMUT **Trail Mountain** **79.53** **49** *e*P **P** **19 48 45.5 +1.5**
comp=Z,5.9nm,0.8s
LCMT **Little Creek M** **79.69** **52** *e*P **P** **19 48 46.5 +1.8**
comp=Z,9.8nm,0.9s
KNB **Kanab** **79.95** **51** *e*P **P** **19 48 48.3 +2.2**
KNB pmax pmax
comp=Z,13nm,1.1s
KNB **Kanab** **79.95** **51** *e*P **P** **19 48 48.3 +2.2**
comp=Z,13nm,1.1s
VOIR **80.03** **320** ⇓*i*P **P** **19 48 46.3 0.0**
SRU **San Rafael Swe** **80.06** **48** *e*P **P** **19 48 48.1 +1.4**
SRU pmax pmax
comp=Z,12nm,0.8s
SRU **San Rafael Swe** **80.06** **48** *e*P **P** **19 48 48.1 +1.4**
comp=Z,12nm,0.8s
ULM **Lac du Bonnet** **80.16** **33** P **P** **19 48 46.5 -0.3**
comp=Z,6.2nm,0.8s,baz=302,slow=4.6,SNR=3.5
ULM LR LR 20 27 39.1
comp=Z,42nm,18.3s,baz=280,slow=38
ULM **Lac du Bonnet** **80.16** **33** *e*P **P** **19 48 47.1 +0.4**
comp=Z,46nm,1.6s
LANS **Liptovska Anna** **80.17** **325** *e*P **P** **19 48 48.2 +1.3**
LANS **Liptovska Anna** **80.17** **325** *e*P **P** **19 48 48.2 +1.3**
OKC **Ostrava-Krasne** **80.27** **326** *ex* **P** **19 48 52.1 +4.7**
OKC **Ostrava-Krasne** **80.27** **326** *e*P **P** **19 48 52.1 +4.7**
PRD **Provadia** **80.28** **317** *e*P **P** **19 48 50.9 +3.4**
ARR **Arges** **80.30** **320** ⇓*i*P **P** **19 48 48.6 +0.9**
W13A **Hualapai Mount** **80.45** **53** *e*P **P** **19 48 47.7 -1.2**
comp=Z,5.8nm,1.1s
RSSD **Black Hills** **80.49** **41** *e*P **P** **19 48 50.3 +1.3**
RSSD pmax pmax
comp=Z,18nm,1.4s
RSSD **Black Hills** **80.49** **41** *e*P **P** **19 48 50.3 +1.3**
comp=Z,18nm,1.4s
MORC **Moravsky Berou** **80.58** **327** *e*P **P** **19 48 49.6 +0.5**
MORC pmax pmax
comp=Z,30nm,0.6s
MORC **Moravsky Berou** **80.58** **327** *e*P **P** **19 48 49.6 +0.5**
comp=Z,30nm,0.6s
U15A **North Rim** **80.65** **51** *e*P **P** **19 48 51.9 +1.8**
comp=Z,11nm,1.0s
DPC **Dobruska-Polom** **80.69** **328** *e*P **P** **19 48 50.4 +0.7**
DPC *e*PCP **PcP** **19 48 54.5 -1.9**
DPC AMS AMS 20 29 00.0
comp=Z,300nm,14.4s
DPC **Dobruska-Polom** **80.69** **328** *e*P **P** **19 48 50.4 +0.7**
DPC MLR MLR
comp=Z,300nm,14.4s
UPC **Upice** **80.71** **328** *e*P **P** **19 48 50.1 +0.4**
UPC *e*PCP **PcP** **19 48 54.1 -2.3**
UPC AMS AMS 20 32 00.0
comp=Z,300nm,17.6s
UPC **Upice** **80.71** **328** *e*P **P** **19 48 50.1 +0.4**
UPC MLR MLR
comp=Z,300nm,17.6s
O20A **White River Ci** **80.76** **47** *e*P **P** **19 48 51.7 +1.2**
comp=Z,31nm,1.6s
PSZ **Piszkesteto** **80.86** **324** ⇓*i*P **P** **19 48 50.8 +0.2**
PSZ **Piszkesteto** **80.86** **324** *e*P **P** **19 48 50.9 +0.2**
PSZ pmax pmax
comp=Z,25nm,1.3s
PSZ **Piszkesteto** **80.86** **324** *e*P **P** **19 48 50.9 +0.2**
comp=Z,25nm,1.3s
Y12C **Blythe** **80.86** **55** *e*P **P** **19 48 50.5 -0.3**
comp=Z,9.1nm,0.8s
GLA **Glamis** **81.09** **55** *e*P **P** **19 48 54.9 +2.7**
GLA pmax pmax
comp=Z,12nm,0.8s
GLA **Glamis** **81.09** **55** *e*P **P** **19 48 54.9 +2.7**
comp=Z,12nm,0.8s
GZR **Gura Zlata** **81.23** **321** ⇑*i*P **P** **19 48 52.8 +0.1**
BRG **Berggiesshubel** **81.30** **329** *e*P **P** **19 48 52.9 0.0**
comp=Z,4.7nm,1.0s
BRG *e* 19 48 56.5
comp=Z,13nm,1.1s
comp=N,131nm,13.1s
comp=E,155nm,14.8s
comp=Z,237nm,15.5s
BRG **Berggiesshubel** **81.30** **329** *e*P **P** **19 48 52.9 0.0**
BRG pmax pmax
comp=Z,5.0nm,1.0s
BRG MLR MLR
comp=N,131nm,13.1s
BRG MLR MLR
comp=E,155nm,14.8s
BRG MLR MLR
comp=Z,237nm,15.5s
PVCC **Panska Ves** **81.31** **329** *ex* **P** **19 48 57.1 +4.2**
PVCC AMS AMS 20 29 50.0
comp=Z,300nm,15.4s
PVCC **Panska Ves** **81.31** **329** *e*P **P** **19 48 57.1 +4.2**
PVCC MLR MLR
comp=Z,300nm,15.4s
VRAC **Vranov** **81.35** **327** LR LR 20 27 01.7
comp=Z,143nm,18.4s,baz=9.5,slow=37
CLL **Collm** **81.36** **330** *i*P **P** **19 48 52.8 -0.3**
comp=Z,11nm,1.1s
CLL *i* 19 48 56.4
comp=Z,24nm,1.3s
CLL *e* 19 49 01.0
CLL **Collm** **81.36** **330** *i*P **P** **19 48 52.8 -0.3**
CLL pmax pmax
comp=Z,11nm,1.1s
CLL **Collm** **81.36** **330** *e*P **P** **19 48 53.0 -0.1**
comp=Z,16nm,1.0s
PV05 **Paradox Valley** **81.58** **49** *e*P **P** **19 48 56.5 +1.7**
N23A **Red Feather La** **81.59** **45** *e*P **P** **19 48 56.5 +1.6**
comp=Z,27nm,1.2s
BZS **Buzias** **81.65** **322** ⇓*i*P **P** **19 48 54.6 -0.2**
GOPC **GO Pecny, Ondr** **81.68** **328** AMS AMS 20 28 50.0
comp=Z,300nm,15.2s
PRU **Pruhonice** **81.72** **328** *e*P **P** **19 48 55.5 +0.4**
PRU *e*PCP **PcP** **19 48 59.5 -1.4**
PRU **Pruhonice** **81.72** **328** *e*P **P** **19 48 55.5 +0.4**
Y14A **Wickenburg** **81.74** **54** *e*P **P** **19 48 56.6 +1.0**
comp=Z,20nm,0.8s
TREC **Trest** **81.84** **327** AMS AMS 20 30 10.0
comp=Z,200nm,13.0s
PV01 **Paradox Valley** **81.86** **48** *e*P **P** **19 48 57.8 +1.4**
MMAI **Mount Meron Ar** **81.94** **305** LR LR 20 27 50.6
comp=Z,76nm,20.8s,baz=90,slow=38
CSS **Mathiatis** **82.07** **308** *e*P **P** **19 48 57.3 0.0**
comp=Z,3.3nm,1.0s
SMCO **Snowmass** **82.13** **47** *e*P **P** **19 48 58.8 +0.8**
comp=Z,20nm,1.5s
MDVR **Moldovita** **82.19** **321** ⇓*i*P **P** **19 48 57.4 -0.4**
KDZ **Kundzhali** **82.40** **317** *e*P **P** **19 49 03.3 +4.4**
NKC **Novy Kostel** **82.41** **330** *e*P **P** **19 48 59.4 +0.7**
NKC *e*PCP **PcP** **19 49 03.0 -0.9**
NKC *ep*P **pP** **19 49 07.8 0.0**
NKC **Novy Kostel** **82.41** **330** *e*P **P** **19 48 59.4 +0.7**
NKC *e* 19 49 07.8
MVCO **Mesa Verde** **82.50** **49** *e*P **P** **19 48 59.5 -0.3**
comp=Z,8.3nm,1.1s
ISCO **Idaho Springs** **82.51** **45** *e*P **P** **19 49 01.4 +1.5**
ISCO pmax pmax
comp=Z,7.0nm,1.1s
ISCO **Idaho Springs** **82.51** **45** *e*P **P** **19 49 01.4 +1.5**
comp=Z,6.9nm,1.1s
CONA **Conrad Observa** **82.70** **326** *i*P **P** **19 49 01.2 +0.8**
comp=Z,21nm,1.9s
KHC **Kasperske Hory** **82.78** **328** *e*P **P** **19 49 01.0 +0.3**
KHC *e*PCP **PcP** **19 49 04.2 -1.4**
KHC AMS AMS 20 30 10.0
comp=Z,300nm,17.5s
KHC **Kasperske Hory** **82.78** **328** *e*P **P** **19 49 01.0 +0.3**
KHC MLR MLR
comp=Z,300nm,17.5s
KHC **Kasperske Hory** **82.78** **328** *e*P **P** **19 49 00.1 -0.7**
comp=Z,3.5nm,1.0s
GEC2 **GERESS Array S** **82.95** **328** *e*P **P** **19 49 02.1 +0.4**
GEC2 pmax pmax
comp=Z,12nm,1.4s
GEC2 **GERESS Array S** **82.95** **328** *e*P **P** **19 49 02.1 +0.4**
comp=Z,12nm,1.4s
GERES **GERESS Array B** **82.95** **328** P **P** **19 49 01.1 -0.6**
comp=Z,1.2nm,0.4s,baz=35,slow=4.9,SNR=12

GERES LR LR 20 28 18.2
comp=Z,94nm,18.1s,baz=35,slow=37
GEA0 **GERESS Array S** **82.96** **328** *e*P **P** **19 49 01.1 -0.6**
S22A **4UR Ranch, Cre** **83.16** **48** *e*P **P** **19 49 03.8 +0.6**
comp=Z,9.0nm,1.0s
X18A **Snowflake** **83.33** **52** *e*P **P** **19 49 05.5 +1.5**
comp=Z,8.4nm,1.1s
ARSA **Arzberg** **83.36** **326** *i* PcP **P** **19 49 05.3 +1.6**
comp=Z,5.2nm,1.2s
MMB **Musomiste** **83.37** **318** *e*P **P** **19 49 07.5 +3.6**
MOA **Molln** **83.46** **327** *i*P **P** **19 49 04.5 +0.3**
comp=Z,10nm,1.6s
KKB **Krupnik** **83.52** **318** *e*P **P** **19 49 09.0 +4.3**
SOKA **Soboth** **84.01** **326** *i*P **P** **19 49 07.2 +0.1**
comp=Z,21nm,1.1s
VAY **Valandovo** **84.18** **318** *i*P **P** **19 49 08.3 +0.3**
TUC **Tucson** **84.21** **54** *e*P **P** **19 49 09.9 +1.4**
TUC pmax pmax
comp=Z,11nm,1.3s
TUC **Tucson** **84.21** **54** *e*P **P** **19 49 09.9 +1.4**
comp=Z,11nm,1.3s
SKO **Skopje** **84.32** **319** *i*P **P** **19 49 09.8 +1.1**
KBA **Koelnbreinsper** **84.46** **327** *i* PcP **P** **19 49 10.8 +1.3**
comp=Z,8.1nm,1.3s
ECSD **EROS Data Cent** **84.58** **38** *e*P **P** **19 49 10.4 +0.4**
comp=Z,11nm,1.1s
PPT **Papeete** **84.76** **116** LR LR 20 23 04.7
comp=Z,54nm,18.8s,baz=329,slow=33
T25A **Trinidad** **84.99** **47** *e*P **P** **19 49 13.8 +1.4**
comp=Z,15nm,0.9s
ABTA **Abofaltersbach** **85.08** **327** *i* PcP **P** **19 49 15.0 +2.4**
comp=Z,6.2nm,1.2s
PDG **Podgorica** **85.12** **321** ⇓*i*P **P** **19 49 12.4 -0.3**
ANMO **Albuquerque** **85.23** **50** *c i*P **P** **19 49 15.7 +2.0**
ANMO pmax pmax
comp=Z,11nm,1.2s
ANMO **Albuquerque** **85.23** **50** *e*P **P** **19 49 15.3 +1.6**
comp=Z,9.2nm,1.0s
RETA **Reutte** **85.25** **329** *i*P **P** **19 49 13.4 0.0**
comp=Z,12nm,1.2s
OHR **Ohrid** **85.27** **319** *i*P **P** **19 49 13.1 -0.5**
KARP **Karpathos** **85.52** **312** *e*P **P** **19 49 14.3 -0.6**
comp=Z,10.0nm,1.1s
BFO **Black Forest** **85.57** **330** *ce*P **P** **19 49 15.3 +0.4**
BFO **Black Forest** **85.57** **330** *e*P **P** **19 49 14.9 0.0**
comp=Z,71nm,1.9s
DAVA **Damuels** **85.77** **329** *i*P **P** **19 49 15.8 -0.3**
comp=Z,8.8nm,1.0s
SCHQ **Schefferville** **85.95** **16** P **P** **19 49 16.7 0.0**
comp=Z,13nm,0.7s,baz=270,slow=6.1,SNR=3.8
SCHQ LR LR 20 31 46.6
comp=Z,75nm,18.5s,baz=280,slow=38
SCHQ **Schefferville** **85.95** **16** *e*P **P** **19 49 15.4 -1.3**
comp=Z,13nm,0.8s
DAVOX **Davos/Dischmat** **86.17** **329** LR LR 20 31 11.5
comp=Z,125nm,18.8s,baz=1.0,slow=38
LAST **Lasithi** **86.79** **312** ⇓*i*P **P** **19 49 22.0 +0.8**
IDI **Anoyia** **87.05** **313** ⇓*i*P **P** **19 49 21.3 -1.2**
IDI **Anoyia** **87.05** **313** *e*P **P** **19 49 23.1 +0.6**
comp=Z,30nm,1.3s
KSU1 **Kansas State U** **87.97** **41** *e*P **P** **19 49 29.8 +3.1**
comp=Z,11nm,0.9s
TIP **Timpagrande** **88.80** **320** *e*P **P** **19 49 31.2 +0.5**
comp=Z,18nm,1.6s
ATD **Arta Tunnel** **89.61** **284** LR LR 20 34 42.3
comp=Z,72nm,19.0s,slow=39
TX31 **Lajitas Ar. Si** **90.76** **52** *e*P **P** **19 49 40.8 +0.6**
TXAR **Lajitas Array** **90.76** **52** P **P** **19 49 40.8 +0.6**
comp=Z,3.7nm,0.9s,baz=292,slow=2.5,SNR=13
TXAR LR LR 20 24 24.5
comp=Z,71nm,21.9s,baz=0.0,slow=32
TRQ **Mont Tremblant** **91.68** **24** *e*P **P** **19 49 43.8 -0.2**
MIAR **Mount Ida** **92.98** **42** *e*P **P** **19 49 49.8 -0.4**
MIAR pmax pmax
comp=Z,13nm,1.2s
MIAR **Mount Ida** **92.98** **42** *e*P **P** **19 49 49.8 -0.4**
comp=Z,13nm,1.2s
KEST **Kesra** **95.20** **322** LR LR 20 36 32.2
comp=Z,90nm,19.7s,baz=258,slow=38
CASY **Casey** **105.10** **192** *e*Pdif **Pdif** **19 50 41.4 -2.2**
MAW **Mawson** **118.89** **205** PKP **PKPdf** **19 55 24.6 +0.7**
comp=Z,2.4nm,0.8s,baz=137,slow=6.4,SNR=5.4
SAML **Samuel** **144.90** **45** *e*PKPbc **PKPab** **19 56 12.8 -0.7**
LPAZ **La Paz** **147.30** **60** PKPbc **PKPbc** **19 56 21.7 +0.3**
comp=Z,9.2nm,0.8s,baz=345,slow=2.2,SNR=18
LPAZ **La Paz** **147.30** **60** *e*PKPbc **PKPbc** **19 56 22.1 +0.6**
PB11 **IPOC Station P** **148.48** **66** *e*PKPbc **PKPbc** **19 56 24.4 +0.5**
LVC **Limon Verde** **150.73** **70** *e*PKPbc **PKPbc** **19 56 31.0 +1.3**
LCO **Las Campanas** **152.47** **83** *e*PKPbc **PKPbc** **19 56 34.3 +1.0**

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*ISK **30** 19:42:47.2, 39.°10N×29.°06E, h8km, MD2.7*
*ISCJB **30** 19:42:48.4±0.5, 39.°12N±0.°03×29.°04E±0.°04, h5km±7km, Error ellipse: s-maj=5.4km s-min=4.2km az=37.9*
*CSEM **30** 19:42:48.6±0.2, 39.°13N×29.°05E, h10km, MD2.8, Error ellipse: s-maj=5.8km s-min=4.4km az=106.0*
*DDA **30** 19:42:49.2, 39.°12N×29.°07E, h7km, Md2.8*
ISC 30 19:42:48.1±1.1, 39.°10N±0.°02×29.°06E±0.°02, h7km±10km, n28, σ0°63/44, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**258**	P	**Pb**	**19 42 56.1**	**+0.6**
DEMI				S	**Sb**	**19 43 00.4**	**0.0**
DEMI	**Demirci**	**0.28**	**258**	*i* P	**Pb**	**19 42 56.1**	**+0.6**
DEMI				*i* S	**Sb**	**19 43 00.4**	**0.0**
GDZ	**Gediz**	**0.33**	**92**	P	**Pb**	**19 42 56.2**	**-0.2**
GDZ				S	**Sb**	**19 43 00.6**	**-1.4**
GDZ	**Gediz**	**0.33**	**92**	*i* P	**Pb**	**19 42 56.2**	**-0.2**
GDZ				*i* S	**Sb**	**19 43 00.6**	**-1.4**
TVSB	**Tavsanli**	**0.47**	**42**	*e*PG	**Pg**	**19 42 56.9**	**-0.2**
TVSB				*e*SG	**Sg**	**19 43 03.8**	**+0.5**
TVSB	**Tavsanli**	**0.47**	**42**	*e*Pg	**Pg**	**19 42 56.9**	**-0.2**
TVSB				*e*Sg	**Sg**	**19 43 03.8**	**+0.5**
KULA	**Kula-Manisa**	**0.67**	**208**	*e*PG	**Pg**	**19 43 00.4**	**-0.5**
KULA				*e*SG	**Sg**	**19 43 10.0**	**+0.4**
KULA	**Kula-Manisa**	**0.67**	**208**	*e*Pg	**Pg**	**19 43 00.4**	**-0.5**
KULA				*e*Sg	**Sg**	**19 43 10.0**	**+0.4**
MANT	**Manisa**	**0.73**	**213**	P	**Pn**	**19 43 04.3**	**-0.7**
MANT				S	**Sb**	**19 43 13.8**	**+0.3**
MANT	**Manisa**	**0.73**	**213**	*i* P	**Pn**	**19 43 04.3**	**-0.7**
MANT				*i* S	**Sb**	**19 43 13.8**	**+0.3**
KHAL	**Karahalli**	**0.80**	**155**	P	**Pn**	**19 43 05.7**	**-0.3**
KHAL				S	**Sb**	**19 43 16.1**	**+0.5**
KHAL	**Karahalli**	**0.80**	**155**	*i* P	**Pn**	**19 43 05.7**	**-0.3**
KHAL				*i* S	**Sb**	**19 43 16.1**	**+0.5**
KHL	**Karahalli**	**0.86**	**155**	*e*PG	**Pg**	**19 43 03.9**	**-0.7**
KHL				*e*SG	**Sg**	**19 43 16.6**	**+0.9**
KHL	**Karahalli**	**0.86**	**155**	*e*Pg	**Pg**	**19 43 03.9**	**-0.7**
KHL				*e*Sg	**Sg**	**19 43 16.6**	**+0.9**
ORLT	**Orhaneli**	**0.95**	**352**	*e*PG	**Pg**	**19 43 06.0**	**-0.4**
ORLT	**Orhaneli**	**0.95**	**352**	*e*Pg	**Pg**	**19 43 06.0**	**-0.4**
BALB	**Balikesir**	**1.06**	**301**	*e*PG	**Pg**	**19 43 08.2**	**-0.3**
BALB	**Balikesir**	**1.06**	**301**	*e*Pg	**Pg**	**19 43 08.2**	**-0.3**
IZI	**Iznik**	**1.27**	**14**	*e*PN	**Pn**	**19 43 12.0**	**-0.4**
IZI	**Iznik**	**1.27**	**14**	*e*Pn	**Pn**	**19 43 12.0**	**-0.4**
KCTX	**Karacabey (Bur**	**1.28**	**335**	*e*PN	**Pb**	**19 43 12.2**	**-0.4**
KCTX	**Karacabey (Bur**	**1.28**	**335**	*e*Pn	**Pb**	**19 43 12.2**	**-0.4**
BORA	**Eskisehir**	**1.33**	**54**	P	**Pg**	**19 43 14.6**	**+1.0**
BORA				S	**Sn**	**19 43 32.0**	**+0.8**
BORA	**Eskisehir**	**1.33**	**54**	*i* P	**Pg**	**19 43 14.7**	**+1.0**
BORA				*i* S	**Sn**	**19 43 32.0**	**+0.8**
ARMT	**Armutlu**	**1.47**	**354**	*e*PN	**Pn**	**19 43 14.6**	**-0.5**
ARMT	**Armutlu**	**1.47**	**354**	*e*Pn	**Pn**	**19 43 14.6**	**-0.5**
GULT	**Gulveren**	**1.74**	**40**	*e*PN	**Pn**	**19 43 18.4**	**-0.4**
GULT	**Gulveren**	**1.74**	**40**	*e*Pn	**Pn**	**19 43 18.4**	**-0.4**

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*ISCJB **30** 20:05:59.4±0.6, 30.°95S±0.°04×179.°9W±0.°1, h300km, mb3.7/7, Error ellipse: s-maj=17.1km s-min=5.7km az=7.1*
*IDC **30** 20:06:01.9±0.7, 31.°12S×179.°67W, h323km±6km, mb3.6/7, mb1 3.9/11, mb1mx3.6/32, mbtmp4.5/11, Error ellipse: s-maj=20.9km s-min=10.8km az=133.0*
ISC 30 20:06:01.1±0.6, 31.°02S±0.°06×180.°0E±0.°1, h300km, n66, σ2°14/68, mb3.9/6, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**2.54**	**47**	P	**Pn**	**20 06 55.8**	**+3.3**
	368nm,0.3s,baz=160,slow=3.5,SNR=17						
RAO				S	**S**	**20 07 35.5**	**+1.9**
	465nm,0.3s,baz=87,slow=22,SNR=15						
MXZ	**Matakaoa Point**	**6.67**	**191**	PN	**Pn**	**20 07 39.1**	**+0.8**

MXZ			SN	S	20 08 56.2	-0.6
WMGZ	Waiomatatini S	6.90 190	PN	Pn	20 07 42.4	+1.2
HAZ	Te Kaha	6.96 194	PN	Pn	20 07 42.8	+1.0
HAZ			SN	S	20 09 04.3	+1.1
PKGZ	Pakihiroa	7.03 192	PN	Pn	20 07 43.0	+0.3
PUZ	Puketiti	7.17 191	PN	Pn	20 07 44.5	0.0
PUZ			SN	S	20 09 07.4	-0.7
OPRZ	Ohinepanea	7.37 202	PN	Pn	20 07 51.4	+4.6
MWZ	Matawai	7.57 195	PN	Pn	20 07 49.5	+0.2
CNGZ	Carnagh Statio	7.58 191	PN	Pn	20 07 51.4	+2.0
URZ	Urewera	7.59 197	P	Pn	20 07 50.5	+0.9
	31nm,0.3s,baz=269,slow=4.7,SNR=40					
URZ			S	S	20 09 17.2	-0.2
	40nm,0.3s,baz=85,slow=23,SNR=14					
URZ	Urewera	7.59 197	PN	Pn	20 07 49.5	0.0
RAGZ	Rawiri	7.75 195	PN	Pn	20 07 51.7	+0.1
RRRZ	Republican Roa	7.83 200	PN	Pn	20 07 58.0	+5.4
RIGZ	Rimuhau	7.88 193	PN	Pn	20 07 52.6	-0.5
RTZ	Ruatahuna	7.96 197	PN	Pn	20 07 53.6	-0.6
PRRZ	Plateau Road	8.02 201	PN	Pn	20 08 00.0	+5.2
SNGZ	Shannon Statio	8.04 195	PN	Pn	20 07 54.9	-0.1
SNGZ			SN	S	20 09 28.2	+0.7
MHGZ	Mahia Peninsul	8.29 191	PN	Pn	20 07 59.4	+1.3
WHHZ	Waihua	8.34 195	PN	Pn	20 08 02.2	+3.5
NMHZ	Naumai	8.46 197	PN	Pn	20 08 00.4	+0.1
HIZ	Hauiti	8.57 208	PN	P	20 08 07.3	+0.4
ARHZ	Aropaoanui	8.58 196	PN	Pn	20 08 04.3	+2.7
BKZ	Black Stump Fm	8.61 198	PN	Pn	20 08 01.9	-0.2
MCHZ	McNeill Hill	8.82 197	PN	P	20 08 08.7	-0.8
CKHZ	Cape Kidnapper	8.94 195	PN	P	20 08 09.1	-1.8
KRHZ	Kereru	9.09 198	PN	Pn	20 08 07.6	-0.3
KAHZ	Kahuranaki	9.11 195	PN	Pn	20 08 06.9	-1.3
MTVZ	Mangateitei	9.12 203	PN	P	20 08 11.9	-1.0
PXZ	Pawanui	9.34 195	PN	Pn	20 08 10.1	-0.8
TSZ	Takapari Road	9.59 199	PN	Pn	20 08 12.1	-2.0
WAZ	Wanganui	9.61 204	PN	P	20 08 18.0	-0.4
DVHZ	Dannevirke	9.76 197	PN	Pn	20 08 16.5	+0.4
PRWZ	Pori Road	10.05 198	PN	Pn	20 08 21.1	+1.4
MRZ	Mangatainoka R	10.26 199	PN	Pn	20 08 19.8	-2.4
CPWZ	Castlepoint	10.33 196	PN	Pn	20 08 25.1	+2.0
OGWZ	Otaki Gorge	10.52 200	PN	Pn	20 08 23.2	-2.2
TMWZ	Te Maipa	10.59 197	PN	Pn	20 08 24.6	-1.8
TCW	Tory Channel	11.16 203	PN	Pn	20 08 32.9	-0.4
PLWZ	Palliser	11.19 199	PN	Pn	20 08 33.6	-0.1
TUWZ	Tuamarina	11.47 203	PN	Pn	20 08 36.1	-0.9
OXZ	Oxford	13.80 205	PN	P	20 09 04.3	-0.6
RPZ	Rata Peaks	14.51 207	P	P	20 09 13.3	+0.7
	1.6nm,0.3s,baz=346,slow=2.6,SNR=5.6					
RPZ			S	S	20 11 45.1	-6.5
	4.1nm,0.3s,baz=147,slow=22,SNR=19					
DZM	Mont Dzumac	15.02 303	P	P	20 09 23.0	+4.5
	2.3nm,0.3s,baz=170,slow=14,SNR=22					
AFI	Afiamalu	18.65 26	P	P	20 09 56.7	-1.2
	4.6nm,0.3s,baz=243,slow=4.5,SNR=3.7					
STKA	Stephens Creek	32.63 258	P	P	20 12 08.3	+2.8
	3.4nm,0.4s,baz=101,slow=12,SNR=13					
ASAR	Alice Springs	41.34 269	P	P	20 13 19.1	+0.6
	0.6nm,0.5s,baz=107,slow=7.4,SNR=18					
ASAR			ScP	ScP	20 18 26.5	-4.9
	1.8nm,1.1s,baz=149,slow=4.7,SNR=5.9					
WRA	Warramunga Arr	42.38 274	P	P	20 13 27.3	+0.5
	1.1nm,0.2s,baz=111,slow=8.1,SNR=95					
VNDA	Vanda	47.31 185	ScP	ScP	20 18 50.1	-4.8
	0.8nm,0.7s,baz=331,slow=4.6,SNR=8.2					
FITZ	Fitzroy Crossi	50.62 271	P	P	20 14 31.3	+0.9
	2.5nm,1.0s,baz=146,slow=15,SNR=3.1					
PETK	Petropavlovsk-	85.99 347	P	P	20 18 06.8	-0.6
	1.7nm,0.6s,baz=116,slow=6.6,SNR=4.2					
NVAR	Mina Array Bea	89.89 44	P	P	20 18 25.0	-1.5
	1.6nm,0.7s,baz=223,slow=6.9,SNR=8.5					
ILAR	Eielson Array	98.93 14	P	Pdif	20 19 04.2	-2.6
	0.3nm,0.7s,baz=208,slow=7.6,SNR=3.8					
BVAR	Borovoye Array	125.62 316	PKP	PKPdf	20 24 24.4	-2.0
	0.8nm,0.5s,baz=132,slow=2.2,SNR=5.8					
GEYT	Alibeck	132.23 295	SKPbc	SKPbc	20 27 33.0	-4.4
	1.9nm,0.8s,baz=52,slow=2.4,SNR=5.6					
ARU	Arti	132.45 320	SKPbc	SKPbc	20 27 32.9	-4.5
	0.7nm,0.4s,baz=133,slow=2.8,SNR=4.2					
AKTO	Aktyubinsk	133.22 312	SKPbc	SKPbc	20 27 36.7	-3.6
	1.5nm,0.8s,baz=49,slow=7.4,SNR=3.9					
ARCES	ARCESS Array B	138.81 347	PKhKP	PKPpre	20 24 42.0	
	0.8nm,0.5s,baz=71,slow=1.5,SNR=7.3					
OBN	Obninsk	144.66 324	PKP	PKPbc	20 24 59.1	-2.0
	13nm,0.5s,baz=109,slow=18,SNR=4.6					
FINES	FINESS Array B	145.10 338	PKPbc	PKPdf	20 25 00.1	-2.0
	12nm,0.5s,baz=60,slow=4.1,SNR=132					
NB2	NORSAR Subarra	149.07 349	PKP	PKPdf	20 25 10.8	+2.0
	comp=Z,3.9nm,0.7s,baz=16,slow=2.8					
NOA	NORSAR Array B	149.07 349	PKPbc	PKPdf	20 25 10.9	+2.2
	comp=Z,5.3nm,0.8s,baz=15,slow=4.2,SNR=15					
MMAI	Mount Meron Ar	149.97 283	PKPbc	PKPbc	20 25 15.8	-0.6
	comp=Z,1.0nm,0.4s,baz=80,slow=6.0,SNR=7.4					
AKASG	Malin Array Be	150.70 321	PKPbc	PKPbc	20 25 16.6	-0.8
	comp=Z,0.6nm,0.4s,baz=61,slow=2.3,SNR=6.8					
BRTR	Keskin Array B	151.34 297	PKPbc	PKPdf	20 25 17.5	+4.4
	comp=Z,0.5nm,0.4s,baz=139,slow=3.9,SNR=6.4					
GERES	GERESS Array B	159.37 334	PKPab	PKPab	20 26 01.1	-1.8
	comp=Z,0.6nm,0.7s,baz=347,slow=4.1,SNR=5.1					
TORD	Torodi Ar. Bea	162.14 185	PKPab	PKPab	20 26 13.9	-1.6
	comp=Z,1.0nm,0.6s,baz=166,slow=4.8,SNR=11					

*ISK **30** 20:15:24.3, 39°.12N×28°.99E, h10km, MD2.6*
*ISCJB **30** 20:15:25.0±0.5, 39°.13N±0°.03×28°.97E±0°.04, h11km±5km, Error ellipse: s-maj=5.6km s-min=4.1km az=25.8*
*DDA **30** 20:15:25.7, 39°.08N×28°.98E, h11km, Md2.5*
*CSEM **30** 20:15:25.2±0.1, 39°.12N×28°.97E, h12km, MD2.5, Error ellipse: s-maj=2.3km s-min=1.7km az=99.0*
ISC 30 20:15:24.7±1.0, 39°.12N±0°.03×28°.97E±0°.03, h17km±9km, n24, σ0s23/37, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.21	248	P	Pb	20 15 30.5	+0.2
DEMI	Demirci	0.21	248	*i* P	Pb	20 15 30.5	+0.2
DEMI				*i* S	Sb	20 15 33.8	-0.2
GDZ	Gediz	0.40	95	P	Pb	20 15 33.8	+0.3
GDZ				S	Sb	20 15 39.1	-0.2
GDZ	Gediz	0.40	95	*i* P	Pb	20 15 33.8	+0.3
GDZ				*i* S	Sb	20 15 39.1	-0.2
TVSB	Tavsanli	0.50	49	*e*PG	Pg	20 15 34.6	-0.2
TVSB				*e*SG	Sg	20 15 41.8	+0.2
TVSB	Tavsanli	0.50	49	*e*Pg	Pg	20 15 34.6	-0.2
TVSB				*e*Sg	Sg	20 15 41.8	+0.2
KULA	Kula-Manisa	0.66	202	*e*PG	Pb	20 15 38.0	+0.2
KULA				*e*SG	Sb	20 15 46.4	-0.3
KULA	Kula-Manisa	0.66	202	*e*Pg	Pb	20 15 38.0	+0.2
KULA				*e*Sg	Sb	20 15 46.4	-0.3
MANT	Manisa	0.71	207	P	Pb	20 15 39.3	+0.5
MANT				S	Sg	20 15 48.0	-0.2
MANT	Manisa	0.71	207	*i* P	Pb	20 15 39.3	+0.5
MANT				*i* S	Sg	20 15 48.0	-0.2
KHAL	Karahalli	0.85	151	P	Pn	20 15 42.0	-0.1
KHAL				S	Sb	20 15 52.6	+0.2
KHAL	Karahalli	0.85	151	*i* P	Pn	20 15 42.0	-0.1
KHAL				*i* S	Sb	20 15 52.6	+0.2
ORLT	Orhaneli	0.92	356	*e*PG	Pg	20 15 42.7	0.0
ORLT				*e*SG	Sn	20 15 55.9	-0.1
ORLT	Orhaneli	0.92	356	*e*Pg	Pg	20 15 42.7	0.0
ORLT				*e*Sg	Sn	20 15 55.9	-0.1
BALB	Balikesir	0.99	302	*e*PG	Pg	20 15 44.1	+0.1
BALB	Balikesir	0.99	302	*e*Pg	Pg	20 15 44.1	+0.1
KCTX	Karacabey (Bur	1.24	338	*e*PN	Pg	20 15 48.5	-0.1
KCTX	Karacabey (Bur	1.24	338	*e*Pn	Pg	20 15 48.5	-0.1
MDNY	Mudanya-Bursa	1.25	357	*e*PN	Pg	20 15 48.7	-0.1
MDNY	Mudanya-Bursa	1.25	357	*e*Pn	Pg	20 15 48.7	-0.1
IZI	Iznik	1.27	18	*e*PN	Pb	20 15 48.5	+0.2
IZI	Iznik	1.27	18	*e*Pn	Pb	20 15 48.5	+0.2
ARMT	Armutlu	1.44	357	*e*PN	Pb	20 15 51.5	+0.3
ARMT	Armutlu	1.44	357	*e*Pn	Pb	20 15 51.5	+0.3

*IDC **30** 20:16:06.9±1.3, 38°.22N×144°.80E, h0km, mb3.7/6, mb1 3.9/9, mb1mx3.5/56, mbtmp3.8/9, ML3.3/3, MS2.4/1, Ms1 2.4/1, ms1mx2.1/52, Error ellipse: s-maj=30.0km s-min=22.5km az=119.0*
*ISCJB **30** 20:16:11.4±0.9, 38°.53N±0°.06×144°.53E±0°.06, h29km, mb3.7/6, Error ellipse: s-maj=9.2km s-min=5.8km az=146.8*
*JMA **30** 20:16:11.7±0.2, 38°.50N×144°.52E, h39km, M3.7*
ISC 30 20:16:12.5±1.3, 38°.47N±0°.08×144°.56E±0°.09, h29km, n23, σ1s18/29, mb3.8/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	2.34	286	P	Pn	20 16 48.5	-0.5
MIYJ	Miyakonagasawa	2.41	298	P	Pn	20 16 49.4	-0.5
MIYJ				S	Sn	20 17 17.1	-1.3
JMK	Ichinoseki	2.66	282	P	Pn	20 16 53.2	-0.1
JOM	Ohasama	2.74	293	P	Pn	20 16 54.4	-0.1
JOM				S	Sn	20 17 26.5	-0.1
JANG	Nango	3.03	310	P	Pn	20 16 57.9	-0.6
JOU	Okura	3.06	269	P	Pn	20 16 59.6	+0.7
JOU				S	Sn	20 17 34.1	-0.5
JRG	Rokugo	3.20	288	P	Pn	20 17 01.1	+0.3
JYK	Kaneyama	3.32	279	P	Pn	20 17 02.7	+0.3
JYK				S	Sn	20 17 41.0	+0.1
JFT	Otama	3.47	255	P	Pn	20 17 04.5	0.0
JFT				*e*S	Sn	20 17 43.9	-0.7
JAH	Hinai	3.50	301	P	Pn	20 17 05.4	+0.5
JAH				S	Sn	20 17 44.3	-1.0
JRY	Ryogami san	5.13	243	S	Sn	20 18 22.0	-3.7
MJAR	Matsushiro Arr	5.40	251	Pn	Pn	20 17 31.8	+0.7
	2.5nm,0.3s,baz=49,slow=9.7,SNR=21						
MAT	Matsushiro	5.40	251	P	Pn	20 17 31.9	+0.8
MAT				*e*S	Sn	20 18 33.3	+0.9
JTKR	Abashiri--Toko	5.52	355	P	Pn	20 17 32.1	-0.6
ASAJ	Asahikawa	5.84	346	Pn	Pn	20 17 37.3	+0.3
	1.2nm,0.3s,baz=188,slow=14,SNR=5.1						
ASAJ				Sn	Sn	20 18 41.5	-1.4
	0.4nm,0.3s,baz=285,slow=26,SNR=1.7						
USRK	Ussuriysk Ar.	11.05	305	Pn	Pn	20 18 50.8	+2.3
	0.2nm,0.3s,baz=108,slow=18,SNR=4.7						
KSRS	Korea Array	13.17	271	LR	LR	20 23 40.2	
	comp=Z,16nm,20.1s,baz=145,slow=34						
SEY	Seymchan	24.96	8	P	P	20 21 35.1	+2.0
	1.5nm,0.2s,baz=188,slow=5.5,SNR=8.1						
ZALV	Zalesovo Beam	42.82	311	P	P	20 24 07.6	+0.1
	0.4nm,0.2s,baz=93,slow=8.2,SNR=1.4						
MKAR	Makanchi Array	45.49	301	P	P	20 24 29.5	+0.4
	0.3nm,0.7s,baz=89,slow=10,SNR=2.5						
ILAR	Eielson Array	46.94	33	P	P	20 24 40.5	+0.3
	0.2nm,0.7s,baz=298,slow=6.9,SNR=4.3						
INK	Inuvik	51.97	28	P	P	20 25 16.7	-1.7
	1.9nm,0.8s,baz=142,slow=11,SNR=4.1						
WRA	Warramunga Arr	58.89	191	P	P	20 26 06.0	-2.8
	0.6nm,0.7s,baz=9.1,slow=7.0,SNR=6.0						

*IDC **30** 20:19:05.9±1.4, 33°.85N×47°.59E, h0km, mb3.6/6, mb1 3.8/9, mb1mx3.5/53, mbtmp3.6/9, ML3.3/3, MS2.9/1, Ms1 2.9/1, ms1mx2.3/50, Error ellipse: s-maj=33.1km s-min=23.5km az=6.0*
*ISCJB **30** 20:19:08.2±0.4, 33°.99N±0°.04×47°.61E±0°.04, h10km, mb3.5/6, MS2.7/1, Error ellipse: s-maj=6.7km s-min=3.3km az=135.8*
*CSEM **30** 20:19:09.4±0.3, 34°.00N×47°.57E, h10km, ML3.5, Error ellipse: s-maj=10.3km s-min=5.5km az=39.0*
*TEH **30** 20:19:10.2, 33°.93N×47°.54E, h7km, ML3.5*
*ISN **30** 20:19:11.2±0.9, 33°.77N×47°.37E, h0km, 3km, ML3.5*
ISC 30 20:19:08.7±0.6, 33°.98N±0°.03×47°.63E±0°.04, h10km, n45, σ1s76/51, mb3.8/6, Western Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IKFM	Kafar-mosalman	0.49	158	*e*Pg	Pg	20 19 18.8	+0.6
IKFM				*e*Sg	Sg	20 19 25.5	+0.8
IKFM	Kafar-mosalman	0.49	158	*e*Pg	Pg	20 19 18.8	+0.6
IKFM				*e*Sg	Sg	20 19 25.5	+0.8
IKMR	Kamar-syah	0.78	126	*e*Pg	Pg	20 19 22.2	-1.5
IVIS	Veis	0.84	310	*e*Pg	Pg	20 19 24.2	-0.7
IVIS				*e*Sg	Sg	20 19 36.2	+0.2
IVIS				*e*AMB	AMB	20 19 41.3	
	comp=Z,20μm,0.0s						
IVIS	Veis	0.84	310	*e*Pg	Pg	20 19 24.2	-0.7
IVIS				*e*Sg	Sg	20 19 36.2	+0.2
IGHG	Ghaleghazi	0.94	292	*e*Pg	Pg	20 19 27.3	+0.4
IGHG				*e*AMB	AMB	20 20 01.3	
	comp=Z,15μm,0.3s						
IGHG	Ghaleghazi	0.94	292	*e*Pg	Pg	20 19 27.3	+0.4
ILIN	Lien	1.08	330	*e*Pg	Pg	20 19 28.4	-1.2
ILIN				*e*Sg	Sg	20 19 44.8	+1.1
ILIN				*e*AMB	AMB	20 19 45.0	
	comp=Z,19μm,0.1s						
ILIN	Lien	1.08	330	*e*Pg	Pg	20 19 28.4	-1.2
ILIN				*e*Sg	Sg	20 19 44.8	+1.1
SNGE	Sanandaj	1.13	348	*e*Pg	Pb	20 19 28.9	-1.6
IDHR	Dehrash	1.25	305	*e*Pg	Pb	20 19 32.1	-0.4
IDHR				*e*AMB	AMB	20 19 58.5	
	comp=Z,19μm,0.2s						
IDHR	Dehrash	1.25	305	*e*Pg	Pb	20 19 32.1	-0.4
ASAO	Ashtian	2.07	73	*e*Pn	Pn	20 19 44.2	+0.5
ASAO				*e*Sg	Sn	20 20 10.4	+0.8
SHGR	Shooshtar-Gavs	2.11	152	*e*Pn	Pg	20 19 49.9	+0.7
BHD	Baghdad	2.80	256	*e*Pn	Pn	20 19 54.0	+0.5
	SNR=3.0						
IPIR	Pirpir	3.02	114	*e*Pn	Pn	20 19 58.8	+1.9
IPIR				*e*AMB	AMB	20 20 55.9	
	comp=Z,2μm,0.3s						
IPIR	Pirpir	3.02	114	*e*Pn	Pn	20 19 58.8	+1.9
QAM	Ghamsar	3.18	93	*e*Pn	Pn	20 19 59.2	+0.2
QAM				*e*AMB	AMB	20 20 59.6	
	comp=Z,2μm,0.2s						
NSR	Nassriya	3.22	203	*e*Pn	Pn	20 19 59.0	-0.3
	SNR=3.0						
IKLH	Kolahrood	3.36	100	*e*Pn	Pn	20 20 05.0	+3.5
IKLH				*e*AMB	AMB	20 20 59.4	
	comp=Z,1μm,0.2s						
IKLH	Kolahrood	3.36	100	*e*Pn	Pn	20 20 05.0	+3.5
CHTH	Charan	3.46	55	*e*Pn	Pn	20 20 03.2	+0.4
IBST	Bostanabad	3.76	351	*e*Pn	Pn	20 20 08.3	+1.4
IBST				*e*AMB	AMB	20 21 16.4	
	comp=Z,322nm,0.4s						
IBST	Bostanabad	3.76	351	*e*Pn	Pn	20 20 08.3	+1.4
ISRB	Sarab	3.84	0	*e*Pn	Pn	20 20 12.5	+4.5
ISRB				*e*AMB	AMB	20 21 19.2	
	comp=Z,698nm,0.3s						
IGAR	Gharneh	4.02	112	*e*Pn	Pn	20 20 12.9	+2.3
IGAR				*e*AMB	AMB	20 21 28.7	
	comp=Z,692nm,0.3s						
IZEF	Zefreh	4.08	104	*e*Pn	Pn	20 20 13.9	+2.5
IZEF				*e*AMB	AMB	20 21 32.2	
	comp=Z,544nm,0.4s						
IZEF	Zefreh	4.08	104	*e*Pn	Pn	20 20 13.9	+2.5
IHRS	Heris	4.35	354	*e*Pn	Pn	20 20 17.2	+2.1
IHRS				*e*AMB	AMB	20 20 34.2	
	comp=Z,479nm,0.5s						
IHRS	Heris	4.35	354	*e*Pn	Pn	20 20 17.2	+2.1
NASN	Na'in	4.49	104	*e*Pn	Pn	20 20 19.6	+2.5
IRAM	Ramesheh	4.55	117	*e*Pn	Pn	20 20 19.2	+1.4
IRAM				*e*AMB	AMB	20 21 55.6	
	comp=Z,326nm,0.3s						
IRAM	Ramesheh	4.55	117	*e*Pn	Pn	20 20 19.2	+1.4
ISHB	Shabestar	4.59	340	*e*Pn	Pn	20 20 21.6	+3.2
ISHB				*e*AMB	AMB	20 21 45.1	
	comp=Z,584nm,0.6s						
BRTR	Keskin Array B	12.58	301	Pn	Pn	20 22 11.5	+3.7
	comp=Z,0.1nm,0.3s,baz=115,slow=14,SNR=4.9						
WSAR	Wadi Sarin	14.41	135	Pn	Pn	20 22 30.9	-1.8
	comp=Z,0.3nm,0.3s,baz=360,slow=8.8,SNR=2.7						
AKTO	Aktyubinsk	18.12	22	P	Pn	20 23 18.8	-1.6
	comp=Z,0.1nm,0.3s,baz=211,slow=14,SNR=3.7						
AKASG	Malin Array Be	21.45	327	P	P	20 23 58.0	+1.1
	comp=Z,0.3nm,0.3s,baz=129,slow=10,SNR=1.6						
AAK	Ala-Archa	22.71	60	LR	LR	20 34 52.7	
	comp=Z,28nm,20.7s,baz=238,slow=42						
CRVS	Cervenica-Dubn	24.47	315	*e*P	P	20 24 28.0	+0.2
MKAR	Makanchi Array	29.09	53	P	P	20 25 09.7	+0.2
	comp=Z,0.5nm,0.8s,baz=254,slow=8.9,SNR=3.1						
ZALV	Zalesovo Beam	32.86	41	P	P	20 25 42.0	-0.4
	comp=Z,0.6nm,0.4s,baz=264,slow=8.8,SNR=2.7						
TORD	Torodi Ar. Bea	46.47	255	P	P	20 27 33.6	-2.6
	comp=Z,0.6nm,0.7s,baz=76,slow=6.1,SNR=2.6						
CMAR	Chiang Mai Arr	48.08	95	P	P	20 27 47.9	-0.8
	comp=Z,0.7nm,0.8s,baz=294,slow=6.9,SNR=2.8						
ILAR	Eielson Array	80.92	6	P	P	20 31 21.8	-1.0
	comp=Z,0.7nm,0.7s,baz=330,slow=5.2,SNR=7.0						

*ISCJB **30** 20:21:41.8±0.5, 39°.10N±0°.03×29°.03E±0°.03, h8km±4km, Error ellipse: s-maj=5.0km s-min=3.5km az=146.0*
*DDA **30** 20:21:41.7, 39°.11N×29°.03E, h9km, Md2.8*
*CSEM **30** 20:21:41.9±0.1, 39°.10N×29°.04E, h10km, MD2.8, Error ellipse: s-maj=2.2km s-min=1.6km az=130.0*
*ISK **30** 20:21:41.1, 39°.08N×29°.08E, h10km, MD2.8*
ISC 30 20:21:41.5±1.0, 39°.05N±0°.03×29°.08E±0°.02, h12km±8km, n39, σ0s23/58, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.29	269	P	Pg	20 21 47.5	+0.1
DEMI				S	Sg	20 21 51.0	-0.3
DEMI	Demirci	0.29	269	*i* P	Pg	20 21 47.5	+0.1
DEMI				*i* S	Sg	20 21 51.0	-0.3
GDZ	Gediz	0.31	82	P	Pb	20 21 49.1	0.0
GDZ				S	Sb	20 21 54.2	0.0
GDZ	Gediz	0.31	82	*i* P	Pb	20 21 49.1	0.0
GDZ				*i* S	Sb	20 21 54.2	0.0
TVSB	Tavsanli	0.50	36	*e*PG	Pg	20 21 50.9	-0.3
TVSB				*e*SG	Sg	20 21 58.0	+0.1
TVSB	Tavsanli	0.50	36	*e*Pg	Pg	20 21 50.9	-0.3
TVSB				*e*Sg	Sg	20 21 58.0	+0.1
KULA	Kula-Manisa	0.63	212	*e*PG	Pb	20 21 54.5	+0.1
KULA				*e*SG	Sb	20 22 03.2	0.0
KULA	Kula-Manisa	0.63	212	*e*Pg	Pb	20 21 54.5	+0.1
KULA				*e*Sg	Sb	20 22 03.2	0.0
MANT	Manisa	0.69	217	P	Pb	20 21 55.7	+0.1
MANT				S	Sb	20 22 05.1	-0.1
MANT	Manisa	0.69	217	*i* P	Pb	20 21 55.7	+0.1
MANT				*i* S	Sb	20 22 05.1	-0.1
KHAL	Karahalli	0.75	155	P	Pn	20 21 58.0	0.0
KHAL				S	Sn	20 22 09.1	-0.2
KHAL	Karahalli	0.75	155	*i* P	Pn	20 21 58.0	0.0
KHAL				*i* S	Sn	20 22 09.1	-0.2
AKS	Akhisar	1.00	261	*e*PG	Pg	20 22 00.9	+0.1
AKS				*e*SG	Sn	20 22 15.2	-0.3
AKS	Akhisar	1.00	261	*e*Pg	Pg	20 22 01.0	+0.1
AKS				*e*Sg	Sn	20 22 15.2	-0.3
BALB	Balikesir	1.10	303	*e*PN	Pg	20 22 02.9	+0.2
BALB				*e*SN	Sg	20 22 17.2	+0.1
BALB	Balikesir	1.10	303	*e*Pn	Pg	20 22 02.9	+0.2
BALB				*e*Sn	Sg	20 22 17.2	+0.1
IGD	Bursa	1.22	4	*i* P	Pn	20 22 03.6	-0.8
IGD				*i* S	Sn	20 22 20.6	-0.2
CAVI	Cavuskoy	1.29	27	*e*PN	Pn	20 22 05.4	0.0
CAVI	Cavuskoy	1.29	27	*e*Pn	Pn	20 22 05.4	0.0
IZI	Iznik	1.32	13	*e*PN	Pn	20 22 05.8	-0.1
IZI	Iznik	1.32	13	*e*Pn	Pn	20 22 05.8	-0.1
MDNY	Mudanya-Bursa	1.33	353	*e*PN	Pn	20 22 05.9	+0.1
MDNY	Mudanya-Bursa	1.33	353	*e*Pn	Pn	20 22 05.9	+0.1
KCTX	Karacabey (Bur	1.34	335	*e*PN	Pn	20 22 06.1	0.0
KCTX	Karacabey (Bur	1.34	335	*e*Pn	Pn	20 22 06.1	0.0
BORA	Eskisehir	1.35	51	P	Pg	20 22 07.4	0.0
BORA				S	Sg	20 22 25.5	+0.6
BORA	Eskisehir	1.35	51	*i* P	Pg	20 22 07.4	0.0
BORA				*i* S	Sg	20 22 25.5	+0.6
GONE	Gonen-Balikesi	1.47	313	*e*PN	Pn	20 22 07.9	+0.1
GONE	Gonen-Balikesi	1.47	313	*e*Pn	Pn	20 22 07.9	+0.1
ADVT	Abdulvahap	1.47	20	*e*PN	Pn	20 22 07.8	-0.1
ADVT	Abdulvahap	1.47	20	*e*Pn	Pn	20 22 07.8	-0.1
ARMT	Armutlu	1.52	354	*e*PN	Pn	20 22 08.7	+0.1
ARMT	Armutlu	1.52	354	*e*Pn	Pn	20 22 08.7	+0.1
EDC	Edincik	1.60	324	*e*PN	Pn	20 22 09.9	+0.3
EDC	Edincik	1.60	324	*e*Pn	Pn	20 22 09.9	+0.3
GULT	Gulveren	1.77	38	*e*PN	Pn	20 22 12.2	+0.2
GULT	Gulveren	1.77	38	*e*Pn	Pn	20 22 12.2	+0.2
SPNC	Sapanca-Adapaz	1.89	30	*e*PN	Pn	20 22 13.5	-0.1
SPNC	Sapanca-Adapaz	1.89	30	*e*Pn	Pn	20 22 13.5	-0.1

WEL 30 20:26:37.6±0.1, 43°.57S×172°.32E, h9km±1km, ML3.5/9, 1C-5D, Error ellipse: s-maj=1.1km s-min=0.8km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRLZ	Canterbury Las	0.22	91	⇓PG	Pg	20 26 42.1	0.0
CRLZ

*ISK **30** 20:31:50.8, 39°.12N×28°.94E, h9km, MD2.7*
*ISCJB **30** 20:31:51.8±0.5, 39°.12N±0°.03×28°.97E±0°.04, h11km±5km, Error ellipse: s-maj=6.0km s-min=4.0km az=30.8*
*DDA **30** 20:31:51.6, 39°.13N×28°.96E, h7km, Md2.5*
*CSEM **30** 20:31:51.7±0.1, 39°.13N×28°.95E, h10km, MD2.5, Error ellipse: s-maj=2.6km s-min=1.8km az=107.0*
ISC 30 20:31:51.7±0.8, 39°.12N±0°.03×28°.94E±0°.03, h14km±9km, n25, σ0s30/38, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.19**	**245**	P	**Pb**	**20 31 57.2**	**+0.1**
DEMI				S	**Sb**	**20 32 00.4**	**-0.3**
DEMI	**Demirci**	**0.19**	**245**	*i* P	**Pg**	**20 31 57.2**	**+0.1**
DEMI				*i* S	**Sb**	**20 32 00.4**	**-0.3**
GDZ	**Gediz**	**0.42**	**95**	P	**Pg**	**20 32 00.4**	**+0.1**
GDZ				S	**Sg**	**20 32 05.9**	**-0.1**
GDZ	**Gediz**	**0.42**	**95**	*i* P	**Pg**	**20 32 00.4**	**+0.1**
GDZ				*i* S	**Sg**	**20 32 06.0**	**-0.1**
TVSB	**Tavsanli**	**0.52**	**51**	*e*PG	**Pg**	**20 32 01.6**	**-0.4**
TVSB				*e*SG	**Sg**	**20 32 08.8**	**-0.2**
TVSB	**Tavsanli**	**0.52**	**51**	*e*Pg	**Pg**	**20 32 01.6**	**-0.4**
TVSB				*e*Sg	**Sg**	**20 32 08.8**	**-0.2**
KULA	**Kula-Manisa**	**0.65**	**200**	*e*PG	**Pg**	**20 32 03.8**	**-0.6**
KULA				*e*SG	**Sg**	**20 32 12.9**	**0.0**
KULA	**Kula-Manisa**	**0.65**	**200**	*e*Pg	**Pg**	**20 32 03.8**	**-0.6**
KULA				*e*Sg	**Sg**	**20 32 12.9**	**0.0**
MANT	**Manisa**	**0.70**	**205**	P	**Pb**	**20 32 06.0**	**+0.2**
MANT				S	**Sg**	**20 32 14.8**	**+0.2**
MANT	**Manisa**	**0.70**	**205**	*i* P	**Pb**	**20 32 06.0**	**+0.2**
MANT				*i* S	**Sg**	**20 32 14.8**	**+0.2**
KHAL	**Karahalli**	**0.87**	**150**	P	**Pb**	**20 32 08.7**	**0.0**
KHAL				S	**Sg**	**20 32 19.9**	**-0.1**
KHAL	**Karahalli**	**0.87**	**150**	*i* P	**Pb**	**20 32 08.7**	**0.0**
KHAL				*i* S	**Sg**	**20 32 19.9**	**-0.1**
KHL	**Karahalli**	**0.92**	**150**	*e*PG	**Pg**	**20 32 08.9**	**-0.6**
KHL	**Karahalli**	**0.92**	**150**	*e*Pg	**Pg**	**20 32 09.0**	**-0.6**
IGD	**Bursa**	**1.16**	**10**	*i* P	**Pb**	**20 32 13.4**	**-0.1**
IGD				*i* S	**Sg**	**20 32 28.9**	**-0.2**
KCTX	**Karacabey (Bur**	**1.23**	**339**	*e*PN	**Pn**	**20 32 14.8**	**+0.3**
KCTX	**Karacabey (Bur**	**1.23**	**339**	*e*Pn	**Pn**	**20 32 14.8**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.24**	**358**	*e*PN	**Pn**	**20 32 14.9**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.24**	**358**	*e*Pn	**Pn**	**20 32 14.9**	**+0.1**
IZI	**Iznik**	**1.28**	**19**	*e*PN	**Pn**	**20 32 15.5**	**+0.2**
IZI	**Iznik**	**1.28**	**19**	*e*Pn	**Pn**	**20 32 15.5**	**+0.2**
ARMT	**Armutlu**	**1.44**	**358**	*e*PN	**Pn**	**20 32 17.9**	**+0.4**
ARMT	**Armutlu**	**1.44**	**358**	*e*Pn	**Pn**	**20 32 17.9**	**+0.4**
GULT	**Gulveren**	**1.79**	**42**	*e*PN	**Pn**	**20 32 22.6**	**+0.4**
GULT	**Gulveren**	**1.79**	**42**	*e*Pn	**Pn**	**20 32 22.6**	**+0.4**

*NIED **30** 20:34:00, 37°.70N×143°.90E, h8km, Mw4.1 Best double couple: M0 1.58000×10^15^ NP1:φs30.00000°, δ29.00000°, λ-77.00000°. NP2:φs195.00000°, δ62.00000°, λ-97.00000°.*
*IDC **30** 20:34:21.6±0.7, 37°.58N×144°.06E, h0km, mb3.9/17, mb1 4.1/23, mb1mx4.0/55, mbtmp3.9/23, ML3.5/5, MS3.1/5, Ms1 3.1/5, ms1mx2.7/51, Error ellipse: s-maj=17.8km s-min=14.6km az=116.0*
*NEIC **30** 20:34:23.8±4.0, 37°.60N×144°.07E, h14km±24km, mb4.5/3, Error ellipse: s-maj=12.5km s-min=7.5km az=130.0*
*ISCJB **30** 20:34:25.5±0.5, 37°.74N±0°.04×143°.90E±0°.04, h33km, mb4.0/20, MS3.2/2, Error ellipse: s-maj=6.0km s-min=4.9km az=174.4*
*JMA **30** 20:34:25.2±0.2, 37°.73N×143°.89E, h38km, M4.2*
ISC 30 20:34:27.3±0.6, 37°.71N±0°.06×143°.96E±0°.06, h35km, n55, σ1s43/61, mb4.0/20, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.19**	**291**	P	**Pn**	**20 34 59.8**	**-1.3**
JIO				S	**Sn**	**20 35 24.7**	**-2.3**
OFUJ	**Ofunato**	**2.26**	**308**	P	**Pn**	**20 35 00.6**	**-1.5**
JMK	**Ichinoseki**	**2.49**	**301**	P	**Pn**	**20 35 03.9**	**-1.3**
JOU	**Okura**	**2.68**	**285**	P	**Pn**	**20 35 07.4**	**-0.5**
JOM	**Ohasama**	**2.73**	**311**	P	**Pn**	**20 35 07.7**	**-0.9**
JOM				S	**Sn**	**20 35 39.0**	**-1.4**
JFT	**Otama**	**2.88**	**267**	P	**Pn**	**20 35 09.7**	**-1.0**
JFT				S	**Sn**	**20 35 42.6**	**-1.5**
JYK	**Kaneyama**	**3.08**	**294**	P	**Pn**	**20 35 12.8**	**-0.6**
JYK				*e*S	**Sn**	**20 35 48.1**	**-0.8**
JRG	**Rokugo**	**3.10**	**304**	P	**Pn**	**20 35 13.1**	**-0.6**
JANG	**Nango**	**3.27**	**325**	P	**Pn**	**20 35 15.3**	**-0.7**
JANG				S	**Sn**	**20 35 58.9**	**-1.8**
JAH	**Hinai**	**3.58**	**315**	P	**Pn**	**20 35 20.1**	**-0.2**
JAH				S	**Sn**	**20 36 00.3**	**-1.1**
JTM	**Tenmabayashi**	**3.81**	**325**	*e*S	**Sn**	**20 36 04.5**	**-2.4**
JRY	**Ryogami san**	**4.39**	**249**	P	**Pn**	**20 35 29.3**	**-2.2**
JRY				S	**Sn**	**20 36 16.8**	**-4.6**
MJAR	**Matsushiro Arr**	**4.74**	**258**	Pn	**Pn**	**20 35 35.9**	**-0.3**
	7.1nm,0.3s,baz=90,slow=16,SNR=64						
MAJO	**Matsushiro**	**4.74**	**258**	*e*P	**Pn**	**20 35 36.1**	**-0.2**
MAT	**Matsushiro**	**4.74**	**258**	P	**Pn**	**20 35 36.0**	**-0.2**
MAT				S	**Sn**	**20 36 27.6**	**-2.4**
JCH	**Churui**	**4.92**	**355**	P	**Pn**	**20 35 36.6**	**-2.1**
NEM2	**Nemuro 2**	**5.81**	**13**	P	Pn	20 35 47.3	-3.6
JTKR	**Abashiri--Toko**	**6.26**	**360**	P	**Pn**	**20 35 55.0**	**-2.0**
ASAJ	**Asahikawa**	**6.49**	**351**	Pn	**Pn**	**20 35 59.8**	**-0.4**
	2.1nm,0.3s,baz=205,slow=7.3,SNR=16						
ASAJ				Sn	**Sn**	**20 37 09.4**	**-3.4**
	2.1nm,0.3s,baz=251,slow=33,SNR=4.4						
USRK	**Ussuriysk Ar.**	**11.13**	**309**	Pn	**Pn**	**20 37 02.7**	**-1.1**
	0.2nm,0.3s,baz=107,slow=13,SNR=3.6						
USRK				LR	LR	20 42 11.6	
	comp=Z,129nm,18.2s,baz=116,slow=42						
KSRS	**Korea Array**	**12.73**	**274**	Pn	**Pn**	**20 37 27.4**	**+1.7**
	0.1nm,0.3s,baz=87,slow=14,SNR=6.9						
KSRS				LR	LR	20 41 55.0	
	comp=Z,37nm,18.2s,baz=84,slow=35						
KSAR	**Wonju Array Be**	**12.76**	**274**	Pn	**Pn**	**20 37 27.4**	**+1.3**
MDJ	**Mudanjiang**	**12.83**	**307**	*e*P	**Pn**	**20 37 27.6**	**+0.5**
KLR	**Kul'dur**	**14.51**	**326**	Pn	**Pn**	**20 37 48.5**	**-1.4**
	0.1nm,0.3s,baz=120,slow=7.2,SNR=3.2						
KLR				LR	LR	20 42 56.1	
	comp=Z,64nm,20.2s,baz=127,slow=35						
PETK	**Petropavlovsk-**	**18.12**	**27**	P	**P**	**20 38 36.5**	**+0.4**
	0.1nm,0.3s,baz=224,slow=11,SNR=2.8						
SEY	**Seymchan**	**25.77**	**9**	P	**P**	**20 39 55.5**	**+1.0**
	4.4nm,0.7s,baz=191,slow=7.8,SNR=16						
YAK	**Yakutsk**	**25.91**	**345**	LR	LR	20 51 05.4	
	comp=Z,43nm,18.3s,baz=88,slow=38						
H11N2	**WAKE ISLAND Hy**	**26.82**	**126**	T	T	21 07 53.2	
	baz=317,slow=74,SNR=9.4						
H11N1	**WAKE ISLAND Hy**	**26.83**	**126**	T	T	21 07 53.1	
	baz=317,slow=74,SNR=4.3						
H11N3	**WAKE ISLAND Hy**	**26.84**	**126**	T	T	21 07 54.6	
	baz=317,slow=74,SNR=4.0						
SONM	**Songino Array**	**29.11**	**302**	P	**P**	**20 40 26.9**	**+2.1**
	0.6nm,0.7s,baz=96,slow=8.6,SNR=4.0						
ENH	**Enshi**	**29.41**	**266**	*e*P	**P**	**20 40 29.2**	**+1.8**
	3.0nm,0.6s						
ZALV	**Zalesovo Beam**	**42.97**	**312**	P	**P**	**20 42 22.8**	**+0.1**
	0.3nm,0.3s,baz=106,slow=7.0,SNR=2.6						
ZALV				PcP	**PcP**	**20 44 12.5**	**-0.1**
	2.0nm,0.7s,baz=113,slow=3.0,SNR=6.6						
CMAR	**Chiang Mai Arr**	**43.63**	**257**	P	**P**	**20 42 28.2**	**-0.2**
	0.7nm,0.8s,baz=46,slow=7.2,SNR=7.2						
PPLA	**Purkeypile**	**45.45**	**35**	*e*P	**P**	**20 42 43.9**	**+1.2**
MKAR	**Makanchi Array**	**45.48**	**302**	P	**P**	**20 42 43.7**	**+0.8**
	0.8nm,0.7s,baz=90,slow=9.3,SNR=4.7						
KURK	**Kurchatov**	**47.12**	**308**	*e*P	**P**	**20 42 54.9**	**-0.7**
	8.5nm,0.8s						
ILAR	**Eielson Array**	**47.84**	**33**	P	**P**	**20 43 01.1**	**-0.1**
	3.5nm,0.8s,baz=265,slow=6.4,SNR=29						
TKM2	**Tokmak 2**	**51.09**	**299**	*e*P	**P**	**20 43 28.0**	**+1.5**
	4.5nm,0.8s						
INK	**Inuvik**	**52.86**	**28**	P	**P**	**20 43 39.4**	**+0.5**
	0.9nm,0.6s,baz=343,slow=11,SNR=3.4						
WRAB	**Tennant Creek**	**58.04**	**191**	*e*P	**P**	**20 44 14.7**	**-2.1**
WRA	**Warramunga Arr**	**58.05**	**191**	P	**P**	**20 44 14.8**	**-2.0**
	3.7nm,0.6s,baz=11,slow=7.4,SNR=18						
ASAR	**Alice Springs**	**61.78**	**190**	P	**P**	**20 44 41.0**	**-1.4**
	1.7nm,0.8s,baz=11,slow=7.0,SNR=10						
YKA	**Yellowknife Ar**	**62.20**	**31**	P	**P**	**20 44 45.0**	**+0.2**
	0.3nm,0.6s,baz=306,slow=6.5,SNR=4.9						
YKA	**Yellowknife Ar**	**62.20**	**31**	P	**P**	**20 44 45.0**	**+0.2**
GEYT	**Alibeck**	**65.27**	**300**	P	**P**	**20 45 06.4**	**+0.9**
	1.1nm,0.5s,baz=45,slow=2.2,SNR=3.2						
FINES	**FINESS Array B**	**69.15**	**333**	P	**P**	**20 45 30.0**	**+0.4**
	2.3nm,0.8s,baz=174,slow=19,SNR=4.3						
KBZ	**Khabaz**	**71.99**	**312**	P	**P**	**20 45 48.1**	**+0.9**
	1.6nm,0.6s,baz=205,slow=1.8,SNR=4.7						
NB2	**NORSAR Subarra**	**74.33**	**338**	P	**P**	**20 46 00.9**	**+0.1**
	comp=Z,0.8nm,0.7s,baz=39,slow=6.2						
NOA	**NORSAR Array B**	**74.33**	**338**	P	**P**	**20 46 01.2**	**+0.4**
	comp=Z,1.0nm,0.7s,baz=39,slow=5.8,SNR=4.1						
NOA				LR	LR	21 23 59.6	
	comp=Z,15nm,18.1s,baz=10.0,slow=40						
AKASG	**Malin Array Be**	**74.99**	**323**	P	**P**	**20 46 04.7**	**-0.1**
	comp=Z,1.0nm,0.7s,baz=45,slow=6.3,SNR=4.5						
PDAR	**Pinedale Array**	**75.74**	**47**	P	**P**	**20 46 09.1**	**-0.5**
	comp=Z,0.5nm,0.6s,baz=267,slow=3.0,SNR=5.1						
GERES	**GERESS Array B**	**83.19**	**329**	P	**P**	**20 46 49.5**	**-0.3**
	comp=Z,0.3nm,0.6s,baz=7.0,slow=8.9,SNR=2.7						
PMSA	**Palmer Station**	**148.25**	**158**	PKPbc	**PKPbc**	**20 54 09.3**	**+0.8**
	comp=Z,23nm,0.6s,baz=9.8,slow=21,SNR=8.9						
PMSA	**Palmer Station**	**148.25**	**158**	PKPbc	**PKPbc**	**20 54 09.3**	**+0.8**
PMSA				*e*PKPab	**PKiKP**	**20 54 10.0**	**-0.2**

*ISCJB **30** 20:36:19.9±0.6, 20°.6S±0°.1×178°.4W±0°.1, h587km, mb3.8/16, Error ellipse: s-maj=17.4km s-min=10.7km az=145.0*
*IDC **30** 20:36:22.7±2.2, 20°.54S×178°.40W, h606km±26km, mb3.4/16, mb1 3.7/17, mb1mx3.5/46, mbtmp4.4/17, Error ellipse: s-maj=21.6km s-min=10.6km az=153.0*
ISC 30 20:36:20.9±0.7, 20°.6S±0°.1×178°.4W±0°.1, h587km, n31, σ0s79/31, mb3.9/16, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**9.16**	**44**	P	P	20 38 25.7	-5.6
	10nm,0.3s,baz=117,slow=3.3,SNR=12						
AFI				S	S	20 40 06.8	-11
	5.5nm,0.3s,baz=48,slow=21,SNR=4.2						
DZM	**Mont Dzumac**	**14.23**	**261**	P	**P**	**20 39 21.8**	**-0.6**
	2.2nm,0.3s,baz=96,slow=18,SNR=16						
URZ	**Urewera**	**18.03**	**192**	P	**P**	**20 39 55.5**	**-1.7**
	2.5nm,0.3s,baz=277,slow=2.1,SNR=10.0						
STKA	**Stephens Creek**	**37.43**	**244**	P	**P**	**20 42 46.3**	**+0.7**
	5.2nm,0.5s,baz=97,slow=10,SNR=23						
ASAR	**Alice Springs**	**44.16**	**257**	P	**P**	**20 43 39.2**	**+0.2**
	12nm,0.5s,baz=94,slow=7.6,SNR=173						
ASAR				S	**S**	**20 49 30.7**	**+0.2**
	2.8nm,1.0s,baz=95,slow=15,SNR=13						
WRA	**Warramunga Arr**	**44.24**	**262**	P	**P**	**20 43 39.5**	**-0.2**
	4.3nm,0.4s,baz=98,slow=8.3,SNR=143						
WRA				S	**S**	**20 49 31.1**	**-0.7**
	0.7nm,1.0s,baz=98,slow=13,SNR=4.9						
FITZ	**Fitzroy Crossi**	**52.67**	**263**	P	**P**	**20 44 42.4**	**+0.4**
	2.1nm,0.4s,baz=74,slow=3.5,SNR=21						
VNDA	**Vanda**	**57.78**	**185**	P	**P**	**20 45 17.6**	**+1.1**
	0.5nm,0.6s,baz=356,slow=6.6,SNR=6.0						
MJAR	**Matsushiro Arr**	**70.08**	**324**	P	**P**	**20 46 34.8**	**-0.3**
	1.8nm,0.6s,baz=61,slow=0.8,SNR=6.2						
PETK	**Petropavlovsk-**	**76.28**	**345**	P	**P**	**20 47 09.8**	**-0.1**
	3.9nm,0.7s,baz=125,slow=8.5,SNR=5.8						
KSRS	**Korea Array**	**76.73**	**319**	P	**P**	**20 47 13.4**	**+0.7**
	0.9nm,0.5s,baz=118,slow=4.8,SNR=4.9						
USRK	**Ussuriysk Ar.**	**78.85**	**326**	P	**P**	**20 47 24.8**	**+0.8**
	2.4nm,0.8s,baz=38,slow=0.5,SNR=4.6						
YBH	**Yreka Blue Hor**	**80.58**	**39**	P	**P**	**20 47 33.6**	**+0.3**
	4.2nm,0.7s,baz=144,slow=0.7,SNR=6.2						
NVAR	**Mina Array Bea**	**81.33**	**44**	P	**P**	**20 47 37.8**	**+0.4**
	1.5nm,0.7s,baz=225,slow=9.2,SNR=5.1						
SEY	**Seymchan**	**86.39**	**347**	P	**P**	**20 48 01.4**	**0.0**
	1.1nm,0.2s,baz=200,slow=5.7,SNR=12						
TXAR	**Lajitas Array**	**87.40**	**57**	P	**P**	**20 48 07.8**	**+0.7**
	0.9nm,0.9s,baz=215,slow=6.5,SNR=6.4						
ILAR	**Eielson Array**	**88.49**	**13**	P	**P**	**20 48 09.9**	**-1.2**
	1.1nm,0.4s,baz=221,slow=5.6,SNR=22						
PDAR	**Pinedale Array**	**89.27**	**43**	P	**P**	**20 48 15.3**	**-0.3**
	0.9nm,0.6s,baz=206,slow=3.2,SNR=9.7						
CMAR	**Chiang Mai Arr**	**89.82**	**290**	P	**P**	**20 48 19.9**	**+1.5**
	1.4nm,0.9s,baz=134,slow=3.5,SNR=9.4						
MKAR	**Makanchi Array**	**111.01**	**313**	PKiKP	**PKiKP**	**20 53 47.1**	**-1.2**
	0.3nm,0.6s,baz=172,slow=0.8,SNR=5.9						
ARU	**Arti**	**125.08**	**325**	PKP	**PKPdf**	**20 54 14.3**	**-0.7**
	1.7nm,0.4s,baz=117,slow=4.1,SNR=5.1						
ARCES	**ARCESS Array B**	**128.95**	**349**	PKP	**PKPdf**	**20 54 21.2**	**-0.8**
	1.1nm,0.5s,baz=82,slow=2.3,SNR=9.4						
FINES	**FINESS Array B**	**135.77**	**343**	PKP	**PKPdf**	**20 54 34.7**	**-0.3**
	0.6nm,0.5s,baz=126,slow=2.6,SNR=5.8						
AKASG	**Malin Array Be**	**142.93**	**331**	PKhKP	PKPpre	20 54 45.1	
	4.9nm,0.5s,baz=43,slow=4.4,SNR=34						
BRTR	**Keskin Array B**	**146.65**	**312**	PKPbc	**PKPdf**	**20 54 56.2**	**+0.9**
	1.6nm,0.6s,baz=136,slow=5.6,SNR=11						
DPC	**Dobruska-Polom**	**148.11**	**342**	*e*PKP	**PKPbc**	**20 55 01.7**	**+0.4**
DPC				*ex*	x	20 55 07.2	
GERES	**GERESS Array B**	**150.20**	**344**	PKPbc	**PKPbc**	**20 55 05.4**	**-1.0**
	1.9nm,0.7s,baz=38,slow=2.4,SNR=18						
CONA	**Conrad Observa**	**150.41**	**340**	*i* PKPbc	**PKPbc**	**20 55 07.2**	**+0.2**
	2.6nm,0.6s						
MOA	**Molln**	**150.96**	**342**	*i* PKPbc	**PKPbc**	**20 55 07.9**	**-0.3**
	1.4nm,0.7s						
SOKA	**Soboth**	**151.78**	**340**	*i* PKPbc	**PKPbc**	**20 55 09.3**	**-0.8**
	1.8nm,1.0s						
ABTA	**Abfaltersbach**	**152.44**	**344**	*i* PKPbc	**PKPbc**	**20 55 10.7**	**-0.8**
	3.3nm,0.6s						

*NIED **30** 20:39:00, 36°.80N×140°.60E, h5km, Mw3.6 Best double couple: M0 2.46000×10^14^ NP1:φs322.00000°, δ42.00000°, λ-110.00000°. NP2:φs168.00000°, δ51.00000°, λ-73.00000°.*
*IDC **30** 20:39:16.9±1.3, 36°.75N×140°.56E, h0km, mb3.6/5, mb1 3.8/6, mb1mx3.5/52, mbtmp3.6/6, ML3.1/1, MS3.1/1, Ms1 3.1/1, ms1mx2.3/46, Error ellipse: s-maj=26.4km s-min=24.6km az=4.0*
*ISCJB **30** 20:39:18.0±0.7, 36°.78N±0°.04×140°.65E±0°.06, h19km±5km, mb3.5/5, Error ellipse: s-maj=9.5km s-min=5.5km az=38.0*
*JMA **30** 20:39:18.7, 36°.81N×140°.56E, h7km±1km, M3.6 Broadband fault plane solution: P waves. NP1: φs310.00000°, δ50.00000°, λ-103.00000°. NP2: φs150.00000°, δ42.00000°, λ-75.00000°. Principal axes: T Plg4.0000°, Azm49.0000°; N Plg10.0000°, Azm318.0000°; P Plg79.0000°, Azm161.0000°;*
JMA Felt II J1.
ISC 30 20:39:18.4±1.1, 36°.79N±0°.04×140°.55E±0°.05, h10km±9km, n22, σ0s66/20, mb3.6/5, 6C-1D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.18**	**175**	⇑P	**Pg**	**20 39 22.7**	**+0.4**
ONAJ	**Iwakimizuishiy**	**0.37**	**33**	⇑P	**Pg**	**20 39 25.6**	**-0.1**
ONAJ				S	**Sg**	**20 39 30.7**	**+0.1**
JSB	**Shiboa**	**0.53**	**289**	⇑P	**Pb**	**20 39 29.7**	**-0.2**
JSB				S	**Sb**	**20 39 37.3**	**-0.4**
JFK	**Kawauchi**	**0.63**	**24**	⇑P	**Pg**	**20 39 30.1**	**-0.5**
JYT	**Yasato**	**0.63**	**207**	⇑P	**Pb**	**20 39 30.9**	**-0.6**
JYT				S	**Sb**	**20 39 39.3**	**-1.1**
JFT	**Otama**	**0.74**	**347**	⇓P	**Pg**	**20 39 32.8**	**0.0**
JAG	**Ashikaga**	**0.95**	**248**	⇑P	**Pg**	**20 39 36.3**	**-0.5**
MJAR	**Matsushiro Arr**	**1.90**	**263**	Pn	**Pn**	**20 39 51.7**	**+0.8**
	29nm,0.3s,baz=86,slow=15,SNR=118						
MJAR				Sn	**Sn**	**20 40 15.6**	**+0.8**
	48nm,0.3s,baz=80,slow=26,SNR=11						
MAT	**Matsushiro**	**1.90**	**263**	P	**Pn**	**20 39 51.9**	**+1.0**
MAT				S	**Sb**	**20 40 16.6**	**-0.4**
JHJ	**Hachijo jima 2**	**3.72**	**190**	LR	LR	20 41 21.5	
	comp=Z,262nm,21.5s,baz=188,slow=34						
ASAJ	**Asahikawa**	**7.48**	**11**	Pn	**Pn**	**20 41 08.0**	**+0.4**
	0.3nm,0.3s,baz=287,slow=28,SNR=2.2						
SONM	**Songino Array**	**27.35**	**305**	P	**P**	**20 45 02.9**	**-0.8**
	0.2nm,0.5s,baz=96,slow=11,SNR=2.5						
H11N2	**WAKE ISLAND Hy**	**28.63**	**119**	T	T	21 15 01.8	
	baz=313,slow=75,SNR=46						
H11N1	**WAKE ISLAND Hy**	**28.63**	**119**	T	T	21 15 00.5	
	baz=313,slow=75,SNR=50						
H11N3	**WAKE ISLAND Hy**	**28.64**	**119**	T	T	21 15 03.1	
	baz=313,slow=75,SNR=43						
H11S1	**WAKE ISLAND Hy**	**29.32**	**121**	T	T	21 15 51.6	
	baz=314,slow=76,SNR=164						
H11S3	**WAKE ISLAND Hy**	**29.32**	**121**	T	T	21 15 52.8	
	baz=314,slow=76,SNR=108						
H11S2	**WAKE ISLAND Hy**	**29.33**	**121**	T	T	21 15 53.9	
	baz=314,slow=76,SNR=92						
ZALV	**Zalesovo Beam**	**41.57**	**313**	P	**P**	**20 47 06.1**	**+0.1**
	0.6nm,0.5s,baz=84,slow=5.9,SNR=2.1						
MKAR	**Makanchi Array**	**43.66**	**302**	P	**P**	**20 47 23.2**	**0.0**
	0.3nm,0.7s,baz=98,slow=8.9,SNR=2.1						
WRA	**Warramunga Arr**	**56.73**	**187**	P	**P**	**20 49 01.8**	**-0.6**
	0.6nm,0.4s,baz=4.3,slow=7.4,SNR=13						
TXAR	**Lajitas Array**	**90.82**	**52**	P	**P**	**20 52 23.3**	**+0.9**
	0.3nm,0.5s,baz=301,slow=1.7,SNR=5.1						

*ISK **30** 20:39:38.9, 39°.14N×28°.92E, h8km, MD2.7*
*ISCJB **30** 20:39:39.5±0.5, 39°.14N±0°.03×28°.95E±0°.04, h11km±5km, Error ellipse: s-maj=5.4km s-min=3.9km az=22.9*
*DDA **30** 20:39:39.8, 39°.14N×28°.96E, h9km, Md2.6*
*CSEM **30** 20:39:39.6±0.1, 39°.14N×28°.93E, h10km, MD2.6, Error ellipse: s-maj=2.1km s-min=1.5km az=95.0*
ISC 30 20:39:39.5±1.0, 39°.13N±0°.03×28°.97E±0°.03, h18km±3km, n28, σ0s24/42, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.21**	**247**	P	**Pg**	**20 39 45.1**	**+0.4**
DEMI				S	**Sb**	**20 39 48.3**	**+0.3**
DEMI	**Demirci**	**0.21**	**247**	*i* P	**Pg**	**20 39 45.1**	**+0.4**
DEMI				*i* S	**Sb**	**20 39 48.3**	**+0.3**
GDZ	**Gediz**	**0.40**	**95**	P	**Pb**	**20 39 48.2**	**0.0**
GDZ				S	**Sg**	**20 39 53.7**	**+0.1**
GDZ	**Gediz**	**0.40**	**95**	*i* P	**Pb**	**20 39 48.2**	**0.0**
GDZ				*i* S	**Sg**	**20 39 53.7**	**+0.1**
TVSB	**Tavsanli**	**0.50**	**50**	*e*PG	**Pb**	**20 39 49.9**	**0.0**
TVSB				*e*SG	**Sb**	**20 39 56.8**	**-0.1**
TVSB	**Tavsanli**	**0.50**	**50**	*e*Pg	**Pb**	**20 39 49.9**	**0.0**
TVSB				*e*Sg	**Sb**	**20 39 56.8**	**-0.1**
KULA	**Kula-Manisa**	**0.66**	**202**	*e*PG	**Pg**	**20 39 52.7**	**+0.2**
KULA				*e*SG	**Sb**	**20 40 01.0**	**-0.2**
KULA	**Kula-Manisa**	**0.66**	**202**	*e*Pg	**Pg**	**20 39 52.7**	**+0.2**
KULA				*e*Sg	**Sb**	**20 40 01.0**	**-0.2**
MANT	**Manisa**	**0.71**	**207**	P	**Pg**	**20 39 53.8**	**+0.2**
MANT				S	**Sb**	**20 40 02.7**	**-0.3**
MANT	**Manisa**	**0.71**	**207**	*i* P	**Pg**	**20 39 53.8**	**+0.2**
MANT				*i* S	**Sb**	**20 40 02.7**	**-0.3**
KHAL	**Karahalli**	**0.86**	**151**	P	**Pn**	**20 39 56.7**	**-0.1**
KHAL				S	**Sg**	**20 40 07.7**	**0.0**
KHAL	**Karahalli**	**0.86**	**151**	*i* P	**Pn**	**20 39 56.7**	**-0.1**
KHAL				*i* S	**Sg**	**20 40 07.7**	**0.0**
KHL	**Karahalli**	**0.91**	**151**	*e*PG	**Pn**	**20 39 57.4**	**-0.1**
KHL	**Karahalli**	**0.91**	**151**	*e*Pg	**Pn**	**20 39 57.4**	**-0.1**
ORLT	**Orhaneli**	**0.92**	**357**	*e*PG	**Pb**	**20 39 56.8**	**-0.2**
ORLT				*e*SG	**Sg**	**20 40 09.4**	**-0.2**
ORLT	**Orhaneli**	**0.92**	**357**	*e*Pg	**Pb**	**20 39 56.8**	**-0.2**
ORLT				*e*Sg	**Sg**	**20 40 09.4**	**-0.2**
BALB	**Balikesir**	**0.99**	**302**	*e*PG	**Pb**	**20 39 57.6**	**-0.5**
BALB	**Balikesir**	**0.99**	**302**	*e*Pg	**Pb**	**20 39 57.6**	**-0.5**
KCTX	**Karacabey (Bur**	**1.23**	**338**	*e*PN	**Pb**	**20 40 02.6**	**+0.3**
KCTX	**Karacabey (Bur**	**1.23**	**338**	*e*Pn	**Pb**	**20 40 02.6**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.24**	**357**	*e*PN	**Pb**	**20 40 02.8**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.24**	**357**	*e*Pn	**Pb**	**20 40 02.8**	**+0.3**
ADVT	**Abdulvahap**	**1.43**	**24**	*e*PN	**Pb**	**20 40 05.7**	**0.0**
ADVT	**Abdulvahap**	**1.43**	**24**	*e*Pn	**Pb**	**20 40 05.7**	**0.0**
ARMT	**Armutlu**	**1.44**	**357**	*e*PN	**Pb**	**20 40 05.6**	**-0.2**
ARMT	**Armutlu**	**1.

ASAR	Alice Springs	145.13	238	PKPbc	PKPbc	21 02 02.8	0.0
	comp=Z,1.2nm,0.6s,baz=120,slow=3.6,SNR=13						
WRA	Warramunga Arr	146.03	245	PKPbc	PKPdf	21 02 05.4	+0.5
	comp=Z,0.6nm,0.5s,baz=100,slow=3.6,SNR=8.5						
CMAR	Chiang Mai Arr	154.43	6	PKPbc	PKPbc	21 02 25.9	-0.5
	comp=Z,0.8nm,0.8s,baz=303,slow=3.5,SNR=6.1						

NIED ***30*** *20:48:00,38°.60N×144°.40E,h5km,Mw3.9 Best double couple: M0=6.72000×10^14 NP1:φ=9.00000°,δ=25.00000°, λ=-86.00000°. NP2:φ=184.00000°,δ=65.00000°, λ=-92.00000°.*

IDC ***30*** *20:48:31.9±0.7,38°.53N×144°.57E,h0km,mb3.8/14, mb1 4.0/18,mb1mx3.8/50,mbtmp3.9/18,ML3.6/4,MS2.9/2, Ms1 2.9/2,ms1mx2.4/39,Error ellipse: s-maj=20.1km s-min=15.0km az=96.0*

ISCJB ***30*** *20:48:34.4±0.5,38°.60N±0°.05×144°.45E±0°.05,h29km, mb3.9/16,MS2.9/1,Error ellipse: s-maj=7.3km s-min=5.7km az=169.3*

JMA ***30*** *20:48:34.4±0.2,38°.64N×144°.42E,h29km,M3.9*

NEIC ***30*** *20:48:37.3±0.5,38°.57N×144°.49E,h35km,mb4.4/2,Error ellipse: s-maj=10.9km s-min=9.1km az=118.0*

ISC 30 20:48:36.8±0.8,38°.65N±0°.08×144°.46E±0°.07,h29km,n39, σ1§10/40,mb4.0/16,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	Ofunato	2.22	282	P	Pn	20 49 10.2	-1.5
OFUJ				eS	Sn	20 49 36.9	-1.3
MIYJ	Miyakonagasawa	2.26	295	P	Pn	20 49 10.4	-1.8
MIYJ				eS	Sn	20 49 37.3	-1.7
JMK	Ichinoseki	2.55	278	P	Pn	20 49 15.1	-1.1
JOM	Ohasama	2.60	289	P	Pn	20 49 15.9	-1.0
JOM				eS	Sn	20 49 46.8	-0.8
JOU	Okura	2.99	266	P	Pn	20 49 21.3	-1.0
JRG	Rokugo	3.08	285	P	Pn	20 49 22.8	-0.6
JYK	Kaneyama	3.22	276	P	Pn	20 49 24.8	-0.6
JAH	Hinai	3.34	299	P	Pn	20 49 26.3	-0.8
JFT	Otama	3.45	252	P	Pn	20 49 27.7	-0.8
JFT				eS	Sn	20 50 07.0	-1.4
JOSM	Okushiri--Mats	5.13	314	P	Pn	20 49 51.0	-0.6
JRY	Ryogami san	5.15	241	P	Pn	20 49 50.2	-1.8
MJAR	Matsushiro Arr	5.39	249	Pn	Pn	20 49 55.1	-0.2
	7.1nm,0.3s,baz=59,slow=12,SNR=83						
MAJO	Matsushiro	5.39	249	ePn	Pn	20 49 55.0	-0.3
	53nm,0.5s						
MAT	Matsushiro	5.39	249	P	Pn	20 49 55.1	-0.2
MAT				S	Sn	20 50 57.1	+0.7
ASAJ	Asahikawa	5.64	346	Pn	Pn	20 49 56.8	-1.9
	3.3nm,0.3s,baz=204,slow=6.4,SNR=15						
USRK	Ussuriysk Ar.	10.88	305	Pn	Pn	20 51 11.8	+1.3
	0.6nm,0.3s,baz=102,slow=14,SNR=14						
MDJ	Mudanjiang	12.62	303	ePn	Pn	20 51 34.4	+0.2
KSRS	Korea Array	13.10	270	LR	LR	20 55 40.1	
	comp=Z,49nm,19.2s,baz=92,slow=32						
KLR	Kul'dur	13.97	323	Pn	Pn	20 51 51.5	-1.2
	0.1nm,0.3s,baz=137,slow=15,SNR=3.0						
SEY	Seymchan	24.79	9	P	P	20 53 57.1	+1.2
	0.6nm,0.3s,baz=167,slow=9.1,SNR=4.1						
H11N2	WAKE ISLAND Hy	27.06	128	T	T	21 22 32.6	
	baz=319,slow=74,SNR=3.5						
H11N1	WAKE ISLAND Hy	27.07	128	T	T	21 22 29.3	
	baz=319,slow=74,SNR=5.1						
H11N3	WAKE ISLAND Hy	27.08	128	T	T	21 22 29.8	
	baz=319,slow=74,SNR=5.0						
SONM	Songino Array	28.96	301	P	P	20 54 34.4	+0.7
	0.5nm,0.9s,baz=91,slow=9.1,SNR=3.9						
ENH	Enshi	29.88	264	eP	P	20 54 44.1	+2.2
	3.6nm,0.8s						
TLY	Talaya	31.17	308	LR	LR	21 07 39.9	
	comp=Z,22nm,18.1s,baz=92,slow=37						
ZALV	Zalesovo Beam	42.64	311	P	P	20 56 30.7	+0.3
	0.6nm,0.4s,baz=93,slow=7.4,SNR=4.8						
ZALV				PcP	PcP	20 58 21.7	-0.3
	1.1nm,0.6s,baz=95,slow=3.2,SNR=4.8						
CMAR	Chiang Mai Arr	44.23	256	P	P	20 56 43.9	+0.2
	0.3nm,0.8s,baz=32,slow=6.9,SNR=5.1						
MKAR	Makanchi Array	45.33	301	P	P	20 56 52.4	+0.3
	1.3nm,0.8s,baz=90,slow=9.3,SNR=11						
ILAR	Eielson Array	46.83	33	P	P	20 57 03.7	0.0
	0.4nm,0.9s,baz=274,slow=6.6,SNR=4.1						
INK	Inuvik	51.84	28	P	P	20 57 42.1	+0.3
	1.0nm,0.9s,baz=278,slow=8.3,SNR=3.5						
ARU	Arti	56.75	319	P	P	20 58 18.1	+0.4
	0.7nm,0.4s,baz=40,slow=1.3,SNR=4.3						
WRAB	Tennant Creek	59.04	191	eP	P	20 58 32.2	-1.8
	4.9nm,0.9s						
WRA	Warramunga Arr	59.05	191	P	P	20 58 32.4	-1.7
	3.3nm,0.7s,baz=12,slow=7.2,SNR=29						
FITZ	Fitzroy Crossi	59.15	201	P	P	20 58 34.4	-0.4
	2.6nm,0.8s,baz=37,slow=5.2,SNR=5.8						
ASAR	Alice Springs	62.77	191	P	P	20 58 58.0	-1.4
	0.9nm,0.7s,baz=15,slow=8.0,SNR=12						
GEYT	Alibeck	65.16	300	P	P	20 59 15.5	+0.3
	1.7nm,0.6s,baz=48,slow=4.4,SNR=5.8						
FINES	FINESS Array B	68.50	333	P	P	20 59 36.1	+0.2
	2.3nm,0.6s,baz=62,slow=4.8,SNR=15						
PDAR	Pinedale Array	74.81	47	P	P	21 00 14.6	-0.1
	0.2nm,0.5s,baz=318,slow=1.2,SNR=3.2						

SJA 30 20:50:41.9±0.8,31°.51S×69°.16W,h108km±5km,ML3.0, MW3.5,San Juan Province

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RTLS	Leoncito	0.31	202	eP	Pn	20 50 58.9	+1.0
RTLS				eS	Sn	20 51 11.4	+1.5
RTLL	Cerro Villicun	0.61	73	eP	Pn	20 50 59.8	+0.3
RTCV	Cerro Valdivia	0.63	124	eP	Pn	20 51 00.7	+1.1
AUSP	Uspallata	0.73	195	eP	Pn	20 51 02.3	+1.5
AMOG	MOGNA	0.81	45	eP	Pn	20 51 01.6	+0.4
ACAN	Cantantal	1.84	115	eP	Pn	20 51 14.1	+1.3
AGUA	GUANDACOL	2.10	16	eP	Pn	20 51 17.5	+1.3
ROC1	El Roble	2.15	227	eP	Pn	20 51 17.8	+0.9
VCA	Vinchina	2.89	17	eP	Pn	20 51 28.0	+1.4
VCA				IAML		20 52 06.3	
	comp=Z,36nm,0.2s						
MRA	San Martin	3.06	108	eP	Pn	20 51 29.7	+0.9
MRA				IAML		20 51 30.0	
	comp=Z,44nm,0.5s						
TCA	Tanti	3.91	89	eP	Pn	20 51 39.8	-0.2

NNC 30 20:56:54.5±1.6,37°.65N×71°.43E,h0km,mb4.0,mpv3.6, 4C-5D,Error ellipse: s-maj=14.5km s-min=5.7km az=162.0,Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	Dzherino	2.35	300	⇓Pn	Pn	20 57 34.1	-0.3
	8.8nm,0.3s						
DZET				⇓Sn	Sn	20 58 05.3	+1.2
	76nm,0.3s						
MNAS	Manas	4.91	9	⇑Pn	Pn	20 58 10.2	+0.6
	4.5nm,0.5s						
MNAS				⇓Sn	Sn	20 59 08.5	+1.4
	19nm,0.8s						
KK31	Karatay Array	5.50	353	⇑Pn	Pn	20 58 18.5	+0.9
	2.8nm,0.5s,baz=181,slow=13,SNR=47						
KK31				⇑Sn	Sn	20 59 21.7	+0.2
	1.1nm,0.4s,baz=160,slow=20,SNR=4.2						
AAK	Ala-Archa	5.51	24	⇑Pn	Pn	20 58 18.2	+0.3
	5.5nm,0.4s						
AAK				⇓Sn	Sn	20 59 23.4	+1.4
	7.1nm,0.6s						
TKM2	Tokmak 2	6.16	30	⇓Pn	Pn	20 58 25.9	-0.9
	2.9nm,0.5s						

IDC 30 21:13:56.2±66.0,21°.67S×178°.78E,h0km,mb3.9/3, mb1 4.1/3,mb1mx3.6/32,mbtmp3.9/3,Error ellipse: s-maj=1181.0km s-min=156.1km az=83.0,South of Fiji Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	Stephens Creek	34.57	245	P	P	21 20 44.8	-2.0
	1.9nm,0.8s,baz=83,slow=14,SNR=3.3						
ASAR	Alice Springs	41.33	258	P	P	21 21 43.9	-0.1
	1.3nm,0.9s,baz=82,slow=9.0,SNR=7.7						
WRA	Warramunga Arr	41.47	264	P	P	21 21 46.2	+1.1
	1.5nm,0.6s,baz=94,slow=8.3,SNR=91						

IDC ***30*** *21:24:55.4±1.0,25°.42N×142°.03E,h0km,mb3.5/7, mb1 3.7/7,mb1mx3.5/39,mbtmp3.5/7,MS3.2/2,Ms1 3.2/2, ms1mx2.6/41,Error ellipse: s-maj=35.1km s-min=17.2km az=88.0*

ISCJB ***30*** *21:24:58.7±0.9,25°.36N±0°.08×141°.9E±0°.2,h33km, mb3.5/7,MS3.2/2,Error ellipse: s-maj=28.6km s-min=10.1km az=9.7*

ISC 30 21:25:00.5±1.1,25°.4N±0°.1×142°.0E±0°.2,h35km,n10, σ1§31/9,mb3.5/7,Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCJ	Chichijima	1.69	5	Pn	Pn	21 25 25.4	-2.1
	77nm,0.3s,baz=276,slow=21,SNR=9.1						
JCJ				Sn	Sn	21 25 49.8	+1.9
JCJ				LR	LR	21 25 56.8	
	comp=Z,87nm,18.0s,baz=179,slow=37						
KLR	Kul'dur	25.09	344	LR	LR	21 40 28.0	
	comp=Z,30nm,19.4s,baz=84,slow=37						
SONM	Songino Array	35.83	318	P	P	21 31 56.8	0.0
	0.2nm,0.4s,baz=134,slow=4.2,SNR=2.5						
WRA	Warramunga Arr	45.69	190	P	P	21 33 17.4	-0.7
	0.2nm,0.3s,baz=12,slow=9.0,SNR=11						
ASAR	Alice Springs	49.41	190	P	P	21 33 47.8	+0.7
	0.5nm,1.1s,baz=13,slow=12,SNR=3.9						
MKAR	Makanchi Array	51.43	311	P	P	21 34 02.9	+0.7
	0.2nm,0.4s,baz=86,slow=10,SNR=2.9						
KURBB	Kurchatov Arra	54.11	315	P	P	21 34 21.9	+0.2
	0.7nm,0.7s,baz=92,slow=7.5,SNR=9.9						
YBH	Yreka Blue Hor	77.25	50	LR	LR	22 02 15.4	
	comp=Z,32nm,21.7s,baz=306,slow=29						
FINES	FINESS Array B	79.38	334	P	P	21 37 02.3	-0.3
	1.3nm,0.8s,baz=56,slow=3.7,SNR=5.5						
NVAR	Mina Array Bea	81.69	51	P	P	21 37 16.5	+0.8
	0.4nm,0.5s,baz=297,slow=5.9,SNR=3.2						

IDC ***30*** *21:37:08.9±0.9,53°.16N×161°.05E,h0km,mb3.8/18, mb1 4.0/20,mb1mx3.9/45,mbtmp3.9/20,ML3.4/2,Error ellipse: s-maj=25.8km s-min=14.5km az=163.0*

KRSC ***30*** *21:37:08.1±1.2,52°.79N×161°.53E,h41km±20km,ML4.2*

MOS ***30*** *21:37:09.8±0.9,52°.75N×161°.49E,h38km,mb4.1/4,Error ellipse: s-maj=7.9km s-min=4.7km az=105.9*

ISCJB ***30*** *21:37:11.3±0.7,52°.83N±0°.04×161°.38E±0°.06,h44km±5km, mb4.0/24,Error ellipse: s-maj=8.6km s-min=3.8km az=144.8*

NEIC ***30*** *21:37:13.8±0.6,53°.12N×161°.01E,h35km,mb4.0/3,Error ellipse: s-maj=17.0km s-min=8.5km az=157.0*

ISC 30 21:37:11.9±2.3,52°.85N±0°.05×161°.37E±0°.04,h31km±16km, n107,σ1§24/136,mb3.9/24,4C-3D,Off east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NLC	Nalytchevo	1.26	285	eP	Pn	21 37 31.6	-1.7
NLC				eS	Sn	21 37 47.7	-1.5
NLC	Nalytchevo	1.26	285	PN	Pn	21 37 31.6	-1.7
NLC				S	Sn	21 37 47.7	-1.5
SDLR	Sedlovina	1.56	287	eP	Pn	21 37 36.6	-0.9
SDLR	Sedlovina	1.56	287	PN	Pn	21 37 36.6	-0.9
UGLR	Uglovaya	1.58	284	eP	Pn	21 37 37.2	-0.6
UGLR	Uglovaya	1.58	284	PN	Pn	21 37 37.2	-0.6
DALK	Dalny	1.59	278	eP	Pn	21 37 37.4	-0.5
DALK				eS	Sn	21 37 58.0	+0.7
DALK	Dalny	1.59	278	PN	Pn	21 37 37.4	-0.5
DALK				S	Sn	21 37 58.0	+0.7
SMAR	Somma	1.60	286	eP	Pn	21 37 37.4	-0.8
SMAR	Somma	1.60	286	PN	Pn	21 37 37.4	-0.8
AVH	Avacha	1.64	286	eP	Pn	21 37 38.3	-0.3
AVH				eS	Sn	21 37 59.2	+0.5
AVH	Avacha	1.64	286	PN	Pn	21 37 38.3	-0.3
AVH				S	Sn	21 37 59.2	+0.5
KRER	Koryakskii	1.64	287	eP	Pn	21 37 38.3	-0.5
KRER				eS	Sn	21 37 59.6	+0.7
KRER	Koryakskii	1.64	287	PN	Pn	21 37 38.3	-0.5
KRER				S	Sn	21 37 59.6	+0.7
KII	Karymskiy	1.65	317	eP	Pn	21 37 38.1	-0.7
KII	Karymskiy	1.65	317	PN	Pn	21 37 38.1	-0.7
PET	Petropavlovsk	1.65	277	eP	Pn	21 37 38.3	-0.4
PET				eS	Sn	21 37 59.4	+0.6
PET	Petropavlovsk	1.65	277	⇓PN	Pn	21 37 38.1	-0.6
PET				eS	Sn	21 37 58.5	-0.3
PET				pmax	pmax		
	comp=Z,123nm,0.5s						
PET				smax	smax		
	comp=E,715nm,0.6s						
PET				smax	smax		
	comp=N,461nm,0.7s						
PET	Petropavlovsk	1.65	277	ePn	Pn	21 37 36.8	-1.9
KOK	Koryaka	1.71	286	eP	Pn	21 37 39.5	-0.1
KOK	Koryaka	1.71	286	PN	Pn	21 37 39.5	-0.1
KRX	Arik	1.72	288	eP	Pn	21 37 39.0	-0.7
KRX				eS	Sn	21 38 00.7	+0.1
KRX	Arik	1.72	288	PN	Pn	21 37 39.0	-0.7
KRX				S	Sn	21 38 00.7	+0.1
MKZ	Mys Kozlova	1.72	7	eP	Pn	21 37 38.6	-1.0
MKZ				eS	Sn	21 37 59.8	-0.7
MKZ	Mys Kozlova	1.72	7	PN	Pn	21 37 38.6	-1.0
MKZ				S	Sn	21 37 59.8	-0.7
RUS	Russkaya	1.79	258	eP	Pn	21 37 40.1	-0.5
RUS				eS	Sn	21 38 02.4	+0.2
RUS	Russkaya	1.79	258	PN	Pn	21 37 40.1	-0.5
RUS				S	Sn	21 38 02.4	+0.2
KRMR	Karymshinskiy	1.96	271	eP	Pn	21 37 42.2	-0.8
KRMR				eS	Sn	21 38 06.3	-0.2
KRMR	Karymshinskiy	1.96	271	PN	Pn	21 37 42.2	-0.8
KRMR				S	Sn	21 38 06.3	-0.2
MTVR	Mutnovka	1.97	260	eP	Pn	21 37 43.0	-0.3
MTVR				eS	Sn	21 38 07.7	+0.7
MTVR	Mutnovka	1.97	260	PN	Pn	21 37 43.0	-0.3
MTVR				S	Sn	21 38 07.7	+0.7
ASAK	Asacha	2.17	259	eP	Pn	21 37 45.9	0.0
ASAK				eS	Sn	21 38 12.3	+0.7
ASAK	Asacha	2.17	259	PN	Pn	21 37 45.9	0.0
ASAK				S	Sn	21 38 12.3	+0.7
GNL	Ganaly	2.22	294	eP	Pn	21 37 47.0	+0.3
GNL				eS	Sn	21 38 14.4	+1.3
GNL	Ganaly	2.22	294	PN	Pn	21 37 47.0	+0.3
GNL				S	Sn	21 38 14.4	+1.3
PETK	Petropavlovsk-	2.23	278	Pn	Pn	21 37 47.0	+0.2
	comp=N,25nm,0.3s,baz=96,slow=19,SNR=253						
PETK				Sn	Sn	21 38 14.4	+1.2
	comp=N,13nm,0.3s,baz=90,slow=19,SNR=7.4						
TUMR	Tumrok	2.54	344	eP	Pn	21 37 51.7	+0.7
TUMR	Tumrok	2.54	344	PN	Pn	21 37 51.7	+0.7
KMNR	Kamenistaya	2.98	348	eP	Pn	21 37 58.2	+1.1
KMNR				eS	Sn	21 38 33.7	+1.8
KMNR	Kamenistaya	2.98	348	PN	Pn	21 37 58.2	+1.1
KMNR				S	Sn	21 38 33.7	+1.8
BZMR	Bezymyannaya	3.13	351	eP	Pn	21 38 00.7	+1.5
BZMR	Bezymyannaya	3.13	351	PN	Pn	21 38 00.7	+1.5
KIRR	Kirishev	3.17	349	eP	Pn	21 38 00.9	+1.3
KIRR	Kirishev	3.17	349	PN	Pn	21 38 00.9	+1.3
ZLN	Zelenaya	3.19	354	eP	Pn	21 38 00.9	+1.0
ZLN	Zelenaya	3.19	354	PN	Pn	21 38 00.9	+1.0
KPT	Kopyto	3.19	348	eP	Pn	21 38 00.9	+0.9
KPT	Kopyto	3.19	348	PN	Pn	21 38 00.9	+0.9
LGNR	Loginova	3.26	353	eP	Pn	21 38 02.1	+1.0
LGNR	Loginova	3.26	353	PN	Pn	21 38 02.1	+1.0
CIRR	Tsirk	3.29	354	eP	Pn	21 38 02.7	+1.3
CIRR	Tsirk	3.29	354	PN	Pn	21 38 02.7	+1.3
KOZ	Kozyrevsk	3.33	345	eP	Pn	21 38 02.9	+1.1
KOZ	Kozyrevsk	3.33	345	PN	Pn	21 38 02.9	+1.1
KRSR	Krestovskiy	3.40	352	eP	Pn	21 38 03.5	+0.6
KRSR	Krestovskiy	3.40	352	PN	Pn	21 38 03.5	+0.6
ESO	Esso	3.45	334	eP	Pn	21 38 04.2	+0.7
ESO	Esso	3.45	334	PN	Pn	21 38 04.2	+0.7
KBG	Krutoberegovo	3.50	12	eP	Pn	21 38 04.2	+0.2
KBG	Krutoberegovo	3.50	12	PN	Pn	21 38 04.2	+0.2
BKI	Bering	3.59	47	eP	Pn	21 38 04.4	-1.0
BKI				eS	Sn	21 38 43.3	-3.4
BKI	Bering	3.59	47	PN	Pn	21 38 04.4	-1.0
BDR	Baidarnaya	3.73	359	eP	Pn	21 38 08.5	+1.2
BDR				eS	Sn	21 38 51.5	+1.4
BDR	Baidarnaya	3.73	359	PN	Pn	21 38 08.5	+1.2
BDR				S	Sn	21 38 51.5	+1.4
SRKR	Sorokina	3.81	358	eP	Pn	21 38 09.3	+0.8
SRKR	Sorokina	3.81	358	PN	Pn	21 38 09.3	+0.8
SKR	Severo-Kuril's	3.92	238	ePN	Pn	21 38 02.0	-7.8
YSS	Yuzh-Sakhalins	13.35	251	ePN	Pn	21 40 21.8	+2.7
ASAJ	Asahikawa	15.17	242	Pn	Pn	21 40 43.4	-0.4
	comp=N,0.2nm,0.3s,baz=111,slow=17,SNR=3.4						
HABR	Khabarovsk	17.21	266	eP	Pn	21 41 08.5	-1.1
HABR				eS	Sn	21 44 17.1	-2.8
HABR				pmax	pmax		
	comp=N,20nm,1.4s						
HABR				pmax	pmax		
	comp=Z,36nm,1.4s						
HABR				pmax	pmax		
	comp=E,54nm,1.4s						
HABR				MLR	MLR		
	comp=Z,66nm,15.0s						
KLR	Kul'dur	18.91	271	P	P	21 41 28.3	-1.4
	comp=Z,0.1nm,0.3s,baz=58,slow=9.5,SNR=3.2						
YAK	Yakutsk	19.18	311	eP	P	21 41 30.8	-1.7
YAK				pmax	pmax		
	comp=Z,7.0nm,0.6s						
USRK	Ussuriysk Ar.	21.17	258	P	P	21 41 54.9	+0.6
	comp=Z,1.7nm,0.7s,baz=72,slow=12,SNR=4.7						
VLA	Vladivostok	21.86	255	deP	P	21 42 01.5	-0.2
VLA				e		21 42 22.7	
VLA				pmax	pmax		
	comp=Z,36nm,1.2s						
MJAR	Matsushiro Arr	23.01	234	P	P	21 42 15.8	+1.7
	comp=Z,1.2nm,0.6s,baz=20,slow=11,SNR=3.7						
MAJO	Matsushiro	23.02	234	⇓P	P	21 42 17.3	+3.2
MAJO				pmax	pmax		
	comp=Z,39nm,1.0s						
TIXI	Tiksi	23.62	335	P	P	21 42 17.5	-2.2
	comp=Z,2.4nm,0.5s,baz=123,slow=12,SNR=13						
TIXI	Tiksi	23.62	335	ceP	P	21 42 18.5	-1.2
TIXI				pmax	pmax		
	comp=Z,2.0nm,0.7s						
TIXI	Tiksi	23.62	335	eP	P	21 42 17.7	-2.0
	comp=Z,2.3nm,0.8s						
H11N2	WAKE ISLAND Hy	33.34	170	T	T	22 19 05.9	
	SNR=13						
H11N3	WAKE ISLAND Hy	33.35	170	T	T	22 19 17.9	
	baz=160,slow=74,SNR=9.6						
H11N1	WAKE ISLAND Hy	33.35	171	T	T	22 19 15.5	
	baz=353,slow=74,SNR=9.1						
SONM	Songino Array	34.71	284	P	P	21 43 57.1	-1.7
	comp=Z,0.4nm,0.6s,baz=68,slow=5.9,SNR=3.9						
SONM	Songino Array	34.71	284	eP	P	21 43 59.6	+0.8
YKA	Yellowknife Ar	42.82	43	P	P	21 45 05.4	-0.9
	comp=Z,0.4nm,0.5s,baz=297,slow=7.0,SNR=4.5						
ZALV	Zalesovo Beam	43.55	303	P	P	21 45 10.0	-2.4
	comp=Z,0.9nm,0.7s,baz=54,slow=5.8,SNR=3.9						
ZALV	Zalesovo Beam	43.55	303	eP	P	21 45 10.8	-1.6
KURK	Kurchatov	48.51	303	eP	P	21 45 49.2	-2.2
KURK				pmax	pmax		
	comp=Z,8.0nm,0.6s						
KURK	Kurchatov	48.51	303	eP	P	21 45 49.2	-2.2
	comp=Z,7.7nm,0.6s						
MKAR	Makanchi Array	48.95	297	P	P	21 45 52.9	-2.1
	comp=Z,0.5nm,0.5s,baz=59,slow=7.0,SNR=18						
MKAR	Makanchi Array	48.95	297	ceP	P	21 45 58.2	+3.3
ARCES	ARCESS Array B	53.75	342	P	P	21 46 30.1	-0.5
	comp=Z,2.4nm,0.8s,baz=28,slow=8.4,SNR=8.3						
ARU	Arti	54.09	318	c iP	P	21 46 32.5	-0.7
ARU						21 48 32.8	
ARU				S	S	21 54 05.7	-1.5
ARU				SS	SKiKP	21 57 44.1	+2.0
ARU				pmax	pmax		
	comp=Z,6.0nm,1.7s						
NVAR	Mina Array Bea	55.10	71	P	P	21 46 43.3	+2.3
	comp=Z,0.4nm,0.5s,baz=297,slow=8.0,SNR=3.5						
AAK	Ala-Archa	55.88	297	⇑iP	P	21 46 46.7	+0.2
AAK				pmax	pmax		
	comp=Z,1.0nm,0.7s						
PDAR	Pinedale Array	56.97	61	P	P	21 46 56.5	+2.2
	comp=Z,0.6nm,0.6s,baz=301,slow=3.3,SNR=6.7						
KKAR	Karatay Array	57.67	300	eP	P	21 46 57.4	-1.7
KKAR				pmax	pmax		
	comp=Z,1.0nm,0.6s						
KKAR	Karatay Array	57.67	300	eP	P	21 46 57.4	-1.7
	comp=Z,0.7nm,0.6s						
CMAR	Chiang Mai Arr	58.89	259	P	P	21 47 09.0	+1.2
	comp=Z,1.0nm,0.6s,baz=28,slow=6.4,SNR=7.9						
FINES	FINESS Array B	60.65	337	P	P	21 47 19.6	+0.4
	comp=Z,2.1nm,0.8s,baz=28,slow=8.6,SNR=6.0						
NB2	NORSAR Subarra	63.99	344	P	P	21 47 41.7	0.0
	comp=Z,1.3nm,0.7s,baz=21,slow=6.9						
NOA	NORSAR Array B	63.99	344	P	P	21 47 41.2	-0.5
	comp=Z,0.4nm,0.6s,baz=19,slow=6.1,SNR=4.0						
GEYT	Alibeck	67.86	304	P	P	21 48 07.3	+0.3
	comp=Z,2.6nm,0.6s,baz=30,slow=3.2,SNR=10						
AKASG	Malin Array Be	69.21	330	P	P	21 48 14.4	-0.8
	comp=Z,0.6nm,0.4s,baz=28,slow=6.6,SNR=4.1						
TXAR	Lajitas Array	70.02	68	P	P	21 48 22.4	+1.8
	comp=Z,0.4nm,0.5s,baz=304,slow=5.2,SNR=6.0						
GERES	GERESS Array B	75.02	339	P	P	21 48 50.5	+0.4
	comp=Z,0.4nm,0.5s,baz=42,slow=6.1,SNR=6.1						
KEST	Kesra	88.48	338	P	P	21 50 02.5	+1.4
	comp=Z,1.9nm,0.7s,baz=68,slow=9.2,SNR=3.7						

IDC ***30*** *21:46:44.6±0.8,2°.53N×95°.91E,h0km,mb4.2/21, mb1 4.3/23,mb1mx4.0/62,mbtmp4.2/23,ML4.1/2,MS3.4/9, Ms1 3.4/9,ms1mx3.0/45,Error ellipse: s-maj=26.7km s-min=11.9km az=44.0*

ISCJB ***30*** *21:46:46.5±0.3,2°.48N±0°.04×95°.85E±0°.04,h25km, mb4.4/37,MS3.4/6,Error ellipse: s-maj=6.6km s-min=3.7km az=137.3*

DJA ***30*** *21:46:47.6±0.9,3°.N±4°.×9°.6E±°,h10km,M4.5/16,mb4.5

comp=Z,0.5nm,0.3s,baz=198,slow=11,SNR=47
LAMP Lampang 16.32 13 P **P 21 50 39.5 +0.7**
comp=Z,3.8nm,0.9s
SBUM Sibu 16.34 90 *e*Pn **P 21 50 39.0 0.0**
comp=Z,7.8nm,0.9s
CMMT Chiang Mai 16.47 10 P **Pn 21 50 39.1 +1.2**
comp=Z,8.3nm,0.9s
CHTO Chiang Mai 16.47 10 P **Pn 21 50 39.2 +1.3**
comp=Z,24nm,1.1s
CHTO Chiang Mai 16.47 10 *e*Pn **Pn 21 50 36.8 -1.1**
comp=Z,3.4nm,0.8s
PANO Nakornpanom 16.89 30 P **Pn 21 50 42.8 -0.3**
comp=Z,17nm,0.7s
CRAI Chiangrai 18.14 14 P **Pn 21 50 58.7 0.0**
comp=Z,1μm,0.9s
MYLDM Lahad Datu 22.73 83 *e*P **P 21 51 49.4 +0.6**
comp=Z,17nm,1.0s
SHL Shillong 23.23 351 *e*P **P 21 51 52.2 -1.7**
BOK Bokaro 23.25 336 *e*P **P 21 51 54.0 +0.1**
BOK IAmb IAmb 21 51 56.9
comp=Z,52nm,1.2s
NGP Nagpur 24.72 320 *e*P **P 21 52 06.7 -1.2**
NGP IAmb IAmb 21 52 12.1
comp=Z,5.8nm,0.5s
KAPI Kappang 25.01 107 P **P 21 52 10.4 -0.1**
comp=Z,13nm,0.8s,baz=305,slow=8.7,SNR=5.6
KAPI Kappang 25.01 107 *e*P **P 21 52 10.4 -0.1**
comp=Z,18nm,0.9s
H08S2 Diego Garcia H 25.41 246 T T 22 18 33.6
baz=67,slow=76,SNR=1887
H08S3 Diego Garcia H 25.41 246 T T 22 18 33.8
baz=67,slow=76,SNR=1508
H08S1 Diego Carcia H 25.43 246 T T 22 18 34.9
baz=67,slow=76,SNR=1766
PKIN Phulchoki 26.85 339 *e*P **P 21 52 29.2 +1.8**
comp=Z,5.3nm,0.6s
DMN Daman 26.99 339 *e*P **P 21 52 29.6 +1.0**
GUN Gumba 26.99 340 *e*P **P 21 52 30.1 +1.4**
comp=Z,34nm,0.8s
KKN Kakani 27.09 339 *e*P **P 21 52 30.5 +1.0**
comp=Z,30nm,0.9s
LSA Lhasa 27.40 351 *e*P **P 21 52 33.6 +1.1**
comp=Z,11nm,0.9s
GKN Gorkha 27.52 338 *e*P **P 21 52 34.4 +1.2**
comp=Z,36nm,0.9s
KOLN Koldanda 27.71 336 *e*P **P 21 52 36.5 +1.5**
comp=Z,21nm,0.7s
PYUN Piuthan 28.25 335 *e*P **P 21 52 42.3 +2.4**
ENH Enshi 30.47 24 *e*P **P 21 52 57.9 -1.4**
comp=Z,4.4nm,0.6s
SMLA Simla 33.49 330 *e*P **P 21 53 26.6 +0.9**
SMLA IAmb IAmb 21 53 27.9
comp=Z,7.2nm,1.1s
XAN Xi'an 33.64 20 P **P 21 53 25.8 -1.4**
XAN sP sP 21 53 37.0 -0.7
XAN pmax pmax
comp=Z,14nm,0.9s
XAN pmax pmax
comp=Z,52nm,6.9s
DHRM DHARAMSHALA 34.83 330 *e*P **P 21 53 38.3 +0.6**
DHRM IAmb IAmb 21 53 39.2
comp=Z,4.1nm,0.7s
FITZ Fitzroy Crossi 35.78 126 P **P 21 53 45.0 -0.7**
comp=Z,4.1nm,1.1s,baz=128,slow=5.1,SNR=4.5
GTA Gaotai 36.89 5 *e*P **P 21 53 55.0 -0.2**
GTA pP pP 21 54 02.3 -0.4
GTA sP sP 21 54 05.0 -0.7
GTA pmax pmax
comp=Z,14nm,1.0s
H01W3 Cape Leeuwin H 40.97 157 T T 22 37 54.7
baz=332,slow=76,SNR=240
H01W2 Cape Leeuwin H 40.98 157 T T 22 37 55.7
baz=332,slow=76,SNR=195
H01W1 Cape Leeuwin H 40.99 157 T T 22 37 55.8
baz=332,slow=76,SNR=209
KSH Kashi 41.03 336 *e*P **P 21 54 29.5 -0.3**
KSH *e*pP sP 21 54 44.5 +4.1
KSH *e*PP **PnPn 21 56 09.3 +0.2**
KSH *e*ScP **ScP 22 00 11.8 -6.1**
KSH S **S 22 00 38.5 -2.4**
KSH pmax pmax
comp=Z,86nm,4.7s
BJT Baijiatuau 41.62 24 *e*P **P 21 54 35.4 +0.9**
comp=Z,26nm,0.7s
BJI Beijing 41.64 24 P **P 21 54 35.3 +0.7**
BJI pmax pmax
comp=Z,36nm,1.1s
WR1 Warramunga Arr 43.86 122 *e*P **P 21 54 52.2 -0.8**
comp=Z,24nm,1.6s
WRA Warramunga Arr 43.86 122 P **P 21 54 52.2 -0.8**
comp=Z,2.3nm,0.7s,baz=301,slow=9.2,SNR=18
AAK Ala-Archa 44.27 337 *e*P **P 21 54 59.7 +3.6**
comp=Z,2.6nm,0.9s
AS31 Alice Springs 45.25 127 *e*P **P 21 55 04.0 -0.1**
comp=Z,7.7nm,1.9s
ASAR Alice Springs 45.25 127 P **P 21 55 04.0 -0.1**
comp=Z,1.4nm,0.7s,baz=300,slow=7.9,SNR=16
KS15 Wonju Array Si 45.52 36 *e*P **P 21 55 05.1 -0.8**
KSAR Wonju Array Be 45.52 36 P **P 21 55 05.1 -0.8**
KSRS Korea Array 45.55 36 P **P 21 55 05.1 -1.1**
comp=Z,2.9nm,0.8s,baz=232,slow=9.3,SNR=7.5
KSRS LR LR 22 16 15.4
comp=Z,66nm,18.2s,baz=238,slow=39
MK01 Makanchi Array 45.63 347 *e*P **P 21 55 07.0 +0.2**
MK31 Makanchi Array 45.65 347 *e*P **P 21 55 07.4 +0.5**
MK32 Makanchi Array 45.65 347 *e*P **P 21 55 07.3 +0.4**
MKAR Makanchi Array 45.65 347 P **P 21 55 07.3 +0.4**
comp=Z,6.1nm,0.7s,baz=160,slow=8.3,SNR=65
MAKZ Makanchi 45.74 347 *e*P **P 21 55 08.1 +0.5**
comp=Z,6.9nm,0.9s
SONA0 Songino Array 46.05 10 *e*P **P 21 55 10.1 0.0**
comp=Z,4.7nm,0.8s
SONA0 *e*PcP **PcP 21 56 47.1 +0.8**
SONM Songino Array 46.05 10 P **P 21 55 10.1 0.0**
comp=Z,4.9nm,0.5s,baz=190,slow=9.3,SNR=45
SONM PcP **PcP 21 56 47.1 +0.8**
comp=Z,1.5nm,0.7s,baz=184,slow=3.9,SNR=5.5
SONA1 Songino Array 46.06 10 *e*P **P 21 55 09.9 -0.3**
ULN Ulaanbaatar 46.19 10 *e*P **P 21 55 11.0 -0.3**
comp=Z,3.3nm,0.7s
KKAR Karatay Array 46.29 334 *e*P **P 21 55 13.3 +1.3**
GEYT Alibeck 49.35 320 P **P 21 55 36.4 +0.6**
comp=Z,3.1nm,0.8s,baz=140,slow=9.5,SNR=7.5
GEYT LR LR 22 18 44.1
comp=Z,29nm,19.2s,baz=80,slow=39
GUMO Guam 49.65 74 P **P 21 55 38.6 +0.2**
comp=Z,40nm,0.3s,baz=157,slow=20,SNR=5.7
GUMO LR LR 22 20 14.3
comp=Z,15nm,18.4s,baz=148,slow=40
KURBB Kurchatov Arra 50.12 346 P **P 21 55 42.0 +0.6**
comp=Z,4.1nm,0.7s,baz=166,slow=6.9,SNR=49
KURK Kurchatov 50.19 346 *e*P **P 21 55 42.1 +0.3**
ZAA0 Zalesovo Array 52.06 352 *e*P **P 21 55 56.0 +0.1**
ZALV Zalesovo Beam 52.06 352 P **P 21 55 56.1 +0.3**
comp=Z,8.6nm,0.6s,baz=183,slow=6.6,SNR=39
ZAA1 Zalesovo Array 52.06 352 *e*P **P 21 55 56.1 +0.2**
USRK Ussuriysk Ar. 52.35 32 LR LR 22 20 57.7
comp=Z,30nm,20.1s,baz=208,slow=39
BVAR Borovoye Array 54.58 341 P **P 21 56 14.7 +0.2**
comp=Z,2.4nm,0.7s,baz=134,slow=8.4,SNR=15
ZRNK Zerenda 54.97 340 *e*P **P 21 56 17.4 +0.2**
comp=Z,3.8nm,1.0s
STKA Stephens Creek 55.23 132 P **P 21 56 19.9 +0.4**
comp=Z,2.3nm,0.9s,baz=304,slow=9.3,SNR=5.7
STKA LR LR 22 24 02.5
comp=Z,41nm,18.1s,baz=28,slow=40
STKA Stephens Creek 55.23 132 *e*P **P 21 56 19.9 +0.4**
comp=Z,4.7nm,1.4s
KLR Kul'dur 55.69 28 P **P 21 56 22.4 -0.2**
comp=Z,0.9nm,0.6s,baz=290,slow=6.0,SNR=5.7
ABKAR Akbulak array 55.73 332 *e*P **P 21 56 23.5 +0.7**
ARU Arti 61.46 337 P **P 21 57 02.6 0.0**
comp=Z,1.9nm,0.6s,baz=135,slow=2.4
ARU Arti 61.46 337 *e*P **P 21 57 02.6 0.0**
comp=Z,5.3nm,1.1s
KBZ Khabaz 62.21 319 P **P 21 57 08.7 +0.8**
comp=Z,1.4nm,0.8s,baz=62,slow=1.5,SNR=4.2
BR101 Keskin Array S 67.24 312 *e*P **P 21 57 41.1 +0.1**
BRTR Keskin Array B 67.24 312 P **P 21 57 41.1 +0.1**
comp=Z,0.4nm,0.7s,baz=128,slow=8.0,SNR=3.6
SEY Seymchan 73.08 24 P **P 21 58 15.2 -0.9**
comp=Z,2.1nm,0.8s,baz=230,slow=5.0,SNR=6.8
AKASG Malin Array Be 73.40 322 P **P 21 58 18.1 -0.2**
comp=Z,0.2nm,0.3s,baz=88,slow=4.7,SNR=5.7
AKBB Malin Array Si 73.40 322 *e*P **P 21 58 18.1 -0.2**
comp=Z,5.7nm,0.8s
FIA0 FINESS Array S 78.22 333 *e*P **P 21 58 45.9 +0.3**
FINES FINESS Array B 78.22 333 P **P 21 58 45.9 +0.3**
comp=Z,2.8nm,0.8s,baz=117,slow=7.2,SNR=7.1
FINES LR LR 22 37 22.8
comp=Z,38nm,18.5s,baz=80,slow=39
ARA0 ARCESS Array S 80.85 340 *e*P **P 21 59 00.4 +0.6**
ARCES ARCESS Array B 80.85 340 P **P 21 59 00.4 +0.6**
comp=Z,2.2nm,0.9s,baz=99,slow=8.4,SNR=3.1
GEA0 GERESS Array S 82.95 319 *e*P **P 21 59 12.8 +1.4**
GERES GERESS Array B 82.95 319 P **P 21 59 12.3 +1.0**
comp=Z,0.8nm,0.7s,baz=103,slow=5.8,SNR=8.3

IDC 30 21:53:23.1±12.0, 1°.02S×16°.12W, h0km, mb4.0/3, mb1 4.0/3, mb1mx3.4/49, mbtmp4.0/3, MS3.5/10, Ms1 3.5/10, ms1mx3.3/29, Error ellipse: s-maj=366.6km s-min=88.3km az=170.0, North of Ascension Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H10N2	**ASCENSION HYDR**	**6.96**	**167**	T	T	22 01 38.9	
	baz=348,slow=74,SNR=210						
H10N3	**ASCENSION HYDR**	**6.97**	**167**	T	T	22 01 41.9	
	baz=348,slow=74,SNR=193						
H10N1	**ASCENSION HYDR**	**6.97**	**166**	T	T	22 01 45.6	
	baz=348,slow=74,SNR=250						
H10S1	**ASCENSION HYDR**	**8.01**	**169**	T	T	22 03 03.5	
	baz=351,slow=74,SNR=81						
H10S3	**ASCENSION HYDR**	**8.01**	**170**	T	T	22 03 00.0	
	baz=351,slow=74,SNR=132						
H10S2	**ASCENSION HYDR**	**8.02**	**169**	T	T	22 02 59.8	
	baz=351,slow=74,SNR=84						
DBIC	**Dimbokro**	**13.59**	**56**	LR	LR	22 00 46.7	
	comp=Z,236nm,21.1s,baz=203,slow=33						
TORD	**Torodi Ar. Bea**	**22.59**	**51**	P	P	21 58 25.4	-0.1
	8.7nm,1.2s,baz=226,slow=10,SNR=10						
TORD				LR	LR	22 06 10.3	
	comp=Z,232nm,20.4s,baz=215,slow=34						
BDFB	**Brasília**	**34.65**	**244**	LR	LR	22 11 34.8	
	comp=Z,57nm,21.9s,baz=54,slow=32						
MDT	**Midelt**	**35.37**	**17**	LR	LR	22 15 35.2	
	comp=Z,48nm,20.3s,baz=178,slow=38						
KEST	**Kesra**	**43.60**	**30**	LR	LR	22 21 41.4	
	comp=Z,66nm,18.0s,baz=302,slow=39						
CPUP	**Villa Florida**	**46.93**	**234**	LR	LR	22 20 03.9	
	comp=Z,64nm,20.2s,baz=78,slow=34						
BOSA	**Boshof**	**48.08**	**129**	LR	LR	22 21 18.9	
	comp=Z,59nm,18.8s,baz=222,slow=35						
LPAZ	**La Paz**	**53.42**	**250**	LR	LR	22 25 06.9	
	comp=Z,84nm,20.0s,baz=55,slow=36						
BRTR	**Keskin Array B**	**60.87**	**42**	P	P	22 03 37.9	+0.1
	1.4nm,1.1s,baz=224,slow=5.2,SNR=7.2						
PLCA	**Paso Flores**	**63.03**	**224**	LR	LR	22 27 49.0	
	comp=Z,31nm,21.1s,baz=171,slow=33						
NOA	**NORSAR Array B**	**65.36**	**14**	LR	LR	22 34 30.7	
	comp=Z,20nm,18.5s,baz=210,slow=38						
FINES	**FINESS Array B**	**70.10**	**20**	P	P	22 04 36.8	-0.1
	1.4nm,0.9s,baz=221,slow=17,SNR=1.5						

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*IDC **30** 21:54:53.4±2.6, 37°.82N×142°.68E, h0km, mb3.5/3, mb1 3.7/4, mb1mx3.3/61, mbtmp3.5/4, ML3.0/1, Error ellipse: s-maj=66.0km s-min=30.7km az=64.0*
*JMA **30** 21:54:59.2±0.1, 37°.74N×142°.10E, h32km±3km, M3.6*
ISC 30 21:54:56.9±2.3, 37°.71N±0°.05×142°.08E±0°.10, h12km±11km, n16, σ1°.00/22, mb3.6/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.94**	**323**	P	**Pn**	**21 55 16.2**	**+0.2**
JIO				S	**Sg**	**21 55 27.6**	**+0.1**
JFK	**Kawauchi**	**1.01**	**251**	P	**Pn**	**21 55 17.8**	**+0.8**
JMM	**Marumori**	**1.03**	**279**	P	**Pn**	**21 55 17.9**	**+0.7**
JMM				S	**Sn**	**21 55 31.3**	**-0.3**
ONAJ	**Iwakimizuishiy**	**1.18**	**240**	P	**Pg**	**21 55 20.3**	**+0.6**
ONAJ				S	**Sn**	**21 55 35.2**	**-0.2**
JOU	**Okura**	**1.30**	**301**	P	**Pg**	**21 55 22.0**	**+0.1**
JOU				S	**Sg**	**21 55 38.6**	**-0.1**
JFT	**Otama**	**1.40**	**263**	P	**Pg**	**21 55 24.1**	**+0.4**
JFT				S	**Sg**	**21 55 42.0**	**+0.1**
JMK	**Ichinoseki**	**1.42**	**332**	P	**Pn**	**21 55 22.8**	**+0.3**
JMK				*e*S	**Sn**	**21 55 39.7**	**-1.4**
JYS	**Shiratake**	**1.67**	**289**	P	**Pb**	**21 55 27.9**	**+0.2**
JYK	**Kaneyama**	**1.81**	**312**	P	**Pb**	**21 55 29.3**	**-0.8**
JOM	**Ohasama**	**1.87**	**341**	P	**Pn**	**21 55 29.4**	**+0.6**
JRG	**Rokugo**	**2.03**	**327**	P	**Pb**	**21 55 32.6**	**-1.2**
JYA	**Atsumi**	**2.06**	**296**	P	**Pb**	**21 55 33.4**	**-0.9**
MJAR	**Matsushiro Arr**	**3.30**	**251**	Pn	**Pb**	**21 55 52.7**	**-2.8**
	1.3nm,0.3s,baz=56,slow=9.2,SNR=11						
SONM	**Songino Array**	**27.86**	**303**	P	**P**	**22 00 48.1**	**+1.7**
	0.2nm,0.4s,baz=94,slow=8.6,SNR=3.1						
KURBB	**Kurchatov Arra**	**46.01**	**308**	P	**P**	**22 03 20.4**	**+0.3**
	0.3nm,0.4s,baz=81,slow=7.8,SNR=6.4						
WRA	**Warramunga Arr**	**57.80**	**189**	P	**P**	**22 04 47.8**	**-0.3**
	0.5nm,0.6s,baz=6.8,slow=7.2,SNR=7.5						

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*ISCJB **30** 21:59:52.9±0.4, 39°.10N±0°.03×29°.12E±0°.03, h5km±6km, Error ellipse: s-maj=5.1km s-min=3.4km az=145.5*
*ISK **30** 21:59:52.4, 39°.10N×29°.13E, h6km, MD2.6*
*DDA **30** 21:59:53.1, 39°.10N×29°.12E, h5km, Md2.7*
*CSEM **30** 21:59:53.1±0.1, 39°.10N×29°.13E, h8km, MD2.7, Error ellipse: s-maj=2.2km s-min=1.7km az=121.0*
ISC 30 21:59:52.8±0.9, 39°.10N±0°.02×29°.16E±0°.02, h16km±7km, n41, σ0°.28/60, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.25**	**92**	P	**Pb**	**21 59 59.2**	**+0.1**
GDZ				S	**Sb**	**22 00 03.2**	**-0.1**
GDZ	**Gediz**	**0.25**	**92**	*i* P	**Pb**	**21 59 59.2**	**+0.1**
GDZ				*i* S	**Sb**	**22 00 03.2**	**-0.1**
DEMI	**Demirci**	**0.35**	**261**	P	**Pg**	**22 00 00.2**	**+0.1**
DEMI				S	**Sg**	**22 00 04.7**	**-0.3**
DEMI	**Demirci**	**0.35**	**261**	*i* P	**Pg**	**22 00 00.2**	**+0.1**
DEMI				*i* S	**Sg**	**22 00 04.7**	**-0.3**
TVSB	**Tavsanli**	**0.42**	**34**	*e*PG	**Pg**	**22 00 01.5**	**0.0**
TVSB				*e*SG	**Sg**	**22 00 07.6**	**+0.2**
TVSB	**Tavsanli**	**0.42**	**34**	*e*Pg	**Pg**	**22 00 01.5**	**0.0**
TVSB				*e*Sg	**Sg**	**22 00 07.6**	**+0.2**
KULA	**Kula-Manisa**	**0.70**	**214**	*e*PG	**Pg**	**22 00 06.2**	**-0.4**
KULA				*e*SG	**Sb**	**22 00 16.2**	**+0.1**
KULA	**Kula-Manisa**	**0.70**	**214**	*e*Pg	**Pg**	**22 00 06.2**	**-0.4**
KULA				*e*Sg	**Sb**	**22 00 16.2**	**+0.1**
MANT	**Manisa**	**0.77**	**218**	P	**Pb**	**22 00 08.0**	**+0.1**
MANT				S	**Sg**	**22 00 17.7**	**-0.3**
MANT	**Manisa**	**0.77**	**218**	*i* P	**Pb**	**22 00 08.0**	**+0.1**
MANT				*i* S	**Sg**	**22 00 17.7**	**-0.3**
KHAL	**Karahalli**	**0.77**	**160**	P	**Pn**	**22 00 08.9**	**-0.2**
KHAL				S	**Sb**	**22 00 18.8**	**+0.6**
KHAL	**Karahalli**	**0.77**	**160**	*i* P	**Pn**	**22 00 08.9**	**-0.2**
KHAL				*i* S	**Sb**	**22 00 18.8**	**+0.6**
KHL	**Karahalli**	**0.83**	**159**	*e*PG	**Pb**	**22 00 08.9**	**+0.1**
KHL	**Karahalli**	**0.83**	**159**	*e*Pg	**Pb**	**22 00 08.9**	**+0.1**
ORLT	**Orhaneli**	**0.97**	**348**	*e*PG	**Pb**	**22 00 11.3**	**+0.1**
ORLT	**Orhaneli**	**0.97**	**348**	*e*Pg	**Pb**	**22 00 11.3**	**+0.1**
AKHS	**Akhisar**	**1.07**	**259**	P	**Pg**	**22 00 13.7**	**+0.2**
AKHS				S	**Sn**	**22 00 27.9**	**+0.3**
AKHS	**Akhisar**	**1.07**	**259**	*i* P	**Pg**	**22 00 13.7**	**+0.2**
AKHS				*i* S	**Sn**	**22 00 27.9**	**+0.3**
AKS	**Akhisar**	**1.07**	**259**	*e*PG	**Pb**	**22 00 13.0**	**+0.1**
AKS				*e*SG	**Sn**	**22 00 27.8**	**+0.2**
AKS	**Akhisar**	**1.07**	**259**	*e*Pg	**Pb**	**22 00 13.0**	**+0.1**
AKS				*e*Sg	**Sn**	**22 00 27.8**	**+0.2**
BALB	**Balikesir**	**1.13**	**299**	*e*PN	**Pn**	**22 00 14.0**	**+0.1**
BALB	**Balikesir**	**1.13**	**299**	*e*Pn	**Pn**	**22 00 14.0**	**+0.1**
IGD	**Bursa**	**1.16**	**2**	*i* P	**Pn**	**22 00 14.4**	**0.0**
IGD				*i* S	**Sg**	**22 00 31.3**	**+0.7**
CAVI	**Cavuskoy**	**1.22**	**26**	*e*PN	**Pg**	**22 00 16.3**	**-0.2**
CAVI	**Cavuskoy**	**1.22**	**26**	*e*Pn	**Pg**	**22 00 16.3**	**-0.2**
IZI	**Iznik**	**1.26**	**11**	*e*PN	**Pg**	**22 00 17.0**	**-0.2**
IZI	**Iznik**	**1.26**	**11**	*e*Pn	**Pg**	**22 00 17.0**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.29**	**351**	*e*PN	**Pg**	**22 00 17.4**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.29**	**351**	*e*Pn	**Pg**	**22 00 17.4**	**-0.2**
KCTX	**Karacabey (Bur**	**1.32**	**332**	*e*PN	**Pg**	**22 00 17.8**	**-0.5**
KCTX	**Karacabey (Bur**	**1.32**	**332**	*e*Pn	**Pg**	**22 00 17.8**	**-0.5**
BALY	**Balya**	**1.35**	**299**	P	**Pg**	**22 00 18.7**	**-0.2**
BALY				S	**Sn**	**22 00 34.2**	**-0.4**
BALY	**Balya**	**1.35**	**299**	*i* P	**Pg**	**22 00 18.7**	**-0.2**
BALY				*i* S	**Sn**	**22 00 34.2**	**-0.4**
ADVT	**Abdulvahap**	**1.41**	**18**	*e*PN	**Pg**	**22 00 19.4**	**-0.5**
ADVT	**Abdulvahap**	**1.41**	**18**	*e*Pn	**Pg**	**22 00 19.5**	**-0.5**
ARMT	**Armutlu**	**1.48**	**351**	*e*PN	**Pb**	**22 00 20.3**	**+0.3**
ARMT	**Armutlu**	**1.48**	**351**	*e*Pn	**Pb**	**22 00 20.3**	**+0.3**
EDC	**Edincik**	**1.59**	**322**	*e*PN	**Pb**	**22 00 21.7**	**-0.2**
EDC	**Edincik**	**1.59**	**322**	*e*Pn	**Pb**	**22 00 21.7**	**-0.2**
GULT	**Gulveren**	**1.69**	**38**	*e*PN	**Pb**	**22 00 23.6**	**-0.1**
GULT	**Gulveren**	**1.69**	**38**	*e*Pn	**Pb**	**22 00 23.6**	**-0.1**

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*IDC **30** 22:03:34.1±1.3, 39°.11N×29°.12E, h0km, mb3.3/3, mb1 3.3/7, mb1mx3.2/49, mbtmp3.2/7, ML2.9/4, MS2.7/3, Ms1 2.6/3, ms1mx2.1/34, Error ellipse: s-maj=21.2km s-min=18.9km az=68.0*
*DDA **30** 22:03:35.1, 39°.16N×29°.01E, h15km, Ml4.0*
*THE **30** 22:03:35.1, 39°.18N×29°.12E, h0km±1km, ML3.7/5, Error ellipse: s-maj=1.6km s-min=1.1km az=64.0*
*ISK **30** 22:03:35.3, 39°.13N×29°.06E, h5km, ML3.8*
*CSEM **30** 22:03:36.4±0.1, 39°.12N×29°.05E, h10km, ML4.0, Error ellipse: s-maj=2.3km s-min=2.2km az=86.0*
ISC 30 22:03:36.0±0.9, 39°.14N±0°.01×29°.01E±0°.01, h8km±7km, n207, σ0°.93/265, mb3.3/4, 10C-12D, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**247**	P	**Pg**	**22 03 41.2**	**+0.1**
DEMI				S	**Sg**	**22 03 44.6**	**+0.2**
DEMI	**Demirci**	**0.25**	**247**	⇓*i* P	**Pg**	**22 03 41.1**	**+0.1**
DEMI				*i* S	**Sg**	**22 03 44.6**	**+0.2**
GDZ	**Gediz**	**0.37**	**98**	P	**Pg**	**22 03 43.2**	**-0.1**
GDZ				S	**Sg**	**22 03 48.5**	**+0.3**
GDZ	**Gediz**	**0.37**	**98**	⇓*i* P	**Pg**	**22 03 43.2**	**-0.1**
GDZ				*i* S	**Sg**	**22 03 48.5**	**+0.3**
TVSB	**Tavsanli**	**0.47**	**48**	*e*PG	**Pg**	**22 03 44.9**	**-0.3**
TVSB				*e*SG	**Sg**	**22 03 51.1**	**-0.2**
TVSB	**Tavsanli**	**0.47**	**48**	*e*Pg	**Pg**	**22 03 44.9**	**-0.3**
TVSB				*e*Sg	**Sg**	**22 03 51.1**	**-0.2**
KULA	**Kula-Manisa**	**0.68**	**204**	*e*PG	**Pg**	**22 03 48.8**	**-0.4**
KULA	**Kula-Manisa**	**0.68**	**204**	*e*Pg	**Pg**	**22 03 48.8**	**-0.4**
KHAL	**Karahalli**	**0.85**	**154**	P	**Pg**	**22 03 52.1**	**-0.4**
KHAL				S	**Sg**	**22 04 03.2**	**-0.4**
KHAL	**Karahalli**	**0.85**	**154**	⇑*i* P	**Pg**	**22 03 52.1**	**-0.4**
KHAL				*i* S	**Sg**	**22 04 03.2**	**-0.4**
KHL	**Karahalli**	**0.91**	**154**	*e*PG	**Pg**	**22 03 52.7**	**-0.8**
KHL				*e*SG	**Sg**	**22 04 05.3**	**0.0**
KHL	**Karahalli**	**0.91**	**154**	*e*Pg	**Pg**	**22 03 52.7**	**-0.8**
KHL				*e*Sg	**Sg**	**22 04 05.3**	**0.0**
ORLT	**Orhaneli**	**0.91**	**354**	*e*PG	**Pg**	**22 03 53.4**	**-0.2**
ORLT	**Orhaneli**	**0.91**	**354**	*e*Pg	**Pg**	**22 03 53.4**	**-0.2**
AKHS	**Akhisar**	**0.97**	**255**	P	**Pg**	**22 03 54.3**	**-0.3**
AKHS				S	**Sg**	**22 04 07.3**	**+0.1**
AKHS	**Akhisar**	**0.97**	**255**	⇑*i* P	**Pg**	**22 03 54.4**	**-0.3**
AKHS				*i* S	**Sg**	**22 04 07.3**	**+0.1**
AKS	**Akhisar**	**0.97**	**255**	*e*PG	**Pb**	**22 03 54.9**	**-0.2**
AKS	**Akhisar**	**0.97**	**255**	*e*Pg	**Pb**	**22 03 54.9**	**-0.2**
BALB	**Balikesir**	**1.01**	**300**	*e*PG	**Pb**	**22 03 55.7**	**0.0**
BALB	**Balikesir**	**1.01**	**300**	*e*Pg	**Pb**	**22 03 55.7**	**0.0**
IGD	**Bursa**	**1.13**	**7**	⇑*i* P	**Pg**	**22 03 55.9**	**-2.0**
IGD				*i* S	**Sg**	**22 04 12.0**	**-0.5**
KCTX	**Karacabey (Bur**	**1.23**	**336**	*e*PN	**Pn**	**22 03 59.7**	**+0.1**
KCTX	**Karacabey (Bur**	**1.23**	**336**	*e*Pn	**Pn**	**22 03 59.7**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.23**	**355**	*e*PN	**Pg**	**22 03 59.0**	**-0.7**
MDNY	**Mudanya-Bursa**	**1.23**	**355**	*e*Pn	**Pg**	**22 03 59.0**	**-0.7**
BALY	**Balya**	**1.23**	**300**	P	**Pg**	**22 03 58.9**	**-0.8**
BALY				S	**Sb**	**22 04 16.1**	**+0.4**
BALY	**Balya**	**1.23**	**300**	⇓*i* P	**Pg**	**22 03 58.9**	**-0.8**
BALY				*i* S	**Sb**	**22 04 16.1**	**+0.4**
CAVI	**Cavuskoy**	**1.24**	**31**	*e*PN	**Pg**	**22 03 59.3**	**-0.5**
CAVI	**Cavuskoy**	**1.24**	**31**	*e*Pn	**Pg**	**22 03 59.3**	**-0.5**
IZI	**Iznik**	**1.25**	**16**	*e*PN	**Pg**	**22 03 59.7**	**-0.3**
IZI	**Iznik**	**1.25**	**16**	*e*Pn	**Pg**	**22 03 59.7**	**-0.3**
GEMT	**Gemlik**	**1.30**	**6**	*e*PN	**Pb**	**22 04 00.8**	**+0.1**
GEMT	**Gemlik**	**1.30**	**6**	*e*Pn	**Pb**	**22 04 00.8**	**+0.1**
BORA	**Eskisehir**	**1.34**	**56**	P	**Pn**	**22 04 00.3**	**-0.8**
BORA				S	**Sn**	**22 04 19.4**	**+0.3**
BORA	**Eskisehir**	**1.34**	**56**	⇑*i* P	**Pn**	**22 04 00.3**	**-0.8**
BORA				*i* S	**Sn**	**22 04 19.4**	**+0.3**
GONE	**Gonen-Balikesi**	**1.37**	**312**	*e*PN	**Pg**	**22 04 02.0**	**-0.3**
GONE	**Gonen-Balikesi**	**1.37**	**312**	*e*Pn	**Pg**	**22 04 02.0**	**-0.3**
DENT	**Denizli**	**1.38**	**179**	*e*PN	**Pn**	**22 04 01.8**	**+0.2**
DENT	**Denizli**	**1.38**	**179**	*e*Pn	**Pn**	**22 04 01.8**	**+0.2**
ADVT	**Abdulvahap**	**1.41**	**23**	*e*PN	**Pn**	**22 04 02.1**	**+0.2**
ADVT	**Abdulvahap**	**1.41**	**23**	*e*Pn	**Pn**	**22 04 02.2**	**+0.2**
ARMT	**Armutlu**	**1.43**	**355**	*e*PN	**Pn**	**22 04 02.3**	**0.0**
ARMT	**Armutlu**	**1.43**	**355**	*e*Pn	**Pn**	**22 04 02.3**	**0.0**
DNZL	**Cakiroluk**	**1.45**	**179**	P	**Pn**	**22 04 01.6**	**-1.1**
DNZL	**Cakiroluk**	**1.45**	**179**	⇑*i* P	**Pn**	**22 04 01.6**	**-1.1**
DNZL				*i* S	**Sg**	**22 04 24.5**	**+1.9**
ESKT	**Eskisehir**	**1.48**	**74**	⇓*i* P	**Pn**	**22 04 02.5**	**-0.5**
ESKT				*i* S	**Sg**	**22 04 26.7**	**+3.2**
SEYT	**Eskypehyr**	**1.48**	**74**	P	**Pn**	**22 04 02.5**	**-0.5**
EDC	**Edincik**	**1.50**	**324**	*e*PN	**Pb**	**22 04 03.9**	**-0.2**
EDC	**Edincik**	**1.50**	**324**	*e*Pn	**Pb**	**22 04 03.9**	**-0.2**
GPA	**Golpazari**	**1.52**	**41**	*e*PN	**Pn**	**22 04 03.5**	**-0.1**
GPA	**Golpazari**	**1.52**	**41**	*e*Pn	**Pn**	**22 04 03.5**	**-0.1**
BOLV	**Bolvadin**	**1.57**	**105**	P	**Pn**	**22 04 03.9**	**-0.4**
BOLV				S	**Sg**	**22 04 26.4**	**-0.1**
BOLV	**Bolvadin**	**1.57**	**105**

SART				*i* S		Sg	22 04 42.7	-0.6
BTAS	**Taskesti**	**2.10**	**46**	P		Pn	22 04 11.3	-0.1
BTAS	**Taskesti**	**2.10**	**46**	*i* P		Pn	22 04 11.3	-0.1
BTAS				*i* S		Sg	22 04 45.4	+2.0
KLYT	**Kilyos**	**2.11**	**1**	*e*PN		Pn	22 04 12.4	+0.8
KLYT	**Kilyos**	**2.11**	**1**	*e*Pn		Pn	22 04 12.4	+0.8
LPK	**Lapseki**	**2.13**	**306**	*e*PN		Pn	22 04 13.0	+1.2
LPK	**Lapseki**	**2.13**	**306**	*e*Pn		Pn	22 04 13.0	+1.2
CTKS	**Kestanelik-??a**	**2.13**	**350**	*e*PN		Pn	22 04 12.6	+0.8
CTKS	**Kestanelik-??a**	**2.13**	**350**	*e*Pn		Pn	22 04 12.6	+0.8
PRK	**Paraskevi**	**2.13**	**274**	P		Pn	22 04 11.6	-0.3
PRK				S		Sb	22 04 40.9	-0.5
PRK	**Paraskevi**	**2.13**	**274**	P		Pn	22 04 11.6	-0.3
PRK				S		Sb	22 04 40.9	-0.5
MDUB	**Mudurnu**	**2.15**	**51**	*e*PN		Pn	22 04 12.5	+0.3
MDUB	**Mudurnu**	**2.15**	**51**	*e*Pn		Pn	22 04 12.5	+0.3
KAND	**Kocaeli-Kandir**	**2.15**	**25**	P		Pn	22 04 11.7	-0.5
KAND				S		Sn	22 04 39.3	+0.3
KAND	**Kocaeli-Kandir**	**2.15**	**25**	*i* P		Pn	22 04 11.7	-0.5
KAND				*i* S		Sn	22 04 39.3	+0.3
ZEY	**¯zmir**	**2.16**	**246**	*i* P		Pn	22 04 10.9	-1.3
ZEY				*i* S		Sg	22 04 44.7	-0.7
TKR	**Tekirdag**	**2.17**	**329**	*e*PN		Pn	22 04 13.4	+1.0
TKR	**Tekirdag**	**2.17**	**329**	*e*Pn		Pn	22 04 13.4	+1.0
EZN	**Ezine**	**2.19**	**289**	*e*PN		Pn	22 04 14.0	+1.3
EZN	**Ezine**	**2.19**	**289**	*e*Pn		Pn	22 04 14.0	+1.3
CRLT	**Corlu**	**2.21**	**334**	*e*PN		Pn	22 04 14.4	+1.4
CRLT	**Corlu**	**2.21**	**334**	*e*Pn		Pn	22 04 14.4	+1.4
SAHE	**Sakarya_HENDEK**	**2.22**	**39**	P		Pn	22 04 12.3	-0.8
SAHE	**Sakarya_HENDEK**	**2.22**	**39**	*i* P		Pn	22 04 12.3	-0.8
SAHE				*i* S		Sg	22 04 48.7	+1.3
SMG	**Samos**	**2.23**	**231**	P		Pn	22 04 12.6	-0.6
SMG				S		Sb	22 04 44.0	-0.2
SMG	**Samos**	**2.23**	**231**	P		Pn	22 04 12.6	-0.6
SMG				S		Sb	22 04 44.0	-0.2
KIZT	**Kizilcal**	**2.25**	**96**	*e*PN		Pn	22 04 13.7	+0.1
KIZT	**Kizilcal**	**2.25**	**96**	*e*Pn		Pn	22 04 13.7	+0.1
GELI	**Tayfur-Gelibol**	**2.33**	**304**	*e*PN		Pn	22 04 15.9	+1.4
GELI	**Tayfur-Gelibol**	**2.33**	**304**	*e*Pn		Pn	22 04 15.9	+1.4
DALY	**Dalyan (Mu¯la**	**2.33**	**187**	*e*PN		Pn	22 04 15.0	+0.4
DALY	**Dalyan (Mu¯la**	**2.33**	**187**	*e*Pn		Pn	22 04 15.0	+0.4
BOZC	**Bozcaada**	**2.39**	**288**	*i* P		Pn	22 04 15.2	-0.3
BOZC				*i* S		Sb	22 04 49.9	+0.9
CTYL	**Yalikoy Yolu**	**2.40**	**347**	*e*PN		Pn	22 04 16.6	+1.1
CTYL	**Yalikoy Yolu**	**2.40**	**347**	*e*Pn		Pn	22 04 16.6	+1.1
BDRM	**Kayabasi**	**2.41**	**211**	P		Pn	22 04 14.5	-1.2
BDRM	**Kayabasi**	**2.41**	**211**	*i* P		Pn	22 04 14.5	-1.2
BDRM				*i* S		Sg	22 04 55.0	+1.5
CHOS	**Chios island**	**2.43**	**253**	*e*PN		Pn	22 04 17.3	+1.3
CHOS	**Chios island**	**2.43**	**253**	P		Pn	22 04 15.3	-0.7
CHOS				S		Sb	22 04 48.4	-1.7
CHOS	**Chios island**	**2.43**	**253**	P		Pn	22 04 15.3	-0.7
CHOS	**Chios island**	**2.43**	**253**	*e*Pn		Pn	22 04 17.3	+1.3
CHOS				S		Sb	22 04 48.4	-1.7
SIGR	**SIGRI**	**2.45**	**273**	*e*PN		Pn	22 04 17.6	+1.3
SIGR	**SIGRI**	**2.45**	**273**	*e*Pn		Pn	22 04 17.6	+1.3
ERIK	**Erikli-Kesan**	**2.46**	**309**	*e*PN		Pn	22 04 17.7	+1.4
ERIK	**Erikli-Kesan**	**2.46**	**309**	*e*Pn		Pn	22 04 17.7	+1.4
KESN	**Edirne-Kesan**	**2.46**	**314**	P		Pn	22 04 18.1	+1.4
KESN				S		Sb	22 04 50.3	-0.9
KESN	**Edirne-Kesan**	**2.46**	**314**	*i* P		Pn	22 04 18.1	+1.4
KESN				*i* S		Sb	22 04 50.3	-0.9
BODT	**Bodrum**	**2.47**	**213**	*e*PN		Pn	22 04 17.6	+1.1
BODT	**Bodrum**	**2.47**	**213**	P		Pn	22 04 15.4	-1.1
BODT	**Bodrum**	**2.47**	**213**	P		Pn	22 04 15.4	-1.1
BODT	**Bodrum**	**2.47**	**213**	*e*Pn		Pn	22 04 17.6	+1.1
ELL	**Elmali**	**2.49**	**163**	*e*PN		Pn	22 04 17.2	+0.3
ELL	**Elmali**	**2.49**	**163**	*e*Pn		Pn	22 04 17.2	+0.3
FETY	**Fethiye**	**2.50**	**179**	*e*PN		Pn	22 04 17.5	+0.5
FETY	**Fethiye**	**2.50**	**179**	P		Pn	22 04 17.3	+0.3
FETY	**Fethiye**	**2.50**	**179**	P		Pn	22 04 17.3	+0.3
FETY	**Fethiye**	**2.50**	**179**	*e*Pn		Pn	22 04 17.5	+0.5
KDHN	**Kadinhani**	**2.50**	**103**	P		Pn	22 04 16.9	-0.2
KDHN	**Kadinhani**	**2.50**	**103**	*i* P		Pn	22 04 16.9	-0.2
KDHN				*i* S		Sg	22 04 56.9	+0.4
PHSR	**Pinarhisar**	**2.74**	**336**	*e*PN		Pn	22 04 21.6	+1.4
PHSR	**Pinarhisar**	**2.74**	**336**	*e*Pn		Pn	22 04 21.6	+1.4
LADK	**Ladik-KONYA**	**2.79**	**109**	*e*PN		Pn	22 04 21.6	+0.6
LADK	**Ladik-KONYA**	**2.79**	**109**	*e*Pn		Pn	22 04 21.6	+0.6
KDZE	**Karadeniz Ereo**	**2.86**	**40**	*e*PN		Pn	22 04 22.8	+0.8
KDZE	**Karadeniz Ereo**	**2.86**	**40**	*e*Pn		Pn	22 04 22.8	+0.8
ALN	**Alexandroupoli**	**2.88**	**309**	*e*PN		Pn	22 04 23.8	+1.7
ALN	**Alexandroupoli**	**2.88**	**309**	P		Pn	22 04 21.8	-0.3
ALN				S		Sn	22 04 57.9	+1.1
ALN	**Alexandroupoli**	**2.88**	**309**	P		Pn	22 04 21.8	-0.3
ALN	**Alexandroupoli**	**2.88**	**309**	*e*Pn		Pn	22 04 23.8	+1.7
ALN				S		Sn	22 04 57.9	+1.1
KONT	**Konya--Tatoy**	**2.88**	**113**	*e*PN		Pn	22 04 22.6	+0.3
KONT	**Konya--Tatoy**	**2.88**	**113**	*e*Pn		Pn	22 04 22.6	+0.3
AKAS	**Kas**	**2.94**	**171**	P		Pn	22 04 23.8	+0.7
AKAS	**Kas**	**2.94**	**171**	*i* P		Pn	22 04 23.8	+0.7
AKAS				*i* S		Sg	22 05 09.8	-0.7
SMTH	**Samothraki Isl**	**2.99**	**297**	P		Pn	22 04 23.8	+0.1
SMTH	**Samothraki Isl**	**2.99**	**297**	P		Pn	22 04 23.8	+0.1
KSL	**Kastellorizon**	**3.02**	**171**	P		Pn	22 04 24.0	-0.1
LIA	**Limnos Island**	**3.06**	**286**	P		Pn	22 04 24.8	+0.2
LIA				S		Sn	22 05 03.2	+1.9
LIA	**Limnos Island**	**3.06**	**286**	P		Pn	22 04 24.8	+0.2
LIA				S		Sn	22 05 03.2	+1.9
CHBY	**Cihanbeyli**	**3.08**	**99**	*e*PN		Pn	22 04 25.4	+0.4
CHBY	**Cihanbeyli**	**3.08**	**99**	*e*Pn		Pn	22 04 25.4	+0.4
AFSR	**Af¯ar-Bala (A**	**3.17**	**83**	*e*PN		Pn	22 04 26.9	+0.7
AFSR	**Af¯ar-Bala (A**	**3.17**	**83**	*e*Pn		Pn	22 04 26.9	+0.7
APE	**Apeiranthos**	**3.44**	**234**	⇑ S		Pn	22 04 31.1	+1.2
SAFT	**Safranbolu**	**3.51**	**52**	*e*PN		Pn	22 04 31.8	+0.9
SAFT	**Safranbolu**	**3.51**	**52**	*e*Pn		Pn	22 04 31.8	+0.9
BRTR	**Keskin Array B**	**3.63**	**79**	Pn		Pn	22 04 32.8	+0.1
	1.2nm,0.3s,baz=256,slow=14,SNR=39							
BRTR				Pg		**Pg**	**22 04 44.9**	**-0.7**
	2.0nm,0.3s,baz=255,slow=16,SNR=21							
BRTR				Lg		Lg	22 05 33.9	
	1.9nm,0.3s,baz=256,slow=25,SNR=6.4							
KARP	**Karpathos**	**3.88**	**203**	P		Pn	22 04 35.4	-0.5
KARP	**Karpathos**	**3.88**	**203**	P		Pn	22 04 35.4	-0.5
LAST	**Lasithi**	**4.87**	**216**	⇑ *i* P		Pn	22 04 51.1	+1.5
MSAB	**Monastry St. A**	**5.03**	**350**	⇓ *i* P		Pn	22 04 51.8	+0.1
IDI	**Anoyia**	**5.06**	**222**	Pn		Pn	22 04 51.4	-0.8
	0.4nm,0.3s,baz=46,slow=14,SNR=2.0							
IDI	**Anoyia**	**5.06**	**222**	⇓ *i* P		Pn	22 04 51.9	-0.3
TIRR	**Tirgusor**	**5.33**	**355**	⇑ *i* P		Pn	22 04 55.6	-0.3
CFR	**Carcaliu**	**6.07**	**354**	⇓ *i* P		Pn	22 05 05.0	-1.0
MLR	**Muntele Rosu**	**6.74**	**341**	Pn		Pn	22 05 16.6	+1.3
	0.1nm,0.3s,baz=72,slow=4.0,SNR=3.0							
MLR				Sn		**Sn**	**22 06 32.1**	**-0.2**
	0.0nm,0.3s,baz=178,slow=21,SNR=1.1							
MLR				Lg		Lg	22 07 03.5	
	0.1nm,0.3s,baz=324,slow=19,SNR=1.9							
MLR	**Muntele Rosu**	**6.74**	**341**	⇓ *i* P		Pn	22 05 14.9	-0.4
PLOR	**Plostina**	**6.93**	**346**	⇑ *i* P		Pn	22 05 17.4	-0.5
VRI	**Vrincioaia**	**6.93**	**347**	⇓ *i* P		Pn	22 05 18.2	+0.4
DOPR	**Dopca**	**7.33**	**340**	⇓ *i* P		Pn	22 05 23.7	+0.4
MMAI	**Mount Meron Ar**	**8.01**	**138**	Pn		Pn	22 05 30.3	-2.4
	0.6nm,0.3s,baz=335,slow=13,SNR=3.2							
BURAR	**Bucovina Array**	**8.91**	**343**	⇓ *i* P		Pn	22 05 43.5	-1.5
KVAR	**Kislovodsk Arr**	**11.32**	**60**	LR		LR	22 10 49.5	
	comp=Z,27nm,21.2s,baz=313,slow=39							
KBZ	**Khabaz**	**11.39**	**62**	LR		LR	22 12 11.2	
	comp=Z,36nm,19.8s,baz=324,slow=46							
AKTO	**Aktyubinsk**	**23.33**	**52**	P		**P**	**22 08 47.4**	**+3.0**
	0.6nm,0.4s,baz=262,slow=11,SNR=2.9							
ARU	**Arti**	**26.03**	**39**	LR		LR	22 22 20.4	
	comp=Z,22nm,19.0s,baz=264,slow=43							
TORD	**Torodi Ar. Bea**	**35.40**	**231**	P		**P**	**22 10 32.3**	**-0.1**
	0.3nm,0.7s,baz=38,slow=7.9,SNR=2.3							
MKAR	**Makanchi Array**	**39.08**	**61**	P		**P**	**22 11 02.0**	**-1.4**
	0.3nm,0.7s,baz=262,slow=9.2,SNR=3.2							
ZALV	**Zalesovo Beam**	**40.06**	**49**	P		**P**	**22 11 10.4**	**-1.1**
	0.3nm,0.3s,baz=286,slow=10,SNR=2.0							

JMA ***30*** *22:05:17.9±0.2, 22°.94N×122°.55E, h43km, M2.5*
TAP ***30*** *22:05:19.7, 22°.87N×122°.47E, h39km±1km, ML3.0, D*
ISC 30 22:05:14.7±1.3, 22°.94N±0°.04×122°.55E±0°.03, h9km±10km, n37, σ0°64/66, 1C, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHKT	**Chengkung**	**1.11**	**278**	*i* P		**Pn**	**22 05 36.8**	**+0.5**
	baz=291						
CHKT				*e*S		**Sg**	**22 05 49.2**	**-1.1**
	baz=291						

TWF1	**Yuli**	**1.23**	**290**	⇑ *i* P		**Pg**	**22 05 39.1**	**+0.8**
	baz=295							
TWF1				*e*S		**Sb**	**22 05 52.9**	**-1.1**
	baz=295							
EHY	**Hungye**	**1.27**	**297**	*e*P		**Pg**	**22 05 39.9**	**+0.9**
	baz=302							
EHY				*e*S		**Sg**	**22 05 55.3**	**-0.2**
	baz=302							
LAY	**Lan-yu**	**1.29**	**226**	P		**Pn**	**22 05 39.5**	**+0.6**
	baz=236							
LAY				S		**Sb**	**22 05 54.3**	**-1.5**
	baz=236							
ESL	**Shilin**	**1.35**	**310**	*e*P		**Pg**	**22 05 40.6**	**0.0**
	baz=316							
TWG	**Pinlang**	**1.37**	**265**	*e*P		**Pg**	**22 05 41.7**	**+0.6**
	baz=268							
TWG				*e*S		**Sb**	**22 05 56.9**	**-1.2**
	baz=268							
TWD	**Chiawan**	**1.44**	**322**	*e*P		**Pg**	**22 05 42.0**	**-0.2**
	baz=327							
ELDTW	**Lidau**	**1.44**	**280**	*e*P		**Pb**	**22 05 42.1**	**+0.4**
	baz=295							
ECL	**Taimali**	**1.52**	**257**	P		**Pb**	**22 05 43.4**	**+0.4**
	baz=260							
ECL				*e*S		**Sn**	**22 06 00.9**	**-0.9**
	baz=260							
JYNG	**Yonagunijimaku**	**1.55**	**13**	P		**Pg**	**22 05 44.3**	**0.0**
JYNG				S		**Sg**	**22 06 03.8**	**-0.6**
YOJ	**Yonaguni jima**	**1.57**	**15**	P		**Pg**	**22 05 44.9**	**+0.1**
YOJ				*e*S		**Sg**	**22 06 04.5**	**-0.7**
YUS	**Yu-Shan**	**1.57**	**291**	*e*P		**Pg**	**22 05 45.1**	**+0.2**
	baz=295							
YUS				*e*S		**Sn**	**22 06 03.2**	**-0.7**
	baz=295							
HATJ	**Hateruma jima**	**1.60**	**46**	P		**Pb**	**22 05 44.6**	**+0.3**
HATJ				*e*S		**Sn**	**22 06 03.5**	**-0.3**
ENA	**Nanau**	**1.66**	**333**	*e*P		**Pb**	**22 05 45.6**	**+0.3**
	baz=338							
STYT	**Tauyuan**	**1.67**	**278**	*e*P		**Pg**	**22 05 46.7**	**-0.1**
	baz=282							
STYT				*e*S		**Sn**	**22 06 05.1**	**-0.6**
	baz=282							
EAST	**Anshuo**	**1.67**	**251**	*e*P		**Pb**	**22 05 46.2**	**+0.6**
	baz=263							
EAST				*e*S		**Sn**	**22 06 05.2**	**-0.5**
	baz=263							
WHF	**Hehuan Shan**	**1.68**	**316**	*e*P		**Pg**	**22 05 46.7**	**-0.4**
	baz=320							
WHF				*e*S		**Sn**	**22 06 05.8**	**-0.8**
	baz=320							
ALS	**Alishan**	**1.71**	**290**	*e*P		**Pg**	**22 05 47.4**	**0.0**
	baz=294							
ALS				*e*S		**Sn**	**22 06 06.9**	**-0.1**
	baz=294							
IRIF	**Iriomote-Funau**	**1.76**	**38**	P		**Pb**	**22 05 47.0**	**-0.1**
IRIF				S		**Sn**	**22 06 08.4**	**+0.6**
TWC	**Suao**	**1.78**	**339**	*e*P		**Pb**	**22 05 48.0**	**+0.5**
	baz=343							
SMLT	**Sun Moon Lake**	**1.79**	**302**	*e*P		**Pb**	**22 05 48.0**	**+0.3**
	baz=313							
WTP	**Ta-pu**	**1.81**	**280**	*e*P		**Pg**	**22 05 49.8**	**+0.3**
	baz=284							
WTP				*e*S		**Sb**	**22 06 10.3**	**-0.6**
	baz=284							
TWT	**Tachien**	**1.82**	**316**	*e*P		**Pg**	**22 05 49.1**	**-0.4**
	baz=320							
TWT				*e*S		**Sb**	**22 06 10.3**	**-0.8**
	baz=320							
TYC	**Yuchr**	**1.83**	**302**	*e*P		**Pb**	**22 05 49.0**	**+0.7**
	baz=306							
TYC				*e*S		**Sb**	**22 06 11.0**	**-0.4**
	baz=306							
CHN5	**Tsauling**	**1.84**	**291**	P		**Pg**	**22 05 49.8**	**-0.3**
	baz=295							
CHN5				S		**Sb**	**22 06 12.1**	**+0.3**
	baz=295							
CHN4	**Tsaushan**	**1.85**	**283**	*e*P		**Pg**	**22 05 50.0**	**-0.2**
	baz=292							
CHN4				*e*S		**Sb**	**22 06 12.3**	**+0.4**
	baz=292							
JKRS	**Kuro-shima**	**1.86**	**46**	P		**Pb**	**22 05 48.4**	**-0.4**
JKRS				S		**Sn**	**22 06 09.6**	**-0.6**
CHN1	**Nanshi**	**1.88**	**278**	P		**Pg**	**22 05 50.9**	**+0.1**
	baz=289							
CHN1				S		**Sb**	**22 06 13.3**	**+0.5**
	baz=289							
ENTT	**Nioudou**	**1.92**	**332**	*e*P		**Pg**	**22 05 51.3**	**-0.1**
	baz=336							
ENTT				*e*S		**Sn**	**22 06 11.8**	**0.0**
	baz=336							
TWK	**Hsinying**	**1.93**	**280**	*e*P		**Pg**	**22 05 51.5**	**-0.2**
	baz=292							
TWK				*e*S		**Sb**	**22 06 14.2**	**-0.1**
	baz=292							
TWE	**Neicheng**	**1.95**	**336**	*e*P		**Pb**	**22 05 51.0**	**+0.6**
	baz=339							
JIJ	**Ishigaki jima**	**2.03**	**45**	P		**Pn**	**22 05 50.4**	**+1.3**
JIJ				S		**Sn**	**22 06 13.3**	**-1.3**
NSK	**Sanguang**	**2.04**	**328**	*e*P		**Pb**	**22 05 51.5**	**-0.5**
	baz=332							
NSK				*e*S		**Sn**	**22 06 14.8**	**-0.2**
	baz=332							
TWQ1	**Liyutan**	**2.15**	**311**	*e*P		**Pb**	**22 05 54.2**	**+0.4**
	baz=315							
TWQ1				*e*S		**Sb**	**22 06 21.2**	**+0.6**
	baz=315							
NSTT	**Nanjuang**	**2.20**	**320**	*e*P		**Pb**	**22 05 55.0**	**+0.3**
	baz=324							
JISG	**Ishigakijimahi**	**2.30**	**44**	P		**Pn**	**22 05 53.5**	**+0.8**
JISG				S		**Sn**	**22 06 20.5**	**-0.6**
JTJ	**Tarama**	**2.59**	**49**	P		**Pn**	**22 05 58.3**	**+1.5**
JTJ				S		**Sn**	**22 06 28.1**	**-0.4**

IDC 30 22:15:01.2±2.1, 3°.16N×129°.24E, h0km, mb3.9/4, mb1 4.0/4, mb1mx3.6/37, mbtmp3.9/4, Error ellipse: s-maj=139.4km s-min=24.2km az=68.0, North of Halmahera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**23.50**	**168**	P	P	22 20 13.5	+0.6
	4.9nm,1.0s,baz=348,slow=11,SNR=12						
ASAR	**Alice Springs**	**27.05**	**171**	P	P	22 20 45.5	0.0
	0.5nm,0.6s,baz=355,slow=8.3,SNR=7.7						
STKA	**Stephens Creek**	**36.77**	**162**	P	P	22 22 09.5	-1.1
	1.7nm,0.5s,baz=342,slow=7.6,SNR=3.4						
MKAR	**Makanchi Array**	**59.46**	**324**	P	P	22 25 06.2	+0.2
	0.7nm,0.7s,baz=129,slow=7.1,SNR=6.3						

IDC 30 22:21:42.5±5.1, 5°.55S×147°.29E, h218km±54km, mb3.2/3, mb1 3.4/5, mb1mx3.0/29, mbtmp3.7/5, MS2.8/1, Ms1 2.8/1, ms1mx2.2/12, Error ellipse: s-maj=89.9km s-min=29.3km az=134.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**3.83**	**182**	P	Pn	22 22 44.9	+1.9
	3.1nm,0.3s,baz=338,slow=8.7,SNR=2.6						
PMG				S	S	22 23 30.3	-0.2
	4.0nm,0.3s,baz=35,slow=23,SNR=2.4						
JAY	**Jayapura**	**7.23**	**294**	LR	LR	22 26 01.8	
	comp=Z,80nm,21.9s,baz=194,slow=36						
WRA	**Warramunga Arr**	**19.06**	**220**	P	P	22 25 48.2	-0.6
	0.5nm,0.3s,baz=44,slow=9.5,SNR=9.1						
ASAR	**Alice Springs**	**22.15**	**214**	P	P	22 26 21.4	+0.6
	1.4nm,0.7s,baz=45,slow=7.4,SNR=8.0						
FITZ	**Fitzroy Crossi**	**24.55**	**238**	P	P	22 26 42.9	+0.3
	2.2nm,0.4s,baz=46,slow=10,SNR=3.4						
ILAR	**Eielson Array**	**84.95**	**23**	P	P	22 33 52.2	-0.7
	0.2nm,0.6s,baz=243,slow=6.0,SNR=1.8						

DHMR ***30*** *22:33:58.0±1.3, 11°.76N×42°.66E, h12km±14km, ML3.6*
ISCJB ***30*** *22:34:01.8±0.7, 11°.62N±0°.08×42°.82E±0°.08, h18km±8km, Error ellipse: s-maj=16.8km s-min=9.0km az=135.5*
ARO ***30*** *22:34:03.0, 11°.6N±0°.2×42°.8E±0°.3, h7km±1km, ML3.3*
ISC 30 22:34:02.0±1.0, 11°.63N±0°.06×42°.82E±0°.07, h15km±7km, n11, σ1°40/16, 2C, Ethiopia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ATD	**Arta Tunnel**	**0.10**	**163**	*e*P		**Pg**	**22 34 05.6**	**+0.2**
ATD				*e*S		**Sg**	**22 34 07.7**	**+0.1**
TDD	**Tadjoura Ara**	**0.20**	**26**	*e*P		**Pg**	**22 34 07.2**	**+0.5**

SGH	**Sud-Ghoubbet**	**0.26**	**224**	*e*P		**Pb**	**22 34 08.6**	**+0.2**
MCAD	**Moucha**	**0.40**	**75**	*e*P		**Pg**	**22 34 10.0**	**-0.1**
ATA	**Atar**	**0.42**	**114**	*e*P		**Pg**	**22 34 10.5**	**+0.1**
GBR	**Grand-Bara**	**0.58**	**216**	*e*P		**Pg**	**22 34 13.8**	**+0.2**
OBO	**Obock**	**0.59**	**52**	*e*P		**Pg**	**22 34 13.3**	**-0.2**
TRBA	**At Turbah**	**2.04**	**38**	⇑ *i* P		**Pn**	**22 34 34.1**	**-1.9**
TRBA				*i* S		**Sn**	**22 35 01.9**	**+0.6**
TRBA				AML	AML		22 35 03.3	
	comp=E,897nm,0.3s							
UDYN	**Al 'Udayn**	**2.58**	**26**	⇑ *i* P		**Pn**	**22 34 42.2**	**-1.2**
UDYN				*i* S		**Sn**	**22 35 15.4**	**+0.8**
UDYN				AML	AML		22 35 24.8	
	comp=N,470nm,0.5s							
DHBB	**Dhamar BB**	**3.31**	**27**	*i* P		**Pn**	**22 34 51.4**	**-2.1**
DHBB				*i* S		**Sn**	**22 35 34.8**	**+2.1**
BDHA	**Al Bayda'**	**3.56**	**49**	*i* P		**Pn**	**22 34 56.1**	**-0.7**
BDHA				*i* S		**Sn**	**22 35 41.6**	**+2.8**
BDHA				AML	AML		22 35 59.2	
	comp=E,138nm,0.7s							

ISK ***30*** *22:35:34.8, 39°.15N×28°.94E, h9km, MD2.7*
ISCJB ***30*** *22:35:35.5±0.5, 39°.16N±0°.03×28°.94E±0°.04, h10km±6km, Error ellipse: s-maj=6.0km s-min=4.7km az=39.4*
CSEM ***30*** *22:35:35.6±0.1, 39°.16N×28°.93E, h10km, MD2.6, Error ellipse: s-maj=2.4km s-min=1.9km az=99.0*
DDA ***30*** *22:35:36.5, 39°.13N×28°.98E, h7km, Md2.6*
ISC 30 22:35:35.9±0.9, 39°.16N±0°.03×28°.95E±0°.03, h18km±6km, n26, σ0°60/36, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.21**	**237**	P		**Pg**	**22 35 41.4**	**+0.3**
DEMI				S		**Sg**	**22 35 44.5**	**-0.1**
DEMI	**Demirci**	**0.21**	**237**	*i* P		**Pg**	**22 35 41.4**	**+0.3**
DEMI				*i* S		**Sg**	**22 35 44.5**	**-0.1**
GDZ	**Gediz**	**0.42**	**99**	P		**Pg**	**22 35 44.4**	**-0.2**
GDZ				S		**Sg**	**22 35 50.3**	**-0.2**
GDZ	**Gediz**	**0.42**	**99**	*i* P		**Pg**	**22 35 44.4**	**-0.2**
GDZ				*i* S		**Sg**	**22 35 50.3**	**-0.2**
TVSB	**Tavsanli**	**0.49**	**54**	*e*PG		**Pg**	**22 35 45.2**	**-0.7**
TVSB				*e*SG		**Sg**	**22 35 52.4**	**-0.2**
TVSB	**Tavsanli**	**0.49**	**54**	*e*Pg		**Pg**	**22 35 45.3**	**-0.7**
TVSB				*e*Sg		**Sg**	**22 35 52.4**	**-0.2**
KULA	**Kula-Manisa**	**0.68**	**199**	*e*PG		**Pg**	**22 35 48.4**	**-0.9**
KULA				*e*SG		**Sg**	**22 35 57.8**	**-0.6**
KULA	**Kula-Manisa**	**0.68**	**199**	*e*Pg		**Pg**	**22 35 48.4**	**-0.9**
KULA				*e*Sg		**Sg**	**22 35 57.8**	**-0.6**
ORLT	**Orhaneli**	**0.89**	**358**	*e*PG		**Pg**	**22 35 52.3**	**-0.9**
ORLT	**Orhaneli**	**0.89**	**358**	*e*Pg		**Pg**	**22 35 52.3**	**-0.9**
KHAL	**Karahalli**	**0.90**	**151**	P		**Pb**	**22 35 53.3**	**+0.3**
KHAL				S		**Sb**	**22 36 04.9**	**+0.2**
KHAL	**Karahalli**	**0.90**	**151**	*i* P		**Pb**	**22 35 53.3**	**+0.3**
KHAL				*i* S		**Sb**	**22 36 04.9**	**+0.2**
AKS	**Akhisar**	**0.93**	**253**	*e*PG		**Pg**	**22 35 53.1**	**-0.8**
AKS	**Akhisar**	**0.93**	**253**	*e*Pg		**Pg**	**22 35 53.1**	**-0.8**
KHL	**Karahalli**	**0.95**	**151**	*e*PG		**Pg**	**22 35 53.7**	**-0.7**
KHL	**Karahalli**	**0.95**	**151**	*e*Pg		**Pg**	**22 35 53.7**	**-0.7**
KCTX	**Karacabey (Bur**	**1.20**	**338**	*e*PN		**Pb**	**22 35 58.4**	**+0.3**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OKC	**Ostrava-Krasne**	**0.21**	**272**	*e*PG	Pg	22 44 56.6	0.0
OKC				*e*SG	Sg	22 45 00.5	+1.2
	comp=Z,5.9nm,0.5s						
OKC	**Ostrava-Krasne**	**0.21**	**272**	Pg	Pg	22 44 56.6	0.0
OKC				Sg	Sg	22 45 00.5	+1.2
	5.9nm,0.5s						
MORC	**Moravsky Berou**	**0.60**	**265**	*e*Pg	Pg	22 45 03.6	-0.5
MORC				*e*Sg	Sg	22 45 11.7	-0.3
LANS	**Liptovska Anna**	**0.94**	**136**	*e*Pg	Pg	22 45 10.1	-0.5
LANS				*e*Sg	Sg	22 45 23.5	+0.7
LANS	**Liptovska Anna**	**0.94**	**136**	*e*PG	Pg	22 45 10.1	-0.5
LANS				*e*SG	Sg	22 45 23.5	+0.7
VRAC	**Vranov**	**1.33**	**248**	*e*Pg	Pg	22 45 16.7	-1.3
VRAC				*e*Sg	Sg	22 45 34.1	-1.1
DPC	**Dobruska-Polom**	**1.48**	**291**	*e*PG	Pn	22 45 20.5	0.0
DPC				*e*SG	Sg	22 45 39.9	-0.2
	comp=Z,1.7nm,0.5s						
DPC	**Dobruska-Polom**	**1.48**	**291**	Pg	Pn	22 45 20.5	0.0
DPC				Sg	Sg	22 45 39.9	-0.2
	1.7nm,0.5s						

CSEM ***30*** *22:46:11.1, 45°.36N×26°.20E, h153km, MD3.0/3*
BUC 30 22:46:11.1±1.3, 45°.36N×26°.20E, h153km±10km, MD3.0/3, 12C-9D, Error ellipse: s-maj=10.5km s-min=7.6km az=61.0, Romania

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MLR	**Muntele Rosu**	**0.23**	**307**	⇑*i*P	Pn	22 46 32.3	+0.3
MLR	**Muntele Rosu**	**0.23**	**307**	⇑*i*P	Pn	22 46 32.3	+0.3
MLR				*i* S	Sn	22 46 46.5	-1.4
MLR	**Muntele Rosu**	**0.23**	**307**	⇑*i*P	Pn	22 46 32.3	+0.3
MLR				*i* S	Sn	22 46 46.5	-1.4
PLOR	**Plostina**	**0.59**	**32**	⇓*i*P	Pn	22 46 33.4	+0.1
PLOR	**Plostina**	**0.59**	**32**	⇓*i*P	Pn	22 46 33.4	+0.1
PLOR				*i* S	Sn	22 46 49.2	-1.1
PLOR	**Plostina**	**0.59**	**32**	⇓*i*P	Pn	22 46 33.4	+0.1
PLOR				*i* S	Sn	22 46 49.2	-1.1
VRI	**Vrincioaia**	**0.63**	**36**	⇓*i*P	Pn	22 46 33.8	+0.3
VRI	**Vrincioaia**	**0.63**	**36**	⇓*i*P	Pn	22 46 33.8	+0.3
VRI				*i* S	Sn	22 46 49.5	-1.2
VRI	**Vrincioaia**	**0.63**	**36**	⇓*i*P	Pn	22 46 33.8	+0.3
VRI				*i* S	Sn	22 46 49.5	-1.2
VOIR		**0.81**	**276**	S	Sn	22 46 51.8	-1.1
VOIR		**0.81**	**276**	*i* S	Sn	22 46 51.8	-1.1
VOIR		**0.81**	**276**	*i* S	Sn	22 46 51.8	-1.1
TESR	**Tescani**	**1.20**	**15**	⇑*i*P	Pn	22 46 37.9	0.0
TESR	**Tescani**	**1.20**	**15**	⇑*i*P	Pn	22 46 37.9	0.0
TESR				*i* S	Sn	22 46 57.7	-0.8
TESR	**Tescani**	**1.20**	**15**	⇑*i*P	Pn	22 46 37.9	0.0
TESR				*i* S	Sn	22 46 57.7	-0.8
CFR	**Carcaliu**	**1.38**	**97**	⇑*i*P	Pn	22 46 39.4	-0.2
CFR	**Carcaliu**	**1.38**	**97**	⇑*i*P	Pn	22 46 39.4	-0.2
CFR				*i* S	Sn	22 46 59.5	-1.9
CFR	**Carcaliu**	**1.38**	**97**	⇑*i*P	Pn	22 46 39.4	-0.2
CFR				*i* S	Sn	22 46 59.5	-1.9
TIRR	**Tirgusor**	**1.81**	**119**	⇓*i*P	Pn	22 46 43.8	-0.4
TIRR	**Tirgusor**	**1.81**	**119**	⇓*i*P	Pn	22 46 43.8	-0.4
TIRR				*i* S	Sn	22 47 08.2	-1.4
TIRR	**Tirgusor**	**1.81**	**119**	⇓*i*P	Pn	22 46 43.8	-0.4
TIRR				*i* S	Sn	22 47 08.2	-1.4
MILM	**Milestii Mici**	**2.40**	**48**	⇑*i*P	Pn	22 46 51.5	+0.5
MILM	**Milestii Mici**	**2.40**	**48**	⇑*i*P	Pn	22 46 51.5	+0.5
MILM				*i* S	Sn	22 47 19.8	-2.1
MILM	**Milestii Mici**	**2.40**	**48**	⇑*i*P	Pn	22 46 51.5	+0.5
MILM				*i* S	Sn	22 47 19.8	-2.1

ISCJB ***30*** *22:46:33.5±1.0, 36°.1S±0°.2×100°.1W±0°.2, h14km, mb3.8/7, MS3.3/2, Error ellipse: s-maj=25.3km s-min=22.4km az=141.7*
IDC ***30*** *22:46:33.1±1.1, 36°.12S×100°.06W, h0km, mb3.9/7, mb1 4.2/7, mb1mx4.0/33, mbtmp3.9/7, MS3.4/2, Ms1 3.4/2, ms1mx3.0/21, Error ellipse: s-maj=30.5km s-min=25.9km az=51.0*
ISC 30 22:46:35.5±1.1, 36°.2S±0°.2×100°.0W±0°.2, h14km, n10, σ1§38/7, mb3.9/7, Southeast of Easter Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLCA	**Paso Flores**	**23.47**	**110**	P	**P**	**22 51 45.8**	**+1.1**
	2.8nm,0.8s,baz=302,slow=7.1,SNR=7.9						
PLCA				LR	LR	22 59 02.0	
	comp=Z,59nm,18.3s,baz=325,slow=32						
LPAZ	**La Paz**	**34.55**	**63**	P	**P**	**22 53 24.3**	**-0.1**
	4.1nm,1.1s,baz=208,slow=6.7,SNR=9.4						
LPAZ				LR	LR	23 04 03.6	
	comp=Z,85nm,19.8s,baz=204,slow=30						
SIV	**San Ignacio**	**39.98**	**70**	P	**P**	**22 54 08.4**	**-1.4**
	1.8nm,0.7s,baz=243,slow=4.6,SNR=3.5						
VNDA	**Vanda**	**56.74**	**195**	P	**P**	**22 56 18.1**	**-0.1**
	1.2nm,1.0s,baz=154,slow=2.5,SNR=4.8						
TXAR	**Lajitas Array**	**65.23**	**356**	P	**P**	**22 57 18.2**	**+1.6**
	0.8nm,0.9s,baz=171,slow=8.6,SNR=4.8						
NVAR	**Mina Array Bea**	**76.12**	**345**	P	**P**	**22 58 22.0**	**-0.8**
	0.3nm,0.5s,baz=182,slow=6.2,SNR=3.8						
PDAR	**Pinedale Array**	**79.03**	**353**	P	**P**	**22 58 38.0**	**-1.0**
	0.7nm,0.7s,baz=191,slow=3.3,SNR=3.3						
H01W1	**Cape Leeuwin H**	**102.47**	**208**	T	T	00 55 46.3	
	baz=151,slow=76,SNR=9.7						
H01W2	**Cape Leeuwin H**	**102.47**	**208**	T	T	00 55 39.5	
	baz=151,slow=76,SNR=11						
H01W3	**Cape Leeuwin H**	**102.48**	**208**	T	T	00 55 46.9	
	baz=151,slow=76,SNR=11						

ISCJB ***30*** *22:52:25.6±2.1, 34°.17S±0°.04×72°.3W±0°.1, h15km±22km, Error ellipse: s-maj=19.5km s-min=6.6km az=3.8*
GUC ***30*** *22:52:26.8±0.3, 34°.20S×72°.26W, h30km±3km, ML3.8*
ISC 30 22:52:26.4±3.0, 34°.21S±0°.05×72°.2W±0°.1, h8km±19km, n16, σ1§06/22, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHPI	**Pichilemu**	**0.26**	**135**	*i* P	**Pb**	**22 52 33.4**	**+0.1**
CHPI				*i* S	**Sb**	**22 52 38.3**	**+0.5**
TALC	**Talca**	**1.28**	**158**	*i* P	**Pn**	**22 52 49.6**	**-1.0**
TALC				*i* S	**Sb**	**22 53 06.5**	**-0.9**
RCDM	**Rinconada Maip**	**1.38**	**59**	*i* P	**Pn**	**22 52 50.9**	**-1.1**
RCDM				*i* S	**Sb**	**22 53 09.2**	**-1.0**
ANTU	**Antumapu**	**1.47**	**65**	*i* P	**Pn**	**22 52 52.6**	**-0.6**
ANTU				*i* S	**Sn**	**22 53 12.3**	**-0.4**
ANTU				IAML		22 53 22.1	
	comp=N,2μm,0.4s						
CLCH	**Cerro Calan**	**1.62**	**61**	*i* P	**Pn**	**22 52 55.2**	**-0.1**
CLCH				*i* S	**Sn**	**22 53 16.7**	**+0.3**
CLCH				IAML		22 53 26.0	
	comp=E,2μm,0.5s						
PEL	**Peldehue**	**1.67**	**51**	*i* P	**Pn**	**22 52 55.6**	**-0.4**
PEL				*i* S	**Sn**	**22 53 17.6**	**+0.1**
AUSP	**Uspallata**	**3.10**	**51**	*e*P	**Pb**	**22 53 22.1**	**+0.2**
AUSP				*e*S	**Sg**	**22 54 05.6**	**-0.2**
RTLS	**Leoncito**	**3.44**	**46**	*e*P	**Pb**	**22 53 27.8**	**+0.1**
CANA	**Caviahue**	**3.79**	**166**	*e*P	**Pn**	**22 53 27.1**	**+1.8**
RTCV	**Cerro Valdivia**	**3.88**	**54**	*e*P	**Pn**	**22 53 28.9**	**+2.5**
AMOG	**MOGNA**	**4.53**	**45**	*e*P	**Pn**	**22 53 36.2**	**+0.8**
ACAN	**Cantantal**	**4.64**	**67**	*e*P	**Pn**	**22 53 38.5**	**+1.7**
AGUA	**GUANDACOL**	**5.68**	**35**	*e*P	**Pn**	**22 53 51.4**	**+0.2**
MRA	**San Martin**	**5.73**	**74**	*e*P	Pn	22 53 55.1	+3.2
MRA				IAML		22 54 21.1	
	comp=Z,23nm,0.5s						
MRA				*e*		22 54 33.7	
VCA	**Vinchina**	**6.45**	**33**	*e*P	**Pn**	**22 54 00.3**	**-1.4**
VCA				IAML		22 56 13.8	
	comp=Z,37nm,0.6s						
TCA	**Tanti**	**7.03**	**68**	*e*P	**Pn**	**22 54 09.5**	**-0.2**

DDA ***30*** *22:58:09.9, 34°.82N×26°.06E, h5km, Md3.8*
IDC ***30*** *22:58:11.1±1.2, 34°.80N×25°.96E, h0km, mb3.6/6, mb1 3.7/10, mb1mx3.5/39, mbtmp3.5/10, ML3.2/4, MS3.9/1, Ms1 3.8/1, ms1mx2.2/40, Error ellipse: s-maj=24.8km s-min=16.2km az=2.0*
ISCJB ***30*** *22:58:11.5±0.8, 34°.85N±0°.04×26°.03E±0°.02, h8km±4km, mb3.5/6, MS3.9/1, Error ellipse: s-maj=6.8km s-min=3.0km az=175.8*
THE ***30*** *22:58:11.1, 34°.86N×26°.06E, h6km, ML3.3/7, Error ellipse: s-maj=0.9km s-min=0.3km az=353.0*
ATH ***30*** *22:58:12.2, 34°.95N×26°.03E, h16km±1km, ML3.1/9, Error ellipse: s-maj=2.5km s-min=0.8km az=350.0*
CSEM ***30*** *22:58:13.1±0.3, 34°.97N×26°.01E, h2km, ML3.1, Error ellipse: s-maj=9.2km s-min=3.2km az=175.0*
ISC 30 22:58:12.4±1.3, 34°.92N±0°.05×26°.02E±0°.02, h5km±8km, n127, σ1§30/157, mb3.6/6, Crete

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZKR	**Zakros**	**0.25**	**39**	P	**Pg**	**22 58 17.0**	**-0.4**
ZKR				S	**Sg**	**22 58 21.6**	**+0.9**
ZKR	**Zakros**	**0.25**	**39**	P	**Pg**	**22 58 17.5**	**+0.1**
ZKR				S	**Sg**	**22 58 20.9**	**+0.2**
ZKR	**Zakros**	**0.25**	**39**	P	**Pg**	**22 58 17.5**	**+0.1**
ZKR				S	**Sg**	**22 58 20.9**	**+0.2**
ZKR				AML	AML	22 58 21.9	
	comp=E,21895μm,0.3s						
ZKR				AML	AML	22 58 23.1	
	comp=N,14426μm,0.4s						
NPS	**Neapolis**	**0.48**	**316**	P	**Pg**	**22 58 21.7**	**0.0**
NPS				S	**Sb**	**22 58 30.0**	**-0.9**
NPS	**Neapolis**	**0.48**	**316**	P	**Pg**	**22 58 21.7**	**0.0**
NPS				S	**Sg**	**22 58 28.6**	**+0.6**
NPS	**Neapolis**	**0.48**	**316**	P	**Pg**	**22 58 22.3**	**+0.5**
NPS				S	**Sg**	**22 58 28.6**	**+0.6**
NPS				AML	AML	22 58 32.5	
	comp=E,4348μm,0.3s						
NPS				AML	AML	22 58 36.2	
	comp=N,3290μm,0.3s						
LAST	**Lasithi**	**0.51**	**299**	P	**Pg**	**22 58 22.2**	**0.0**
LAST				S	**Sb**	**22 58 30.9**	**-0.8**
LAST	**Lasithi**	**0.51**	**299**	P	**Pg**	**22 58 22.2**	**0.0**
LAST				S	**Sg**	**22 58 29.6**	**+0.7**
LAST	**Lasithi**	**0.51**	**299**	P	**Pg**	**22 58 22.4**	**+0.1**
IDI	**Anoyia**	**1.00**	**292**	Pn	**Pg**	**22 58 30.9**	**-0.7**
	comp=N,20nm,0.3s,baz=116,slow=20,SNR=35						
IDI				Sn	**Sb**	**22 58 45.7**	**-0.2**
	comp=N,48nm,0.3s,baz=332,slow=17,SNR=7.1						
IDI				LR	LR	22 59 11.2	
	comp=N,82nm,18.2s,baz=150,slow=60						
IDI	**Anoyia**	**1.00**	**292**	P	**Pg**	**22 58 30.1**	**-1.5**
IDI				S	**Sb**	**22 58 45.6**	**-0.2**
IDI	**Anoyia**	**1.00**	**292**	P	**Pg**	**22 58 30.6**	**-1.0**
IDI				S	**Sb**	**22 58 45.6**	**-0.2**
IDI	**Anoyia**	**1.00**	**292**	P	**Pg**	**22 58 30.6**	**-1.0**
IDI				AML	AML	22 58 48.6	
	comp=N,1276μm,0.5s						
IDI				AML	AML	22 58 57.2	
	comp=E,1129μm,0.5s						
SIVA	**Sivas**	**1.00**	**276**	P	**Pg**	**22 58 30.2**	**-1.4**
SIVA				S	**Sg**	**22 58 45.0**	**+0.4**
SIVA	**Sivas**	**1.00**	**276**	P	**Pg**	**22 58 30.7**	**-0.9**
SIVA				S	**Sg**	**22 58 45.0**	**+0.4**
SIVA	**Sivas**	**1.00**	**276**	P	**Pg**	**22 58 30.7**	**-0.9**
SIVA				AML	AML	22 58 57.2	
	comp=E,3781μm,0.6s						
SIVA				AML	AML	22 58 59.5	
	comp=N,4598μm,0.9s						
KARP	**Karpathos**	**1.12**	**56**	P	**Pg**	**22 58 31.8**	**-2.2**
KARP				S	**Sg**	**22 58 48.1**	**-0.5**
KARP	**Karpathos**	**1.12**	**56**	P	**Pg**	**22 58 32.2**	**-1.8**
KARP				S	**Sg**	**22 58 48.1**	**-0.5**
KARP	**Karpathos**	**1.12**	**56**	P	**Pg**	**22 58 32.2**	**-1.8**
KARP				S	**Sg**	**22 58 48.8**	**+0.2**
KARP				AML	AML	22 58 56.0	
	comp=N,2416μm,0.7s						
KARP				AML	AML	22 58 56.6	
	comp=E,2469μm,0.6s						
SANT	**Santorini**	**1.52**	**343**	P	**Pn**	**22 58 39.5**	**-0.9**
SANT	**Santorini**	**1.52**	**343**	P	**Pn**	**22 58 39.8**	**-0.6**
SANT	**Santorini**	**1.52**	**343**	P	**Pn**	**22 58 39.8**	**-0.6**
SANT				AML	AML	22 59 06.9	
	comp=N,1097μm,0.5s						
SANT				AML	AML	22 59 07.8	
	comp=E,2164μm,0.5s						
THR6	**Thira Island,**	**1.52**	**341**	P	**Pn**	**22 58 39.6**	**-0.8**
THR6	**Thira Island,**	**1.52**	**341**	P	**Pn**	**22 58 39.6**	**-0.8**
THR8	**Santorini-Mono**	**1.55**	**344**	P	**Pn**	**22 58 40.0**	**-0.7**
THR8	**Santorini-Mono**	**1.55**	**344**	P	**Pn**	**22 58 40.0**	**-0.7**
VAM	**Vamos**	**1.57**	**289**	P	**Pn**	**22 58 38.9**	**-2.1**
VAM				S	**Sn**	**22 59 00.2**	**-1.6**
VAM	**Vamos**	**1.57**	**289**	P	**Pn**	**22 58 41.2**	**+0.2**
VAM				S	**Sn**	**22 59 00.2**	**-1.6**
THR3	**Thira Island,**	**1.57**	**341**	P	**Pn**	**22 58 40.0**	**-1.0**
THR3	**Thira Island,**	**1.57**	**341**	P	**Pn**	**22 58 40.0**	**-1.0**
GVD	**Gavdhos**	**1.59**	**268**	P	**Pn**	**22 58 42.0**	**+0.7**
GVD	**Gavdhos**	**1.59**	**268**	P	**Pn**	**22 58 42.0**	**+0.7**
THR5	**Thira Island,**	**1.59**	**340**	P	**Pn**	**22 58 40.6**	**-0.7**
THR5	**Thira Island,**	**1.59**	**340**	P	**Pn**	**22 58 40.6**	**-0.7**
THR2	**Thira island,**	**1.60**	**343**	P	**Pn**	**22 58 39.3**	**-2.1**
THR2	**Thira island,**	**1.60**	**343**	P	**Pn**	**22 58 39.3**	**-2.1**
CMBO	**Columbo, Santo**	**1.63**	**342**	P	**Pn**	**22 58 39.6**	**-2.2**
CMBO				S	**Sn**	**22 59 01.8**	**-1.4**
CMBO	**Columbo, Santo**	**1.63**	**342**	P	**Pn**	**22 58 41.5**	**-0.3**
CMBO				S	**Sn**	**22 59 01.8**	**-1.4**
CMBO	**Columbo, Santo**	**1.63**	**342**	P	**Pn**	**22 58 41.5**	**-0.3**
CMBO				AML	AML	22 59 09.4	
	comp=N,2400μm,0.7s						
CMBO				AML	AML	22 59 12.2	
	comp=E,1727μm,0.6s						
IMMV	**Iera Moni Meta**	**1.76**	**289**	P	**Pn**	**22 58 42.8**	**-0.8**
IMMV	**Iera Moni Meta**	**1.76**	**289**	P	**Pn**	**22 58 44.6**	**+1.0**
IMMV	**Iera Moni Meta**	**1.76**	**289**	P	**Pn**	**22 58 44.6**	**+1.0**
NISR	**Nisiros**	**1.92**	**28**	P	**Pn**	**22 58 46.8**	**+1.1**
NISR	**Nisiros**	**1.92**	**28**	P	**Pn**	**22 58 46.8**	**+1.1**
NIS1	**Nisyros Isl.**	**1.93**	**29**	*e*PN	**Pn**	**22 58 46.3**	**+0.4**
NIS1	**Nisyros Isl.**	**1.93**	**29**	P	**Pn**	**22 58 46.0**	**+0.1**
NIS1	**Nisyros Isl.**	**1.93**	**29**	P	**Pn**	**22 58 46.0**	**+0.1**
ARG	**Arkhangelos**	**2.15**	**52**	P	**Pn**	**22 58 50.2**	**+1.2**
ARG	**Arkhangelos**	**2.15**	**52**	P	**Pn**	**22 58 50.2**	**+1.2**
APE	**Apeiranthos**	**2.19**	**350**	P	**Pn**	**22 58 48.3**	**-1.2**
APE	**Apeiranthos**	**2.19**	**350**	P	**Pn**	**22 58 48.3**	**-1.2**
APE				AML	AML	22 59 24.6	
	comp=N,309μm,0.7s						
APE				AML	AML	22 59 27.1	
	comp=E,353μm,0.5s						
MHLO	**Agia Marina, M**	**2.21**	**324**	P	**Pn**	**22 58 49.5**	**-0.3**
MHLO	**Agia Marina, M**	**2.21**	**324**	P	**Pn**	**22 58 49.5**	**-0.3**
MHLO	**Agia Marina, M**	**2.21**	**324**	P	**Pn**	**22 58 49.4**	**-0.3**
MHLO				AML	AML	22 59 30.5	
	comp=E,1268μm,0.5s						
MHLO				AML	AML	22 59 31.9	
	comp=N,1409μm,0.5s						
BODT	**Bodrum**	**2.38**	**26**	*e*PN	**Pn**	**22 58 52.8**	**+0.6**
ANKY	**Antikythira Is**	**2.42**	**294**	P	**Pn**	**22 58 53.8**	**+1.2**
ANKY	**Antikythira Is**	**2.42**	**294**	P	**Pn**	**22 58 53.8**	**+1.2**
ANKY	**Antikythira Is**	**2.42**	**294**	P	**Pn**	**22 58 54.2**	**+1.6**
BDRM	**Kayabasi**	**2.43**	**28**	P	**Pn**	**22 58 53.5**	**+0.6**
BDRM				S	**Sb**	**22 59 25.4**	**-1.6**
BDRM	**Kayabasi**	**2.43**	**28**	*i* P	**Pn**	**22 58 53.5**	**+0.6**
BDRM				*i* S	**Sb**	**22 59 25.4**	**-1.6**
KYTH	**Kithira**	**2.77**	**300**	P	**Pn**	**22 58 58.3**	**+0.7**
KYTH	**Kithira**	**2.77**	**300**	P	**Pn**	**22 58 58.3**	**+0.7**
DALY	**Dalyan (Mu¨la**	**2.86**	**48**	*e*PN	**Pn**	**22 58 59.0**	**+0.3**
SMG	**Samos**	**2.86**	**13**	P	**Pn**	**22 58 58.6**	**-0.2**
SMG	**Samos**	**2.86**	**13**	P	**Pn**	**22 58 58.6**	**-0.2**
TURN	**Turunc**	**2.86**	**46**	*i* P	**Pn**	**22 58 56.1**	**-2.7**
TURN				*i* S	**Sn**	**22 59 27.6**	**-6.0**
YER	**Yerkesik**	**2.87**	**39**	*e*PN	**Pn**	**22 58 59.4**	**+0.4**
YER	**Yerkesik**	**2.87**	**39**	P	**Pn**	**22 59 00.1**	**+1.1**
YER	**Yerkesik**	**2.87**	**39**	P	**Pn**	**22 59 00.1**	**+1.1**
FETY	**Fethiye**	**3.02**	**55**	*e*PN	**Pn**	**22 59 01.2**	**+0.2**
FETY	**Fethiye**	**3.02**	**55**	P	**Pn**	**22 59 01.4**	**+0.4**
FETY	**Fethiye**	**3.02**	**55**	P	**Pn**	**22 59 01.4**	**+0.4**
VLI	**Veliai**	**3.09**	**307**	P	**Pn**	**22 59 02.3**	**+0.5**
VLI	**Veliai**	**3.09**	**307**	P	**Pn**	**22 59 02.3**	**+0.5**
VLI	**Veliai**	**3.09**	**307**	P	**Pn**	**22 59 02.4**	**+0.5**
AYDN	**Tasoluk**	**3.12**	**28**	P	**Pn**	**22 59 04.3**	**+1.9**
AYDN	**Tasoluk**	**3.12**	**28**	*i* P	**Pn**	**22 59 04.3**	**+1.9**
AYDN				*i* S	**Sb**	**22 59 46.2**	**-0.7**
KSL	**Kastellorizon**	**3.15**	**66**	P	**Pn**	**22 59 03.1**	**+0.3**
KSL	**Kastellorizon**	**3.15**	**66**	P	**Pn**	**22 59 03.1**	**+0.3**
KSL	**Kastellorizon**	**3.15**	**66**	P	**Pn**	**22 59 02.7**	**-0.1**
AKAS	**Kas**	**3.20**	**65**	P	**Pn**	**22 59 03.8**	**+0.3**
AKAS				S	**Sn**	**22 59 44.3**	**+2.1**
AKAS	**Kas**	**3.20**	**65**	*i* P	**Pn**	**22 59 03.9**	**+0.3**
AKAS				*i* S	**Sn**	**22 59 44.3**	**+2.1**
DGB	**¨zmir**	**3.21**	**12**	*i* P	**Pn**	**22 59 04.0**	**+0.6**
DGB				*i* S	**Sn**	**22 59 41.1**	**-1.0**
KRND	**KRANIDI**	**3.39**	**317**	P	**Pn**	**22 59 07.7**	**+1.8**
KRND	**KRANIDI**	**3.39**	**317**	P	**Pn**	**22 59 07.7**	**+1.8**
DID	**Didima**	**3.43**	**320**	P	**Pn**	**22 59 06.5**	**-0.1**
DID	**Didima**	**3.43**	**320**	P	**Pn**	**22 59 06.5**	**-0.1**
DID	**Didima**	**3.43**	**320**	P	**Pn**	**22 59 08.0**	**+1.4**
VLY	**Voula,Athens**	**3.44**	**329**	P	**Pn**	**22 59 07.4**	**+0.7**
VLY	**Voula,Athens**	**3.44**	**329**	P	**Pn**	**22 59 07.4**	**+0.7**
CHOS	**Chios island**	**3.46**	**0**	P	**Pn**	**22 59 07.1**	**0.0**
CHOS	**Chios island**	**3.46**	**0**	P	**Pn**	**22 59 07.1**	**0.0**
PTL	**Penteli**	**3.58**	**332**	P	**Pn**	**22 59 09.7**	**+1.1**
PTL	**Penteli**	**3.58**	**332**	P	**Pn**	**22 59 09.7**	**+1.1**
GLHS	**Ghisar (BURDU**	**3.59**	**51**	*e*PN	**Pn**	**22 59 09.7**	**+0.8**
ELL	**Elmali**	**3.65**	**59**	*e*PN	**Pn**	**22 59 09.9**	**+0.3**
GOLH	**Golhisar**	**3.68**	**50**	P	**Pn**	**22 59 11.7**	**+1.5**
GOLH				S	**Sn**	**22 59 58.6**	**+4.6**
GOLH	**Golhisar**	**3.68**	**50**	*i* P	**Pn**	**22 59 11.7**	**+1.5**
GOLH				*i* S	**Sn**	**22 59 58.6**	**+4.6**
VLX	**Vlachokerasia**	**3.83**	**311**	P	**Pn**	**22 59 12.3**	**+0.1**
VLX	**Vlachokerasia**	**3.83**	**311**	P	**Pn**	**22 59 12.3**	**+0.1**
VLX	**Vlachokerasia**	**3.83**	**311**	P	**Pn**	**22 59 13.9**	**+1.7**
LTK	**Loutraki**	**3.96**	**322**	P	**Pn**	**22 59 15.1**	**+1.2**
LTK	**Loutraki**	**3.96**	**322**	P	**Pn**	**22 59 15.1**	**+1.2**
PYL	**PYLOS**	**4.00**	**301**	P	**Pn**	**22 59 14.7**	**+0.3**
PYL	**PYLOS**	**4.00**	**301**	P	**Pn**	**22 59 14.7**	**+0.3**
TRIP	**Tripoli**	**4.00**	**312**	P	**Pn**	**22 59 16.2**	**+1.7**
TRIP	**Tripoli**	**4.00**	**312**	P	**Pn**	**22 59 16.2**	**+1.7**
KORT	**Korkueli**	**4.08**	**58**	P	**Pn**	**22 59 16.7**	**+1.1**
KORT				S	**Sn**	**23 00 05.2**	**+1.4**
KORT	**Korkueli**	**4.08**	**58**	*i* P	**Pn**	**22 59 16.7**	**+1.1**
KORT				*i* S	**Sn**	**23 00 05.2**	**+1.4**
KLV	**Kalavryta, Ach**	**4.41**	**316**	P	**Pn**	**22 59 21.4**	**+1.2**
KLV	**Kalavryta, Ach**	**4.41**	**316**	P	**Pn**	**22 59 21.4**	**+1.2**
DSF	**Desfina**	**4.48**	**322**	P	**Pn**	**22 59 22.9**	**+1.9**
DSF	**Desfina**	**4.48**	**322**	P	**Pn**	**22 59 22.9**	**+1.9**
LAKA	**Lakka**	**4.65**	**317**	P	**Pn**	**22 59 25.0**	**+1.7**
LAKA	**Lakka**	**4.65**	**317**	P	**Pn**	**22 59 25.0**	**+1.7**
BRTR	**Keskin Array B**	**7.73**	**49**	Pn	**Pn**	**23 00 08.5**	**+2.7**
	comp=N,0.1nm,0.3s,baz=211,slow=14,SNR=3.8						
MMAI	**Mount Meron Ar**	**8.02**	**101**	Pn	Pn	23 00 05.7	-4.0
	comp=N,0.3nm,0.3s,baz=271,slow=14,SNR=2.3						
EIL	**Elat**	**9.19**	**122**	Pn	**Pn**	**23 00 24.5**	**-1.2**
	comp=N,0.2nm,0.3s,baz=6.3,slow=9.2,SNR=2.9						
EIL				Sn	**Sn**	**23 02 08.1**	**-1.4**
	comp=N,0.2nm,0.3s,baz=27,slow=12,SNR=2.2						
KBZ	**Khabaz**	**15.72**	**51**	Pn	**P**	**23 01 59.2**	**+0.5**
	comp=N,0.1nm,0.3s,baz=234,slow=6.8,SNR=2.9						
AKASG	**Malin Array Be**	**15.95**	**7**	Pn	**Pn**	**23 01 58.6**	**+1.1**
	comp=N,0.4nm,0.3s,baz=194,slow=11,SNR=3.4						
ESDC	**Sonseca Array**	**24.26**	**290**	P	**P**	**23 03 30.4**	**-0.2**
	comp=N,0.2nm,0.4s,baz=78,slow=9.2,SNR=2.6						
GEYT	**Alibeck**	**25.93**	**74**	P	**P**	**23 03 45.0**	**-0.7**
	comp=N,1.0nm,0.7s,baz=302,slow=12,SNR=2.5						
EKA	**Eskdalemuir Ar**	**28.65**	**324**	P	**P**	**23 04 11.0**	**+1.1**
	comp=N,0.6nm,0.7s,baz=119,slow=10,SNR=2.2						
TORD	**Torodi Ar. Bea**	**30.88**	**231**	P	**P**	**23 04 29.2**	**-0.8**
	comp=N,0.4nm,0.4s,baz=33,slow=8.1,SNR=5.9						
ARCES	**ARCESS Array B**	**34.67**	**360**	P	**P**	**23 05 03.1**	**+0.5**
	comp=N,2.0nm,0.9s,baz=184,slow=8.8,SNR=1.7						
MKAR	**Makanchi Array**	**43.32**	**56**	P	**P**	**23 06 15.1**	**-0.2**
	comp=N,0.2nm,0.4s,baz=284,slow=4.9,SNR=4.7						
BOSA	**Boshof**	**63.19**	**181**	LR	LR	23 39 19.0	
	comp=N,94nm,20.8s,baz=208,slow=39						

ISK ***30*** *23:

KCTX	Karacabey (Bur	1.24	338	ePN	Pg	23 03 39.2	-0.6
MDNY	Mudanya-Bursa	1.25	357	ePN	Pg	23 03 39.4	-0.6
MDNY	Mudanya-Bursa	1.25	357	ePN	Pg	23 03 39.4	-0.6
CAVI	Cavuskoy	1.28	32	ePN	Pg	23 03 39.9	-0.6
CAVI	Cavuskoy	1.28	32	ePn	Pg	23 03 39.9	-0.6
IZI	Iznik	1.28	18	ePN	Pg	23 03 39.9	-0.6
IZI	Iznik	1.28	18	ePn	Pg	23 03 39.9	-0.6
GEMT	Gemlik	1.33	7	ePN	Pb	23 03 40.5	-0.2
GEMT	Gemlik	1.33	7	ePn	Pb	23 03 40.5	-0.2
GONE	Gonen-Balikesi	1.36	314	ePN	Pb	23 03 41.1	-0.1
GONE	Gonen-Balikesi	1.36	314	ePn	Pb	23 03 41.1	-0.1
DENT	Denizli	1.36	178	ePN	Pn	23 03 40.3	-0.4
DENT	Denizli	1.36	178	ePn	Pn	23 03 40.3	-0.4
BORA	Eskisehir	1.38	56	P	Pn	23 03 41.1	+0.2
BORA				S	Sg	23 04 00.4	0.0
BORA	Eskisehir	1.38	56	*i* P	Pn	23 03 41.1	+0.2
BORA				*i* S	Sg	23 04 00.4	0.0
DNZL	Cakiroluk	1.43	178	P	Pn	23 03 41.9	+0.2
DNZL				S	Sg	23 04 02.5	+0.6
DNZL	Cakiroluk	1.43	178	*i* P	Pn	23 03 41.9	+0.2
DNZL				*i* S	Sg	23 04 02.5	+0.6
ADVT	Abdulvahap	1.44	24	ePN	Pb	23 03 42.0	-0.5
ADVT	Abdulvahap	1.44	24	ePn	Pb	23 03 42.1	-0.5
ARMT	Armutlu	1.45	357	ePN	Pb	23 03 42.2	-0.5
ARMT	Armutlu	1.45	357	ePn	Pb	23 03 42.2	-0.5
EDC	Edincik	1.49	326	ePN	Pb	23 03 43.0	-0.4
EDC	Edincik	1.49	326	ePn	Pb	23 03 43.1	-0.4
ESKT	Eskisehir	1.51	74	*i* P	Pg	23 03 44.5	-0.5
ESKT				*i* S	Sb	23 04 03.5	+0.4
SEYT	Eskypehyr	1.51	74	P	Pg	23 03 44.5	-0.5
SEYT				S	Sb	23 04 03.5	+0.4
GPA	Golpazari	1.56	41	ePN	Pb	23 03 44.0	-0.7
GPA	Golpazari	1.56	41	ePn	Pb	23 03 44.0	-0.7
KNL	Bal¨-kesir	1.60	316	*i* P	Pb	23 03 44.6	-0.8
KNL				*i* S	Sn	23 04 04.6	+0.1
AYDN	Tasoluk	1.69	211	P	Pg	23 03 48.0	-0.3
AYDN				S	Sg	23 04 09.9	-0.3
AYDN	Tasoluk	1.69	211	*i* P	Pg	23 03 48.0	-0.3
AYDN				*i* S	Sg	23 04 09.8	-0.3
GULT	Gulveren	1.77	42	ePN	Pn	23 03 47.1	+0.7
GULT	Gulveren	1.77	42	ePn	Pn	23 03 47.1	+0.7
AYVA	Ayvalik	1.78	277	P	Pn	23 03 46.7	+0.4
AYVA	Ayvalik	1.78	277	*i* P	Pn	23 03 46.7	+0.4
AYVA				*i* S	Sg	23 04 13.1	-0.1
HRT	Hereke	1.79	17	ePN	Pn	23 03 46.8	+0.3
HRT	Hereke	1.79	17	ePn	Pn	23 03 46.8	+0.3
SPNC	Sapanca-Adapaz	1.88	33	ePN	Pn	23 03 48.3	+0.6
SPNC	Sapanca-Adapaz	1.88	33	ePn	Pn	23 03 48.3	+0.6
ISK	Istanbul-Kandi	1.95	2	ePN	Pn	23 03 49.4	+0.8
ISK	Istanbul-Kandi	1.95	2	ePn	Pn	23 03 49.4	+0.8
DGB	¨zmir	1.95	238	*i* P	Pg	23 03 53.4	+0.1
DGB				*i* S	Sg	23 04 18.1	-0.5
SVRH	Sivrihisar-ESK	2.01	80	ePN	Pn	23 03 50.3	+0.7
SVRH	Sivrihisar-ESK	2.01	80	ePn	Pn	23 03 50.3	+0.7
SILT	Sile	2.10	14	ePN	Pn	23 03 51.1	+0.4
SILT	Sile	2.10	14	ePn	Pn	23 03 51.1	+0.4
MDUB	Mudurnu	2.19	51	ePN	Pn	23 03 52.7	+0.7
MDUB	Mudurnu	2.19	51	ePn	Pn	23 03 52.7	+0.7

*ATH **30** 23:05:21.9, 37°.26N×21°.36E, h23km±1km, ML1.8/5, Error ellipse: s-maj=1.6km s-min=0.8km az=49.0*
*CSEM **30** 23:05:22.7±0.3, 37°.25N×21°.37E, h20km, ML1.8, Error ellipse: s-maj=6.3km s-min=3.4km az=40.0*
THE 30 23:05:22.5, 37°.23N×21°.37E, h22km, ML2.0/6, Error ellipse: s-maj=0.9km s-min=0.4km az=190.0, Southern Greece

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AMT	Artemida-Makis	0.41	42	P	Pb	23 05 30.9	-0.1
AMT				S	Sb	23 05 37.4	+0.6
AMT	Artemida-Makis	0.41	42	P	Pb	23 05 30.9	-0.1
AMT				S	Sb	23 05 36.6	-0.2
AMT	Artemida-Makis	0.41	42	P	Pb	23 05 31.0	0.0
AMT				S	Sb	23 05 36.6	-0.2
AMT				AML	AML	23 05 38.8	
	comp=E,667μm,0.4s						
AMT				AML	AML	23 05 39.6	
	comp=N,707μm,0.3s						
PYL	PYLOS	0.45	138	P	Pb	23 05 31.3	-0.4
PYL				S	Sb	23 05 38.6	+0.7
PYL	PYLOS	0.45	138	P	Pb	23 05 31.3	-0.4
PYL				S	Sb	23 05 38.6	+0.7
PYL	PYLOS	0.45	138	P	Pb	23 05 31.1	-0.5
PYL				S	Sb	23 05 39.1	+1.2
PYL				AML	AML	23 05 39.5	
	comp=N,132μm,0.2s						
PYL				AML	AML	23 05 44.7	
	comp=E,142μm,0.3s						
ITM	Ithomi	0.45	96	P	Pb	23 05 31.5	-0.2
ITM				S	Sb	23 05 38.3	+0.3
ITM	Ithomi	0.45	96	P	Pb	23 05 31.5	-0.2
ITM				S	Sb	23 05 38.2	+0.2
ITM	Ithomi	0.45	96	P	Pb	23 05 31.5	-0.2
ITM				S	Sb	23 05 38.2	+0.2
ITM				AML	AML	23 05 39.1	
	comp=N,362μm,0.1s						
ITM				AML	AML	23 05 40.0	
	comp=E,178μm,0.2s						
ZKS	Zakynthos	0.66	315	P	Pb	23 05 35.0	-0.4
ZKS				S	Sb	23 05 44.7	+0.5
ZKS	Zakynthos	0.66	315	P	Pb	23 05 34.5	-0.9
ZKS				S	Sb	23 05 44.7	+0.5
ZKS	Zakynthos	0.66	315	P	Pb	23 05 34.5	-0.9
VTN	Vitineika	0.70	348	P	Pb	23 05 36.3	+0.2
VTN	Vitineika	0.70	348	P	Pb	23 05 36.3	+0.2
DRO	Drossia	0.77	20	P	Pb	23 05 36.6	-0.7
DRO				S	Sb	23 05 48.1	+0.8
DRO	Drossia	0.77	20	P	Pb	23 05 36.7	-0.6
DRO				S	Sb	23 05 47.1	-0.2
DRO	Drossia	0.77	20	S	Sb	23 05 48.1	+0.8
DRO	Drossia	0.77	20	P	Pb	23 05 36.6	-0.6
DRO				S	Sb	23 05 47.1	-0.2
DRO				AML	AML	23 05 49.2	
	comp=E,312μm,0.3s						
DRO				AML	AML	23 05 52.5	
	comp=N,291μm,0.3s						
TRIP	Tripoli	0.78	67	P	Pb	23 05 36.3	-1.1
TRIP				S	Sb	23 05 47.5	0.0
TRIP	Tripoli	0.78	67	P	Pb	23 05 36.3	-1.1
TRIP				S	Sb	23 05 47.5	-0.1
VLX	Vlachokerasia	0.82	80	P	Pb	23 05 37.6	-0.5
VLX				S	Sb	23 05 49.4	+0.7
VLX	Vlachokerasia	0.82	80	P	Pb	23 05 37.7	-0.4
VLX				S	Sb	23 05 49.4	+0.7
VLX	Vlachokerasia	0.82	80	P	Pb	23 05 37.7	-0.4
VLX				S	Sn	23 05 49.9	-0.3
VLX				AML	AML	23 05 56.5	
	comp=E,111μm,0.6s						
VLX				AML	AML	23 05 56.7	
	comp=N,102μm,0.5s						
RLS	Riolos of Patr	0.83	5	P	Pb	23 05 37.5	-0.8
RLS				S	Sb	23 05 48.2	-0.8
AXS	Araxos	0.97	0	P	Pb	23 05 40.1	-0.4
AXS	Araxos	0.97	0	P	Pb	23 05 40.1	-0.5
KFL	Anninata	0.99	332	P	Pb	23 05 40.0	-1.0
KFL				S	Sn	23 05 54.2	-0.3
KFL	Anninata	0.99	332	P	Pb	23 05 40.0	-1.1
KFL				S	Sn	23 05 54.2	-0.3
KLV	Kalavryta, Ach	1.02	37	P	Pb	23 05 40.7	-0.9
KLV				S	Sn	23 05 55.0	-0.3
KLV	Kalavryta, Ach	1.02	37	P	Pb	23 05 40.8	-0.8
KLV				S	Sn	23 05 55.0	-0.3
KLV	Kalavryta, Ach	1.02	37	P	Pb	23 05 40.9	-0.7
KLV				S	Sb	23 05 54.8	+0.2
LAKA	Lakka	1.12	25	P	Pn	23 05 42.2	-0.7
LAKA	Lakka	1.12	25	P	Pb	23 05 43.2	0.0
LAKA				S	Sn	23 05 58.3	+0.7
LAKA	Lakka	1.12	25	P	Pb	23 05 43.2	0.0
LAKA				S	Sn	23 05 58.3	+0.7
VLS	Valsamata	1.13	327	P	Pn	23 05 42.2	-0.8
VLS				S	Sn	23 05 58.5	+0.6
VLI	Veliai	1.35	112	P	Pb	23 05 48.3	+1.1
VLI	Veliai	1.35	112	P	Pb	23 05 48.4	+1.2
PDO	Prodromos	1.38	354	P	Pb	23 05 47.6	+0.1
PDO	Prodromos	1.38	354	P	Pb	23 05 47.6	+0.1
PVO	Paravola	1.39	5	P	Pb	23 05 47.3	-0.5
PVO	Paravola	1.39	5	P	Pb	23 05 47.3	-0.5
KRND	KRANIDI	1.43	83	P	Pb	23 05 48.3	-0.1
KRND	KRANIDI	1.43	83	P	Pb	23 05 48.3	-0.1
DID	Didima	1.51	79	P	Pb	23 05 49.9	0.0
DID	Didima	1.51	79	P	Pb	23 05 49.9	0.0
LKD2	Lefkada island	1.66	340	P	Pn	23 05 51.2	+0.9
LKD2	Lefkada island	1.66	340	P	Pn	23 05 51.2	+0.9

IDC 30 23:13:14.3±3.2, 7°.97N×103°.98W, h0km, mb3.5/4, mb1 3.9/4, mb1mx3.7/29, mbtmp3.5/4, MS3.5/13, Ms1 3.4/13, ms1mx3.4/22, Error ellipse: s-maj=128.3km s-min=29.1km az=60.0, Northern East Pacific Rise

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LPIG	La Paz	17.15	340	LR	LR	23 22 14.8	
	comp=Z,133nm,21.6s,baz=201,slow=32						
TEIG	Tepich	19.48	50	LR	LR	23 24 05.2	
	comp=Z,151nm,20.2s,baz=78,slow=33						
TXAR	Lajitas Array	21.25	1	P	P	23 18 02.0	-0.3
	1.1nm,0.8s,baz=181,slow=12,SNR=11						
TXAR				LR	LR	23 25 34.0	
	comp=Z,251nm,18.3s,baz=0.0,slow=35						
ANMO	Albuquerque	26.94	355	LR	LR	23 28 02.2	
	comp=Z,91nm,20.2s,baz=174,slow=33						
PFO	Pinyon Flats O	28.00	337	LR	LR	23 29 17.4	
	comp=Z,70nm,18.9s,baz=144,slow=34						
ATAH	Atahualpa	29.59	120	LR	LR	23 27 08.3	
	comp=Z,45nm,21.0s,baz=285,slow=28						
NVAR	Mina Array Bea	32.97	339	LR	LR	23 30 39.1	
	comp=Z,81nm,20.5s,baz=246,slow=32						
PDAR	Pinedale Array	35.00	353	P	P	23 20 09.0	+0.1
	0.7nm,0.8s,baz=172,slow=9.1,SNR=5.3						
PDAR				LR	LR	23 33 02.0	
	comp=Z,47nm,18.5s,baz=196,slow=34						
TAOE	Nuku Hiva Isla	39.73	246	eLR	LR	23 31 28.9	
	115nm,25.9s						
ULM	Lac du Bonnet	42.68	8	LR	LR	23 37 43.0	
	comp=Z,59nm,18.5s,baz=272,slow=34						
LPAZ	La Paz	42.89	124	P	P	23 21 15.6	-0.1
	0.6nm,0.5s,baz=315,slow=6.1,SNR=3.9						
LPAZ				LR	LR	23 36 24.0	
	comp=Z,55nm,21.5s,baz=290,slow=32						
RKT	Rikitea	43.30	224	eLR	LR	23 33 26.8	
	122nm,25.8s						
TIAR	Tiarei	51.50	240	*e*T	T	00 17 35.0	
	1.9nm,0.2s						
PPT	Papeete	51.70	240	LR	LR	23 39 37.3	
	comp=Z,64nm,18.0s,baz=218,slow=31						
PPT2	Papeete2	51.71	240	eLR	LR	23 37 07.0	
	97nm,25.0s						
TBI	Tubuai	54.27	234	eLR	LR	23 38 23.8	
YKA	Yellowknife Ar	54.97	354	LR	LR	23 45 44.1	
	comp=Z,10nm,20.1s,baz=180,slow=35						
SCHQ	Schefferville	55.31	25	LR	LR	23 48 10.5	
	comp=Z,81nm,18.6s,baz=344,slow=38						
ILAR	Eielson Array	64.19	341	P	P	23 23 50.6	-0.1
	0.2nm,0.7s,baz=176,slow=4.2,SNR=4.1						

*ISK **30** 23:13:51.6, 39°.12N×29°.02E, h6km, MD2.8*
*DDA **30** 23:13:52.5, 39°.09N×29°.05E, h7km, Md2.7*
*CSEM **30** 23:13:52.5±0.1, 39°.13N×29°.05E, h5km, MD2.7, Error ellipse: s-maj=3.4km s-min=3.0km az=150.0*
ISC 30 23:13:52.1±0.9, 39°.10N±0°.03×29°.08E±0°.02, h15km±8km, n36, σ0s41/49, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.29	258	P	Pb	23 13 58.6	-0.4
DEMI				S	Sg	23 14 02.5	-0.1
DEMI	Demirci	0.29	258	*i* P	Pb	23 13 58.6	-0.4
DEMI				*i* S	Sg	23 14 02.5	-0.1
GDZ	Gediz	0.31	93	P	Pb	23 13 59.5	0.0
GDZ				S	Sb	23 14 04.3	-0.1
GDZ	Gediz	0.31	93	*i* P	Pb	23 13 59.5	0.0
GDZ				*i* S	Sb	23 14 04.3	-0.1
TVSB	Tavsanli	0.46	40	*e*PG	Pg	23 14 01.4	+0.1
TVSB				*e*SG	Sb	23 14 08.3	-0.2
TVSB	Tavsanli	0.46	40	*e*Pg	Pg	23 14 01.4	+0.1
KULA	Kula-Manisa	0.67	209	*e*PG	Pg	23 14 05.1	-0.2
KULA				*e*SG	Sg	23 14 14.2	0.0
KULA	Kula-Manisa	0.67	209	*e*Pg	Pg	23 14 05.1	-0.2
KULA				*e*Sg	Sg	23 14 14.2	0.0
KHAL	Karahalli	0.80	156	P	Pn	23 14 08.8	-0.1
KHAL				S	Sb	23 14 19.0	+0.6
KHAL	Karahalli	0.80	156	*i* P	Pn	23 14 08.8	-0.1
KHAL				*i* S	Sb	23 14 19.0	+0.6
ORLT	Orhaneli	0.95	351	*e*PG	Pb	23 14 09.8	-0.5
ORLT	Orhaneli	0.95	351	*e*Pg	Pb	23 14 09.9	-0.5
AKHS	Akhisar	1.01	258	P	Pn	23 14 12.3	+0.6
AKHS				S	Sn	23 14 25.4	-0.2
AKHS	Akhisar	1.01	258	*i* P	Pn	23 14 12.3	+0.6
AKHS				*i* S	Sn	23 14 25.4	-0.2
AKS	Akhisar	1.01	258	*e*PG	Pb	23 14 10.8	-0.5
AKS	Akhisar	1.01	258	*e*Pg	Pb	23 14 10.8	-0.5
BALB	Balikesir	1.07	300	*e*PG	Pb	23 14 11.6	-0.7
BALB	Balikesir	1.07	300	*e*Pg	Pb	23 14 11.6	-0.7
IZI	Iznik	1.27	14	*e*PN	Pg	23 14 16.4	-0.2
IZI	Iznik	1.27	14	*e*Pn	Pg	23 14 16.4	-0.2
MDNY	Mudanya-Bursa	1.27	353	*e*PN	Pg	23 14 16.4	-0.3
MDNY	Mudanya-Bursa	1.27	353	*e*Pn	Pg	23 14 16.4	-0.3
KCTX	Karacabey (Bur	1.29	335	*e*PN	Pb	23 14 15.9	-0.1
KCTX	Karacabey (Bur	1.29	335	*e*Pn	Pb	23 14 15.9	-0.1
BALY	Balya	1.30	300	P	Pg	23 14 17.9	+0.7
BALY				S	Sg	23 14 34.7	+0.6
BALY	Balya	1.30	300	*i* P	Pg	23 14 17.9	+0.7
BALY				*i* S	Sg	23 14 34.7	+0.6
ADVT	Abdulvahap	1.42	21	*e*PN	Pg	23 14 18.9	-0.6
ADVT	Abdulvahap	1.42	21	*e*Pn	Pg	23 14 18.9	-0.6
ARMT	Armutlu	1.47	354	*e*PN	Pb	23 14 19.1	0.0
ARMT	Armutlu	1.47	354	*e*Pn	Pb	23 14 19.1	0.0
EDC	Edincik	1.56	323	*e*PN	Pb	23 14 20.1	-0.5
EDC	Edincik	1.56	323	*e*Pn	Pb	23 14 20.1	-0.5
GULT	Gulveren	1.73	39	*e*PN	Pb	23 14 23.4	-0.1
GULT	Gulveren	1.73	39	*e*Pn	Pb	23 14 23.5	-0.1
SVRH	Sivrihisar-ESK	1.93	79	*e*PN	Pb	23 14 27.0	0.0
SVRH	Sivrihisar-ESK	1.93	79	*e*Pn	Pb	23 14 27.0	0.0

*ISK **30** 23:14:29.9, 39°.14N×28°.99E, h10km, MD2.7*
*ISCJB **30** 23:14:30.3±0.4, 39°.14N±0°.03×28°.97E±0°.04, h10km±5km, Error ellipse: s-maj=5.0km s-min=4.4km az=166.3*
*CSEM **30** 23:14:30.4±0.1, 39°.14N×28°.98E, h10km, MD2.7, Error ellipse: s-maj=1.9km s-min=1.5km az=75.0*
*DDA **30** 23:14:31.1, 39°.08N×28°.99E, h7km, Md2.7*
ISC 30 23:14:30.2±0.9, 39°.13N±0°.02×28°.98E±0°.03, h17km±7km, n30, σ0s18/42, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.22	246	P	Pb	23 14 35.8	0.0
DEMI				S	Sg	23 14 39.1	+0.1
DEMI	Demirci	0.22	246	*i* P	Pb	23 14 35.8	0.0
DEMI				*i* S	Sg	23 14 39.1	+0.1
GDZ	Gediz	0.40	96	P	Pg	23 14 38.3	0.0
GDZ				S	Sb	23 14 44.7	+0.1
GDZ	Gediz	0.40	96	*i* P	Pg	23 14 38.3	0.0
GDZ				*i* S	Sb	23 14 44.7	+0.1
TVSB	Tavsanli	0.49	50	*e*PG	Pg	23 14 39.9	-0.2
TVSB				*e*SG	Sb	23 14 47.2	-0.1
TVSB	Tavsanli	0.49	50	*e*Pg	Pg	23 14 39.9	-0.2
TVSB				*e*Sg	Sb	23 14 47.3	-0.1
KULA	Kula-Manisa	0.67	202	*e*PG	Pb	23 14 43.5	+0.1
KULA	Kula-Manisa	0.67	202	*e*Pg	Pb	23 14 43.5	+0.1
KHAL	Karahalli	0.86	152	P	Pn	23 14 47.5	-0.1
KHAL				S	Sg	23 14 58.4	0.0
KHAL	Karahalli	0.86	152	*i* P	Pn	23 14 47.5	-0.1
KHAL				*i* S	Sg	23 14 58.4	0.0
ORLT	Orhaneli	0.91	356	*e*PG	Pg	23 14 47.8	-0.2
ORLT				*e*SG	Sn	23 15 01.1	0.0
ORLT	Orhaneli	0.91	356	*e*Pg	Pg	23 14 47.8	-0.2
ORLT				*e*Sg	Sn	23 15 01.1	0.0
KHL	Karahalli	0.92	152	*e*PG	Pg	23 14 47.7	-0.3
KHL				*e*SG	Sn	23 15 01.1	0.0
KHL	Karahalli	0.92	152	*e*Pg	Pg	23 14 47.7	-0.3
KHL				*e*Sg	Sn	23 15 01.1	0.0
AKS	Akhisar	0.94	255	*e*PG	Pn	23 14 48.7	+0.1
AKS	Akhisar	0.94	255	*e*Pg	Pn	23 14 48.7	+0.1
BALB	Balikesir	0.99	301	*e*PG	Pn	23 14 49.4	+0.2
BALB	Balikesir	0.99	301	*e*Pg	Pn	23 14 49.4	+0.2
KCTX	Karacabey (Bur	1.23	337	*e*PN	Pg	23 14 53.7	-0.2
KCTX	Karacabey (Bur	1.23	337	*e*Pn	Pg	23 14 53.7	-0.2
MDNY	Mudanya-Bursa	1.24	357	*e*PN	Pg	23 14 53.7	-0.3
MDNY	Mudanya-Bursa	1.24	357	*e*Pn	Pg	23 14 53.7	-0.3
IZI	Iznik	1.26	17	*e*PN	Pg	23 14 54.1	-0.4
IZI	Iznik	1.26	17	*e*Pn	Pg	23 14 54.1	-0.4
ADVT	Abdulvahap	1.43	24	*e*PN	Pb	23 14 56.4	+0.2
ADVT	Abdulvahap	1.43	24	*e*Pn	Pb	23 14 56.4	+0.2
ARMT	Armutlu	1.43	356	*e*PN	Pb	23 14 56.6	+0.2
ARMT	Armutlu	1.43	356	*e*Pn	Pb	23 14 56.6	+0.2
EDC	Edincik	1.48	325	*e*PN	Pb	23 14 57.4	+0.1
EDC	Edincik	1.48	325	*e*Pn	Pb	23 14 57.4	+0.1

IDC 30 23:19:39.6±2.2, 64°.17S×176°.64E, h0km, mb3.6/2, mb1 3.9/2, mb1mx3.7/21, mbtmp3.6/2, MS3.4/3, Ms1 3.4/3, ms1mx3.1/20, Error ellipse: s-maj=121.7km s-min=57.1km az=43.0, Balleny Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VNDA	Vanda	14.18	193	LR	LR	23 27 01.3	
	comp=Z,171nm,18.4s,baz=358,slow=31						
RPZ	Rata Peaks	20.74	349	LR	LR	23 30 58.9	
	comp=Z,149nm,19.4s,baz=120,slow=33						
MAW	Mawson	40.30	213	LR	LR	23 42 56.5	
	comp=Z,31nm,20.5s,baz=229,slow=35						
H01W1	Cape Leeuwin H	47.29	277	T	T	00 18 55.6	
	baz=148,slow=76,SNR=5.7						
H01W2	Cape Leeuwin H	47.30	277	T	T	00 18 55.1	
	baz=148,slow=76,SNR=4.7						
H01W3	Cape Leeuwin H	47.31	277	T	T	00 18 56.1	
	baz=148,slow=76,SNR=4.7						
ASAR	Alice Springs	49.17	305	P	P	23 28 29.1	-0.1
	0.9nm,0.8s,baz=157,slow=7.1,SNR=4.4						
WRA	Warramunga Arr	52.44	307	P	P	23 28 53.7	-0.1
	0.6nm,0.8s,baz=157,slow=6.8,SNR=2.5						
ILAR	Eielson Array	131.39	20	PKP	PKPdf	23 38 51.9	-0.2
	0.6nm,0.9s,baz=212,slow=4.3,SNR=4.5						
BRTR	Keskin Array B	147.36	239	PKPbc	PKPbc	23 39 23.5	-0.9
	1.1nm,0.8s,baz=177,slow=4.9,SNR=6.9						

*ISK **30** 23:23:09.6, 39°.10N×29°.11E, h10km, MD2.7*
*ISCJB **30** 23:23:10.3±0.4, 39°.11N±0°.02×29°.09E±0°.03, h7km±5km, Error ellipse: s-maj=4.3km s-min=4.0km az=16.4*
*DDA **30** 23:23:10.6, 39°.14N×29°.08E, h7km, Md3.0*
*CSEM **30** 23:23:10.4±0.1, 39°.11N×29°.10E, h10km, MD3.0, Error ellipse: s-maj=2.6km s-min=2.4km az=96.0*
ISC 30 23:23:10.1±0.9, 39°.07N±0°.03×29°.13E±0°.02, h14km±8km, n29, σ0s25/47, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	Gediz	0.28	86	P	Pb	23 23 17.2	+0.2
GDZ				S	Sb	23 23 21.7	+0.1
GDZ	Gediz	0.28	86	*i* P	Pb	23 23 17.2	+0.2
GDZ				*i* S	Sb	23 23 21.7	+0.1
DEMI	Demirci	0.32	265	P	Pg	23 23 17.0	+0.2
DEMI				S	Sg	23 23 21.1	-0.2
DEMI	Demirci	0.32	265	*i* P	Pg	23 23 17.0	+0.2
DEMI				*i* S	Sg	23 23 21.1	-0.2
TVSB	Tavsanli	0.46	35	*e*PG	Pg	23 23 19.2	-0.1
TVSB				*e*SG	Sg	23 23 25.5	0.0
TVSB	Tavsanli	0.46	35	*e*Pg	Pg	23 23 19.2	-0.1
TVSB				*e*Sg	Sg	23 23 25.5	0.0
KULA	Kula-Manisa	0.67	213	*e*PG	Pg	23 23 23.2	+0.1
KULA				*e*SG	Sb	23 23 32.9	+0.2
KULA	Kula-Manisa	0.67	213	*e*Pg	Pg	23 23 23.2	+0.1
KULA				*e*Sg	Sb	23 23 32.9	+0.2
KHAL	Karahalli	0.76	158	P	Pn	23 23 26.6	+0.1
KHAL				S	Sn	23 23 37.2	-0.6
KHAL	Karahalli	0.76	158	*i* P	Pn	23 23 26.6	+0.1
KHAL				*i* S	Sn	23 23 37.2	-0.6
KHL	Karahalli	0.81	157	*e*PG	Pg	23 23 25.8	-0.1
KHL				*e*SG	Sn	23 23 38.7	-0.4
KHL	Karahalli	0.81	157	*e*Pg	Pg	23 23 25.8	-0.1
KHL				*e*Sg	Sn	23 23 38.7	-0.4
ORLT	Orhaneli	0.99	350	*e*PG	Pb	23 23 28.7	-0.4
ORLT				*e*SG	Sg	23 23 42.3	+0.1
ORLT	Orhaneli	0.99	350	*e*Pg	Pb	23 23 28.7	-0.4
ORLT				*e*Sg	Sg	23 23 42.3	+0.1
AKHS	Akhisar	1.04	260	P	Pg	23 23 30.1	-0.1
AKHS				S	Sn	23 23 44.9	+0.3
AKHS	Akhisar	1.04	260	*i* P	Pg	23 23 30.1	-0.1
AKHS				*i* S	Sn	23 23 44.9	+0.3
AKS	Akhisar	1.04	260	*e*PG	Pb	23 23 30.0	+0.1
AKS	Akhisar	1.04	260	*e*Pg	Pb	23 23 30.0	+0.1
BALB	Balikesir	1.12	301	*e*PN	Pb	23 23 31.0	-0.2
MDNY	Mudanya-Bursa	1.31	352	*e*PN	Pn	23 23 34.2	+0.2
MDNY	Mudanya-Bursa	1.31	352	*e*Pn	Pn	23 23 34.2	+0.2
KCTX	Karacabey (Bur	1.33	334	*e*PN	Pn	23

IZI	**Iznik**	**1.23**	**18**	*e*PN	**Pg**	**23 27 38.1**	**-0.1**
IZI	**Iznik**	**1.23**	**18**	*e*Pn	**Pg**	**23 27 38.1**	**-0.1**
ARMT	**Armutlu**	**1.40**	**356**	*e*PN	**Pb**	**23 27 40.4**	**+0.2**
ARMT	**Armutlu**	**1.40**	**356**	*e*Pn	**Pb**	**23 27 40.4**	**+0.2**

ISCJB ***30*** *23:32:05.5±0.5, 39°.13N±0°.02×29°.10E±0°.03, h3km±5km, Error ellipse: s-maj=3.9km s-min=3.5km az=44.3*
CSEM ***30*** *23:32:05.8±0.1, 39°.13N×29°.11E, h8km, MD2.9, Error ellipse: s-maj=2.0km s-min=1.8km az=121.0*
ISK ***30*** *23:32:05.2, 39°.12N×29°.14E, h11km, MD2.8*
DDA ***30*** *23:32:05.3, 39°.14N×29°.09E, h7km, Md2.9*
ISC 30 23:32:05.9±0.9, 39°.14N±0°.02×29°.10E±0°.02, h10km±8km, n51, σ0.42/71, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.30**	**100**	P	**Pg**	**23 32 11.9**	**-0.1**
GDZ				S	**Sg**	**23 32 16.5**	**+0.4**
GDZ	**Gediz**	**0.30**	**100**	*i* P	**Pg**	**23 32 11.9**	**-0.1**
GDZ				*i* S	**Sg**	**23 32 16.5**	**+0.4**
DEMI	**Demirci**	**0.31**	**252**	P	**Pg**	**23 32 12.2**	**0.0**
DEMI				S	**Sg**	**23 32 16.4**	**0.0**
DEMI	**Demirci**	**0.31**	**252**	*i* P	**Pg**	**23 32 12.2**	**0.0**
DEMI				*i* S	**Sg**	**23 32 16.4**	**0.0**
TVSB	**Tavsanli**	**0.42**	**42**	*e*PG	**Pg**	**23 32 14.1**	**0.0**
TVSB				*e*SG	**Sg**	**23 32 20.2**	**+0.5**
TVSB	**Tavsanli**	**0.42**	**42**	*e*Pg	**Pg**	**23 32 14.1**	**0.0**
TVSB				*e*Sg	**Sg**	**23 32 20.2**	**+0.5**
KULA	**Kula-Manisa**	**0.71**	**209**	*e*PG	**Pg**	**23 32 19.1**	**-0.5**
KULA	**Kula-Manisa**	**0.71**	**209**	*e*Pg	**Pg**	**23 32 19.2**	**-0.5**
KHAL	**Karahalli**	**0.83**	**158**	P	**Pg**	**23 32 21.5**	**-0.3**
KHAL				S	**Sg**	**23 32 32.2**	**-0.5**
KHAL	**Karahalli**	**0.83**	**158**	*i* P	**Pg**	**23 32 21.5**	**-0.3**
KHAL				*i* S	**Sg**	**23 32 32.2**	**-0.5**
KHL	**Karahalli**	**0.88**	**158**	*e*PG	**Pg**	**23 32 22.4**	**-0.5**
KHL				*e*SG	**Sg**	**23 32 33.9**	**-0.4**
KHL	**Karahalli**	**0.88**	**158**	*e*Pg	**Pg**	**23 32 22.4**	**-0.5**
KHL				*e*Sg	**Sg**	**23 32 33.9**	**-0.4**
ORLT	**Orhaneli**	**0.92**	**350**	*e*PG	**Pb**	**23 32 23.9**	**0.0**
ORLT				*e*SG	**Sn**	**23 32 37.5**	**-0.7**
ORLT	**Orhaneli**	**0.92**	**350**	*e*Pg	**Pb**	**23 32 23.9**	**0.0**
ORLT				*e*Sg	**Sn**	**23 32 37.5**	**-0.7**
AKHS	**Akhisar**	**1.03**	**256**	P	**Pn**	**23 32 26.5**	**+0.1**
AKHS				S	**Sb**	**23 32 39.8**	**+0.3**
AKHS	**Akhisar**	**1.03**	**256**	*i* P	**Pn**	**23 32 26.5**	**+0.1**
AKHS				*i* S	**Sb**	**23 32 39.8**	**+0.3**
AKS	**Akhisar**	**1.03**	**256**	*e*PG	**Pb**	**23 32 26.0**	**+0.1**
AKS	**Akhisar**	**1.03**	**256**	*e*Pg	**Pb**	**23 32 26.0**	**+0.1**
BALB	**Balikesir**	**1.07**	**298**	*e*PN	**Pn**	**23 32 26.9**	**0.0**
BALB	**Balikesir**	**1.07**	**298**	*e*Pn	**Pn**	**23 32 26.9**	**0.0**
IGD	**Bursa**	**1.12**	**4**	*i* P	**Pb**	**23 32 26.5**	**-0.9**
IGD				*i* S	**Sb**	**23 32 42.4**	**+0.3**
CAVI	**Cavuskoy**	**1.21**	**28**	*e*PN	**Pb**	**23 32 28.5**	**-0.3**
CAVI	**Cavuskoy**	**1.21**	**28**	*e*Pn	**Pb**	**23 32 28.5**	**-0.3**
IZI	**Iznik**	**1.23**	**13**	*e*PN	**Pn**	**23 32 29.0**	**-0.2**
IZI	**Iznik**	**1.23**	**13**	*e*Pn	**Pn**	**23 32 29.0**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.24**	**352**	*e*PN	**Pb**	**23 32 29.3**	**0.0**
MDNY	**Mudanya-Bursa**	**1.24**	**352**	*e*Pn	**Pb**	**23 32 29.3**	**0.0**
KCTX	**Karacabey (Bur**	**1.26**	**333**	*e*PN	**Pb**	**23 32 29.8**	**+0.1**
KCTX	**Karacabey (Bur**	**1.26**	**333**	*e*Pn	**Pb**	**23 32 29.8**	**+0.1**
BORA	**Eskisehir**	**1.28**	**54**	P	**Pb**	**23 32 30.1**	**-0.1**
BORA				S	**Sn**	**23 32 47.9**	**+0.7**
BORA	**Eskisehir**	**1.28**	**54**	*i* P	**Pb**	**23 32 30.1**	**-0.1**
BORA				*i* S	**Sn**	**23 32 47.9**	**+0.7**
ADVT	**Abdulvahap**	**1.38**	**21**	*e*PN	**Pn**	**23 32 31.1**	**-0.1**
ADVT	**Abdulvahap**	**1.38**	**21**	*e*Pn	**Pn**	**23 32 31.1**	**-0.1**
ESKT	**Eskisehir**	**1.41**	**74**	*i* P	**Pb**	**23 32 32.3**	**-0.1**
ESKT				*i* S	**Sg**	**23 32 51.0**	**-0.3**
SEYT	**Eskypehyr**	**1.41**	**74**	P	**Sg**	**23 32 32.3**	**0.0**
SEYT				S	**Sg**	**23 32 51.0**	**-0.3**
GONE	**Gonen-Balikesi**	**1.42**	**310**	*e*PN	**Pn**	**23 32 32.0**	**+0.3**
GONE	**Gonen-Balikesi**	**1.42**	**310**	*e*Pn	**Pn**	**23 32 32.0**	**+0.3**
ARMT	**Armutlu**	**1.44**	**353**	*e*PN	**Pb**	**23 32 32.6**	**-0.1**
ARMT	**Armutlu**	**1.44**	**353**	*e*Pn	**Pb**	**23 32 32.6**	**-0.1**
DNZL	**Cakiroluk**	**1.45**	**182**	P	**Pb**	**23 32 33.0**	**-0.1**
DNZL	**Cakiroluk**	**1.45**	**182**	*i* P	**Pb**	**23 32 33.0**	**-0.1**
DNZL				*i* S	**Sg**	**23 32 53.8**	**+1.2**
GPA	**Golpazari**	**1.48**	**39**	*e*PN	**Pb**	**23 32 33.1**	**-0.4**
GPA	**Golpazari**	**1.48**	**39**	*e*Pn	**Pb**	**23 32 33.1**	**-0.4**
EDC	**Edincik**	**1.54**	**322**	*e*PN	**Pn**	**23 32 33.8**	**+0.5**
EDC	**Edincik**	**1.54**	**322**	*e*Pn	**Pn**	**23 32 33.8**	**+0.5**
GULT	**Gulveren**	**1.69**	**40**	*e*PN	**Pn**	**23 32 35.4**	**-0.1**
GULT	**Gulveren**	**1.69**	**40**	*e*Pn	**Pn**	**23 32 35.4**	**-0.1**
SVRH	**Sivrihisar-ESK**	**1.91**	**80**	*e*PN	**Pn**	**23 32 39.1**	**+0.6**
SVRH	**Sivrihisar-ESK**	**1.91**	**80**	*e*Pn	**Pn**	**23 32 39.1**	**+0.6**
ISK	**Istanbul-Kandi**	**1.92**	**359**	*e*PN	**Pb**	**23 32 39.9**	**-1.1**
ISK	**Istanbul-Kandi**	**1.92**	**359**	*e*Pn	**Pb**	**23 32 39.9**	**-1.1**

ISCJB ***30*** *23:33:31.8±1.0, 1°.66S±0°.04×101°.09E±0°.04, h19km±6km, mb4.2/18, MS2.9/2, Error ellipse: s-maj=7.3km s-min=5.3km az=39.6*
IDC ***30*** *23:33:31.1±0.9, 1°.66S×101°.07E, h0km, mb3.8/11, mb1 3.9/12, mb1mx3.8/42, mbtmp3.8/12, ML2.9/1, MS3.2/5, Ms1 3.2/5, ms1mx3.0/44, Error ellipse: s-maj=47.1km s-min=17.9km az=54.0*
DJA ***30*** *23:33:33.9±0.3, 2°.5±3°.3×10°1E±°, h10km, M4.6/15, mB4.7/1, mb4.8/3, MLv4.5/15, Mw(mB)3.9/1*
NEIC ***30*** *23:33:35.4±0.6, 1°.65S×101°.19E, h35km, mb4.7/8, Error ellipse: s-maj=18.1km s-min=11.2km az=52.0*
NEIC Felt [III] at Muaralabuh and Solok; [II] at Padang.
ISC 30 23:33:31.6±1.4, 1°.58S±0°.04×101°.08E±0°.04, h6km±8km, n57, σ1.96/67, mb4.2/18, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SDSI	**Sungai Dareh**	**0.73**	**29**	P	**Pg**	**23 33 45.8**	**+0.1**
SDSI				S	**Sg**	**23 33 55.4**	**+0.1**
PDSI	**Padang**	**0.91**	**317**	P	**Pg**	**23 33 49.1**	**+0.1**
PDSI				S	**Sg**	**23 34 01.8**	**+1.0**
PPI	**Padang Panjang**	**1.31**	**329**	P	**Pn**	**23 33 56.9**	**+0.5**
PPI				S	**Sn**	**23 34 15.6**	**+1.4**
PPSI	**Pulau Pagai**	**1.59**	**222**	P	**Pg**	**23 34 02.1**	**+0.1**
RGRI	**Rengat**	**1.75**	**46**	P	**Pb**	**23 34 04.2**	**0.0**
BKNI	**Bangkinang**	**1.90**	**359**	P	**Pn**	**23 34 05.3**	**+0.8**
BKNI	**Bangkinang**	**1.90**	**359**	*e*Pn	**Pn**	**23 34 05.3**	**+0.8**
BKNI				*e*Sn	**Sb**	**23 34 31.6**	**+1.0**
MNSI	**Mandailing Nat**	**2.80**	**328**	P	**Pn**	**23 34 20.0**	**+3.1**
PBSI	**Pulau Batu**	**3.18**	**298**	P	**Pn**	**23 34 24.1**	**+1.9**
PMBI	**Palembang**	**3.93**	**110**	P	**Pn**	**23 34 33.0**	**+0.6**
TPRI	**Tanjung Pinang**	**4.25**	**54**	P	**Pn**	**23 34 38.8**	**+1.9**
MYKOM	**Kota Tinggi**	**4.35**	**40**	*e*Pn	**Pn**	**23 34 38.6**	**+0.4**
MYKOM				*e*Sn	**Sn**	**23 35 30.1**	**+0.9**
GSI	**Gunungsitoli**	**4.53**	**309**	P	**Pn**	**23 34 41.1**	**+0.4**
GSI	**Gunungsitoli**	**4.53**	**309**	*e*Pn	**Pn**	**23 34 43.5**	**+2.8**
GSI				*e*Sn	**Sn**	**23 35 35.1**	**+1.4**
LWLI	**Liwa**	**4.53**	**139**	P	Pn	23 34 45.4	+4.6
PSI	**Prapat**	**4.86**	**334**	*e*Pn	**Pn**	**23 34 45.4**	**0.0**
	0.5nm,0.3s,baz=124,slow=15,SNR=2.4						
PSI				Sn	**Sb**	**23 35 50.1**	**-5.9**
	2.0nm,0.3s,baz=155,slow=22,SNR=2.2						
PSI				LR	LR	23 37 00.1	
	comp=Z,289nm,19.1s,baz=170,slow=43						
PSI	**Prapat**	**4.86**	**334**	*e*Pn	**Pn**	**23 34 46.8**	**+1.4**
PSI				*e*Sn	**Sb**	**23 35 50.1**	**-5.9**
PPBI	**Pangkal Pinang**	**5.09**	**97**	P	**Pn**	**23 34 50.4**	**+2.0**
KASI	**Kota Agung**	**5.19**	**139**	P	**Pn**	**23 34 50.9**	**+1.0**
	106nm,0.9s,0.3nm						
IPM	**Ipoh**	**6.02**	**360**	*e*Pn	**Pn**	**23 35 03.5**	**+2.2**
IPM				*e*Sn	**Sn**	**23 36 14.0**	**+3.4**
KCSI	**Kotacane, Aceh**	**6.05**	**327**	P	**Pn**	**23 35 05.2**	**+3.5**
KULM	**Kulim**	**6.84**	**356**	*e*Pn	**Pn**	**23 35 14.8**	**+2.2**
KULM				*e*Sn	**Sn**	**23 36 29.7**	**-1.0**
LEM	**Lembang**	**8.35**	**129**	LR	LR	23 39 07.6	
	comp=Z,243nm,18.6s,baz=210,slow=40						
XMIS	**Christmas Isla**	**9.94**	**153**	*e*Pn	Pn	23 35 49.9	-5.2
KAPI	**Kappang**	**18.95**	**101**	LR	LR	23 45 37.5	
	comp=Z,59nm,20.0s,baz=255,slow=38						
CMAR	**Chiang Mai Arr**	**20.02**	**354**	P	Pn	23 38 07.7	+0.6
	0.6nm,0.3s,baz=181,slow=10,SNR=2.0						
CMAR				LR	LR	23 47 31.7	
	comp=Z,46nm,18.3s,baz=185,slow=42						
PALK	**Pallekele**	**22.15**	**294**	LR	LR	23 47 27.0	
	comp=Z,55nm,18.3s,baz=116,slow=38						
WR1	**Warramunga Arr**	**37.28**	**122**	*e*P	**P**	**23 40 43.6**	**-1.1**
	18nm,1.5s						
WR1				*e*PcP	**PcP**	**23 43 04.8**	**+0.5**
WRA	**Warramunga Arr**	**37.28**	**122**	P	**P**	**23 40 43.6**	**-1.1**
	1.1nm,1.1s,baz=306,slow=8.7,SNR=2.7						
WRA				PcP	**PcP**	**23 43 04.8**	**+0.5**
	0.4nm,0.8s,baz=348,slow=5.0,SNR=1.8						
WRAB	**Tennant Creek**	**37.29**	**122**	*e*P	**P**	**23 40 40.0**	**-4.7**
	22nm,0.8s						
JOW	**Kunigami**	**38.54**	**41**	*e*P	**P**	**23 40 52.8**	**-2.5**
	96nm,1.9s						
ASAR	**Alice Springs**	**38.64**	**127**	P	**P**	**23 40 55.1**	**-1.0**
	0.8nm,0.7s,baz=305,slow=8.1,SNR=5.5						
ASAR				PcP	**PcP**	**23 43 09.4**	**+0.9**
	0.2nm,0.6s,baz=330,slow=2.6,SNR=2.1						
AS31	**Alice Springs**	**38.64**	**127**	*e*P	**P**	**23 40 55.1**	**-1.0**
	4.1nm,1.6s						
AS31				*e*PcP	**PcP**	**23 43 09.4**	**+0.9**
MRIV	**Mauritius Mete**	**46.44**	**243**	*e*P	**P**	**23 41 58.5**	**-1.1**
SONA0	**Songino Array**	**49.43**	**5**	*e*P	**P**	**23 42 24.5**	**+2.0**
	9.4nm,2.0s						
SONA0				*e*PcP	**PcP**	**23 43 47.3**	**+2.5**
SONM	**Songino Array**	**49.43**	**5**	P	**P**	**23 42 24.5**	**+2.0**
	0.4nm,0.7s,baz=188,slow=7.3,SNR=2.2						
SONM				PcP	**PcP**	**23 43 47.3**	**+2.5**
	0.3nm,0.4s,baz=185,slow=4.2,SNR=1.9						
EKS2	**Erkin-Say**	**50.45**	**334**	*e*P	**P**	**23 42 31.6**	**+1.3**
	3.2nm,0.8s						
MK01	**Makanchi Array**	**50.90**	**343**	*e*P	**P**	**23 42 31.7**	**-1.9**
MK32	**Makanchi Array**	**50.93**	**343**	*e*P	**P**	**23 42 34.2**	**+0.5**
MKAR	**Makanchi Array**	**50.93**	**343**	P	**P**	**23 42 34.2**	**+0.4**
	0.5nm,0.5s,baz=159,slow=10,SNR=3.4						
MKAR	**Makanchi Array**	**50.93**	**343**	*e*P	**P**	**23 42 33.0**	**-0.8**
KKAR	**Karatay Array**	**52.28**	**332**	*e*P	**P**	**23 42 42.9**	**-1.1**
GEYT	**Alibeck**	**55.83**	**319**	P	**P**	**23 43 09.5**	**-0.4**
	1.4nm,0.6s,baz=132,slow=6.6,SNR=4.2						
ZALV	**Zalesovo Beam**	**56.97**	**349**	P	**P**	**23 43 16.8**	**-0.9**
	0.4nm,0.3s,baz=131,slow=4.4,SNR=1.7						
ZAA1	**Zalesovo Array**	**56.97**	**349**	*e*P	**P**	**23 43 16.8**	**-0.9**
ABKAR	**Akbulak array**	**61.80**	**331**	*e*P	**P**	**23 43 49.1**	**-2.1**
	1.3nm,0.6s						
KBZ	**Khabaz**	**68.70**	**319**	P	**P**	**23 44 35.8**	**-0.4**
	1.5nm,0.7s,baz=107,slow=6.1,SNR=3.3						
PEA0B	**Petropavlovsk-**	**71.96**	**32**	*e*P	**P**	**23 44 55.8**	**-0.2**
	26nm,1.3s						
BR101	**Keskin Array S**	**73.84**	**312**	*e*P	**P**	**23 45 07.5**	**0.0**
BRTR	**Keskin Array B**	**73.84**	**312**	P	**P**	**23 45 07.5**	**0.0**
	0.4nm,0.6s,baz=138,slow=5.8,SNR=3.4						
BR231	**Keskin MP Arra**	**74.51**	**312**	*e*P	**P**	**23 45 08.6**	**-2.9**
FIA0	**FINESS Array S**	**84.25**	**332**	*e*P	**P**	**23 46 05.8**	**+1.9**
FINES	**FINESS Array B**	**84.25**	**332**	P	**P**	**23 46 05.8**	**+1.9**
	1.0nm,0.7s,baz=114,slow=4.6,SNR=2.3						
ARA0	**ARCESS Array S**	**86.45**	**340**	*e*P	**P**	**23 46 17.1**	**+2.3**
ARCES	**ARCESS Array B**	**86.45**	**340**	P	**P**	**23 46 17.1**	**+2.3**
	1.4nm,0.8s,baz=104,slow=5.1,SNR=1.6						
TXAR	**Lajitas Array**	**143.71**	**38**	PKP	**PKPdf**	**23 53 09.2**	**+0.7**
	0.1nm,0.5s,baz=174,slow=1.0,SNR=1.9						
CPUP	**Villa Florida**	**145.29**	**215**	PKPbc	**PKPdf**	**23 53 12.2**	**+1.0**
	2.2nm,0.8s,baz=111,slow=4.6,SNR=4.9						

WEL 30 23:46:48.8±0.8, 36°.36S×177°.01E, h251km±8km, ML3.6/8, 2D, Error ellipse: s-maj=8.2km s-min=6.9km az=90.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HAZ	**Te Kaha**	**1.52**	**156**	PN	Pn	23 47 27.5	+0.3
MXZ	**Matakaoa Point**	**1.59**	**139**	PN	Pn	23 47 28.2	+0.4
MXZ				SN	S	23 47 58.6	+0.1
PKGZ	**Pakihiroa**	**1.75**	**151**	PN	Pn	23 47 29.6	+0.4
WMGZ	**Waiomatatini S**	**1.84**	**143**	⇓PN	Pn	23 47 30.1	+0.2
WMGZ				SN	S	23 48 01.7	-0.6
URZ	**Urewera**	**1.90**	**178**	PN	Pn	23 47 30.8	+0.5
TWGZ	**Tauwhareparae**	**1.97**	**157**	⇓PN	Pn	23 47 31.7	+0.6
PUZ	**Puketiti**	**1.98**	**150**	PN	Pn	23 47 31.0	-0.1
MWZ	**Matawai**	**2.01**	**168**	PN	Pn	23 47 31.8	+0.3
MUGZ	**Murupara**	**2.12**	**185**	PN	Pn	23 47 32.7	+0.3
RAGZ	**Rawiri**	**2.15**	**172**	PN	Pn	23 47 33.1	+0.3
RIGZ	**Rimuhau**	**2.42**	**166**	PN	Pn	23 47 35.4	+0.1
KNZ	**Kokohu**	**2.71**	**169**	PN	Pn	23 47 37.7	-0.5
NMHZ	**Naumai**	**2.74**	**183**	PN	Pn	23 47 38.9	+0.4
BKZ	**Black Stump Fm**	**2.83**	**188**	PN	Pn	23 47 38.9	-0.6
MHGZ	**Mahia Peninsul**	**2.88**	**166**	PN	Pn	23 47 39.8	-0.1
MCHZ	**McNeill Hill**	**3.09**	**185**	PN	Pn	23 47 42.1	-0.1
WNVZ	**Wahianoa**	**3.16**	**200**	PN	Pn	23 47 43.5	+0.3
BHHZ	**Black Hill Sta**	**3.21**	**193**	PN	Pn	23 47 43.0	-0.6
KRHZ	**Kereru**	**3.31**	**189**	PN	Pn	23 47 43.9	-0.8
KAHZ	**Kahuranaki**	**3.43**	**182**	PN	Pn	23 47 45.2	-0.9
PNHZ	**Pukenui**	**3.60**	**190**	PN	Pn	23 47 46.6	-1.4
PXZ	**Pawanui**	**3.67**	**182**	PN	Pn	23 47 47.3	-1.4
OGWZ	**Otaki Gorge**	**4.68**	**197**	PN	Pn	23 47 58.4	-2.2
HOWZ	**Holdsworth Sta**	**4.68**	**194**	PN	Pn	23 47 58.3	-2.4
KIWZ	**Kapiti Island**	**4.78**	**199**	PN	Pn	23 48 00.1	-1.8
CAWZ	**Cannon Point**	**4.98**	**197**	PN	Pn	23 48 01.7	-2.5
PLWZ	**Palliser**	**5.38**	**194**	PN	Pn	23 48 06.8	-2.4
TUWZ	**Tuamarina**	**5.60**	**204**	PN	Pn	23 48 10.0	-1.8

NIED ***30*** *23:53:00, 40°.30N×143°.40E, h20km, Mw5.1 Best double couple: M0 5.61000×10^16 NP1:ϕ1 170.00000°, δ21.00000°, λ56.00000°. NP2:ϕ2 26.00000°, δ73.00000°, λ102.00000°.*
IDC ***30*** *23:53:39.0±0.6, 40°.25N×143°.28E, h0km, mb4.7/33, mb1 4.7/36, mb1mx4.6/52, mbtmp4.7/36, ML4.6/3, MS4.6/42, Ms1 4.6/42, ms1mx4.5/54, Error ellipse: s-maj=14.9km s-min=13.2km az=110.0*
JMA ***30*** *23:53:39.9±0.2, 40°.26N×143°.38E, h10km±2km, M5.0*
JMA Felt II J1.
ISCJB ***30*** *23:53:42.0±0.8, 40°.32N±0°.03×143°.26E±0°.04, h24km±5km, mb4.8/128, MS4.9/70, Error ellipse: s-maj=6.0km s-min=3.1km az=36.0*
MOS ***30*** *23:53:44.1±0.9, 40°.39N×143°.23E, h39km, mb5.2/55, MS5.2/31, Error ellipse: s-maj=7.7km s-min=4.2km az=108.1*
GCMT ***30*** *23:53:45.5±0.2, 40°.33N×143°.52E, h31km, MW5.1/92, Moment Tensor Solution. s50,c74; s92,c153; Duration: 0 Moment tensor: Scale 10^16 Nm; Mrr 4.89±.20; Mθθ -0.34±.12; Mϕϕ -4.55±.13; Mrθ 1.25±.17; Mrϕ -0.34±.08; Mθϕ 4.11±.16; Best double couple: M0 6.38900×10^16 NP1:ϕ1 13.00000°, δ66.00000°, λ96.00000°. NP2: ϕ2 178.00000°, δ25.00000°, λ77.00000°. Principal axes: T 6.5890, Plg68.0000°, Azm294.0000°; N -0.3990, Plg5.0000°, Azm190.0000°; P -6.1880, Plg21.0000°, Azm98.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
NEIC ***30*** *23:53:45.5±0.6, 40°.29N×143°.21E, h39km±5km, mb4.9/65 Error ellipse: s-maj=5.9km s-min=4.2km az=125.0*
NEIC Recorded [2 JMA] in Aomori.
ISC 30 23:53:44.6±0.7, 40°.32N±0°.04×143°.31E±0°.04, h32km±4km, n419, σ1.68/446, mb4.9/132, MS5.0/73, 29C-25D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.18**	**251**	P	**Pn**	**23 54 02.4**	**-2.4**
JTH				*e*S	**Sn**	**23 54 18.4**	**-1.3**
MIYJ	**Miyakonagasawa**	**1.37**	**238**	P	**Pn**	**23 54 05.0**	**-2.5**
MIYJ				*e*S	**Sn**	**23 54 23.0**	**-1.4**
JANG	**Nango**	**1.37**	**273**	P	**Pn**	**23 54 05.9**	**-1.7**
ERM	**Erimo**	**1.70**	**356**	*d*P	**Pn**	**23 54 11.8**	**-0.2**
ERM	**Erimo**	**1.70**	**356**	*e*Pn	**Pn**	**23 54 11.4**	**-0.6**
ERM				*e*Sn	**Sn**	**23 54 28.7**	**-3.8**
JEM	**Erimo**	**1.70**	**356**	P	**Pn**	**23 54 10.7**	**-1.3**
JOM	**Ohasama**	**1.77**	**242**	P	**Pn**	**23 54 11.4**	**-1.6**
JOM				*e*S	**Sn**	**23 54 35.0**	**+0.6**
JTM	**Tenmabayashi**	**1.77**	**286**	P	**Pn**	**23 54 12.4**	**-0.6**
JTM				*e*S	**Sb**	**23 54 36.5**	**-1.8**
JNBK	**Urakawa-nobuka**	**2.00**	**348**	P	**Pn**	**23 54 16.2**	**0.0**
JOT	**Ohata**	**2.02**	**302**	P	**Pn**	**23 54 15.8**	**-0.6**
JAH	**Hinai**	**2.05**	**267**	P	**Pn**	**23 54 16.5**	**-0.4**
JMK	**Ichinoseki**	**2.12**	**230**	P	**Pn**	**23 54 16.2**	**-1.5**
JRG	**Rokugo**	**2.26**	**247**	P	**Pn**	**23 54 18.6**	**-1.1**
JCH	**Churui**	**2.29**	**1**	P	**Pn**	**23 54 19.3**	**-0.8**
JCH				*e*S	**Sn**	**23 54 47.1**	**-0.1**
JKB	**Kayabe**	**2.33**	**313**	P	**Pn**	**23 54 20.7**	**+0.1**
JYK	**Kaneyama**	**2.68**	**239**	P	**Pn**	**23 54 24.4**	**-1.1**
JYK				*e*S	**Sn**	**23 54 56.9**	**+0.1**
JOU	**Okura**	**2.83**	**227**	P	**Pn**	**23 54 25.8**	**-1.8**
ASAJ	**Asahikawa**	**3.83**	**352**	Pn	**Pn**	**23 54 41.5**	**+0.3**
	13nm,0.3s,baz=210,slow=11,SNR=30						
ASAJ				Sn	**Sn**	**23 55 30.7**	**+5.5**
	42nm,0.3s,baz=165,slow=11,SNR=4.7						
ASAJ				LR	LR	23 56 01.8	
	comp=Z,2μm,21.4s,baz=174,slow=37						
ASAJ	**Asahikawa**	**3.83**	**352**	*e*Pn	**Pn**	**23 54 42.0**	**+0.7**
ASAJ				*e*Sn	**Sn**	**23 55 21.4**	**-3.8**
ASAJ				*e*Sg	**Sn**	**23 55 30.7**	**+5.5**
YUK	**Yuzh-Kuril'sk**	**4.17**	**26**	⇑*i*P	**Pn**	**23 54 44.4**	**-1.5**
MJAR	**Matsushiro Arr**	**5.50**	**228**	Pn	**Pn**	**23 55 03.9**	**-0.5**
	17nm,0.3s,baz=39,slow=12,SNR=132						
MJAR				LR	LR	23 57 23.9	
	comp=Z,6μm,19.7s,baz=45,slow=41						
MJB9	**Matsu-Tunnel**	**5.50**	**228**	*e*Pn	**Pn**	**23 55 04.0**	**-0.3**
MJB9				*e*Sn	**Sn**	**23 56 04.4**	**-2.1**
MAJO	**Matsushiro**	**5.50**	**228**	*e*P	**Pn**	**23 55 03.6**	**-0.7**
MAJO	**Matsushiro**	**5.50**	**228**	*e*Pn	**Pn**	**23 55 04.0**	**-0.4**
MAT	**Matsushiro**	**5.50**	**228**	P	**Pn**	**23 55 03.8**	**-0.5**
MAT				S	**Sn**	**23 56 08.8**	**+2.3**
KUR	**Kuril'sk**	**5.94**	**33**	*e*P	**Pn**	**23 55 09.1**	**-1.2**
KUR				*i* S	**Sn**	**23 56 12.9**	**-4.3**
KUR				pmax	pmax		
	comp=Z,174nm,0.6s						
KUR				pmax	pmax		
	comp=N,51nm,0.3s						
KUR				pmax	pmax		
	comp=E,92nm,0.6s						
KUR				smax	smax		
	comp=N,486nm,0.6s						
KUR				smax	smax		
	comp=E,353nm,0.6s						
KUR				smax	smax		
	comp=N,1μm,4.3s						
YSS	**Yuzh-Sakhalins**	**6.64**	**357**	⇑*e*P	**Pn**	**23 55 21.8**	**+1.9**
YSS				*e*S	**Sn**	**23 56 35.0**	**+0.6**
YSS				pmax	pmax		
	comp=Z,40nm,0.8s						
YSS				MLR	MLR		
	comp=Z,8μm,14.0s						
YSS				MLR	MLR		
	comp=N,7μm,15.0s						
YSS	**Yuzh-Sakhalins**	**6.64**	**357**	*e*Pn	**Pn**	**23 55 18.9**	**-0.9**
INU	**Inuyama**	**7.03**	**227**	*e*Pn	**Pn**	**23 55 24.7**	**-0.6**
JHJ2	**Mitsune**	**7.72**	**202**	*e*Pn	**Pn**	**23 55 35.3**	**+0.5**
JHJ	**Hachijo jima 2**	**7.73**	**203**	LR	LR	23 58 36.2	
	comp=N,3μm,21.3s,baz=72,slow=39						
UGL	**Uglegorsk**	**8.80**	**355**	P	**Pn**	**23 55 50.0**	**+0.5**
UGL				*e*		23 57 26.0	
UGL				MLR	MLR		
	comp=Z,6μm,16.0s						
UGL				MLR	MLR		
	comp=N,8μm,17.0s						
UGL				MLR	MLR		
	comp=E,4μm,20.0s						
VLA	**Vladivostok**	**8.99**	**292**	⇑P	Pn	23 55 46.4	-5.7
USRK	**Ussuriysk Ar.**	**9.25**	**298**	Pn	**Pn**	**23 55 57.6**	**+2.0**
	comp=E,3.0nm,0.3s,baz=90,slow=13,SNR=39						
USRK				LR	LR	23 59 34.8	
	comp=E,8μm,18.6s,baz=93,slow=38						
HABR	**Khabarovsk**	**10.06**	**327**	*e*P	**Pn**	**23 56 04.0**	**-2.8**
HABR				*e*S	**Sn**	**23 57 55.6**	**-2.8**
HABR				pmax	pmax		
	comp=N,13nm,0.8s						
HABR				pmax	pmax

YAK eS S 00 02 53.3 -5.4
YAK e 00 10 01.6
YAK pmax pmax
comp=N,18nm,0.9s
YAK pmax pmax
comp=Z,88nm,0.8s
YAK pmax pmax
comp=E,7.0nm,0.9s
YAK pmax pmax
comp=Z,43nm,0.9s
YAK pmax pmax
comp=N,20nm,0.9s
YAK smax smax
comp=E,318nm,3.6s
YAK smax smax
comp=N,73nm,1.7s
YAK MLR MLR
comp=Z,2μm,17.0s
YAK MLR MLR
comp=N,1μm,19.0s
YAK MLR MLR
comp=E,2μm,16.0s
YAK Yakutsk 23.26 344 eP P **23 58 46.8 -2.2**
comp=E,108nm,0.7s
SEY Seymchan 23.29 11 P P **23 58 47.7 -1.5**
comp=E,16nm,0.8s,baz=182,slow=6.7,SNR=45
CIT Chita 23.52 310 eP P **23 58 49.6 -2.1**
CIT e 23 59 02.0
CIT e 23 59 06.3
CIT e 23 59 36.4
CIT eS S **00 03 04.3 +0.9**
CIT pmax pmax
comp=Z,169nm,2.8s
YHNB Yeheng 24.11 236 eP P **23 58 56.6 -0.9**
comp=Z,38nm,1.3s
NACB Ninganchiao 24.33 235 eP P **23 58 56.4 -3.0**
comp=Z,15nm,0.6s
YULB Yu-li 25.08 234 eP P **23 59 05.5 -0.8**
comp=Z,17nm,0.8s
BTO Baotou 25.25 282 eP P **23 59 08.0 +0.2**
WHN Wuhan 25.44 257 ⇓P P **23 59 08.8 -0.6**
WHN Wuhan 25.44 257 pP pP **23 59 17.3 -1.4**
WHN LR LR
comp=N,5μm,13.2s
WHN LR LR
comp=E,9μm,14.3s
WHN LR LR
comp=Z,11μm,16.0s
TPUB Ta-pu 25.57 235 eP P **23 59 09.5 -1.2**
comp=Z,21nm,0.6s
BOD Bodaibo 25.67 323 eP P **23 59 11.4 +0.1**
BOD pmax pmax
comp=Z,30nm,0.9s
GUMO Guam 26.66 177 LR LR 00 08 37.7
comp=Z,622nm,21.0s,baz=5.5,slow=34
ULN Ulaanbaatar 26.92 298c iP P **23 59 22.5 -0.4**
ULN pmax pmax
comp=Z,33nm,1.3s
ULN MLR MLR
comp=Z,4μm,15.0s
ULN Ulaanbaatar 26.92 298 eP P **23 59 21.8 -1.1**
comp=Z,39nm,1.3s
SONA1 Songino Array 27.36 298 eP P **23 59 25.9 -0.9**
SONA0 Songino Array 27.36 298 eP P **23 59 26.6 -0.2**
comp=Z,65nm,1.5s
SONA0 ePcP PcP **00 02 44.3 -0.9**
SONM Songino Array 27.36 298 P P **23 59 26.6 -0.2**
comp=Z,10nm,0.6s,baz=91,slow=9.0,SNR=69
SONM PcP PcP **00 02 44.3 -0.9**
comp=Z,0.7nm,0.6s,baz=139,slow=5.0,SNR=2.3
SONM LR LR 00 11 01.1
comp=Z,4μm,18.5s,baz=96,slow=38
H11N2 WAKE ISLAND Hy 28.79 129 T T 00 29 41.9
baz=318,slow=75,SNR=681
H11N1 WAKE ISLAND Hy 28.80 129 T T 00 29 41.9
baz=318,slow=75,SNR=627
H11N3 WAKE ISLAND Hy 28.81 129 T T 00 29 41.9
baz=318,slow=75,SNR=694
ENH Enshi 29.22 261 eP P **23 59 42.0 -1.4**
comp=Z,15nm,0.8s
TLY Talaya 29.45 306 LR LR 00 12 28.1
comp=Z,2μm,18.4s,baz=90,slow=38
TLY Talaya 29.45 306 eP P **23 59 43.8 -1.5**
TLY pmax pmax
comp=Z,10.0nm,0.8s
TLY Talaya 29.45 306 eP P **23 59 43.8 -1.5**
comp=Z,10nm,0.8s
ZAK Zakamensk 29.55 303 eP P **23 59 45.3 -0.9**
ZAK pmax pmax
comp=Z,8.0nm,1.3s
H11S1 WAKE ISLAND Hy 29.63 130 T T 00 30 45.6
baz=322,slow=76,SNR=109
H11S3 WAKE ISLAND Hy 29.63 130 T T 00 30 48.6
baz=322,slow=76,SNR=104
H11S2 WAKE ISLAND Hy 29.64 130 T T 00 30 46.8
baz=322,slow=76,SNR=101
BILL Bilibino 30.46 17⇓iP P **23 59 55.2 +1.3**
BILL iSS SS 00 06 28.0 -35
BILL pmax pmax
comp=Z,10.0nm,1.0s
BILL MLR MLR
comp=Z,771nm,15.0s
BILL Bilibino 30.46 17 eP P **23 59 54.7 +0.8**
comp=Z,15nm,1.0s
TIXI Tiksi 32.23 351 P P **00 00 07.8 -1.7**
comp=Z,7.9nm,0.7s,baz=139,slow=5.7,SNR=19
TIXI Tiksi 32.23 351⇓iP P **00 00 09.9 +0.4**
TIXI pmax pmax
comp=Z,14nm,1.0s
TIXI MLR MLR
comp=Z,1μm,14.0s
TIXI Tiksi 32.23 351 eP P **00 00 08.0 -1.5**
GTA Gaotai 33.15 283 eP P **00 00 18.0 -0.1**
GTA pP pP 00 00 25.0 -2.5
GTA sP sP 00 00 28.0 -3.4
GTA S S **00 05 33.0 -2.5**
GTA sS sS 00 05 47.0 -4.0
GTA SS SnSn **00 07 34.3 -1.6**
GTA pmax pmax
comp=Z,10.0nm,1.1s
GTA pmax pmax
comp=Z,200nm,5.5s
GTA LR LR
comp=N,1μm,18.8s
GTA LR LR
comp=E,4μm,17.3s
GTA LR LR
comp=Z,5μm,17.1s
GYA Guiyang 33.33 257⇑iP P **00 00 17.8 -1.9**
GYA pmax pmax
comp=Z,50nm,0.7s
QIZ Qiongzhong 35.68 243 P P **00 00 41.0 +1.0**
QIZ PP PP **00 02 04.3 +3.0**
QIZ S S 00 06 30.0 +15
QIZ sS ScP **00 06 45.5 -5.9**
QIZ LR LR
comp=N,1μm,16.6s
QIZ LR LR
comp=E,780nm,15.1s
QIZ LR LR
comp=Z,2μm,15.3s
KMI Kunming 37.00 258 P P **00 00 50.5 -1.0**
KMI pP pP 00 00 56.5 -4.5
KMI sP sP 00 00 59.0 -5.9
KMI PP PnPn 00 02 29.5 +13
KMI S S 00 06 44.5 +9.4
KMI SS SS **00 09 31.0 +13**
KMI pmax pmax
comp=Z,35nm,0.8s
KMI pmax pmax
comp=Z,280nm,4.0s
KMI LR LR
comp=N,3μm,15.5s
KMI LR LR
comp=E,3μm,16.4s
KMI LR LR
comp=Z,4μm,16.4s
ZAA0 Zalesovo Array 40.88 310 eP P **00 01 23.2 -0.2**
ZAA1 Zalesovo Array 40.88 310 eP P **00 01 22.5 -0.8**
ZAA1 ePcP PcP **00 03 23.3 -0.2**
ZALV Zalesovo Beam 40.88 310 P P **00 01 22.5 -0.8**
comp=Z,11nm,0.6s,baz=94,slow=7.8,SNR=50
ZALV PcP PcP **00 03 23.3 -0.2**
comp=Z,9.5nm,0.6s,baz=114,slow=2.5,SNR=6.9
ZALV LR LR 00 19 20.6
comp=Z,2μm,18.4s,baz=75,slow=38

NRIK Noril'sk 40.95 333 P P **00 01 24.7 +1.0**
comp=Z,9.8nm,0.5s,baz=100,slow=10,SNR=14
NRIK LR LR 00 20 18.6
comp=Z,1μm,18.3s,baz=104,slow=39
MYLDM Lahad Datu 41.50 219 eP P **00 01 30.9 +2.1**
comp=Z,37nm,1.2s
NVS Novosibirsk 41.72 311 eP P **00 01 30.1 -0.1**
NVS i 00 01 47.9
NVS pmax pmax
comp=Z,12nm,0.6s
NVS pmax pmax
comp=N,1.0nm,0.3s
NVS pmax pmax
comp=E,9.0nm,0.5s
LSA Lhasa 43.47 273 eP P **00 01 46.8 +1.5**
LSA pmax pmax
comp=Z,20nm,1.3s
LSA Lhasa 43.47 273 eP P **00 01 46.8 +1.5**
comp=Z,20nm,1.3s
CHTO Chiang Mai 43.59 254 eP P **00 01 45.4 -0.4**
CHTO pmax pmax
comp=Z,9.0nm,0.6s
CHTO Chiang Mai 43.59 254 eP P **00 01 45.4 -0.4**
comp=Z,9.2nm,0.6s
MK01 Makanchi Array 43.71 300 eP P **00 01 45.9 -0.7**
MK31 Makanchi Array 43.71 300 eP P **00 01 46.0 -0.6**
MK31 Makanchi Array 43.71 300 eP P **00 01 46.0 -0.6**
MK32 Makanchi Array 43.71 300 eP P **00 01 45.9 -0.7**
MKAR Makanchi Array 43.71 300 P P **00 01 45.9 -0.7**
comp=Z,11nm,0.7s,baz=82,slow=7.9,SNR=89
MKAR LR LR 00 21 07.9
comp=Z,2μm,18.1s,baz=79,slow=38
CM31 Chiang Mai Arr 43.81 253 eP P **00 01 47.0 -0.7**
CMAR Chiang Mai Arr 43.81 253 P P **00 01 47.0 -0.7**
comp=Z,3.1nm,0.5s,baz=45,slow=7.9,SNR=17
CMAR LR LR 00 22 08.8
comp=Z,723nm,18.2s,baz=68,slow=39
CMAR Chiang Mai Arr 43.81 253ceP P **00 01 47.4 -0.2**
CMAR pmax pmax
comp=Z,3.0nm,0.5s
CM01 Chiang Mai Arr 43.82 253 eP P **00 01 47.1 -0.6**
MAKZ Makanchi 43.92 300 eP P **00 01 47.7 -0.5**
MAKZ pmax pmax
comp=Z,26nm,1.1s
MAKZ Makanchi 43.92 300 eP P **00 01 47.7 -0.5**
comp=Z,26nm,1.1s
MLY Manley 44.29 34 eP P **00 01 52.2 +1.3**
comp=Z,4.9nm,0.8s
COLD Coldfoot 44.56 31 eP P **00 01 55.3 +2.2**
comp=Z,5.4nm,0.8s
KURK Kurchatov 45.15 306c iP P **00 01 57.3 -0.6**
KURK MLR MLR
comp=Z,1μm,13.0s
KURK Kurchatov 45.15 306 eP P **00 01 57.1 -0.8**
KURBB Kurchatov Arra 45.22 306 P P **00 01 56.9 -1.6**
comp=Z,64nm,0.7s,baz=78,slow=8.6,SNR=203
MDM Murphy Dome 45.35 34 eP P **00 02 02.4 +3.0**
comp=Z,52nm,1.8s
IL1 Eielson Array 45.93 34 eP P **00 02 04.0 0.0**
ILAR Eielson Array 45.93 34 LR LR 00 23 41.6
comp=Z,237nm,18.3s,baz=298,slow=39
FYU Fort Yukon 46.53 32 eP P **00 02 11.5 +3.0**
comp=Z,72nm,1.8s
GUN Gumba 48.37 274 eP P **00 02 23.3 -0.5**
comp=Z,88nm,0.5s
EGAK Eagle 48.38 34 eP P **00 02 24.3 +1.4**
comp=Z,6.3nm,0.8s
KKN Kakani 48.89 274 eP P **00 02 27.2 -0.5**
comp=Z,70nm,0.8s
PKIN Phulchoki 48.91 274 eP P **00 02 27.2 -0.7**
comp=Z,22nm,0.5s
DMN Daman 49.11 274 eP P **00 02 28.5 -0.9**
GKN Gorkha 49.27 275 eP P **00 02 29.9 -0.6**
comp=Z,27nm,0.5s
TKM2 Tokmak 2 49.44 297 eP P **00 02 31.6 -0.1**
TKM2 pmax pmax
comp=Z,41nm,0.7s
TKM2 Tokmak 2 49.44 297 eP P **00 02 31.6 -0.1**
comp=Z,41nm,0.7s
BVAR Borovoye Array 49.51 311 LR LR 00 24 39.0
comp=Z,1μm,20.9s,baz=76,slow=38
BRVK Borovoye 49.56 311 eP P **00 02 32.2 -0.1**
BRVK pmax pmax
comp=Z,25nm,0.8s
BRVK Borovoye 49.56 311 eP P **00 02 32.1 -0.1**
comp=Z,25nm,0.8s
FRU Bishkek 50.14 297 eP P **00 02 36.5 -0.3**
FRU e 00 02 53.0
FRU pmax pmax
comp=Z,60nm,2.2s
FRU MLR MLR
comp=E,1μm,16.0s
KOLN Koldanda 50.18 275 eP P **00 02 37.0 -0.5**
comp=E,25nm,0.5s
AAK Ala-Archa 50.30 297⇑iP P **00 02 37.7 -0.5**
AAK pmax pmax
comp=Z,16nm,0.6s
AAK MLR MLR
comp=Z,4μm,19.0s
AAK Ala-Archa 50.30 297 eP P **00 02 37.6 -0.5**
comp=Z,8.7nm,0.6s
ZRNK Zerenda 50.34 311 eP P **00 02 38.0 -0.1**
ZRNK pmax pmax
comp=Z,32nm,0.8s
ZRNK Zerenda 50.34 311 eP P **00 02 38.0 -0.1**
comp=Z,32nm,0.8s
PYUN Piuthan 50.47 276 eP P **00 02 39.1 -0.6**
comp=Z,64nm,0.7s
KSH Kashi 50.48 292 eP P **00 02 42.8 +3.2**
KSH epP sP 00 03 01.5 +8.4
KSH esP pP 00 03 10.8 +22
KSH ePcP PcP **00 03 59.8 +2.5**
KSH ePP PP **00 04 41.0 +5.8**
KSH eScP ScP **00 07 47.0 -3.8**
KSH S S **00 09 50.0 -1.3**
KSH Kashi 50.48 292 SS SS **00 13 22.5 -2.6**
KSH pmax pmax
comp=Z,18nm,1.2s
KSH pmax pmax
comp=Z,150nm,5.7s
KSH LR LR
comp=N,2μm,15.2s
KSH LR LR
comp=E,2μm,15.1s
KSH LR LR
comp=Z,3μm,16.8s
EKS2 Erkin-Say 50.77 297 eP P **00 02 41.3 -0.4**
EKS2 pmax pmax
comp=Z,16nm,0.7s
EKS2 Erkin-Say 50.77 297 eP P **00 02 41.3 -0.4**
comp=Z,16nm,0.7s
INK Inuvik 50.79 28 P P **00 02 41.0 -0.3**
comp=Z,3.5nm,0.5s,baz=306,slow=5.8,SNR=11
INK LR LR 00 25 32.6
comp=Z,316nm,21.5s,baz=271,slow=38
INK Inuvik 50.79 28 eP P **00 02 41.0 -0.3**
INK pmax pmax
comp=Z,9.0nm,0.9s
INK Inuvik 50.79 28 eP P **00 02 41.0 -0.3**
comp=Z,8.8nm,0.9s
KKAR Karatay Array 52.81 299 eP P **00 02 56.0 -0.8**
KKAR Karatay Array 52.81 299 eP P **00 02 56.0 -0.8**
SVE Sverdlovsk 53.70 317deP P **00 03 03.3 +0.2**
SVE pmax pmax
comp=Z,41nm,0.9s
SVE MLR MLR
comp=Z,4μm,15.0s
SVE MLR MLR
comp=E,3μm,15.0s
ARU Arti 54.91 317c iP P **00 03 11.4 -0.5**
ARU 00 04 09.6
ARU 00 05 14.2
ARU S S **00 10 52.0 +1.0**
ARU 00 12 54.8
ARU SS SS **00 14 37.4 +3.3**
ARU pmax pmax
comp=Z,41nm,1.2s
ARU MLR MLR
comp=Z,3μm,17.0s
ARU Arti 54.91 317 eP P **00 03 10.6 -1.3**
comp=Z,22nm,0.8s
ABKAR Akbulak array 56.99 309 eP P **00 03 26.6 -0.3**
KBL Kabul 57.66 290 eP P **00 03 31.0 -1.1**
KBL pmax pmax
comp=Z,27nm,0.9s
KBL Kabul 57.66 290 eP P **00 03 31.0 -1.1**

comp=Z,27nm,0.9s
YKA Yellowknife Ar 60.23 32 P P **00 03 49.0 -0.2**
comp=Z,0.9nm,0.7s,baz=300,slow=6.6,SNR=6.0
YKA LR LR 00 32 56.7
comp=Z,30nm,19.5s,baz=0.0,slow=39
YKA Yellowknife Ar 60.23 32 P P **00 03 49.0 -0.2**
YKA Yellowknife Ar 60.23 32 P P **00 03 49.0 -0.2**
YKB5 Yellowknife Ar 60.23 32 eP P **00 03 50.2 +1.1**
FITZ Fitzroy Crossi 60.41 199 LR LR 00 29 21.9
comp=Z,110nm,19.7s,slow=36
WRAB Tennant Creek 60.52 190⇑eP P **00 03 49.1 -2.5**
WRAB pmax pmax
comp=Z,9.0nm,1.2s
WB2 Warramunga Arr 60.53 190 eP P **00 03 50.1 -1.5**
comp=Z,7.5nm,0.8s
WR1 Warramunga Arr 60.53 190 eP P **00 03 49.4 -2.3**
comp=Z,30nm,1.6s
WRA Warramunga Arr 60.53 190 P P **00 03 49.4 -2.3**
comp=Z,4.4nm,0.6s,baz=7.5,slow=6.9,SNR=38
TMCR Tamitsa 60.59 331 eP P **00 03 51.1 -0.5**
TMCR pmax pmax
comp=Z,19nm,0.7s
ARA0 ARCESS Array S 61.45 339 eP P **00 03 56.8 -0.6**
ARCES ARCESS Array B 61.45 339 P P **00 03 56.8 -0.6**
comp=Z,4.0nm,0.8s,baz=52,slow=8.0,SNR=8.1
ARCES LR LR 00 33 13.1
comp=Z,709nm,21.5s,baz=41,slow=39
KLMR Klimovskoe 61.78 327 eP P **00 03 58.7 -1.0**
KLMR e 00 04 38.6
KLMR e 00 06 14.6
KLMR pmax pmax
comp=Z,24nm,1.4s
DAG Danmarks Havn 62.63 355i P P **00 04 04.6 -0.6**
comp=Z,12nm,0.9s
DAG Danmarks Havn 62.63 355i P P **00 04 04.6 -0.6**
DAG pmax pmax
comp=Z,10.0nm,0.9s
GEYT Alibeck 63.56 298 P P **00 04 11.4 -0.7**
comp=Z,12nm,0.7s,baz=28,slow=2.9,SNR=44
GEYT LR LR 00 34 01.9
comp=Z,1μm,18.4s,baz=55,slow=38
AS01 Alice Springs 64.25 190 eP P **00 04 15.9 -0.6**
AS31 Alice Springs 64.26 190 eP P **00 04 15.1 -1.5**
comp=Z,1.6nm,0.7s
ASAR Alice Springs 64.26 190 P P **00 04 15.1 -1.5**
comp=Z,2.2nm,0.6s,baz=9.2,slow=5.1,SNR=19
ASAR LR LR 00 30 44.2
comp=Z,155nm,21.7s,baz=2.0,slow=35
DZM Mont Dzumac 65.71 156 LR LR 00 36 11.9
comp=Z,353nm,18.0s,baz=26,slow=39
PUL Pulkovo 66.12 329⇑eP P **00 04 29.3 +1.0**
PUL pmax pmax
comp=Z,49nm,0.6s
PUL MLR MLR
comp=Z,672nm,18.0s
VRH Novokhopyorsk 66.15 318 eP P **00 04 28.0 -0.6**
VRH pmax pmax
comp=Z,20nm,0.7s
VRH MLR MLR
comp=Z,3μm,17.0s
OBN Obninsk 66.36 323 P P **00 04 29.6 -0.2**
comp=Z,14nm,0.6s,baz=72,slow=6.0,SNR=6.2
OBN Obninsk 66.36 323 eP P **00 04 29.1 -0.7**
OBN i 00 04 58.9
OBN i 00 06 55.0
OBN iS S **00 13 18.8 +1.6**
OBN pmax pmax
comp=Z,12nm,0.8s
OBN MLR MLR
comp=Z,2μm,15.0s
OBN Obninsk 66.36 323 eP P **00 04 29.6 -0.2**
comp=Z,16nm,0.8s
FIA1 FINESS Array S 66.60 332 eP P **00 04 30.7 -0.6**
FIA0 FINESS Array S 66.60 332 eP P **00 04 31.1 -0.2**
FIA0 FINESS Array S 66.60 332 eP P **00 04 31.1 -0.2**
FINES FINESS Array B 66.60 332 P P **00 04 31.1 -0.2**
comp=Z,21nm,0.7s,baz=51,slow=7.6,SNR=58
FINES LR LR 00 36 46.1
comp=Z,2μm,19.1s,baz=28,slow=39
LPSR Galich'ya Gora 66.74 320 eP P **00 04 32.1 -0.2**
LPSR pmax pmax
comp=Z,10.0nm,0.8s
LPSR MLR MLR
comp=Z,790nm,14.0s
SUMG Summit 67.39 1i P P **00 04 37.4 +0.7**
comp=Z,22nm,0.8s
SUMG Summit 67.39 1i P P **00 04 37.4 +0.7**
SUMG pmax pmax
comp=Z,22nm,0.8s
SUMG Summit 67.39 1 eP P **00 04 37.1 +0.4**
comp=Z,21nm,0.8s
VSR Storozhevoye 67.44 319 eP P **00 04 35.9 -0.9**
VSR pmax pmax
comp=Z,10.0nm,0.7s
VSR MLR MLR
comp=Z,2μm,19.0s
VSU Vasula 68.38 330ceP P **00 04 42.4 -0.1**
VSU pmax pmax
comp=Z,57nm,0.6s
VSU MLR MLR
comp=Z,1μm,13.0s
GOF Gofitskoye 69.02 312⇑eP P **00 04 47.3 +0.5**
DGRG David-gareji 69.78 307 eP P **00 04 52.6 +0.9**
ZEI Tsey 69.87 309 eP P **00 04 51.1 -1.3**
ZEI pmax pmax
comp=Z,28nm,0.6s
ZEI MLR MLR
comp=Z,752nm,11.0s
KIV Kislovodsk 69.88 311 eP P **00 04 53.1 +0.8**
KIV e 00 05 16.1
KIV e 00 07 27.7
KIV eS S **00 14 00.1 +0.3**
KIV eSS SS **00 18 30.4 +2.2**
KIV pmax pmax
comp=Z,80nm,1.1s
KIV pmax pmax
comp=Z,51nm,3.5s
KIV MLR MLR
comp=Z,2μm,17.0s
KIV Kislovodsk 69.88 311 eP P **00 04 52.6 +0.4**
comp=Z,55nm,0.8s
KBZ Khabaz 69.89 311 P P **00 04 52.6 +0.4**
comp=Z,17nm,0.7s,baz=49,slow=2.9,SNR=42
KBZ LR LR 00 41 01.7
comp=Z,808nm,19.2s,baz=34,slow=41
FFC Flin Flon 70.15 34 eP P **00 04 54.6 +1.0**
FFC pmax pmax
comp=Z,8.0nm,1.2s
FFC Flin Flon 70.15 34 eP P **00 04 54.6 +1.0**
comp=Z,8.1nm,1.2s
NEY Neytrino 70.28 310⇑iP P **00 04 57.6 +2.7**
NEY pmax pmax
comp=Z,2.0nm,0.7s
IZAR Zarasai 70.43 328 eP P **00 04 55.3 0.0**
IZAR IAmb IAmb 00 04 57.5
comp=Z,15nm,0.7s
IDID Didziasalis 70.53 327 eP P **00 04 55.9 0.0**
IDID IAmb IAmb 00 04 58.3
comp=Z,18nm,0.8s
ISAL Salakas 70.60 328 eP P **00 04 56.4 0.0**
ISAL IAmb IAmb 00 04 58.9
comp=Z,28nm,0.8s
MICGM Minsk 70.61 326 e P **00 04 57.0 +0.6**
MICGM eLR LR 00 37 24.0
MICGM LRM MLR 00 38 42.0
comp=Z,2.1nm,18.0s
MNK Minsk 70.61 326 eP P **00 04 57.0 +0.6**
MNK MLR MLR
comp=Z,2μm,18.0s
LRM Limekiln Ridge 70.78 46 eP P **00 04 58.6 +0.7**
NACGM Naroch 70.79 327 e P **00 04 57.0 -0.5**
NACGM eLQ LQ 00 33 07.0
NACGM eLR LR 00 37 22.0
AKH Akhalkalaki 70.94 308⇓iP P **00 04 59.7 +0.8**
GNI Garni 70.94 307 LR LR 00 39 15.5
comp=Z,798nm,18.2s,baz=76,slow=39
GNI Garni 70.94 307d iP P **00 05 00.9 +2.0**
GNI pmax pmax
comp=Z,68nm,2.0s
GNI MLR MLR
comp=Z,2μm,15.0s
GNI Garni 70.94 307 eP P **00 05 02.0 +3.1**
comp=Z,18nm,1.1s
CHVG Ch'k'valeri 70.98 310⇓iP P **00 05 01.2 +2.3**
BOZ Bozeman (W) 71.33 46 eP P **00 05 01.4 +0.2**
BOZ pmax pmax

comp=Z,16nm,1.4s
BOZ Bozeman (W) 71.33 46 *e*P **P 00 05 01.4 +0.2**
comp=Z,16nm,1.4s
NC405 NORSAR Array S 71.52 337 *e*P **P 00 05 01.9 +0.1**
NC303 NORSAR Array S 71.53 338 *e*P **P 00 05 02.9 +1.0**
NC204 NORSAR Array S 71.66 338 *e*P **P 00 05 03.0 +0.2**
NB201 NORSAR Array S 71.69 338 *e*P **P 00 05 02.9 0.0**
HFS Hagfors 71.70 336 P **P 00 05 02.7 -0.3**
comp=Z,13nm,0.7s,baz=40,slow=7.8,SNR=25
NB2 NORSAR Subarra 71.72 338 P **P 00 05 02.8 -0.4**
comp=Z,18nm,0.8s,baz=38,slow=6.2
NB2 NORSAR Subarra 71.72 338 P **P 00 05 02.8 -0.4**
baz=38,slow=6.2
NB200 NORSAR Array S 71.72 338 *e*P **P 00 05 02.7 -0.4**
NB200 *e*PP **PP 00 07 46.0 +4.1**
NOA NORSAR Array B 71.72 338 P **P 00 05 02.7 -0.4**
comp=Z,13nm,0.8s,baz=39,slow=6.1,SNR=40
NOA PP **PP 00 07 46.0 +4.1**
comp=Z,1.1nm,0.7s,baz=44,slow=8.7,SNR=3.4
NOA LR LR 00 39 44.4
comp=Z,711nm,21.9s,baz=25,slow=38
NBO02 NORSAR Array S 71.82 338 *e*P **P 00 05 03.7 0.0**
STKA Stephens Creek 71.85 182 LR LR 00 36 31.5
comp=Z,143nm,20.8s,baz=17,slow=36
NV01 Mina Array Sit 71.86 55 *e*P **P 00 05 04.9 +0.3**
NVAR Mina Array Bea 71.86 55 P **P 00 05 04.9 +0.3**
comp=Z,0.8nm,0.2s,baz=305,slow=5.2,SNR=6.3
NVAR LR LR 00 29 42.4
comp=Z,118nm,21.6s,baz=273,slow=30
NBO00 NORSAR Array S 71.86 338 *e*P **P 00 05 05.1 +1.2**
NAO01 NORSAR Array S 71.98 338 *e*P **P 00 05 05.5 +0.9**
UOSS Minazif 72.22 288 *e*P **P 00 05 06.0 -0.6**
comp=Z,0.9nm,0.8s
SFJD Kangerlussuaq 72.48 6 P **P 00 05 07.4 0.0**
comp=Z,6.6nm,0.8s,baz=82,slow=4.9,SNR=4.2
SFJD Kangerlussuaq 72.48 6 *i* P **P 00 05 08.0 +0.5**
comp=Z,8.9nm,1.1s
SFJD Kangerlussuaq 72.48 6 *e*P **P 00 05 08.0 +0.5**
SFJD pmax pmax
comp=Z,9.0nm,1.1s
AKASG Malin Array Be 72.60 323 P **P 00 05 07.6 -0.9**
comp=Z,9.2nm,0.7s,baz=44,slow=6.4,SNR=41
AKASG LR LR 00 40 55.4
comp=Z,945nm,18.2s,baz=55,slow=39
AKASG Malin Array Be 72.60 323 *ce*P **P 00 05 07.5 -0.9**
AKASG pmax pmax
comp=Z,10.0nm,0.7s
AKBB Malin Array Si 72.60 323 *e*P **P 00 05 07.6 -0.9**
AKBB pmax pmax
comp=Z,19nm,0.8s
AKBB Malin Array Si 72.60 323 *e*P **P 00 05 07.6 -0.9**
comp=Z,19nm,0.8s
KIEV Kiev 72.61 323⇓*i*P **P 00 05 07.2 -1.4**
KIEV pmax pmax
comp=Z,18nm,0.8s
KIEV MLR MLR
comp=Z,1μm,16.0s
KIEV Kiev 72.61 323 *e*P **P 00 05 07.5 -1.1**
comp=Z,16nm,0.8s
AK11 Malin Array Si 72.64 323 *e*P **P 00 05 08.4 -0.3**
IMW Indian Meadow 72.82 47 *e*P **P 00 05 12.3 +2.0**
comp=Z,21nm,1.8s
SUW Suwalki 72.91 328 *e*P **P 00 05 10.8 +0.5**
SUW Suwalki 72.91 328 *e*P **P 00 05 10.8 +0.5**
KLNR Kaliningrad 73.66 329 *c i*P **P 00 05 14.5 -0.2**
KLNR MLR MLR
comp=Z,499nm,17.0s
SIM Simferopol' 74.02 316 *e*P **P 00 05 16.4 -0.6**
SIM *e* 00 07 59.0
SIM *e*S **S 00 14 45.0 -2.1**
SIM *e*SS **SS 00 19 29.0 -2.2**
SIM pmax pmax
comp=Z,11nm,0.8s
SIM pmax pmax
comp=Z,20nm,15.4s
SIM MLR MLR
comp=N,520nm,19.3s
BW06 Boulder Array 74.32 47 *e*P **P 00 05 18.8 -0.3**
PD31 Pinedale Array 74.32 47 *e*P **P 00 05 19.2 +0.1**
PDAR Pinedale Array 74.32 47 P **P 00 05 19.2 +0.1**
comp=N,0.8nm,0.6s,baz=252,slow=1.7,SNR=10
SORM Soroca 74.78 321⇑*i*P **P 00 05 20.6 -0.7**
BSD Bornholm Skovb 75.24 332 *i* P **P 00 05 24.1 +0.3**
comp=N,20nm,0.9s
BSD Bornholm Skovb 75.24 332 *e*P **P 00 05 24.1 +0.3**
BSD pmax pmax
comp=Z,20nm,0.9s
KIS Kishinev 75.35 320 *e*P **P 00 05 25.0 +0.4**
KIS LRM MLR 00 41 56.0
comp=Z,2μm,16.0s
KIS Kishinev 75.35 320 *e*P **P 00 05 25.0 +0.4**
KIS *e* 00 15 20.0
KIS MLR MLR
comp=N,500nm,15.0s
KIS MLR MLR
comp=E,400nm,15.0s
KIS MLR MLR
comp=Z,2μm,15.0s
KIS MLR MLR
comp=Z,2μm,16.0s
KBSD Kabsdagh 75.47 306 *e*P **P 00 05 26.4 +0.9**
MSU Marysvale 75.56 52 *e*P **P 00 05 25.3 -1.0**
MSU Marysvale 75.56 52 *e*P **P 00 05 25.3 -1.0**
LVV L'vov 75.59 324 *e*P **P 00 05 27.0 +1.0**
LVV MLR MLR
comp=Z,2μm,15.0s
LVV MLR MLR
comp=N,1μm,14.0s
LVV MLR MLR
comp=E,1μm,15.0s
P17A Butcher Ranch, 75.79 50 *e*P **P 00 05 30.6 +3.1**
comp=E,5.7nm,1.1s
MTPU Mount Pierson 75.86 52 *e*P **P 00 05 32.4 +4.2**
comp=E,5.5nm,1.2s
LCMT Little Creek M 75.87 53 *e*P **P 00 05 30.2 +2.2**
comp=E,6.3nm,1.2s
ULM Lac du Bonnet 75.95 35 LR LR 00 40 21.7
comp=E,139nm,19.7s,baz=320,slow=37
SFNV Sufian 76.10 306 *e*P **P 00 05 30.2 +0.9**
MZRK Al-Mazaregh 76.15 305 *e*P **P 00 05 31.2 +1.8**
SRU San Rafael Swe 76.15 50 *e*P **P 00 05 30.8 +1.2**
SRU pmax pmax
comp=Z,6.0nm,1.0s
SRU San Rafael Swe 76.15 50 *e*P **P 00 05 30.8 +1.2**
comp=Z,5.5nm,1.0s
KWP Kalwaria Pacla 76.31 325 *e*P **P 00 05 30.0 -0.1**
KWP Kalwaria Pacla 76.31 325⇓*i*P **P 00 05 31.0 +0.9**
KWP Kalwaria Pacla 76.31 325 *e*P **P 00 05 30.0 -0.1**
BUR08 Bucovina Ar. S 76.63 322 *e*P **P 00 05 32.0 -0.1**
BURAR Bucovina Array 76.64 322⇑*i*P **P 00 05 32.2 +0.1**
TESR Tescani 76.75 321⇓*i*P **P 00 05 32.7 +0.1**
CFR Carcaliu 76.96 319⇑*i*P **P 00 05 34.5 +0.7**
OJC Ojcow 77.13 327 *e*P **P 00 05 34.9 +0.2**
OJC Ojcow 77.13 327 *e*P **P 00 05 34.6 -0.1**
OJC pmax pmax
comp=Z,20nm,0.8s
OJC Ojcow 77.13 327 *e*P **P 00 05 34.6 -0.1**
comp=Z,20nm,0.8s
VRI Vrincioaia 77.17 320⇓*i*P **P 00 05 36.3 +1.3**
UZH Uzhgorod 77.24 324 *e*P **P 00 05 36.4 +1.1**
UZH *e* 00 05 47.6
UZH *e*S **S 00 15 19.8 -2.7**
UZH *e* 00 16 14.4
UZH MLR MLR
comp=N,550nm,14.0s
UZH MLR MLR
comp=E,750nm,14.0s
UZH MLR MLR
comp=Z,300nm,14.0s
TIRR Tirgusor 77.33 318⇓*i*P **P 00 05 37.0 +1.1**
ARCR ARCALIA 77.43 322⇓*i*P **P 00 05 37.8 +1.3**
TRPA Tarpa 77.50 324⇓*i*P **P 00 05 37.5 +0.7**
PV10 Paradox Valley 77.51 50 *e*P **P 00 05 39.0 +1.6**
NIE Niedzica 77.52 326 *e*P **P 00 05 37.7 +0.7**
NIE Niedzica 77.52 326 *e*P **P 00 05 37.7 +0.7**
DOPR Dopca 77.75 321⇓*i*P **P 00 05 39.8 +1.5**
BR101 Keskin Array S 77.77 312 *e*P **P 00 05 38.5 -0.2**
BR131 Keskin Array S 77.77 312 *e*P **P 00 05 38.9 +0.2**
BRTR Keskin Array B 77.77 312 P **P 00 05 38.5 -0.2**
comp=Z,2.5nm,0.7s,baz=72,slow=3.7,SNR=19
BRTR LR LR 00 45 31.4
comp=Z,334nm,19.4s,baz=25,slow=40
ISR Istrita 77.80 320⇓*i*P **P 00 05 39.5 +0.9**
MLR Muntele Rosu 77.82 320 P **P 00 05 39.0 +0.2**
comp=Z,0.3nm,0.5s,baz=347,slow=11,SNR=5.7
MLR Muntele Rosu 77.82 320⇑*i*P **P 00 05 39.4 +0.6**
MLR Muntele Rosu 77.82 320 *e*P **P 00 05 39.0 +0.2**
MLR pmax pmax
comp=Z,15nm,1.5s
MLR Muntele Rosu 77.82 320 *e*P **P 00 05 39.0 +0.2**
comp=Z,15nm,1.5s
MSAB Monastry St. A 77.89 318⇓*i*P **P 00 05 39.6 +0.6**
PSN Preselentsi 77.99 318 *e*P **P 00 05 39.1 -0.5**
KSP Ksiaz 78.08 329 *e*P **P 00 05 40.2 +0.2**
KSP Ksiaz 78.08 329 *e*P **P 00 05 40.2 +0.2**
OKC Ostrava-Krasne 78.11 327 *e*P **P 00 05 40.2 +0.1**
OKC *ex* x 00 05 47.6
OKC AMS AMS 00 43 10.0
comp=Z,1μm,21.0s
OKC Ostrava-Krasne 78.11 327 *e*P **P 00 05 40.2 +0.1**
OKC *e* 00 05 47.6
OKC MLR MLR
comp=Z,1μm,21.0s
ANTO Ankara 78.15 313 *e*P **P 00 05 41.4 +0.7**
ANTO pmax pmax
comp=Z,14nm,0.7s
ANTO Ankara 78.15 313 *e*P **P 00 05 41.4 +0.7**
comp=Z,14nm,0.7s
BR231 Keskin MP Arra 78.18 313 *e*P **P 00 05 38.5 -2.4**
MORC Moravsky Berou 78.40 328⇓*i*P **P 00 05 42.6 +0.7**
MORC Moravsky Berou 78.40 328 *e*P **P 00 05 42.6 +0.7**
MORC pmax pmax
comp=Z,65nm,0.8s
MORC Moravsky Berou 78.40 328 *e*P **P 00 05 42.5 +0.7**
comp=Z,64nm,0.8s
DPC Dobruska-Polom 78.45 329 *e*P **P 00 05 42.7 +0.6**
DPC *e*PP PP 00 08 30.0 -9.0
DPC AMS AMS 00 45 20.0
comp=Z,700nm,13.1s
DPC Dobruska-Polom 78.45 329 *e*P **P 00 05 42.7 +0.6**
DPC MLR MLR
comp=Z,700nm,13.1s
UPC Upice 78.45 329 *e*P **P 00 05 42.5 +0.4**
UPC *e*S **S 00 15 35.0 -0.6**
UPC AMS AMS 00 45 40.0
comp=Z,1μm,14.4s
UPC Upice 78.45 329 *e*P **P 00 05 42.5 +0.4**
UPC *e*S **S 00 15 35.0 -0.6**
UPC MLR MLR
comp=Z,1μm,14.4s
PSZ Piszkesteto 78.83 325 *e*P **P 00 05 44.1 -0.2**
PSZ pmax pmax
comp=Z,18nm,1.0s
PSZ Piszkesteto 78.83 325 *e*P **P 00 05 44.1 -0.2**
comp=Z,18nm,1.0s
BRG Berggiesshubel 78.97 330 *e*P **P 00 05 45.8 +0.9**
comp=Z,9.2nm,0.8s
comp=N,438nm,17.3s
comp=E,621nm,16.5s
comp=Z,704nm,17.0s
BRG Berggiesshubel 78.97 330 *e*P **P 00 05 45.8 +0.9**
BRG pmax pmax
comp=Z,9.0nm,0.8s
BRG MLR MLR
comp=N,438nm,17.3s
BRG MLR MLR
comp=E,621nm,16.5s
BRG MLR MLR
comp=Z,704nm,17.0s
WRDH Warideh 78.97 307 *e*P **P 00 05 45.8 +0.6**
CLL Collm 78.97 331⇑*i*P **P 00 05 44.8 -0.1**
comp=Z,25nm,0.8s
CLL ⇑*i*Pmax 00 05 45.8
comp=Z,25nm,0.8s
CLL *i* PP **PP 00 08 44.6 +1.4**
CLL *e*S **S 00 15 39.0 -2.1**
CLL *e*PS **PnS 00 16 39.0 +13**
CLL *e* 00 22 00.0
CLL LmH 00 41 00.0
comp=N,400nm,20.2s
CLL LmH 00 41 00.0
comp=E,1μm,18.9s
CLL LmH 00 41 00.0
comp=Z,500nm,22.0s
CLL Collm 78.97 331⇑*i*P **P 00 05 44.8 -0.1**
CLL *e*S **S 00 15 39.0 -2.1**
CLL pmax pmax
comp=Z,25nm,0.8s
CLL Collm 78.97 331 *e*P **P 00 05 44.9 0.0**
comp=Z,20nm,0.7s
ARNB Al Arnab 79.00 308 *e*P **P 00 05 46.1 +0.6**
PVCC Panska Ves 79.00 330 *e*P **P 00 05 45.6 +0.5**
PVCC AMS AMS 00 47 00.0
comp=Z,700nm,15.4s
PVCC Panska Ves 79.00 330 *e*P **P 00 05 45.6 +0.5**
PVCC MLR MLR
comp=Z,700nm,15.4s
VRAC Vranov 79.16 328 P **P 00 05 46.5 +0.5**
comp=Z,12nm,0.9s,baz=39,slow=4.7,SNR=20
VRAC Vranov 79.16 328⇑*i*P **P 00 05 46.5 +0.5**
RABH Abou Rabah 79.19 306 *e*P **P 00 05 48.3 +1.8**
GOPC GO Pecny, Ondr 79.40 329 *e*P **P 00 05 47.6 +0.3**
GOPC AMS AMS 00 46 20.0
comp=Z,1μm,14.1s
GOPC GO Pecny, Ondr 79.40 329 *e*P **P 00 05 47.6 +0.3**
GOPC MLR MLR
comp=Z,1μm,14.1s
GZR Gura Zlata 79.42 322⇓*i*P **P 00 05 48.2 +0.7**
SZH Strazhica 79.43 319 *e*P **P 00 05 47.3 -0.3**
PRU Pruhonice 79.44 329 *e*P **P 00 05 47.8 +0.3**
PRU *ex* x 00 05 53.6
PRU *e*S **S 00 15 49.0 +2.9**
PRU AMS AMS 00 46 40.0
comp=Z,1μm,15.1s
PRU Pruhonice 79.44 329 *e*P **P 00 05 47.8 +0.3**
PRU *e* 00 05 53.6
PRU *e*S **S 00 15 49.0 +2.9**
PRU MLR MLR
comp=Z,1μm,15.1s
TREC Trest 79.61 328 *e*P **P 00 05 48.8 +0.3**
TREC AMS AMS 00 46 30.0
comp=Z,700nm,15.1s
TREC Trest 79.61 328 *e*P **P 00 05 48.8 +0.3**
TREC MLR MLR
comp=Z,700nm,15.1s
BZS Buzias 79.79 323⇓*i*P **P 00 05 48.8 -0.7**
NKC Novy Kostel 80.05 330 *e*P **P 00 05 50.6 -0.2**
NKC AMS AMS 00 47 50.0
comp=Z,800nm,12.1s
NKC Novy Kostel 80.05 330 *e*P **P 00 05 50.6 -0.2**
NKC MLR MLR
comp=Z,800nm,12.1s
ZALF Zalf 80.12 305 *e*P **P 00 05 53.5 +2.0**
MDVR Moldovita 80.38 322⇓*i*P **P 00 05 53.7 +1.0**
MPEP Malo Peshtene 80.46 320 *e*P **P 00 05 52.9 -0.2**
KHC Kasperske Hory 80.50 329 *e*P **P 00 05 53.6 +0.3**
KHC *e*S **S 00 15 59.1 +1.6**
KHC AMS AMS 00 47 10.0
comp=Z,900nm,14.7s
KHC Kasperske Hory 80.50 329 *e*P **P 00 05 53.6 +0.3**
KHC pmax pmax
comp=Z,7.0nm,0.8s
KHC Kasperske Hory 80.50 329 *e*P **P 00 05 53.5 +0.3**
comp=Z,6.7nm,0.8s
EKA Eskdalemuir Ar 80.52 341 P **P 00 05 53.0 -0.2**
comp=Z,4.2nm,0.7s,baz=30,slow=5.3,SNR=16
EKA Eskdalemuir Ar 80.52 341 *e*P **P 00 05 53.0 -0.2**
CONA Conrad Observa 80.54 327 *i* P **P 00 05 54.3 +0.7**
comp=Z,12nm,1.0s,SNR=9.3
SALA Sala 80.63 305 *e*P **P 00 05 55.4 +0.9**
GEC2 GERESS Array S 80.69 329 *e*P **P 00 05 54.5 +0.2**
GEC2 pmax pmax
comp=Z,7.0nm,0.9s
GEC2 GERESS Array S 80.69 329 *e*P **P 00 05 54.5 +0.2**
comp=Z,7.2nm,0.9s
GERES GERESS Array B 80.69 329 P **P 00 05 54.0 -0.4**
comp=Z,4.2nm,0.7s,baz=44,slow=5.9,SNR=37
GERES PP **PP 00 08 50.2 -7.4**
comp=Z,0.3nm,0.3s,baz=50,slow=9.1,SNR=5.0
GERES LR LR 00 46 01.8
comp=Z,441nm,18.6s,baz=9.5,slow=39
GERES GERESS Array B 80.69 329 P **P 00 05 54.0 -0.4**
GEA0 GERESS Array S 80.69 329 *e*P **P 00 05 53.7 -0.7**
PGB Panagyurishte 80.84 319 *e*P **P 00 05 55.8 +0.5**
GRFO Grafenberg 80.95 331 *e*P **P 00 05 57.2 +1.5**
GRFO pmax pmax
comp=Z,41nm,0.8s
GRFO Grafenberg 80.95 331 *e*P **P 00 05 57.1 +1.5**
comp=Z,41nm,0.8s
CSS Mathiatis 81.19 309 *e*P **P 00 05 58.3 +1.1**
comp=Z,2.3nm,0.8s
ARSA Arzberg 81.22 327 *i* P **P 00 05 57.4 +0.3**
comp=Z,6.3nm,0.8s,SNR=7.0
MMAI Mount Meron Ar 81.26 306 LR LR 00 46 16.1
comp=Z,495nm,18.0s,baz=75,slow=39
ANMO Albuquerque 81.35 51 *ce*P P 00 06 04.6 +6.3
ANMO pmax pmax
comp=Z,5.0nm,1.2s
SCHQ Schefferville 81.77 17 P **P 00 05 59.6 -0.2**
comp=Z,3.2nm,0.8s,baz=300,slow=5.5,SNR=4.0
SCHQ LR LR 00 47 35.0
comp=Z,203nm,18.3s,baz=7.0,slow=40
SCHQ Schefferville 81.77 17 *e*P **P 00 05 59.6 -0.2**
comp=Z,32nm,1.6s
SOKA Soboth 81.88 327 *i* P **P 00 06 00.7 0.0**
comp=Z,21nm,0.9s,SNR=24
MEM Membach 82.03 334 P **P 00 06 02.4 +1.1**
comp=Z,7.2nm,1.0s
OBKA Obir 82.21 327 *e*P **P 00 06 02.2 -0.2**
comp=Z,9.1nm,0.7s,SNR=8.7
KBA Koelnbreinsper 82.25 328 *i* PcP **P 00 06 03.7 +0.9**
comp=Z,14nm,0.8s,SNR=8.8
CWF Charnwood Fore 82.38 339 *e*P **P 00 06 04.7 +1.7**
comp=Z,13nm,1.0s
PDKS Podkum 82.38 327 *i* P **P 00 06 03.9 +0.6**
BCLA Clavier 82.42 334 P **P 00 06 04.1 +0.7**
comp=Z,7.1nm,1.2s
MYKA Terra Mystica 82.49 328 *i* P **P 00 06 03.2 -0.7**
comp=Z,6.9nm,0.6s,SNR=6.7
VAY Valandovo 82.55 319 *i* P **P 00 06 06.0 +1.8**
LJU Ljubljana 82.59 327 *i* P **P 00 06 04.8 +0.5**
SKO Skopje 82.62 320 *i* P **P 00 06 06.0 +1.4**
BOJS Bojanci 82.72 326 *i* P **P 00 06 04.0 -1.0**
WATA Walderalm 82.74 329 *i* P **P 00 06 05.2 -0.1**
comp=Z,4.8nm,0.6s,SNR=7.4
WTTA Wattenberg 82.78 329 *i* P **P 00 06 04.8 -0.8**
comp=Z,3.9nm,0.6s
LANF Langenberg 82.79 332 *e*P **P 00 06 06.3 +1.0**
ABTA Abfaltersbach 82.85 328 *i* P **P 00 06 05.8 0.0**
comp=Z,6.1nm,1.1s
JAVS Javornik 82.91 327 *i* P **P 00 06 05.0 -1.1**
MOTA Moosalm 82.92 329 *i* P **P 00 06 06.0 -0.2**
comp=Z,11nm,0.8s,SNR=16
RETA Reutte 82.94 330 *i* P **P 00 06 06.2 0.0**
comp=Z,14nm,0.7s,SNR=13
BFO Black Forest 83.14 332 *ce*P **P 00 06 07.7 +0.5**
BFO Black Forest 83.14 332 *e*P **P 00 06 06.7 -0.6**
comp=Z,9.3nm,0.8s
BFO *ep*P **pP 00 06 16.8 -0.7**
TRI Trieste 83.18 327 *e*P **P 00 06 06.5 -0.9**
TRI pmax pmax
comp=Z,14nm,0.9s
TRI Trieste 83.18 327 *e*P **P 00 06 06.5 -0.9**
comp=Z,14nm,0.9s
PDG Podgorica 83.32 322⇓*i*P **P 00 06 08.2 0.0**
FETA Feichten 83.33 330 *i* P **P 00 06 08.2 -0.2**
comp=Z,12nm,1.2s,SNR=6.9
DAVA Damuels 83.44 330 *i* P **P 00 06 08.6 -0.3**
comp=Z,13nm,0.9s,SNR=5.3
OHR Ohrid 83.59 320 *i* P **P 00 06 10.3 +0.6**
ECH Echery 83.66 332 *e*P **P 00 06 09.3 -0.6**
EIL Elat 83.81 304 LR LR 00 48 46.5
comp=Z,484nm,19.3s,baz=52,slow=40
FUORN Ofenpass-Fuorn 83.84 330 *e*P **P 00 06 11.3 +0.2**
comp=Z,31nm,1.0s
DAVOX Davos/Dischmat 83.86 330 P **P 00 06 11.9 +0.8**
comp=Z,6.9nm,0.7s,baz=208,slow=2.8,SNR=12
MOF Molkenrain 83.98 332 *e*P **P 00 06 11.0 -0.6**
TUE Stuetta 84.32 330 *e*P **P 00 06 13.7 +0.2**
comp=Z,9.2nm,0.8s
KARP Karpathos 84.36 313 *e*P **P 00 06 13.8 +0.1**
comp=Z,4.4nm,0.8s
LOMF Lomont 84.51 332 *e*P **P 00 06 13.0 -1.3**
PPT Papeete 84.82 118 LR LR 00 38 00.5
comp=Z,517nm,20.1s,baz=356,slow=31
SENIN Lac Senin/Sane 85.18 331 *e*P **P 00 06 17.9 0.0**
comp=Z,7.8nm,0.8s
MATE Matera 85.91 322⇓*i*P **P 00 06 20.6 -0.6**
PLDF La Plantade 86.83 333 *e*P **P 00 06 25.1 -0.7**
AGO Saint Agoulin 86.93 333 *e*P **P 00 06 26.2 0.0**
LTX Lajitas 86.96 54 *e*P **P 00 06 27.5 +0.7**
LTX Lajitas 86.96 54 *e*P **P 00 06 27.4 +0.7**
TX31 Lajitas Ar. Si 86.96 54 *e*P **P 00 06 28.3 +1.5**
TXAR Lajitas Array 86.96 54 P **P 00 06 27.4 +0.7**
comp=Z,0.6nm,0.6s,baz=291,slow=4.0,SNR=9.3
TXAR LR LR 00 40 22.5
comp=Z,79nm,21.9s,baz=0.0,slow=32
SSB Saint Sauveur 87.11 332 *e*P **P 00 06 27.7 +0.6**
SSB *e**PP **pP 00 06 37.3 -0.1**
SSB pmax pmax
comp=Z,9.0nm,0.9s
SSB Saint Sauveur 87.11 332 *e*P **P 00 06 27.7 +0.6**
comp=Z,9.1nm,0.9s
SSB *ep*P **pP 00 06 37.3 -0.1**
PYM Petit Puy Mans 87.23 333 *e*P **P 00 06 26.8 -1.0**
KEST Kesra 93.27 324 LR LR 00 54 04.5
comp=Z,717nm,18.4s,baz=337,slow=39
ES19 SONSECA Array 94.92 335 *e*P **P 00 07 04.5 +0.8**
ESDC Sonseca Array 94.97 335 P **P 00 07 03.4 -0.5**
comp=Z,1.4nm,0.7s,baz=13,slow=4.5,SNR=9.6
ESDC LR LR 00 55 38.6
comp=Z,448nm,19.2s,baz=35,slow=39
LPAZ La Paz 143.72 58 PKP PKPbc 00 13 15.0 0.0
comp=Z,0.7nm,0.6s,baz=340,slow=5.0,SNR=3.5
SNAA Sanae 144.32 198 P **PKPab 00 13 13.2 -1.0**
PB11 IPOC Station P 145.16 64 *e*PKPbc **PKPdf 00 13 19.4 +0.2**
VNA3 Neumayer Olymp 146.12 195 P **PKPdf 00 13 19.6 +0.4**
LVC Limon Verde 147.57 67 PKPbc **PKPbc 00 13 26.9 +0.7**
comp=Z,7.5nm,0.7s,baz=20,slow=8.2,SNR=4.4
PLCA Paso Flores 154.34 102 PKPbc **PKPbc 00 13 41.0 -0.3**
comp=Z,0.4nm,0.6s,baz=228,slow=2.8,SNR=3.1

DHMR ***30*** *23:56:53.9±1.3, 11°.73N×42°.68E, h6km±12km, ML3.9*
ISCJB ***30*** *23:56:58.0±1.0, 11°.68N±0°.07×42°.76E±0°.08, h12km±8km,*
Error ellipse: s-maj=15.0km s-min=8.4km az=38.5
ARO ***30*** *23:56:59.8, 11°.6N±0°.3×42°.8E±0°.4, h7km±2km, ML3.4*
ISC 30 23:56:58.6±1.0, 11°.66N±0°.05×42°.83E±0°.05, h13km±8km,
n13,σ1§92/20, 1D, Ethiopia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ATD	**Arta Tunnel**	**0.13**	**170**	*e*P	**Pg**	**23 57 02.3**	**+0.2**
ATD				*e*S	**Sg**	**23 57 04.4**	**-0.1**
TDD	**Tadjoura Ara**	**0.16**	**30**	*e*P	**Pg**	**23 57 03.9**	**+1.5**
SGH	**Sud-Ghoubbet**	**0.29**	**220**	*e*P	**Pb**	**23 57 05.5**	**-0.3**
MCAD	**Moucha**	**0.39**	**80**	*e*P	**Pb**	**23 57 06.8**	**-0.5**
ATA	**Atar**	**0.43**	**119**	*e*P	**Pb**	**23 57 07.2**	**-0.8**
OBO	**Obock**	**0.56**	**55**	*e*P	**Pb**	**23 57 10.3**	**0.0**
GBR	**Grand-Bara**	**0.62**	**215**	*e*P	**Pb**	**23 57 10.6**	**-0.8**
TRBA	**At Turbah**	**2.01**	**39**	*i* P	**Pn**	**23 57 30.6**	**-1.9**
TRBA				*i* S	**Sn**	**23 57 58.7**	**+1.1**
UDYN	**Al 'Udayn**	**2.55**	**26**	⇓*i*P	**Pn**	**23 57 38.9**	**-1.0**
UDYN				*i* S	**Sb**	**23 58 13.0**	**-2.8**
UDYN				AML	AML	23 58 21.5	
	comp=N,934nm,0.5s						
DHBB	**Dhamar BB**	**3.27**	**28**	*i* P	**Pn**	**23 57 48.5**	**-1.5**
DHBB				*i* S	**Sn**	**23 58 30.7**	**+1.8**
BDHA	**Al Bayda'**	**3.53**	**49**	*i* P	**Pn**	**23 57 52.6**	**-0.8**
BDHA				*i* S	**Sn**	**23 58 39.5**	**+4.4**
HAJJ	**Hajjah**	**4.08**	**11**	*i* P	**Pn**	**23 57 58.7**	**-2.3**
HAJJ				*i* S	**Sn**	**23 58 50.2**	**+1.4**
FURI	**Furi**	**4.92**	**236**	P	**Pb**	**23 58 23.7**	**-1.2**
FURI				S	**Sb**	**23 59 27.0**	**+2.8**

IDC 31 00:01:03.4±13.0, 40°.48N×142°.96E, h0km, mb3.7/3, mb1 3.7/4, mb1mx3.3/49, mbtmp3.6/4, ML3.3/1, Error ellipse: s-maj=256.5km s-min=48.9km az=100.0, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MJAR	**Matsushiro Arr**	**5.42**	**225**	Pn	Pn	00 02 25.2	-0.2
	1.0nm,0.3s,baz=40,slow=12,SNR=3.3						
SONM	**Songino Array**	**27.05**	**298**	P	P	00 06 47.5	0.0
	0.4nm,0.7s,baz=90,slow=8.9,SNR=2.2						
MKAR	**Makanchi Array**	**43.40**	**299**	P	P	00 09 08.3	+0.7
	0.5nm,0.7s,baz=64,slow=9.8,SNR=2.7						
KURBB	**Kurchatov Arra**	**44.91**	**306**	P	P	00 09 19.0	-0.6
	2.6nm,0.7s,baz=78,slow=8.5,SNR=9.9						

MEX ***31*** *00:08:53.0±0.6, 14°.35N×92°.75W, h20km±208km, MD4.1*

IDC 31 00:08:60.0±9.6, 14°46N×91°91W, h121km±60km, mb3.1/3, mb1 3.5/5, mb1mx3.2/43, mbtmp3.6/5, Error ellipse: s-maj=106.7km s-min=54.3km az=155.0

ISC 31 00:09:02.7±3.1, 15°11N±0°3×92°7W±0°1, h100km, n7, σ3°46/8, mb3.3/3, Mexico-Guatemala border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		**0.82**	**321**	*e*P	Pn	00 09 15.2	-6.0
PCIG				*e*S	**Sn**	**00 09 31.2**	**-4.0**
CCIG	**Comitan**	**1.32**	**23**	*e*P	**Pn**	**00 09 23.5**	**-3.5**
CCIG				*e*S	**Sn**	**00 09 46.9**	**+1.6**
TEIG	**Tepich**	**6.63**	**39**	P	**Pn**	**00 10 36.1**	**-1.5**
	3.6nm,0.3s,baz=89,slow=23,SNR=20						
TEIG				S	**Sn**	**00 11 51.1**	**-0.6**
	0.0nm,0.3s,baz=90,slow=20,SNR=1.3						
TXAR	**Lajitas Array**	**17.45**	**326**	P	**Pn**	**00 13 04.9**	**+5.0**
	baz=143,slow=12,SNR=2.8						
NVAR	**Mina Array Bea**	**32.44**	**321**	P	P	00 15 27.3	+3.8
	0.4nm,0.7s,baz=117,slow=11,SNR=1.9						
YKA	**Yellowknife Ar**	**49.85**	**347**	P	**P**	**00 17 46.7**	**+1.3**
	1.1nm,0.7s,baz=149,slow=7.2,SNR=7.8						
ILAR	**Eielson Array**	**61.61**	**337**	P	**P**	**00 19 09.0**	**-0.4**
	0.2nm,0.8s,baz=106,slow=5.7,SNR=2.0						

ISCJB 31 00:12:00.5±0.4, 19°85N±0°05×75°47W±0°03, h30km, mb4.9/5, Error ellipse: s-maj=7.1km s-min=3.7km az=158.8
NEIC 31 00:12:02.2±1.1, 19°84N×75°45W, h29km±9km, mb4.5/5, Error ellipse: s-maj=9.4km s-min=8.1km az=201.0
NEIC Felt [III] at Guantanamo.
JSN 31 00:12:03.0±0.9, 19°86N×75°55W, h25km±296km, MD4.3

ISC 31 00:12:02.0±0.7, 19°84N±0°07×75°48W±0°04, h30km, n22, σ0°97/28, mb4.9/5, 2D, Cuba region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GTBY	**Guantanamo Bay**	**0.36**	**75**	*e*Pg	**Pb**	**00 12 10.1**	**-0.3**
GTBY				*e*Sg	**Sb**	**00 12 15.5**	**-0.4**
GWJ	**Greenwich**	**2.12**	**214**	*i* P	**Pn**	**00 12 35.3**	**-0.2**
STH	**Stony Hill**	**2.16**	**216**	⇓*i*P	**Pn**	**00 12 35.9**	**-0.1**
YHJ	**Yallahs**	**2.16**	**207**	*i* P	**Pn**	**00 12 36.8**	**+0.7**
HOJ	**Hope**	**2.18**	**214**	*i* P	**Pn**	**00 12 36.7**	**+0.3**
BBJ	**Bamboo Saint A**	**2.23**	**230**	⇓*i*P	**Pn**	**00 12 37.1**	**+0.1**
MTDJ	**Mount Denham**	**2.52**	**231**	*e*Pn	**Pn**	**00 12 40.9**	**-0.1**
MTDJ				*e*Sn	**Sn**	**00 13 08.5**	**-2.3**
MBJ	**Montego Bay**	**2.67**	**238**	*i* S	**Sn**	**00 13 12.9**	**-1.5**
MCJ	**Malvern**	**2.83**	**228**	*i* P	**Pn**	**00 12 46.2**	**+1.0**
MCJ				*i* S	**Sn**	**00 13 18.0**	**-0.3**
PAPH	**Port-au-Prince**	**3.28**	**113**	*e*Pn	**Pn**	**00 12 52.0**	**+0.6**
PAPH				*e*Sn	**Sn**	**00 13 30.3**	**+0.9**
SDDR	**Presa de Saban**	**4.05**	**101**	*e*Pn	**Pn**	**00 13 01.6**	**-0.4**
SDDR				*e*Sn	**Sn**	**00 13 47.5**	**-0.9**
GRTK	**Grand Turk**	**4.40**	**67**	*e*Pn	**Pn**	**00 13 07.3**	**+0.6**
GRTK				*e*Sn	**Sn**	**00 13 55.5**	**-1.5**
BANI	**BANI**	**5.05**	**106**	*e*Pn	**Pn**	**00 13 15.7**	**-0.2**
CBYP	**Canovanas**	**9.23**	**98**	*e*Pn	**Pn**	**00 14 12.4**	**-0.9**
HELC	**Santa Helena**	**13.56**	**180**	*e*Pn	**Pn**	**00 15 13.3**	**+0.5**
MCWV	**Mont Chateau**	**20.11**	**350**	*e*P	**P**	**00 16 32.2**	**-1.2**
	9.7nm,1.6s						
BCX	**Boston College**	**22.72**	**8**	*e*P	**P**	**00 17 03.3**	**+1.9**
	69nm,1.6s						
W34A	**Bridge Creek,**	**24.94**	**313**	*e*P	**P**	**00 17 23.5**	**+0.8**
	6.3nm,0.5s						
BGNE	**Belgrade**	**28.88**	**323**	*e*P	**P**	**00 17 59.0**	**+0.9**
	110nm,0.4s						
MNTX	**Cornudas Mount**	**29.31**	**300**	*e*P	**P**	**00 18 03.0**	**+1.0**
	6.5nm,1.5s						
DRLN	**Deer Lake**	**32.70**	**22**	*e*P	**P**	**00 18 30.8**	**-0.9**
	72nm,1.5s						
BW06	**Boulder Array**	**36.64**	**316**	*e*P	**P**	**00 19 06.0**	**-0.1**

IDC 31 00:22:43.2±2.2, 3°49S×145°54E, h0km, mb3.4/2, mb1 3.8/3, mb1mx3.5/24, mbtmp3.5/3, ML3.3/1, MS3.5/2, Ms1 3.5/2, ms1mx2.9/29, Error ellipse: s-maj=434.9km s-min=31.0km az=118.0, Near north coast of New Guinea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**19.67**	**213**	P	P	00 27 13.1	-0.9
	0.1nm,0.3s,baz=37,slow=12,SNR=4.9						
DAV	**Davao City (W)**	**22.51**	**298**	LR	LR	00 36 09.8	
	comp=Z,122nm,19.1s,baz=330,slow=36						
ASAR	**Alice Springs**	**23.00**	**208**	P	P	00 27 50.5	+0.7
	0.8nm,1.0s,baz=41,slow=12,SNR=4.5						
AFI	**Afiamalu**	**43.37**	**107**	LR	LR	00 44 58.6	
	comp=Z,50nm,20.8s,baz=194,slow=31						
ILAR	**Eielson Array**	**83.77**	**23**	P	P	00 35 14.0	0.0
	0.4nm,0.8s,baz=258,slow=4.9,SNR=4.6						

ISK 31 00:23:22.7, 38°35N×28°05E, h9km, ML3.3
ISCJB 31 00:23:23.5±0.5, 38°38N±0°01×28°08E±0°02, h8km±4km, Error ellipse: s-maj=2.8km s-min=2.3km az=13.1
DDA 31 00:23:23.5, 38°37N×28°10E, h15km, Ml3.8
CSEM 31 00:23:23.7±0.1, 38°36N×28°07E, h8km, ML3.1, Error ellipse: s-maj=1.6km s-min=1.3km az=99.0
THE 31 00:23:24.8, 38°37N×28°14E, h10km±3km, ML3.1/3, Error ellipse: s-maj=3.8km s-min=0.9km az=67.0

ISC 31 00:23:23.5±1.0, 38°36N±0°01×28°06E±0°02, h6km±9km, n163, σ0°71/214, 2C-1D, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KULA	**Kula-Manisa**	**0.50**	**72**	*e*PG	**Pg**	**00 23 33.0**	**-0.2**
KULA				*e*SG	**Sg**	**00 23 39.5**	**-0.2**
KULA	**Kula-Manisa**	**0.50**	**72**	P	**Pg**	**00 23 33.3**	**+0.1**
KULA				S	**Sg**	**00 23 39.1**	**-0.6**
KULA	**Kula-Manisa**	**0.50**	**72**	*e*Pg	**Pg**	**00 23 33.0**	**-0.2**
KULA	**Kula-Manisa**	**0.50**	**72**	P	**Pg**	**00 23 33.3**	**+0.1**
KULA				S	**Sg**	**00 23 39.1**	**-0.6**
AKHS	**Akhisar**	**0.55**	**340**	P	**Pg**	**00 23 34.8**	**+0.7**
AKHS				S	**Sg**	**00 23 42.3**	**+1.0**
AKHS	**Akhisar**	**0.55**	**340**	⇑*i*P	**Pg**	**00 23 34.8**	**+0.7**
AKHS				*i* S	**Sg**	**00 23 42.3**	**+1.0**
AKS	**Akhisar**	**0.55**	**340**	*e*PG	**Pg**	**00 23 34.6**	**+0.5**
AKS				*e*SG	**Sg**	**00 23 41.4**	**+0.1**
AKS	**Akhisar**	**0.55**	**340**	*e*Pg	**Pg**	**00 23 34.6**	**+0.5**
AKS				*e*Sg	**Sg**	**00 23 41.4**	**+0.1**
AYDN	**Tasoluk**	**0.71**	**191**	P	**Pb**	**00 23 38.0**	**-0.4**
AYDN				S	**Sb**	**00 23 48.3**	**-0.2**
AYDN	**Tasoluk**	**0.71**	**191**	*i* P	**Pb**	**00 23 38.0**	**-0.4**
AYDN				*i* S	**Sb**	**00 23 48.3**	**-0.2**
DEMI	**Demirci**	**0.85**	**37**	P	**Pg**	**00 23 39.9**	**0.0**
DEMI				S	**Sg**	**00 23 50.6**	**-0.4**
DEMI	**Demirci**	**0.85**	**37**	⇑*i*P	**Pg**	**00 23 39.9**	**0.0**
DEMI				*i* S	**Sg**	**00 23 50.6**	**-0.4**
GCAM	**G?zelcaml?**	**0.93**	**225**	P	**Pb**	**00 23 41.8**	**-0.2**
GCAM				S	**Sg**	**00 23 53.0**	**-0.4**
GCAM	**G?zelcaml?**	**0.93**	**225**	*i* P	**Pb**	**00 23 41.8**	**-0.2**
GCAM				*i* S	**Sg**	**00 23 53.0**	**-0.4**
DGB	**¨zmir**	**0.98**	**252**	*i* P	**Pn**	**00 23 43.4**	**-0.4**
DGB				*i* S	**Sg**	**00 23 54.5**	**-0.5**
DENT	**Denizli**	**0.98**	**128**	*e*PG	**Pg**	**00 23 42.1**	**-0.3**
DENT	**Denizli**	**0.98**	**128**	*e*Pg	**Pg**	**00 23 42.1**	**-0.3**
DNZL	**Cakiroluk**	**1.03**	**130**	P	**Pb**	**00 23 43.5**	**-0.4**
DNZL				S	**Sb**	**00 23 57.3**	**-0.4**
DNZL	**Cakiroluk**	**1.03**	**130**	*i* P	**Pb**	**00 23 43.5**	**-0.4**
DNZL				*i* S	**Sb**	**00 23 57.4**	**-0.4**
KHAL	**Karahalli**	**1.13**	**89**	P	**Pb**	**00 23 45.3**	**-0.2**
KHAL				S	**Sg**	**00 23 58.7**	**-1.1**
KHAL	**Karahalli**	**1.13**	**89**	*i* P	**Pb**	**00 23 45.3**	**-0.2**
KHAL				*i* S	**Sg**	**00 23 58.6**	**-1.1**
URLA	**Izmir**	**1.15**	**270**	P	**Pn**	**00 23 46.0**	**-0.2**
URLA				S	**Sn**	**00 24 01.7**	**-0.5**
URLA	**Izmir**	**1.15**	**270**	⇓*i*P	**Pn**	**00 23 46.0**	**-0.2**
URLA				*i* S	**Sn**	**00 24 01.7**	**-0.5**
KHL	**Karahalli**	**1.15**	**92**	*e*PN	**Pb**	**00 23 45.8**	**-0.1**
KHL	**Karahalli**	**1.15**	**92**	*e*Pn	**Pb**	**00 23 45.8**	**-0.1**
SMG	**Samos**	**1.17**	**236**	P	**Pb**	**00 23 45.8**	**-0.2**
SMG				S	**Sn**	**00 24 02.0**	**-0.5**
SMG	**Samos**	**1.17**	**236**	P	**Pb**	**00 23 45.8**	**-0.2**
SMG				S	**Sn**	**00 24 02.0**	**-0.5**
ZEY	**¨zmir**	**1.23**	**265**	*i* P	**Pg**	**00 23 46.9**	**-0.2**
ZEY				*i* S	**Sn**	**00 24 04.5**	**+0.4**
YER	**Yerkesik**	**1.24**	**172**	*e*PN	**Pg**	**00 23 46.3**	**-1.0**
YER	**Yerkesik**	**1.24**	**172**	P	**Pg**	**00 23 46.8**	**-0.5**
YER				S	**Sb**	**00 24 03.5**	**-0.1**
YER	**Yerkesik**	**1.24**	**172**	*e*Pn	**Pg**	**00 23 46.3**	**-1.0**
YER	**Yerkesik**	**1.24**	**172**	P	**Pg**	**00 23 46.8**	**-0.5**
YER				S	**Sb**	**00 24 03.5**	**-0.1**
BALB	**Balikesir**	**1.28**	**354**	*e*PN	**Pg**	**00 23 48.2**	**0.0**
BALB				*e*SN	**Sn**	**00 24 05.6**	**+0.2**
BALB	**Balikesir**	**1.28**	**354**	*e*Pn	**Pg**	**00 23 48.2**	**0.0**
BALB				*e*Sn	**Sn**	**00 24 05.6**	**+0.2**
GDZ	**Gediz**	**1.33**	**57**	P	**Pn**	**00 23 48.1**	**-0.6**
GDZ				S	**Sb**	**00 24 06.5**	**+0.3**
GDZ	**Gediz**	**1.33**	**57**	*i* P	**Pn**	**00 23 48.1**	**-0.6**
GDZ				*i* S	**Sb**	**00 24 06.5**	**+0.3**
BDRM	**Kayabasi**	**1.38**	**201**	P	**Pn**	**00 23 49.0**	**-0.4**
BDRM				S	**Sn**	**00 24 11.0**	**+3.1**
BDRM	**Kayabasi**	**1.38**	**201**	*i* P	**Pn**	**00 23 49.0**	**-0.4**
BDRM				*i* S	**Sn**	**00 24 11.0**	**+3.1**
BALY	**Balya**	**1.42**	**346**	P	**Pn**	**00 23 49.7**	**-0.2**
BALY				S	**Sb**	**00 24 07.6**	**-1.1**
BALY	**Balya**	**1.42**	**346**	*i* P	**Pn**	**00 23 49.7**	**-0.2**
BALY				*i* S	**Sb**	**00 24 07.6**	**-1.1**
AYVA	**Ayvalik**	**1.43**	**312**	P	**Pn**	**00 23 50.0**	**+0.1**
AYVA				S	**Sg**	**00 24 09.3**	**0.0**
AYVA	**Ayvalik**	**1.43**	**312**	*i* P	**Pn**	**00 23 50.0**	**+0.1**
AYVA				*i* S	**Sg**	**00 24 09.3**	**0.0**
BODT	**Bodrum**	**1.43**	**205**	*e*PN	**Pn**	**00 23 49.4**	**-0.6**
BODT	**Bodrum**	**1.43**	**205**	P	**Pn**	**00 23 49.6**	**-0.4**
BODT				S	**Sg**	**00 24 09.0**	**-0.4**
BODT	**Bodrum**	**1.43**	**205**	P	**Pn**	**00 23 49.6**	**-0.4**
BODT				S	**Sg**	**00 24 09.0**	**-0.4**
TVSB	**Tavsanli**	**1.54**	**45**	*e*PN	**Pn**	**00 23 51.3**	**-0.3**
TVSB	**Tavsanli**	**1.54**	**45**	*e*Pn	**Pn**	**00 23 51.3**	**-0.3**
TURN	**Turunc**	**1.55**	**164**	*i* P	**Pb**	**00 23 51.9**	**-0.7**
TURN				*i* S	**Sg**	**00 24 16.8**	**+3.4**
CHOS	**Chios island**	**1.57**	**271**	*e*PN	**Pn**	**00 23 51.9**	**-0.1**
CHOS	**Chios island**	**1.57**	**271**	P	**Pn**	**00 23 52.4**	**+0.4**
CHOS				S	**Sg**	**00 24 14.2**	**0.0**
CHOS	**Chios island**	**1.57**	**271**	*e*Pn	**Pn**	**00 23 51.9**	**-0.1**
CHOS	**Chios island**	**1.57**	**271**	P	**Pn**	**00 23 52.4**	**+0.4**
CHOS				S	**Sg**	**00 24 14.2**	**0.0**
GOLH	**Golhisar**	**1.64**	**133**	P	**Pb**	**00 23 53.9**	**-0.3**
GOLH	**Golhisar**	**1.64**	**133**	*i* P	**Pb**	**00 23 53.9**	**-0.3**
GOLH				*i* S	**Sg**	**00 24 19.4**	**+3.3**
PRK	**Paraskevi**	**1.65**	**303**	P	**Pn**	**00 23 53.3**	**+0.3**
PRK				S	**Sn**	**00 24 14.5**	**0.0**
PRK	**Paraskevi**	**1.65**	**303**	P	**Pn**	**00 23 53.3**	**+0.3**
PRK				S	**Sn**	**00 24 14.5**	**0.0**
GONE	**Gonen-Balikesi**	**1.71**	**350**	*e*PN	**Pn**	**00 23 53.3**	**-0.5**
GONE	**Gonen-Balikesi**	**1.71**	**350**	*e*Pn	**Pn**	**00 23 53.3**	**-0.5**
ORLT	**Orhaneli**	**1.80**	**21**	*e*PN	**Pn**	**00 23 55.8**	**+0.6**
ORLT	**Orhaneli**	**1.80**	**21**	*e*Pn	**Pn**	**00 23 55.8**	**+0.6**
NIS1	**Nisyros Isl.**	**1.89**	**202**	*e*PN	**Pn**	**00 23 55.2**	**-1.1**
NIS1	**Nisyros Isl.**	**1.89**	**202**	P	**Pn**	**00 23 56.1**	**-0.2**
NIS1	**Nisyros Isl.**	**1.89**	**202**	*e*Pn	**Pn**	**00 23 55.2**	**-1.1**
NIS1	**Nisyros Isl.**	**1.89**	**202**	P	**Pn**	**00 23 56.1**	**-0.2**
FETY	**Fethiye**	**1.91**	**154**	*e*PN	**Pn**	**00 23 56.0**	**-0.6**
FETY	**Fethiye**	**1.91**	**154**	P	**Pn**	**00 23 56.6**	**0.0**
FETY	**Fethiye**	**1.91**	**154**	*e*Pn	**Pn**	**00 23 56.0**	**-0.6**
FETY	**Fethiye**	**1.91**	**154**	P	**Pn**	**00 23 56.6**	**0.0**
KCTX	**Karacabey (Bur**	**1.91**	**7**	*e*PN	**Pn**	**00 23 56.6**	**-0.1**
KCTX	**Karacabey (Bur**	**1.91**	**7**	*e*Pn	**Pn**	**00 23 56.6**	**-0.1**
SIGR	**SIGRI**	**1.92**	**297**	*e*PN	**Pn**	**00 23 57.2**	**+0.5**
SIGR	**SIGRI**	**1.92**	**297**	P	**Pn**	**00 23 56.8**	**+0.1**
SIGR	**SIGRI**	**1.92**	**297**	P	**Pn**	**00 23 56.8**	**+0.1**
SIGR	**SIGRI**	**1.92**	**297**	*e*Pn	**Pn**	**00 23 57.2**	**+0.5**
KNL	**Bal¨–kesir**	**1.95**	**348**	*i* P	**Pn**	**00 23 57.5**	**+0.4**
KNL				*i* S	**Sn**	**00 24 19.8**	**-2.1**
EDC	**Edincik**	**1.99**	**356**	*e*PN	**Pn**	**00 23 57.0**	**-0.7**
EDC	**Edincik**	**1.99**	**356**	*e*Pn	**Pn**	**00 23 57.0**	**-0.7**
EZN	**Ezine**	**1.99**	**318**	*e*PN	**Pn**	**00 23 56.7**	**-0.9**
EZN	**Ezine**	**1.99**	**318**	P	**Pn**	**00 23 57.4**	**-0.2**
EZN	**Ezine**	**1.99**	**318**	*e*Pn	**Pn**	**00 23 56.7**	**-0.9**
EZN	**Ezine**	**1.99**	**318**	P	**Pn**	**00 23 57.4**	**-0.2**
BNT	**Bandirma**	**1.99**	**357**	*e*PN	**Pn**	**00 23 57.6**	**-0.1**
BNT	**Bandirma**	**1.99**	**357**	*e*Pn	**Pn**	**00 23 57.6**	**-0.1**
IGD	**Bursa**	**2.10**	**25**	*i* P	**Pb**	**00 24 01.7**	**-0.2**
IGD				*i* S	**Sg**	**00 24 29.8**	**-1.1**
MDNY	**Mudanya-Bursa**	**2.10**	**17**	*e*PN	**Pn**	**00 23 59.3**	**+0.1**
MDNY	**Mudanya-Bursa**	**2.10**	**17**	*e*Pn	**Pn**	**00 23 59.3**	**+0.1**
ARG	**Arkhangelos**	**2.14**	**179**	P	**Pn**	**00 23 59.7**	**-0.1**
ARG	**Arkhangelos**	**2.14**	**179**	P	**Pn**	**00 23 59.7**	**-0.1**
BOZC	**Bozcaada**	**2.15**	**314**	*i* P	**Pn**	**00 23 60.0**	**+0.1**
BOZC				*i* S	**Sg**	**00 24 32.1**	**-0.4**
LPK	**Lapseki**	**2.25**	**334**	*e*PN	**Pn**	**00 24 00.2**	**-1.0**
LPK	**Lapseki**	**2.25**	**334**	*e*Pn	**Pn**	**00 24 00.2**	**-1.0**
GEMT	**Gemlik**	**2.25**	**23**	*e*PN	**Pn**	**00 24 01.1**	**-0.1**
GEMT	**Gemlik**	**2.25**	**23**	*e*Pn	**Pn**	**00 24 01.1**	**-0.1**
MRMT	**Marmara Adasi**	**2.27**	**351**	*e*PN	**Pn**	**00 24 02.5**	**+0.9**
MRMT	**Marmara Adasi**	**2.27**	**351**	*e*Pn	**Pn**	**00 24 02.5**	**+0.9**
ARMT	**Armutlu**	**2.29**	**16**	*e*PN	**Pn**	**00 24 01.8**	**0.0**
ARMT	**Armutlu**	**2.29**	**16**	*e*Pn	**Pn**	**00 24 01.8**	**0.0**
CAVI	**Cavuskoy**	**2.30**	**36**	*e*PN	**Pn**	**00 24 02.5**	**+0.5**
CAVI	**Cavuskoy**	**2.30**	**36**	*e*Pn	**Pn**	**00 24 02.5**	**+0.5**
GELI	**Tayfur-Gelibol**	**2.37**	**329**	*e*PN	**Pn**	**00 24 02.3**	**-0.7**
GELI	**Tayfur-Gelibol**	**2.37**	**329**	*e*Pn	**Pn**	**00 24 02.3**	**-0.7**
APE	**Apeiranthos**	**2.38**	**238**	*e*PN	**Pn**	**00 24 02.0**	**-1.1**
APE	**Apeiranthos**	**2.38**	**238**	P	**Pn**	**00 24 02.9**	**-0.2**
APE	**Apeiranthos**	**2.38**	**238**	*e*Pn	**Pn**	**00 24 02.0**	**-1.1**
APE	**Apeiranthos**	**2.38**	**238**	P	**Pn**	**00 24 02.9**	**-0.2**
BORA	**Eskisehir**	**2.40**	**50**	P	**Pb**	**00 24 07.8**	**+0.6**
BORA	**Eskisehir**	**2.40**	**50**	*i* P	**Pb**	**00 24 07.8**	**+0.6**
BORA				*i* S	**Sg**	**00 24 40.1**	**-0.6**
RKY	**Sarkoy-Tekirda**	**2.42**	**344**	*e*PN	**Pn**	**00 24 03.3**	**-0.3**
RKY	**Sarkoy-Tekirda**	**2.42**	**344**	*e*Pn	**Pn**	**00 24 03.3**	**-0.3**
SART	**Tekirdag**	**2.42**	**344**	P	**Pn**	**00 24 03.9**	**+0.2**
SART				S	**Sn**	**00 24 32.8**	**-0.8**
SART	**Tekirdag**	**2.42**	**344**	*i* P	**Pn**	**00 24 03.9**	**+0.2**
SART				*i* S	**Sn**	**00 24 32.9**	**-0.8**
ADVT	**Abdulvahap**	**2.44**	**32**	*e*PN	**Pn**	**00 24 04.0**	**+0.1**
ADVT	**Abdulvahap**	**2.44**	**32**	*e*Pn	**Pn**	**00 24 04.0**	**+0.1**
GADA	**Gvkgeada**	**2.48**	**318**	*e*PN	**Pn**	**00 24 04.7**	**+0.3**
GADA	**Gvkgeada**	**2.48**	**318**	*e*Pn	**Pn**	**00 24 04.7**	**+0.3**
KSL	**Kastellorizon**	**2.52**	**151**	P	**Pn**	**00 24 05.0**	**0.0**
ERIK	**Erikli-Kesan**	**2.60**	**333**	*e*PN	**Pn**	**00 24 05.5**	**-0.5**
ERIK	**Erikli-Kesan**	**2.60**	**333**	*e*Pn	**Pn**	**00 24 05.5**	**-0.5**
BUY	**Buyukada**	**2.62**	**18**	*i* P	**Pg**	**00 24 13.5**	**-0.2**
BUY				*i* S	**Sg**	**00 24 47.9**	**+0.2**
TKR	**Tekirdag**	**2.65**	**351**	*e*PN	**Pn**	**00 24 07.8**	**+1.0**
TKR	**Tekirdag**	**2.65**	**351**	*e*Pn	**Pn**	**00 24 07.8**	**+1.0**
KESN	**Edirne-Kesan**	**2.68**	**337**	P	**Pn**	**00 24 07.1**	**-0.4**
KESN	**Edirne-Kesan**	**2.68**	**337**	*i* P	**Pn**	**00 24 07.1**	**-0.4**
KESN				*i* S	**Sb**	**00 24 47.7**	**+2.3**
LIA	**Limnos Island**	**2.71**	**305**	P	**Pn**	**00 24 08.1**	**+0.5**
LIA	**Limnos Island**	**2.71**	**305**	P	**Pn**	**00 24 08.1**	**+0.5**
ISK	**Istanbul-Kandi**	**2.81**	**16**	*e*PN	**Pn**	**00 24 10.1**	**+1.2**
ISK	**Istanbul-Kandi**	**2.81**	**16**	P	**Pn**	**00 24 08.4**	**-0.5**
ISK	**Istanbul-Kandi**	**2.81**	**16**	P	**Pn**	**00 24 08.4**	**-0.5**
ISK	**Istanbul-Kandi**	**2.81**	**16**	*e*Pn	**Pn**	**00 24 10.1**	**+1.2**
GULT	**Gulveren**	**2.81**	**42**	*e*PN	**Pn**	**00 24 09.3**	**+0.3**
GULT	**Gulveren**	**2.81**	**42**	*e*Pn	**Pn**	**00 24 09.3**	**+0.3**
SLVT	**Silivri**	**2.87**	**2**	*e*PN	**Pn**	**00 24 10.0**	**+0.3**
SLVT	**Silivri**	**2.87**	**2**	*e*Pn	**Pn**	**00 24 10.0**	**+0.3**
BGKT	**Bogazkoy**	**2.87**	**11**	*e*PN	**Pn**	**00 24 10.1**	**+0.4**
BGKT	**Bogazkoy**	**2.87**	**11**	*e*Pn	**Pn**	**00 24 10.1**	**+0.4**
SMTH	**Samothraki Isl**	**2.87**	**318**	P	**Pn**	**00 24 10.2**	**+0.3**
SMTH	**Samothraki Isl**	**2.87**	**318**	P	**Pn**	**00 24 10.2**	**+0.3**
THR3	**Thira Island,**	**2.88**	**228**	P	**Pn**	**00 24 10.4**	**+0.5**
THR3	**Thira Island,**	**2.88**	**228**	P	**Pn**	**00 24 10.4**	**+0.5**
CTKS	**Kestanelik-??a**	**2.89**	**7**	*e*PN	**Pn**	**00 24 10.8**	**+0.8**
CTKS	**Kestanelik-??a**	**2.89**	**7**	*e*Pn	**Pn**	**00 24 10.8**	**+0.8**
KARP	**Karpathos**	**2.90**	**195**	P	**Pn**	**00 24 10.1**	**-0.1**
KARP	**Karpathos**	**2.90**	**195**	P	**Pn**	**00 24 10.1**	**-0.1**
SVRH	**Sivrihisar-ESK**	**2.91**	**67**	*e*PN	**Pn**	**00 24 10.8**	**+0.4**
SVRH	**Sivrihisar-ESK**	**2.91**	**67**	*e*Pn	**Pn**	**00 24 10.8**	**+0.4**
THR6	**Thira Island,**	**2.92**	**227**	P	**Pn**	**00 24 10.8**	**+0.4**
THR6	**Thira Island,**	**2.92**	**227**	P	**Pn**	**00 24 10.8**	**+0.4**
ALN	**Alexandroupoli**	**2.97**	**329**	*e*PN	**Pn**	**00 24 10.8**	**-0.3**
ALN	**Alexandroupoli**	**2.97**	**329**	P	**Pn**	**00 24 11.4**	**+0.3**
ALN	**Alexandroupoli**	**2.97**	**329**	*e*Pn	**Pn**	**00 24 10.8**	**-0.3**
ALN	**Alexandroupoli**	**2.97**	**329**	P	**Pn**	**00 24 11.4**	**+0.3**
KLYT	**Kilyos**	**2.98**	**14**	*e*PN	**Pn**	**00 24 11.6**	**+0.3**
KLYT	**Kilyos**	**2.98**	**14**	*e*Pn	**Pn**	**00 24 11.6**	**+0.3**
SILT	**Sile**	**3.04**	**23**	*e*PN	**Pn**	**00 24 11.6**	**-0.5**
SILT	**Sile**	**3.04**	**23**	*e*Pn	**Pn**	**00 24 11.6**	**-0.5**
CTYL	**Yalikoy Yolu**	**3.11**	**3**	*e*PN	**Pn**	**00 24 13.9**	**+0.8**
CTYL	**Yalikoy Yolu**	**3.11**	**3**	*e*Pn	**Pn**	**00 24 13.9**	**+0.8**
MDUB	**Mudurnu**	**3.22**	**48**	*e*PN	**Pn**	**00 24 15.4**	**+0.8**
MDUB	**Mudurnu**	**3.22**	**48**	*e*Pn	**Pn**	**00 24 15.4**	**+0.8**
ZKR	**Zakros**	**3.56**	**205**	P	**Pn**	**00 24 20.0**	**+0.7**
ZKR	**Zakros**	**3.56**	**205**	P	**Pn**	**00 24 20.0**	**+0.7**
EDRB	**Edirne**	**3.62**	**344**	P	**Pn**	**00 24 20.4**	**+0.3**
EDRB	**Edirne**	**3.62**	**344**	P	**Pn**	**00 24 20.4**	**+0.3**

ISCJB 31 00:36:18.4±1.8, 12°46N±0°04×47°22E±0°03, h9km±11km, mb4.5/63, MS3.7/5, Error ellipse: s-maj=6.8km s-min=4.6km az=2.0
MOS 31 00:36:18.6±1.0, 12°38N×47°30E, h10km, mb4.8/29, Error ellipse: s-maj=10.4km s-min=5.2km az=93.5
IDC 31 00:36:18.7±0.5, 12°44N×47°35E, h0km, mb4.2/27, mb1 4.3/30, mb1mx4.3/53, mbtmp4.3/30, ML3.7/3, MS3.7/6, Ms1 3.8/6, ms1mx3.3/38, Error ellipse: s-maj=15.3km s-min=11.9km az=140.0
DHMR 31 00:36:19.6±1.8, 12°56N×46°85E, h4km±20km, ML4.3
CSEM 31 00:36:20.5±0.2, 12°43N×47°30E, h10km, mb4.6/31, Error ellipse: s-maj=7.0km s-min=6.6km az=160.0
NEIC 31 00:36:20.3±3.6, 12°41N×47°29E, h11km±22km, mb4.5/26, Error ellipse: s-maj=7.1km s-min=6.0km az=117.0
DSN 31 00:36:21.4±0.9, 13°61N×45°66E, h15km, Error ellipse: s-maj=120.7km s-min=4.8km az=124.0

ISC 31 00:36:20.8±0.8, 12°56N±0°05×47°19E±0°05, h11km±4km, n243, σ1°54/255, mb4.5/63, MS3.8/5, 10C-27D, Eastern Gulf of Aden

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BDHA	**Al Bayda'**	**2.12**	**312**	*i* P	**Pn**	**00 36 54.1**	**-2.3**
BDHA				*i* S	**Sn**	**00 37 20.5**	**-2.4**
BDHA				AML	AML	00 37 23.4	
	comp=N,4μm,0.5s						
ADEN	**Aden**	**2.17**	**276**	*i* P	**Pn**	**00 36 53.1**	**-3.8**
ADEN				*i* S	**Sn**	**00 37 19.3**	**-4.4**
TRBA	**At Turbah**	**3.07**	**283**	*i* P	**Pn**	**00 37 06.1**	**-3.5**
TRBA				*i* S	**Sn**	**00 37 44.0**	**-2.5**
DAMY	**Dhamar**	**3.38**	**307**	*e*Pn	**Pn**	**00 37 14.3**	**+0.5**
**DAMY

comp=Z,13nm,1.6s
EKS2 Erkin-Say 37.82 33 *e*P **P 00 43 39.6 +2.0**
comp=Z,13nm,1.6s
EKS2 Erkin-Say 37.82 33 *e*P **P 00 43 39.6 +2.0**
comp=Z,13nm,1.6s
ABKAR Akbulak array 38.08 14 *e*P **P 00 43 40.8 +1.3**
ABKAR Akbulak array 38.08 14 *e*P **P 00 43 40.8 +1.3**
DOPR Dopca 38.08 335 ⇓*i*P **P 00 43 41.2 +1.6**
GKN Gorkha 38.16 60 *e*P **P 00 43 39.3 -1.4**
comp=Z,17nm,0.8s
AAK Ala-Archa 38.18 33 *e*P **P 00 43 42.8 +2.1**
AAK pmax pmax
comp=Z,7.0nm,1.1s
AAK Ala-Archa 38.18 33 *e*P **P 00 43 42.8 +2.1**
comp=Z,7.0nm,1.1s
AAK Ala-Archa 38.18 33 *e*P **P 00 43 42.8 +2.1**
comp=Z,7.2nm,1.1s
DMN Daman 38.45 61 *e*P **P 00 43 42.0 -1.3**
KKN Kakani 38.65 61 *e*P **P 00 43 43.6 -1.3**
comp=Z,27nm,0.7s
GZR Gura Zlata 38.76 332 ⇓*i*P **P 00 43 47.0 +1.6**
GZR Gura Zlata 38.76 332 ⇓P **P 00 43 47.0 +1.6**
GZR Gura Zlata 38.76 332 P **P 00 43 47.0 +1.6**
VRH Novokhopyorsk 38.79 355 *e*P **P 00 43 45.4 0.0**
VRH *e* 00 45 16.1
VRH pmax pmax
comp=Z,4.0nm,0.5s
VRH Novokhopyorsk 38.79 355 *e*P **P 00 43 45.4 0.0**
comp=Z,4.0nm,0.5s
MDVR Moldovita 38.79 331 ⇓*i*P **P 00 43 44.8 -0.9**
TKM2 Tokmak 2 38.97 34 *e*P **P 00 43 48.0 +0.6**
TKM2 pmax pmax
comp=Z,9.0nm,1.6s
TKM2 Tokmak 2 38.97 34 *e*P **P 00 43 48.0 +0.6**
comp=Z,9.0nm,1.6s
TKM2 Tokmak 2 38.97 34 *e*P **P 00 43 48.0 +0.6**
comp=Z,8.7nm,1.6s
VSR Storozhevoye 39.10 352 *e*P **P 00 43 47.7 -0.3**
VSR *e* 00 45 20.6
VSR pmax pmax
comp=Z,20nm,1.2s
VSR Storozhevoye 39.10 352 *e*P **P 00 43 47.7 -0.3**
comp=Z,20nm,1.2s
BURAR Bucovina Array 39.49 337 ⇓*i*P **P 00 43 53.6 +2.1**
BURAR Bucovina Array 39.49 337 ⇓P **P 00 43 53.6 +2.1**
BUR08 Bucovina Ar. S 39.52 337 *e*P **P 00 43 53.8 +2.0**
BUR08 Bucovina Ar. S 39.52 337 *e*P **P 00 43 53.8 +2.0**
LPSR Galich'ya Gora 40.49 352 *e*P **P 00 43 59.3 -0.2**
LPSR *e* 00 45 35.6
LPSR pmax pmax
comp=Z,10.0nm,1.1s
LPSR Galich'ya Gora 40.49 352 *e*P **P 00 43 59.3 -0.2**
comp=Z,10.0nm,1.1s
AKASG Malin Array Be 40.77 343 PcP **P 00 44 02.6 +0.7**
comp=Z,0.2nm,0.3s,baz=156,slow=7.4,SNR=5.7
AKASG PcP **PcP 00 46 02.9 -0.2**
comp=Z,1.3nm,0.6s,baz=162,slow=2.5,SNR=4.6
AKBB Malin Array Si 40.77 343 *e*P **P 00 44 02.6 +0.7**
AKBB *e* 00 46 02.9
AKBB pmax pmax
comp=Z,6.0nm,0.6s
AKBB Malin Array Si 40.77 343 *e*P **P 00 44 02.6 +0.7**
comp=Z,6.0nm,0.6s
AKBB Malin Array Si 40.77 343 *e*P **P 00 44 02.6 +0.7**
comp=Z,5.9nm,0.6s
AKBB *e*PcP **PcP 00 46 02.9 -0.2**
TAM Tamanrasset 40.86 290 *e*P **P 00 44 05.0 +1.7**
TAM pmax pmax
comp=Z,5.0nm,1.3s
TAM Tamanrasset 40.86 290 *e*P **P 00 44 05.0 +1.7**
comp=Z,5.0nm,1.3s
TAM Tamanrasset 40.86 290 *e*P **P 00 44 05.0 +1.7**
comp=Z,5.2nm,1.3s
BLY Banja Luka 41.05 327 ⇑*i*P **P 00 44 06.0 +1.6**
PSZ Piszkesteto 41.97 333 ⇓*i*P **P 00 44 12.8 +0.9**
PSZ Piszkesteto 41.97 333 ⇓P **P 00 44 12.8 +0.9**
PSZ Piszkesteto 41.97 333 P **P 00 44 12.8 +0.9**
KWP Kalwaria Pacla 42.10 336 ⇓*i*P **P 00 44 14.9 +2.0**
KWP Kalwaria Pacla 42.10 336 ⇓P **P 00 44 14.9 +2.0**
KWP Kalwaria Pacla 42.10 336 P **P 00 44 14.9 +2.0**
VSL Villasalto 42.80 316 *e*P **P 00 44 21.1 +2.3**
comp=Z,12nm,1.0s
VSL Villasalto 42.80 316 *e*P **P 00 44 21.1 +2.3**
comp=Z,12nm,1.0s
LBTB Lobatse 42.88 209 P **P 00 44 19.3 -0.3**
comp=Z,5.3nm,1.0s,baz=46,slow=9.4,SNR=3.6
LBTB Lobatse 42.88 209 *e*P **P 00 44 19.3 -0.3**
LBTB pmax pmax
comp=Z,43nm,1.6s
LBTB Lobatse 42.88 209 *e*P **P 00 44 19.3 -0.3**
comp=Z,43nm,1.6s
LBTB Lobatse 42.88 209 *e*P **P 00 44 19.3 -0.3**
comp=Z,43nm,1.6s
OBN Obninsk 43.26 351 ⇓*i*P **P 00 44 25.7 +3.5**
OBN *i* 00 46 06.3
OBN *i* 00 46 09.9
OBN pmax pmax
comp=Z,5.0nm,1.0s
ZRNK Zerenda 43.90 19 *e*P **P 00 44 28.2 +0.8**
ZRNK pmax pmax
comp=Z,3.0nm,0.8s
ZRNK Zerenda 43.90 19 *e*P **P 00 44 28.2 +0.8**
comp=Z,3.0nm,0.8s
ZRNK Zerenda 43.90 19 *e*P **P 00 44 28.2 +0.8**
comp=Z,3.0nm,0.8s
VOSK Vostochnaya 44.36 21 *e*P **P 00 44 31.5 +0.4**
VOSK pmax pmax
comp=Z,4.0nm,1.0s
VOSK Vostochnaya 44.36 21 *e*P **P 00 44 31.5 +0.4**
comp=Z,4.0nm,1.0s
VOSK Vostochnaya 44.36 21 *e*P **P 00 44 31.5 +0.4**
comp=Z,3.8nm,1.0s
MORC Moravsky Berou 44.39 333 *e*P **P 00 44 32.3 +0.9**
MORC pmax pmax
comp=Z,13nm,0.9s
MORC Moravsky Berou 44.39 333 *e*P **P 00 44 32.3 +0.9**
comp=Z,13nm,0.9s
MORC Moravsky Berou 44.39 333 *e*P **P 00 44 32.3 +0.9**
comp=Z,13nm,0.9s
ARU Arti 44.65 9 *d i*P **P 00 44 33.8 +0.5**
ARU 00 46 17.9
ARU S **S 00 51 12.8 +3.4**
ARU SS **ScS 00 54 31.4 +0.3**
ARU pmax pmax
comp=Z,9.0nm,1.0s
ARU Arti 44.65 9 *e*P **P 00 44 34.1 +0.8**
comp=Z,5.9nm,0.7s
ARU ScS ScS 00 54 31.4 +0.3
ARU Arti 44.65 9 *e*P **P 00 44 34.1 +0.8**
comp=Z,5.9nm,0.7s
MAKZ Makanchi 44.94 34 *e*P **P 00 44 36.2 +0.3**
MAKZ pmax pmax
comp=Z,6.0nm,0.8s
MAKZ Makanchi 44.94 34 *e*P **P 00 44 36.2 +0.3**
comp=Z,6.0nm,0.8s
MAKZ Makanchi 44.94 34 *e*P **P 00 44 36.2 +0.3**
comp=Z,5.5nm,0.8s
MK01 Makanchi Array 45.09 34 *e*P **P 00 44 36.7 -0.4**
MK01 Makanchi Array 45.09 34 *e*P **P 00 44 36.7 -0.4**
MK31 Makanchi Array 45.10 34 *e*P **P 00 44 37.1 -0.1**
MK31 Makanchi Array 45.10 34 *e*P **P 00 44 37.1 -0.1**
MK31 Makanchi Array 45.10 34 *e*P **P 00 44 37.1 -0.1**
MK32 Makanchi Array 45.10 34 *e*P **P 00 44 37.0 -0.2**
MK32 Makanchi Array 45.10 34 *e*P **P 00 44 37.0 -0.2**
MKAR Makanchi Array 45.10 34 P **P 00 44 37.0 -0.2**
comp=Z,5.4nm,0.8s,baz=218,slow=8.0,SNR=37
MKAR LR LR 01 05 25.2
comp=Z,83nm,20.5s,baz=285,slow=39
MKAR Makanchi Array 45.10 34 *e*P **P 00 44 37.1 -0.1**
MKAR Makanchi Array 45.10 34 *e*P **P 00 44 37.1 -0.1**
MKAR Makanchi Array 45.10 34 *e*P **P 00 44 37.1 -0.1**
DPC Dobruska-Polom 45.35 332 *e*P **P 00 44 39.6 +0.5**
DPC epP **sP 00 44 44.0 +0.3**
DPC Dobruska-Polom 45.35 332 *e*P **P 00 44 39.6 +0.5**
DPC *e* 00 44 44.0
DPC Dobruska-Polom 45.35 332 *e*P **P 00 44 39.6 +0.5**
SVE Sverdlovsk 45.37 10 ⇓*i*P **P 00 44 40.2 +1.1**
SVE pmax pmax
comp=Z,18nm,1.3s
SVE Sverdlovsk 45.37 10 *i* P **P 00 44 40.2 +1.1**
comp=Z,18nm,1.3s
GEA0 GERESS Array S 45.56 329 *e*P **P 00 44 40.8 0.0**
GEA0 GERESS Array S 45.56 329 *e*P **P 00 44 40.8 0.0**
GEC2 GERESS Array S 45.56 329 *e*P **P 00 44 41.5 +0.6**
GEC2 pmax pmax
comp=Z,8.0nm,1.5s
GEC2 GERESS Array S 45.56 329 *e*P **P 00 44 41.5 +0.6**
comp=Z,8.0nm,1.5s
GEC2 GERESS Array S 45.56 329 *e*P **P 00 44 41.5 +0.6**
comp=Z,8.4nm,1.5s
GERES GERESS Array B 45.56 329 P **P 00 44 41.3 +0.5**
comp=Z,1.0nm,0.6s,baz=125,slow=7.0,SNR=15
KHC Kasperske Hory 45.81 330 *e*P **P 00 44 42.8 0.0**
KHC Kasperske Hory 45.81 330 *e*P **P 00 44 42.8 0.0**
KHC Kasperske Hory 45.81 330 *e*P **P 00 44 42.8 0.0**
KURK Kurchatov 45.86 28 ⇑*i*P **P 00 44 43.8 +0.8**
KURK pmax pmax
comp=Z,6.0nm,1.0s
KURK Kurchatov 45.86 28 *e*P **P 00 44 43.2 +0.2**
comp=Z,7.0nm,1.0s
KURK Kurchatov 45.86 28 *e*P **P 00 44 43.2 +0.2**
comp=Z,7.0nm,1.0s
BOSA Boshof 46.10 207 P **P 00 44 44.5 -0.9**
comp=Z,5.8nm,0.8s,baz=43,slow=7.1,SNR=6.9
BOSA LR LR 01 03 24.4
comp=Z,207nm,18.4s,baz=32,slow=35
CLL Collm 47.53 331 *e*P **P 00 44 58.0 +1.8**
CLL *e*PP **PP 00 46 45.0 -2.6**
CLL Collm 47.53 331 *e*P **P 00 44 58.0 +1.8**
KLMR Klimovskoe 48.54 355 *e*P **P 00 45 01.8 -2.0**
KLMR *e**PP **pP 00 45 07.2 +0.1**
KLMR *e* 00 46 27.3
KLMR pmax pmax
comp=Z,13nm,1.1s
CM31 Chiang Mai Arr 50.08 76 *e*P **P 00 45 14.7 -1.6**
CM31 Chiang Mai Arr 50.08 76 *e*P **P 00 45 14.7 -1.6**
CMAR Chiang Mai Arr 50.08 76 P **P 00 45 14.7 -1.6**
comp=Z,4.2nm,0.6s,baz=273,slow=8.2,SNR=19
CMAR LR LR 01 04 39.0
comp=Z,16nm,19.7s,baz=210,slow=34
ZAA0 Zalesovo Array 50.85 28 *e*P **P 00 45 20.5 -1.0**
ZAA0 Zalesovo Array 50.85 28 *e*P **P 00 45 20.6 -1.0**
ZALV Zalesovo Beam 50.85 28 P **P 00 45 20.0 -1.5**
comp=Z,3.5nm,0.6s,baz=234,slow=8.0,SNR=18
ZALV Zalesovo Beam 50.85 28 P **P 00 45 20.0 -1.5**
ZALV Zalesovo Beam 50.85 28 P **P 00 45 20.0 -1.5**
ZAA1 Zalesovo Array 50.85 28 *e*P **P 00 45 20.0 -1.5**
ZAA1 Zalesovo Array 50.85 28 *e*P **P 00 45 19.9 -1.5**
FIA0 FINESS Array S 51.16 347 *e*P **P 00 45 23.9 +0.2**
FIA0 FINESS Array S 51.16 347 *e*P **P 00 45 23.9 +0.2**
FIA0 FINESS Array S 51.16 347 *e*P **P 00 45 23.9 +0.2**
FINES FINESS Array B 51.16 347 P **P 00 45 23.9 +0.2**
comp=Z,2.5nm,0.7s,baz=146,slow=13,SNR=8.0
DBIC Dimbokro 51.58 269 P **P 00 45 28.3 +0.7**
comp=Z,3.3nm,0.9s,baz=79,slow=10.0,SNR=2.5
DBIC Dimbokro 51.58 269 *e*P **P 00 45 28.3 +0.7**
DBIC pmax pmax
comp=Z,67nm,1.8s
DBIC Dimbokro 51.58 269 *e*P **P 00 45 28.3 +0.7**
comp=Z,67nm,1.8s
DBIC Dimbokro 51.58 269 *e*P **P 00 45 28.3 +0.7**
comp=Z,67nm,1.8s
ESDC Sonseca Array 52.41 311 P **P 00 45 34.2 +0.7**
comp=Z,0.8nm,0.8s,baz=93,slow=5.1,SNR=3.7
GTA Gaotai 53.43 50 *e*P **P 00 45 41.0 -0.2**
GTA pP sP 00 45 45.5 -0.3
GTA sP pP 00 45 49.0 +4.5
GTA pmax pmax
comp=Z,11nm,0.7s
NB200 NORSAR Array S 55.02 340 *e*P **P 00 45 52.1 -0.2**
NB200 NORSAR Array S 55.02 340 *e*P **P 00 45 52.1 -0.2**
NOA NORSAR Array B 55.02 340 P **P 00 45 52.1 -0.2**
comp=Z,0.6nm,0.7s,baz=121,slow=5.9,SNR=3.0
LVZ Lovozero 55.90 354 ⇑*i*P **P 00 46 00.7 +2.3**
LVZ pmax pmax
comp=Z,46nm,2.6s
ARA0 ARCESS Array S 58.58 351 *e*P **P 00 46 17.7 +0.4**
ARA0 ARCESS Array S 58.58 351 *e*P **P 00 46 17.7 +0.4**
ARCES ARCESS Array B 58.58 351 P **P 00 46 17.7 +0.4**
comp=Z,4.0nm,0.8s,baz=157,slow=6.6,SNR=7.9
SONA0 Songino Array 60.23 42 *e*P **P 00 46 29.2 -0.1**
comp=Z,7.1nm,1.0s
SONA0 Songino Array 60.23 42 *e*P **P 00 46 29.2 -0.1**
comp=Z,7.1nm,1.0s
SONM Songino Array 60.23 42 P **P 00 46 29.2 -0.2**
comp=Z,7.2nm,1.1s,baz=243,slow=6.9,SNR=24
SONA1 Songino Array 60.24 42 *e*P **P 00 46 29.1 -0.3**
SONA1 Songino Array 60.24 42 *e*P **P 00 46 29.1 -0.3**
ULN Ulaanbaatar 60.67 42 ⇑*i*P **P 00 46 32.2 -0.1**
ULN pmax pmax
comp=Z,5.0nm,1.0s
ULN Ulaanbaatar 60.67 42 *e*P **P 00 46 31.8 -0.6**
comp=Z,4.9nm,1.0s
ULN Ulaanbaatar 60.67 42 *e*P **P 00 46 31.8 -0.6**
comp=Z,4.9nm,1.0s
NRIK Noril'sk 62.22 15 LR LR 01 18 58.7
comp=Z,71nm,20.4s,baz=274,slow=41
WHN Wuhan 64.14 62 ⇑P **P 00 46 55.0 -0.6**
DAG Danmarks Havn 72.41 347 *i* P **P 00 47 45.1 -1.5**
comp=Z,0.9nm,0.5s
DAG Danmarks Havn 72.41 347 *i* P **P 00 47 45.1 -1.5**
DAG pmax pmax
comp=Z,1.0nm,0.5s
KS15 Wonju Array Si 75.14 54 *e*P **P 00 48 02.2 -1.2**
KS15 Wonju Array Si 75.14 54 *e*P **P 00 48 02.2 -1.2**
KSAR Wonju Array Be 75.14 54 P **P 00 48 02.3 -1.2**
KSAR Wonju Array Be 75.14 54 P **P 00 48 02.2 -1.2**
KSAR Wonju Array Be 75.14 54 P **P 00 48 02.2 -1.2**
KS01 Wonju Array Si 75.14 54 *e*P **P 00 48 01.8 -1.6**
KS01 Wonju Array Si 75.14 54 *e*P **P 00 48 01.8 -1.6**
KSRS Korea Array 75.17 54 P **P 00 48 02.2 -1.3**
comp=Z,1.8nm,0.6s,baz=274,slow=6.2,SNR=7.2
YAK Yakutsk 75.48 29 *i* P **P 00 48 04.6 -0.3**
YAK pmax pmax
comp=Z,14nm,0.7s
TIXI Tiksi 75.54 19 ⇓*i*P **P 00 48 05.3 +0.3**
TIXI pmax pmax
comp=Z,5.0nm,1.1s
TIXI Tiksi 75.54 19 *e*P **P 00 48 03.2 -1.9**
comp=Z,4.5nm,0.5s
TIXI Tiksi 75.54 19 *e*P **P 00 48 03.1 -1.9**
comp=Z,4.5nm,0.5s
LUWI Luwuk 76.16 94 *e*P **P 00 48 09.5 -0.2**
comp=Z,82nm,0.3s
LUWI Luwuk 76.16 94 *e*P **P 00 48 09.5 -0.2**
comp=Z,82nm,0.3s
SUMG Summit 76.80 342 *i* P **P 00 48 13.0 +0.3**
comp=Z,12nm,1.2s
SUMG Summit 76.80 342 *i* P **P 00 48 13.0 +0.3**
SUMG pmax pmax
comp=Z,12nm,1.2s
SUMG Summit 76.80 342 *e*P **P 00 48 13.8 +1.1**
comp=Z,11nm,1.2s
SUMG Summit 76.80 342 *e*P **P 00 48 13.8 +1.1**
comp=Z,11nm,1.2s
KLR Kul'dur 77.06 42 P **P 00 48 12.8 -1.3**
comp=Z,6.4nm,0.9s,baz=299,slow=6.7,SNR=6.5
KLR Kul'dur 77.06 42 ⇑*e*P **P 00 48 12.7 -1.5**
SYO Syowa Base 81.54 183 ⇑*e*P **P 00 48 39.0 +1.0**
SEY Seymchan 85.69 26 P **P 00 48 59.9 +0.3**
comp=Z,3.8nm,1.0s,baz=303,slow=8.0,SNR=12
SEY Seymchan 85.69 26 ⇑*i*P **P 00 49 00.3 +0.7**
BILL Bilibino 88.76 19 *i* P **P 00 49 14.3 -0.1**
BILL *i* 00 49 18.0
BILL *i* 00 52 50.8
BILL pmax pmax
comp=Z,2.0nm,1.0s
WRA Warramunga Arr 91.58 110 P **P 00 49 27.6 -0.9**
comp=Z,3.0nm,0.7s,baz=298,slow=3.6,SNR=23
WR1 Warramunga Arr 91.58 110 *e*P **P 00 49 27.5 -1.0**
comp=Z,34nm,1.8s
WR1 Warramunga Arr 91.58 110 *e*P **P 00 49 27.6 -1.0**
comp=Z,34nm,1.8s
WRAB Tennant Creek 91.59 110 ⇓*i*P P 00 49 23.6 -4.9
WRAB pmax pmax
comp=Z,30nm,1.7s
ASAR Alice Springs 92.00 114 P **P 00 49 29.3 -1.1**
comp=Z,0.8nm,0.6s,baz=289,slow=4.8,SNR=8.3
AS31 Alice Springs 92.00 114 *e*P **P 00 49 29.3 -1.1**
comp=Z,2.0nm,1.3s
AS31 Alice Springs 92.00 114 *e*P **P 00 49 29.3 -1.1**
comp=Z,2.0nm,1.3s
ILAR Eielson Array 102.16 6 PP PP 00 54 27.2 +0.7
comp=Z,0.4nm,0.9s,baz=133,slow=4.0,SNR=5.3
NLU North Lily Min 124.31 341 *e*PKPpre PKPpre 00 55 13.0
NLU *e*PKPdf **PKiKP 00 55 21.2 +0.3**
NV01 Mina Array Sit 127.49 346 *e*PKiKP **PKPdf 00 55 27.3 +0.6**
NV01 Mina Array Sit 127.49 346 *e*PKPdf **PKPdf 00 55 27.3 +0.6**
NVAR Mina Array Bea 127.49 346 PKP **PKPdf 00 55 27.3 +0.6**
comp=Z,1.0nm,0.8s,baz=15,slow=1.6,SNR=6.0

*IDC **31** 00:42:14.6±1.2, 8°.29S×117°.00E, h0km, mb3.7/5, mb1 4.0/7, mb1mx3.7/39, mbtmp3.8/7, ML3.5/2, Error ellipse: s-maj=37.1km s-min=19.4km az=65.0*
*ISCJB **31** 00:42:17.1±1.1, 8°.33S±0°.07×117°.0E±0°.1, h33km, mb3.8/4, Error ellipse: s-maj=18.7km s-min=10.3km az=8.0*
ISC 31 00:42:19.7±1.1, 8°.37S±0°.08×117°.1E±0°.1, h35km, n8, σ1°.23/10, mb3.6/4, Sumbawa region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAPI	**Kappang**	**4.25**	**39**	Pn	**Pn**	**00 43 22.0**	**+0.1**
	4.6nm,0.3s,baz=252,slow=3.2,SNR=18						
KAPI				Sn	**Sn**	**00 44 10.6**	**+0.1**
	2.5nm,0.3s,baz=66,slow=21,SNR=9.8						
FITZ	**Fitzroy Crossi**	**12.76**	**140**	Pn	**Pn**	**00 45 19.7**	**+1.1**
	0.1nm,0.3s,baz=327,slow=12,SNR=3.5						
FITZ				Sn	**Sn**	**00 47 37.2**	**-2.3**
	0.1nm,0.3s,baz=120,slow=18,SNR=4.0						
WRA	**Warramunga Arr**	**20.28**	**126**	P	**P**	**00 46 53.7**	**+1.3**
	3.9nm,0.6s,baz=301,slow=12,SNR=47						
ASAR	**Alice Springs**	**22.15**	**135**	P	**P**	**00 47 13.7**	**+1.0**
	1.3nm,0.6s,baz=308,slow=9.2,SNR=8.2						
STKA	**Stephens Creek**	**32.65**	**139**	P	**P**	**00 48 48.1**	**-0.4**
	1.9nm,0.6s,baz=318,slow=16,SNR=3.5						
SONM	**Songino Array**	**56.75**	**351**	P	**P**	**00 51 59.0**	**-1.1**
	0.4nm,0.5s,baz=159,slow=6.5,SNR=3.0						
MKAR	**Makanchi Array**	**63.05**	**334**	P	**P**	**00 52 43.5**	**+0.1**
	0.4nm,0.8s,baz=157,slow=7.8,SNR=3.5						
CPUP	**Villa Florida**	**145.09**	**189**	PKPbc	**PKPab**	**01 01 54.1**	**+0.5**
	1.5nm,0.8s,baz=137,slow=6.0,SNR=4.0						

JMA 31 00:43:12.4±0.4, 35°.98N×143°.74E, h86km, M3.5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**2.36**	**264**	P	Pn	00 43 50.5	+1.3
BSO1	**Boso 1**	**2.62**	**240**	P	Pn	00 43 52.3	+0.1
ONAJ	**Iwakimizuishiy**	**2.62**	**296**	*e*S	Sn	00 44 25.1	+1.3
JHO	**Hitachi**	**2.64**	**285**	P	Pn	00 43 53.7	+0.8
JHO				*e*S	Sn	00 44 25.1	+1.0
JFK	**Kawauchi**	**2.69**	**302**	P	Pn	00 43 53.9	+0.3
JFK				*e*S	Sn	00 44 25.6	+0.3
JFT	**Otama**	**3.13**	**300**	P	Pn	00 44 01.2	+1.5
JFT				*e*S	Sn	00 44 38.4	+2.3
JAG	**Ashikaga**	**3.50**	**279**	P	Pn	00 44 06.0	+1.5
JAG				*e*S	Sn	00 44 45.6	+0.8
JMK	**Ichinoseki**	**3.58**	**327**	P	Pn	00 44 05.7	+0.1
JMK				*e*S	Sn	00 44 47.0	+0.2
JOD2	**Odawara 2**	**3.86**	**261**	P	Pn	00 44 10.6	+1.2
JOD2				*e*S	Sn	00 44 54.8	+1.2
JRY	**Ryogami san**	**3.92**	**272**	P	Pn	00 44 12.0	+1.6
JRY				*e*S	Sn	00 44 53.8	-1.5
JYK	**Kaneyama**	**3.98**	**318**	P	Pn	00 44 12.8	+1.7
JOM	**Ohasama**	**3.99**	**332**	P	Pn	00 44 12.7	+1.5
JOM				*e*S	Sn	00 44 56.6	-0.2
JYN	**Shimob**	**4.25**	**265**	P	Pn	00 44 17.3	+2.4
JYN				*e*S	Sn	00 45 06.2	+2.8

*DDA **31** 00:52:38.5, 38°.40N×28°.08E, h22km, Ml3.4*
*CSEM **31** 00:52:38.7±0.1, 38°.37N×28°.09E, h10km, ML2.9, Error ellipse: s-maj=2.3km s-min=2.2km az=118.0*
*THE **31** 00:52:38.5, 38°.33N×28°.14E, h1km±1km, ML2.9/3, Error ellipse: s-maj=1.5km s-min=0.7km az=118.0*
*ISK **31** 00:52:38.1, 38°.41N×28°.09E, h12km, MD3.2*
*ISCJB **31** 00:52:39.5±0.3, 38°.38N±0°.02×28°.09E±0°.02, h17km±5km, Error ellipse: s-maj=3.3km s-min=3.0km az=140.3*
ISC 31 00:52:38.7±1.0, 38°.37N±0°.02×28°.09E±0°.02, h11km±9km, n72, σ0°.59/111, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KULA	**Kula-Manisa**	**0.47**	**72**	*e*PG	**Pg**	**00 52 47.7**	**-0.2**
KULA				*e*SG	**Sg**	**00 52 54.4**	**+0.1**
KULA	**Kula-Manisa**	**0.47**	**72**	P	**Pg**	**00 52 48.1**	**+0.2**
KULA				S	**Sg**	**00 52 54.1**	**-0.1**
KULA	**Kula-Manisa**	**0.47**	**72**	*e*Pg	**Pg**	**00 52 47.7**	**-0.2**
KULA	**Kula-Manisa**	**0.47**	**72**	P	**Pg**	**00 52 48.1**	**+0.2**
KULA				S	**Sg**	**00 52 54.1**	**-0.1**
AKHS	**Akhisar**	**0.55**	**337**	P	**Pg**	**00 52 49.8**	**+0.5**
AKHS				S	**Sg**	**00 52 57.1**	**+0.5**
AKHS	**Akhisar**	**0.55**	**337**	*i* P	**Pg**	**00 52 49.8**	**+0.5**
AKHS				*i* S	**Sg**	**00 52 57.1**	**+0.5**
AKS	**Akhisar**	**0.55**	**337**	*e*PG	**Pg**	**00 52 48.9**	**-0.4**
AKS				*e*SG	**Sg**	**00 52 56.3**	**-0.3**
AKS	**Akhisar**	**0.55**	**337**	*e*Pg	**Pg**	**00 52 48.9**	**-0.4**
AKS				*e*Sg	**Sg**	**00 52 56.3**	**-0.3**
AYDN	**Tasoluk**	**0.73**	**193**	P	**Pg**	**00 52 53.0**	**+0.3**
AYDN				S	**Sb**	**00 53 03.4**	**0.0**
AYDN	**Tasoluk**	**0.73**	**193**	*i* P	**Pg**	**00 52 53.0**	**+0.3**
AYDN				*i* S	**Sb**	**00 53 03.4**	**0.0**
DEMI	**Demirci**	**0.83**	**36**	P	**Pg**	**00 52 54.9**	**+0.2**
DEMI				S	**Sg**	**00 53 05.6**	**0.0**
DEMI	**Demirci**	**0.83**	**36**	*i* P	**Pg**	**00 52 54.9**	**+0.2**
DEMI				*i* S	**Sg**	**00 53 05.6**	**0.0**
GCAM	**G?zelcaml?**	**0.95**	**225**	P	**Pg**	**00 52 56.9**	**-0.1**
GCAM				S	**Sg**	**00 53 08.1**	**-1.2**
GCAM	**G?zelcaml?**	**0.95**	**225**	*i* P	**Pg**	**00 52 56.9**	**-0.1**
GCAM				*i* S	**Sg**	**00 53 08.1**	**-1.2**
DENT	**Denizli**	**0.97**	**129**	*e*PG	**Pg**	**00 52 57.3**	**0.0**
DENT	**Denizli**	**0.97**	**129**	*e*Pg	**Pg**	**00 52 57.3**	**0.0**
DGB	**˜zmir**	**1.00**	**252**	*i* P	**Pb**	**00 52 58.5**	**+0.5**
DGB				*i* S	**Sg**	**00 53 09.6**	**-1.4**
DNZL	**Cakiroluk**	**1.02**	**132**	P	**Pn**	**00 52 59.6**	**+0.5**
DNZL				S	**Sn**	**00 53 13.1**	**-0.5**
DNZL	**Cakiroluk**	**1.02**	**132**	*i* P	**Pn**	**00 52 59.6**	**+0.5**
DNZL				*i* S	**Sn**	**00 53 13.1**	**-0.5**
KHAL	**Karahalli**	**1.10**	**90**	P	**Pn**	**00 53 00.6**	**+0.3**
KHAL				S	**Sg**	**00 53 14.1**	**-0.2**
KHAL	**Karahalli**	**1.10**	**90**	*i* P	**Pn**	**00 53 00.6**	**+0.3**
KHAL				*i* S	**Sg**	**00 53 14.1**	**-0.2**
KHL	**Karahalli**	**1.13**	**92**	*e*PN	**Pb**	**00 53 00.2**	**0.0**
KHL	**Karahalli**	**1.13**	**92**	*e*Pn	**Pb**	**00 53 00.3**	**0.0**
URLA	**Izmir**	**1.17**	**270**	P	**Pn**	**00 53 01.2**	**+0.1**
URLA				S	**Sg**	**00 53 16.5**	**+0.1**
URLA	**Izmir**	**1.17**	**270**	*i* P	**Pn**	**00 53 01.2**	**+0.1**
URLA				*i* S	**Sg**	**00 53 16.5**	**+0.1**
SMG	**Samos**	**1.19**	**236**	P	**Pb**	**00 53 00.8**	**-0.4**
SMG				S	**Sn**	**00 53 17.3**	**-0.1**
SMG	**Samos**	**1.19**	**236**	P	**Pb**	**00 53 00.8**	**-0.4**
SMG				S	**Sn**	**00 53 17.3**	**-0.1**
YER	**Yerkesik**	**1.25**	**173**	*e*PN	**Pb**	**00 53 02.3**	**+0.1**
YER	**Yerkesik**	**1.25**	**173**	P	**Pn**	**00 53 00.6**	**-1.5**
YER	**Yerkesik**	**1.25**	**173**	P	**Pn**	**00 53 00.6**	**-1.5**
YER	**Yerkesik**	**1.25**	**173**	*e*Pn	**Pb**	**00 53 02.3**	**+0.1**
ZEY	**˜zmir**	**1.25**	**264**	*i* P	**Pg**	**00 53 02.9**	**+0.2**
ZEY				*i* S	**Sn**	**00 53 19.4**	**+0.5**
BALB	**Balikesir**	**1.28**	**353**	*e*PN	**Pn**	**00 53 01.8**	**-0.6**
BALB	**Balikesir**	**1.28**	**353**	*e*Pn	**Pn**	**00 53 01.8**	**-0.6**
GDZ	**Gediz**	**1.30**	**56**	P	**Pb**	**00 53 03.3**	**0.0**
GDZ				S	**Sg**	**00 53 21.0**	**+0.3**
GDZ	**Gediz**	**1.30**	**56**	*i* P	**Pb**	**00 53 03.3**	**0.0**
GDZ				*i* S	**Sg**	**00 53 21.0**	**+0.3**
BDRM	**Kayabasi**	**1.40**	**201**	P	**Pn**	**00 53 04.1**	**-0.1**
BDRM				S	**Sg**	**00 53 25.5**	**+1.8**
BDRM	**Kayabasi**	**1.40**	**201**	*i* P	**Pn**	**00 53 04.1**	**-0.1**
BDRM				*i* S	**Sg**	**00 53 25.5**	**+1.8**
BALY	**Balya**	**1.41**	**345**	P	**Pn**	**00 53 04.8**	**+0.4**
BALY				S	**Sn**	**00 53 22.7**	**-0.4**
BALY	**Balya**	**1.41**	**345**	*i* P	**Pn**	**00 53 04.8**	**+0.4**
BALY				*i* S	**Sn**	**00 53 22.7**	**-0.4**
AYVA	**Ayvalik**	**1.44**	**311**	P	**Pg**	**00 53 06.3**	**+0.1**
AYVA				S	**Sb**	**00 53 24.5**	**+0.8**
AYVA	**Ayvalik**	**1.44**	**311**	*i* P	**Pg**	**00 53 06.3**	**+0.1**
AYVA				*i* S	**Sb**	**00 53 24.5**	**+0.8**
BODT	**Bodrum**	**1.45**	**205**	*e*PN	**Pn**	**00 53 05.0**	**+0.2**
BODT	**Bodrum**	**1.45**	**205**	P	**Pn**	**00 53

PRK			S	Sg	00 53 31.5	-0.7
PRK	**Paraskevi**	**1.66 302**	P	Pn	00 53 08.1	+0.3
PRK			S	Sg	00 53 31.5	-0.7
GONE	**Gonen-Balikesi**	**1.70 350**	*e*PN	Pn	00 53 06.9	-1.4
GONE	**Gonen-Balikesi**	**1.70 350**	*e*Pn	Pn	00 53 06.9	-1.4
NIS1	**Nisyros Isl.**	**1.91 202**	*e*PN	Pn	00 53 12.2	+1.0
NIS1	**Nisyros Isl.**	**1.91 202**	P	Pn	00 53 10.4	-0.8
NIS1	**Nisyros Isl.**	**1.91 202**	P	Pn	00 53 10.4	-0.8
NIS1	**Nisyros Isl.**	**1.91 202**	*e*Pn	Pn	00 53 12.2	+1.0
SIGR	**SIGRI**	**1.93 296**	*e*PN	Pn	00 53 11.4	-0.1
SIGR	**SIGRI**	**1.93 296**	P	Sn	00 53 11.9	+0.4
SIGR	**SIGRI**	**1.93 296**	*e*Pn	Pn	00 53 11.4	-0.1
SIGR	**SIGRI**	**1.93 296**	P	Pn	00 53 11.9	+0.4
EZN	**Ezine**	**2.00 317**	*e*PN	Pn	00 53 12.2	-0.2
EZN	**Ezine**	**2.00 317**	*e*Pn	Pn	00 53 12.2	-0.2
IGD	**Bursa**	**2.08 24**	*i* P	Pb	00 53 16.9	+0.5
IGD			*i* S	Sg	00 53 44.2	-1.2
ARG	**Arkhangelos**	**2.15 179**	P	Pn	00 53 14.0	-0.5
ARG	**Arkhangelos**	**2.15 179**	P	Pn	00 53 14.0	-0.5
BOZC	**Bozcaada**	**2.16 313**	*i* P	Pn	00 53 15.0	+0.4
BOZC			*i* S	Sg	00 53 46.8	-1.2
APE	**Apeiranthos**	**2.41 238**	P	Pn	00 53 18.0	-0.1
APE	**Apeiranthos**	**2.41 238**	P	Pn	00 53 18.0	-0.1
ALN	**Alexandroupoli**	**2.97 329**	P	Pn	00 53 26.4	+0.6
ALN	**Alexandroupoli**	**2.97 329**	P	Pn	00 53 26.4	+0.6

*ISK **31** 00:57:45.6, 39°.10N×29°.04E, h6km, MD2.7*
*ISCJB **31** 00:57:46.2±0.5, 39°.11N±0°.03×29°.01E±0°.03, h8km±5km, Error ellipse: s-maj=5.2km s-min=4.4km az=178.3*
*DDA **31** 00:57:46.3, 39°.10N×29°.02E, h7km, Md2.9*
*CSEM **31** 00:57:46.4±0.1, 39°.11N×29°.02E, h5km, MD2.9, Error ellipse: s-maj=2.3km s-min=2.3km az=87.0*
ISC 31 00:57:46.0±1.0, 39°.11N±0°.03×29°.03E±0°.03, h20km±4km, n21, σ0°.39/34, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**255**	P	**Pg**	**00 57 52.0**	**0.0**
DEMI				S	**Sb**	**00 57 55.6**	**-0.3**
DEMI	**Demirci**	**0.26**	**255**	*i* P	**Pg**	**00 57 52.0**	**0.0**
DEMI				*i* S	**Sb**	**00 57 55.6**	**-0.3**
GDZ	**Gediz**	**0.35**	**93**	P	**Pg**	**00 57 53.7**	**+0.1**
GDZ				S	**Sg**	**00 57 58.9**	**+0.2**
GDZ	**Gediz**	**0.35**	**93**	*i* P	**Pg**	**00 57 53.7**	**+0.1**
GDZ				*i* S	**Sg**	**00 57 58.9**	**+0.2**
TVSB	**Tavsanli**	**0.48**	**44**	*e*PG	**Pg**	**00 57 55.6**	**-0.2**
TVSB				*e*SG	**Sg**	**00 58 01.9**	**-0.5**
TVSB	**Tavsanli**	**0.48**	**44**	*e*Pg	**Pg**	**00 57 55.6**	**-0.2**
TVSB				*e*Sg	**Sg**	**00 58 01.9**	**-0.5**
KULA	**Kula-Manisa**	**0.66**	**206**	*e*PG	**Pb**	**00 57 58.7**	**-0.2**
KULA				*e*SG	**Sg**	**00 58 07.9**	**-0.1**
KULA	**Kula-Manisa**	**0.66**	**206**	*e*Pg	**Pb**	**00 57 58.7**	**-0.2**
KULA				*e*Sg	**Sg**	**00 58 07.9**	**-0.1**
KHAL	**Karahalli**	**0.82**	**154**	P	**Pn**	**00 58 02.7**	**+0.2**
KHAL				S	**Sg**	**00 58 13.4**	**+0.4**
KHAL	**Karahalli**	**0.82**	**154**	*i* P	**Pn**	**00 58 02.7**	**+0.2**
KHAL				*i* S	**Sg**	**00 58 13.4**	**+0.4**
BALB	**Balikesir**	**1.04**	**301**	*e*PG	**Pg**	**00 58 06.1**	**-0.1**
BALB				*e*SG	**Sg**	**00 58 20.7**	**+0.8**
BALB	**Balikesir**	**1.04**	**301**	*e*Pg	**Pg**	**00 58 06.1**	**-0.1**
BALB				*e*Sg	**Sg**	**00 58 20.7**	**+0.8**
BALY	**Balya**	**1.26**	**300**	*i* P	**Pn**	**00 58 07.7**	**-0.9**
BALY				*i* S	**Sn**	**00 58 25.2**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.26**	**355**	*e*PN	**Pg**	**00 58 10.9**	**+0.4**
MDNY	**Mudanya-Bursa**	**1.26**	**355**	*e*Pn	**Pg**	**00 58 10.9**	**+0.4**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*PN	**Pg**	**00 58 10.9**	**+0.4**
KCTX	**Karacabey (Bur**	**1.27**	**336**	*e*Pn	**Pg**	**00 58 10.9**	**+0.4**
IZI	**Iznik**	**1.27**	**15**	*e*PN	**Pg**	**00 58 11.2**	**+0.5**
IZI	**Iznik**	**1.27**	**15**	*e*Pn	**Pg**	**00 58 11.2**	**+0.5**
GULT	**Gulveren**	**1.75**	**40**	*e*PN	**Pb**	**00 58 17.2**	**-0.1**
GULT	**Gulveren**	**1.75**	**40**	*e*Pn	**Pb**	**00 58 17.3**	**-0.1**

*ISK **31** 01:11:30.3, 39°.11N×29°.02E, h16km, MD2.5*
*ISCJB **31** 01:11:31.2±0.6, 39°.13N±0°.04×29°.01E±0°.05, h12km±6km, Error ellipse: s-maj=7.2km s-min=5.1km az=140.4*
*DDA **31** 01:11:31.7, 39°.09N×29°.03E, h7km, Md2.5*
*CSEM **31** 01:11:31.1±0.1, 39°.13N×29°.00E, h13km±1km, MD2.5, Error ellipse: s-maj=3.9km s-min=3.0km az=130.0*
ISC 31 01:11:30.4±1.5, 39°.13N±0°.03×29°.02E±0°.03, h13km±15km, n14, σ0°.28/24, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**249**	P	**Pb**	**01 11 37.2**	**+0.3**
DEMI				S	**Sb**	**01 11 40.8**	**-0.5**
DEMI	**Demirci**	**0.25**	**249**	*i* P	**Pb**	**01 11 37.2**	**+0.3**
DEMI				*i* S	**Sb**	**01 11 40.8**	**-0.5**
GDZ	**Gediz**	**0.36**	**97**	P	**Pb**	**01 11 38.8**	**0.0**
GDZ				S	**Sb**	**01 11 44.2**	**-0.3**
GDZ	**Gediz**	**0.36**	**97**	*i* P	**Pb**	**01 11 38.8**	**0.0**
GDZ				*i* S	**Sb**	**01 11 44.2**	**-0.3**
TVSB	**Tavsanli**	**0.47**	**47**	*e*PG	**Pb**	**01 11 40.4**	**-0.2**
TVSB				*e*SG	**Sb**	**01 11 47.7**	**+0.2**
TVSB	**Tavsanli**	**0.47**	**47**	*e*Pg	**Pb**	**01 11 40.4**	**-0.2**
TVSB				*e*Sg	**Sb**	**01 11 47.7**	**+0.2**
KULA	**Kula-Manisa**	**0.68**	**205**	*e*PG	**Pg**	**01 11 43.6**	**-0.1**
KULA				*e*SG	**Sb**	**01 11 53.2**	**-0.3**
KULA	**Kula-Manisa**	**0.68**	**205**	*e*Pg	**Pg**	**01 11 43.6**	**-0.1**
KULA				*e*Sg	**Sb**	**01 11 53.2**	**-0.3**
KHAL	**Karahalli**	**0.85**	**154**	P	**Pn**	**01 11 48.2**	**0.0**
KHAL				S	**Sb**	**01 11 58.8**	**+0.4**
KHAL	**Karahalli**	**0.85**	**154**	*i* P	**Pn**	**01 11 48.2**	**0.0**
KHAL				*i* S	**Sb**	**01 11 58.8**	**+0.4**
MDNY	**Mudanya-Bursa**	**1.24**	**355**	*e*PN	**Pg**	**01 11 54.3**	**0.0**
MDNY	**Mudanya-Bursa**	**1.24**	**355**	*e*Pn	**Pg**	**01 11 54.3**	**0.0**
KCTX	**Karacabey (Bur**	**1.24**	**336**	*e*PN	**Pb**	**01 11 53.9**	**+0.1**
KCTX	**Karacabey (Bur**	**1.24**	**336**	*e*Pn	**Pb**	**01 11 53.9**	**+0.1**

*ISCJB **31** 01:13:24.1±0.4, 30°.76N±0°.03×56°.75E±0°.04, h10km, mb3.4/5, Error ellipse: s-maj=5.1km s-min=4.2km az=169.5*
*CSEM **31** 01:13:24.4±0.1, 30°.78N×56°.79E, h2km, ML3.7, Error ellipse: s-maj=4.0km s-min=3.3km az=91.0*
*THR **31** 01:13:24.0±0.4, 30°.80N×56°.80E, h9km±7km, ML3.5*
*IDC **31** 01:13:24.1±1.4, 30°.72N×56°.60E, h0km, mb3.5/6, mb1 3.5/9, mb1mx3.4/52, mbtmp3.5/9, ML3.3/3, Error ellipse: s-maj=25.6km s-min=23.3km az=123.0*
*TEH **31** 01:13:25.2, 30°.83N×56°.80E, h5km, ML3.7*
ISC 31 01:13:25.2±0.7, 30°.78N±0°.05×56°.77E±0°.03, h10km, n50, σ1°.04/53, mb3.4/5, Northern and central Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KHGB	**Koh Gabri**	**0.48**	**212**	*e*Pg	**Pg**	**01 13 33.7**	**-0.9**
KHGB	**Koh Gabri**	**0.48**	**212**	*e*Pg	**Pg**	**01 13 33.7**	**-0.9**
TVBK	**TV Kerman**	**0.79**	**181**	*e*Pg	**Pg**	**01 13 40.2**	**-0.3**
TVBK	**TV Kerman**	**0.79**	**181**	*e*Pg	**Pg**	**01 13 40.2**	**-0.3**
KRBR	**Kerman**	**0.80**	**181**	*e*Pg	**Pg**	**01 13 40.1**	**-0.5**
KRBR				AML	AML	01 13 55.2	
	comp=N,1μm,0.3s						
KRBR				AML	AML	01 13 58.6	
	comp=E,2μm,0.2s						
KRBR	**Kerman**	**0.80**	**181**	*e*Pg	**Pg**	**01 13 40.1**	**-0.5**
CHMN	**Cheshme madani**	**1.13**	**144**	*e*Pg	**Pg**	**01 13 45.7**	**-1.3**
CHMN	**Cheshme madani**	**1.13**	**144**	*e*Pg	**Pg**	**01 13 45.7**	**-1.3**
NGRK	**Negar Kerman**	**1.13**	**182**	*e*Pg	**Pg**	**01 13 46.5**	**-0.5**
NGRK	**Negar Kerman**	**1.13**	**182**	*e*Pg	**Pg**	**01 13 46.5**	**-0.5**
IBAF	**Bafgh**	**1.31**	**308**	*e*AMB	AMB	01 13 50.8	
	comp=Z,38μm,0.1s						
IBAF				*e*Sg	**Sb**	**01 14 05.1**	**-1.8**
IMEH	**Mehriz**	**1.95**	**289**	*e*Pn	**Pn**	**01 13 59.1**	**+0.5**
IMEH				*e*Sg	**Sb**	**01 14 25.6**	**+0.2**
IMEH				*e*AMB	AMB	01 14 28.3	
	comp=Z,13μm,0.2s						
IMEH	**Mehriz**	**1.95**	**289**	*e*Pn	**Pn**	**01 13 59.1**	**+0.5**
IMEH				*e*Sg	**Sb**	**01 14 25.6**	**+0.2**
ICHK	**Chekchek**	**2.49**	**306**	*e*AMB	AMB	01 14 46.6	
	comp=Z,5μm,0.2s						
ICHK				*e*Pn	**Pn**	**01 14 06.7**	**+0.7**
IKOO	**Kooshah**	**2.51**	**49**	*e*Sg	**Sb**	**01 14 41.6**	**-0.1**
IKOO				*e*Pn	**Pn**	**01 14 06.6**	**+0.2**
IKOO				*e*AMB	AMB	01 14 47.1	
	comp=Z,4μm,0.2s						
ITEG	**Tejag**	**2.70**	**38**	*e*Pn	**Pn**	**01 14 08.1**	**-0.8**
ITEG				*e*AMB	AMB	01 15 04.9	
	comp=Z,2μm,0.2s						
ITEG	**Tejag**	**2.70**	**38**	*e*Pn	**Pn**	**01 14 08.1**	**-0.8**
ISAD	**Sadrabad**	**2.87**	**294**	*e*Pn	**Pn**	**01 14 12.0**	**+0.7**
ISAD				*e*AMB	AMB	01 15 00.2	
	comp=Z,3μm,0.3s						
ISAD	**Sadrabad**	**2.87**	**294**	*e*Pn	**Pn**	**01 14 12.0**	**+0.7**
TABS	**Tabas**	**2.88**	**6**	*e*Pn	**Pn**	**01 14 11.8**	**+0.6**
TABS				AML	AML	01 15 04.2	
	comp=E,161nm,0.6s						
TABS				AML	AML	01 15 05.0	
	comp=N,300nm,0.5s						
TABS	**Tabas**	**2.88**	**6**	*e*Pn	**Pn**	**01 14 11.9**	**+0.6**
IDAH	**Dahanechah**	**3.28**	**53**	*e*Pn	Pn	01 14 12.0	-5.0
IRAM	**Ramesheh**	**3.89**	**286**	*e*Pn	**Pn**	**01 14 25.9**	**+0.6**
IRAM				*e*AMB	AMB	01 15 29.1	
	comp=Z,800nm,0.3s						
IRAM	**Ramesheh**	**3.89**	**286**	*e*Pn	**Pn**	**01 14 25.9**	**+0.6**
NASN	**Na'in**	**3.93**	**302**	*e*Pn	**Pn**	**01 14 26.9**	**+1.0**
NASN				AML	AML	01 15 35.3	
	comp=E,101nm,0.4s						
NASN	**Na'in**	**3.93**	**302**	*e*Pn	**Pn**	**01 14 26.9**	**+1.0**
GHIR	**Ghir-Karzin**	**4.13**	**234**	*e*Pn	**Pn**	**01 14 29.9**	**+1.4**
GHIR	**Ghir-Karzin**	**4.13**	**234**	*e*Pn	**Pn**	**01 14 29.9**	**+1.4**
SHRT	**Shahrakht**	**4.13**	**45**	*e*Pn	**Pn**	**01 14 28.9**	**+0.4**
SHRT	**Shahrakht**	**4.13**	**45**	*e*Pn	**Pn**	**01 14 28.9**	**+0.4**
IZEF	**Zefreh**	**4.33**	**300**	*e*Pn	**Pn**	**01 14 31.7**	**+0.4**
IZEF				*e*AMB	AMB	01 15 42.5	
	comp=Z,604nm,0.3s						
IZEF	**Zefreh**	**4.33**	**300**	*e*Pn	**Pn**	**01 14 31.7**	**+0.4**
IPIR	**Pirpir**	**5.36**	**292**	*e*Pn	**Pn**	**01 14 45.9**	**+0.4**
IPIR				*e*AMB	AMB	01 16 40.0	
	comp=Z,211nm,0.3s						
IPIR	**Pirpir**	**5.36**	**292**	*e*Pn	**Pn**	**01 14 45.9**	**+0.4**
IMOG	**Moghan**	**5.73**	**21**	*e*Pn	**Pn**	**01 14 50.0**	**-0.6**
IMOG				*e*AMB	AMB	01 15 20.8	
	comp=Z,149nm,0.3s						
IMOG	**Moghan**	**5.73**	**21**	*e*Pn	**Pn**	**01 14 50.0**	**-0.6**
IPAY	**Payeh**	**5.95**	**18**	*e*Pn	**Pn**	**01 14 54.5**	**+0.9**
IPAY				*e*AMB	AMB	01 14 56.1	
	comp=Z,163nm,0.1s						
IPAY	**Payeh**	**5.95**	**18**	*e*Pn	**Pn**	**01 14 54.5**	**+0.9**
IMYA	**Miami**	**6.20**	**26**	*e*Pn	**Pn**	**01 14 57.6**	**+0.6**
IMYA				*e*AMB	AMB	01 15 31.2	
	comp=Z,131nm,0.3s						
IMYA	**Miami**	**6.20**	**26**	*e*Pn	**Pn**	**01 14 57.6**	**+0.6**
GEYT	**Alibeck**	**7.22**	**9**	Pn	**Pn**	**01 15 12.8**	**+2.0**
	comp=Z,0.3nm,0.3s,baz=193,slow=12,SNR=5.0						
GEYT				Lg	Lg	01 17 20.3	
	comp=Z,0.1nm,0.3s,baz=218,slow=35,SNR=4.1						
WSAR	**Wadi Sarin**	**7.69**	**167**	Pn	**Pn**	**01 15 17.9**	**+0.5**
	comp=Z,0.4nm,0.3s,baz=343,slow=11,SNR=7.7						
WSAR				Sn	**Sn**	**01 16 45.6**	**+1.0**
	comp=Z,0.3nm,0.3s,baz=221,slow=19,SNR=3.2						
ASF	**Jabal al Asfar**	**17.01**	**280**	Sn	**Sn**	**01 20 29.5**	**-3.1**
	comp=Z,0.2nm,0.3s,baz=346,slow=19,SNR=3.2						
EIL	**Elat**	**18.89**	**272**	P	**P**	**01 17 43.8**	**-2.0**
	comp=Z,0.1nm,0.3s,baz=99,slow=13,SNR=2.1						
BRTR	**Keskin Array B**	**20.83**	**302**	P	**P**	**01 18 07.5**	**+0.2**
	comp=Z,0.6nm,0.6s,baz=113,slow=13,SNR=6.1						
BVAR	**Borovoye Array**	**24.35**	**20**	P	**P**	**01 18 44.4**	**+1.3**
	comp=Z,0.7nm,0.6s,baz=204,slow=6.5,SNR=6.8						
MKAR	**Makanchi Array**	**25.36**	**44**	P	**P**	**01 18 53.9**	**+1.5**
	comp=Z,0.3nm,0.5s,baz=233,slow=8.5,SNR=5.2						
KURBB	**Kurchatov Arra**	**25.62**	**33**	P	**P**	**01 18 56.8**	**+2.2**
	comp=Z,0.6nm,0.7s,baz=231,slow=9.2,SNR=5.3						
ZALV	**Zalesovo Beam**	**30.72**	**33**	P	**P**	**01 19 41.3**	**+1.2**
	comp=Z,1.2nm,0.6s,baz=255,slow=11,SNR=5.4						
FINES	**FINESS Array B**	**36.66**	**336**	P	**P**	**01 20 31.9**	**+0.1**
	comp=Z,0.7nm,0.6s,baz=134,slow=12,SNR=3.1						

MEX 31 01:14:50.4±0.6, 14°.02N×92°.23W, h16km±999km, MD3.6, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		**1.93**	**330**	*e*P	Pn	01 15 18.9	-3.7
PCIG				*e*S	Sn	01 15 42.5	-3.9
CCIG	**Comitan**	**2.25**	**2**	*i* P	Pn	01 15 23.3	-3.8
CCIG				*i* S	Sn	01 15 50.9	-3.8

*ISK **31** 01:17:19.6, 39°.12N×29°.01E, h9km, MD2.8*
*ISCJB **31** 01:17:20.0±0.5, 39°.11N±0°.03×28°.99E±0°.03, h6km±5km, Error ellipse: s-maj=4.8km s-min=3.9km az=5.3*
*DDA **31** 01:17:20.0, 39°.11N×29°.00E, h7km, Md3.1*
*CSEM **31** 01:17:20.1±0.1, 39°.11N×29°.00E, h8km, MD3.1, Error ellipse: s-maj=1.5km s-min=1.4km az=29.0*
ISC 31 01:17:20.4±0.9, 39°.11N±0°.03×29°.00E±0°.02, h13km±8km, n41, σ0°.33/58, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.23**	**253**	P	**Pg**	**01 17 25.6**	**+0.2**
DEMI				S	**Sg**	**01 17 29.1**	**+0.2**
DEMI	**Demirci**	**0.23**	**253**	*i* P	**Pg**	**01 17 25.6**	**+0.2**
DEMI				*i* S	**Sg**	**01 17 29.1**	**+0.2**
GDZ	**Gediz**	**0.37**	**93**	P	**Pg**	**01 17 27.6**	**-0.3**
GDZ				S	**Sg**	**01 17 32.8**	**-0.2**
GDZ	**Gediz**	**0.37**	**93**	*i* P	**Pg**	**01 17 27.6**	**-0.3**
GDZ				*i* S	**Sg**	**01 17 32.8**	**-0.2**
TVSB	**Tavsanli**	**0.49**	**46**	*e*PG	**Pg**	**01 17 29.7**	**-0.4**
TVSB				*e*SG	**Sg**	**01 17 36.4**	**-0.3**
TVSB	**Tavsanli**	**0.49**	**46**	*e*Pg	**Pg**	**01 17 29.7**	**-0.4**
TVSB				*e*Sg	**Sg**	**01 17 36.4**	**-0.3**
KULA	**Kula-Manisa**	**0.65**	**204**	*e*PG	**Pg**	**01 17 32.9**	**-0.2**
KULA	**Kula-Manisa**	**0.65**	**204**	*e*Pg	**Pg**	**01 17 32.9**	**-0.2**
KHAL	**Karahalli**	**0.83**	**153**	P	**Pg**	**01 17 36.1**	**-0.4**
KHAL				S	**Sg**	**01 17 47.1**	**-0.4**
KHAL	**Karahalli**	**0.83**	**153**	*i* P	**Pg**	**01 17 36.1**	**-0.4**
KHAL				*i* S	**Sg**	**01 17 47.1**	**-0.4**
KHL	**Karahalli**	**0.89**	**152**	*e*PG	**Pg**	**01 17 37.2**	**-0.3**
KHL				*e*SG	**Sb**	**01 17 49.7**	**+0.2**
KHL	**Karahalli**	**0.89**	**152**	*e*Pg	**Pg**	**01 17 37.2**	**-0.3**
KHL				*e*Sg	**Sb**	**01 17 49.7**	**+0.2**
AKS	**Akhisar**	**0.96**	**256**	*e*PG	**Pg**	**01 17 38.4**	**-0.4**
AKS	**Akhisar**	**0.96**	**256**	*e*Pg	**Pg**	**01 17 38.4**	**-0.4**
BALB	**Balikesir**	**1.02**	**302**	*e*PG	**Pg**	**01 17 39.6**	**-0.4**
BALB	**Balikesir**	**1.02**	**302**	*e*Pg	**Pg**	**01 17 39.6**	**-0.4**
IGD	**Bursa**	**1.16**	**8**	*i* P	**Pb**	**01 17 42.2**	**-0.2**
IGD				*i* S	**Sb**	**01 17 57.4**	**0.0**
BALY	**Balya**	**1.24**	**301**	P	**Pb**	**01 17 43.9**	**+0.1**
BALY				S	**Sb**	**01 17 59.3**	**-0.4**
BALY	**Balya**	**1.24**	**301**	*i* P	**Pb**	**01 17 43.9**	**+0.1**
BALY				*i* S	**Sb**	**01 17 59.3**	**-0.4**
KCTX	**Karacabey (Bur**	**1.26**	**337**	*e*PN	**Pn**	**01 17 43.9**	**+0.2**
KCTX	**Karacabey (Bur**	**1.26**	**337**	*e*Pn	**Pn**	**01 17 43.9**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.26**	**356**	*e*PN	**Pn**	**01 17 43.9**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.26**	**356**	*e*Pn	**Pn**	**01 17 43.9**	**+0.1**
CAVI	**Cavuskoy**	**1.27**	**30**	*e*PN	**Pn**	**01 17 44.0**	**+0.1**
CAVI	**Cavuskoy**	**1.27**	**30**	*e*Pn	**Pn**	**01 17 44.0**	**+0.1**
IZI	**Iznik**	**1.28**	**16**	*e*PN	**Pn**	**01 17 44.1**	**0.0**
IZI	**Iznik**	**1.28**	**16**	*e*Pn	**Pn**	**01 17 44.1**	**0.0**
BORA	**Eskisehir**	**1.36**	**55**	P	**Pb**	**01 17 45.8**	**0.0**
BORA				S	**Sg**	**01 18 04.1**	**-0.1**
BORA	**Eskisehir**	**1.36**	**55**	*i* P	**Pb**	**01 17 45.8**	**0.0**
BORA				*i* S	**Sg**	**01 18 04.1**	**-0.1**
ADVT	**Abdulvahap**	**1.44**	**23**	*e*PN	**Pn**	**01 17 46.5**	**+0.3**
ADVT	**Abdulvahap**	**1.44**	**23**	*e*Pn	**Pn**	**01 17 46.5**	**+0.3**
ARMT	**Armutlu**	**1.46**	**356**	*e*PN	**Pn**	**01 17 46.7**	**+0.2**
ARMT	**Armutlu**	**1.46**	**356**	*e*Pn	**Pn**	**01 17 46.7**	**+0.2**
ESKT	**Eskisehir**	**1.49**	**74**	*i* P	**Pg**	**01 17 49.7**	**+0.7**
ESKT				*i* S	**Sg**	**01 18 08.7**	**+0.3**
SEYT	**Eskypehyr**	**1.49**	**74**	P	**Pg**	**01 17 49.7**	**+0.7**
SEYT				S	**Sg**	**01 18 08.7**	**+0.3**
EDC	**Edincik**	**1.52**	**325**	*e*PN	**Pn**	**01 17 47.6**	**+0.3**
EDC	**Edincik**	**1.52**	**325**	*e*Pn	**Pn**	**01 17 47.6**	**+0.3**
GULT	**Gulveren**	**1.76**	**41**	*e*PN	**Pn**	**01 17 50.9**	**+0.2**
GULT	**Gulveren**	**1.76**	**41**	*e*Pn	**Pn**	**01 17 50.9**	**+0.2**
MRMT	**Marmara Adasi**	**1.84**	**324**	*e*PN	**Pn**	**01 17 52.4**	**+0.6**
MRMT	**Marmara Adasi**	**1.84**	**324**	*e*Pn	**Pn**	**01 17 52.4**	**+0.6**

*ISCJB **31** 01:17:41.5±0.8, 1°.29N±0°.09×98°.8E±0°.1, h90km, mb3.9/13, Error ellipse: s-maj=21.1km s-min=11.4km az=166.4*
*IDC **31** 01:17:43.4±1.2, 1°.30N×98°.82E, h89km±7km, mb3.6/13, mb1 3.7/14, mb1mx3.5/53, mbtmp4.0/14, MS3.4/1, Ms1 3.4/1, ms1mx2.6/26, Error ellipse: s-maj=20.9km s-min=12.4km az=75.0*
ISC 31 01:17:43.4±1.0, 1°.3N±0°.1×98°.8E±0°.2, h90km, n17, σ0°.89/19, mb3.9/13, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PSI	**Prapat**	**1.46**	**3**	P	**Pn**	**01 18 09.2**	**+0.3**
	10nm,0.3s,baz=159,slow=9.7,SNR=22						
PSI				S	**Sn**	**01 18 25.9**	**-2.2**
	11nm,0.3s,baz=23,slow=15,SNR=13						
PSI				LR	LR	01 18 59.7	
	comp=Z,87nm,18.1s,baz=78,slow=55						
CMAR	**Chiang Mai Arr**	**17.02**	**0**	P	**Pn**	**01 21 36.2**	**+0.2**
	0.8nm,0.3s,baz=187,slow=12,SNR=6.8						
WRA	**Warramunga Arr**	**40.72**	**123**	P	**P**	**01 25 14.9**	**-0.8**
	1.9nm,0.4s,baz=302,slow=9.0,SNR=18						
ASAR	**Alice Springs**	**42.18**	**128**	P	**P**	**01 25 26.9**	**-0.7**
	0.7nm,0.5s,baz=297,slow=7.7,SNR=7.3						
KSRS	**Korea Array**	**44.83**	**33**	P	**P**	**01 25 48.6**	**+0.1**
	2.3nm,0.7s,baz=219,slow=8.3,SNR=8.0						
SONM	**Songino Array**	**46.78**	**7**	P	**P**	**01 26 05.4**	**+1.4**
	0.3nm,0.3s,baz=193,slow=9.6,SNR=3.0						
MKAR	**Makanchi Array**	**47.53**	**345**	P	**P**	**01 26 10.3**	**+0.5**
	1.2nm,0.5s,baz=158,slow=8.6,SNR=17						
MKAR				pP	**pP**	**01 26 32.6**	**+1.1**
	0.4nm,0.5s,baz=160,slow=8.4,SNR=2.9						
USRK	**Ussuriysk Ar.**	**51.83**	**30**	P	**P**	**01 26 43.3**	**+1.0**
	2.3nm,0.8s,baz=237,slow=4.3,SNR=4.5						
KURBB	**Kurchatov Arra**	**52.05**	**344**	P	**P**	**01 26 44.4**	**+0.5**
	0.6nm,0.5s,baz=165,slow=7.2,SNR=8.8						
KURBB				pP	**pP**	**01 27 06.2**	**+0.3**
	0.7nm,0.7s,baz=162,slow=7.3,SNR=4.2						
GEYT	**Alibeck**	**52.17**	**319**	P	**P**	**01 26 43.9**	**-1.2**
	0.8nm,0.6s,baz=149,slow=3.4,SNR=2.5						
ZALV	**Zalesovo Beam**	**53.71**	**350**	P	**P**	**01 26 56.2**	**+0.2**
	2.6nm,0.5s,baz=167,slow=7.4,SNR=11						
ZALV				pP	**pP**	**01 27 18.1**	**0.0**
	1.4nm,0.5s,baz=180,slow=4.9,SNR=2.4						
BVAR	**Borovoye Array**	**56.68**	**340**	P	**P**	**01 27 17.3**	**-0.1**
	0.5nm,0.5s,baz=152,slow=10,SNR=5.5						
BRTR	**Keskin Array B**	**70.24**	**312**	P	**P**	**01 28 46.9**	**-0.4**
	0.4nm,0.7s,baz=118,slow=5.8,SNR=3.1						
OBN	**Obninsk**	**73.37**	**328**	LR	LR	02 04 13.0	
	comp=Z,20nm,18.1s,baz=271,slow=38						
FINES	**FINESS Array B**	**80.64**	**332**	P	**P**	**01 29 46.6**	**+0.4**
	0.4nm,0.5s,baz=122,slow=1.8,SNR=3.9						
ARCES	**ARCESS Array B**	**82.97**	**340**	P	**P**	**01 29 58.1**	**-0.2**
	1.2nm,0.8s,baz=105,slow=6.6,SNR=5.2						
H09W1	**TRISTAN DA CUNI**	**07.61**	**231**	T	T	03 30 17.3	
	SNR=4.7						

*ISCJB **31** 01:19:08.6±0.8, 10°.26N±0°.03×62°.31W±0°.02, h13km±5km, Error ellipse: s-maj=6.2km s-min=3.0km az=151.1*
*FUNV **31** 01:19:08.5, 10°.24N×62°.24W, h2km, MW3.4*
*TRN **31** 01:19:09.2, 10°.33N×62°.25W, h3km, MD4.0*
ISC 31 01:19:07.7±1.2, 10°.20N±0°.04×62°.28W±0°.03, h4km±10km, n37, σ0°.94/50, 1C, Near coast of Venezuela

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUIV	**Guiria**	**0.45**	**7**	*e*P	**Pg**	**01 19 16.5**	**+0.2**
GUIV				*e*S

CPBX				*e*S	Sg	01 42 41.1	-0.5
CPBX				AML	AML	01 42 41.9	
	comp=N,16μm,0.1s						
CPBX			⇓	*e*		01 42 41.9	
CPBX			⇑	*e*		01 42 42.7	
CPBX				AML	AML	01 42 42.7	
	comp=N,8μm,0.1s						
CPBX				AML	AML	01 42 43.3	
	comp=E,10μm,0.1s						
CPBX				*e*		01 42 43.3	
MBIG	**Mexicali**	**0.09**	**92**	*e*P	**Pg**	**01 42 40.3**	**+0.5**
MBIG				*e*S	**Sg**	**01 42 42.4**	**+0.2**
MBIG	**Mexicali**	**0.09**	**92**⇑	*e*P	**Pg**	**01 42 40.5**	**+0.7**
DREC	**Desert Rsrch C**	**0.41**	**343**	*e*P	**Pn**	**01 42 46.6**	**-0.7**
WESC	**Westside Schoo**	**0.50**	**314**⇓	*e*P	**Pn**	**01 42 47.9**	**-0.7**
IKP	**In-Ko-Pah, Jac**	**0.72**	**289**⇑	*e*P	**Pg**	**01 42 50.9**	**+0.4**
ECBX	**El Chinero**	**0.96**	**167**⇓	*e*P	**Pb**	**01 42 54.4**	**0.0**
ECBX				*e*S	**Sb**	**01 43 06.6**	**-0.2**
ECBX				AML	AML	01 43 07.2	
	comp=E,195nm,0.2s						
CBX	**Cerro Bola**	**1.16**	**266**⇓	*e*P	**Pb**	**01 42 57.9**	**+0.1**
TJIG	**Tijuana**	**1.16**	**271**	*e*P	**Pb**	**01 42 58.0**	**+0.2**
TJIG				*e*S	**Sb**	**01 43 12.8**	**+0.3**
BAR	**Barrett**	**1.19**	**283**⇓	*e*P	**Pb**	**01 42 59.0**	**+0.7**
SPIG	**San Pedro Mart**	**1.37**	**186**	*e*P	**Pn**	**01 43 00.4**	**-0.4**
SPIG				*e*S	**Sn**	**01 43 18.8**	**+0.1**
SPIG	**San Pedro Mart**	**1.37**	**186**⇑	*e*P	**Pn**	**01 43 00.4**	**-0.4**
SPX	**San Pedro Mart**	**1.37**	**186**⇑	*e*P	**Pn**	**01 43 00.4**	**-0.4**

*ISK **31** 01:45:15.4, 39°.10N×29°.10E, h5km, MD2.8*
*ISCJB **31** 01:45:16.4±0.5, 39°.12N±0°.03×29°.08E±0°.03, h5km±.6km,*
Error ellipse: s-maj=5.9km s-min=4.4km az=163.8
*DDA **31** 01:45:16.5, 39°.11N×29°.07E, h8km, Md3.0*
*CSEM **31** 01:45:16.5±0.1, 39°.11N×29°.07E, h8km, MD3.0, Error*
ellipse: s-maj=3.5km s-min=3.3km az=128.0
ISC 31 01:45:16.4±1.0, 39°.11N±0°.02×29°.08E±0°.02, h16km±9km, n33, σ0s46/46, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.29**	**257**	P	**Pg**	**01 45 22.9**	**+0.1**
DEMI				S	**Sg**	**01 45 27.0**	**0.0**
DEMI	**Demirci**	**0.29**	**257**	*i* P	**Pg**	**01 45 22.9**	**+0.1**
DEMI				*i* S	**Sg**	**01 45 27.0**	**0.0**
GDZ	**Gediz**	**0.31**	**94**	P	**Pg**	**01 45 23.3**	**+0.2**
GDZ				S	**Sg**	**01 45 27.8**	**+0.1**
GDZ	**Gediz**	**0.31**	**94**	*i* P	**Pg**	**01 45 23.3**	**+0.2**
GDZ				*i* S	**Sg**	**01 45 27.8**	**+0.1**
TVSB	**Tavsanli**	**0.45**	**41**	*e*PG	**Pg**	**01 45 24.9**	**-0.6**
TVSB				*e*SG	**Sg**	**01 45 31.4**	**-0.3**
TVSB	**Tavsanli**	**0.45**	**41**	*e*Pg	**Pg**	**01 45 24.9**	**-0.6**
TVSB				*e*Sg	**Sg**	**01 45 31.4**	**-0.3**
KULA	**Kula-Manisa**	**0.68**	**209**	*e*PG	**Pg**	**01 45 28.7**	**-1.1**
KULA	**Kula-Manisa**	**0.68**	**209**	*e*Pg	**Pg**	**01 45 28.7**	**-1.1**
KHAL	**Karahalli**	**0.81**	**156**	P	**Pb**	**01 45 32.6**	**+0.5**
KHAL				S	**Sg**	**01 45 42.9**	**+0.1**
KHAL	**Karahalli**	**0.81**	**156**	*i* P	**Pb**	**01 45 32.6**	**+0.5**
KHAL				*i* S	**Sg**	**01 45 42.9**	**+0.1**
ORLT	**Orhaneli**	**0.94**	**351**	*e*PG	**Pb**	**01 45 34.0**	**-0.3**
ORLT	**Orhaneli**	**0.94**	**351**	*e*Pg	**Pb**	**01 45 34.1**	**-0.3**
BALB	**Balikesir**	**1.07**	**300**	*e*PN	**Pb**	**01 45 36.7**	**+0.2**
BALB	**Balikesir**	**1.07**	**300**	*e*Pn	**Pb**	**01 45 36.7**	**+0.2**
IGD	**Bursa**	**1.16**	**5**	*i* P	**Pg**	**01 45 38.6**	**-0.1**
IGD				*i* S	**Sb**	**01 45 52.5**	**-0.2**
IZI	**Iznik**	**1.26**	**14**	*e*PN	**Pb**	**01 45 39.9**	**+0.1**
IZI	**Iznik**	**1.26**	**14**	*e*Pn	**Pb**	**01 45 39.9**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.27**	**353**	*e*PN	**Pg**	**01 45 40.4**	**-0.4**
MDNY	**Mudanya-Bursa**	**1.27**	**353**	*e*Pn	**Pg**	**01 45 40.4**	**-0.4**
KCTX	**Karacabey (Bur**	**1.28**	**334**	*e*PN	**Pg**	**01 45 40.8**	**-0.3**
KCTX	**Karacabey (Bur**	**1.28**	**334**	*e*Pn	**Pg**	**01 45 40.8**	**-0.3**
BALY	**Balya**	**1.29**	**299**	P	**Pg**	**01 45 41.8**	**+0.4**
BALY				S	**Sg**	**01 45 59.0**	**+0.7**
BALY	**Balya**	**1.29**	**299**	*i* P	**Pg**	**01 45 41.8**	**+0.4**
BALY				*i* S	**Sg**	**01 45 59.0**	**+0.7**
BORA	**Eskisehir**	**1.31**	**54**	P	**Pg**	**01 45 41.7**	**0.0**
BORA				S	**Sg**	**01 45 59.8**	**+1.0**
BORA	**Eskisehir**	**1.31**	**54**	*i* P	**Pg**	**01 45 41.7**	**0.0**
BORA				*i* S	**Sg**	**01 45 59.9**	**+1.0**
ADVT	**Abdulvahap**	**1.41**	**21**	*e*PN	**Pb**	**01 45 42.5**	**+0.1**
ADVT	**Abdulvahap**	**1.41**	**21**	*e*Pn	**Pb**	**01 45 42.5**	**+0.1**
ARMT	**Armutlu**	**1.46**	**353**	*e*PN	**Pb**	**01 45 43.3**	**+0.1**
ARMT	**Armutlu**	**1.46**	**353**	*e*Pn	**Pb**	**01 45 43.3**	**+0.1**
EDC	**Edincik**	**1.55**	**323**	*e*PN	**Pb**	**01 45 44.4**	**-0.3**
EDC	**Edincik**	**1.55**	**323**	*e*Pn	**Pb**	**01 45 44.4**	**-0.3**
GULT	**Gulveren**	**1.72**	**40**	*e*PN	**Pb**	**01 45 47.3**	**-0.4**
GULT	**Gulveren**	**1.72**	**40**	*e*Pn	**Pb**	**01 45 47.3**	**-0.4**

*ISK **31** 01:54:38.4, 39°.11N×29°.11E, h6km, MD2.6*
*ISCJB **31** 01:54:39.2±0.5, 39°.11N±0°.03×29°.09E±0°.04, h8km±5km,*
Error ellipse: s-maj=5.9km s-min=4.3km az=149.3
*CSEM **31** 01:54:39.2±0.1, 39°.12N×29°.09E, h8km, MD2.9, Error*
ellipse: s-maj=3.1km s-min=2.6km az=123.0
*DDA **31** 01:54:39.0, 39°.13N×29°.09E, h7km, Md2.9*
ISC 31 01:54:38.8±0.9, 39°.09N±0°.03×29°.13E±0°.02, h15km±8km, n20, σ0s39/34, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.27**	**89**	P	**Pb**	**01 54 45.6**	**+0.1**
GDZ				S	**Sb**	**01 54 49.8**	**-0.2**
GDZ	**Gediz**	**0.27**	**89**	*i* P	**Pb**	**01 54 45.6**	**+0.1**
GDZ				*i* S	**Sb**	**01 54 49.8**	**-0.2**
DEMI	**Demirci**	**0.32**	**263**	P	**Pb**	**01 54 46.0**	**-0.3**
DEMI				S	**Sg**	**01 54 50.3**	**+0.1**
DEMI	**Demirci**	**0.32**	**263**	*i* P	**Pb**	**01 54 46.0**	**-0.3**
DEMI				*i* S	**Sg**	**01 54 50.4**	**+0.1**
TVSB	**Tavsanli**	**0.45**	**35**	*e*PG	**Pg**	**01 54 47.4**	**-0.3**
TVSB				*e*SG	**Sg**	**01 54 53.6**	**-0.2**
TVSB	**Tavsanli**	**0.45**	**35**	*e*Pg	**Pg**	**01 54 47.4**	**-0.3**
TVSB				*e*Sg	**Sg**	**01 54 53.6**	**-0.2**
KULA	**Kula-Manisa**	**0.68**	**213**	*e*PG	**Pg**	**01 54 52.1**	**+0.1**
KULA				*e*SG	**Sb**	**01 55 02.1**	**+0.6**
KULA	**Kula-Manisa**	**0.68**	**213**	*e*Pg	**Pg**	**01 54 52.1**	**+0.1**
KULA				*e*Sg	**Sb**	**01 55 02.1**	**+0.6**
KHAL	**Karahalli**	**0.77**	**158**	P	**Pn**	**01 54 55.2**	**0.0**
KHAL				S	**Sn**	**01 55 05.6**	**-0.9**
KHAL	**Karahalli**	**0.77**	**158**	*i* P	**Pn**	**01 54 55.1**	**0.0**
KHAL				*i* S	**Sn**	**01 55 05.6**	**-0.9**
BALB	**Balikesir**	**1.11**	**300**	*e*PN	**Pn**	**01 54 59.8**	**0.0**
BALB				*e*SN	**Sn**	**01 55 15.1**	**+0.2**
BALB	**Balikesir**	**1.11**	**300**	*e*Pn	**Pn**	**01 54 59.8**	**0.0**
BALB				*e*Sn	**Sn**	**01 55 15.1**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.29**	**352**	*e*PN	**Pg**	**01 55 03.5**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.29**	**352**	*e*Pn	**Pg**	**01 55 03.5**	**-0.2**
BORA	**Eskisehir**	**1.30**	**52**	P	**Pg**	**01 55 03.8**	**+0.1**
BORA				S	**Sg**	**01 55 21.5**	**+0.9**
BORA	**Eskisehir**	**1.30**	**52**	*i* P	**Pg**	**01 55 03.8**	**+0.1**
BORA				*i* S	**Sg**	**01 55 21.6**	**+0.9**
KCTX	**Karacabey (Bur**	**1.32**	**333**	*e*PN	**Pg**	**01 55 04.0**	**-0.2**
KCTX	**Karacabey (Bur**	**1.32**	**333**	*e*Pn	**Pg**	**01 55 04.0**	**-0.2**
ARMT	**Armutlu**	**1.49**	**352**	*e*PN	**Pb**	**01 55 06.3**	**+0.1**
ARMT	**Armutlu**	**1.49**	**352**	*e*Pn	**Pb**	**01 55 06.3**	**+0.1**

WEL 31 02:03:08.0±0.4, 37°.45S×176°.39E, h188km±3km, ML3.5/12, 2C-1D, Error ellipse: s-maj=4.9km s-min=3.9km az=90.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HAZ	**Te Kaha**	**1.15**	**106**	PN	Pn	02 03 37.7	+0.1
HAZ				SN	Sn	02 04 00.4	-0.1
RTZ	**Ruatahuna**	**1.26**	**158**	PN	Pn	02 03 38.7	+0.1
RTZ				SN	Sn	02 04 02.2	-0.2
MWZ	**Matawai**	**1.26**	**135**	PN	Pn	02 03 38.6	0.0
RAGZ	**Rawiri**	**1.32**	**142**	PN	Pn	02 03 39.5	+0.4
PKGZ	**Pakihiroa**	**1.41**	**109**	PN	Pn	02 03 40.0	+0.1
SNGZ	**Shannon Statio**	**1.53**	**151**	PN	Pn	02 03 40.9	0.0
MXZ	**Matakaoa Point**	**1.53**	**95**	PN	Pn	02 03 40.9	+0.1
PUZ	**Puketiti**	**1.61**	**113**	PN	Pn	02 03 41.0	-0.7
WMGZ	**Waiomatatini S**	**1.65**	**104**	PN	Pn	02 03 42.1	+0.1
WMGZ				SN	Sn	02 04 08.0	-0.4
RIGZ	**Rimuhau**	**1.66**	**140**	PN	Pn	02 03 42.1	0.0
NMHZ	**Naumai**	**1.68**	**169**	PN	Pn	02 03 42.9	+0.5
BKZ	**Black Stump Fm**	**1.72**	**177**	PN	Pn	02 03 42.4	-0.3
WHHZ	**Waihua**	**1.76**	**158**	PN	Pn	02 03 42.8	-0.2
CNGZ	**Carnagh Statio**	**1.77**	**126**	⇓PN	Pn	02 03 43.8	+0.6
KNZ	**Kokohu**	**1.87**	**148**	PN	Pn	02 03 43.7	-0.5
TUVZ	**Tukino**	**1.91**	**197**	PN	Pn	02 03 44.6	-0.1
FWVZ	**Far West T-bar**	**1.92**	**200**	PN	Pn	02 03 45.6	+0.6
KWHZ	**Kaweka Forest**	**1.97**	**179**	PN	Pn	02 03 45.0	-0.3
WNVZ	**Wahianoa**	**1.98**	**198**	⇑PN	Pn	02 03 45.2	-0.3
MCHZ	**McNeill Hill**	**2.01**	**173**	PN	Pn	02 03 45.5	-0.1
BHHZ	**Black Hill Sta**	**2.05**	**187**	PN	Pn	02 03 45.4	-0.8
MHGZ	**Mahia Peninsul**	**2.08**	**145**	PN	Pn	02 03 46.0	-0.4
KRHZ	**Kereru**	**2.19**	**180**	PN	Pn	02 03 46.7	-1.0
CKHZ	**Cape Kidnapper**	**2.27**	**166**	PN	Pn	02 03 47.9	-0.7
KAHZ	**Kahuranaki**	**2.37**	**171**	⇑PN	Pn	02 03 48.9	-0.8
PNHZ	**Pukenui**	**2.47**	**183**	PN	Pn	02 03 49.5	-1.2
PXZ	**Pawanui**	**2.61**	**172**	PN	Pn	02 03 50.9	-1.4
TSZ	**Takapari Road**	**2.63**	**187**	PN	Pn	02 03 51.1	-1.5
DVHZ	**Dannevirke**	**2.85**	**183**	PN	Pn	02 03 53.2	-2.0
POWZ	**Post Office Ro**	**2.98**	**189**	PN	Pn	02 03 54.7	-2.0
ANWZ	**Angora Road**	**3.01**	**179**	PN	Pn	02 03 55.3	-1.7
PRWZ	**Pori Road**	**3.12**	**186**	PN	Pn	02 03 56.5	-1.9
BFZ	**Birch Farm**	**3.23**	**182**	PN	Pn	02 03 57.4	-2.4
MRZ	**Mangatainoka R**	**3.27**	**191**	PN	Pn	02 03 57.3	-3.0
TIWZ	**Tintock**	**3.35**	**187**	PN	Pn	02 03 58.6	-2.6
OGWZ	**Otaki Gorge**	**3.49**	**195**	PN	Pn	02 04 00.2	-2.8
HOWZ	**Holdsworth Sta**	**3.51**	**191**	PN	Pn	02 04 00.1	-3.1
KIW	**Kapiti Island**	**3.60**	**198**	PN	Pn	02 04 01.0	-3.2
TMWZ	**Te Maipa**	**3.67**	**186**	PN	Pn	02 04 02.4	-2.9
DUWZ	**D'Urville Isla**	**3.86**	**209**	PN	Pn	02 04 04.1	-3.4
TRWZ	**Traveller**	**3.98**	**188**	AML	AML	02 04 54.8	
PAWZ	**Paruwai Farm**	**4.00**	**190**	AML	AML	02 04 55.2	
TCW	**Tory Channel**	**4.10**	**203**	PN	Pn	02 04 07.2	-3.3
PLWZ	**Palliser**	**4.21**	**192**	PN	Pn	02 04 07.9	-4.1
TUWZ	**Tuamarina**	**4.40**	**205**	PN	Pn	02 04 10.6	-3.8
DSZ	**Denniston Nort**	**5.56**	**218**	PN	Pn	02 04 25.1	-4.3

*ISK **31** 02:05:35.9, 39°.13N×28°.97E, h7km, MD2.9*
*ISCJB **31** 02:05:36.3±0.5, 39°.16N±0°.02×28°.97E±0°.03, h1km±5km,*
Error ellipse: s-maj=4.2km s-min=3.2km az=160.4
*DDA **31** 02:05:36.7, 39°.16N×28°.98E, h8km, Md3.3*
*CSEM **31** 02:05:36.8±0.1, 39°.16N×28°.97E, h5km, MD3.3, Error*
ellipse: s-maj=2.2km s-min=2.0km az=146.0
ISC 31 02:05:37.0±0.9, 39°.15N±0°.02×28°.97E±0°.02, h11km±8km, n55, σ0s51/78, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.23**	**241**	P	**Pg**	**02 05 41.8**	**+0.1**
DEMI				S	**Sg**	**02 05 45.0**	**0.0**
DEMI	**Demirci**	**0.23**	**241**	*i* P	**Pg**	**02 05 41.8**	**+0.1**
DEMI				*i* S	**Sg**	**02 05 45.0**	**0.0**
GDZ	**Gediz**	**0.40**	**99**	P	**Pg**	**02 05 45.0**	**0.0**
GDZ				S	**Sg**	**02 05 50.6**	**+0.2**
GDZ	**Gediz**	**0.40**	**99**	*i* P	**Pg**	**02 05 45.0**	**0.0**
GDZ				*i* S	**Sg**	**02 05 50.6**	**+0.2**
TVSB	**Tavsanli**	**0.48**	**52**	*e*PG	**Pg**	**02 05 46.6**	**+0.1**
TVSB				*e*SG	**Sg**	**02 05 53.1**	**+0.1**
TVSB	**Tavsanli**	**0.48**	**52**	*e*Pg	**Pg**	**02 05 46.6**	**+0.1**
TVSB				*e*Sg	**Sg**	**02 05 53.1**	**+0.1**
KULA	**Kula-Manisa**	**0.68**	**201**	*e*PG	**Pg**	**02 05 49.5**	**-0.7**
KULA				*e*SG	**Sg**	**02 05 58.4**	**-0.7**
KULA	**Kula-Manisa**	**0.68**	**201**	*e*Pg	**Pg**	**02 05 49.5**	**-0.7**
KULA				*e*Sg	**Sg**	**02 05 58.4**	**-0.7**
KHAL	**Karahalli**	**0.88**	**152**	P	**Pb**	**02 05 54.4**	**0.0**
KHAL				S	**Sg**	**02 06 04.8**	**-0.7**
KHAL	**Karahalli**	**0.88**	**152**	*i* P	**Pb**	**02 05 54.4**	**0.0**
KHAL				*i* S	**Sg**	**02 06 04.8**	**-0.7**
ORLT	**Orhaneli**	**0.90**	**356**	*e*PG	**Pg**	**02 05 53.1**	**-1.1**
ORLT	**Orhaneli**	**0.90**	**356**	*e*Pg	**Pg**	**02 05 53.2**	**-1.1**
KHL	**Karahalli**	**0.93**	**152**	*e*PG	**Pg**	**02 05 53.8**	**-1.2**
KHL				*e*SG	**Sg**	**02 06 07.1**	**0.0**
KHL	**Karahalli**	**0.93**	**152**	*e*Pg	**Pg**	**02 05 53.8**	**-1.2**
KHL				*e*Sg	**Sg**	**02 06 07.1**	**0.0**
AKHS	**Akhisar**	**0.94**	**254**	P	**Pb**	**02 05 55.4**	**+0.1**
AKHS				S	**Sb**	**02 06 08.0**	**+0.2**
AKHS	**Akhisar**	**0.94**	**254**	*i* P	**Pb**	**02 05 55.4**	**+0.1**
AKHS				*i* S	**Sb**	**02 06 08.0**	**+0.2**
AKS	**Akhisar**	**0.94**	**254**	*e*PG	**Pg**	**02 05 54.6**	**-0.5**
AKS	**Akhisar**	**0.94**	**254**	*e*Pg	**Pg**	**02 05 54.6**	**-0.5**
BALB	**Balikesir**	**0.98**	**300**	*e*PG	**Pg**	**02 05 55.5**	**-0.2**
BALB	**Balikesir**	**0.98**	**300**	*e*Pg	**Pg**	**02 05 55.6**	**-0.2**
IGD	**Bursa**	**1.13**	**9**	*i* P	**Pg**	**02 05 57.9**	**-0.8**
IGD				*i* S	**Sg**	**02 06 12.1**	**-1.2**
BALY	**Balya**	**1.20**	**300**	P	**Pn**	**02 06 00.6**	**+0.8**
BALY				S	**Sn**	**02 06 16.4**	**+0.3**
BALY	**Balya**	**1.20**	**300**	*i* P	**Pn**	**02 06 00.7**	**+0.8**
BALY				*i* S	**Sn**	**02 06 16.4**	**+0.3**
KCTX	**Karacabey (Bur**	**1.21**	**337**	*e*PN	**Pg**	**02 05 59.7**	**-0.6**
KCTX	**Karacabey (Bur**	**1.21**	**337**	*e*Pn	**Pg**	**02 05 59.7**	**-0.6**
MDNY	**Mudanya-Bursa**	**1.22**	**357**	*e*PN	**Pg**	**02 05 59.8**	**-0.6**
MDNY	**Mudanya-Bursa**	**1.22**	**357**	*e*Pn	**Pg**	**02 05 59.8**	**-0.6**
IZI	**Iznik**	**1.25**	**18**	*e*PN	**Pn**	**02 06 00.9**	**+0.4**
IZI	**Iznik**	**1.25**	**18**	*e*Pn	**Pn**	**02 06 00.9**	**+0.4**
CAVI	**Cavuskoy**	**1.25**	**32**	*e*PN	**Pg**	**02 06 00.3**	**-0.6**
CAVI	**Cavuskoy**	**1.25**	**32**	*e*Pn	**Pg**	**02 06 00.4**	**-0.6**
GONE	**Gonen-Balikesi**	**1.34**	**312**	*e*PN	**Pn**	**02 06 01.6**	**0.0**
GONE	**Gonen-Balikesi**	**1.34**	**312**	*e*Pn	**Pn**	**02 06 01.6**	**0.0**
BORA	**Eskisehir**	**1.36**	**57**	P	**Pn**	**02 06 02.4**	**+0.3**
BORA				S	**Sb**	**02 06 20.4**	**+0.4**
BORA	**Eskisehir**	**1.36**	**57**	*i* P	**Pn**	**02 06 02.4**	**+0.3**
BORA				*i* S	**Sb**	**02 06 20.4**	**+0.4**
ADVT	**Abdulvahap**	**1.41**	**25**	*e*PN	**Pn**	**02 06 02.9**	**+0.2**
ADVT	**Abdulvahap**	**1.41**	**25**	*e*Pn	**Pn**	**02 06 02.9**	**+0.2**
ARMT	**Armutlu**	**1.42**	**357**	*e*PN	**Pn**	**02 06 03.0**	**+0.2**
ARMT	**Armutlu**	**1.42**	**357**	*e*Pn	**Pn**	**02 06 03.0**	**+0.2**
EDC	**Edincik**	**1.47**	**325**	*e*PN	**Pn**	**02 06 03.5**	**0.0**
EDC	**Edincik**	**1.47**	**325**	*e*Pn	**Pn**	**02 06 03.5**	**0.0**
ESKT	**Eskisehir**	**1.50**	**75**	*i* P	**Pg**	**02 06 05.4**	**-0.5**
ESKT				*i* S	**Sg**	**02 06 24.9**	**-0.5**
SEYT	**Eskypehyr**	**1.50**	**75**	P	**Pg**	**02 06 05.4**	**-0.5**
SEYT				S	**Sg**	**02 06 24.9**	**-0.5**
AYDN	**Tasoluk**	**1.72**	**210**	P	**Pb**	**02 06 08.7**	**+0.1**
AYDN				S	**Sb**	**02 06 30.9**	**+0.7**
AYDN	**Tasoluk**	**1.72**	**210**	*i* P	**Pb**	**02 06 08.7**	**+0.1**
AYDN				*i* S	**Sb**	**02 06 30.9**	**+0.7**
GULT	**Gulveren**	**1.75**	**42**	*e*PN	**Pn**	**02 06 07.9**	**+0.5**
GULT	**Gulveren**	**1.75**	**42**	*e*Pn	**Pn**	**02 06 07.9**	**+0.5**
ISK	**Istanbul-Kandi**	**1.91**	**2**	*e*PN	**Pn**	**02 06 09.9**	**+0.3**
ISK	**Istanbul-Kandi**	**1.91**	**2**	*e*Pn	**Pn**	**02 06 09.9**	**+0.3**
SVRH	**Sivrihisar-ESK**	**2.00**	**81**	*e*PN	**Pn**	**02 06 11.1**	**+0.2**
SVRH	**Sivrihisar-ESK**	**2.00**	**81**	*e*Pn	**Pn**	**02 06 11.1**	**+0.2**
SILT	**Sile**	**2.07**	**14**	*e*PN	**Pn**	**02 06 12.0**	**+0.3**
SILT	**Sile**	**2.07**	**14**	*e*Pn	**Pn**	**02 06 12.0**	**+0.3**
MDUB	**Mudurnu**	**2.16**	**52**	*e*PN	**Pn**	**02 06 13.6**	**+0.4**
MDUB	**Mudurnu**	**2.16**	**52**	*e*Pn	**Pn**	**02 06 13.6**	**+0.4**

*IDC **31** 02:18:58.1±10.0, 31°.71S×179°.52W, h186km±72km,*
mb4.1/2, mb1 4.2/3, mb1mx3.5/26, mbtmp4.5/3, Error
ellipse: s-maj=92.2km s-min=32.6km az=45.0
ISC 31 02:19:04.9±2.1, 31°.87S±0°.10×179°.5E±0°.3, h200km, n15, σ2s44/20, Kermadec Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MXZ	**Matakaoa Point**	**5.75**	**189**	*e*PN	**Pn**	**02 20 30.7**	**+1.8**
MXZ				SN	Sn	02 21 38.6	+3.2
PUZ	**Puketiti**	**6.26**	**189**	SN	**Sn**	**02 21 48.8**	**+1.5**
TWGZ	**Tauwhareparae**	**6.41**	**191**	SN	**Sn**	**02 21 53.4**	**+2.8**
URZ	**Urewera**	**6.66**	**196**	P	**Pn**	**02 20 40.4**	**-0.1**
	2.3nm,0.3s,baz=290,slow=4.5,SNR=9.4						
URZ				S	**Sn**	**02 21 58.7**	**+2.2**
	10nm,0.3s,baz=78,slow=22,SNR=13						
ARHZ	**Aropaoanui**	**7.64**	**195**	SN	**Sn**	**02 22 22.3**	**+2.6**
PXZ	**Pawanui**	**8.41**	**194**	SN	**Sn**	**02 22 35.5**	**-2.3**
PXZ				SN	**Sn**	**02 22 35.5**	**-2.3**
PNHZ	**Pukenui**	**8.45**	**197**	SN	**Sn**	**02 22 38.2**	**-0.6**
DVHZ	**Dannevirke**	**8.82**	**197**	SN	**Sn**	**02 22 45.9**	**-1.7**
DVHZ				SN	**Sn**	**02 22 46.8**	**-0.9**
POWZ	**Post Office Ro**	**9.01**	**198**	SN	**Sn**	**02 22 54.1**	**+1.9**
TIWZ	**Tintock**	**9.34**	**197**	SN	**Sn**	**02 22 59.1**	**-1.0**
HOWZ	**Holdsworth Sta**	**9.55**	**198**	SN	**Sn**	**02 23 00.6**	**-4.4**
TCW	**Tory Channel**	**10.21**	**203**	SN	**Sn**	**02 23 20.2**	**-0.4**
TCW				SN	**S**	**02 23 20.3**	**-0.7**
ASAR	**Alice Springs**	**40.89**	**270**	P	**P**	**02 26 29.4**	**+1.7**
	2.5nm,0.5s,baz=106,slow=7.5,SNR=30						
WRA	**Warramunga Arr**	**42.02**	**275**	P	**P**	**02 26 38.1**	**+1.3**
	5.5nm,0.4s,baz=112,slow=8.0,SNR=115						
TORD	**Torodi Ar. Bea**	**161.25**	**187**	PKPab	**PKPab**	**02 39 21.9**	**-4.7**
	0.2nm,0.5s,baz=173,slow=3.6,SNR=6.0						

*IDC **31** 02:22:23.8±1.4, 36°.74N×144°.04E, h0km, mb3.5/3,*
mb1 3.8/4, mb1mx3.4/36, mbtmp3.5/4, ML3.5/1, Error
ellipse: s-maj=44.7km s-min=30.1km az=110.0
*ISCJB **31** 02:22:27.5±0.9, 36°.94N±0°.05×143°.78E±0°.06, h33km,*
mb3.5/3, Error ellipse: s-maj=8.0km s-min=6.1km
az=141.5
*JMA **31** 02:22:28.7±0.4, 36°.92N×143°.70E, h57km, M3.8*
ISC 31 02:22:28.5±1.2, 36°.97N±0°.06×143°.88E±0°.08, h35km, n17, σ1s72/30, mb3.6/3, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**2.43**	**280**	P	**Pn**	**02 23 05.1**	**-0.6**
JFK				S	**Sn**	**02 23 32.9**	**-1.4**
ONAJ	**Iwakimizuishiy**	**2.47**	**274**	P	**Pn**	**02 23 05.8**	**-0.4**
ONAJ				*e*S	**Sn**	**02 23 33.5**	**-1.7**
JHO	**Hitachi**	**2.68**	**263**	P	**Pn**	**02 23 08.7**	**-0.4**
JHO				*e*S	**Sn**	**02 23 38.2**	**-2.1**
JFT	**Otama**	**2.88**	**282**	P	**Pn**	**02 23 12.3**	**+0.4**
JFT				*e*S	**Sn**	**02 23 45.1**	**-0.2**
JMK	**Ichinoseki**	**2.89**	**314**	P	**Pn**	**02 23 11.9**	**-0.1**
JMK				*e*S	**Sn**	**02 23 44.7**	**-0.8**
JOM	**Ohasama**	**3.23**	**322**	P	**Pn**	**02 23 17.1**	**+0.5**
JOM				S	**Sn**	**02 23 52.8**	**-1.0**
JYK	**Kaneyama**	**3.40**	**306**	P	**Pn**	**02 23 19.5**	**+0.5**
JYK				*e*S	**Sn**	**02 23 57.6**	**-0.4**
JAG	**Ashikaga**	**3.60**	**263**	P	**Pn**	**02 23 21.5**	**-0.2**
JAG				*e*S	**Sn**	**02 24 00.1**	**-2.9**
JRY	**Ryogami san**	**4.12**	**258**	P	**Pn**	**02 23 28.1**	**-0.8**
JRY				*e*S	**Sn**	**02 24 11.8**	**-4.1**
JOD2	**Odawara 2**	**4.23**	**248**	*e*S	**Sn**	**02 24 17.2**	**-1.5**
JYN	**Shimob**	**4.55**	**253**	P	**Pn**	**02 23 35.0**	**+0.1**
JYN				*e*S	**Sn**	**02 24 25.0**	**-1.7**
MJAR	**Matsushiro Arr**	**4.57**	**266**	Pn	**Pn**	**02 23 36.0**	**+0.8**
	2.0nm,0.3s,baz=85,slow=14,SNR=7.2						
MJAR				Sn	**Sn**	**02 24 29.2**	**+2.2**
	1.2nm,0.3s,baz=129,slow=15,SNR=4.7						
MAT	**Matsushiro**	**4.57**	**266**	P	**Pn**	**02 23 36.4**	**+1.2**
MAT				S	**Sn**	**02 24 27.0**	**-0.1**
JCH	**Churui**	**5.66**	**356**	P	**Pn**	**02 23 49.0**	**-1.0**
JC

mb3.2/4, Error ellipse: s-maj=10.3km s-min=6.1km az=23.9.
*IDC **31** 03:07:45.8±1.4, 35°.92N×141°.22E, h0km, mb3.2/4, mb1 3.4/6, mb1mx3.3/51, mbtmp3.3/6, ML3.4/2, Error ellipse: s-maj=32.8km s-min=24.8km az=95.0*
*JMA **31** 03:07:47.8±0.1, 35°.71N×141°.25E, h37km±1km, M3.1*
ISC 31 03:07:47.3±1.0, 35°.71N±0°.05×141°.29E±0°.07, h25km, n19, σ0°.94/15, mb3.3/4, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	**Chosi**	**0.35**	**269**	P	**Pn**	**03 07 55.9**	**-0.8**
CHOJ				S	**Sn**	**03 08 02.1**	**-0.8**
JCN	**Nagara**	**0.93**	**252**	P	**Pb**	**03 08 05.1**	**+0.4**
JYT	**Yasato**	**1.02**	**301**	P	**Pb**	**03 08 05.6**	**-0.7**
BSO2	**Boso 2**	**1.05**	**205**	S	**Sn**	**03 08 18.8**	**-1.0**
JHO	**Hitachi**	**1.07**	**327**	P	**Pb**	**03 08 06.7**	**-0.4**
BSO1	**Boso 1**	**1.08**	**193**	P	**Pb**	**03 08 06.8**	**-0.2**
BSO3	**Boso 3**	**1.11**	**215**	P	**Pb**	**03 08 07.0**	**-0.6**
MJAR	**Matsushiro Arr**	**2.62**	**289**	Pn	**Pn**	**03 08 29.3**	**+1.3**
	2.4nm,0.3s,baz=93,slow=8.8,SNR=13						
MJAR				Sn	**Sb**	**03 09 05.1**	**-0.3**
	2.1nm,0.3s,baz=119,slow=10,SNR=4.6						
ASAJ	**Asahikawa**	**8.46**	**6**	Pn	**Pn**	**03 09 46.5**	**-1.6**
	0.8nm,0.3s,baz=194,slow=21,SNR=2.5						
ASAJ				Sn	**Sn**	**03 11 23.3**	**+0.6**
	0.3nm,0.3s,baz=244,slow=29,SNR=2.0						
H11N2	**WAKE ISLAND Hy**	**27.59**	**118**	T	T	03 42 35.5	
	baz=311,slow=75,SNR=17						
H11N1	**WAKE ISLAND Hy**	**27.59**	**118**	T	T	03 42 31.8	
	baz=311,slow=75,SNR=17						
H11N3	**WAKE ISLAND Hy**	**27.60**	**118**	T	T	03 42 38.7	
	baz=311,slow=75,SNR=23						
H11S1	**WAKE ISLAND Hy**	**28.25**	**121**	T	T	03 43 24.5	
	baz=313,slow=75,SNR=14						
H11S3	**WAKE ISLAND Hy**	**28.25**	**121**	T	T	03 43 21.8	
	baz=313,slow=75,SNR=13						
H11S2	**WAKE ISLAND Hy**	**28.27**	**121**	T	T	03 43 28.6	
	baz=313,slow=75,SNR=8.7						
MKAR	**Makanchi Array**	**44.74**	**303**	P	**P**	**03 15 58.9**	**+0.5**
	0.2nm,0.6s,baz=101,slow=7.5,SNR=2.0						
KURBB	**Kurchatov Arra**	**46.74**	**309**	P	**P**	**03 16 13.9**	**-0.3**
	0.2nm,0.6s,baz=90,slow=7.7,SNR=2.3						
ILAR	**Eielson Array**	**50.67**	**32**	P	**P**	**03 16 45.6**	**+1.5**
	0.1nm,0.7s,baz=272,slow=6.7,SNR=1.6						
WRA	**Warramunga Arr**	**55.74**	**188**	P	P	03 17 25.8	+3.9
	0.2nm,0.4s,baz=4.4,slow=7.6,SNR=7.3						

IDC 31 03:10:02.7±1.6, 29°.87N×85°.10E, h0km, mb3.5/5, mb1 3.6/6, mb1mx3.3/52, mbtmp3.5/6, ML2.7/1, Error ellipse: s-maj=49.4km s-min=25.7km az=42.0, Xizang

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MKAR	**Makanchi Array**	**17.04**	**353**	P	Pn	03 14 00.4	-1.9
	0.0nm,0.3s,baz=169,slow=13,SNR=5.3						
KURBB	**Kurchatov Arra**	**21.31**	**348**	P	P	03 14 49.0	-1.8
	0.4nm,0.5s,baz=167,slow=10,SNR=4.8						
KSRS	**Korea Array**	**36.19**	**66**	P	P	03 17 07.8	+0.7
	1.6nm,0.3s,baz=261,slow=15,SNR=5.7						
AKASG	**Malin Array Be**	**46.19**	**313**	P	P	03 18 29.2	+0.1
	0.1nm,0.2s,baz=79,slow=7.8,SNR=2.6						
FINES	**FINESS Array B**	**49.50**	**327**	P	P	03 18 55.2	+0.6
	0.8nm,0.8s,baz=81,slow=8.7,SNR=2.5						
WRA	**Warramunga Arr**	**68.56**	**130**	P	P	03 21 06.1	-1.4
	0.5nm,0.6s,baz=320,slow=6.1,SNR=2.4						
TXAR	**Lajitas Array**	**120.53**	**9**	PKP	PKPdf	03 28 57.7	+0.8
	1.3nm,1.2s,baz=1.9,slow=2.7,SNR=1.6						

WEL 31 03:11:07.3±0.4, 38°.25S×175°.90E, h165km±3km, ML3.6/8, 12C-12D, Error ellipse: s-maj=2.6km s-min=2.4km az=0.0, North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MRHZ	**Matea Rd**	**0.71**	**145**	PN	Pn	03 11 31.6	0.0
MRHZ				SN	Sn	03 11 49.1	-1.2
MUGZ	**Murupara**	**0.72**	**109**	PN	Pn	03 11 31.6	0.0
TWVZ	**Taurewa**	**0.90**	**204**	PN	Pn	03 11 33.0	+0.1
WTVZ	**West Tongariro**	**0.90**	**196**	PN	Pn	03 11 33.0	+0.1
RTZ	**Ruatahuna**	**0.92**	**114**	↓PN	Pn	03 11 33.1	0.0
RTZ				SN	Sn	03 11 52.4	-0.5
NGZ	**Ngauruhoe**	**0.95**	**194**	PN	Pn	03 11 33.5	+0.1
NGZ				SN	Sn	03 11 53.0	-0.5
URZ	**Urewera**	**0.95**	**91**	↓PN	Pn	03 11 32.8	-0.4
URZ				SN	Sn	03 11 51.6	-1.4
URZ				AML	AML	03 11 53.0	
BKZ	**Black Stump Fm**	**1.02**	**153**	↑PN	Pn	03 11 33.7	-0.1
BKZ				AML	AML	03 11 54.7	
BKZ				AML	AML	03 11 54.8	
TUVZ	**Tukino**	**1.03**	**191**	PN	Pn	03 11 34.0	0.0
WHVZ	**Whangaehu Hut**	**1.06**	**193**	PN	Pn	03 11 34.1	-0.2
TRVZ	**Turoa**	**1.08**	**195**	↑PN	Pn	03 11 34.5	0.0
WNVZ	**Wahianoa**	**1.10**	**192**	↑PN	Pn	03 11 34.4	-0.2
NMHZ	**Naumai**	**1.10**	**140**	PN	Pn	03 11 35.4	+0.9
PKVZ	**Pokaka**	**1.12**	**202**	↑PN	Pn	03 11 34.6	-0.1
RAHZ	**Arahi**	**1.14**	**126**	PN	Pn	03 11 35.3	+0.6
MOVZ	**Moawhango**	**1.16**	**186**	PN	Pn	03 11 34.4	-0.5
MTVZ	**Mangateitei**	**1.18**	**196**	PN	Pn	03 11 35.7	-0.1
RAGZ	**Rawiri**	**1.22**	**102**	↓PN	Pn	03 11 35.5	0.0
KWHZ	**Kaweka Forest**	**1.24**	**161**	↓PN	Pn	03 11 35.7	0.0
BHHZ	**Black Hill Sta**	**1.24**	**174**	↑PN	Pn	03 11 35.2	-0.5
SNGZ	**Shannon Statio**	**1.25**	**116**	↓PN	Pn	03 11 36.0	+0.3
MWZ	**Matawai**	**1.28**	**94**	↓PN	Pn	03 11 35.9	-0.1
MWZ				AML	AML	03 11 58.0	
MWZ				AML	AML	03 11 59.3	
ARHZ	**Aropaoanui**	**1.32**	**140**	PN	Pn	03 11 36.7	+0.4
MCHZ	**McNeill Hill**	**1.34**	**153**	PN	Pn	03 11 37.0	+0.5
KRHZ	**Kereru**	**1.44**	**165**	↑PN	Pn	03 11 37.1	-0.3
KUZ	**Kuaotunu**	**1.51**	**355**	PN	Pn	03 11 38.9	+0.7
RIGZ	**Rimuhau**	**1.53**	**108**	↓PN	Pn	03 11 38.5	+0.1
TKGZ	**Te Karaka**	**1.54**	**98**	PN	Pn	03 11 39.1	+0.6
HAZ	**Te Kaha**	**1.57**	**72**	PN	Pn	03 11 38.0	-0.7
KNZ	**Kokohu**	**1.59**	**120**	PN	Pn	03 11 38.7	-0.2
TWGZ	**Tauwhareparae**	**1.64**	**88**	PN	Pn	03 11 39.7	+0.2
WAZ	**Wanganui**	**1.66**	**205**	PN	Pn	03 11 39.2	-0.5
PNHZ	**Pukenui**	**1.68**	**172**	PN	Pn	03 11 39.1	-0.8
CKHZ	**Cape Kidnapper**	**1.68**	**147**	PN	Pn	03 11 39.8	0.0
PRGZ	**Paritu Road**	**1.69**	**114**	PN	Pn	03 11 40.0	-0.1
KAHZ	**Kahuranaki**	**1.72**	**154**	PN	Pn	03 11 40.2	-0.2
NEZ	**North Egmont**	**1.74**	**234**	PN	Pn	03 11 41.1	+0.5
PKGZ	**Pakihiroa**	**1.76**	**79**	PN	Pn	03 11 40.5	-0.2
TSZ	**Takapari Road**	**1.81**	**179**	↑PN	Pn	03 11 40.4	-0.9
TSZ				AML	AML	03 12 07.2	
TSZ				AML	AML	03 12 07.7	
MHGZ	**Mahia Peninsul**	**1.81**	**120**	PN	Pn	03 11 41.3	0.0
CNGZ	**Carnagh Statio**	**1.83**	**98**	PN	Pn	03 11 41.7	+0.3
WPHZ	**Waipukurau**	**1.86**	**167**	PN	Pn	03 11 41.0	-0.8
PUZ	**Puketiti**	**1.87**	**85**	PN	Pn	03 11 41.4	-0.5
PXZ	**Pawanui**	**1.93**	**157**	↑PN	Pn	03 11 41.8	-0.7
PXZ				AML	AML	03 12 10.4	
PXZ				AML	AML	03 12 10.4	
OHWZ	**Ohakea**	**2.00**	**193**	PN	Pn	03 11 42.7	-0.6
MXZ	**Matakaoa Point**	**2.02**	**71**	PN	Pn	03 11 43.6	0.0
WMGZ	**Waiomatatini S**	**2.03**	**79**	PN	Pn	03 11 43.5	-0.2
DVHZ	**Dannevirke**	**2.06**	**174**	↑PN	Pn	03 11 42.6	-1.4
PRHZ	**Porangahau**	**2.09**	**164**	PN	Pn	03 11 43.4	-1.0
POWZ	**Post Office Ro**	**2.14**	**183**	PN	Pn	03 11 43.4	-1.5
ANWZ	**Angora Road**	**2.25**	**169**	↑PN	Pn	03 11 45.0	-1.2
PRWZ	**Pori Road**	**2.30**	**179**	PN	Pn	03 11 45.3	-1.5
MRZ	**Mangatainoka R**	**2.42**	**186**	↑PN	Pn	03 11 46.1	-2.1
BFZ	**Birch Farm**	**2.44**	**174**	↑PN	Pn	03 11 46.6	-1.8
TIWZ	**Tintock**	**2.52**	**180**	PN	Pn	03 11 47.4	-2.0
TIWZ				AML	AML	03 12 19.5	
TIWZ				AML	AML	03 12 19.6	
OGWZ	**Otaki Gorge**	**2.62**	**192**	PN	Pn	03 11 48.5	-2.1
HOWZ	**Holdsworth Sta**	**2.66**	**186**	PN	Pn	03 11 48.6	-2.5
KIW	**Kapiti Island**	**2.72**	**196**	PN	Pn	03 11 49.3	-2.5
TMWZ	**Te Maipa**	**2.85**	**180**	PN	Pn	03 11 50.9	-2.6
MTW	**Mount Morrison**	**2.92**	**186**	PN	Pn	03 11 51.4	-2.9
CAW	**Cannon Point**	**2.92**	**192**	PN	Pn	03 11 51.7	-2.6
CAW				AML	AML	03 12 29.2	
DUWZ	**D'Urville Isla**	**2.97**	**210**	↓PN	Pn	03 11 52.2	-2.7
TRWZ	**Traveller**	**3.15**	**183**	PN	Pn	03 11 54.2	-2.9
PAWZ	**Paruwai Farm**	**3.15**	**186**	↓PN	Pn	03 11 54.1	-3.0
MSWZ	**Moikau Station**	**3.20**	**189**	↓PN	Pn	03 11 54.7	-3.1
MSWZ				AML	AML	03 12 32.7	
MSWZ				AML	AML	03 12 32.9	
TCW	**Tory Channel**	**3.21**	**202**	↓PN	Pn	03 11 54.9	-2.9
PLWZ	**Palliser**	**3.35**	**188**	PN	Pn	03 11 56.2	-3.5
TUWZ	**Tuamarina**	**3.51**	**205**	PN	Pn	03 11 58.2	-3.5
NNZ	**Nelson**	**3.54**	**212**	↓PN	Pn	03 11 58.7	-3.3
QRZ	**Quartz Range**	**3.66**	**224**	PN	Pn	03 11 60.0	-3.6
BSWZ	**Blackbirch Sta**	**3.79**	**204**	PN	Pn	03 12 01.9	-3.4
KHZ	**Kahutara**	**4.53**	**203**	PN	Pn	03 12 11.1	-3.7
LTZ	**Lake Taylor**	**5.30**	**210**	PN	Pn	03 12 20.5	-4.4
OXZ	**Oxford**	**5.86**	**209**	PN	Pn	03 12 26.7	-5.5
MQZ	**McQueen's Vall**	**5.98**	**203**	PN	Pn	03 12 28.0	-5.8
RPZ	**Rata Peaks**	**6.57**	**212**	PN	Pn	03 12 37.4	-4.3

*ISK **31** 03:14:52.7, 39°.12N×29°.02E, h11km, MD2.8*
*DDA **31** 03:14:53.7, 39°.10N×29°.05E, h7km, Md2.8*
*CSEM **31** 03:14:53.5±0.1, 39°.13N×29°.02E, h10km, MD2.8, Error ellipse: s-maj=2.7km s-min=2.1km az=138.0*
ISC 31 03:14:53.4±1.0, 39°.12N±0°.03×29°.05E±0°.02, h20km±4km, n36, σ0°.29/54, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**254**	P	**Pg**	**03 14 59.5**	**-0.2**
DEMI				S	**Sb**	**03 15 03.2**	**-0.6**
DEMI	**Demirci**	**0.27**	**254**	*i* P	**Pg**	**03 14 59.5**	**-0.2**
DEMI				*i* S	**Sb**	**03 15 03.2**	**-0.6**
GDZ	**Gediz**	**0.34**	**95**	P	**Pb**	**03 15 00.9**	**+0.1**
GDZ				S	**Sg**	**03 15 05.7**	**-0.1**
GDZ	**Gediz**	**0.34**	**95**	*i* P	**Pb**	**03 15 00.9**	**+0.1**
GDZ				*i* S	**Sg**	**03 15 05.7**	**-0.1**
TVSB	**Tavsanli**	**0.46**	**44**	*e*PG	**Pg**	**03 15 02.9**	**0.0**
TVSB				*e*SG	**Sg**	**03 15 09.2**	**-0.1**
TVSB	**Tavsanli**	**0.46**	**44**	*e*Pg	**Pg**	**03 15 02.9**	**0.0**
TVSB				*e*Sg	**Sg**	**03 15 09.2**	**-0.1**
KULA	**Kula-Manisa**	**0.68**	**207**	*e*PG	**Pb**	**03 15 06.4**	**-0.1**
KULA				*e*SG	**Sb**	**03 15 15.2**	**-0.3**
KULA	**Kula-Manisa**	**0.68**	**207**	*e*Pg	**Pb**	**03 15 06.4**	**-0.1**
KULA				*e*Sg	**Sb**	**03 15 15.2**	**-0.3**
KHAL	**Karahalli**	**0.82**	**155**	P	**Pn**	**03 15 10.0**	**0.0**
KHAL				S	**Sg**	**03 15 20.6**	**+0.1**
KHAL	**Karahalli**	**0.82**	**155**	*i* P	**Pn**	**03 15 10.0**	**0.0**
KHAL				*i* S	**Sg**	**03 15 20.6**	**+0.1**
ORLT	**Orhaneli**	**0.94**	**353**	*e*PG	**Pb**	**03 15 10.9**	**-0.1**
ORLT				*e*SG	**Sg**	**03 15 24.2**	**+0.1**
ORLT	**Orhaneli**	**0.94**	**353**	*e*Pg	**Pb**	**03 15 10.9**	**-0.1**
ORLT				*e*Sg	**Sg**	**03 15 24.2**	**+0.1**
AKHS	**Akhisar**	**0.99**	**256**	P	**Pg**	**03 15 13.4**	**+0.7**
AKHS				S	**Sn**	**03 15 26.1**	**+0.4**
AKHS	**Akhisar**	**0.99**	**256**	*i* P	**Pg**	**03 15 13.4**	**+0.7**
AKHS				*i* S	**Sn**	**03 15 26.1**	**+0.4**
AKS	**Akhisar**	**0.99**	**257**	*e*PG	**Pb**	**03 15 11.9**	**-0.1**
AKS				*e*SG	**Sg**	**03 15 25.6**	**-0.3**
AKS	**Akhisar**	**0.99**	**257**	*e*Pg	**Pb**	**03 15 11.9**	**-0.1**
AKS				*e*Sg	**Sg**	**03 15 25.6**	**-0.3**
BALB	**Balikesir**	**1.05**	**300**	*e*PG	**Pb**	**03 15 12.7**	**-0.2**
BALB	**Balikesir**	**1.05**	**300**	*e*Pg	**Pb**	**03 15 12.7**	**-0.2**
CAVI	**Cavuskoy**	**1.24**	**29**	*e*PN	**Pb**	**03 15 16.6**	**+0.3**
CAVI	**Cavuskoy**	**1.24**	**29**	*e*Pn	**Pb**	**03 15 16.6**	**+0.3**
MDNY	**Mudanya-Bursa**	**1.26**	**354**	*e*PN	**Pb**	**03 15 16.6**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.26**	**354**	*e*Pn	**Pb**	**03 15 16.6**	**+0.2**
IZI	**Iznik**	**1.26**	**15**	*e*PN	**Pb**	**03 15 16.5**	**-0.1**
IZI	**Iznik**	**1.26**	**15**	*e*Pn	**Pb**	**03 15 16.5**	**-0.1**
KCTX	**Karacabey (Bur**	**1.27**	**335**	*e*PN	**Pb**	**03 15 16.6**	**0.0**
KCTX	**Karacabey (Bur**	**1.27**	**335**	*e*Pn	**Pb**	**03 15 16.6**	**0.0**
BORA	**Eskisehir**	**1.33**	**54**	P	**Pg**	**03 15 19.0**	**-0.1**
BORA				S	**Sg**	**03 15 36.9**	**+0.5**
BORA	**Eskisehir**	**1.33**	**54**	*i* P	**Pg**	**03 15 18.9**	**-0.1**
BORA				*i* S	**Sg**	**03 15 36.9**	**+0.5**
ADVT	**Abdulvahap**	**1.42**	**22**	*e*PN	**Pb**	**03 15 19.0**	**-0.2**
ADVT	**Abdulvahap**	**1.42**	**22**	*e*Pn	**Pb**	**03 15 19.0**	**-0.2**
ARMT	**Armutlu**	**1.45**	**354**	*e*PN	**Pb**	**03 15 19.8**	**0.0**
ARMT	**Armutlu**	**1.45**	**354**	*e*Pn	**Pb**	**03 15 19.8**	**0.0**
EDC	**Edincik**	**1.53**	**324**	*e*PN	**Pb**	**03 15 20.9**	**-0.2**
EDC	**Edincik**	**1.53**	**324**	*e*Pn	**Pb**	**03 15 20.9**	**-0.2**
GULT	**Gulveren**	**1.73**	**40**	*e*PN	**Pb**	**03 15 24.0**	**-0.6**
GULT	**Gulveren**	**1.73**	**40**	*e*Pn	**Pb**	**03 15 24.0**	**-0.6**

*IDC **31** 03:15:56.8±1.2, 15°.29S×173°.37W, h0km, mb4.0/8, mb1 4.4/8, mb1mx4.1/33, mbtmp4.0/8, MS3.6/17, Ms1 3.7/17, ms1mx3.5/32, Error ellipse: s-maj=85.7km s-min=18.7km az=147.0*
*NEIC **31** 03:15:58.5±0.4, 15°.25S×173°.43W, h10km, mb4.6/10, Error ellipse: s-maj=23.1km s-min=9.0km az=143.0*
*ISCJB **31** 03:16:00.1±0.5, 15°.2S±0°.2×173°.5W±0°.2, h30km, mb4.4/21, MS3.7/16, Error ellipse: s-maj=32.5km s-min=12.9km az=142.4*
ISC 31 03:16:01.7±0.7, 15°.3S±0°.2×173°.4W±0°.2, h30km, n76, σ1°.32/41, mb4.4/21, MS3.8/16, 12C-2D, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**2.09**	**49**	Pn	Pn	03 16 25.7	-9.1
	39nm,0.3s,baz=136,slow=1.2,SNR=28						
AFI				Sn	Sn	03 16 46.9	-13
	83nm,0.3s,baz=229,slow=20,SNR=12						
AFI				LR	LR	03 17 02.3	
	comp=Z,344nm,20.8s,baz=199,slow=32						
AFI				T	T	03 18 07.8	
	46nm,0.3s,baz=198,slow=20,SNR=1.8						
AFI	**Afiamalu**	**2.09**	**49**	*e*Pn	Pn	03 16 25.7	-9.1
AFI				*e*S	Sn	03 16 47.3	-13
AFI				TT		03 18 07.8	
DZM	**Mont Dzumac**	**20.24**	**248**	*e*LR	LR	03 25 56.2	
	223nm,24.1s						
DZM	**Mont Dzumac**	**20.24**	**248**	LR	LR	03 26 47.4	
	comp=Z,160nm,18.6s,baz=78,slow=32						
PAE	**Paea**	**22.96**	**99**	*e*T	T	03 43 54.3	
	2.5nm,0.3s						
PPT	**Papeete**	**22.96**	**99**	LR	LR	03 27 49.7	
	comp=Z,67nm,18.6s,baz=286,slow=31						
PPT2	**Papeete2**	**22.96**	**99**	*e*LQ	LQ	03 25 21.4	
	583nm,28.0s						
PPT2				*e*LR	LR	03 26 08.2	
	95nm,25.8s						
PPT2	**Papeete2**	**22.96**	**99**	*e*T	T	03 43 55.3	
	4.1nm,0.4s						
TVO	**Taravao**	**23.28**	**99**	*e*T	T	03 44 18.4	
	1.3nm,0.4s						
TBI	**Tubuai**	**23.95**	**113**	*e*LQ	LQ	03 25 47.3	
	754nm,31.2s						
TBI				*e*LR	LR	03 26 33.7	
	178nm,28.5s						
TBI	**Tubuai**	**23.95**	**113**	*e*T	T	03 45 18.8	
	9.1nm,0.3s						
URZ	**Urewera**	**24.36**	**198**	LR	LR	03 30 04.3	
	comp=Z,392nm,18.9s,baz=41,slow=35						
HNR	**Honiara**	**26.66**	**280**	LR	LR	03 30 38.5	
	comp=Z,183nm,18.4s,baz=92,slow=33						
TAOE	**Nuku Hiva Isla**	**33.11**	**83**	*e*LR	LR	03 31 10.5	
	123nm,24.1s						
TAOE	**Nuku Hiva Isla**	**33.11**	**83**	*e*T	T	03 56 28.0	
	168nm,0.3s						
RKT	**Rikitea**	**37.03**	**108**	*e*T	T	04 01 34.5	
	4.7nm,0.3s						
H11S2	**WAKE ISLAND Hy**	**38.87**	**329**	T	T	04 05 22.4	
	baz=147,slow=76,SNR=20						
H11S3	**WAKE ISLAND Hy**	**38.89**	**329**	T	T	04 05 16.8	
	baz=147,slow=76,SNR=18						
H11S1	**WAKE ISLAND Hy**	**38.89**	**329**	T	T	04 05 21.1	
	baz=147,slow=76,SNR=20						
PMG	**Port Moresby**	**38.93**	**274**	LR	LR	03 37 09.7	
	comp=Z,79nm,18.8s,baz=48,slow=33						
H11N3	**WAKE ISLAND Hy**	**39.82**	**330**	T	T	04 06 36.1	
	baz=148,slow=76,SNR=12						
H11N1	**WAKE ISLAND Hy**	**39.83**	**330**	T	T	04 06 24.5	
	baz=148,slow=76,SNR=12						
H11N2	**WAKE ISLAND Hy**	**39.84**	**330**	T	T	04 06 37.5	
	baz=148,slow=76,SNR=15						
STKA	**Stephens Creek**	**44.09**	**240**	P	**P**	**03 24 08.1**	**+0.7**
	3.1nm,0.8s,baz=45,slow=11,SNR=5.4						
WRA	**Warramunga Arr**	**49.87**	**257**	P	**P**	**03 24 51.3**	**-1.4**
	0.8nm,0.5s,baz=93,slow=6.8,SNR=11						
ASAR	**Alice Springs**	**50.14**	**252**	P	**P**	**03 24 54.0**	**-0.7**
	4.0nm,0.8s,baz=88,slow=7.9,SNR=28						
VNDA	**Vanda**	**63.48**	**186**	LR	LR	03 50 58.7	
	comp=Z,30nm,19.6s,baz=48,slow=33						
MJAR	**Matsushiro Arr**	**68.86**	**320**	LR	LR	03 51 43.8	
	comp=Z,68nm,22.0s,baz=145,slow=31						
NVAR	**Mina Array Bea**	**74.25**	**42**	P	**P**	**03 27 34.8**	**-1.5**
	0.6nm,0.7s,baz=251,slow=11,SNR=5.5						
QSPA	**South Pole Qui**	**74.75**	**180**	*e*P	**P**	**03 27 39.0**	**+0.3**
	22nm,0.8s						
KSRS	**Korea Array**	**76.08**	**316**	LR	LR	03 53 15.9	
	comp=Z,43nm,21.2s,baz=97,slow=29						
USRK	**Ussuriysk Ar.**	**77.30**	**323**	LR	LR	03 56 37.6	
	comp=Z,75nm,21.0s,baz=130,slow=32						
KLR	**Kul'dur**	**80.43**	**327**	LR	LR	03 58 10.4	
	comp=Z,50nm,21.0s,slow=32						
TRF	**Thorofare Moun**	**80.52**	**10**	*e*P	**P**	**03 28 10.1**	**-0.8**
	8.4nm,1.0s						
TXAR	**Lajitas Array**	**80.56**	**56**	P	**P**	**03 28 11.8**	**+0.1**
	1.9nm,1.1s,baz=204,slow=2.7,SNR=14						
PV01	**Paradox Valley**	**80.65**	**46**	*e*P	**P**	**03 28 11.8**	**-0.4**
	189nm,0.9s						
ANMO	**Albuquerque**	**80.74**	**50**	*e*P	**P**	**03 28 12.4**	**-0.2**
	1.9nm,0.8s						
IMW	**Indian Meadow**	**81.87**	**40**	*e*P	**P**	**03 28 18.8**	**+0.2**
	5.3nm,1.0s						
DOT	**Dot Lake**	**81.91**	**13**	*e*P	**P**	**03 28 17.7**	**-0.3**
	8.8nm,0.9s						
PDAR	**Pinedale Array**	**82.19**	**42**	P	**P**	**03 28 19.7**	**-0.5**
	1.7nm,1.0s,baz=219,slow=2.3,SNR=7.1						
COLA	**College**	**82.26**	**11**	*e*P	**P**	**03 28 19.8**	**0.0**
	6.9nm,0.9s						
BOZ	**Bozeman (W)**	**82.34**	**39**	*e*P	**P**	**03 28 20.3**	**-0.5**
	3.2nm,1.0s						
ILAR	**Eielson Array**	**82.34**	**11**	P	**P**	**03 28 20.0**	**-0.2**
	1.6nm,1.1s,baz=218,slow=4.2,SNR=8.2						
ILAR				LR	LR	03 57 46.2	
	comp=Z,52nm,21.5s,baz=210,slow=30						
H17A	**Grant Village**	**82.35**	**40**	*e*P	**P**	**03 28 21.7**	**+0.6**
	3.2nm,1.1s						
SDCO	**Great Sand Dun**	**82.65**	**48**	*e*P	**P**	**03 28 22.8**	**0.0**
	2.7nm,0.8s						
MSTX	**Muleshoe**	**83.10**	**52**	*e*P	**P**	**03 28 24.7**	**-0.3**
	7.5nm,1.1s						
RLMT	**Red Lodge**	**83.52**	**40**	*e*P	**P**	**03 28 27.3**	**+0.3**
	4.9nm,0.9s						
ABTX	**Abilene, Hawle**	**85.00**	**54**	*e*P	**P**	**03 28 34.5**	**-0.2**
	16nm,0.9s						
RSSD	**Black Hills**	**86.39**	**42**	*e*P	**P**	**03 28 41.3**	**-0.2**
MAW	**Mawson**	**87.89**	**199**	LR	LR	04 05 43.6	
	comp=Z,108nm,20.1s,baz=62,slow=34						
PLCA	**Paso Flores**	**89.58**	**132**	LR	LR	04 01 29.4	
	comp=Z,74nm,18.3s,baz=268,slow=30						
YKA	**Yellowknife Ar**	**90.00**	**23**	P	**P**	**03 28 57.9**	**0.0**
	0.5nm,0.8s,baz=234,slow=4.7,SNR=8.1						
YKA				LR	LR	04 03 05.2	
	comp=Z,7.1nm,18.8s,baz=180,slow=31						
CMAR	**Chiang Mai Arr**	**92.58**	**288**	LR	LR	04 06 04.8	
	comp=Z,15nm,21.0s,baz=142,slow=32						
SONM	**Songino Array**	**94.77**	**318**	LR	LR	04 06 39.3	
	comp=Z,47nm,21.9s,baz=98,slow=32						
AKASG	**Malin Array Be**	**140.24**	**338**	PKP	**PKPdf**	**03 35 27.2**	**-0.3**
	0.4nm,0.4s,baz=28,slow=2.5,SNR=4.1						
STHS	**Stebnicka Huta**	**143.93**	**344**	*e*PKP	**PKPdf**	**03 35 35.7**	**+1.5**
LANS	**Liptovska Anna**	**144.63**	**345**	*e*PKP	**PKPdf**	**03 35 35.9**	**+0.4**
TESR	**Tescani**	**144.66**	**336**	↑*i*P	**PKPdf**	**03 35 37.8**	**+2.2**
KECS	**Kecovo**	**144.99**	**344**	*e*PKP	PKPbc	03 35 34.4	-1.0
KECS				*e*		03 35 43.3	
CFR	**Carcaliu**	**145.11**	**333**	↑*i*P	**PKPdf**	**03 35 37.5**	**+1.2**
VRI	**Vrincioaia**	**145.15**	**335**	↑*i*P	**PKPdf**	**03 35 38.9**	**+2.4**
PLOR	**Plostina**	**145.19**	**335**	↑*

BDRM			*i* S		**Sb**	**03 23 57.1**	**-0.6**
AYDN	**Tasoluk**	**0.48 351**	P		**Pb**	**03 23 51.6**	**+0.3**
AYDN			S		**Sb**	**03 23 57.9**	**-1.0**
AYDN	**Tasoluk**	**0.48 351**	*i* P		**Pb**	**03 23 51.6**	**+0.3**
AYDN			*i* S		**Sb**	**03 23 57.9**	**-1.0**
BODT	**Bodrum**	**0.54 257**	*e*PG		**Pb**	**03 23 52.2**	**-0.1**
BODT			*e*SG		**Sb**	**03 24 00.5**	**-0.2**
BODT	**Bodrum**	**0.54 257**	*e*Pg		**Pb**	**03 23 52.2**	**-0.1**
BODT			*e*Sg		**Sb**	**03 24 00.5**	**-0.2**
TURN	**Turunc**	**0.59 122**	*i* P		**Pg**	**03 23 51.2**	**0.0**
TURN			*i* S		**Sg**	**03 23 59.1**	**+0.2**
GCAM	**G?zelcaml?**	**0.78 311**	P		**Pn**	**03 23 58.6**	**+0.5**
GCAM			S		**Sb**	**03 24 06.9**	**-0.5**
GCAM	**G?zelcaml?**	**0.78 311**	*i* P		**Pn**	**03 23 58.6**	**+0.5**
GCAM			*i* S		**Sb**	**03 24 06.9**	**-0.5**
FETY	**Fethiye**	**1.05 121**	*e*PG		**Pn**	**03 24 02.1**	**+0.3**
FETY	**Fethiye**	**1.05 121**	*e*Pg		**Pn**	**03 24 02.1**	**+0.3**

*ISCJB **31** 03:27:54.6±0.5, 39.°16N±0.°03×29.°08E±0.°04, h9km, Error ellipse: s-maj=5.0km s-min=4.4km az=145.1*
*CSEM **31** 03:27:54.6±0.2, 39.°16N×29.°05E, h10km, MD2.6, Error ellipse: s-maj=4.5km s-min=3.8km az=86.0*
*ISK **31** 03:27:54.2, 39.°19N×29.°03E, h7km, MD2.6*
*DDA **31** 03:27:55.3, 39.°09N×29.°11E, h7km, Md2.6*
ISC 31 03:27:54.4±0.9, **39.°16N**±0.°02×**29.°02E**±0.°03, **h9km, n24,** σ0**45**/32, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**244**	P	**Pb**	**03 28 01.8**	**+0.4**
DEMI				S	**Sb**	**03 28 06.2**	**+0.1**
DEMI	**Demirci**	**0.27**	**244**	*i* P	**Pb**	**03 28 01.8**	**+0.4**
DEMI				*i* S	**Sb**	**03 28 06.2**	**+0.1**
GDZ	**Gediz**	**0.36**	**101**	P	**Pg**	**03 28 01.4**	**-0.2**
GDZ				S	**Sg**	**03 28 05.7**	**-0.7**
GDZ	**Gediz**	**0.36**	**101**	*i* P	**Pg**	**03 28 01.4**	**-0.2**
GDZ				*i* S	**Sg**	**03 28 05.7**	**-0.7**
TVSB	**Tavsanli**	**0.45**	**50**	*e*PG	**Pg**	**03 28 03.5**	**+0.3**
TVSB				*e*SG	**Sg**	**03 28 09.1**	**+0.1**
TVSB	**Tavsanli**	**0.45**	**50**	*e*Pg	**Pg**	**03 28 03.5**	**+0.3**
TVSB				*e*Sg	**Sg**	**03 28 09.1**	**+0.1**
KULA	**Kula-Manisa**	**0.71**	**204**	*e*PG	**Pg**	**03 28 08.1**	**+0.1**
KULA	**Kula-Manisa**	**0.71**	**204**	*e*Pg	**Pg**	**03 28 08.1**	**+0.1**
KHAL	**Karahalli**	**0.87**	**155**	P	**Pg**	**03 28 11.0**	**-0.2**
KHAL				S	**Sg**	**03 28 21.5**	**-1.0**
KHAL	**Karahalli**	**0.87**	**155**	*i* P	**Pg**	**03 28 11.0**	**-0.2**
KHAL				*i* S	**Sg**	**03 28 21.5**	**-1.0**
KHL	**Karahalli**	**0.92**	**155**	*e*PG	**Pb**	**03 28 13.4**	**+0.7**
KHL	**Karahalli**	**0.92**	**155**	*e*Pg	**Pb**	**03 28 13.4**	**+0.7**
BALB	**Balikesir**	**1.01**	**299**	*e*PG	**Pg**	**03 28 13.4**	**-0.4**
BALB	**Balikesir**	**1.01**	**299**	*e*Pg	**Pg**	**03 28 13.4**	**-0.4**
MDNY	**Mudanya-Bursa**	**1.21**	**355**	*e*PN	**Pg**	**03 28 17.6**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.21**	**355**	*e*Pn	**Pg**	**03 28 17.6**	**-0.1**
KCTX	**Karacabey (Bur**	**1.22**	**335**	*e*PN	**Pg**	**03 28 18.0**	**+0.2**
KCTX	**Karacabey (Bur**	**1.22**	**335**	*e*Pn	**Pg**	**03 28 18.0**	**+0.2**
IZI	**Iznik**	**1.22**	**16**	*e*PN	**Pb**	**03 28 17.4**	**-0.4**
IZI	**Iznik**	**1.22**	**16**	*e*Pn	**Pb**	**03 28 17.4**	**-0.4**
ARMT	**Armutlu**	**1.41**	**355**	*e*PN	**Pb**	**03 28 20.8**	**-0.1**
ARMT	**Armutlu**	**1.41**	**355**	*e*Pn	**Pb**	**03 28 20.8**	**-0.1**
GULT	**Gulveren**	**1.71**	**42**	*e*PN	**Pn**	**03 28 24.9**	**+0.4**
GULT	**Gulveren**	**1.71**	**42**	*e*Pn	**Pn**	**03 28 24.9**	**+0.4**

*ISK **31** 03:31:26.6, 39.°11N×29.°15E, h8km, MD2.9*
*ISCJB **31** 03:31:27.1±0.5, 39.°11N±0.°02×29.°14E±0.°03, h7km±4km, Error ellipse: s-maj=4.3km s-min=3.7km az=159.2*
*CSEM **31** 03:31:27.3±0.1, 39.°11N×29.°14E, h8km, MD3.2, Error ellipse: s-maj=1.3km s-min=1.2km az=116.0*
*DDA **31** 03:31:27.1, 39.°11N×29.°13E, h8km, Md3.2*
ISC 31 03:31:27.5±1.0, **39.°12N**±0.°02×**29.°13E**±0.°02, **h8km**±9km, **n55,** σ0**31**/72, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.27**	**97**	P	**Pg**	**03 31 33.3**	**+0.3**
GDZ				S	**Sg**	**03 31 37.3**	**+0.6**
GDZ	**Gediz**	**0.27**	**97**	*i* P	**Pg**	**03 31 33.3**	**+0.3**
GDZ				*i* S	**Sg**	**03 31 37.3**	**+0.6**
DEMI	**Demirci**	**0.33**	**256**	P	**Pg**	**03 31 34.1**	**-0.1**
DEMI				S	**Sg**	**03 31 38.5**	**-0.1**
DEMI	**Demirci**	**0.33**	**256**	*i* P	**Pg**	**03 31 34.1**	**-0.1**
DEMI				*i* S	**Sg**	**03 31 38.5**	**-0.1**
TVSB	**Tavsanli**	**0.41**	**38**	*e*PG	**Pg**	**03 31 35.4**	**-0.3**
TVSB				*e*SG	**Sg**	**03 31 41.2**	**+0.1**
TVSB	**Tavsanli**	**0.41**	**38**	*e*Pg	**Pg**	**03 31 35.4**	**-0.3**
TVSB				*e*Sg	**Sg**	**03 31 41.2**	**+0.1**
KULA	**Kula-Manisa**	**0.71**	**211**	*e*PG	**Pg**	**03 31 40.8**	**-0.5**
KULA	**Kula-Manisa**	**0.71**	**211**	*e*Pg	**Pg**	**03 31 40.8**	**-0.5**
KHAL	**Karahalli**	**0.80**	**159**	P	**Pg**	**03 31 42.9**	**-0.1**
KHAL				S	**Sg**	**03 31 53.4**	**-0.1**
KHAL	**Karahalli**	**0.80**	**159**	*i* P	**Pg**	**03 31 42.9**	**-0.1**
KHAL				*i* S	**Sg**	**03 31 53.4**	**-0.1**
KHL	**Karahalli**	**0.85**	**159**	*e*PG	**Pg**	**03 31 43.6**	**-0.4**
KHL				*e*SG	**Sg**	**03 31 54.9**	**-0.2**
KHL	**Karahalli**	**0.85**	**159**	*e*Pg	**Pg**	**03 31 43.6**	**-0.4**
KHL				*e*Sg	**Sg**	**03 31 54.9**	**-0.2**
ORLT	**Orhaneli**	**0.94**	**349**	*e*PG	**Pg**	**03 31 45.4**	**-0.2**
ORLT	**Orhaneli**	**0.94**	**349**	*e*Pg	**Pg**	**03 31 45.4**	**-0.2**
AKHS	**Akhisar**	**1.06**	**257**	P	**Pg**	**03 31 47.6**	**-0.2**
AKHS				S	**Sg**	**03 32 01.0**	**-0.5**
AKHS	**Akhisar**	**1.06**	**257**	*i* P	**Pg**	**03 31 47.6**	**-0.2**
AKHS				*i* S	**Sg**	**03 32 01.0**	**-0.5**
AKS	**Akhisar**	**1.06**	**257**	*e*PG	**Pg**	**03 31 47.8**	**-0.1**
AKS				*e*SG	**Sb**	**03 32 02.4**	**+0.4**
AKS	**Akhisar**	**1.06**	**257**	*e*Pg	**Pg**	**03 31 47.8**	**-0.1**
AKS				*e*Sg	**Sb**	**03 32 02.4**	**+0.4**
BALB	**Balikesir**	**1.10**	**298**	*e*PN	**Pg**	**03 31 48.5**	**-0.1**
BALB	**Balikesir**	**1.10**	**298**	*e*Pn	**Pg**	**03 31 48.5**	**-0.1**
IGD	**Bursa**	**1.14**	**3**	*i* P	**Pg**	**03 31 48.4**	**-1.1**
IGD				*i* S	**Sb**	**03 32 05.0**	**+0.6**
CAVI	**Cavuskoy**	**1.21**	**27**	*e*PN	**Pb**	**03 31 50.3**	**-0.4**
CAVI	**Cavuskoy**	**1.21**	**27**	*e*Pn	**Pb**	**03 31 50.3**	**-0.4**
IZI	**Iznik**	**1.24**	**12**	*e*PN	**Pb**	**03 31 51.0**	**-0.3**
IZI	**Iznik**	**1.24**	**12**	*e*Pn	**Pb**	**03 31 51.0**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.26**	**351**	*e*PN	**Pn**	**03 31 51.3**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.26**	**351**	*e*Pn	**Pn**	**03 31 51.3**	**-0.1**
KCTX	**Karacabey (Bur**	**1.29**	**333**	*e*PN	**Pn**	**03 31 51.8**	**-0.1**
KCTX	**Karacabey (Bur**	**1.29**	**333**	*e*Pn	**Pn**	**03 31 51.8**	**-0.1**
BALY	**Balya**	**1.32**	**298**	P	**Pb**	**03 31 52.6**	**0.0**
BALY				S	**Sn**	**03 32 10.6**	**+0.4**
BALY	**Balya**	**1.32**	**298**	*i* P	**Pb**	**03 31 52.6**	**0.0**
BALY				*i* S	**Sn**	**03 32 10.6**	**+0.4**
GONE	**Gonen-Balikesi**	**1.45**	**310**	*e*PN	**Pn**	**03 31 54.3**	**+0.3**
GONE	**Gonen-Balikesi**	**1.45**	**310**	*e*Pn	**Pn**	**03 31 54.3**	**+0.3**
ARMT	**Armutlu**	**1.46**	**352**	*e*PN	**Pn**	**03 31 54.0**	**-0.1**
ARMT	**Armutlu**	**1.46**	**352**	*e*Pn	**Pn**	**03 31 54.0**	**-0.1**
EDC	**Edincik**	**1.56**	**322**	*e*PN	**Pn**	**03 31 56.0**	**+0.4**
EDC	**Edincik**	**1.56**	**322**	*e*Pn	**Pn**	**03 31 56.0**	**+0.4**
GULT	**Gulveren**	**1.69**	**39**	*e*PN	**Pn**	**03 31 57.2**	**-0.2**
GULT	**Gulveren**	**1.69**	**39**	*e*Pn	**Pn**	**03 31 57.2**	**-0.2**
SVRH	**Sivrihisar-ESK**	**1.88**	**79**	*e*PN	**Pn**	**03 31 59.8**	**-0.3**
SVRH	**Sivrihisar-ESK**	**1.88**	**79**	*e*Pn	**Pn**	**03 31 59.8**	**-0.3**
MRMT	**Marmara Adasi**	**1.89**	**322**	*e*PN	**Pn**	**03 32 00.4**	**+0.2**
MRMT	**Marmara Adasi**	**1.89**	**322**	*e*Pn	**Pn**	**03 32 00.4**	**+0.2**
ISK	**Istanbul-Kandi**	**1.94**	**358**	*e*PN	**Pn**	**03 32 00.8**	**0.0**
ISK	**Istanbul-Kandi**	**1.94**	**358**	*e*Pn	**Pn**	**03 32 00.8**	**0.0**
MDUB	**Mudurnu**	**2.08**	**49**	*e*PN	**Pn**	**03 32 02.7**	**-0.2**
MDUB	**Mudurnu**	**2.08**	**49**	*e*Pn	**Pn**	**03 32 02.7**	**-0.2**
KLYT	**Kilyos**	**2.13**	**358**	*e*PN	**Pn**	**03 32 03.6**	**+0.2**
KLYT	**Kilyos**	**2.13**	**358**	*e*Pn	**Pn**	**03 32 03.6**	**+0.2**
CTKS	**Kestanelik-??a**	**2.16**	**347**	*e*PN	**Pn**	**03 32 04.1**	**+0.2**
CTKS	**Kestanelik-??a**	**2.16**	**347**	*e*Pn	**Pn**	**03 32 04.1**	**+0.2**
RKY	**Sarkoy-Tekirda**	**2.17**	**317**	*e*PN	**Pn**	**03 32 04.2**	**+0.2**
RKY	**Sarkoy-Tekirda**	**2.17**	**317**	*e*Pn	**Pn**	**03 32 04.2**	**+0.2**
SLVT	**Silivri**	**2.22**	**342**	*e*PN	**Pn**	**03 32 04.8**	**+0.2**
SLVT	**Silivri**	**2.22**	**342**	*e*Pn	**Pn**	**03 32 04.8**	**+0.2**

*ISCJB **31** 03:34:37.2±0.5, 39.°11N±0.°03×29.°10E±0.°04, h4km±6km, Error ellipse: s-maj=5.4km s-min=4.6km az=144.2*
*ISK **31** 03:34:37.0, 39.°12N×29.°11E, h8km, MD2.7*
*CSEM **31** 03:34:37.5±0.1, 39.°11N×29.°12E, h10km, MD3.0, Error ellipse: s-maj=2.0km s-min=1.8km az=110.0*
*DDA **31** 03:34:37.5, 39.°13N×29.°11E, h7km, Md3.0*
ISC 31 03:34:37.5±0.9, **39.°12N**±0.°02×**29.°11E**±0.°03, **h12km**±9km, **n37,** σ0**23**/50, **Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.29**	**95**	P	**Pg**	**03 34 43.7**	**+0.1**
GDZ				S	**Sg**	**03 34 47.7**	**0.0**
GDZ	**Gediz**	**0.29**	**95**	*i* P	**Pg**	**03 34 43.7**	**+0.1**
GDZ				*i* S	**Sg**	**03 34 47.6**	**0.0**
TVSB	**Tavsanli**	**0.43**	**40**	*e*PG	**Pg**	**03 34 46.0**	**0.0**
TVSB				*e*SG	**Sg**	**03 34 51.7**	**-0.2**
TVSB	**Tavsanli**	**0.43**	**40**	*e*Pg	**Pg**	**03 34 46.1**	**0.0**
TVSB				*e*Sg	**Sg**	**03 34 51.7**	**-0.2**
KULA	**Kula-Manisa**	**0.69**	**210**	*e*PG	**Pg**	**03 34 51.0**	**0.0**
KULA	**Kula-Manisa**	**0.69**	**210**	*e*Pg	**Pg**	**03 34 51.0**	**0.0**
KHAL	**Karahalli**	**0.81**	**158**	P	**Pb**	**03 34 53.3**	**-0.2**
KHAL				S	**Sg**	**03 35 03.8**	**+0.1**
KHAL	**Karahalli**	**0.81**	**158**	*i* P	**Pb**	**03 34 53.3**	**-0.2**
KHAL				*i* S	**Sg**	**03 35 03.8**	**+0.1**
ORLT	**Orhaneli**	**0.94**	**350**	*e*PG	**Pg**	**03 34 55.8**	**+0.1**
ORLT				*e*SG	**Sb**	**03 35 08.5**	**+0.3**
ORLT	**Orhaneli**	**0.94**	**350**	*e*Pg	**Pg**	**03 34 55.8**	**+0.1**
ORLT				*e*Sg	**Sb**	**03 35 08.5**	**+0.3**
AKS	**Akhisar**	**1.03**	**257**	*e*PG	**Pb**	**03 34 57.2**	**-0.1**
AKS				*e*SG	**Sn**	**03 35 11.8**	**-0.4**
AKS	**Akhisar**	**1.03**	**257**	*e*Pg	**Pb**	**03 34 57.2**	**-0.1**
AKS				*e*Sg	**Sn**	**03 35 11.8**	**-0.4**
BALB	**Balikesir**	**1.08**	**299**	*e*PN	**Pg**	**03 34 58.5**	**+0.1**
BALB	**Balikesir**	**1.08**	**299**	*e*Pn	**Pg**	**03 34 58.5**	**+0.1**
IGD	**Bursa**	**1.15**	**4**	*i* P	**Pb**	**03 34 59.1**	**-0.1**
IGD				*i* S	**Sn**	**03 35 15.5**	**+0.6**
CAVI	**Cavuskoy**	**1.22**	**27**	*e*PN	**Pb**	**03 35 00.6**	**+0.1**
CAVI	**Cavuskoy**	**1.22**	**27**	*e*Pn	**Pb**	**03 35 00.6**	**+0.1**
IZI	**Iznik**	**1.25**	**13**	*e*PN	**Pg**	**03 35 01.4**	**-0.2**
IZI	**Iznik**	**1.25**	**13**	*e*Pn	**Pg**	**03 35 01.4**	**-0.2**
MDNY	**Mudanya-Bursa**	**1.26**	**352**	*e*PN	**Pg**	**03 35 01.4**	**-0.4**
MDNY	**Mudanya-Bursa**	**1.26**	**352**	*e*Pn	**Pg**	**03 35 01.4**	**-0.4**
KCTX	**Karacabey (Bur**	**1.28**	**333**	*e*PN	**Pg**	**03 35 02.0**	**-0.2**
KCTX	**Karacabey (Bur**	**1.28**	**333**	*e*Pn	**Pg**	**03 35 02.0**	**-0.2**
BALY	**Balya**	**1.31**	**299**	P	**Pn**	**03 35 01.5**	**-0.1**
BALY				S	**Sg**	**03 35 20.1**	**+0.4**
BALY	**Balya**	**1.31**	**299**	*i* P	**Pn**	**03 35 01.5**	**-0.1**
BALY				*i* S	**Sg**	**03 35 20.1**	**+0.4**
ADVT	**Abdulvahap**	**1.40**	**20**	*e*PN	**Pn**	**03 35 03.0**	**+0.2**
ADVT	**Abdulvahap**	**1.40**	**20**	*e*Pn	**Pn**	**03 35 03.0**	**+0.2**
GONE	**Gonen-Balikesi**	**1.44**	**311**	*e*PN	**Pb**	**03 35 04.2**	**0.0**
GONE	**Gonen-Balikesi**	**1.44**	**311**	*e*Pn	**Pb**	**03 35 04.2**	**0.0**
ARMT	**Armutlu**	**1.46**	**353**	*e*PN	**Pb**	**03 35 04.3**	**-0.3**
ARMT	**Armutlu**	**1.46**	**353**	*e*Pn	**Pb**	**03 35 04.3**	**-0.3**
BNT	**Bandirma**	**1.54**	**324**	*e*PN	**Pb**	**03 35 05.7**	**-0.2**
BNT	**Bandirma**	**1.54**	**324**	*e*Pn	**Pb**	**03 35 05.7**	**-0.2**
EDC	**Edincik**	**1.56**	**322**	*e*PN	**Pb**	**03 35 05.8**	**-0.4**
EDC	**Edincik**	**1.56**	**322**	*e*Pn	**Pb**	**03 35 05.8**	**-0.4**
GULT	**Gulveren**	**1.70**	**39**	*e*PN	**Pn**	**03 35 07.1**	**0.0**
GULT	**Gulveren**	**1.70**	**39**	*e*Pn	**Pn**	**03 35 07.1**	**0.0**

*IDC **31** 03:40:49.1±5.7, 72.°24N×3.°02E, h0km, mb3.4/2, mb1 3.5/4, mb1mx3.2/40, mbtmp3.4/4, ML2.7/2, MS2.2/1, Ms1 2.3/1, ms1mx2.1/36, Error ellipse: s-maj=98.9km s-min=33.3km az=162.0*
*NAO **31** 03:40:50.3±3.4, 71.°86N×3.°46E, ML2.7*
*CSEM **31** 03:40:52.7±0.7, 72.°00N×4.°11E, h5km, ML2.1, Error ellipse: s-maj=18.1km s-min=8.5km az=69.0*
*BER **31** 03:40:52.6±1.9, 71.°98N×3.°32E, h2km±25km, ML2.1, MW2.5, ML2.7(NAO)*
*HEL **31** 03:40:55.2±0.4, 72.°04N×4.°31E, h10km, ML2.7(NAO), ML2.1(BER), MW2.5(BER)*
ISC 31 03:40:53.2±1.2, **72.°02N**±0.°07×**4.°18E**±0.°09, **h10km, n42,** σ1**46**/58, **Norwegian Sea**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BJO1	**Bjornoya**	**4.95**	**53**	Pn	**Pn**	**03 42 07.1**	**-0.3**
BJO1	**Bjornoya**	**4.95**	**53**	*e*P	**Pn**	**03 42 07.1**	**-0.3**
BJO	**Bjornoya**	**5.00**	**53**	*e*P	**Pn**	**03 42 07.1**	**-1.0**
BJO	**Bjornoya**	**5.00**	**53**	*e*P	**Pn**	**03 42 07.1**	**-1.0**
	SNR=49						
LOF	**Lofoten**	**5.04**	**136**	*e*P	**Pn**	**03 42 10.2**	**+1.4**
LOF				*e*S	**Sn**	**03 43 06.0**	**-1.0**
LOF	**Lofoten**	**5.04**	**136**	*e*P	**Pn**	**03 42 10.2**	**+1.4**
LOF				*e*S	**Sn**	**03 43 06.0**	**-1.0**
LOF	**Lofoten**	**5.04**	**136**	*e*P	**Pn**	**03 42 10.2**	**+1.4**
	SNR=49						
LOF				*e*S	**Sn**	**03 43 06.0**	**-1.0**
	SNR=49						
TRO	**Tromso**	**5.41**	**109**	*e*P	**Pn**	**03 42 15.3**	**+1.5**
TRO				*e*S	**Sn**	**03 43 15.6**	**-0.4**
TRO				IAML		03 43 18.0	
	comp=Z,4.5nm,0.5s						
TRO	**Tromso**	**5.41**	**109**	*e*P	**Pn**	**03 42 15.3**	**+1.5**
TRO				*e*S	**Sn**	**03 43 15.6**	**-0.4**
TRO				IAML		03 43 18.0	
	comp=Z,4.5nm,0.5s						
TRO	**Tromso**	**5.41**	**109**	*e*P	**Pn**	**03 42 15.3**	**+1.5**
	SNR=49						
TRO				*e*S	**Sn**	**03 43 15.6**	**-0.4**
	SNR=49						
STEI	**Steigen**	**5.59**	**132**	*e*S	**Sn**	**03 43 19.3**	**-1.0**
STEI	**Steigen**	**5.59**	**132**	*e*S	**Sn**	**03 43 19.3**	**-1.0**
STEI	**Steigen**	**5.59**	**132**	*e*S	**Sn**	**03 43 19.3**	**-1.0**
	SNR=49						
KIF	**Kilpisjarvi**	**6.32**	**110**	*e*P	**Pn**	**03 42 28.0**	**+1.8**
KIF				*e*S	**Sn**	**03 43 37.2**	**-1.1**
KIF	**Kilpisjarvi**	**6.32**	**110**	*e*P	**Pn**	**03 42 27.8**	**+1.6**
KIF				*e*S	**Sn**	**03 43 37.2**	**-1.1**
KIF	**Kilpisjarvi**	**6.32**	**110**	*e*P	**Pn**	**03 42 28.0**	**+1.8**
	SNR=47						
KIF				*e*S	**Sn**	**03 43 37.2**	**-1.1**
	SNR=47						
HAMF	**Hammerfest**	**6.40**	**93**	*e*P	**Pn**	**03 42 28.2**	**+0.8**
HAMF	**Hammerfest**	**6.40**	**93**	*e*P	**Pn**	**03 42 28.2**	**+0.8**
	SNR=47						
SPA0	**Spitsbergen Ar**	**6.92**	**21**	Pn	**Pn**	**03 42 35.8**	**+1.3**
	baz=207,slow=18						
SPA0	**Spitsbergen Ar**	**6.92**	**21**	Pn	**Pn**	**03 42 35.8**	**+1.3**
	baz=207,slow=18						
SPA0	**Spitsbergen Ar**	**6.92**	**21**	*e*P	**Pn**	**03 42 35.8**	**+1.3**
SPA0	**Spitsbergen Ar**	**6.92**	**21**	Pn	**Pn**	**03 42 35.8**	**+1.3**
	baz=207,slow=16,SNR=50						
KBS	**Kingsbay**	**7.20**	**12**	Pn	**Pn**	**03 42 38.2**	**-0.1**
KBS	**Kingsbay**	**7.20**	**12**	Pn	**Pn**	**03 42 38.2**	**-0.1**
KBS	**Kingsbay**	**7.20**	**12**	*e*P	**Pn**	**03 42 38.2**	**-0.1**
KBS	**Kingsbay**	**7.20**	**12**	Pn	**Pn**	**03 42 38.2**	**-0.1**
	SNR=50						
LANU	**Lannavaara**	**7.26**	**115**	*e*P	**Pn**	**03 42 40.9**	**+1.7**
LANU				*e*S	**Sn**	**03 43 59.1**	**-2.4**
ARA0	**ARCESS Array S**	**7.44**	**99**	Pn	**Pn**	**03 42 43.6**	**+1.9**
	baz=295,slow=12						
ARA0				Sn	**Sn**	**03 44 06.8**	**+0.8**
	baz=296,slow=22						
ARA0	**ARCESS Array S**	**7.44**	**99**	Pn	**Pn**	**03 42 43.6**	**+1.9**
	baz=295,slow=12						
ARA0				Sn	**Sn**	**03 44 06.8**	**+0.8**
	baz=296,slow=22						
ARA0	**ARCESS Array S**	**7.44**	**99**	Pn	**Pn**	**03 42 43.6**	**+1.9**
	baz=295,slow=12,SNR=50						
ARA0				Sn	**Sn**	**03 44 06.8**	**+0.8**
	baz=296,slow=20,SNR=50						
ARCES	**ARCESS Array B**	**7.44**	**99**	Pn	**Pn**	**03 42 43.7**	**+2.0**
	comp=Z,0.3nm,0.3s,baz=299,slow=12,SNR=8.8						
ARCES				Sn	**Sn**	**03 44 06.2**	**+0.2**
	comp=Z,0.2nm,0.3s,baz=305,slow=22,SNR=1.7						
ARE0	**ARCESS Array S**	**7.44**	**99**	*e*P	**Pn**	**03 42 42.6**	**+1.0**
ARE0				*e*S	**Sn**	**03 44 02.7**	**-3.3**
HEF	**Hetta**	**7.51**	**109**	*e*P	**Pn**	**03 42 42.4**	**-0.2**
HEF				*e*S	**Sn**	**03 44 05.1**	**-2.6**
KEV	**Kevo**	**7.80**	**96**	*e*P	**Pn**	**03 42 47.7**	**+1.1**
KEV				*e*S	**Sn**	**03 44 11.2**	**-3.6**
NOA	**NORSAR Array B**	**11.36**	**162**	LR	LR	03 47 51.2	
	comp=Z,11nm,18.9s,baz=340,slow=36						
HFS	**Hagfors**	**12.52**	**158**	Pn	**Pn**	**03 43 49.8**	**-1.3**
	baz=344,slow=16						
HFS	**Hagfors**	**12.52**	**158**	Pn	**Pn**	**03 43 49.8**	**-1.3**
	baz=344,slow=16						
HFS	**Hagfors**	**12.52**	**158**	*e*P	**Pn**	**03 43 49.8**	**-1.3**
HFS	**Hagfors**	**12.52**	**158**	Pn	**Pn**	**03 43 49.8**	**-1.3**
	baz=344,slow=14,SNR=50						
FINES	**FINESS Array B**	**13.57**	**130**	Pn	**Pn**	**03 44 07.1**	**+1.8**
	comp=Z,0.1nm,0.3s,baz=320,slow=15,SNR=4.0						
GERES	**GERESS Array B**	**23.66**	**164**	P	**P**	**03 46 06.5**	**+2.1**
	comp=Z,0.6nm,0.9s,baz=356,slow=11,SNR=3.5						
TORD	**Torodi Ar. Bea**	**58.86**	**183**	P	**P**	**03 50 50.0**	**-1.8**
	comp=Z,0.8nm,0.9s,baz=351,slow=5.5,SNR=4.4						

*NIED **31** 03:54:00, 36.°90N×143.°70E, h8km, Mw3.8 Best double couple: M0:5.90000×10^14 NP1:φ0=52.00000°, δ27.00000°, λ-79.00000°. NP2:φ0=220.00000°, δ63.00000°, λ-95.00000°.*
*IDC **31** 03:54:18.4±1.0, 36.°76N×144.°82E, h0km, mb3.8/6, mb1 3.9/8, mb1mx3.5/59, mbtmp3.7/8, ML3.6/2, Error ellipse: s-maj=44.0km s-min=20.7km az=81.0*
*ISCJB **31** 03:54:24.2±1.1, 36.°90N±0.°04×143.°74E±0.°07, h52km±12km, mb3.7/6, Error ellipse: s-maj=10.3km s-min=6.8km az=22.6*
*JMA **31** 03:54:24.2±0.3, 36.°88N×143.°74E, h64km, M3.8*
ISC 31 03:54:24.1±2.8, **36.°93N**±0.°07×**143.°9E**±0.°1, **h44km**±29km, **n25,** σ1**59**/32, **mb3.8/6, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**2.43**	**281**	P	**Pn**	**03 55 01.2**	**-0.1**
JFK				*e*S	**Sn**	**03 55 28.9**	**-0.9**
ONAJ	**Iwakimizuishiy**	**2.46**	**275**	P	**Pn**	**03 55 02.2**	**+0.4**
ONAJ				*e*S	**Sn**	**03 55 29.3**	**-1.3**
JHO	**Hitachi**	**2.67**	**264**	P	**Pn**	**03 55 04.8**	**+0.3**
JHO				*e*S	**Sn**	**03 55 33.5**	**-2.1**
JFT	**Otama**	**2.88**	**283**	P	**Pn**	**03 55 08.2**	**+0.8**
JFT				S	**Sn**	**03 55 41.0**	**+0.2**
JMK	**Ichinoseki**	**2.91**	**315**	P	**Pn**	**03 55 07.7**	**-0.1**
JMK				*e*S	**Sn**	**03 55 42.0**	**+0.6**
JOM	**Ohasama**	**3.25**	**322**	P	**Pn**	**03 55 13.1**	**+0.6**
JOM				*e*S	**Sn**	**03 55 48.4**	**-1.5**
BSO1	**Boso 1**	**3.27**	**227**	P	**Pn**	**03 55 11.7**	**-0.6**
BSO1				*e*S	**Sn**	**03 55 50.1**	**+0.4**
JYK	**Kaneyama**	**3.41**	**307**	P	**Pn**	**03 55 15.8**	**+1.1**
JYK				*e*S	**Sn**	**03 55 53.6**	**-0.3**
JAG	**Ashikaga**	**3.58**	**263**	P	**Pn**	**03 55 17.5**	**+0.4**
JAG				*e*S	**Sn**	**03 55 56.1**	**-2.1**
JANG	**Nango**	**3.90**	**333**	P	**Pn**	**03 55 22.9**	**+1.5**
JANG				*e*S	**Sn**	**03 56 03.6**	**-2.3**
JRY	**Ryogami san**	**4.10**	**259**	P	**Pn**	**03 55 24.4**	**+0.1**
JRY				*e*S	**Sn**	**03 56 08.9**	**-2.2**
JYN	**Shimob**	**4.54**	**253**	P	**Pn**	**03 55 31.1**	**+0.8**
JYN				*e*S	**Sn**	**03 56 21.1**	**-0.6**
MJAR	**Matsushiro Arr**	**4.56**	**267**	Pn	**Pn**	**03 55 32.2**	**+1.6**
	2.5nm,0.3s,baz=84,slow=8.3,SNR=18						
MJAR				Sn	**Sn**	**03 56 25.0**	**+2.7**
	1.7nm,0.3s,baz=123,slow=15,SNR=6.1						
ASAJ	**Asahikawa**	**7.24

ABTA	**Abfaltersbach**	**0.80**	**344**	Pg	**Pb**	**03 55 48.8**	**-0.3**
	2.7nm,0.1s,SNR=8.7						
ABTA				Sg	**Sb**	**03 55 59.7**	**-0.1**
	3.6nm,0.2s						
MYKA	**Terra Mystica**	**0.86**	**40**	Pg	**Pn**	**03 55 50.7**	**-0.4**
	0.9nm,0.2s						
MYKA				Sg	**Sb**	**03 56 01.8**	**+0.3**
	4.1nm,0.3s,SNR=5.6						
JAVS	**Javornik**	**0.86**	**95**	*i* Pn	**Pg**	**03 55 48.9**	**-1.1**
JAVS	**Javornik**	**0.86**	**95**	*i* Pn	**Pg**	**03 55 48.9**	**-1.1**
CEY	**Cerknica**	**1.14**	**102**	*i* Pn	**Pg**	**03 55 54.3**	**-0.9**
CEY	**Cerknica**	**1.14**	**102**	*i* Pn	**Pg**	**03 55 54.3**	**-0.9**
KBA	**Koelnbreinsper**	**1.15**	**18**	Pg	**Pn**	**03 55 56.1**	**+0.8**
	1.9nm,0.2s						
KBA				Sg	**Sn**	**03 56 11.0**	**0.0**
	3.2nm,0.2s						
APPI	**Appiano**	**1.22**	**295**	Pg	**Pb**	**03 55 56.2**	**-0.1**
APPI				Sg	**Sn**	**03 56 13.5**	**+0.9**
	78nm,0.3s						
APPI	**Appiano**	**1.22**	**295**	Pg	**Pb**	**03 55 56.2**	**-0.1**
APPI				Sg	**Sn**	**03 56 13.5**	**+0.9**
	78nm,0.3s						
ROVR	**Rover¯¤ Verone**	**1.28**	**255**	Pg	**Pn**	**03 55 56.9**	**-0.1**
ROVR				Sg	**Sn**	**03 56 14.6**	**+0.6**
	72nm,0.2s						
ROVR	**Rover¯¤ Verone**	**1.28**	**255**	Pg	**Pn**	**03 55 56.9**	**-0.1**
ROVR				Sg	**Sn**	**03 56 14.6**	**+0.6**
	72nm,0.2s						
OBKA	**Obir**	**1.30**	**65**	Pg	**Pg**	**03 55 58.0**	**-0.3**
	1.3nm,0.1s						
OBKA				Sg	**Sn**	**03 56 16.4**	**+1.8**
	6.7nm,0.2s						
WTTA	**Wattenberg**	**1.53**	**328**	Pg	**Pg**	**03 56 02.8**	**+0.2**
	3.6nm,0.2s,SNR=7.2						
WTTA				Sg	**Sg**	**03 56 23.7**	**+1.3**
	11nm,0.4s,SNR=4.9						
MAGA	**Magasa**	**1.56**	**263**	Pg	**Pb**	**03 56 01.6**	**-0.4**
MAGA				Sg	**Sg**	**03 56 23.1**	**-0.3**
	75nm,0.3s						
MAGA	**Magasa**	**1.56**	**263**	Pg	**Pb**	**03 56 01.6**	**-0.4**
MAGA				Sg	**Sg**	**03 56 23.1**	**-0.3**
	75nm,0.3s						
WATA	**Walderalm**	**1.61**	**328**	Pg	**Pg**	**03 56 04.1**	**-0.1**
	2.4nm,0.2s						
WATA				Sg	**Sg**	**03 56 28.0**	**+2.9**
	3.6nm,0.2s						
SQTA	**Sankt Quirin**	**1.67**	**318**	Pg	**Pg**	**03 56 05.0**	**-0.4**
SOKA	**Soboth**	**1.67**	**65**	Pg	**Pg**	**03 56 04.8**	**-0.6**
	0.5nm,0.2s						
SOKA				Sg	**Sg**	**03 56 27.1**	**0.0**
	3.0nm,0.3s						
FETA	**Feichten**	**1.79**	**306**	Pg	**Pg**	**03 56 06.8**	**-0.8**
	1.9nm,0.2s,SNR=9.8						
FETA				Sg	**Sg**	**03 56 30.6**	**-0.2**
	2.1nm,0.2s,SNR=5.2						
MOTA	**Moosalm**	**1.81**	**319**	Pg	**Pg**	**03 56 07.3**	**-0.7**
	1.3nm,0.1s,SNR=8.8						
MOTA				Sg	**Sg**	**03 56 33.1**	**+1.5**
	3.4nm,0.2s						
NVLJ	**Novalja**	**2.02**	**134**	*e*Pn	**Pn**	**03 56 07.7**	**+0.6**
NVLJ				Sn	**Sb**	**03 56 34.2**	**-0.7**
NVLJ	**Novalja**	**2.02**	**134**	*e*Pn	**Pn**	**03 56 07.6**	**+0.6**
NVLJ				Sn	**Sb**	**03 56 34.1**	**-0.7**
RETA	**Reutte**	**2.07**	**317**	Pg	**Pg**	**03 56 11.9**	**-1.1**
	0.8nm,0.2s						
RETA				Sg	**Sg**	**03 56 40.0**	**+0.1**
	3.2nm,0.2s						
DAVA	**Damuels**	**2.42**	**304**	Sg	**Sg**	**03 56 50.8**	**-0.2**
	3.0nm,0.3s						
UDBI	**Udbina**	**2.53**	**124**	*e*Pn	**Pn**	**03 56 14.7**	**+0.5**
UDBI				Sn	**Sb**	**03 56 48.5**	**-1.0**
UDBI	**Udbina**	**2.53**	**124**	*e*Pn	**Pn**	**03 56 14.6**	**+0.5**
UDBI				Sn	**Sb**	**03 56 48.5**	**-1.0**
KHC	**Kasperske Hory**	**3.19**	**9**	*e*PN	**Pn**	**03 56 24.3**	**+1.1**
KHC				*e*SN	**Sn**	**03 57 02.0**	**+0.9**
KHC				*e*SG	**Sg**	**03 57 15.7**	**0.0**
KHC	**Kasperske Hory**	**3.19**	**9**	Pn	**Pn**	**03 56 24.3**	**+1.1**
KHC				Sn	**Sn**	**03 57 02.0**	**+0.9**
KHC				Sg	**Sg**	**03 57 15.7**	**0.0**

JMA 31 04:07:18.4±0.1,37°.90N×143°.74E,h0km,M3.5,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**1.96**	**287**	*e*S	Sb	04 08 19.4	-0.6
OFUJ	**Ofunato**	**2.01**	**307**	P	Pn	04 07 54.1	+0.6
OFUJ				*e*S	Sb	04 08 20.6	-0.7
JMK	**Ichinoseki**	**2.24**	**299**	P	Pn	04 07 57.7	+1.0
JMK				*e*S	Sb	04 08 26.6	-1.4
JOM	**Ohasama**	**2.48**	**310**	P	Pn	04 08 01.6	+1.6
JOM				*e*S	Sb	04 08 33.0	-1.8
JFT	**Otama**	**2.73**	**263**	P	Pn	04 08 04.8	+1.4
JFT				*e*S	Sn	04 08 37.2	+0.1
JYK	**Kaneyama**	**2.84**	**292**	P	Pn	04 08 06.6	+1.6
JYK				*e*S	Sn	04 08 42.6	+2.6

MAN 31 04:12:30,13°.86N×120°.69E,h99km,mb3.8,ML2.6,MS2.1, 1C,Mindoro

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PGP	**Puerto Galera**	**0.43**	**144⇑**	*e*P	Pn	04 12 47.5	+2.2
PGP				*i* S	Sn	04 13 00.0	+3.3
LUBP	**Lubang**	**0.45**	**254**	*e*P	Pn	04 12 47.2	+1.9
LUBP				*e*S	Sn	04 13 00.4	+3.6
SJMP	**San Jose**	**1.45**	**163**	*e*P	Pn	04 12 56.8	+1.2
SJMP				*e*S	Sn	04 13 16.5	+1.5
BOLP	**Bolinao**	**2.62**	**343**	*e*P	Pn	04 13 12.2	+1.5

ISCJB ***31*** *04:23:03.8±1.6,38°.34N±0°.05×142°.20E±0°.10,h28km±8km, mb3.4/2,Error ellipse: s-maj=13.3km s-min=8.2km az=15.3*
JMA ***31*** *04:23:05.1±0.1,38°.40N×142°.17E,h31km±2km,M3.6*
IDC ***31*** *04:23:05.1±3.0,37°.70N×142°.65E,h0km,mb3.4/2, mb1 3.5/3,mb1mx3.2/45,mbtmp3.3/3,ML2.8/1,MS2.5/1, Ms1 2.5/1,ms1mx2.0/27,Error ellipse: s-maj=70.7km s-min=38.2km az=59.0*
ISC 31 04:23:04.5±2.4,38°.36N±0°.06×142°.2E±0°.1,h27km±15km, n18,σ0s55/16,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.64**	**279**	P	**Pb**	**04 23 17.6**	**+0.6**
JIO				S	**Sb**	**04 23 26.1**	**+0.5**
OFUJ	**Ofunato**	**0.81**	**333**	P	**Pb**	**04 23 19.8**	**-0.3**
OFUJ				S	**Sb**	**04 23 30.0**	**-0.7**
JMK	**Ichinoseki**	**0.94**	**310**	P	**Pn**	**04 23 22.0**	**+0.1**
JMK				S	**Sb**	**04 23 34.0**	**-0.2**
JOU	**Okura**	**1.17**	**271**	P	**Pb**	**04 23 26.0**	**0.0**
JOU				S	**Sb**	**04 23 41.0**	**+0.2**
JMM	**Marumori**	**1.18**	**246**	P	**Pn**	**04 23 25.4**	**+0.2**
JMM				*e*S	**Sn**	**04 23 40.0**	**-0.3**
JOM	**Ohasama**	**1.30**	**329**	P	**Pn**	**04 23 27.3**	**+0.4**
JOM				S	**Sn**	**04 23 43.3**	**-0.1**
JFK	**Kawauchi**	**1.41**	**226**	P	**Pn**	**04 23 28.1**	**-0.4**
JFK				*e*S	**Sn**	**04 23 45.1**	**-1.1**
JYK	**Kaneyama**	**1.51**	**292**	P	**Pb**	**04 23 31.3**	**-0.5**
MJAR	**Matsushiro Arr**	**3.62**	**241**	Pn	Pb	04 24 03.6	-4.2
	0.7nm,0.3s,baz=60,slow=10,SNR=4.0						
KLR	**Kul'dur**	**13.20**	**329**	LR	LR	04 31 13.0	
	comp=Z,21nm,20.4s,baz=52,slow=35						
H11N2	**WAKE ISLAND Hy 28.36**	**124**		T	T	04 59 10.6	
	baz=317,slow=75,SNR=53						
H11N1	**WAKE ISLAND Hy 28.37**	**124**		T	T	04 59 26.0	
	baz=317,slow=75,SNR=21						
H11N3	**WAKE ISLAND Hy 28.38**	**124**		T	T	04 59 22.8	
	baz=317,slow=75,SNR=30						
H11S1	**WAKE ISLAND Hy 29.12**	**126**		T	T	05 00 11.4	
	baz=318,slow=76,SNR=13						
H11S3	**WAKE ISLAND Hy 29.12**	**126**		T	T	05 00 11.6	
	baz=318,slow=76,SNR=13						
H11S2	**WAKE ISLAND Hy 29.14**	**126**		T	T	05 00 17.8	
	baz=318,slow=76,SNR=8.7						
MKAR	**Makanchi Array**	**43.92**	**301**	P	P	04 31 18.9	+10
	0.2nm,0.5s,baz=93,slow=8.8,SNR=2.6						
WRA	**Warramunga Arr**	**58.45**	**189**	P	**P**	**04 32 58.6**	**+0.6**
	0.5nm,0.7s,baz=7.1,slow=7.1,SNR=4.8						

ISCJB ***31*** *04:27:34.9±0.4,39°.12N±0°.01×28°.96E±0°.02,h8km±3km,*
Error ellipse: s-maj=2.8km s-min=2.2km az=22.4
DDA ***31*** *04:27:34.6,39°.11N×28°.98E,h18km,Ml3.9*
ISK ***31*** *04:27:34.6,39°.13N×29°.00E,h8km,ML3.7*
CSEM ***31*** *04:27:35.3±0.1,39°.11N×28°.98E,h8km,ML3.9,Error ellipse: s-maj=1.7km s-min=1.4km az=106.0*
THE ***31*** *04:27:37.2,39°.04N×28°.78E,h0km±1km,ML3.4/3,Error ellipse: s-maj=2.3km s-min=0.7km az=65.0*
ISC 31 04:27:35.4±0.9,39°.14N±0°.01×28°.98E±0°.02,h12km±7km, n176,σ0s85/226,9C-2D,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.22**	**246**	P	**Pg**	**04 27 40.2**	**0.0**
DEMI				S	**Sg**	**04 27 43.5**	**0.0**
DEMI	**Demirci**	**0.22**	**246⇑**	*i*P	**Pg**	**04 27 40.2**	**0.0**
DEMI				*i* S	**Sg**	**04 27 43.5**	**0.0**
GDZ	**Gediz**	**0.40**	**97**	P	**Pg**	**04 27 43.4**	**0.0**
GDZ				S	**Sg**	**04 27 48.9**	**+0.3**
GDZ	**Gediz**	**0.40**	**97⇓**	*i*P	**Pg**	**04 27 43.4**	**0.0**
GDZ				*i* S	**Sg**	**04 27 48.9**	**+0.3**
TVSB	**Tavsanli**	**0.49**	**50**	*e*PG	**Pg**	**04 27 44.8**	**-0.3**
TVSB				*e*SG	**Sg**	**04 27 51.7**	**+0.1**
TVSB	**Tavsanli**	**0.49**	**50**	*e*Pg	**Pg**	**04 27 44.8**	**-0.3**
TVSB				*e*Sg	**Sg**	**04 27 51.7**	**+0.1**
KULA	**Kula-Manisa**	**0.67**	**202**	*e*PG	**Pg**	**04 27 47.6**	**-0.8**
KULA	**Kula-Manisa**	**0.67**	**202**	P	**Pg**	**04 27 47.9**	**-0.5**
KULA				S	**Sg**	**04 27 56.3**	**-0.9**
KULA	**Kula-Manisa**	**0.67**	**202**	*e*Pg	**Pg**	**04 27 47.6**	**-0.8**
KULA	**Kula-Manisa**	**0.67**	**202**	P	**Pg**	**04 27 47.9**	**-0.5**
KULA				S	**Sg**	**04 27 56.3**	**-0.9**
KHAL	**Karahalli**	**0.86**	**152**	P	**Pg**	**04 27 51.8**	**-0.3**
KHAL				S	**Sg**	**04 28 02.9**	**-0.5**
KHAL	**Karahalli**	**0.86**	**152**	*i* P	**Pg**	**04 27 51.8**	**-0.3**
KHAL				*i* S	**Sg**	**04 28 02.9**	**-0.5**
ORLT	**Orhaneli**	**0.91**	**356**	*e*PG	**Pg**	**04 27 52.6**	**-0.5**
ORLT				*e*SG	**Sb**	**04 28 05.6**	**+0.2**
ORLT	**Orhaneli**	**0.91**	**356**	*e*Pg	**Pg**	**04 27 52.6**	**-0.5**
ORLT				*e*Sg	**Sb**	**04 28 05.6**	**+0.2**
KHL	**Karahalli**	**0.92**	**152**	*e*PG	**Pg**	**04 27 52.9**	**-0.2**
KHL	**Karahalli**	**0.92**	**152**	*e*Pg	**Pg**	**04 27 52.9**	**-0.2**
AKHS	**Akhisar**	**0.94**	**255**	P	**Pg**	**04 27 53.5**	**-0.1**
AKHS				S	**Sb**	**04 28 06.2**	**0.0**
AKHS	**Akhisar**	**0.94**	**255**	*i* P	**Pg**	**04 27 53.5**	**-0.1**
AKHS				*i* S	**Sb**	**04 28 06.2**	**0.0**
AKS	**Akhisar**	**0.94**	**255**	*e*PG	**Pg**	**04 27 53.0**	**-0.6**
AKS	**Akhisar**	**0.94**	**255**	*e*Pg	**Pg**	**04 27 53.0**	**-0.6**
BALB	**Balikesir**	**0.99**	**301**	*e*PG	**Pb**	**04 27 54.6**	**+0.1**
BALB	**Balikesir**	**0.99**	**301**	*e*Pg	**Pb**	**04 27 54.6**	**+0.1**
IGD	**Bursa**	**1.14**	**9**	*i* P	**Pb**	**04 27 56.2**	**-0.9**
IGD				*i* S	**Sb**	**04 28 11.2**	**-0.7**
BALY	**Balya**	**1.21**	**300**	P	**Pg**	**04 27 58.7**	**-0.1**
BALY				S	**Sn**	**04 28 15.4**	**+0.7**
BALY	**Balya**	**1.21**	**300**	*i* P	**Pg**	**04 27 58.7**	**-0.1**
BALY				*i* S	**Sn**	**04 28 15.4**	**+0.7**
KCTX	**Karacabey (Bur**	**1.23**	**337**	*e*PN	**Pb**	**04 27 58.8**	**+0.2**
KCTX	**Karacabey (Bur**	**1.23**	**337**	*e*Pn	**Pb**	**04 27 58.8**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.23**	**357**	*e*PN	**Pb**	**04 27 58.8**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.23**	**357**	*e*Pn	**Pb**	**04 27 58.8**	**+0.1**
IZI	**Iznik**	**1.26**	**18**	*e*PN	**Pb**	**04 27 59.2**	**0.0**
IZI	**Iznik**	**1.26**	**18**	*e*Pn	**Pb**	**04 27 59.2**	**0.0**
GEMT	**Gemlik**	**1.31**	**7**	*e*PN	**Pb**	**04 27 59.9**	**-0.1**
GEMT	**Gemlik**	**1.31**	**7**	*e*Pn	**Pb**	**04 27 59.9**	**-0.1**
GONE	**Gonen-Balikesi**	**1.35**	**313**	*e*PN	**Pb**	**04 28 00.8**	**+0.1**
GONE	**Gonen-Balikesi**	**1.35**	**313**	*e*Pn	**Pb**	**04 28 00.8**	**+0.1**
BORA	**Eskisehir**	**1.36**	**56**	P	**Pn**	**04 28 00.5**	**+0.1**
BORA				S	**Sg**	**04 28 19.5**	**+0.1**
BORA	**Eskisehir**	**1.36**	**56**	*i* P	**Pn**	**04 28 00.5**	**+0.1**
BORA				*i* S	**Sg**	**04 28 19.5**	**+0.1**
DENT	**Denizli**	**1.38**	**178**	*e*PN	**Pn**	**04 28 00.6**	**-0.1**
DENT	**Denizli**	**1.38**	**178**	*e*Pn	**Pn**	**04 28 00.5**	**-0.1**
ADVT	**Abdulvahap**	**1.42**	**24**	*e*PN	**Pn**	**04 28 01.4**	**+0.3**
ADVT	**Abdulvahap**	**1.42**	**24**	*e*Pn	**Pn**	**04 28 01.4**	**+0.3**
ARMT	**Armutlu**	**1.43**	**356**	*e*PN	**Pb**	**04 28 01.9**	**-0.2**
ARMT	**Armutlu**	**1.43**	**356**	*e*Pn	**Pb**	**04 28 01.9**	**-0.2**
DNZL	**Cakiroluk**	**1.45**	**178**	P	**Pn**	**04 28 00.9**	**-0.7**
DNZL				S	**Sn**	**04 28 20.1**	**-0.5**
DNZL	**Cakiroluk**	**1.45**	**178**	*i* P	**Pn**	**04 28 00.9**	**-0.7**
DNZL				*i* S	**Sn**	**04 28 20.1**	**-0.5**
AYDB	**Zeytinkoy-Aydi**	**1.46**	**216**	*e*PN	**Pn**	**04 28 02.1**	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**1.46**	**216**	*e*Pn	**Pn**	**04 28 02.1**	**+0.3**
BNT	**Bandirma**	**1.47**	**327**	*e*PN	**Pb**	**04 28 02.6**	**-0.1**
BNT	**Bandirma**	**1.47**	**327**	*e*Pn	**Pb**	**04 28 02.6**	**-0.1**
EDC	**Edincik**	**1.48**	**325**	*e*PN	**Pb**	**04 28 03.0**	**0.0**
EDC	**Edincik**	**1.48**	**325**	*e*Pn	**Pb**	**04 28 03.0**	**0.0**
ESKT	**Eskisehir**	**1.50**	**75**	*i* P	**Pb**	**04 28 03.3**	**-0.1**
ESKT				*i* S	**Sg**	**04 28 23.5**	**-0.3**
SEYT	**Eskypehyr**	**1.50**	**75**	P	**Pb**	**04 28 03.3**	**-0.1**
SEYT				S	**Sg**	**04 28 23.5**	**-0.3**
IZM	**Izmir**	**1.53**	**242**	*e*PN	**Pn**	**04 28 03.0**	**+0.3**
IZM	**Izmir**	**1.53**	**242**	*e*Pn	**Pn**	**04 28 03.0**	**+0.3**
GPA	**Golpazari**	**1.54**	**41**	*e*PN	**Pn**	**04 28 03.0**	**+0.1**
GPA	**Golpazari**	**1.54**	**41**	*e*Pn	**Pn**	**04 28 03.0**	**+0.1**
KNL	**Bal¯¦kesir**	**1.59**	**316**	*i* P	**Pn**	**04 28 02.7**	**-0.8**
KNL				*i* S	**Sn**	**04 28 24.4**	**+0.4**
AYDN	**Tasoluk**	**1.71**	**211**	P	**Pn**	**04 28 04.6**	**-0.5**
AYDN				S	**Sb**	**04 28 28.0**	**-0.2**
AYDN	**Tasoluk**	**1.71**	**211**	*i* P	**Pn**	**04 28 04.5**	**-0.5**
AYDN				*i* S	**Sb**	**04 28 28.1**	**-0.2**
BUY	**Buyukada**	**1.72**	**4**	P	**Pn**	**04 28 05.1**	**-0.1**
BUY	**Buyukada**	**1.72**	**4**	*i* P	**Pn**	**04 28 05.1**	**-0.1**
BUY				*i* S	**Sg**	**04 28 30.8**	**0.0**
GULT	**Gulveren**	**1.76**	**42**	*e*PN	**Pn**	**04 28 06.1**	**+0.3**
GULT	**Gulveren**	**1.76**	**42**	*e*Pn	**Pn**	**04 28 06.1**	**+0.3**
AYVA	**Ayvalik**	**1.78**	**276**	*i* P	**Pg**	**04 28 08.7**	**0.1**
AYVA				*i* S	**Sg**	**04 28 33.2**	**+0.4**
ISP	**Isparta**	**1.79**	**137**	*e*PN	**Pn**	**04 28 06.3**	**0.0**
ISP	**Isparta**	**1.79**	**137⇑**	*i*P	**Pn**	**04 28 06.1**	**-0.1**
ISP	**Isparta**	**1.79**	**137**	*e*Pn	**Pn**	**04 28 06.3**	**0.0**
MRMT	**Marmara Adasi**	**1.81**	**324**	*e*PN	**Pn**	**04 28 07.4**	**+0.8**
MRMT	**Marmara Adasi**	**1.81**	**324**	*e*Pn	**Pn**	**04 28 07.4**	**+0.8**
SPNC	**Sapanca-Adapaz**	**1.86**	**33**	*e*PN	**Pn**	**04 28 07.8**	**+0.7**
SPNC	**Sapanca-Adapaz**	**1.86**	**33**	*e*Pn	**Pn**	**04 28 07.8**	**+0.7**
ISK	**Istanbul-Kandi**	**1.93**	**2**	*e*PN	**Pn**	**04 28 08.9**	**+0.8**
ISK	**Istanbul-Kandi**	**1.93**	**2**	P	**Pg**	**04 28 11.6**	**-0.8**
ISK	**Istanbul-Kandi**	**1.93**	**2**	*e*Pn	**Pn**	**04 28 08.9**	**+0.8**
ISK	**Istanbul-Kandi**	**1.93**	**2**	P	**Pg**	**04 28 11.6**	**-0.8**
GOLH	**Golhisar**	**1.95**	**166**	P	**Pn**	**04 28 08.8**	**+0.3**
GOLH	**Golhisar**	**1.95**	**166**	*i* P	**Pn**	**04 28 08.8**	**+0.3**
GOLH				*i* S	**Sg**	**04 28 41.4**	**+3.2**
DGB	**¯zmir**	**1.96**	**237**	*i* P	**Pn**	**04 28 08.1**	**-0.5**
DGB				*i* S	**Sg**	**04 28 37.8**	**-0.8**
GCAM	**G?zelcaml?**	**1.98**	**224**	P	**Pb**	**04 28 11.1**	**-0.4**
GCAM	**G?zelcaml?**	**1.98**	**224**	*i* P	**Pb**	**04 28 11.1**	**-0.4**
GCAM				*i* S	**Sg**	**04 28 37.6**	**-1.5**
SVRH	**Sivrihisar-ESK**	**2.00**	**80**	*e*PN	**Pn**	**04 28 09.1**	**-0.1**
SVRH	**Sivrihisar-ESK**	**2.00**	**80**	*e*Pn	**Pn**	**04 28 09.1**	**-0.1**
URLA	**Izmir**	**2.02**	**248**	P	**Pn**	**04 28 08.4**	**-1.0**
URLA				S	**Sb**	**04 28 37.5**	**+0.4**
URLA	**Izmir**	**2.02**	**248**	*i* P	**Pn**	**04 28 08.3**	**-1.0**
URLA				*i* S	**Sb**	**04 28 37.5**	**+0.4**
BGKT	**Bogazkoy**	**2.05**	**356**	*e*PN	**Pn**	**04 28 10.4**	**+0.6**
BGKT	**Bogazkoy**	**2.05**	**356**	*e*Pn	**Pn**	**04 28 10.4**	**+0.6**
YER	**Yerkesik**	**2.07**	**196**	*e*PN	**Pn**	**04 28 10.6**	**+0.5**
YER	**Yerkesik**	**2.07**	**196**	P	**Pn**	**04 28 09.9**	**-0.2**
YER				S	**Sn**	**04 28 36.0**	**+0.1**
YER	**Yerkesik**	**2.07**	**196**	P	**Pn**	**04 28 09.9**	**-0.2**
YER	**Yerkesik**	**2.07**	**196**	*e*Pn	**Pn**	**04 28 10.6**	**+0.5**
YER				S	**Sn**	**04 28 36.0**	**+0.1**
RKY	**Sarkoy-Tekirda**	**2.08**	**319**	*e*PN	**Pb**	**04 28 11.9**	**-1.2**
RKY	**Sarkoy-Tekirda**	**2.08**	**319**	*e*Pn	**Pb**	**04 28 12.0**	**-1.2**
SART	**Tekirdag**	**2.08**	**319**	*i* P	**Pb**	**04 28 14.1**	**+1.0**
SART				*i* S	**Sg**	**04 28 41.8**	**-0.5**
SILT	**Sile**	**2.08**	**14**	*e*PN	**Pn**	**04 28 10.6**	**+0.4**
SILT	**Sile**	**2.08**	**14**	*e*Pn	**Pn**	**04 28 10.6**	**+0.4**
PRK	**Paraskevi**	**2.10**	**274**	P	**Pn**	**04 28 10.7**	**+0.2**
PRK				S	**Sn**	**04 28 35.9**	**-0.7**
PRK	**Paraskevi**	**2.10**	**274**	P	**Pn**	**04 28 10.7**	**+0.2**
PRK				S	**Sn**	**04 28 35.9**	**-0.7**
LPK	**Lapseki**	**2.11**	**307**	*e*PN	**Pn**	**04 28 11.6**	**+1.0**
LPK	**Lapseki**	**2.11**	**307**	*e*Pn	**Pn**	**04 28 11.6**	**+1.0**
KLYT	**Kilyos**	**2.12**	**1**	*e*PN	**Pn**	**04 28 11.1**	**+0.4**
KLYT	**Kilyos**	**2.12**	**1**	*e*Pn	**Pn**	**04 28 11.1**	**+0.4**
BTAS	**Taskesti**	**2.12**	**47**	P	**Pn**	**04 28 10.8**	**0.0**
BTAS	**Taskesti**	**2.12**	**47**	*i* P	**Pn**	**04 28 10.8**	**0.0**
BTAS				*i* S	**Sg**	**04 28 44.1**	**+0.6**
CTKS	**Kestanelik-??a**	**2.13**	**350**	*e*PN	**Pn**	**04 28 11.5**	**+0.7**
CTKS	**Kestanelik-??a**	**2.13**	**350**	*e*Pn	**Pn**	**04 28 11.5**	**+0.7**
ZEY	**¯zmir**	**2.13**	**246**	*i* P	**Pn**	**04 28 10.2**	**-0.7**
ZEY				*i* S	**Sg**	**04 28 44.6**	**+0.6**
TKR	**Tekirdag**	**2.16**	**330**	*e*PN	**Pn**	**04 28 12.2**	**+0.9**
TKR	**Tekirdag**	**2.16**	**330**	*e*Pn	**Pn**	**04 28 12.2**	**+0.9**
EZN	**Ezine**	**2.17**	**289**	*e*PN	**Pn**	**04 28 12.6**	**+1.3**
EZN	**Ezine**	**2.17**	**289**	*e*Pn	**Pn**	**04 28 12.6**	**+1.3**
KAND	**Kocaeli-Kandir**	**2.17**	**25**	P	**Pn**	**04 28 11.7**	**+0.3**
KAND	**Kocaeli-Kandir**	**2.17**	**25**	*i* P	**Pn**	**04 28 11.7**	**+0.3**
KAND				*i* S	**Sg**	**04 28 44.6**	**-0.5**
MDUB	**Mudurnu**	**2.17**	**51**	*e*PN	**Pn**	**04 28 11.9**	**+0.4**
MDUB	**Mudurnu**	**2.17**	**51**	*e*Pn	**Pn**	**04 28 12.0**	**+0.4**
SLVT	**Silivri**	**2.17**	**345**	*e*PN	**Pn**	**04 28 12.1**	**+0.6**
SLVT	**Silivri**	**2.17**	**345**	*e*Pn	**Pn**	**04 28 12.1**	**+0.6**
SLVT	**Silivri**	**2.17**	**345**	P	**Pb**	**04 28 13.9**	**-0.8**
SMG	**Samos**	**2.20**	**230**	P	**Pn**	**04 28 10.8**	**-1.1**
SMG				S	**Sn**	**04 28 37.4**	**-1.7**
SMG	**Samos**	**2.20**	**230**	P	**Pn**	**04 28 10.8**	**-1.1**
SMG				S	**Sn**	**04 28 37.4**	**-1.7**
CRLT	**Corlu**	**2.21**	**335**	*e*PN	**Pn**	**04 28 12.8**	**+0.9**
CRLT	**Corlu**	**2.21**	**335**	*e*Pn	**Pn**	**04 28 12.8**	**+0.9**
KIZT	**Kizilcal**	**2.28**	**96**	*e*PN	**Pn**	**04 28 13.0**	**0.0**
KIZT	**Kizilcal**	**2.28**	**96**	*e*Pn	**Pn**	**04 28 13.0**	**0.0**
TURN	**Turunc**	**2.28**	**188**	*i* P	**Pn**	**04 28 14.5**	**+1.6**
TURN				*i* S	**Sg**	**04 28 55.5**	**+6.9**
SUTC	**Sutluce-Ispart**	**2.30**	**136**	*e*PN	**Pn**	**04 28 13.6**	**+0.3**
SUTC	**Sutluce-Ispart**	**2.30**	**136**	*e*Pn	**Pn**	**04 28 13.6**	**+0.3**
GELI	**Tayfur-Gelibol**	**2.30**	**304**	*e*PN	**Pn**	**04 28 14.3**	**+1.0**
GELI	**Tayfur-Gelibol**	**2.30**	**304**	*e*Pn	**Pn**	**04 28 14.3**	**+1.0**
BOZC	**Bozcaada**	**2.37**	**288**	*i* P	**Pn**	**04 28 14.6**	**+0.4**
BOZC				*i* S	**Sg**	**04 28 51.2**	**-0.4**
BDRM	**Kayabasi**	**2.39**	**211**	P	**Pn**	**04 28 13.7**	**-0.8**
BDRM	**Kayabasi**	**2.39**	**211**	*i* P	**Pn**	**04 28 13.7**	**-0.8**
BDRM				*i* S	**Sg**	**04 28 53.0**	**+0.7**
CTYL	**Yalikoy Yolu**	**2.40**	**348**	*e*PN	**Pn**	**04 28 15.7**	**+1.2**
CTYL	**Yalikoy Yolu**	**2.40**	**348**	*e*Pn	**Pn**	**04 28 15.7**	**+1.2**
CHOS	**Chios Island**	**2.40**	**253**	P	**Pn**	**04 28 14.2**	**-0.5**
CHOS				S	**Sn**	**04 28 43.8**	**-0.3**
CHOS	**Chios island**	**2.40**	**253**	P	**Pn**	**04 28 14.2**	**-0.5**
CHOS				S	**Sn**	**04 28 43.8**	**-0.3**
SIGR	**SIGRI**	**2.43**	**273**	P	**Pn**	**04 28 14.9**	**-0.1**
SIGR	**SIGRI**	**2.43**	**273**	P	**Pn**	**04 28 14.9**	**-0.1**
ERIK	**Erikli-Kesan**	**2.44**	**310**	*e*PN	**Pn**	**04 28 16.2**	**+1.1

BORA *i* S **Sg** **04 39 51.1 -0.1**
ESKT Eskisehir 1.44 72 *i* P **Pg** **04 39 36.0 0.0**
SEYT Eskypehyr 1.44 72 P **Pg** **04 39 36.0 0.0**
ARMT Armutlu 1.49 354 *e*PN **Pb** **04 39 36.0 +0.6**
ARMT Armutlu 1.49 354 *e*Pn **Pb** **04 39 36.1 +0.6**
EDC Edincik 1.57 324 *e*PN **Pb** **04 39 36.9 +0.1**
EDC Edincik 1.57 324 *e*Pn **Pb** **04 39 36.9 +0.1**
GULT Gulveren 1.74 39 *e*PN **Pb** **04 39 39.6 -0.3**
GULT Gulveren 1.74 39 *e*Pn **Pb** **04 39 39.6 -0.3**
SAHE Sakarya_HENDEK 2.23 37 *i* P **Pg** **04 39 50.5 -0.6**
SAHE *i* S **Sg** **04 40 20.1 +0.1**

*ISCJB **31** 04:40:22.5±0.9, 8°.12S±0°.07×117°.7E±0°.1, h33km, mb3.8/5, MS4.3/1, Error ellipse: s-maj=15.8km s-min=10.0km az=179.7*
*IDC **31** 04:40:25.2±5.8, 8°.09S×117°.80E, h37km±52km, mb3.6/5, mb1 3.8/7, mb1mx3.6/30, mbtmp3.7/7, ML3.2/2, MS4.2/1, Ms1 4.2/1, ms1mx2.6/32, Error ellipse: s-maj=40.3km s-min=19.6km az=63.0*
ISC 31 04:40:24.8±1.1, 8°.14S±0°.08×117°.8E±0°.1, h35km, n10, σ1§04/10, mb4.0/5, Sumbawa region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KAPI	**Kappang**	**3.66**	**32**	Pn	**Pn**	**04 41 18.5**	**-0.4**
	46nm,0.3s,baz=214,slow=4.5,SNR=44						
KAPI				Sn	**Sn**	**04 42 01.3**	**+0.4**
	18nm,0.3s,baz=229,slow=19,SNR=11						
LEM	**Lembang**	**10.18**	**277**	LR	LR	04 48 22.3	
	comp=Z,50nm,19.1s,baz=117,slow=47						
FITZ	**Fitzroy Crossi**	**12.50**	**143**	Pn	**Pn**	**04 43 21.3**	**+1.1**
	0.1nm,0.3s,baz=330,slow=14,SNR=2.5						
FITZ				Sn	**Sn**	**04 45 36.2**	**-2.1**
	0.2nm,0.3s,baz=200,slow=18,SNR=3.5						
WRA	**Warramunga Arr**	**19.85**	**128**	P	**P**	**04 44 53.4**	**+0.4**
	0.1nm,0.3s,baz=302,slow=12,SNR=4.8						
ASAR	**Alice Springs**	**21.83**	**137**	P	**P**	**04 45 15.4**	**+1.1**
	0.7nm,0.4s,baz=313,slow=9.0,SNR=7.5						
JAY	**Jayapura**	**23.47**	**77**	P	**P**	**04 45 31.6**	**0.0**
	0.6nm,0.7s,baz=334,slow=23,SNR=3.0						
CMAR	**Chiang Mai Arr**	**32.33**	**325**	P	**P**	**04 46 50.6**	**-0.2**
	1.3nm,0.3s,baz=145,slow=8.7,SNR=6.3						
SONM	**Songino Array**	**56.64**	**351**	P	**P**	**04 50 04.7**	**+0.2**
	1.3nm,0.7s,baz=172,slow=8.4,SNR=7.9						
MKAR	**Makanchi Array**	**63.16**	**333**	P	**P**	**04 50 48.8**	**-0.4**
	0.7nm,0.5s,baz=149,slow=7.1,SNR=9.8						
ASF	**Jabal al Asfar**	**86.67**	**303**	LR	LR	05 38 12.7	
	comp=Z,123nm,18.8s,slow=40						

*GUC **31** 05:01:46.7±0.6, 34°.75S×71°.83W, h50km±3km, ML3.6*
*SJA **31** 05:01:48.8±0.5, 34°.73S×71°.47W, h152km±14km, ML3.3*
ISC 31 05:01:46.3±1.7, 34°.82S±0°.04×71°.73W±0°.07, h20km±6km, n19, σ0§92/27, 4C-1D, Near coast of central Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHPI	**Pichilemu**	**0.48**	**332**	⇑*i* P	**Pg**	**05 01 56.3**	**+0.1**
CHPI				*i* S	**Sb**	**05 02 03.6**	**+0.7**
TALC	**Talca**	**0.58**	**172**	⇑*i* P	**Pn**	**05 02 00.5**	**+1.0**
TALC				*i* S	**Sn**	**05 02 09.8**	**+1.3**
RCDM	**Rinconada Maip**	**1.53**	**30**	*e*P	**Pn**	**05 02 12.1**	**-0.6**
RCDM				*i* S	**Sn**	**05 02 31.4**	**-0.7**
ANTU	**Antumapu**	**1.54**	**36**	*e*P	**Pn**	**05 02 12.9**	**+0.1**
ANTU				*e*S	**Sn**	**05 02 32.4**	**+0.1**
ANTU				IAML		05 02 37.9	
	comp=E,1μm,0.3s						
COCH	**Cobquecura**	**1.57**	**213**	⇓*i* P	**Pn**	**05 02 13.1**	**+0.1**
SJCH	**San Jose de Ma**	**1.64**	**44**	*e*P	**Pn**	**05 02 14.5**	**+0.4**
SJCH				*e*S	**Sn**	**05 02 35.6**	**+0.9**
CLCH	**Cerro Calan**	**1.73**	**35**	⇑*i* P	**Pn**	**05 02 15.5**	**+0.1**
CLCH				*i* S	**Sn**	**05 02 37.3**	**+0.3**
CLCH				IAML		05 02 41.2	
	comp=N,1μm,0.9s						
PEL	**Peldehue**	**1.89**	**28**	⇑*i* P	**Pn**	**05 02 17.7**	**+0.2**
PEL				*e*S	**Sn**	**05 02 40.6**	**-0.2**
PEL				IAML		05 02 45.7	
	comp=N,716nm,0.5s						
CANA	**Caviahue**	**3.11**	**170**	*e*P	**Pb**	**05 02 39.4**	**-1.6**
CANA				IAML		05 02 58.6	
	comp=Z,28nm,0.8s						
AUSP	**Uspallata**	**3.25**	**38**	*e*P	**Pn**	**05 02 38.3**	**+1.9**
AUSP				*e*S	**Sn**	**05 03 15.1**	**+0.4**
RTLS	**Leoncito**	**3.64**	**35**	*e*P	**Pn**	**05 02 43.8**	**+2.0**
RTCV	**Cerro Valdivia**	**3.98**	**43**	*e*P	**Pn**	**05 02 47.1**	**+0.8**
RTLL	**Cerro Villicun**	**4.43**	**39**	*e*P	**Pn**	**05 02 53.3**	**+0.8**
ACAN	**Cantantal**	**4.56**	**57**	*e*P	**Pn**	**05 02 54.4**	**+0.1**
AMOG	**MOGNA**	**4.73**	**36**	*e*P	**Pn**	**05 02 56.8**	**+0.1**
MRA	**San Martin**	**5.56**	**66**	*e*P	**Pn**	**05 03 07.2**	**-0.9**
MRA				IAML		05 04 53.5	
	comp=Z,10nm,0.6s						
AGUA	**GUANDACOL**	**5.99**	**28**	*e*P	**Pn**	**05 03 13.6**	**-0.4**
VCA	**Vinchina**	**6.77**	**27**	*e*P	**Pn**	**05 03 24.6**	**-0.1**
VCA				IAML		05 05 01.2	
	comp=Z,12nm,0.4s						
TCA	**Tanti**	**6.92**	**62**	*e*P	**Pn**	**05 03 28.1**	**+1.3**
TCA				IAML		05 04 52.0	
	comp=Z,6.5nm,0.8s						

*ISCJB **31** 05:04:07.6±0.4, 11°.12S±0°.08×13°.52W±0°.08, h10km, mb4.1/26, MS3.9/26, Error ellipse: s-maj=13.5km s-min=8.8km az=41.7*
*IDC **31** 05:04:07.9±0.5, 11°.12S×13°.51W, h0km, mb4.2/25, mb1 4.3/26, mb1mx4.1/54, mbtmp4.2/26, ML3.3/1, MS3.8/27, Ms1 3.8/27, ms1mx3.8/33, Error ellipse: s-maj=18.7km s-min=12.4km az=145.0*
*NEIC **31** 05:04:09.4±0.3, 11°.12S×13°.52W, h10km, mb4.7/1, Error ellipse: s-maj=11.7km s-min=8.1km az=138.0*
ISC 31 05:04:09.5±0.5, 11°.15S±0°.1×13°.5W±0°.1, h10km, n48, σ1§09/31, mb4.2/26, MS3.9/26, 1C, Ascension Island region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H10S2	**ASCENSION HYDR**	**2.44**	**333**	T	T	05 07 59.4	
	baz=152,slow=74,SNR=862						
H10S3	**ASCENSION HYDR**	**2.45**	**332**	T	T	05 08 01.5	
	baz=152,slow=74,SNR=1470						
H10S1	**ASCENSION HYDR**	**2.45**	**333**	T	T	05 08 10.4	
	baz=152,slow=74,SNR=627						
LIC	**Lamto**	**19.20**	**26**	*e*P	**Pn**	**05 08 38.0**	**+3.4**
	101nm,1.4s						
KIC	**Kosan Boka**	**19.45**	**27**	*e*P	**Pn**	**05 08 38.3**	**+0.7**
	105nm,1.5s						
TIC	**Toumodi**	**19.58**	**26**	*e*P	**Pn**	**05 08 39.9**	**+0.7**
DBIC	**Dimbokro**	**19.67**	**26**	P	**Pn**	**05 08 39.7**	**-0.6**
	0.1nm,0.3s,baz=198,slow=20,SNR=3.3						
DBIC				LR	LR	05 14 33.9	
	comp=Z,352nm,20.0s,baz=157,slow=32						
RCBR	**Riachuelo**	**22.76**	**282**	LR	LR	05 15 54.0	
	comp=Z,347nm,20.4s,baz=90,slow=31						
BBTS	**Babate**	**25.80**	**353**	LR	LR	05 18 59.4	
	comp=Z,166nm,18.1s,baz=148,slow=35						
TORD	**Torodi Ar. Bea**	**28.46**	**32**	P	**P**	**05 10 03.1**	**-1.7**
	6.6nm,1.0s,baz=211,slow=7.9,SNR=15						
TORD				LR	LR	05 19 48.6	
	comp=Z,357nm,20.1s,baz=215,slow=33						
TSUM	**Tsumeb**	**31.02**	**109**	LR	LR	05 19 53.6	
	comp=Z,315nm,21.7s,baz=330,slow=30						
BDFB	**Brasilia**	**33.84**	**259**	P	**P**	**05 10 51.8**	**-0.7**
	3.1nm,1.0s,baz=69,slow=7.8,SNR=3.4						
LBTB	**Lobatse**	**39.50**	**116**	P	**P**	**05 11 40.4**	**-0.3**
	5.9nm,1.1s,baz=275,slow=12,SNR=3.0						
BOSA	**Boshof**	**40.16**	**121**	P	**P**	**05 11 46.2**	**+0.1**
	7.5nm,1.1s,baz=284,slow=4.2,SNR=3.2						
BOSA				LR	LR	05 26 01.1	
	comp=Z,174nm,21.6s,baz=260,slow=33						
LSZ	**Lusaka**	**40.76**	**100**	P	**P**	**05 11 51.3**	**+0.1**
	0.6nm,0.3s,baz=97,slow=18,SNR=5.0						
CPUP	**Villa Florida**	**43.93**	**244**	P	**P**	**05 12 17.3**	**+0.5**
	10nm,1.3s,baz=72,slow=10,SNR=3.8						
CPUP				LR	LR	05 27 54.6	
	comp=Z,151nm,18.4s,baz=86,slow=32						
MDT	**Midelt**	**44.52**	**11**	LR	LR	05 30 11.3	
	comp=Z,408nm,18.5s,slow=35						
SIV	**San Ignacio**	**46.41**	**259**	P	**P**	**05 12 37.5**	**+0.8**
	1.1nm,0.7s,baz=167,slow=3.4,SNR=2.5						
ESDC	**Sonseca Array**	**51.32**	**9**	LR	LR	05 34 40.6	
	comp=Z,109nm,18.2s,baz=150,slow=36						
KMBO	**Kilima Mbogo**	**51.36**	**82**	LR	LR	05 33 47.4	
	comp=Z,67nm,18.9s,baz=248,slow=35						
KEST	**Kesra**	**51.37**	**24**	P	**P**	**05 13 14.7**	**+0.2**
	4.4nm,1.1s,baz=202,slow=19,SNR=2.9						
KEST				LR	LR	05 34 13.2	
	comp=Z,179nm,20.6s,baz=180,slow=35						
LPAZ	**La Paz**	**53.19**	**258**	P	**P**	**05 13 27.4**	**-1.6**
	1.5nm,1.1s,baz=78,slow=9.3,SNR=3.7						
VAE	**Valguarnera**	**55.00**	**27**	LR	LR	05 37 56.3	
	comp=Z,222nm,18.1s,baz=149,slow=37						
PLCA	**Paso Flores**	**57.36**	**229**	P	**P**	**05 14 02.2**	**-0.2**
	2.0nm,1.1s,baz=140,slow=2.8,SNR=2.4						
PLCA				LR	LR	05 35 47.3	
	comp=Z,69nm,20.4s,baz=159,slow=33						
IDI	**Anoyia**	**58.74**	**36**	P	**P**	**05 14 07.2**	**-0.7**
	8.8nm,0.9s,baz=208,slow=6.2,SNR=5.3						
SNAA	**Sanae**	**60.84**	**176**	*e*P	**P**	**05 14 21.7**	**0.0**
DAVOX	**Davos/Dischmat**	**61.34**	**18**	LR	LR	05 40 37.5	
	comp=Z,184nm,19.9s,baz=228,slow=36						
EIL	**Elat**	**61.84**	**48**	P	**P**	**05 14 28.6**	**-0.5**
	1.5nm,0.4s,baz=205,slow=2.6,SNR=2.9						
EIL				LR	LR	05 40 30.0	
	comp=Z,74nm,19.1s,baz=238,slow=35						
ROSC	**El Rosal**	**62.56**	**281**	LR	LR	05 40 27.3	
	comp=Z,81nm,18.6s,baz=186,slow=35						
MMAI	**Mount Meron Ar**	**64.03**	**45**	LR	LR	05 41 26.0	
	comp=Z,25nm,20.4s,baz=190,slow=35						
GERES	**GERESS Array B**	**64.37**	**20**	P	**P**	**05 14 45.4**	**-0.2**
	0.3nm,0.3s,baz=195,slow=9.7,SNR=4.2						
GERES				LR	LR	05 42 49.9	
	comp=Z,137nm,19.0s,baz=234,slow=36						
ASF	**Jabal al Asfar**	**64.61**	**46**	P	**P**	**05 14 47.9**	**+0.3**
	2.3nm,0.9s,baz=81,slow=2.3,SNR=4.3						
MLR	**Muntele Rosu**	**66.63**	**29**	P	**P**	**05 14 59.7**	**-0.6**
	0.4nm,0.7s,baz=226,slow=10,SNR=4.4						
EKA	**Eskdalemuir Ar**	**66.79**	**6**	P	**P**	**05 15 02.7**	**+1.8**
	1.0nm,1.0s,baz=197,slow=28,SNR=2.9						
BRTR	**Keskin Array B**	**66.88**	**38**	P	**P**	**05 15 01.9**	**-0.2**
	1.1nm,0.8s,baz=202,slow=6.3,SNR=7.9						
BRTR				LR	LR	05 44 36.5	
	comp=Z,26nm,21.5s,baz=237,slow=36						
SYO	**Syowa Base**	**66.96**	**162**	⇑*e*pP	pP	05 15 04.8	-0.4
KIEV	**Kiev**	**71.91**	**27**	*e*P	**P**	**05 15 31.3**	**-1.4**
	8.1nm,1.0s						
AKASG	**Malin Array Be**	**71.92**	**27**	P	**P**	**05 15 31.4**	**-1.5**
	2.0nm,0.8s,baz=225,slow=6.3,SNR=8.4						
AKASG				LR	LR	05 47 49.7	
	comp=Z,46nm,21.1s,baz=280,slow=36						
GNI	**Garni**	**74.18**	**43**	P	**P**	**05 15 46.4**	**-0.3**
	7.6nm,0.5s,baz=43,slow=18,SNR=2.2						
NOA	**NORSAR Array B**	**74.56**	**12**	LR	LR	05 51 02.8	
	comp=Z,34nm,18.1s,baz=205,slow=38						
MAW	**Mawson**	**74.58**	**157**	P	**P**	**05 15 49.6**	**+1.3**
	2.6nm,1.0s,baz=283,slow=10.0,SNR=3.7						
MAW				LR	LR	05 42 00.3	
	comp=Z,53nm,18.3s,baz=242,slow=30						
KVAR	**Kislovodsk Arr**	**74.84**	**38**	P	**P**	**05 15 51.4**	**+1.0**
	2.8nm,0.3s,baz=121,slow=7.3,SNR=2.7						
KBZ	**Khabaz**	**74.84**	**39**	P	**P**	**05 15 51.3**	**+1.1**
	1.8nm,0.8s,baz=256,slow=4.2,SNR=3.3						
KBZ				LR	LR	05 50 31.9	
	comp=Z,20nm,18.7s,baz=236,slow=37						
FINES	**FINESS Array B**	**78.75**	**18**	P	**P**	**05 16 11.6**	**-0.3**
	1.2nm,0.7s,baz=210,slow=14,SNR=3.7						
FINES				LR	LR	05 52 38.3	
	comp=Z,63nm,19.1s,baz=205,slow=37						
SCHQ	**Schefferville**	**79.48**	**332**	P	**P**	**05 16 17.0**	**+0.9**
	1.7nm,0.7s,baz=150,slow=6.6,SNR=2.6						
VNDA	**Vanda**	**91.46**	**179**	LR	LR	05 51 41.2	
	comp=Z,38nm,19.2s,baz=188,slow=31						
ULM	**Lac du Bonnet**	**93.64**	**320**	LR	LR	05 53 44.6	
	comp=Z,108nm,19.2s,baz=57,slow=32						
TXAR	**Lajitas Array**	**95.50**	**299**	P	**P**	**05 17 35.2**	**-0.1**
	0.2nm,0.8s,baz=147,slow=1.8,SNR=3.3						
TXAR				LR	LR	06 03 45.3	
	comp=Z,20nm,18.1s,baz=0.0,slow=38						

WEL 31 05:20:24.0±0.4, 36°.69S×177°.48E, h147km±3km, ML3.8/5, Error ellipse: s-maj=4.9km s-min=4.9km az=0.0, Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HAZ	**Te Kaha**	**1.09**	**167**	PN	Pn	05 20 49.4	+0.1
HAZ				SN	Sn	05 21 08.7	+0.1
MXZ	**Matakaoa Point**	**1.09**	**143**	PN	Pn	05 20 49.4	+0.1
MXZ				SN	Sn	05 21 08.4	-0.2
MXZ				AML	AML	05 21 09.9	
MXZ				AML	AML	05 21 09.9	
WMGZ	**Waiomatatini S**	**1.35**	**147**	PN	Pn	05 20 51.5	-0.3
WMGZ				SN	Sn	05 21 13.4	+0.4
PUZ	**Puketiti**	**1.51**	**156**	PN	Pn	05 20 53.2	-0.2
PUZ				AML	AML	05 21 17.5	
PUZ				AML	AML	05 21 17.5	
TWGZ	**Tauwhareparae**	**1.54**	**165**	PN	Pn	05 20 54.2	+0.5
URZ	**Urewera**	**1.60**	**191**	PN	Pn	05 20 54.4	+0.1
URZ				AML	AML	05 21 18.5	
URZ				AML	AML	05 21 18.8	
MWZ	**Matawai**	**1.64**	**179**	PN	Pn	05 20 54.7	-0.1
MWZ				AML	AML	05 21 20.5	
MWZ				AML	AML	05 21 28.4	
MWZ				AML	AML	05 21 28.4	
TKGZ	**Te Karaka**	**1.77**	**171**	PN	Pn	05 20 56.1	-0.2
RAGZ	**Rawiri**	**1.81**	**182**	PN	Pn	05 20 57.2	+0.5
MUGZ	**Murupara**	**1.87**	**197**	PN	Pn	05 20 57.6	+0.2
CNGZ	**Carnagh Statio**	**1.88**	**162**	PN	Pn	05 20 57.6	+0.1
RIGZ	**Rimuhau**	**2.03**	**174**	PN	Pn	05 20 58.8	-0.5
SNGZ	**Shannon Statio**	**2.09**	**183**	PN	Pn	05 20 59.5	-0.5
RAHZ	**Arahi**	**2.25**	**188**	PN	Pn	05 21 00.4	-1.4
PRGZ	**Paritu Road**	**2.25**	**172**	PN	Pn	05 21 01.6	-0.3
KNZ	**Kokohu**	**2.33**	**176**	PN	Pn	05 21 02.0	-0.9
NMHZ	**Naumai**	**2.46**	**192**	PN	Pn	05 21 05.1	+0.6
MHGZ	**Mahia Peninsul**	**2.48**	**172**	PN	Pn	05 21 04.3	-0.4
BKZ	**Black Stump Fm**	**2.59**	**197**	PN	Pn	05 21 06.7	+0.6
BHHZ	**Black Hill Sta**	**3.01**	**201**	PN	Pn	05 21 11.3	-0.1
WNVZ	**Wahianoa**	**3.02**	**209**	PN	Pn	05 21 12.2	+0.6
KRHZ	**Kereru**	**3.08**	**196**	PN	Pn	05 21 10.6	-1.6
KAHZ	**Kahuranaki**	**3.14**	**189**	PN	Pn	05 21 11.9	-1.0
PXZ	**Pawanui**	**3.37**	**188**	PN	Pn	05 21 13.8	-2.1
PXZ				AML	AML	05 21 53.8	
PXZ				AML	AML	05 21 54.2	
PNHZ	**Pukenui**	**3.37**	**197**	PN	Pn	05 21 14.4	-1.6
PRHZ	**Porangahau**	**3.63**	**190**	PN	Pn	05 21 17.0	-2.3
DVHZ	**Dannevirke**	**3.75**	**196**	PN	Pn	05 21 18.6	-2.2
ANWZ	**Angora Road**	**3.85**	**192**	PN	Pn	05 21 19.6	-2.5
PRWZ	**Pori Road**	**4.04**	**197**	PN	Pn	05 21 22.9	-1.7
BFZ	**Birch Farm**	**4.10**	**193**	PN	Pn	05 21 22.5	-2.9
MRZ	**Mangatainoka R**	**4.24**	**200**	PN	Pn	05 21 24.5	-2.6
TIWZ	**Tintock**	**4.27**	**196**	PN	Pn	05 21 25.1	-2.5
HOWZ	**Holdsworth Sta**	**4.47**	**199**	PN	Pn	05 21 26.8	-3.5
OGWZ	**Otaki Gorge**	**4.50**	**203**	PN	Pn	05 21 27.6	-3.1
KIW	**Kapiti Island**	**4.62**	**205**	PN	Pn	05 21 28.8	-3.5
DUWZ	**D'Urville Isla**	**4.96**	**213**	PN	Pn	05 21 34.4	-2.4
TCW	**Tory Channel**	**5.16**	**208**	PN	Pn	05 21 35.8	-3.5

*ISCJB **31** 05:23:05.5±0.2, 43°.87N±0°.02×11°.96E±0°.02, h21km±3km, Error ellipse: s-maj=3.9km s-min=2.5km az=25.2*
*CSEM **31** 05:23:05.2±0.1, 43°.87N×11°.99E, h10km, ML2.9/24, Error ellipse: s-maj=2.9km s-min=2.1km az=42.0*
*ROM **31** 05:23:05.2±0.1, 43°.87N×12°.00E, h8km±1km, Md3.0/22, Ml2.5/22, Error ellipse: s-maj=2.1km s-min=0.9km az=27.0*
*LDG **31** 05:23:06.6±0.1, 43°.81N×11°.99E, h5km, Ml2.8/7, Error ellipse: s-maj=4.2km s-min=2.2km az=63.0*
ISC 31 05:23:05.7±0.8, 43°.86N±0°.02×11°.98E±0°.02, h12km±4km, n110, σ0§97/156, Central Italy

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SFI	**Santa Sofia**	**0.11**	**296**	Pg	**Pg**	**05 23 08.1**	**-0.6**
SFI				Sg	**Sg**	**05 23 10.3**	**-0.6**
	2μm,0.3s						
SFI	**Santa Sofia**	**0.11**	**296**	Pg	**Pg**	**05 23 08.1**	**-0.6**
SFI				Sg	**Sg**	**05 23 10.3**	**-0.6**
	2μm,0.3s						
ASQU	**Asqua**	**0.15**	**246**	Pg	**Pg**	**05 23 09.3**	**-0.1**
ASQU				Sg	**Sg**	**05 23 12.6**	**+0.6**
	2μm,0.3s						
ASQU	**Asqua**	**0.15**	**246**	Pg	**Pg**	**05 23 09.3**	**-0.1**
ASQU				Sg	**Sg**	**05 23 12.6**	**+0.6**
	2μm,0.3s						
CRE	**Caprese Michel**	**0.24**	**185**	Pg	**Pg**	**05 23 11.0**	**+0.2**
CRE				Sg	**Sg**	**05 23 14.8**	**+0.5**
	820nm,0.6s						
CRE	**Caprese Michel**	**0.24**	**185**	Pg	**Pg**	**05 23 11.0**	**+0.2**
CRE				Sg	**Sg**	**05 23 14.8**	**+0.5**
	820nm,0.6s						
CPGN	**Carpegna, Ital**	**0.25**	**103**	Pg	**Pg**	**05 23 11.2**	**+0.1**
CPGN				Sg	**Sb**	**05 23 16.0**	**-0.6**
	771nm,0.8s						
CPGN	**Carpegna, Ital**	**0.25**	**103**	Pg	**Pg**	**05 23 11.2**	**+0.1**
CPGN				Sg	**Sb**	**05 23 16.0**	**-0.6**
	771nm,0.8s						
VMG	**Vicchio**	**0.33**	**288**	Pg	**Pg**	**05 23 12.4**	**0.0**
VMG				Sg	**Sb**	**05 23 18.2**	**-0.6**
	729nm,0.6s						
VMG	**Vicchio**	**0.33**	**288**	Pg	**Pg**	**05 23 12.4**	**0.0**
VMG				Sg	**Sb**	**05 23 18.2**	**-0.6**
	729nm,0.6s						
BADI	**Badiali**	**0.40**	**151**	Pg	**Pg**	**05 23 13.3**	**-0.3**
BADI				Sg	**Sb**	**05 23 19.9**	**-0.8**
	559nm,0.6s						
BADI	**Badiali**	**0.40**	**151**	Pg	**Pg**	**05 23 13.3**	**-0.3**
BADI				Sg	**Sb**	**05 23 19.9**	**-0.8**
	559nm,0.6s						
SEI	**Scarperia**	**0.49**	**294**	Pg	**Pg**	**05 23 15.0**	**-0.4**
SEI				Sg	**Sb**	**05 23 23.4**	**0.0**
	1μm,0.3s						
SEI	**Scarperia**	**0.49**	**294**	Pg	**Pg**	**05 23 15.0**	**-0.4**
SEI				Sg	**Sb**	**05 23 23.4**	**0.0**
	1μm,0.3s						
ATPC	**Poggio Castell**	**0.51**	**137**	Pg	**Pg**	**05 23 15.2**	**-0.5**
ATPC				Sg	**Sb**	**05 23 24.3**	**+0.3**
	347nm,0.2s						
ATPC	**Poggio Castell**	**0.51**	**137**	Pg	**Pg**	**05 23 15.2**	**-0.5**
ATPC				Sg	**Sb**	**05 23 24.3**	**+0.3**
	347nm,0.2s						
PIEI	**Pieia**	**0.52**	**128**	Pg	**Pg**	**05 23 14.9**	**-0.9**
PIEI				Sg	**Sb**	**05 23 23.6**	**-0.5**
	189nm,0.9s						
PIEI	**Pieia**	**0.52**	**128**	Pg	**Pg**	**05 23 14.9**	**-0.9**
PIEI				Sg	**Sb**	**05 23 23.6**	**-0.5**
	189nm,0.9s						
ATVO	**AVT- Monte Val**	**0.57**	**147**	Pg	**Pg**	**05 23 16.3**	**-0.5**
ATVO				Sg	**Sb**	**05 23 26.2**	**+0.6**
ATVO	**AVT- Monte Val**	**0.57**	**147**	Pg	**Pg**	**05 23 16.3**	**-0.5**
ATVO				Sg	**Sb**	**05 23 26.2**	**+0.6**
FSSB	**Fossombrone**	**0.60**	**106**	Pg	**Pg**	**05 23 16.6**	**-0.8**
FSSB				Sg	**Sb**	**05 23 26.4**	**-0.1**
	248nm,0.6s						
FSSB	**Fossombrone**	**0.60**	**106**	Pg	**Pg**	**05 23 16.6**	**-0.8**
FSSB				Sg	**Sb**	**05 23 26.4**	**-0.1**
	248nm,0.6s						
FRON	**Frontone**	**0.64**	**122**	Pg	**Pg**	**05 23 17.6**	**-0.5**
FRON				Sg	**Sb**	**05 23 27.1**	**-0.5**
	108nm,0.6s						
FRON	**Frontone**	**0.64**	**122**	Pg	**Pg**	**05 23 17.6**	**-0.5**
FRON				Sg	**Sb**	**05 23 27.1**	**-0.5**
	108nm,0.6s						
FNVD	**Fontana Vidola**	**0.69**	**297**	Pg	**Pg**	**05 23 18.9**	**-0.3**
FNVD				Sg	**Sb**	**05 23 29.3**	**0.0**
	329nm,0.6s						
FNVD	**Fontana Vidola**	**0.69**	**297**	Pg	**Pg**	**05 23 18.9**	**-0.3**
FNVD				Sg	**Sb**	**05 23 29.3**	**0.0**
	329nm,0.6s						
MURB	**Monte Urbino**	**0.71**	**146**	Pg	**Pg**	**05 23 19.5**	**-0.1**
	268nm,0.4s						
MURB	**Monte Urbino**	**0.71**	**146**	Pg	**Pg**	**05 23 19.5**	**-0.1**
	268nm,0.4s						
SSFR	**Montelago di S**	**0.72**	**126**	Pg	**Pg**	**05 23 19.0**	**-0.6**
	156nm,0.2s						
SSFR	**Montelago di S**	**0.72**	**126**	Pg	**Pg**	**05 23 19.0**	**-0.6**
	156nm,0.2s						
FROS	**Frosini**	**0.88**	**223**	Pg	**Pb**	**05 23 23.1**	**+0.2**
	172nm,0.6s						
FROS	**Frosini**	**0.88**	**223**	Pg	**Pb**	**05 23 23.1**	**+0.2**
	172nm,0.6s						
SNTG	**Esanatoglia**	**0.92**	**130**	Pg	**Pg**	**05 23 23.0**	**-0.5**
	128nm,0.8s						
SNTG	**Esanatoglia**	**0.92**	**130**	Pg	**Pg**	**05 23 23.0**	**-0.5**
	128nm,0.8s						
MGAB	**Montegabbione**	**0.95**	**174**	Pg	**Pg**	**05 23 23.7**	**-0.3**
	198nm,0.5s						
MGAB	**Montegabbione**	**0.95**	**174**	Pg	**Pg**	**05 23 23.7**	**-0.3**
	198nm,0.5s						
BDI	**Bagni Di Lucca**	**1.02**	**282**	Pg	**Pg**	**05 23 24.9**	**-0.5**
	81nm,0.6s						
BDI	**Bagni Di Lucca**	**1.02**	**282**	Pg	**Pg**	**05 23 24.9**	**-0.5**
	81nm,0.6s						
ARCI	**Arcidosso**	**1.07**	**200**	Pg	**Pb**	**05 23 25.9**	**-0.3**
	55nm,0.6s						
ARCI	**Arcidosso**	**1.07**	**200**	Pg	**Pb**	**05 23 25.9**	**-0.3**
	55nm,0.6s						

MOTA	**Moosalm**	**3.54 350**	*i* Pn	**Pn**	**05 24 02.5**	**+1.9**
	1.7nm,0.2s					
MOTA	**Moosalm**	**3.54 350**	Pn	**Pn**	**05 24 02.5**	**+1.9**
	1.7nm,0.2s					
DAVA	**Damuels**	**3.73 337**	*e*Pn	Pn	05 24 06.1	+2.9
	3.3nm,0.4s					
DAVA			*i* Sn	**Sn**	**05 24 48.4**	**+1.2**
	8.2nm,0.5s					
DAVA	**Damuels**	**3.73 337**	Pn	Pn	05 24 06.1	+2.9
	3.3nm,0.4s					
DAVA			Sn	**Sn**	**05 24 48.4**	**+1.2**
	8.2nm,0.5s					
MBDF	**Montbardon**	**3.84 285**	*e*P	Pn	05 24 08.6	+3.9
MBDF			*e*Sn	**Sn**	**05 24 48.2**	**-1.6**
	2.8nm,0.4s					
MBDF	**Montbardon**	**3.84 285**	*e*P	Pn	05 24 08.6	+3.9
MBDF			*e*Sn	**Sn**	**05 24 48.2**	**-1.6**
	1.4nm,0.4s					
FRF	**La Foret Royal**	**3.88 267**	*e*Pn	**Pn**	**05 24 05.5**	**+0.4**
FRF	**La Foret Royal**	**3.88 267**	*e*Pn	**Pn**	**05 24 05.5**	**+0.4**
LMR	**La Mourre**	**4.01 264**	*e*Pn	**Pn**	**05 24 06.4**	**-0.5**
LMR	**La Mourre**	**4.01 264**	*e*Pn	**Pn**	**05 24 06.4**	**-0.5**
LPL	**La Plagne**	**4.09 296**	*e*P	Pn	05 24 12.0	+3.8
LPL			*e*Sn	**Sn**	**05 24 54.3**	**-1.8**
	2.1nm,0.2s					
LPL	**La Plagne**	**4.09 296**	*e*P	Pn	05 24 12.0	+3.8
LPL			*e*Sn	**Sn**	**05 24 54.3**	**-1.8**
	1.0nm,0.2s					
MOA	**Molln**	**4.30 21**	*i* Pn	**Pn**	**05 24 12.2**	**+1.3**
	1.3nm,0.2s					
MOA			*i* Sn	**Sn**	**05 25 01.1**	**+0.1**
	1.5nm,0.2s					
MOA	**Molln**	**4.30 21**	Pn	**Pn**	**05 24 12.2**	**+1.3**
	1.3nm,0.2s					
MOA			Sn	**Sn**	**05 25 01.1**	**+0.1**
	1.5nm,0.2s					
SMRF	**Simiane la Rot**	**4.63 274**	*e*Pn	**Pn**	**05 24 16.0**	**+0.6**
SMRF	**Simiane la Rot**	**4.63 274**	*e*Pn	**Pn**	**05 24 16.0**	**+0.6**
CABF	**La Chapelle**	**4.99 306**	*e*Pn	**Pn**	**05 24 20.9**	**+0.5**
CABF	**La Chapelle**	**4.99 306**	*e*Pn	**Pn**	**05 24 20.9**	**+0.5**
HINF	**Hinteralfeld**	**5.34 320**	*e*Pn	**Pn**	**05 24 25.3**	**+0.1**
HINF			*e*Sn	**Sn**	**05 25 24.3**	**-2.3**
	2.8nm,0.3s					
HINF	**Hinteralfeld**	**5.34 320**	*e*Pn	**Pn**	**05 24 25.3**	**+0.1**
HINF			*e*Sn	**Sn**	**05 25 24.3**	**-2.3**
	1.4nm,0.3s					
KHC	**Kasperske Hory**	**5.39 11**	*e*SN	**Sn**	**05 25 26.9**	**-0.9**
CDF	**Champ du Feu**	**5.61 326**	*e*Pn	**Pn**	**05 24 29.0**	**+0.1**
CDF			*e*Sn	**Sn**	**05 25 30.3**	**-2.9**
	1.5nm,0.2s					
CDF	**Champ du Feu**	**5.61 326**	*e*Pn	**Pn**	**05 24 29.0**	**+0.1**
CDF			*e*Sn	**Sn**	**05 25 30.3**	**-2.9**
	0.8nm,0.2s					
HAU	**Haudompre**	**5.71 319**	*e*Pn	**Pn**	**05 24 30.5**	**+0.2**
HAU			*e*Sn	**Sn**	**05 25 33.0**	**-2.7**
	7.5nm,0.4s					
HAU	**Haudompre**	**5.71 319**	*e*Pn	**Pn**	**05 24 30.5**	**+0.2**
HAU			*e*Sn	**Sn**	**05 25 33.0**	**-2.7**
	3.8nm,0.4s					
PAGF	**Fort de Pagny**	**6.39 319**	*e*Pn	**Pn**	**05 24 39.4**	**-0.2**
PAGF	**Fort de Pagny**	**6.39 319**	*e*Pn	**Pn**	**05 24 39.4**	**-0.2**
MTLF	**Montolieu**	**7.11 269**	*e*Pn	**Pn**	**05 24 48.7**	**-0.7**
MTLF	**Montolieu**	**7.11 269**	*e*Pn	**Pn**	**05 24 48.7**	**-0.7**

*IDC **31** 05:24:15.2±1.0, 39°.36N×20°.73E, h0km, mb3.7/9, mb1 3.7/13, mb1mx3.6/42, mbtmp3.6/13, ML3.3/4, Error ellipse: s-maj=17.8km s-min=16.1km az=87.0*
*TIR **31** 05:24:15.9, 39°.26N×20°.34E, h28km, ML3.1*
*BEO **31** 05:24:15.1±0.9, 39°.09N×20°.56E, h0km, M3.1/6*
*THE **31** 05:24:16.9, 39°.27N×20°.54E, h0km±1km, ML3.5/11, Error ellipse: s-maj=1.5km s-min=0.4km az=254.0*
*ISCJB **31** 05:24:16.4±0.4, 39°.26N±0°.01×20°.49E±0°.02, h6km±3km, mb3.5/9, Error ellipse: s-maj=3.5km s-min=1.9km az=149.9*
*ATH **31** 05:24:16.8, 39°.25N×20°.56E, h14km±1km, ML3.1/24, Error ellipse: s-maj=1.6km s-min=0.7km az=262.0*
*CSEM **31** 05:24:16.7±0.1, 39°.25N×20°.52E, h2km, ML3.5, Error ellipse: s-maj=2.7km s-min=1.5km az=59.0*
*PDG **31** 05:24:17.3±0.7, 39°.29N×20°.46E, h7km±1km, ML3.5/11, Error ellipse: s-maj=0.8km s-min=1.3km az=0.0*

ISC 31 05:24:16.9±1.0, 39°24N±0°.01×20°53E±0°.02, h7km±7km, n215, σ1°01/264, mb3.6/9, 17C-19D, Greece-Albania border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IGT	**Igoumenitsa**	**0.33**	**332**	P	**Pg**	**05 24 23.3**	**-0.1**
IGT				S	**Sg**	**05 24 27.7**	**0.0**
IGT	**Igoumenitsa**	**0.33**	**332**	P	**Pg**	**05 24 23.0**	**-0.4**
IGT				S	**Sg**	**05 24 27.7**	**0.0**
IGT	**Igoumenitsa**	**0.33**	**332**	P	**Pg**	**05 24 23.0**	**-0.4**
IGT				S	**Sb**	**05 24 29.4**	**-1.2**
IGT				AML	AML	05 24 33.0	
	comp=E,22273μm,0.4s						
IGT				AML	AML	05 24 33.7	
	comp=N,12439μm,0.2s						
SGD	**Sagiada**	**0.44**	**328**	P	**Pg**	**05 24 25.3**	**-0.1**
SGD				S	**Sg**	**05 24 31.6**	**+0.5**
SGD	**Sagiada**	**0.44**	**328**	P	**Pg**	**05 24 25.3**	**-0.1**
SGD				S	**Sg**	**05 24 31.6**	**+0.5**
SGD	**Sagiada**	**0.44**	**328**	P	**Pg**	**05 24 25.9**	**+0.5**
SGD				S	**Sb**	**05 24 32.4**	**-1.3**
DSL	**Palaion Diasel**	**0.45**	**104**	P	**Pg**	**05 24 25.1**	**-0.5**
DSL				S	**Sg**	**05 24 32.1**	**+0.6**
DSL	**Palaion Diasel**	**0.45**	**104**	P	**Pg**	**05 24 25.1**	**-0.5**
DSL				S	**Sg**	**05 24 31.8**	**+0.3**
DSL	**Palaion Diasel**	**0.45**	**104**	P	**Pg**	**05 24 24.8**	**-0.8**
DSL				S	**Sg**	**05 24 31.8**	**+0.3**
DSL				AML	AML	05 24 35.0	
	comp=N,18877μm,0.3s						
DSL				AML	AML	05 24 36.6	
	comp=E,9808μm,0.2s						
LKD2	**Lefkada island**	**0.46**	**168**	P	**Pg**	**05 24 26.3**	**+0.5**
LKD2				S	**Sb**	**05 24 33.7**	**-0.7**
LKD2	**Lefkada island**	**0.46**	**168**	P	**Pg**	**05 24 26.3**	**+0.5**
LKD2				S	**Sb**	**05 24 33.7**	**-0.7**
LKD2	**Lefkada island**	**0.46**	**168**	P	**Pb**	**05 24 26.6**	**-0.7**
LKD2				S	**Sb**	**05 24 35.0**	**+0.6**
LKD2				AML	AML	05 24 41.1	
	comp=N,6046μm,0.5s						
LKD2				AML	AML	05 24 44.3	
	comp=E,8031μm,0.3s						
JAN	**Janina**	**0.48**	**30**	P	**Pg**	**05 24 25.7**	**-0.5**
JAN				S	**Sg**	**05 24 32.7**	**+0.2**
JAN	**Janina**	**0.48**	**30**	P	**Pg**	**05 24 25.8**	**-0.5**
JAN				S	**Sg**	**05 24 32.7**	**+0.2**
JAN	**Janina**	**0.48**	**30**	S	**Sg**	**05 24 32.7**	**+0.2**
JAN				AML	AML	05 24 34.1	
	comp=E,24854μm,0.6s						
KEK	**Kerkira**	**0.74**	**310**	P	**Pg**	**05 24 30.9**	**-0.2**
KEK				S	**Sg**	**05 24 40.9**	**+0.2**
KEK	**Kerkira**	**0.74**	**310**	P	**Pg**	**05 24 30.9**	**-0.2**
KEK				S	**Sg**	**05 24 40.9**	**+0.2**
PDO	**Prodromos**	**0.82**	**141**	P	**Pg**	**05 24 32.3**	**-0.2**
PDO	**Prodromos**	**0.82**	**141**	P	**Pg**	**05 24 32.4**	**-0.1**
PDO				S	**Sb**	**05 24 45.3**	**+0.7**
PDO	**Prodromos**	**0.82**	**141**	P	**Pg**	**05 24 32.4**	**-0.1**
PDO				AML	AML	05 24 47.7	
	comp=E,3250μm,0.8s						
PDO				AML	AML	05 24 51.1	
	comp=N,2862μm,0.3s						
PVO	**Paravola**	**0.99**	**129**	P	**Pg**	**05 24 35.7**	**-0.2**
PVO	**Paravola**	**0.99**	**129**	P	**Pg**	**05 24 35.7**	**-0.2**
PVO	**Paravola**	**0.99**	**129**	P	**Pg**	**05 24 36.1**	**+0.2**
EVR	**Evrytania**	**1.04**	**108**	P	**Pg**	**05 24 36.4**	**-0.5**
EVR	**Evrytania**	**1.04**	**108**	P	**Pg**	**05 24 36.4**	**-0.5**
EVR				S	**Sb**	**05 24 51.8**	**+0.6**
EVR	**Evrytania**	**1.04**	**108**	P	**Pg**	**05 24 36.2**	**-0.7**
EVR				S	**Sb**	**05 24 51.8**	**+0.6**
EVR				AML	AML	05 24 58.2	
	comp=N,2006μm,0.6s						
PENT	**Pentalofos**	**1.06**	**26**	P	**Pg**	**05 24 36.0**	**-1.3**
PENT				S	**Sg**	**05 24 51.0**	**0.0**
PENT	**Pentalofos**	**1.06**	**26**	P	**Pg**	**05 24 36.0**	**-1.3**
PENT				S	**Sg**	**05 24 51.0**	**0.0**
PENT	**Pentalofos**	**1.06**	**26**	P	**Pg**	**05 24 35.5**	**-1.7**
PENT				AML	AML	05 24 55.5	
	comp=E,1304μm,0.5s						
PENT				AML	AML	05 24 58.7	
	comp=N,1672μm,0.4s						
VLS	**Valsamata**	**1.06**	**178**	P	**Pg**	**05 24 36.9**	**-0.3**
VLS				S	**Sn**	**05 24 53.6**	**+0.4**
VLS	**Valsamata**	**1.06**	**178**	P	**Pg**	**05 24 36.9**	**-0.3**
VLS				S	**Sb**	**05 24 52.6**	**+0.9**
KFL	**Anninata**	**1.15**	**170**	P	**Pg**	**05 24 38.1**	**-0.8**
KFL				S	**Sn**	**05 24 56.3**	**+1.0**
KFL	**Anninata**	**1.15**	**170**	P	**Pg**	**05 24 38.1**	**-0.8**
KFL	**Anninata**	**1.15**	**170**	P	**Pg**	**05 24 37.4**	**-1.5**
THL	**Klokotos Trika**	**1.19**	**74**	P	**Pg**	**05 24 38.6**	**-1.1**
THL				S	**Sb**	**05 24 56.1**	**+0.7**
THL	**Klokotos Trika**	**1.19**	**74**	P	**Pg**	**05 24 38.6**	**-1.1**
THL				S	**Sb**	**05 24 56.1**	**+0.7**
AXS	**Araxos**	**1.23**	**147**	P	**Pg**	**05 24 39.5**	**-1.0**
AXS	**Araxos**	**1.23**	**147**	P	**Pg**	**05 24 39.5**	**-1.0**
AXS	**Araxos**	**1.23**	**147**	P	**Pg**	**05 24 38.8**	**-1.8**
NEST	**Nestorio**	**1.24**	**19**	P	**Pg**	**05 24 39.6**	**-1.0**
NEST	**Nestorio**	**1.24**	**19**	P	**Pg**	**05 24 39.6**	**-1.0**
NEST	**Nestorio**	**1.24**	**19**	P	**Pg**	**05 24 39.6**	**-1.0**
NEST				AML	AML	05 25 04.5	
	comp=E,1698μm,0.6s						
NEST				AML	AML	05 25 06.0	
	comp=N,2346μm,0.4s						
ANX	**Ano Chora**	**1.26**	**120**	P	**Pn**	**05 24 42.2**	**+1.2**
ANX	**Ano Chora**	**1.26**	**120**	AML	AML	05 25 06.1	
	comp=N,2378μm,0.5s						
ANX				AML	AML	05 25 06.3	
	comp=E,2288μm,0.4s						
EFP	**Efpalio**	**1.34**	**127**	P	**Pb**	**05 24 42.6**	**+0.2**
EFP	**Efpalio**	**1.34**	**127**	P	**Pb**	**05 24 42.6**	**+0.2**
EFP	**Efpalio**	**1.34**	**127**	P	**Pb**	**05 24 43.3**	**+0.9**
RLS	**Riolos of Patr**	**1.39**	**148**	P	**Pn**	**05 24 42.5**	**-0.1**
RLS	**Riolos of Patr**	**1.39**	**148**	P	**Pn**	**05 24 42.5**	**-0.1**
RLS	**Riolos of Patr**	**1.39**	**148**	AML	AML	05 25 11.7	
	comp=N,664μm,0.4s						
RLS				AML	AML	05 25 12.7	
	comp=E,821μm,0.6s						
AGG	**Agios Georgios**	**1.41**	**98**	P	**Pn**	**05 24 43.1**	**+0.1**
AGG				S	**Sn**	**05 25 03.0**	**+1.1**
AGG	**Agios Georgios**	**1.41**	**98**	P	**Pn**	**05 24 43.1**	**+0.1**
AGG				S	**Sn**	**05 25 03.0**	**+1.1**
KZN	**Kozani**	**1.43**	**41**	P	**Pn**	**05 24 42.5**	**-0.8**
KZN				S	**Sn**	**05 25 03.3**	**+0.9**
KZN	**Kozani**	**1.43**	**41**	P	**Pn**	**05 24 43.7**	**+0.4**
KZN				S	**Sn**	**05 25 03.3**	**+0.9**
SERG	**Sergoula**	**1.45**	**124**	P	**Pn**	**05 24 44.0**	**+0.5**
SERG	**Sergoula**	**1.45**	**124**	P	**Pn**	**05 24 44.0**	**+0.5**
LAKA	**Lakka**	**1.51**	**131**	P	**Pn**	**05 24 45.0**	**+0.7**
LAKA	**Lakka**	**1.51**	**131**	P	**Pn**	**05 24 45.0**	**+0.7**
ZKS	**Zakynthos**	**1.55**	**173**	P	**Pn**	**05 24 45.2**	**+0.3**
ZKS	**Zakynthos**	**1.55**	**173**	P	**Pn**	**05 24 45.2**	**+0.3**
ZKS	**Zakynthos**	**1.55**	**173**	P	**Pn**	**05 24 44.4**	**-0.6**
ZKS				AML	AML	05 25 17.9	
	comp=N,2074μm,0.4s						
ZKS				AML	AML	05 25 23.0	
	comp=E,2592μm,0.4s						
DRO	**Drossia**	**1.58**	**144**	P	**Pn**	**05 24 45.8**	**+0.5**
DRO				S	**Sg**	**05 25 08.1**	**+0.4**
DRO	**Drossia**	**1.58**	**144**	P	**Pn**	**05 24 45.8**	**+0.5**
DRO				S	**Sg**	**05 25 08.1**	**+0.4**
DRO	**Drossia**	**1.58**	**144**	P	**Pn**	**05 24 44.9**	**-0.5**
DRO				AML	AML	05 25 19.1	
	comp=N,1365μm,0.4s						
DRO				AML	AML	05 25 23.4	
	comp=E,1715μm,0.4s						
FNA	**Florina**	**1.67**	**22**	P	**Pn**	**05 24 46.9**	**+0.3**
FNA	**Florina**	**1.67**	**22**	P	**Pn**	**05 24 46.9**	**+0.3**
FNA	**Florina**	**1.67**	**22**	P	**Pb**	**05 24 47.8**	**-0.2**
FNA				AML	AML	05 25 16.6	
	comp=E,1070μm,0.6s						
FNA				AML	AML	05 25 19.8	
	comp=N,1260μm,0.5s						
LIT	**Litokhoron**	**1.74**	**60**	P	**Pn**	**05 24 47.7**	**+0.2**
LIT	**Litokhoron**	**1.74**	**60**	P	**Pn**	**05 24 48.2**	**+0.7**
LIT	**Litokhoron**	**1.74**	**60**	P	**Pn**	**05 24 48.2**	**+0.7**
LIT				AML	AML	05 25 17.9	
	comp=E,817μm,0.8s						
LIT				AML	AML	05 25 19.4	
	comp=N,1131μm,0.8s						
KLV	**Kalavryta, Ach**	**1.74**	**133**	P	**Pn**	**05 24 48.3**	**+0.8**
KLV	**Kalavryta, Ach**	**1.74**	**133**	P	**Pn**	**05 24 48.1**	**+0.6**
KLV	**Kalavryta, Ach**	**1.74**	**133**	P	**Pn**	**05 24 48.1**	**+0.6**
KLV				AML	AML	05 25 25.8	
	comp=E,481μm,1.1s						
KLV				AML	AML	05 25 27.2	
	comp=N,460μm,0.7s						
DSF	**Desfina**	**1.76**	**117**	P	**Pn**	**05 24 48.4**	**+0.6**
DSF	**Desfina**	**1.76**	**117**	P	**Pn**	**05 24 48.4**	**+0.6**
DSF	**Desfina**	**1.76**	**117**	P	**Pn**	**05 24 47.1**	**-0.8**
DSF				AML	AML	05 25 21.1	
	comp=E,479μm,0.4s						
DSF				AML	AML	05 25 22.0	
	comp=N,468μm,0.6s						
FYTO	**Fytoko, Volos**	**1.87**	**84**	P	**Pn**	**05 24 49.8**	**+0.5**
FYTO	**Fytoko, Volos**	**1.87**	**84**	P	**Pn**	**05 24 49.8**	**+0.5**
OHR	**Ohrid**	**1.88**	**6**	*i* Pn	**Pb**	**05 24 51.8**	**+0.3**
OHR	**Ohrid**	**1.88**	**6**	*i* Pn	**Pb**	**05 24 51.8**	**+0.3**
AMT	**Artemida-Makis**	**1.94**	**151**	P	**Pb**	**05 24 52.1**	**-0.4**
AMT	**Artemida-Makis**	**1.94**	**151**	P	**Pb**	**05 24 52.1**	**-0.4**
AMT	**Artemida-Makis**	**1.94**	**151**	P	**Pb**	**05 24 52.8**	**+0.3**
LKR	**Lokris**	**2.01**	**106**	P	**Pn**	**05 24 51.9**	**+0.7**
LKR	**Lokris**	**2.01**	**106**	P	**Pn**	**05 24 51.9**	**+0.7**
LKR	**Lokris**	**2.01**	**106**	P	**Pb**	**05 24 54.4**	**+0.7**
LKR				AML	AML	05 25 22.8	
	comp=E,191μm,0.5s						
LKR				AML	AML	05 25 26.4	
	comp=N,157μm,0.3s						
XOR	**Xorichti**	**2.07**	**86**	P	**Pn**	**05 24 52.2**	**+0.2**
XOR	**Xorichti**	**2.07**	**86**	P	**Pn**	**05 24 52.2**	**+0.2**
XOR	**Xorichti**	**2.07**	**86**	P	**Pb**	**05 24 55.2**	**+0.5**
XOR				AML	AML	05 25 28.8	
	comp=N,774μm,1.0s						
XOR				AML	AML	05 25 31.3	
	comp=E,538μm,0.6s						
NEO	**Neokhori**	**2.09**	**87**	P	**Pn**	**05 24 52.6**	**+0.3**
NEO	**Neokhori**	**2.09**	**87**	P	**Pn**	**05 24 52.6**	**+0.3**
NEO	**Neokhori**	**2.09**	**87**	P	**Pn**	**05 24 54.0**	**+1.7**
NEO				AML	AML	05 25 25.9	
	comp=E,401μm,0.4s						
NEO				AML	AML	05 25 27.8	
	comp=N,397μm,0.3s						
TIR	**Tirane**	**2.14**	**346**	⇑*i* P	Pn	05 24 54.6	+0.7
TIR	**Tirane**	**2.17**	**347**	*i* PG	**Pn**	**05 24 55.1**	**+1.7**
TIR				*i* SG	**Sb**	**05 25 24.1**	**+0.7**
TIR	**Tirane**	**2.17**	**347**	*e*Pn	**Pn**	**05 24 55.0**	**+1.7**
TIR				*e*Sn	**Sb**	**05 25 24.7**	**+1.3**
TIR	**Tirane**	**2.17**	**347**	*e*Pn	**Pn**	**05 24 55.0**	**+1.7**
TIR				*i* Sg	**Sb**	**05 25 24.1**	**+0.7**
GRG	**Griva**	**2.23**	**39**	P	**Pn**	**05 24 54.5**	**+0.2**
GRG	**Griva**	**2.23**	**39**	P	**Pn**	**05 24 54.5**	**+0.2**
GRG	**Griva**	**2.23**	**39**	P	**Pb**	**05 24 57.1**	**-0.5**
ITM	**Ithomi**	**2.33**	**152**	P	**Pn**	**05 24 56.5**	**+0.9**
ITM	**Ithomi**	**2.33**	**152**	P	**Pn**	**05 24 56.5**	**+0.9**
ITM	**Ithomi**	**2.33**	**152**	P	**Pn**	**05 24 57.5**	**+1.9**
ITM				AML	AML	05 25 48.9	
	comp=N,263μm,0.9s						
ITM				AML	AML	05 25 51.1	
	comp=E,315μm,0.7s						
VLX	**Vlachokerasia**	**2.37**	**142**	P	**Pn**	**05 24 57.5**	**+1.3**
VLX	**Vlachokerasia**	**2.37**	**142**	P	**Pn**	**05 24 57.5**	**+1.3**
HORT	**Hortiatis**	**2.39**	**55**	P	**Pn**	**05 24 56.8**	**+0.3**
HORT	**Hortiatis**	**2.39**	**55**	P	**Pn**	**05 24 56.8**	**+0.3**
HORT	**Hortiatis**	**2.39**	**55**	P	**Pn**	**05 24 56.3**	**-0.2**
PLG	**Polygyros**	**2.51**	**62**	P	**Pn**	**05 24 58.4**	**+0.3**
PLG	**Polygyros**	**2.51**	**62**	P	**Pn**	**05 24 58.4**	**+0.3**
PLG	**Polygyros**	**2.51**	**62**	AML	AML	05 25 35.1	
	comp=N,159μm,0.4s						
PLG				AML	AML	05 25 35.3	
	comp=E,161μm,0.6s						
PAIG	**Paliouri**	**2.53**	**73**	P	**Pn**	**05 24 58.6**	**+0.3**
PAIG	**Paliouri**	**2.53**	**73**	P	**Pn**	**05 24 58.6**	**+0.3**
PYL	**PYLOS**	**2.53**	**157**	P	**Pn**	**05 24 59.3**	**+1.0**
PYL	**PYLOS**	**2.53**	**157**	P	**Pn**	**05 24 58.9**	**+0.6**
PYL	**PYLOS**	**2.53**	**157**	P	**Pn**	**05 24 58.9**	**+0.6**
VAY	**Valandovo**	**2.57**	**37**	*i* Pn	Pn	05 25 00.9	+1.2
VAY	**Valandovo**	**2.60**	**36**	⇓*i* Pn	**Pn**	**05 25 01.4**	**+2.1**
VAY				*e*Sn	**Sn**	**05 25 33.2**	**+2.2**
VAY	**Valandovo**	**2.60**	**36**	⇓*i* Pn	**Pn**	**05 25 01.4**	**+2.1**
VAY				*e*Sn	**Sn**	**05 25 33.2**	**+2.2**
AOS	**Alonnisos**	**2.60**	**90**	P	**Pn**	**05 25 00.2**	**+0.8**
AOS	**Alonnisos**	**2.60**	**90**	P	**Pn**	**05 25 00.1**	**+0.8**
AOS	**Alonnisos**	**2.60**	**90**	P	**Pn**	**05 25 00.1**	**+0.8**
AOS				AML	AML	05 25 37.9	
	comp=N,329μm,0.5s						
AOS				AML	AML	05 25 38.4	
	comp=E,157μm,0.5s						
SOH	**Sokhos**	**2.68**	**53**	P	**Pn**	**05 25 01.2**	**+0.8**
SOH	**Sokhos**	**2.68**	**53**	P	**Pn**	**05 25 01.2**	**+0.8**
SOH	**Sokhos**	**2.68**	**53**	P	**Pn**	**05 25 02.6**	**+2.1**
SOH				AML	AML	05 25 39.7	
	comp=N,402μm,0.5s						
SOH				AML	AML	05 25 41.4	
	comp=E,392μm,0.6s						
DID	**Didima**	**2.74**	**128**	P	**Pn**	**05 25 02.5**	**+1.2**
DID	**Didima**	**2.74**	**128**	P	**Pn**	**05 25 02.5**	**+1.2**
DID	**Didima**	**2.74**	**128**	P	**Pn**	**05 25 02.6**	**+1.3**
SKO	**Skopje**	**2.79**	**14**	*i* Pn	Pn	05 25 03.8	+1.1
TAR1	**Taranto**	**2.81**	**298**	*e*Pn	**Pn**	**05 25 02.2**	**0.0**
SKO	**Skopje**	**2.81**	**14**	*i* Pn	**Pn**	**05 25 03.8**	**+1.5**
OUR	**Ouranopolis**	**2.87**	**67**	P	**Pn**	**05 25 03.6**	**+0.6**
OUR	**Ouranopolis**	**2.87**	**67**	P	**Pn**	**05 25 03.6**	**+0.6**
OUR	**Ouranopolis**	**2.87**	**67**	P	**Pn**	**05 25 04.6**	**+1.6**
ULC	**Ulcinj**	**2.89**	**341**	⇓*i* Pn	**Pn**	**05 25 03.6**	**+0.3**
ULC				*e*Sn	**Sn**	**05 25 40.7**	**+2.3**
ULC	**Ulcinj**	**2.89**	**341**	⇓*i* Pn	**Pn**	**05 25 03.6**	**+0.3**
ULC				*e*Sn	**Sn**	**05 25 40.7**	**+2.3**
VLY	**Voula,Athens**	**2.91**	**117**	P	**Pn**	**05 25 04.6**	**+1.1**
VLY	**Voula,Athens**	**2.91**	**117**	P	**Pn**	**05 25 04.6**	**+1.1**
TIP	**Timpagrande**	**2.93**	**270**	P	**Pn**	**05 25 04.0**	**0.0**
TIP	**Timpagrande**	**2.93**	**270**	P	**Pn**	**05 25 04.0**	**0.0**
TIP	**Timpagrande**	**2.94**	**269**	⇑*i* P	Pn	05 25 02.9	+1.9
SRS	**Serrai**	**3.00**	**50**	P	**Pn**	**05 25 05.2**	**+0.4**
SRS	**Serrai**	**3.00**	**50**	P	**Pn**	**05 25 05.2**	**+0.4**
DRME	**Dracevica, Mon**	**3.12**	**341**	⇑*i* Pn	**Pn**	**05 25 07.1**	**+0.7**
DRME				*e*Sn	**Sn**	**05 25 45.8**	**+1.9**
DRME	**Dracevica, Mon**	**3.12**	**341**	⇑*i* Pn	**Pn**	**05 25 07.1**	**+0.7**
DRME				*e*Sn	**Sn**	**05 25 45.8**	**+1.9**
MATE	**Matera**	**3.25**	**296**	⇓*i* P	Pg	05 25 21.6	+2.3
BUM	**Brajici-Budva**	**3.30**	**338**	⇑*i* Pn	**Pn**	**05 25 08.8**	**-0.2**
BUM				*e*Sn	**Sn**	**05 25 49.3**	**+0.8**
BUM	**Brajici-Budva**	**3.30**	**338**	⇑*i* Pn	**Pn**	**05 25 08.8**	**-0.2**
BUM				*e*Sn	**Sn**	**05 25 49.3**	**+0.8**
NVR	**Nevrokopi**	**3.30**	**49**	P	**Pn**	**05 25 09.3**	**+0.3**
NVR	**Nevrokopi**	**3.30**	**49**	P	**Pn**	**05 25 09.3**	**+0.3**
PDG	**Podgorica**	**3.33**	**343**	*e*Pn	**Pn**	**05 25 09.6**	**+0.3**
PDG				*e*Sn	**Sn**	**05 25 53.0**	**+3.8**
PDG	**Podgorica**	**3.33**	**343**	*e*Pn	**Pn**	**05 25 09.6**	**+0.3**
PDG				*e*Sn	**Sn**	**05 25 52.9**	**+3.8**
TTG	**Podgorica**	**3.33**	**343**	⇓*i* Pn	**Pn**	**05 25 10.7**	**+1.4**
TTG				*e*Sn	**Sn**	**05 25 52.9**	**+3.8**
SG1	**Sgolgore (BA)**	**3.36**	**300**	*e*Pn	**Pn**	**05 25 08.1**	**-1.7**
BAI	**Bari**	**3.36**	**305**	*e*Pn	**Pn**	**05 25 10.2**	**+0.4**
PVY	**Plav**	**3.38**	**353**	⇓*i* Pn	**Pn**	**05 25 11.3**	**+1.2**
PVY				*e*Sn	**Sn**	**05 25 52.5**	**+2.0**
PVY	**Plav**	**3.38**	**353**	⇓*i* Pn	**Pn**	**05 25 11.3**	**+1.2**
PVY				*e*Sn	**Sn**	**05 25 52.5**	**+2.0**
CEME	**Cevo**	**3.52**	**340**	⇓*i* Pn	**Pn**	**05 25 11.9**	**-0.1**
CEME				*e*Sn	**Sn**	**05 25 56.1**	**+2.1**
CEME	**Cevo**	**3.52**	**340**	⇓*i* Pn	**Pn**	**05 25 11.9**	**-0.1**
CEME				*e*Sn	**Sn**	**05 25 56.1**	**+2.1**
HCY	**Herceg Novi**	**3.56**	**335**	⇓*i* Pn	**Pn**	**05 25 12.2**	**-0.3**
HCY				*e*Sn	**Sn**	**05 25 55.7**	**+0.9**
HCY	**Herceg Novi**	**3.56**	**335**	⇓*i* Pn	**Pn**	**05 25 12.2**	**-0.3**
HCY				*e*Sn	**Sn**	**05 25 55.7**	**+0.9**
BEY	**Berane**	**3.66**	**353**	⇑*i* Pn	**Pn**	**05 25 15.2**	**+1.2**
BEY				*e*Sn	**Sn**	**05 25 59.3**	**+1.9**
IVA	**Berane**	**3.66**	**353**	⇑*i* Pn	**Pn**	**05 25 15.2**	**+1.2**
IVA				*e*Sn	**Sn**	**05 25 59.3**	**+1.9**
BARS	**Barje**	**3.70**	**15**	⇑*i* Pn	**Pn**	**05 25 15.3**	**+0.8**
BARS				*e*Sn	**Sn**	**05 25 59.2**	**+0.9**
**B

DEMI				*i* S		Sg	05 38 00.7	+0.1
GDZ	**Gediz**	**0.36**	**98**	P		**Pg**	05 37 58.9	-0.2
GDZ				S		Sg	05 38 04.1	+0.3
GDZ	**Gediz**	**0.36**	**98**	*i* P		**Pg**	05 37 58.9	-0.2
GDZ				*i* S		Sg	05 38 04.1	+0.3
TVSB	**Tavsanli**	**0.46**	**47**	*e*PG		**Pg**	05 38 01.0	0.0
KULA	**Kula-Manisa**	**0.68**	**205**	*e*PG		**Pg**	05 38 04.5	-0.8
KHAL	**Karahalli**	**0.85**	**154**	P		**Pg**	05 38 08.4	0.0
KHAL				S		Sg	05 38 19.2	-0.2
KHAL	**Karahalli**	**0.85**	**154**	*i* P		**Pg**	05 38 08.4	0.0
KHAL				*i* S		Sg	05 38 19.2	-0.2
KHL	**Karahalli**	**0.90**	**154**	*e*PG		**Pg**	05 38 09.5	+0.1
ORLT	**Orhaneli**	**0.91**	**354**	*e*PG		**Pg**	05 38 09.9	+0.2
AKHS	**Akhisar**	**0.98**	**255**	P		**Pg**	05 38 10.8	-0.1
AKHS				S		**Sg**	05 38 23.9	+0.3
AKHS	**Akhisar**	**0.98**	**255**	*i* P		**Pg**	05 38 10.8	-0.1
AKHS				*i* S		**Sg**	05 38 23.9	+0.3
AKS	**Akhisar**	**0.98**	**255**	*e*PG		**Pg**	05 38 10.6	-0.3
BALB	**Balikesir**	**1.02**	**300**	*e*PG		**Pg**	05 38 11.5	-0.2
IGD	**Bursa**	**1.13**	**7**	*i* P		**Pg**	05 38 13.0	-0.8
IGD				*i* S		**Sn**	05 38 30.1	-0.5
KCTX	**Karacabey (Bur**	**1.24**	**336**	*e*PN		**Pb**	05 38 16.0	0.0
IZI	**Iznik**	**1.25**	**16**	*e*PN		**Pn**	05 38 16.3	0.0
BORA	**Eskisehir**	**1.33**	**56**	P		**Pn**	05 38 17.2	-0.3
BORA				S		**Sn**	05 38 35.7	+0.1
BORA	**Eskisehir**	**1.33**	**56**	*i* P		**Pn**	05 38 17.2	-0.3
BORA				*i* S		**Sn**	05 38 35.7	+0.1
GONE	**Gonen-Balikesi**	**1.38**	**312**	*e*PN		**Pn**	05 38 18.1	+0.1
ADVT	**Abdulvahap**	**1.41**	**23**	*e*PN		**Pb**	05 38 18.9	0.0
ARMT	**Armutlu**	**1.43**	**355**	*e*PN		**Pb**	05 38 19.4	+0.1
ESKT	**Eskisehir**	**1.47**	**74**	*i* P		**Pn**	05 38 19.4	+0.1
ESKT				*i* S		**Sg**	05 38 39.3	0.0
SEYT	**Eskypehyr**	**1.47**	**74**	P		**Pn**	05 38 19.4	+0.1
SEYT				S		**Sg**	05 38 39.3	0.0
GULT	**Gulveren**	**1.73**	**41**	*e*PN		**Pn**	05 38 23.3	+0.3
SVRH	**Sivrihisar-ESK**	**1.96**	**80**	*e*PN		**Pn**	05 38 26.7	+0.6

MOS ***31*** *05:41:19.7±1.0, 43°.05N×44°.16E, h14km, mb3.7/2, Error ellipse: s-maj=8.7km s-min=6.5km az=98.6*
IASPEI ***31*** *05:41:20.9±0.9, 43°.07N±0°.02×44°.17E±0°.02, h10km±7km, Error ellipse: s-maj=2.7km s-min=2.5km az=162.5, GT5 selection from ISC bulletin GT5 identified by Bond'ir and McLaughlin (2009) selection criteria Bond'ir and McLaughlin, A new ground truth data set for seismic studies, Seism. Res. Let., 80, 465-472, 2009*
ISCJB ***31*** *05:41:20.6±0.3, 43°.07N±0°.02×44°.19E±0°.02, h10km±3km, mb3.5/2, Error ellipse: s-maj=3.0km s-min=2.9km az=135.9*
TIF ***31*** *05:41:20.4, 43°.09N×44°.18E, h13km±1km*
CSEM ***31*** *05:41:20.7±0.1, 43°.07N×44°.16E, h10km, mb3.7, Error ellipse: s-maj=2.8km s-min=2.6km az=30.0*

ISC 31 05:41:20.7±0.8**, 43°.07N**±0°.02×**44°.17E**±0°.02**, h8**km±6km**, n51**, σ1**9**14/85**, 7C-3D, Western Caucasus**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KORR	**Kora**	**0.07**	**287**	⇓*i*PG	**Pg**	05 41 23.0	+0.2
KORR	**Kora**	**0.07**	**287**	*i* Pg	**Pg**	05 41 23.0	+0.2
LACR	**Lac**	**0.26**	**158**	⇑*i*PG	**Pg**	05 41 25.9	0.0
LACR				*e*S	**Sg**	05 41 29.9	+0.6
LACR	**Lac**	**0.26**	**158**	*i* Pg	**Pg**	05 41 25.9	0.0
LACR				*e*Sg	**Sg**	05 41 29.9	+0.6
STDR	**Stavd-Durt**	**0.31**	**346**	⇑*i*PG	**Pg**	05 41 26.8	-0.1
STDR				*e*S	**Sg**	05 41 31.9	+0.8
STDR	**Stavd-Durt**	**0.31**	**346**	*i* Pg	**Pg**	05 41 26.8	-0.1
STDR				*e*Sg	**Sg**	05 41 31.9	+0.8
LSNR	**Lesken**	**0.33**	**311**	*e*PG	**Pg**	05 41 27.2	0.0
LSNR				*e*S	**Sg**	05 41 32.3	+0.8
LSNR	**Lesken**	**0.33**	**311**	*e*Pg	**Pg**	05 41 27.2	0.0
LSNR				*e*Sg	**Sg**	05 41 32.3	+0.8
ZEI	**Tsey**	**0.34**	**215**	*e*PG	**Pg**	05 41 27.4	0.0
ZEI				*e*S	**Sg**	05 41 32.6	+0.7
VLKR	**Vladikavkaz**	**0.38**	**93**	*e*PG	**Pg**	05 41 28.2	+0.1
VLKR				*e*S	**Sg**	05 41 33.7	+0.7
VLKR	**Vladikavkaz**	**0.38**	**93**	*e*Pg	**Pg**	05 41 28.2	+0.1
VLKR				*e*Sg	**Sg**	05 41 33.7	+0.7
BTKR	**Batakoyurt**	**0.41**	**42**	*i* PG	**Pg**	05 41 28.6	-0.2
BTKR				*e*S	**Sg**	05 41 34.7	+0.5
BTKR	**Batakoyurt**	**0.41**	**42**	*i* Pg	**Pg**	05 41 28.6	-0.2
BTKR				*e*Sg	**Sg**	05 41 34.7	+0.5
DIGR	**Digorskoe uzhe**	**0.46**	**249**	⇑*i*PG	**Pg**	05 41 29.8	+0.1
DIGR				*e*S	**Sb**	05 41 36.8	-1.4
DIGR	**Digorskoe uzhe**	**0.46**	**249**	*i* Pg	**Pg**	05 41 29.8	+0.1
DIGR				*e*Sg	**Sb**	05 41 36.8	-1.4
KMGR	**Komgaron**	**0.51**	**91**	⇑*i*PG	**Pg**	05 41 29.6	-1.1
KMGR				*e*S	**Sg**	05 41 36.8	-0.6
KMGR	**Komgaron**	**0.51**	**91**	*i* Pg	**Pg**	05 41 29.6	-1.1
KMGR				*e*Sg	**Sg**	05 41 36.8	-0.6
GUDG	**Gudauri**	**0.64**	**159**	P	**Pb**	05 41 33.9	-0.4
GUDG				S	**Sb**	05 41 43.6	+0.2
GUDG	**Gudauri**	**0.64**	**159**	P	**Pb**	05 41 33.9	-0.4
GUDG				S	**Sb**	05 41 43.6	+0.2
PRTR	**Priterechnaya**	**0.69**	**7**	⇑⇑*i*PG	**Pb**	05 41 35.4	+0.4
PRTR				*e*S	**Sb**	05 41 45.4	+0.7
PRTR	**Priterechnaya**	**0.69**	**7**	*i* Pg	**Pb**	05 41 35.4	+0.4
PRTR				*e*Sg	**Sb**	05 41 45.4	+0.7
ONI	**Oni**	**0.71**	**228**	P	**Pb**	05 41 34.7	-0.6
ONI				S	**Sb**	05 41 45.9	+0.7
ONI	**Oni**	**0.71**	**228**	*e*PG	**Pb**	05 41 34.6	-0.6
ONI				*e*S	**Sb**	05 41 45.8	+0.7
ONI	**Oni**	**0.71**	**228**	P	**Pb**	05 41 34.7	-0.6
ONI				*e*Sg	**Sb**	05 41 45.8	+0.7
TRKR	**Terskaya**	**0.78**	**32**	⇑⇑*i*PG	**Pg**	05 41 35.6	-0.1
TRKR				*e*S	**Sb**	05 41 46.6	-0.5
TRKR	**Terskaya**	**0.78**	**32**	*i* Pg	**Pg**	05 41 35.6	-0.1
TRKR				*e*Sg	**Sb**	05 41 46.6	-0.5
KBTC	**Kuba-Taba**	**0.93**	**324**	⇓⇓*e*PG	**Pb**	05 41 38.9	-0.2
KBTC				*e*S	**Sn**	05 41 53.7	0.0
KBTC	**Kuba-Taba**	**0.93**	**324**	*e*Pg	**Pb**	05 41 38.9	-0.2
DUS	**Dusheti**	**1.05**	**158**	P	**Sn**	05 42 01.8	+5.2
NEY	**Neytrino**	**1.07**	**280**	*i* PG	**Pg**	05 41 40.4	-0.9
NEY				*e*S	**Sg**	05 41 54.9	-0.3
NEY	**Neytrino**	**1.07**	**280**	*i* Pg	**Pg**	05 41 40.4	-0.9
NEY				*e*Sg	**Sg**	05 41 54.9	-0.3
GROC	**Groznyy**	**1.20**	**83**	*e*PG	**Pn**	05 41 43.4	-0.3
GROC				*e*		05 42 00.9	
GROC	comp=Z,46nm,0.4s			pmax	pmax		
GROC	comp=N,210nm,0.5s			smax	smax		
GROC	comp=E,104nm,0.5s			smax	smax		
GROC	comp=N,195nm,0.4s			smax	smax		
GROC	**Groznyy**	**1.20**	**83**	*e*Pg	**Pn**	05 41 43.4	-0.3
GROC	comp=N,46nm,0.4s						
GROC				*e*Sg	**Sn**	05 42 00.9	+0.7
GROC	comp=N,195nm,0.4s						
KIV	**Kislovodsk**	**1.40**	**310**	⇓⇓*e*PG	**Pb**	05 41 46.7	-0.4
KIV				*e*S	**Sg**	05 42 05.4	-0.2
KIV	**Kislovodsk**	**1.40**	**310**	*e*Pg	**Pb**	05 41 46.7	-0.4
KIV				*e*Sg	**Sg**	05 42 05.4	-0.2
TBLG	**Delisi**	**1.40**	**162**	P	**Sn**	05 42 08.9	+3.8
DGRG	**David-gareji**	**1.84**	**151**	P	**Pb**	05 41 54.4	-0.3
DGRG				S	**Sg**	05 42 21.2	+1.1
DGRG	**David-gareji**	**1.84**	**151**	*e*PN	**Pb**	05 41 54.4	-0.3
DGRG				*e*S	**Sg**	05 42 21.1	+1.1
DGRG	**David-gareji**	**1.84**	**151**	P	**Pb**	05 41 54.4	-0.3
DGRG				*e*Sg	**Sg**	05 42 21.1	+1.1
GOF	**Gofitskoye**	**2.15**	**338**	⇑⇑*e*PN	**Pg**	05 42 04.8	+2.9
GOF				*e*S	**Sg**	05 42 33.9	+4.1
GOF	comp=Z,56nm,1.0s			pmax	pmax		
GOF	comp=E,56nm,0.6s			smax	smax		
GNI	**Garni**	**2.94**	**171**	*i* PN	**Pn**	05 42 07.8	-0.1
GNI	**Garni**	**2.94**	**171**	*i* Pn	**Pn**	05 42 07.8	-0.1
KIEV	**Kiev**	**12.75**	**312**	*i* P	**Pn**	05 44 21.2	-0.9
KIEV				pmax	pmax		
KIEV	comp=Z,1.0nm,0.9s						
KIEV	**Kiev**	**12.75**	**312**	*i* P	**Pn**	05 44 21.2	-0.9
KIEV	comp=Z,1.0nm,0.9s						
ARU	**Arti**	**16.25**	**30**	*i* P	**Pn**	05 45 06.0	-3.0
ARU				pmax	pmax		
ARU	comp=Z,1.0nm,1.1s						
KLMR	**Klimovskoe**	**18.04**	**353**	*e*P	**P**	05 45 32.7	+0.9
KLMR				*e*		05 48 53.1	
KLMR				pmax	pmax		
KLMR	comp=Z,3.0nm,0.8s						
KLMR	**Klimovskoe**	**18.04**	**353**	*e*P	**P**	05 45 32.7	+0.9
KLMR	comp=Z,3.0nm,0.8s						
AAK	**Ala-Archa**	**22.19**	**81**	*i* P	**P**	05 46 16.3	-1.0
AAK				pmax	pmax		
AAK	comp=Z,2.0nm,1.1s						
AAK	**Ala-Archa**	**22.19**	**81**	*i* P	**P**	05 46 16.3	-1.0
AAK	comp=Z,2.0nm,1.1s						
KURK	**Kurchatov**	**24.58**	**60**	*i* P	**P**	05 46 40.4	-0.5
KURK				pmax	pmax		
KURK	comp=Z,2.0nm,1.3s						
KURK	**Kurchatov**	**24.58**	**60**	*i* P	**P**	05 46 40.4	-0.5
KURK	comp=Z,2.0nm,1.3s						

MOS ***31*** *05:44:48.1±0.4, 51°.24N×158°.93E, h80km, mb4.2/1, Error ellipse: s-maj=25.8km s-min=5.8km az=92.1*
KRSC ***31*** *05:44:54.4±1.7, 51°.87N×159°.08E, h71km±19km, ML4.1*
ISCJB ***31*** *05:44:56.4±0.7, 51°.87N±0°.05×159°.03E±0°.10, h62km±8km, mb3.4/5, Error ellipse: s-maj=11.5km s-min=6.1km az=34.4*
IDC ***31*** *05:44:58.6±5.3, 51°.81N×158°.51E, h82km±33km, mb3.2/5, mb1 3.5/5, mb1mx3.2/34, mbtmp3.5/5, Error ellipse: s-maj=66.3km s-min=39.1km az=34.0*

ISC 31 05:44:56.4±1.4**, 51°.83N**±0°.06×**159°.10E**±0°.06**, h46**km±15km**, n47**, σ0**9**94/69**, mb3.4/5, Off east coast of Kamchatka Peninsula**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RUS	**Russkaya**	**0.71**	**330**	*e*P	**Pn**	05 45 10.6	+0.5
RUS				*e*P	**Pn**	05 45 10.7	+0.6
RUS				*e*S	**Sn**	05 45 20.1	+0.1
RUS	**Russkaya**	**0.71**	**330**	PN	**Pn**	05 45 10.6	+0.5
MTVR	**Mutnovka**	**0.87**	**320**	*e*P	**Pn**	05 45 12.7	+0.3
MTVR				*e*S	**Sn**	05 45 23.6	-0.4
MTVR	**Mutnovka**	**0.87**	**320**	PN	**Pn**	05 45 12.7	+0.3
MTVR				S	**Sn**	05 45 23.6	-0.4
ASAK	**Asacha**	**0.93**	**308**	*e*P	**Pn**	05 45 13.5	+0.4
ASAK				*e*S	**Sn**	05 45 24.5	-0.9
ASAK	**Asacha**	**0.93**	**308**	PN	**Pn**	05 45 13.5	+0.4
ASAK				S	**Sn**	05 45 24.5	-0.9
KRMR	**Karymshinskiy**	**1.17**	**330**	*e*P	**Pn**	05 45 16.5	+0.2
KRMR				*e*S	**Sn**	05 45 30.6	-0.5
KRMR	**Karymshinskiy**	**1.17**	**330**	PN	**Pn**	05 45 16.5	+0.2
KRMR				S	**Sn**	05 45 30.6	-0.5
DALK	**Dalny**	**1.23**	**350**	*e*P	**Pn**	05 45 17.6	+0.5
DALK				*e*S	**Sn**	05 45 32.9	+0.4
DALK	**Dalny**	**1.23**	**350**	PN	**Pn**	05 45 17.6	+0.5
PET	**Petropavlovsk**	**1.23**	**347**	*e*P	**Pn**	05 45 17.5	+0.3
PET				*e*S	**Sn**	05 45 32.5	-0.1
PET	**Petropavlovsk**	**1.23**	**347**	*e*PN	**Pn**	05 45 17.2	0.0
PET				pmax	pmax		
PET	comp=Z,171nm,0.2s						
PET	comp=Z,200nm,0.2s			pmax	pmax		
NLC	**Nalytchevo**	**1.36**	**6**	*e*P	**Pn**	05 45 18.9	0.0
NLC				*e*S	**Sn**	05 45 34.5	-1.2
NLC	**Nalytchevo**	**1.36**	**6**	PN	**Pn**	05 45 18.9	0.0
UGLR	**Uglovaya**	**1.40**	**353**	*e*P	**Pn**	05 45 20.2	+0.6
UGLR				*e*S	**Sn**	05 45 37.2	+0.3
UGLR	**Uglovaya**	**1.40**	**353**	PN	**Pn**	05 45 20.2	+0.6
UGLR				S	**Sn**	05 45 37.2	+0.3
SMAR	**Somma**	**1.45**	**353**	*e*P	**Pn**	05 45 20.7	+0.3
SMAR				*e*S	**Sn**	05 45 37.4	-1.0
SMAR	**Somma**	**1.45**	**353**	PN	**Pn**	05 45 20.7	+0.3
AVH	**Avacha**	**1.46**	**351**	*e*P	**Pn**	05 45 21.2	+0.8
AVH				*e*S	**Sn**	05 45 39.0	+0.7
AVH	**Avacha**	**1.46**	**351**	PN	**Pn**	05 45 21.2	+0.8
AVH				S	**Sn**	05 45 39.0	+0.7
SDLR	**Sedlovina**	**1.46**	**355**	*e*P	**Pn**	05 45 20.7	+0.2
SDLR				*e*S	**Sn**	05 45 37.4	-1.1
SDLR	**Sedlovina**	**1.46**	**355**	PN	**Pn**	05 45 20.7	+0.2
KOK	**Koryaka**	**1.50**	**349**	*e*P	**Pn**	05 45 21.9	+1.0
KOK				*e*S	**Sn**	05 45 39.9	+0.6
KOK	**Koryaka**	**1.50**	**349**	PN	**Pn**	05 45 21.9	+1.0
KOK				S	**Sn**	05 45 39.9	+0.6
KRER	**Koryakskii**	**1.50**	**352**	*e*P	**Pn**	05 45 21.7	+0.7
KRER				*e*S	**Sn**	05 45 39.4	0.0
KRER	**Koryakskii**	**1.50**	**352**	PN	**Pn**	05 45 21.7	+0.7
KRER				S	**Sn**	05 45 39.4	0.0
PETK	**Petropavlovsk-**	**1.54**	**327**	P	**Pn**	05 45 21.5	0.0
PETK	comp=Z,24nm,0.3s,baz=115,slow=19,SNR=516			S	**Sn**	05 45 40.8	+0.5
PETK	comp=Z,28nm,0.3s,baz=93,slow=29,SNR=16						
KRX	**Arik**	**1.56**	**350**	*e*P	**Pn**	05 45 22.5	+0.7
KRX				*e*S	**Sn**	05 45 38.4	-2.5
KRX	**Arik**	**1.56**	**350**	PN	**Pn**	05 45 22.5	+0.7
GNL	**Ganaly**	**2.00**	**340**	*e*P	**Pn**	05 45 28.3	+0.5
GNL				*e*S	**Sn**	05 45 51.1	-0.6
GNL	**Ganaly**	**2.00**	**340**	PN	**Pn**	05 45 28.3	+0.5
GNL				S	**Sn**	05 45 51.1	-0.6
SKR	**Severo-Kuril's**	**2.19**	**240**	*e*P	**Pn**	05 45 30.9	+0.5
SKR				*e*S	**Sn**	05 45 55.4	-0.9
MKZ	**Mys Kozlova**	**3.16**	**29**	*e*P	**Pn**	05 45 44.5	+0.9
MKZ				*e*S	**Sn**	05 46 19.2	-0.8
MKZ	**Mys Kozlova**	**3.16**	**29**	PN	**Pn**	05 45 44.5	+0.9
BKI	**Bering**	**5.32**	**48**	*e*P	**Pn**	05 46 14.5	+1.3
BKI				*e*S	**Sn**	05 47 08.9	-4.1
BKI	**Bering**	**5.32**	**48**	PN	**Pn**	05 46 14.5	+1.3
TIXI	**Tiksi**	**23.99**	**337**	P	**P**	05 50 03.6	-2.6
H11N2	comp=Z,0.8nm,0.4s,baz=136,slow=12,SNR=3.4 **WAKE ISLAND Hy 32.61**	**166**		T	T	06 26 31.8	
H11N3	baz=351,slow=76,SNR=28 **WAKE ISLAND Hy 32.62**	**166**		T	T	06 26 34.5	
H11N1	baz=351,slow=76,SNR=14 **WAKE ISLAND Hy 33.78**	**167**		T	T	06 26 31.9	
H11S1	baz=351,slow=76,SNR=19 **WAKE ISLAND Hy 33.78**	**167**		T	T	06 27 55.4	
H11S3	baz=351,slow=76,SNR=27 **WAKE ISLAND Hy 33.80**	**167**		T	T	06 28 04.5	
H11S2	baz=351,slow=76,SNR=32 **WAKE ISLAND Hy 33.80**	**167**		T	T	06 28 02.2	
YKA	baz=351,slow=76,SNR=26 **Yellowknife Ar**	**44.51**	**41**	P	**P**	05 53 02.8	0.0
PDAR	comp=Z,0.2nm,0.3s,baz=303,slow=7.7,SNR=4.2 **Pinedale Array**	**58.68**	**60**	P	**P**	05 54 50.8	+1.5
TXAR	comp=Z,0.3nm,0.5s,baz=285,slow=3.5,SNR=3.0 **Lajitas Array**	**71.70**	**66**	P	**P**	05 56 14.2	+0.6
	comp=Z,0.2nm,0.7s,baz=278,slow=3.7,SNR=4.2						

ISK ***31*** *05:46:25.7, 39°.08N×29°.01E, h7km, MD2.4*
ISCJB ***31*** *05:46:26.4±0.6, 39°.08N±0°.04×29°.01E±0°.04, h8km±6km, Error ellipse: s-maj=6.7km s-min=4.9km az=140.1*
CSEM ***31*** *05:46:26.4±0.1, 39°.09N×29°.00E, h8km, MD2.6, Error ellipse: s-maj=2.1km s-min=1.6km az=111.0*
DDA ***31*** *05:46:26.1, 39°.08N×29°.01E, h7km, Md2.6*

ISC 31 05:46:26.6±0.9**, 39°.08N**±0°.03×**29°.01E**±0°.03**, h12**km±10km**, n16**, σ0**8**28/26**, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.23**	**260**	P	**Pg**	05 46 31.4	-0.1
DEMI				S	**Sg**	05 46 35.0	+0.1
DEMI	**Demirci**	**0.23**	**260**	*i* P	**Pg**	05 46 31.4	-0.1
DEMI				*i* S	**Sg**	05 46 35.0	+0.1
GDZ	**Gediz**	**0.37**	**89**	P	**Pg**	05 46 33.8	-0.2
GDZ				S	**Sg**	05 46 39.2	+0.3
GDZ	**Gediz**	**0.37**	**89**	*i* P	**Pg**	05 46 33.8	-0.2
GDZ				*i* S	**Sg**	05 46 39.2	+0.3
TVSB	**Tavsanli**	**0.51**	**44**	*e*PG	**Pg**	05 46 36.0	-0.5
TVSB				*e*SG	**Sg**	05 46 43.5	+0.2
TVSB	**Tavsanli**	**0.51**	**44**	*e*Pg	**Pg**	05 46 36.0	-0.5
TVSB				*e*Sg	**Sg**	05 46 43.5	+0.2
KULA	**Kula-Manisa**	**0.63**	**206**	*e*PG	**Pg**	05 46 38.4	-0.5
KULA				*e*SG	**Sg**	05 46 47.4	+0.2
KULA	**Kula-Manisa**	**0.63**	**206**	*e*Pg	**Pg**	05 46 38.4	-0.5
KULA				*e*Sg	**Sg**	05 46 47.4	+0.2
KHAL	**Karahalli**	**0.81**	**152**	P	**Pb**	05 46 42.5	-0.1
KHAL				S	**Sg**	05 46 53.0	+0.3
KHAL	**Karahalli**	**0.81**	**152**	*i* P	**Pb**	05 46 42.5	-0.1
KHAL				*i* S	**Sg**	05 46 53.0	+0.3
KCTX	**Karacabey (Bur**	**1.28**	**337**	*e*PN	**Pb**	05 46 50.6	-0.1
KCTX	**Karacabey (Bur**	**1.28**	**337**	*e*Pn	**Pb**	05 46 50.6	-0.1
IZI	**Iznik**	**1.30**	**16**	*e*PN	**Pb**	05 46 51.1	0.0
IZI	**Iznik**	**1.30**	**16**	*e*Pn	**Pb**	05 46 51.1	0.0
ARMT	**Armutlu**	**1.48**	**356**	*e*PN	**Pn**	05 46 53.4	+0.3
ARMT	**Armutlu**	**1.48**	**356**	*e*Pn	**Pn**	05 46 53.4	+0.3

ISCJB ***31*** *05:47:51.0±0.8, 31°.75S±0°.06×68°.33W±0°.06, h111km±9km, Error ellipse: s-maj=11.3km s-min=6.1km az=145.6*
GUC ***31*** *05:47:50.2±0.4, 31°.40S×68°.77W, h136km±43km, ML3.6*
SJA ***31*** *05:47:50.4±0.8, 31°.78S×68°.38W, h110km±4km, ML3.6, MW3.8*

ISC 31 05:47:52.1±1.5**, 31°.76S**±0°.06×**68°.35W**±0°.05**, h103**km±10km**, n17**, σ0**6**5/22**, 2C, San Juan Province**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RTCV	**Cerro Valdivia**	**0.20**	**237**	*e*P	**Pn**	05 48 06.5	-0.3
RTCV				*e*S	**Sn**	05 48 17.7	0.0
SJA	**San Juan**	**0.29**	**321**	*e*P	**Pn**	05 48 06.9	-0.3
SJA	comp=Z,1μm,0.1s			IAML		05 48 19.5	
RTLL	**Cerro Villicun**	**0.44**	**346**	*e*P	**Pn**	05 48 07.4	-0.5
RTLS	**Leoncito**	**0.81**	**267**	*e*P	**Pn**	05 48 11.1	-0.1
AMOG	**MOGNA**	**0.82**	**351**	*e*P	**Pn**	05 48 10.9	-0.2
AUSP	**Uspallata**	**1.00**	**242**	*e*P	**Pn**	05 48 12.9	-0.2
ACAN	**Cantantal**	**1.11**	**118**	*e*P	**Pn**	05 48 14.4	+0.4
AGUA	**GUANDACOL**	**2.27**	**357**	*e*P	**Pn**	05 48 28.7	+0.3
MRA	**San Martin**	**2.33**	**107**	*e*P	**Pn**	05 48 29.0	-0.2
MRA	comp=Z,256nm,0.3s			IAML		05 48 57.7	
PEL	**Peldehue**	**2.41**	**234**	⇑*i*P	**Pn**	05 48 29.8	-0.5
PEL				*i* S	**Sn**	05 48 59.8	+0.4
PEL	comp=N,198nm,0.4s			IAML		05 49 02.0	
CLCH	**Cerro Calan**	**2.47**	**228**	⇑*i*P	**Pn**	05 48 31.3	+0.3
CLCH				*i* S	**Sn**	05 49 02.1	+1.3
CLCH	comp=N,205nm,0.4s			IAML		05 49 10.1	
ROCH	**El Roble**	**2.56**	**241**	*e*P	**Pn**	05 48 31.3	-1.0
ROCH				*i* S	**Sn**	05 49 02.5	-0.6
ROCH	comp=N,272nm,0.3s			IAML		05 49 07.5	
ROC1	**El Roble**	**2.56**	**241**	*e*P	**Pn**	05 48 31.4	-1.0
RCDM	**Rinconada Maip**	**2.70**	**230**	*e*P	**Pn**	05 48 33.8	-0.2
RCDM				*i* S	**Sn**	05 49 07.4	+1.2
RCDM	comp=E,254nm,0.3s			IAML		05 49 08.5	
VCA	**Vinchina**	**3.01**	**2**	*e*P	**Pn**	05 48 38.4	+0.1
TCA	**Tanti**	**3.23**	**84**	*e*PN	**Pn**	05 48 40.3	-0.9
SUCO	**SUCO**	**3.33**	**119**	*e*P	**Pn**	05 48 42.0	-0.4

NIED ***31*** *05:51:00, 37°.50N×143°.50E, h5km, Mw3.7 Best double couple: M0=3.75000×10^14 NP1:φs=15.00000°, δ=22.00000°, λ=-94.00000°. NP2:φs=199.00000°, δ=68.00000°, λ=-89.00000°.*
ISCJB ***31*** *05:51:08.5±0.8, 37°.58N±0°.04×143°.70E±0°.06, h33km, mb4.0/3, MS2.6/1, Error ellipse: s-maj=7.5km s-min=5.7km az=29.4*
JMA ***31*** *05:51:10.3±0.2, 37°.54N×143°.52E, h45km, M3.8*
IDC ***31*** *05:51:13.9±5.3, 37°.76N×143°.51E, h75km±54km, mb3.7/3, mb1 3.7/7, mb1mx3.3/39, mbtmp3.9/7, ML3.8/3, MS2.6/2, Ms1 2.7/2, ms1mx2.4/39, Error ellipse: s-maj=53.1km s-min=13.4km az=118.0*

ISC 31 05:51:09.7±1.2**, 37°.56N**±0°.06×**143°.71E**±0°.08**, h35**km**, n19**, σ1**9**64/29**, mb4.1/3**, Off east coast of Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**2.21**	**314**	P	**Pn**	05 51 44.2	+0.4
OFUJ				S	**Sn**	05 52 09.6	-0.4
JFK	**Kawauchi**	**2.26**	**266**	P	**Pn**	05 51 44.2	-0.4
JFK				S	**Sn**	05 52 08.8	-2.5
JMK	**Ichinoseki**	**2.40**	**306**	P	**Pn**	05 51 47.0	+0.5
JMK				*e*S	**Sn**	05 52 14.1	-0.6
JFT	**Otama**	**2.68**	**270**	P	**Pn**	05 51 51.0	+0.7
JFT				*e*S	**Sn**	05 52 20.8	-0.8
JOM	**Ohasama**	**2.69**	**316**	P	**Pn**	05 51 51.3	+0.8
JOM				S	**Sn**	05 52 22.0	+0.1
JYK	**Kaneyama**	**2.97**	**298**	P	**Pn**	05 51 55.4	+1.2
JYK				*e*S	**Sn**	05 52 29.0	+0.4
JAG	**Ashikaga**	**3.59**	**253**	P	**Pn**	05 52 03.0	+0.2
JAG				*e*S	**Sn**	05 52 41.7	-2.2
JRY

ISC 31 05:59:32.8±1.3, 55°78N±0°03×162°41E±0°03, h25km±10km, n90, σ1§16/117, mb3.8/22, MS3.2/8, Near east coast of Kamchatka Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KBG	Krutoberegovo	0.50	19	eP	Pb	05 59 43.1	+0.1
KBG				eS	Sn	05 59 52.4	+0.1
KBG	Krutoberegovo	0.50	19	PN	Pb	05 59 43.1	+0.1
KBG				S	Sn	05 59 52.4	+0.1
ZLN	Zelenaya	0.93	285	eP	Pn	05 59 49.7	-0.7
ZLN	Zelenaya	0.93	285	PN	Pn	05 59 49.7	-0.7
SMKR	Semkarok	0.96	327	eP	Pn	05 59 50.1	-0.6
SMKR				eS	Sn	06 00 04.2	+0.6
SMKR	Semkarok	0.96	327	PN	Pn	05 59 50.1	-0.6
SMKR				S	Sn	06 00 04.2	+0.6
CIRR	Tsirk	0.99	290	eP	Pn	05 59 50.4	-0.8
CIRR				eS	Sn	06 00 04.2	-0.3
CIRR	Tsirk	0.99	290	PN	Pn	05 59 50.4	-0.8
CIRR				S	Sn	06 00 04.2	-0.3
LGNR	Loginova	1.01	288	eP	Pn	05 59 51.1	-0.5
LGNR				eS	Sn	06 00 03.3	-1.9
LGNR	Loginova	1.01	288	PN	Pn	05 59 51.1	-0.5
LGNR				S	Sn	06 00 03.3	-1.9
BDR	Baidarnaya	1.03	320	eP	Pn	05 59 51.6	-0.2
BDR				eS	Sb	06 00 06.6	+1.4
BDR	Baidarnaya	1.03	320	PN	Pn	05 59 51.6	-0.2
BDR				S	Sb	06 00 06.6	+1.4
SRKR	Sorokina	1.11	322	eP	Pn	05 59 52.6	-0.3
SRKR	Sorokina	1.11	322	PN	Pn	05 59 52.6	-0.3
KLY	Klyuchi	1.12	299	eP	Pn	05 59 50.6	-2.2
KLY				eS	Sn	06 00 04.6	-2.8
KLY	Klyuchi	1.12	299	PN	Pn	05 59 50.6	-2.2
KLY				S	Sn	06 00 04.6	-2.8
KRSR	Krestovskiy	1.12	294	eP	Pn	05 59 51.9	-1.1
KRSR				eS	Sn	06 00 06.3	-1.4
KRSR	Krestovskiy	1.12	294	PN	Pn	05 59 51.9	-1.1
KRSR				S	Sn	06 00 06.3	-1.4
TUMD	Tumrok D	1.28	244	eP	Pn	05 59 54.9	-0.2
TUMD				eS	Sn	06 00 10.9	-0.5
MKZ	Mys Kozlova	1.29	198	eP	Pn	05 59 53.7	-1.4
MKZ				eS	Sn	06 00 10.3	-1.2
MKZ	Mys Kozlova	1.29	198	PN	Pn	05 59 53.7	-1.4
MKZ				S	Sn	06 00 10.3	-1.2
TUMR	Tumrok	1.38	250	PN	Pn	05 59 54.9	-1.6
TUMR				S	Sn	06 00 10.9	-3.1
ESO	Esso	2.09	275	eP	Pn	06 00 05.7	-0.6
ESO				eS	Sn	06 00 31.0	-0.5
ESO	Esso	2.09	275	PN	Pn	06 00 05.7	-0.6
ESO				S	Sn	06 00 31.0	-0.5
BKI	Bering	2.11	104	eP	Pn	06 00 05.5	-0.9
BKI				eS	Sn	06 00 30.8	-1.0
BKI	Bering	2.11	104	PN	Pn	06 00 05.5	-0.9
BKI				S	Sn	06 00 30.8	-1.0
NLC	Nalytchevo	3.17	216	eP	Pn	06 00 21.0	+0.1
NLC				eS	Sn	06 00 57.8	-0.1
NLC	Nalytchevo	3.17	216	PN	Pn	06 00 21.0	+0.1
NLC				S	Sn	06 00 57.8	-0.1
SDLR	Sedlovina	3.24	221	*i* P	Pn	06 00 22.6	+0.5
SDLR				eS	Sn	06 01 00.3	+0.4
SDLR	Sedlovina	3.24	221	PN	Pn	06 00 22.6	+0.5
SDLR				S	Sn	06 01 00.3	+0.4
KRX	Arik	3.27	224	*i* P	Pn	06 00 24.6	+2.1
KRX	Arik	3.27	224	PN	Pn	06 00 24.6	+2.1
KRER	Koryakskii	3.27	222	*i* P	Pn	06 00 23.6	+1.0
KRER	Koryakskii	3.27	222	PN	Pn	06 00 23.6	+1.0
SMAR	Somma	3.28	221	*i* P	Pn	06 00 23.3	+0.5
SMAR				eS	Sn	06 01 01.6	+0.5
SMAR	Somma	3.28	221	PN	Pn	06 00 23.3	+0.5
SMAR				S	Sn	06 01 01.6	+0.5
AVH	Avacha	3.31	222	*i* P	Pn	06 00 24.0	+1.0
AVH	Avacha	3.31	222	PN	Pn	06 00 24.0	+1.0
UGLR	Uglovaya	3.32	220	*i* P	Pn	06 00 24.0	+0.8
UGLR	Uglovaya	3.32	220	PN	Pn	06 00 24.0	+0.8
KOK	Koryaka	3.32	223	eP	Pn	06 00 24.3	+1.1
KOK	Koryaka	3.32	223	PN	Pn	06 00 24.3	+1.1
GNL	Ganaly	3.33	233	*i* P	Pn	06 00 24.2	+0.9
GNL	Ganaly	3.33	233	PN	Pn	06 00 24.2	+0.9
DALK	Dalny	3.48	219	eP	Pn	06 00 25.6	+0.3
DALK				eS	Sn	06 01 05.1	-0.6
DALK	Dalny	3.48	219	PN	Pn	06 00 25.6	+0.3
DALK				S	Sn	06 01 05.1	-0.6
PET	Petropavlovsk	3.53	220	ePN	Pn	06 00 26.6	+0.7
PET				eS	Sn	06 01 07.7	+0.9
PET				smax	smax		
	comp=E,178nm,0.5s						
PET				smax	smax		
	comp=N,261nm,0.5s						
PET				smax	smax		
	comp=E,500nm,2.4s						
PET				MLR	MLR		
	comp=Z,200nm,13.0s						
PET	Petropavlovsk	3.53	220	ePn	Pn	06 00 26.8	+0.9
PETK	Petropavlovsk-	3.84	228	Pn	Pn	06 00 31.3	+1.1
	comp=Z,2.9nm,0.3s,baz=64,slow=16,SNR=20						
PETK				Sn	Sb	06 01 22.4	-3.2
	comp=Z,2.4nm,0.3s,baz=48,slow=22,SNR=2.7						
PETK				LR	LR	06 02 15.3	
	comp=Z,142nm,20.9s,baz=70,slow=43						
KRMR	Karymshinskiy	3.87	222	eP	Pn	06 00 31.5	+0.8
KRMR				eS	Sn	06 01 16.4	+1.1
KRMR	Karymshinskiy	3.87	222	PN	Pn	06 00 31.5	+0.8
KRMR				S	Sn	06 01 16.4	+1.1
RUS	Russkaya	4.06	216	*i* P	Pn	06 00 33.9	+0.6
RUS				eS	Sn	06 01 19.3	-0.6
RUS	Russkaya	4.06	216	PN	Pn	06 00 33.9	+0.6
ASAK	Asacha	4.32	220	*i* P	Pn	06 00 39.0	+2.2
ASAK	Asacha	4.32	220	PN	Pn	06 00 39.0	+2.2
MA2	Magadan	7.30	306	LR	LR	06 04 25.3	
	comp=Z,115nm,19.3s,baz=148,slow=40						
ASAJ	Asahikawa	17.21	236	P	P	06 03 33.9	+1.3
	comp=Z,1.9nm,0.3s,baz=42,slow=10,SNR=4.5						
ASAJ				LR	LR	06 10 18.5	
	comp=Z,62nm,19.6s,baz=350,slow=38						
KLR	Kul'dur	19.66	263	P	P	06 04 00.1	+0.5
	comp=Z,0.1nm,0.3s,baz=65,slow=10.0,SNR=7.7						
KLR				LR	LR	06 12 21.4	
	comp=Z,48nm,19.4s,baz=80,slow=39						
TIXI	Tiksi	21.28	331	P	P	06 04 16.8	-0.1
	comp=Z,1.7nm,0.4s,baz=108,slow=9.3,SNR=6.8						
TIXI	Tiksi	21.28	331	eP	P	06 04 16.5	-0.4
TIXI				pmax	pmax		
	comp=Z,3.0nm,0.6s						
TIXI	Tiksi	21.28	331	eP	P	06 04 16.5	-0.4
	comp=Z,2.7nm,0.6s						
TIXI				P	P	06 04 16.8	-0.1
USRK	Ussuriysk Ar.	22.53	252	LR	LR	06 14 36.9	
	comp=Z,49nm,18.2s,baz=17,slow=40						
PPLA	Purkeypile	23.77	54	eP	P	06 04 43.0	-0.1
	comp=Z,17nm,1.6s						
BPAW	Bear Paw Mtn.	24.25	51	eP	P	06 04 46.8	-0.6
	comp=Z,3.0nm,1.3s						
KTH	Kantishna Hill	24.30	52	eP	P	06 04 46.7	-1.2
	comp=Z,14nm,1.4s						
TRF	Thorofare Moun	24.60	53	eP	P	06 04 49.7	-1.0
	comp=Z,9.3nm,0.9s						
COLD	Coldfoot	24.64	43	eP	P	06 04 49.6	-1.3
	comp=Z,8.3nm,1.2s						
MJAR	Matsushiro Arr	25.29	231	P	P	06 04 56.2	-0.8
	comp=Z,0.9nm,0.3s,baz=37,slow=7.7,SNR=3.5						
MJAR				LR	LR	06 14 28.8	
	comp=Z,24nm,21.7s,baz=140,slow=36						
ILAR	Eielson Array	25.99	49	P	P	06 05 02.3	-0.9
	comp=Z,1.8nm,0.8s,baz=264,slow=8.6,SNR=16						
ILAR				LR	LR	06 15 37.8	
	comp=Z,56nm,18.1s,baz=185,slow=37						
INK	Inuvik	30.93	41	P	P	06 05 46.6	-0.4
	comp=Z,0.9nm,0.5s,baz=306,slow=6.9,SNR=12						
NRIK	Noril'sk	34.53	323	LR	LR	06 21 18.5	
	comp=Z,56nm,18.2s,baz=108,slow=38						
SONM	Songino Array	34.66	281	P	P	06 06 19.9	-0.2
	comp=Z,0.4nm,0.5s,baz=46,slow=6.2,SNR=3.1						
H11N2	WAKE ISLAND Hy	36.15	173	T	T	06 44 05.4	
	baz=355,slow=74,SNR=23						
H11N3	WAKE ISLAND Hy	36.17	173	T	T	06 44 07.4	
	baz=355						
H11N1	WAKE ISLAND Hy	36.17	173	T	T	06 44 05.4	
	baz=355,slow=74,SNR=21						
BBB	Bella Bella	39.46	65	LR	LR	06 20 42.5	
	comp=Z,58nm,20.8s,baz=175,slow=32						
YKA	Yellowknife Ar	40.29	45	P	P	06 07 06.7	-0.6
	comp=Z,0.6nm,0.5s,baz=297,slow=7.9,SNR=8.8						
ZALV	Zalesovo Beam	42.49	301	P	P	06 07 26.3	+0.8
	comp=Z,1.1nm,0.3s,baz=20,slow=4.6,SNR=5.4						
MKAR	Makanchi Array	48.23	295	P	P	06 08 10.4	-0.7
	comp=Z,0.8nm,0.7s,baz=60,slow=8.5,SNR=6.4						
ARU	Arti	52.34	317	LR	LR	06 32 38.3	
	comp=Z,34nm,18.6s,baz=248,slow=38						
NVAR	Mina Array Bea	53.62	73	P	P	06 08 52.7	+0.8
	comp=Z,0.6nm,0.7s,baz=302,slow=5.2,SNR=3.1						
PDAR	Pinedale Array	55.08	64	P	P	06 09 02.3	-0.2
	comp=Z,0.3nm,0.5s,baz=310,slow=2.0,SNR=3.1						
PDAR				LR	LR	06 33 30.1	
	comp=Z,27nm,20.6s,baz=178,slow=37						
AAK	Ala-Archa	55.11	296	LR	LR	06 34 43.9	
	comp=Z,20nm,19.2s,baz=70,slow=38						
FINES	FINESS Array B	58.18	337	P	P	06 09 22.2	-1.8
	comp=Z,0.8nm,0.4s,baz=39,slow=7.4,SNR=9.9						
NOA	NORSAR Array B	61.32	344	P	P	06 09 48.0	+2.3
	comp=Z,0.5nm,0.6s,baz=23,slow=6.5,SNR=3.4						
TXAR	Lajitas Array	68.38	70	P	P	06 10 32.0	-0.1
	comp=Z,1.5nm,0.6s,baz=299,slow=4.8,SNR=23						
KBZ	Khabaz	68.49	317	P	P	06 10 34.2	+1.7
	comp=Z,1.8nm,0.8s,baz=112,slow=4.6,SNR=4.4						
BRTR	Keskin Array B	75.38	322	P	P	06 11 15.8	+1.7
	comp=Z,0.4nm,0.6s,baz=68,slow=4.3,SNR=2.9						
WRA	Warramunga Arr	79.09	207	P	P	06 11 36.2	+1.5
	comp=Z,0.3nm,0.6s,baz=14,slow=5.9,SNR=4.6						
ASAR	Alice Springs	82.77	206	P	P	06 11 52.9	-1.4
	comp=Z,0.4nm,0.8s,baz=24,slow=5.1,SNR=3.4						

*ISCJB **31** 06:01:55.8±1.9, 40°15N±0°10×25°2E±0°1, h10km, Error ellipse: s-maj=16.7km s-min=10.2km az=136.0*
*DDA **31** 06:01:56.6, 40°31N×25°37E, h8km, Md2.9*
ISC 31 06:01:55.9±2.1, 40°2N±0°1×25°2E±0°1, h10km, n6, σ1§29/6, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BOZC	Bozcaada	0.74	116	*i* P	Pg	06 02 10.3	+0.1
BOZC				*i* S	Sb	06 02 20.5	-0.6
KESN	Edirne-Kesan	1.31	60	*i* P	Pn	06 02 22.1	+1.5
KESN				*i* S	Sn	06 02 37.1	-1.3
KDZ	Kurdzhali	1.49	7	eP	Pn	06 02 15.4	-7.3
RZN	Rozhen	1.56	347	eP	Pn	06 02 23.2	-0.6
MMB	Musomiste	1.79	323	eP	Pg	06 02 30.9	+0.6
MPEP	Malo Peshtene	3.36	342	eP	Pn	06 02 43.2	-5.2

IDC 31 06:14:52.8±4.8, 30°56S×138°25E, h0km, mb1 2.9/3, mb1mx2.9/28, mbtmp2.7/3, ML2.5/3, Error ellipse: s-maj=110.8km s-min=17.2km az=39.0, South Australia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	Stephens Creek	3.15	116	Pn	Pn	06 15 44.6	+0.9
	0.2nm,0.3s,baz=294,slow=13,SNR=2.9						
STKA				Sn	Sn	06 16 23.4	+1.5
	1.6nm,0.3s,baz=332,slow=15,SNR=6.4						
STKA				Lg	Lg	06 16 31.8	
	1.7nm,0.3s,baz=253,slow=20,SNR=5.3						
ASAR	Alice Springs	7.88	330	Pn	Pn	06 16 49.2	+0.4
	0.1nm,0.3s,baz=152,slow=13,SNR=3.0						
ASAR				Sn	Sn	06 18 20.6	+1.9
	0.1nm,0.3s,baz=154,slow=22,SNR=4.1						
WRA	Warramunga Arr	11.15	341	Pn	Pn	06 17 32.3	-1.2
	0.1nm,0.3s,baz=152,slow=11,SNR=5.0						

*ISCJB **31** 06:15:04.4±1.3, 17°8S±0°3×178°6W±0°2, h579km, mb3.5/10, Error ellipse: s-maj=52.2km s-min=18.2km az=154.2*
*IDC **31** 06:15:07.4±5.7, 17°78S×178°60W, h606km±66km, mb3.1/10, mb1 3.4/10, mb1mx3.1/32, mbtmp3.9/10, Error ellipse: s-maj=43.4km s-min=21.9km az=146.0*
ISC 31 06:15:04.9±1.3, 17°8S±0°3×178°6W±0°2, h579km, n12, σ0§69/14, mb3.5/10, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr	44.50	259	P	P	06 22 26.3	+0.1
	0.2nm,0.3s,baz=97,slow=7.0,SNR=7.8						
WRA				PcP	PcP	06 23 56.0	-0.8
	1.0nm,1.2s,baz=91,slow=3.7,SNR=5.1						
ASAR	Alice Springs	44.67	254	P	P	06 22 28.1	+0.6
	0.6nm,0.4s,baz=90,slow=8.8,SNR=11						
ASAR				PcP	PcP	06 23 56.5	-0.8
	0.4nm,0.5s,baz=103,slow=3.8,SNR=4.5						
MJAR	Matsushiro Arr	67.70	323	P	P	06 25 06.0	+0.5
	0.8nm,0.3s,baz=148,slow=6.7,SNR=3.0						
NVAR	Mina Array Bea	79.44	44	P	P	06 26 12.9	+0.6
	0.6nm,0.6s,baz=238,slow=14,SNR=5.0						
SEY	Seymchan	83.61	347	P	P	06 26 33.0	+0.3
	1.5nm,0.4s,baz=200,slow=12,SNR=6.7						
ILAR	Eielson Array	85.79	13	P	P	06 26 42.4	-0.9
	0.5nm,0.4s,baz=220,slow=4.9,SNR=9.9						
TXAR	Lajitas Array	86.06	58	P	P	06 26 46.5	+1.0
	0.9nm,0.7s,baz=224,slow=5.9,SNR=10						
PDAR	Pinedale Array	87.36	43	P	P	06 26 51.0	-0.5
	0.5nm,0.6s,baz=203,slow=2.1,SNR=7.2						
INK	Inuvik	91.80	15	P	P	06 27 10.5	-0.6
	0.3nm,0.3s,baz=228,slow=8.9,SNR=3.7						
YKA	Yellowknife Ar	94.28	25	P	P	06 27 22.1	-0.5
	0.2nm,0.6s,baz=248,slow=3.7,SNR=3.9						
BRTR	Keskin Array B	144.57	315	PKP	PKPdf	06 33 36.5	-0.1
	0.6nm,0.5s,baz=114,slow=3.1,SNR=4.5						
GERES	GERESS Array B	147.44	345	PKPbc	PKPbc	06 33 44.2	-0.3
	1.0nm,0.5s,baz=38,slow=2.4,SNR=8.6						

*GUC **31** 06:27:53.5±0.6, 33°62S±0°07×71°89W±0°09, h5km±13km, n20, σ0§94/24, 7C-1D, Near coast of central Chile*

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHPI	Pichilemu	0.78	187	⇑*i* P	Pg	06 28 08.2	0.0
CHPI				*i* S	Sb	06 28 19.9	-0.3
RCDM	Rinconada Maip	0.92	82	⇑*i* P	Pg	06 28 10.6	-0.3
RCDM				IAML		06 28 24.2	
	comp=N,2μm,0.3s						
ROC1	El Roble	0.97	49	eP	Pg	06 28 11.9	-0.1
ROC1				eS	Sg	06 28 24.4	-0.2
ROCH	El Roble	0.98	49	eP	Pg	06 28 11.2	-0.8
ROCH				*i* S	Sg	06 28 25.6	+0.8
ROCH				IAML		06 28 29.0	
	comp=N,1μm,0.5s						
ANTU	Antumapu	1.05	88	⇑*i* P	Pb	06 28 13.4	-0.7
ANTU				eS	Sb	06 28 27.7	-0.5
ANTU				IAML		06 28 33.6	
	comp=E,2μm,0.6s						
STL	Santa Lucia	1.06	81	⇑*i* P	Pb	06 28 13.3	-0.8
PEL	Peldehue	1.12	65	⇓*i* P	Pb	06 28 14.2	-0.9
PEL				*i* S	Sg	06 28 30.2	+1.0
PEL				IAML		06 28 33.5	
	comp=N,2μm,0.5s						
CLCH	Cerro Calan	1.16	79	⇑*i* P	Pb	06 28 14.9	-0.8
CLCH				*i* S	Sb	06 28 31.1	-0.1
CLCH				IAML		06 28 37.1	
	comp=E,1μm,0.7s						
SJCH	San Jose de Ma	1.28	91	⇑*i* P	Pn	06 28 17.1	-0.9
SJCH				*i* S	Sb	06 28 34.6	-0.2
TALC	Talca	1.79	173	⇑*i* P	Pn	06 28 24.1	-0.7
TALC				eS	Sn	06 28 47.1	-0.9
AUSP	Uspallata	2.52	57	eP	Pn	06 28 36.4	+1.2
RTLS	Leoncito	2.84	51	eP	Pn	06 28 40.5	+0.9
RTCV	Cerro Valdivia	3.32	59	eP	Pn	06 28 47.6	+1.6
RTLL	Cerro Villicun	3.68	53	eP	Pn	06 28 51.6	+0.7
AMOG	MOGNA	3.93	48	eP	Pn	06 28 54.8	+0.4
ACAN	Cantantal	4.18	73	eP	Pn	06 28 59.7	+2.0
AGUA	GUANDACOL	5.04	36	eP	Pn	06 29 09.4	-0.2
MRA	San Martin	5.32	79	eP	Pn	06 29 14.0	+0.5
MRA				IAML		06 30 44.0	
	comp=Z,17nm,0.6s						
VCA	Vinchina	5.80	34	eP	Pn	06 29 19.6	-0.6
VCA				IAML		06 30 52.7	
	comp=Z,19nm,0.4s						
TCA	Tanti	6.57	72	eP	Pn	06 29 32.1	+1.3

*ISCJB **31** 06:28:45.8±0.5, 7°46N±0°05×73°14W±0°05, h140km±4km, Error ellipse: s-maj=10.1km s-min=4.3km az=44.9*
*FUNV **31** 06:28:47.2, 7°40N×73°22W, h137km, MW3.0*
*RSNC **31** 06:28:48.4±0.7, 7°41N×73°18W, h128km±4km, ML2.8*
ISC 31 06:28:45.8±1.3, 7°44N±0°05×73°14W±0°05, h144km±7km, n27, σ1§16/43, 1D, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GIRC	Giron, Santand	0.36	189	eP	Pn	06 29 06.1	0.0
GIRC				eS	Sn	06 29 19.3	-2.2
GRMC	Gramalote, San	0.43	50	*i* P	Pn	06 29 07.9	+1.6
GRMC				eS	Sn	06 29 23.1	+1.2
GRMC				*i*		06 29 24.3	
	comp=Z,309nm,0.3s						
CBRI	Barrientos, No	0.43	51	eP	Pn	06 29 07.3	+0.9
CBRI				*i*		06 29 07.8	
	comp=Z,141nm,0.3s						
CBRI				eS	Sn	06 29 21.6	-0.4
PAMC	Pamplona, Colo	0.44	103	eP	Pn	06 29 07.5	+0.7
PAMC				*i*		06 29 07.7	
	comp=Z,51nm,0.3s						
PAMC				eS	Sn	06 29 22.3	-0.3
BTLC	Betulia, Santa	0.54	194	eP	Pn	06 29 07.0	0.0
BRRC	Barranca, Sant	0.66	240	⇓*i* P	Pn	06 29 07.3	-0.1
BRRC				eS	Sn	06 29 22.5	-1.3
BRRC				*i*		06 29 23.7	
	comp=Z,225nm,0.1s						
OCAC	Ocana	0.81	347	eP	Pn	06 29 09.3	+0.6
OCAC				eS	Sn	06 29 25.7	-0.4
OCAC				*i*		06 29 27.9	
	comp=Z,132nm,0.2s						
BARC	Barichara	0.84	183	eP	Pn	06 29 09.2	+0.2
BARC				eS	Sn	06 29 25.6	-1.1
BARC				*i*		06 29 26.8	
	comp=Z,168nm,0.1s						
CAPV	Capacho	0.92	63	eP	Pn	06 29 10.9	+1.4
CAPV				eS	Sn	06 29 26.9	-0.7
VIGV	El Vigia	2.24	51	eP	Pn	06 29 25.1	+1.7
VIGV				eS	Sn	06 29 52.8	+0.3
SOCV	Socops	2.41	69	eP	Pn	06 29 26.8	+1.2
SOCV				eS	Sn	06 29 56.6	+0.5
NORC	Norcasia	2.54	223	eP	Pn	06 29 27.7	+0.5
NORC				eS	Sn	06 29 59.4	+0.4
HELC	Santa Helena	2.68	243	eP	Pn	06 29 29.9	+0.7
HELC				*i*		06 30 10.2	
	comp=Z,24nm,0.3s						
DBBC	Dabeiba	3.08	262	eP	Pn	06 29 34.7	+0.7
DBBC				*i*		06 30 12.2	
	comp=Z,13nm,0.4s						
VIRV	Villa del Rosa	3.13	13	eP	Pn	06 29 34.5	-0.1
VIRV				eS	Sn	06 30 11.3	-1.1
ELOV	Elorza	3.65	97	eP	Pn	06 29 42.6	+1.3
QARV	Quebrada Arrib	3.77	43	eP	Pn	06 29 44.5	+1.6
CURV	Curarigua	4.05	51	eP	Pn	06 29 47.5	+0.9
CURV				eS	Sn	06 30 31.7	-2.1
PRAC	Prado	4.09	205	eP	Pn	06 29 47.8	+0.6
PRAC				eS	Sn	06 30 35.6	+0.8
SANV	Sanarito	4.11	60	eP	Pn	06 29 48.3	+0.9
SANV				eS	Sn	06 30 34.1	-1.1
DABV	Dabajuro	4.25	35	eP	Pn	06 29 49.9	+0.7
SIQV	Siquisique	4.58	46	eP	Pn	06 29 53.8	+0.2
TEPV	Terepaima	4.63	57	eP	Pn	06 29 55.5	+1.2
MAPV	Macapo	5.20	62	eP	Pn	06 30 02.3	+0.5
BAUV	El Baul	5.26	73	eP	Pn	06 30 02.3	-0.3
BAUV				eS	Sn	06 30 58.8	-3.6
MONV	Montecano	5.46	35	eP	Pn	06 30 06.1	+0.8
TURV	Turiamo	6.03	60	eP	Pn	06 30 13.4	+0.6

IDC 31 06:32:43.5±1.8, 5°71N×126°80E, h0km, mb3.9/5, mb1 4.0/5, mb1mx3.6/31, mbtmp3.9/5, MS3.0/1, Ms1 3.0/1, ms1mx2.3/37, Error ellipse: s-maj=164.1km s-min=20.3km az=66.0, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAY	Jayapura	16.12	120	LR	LR	06 41 43.5	
	comp=Z,58nm,22.0s,slow=34						
WRA	Warramunga Arr	26.55	164	P	P	06 38 23.5	+0.2
	0.9nm,0.6s,baz=344,slow=10.0,SNR=13						
ASAR	Alice Springs	30.01	167	P	P	06 38 54.2	+0.1
	0.3nm,0.5s,baz=349,slow=9.0,SNR=5.2						
STKA	Stephens Creek	39.95	160	P	P	06 40 19.2	-0.6
	1.9nm,0.8s,baz=333,slow=14,SNR=3.4						
MKAR	Makanchi Array	55.98	324	P	P	06 42 22.9	-0.9
	0.5nm,0.4s,baz=110,slow=7.8,SNR=6.6						
BVAR	Borovoye Array	65.71	326	P	P	06 43 30.7	+0.8
	1.2nm,0.6s,baz=128,slow=9.6,SNR=5.6						

*NIED **31** 06:44:00.37°20N×143°90E, h5km, Mw3.6 Best double couple: M0:2.45000×10^14 NP1:φs49.00000°, δ24.00000°, λ-120.00000°. NP2:φs262.00000°, δ69.00000°, λ-77.00000°.*
JMA 31 06:44:10.6±0.2, 37°17N×143°85E, h61km, M3.8, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	Ouri	2.36	304	eS	Sn	06 45 15.5	+0.8
JFK	Kawauchi	2.38	276	P	Pn	06 44 48.6	+1.3
JFK				S	Sn	06 45 16.3	+0.9
ONAJ	Iwakimizuishiy	2.44	269	S	Sn	06 45 18.2	+1.4
JMM	Marumori	2.53	287	P	Pn	06 44 48.3	-0.9
JMM				S	Sn	06 45 19.6	+0.7
JMK	Ichinoseki	2.73	311	P	Pn	06 44 53.0	+1.0
JMK				eS	Sn	06 45 25.7	+1.8
JFT	Otama	2.82	278	S	Sn	06 45 28.7	+2.6
JOM	Ohasama	3.06	320	P	Pn	06 44 57.6	+1.2
JOM				S	Sn	06 45 32.4	+0.6
JYK	Kaneyama	3.26	303	P	Pn	06 45 00.5	+1.2
JYK				eS	Sn	06 45 39.3	+2.4
JRY	Ryogami san	4.14	255	P	Pn	06 45 12.3	+0.9
JRY				S	Sn	06 45 58.4	-0.2
JCH	Churui	5.45	356	P	Pn	06 45 27.3	-1.9
JCH				eS	Sn	06 46 25.8	-4.7
NEM2	Nemuro

HOPEN	**Hopen**	4.94	112	*e*P	Pn	06 46 56.4	+0.8
	SNR=53						
HOPEN				*e*S	Sn	06 47 51.8	-0.9
	SNR=53						
DAG	**Danmarks Havn**	5.48	257	*i* P	Pn	06 46 54.3	-8.7
ARA0	**ARCESS Array S**	10.99	140	Pn	Pn	06 48 18.4	0.0
	baz=342,slow=12						
ARA0	**ARCESS Array S**	10.99	140	Pn	Pn	06 48 18.4	0.0
	baz=342,slow=12						
ARA0	**ARCESS Array S**	10.99	140	Pn	Pn	06 48 18.4	0.0
	SNR=4.9						
SUMG	**Summit**	12.14	261	*i* P	Pn	06 48 24.8	-10
SUMG				*i* S	Sn	06 50 33.1	-17
SUMG	**Summit**	12.14	261	*i* P	Pn	06 48 24.8	-10
HFS	**Hagfors**	19.28	167	P	P	06 50 05.8	-0.1
HFS	**Hagfors**	19.28	167	P	P	06 50 05.8	-0.1
HFS	**Hagfors**	19.28	167	P	P	06 50 05.8	-0.1

ISN ***31*** *06:46:14.0±0.3, 37°.22N×42°.63E, h0km, ML3.2*
CSEM ***31*** *06:46:17.6±0.3, 37°.20N×42°.58E, h2km, ML3.0, Error ellipse: s-maj=7.5km s-min=5.6km az=14.0*
DDA ***31*** *06:46:18.9, 37°.39N×42°.58E, h5km, Md3.4*
ISK ***31*** *06:46:19.3, 37°.39N×42°.55E, h6km, ML3.0*
ISC 31 06:46:19.5±1.1, 37°.37N±0°.04×42°.55E±0°.03, h9km±7km, n36, σ1s06/54, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SIRT	**Sirnak**	0.15	326	*e*PG	Pg	06 46 22.7	-0.2
SIRT				*e*SG	Sg	06 46 25.3	-0.1
SIRT	**Sirnak**	0.15	326	*e*Pg	Pg	06 46 22.7	-0.2
HAKT	**HAKKARI**	0.94	78	P	Pg	06 46 36.9	-0.8
HAKT				S	Sb	06 46 50.5	-0.3
HAKT	**HAKKARI**	0.94	78	*i* P	Pg	06 46 36.9	-0.8
HAKT				*i* S	Sb	06 46 50.5	-0.3
HKR	**Hakkari**	0.97	78	*e*PG	Pg	06 46 38.1	-0.2
HKR				*e*SG	Sb	06 46 52.0	+0.3
HKR	**Hakkari**	0.97	78	*e*Pg	Pg	06 46 38.1	-0.2
HKR				*e*Sg	Sb	06 46 52.0	+0.3
GEVA	**Gevas**	1.02	23	P	Pg	06 46 38.5	-0.7
GEVA				S	Sb	06 46 52.8	-0.2
GEVA	**Gevas**	1.02	23	*i* P	Pg	06 46 38.5	-0.7
GEVA				*i* S	Sb	06 46 52.9	-0.2
BTMN	**Batman**	1.14	297	P	Pb	06 46 41.4	0.0
BTMN				S	Sn	06 46 58.4	+1.0
BTMN	**Batman**	1.14	297	*i* P	Pb	06 46 41.4	0.0
BTMN				*i* S	Sn	06 46 58.4	+1.0
SVAN	**Silvan-Diyarba**	1.32	306	*e*PN	Pb	06 46 44.6	+0.1
SVAN	**Silvan-Diyarba**	1.32	306	*e*Pn	Pb	06 46 44.6	+0.1
MARD	**Mardin**	1.41	268	*i* P	Pb	06 46 46.2	+0.1
MARD				*i* S	Sg	06 47 05.2	+0.4
MAZI	**Mazidag**	1.67	274	*e*PN	Pn	06 46 49.7	+0.6
MAZI	**Mazidag**	1.67	274	*e*Pn	Pn	06 46 49.7	+0.6
EKAR	**Karacoban**	1.92	349	P	Pg	06 46 55.7	-0.6
EKAR				S	Sg	06 47 22.5	+1.3
EKAR	**Karacoban**	1.92	349	*i* P	Pg	06 46 55.7	-0.6
EKAR				*i* S	Sg	06 47 22.5	+1.3
DYBB	**Diyarbakir**	2.00	288	*e*PN	Pn	06 46 54.7	+1.2
TUTA	**Tutak**	2.04	6	P	Pn	06 46 55.4	+1.2
TUTA				S	Sb	06 47 23.0	+0.7
TUTA	**Tutak**	2.04	6	*i* P	Pn	06 46 55.4	+1.2
TUTA				*i* S	Sb	06 47 23.0	+0.7
BNGB	**Bing¯¶l**	2.18	318	*e*PN	Pn	06 46 56.9	+0.8
BGOL	**Bingol**	2.19	318	P	Pn	06 46 56.9	+0.8
BGOL	**Bingol**	2.19	318	*i* P	Pn	06 46 56.9	+0.8
BGOL				*i* S	Sn	06 47 18.6	-4.7
BINT	**Bingol**	2.21	313	*e*Pn	Pn	06 46 56.9	+0.4
AGRB	**Hanur-Agry**	2.23	9	*e*PN	Pn	06 46 57.5	+0.7
AGRB	**Hanur-Agry**	2.23	9	*e*Pn	Pn	06 46 57.5	+0.7
EATA	**Eleskirt**	2.48	359	S	Sg	06 47 39.0	-0.4
EATA	**Eleskirt**	2.48	359	*i* P	Pg	06 47 07.7	+0.6
EATA				*i* S	Sg	06 47 39.0	-0.4
SVRC	**Sivrice-ELAZID**	2.75	292	*e*PN	Pn	06 47 05.5	+1.5
SVRC	**Sivrice-ELAZID**	2.75	292	*e*Pn	Pn	06 47 05.5	+1.5
PTK	**Pertek**	2.91	302	*e*PN	Pn	06 47 06.5	+0.3
PTK	**Pertek**	2.91	302	*e*Pn	Pn	06 47 06.5	+0.3
TNCL	**Tunceli-Merkez**	2.93	307	*i* P	Pg	06 47 14.6	-1.2
ELZG	**Elazig**	3.03	293	P	Pn	06 47 08.5	+0.7
ELZG	**Elazig**	3.03	293	*i* P	Pn	06 47 08.5	+0.7
ELZG				*i* S	Sg	06 47 54.5	-2.4
SURC	**SANLIURFA_SURC**	3.18	262	*i* P	Pb	06 47 16.0	-0.2
SURC				*i* S	Sb	06 47 56.3	+1.2

NIED ***31*** *07:12:00, 37°.20N×141°.10E, h35km, Mw3.8 Best double couple: M0=6.05000×10^14 NP1:φs=71.00000°, δ12.00000°, λ-77.00000°. NP2:φs=238.00000°, δ79.00000°, λ-93.00000°.*
ISCJB ***31*** *07:12:18.1±1.0, 37°.17N±0°.04×141°.27E±0°.06, h23km±5km, mb3.7/7, MS3.2/1, Error ellipse: s-maj=9.1km s-min=5.4km az=25.2*
JMA ***31*** *07:12:20.2±0.1, 37°.20N×141°.09E, h32km±1km, M3.9*
JMA Felt II J1.
IDC ***31*** *07:12:25.7±3.1, 37°.08N×140°.86E, h75km±27km, mb3.4/7, mb1 3.5/10, mb1mx3.3/45, mbtmp3.7/10, MS3.0/2, Ms1 3.0/2, ms1mx2.5/27, Error ellipse: s-maj=26.2km s-min=21.8km az=93.0*
ISC 31 07:12:19.7±1.2, 37°.19N±0°.04×141°.15E±0°.07, h28km±7km, n29, σ1s00/31, mb3.7/7, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	0.28	308	P	Pb	07 12 26.9	+0.2
JFK				*e*S	Sb	07 12 31.5	0.0
ONAJ	**Iwakimizuishiy**	0.29	252	P	Pb	07 12 27.1	+0.2
ONAJ				*e*S	Sb	07 12 31.9	+0.1
JFT	**Otama**	0.72	297	P	Pb	07 12 33.8	0.0
JFT				*e*S	Sb	07 12 43.0	-0.3
JMM	**Marumori**	0.73	337	P	Pb	07 12 33.3	+0.5
JMM				*e*S	Sb	07 12 42.8	-0.7
JHO	**Hitachi**	0.74	219	P	Pb	07 12 33.1	-1.0
JHO				*e*S	Sb	07 12 42.4	-1.5
JSB	**Shiboa**	1.01	257	P	Pb	07 12 38.8	+0.3
JSB				*e*S	Sn	07 12 51.8	+0.5
JFY	**Yanaizu**	1.17	281	P	Pn	07 12 40.6	+0.3
JFY				*e*S	Sb	07 12 55.6	-0.5
JOU	**Okura**	1.23	342	P	Pn	07 12 41.5	+0.4
JOU				*e*S	Sb	07 12 57.9	+0.1
JIO	**Ouri**	1.27	7	P	Pn	07 12 41.7	+0.1
JIO				*e*S	Sn	07 12 56.6	-1.1
MJAR	**Matsushiro Arr**	2.44	255	P	Pn	07 12 59.3	+1.5
	3.5nm,0.3s,baz=80,slow=16,SNR=13						
MJAR				S	Sb	07 13 31.1	-1.6
	6.3nm,0.3s,baz=190,slow=18,SNR=7.0						
MJAR				LR	LR	07 14 15.8	
	comp=Z,173nm,18.3s,baz=90,slow=51						
MAT	**Matsushiro**	2.45	255	P	Pn	07 12 59.4	+1.6
MAT				S	Sb	07 13 31.1	-1.6
USRK	**Ussuriysk Ar.**	9.86	318	P	Pn	07 14 44.9	+5.3
	0.3nm,0.3s,baz=132,slow=14,SNR=7.6						
KSRS	**Korea Array**	10.54	275	P	Pn	07 14 54.6	+5.7
	0.2nm,0.3s,baz=85,slow=15,SNR=3.7						
KLR	**Kul'dur**	13.83	333	P	P	07 15 40.0	-1.9
	0.1nm,0.3s,baz=122,slow=9.5,SNR=3.0						
SONM	**Songino Array**	27.52	304	P	P	07 18 03.3	-0.7
	0.7nm,0.7s,baz=99,slow=9.5,SNR=3.6						
H11N2	**WAKE ISLAND Hy 28.41**	121		T	T	07 48 06.2	
	baz=314,slow=76,SNR=54						
H11N1	**WAKE ISLAND Hy 28.42**	121		T	T	07 48 06.9	
	baz=314,slow=76,SNR=59						
H11N3	**WAKE ISLAND Hy 28.43**	121		T	T	07 48 07.5	
	baz=314,slow=76,SNR=65						
H11S1	**WAKE ISLAND Hy 29.12**	123		T	T	07 49 03.9	
	baz=315,slow=76,SNR=53						
H11S3	**WAKE ISLAND Hy 29.12**	123		T	T	07 48 56.9	
	baz=315,slow=76,SNR=24						
H11S2	**WAKE ISLAND Hy 29.14**	123		T	T	07 48 56.8	
	baz=315,slow=76,SNR=26						
ZALV	**Zalesovo Beam**	41.65	312	P	P	07 20 05.7	+0.2
	1.5nm,0.5s,baz=91,slow=8.9,SNR=4.5						
MKAR	**Makanchi Array**	43.85	302	P	P	07 20 23.4	0.0
	1.1nm,0.8s,baz=94,slow=8.5,SNR=6.6						
KURBB	**Kurchatov Arra**	45.74	308	P	P	07 20 38.2	-0.1
	1.7nm,0.7s,baz=84,slow=8.5,SNR=22						
ILAR	**Eielson Array**	49.47	32	P	P	07 21 09.1	+1.9
	0.2nm,0.6s,baz=261,slow=6.8,SNR=4.2						
INK	**Inuvik**	54.34	27	P	P	07 21 45.0	+1.7
	0.7nm,0.8s,baz=270,slow=2.0,SNR=3.2						
WRA	**Warramunga Arr**	57.19	188	P	P	07 22 04.1	-0.2
	0.4nm,0.6s,baz=5.5,slow=7.0,SNR=6.7						
AKTO	**Aktyubinsk**	58.41	312	LR	LR	07 49 17.3	
	comp=Z,20nm,20.7s,slow=38						
LPAZ	**La Paz**	146.79	59	PKPbc	PKPbc	07 32 01.1	+0.7
	0.5nm,0.7s,baz=175,slow=4.4,SNR=3.8						

ISCJB ***31*** *07:14:41.0±1.3, 28°.90N±0°.10×130°.7E±0°.1, h40km, mb3.8/7, MS3.2/5, Error ellipse: s-maj=22.6km s-min=6.3km az=35.3*
JMA ***31*** *07:14:41.3±0.2, 28°.92N×130°.68E, h55km, M3.7*
IDC ***31*** *07:14:50.1±4.6, 29°.42N×130°.58E, h78km±50km, mb3.4/7, mb1 3.5/9, mb1mx3.2/45, mbtmp3.7/9, ML2.7/2, MS3.2/6, Ms1 3.2/6, ms1mx2.9/25, Error ellipse: s-maj=75.6km s-min=18.1km az=74.0*
ISC 31 07:14:43.0±1.3, 28°.94N±0°.09×130°.6E±0°.1, h40km, n25, σ0s76/18, mb3.8/7, MS3.1/5, Ryukyu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAM	**Amami Oshima**	1.03	240	P	Pn	07 15 00.5	-0.5
JAM				*e*S	Sn	07 15 14.5	+0.3
JNN	**Nakanoshima**	1.11	325	P	Pn	07 15 01.3	-0.8
JTAJ	**Takarajima**	1.25	280	P	Pn	07 15 04.1	+0.1
JYAK	**Yakushimahirau**	1.30	356	P	Pn	07 15 03.8	-0.9
JAMN	**Amaminishikomi**	1.44	242	P	Pn	07 15 05.7	-0.9
JKC	**Kuchinoerabu**	1.56	347	P	Pn	07 15 08.0	-0.3
JTN	**Tanegashima 3**	1.74	10	P	Pn	07 15 09.9	-0.8
JTK	**Tokunoshima**	1.86	232	P	Pn	07 15 12.2	-0.2
JOKE	**Okinoerabujima**	2.39	229	P	Pn	07 15 19.4	-0.3
JNAR	**Kushima--Naru**	2.64	12	P	Pn	07 15 23.1	0.0
JNU	**Nakatsue**	4.18	3	P	Pn	07 15 45.0	+0.8
	0.5nm,0.3s,baz=153,slow=9.3,SNR=5.5						
ASAJ	**Asahikawa**	17.92	29	LR	LR	07 26 31.4	
	comp=Z,87nm,18.4s,baz=341,slow=40						
KLR	**Kul'dur**	20.28	2	P	P	07 19 14.3	-0.8
	0.1nm,0.3s,baz=239,slow=2.8,SNR=5.9						
SONM	**Songino Array**	26.58	322	LR	LR	07 32 29.2	
	comp=Z,55nm,18.8s,baz=112,slow=40						
PETK	**Petropavlovsk-**	31.29	32	LR	LR	07 34 07.8	
	comp=Z,32nm,20.9s,baz=221,slow=38						
MKAR	**Makanchi Array**	41.39	309	LR	LR	07 42 05.2	
	comp=Z,20nm,20.4s,baz=101,slow=40						
KURBB	**Kurchatov Arra**	44.42	314	P	P	07 22 49.5	-0.2
	0.4nm,0.3s,baz=99,slow=8.4,SNR=4.8						
NRIK	**Noril'sk**	47.37	341	P	P	07 23 12.1	-0.6
	1.5nm,0.5s,baz=143,slow=7.5,SNR=2.9						
WRA	**Warramunga Arr**	48.73	175	P	P	07 23 29.6	+5.9
	0.6nm,0.9s,baz=356,slow=8.4,SNR=2.6						
ASAR	**Alice Springs**	52.40	176	P	P	07 23 59.0	+7.5
	0.3nm,0.3s,baz=358,slow=6.3,SNR=4.7						
ARCES	**ARCESS Array B**	68.27	339	LR	LR	08 01 30.6	
	comp=Z,22nm,18.2s,baz=282,slow=41						
KBZ	**Khabaz**	69.09	309	P	P	07 25 46.7	+1.8
	1.4nm,0.9s,baz=49,slow=11,SNR=2.9						
FINES	**FINESS Array B**	71.55	331	P	P	07 25 59.7	+0.1
	0.5nm,0.5s,baz=181,slow=34,SNR=3.3						
AKASG	**Malin Array Be**	74.84	320	LR	LR	08 02 37.2	
	comp=Z,26nm,19.1s,baz=60,slow=38						
BRTR	**Keskin Array B**	77.04	308	P	P	07 26 32.7	+0.5
	0.7nm,0.7s,baz=107,slow=4.3,SNR=4.4						

IDC ***31*** *07:17:32.9±0.8, 25°.49N×142°.75E, h0km, mb3.9/14, mb1 4.1/14, mb1mx3.9/42, mbtmp3.9/14, Error ellipse: s-maj=27.4km s-min=15.8km az=82.0*
ISCJB ***31*** *07:17:36.0±0.5, 25°.38N±0°.06×142°.9E±0°.1, h38km, mb4.0/18, Error ellipse: s-maj=19.0km s-min=7.6km az=166.2*
NEIC ***31*** *07:17:39.3±1.4, 25°.51N×142°.68E, h45km±12km, mb4.5/4, Error ellipse: s-maj=13.9km s-min=8.7km az=93.0*
ISC 31 07:17:38.2±0.8, 25°.41N±0°.10×142°.7E±0°.2, h38km, n29, σ0s93/25, mb4.1/18, Volcano Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	1.75	344	*e*Pn	Pn	07 18 05.7	-0.3
CBIJ				*e*Sn	Sn	07 18 29.4	+2.3
JCJ	**Chichijima**	1.75	344	Pn	Pn	07 18 05.5	-0.5
JCJ				Sn	Sn	07 18 28.5	+1.5
	95nm,0.3s,baz=248,slow=23,SNR=13						
H11N1	**WAKE ISLAND Hy 23.00**	99		T	T	07 46 18.4	
	baz=288						
H11N2	**WAKE ISLAND Hy 23.00**	99		T	T	07 46 14.4	
	baz=288						
H11N3	**WAKE ISLAND Hy 23.01**	99		T	T	07 46 26.2	
	baz=288						
H11S3	**WAKE ISLAND Hy 23.23**	102		T	T	07 46 34.4	
	baz=292,slow=75,SNR=3.9						
H11S1	**WAKE ISLAND Hy 23.24**	102		T	T	07 46 35.2	
	baz=292,slow=75,SNR=5.9						
H11S2	**WAKE ISLAND Hy 23.25**	102		T	T	07 46 35.0	
	baz=292,slow=75,SNR=6.5						
KLR	**Kul'dur**	25.27	343	P	P	07 23 01.2	+0.4
	4.0nm,0.8s,baz=139,slow=8.9,SNR=15						
SONM	**Songino Array**	36.28	318	P	P	07 24 37.5	-0.5
	0.6nm,0.5s,baz=125,slow=7.2,SNR=4.5						
WRAB	**Tennant Creek**	45.81	191	*e*P	P	07 25 57.5	+1.0
	2.5nm,0.5s						
WRA	**Warramunga Arr**	45.82	191	P	P	07 25 57.6	+1.0
	1.4nm,0.5s,baz=9.0,slow=8.5,SNR=31						
ASAR	**Alice Springs**	49.53	191	P	P	07 26 26.4	+1.0
	0.3nm,0.5s,baz=16,slow=14,SNR=4.3						
MKAR	**Makanchi Array**	51.93	311	P	P	07 26 42.9	-0.4
	0.4nm,0.5s,baz=93,slow=9.4,SNR=4.8						
NRIK	**Noril'sk**	54.39	339	P	P	07 27 00.3	-0.6
	1.1nm,0.3s,baz=106,slow=7.9,SNR=3.6						
KURK	**Kurchatov**	54.52	315	*e*P	P	07 27 00.6	-1.6
	3.1nm,0.7s						
KURBB	**Kurchatov Arra**	54.57	315	P	P	07 27 02.1	-0.5
	2.0nm,0.7s,baz=92,slow=7.8,SNR=24						
TRF	**Thorofare Moun**	57.30	29	*e*P	P	07 27 21.9	-0.2
	6.7nm,1.1s						
ILAR	**Eielson Array**	58.95	28	P	P	07 27 32.6	-0.8
	0.6nm,0.7s,baz=260,slow=5.8,SNR=7.2						
DOT	**Dot Lake**	60.09	30	*e*P	P	07 27 41.3	-0.1
	6.3nm,1.1s						
INK	**Inuvik**	64.35	24	P	P	07 28 09.8	+0.2
	0.7nm,0.6s,baz=320,slow=4.9,SNR=4.9						
ABKAR	**Akbulak array**	66.62	315	*e*P	P	07 28 24.4	-0.3
YKA	**Yellowknife Ar**	73.38	28	P	P	07 29 05.7	-0.2
	0.6nm,0.6s,baz=295,slow=6.0,SNR=9.6						
KBZ	**Khabaz**	79.52	313	P	P	07 29 41.7	+0.7
	2.3nm,0.8s,baz=86,slow=4.4,SNR=5.1						
FINES	**FINESS Array B**	79.67	334	P	P	07 29 41.0	-0.6
	0.9nm,0.4s,baz=58,slow=7.2,SNR=6.6						
AKASG	**Malin Array Be**	84.26	324	P	P	07 30 05.5	-0.4
	0.2nm,0.3s,baz=53,slow=5.5,SNR=3.3						
NB2	**NORSAR Subarra**	85.35	339	P	P	07 30 10.6	-0.6
	comp=Z,0.5nm,0.6s,baz=52,slow=4.4						
NOA	**NORSAR Array B**	85.35	339	P	P	07 30 10.7	-0.5
	comp=Z,0.7nm,0.6s,baz=44,slow=4.8,SNR=4.0						
LPAZ	**La Paz**	149.82	79	PKPbc	PKPbc	07 37 27.0	+1.3
	comp=Z,0.8nm,0.7s,baz=0.6,slow=2.4,SNR=5.8						

NNC ***31*** *07:27:15.5±8.1, 42°.26N×75°.21E, h0km, mb2.6, mpv1.9, Error ellipse: s-maj=60.4km s-min=20.7km az=156.0*
SOME ***31*** *07:27:15.5, 43°.18N×74°.62E, h0km*
KRNET ***31*** *07:27:16.3±0.1, 43°.24N×74°.74E, h13km, mb1.7*
ISC 31 07:27:16.5±1.0, 43°.24N±0°.04×74°.71E±0°.02, h11km±8km, n23, σ0s74/45, 26C-5D, Central Kazakhstan

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
USP	**Ospenovka**	0.16	281	⇑*i*P	Pg	07 27 20.1	0.0
	baz=278						
USP				⇑*i*S	Sg	07 27 22.9	+0.3
	baz=278						
CHMS	**Chumysh**	0.24	173	⇑*i*P	Pg	07 27 21.4	0.0
	baz=179						
CHMS				⇑*i*S	Sg	07 27 24.6	-0.2
	baz=179						
KBK	**Karagaybulak**	0.60	163	⇑*i*P	Pg	07 27 28.6	+0.4
	baz=166						
KBK				⇑*i*S	Sb	07 27 37.3	-0.5
	baz=166						
AAK	**Ala-Archa**	0.62	195	⇑*i*P	Pg	07 27 28.9	+0.3
	baz=197						
AAK				⇑*i*S	Sb	07 27 38.0	-0.3
	baz=197						
AAK	**Ala-Archa**	0.62	195	⇑P	Pg	07 27 28.5	-0.1
	1.3nm,0.3s						
AAK				⇑S	Sb	07 27 38.2	-0.1
	5.9nm,0.4s						
TKM2	**Tokmak 2**	0.72	116	⇑*i*P	Pg	07 27 29.9	-0.5
	baz=117						
TKM2				⇑*i*S	Sg	07 27 39.7	-0.2
	baz=117						
TKM2	**Tokmak 2**	0.72	116	⇑P	Pg	07 27 29.9	-0.5
	0.7nm,0.4s						
TKM2				⇓S	Sg	07 27 39.7	-0.2
	7.9nm,0.5s						
DGS	**Degeres**	0.77	89	*e*P	Pg	07 27 30.1	-1.3
	4.3nm,0.6s						
DGS				*e*S	Sg	07 27 40.8	-0.8
	11nm,0.4s						
KST	**Kastek**	0.93	101	*e*P	Pg	07 27 34.4	-0.1
	2.2nm,0.4s						
KST				*e*S	Sb	07 27 47.5	+0.3
	3.1nm,0.5s						
UCH	**Uchtor**	1.02	188	⇑*i*P	Pb	07 27 36.3	-0.1
	baz=190						
UCH				⇑*i*S	Sb	07 27 50.2	+0.2
	baz=190						
BOOM	**Boomskoye usch**	1.17	129	⇑*e*P	Pb	07 27 38.5	-0.3
	baz=130						
BOOM				⇑*i*S	Sn	07 27 54.8	-0.2
	baz=130						
KZA	**Kyzart**	1.22	161	⇑*i*P	Pb	07 27 39.8	-0.1
	baz=162						
KZA				⇑*i*S	Sn	07 27 56.6	-0.1
	baz=162						
IZV	**Izvestkoviy**	1.40	98	*e*P	Pg	07 27 43.1	-0.3
	2.4nm,0.1s						
IZV				*e*S	Sg	07 28 03.3	+1.6
	3.6nm,0.5s						
ULHL	**Ulahol**	1.50	131	⇑*i*P	Pb	07 27 44.4	-0.1
	baz=132						
ULHL				⇑*i*S	Sg	07 28 04.5	-0.2
	baz=132						
KTBS	**Karatobe**	1.51	71	*e*P	Pg	07 27 45.2	-0.3
KTBS				*e*S	Sg	07 28 06.7	+1.6
TNSS	**Tian-Shan**	1.64	96	*e*P	Pg	07 27 47.8	-0.2
	3.4nm,0.1s						
TNSS				*e*S	Sg	07 28 11.4	+2.0
	5.5nm,0.4s						
MDOK	**Medeo**	1.71	92	*e*P	Pb	07 27 48.4	+0.4
	4.7nm,0.4s						
MDOK				*e*S	Sg	07 28 11.9	+0.5
	5.3nm,0.4s						
CHKK	**Chushkaly**	1.78	68	*e*P	Pb	07 27 49.1	0.0
	3.2nm,0.5s						
CHKK				*e*S	Sg	07 28 13.5	-0.1
	19nm,0.3s						
MNAS	**Manas**	1.79	246	⇑*e*P	Pb	07 27 49.1	-0.3
	baz=246						
MNAS				⇑*i*S	Sg	07 28 13.6	-0.4
	baz=246						
MNAS	**Manas**	1.79	246	⇓Pn	Pb	07 27 49.3	0.0
	1.0nm,0.6s						
MNAS				⇑Sn	Sg	07 28 16.1	+2.1
	1.5nm,0.3s						
NRN	**Naryn**	2.04	152	⇓*i*P	Pb	07 27 53.1	-0.6
	baz=153						
NRN				⇓*e*S	Sb	07 28 20.3	+1.1
	baz=153						
KDJ	**Kajisay**	2.13	120	⇑*e*P	Pb	07 27 54.3	-0.9
	baz=121						
KDJ				⇑*e*S	Sb	07 28 22.4	+0.8
	baz=121						
KK31	**Karatay Array**	3.08	269	⇓Sn	Sg	07 28 54.2	-1.1
	0.5nm,0.3s,baz=80,slow=32,SNR=3.8						

NIED ***31*** *07:50:00, 36°.20N×141°.00E, h41km, Mw4.3 Best double couple: M0=3.33000×10^15 NP1:φs=136.00000°, δ13.00000°, λ34.00000°. NP2:φs=13.00000°, δ83.00000°, λ101.00000°.*
ISCJB ***31*** *07:50:13.2±0.6, 36°.28N±0°.03×141°.02E±0°.04, h37km±4km, mb4.3/48, MS3.5/13, Error ellipse: s-maj=6.1km s-min=4.6km az=23.7*
JMA ***31*** *07:50:13.2±0.1, 36°.22N×141°.00E, h45km±1km, M4.4*
JMA Felt II J1.
NEIC ***31*** *07:50:16.6±0.6, 36°.43N×140°.87E, h45km±5km, mb4.6/19, Error ellipse: s-maj=6.7km s-min=4.6km az=143.0*
NEIC Felt at Narita and Tsukuba. Recorded [2 JMA] in Chiba, Ibaraki and Tochigi.
IDC ***31*** *07:50:16.9±1.7, 36°.20N×140°.94E, h58km±15km, mb3.8/23, mb1 4.0/27, mb1mx3.9/52, mbtmp4.1/27, MS3.4/13, Ms1 3.4/13, ms1mx3.2/36, Error ellipse: s-maj=13.9km s-min=8.8km az=70.0*
ISC 31 07:50:13.6±1.0, 36°.24N±0°.03×141°.01E±0°.04, h29km±7km, n119, σ1s85/127, mb4.3/48, MS3.5/13, 2D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	0.51	316	P	Pn	07 50 24.2	-0.8
JHO				S	Sn	07 50 31.5	-1.3
CHOJ	**Chosi**	0.55	193	P	Pb	07 50 24.5	-0.4
CHOJ				S	Sb	07 50 31.7	-0.8
JYT	**Yasato**	0.66	269	P	Pb	07 50 26.1	-0.5
JYT				S	Sb	07 50 35.1	-0.4
ONAJ	**Iwakimizuishiy**	0.87	349	P	Pb	07 50 29.0	-1.3
ONAJ				S	Sb	07 50 40.1	-1.6
JFK	**Kawauchi**	1.13	354	P	Pn	07 50 32.4	-1.1
JAG	**Ashikaga**	1.27	279	P	Pn	07 50 34.8	-0.7
MJAR	**Matsushiro Arr**	2.28	278	P	Pn	07 50 49.7	+0.3
	35nm,0.3s,baz=100,slow=9.1,SNR=231						
MJAR				S	Sn	07 51 18.1	+1.6
	72nm,0.3s,baz=128,slow

YAK	Yakutsk	26.77	348	LR	LR	08 06 37.1
	comp=Z,67nm,19.3s,baz=202,slow=37					
ENH	Enshi	26.95	266	eP	P	07 55 51.5 -1.2
	comp=Z,7.1nm,0.8s					
ULN	Ulaanbaatar	27.54	306	eP	P	07 55 56.9 -1.1
	comp=Z,5.7nm,1.2s					
SEY	Seymchan	27.63	11	P	P	07 55 58.6 +0.2
	comp=Z,0.4nm,0.3s,baz=195,slow=20,SNR=2.8					
SONA1	Songino Array	27.96	305	eP	P	07 56 01.1 -0.7
SONM	Songino Array	27.97	305	P	P	07 56 00.6 -1.2
	comp=Z,1.8nm,0.5s,baz=107,slow=8.4,SNR=13					
SONM				LR	LR	08 07 17.1
	comp=Z,89nm,20.6s,baz=90,slow=36					
H11N2	WAKE ISLAND Hy	28.04	119	T	T	08 25 20.3
	baz=312,slow=75,SNR=76					
H11N1	WAKE ISLAND Hy	28.04	119	T	T	08 25 20.9
	baz=312,slow=75,SNR=136					
H11N3	WAKE ISLAND Hy	28.05	119	T	T	08 25 21.7
	baz=312,slow=75,SNR=98					
H11S1	WAKE ISLAND Hy	28.72	121	T	T	08 26 10.9
	baz=314,slow=75,SNR=264					
H11S3	WAKE ISLAND Hy	28.72	121	T	T	08 26 10.1
	baz=314,slow=75,SNR=241					
H11S2	WAKE ISLAND Hy	28.73	121	T	T	08 26 12.6
	baz=314,slow=75,SNR=214					
LZH	Lanzhou	29.89	281	eP	P	07 56 20.8 +1.8
LZH				pP	sP	07 56 30.3 -0.6
LZH				sP	pP	07 56 36.0 +8.6
LZH				PP	PP	07 57 22.0 -4.6
LZH				PcP	PcP	07 59 18.0 -3.5
LZH				eS	S	08 01 08.3 -6.2
LZH				sS	sS	08 01 26.0 -2.4
LZH				SS	SnSn	08 02 47.0 +0.7
LZH				pmax	pmax	
	comp=Z,20nm,1.1s					
LZH				pmax	pmax	
	comp=Z,87nm,4.2s					
LZH				LR	LR	
	comp=N,1μm,13.5s					
LZH				LR	LR	
	comp=E,1μm,14.8s					
LZH				LR	LR	
	comp=Z,1μm,15.6s					
GYA	Guiyang	30.77	261	eP	P	07 56 27.8 +1.0
GYA				pmax	pmax	
	comp=Z,10.0nm,0.8s					
CD2	Chengdu	31.36	271	P	P	07 56 30.8 -1.1
CD2				pmax	pmax	
	comp=Z,10.0nm,0.5s					
QIZ	Qiongzhong	32.31	246	P	P	07 56 42.5 +2.2
QIZ				S	S	08 01 54.3 +2.0
QIZ				LR	LR	
	comp=N,140nm,3.8s					
QIZ				LR	LR	
	comp=E,110nm,3.4s					
QIZ				LR	LR	
	comp=Z,150nm,20.8s					
KMI	Kunming	34.53	262	P	P	07 57 02.8 +3.0
KMI				pP	sP	07 57 12.8 +1.0
KMI				sP	pP	07 57 19.3 +11
KMI				pmax	pmax	
	comp=Z,8.0nm,0.9s					
KMI				LR	LR	
	comp=N,130nm,12.5s					
KMI				LR	LR	
	comp=E,120nm,12.1s					
KMI				LR	LR	
	comp=Z,140nm,32.2s					
WMQ	Urumqi	40.91	298	eP	P	07 57 55.5 +2.1
WMQ				pmax	pmax	
	comp=Z,5.0nm,0.6s					
WMQ				pmax	pmax	
	comp=Z,60nm,4.2s					
WMQ				LR	LR	
	comp=N,15nm,17.8s					
WMQ				LR	LR	
	comp=E,25nm,16.6s					
WMQ				LR	LR	
	comp=Z,21nm,25.4s					
CMAR	Chiang Mai Arr	40.99	256	P	P	07 57 53.6 -0.6
	comp=Z,0.8nm,0.3s,baz=57,slow=6.6,SNR=3.9					
ZAA0	Zalesovo Array	42.21	313	eP	P	07 58 03.5 -0.2
ZALV	Zalesovo Beam	42.21	313	P	P	07 58 03.2 -0.6
	comp=Z,4.2nm,0.6s,baz=93,slow=6.5,SNR=15					
ZALV				PcP	PcP	07 59 57.2 -0.2
	comp=Z,1.5nm,0.6s,baz=50,slow=2.3,SNR=3.9					
ZALV				LR	LR	08 16 20.1
	comp=Z,30nm,19.2s,baz=68,slow=37					
NRIK	Noril'sk	43.85	336	P	P	07 58 16.5 -0.4
	comp=Z,1.7nm,0.7s,baz=105,slow=8.6,SNR=2.8					
MK01	Makanchi Array	44.27	303	eP	P	07 58 20.4 -0.1
MK31	Makanchi Array	44.27	303	eP	P	07 58 21.0 +0.5
MKAR	Makanchi Array	44.27	303	P	P	07 58 20.2 -0.3
	comp=Z,3.1nm,0.8s,baz=89,slow=9.5,SNR=15					
MKAR				PcP	PcP	08 00 04.4 -0.2
	comp=Z,1.1nm,0.8s,baz=104,slow=4.8,SNR=3.6					
MKAR				LR	LR	08 17 43.0
	comp=Z,67nm,18.3s,baz=61,slow=37					
MKAR	Makanchi Array	44.27	303	eP	P	07 58 21.4 +0.8
MKAR				PcP	PcP	08 00 04.4 -0.2
KURK	Kurchatov	46.17	309	eP	P	07 58 34.8 -0.7
	comp=Z,18nm,0.9s					
TT01	Tatalina	46.25	34	eP	P	07 58 36.6 +0.6
TTA	Tatalina	46.26	34	eP	P	07 58 37.0 +0.9
CAST	Castle Rocks	48.06	34	eP	P	07 58 51.6 +1.4
	comp=Z,7.4nm,1.5s					
MLY	Manley	48.69	32	eP	P	07 58 56.7 +1.7
	comp=Z,2.6nm,0.9s					
TKM2	Tokmak 2	49.72	299	eP	P	07 59 04.1 +0.6
	comp=Z,11nm,1.2s					
MDM	Murphy Dome	49.76	32	eP	P	07 59 04.6 +1.4
	comp=Z,3.6nm,0.8s					
WRH	Wood River Hil	49.83	32	eP	P	07 59 04.6 +1.0
	comp=Z,15nm,1.9s					
IL1	Eielson Array	50.34	32	eP	P	07 59 07.7 +0.2
ILAR	Eielson Array	50.34	32	P	P	07 59 07.7 +0.2
	comp=Z,1.7nm,0.8s,baz=264,slow=6.8,SNR=20					
ILB	Eielson Array	50.34	32	eP	P	07 59 08.1 +0.6
KSH	Kashi	50.44	295	eP	P	07 59 13.0 +4.2
KSH				epP	sP	07 59 26.8 +5.8
KSH				ePP	PP	08 01 10.5 +6.1
KSH				PcS	PcS	08 04 26.8 +2.7
KSH				S	S	08 06 21.8 +1.2
KSH				pmax	pmax	
	comp=Z,81nm,4.8s					
KSH				LR	LR	
	comp=N,130nm,9.9s					
KSH				LR	LR	
	comp=E,57nm,7.5s					
KSH				LR	LR	
	comp=Z,79nm,7.1s					
AAK	Ala-Archa	50.58	299	eP	P	07 59 09.7 -0.2
	comp=Z,2.2nm,0.9s					
BRVK	Borovoye	50.92	313	eP	P	07 59 11.3 -0.8
	comp=Z,17nm,1.0s					
EKS2	Erkin-Say	51.08	299	eP	P	07 59 13.2 -0.4
	comp=Z,3.8nm,1.0s					
ZRNK	Zerenda	51.70	313	eP	P	07 59 17.7 -0.2
	comp=Z,7.8nm,1.0s					
KKAR	Karatay Array	53.24	300	eP	P	07 59 29.6 +0.1
INK	Inuvik	55.24	27	P	P	07 59 44.2 +0.6
	comp=Z,1.1nm,0.7s,baz=313,slow=7.2,SNR=7.3					
INK	Inuvik	55.24	27	eP	P	07 59 44.2 +0.6
	comp=Z,6.2nm,1.5s					
FITZ	Fitzroy Crossi	55.97	198	P	P	07 59 50.1 +0.7
	comp=Z,2.4nm,0.7s,baz=349,slow=5.2,SNR=3.0					
WRA	Warramunga Arr	56.23	188	P	P	07 59 49.5 -1.8
	comp=Z,1.4nm,0.5s,baz=4.4,slow=7.4,SNR=12					
ARU	Arti	56.74	319	eP	P	07 59 53.8 -0.8
	comp=Z,15nm,1.0s					
ABKAR	Akbulak array	58.20	310	eP	P	08 00 04.2 -0.8
ASAR	Alice Springs	59.96	188	P	P	08 00 16.9 -0.5
	comp=Z,1.2nm,0.7s,baz=18,slow=8.9,SNR=9.7					
GEYT	Alibeck	63.93	299	P	P	08 00 45.1 +1.0
	comp=Z,1.3nm,0.4s,baz=72,slow=6.2,SNR=3.0					
ARCES	ARCESS Array B	64.62	339	P	P	08 00 47.9 -0.2
	comp=Z,1.6nm,0.9s,baz=50,slow=11,SNR=3.0					
YKA	Yellowknife Ar	64.65	30	P	P	08 00 48.2 -0.1
	comp=Z,0.4nm,0.8s,baz=300,slow=6.6,SNR=5.0					
FIA1	FINESS Array S	69.36	332	eP	P	08 01 17.7 -0.6
FINES	FINESS Array B	69.36	332	P	P	08 01 17.8 -0.5
	comp=Z,4.8nm,0.9s,baz=61,slow=14,SNR=12					
KBZ	Khabaz	71.17	311	P	P	08 01 29.8 +0.2
	comp=Z,3.2nm,0.8s,baz=29,slow=4.0,SNR=8.1					
CAN	Canberra	71.59	173	eP	P	08 01 35.9 +3.9
	comp=Z,162nm,2.0s					
NC405	NORSAR Array S	74.58	337	eP	P	08 01 49.3 -0.2
AKASG	Malin Array Be	74.72	322	P	P	08 01 49.7 -0.8
	comp=Z,1.7nm,0.5s,baz=46,slow=6.2,SNR=15					
AKASG				LR	LR	08 37 32.6
	comp=Z,47nm,18.1s,baz=330,slow=38					
KIEV	Kiev	74.73	322	eP	P	08 01 49.7 -0.9
	comp=Z,5.7nm,0.9s					
NC204	NORSAR Array S	74.75	338	eP	P	08 01 50.8 +0.2
NB201	NORSAR Array S	74.76	337	eP	P	08 01 50.5 -0.1
AK11	Malin Array Si	74.77	322	eP	P	08 01 50.1 -0.6
NB2	NORSAR Subarra	74.79	337	P	P	08 01 50.2 -0.6
	comp=Z,1.8nm,0.7s,baz=39,slow=5.9					
NOA	NORSAR Array B	74.79	337	P	P	08 01 50.3 -0.6
	comp=Z,3.3nm,0.8s,baz=39,slow=5.7,SNR=14					
NOA				LR	LR	08 37 54.6
	comp=Z,31nm,18.5s,baz=35,slow=38					
NBO02	NORSAR Array S	74.89	337	eP	P	08 01 51.0 -0.4
LRM	Limekiln Ridge	74.94	44	eP	P	08 01 52.7 +0.4
DLMT	Dillon	75.13	44	eP	P	08 01 54.2 +1.0
	comp=Z,2.6nm,0.8s					
NV01	Mina Array Sit	75.72	53	eP	P	08 01 57.7 +0.9
NVAR	Mina Array Bea	75.72	53	P	P	08 01 57.7 +0.8
	comp=Z,0.8nm,0.8s,baz=308,slow=4.4,SNR=3.4					
BW06	Boulder Array	78.45	45	eP	P	08 02 12.1 0.0
PDAR	Pinedale Array	78.45	45	P	P	08 02 12.1 -0.1
	comp=Z,0.3nm,0.6s,baz=254,slow=2.9,SNR=4.6					
BUR08	Bucovina Ar. S	78.72	322	eP	P	08 02 13.3 0.0
BR131	Keskin Array S	79.13	311	eP	P	08 02 16.1 +0.3
BRTR	Keskin Array B	79.13	311	P	P	08 02 15.4 -0.4
	comp=Z,1.5nm,0.7s,baz=104,slow=5.2,SNR=8.8					
STHS	Stebnicka Huta	79.42	325	eP	P	08 02 18.0 +1.0
OJC	Ojcow	79.51	326	eP	P	08 02 17.3 -0.2
	comp=Z,12nm,1.2s					
BR231	Keskin MP Arra	79.58	312	eP	P	08 02 16.2 -2.0
PV10	Paradox Valley	81.54	48	eP	P	08 02 29.9 +0.9
CLL	Collm	81.62	330	⇓iP	P	08 02 28.6 -0.1
	comp=Z,7.0nm,0.7s					
CLL				e		08 02 41.0
CLL	Collm	81.62	330	eP	P	08 02 28.3 -0.4
	comp=Z,6.2nm,0.7s					
GERES	GERESS Array B	83.21	328	P	P	08 02 36.6 -0.7
	comp=Z,0.6nm,0.5s,baz=40,slow=4.4,SNR=6.6					
PPT	Papeete	84.57	116	LR	LR	08 35 48.7
	comp=Z,20nm,21.0s,baz=330,slow=32					
U34A	Anderson Ranch	89.55	43	eP	P	08 03 07.3 -1.2
	comp=Z,20nm,0.8s					
TXAR	Lajitas Array	90.86	52	P	P	08 03 15.0 +0.1
	comp=Z,0.2nm,0.8s,baz=259,slow=3.3,SNR=2.8					
TORD	Torodi Ar. Bea	117.65	314	PKP	PKPdf	08 08 55.4 -2.1
	comp=Z,0.7nm,1.0s,baz=356,slow=3.4,SNR=2.6					
LPAZ	La Paz	147.37	60	PKPbc	PKPbc	08 09 55.8 0.0
	comp=Z,0.7nm,0.7s,baz=305,slow=3.8,SNR=5.4					
LPAZ	La Paz	147.37	60	ePKPdf	PKPbc	08 09 55.6 -0.2

NIED ***31*** *07:56:00,42.°60N×145.°40E,h35km,Mw4.0 Best double couple: M0 1.21000×10^15 NP1:φ=183.00000°,δ31.00000°, λ53.00000°. NP2:φ=44.00000°,δ66.00000°,λ110.00000°.*
JMA ***31*** *07:56:42.4±0.1,42.°64N×145.°37E,h47km±2km,M3.9*
JMA Felt I J1.
ISCJB ***31*** *07:56:43.9±0.6,42.°78N±0.°05×145.°33E±0.°05,h56km±4km, mb4.1/26,MS4.3/1,Error ellipse: s-maj=8.9km s-min=4.4km az=149.2*
MOS ***31*** *07:56:44.3±1.5,42.°93N×145.°23E,h51km,mb4.4/11,Error ellipse: s-maj=10.2km s-min=6.2km az=86.0*
SKHL ***31*** *07:56:45.0±0.1,42.°83N×145.°26E,h61km±5km,mb5.3/1, msh4.7/1*
IDC ***31*** *07:56:51.1±2.4,43.°23N×145.°15E,h84km±20km,mb3.7/19, mb1 3.8/23,mb1mx3.7/48,mbtmp4.0/23,MS3.4/3, Ms1 3.4/3,ms1mx2.8/37,Error ellipse: s-maj=21.5km s-min=14.5km az=162.0*

ISC 31 07:56:45.4±0.9,42.82N±0.°06×145.°30E±0.°04,h51km±7km, n97,σ1.9 67/105,mb4.1/26,14C-7D,Hokkaido region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAK	Akkeshi	0.47	292	⇓P	Pn	07 56 54.9	-1.4
JAK				eS	Sn	07 57 04.5	+0.3
NEM2	Nemuro 2	0.64	31	⇑P	Pn	07 56 57.2	-1.1
NEM2				eS	Sn	07 57 07.9	+0.3
JNK	Nakash	0.87	331	⇓P	Pn	07 57 00.8	-0.6
JNK				eS	Sn	07 57 14.1	+0.9
JOB	Onbets	1.08	275	⇓P	Pn	07 57 02.4	-1.7
JRA	Rausu	1.12	354	P	Pn	07 57 04.8	+0.1
JRA				eS	Sn	07 57 21.1	+2.0
JAR	Ashorobuto	1.22	294	⇓P	Pn	07 57 04.8	-1.2
JAR				eS	Sn	07 57 21.9	+0.5
YUK	Yuzh-Kuril'sk	1.28	19	c iPN	Pn	07 57 06.6	-0.3
YUK				i S	Sn	07 57 24.6	+1.7
YUK				pmax	pmax		
	comp=N,258nm,0.2s						
YUK				pmax	pmax		
	comp=Z,2μm,0.2s						
YUK				pmax	pmax		
	comp=E,98nm,0.1s						
YUK				smax	smax		
	comp=N,2μm,0.3s						
YUK				smax	smax		
	comp=E,7μm,0.4s						
YUK	Yuzh-Kuril'sk	1.28	19	⇑iP	Pn	07 57 06.7	-0.2
YUK				AMB	AMB	07 57 07.1	
	comp=E,340nm,0.3s						
YUK				eS	Sn	07 57 22.9	0.0
YUK				A	A	07 57 30.0	
	comp=E,2μm,0.4s						
YUK				A	A	07 57 30.0	
	comp=E,7μm,0.4s						
JCH	Churui	1.44	262	P	Pn	07 57 07.3	-1.7
JCH				eS	Sn	07 57 26.1	-0.7
SHO	Shikotan	1.53	46	c iPN	Pn	07 57 08.6	-1.7
SHO				i S	Sn	07 57 27.8	-1.3
SHO				pmax	pmax		
	comp=E,206nm,0.3s						
SHO				pmax	pmax		
	comp=Z,264nm,0.3s						
SHO				pmax	pmax		
	comp=N,166nm,0.2s						
SHO				smax	smax		
	comp=N,668nm,0.5s						
SHO				smax	smax		
	comp=E,2μm,0.5s						
SHO	Shikotan	1.53	46	eP	Pn	07 57 09.7	-0.6
SHO				AMB	AMB	07 57 10.6	
	comp=E,1μm,3.0s						
SHO				AMB	AMB	07 57 13.6	
	comp=E,170nm,0.3s						
SHO				AMB	AMB	07 57 13.6	
	comp=E,210nm,0.3s						
SHO				AMB	AMB	07 57 13.6	
	comp=E,260nm,0.3s						
SHO				eS	Sn	07 57 28.2	-0.9
SHO				A	A	07 57 35.4	
	comp=E,670nm,0.5s						
SHO				A	A	07 57 35.4	
	comp=E,2μm,0.5s						
ERM	Erimo	1.78	244	c iPN	Pn	07 57 14.0	+0.4
ERM	Erimo	1.78	244	⇑iP	Pn	07 57 14.0	+0.4
JKA	Kamikawa-asahi	2.35	304	eP	Pn	07 57 22.8	+1.3
JKA				AMS	AMS	07 58 30.0	
	comp=E,300nm,21.0s						
ASAJ	Asahikawa	2.35	304	P	Pn	07 57 22.8	+1.3
	comp=E,64nm,0.3s,baz=120,slow=13,SNR=77						
ASAJ				S	Sn	07 57 55.2	+6.0
	comp=E,47nm,0.3s,baz=242,slow=26,SNR=18						
ASAJ				LR	LR	07 58 29.9	
	comp=E,301nm,20.3s,baz=350,slow=48						
KUR	Kuril'sk	3.04	37	d iPN	Pn	07 57 31.5	+0.6
KUR				i S	Sn	07 58 08.5	+2.4
KUR				pmax	pmax		
	comp=Z,113nm,0.3s						
KUR				pmax	pmax		
	comp=N,23nm,0.2s						
KUR				pmax	pmax		
	comp=E,27nm,0.2s						
KUR				smax	smax		
	comp=N,314nm,0.6s						
KUR				smax	smax		
	comp=E,105nm,0.4s						
KUR	Kuril'sk	3.04	37	eP	Pn	07 57 30.2	-0.7
KUR				AMB	AMB	07 57 31.6	
	comp=E,140nm,0.4s						
KUR				AMB	AMB	07 57 36.8	
	comp=E,800nm,3.5s						
KUR				eS	Sn	07 58 04.2	-1.9
KUR				A	A	07 58 11.0	
	comp=E,130nm,0.4s						
KUR				A	A	07 58 11.0	
	comp=E,580nm,0.4s						
KUR				A	A	07 58 13.8	
	comp=E,1μm,2.5s						
YSS	Yuzh-Sakhalins	4.51	337	ePN	Pn	07 57 52.5	+1.4
YSS				pmax	pmax		
	comp=Z,10.0nm,0.8s						
YSS	Yuzh-Sakhalins	4.51	337	eP	Pn	07 57 51.1	0.0
YSS				AMB	AMB	07 57 53.5	
	comp=Z,10.0nm,0.8s						
YSS				eS	Sn	07 58 40.3	-1.9
UGL	Uglegorsk	6.65	341	ePN	Pn	07 58 16.5	-3.9
UGL	Uglegorsk	6.65	341	eP	Pn	07 58 21.9	+1.5
TYV	Tymovskoe	8.25	348	ePN	Pn	07 58 44.2	+2.0
TYV				pmax	pmax		
	comp=Z,5.0nm,0.6s						
TYV	Tymovskoe	8.25	348	eP	Pn	07 58 44.2	+2.0
TYV				AMB	AMB	07 58 53.0	
	comp=Z,10.0nm,0.6s						
MJA0	Matsu Arr-Jizo	8.29	223	ePN	Pn	07 58 45.7	+2.7
MJA0				pmax	pmax		
	comp=Z,1.0nm,0.3s						
MJAR	Matsushiro Arr	8.31	223	P	Pn	07 58 39.5	-3.7
	comp=Z,0.5nm,0.3s,baz=28,slow=15,SNR=3.8						
MJAR	Matsushiro Arr	8.31	223	eP	Pn	07 58 45.7	+2.4
MAJO	Matsushiro	8.31	223	⇑iPN	Pn	07 58 43.3	0.0
MAJO	Matsushiro	8.31	223	⇑iP	Pn	07 58 43.3	0.0
HABR	Khabarovsk	9.13	312	ePN	Pn	07 58 50.1	-4.2
HABR				pmax	pmax		
	comp=Z,9.0nm,0.8s						
HABR				pmax	pmax		
	comp=N,9.0nm,1.0s						
HABR				MLR	MLR		
	comp=Z,61nm,15.0s						
HABR	Khabarovsk	9.13	312	eP	Pn	07 58 50.1	-4.2
HABR				AMB	AMB	07 58 50.6	
	comp=Z,10.0nm,0.8s						
HABR				AMS	AMS	08 03 07.0	
	comp=Z,100nm,15.0s						
USRK	Ussuriysk Ar.	9.77	283	P	Pn	07 59 07.3	+4.2
	comp=Z,0.1nm,0.3s,baz=84,slow=14,SNR=4.2						
VLA	Vladivostok	9.84	276	i PN	Pn	07 59 03.3	-0.7
VLA	Vladivostok	9.84	276	eP	Pn	07 59 03.3	-0.7
SKR	Severo-Kuril's	10.81	40	eP	Pn	07 59 17.6	+0.4
KLR	Kul'dur	11.38	309	P	Pn	07 59 27.9	+2.8
	comp=Z,0.1nm,0.3s,baz=107,slow=12,SNR=3.9						
KLR				LR	LR	08 04 16.6	
	comp=Z,113nm,19.2s,baz=114,slow=40						
KLR	Kul'dur	11.38	309	eP	Pn	07 59 27.9	+2.8
KLR				AMS	AMS	08 04 16.5	
	comp=Z,100nm,19.0s						
EKMR	Ekimchan	13.16	325	eP	Pn	07 59 50.1	+0.8
EKMR				AMB	AMB	07 59 55.0	
	comp=Z,10.0nm,0.8s						
PETK	Petropavlovsk-	13.21	35	P	Pn	07 59 48.8	-1.3
	comp=Z,0.1nm,0.3s,baz=193,slow=9.2,SNR=3.5						
PET	Petropavlovsk	13.56	37	i P	Pn	07 59 54.9	+0.2
PET				pmax	pmax		
	comp=Z,26nm,1.1s						
PET	Petropavlovsk	13.56	37	i P	Pn	07 59 54.9	+0.2
KSRS	Korea Array	14.32	254	P	P	08 00 11.2	+0.2
	baz=69,slow=13,SNR=2.5						
MA2	Magadan	17.11	9	i P	Pn	08 00 37.9	-2.8
MA2	Magadan	17.11	9	i P	Pn	08 00 37.9	-2.8
SEY	Seymchan	20.57	9	P	P	08 01 16.8	-2.8
	comp=Z,1.8nm,0.7s,baz=158,slow=6.3,SNR=6.5						
SEY	Seymchan	20.57	9	⇑iP	P	08 01 17.7	-1.9
SEY	Seymchan	20.57	9	⇑iP	P	08 01 17.7	-1.9
ULN	Ulaanbaatar	27.15	294	⇑iP	P	08 02 23.4	-0.5
ULN				pmax	pmax		
	comp=Z,2.0nm,0.6s						
ULN	Ulaanbaatar	27.15	294	⇑iP	P	08 02 23.4	-0.5
SONM	Songino Array	27.60	294	P	P	08 02 27.7	-0.1
	comp=Z,2.1nm,0.6s,baz=88,slow=8.3,SNR=9.5						
SONM	Songino Array	27.60	294	eP	P	08 02 28.2	+0.4
SONM				pmax	pmax		
	comp=Z,2.0nm,0.6s						
H11N2	WAKE ISLAND Hy	29.34	135	T	T	08 33 43.7	
	baz=327,slow=75,SNR=385						
H11N1	WAKE ISLAND Hy	29.36	135	T	T	08 33 47.2	
	baz=327,slow=75,SNR=430						
H11N3	WAKE ISLAND Hy	29.36	135	T	T	08 33 47.6	
	baz=327,slow=75,SNR=409						
H11S1	WAKE ISLAND Hy	30.26	137	T	T	08 34 54.0	
	baz=328,slow=76,SNR=546						
H11S3	WAKE ISLAND Hy	30.27	137	T	T	08 34 53.2	
	baz=328,slow=76,SNR=504						
H11S2	WAKE ISLAND Hy	30.28	137	T	T	08 34 53.6	
	baz=328,slow=76,SNR=690						
ZALV	Zalesovo Beam	40.49	308	P	P	08 04 19.1	+0.2
	comp=Z,1.0nm,0.3s,baz=78,slow=8.3,SNR=4.1						
COLA	College	42.62	35	eP	P	08 04 36.7	+0.6
ILAR	Eielson Array	43.03	36	P	P	08 04 40.0	+0.4
	comp=Z,0.7nm,0.4s,baz=256,slow=5.0,SNR=17						
MKAR	Makanchi Array	43.82	298	P	P	08 04 45.8	-0.4
	comp=Z,1.4nm,0.7s,baz=82,slow=10,SNR=7.2						
MKAR	Makanchi Array	43.82	298	eP	P	08 04 46.1	-0.1
MKAR				pmax	pmax		
	comp=Z,1.0nm,0.7s						
MKAR	Makanchi Array	43.82	298	eP	P	08 04 46.1	-0.1
KURK	Kurchatov	44.93	304	c iP	P	08 04 54.6	-0.3
KURK				pmax	pmax		
	comp=Z,3.0nm,0.6s						
KURK	Kurchatov	44.93	304	⇑iP	P	08 04 54.6	-0.3
INK	Inuvik	47.88	30	P	P	08 05 18.6	+0.8
	comp=Z,2.7nm,0.6s,baz=305,slow=6.9,SNR=24						
ARU	Arti	54.10	317	d iP	P	08 06 04.1	-0.5
ARU						08 08 04.6	
ARU				S	S	08 13 36.6	-0.6
ARU				SS	SS	08 17 15.2	-3.4
ARU				pmax	pmax		
	comp=Z,13nm,2.5s						
ARU	Arti	54.10	317	⇓iP	P	08 06 04.1	-0.5
YKA	Yellowknife Ar	57.32	33	P	P	08 06 28.0	+0.4
	comp=Z,0.5nm,0.5s,baz=302,slow=7.0,SNR=10						
YKA	Yellowknife Ar	57.32	33	eP	P	08 06 30.7	+3.1
YKA				pmax	pmax		
	comp=Z,1.0nm,0.5s						
YKA	Yellowknife Ar	57.32	33	eP	P	08 06 30.7	+3.1
ARCES	ARCESS Array B	59.64	339	P	P	08 06 44.4	+0.6
	comp=Z,2.6nm,0.8s,baz=52,slow=8.3,SNR=5.0						
DAG	Danmarks Havn	60.25	356	i P	P	08 06 47.1	-0.7
	comp=Z,1.6nm,0.7s						
DAG	Danmarks Havn	60.25	356	i P	P	08 06 47.1	-0.7
DAG				pmax	pmax		
	comp=Z,1.0nm,0.7s						
DAG	Danmarks Havn	60.25	356	i P	P	08 06 47.1	-0.7
WRA	Warramunga Arr	63.26	192	P	P	08 07 13.7	+5.1
	comp=Z,0.2nm,0.5s,baz=11,slow=8.8,SNR=2.4						
GEYT	Alibeck	63.69	298	P	P	08 07 11.9	+0.4
	comp=Z,2.1nm,0.7s,baz=53,slow=7.4,SNR=2.5						
SUMG	Summit	64.88	1	i P	P	08 07 19.3	+0.2
	comp=Z,6.7nm,0.7s						
SUMG	Summit	64.88	1	i P	P	08 07 19.3	+0.2
SUMG				pmax	pmax

PDAR	**Pinedale Array**	**71.54**	**49**	P	**P**	**08 08 01.0**	**-0.2**
	comp=Z,0.6nm,0.6s,baz=272,slow=1.4,SNR=7.6						
BRTR	**Keskin Array B**	**77.19**	**313**	P	**P**	**08 08 34.0**	**+0.1**
	comp=Z,0.5nm,0.5s,baz=60,slow=7.3,SNR=3.8						
BRTR	**Keskin Array B**	**77.19**	**313**	*e*P	**P**	**08 08 35.0**	**+1.1**
SCHQ	**Schefferville**	**78.94**	**18**	P	**P**	**08 08 45.0**	**+1.8**
	comp=Z,2.0nm,0.8s,baz=240,slow=2.3,SNR=3.0						
TXAR	**Lajitas Array**	**84.29**	**55**	P	**P**	**08 09 12.3**	**+0.3**
	comp=Z,0.4nm,0.7s,baz=306,slow=4.0,SNR=7.4						
RPZ	**Rata Peaks**	**89.19**	**162**	LR	LR	08 47 46.3	

NNC 31 07:58:30.6±3.7, 36°.99N×71°.04E, h0km, mb3.7, mpv3.3, 2C-3D, Error ellipse: s-maj=30.1km s-min=15.4km az=170.0, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**2.52**	**317**	⇓P	Pn	07 59 12.8	-0.2
	12nm,0.5s						
DZET				⇓S	Sn	07 59 46.1	+1.7
	31nm,0.4s						
MNAS	**Manas**	**5.61**	**11**	⇑P	Pn	07 59 56.0	+0.7
	1.4nm,0.4s						
MNAS				⇓S	Sn	08 01 01.9	+1.3
	15nm,1.0s						
KK31	**Karatay Array**	**6.12**	**356**	P	Pn	08 00 01.2	-1.2
	0.5nm,0.2s,baz=0.0,slow=0.1,SNR=11						
KK31				S	Sn	08 01 11.7	-1.3
	2.9nm,0.5s,baz=187,slow=20,SNR=14						
AAK	**Ala-Archa**	**6.23**	**24**	P	Pn	08 00 03.9	-0.1
	1.0nm,0.4s						
AAK				⇑S	Sn	08 01 19.1	+3.1
	4.7nm,0.6s						

*ISCJB **31** 07:58:41.8±0.5, 39°.19N±0°.03×27°.57E±0°.05, h0km, Error ellipse: s-maj=5.4km s-min=3.9km az=9.8*
*ISK **31** 07:58:41.7, 39°.16N×27°.54E, h8km, MD2.7*
*CSEM **31** 07:58:41.9±0.3, 39°.19N×27°.58E, h1km, MD2.6, Error ellipse: s-maj=7.2km s-min=4.7km az=90.0, Suspected Mining explosion.*
*DDA **31** 07:58:42.5, 39°.16N×27°.58E, h7km, Md2.6, Suspected Mining explosion.*
ISC 31 07:58:41.5±0.9, 39°.20N±0°.03×27°.51E±0°.04, h0km, n23, σ0§46/36, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AKHS	**Akhisar**	**0.40**	**144**	P	**Pg**	**07 58 48.6**	**-0.5**
AKHS				S	**Sg**	**07 58 55.0**	**+0.7**
AKHS	**Akhisar**	**0.40**	**144**	*i* P	**Pg**	**07 58 48.6**	**-0.5**
AKHS				*i* S	**Sg**	**07 58 55.0**	**+0.7**
AKS	**Akhisar**	**0.40**	**144**	*e*PG	**Pg**	**07 58 49.2**	**+0.1**
AKS				*e*SG	**Sg**	**07 58 54.5**	**+0.2**
AKS	**Akhisar**	**0.40**	**144**	*e*Pg	**Pg**	**07 58 49.2**	**+0.1**
AKS				*e*Sg	**Sg**	**07 58 54.5**	**+0.2**
BALY	**Balya**	**0.55**	**9**	P	**Pb**	**07 58 53.3**	**-0.6**
BALY	**Balya**	**0.55**	**9**	*i* P	**Pb**	**07 58 53.3**	**-0.6**
URLA	**Izmir**	**1.10**	**221**	P	**Pb**	**07 59 03.4**	**0.0**
URLA				S	**Sn**	**07 59 20.0**	**-0.1**
URLA	**Izmir**	**1.10**	**221**	*i* P	**Pb**	**07 59 03.4**	**0.0**
URLA				*i* S	**Sn**	**07 59 20.0**	**-0.1**
KULA	**Kula-Manisa**	**1.13**	**127**	*e*PN	**Pg**	**07 59 02.3**	**-0.9**
KULA				*e*SN	**Sg**	**07 59 18.4**	**+0.6**
KULA	**Kula-Manisa**	**1.13**	**127**	*e*Pn	**Pg**	**07 59 02.3**	**-0.9**
KULA				*e*Sn	**Sg**	**07 59 18.4**	**+0.6**
EDC	**Edincik**	**1.18**	**13**	*e*PN	**Pn**	**07 59 05.3**	**+0.1**
EDC				*e*SN	**Sn**	**07 59 22.8**	**+0.9**
EDC	**Edincik**	**1.18**	**13**	*e*Pn	**Pn**	**07 59 05.3**	**+0.1**
EDC				*e*Sn	**Sn**	**07 59 22.8**	**+0.9**
KCTX	**Karacabey (Bur**	**1.25**	**31**	*e*PN	**Pn**	**07 59 06.2**	**0.0**
KCTX	**Karacabey (Bur**	**1.25**	**31**	*e*Pn	**Pn**	**07 59 06.2**	**0.0**
DGB	**¨zmir**	**1.25**	**203**	*i* P	**Pb**	**07 59 05.7**	**-0.2**
DGB				*i* S	**Sb**	**07 59 22.8**	**+0.4**
ORLT	**Orhaneli**	**1.36**	**51**	*e*PN	**Pb**	**07 59 08.0**	**+0.1**
ORLT	**Orhaneli**	**1.36**	**51**	*e*Pn	**Pb**	**07 59 08.0**	**+0.1**
TVSB	**Tavsanli**	**1.53**	**80**	*e*PN	**Pn**	**07 59 09.8**	**-0.4**
TVSB	**Tavsanli**	**1.53**	**80**	*e*Pn	**Pn**	**07 59 09.8**	**-0.4**
GDZ	**Gediz**	**1.54**	**94**	P	**Pn**	**07 59 10.2**	**-0.1**
GDZ				S	**Sn**	**07 59 31.1**	**+0.1**
GDZ	**Gediz**	**1.54**	**94**	*i* P	**Pn**	**07 59 10.2**	**-0.1**
GDZ				*i* S	**Sn**	**07 59 31.1**	**+0.1**
ARMT	**Armutlu**	**1.71**	**37**	*e*PN	**Pn**	**07 59 12.4**	**-0.2**
ARMT	**Armutlu**	**1.71**	**37**	*e*Pn	**Pn**	**07 59 12.4**	**-0.2**

*IDC **31** 07:59:39.4±0.6, 8°.93S×109°.14E, h0km, mb4.3/18, mb1 4.4/19, mb1mx4.2/41, mbtmp4.3/19, ML3.7/1, MS3.5/12, Ms1 3.5/12, ms1mx3.2/32, Error ellipse: s-maj=25.1km s-min=13.0km az=59.0*
*ISCJB **31** 07:59:40.5±0.3, 9°.26S±0°.05×108°.84E±0°.04, h27km, mb4.5/35, MS3.5/12, Error ellipse: s-maj=7.6km s-min=5.2km az=8.9*
*NEIC **31** 07:59:44.8±0.8, 9°.14S×108°.90E, h43km±7km, mb4.7/11, Error ellipse: s-maj=10.5km s-min=7.0km az=213.0*
ISC 31 07:59:42.6±0.4, 9°.19S±0°.06×108°.89E±0°.04, h27km, n70, σ1§78/73, mb4.5/35, MS3.5/12, South of Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CISI	**Cisompet, Garu**	**1.94**	**327**	*e*Pn	**Pn**	**08 00 15.4**	**+1.5**
CISI				*e*Sn	**Sb**	**08 00 41.1**	**-0.1**
UGM	**Wanagama**	**2.06**	**52**	*e*Pn	**Pn**	**08 00 15.4**	**-0.1**
SMRI	**Semarang**	**2.63**	**36**	*e*Pn	**Pb**	**08 00 25.4**	**-3.6**
LEM	**Lembang**	**2.67**	**332**	Pn	**Pb**	**08 00 32.6**	**+2.8**
	38nm,0.3s,baz=172,slow=6.1,SNR=27						
LEM				Sn	Sb	08 01 12.7	+11
	73nm,0.3s,baz=26,slow=23,SNR=8.4						
LEM				LR	LR	08 01 44.0	
	comp=Z,950nm,21.1s,baz=136,slow=48						
XMIS	**Christmas Isla**	**3.43**	**248**	*e*Pn	**Pn**	**08 00 33.5**	**-0.9**
XMIS				*e*Sn	**Sn**	**08 01 10.3**	**-3.9**
JAGI	**Jajag, Banyuwa**	**5.25**	**83**	*e*Pn	**Pn**	**08 01 01.1**	**+1.6**
JAGI				*e*Sn	**Sn**	**08 01 59.8**	**+0.6**
MNAI	**Manna**	**7.60**	**309**	*e*Pn	**Pn**	**08 01 33.8**	**+2.2**
KAPI	**Kappang**	**11.55**	**70**	Pn	**Pn**	**08 02 28.1**	**+2.2**
	0.5nm,0.3s,baz=262,slow=11,SNR=4.3						
KAPI				LR	LR	08 08 18.2	
	comp=Z,183nm,18.2s,baz=254,slow=46						
FITZ	**Fitzroy Crossi**	**18.52**	**120**	P	**Pn**	**08 03 58.1**	**+0.7**
	0.2nm,0.3s,baz=288,slow=8.1,SNR=5.0						
FITZ				LR	LR	08 11 04.4	
	comp=Z,130nm,20.7s,baz=304,slow=37						
DAV	**Davao City (W)**	**23.19**	**46**	LR	LR	08 15 51.3	
	comp=Z,106nm,19.4s,baz=240,slow=43						
WRA	**Warramunga Arr**	**26.81**	**116**	P	**P**	**08 05 20.2**	**-0.6**
	2.1nm,0.7s,baz=289,slow=12,SNR=22						
WRAB	**Tennant Creek**	**26.82**	**116**	*e*P	**P**	**08 05 20.8**	**-0.1**
	55nm,1.9s						
WB2	**Warramunga Arr**	**26.82**	**116**	P	**P**	**08 05 21.0**	**0.0**
	baz=27						
WB2	**Warramunga Arr**	**26.82**	**116**	*e*P	**P**	**08 05 20.7**	**-0.2**
	47nm,2.0s						
ASAR	**Alice Springs**	**27.91**	**124**	P	**P**	**08 05 31.7**	**+1.0**
	0.5nm,0.5s,baz=299,slow=9.1,SNR=10						
ASAR				PcP	**PcP**	**08 08 47.1**	**+1.0**
	0.7nm,0.6s,baz=253,slow=1.5,SNR=6.1						
ASAR				LR	LR	08 17 00.7	
	comp=Z,88nm,20.5s,baz=302,slow=37						
AS01	**Alice Springs**	**27.95**	**124**	*e*P	**P**	**08 05 31.4**	**+0.4**
QIZ	**Qiongzhong**	**28.06**	**2**	P	**P**	**08 05 34.0**	**+2.1**
QIZ				S	**S**	**08 10 18.5**	**+3.3**
QIZ				LR	LR		
	comp=N,150nm,3.1s						
QIZ				LR	LR		
	comp=E,160nm,3.4s						
QIZ				LR	LR		
	comp=Z,120nm,13.9s						
CMAR	**Chiang Mai Arr**	**29.18**	**340**	P	**P**	**08 05 41.4**	**-0.4**
	comp=Z,1.0nm,0.3s,baz=173,slow=8.2,SNR=4.4						
KMI	**Kunming**	**34.63**	**350**	P	P	08 06 37.8	+7.8
KMI				sP	sP	08 06 53.0	+12
KMI				pmax	pmax		
	comp=Z,8.0nm,0.7s						
KMI				LR	LR		
	comp=N,260nm,17.1s						
KMI				LR	LR		
	comp=E,190nm,13.0s						
KMI				LR	LR		
	comp=Z,230nm,16.1s						
GYA	**Guiyang**	**35.51**	**357**	*e*P	**P**	**08 06 39.5**	**+2.1**
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
STKA	**Stephens Creek**	**37.80**	**131**	P	**P**	**08 06 57.7**	**+0.9**
	comp=Z,3.7nm,0.6s,baz=302,slow=9.2,SNR=9.7						
STKA				LR	LR	08 23 50.3	
	comp=Z,84nm,19.8s,baz=16,slow=38						
STKA	**Stephens Creek**	**37.80**	**131**	P	**P**	**08 06 57.6**	**+0.9**
	baz=38,SNR=3.8						
STKA	**Stephens Creek**	**37.80**	**131**	*e*P	**P**	**08 06 57.9**	**+1.1**
	comp=Z,1.6nm,0.8s						
WHN	**Wuhan**	**39.86**	**7**	P	P	08 07 18.3	+4.4
CD2	**Chengdu**	**40.18**	**353**	P	**P**	**08 07 18.0**	**+1.3**
CD2				pmax	pmax		
	comp=Z,3.0nm,0.6s						
LZH	**Lanzhou**	**45.29**	**354**	*e*P	**P**	**08 07 58.8**	**+0.6**
LZH				pP	sP	08 08 09.5	-0.2
LZH				sP	pP	08 08 15.5	+9.1
LZH				pmax	pmax		
	comp=Z,40nm,1.3s						
BJI	**Beijing**	**49.45**	**7**	P	**P**	**08 08 29.8**	**-0.5**
BJI				pmax	pmax		
	comp=Z,11nm,0.9s						
BJI				pmax	pmax		
	comp=Z,110nm,4.5s						
HHC	**Hu-ho-hao-te**	**49.85**	**3**	*e*P	**P**	**08 08 37.0**	**+3.4**
HHC				pmax	pmax		
	comp=Z,17nm,1.0s						
HHC				pmax	pmax		
	comp=Z,79nm,6.2s						
MJAR	**Matsushiro Arr**	**53.19**	**30**	P	**P**	**08 08 55.7**	**-2.8**
	comp=Z,5.3nm,0.9s,baz=207,slow=7.6,SNR=8.5						
MJAR				LR	LR	08 31 12.9	
	comp=Z,23nm,20.7s,baz=140,slow=36						
WMQ	**Urumqi**	**56.16**	**342**	*e*P	**P**	**08 09 22.3**	**+2.3**
WMQ				pmax	pmax		
	comp=Z,6.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,55nm,4.0s						
WMQ				LR	LR		
	comp=Z,12nm,38.0s						
SONM	**Songino Array**	**56.82**	**358**	P	**P**	**08 09 24.6**	**-0.1**
	comp=Z,1.9nm,0.6s,baz=169,slow=8.3,SNR=9.9						
SONM				LR	LR	08 36 33.5	
	comp=Z,43nm,21.2s,baz=122,slow=39						
ULN	**Ulaanbaatar**	**56.83**	**359**	*e*P	**P**	**08 09 24.6**	**-0.2**
	comp=Z,2.9nm,0.7s						
SONA1	**Songino Array**	**56.83**	**358**	*e*P	**P**	**08 09 24.1**	**-0.7**
USRK	**Ussuriysk Ar.**	**57.12**	**20**	P	**P**	**08 09 25.4**	**-1.3**
	comp=Z,2.9nm,0.8s,baz=212,slow=6.8,SNR=4.4						
KSH	**Kashi**	**57.28**	**330**	P	**P**	**08 09 26.5**	**-1.6**
KSH				*e*pP	pP	08 09 37.0	+0.5
KSH				*e*PP	**PP**	**08 11 34.0**	**-1.6**
KSH				PcS	**PcS**	**08 14 21.8**	**-1.5**
KSH				S	**S**	**08 17 14.3**	**-8.4**
TKM2	**Tokmak 2**	**60.10**	**332**	*e*P	**P**	**08 09 47.9**	**+0.1**
	comp=Z,8.9nm,0.7s						
MK01	**Makanchi Array**	**60.55**	**339**	*e*P	**P**	**08 09 50.2**	**-0.4**
MK31	**Makanchi Array**	**60.58**	**339**	*e*P	**P**	**08 09 50.8**	**0.0**
MKAR	**Makanchi Array**	**60.58**	**339**	P	**P**	**08 09 50.6**	**-0.1**
	comp=Z,6.5nm,0.7s,baz=144,slow=7.5,SNR=38						
MKAR				LR	LR	08 38 54.7	
	comp=Z,32nm,18.9s,baz=155,slow=39						
MKAR	**Makanchi Array**	**60.58**	**339**	*e*P	**P**	**08 09 50.8**	**0.0**
EKS2	**Erkin-Say**	**60.75**	**331**	*e*P	**P**	**08 09 52.5**	**+0.4**
	comp=Z,5.0nm,1.0s						
KLR	**Kul'dur**	**61.54**	**17**	P	**P**	**08 09 55.4**	**-1.8**
	comp=Z,4.9nm,0.7s,baz=224,slow=4.9,SNR=17						
KURK	**Kurchatov**	**65.19**	**339**	*e*P	**P**	**08 10 20.6**	**-0.7**
	comp=Z,5.8nm,0.8s						
ZAA0	**Zalesovo Array**	**66.12**	**345**	*e*P	**P**	**08 10 26.2**	**-1.0**
ZALV	**Zalesovo Beam**	**66.12**	**345**	P	**P**	**08 10 26.7**	**-0.5**
	comp=Z,1.5nm,0.3s,baz=124,slow=4.5,SNR=9.7						
GEYT	**Alibeck**	**66.63**	**318**	P	**P**	**08 10 31.8**	**+0.8**
	comp=Z,1.2nm,0.3s,baz=235,slow=49,SNR=4.9						
ZRNK	**Zerenda**	**70.61**	**336**	*e*P	**P**	**08 10 55.3**	**-0.1**
	comp=Z,5.0nm,1.0s						
ABKAR	**Akbulak array**	**72.24**	**329**	*e*P	**P**	**08 11 05.4**	**0.0**
YAK	**Yakutsk**	**72.83**	**10**	*e*P	**P**	**08 11 07.9**	**-0.6**
	comp=Z,26nm,0.4s						
VNDA	**Vanda**	**73.48**	**170**	P	**P**	**08 11 13.5**	**+1.2**
	comp=Z,1.4nm,0.9s,baz=288,slow=3.2,SNR=3.1						
PETK	**Petropavlovsk-**	**74.61**	**28**	P	**P**	**08 11 18.7**	**-0.5**
	comp=Z,1.6nm,0.6s,baz=255,slow=2.0,SNR=3.7						
PETK				LR	LR	08 47 13.2	
	comp=Z,11nm,19.8s,baz=206,slow=38						
SEY	**Seymchan**	**79.25**	**19**	P	**P**	**08 11 44.6**	**-0.5**
	comp=Z,1.0nm,0.5s,baz=160,slow=6.2,SNR=5.5						
KBZ	**Khabaz**	**79.52**	**318**	P	**P**	**08 11 48.5**	**+1.5**
	comp=Z,1.1nm,0.5s,baz=110,slow=15,SNR=2.9						
NRIK	**Noril'sk**	**79.75**	**352**	P	**P**	**08 11 47.5**	**-0.1**
	comp=Z,3.0nm,0.8s,baz=123,slow=5.2,SNR=5.3						
BOSA	**Boshof**	**80.10**	**242**	LR	LR	08 45 18.8	
	comp=Z,85nm,18.0s,baz=183,slow=34						
TIXI	**Tiksi**	**81.76**	**6**	*e*P	**P**	**08 11 56.8**	**-1.6**
	comp=Z,6.0nm,0.7s						
BR131	**Keskin Array S**	**84.67**	**311**	*e*P	**P**	**08 12 15.3**	**+0.9**
BRTR	**Keskin Array B**	**84.67**	**311**	P	**P**	**08 12 14.9**	**+0.6**
	comp=Z,3.3nm,0.9s,baz=125,slow=6.2,SNR=14						
BRTR				LR	LR	08 54 34.5	
	comp=Z,20nm,18.1s,baz=93,slow=39						
BR231	**Keskin MP Arra**	**85.34**	**311**	*e*P	**P**	**08 12 15.2**	**-2.5**
KARP	**Karpathos**	**88.62**	**306**	*e*P	**P**	**08 12 35.4**	**+1.8**
	comp=Z,12nm,0.9s						
ARCES	**ARCESS Array B**	**96.23**	**339**	P	**P**	**08 13 09.8**	**+1.8**
	comp=Z,1.5nm,0.8s,baz=96,slow=4.3,SNR=4.3						
YKA	**Yellowknife Ar**	**118.24**	**21**	PKP	**PKPdf**	**08 18 26.8**	**-0.2**
	comp=Z,0.3nm,0.8s,baz=329,slow=1.7,SNR=3.4						
TXAR	**Lajitas Array**	**143.52**	**52**	PKhKP	PKPpre	08 19 12.5	
	comp=Z,0.2nm,0.8s,baz=336,slow=2.0,SNR=3.6						
WMOK	**Wichita Mounta**	**144.11**	**41**	*e*PKPdf	**PKPdf**	**08 19 16.0**	**-0.5**
BDFB	**Brasilia**	**146.35**	**223**	PKPbc	**PKPab**	**08 19 24.6**	**+1.7**
	comp=Z,1.8nm,0.6s,baz=170,slow=6.6,SNR=3.7						
PBMO	**Poplar Bluff**	**147.43**	**30**	*e*PKPbc	**PKPbc**	**08 19 24.7**	**+0.3**
ODNJ	**Ogdensburg**	**148.09**	**5**	*e*PKPbc	**PKPbc**	**08 19 26.1**	**0.0**
SWET	**Sewanee**	**150.77**	**25**	*e*PKPdf	**PKPdf**	**08 19 28.0**	**+0.6**
TKL	**Tuckaleechee C**	**151.24**	**22**	*e*PKPbc	**PKPbc**	**08 19 34.6**	**+0.6**
LPAZ	**La Paz**	**154.51**	**187**	PKPab	**PKPab**	**08 19 59.0**	**+2.2**
	comp=Z,0.7nm,0.6s,baz=174,slow=2.5,SNR=4.6						

*CSEM **31** 07:59:58.9±0.2, 39°.18N×29°.01E, h6km, MD2.4, Error ellipse: s-maj=6.5km s-min=3.5km az=140.0*
*ISK **31** 07:59:58.3, 39°.17N×28°.97E, h6km, MD2.6*
*ISCJB **31** 07:59:59.0±0.5, 39°.14N±0°.05×29°.03E±0°.05, h12km±7km, Error ellipse: s-maj=10.1km s-min=4.8km az=151.3*
*DDA **31** 07:59:59.4, 39°.12N×29°.06E, h7km, Md2.4*
ISC 31 07:59:58.8±1.1, 39°.15N±0°.04×29°.01E±0°.05, h15km±12km, n18, σ0§19/28, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**246**	P	**Pb**	**08 00 05.4**	**+0.2**
DEMI				S	**Sb**	**08 00 09.4**	**0.0**
DEMI	**Demirci**	**0.25**	**246**	*i* P	**Pb**	**08 00 05.4**	**+0.2**
DEMI				*i* S	**Sb**	**08 00 09.4**	**0.0**
GDZ	**Gediz**	**0.37**	**99**	P	**Pg**	**08 00 06.4**	**0.0**
GDZ				S	**Sg**	**08 00 11.3**	**-0.3**
GDZ	**Gediz**	**0.37**	**99**	*i* P	**Pg**	**08 00 06.4**	**0.0**
GDZ				*i* S	**Sg**	**08 00 11.3**	**-0.3**
TVSB	**Tavsanli**	**0.46**	**49**	*e*PG	**Pg**	**08 00 08.3**	**+0.2**
TVSB				*e*SG	**Sg**	**08 00 14.6**	**+0.2**
TVSB	**Tavsanli**	**0.46**	**49**	*e*Pg	**Pg**	**08 00 08.3**	**+0.2**
TVSB				*e*Sg	**Sg**	**08 00 14.6**	**+0.2**
KULA	**Kula-Manisa**	**0.69**	**204**	*e*PG	**Pb**	**08 00 12.8**	**+0.2**
KULA				*e*SG	**Sb**	**08 00 22.1**	**+0.2**
KULA	**Kula-Manisa**	**0.69**	**204**	*e*Pg	**Pb**	**08 00 12.8**	**+0.2**
KULA				*e*Sg	**Sb**	**08 00 22.1**	**+0.2**
AKS	**Akhisar**	**0.97**	**255**	*e*PG	**Pb**	**08 00 17.2**	**-0.2**
AKS	**Akhisar**	**0.97**	**255**	*e*Pg	**Pb**	**08 00 17.2**	**-0.2**
CAVI	**Cavuskoy**	**1.23**	**31**	*e*PN	**Pb**	**08 00 22.1**	**+0.2**
CAVI	**Cavuskoy**	**1.23**	**31**	*e*Pn	**Pb**	**08 00 22.1**	**+0.2**
IZI	**Iznik**	**1.24**	**16**	*e*PN	**Pn**	**08 00 21.7**	**-0.1**
IZI	**Iznik**	**1.24**	**16**	*e*Pn	**Pn**	**08 00 21.7**	**-0.1**
BORA	**Eskisehir**	**1.33**	**56**	P	**Pn**	**08 00 22.9**	**-0.2**
BORA				S	**Sg**	**08 00 41.7**	**-0.2**
BORA	**Eskisehir**	**1.33**	**56**	*i* P	**Pn**	**08 00 22.9**	**-0.2**
BORA				*i* S	**Sg**	**08 00 41.7**	**-0.2**
ARMT	**Armutlu**	**1.42**	**355**	*e*PN	**Pb**	**08 00 25.1**	**0.0**
ARMT	**Armutlu**	**1.42**	**355**	*e*Pn	**Pb**	**08 00 25.1**	**0.0**

*NIED **31** 08:04:00, 37°.20N×143°.80E, h5km, Mw3.6 Best double couple: M0=2.67000×10^14 NP1:φ=58.00000°, δ=35.00000°, λ=-94.00000°. NP2:φ=243.00000°, δ=55.00000°, λ=-87.00000°.*
*IDC **31** 08:04:03.3±1.0, 37°.01N×144°.17E, h0km, mb3.8/5, mb1 3.9/7, mb1mx3.6/39, mbtmp3.7/7, ML3.6/2, MS2.8/2, Ms1 2.9/2, ms1mx2.3/38, Error ellipse: s-maj=39.3km s-min=19.8km az=101.0*
*ISCJB **31** 08:04:06.5±0.7, 37°.12N±0°.04×143°.98E±0°.05, h33km, mb3.7/5, MS3.3/1, Error ellipse: s-maj=6.1km s-min=5.8km az=142.4*
*JMA **31** 08:04:09.0±0.2, 37°.16N×143°.84E, h47km, M3.9*
ISC 31 08:04:08.4±1.1, 37°.17N±0°.06×144°.02E±0°.08, h35km, n22, σ1§59/30, mb3.7/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**2.52**	**275**	*e*S	**Sn**	**08 05 15.0**	**-1.4**
ONAJ	**Iwakimizuishiy**	**2.58**	**269**	P	**Pn**	**08 04 47.7**	**0.0**
ONAJ				*e*S	**Sn**	**08 05 16.0**	**-1.9**
JMM	**Marumori**	**2.66**	**286**	*e*S	**Sn**	**08 05 18.5**	**-1.3**
JMK	**Ichinoseki**	**2.84**	**310**	P	**Pn**	**08 04 51.5**	**+0.3**
JMK				*e*S	**Sn**	**08 05 23.3**	**-0.9**
JOU	**Okura**	**2.92**	**295**	P	**Pn**	**08 04 52.8**	**+0.4**
JOU				*e*S	**Sn**	**08 05 25.6**	**-0.6**
JFT	**Otama**	**2.96**	**278**	*e*S	**Sn**	**08 05 26.8**	**-0.4**
JOM	**Ohasama**	**3.15**	**318**	P	**Pn**	**08 04 56.0**	**+0.5**
JOM				*e*S	**Sn**	**08 05 30.8**	**-1.0**
JYK	**Kaneyama**	**3.38**	**302**	P	**Pn**	**08 04 59.8**	**+1.1**
JYK				*e*S	**Sn**	**08 05 37.3**	**-0.2**
JRG	**Rokugo**	**3.47**	**311**	P	**Pn**	**08 05 01.6**	**+1.6**
JRG				*e*S	**Sn**	**08 05 40.9**	**+1.1**
BSO1	**Boso 1**	**3.52**	**225**	*e*S	**Sn**	**08 05 39.2**	**-1.1**
JAG	**Ashikaga**	**3.74**	**260**	P	**Pn**	**08 05 03.5**	**-0.2**
JAG				*e*S	**Sn**	**08 05 44.6**	**-1.9**
JRY	**Ryogami san**	**4.28**	**256**	P	**Pn**	**08 05 10.6**	**-0.5**
JRY				*e*S	**Sn**	**08 05 57.9**	**-1.9**
JTM	**Tenmabayashi**	**4.28**	**328**	*e*S	**Sn**	**08 05 58.0**	**-1.8**
MJAR	**Matsushiro Arr**	**4.71**	**264**	Pn	**Pn**	**08 05 16.7**	**-0.2**
	1.5nm,0.3s,baz=75,slow=9.7,SNR=10.0						
JTKR	**Abashiri--Toko**	**6.79**	**359**	P	**Pn**	**08 05 44.3**	**-1.3**
JTKR				*e*S	**Sn**	**08 06 56.0**	**-5.6**
ASAJ	**Asahikawa**	**7.02**	**352**	Pn	**Pn**	**08 05 48.2**	**-0.5**
	1.3nm,0.3s,baz=210,slow=10.0,SNR=5.5						
KSRS	**Korea Array**	**12.82**	**276**	LR	LR	08 11 20.9	
	comp=Z,11nm,19.2s,baz=25,slow=34						
SEY	**Seymchan**	**26.30**	**9**	P	**P**	**08 09 41.9**	**+1.5**
	0.7nm,0.2s,baz=164,slow=9.6,SNR=4.1						
ILAR	**Eielson Array**	**48.26**	**32**	P	**P**	**08 12 46.3**	**+0.7**
	0.4nm,0.7s,baz=261,slow=6.6,SNR=5.5						
ILAR				LR	LR	08 38 03.2	
	comp=Z,27nm,18.0s,baz=115,slow=42						
WRA	**Warramunga Arr**	**57.53**	**191**	P	**P**	**08 13 53.7**	**-0.7**
	0.7nm,0.5s,baz=9.7,slow=7.1,SNR=12						
ASAR	**Alice Springs**	**61.26**	**191**	P	**P**	**08 14 19.0**	**-1.0**
	0.5nm,0.8s,baz=12,slow=9.5,SNR=3.3						
AKASG	**Malin Array Be**	**75.45**	**323**	P	**P**	**08 15 50.4**	**+1.8**
	0.1nm,0.3s,baz=38,slow=6.2,SNR=4.3						

*ISK **31** 08:08:06.5, 39°.05N×29°.22E, h5km, MD2.4*
*ISCJB **31** 08:08:07.7±0.6, 39°.09N±0°.04×29°.12E±0°.05, h9km, Error ellipse: s-maj=6.8km s-min=4.2km az=146.4*
*CSEM **31** 08:08:07.8±0.2, 39°.09N×29°.13E, h5km, MD2.4, Error ellipse: s-maj=4.8km s-min=3.4km az=123.0*
*DDA **31** 08:08:07.3, 39°.13N×29°.11E, h7km, Md2.5*
ISC 31 08:08:07.4±1.0, 39°.09N±0°.03×29°.14E±0°.03, h9km, n14, σ0§61/22, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.27**	**90**	P	**Pg**	**08 08 13.7**	**+0.9**
GDZ				S	**Sb**	**08 08 17.9**	**-1.3**
GDZ	**Gediz**	**0.27**	**90**	*i* P	**Pg**	**08 08 13.7**	**+0.9**
GDZ				*i* S	**Sb**	**08 08 17.9**	**-1.3**
DEMI	**Demirci**	**0.33**	**262**	P	**Pg**	**08 08 14.1**	**0.0**
DEMI				S	**Sg**	**08 08 18.6**	**+0.1**
DEMI	**Demirci**	**0.33**	**262**	*i* P	**Pg**	**08 08 14.1**	**0.0**
DEMI				*i* S	**Sg**	**08 08 18.6**	**+0.1**
TVSB	**Tavsanli**	**0.44**	**35**	*e*PG	**Pg**	**08 08 15.8**	**-0.2**
TVSB				*e*SG	**Sg**	**08 08 21.8**	**0.0**
TVSB	**Tav

SML			S	Sn	08 25 31.2	+0.6
SKT	**Skwentna**	**1.06 233**	P	Pn	08 25 15.7	-0.7
SKT			S	Sn	08 25 29.7	-0.9
KTH	**Kantishna Hill**	**1.07 331**	P	Pn	08 25 16.8	+0.1
KTH			S	Sn	08 25 31.7	+0.6
PMR	**Palmer**	**1.08 164**	P	Pn	08 25 16.1	-0.5
PMR			S	Sn	08 25 31.9	+0.9
PPLA	**Purkeypile**	**1.16 285**	P	Pn	08 25 17.4	-0.4
PPLA			S	Sn	08 25 33.3	+0.3
MCK	**McKinley**	**1.17 18**	P	Pn	08 25 18.0	+0.2
MCK			S	Sn	08 25 34.3	+1.1
SUA	**Susitna One**	**1.26 202**	P	Pn	08 25 18.7	-0.3
SUA			S	Sn	08 25 36.9	+1.5
CAST	**Castle Rocks**	**1.33 308**	P	Pn	08 25 19.6	-0.3
KNK	**Knik Glacier**	**1.36 153**	P	Pn	08 25 20.4	+0.1
KNK			S	Sn	08 25 39.3	+1.7
SCM	**Sheep Creek Mo**	**1.38 124**	P	Pn	08 25 20.5	-0.2
FIB	**Fire Island**	**1.48 188**	P	Pn	08 25 22.4	+0.6
STLK	**Strandline Lak**	**1.50 222**	P	Pn	08 25 21.7	-0.5
RC01	**Rabbit Creek A**	**1.54 180**	P	Pn	08 25 22.1	-0.6
RC01			S	Sn	08 25 42.3	+0.4
BWN	**Browne**	**1.56 5**	P	Pn	08 25 23.1	+0.2
BPAW	**Bear Paw Mtn.**	**1.58 340**	P	Pn	08 25 23.0	-0.2
VOGL	**Vogel Lake**	**1.67 192**	P	Pn	08 25 25.2	+0.9
CHUM	**Lake Minchumin**	**1.71 318**	P	Pn	08 25 25.0	+0.1
SPCR	**Spurr Chakacha**	**1.84 220**	P	Pn	08 25 26.8	0.0
CKL	**Chakachamna La**	**1.89 222**	P	Pn	08 25 27.2	-0.2
SPWE	**Spurr West**	**1.90 226**	P	Pn	08 25 27.9	+0.4
PAX	**Paxson**	**2.00 78**	P	Pn	08 25 29.6	+0.7
WRH	**Wood River Hil**	**2.00 21**	P	Pn	08 25 28.5	-0.2
PS11	**TAPS Pump St11**	**2.07 104**	P	Pn	08 25 30.6	+0.9
KLU	**Klutina**	**2.13 121**	P	Pn	08 25 30.1	-0.6
SLKM	**Skilak Lake**	**2.14 186**	P	Pn	08 25 30.9	+0.2
HDA	**Harding Lake**	**2.19 34**	P	Pn	08 25 31.2	-0.1
CCB	**Clear Creek Bu**	**2.21 22**	P	Pn	08 25 31.3	-0.3
VLZ	**Valdez**	**2.21 131**	P	Pn	08 25 30.5	-1.0
PS08	**TAPS Pump Stn8**	**2.33 33**	P	Pn	08 25 33.1	-0.1
COLA	**College**	**2.41 20**	P	Pn	08 25 34.2	-0.1
DIV	**Divide**	**2.41 127**	P	Pn	08 25 33.4	-1.0
MDM	**Murphy Dome**	**2.44 15**	P	Pn	08 25 34.8	0.0
MLY	**Manley**	**2.45 350**	P	Pn	08 25 34.7	-0.3
PS12	**TAPS Pump St12**	**2.46 116**	P	Pn	08 25 34.5	-0.5
ILAR	**Eielson Array**	**2.50 29**	P	Pn	08 25 35.4	-0.2
	17nm,0.3s,baz=212,slow=14,SNR=971					
ILAR			S	Sn	08 26 03.6	-1.3
	26nm,0.3s,baz=216,slow=26,SNR=11					
ILAR			LR	LR	08 26 16.1	
	comp=Z,100nm,20.3s,baz=95,slow=33					
ILB	**Eielson Array**	**2.50 29**	P	Pn	08 25 35.3	-0.3
RDJH	**Redoubt Jeurge**	**2.51 217**	P	Pn	08 25 35.7	-0.1
SEW	**Seward**	**2.54 177**	P	Pn	08 25 36.2	+0.2
NCT	**North Crescent**	**2.57 218**	P	Pn	08 25 36.6	0.0
RDWB	**Redoubt West**	**2.61 216**	P	Pn	08 25 36.9	-0.3
DOT	**Dot Lake**	**2.78 66**	P	Pn	08 25 40.0	+0.7
MENT	**Mentasta**	**2.79 81**	P	Pn	08 25 39.8	+0.3
EYAK	**Cordova Ski Ar**	**2.83 136**	P	Pn	08 25 39.4	-0.6
TTA	**Tatalina**	**2.90 279**	P	Pn	08 25 40.5	-0.6
TT01	**Tatalina**	**2.90 278**	P	Pn	08 25 40.3	-0.7
BRLK	**Bradley Lake**	**2.92 191**	P	Pn	08 25 41.5	+0.1
BMRM	**Bremner River**	**2.95 122**	P	Pn	08 25 40.8	-1.0
ILW	**Iliamna West**	**3.05 214**	P	Pn	08 25 43.9	+0.7
HOM	**Homer**	**3.12 198**	P	Pn	08 25 44.8	+0.9
CNPM	**China Poot**	**3.19 194**	P	Pn	08 25 45.0	-0.1
PS06	**TAPS Pump Stn6**	**3.24 0**	P	Pn	08 25 45.7	+0.1
VRDI	**Verde Repeater**	**3.29 112**	P	Pn	08 25 45.5	-1.0
MCARA	**McCarthy VSAT**	**3.41 108**	P	Pn	08 25 47.7	-0.2
BERG	**Berg Lake**	**3.66 125**	P	Pn	08 25 50.5	-0.9
CRQM	**Cirque**	**3.66 118**	P	Pn	08 25 51.0	-0.5
BCA3	**Beaver Creek A**	**3.68 80**	P	Pn	08 25 51.5	-0.1
PTPK	**Patty Peak**	**3.73 110**	P	Pn	08 25 52.1	-0.4
AUSE	**Augustine SEas**	**3.75 210**	P	Pn	08 25 53.6	+1.1
AUI	**Augustine Isla**	**3.76 210**	P	Pn	08 25 53.5	+0.8
IM3	**Indian Mountai**	**3.79 334**	P	Pn	08 25 53.1	-0.1
KHIT	**Khitrov Hills**	**3.80 122**	P	Pn	08 25 52.3	-1.1
KIAG	**Kiagna River**	**3.90 113**	P	Pn	08 25 53.5	-1.3
ISLE	**Juniper Island**	**4.08 117**	P	Pn	08 25 56.9	-0.3
MCNL	**McNeil River**	**4.12 215**	P	Pn	08 25 58.2	+0.6
BARK	**Barkley Ridge**	**4.13 119**	P	Pn	08 25 56.8	-1.0
KULT	**Kultieth River**	**4.13 122**	P	Pn	08 25 57.6	-0.3
BARN	**Barnard Glacie**	**4.14 109**	P	Pn	08 25 57.7	-0.4
CDD	**Cape Douglas**	**4.17 209**	P	Pn	08 25 57.9	-0.5
PS05	**TAPS Pump Stn5**	**4.22 355**	P	Pn	08 25 59.1	+0.1
BAGL	**Bagley Icefiel**	**4.24 117**	P	Pn	08 25 58.1	-1.2
GRNC	**Granite Creek**	**4.25 113**	P	Pn	08 25 58.7	-1.0
FOPK	**Fourpeaked Vol**	**4.29 207**	P	Pn	08 25 59.9	-0.1
FOSS	**Fourpeaked Sta**	**4.30 209**	P	Pn	08 26 00.1	0.0
CTGM	**Chitina Glacie**	**4.33 109**	P	Pn	08 26 00.2	-0.4
EGAK	**Eagle**	**4.39 57**	*e*Pn	Pn	08 26 01.5	+0.2
EGAK			*e*Sn	Sn	08 26 53.0	+2.0
FYU	**Fort Yukon**	**4.41 24**	P	Pn	08 26 01.7	+0.2
MESA	**MESA**	**4.48 120**	P	Pn	08 26 02.5	-0.2
LOGN	**Logan Glacier**	**4.53 110**	P	Pn	08 26 02.6	-0.8
COLD	**Coldfoot**	**4.62 358**	P	Pn	08 26 04.8	+0.2
RKAV	**Rock Avalanche**	**4.66 116**	P	Pn	08 26 04.7	-0.4
TABL	**Table Mountain**	**4.66 114**	P	Pn	08 26 04.1	-1.2
KAHC	**Katmai Hardscr**	**4.76 215**	P	Pn	08 26 06.4	0.0
DAWV	**Dawson**	**4.88 65**	P	Pn	08 26 08.2	+0.2
KAWH	**Katmai**	**4.93 213**	P	Pn	08 26 08.8	0.0
KDAK	**Kodiak Island**	**5.06 198**	P	Pn	08 26 08.9	-1.6
KAKN	**Katmai Knife C**	**5.08 214**	P	Pn	08 26 10.4	-0.4
KELA	**Mount Kelaz**	**5.14 218**	P	Pn	08 26 11.4	-0.2
KABR	**Katmai Barrier**	**5.20 212**	P	Pn	08 26 12.1	-0.3
BM3	**Burnt Mountain**	**5.28 22**	P	Pn	08 26 13.5	0.0
OHAK	**Old Harbor**	**5.71 200**	P	Pn	08 26 17.1	-2.2
DHAK	**Deception Hill**	**6.65 117**	P	Pn	08 26 31.7	-0.6
WHY	**Whitehorse**	**7.35 99**	P	Pn	08 26 40.0	-1.8
INK	**Inuvik**	**8.81 43**	*e*Pn	Pn	08 27 02.6	+1.0
	7.6nm,0.8s					
YKA	**Yellowknife Ar**	**16.08 75**	P	Pn	08 28 37.4	-1.3
	0.0nm,0.3s,baz=285,slow=12,SNR=3.4					
TXAR	**Lajitas Array**	**44.59 116**	P	P	08 33 02.7	+0.3
	0.2nm,0.6s,baz=338,slow=6.9,SNR=3.2					

IDC 31 08:38:11.0±1.7, 17°.87S×177°.84W, h0km, mb4.0/4, mb1 4.2/4, mb1mx3.7/42, mbtmp4.0/4, Error ellipse: s-maj=153.9km s-min=29.5km az=156.0, Fiji Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**39.12**	**241**	P	P	08 45 41.1	+0.7
	1.1nm,0.3s,baz=90,slow=11,SNR=8.9						
WRA	**Warramunga Arr**	**45.17**	**259**	P	P	08 46 29.4	-0.5
	0.3nm,0.3s,baz=97,slow=8.1,SNR=20						
ASAR	**Alice Springs**	**45.32**	**254**	P	P	08 46 30.6	-0.5
	1.9nm,0.4s,baz=89,slow=8.8,SNR=56						
TXAR	**Lajitas Array**	**85.52**	**57**	P	P	08 50 51.4	0.0
	0.6nm,0.7s,baz=219,slow=6.6,SNR=6.4						

*ISK **31** 08:38:27.9, 39°.12N×29°.09E, h7km, MD2.2, ML2.2*
*ISCJB **31** 08:38:28.5±0.6, 39°.13N±0°.04×29°.07E±0°.05, h9km±7km, Error ellipse: s-maj=7.4km s-min=4.9km az=139.9*
*DDA **31** 08:38:28.6, 39°.11N×29°.08E, h7km, Md2.5*
*CSEM **31** 08:38:28.5±0.1, 39°.14N×29°.08E, h8km, MD2.5, Error ellipse: s-maj=3.5km s-min=2.4km az=120.0*

ISC 31 08:38:28.2±1.0, 39°.13N±0°.04×29°.10E±0°.04, h15km±9km, n14, σ0°.27/24, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.30**	**98**	P	Pg	08 38 34.6	0.0
GDZ				S	Sb	08 38 40.2	0.0
GDZ	**Gediz**	**0.30**	**98**	*i* P	Pg	08 38 34.6	0.0
GDZ				*i* S	Sb	08 38 40.1	0.0
DEMI	**Demirci**	**0.31**	**254**	P	Pg	08 38 34.9	+0.2
DEMI				S	Sg	08 38 39.0	-0.2
DEMI	**Demirci**	**0.31**	**254**	*i* P	Pg	08 38 34.9	+0.2
DEMI				*i* S	Sg	08 38 39.0	-0.2
TVSB	**Tavsanli**	**0.42**	**41**	*e*PG	Pg	08 38 36.9	+0.1
TVSB				*e*SG	Sb	08 38 43.5	-0.3
TVSB	**Tavsanli**	**0.42**	**41**	*e*Pg	Pg	08 38 36.9	+0.1
TVSB				*e*Sg	Sb	08 38 43.5	-0.3
KULA	**Kula-Manisa**	**0.70**	**209**	*e*PG	Pg	08 38 41.8	-0.2
KULA				*e*SG	Sb	08 38 51.7	0.0
KULA	**Kula-Manisa**	**0.70**	**209**	*e*Pg	Pg	08 38 41.8	-0.2
KULA				*e*Sg	Sb	08 38 51.7	0.0
KHAL	**Karahalli**	**0.82**	**158**	P	Pn	08 38 45.0	-0.3
KHAL				S	Sb	08 38 55.6	+0.5
KHAL	**Karahalli**	**0.82**	**158**	*i* P	Pn	08 38 45.0	-0.3
KHAL				*i* S	Sb	08 38 55.6	+0.5
CAVI	**Cavuskoy**	**1.22**	**28**	*e*Pn	Pg	08 38 51.7	0.0
CAVI	**Cavuskoy**	**1.22**	**28**	*e*Pn	Pg	08 38 51.7	0.0
ARMT	**Armutlu**	**1.45**	**353**	*e*PN	Pb	08 38 55.2	+0.4
ARMT	**Armutlu**	**1.45**	**353**	*e*Pn	Pb	08 38 55.2	+0.4

*IDC **31** 08:43:47.3±2.2, 8°.31N×123°.13E, h0km, mb3.6/4, mb1 3.8/4, mb1mx3.5/42, mbtmp3.6/4, MS2.8/3, Ms1 2.8/3, ms1mx2.4/37, Error ellipse: s-maj=110.9km s-min=22.8km az=55.0*
*ISCJB **31** 08:43:48.2±1.8, 8°.43N±0°.06×123°.14E±0°.07, h15km±14km, mb3.5/4, MS2.6/3, Error ellipse: s-maj=13.7km s-min=7.1km az=148.1*

ISC 31 08:43:48.0±1.6, 8°.41N±0°.05×123°.22E±0°.08, h6km±11km, n13, σ1°.60/14, mb3.5/4, MS2.7/3, 5C-1D, Mindanao

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SNPH	**Sibulan**	**0.93**	**1**	*i* P	Pg	08 44 04.5	-1.5
SNPH				*i* S	Sg	08 44 16.9	-1.1
TBP	**Tagbilaran**	**1.43**	**26**	*i* P	Pg	08 44 19.7	+4.3
TBP				*i* S	Sg	08 44 38.3	+4.3
CGP	**Cagayan de Oro**	**1.46**	**88**	*e*P	Pn	08 44 15.1	+0.1
CGP				*e*S	Sg	08 44 34.8	-0.3
CTBH	**Cotabato--PC H**	**1.56**	**139**	*i* P	Pg	08 44 17.7	-0.2
CTBH				*i* S	Sg	08 44 38.7	+0.6
LLP	**Lapu-Lapu**	**2.04**	**21**	*e*P	Pn	08 44 22.7	-0.2
LLP				*e*S	Sn	08 44 48.2	-0.5
JAP	**San Jose, Anti**	**2.64**	**332**	*e*P	Pn	08 44 32.7	+1.5
PSI	**Prapat**	**24.80**	**258**	LR	LR	09 01 38.0	
	comp=Z,27nm,20.5s,baz=18,slow=43						
JNU	**Nakatsue**	**25.60**	**15**	LR	LR	09 00 20.9	
	comp=Z,16nm,18.7s,baz=113,slow=39						
CMAR	**Chiang Mai Arr**	**25.60**	**295**	P	P	08 49 18.6	+0.2
	1.0nm,0.3s,baz=123,slow=9.8,SNR=5.6						
KSRS	**Korea Array**	**29.23**	**8**	LR	LR	09 01 40.8	
	comp=Z,16nm,18.8s,baz=163,slow=37						
WRA	**Warramunga Arr**	**30.22**	**159**	P	P	08 49 59.2	-0.5
	0.5nm,0.9s,baz=336,slow=12,SNR=3.2						
ASAR	**Alice Springs**	**33.54**	**162**	P	P	08 50 28.6	-0.2
	0.3nm,0.8s,baz=341,slow=7.3,SNR=3.0						
MKAR	**Makanchi Array**	**51.75**	**325**	P	P	08 52 56.4	0.0
	0.5nm,0.6s,baz=134,slow=8.7,SNR=3.7						

*NEIC **31** 08:45:38.1, 15°.02N×97°.41W, h16km, mb4.1/30, MD4.2(MEX), After MEX.*
*MEX **31** 08:45:38.1±0.7, 15°.02N×97°.41W, h16km±16km, MD4.2*
*IDC **31** 08:45:39.6±2.8, 15°.54N×97°.26W, h0km, mb3.9/5, mb1 4.1/7, mb1mx3.8/38, mbtmp3.9/7, ML3.5/2, MS3.4/10, Ms1 3.4/10, ms1mx3.1/34, Error ellipse: s-maj=61.0km s-min=27.3km az=31.0*
*ISCJB **31** 08:45:40.2±1.5, 15°.55N±0°.08×97°.17W±0°.04, h3km±9km, mb4.0/22, MS3.3/9, Error ellipse: s-maj=14.4km s-min=4.7km az=16.9*

ISC 31 08:45:41.2±2.0, 15°.35N±0°.09×97°.20W±0°.05, h16km±10km, n168, σ1°.50/170, mb4.1/23, MS3.4/9, Near coast of Oaxaca

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PANG	**Puerto Angel**	**0.77**	**66**	*e*P	Pg	08 45 54.9	-1.4
PANG				*i* S	Sg	08 46 08.3	+1.8
HUIG	**Huatulco**	**1.13**	**68**	*i* P	Pn	08 45 59.9	-2.6
HUIG				*e*S	Sb	08 46 17.5	+0.4
HUIG	**Huatulco**	**1.13**	**68**	*i* P	Pn	08 45 59.9	-2.6
HUIG				*e*S	Sb	08 46 17.5	+0.4
PNIG	**Pinotepa**	**1.36**	**319**	*i* P	Pn	08 46 01.0	-4.7
PNIG				*i* S	Sn	08 46 18.9	-4.6
PNIG	**Pinotepa**	**1.36**	**319**	*i* P	Pn	08 46 01.0	-4.7
PNIG				*i* S	Sn	08 46 18.9	-4.6
VHO	**Vista Hermosa**	**1.77**	**15**	*e*P	Pn	08 46 10.6	-0.9
VHO				*i* S	Sn	08 46 35.4	+1.7
VHO	**Vista Hermosa**	**1.77**	**15**	*e*P	Pn	08 46 10.6	-0.9
VHO				*i* S	Sn	08 46 35.4	+1.7
TLIG	**Tlapa**	**2.56**	**329**	*e*P	Pn	08 46 19.7	-2.5
TLIG				*i* S	Sn	08 46 51.2	-2.0
TLIG	**Tlapa**	**2.56**	**329**	*e*Pn	Pn	08 46 20.4	-1.9
TLIG				*e*Sn	Sn	08 46 50.2	-2.9
PCIG		**3.86**	**84**	*i* P	Pn	08 46 38.3	-1.7
PCIG				*e*S	Sn	08 47 24.7	-0.2
PCIG		**3.86**	**84**	*i* P	Pn	08 46 38.3	-1.7
PCIG				*e*S	Sn	08 47 24.7	-0.2
CCIG	**Comitan**	**4.96**	**79**	*e*Pn	Pn	08 46 55.6	+0.3
CCIG				*e*Sn	Sn	08 47 56.0	+3.4
MOIG	**Morelia**	**5.74**	**319**	*e*Pn	Pn	08 47 06.3	+0.2
ZAIG	**Zacatecas**	**8.95**	**326**	*e*Pn	Pn	08 47 51.9	+1.7
TEIG	**Tepich**	**9.79**	**59**	Pn	Pn	08 47 59.1	-2.3
	1.3nm,0.3s,baz=89,slow=24,SNR=22						
TEIG				Sn	Sn	08 49 47.8	-3.3
	2.8nm,0.3s,baz=61,slow=23,SNR=8.9						
TEIG	**Tepich**	**9.79**	**59**	*e*Pn	Pn	08 48 00.6	-0.8
TEIG				Sn	Sn	08 49 47.8	-3.3
HPIG		**13.96**	**327**	*e*Pn	Pn	08 48 59.9	+1.2
SLBS	**Sierra La Lagu**	**14.59**	**307**	*e*Pn	Pn	08 49 09.3	+2.1
TXAR	**Lajitas Array**	**15.14**	**338**	Pn	Pn	08 49 14.3	-0.3
	0.0nm,0.3s,baz=151,slow=16,SNR=8.2						
TXAR				LR	LR	08 55 33.7	
	comp=Z,194nm,18.4s,baz=0.0,slow=40						
TX31	**Lajitas Ar. Si**	**15.14**	**338**	*e*Pn	Pn	08 49 17.5	+2.8
JCT	**Junction City**	**15.25**	**351**	*e*Pn	P	08 49 22.6	+1.8
	8.5nm,1.3s						
333A	**Richland Sprin**	**15.98**	**354**	P	Pn	08 49 24.6	-1.0
	baz=175						
WHTX	**Lake Whitney,**	**16.57**	**359**	P	Pn	08 49 34.2	+1.2
	baz=180						
234A	**Clairette**	**16.60**	**357**	P	Pn	08 49 32.7	-0.7
	baz=178						
233A	**Rising Star**	**16.66**	**355**	P	Pn	08 49 33.9	-0.3
	baz=175,SNR=10.0						
238A	**Jacksonville**	**16.69**	**6**	P	Pn	08 49 34.7	+0.2
	baz=188						
134A	**White-Moore Ra**	**17.16**	**357**	P	Pn	08 49 40.9	+0.4
	baz=178						
133A	**Hamilton Ranch**	**17.25**	**355**	P	Pn	08 49 41.7	+0.2
	baz=175,SNR=6.0						
ABTX	**Abilene, Hawle**	**17.34**	**353**	P	Pn	08 49 43.4	+0.7
	baz=173						
ABTX	**Abilene, Hawle**	**17.34**	**353**	*e*Pn	P	08 49 46.1	+2.1
	17nm,0.9s						
Z36A	**Blue Ridge**	**17.86**	**2**	P	Pn	08 49 49.5	+0.4
	baz=183						
MNTX	**Cornudas Mount**	**17.91**	**337**	P	Pn	08 49 49.3	-0.4
	baz=155						
MNTX	**Cornudas Mount**	**17.91**	**337**	*e*Pn	Pn	08 49 50.2	+0.5
	4.2nm,1.1s						
Z33A	**Whitaker Ranch**	**17.91**	**356**	P	Pn	08 49 50.0	+0.2
	baz=176						
Y33A	**Hilltop Ranch,**	**18.62**	**356**	P	P	08 49 58.6	+0.5
	baz=176						
Y38A	**Idabel**	**18.63**	**6**	P	P	08 49 58.4	+0.2
	baz=188						
X35A	**Drake**	**18.97**	**1**	P	P	08 50 01.8	-0.2
	baz=181						
X32A	**Elmer**	**19.08**	**355**	P	P	08 50 03.3	+0.1
	baz=175						
X33A	**Lawton**	**19.14**	**357**	P	P	08 50 03.5	-0.4
	baz=177						
Z45A	**Winona**	**19.19**	**19**	P	P	08 50 04.5	+0.2
	baz=203						
MSTX	**Muleshoe**	**19.21**	**346**	P	P	08 50 05.4	+0.7
	baz=164,SNR=5.9						
MSTX	**Muleshoe**	**19.21**	**346**	*e*P	P	08 50 06.2	+1.5
	16nm,1.2s						
X38A	**Whitesboro**	**19.36**	**6**	P	P	08 50 06.9	+0.7
	baz=187						
WMOK	**Wichita Mounta**	**19.36**	**356**	P	P	08 50 06.9	+0.7
	baz=176						
MIAR	**Mount Ida**	**19.39**	**9**	P	P	08 50 07.2	+0.7
	baz=191						
MIAR	**Mount Ida**	**19.39**	**9**	*e*P	P	08 50 08.3	+1.8
	8.0nm,1.0s						
319A	**Douglas**	**19.40**	**327**	*e*P	Pn	08 50 09.5	+1.5
	11nm,1.3s						
Z47A	**Carrollton**	**19.61**	**23**	P	P	08 50 10.6	+1.7
	baz=207						
121A	**Cookes Peak, D**	**19.63**	**332**	P	Pn	08 50 12.2	+1.5
	baz=149,SNR=7.3						
121A	**Cookes Peak, D**	**19.63**	**332**	*e*P	Pn	08 50 11.9	+1.2
	8.2nm,0.9s						
Y45A	**Yeager Farm, C**	**19.69**	**19**	P	P	08 50 11.1	+1.3
	baz=203						
W35A	**Tecumseh**	**19.72**	**1**	P	P	08 50 11.0	+0.8
	baz=182						
W32A	**Sentinel**	**19.78**	**355**	P	P	08 50 10.0	-0.8
	baz=175						
W34A	**Bridge Creek,**	**19.81**	**359**	P	P	08 50 12.0	+0.9
	baz=179						
W34A	**Bridge Creek,**	**19.81**	**359**	*e*P	P	08 50 12.7	+1.6
	20nm,1.3s						
AMTX	**Amarillo**	**19.86**	**349**	P	P	08 50 13.2	+1.4
	baz=168						
AMTX	**Amarillo**	**19.86**	**349**	*e*P	P	08 50 13.8	+2.0
	9.7nm,0.9s						
X43A	**Marvell**	**19.92**	**15**	P	P	08 50 13.2	+0.9
	baz=198						
Y46A	**Houston**	**19.93**	**21**	P	P	08 50 12.3	-0.2
	baz=204						
W39A	**Magazine**	**20.00**	**8**	P	P	08 50 13.8	+0.7
	baz=190						
W40A	**Ferguson Farm,**	**20.10**	**10**	P	P	08 50 15.2	+0.9
	baz=192						
W41B	**Gary Mavity, V**	**20.23**	**12**	P	P	08 50 17.6	+1.9
	baz=194						
TIGA	**Tifton**	**20.28**	**35**	P	P	08 50 16.9	+0.7
	baz=221						
Y47A	**UCPARC, Winfie**	**20.31**	**23**	P	P	08 50 17.5	+0.9
	baz=207						
V35A	**Meyer Ranch, C**	**20.33**	**1**	P	P	08 50 17.6	+0.8
	baz=182						
V32A	**Arapaho**	**20.35**	**356**	P	P	08 50 17.5	+0.4
	baz=176						
V36A	**Jenks**	**20.38**	**3**	P	P	08 50 18.4	+1.1
	baz=184						
V34A	**Guthrie**	**20.40**	**359**	P	P	08 50 18.0	+0.4
	baz=180						
TUL1	**Leonard**	**20.51**	**3**	P	P	08 50 19.3	+0.5
	baz=184						
TUL1	**Leonard**	**20.51**	**3**	*e*P	P	08 50 20.7	+1.9
	9.2nm,1.0s						
V37A	**Hulbert**	**20.53**	**5**	P	P	08 50 19.1	+0.1
	baz=186						
BNM	**Barren Site**	**20.56**	**337**	*e*P	Pn	08 50 22.0	+0.2
V38A	**Canehill**	**20.58**	**6**	P	P	08 50 20.1	+0.6
	baz=188						
V39A	**Pettigrew**	**20.65**	**8**	P	P	08 50 21.4	+1.1
	baz=190						
LPM	**Los Pinos Moun**	**20.71**	**337**	*e*P	Pn	08 50 23.7	+0.3
V40A	**Witts Springs**	**20.74**	**10**	P	P	08 50 23.0	+1.7
	baz=192						
V41A	**Mountainview**	**20.85**	**12**	P	P	08 50 23.7	+1.3
	baz=194						
TUC	**Tucson**	**20.92**	**326**	P	P	08 50 24.4	+1.0
	baz=142						
TUC	**Tucson**	**20.92**	**326**	*e*P	Pn	08 50 25.7	-0.2
	4.6nm,1.0s						
U35A	**Pawnee**	**20.94**	**1**	P	P	08 50 23.6	+0.2
	baz=182						
LAZ	**Ladron**	**20.98**	**337**	*e*P	P	08 50 24.1	+0.1
W45A	**Hickory Valley**	**21.00**	**19**	P	P	08 50 26.1	+2.1
	baz=202						
U34A	**Anderson Ranch**	**21.00**	**359**	*e*P	P	08 50 26.2	+2.1
	8.4nm,0.8s						
U32A	**Winter Ranch,**	**21.00**	**356**	P	P	08 50 25.1	+0.9
	baz=176						
U33A	**Lingo Farm, Me**	**21.01**	**358**	P	P	08 50 25.3	+1.1
	baz=178						
V42A	**Cord**	**21.02**	**13**	P	P	08 50 25.2	+0.9
	baz=196						
U37A	**Salina**	**21.05**	**5**	P	P	08 50 25.4	+0.8
	baz=186						
PLAL	**Pickwick Lake**	**21.20**	**21**	*e*P	P	08 50 26.7	+0.5
	4.7nm,1.1s						
U39A	**Green Forest**	**21.21**	**8**	P	P	08 50 26.3	0.0
	baz=190,SNR=5.1						
ANMO	**Albuquerque**	**21.21**	**339**	P	P	08 50 27.1	+0.6
	3.4nm,1.0s,baz=149,slow=13,SNR=14						
ANMO				LR	LR	08 59 02.2	
	comp=Z,156nm,19.3s,baz=163,slow=38						
ANMO	**Albuquerque**	**21.21**	**339**	P	P	08 50 28.7	+2.1
	baz=156						
ANMO	**Albuquerque**	**21.21**	**339**	*e*P	P	08 50 29.1	+2.6
	5.2nm,1.0s						
U40A	**Yellville**	**21.28**	**10**	P	P	08 50 27.3	+0.3
	baz=192						
T35A	**Sooner Cattle**	**21.49**	**2**	P	P	08 50 30.3	+1.0
	baz=182,SNR=5.4						
T36A	**Boggs Farm, Ca**	**21.66**	**3**	P	P	08 50 30.6	-0.5
	baz=184,SNR=7.5						
T38A	**Diamond**	**21.75**	**6**	P	P	08 50 33.0	+0.9
	baz=188						
T37A	**Cheneyville 18**	**21.78**	**5**	P	P	08 50 33.4	+1.0
	baz=186						
T32A	**Huddler Ranch,**	**21.80**	**356**	P	P	08 50 32.7	+0.1
	baz=176				

P38A	Dawn	24.40	7	P		P	08 50 58.5	-0.4
	baz=189							
O33A	Hebron	24.64	359	P		P	08 51 02.2	+1.1
	baz=180							
WCI	Wyandotte Cave	24.74	21	eP		P	08 51 03.8	+1.7
	12nm,1.0s							
O34A	Beatrice	24.75	1	P		P	08 51 03.1	+1.0
	baz=182							
IRM	Iron Mountain	24.75	322	P		P	08 51 01.9	-0.3
	baz=136							
PV01	Paradox Valley	24.82	338	eP		P	08 51 04.6	+1.6
O38A	Galt	24.89	7	P		P	08 51 03.4	0.0
	baz=189							
U15A	North Rim	24.93	330	eP		P	08 51 05.5	+1.4
	14nm,1.7s							
O40A	La Belle	25.11	10	P		P	08 51 04.9	-0.5
	baz=192							
SMCO	Snowmass	25.24	342	eP		P	08 51 10.3	+3.3
	5.5nm,1.4s							
N33A	J Bar K, Exete	25.30	360	P		P	08 51 09.1	+2.1
	baz=180							
N34A	Lincoln	25.40	1	P		P	08 51 10.1	+2.1
	baz=182							
ISCO	Idaho Springs	25.45	345	P		P	08 51 09.7	+0.9
	baz=162							
ISCO	Idaho Springs	25.45	345	eP		P	08 51 12.7	+3.9
	5.2nm,1.2s							
N35A	Tabor	25.45	3	P		P	08 51 10.1	+1.7
	baz=184							
N38A	Joes South For	25.58	7	P		P	08 51 10.4	+0.7
	baz=189							
BBRC	Big Bear Solar	25.89	320	P		P	08 51 11.9	-0.9
	baz=133							
M37A	Trindle Farm,	26.10	5	P		P	08 51 16.4	+2.0
	baz=187							
MTPU	Mount Pierson	26.19	332	eP		P	08 51 17.1	+1.4
	5.9nm,1.3s							
O20A	White River Ci	26.51	341	P		P	08 51 19.0	+0.8
	baz=156							
SDV	Santo Domingo	26.74	101	P		P	08 51 23.0	+2.3
	4.7nm,0.3s,baz=338,slow=11,SNR=3.1							
PHWY	Pilot Hill	26.83	346	eP		P	08 51 20.8	-0.5
	5.2nm,0.7s							
L37A	Phoenix Point,	26.85	6	P		P	08 51 23.2	+2.2
	baz=188							
K30A	Basset	27.31	356	P		P	08 51 28.4	+3.2
	baz=175							
ATAH	Atahualpa	29.09	139	LR		LR	09 00 03.1	
	comp=Z,95nm,19.2s,slow=30							
PDAR	Pinedale Array	29.31	341	LR		LR	09 04 43.8	
	comp=Z,92nm,20.5s,baz=164,slow=39							
NVAR	Mina Array Bea	29.57	325	LR		LR	09 04 30.3	
	comp=Z,44nm,18.3s,baz=216,slow=39							
ULM	Lac du Bonnet	34.83	1	LR		LR	09 06 12.2	
	comp=Z,66nm,19.3s,baz=218,slow=36							
LPAZ	La Paz	42.57	136	LR		LR	09 08 51.9	
	comp=Z,67nm,20.1s,baz=274,slow=33							
YKA	Yellowknife Ar	48.67	349	P		P	08 54 22.2	-2.1
	0.7nm,0.8s,baz=159,slow=7.7,SNR=5.2							
YKA				LR		LR	09 15 58.9	
	comp=Z,6.2nm,20.8s,baz=180,slow=38							
CPUP	Villa Florida	56.74	137	LR		LR	09 17 54.8	
	comp=Z,43nm,19.2s,baz=126,slow=34							
ILAR	Eielson Array	59.65	338	P		P	08 55 43.6	-0.9
	1.3nm,1.1s,baz=134,slow=3.8,SNR=8.0							
PLCA	Paso Flores	61.04	157	LR		LR	09 16 10.0	
	comp=Z,40nm,20.6s,baz=340,slow=30							

*NAO **31** 09:03:47.8±1.1,59°.30N×26°.95E,ML2.4*
*ISCJB **31** 09:03:47.3±0.7,59°.30N±0°.03×27°.12E±0°.08, h0km, Error ellipse: s-maj=6.0km s-min=4.2km az=18.1*
*CSEM **31** 09:03:48.4±0.5,59°.31N×27°.07E, h2km, ML1.9, Error ellipse: s-maj=10.3km s-min=7.2km az=109.0, Mining explosion.*
*BER **31** 09:03:48.6±1.9,59°.33N×27°.03E, h0km, ML2.4(NAO), Suspected explosion*
*HEL **31** 09:03:49.1±0.2,59°.30N×27°.10E, h0km, ML1.9, Explosion*
*IDC **31** 09:03:50.2±2.2,59°.48N×27°.37E, h0km, mb1 3.1/3, mb1mx2.9/29, mbtmp2.9/3, ML2.7/3, Error ellipse: s-maj=24.6km s-min=13.8km az=97.0*
ISC 31 09:03:48.2±0.9, 59°.33N±0°.03×27°.11E±0°.04, h0km, n38, σ1§37/52, Baltic States-Belarus-Northwestern Russia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ARBE	Arbavere	0.59	281	P	Pg	09 03 59.7	+0.3
ARBE				S	Sg	09 04 07.2	+0.2
VSU	Vasula	0.89	193	Pg	Pg	09 04 04.7	-0.5
VSU				Lg	Lg	09 04 15.6	
VSU	Vasula	0.89	193	Pg	Pg	09 04 04.7	-0.5
VSU				Lg	Lg	09 04 15.6	
VSU	Vasula	0.89	193	Pg	Pg	09 04 04.7	-0.5
	SNR=90						
VSU				S	Sg	09 04 15.5	-1.2
VJF	Virojoki	1.23	10	eP	Pg	09 04 10.9	-1.0
VJF				eS	Sg	09 04 27.8	0.0
VJF	Virojoki	1.23	10	P	Pg	09 04 10.8	-1.0
VJF				S	Sg	09 04 27.8	0.0
PVF	Pernaja	1.37	333	eP	Pg	09 04 13.5	-1.0
PVF				MSG		09 04 30.8	
	comp=Z,15nm,0.2s						
PVF				eSN	Sn	09 04 35.9	+2.5
PVF	Pernaja	1.37	333	P	Pg	09 04 13.4	-1.0
PVF				Sn	Sn	09 04 35.9	+2.5
MEF	Metsahovi	1.64	304	ePG	Pn	09 04 18.5	+0.3
MEF				eSN	Sb	09 04 40.5	+0.1
MEF	Metsahovi	1.64	304	Pg	Pn	09 04 18.5	+0.3
MEF	Metsahovi	1.64	304	eP	Pb	09 04 18.8	-0.4
	SNR=90						
MEF				eS	Sn	09 04 38.5	-1.4
	comp=Z,19nm,0.7s,SNR=90						
MEF				Sn	Sb	09 04 40.5	+0.1
FIA0	FINESS Array S	2.18	347	Pn	Pn	09 04 25.8	+0.1
	baz=164,slow=18						
FIA0				Lg	Lg	09 04 56.8	
	baz=167,slow=37						
FIA0				Rg	Rg	09 05 09.1	
	baz=163,slow=37						
FIA0	FINESS Array S	2.18	347	Pn	Pn	09 04 25.8	+0.1
	baz=164,slow=18						
FIA0				Lg	Lg	09 04 56.8	
	baz=167,slow=37						
FIA0				Rg	Rg	09 05 09.1	
	baz=163,slow=37						
FIA0	FINESS Array S	2.18	347	eP	Pn	09 04 26.4	+0.7
FIA0				eSG	Sb	09 04 56.8	+0.7
FIA0	FINESS Array S	2.18	347	Pn	Pn	09 04 25.8	+0.1
	SNR=50						
FIA0	FINESS Array S	2.18	347	P	Pn	09 04 26.4	+0.7
FIA0				Sg	Sb	09 04 56.8	+0.7
FINES	FINESS Array B	2.18	347	Pn	Pn	09 04 26.0	+0.3
	comp=Z,1.1nm,0.3s,baz=165,slow=15,SNR=24						
FINES				Lg	Lg	09 04 56.1	
	comp=Z,3.4nm,0.3s,baz=166,slow=26,SNR=23						
FINES				Rg	Rg	09 05 07.8	
	comp=Z,50nm,1.1s,baz=165,slow=30,SNR=15						
KAF	Kangasniemi	2.82	352	eP	Pn	09 04 35.6	+1.1
KAF				eS	Sn	09 05 09.4	+0.3
KAF				MSG		09 05 12.2	
	comp=Z,3.0nm,0.2s						
KAF	Kangasniemi	2.82	352	P	Pn	09 04 35.6	+1.1
KAF				S	Sn	09 05 09.4	+0.3
KEF	Keuruu	3.05	340	MSG		09 05 19.2	
	comp=Z,2.0nm,0.2s						
KEF				eSG	Sb	09 05 22.7	+1.6
RAF	Rauma	3.17	305	eP	Pn	09 04 41.0	+1.8
RAF				MSG		09 05 22.6	
	comp=Z,3.5nm,0.2s						
RAF	Rauma	3.17	305	P	Pn	09 04 41.0	+1.8
SUF	Sumiainen	3.44	353	eP	Pn	09 04 44.8	+1.9
SUF				eSB	Sb	09 05 33.2	+1.2
SUF	Sumiainen	3.44	353	P	Pn	09 04 44.8	+1.9
AAL	Aland	3.70	286	e	Sg	09 05 47.6	+0.7
JOF	Joensuu	4.14	28	eP	Pn	09 04 54.4	+1.8
JOF				eS	Sn	09 05 42.4	+0.8
JOF	Joensuu	4.14	28	P	Pn	09 04 54.3	+1.8
JOF				S	Sn	09 05 42.4	+0.8
VAF	Ylistaro	4.30	332	eSG	Sg	09 06 02.4	-3.8
HFS	Hagfors	6.83	283	Lg	Lg	09 07 17.6	
	baz=93,slow=37						
HFS	Hagfors	6.83	283	Lg	Lg	09 07 17.6	
	baz=93,slow=37						
NB2	NORSAR Subarra	8.11	289	Pn	Pn	09 05 45.3	-1.7
NB2	NORSAR Subarra	8.11	289	Pn	Pn	09 05 45.3	-1.7
	SNR=50						
NOA	NORSAR Array B	8.11	289	Pn	Pn	09 05 47.1	+0.1
	comp=Z,0.1nm,0.3s,baz=81,slow=13,SNR=2.9						
ARA0	ARCESS Array S	10.27	357	Pn	Pn	09 06 14.9	-1.7
	baz=174,slow=14						
ARA0				Sn	Sn	09 08 02.6	-10
	baz=175,slow=28						
ARA0	ARCESS Array S	10.27	357	Pn	Pn	09 06 14.9	-1.7
	baz=174,slow=14						
ARA0				Sn	Sn	09 08 02.6	-10
	baz=175,slow=28						
ARA0	ARCESS Array S	10.27	357	Pn	Pn	09 06 14.9	-1.7
	SNR=50						
ARCES	ARCESS Array B	10.27	357	Pn	Pn	09 06 14.1	-2.5
	comp=Z,0.2nm,0.3s,baz=173,slow=14,SNR=5.3						
ARCES				Lg	Lg	09 09 04.2	
	comp=Z,0.4nm,0.3s,baz=178,slow=31,SNR=5.8						

*ISCJB **31** 09:13:18.8±0.5,58°.99N±0°.04×18°.25E±0°.07, h0km, Error ellipse: s-maj=6.2km s-min=4.1km az=143.3*
*CSEM **31** 09:13:19.6±0.3,58°.99N×18°.21E, h2km, ML1.7, Error ellipse: s-maj=7.8km s-min=5.2km az=119.0, Mining explosion.*
*UPP **31** 09:13:19.4±0.1,58°.99N×18°.20E, h0km, ML1.7, Explosion*
*IDC **31** 09:13:23.1±1.9,59°.24N×18°.05E, h0km, mb1 2.8/4, mb1mx2.8/58, mbtmp2.7/4, ML2.0/4, Error ellipse: s-maj=24.0km s-min=6.9km az=179.0*
ISC 31 09:13:18.7±0.8, 58°.98N±0°.03×18°.12E±0°.04, h0km, n35, σ0§72/40, Baltic Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NRTU	Norrtaelje	0.75	20	P	Pg	09 13 33.1	+0.1
NRTU				S	Sg	09 13 42.6	-0.1
NRTU	Norrtaelje	0.75	20	P	Pg	09 13 33.1	+0.1
NRTU				S	Sg	09 13 42.6	-0.1
VIKU	Vikbolandet	0.88	238	P	Pb	09 13 36.7	-0.1
VIKU	Vikbolandet	0.88	238	P	Pb	09 13 36.7	-0.1
ESKU	Eskilstuna	0.93	287	P	Pb	09 13 37.3	-0.3
ESKU	Eskilstuna	0.93	287	P	Pb	09 13 37.3	-0.3
FIBU	Brunna	1.01	337	P	Pg	09 13 38.3	+0.3
BACU	Backbrunna	1.02	330	P	Pb	09 13 38.7	-0.5
BACU	Backbrunna	1.02	330	P	Pb	09 13 38.7	-0.5
FLYU	Flymyra	1.16	354	P	Pg	09 13 40.9	0.0
FLYU	Flymyra	1.16	354	P	Pg	09 13 40.9	0.0
GOTU	Gotland	1.32	169	P	Pg	09 13 43.6	-0.3
GOTU	Gotland	1.32	169	P	Pg	09 13 43.6	-0.3
OSTU	Oestervaala	1.35	339	P	Pg	09 13 44.6	0.0
OSTU	Oestervaala	1.35	339	P	Pg	09 13 44.6	0.0
GRAU	Graesoe	1.38	9	P	Pg	09 13 44.8	-0.3
GRAU	Graesoe	1.38	9	P	Pg	09 13 44.8	-0.3
FORU	Forsmark	1.41	1	P	Pn	09 13 45.4	-0.2
FORU	Forsmark	1.41	1	P	Pn	09 13 45.4	-0.2
AAL	Aland	1.54	38	P	Pn	09 13 47.1	-0.2
AAL	Aland	1.54	38	P	Pn	09 13 47.1	-0.2
LNKU	Linkoeping	1.56	242	P	Pg	09 13 48.9	+0.2
LNKU	Linkoeping	1.56	242	P	Pg	09 13 48.9	+0.2
ASKU	Askersund	1.71	269	P	Pg	09 13 51.3	-0.1
ASKU	Askersund	1.71	269	P	Pg	09 13 51.3	-0.1
ASPU	Aespoe	1.76	208	P	Pg	09 13 52.2	-0.1
ASPU	Aespoe	1.76	208	P	Pg	09 13 52.2	-0.1
HFC2	Hagfors New Ar	2.53	299	eP	Pb	09 14 04.1	-0.9
	SNR=50						
HFC2				eS	Sb	09 14 36.7	0.0
	SNR=50						
HFS	Hagfors	2.53	299	Pn	Pb	09 14 03.5	-1.5
	0.2nm,0.3s,baz=109,slow=18,SNR=22						
HFS				Lg	Lg	09 14 36.5	
	1.0nm,0.3s,baz=111,slow=28,SNR=22						
HFA0	Hagfors New Ar	2.54	299	eP	Pb	09 14 04.1	-1.0
	SNR=50						
RAF	Rauma	2.75	40	eP	Pn	09 14 05.3	+1.3
	SNR=50						
RAF				eS	Sn	09 14 39.8	+2.0
	4.2nm,0.2s,SNR=50						
MEF	Metsahovi	3.42	66	eS	Sn	09 14 54.4	-0.1
	2.5nm,0.3s,SNR=50						
NOA	NORSAR Array B	4.04	304	Pn	Pn	09 14 21.9	+0.1
	0.1nm,0.3s,baz=113,slow=15,SNR=5.4						
NOA				Lg	Lg	09 15 26.1	
	0.4nm,0.3s,baz=185,slow=2.5,SNR=5.1						
FINES	FINESS Array B	4.68	55	Pn	Pn	09 14 32.7	+2.3
	0.1nm,0.3s,baz=244,slow=13,SNR=7.4						
FINES				Sn	Sn	09 15 25.1	-0.2
	0.2nm,0.3s,baz=238,slow=21,SNR=5.4						
FINES				Lg	Lg	09 15 44.4	
	0.4nm,0.3s,baz=248,slow=23,SNR=6.4						
ARCES	ARCESS Array B	11.06	14	Pn	Pn	09 15 56.2	-1.7
	0.1nm,0.3s,baz=188,slow=13,SNR=5.9						

*ISCJB **31** 09:23:25.8±0.2,6°.04S±0°.03×127°.69E±0°.04, h400km, mb4.1/23, Error ellipse: s-maj=6.2km s-min=3.6km az=161.0*
*IDC **31** 09:23:27.1±1.6,6°.05S×127°.63E, h399km±19km, mb3.9/13, mb1 4.0/17, mb1mx3.7/49, mbtmp4.8/17, Error ellipse: s-maj=19.2km s-min=10.4km az=74.0*
*NEIC **31** 09:23:27.6±0.3,6°.06S×127°.69E, h406km±4km, mb4.4/14, Error ellipse: s-maj=6.7km s-min=4.7km az=64.0*
ISC 31 09:23:26.8±0.4, 6°.07S±0°.05×127°.73E±0°.06, h400km, n63, σ1§19/76, mb4.1/23, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SAUI	Saumlaki	4.02	118	ePn	Pn	09 24 41.2	+2.1
SAUI				eS	S	09 25 36.9	-0.7
SOEI	Soe	5.01	223	ePn	Pn	09 24 50.5	+1.4
SOEI				eS	S	09 25 52.8	-3.1
FAKI	Fak Fak	5.49	55	ePn	Pn	09 24 54.3	+0.4
FAKI				eS	S	09 25 59.7	-5.1
MMRI	Maumere	6.01	245	ePn	Pn	09 24 59.8	+0.2
SIJI	Sorong	6.26	34	P	Pn	09 25 03.0	+0.7
	13nm,0.3s,baz=90,slow=23,SNR=13						
SIJI				S	S	09 26 18.2	-1.9
	18nm,0.3s,baz=265,slow=23,SNR=5.6						
MTN	Manton Dam	7.52	154	ePn	P	09 25 18.0	+1.2
MTN				eS	S	09 26 42.6	-3.3
FITZ	Fitzroy Crossi	12.13	190	P	Pn	09 26 09.2	-0.2
	2.7nm,0.3s,baz=21,slow=10,SNR=62						
WRAB	Tennant Creek	15.20	156	eP	P	09 26 42.5	+1.0
	36nm,0.8s						
WRAB				eS	S	09 29 21.1	-1.7
WRA	Warramunga Arr	15.21	156	P	P	09 26 42.3	+0.7
	12nm,0.3s,baz=333,slow=11,SNR=900						
WRA				S	S	09 29 20.8	-2.1
	1.4nm,0.3s,baz=332,slow=20,SNR=16						
WR1	Warramunga Arr	15.21	156	eP	P	09 26 42.3	+0.7
	34nm,0.8s						
WR1				eS	S	09 29 20.8	-2.1
WB2	Warramunga Arr	15.21	156	eP	P	09 26 42.6	+1.0
	34nm,0.8s						
MBWA	Marble Bar	16.88	207	eP	P	09 26 59.8	+0.3
	50nm,1.5s						
SBUM	Sibu	17.65	298	eP	P	09 27 09.0	+1.2
	11nm,0.7s						
AS31	Alice Springs	18.47	162	eP	P	09 27 17.1	+0.7
	13nm,0.6s						
AS31				eS	S	09 30 24.6	-1.1
ASAR	Alice Springs	18.47	162	P	P	09 27 17.1	+0.7
	9.9nm,0.3s,baz=345,slow=11,SNR=721						
ASAR				S	S	09 30 24.6	-1.1
	0.7nm,0.3s,baz=347,slow=23,SNR=19						
AS01	Alice Springs	18.48	162	eP	P	09 27 17.0	+0.5
AS01				eS	S	09 30 26.0	+0.1
KSM	Kuching	18.94	293	eP	P	09 27 21.9	+0.6
	10.0nm,0.9s						
STKA	Stephens Creek	28.76	155	P	P	09 28 50.8	+1.1
	7.0nm,0.5s,baz=325,slow=9.3,SNR=28						
STKA	Stephens Creek	28.76	155	eP	P	09 28 50.8	+1.1
	9.8nm,1.9s						
PSI	Prapat	30.09	286	P	P	09 29 00.3	-1.3
	4.9nm,0.3s,baz=108,slow=3.8,SNR=8.5						
PSI	Prapat	30.09	286	eP	P	09 29 00.3	-1.3
	13nm,0.9s						
CMAR	Chiang Mai Arr	37.42	311	P	P	09 30 04.2	+0.3
	3.3nm,0.5s,baz=145,slow=7.5,SNR=8.0						
CMAR				PcP	PcP	09 32 13.6	+0.7
	1.1nm,0.3s,baz=144,slow=2.1,SNR=4.7						
WHN	Wuhan	38.60	341	P	P	09 30 18.5	+5.1
KS15	Wonju Array Si	43.29	0	eP	P	09 30 52.5	+1.5
KSRS	Korea Array	43.30	0	P	P	09 30 51.9	+0.8
	3.3nm,0.8s,baz=178,slow=10.0,SNR=8.9						
CD2	Chengdu	43.34	329	P	P	09 30 52.0	+0.4
CD2				pmax	pmax		
	comp=Z,1.0nm,0.5s						
MJAR	Matsushiro Arr	43.51	12	P	P	09 30 51.8	-1.0
	comp=Z,2.1nm,0.6s,baz=191,slow=9.2,SNR=7.6						
XAN	Xi'an	43.69	337	P	P	09 30 53.0	-1.3
XAN				pP	pP	09 31 00.0	-72
XAN				pmax	pmax		
	comp=Z,12nm,0.8s						
XAN				pmax	pmax		
	comp=Z,55nm,5.1s						
HHC	Hu-ho-hao-te	49.00	344	eP	P	09 31 37.3	+2.3
HHC				pmax	pmax		
	comp=Z,21nm,1.0s						
HHC				pmax	pmax		
	comp=Z,75nm,6.3s						
USRK	Ussuriysk Ar.	50.19	4	P	P	09 31 44.0	+0.4
	comp=Z,5.0nm,0.7s,baz=184,slow=8.6,SNR=10						
GTA	Gaotai	52.10	333	eP	P	09 31 58.5	+0.6
GTA				pP	pP	09 32 03.0	-76
GTA				sP	PcP	09 32 06.0	-58
GTA				pmax	pmax		
	comp=Z,9.0nm,1.1s						
GUN	Gumba	52.66	312	eP	P	09 32 02.1	-0.4
	comp=Z,38nm,0.5s						
KKN	Kakani	53.04	312	eP	P	09 32 04.5	-0.5
	comp=Z,14nm,0.6s						
GKN	Gorkha	53.63	311	eP	P	09 32 08.9	-0.3
	comp=Z,35nm,0.5s						
KOLN	Koldanda	54.29	311	eP	P	09 32 13.8	-0.2
	comp=Z,25nm,0.5s						
PYUN	Piuthan	54.92	311	eP	P	09 32 18.4	-0.1
ULN	Ulaanbaatar	56.72	343	eP	P	09 32 31.3	+0.7
	comp=Z,9.0nm,1.1s						
SONA0	Songino Array	56.88	343	eP	P	09 32 32.0	+0.3
	comp=Z,5.2nm,0.6s						
SONM	Songino Array	56.88	343	P	P	09 32 32.0	+0.3
	comp=Z,2.9nm,0.5s,baz=164,slow=8.4,SNR=18						
SONA1	Songino Array	56.89	343	eP	P	09 32 32.2	+0.4
WMQ	Urumqi	61.41	328	P	P	09 33 03.0	+0.6
WMQ				pmax	pmax		
	comp=Z,7.0nm,1.0s						
WMQ				pmax	pmax		
	comp=Z,55nm,5.0s						
PETK	Petropavlovsk-	64.18	20	P	P	09 33 21.1	+0.9
	comp=Z,4.2nm,0.6s,baz=191,slow=7.0,SNR=6.2						
PEA1	Petropavlovsk-	64.19	20	eP	P	09 33 21.1	+0.9
MK01	Makanchi Array	66.21	328	eP	P	09 33 33.3	0.0
MK31	Makanchi Array	66.23	328	eP	P	09 33 33.6	+0.3
MK32	Makanchi Array	66.23	328	eP	P	09 33 33.6	+0.2
MK32				ePcP	PcP	09 33 59.9	0.0
MKAR	Makanchi Array	66.23	328	P	P	09 33 33.6	+0.2
	comp=Z,9.3nm,0.4s,baz=118,slow=8.3,SNR=94						
MKAR				PcP	PcP	09 33 59.9	0.0
	comp=Z,1.9nm,0.6s,baz=120,slow=4.6,SNR=5.1						
ZAA0	Zalesovo Array	69.77	335	eP	P	09 33 54.5	-0.4
ZALV	Zalesovo Beam	69.77	335	P	P	09 33 54.5	-0.4
	comp=Z,7.3nm,0.5s,baz=129,slow=5.3,SNR=21						
ZAA1	Zalesovo Array	69.78	335	eP	P	09 33 54.5	-0.4
KURBB	Kurchatov Arra	70.56	329	P	P	09 33 59.8	+0.1
	comp=Z,9.4nm,0.6s,baz=130,slow=4.9,SNR=56						
KURK	Kurchatov	70.57	329	eP	P	09 33 59.8	+0.1
	comp=Z,17nm,1.0s						
BVAR	Borovoye Array	76.09	328	P	P	09 34 31.0	-0.6
	comp=Z,1.8nm,0.5s,baz=133,slow=6.5,SNR=7.9						
ZRNK	Zerenda	76.78	328	eP	P	09 34 35.4	0.0
	comp=Z,5.0nm,0.8s						
TIXI	Tiksi	77.57	0	eP	P	09 34 39.0	-0.3
	comp=Z,5.2nm,0.6s						
ABKAR	Akbulak array	80.39	322	eP	P	09 34 54.9	0.0
AKTO	Aktyubinsk	81.97	323	P	P	09 35 03.0	-0.2
	comp=Z,2.3nm,0.6s,baz=116,slow=7.5,SNR=9.6						
LTX	Lajitas	126.37	58	ePKPdf	PKPdf	09 41 43.9	+0.3
TXAR	Lajitas Array	126.37	58	PKP	PKPdf	09 41 43.9	+0.3
	comp=Z,0.1nm,0.5s,baz=204,slow=2.7,SNR=4.0						
TORD	Torodi Ar. Bea	126.42	282	PKP	PKPdf	09 41 43.5	-0.4
	comp=Z,0.7nm,0.6s,baz=99,slow=1.9,SNR=5.3						
TOA1	Torodi Ar. Sit	126.42	282	ePKPdf	PKPdf	09 41 43.5	-0.4
CPUP	Villa Florida	147.42	172	PKPbc	PKPbc	09 42 25.1	+0.1
	comp=Z,1.3nm,0.8s,baz=114,slow=2.0,SNR=4.3						
LPAZ	La Paz	152.79	145	PKPbc	PKPbc	09 42 39.9	+1.0
	comp=Z,0.8nm,0.6s,baz=227,slow=2.7,SNR=6.7						

MEX 31 09:23:28.8±0.7, 13°.42N×91°.51W, h15km, MD3.9, Near coast of Guatemala

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		2.81	324	eP	Pn	09 24 10.8	-2.4
PCIG				eS	Sn	09 24 41.9	-4.9
CCIG	Comitan	2.91	348	eP	Pn	09 24 12.9	-1.8
CCIG				eS	Sn	09 24 46.2	-3.4

*CSEM **31** 09:24:36.8, 39°.68N×29°.48E, h7km, MD2.7*
DDA 31 09:24:36.8, 39°.68N×29°.48E, h7km, Md2.7, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	Gediz	0.59	180	P	Pg	09 24 48.3	+0.1
GDZ				S	Sb	09 24 57.5	-0.7
GDZ	Gediz	0.59	180	i P	Pg	09 24 48.3	+0.1
GDZ				i S	Sb	09 24 57.5	-0.7
BORA	Eskisehir	0.78	75	P	Pg	09 24 51.9	+0.2
BORA	Eskisehir	0.78	75	i P	Pg	09 24 51.9	+0.2
DEMI	Demirci	0.87	223	P	Pg	09 24 53.2	-0.3
DEMI				S	Sn	09 25 10.0	+1.5
DEMI	Demirci	0.87	223	i P	Pg	09 24 53.2	-0.3
DEMI				i S	Sn	09 25 10.0	+1.5
ESKT	Eskisehir	1.07	98	i P	Pg	09 24 57.2	-0.1
ESKT				i S	Sb	09 25 12.0	+0.1
SEYT	Eskypehyr	1.07	98	P	Pg	09 24 57.2	-0.1
SEYT				S	Sb	09 25 12.0	+0.1
BUY	Buyukada	1.20	347	P	Pg	09 24 59.8	0.0
BUY				S	Sn	09 25 17.4	+0.9
BUY	Buyukada	1.20	347	i P	Pg	09 24 59.8	0.0
BUY				i S	Sn	09 25 17.4	+0.9
KHAL	Karahalli	1.31	180	P	Pn	09 24 59.2	-2.4
KHAL	Karahalli	1.31	180	i P	Pn	09 24 59.2	-2.4
BALY	Balya	1.44	273	P	Pn	09 25 03.3	0.0
BALY				S

BORA				S		Sg	09 31 53.7	+1.1
BORA	**Eskisehir**	**1.37**	**55**	*i* P		**Pg**	09 31 34.6	-0.1
BORA				*i* S		**Sg**	09 31 53.7	+1.1
ARMT	**Armutlu**	**1.47**	**356**	*e*PN		**Pb**	09 31 35.5	+0.3
ARMT	**Armutlu**	**1.47**	**356**	*e*Pn		**Pb**	09 31 35.6	+0.3
GULT	**Gulveren**	**1.77**	**41**	*e*PN		**Pb**	09 31 39.9	-0.5
GULT	**Gulveren**	**1.77**	**41**	*e*Pn		**Pb**	09 31 39.9	-0.5

*ISK **31** 09:35:56.2, 38°.93N×29°.35E, h13km, ML2.4*
*DDA **31** 09:35:57.8, 39°.13N×28°.99E, h7km, Md2.5*
*ISCJB **31** 09:35:58.1±0.6, 39°.12N±0°.03×28°.98E±0°.04, h7km±6km, Error ellipse: s-maj=6.2km s-min=4.3km az=147.5*
*CSEM **31** 09:35:58.0±0.2, 39°.15N×28°.96E, h10km, MD2.5, Error ellipse: s-maj=5.7km s-min=3.7km az=141.0*

ISC 31 09:35:57.9±0.9, 39°.13N±0°.03×28°.97E±0°.03, h14km±8km, n20, σ0s47/33, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.21**	**246**	P	**Pb**	**09 36 03.6**	**0.0**
DEMI				S	**Sg**	**09 36 06.6**	**+0.7**
DEMI	**Demirci**	**0.21**	**246**	*i* P	**Pb**	**09 36 03.6**	**0.0**
DEMI				*i* S	**Sg**	**09 36 06.6**	**+0.7**
GDZ	**Gediz**	**0.40**	**96**	P	**Pg**	**09 36 06.2**	**+0.2**
GDZ				S	**Sg**	**09 36 11.6**	**+0.1**
GDZ	**Gediz**	**0.40**	**96**	*i* P	**Pg**	**09 36 06.2**	**+0.2**
GDZ				*i* S	**Sg**	**09 36 11.6**	**+0.1**
TVSB	**Tavsanli**	**0.50**	**50**	*e*PG	**Pg**	**09 36 07.0**	**-0.8**
TVSB	**Tavsanli**	**0.50**	**50**	*e*Pg	**Pg**	**09 36 07.0**	**-0.8**
KULA	**Kula-Manisa**	**0.66**	**201**	*e*PG	**Pg**	**09 36 09.9**	**-0.9**
KULA				*e*SG	**Sg**	**09 36 19.8**	**+0.3**
KULA	**Kula-Manisa**	**0.66**	**201**	*e*Pg	**Pg**	**09 36 09.9**	**-0.9**
KULA				*e*Sg	**Sg**	**09 36 19.8**	**+0.3**
KHAL	**Karahalli**	**0.86**	**151**	P	**Pn**	**09 36 15.9**	**+0.2**
KHAL				S	**Sb**	**09 36 26.2**	**0.0**
KHAL	**Karahalli**	**0.86**	**151**	*i* P	**Pn**	**09 36 15.9**	**+0.2**
KHAL				*i* S	**Sb**	**09 36 26.2**	**0.0**
AKHS	**Akhisar**	**0.93**	**255**	P	**Pn**	**09 36 16.5**	**-0.1**
AKHS				S	**Sg**	**09 36 28.3**	**+0.2**
AKHS	**Akhisar**	**0.93**	**255**	*i* P	**Pn**	**09 36 16.4**	**-0.1**
AKHS				*i* S	**Sg**	**09 36 28.3**	**+0.2**
IGD	**Bursa**	**1.15**	**9**	*i* P	**Pb**	**09 36 19.0**	**-0.5**
IGD				*i* S	**Sn**	**09 36 36.1**	**+1.0**
CAVI	**Cavuskoy**	**1.27**	**32**	*e*PN	**Pn**	**09 36 20.9**	**-0.3**
CAVI	**Cavuskoy**	**1.27**	**32**	*e*Pn	**Pn**	**09 36 20.9**	**-0.3**
BORA	**Eskisehir**	**1.37**	**57**	P	**Pb**	**09 36 23.7**	**+0.3**
BORA				S	**Sg**	**09 36 42.1**	**-0.1**
BORA	**Eskisehir**	**1.37**	**57**	*i* P	**Pb**	**09 36 23.7**	**+0.3**
BORA				*i* S	**Sg**	**09 36 42.1**	**-0.1**
ADVT	**Abdulvahap**	**1.43**	**24**	*e*PN	**Pb**	**09 36 23.9**	**-0.4**
ADVT	**Abdulvahap**	**1.43**	**24**	*e*Pn	**Pb**	**09 36 24.0**	**-0.4**
ARMT	**Armutlu**	**1.44**	**357**	*e*PN	**Pg**	**09 36 25.9**	**+0.4**

IDC 31 09:40:55.4±53.0, 17°.49S×174°.18W, h0km, mb3.7/3, mb1 3.9/3, mb1mx3.5/38, mbtmp3.7/3, Error ellipse: s-maj=1013.0km s-min=181.0km az=80.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**42.38**	**242**	P	P	09 48 52.8	+1.1
	1.8nm,0.8s,baz=100,slow=12,SNR=2.9						
WRA	**Warrarmunga Arr**	**48.67**	**259**	P	P	09 49 41.5	-0.3
	0.5nm,0.5s,baz=97,slow=7.3,SNR=11						
ASAR	**Alice Springs**	**48.78**	**254**	P	P	09 49 41.8	-0.9
	0.4nm,0.5s,baz=94,slow=7.3,SNR=8.4						

IDC 31 09:42:43.1±4.0, 20°.90S×168°.03E, h0km, mb3.8/3, mb1 4.0/3, mb1mx3.6/37, mbtmp3.8/3, MS3.7/1, Ms1 3.7/1, ms1mx2.7/32, Error ellipse: s-maj=121.2km s-min=27.1km az=131.0, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**1.88**	**231**	Pn	Pn	09 43 16.6	0.0
	15nm,0.3s,baz=89,slow=10.0,SNR=210						
DZM				Sn	Sg	09 43 43.4	-0.2
	48nm,0.3s,baz=134,slow=21,SNR=16						
DZM				LR	LR	09 44 02.6	
	comp=Z,90nm,20.4s,baz=139,slow=42						
RPZ	**Rata Peaks**	**22.89**	**174**	LR	LR	09 54 58.8	
	comp=Z,173nm,18.0s,baz=3.5,slow=32						
WRA	**Warrarmunga Arr**	**31.56**	**266**	P	P	09 49 07.1	-0.4
	0.9nm,0.9s,baz=97,slow=8.5,SNR=6.0						
ASAR	**Alice Springs**	**31.65**	**259**	P	P	09 49 08.0	-0.4
	1.3nm,0.9s,baz=83,slow=9.2,SNR=9.1						
SONM	**Songino Array**	**87.87**	**324**	P	P	09 55 35.3	+0.7
	0.2nm,0.3s,baz=131,slow=7.9,SNR=2.1						
GERES	**GERESS Array B**	**145.38**	**330**	PKPbc	PKPbc	10 02 21.7	-1.3
	0.2nm,0.3s,baz=29,slow=3.0,SNR=7.0						

MAN 31 09:43:14, 16°.82N×119°.54E, h29km, mb4.3, ML3.2, MS3.0, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SCZP	**Santa Cruz**	**1.10**	**161**	*e*P	Pb	09 43 34.0	-0.4
SCZP				*e*S	Sn	09 43 47.3	-0.4
ABRA	**Dolores**	**1.39**	**54**	*e*P	Pn	09 43 37.1	-0.3
ABRA				*e*S	Sn	09 43 55.4	+0.6
APYP	**Conner**	**1.93**	**57**	*e*P	Pn	09 43 45.5	+0.7
APYP				*e*S	Sn	09 44 08.1	+0.1
CAUP	**Cauayan**	**2.19**	**87**	*e*P	Pb	09 43 50.9	-2.0

SJA 31 09:43:25.2±0.9, 27°.16S×69°.13W, h154km±96km, ML3.5, MW3.5, Northern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FSA	**Cafayete**	**3.01**	**70**	*e*P	Pn	09 44 13.9	+0.8
CYA	**Choya**	**3.21**	**114**	*e*P	Pn	09 44 16.2	+0.7
CYA				*e*S	Sn	09 44 54.0	-0.4
CYA				IAML		09 44 56.0	
	comp=Z,169nm,0.9s						
AHML	**Horco Molle**	**3.41**	**85**	*e*P	Pn	09 44 19.4	+1.4
SLA	**San Lorenzo**	**4.07**	**54**	*e*P	Pn	09 44 28.3	+1.7
AZAP	**Zapla**	**4.69**	**52**	*e*P	Pn	09 44 35.6	+0.7
AZAP				IAML		09 44 36.0	
	comp=Z,31nm,0.4s						
HJA	**Humahuaca**	**5.18**	**41**	*e*P	Pn	09 44 42.5	+0.9
HJA				IAML		09 44 43.5	
	comp=Z,25nm,0.5s						
YJA	**Yavi**	**5.95**	**34**	*e*P	Pn	09 44 53.3	+1.5
YJA				IAML		09 44 53.8	
	comp=Z,5.8nm,0.4s						

NNC 31 09:44:56.7±2.4, 37°.24N×71°.15E, h2km±20km, mb3.9, mpv3.5, 4C-5D, Error ellipse: s-maj=23.5km s-min=10.5km az=152.0, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**2.41**	**311**	⇓P	Pn	09 45 37.8	+0.6
	21nm,0.5s						
DZET				⇑S	Sn	09 46 08.4	+1.1
	114nm,0.5s						
MNAS	**Manas**	**5.34**	**11**	⇓Pn	Pn	09 46 17.1	-0.4
	2.0nm,0.8s						
MNAS				⇑Sn	Sn	09 47 21.8	+2.2
	3.2nm,0.4s						
MNAS				⇓Lg	Lg	09 47 47.4	
	6.0nm,0.5s						
KK31	**Karatay Array**	**5.87**	**355**	Pn	Pn	09 46 22.9	-1.8
	3.0nm,0.3s,baz=175,slow=11,SNR=33						
KK31				⇑Sn	Sn	09 47 33.4	+0.7
	1.0nm,0.3s,baz=194,slow=23,SNR=4.1						
AAK	**Ala-Archa**	**5.96**	**24**	⇓Pn	Pn	09 46 26.5	+0.4
	1.9nm,0.4s						
AAK				⇓Lg	Lg	09 48 07.5	
	6.4nm,0.7s						
TKM2	**Tokmak 2**	**6.62**	**30**	⇑Pn	Pn	09 46 35.2	+0.1
	5.2nm,0.9s						

IDC 31 09:47:49.1±2.3, 3°.69S×151°.70E, h0km, mb3.4/3, mb1 3.8/3, mb1mx3.4/39, mbtmp3.4/3, MS3.6/5, Ms1 3.5/5, ms1mx3.1/24, Error ellipse: s-maj=221.0km s-min=27.5km az=125.0, New Ireland region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	**Honiara**	**9.99**	**125**	LR	LR	09 54 14.5	
	comp=Z,460nm,19.8s,baz=299,slow=39						
WRA	**Warrarmunga Arr**	**23.40**	**225**	P	P	09 52 58.6	-1.3
	1.4nm,0.8s,baz=51,slow=9.7,SNR=8.9						
ASAR	**Alice Springs**	**26.27**	**219**	P	P	09 53 27.6	+1.2
	0.4nm,0.9s,baz=56,slow=8.7,SNR=3.8						
STKA	**Stephens Creek**	**29.61**	**198**	LR	LR	10 06 23.9	
	comp=Z,79nm,18.3s,baz=25,slow=38						
KAPI	**Kappang**	**31.88**	**266**	LR	LR	10 09 40.8	
	comp=Z,24nm,18.4s,baz=106,slow=41						
JCJ	**Chichijima**	**31.95**	**344**	LR	LR	10 07 30.2	
	comp=Z,179nm,18.7s,baz=208,slow=37						
RAO	**Raoul Island**	**38.43**	**135**	LR	LR	10 08 07.2	
	comp=Z,117nm,18.6s,baz=148,slow=32						
ILAR	**Eielson Array**	**81.55**	**22**	P	P	10 00 08.3	-0.1
	0.2nm,0.6s,baz=232,slow=4.4,SNR=3.8						

IDC 31 09:50:14.1±7.6, 6°.57S×147°.96E, h66km±65km, mb3.5/2, mb1 3.7/4, mb1mx3.3/38, mbtmp3.7/4, ML3.4/1, Error ellipse: s-maj=82.9km s-min=53.4km az=116.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.93**	**196**	P	Pn	09 50 57.4	-0.9
	5.5nm,0.3s,baz=339,slow=5.3,SNR=12						
PMG				S	Sn	09 51 33.7	+1.4
	1.1nm,0.3s,baz=351,slow=18,SNR=2.3						
WRA	**Warrarmunga Arr**	**18.75**	**224**	P	P	09 54 27.4	-0.4
	0.1nm,0.3s,baz=52,slow=10,SNR=6.6						
ASAR	**Alice Springs**	**21.71**	**217**	P	P	09 54 58.6	-1.3
	0.7nm,0.5s,baz=50,slow=9.3,SNR=8.4						
FITZ	**Fitzroy Crossi**	**24.59**	**240**	P	P	09 55 27.5	-0.8
	3.4nm,0.5s,baz=59,slow=7.7,SNR=12						
TORD	**Torodi Ar. Bea**	**146.15**	**284**	PKPbc	PKPab	10 09 48.6	-0.1
	0.1nm,0.3s,baz=68,slow=3.6,SNR=5.5						

*NEIC **31** 10:09:51.7±0.4, 20°.20S×168°.36E, h10km, mb4.5/7, Error ellipse: s-maj=12.9km s-min=9.1km az=138.0*
*ISCJB **31** 10:09:52.5±0.5, 20°.25S±0°.08×168°.30E±0°.09, h26km, mb4.3/20, MS3.4/6, Error ellipse: s-maj=14.3km s-min=8.4km az=39.2*
*IDC **31** 10:09:55.8±0.8, 20°.27S×168°.33E, h39km±5km, mb4.0/14, mb1 4.2/15, mb1mx4.0/44, mbtmp4.2/15, ML3.4/1, MS3.4/8, Ms1 3.4/8, ms1mx3.1/31, Error ellipse: s-maj=25.6km s-min=14.9km az=140.0*

ISC 31 10:09:54.4±0.6, 20°.27S±0°.09×168°.3E±0°.1, h26km, n43, σ1s13/42, mb4.3/20, MS3.4/6, 1C, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.48**	**223**	*e*Pn	**Pn**	**10 10 32.0**	**-1.2**
	91nm,0.2s						
DZM				*e*Sn	**Sn**	**10 11 00.1**	**-2.5**
	164nm,0.2s						
DZM	**Mont Dzumac**	**2.48**	**223**	Pn	**Pn**	**10 10 32.9**	**-0.2**
	8.6nm,0.3s,baz=112,slow=13,SNR=114						
DZM				Sn	**Sn**	**10 11 03.1**	**+0.5**
	35nm,0.3s,baz=295,slow=21,SNR=9.3						
DZM				LR	LR	10 11 12.6	
	comp=Z,407nm,21.3s,baz=359,slow=31						
DZM	**Mont Dzumac**	**2.48**	**223**	*e*Pn	**Pn**	**10 10 31.9**	**-1.2**
DZM				*e*Sn	**Sn**	**10 11 03.4**	**+0.8**
HNR	**Honiara**	**13.44**	**322**	LR	LR	10 18 12.7	
	comp=Z,100nm,18.3s,baz=175,slow=37						
AFI	**Afiamalu**	**20.08**	**75**	LR	LR	10 20 39.0	
	comp=Z,179nm,20.4s,baz=134,slow=32						
CTA	**Charters Tower**	**20.67**	**267**	P	Pn	10 14 34.8	-0.1
	8.0nm,1.1s,baz=74,slow=11,SNR=5.1						
PMG	**Port Moresby**	**23.06**	**295**	LR	LR	10 21 40.9	
	comp=Z,96nm,18.9s,baz=162,slow=30						
STKA	**Stephens Creek**	**26.53**	**239**	P	**P**	**10 15 30.4**	**+0.4**
	3.7nm,0.7s,baz=70,slow=9.3,SNR=3.0						
STKA				LR	LR	10 26 47.7	
	comp=Z,103nm,18.0s,baz=26,slow=38						
RAR	**Rarotonga**	**29.87**	**98**	LR	LR	10 25 32.0	
	comp=Z,60nm,21.9s,baz=255,slow=31						
WRAB	**Tennant Creek**	**31.83**	**265**	*e*P	**P**	**10 16 18.3**	**+1.0**
	3.7nm,1.0s						
WRA	**Warrarmunga Arr**	**31.84**	**265**	P	**P**	**10 16 16.2**	**-1.1**
	1.0nm,0.8s,baz=88,slow=8.6,SNR=9.4						
ASAR	**Alice Springs**	**32.01**	**258**	P	**P**	**10 16 19.2**	**+0.3**
	4.8nm,0.8s,baz=85,slow=8.5,SNR=50						
ASAR				LR	LR	10 28 47.4	
	comp=Z,126nm,18.9s,baz=104,slow=35						
TBI	**Tubuai**	**39.26**	**102**	*e*LR	LR	10 28 16.4	
	106nm,30.0s						
PPT2	**Papeete2**	**39.89**	**93**	*e*LR	LR	10 28 35.1	
	172nm,29.5s						
PPT	**Papeete**	**39.89**	**93**	LR	LR	10 29 45.6	
	comp=Z,64nm,19.8s,baz=202,slow=30						
FITZ	**Fitzroy Crossi**	**40.24**	**266**	P	**P**	**10 17 30.1**	**+0.7**
	3.4nm,0.7s,baz=176,slow=7.1,SNR=6.1						
FITZ	**Fitzroy Crossi**	**40.24**	**266**	*e*P	**P**	**10 17 30.2**	**+0.9**
MBWA	**Marble Bar**	**45.27**	**260**	*e*P	**P**	**10 18 10.9**	**+0.8**
	3.7nm,0.4s						
KAPI	**Kappang**	**49.50**	**281**	*e*P	**P**	**10 18 42.9**	**-0.2**
	4.7nm,0.7s						
TAOE	**Nuku Hiva Isla**	**51.01**	**85**	*e*LR	LR	10 33 40.7	
	82nm,27.6s						
VNDA	**Vanda**	**57.38**	**182**	P	**P**	**10 19 39.9**	**-0.2**
	0.9nm,0.9s,baz=349,slow=4.8,SNR=4.5						
SBA	**Scott Base**	**57.63**	**180**	*e*P	**P**	**10 19 43.3**	**+1.5**
	1.4nm,0.9s						
CASY	**Casey**	**58.82**	**204**	*e*P	**P**	**10 19 50.8**	**+0.5**
	0.5nm,0.7s						
MJAR	**Matsushiro Arr**	**63.24**	**333**	P	**P**	**10 20 19.6**	**-1.1**
	2.1nm,0.8s,baz=147,slow=1.3,SNR=5.6						
QSPA	**South Pole Qui**	**69.79**	**180**	*e*P	**P**	**10 21 03.0**	**+0.7**
	14nm,0.7s						
USRK	**Ussuriysk Ar.**	**72.24**	**333**	P	**P**	**10 21 16.8**	**-0.4**
	3.1nm,0.8s,baz=104,slow=3.2,SNR=5.7						
USRK				pP	**sP**	**10 21 28.2**	**-0.3**
	6.0nm,0.9s,baz=136,slow=4.0,SNR=6.0						
CMAR	**Chiang Mai Arr**	**78.10**	**295**	P	**P**	**10 21 52.0**	**+0.4**
	2.4nm,0.4s,baz=130,slow=4.5,SNR=8.3						
SYO	**Syowa Base**	**83.70**	**196**	⇓*e*P	**P**	**10 22 20.0**	**-0.5**
SEY	**Seymchan**	**83.87**	**353**	P	**P**	**10 22 21.6**	**+0.3**
	0.4nm,0.3s,baz=102,slow=4.2,SNR=3.9						
SONM	**Songino Array**	**87.50**	**324**	P	**P**	**10 22 39.9**	**0.0**
	0.5nm,0.5s,baz=132,slow=6.0,SNR=3.2						
YBH	**Yreka Blue Hor**	**88.67**	**44**	P	**P**	**10 22 45.3**	**-0.2**
	2.2nm,0.8s,baz=221,slow=0.7,SNR=5.6						
YBH				pP	**sP**	**10 22 56.9**	**-0.1**
	3.4nm,0.9s,baz=202,slow=3.2,SNR=4.5						
VNA3	**Neumayer Olymp**	**88.72**	**181**	P	**P**	**10 22 44.0**	**-1.2**
HUMO	**Hull Mountain**	**88.93**	**43**	*e*P	**P**	**10 22 46.4**	**-0.2**
	3.9nm,0.5s						
NVAR	**Mina Array Bea**	**90.16**	**49**	P	**P**	**10 22 52.1**	**-0.7**
	2.9nm,1.0s,baz=232,slow=8.5,SNR=11						
NVAR				pP	**sP**	**10 23 04.0**	**-0.3**
	1.4nm,0.8s,baz=233,slow=7.6,SNR=6.1						
ILAR	**Eielson Array**	**91.48**	**18**	P	**P**	**10 22 56.2**	**-1.7**
	0.7nm,0.7s,baz=251,slow=2.8,SNR=4.1						
ARCES	**ARCESS Array B**	**125.82**	**345**	PKP	**PKPdf**	**10 28 52.5**	**-0.6**
	2.9nm,0.8s,baz=169,slow=2.0,SNR=4.9						
ARCES				pPKP	**pPKPdf**	**10 29 04.1**	**+2.2**
	1.1nm,0.5s,baz=321,slow=1.6,SNR=2.0						
CONA	**Conrad Observa**	**144.53**	**328**	*e*PKPdf	**PKPdf**	**10 29 28.8**	**+0.2**
	8.8nm,1.6s						
GERES	**GERESS Array B**	**144.95**	**330**	PKP	**PKPab**	**10 29 28.5**	**0.0**
	1.0nm,0.8s,baz=31,slow=3.4,SNR=5.5						
ARSA	**Arzberg**	**145.15**	**327**	*e*PKPdf	**PKPdf**	**10 29 29.8**	**+0.2**
	4.0nm,0.7s						
MOA	**Molln**	**145.38**	**329**	*i* PKPdf	**PKPab**	**10 29 30.6**	**+0.6**
	13nm,1.3s						
SOKA	**Soboth**	**145.78**	**327**	*e*PKPab	**PKPbc**	**10 29 31.6**	**+0.4**
	11nm,1.2s						
DAVA	**Damuels**	**147.83**	**332**	*i* PKPbc	**PKPdf**	**10 29 35.9**	**+1.6**
	8.7nm,1.1s						
DAVOX	**Davos/Dischmat**	**148.21**	**331**	PKPbc	**PKPbc**	**10 29 37.8**	**-0.5**
	4.5nm,0.8s,baz=304,slow=3.5,SNR=5.1						
DAVOX				pPKPbc	**pPKPbc**	**10 29 51.0**	**+4.0**
	9.4nm,1.0s,baz=298,slow=2.1,SNR=5.9						

IDC 31 10:13:09.3±10.0, 20°.19S×167°.76E, h0km, mb3.7/3, mb1 3.8/4, mb1mx3.6/45, mbtmp3.6/4, ML2.8/1, Error ellipse: s-maj=184.5km s-min=41.7km az=94.0, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.24**	**213**	Pn	Pn	10 13 47.5	-0.3
	2.7nm,0.3s,baz=116,slow=17,SNR=24						
DZM				Sn	Sn	10 14 17.1	+0.9
	26nm,0.3s,baz=295,slow=20,SNR=6.5						
STKA	**Stephens Creek**	**26.16**	**238**	P	P	10 18 46.0	+0.6
	1.7nm,0.8s,baz=86,slow=14,SNR=2.9						
WRA	**Warrarmunga Arr**	**31.37**	**265**	P	P	10 19 31.5	-0.5
	0.3nm,0.6s,baz=97,slow=8.8,SNR=2.8						
ASAR	**Alice Springs**	**31.56**	**257**	P	P	10 19 33.6	0.0
	0.9nm,0.6s,baz=86,slow=8.9,SNR=5.3						

IDC 31 10:15:11.9±10.0, 20°.13S×167°.70E, h0km, mb3.6/3, mb1 3.7/4, mb1mx3.5/47, mbtmp3.5/4, ML2.5/1, Error ellipse: s-maj=188.7km s-min=40.8km az=92.0, Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.26**	**211**	Pn	Pn	10 15 49.9	-0.7
	1.3nm,0.3s,baz=50,slow=19,SNR=7.6						
DZM				Sn	Sn	10 16 20.1	+0.8
	13nm,0.3s,baz=115,slow=21,SNR=7.9						
STKA	**Stephens Creek**	**26.15**	**238**	P	P	10 20 48.5	+0.6
	1.2nm,0.9s,baz=90,slow=13,SNR=2.7						
WRA	**Warrarmunga Arr**	**31.32**	**265**	P	P	10 21 33.7	-0.4
	0.6nm,1.1s,baz=93,slow=8.5,SNR=4.4						
ASAR	**Alice Springs**	**31.52**	**257**	P	P	10 21 36.0	+0.1
	1.0nm,0.7s,baz=84,slow=9.0,SNR=5.7						

*NIED **31** 10:22:00, 28°.80N×141°.30E, h165km, Mw4.8 Best double couple: $M_0$1.63000×10^{16} NP1:ϕ_s302.00000°, δ6.00000°, λ-88.00000°. NP2:ϕ_s120.00000°, δ84.00000°, λ-90.00000°.*
*IDC **31** 10:22:47.7±0.5, 28°.54N×140°.71E, h165km±5km, mb4.3/37, mb1 4.4/44, mb1mx4.3/66, mbtmp4.8/44, MS3.2/7, Ms1 3.2/7, ms1mx2.8/41, Error ellipse: s-maj=10.1km s-min=7.0km az=65.0*
*ISCJB **31** 10:22:48.2±0.4, 28°.70N±0°.02×140°.65E±0°.03, h170km±3km, mb4.6/191, Error ellipse: s-maj=4.2km s-min=4.0km az=26.4*
*MOS **31** 10:22:49.0±0.9, 28°.65N×140°.53E, h184km, mb4.7/75, Error ellipse: s-maj=9.1km s-min=4.6km az=94.6*
*JMA **31** 10:22:49.0, 28°.81N×141°.26E, h161km, M4.6*
*NEIC **31** 10:22:50.5±0.5, 28°.61N×140°.67E, h181km±4km, mb4.7/142, Error ellipse: s-maj=4.6km s-min=3.9km az=128.0*

ISC 31 10:22:49.3±0.4, 28°.71N±0°.04×140°.87E±0°.05, h173km±3km, h173km:pP-P, n388, σ1s83/436, mb4.7/191, 11C-11D, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	**Chichi jima**	**1.99**	**144**	P	**Pn**	**10 23 23.8**	**-1.9**
CBIJ				S	**Sn**	**10 23 50.2**	**-3.8**
CBIJ	**Chichi jima**	**1.99**	**144**	*e*Pn	**Pn**	**10 23 23.9**	**-1.9**
CBIJ				*e*Sn	**Sn**	**10 23 51.0**	**-3.0**
JCJ	**Chichijima**	**1.99**	**144**	P	**Pn**	**10 23 24.0**	**-1.8**
	1μm,0.3s,baz=319,slow=6.0,SNR=217						
JCJ				S	**Sn**	**10 23 49.6**	**-4.4**
	2μm,0.3s,baz=29,slow=23,SNR=32						
JHCJ	**Hachijojimakas**	**4.44**	**348**	P	**Pn**	**10 23 57.3**	**+1.4**
JHCJ				*e*S	**Sn**	**10 24 46.1**	**-2.0**
JHJ2	**Mitsune**	**4.48**	**349**	P	**Pn**	**10 23 57.9**	**+1.6**
JHJ2				*e*S	**Sn**	**10 24 46.2**	**-2.6**
JHJ2	**Mitsune**	**4.48**	**349**	*e*Pn	**Pn**	**10 23 58.4**	**+2.1**
JHJ2				*e*Sn	**Sn**	**10 24 42.4**	**-6.4**
JHJ	**Hachijo jima 2**	**4.49**	**348**	P	**Pn**	**10 23 55.7**	**-0.8**
	64nm,0.3s,baz=66,slow=20,SNR=3.8						
JHJ				S	**Sn**	**10 24 47.2**	**-1.9**
	302nm,0.3s,baz=136,slow=23,SNR=5.9						
JKO	**Kozu shima**	**5.66**	**345**	P	**Pn**	**10 24 12.6**	**+0.9**
JKO				*e*S	**Sn**	**10 25 16.4**	**0.0**
BSO1	**Boso 1**	**5.92**	**1**	P	**Pn**	**10 24 14.4**	**-0.3**
BSO1				*e*S	**Sn**	**10 25 19.1**	**-2.9**
BSO2	**Boso 2**	**6.02**	**359**	*e*S	**Sn**	**10 25 23.5**	**-1.1**
BSO3	**Boso 3**	**6.08**	**357**	P	**Pn**	**10 24 16.7**	**-0.3**
BSO3				S	**Sn**	**10 25 23.8**	**-2.2**
BSO4	**Boso 4**	**6.28**	**356**	P	**Pn**	**10 24 19.7**	**0.0**
BSO4				*e*S	**Sn**	**10 25 30.2**	**-0.7**
JIE	**Ise**	**6.69**	**329**	P	**Pn**	**10 24 27.5**	**+2.3**
HMMJ	**Hamamatsu 2**	**6.69**	**337**	P	**Pn**	**10 24 26.9**	**+1.7**
JOD2	**Odawara 2**	**6.71**	**347**	P	**Pn**	**10 24 25.7**	**+0.2**
JOD2				*e*S	**Sn**	**10 25 39.2**	**-2.1**
INU	**Inuyama**	**7.38**	**335**	*e*Pn	**Pn**	**10 24 35.9**	**+1.6**
JRY	**Ryogami san**	**7.47**	**348**	P	**Pn**	**10 24 35.9**	**+0.3**
JRY				S	**Sn**	**10 25 55.5**	**-4.1**
MJAR	**Matsushiro Arr**	**8.12**	**345**	P	**Pn**	**10 24 43.1**	**-1.1**
	7.0nm,0.3s,baz=160,slow=11,SNR=41						
MJAR				S	**Sn**	**10 26 13.1**	**-2.0**
	7.1nm,0.3s,baz=95,slow=10,SNR=5.6						
MAJO	**Matsushiro**	**8.12**	**345**	*i* P	**Pn**	**10 24 45.6**	**+1.4**
MAJO	**Matsushiro**	**8.12**	**345**	*e*Pn	**Pn**	**10 24 44.9**	**+0.6**
MAJO				*e*Sn	**Sn**	**10 26 12.8**	**-2.4**
MAT	**Matsushiro**	**8.12**	**345**	P	**Pn**	**10 24 44.3**	**+0.1**
MAT				S	**Sn**	**10 26 10.8**	**-4.4**
MJB9	**Matsu-Tunnel**	**8.13**	**345**	*e*Pn

TPUB	**Ta-pu**	18.97	258	*e*P		**P**	**10 26 58.8 +1.3**
	comp=E,121nm,1.7s						
HABR	**Khabarovsk**	20.24	349	*e*P		**P**	**10 27 09.4 -1.5**
HABR				*e**PP		**pP**	**10 27 42.7 +2.2**
HABR				*e**SP		sP	10 28 08.3 +5.8
HABR				*e*S		**S**	**10 30 43.9 -4.4**
HABR				*e*			10 31 16.6
HABR				*e*			10 38 16.1
HABR				pmax	pmax		
	comp=N,45nm,0.9s						
HABR				pmax	pmax		
	comp=E,8.0nm,0.9s						
HABR				pmax	pmax		
	comp=Z,87nm,0.9s						
HABR				MLR	MLR		
	comp=Z,17nm,15.0s						
KLR	**Kul'dur**	21.65	344	P		**P**	**10 27 26.3 +0.4**
	comp=Z,68nm,0.7s,baz=162,slow=8.2,SNR=126						
KLR				ScP		**ScP**	**10 34 38.7 -2.2**
	comp=Z,3.3nm,1.0s,baz=84,slow=2.0,SNR=4.4						
KLR	**Kul'dur**	21.65	344	*d iP*		**P**	**10 27 25.9 -0.1**
TYV	**Tymovskoe**	22.17	3	*e*P		**P**	**10 27 31.8 +0.7**
TYV				pmax	pmax		
	comp=Z,20nm,0.8s						
WHN	**Wuhan**	23.11	281	⇓P		**P**	**10 27 41.0 +1.0**
WHN				S		**S**	**10 31 41.3 +3.2**
H11N2	**WAKE ISLAND Hy**	25.32	105	T		T	10 54 10.1
	baz=296,slow=75,SNR=14						
H11N1	**WAKE ISLAND Hy**	25.32	105	T		T	10 54 07.8
	baz=296,slow=75,SNR=16						
H11N3	**WAKE ISLAND Hy**	25.34	105	T		T	10 54 07.5
	baz=296,slow=75,SNR=12						
H11S3	**WAKE ISLAND Hy**	25.70	108	T		T	10 54 02.9
	baz=296,slow=74,SNR=5.1						
H11S1	**WAKE ISLAND Hy**	25.70	108	T		T	10 54 03.9
	baz=296,slow=74,SNR=3.8						
H11S2	**WAKE ISLAND Hy**	25.72	108	T		T	10 54 05.3
	baz=296,slow=74,SNR=4.0						
HHC	**Hu-ho-hao-te**	26.82	305	*e*P		**P**	**10 28 15.3 +1.7**
HHC				pmax	pmax		
	comp=Z,30nm,0.8s						
HHC				pmax	pmax		
	comp=Z,140nm,4.0s						
PETK	**Petropavlovsk-**	27.35	22	P		**P**	**10 28 19.6 +1.6**
	comp=Z,0.7nm,0.4s,baz=90,slow=1.0,SNR=4.1						
PETK				LR	LR		10 37 50.9
	comp=Z,24nm,21.6s,baz=202,slow=33						
PEA1	**Petropavlovsk-**	27.36	22	*e*P		**P**	**10 28 19.6 +1.6**
XAN	**Xi'an**	27.72	289	P		**P**	**10 28 20.5 -1.1**
XAN				sP		sP	10 29 21.5 +4.1
XAN				pmax	pmax		
	comp=Z,19nm,0.8s						
XAN				pmax	pmax		
	comp=Z,36nm,6.5s						
QIZ	**Qiongzhong**	29.89	258	P		**P**	**10 28 41.3 +0.4**
QIZ				pP		**pP**	**10 29 18.0 +1.1**
QIZ				S		S	10 33 22.8 -2.6
QIZ				LR		LR	
	comp=N,96nm,5.4s						
QIZ				LR		LR	
	comp=E,120nm,4.6s						
QIZ				LR		LR	
	comp=Z,160nm,14.6s						
CLNS	**Chul'man**	30.30	343	*e*P		**P**	**10 28 45.0 +0.9**
CLNS				pmax	pmax		
	comp=Z,23nm,0.8s						
CLNS				pmax	pmax		
	comp=N,16nm,0.9s						
CLNS				pmax	pmax		
	comp=E,7.0nm,0.9s						
GYA	**Guiyang**	30.34	274	*e*P		**P**	**10 28 45.8 +0.8**
GYA				pP		pP	10 29 24.5 +3.5
GYA				PP		**PnPn**	**10 29 53.3 +1.9**
GYA				PcP		**PcP**	**10 31 42.0 +1.2**
GYA				S		S	10 33 29.3 -3.3
GYA				sS		sS	10 34 39.0 +2.7
GYA				ScP		**ScP**	**10 35 04.5 -2.4**
GYA	**Guiyang**	30.34	274	ScS		ScS	10 38 59.5 -4.0
GYA				pmax	pmax		
	comp=Z,10.0nm,0.8s						
MYLDM	**Lahad Datu**	31.58	226	*e*P		**P**	**10 28 56.7 +0.9**
	comp=Z,68nm,1.2s						
MA2	**Magadan**	31.59	10⇑	*e*P		**P**	**10 28 56.5 +1.1**
LZH	**Lanzhou**	31.97	293	*e*P		**P**	**10 29 03.0 +3.8**
LZH				pP		pP	10 29 42.3 +6.9
LZH				sP		sP	10 30 02.5 +7.2
LZH				PP		**PnPn**	**10 30 05.8 -5.9**
LZH				PcP		PcP	10 30 56.0 -49
LZH				*e*S		**S**	**10 33 58.0 +0.1**
LZH				sS		sS	10 35 06.0 +4.3
LZH				SS		**SnSn**	**10 36 03.0 -5.7**
LZH				pmax	pmax		
	comp=Z,29nm,1.1s						
LZH				pmax	pmax		
	comp=Z,150nm,5.5s						
CD2	**Chengdu**	32.18	283	P		P	10 28 59.0 -2.0
CD2				pP		pP	10 29 38.5 +1.4
CD2				sP		sP	10 30 01.0 +4.0
CD2				PP		**PnPn**	**10 30 15.3 +1.0**
CD2				S		S	10 33 57.0 -4.1
CD2				sS		sS	10 35 07.8 +2.9
CD2				SS		**SnSn**	**10 36 23.5 +10**
CD2				pmax	pmax		
	comp=Z,70nm,0.6s						
CD2				pmax	pmax		
	comp=Z,120nm,5.4s						
ULN	**Ulaanbaatar**	32.36	316	*ce*P		**P**	**10 29 01.6 -0.8**
ULN				pmax	pmax		
	comp=Z,10.0nm,2.5s						
SONA1	**Songino Array**	32.75	315	*e*P		**P**	**10 29 04.7 -1.1**
SONA0	**Songino Array**	32.75	315	*e*P		**P**	**10 29 04.1 -1.7**
	comp=Z,8.0nm,1.5s						
SONA0				*e*PcP		**PcP**	**10 31 45.8 -1.2**
SONM	**Songino Array**	32.75	315	P		**P**	**10 29 04.1 -1.7**
	comp=Z,1.6nm,0.4s,baz=126,slow=9.1,SNR=11						
SONM				PcP		**PcP**	**10 31 45.8 -1.2**
	comp=Z,0.8nm,0.4s,baz=99,slow=2.4,SNR=3.7						
SONM				ScP		**ScP**	**10 35 12.6 -2.1**
	comp=Z,0.6nm,0.3s,baz=125,slow=3.8,SNR=5.4						
KMI	**Kunming**	34.09	273	P		**P**	**10 29 17.5 -0.3**
KMI				pmax	pmax		
	comp=Z,7.0nm,0.7s						
YAK	**Yakutsk**	34.13	351	*e*P		**P**	**10 29 16.9 -0.5**
YAK				*e**PP		**pP**	**10 29 51.2 -2.6**
YAK				*e*			10 31 47.2
YAK				*e*S		**S**	**10 34 31.2 +0.9**
YAK				*e*			10 39 17.8
YAK				pmax	pmax		
	comp=Z,22nm,0.9s						
YAK				pmax	pmax		
	comp=E,5.0nm,0.9s						
YAK				pmax	pmax		
	comp=N,14nm,1.1s						
YAK				smax	smax		
	comp=N,100nm,4.3s						
YAK				smax	smax		
	comp=E,57nm,4.1s						
BOD	**Bodaibo**	34.61	335	*e*P		**P**	**10 29 21.6 +0.1**
BOD				pmax	pmax		
	comp=Z,13nm,1.3s						
SEY	**Seymchan**	35.04	9	P		**P**	**10 29 25.8 +0.6**
	comp=Z,6.9nm,0.5s,baz=193,slow=7.0,SNR=35						
SEY	**Seymchan**	35.04	9	*ce*P		**P**	**10 29 25.2 0.0**
NONG	**Nongkai**	36.08	261	P		**P**	**10 29 36.1 +1.6**
	comp=Z,29nm,0.8s						
CRAI	**Chiangrai**	37.67	266	P		**P**	**10 29 48.9 +0.9**
	comp=Z,42nm,0.8s,comp=Z,4μm						
SBUM	**Sibu**	37.77	231	*e*P		**P**	**10 29 48.8 -0.1**
	comp=Z,25nm,1.6s						
PBKT	**Sadao Pong**	38.58	261	P		**P**	**10 29 56.7 +1.1**
	comp=Z,6.4nm,1.2s						
KAPI	**Kappang**	39.21	215	*e*P		**P**	**10 30 00.2 -0.6**
	comp=Z,15nm,1.1s						
CMAR	**Chiang Mai Arr**	39.58	264	P		P	10 30 02.9 -1.1
	comp=Z,0.8nm,0.4s,baz=43,slow=9.2,SNR=6.5						
BILL	**Bilibino**	42.16	14	*d iP*		**P**	**10 30 25.6 +1.2**
BILL				*i* *PP		sP	10 31 10.1 -11
BILL				*i*			10 32 06.6
BILL				*i*			10 32 14.9
BILL				pmax	pmax		
	comp=Z,24nm,1.1s						
BILL	**Bilibino**	42.16	14	*e*P		**P**	**10 30 25.8 +1.4**
	comp=Z,53nm,1.3s						
MTN	**Manton Dam**	42.37	194	*e*P		**P**	**10 30 25.4 -1.2**
	comp=Z,44nm,1.1s						
TIXI	**Tiksi**	43.49	355	P		**P**	**10 30 35.3 +0.3**
	comp=Z,6.4nm,0.4s,baz=146,slow=6.8,SNR=34						
TIXI	**Tiksi**	43.49	355	*d iP*		**P**	**10 30 35.2 +0.2**
TIXI				pmax	pmax		
	comp=Z,17nm,1.2s						
TIXI	**Tiksi**	43.49	355	*e*P		**P**	**10 30 35.5 +0.6**
	comp=Z,21nm,1.2s						
WMQ	**Urumqi**	44.70	305	*e*P		**P**	**10 30 47.5 +2.4**
WMQ				pmax	pmax		
	comp=Z,10.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,27nm,6.4s						
ZAA0	**Zalesovo Array**	47.51	318	*e*P		**P**	**10 31 05.2 -1.6**
ZALV	**Zalesovo Beam**	47.51	318	P		**P**	**10 31 05.8 -1.1**
	comp=Z,2.1nm,0.3s,baz=101,slow=7.7,SNR=7.5						
ZALV				PcP		**PcP**	**10 32 32.8 -1.2**
	comp=Z,5.0nm,0.5s,baz=111,slow=3.7,SNR=12						
ZALV				LR	LR		10 50 38.2
	comp=Z,21nm,21.6s,baz=82,slow=35						
ZAA1	**Zalesovo Array**	47.51	318	*e*P		**P**	**10 31 05.8 -1.1**
ZAA1				*e*PcP		**PcP**	**10 32 32.8 -1.2**
TNA	**Tin City**	48.43	26	*e*P		**P**	**10 31 15.6 +2.0**
	comp=Z,32nm,1.2s						
MK32	**Makanchi Array**	48.56	309	*e*P		**P**	**10 31 13.4 -1.6**
MK32				*e*PcP		**PcP**	**10 32 36.6 -1.4**
MKAR	**Makanchi Array**	48.56	309	P		**P**	**10 31 13.4 -1.6**
	comp=Z,0.6nm,0.3s,baz=84,slow=11,SNR=9.1						
MKAR				PcP		**PcP**	**10 32 36.6 -1.4**
	comp=Z,0.9nm,0.5s,baz=94,slow=7.3,SNR=4.6						
MKAR				ScP		**ScP**	**10 36 13.5 -2.9**
	comp=Z,1.7nm,0.7s,baz=86,slow=3.9,SNR=9.4						
WRAB	**Tennant Creek**	48.77	188	*e*P		**P**	**10 31 15.5 -1.3**
WRAB				pmax	pmax		
	comp=Z,20nm,1.0s						
WRAB	**Tennant Creek**	48.77	188	*e*P		**P**	**10 31 15.5 -1.3**
	comp=Z,20nm,1.0s						
WR1	**Warramunga Arr**	48.78	188	*e*P		**P**	**10 31 14.7 -2.2**
WR1				*e*pP		**pP**	**10 31 51.8 -3.7**
WR1				*e*S		S	10 37 59.3 -7.3
WRA	**Warramunga Arr**	48.78	188	P		**P**	**10 31 14.7 -2.2**
	comp=Z,8.4nm,0.3s,baz=5.6,slow=7.6,SNR=348						
WRA				pP		**pP**	**10 31 51.8 -3.7**
	comp=Z,7.3nm,0.9s,baz=9.6,slow=8.5,SNR=3.5						
WRA				ScP		**ScP**	**10 36 14.3 -3.2**
	comp=Z,2.9nm,1.0s,baz=3.6,slow=4.4,SNR=7.9						
WRA				S		S	10 37 59.3 -7.4
	comp=Z,2.2nm,0.9s,baz=7.7,slow=14,SNR=6.2						
FITZ	**Fitzroy Crossi**	48.81	199	LR		LR	10 53 07.6
	comp=Z,31nm,20.0s,slow=37						
FITZ	**Fitzroy Crossi**	48.81	199	*e*P		**P**	**10 31 16.6 -0.5**
	comp=Z,14nm,0.9s						
NRIK	**Noril'sk**	50.72	338	P		**P**	**10 31 30.9 -0.1**
	comp=Z,29nm,0.8s,baz=114,slow=7.9,SNR=28						
NRIK				PcP		**PcP**	**10 32 44.9 -0.6**
	comp=Z,3.9nm,0.5s,baz=83,slow=3.9,SNR=3.5						
NRIK				LR		LR	10 52 56.0
	comp=Z,31nm,19.9s,baz=92,slow=36						
KURK	**Kurchatov**	51.03	314	*ce*P		**P**	**10 31 31.7 -1.8**
KURK				pmax	pmax		
	comp=Z,7.0nm,1.0s						
KURK	**Kurchatov**	51.03	314	*e*P		**P**	**10 31 31.9 -1.6**
	comp=Z,6.0nm,1.0s						
AS01	**Alice Springs**	52.50	188	*e*P		**P**	**10 31 43.2 -1.5**
AS31	**Alice Springs**	52.50	188	*e*P		**P**	**10 31 43.2 -1.5**
	comp=Z,1.2nm,0.5s						
ASAR	**Alice Springs**	52.51	188	P		**P**	**10 31 42.9 -1.9**
	comp=Z,1.4nm,0.4s,baz=17,slow=8.8,SNR=50						
ASAR				pP		**pP**	**10 32 21.4 -2.5**
	comp=Z,0.9nm,0.7s,baz=8.6,slow=8.1,SNR=2.5						
TT01	**Tatalina**	52.64	31	*e*P		**P**	**10 31 47.4 +2.1**
MBWA	**Marble Bar**	53.61	205	*e*P		**P**	**10 31 51.7 -1.1**
	comp=Z,36nm,1.1s						
MBWA				*e*pP		**pP**	**10 32 35.4 +3.2**
MBWA				*e*sP		**sP**	**10 32 53.2 +2.0**
KSH	**Kashi**	53.76	300	*e*P		**P**	**10 31 56.5 +2.5**
KSH				*e*pP		pP	10 32 39.8 +6.5
KSH				*e*sP		PcP	10 33 00.0 +2.3
KSH				PcS		**PcS**	**10 36 57.8 +0.6**
KSH				S		**S**	**10 39 14.8 -0.2**
KSH				ScS		**ScS**	**10 41 22.5 -3.5**
KSH				pmax	pmax		
	comp=Z,84nm,4.5s						
KSH				LR	LR		
	comp=N,56nm,6.6s						
KSH				LR	LR		
	comp=E,70nm,7.3s						
KSH				LR	LR		
	comp=Z,71nm,8.3s						
KDAK	**Kodiak Island**	53.78	38	*ce*P		**P**	**10 31 54.6 +1.0**
PPLA	**Purkeypile**	54.38	31	*e*P		**P**	**10 31 59.6 +1.6**
	comp=Z,27nm,1.0s						
PPLA				*e*pP		sP	10 32 43.0 -14
CAST	**Castle Rocks**	54.48	31	*e*P		**P**	**10 32 01.3 +2.6**
	comp=Z,25nm,0.9s						
EIDS	**Eidsvold**	54.66	169	*e*P		**P**	**10 31 59.8 -0.5**
	comp=Z,9.9nm,0.9s						
KTH	**Kantishna Hill**	55.02	30	*e*P		**P**	**10 32 04.7 +2.1**
	comp=Z,31nm,1.4s						
BPAW	**Bear Paw Mtn.**	55.04	30	*e*P		**P**	**10 32 05.1 +2.4**
	comp=Z,21nm,1.1s						
MLY	**Manley**	55.25	29	*e*P		**P**	**10 32 06.3 +2.2**
	comp=Z,34nm,1.2s						
TRF	**Thorofare Moun**	55.29	31	*e*P		**P**	**10 32 06.5 +1.9**
	comp=Z,25nm,1.2s						
TRF				*e*pP		sP	10 32 49.7 -14
TRF				*e*sP		**PcP**	**10 33 09.3 +6.2**
PMR	**Palmer**	55.71	33	*e*P		**P**	**10 32 08.6 +1.2**
PMR				*e**SP		**PcP**	**10 33 11.0 +6.4**
PMR				pmax	pmax		
	comp=Z,13nm,1.0s						
PMR	**Palmer**	55.71	33	*e*P		**P**	**10 32 08.6 +1.2**
	comp=Z,13nm,1.0s						
PMR				*e*sP		**PcP**	**10 33 10.9 +6.4**
COLD	**Coldfoot**	55.73	26	*e*P		**P**	**10 32 09.7 +2.2**
	comp=Z,18nm,1.2s						
VOSK	**Vostochnaya**	55.73	316	*e*P		**P**	**10 32 06.5 -1.3**
VOSK				pmax	pmax		
	comp=Z,3.0nm,0.8s						
VOSK	**Vostochnaya**	55.73	316	*e*P		**P**	**10 32 06.5 -1.3**
	comp=Z,3.3nm,0.8s						
MCK	**McKinley**	55.91	30	*e*P		**P**	**10 32 10.6 +1.7**
MCK				pmax	pmax		
	comp=Z,53nm,1.1s						
MCK	**McKinley**	55.91	30	*e*P		**P**	**10 32 10.6 +1.7**
	comp=Z,53nm,1.1s						
RND	**Reindeer**	55.93	31	*e*P		**P**	**10 32 10.2 +1.1**
RND				pmax	pmax		
	comp=Z,35nm,1.1s						
RND	**Reindeer**	55.93	31	*e*P		**P**	**10 32 10.2 +1.1**
	comp=Z,34nm,1.1s						
SML	**Sawmill**	56.10	33	*e*P		**P**	**10 32 11.8 +1.5**
SML				pmax	pmax		
	comp=Z,25nm,1.1s						
SML	**Sawmill**	56.10	33	*e*P		**P**	**10 32 11.8 +1.5**
	comp=Z,25nm,1.1s						
BRVK	**Borovoye**	56.13	317	*e*P		**P**	**10 32 10.1 -0.5**
BRVK				pmax	pmax		
	comp=Z,9.0nm,0.8s						
BRVK	**Borovoye**	56.13	317	*e*P		**P**	**10 32 10.1 -0.5**
	comp=Z,8.7nm,0.8s						
MDM	**Murphy Dome**	56.30	29	*e*P		**P**	**10 32 13.5 +1.9**
	comp=Z,58nm,1.4s						
WRH	**Wood River Hil**	56.33	29	*e*P		**P**	**10 32 12.7 +0.9**
	comp=Z,12nm,1.1s						
COLA	**College**	56.46	29	*e*P		**P**	**10 32 14.9 +2.3**
COLA				pmax	pmax		
	comp=Z,11nm,0.8s						
COLA	**College**	56.46	29	*e*P		**P**	**10 32 14.9 +2.3**
	comp=Z,11nm,0.8s						
CCB	**Clear Creek Bu**	56.46	29	*e*P		**P**	**10 32 14.9 +2.2**
	comp=Z,16nm,1.2s						
SCM	**Sheep Creek Mo**	56.57	33	*e*P		**P**	**10 32 15.2 +1.5**
SCM				pmax	pmax		
	comp=Z,24nm,0.9s						
SCM	**Sheep Creek Mo**	56.57	33	*e*P		**P**	**10 32 15.2 +1.5**
	comp=Z,24nm,0.9s						
IL1	**Eielson Array**	56.87	29	*e*P		**P**	**10 32 16.0 +0.4**
ILAR	**Eielson Array**	56.87	29	P		**P**	**10 32 15.2 -0.4**
	comp=Z,14nm,1.0s,baz=263,slow=5.8,SNR=67						
ILAR				pP		**pP**	**10 32 56.0 +0.7**
	comp=Z,6.3nm,1.1s,baz=268,slow=6.3,SNR=4.3						
ILB	**Eielson Array**	56.87	29	*e*P		**P**	**10 32 16.2 +0.6**
ZRNK	**Zerenda**	56.91	317	*e*P		**P**	**10 32 14.9 -1.2**
ZRNK				pmax	pmax		
	comp=Z,5.0nm,0.7s						
ZRNK	**Zerenda**	56.91	317	*e*P		**P**	**10 32 14.9 -1.2**
	comp=Z,4.9nm,0.7s						
KKAR	**Karatay Array**	57.20	305	*e*P		**P**	**10 32 17.5 -0.9**
KKAR	**Karatay Array**	57.20	305	*e*P		**P**	**10 32 17.5 -0.9**
KLU	**Klutina**	57.24	33	*e*P		**P**	**10 32 20.1 +1.7**
	comp=Z,60nm,1.9s						
DIV	**Divide**	57.32	34	*e*P		**P**	**10 32 20.3 +1.4**
	comp=Z,56nm,1.8s						
PAX	**Paxson**	57.45	31	*e*P		**P**	**10 32 21.5 +1.7**
PAX				pmax	pmax		
	comp=Z,51nm,1.4s						
PAX	**Paxson**	57.45	31	*e*P		**P**	**10 32 21.5 +1.7**
	comp=Z,51nm,1.4s						
FYU	**Fort Yukon**	57.62	27	*e*P		**P**	**10 32 23.4 +2.5**
	comp=Z,66nm,1.4s						
BMRM	**Bremner River**	57.89	34	*e*P		**P**	**10 32 24.6 +1.8**
	comp=Z,30nm,1.0s						
DOT	**Dot Lake**	58.08	31	*e*P		**P**	**10 32 25.5 +1.3**
	comp=Z,94nm,1.1s						
MENT	**Mentasta**	58.25	31	*e*P		**P**	**10 32 27.3 +2.0**
	comp=Z,11nm,0.7s						
CRQM	**Cirque**	58.62	34	*e*P		**P**	**10 32 29.8 +1.7**
	comp=Z,32nm,1.0s						
BALM	**Baldy**	58.99	34	*e*P		**P**	**10 32 32.3 +1.7**
BALM				pmax	pmax		
	comp=Z,14nm,1.0s						
BALM	**Baldy**	58.99	34	*e*P		**P**	**10 32 32.3 +1.7**
	comp=Z,14nm,1.0s						
EGAK	**Eagle**	59.32	29	*e*P		**P**	**10 32 33.6 +1.0**
	comp=Z,11nm,1.3s						
DAWY	**Dawson**	60.13	30	*e*P		**P**	**10 32 40.0 +1.7**
	comp=Z,16nm,1.4s						
STKA	**Stephens Creek**	60.26	179	P		**P**	**10 32 38.0 -1.4**
	comp=Z,1.0nm,0.4s,baz=40,slow=6.4,SNR=6.3						
STKA	**Stephens Creek**	60.26	179	*e*P		**P**	**10 32 36.6 -2.7**
STKA				pmax	pmax		
	comp=Z,9.0nm,2.0s						
STKA	**Stephens Creek**	60.26	179	*e*P		**P**	**10 32 36.6 -2.7**
	comp=Z,8.6nm,2.0s						
INK	**Inuvik**	62.05	25	P		**P**	**10 32 52.0 +1.0**
	comp=Z,8.0nm,0.4s,baz=285,slow=5.4,SNR=93						
INK	**Inuvik**	62.05	25	*e*P		**P**	**10 32 52.0 +1.0**
INK				pmax	pmax		
	comp=Z,19nm,1.3s						
INK	**Inuvik**	62.05	25	*e*P		**P**	**10 32 52.0 +1.0**
	comp=Z,19nm,1.3s						
ARU	**Arti**	62.44	322	*d iP*		**P**	**10 32 52.7 -1.1**
ARU							10 33 30.4
ARU							10 35 08.4
ARU				S		**S**	**10 41 02.8 -4.0**
ARU				pmax	pmax		
	comp=Z,17nm,2.5s						
SKAG	**Skagway**	62.66	35	*e*P		**P**	**10 32 57.3 +2.2**
	comp=Z,19nm,1.1s						
ABKAR	**Akbulak array**	63.14	314	*e*P		**P**	**10 32 57.5 -1.1**
AKTO	**Aktyubinsk**	64.07	315	LR		LR	11 01 47.7
	comp=Z,22nm,19.4s,baz=83,slow=36						
DLBC	**Dease Lake**	65.56	35	P		**P**	**10 33 15.6 +1.4**
	comp=Z,6.4nm,1.1s,baz=278,slow=5.5,SNR=5.1						
DLBC	**Dease Lake**	65.56	35	*e*P		**P**	**10 33 16.1 +1.9**
	comp=Z,18nm,1.4s						
SPITS	**Spitsbergen Ar**	68.59	349	P		**P**	**10 33 32.8 -0.1**
	comp=Z,4.5nm,0.5s,baz=101,slow=7.0,SNR=20						
SPITS	**Spitsbergen Ar**	68.59	349	P		**P**	**10 33 32.8 -0.1**
SPITS				pmax	pmax		
	comp=Z,4.0nm,0.5s						
KBS	**Kingsbay**	68.77	351	*e*P		**P**	**10 33 35.5 +1.5**
KBS				pmax	pmax		
	comp=Z,11nm,0.7s						
KBS	**Kingsbay**	68.77	351	*e*P		**P**	**10 33 35.5 +1.5**
	comp=Z,11nm,0.7s						
TMCR	**Tamitsa**	69.87	333	*e*P		**P**	**10 33 40.1 -0.8**
TMCR				pmax	pmax		
	comp=Z,45nm,1.0s						
KLMR	**Klimovskoe**	70.60	329	*e*P		**P**	**10 33 44.0 -1.4**
KLMR				*e*S		S	10 42 35.7 -9.1
KLMR				pmax	pmax		
	comp=Z,10.0nm,0.9s						
RES	**Resolute Bay**	70.77	13	P		**P**	**10 33 46.4 +0.2**
	comp=Z,12nm,0.8s,baz=310,slow=7.2,SNR=8.6						
RES	**Resolute Bay**	70.77	13	*e*P		**P**	**10 33 47.0 +0.8**
RES				pmax	pmax		
	comp=Z,15nm,0.9s						
RES	**Resolute Bay**	70.77	13	*e*P		**P**	**10 33 47.0 +0.8**
	comp=Z,15nm,0.9s						
KEV	**Kevo**	71.08	340	*e*P		**P**	**10 33 49.1 +1.0**
KEV				pmax	pmax		
	comp=Z,60nm,1.3s						
KEV	**Kevo**	71.08	340	*e*P		**P**	**10 33 49.1 +1.0**
	comp=Z,60nm,1.3s						
YKW3	**Yellowknife Ar**	71.24	28	*e*P		**P**	**10 33 49.7 +0.5**
	comp=Z,13nm,1.1s						
YKA	**Yellowknife Ar**	71.28	28	P		**P**	**10 33 49.9 +0.5**
	comp=Z,5.6nm,0.6s,baz=298,slow=6.3,SNR=77						
YKB5	**Yellowknife Ar**	71.28	28	*e*P		**P**	**10 33 49.7 +0.2**
ARA0	**ARCESS Array S**	71.64	340	*e*P		**P**	**10 33 51.7 +0.1**
ARCES	**ARCESS Array B**	71.64	340	P		**P**	**10 33 51.2 -0.4**
	comp=Z,14nm,0.8s,baz=76,slow=8.2,SNR=31						
ARCES				LR	LR		11 09 37.8
	comp=Z,15nm,18.4s,baz=202,slow=39						
ARCES	**ARCESS Array B**	71.64	340	P		**P**	**10 33 51.2 -0.4**
ARCES				pmax	pmax		
	comp=Z,13nm,0.8s						
ARCES				MLR	MLR		
	comp=Z,15nm,18.5s						
ARE0	**ARCESS Array S**	71.64	340	*e*P		**P**	**10 33 52.2 +0.7**
	comp=Z,30nm,1.0s						
PGC	**Sidney**	72.54	44	*e*P		**P**	**10 33 59.4 +2.2**
	comp=Z,16nm,1.0s						
VRH	**Novokhopyorsk**	73.52	320	*e*P		**P**	**10 34 01.5 -1.5**
VRH				pmax	pmax		
	comp=Z,7.0nm,0.6s						
DAG	**Danmarks Havn**	74.00	355	⇓*i P*		**P**	**10 34 05.9 +0.6**
	comp=Z,15nm,0.9s						
DAG	**Danmarks Havn**	74.00	355	⇓*i P*		**P**	**10 34 05.9 +0.6**
DAG				pmax	pmax		
	comp=Z,12nm,0.9s						
LPSR	**Galich'ya Gora**	74.46	322	*e*P		**P**	**10 34 08.7 +0.3**
LPSR				pmax	pmax		
	comp=Z,10.0nm,0.9s						
OBN	**Obninsk**	74.54	325	⇑*i P*		**P**	**10 34 08.4 -0.4**
OBN				*i* *PP		pP	10 34 56.9 +6.3
OBN				pmax	pmax

WDC	**Whiskeytown Da**	**76.53**	**51**	*eP*	**P**	**10 34 21.9 +1.5**
WDC				pmax	pmax	
comp=Z,14nm,1.4s						
WDC	**Whiskeytown Da**	**76.53**	**51**	*eP*	**P**	**10 34 21.9 +1.5**
comp=Z,14nm,1.4s						
K05A	**Summer Lake**	**76.68**	**49**	*eP*	**P**	**10 34 23.5 +2.0**
comp=Z,22nm,1.1s						
VSU	**Vasula**	**77.42**	**331**	*ceP*	**P**	**10 34 25.6 +0.6**
VSU				pmax	pmax	
comp=Z,30nm,1.0s						
WALA	**Waterton Lakes**	**77.98**	**40**	*eP*	**P**	**10 34 30.1 +1.6**
comp=Z,10nm,1.0s						
BMO	**Blue Mountains**	**78.00**	**45**	*eP*	**P**	**10 34 29.6 +0.9**
BMO				pmax	pmax	
comp=Z,15nm,1.1s						
BMO	**Blue Mountains**	**78.00**	**45**	*eP*	**P**	**10 34 29.6 +0.9**
comp=Z,15nm,1.1s						
BSMT	**Bassoo Peak**	**78.07**	**42**	*eP*	**P**	**10 34 31.2 +2.0**
BLMT	**Blacktail Moun**	**78.24**	**42**	*eP*	**P**	**10 34 31.5 +1.5**
WVOR	**Wild Horse Val**	**78.30**	**48**	*eP*	**P**	**10 34 32.1 +1.7**
WVOR				pmax	pmax	
comp=Z,10.0nm,1.0s						
WVOR	**Wild Horse Val**	**78.30**	**48**	*eP*	**P**	**10 34 32.1 +1.7**
comp=Z,9.9nm,1.0s						
AFDM	**Forest Hills D**	**78.34**	**52**	*eP*	**P**	**10 34 32.1 +1.5**
comp=Z,18nm,1.6s						
JTMT	**Jette**	**78.42**	**42**	*eP*	**P**	**10 34 32.5 +1.5**
YBMT	**Yellow Bay**	**78.52**	**42**	*eP*	**P**	**10 34 33.1 +1.6**
SWMT	**Swartz Lake**	**78.70**	**42**	*eP*	**P**	**10 34 34.0 +1.5**
SUMG	**Summit**	**78.98**	**360**	*i P*	**P**	**10 34 35.1 +1.2**
comp=Z,13nm,0.9s						
SUMG	**Summit**	**78.98**	**360**	*eP*	**P**	**10 34 35.2 +1.3**
SUMG				pmax	pmax	
comp=Z,13nm,0.9s						
SUMG	**Summit**	**78.98**	**360**	*eP*	**P**	**10 34 35.2 +1.3**
comp=Z,13nm,0.9s						
MSO	**Missoula**	**79.08**	**42**	*eP*	**P**	**10 34 35.8 +1.2**
comp=Z,14nm,1.6s						
PAHR	**Pah Rah Range**	**79.08**	**51**	*eP*	**P**	**10 34 36.3 +1.5**
comp=Z,14nm,1.1s						
CMB	**Columbia Colle**	**79.17**	**53**	*eP*	**P**	**10 34 36.5 +1.3**
CMB				pmax	pmax	
comp=Z,15nm,1.1s						
CMB	**Columbia Colle**	**79.17**	**53**	*eP*	**P**	**10 34 36.5 +1.3**
comp=Z,14nm,1.1s						
CHMT	**Chamberlain Mo**	**79.44**	**42**	*eP*	**P**	**10 34 37.9 +1.2**
MFID	**Camas Ranch**	**79.63**	**46**	*eP*	**P**	**10 34 39.2 +1.6**
comp=Z,22nm,1.2s						
BMN	**Battle Mountai**	**80.19**	**49**	*eP*	**P**	**10 34 42.7 +2.0**
BMN				pmax	pmax	
comp=Z,13nm,1.3s						
BMN	**Battle Mountai**	**80.19**	**49**	*eP*	**P**	**10 34 42.7 +2.0**
comp=Z,13nm,1.3s						
SCO	**Scoresbysund**	**80.32**	**354**	*i P*	**P**	**10 34 41.8 +1.2**
comp=Z,26nm,1.3s						
SCO	**Scoresbysund**	**80.32**	**354**	*i P*	**P**	**10 34 41.8 +1.2**
SCO				pmax	pmax	
comp=Z,26nm,1.3s						
NV01	**Mina Array Sit**	**80.43**	**51**	*eP*	**P**	**10 34 43.5 +1.4**
NVAR	**Mina Array Bea**	**80.43**	**51**	P	**P**	**10 34 43.5 +1.4**
comp=Z,6.8nm,0.7s,baz=286,slow=5.7,SNR=42						
HLID	**Hailey**	**80.44**	**45**	*eP*	**P**	**10 34 43.6 +1.6**
comp=Z,6.3nm,1.0s						
LRM	**Limekiln Ridge**	**80.48**	**43**	*eP*	**P**	**10 34 43.6 +1.3**
NV11	**Mina Array Sit**	**80.53**	**51**	*eP*	**P**	**10 34 43.9 +1.4**
comp=Z,16nm,1.4s						
AKASG	**Malin Array Be**	**80.63**	**323**	P	**P**	**10 34 41.0 -1.6**
comp=Z,3.4nm,0.6s,baz=48,slow=5.9,SNR=14						
AKBB	**Malin Array Si**	**80.63**	**323**	*eP*	**P**	**10 34 42.0 -0.6**
AKBB				pmax	pmax	
comp=Z,7.0nm,0.8s						
AKBB	**Malin Array Si**	**80.63**	**323**	*eP*	**P**	**10 34 42.0 -0.6**
comp=Z,6.5nm,0.8s						
DLMT	**Dillon**	**80.64**	**43**	*eP*	**P**	**10 34 44.7 +1.7**
comp=Z,15nm,1.3s						
KIEV	**Kiev**	**80.64**	**323**	*i P*	**P**	**10 34 42.6 -0.1**
FFC	**Flin Flon**	**80.98**	**32**	*eP*	**P**	**10 34 45.3 +0.9**
FFC				pmax	pmax	
comp=Z,15nm,1.2s						
FFC	**Flin Flon**	**80.98**	**32**	*eP*	**P**	**10 34 45.3 +0.9**
comp=Z,15nm,1.2s						
BOZ	**Bozeman (W)**	**81.06**	**43**	*eP*	**P**	**10 34 45.2 -0.1**
BOZ				pmax	pmax	
comp=Z,18nm,1.8s						
BOZ	**Bozeman (W)**	**81.06**	**43**	*eP*	**P**	**10 34 45.2 -0.1**
comp=Z,18nm,1.8s						
ELK	**Elko**	**81.34**	**48**	*eP*	**P**	**10 34 48.8 +1.9**
ELK				pmax	pmax	
comp=Z,10.0nm,1.3s						
ELK	**Elko**	**81.34**	**48**	*eP*	**P**	**10 34 48.8 +1.9**
comp=Z,10nm,1.3s						
NC405	**NORSAR Array S**	**81.46**	**338**	*eP*	**P**	**10 34 46.7 -0.2**
HFS	**Hagfors**	**81.48**	**336**	P	**P**	**10 34 46.5 -0.4**
comp=Z,18nm,0.5s,baz=62,slow=3.8,SNR=63						
NC303	**NORSAR Array S**	**81.50**	**338**	*eP*	**P**	**10 34 47.2 +0.2**
NB201	**NORSAR Array S**	**81.65**	**338**	*eP*	**P**	**10 34 47.6 -0.2**
NC204	**NORSAR Array S**	**81.66**	**338**	*eP*	**P**	**10 34 48.1 +0.2**
FCC	**Fort Churchill**	**81.66**	**26**	*eP*	**P**	**10 34 47.8 -0.1**
FCC				pmax	pmax	
comp=Z,7.0nm,1.0s						
FCC	**Fort Churchill**	**81.66**	**26**	*eP*	**P**	**10 34 47.8 -0.1**
comp=Z,7.2nm,1.0s						
NB200	**NORSAR Array S**	**81.68**	**338**	*eP*	**P**	**10 34 47.6 -0.4**
NOA	**NORSAR Array B**	**81.68**	**338**	P	**P**	**10 34 47.6 -0.4**
comp=Z,13nm,0.6s,baz=45,slow=5.1,SNR=43						
NBO02	**NORSAR Array S**	**81.79**	**338**	*eP*	**P**	**10 34 48.2 -0.3**
NBO00	**NORSAR Array S**	**81.83**	**338**	*eP*	**P**	**10 34 48.6 -0.2**
NAO01	**NORSAR Array S**	**81.94**	**338**	*eP*	**P**	**10 34 48.9 -0.5**
DAC	**Darwin (Calif)**	**81.97**	**53**	*eP*	**P**	**10 34 51.4 +1.1**
DAC				pmax	pmax	
comp=Z,6.0nm,1.1s						
DAC	**Darwin (Calif)**	**81.97**	**53**	*eP*	**P**	**10 34 51.4 +1.1**
comp=Z,6.0nm,1.1s						
GCMT	**Greycliff**	**82.14**	**42**	*eP*	**P**	**10 34 50.4 -0.5**
YFT	**Old Faithful**	**82.18**	**43**	*eP*	**P**	**10 34 55.0 +3.8**
comp=Z,5.8nm,0.8s						
R11A	**Troy Canyon, C**	**82.33**	**50**	*eP*	**P**	**10 34 53.1 +1.0**
comp=Z,11nm,1.2s						
H17A	**Grant Village**	**82.37**	**43**	*eP*	**P**	**10 34 55.5 +3.3**
comp=Z,28nm,1.4s						
LKWY	**Lake**	**82.38**	**43**	*eP*	**P**	**10 34 55.6 +3.3**
LKWY				pmax	pmax	
comp=Z,12nm,1.1s						
LKWY	**Lake**	**82.38**	**43**	*eP*	**P**	**10 34 55.5 +3.3**
comp=Z,12nm,1.1s						
HVU	**Hansel Valley**	**82.40**	**46**	*eP*	**P**	**10 34 54.4 +2.1**
HVU				pmax	pmax	
comp=Z,33nm,1.8s						
HVU	**Hansel Valley**	**82.40**	**46**	*eP*	**P**	**10 34 54.4 +2.1**
comp=Z,33nm,1.8s						
IMW	**Indian Meadow**	**82.42**	**44**	*eP*	**P**	**10 34 55.0 +2.4**
comp=Z,6.5nm,0.9s						
FLWY	**Flagg Ranch**	**82.46**	**44**	*eP*	**P**	**10 34 55.0 +2.4**
comp=Z,16nm,1.3s						
TPNV	**Topopah Spring**	**82.58**	**52**	*eP*	**P**	**10 34 54.4 +1.0**
TPNV				pmax	pmax	
comp=Z,9.0nm,0.8s						
TPNV	**Topopah Spring**	**82.58**	**52**	*eP*	**P**	**10 34 54.4 +1.0**
comp=Z,8.6nm,0.8s						
PTU	**Portage**	**82.61**	**46**	*eP*	**P**	**10 34 54.7 +1.2**
MOOW	**Moose Ponds**	**82.61**	**44**	*eP*	**P**	**10 34 55.1 +1.7**
comp=Z,8.7nm,1.3s						
BGU	**Big Grassy Mou**	**82.69**	**47**	*eP*	**P**	**10 34 55.0 +1.1**
comp=Z,14nm,1.5s						
RLMT	**Red Lodge**	**82.75**	**42**	*eP*	**P**	**10 34 56.0 +1.8**
comp=Z,17nm,1.3s						
REDW	**Red Top Meadow**	**82.76**	**44**	*eP*	**P**	**10 34 55.9 +1.6**
comp=Z,15nm,1.5s						
SNOW	**Snow King Moun**	**82.76**	**44**	*eP*	**P**	**10 34 56.2 +1.9**
comp=Z,5.2nm,0.8s						
GSC	**Goldstone, Bar**	**83.02**	**54**	*eP*	**P**	**10 34 56.9 +1.4**
GSC				pmax	pmax	
comp=Z,10.0nm,1.3s						
GSC	**Goldstone, Bar**	**83.02**	**54**	*eP*	**P**	**10 34 56.9 +1.4**
comp=Z,10nm,1.3s						
DUG	**Dugway, Tooele**	**83.21**	**48**	*eP*	**P**	**10 34 57.8 +1.3**
DUG				pmax	pmax	
comp=Z,15nm,1.2s						
DUG	**Dugway, Tooele**	**83.21**	**48**	*eP*	**P**	**10 34 57.8 +1.3**
comp=Z,16nm,1.2s						
HWUT	**Hardware Ranch**	**83.26**	**46**	*eP*	**P**	**10 34 58.4 +1.6**
comp=Z,20nm,1.0s						
PSUT	**Pine Spring**	**83.39**	**50**	*eP*	**P**	**10 34 59.0 +1.4**
comp=Z,13nm,1.2s						
SHPR	**Sheep Range**	**83.56**	**52**	*eP*	**P**	**10 35 00.2 +1.8**
comp=Z,13nm,1.2s						
JLU	**Jordanelle**	**83.87**	**47**	*eP*	**P**	**10 35 01.4 +1.4**
comp=Z,32nm,1.6s						
BW06	**Boulder Array**	**83.88**	**44**	*eP*	**P**	**10 35 01.1 +1.1**
comp=Z,7.6nm,1.1s						
PD31	**Pinedale Array**	**83.88**	**44**	*eP*	**P**	**10 35 00.9 +1.0**
PDAR	**Pinedale Array**	**83.88**	**44**	P	**P**	**10 35 00.9 +1.0**
comp=Z,4.0nm,0.9s,baz=264,slow=3.0,SNR=26						
BR101	**Keskin Array S**	**84.06**	**312**	*eP*	**P**	**10 35 00.5 -0.4**
BR131	**Keskin Array S**	**84.06**	**312**	*eP*	**P**	**10 35 00.5 -0.4**
BRTR	**Keskin Array B**	**84.06**	**312**	P	**P**	**10 35 00.5 -0.4**
comp=Z,1.8nm,0.7s,baz=101,slow=5.2,SNR=13						
PFO	**Pinyon Flats O**	**84.11**	**55**	P	**P**	**10 35 02.1 +0.9**
comp=Z,8.9nm,0.9s,baz=302,slow=4.7,SNR=6.2						
PFO	**Pinyon Flats O**	**84.11**	**55**	*eP*	**P**	**10 35 02.1 +0.9**
PFO				pmax	pmax	
comp=Z,13nm,1.1s						
PFO	**Pinyon Flats O**	**84.11**	**55**	*eP*	**P**	**10 35 02.1 +0.9**
comp=Z,13nm,1.1s						
SFJD	**Kangerlussuaq**	**84.19**	**5**	P	**P**	**10 35 01.0 +0.2**
comp=Z,14nm,0.9s,baz=350,slow=5.1,SNR=5.8						
SFJD	**Kangerlussuaq**	**84.19**	**5**	⇓*iP*	**P**	**10 35 01.3 +0.6**
SFJD	**Kangerlussuaq**	**84.19**	**5**	⇓*iP*	**P**	**10 35 01.3 +0.6**
CCUT	**Cedar City**	**84.24**	**50**	*eP*	**P**	**10 35 03.5 +1.6**
comp=Z,8.9nm,1.2s						
LDFC	**Landfair**	**84.33**	**53**	*eP*	**P**	**10 35 03.2 +1.0**
comp=Z,17nm,1.0s						
MSU	**Marysvale**	**84.52**	**49**	*eP*	**P**	**10 35 05.0 +1.7**
MSU	**Marysvale**	**84.52**	**49**	*eP*	**P**	**10 35 05.0 +1.7**
BR231	**Keskin MP Arra**	**84.55**	**313**	*eP*	**P**	**10 35 01.1 -2.1**
BUR08	**Bucovina Ar. S**	**84.56**	**322**	*eP*	**P**	**10 35 03.2 0.0**
LCMT	**Little Creek M**	**84.61**	**51**	*eP*	**P**	**10 35 05.4 +1.7**
comp=Z,13nm,1.1s						
MTPU	**Mount Pierson**	**84.77**	**49**	*eP*	**P**	**10 35 06.3 +1.6**
comp=Z,10nm,1.1s						
KNB	**Kanab**	**84.89**	**50**	*eP*	**P**	**10 35 06.8 +1.7**
KNB				pmax	pmax	
comp=Z,28nm,1.1s						
KNB	**Kanab**	**84.89**	**50**	*eP*	**P**	**10 35 06.8 +1.7**
comp=Z,28nm,1.1s						
P17A	**Butcher Ranch,**	**84.94**	**48**	*eP*	**P**	**10 35 06.7 +1.4**
comp=Z,14nm,1.0s						
Q16A	**Castle Valley**	**84.97**	**48**	*eP*	**P**	**10 35 07.0 +1.5**
comp=Z,29nm,1.5s						
W13A	**Hualapai Mount**	**85.17**	**53**	*eP*	**P**	**10 35 07.8 +1.2**
comp=Z,5.2nm,1.1s						
P18A	**Preston Nutter**	**85.18**	**47**	*eP*	**P**	**10 35 08.3 +1.6**
comp=Z,9.2nm,1.0s						
SRU	**San Rafael Swe**	**85.28**	**48**	*eP*	**P**	**10 35 08.1 +1.1**
SRU				pmax	pmax	
comp=Z,11nm,0.9s						
SRU	**San Rafael Swe**	**85.28**	**48**	*eP*	**P**	**10 35 08.1 +1.1**
comp=Z,11nm,0.9s						
Y12C	**Blythe**	**85.43**	**54**	*eP*	**P**	**10 35 08.7 +1.1**
comp=Z,14nm,1.2s						
U15A	**North Rim**	**85.56**	**51**	*eP*	**P**	**10 35 10.3 +1.7**
comp=Z,7.5nm,0.9s						
GLA	**Glamis**	**85.57**	**55**	*eP*	**P**	**10 35 09.9 +1.5**
GLA				pmax	pmax	
comp=Z,20nm,1.3s						
GLA	**Glamis**	**85.57**	**55**	*eP*	**P**	**10 35 09.9 +1.5**
comp=Z,20nm,1.3s						
CRVS	**Cervenica-Dubn**	**85.73**	**325**	*eP*	**P**	**10 35 07.6 -1.2**
CRVS	**Cervenica-Dubn**	**85.73**	**325**	*eP*	**P**	**10 35 07.6 -1.2**
K22A	**Casper**	**85.78**	**43**	*eP*	**P**	**10 35 10.7 +1.2**
comp=Z,7.4nm,0.8s						
O20A	**White River Ci**	**86.17**	**46**	*eP*	**P**	**10 35 12.7 +1.2**
comp=Z,17nm,1.2s						
RSSD	**Black Hills**	**86.37**	**41**	*eP*	**P**	**10 35 13.7 +1.4**
RSSD				pmax	pmax	
comp=Z,3.0nm,0.7s						
RSSD	**Black Hills**	**86.37**	**41**	*eP*	**P**	**10 35 13.7 +1.4**
comp=Z,3.4nm,0.7s						
Y14A	**Wickenburg**	**86.40**	**53**	*eP*	**P**	**10 35 14.0 +1.5**
comp=Z,42nm,1.0s						
113A	**Mohawk Valley,**	**86.48**	**54**	*eP*	**P**	**10 35 13.9 +1.1**
comp=Z,13nm,1.1s						
PV09	**Paradox Valley**	**86.53**	**48**	*eP*	**P**	**10 35 14.9 +1.6**
PV10	**Paradox Valley**	**86.66**	**48**	*eP*	**P**	**10 35 15.5 +1.6**
WUAZ	**Wupatki**	**86.68**	**51**	*eP*	**P**	**10 35 14.9 +1.0**
comp=Z,8.7nm,1.0s						
PV05	**Paradox Valley**	**86.78**	**48**	*eP*	**P**	**10 35 15.8 +1.3**
PV01	**Paradox Valley**	**87.10**	**48**	*eP*	**P**	**10 35 17.3 +1.3**
N23A	**Red Feather La**	**87.16**	**44**	*eP*	**P**	**10 35 14.7 -1.6**
comp=Z,22nm,1.5s						
PHWY	**Pilot Hill**	**87.22**	**44**	*eP*	**P**	**10 35 18.0 +1.4**
comp=Z,5.5nm,1.0s						
X16A	**Lo Mia Camp, P**	**87.23**	**52**	*eP*	**P**	**10 35 18.5 +1.8**
comp=Z,8.3nm,1.3s						
DPC	**Dobruska-Polom**	**87.26**	**328**	*eP*	**P**	**10 35 16.2 -0.1**
DPC	**Dobruska-Polom**	**87.26**	**328**	*eP*	**P**	**10 35 16.2 -0.1**
SMCO	**Snowmass**	**87.52**	**46**	*eP*	**P**	**10 35 19.9 +1.6**
comp=Z,6.5nm,1.1s						
VRAC	**Vranov**	**87.85**	**327**	P	**P**	**10 35 18.3 -0.8**
comp=Z,2.9nm,0.4s,baz=356,slow=5.1,SNR=3.2						
CLL	**Collm**	**88.08**	**330**	⇑*iP*	**P**	**10 35 19.2 -0.8**
CLL	**Collm**	**88.08**	**330**	⇑*iP*	**P**	**10 35 19.2 -0.8**
GOPC	**GO Pecny, Ondr**	**88.27**	**328**	*eP*	**P**	**10 35 20.7 -0.3**
GOPC	**GO Pecny, Ondr**	**88.27**	**328**	*eP*	**P**	**10 35 20.7 -0.3**
SDCO	**Great Sand Dun**	**89.30**	**47**	*eP*	**P**	**10 35 27.7 +1.3**
comp=Z,6.3nm,1.4s						
KHC	**Kasperske Hory**	**89.38**	**328**	*eP*	**P**	**10 35 25.8 -0.5**
KHC	**Kasperske Hory**	**89.38**	**328**	*eP*	**P**	**10 35 25.9 -0.4**
KHC				pmax	pmax	
comp=Z,2.0nm,0.6s						
KHC	**Kasperske Hory**	**89.38**	**328**	*eP*	**P**	**10 35 25.9 -0.4**
comp=Z,1.5nm,0.6s						
GEC2	**GERESS Array S**	**89.53**	**328**	*eP*	**P**	**10 35 26.3 -0.8**
GEC2				pmax	pmax	
comp=Z,3.0nm,0.8s						
GEC2	**GERESS Array S**	**89.53**	**328**	*eP*	**P**	**10 35 26.3 -0.8**
comp=Z,2.9nm,0.8s						
GERES	**GERESS Array B**	**89.53**	**328**	P	**P**	**10 35 26.1 -0.9**
comp=Z,2.4nm,0.7s,baz=39,slow=5.1,SNR=17						
GEA0	**GERESS Array S**	**89.53**	**328**	*eP*	**P**	**10 35 25.8 -1.3**
ANMO	**Albuquerque**	**90.32**	**49**	P	**P**	**10 35 31.6 +0.5**
comp=Z,2.6nm,1.1s,baz=340,slow=3.6,SNR=6.6						
ANMO	**Albuquerque**	**90.32**	**49**	*ceP*	**P**	**10 35 33.2 +2.0**
ANMO				pmax	pmax	
comp=Z,2.0nm,0.8s						
ANMO	**Albuquerque**	**90.32**	**49**	*eP*	**P**	**10 35 32.6 +1.5**
comp=Z,6.3nm,1.3s						
T25A	**Trinidad**	**90.36**	**47**	*eP*	**P**	**10 35 33.0 +1.7**
comp=Z,6.0nm,1.0s						
319A	**Douglas**	**90.43**	**54**	*eP*	**P**	**10 35 33.1 +1.5**
comp=Z,9.3nm,1.1s						
BNM	**Barren Site**	**90.67**	**50**	*eP*	**P**	**10 35 34.1 +1.3**
EKA	**Eskdalemuir Ar**	**90.80**	**340**	P	**P**	**10 35 32.6 -0.1**
comp=Z,1.7nm,0.4s,baz=71,slow=2.7,SNR=14						
BFO	**Black Forest**	**92.31**	**331**	*ceP*	**P**	**10 35 40.0 +0.1**
FUORN	**Ofenpass-Fuorn**	**92.74**	**328**	*eP*	**P**	**10 35 41.4 -0.8**
comp=Z,14nm,1.0s						
DAVOX	**Davos/Dischmat**	**92.80**	**329**	P	**P**	**10 35 41.3 -1.1**
comp=Z,4.9nm,0.7s,baz=80,slow=5.3,SNR=4.9						
MNTX	**Cornudas Mount**	**92.96**	**51**	*eP*	**P**	**10 35 44.5 +1.3**
comp=Z,6.5nm,1.0s						
AMTX	**Amarillo**	**93.48**	**47**	*eP*	**P**	**10 35 46.6 +1.0**
comp=Z,14nm,1.1s						
LTX	**Lajitas**	**95.56**	**52**	*eP*	**P**	**10 35 55.8 +0.6**
LTX	**Lajitas**	**95.56**	**52**	*eP*	**P**	**10 35 55.8 +0.6**
TX31	**Lajitas Ar. Si**	**95.56**	**52**	*eP*	**P**	**10 35 56.4 +1.2**
TXAR	**Lajitas Array**	**95.56**	**52**	P	**P**	**10 35 55.8 +0.6**
comp=Z,2.3nm,0.7s,baz=294,slow=2.8,SNR=33						
TOA1	**Torodi Ar. Sit**	**122.65**	**311**	*e*PKPdf	**PKPdf**	**10 41 24.1 -1.0**
TOA0	**Torodi Ar. Sit**	**122.65**	**311**	*e*PKPdf	**PKPdf**	**10 41 24.2 -0.9**
TORD	**Torodi Ar. Bea**	**122.65**	**311**	PKP	**PKPdf**	**10 41 24.1 -1.0**
comp=Z,2.0nm,0.7s,baz=81,slow=1.5,SNR=16						
SAML	**Samuel**	**150.04**	**54**	*e*PKPbc	**PKPbc**	**10 42 20.3 +0.2**
LPAZ	**La Paz**	**150.58**	**71**	PKPbc	**PKPbc**	**10 42 22.8 +0.7**
comp=Z,4.8nm,0.6s,baz=315,slow=2.0,SNR=26						
PLCA	**Paso Flores**	**151.68**	**123**	PKPbc	**PKPbc**	**10 42 23.1 -0.2**
comp=Z,3.1nm,0.8s,baz=202,slow=2.4,SNR=14						
PLCA	**Paso Flores**	**151.68**	**123**	*e*PKPbc	**PKPbc**	**10 42 23.7 +0.4**

IDC 31 10:25:32.5±4.5, 44°.24S×80°.35W, h0km, mb4.3/4, mb1 4.4/5, mb1mx3.9/30, mbtmp4.1/5, ML3.6/1, MS3.7/6, Ms1 3.6/6, ms1mx3.4/20, Error ellipse: s-maj=101.3km s-min=42.9km az=173.0, Off coast of southern Chile

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PLCA	**Paso Flores**	**8.04**	**68**	Pn	Pn	10 27 32.0	+1.4
0.2nm,0.3s,baz=259,slow=16,SNR=7.2							
PLCA				LR	LR	10 30 11.4	
comp=Z,114nm,20.8s,baz=232,slow=35							
USHA	**Ushuaia**	**13.11**	**148**	LR	LR	10 32 44.3	
comp=Z,2μm,19.4s,baz=162,slow=33							
LVC	**Limon Verde**	**23.54**	**27**	P	P	10 30 45.2	+0.4
21nm,0.9s,baz=219,slow=11,SNR=3.9							
CPUP	**Villa Florida**	**25.79**	**54**	P	P	10 31 04.3	-0.8
8.0nm,1.1s,baz=228,slow=8.8,SNR=10							
CPUP				LR	LR	10 41 49.5	
comp=Z,165nm,19.0s,baz=220,slow=38							
LPAZ	**La Paz**	**29.72**	**24**	P	P	10 31 41.0	-0.1
1.5nm,1.0s,baz=209,slow=8.9,SNR=3.8							
ROSC	**El Rosal**	**49.15**	**8**	LR	LR	10 52 33.0	
comp=Z,100nm,20.3s,baz=238,slow=33							
RCBR	**Riachuelo**	**54.50**	**59**	LR	LR	10 57 34.9	
comp=Z,52nm,18.9s,baz=196,slow=35							
MAW	**Mawson**	**65.07**	**165**	LR	LR	11 02 43.0	
comp=Z,46nm,18.1s,baz=241,slow=34							
NVAR	**Mina Array Bea**	**89.15**	**331**	P	P	10 38 30.0	+0.2
0.8nm,0.8s,baz=160,slow=8.2,SNR=3.7							

*CSEM **31** 10:37:55.9±0.3, 41°.84N×20°.21E, h2km, ML2.0, Error ellipse: s-maj=6.4km s-min=4.5km az=66.0*
*BEO **31** 10:37:56.9±0.4, 41°.88N×20°.25E, h0km, M2.0/5*
*PDG **31** 10:37:56.2±0.2, 41°.82N×20°.14E, h11km, ML2.5/13, Error ellipse: s-maj=0.6km s-min=0.6km az=90.0*
*SKO **31** 10:37:56.1, 41°.88N×20°.16E, h16km*
*TIR **31** 10:37:57.4, 41°.76N×20°.29E, h8km, ML2.4*

ISC 31 10:37:54.4±1.3, 41°.82N±0°.02×20°.26E±0°.03, h0km±11km, n37, σ0 70/71, 14C-9D, Albania

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TIR	**Tirane**	**0.56**	**213**	*i* PG	**Pb**	**10 38 06.2**	**-0.8**
TIR				*i* SG	**Sb**	**10 38 15.8**	**+0.4**
TIR	**Tirane**	**0.56**	**213**	*e*Pg	**Pb**	**10 38 06.9**	**-0.1**
TIR				*e*Sg	**Sb**	**10 38 16.3**	**+0.8**
TIR	**Tirane**	**0.56**	**213**	*e*Pg	**Pb**	**10 38 06.9**	**-0.1**
TIR				*i* Sg	**Sb**	**10 38 15.9**	**+0.4**
ULC	**Ulcinj**	**0.77**	**281**	⇓*iPg*	**Pg**	**10 38 09.1**	**-0.1**
ULC				*e*Sg	**Sg**	**10 38 19.9**	**+0.6**
ULC	**Ulcinj**	**0.77**	**281**	⇓*iPg*	**Pg**	**10 38 09.1**	**-0.1**
ULC				*e*Sg	**Sg**	**10 38 19.9**	**+0.6**
PVY	**Plav**	**0.81**	**344**	⇓⇓*iPg*	**Pb**	**10 38 10.7**	**-0.7**
PVY				*e*Sg	**Sb**	**10 38 22.8**	**-0.1**
PVY	**Plav**	**0.81**	**344**	⇓⇓*iPg*	**Pb**	**10 38 10.7**	**-0.7**
PVY				*e*Sg	**Sb**	**10 38 22.8**	**-0.1**
OHR	**Ohrid**	**0.81**	**150**	*i* Pg	**Pn**	**10 38 12.5**	**-0.7**
OHR				*i* Sg	**Sn**	**10 38 25.9**	**0.0**
OHR	**Ohrid**	**0.81**	**150**	*i* Pg	**Pn**	**10 38 12.4**	**-0.7**
OHR				*i* Sg	**Sn**	**10 38 25.8**	**0.0**
DRME	**Dracevica, Mon**	**0.88**	**295**	*e*Pg	**Pg**	**10 38 10.7**	**-0.6**
DRME				*e*Sg	**Sb**	**10 38 24.0**	**-0.9**
DRME	**Dracevica, Mon**	**0.88**	**295**	*e*Pg	**Pg**	**10 38 10.7**	**-0.6**
DRME				*e*Sg	**Sb**	**10 38 24.0**	**-0.9**
PDG	**Podgorica**	**0.97**	**310**	*e*Pg	**Pb**	**10 38 13.7**	**-0.3**
PDG				*e*Sg	**Sb**	**10 38 26.8**	**-0.5**
PDG	**Podgorica**	**0.97**	**310**	*e*Pg	**Pb**	**10 38 13.7**	**-0.3**
PDG				*e*Sg	**Sb**	**10 38 26.8**	**-0.5**
TTG	**Podgorica**	**0.97**	**310**	⇓*iPg*	**Pg**	**10 38 13.0**	**+0.1**
TTG				*e*Sg	**Sb**	**10 38 27.4**	**+0.1**
BEY	**Berane**	**1.09**	**346**	⇑*iPg*	**Pb**	**10 38 16.2**	**+0.1**
BEY				*e*Sg	**Sn**	**10 38 32.6**	**-0.1**
IVA	**Berane**	**1.09**	**346**	⇑*iPg*	**Pb**	**10 38 16.2**	**+0.1**
IVA				*e*Sg	**Sn**	**10 38 32.6**	**-0.1**
BUM	**Brajici-Budva**	**1.13**	**296**	⇑*iPg*	**Pg**	**10 38 15.9**	**-0.1**
BUM				*e*Sg	**Sb**	**10 38 32.3**	**+0.3**
BUM	**Brajici-Budva**	**1.13**	**296**	⇑*iPg*	**Pg**	**10 38 15.9**	**-0.1**
BUM				*e*Sg	**Sb**	**10 38 32.3**	**+0.3**
CEME	**Cev

0.4nm,0.5s,baz=288,slow=5.8,SNR=5.4
NVAR Mina Array Bea 82.86 52 P P 11 16 41.9 +0.2
0.5nm,0.6s,baz=278,slow=6.3,SNR=4.4
FINES FINESS Array B 86.25 335 P P 11 16 56.7 -1.4
0.7nm,0.7s,baz=77,slow=8.8,SNR=4.5

NEIC ***31*** *11:07:16.3±0.7, 10°.87S×164°.00E, h10km, mb4.3/3, Error ellipse: s-maj=15.7km s-min=13.4km az=145.0*
ISCJB ***31*** *11:07:17.6±0.8, 10°.92S±0°.10×163°.81E±0°.08, h29km, mb3.9/8, MS3.2/1, Error ellipse: s-maj=14.8km s-min=10.3km az=24.5*
IDC ***31*** *11:07:20.4±4.6, 10°.86S×163°.85E, h38km±40km, mb3.9/7, mb1 4.1/10, mb1mx3.8/43, mbtmp4.1/10, ML4.3/3, MS3.4/4, Ms1 3.4/4, ms1mx3.1/37, Error ellipse: s-maj=34.6km s-min=21.9km az=144.0*
ISC 31 11:07:19.1±0.9, 10°.9S±0°.1×163°.86E±0°.10, h29km, n20, σ0°58/15, mb4.0/8, Bougainville-Solomon Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HNR	**Honiara**	**4.10**	**290**	Pn	**Pn**	**11 08 20.8**	**+0.8**
	39nm,0.3s,baz=163,slow=7.4,SNR=18						
HNR				LR	LR	11 10 01.4	
	comp=Z,502nm,20.1s,baz=90,slow=39						
HNR	**Honiara**	**4.10**	**290**	*e*Pn	Pn	11 08 23.1	+3.1
HNR				*e*Sn	**Sn**	**11 09 06.0**	**-1.0**
DZM	**Mont Dzumac**	**11.43**	**168**	Pn	**Pn**	**11 10 00.3**	**-0.4**
	0.6nm,0.3s,baz=302,slow=15,SNR=13						
DZM				LR	LR	11 13 24.5	
	comp=Z,152nm,18.5s,baz=40,slow=32						
PMG	**Port Moresby**	**16.51**	**273**	LR	LR	11 17 16.4	
	comp=Z,179nm,19.8s,baz=90,slow=36						
CTA	**Charters Tower**	**19.28**	**239**	P	**Pn**	**11 11 43.0**	**+0.1**
	0.8nm,0.3s,baz=61,slow=12,SNR=7.9						
CTAO	**Charters Tower**	**19.28**	**239**	*e*P	**Pn**	**11 11 43.1**	**+0.1**
	28nm,0.8s						
AFI	**Afiamalu**	**23.98**	**100**	LR	LR	11 20 04.6	
	comp=Z,81nm,20.7s,baz=155,slow=32						
H11S2	**WAKE ISLAND Hy**	**29.28**	**6**	T	T	11 43 57.3	
	baz=184,slow=76,SNR=23						
H11S3	**WAKE ISLAND Hy**	**29.29**	**5**	T	T	11 43 58.0	
	baz=184,slow=76,SNR=25						
H11S1	**WAKE ISLAND Hy**	**29.30**	**6**	T	T	11 43 53.4	
	baz=184,slow=76,SNR=19						
STKA	**Stephens Creek**	**29.34**	**221**	P	**P**	**11 13 20.4**	**+0.8**
	3.5nm,0.9s,baz=32,slow=13,SNR=5.5						
WRAB	**Tennant Creek**	**29.81**	**249**	*e*P	**P**	**11 13 24.1**	**+0.1**
	1.9nm,0.4s						
WRA	**Warramunga Arr**	**29.82**	**249**	P	**P**	**11 13 23.9**	**-0.2**
	1.9nm,0.5s,baz=80,slow=9.3,SNR=32						
ASAR	**Alice Springs**	**31.24**	**242**	P	**P**	**11 13 36.0**	**-0.5**
	0.6nm,0.5s,baz=63,slow=10,SNR=21						
FITZ	**Fitzroy Crossi**	**37.65**	**254**	P	**P**	**11 14 31.5**	**-0.5**
	3.9nm,0.8s,baz=70,slow=9.4,SNR=16						
FITZ	**Fitzroy Crossi**	**37.65**	**254**	*e*P	**P**	**11 14 31.8**	**-0.2**
	2.2nm,0.5s						
ILAR	**Eielson Array**	**83.92**	**19**	P	**P**	**11 19 46.0**	**0.0**
	0.4nm,0.6s,baz=237,slow=5.9,SNR=6.7						
NVAR	**Mina Array Bea**	**87.31**	**50**	P	**P**	**11 20 04.3**	**+0.5**
	0.2nm,0.4s,baz=239,slow=10,SNR=3.2						
YKA	**Yellowknife Ar**	**95.65**	**27**	P	**P**	**11 20 41.3**	**-0.3**
	0.5nm,0.9s,baz=264,slow=5.1,SNR=5.5						
SANT	**Santorini**	**134.69**	**311**	*e*PKPdf	**PKPdf**	**11 26 34.7**	**-0.8**

IDC ***31*** *11:12:24.2±0.8, 8°.84S×108°.56E, h0km, mb4.3/12, mb1 4.5/14, mb1mx4.2/43, mbtmp4.3/14, ML3.9/2, MS3.3/7, Ms1 3.3/7, ms1mx3.1/38, Error ellipse: s-maj=30.6km s-min=14.0km az=50.0*
ISCJB ***31*** *11:12:27.0±0.3, 8°.98S±0°.05×108°.48E±0°.04, h31km, mb4.3/26, MS3.4/6, Error ellipse: s-maj=7.3km s-min=4.8km az=27.4*
NEIC ***31*** *11:12:28.9±2.1, 8°.93S×108°.58E, h31km±16km, mb4.5/12, Error ellipse: s-maj=11.0km s-min=6.2km az=210.0*
ISC 31 11:12:28.8±0.5, 9°.03S±0°.05×108°.48E±0°.04, h31km, n61, σ1°38/62, mb4.4/26, MS3.4/6, 1C, South of Jawa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CISI	**Cisompet, Garu**	**1.60**	**336**	*e*Pn	**Pn**	**11 12 55.0**	**-0.1**
CISI				*e*Sn	**Sb**	**11 13 16.1**	**-1.6**
UGM	**Wanagama**	**2.30**	**61**	*e*Pn	**Pn**	**11 13 03.6**	**-1.1**
UGM				*e*Sn	**Sn**	**11 13 31.0**	**-1.0**
LEM	**Lembang**	**2.35**	**338**	Pg	**Pb**	**11 13 12.3**	**+1.7**
	246nm,0.3s,baz=336,slow=12,SNR=92						
LEM				Lg	Lg	11 13 43.6	
	186nm,0.3s,baz=161,slow=23,SNR=6.1						
LEM				LR	LR	11 13 49.8	
	comp=Z,169nm,21.8s,baz=182,slow=39						
XMIS	**Christmas Isla**	**3.14**	**242**	*e*Pn	**Pn**	**11 13 16.8**	**+0.5**
XMIS				*e*Sn	**Sn**	**11 13 49.3**	**-3.5**
JAGI	**Jajag, Banyuwa**	**5.63**	**85**	*e*Pn	**Pn**	**11 13 50.6**	**+0.2**
JAGI				*e*Sn	**Sn**	**11 14 56.6**	**+2.5**
MNAI	**Manna**	**7.18**	**310**	*e*Pn	**Pn**	**11 14 13.6**	**+1.8**
MNAI				*e*Sn	**Sn**	**11 15 30.2**	**-2.2**
KAPI	**Kappang**	**11.87**	**71**	Pn	**Pn**	**11 15 14.0**	**-2.0**
	0.8nm,0.3s,baz=259,slow=11,SNR=5.7						
KAPI				LR	LR	11 20 10.3	
	comp=Z,107nm,19.1s,baz=259,slow=40						
SOEI	**Soe**	**15.59**	**94**	*e*Pn	**Pn**	**11 16 02.8**	**-3.9**
	43nm,0.9s						
FITZ	**Fitzroy Crossi**	**18.95**	**120**	P	**P**	**11 16 47.3**	**-0.2**
	0.3nm,0.3s,baz=287,slow=5.2,SNR=10						
FITZ				LR	LR	11 23 33.0	
	comp=Z,105nm,21.2s,baz=298,slow=35						
FITZ	**Fitzroy Crossi**	**18.95**	**120**	P	**Pn**	**11 16 48.4**	**+0.1**
	baz=19,SNR=5.9						
FITZ	**Fitzroy Crossi**	**18.95**	**120**	*e*P	**Pn**	**11 16 48.4**	**+0.1**
	7.2nm,0.8s						
MTN	**Manton Dam**	**22.55**	**102**	*e*P	**P**	**11 17 23.4**	**-3.2**
	24nm,1.1s						
WRKA	**Warakurna**	**24.69**	**133**	P	**P**	**11 17 48.3**	**+1.0**
	baz=25,SNR=18						
NWAO	**Narrogin (SRO)**	**25.12**	**162**	LR	LR	11 28 54.0	
	comp=Z,55nm,19.4s,baz=242,slow=39						
WC1	**Warramunga Arr**	**27.23**	**116**	P	**P**	**11 18 10.4**	**0.0**
	baz=27						
WR1	**Warramunga Arr**	**27.24**	**116**	*e*P	**P**	**11 18 10.4**	**0.0**
	8.1nm,0.9s						
WRA	**Warramunga Arr**	**27.24**	**116**	P	**P**	**11 18 10.4**	**0.0**
	5.2nm,0.7s,baz=289,slow=12,SNR=40						
WRAB	**Tennant Creek**	**27.25**	**116**	*e*P	**P**	**11 18 10.7**	**+0.2**
	65nm,1.9s						
WB2	**Warramunga Arr**	**27.25**	**116**	*e*P	**P**	**11 18 10.7**	**+0.1**
	12nm,1.1s						
QIZ	**Qiongzhong**	**27.91**	**3**	P	**P**	**11 18 18.0**	**+1.7**
QIZ				S	**S**	**11 23 01.0**	**+2.8**
QIZ				pmax	pmax		
	comp=Z,11nm,1.6s						
QIZ				LR	LR		
	comp=Z,100nm,3.5s						
ASAR	**Alice Springs**	**28.33**	**124**	P	**P**	**11 18 20.2**	**0.0**
	comp=Z,4.2nm,0.6s,baz=300,slow=7.9,SNR=25						
ASAR				PcP	**PcP**	**11 21 33.8**	**+1.0**
	comp=Z,0.8nm,0.4s,baz=304,slow=2.1,SNR=7.5						
ASAR				LR	LR	11 29 49.9	
	comp=Z,80nm,20.5s,baz=336,slow=37						
AS31	**Alice Springs**	**28.33**	**124**	*e*P	**P**	**11 18 20.9**	**+0.7**
	comp=Z,1.9nm,0.6s						
CMAR	**Chiang Mai Arr**	**28.89**	**341**	LR	LR	11 30 13.4	
	comp=Z,72nm,21.3s,baz=188,slow=37						
COEN	**Coen**	**34.32**	**101**	P	**P**	**11 19 12.9**	**-0.1**
	baz=34,SNR=6.4						
KMI	**Kunming**	**34.40**	**351**	P	P	11 19 19.8	+6.1
KMI				pP	sP	11 19 26.0	-0.5
KMI				sP	pP	11 19 29.8	+7.0
KMI				pmax	pmax		
	comp=Z,4.0nm,0.9s						
KMI				LR	LR		
	comp=N,110nm,15.6s						
KMI				LR	LR		
	comp=E,120nm,11.5s						
KMI				LR	LR		
	comp=Z,180nm,17.0s						
BBOO	**Buckleboo**	**34.78**	**137**	P	**P**	**11 19 16.7**	**0.0**
	baz=35,SNR=6.7						
H08S2	**Diego Garcia H**	**35.63**	**269**	T	T	11 57 00.8	
	baz=93,slow=76,SNR=35						
H08S3	**Diego Garcia H**	**35.64**	**269**	T	T	11 57 28.8	
	baz=93,slow=76,SNR=30						
H08S1	**Diego Carcia H**	**35.65**	**269**	T	T	11 57 05.8	
	baz=93,slow=76,SNR=31						
HTT	**Hallett**	**37.09**	**135**	P	**P**	**11 19 37.2**	**+0.6**
	baz=37,SNR=3.3						
CTA	**Charters Tower**	**38.08**	**111**	P	**P**	**11 19 45.8**	**+0.7**
	comp=Z,2.1nm,0.5s,baz=274,slow=9.5,SNR=7.1						
STKA	**Stephens Creek**	**38.20**	**131**	P	**P**	**11 19 46.6**	**+0.7**
	comp=Z,26nm,0.7s,baz=304,slow=7.9,SNR=83						
STKA				LR	LR	11 36 59.7	
	comp=Z,82nm,19.3s,baz=231,slow=39						
STKA	**Stephens Creek**	**38.20**	**131**	P	**P**	**11 19 46.8**	**+0.9**
	baz=38,SNR=49						
STKA	**Stephens Creek**	**38.20**	**131**	*e*P	**P**	**11 19 46.9**	**+0.9**
	comp=Z,4.9nm,0.6s						
CD2	**Chengdu**	**39.97**	**354**	P	**P**	**11 20 01.0**	**+0.4**
CD2				pmax	pmax		
	comp=Z,8.0nm,0.6s						
CMSA	**Cobar Meteorol**	**41.16**	**128**	P	**P**	**11 20 12.1**	**+1.5**
	baz=41,SNR=7.8						
YNG	**Young**	**44.38**	**131**	P	**P**	**11 20 37.8**	**+1.0**
	baz=44						
HHC	**Hu-ho-hao-te**	**49.71**	**3**	*e*P	**P**	**11 21 20.0**	**+1.8**
HHC				pmax	pmax		
	comp=Z,21nm,1.0s						
HHC				pmax	pmax		
	comp=Z,85nm,6.2s						
MJAR	**Matsushiro Arr**	**53.24**	**30**	P	**P**	**11 21 41.9**	**-2.7**
	comp=Z,1.4nm,0.7s,baz=226,slow=7.0,SNR=4.2						
WMQ	**Urumqi**	**55.88**	**342**	*e*P	**P**	**11 22 05.0**	**+1.3**
WMQ				pmax	pmax		
	comp=Z,6.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,57nm,5.2s						
WMQ				LR	LR		
	comp=N,26nm,21.6s						
WMQ				LR	LR		
	comp=E,41nm,28.8s						
WMQ				LR	LR		
	comp=Z,37nm,24.4s						
SONA0	**Songino Array**	**56.64**	**358**	*e*P	**P**	**11 22 07.4**	**-1.7**
	comp=Z,2.2nm,1.0s						
SONM	**Songino Array**	**56.64**	**358**	P	**P**	**11 22 07.4**	**-1.7**
	comp=Z,0.7nm,0.5s,baz=177,slow=7.7,SNR=3.8						
TKM2	**Tokmak 2**	**59.76**	**333**	*e*P	**P**	**11 22 30.8**	**-0.4**
	comp=Z,6.7nm,0.6s						
MK01	**Makanchi Array**	**60.26**	**340**	*e*P	**P**	**11 22 33.8**	**-0.4**
MK31	**Makanchi Array**	**60.28**	**340**	*e*P	**P**	**11 22 34.2**	**-0.2**
MK32	**Makanchi Array**	**60.28**	**340**	*e*P	**P**	**11 22 34.0**	**-0.4**
MKAR	**Makanchi Array**	**60.28**	**340**	P	**P**	**11 22 34.0**	**-0.4**
	comp=Z,3.6nm,0.4s,baz=155,slow=8.0,SNR=31						
MKAR	**Makanchi Array**	**60.28**	**340**	*e*P	**P**	**11 22 34.2**	**-0.2**
ZAA0	**Zalesovo Array**	**65.85**	**345**	*e*P	**P**	**11 23 10.1**	**-1.1**
ZALV	**Zalesovo Beam**	**65.85**	**345**	P	**P**	**11 23 10.2**	**-1.0**
	comp=Z,2.4nm,0.3s,baz=156,slow=6.5,SNR=9.0						
ZAA1	**Zalesovo Array**	**65.86**	**345**	*e*P	**P**	**11 23 10.2**	**-1.0**
VOSK	**Vostochnaya**	**69.33**	**337**	*e*P	**P**	**11 23 32.8**	**-0.4**
	comp=Z,3.1nm,0.5s						
ZRNK	**Zerenda**	**70.29**	**336**	*e*P	**P**	**11 23 39.0**	**-0.1**
	comp=Z,4.7nm,0.6s						
ABKAR	**Akbulak array**	**71.89**	**329**	*e*P	**P**	**11 23 49.0**	**+0.1**
VNDA	**Vanda**	**73.72**	**170**	P	**P**	**11 23 59.9**	**+0.5**
	comp=Z,0.9nm,0.5s,baz=318,slow=6.8,SNR=7.2						
SYO	**Syowa Base**	**74.12**	**200⇑**	*e*PcP	**PcP**	**11 24 18.6**	**+1.8**
PETK	**Petropavlovsk-**	**74.65**	**28**	P	**P**	**11 24 04.4**	**-0.7**
	comp=Z,0.9nm,0.7s,baz=260,slow=1.7,SNR=3.8						
PEA1	**Petropavlovsk-**	**74.66**	**28**	*e*P	**P**	**11 24 04.4**	**-0.7**
KBZ	**Khabaz**	**79.13**	**318**	P	**P**	**11 24 31.0**	**+0.5**
	comp=Z,0.6nm,0.4s,baz=191,slow=5.2,SNR=2.2						
BRTR	**Keskin Array B**	**84.26**	**312**	P	**P**	**11 24 58.1**	**+0.2**
	comp=Z,0.4nm,0.6s,baz=192,slow=5.6,SNR=3.3						
BR101	**Keskin Array S**	**84.26**	**312**	*e*P	**P**	**11 24 58.1**	**+0.2**

ISK ***31*** *11:19:48.9, 36°.96N×28°.31E, h3km, MD2.7*
THE ***31*** *11:19:49.6, 36°.96N×28°.26E, h3km±3km, ML2.8/2, Error ellipse: s-maj=3.7km s-min=0.8km az=41.0*
ISCJB ***31*** *11:19:49.7±0.4, 36°.96N±0°.02×28°.25E±0°.02, h3km±4km, Error ellipse: s-maj=3.6km s-min=3.1km az=173.3*
DDA ***31*** *11:19:50.2, 36°.99N×28°.25E, h7km, Ml3.0*
ATH ***31*** *11:19:50.9, 36°.97N×28°.17E, h27km±2km, ML2.4/5, Error ellipse: s-maj=3.3km s-min=1.5km az=219.0*
CSEM ***31*** *11:19:50.3±0.2, 36°.98N×28°.25E, h8km, MD2.7, Error ellipse: s-maj=4.1km s-min=3.4km az=168.0*
ISC 31 11:19:49.9±1.1, 36°.97N±0°.02×28°.24E±0°.02, h3km±9km, n62, σ1°07/96, Dodecanese Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.17**	**12**	*e*PG	**Pg**	**11 19 53.3**	**0.0**
YER				*e*SG	**Sg**	**11 19 54.0**	**+0.9**
YER	**Yerkesik**	**0.17**	**12**	P	**Pg**	**11 19 53.4**	**+0.2**
YER				S	**Sg**	**11 19 56.3**	**+0.8**
YER	**Yerkesik**	**0.17**	**12**	*e*Pg	**Pg**	**11 19 53.3**	**0.0**
YER				*e*Sg	**Sg**	**11 19 56.4**	**+0.9**
TURN	**Turunc**	**0.31**	**108**	*i* P	**Pg**	**11 19 54.3**	**-1.6**
TURN				*i* S	**Sg**	**11 19 57.9**	**-1.9**
BDRM	**Kayabasi**	**0.65**	**279**	P	**Pg**	**11 20 02.2**	**-0.1**
BDRM				S	**Sb**	**11 20 13.1**	**-0.2**
BDRM	**Kayabasi**	**0.65**	**279**	*i* P	**Pg**	**11 20 02.2**	**-0.1**
BDRM				*i* S	**Sb**	**11 20 13.1**	**-0.2**
AYDN	**Tasoluk**	**0.75**	**337**	P	**Pg**	**11 20 04.4**	**+0.1**
AYDN				S	**Sg**	**11 20 14.6**	**+0.6**
AYDN	**Tasoluk**	**0.75**	**337**	*i* P	**Pg**	**11 20 04.4**	**+0.1**
AYDN				*i* S	**Sg**	**11 20 14.6**	**+0.6**
BODT	**Bodrum**	**0.75**	**277**	*e*PG	**Pg**	**11 20 04.8**	**+0.5**
BODT	**Bodrum**	**0.75**	**277**	P	**Pg**	**11 20 04.6**	**+0.3**
BODT				S	**Sb**	**11 20 16.2**	**-0.1**
BODT	**Bodrum**	**0.75**	**277**	*e*Pg	**Pg**	**11 20 04.8**	**+0.5**
BODT				S	**Sb**	**11 20 16.2**	**-0.1**
FETY	**Fethiye**	**0.75**	**116**	*e*PG	**Pg**	**11 20 03.2**	**-1.2**
FETY	**Fethiye**	**0.75**	**116**	P	**Pg**	**11 20 03.6**	**-0.8**
FETY				S	**Sb**	**11 20 15.3**	**-1.1**
FETY	**Fethiye**	**0.75**	**116**	*e*Pg	**Pg**	**11 20 03.2**	**-1.2**
FETY	**Fethiye**	**0.75**	**116**	P	**Pg**	**11 20 03.6**	**-0.8**
FETY				S	**Sb**	**11 20 15.3**	**-1.1**
ARG	**Arkhangelos**	**0.76**	**187**	P	**Pg**	**11 20 04.1**	**-0.4**
ARG				S	**Sb**	**11 20 16.4**	**-0.1**
ARG	**Arkhangelos**	**0.76**	**187**	P	**Pg**	**11 20 04.1**	**-0.4**
ARG				S	**Sb**	**11 20 16.4**	**-0.1**
NIS1	**Nisyros Isl.**	**0.93**	**247**	*e*PG	**Pg**	**11 20 08.3**	**+0.6**
NIS1	**Nisyros Isl.**	**0.93**	**247**	P	**Pg**	**11 20 08.2**	**+0.5**
NIS1				S	**Sb**	**11 20 21.1**	**-0.3**
NIS1	**Nisyros Isl.**	**0.93**	**247**	*e*Pg	**Pg**	**11 20 08.3**	**+0.6**
NIS1				S	**Sb**	**11 20 21.1**	**-0.3**
NIS1	**Nisyros Isl.**	**0.93**	**247**	P	**Pb**	**11 20 08.9**	**+0.2**
NIS1				S	**Sn**	**11 20 22.7**	**-1.1**
NIS1				AML	AML	11 20 32.6	
	comp=N,1408μm,0.5s						
NIS1				AML	AML	11 20 35.1	
	comp=E,887μm,0.9s						
NISR	**Nisiros**	**0.96**	**249**	P	**Pg**	**11 20 08.8**	**+0.4**
NISR				S	**Sg**	**11 20 21.8**	**+1.0**
NISR	**Nisiros**	**0.96**	**249**	P	**Pg**	**11 20 08.8**	**+0.4**
NISR				S	**Sg**	**11 20 21.8**	**+1.0**
DNZL	**Cakiroluk**	**0.96**	**42**	P	**Pg**	**11 20 08.4**	**0.0**
DNZL				S	**Sb**	**11 20 22.4**	**-0.3**
DNZL	**Cakiroluk**	**0.96**	**42**	*i* P	**Pg**	**11 20 08.4**	**0.0**
DNZL				*i* S	**Sb**	**11 20 22.4**	**-0.3**
DENT	**Denizli**	**1.01**	**39**	*e*PG	**Pg**	**11 20 08.2**	**-1.0**
DENT	**Denizli**	**1.01**	**39**	*e*Pg	**Pg**	**11 20 08.2**	**-1.0**
GCAM	**G?zelcaml?**	**1.08**	**313**	P	**Pb**	**11 20 11.4**	**+0.1**
GCAM				S	**Sn**	**11 20 26.7**	**-0.9**
GCAM	**G?zelcaml?**	**1.08**	**313**	*i* P	**Pb**	**11 20 11.4**	**+0.1**
GCAM				*i* S	**Sn**	**11 20 26.7**	**-0.9**
GOLH	**Golhisar**	**1.09**	**75**	P	**Pn**	**11 20 12.6**	**+0.4**
GOLH				S	**Sn**	**11 20 28.4**	**+0.5**
GOLH	**Golhisar**	**1.09**	**75**	*i* P	**Pn**	**11 20 12.6**	**+0.4**
GOLH				*i* S	**Sn**	**11 20 28.4**	**+0.5**
AKAS	**Kas**	**1.32**	**123**	P	**Pg**	**11 20 15.8**	**+0.5**
AKAS				S	**Sn**	**11 20 37.5**	**+3.8**
AKAS	**Kas**	**1.32**	**123**	*i* P	**Pg**	**11 20 15.8**	**+0.5**
AKAS				*i* S	**Sn**	**11 20 37.5**	**+3.8**
SMG	**Samos**	**1.34**	**304**	P	**Pn**	**11 20 14.3**	**-1.3**
SMG	**Samos**	**1.34**	**304**	P	**Pn**	**11 20 14.8**	**-0.8**
SMG				S	**Sb**	**11 20 31.1**	**-2.2**
SMG	**Samos**	**1.34**	**304**	P	**Pn**	**11 20 14.8**	**-0.8**
SMG				S	**Sb**	**11 20 31.1**	**-2.2**
SMG				AML	AML	11 20 40.9	
	comp=E,464μm,0.4s						
SMG				AML	AML	11 20 41.0	
	comp=N,428μm,0.4s						
KSL	**Kastellorizon**	**1.36**	**127**	P	**Pg**	**11 20 18.1**	**+2.1**
KSL				S	**Sn**	**11 20 37.1**	**+2.8**
KSL				AML	AML	11 20 43.3	
	comp=E,196μm,0.6s						
KSL				AML	AML	11 20 47.0	
	comp=N,113μm,1.0s						
KULA	**Kula-Manisa**	**1.58**	**12**	*e*PN	**Pn**	**11 20 18.6**	**-0.4**
KULA	**Kula-Manisa**	**1.58**	**12**	*e*Pn	**Pn**	**11 20 18.6**	**-0.4**
KARP	**Karpathos**	**1.67**	**212**	P	**Pn**	**11 20 18.1**	**-2.0**
KARP	**Karpathos**	**1.67**	**212**	P	**Pn**	**11 20 19.6**	**-0.5**
KARP				S	**Sn**	**11 20 40.2**	**-1.8**
KARP	**Karpathos**	**1.67**	**212**	P	**Pn**	**11 20 19.6**	**-0.5**
KARP				S	**Sn**	**11 20 40.2**	**-1.8**
KARP				AML	AML	11 20 50.9	
	comp=E,204μm,0.6s						
KARP				AML	AML	11 20 54.6	
	comp=N,195μm,0.5s						
KORT	**Korkueli**	**1.69**	**88**	P	**Pg**	**11 20 22.8**	**+0.5**
KORT	**Korkueli**	**1.69**	**88**	*i* P	**Pg**	**11 20 22.8**	**+0.5**
KHL	**Karahalli**	**1.69**	**37**	*e*PN	**Pn**	**11 20 19.9**	**-0.6**
KHL	**Karahalli**	**1.69**	**37**	*e*Pn	**Pn**	**11 20 19.9**	**-0.6**
KHAL	**Karahalli**	**1.71**	**35**	P	**Pn**	**11 20 20.3**	**-0.5**
KHAL	**Karahalli**	**1.71**	**35**	*i* P	**Pn**	**11 20 20.3**	**-0.5**
AKS	**Akhisar**	**1.94**	**350**	*e*PN	**Pn**	**11 20 23.3**	**-0.5**
AKS	**Akhisar**	**1.94**	**350**	*e*Pn	**Pn**	**11 20 23.3**	**-0.5**
APE	**Apeiranthos**	**2.17**	**273**	*e*PN	**Pn**	**11 20 27.8**	**+0.7**
APE	**Apeiranthos**	**2.17**	**273**	*e*Pn	**Pn**	**11 20 27.8**	**+0.7**
CHOS	**Chios island**	**2.24**	**310**	*e*PN	**Pn**	**11 20 28.8**	**+0.8**
CHOS	**Chios island**	**2.24**	**310**	*e*Pn	**Pn**	**11 20 28.8**	**+0.8**
SUTC	**Sutluce-Ispart**	**2.26**	**76**	*e*PN	**Pn**	**11 20 27.5**	**-0.8**
SUTC	**Sutluce-Ispart**	**2.26**	**76**	*e*Pn	**Pn**	**11 20 27.5**	**-0.8**
ZKR	**Zakros**	**2.47**	**222**	P	**Pn**	**11 20 31.4**	**+0.2**
ZKR	**Zakros**	**2.47**	**222**	P	**Pn**	**11 20 31.4**	**+0.2**
LAST	**Lasithi**	**2.88**	**232**	P	**Pn**	**11 20 35.0**	**-1.7**
LAST	**Lasithi**	**2.88**	**232**	P	**Pn**	**11 20 35.0**	**-1.7**
IDI	**Anoyia**	**3.19**	**239**	P	**Pn**	**11 20 41.2**	**+0.1**
IDI				S	**Sn**	**11 21 20.0**	**+0.3**
IDI	**Anoyia**	**3.19**	**239**	P	**Pn**	**11 20 41.2**	**+0.1**
IDI				S	**Sn**	**11 21 20.0**	**+0.3**
IDI				AML	AML	11 21 37.0	
	comp=N,24μm,0.8s						
IDI				AML	AML	11 21 40.2	
	comp=E,20μm,0.9s						

NIED ***31*** *11:26:00, 36°.50N×142°.60E, h8km, Mw4.7 Best double couple: M0 1.15000×10^16 NP1:φs205.00000°, δ38.00000°, λ94.00000°. NP2:φs21.00000°, δ52.00000°, λ87.00000°.*
IDC ***31*** *11:26:34.8±0.7, 36°.34N×142°.50E, h0km, mb4.0/19, mb1 4.2/26, mb1mx4.1/47, mbtmp4.0/26, ML3.5/6, MS3.9/22, Ms1 3.9/22, ms1mx3.7/51, Error ellipse: s-maj=16.9km s-min=14.6km az=137.0*
ISCJB ***31*** *11:26:35.7±1.0, 36°.50N±0°.03×142°.58E±0°.04, h15km±7km, mb4.4/62, MS4.2/36, Error ellipse: s-maj=6.8km s-min=3.9km az=43.6*
JMA ***31*** *11:26:37.0±0.2, 36°.45N×142°.63E, h64km, M4.1*
MOS ***31*** *11:26:41.3±1.1, 36°.88N×142°.35E, h35km, mb4.9/22, MS4.2/8, Error ellipse: s-maj=9.6km s-min=6.2km az=108.6*
NEIC ***31*** *11:26:51.8±0.7, 37°.50N×141°.16E, h35km, mb4.7/16, Error ellipse: s-maj=16.9km s-min=8.3km az=146.0*
ISC 31 11:26:39.1±0.7, 36°.51N±0°.04×142°.48E±0°.05, h26km±3km, n158, σ2°45/151, mb4.6/61, MS4.2/36, 7C-2D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**1.48**	**294**	P	**Pn**	**11 27 03.9**	**-0.1**
CHOJ	**Chosi**	**1.54**	**239**	P	**Pn**	**11 27 04.2**	**-0.6**
CHOJ				*e*S	**Sn**	**11 27 23.3**	**-0.7**
JHO	**Hitachi**	**1.54**	**274**	P	**Pn**	**11 27 04.3**	**-0.6**
JHO				S	**Sn**	**11 27 23.9**	**-0.2**
JFK	**Kawauchi**	**1.55**	**304**	P	**Pn**	**11 27 04.7**	**-0.2**
JMM	**Marumori**	**1.91**	**316**	P	**Pn**	**11 27 09.5**	**-0.4**
JMM				*e*S	**Sn**	**11 27 35.3**	**+2.2**
JFT	**Otama**	**1.99**	**301**	P	**Pn**	**11 27 11.8**	**+0.8**
BSO1	**Boso 1**	**2.22**	**214**	P	**Pn**	**11 27 12.7**	**-1.0**
BSO1				*e*S	**Sn**	**11 27 41.1**	**+1.1**
JAG	**Ashikaga**	**2.44**	**269**	P	**Pn**	**11 27 16.9**	**-0.3**
JAG				S	**Sn**	**11 27 46.5**	**+0.2**
JMK	**Ichinoseki**	**2.63**	**338**	P	**Pn**	**11 27 19.4**	**-0.4**
JMK				S	**Sn**	**11 27 52.5**	**+1.6**
JNS	**Sasagawa**	**2.85**	**298**	P	**Pn**	**11 27 22.8**	**0.0**
JYK	**Kaneyama**	**2.93**	**326**	P	**Pn**	**11 27 24.1**	**+0.1**
JRY	**Ryogami san**	**2.94**	**261**	P	**Pn**	**11 27 23.6**	**-0.4**
JOD2	**Odawara 2**	**3.02

comp=Z,0.1nm,0.3s,baz=194,slow=5.5,SNR=3.6
PET Petropavlovsk 20.03 29 *e*P Pn 11 31 17.0 +5.4
PET *e*S **S** **11 34 51.7 -1.8**
BJI Beijing 20.93 288 P **P** **11 31 16.8 -2.8**
BJI pP **pP** **11 31 21.5 -5.3**
BJI S S 11 34 55.0 -16
BJI pmax pmax
comp=Z,13nm,1.1s
BJI pmax pmax
comp=Z,130nm,3.2s
BJI LR LR
comp=E,700nm,12.9s
BJI LR LR
comp=N,440nm,11.4s
BJI LR LR
comp=Z,280nm,14.3s
QZH Quanzhou 23.49 247 P P 11 31 55.5 +8.8
QZH S **S** **11 36 01.0 +2.2**
QZH LR LR
comp=N,570nm,12.2s
QZH LR LR
comp=E,810nm,11.0s
QZH LR LR
comp=Z,1μm,12.1s
CLNS Chul'man 23.51 335 *e*P **P** **11 31 47.2 +0.4**
CLNS pmax pmax
comp=Z,40nm,1.6s
CLNS pmax pmax
comp=N,36nm,1.3s
CLNS pmax pmax
comp=E,14nm,1.1s
CLNS MLR MLR
comp=N,778nm,14.0s
CLNS MLR MLR
comp=Z,810nm,16.0s
CLNS MLR MLR
comp=E,658nm,13.0s
MA2 Magadan 23.70 11 LR LR 11 41 58.3
comp=E,402nm,18.6s,baz=219,slow=39
WHN Wuhan 24.15 264 ⇓P **P** **11 31 53.0 0.0**
WHN pP **sP** **11 32 04.0 +0.1**
WHN S **S** **11 36 13.8 +4.4**
WHN LR LR
comp=N,1μm,16.6s
WHN LR LR
comp=E,3μm,14.0s
WHN LR LR
comp=Z,3μm,15.2s
HHC Hu-ho-hao-te 24.45 290 *e*P **P** **11 31 55.8 0.0**
HHC S S 11 35 54.0 -20
HHC sS sS 11 36 22.5 -4.6
HHC pmax pmax
comp=Z,34nm,0.7s
HHC pmax pmax
comp=Z,260nm,4.4s
HHC LR LR
comp=N,630nm,12.1s
HHC LR LR
comp=E,770nm,11.8s
HHC LR LR
comp=Z,790nm,11.4s
CIT Chita 25.65 316 *e*P **P** **11 32 08.4 +1.9**
CIT *e* 11 32 18.1
CIT *e* 11 32 42.5
CIT pmax pmax
comp=Z,139nm,2.4s
YAK Yakutsk 26.77 347 LR LR 11 43 00.9
comp=Z,422nm,19.1s,baz=159,slow=37
YAK Yakutsk 26.77 347 *e*P **P** **11 32 17.7 +1.3**
YAK *e* 11 32 56.5
YAK *e* 11 35 45.0
YAK *e*S **S** **11 36 47.5 -3.0**
YAK *e* 11 43 09.6
YAK pmax pmax
comp=Z,24nm,1.0s
YAK pmax pmax
comp=E,8.0nm,0.9s
YAK pmax pmax
comp=N,12nm,1.0s
YAK pmax pmax
comp=Z,33nm,1.6s
YAK pmax pmax
comp=N,20nm,1.1s
YAK pmax pmax
comp=E,16nm,1.2s
YAK smax smax
comp=E,115nm,5.5s
YAK smax smax
comp=N,127nm,3.8s
YAK MLR MLR
comp=Z,1μm,14.0s
YAK MLR MLR
comp=N,828nm,14.0s
YAK MLR MLR
comp=E,148nm,14.0s
H11N2 WAKE ISLAND Hy 27.14 121 T T 12 00 45.7
baz=313,slow=75,SNR=11
SEY Seymchan 27.15 10 P **P** **11 32 20.5 +0.7**
comp=E,2.1nm,0.8s,baz=205,slow=7.3,SNR=6.5
SEY Seymchan 27.15 10 *i* P **P** **11 32 21.4 +1.6**
H11N1 WAKE ISLAND Hy 27.15 121 T T 12 00 41.7
baz=313,slow=75,SNR=12
H11N3 WAKE ISLAND Hy 27.16 121 T T 12 00 47.2
baz=313,slow=75,SNR=9.0
XAN Xi'an 27.43 275 P **P** **11 32 23.3 +0.5**
XAN pP pP 11 32 29.0 -1.5
XAN PP **PnPn** **11 33 05.5 -2.1**
XAN PcP PcP 11 35 50.5 +9.5
XAN S **S** **11 36 52.0 -10**
XAN SS **SnSn** **11 37 59.5 -13**
XAN pmax pmax
comp=Z,18nm,1.5s
XAN pmax pmax
comp=Z,140nm,6.9s
XAN LR LR
comp=N,560nm,15.8s
XAN LR LR
comp=E,260nm,15.4s
XAN LR LR
comp=Z,580nm,13.6s
H11S1 WAKE ISLAND Hy 27.86 124 T T 12 01 31.2
baz=316,slow=76,SNR=10
H11S3 WAKE ISLAND Hy 27.86 124 T T 12 01 32.6
baz=316,slow=76,SNR=9.3
H11S2 WAKE ISLAND Hy 27.87 124 T T 12 01 26.3
baz=316,slow=76,SNR=8.5
ULN Ulaanbaatar 28.36 305 *i* P **P** **11 32 31.9 +0.9**
ULN Ulaanbaatar 28.36 305 *e*P **P** **11 32 32.5 +1.5**
comp=Z,32nm,1.3s
BOD Bodaibo 28.43 328 *e*P **P** **11 32 36.0 +4.7**
BOD pmax pmax
comp=Z,37nm,1.6s
SONA1 Songino Array 28.79 305 *e*P **P** **11 32 35.8 +1.0**
SONM Songino Array 28.79 305 P **P** **11 32 35.0 +0.2**
comp=Z,5.7nm,1.0s,baz=110,slow=8.3,SNR=26
TGY Tagaytay City 29.49 226 LR LR 11 44 49.2
comp=Z,124nm,18.0s,baz=38,slow=37
LZH Lanzhou 31.01 281 *e*P **P** **11 32 55.5 +0.9**
LZH pP pP 11 33 01.0 -1.4
LZH sP sP 11 33 04.3 -1.3
LZH PP **PnPn** **11 33 55.3 -0.6**
LZH *e*S S 11 37 45.5 -12
LZH sS sS 11 38 00.5 -10
LZH SS **ScP** **11 39 29.8 -1.4**
LZH pmax pmax
comp=Z,21nm,1.2s
LZH pmax pmax
comp=Z,130nm,5.3s
LZH LR LR
comp=N,520nm,13.6s
LZH LR LR
comp=E,660nm,13.0s
LZH LR LR
comp=Z,1μm,16.5s
ZAK Zakamensk 31.27 309 *e*P **P** **11 32 57.3 +0.6**
ZAK pmax pmax
comp=Z,15nm,1.6s
GYA Guiyang 31.99 262 *e*P P 11 33 08.3 +5.0
GYA pmax pmax
comp=Z,10.0nm,0.8s
CD2 Chengdu 32.54 272 P **P** **11 33 10.0 +2.0**
CD2 pmax pmax
comp=Z,20nm,1.2s
QIZ Qiongzhong 33.51 248 P P 11 33 23.5 +7.0
QIZ pP sP 11 33 29.8 +2.3
QIZ S **S** **11 38 41.5 +4.6**
QIZ SS **SS** **11 41 04.8 +2.8**
QIZ LR LR
comp=N,290nm,16.6s
QIZ LR LR
comp=E,330nm,18.8s
QIZ LR LR
comp=Z,430nm,14.8s
GTA Gaotai 33.54 288 *e*P **P** **11 33 17.8 +1.1**
GTA pP pP 11 33 25.0 +0.5
GTA sP sP 11 33 28.5 +0.7
GTA S **S** **11 38 30.5 -6.8**
GTA sS sS 11 38 40.5 -10
GTA SS SnSn 11 40 25.5 -15
GTA pmax pmax
comp=Z,9.0nm,1.1s
GTA pmax pmax
comp=Z,110nm,4.0s
GTA LR LR
comp=N,320nm,16.4s
GTA LR LR
comp=E,360nm,14.3s
GTA LR LR
comp=Z,310nm,15.2s
BILL Bilibino 34.29 16 *i* P **P** **11 33 21.8 -0.9**
BILL *i* S **S** **11 38 48.2 +0.2**
BILL pmax pmax
comp=Z,3.0nm,1.1s
BILL MLR MLR
comp=Z,219nm,17.0s
KMI Kunming 35.74 263 P **P** **11 33 38.0 +2.0**
KMI pP sP 11 33 47.3 +0.3
KMI sP pP 11 33 50.0 +6.2
KMI PP **PP** **11 35 01.0 +3.7**
KMI S **S** **11 39 12.3 +0.6**
KMI SS **SnSn** **11 41 27.5 -7.0**
KMI pmax pmax
comp=Z,13nm,1.1s
KMI pmax pmax
comp=Z,57nm,4.3s
KMI LR LR
comp=N,310nm,14.2s
KMI LR LR
comp=E,680nm,12.7s
KMI LR LR
comp=Z,650nm,13.9s
TIXI Tiksi 35.91 353⇑ *e*P **P** **11 33 36.4 -0.2**
TIXI pmax pmax
comp=Z,2.0nm,0.9s
WMQ Urumqi 41.84 298 P **P** **11 34 29.5 +2.7**
WMQ pP P 11 34 29.5 +2.7
WMQ sP sP 11 34 41.8 +3.9
WMQ S **S** **11 40 45.5 +2.5**
WMQ ScS **ScS** **11 44 23.0 -4.9**
WMQ pmax pmax
comp=Z,12nm,1.2s
WMQ pmax pmax
comp=Z,120nm,5.8s
WMQ LR LR
comp=N,250nm,16.0s
WMQ LR LR
comp=E,110nm,18.6s
WMQ LR LR
comp=Z,67nm,22.6s
CMAR Chiang Mai Arr 42.20 257 P **P** **11 34 29.1 -0.8**
comp=Z,0.8nm,0.3s,baz=38,slow=6.2,SNR=4.9
CMAR LR LR 11 53 51.0
comp=Z,125nm,19.0s,baz=62,slow=39
ZAA0 Zalesovo Array 42.90 313 *e*P **P** **11 34 35.8 +0.7**
ZALV Zalesovo Beam 42.90 313 P **P** **11 34 36.2 +1.1**
comp=Z,2.1nm,0.7s,baz=90,slow=5.7,SNR=7.5
LSA Lhasa 43.12 276 P **P** **11 34 41.8 +4.0**
LSA pmax pmax
comp=Z,4.0nm,1.1s
NVS Novosibirsk 43.82 314 *e*P **P** **11 34 43.7 +1.2**
NVS pmax pmax
comp=N,9.0nm,1.5s
NVS pmax pmax
comp=E,17nm,1.5s
NVS pmax pmax
comp=Z,20nm,1.5s
SBUM Sibu 43.91 227 *e*P P 11 34 52.6 +8.9
comp=Z,12nm,1.4s
NRIK Noril'sk 44.10 335 P **P** **11 34 46.1 +1.6**
comp=Z,1.3nm,0.4s,baz=98,slow=5.9,SNR=3.7
NRIK LR LR 11 55 16.9
comp=Z,530nm,19.2s,baz=103,slow=39
MK01 Makanchi Array 45.12 303 *e*P **P** **11 34 53.9 +0.8**
MK31 Makanchi Array 45.12 303 *e*P **P** **11 34 53.8 +0.7**
MK31 Makanchi Array 45.12 303 *e*P **P** **11 34 53.8 +0.7**
MKAR Makanchi Array 45.12 303 P **P** **11 34 53.5 +0.4**
comp=Z,3.1nm,0.8s,baz=83,slow=9.9,SNR=14
MKAR LR LR 11 52 48.5
comp=Z,120nm,21.5s,baz=93,slow=35
MKAR Makanchi Array 45.12 303 *e*P **P** **11 34 53.9 +0.8**
MAKZ Makanchi 45.33 303 *e*P **P** **11 34 55.4 +0.6**
MAKZ pmax pmax
comp=Z,40nm,1.5s
MAKZ Makanchi 45.33 303 *e*P **P** **11 34 55.4 +0.6**
comp=Z,40nm,1.5s
KURK Kurchatov 46.93 309*c* *i*P **P** **11 35 07.0 -0.2**
KURK pmax pmax
comp=Z,10.0nm,1.0s
KURK Kurchatov 46.93 309 *e*P **P** **11 35 07.9 +0.7**
comp=Z,36nm,1.4s
MDM Murphy Dome 48.90 32 *e*P P 11 35 34.0 +12
comp=Z,8.3nm,1.1s
ILAR Eielson Array 49.48 32 P **P** **11 35 27.8 +1.1**
comp=Z,1.1nm,0.8s,baz=272,slow=6.8,SNR=10
ILB Eielson Array 49.48 32 *e*P P 11 35 35.1 +8.3
TKM2 Tokmak 2 50.63 299 *e*P **P** **11 35 38.0 +1.9**
TKM2 pmax pmax
comp=Z,34nm,1.5s
TKM2 Tokmak 2 50.63 299 *e*P **P** **11 35 38.0 +1.9**
comp=Z,34nm,1.5s
VOSK Vostochnaya 51.27 312 *e*P **P** **11 35 41.4 +0.9**
VOSK pmax pmax
comp=Z,15nm,1.1s
VOSK Vostochnaya 51.27 312 *e*P **P** **11 35 41.4 +0.9**
comp=Z,15nm,1.1s
FRU Bishkek 51.35 299 *e*P **P** **11 35 39.0 -2.2**
FRU *i* 11 35 51.0
KSH Kashi 51.40 295 *e*P P 11 35 48.0 +6.2
KSH *e*sP sP 11 35 57.8 +4.8
KSH *e*PcP PcP 11 37 06.3 +10
KSH PcS PcS 11 41 02.3 +8.2
KSH S **S** **11 42 59.3 -0.7**
KSH Kashi 51.40 295 SS **SS** **11 46 29.8 -5.8**
KSH pmax pmax
comp=Z,88nm,2.9s
KSH LR LR
comp=N,350nm,11.7s
KSH LR LR
comp=E,130nm,7.5s
KSH LR LR
comp=Z,440nm,16.4s
AAK Ala-Archa 51.49 299 LR LR 11 59 14.8
comp=Z,213nm,18.0s,baz=60,slow=38
AAK Ala-Archa 51.49 299 *i* P **P** **11 35 43.6 +1.1**
AAK pmax pmax
comp=Z,7.0nm,1.0s
ZRNK Zerenda 52.39 313 *e*P **P** **11 35 49.5 +0.7**
ZRNK Zerenda 52.39 313 *e*P **P** **11 35 49.6 +0.7**
comp=Z,35nm,1.8s
KKAR Karatay Array 54.13 301 *e*P **P** **11 36 03.6 +1.8**
KKAR Karatay Array 54.13 301 *e*P **P** **11 36 03.6 +1.8**
INK Inuvik 54.46 27 P **P** **11 36 03.7 0.0**
comp=Z,0.9nm,0.8s,baz=271,slow=3.0,SNR=3.3
WRA Warramunga Arr 56.67 189 P **P** **11 36 18.1 -2.1**
comp=Z,2.2nm,0.8s,baz=9.3,slow=7.3,SNR=11
ARU Arti 57.32 319*c* *i*P **P** **11 36 25.1 +0.7**
ARU *PP **sP** **11 36 35.9 +0.2**
ARU 11 37 20.2
ARU 11 38 30.4
ARU S **S** **11 44 13.5 -5.4**
ARU pmax pmax
comp=Z,16nm,1.2s
ARU MLR MLR
comp=Z,319nm,17.0s
ARU Arti 57.32 319 *e*P **P** **11 36 25.3 +0.9**
comp=Z,40nm,1.5s
ASAR Alice Springs 60.40 189 P **P** **11 36 44.7 -1.4**
comp=Z,0.9nm,0.8s,baz=3.1,slow=6.4,SNR=8.7
ASAR LR LR 12 00 52.7
comp=Z,70nm,21.7s,baz=41,slow=34
SPITS Spitsbergen Ar 61.20 349 LR LR 12 04 36.8
comp=Z,212nm,19.9s,baz=335,slow=37
BBB Bella Bella 61.84 44 LR LR 12 00 29.4
comp=Z,58nm,20.3s,baz=195,slow=33
YKA Yellowknife Ar 63.83 30 P **P** **11 37 09.6 +1.0**
comp=Z,0.4nm,0.9s,baz=294,slow=6.7,SNR=4.5
KLMR Klimovskoe 64.65 328 *e*P **P** **11 37 13.6 -0.5**
KLMR pmax pmax
comp=Z,8.0nm,0.8s
ARCES ARCESS Array B 64.78 340 LR LR 12 08 59.6
comp=Z,90nm,19.5s,baz=72,slow=39
AFI Afiamalu 66.14 130 LR LR 12 02 31.9
comp=Z,51nm,18.7s,baz=357,slow=33
STKA Stephens Creek 68.04 181 LR LR 12 05 16.0
comp=Z,30nm,21.9s,baz=25,slow=34
MOS Moscow 68.18 324 *e*P P 11 37 48.5 +12
OBN Obninsk 69.03 324⇑ *e*P **P** **11 37 43.5 +1.5**
OBN *i* 11 37 53.5
OBN *i* 11 38 10.5
OBN *i* SS SS 11 51 11.6 +1.4
OBN pmax pmax
comp=Z,9.0nm,1.3s
OBN MLR MLR
comp=Z,170nm,15.0s
LPSR Galich'ya Gora 69.25 321 *e*P P 11 37 54.8 +11
LPSR *e*SP **PcP** **11 38 12.9 +5.8**
LPSR pmax pmax
comp=Z,6.0nm,0.6s
LPSR MLR MLR
comp=Z,530nm,19.0s
FINES FINESS Array B 69.67 333 P **P** **11 37 46.6 +0.7**
comp=Z,3.5nm,0.8s,baz=35,slow=4.7,SNR=7.6
FINES FINESS Array B 69.67 333 *i* P **P** **11 37 46.5 +0.6**
FINES pmax pmax
comp=Z,4.0nm,0.8s
VSR Storozhevoye 69.89 319 *e*P **P** **11 37 47.3 -0.1**
VSR *e*SP **sP** **11 37 58.4 -0.5**
VSR pmax pmax
comp=Z,8.0nm,1.0s
VSR MLR MLR
comp=Z,370nm,18.0s
KBZ Khabaz 71.89 311 P **P** **11 38 00.5 +0.8**
comp=Z,3.1nm,0.8s,baz=32,slow=4.5,SNR=6.5
KIV Kislovodsk 71.90 312 *e*P **P** **11 38 01.3 +1.4**
KIV pmax pmax
comp=Z,15nm,1.0s
NEY Neytrino 72.26 311 *i* P **P** **11 38 03.8 +1.6**
LRM Limekiln Ridge 73.92 45 *e*P P 11 38 24.4 +12
BOZ Bozeman (W) 74.48 44 *e*P P 11 38 27.3 +12
BOZ pmax pmax
comp=Z,16nm,1.9s
BOZ Bozeman (W) 74.48 44 *e*P P 11 38 27.3 +12
comp=Z,16nm,1.9s
NVAR Mina Array Bea 74.61 54 P **P** **11 38 17.4 +1.2**
comp=Z,0.8nm,0.7s,baz=301,slow=5.7,SNR=4.9
NVAR LR LR 12 08 34.8
comp=Z,55nm,18.3s,baz=266,slow=34
NB2 NORSAR Subarra 75.00 338 P **P** **11 38 18.3 +0.5**
comp=Z,16nm,1.4s,baz=38,slow=5.9
NOA NORSAR Array B 75.00 338 P **P** **11 38 18.7 +0.9**
comp=Z,0.9nm,0.8s,baz=39,slow=5.7,SNR=3.4
NOA LR LR 12 15 34.0
comp=Z,202nm,19.3s,baz=35,slow=39
AKASG Malin Array Be 75.23 323 P **P** **11 38 19.5 +0.2**
comp=Z,0.4nm,0.2s,baz=45,slow=6.2,SNR=7.4
AKASG LR LR 12 13 41.9
comp=Z,119nm,18.3s,baz=45,slow=38
KIEV Kiev 75.25 323⇑ *e*P **P** **11 38 19.5 +0.2**
KIEV pmax pmax
comp=Z,11nm,1.6s
MOOW Moose Ponds 76.13 46 *e*P P 11 38 36.9 +12
comp=Z,14nm,1.8s
R11A Troy Canyon, C 76.40 52 *e*P P 11 38 38.5 +12
comp=E,3.3nm,1.1s
PFO Pinyon Flats O 78.61 57 LR LR 12 10 27.3
comp=Z,104nm,19.9s,baz=288,slow=33
LCMT Little Creek M 78.69 52 *e*P P 11 38 52.5 +13
comp=Z,6.3nm,1.4s
BRTR Keskin Array B 79.84 312 P **P** **11 38 46.6 +1.2**
comp=Z,0.9nm,0.7s,baz=97,slow=5.0,SNR=5.8
PV05 Paradox Valley 80.62 49 *e*P P 11 39 03.0 +13
PV01 Paradox Valley 80.91 49 *e*P P 11 39 04.3 +13
DPC Dobruska-Polom 81.35 328 *e*pP pP 11 39 06.4 +4.7
CLL Collm 81.97 331 *i* (P) P 11 39 07.9 +12
comp=Z,20nm,1.6s
CLL LmH 12 15 00.0
comp=N,100nm,19.4s
CLL LmH 12 15 00.0
comp=E,300nm,19.1s
CLL Collm 81.97 331 *i* P P 11 39 07.9 +12
S22A 4UR Ranch, Cre 82.21 48 *e*P P 11 39 11.9 +14
comp=E,7.2nm,1.4s
SDCO Great Sand Dun 83.01 48 *e*P P 11 39 15.5 +13
comp=E,8.7nm,1.6s
KHC Kasperske Hory 83.44 329 *e*pP pP 11 39 16.2 +3.6
GERES GERESS Array B 83.61 329 P **P** **11 39 05.9 +0.9**
comp=E,0.3nm,0.2s,baz=11,slow=5.5,SNR=3.4
PPT Papeete 83.63 117 LR LR 12 13 03.4
comp=E,86nm,18.7s,baz=338,slow=33
ANMO Albuquerque 84.26 50 *e*P P 11 39 21.8 +13
ANMO pmax pmax
comp=Z,6.0nm,1.4s
ANMO Albuquerque 84.26 50 *e*P P 11 39 21.8 +13
comp=Z,5.8nm,1.4s
SCHQ Schefferville 85.60 17 LR LR 12 23 04.5
comp=Z,57nm,18.0s,baz=332,slow=40
TXAR Lajitas Array 89.75 53 P **P** **11 39 35.9 +0.5**
comp=Z,0.4nm,0.7s,baz=284,slow=1.7,SNR=4.4
LPAZ La Paz 146.20 62 PKPbc **PKPab** **11 46 19.2 +0.2**
comp=Z,2.0nm,0.8s,baz=12,slow=5.8,SNR=6.6

ISK ***31*** *11:42:47.5, 39.°11N×29.°07E, h4km, ML2.2*
ISCJB ***31*** *11:42:48.4±0.5, 39.°11N±0.°03×29.°09E±0.°04, h9km, Error ellipse: s-maj=5.1km s-min=4.5km az=43.5*
DDA ***31*** *11:42:48.1, 39.°13N×29.°09E, h7km, Md2.8*
CSEM ***31*** *11:42:48.4±0.1, 39.°11N×29.°09E, h8km, MD2.8, Error ellipse: s-maj=4.3km s-min=3.2km az=87.0*
ISC 31 11:42:47.9±0.9, 39.°12N±0.°03×29.°15E±0.°04, h9km, n21, σ0.°24/28, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.26**	**96**	P	**Pb**	**11 42 54.8**	**-0.2**
GDZ				S	**Sb**	**11 42 59.1**	**-0.5**
GDZ	**Gediz**	**0.26**	**96**	*i* P	**Pb**	**11 42 54.8**	**-0.2**
GDZ				*i* S	**Sb**	**11 42 59.1**	**-0.5**
DEMI	**Demirci**	**0.34**	**257**	P	**Pg**	**11 42 54.8**	**+0.1**
DEMI				S	**Sg**	**11 42 59.2**	**0.0**
DEMI	**Demirci**	**0.34**	**257**	*i* P	**Pg**	**11 42 54.8**	**+0.1**
DEMI				*i* S	**Sg**	**11 42 59.2**	**0.0**
KULA	**Kula-Manisa**	**0.71**	**212**	*e*PG	**Pg**	**11 43 01.5**	**-0.2**
KULA				*e*SG	**Sg**	**11 43 11.0**	**+0.1**
KULA	**Kula-Manisa**	**0.71**	**212**	*e*Pg	**Pg**	**11 43 01.5**	**-0.2**
KHAL	**Karahalli**	**0.79**	**160**	P	**Pb**	**11 43 04.2**	**+0.3**
KHAL				S	**Sb**	**11 43 14.9**	**0.0**
KHAL	**Karahalli**	**0.79**	**160**	*i* P	**Pb**	**11 43 04.2**	**+0.3**
KHAL				*i* S	**Sb**	**11 43 14.9**	**0.0**
KHL	**Karahalli**	**0.85**	**159**	*e*PG	**Pb**	**11 43 05.0**	**+0.2**
KHL	**Karahalli**	**0.85**	**159**	*e*Pg	**Pb**	**11 43 05.0**	**+0.2**
IGD	**Bursa**	**1.15**	**2**	*i* P	**Pb**	**11 43 09.6**	**-0.3**
CAVI	**Cavuskoy**	**1.21**	**26**	*e*PN	**Pg**	**11 43 11.4**	**+0.3**
CAVI	**Cavuskoy**	**1.21**	**26**	*e*Pn	**Pg**	**11 43 11.5**	**+0.3**
IZI	**Iznik**	**1.24**	**12**	*e*PN	**Pg**	**11 43 11.9**	**+0.1**
IZI	**Iznik**	**1.24**	**12**	*e*Pn	**Pg**	**11 43 11.9**	**+0.1**
KCTX	**Karacabey (Bur**	**1.30**	**332**	*e*PN	**Pn**	**11 43 12.3**	**+0.1**
KCTX	**Karacabey (Bur**	**1.30**	**332**	*e*Pn	**Pn**	**11 43 12.3**	**+0.1**
ARMT	**Armutlu**	**1.46**	**352**	*e*PN	**Pg**	**11 43 15.9**	**-0.1**
ARMT	**Armutlu**	**1.46**	**352**	*e*Pn	**Pg**	**11 43 15.9**	**-0.1**
GULT	**Gulveren**	**1.69**	**38**	*e*PN	**Pb**	**11 43 19.5**	**+0.3**
GULT	**Gulveren**	**1.69**	**38**	*e*Pn	**Pb**	**11 43 19.5**	**+0.3**

ISK ***31*** *11:47:55.6, 40.°69N×26.°58E, h12km, MD2.3*
ISCJB ***31*** *11:47:56.2±0.5, 40.°64N±0.°03×26.°55E±0.°04, h12km±3km, Error ellipse: s-maj=5.7km s-min=4.7km az=173.7*
CSEM ***31*** *11:47:56.2±0.1, 40.°67N×26.°56E, h12km, MD2.3, Error ellipse: s-maj=4.3km s-min=3.1km az=10.0*
DDA ***31*** *11:47:56.6, 40.°61N×26.°52E, h7km, Ml2.7*
ISC 31 11:47:56.1±0.8, 40.°67N±0.°03×26.°54E±0.°02, h13km±5km, n31, σ0.°43/44, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ERIK	**Erikli-Kesan**	**0.02**	**269**	*e*PG	**Pg**	**11 47 58.2**	**-0.2**
ERIK				*e*SG	**Sg**	**11 48 00.0**	**+0.1**

ERIK	**Erikli-Kesan**	**0.02 269**	*e*Pg	**Pg**	**11 47 58.2 -0.2**
ERIK			*e*Sg	**Sg**	**11 48 00.0 +0.1**
KESN	**Edirne-Kesan**	**0.19 34**	P	**Pb**	**11 48 01.7 0.0**
KESN			S	**Sb**	**11 48 05.9 +0.6**
KESN	**Edirne-Kesan**	**0.19 34**	*i* P	**Pb**	**11 48 01.7 0.0**
KESN			*i* S	**Sb**	**11 48 05.9 +0.6**
LPK	**Lapseki**	**0.34 151**	*e*PG	**Pg**	**11 48 03.0 0.0**
LPK			*e*SG	**Sg**	**11 48 08.3 +0.7**
LPK	**Lapseki**	**0.34 151**	*e*Pg	**Pg**	**11 48 03.0 0.0**
LPK			*e*Sg	**Sg**	**11 48 08.3 +0.7**
ALN	**Alexandroupoli**	**0.44 301**	*e*PG	**Pg**	**11 48 05.1 +0.3**
ALN			*e*SG	**Sb**	**11 48 12.0 -0.3**
ALN	**Alexandroupoli**	**0.44 301**	*e*Pg	**Pg**	**11 48 05.1 +0.3**
ALN			*e*Sg	**Sb**	**11 48 12.0 -0.3**
RKY	**Sarkoy-Tekirda**	**0.48 88**	*e*PG	**Pg**	**11 48 05.0 -0.5**
RKY			*e*SG	**Sg**	**11 48 12.0 -0.1**
RKY	**Sarkoy-Tekirda**	**0.48 88**	*e*Pg	**Pg**	**11 48 05.1 -0.5**
RKY			*e*Sg	**Sg**	**11 48 12.0 -0.1**
SART	**Tekirdag**	**0.48 88**	P	**Pb**	**11 48 06.6 +0.1**
SART			S	**Sb**	**11 48 14.4 +0.8**
SART	**Tekirdag**	**0.48 88**	*i* P	**Pb**	**11 48 06.6 +0.1**
SART			*i* S	**Sb**	**11 48 14.4 +0.8**
GADA	**Gvkgeada**	**0.69 226**	*e*PG	**Pg**	**11 48 09.4 0.0**
GADA	**Gvkgeada**	**0.69 226**	*e*Pg	**Pg**	**11 48 09.4 0.0**
MRMT	**Marmara Adasi**	**0.80 95**	*e*PG	**Pg**	**11 48 10.9 -0.7**
MRMT	**Marmara Adasi**	**0.80 95**	*e*Pg	**Pg**	**11 48 11.0 -0.7**
BOZC	**Bozcaada**	**0.91 205**	*i* P	**Pb**	**11 48 12.9 -0.9**
BOZC			*i* S	**Sg**	**11 48 25.4 -0.1**
EDC	**Edincik**	**1.06 107**	*e*PG	**Pb**	**11 48 16.0 -0.3**
EDC	**Edincik**	**1.06 107**	*e*Pg	**Pb**	**11 48 16.0 -0.3**
GONE	**Gonen-Balikesi**	**1.07 125**	*e*PG	**Pb**	**11 48 16.4 -0.1**
GONE	**Gonen-Balikesi**	**1.07 125**	*e*Pg	**Pb**	**11 48 16.4 -0.1**
EDRB	**Edirne**	**1.19 7**	*e*PN	**Pn**	**11 48 18.2 -0.2**
EDRB	**Edirne**	**1.19 7**	*e*Pn	**Pn**	**11 48 18.2 -0.2**
KCTX	**Karacabey (Bur**	**1.44 106**	*e*PN	**Pn**	**11 48 21.5 -0.4**
KCTX	**Karacabey (Bur**	**1.44 106**	*e*Pn	**Pn**	**11 48 21.5 -0.4**
SIGR	**SIGRI**	**1.55 200**	*e*PN	**Pb**	**11 48 24.1 -0.5**
SIGR	**SIGRI**	**1.55 200**	*e*Pn	**Pb**	**11 48 24.2 -0.5**
DKL	**Dikili**	**1.62 170**	*e*PN	**Pn**	**11 48 25.0 +0.6**
DKL	**Dikili**	**1.62 170**	*e*Pn	**Pn**	**11 48 25.0 +0.6**
ARMT	**Armutlu**	**1.77 93**	*e*PN	**Pn**	**11 48 26.4 0.0**
ARMT	**Armutlu**	**1.77 93**	*e*Pn	**Pn**	**11 48 26.4 0.0**

IDC 31 11:49:49.2±2.2, 3°.48N×127°.49E, h0km, mb3.5/3, mb1 3.7/3, mb1mx3.4/50, mbtmp3.5/3, Error ellipse: s-maj=171.8km s-min=23.8km az=67.0, Talaud Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**24.23**	**164**	P	P	11 55 08.0	0.0
	1.2nm,0.6s,baz=343,slow=10.0,SNR=18						
ASAR	**Alice Springs**	**27.69**	**167**	P	P	11 55 39.4	0.0
	0.4nm,0.5s,baz=354,slow=7.6,SNR=20						
MKAR	**Makanchi Array**	**58.20**	**325**	P	P	11 59 45.1	-0.1
	0.3nm,0.6s,baz=126,slow=7.3,SNR=2.3						

*ISCJB **31** 11:50:29.5±0.7, 6°.76N±0°.06×73°.03W±0°.06, h165km±6km, Error ellipse: s-maj=12.9km s-min=4.8km az=138.8*
*FUNV **31** 11:50:30.4, 6°.72N×73°.09W, h169km, MW2.6*
*RSNC **31** 11:50:32.0±0.6, 6°.75N×73°.09W, h150km±4km, ML2.6*
ISC 31 11:50:29.1±1.5, 6°.77N±0°.06×73°.04W±0°.06, h170km±9km, n19, σ1°.25/31, 1C, Northern Colombia

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BARC	**Barichara**	**0.23**	**218**	*e*P	**Pn**	**11 50 52.3**	**+0.1**
BARC				*e*S	**Sn**	**11 51 07.9**	**-1.9**
BARC				*i*		11 51 10.3	
	comp=Z,96nm,0.4s						
PAMC	**Pamplona, Colo**	**0.66**	**31**	*e*P	**Pn**	**11 50 55.0**	**+0.9**
PAMC				*e*S	**Sn**	**11 51 12.5**	**-0.8**
PAMC				*i*		11 51 14.4	
	comp=Z,22nm,0.2s						
BRRC	**Barranca, Sant**	**0.74**	**297**	*e*P	**Pn**	**11 50 54.2**	**+0.1**
BRRC				*e*S	**Sn**	**11 51 11.8**	**-1.4**
BRRC				*i*		11 51 13.9	
	comp=Z,100nm,0.1s						
GRMC	**Gramalote, San**	**0.97**	**14**	*e*P	**Pn**	**11 50 58.0**	**+2.2**
GRMC				*e*S	**Sn**	**11 51 18.0**	**+1.6**
GRMC				*i*		11 51 18.9	
	comp=Z,64nm,0.3s						
CBRI	**Barrientos, No**	**0.97**	**14**	*e*P	**Pn**	**11 50 56.8**	**+1.0**
CBRI				*e*S	**Sn**	**11 51 15.6**	**-0.9**
CBRI				*i*		11 51 17.6	
	comp=Z,52nm,0.2s						
CAPV	**Capacho**	**1.30**	**34⇑**	*e*P	**Pn**	**11 51 00.1**	**+1.5**
CAPV				*e*S	**Sn**	**11 51 21.0**	**-0.5**
OCAC	**Ocana**	**1.48**	**349**	*e*P	**Pn**	**11 51 01.2**	**+1.0**
NORC	**Norcasia**	**2.18**	**237**	*e*P	**Pn**	**11 51 08.1**	**+0.6**
NORC				*e*S	**Sn**	**11 51 36.1**	**-1.2**
NORC				*i*		11 51 40.1	
	comp=Z,9.0nm,0.3s						
HELC	**Santa Helena**	**2.54**	**257**	*e*P	**Pn**	**11 51 13.2**	**+1.1**
HELC				*e*S	**Sn**	**11 51 44.9**	**-0.4**
HELC				*i*		11 51 49.6	
	comp=Z,22nm,0.2s						
SOCV	**Socops**	**2.64**	**55**	*e*P	**Pn**	**11 51 14.9**	**+2.0**
SOCV				*e*S	**Sn**	**11 51 46.6**	**-0.3**
VIGV	**El Vigia**	**2.64**	**39**	*e*P	**Pn**	**11 51 14.3**	**+1.3**
VIGV				*e*S	**Sn**	**11 51 45.7**	**-1.5**
GUYC	**Guyana, Colomb**	**2.80**	**237**	*e*P	**Pn**	**11 51 17.0**	**+1.7**
GUYC				*i*		11 51 58.8	
	comp=Z,56nm,0.4s						
DBBC	**Dabeiba**	**3.15**	**275**	*e*P	**Pn**	**11 51 19.9**	**+0.6**
ELOV	**Elorza**	**3.54**	**86**	*e*P	**Pn**	**11 51 24.1**	**0.0**
PRAC	**Prado**	**3.55**	**211**	*e*P	**Pn**	**11 51 25.7**	**+1.4**
PRAC				*e*S	**Sn**	**11 52 06.5**	**-0.7**
PRAC				*i*		11 52 17.9	
	comp=Z,51nm,0.2s						
VIRV	**Villa del Rosa**	**3.76**	**10**	*e*P	**Pn**	**11 51 26.8**	**-0.1**
VIRV				*e*S	**Sn**	**11 52 09.9**	**-2.1**
CURV	**Curarigua**	**4.43**	**43**	*e*P	**Pn**	**11 51 36.8**	**+1.1**
BAUV	**El Baul**	**5.40**	**66**	*e*P	**Pn**	**11 51 48.0**	**-0.2**
MONV	**Montecano**	**5.98**	**30**	*e*P	**Pn**	**11 51 56.0**	**+0.3**

IDC 31 11:58:37.2±60.0, 15°.66S×173°.20W, h0km, mb3.8/3, mb1 4.0/3, mb1mx3.5/45, mbtmp3.8/3, Error ellipse: s-maj=1149.0km s-min=184.8km az=79.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
STKA	**Stephens Creek**	**44.07**	**240**	P	P	12 06 47.6	+0.5
	0.9nm,0.6s,baz=100,slow=12,SNR=2.7						
WRA	**Warramunga Arr**	**49.97**	**257**	P	P	12 07 33.0	-0.5
	0.2nm,0.4s,baz=96,slow=7.2,SNR=5.5						
ASAR	**Alice Springs**	**50.21**	**252**	P	P	12 07 35.0	-0.3
	1.9nm,0.6s,baz=90,slow=7.8,SNR=53						

TRN 31 12:01:04.7, 18°.50N×62°.53W, h3km, MD3.9, Leeward Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SMRT	**St. Maarten**	**0.68**	**230**	*e*P	Pn	12 01 22.2	+0.9
SMRT				*e*S	Sn	12 01 34.7	+2.3
ANWB	**Willy Bob**	**1.08**	**139**	*e*P	Pn	12 01 28.6	+1.8
ANWB				*e*S	Sn	12 01 42.0	-0.3
SEUS	**St. Eustatius**	**1.09**	**203**	*e*S	Sn	12 01 46.0	+3.6
SABA	**Saba**	**1.10**	**218**	*e*P	Pn	12 01 28.7	+1.6
SABA				*e*S	Sn	12 01 45.4	+2.6
NEV	**Hard Times**	**1.35**	**182**	*e*P	Pb	12 01 33.3	+2.6
NEV				*e*S	Sn	12 01 53.6	+4.6
BPA	**Boggy Peak**	**1.58**	**156**	*e*P	Pg	12 01 36.7	+1.7
BPA				*e*S	Sg	12 01 58.3	+2.9
MLYT	**Lee's Yard**	**1.79**	**170**	*e*P	Pg	12 01 39.0	-0.1
MLYT				*e*S	Sg	12 02 04.5	+2.1

*GRAL **31** 12:15:40.7±0.3, 34°.47N×36°.84E, h0km±7km, MD3.0*
*ISCJB **31** 12:15:43.0±0.6, 34°.40N±0°.02×36°.71E±0°.03, h5km±4km, Error ellipse: s-maj=4.3km s-min=3.6km az=19.8*
*NSSC **31** 12:15:42.8±1.3, 34°.39N×36°.73E, h2km±3km, ML2.1*
*CSEM **31** 12:15:42.9±0.2, 34°.40N×36°.69E, h2km, ML2.1, Error ellipse: s-maj=4.0km s-min=3.2km az=114.0*
ISC 31 12:15:42.3±1.0, 34°.43N±0°.02×36°.69E±0°.02, h10km±9km, n27, σ0°.57/53, Jordan-Syria region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FKH	**Fakeheh**	**0.30**	**232**	*e*P	**Pg**	**12 15 48.2**	**-0.2**
FKH				*e*S	**Sb**	**12 15 53.8**	**-1.0**
FKH	**Fakeheh**	**0.30**	**232**	*e*P	**Pg**	**12 15 48.2**	**-0.2**
FKH				*e*S	**Sb**	**12 15 53.8**	**-1.0**
RABH	**Abou Rabah**	**0.42**	**89**	*e*P	**Pb**	**12 15 52.0**	**+0.1**
RABH				*e*S	**Sg**	**12 15 57.1**	**+0.8**
RABH				AML	AML	12 15 58.7	
	comp=N,102nm,0.4s						
RABH				AML	AML	12 16 06.1	
	comp=E,96nm,0.7s						
RABH				AML	AML	12 16 19.6	
	comp=Z,68nm,0.4s						
RABH	**Abou Rabah**	**0.42**	**89**	*e*P	**Pb**	**12 15 52.0**	**+0.1**
RABH				*e*S	**Sg**	**12 15 57.1**	**+0.8**
	comp=Z,68nm,0.4s						
MARH	**Ras Al Marh**	**0.44**	**204**	*e*P	**Pg**	**12 15 50.6**	**-0.4**
MARH				*e*S	**Sg**	**12 15 57.5**	**+0.7**
MARH				AML	AML	12 16 00.6	
	comp=E,135nm,0.4s						
MARH				AML	AML	12 16 01.0	
	comp=N,232nm,0.4s						
MARH	**Ras Al Marh**	**0.44**	**204**	*e*P	**Pg**	**12 15 50.6**	**-0.4**
MARH				*e*S	**Sg**	**12 15 57.5**	**+0.7**
	comp=N,232nm,0.4s						
ROOS	**tI_alroos**	**0.56**	**117**	*e*P	**Pg**	**12 15 52.7**	**-0.5**
ROOS				*e*S	**Sg**	**12 16 00.8**	**+0.3**
ROOS				AML	AML	12 16 09.0	
	comp=N,160nm,0.7s						
ROOS				AML	AML	12 16 14.3	
	comp=E,271nm,0.5s						
ROOS	**tI_alroos**	**0.56**	**117**	*e*P	**Pg**	**12 15 52.7**	**-0.5**
ROOS				*e*S	**Sg**	**12 16 00.8**	**+0.3**
	comp=E,271nm,0.5s						
HWQ	**Hawqa**	**0.64**	**257**	*e*P	**Pg**	**12 15 54.4**	**-0.3**
HWQ				*e*S	**Sb**	**12 16 04.6**	**0.0**
HWQ	**Hawqa**	**0.64**	**257**	*e*P	**Pg**	**12 15 54.4**	**-0.3**
HWQ				*e*S	**Sb**	**12 16 04.6**	**0.0**
TOTH	**TOTAH**	**1.09**	**192**	*e*P	**Pn**	**12 16 03.8**	**+0.2**
TOTH				*e*S	**Sg**	**12 16 17.4**	**+0.1**
TOTH	**TOTAH**	**1.09**	**192**	*e*P	**Pn**	**12 16 03.8**	**+0.2**
TOTH				*e*S	**Sg**	**12 16 17.4**	**+0.1**
RCY	**Rachaya**	**1.17**	**218**	*e*P	**Pb**	**12 16 03.7**	**-1.1**
BRBR	**Barbar**	**1.19**	**212**	*e*P	**Pg**	**12 16 05.8**	**+0.6**
BRBR				*e*S	**Sn**	**12 16 22.4**	**+0.9**
BRBR				AML	AML	12 16 28.0	
	comp=E,37nm,0.5s						
BRBR				AML	AML	12 16 29.5	
	comp=N,25nm,0.6s						
BRBR	**Barbar**	**1.19**	**212**	*e*P	**Pg**	**12 16 05.8**	**+0.6**
BRBR				*e*S	**Sn**	**12 16 22.4**	**+0.9**
	comp=N,25nm,0.6s						
ARNB	**Al Arnab**	**1.55**	**338**	*e*P	**Pb**	**12 16 11.3**	**+0.1**
ARNB				*e*S	**Sg**	**12 16 32.7**	**+0.5**
ARNB				AML	AML	12 16 35.5	
	comp=E,142nm,0.5s						
ARNB				AML	AML	12 16 36.7	
	comp=N,120nm,0.3s						
ARNB	**Al Arnab**	**1.55**	**338**	*e*P	**Pb**	**12 16 11.3**	**+0.1**
ARNB				*e*S	**Sg**	**12 16 32.7**	**+0.5**
	comp=N,120nm,0.3s						
ZALF	**Zalf**	**1.59**	**160**	*e*P	**Pb**	**12 16 11.7**	**-0.3**
ZALF				*e*S	**Sb**	**12 16 31.4**	**-0.7**
ZALF				AML	AML	12 16 35.2	
	comp=E,27nm,0.9s						
ZALF				AML	AML	12 16 35.9	
	comp=N,22nm,0.7s						
ZALF	**Zalf**	**1.59**	**160**	*e*P	**Pb**	**12 16 11.6**	**-0.3**
ZALF				*e*S	**Sb**	**12 16 31.4**	**-0.7**
	comp=N,23nm,0.7s						
BTCH	**Batrach**	**1.62**	**353**	*e*P	**Pg**	**12 16 13.3**	**-0.1**
BTCH				*e*S	**Sg**	**12 16 34.8**	**+0.4**
BTCH				AML	AML	12 16 38.8	
	comp=E,97nm,0.4s						
BTCH				AML	AML	12 16 44.1	
	comp=N,39nm,0.3s						
BTCH	**Batrach**	**1.62**	**353**	*e*P	**Pg**	**12 16 13.3**	**-0.1**
BTCH				*e*S	**Sg**	**12 16 34.8**	**+0.4**
	comp=N,39nm,0.3s						
SALA	**Sala**	**1.71**	**179**	*e*P	**Pb**	**12 16 13.9**	**-0.1**
SALA				*e*S	**Sb**	**12 16 35.5**	**-0.2**
SALA				AML	AML	12 16 38.3	
	comp=E,6.6nm,0.6s						
SALA				AML	AML	12 16 46.7	
	comp=N,41nm,0.4s						
SALA	**Sala**	**1.71**	**179**	*e*P	**Pb**	**12 16 13.9**	**-0.1**
SALA				*e*S	**Sb**	**12 16 35.5**	**-0.2**
	comp=N,41nm,0.4s						
TCHB	**Talchebab**	**1.85**	**199**	*e*P	**Pb**	**12 16 16.3**	**-0.1**
TCHB				*e*S	**Sb**	**12 16 38.5**	**-1.1**
TCHB				AML	AML	12 16 47.0	
	comp=N,58nm,0.9s						
TCHB				AML	AML	12 16 47.4	
	comp=E,64nm,0.4s						
TCHB	**Talchebab**	**1.85**	**199**	*e*P	**Pb**	**12 16 16.3**	**-0.1**
TCHB				*e*S	**Sb**	**12 16 38.5**	**-1.1**
	comp=E,64nm,0.4s						
DRWC	**Darouich**	**2.19**	**359**	*e*P	**Pb**	**12 16 21.5**	**-0.6**
DRWC				*e*S	**Sb**	**12 16 48.5**	**-0.8**
DRWC				AML	AML	12 16 59.5	
	comp=N,25nm,0.4s						
DRWC				AML	AML	12 17 03.9	
	comp=E,12nm,0.3s						
DRWC	**Darouich**	**2.19**	**359**	*e*P	**Pb**	**12 16 21.5**	**-0.6**
DRWC				*e*S	**Sb**	**12 16 48.5**	**-0.8**
	comp=E,12nm,0.3s						

*ISK **31** 12:24:46.4, 37°.34N×28°.04E, h28km, MD2.6*
*ISCJB **31** 12:24:47.9±0.6, 37°.36N±0°.03×28°.08E±0°.04, h0km, Error ellipse: s-maj=5.9km s-min=3.7km az=43.5*
*CSEM **31** 12:24:47.9±0.3, 37°.34N×28°.05E, h1km, MD2.6, Error ellipse: s-maj=8.3km s-min=5.7km az=50.0, Suspected Mining explosion.*
*DDA **31** 12:24:47.6, 37°.33N×28°.03E, h7km, Md2.7, Suspected Mining explosion.*
ISC 31 12:24:45.9±0.9, 37°.40N±0°.04×28°.10E±0°.04, h0km, n15, σ0°.54/26, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
YER	**Yerkesik**	**0.30**	**151**	*e*PG	**Pb**	**12 24 53.9**	**-0.3**
YER				*e*SG	**Sb**	**12 24 59.4**	**-0.2**
YER	**Yerkesik**	**0.30**	**151**	*e*Pg	**Pb**	**12 24 53.9**	**-0.3**
YER				*e*Sg	**Sb**	**12 24 59.4**	**-0.2**
AYDN	**Tasoluk**	**0.32**	**326**	P	**Pb**	**12 24 54.9**	**+0.4**
AYDN				S	**Sb**	**12 24 59.8**	**-0.5**
AYDN	**Tasoluk**	**0.32**	**326**	*i* P	**Pb**	**12 24 54.9**	**+0.4**
AYDN				*i* S	**Sb**	**12 24 59.8**	**-0.5**
AYDB	**Zeytinkoy-Aydi**	**0.57**	**343**	*e*PG	**Pb**	**12 24 59.4**	**+0.5**
AYDB	**Zeytinkoy-Aydi**	**0.57**	**343**	*e*Pg	**Pb**	**12 24 59.4**	**+0.5**
BDRM	**Kayabasi**	**0.62**	**238**	P	**Pg**	**12 24 58.4**	**+0.6**
BDRM				S	**Sb**	**12 25 08.9**	**0.0**
BDRM	**Kayabasi**	**0.62**	**238**	*i* P	**Pg**	**12 24 58.4**	**+0.6**
BDRM				*i* S	**Sb**	**12 25 08.9**	**0.0**
TURN	**Turunc**	**0.66**	**143**	*i* P	**Pg**	**12 24 58.9**	**+0.4**
TURN				*i* S	**Sb**	**12 25 10.2**	**+0.3**
BODT	**Bodrum**	**0.72**	**242**	*e*PG	**Pg**	**12 24 59.9**	**+0.3**
BODT				*e*SG	**Sg**	**12 25 09.7**	**+0.8**
BODT	**Bodrum**	**0.72**	**242**	*e*Pg	**Pg**	**12 24 59.9**	**+0.3**
BODT				*e*Sg	**Sg**	**12 25 09.7**	**+0.8**
DALY	**Dalyan (Mu¨la**	**0.73**	**143**	*e*PG	**Pg**	**12 25 00.5**	**+0.7**
DALY	**Dalyan (Mu¨la**	**0.73**	**143**	*e*Pg	**Pg**	**12 25 00.5**	**+0.7**
GCAM	**G?zelcaml?**	**0.76**	**294**	P	**Pn**	**12 25 03.0**	**-0.8**
GCAM				S	**Sn**	**12 25 15.4**	**-0.6**
GCAM	**G?zelcaml?**	**0.76**	**294**	*i* P	**Pn**	**12 25 03.0**	**-0.8**
GCAM				*i* S	**Sn**	**12 25 15.4**	**-0.6**

*SJA **31** 12:26:09.7±0.9, 35°.36S×71°.19W, h137km±23km, ML3.1, MW4.1*
*ISCJB **31** 12:26:10.5±0.4, 35°.39S±0°.04×70°.95W±0°.10, h106km±5km, mb3.8/7, Error ellipse: s-maj=14.2km s-min=4.6km az=20.5*
*IDC **31** 12:26:11.5±2.6, 35°.39S×70°.68W, h97km±23km, mb3.7/7, mb1 3.9/11, mb1mx3.8/27, mbtmp4.2/11, MS2.5/1, Ms1 2.5/1, ms1mx2.4/19, Error ellipse: s-maj=37.3km s-min=13.5km az=96.0*
*GUC **31** 12:26:12.1±0.6, 35°.33S×71°.07W, h105km±5km, ML4.2*
ISC 31 12:26:11.3±0.8, 35°.37S±0°.05×71°.00W±0°.09, h100km±8km, n32, σ0°.89/39, mb4.1/7, 4C-1D, Chile-Argentina border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TALC	**Talca**	**0.52**	**267⇑**	*i* P	**Pn**	**12 26 27.6**	**+0.3**
TALC				*i* S	**Sn**	**12 26 39.5**	**+0.3**
CCHI	**Chillan**	**1.51**	**215⇑**	*i* P	**Pn**	**12 26 37.6**	**0.0**
CCHI				*i* S	**Sn**	**12 26 58.4**	**+0.8**
CCHI				AML	AML	12 27 14.3	
	comp=E,2μm,0.7s						
COCH	**Cobquecura**	**1.64**	**242⇑**	*i* P	**Pn**	**12 26 40.2**	**+0.9**
COCH				*i* S	**Sn**	**12 27 00.6**	**0.0**
COCH				AML	AML	12 27 05.4	
	comp=E,1μm,0.4s						
ANTU	**Antumapu**	**1.82**	**10⇑**	*i* P	**Pn**	**12 26 41.9**	**+0.2**
ANTU				*i* S	**Sn**	**12 27 04.9**	**+0.1**
ANTU				AML	AML	12 27 08.1	
	comp=N,5μm,0.3s						
PEL	**Peldehue**	**2.24**	**7⇓**	*i* P	**Pn**	**12 26 47.7**	**+0.6**
PEL				*i* S	**Sn**	**12 27 14.4**	**+0.1**
ROC1	**El Roble**	**2.39**	**360**	*e*P	**Pn**	**12 26 50.1**	**+0.8**
ROC1				*e*S	**Sn**	**12 27 19.6**	**+1.3**
ROCH	**El Roble**	**2.39**	**360**	*e*P	**Pn**	**12 26 49.5**	**+0.2**
ROCH				*i* S	**Sn**	**12 27 17.1**	**-1.1**
ROCH				AML	AML	12 27 22.3	
	comp=E,5μm,0.6s						
CANA	**Caviahue**	**2.51**	**181**	*e*P	**Pn**	**12 26 51.6**	**+0.8**
CANA				IAML		12 27 32.1	
	comp=Z,61nm,0.6s						
AUSP	**Uspallata**	**3.41**	**24**	*e*P	**Pn**	**12 27 04.6**	**+1.7**
RTLS	**Leoncito**	**3.83**	**22**	*e*P	**Pn**	**12 27 10.5**	**+1.9**
RTCV	**Cerro Valdivia**	**4.05**	**31**	*e*P	**Pn**	**12 27 12.0**	**+0.7**
ACAN	**Cantantal**	**4.42**	**47**	*e*P	**Pn**	**12 27 17.9**	**+1.6**
RTLL	**Cerro Villicun**	**4.55**	**28**	*e*P	**Pn**	**12 27 18.2**	**+0.2**
AMOG	**MOGNA**	**4.89**	**26**	*e*P	**Pn**	**12 27 22.9**	**+0.2**
PLCA	**Paso Flores**	**5.37**	**176**	P	**Pn**	**12 27 28.9**	**-0.1**
	comp=Z,2.3nm,0.3s,baz=7.4,slow=11,SNR=50						
PLCA				LR	LR	12 29 14.8	
	comp=Z,50nm,20.2s,baz=342,slow=34						
AGUA	**GUANDACOL**	**6.24**	**21**	*e*P	**Pn**	**12 27 41.7**	**+0.7**
TCA	**Tanti**	**6.70**	**55**	*e*P	**Pn**	**12 27 45.9**	**-1.3**
VCA	**Vinchina**	**7.03**	**20**	*e*P	**Pn**	**12 27 51.1**	**-0.6**
LVC	**Limon Verde**	**12.85**	**9**	P	**Pn**	**12 29 10.2**	**-0.4**
	comp=Z,31nm,0.3s,baz=195,slow=11,SNR=5.0						
LPAZ	**La Paz**	**19.18**	**8**	P	**Pn**	**12 30 29.7**	**0.0**
	comp=Z,0.5nm,0.3s,baz=196,slow=7.5,SNR=14						
USHA	**Ushuaia**	**19.54**	**176**	P	**P**	**12 30 30.2**	**-0.6**
	comp=Z,80nm,0.3s,baz=335,slow=9.9,SNR=11						
SIV	**San Ignacio**	**21.24**	**27**	P	**P**	**12 30 47.8**	**-1.7**
	comp=Z,1.5nm,0.5s,baz=206,slow=8.6,SNR=4.7						
PTGA	**Pitinga**	**35.96**	**19**	P	**P**	**12 33 01.6**	**-0.9**
	comp=Z,1.5nm,0.5s,baz=214,slow=9.5,SNR=2.9						
VNDA	**Vanda**	**62.93**	**191**	P	**P**	**12 36 27.9**	**+1.4**
	comp=Z,0.6nm,0.6s,baz=134,slow=4.8,SNR=7.2						
MAW	**Mawson**	**71.62**	**163**	P	**P**	**12 37 21.4**	**-0.1**
	comp=Z,2.5nm,0.7s,baz=206,slow=6.3,SNR=7.6						
BOSA	**Boshof**	**78.68**	**117**	P	**P**	**12 38 02.2**	**-0.7**
	comp=Z,3.3nm,0.9s,baz=225,slow=4.0,SNR=3.8						
TORD	**Torodi Ar. Bea**	**83.88**	**69**	P	**P**	**12 38 30.0**	**-0.3**
	comp=Z,1.6nm,0.7s,baz=236,slow=6.8,SNR=10.0						
PDAR	**Pinedale Array**	**85.37**	**333**	P	**P**	**12 38 38.6**	**+1.2**
	comp=Z,0.1nm,0.5s,baz=172,slow=9.1,SNR=2.5						
WRA	**Warramunga Arr**	**119.97**	**208**	PKP	**PKPdf**	**12 44 49.9**	**-0.8**
	comp=Z,0.3nm,0.8s,baz=152,slow=1.9,SNR=4.0						
PSI	**Prapat**	**146.27**	**162**	PKPbc	**PKPdf**	**12 45 40.0**	**+0.2**
	comp=Z,3.5nm,0.6s,baz=207,slow=6.0,SNR=4.7						
YAK	**Yakutsk**	**150.31**	**340**	PKPbc	**PKPbc**	**12 45 50.5**	**+0.6**
	comp=Z,0.6nm,0.3s,baz=343,slow=19,SNR=3.3						
MKAR	**Makanchi Array**	**156.97**	**52**	PKPab	**PKPab**	**12 46 25.4**	**-0.1**
	comp=Z,1.0nm,0.8s,baz=265,slow=7.9,SNR=4.4						

*CSEM **31** 12:28:21.0±0.5, 28°.35N×58°.97E, h15km, ML3.4, Error ellipse: s-maj=17.6km s-min=8.3km az=141.0*
TEH 31 12:28:20.0, 28°.27N×59°.13E, h18km, ML3.7, Southern Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ZHSF	**Zahedan**	**1.97**	**47**	*e*Pg	Pg	12 29 00.6	+2.7
CHMN	**Cheshme madani**	**2.11**	**319**	*e*Pn	Pn	12 28 52.9	-1.9
CHMN	**Cheshme madani**	**2.11**	**319**	*e*Pn	Pn	12 28 52.9	-1.9
NIAN	**Nian**	**2.15**	**251**	*e*Pn	Pn	12 28 54.4	-0.5
NIAN	**Nian**	**2.15**	**251**	*e*Pn	Pn	12 28 54.4	-0.5
IBND	**Bandar-abas**	**2.43**	**251**	*e*Pn	Pn	12 28 58.1	-0.7
IBND				*e*AMB	AMB	12 29 46.2	
	comp=Z,6μm,0.2s						
IBND	**Bandar-abas**	**2.43**	**251**	*e*Pn	Pn	12 28 58.1	-0.7
NGRK	**Negar Kerman**	**2.51**	**304**	*e*Pn	Pn	12 29 00.5	+0.2
NGRK	**Negar Kerman**	**2.51**	**304**	*e*Pn	Pn	12 29 00.5	+0.2
KRBR	**Kerman**	**2.69**	**310**	*e*Pn	Pn	12 29 02.1	-0.5
KRBR				*e*Sg	Sb	12 29 38.8	-1.7
GENO	**Geno

MIYJ			*e*S		**Sn**	**12 28 50.8 +0.8**
OFUJ	**Ofunato**	**0.39 225**	P		**Pn**	**12 28 45.7 +0.5**
OFUJ			*e*S		**Sn**	**12 28 52.7 +0.7**
JOM	**Ohasama**	**0.58 282**	P		**Pn**	**12 28 48.1 +0.6**
JOM			*e*S		**Sn**	**12 28 57.6 +1.5**
JTH	**Tanohata**	**0.59 348**	P		**Pn**	**12 28 48.1 +0.4**
JTH			*e*S		**Sn**	**12 28 57.2 +0.7**
JMK	**Ichinoseki**	**0.75 237**	P		**Pn**	**12 28 50.0 +0.4**
JMK			*e*S		**Sn**	**12 29 00.2 +0.3**
JKZ	**Kuzumaki**	**0.83 320**	P		**Pn**	**12 28 51.8 +1.0**
JKZ			*e*S		**Sn**	**12 29 03.2 +1.2**
JIO	**Ouri**	**1.04 211**	P		**Pn**	**12 28 53.7 0.0**
JIO			*e*S		**Sn**	**12 29 06.4 -0.7**
JRG	**Rokugo**	**1.08 273**	P		**Pn**	**12 28 54.8 +0.6**
JANG	**Nango**	**1.09 339**	P		**Pn**	**12 28 54.7 +0.4**
JAH	**Hinai**	**1.36 308**	P		**Pn**	**12 28 58.8 +0.9**
JYK	**Kaneyama**	**1.37 252**	P		**Pn**	**12 28 58.9 +0.8**
ERM	**Erimo**	**2.79 18**	*ce*P		**Pn**	**12 29 18.4 +0.8**
ERM			pmax	pmax		
comp=Z,261nm,0.8s						
ERM	**Erimo**	**2.79 18**	*e*Pn		**Pn**	**12 29 18.7 +1.1**
ERM			*e*Sn		**Sn**	**12 29 57.8 +7.7**
MAJO	**Matsushiro**	**4.12 228**	*c i*P		**Pn**	**12 29 39.5 +3.6**
MAJO	**Matsushiro**	**4.12 228**	*e*Pn		**Pn**	**12 29 38.8 +2.8**
MAJO			*e*Sn		**Sn**	**12 30 22.8 -0.1**
MAT	**Matsushiro**	**4.12 228**	P		**Pn**	**12 29 37.8 +1.9**
MAT			*e*S		**Sn**	**12 30 24.2 +1.3**
MJAR	**Matsushiro Arr**	**4.12 228**	P		**Pn**	**12 29 38.2 +2.2**
comp=Z,24nm,0.3s,baz=37,slow=11,SNR=184						
MJAR			LR		LR	12 31 24.2
comp=Z,8μm,21.2s,baz=50,slow=41						
MJB9	**Matsu-Tunnel**	**4.12 228**	*e*Pn		**Pn**	**12 29 38.5 +2.5**
ASAJ	**Asahikawa**	**4.78 5**	P		**Pn**	**12 29 45.7 +0.8**
comp=Z,8.4nm,0.3s,baz=220,slow=12,SNR=66						
ASAJ			S		**Sn**	**12 30 40.7 +1.8**
baz=169,slow=16						
ASAJ	**Asahikawa**	**4.78 5**	*e*Pn		**Pn**	**12 29 46.6 +1.8**
ASAJ			*e*Sn		**Sn**	**12 30 40.7 +1.8**
YUK	**Yuzh-Kuril'sk**	**5.49 30**	*i* P		**Pn**	**12 29 54.4 -0.2**
INU	**Inuyama**	**5.65 226**	*e*Pn		**Pn**	**12 29 59.9 +3.0**
JHJ	**Hachijo jima 2**	**6.48 197**	P		**Pn**	**12 30 07.5 -0.8**
comp=Z,136nm,0.3s,baz=331,slow=23,SNR=6.5						
JHJ			S		**Sn**	**12 31 18.1 -2.8**
comp=Z,155nm,0.3s,baz=59,slow=19,SNR=3.1						
JHJ			LR		LR	12 33 17.3
comp=Z,2μm,19.2s,baz=15,slow=44						
KUR	**Kuril'sk**	**7.29 34**	*e*P		**Pn**	**12 30 19.5 +0.1**
KUR			*e*S		**Sn**	**12 31 37.3 -3.5**
KUR			pmax	pmax		
comp=Z,294nm,0.8s						
KUR			smax	smax		
comp=N,704nm,0.6s						
KUR			smax	smax		
comp=E,516nm,0.6s						
YSS	**Yuzh-Sakhalins**	**7.61 4**	α *i*P		**Pn**	**12 30 24.7 +1.0**
YSS			*e*S		**Sn**	**12 31 45.4 -3.2**
YSS			pmax	pmax		
comp=Z,90nm,0.7s						
YSS			pmax	pmax		
comp=Z,800nm,5.0s						
YSS			smax	smax		
comp=E,2μm,7.0s						
YSS			smax	smax		
comp=N,280nm,1.0s						
YSS			smax	smax		
comp=E,220nm,1.3s						
YSS			MLR	MLR		
comp=N,3μm,14.0s						
YSS			MLR	MLR		
comp=Z,2μm,14.0s						
YSS			MLR	MLR		
comp=E,2μm,15.0s						
YSS	**Yuzh-Sakhalins**	**7.61 4**	*e*Pn		**Pn**	**12 30 23.7 0.0**
YSS			*e*Sn		**Sn**	**12 31 50.8 +2.2**
VLA	**Vladivostok**	**8.52 299**	⇓*e*P		**Pn**	**12 30 39.9 +3.8**
USRK	**Ussuriysk Ar.**	**8.92 306**	P		**Pn**	**12 30 44.0 +2.3**
comp=E,3.9nm,0.3s,baz=116,slow=14,SNR=73						
USRK			LR		LR	12 34 05.4
comp=E,10μm,19.2s,baz=110,slow=37						
HABR	**Khabarovsk**	**10.40 333**	*ce*P		**Pn**	**12 30 59.9 -2.0**
HABR			*e*S		**Sn**	**12 32 54.9 -2.1**
HABR			pmax	pmax		
comp=E,67nm,1.5s						
HABR			pmax	pmax		
comp=N,81nm,1.5s						
HABR			pmax	pmax		
comp=Z,166nm,1.5s						
HABR			MLR	MLR		
comp=Z,1μm,12.0s						
MDJ	**Mudanjiang**	**10.64 304**	P		**Pn**	**12 31 09.0 +3.8**
MDJ			S		**Sn**	**12 33 10.8 +7.9**
MDJ			PcP		**PcP**	**12 37 06.5 +1.2**
MDJ			pmax	pmax		
comp=Z,150nm,1.1s						
MDJ			LR	LR		
comp=Z,4μm,15.0s						
MDJ			LR	LR		
comp=Z,5μm,17.9s						
MDJ			LR	LR		
comp=Z,9μm,17.4s						
MDJ	**Mudanjiang**	**10.64 304**	*e*Pn		**Pn**	**12 31 09.6 +4.4**
JNU	**Nakatsue**	**10.94 239**	P		**Pn**	**12 31 10.9 +1.5**
comp=Z,1.4nm,0.3s,baz=79,slow=4.8,SNR=14						
JNU			LR		LR	12 35 40.2
comp=Z,3μm,21.0s,baz=38,slow=39						
JNU	**Nakatsue**	**10.94 239**	*e*Pn		**Pn**	**12 31 11.7 +2.3**
KSRS	**Korea Array**	**11.23 265**	P		Pn	12 31 18.4 +5.2
comp=Z,2.3nm,0.3s,baz=70,slow=13,SNR=18						
KSRS			LR		LR	12 35 13.8
comp=Z,4μm,20.2s,baz=78,slow=35						
KS01	**Wonju Array Si**	**11.25 265**	*e*Pn		Pn	12 31 18.4 +4.9
KS15	**Wonju Array Si**	**11.26 265**	*e*Pn		**Pn**	**12 31 18.4 +4.7**
TYV	**Tymovskoe**	**11.52 2**	*e*P		**Pn**	**12 31 17.2 +0.1**
TYV			pmax	pmax		
comp=Z,44nm,0.8s						
TYV			MLR	MLR		
comp=N,4μm,20.0s						
TYV			MLR	MLR		
comp=Z,4μm,18.0s						
TJN	**Taejon**	**11.96 260**	⇓*e*P		**Pn**	**12 31 26.6 +3.3**
INCN	**Inchon**	**12.22 266**	P		P	12 31 44.8 +6.6
SNR=5.9						
CBIJ	**Chichi jima**	**12.23 179**	*e*Pn		**Pn**	**12 31 29.8 +2.8**
CBIJ			*e*Sn		**Sn**	**12 33 35.8 -6.1**
JCJ	**Chichijima**	**12.23 179**	P		**Pn**	**12 31 24.8 -2.2**
comp=Z,14nm,0.3s,baz=287,slow=20,SNR=4.6						
JCJ			S		Sn	12 33 29.8 -12
comp=Z,9.8nm,0.3s,baz=288,slow=19,SNR=2.8						
JCJ			LR		LR	12 40 33.6
comp=Z,258nm,18.6s,baz=351,slow=59						
KLR	**Kul'dur**	**12.30 327**	P		**Pn**	**12 31 28.7 +0.9**
comp=Z,0.3nm,0.3s,baz=138,slow=12,SNR=14						
KLR			LR		LR	12 36 15.4
comp=Z,6μm,18.7s,baz=140,slow=37						
KLR	**Kul'dur**	**12.30 327**	⇓*i*P		**Pn**	**12 31 28.9 +1.0**
CN2	**Changchun**	**13.18 295**	*e*P		**Pn**	**12 31 43.5 +3.6**
CN2			*e*S		**Sn**	**12 34 07.3 +2.4**
CN2			pmax	pmax		
comp=Z,10.0nm,1.0s						
CN2			pmax	pmax		
comp=Z,200nm,4.0s						
CN2			LR	LR		
comp=Z,2μm,18.0s						
CN2			LR	LR		
comp=Z,3μm,18.0s						
CN2			LR	LR		
comp=Z,1μm,18.0s						
NKL	**Nikolayevsk**	**13.83 357**	*e*P		Pn	12 31 39.0 -10
NKL			*e*S		**Sn**	**12 34 19.0 -1.6**
NKL			pmax	pmax		
comp=Z,79nm,1.5s						
NKL			pmax	pmax		
comp=N,400nm,5.0s						
NKL			pmax	pmax		
comp=Z,500nm,5.0s						
NKL			smax	smax		
comp=E,1μm,10.0s						
NKL			MLR	MLR		
comp=N,2μm,16.0s						
NKL			MLR	MLR		
comp=E,3μm,16.0s						
NKL			MLR	MLR		
comp=Z,2μm,16.0s						
SNY	**Shenyang**	**14.23 286**	⇑P		**Pn**	**12 31 55.0 +0.8**
SNY			pmax	pmax		
comp=Z,19nm,2.4s						
SNY			LR	LR		
comp=Z,6μm,27.7s						
SKR	**Severo-Kuril's**	**15.05 37**	*e*P		Pn	12 31 51.2 -14
SKR			pmax	pmax		
comp=N,60nm,0.5s						
SKR			pmax	pmax		
comp=E,80nm,0.5s						
SKR			pmax	pmax		
comp=Z,80nm,0.5s						
SKR			MLR	MLR		
comp=N,1μm,14.0s						
SKR			MLR	MLR		
comp=Z,1μm,14.0s						
SKR			MLR	MLR		
comp=E,2μm,16.0s						
DL2	**Dalian**	**15.84 275**	⇑*i*P		**Pn**	**12 32 16.0 +0.8**
DL2			S		**Sn**	**12 35 13.0 +3.4**
DL2			pmax	pmax		
comp=E,270nm,1.5s						
DL2			pmax	pmax		
comp=E,2μm,9.8s						
DL2			LR	LR		
comp=E,1μm,18.3s						
DL2			LR	LR		
comp=E,3μm,24.1s						
DL2			LR	LR		
comp=E,4μm,27.1s						
JOW	**Kunigami**	**16.97 227**	*e*Pn		**Pn**	**12 32 27.4 -2.1**
comp=E,65nm,1.0s						
PEA0	**Petropavlovsk-**	**17.46 33**	*e*Pn		**Pn**	**12 32 33.4 -2.1**
PEA0B	**Petropavlovsk-**	**17.46 33**	*e*Pn		**Pn**	**12 32 33.5 -1.9**
comp=E,56nm,0.9s						
PETK	**Petropavlovsk-**	**17.46 33**	P		**Pn**	**12 32 33.4 -2.0**
comp=E,0.5nm,0.3s,baz=201,slow=9.3,SNR=25						
PETK			LR		LR	12 40 14.0
comp=E,1μm,18.6s,baz=218,slow=40						
PEA1	**Petropavlovsk-**	**17.46 33**	*e*Pn		**Pn**	**12 32 33.4 -2.0**
PET	**Petropavlovsk**	**17.81 34**	*e*P		**P**	**12 32 40.2 +0.2**
PET			*e*S		**Sn**	**12 35 56.8 -0.3**
PET			pmax	pmax		
comp=Z,200nm,7.6s						
PET			pmax	pmax		
comp=Z,111nm,1.4s						
PET			MLR	MLR		
comp=Z,1μm,19.0s						
PET			MLR	MLR		
comp=Z,1μm,15.0s						
PET	**Petropavlovsk**	**17.81 34**	*e*Pn		**P**	**12 32 40.0 0.0**
comp=Z,200nm,1.4s						
HIA	**Hailar**	**18.71 309**	*e*P		**P**	**12 32 48.2 -1.8**
HIA			pmax	pmax		
comp=Z,63nm,1.1s						
HIA	**Hailar**	**18.71 309**	*e*P		**P**	**12 32 48.2 -1.8**
comp=Z,63nm,1.1s						
SSE	**Sheshan**	**18.89 251**	P		**P**	**12 32 49.0 -3.0**
SSE			sP		**sP**	**12 33 09.5 +0.9**
SSE			S		**Sn**	**12 36 20.5 -2.9**
SSE			sS		**sS**	**12 36 38.0 -3.5**
SSE			pmax	pmax		
comp=Z,62nm,1.2s						
SSE			pmax	pmax		
comp=Z,370nm,4.7s						
SSE			LR	LR		
comp=Z,2μm,18.3s						
SSE			LR	LR		
comp=Z,610nm,18.3s						
SSE			LR	LR		
comp=Z,1μm,20.2s						
BJI	**Beijing**	**19.89 280**	P		**P**	**12 33 01.5 -1.4**
BJI			sP		**sP**	**12 33 17.8 -1.7**
BJI			S		**S**	**12 36 38.5 -5.7**
BJI			pmax	pmax		
comp=Z,54nm,1.1s						
BJI			pmax	pmax		
comp=Z,500nm,3.5s						
BJI			LR	LR		
comp=Z,730nm,10.8s						
BJI			LR	LR		
comp=Z,2μm,15.8s						
BJI			LR	LR		
comp=Z,2μm,23.4s						
BJT	**Baijiatuau**	**19.89 280**	*e*P		**P**	**12 33 01.5 -1.5**
BJT			pmax	pmax		
comp=Z,424nm,1.7s						
BJT	**Baijiatuau**	**19.89 280**	*e*P		**P**	**12 33 01.5 -1.5**
comp=Z,424nm,1.7s						
TIA	**Tai'an**	**19.91 269**	⇓P		**P**	**12 33 02.5 -0.7**
TIA			pP		**pP**	**12 33 12.3 -1.8**
TIA			sP		**sP**	**12 33 17.8 -2.0**
TIA			S		**S**	**12 36 38.8 -6.0**
TIA			pmax	pmax		
comp=Z,80nm,1.1s						
TIA			pmax	pmax		
comp=Z,670nm,3.1s						
TIA			LR	LR		
comp=Z,1μm,9.3s						
TIA			LR	LR		
comp=Z,3μm,16.9s						
TIA			LR	LR		
comp=Z,3μm,16.0s						
NJ2	**Nanjing**	**20.15 256**	*e*P		**P**	**12 33 06.0 +0.2**
NJ2			sP		**sP**	**12 33 23.0 +0.6**
NJ2			S		**S**	**12 36 51.0 +1.5**
NJ2			pmax	pmax		
comp=Z,71nm,1.0s						
NJ2			LR	LR		
comp=Z,2μm,21.7s						
NJ2			LR	LR		
comp=Z,2μm,19.5s						
NJ2			LR	LR		
comp=Z,3μm,22.5s						
CLNS	**Chul'man**	**20.80 333**	*e*P		**P**	**12 33 11.7 -1.0**
CLNS			*e*			12 33 27.0
CLNS			*e*S		**S**	**12 36 56.8 -5.2**
CLNS			*e*			12 37 24.0
CLNS			*e*SS		**SnSn**	**12 37 36.9 +13**
CLNS			pmax	pmax		
comp=N,40nm,1.3s						
CLNS			pmax	pmax		
comp=Z,31nm,1.1s						
CLNS			pmax	pmax		
comp=E,15nm,0.9s						
CLNS			pmax	pmax		
comp=Z,72nm,0.9s						
CLNS			pmax	pmax		
comp=E,36nm,0.8s						
CLNS			pmax	pmax		
comp=N,107nm,1.2s						
CLNS			smax	smax		
comp=N,489nm,9.9s						
CLNS			smax	smax		
comp=E,604nm,11.5s						
CLNS			MLR	MLR		
comp=Z,2μm,13.0s						
CLNS			MLR	MLR		
comp=E,341nm,14.0s						
CLNS			MLR	MLR		
comp=N,2μm,16.0s						
MA2	**Magadan**	**20.98 12**	P		**P**	**12 33 14.9 +0.3**
comp=N,48nm,0.6s,baz=224,slow=9.2,SNR=27						
TATO	**Taipei**	**22.46 236**	*e*P		**P**	**12 33 30.9 +0.2**
comp=N,107nm,0.9s						
YHNB	**Yeheng**	**22.75 236**	*e*P		**P**	**12 33 34.1 +0.2**
comp=N,167nm,1.7s						
TIY	**Taiyuan**	**23.16 275**	*e*P		**P**	**12 33 37.8 -0.2**
TIY			S		**S**	**12 37 49.3 +3.1**
TIY			SS		**SnSn**	**12 38 36.5 +14**
TIY			pmax	pmax		
comp=N,390nm,5.3s						
TIY			LR	LR		
comp=N,810nm,9.9s						
TIY			LR	LR		
comp=N,590nm,9.8s						
TIY			LR	LR		
comp=N,770nm,13.2s						
HHC	**Hu-ho-hao-te**	**23.30 283**	*e*P		**P**	**12 33 36.0 -3.3**
HHC			sP		sP	12 33 53.5 -2.8
HHC			PP		**PnPn**	**12 34 10.3 +3.8**
HHC			S		**S**	**12 37 41.5 -6.9**
HHC			pmax	pmax		
comp=N,220nm,0.9s						
HHC			pmax	pmax		
comp=N,1μm,4.3s						
HHC			LR	LR		
comp=N,3μm,13.0s						
HHC			LR	LR		
comp=N,3μm,11.8s						
HHC			LR	LR		
comp=N,3μm,12.4s						
CIT	**Chita**	**23.41 312**	*e*P		**P**	**12 33 41.3 +1.1**
CIT			*e*			12 33 50.7
CIT			*e*			12 33 57.6
CIT			*e*			12 34 07.5
CIT			*e*			12 34 19.3
CIT			pmax	pmax		
comp=Z,254nm,2.2s						
SSLB	**Suanglung**	**23.65 235**	*e*P		**P**	**12 33 40.4 -2.2**
comp=Z,68nm,1.2s						
YULB	**Yu-li**	**23.71 234**	*e*P		**P**	**12 33 39.6 -3.7**
comp=Z,66nm,1.2s						
YAK	**Yakutsk**	**23.93 346**	P		**P**	**12 33 44.7 -0.1**
comp=Z,6.5nm,0.4s,baz=338,slow=21,SNR=25						
YAK			LR		LR	12 43 40.0
comp=Z,2μm,18.5s,baz=144,slow=38						
YAK	**Yakutsk**	**23.93 346**	*c i*P		**P**	**12 33 42.9 -2.0**
YAK			*e*S		**S**	**12 37 53.4 -4.5**
YAK			*e*			12 44 43.5
YAK			pmax	pmax		
comp=Z,114nm,0.9s						
YAK			pmax	pmax		
comp=N,47nm,1.0s						
YAK			pmax	pmax		
comp=E,11nm,0.8s						
YAK			pmax	pmax		
comp=Z,139nm,1.0s						
YAK			pmax	pmax		
comp=N,47nm,0.9s						
YAK			pmax	pmax		
comp=E,38nm,1.0s						
YAK			smax	smax		
comp=E,701nm,3.2s						
YAK			smax	smax		
comp=N,838nm,2.3s						
YAK			MLR	MLR		
comp=Z,2μm,17.0s						
YAK			MLR	MLR		
comp=E,901nm,15.0s						
YAK			MLR	MLR		
comp=N,1μm,14.0s						
YAK	**Yakutsk**	**23.93 346**	*e*P		**P**	**12 33 44.8 -0.1**
comp=N,301nm,1.0s						
TPUB	**Ta-pu**	**24.20 235**	*e*P		**P**	**12 33 46.0 -1.8**
comp=N,74nm,1.0s						
WHN	**Wuhan**	**24.26 257**	⇓P		**P**	**12 33 48.3 +0.1**
WHN			S		**S**	**12 38 00.3 -3.5**
WHN			LR	LR		
comp=N,590nm,13.8s						
WHN			LR	LR		
comp=N,5μm,14.4s						
WHN			LR	LR		
comp=N,6μm,21.0s						
TWG	**Pinlang**	**24.27 233**	*e*P		**P**	**12 33 49.0 +0.6**
comp=N,449nm,1.0s						
QZH	**Quanzhou**	**24.40 241**	⇑*i*P		P	12 33 41.5 -8.1
QZH			sP		pP	12 33 58.8 -2.8
QZH			S		**S**	**12 37 56.5 -10**
QZH			sS		sS	12 38 08.3 -18
QZH			pmax	pmax		
comp=Z,90nm,1.2s						
QZH			pmax	pmax		
comp=Z,890nm,3.4s						
QZH			LR	LR		
comp=N,3μm,20.7s						
QZH			LR	LR		
comp=E,3μm,21.7s						
QZH			LR	LR		
comp=Z,4μm,20.6s						
SEY	**Seymchan**	**24.42 11**	P		**P**	**12 33 50.0 +0.6**
comp=Z,42nm,1.0s,baz=198,slow=8.3,SNR=55						
SEY	**Seymchan**	**24.42 11**	*ce*P		**P**	**12 33 50.8 +1.4**
BTO	**Baotou**	**24.49 283**	*e*P		**P**	**12 33 50.8 +0.4**
BOD	**Bodaibo**	**25.87 325**	*e*P		**P**	**12 34 02.0 -0.6**
BOD			pmax	pmax		
comp=Z,92nm,1.3s						
ULN	**Ulaanbaatar**	**26.53 300**	*c i*P		**P**	**12 34 08.1 -0.7**
ULN			pmax	pmax		
comp=Z,16nm,1.7s						
ULN	**Ulaanbaatar**	**26.53 300**	*e*P		**P**	**12 34 07.9 -1.0**
comp=Z,41nm,1.4s						
SONA1	**Songino Array**	**26.96 300**	*e*P		**P**	**12 34 12.8 0.0**
SONA0	**Songino Array**	**26.96 300**	*e*P		**P**	**12 34 13.0 +0.2**
comp=Z,18nm,0.9s						
SONM	**Songino Array**	**26.96 300**	P		**P**	**12 34 13.0 +0.2**
comp=Z,3.6nm,0.6s,baz=101,slow=7.7,SNR=16						
SONM			LR		LR	12 45 26.8
comp=Z,3μm,18.6s,baz=93,slow=38						
SONM	**Songino Array**	**26.96 300**	P		**P**	**12 34 13.0 +0.2**
SONM			pmax	pmax		
comp=Z,4.0nm,0.6s						
SONM			MLR	MLR		
comp=Z,3μm,18.6s						
XAN	**Xi'an**	**26.98 269**	P		**P**	**12 34 10.0 -2.9**
XAN			sP		pP	12 34 26.0 +1.1
XAN			PcP		**PcP**	**12 37 34.5 +0.9**
XAN			S		**S**	**12 38 38.5 -8.5**
XAN			SS		**SnSn**	**12 40 04.0 +8.3**
XAN			pmax	pmax		
comp=Z,290nm,11.9s						
XAN			LR	LR		
comp=Z,600nm,21.5s						
XAN			LR	LR		
comp=Z,2μm,32.6s						
XAN			LR	LR		
comp=Z,2μm,25.7s						
ENH	**Enshi**	**28.09 261**	*e*P		**P**	**12 34 22.1 -0.7**
comp=Z,69nm,0.9s						
IRK	**Irkutsk**	**28.96 309**	*e*P		**P**	**12 34 29.8 -0.5**
IRK			pmax	pmax		
comp=Z,182nm,1.8s						
H11N2	**WAKE ISLAND Hy**	**29.01 125**	T		T	13 04 56.1
baz=318,slow=75						
H11N1	**WAKE ISLAND Hy**	**29.02 125**	T		T	13 04 56.6
baz=318,slow=75						
H11N3	**WAKE ISLAND Hy**	**29.02 125**	T		T	13 04 56.1
baz=318,slow=75						
TLY	**Talaya**	**29.23 308**	P		**P**	**12 34 33.4 +0.5**
comp=Z,7.4nm,0.7s,baz=106,slow=8.8,SNR=9.2						
TLY	**Talaya**	**29.23 308**	*c i*P		**P**	**12 34 32.4 -0.4**
TLY			*e*			12 34 49.2
TLY			*e*			12 35 42.6
TLY			*e*S		**S**	**12 39 21.0 -1.2**
TLY			pmax	pmax		
comp=Z,32nm,1.3s						
TLY			MLR	MLR		
comp=Z,3μm,18.0s						
TLY	**Talaya**	**29.23 308**	*e*P		**P**	**12 34 32.8 0.0**
comp=Z,46nm,1.1s						
ZAK	**Zakamensk**	**29.27 305**	*e*P		**P**	**12 34 33.3 0.0**
ZAK			pmax	pmax		
comp=Z,24nm,1.2s						
H11S1	**WAKE ISLAND Hy**	**29.80 127**	T		T	13 05 57.0
baz=319,slow=76,SNR=1237						
H11S3	**WAKE ISLAND Hy**	**29.80 127**	T		T	13 05 57.0
baz=319,slow=76,SNR=1747						
H11S2	**WAKE ISLAND Hy**	**29.81 127**	T		T	13 05 57.0
baz=319,slow=76,SNR=755						
LZH	**Lanzhou**	**30.23 276**	*e*P		**P**	**12 34 43.8 +1.8**
LZH			pP		pP	12 34 54.0 0.0
LZH			sP		sP	12 34 59.8 +0.3
LZH			PP		**PnPn**	**12 35 42.0 +1.2**
LZH			*e*S		**S**	**12 39 39.0 +0.6**
LZH			pmax	pmax		
comp=Z,56nm,1.2s						
LZH			pmax	pmax		
comp=Z,230nm,5.1s						
LZH			LR	LR		
comp=Z,980nm,12.8s						
LZH			LR	LR		
comp=Z,2μm,11.9s						
LZH			LR	LR		
comp=Z,2μm,12.8s						
MOY	**Mondy**	**30.86 307**	*e*P		**P**	**12 34 47.6 +0.3**
MOY			pmax	pmax		
comp=Z,150nm,2.3s						
BILL	**Biliibino**	**31.67 17**	*c i*P		**P**	**12 34 53.9 -0.2**
BILL			*i*			12 35 02.2
BILL			*i*			12 35 56.2
BILL			*i* S		**S**	**12 39 53.7 -6.2**
BILL			pmax	pmax		
comp=Z,14nm,1.1s						
BILL			MLR	MLR		

comp=Z,603nm,16.0s
BILL Bilibino 31.67 17 *e*P **P 12 34 54.6 +0.6**
comp=Z,78nm,1.3s
GYA Guiyang 32.15 257⇑ *i*P **P 12 34 57.5 -1.4**
GYA pP pP 12 35 12.3 +1.3
GYA PP **PnPn 12 36 08.3 +2.5**
GYA PcP **PcP 12 37 50.0 +2.9**
GYA sS sS 12 40 28.5 -0.3
GYA ScP **ScP 12 41 29.0 +2.2**
GYA SS **SnSn 12 42 03.0 +1.1**
GYA ScS **ScS 12 45 25.5 -0.4**
GYA pmax pmax
comp=Z,70nm,1.0s
GYA pmax pmax
comp=Z,190nm,6.9s
GYA LR LR
comp=Z,930nm,19.0s
GYA LR LR
comp=Z,1μm,17.4s
GYA LR LR
comp=Z,2μm,19.0s
CD2 Chengdu 32.22 267 P **P 12 34 59.0 -0.4**
CD2 pP pP 12 35 10.0 -1.5
CD2 PP **PP 12 36 12.0 -0.7**
CD2 PcP **PcP 12 37 47.5 +0.4**
CD2 S **S 12 40 09.3 -0.1**
CD2 sS sS 12 40 28.3 -1.4
CD2 pmax pmax
comp=Z,40nm,0.5s
CD2 pmax pmax
comp=Z,160nm,6.2s
CD2 LR LR
comp=Z,2μm,13.3s
CD2 LR LR
comp=Z,2μm,14.2s
GTA Gaotai 32.41 284 *e*P **P 12 35 01.0 -0.1**
GTA pP pP 12 35 12.0 -1.2
GTA sP sP 12 35 18.3 -0.3
GTA PP **PnPn 12 36 08.5 -0.5**
GTA S **S 12 40 08.5 -3.9**
GTA pmax pmax
comp=Z,4.0nm,0.8s
GTA pmax pmax
comp=Z,290nm,7.4s
GTA LR LR
comp=Z,2μm,19.7s
GTA LR LR
comp=Z,3μm,18.8s
GTA LR LR
comp=Z,4μm,18.5s
TIXI Tiksi 33.05 352⇑ *i*P **P 12 35 05.4 -0.7**
TIXI pmax pmax
comp=Z,26nm,1.7s
TIXI Tiksi 33.05 352 *e*P **P 12 35 06.4 +0.3**
comp=Z,36nm,1.0s
QIZ Qiongzhong 34.37 243 P **P 12 35 18.3 +0.2**
QIZ pP **pP 12 35 30.5 +0.2**
QIZ sP **sP 12 35 35.5 -0.2**
QIZ PP **PP 12 36 37.8 +1.3**
QIZ S **S 12 40 43.8 +1.1**
QIZ LR LR
comp=Z,820nm,20.4s
QIZ LR LR
comp=Z,720nm,20.9s
QIZ LR LR
comp=Z,1μm,17.5s
DAV Davao City (W) 35.39 209 LR LR 12 51 33.2
comp=Z,352nm,19.2s,baz=40,slow=39
KMI Kunming 35.84 259 P **P 12 35 30.5 -0.5**
KMI pP sP 12 35 48.0 -0.7
KMI PP **PP 12 36 55.0 +2.0**
KMI S S 12 40 55.5 -10
KMI sS sS 12 41 25.5 -0.8
KMI pmax pmax
comp=Z,62nm,1.2s
KMI pmax pmax
comp=Z,480nm,4.5s
KMI LR LR
comp=Z,370nm,18.0s
KMI LR LR
comp=Z,1μm,18.0s
KMI LR LR
comp=Z,2μm,17.4s
TNA Tin City 38.61 31 *e*P **P 12 35 56.2 +2.5**
comp=Z,67nm,1.0s
PANO Nakornpanom 39.30 247 P **P 12 36 01.6 +1.5**
comp=Z,34nm,0.7s
NONG Nongkai 39.75 249 P **P 12 36 04.6 +0.8**
comp=Z,56nm,0.9s
SKNT Sakolnakorn 39.86 247 P **P 12 36 05.4 +0.6**
comp=Z,46nm,1.2s
UBPT Khong Chiam 39.96 244 P **P 12 36 07.7 +2.1**
comp=Z,52nm,0.7s
MYLDM Lahad Datu 40.12 218⇓P **P 12 36 10.3 +3.3**
WMQ Urumqi 40.27 295⇓ *i*P **P 12 36 09.5 +1.5**
WMQ pP pP 12 36 18.0 -2.3
WMQ sP sP 12 36 25.8 +0.1
WMQ PcP **PcP 12 38 12.0 +1.0**
WMQ S **S 12 42 08.3 -3.8**
WMQ ScS **ScS 12 46 07.3 -2.9**
WMQ pmax pmax
comp=Z,43nm,1.0s
WMQ pmax pmax
comp=Z,270nm,4.0s
WMQ LR LR
comp=Z,270nm,14.0s
WMQ LR LR
comp=Z,370nm,17.6s
WMQ LR LR
comp=Z,600nm,29.4s
CRAI Chiangrai 40.44 254 P **P 12 36 09.9 +0.4**
comp=Z,656nm,1.4s,comp=Z,8μm
ZAA0 Zalesovo Array 40.74 310 *e*P **P 12 36 11.2 -0.4**
ZAA1 Zalesovo Array 40.74 310 *e*P **P 12 36 11.5 -0.1**
ZAA1 *e*PcP **PcP 12 38 11.9 -0.3**
ZALV Zalesovo Beam 40.74 310 P **P 12 36 11.5 -0.1**
comp=Z,18nm,0.5s,baz=88,slow=7.6,SNR=47
ZALV PcP **PcP 12 38 11.9 -0.3**
comp=Z,8.0nm,0.9s,baz=105,slow=3.2,SNR=3.3
ZALV LR LR 12 53 55.1
comp=Z,3μm,18.2s,baz=76,slow=37
ZALV Zalesovo Beam 40.74 310 P **P 12 36 11.5 -0.1**
ZALV 12 38 11.9
ZALV pmax pmax
comp=Z,18nm,0.5s
ZALV pmax pmax
comp=Z,8.0nm,0.9s
ZALV MLR MLR
comp=Z,3μm,18.2s
KHON Khomkaen 41.11 247 P **P 12 36 15.8 +0.7**
comp=Z,21nm,0.7s,comp=Z,6μm
NRIK Noril'sk 41.38 334 P **P 12 36 16.1 -0.5**
comp=Z,5.1nm,0.5s,baz=109,slow=10,SNR=16
NRIK LR LR 12 54 28.9
comp=Z,3μm,20.1s,baz=108,slow=38
NVS Novosibirsk 41.62 312 *e*P **P 12 36 18.6 -0.2**
NVS pmax pmax
comp=N,39nm,1.5s
NVS pmax pmax
comp=E,123nm,1.5s
NVS pmax pmax
comp=Z,140nm,1.5s
UTTA Uttaradit 41.85 251 P **P 12 36 21.9 +0.8**
comp=Z,6.8nm,0.8s
CHAI Chaiyaphum 42.00 248 P **P 12 36 22.1 -0.3**
comp=Z,14nm,1.1s,comp=Z,132nm
LAMP Lampang 42.04 253 P **P 12 36 23.8 +1.1**
comp=Z,11nm,1.0s
PBKT Sadao Pong 42.30 249 P **P 12 36 25.8 +1.1**
comp=Z,22nm,1.1s
CMMT Chiang Mai 42.37 254 P **P 12 36 25.9 +0.6**
comp=Z,41nm,1.0s,comp=Z,556nm
CHTO Chiang Mai 42.37 254 P **P 12 36 26.0 +0.6**
comp=Z,110nm,1.2s,comp=Z,3μm
CHTO Chiang Mai 42.37 254 *e*P **P 12 36 25.5 +0.2**
CHTO pmax pmax
comp=Z,38nm,0.9s
CHTO Chiang Mai 42.37 254 P **P 12 36 25.6 +0.2**
SNR=9.3
CHTO Chiang Mai 42.37 254 *e*P **P 12 36 25.5 +0.2**
comp=Z,38nm,0.9s
LSA Lhasa 42.52 273 *e*P **P 12 36 28.6 +1.5**
LSA pmax pmax
comp=Z,61nm,1.1s
LSA Lhasa 42.52 273 *e*P **P 12 36 28.6 +1.5**
comp=Z,61nm,1.1s

CM31 Chiang Mai Arr 42.59 253 *e*P **P 12 36 27.8 +0.7**
CMAR Chiang Mai Arr 42.59 253 P **P 12 36 26.6 -0.5**
comp=Z,4.0nm,0.7s,baz=46,slow=6.4,SNR=27
CMAR LR LR 12 55 46.5
comp=Z,414nm,18.5s,baz=52,slow=38
CM01 Chiang Mai Arr 42.60 253 *e*P **P 12 36 27.3 0.0**
TT01 Tatalina 43.25 36 *e*P **P 12 36 34.0 +2.0**
TTA Tatalina 43.25 36 *e*P **P 12 36 34.2 +2.1**
TTA pmax pmax
comp=Z,40nm,1.4s
TTA Tatalina 43.25 36 *e*P **P 12 36 34.2 +2.1**
comp=Z,40nm,1.4s
MK01 Makanchi Array 43.33 300 *e*P **P 12 36 32.6 -0.3**
MK31 Makanchi Array 43.33 300 *e*P **P 12 36 32.9 0.0**
MK31 Makanchi Array 43.33 300 *e*P **P 12 36 32.9 0.0**
MK32 Makanchi Array 43.33 300 *e*P **P 12 36 32.8 -0.1**
MKAR Makanchi Array 43.33 300 P **P 12 36 32.8 -0.1**
comp=Z,11nm,0.6s,baz=81,slow=7.6,SNR=46
MKAR LR LR 12 55 15.8
comp=Z,2μm,21.1s,baz=70,slow=37
MHMT Maesarieng 43.52 254 P **P 12 36 36.1 +1.5**
comp=Z,24nm,1.4s,comp=Z,373nm
MAKZ Makanchi 43.54 300 P **P 12 36 33.4 -1.2**
MAKZ pmax pmax
comp=Z,175nm,1.3s
MAKZ Makanchi 43.54 300 *e*P **P 12 36 34.2 -0.4**
comp=Z,151nm,1.1s
CHBT CHBT 43.90 244 P **P 12 36 39.6 +1.9**
comp=Z,55nm,1.2s,comp=Z,4μm
OHAK Old Harbor 44.74 44 *e*P **P 12 36 44.8 +0.8**
comp=Z,62nm,1.4s
PATY Pattaya 44.81 246 P P 12 36 50.0 +5.0
comp=Z,15nm,1.1s,comp=Z,3μm
KURK Kurchatov 44.91 306 *c i*P **P 12 36 44.8 -0.6**
KURK pmax pmax
comp=Z,97nm,1.2s
KURK Kurchatov 44.91 306 *e*P **P 12 36 45.0 -0.4**
comp=Z,253nm,1.1s
PPLA Purkeypile 45.00 36 *e*P **P 12 36 47.2 +1.1**
comp=Z,146nm,1.4s
CAST Castle Rocks 45.05 35 *e*P **P 12 36 48.2 +1.8**
comp=Z,46nm,1.0s
KDAK Kodiak Island 45.07 43 *i*P **P 12 36 47.0 +0.5**
KDAK Kodiak Island 45.07 43 *e*P **P 12 36 47.7 +1.2**
comp=Z,54nm,0.9s
SRDT SRDT 45.09 249 P **P 12 36 49.1 +1.8**
comp=Z,107nm,1.2s
SPU Mount Spurr 45.11 39 *e*P **P 12 36 47.6 +0.7**
KHLT Khaolaem Dam 45.18 250 P P 12 36 54.0 +6.0
comp=Z,17nm,1.2s
BPAW Bear Paw Mtn. 45.53 35 *e*P **P 12 36 52.4 +2.2**
comp=Z,86nm,1.5s
KTH Kantishna Hill 45.57 35 *e*P **P 12 36 52.4 +1.9**
comp=Z,116nm,1.2s
MLY Manley 45.64 33 *e*P **P 12 36 52.8 +1.7**
comp=Z,72nm,1.3s
SBUM Sibu 45.66 224⇑P **P 12 36 52.4 +0.7**
SBUM Sibu 45.66 224 *e*P **P 12 36 52.9 +1.2**
comp=Z,64nm,0.2s
PHET Kaeng Krachan 45.69 247 P **P 12 36 53.6 +1.6**
comp=Z,38nm,0.8s,comp=Z,298nm
SUA Susitna One 45.73 38 *e*P **P 12 36 54.2 +2.4**
comp=Z,47nm,1.0s
BRLK Bradley Lake 45.77 41 *e*P **P 12 36 53.2 +1.0**
comp=Z,169nm,2.0s
TRF Thorofare Moun 45.85 35 *e*P **P 12 36 55.2 +2.3**
comp=Z,43nm,1.2s
COLD Coldfoot 45.90 30 *e*P **P 12 36 54.8 +1.7**
comp=Z,88nm,1.3s
PDGK Podgornoye 46.16 296 P **P 12 36 55.0 -0.3**
PDGK pmax pmax
comp=Z,265nm,1.3s
BWN Browne 46.20 34 *e*P **P 12 36 58.2 +2.8**
comp=Z,350nm,1.2s
RC01 Rabbit Creek A 46.24 39 *e*P **P 12 36 57.2 +1.4**
comp=Z,116nm,1.4s
MCK McKinley 46.45 35 *e*P **P 12 36 59.2 +1.8**
MCK pmax pmax
comp=Z,38nm,1.0s
MCK McKinley 46.45 35 *e*P **P 12 36 59.2 +1.8**
comp=Z,38nm,1.0s
SEW Seward 46.46 40 *e*P **P 12 36 58.6 +1.1**
comp=Z,57nm,1.2s
PMR Palmer 46.49 38 *e*P **P 12 36 58.9 +1.2**
PMR pmax pmax
comp=Z,33nm,1.0s
PMR Palmer 46.49 38 *e*P **P 12 36 58.9 +1.2**
comp=Z,33nm,1.0s
RND Reindeer 46.50 35 *e*P **P 12 36 59.2 +1.3**
RND pmax pmax
comp=Z,100nm,1.2s
RND Reindeer 46.50 35 *e*P **P 12 36 59.2 +1.3**
comp=Z,100nm,1.2s
MDM Murphy Dome 46.70 33 *e*P **P 12 37 00.9 +1.5**
comp=Z,108nm,1.3s
WRH Wood River Hil 46.78 34 *e*P **P 12 37 01.0 +1.0**
comp=Z,29nm,1.0s
COLA College 46.87 33 *e*P **P 12 37 02.2 +1.6**
COLA pmax pmax
comp=Z,120nm,1.4s
COLA College 46.87 33 *e*P **P 12 37 02.2 +1.6**
comp=Z,120nm,1.4s
CCB Clear Creek Bu 46.90 34 *e*P **P 12 37 01.7 +0.8**
comp=Z,34nm,1.2s
ILAR Eielson Array 47.28 33 P **P 12 37 04.7 +0.8**
comp=Z,5.7nm,0.6s,baz=267,slow=6.1,SNR=80
ILAR LR LR 13 00 00.3
comp=Z,257nm,18.1s,baz=285,slow=40
ILB Eielson Array 47.28 33 *e*P **P 12 37 04.5 +0.5**
IL1 Eielson Array 47.29 33 *e*P **P 12 37 04.4 +0.5**
SCM Sheep Creek Mo 47.32 38 *e*P **P 12 37 05.9 +1.6**
SCM pmax pmax
comp=Z,56nm,0.9s
SCM Sheep Creek Mo 47.32 38 *e*P **P 12 37 05.9 +1.6**
comp=Z,56nm,0.9s
GUN Gumba 47.44 274 *e*P **P 12 37 06.0 -0.1**
comp=Z,146nm,0.8s
KSM Kuching 47.51 225⇓P **P 12 37 07.7 +1.4**
KSM Kuching 47.51 225 *e*P **P 12 37 06.7 +0.4**
comp=Z,53nm,1.1s
FYU Fort Yukon 47.87 31 *e*P **P 12 37 10.6 +2.2**
comp=Z,124nm,1.3s
KKN Kakani 47.97 274 *e*P **P 12 37 10.1 +0.1**
comp=Z,111nm,0.7s
PKIN Phulchoki 47.98 274 *e*P **P 12 37 10.4 +0.3**
comp=Z,36nm,0.7s
KLU Klutina 48.03 38 *e*P **P 12 37 11.9 +2.1**
comp=Z,63nm,1.0s
PAX Paxson 48.06 36 *e*P **P 12 37 11.2 +1.1**
PAX pmax pmax
comp=Z,59nm,1.6s
PAX Paxson 48.06 36 *e*P **P 12 37 10.5 +0.4**
comp=Z,59nm,1.6s
DIV Divide 48.15 38 *e*P **P 12 37 12.0 +1.2**
comp=Z,89nm,1.1s
DMN Daman 48.19 274 *e*P **P 12 37 12.4 +0.7**
EYAK Cordova Ski Ar 48.24 39 *e*P **P 12 37 12.9 +1.6**
comp=Z,46nm,0.9s
GKN Gorkha 48.36 275 *e*P **P 12 37 12.7 -0.2**
comp=Z,46nm,0.5s
DOT Dot Lake 48.62 35 *e*P **P 12 37 14.6 +0.3**
comp=Z,110nm,1.2s
KAPI Kappang 48.71 210 *e*P **P 12 37 16.0 +0.6**
comp=Z,68nm,1.4s
BMRM Bremner River 48.73 38 *e*P **P 12 37 16.5 +1.3**
comp=Z,92nm,1.2s
MENT Mentasta 48.86 36 *e*P **P 12 37 18.6 +2.5**
comp=Z,91nm,1.2s
TKM2 Tokmak 2 48.98 297 P **P 12 37 17.1 -0.5**
TKM2 pmax pmax
comp=Z,255nm,1.4s
TKM2 Tokmak 2 48.98 297 *e*P **P 12 37 18.2 +0.7**
comp=Z,206nm,1.1s
CHKZ Chkalovo 49.10 312 P **P 12 37 17.0 -1.1**
CHKZ pmax pmax
comp=Z,135nm,1.6s
TRTT Trang 49.20 242 P **P 12 37 23.0 +3.7**
comp=Z,41nm,1.1s,comp=Z,694nm
KOLN Koldanda 49.27 275 *e*P **P 12 37 19.9 -0.1**
BVA0 Borovoye Array 49.39 311 P **P 12 37 19.3 -1.0**
BVA0 pmax pmax
comp=Z,72nm,1.6s
BVAR Borovoye Array 49.39 311 LR LR 12 59 13.8
comp=Z,2μm,19.6s,baz=80,slow=37
BRVK Borovoye 49.45 311 *e*P **P 12 37 20.5 -0.2**
BRVK pmax pmax
comp=Z,198nm,1.3s

BRVK Borovoye 49.45 311 *e*P **P 12 37 20.5 -0.2**
comp=Z,198nm,1.3s
CRQM Cirque 49.47 39 *e*P **P 12 37 23.4 +2.3**
comp=Z,167nm,1.4s
OTUK Ortayu 49.48 304 P **P 12 37 20.0 -1.1**
OTUK pmax pmax
comp=Z,171nm,1.7s
PYUN Piuthan 49.58 276 *e*P **P 12 37 22.4 0.0**
comp=Z,445nm,1.1s
FRU Bishkek 49.69 297⇓ *i*P **P 12 37 23.0 +0.2**
FRU *i* *PP **sP 12 37 39.0 -1.8**
FRU *e* 12 39 14.0
FRU *e*S **S 12 44 24.0 -4.3**
FRU *e*PS **sS 12 44 44.0 -5.4**
FRU pmax pmax
comp=Z,160nm,2.1s
FRU smax smax
comp=E,110nm,2.8s
EGAK Eagle 49.73 33 *e*P **P 12 37 23.3 +0.6**
comp=E,31nm,1.0s
BALM Baldy 49.80 38 *e*P **P 12 37 25.5 +2.0**
BALM pmax pmax
comp=Z,109nm,1.5s
BALM Baldy 49.80 38 *e*P **P 12 37 25.5 +2.0**
comp=Z,109nm,1.5s
AAK Ala-Archa 49.84 297 P **P 12 37 23.4 -0.7**
AAK pmax pmax
comp=Z,96nm,1.5s
AAK Ala-Archa 49.84 297 *e*P **P 12 37 24.2 +0.1**
comp=Z,127nm,1.5s
KSH Kashi 49.93 293 P **P 12 37 29.0 +4.2**
KSH *es*P sP 12 37 47.3 +4.5
KSH *e*PP **PP 12 39 26.3 +6.6**
KSH *e*ScP **ScP 12 42 39.5 +3.2**
KSH PcS **PcS 12 42 44.3 +2.8**
KSH S **S 12 44 36.8 +4.9**
KSH ScS **ScS 12 47 13.8 +1.5**
KSH pmax pmax
comp=Z,37nm,1.4s
KSH pmax pmax
comp=Z,540nm,4.2s
KSH LR LR
comp=Z,950nm,18.4s
KSH LR LR
comp=Z,710nm,17.1s
KSH LR LR
comp=Z,1μm,18.8s
ZRNK Zerenda 50.22 311 P **P 12 37 25.5 -1.1**
ZRNK pmax pmax
comp=Z,154nm,1.6s
ZRNK Zerenda 50.22 311 *e*P **P 12 37 26.6 0.0**
comp=Z,150nm,1.4s
EKS2 Erkin-Say 50.33 297 *e*P **P 12 37 27.8 +0.1**
EKS2 pmax pmax
comp=Z,62nm,1.3s
EKS2 Erkin-Say 50.33 297 *e*P **P 12 37 27.8 +0.1**
comp=Z,62nm,1.3s
KULM Kulim 50.42 239⇑P **P 12 37 30.4 +1.9**
KULM Kulim 50.42 239 *e*P **P 12 37 29.3 +0.8**
comp=Z,26nm,0.9s
DAWY Dawson 50.60 34 *e*P **P 12 37 31.0 +1.6**
comp=Z,8.3nm,0.9s
IPM Ipoh 50.78 238⇓P **P 12 37 32.5 +1.2**
IPM Ipoh 50.78 238 *e*P **P 12 37 31.6 +0.3**
comp=Z,41nm,1.0s
MYKOM Kota Tinggi 51.04 233⇑P **P 12 37 34.4 +1.2**
MYKOM Kota Tinggi 51.04 233 *e*P **P 12 37 34.8 +1.6**
comp=Z,22nm,1.0s
MNAS Manas 51.27 297 P **P 12 37 35.2 +0.4**
MNAS pmax pmax
comp=Z,139nm,1.2s
FRIM Kepong 51.33 236⇓P **P 12 37 37.2 +1.8**
SOEI Soe 51.57 203 *e*P **P 12 37 37.1 -0.2**
comp=Z,106nm,1.1s
INK Inuvik 52.11 28 *e*P **P 12 37 41.6 +1.1**
INK Inuvik 52.11 28 *e*P **P 12 37 41.6 +1.1**
KK31 Karatay Array 52.41 299 *i*P **P 12 37 42.4 -0.7**
KK31 pmax pmax
comp=Z,58nm,1.3s
KKAR Karatay Array 52.41 299 *e*P **P 12 37 43.0 -0.2**
KKAR Karatay Array 52.41 299 *e*P **P 12 37 43.0 -0.2**
SMLA Simla 52.60 282 *e*P **P 12 37 44.2 -0.5**
MTN Manton Dam 52.91 193 *e*P **P 12 37 47.2 +0.2**
comp=Z,29nm,0.9s
COEN Coen 53.05 179 *e*P **P 12 37 49.3 +1.3**
comp=Z,39nm,1.0s
PSI Prapat 53.41 238 LR LR 13 01 30.2
comp=Z,322nm,21.5s,baz=34,slow=37
PSI Prapat 53.41 238 *e*P **P 12 37 51.3 +0.3**
PSI pmax pmax
comp=Z,20nm,0.9s
PSI Prapat 53.41 238 *e*P **P 12 37 51.2 +0.3**
comp=Z,20nm,0.9s
SVE Sverdlovsk 53.74 318 *de*P **P 12 37 53.1 +0.4**
SVE pmax pmax
comp=Z,145nm,1.3s
SVE MLR MLR
comp=Z,3μm,16.0s
SOKR Solikamsk 54.79 322 *e*P **P 12 37 59.4 -0.8**
SOKR pmax pmax
comp=Z,26nm,0.9s
ARU Arti 54.96 318 LR LR 13 04 01.0
comp=Z,3μm,19.1s,baz=68,slow=39
ARU Arti 54.96 318 *c i*P **P 12 38 01.4 -0.1**
ARU S **S 12 45 41.4 +1.6**
ARU pmax pmax
comp=Z,149nm,1.7s
ARU MLR MLR
comp=Z,3μm,18.0s
ARU Arti 54.96 318 *e*P **P 12 38 01.4 -0.1**
comp=Z,133nm,1.2s
DZET Dzherino 55.30 295 P **P 12 38 03.4 -1.1**
DZET pmax pmax
comp=Z,72nm,1.4s
DLBC Dease Lake 56.51 39 *e*P **P 12 38 14.2 +1.4**
comp=Z,101nm,1.9s
AB31 Akbulak array 56.83 309 *i*P **P 12 38 14.5 -0.6**
AB31 pmax pmax
comp=Z,11nm,0.5s
ABKAR Akbulak array 56.83 309 *e*P **P 12 38 14.8 -0.3**
KBL Kabul 57.06 290 *e*P **P 12 38 16.5 -0.7**
KBL pmax pmax
comp=Z,69nm,1.1s
KBL Kabul 57.06 290 *e*P **P 12 38 16.5 -0.7**
comp=Z,69nm,1.1s
AKTO Aktyubinsk 57.50 311 LR LR 13 04 30.4
comp=Z,1μm,18.8s,baz=73,slow=38
AKTO Aktyubinsk 57.50 311 P **P 12 38 19.3 -0.5**
AKTO pmax pmax
comp=Z,23nm,0.8s
HYB Hyderabad 58.77 267 *i*P **P 12 38 28.0 -1.1**
FITZ Fitzroy Crossi 59.18 198 *e*P **P 12 38 32.4 +0.7**
WRAB Tennant Creek 59.41 188 *ce*P **P 12 38 32.3 -1.1**
WRAB pmax pmax
comp=Z,84nm,1.7s
WRAB Tennant Creek 59.41 188 *e*P **P 12 38 32.2 -1.1**
comp=Z,35nm,0.9s
WB2 Warramunga Arr 59.42 188 *e*P **P 12 38 32.8 -0.6**
comp=Z,41nm,1.1s
WR1 Warramunga Arr 59.42 188 *e*P **P 12 38 32.1 -1.3**
comp=Z,56nm,1.3s
WRA Warramunga Arr 59.42 188 P **P 12 38 32.1 -1.3**
comp=Z,9.5nm,0.7s,baz=6.5,slow=7.0,SNR=59
WRA LR LR 13 01 02.6
comp=Z,116nm,21.4s,baz=40,slow=33
RES Resolute Bay 60.23 15 *e*P **P 12 38 38.9 +0.5**
RES pmax pmax
comp=Z,32nm,0.9s
RES Resolute Bay 60.23 15 *e*P **P 12 38 38.9 +0.5**
comp=Z,32nm,0.9s
APA Apatity 60.78 335⇑ *i*P **P 12 38 41.6 -0.5**
APA *i* 12 39 31.5
APA *i*S **S 12 46 50.0 -5.6**
APA MLR MLR
comp=Z,900nm,20.0s
TMCR Tamitsa 60.95 331 *e*P **P 12 38 43.7 +0.4**
TMCR pmax pmax
comp=Z,51nm,1.1s
YKA Yellowknife Ar 61.56 31 P **P 12 38 46.9 -0.7**
comp=Z,3.6nm,0.9s,baz=299,slow=6.8,SNR=28
YKA LR LR 13 06 12.8
comp=Z,18nm,21.6s,baz=0.0,slow=37
ARA0 ARCESS Array S 62.00 339 *e*P **P 12 38 50.2 -0.2**
ARCES ARCESS Array B 62.00 339 P **P 12 38 50.2 -0.2**
comp=Z,3.0nm,0.5s,baz=49,slow=7.4,SNR=19
ARCES LR LR 13 10 25.2

comp=Z,602nm,18.0s,baz=56,slow=40
KLMR Klimovskoe 62.06 327 *e*P P 12 38 50.2 -0.7
KLMR *e* 12 41 06.6
KLMR *e*S **S 12 47 09.7 -2.3**
KLMR pmax pmax
comp=Z,63nm,1.5s
AS01 Alice Springs 63.15 188 *e*P P 12 38 57.7 -0.8
AS31 Alice Springs 63.15 188 *e*P P 12 38 57.8 -0.8
comp=Z,4.4nm,0.6s
GEYT Alibeck 63.15 298 P P 12 38 58.4 -0.2
comp=Z,6.9nm,0.5s,baz=29,slow=3.4,SNR=22
GEYT LR LR 13 08 14.6
comp=Z,797nm,18.8s,baz=85,slow=38
ASAR Alice Springs 63.15 188 P P 12 38 57.8 -0.8
comp=Z,5.6nm,0.8s,baz=359,slow=6.0,SNR=55
ASAR LR LR 13 06 34.6
comp=Z,248nm,21.9s,baz=7.0,slow=36
ASAR PKP2bc 13 08 05.4
comp=Z,0.3nm,0.7s,baz=180,slow=3.1,SNR=4.7
DAG Danmarks Havn 63.51 355 *i*P P 12 38 59.4 -0.9
DAG Danmarks Havn 63.51 355 *i*P P 12 38 59.4 -0.9
MBWA Marble Bar 63.71 203 *e*P P 12 39 01.8 -0.5
comp=Z,25nm,1.4s
DZM Mont Dzumac 65.24 155 *e*LR LR 12 58 44.6
comp=Z,2μm,22.9s
B05A Bryant 65.36 47 P P 12 39 14.2 +1.4
baz=302
KULLO Kullorsuaq 65.62 6 *i*P P 12 39 13.1 -1.0
comp=Z,480nm,23.0s
KULLO Kullorsuaq 65.62 6 *e*P P 12 39 13.1 -1.0
KULLO MLR MLR
comp=Z,490nm,23.0s
MOS Moscow 65.68 323 *e*P P 12 39 13.4 -1.4
MOS *e* 12 39 28.8
MOS *e* 12 39 42.2
MOS pmax pmax
comp=Z,105nm,1.2s
MOS MLR MLR
comp=Z,2μm,17.0s
D05A Enumclaw 66.00 48 *e*P P 12 39 19.8 +2.7
comp=Z,83nm,1.4s
VRH Novokhopyorsk 66.19 317 *e*P P 12 39 17.2 -0.9
VRH pmax pmax
comp=Z,40nm,1.3s
VRH MLR MLR
comp=Z,3μm,22.0s
LON Longmire 66.34 48 *e*P P 12 39 21.1 +1.8
LON pmax pmax
comp=Z,11nm,1.0s
LON Longmire 66.34 48 *e*P P 12 39 21.1 +1.8
comp=Z,11nm,1.0s
OBN Obninsk 66.53 323 LR LR 13 11 51.2
comp=Z,881nm,19.0s,baz=63,slow=39
OBN Obninsk 66.53 323*c* *i*P P 12 39 20.6 +0.4
OBN *i* 12 39 37.1
OBN *i* 12 39 46.4
OBN *i*S **S 12 48 02.0 -5.4**
OBN pmax pmax
comp=Z,38nm,1.2s
OBN MLR MLR
comp=Z,2μm,16.0s
LPSR Galich'ya Gora 66.84 320 *e*P P 12 39 21.7 -0.6
LPSR pmax pmax
comp=Z,40nm,1.0s
LPSR MLR MLR
comp=Z,860nm,25.0s
B08A Colville Reser 66.86 46 *e*P P 12 39 24.0 +1.4
comp=Z,46nm,1.3s
FIA1 FINESS Array S 66.99 332 *e*P P 12 39 22.8 -0.2
FIA0 FINESS Array S 66.99 332 *e*P P 12 39 22.7 -0.4
FIA0 FINESS Array S 66.99 332 *e*P P 12 39 22.6 -0.4
FINES FINESS Array B 66.99 332 P P 12 39 22.6 -0.4
comp=Z,13nm,0.7s,baz=49,slow=8.6,SNR=37
FINES LR LR 13 10 55.1
comp=Z,2μm,18.6s,baz=40,slow=38
FINES FINESS Array B 66.99 332 P P 12 39 22.7 -0.4
FINES pmax pmax
comp=Z,13nm,0.7s
FINES MLR MLR
comp=Z,2μm,18.6s
I03D Drain, OR 67.08 52 P P 12 39 25.4 +1.4
baz=303
H04A Detroit Lake 67.24 50 *e*P P 12 39 27.0 +2.0
comp=Z,80nm,1.4s
VSR Storozhevoye 67.51 318 *e*P P 12 39 25.3 -1.3
VSR pmax pmax
comp=Z,80nm,2.0s
VSR MLR MLR
comp=Z,2μm,22.0s
I04A Tendick Farm, 67.59 51 P P 12 39 28.2 +0.9
baz=304,SNR=6.4
C09A Chrisman Ranch 67.77 46 *e*P P 12 39 29.4 +1.1
comp=Z,84nm,1.5s
L02D Cave Junction, 67.77 53 P P 12 39 28.6 +0.3
baz=304
HUMO Hull Mountain 67.92 53 *e*P P 12 39 31.5 +2.1
comp=Z,45nm,1.5s
I05D Terrebonne, OR 67.94 50 P P 12 39 30.1 +0.7
baz=304
JMIC Jan Mayen 67.95 350 LR LR 13 08 53.0
comp=Z,118nm,21.5s,baz=74,slow=36
NEW Newport 68.14 45 P P 12 39 31.5 +0.8
baz=305
NEW Newport 68.14 45 *e*P P 12 39 32.5 +1.9
NEW pmax pmax
comp=Z,60nm,1.4s
NEW Newport 68.14 45 *e*P P 12 39 31.8 +1.2
comp=Z,60nm,1.4s
SUMG Summit 68.37 0 *i*P P 12 39 33.4 +1.3
comp=Z,790nm,24.0s
SUMG Summit 68.37 0 *e*P P 12 39 34.3 +2.2
SUMG pmax pmax
comp=Z,44nm,1.0s
SUMG Summit 68.37 0 *e*P P 12 39 33.4 +1.3
comp=Z,44nm,1.0s
YBH Yreka Blue Hor 68.56 53 *e*P P 12 39 35.7 +2.3
YBH pmax pmax
comp=Z,40nm,1.3s
YBH Yreka Blue Hor 68.56 53 *e*P P 12 39 35.7 +2.3
comp=Z,40nm,1.3s
J05D Fort Rock, OR 68.59 51 P P 12 39 35.2 +1.5
baz=304,SNR=11
K04D Chiloquin, OR 68.64 52 P P 12 39 35.1 +1.1
baz=304
M02C Callahan 68.66 54 P P 12 39 35.5 +1.4
baz=304
VSU Vasula 68.70 329*ce*P P 12 39 34.3 +0.4
VSU pmax pmax
comp=Z,152nm,1.3s
GOF Gofitskoye 68.92 311⇑*e*P P 12 39 36.6 +1.1
GOF pmax pmax
comp=Z,99nm,1.2s
N02D Trinity Center 68.98 54 P P 12 39 37.6 +1.6
baz=304
M04C Macdoel 69.07 53 P P 12 39 38.1 +1.5
baz=305,SNR=10
K05A Summer Lake 69.11 52 *e*P P 12 39 39.5 +2.5
comp=Z,125nm,1.4s
WDC Whiskeytown Da 69.31 54 *e*P P 12 39 39.2 +1.2
WDC pmax pmax
comp=Z,35nm,1.3s
WDC Whiskeytown Da 69.31 54 *e*P P 12 39 38.8 +0.8
comp=Z,35nm,1.3s
WALA Waterton Lakes 69.40 43 *e*P P 12 39 39.0 +0.4
comp=Z,54nm,1.5s
GUDG Gudauri 69.54 308 P P 12 39 40.7 +1.0
DGRG David-gareji 69.57 307 P P 12 39 50.7 +11
DGRG David-gareji 69.57 307 *e*P P 12 39 50.6 +11
BSMT Bassoo Peak 69.65 44 *e*P P 12 39 41.8 +1.6
ZEI Tsey 69.71 309 *e*P P 12 39 39.6 -1.1
ZEI pmax pmax
comp=Z,76nm,1.3s
ZEI MLR MLR
comp=Z,2μm,15.0s
KVAR Kislovodsk Arr 69.75 311 LR LR 13 15 19.1
comp=Z,760nm,18.6s,slow=40
KIV Kislovodsk 69.76 311 *e*P P 12 39 41.2 +0.4
KIV *e* 12 40 00.3
KIV *e*S **S 12 48 46.9 +0.4**
KIV *e*SS **SS 12 53 16.5 +1.7**
KIV pmax pmax
comp=Z,110nm,1.1s
KIV pmax pmax
comp=Z,89nm,3.5s
KIV MLR MLR
comp=Z,641nm,17.0s

KIV Kislovodsk 69.76 311 *e*P P 12 39 41.0 +0.2
comp=Z,141nm,1.2s
KBZ Khabaz 69.76 310 P P 12 39 40.9 +0.2
comp=Z,19nm,0.9s,baz=63,slow=4.8,SNR=42
KBZ LR LR 13 15 40.8
comp=Z,550nm,18.1s,baz=46,slow=40
BLMT Blacktail Moun 69.79 44 *e*P P 12 39 43.1 +2.0
TBLG Delisi 69.81 308 P P 12 39 40.3 -0.8
TBLG Delisi 69.81 308 *e*P P 12 39 40.3 -0.8
SCO Scoresbysund 69.85 354 *i*P P 12 39 41.8 +1.0
SCO Scoresbysund 69.85 354 *i*P P 12 39 41.8 +1.0
O03D Paynes Creek 69.93 54 P P 12 39 42.6 +0.7
baz=305
MOD Modoc Plateau 69.94 52 *e*P P 12 39 43.9 +1.9
comp=Z,47nm,1.4s
JTMT Jette 69.99 44 *e*P P 12 39 43.9 +1.7
BMO Blue Mountains 70.01 48 *e*P P 12 39 43.9 +1.5
BMO pmax pmax
comp=Z,44nm,1.5s
BMO Blue Mountains 70.01 48 *e*P P 12 39 43.9 +1.5
comp=Z,44nm,1.5s
YBMT Yellow Bay 70.06 44 *e*P P 12 39 44.3 +1.6
ONI Oni 70.09 309 P P 12 39 43.3 +0.4
ONI Oni 70.09 309 *e*P P 12 39 43.3 +0.4
NEY Neytrino 70.15 310⇓*i*P P 12 39 44.4 +1.1
NEY pmax pmax
comp=Z,6.0nm,1.4s
SWMT Swartz Lake 70.28 44 *e*P P 12 39 45.7 +1.6
ORV Oroville 70.55 55 *e*P P 12 39 47.7 +2.1
ORV pmax pmax
comp=Z,39nm,1.3s
ORV Oroville 70.55 55 *e*P P 12 39 47.4 +1.8
comp=Z,39nm,1.3s
WVOR Wild Horse Val 70.64 51 *e*P P 12 39 48.2 +1.9
WVOR pmax pmax
comp=Z,56nm,1.4s
WVOR Wild Horse Val 70.64 51 *e*P P 12 39 48.2 +1.9
comp=Z,56nm,1.4s
IZAR Zarasai 70.71 327 *e*P P 12 39 47.2 +0.9
IZAR IAmb IAmb 12 39 48.2
comp=Z,9.7nm,0.6s
GNI Garni 70.71 306 LR LR 13 13 57.6
comp=Z,1μm,19.1s,baz=55,slow=38
GNI Garni 70.71 306*c* *i*P P 12 39 47.9 +1.1
GNI pmax pmax
comp=Z,124nm,1.6s
MSO Missoula 70.72 45 P P 12 39 47.2 +0.5
baz=307
MSO Missoula 70.72 45 *e*P P 12 39 48.5 +1.8
comp=Z,44nm,1.4s
AKH Akhalkalaki 70.75 308⇑*i*P P 12 39 48.3 +1.2
BGD Bogdanovka 70.77 308 P P 12 39 47.8 +0.5
IDID Didziasalis 70.80 327 *e*P P 12 39 47.6 +0.8
IDID IAmb IAmb 12 39 49.1
comp=Z,24nm,1.1s
CHVG Ch'k'valeri 70.84 310⇓*i*P P 12 39 45.5 -1.8
CHVG Ch'k'valeri 70.84 310 P P 12 39 48.4 +1.1
MICGM Minsk 70.85 326 *e*P P 12 39 47.0 -0.2
MICGM *e*LR LR 13 24 30.0
STKA Stephens Creek 70.87 180 P P 12 39 48.0 +0.6
comp=Z,2.1nm,0.9s,baz=326,slow=11,SNR=3.3
STKA LR LR 13 12 02.2
comp=Z,144nm,21.1s,baz=17,slow=37
STKA Stephens Creek 70.87 180 *e*P P 12 39 48.6 +1.2
comp=Z,2.9nm,1.2s
ISAL Salakas 70.88 327 *e*P P 12 39 48.2 +0.9
ISAL IAmb IAmb 12 39 49.8
comp=Z,36nm,1.2s
BANOM Banah 70.94 288 P P 12 39 48.7 +0.5
CHMT Chamberlain Mo 71.05 45 *e*P P 12 39 49.8 +1.0
NACGM Naroch 71.06 326 *e* P 12 39 47.0 -1.4
NACGM *e*LQ LQ 13 08 11.0
NACGM *e*LR LR 13 12 41.0
AFDM Forest Hills D 71.23 55 *e*P P 12 39 50.6 +0.8
comp=Z,28nm,1.3s
FFC Flin Flon 71.50 33 *e*P P 12 39 52.3 +1.2
FFC pmax pmax
comp=Z,43nm,1.1s
FFC Flin Flon 71.50 33 *e*P P 12 39 52.3 +1.2
comp=Z,43nm,1.1s
UOSS Minazif 71.57 287 *e*P P 12 39 52.3 +0.3
comp=Z,6.6nm,1.4s
HATD Hatta, Dubai 71.69 287 *i*P P 12 39 53.3 +0.5
SNR=9.3
HATD Hatta, Dubai 71.69 287 P P 12 39 52.4 -0.4
SNR=6.3
SOC Sochi 71.71 312*c* *i*P P 12 39 51.9 -0.7
SOC *e**SP **PcP 12 40 11.3 -0.2**
SOC *e* 12 42 28.9
SOC *e*PPP PPP 12 44 13.3
SOC *e*S **S 12 49 04.6 -4.4**
SOC *e**SS **ScS 12 49 55.4 +1.2**
SOC pmax pmax
comp=Z,21nm,0.6s
SOC MLR MLR
comp=Z,853nm,19.0s
FCC Fort Churchill 71.71 27 *e*P P 12 39 53.1 +0.8
FCC pmax pmax
comp=Z,35nm,1.2s
FCC Fort Churchill 71.71 27 *e*P P 12 39 53.1 +0.8
comp=Z,35nm,1.2s
MFID Camas Ranch 71.72 49 *e*P P 12 39 54.6 +1.8
comp=Z,33nm,1.2s
PAHR Pah Rah Range 71.79 53 *e*P P 12 39 55.1 +1.8
comp=Z,50nm,1.2s
ASHO Ashiyiah 71.83 287 *i*P P 12 39 54.1 +0.4
SNR=11
ASHO Ashiyiah 71.83 287 P P 12 39 55.7 +2.0
SNR=7.8
HRY Holter Researc 71.94 44 *e*P P 12 39 55.5 +1.4
NC405 NORSAR Array S 72.03 337 *e*P P 12 39 54.1 -0.1
NC303 NORSAR Array S 72.04 337 *e*P P 12 39 54.5 +0.2
BSY Bisya 72.10 285 P P 12 39 56.6 +1.3
SNR=8.4
FAQ Al Faqa, Dubai 72.14 288 P P 12 39 55.5 +0.1
CMB Columbia Colle 72.14 55 *e*P P 12 39 57.0 +1.7
CMB pmax pmax
comp=Z,45nm,1.2s
CMB Columbia Colle 72.14 55 *e*P P 12 39 57.0 +1.7
comp=Z,45nm,1.2s
LRM Limekiln Ridge 72.16 45 *e*P P 12 39 56.4 +0.8
HFS Hagfors 72.17 336 LR LR 13 14 38.1
comp=Z,968nm,18.5s,baz=38,slow=38
NC204 NORSAR Array S 72.18 338 *e*P P 12 39 55.2 0.0
NB201 NORSAR Array S 72.20 337 *e*P P 12 39 55.3 0.0
EGMT Eagleton 72.22 42 P P 12 39 56.3 +0.6
baz=310,SNR=8.7
EGMT Eagleton 72.22 42 *e*P P 12 39 57.2 +1.5
comp=Z,79nm,0.6s
NB2 NORSAR Subarra 72.23 337 P P 12 39 55.0 -0.4
comp=Z,41nm,1.2s,baz=39,slow=6.2
NB2 NORSAR Subarra 72.23 337 P P 12 39 55.0 -0.4
baz=39,slow=6.2
NB200 NORSAR Array S 72.23 337 *e*P P 12 39 55.1 -0.4
NOA NORSAR Array B 72.23 337 P P 12 39 55.1 -0.4
comp=Z,13nm,0.9s,baz=38,slow=6.0,SNR=29
NOA LR LR 13 14 22.2
comp=Z,811nm,21.8s,baz=30,slow=38
ANN Anapa 72.27 314 *e*P P 12 39 55.1 -0.8
ANN *e**PP **pP 12 40 08.6 -0.6**
ANN *e*S **S 12 49 12.3 -3.1**
ANN pmax pmax
comp=Z,50nm,1.8s
ANN MLR MLR
comp=E,1μm,22.0s
ANN MLR MLR
comp=N,684nm,22.0s
ANN MLR MLR
comp=Z,892nm,22.0s
NBO02 NORSAR Array S 72.33 337 *e*P P 12 39 55.7 -0.3
DLMT Dillon 72.36 46 *e*P P 12 39 57.4 +0.8
comp=Z,48nm,1.3s
NBO00 NORSAR Array S 72.37 337 *e*P P 12 39 56.6 +0.4
NC602 NORSAR Array S 72.38 337 *e*P P 12 39 55.6 -0.6
HLID Hailey 72.45 48 P P 12 39 58.4 +1.2
baz=308,SNR=5.3
HLID Hailey 72.45 48 *e*P P 12 39 59.1 +1.9
comp=Z,22nm,1.3s
NAO01 NORSAR Array S 72.49 337 *e*P P 12 39 56.9 0.0
MCMT McKenzie Canyo 72.55 46 *e*P P 12 39 59.1 +1.2
BMN Battle Mountai 72.69 52 *e*P P 12 40 00.9 +2.2
BMN pmax pmax
comp=Z,45nm,1.2s
BMN Battle Mountai 72.69 52 *e*P P 12 40 00.9 +2.2
comp=Z,45nm,1.2s

BOZ Bozeman (W) 72.72 45 P P 12 39 59.8 +1.1
baz=309,SNR=21
BOZ Bozeman (W) 72.72 45 *e*P P 12 39 59.9 +1.1
BOZ pmax pmax
comp=Z,45nm,1.4s
BOZ Bozeman (W) 72.72 45 *e*P P 12 39 59.9 +1.1
comp=Z,45nm,1.4s
AKASG Malin Array Be 72.76 322 P P 12 39 58.1 -0.6
comp=Z,6.2nm,0.4s,baz=44,slow=6.4,SNR=46
AKASG LR LR 13 15 23.4
comp=Z,673nm,18.0s,baz=40,slow=39
AKASG Malin Array Be 72.76 322*ce*P P 12 39 58.0 -0.7
AKASG pmax pmax
comp=Z,6.0nm,0.4s
AKBB Malin Array Si 72.76 322 *e*P P 12 39 58.3 -0.4
AKBB pmax pmax
comp=Z,23nm,0.8s
AKBB Malin Array Si 72.76 322 *e*P P 12 39 58.3 -0.4
comp=Z,23nm,0.8s
KIEV Kiev 72.77 322*c* *i*P P 12 39 58.7 -0.1
KIEV pmax pmax
comp=Z,33nm,1.1s
SUW Suwalki 73.20 327 *e*P P 12 40 01.9 +0.6
SUW Suwalki 73.20 327 *e*P P 12 40 01.8 +0.6
NV01 Mina Array Sit 73.22 54 *e*P P 12 40 03.5 +1.5
NVAR Mina Array Bea 73.22 54 P P 12 40 03.5 +1.5
comp=Z,5.8nm,0.9s,baz=296,slow=6.0,SNR=17
NVAR LR LR 13 05 16.1
comp=Z,186nm,21.8s,baz=289,slow=30
NV11 Mina Array Sit 73.31 54 *e*P P 12 40 04.5 +2.0
comp=Z,30nm,1.1s
GCMT Greycliff 73.69 44 *e*P P 12 40 06.4 +1.9
ELK Elko 73.69 51 *e*P P 12 40 06.5 +1.8
ELK pmax pmax
comp=Z,33nm,1.5s
ELK Elko 73.69 51 *e*P P 12 40 06.5 +1.8
comp=Z,33nm,1.5s
YFT Old Faithful 73.91 45 *e*P P 12 40 09.4 +3.4
comp=Z,81nm,1.9s
SMMC Simmler 74.01 57 P P 12 40 08.0 +1.5
baz=307
SIM Simferopol' 74.02 315*ce*P P 12 40 06.2 0.0
SIM *e**PP **pP 12 40 16.0 -3.5**
SIM *e*S **S 12 49 35.0 -0.2**
SIM pmax pmax
comp=Z,15nm,0.7s
LKWY Lake 74.08 45 *e*P P 12 40 09.9 +3.0
LKWY pmax pmax
comp=Z,36nm,1.4s
LKWY Lake 74.08 45 *e*P P 12 40 09.9 +3.0
comp=Z,36nm,1.4s
H17A Grant Village 74.09 45 P P 12 40 09.1 +2.1
baz=310,SNR=11
IMW Indian Meadow 74.20 46 *e*P P 12 40 10.1 +2.4
comp=Z,54nm,1.5s
FLWY Flagg Ranch 74.22 46 *e*P P 12 40 10.5 +2.8
comp=Z,80nm,1.6s
VES Vestal, Richgr 74.28 57 P P 12 40 08.5 +0.6
baz=308,SNR=6.6
RLMT Red Lodge 74.33 44 P P 12 40 09.5 +1.1
baz=311,SNR=9.1
RLMT Red Lodge 74.33 44 *e*P P 12 40 10.3 +2.0
comp=Z,69nm,1.8s
PKM Mcpherson Peak 74.39 58 P P 12 40 11.0 +2.2
baz=307,SNR=5.4
MOOW Moose Ponds 74.41 46 *e*P P 12 40 11.1 +2.2
comp=Z,31nm,1.3s
TPAW Teton Pass 74.46 46 *e*P P 12 40 11.5 +2.3
comp=Z,48nm,1.4s
HVU Hansel Valley 74.50 49 *e*P P 12 40 10.5 +1.2
HVU pmax pmax
comp=Z,25nm,1.1s
HVU Hansel Valley 74.50 49 *e*P P 12 40 10.5 +1.2
comp=Z,25nm,1.1s
LOHW Long Hollow 74.57 46 *e*P P 12 40 11.2 +1.4
comp=Z,66nm,2.0s
SNOW Snow King Moun 74.58 46 *e*P P 12 40 11.5 +1.6
comp=Z,36nm,1.4s
REDW Red Top Meadow 74.59 46 *e*P P 12 40 11.4 +1.5
comp=Z,68nm,1.6s
GRAC Grapevine Rang 74.68 55 P P 12 40 11.5 +1.2
baz=308
DGMT Dagmar 74.73 39 P P 12 40 10.9 +0.5
baz=313
DGMT Dagmar 74.73 39 *e*P P 12 40 12.0 +1.7
comp=Z,62nm,1.1s
BGU Big Grassy Mou 74.89 49 *e*P P 12 40 11.9 +0.3
comp=Z,46nm,1.7s
SORM Soroca 74.91 321⇓*i*P P 12 40 09.6 -1.7
SORM Soroca 74.91 321 ⇓P P 12 40 09.7 -1.6
LAO LASA Array 74.91 41 P P 12 40 12.2 +0.8
baz=312
R11A Troy Canyon, C 74.96 53 P P 12 40 13.2 +1.2
baz=309,SNR=14
R11A Troy Canyon, C 74.96 53 *e*P P 12 40 12.7 +0.6
comp=Z,47nm,1.2s
DAC Darwin (Calif) 74.98 55 *e*P P 12 40 13.6 +1.4
DAC pmax pmax
comp=Z,25nm,1.1s
DAC Darwin (Calif) 74.98 55 *e*P P 12 40 13.6 +1.4
comp=Z,26nm,1.1s
MPMC Manual Prospec 75.18 56 P P 12 40 14.4 +1.1
baz=308,SNR=7.4
HWUT Hardware Ranch 75.31 48 *e*P P 12 40 15.4 +1.4
comp=Z,54nm,1.3s
FURC Furnace Creek, 75.33 55 P P 12 40 15.1 +1.2
baz=308,SNR=5.4
B25A Knox Farm, Ray 75.37 39 P P 12 40 14.9 +0.9
baz=314
TPNV Topopah Spring 75.42 54 P P 12 40 15.5 +0.9
baz=309,SNR=12
TPNV Topopah Spring 75.42 54 *e*P P 12 40 15.6 +0.9
TPNV pmax pmax
comp=Z,81nm,1.3s
TPNV Topopah Spring 75.42 54 *e*P P 12 40 15.6 +0.9
comp=Z,81nm,1.3s
KIS Kishinev 75.44 319 *e*P P 12 40 14.0 -0.4
KIS *e*LR LR 13 07 28.0
comp=Z,2μm,16.0s
KIS Kishinev 75.44 319 *e*P P 12 40 14.0 -0.4
KIS *e* 12 40 30.0
KIS *e* 12 50 10.0
KIS *e* 12 50 50.0
KIS MLR MLR
comp=N,1μm,15.0s
KIS MLR MLR
comp=E,1μm,15.0s
KIS MLR MLR
comp=Z,2μm,15.0s
KIS MLR MLR
comp=Z,2μm,16.0s
A26A Wade Farm, Ken 75.48 38 P P 12 40 14.9 +0.3
baz=314
DUG Dugway, Tooele 75.48 50 P P 12 40 16.0 +1.0
baz=310,SNR=6.6
DUG Dugway, Tooele 75.48 50 *e*P P 12 40 17.1 +2.1
DUG pmax pmax
comp=Z,42nm,1.2s
DUG Dugway, Tooele 75.48 50 *e*P P 12 40 15.8 +0.9
comp=Z,42nm,1.2s
EDW2 Edwards Air Fo 75.58 57 P P 12 40 16.4 +0.9
baz=308,SNR=5.5
BW06 Boulder Array 75.70 46 P P 12 40 16.6 +0.2
baz=311,SNR=8.7
BW06 Boulder Array 75.70 46 *e*P P 12 40 16.8 +0.4
PD31 Pinedale Array 75.70 46 *e*P P 12 40 16.8 +0.4
PDAR Pinedale Array 75.70 46 P P 12 40 16.8 +0.4
comp=Z,1.5nm,0.4s,baz=259,slow=1.8,SNR=18
PDAR LR LR 13 10 12.0
comp=Z,142nm,21.8s,baz=328,slow=33
TCUT Toone Canyon 75.72 48 *e*P P 12 40 17.6 +1.2
comp=Z,149nm,1.6s
B26A Jensen Ranch, 75.75 38 P P 12 40 16.8 +0.6
baz=314
BEL Belsk 75.77 327 *e*P P 12 40 17.3 +1.1
BEL Belsk 75.77 327 *e*P P 12 40 17.3 +1.1
LVV L'vov 75.79 324 *e*P P 12 40 16.6 +0.2
LVV MLR MLR
comp=N,700nm,15.0s
LVV MLR MLR
comp=E,700nm,15.0s
LVV MLR MLR
comp=Z,1μm,15.0s
A27A Ledoux Ranch, 75.81 37 P P 12 40 17.2 +0.7
baz=315
PSUT Pine Spring 75.91 52 *e*P P 12 40 19.4 +1.8
comp=Z,44nm,1.2s

SHOC	Shoshone, Teco	76.05	55	P		P	12 40 19.1 +0.9
	baz=309,SNR=5.3						
GSC	Goldstone, Bar	76.08	56	P		P	12 40 19.4 +1.0
	baz=309,SNR=6.4						
GSC	Goldstone, Bar	76.08	56	*e*P		P	12 40 19.7 +1.3
GSC					pmax	pmax	
	comp=Z,35nm,1.3s						
GSC	Goldstone, Bar	76.08	56	*e*P		P	12 40 19.7 +1.3
	comp=Z,35nm,1.3s						
A28A	Rude Farm, Bot	76.30	37	P		P	12 40 20.2 +0.9
	baz=315						
SHPR	Sheep Range	76.38	54	*e*P		P	12 40 22.2 +2.0
	comp=Z,51nm,1.2s						
E25A	Miller Ranch,	76.47	40	P		P	12 40 21.5 +1.1
	baz=314						
KWP	Kalwaria Pacla	76.53	324	*e*P		P	12 40 21.3 +0.7
KWP	Kalwaria Pacla	76.53	324	*e*P		P	12 40 21.3 +0.7
TUQ	Turquoise Moun	76.56	55	P		P	12 40 22.0 +0.8
	baz=309,SNR=6.0						
D26A	Manning	76.58	39	P		P	12 40 21.6 +0.6
	baz=314						
B28A	Dugan Ranch, T	76.58	37	P		P	12 40 21.7 +0.8
	baz=315						
HEC	Hector,Ludlow	76.68	56	P		P	12 40 22.7 +0.9
	baz=309,SNR=6.0						
A29A	Manning Farm,	76.77	36	P		P	12 40 22.3 +0.3
	baz=316,SNR=7.7						
BUR08	Bucovina Ar. S	76.78	322	*e*P		P	12 40 22.3 +0.1
BURAR	Bucovina Array	76.79	322	⇑*i*P		P	12 40 22.6 +0.4
BURAR	Bucovina Array	76.79	322	⇑P		P	12 40 22.6 +0.4
CCUT	Cedar City	76.83	52	*e*P		P	12 40 24.0 +1.2
	comp=Z,43nm,1.2s						
TESR	Tescani	76.86	320	⇓*i*P		P	12 40 22.7 +0.2
MURC	Murrieta	76.89	57	P		P	12 40 23.4 +0.4
	baz=309						
MSU	Marysvale	76.93	51	*e*P		P	12 40 24.8 +1.4
MSU	Marysvale	76.93	51	*e*P		P	12 40 24.8 +1.4
E26A	Carlson Angus	76.96	40	P		P	12 40 23.5 +0.4
	baz=314						
TMUT	Trail Mountain	77.00	50	*e*P		P	12 40 25.6 +1.8
	comp=Z,36nm,1.3s						
CFR	Carcaliu	77.03	318	⇑*i*P		P	12 40 20.8 -2.6
CFR	Carcaliu	77.03	318	⇑P		P	12 40 20.8 -2.6
B29A	Wagenman Farm,	77.04	37	P		P	12 40 24.1 +0.5
	baz=316						
C28A	Hausauer Farms	77.09	38	P		P	12 40 24.2 +0.4
	baz=315						
GMRC	Granite Mounta	77.14	56	P		P	12 40 25.0 +0.5
	baz=309						
P17A	Butcher Ranch,	77.17	49	*e*P		P	12 40 25.5 +0.9
	comp=Z,81nm,1.3s						
A30A	Hoffart Farm,	77.19	36	P		P	12 40 24.7 +0.4
	baz=317						
MTPU	Mount Pierson	77.23	51	*e*P		P	12 40 26.9 +1.7
	comp=Z,51nm,1.2s						
LCMT	Little Creek M	77.25	53	*e*P		P	12 40 27.1 +2.1
	comp=Z,51nm,1.1s						
Q16A	Castle Valley	77.27	50	*e*P		P	12 40 26.9 +1.6
	comp=Z,56nm,1.3s						
VRI	Vrincioaia	77.27	320	⇑*i*P		P	12 40 27.2 +2.3
VRI	Vrincioaia	77.27	320	⇑P		P	12 40 27.2 +2.3
F26A	Lodgepole	77.28	40	P		P	12 40 25.0 0.0
	baz=314						
ULM	Lac du Bonnet	77.30	34	P		P	12 40 24.7 -0.2
	comp=Z,5.7nm,0.7s,baz=322,slow=5.4,SNR=6.4						
ULM					LR	LR	13 18 24.8
	comp=Z,115nm,18.1s,baz=268,slow=39						
ULM	Lac du Bonnet	77.30	34	*e*P		P	12 40 25.3 +0.4
	comp=Z,29nm,1.0s						
LDFC	Landfair	77.31	55	*e*P		P	12 40 26.6 +1.3
	comp=Z,63nm,1.2s						
PLOR	Plostina	77.32	320	⇓*i*P		P	12 40 25.6 +0.4
PLOR	Plostina	77.32	320	⇓P		P	12 40 25.6 +0.4
STHS	Stebnicka Huta	77.34	325	*e*P		P	12 40 25.5 +0.3
STHS				*e*			12 40 35.4
STHS					pmax	pmax	
	comp=Z,15nm,1.0s						
STHS	Stebnicka Huta	77.34	325	*e*P		P	12 40 25.5 +0.3
STHS				*e*			12 40 35.4
P18A	Preston Nutter	77.36	49	*e*P		P	12 40 27.1 +1.3
	comp=Z,44nm,1.2s						
PFO	Pinyon Flats O	77.36	57	*e*P		P	12 40 27.0 +1.3
PFO					pmax	pmax	
	comp=Z,28nm,1.3s						
PFO	Pinyon Flats O	77.36	57	*e*P		P	12 40 27.0 +1.3
	comp=Z,28nm,1.3s						
G25A	Newell	77.36	41	P		P	12 40 25.8 +0.4
	baz=314						
OJC	Ojcow	77.38	326	*e*P		P	12 40 25.6 +0.2
OJC	Ojcow	77.38	326	*e*P		P	12 40 25.6 +0.2
OJC					pmax	pmax	
	comp=Z,41nm,1.0s						
OJC	Ojcow	77.38	326	*e*P		P	12 40 25.6 +0.2
	comp=Z,41nm,1.0s						
TIRR	Tirgusor	77.38	318	⇑*i*P		P	12 40 26.2 +0.8
TIRR	Tirgusor	77.38	318	⇑P		P	12 40 26.2 +0.8
TIRR	Tirgusor	77.38	318	*e*P		P	12 40 26.0 +0.6
	comp=Z,16nm,1.1s						
BELC	Belle Mtn. Jos	77.41	56	P		P	12 40 26.6 +0.5
	baz=309						
E27A	Carson	77.43	39	P		P	12 40 26.2 +0.4
	baz=315						
UZH	Uzhgorod	77.44	324	*e*P		P	12 40 25.4 -0.3
UZH				*e*			12 40 38.6
UZH				*e*			12 40 42.2
UZH				*e*S		S	12 50 10.4 -2.4
UZH					MLR	MLR	
	comp=N,500nm,14.0s						
UZH					MLR	MLR	
	comp=E,700nm,14.0s						
UZH					MLR	MLR	
	comp=Z,250nm,14.0s						
K22A	Casper	77.46	45	P		P	12 40 26.6 +0.4
	baz=313,SNR=7.4						
K22A	Casper	77.46	45	*e*P		P	12 40 26.7 +0.5
	comp=Z,71nm,1.4s						
KNB	Kanab	77.50	52	*e*P		P	12 40 28.7 +2.2
KNB					pmax	pmax	
	comp=Z,71nm,1.2s						
KNB	Kanab	77.50	52	*e*P		P	12 40 27.9 +1.3
	comp=Z,71nm,1.2s						
B30A	Myrvik Farm, E	77.53	36	P		P	12 40 26.4 +0.1
	baz=317,SNR=6.6						
SRU	San Rafael Swe	77.53	49	*e*P		P	12 40 27.7 +1.0
SRU					pmax	pmax	
	comp=Z,48nm,1.1s						
SRU	San Rafael Swe	77.53	49	*e*P		P	12 40 27.7 +1.0
	comp=Z,48nm,1.1s						
CRVS	Cervenica-Dubn	77.62	324	*e*P		P	12 40 28.1 +1.4
CRVS	Cervenica-Dubn	77.62	324	*e*P		P	12 40 28.1 +1.4
H25A	Fruitdale	77.67	42	P		P	12 40 27.3 +0.1
	baz=314						
BR101	Keskin Array S	77.68	311	*e*P		P	12 40 27.2 -0.1
BR131	Keskin Array S	77.68	311	*e*P		P	12 40 27.1 -0.3
BRTR	Keskin Array B	77.68	311	P		P	12 40 27.2 -0.1
	comp=Z,2.7nm,0.5s,baz=79,slow=3.1,SNR=24						
BRTR					PP	PP	12 43 20.8 -1.6
	comp=Z,1.8nm,0.9s,baz=72,slow=4.7,SNR=3.5						
BRTR					LR	LR	13 19 15.7
	comp=Z,385nm,19.2s,baz=54,slow=39						
TRPA	Tarpa	77.69	323	*e*P		P	12 40 27.1 0.0
E28A	Huff	77.75	39	P		P	12 40 28.1 +0.5
	baz=315						
NIE	Niedzica	77.76	325	*e*P		P	12 40 28.1 +0.6
NIE	Niedzica	77.76	325	*e*P		P	12 40 28.1 +0.6
RSSD	Black Hills	77.78	42	P		P	12 40 28.3 +0.3
	baz=314						
RSSD	Black Hills	77.78	42	*e*P		P	12 40 29.1 +1.1
RSSD					pmax	pmax	
	comp=Z,81nm,1.6s						
RSSD	Black Hills	77.78	42	*e*P		P	12 40 28.5 +0.5
	comp=Z,81nm,1.6s						
MONP2	Monument Peak	77.83	57	P		P	12 40 29.6 +1.1
	baz=309						
B31A	Greenbush Farm	77.86	36	P		P	12 40 28.7 +0.7
	baz=317						
IRM	Iron Mountain	77.86	56	P		P	12 40 29.4 +1.0
	baz=310,SNR=6.3						
ISR	Istrita	77.89	319	⇑*i*P		P	12 40 29.2 +0.9
ISR	Istrita	77.89	319	⇑P		P	12 40 29.2 +0.9
MLR	Muntele Rosu	77.93	320	LR		LR	13 20 53.3
	comp=Z,21nm,18.8s,baz=47,slow=40						
MLR	Muntele Rosu	77.93	320	⇓*i*P		P	12 40 28.9 +0.2
MLR	Muntele Rosu	77.93	320	⇓P		P	12 40 28.9 +0.2
MLR	Muntele Rosu	77.93	320	*e*P		P	12 40 29.1 +0.5
	comp=Z,30nm,1.3s						
MSAB	Monastry St. A	77.94	318	⇓*i*P		P	12 40 29.2 +0.6
BC3	Big Chuckawall	77.98	56	P		P	12 40 30.0 +0.8
	baz=310,SNR=5.4						
C30A	Mose, Pekin	78.00	37	P		P	12 40 29.2 +0.3
	baz=317						
A32A	Rocking H Ranc	78.02	35	P		P	12 40 28.8 -0.1
	baz=318						
W13A	Hualapai Mount	78.07	54	*e*P		P	12 40 30.5 +0.8
	comp=Z,22nm,1.2s						
ANTO	Ankara	78.07	312	*e*P		P	12 40 29.8 +0.3
ANTO					pmax	pmax	
	comp=Z,23nm,0.8s						
ANTO	Ankara	78.07	312	*e*P		P	12 40 29.8 +0.3
	comp=Z,23nm,0.8s						
BR231	Keskin MP Arra	78.10	312	*e*P		P	12 40 28.0 -1.7
O20A	White River Ci	78.18	48	P		P	12 40 30.9 +0.7
	baz=312,SNR=6.0						
O20A	White River Ci	78.18	48	*e*P		P	12 40 30.7 +0.4
	comp=Z,38nm,1.3s						
U15A	North Rim	78.21	52	*e*P		P	12 40 31.8 +1.2
	comp=Z,74nm,1.3s						
SWSC	Sam W. Stewart	78.21	57	P		P	12 40 30.9 +0.6
	baz=310						
E29A	Napoleon	78.27	38	P		P	12 40 30.4 0.0
	baz=316						
C31A	Landman Farms,	78.28	37	P		P	12 40 30.7 +0.3
	baz=317						
D30A	Buchanan	78.30	38	P		P	12 40 30.8 +0.3
	baz=317						
LANS	Liptovska Anna	78.32	326	*e*P		P	12 40 31.4 +0.7
LANS	Liptovska Anna	78.32	326	*e*P		P	12 40 31.4 +0.7
KECS	Kecovo	78.36	325	*e*P		P	12 40 32.6 +1.7
KECS					pmax	pmax	
	comp=Z,6.0nm,1.3s						
KECS	Kecovo	78.36	325	*e*P		P	12 40 32.5 +1.7
OKC	Ostrava-Krasne	78.38	327	*e*P		P	12 40 31.6 +0.7
OKC				*e*PP		PP	12 43 27.2 -0.6
OKC					AMS	AMS	13 17 40.0
	comp=Z,900nm,17.7s						
OKC	Ostrava-Krasne	78.38	327	*e*P		P	12 40 31.6 +0.7
OKC				*e*			12 43 27.2
OKC					MLR	MLR	
	comp=Z,900nm,17.7s						
KSP	Ksiaz	78.38	328	*e*P		P	12 40 31.9 +1.0
KSP	Ksiaz	78.38	328	*e*P		P	12 40 31.9 +1.0
B32A	Ashes, Strandq	78.38	35	P		P	12 40 30.6 -0.3
	baz=318						
VOIR		78.41	320	⇑*i*P		P	12 40 32.4 +1.1
VOIR		78.41	320	⇑P		P	12 40 32.4 +1.1
PDMCI	Parker Dam,Lak	78.41	55	P		P	12 40 32.2 +0.8
	baz=310,SNR=5.2						
A33A	Warroad	78.49	35	P		P	12 40 31.4 -0.1
	baz=318						
Y12C	Blythe	78.52	56	P		P	12 40 32.7 +0.7
	baz=310,SNR=6.0						
Y12C	Blythe	78.52	56	*e*P		P	12 40 32.8 +0.9
	comp=Z,43nm,1.1s						
E30A	Jud	78.67	38	P		P	12 40 32.4 -0.2
	baz=317						
ARR	Arges	78.67	320	⇑*i*P		P	12 40 33.8 +1.1
MORC	Moravsky Berou	78.68	327	⇑*i*P		P	12 40 32.3 -0.3
MORC	Moravsky Berou	78.68	327	⇑P		P	12 40 32.3 -0.3
MORC	Moravsky Berou	78.68	327	*e*P		P	12 40 33.0 +0.4
	comp=Z,113nm,1.1s						
F29A	Eureka	78.70	39	P		P	12 40 32.8 0.0
	baz=316						
DPC	Dobruska-Polom	78.75	328	*e*P		P	12 40 33.7 +0.7
DPC				*e*PCP		PcP	12 40 41.3 -0.4
DPC				*e*PP		PP	12 43 32.3 +1.4
DPC					AMS	AMS	13 18 00.0
	comp=Z,1μm,18.1s						
DPC	Dobruska-Polom	78.75	328	*e*P		P	12 40 33.7 +0.7
DPC				*e*			12 40 41.3
DPC				*e*			12 43 32.3
DPC					MLR	MLR	
	comp=Z,1μm,18.1s						
PV09	Paradox Valley	78.75	49	*e*P		P	12 40 34.5 +0.9
UPC	Upice	78.76	328	*e*P		P	12 40 33.4 +0.4
UPC					AMS	AMS	13 18 00.0
	comp=Z,1μm,18.6s						
UPC	Upice	78.76	328	*e*P		P	12 40 33.4 +0.4
UPC					MLR	MLR	
	comp=Z,1μm,18.6s						
GLA	Glamis	78.77	56	P		P	12 40 33.1 -0.3
	baz=310						
PRD	Provadia	78.78	317	*e*P		P	12 40 33.3 +0.1
C32A	Crookston	78.81	36	P		P	12 40 33.1 -0.2
	baz=318						
D31A	Mcclaflin, Tow	78.83	37	P		P	12 40 33.1 -0.3
	baz=317						
J26A	Sides Ranch, S	78.84	42	P		P	12 40 34.0 +0.3
	baz=314						
PV10	Paradox Valley	78.89	49	*e*P		P	12 40 35.6 +1.3
B33A	Robert and Kas	78.90	35	P		P	12 40 33.6 -0.2
	baz=318						
PHWY	Pilot Hill	78.95	45	*e*P		P	12 40 35.3 +0.7
	comp=Z,40nm,1.3s						
N23A	Red Feather La	78.96	46	P		P	12 40 35.2 +0.6
	baz=313						
LOT	Lotru	79.03	321	⇓*i*P		P	12 40 34.8 +0.1
PSZ	Piszkesteto	79.05	325	⇑*i*P		P	12 40 32.6 -2.1
PSZ	Piszkesteto	79.05	325	*e*P		P	12 40 35.1 +0.4
PSZ	Piszkesteto	79.05	325	⇑P		P	12 40 32.6 -2.1
PSZ	Piszkesteto	79.05	325	*e*P		P	12 40 35.1 +0.4
	comp=Z,39nm,1.2s						
PV05	Paradox Valley	79.05	50	*e*P		P	12 40 36.9 +1.8
E31A	Nome	79.11	37	P		P	12 40 35.2 +0.2
	baz=317						
B34A	Aery, Baudette	79.15	34	P		P	12 40 34.8 -0.4
	baz=319						
C33A	Trail	79.20	36	P		P	12 40 35.4 -0.1
	baz=318						
BRG	Berggiesshubel	79.30	330	*e*P		P	12 40 36.5 +0.6
	comp=Z,24nm,1.3s						
	comp=N,1μm,17.9s						
	comp=E,416nm,16.5s						
	comp=Z,1μm,17.1s						
BRG	Berggiesshubel	79.30	330	*e*P		P	12 40 36.5 +0.6
BRG					pmax	pmax	
	comp=Z,24nm,1.3s						
BRG					MLR	MLR	
	comp=N,1μm,17.9s						
BRG					MLR	MLR	
	comp=E,416nm,16.5s						
BRG					MLR	MLR	
	comp=Z,1μm,17.1s						
PVCC	Panska Ves	79.32	329	*e*P		P	12 40 37.0 +0.9
PVCC				*e*pP		pP	12 40 50.6 +1.1
PVCC					AMS	AMS	13 18 20.0
	comp=Z,1μm,17.9s						
PVCC	Panska Ves	79.32	329	*e*P		P	12 40 37.0 +0.9
PVCC				*e*			12 40 50.6
PVCC					MLR	MLR	
	comp=Z,1μm,17.9s						
PV01	Paradox Valley	79.32	49	*e*P		P	12 40 37.8 +1.2
CLL	Collm	79.32	330	*i*P		P	12 40 35.7 -0.3
	comp=Z,32nm,1.1s						
CLL				*e*			12 40 41.0
CLL				*i*			12 40 54.1
CLL				*i*			12 42 42.6
CLL				*e*PP		PP	12 43 37.0 +1.4
CLL				*e*PPP		PPP	12 45 24.0
CLL				*e*S		S	12 50 30.0 -2.9
CLL				*e*PS		PnS	12 51 18.0 -2.4
CLL				*e*SS		SS	12 55 42.0 +2.8
CLL				*e*SSS		SSS	12 59 18.0
CLL					LmH		13 20 00.0
	comp=N,500nm,20.7s						
CLL					LmH		13 20 00.0
	comp=E,500nm,18.6s						
CLL					LmH		13 20 00.0
	comp=Z,600nm,19.3s						
CLL	Collm	79.32	330	*e*P		P	12 40 36.0 0.0
CLL					pmax	pmax	
	comp=Z,33nm,1.1s						
CLL	Collm	79.32	330	*e*P		P	12 40 35.7 -0.3
	comp=Z,33nm,1.1s						
WUAZ	Wupatki	79.36	53	P		P	12 40 37.6 +0.8
	baz=311,SNR=6.2						
WUAZ	Wupatki	79.36	53	*e*P		P	12 40 38.9 +2.1
	comp=Z,39nm,1.0s						
F31A	Hecla	79.45	38	P		P	12 40 37.1 +0.3
	baz=317						
G30A	Faulkton	79.55	39	P		P	12 40 37.7 +0.3
	baz=317						
SMCO	Snowmass	79.55	48	*e*P		P	12 40 38.9 +0.8
	comp=Z,51nm,1.4s						
GZR	Gura Zlata	79.56	321	⇑*i*P		P	12 40 37.5 0.0
GZR	Gura Zlata	79.56	321	⇑P		P	12 40 37.5 0.0
D33A	AnnSam, Waubun	79.63	36	P		P	12 40 37.6 -0.2
	baz=318						
113A	Mohawk Valley,	79.64	56	*e*P		P	12 40 41.8 +3.7
	comp=Z,25nm,1.1s						
B35A	Bob, Littlefor	79.65	34	P		P	12 40 37.9 0.0
	baz=320						
GOPC	GO Pecny, Ondr	79.71	328	*e*P		P	12 40 38.7 +0.5
GOPC				*e*PCP		PcP	12 40 48.3 +2.4
GOPC					AMS	AMS	13 18 30.0
	comp=Z,1μm,19.0s						
GOPC	GO Pecny, Ondr	79.71	328	*e*P		P	12 40 38.7 +0.5
GOPC				*e*			12 40 48.3
GOPC					MLR	MLR	
	comp=Z,1μm,19.0s						
JMB	Yambol	79.72	317	*e*P		P	12 40 38.8 +0.4
PRU	Pruhonice	79.75	329	*e*P		P	12 40 38.9 +0.5
PRU				*e*pP		pP	12 40 53.5 +1.6
PRU					AMS	AMS	13 18 40.0
	comp=Z,1μm,18.6s						
PRU	Pruhonice	79.75	329	*e*P		P	12 40 38.9 +0.5
PRU				*e*			12 40 53.5
PRU					MLR	MLR	
	comp=Z,1μm,18.6s						
BUD	Budapest	79.77	325	*e*P		P	12 40 39.4 +0.9
I29A	Vivian Onida	79.77	40	P		P	12 40 38.8 +0.2
	baz=316						
ISCO	Idaho Springs	79.89	46	P		P	12 40 40.0 +0.3
	baz=314,SNR=8.6						
ISCO	Idaho Springs	79.89	46	*e*P		P	12 40 41.7 +1.9
ISCO					pmax	pmax	
	comp=Z,48nm,1.4s						
ISCO	Idaho Springs	79.89	46	*e*P		P	12 40 41.7 +1.9
	comp=Z,48nm,1.4s						
TREC	Trest	79.91	328	AMS		AMS	13 18 40.0
	comp=Z,1μm,18.4s						
G31A	Conde	79.93	39	P		P	12 40 39.4 -0.1
	baz=317						
BZS	Buzias	79.95	322	⇓*i*P		P	12 40 39.3 -0.3
BZS	Buzias	79.95	322	⇓P		P	12 40 39.3 -0.3
D34A	Park Rapids	79.96	36	P		P	12 40 39.3 -0.4
	baz=319						
MVCO	Mesa Verde	79.98	50	P		P	12 40 40.4 +0.2
	baz=312,SNR=6.9						
MVCO	Mesa Verde	79.98	50	*e*P		P	12 40 41.1 +0.9
	comp=Z,57nm,1.3s						
E33A	Westby DABS, E	80.03	37	P		P	12 40 39.5 -0.5
	baz=318						
X16A	Lo Mia Camp, P	80.04	54	*e*P		P	12 40 41.9 +1.4
	comp=Z,42nm,1.3s						
C35A	Jirik Farms, M	80.04	35	P		P	12 40 39.4 -0.6
	baz=320						
EDRB	Edirne	80.07	317	P		P	12 40 40.7 +0.4
SUSD	Miller	80.14	39	P		P	12 40 40.7 0.0
	baz=317						
CSKK	Cs¨ţkako	80.20	325	⇓*e*P		P	12 40 42.1 +1.2
H31A	Wolsey	80.34	39	P		P	12 40 42.1 +0.4
	baz=317						
F33A	5 Mile Ranch,	80.39	37	P		P	12 40 42.1 +0.2
	baz=318						
NKC	Novy Kostel	80.39	330	*e*P		P	12 40 42.5 +0.6
NKC					AMS	AMS	13 19 30.0
	comp=Z,900nm,15.6s						
NKC	Novy Kostel	80.39	330	*e*P		P	12 40 42.5 +0.6
NKC					MLR	MLR	
	comp=Z,900nm,15.6s						
C36A	Pine Crest Far	80.50	34	P		P	12 40 42.2 -0.3
	baz=320						
MDVR	Moldovita	80.52	321	⇓*i*P		P	12 40 42.5 -0.2
MPEP	Malo Peshtene	80.56	319	*e*P		P	12 40 43.4 +0.5
S22A	4UR Ranch, Cre	80.60	49	P		P	12 40 43.9 +0.3
	baz=313,SNR=10						
S22A	4UR Ranch, Cre	80.60	49	*e*P		P	12 40 44.9 +1.3
	comp=Z,46nm,1.3s						
W18A	Petrified Fore	80.63	52	P		P	12 40 44.7 +1.0
	baz=312						
W18A	Petrified Fore	80.63	52	*e*P		P	12 40 46.7 +3.0
	comp=Z,19nm,1.1s						
J30A	Dallas	80.68	41	P		P	12 40 44.0 +0.4
	baz=317						
SOP	Sopron	80.70	326	*e*P		P	12 40 44.2 +0.7
E35A	Pequot Lakes	80.72	36	P		P	12 40 43.9 +0.3
	baz=319						
Q24A	Divide	80.73	47	P		P	12 40 44.4 +0.1
	baz=314						
214A	Organ Pipe Nat	80.78	56	P		P	12 40 44.6 +0.3
	baz=311,SNR=6.9						
G33A	Ortonville	80.80	38	P		P	12 40 43.7 -0.5
	baz=318						
D36A	Goodland	80.80	35	P		P	12 40 43.6 -0.5
	baz=320						
C37A	Embarrass	80.80	34	P		P	12 40 43.5 -0.6
	baz=321						
CONA	Conrad Observa	80.81	327	*e*P		P	12 40 45.3 +1.0
	comp=Z,20nm,1.3s,SNR=15						
KHC	Kasperske Hory	80.82	329	*e*P		P	12 40 44.4 +0.2
KHC				*e*S		S	12 50 50.0 +1.2
KHC					AMS	AMS	13 19 10.0
	comp=Z,1μm,19.1s						
KHC	Kasperske Hory	80.82	329	*e*P		P	12 40 44.4 +0.2
KHC				*e*S		S	12 50 50.0 +1.2
KHC					MLR	MLR	
	comp=Z,1μm,19.1s						
KHC	Kasperske Hory	80.82	329	*e*P		P	12 40 41.0 -3.2
	comp=Z,15nm,1.3s						
H32A	Carlson Farm,	80.83	39	P		P	12 40 44.0 -0.4
	baz=318						
X18A	Snowflake	80.89	53	*e*P		P	12 40 46.9 +1.8
	comp=Z,28nm,1.2s						
KDZ	Kurdzhali	80.91	317	*e*P		P	12 40 44.7 -0.1
PGB	Panagyurishte	80.92	319	*e*P		P	12 40 44.7 -0.2
EYMN	Ely	80.93	33	P		P	12 40 44.6 -0.2
	baz=321						
EYMN	Ely	80.93	33	*e*P		P	12 40 45.4 +0.6
	comp=Z,47nm,1.2s						
GEC2	GERESS Array S	80.99	328	*e*P		P	12 40 45.7 +0.5
GEC2					pmax	pmax	
	comp=Z,7.0nm,0.9s						
GEC2	GERESS Array S	80.99	328	*e*P		P	12 40 45.7 +0.5
	comp=Z,7.4nm,0.9s						
GERES	GERESS Array B	80.99	328	P		P	12 40 45.2 0.0
	comp=Z,2.9nm,0.6s,baz=38,slow=5.0,SNR=21						
GERES					LR	LR	13 19 47.5
	comp=Z,1μm,19.4s,baz=31,slow=38						
GEA0	GERESS Array S	81.00	328	*e*P		P	12 40 44.9 -0.3
CSS	Mathiatis	81.02	308	P		P	12 40 45.5 0.0
CSS	Mathiatis	81.02	308	*e*P		P	12 40 45.8 +0.2
	comp=Z,4.4nm,0.8s						
MMAI	Mount Meron Ar	81.02	305	LR		LR	13 22 32.5
	comp=Z,22nm,21.8s,baz=75,slow=40						
H33A	Prehn Over Nor	81.03	38	P		P	12 40 45.3 -0.1
	baz=318						
J31A	Geddes	81.08	40	P		P	12 40 45.6 -0.1
	baz=317						
K30A	Basset	81.09	41	P		P	12 40 46.1 +0.3
	baz=317						
ALN	Alexandroupoli	81.11	316	P		P	12 40 45.5 -0.4

comp=Z,24nm,1.7s,SNR=6.4
K31A O'Neill 81.56 41 P P 12 40 48.2 -0.1
baz=317
C39A Grand Marais 81.61 33 P P 12 40 48.0 -0.4
baz=322
F36A Milaca 81.64 36 P P 12 40 48.5 -0.1
baz=320
G35A Watkins 81.69 37 P P 12 40 48.7 -0.2
baz=320
SMTH Samothraki Isl 81.69 316 P P 12 40 49.1 +0.1
SMTH Samothraki Isl 81.69 316 eP P 12 40 49.1 +0.1
KOGS Kog 81.78 325 i P P 12 40 48.9 -0.5
ECSD EROS Data Cent 81.80 39 P P 12 40 49.0 -0.5
baz=318,SNR=8.4
ECSD EROS Data Cent 81.80 39 eP P 12 40 50.2 +0.7
comp=Z,32nm,1.1s
MMB Musomiste 81.84 318 eP P 12 40 49.6 -0.2
TUC Tucson 81.84 55 P P 12 40 51.1 +1.1
baz=312
TUC Tucson 81.84 55 eP P 12 40 51.6 +1.6
TUC pmax pmax
comp=Z,29nm,1.3s
TUC Tucson 81.84 55 eP P 12 40 51.6 +1.6
comp=Z,29nm,1.3s
L31A Butterfield Fa 81.84 41 P P 12 40 50.1 +0.3
baz=317
DIVS Divibare 81.85 322 P P 12 40 49.3 -0.6
KAVA Kavala 81.86 317 P P 12 40 50.4 +0.6
KAVA Kavala 81.86 317 eP P 12 40 50.4 +0.6
K32A Verdigre 81.92 40 P P 12 40 50.0 -0.2
baz=318
H35A Sunnyside Ranc 81.93 37 P P 12 40 50.5 +0.4
baz=319
J33A Davis 81.94 39 P P 12 40 50.1 -0.1
baz=318
NVR Nevrokopi 81.94 318 P P 12 40 50.3 0.0
NVR Nevrokopi 81.94 318 P P 12 40 50.3 0.0
KKB Krupnik 81.97 319 eP P 12 40 49.6 -0.8
G36A St. Michael 82.02 36 P P 12 40 50.9 +0.3
baz=320
KSCO Kaye Shedlock' 82.10 45 P P 12 40 51.6 +0.2
baz=315
SOKA Soboth 82.14 326 i P P 12 40 51.1 -0.2
comp=Z,43nm,1.1s,SNR=24
SRS Serrai 82.25 318 P P 12 40 50.7 -1.2
SRS Serrai 82.25 318 eP P 12 40 50.7 -1.2
SRS Serrai 82.25 318 eP P 12 40 50.7 -1.2
LIA Limnos Island 82.29 316 P P 12 40 51.5 -0.6
LIA Limnos Island 82.29 316 P P 12 40 51.5 -0.6
M31A Lambtecht Ranc 82.38 42 P P 12 40 52.4 -0.2
baz=317
L32A Elgin 82.39 41 P P 12 40 52.3 -0.3
baz=318
FETY Fethiye 82.41 312 P P 12 40 53.6 +0.8
FETY Fethiye 82.41 312 eP P 12 40 53.6 +0.8
SIGR SIGRI 82.41 315 P P 12 40 52.8 +0.1
SIGR SIGRI 82.41 315 eP P 12 40 52.8 +0.1
T25A Trinidad 82.41 48 P P 12 40 53.4 +0.3
baz=314,SNR=8.0
T25A Trinidad 82.41 48 eP P 12 40 54.7 +1.6
comp=Z,50nm,1.3s
K33A Hardington 82.45 40 P P 12 40 52.7 -0.2
baz=318
SPMN Marine on St. 82.46 36 P P 12 40 52.8 -0.1
baz=320
OBKA Obir 82.48 326 i P P 12 40 52.7 -0.4
comp=Z,13nm,0.9s,SNR=5.8
I35A Creekview Farm 82.49 38 P P 12 40 53.1 0.0
baz=319
YER Yerkesik 82.52 312 P P 12 40 52.9 -0.5
YER Yerkesik 82.52 312 eP P 12 40 52.9 -0.5
YER Yerkesik 82.52 312 eP P 12 40 52.9 -0.5
KBA Koelnbreinsper 82.54 327 i P P 12 40 53.5 0.0
comp=Z,23nm,1.1s,SNR=11
OUR Ouranopolis 82.61 317 P P 12 40 54.8 +1.0
OUR Ouranopolis 82.61 317 eP P 12 40 54.8 +1.0
OUR Ouranopolis 82.61 317 eP P 12 40 54.8 +1.0
VAY Valandovo 82.63 319 P P 12 40 53.1 -0.7
VAY Valandovo 82.63 319 eP P 12 40 53.1 -0.7
VAY Valandovo 82.63 319 eP P 12 40 53.1 -0.7
L33A Hoskins 82.64 40 P P 12 40 53.6 -0.4
baz=318
LAZ Ladron 82.69 51 eP P 12 40 56.5 +1.9
SKO Skopje 82.72 320 P P 12 40 55.3 +0.9
SKO Skopje 82.72 320 eP P 12 40 55.3 +0.9
SKO Skopje 82.72 320 eP P 12 40 55.3 +0.9
ANMO Albuquerque 82.73 50 P P 12 40 56.2 +1.5
baz=314
ANMO Albuquerque 82.73 50 ceP P 12 40 55.7 +0.9
ANMO pmax pmax
comp=Z,15nm,1.7s
ANMO Albuquerque 82.73 50 eP P 12 40 55.9 +1.1
comp=Z,35nm,1.1s
BGNE Belgrade 82.75 41 P P 12 40 54.2 -0.3
baz=318
BGNE Belgrade 82.75 41 eP P 12 40 55.3 +0.7
comp=Z,93nm,1.0s
J35A Milford 82.75 38 P P 12 40 53.9 -0.6
baz=319
MYKA Terra Mystica 82.77 327 i P P 12 40 54.2 -0.3
comp=Z,19nm,1.2s,SNR=7.3
K34A Le Mars 82.83 39 P P 12 40 54.8 -0.1
baz=319
LJU Ljubljana 82.85 326 eP P 12 40 53.9 -1.0
PLG Polygyros 82.87 317 P P 12 40 54.0 -1.2
PLG Polygyros 82.87 317 P P 12 40 54.0 -1.2
PLG Polygyros 82.87 317 P P 12 40 54.0 -1.2
CHOS Chios island 82.89 315 P P 12 40 55.2 -0.2
H37A Dierke Farm, C 82.90 36 P P 12 40 55.5 +0.3
baz=320
SCHQ Schefferville 82.97 16 P P 12 40 55.2 -0.2
comp=Z,2.7nm,0.3s,baz=42,slow=17,SNR=3.8
SCHQ LR LR 13 23 27.5
comp=Z,188nm,18.2s,baz=310,slow=40
SCHQ Schefferville 82.97 16 eP P 12 40 54.2 -1.2
comp=Z,17nm,1.1s
PAIG Paliouri 83.07 317 P P 12 40 55.3 -0.8
PAIG Paliouri 83.07 317 eP P 12 40 55.3 -0.8
PAIG Paliouri 83.07 317 eP P 12 40 55.3 -0.8
I37A Lemond, Waseca 83.11 37 P P 12 40 56.8 +0.5
baz=320
M33A Taylor Creek F 83.12 40 P P 12 40 56.3 -0.1
baz=318
BODT Bodrum 83.12 313 P P 12 40 56.3 -0.2
BODT Bodrum 83.12 313 eP P 12 40 56.3 -0.2
N32A Stulken Farm, 83.15 42 P P 12 40 56.3 -0.3
baz=318
JAVS Javornik 83.17 326 i P P 12 40 55.6 -1.1
BNM Barren Site 83.17 51 eP P 12 40 58.9 +1.8
J36A Seneca 1, Swea 83.19 38 P P 12 40 57.0 +0.3
baz=320
K35A Storm Lake 83.23 39 P P 12 40 56.6 -0.4
baz=319
L34A Svendsen Farm, 83.23 40 P P 12 40 56.8 -0.2
baz=319
319A Douglas 83.41 55 eP P 12 40 59.3 +1.0
comp=Z,51nm,1.0s
PDG Podgorica 83.46 321 ⇑i P P 12 40 58.0 -0.1
PDG Podgorica 83.46 321 P P 12 40 58.5 +0.4
M34A Aspy Farms, Fr 83.48 40 P P 12 40 58.2 -0.1
baz=318
AOS Alonnisos 83.51 316 P P 12 40 57.5 -0.9
AOS Alonnisos 83.51 316 eP P 12 40 57.5 -0.9
BFO Black Forest 83.51 331 i P P 12 40 59.5 +1.2
BFO Black Forest 83.51 331 eP P 12 40 58.7 +0.4
comp=Z,16nm,0.9s
O32A Brockman Farm, 83.53 42 P P 12 40 57.8 -0.8
baz=318
LIT Litokhoron 83.57 318 P P 12 40 57.5 -1.3
LIT Litokhoron 83.57 318 eP P 12 40 57.5 -1.3
LIT Litokhoron 83.57 318 eP P 12 40 57.5 -1.3
121A Cookes Peak, D 83.57 53 P P 12 41 00.0 +0.9
baz=313,SNR=6.0
J37A Redenius Farm, 83.58 37 P P 12 40 58.6 -0.1
baz=320
I38A Scanlan Farm, 83.59 36 P P 12 40 58.6 -0.1
baz=321
N33A J Bar K, Exete 83.61 41 P P 12 40 58.7 -0.2
baz=318
FNA Florina 83.64 319 P P 12 40 58.7 -0.4
K36A Gilmore City 83.67 38 P P 12 40 59.0 -0.2
baz=320
XOR Xorichti 83.73 317 P P 12 40 58.1 -1.5
DAVA Damuels 83.77 329 i P P 12 40 59.8 -0.1
comp=Z,39nm,1.0s,SNR=14

CBKS Cedar Bluff 83.82 44 P P 12 40 59.5 -0.6
baz=317
P32A Huiting Farm, 83.83 43 P P 12 40 59.6 -0.6
baz=318
M35A Neola 83.95 40 P P 12 41 00.8 +0.2
baz=319,SNR=7.0
K37A Belmond 83.96 38 P P 12 41 00.4 -0.2
baz=320
L36A Harm Buss Farm 83.97 39 P P 12 41 00.7 -0.1
baz=320
N34A Lincoln 84.01 41 P P 12 41 00.3 -0.7
baz=319
O33A Hebron 84.03 42 P P 12 41 00.4 -0.7
baz=318
ECH Echery 84.05 332 ||eP P 12 41 01.8 +0.7
J38A Wedel Dairy, R 84.08 37 P P 12 41 01.0 -0.3
baz=321
FUORN Ofenpass-Fuorn 84.17 329 eP P 12 41 02.1 +0.1
comp=Z,70nm,1.1s
THL Klokotos Trika 84.21 318 P P 12 41 00.3 -1.7
KPRO Kipourio 84.26 318 P P 12 41 01.0 -1.3
KARP Karpathos 84.28 312 eP P 12 41 02.7 +0.2
comp=Z,11nm,0.9s
Q32A Meitler Ranch, 84.32 43 P P 12 41 02.4 -0.2
baz=318
LKR Lokris 84.36 317 P P 12 41 01.2 -1.6
MOF Molkenrain 84.36 331 ||eP P 12 41 03.3 +0.6
L37A Phoenix Point, 84.39 38 P P 12 41 02.3 -0.6
baz=320
M36A Felix, Anita 84.39 39 P P 12 41 02.7 -0.2
baz=320
O34A Beatrice 84.40 41 P P 12 41 02.3 -0.7
baz=318
N35A Tabor 84.43 40 P P 12 41 02.0 -1.1
baz=319
AGG Agios Georgios 84.44 317 P P 12 41 02.0 -1.2
AGG Agios Georgios 84.44 317 eP P 12 41 02.3 -0.9
AGG pmax pmax
comp=Z,25nm,0.9s
K38A Parkersburg 84.46 37 P P 12 41 02.9 -0.4
baz=321
VLY Voula,Athens 84.51 316 P P 12 41 02.2 -1.4
VLY Voula,Athens 84.51 316 eP P 12 41 02.2 -1.4
TUE Stuetta 84.65 329 eP P 12 41 04.1 -0.3
comp=Z,24nm,1.0s
SANT Santorini 84.66 314 eP P 12 41 02.1 -2.3
comp=Z,48nm,1.3s
Q33A Connelly Farm, 84.69 43 P P 12 41 04.3 -0.2
baz=318,SNR=5.7
O35A Humboldt 84.74 41 P P 12 41 03.7 -0.9
baz=319
L38A Oak Wood Farm, 84.76 38 P P 12 41 04.4 -0.4
baz=321
DSF Desfina 84.79 317 P P 12 41 03.4 -1.6
DSF Desfina 84.79 317 eP P 12 41 03.4 -1.6
EVR Evrytania 84.79 317 P P 12 41 04.4 -0.7
M37A Trindle Farm, 84.80 39 P P 12 41 04.7 -0.2
baz=320
N36A Muff Farm, Cla 84.80 40 P P 12 41 04.9 -0.1
baz=320
P34A Walnut Farm, R 84.81 42 P P 12 41 04.4 -0.7
baz=318
LOMF Lomont 84.89 331 ||eP P 12 41 06.3 +0.9
ANX Ano Chora 84.97 317 P P 12 41 04.6 -1.4
DSL Palaion Diasel 85.00 318 P P 12 41 04.9 -1.2
DSL Palaion Diasel 85.00 318 eP P 12 41 04.9 -1.2
SERG Sergoula 85.03 317 P P 12 41 04.8 -1.4
DID Didima 85.07 316 P P 12 41 05.4 -1.0
DID Didima 85.07 316 eP P 12 41 05.4 -1.0
SGD Sagiada 85.09 319 P P 12 41 05.2 -1.2
IGT Igoumenitsa 85.10 319 P P 12 41 06.2 -0.3
IGT Igoumenitsa 85.10 319 eP P 12 41 06.2 -0.3
IGT Igoumenitsa 85.10 319 eP P 12 41 06.2 -0.3
R33A Ölander Ranch, 85.12 43 P P 12 41 05.9 -0.8
baz=318
ZKR Zakros 85.13 312 P P 12 41 05.7 -1.0
ZKR Zakros 85.13 312 eP P 12 41 05.7 -1.0
M38A Pleasantville 85.20 38 P P 12 41 06.8 -0.2
baz=321
LAKA Lakka 85.20 317 P P 12 41 03.8 -3.3
LAKA Lakka 85.20 317 eP P 12 41 03.8 -3.3
N37A Lee Faris, Mou 85.21 39 P P 12 41 07.5 +0.4
baz=320
Q34A Chapman 85.22 42 P P 12 41 06.9 -0.2
baz=318
P35A Duane Minner, 85.24 41 P P 12 41 06.6 -0.6
baz=319
KEK Kerkira 85.24 319 P P 12 41 06.4 -0.8
PPT Papeete 85.25 117 LR LR 13 11 45.0
comp=Z,698nm,21.2s,baz=294,slow=30
KSU1 Kansas State U 85.25 42 P P 12 41 07.0 -0.3
baz=319
KLV Kalavryta, Ach 85.26 317 P P 12 41 05.4 -2.0
KLV Kalavryta, Ach 85.26 317 eP P 12 41 05.4 -2.0
PPT2 Papeete2 85.26 117 eS S 12 51 36.8 +2.1
comp=Z,272nm,24.8s
PPT2 Papeete2 85.26 117 eLR LR 13 08 00.3
comp=Z,1µm,22.5s,baz=315
PPT2 Papeete2 85.26 117 eT T 14 15 14.2
comp=Z,32nm,0.3s
PAE Paea 85.31 117 eT T 14 15 17.0
comp=Z,6.5nm,0.3s
O36A Bolckow 85.32 40 P P 12 41 07.2 -0.3
baz=320
PDO Prodromos 85.36 318 P P 12 41 06.8 -1.0
TIAR Tiarei 85.40 117 eT T 14 15 23.7
comp=Z,11nm,0.3s
T32A Huddler Ranch, 85.45 44 P P 12 41 08.4 +0.1
baz=317
LKD2 Lefkada island 85.49 318 P P 12 41 07.0 -1.5
LAST Lasithi 85.52 313 ⇑i P P 12 41 07.9 -0.8
LAST Lasithi 85.52 313 P P 12 41 08.0 -0.8
LAST Lasithi 85.52 313 eP P 12 41 08.0 -0.8
comp=Z,44nm,0.9s
R34A Isabella, Hill 85.52 43 P P 12 41 08.0 -0.7
baz=318
SENIN Lac Senin/Sane 85.54 330 eP P 12 41 09.1 +0.3
comp=Z,49nm,1.7s
DRO Drossia 85.56 317 P P 12 41 09.3 +0.5
AMTX Amarillo 85.57 48 P P 12 41 08.6 -0.5
baz=316
AMTX Amarillo 85.57 48 eP P 12 41 10.4 +1.3
comp=Z,27nm,1.0s
P36A Good Intent, A 85.58 41 P P 12 41 08.2 -0.7
baz=319
MSTX Muleshoe 85.59 49 P P 12 41 09.4 +0.2
baz=316,SNR=5.2
MSTX Muleshoe 85.59 49 eP P 12 41 10.2 +1.1
comp=Z,48nm,1.2s
RLS Riolos of Patr 85.61 317 P P 12 41 09.8 +0.8
MNTX Cornudas Mount 85.62 52 P P 12 41 10.0 +0.7
baz=314,SNR=6.2
MNTX Cornudas Mount 85.62 52 eP P 12 41 09.8 +0.5
comp=Z,28nm,1.3s
TVO Taravao 85.62 117 eT T 14 15 21.1
comp=Z,2.3nm,0.3s
S33A Kaszmaul Farm, 85.64 44 P P 12 41 09.3 +0.1
baz=318
N38A Joes South For 85.66 39 P P 12 41 09.1 -0.2
baz=321
O37A Wolven Farm, M 85.70 40 P P 12 41 09.1 -0.3
baz=320
Q35A Mercer Eighty, 85.73 42 P P 12 41 09.1 -0.6
baz=319
IDI Anoyia 85.76 313 ⇑i P P 12 41 09.4 -0.6
IDI Anoyia 85.76 313 P P 12 41 08.8 -1.2
IDI Anoyia 85.76 313 eP P 12 41 08.0 -2.0
comp=Z,18nm,0.9s
VLI Veliai 85.81 315 P P 12 41 07.6 -2.5
VLI Veliai 85.81 315 eP P 12 41 07.6 -2.5
T33A Patterson Ranc 85.89 44 P P 12 41 10.7 +0.2
baz=318
Q36A Arnold C. Orve 85.95 41 P P 12 41 10.2 -0.6
baz=319
N39A Derby Farms, D 85.95 38 P P 12 41 10.5 -0.2
baz=321
VLS Valsamata 85.98 318 P P 12 41 10.1 -0.8
U32A Winter Ranch, 85.99 45 P P 12 41 10.0 -1.0
baz=317
ITM Ithomi 86.01 316 P P 12 41 09.9 -1.2
S34A Willow Spring 86.03 43 P P 12 41 11.3 +0.1
baz=318
P37A Lathrop 86.04 40 P P 12 41 11.2 0.0
baz=320
R35A Emporia Munici 86.05 42 P P 12 41 11.7 +0.4
baz=319

O38A Galt 86.06 39 P P 12 41 11.3 0.0
baz=320
IMMV Iera Moni Meta 86.15 314 P P 12 41 12.0 +0.2
ANKY Antikythira Is 86.23 314 P P 12 41 10.6 -1.6
ANKY Antikythira Is 86.23 314 eP P 12 41 10.6 -1.6
TAOE Nuku Hiva Isla 86.27 105 eS S 12 51 47.3 +2.5
comp=Z,189nm,25.8s
TAOE Nuku Hiva Isla 86.27 105 eLR LR 13 08 23.7
comp=Z,2µm,32.4s,baz=321
TAOE Nuku Hiva Isla 86.27 105 eT T 14 16 30.3
comp=Z,23nm,0.2s
PYL PYLOS 86.32 316 P P 12 41 10.8 -1.8
PYL PYLOS 86.32 316 eP P 12 41 10.8 -1.8
R36A Gordon, Harris 86.41 42 P P 12 41 12.7 -0.3
baz=319,SNR=6.5
O39A Kirksville 86.41 39 P P 12 41 13.3 +0.3
baz=321
P38A Dawn 86.41 40 P P 12 41 12.9 -0.1
baz=320,SNR=5.6
U33A Lingo Farm, Me 86.44 44 P P 12 41 13.7 +0.5
baz=318
V32A Arapaho 86.45 46 P P 12 41 13.8 +0.5
baz=318
S35A Otter Creek Ra 86.47 43 P P 12 41 13.4 +0.1
baz=319,SNR=5.9
T34A McClaskey Farm 86.50 44 P P 12 41 13.7 +0.2
baz=318,SNR=5.3
MEH Mehetia 86.50 116 eT T 14 16 46.5
comp=Z,254nm,0.3s
Q37A Longview Farm, 86.53 41 P P 12 41 13.3 -0.3
baz=320
GVD Gavdhos 86.54 313 P P 12 41 13.8 +0.1
GVD Gavdhos 86.54 313 eP P 12 41 13.8 +0.1
DAMY Dhamar 86.66 286 eP P 12 41 16.4 +1.4
comp=Z,48nm,1.3s
U34A Anderson Ranch 86.75 44 P P 12 41 15.2 +0.5
baz=318
R37A Teagarden Farm 86.76 41 P P 12 41 14.4 -0.3
baz=320
W32A Sentinel 86.77 46 P P 12 41 15.4 +0.5
baz=317
V33A Lossen Ranch, 86.79 45 P P 12 41 13.8 -1.2
baz=318
S36A Lake Cedric, C 86.81 42 P P 12 41 15.1 +0.1
baz=319
O40A La Belle 86.84 38 P P 12 41 15.4 +0.3
baz=321
Q38A Cooks Store, C 86.88 40 P P 12 41 14.9 -0.4
baz=320,SNR=6.8
P39B Salisbury 86.90 39 P P 12 41 15.6 +0.2
baz=321
T35A Sooner Cattle 86.94 43 P P 12 41 15.8 +0.2
baz=319
Q39A Willow Grove F 87.14 40 P P 12 41 16.6 0.0
baz=321,SNR=10
T36A Boggs Farm, Ca 87.16 43 P P 12 41 16.7 0.0
baz=319
TIP Timpagrande 87.17 321 P P 12 41 15.1 -1.7
TIP Timpagrande 87.17 321 eP P 12 41 15.1 -1.7
S37A Fort Scott 87.18 42 P P 12 41 16.4 -0.4
baz=320,SNR=7.9
W33A Caddo, Fort Co 87.19 46 P P 12 41 16.5 -0.4
baz=318
V34A Guthrie 87.20 45 P P 12 41 17.3 +0.3
baz=318
P40A Paris 87.22 39 P P 12 41 16.8 -0.1
baz=321,SNR=7.9
U35A Pawnee 87.23 44 P P 12 41 17.0 0.0
baz=319
PLDF La Plantade 87.23 332 ||eP P 12 41 17.9 +0.9
X32A Elmer 87.27 47 P P 12 41 17.3 0.0
baz=317
WMOK Wichita Mounta 87.32 46 P P 12 41 17.8 +0.2
baz=318,SNR=6.0
WMOK Wichita Mounta 87.32 46 eP P 12 41 18.1 +0.6
WMOK pmax pmax
comp=Z,28nm,1.4s
WMOK Wichita Mounta 87.32 46 eP P 12 41 18.1 +0.6
comp=Z,28nm,1.4s
R38A Fenwick Farm, 87.33 41 P P 12 41 16.9 -0.6
baz=320
AGO Saint Agoulin 87.34 333 ||eP P 12 41 18.8 +1.4
W34A Bridge Creek, 87.51 45 P P 12 41 18.9 +0.5
baz=318
X33A Lawton 87.62 46 P P 12 41 19.1 +0.1
baz=318
Q40A Laux Farm, Aux 87.62 39 P P 12 41 18.9 0.0
baz=321
T37A Cheneyville 18 87.62 42 P P 12 41 19.0 +0.1
baz=320
V35A Meyer Ranch, C 87.62 44 P P 12 41 19.1 +0.1
baz=319
PYM Petit Puy Mans 87.64 333 eP P 12 41 19.7 +0.7
R39A Chumby, Stover 87.67 40 P P 12 41 18.8 -0.3
baz=321,SNR=8.6
HDIL Hopedale 87.71 37 P P 12 41 19.1 -0.2
baz=323
U36A Oologah 87.74 43 P P 12 41 19.5 0.0
baz=319
S38A Stockton 87.75 41 P P 12 41 18.7 -0.8
baz=320
Y33A Hilltop Ranch, 87.94 46 P P 12 41 20.5 0.0
baz=318
X34A Smith Ranch, M 87.94 46 P P 12 41 21.0 +0.5
baz=318
S39A Bolivar 88.00 41 P P 12 41 20.5 -0.2
baz=321,SNR=6.6
T38A Diamond 88.01 42 P P 12 41 20.8 +0.1
baz=320,SNR=7.4
U37A Salina 88.06 43 P P 12 41 20.9 -0.2
baz=320
W35A Tecumseh 88.06 45 P P 12 41 21.2 +0.1
baz=319
R40A Maddies Statio 88.07 40 P P 12 41 20.9 -0.1
baz=321,SNR=5.7
TUL1 Leonard 88.08 43 P P 12 41 21.4 +0.3
baz=319
V36A Jenks 88.09 44 P P 12 41 21.4 +0.2
baz=319
LTX Lajitas 88.33 53 eP P 12 41 22.7 +0.1
LTX Lajitas 88.33 53 eP P 12 41 22.7 +0.1
TXAR Lajitas Array 88.33 53 P P 12 41 22.7 +0.1
comp=Z,1.1nm,0.5s,baz=286,slow=3.1,SNR=13
TXAR LR LR 13 16 54.7
comp=Z,139nm,21.0s,baz=0.0,slow=33
ABTX Abilene, Hawle 88.37 48 P P 12 41 22.7 +0.1
baz=317
ABTX Abilene, Hawle 88.37 48 eP P 12 41 23.5 +0.9
comp=Z,52nm,1.3s
Z33A Whitaker Ranch 88.39 47 P P 12 41 22.4 -0.2
baz=318
U38A Gravette 88.42 42 P P 12 41 22.7 -0.1
baz=320
W36A Wetumka 88.42 44 P P 12 41 22.6 -0.1
baz=319
Q42A Golden Eagle 88.43 38 P P 12 41 22.6 -0.1
baz=322
V37A Hulbert 88.44 43 P P 12 41 22.6 -0.3
baz=320
Y34A Reagan Ranch, 88.46 46 P P 12 41 22.9 -0.1
baz=318
S40A Lebanon 88.49 40 P P 12 41 23.1 0.0
baz=321,SNR=6.6
T39A Clever 88.49 41 P P 12 41 22.7 -0.3
baz=321
X35A Drake 88.57 45 P P 12 41 23.2 -0.3
baz=319
TRQ Mont Tremblant 88.72 24 eP P 12 41 24.3 +0.3
HHAR Hobbs 88.77 42 eP P 12 41 25.0 +0.6
comp=Z,9.8nm,1.0s
X36A Centrahoma 88.78 45 P P 12 41 24.7 +0.2
baz=319
133A Hamilton Ranch 88.80 48 P P 12 41 24.9 +0.2
baz=318
LMQ La Malbaie 88.80 21 eP P 12 41 24.8 +0.4
comp=Z,17nm,0.9s
Z34A Collier Ranch, 88.81 46 P P 12 41 24.1 -0.5
baz=318
T40A Mansfield 88.83 41 P P 12 41 23.9 -0.7
baz=321
V38A Canehill 88.84 43 P P 12 41 24.6 -0.2
baz=320,SNR=7.3
W37B Quinton 88.85 44 P P 12 41 24.7 0.0
baz=320
SFIN Lafayette 88.86 35 P P 12 41 24.4 -0.3
baz=324
SFIN Lafayette 88.86 35 eP P 12 41 25.7 +1.0
comp=Z,20nm,0.9s

Y35A	Marietta baz=319	88.90	46	P	P	12 41 24.7 -0.4
U39A	Green Forest baz=321,SNR=6.3	88.93	42	P	P	12 41 24.7 -0.5
Z35A	Perchaven, San baz=318	89.21	46	P	P	12 41 26.2 -0.2
233A	Rising Star baz=318	89.24	48	P	P	12 41 26.8 +0.1
V39A	Pettigrew baz=320,SNR=5.8	89.26	42	P	P	12 41 26.4 -0.4
U40A	Yellville baz=321,SNR=8.2	89.27	41	P	P	12 41 26.3 -0.5
T41A	Mountain View baz=322,SNR=7.3	89.29	40	P	P	12 41 26.6 -0.2
X37A	Clayton baz=320	89.30	44	P	P	12 41 27.1 +0.2
134A	White-Moore Ra baz=318	89.30	47	P	P	12 41 27.5 +0.5
TBI	Tubuai comp=Z,189nm,24.1s	89.31 121	eS		S	12 52 14.9 +1.8
TBI	Tubuai comp=Z,932nm,22.8s,baz=316	89.31 121	eLR		LR	13 09 27.9
TBI	Tubuai comp=Z,91nm,0.3s	89.31 121	eT		T	14 20 15.7
Y36A	Durant baz=319	89.32	45	P	P	12 41 27.1 +0.1
W38A	Poteau baz=320	89.39	43	P	P	12 41 27.6 +0.3
X38A	Whitesboro baz=320	89.53	44	P	P	12 41 28.4 +0.5
Y37A	Hugo baz=319	89.62	45	P	P	12 41 28.6 +0.2
W39A	Magazine baz=320	89.68	43	P	P	12 41 28.9 +0.2
234A	Clairette baz=318	89.69	47	P	P	12 41 28.9 +0.1
135A	Vickery Place, baz=318	89.69	47	P	P	12 41 28.8 0.0
333A	Richland Sprin baz=318,SNR=5.6	89.70	48	P	P	12 41 29.0 +0.1
Z36A	Blue Ridge baz=319	89.71	46	P	P	12 41 28.4 -0.4
S43A	Fulton Ridge, baz=323	89.71	39	P	P	12 41 28.5 -0.2
V40A	Witts Springs baz=321	89.71	42	P	P	12 41 28.5 -0.4
OLIL	Olney comp=Z,33nm,1.0s	89.72	37	eP	P	12 41 29.3 +0.5
JCT	Junction City baz=317	89.84	50	P	P	12 41 29.6 0.0
JCT JCT	Junction City comp=Z,53nm,1.6s	89.84	50	eP pmax	P pmax	12 41 30.5 +1.0
JCT	Junction City comp=Z,53nm,1.6s	89.84	50	eP	P	12 41 30.5 +1.0
SIUC	Southern Illin comp=Z,46nm,1.1s	90.01	38	eP	P	12 41 31.5 +1.4
X39A	Fountain Ranch baz=320	90.03	43	P	P	12 41 30.4 +0.1
W40A	Ferguson Farm, baz=321	90.06	42	P	P	12 41 30.2 -0.2
433A	Art baz=318	90.06	49	P	P	12 41 30.7 +0.1
V41A	Mountainview baz=321,SNR=5.8	90.07	41	P	P	12 41 30.1 -0.4
WHTX	Lake Whitney, baz=318	90.09	47	P	P	12 41 31.3 +0.6
WHTX	Lake Whitney, comp=Z,71nm,1.5s	90.09	47	eP	P	12 41 31.5 +0.9
334A	Lometa baz=318,SNR=6.3	90.13	48	P	P	12 41 31.1 +0.2
Y38A	Idabel baz=320	90.14	44	P	P	12 41 30.8 0.0
PBMO	Poplar Bluff comp=Z,75nm,1.6s	90.16	40	eP	P	12 41 31.9 +1.0
Z37A	Pogue Cattle C baz=319	90.21	45	P	P	12 41 31.6 +0.5
136A	Ennis baz=319	90.25	46	P	P	12 41 31.0 -0.3
MIAR	Mount Ida baz=320	90.29	43	P	P	12 41 31.8 +0.3
MIAR MIAR	Mount Ida comp=Z,71nm,1.6s	90.29	43	eP pmax	P pmax	12 41 32.8 +1.3
MIAR	Mount Ida comp=Z,71nm,1.6s	90.29	43	eP	P	12 41 32.8 +1.3
X201	Greenbrier Sit comp=Z,55nm,1.5s	90.34	42	eP	P	12 41 32.4 +0.6
X301	Greenbrier Sit comp=Z,33nm,1.4s	90.37	42	eP	P	12 41 32.2 +0.4
ERPA	Erie comp=Z,44nm,1.0s	90.38	30	eP	P	12 41 33.0 +1.2
WHAR	Wooly Hollow comp=Z,35nm,1.2s	90.39	42	eP	P	12 41 32.4 +0.5
V42A	Cord baz=322	90.44	41	P	P	12 41 32.2 0.0
Y39A	Lockesburg baz=320	90.48	44	P	P	12 41 32.5 +0.1
434A	Burnet baz=318	90.49	48	P	P	12 41 32.6 0.0
W41B	Gary Mavity, V baz=321	90.50	42	P	P	12 41 32.6 +0.2
Z38A	Mt. Pleasant baz=320	90.52	45	P	P	12 41 32.5 -0.1
137A	Heron Place, G baz=319	90.59	46	P	P	12 41 32.9 0.0
533A	Kerrville baz=318	90.59	49	P	P	12 41 32.9 -0.1
236A	Katherine and baz=319	90.61	46	P	P	12 41 32.9 -0.1
335A	Moody baz=318	90.63	48	P	P	12 41 33.2 0.0
MMNY	Mt. Morris Dam	90.63	28	eP	P	12 41 33.9 +1.0
X40A	Basin Creek Fa baz=321	90.72	42	P	P	12 41 33.7 +0.2
NCB	Newcomb	90.83	25	eP	P	12 41 34.8 +0.9
Y40A	Okolona baz=321	90.85	43	P	P	12 41 34.3 +0.2
X41A	Kaden, Bauxite baz=321	90.88	42	P	P	12 41 34.5 +0.2
336A	Riesel baz=319	90.89	47	P	P	12 41 34.4 0.0
138A	Matatall Enter baz=320	90.91	45	P	P	12 41 34.0 -0.4
435B	Jarrell baz=318	90.91	48	P	P	12 41 34.9 +0.4
534A	Blanco baz=318,SNR=5.2	90.95	49	P	P	12 41 34.7 0.0
633A	Saathoff Ranch baz=319	90.95	50	P	P	12 41 34.3 -0.5
Z39A	Irene McRaven, baz=320	90.96	44	P	P	12 41 34.2 -0.4
M54A	Oil Creek Stat baz=329	91.02	30	P	P	12 41 35.0 +0.2
Y41A	Eaglette Beard baz=321	91.31	43	P	P	12 41 36.6 +0.3
832A	Faith Ranch, C baz=317	91.33	51	P	P	12 41 35.3 -1.1
N54A	Moraine State baz=329	91.36	30	P	P	12 41 36.8 +0.3
Z40A	Long Farm, Mag baz=321	91.37	44	P	P	12 41 36.7 +0.2
436A	Wall Ranch, Ga baz=319	91.37	47	P	P	12 41 37.2 +0.6
535A	Dale baz=318	91.48	48	P	P	12 41 35.9 -1.2
634A	China Grove, S baz=318	91.50	49	P	P	12 41 35.2 -2.0
ACCN	Adirondack Com comp=Z,23nm,1.2s	91.53	25	eP	P	12 41 38.1 +1.0
437A	Phantom Ranch, baz=319	91.70	47	P	P	12 41 36.2 -1.9
X43A	Marvell baz=322	91.71	41	P	P	12 41 37.0 -1.1
140A	Cam and Jess, baz=320	91.75	44	P	P	12 41 37.1 -1.2
338A	Crockett baz=320	91.77	46	P	P	12 41 37.6 -0.9
Y42A	Garnett, Star baz=322	91.77	42	P	P	12 41 37.8 -0.6
Z42A	Norrel Spur, H baz=321	92.13	43	P	P	12 41 40.1 +0.1
SSPA	Standing Stone comp=Z,27nm,1.5s	92.45	29	eP	P	12 41 42.3 +0.8
KEST	Kesra comp=Z,252nm,20.9s,baz=341,slow=38	93.46 323		LR	LR	13 27 58.0
SWET	Sewanee comp=Z,2.7nm,0.8s	93.58	38	eP	P	12 41 47.0 +0.2
Z46A	Louisville baz=323	93.74	41	P	P	12 41 47.5 0.0
035Z	Hargill baz=318	93.82	51	P	P	12 41 47.5 -0.5
343A	Vidalia baz=322	93.85	44	P	P	12 41 48.1 +0.1
CPCT	Cooper Cave comp=Z,4.9nm,1.0s	94.05	36	eP	P	12 41 49.5 +0.6
TKL	Tuckaleechee C	94.22	36	eP	P	12 41 50.4 +0.7
TKL				pmax	pmax	
TKL	Tuckaleechee C comp=Z,10nm,1.1s	94.22	36	eP	P	12 41 50.4 +0.7
ESDC	Sonseca Array comp=Z,0.8nm,0.7s,baz=29,slow=3.8,SNR=4.4	95.42 334		P	P	12 41 54.1 -1.1
ESDC				LR	LR	13 30 16.5
446A	Poplarville baz=323	95.43	42	P	P	12 41 54.6 -0.6
KMSC	Kings Mountain baz=328	95.74	34	P	P	12 41 56.2 -0.4
645A	Chauvin baz=322	95.82	44	P	P	12 41 56.7 -0.4
TIGA	Tifton baz=326	97.80	38	P	Pdif	12 42 06.2 +0.1
RKT	Rikitea comp=Z,992nm,25.0s,baz=309	99.18 112	eLR		LR	13 14 20.0
TOA1	Torodi Ar. Sit	116.01 316	ePKPdf		PKPdf	12 47 12.4 -1.4
TOA1			ePP		PP	12 48 16.5 -1.2
TORD	Torodi Ar. Bea comp=Z,1.2nm,1.0s,baz=20,slow=1.0,SNR=4.7	116.01 316	PKP		PKPdf	12 47 12.4 -1.4
TORD			PP		PP	12 48 16.5 -1.2
MAW	Mawson comp=Z,5.2nm,1.2s,baz=12,slow=5.7,SNR=9.4	121.84 206	PKP		PKPdf	12 47 21.8 -1.5
MAW	Mawson comp=Z,1.3nm,0.6s,baz=342,slow=20,SNR=3.1	121.84 206	ePKPdf		PKPdf	12 47 23.0 -0.3
SNAA	Sanae	143.11 198	PKP		PKPab	12 47 58.6 -0.1
SNAA	Sanae	143.11 198	ePKHKP		PKPab	12 47 59.4 +0.7
VNA3	Neumayer Olymp	144.93 195	PKP		PKPab	12 48 05.1 -0.5
LPAZ	La Paz comp=Z,2.7nm,0.5s,baz=24,slow=16,SNR=13	145.07 57	PKPbc		PKPbc	12 48 07.9 -0.5
VNA1	Neumayer--Stat	145.08 197	PKP		PKPdf	12 48 06.9 +0.4
PB11	IPOC Station P	146.48 64	ePKPdf		PKPbc	12 48 12.5 +0.4
PB01	IPOC Station P	147.44 65	ePKPbc		PKPbc	12 48 14.7 0.0
LVC	Limon Verde	148.86 67	ePKPbc		PKPbc	12 48 19.3 +0.5
LCO	Las Campanas	151.17 79	ePKPbc		PKPbc	12 48 24.2 +0.1
ROC1	El Roble	152.68 87	ePKPdf		PKPdf	12 48 20.1 -0.2
ROC1			ePKPbc		PKPbc	12 48 26.9 -0.5
ROC1			ePKPab		PKPab	12 48 40.3 +2.1
BDFB	Brasilia comp=Z,4.4nm,0.7s,baz=64,slow=2.4,SNR=5.1	154.79 23	PKPab		PKPab	12 48 46.2 -1.0
PLCA	Paso Flores comp=Z,3.2nm,1.0s,baz=340,slow=2.5,SNR=3.8	155.10 104	PKPab		PKPab	12 48 47.2 -0.8
CPUP	Villa Florida comp=Z,1.0nm,0.6s,baz=280,slow=6.1,SNR=2.3	159.24 57	PKPab		PKPab	12 49 06.1 -0.1

*NEIC **31** 12:34:41.4, 19.°06N×67.°84W, h33km, MD3.0(RSPR), After RSPR.*

RSPR 31 12:34:41.4, 19.°06N×67.°84W, h33km±18km, MD3.0/3, 8C, Mona Passage

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AOPR	Arecibo Observ	1.25	125⇑	eP	Pn	12 35 01.1	-1.6
AOPR	Arecibo Observ	1.25	125⇑	eP	Pn	12 35 01.1	-1.6
CRPR	Cabo Rojo, PR	1.26	146⇑	eP	Pn	12 35 01.7	-1.1
CRPR	Cabo Rojo, PR	1.26	146⇑	eP	Pn	12 35 01.7	-1.1
CRPR				eS	Sn	12 35 16.8	-1.7
OBIP	Obispado Ponce	1.55	131⇑	eP	Pn	12 35 05.0	-1.7
OBIP	Obispado Ponce	1.55	131⇑	eP	Pn	12 35 05.0	-1.7
OBIP				eS	Sn	12 35 24.1	-1.6
SJG	San Juan	1.86	120	ePn	Pn	12 35 08.8	-2.2
SJG				eSn	Sn	12 35 29.7	-3.7
MTP	Monte Pirata	2.37	114⇑	eP	Pn	12 35 17.1	-0.9
MTP	Monte Pirata	2.37	114⇑	eP	Pn	12 35 17.1	-0.9
MTP				eS	Sn	12 35 44.8	-1.2
SDDR	Presa de Saban	3.26	269	ePn	Pn	12 35 25.9	-4.4
SDDR				eSn	Sn	12 36 02.8	-5.3

*ISCJB **31** 12:37:28.6±0.8, 38.°3N±0.°1×31.°81E±0.°04, h11km, Error ellipse: s-maj=15.6km s-min=5.1km az=179.7*
*CSEM **31** 12:37:29.9, 38.°20N×31.°91E, h22km, MD2.4*
*ISK **31** 12:37:29.9, 38.°20N×31.°91E, h22km, MD2.4*

ISC 31 12:37:28.4±1.1, 38.°31N±0.°09×31.°84E±0.°04, h11km, n15, σ0s81/18, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LADK	Ladik-KONYA	0.43	105	ePG	Pb	12 37 38.6	+0.5
LADK				eSG	Sb	12 37 44.1	-0.5
LADK	Ladik-KONYA	0.43	105	ePg	Pb	12 37 38.6	+0.5
LADK				eSg	Sb	12 37 44.1	-0.5
KONT	Konya--Tatoy	0.55	131	ePG	Pb	12 37 39.4	-0.7
KONT	Konya--Tatoy	0.55	131	ePg	Pb	12 37 39.4	-0.7
CHBY	Cihanbeyli	0.87	72	ePG	Pn	12 37 46.8	+0.1
CHBY	Cihanbeyli	0.87	72	ePg	Pn	12 37 46.8	+0.1
SUTC	Sutluce-Ispart	1.06	219	ePG	Pn	12 37 49.3	-0.1
SUTC	Sutluce-Ispart	1.06	219	ePg	Pn	12 37 49.3	-0.1
ISP	Isparta	1.15	245	ePN	Pg	12 37 51.2	+0.8
ISP	Isparta	1.15	245	ePn	Pg	12 37 51.2	+0.8
BCK	Bucak	1.30	230	ePN	Pn	12 37 52.7	+0.1
BCK	Bucak	1.30	230	ePn	Pn	12 37 52.7	+0.1
YESY	Yesilyurt	1.60	109	ePN	Pn	12 37 55.9	-0.8
YESY	Yesilyurt	1.60	109	ePn	Pn	12 37 55.9	-0.8
KHAL	Karahalli	1.84	273	iP	Pn	12 37 57.9	-2.2
KHAL				iS	Sn	12 38 24.2	+0.7

IDC 31 12:45:09.1±8.8, 18.°66S×173.°81W, h0km, mb3.4/3, mb1 3.8/3, mb1mx3.5/31, mbtmp3.4/3, Error ellipse: s-maj=386.9km s-min=37.8km az=142.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	Warramunga Arr 0.6nm,1.0s,baz=97,slow=7.3,SNR=6.2	48.80	260	P	P	12 53 56.4	0.0
ASAR	Alice Springs 0.5nm,0.8s,baz=94,slow=8.1,SNR=6.4	48.80	255	P	P	12 53 56.2	-0.2
ILAR	Eielson Array 0.2nm,0.5s,baz=224,slow=7.6,SNR=4.5	85.70	11	P	P	12 57 49.4	0.0

*ISCJB **31** 12:48:10.9±0.5, 39.°10N±0.°03×29.°04E±0.°03, h2km±7km, Error ellipse: s-maj=5.4km s-min=4.2km az=170.6*
*DDA **31** 12:48:10.5, 39.°10N×29.°00E, h7km, Md2.9*
*ISK **31** 12:48:10.6, 39.°09N×29.°05E, h8km, ML2.6*
*CSEM **31** 12:48:11.1±0.1, 39.°10N×29.°03E, h5km, MD2.9, Error ellipse: s-maj=3.1km s-min=2.7km az=67.0*

ISC 31 12:48:10.3±1.0, 39.°05N±0.°02×29.°07E±0.°02, h11km±8km, n33, σ0s42/46, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	Demirci	0.27	268	P	Pg	12 48 16.1	+0.2
DEMI				S	Sg	12 48 19.0	-0.7
DEMI	Demirci	0.27	268	iP	Pg	12 48 16.1	+0.2
DEMI				iS	Sg	12 48 19.0	-0.7
GDZ	Gediz	0.32	83	P	Pb	12 48 18.3	+0.1
GDZ				S	Sb	12 48 23.3	-0.2
GDZ	Gediz	0.32	83	iP	Pb	12 48 18.3	+0.1
GDZ				iS	Sb	12 48 23.3	-0.2
TVSB	Tavsanli	0.50	38	ePG	Pg	12 48 20.5	+0.3
TVSB				eSG	Sg	12 48 27.2	+0.4
TVSB	Tavsanli	0.50	38	ePg	Pg	12 48 20.5	+0.3
KULA	Kula-Manisa	0.62	211	ePG	Pb	12 48 23.2	-0.1
KULA				eSG	Sb	12 48 32.5	+0.4
KULA	Kula-Manisa	0.62	211	ePg	Pb	12 48 23.2	-0.1
KULA				eSg	Sb	12 48 32.5	+0.4
KHAL	Karahalli	0.76	154	P	Pn	12 48 27.4	+0.3
KHAL				S	Sn	12 48 38.0	-0.6
KHAL	Karahalli	0.76	154	iP	Pn	12 48 27.4	+0.3
KHAL				iS	Sn	12 48 38.0	-0.6
KHL	Karahalli	0.81	154	ePG	Pn	12 48 28.0	+0.2
KHL	Karahalli	0.81	154	ePg	Pn	12 48 28.0	+0.2
AKS	Akhisar	0.99	260	ePG	Pn	12 48 30.2	0.0
AKS	Akhisar	0.99	260	ePg	Pn	12 48 30.2	0.0
BALB	Balikesir	1.09	303	ePG	Pn	12 48 31.5	-0.1
BALB				eSG	Sn	12 48 46.8	+0.1
BALB	Balikesir	1.09	303	ePg	Pn	12 48 31.5	-0.1
BALB				eSg	Sn	12 48 46.8	+0.1
IGD	Bursa	1.22	5	iP	Pn	12 48 32.4	-0.9
IGD				iS	Sb	12 48 47.6	-1.4
CAVI	Cavuskoy	1.29	27	ePN	Pg	12 48 35.8	+0.6
CAVI	Cavuskoy	1.29	27	ePn	Pg	12 48 35.8	+0.6
IZI	Iznik	1.32	14	ePN	Pg	12 48 35.9	+0.2
IZI	Iznik	1.32	14	ePn	Pg	12 48 35.9	+0.2
MDNY	Mudanya-Bursa	1.32	354	ePN	Pb	12 48 35.4	+0.2
MDNY	Mudanya-Bursa	1.32	354	ePn	Pb	12 48 35.4	+0.2
KCTX	Karacabey (Bur	1.33	336	ePN	Pb	12 48 35.4	+0.1
KCTX	Karacabey (Bur	1.33	336	ePn	Pb	12 48 35.4	+0.1
GONE	Gonen-Balikesi	1.46	313	ePN	Pn	12 48 36.9	+0.3
GONE	Gonen-Balikesi	1.46	313	ePn	Pn	12 48 36.9	+0.3
ARMT	Armutlu	1.52	354	ePN	Pn	12 48 37.4	-0.1
ARMT	Armutlu	1.52	354	ePn	Pn	12 48 37.4	-0.1
EDC	Edincik	1.59	325	ePN	Pb	12 48 39.8	0.0
EDC	Edincik	1.59	325	ePn	Pb	12 48 39.8	0.0
KNL	Bal¨--kesir	1.70	316	iP	Pg	12 48 51.4	+8.4
KNL				iS	Sb	12 49 03.4	+0.3
SART	Tekirdag	2.19	319	iP	Pb	12 48 50.8	+0.8
SART				iS	Sb	12 49 17.4	+0.3

*VIE **31** 12:53:12.9±0.7, 45.°31N×14.°79E, h6km, mb1.4/2, ML1.7/2, Error ellipse: s-maj=4.9km s-min=2.2km az=175.0*
*CSEM **31** 12:53:12.8±0.2, 45.°31N×14.°79E, h2km, ML1.8/4, Error ellipse: s-maj=5.2km s-min=3.2km az=90.0*

LJU 31 12:53:13.0, 45.°35N×14.°79E, h10km, ML1.0, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GBRS	Gornja Briga	0.19	5	Pg	Pg	12 53 17.1	+0.1
GBRS				iSg	Sg	12 53 20.3	+0.6
	39nm,0.2s						
BOJS	Bojanci	0.36	64	iPg	Pg	12 53 20.1	-0.1
BOJS	Bojanci	0.36	64	iPg	Pg	12 53 20.1	-0.1
VISS	Visnje	0.46	5	iPg	Pg	12 53 22.1	+0.1
VISS				iSg	Sg	12 53 28.3	+0.2
	comp=Z,6.0nm,0.1s						
VISS	Visnje	0.46	5	iPg	Pg	12 53 22.0	0.0
VISS				iSg	Sg	12 53 28.3	+0.2
	comp=Z,6.0nm,0.1s						
SKDS	Skadanscina	0.58	291	iPg	Pg	12 53 24.2	0.0
SKDS	Skadanscina	0.58	291	iPg	Pg	12 53 24.2	0.0
NVLJ	Novalja	0.79	176	ePg	Pg	12 53 27.3	-0.8
NVLJ				Sg	Sb	12 53 40.5	+1.2
NVLJ	Novalja	0.79	176	ePg	Pg	12 53 27.3	-0.8
NVLJ				Sg	Sb	12 53 40.5	+1.1
OBKA	Obir	1.18	352	Pg	Pn	12 53 36.3	+0.7
	comp=Z,1.5nm,0.1s						
OBKA				Sg	Sn	12 53 52.9	+1.2
	comp=Z,1.4nm,0.2s						
SOKA	Soboth	1.34	7	Sg	Sg	12 53 58.9	+2.7
	comp=Z,0.8nm,0.2s						

*BJI **31** 13:13:37.0, 25.°04N×98.°70E, h11km, mb4.3/27, mB4.6/23, ML4.7/10, Ms4.5/43, Ms7 4.1/34*
*IDC **31** 13:13:37.2±0.5, 25.°04N×98.°86E, h0km, mb4.1/25, mb1 4.2/26, mb1mx4.0/55, mbtmp4.1/26, ML4.2/1, MS3.6/11, Ms1 3.6/11, ms1mx3.3/66, Error ellipse: s-maj=18.1km s-min=11.0km az=64.0*
*ISCJB **31** 13:13:38.2±0.2, 25.°03N±0.°02×98.°74E±0.°03, h17km, mb4.3/50, MS3.7/13, Error ellipse: s-maj=3.9km s-min=3.2km az=164.1*
*MOS **31** 13:13:39.8±1.1, 25.°01N×98.°71E, h30km, mb4.6/24, Error ellipse: s-maj=10.3km s-min=5.8km az=106.5*
*NEIC **31** 13:13:42.3±1.8, 25.°06N×98.°79E, h34km±13km, mb4.7/10, Error ellipse: s-maj=6.9km s-min=5.0km az=81.0*
NEIC Felt at Dali, China.
*BKK **31** 13:14:01.3±4.4, 24.°N×36.°×9.°9E±1.°3, h10km, M4.4/13, mb4.2/8, mB4.6/4, MLv4.7/13, Mw(mB)3.8/4*

ISC 31 13:13:39.5±0.4, 24.°98N±0.°04×98.°76E±0.°03, h17km, n150, σ2s20/160, mb4.3/51, MS3.7/13, 9C-1D, Myanmar-China border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KMI	Kunming	3.62	87	⇑Pn	Pn	13 14 36.8	+1.8
KMI				Pg	Pg	13 14 47.0	-1.8
KMI				Sg	Sg	13 15 33.8	-1.9
KMI				smax	smax		
	comp=N,2μm,1.1s						
KMI				smax	smax		
	comp=E,2μm,0.9s						
KMI				LR	LR		
	comp=N,9μm,7.5s						
KMI				LR	LR		
	comp=E,3μm,7.2s						
KMI				LR	LR		
	comp=Z,3μm,12.7s						
KMI	Kunming	3.62	87	⇑P	Pn	13 14 36.8	+1.8
KMI	Kunming	3.62	87	⇑Pn	Pn	13 14 36.8	+1.8
KMI				Pg	Pg	13 14 47.0	-1.8
KMI				Sg	Sg	13 15 33.8	-1.9
CRAI	Chiangrai	4.96	162	P	Pn	13 14 54.1	+0.9
	705nm,0.6s,45μm17nm						
CRAI	Chiangrai	4.96	162	P	Pn	13 14 53.8	+0.6
PAYA	Payao	5.68	169	P	Pn	13 15 06.5	+3.3
CHTO	Chiang Mai	6.14	178	P	Pn	13 15 10.7	+1.3
	727nm,1.1s,6μm5.9nm						
CHTO	Chiang Mai	6.14	178	P	Pn	13 15 11.6	+2.2
CHTO	Chiang Mai	6.14	178	eP	Pn	13 15 10.4	+1.0
CHTO	Chiang Mai	6.14	178	ePn	Pn	13 15 10.4	+1.0
CMMT	Chiang Mai	6.14	178	P	Pn	13 15 10.7	+1.2
	164nm,1.1s,1μm1.3nm						
CMMT	Chiang Mai	6.14	178	P	Pn	13 15 11.6	+2.1
SHL	Shillong	6.25	277	eP	Pn	13 15 10.3	-0.8
LAMP	Lampang	6.47	173	P	Pn	13 15 16.2	+2.1
LAMP	Lampang	6.47	173	P	Pn	13 15 19.3	+5.2
	8.9nm,0.8s,411nm0.4nm						
CM31	Chiang Mai Arr	6.49	178	ePn	Pn	13 15 16.0	+1.7
CMAR	Chiang Mai Arr	6.49	178	Pn	Pn	13 15 16.2	+2.0
	1.2nm,0.3s,baz=353,slow=13,SNR=32						
CMAR				Pg	Pg	13 15 40.4	-3.4
	2.5nm,0.3s,baz=355,slow=16,SNR=32						
CMAR				Lg	Lg	13 17 03.4	
	0.6nm,0.3s,baz=5.5,slow=17,SNR=4.4						
CMAR				LR	LR	13 18 16.6	
	comp=Z,232nm,20.5s,baz=1.5,slow=43						
CM01	Chiang Mai Arr	6.53	178	ePn	Pn	13 15 18.6	+3.8
GYA	Guiyang	7.28	77	⇑iPn	Pn	13 15 26.0	+0.7
GYA				Sn	Sn	13 16 49.0	+1.4
GYA				Sg	Sg	13 17 34.3	+1.1
GYA				smax	smax		
	comp=N,3μm,1.1s						
GYA				smax	smax		
	comp=E,2μm,1.0s						
GYA				LR	LR		
	comp=N,4μm,9.3s						
GYA				LR	LR		
	comp=E,1μm,10.6s						
GYA				LR	LR		
	comp=Z,1μm,8.8s						
GYA	Guiyang	7.28	77	⇑iPn	Pn	13 15 26.0	+0.7
GYA				Sn	Sn	13 16 49.0	+1.4
GYA				Sg	Sg	13 17 34.3	+1.1
CD2	Chengdu	7.38	36	Pn	Pn	13 15 27.0	+0.5
CD2				Sg	Sg	13 17 35.5	-0.9
CD2				smax	smax		
	comp=N,180nm,2.1s						
CD2				smax	smax		
	comp=E,160nm,1.5s						
CD2				LR	LR		
	comp=E,4μm,9.5s						
CD2				LR	LR		
	comp=Z,2μm,11.4s						
CD2	Chengdu	7.38	36	Pn	Pn	13 15 27.0	+0.5
CD2				Sg	Sg	13 17 35.5	-0.9
UTTA	Uttaradit	7.39	167	P	Pn	13 15 29.7	+3.1
UTTA	Uttaradit	7.39	167	P	Pn	13 15 30.0	+3.4
	7.9nm,0.8s,112nm0.2nm						
NONG	Nongkai	8.00	148	P	Pn	13 15 38.7	+3.7
	40nm,0.7s,7μm0.5nm						
LSA	Lhasa	8.24	307	eP	Pn	13 15 38.1	-0.6
LSA	Lhasa	8.24	307	ePn	Pn	13 15 38.1	-0.6
PBKT	Sadao Pong	8.62	166	P	Pn	13 15 44.8	+1.3
PBKT	Sadao Pong	8.62	166	P	Pn	13 15 47.4	+3.9
	15nm,0.8s,0.1nm						
SKNT	Sakolnakorn	9.34	148	P	Pn	13 15 57.1	+3.7
	17nm,1.0s,0.1nm						

KHON	Khomkaen	9.40	155	P		Pn	13 15 57.6 +3.4
	12nm,0.7s,0.1nm						
PANO	Nakornpanom	9.52	144	P		Pn	13 16 02.8 +7.0
	20nm,1.1s,0.1nm						
CHAI	Chaiyaphum	9.52	161	P		Pn	13 15 49.0 -6.9
ENH	Enshi	10.88	59	*e*Pn		Pn	13 16 13.4 -1.0
BOK	Bokaro	11.79	267	*e*P		Pn	13 16 24.5 -2.5
BOK				IAmb		IAmb	13 16 31.1
	comp=Z,11nm,0.7s						
QIZ	Qiongzhong	11.86	118	P		Pn	13 16 28.5 +0.5
QIZ				S		Sn	13 18 42.0 +2.0
QIZ				LR		LR	
	comp=Z,450nm,9.8s						
QIZ				LR		LR	
	comp=Z,620nm,11.7s						
GUN	Gumba	11.90	287	*e*P		Pn	13 16 26.3 -2.5
	comp=Z,24nm,0.5s						
LZH	Lanzhou	11.91	20	*e*P		Pn	13 16 30.8 +2.1
LZH				pP			13 16 34.5
LZH				sP			13 16 37.5
LZH				*e*S		Sn	13 18 44.0 +2.8
LZH				sS			13 18 50.5
LZH				SS		SnSn	13 19 02.0 +8.4
LZH				pmax		pmax	
	comp=Z,33nm,1.4s						
LZH				pmax		pmax	
	comp=Z,75nm,5.0s						
LZH				LR		LR	
	comp=Z,360nm,11.1s						
LZH				LR		LR	
	comp=Z,1μm,12.3s						
LZH				LR		LR	
	comp=Z,2μm,14.0s						
LZH	Lanzhou	11.91	20	*e*P		Pn	13 16 30.8 +2.1
LZH	Lanzhou	11.91	20	*e*P		Pn	13 16 30.8 +2.1
PKIN	Phulchoki	12.27	285	*e*P		Pn	13 16 30.0 -3.7
	comp=Z,12nm,0.5s						
KKN	Kakani	12.40	286	*e*P		Pn	13 16 32.4 -3.1
	comp=Z,45nm,1.0s						
DMN	Daman	12.53	285	*e*P		Pn	13 16 33.1 -4.1
	comp=Z,30nm,0.8s						
XAN	Xi'an	12.64	42	*e*P		Pn	13 16 41.0 +2.5
XAN				LR		LR	
	comp=Z,2μm,12.6s						
XAN				LR		LR	
	comp=Z,1μm,13.3s						
XAN				LR		LR	
	comp=Z,850nm,13.0s						
GKN	Gorkha	13.00	286	*e*P		Pn	13 16 40.6 -3.0
	comp=Z,18nm,0.5s						
KOLN	Koldanda	13.87	285	*e*P		Pn	13 16 51.0 -4.5
	comp=Z,12nm,0.7s						
GTA	Gaotai	14.42	3	*e*P		Pn	13 17 01.8 -1.2
GTA				pP		P	13 17 06.0 -3.8
GTA				sP			13 17 09.0
GTA				S		Sn	13 19 45.0 +2.5
GTA				sS		S	13 19 51.0 -11
GTA				SS		SnSn	13 20 01.5 +6.1
GTA				pmax		pmax	
	comp=Z,3.0nm,1.1s						
GTA				pmax		pmax	
	comp=Z,75nm,5.9s						
GTA				LR		LR	
	comp=Z,370nm,8.3s						
GTA				LR		LR	
	comp=Z,2μm,13.8s						
GTA				LR		LR	
	comp=Z,330nm,9.5s						
PBA	Port Blair	14.42	204	*e*P		Pn	13 17 06.3 +3.4
PYUN	Piuthan	14.45	286	*e*P		Pn	13 16 59.7 -3.8
WHN	Wuhan	14.87	65	P		Pn	13 17 11.3 +2.3
WHN				S		Sn	13 19 48.0 -5.4
WHN				LR		LR	
	comp=Z,2μm,6.9s						
WHN				LR		LR	
	comp=Z,2μm,6.5s						
WHN				LR		LR	
	comp=Z,2μm,9.0s						
VIS	Vishakhapatnam	16.07	246	*e*P		Pn	13 17 24.6 -0.2
QZH	Quanzhou	17.99	86	*e*P		P	13 17 49.5 +0.2
QZH				*e*S		Sn	13 21 04.0 -5.2
QZH				LR		LR	
	comp=Z,3μm,9.7s						
QZH				LR		LR	
	comp=Z,630nm,12.1s						
QZH				LR		LR	
	comp=Z,2μm,15.1s						
NGP	Nagpur	18.53	262	*e*P		P	13 17 52.3 -2.9
HHC	Hu-ho-hao-te	19.10	31	*e*P		Pn	13 18 02.8 +0.4
HHC				sP		sP	13 18 10.3 +1.7
HHC				S		Sn	13 21 31.0 -5.0
HHC				pmax		pmax	
	comp=Z,21nm,0.7s						
HHC				pmax		pmax	
	comp=Z,90nm,3.7s						
HHC				LR		LR	
	comp=Z,420nm,8.9s						
HHC				LR		LR	
	comp=Z,550nm,10.8s						
HHC				LR		LR	
	comp=Z,270nm,10.3s						
BHPL	Bhopal	19.55	269	*e*P		P	13 18 06.1 -0.4
BHPL				IAmb		IAmb	13 18 06.9
	comp=Z,21nm,0.4s						
KULM	Kulim	19.66	174	*e*P		Pn	13 18 10.1 +1.0
	comp=Z,28nm,1.3s						
SMLA	Simla	20.00	293	*e*P		Pn	13 18 12.8 -0.3
SMLA				IAmb		IAmb	13 18 13.9
	comp=Z,59nm,1.2s						
HYB	Hyderabad	20.27	252	*i*P		Pn	13 18 17.0 +0.6
HYB	Hyderabad	20.27	252	*e*P		P	13 18 12.0 -2.4
WMQ	Urumqi	20.86	337	P		P	13 18 21.0 +0.4
WMQ				pP		sP	13 18 26.8 -0.9
WMQ				sP		pP	13 18 30.0 +4.5
WMQ				S		S	13 22 12.8 +0.1
WMQ				pmax		pmax	
	comp=Z,9.0nm,1.0s						
WMQ				pmax		pmax	
	comp=Z,80nm,4.4s						
WMQ				LR		LR	
	comp=Z,220nm,8.8s						
WMQ				LR		LR	
	comp=Z,210nm,9.8s						
DHRM	DHARAMSHALA	20.98	295	*e*P		P	13 18 21.6 -0.6
DHRM				IAmb		IAmb	13 18 24.3
	comp=Z,135nm,1.1s						
THN	Thein Dam	21.50	295	*e*P		P	13 18 26.0 -1.6
PSI	Prapat	22.05	180	P		P	13 18 37.1 +3.5
	comp=Z,2.9nm,0.4s,baz=3.5,slow=8.9,SNR=4.0						
PSI				LR		LR	13 28 08.8
	comp=Z,241nm,18.2s,baz=332,slow=39						
SONM	Songino Array	23.60	13	P		P	13 18 49.8 +0.2
	comp=Z,3.6nm,1.0s,baz=197,slow=10,SNR=12						
SONM				LR		LR	13 28 52.8
	comp=Z,285nm,21.5s,baz=196,slow=39						
SONA1	Songino Array	23.61	13	*e*P		P	13 18 48.5 -1.3
ULN	Ulaanbaatar	23.77	14	*ce*P		P	13 18 49.9 -1.3
ULN				pmax		pmax	
	comp=Z,8.0nm,1.2s						
ULN	Ulaanbaatar	23.77	14	*e*P		P	13 18 50.2 -1.0
	comp=Z,4.4nm,0.8s						
POO	Poona	23.99	259	*e*P		P	13 18 54.1 +0.7
POO				IAmb		IAmb	13 19 06.1
	comp=Z,9.2nm,0.8s						
KSH	Kashi	24.02	313	P		P	13 18 55.0 +1.3
KSH				*e*pP		pP	13 18 58.8 0.0
KSH				S		S	13 23 08.0 -2.2
KSH				SS		SnSn	13 23 58.8 +7.9
KSH				pmax		pmax	
	comp=Z,25nm,1.3s						
KSH				pmax		pmax	
	comp=Z,77nm,4.5s						
KSH				LR		LR	
	comp=Z,250nm,10.8s						
KSH				LR		LR	
	comp=Z,170nm,10.7s						
KSH				LR		LR	
	comp=Z,240nm,12.5s						
PALK	Pallekele	24.66	227	LR		LR	13 30 49.2
	comp=Z,84nm,18.1s,baz=117,slow=42						
MK01	Makanchi Array	25.41	333	*e*P		P	13 19 05.7 -0.4
MK31	Makanchi Array	25.43	333	*e*P		P	13 19 06.3 0.0
MK31	Makanchi Array	25.43	333	*e*P		P	13 19 06.3 0.0
MKAR	Makanchi Array	25.43	333	P		P	13 19 06.4 +0.1
	comp=Z,8.6nm,0.8s,baz=140,slow=9.6,SNR=34						
MKAR	Makanchi Array	25.43	333	*e*P		P	13 19 06.5 +0.2
MAKZ	Makanchi	25.57	333	*e*P		P	13 19 08.4 +0.8
MAKZ				pmax		pmax	
	comp=Z,11nm,1.1s						
MAKZ	Makanchi	25.57	333	*e*P		P	13 19 08.4 +0.8
	comp=Z,11nm,1.1s						
ZAK	Zakamensk	25.60	7	*e*P		P	13 19 07.8 -0.1
ZAK				pmax		pmax	
	comp=Z,8.0nm,1.4s						
KSM	Kuching	25.89	153	*e*P		P	13 19 11.3 +0.6
	comp=Z,9.1nm,1.0s						
TKM2	Tokmak 2	26.12	319	*e*P		P	13 19 12.5 -0.3
TKM2	Tokmak 2	26.12	319	*e*P		P	13 19 12.5 -0.3
AAK	Ala-Archa	26.62	317	P		P	13 19 18.7 +1.4
	comp=Z,2.3nm,0.5s,baz=153,slow=13,SNR=4.5						
AAK	Ala-Archa	26.62	317	*i*P		P	13 19 18.5 +1.2
AAK				pmax		pmax	
	comp=Z,13nm,1.1s						
AAK	Ala-Archa	26.62	317	*e*P		P	13 19 15.6 -1.7
FRU	Bishkek	26.66	318	*e*P		P	13 19 22.0 +4.5
IRK	Irkutsk	27.55	7	*e*P		P	13 19 27.6 +2.3
IRK				pmax		pmax	
	comp=Z,16nm,2.1s						
KSAR	Wonju Array Be	27.72	56	P		P	13 19 28.2 +1.2
KSAR	Wonju Array Be	27.72	56	P		P	13 19 28.2 +1.2
KSRS	Korea Array	27.75	56	P		P	13 19 28.2 +0.9
	comp=Z,1.2nm,0.8s,baz=257,slow=8.5,SNR=3.8						
KURBB	Kurchatov Arra	29.98	334	P		P	13 19 48.3 +1.3
	comp=Z,1.9nm,0.9s,baz=139,slow=9.9,SNR=3.0						
KURK	Kurchatov	30.02	334	P		P	13 19 48.3 +1.0
KURK	Kurchatov	30.02	334	P		P	13 19 48.3 +1.0
ZAA0	Zalesovo Array	30.75	344	*e*P		P	13 19 53.3 -0.5
ZALV	Zalesovo Beam	30.75	344	P		P	13 19 53.5 -0.3
	comp=Z,1.4nm,0.3s,baz=163,slow=10,SNR=10						
NVS	Novosibirsk	31.97	343	*e*P		P	13 19 58.5 -5.9
NVS				*e*			13 21 11.2
NVS				pmax		pmax	
	comp=N,7.0nm,1.5s						
NVS				pmax		pmax	
	comp=E,7.0nm,1.5s						
NVS				pmax		pmax	
	comp=Z,13nm,1.5s						
USRK	Ussuriysk Ar.	33.10	46	P		P	13 20 13.7 -0.8
	comp=Z,4.1nm,0.8s,baz=247,slow=8.3,SNR=7.7						
USRK				LR		LR	13 34 49.7
	comp=Z,88nm,18.4s,baz=260,slow=39						
BOD	Bodaibo	34.58	14	*e*P		P	13 20 27.5 +0.3
BOD				pmax		pmax	
	comp=Z,3.0nm,0.9s						
KLR	Kul'dur	35.30	38	*i*P		P	13 20 32.0 -1.5
GEYT	Alibeck	36.72	301	P		P	13 20 47.7 +1.8
	comp=Z,3.0nm,0.9s,baz=116,slow=6.8,SNR=4.5						
ABKAR	Akbulak array	38.69	319	*e*P		P	13 21 04.6 +2.3
ASAJ	Asahikawa	40.29	50	P		P	13 21 16.3 +0.6
	comp=Z,9.8nm,0.7s,baz=294,slow=14,SNR=4.0						
ASAJ	Asahikawa	40.29	50	*e*P		P	13 21 16.3 +0.6
	comp=Z,26nm,0.9s						
SVE	Sverdlovsk	41.99	330	*e*P		P	13 21 30.5 +1.0
SVE				pmax		pmax	
	comp=Z,20nm,1.0s						
ARU	Arti	42.75	328	*d*P		P	13 21 35.4 -0.4
ARU							13 23 12.5
ARU							13 23 26.3
ARU				PPP		PPP	13 23 49.0
ARU				S		S	13 28 00.1 +1.4
ARU				pmax		pmax	
	comp=Z,16nm,1.2s						
ARU	Arti	42.75	328	*e*P		P	13 21 35.5 -0.2
	comp=Z,12nm,1.0s						
GUMO	Guam	44.78	96	LR		LR	13 41 34.7
	comp=Z,80nm,18.6s,baz=332,slow=38						
NRIK	Noril'sk	44.88	354	P		P	13 21 51.9 -0.8
	comp=Z,1.9nm,0.4s,baz=124,slow=5.8,SNR=2.6						
GNI	Garni	47.28	302	LR		LR	13 45 04.7
	comp=Z,52nm,19.1s,baz=61,slow=40						
GNI	Garni	47.28	302	*ce*P		P	13 22 15.8 +3.6
GNI				pmax		pmax	
	comp=Z,27nm,0.7s						
ZEI	Tsey	48.03	306	*e*P		P	13 22 17.4 -0.6
NEY	Neytrino	48.91	306	*i*P		P	13 22 24.6 -0.3
NEY				pmax		pmax	
	comp=Z,1.0nm,0.9s						
KVAR	Kislovodsk Arr	48.98	307	LR		LR	13 46 35.8
	comp=Z,134nm,18.1s,slow=40						
KIV	Kislovodsk	48.98	307	*e*P		P	13 22 25.5 +0.3
KIV				pmax		pmax	
	comp=Z,10.0nm,1.1s						
KIV				MLR		MLR	
	comp=Z,92nm,16.0s						
TIXI	Tiksi	49.69	12	*ce*P		P	13 22 28.4 -1.6
TIXI				pmax		pmax	
	comp=Z,3.0nm,1.2s						
FITZ	Fitzroy Crossi	50.19	146	P		P	13 22 34.6 +0.1
	comp=Z,2.4nm,0.9s,baz=20,slow=7.4,SNR=5.6						
VRH	Novokhopyorsk	50.42	317	*e*P		P	13 22 44.1 +8.1
VRH				pmax		pmax	
	comp=Z,8.0nm,0.5s						
VSR	Storozhevoye	52.02	317	*e*P		P	13 22 46.6 -1.3
VSR				pmax		pmax	
	comp=Z,8.0nm,1.1s						
LPSR	Galich'ya Gora	52.34	318	*e*P		P	13 22 46.3 -4.0
LPSR				pmax		pmax	
	comp=Z,7.0nm,0.8s						
KLMR	Klimovskoe	53.60	328	*e*P		P	13 23 00.0 +0.5
KLMR				pmax		pmax	
	comp=Z,12nm,1.5s						
OBN	Obninsk	54.06	321	*e*P		P	13 23 03.9 +1.0
OBN				pmax		pmax	
	comp=Z,10.0nm,1.5s						
MMAI	Mount Meron Ar	55.27	294	LR		LR	13 49 22.6
	comp=Z,51nm,20.9s,baz=340,slow=39						
BRTR	Keskin Array B	55.82	302	P		P	13 23 16.6 +0.5
	comp=Z,0.7nm,0.8s,baz=96,slow=3.7,SNR=7.4						
WRAB	Tennant Creek	56.49	139	*ce*P		P	13 23 24.7 +3.8
WRAB				pmax		pmax	
	comp=Z,35nm,1.7s						
WRA	Warramunga Arr	56.50	139	P		P	13 23 21.0 +0.1
	comp=Z,2.5nm,0.8s,baz=327,slow=7.4,SNR=14						
AKASG	Malin Array Be	58.27	316	P		P	13 23 33.4 +0.3
	comp=Z,1.7nm,0.7s,baz=78,slow=6.6,SNR=7.1						
BILL	Bilibino	58.69	24	*i*P		P	13 23 32.9 -2.9
BILL				*i*			13 23 50.2
BILL				*i*			13 25 45.3
BILL				pmax		pmax	
	comp=Z,4.0nm,1.2s						
BILL				MLR		MLR	
	comp=Z,102nm,15.0s						
BILL	Bilibino	58.69	24	*e*P		P	13 23 34.3 -1.4
	comp=Z,9.1nm,1.5s						
ASAR	Alice Springs	59.15	142	P		P	13 23 40.0 +0.4
	comp=Z,0.7nm,0.7s,baz=329,slow=6.7,SNR=10						
ASAR	Alice Springs	59.15	142	P		P	13 23 40.0 +0.4
FINES	FINESS Array B	60.13	328	P		P	13 23 46.8 +1.1
	comp=Z,1.2nm,0.8s,baz=145,slow=7.0,SNR=4.0						
MLR	Muntele Rosu	60.85	310	*e*P		P	13 23 51.0 -0.1
MLR				pmax		pmax	
	comp=Z,13nm,1.1s						
MLR	Muntele Rosu	60.85	310	*e*P		P	13 23 51.0 -0.1
	comp=Z,13nm,1.1s						
ARCES	ARCESS Array B	60.98	337	P		P	13 23 52.8 +1.3
	comp=Z,2.1nm,0.8s,baz=88,slow=7.3,SNR=3.7						
STHS	Stebnicka Huta	63.50	315	*e*P		P	13 24 10.4 +1.6
STHS				pmax		pmax	
	comp=Z,3.0nm,1.1s						
STHS	Stebnicka Huta	63.50	315	*e*P		P	13 24 10.4 +1.6
KECS	Kecovo	64.14	314	*e*P		P	13 24 14.8 +1.9
KECS				pmax		pmax	
	comp=Z,2.0nm,1.0s						
KECS	Kecovo	64.14	314	*e*P		P	13 24 14.8 +1.9
NB2	NORSAR Subarra	67.31	328	P		P	13 24 31.5 -1.7
	comp=Z,0.8nm,0.6s,baz=80,slow=6.5						
NOA	NORSAR Array B	67.31	328	P		P	13 24 32.1 -1.1
	comp=Z,1.2nm,0.7s,baz=81,slow=6.4,SNR=4.8						
CLL	Collm	68.34	318	*e*P		P	13 24 39.0 -0.8
CLL	Collm	68.34	318	*e*P		P	13 24 39.0 -0.8
GERES	GERESS Array B	68.47	315	P		P	13 24 40.5 -0.3
	comp=Z,1.2nm,0.7s,baz=76,slow=7.0,SNR=6.7						
GEA0	GERESS Array S	68.47	315	*e*P		P	13 24 41.4 +0.5
STKA	Stephens Creek	69.79	142	P		P	13 24 48.8 -0.2
	comp=Z,3.0nm,1.1s,baz=16,slow=3.2,SNR=3.2						
MLY	Manley	75.80	24	*e*P		P	13 25 23.9 -0.4
	comp=Z,25nm,0.5s						
MDM	Murphy Dome	76.76	24	*e*P		P	13 25 28.9 -0.9
	comp=Z,12nm,0.8s						
ILAR	Eielson Array	77.35	24	P		P	13 25 31.4 -1.7
	comp=Z,0.8nm,1.1s,baz=302,slow=4.6,SNR=5.3						
ILAR				LR		LR	14 03 47.2
	comp=Z,83nm,18.2s,baz=296,slow=39						
INK	Inuvik	79.43	17	P		P	13 25 43.5 -1.0
	comp=Z,1.1nm,0.5s,baz=317,slow=4.7,SNR=7.9						
ESDC	Sonseca Array	83.52	311	P		P	13 26 07.9 +1.2
	comp=Z,0.1nm,0.2s,baz=81,slow=7.9,SNR=2.9						
YKA	Yellowknife Ar	88.86	15	P		P	13 26 31.6 -0.8
	comp=Z,1.0nm,1.0s,baz=327,slow=4.9,SNR=6.3						
YKA				LR		LR	14 12 03.1
	comp=Z,7.6nm,18.1s,baz=0.0,slow=40						

ISK ***31*** *13:15:56.1,39°.00N×40°.62E,h4km,MD2.6*
CSEM ***31*** *13:16:00.9±0.4,38°.78N×40°.34E,h5km,MD2.6,Error ellipse: s-maj=11.0km s-min=7.2km az=26.0*
DDA ***31*** *13:16:01.5,38°.84N×40°.38E,h7km,Md2.6*
ISC 31 13:16:00.7±1.2,38.77N±0.04×40.32E±0.03,h5km±12km, n15,σ1§37/24,Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BGOL	Bingol	0.35	51	P	Pg	13 16 07.1	-0.4
BGOL				S	Sg	13 16 11.2	-0.9
BGOL	Bingol	0.35	51	*i*P	Pg	13 16 07.1	-0.4
BGOL				*i*S	Sg	13 16 11.2	-0.9
BNGL	BINGOL	0.67	74	*i*P	Pg	13 16 13.6	0.0
BNGL				*i*S	Sb	13 16 23.3	-1.4
TNCL	Tunceli-Merkez	0.70	300	P	Pb	13 16 15.2	-0.3
TNCL				S	Sb	13 16 25.2	-0.3
TNCL	Tunceli-Merkez	0.70	300	*i*P	Pb	13 16 15.2	-0.3
TNCL				*i*S	Sb	13 16 25.2	-0.3
PTK	Pertek	0.74	280	*e*PG	Pg	13 16 15.3	+0.4
PTK				*e*SG	Sn	13 16 29.4	-0.4
PTK	Pertek	0.74	280	*e*Pg	Pg	13 16 15.3	+0.4
SVRC	Sivrice-ELAZID	0.89	244	*e*PN	Pb	13 16 19.6	+0.9
SVRC	Sivrice-ELAZID	0.89	244	*e*Pn	Pb	13 16 19.6	+0.9
SVAN	Silvan-Diyarba	0.92	132	*e*PG	Pg	13 16 15.3	-3.1
BTMN	Batman	1.15	139	P	Pg	13 16 23.9	+1.1
BTMN				S	Sn	13 16 40.2	+0.4
BTMN	Batman	1.15	139	*i*P	Pg	13 16 23.9	+1.1
BTMN				*i*S	Sn	13 16 40.2	+0.4
MAZI	Mazidag	1.31	176	*e*PN	Pn	13 16 25.1	-0.6
MAZI	Mazidag	1.31	176	*e*Pn	Pn	13 16 25.2	-0.6
EKAR	Karacoban	1.44	70	*i*P	Pg	13 16 31.7	+3.4
EKAR				*i*S	Sg	13 16 49.5	+2.4

IDC ***31*** *13:32:13.7±0.6,29°.30N×142°.29E,h0km,mb3.9/21, mb1 4.1/23,mb1mx4.0/60,mbtmp3.9/23,ML3.5/2,MS3.5/6, Ms1 3.5/6,ms1mx3.1/41,Error ellipse: s-maj=19.3km s-min=14.2km az=83.0*
ISCJB ***31*** *13:32:15.9±0.4,29°.27N±0°.04×142°.3E±0°.1,h27km, mb4.1/27,MS3.5/4,Error ellipse: s-maj=13.4km s-min=5.0km az=174.1*
NEIC ***31*** *13:32:16.3±3.7,29°.25N×142°.37E,h18km±23km,mb4.6/6, Error ellipse: s-maj=13.6km s-min=8.5km az=86.0*
ISC 31 13:32:17.3±0.5,29°.24N±0°.05×142°.2E±0°.1,h27km,n42, σ1§26/40,mb4.1/27,MS3.5/4,1D,Southeast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CBIJ	Chichi jima	2.13	181	*e*Pn	Pn	13 32 50.5	-0.7
CBIJ				Sn	Sn	13 33 16.6	-0.2
JCJ	Chichijima	2.13	181	Pn	Pb	13 32 53.3	-2.0
	6.7nm,0.3s,baz=287,slow=19,SNR=2.9						
JCJ				Sn	Sn	13 33 16.6	-0.2
	60nm,0.3s,baz=289,slow=22,SNR=12						
MJAR	Matsushiro Arr	8.03	336	Pn	Pn	13 34 12.6	+0.4
	1.2nm,0.3s,baz=161,slow=11,SNR=17						
MAJO	Matsushiro	8.03	336	*e*Pn	Pn	13 34 13.8	+1.6
	14nm,0.8s						
MAT	Matsushiro	8.03	336	P	Pn	13 34 13.8	+1.6
MAT				S	Sn	13 35 39.7	-2.4
JNU	Nakatsue	10.46	295	LR	LR	13 38 13.8	
	comp=Z,217nm,20.1s,baz=122,slow=34						
KSRS	Korea Array	14.48	308	Pn	P	13 35 44.7	-2.1
	0.1nm,0.3s,baz=118,slow=12,SNR=2.9						
KSRS				LR	LR	13 41 11.4	
	comp=Z,108nm,19.0s,baz=132,slow=37						
KSAR	Wonju Array Be	14.50	308	Pn	P	13 35 44.7	-2.3
ASAJ	Asahikawa	14.85	1	Pn	Pn	13 35 43.4	-2.0
	baz=180,slow=20						
KLR	Kul'dur	21.51	341	P	P	13 37 02.3	-1.7
	0.2nm,0.3s,baz=168,slow=14,SNR=2.0						
H11N2	WAKE ISLAND Hy	24.32	107	T	T	14 02 59.7	
	baz=297,slow=75,SNR=6.3						
H11N1	WAKE ISLAND Hy	24.33	107	T	T	14 02 59.7	
	baz=297,slow=75,SNR=4.9						
H11N3	WAKE ISLAND Hy	24.34	107	T	T	14 02 58.6	
	baz=297,slow=75,SNR=5.8						
DAV	Davao City (W)	27.06	219	LR	LR	13 47 09.1	
	comp=Z,61nm,19.8s,baz=210,slow=33						
SONM	Songino Array	33.23	314	P	P	13 38 51.6	-0.6
	0.8nm,0.6s,baz=119,slow=7.3,SNR=4.7						
SEY	Seymchan	34.34	8	P	P	13 39 02.3	+0.8
	0.8nm,0.6s,baz=248,slow=22,SNR=5.2						
CHTO	Chiang Mai	40.67	265	*e*P	P	13 39 56.0	+0.4
	2.0nm,0.6s						
CMAR	Chiang Mai Arr	40.81	265	P	P	13 39 57.5	+0.8
	0.4nm,0.3s,baz=64,slow=5.3,SNR=4.2						
CMAR				LR	LR	13 58 06.4	
	comp=Z,67nm,19.0s,baz=92,slow=38						
ZALV	Zalesovo Beam	47.91	318	P	P	13 40 54.1	+1.0
	1.5nm,0.7s,baz=95,slow=7.4,SNR=5.5						
MKAR	Makanchi Array	49.16	308	P	P	13 41 03.4	+0.5
	0.9nm,0.7s,baz=91,slow=9.8,SNR=9.1						
WRAB	Tennant Creek	49.47	190	*e*P	P	13 41 06.7	+1.4
	3.1nm,0.7s						
WRA	Warramunga Arr	49.48	190	P	P	13 41 06.2	+0.8
	4.0nm,0.9s,baz=6.6,slow=8.4,SNR=30						
WRA				PcP	PcP	13 42 27.9	+0.6
	0.3nm,0.5s,baz=1.8,slow=3.6,SNR=2.7						
KURK	Kurchatov	51.53	313	*e*P	P	13 41 21.8	+1.2
	13nm,0.8s						
KURBB	Kurchatov Arra	51.59	313	P	P	13 41 22.3	+1.2
	2.7nm,0.6s,baz=91,slow=6.9,SNR=26						
ASAR	Alice Springs	53.20	190	P	P	13 41 33.7	+0.4
	0.4nm,0.9s,baz=3.8,slow=6.2,SNR=6.8						
TKM2	Tokmak 2	54.24	304	*e*P	P	13 41 40.7	-0.3
	8.5nm,0.8s						
TKM2	Tokmak 2	54.24	304	⇓P	P	13 41 40.9	-0.2
	13nm,0.9s						
AAK	Ala-Archa	55.09	304	LR	LR	14 05 59.2	
	comp=Z,37nm,20.0s,baz=7.0,slow=37						
ILAR	Eielson Array	55.83	29	P	P	13 41 51.5	-0.4
	0.6nm,0.7s,baz=267,slow=5.6,SNR=7.7						
BVAR	Borovoye Array	56.51	317	P	P	13 41 58.3	+1.3
	1.1nm,0.5s,baz=91,slow=7.8,SNR=7.7						
BRVK	Borovoye	56.57	317	P	P	13 41 59.5	+2.1
	7.1nm,0.8s						
ARU	Arti	62.77	322	P	P	13 42 38.6	-1.4
	1.8nm,

az=127.0

ISC 31 13:39:54.2±1.1, 36°44N±0°09×71°49E±0°09, h150km, n16, σ2°25/21, mb3.1/5, 4C-3D, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**3.17**	**319**	⇓P	**Pn**	**13 40 47.5**	**+3.7**
	19nm,0.2s						
DZET				⇑S	**Sn**	**13 41 22.2**	**+0.1**
	142nm,0.4s						
MNAS	**Manas**	**6.09**	**7**	⇓P	**Pn**	**13 41 25.1**	**+3.0**
	6.6nm,0.5s						
MNAS				⇑S	**Sn**	**13 42 29.3**	**-1.6**
	57nm,0.6s						
AAK	**Ala-Archa**	**6.61**	**20**	P	**Pn**	**13 41 32.9**	**+3.9**
	6.2nm,0.3s,baz=216,slow=18,SNR=32						
AAK				S	**Sn**	**13 42 43.4**	**+0.1**
	1.1nm,0.3s,baz=315,slow=24,SNR=12						
AAK	**Ala-Archa**	**6.61**	**20**	⇑P	**Pn**	**13 41 32.6**	**+3.6**
	9.9nm,0.4s						
AAK				⇓S	**Sn**	**13 42 41.5**	**-1.9**
	24nm,0.9s						
KK31	**Karatay Array**	**6.70**	**354**	P	**Pn**	**13 41 32.1**	**+2.0**
	6.4nm,0.2s,baz=169,slow=12,SNR=93						
KK31				S	**Sn**	**13 42 41.2**	**-4.0**
	25nm,0.7s,baz=185,slow=22,SNR=16						
TKM2	**Tokmak 2**	**7.21**	**25**	⇑S	**Sn**	**13 42 55.9**	**-1.9**
	8.3nm,1.1s						
MKAR	**Makanchi Array**	**13.11**	**35**	P	**Pn**	**13 42 56.5**	**+1.9**
	0.1nm,0.3s,baz=214,slow=9.3,SNR=4.3						
KURBB	**Kurchatov Arra**	**15.06**	**18**	P	**Pn**	**13 43 19.5**	**+0.5**
	0.1nm,0.3s,baz=206,slow=10,SNR=3.5						
BVAR	**Borovoye Array**	**16.60**	**358**	P	**P**	**13 43 37.7**	**-0.2**
	0.8nm,0.3s,baz=154,slow=9.5,SNR=7.9						
AKTO	**Aktyubinsk**	**17.03**	**329**	P	**P**	**13 43 42.9**	**+0.3**
	0.9nm,0.3s,baz=135,slow=11,SNR=7.9						
ZALV	**Zalesovo Beam**	**19.81**	**24**	P	**P**	**13 44 13.3**	**+0.5**
	0.5nm,0.3s,baz=223,slow=12,SNR=6.8						
NOA	**NORSAR Array B**	**44.66**	**323**	P	**P**	**13 47 51.6**	**0.0**
	0.2nm,0.4s,baz=102,slow=7.6,SNR=2.2						
TORD	**Torodi Ar. Bea**	**66.11**	**269**	P	**P**	**13 50 23.3**	**-2.2**
	0.7nm,0.6s,baz=41,slow=5.0,SNR=4.8						
YKA	**Yellowknife Ar**	**81.28**	**3**	P	**P**	**13 51 52.6**	**-0.6**
	0.3nm,0.6s,baz=348,slow=5.2,SNR=4.0						
WRA	**Warramunga Arr**	**81.63**	**122**	P	**P**	**13 51 54.7**	**-0.9**
	0.3nm,0.7s,baz=325,slow=4.7,SNR=3.9						
ASAR	**Alice Springs**	**83.90**	**125**	P	**P**	**13 52 07.6**	**+0.3**
	0.2nm,0.7s,baz=295,slow=5.1,SNR=4.7						

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*DSN **31** 13:45:17.5±0.2,28°.23N×57°.01E, h10km, MLS.7, Error ellipse: s-maj=20.3km s-min=4.7km az=295.0*
*THR **31** 13:45:18.9±0.4,27°.85N×57°.54E, h14km±5km, MLS.5*
*OMAN **31** 13:45:18.4±1.1,28°.45N×56°.51E, h39km±99km, Error ellipse: s-maj=233.3km s-min=20.6km az=272.0*
*CSEM **31** 13:45:22.5±0.4,27°.82N×57°.29E, h15km, MLS.2, Error ellipse: s-maj=12.0km s-min=5.8km az=97.0*
*ISCJB **31** 13:45:23.5±0.8,27°.81N±0°.04×57°.25E±0°.08, h30km, Error ellipse: s-maj=10.7km s-min=5.2km az=11.3*
*TEH **31** 13:45:24.2,27°.79N×57°.24E, h29km, MLS.2*

ISC 31 13:45:22.8±1.2, 27°87N±0°03×57°31E±0°07, h30km, n42, σ1°17/44, Southern Iran

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
NIAN	**Nian**	**0.52**	**234**	*e*Pg	**Pb**	**13 45 33.1**	**-0.5**
NIAN	**Nian**	**0.52**	**234**	*e*Pg	**Pb**	**13 45 33.1**	**-0.5**
IBND	**Bandar-abas**	**0.80**	**238**	*e*Pg	**Pb**	**13 45 38.8**	**+0.6**
IBND				*e*AMB	AMB	13 45 39.1	
	comp=Z,60μm,0.1s						
IBND				*e*Sg	**Sb**	**13 45 47.7**	**-1.0**
IBND	**Bandar-abas**	**0.80**	**238**	*e*Pg	**Pb**	**13 45 38.8**	**+0.6**
IBND				*e*Sg	**Sb**	**13 45 47.7**	**-1.0**
GENO	**Geno**	**1.11**	**245**	*e*Pg	**Pb**	**13 45 43.0**	**-0.6**
GENO	**Geno**	**1.11**	**245**	*e*Pg	**Pb**	**13 45 43.0**	**-0.6**
BNDS	**Bandar-Abbas**	**1.11**	**245**	*e*Pg	**Pb**	**13 45 43.0**	**-0.6**
BNDS				AML	AML	13 46 01.1	
	comp=E,1μm,0.6s						
BNDS				AML	AML	13 46 02.9	
	comp=N,806nm,0.1s						
BNDS	**Bandar-Abbas**	**1.11**	**245**	*e*Pg	**Pb**	**13 45 43.0**	**-0.6**
KHSK	**Kohestak**	**1.13**	**192**	*e*Pg	**Pb**	**13 45 43.2**	**-0.6**
KHSK	**Kohestak**	**1.13**	**192**	*e*Pg	**Pb**	**13 45 43.2**	**-0.6**
NGRK	**Negar Kerman**	**1.84**	**344**	*e*Pn	**Pb**	**13 45 54.2**	**-1.8**
NGRK	**Negar Kerman**	**1.84**	**344**	*e*Pn	**Pb**	**13 45 54.2**	**-1.8**
CHMN	**Cheshme madani**	**1.99**	**6**	*e*Pn	**Pb**	**13 45 58.0**	**-0.6**
CHMN	**Cheshme madani**	**1.99**	**6**	*e*Pn	**Pb**	**13 45 58.0**	**-0.6**
BANOM	**Banah**	**2.14**	**205**	*e*P	**Pn**	**13 45 56.4**	**-0.1**
	SNR=28						
BANOM	**Banah**	**2.14**	**205**	P	**Pn**	**13 45 56.5**	**0.0**
	SNR=56						
BANOM				S	**Sb**	**13 46 27.3**	**+0.3**
BANOM	**Banah**	**2.14**	**205**	P	**Pn**	**13 45 56.5**	**0.0**
	SNR=56						
BANOM				S	**Sb**	**13 46 27.3**	**+0.3**
KRBR	**Kerman**	**2.16**	**347**	*e*Pg	**Pb**	**13 45 59.5**	**-1.8**
KRBR				*e*Sg	**Sb**	**13 46 29.2**	**+1.4**
KRBR				AML	AML	13 46 31.7	
	comp=E,154nm,0.6s						
KRBR	**Kerman**	**2.16**	**347**	*e*Pg	**Pb**	**13 45 59.5**	**-1.8**
KRBR				*e*Sg	**Sb**	**13 46 29.2**	**+1.4**
KHGB	**Koh Gabri**	**2.60**	**344**	*e*Pn	**Pb**	**13 46 06.5**	**-2.3**
KHGB	**Koh Gabri**	**2.60**	**344**	*e*Pn	**Pb**	**13 46 06.5**	**-2.3**
UOSS	**Minazif**	**3.08**	**199**	P	**Pn**	**13 46 08.6**	**-0.8**
HATD	**Hatta, Dubai**	**3.21**	**199**	P	**Pn**	**13 46 11.4**	**+0.2**
HATD	**Hatta, Dubai**	**3.21**	**199**	P	**Pn**	**13 46 11.4**	**+0.2**
ASHO	**Ashiyiah**	**3.37**	**200**	*i* P	**Pn**	**13 46 14.6**	**+1.2**
	SNR=7.1						
ASHO	**Ashiyiah**	**3.37**	**200**	P	**Pn**	**13 46 14.6**	**+1.2**
	SNR=7.1						
ASHO	**Ashiyiah**	**3.37**	**200**	P	**Pn**	**13 46 15.2**	**+1.8**
	SNR=7.1						
GHIR	**Ghir-Karzin**	**3.84**	**277**	*e*Pn	Pn	13 46 22.8	+2.8
GHIR	**Ghir-Karzin**	**3.84**	**277**	*e*Pn	Pn	13 46 22.8	+2.8
ISRV	**Sarvestan**	**3.98**	**293**	*e*Pn	**Pn**	**13 46 22.7**	**+0.6**
ISRV	**Sarvestan**	**3.98**	**293**	*e*Pn	**Pn**	**13 46 22.7**	**+0.6**
IBAF	**Bafgh**	**4.00**	**338**	*e*Pn	**Pn**	**13 46 23.7**	**+1.5**
IBAF				*e*AMB	AMB	13 46 54.5	
	comp=Z,131nm,0.2s						
IBAF				*e*Sg	Sb	13 47 30.7	+10
IBAF	**Bafgh**	**4.00**	**338**	*e*Pn	**Pn**	**13 46 23.7**	**+1.5**
IBAF				*e*Sg	Sb	13 47 30.7	+10
IMEH	**Mehriz**	**4.22**	**327**	*e*Pn	**Pn**	**13 46 27.3**	**+2.0**
IMEH				*e*AMB	AMB	13 46 29.1	
	comp=Z,146nm,0.1s						
IMEH	**Mehriz**	**4.22**	**327**	*e*Pn	**Pn**	**13 46 27.3**	**+2.0**
IPAR	**Pars**	**4.22**	**299**	*e*Pn	Pn	13 46 28.5	+3.1
IPAR				*e*AMB	AMB	13 48 05.1	
	comp=Z,142nm,0.4s						
IPAR	**Pars**	**4.22**	**299**	*e*Pn	Pn	13 46 28.5	+3.1
IKAZ	**Kazeroun**	**5.16**	**293**	*e*Pn	**Pn**	**13 46 38.6**	**+0.3**
IKAZ				*e*AMB	AMB	13 46 43.9	
	comp=Z,844nm,0.1s						
IKAZ	**Kazeroun**	**5.16**	**293**	*e*Pn	**Pn**	**13 46 38.6**	**+0.3**
IRAM	**Ramesheh**	**5.81**	**314**	*e*Pn	**Pn**	**13 46 48.1**	**+1.0**
IRAM				*e*AMB	AMB	13 46 50.8	
	comp=Z,53nm,0.0s						
IRAM	**Ramesheh**	**5.81**	**314**	*e*Pn	**Pn**	**13 46 48.1**	**+1.0**
IPIR	**Pirpir**	**7.33**	**312**	*e*AMB	AMB	13 47 14.2	
	comp=Z,67nm,0.1s						
IPIR				*e*Pn	**Pn**	**13 47 08.5**	**+0.4**

IDC 31 14:00:31.8±4.8, 6°32S×132°09E, h0km, mb3.4/1, mb1 3.3/3, mb1mx3.1/33, mbtmp3.1/3, ML3.0/2, Error ellipse: s-maj=319.9km s-min=34.0km az=74.0, Tanimbar Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**13.72**	**171**	Pn	Pn	14 03 49.0	+1.2
	0.1nm,0.3s,baz=352,slow=13,SNR=4.8						
WRA				Sn	Sn	14 06 10.7	-10
	0.2nm,0.3s,baz=2.3,slow=22,SNR=5.1						
ASAR	**Alice Springs**	**17.34**	**174**	P	Pn	14 04 34.6	-0.9
	0.1nm,0.3s,baz=352,slow=9.3,SNR=8.1						
ASAR				S	Sn	14 07 37.4	-12
	0.1nm,0.3s,baz=356,slow=29,SNR=3.6						
MKAR	**Makanchi Array**	**68.81**	**326**	P	P	14 11 38.1	0.0
	0.2nm,0.4s,baz=132,slow=6.1,SNR=3.1						

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*ISK **31** 14:06:44.9, 39°.00N×29°.27E, h7km, MD2.1*
*DDA **31** 14:06:45.8, 39°.08N×29°.06E, h7km, Md2.7*
*ISCJB **31** 14:06:46.2±0.5, 39°.08N±0°.04×29°.07E±0°.04, h9km, Error ellipse: s-maj=5.7km s-min=4.5km az=151.7*
*CSEM **31** 14:06:46.1±0.2, 39°.10N×29°.07E, h2km, MD2.7, Error ellipse: s-maj=5.1km s-min=3.9km az=115.0*

ISC 31 14:06:45.2±0.8, 39°02N±0°03×29°12E±0°03, h9km, n20, σ0°36/28, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.29**	**77**	P	**Pb**	**14 06 52.6**	**-0.1**
GDZ				S	**Sb**	**14 06 57.5**	**-0.2**
GDZ	**Gediz**	**0.29**	**77**	*i* P	**Pb**	**14 06 52.6**	**-0.1**
GDZ				*i* S	**Sb**	**14 06 57.5**	**-0.2**
DEMI	**Demirci**	**0.32**	**274**	P	**Pg**	**14 06 51.5**	**0.0**
DEMI				S	**Sg**	**14 06 55.4**	**-0.4**
DEMI	**Demirci**	**0.32**	**274**	*i* P	**Pg**	**14 06 51.5**	**0.0**
DEMI				*i* S	**Sg**	**14 06 55.4**	**-0.4**
TVSB	**Tavsanli**	**0.50**	**32**	*e*PG	**Pg**	**14 06 54.7**	**-0.3**
TVSB				*e*SG	**Sg**	**14 07 01.6**	**0.0**
TVSB	**Tavsanli**	**0.50**	**32**	*e*Pg	**Pg**	**14 06 54.7**	**-0.3**
TVSB				*e*Sg	**Sg**	**14 07 01.6**	**0.0**
KULA	**Kula-Manisa**	**0.62**	**215**	*e*PG	**Pb**	**14 06 58.4**	**+0.1**
KULA	**Kula-Manisa**	**0.62**	**215**	*e*Pg	**Pb**	**14 06 58.4**	**+0.1**
KHAL	**Karahalli**	**0.71**	**156**	P	**Pn**	**14 07 02.2**	**+0.6**
KHAL				S	**Sn**	**14 07 12.1**	**-0.6**
KHAL	**Karahalli**	**0.71**	**156**	*i* P	**Pn**	**14 07 02.2**	**+0.6**
KHAL				*i* S	**Sn**	**14 07 12.1**	**-0.6**
CAVI	**Cavuskoy**	**1.30**	**25**	*e*PN	**Pn**	**14 07 09.7**	**0.0**
CAVI	**Cavuskoy**	**1.30**	**25**	*e*Pn	**Pn**	**14 07 09.7**	**0.0**
BORA	**Eskisehir**	**1.34**	**50**	P	**Pg**	**14 07 11.5**	**+0.5**
BORA	**Eskisehir**	**1.34**	**50**	*i* P	**Pg**	**14 07 11.5**	**+0.5**
IZI	**Iznik**	**1.34**	**12**	*e*PN	**Pb**	**14 07 10.7**	**+0.1**
IZI	**Iznik**	**1.34**	**12**	*e*Pn	**Pb**	**14 07 10.7**	**+0.1**
KCTX	**Karacabey (Bur**	**1.37**	**335**	*e*PN	**Pg**	**14 07 12.2**	**+0.6**
KCTX	**Karacabey (Bur**	**1.37**	**335**	*e*Pn	**Pg**	**14 07 12.2**	**+0.6**
ARMT	**Armutlu**	**1.55**	**353**	*e*PN	**Pb**	**14 07 14.2**	**0.0**
ARMT	**Armutlu**	**1.55**	**353**	*e*Pn	**Pb**	**14 07 14.2**	**0.0**

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*ISK **31** 14:07:33.6, 39°.10N×28°.99E, h6km, MD2.5, ML2.5*
*CSEM **31** 14:07:34.4±0.1, 39°.11N×28°.96E, h5km, MD2.8, Error ellipse: s-maj=3.2km s-min=2.6km az=26.0*
*DDA **31** 14:07:34.3, 39°.09N×28°.97E, h8km, Md2.8*

ISC 31 14:07:34.1±0.9, 39°11N±0°03×28°97E±0°02, h16km±8km, n37, σ0°27/45, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.21**	**252**	P	**Pg**	**14 07 39.1**	**+0.1**
DEMI				S	**Sg**	**14 07 42.2**	**-0.1**
DEMI	**Demirci**	**0.21**	**252**	*i* P	**Pg**	**14 07 39.1**	**+0.1**
DEMI				*i* S	**Sg**	**14 07 42.2**	**-0.1**
GDZ	**Gediz**	**0.40**	**92**	P	**Pg**	**14 07 42.3**	**0.0**
GDZ				S	**Sg**	**14 07 48.0**	**+0.1**
GDZ	**Gediz**	**0.40**	**92**	*i* P	**Pg**	**14 07 42.3**	**0.0**
GDZ				*i* S	**Sg**	**14 07 48.0**	**+0.1**
TVSB	**Tavsanli**	**0.51**	**48**	*e*PG	**Pg**	**14 07 44.0**	**-0.4**
TVSB				*e*SG	**Sg**	**14 07 51.0**	**-0.3**
TVSB	**Tavsanli**	**0.51**	**48**	*e*Pg	**Pg**	**14 07 44.0**	**-0.4**
KULA	**Kula-Manisa**	**0.64**	**202**	*e*PG	**Pg**	**14 07 46.6**	**0.0**
KULA				*e*SG	**Sb**	**14 07 55.5**	**-0.1**
KHL	**Karahalli**	**0.89**	**151**	*e*PG	**Pb**	**14 07 51.0**	**-0.2**
KHL				*e*SG	**Sg**	**14 08 03.7**	**+0.5**
KHL	**Karahalli**	**0.89**	**151**	*e*Pg	**Pb**	**14 07 51.0**	**-0.2**
KHL				*e*Sg	**Sg**	**14 08 03.7**	**+0.5**
AKS	**Akhisar**	**0.93**	**256**	*e*PG	**Pb**	**14 07 51.9**	**+0.1**
BALB	**Balikesir**	**1.00**	**303**	*e*PG	**Pg**	**14 07 53.5**	**+0.1**
BALB	**Balikesir**	**1.00**	**303**	*e*Pg	**Pg**	**14 07 53.5**	**+0.1**
IGD	**Bursa**	**1.17**	**9**	*i* P	**Pn**	**14 07 55.4**	**-0.4**
BALY	**Balya**	**1.22**	**302**	P	**Pg**	**14 07 57.7**	**0.0**
BALY	**Balya**	**1.22**	**302**	*i* P	**Pg**	**14 07 57.7**	**0.0**
KCTX	**Karacabey (Bur**	**1.25**	**338**	*e*PN	**Pg**	**14 07 58.3**	**+0.1**
KCTX	**Karacabey (Bur**	**1.25**	**338**	*e*Pn	**Pg**	**14 07 58.3**	**+0.1**
MDNY	**Mudanya-Bursa**	**1.26**	**357**	*e*PN	**Pg**	**14 07 58.4**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.26**	**357**	*e*Pn	**Pg**	**14 07 58.4**	**-0.1**
CAVI	**Cavuskoy**	**1.29**	**31**	*e*PN	**Pg**	**14 07 58.8**	**-0.1**
CAVI	**Cavuskoy**	**1.29**	**31**	*e*Pn	**Pg**	**14 07 58.8**	**-0.1**
IZI	**Iznik**	**1.29**	**17**	*e*PN	**Pg**	**14 07 58.8**	**-0.2**
IZI	**Iznik**	**1.29**	**17**	*e*Pn	**Pg**	**14 07 58.8**	**-0.2**
GEMT	**Gemlik**	**1.34**	**7**	*e*PN	**Pg**	**14 07 59.7**	**-0.2**
GEMT	**Gemlik**	**1.34**	**7**	*e*Pn	**Pg**	**14 07 59.7**	**-0.2**
GONE	**Gonen-Balikesi**	**1.37**	**314**	*e*PN	**Pg**	**14 07 60.0**	**-0.4**
GONE	**Gonen-Balikesi**	**1.37**	**314**	*e*Pn	**Pg**	**14 08 00.0**	**-0.4**
BORA	**Eskisehir**	**1.39**	**56**	P	**Pg**	**14 08 01.0**	**+0.2**
BORA	**Eskisehir**	**1.39**	**56**	*i* P	**Pg**	**14 08 01.0**	**+0.2**
ADVT	**Abdulvahap**	**1.45**	**24**	*e*PN	**Pb**	**14 08 00.9**	**+0.2**
ADVT	**Abdulvahap**	**1.45**	**24**	*e*Pn	**Pb**	**14 08 00.9**	**+0.2**
ARMT	**Armutlu**	**1.46**	**357**	*e*PN	**Pb**	**14 08 01.5**	**+0.6**
ARMT	**Armutlu**	**1.46**	**357**	*e*Pn	**Pb**	**14 08 01.5**	**+0.6**
EDC	**Edincik**	**1.50**	**326**	*e*PN	**Pb**	**14 08 02.0**	**+0.4**
EDC	**Edincik**	**1.50**	**326**	*e*Pn	**Pb**	**14 08 02.0**	**+0.4**
ESKT	**Eskisehir**	**1.52**	**74**	*i* P	**Pg**	**14 08 03.5**	**+0.2**
SEYT	**Eskypehyr**	**1.52**	**74**	P	**Pg**	**14 08 03.5**	**+0.2**

NNC 31 14:14:55.9±2.4, 37°52N×71°58E, h0km, mb3.6, mpv3.2, 3C-2D, Error ellipse: s-maj=19.5km s-min=9.0km az=156.0, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**2.52**	**302**	⇑P	Pn	14 15 37.8	-0.4
	5.7nm,0.3s						
DZET				⇓S	Sn	14 16 11.2	+1.5
	15nm,0.4s						
MNAS	**Manas**	**5.02**	**8**	⇓P	Pn	14 16 13.3	+0.8
	1.7nm,0.6s						
MNAS				⇑S	Sn	14 17 12.3	+1.0
	3.7nm,0.6s						
KK31	**Karatay Array**	**5.64**	**352**	P	Pn	14 16 21.6	+0.6
	0.7nm,0.3s,baz=174,slow=13,SNR=14						
KK31				⇑S	Sn	14 17 27.2	+0.7
	0.8nm,0.3s,baz=176,slow=24,SNR=6.2						

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*ISK **31** 14:26:03.4, 39°.10N×29°.00E, h5km, MD2.3*
*DDA **31** 14:26:03.9, 39°.09N×29°.00E, h7km, Md2.6*
*ISCJB **31** 14:26:04.1±0.6, 39°.09N±0°.04×29°.00E±0°.05, h9km, Error ellipse: s-maj=7.3km s-min=4.0km az=145.4*
*CSEM **31** 14:26:04.1±0.1, 39°.11N×28°.98E, h5km, MD2.3, Error ellipse: s-maj=3.4km s-min=2.1km az=135.0*

ISC 31 14:26:04.1±0.9, 39°11N±0°04×29°00E±0°03, h9km, n18, σ0°36/26, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.23**	**254**	P	**Pg**	**14 26 09.1**	**+0.3**
DEMI				S	**Sg**	**14 26 12.4**	**+0.4**
DEMI	**Demirci**	**0.23**	**254**	*i* P	**Pg**	**14 26 09.1**	**+0.3**
DEMI				*i* S	**Sg**	**14 26 12.3**	**+0.4**
GDZ	**Gediz**	**0.38**	**93**	P	**Pg**	**14 26 11.7**	**+0.1**
GDZ				S	**Sg**	**14 26 17.2**	**+0.7**
GDZ	**Gediz**	**0.38**	**93**	*i* P	**Pg**	**14 26 11.7**	**+0.1**
GDZ				*i* S	**Sg**	**14 26 17.2**	**+0.7**
TVSB	**Tavsanli**	**0.50**	**46**	*e*PG	**Pg**	**14 26 13.8**	**0.0**
TVSB				*e*SG	**Sg**	**14 26 20.3**	**0.0**
TVSB	**Tavsanli**	**0.50**	**46**	*e*Pg	**Pg**	**14 26 13.8**	**0.0**
TVSB				*e*Sg	**Sg**	**14 26 20.3**	**0.0**
KULA	**Kula-Manisa**	**0.65**	**204**	*e*PG	**Pg**	**14 26 16.5**	**-0.2**
KULA				*e*SG	**Sg**	**14 26 25.1**	**0.0**
KULA	**Kula-Manisa**	**0.65**	**204**	*e*Pg	**Pg**	**14 26 16.5**	**-0.2**
KULA				*e*Sg	**Sg**	**14 26 25.1**	**0.0**
KCTX	**Karacabey (Bur**	**1.26**	**337**	*e*PN	**Pn**	**14 26 27.8**	**-0.1**
KCTX	**Karacabey (Bur**	**1.26**	**337**	*e*Pn	**Pn**	**14 26 27.8**	**-0.1**
CAVI	**Cavuskoy**	**1.27**	**30**	*e*PN	**Pn**	**14 26 28.4**	**+0.3**
CAVI	**Cavuskoy**	**1.27**	**30**	*e*Pn	**Pn**	**14 26 28.4**	**+0.3**
BORA	**Eskisehir**	**1.36**	**55**	P	**Pn**	**14 26 29.6**	**+0.1**
BORA	**Eskisehir**	**1.36**	**55**	*i* P	**Pn**	**14 26 29.6**	**+0.1**
ARMT	**Armutlu**	**1.46**	**356**	*e*PN	**Pn**	**14 26 31.3**	**+0.6**
ARMT	**Armutlu**	**1.46**	**356**	*e*Pn	**Pn**	**14 26 31.3**	**+0.6**
GULT	**Gulveren**	**1.77**	**41**	*e*PN	**Pb**	**14 26 36.1**	**-0.6**
GULT	**Gulveren**	**1.77**	**41**	*e*Pn	**Pb**	**14 26 36.1**	**-0.6**

NNC 31 14:43:31.5±6.3, 37°26N×71°33E, h20km±185km, mb3.5, mpv3.1, 1C-3D, Error ellipse: s-maj=223.2km s-min=17.5km az=156.0, Afghanistan-Tajikistan border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	**Dzherino**	**2.51**	**309**	⇓P	Pn	14 44 10.8	-0.4
	12nm,0.4s						
DZET				⇓S	Sn	14 44 42.1	+0.9
	8.4nm,0.2s						
MNAS	**Manas**	**5.30**	**9**	⇑P	Pn	14 44 50.2	+0.7
	1.5nm,0.7s						
MNAS				⇓S	Sn	14 45 50.8	+0.7
	1.9nm,0.6s						
KK31	**Karatay Array**	**5.87**	**354**	P	Pn	14 44 57.9	+0.5
	0.2nm,0.2s,baz=337,slow=39,SNR=7.3						
KK31				S	Sn	14 46 04.7	+0.7
	1.8nm,0.6s,baz=194,slow=25,SNR=4.7						

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*ISCJB **31** 14:47:01.0±0.5, 39°.11N±0°.04×29°.02E±0°.04, h9km, Error ellipse: s-maj=6.2km s-min=4.0km az=139.8*
*ISK **31** 14:47:00.3, 39°.09N×29°.07E, h9km, MD2.5*
*DDA **31** 14:47:01.0, 39°.11N×29°.01E, h7km, Md2.2*
*CSEM **31** 14:47:01.1±0.1, 39°.11N×29°.01E, h8km, MD2.5, Error ellipse: s-maj=2.9km s-min=2.1km az=110.0*

ISC 31 14:47:00.5±0.9, 39°06N±0°03×29°07E±0°03, h9km, n20, σ0°22/28, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.27**	**266**	P	**Pg**	**14 47 06.3**	**+0.3**
DEMI				S	**Sg**	**14 47 09.7**	**0.0**
DEMI	**Demirci**	**0.27**	**266**	*i* P	**Pg**	**14 47 06.3**	**+0.3**
DEMI				*i* S	**Sg**	**14 47 09.7**	**0.0**
GDZ	**Gediz**	**0.33**	**85**	P	**Pb**	**14 47 08.6**	**0.0**
GDZ				S	**Sb**	**14 47 13.7**	**-0.3**
GDZ	**Gediz**	**0.33**	**85**	*i* P	**Pb**	**14 47 08.6**	**0.0**
GDZ				*i* S	**Sb**	**14 47 13.7**	**-0.3**
TVSB	**Tavsanli**	**0.50**	**38**	PG	**Pg**	**14 47 10.7**	**+0.5**
TVSB				SG	**Sg**	**14 47 16.6**	**-0.2**
TVSB	**Tavsanli**	**0.50**	**38**	*i* Pg	**Pg**	**14 47 10.7**	**+0.5**
TVSB				*i* Sg	**Sg**	**14 47 16.6**	**-0.2**
KULA	**Kula-Manisa**	**0.63**	**210**	*e*PG	**Pb**	**14 47 13.5**	**-0.3**
KULA				*e*SG	**Sb**	**14 47 22.8**	**+0.1**
KULA	**Kula-Manisa**	**0.63**	**210**	*e*Pg	**Pb**	**14 47 13.5**	**-0.3**
KULA				*e*Sg	**Sb**	**14 47 22.8**	**+0.1**
KHAL	**Karahalli**	**0.77**	**154**	P	**Pn**	**14 47 17.6**	**0.0**
KHAL	**Karahalli**	**0.77**	**154**	*i* P	**Pn**	**14 47 17.6**	**0.0**
ORLT	**Orhaneli**	**0.99**	**352**	*e*PG	**Pb**	**14 47 19.8**	**-0.1**
ORLT	**Orhaneli**	**0.99**	**352**	*e*Pg	**Pb**	**14 47 19.8**	**-0.1**
CAVI	**Cavuskoy**	**1.29**	**28**	*e*PN	**Pn**	**14 47 24.8**	**0.0**
CAVI	**Cavuskoy**	**1.29**	**28**	*e*Pn	**Pn**	**14 47 24.8**	**0.0**
IZI	**Iznik**	**1.31**	**14**	*e*PN	**Pn**	**14 47 24.9**	**-0.3**
IZI	**Iznik**	**1.31**	**14**	*e*Pn	**Pn**	**14 47 24.9**	**-0.3**
KCTX	**Karacabey (Bur**	**1.32**	**336**	*e*PN	**Pn**	**14 47 25.2**	**0.0**
KCTX	**Karacabey (Bur**	**1.32**	**336**	*e*Pn	**Pn**	**14 47 25.2**	**0.0**
ARMT	**Armutlu**	**1.51**	**354**	*e*PN	**Pb**	**14 47 27.7**	**-0.1**
ARMT	**Armutlu**	**1.51**	**354**	*e*Pn	**Pn**	**14 47 27.7**	**-0.1**

DDA 31 15:10:42.9, 40°76N×41°94E, h7km, Md2.2, Suspected Mining explosion., Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DDEM	**Demirkent**	**0.19**	**313**	*i* P	Pg	15 10 47.1	+0.3
DDEM				*i* S	Sg	15 10 50.6	+1.1
DBAD	**Bademkaya**	**0.32**	**325**	*i* P	Pg	15 10 49.4	+0.3
DBAD				*i* S	Sg	15 10 54.0	+0.7
DAGI	**Agillar**	**0.32**	**357**	*i* P	Pg	15 10 49.2	0.0
ARTV	**Artvin**	**0.42**	**359**	*i* P	Pg	15 10 51.6	+0.5
ARTV				*i* S	Sg	15 10 57.9	+1.1

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*CSEM **31** 15:10:47.3, 41°.44N×44°.43E, h0km, ML1.6*

TIF 31 15:10:47.3, 41°44N×44°43E, h0km, Western Caucasus

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KZR	**Kazreti**	**0.06**	**191**	P	P

σ1§41/74, mb4.6/35, MS3.5/16, Near north coast of Irian Jaya

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JAY	**Jayapura**	**0.55**	**88**	Pg	**Pb**	**15 17 49.8**	**-1.8**
	181nm,0.3s,baz=240,slow=20,SNR=3352						
JAY				Lg	Lg	15 17 56.5	
	461nm,0.3s,baz=308,slow=20,SNR=117						
MANU	**Manus Island**	**7.22**	**86**	*e*Pn	**Pn**	**15 19 25.3**	**+0.7**
FAKI	**Fak Fak**	**7.91**	**267**	*e*Pn	**Pn**	**15 19 35.0**	**+0.9**
PMG	**Port Moresby**	**9.74**	**135**	Pn	**Pn**	**15 19 59.7**	**+0.4**
	0.5nm,0.3s,baz=51,slow=6.5,SNR=2.8						
PMG				LR	LR	15 24 52.8	
	comp=Z,351nm,19.3s,baz=308,slow=44						
PMG	**Port Moresby**	**9.74**	**135**	*e*Pn	**Pn**	**15 20 00.3**	**+1.0**
MTN	**Manton Dam**	**13.59**	**221**	*e*Pn	**Pn**	**15 20 51.1**	**-0.8**
GUMO	**Guam**	**16.69**	**16**	LR	LR	15 28 20.0	
	comp=Z,194nm,18.2s,baz=202,slow=39						
SOEI	**Soe**	**17.34**	**245**	*e*Pn	**P**	**15 21 44.8**	**+2.2**
	130nm,1.1s						
WRAB	**Tennant Creek**	**18.20**	**198**	*e*P	**P**	**15 21 52.4**	**+0.6**
	56nm,1.4s						
WB2	**Warramunga Arr**	**18.21**	**198**	*e*P	**Pn**	**15 21 51.7**	**-0.1**
	21nm,0.6s						
WRA	**Warramunga Arr**	**18.21**	**198**	P	**Pn**	**15 21 51.4**	**-0.4**
	1.8nm,0.3s,baz=20,slow=12,SNR=63						
WRA				S	Sn	15 25 04.3	-10
	0.2nm,0.3s,baz=15,slow=22,SNR=5.5						
CTA	**Charters Tower**	**18.43**	**162**	P	**Pn**	**15 21 55.8**	**+1.2**
	0.2nm,0.3s,baz=330,slow=14,SNR=3.6						
CTAO	**Charters Tower**	**18.43**	**162**	*e*P	**P**	**15 21 52.4**	**-1.9**
	15nm,1.3s						
KAPI	**Kappang**	**20.51**	**263**	LR	LR	15 32 25.8	
	comp=Z,32nm,21.3s,baz=92,slow=43						
HNR	**Honiara**	**20.83**	**110**	LR	LR	15 30 38.5	
	comp=Z,42nm,19.1s,baz=318,slow=37						
FITZ	**Fitzroy Crossi**	**21.02**	**222**	P	**P**	**15 22 22.8**	**+0.1**
	20nm,0.8s,baz=40,slow=7.3,SNR=21						
FITZ				S	**S**	**15 26 09.8**	**-6.0**
	11nm,0.8s,baz=34,slow=18,SNR=4.6						
FITZ				LR	LR	15 31 08.2	
	comp=Z,135nm,19.5s,baz=46,slow=38						
FITZ	**Fitzroy Crossi**	**21.02**	**222**	*e*P	**P**	**15 22 23.0**	**+0.4**
	19nm,0.8s						
FITZ				*e*S	**S**	**15 26 11.8**	**-3.9**
AS01	**Alice Springs**	**21.85**	**195**	*e*P	**P**	**15 22 31.3**	**-0.2**
AS31	**Alice Springs**	**21.86**	**196**	*e*P	**P**	**15 22 32.1**	**+0.5**
	7.6nm,0.6s						
ASAR	**Alice Springs**	**21.86**	**196**	P	**P**	**15 22 32.1**	**+0.4**
	8.8nm,0.6s,baz=25,slow=12,SNR=66						
ASAR				S	**S**	**15 26 32.7**	**+0.5**
	3.9nm,0.8s,baz=13,slow=28,SNR=4.7						
ASAR				LR	LR	15 31 46.5	
	comp=Z,166nm,19.7s,baz=22,slow=39						
EIDS	**Eidsvold**	**25.02**	**156**	*e*P	**P**	**15 23 04.2**	**+1.5**
	42nm,0.9s						
MBWA	**Marble Bar**	**27.17**	**226**	*e*P	**P**	**15 23 23.0**	**+0.6**
	35nm,0.8s						
STKA	**Stephens Creek**	**29.22**	**177**	P	**P**	**15 23 41.8**	**+1.4**
	5.0nm,1.0s,baz=332,slow=12,SNR=5.3						
STKA				LR	LR	15 37 04.4	
	comp=Z,299nm,19.7s,baz=14,slow=40						
JCJ	**Chichijima**	**29.52**	**4**	LR	LR	15 34 02.1	
	comp=Z,75nm,19.2s,baz=356,slow=34						
H11S3	**WAKE ISLAND Hy 33.45**		**50**	T	T	15 59 25.7	
	baz=231,slow=75,SNR=56						
H11S2	**WAKE ISLAND Hy 33.46**		**50**	T	T	15 59 27.4	
	baz=231,slow=75,SNR=32						
H11S1	**WAKE ISLAND Hy 33.47**		**50**	T	T	15 59 26.6	
	baz=231,slow=75,SNR=32						
H11N1	**WAKE ISLAND Hy 34.32**		**49**	T	T	16 00 32.4	
	baz=229,slow=76,SNR=34						
H11N2	**WAKE ISLAND Hy 34.34**		**49**	T	T	16 00 32.9	
	baz=229,slow=76,SNR=29						
H11N3	**WAKE ISLAND Hy 34.34**		**49**	T	T	16 00 33.7	
	baz=229,slow=76,SNR=33						
QIZ	**Qiongzhong**	**36.72**	**307**	P	**P**	**15 24 47.0**	**+0.9**
MJAR	**Matsushiro Arr**	**38.92**	**357**	LR	LR	15 39 01.1	
	comp=Z,38nm,18.6s,baz=155,slow=33						
KSAR	**Wonju Array Be**	**41.38**	**345**	P	**P**	**15 25 24.0**	**-0.8**
KSRS	**Korea Array**	**41.38**	**345**	P	**P**	**15 25 24.0**	**-0.8**
	0.5nm,0.5s,baz=162,slow=8.4,SNR=4.5						
KSRS				LR	LR	15 40 28.9	
	comp=Z,43nm,20.5s,baz=127,slow=33						
PSI	**Prapat**	**41.56**	**277**	P	**P**	**15 25 25.5**	**-1.4**
	5.2nm,0.5s,baz=94,slow=4.0,SNR=6.6						
PSI	**Prapat**	**41.56**	**277**	*e*P	**P**	**15 25 25.6**	**-1.2**
	9.3nm,0.9s						
KMI	**Kunming**	**45.52**	**309**	P	**P**	**15 25 59.8**	**+1.1**
KMI				pmax	pmax		
	comp=Z,4.0nm,1.0s						
CM01	**Chiang Mai Arr**	**45.59**	**299**	*e*P	**P**	**15 25 58.1**	**-1.0**
CMAR	**Chiang Mai Arr**	**45.62**	**299**	P	**P**	**15 25 59.0**	**-0.3**
	comp=Z,1.8nm,0.7s,baz=119,slow=6.7,SNR=13						
BJI	**Beijing**	**47.73**	**335**	P	**P**	**15 26 16.5**	**+1.0**
BJI				pmax	pmax		
	comp=Z,4.0nm,0.5s						
CD2	**Chengdu**	**48.04**	**317**	P	**P**	**15 26 18.0**	**-0.1**
CD2				pmax	pmax		
	comp=Z,11nm,0.7s						
HHC	**Hu-ho-hao-te**	**50.45**	**332**	*e*P	**P**	**15 26 38.3**	**+1.8**
HHC				S	**S**	**15 33 47.5**	**-1.3**
HHC				pmax	pmax		
	comp=Z,24nm,1.0s						
HHC				pmax	pmax		
	comp=Z,140nm,6.3s						
HHC				LR	LR		
	comp=N,320nm,15.6s						
HHC				LR	LR		
	comp=E,420nm,15.1s						
HHC				LR	LR		
	comp=Z,420nm,16.0s						
LZH	**Lanzhou**	**51.23**	**322**	*e*P	**P**	**15 26 45.0**	**+2.5**
LZH				pP	sP	15 26 55.0	+1.8
LZH				sP	pP	15 26 59.0	+8.8
LZH				pmax	pmax		
	comp=Z,37nm,1.3s						
GTA	**Gaotai**	**55.80**	**323**	*e*P	**P**	**15 27 16.5**	**+0.5**
GTA				pP	sP	15 27 29.0	+2.2
GTA				sP	pP	15 27 34.5	+11
GTA				pmax	pmax		
	comp=Z,3.0nm,1.2s						
PETK	**Petropavlovsk-**	**57.37**	**12**	P	**P**	**15 27 25.8**	**-0.9**
	comp=Z,1.6nm,0.8s,baz=192,slow=13,SNR=2.6						
PETK				LR	LR	15 55 48.8	
	comp=Z,17nm,18.0s,baz=190,slow=40						
SONM	**Songino Array**	**58.19**	**334**	P	**P**	**15 27 31.9**	**-0.8**
	comp=Z,0.3nm,0.4s,baz=151,slow=3.3,SNR=3.3						
SONM				LR	LR	15 52 41.3	
	comp=Z,53nm,19.3s,baz=97,slow=36						
WMQ	**Urumqi**	**65.78**	**321**	*e*P	**P**	**15 28 26.0**	**+2.2**
WMQ				pmax	pmax		
	comp=Z,7.0nm,0.6s						
WMQ				pmax	pmax		
	comp=Z,54nm,6.2s						
MK01	**Makanchi Array**	**70.53**	**322**	*e*P	**P**	**15 28 53.6**	**+0.1**
MK31	**Makanchi Array**	**70.54**	**322**	*e*P	**P**	**15 28 53.6**	**0.0**
MKAR	**Makanchi Array**	**70.54**	**322**	P	**P**	**15 28 54.0**	**+0.4**
	comp=Z,4.5nm,0.8s,baz=92,slow=8.8,SNR=30						
MKAR	**Makanchi Array**	**70.54**	**322**	*e*P	**P**	**15 28 53.8**	**+0.3**
MAKZ	**Makanchi**	**70.74**	**322**	*e*P	**P**	**15 28 55.0**	**+0.2**
	comp=Z,7.7nm,0.9s						
KSH	**Kashi**	**72.02**	**313**	*e*P	**P**	**15 29 05.0**	**+2.2**
KSH				*es*P	PcP	15 29 22.3	+1.0
KSH				*e*PP	PP	15 31 48.5	+5.5
KSH				S	**S**	**15 38 24.0**	**+0.7**
KSH				SKS	**SKSac**	**15 39 01.5**	**-4.2**
KSH	**Kashi**	**72.02**	**313**	SS	SS	15 43 06.0	+5.4
KSH				pmax	pmax		
	comp=Z,110nm,6.7s						
KSH				LR	LR		
	comp=N,210nm,11.5s						
KSH				LR	LR		
	comp=E,180nm,10.2s						
ZAA0	**Zalesovo Array**	**72.52**	**329**	*e*P	**P**	**15 29 04.1**	**-1.2**
ZALV	**Zalesovo Beam**	**72.52**	**329**	P	**P**	**15 29 04.7**	**-0.6**
	comp=E,1.2nm,0.3s,baz=123,slow=5.3,SNR=8.3						
ZALV				LR	LR	16 00 46.4	
	comp=E,28nm,20.5s,baz=66,slow=36						
TIXI	**Tiksi**	**74.42**	**356**	*e*P	**P**	**15 29 15.7**	**-0.4**
	comp=E,8.9nm,1.8s						
VNDA	**Vanda**	**75.83**	**175**	P	**P**	**15 29 24.7**	**+0.5**
	comp=E,0.6nm,0.5s,baz=331,slow=6.8,SNR=8.5						
VNDA				LR	LR	16 02 40.1	
	comp=E,82nm,18.9s,baz=356,slow=36						
NRIK	**Noril'sk**	**79.97**	**343**	P	**P**	**15 29 46.7**	**-0.6**
	comp=E,2.5nm,0.7s,baz=110,slow=5.7,SNR=6.4						
NRIK				LR	LR	16 04 45.3	
	comp=E,22nm,21.2s,baz=26,slow=35						
BRVK	**Borovoye**	**80.07**	**325**	*e*P	**P**	**15 29 47.8**	**-0.4**
	comp=E,26nm,1.5s						
ZRNK	**Zerenda**	**80.78**	**325**	*e*P	**P**	**15 29 51.9**	**-0.1**
	comp=E,7.1nm,1.2s						
RC01	**Rabbit Creek A**	**82.72**	**27**	*e*P	**P**	**15 30 01.6**	**-0.4**
MLY	**Manley**	**83.60**	**24**	*e*P	**P**	**15 30 06.5**	**-0.1**
	comp=E,11nm,1.5s						
RND	**Reindeer**	**83.84**	**25**	*e*P	**P**	**15 30 07.0**	**-0.9**
	comp=E,4.3nm,0.8s						
WRH	**Wood River Hil**	**84.50**	**24**	*e*P	**P**	**15 30 10.0**	**-1.1**
	comp=E,15nm,1.6s						
DIV	**Divide**	**84.57**	**28**	*e*P	**P**	**15 30 11.8**	**+0.2**
	comp=E,8.6nm,0.7s						
CCB	**Clear Creek Bu**	**84.67**	**24**	*e*P	**P**	**15 30 10.7**	**-1.2**
	comp=E,20nm,1.7s						
IL1	**Eielson Array**	**85.08**	**24**	*e*P	**P**	**15 30 12.4**	**-1.7**
ILAR	**Eielson Array**	**85.08**	**24**	P	**P**	**15 30 12.7**	**-1.4**
	comp=E,1.4nm,0.7s,baz=259,slow=4.6,SNR=18						
ILB	**Eielson Array**	**85.08**	**24**	*e*P	**P**	**15 30 12.4**	**-1.7**
PAX	**Paxson**	**85.19**	**26**	*e*P	**P**	**15 30 14.4**	**-0.3**
GEYT	**Alibeck**	**85.27**	**308**	P	**P**	**15 30 16.3**	**+0.6**
	comp=E,3.3nm,0.8s,baz=163,slow=1.5,SNR=6.0						
QSPA	**South Pole Qui**	**87.41**	**180**	*e*P	**P**	**15 30 25.8**	**+0.1**
	comp=E,17nm,0.9s						
DAWY	**Dawson**	**88.09**	**26**	*e*P	**P**	**15 30 29.6**	**+0.8**
	comp=E,7.1nm,1.1s						
YBH	**Yreka Blue Hor**	**97.01**	**48**	LR	LR	16 05 20.0	
	comp=E,84nm,20.4s,slow=30						
YKA	**Yellowknife Ar**	**99.25**	**27**	P	**Pdif**	**15 31 20.8**	**+0.7**
	comp=E,0.2nm,0.5s,baz=289,slow=5.6,SNR=2.8						
NVAR	**Mina Array Bea**	**100.61**	**52**	P	**Pdif**	**15 31 27.9**	**+0.8**
	comp=E,0.3nm,0.3s,baz=262,slow=11,SNR=2.8						
TORD	**Torodi Ar. Bea**	**137.60**	**287**	PKP	**PKPdf**	**15 37 04.9**	**+1.4**
	comp=E,0.8nm,1.0s,baz=76,slow=2.8,SNR=3.1						
DBIC	**Dimbokro**	**144.90**	**278**	PKP	**PKPab**	**15 37 15.7**	**-0.2**
	comp=E,6.2nm,0.7s,baz=52,slow=4.1,SNR=10						
LPAZ	**La Paz**	**146.37**	**125**	PKPbc	**PKPbc**	**15 37 21.4**	**+0.3**
	comp=E,3.4nm,0.6s,baz=265,slow=2.9,SNR=12						
CPUP	**Villa Florida**	**146.69**	**151**	PKPbc	**PKPab**	**15 37 22.2**	**0.0**
	comp=E,1.2nm,0.6s,baz=275,slow=2.7,SNR=4.9						

IDC 31 15:22:38.8±5.3, 3°26S×102°86E, h0km, mb3.6/3, mb1 3.7/3, mb1mx3.4/37, mbtmp3.6/3, Error ellipse: s-maj=294.9km s-min=28.9km az=51.0, Southern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**34.90**	**121**	P	P	15 29 32.7	+0.3
	0.5nm,0.8s,baz=299,slow=8.5,SNR=2.5						
ASAR	**Alice Springs**	**36.21**	**127**	P	P	15 29 43.4	-0.3
	0.7nm,0.6s,baz=296,slow=8.0,SNR=4.3						
MKAR	**Makanchi Array**	**53.05**	**342**	P	P	15 31 58.0	+0.4
	0.5nm,0.5s,baz=161,slow=8.7,SNR=4.6						
MKAR				pP	pP	15 32 10.8	
	0.6nm,0.5s,baz=153,slow=9.1,SNR=5.5						
TXAR	**Lajitas Array**	**143.85**	**41**	PKP	PKPbc	15 42 14.3	-0.2
	0.4nm,0.5s,baz=244,slow=1.2,SNR=9.1						

JMA 31 15:22:41.3±0.1, 39°06N×142°41E, h32km±1km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.58**	**272**	P	Pb	15 22 52.9	-0.2
OFUJ				S	Sb	15 23 00.8	-0.3
MIYJ	**Miyakonagasawa**	**0.69**	**319**	P	Pn	15 22 54.4	-0.4
MIYJ				S	Sb	15 23 03.5	-0.7
JMK	**Ichinoseki**	**0.93**	**264**	P	Pn	15 22 58.2	0.0
JMK				S	Sn	15 23 10.1	-0.3
JOM	**Ohasama**	**0.96**	**296**	P	Pn	15 22 58.9	+0.3
JOM				*e*S	Sn	15 23 11.4	+0.3
JTH	**Tanohata**	**0.97**	**334**	P	Pn	15 22 58.7	-0.1
JTH				*e*S	Sb	15 23 12.9	+0.7
JIO	**Ouri**	**1.03**	**234**	P	Pn	15 22 58.8	-0.6
JIO				*e*S	Sn	15 23 11.1	-1.6
JKZ	**Kuzumaki**	**1.25**	**318**	P	Pb	15 23 03.4	-0.9
JKZ				S	Sb	15 23 19.6	-0.4
JRG	**Rokugo**	**1.42**	**284**	P	Pb	15 23 06.4	-0.8
JRG				S	Sb	15 23 24.7	-0.2
JANG	**Nango**	**1.48**	**333**	P	Pn	15 23 06.6	+0.9
JANG				*e*S	Sb	15 23 26.0	-0.7
JOU	**Okura**	**1.53**	**244**	P	Pn	15 23 07.4	+1.0

*CSEM **31** 15:23:31.8±0.1, 37°26N×37°07E, h1km, MD2.5, Error ellipse: s-maj=3.9km s-min=3.0km az=94.0, Suspected Mining explosion.*
*ISK **31** 15:23:32.7, 37°12N×37°23E, h9km, MD2.5*
*ISCJB **31** 15:23:33.1±0.6, 37°19N±0°04×37°10E±0°04, h0km, Error ellipse: s-maj=6.0km s-min=4.5km az=158.2*
*DDA **31** 15:23:33.2, 37°18N×37°09E, h7km, Md2.6, Suspected Mining explosion.*

ISC 31 15:23:32.8±0.9, 37°12N±0°04×37°12E±0°04, h0km, n12, σ0§59/20, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GAZ	**Gaziantep**	**0.09**	**53**	*e*PG	**Pg**	**15 23 34.5**	**0.0**
GAZ				*e*SG	**Sg**	**15 23 36.7**	**+1.0**
GAZ	**Gaziantep**	**0.09**	**53**	*e*Pg	**Pg**	**15 23 34.6**	**0.0**
KUZU	**Kuzuini**	**0.35**	**186**	P	**Pb**	**15 23 41.1**	**-0.8**
KUZU				S	**Sb**	**15 23 48.1**	**+0.2**
KUZU	**Kuzuini**	**0.35**	**186**	*i* P	**Pb**	**15 23 41.1**	**-0.8**
KUZU				*i* S	**Sb**	**15 23 48.1**	**+0.2**
KAMA	**Osmaniye**	**0.37**	**281**	*i* P	**Pg**	**15 23 39.6**	**-0.2**
KAMA				*i* S	**Sg**	**15 23 46.0**	**+1.4**
GZT	**Gaziantep**	**0.43**	**56**	*i* P	**Pg**	**15 23 41.1**	**+0.2**
TAHT	**Tahtakopru-Hat**	**1.05**	**226**	*e*PN	**Pn**	**15 23 54.7**	**-0.1**
TAHT				*e*SN	**Sn**	**15 24 10.5**	**+0.2**
TAHT	**Tahtakopru-Hat**	**1.05**	**226**	*e*Pn	**Pn**	**15 23 54.7**	**-0.1**
TAHT				*e*Sn	**Sn**	**15 24 10.5**	**+0.2**
YAYL	**Yayladag**	**1.35**	**217**	P	**Pg**	**15 23 58.6**	**-0.2**
YAYL				S	**Sn**	**15 24 18.5**	**+0.7**
YAYL	**Yayladag**	**1.35**	**217**	*i* P	**Pg**	**15 23 58.6**	**-0.2**
YAYL				*i* S	**Sn**	**15 24 18.5**	**+0.7**
SARI	**SarD1z-Kayseri**	**1.40**	**337**	*e*PN	**Pg**	**15 23 59.5**	**-0.2**
DARE	**Darende-Malaty**	**1.48**	**11**	*e*PN	**Pn**	**15 23 60.0**	**-0.8**

*ISK **31** 15:32:38.6, 39°09N×29°09E, h8km, MD2.8*
*DDA **31** 15:32:38.8, 39°13N×29°06E, h7km, Md2.6*
*ISCJB **31** 15:32:39.0±0.5, 39°10N±0°03×29°07E±0°04, h5km±7km, Error ellipse: s-maj=5.9km s-min=4.2km az=140.7*
*CSEM **31** 15:32:39.2±0.1, 39°10N×29°07E, h5km, MD2.6, Error ellipse: s-maj=1.6km s-min=1.2km az=123.0*

ISC 31 15:32:39.4±1.0, 39°10N±0°02×29°06E±0°03, h8km±12km, n33, σ0§29/44, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**258**	P	**Pg**	**15 32 45.0**	**+0.1**
DEMI				S	**Sg**	**15 32 48.8**	**+0.2**
DEMI	**Demirci**	**0.28**	**258**	*i* P	**Pg**	**15 32 45.0**	**+0.1**
DEMI				*i* S	**Sg**	**15 32 48.8**	**+0.2**
GDZ	**Gediz**	**0.33**	**92**	P	**Pg**	**15 32 45.7**	**-0.2**
GDZ				S	**Sg**	**15 32 50.5**	**+0.3**
GDZ	**Gediz**	**0.33**	**92**	*i* P	**Pg**	**15 32 45.7**	**-0.2**
GDZ				*i* S	**Sg**	**15 32 50.5**	**+0.3**
TVSB	**Tavsanli**	**0.47**	**42**	*e*PG	**Pg**	**15 32 48.0**	**-0.5**
TVSB				*e*SG	**Sg**	**15 32 54.8**	**+0.2**
TVSB	**Tavsanli**	**0.47**	**42**	*e*Pg	**Pg**	**15 32 48.0**	**-0.5**
TVSB				*e*Sg	**Sg**	**15 32 54.8**	**+0.2**
KULA	**Kula-Manisa**	**0.67**	**208**	*e*PG	**Pg**	**15 32 52.0**	**-0.3**
KULA				*e*SG	**Sg**	**15 33 00.8**	**-0.2**
KULA	**Kula-Manisa**	**0.67**	**208**	*e*Pg	**Pg**	**15 32 52.0**	**-0.3**
KULA				*e*Sg	**Sg**	**15 33 00.8**	**-0.2**
KHAL	**Karahalli**	**0.81**	**155**	P	**Pg**	**15 32 55.0**	**+0.1**
KHAL				S	**Sg**	**15 33 05.3**	**-0.1**
KHAL	**Karahalli**	**0.81**	**155**	*i* P	**Pg**	**15 32 55.0**	**+0.1**
KHAL				*i* S	**Sg**	**15 33 05.3**	**-0.1**
ORLT	**Orhaneli**	**0.95**	**352**	*e*PG	**Pg**	**15 32 57.8**	**+0.1**
ORLT	**Orhaneli**	**0.95**	**352**	*e*Pg	**Pg**	**15 32 57.8**	**+0.1**
AKHS	**Akhisar**	**1.00**	**257**	P	**Pb**	**15 32 58.8**	**-0.2**
AKHS	**Akhisar**	**1.00**	**257**	*i* P	**Pb**	**15 32 58.9**	**-0.2**
AKS	**Akhisar**	**1.00**	**257**	*e*PG	**Pb**	**15 32 59.0**	**0.0**
AKS	**Akhisar**	**1.00**	**257**	*e*Pg	**Pb**	**15 32 59.0**	**0.0**
IGD	**Bursa**	**1.17**	**5**	*i* P	**Pg**	**15 33 00.6**	**-1.2**
IGD				*i* S	**Sg**	**15 33 16.9**	**0.0**
CAVI	**Cavuskoy**	**1.25**	**29**	*e*PN	**Pg**	**15 33 03.6**	**+0.2**
CAVI	**Cavuskoy**	**1.25**	**29**	*e*Pn	**Pg**	**15 33 03.6**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.27**	**354**	*e*PN	**Pn**	**15 33 03.3**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.27**	**354**	*e*Pn	**Pn**	**15 33 03.3**	**-0.3**
KCTX	**Karacabey (Bur**	**1.28**	**335**	*e*PN	**Pb**	**15 33 03.9**	**0.0**
KCTX	**Karacabey (Bur**	**1.28**	**335**	*e*Pn	**Pb**	**15 33 03.9**	**0.0**
GONE	**Gonen-Balikesi**	**1.42**	**312**	*e*PN	**Pn**	**15 33 05.6**	**0.0**
GONE	**Gonen-Balikesi**	**1.42**	**312**	*e*Pn	**Pn**	**15 33 05.6**	**0.0**
ARMT	**Armutlu**	**1.47**	**354**	*e*PN	**Pn**	**15 33 06.6**	**+0.3**
ARMT	**Armutlu**	**1.47**	**354**	*e*Pn	**Pn**	**15 33 06.6**	**+0.3**
AYDB	**Zeytinkoy-Aydi**	**1.48**	**219**	*e*PN	**Pn**	**15 33 06.4**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**1.48**	**219**	*e*Pn	**Pn**	**15 33 06.4**	**-0.1**
GULT	**Gulveren**	**1.74**	**40**	*e*PN	**Pn**	**15 33 10.3**	**+0.3**
GULT	**Gulveren**	**1.74**	**40**	*e*Pn	**Pn**	**15 33 10.4**	**+0.3**
RKY	**Sarkoy-Tekirda**	**2.15**	**318**	*e*PN	**Pn**	**15 33 15.9**	**+0.3**
RKY	**Sarkoy-Tekirda**	**2.15**	**318**	*e*Pn	**Pn**	**15 33 15.9**	**+0.3**

IDC 31 15:54:29.9±3.0, 15°98S×173°41W, h0km, mb3.6/4, mb1 3.9/5, mb1mx3.7/28, mbtmp3.6/5, ML3.5/1, MS3.4/1, Ms1 3.4/1, ms1mx2.7/34, Error ellipse: s-maj=159.5km s-min=22.9km az=144.0, Tonga Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
AFI	**Afiamalu**	**2.59**	**38**	Pn	Pn	15 55 11.4	-1.8
	9.8nm,0.3s,baz=317,slow=12,SNR=16						
AFI				Sn	Sn	15 55 37.1	-8.4
	24nm,0.3s,baz=233,slow=20,SNR=9.8						
HNR	**Honiara**	**26.77**	**281**	LR	LR	16 09 39.4	
	comp=Z,71nm,18.6s,baz=201,slow=34						
H11S2	**WAKE ISLAND Hy 39.45**		**329**	T	T	16 43 31.9	
	baz=145						
H11S3	**WAKE ISLAND Hy 39.46**		**329**	T	T	16 43 30.2	
	baz=145						
H11S1	**WAKE ISLAND Hy 39.47**		**329**	T	T	16 43 31.3	
	baz=145						
H11N3	**WAKE ISLAND Hy 40.41**		**331**	T	T	16 44 42.4	
	baz=153						
H11N1	**WAKE ISLAND Hy 40.41**		**331**	T	T	16 44 45.2	
	baz=153						
H11N2	**WAKE ISLAND Hy 40.42**		**331**	T	T	16 44 43.0	
	baz=153						
WRA	**Warramunga Arr**	**49.70**	**257**	P	P	16 03 23.6	-0.6
	0.4nm,0.7s,baz=91,slow=6.6,SNR=5.9						
ASAR	**Alice Springs**	**49.92**	**252**	P	P	16 03 25.1	-0.8
	0.9nm,0.7s,baz=90,slow=7.7,SNR=11						
PDAR	**Pinedale Array**	**82.70**	**42**	P	P	16 06 55.7	-0.2
	0.2nm,0.5s,baz=230,slow=4.2,SNR=3.3						
ILAR	**Eielson Array**	**83.01**	**11**	P	P	16 06 56.9	+0.2
	0.4nm,0.6s,baz=225,slow=5.9,SNR=7.2						
BRTR	**Keskin Array B**	**146.59**	**320**	PKPbc	PKPbc	16 14 13.8	-0.1
	2.0nm,0.8s,baz=134,slow=1.7,SNR=12						
GERES	**GERESS Array B**	**146.71**	**351**	PKPbc	PKPbc	16 14 14.3	+0.4
	0.5nm,0.5s,baz=66,slow=1.6,SNR=6.6						

*MEX **31** 16:16:23.0±0.7, 15°95N×93°05W, h104km±122km, MD4.2*

IDC 31 16:16:29.1±9.3, 15°40N×93°36W, h106km±60km, mb3.1/2, mb1 3.5/4, mb1mx3.2/40, mbtmp3.6/4, Error ellipse: s-maj=110.9km s-min=50.8km az=164.0, Near coast of Chiapas

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PCIG		**0.33**	**24**	*e*P	Pn	16 16 36.4	-8.2
PCIG				*e*S	Sn	16 16 47.7	-8.4
TEIG	**Tepich**	**6.81**	**45**	P	Pn	16 18 06.5	-0.1
	3.5nm,0.3s,baz=270,slow=20,SNR=17						
TEIG				S	Sn	16 19 23.2	+0.6
	1.2nm,0.3s,baz=270,slow=20,SNR=1.9						
TXAR	**Lajitas Array**	**16.81**	**327**	P	Pn	16 20 17.9	-0.3
	0.1nm,0.3s,baz=143,slow=12,SNR=4.7						
YKA	**Yellowknife Ar**	**49.37**	**347**	P	P	16 25 07.3	-0.2
	0.7nm,0.9s,baz=160,slow=6.9,SNR=6.9						
ILAR	**Eielson Array**	**61.04**	**337**	P	P	16 26 31.6	+0.2
	0.4nm,0.6s,baz=134,slow=5.2,SNR=4.4						

*NIED **31** 16:26:00, 40°20N×143°30E, h20km, Mw5.0 Best double couple: M0 3.87000×10^16 NP1:φ0 164.00000°, δ17.00000°, λ43.00000°. NP2:φ0 33.00000°, δ79.00000°, λ103.00000°.*
*IDC **31** 16:26:06.4±0.5, 40°25N×143°38E, h0km, mb4.5/27, mb1 4.7/34, mb1mx4.6/49, mbtmp4.6/34, ML4.2/6, MS4.5/37, Ms1 4.5/37, ms1mx4.3/47, Error ellipse: s-maj=13.6km s-min=11.4km az=114.0*
*JMA **31** 16

comp=Z,15nm,0.3s,baz=31,slow=12,SNR=198
MJAR LR LR 16 29 50.8
comp=Z,4μm,19.8s,baz=40,slow=41
MJB9 Matsu-Tunnel 5.45 229 *e*Pn **Pn 16 27 31.2 +1.0**
KUR Kuril'sk 6.01 32 *e*P **Pn 16 27 36.8 -0.9**
KUR *i* S **Sn 16 28 41.9 -3.5**
KUR pmax pmax
comp=N,66nm,0.6s
KUR pmax pmax
comp=E,74nm,0.6s
KUR pmax pmax
comp=Z,124nm,0.6s
KUR smax smax
comp=N,249nm,0.6s
KUR smax smax
comp=E,479nm,0.6s
YSS Yuzh-Sakhalins 6.72 357⇓ *e*P **Pn 16 27 48.2 +0.7**
YSS *e*S **Sn 16 29 04.0 +1.1**
YSS pmax pmax
comp=Z,20nm,1.2s
YSS smax smax
comp=E,800nm,8.0s
YSS MLR MLR
comp=Z,2μm,13.0s
YSS MLR MLR
comp=N,5μm,14.0s
YSS Yuzh-Sakhalins 6.72 357 *e*Pn **Pn 16 27 47.2 -0.3**
INU Inuyama 6.98 228 *e*Pn **Pn 16 27 52.2 +1.1**
JHJ Hachijo jima 2 7.65 203 Pn **Pn 16 27 58.6 -1.8**
comp=N,53nm,0.3s,baz=61,slow=19,SNR=3.0
JHJ Sn **Sn 16 29 18.6 -7.5**
comp=N,13nm,0.3s,baz=73,slow=19,SNR=2.1
JHJ LR LR 16 31 02.3
comp=N,2μm,20.8s,baz=62,slow=39
UGL Uglegorsk 8.88 355 *e*P **Pn 16 28 18.0 +0.9**
UGL MLR MLR
comp=Z,4μm,16.0s
UGL MLR MLR
comp=N,5μm,17.0s
UGL MLR MLR
comp=E,2μm,20.0s
VLA Vladivostok 9.02 292⇓ *e*P **Pn 16 28 22.7 +3.7**
USRK Ussuriysk Ar. 9.28 299 Pn **Pn 16 28 24.9 +2.3**
comp=E,2.2nm,0.3s,baz=100,slow=14,SNR=69
USRK LR LR 16 32 02.3
comp=E,5μm,18.5s,baz=91,slow=38
HABR Khabarovsk 10.12 327 *de*P **Pn 16 28 32.6 -1.6**
HABR *e*S **Sn 16 30 25.7 -0.8**
HABR pmax pmax
comp=N,28nm,2.0s
HABR pmax pmax
comp=E,32nm,2.0s
HABR pmax pmax
comp=Z,71nm,2.0s
HABR MLR MLR
comp=Z,3μm,15.0s
TYV Tymovskoe 10.63 358 *e*P **Pn 16 28 42.2 +1.1**
TYV pmax pmax
comp=Z,35nm,1.0s
TYV MLR MLR
comp=N,6μm,18.0s
TYV MLR MLR
comp=Z,6μm,16.0s
MDJ Mudanjiang 11.04 298 P **Pn 16 28 46.5 -0.2**
MDJ S **Sn 16 30 49.5 +0.5**
MDJ PcP **PcP 16 34 42.3 -0.9**
MDJ ScP **ScP 16 38 15.0 +1.7**
MDJ Mudanjiang 11.04 298 ScS ScS 16 41 50.5 +2.0
MDJ pmax pmax
comp=Z,74nm,1.1s
MDJ pmax pmax
comp=Z,550nm,5.0s
MDJ LR LR
comp=N,3μm,13.8s
MDJ LR LR
comp=E,4μm,17.4s
MDJ LR LR
comp=Z,6μm,16.4s
MDJ Mudanjiang 11.04 298 *e*Pn **Pn 16 28 49.2 +2.5**
KLR Kul'dur 12.16 321 Pn **Pn 16 29 02.1 +0.1**
comp=Z,0.5nm,0.3s,baz=130,slow=14,SNR=22
KLR LR LR 16 34 09.0
comp=Z,3μm,18.7s,baz=136,slow=40
KLR Kul'dur 12.16 321 *i* P **Pn 16 29 01.4 -0.7**
JNU Nakatsue 12.24 238 Pn **Pn 16 29 02.9 -0.4**
comp=Z,0.7nm,0.3s,baz=105,slow=0.6,SNR=15
JNU LR LR 16 34 04.7
comp=Z,3μm,18.6s,baz=51,slow=39
JNU Nakatsue 12.24 238 *e*Pn **Pn 16 29 03.5 +0.2**
KSRS Korea Array 12.32 262 Pn **Pn 16 29 05.9 +1.7**
comp=Z,0.3nm,0.3s,baz=64,slow=12,SNR=17
KSRS Sn **Sn 16 31 25.7 +5.4**
baz=74,slow=23,SNR=1.9
KSRS LR LR 16 33 32.8
comp=Z,4μm,18.7s,baz=71,slow=36
KS15 Wonju Array Si 12.35 262 *e*Pn **Pn 16 29 08.3 +3.7**
KSAR Wonju Array Be 12.35 262 P **Pn 16 29 05.9 +1.2**
KSAR 16 31 25.7
KSAR Wonju Array Be 12.35 262 Pn **Pn 16 29 05.9 +1.2**
KSAR Sn **Sn 16 31 25.7 +4.6**
NKL Nikolayevsk 13.03 353 *e*P **Pn 16 29 15.0 +1.1**
NKL *e* 16 31 37.0
NKL pmax pmax
comp=Z,22nm,1.0s
NKL MLR MLR
comp=N,2μm,15.0s
NKL MLR MLR
comp=Z,2μm,15.0s
TJN Taejon 13.10 258 *ce*P **Pn 16 29 16.7 +1.7**
CN2 Changchun 13.74 291 *e*P **Pn 16 29 25.3 +1.6**
CN2 *e*S Sn 16 32 05.5 +10
CN2 pmax pmax
comp=Z,10.0nm,1.0s
CN2 pmax pmax
comp=Z,200nm,4.0s
CN2 LR LR
comp=N,2μm,17.0s
CN2 LR LR
comp=E,3μm,17.0s
CN2 LR LR
comp=Z,1μm,17.0s
SNY Shenyang 14.98 282⇑ P **Pn 16 29 38.0 -2.4**
SNY S **Sn 16 32 23.3 -1.8**
SNY pmax pmax
comp=Z,20nm,1.4s
SNY pmax pmax
comp=Z,730nm,12.9s
SNY LR LR
comp=N,2μm,14.3s
SNY LR LR
comp=E,4μm,16.7s
SNY LR LR
comp=Z,5μm,17.6s
PETK Petropavlovsk- 16.18 33 Pn **Pn 16 29 51.0 -4.9**
comp=Z,0.2nm,0.3s,baz=201,slow=12,SNR=5.2
PETK LR LR 16 36 54.9
comp=Z,846nm,18.4s,baz=220,slow=40
PETK Petropavlovsk- 16.18 33 P **Pn 16 29 51.0 -4.9**
PET Petropavlovsk 16.52 34 *e*P **P 16 30 06.2 +3.6**
PET *e*S **S 16 33 10.3 -3.2**
PET pmax pmax
comp=Z,200nm,4.8s
PET pmax pmax
comp=Z,100nm,5.3s
PET pmax pmax
comp=Z,17nm,0.8s
PET MLR MLR
comp=Z,1μm,19.0s
PET MLR MLR
comp=Z,900nm,16.0s
JOW Kunigami 18.30 228 *e*P **P 16 30 19.0 -3.4**
comp=Z,46nm,1.2s
HIA Hailar 18.95 306 *e*P **P 16 30 27.6 -1.9**
HIA pmax pmax
comp=Z,51nm,0.9s
HIA Hailar 18.95 306 *e*P **P 16 30 27.6 -1.9**
comp=Z,51nm,0.9s
MA2 Magadan 19.91 11 P **P 16 30 38.9 -1.0**
comp=Z,1.3nm,0.3s,baz=233,slow=10,SNR=12
MA2 LR LR 16 39 00.8
comp=Z,239nm,19.3s,baz=214,slow=39
SSE Sheshan 20.12 250 P Pn 16 30 43.8 -0.5
SSE S Sn 16 34 28.5 -1.2
SSE pmax pmax
comp=Z,41nm,0.7s
SSE pmax pmax
comp=Z,180nm,10.2s
SSE LR LR
comp=N,1μm,14.2s
SSE LR LR
comp=E,450nm,14.0s
SSE LR LR
comp=Z,1μm,14.5s
CLNS Chul'man 20.49 330 *e*P **P 16 30 45.2 -1.0**
CLNS pmax pmax
comp=N,16nm,1.0s
CLNS pmax pmax
comp=Z,32nm,1.0s
CLNS pmax pmax
comp=E,7.0nm,0.7s
CLNS MLR MLR
comp=Z,1μm,14.0s
CLNS MLR MLR
comp=E,1μm,12.0s
CLNS MLR MLR
comp=N,820nm,12.0s
BJI Beijing 20.72 278 P **P 16 30 47.3 -1.5**
BJI pP **pP 16 30 56.5 -0.7**
BJI sP **sP 16 30 59.3 -1.9**
BJI S **S 16 34 33.3 -5.1**
BJI sS **sS 16 34 50.5 -1.3**
BJI pmax pmax
comp=Z,42nm,1.2s
BJI pmax pmax
comp=Z,320nm,3.7s
BJI LR LR
comp=N,1μm,13.0s
BJI LR LR
comp=E,2μm,19.3s
BJI LR LR
comp=Z,2μm,20.2s
BJT Baijiatuau 20.73 278 *e*P **P 16 30 47.3 -1.6**
BJT pmax pmax
comp=Z,49nm,0.8s
BJT Baijiatuau 20.73 278 *e*P **P 16 30 47.3 -1.6**
comp=Z,48nm,0.8s
TIA Tai'an 20.93 267⇓ P **P 16 30 49.5 -1.6**
TIA S Sn 16 34 56.0 +6.7
TIA pmax pmax
comp=Z,60nm,1.0s
TIA pmax pmax
comp=Z,660nm,4.0s
TIA LR LR
comp=N,1μm,14.3s
TIA LR LR
comp=E,3μm,16.0s
TIA LR LR
comp=Z,4μm,16.2s
NJ2 Nanjing 21.33 255 *e*P **P 16 30 54.3 -1.1**
NJ2 pP **pP 16 31 00.8 -3.0**
NJ2 S **S 16 34 48.3 -2.2**
NJ2 sS **sS 16 35 05.0 +1.1**
NJ2 pmax pmax
comp=Z,61nm,0.8s
NJ2 LR LR
comp=N,2μm,15.7s
NJ2 LR LR
comp=E,2μm,18.4s
NJ2 LR LR
comp=Z,3μm,19.0s
YAK Yakutsk 23.33 344 P **P 16 31 13.5 -2.8**
comp=Z,2.9nm,0.3s,baz=143,slow=20,SNR=15
YAK LR LR 16 41 17.8
comp=Z,1μm,18.1s,baz=160,slow=39
YAK Yakutsk 23.33 344 *c i*P **P 16 31 13.4 -2.8**
YAK *e* 16 35 09.9
YAK *e*S **S 16 35 19.4 -7.2**
YAK *e* 16 42 25.6
YAK pmax pmax
comp=Z,53nm,0.8s
YAK pmax pmax
comp=E,6.0nm,0.9s
YAK pmax pmax
comp=N,14nm,1.0s
YAK pmax pmax
comp=Z,54nm,1.0s
YAK pmax pmax
comp=N,48nm,1.1s
YAK pmax pmax
comp=E,27nm,1.1s
YAK smax smax
comp=N,252nm,2.8s
YAK smax smax
comp=E,268nm,3.0s
YAK MLR MLR
comp=Z,1μm,15.0s
YAK MLR MLR
comp=N,626nm,13.0s
YAK MLR MLR
comp=E,1μm,17.0s
YAK Yakutsk 23.33 344 *e*P **P 16 31 13.3 -3.0**
comp=E,65nm,0.8s
YAK *e*S **S 16 35 24.6 -1.9**
SEY Seymchan 23.36 10 P **P 16 31 15.0 -1.6**
comp=E,15nm,0.7s,baz=186,slow=9.3,SNR=30
SEY Seymchan 23.36 10 *ce*P **P 16 31 15.5 -1.1**
CIT Chita 23.57 310 *e*P **P 16 31 17.1 -1.7**
CIT *e* 16 31 29.1
CIT *e* 16 31 48.0
CIT *e* 16 32 06.9
CIT *e*S **S 16 35 31.7 +0.9**
CIT *e* 16 36 27.3
CIT pmax pmax
comp=Z,247nm,1.8s
TATO Taipei 23.78 237 *e*P **P 16 31 21.4 +0.5**
comp=Z,51nm,0.9s
HHC Hu-ho-hao-te 24.07 282 *e*P **P 16 31 21.5 -2.1**
HHC pP pP 16 31 32.8 +0.2
HHC S S 16 35 27.3 -12
HHC pmax pmax
comp=Z,31nm,0.8s
HHC pmax pmax
comp=Z,550nm,4.4s
HHC LR LR
comp=N,2μm,11.3s
HHC LR LR
comp=E,3μm,11.9s
HHC LR LR
comp=Z,3μm,11.2s
YHNB Yeheng 24.07 236 *e*P **P 16 31 21.6 -2.1**
comp=Z,22nm,0.7s
NACB Ninganchiao 24.28 235 *e*P **P 16 31 22.7 -2.9**
comp=Z,39nm,1.1s
SSLB Suanglung 24.96 236 *e*P **P 16 31 29.0 -2.9**
comp=Z,14nm,0.7s
YULB Yu-li 25.04 234 *e*P **P 16 31 29.8 -2.6**
comp=Z,20nm,0.8s
WHN Wuhan 25.42 257⇑ P **P 16 31 34.3 -1.5**
WHN S S 16 35 45.8 -15
WHN LR LR
comp=N,3μm,14.5s
WHN LR LR
comp=E,7μm,15.8s
WHN LR LR
comp=Z,7μm,17.8s
TPUB Ta-pu 25.52 235 *e*P **P 16 31 34.3 -2.6**
comp=Z,30nm,0.7s
TWG Pinlang 25.60 234 *e*P **P 16 31 37.2 -0.3**
comp=Z,288nm,1.0s
QZH Quanzhou 25.70 241⇑ *i*P **P 16 31 31.8 -6.6**
QZH pP **pP 16 31 40.5 -6.9**
QZH S **S 16 35 59.5 -5.6**
QZH LR LR
comp=N,2μm,13.8s
QZH LR LR
comp=E,2μm,13.4s
QZH LR LR
comp=Z,3μm,14.1s
BOD Bodaibo 25.73 323 *e*P **P 16 31 39.2 +0.8**
BOD pmax pmax
comp=Z,5.0nm,1.1s
GUMO Guam 26.59 177 LR LR 16 41 15.4
comp=Z,412nm,21.5s,baz=8.5,slow=34
ULN Ulaanbaatar 26.95 299 *c i*P **P 16 31 50.0 +0.2**
ULN pmax pmax
comp=Z,59nm,1.2s
ULN Ulaanbaatar 26.95 299 *e*P **P 16 31 49.4 -0.4**
comp=Z,60nm,1.2s
SONA1 Songino Array 27.39 298 *e*P **P 16 31 53.7 0.0**
SONM Songino Array 27.39 298 P **P 16 31 54.1 +0.4**
comp=Z,38nm,1.1s,baz=106,slow=8.1,SNR=123
SONM LR LR 16 43 28.6
comp=Z,3μm,18.4s,baz=92,slow=38
XAN Xi'an 27.98 268 P **P 16 31 58.0 -1.0**
XAN sP sP 16 32 11.3 -0.6
XAN PP **PP 16 32 58.0 -4.4**
XAN PcP PcP 16 34 56.0 -18
XAN S S 16 36 57.3 +16
XAN SS **SS 16 38 38.0 -1.7**
XAN pmax pmax
comp=Z,30nm,1.0s
XAN pmax pmax
comp=Z,200nm,12.8s
XAN LR LR
comp=N,740nm,16.4s
XAN LR LR
comp=E,2μm,16.2s
XAN LR LR
comp=Z,2μm,15.6s
H11N2 WAKE ISLAND Hy 28.75 128 T T 17 03 12.4
baz=318,slow=75,SNR=443
H11N1 WAKE ISLAND Hy 28.76 128 T T 17 03 07.7
baz=318,slow=75,SNR=397
H11N3 WAKE ISLAND Hy 28.77 128 T T 17 03 14.2
baz=318,slow=75,SNR=453
IRK Irkutsk 29.18 307 *e*P **P 16 32 07.6 -1.9**
IRK pmax pmax
comp=Z,56nm,1.2s
ENH Enshi 29.20 261 *e*P **P 16 32 09.1 -0.8**
comp=Z,43nm,0.8s
TLY Talaya 29.49 306 P **P 16 32 13.1 +0.9**
comp=Z,5.3nm,0.6s,baz=107,slow=8.4,SNR=7.4
TLY Talaya 29.49 306 *e*P **P 16 32 13.9 +1.7**
TLY *e* 16 33 18.7
TLY *e*S **S 16 37 12.9 +8.4**
TLY pmax pmax
comp=Z,19nm,1.3s
TLY MLR MLR
comp=Z,2μm,18.0s
TLY Talaya 29.49 306 *e*P **P 16 32 12.3 +0.1**
comp=Z,18nm,0.9s
H11S1 WAKE ISLAND Hy 29.58 130 T T 17 03 17.6
baz=322,slow=76,SNR=140
H11S3 WAKE ISLAND Hy 29.58 130 T T 17 03 16.8
baz=322,slow=76,SNR=119
ZAK Zakamensk 29.59 303 *e*P **P 16 32 12.9 -0.3**
ZAK pmax pmax
comp=Z,14nm,1.5s
H11S2 WAKE ISLAND Hy 29.60 130 T T 17 03 23.8
baz=322,slow=76,SNR=124
GZH Guangzhou 30.51 245 P **P 16 32 17.8 -3.6**
GZH S **S 16 37 13.3 -7.6**
BILL Bilibino 30.53 17 *c i*P **P 16 32 21.6 +0.4**
BILL *i* 16 32 30.2
BILL *i* SS SS 16 39 07.7 -23
BILL pmax pmax
comp=Z,8.0nm,1.1s
BILL MLR MLR
comp=Z,425nm,16.0s
BILL Bilibino 30.53 17 *e*P **P 16 32 22.1 +0.9**
comp=Z,11nm,0.9s
LZH Lanzhou 31.13 275 *e*P **P 16 32 28.3 +1.3**
LZH pP pP 16 32 37.3 +1.2
LZH sP sP 16 32 41.5 +1.6
LZH PP **PnPn 16 33 20.0 -8.9**
LZH PcP PcP 16 35 30.0 +8.3
LZH *e*S **S 16 37 28.5 -2.2**
LZH sS sS 16 37 49.0 +3.2
LZH SS **SnSn 16 39 14.3 +0.8**
LZH pmax pmax
comp=Z,47nm,1.2s
LZH pmax pmax
comp=Z,190nm,4.8s
LZH LR LR
comp=N,970nm,14.1s
LZH LR LR
comp=E,910nm,13.7s
LZH LR LR
comp=Z,1μm,16.8s
MOY Mondy 31.13 306 *e*P **P 16 32 27.9 +1.1**
MOY pmax pmax
comp=Z,33nm,3.9s
TIXI Tiksi 32.31 352 P **P 16 32 36.0 -0.8**
comp=Z,6.6nm,0.7s,baz=169,slow=7.5,SNR=4.0
TIXI Tiksi 32.31 352 *d i*P **P 16 32 36.2 -0.5**
TIXI pmax pmax
comp=Z,16nm,1.2s
TIXI Tiksi 32.31 352 *e*P **P 16 32 36.1 -0.7**
comp=Z,17nm,1.2s
GTA Gaotai 33.17 283 *e*P **P 16 32 45.0 +0.2**
GTA pP pP 16 32 53.5 -0.5
GTA sP sP 16 32 58.0 +0.2
GTA PcP **PcP 16 35 29.3 +2.1**
GTA S **S 16 38 01.8 -0.6**
GTA sS sS 16 38 18.5 +1.0
GTA SS **SnSn 16 40 03.0 +0.1**
GTA pmax pmax
comp=Z,45nm,1.1s
GTA pmax pmax
comp=Z,300nm,5.2s
GTA LR LR
comp=N,990nm,19.7s
GTA LR LR
comp=E,3μm,17.3s
GTA LR LR
comp=Z,3μm,18.1s
GYA Guiyang 33.31 257 *e*P **P 16 32 45.8 -0.4**
GYA pP sP 16 32 57.0 -2.1
GYA PP **PnPn 16 33 58.5 +1.4**
GYA PcP **PcP 16 35 29.0 +1.2**
GYA S **S 16 38 01.3 -3.5**
GYA sS sS 16 38 21.0 +1.1
GYA ScP **ScP 16 39 07.8 -1.9**
GYA SS **SnSn 16 40 04.5 -2.1**
GYA pmax pmax
comp=Z,20nm,0.8s
GYA pmax pmax
comp=Z,120nm,5.0s
GYA LR LR
comp=N,530nm,17.0s
GYA LR LR
comp=E,460nm,17.4s
GYA LR LR
comp=Z,480nm,17.8s
QIZ Qiongzhong 35.65 244 P **P 16 33 07.0 +0.7**
QIZ pP **pP 16 33 14.3 -1.2**
QIZ PP **PnPn 16 34 25.5 -0.7**
QIZ S **S 16 38 41.0 +0.3**
QIZ sS **sS 16 38 57.5 +1.6**
QIZ pmax pmax
comp=Z,12nm,1.5s
QIZ LR LR
comp=N,790nm,16.8s
QIZ LR LR
comp=E,570nm,15.7s
QIZ LR LR
comp=Z,1μm,15.9s
KMI Kunming 36.99 258 P **P 16 33 18.8 +0.8**
KMI pP pP 16 33 23.5 -3.7
KMI sP sP 16 33 27.0 -4.0
KMI S S 16 38 45.5 -16
KMI sS sS 16 38 55.8 -21
KMI SS SnSn 16 41 06.0 -30
KMI pmax pmax
comp=Z,72nm,1.2s
KMI pmax pmax
comp=Z,280nm,3.1s
KMI LR LR
comp=N,2μm,15.3s
KMI LR LR
comp=E,2μm,16.7s
KMI LR LR
comp=Z,3μm,16.0s
KDM Kudat 40.78 223⇑ P **P 16 33 51.5 +2.0**
WMQ Urumqi 40.81 294 P **P 16 33 51.3 +1.7**
WMQ pP sP 16 34 01.0 -1.6
WMQ sP pP 16 34 08.3 +9.4
WMQ S **S 16 39 56.8 -1.6**
WMQ sS sS 16 40 17.5 +3.8
WMQ SS **SS 16 42 58.5 -1.3**
WMQ ScS **ScS 16 43 48.3 -3.9**
WMQ pmax pmax
comp=Z,26nm,0.8s
WMQ pmax pmax
comp=Z,130nm,4.8s
WMQ LR LR
comp=N,320nm,16.6s

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WMQ                                  LR    LR
     comp=E,430nm,19.4s
WMQ                                  LR    LR
     comp=Z,410nm,19.4s
ZAA0 Zalesovo Array    40.93 310 eP        P     16 33 50.0 -0.3
ZALV Zalesovo Beam     40.93 310  P        P     16 33 50.4 +0.1
     comp=Z,11nm,0.5s,baz=89,slow=7.5,SNR=58
ZALV                                 PcP   PcP   16 35 50.9 +0.6
     comp=Z,7.0nm,0.7s,baz=94,slow=3.0,SNR=4.4
ZALV                                 LR    LR    16 51 48.2
     comp=Z,1μm,18.5s,baz=70,slow=38
NONG Nongkai           40.99 249  P        P     16 33 52.2 +1.0
     comp=Z,34nm,0.8s
NRIK Noril'sk          41.02 333  P        P     16 33 50.6 -0.3
     comp=Z,9.0nm,0.5s,baz=110,slow=9.1,SNR=20
NRIK                                 LR    LR    16 52 46.3
     comp=Z,979nm,18.2s,baz=106,slow=39
SKNT Sakolnakorn       41.12 247  P        P     16 33 53.2 +0.9
     comp=Z,27nm,1.2s
UBPT Khong Chiam       41.24 244  P        P     16 33 54.9 +1.6
     comp=Z,32nm,1.6s
MYLDM Lahad Datu       41.44 219 eP        P     16 33 57.6 +2.8
     comp=Z,74nm,1.2s
CRAI Chiangrai         41.63 254  P        P     16 33 57.6 +1.1
     comp=Z,197nm,0.8s,comp=Z,25μm
SDKM Sandakan          41.68 221 ⇓P        P     16 33 59.3 +2.3
NVS  Novosibirsk       41.77 311 eP        P     16 33 58.0 +0.8
NVS                                  e           16 35 53.9
NVS                                  eS    S     16 40 10.5 -1.8
NVS                                  pmax  pmax
     comp=N,13nm,1.3s
NVS                                  pmax  pmax
     comp=E,32nm,1.3s
NVS                                  pmax  pmax
     comp=Z,35nm,1.3s
NVS                                  smax  smax
     comp=N,19nm,2.3s
NVS                                  smax  smax
     comp=E,31nm,2.3s
KKM  Kota Kinabalu     41.84 223 ⇑P        P     16 34 01.3 +3.0
KHON Khomkaen          42.37 248  P        P     16 34 03.6 +1.1
     comp=E,22nm,0.8s
UTTA Uttaradit         43.07 251  P        P     16 34 09.2 +1.0
     comp=E,8.8nm,0.9s,comp=E,66nm
LAMP Lampang           43.24 253  P        P     16 34 11.0 +1.4
     comp=E,8.7nm,0.9s
CHAI Chaiyaphum        43.25 248  P        P     16 34 10.1 +0.4
     comp=E,14nm,0.9s,comp=E,142nm
LSA  Lhasa             43.47 273  P        P     16 34 14.0 +2.1
LSA                                  pmax  pmax
     comp=Z,6.0nm,0.7s
LSA  Lhasa             43.47 273 eP        P     16 34 13.3 +1.4
LSA                                  pmax  pmax
     comp=Z,12nm,0.8s
LSA  Lhasa             43.47 273 eP        P     16 34 13.3 +1.4
     comp=Z,12nm,0.8s
PBKT Sadao Pong        43.53 250  P        P     16 34 13.0 +1.1
     comp=Z,22nm,1.4s
CMMT Chiang Mai        43.56 254  P        P     16 34 12.9 +0.7
     comp=Z,19nm,0.8s,comp=Z,415nm
CHTO Chiang Mai        43.56 254  P        P     16 34 13.0 +0.8
     comp=Z,86nm,0.8s,comp=Z,1μm
CHTO Chiang Mai        43.56 254 eP        P     16 34 12.0 -0.2
CHTO                                 pmax  pmax
     comp=Z,14nm,0.8s
CHTO Chiang Mai        43.56 254 eP        P     16 34 12.0 -0.2
     comp=Z,14nm,0.8s
PPLA Purkeyplie        43.70  37 eP        P     16 34 15.5 +2.5
MK01 Makanchi Array    43.75 300 eP        P     16 34 13.4  0.0
MK31 Makanchi Array    43.75 300 i P       P     16 34 13.4  0.0
MK31                                 pmax  pmax
     comp=Z,33nm,1.0s
MK31 Makanchi Array    43.75 300 eP        P     16 34 13.2 -0.2
MKAR Makanchi Array    43.75 300  P        P     16 34 13.6 +0.1
     comp=Z,10.0nm,0.6s,baz=83,slow=9.2,SNR=89
MKAR                                 LR    LR    16 53 35.5
     comp=Z,1μm,18.2s,baz=79,slow=38
MKAR Makanchi Array    43.75 300 eP        P     16 34 13.3 -0.1
CAST Castle Rocks      43.75  36 eP        P     16 34 15.4 +2.2
     comp=Z,14nm,1.2s
CM31 Chiang Mai Arr    43.79 254 eP        P     16 34 14.3 +0.3
CMAR Chiang Mai Arr    43.79 254  P        P     16 34 14.6 +0.6
     comp=Z,5.7nm,0.8s,baz=45,slow=7.0,SNR=37
CMAR                                 LR    LR    16 54 36.1
     comp=Z,473nm,18.3s,baz=68,slow=39
CMAR Chiang Mai Arr    43.79 254 i P       P     16 34 14.8 +0.8
CMAR                                 pmax  pmax
     comp=Z,6.0nm,0.8s
CM01 Chiang Mai Arr    43.80 254 eP        P     16 34 14.4 +0.3
MAKZ Makanchi          43.95 300 eP        P     16 34 15.5 +0.4
MAKZ                                 pmax  pmax
     comp=Z,44nm,0.8s
MAKZ Makanchi          43.95 300 eP        P     16 34 15.5 +0.4
     comp=Z,44nm,0.8s
BPAW Bear Paw Mtn.     44.24  35 eP        P     16 34 17.1  -0.1
     comp=Z,7.1nm,0.9s
KTH  Kantishna Hill    44.27  36 eP        P     16 34 17.8 +0.3
     comp=Z,14nm,0.9s
MLY  Manley            44.35  34 eP        P     16 34 18.8 +0.7
     comp=Z,7.7nm,0.9s
SUA  Susitna One       44.42  39 eP        P     16 34 20.0 +1.3
     comp=Z,13nm,1.1s
SRAK Srakaew           44.50 246  P        P     16 34 17.9  -1.8
     comp=Z,95nm,1.0s,comp=Z,902nm
TRF  Thorofare Moun    44.55  36 eP        P     16 34 18.2  -1.6
COLD Coldfoot          44.63  31 eP        P     16 34 21.7 +1.5
     comp=Z,8.3nm,0.9s
MHMT Maesarieng        44.71 254  P        P     16 34 23.0 +1.6
     comp=Z,19nm,0.8s
BWN  Browne            44.90  35 eP        P     16 34 22.6 +0.3
     comp=Z,50nm,1.0s
RABL Rabaul            44.96 167 eP        P     16 34 22.8  -0.5
     comp=Z,36nm,1.0s
CHBT CHBT              45.18 244  P        P     16 34 26.8 +1.7
     comp=Z,48nm,1.1s,comp=Z,3μm
RND  Reindeer          45.20  36 eP        P     16 34 24.4  -0.5
RND                                  pmax  pmax
     comp=Z,11nm,0.9s
RND  Reindeer          45.20  36 eP        P     16 34 24.4  -0.5
     comp=Z,11nm,0.9s
MDM  Murphy Dome       45.42  34 eP        P     16 34 27.6 +1.1
     comp=Z,12nm,1.0s
WRH  Wood River Hil    45.49  34 eP        P     16 34 27.9 +0.8
     comp=Z,7.2nm,0.9s
CCB  Clear Creek Bu    45.61  34 eP        P     16 34 28.7 +0.7
     comp=Z,14nm,1.3s
BTM  Bintulu           45.89 224 ⇓P        P     16 34 32.5 +1.7
IL1  Eielson Array     46.00  34 eP        P     16 34 30.9  -0.1
ILAR Eielson Array     46.00  34  P        P     16 34 31.6 +0.5
     comp=Z,2.7nm,0.8s,baz=260,slow=6.3,SNR=28
ILAR                                 LR    LR    16 56 19.0
     comp=Z,142nm,18.1s,baz=306,slow=39
ILB  Eielson Array     46.00  34 eP        P     16 34 30.5  -0.5
FYU  Fort Yukon        46.59  31 eP        P     16 34 39.0 +3.3
     comp=Z,46nm,1.4s
PDGK Podgornoye        46.65 296  P        P     16 34 36.3  -0.2
PDGK                                 pmax  pmax
     comp=Z,27nm,0.8s
DIV  Divide            46.84  39 eP        P     16 34 35.2  -2.5
     comp=Z,17nm,1.0s
PHET Kaeng Krachan     46.95 247  P        P     16 34 41.5 +2.4
     comp=Z,16nm,0.8s,comp=Z,136nm
SBUM Sibu              46.98 225 eP        P     16 34 38.8  -0.5
     comp=Z,18nm,1.4s
DOT  Dot Lake          47.32  35 eP        P     16 34 42.0 +0.5
     comp=Z,26nm,1.2s
BMRM Bremner River     47.42  39 eP        P     16 34 42.7 +0.4
     comp=Z,16nm,1.0s
MENT Mentasta          47.56  36 eP        P     16 34 44.6 +1.2
     comp=Z,10nm,0.8s
GUN  Gumba             48.37 274 eP        P     16 34 50.9 +0.4
     comp=Z,84nm,0.7s
EGAK Eagle             48.44  34 eP        P     16 34 50.9 +0.8
     comp=Z,13nm,1.1s
KSM  Kuching           48.84 226 eP        P     16 34 54.4 +0.6
     comp=Z,18nm,1.0s
KKN  Kakani            48.89 274 eP        P     16 34 54.7 +0.4
     comp=Z,112nm,0.9s
PKIN Phulchoki         48.91 274 eP        P     16 34 55.6 +1.1
DMN  Daman             49.11 274 eP        P     16 34 57.0 +0.9
     comp=Z,75nm,0.9s
GKN  Gorkha            49.27 275 eP        P     16 34 57.4 +0.2
     comp=Z,32nm,0.4s
TKM2 Tokmak 2          49.47 297  P        P     16 34 58.7 +0.2
TKM2                                 pmax  pmax
     comp=Z,43nm,0.8s
TKM2 Tokmak 2          49.47 297 eP        P     16 34 59.1 +0.6
     comp=Z,52nm,0.9s
BVA0 Borovoye Array    49.56 311  P        P     16 34 58.7  -0.1
BVA0                                 pmax  pmax
     comp=Z,38nm,1.1s
BRVK Borovoye          49.61 311 eP        P     16 34 59.4 +0.2
BRVK                                 pmax  pmax
     comp=Z,81nm,0.9s
BRVK Borovoye          49.61 311 eP        P     16 34 59.4 +0.2
     comp=Z,81nm,0.9s
FRU  Bishkek           50.17 297⇑eP        P     16 35 03.0  -0.6
FRU                                  e           16 35 21.0
FRU                                  e           16 42 33.0
FRU                                  pmax  pmax
     comp=Z,70nm,2.1s
KOLN Koldanda          50.18 275 eP        P     16 35 04.8 +0.7
     comp=Z,18nm,0.3s
AAK  Ala-Archa         50.33 297  P        P     16 35 04.6  -0.4
AAK                                  pmax  pmax
     comp=Z,18nm,1.0s
AAK  Ala-Archa         50.33 297 eP        P     16 35 04.8  -0.2
     comp=Z,13nm,0.8s
ZRNK Zerenda           50.38 311  P        P     16 35 05.3 +0.3
ZRNK                                 pmax  pmax
     comp=Z,64nm,1.2s
ZRNK Zerenda           50.38 311 eP        P     16 35 05.3 +0.3
     comp=Z,46nm,0.8s
PYUN Piuthan           50.48 276 eP        P     16 35 07.0 +0.6
     comp=Z,222nm,0.9s
KSH  Kashi             50.51 292 eP        P     16 35 11.5 +5.1
KSH                                  epP   sP    16 35 21.8 +2.2
KSH                                  esP   pP    16 35 25.5  +10
KSH                                  ePP   PP    16 37 08.0 +6.0
KSH                                  S     S     16 42 23.5 +5.2
KSH                                  ScS   ScS   16 44 56.3 +1.3
KSH                                  pmax  pmax
     comp=Z,23nm,1.2s
KSH                                  pmax  pmax
     comp=Z,100nm,3.4s
KSH                                  LR    LR
     comp=N,2μm,15.5s
KSH                                  LR    LR
     comp=E,1μm,15.4s
KSH                                  LR    LR
     comp=Z,2μm,17.0s
EKS2 Erkin-Say         50.81 297 eP        P     16 35 08.4  -0.2
EKS2                                 pmax  pmax
     comp=Z,17nm,0.8s
EKS2 Erkin-Say         50.81 297 eP        P     16 35 08.4  -0.2
     comp=Z,17nm,0.8s
INK  Inuvik            50.86  28  P        P     16 35 09.1 +0.7
     comp=Z,2.4nm,0.3s,baz=289,slow=3.3,SNR=2.8
INK  Inuvik            50.86  28 eP        P     16 35 09.2 +0.8
INK                                  pmax  pmax
     comp=Z,8.0nm,0.8s
INK  Inuvik            50.86  28 eP        P     16 35 09.2 +0.8
     comp=Z,8.3nm,0.8s
KULM Kulim             51.72 239 eP        P     16 35 16.5 +1.0
     comp=Z,28nm,1.0s
MNAS Manas             51.74 297  P        P     16 35 15.2  -0.4
MNAS                                 pmax  pmax
     comp=Z,34nm,0.8s
IPM  Ipoh              52.08 238 eP        P     16 35 18.3   0.0
     comp=Z,19nm,1.0s
SOEI Soe               52.78 204 eP        P     16 35 23.8 +0.4
     comp=Z,24nm,0.8s
KK31 Karatay Array     52.85 299 i P       P     16 35 23.4  -0.2
KK31                                 pmax  pmax
     comp=Z,29nm,1.2s
KKAR Karatay Array     52.85 299 eP        P     16 35 23.3  -0.3
KKAR Karatay Array     52.85 299 eP        P     16 35 23.3  -0.3
SMLA Simla             53.38 282 eP        P     16 35 27.6   0.0
SVE  Sverdlovsk        53.76 317⇓eP        P     16 35 30.9 +0.8
SVE                                  pmax  pmax
     comp=Z,65nm,1.1s
SVE                                  MLR   MLR
     comp=Z,3μm,15.0s
NDI  New Delhi         54.56 280 eP        P     16 35 28.0  -8.4
SOKR Solikamsk         54.71 322c iP       P     16 35 36.2  -0.7
SOKR                                 pmax  pmax
     comp=Z,38nm,1.1s
SOKR                                 MLR   MLR
     comp=Z,927nm,16.0s
PSI  Prapat            54.72 239 eP        P     16 35 37.9 +0.2
PSI                                  pmax  pmax
     comp=Z,15nm,1.0s
PSI  Prapat            54.72 239 eP        P     16 35 37.9 +0.2
     comp=Z,15nm,1.0s
ARU  Arti              54.97 317c iP       P     16 35 39.3 +0.4
ARU                                          16 36 40.3
ARU                                          16 37 42.0
ARU                                  PPP   PPP   16 38 50.9
ARU                                  S     S     16 43 21.3 +2.9
ARU                                  SS    SS    16 47 01.7 +0.1
ARU                                  pmax  pmax
     comp=Z,71nm,1.2s
ARU                                  MLR   MLR
     comp=Z,2μm,16.0s
ARU  Arti              54.97 317 eP        P     16 35 39.0 +0.1
     comp=Z,67nm,1.2s
DZET Dzherino          55.83 295  P        P     16 35 45.1  -0.4
DZET                                 pmax  pmax
     comp=Z,25nm,0.7s
GSI  Gunungsitoli      56.72 239 eP        P     16 35 52.1 +0.1
     comp=Z,56nm,1.2s
AB31 Akbulak array     57.04 309  P        P     16 35 53.8   0.0
AB31                                 pmax  pmax
     comp=Z,14nm,0.7s
KBL  Kabul             57.69 290 eP        P     16 35 58.1  -0.8
KBL                                  pmax  pmax
     comp=Z,402nm,0.8s
KBL  Kabul             57.69 290 eP        P     16 35 58.1  -0.8
     comp=Z,402nm,0.8s
KBS  Kingsbay          57.75 350 eP        P     16 35 57.9  -0.5
KBS                                  pmax  pmax
     comp=Z,41nm,1.3s
KBS  Kingsbay          57.75 350 eP        P     16 35 57.9  -0.5
     comp=Z,42nm,1.3s
HYB  Hyderabad         59.79 268 i P       P     16 36 14.0 +0.5
LVZ  Lovozero          59.80 335⇑eP        P     16 36 13.6 +0.8
LVZ                                  pmax  pmax
     comp=Z,42nm,1.7s
YKW3 Yellowknife Ar    60.26  31 eP        P     16 36 16.3 +0.3
     comp=Z,25nm,2.0s
YKA  Yellowknife Ar    60.29  32  P        P     16 36 16.5 +0.3
     comp=Z,0.4nm,0.5s,baz=301,slow=6.7,SNR=5.2
YKA                                  LR    LR    17 05 24.8
     comp=Z,17nm,19.8s,baz=0.0,slow=39
WRAB Tennant Creek     60.45 190⇑i P       P     16 36 17.6  -0.1
WRAB                                 pmax  pmax
     comp=Z,35nm,1.6s
WB2  Warramunga Arr    60.45 190 eP        P     16 36 17.0  -0.7
     comp=Z,19nm,1.3s
WRA  Warramunga Arr    60.46 190  P        P     16 36 16.9  -0.8
     comp=Z,3.4nm,0.8s,baz=7.4,slow=6.9,SNR=29
WRA  Warramunga Arr    60.46 190 i P       P     16 36 17.7  -0.1
WRA                                  pmax  pmax
     comp=Z,3.0nm,0.8s
TMCR Tamitsa           60.65 331 eP        P     16 36 19.3 +0.7
TMCR                                 pmax  pmax
     comp=Z,49nm,1.3s
ARCES ARCESS Array B   61.52 339  P        P     16 36 24.5   0.0
     comp=Z,3.9nm,0.8s,baz=52,slow=7.9,SNR=8.8
ARCES                                LR    LR    17 05 40.7
     comp=Z,508nm,21.6s,baz=47,slow=39
KLMR Klimovskoe        61.85 327 eP        P     16 36 24.8  -2.0
KLMR                                 e*PP  pP    16 36 36.1  -0.3
KLMR                                 e           16 38 41.1
KLMR                                 pmax  pmax
     comp=Z,44nm,1.5s
DAG  Danmarks Havn     62.70 355⇑i P       P     16 36 33.0 +0.7
     comp=Z,9.2nm,0.9s
DAG  Danmarks Havn     62.70 355⇑i P       P     16 36 33.0 +0.7
DAG                                  pmax  pmax
     comp=Z,8.0nm,0.9s
GEYT Alibeck           63.60 298  P        P     16 36 39.1 +0.2
     comp=Z,22nm,1.0s,baz=29,slow=3.4,SNR=36
GEYT                                 LR    LR    17 06 29.3
     comp=Z,824nm,18.4s,baz=50,slow=38
AS01 Alice Springs     64.17 190 eP        P     16 36 42.6  -0.1
AS31 Alice Springs     64.18 190 eP        P     16 36 45.3 +2.6
     comp=Z,1.8nm,0.8s
ASAR Alice Springs     64.18 190  P        P     16 36 42.5  -0.1
     comp=Z,1.6nm,0.8s,baz=13,slow=6.1,SNR=19
ASAR                                 LR    LR    17 04 23.1
     comp=Z,103nm,20.8s,baz=5.0,slow=36
MOS  Moscow            65.56 323 eP        P     16 36 52.0 +0.7
MOS                                  e           16 37 09.1
MOS                                  MLR   MLR
     comp=Z,1μm,16.0s
DZM  Mont Dzumac       65.64 156 eS        S     16 45 40.5 +4.6
     comp=Z,141nm,23.9s
DZM  Mont Dzumac       65.64 156 eLR       LR    16 56 29.5
     comp=Z,450nm,22.4s
H04A Detroit Lake      65.92  51 eP        P     16 36 54.6 +0.7
     comp=Z,18nm,1.1s
VRH  Novokhopyorsk     66.20 318 eP        P     16 36 55.9 +0.4
VRH                                  e*SP  sP    16 37 11.1 +2.1
VRH                                  pmax  pmax
     comp=Z,30nm,1.0s
VRH                                  MLR   MLR
     comp=Z,1μm,13.0s
OBN  Obninsk           66.42 323c iP       P     16 36 57.6 +0.8
OBN                                  i           16 37 15.7
OBN                                  pmax  pmax
     comp=Z,23nm,1.2s
OBN                                  MLR   MLR
     comp=Z,2μm,16.0s
FIA1 FINESS Array S    66.67 332 eP        P     16 36 58.4 +0.1
FINES FINESS Array B   66.67 332  P        P     16 36 58.4  0.0
     comp=Z,20nm,0.9s,baz=59,slow=7.4,SNR=38
FINES                                LR    LR    17 09 13.7
     comp=Z,1μm,18.9s,baz=38,slow=39
FINES FINESS Array B   66.67 332 i P       P     16 36 58.7 +0.4
FINES                                pmax  pmax
     comp=Z,20nm,0.9s
LPSR Galich'ya Gora    66.80 320 eP        P     16 37 00.5 +1.2
LPSR                                 e*SP  sP    16 37 16.1 +3.4
LPSR                                 pmax  pmax
     comp=Z,30nm,1.2s
LPSR                                 MLR   MLR
     comp=Z,960nm,22.0s
YBH  Yreka Blue Hor    67.23  54  P        P     16 37 02.8 +0.3
     comp=Z,1.7nm,0.6s,baz=255,slow=5.1,SNR=3.5
SUMG Summit            67.47   1 i P       P     16 37 05.3 +1.5
     comp=Z,18nm,1.1s
SUMG Summit            67.47   1 eP        P     16 37 04.4 +0.6
SUMG                                 pmax  pmax
     comp=Z,28nm,1.3s
SUMG Summit            67.47   1 eP        P     16 37 04.4 +0.6
     comp=Z,28nm,1.3s
VSR  Storozhevoye      67.50 319 eP        P     16 37 04.8 +1.0
VSR                                  e*SP  sP    16 37 19.5 +2.3
VSR                                  pmax  pmax
     comp=Z,40nm,1.6s
VSR                                  MLR   MLR
     comp=Z,2μm,21.0s
K05A Summer Lake       67.79  52 eP        P     16 37 07.9 +1.8
AFI  Afiamalu          68.12 132  LR       LR    17 02 49.0
     comp=Z,204nm,21.0s,baz=356,slow=32
VSU  Vasula            68.44 330cePP        P     16 37 10.3 +0.7
VSU                                  pmax  pmax
     comp=Z,108nm,1.7s
SWMT Swartz Lake       68.96  45 eP        P     16 37 14.5 +1.3
WVOR Wild Horse Val    69.31  52 eP        P     16 37 16.5 +1.0
WVOR                                 pmax  pmax
     comp=Z,8.0nm,1.2s
WVOR Wild Horse Val    69.31  52 eP        P     16 37 16.5 +1.0
     comp=Z,8.2nm,1.2s
NCK  Nalchik           69.67 310⇓i P       P     16 37 18.9 +1.4
NCK                                  pmax  pmax
     comp=Z,40nm,1.2s
GUDG Gudauri           69.76 309  P        P     16 37 20.8 +2.4
ZEI  Tsey              69.91 309 eP        P     16 37 17.9  -1.4
ZEI                                  pmax  pmax
     comp=Z,43nm,0.9s
ZEI                                  MLR   MLR
     comp=Z,1μm,14.0s
KIV  Kislovodsk        69.93 311 eP        P     16 37 20.6 +1.4
KIV                                  eS    S     16 46 29.4 +2.3
KIV                                  eSS   SS    16 51 00.3 +4.7
KIV                                  pmax  pmax
     comp=Z,79nm,1.0s
KIV                                  pmax  pmax
     comp=Z,26nm,2.8s
KIV                                  MLR   MLR
     comp=Z,1μm,17.0s
KIV  Kislovodsk        69.93 311 eP        P     16 37 20.9 +1.7
     comp=Z,87nm,1.1s
KBZ  Khabaz            69.94 311  P        P     16 37 20.3 +1.2
     comp=Z,18nm,0.8s,baz=70,slow=5.1,SNR=45
KBZ                                  LR    LR    17 13 38.4
     comp=Z,679nm,18.1s,baz=34,slow=41
TBLG Delisi            70.04 308  P        P     16 37 20.3 +0.5
TBLG Delisi            70.04 308 eP        P     16 37 20.3 +0.5
ONI  Oni               70.30 309  P        P     16 37 23.5 +2.0
ONI  Oni               70.30 309 eP        P     16 37 23.4 +2.0
NEY  Neytrino          70.33 310⇓i P       P     16 37 23.7 +1.9
NEY                                  pmax  pmax
     comp=Z,3.0nm,0.9s
MICGM Minsk            70.67 326 eP        P     16 37 24.0 +0.6
MICGM                                eLR   LR    17 10 16.0
MNK  Minsk             70.67 326 eP        P     16 37 24.0 +0.6
LRM  Limekiln Ridge    70.83  46 eP        P     16 37 26.3 +1.4
NACGM Naroch           70.86 327 e         P     16 37 24.0  -0.5
NACGM                                eLQ   LQ    17 05 31.0
NACGM                                eLR   LR    17 10 34.0
GNI  Garni             70.98 307  P        P     16 37 27.8 +2.0
GNI  Garni             70.98 307⇓i P       P     16 37 28.3 +2.5
GNI                                  pmax  pmax
     comp=Z,81nm,1.2s
GNI  Garni             70.98 307  P        P     16 37 27.2 +1.4
AKH  Akhalkalaki       70.98 308⇑i P       P     16 37 27.9 +2.1
AKH  Akhalkalaki       70.98 308  P        P     16 37 27.2 +1.4
AKH  Akhalkalaki       70.98 308 eP        P     16 37 27.1 +1.4
BGD  Bogdanovka        71.00 308  P        P     16 37 28.4 +2.5
DLMT Dillon            71.04  46 eP        P     16 37 28.5 +2.5
     comp=Z,8.3nm,1.0s
HLID Hailey            71.12  49 eP        P     16 37 27.5 +0.9
     comp=Z,2.3nm,0.8s
BOZ  Bozeman (W)       71.39  46 eP        P     16 37 28.6 +0.4
BOZ                                  pmax  pmax
     comp=Z,4.0nm,0.8s
BOZ  Bozeman (W)       71.39  46 eP        P     16 37 28.6 +0.4
     comp=Z,4.2nm,0.8s
NC405 NORSAR Array S   71.59 337 eP        P     16 37 29.3 +0.4
BANOM Banah            71.59 289  P        P     16 37 30.5 +1.0
NC303 NORSAR Array S   71.60 338 eP        P     16 37 29.0  0.0
NC204 NORSAR Array S   71.73 338 eP        P     16 37 30.0 +0.1
NB201 NORSAR Array S   71.76 338 eP        P     16 37 30.2 +0.2
STKA Stephens Creek    71.78 182  P        P     16 37 31.1 +0.9
     comp=Z,2.3nm,0.9s,baz=333,slow=11,SNR=1.9
STKA                                 LR    LR    17 07 34.3
     comp=Z,106nm,21.9s,baz=22,slow=35
NB2  NORSAR Subarra    71.79 338  P        P     16 37 30.3 +0.1
     comp=Z,18nm,0.9s,baz=37,slow=6.2
NB2  NORSAR Subarra    71.79 338  P        P     16 37 30.3 +0.1
     baz=37,slow=6.2
NOA  NORSAR Array B    71.79 338  P        P     16 37 30.3 +0.1
     comp=Z,13nm,0.9s,baz=38,slow=6.0,SNR=33
NOA                                  PP    PP    16 40 06.2  -2.9
     comp=Z,2.6nm,0.9s,baz=37,slow=7.9,SNR=3.7
NOA                                  LR    LR    17 12 23.0
     comp=Z,486nm,21.5s,baz=25,slow=39
SOC  Sochi             71.86 312 eP        P     16 37 31.3 +0.5
SOC                                  e*SP  sP    16 37 43.6  -0.7
SOC                                  e           16 40 12.7
SOC                                  ePPP  PPP   16 41 53.3
SOC                                  eS    S     16 46 50.3 +1.0
SOC                                  eSS   SS    16 51 28.9 +3.9
SOC                                  pmax  pmax
     comp=Z,17nm,0.6s
NBO02 NORSAR Array S   71.89 338 eP        P     16 37 30.9 +0.2
NV01 Mina Array Sit    71.90  55 eP        P     16 37 32.9 +1.5
NVAR Mina Array Bea    71.90  55  P        P     16 37 29.4  -2.0
     comp=Z,0.4nm,0.3s,baz=336,slow=4.2,SNR=3.0
NVAR                                 LR    LR    17 01 35.4
     comp=Z,90nm,21.9s,baz=270,slow=30
NBO00 NORSAR Array S   71.93 338 eP        P     16 37 31.1 +0.1
UOSS Minazif           72.24 288 eP        P     16 37 33.8 +0.4
     comp=Z,1.4nm,0.9s
GCMT Greycliff         72.36  45 eP        P     16 37 35.2 +1.2
HATD Hatta, Dubai      72.36 288 i P       P     16 37 35.1 +0.9
     SNR=8.0
ANN  Anapa             72.37 314 eP        P     16 37 33.0  -0.8
ANN                                  eS    S     16 46 55.5 +0.4
ANN                                  pmax  pmax
     comp=Z,22nm,0.9s
ANN                                  MLR   MLR
     comp=E,364nm,17.0s
ANN                                  MLR   MLR
     comp=Z,574nm,17.0s
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ANN MLR MLR
comp=N,598nm,17.0s
ASHO Ashiyiah 72.50 288 *i* P **P 16 37 35.8 +0.8**
SNR=6.5
AKASG Malin Array Be 72.66 323 P **P 16 37 35.4 -0.1**
comp=N,8.1nm,0.7s,baz=43,slow=6.4,SNR=41
AKASG LR LR 17 13 14.1
comp=N,634nm,19.3s,baz=50,slow=39
AKASG Malin Array Be 72.66 323 *i* P **P 16 37 35.9 +0.5**
AKASG pmax pmax
comp=Z,8.0nm,0.7s
AKBB Malin Array Si 72.66 323 *e*P **P 16 37 35.5 0.0**
AKBB pmax pmax
comp=Z,22nm,1.0s
AKBB Malin Array Si 72.66 323 *e*P **P 16 37 35.5 0.0**
comp=Z,22nm,1.0s
KIEV Kiev 72.67 323*c i*P **P 16 37 35.9 +0.4**
KIEV pmax pmax
comp=Z,24nm,1.0s
KIEV Kiev 72.67 323 *e*P **P 16 37 35.4 -0.2**
comp=Z,22nm,1.0s
AK11 Malin Array Si 72.70 323 *e*P **P 16 37 36.0 +0.3**
H17A Grant Village 72.76 46 *e*P **P 16 37 39.8 +3.2**
comp=Z,9.5nm,1.1s
FAQ Al Faqa, Dubai 72.81 288 P **P 16 37 37.3 +0.5**
IMW Indian Meadow 72.88 47 *e*P **P 16 37 39.0 +1.7**
comp=Z,17nm,1.5s
TPAW Teton Pass 73.13 47 *e*P **P 16 37 39.2 +0.5**
comp=Z,29nm,1.8s
LOHW Long Hollow 73.25 47 *e*P **P 16 37 39.0 -0.3**
comp=Z,12nm,1.6s
REDW Red Top Meadow 73.27 47 *e*P **P 16 37 39.8 +0.3**
comp=Z,15nm,1.5s
R11A Troy Canyon, C 73.64 54 *e*P **P 16 37 42.9 +1.1**
comp=Z,17nm,1.6s
HWUT Hardware Ranch 73.98 49 *e*P **P 16 37 44.0 +0.3**
comp=Z,26nm,1.8s
SIM Simferopol' 74.07 316 *e*P **P 16 37 44.7 +0.8**
SIM pmax pmax
comp=Z,15nm,0.7s
DUG Dugway, Tooele 74.15 51 *e*P **P 16 37 43.6 -1.0**
DUG pmax pmax
comp=Z,20nm,1.6s
DUG Dugway, Tooele 74.15 51 *e*P **P 16 37 43.6 -1.0**
comp=Z,20nm,1.6s
BW06 Boulder Array 74.38 47 *e*P **P 16 37 46.5 +0.5**
comp=Z,8.1nm,0.8s
PDAR Pinedale Array 74.38 47 P **P 16 37 46.5 +0.4**
comp=Z,0.8nm,0.6s,baz=262,slow=1.5,SNR=7.6
SORM Soroca 74.84 321⇑*i*P **P 16 37 49.5 +1.2**
SORM Soroca 74.84 321⇑P **P 16 37 49.5 +1.2**
SHPR Sheep Range 75.06 55 *e*P **P 16 37 50.9 +1.0**
comp=Z,15nm,1.6s
BSD Bornholm Skovb 75.31 332 *i* P **P 16 37 52.3 +1.5**
comp=Z,25nm,1.1s
BSD Bornholm Skovb 75.31 332 *i* P **P 16 37 52.3 +1.5**
BSD pmax pmax
comp=Z,25nm,1.1s
KIS Kishinev 75.41 320 *e*P **P 16 37 53.0 +1.4**
KIS LRM MLR 17 14 26.0
comp=Z,800nm,16.0s
KIS Kishinev 75.41 320 *e*P **P 16 37 53.0 +1.4**
KIS *e* 16 48 12.0
KIS MLR MLR
comp=N,600nm,15.0s
KIS MLR MLR
comp=E,400nm,15.0s
KIS MLR MLR
comp=Z,900nm,15.0s
KIS MLR MLR
comp=Z,800nm,16.0s
MSU Marysvale 75.61 52 *e*P **P 16 37 53.8 +0.6**
MSU Marysvale 75.61 52 *e*P **P 16 37 53.8 +0.6**
LVV L'vov 75.65 324 *e*P **P 16 37 53.4 +0.5**
LVV *e*S **S 16 47 28.2 -3.7**
LVV MLR MLR
comp=N,700nm,14.0s
LVV MLR MLR
comp=E,700nm,15.0s
LVV MLR MLR
comp=Z,1μm,15.0s
KNB Kanab 76.18 53 *e*P **P 16 37 58.0 +1.6**
KNB pmax pmax
comp=Z,14nm,1.3s
KNB Kanab 76.18 53 *e*P **P 16 37 58.0 +1.6**
comp=Z,14nm,1.3s
SRU San Rafael Swe 76.20 50 *e*P **P 16 37 57.3 +0.8**
SRU pmax pmax
comp=Z,5.0nm,0.7s
SRU San Rafael Swe 76.20 50 *e*P **P 16 37 57.3 +0.8**
comp=Z,5.2nm,0.7s
KWP Kalwaria Pacla 76.38 325 *e*P **P 16 37 58.9 +1.8**
KWP Kalwaria Pacla 76.38 325 *e*P **P 16 37 58.9 +1.8**
BUR08 Bucovina Ar. S 76.69 322 *e*P **P 16 37 59.1 +0.1**
BURAR Bucovina Array 76.70 322⇓*i*P **P 16 38 00.9 +1.8**
BURAR Bucovina Array 76.70 322 ⇓P **P 16 38 00.9 +1.8**
TESR Tescani 76.81 321⇓*i*P **P 16 38 01.1 +1.5**
CFR Carcaliu 77.02 319⇑*i*P **P 16 38 02.4 +1.7**
CFR Carcaliu 77.02 319 ⇑P **P 16 38 02.4 +1.7**
KOLS Kolonicke sedl 77.08 325 *e*P **P 16 38 02.7 +1.6**
KOLS pmax pmax
comp=Z,9.0nm,1.0s
KOLS Kolonicke sedl 77.08 325 *e*P **P 16 38 02.7 +1.6**
STHS Stebnicka Huta 77.17 325 *e*P **P 16 38 03.6 +2.0**
STHS *e* 16 38 21.8
STHS pmax pmax
comp=Z,11nm,1.0s
STHS Stebnicka Huta 77.17 325 *e*P **P 16 38 03.6 +2.0**
STHS *e* 16 38 21.8
OJC Ojcow 77.19 327 *e*P **P 16 38 02.7 +1.0**
OJC Ojcow 77.19 327 *e*P **P 16 38 01.5 -0.2**
OJC pmax pmax
comp=Z,40nm,1.1s
OJC Ojcow 77.19 327 *e*P **P 16 38 01.5 -0.2**
comp=Z,40nm,1.1s
VRI Vrincioaia 77.23 320⇑*i*P **P 16 38 03.7 +1.7**
VRI Vrincioaia 77.23 320 ⇑P **P 16 38 03.7 +1.7**
UZH Uzhgorod 77.30 324 *e*P **P 16 38 00.0 -2.2**
UZH *e* 16 38 11.4
UZH *e* 16 38 15.6
TIRR Tirgusor 77.38 318 *e*P **P 16 38 04.3 +1.5**
TIRR pmax pmax
comp=Z,18nm,1.2s
TIRR Tirgusor 77.38 318 *e*P **P 16 38 04.3 +1.5**
comp=Z,18nm,1.2s
TRPA Tarpa 77.56 324⇓*e*P **P 16 38 05.6 +1.9**
NIE Niedzica 77.58 326 *e*P **P 16 38 05.8 +1.9**
NIE Niedzica 77.58 326 *e*P **P 16 38 05.8 +1.9**
BR131 Keskin Array S 77.82 312 *e*P **P 16 38 05.8 +0.2**
BRTR Keskin Array B 77.82 312 P **P 16 38 05.9 +0.3**
comp=Z,3.9nm,1.0s,baz=72,slow=4.0,SNR=22
BRTR PP **PP 16 41 00.7 -0.1**
comp=Z,1.6nm,0.9s,baz=70,slow=8.0,SNR=3.9
BRTR LR LR 17 17 58.9
comp=Z,244nm,19.4s,baz=20,slow=40
BRTR Keskin Array B 77.82 312 *i* P **P 16 38 07.0 +1.4**
BRTR pmax pmax
comp=Z,4.0nm,1.0s
MLR Muntele Rosu 77.88 320⇓*i*P **P 16 38 06.1 +0.3**
MLR Muntele Rosu 77.88 320 ⇓P **P 16 38 06.1 +0.3**
MLR Muntele Rosu 77.88 320 *e*P **P 16 38 06.0 +0.3**
comp=Z,35nm,1.7s
MSAB Monastry St. A 77.94 318⇑*i*P **P 16 38 07.7 +1.8**
PV01 Paradox Valley 78.00 50 *e*P **P 16 38 05.7 -1.0**
Y14A Wickenburg 78.05 56 *e*P **P 16 38 07.6 +0.8**
comp=Z,37nm,1.3s
KSP Ksiaz 78.14 329 *e*P **P 16 38 08.4 +1.5**
KSP Ksiaz 78.14 329 *e*P **P 16 38 08.4 +1.5**
LANS Liptovska Anna 78.14 326 *e*P **P 16 38 09.6 +2.6**
LANS Liptovska Anna 78.14 326 *e*P **P 16 38 09.6 +2.6**
OKC Ostrava-Krasne 78.17 327 *e*P **P 16 38 08.9 +1.8**
OKC *ex* x 16 38 27.7
OKC AMS AMS 17 15 40.0
comp=Z,600nm,18.8s
OKC Ostrava-Krasne 78.17 327 *e*P **P 16 38 08.9 +1.8**
OKC *e* 16 38 27.7
OKC MLR MLR
comp=Z,600nm,18.8s
ANTO Ankara 78.20 313 *e*P **P 16 38 08.0 +0.4**
ANTO pmax pmax
comp=Z,25nm,1.1s
ANTO Ankara 78.20 313 *e*P **P 16 38 08.0 +0.4**
comp=Z,25nm,1.1s
KECS Kecovo 78.21 325 *e*P **P 16 38 09.3 +2.0**
KECS pmax pmax
comp=Z,5.0nm,1.1s
KECS Kecovo 78.21 325 *e*P **P 16 38 09.3 +2.0**
BR231 Keskin MP Arra 78.23 313 *e*P **P 16 38 06.7 -1.1**
VOIR 78.36 321⇑*i*P **P 16 38 10.6 +2.3**
VOIR 78.36 321 ⇑P **P 16 38 10.6 +2.3**
MORC Moravsky Berou 78.47 328⇓*i*P **P 16 38 10.4 +1.6**
MORC Moravsky Berou 78.47 328 ⇓P **P 16 38 10.4 +1.6**
MORC Moravsky Berou 78.47 328 *e*P **P 16 38 09.0 +0.2**
comp=Z,96nm,1.1s
DRGR 78.47 323⇓*i*P **P 16 38 09.8 +0.9**
DRGR 78.47 323 ⇓P **P 16 38 09.8 +0.9**
DPC Dobruska-Polom 78.51 329 *e*P **P 16 38 10.5 +1.4**
DPC *e*pP **pP 16 38 20.0 +1.0**
DPC *ex* x 16 38 28.8
DPC *e*PP PP 16 40 57.3 -8.8
DPC Dobruska-Polom 78.51 329 *e*P **P 16 38 10.5 +1.4**
DPC *e* 16 38 20.0
DPC *e* 16 38 28.8
UPC Upice 78.51 329 AMS AMS 17 18 10.0
comp=Z,700nm,13.8s
ARR Arges 78.61 321⇓*i*P **P 16 38 13.0 +3.3**
PSZ Piszkesteto 78.89 325⇓*i*P **P 16 38 13.3 +2.1**
PSZ Piszkesteto 78.89 325⇓*e*P **P 16 38 12.4 +1.2**
PSZ Piszkesteto 78.89 325 ⇓P **P 16 38 13.3 +2.1**
PSZ Piszkesteto 78.89 325 *e*P **P 16 38 11.8 +0.6**
comp=Z,30nm,1.2s
BRG Berggiesshubel 79.03 330 *e*P **P 16 38 12.9 +1.1**
comp=Z,17nm,1.2s
BRG Berggiesshubel 79.03 330 S S 16 48 18.0 +10
comp=N,430nm,15.1s
comp=E,234nm,15.8s
comp=Z,538nm,14.7s
BRG Berggiesshubel 79.03 330 *e*P **P 16 38 12.9 +1.1**
BRG S S 16 48 18.0 +10
BRG pmax pmax
comp=Z,17nm,1.2s
BRG MLR MLR
comp=N,430nm,15.1s
BRG MLR MLR
comp=E,234nm,15.8s
BRG MLR MLR
comp=Z,538nm,14.7s
CLL Collm 79.04 331⇑*i*P **P 16 38 12.2 +0.3**
comp=Z,22nm,1.0s
CLL *e*PP **PP 16 41 11.0 +0.6**
CLL *e*S **S 16 48 11.0 +2.5**
CLL *e*PS **PnS 16 49 00.0 +6.7**
CLL *e*SS **SS 16 53 12.0 -1.2**
CLL *e* 16 54 18.0
CLL *e* 16 57 48.0
CLL Collm 79.04 331 *e*P **P 16 38 12.2 +0.3**
CLL pmax pmax
comp=Z,19nm,1.0s
CLL Collm 79.04 331 *e*P **P 16 38 12.2 +0.3**
comp=Z,19nm,1.0s
PVCC Panska Ves 79.06 330 *e*P **P 16 38 13.8 +1.8**
PVCC AMS AMS 17 19 30.0
comp=Z,500nm,16.3s
PVCC Panska Ves 79.06 330 *e*P **P 16 38 13.8 +1.8**
PVCC MLR MLR
comp=Z,500nm,16.3s
VRAC Vranov 79.22 328⇑*i*P **P 16 38 15.4 +2.5**
VRAC Vranov 79.22 328 ⇑P **P 16 38 15.4 +2.5**
GOPC GO Pecny, Ondr 79.47 329 *e*P **P 16 38 15.9 +1.6**
GOPC *e*pP **pP 16 38 25.6 +1.4**
GOPC AMS AMS 17 18 50.0
comp=Z,700nm,15.9s
GOPC GO Pecny, Ondr 79.47 329 *e*P **P 16 38 15.9 +1.6**
GOPC *e* 16 38 25.6
GOPC MLR MLR
comp=Z,700nm,15.9s
SZH Strazhica 79.49 319 *i* P **P 16 38 15.5 +1.0**
PRU Pruhonice 79.50 329 *e*P **P 16 38 15.4 +1.0**
PRU *e*sP **sP 16 38 34.5 +6.5**
PRU AMS AMS 17 19 00.0
comp=Z,700nm,15.6s
PRU Pruhonice 79.50 329 *e*P **P 16 38 15.4 +1.0**
PRU MLR MLR
comp=Z,700nm,15.6s
TREC Trest 79.68 328 AMS AMS 17 19 00.0
comp=Z,500nm,14.6s
BZS Buzias 79.85 323⇓*i*P **P 16 38 18.0 +1.6**
BZS Buzias 79.85 323 ⇓P **P 16 38 18.0 +1.6**
NKC Novy Kostel 80.11 330 *e*P **P 16 38 19.0 +1.2**
NKC AMS AMS 17 19 30.0
comp=Z,600nm,15.6s
NKC Novy Kostel 80.11 330 *e*P **P 16 38 19.0 +1.2**
NKC MLR MLR
comp=Z,600nm,15.6s
SOP Sopron 80.51 327⇑*e*P **P 16 38 21.9 +2.0**
MPEP Malo Peshtene 80.52 320 P P 16 38 13.8 -6.2
TUC Tucson 80.52 56 *e*P **P 16 38 20.9 +0.5**
TUC *e* 16 38 28.9
TUC pmax pmax
comp=Z,18nm,1.8s
TUC Tucson 80.52 56 *e*P **P 16 38 20.9 +0.5**
comp=Z,18nm,1.8s
TUC *e*PcP **pP 16 38 28.9 -1.4**
KHC Kasperske Hory 80.57 329 *e*P **P 16 38 21.2 +0.9**
KHC *ex* x 16 38 40.1
KHC *ex* x 16 38 48.1
KHC *e*S **S 16 48 27.6 +2.7**
KHC AMS AMS 17 18 20.0
comp=Z,600nm,16.1s
KHC Kasperske Hory 80.57 329 *e*P **P 16 38 21.2 +0.9**
KHC *e*S **S 16 48 27.6 +2.7**
KHC MLR MLR
comp=Z,600nm,16.1s
KHC Kasperske Hory 80.57 329 *e*P **P 16 38 20.9 +0.7**
comp=Z,8.2nm,1.0s
CONA Conrad Observa 80.60 327 *i* P **P 16 38 21.8 +1.3**
comp=Z,21nm,1.1s,SNR=16
GEC2 GERESS Array S 80.75 329 *e*P **P 16 38 21.6 +0.3**
GEC2 pmax pmax
comp=Z,8.0nm,1.0s
GEC2 GERESS Array S 80.75 329 *e*P **P 16 38 21.6 +0.3**
comp=Z,8.2nm,1.0s
GERES GERESS Array B 80.75 329 P **P 16 38 21.6 +0.3**
comp=Z,2.8nm,0.6s,baz=36,slow=5.0,SNR=22
GERES LR LR 17 18 29.1
comp=Z,309nm,18.3s,baz=5.0,slow=39
GEA0 GERESS Array S 80.75 329 *e*P **P 16 38 21.6 +0.3**
RAR Rarotonga 80.89 128 LR LR 17 07 08.2
comp=Z,134nm,21.5s,baz=328,slow=30
KDZ Kurdzhali 80.92 318 P **P 16 38 23.1 +0.8**
CSS Mathiatis 81.24 309 *e*P **P 16 38 22.4 -1.7**
comp=Z,2.2nm,0.8s
ARSA Arzberg 81.28 327 *i* P **P 16 38 25.0 +1.0**
comp=Z,9.2nm,1.1s
MOA Molln 81.32 328 *i* PcP **P 16 38 26.0 +1.8**
comp=Z,3.8nm,0.6s
ANMO Albuquerque 81.40 51*c e*P **P 16 38 26.8 +1.6**
ANMO pmax pmax
comp=Z,8.0nm,2.5s
ANMO Albuquerque 81.40 51 *e*P **P 16 38 26.0 +0.8**
comp=Z,14nm,1.4s
MMB Musomiste 81.83 319 *i* P **P 16 38 27.9 +0.8**
SCHQ Schefferville 81.84 17 LR LR 17 20 02.9
comp=Z,141nm,18.2s,baz=331,slow=40
SOKA Soboth 81.94 327 *i* P **P 16 38 28.1 +0.5**
comp=Z,33nm,1.1s,SNR=22
KKB Krupnik 81.95 319 P **P 16 38 28.7 +1.0**
OBKA Obir 82.28 327 *i* PcP **P 16 38 30.6 +1.2**
comp=Z,7.2nm,0.7s
KBA Koelnbreinsper 82.31 328 *i* PcP **P 16 38 31.2 +1.5**
comp=Z,14nm,0.8s,SNR=13
LEGS Legarje 82.40 326 *e*P **P 16 38 30.2 +0.2**
LEGS *e* 16 38 47.6
MYKA Terra Mystica 82.55 328 *i* P **P 16 38 31.4 +0.5**
comp=Z,14nm,1.2s,SNR=5.9
VAY Valandovo 82.61 319 *i* P **P 16 38 32.8 +1.7**
LJU Ljubljana 82.66 327 *e*P **P 16 38 31.3 0.0**
SKO Skopje 82.68 320 *i* P **P 16 38 33.7 +2.2**
WATA Walderalm 82.81 329 *i* PcP **P 16 38 34.3 +2.0**
comp=Z,21nm,1.2s
WTTA Wattenberg 82.84 329 *i* PcP **P 16 38 33.9 +1.4**
comp=Z,13nm,1.2s
ABTA Abfaltersbach 82.92 328 *i* PcP **P 16 38 33.7 +0.9**
comp=Z,11nm,1.3s
CEY Cerknica 82.94 327 *e*P **P 16 38 32.7 -0.1**
CEY *e* 16 38 52.5
MOTA Moosalm 82.98 330 *i* PcP **P 16 38 35.1 +1.9**
comp=Z,14nm,0.8s,SNR=10.0
RETA Reutte 83.00 330 *i* PcP **P 16 38 34.3 +1.2**
comp=Z,23nm,1.2s,SNR=9.9
BFO Black Forest 83.21 332 *e*P **P 16 38 34.7 +0.5**
BFO pmax pmax
comp=Z,15nm,1.1s
BFO Black Forest 83.21 332 *e*P **P 16 38 34.7 +0.5**
comp=Z,15nm,1.1s
FETA Feichten 83.40 330 *i* PcP **P 16 38 36.8 +1.5**
comp=Z,15nm,1.1s,SNR=5.9
DAVA Damuels 83.50 330 *i* PcP **P 16 38 36.8 +1.0**
comp=Z,21nm,1.2s,SNR=6.5
OHR Ohrid 83.64 320 *i* P **P 16 38 37.7 +1.2**
FUORN Ofenpass-Fuorn 83.91 330 *e*P **P 16 38 38.3 +0.2**
comp=Z,43nm,1.1s
URZ Urewera 84.04 154 LR LR 17 13 59.9
comp=Z,157nm,18.7s,baz=322,slow=34
MNTX Cornudas Mount 84.30 53 *e*P **P 16 38 41.5 +1.5**
comp=Z,4.4nm,1.1s
TUE Stuetta 84.38 330 *e*P **P 16 38 40.2 -0.2**
comp=Z,20nm,1.1s
PPT Papeete 84.79 118 LR LR 17 10 28.0
comp=Z,369nm,20.3s,baz=327,slow=31
PPT2 Papeete2 84.80 118 *e*LR LR 17 05 25.7
comp=Z,629nm,22.0s,baz=319
SENIN Lac Senin/Sane 85.25 331 *e*P **P 16 38 44.7 0.0**
comp=Z,18nm,1.2s
TAOE Nuku Hiva Isla 85.55 105 *e*LR LR 17 05 52.6
comp=Z,522nm,20.7s,baz=310
LAST Lasithi 85.63 313⇑*i*P **P 16 38 48.3 +1.6**
LAST Lasithi 85.63 313 *e*P **P 16 38 47.6 +0.8**
comp=Z,37nm,1.0s
IDI Anoyia 85.87 314 *e*P **P 16 38 47.5 -0.4**
comp=Z,20nm,1.1s
MEH Mehetia 86.02 117 *e*T T 18 13 44.9
comp=Z,19nm,0.2s
TUL1 Leonard 86.75 44 *e*P **P 16 38 51.8 -0.3**
comp=Z,19nm,0.9s
TX31 Lajitas Ar. Si 87.00 54 *e*P **P 16 38 54.2 +0.6**
TXAR Lajitas Array 87.00 54 P **P 16 38 54.3 +0.7**
comp=Z,0.8nm,0.8s,baz=292,slow=3.4,SNR=10
TXAR LR LR 17 12 49.7
comp=Z,58nm,21.9s,baz=0.0,slow=32
TBI Tubuai 88.93 122 *e*LR LR 17 06 51.3
comp=Z,260nm,24.2s,baz=320
TKL Tuckaleechee C 92.92 37 LR LR 17 22 41.1
comp=Z,41nm,19.3s,baz=357,slow=36
KEST Kesra 93.33 324 LR LR 17 26 32.0
comp=Z,498nm,18.2s,baz=330,slow=39
ES19 SONSECA Array 94.99 335 *e*P **P 16 39 30.9 +0.3**
ESDC Sonseca Array 95.03 335 P **P 16 39 31.1 +0.3**
comp=Z,1.1nm,0.7s,baz=16,slow=3.9,SNR=5.6
ESDC LR LR 17 28 06.1
comp=Z,343nm,18.9s,baz=40,slow=39
RKT Rikitea 98.61 113 *e*LR LR 17 11 39.5
comp=Z,257nm,23.8s,baz=311
TORD Torodi Ar. Bea 116.04 318 PKP **PKPdf 16 44 51.7 +0.4**
comp=Z,0.7nm,0.9s,baz=27,slow=1.7,SNR=3.3
TORD PP **PP 16 45 51.4 -3.7**
comp=Z,2.3nm,0.9s,baz=30,slow=5.5,SNR=5.8
SNAA Sanae 144.25 198 PKP **PKPdf 16 45 42.7 0.0**
SNAA Sanae 144.25 198 *e*PKIKP PKPbc 16 45 41.8 +0.8
SNAA Sanae 144.25 198 *e*PKPdf PKPbc 16 45 41.8 +0.8
PB11 IPOC Station P 145.20 64 *e*PKPbc **PKPdf 16 45 46.5 +0.6**
VNA3 Neumayer Olymp 146.05 195 PKP **PKPdf 16 45 45.9 +0.2**
LVC Limon Verde 147.60 67 PKPbc **PKPbc 16 45 52.7 -0.2**
comp=Z,11nm,0.8s,baz=211,slow=2.3,SNR=3.1
SIV San Ignacio 147.86 48 PKPbc **PKPbc 16 45 54.4 +1.0**
comp=Z,4.0nm,0.8s,baz=354,slow=4.4,SNR=7.1

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*IDC **31** 16:30:53.0±0.6, 35°.13N×143°.39E, h0km, mb4.2/22, mb1 4.3/29, mb1mx4.2/48, mbtmp4.2/29, ML3.8/5, MS4.2/1, Ms1 4.2/1, ms1mx3.1/43, Error ellipse: s-maj=15.5km s-min=13.0km az=127.0*

*ISCJB **31** 16:30:55.0±1.5, 35°.25N±0°.04×143°.28E±0°.04, h20km±10km, mb4.2/23, MS4.1/1, Error ellipse: s-maj=7.7km s-min=5.3km az=153.9*

*NEIC **31** 16:30:54.8±0.3, 35°.18N×143°.41E, h10km, mb4.8/2, Error ellipse: s-maj=7.2km s-min=5.8km az=142.0*

*JMA **31** 16:30:57.0±0.3, 35°.25N×143°.22E, h76km, M4.4*

ISC 31 16:30:57.3±3.9, 35°.30N±0°.05×143°.31E±0°.07, h24km±27km, n70, σ1§93/85, mb4.4/23, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	Op	ID	Time h m s	Res ISC
BSO1	**Boso 1**	**2.02**	**252**	P	P	**Pn**	**16 31 27.9**	**-1.5**
BSO1				S	S	**Sn**	**16 31 51.7**	**-2.0**
CHOJ	**Chosi**	**2.04**	**282**	P	P	**Pn**	**16 31 29.6**	**-0.6**
CHOJ				S	S	**Sn**	**16 31 53.2**	**-1.7**
BSO3	**Boso 3**	**2.35**	**259**	P	Pn	**Pn**	**16 31 33.3**	**-0.9**
BSO3				*e*S	Sn	**Sn**	**16 32 01.8**	**-0.4**
BSO4	**Boso 4**	**2.46**	**264**	P	Pn	**Pn**	**16 31 35.5**	**-0.3**
BSO4				*e*S	Sn	**Sn**	**16 32 05.4**	**+0.4**
KTR	**Katsuura**	**2.46**	**267**	P	Pn	**Pn**	**16 31 35.0**	**-0.9**
KTR				*e*S	Sn	**Sn**	**16 32 04.0**	**-1.2**
JFT	**Otama**	**3.26**	**314**	P	Pn	**Pn**	**16 31 46.7**	**-0.3**
JFT				*e*S	Sn	**Sn**	**16 32 23.1**	**-2.0**
JAG	**Ashikaga**	**3.33**	**291**	P	Pn	**Pn**	**16 31 46.9**	**-1.0**
JOD2	**Odawara 2**	**3.46**	**271**	P	Pn	**Pn**	**16 31 48.2**	**-1.4**
JOD2				S	Sn	**Sn**	**16 32 26.3**	**-3.5**
JHJ2	**Mitsune**	**3.63**	**234**	P	Pn	**Pn**	**16 31 49.5**	**-2.5**
JHJ2				*e*S	Sn	**Sn**	**16 32 29.1**	**-4.9**
JHJ2	**Mitsune**	**3.63**	**234**	*e*Pn	Pn	**Pn**	**16 31 51.0**	**-1.0**
JHJ	**Hachijo jima 2**	**3.65**	**234**	Pn	Pn	**Pn**	**16 31 49.5**	**-2.7**
	63nm,0.3s,baz=68,slow=22,SNR=6.1							
JHJ				Sn	Sn	**Sn**	**16 32 27.3**	**-7.2**
	234nm,0.3s,baz=107,slow=19,SNR=6.7							
JRY	**Ryogami san**	**3.66**	**283**	P	Pn	**Pn**	**16 31 52.3**	**-0.2**
JYN	**Shimob**	**3.90**	**274**	P	Pn	**Pn**	**16 31 54.8**	**-1.0**
JYN				*e*S	Sn	**Sn**	**16 32 39.3**	**-1.6**
JMK	**Ichinoseki**	**4.01**	**336**	P	Pn	**Pn**	**16 31 55.6**	**-1.6**
JMK				*e*S	Sn	**Sn**	**16 32 39.6**	**-3.8**
JNS	**Sasagawa**	**4.08**	**309**	P	Pn	**Pn**	**16 31 58.2**	**0.0**
JNS				*e*S	Sn	**Sn**	**16 32 43.8**	**-1.4**
JYK	**Kaneyama**	**4.31**	**328**	P	Pn	**Pn**	**16 32 00.1**	**-1.3**
JYK				*e*S	Sn	**Sn**	**16 32 48.2**	**-2.7**
MJAR	**Matsushiro Arr**	**4.32**	**288**	Pn	Pn	**Pn**	**16 32 01.4**	**-0.2**
	8.2nm,0.3s,baz=183,slow=9.8,SNR=24							
MAJO	**Matsushiro**	**4.32**	**288**	*e*Pn	Pn	**Pn**	**16 32 01.7**	**+0.2**
MAT	**Matsushiro**	**4.32**	**288**	P	Pn	**Pn**	**16 32 01.9**	**+0.3**
MAT				*e*S	Sn	**Sn**	**16 32 47.9**	**-3.4**
MAT	**Matsushiro**	**4.32**	**288**	P	Pn	**Pn**	**16 32 01.7**	**+0.1**
JOM	**Ohasama**	**4.46**	**339**	P	Pn	**Pn**	**16 32 02.9**	**-0.6**
JOM				*e*S	Sn	**Sn**	**16 32 50.8**	**-3.8**
JAW	**Awa shima**	**4.53**	**315**	P	Pn	**Pn**	**16 32 05.0**	**+0.6**
ERM	**Erimo**	**6.70**	**359**	*e*Pn	Pn	**Pn**	**16 32 31.5**	**-2.8**
CBIJ	**Chichi jima**	**8.24**	**187**	*e*Pn	Pn	**Pn**	**16 32 49.6**	**-5.7**
CBIJ				Sn	Sn	**Sn**	**16 34 14.2**	**-13**
JCJ	**Chichijima**	**8.24**	**187**	Pn	Pn	**Pn**	**16 32 49.4**	**-6.0**
	36nm,0.3s,baz=274,slow=22,SNR=11							
JCJ				Sn	Sn	**Sn**	**16 34 14.2**	**-13**
	24nm,0.3s,baz=294,slow=20,SNR=4.7							
ASAJ	**Asahikawa**	**8.82**	**357**	Pn	Pn	**Pn**	**16 33 00.8**	**-2.4**
	3.4nm,0.3s,baz=214,slow=17,SNR=24							
ASAJ				Sn	Sn	**Sn**	**16 34 33.8**	**-8.1**
	2.0nm,0.3s,baz=232,slow=18,SNR=2.9							
JNU	**Nakatsue**	**10.52**	**262**	Pn	Pn	**Pn**	**16 33 26.4**	**-0.3**
	0.4nm,0.3s,baz=45,slow=11,SNR=4.6							
YSS	**Yuzh-Sakhalins**	**11.65**	**358**	*e*Pn	Pn	**Pn**	**16 33 41.3**	**-0.7**
USRK	**Ussuriysk Ar.**	**12.43**	**319**	Pn	Pn	**Pn**	**16 33 54.0**	**+1.3**
	0.2nm,0.3s,baz=112,slow=15,SNR=3.5							
KSRS	**Korea Array**	**12.59**	**284**	Pn	Pn	**Pn**	**16 33 57.1**	**+2.2**
	0.3nm,0.3s,baz=90,slow=13,SNR=7.3							
KSAR	**Wonju Array Be**	**12.62**	**284**	Pn	Pn	**Pn**	**16 33 57.1**	**+1.8**
KLR	**Kul'dur**	**16.31**	**332**	Pn	Pn	**P**	**16 34 46.6**	**-0.8**
	0.4nm,0.3s,baz=130,slow=14,SNR=12							
PETK	**Petropavlovsk-**	**20.50**	**25**	P	P	**P**	**16 35 34.7**	**+1.2**
	4.1nm,0.8s,baz=219,slow=3.8,SNR=5.0							
YAK	**Yakutsk**	**28.10**	**346**	P	P	**P**	**16 36 46.7**	**-0.2**
	1.9nm,0.7s,baz=162,slow=20,SNR=5.6							
YAK	**Yakutsk**	**28.10**	**346**	*e*P	P	**P**	**16 36 47.3**	**+0.4**
	13nm,0.6s							
SEY	**Seymchan**	**28.23**	**9**	P	P	**P**	**16 36 49.3**	**+1.2**
	5.2nm,0.6s,baz=195,slow=8.8,SNR=20							
ENH	**Enshi**	**28.79**	**270**	*e*P	P	**P**	**16 36 53.1**	**-0.3**
TGY	**Tagaytay City**	**29.17**	**229**	LR	LR	**LR**	**16 49 26.3**	
	comp=Z,428nm,18.0s,baz=4.0,slow=98							
ULN	**Ulaanbaatar**	**29.61**	**306**	*e*P	P	**P**	**16 37 03.5**	**+2.8**
SONM	**Songino Array**	**30.03**	**306**	P	P	**P**	**16 37 05.9**	**+1.5**
	3.6nm,0.7s,baz=106,slow=9.1,SNR=7.7							
SONM				PcP	PcP	**PcP**	**16 40 06.2**	**+0.2**
	0.5nm,0.5s,baz=101,slow=1.3,SNR=4.9							
TIXI	**Tiksi**	**37.20**	**352**	P	P	**P**	**16 38 06.6**	**+0.4**
	2.3nm,0.6s,baz=49,slow=1.3,SNR=6.3							
CMAR	**Chiang Mai Arr**	**42.60**	**259**	P	P	**P**	**16 38 51.9**	**+0.1**
	0.5nm,0.7s,baz=47,slow=7.0,SNR=3.5							

ZALV	**Zalesovo Beam**	**44.22 314**	P		**P**	**16 39 04.8 +0.5**
	4.0nm,0.5s,baz=86,slow=6.9,SNR=6.8					
ZALV			PcP		**PcP**	**16 40 48.6 -0.1**
	1.7nm,0.6s,baz=88,slow=4.0,SNR=4.0					
MKAR	**Makanchi Array**	**46.35 304**	P		**P**	**16 39 22.1 +0.7**
	4.1nm,0.8s,baz=89,slow=10,SNR=9.0					
KURK	**Kurchatov**	**48.21 310**	*eP*		**P**	**16 39 36.1 +0.3**
ILAR	**Eielson Array**	**50.15 32**	P		**P**	**16 39 50.7 +0.3**
	2.6nm,0.7s,baz=258,slow=6.0,SNR=19					
TKM2	**Tokmak 2**	**51.81 300**	*eP*		**P**	**16 40 05.1 +1.5**
BRVK	**Borovoye**	**52.93 314**	*eP*		**P**	**16 40 11.6 +0.2**
INK	**Inuvik**	**55.23 27**	P		**P**	**16 40 28.5 +0.6**
	1.0nm,0.8s,baz=282,slow=3.4,SNR=4.2					
KKAR	**Karatay Array**	**55.33 302**	*eP*		**P**	**16 40 30.0 +0.9**
WRAB	**Tennant Creek**	**55.59 190**	*eP*		**P**	**16 40 29.2 -1.8**
	7.6nm,0.7s					
WRA	**Warramunga Arr**	**55.60 190**	P		**P**	**16 40 29.6 -1.5**
	6.7nm,0.7s,baz=7.6,slow=7.5,SNR=19					
ARU	**Arti**	**58.67 320**	*eP*		**P**	**16 40 52.9 +0.4**
ASAR	**Alice Springs**	**59.32 190**	P		**P**	**16 40 55.6 -1.7**
	2.1nm,0.8s,baz=18,slow=10,SNR=10					
ABKAR	**Akbulak array**	**60.23 311**	*eP*		**P**	**16 41 03.1 -0.3**
MBWA	**Marble Bar**	**60.44 205**	*eP*		**P**	**16 41 05.6 +0.6**
	11nm,0.8s					
YKA	**Yellowknife Ar**	**64.53 30**	P		**P**	**16 41 31.3 -0.6**
	0.4nm,0.8s,baz=293,slow=6.4,SNR=3.5					
GEYT	**Alibeck**	**66.02 300**	P		**P**	**16 41 42.6 +0.5**
	3.8nm,0.8s,baz=20,slow=4.7,SNR=6.3					
FINES	**FINESS Array B**	**71.05 333**	P		**P**	**16 42 13.1 +0.1**
	5.0nm,0.8s,baz=54,slow=7.3,SNR=7.2					
KBZ	**Khabaz**	**73.20 312**	P		**P**	**16 42 27.1 +1.0**
	2.5nm,0.8s,baz=332,slow=2.3,SNR=3.8					
NVAR	**Mina Array Bea**	**74.79 54**	P		**P**	**16 42 36.6 +0.8**
	2.6nm,0.7s,baz=298,slow=6.9,SNR=8.9					
NB2	**NORSAR Subarra**	**76.37 338**	P		**P**	**16 42 44.7 +0.4**
	comp=Z,8.1nm,1.1s,baz=38,slow=5.9					
NOA	**NORSAR Array B**	**76.37 338**	P		**P**	**16 42 44.4 +0.2**
	comp=Z,4.0nm,0.9s,baz=39,slow=5.7,SNR=7.7					
PDAR	**Pinedale Array**	**77.77 46**	P		**P**	**16 42 53.0 +0.2**
	comp=Z,0.9nm,0.6s,baz=286,slow=1.9,SNR=5.3					
BRTR	**Keskin Array B**	**81.15 313**	P		**P**	**16 43 10.7 -0.4**
	comp=Z,1.7nm,0.8s,baz=116,slow=2.9,SNR=6.0					
KHC	**Kasperske Hory**	**84.81 330**	*eP*		**P**	**16 43 30.4 +0.6**
GERES	**GERESS Array B**	**84.98 329**	P		**P**	**16 43 30.3 -0.4**
	comp=Z,1.1nm,0.6s,baz=29,slow=6.1,SNR=5.9					
TXAR	**Lajitas Array**	**89.94 53**	P		**P**	**16 43 54.9 -0.1**
	comp=Z,0.5nm,0.6s,baz=296,slow=3.5,SNR=5.6					
TORD	**Torodi Ar. Bea**	**119.64 316**	PKP		**PKPdf**	**16 49 44.9 -0.9**
	comp=Z,0.3nm,0.5s,baz=11,slow=1.5,SNR=3.3					
LPAZ	**La Paz**	**146.16 64**	PKPbc		**PKPbc**	**16 50 36.4 -0.4**
	comp=Z,2.1nm,0.6s,baz=278,slow=3.5,SNR=10					

NIED ***31*** *16:41:00,37.°70N×141.°70E,h68km,Mw4.1 Best double couple: M0 1.49000×10^15 NP1:φs=24.00000°,δ34.00000°, λ91.00000°. NP2:φs=203.00000°,δ56.00000°,λ89.00000°.*
ISCJB ***31*** *16:41:18.0±0.8,37.°66N±0.°04×141.°89E±0.°07,h49km±7km, mb3.9/16,MS3.8/1,Error ellipse: s-maj=10.1km s-min=5.1km az=22.5*
JMA ***31*** *16:41:19.6,37.°66N×141.°76E,h44km±2km,M4.2*
JMA Felt II J1.
IDC ***31*** *16:41:23.2±2.4,37.°67N×141.°69E,h81km±22km,mb3.6/16, mb1 3.8/20,mb1mx3.7/39,mbtmp3.9/20,MS3.5/2, Ms1 3.5/2,ms1mx2.9/48,Error ellipse: s-maj=19.6km s-min=13.4km az=105.0*

ISC 31 16:41:19.3±1.6,37.°65N±0.°05×141.°8E±0.°1,h45km±14km, n43,σ1°28/49,mb3.9/16,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**0.79 249**		P	**Pn**	**16 41 34.0**	**-0.1**
JFK				S	**Sn**	**16 41 44.2**	**-0.6**
JMM	**Marumori**	**0.82 285**		P	**Pn**	**16 41 34.5**	**0.0**
JMM				S	**Sn**	**16 41 45.3**	**-0.3**
JIO	**Ouri**	**0.87 336**		P	**Pn**	**16 41 35.4**	**+0.2**
JIO				S	**Sn**	**16 41 46.5**	**-0.3**
ONAJ	**Iwakimizuishiy**	**0.97 236**		P	**Pn**	**16 41 36.5**	**0.0**
ONAJ				S	**Sn**	**16 41 48.5**	**-0.7**
JOU	**Okura**	**1.14 309**		P	**Pn**	**16 41 39.1**	**+0.2**
JOU				S	**Sn**	**16 41 53.9**	**+0.5**
JFT	**Otama**	**1.17 264**		P	**Pn**	**16 41 40.0**	**+0.8**
JFT				S	**Sn**	**16 41 54.5**	**+0.5**
JMK	**Ichinoseki**	**1.37 341**		P	**Pn**	**16 41 42.6**	**+0.6**
JMK				S	**Sn**	**16 41 59.5**	**+0.5**
JYS	**Shiratake**	**1.48 293**		P	**Pn**	**16 41 44.0**	**+0.5**
JYS				S	**Sn**	**16 42 01.9**	**+0.2**
JFY	**Yanaizu**	**1.68 262**		P	**Pn**	**16 41 46.9**	**+0.7**
JFY				S	**Sn**	**16 42 08.1**	**+1.5**
JYK	**Kaneyama**	**1.70 319**		P	**Pn**	**16 41 47.1**	**+0.7**
JYK				*e*S	**Sn**	**16 42 07.4**	**+0.5**
MJAR	**Matsushiro Arr**	**3.08 250**		P	**Pn**	**16 42 06.5**	**+1.2**
	9.1nm,0.3s,baz=53,slow=11,SNR=52						
MJAR				S	**Sn**	**16 42 44.5**	**+3.6**
	12nm,0.3s,baz=87,slow=27,SNR=5.6						
MAT	**Matsushiro**	**3.08 250**		P	**Pn**	**16 42 07.2**	**+1.8**
MAT				S	**Sn**	**16 42 45.0**	**+4.0**
JHJ	**Hachijo jima 2**	**4.81 201**		P	**Pn**	**16 42 29.4**	**+0.2**
	44nm,0.3s,baz=73,slow=19,SNR=2.1						
JHJ				S	**Sn**	**16 43 19.6**	**-4.1**
	44nm,0.3s,baz=72,slow=19,SNR=2.3						
ASAJ	**Asahikawa**	**6.48 5**		P	**Pn**	**16 42 51.2**	**-0.9**
	2.6nm,0.3s,baz=209,slow=17,SNR=36						
ASAJ				S	**Sn**	**16 44 05.2**	**+0.5**
	1.6nm,0.3s,baz=252,slow=20,SNR=2.8						
USRK	**Ussuriysk Ar.**	**9.89 314**		P	**Pn**	**16 43 40.1**	**+1.4**
	0.4nm,0.3s,baz=122,slow=14,SNR=7.1						
JNU	**Nakatsue**	**9.99 246**		P	**Pn**	**16 43 41.0**	**+0.7**
	0.3nm,0.3s,baz=144,slow=0.9,SNR=4.2						
JNU				LR	LR	16 47 49.3	
	comp=Z,186nm,18.7s,baz=78,slow=39						
KSRS	**Korea Array**	**11.02 273**		P	Pn	16 43 58.5	+4.3
	0.2nm,0.3s,baz=80,slow=14,SNR=9.1						
KLR	**Kul'dur**	**13.66 331**		P	**Pn**	**16 44 35.3**	**-2.7**
	0.2nm,0.3s,baz=142,slow=15,SNR=2.6						
YAK	**Yakutsk**	**25.54 347**		P	**Pn**	**16 46 42.8**	**-0.6**
	1.0nm,0.5s,baz=139,slow=19,SNR=5.2						
SEY	**Seymchan**	**26.12 11**		P	**Pn**	**16 46 50.1**	**+1.4**
	2.5nm,0.7s,baz=202,slow=8.5,SNR=8.1						
SONM	**Songino Array**	**27.70 303**		P	**Pn**	**16 47 03.1**	**-0.2**
	0.8nm,0.4s,baz=102,slow=11,SNR=4.8						
H11N2	**WAKE ISLAND Hy 28.21 122**			T	T	17 16 51.6	
	baz=318,slow=74						
H11N1	**WAKE ISLAND Hy 28.22 122**			T	T	17 16 47.7	
	baz=318,slow=74						
H11N3	**WAKE ISLAND Hy 28.23 122**			T	T	17 16 53.0	
	baz=318						
H11S1	**WAKE ISLAND Hy 28.95 124**			T	T	17 17 37.9	
	baz=316,slow=76,SNR=181						
H11S3	**WAKE ISLAND Hy 28.95 124**			T	T	17 17 37.5	
	baz=316,slow=76,SNR=205						
H11S2	**WAKE ISLAND Hy 28.96 124**			T	T	17 17 38.7	
	baz=316,slow=76,SNR=152						
ZALV	**Zalesovo Beam**	**41.73 312**		P	**P**	**16 49 03.5**	**-0.1**
	0.9nm,0.5s,baz=84,slow=6.1,SNR=4.2						
MKAR	**Makanchi Array**	**44.05 302**		P	**P**	**16 49 22.4**	**-0.1**
	1.7nm,0.7s,baz=88,slow=9.9,SNR=13						
ILAR	**Eielson Array**	**48.81 33**		P	**P**	**16 50 00.3**	**+0.7**
	1.0nm,0.7s,baz=265,slow=6.9,SNR=13						
INK	**Inuvik**	**53.70 27**		P	**P**	**16 50 36.5**	**+0.4**
	1.4nm,0.5s,baz=283,slow=7.4,SNR=6.0						
WRA	**Warramunga Arr**	**57.72 188**		P	**P**	**16 51 05.1**	**-0.3**
	0.7nm,0.4s,baz=6.1,slow=6.8,SNR=31						
ASAR	**Alice Springs**	**61.44 188**		P	**P**	**16 51 31.0**	**-0.1**
	0.5nm,0.7s,baz=6.5,slow=5.0,SNR=9.7						
YKA	**Yellowknife Ar**	**63.12 30**		P	**P**	**16 51 41.9**	**+0.1**
	0.7nm,0.6s,baz=304,slow=6.7,SNR=10						
FINES	**FINESS Array B**	**68.41 332**		P	**P**	**16 52 15.3**	**-0.6**
	1.8nm,0.7s,baz=38,slow=9.6,SNR=6.0						
YBH	**Yreka Blue Hor**	**69.72 53**		LR	LR	17 18 27.8	
	comp=Z,58nm,21.4s,baz=356,slow=32						
NB2	**NORSAR Subarra**	**73.73 337**		P	**P**	**16 52 47.9**	**-0.3**
	comp=Z,3.1nm,0.9s,baz=39,slow=6.2						
NOA	**NORSAR Array B**	**73.73 337**		P	**P**	**16 52 47.5**	**-0.7**
	comp=Z,1.4nm,0.7s,baz=39,slow=5.9,SNR=7.3						
AKASG	**Malin Array Be**	**74.00 322**		P	**P**	**16 52 49.1**	**-0.8**
	comp=Z,0.9nm,0.4s,baz=45,slow=6.2,SNR=8.5						
PDAR	**Pinedale Array**	**77.01 46**		P	**P**	**16 53 08.2**	**+0.5**
	comp=Z,0.7nm,0.6s,baz=258,slow=2.1,SNR=4.9						
GERES	**GERESS Array B**	**82.35 328**		P	**P**	**16 53 35.8**	**-0.5**
	comp=Z,0.4nm,0.4s,baz=50,slow=6.5,SNR=3.5						
TXAR	**Lajitas Array**	**89.50 53**		P	**P**	**16 54 12.6**	**+0.6**
	comp=Z,0.3nm,0.5s,baz=299,slow=2.9,SNR=5.4						
LPAZ	**La Paz**	**146.11 59**		PKPbc	**PKPbc**	**17 00 55.7**	**+0.1**
	comp=Z,1.0nm,0.4s,baz=344,slow=3.3,SNR=6.6						

JMA 31 16:58:28.4±0.2,36.°96N×143.°77E,h65km,M3.6,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JFK	**Kawauchi**	**2.35 281**		P	Pn	16 59 05.7	+1.0
JFK				S	Sn	16 59 33.3	+0.8
ONAJ	**Iwakimizuishiy**	**2.38 274**		S	Sn	16 59 34.2	+0.9
JIO	**Ouri**	**2.43 309**		P	Pn	16 59 06.6	+0.8
JIO				S	Sn	16 59 34.9	+0.5
JMM	**Marumori**	**2.54 292**		P	Pn	16 59 08.3	+1.1
JMM				S	Sn	16 59 38.7	+1.7
JFT	**Otama**	**2.80 283**		S	Sn	16 59 45.6	+2.3
JOM	**Ohasama**	**3.18 323**		P	Pn	16 59 17.4	+1.4
JAG	**Ashikaga**	**3.51 263**		P	Pn	16 59 21.6	+1.1
JAG				S	Sn	17 00 02.0	+1.2
JRY	**Ryogami san**	**4.03 258**		P	Pn	16 59 28.4	+0.7

IDC 31 17:06:17.2±2.2,3.°03N×128.°91E,h0km,mb3.2/3, mb1 3.4/3,mb1mx3.2/50,mbtmp3.2/3,Error ellipse: s-maj=145.8km s-min=25.1km az=68.0,North of Halmahera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**23.45 167**		P	P	17 11 28.4	0.0
	0.6nm,0.5s,baz=347,slow=11,SNR=7.1						
ASAR	**Alice Springs**	**26.98 170**		P	P	17 12 00.6	-0.3
	0.2nm,0.5s,baz=353,slow=8.2,SNR=7.4						
MKAR	**Makanchi Array**	**59.37 325**		P	P	17 16 21.5	+0.1
	0.1nm,0.4s,baz=111,slow=8.1,SNR=3.6						

ISCJB ***31*** *17:11:21.4±0.7,24.°86N±0.°05×122.°46E±0.°03,h10km±6km, Error ellipse: s-maj=9.1km s-min=4.2km az=20.4*
TAP ***31*** *17:11:22.0,24.°87N×122.°40E,h19km±1km,ML2.6,D*
JMA ***31*** *17:11:21.0±0.4,24.°84N×122.°42E,h1km±4km,M2.3*

ISC 31 17:11:21.3±1.2,24.°87N±0.°07×122.°46E±0.°04,h19km±4km, n12,σ0°21/22,1C,Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWB1	**Santiao Chiao**	**0.45 287**		P	**Pg**	**17 11 30.4**	**-0.2**
	baz=291						
TWB1				S	**Sg**	**17 11 36.8**	**0.0**
	baz=291						
JYNG	**Yonagunijimaku**	**0.61 134**		P	**Pb**	**17 11 33.2**	**0.0**
JYNG				S	**Sg**	**17 11 41.7**	**+0.1**
TWC	**Suao**	**0.62 245**		P	**Pb**	**17 11 33.3**	**-0.1**
	baz=242						
TWC				S	**Sg**	**17 11 42.2**	**+0.3**
	baz=242						
YOJ	**Yonaguni jima**	**0.65 129**		P	**Pb**	**17 11 33.6**	**-0.3**
YOJ				*e*S	**Sg**	**17 11 42.7**	**-0.1**
NWF	**Wu-fen Shan**	**0.65 288**		⇑P	**Pg**	**17 11 34.5**	**+0.3**
	baz=290						
NWF				S	**Sg**	**17 11 43.4**	**+0.4**
	baz=290						
TWE	**Neicheng**	**0.74 258**		P	**Pg**	**17 11 35.7**	**-0.1**
	baz=257						
TWE				S	**Sb**	**17 11 45.3**	**+0.1**
	baz=257						
ENA	**Nanau**	**0.79 236**		P	**Pb**	**17 11 36.4**	**-0.1**
	baz=233						
ENA				S	**Sb**	**17 11 46.8**	**+0.1**
	baz=233						
ENTT	**Nioudou**	**0.85 254**		P	**Pn**	**17 11 38.2**	**0.0**
	baz=253						
ENTT				S	**Sg**	**17 11 48.9**	**-0.3**
	baz=253						
TWY	**Chenhua**	**0.88 297**		*e*P	**Pb**	**17 11 37.9**	**0.0**
	baz=299						
TWY				*e*S	**Sg**	**17 11 49.9**	**-0.3**
	baz=299						
NSK	**Sanguang**	**1.02 259**		P	**Pb**	**17 11 40.5**	**+0.1**
	baz=258						
NSK				S	**Sb**	**17 11 53.3**	**-0.2**
	baz=258						
NNS	**Nan Shan**	**1.08 247**		*e*S	**Sb**	**17 11 55.5**	**+0.2**
	baz=245						
IRIF	**Iriomote-Funau**	**1.27 115**		P	**Pg**	**17 11 46.1**	**+0.2**

ISCJB ***31*** *17:12:25.8±0.6,24.°86N±0.°04×122.°45E±0.°03,h3km±4km, Error ellipse: s-maj=7.4km s-min=3.4km az=20.4*
JMA ***31*** *17:12:25.4±0.2,24.°83N×122.°42E,h1km±3km,M2.5*
TAP ***31*** *17:12:26.8,24.°85N×122.°33E,h3km±1km,ML2.8,D*

ISC 31 17:12:25.9±1.1,24.°86N±0.°05×122.°46E±0.°03,h11km±10km, n19,σ0°26/35,1C-1D,Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWB1	**Santiao Chiao**	**0.45 289**		*i* P	**Pg**	**17 12 34.7**	**0.0**
	baz=297						
TWB1				*i* S	**Sg**	**17 12 40.6**	**-0.1**
	baz=297						
JYNG	**Yonagunijimaku**	**0.60 133**		P	**Pg**	**17 12 37.5**	**-0.1**
JYNG				*e*S	**Sg**	**17 12 45.9**	**+0.3**
TWC	**Suao**	**0.61 246**		*i* P	**Pg**	**17 12 37.9**	**+0.2**
	baz=240						
TWC				S	**Sb**	**17 12 46.5**	**-0.6**
	baz=240						
YOJ	**Yonaguni jima**	**0.64 128**		P	**Pg**	**17 12 38.1**	**-0.3**
YOJ				S	**Sg**	**17 12 47.1**	**+0.3**
NWF	**Wu-fen Shan**	**0.65 289**		⇑*i* P	**Pb**	**17 12 39.0**	**-0.3**
	baz=293						
NWF				*i* S	**Sb**	**17 12 47.9**	**-0.4**
	baz=293						
TWE	**Neicheng**	**0.73 259**		*i* P	**Pg**	**17 12 40.1**	**+0.1**
	baz=257						
TWE				*i* S	**Sg**	**17 12 49.9**	**+0.2**
	baz=257						
ENA	**Nanau**	**0.78 237**		⇓P	**Pg**	**17 12 41.0**	**0.0**
	baz=231						
ENA				*e*S	**Sg**	**17 12 51.4**	**+0.2**
	baz=231						
TWA	**Mucha**	**0.80 279**		*e*S	**Sb**	**17 12 52.4**	**-0.2**
	baz=280						
ENTT	**Nioudou**	**0.84 255**		*e*P	**Pb**	**17 12 42.6**	**+0.1**
	baz=252						
ENTT				S	**Sg**	**17 12 53.1**	**0.0**
	baz=252						
TWY	**Chenhua**	**0.88 298**		*e*P	**Pb**	**17 12 43.2**	**+0.1**
	baz=302						
TWY				*e*S	**Sb**	**17 12 55.1**	**+0.3**
	baz=302						
TWS1	**Kuangyinshan**	**0.97 284**		*e*P	**Pb**	**17 12 44.7**	**0.0**
	baz=286						
TWS1				*e*S	**Sb**	**17 12 57.5**	**-0.1**
	baz=286						
NSK	**Sanguang**	**1.02 260**		P	**Pb**	**17 12 45.4**	**-0.1**
	baz=258						
NSK				S	**Sg**	**17 12 58.1**	**-0.7**
	baz=258						
NNS	**Nan Shan**	**1.07 247**		*e*P	**Pn**	**17 12 47.1**	**+0.1**
	baz=244						
NNS				S	**Sb**	**17 13 00.1**	**-0.4**
	baz=244						
IRIF	**Iriomote-Funau**	**1.27 114**		P	**Pg**	**17 12 50.3**	**0.0**
WHF	**Hehuan Shan**	**1.30 237**		*e*P	**Pg**	**17 12 50.9**	**-0.1**
	baz=233						
TWT	**Tachien**	**1.31 243**		*e*P	**Pg**	**17 12 51.0**	**-0.2**
	baz=240						
TWT				*e*S	**Sg**	**17 13 08.7**	**+0.4**
	baz=240						
NSTT	**Nanjuang**	**1.34 260**		*e*P	**Pb**	**17 12 51.3**	**+0.3**
	baz=259						
NSTT				*e*S	**Sn**	**17 13 08.7**	**+0.3**
	baz=259						
SMLT	**Sun Moon Lake**	**1.72 236**		*e*P	**Pb**	**17 12 57.5**	**-0.1**
	baz=233						
SMLT				*e*S	**Sb**	**17 13 19.2**	**-0.1**
	baz=233						
TYC	**Yuchr**	**1.74 237**		*e*P	**Pb**	**17 12 57.8**	**-0.1**
	baz=234						
TYC				*e*S	**Sb**	**17 13 19.5**	**-0.2**
	baz=234						

NEIC ***31*** *17:14:38.6±0.9,36.°63N×146.°46E,h10km,mb4.8/15,Error ellipse: s-maj=16.3km s-min=14.4km az=130.0*
NEIC Recorded [2 JMA] in Iwate and Miyagi.
NIED ***31*** *17:15:00,38.°90N×142.°00E,h50km,Mw4.2 Best double couple: M0 2.41000×10^15 NP1:φs167.00000°,δ25.00000°, λ56.00000°. NP2:φs24.00000°,δ69.00000°,λ105.00000°.*
ISCJB ***31*** *17:15:16.5±0.7,38.°89N±0.°03×142.°01E±0.°07,h57km±3km, mb4.2/33,MS3.2/10,Error ellipse: s-maj=10.1km s-min=4.6km az=20.8*
JMA ***31*** *17:15:17.1±0.1,38.°88N×142.°00E,h50km±1km,M4.1*
JMA Felt II J1.
IDC ***31*** *17:15:19.5±1.1,38.°91N×141.°95E,h68km±7km,mb3.6/18, mb1 3.7/22,mb1mx3.6/49,mbtmp3.9/22,MS3.3/14, Ms1 3.3/14,ms1mx3.1/46,Error ellipse: s-maj=18.4km s-min=9.6km az=118.0*

ISC 31 17:15:16.9±0.8,38.°90N±0.°05×142.°00E±0.°07,h45km±5km, n80,σ1°57/81,mb4.3/33,MS3.4/10,1C,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OFUJ	**Ofunato**	**0.32 305**		P	**Pn**	**17 15 26.6**	**+0.8**
OFUJ				S	**Sn**	**17 15 33.0**	**+1.0**
JMK	**Ichinoseki**	**0.61 275**		P	**Pn**	**17 15 29.8**	**+0.5**
JMK				S	**Sn**	**17 15 38.8**	**+0.6**
JIO	**Ouri**	**0.68 229**		P	**Pn**	**17 15 30.3**	**+0.2**
JIO				*i* S	**Sn**	**17 15 39.2**	**-0.4**
JOM	**Ohasama**	**0.80 316**		P	**Pn**	**17 15 32.4**	**+0.6**
JOM				S	**Sn**	**17 15 43.2**	**+0.6**
JOU	**Okura**	**1.17 243**		P	**Pn**	**17 15 37.1**	**+0.2**
JOU				S	**Sn**	**17 15 52.0**	**+0.2**
JRG	**Rokugo**	**1.17 296**		P	**Pn**	**17 15 37.4**	**+0.5**
JRG				*e*S	**Sn**	**17 15 52.6**	**+0.9**
JYK	**Kaneyama**	**1.28 271**		P	**Pn**	**17 15 38.8**	**+0.4**
JMM	**Marumori**	**1.40 223**		P	**Pn**	**17 15 39.7**	**-0.3**
JMM				S	**Sn**	**17 15 56.7**	**-0.6**
JANG	**Nango**	**1.52 346**		P	**Pn**	**17 15 42.2**	**+0.5**
JANG				S	**Sn**	**17 16 01.7**	**+1.4**
ERM	**Erimo**	**3.24 15**		*e*Pn	**Pn**	**17 16 06.3**	**+1.1**
MJAR	**Matsushiro Arr**	**3.82 233**		P	**Pn**	**17 16 15.4**	**+2.2**
	5.2nm,0.3s,baz=39,slow=11,SNR=54						
MJAR				S	**Sn**	**17 17 00.6**	**+3.8**
	2.5nm,0.3s,baz=36,slow=26,SNR=4.0						
MJAR				LR	LR	17 18 05.8	
	comp=Z,161nm,20.5s,baz=30,slow=44						
MAJO	**Matsushiro**	**3.82 233**		*e*Pn	**Pn**	**17 16 15.8**	**+2.5**
MAT	**Matsushiro**	**3.82 233**		P	**Pn**	**17 16 15.8**	**+2.6**
MAT				*e*S	**Sn**	**17 17 03.1**	**+6.3**
MJB9	**Matsu-Tunnel**	**3.82 233**		*e*Pn	**Pn**	**17 16 15.6**	**+2.4**
ASAJ	**Asahikawa**	**5.23 5**		P	**Pn**	**17 16 33.6**	**+1.0**
	1.5nm,0.3s,baz=214,slow=15,SNR=33						
ASAJ				S	**Sn**	**17 17 34.3**	**+2.7**
	2.3nm,0.3s,baz=126,slow=19,SNR=4.0						
ASAJ	**Asahikawa**	**5.23 5**		*e*Pn	**Pn**	**17 16 34.0**	**+1.4**
INU	**Inuyama**	**5.33 230**		*e*Pn	**Pn**	**17 16 37.1**	**+3.1**
YSS	**Yuzh-Sakhalins**	**8.07 4**		*e*Pn	**Pn**	**17 17 09.4**	**-2.0**
USRK	**Ussuriysk Ar.**	**9.18 308**		P	**Pn**	**17 17 27.9**	**+1.2**
	0.9nm,0.3s,baz=124,slow=12,SNR=27						
USRK				LR	LR	17 20 52.5	
	comp=Z,202nm,18.1s,baz=142,slow=36						
JNU	**Nakatsue**	**10.69 241**		LR	LR	17 22 14.6	
	comp=Z,143nm,18.9s,baz=297,slow=39						
KSRS	**Korea Array**	**11.18 267**		P	Pn	17 17 59.2	+5.2
	0.3nm,0.3s,baz=83,slow=14,SNR=7.0						
KSRS				LR	LR	17 21 41.2	
	comp=Z,110nm,20.8s,baz=66,slow=34						
KS01	**Wonju Array Si**	**11.19 267**		*e*Pn	Pn	17 18 02.2	+7.9
KLR	**Kul'dur**	**12.68 328**		P	**Pn**	**17 18 15.3**	**+0.9**
	0.1nm,0.3s,baz=124,slow=18,SNR=4.3						
KLR				LR	LR	17 22 30.7	
	comp=Z,130nm,21.1s,baz=139,slow=34						
BJI	**Beijing**	**19.95 281**		P	**P**	**17 19 40.0**	**-5.1**
BJI				pmax	pmax		
	comp=Z,6.0nm,0.8s						
BJI				pmax	pmax		
	comp=Z,89nm,3.7s						
HHC	**Hu-ho-hao-te**	**23.39 285**		*e*P	**P**	**17 20 25.3**	**+3.5**
HHC				pmax	pmax		
	comp=Z,34nm,0.8s						
HHC				pmax	pmax		
	comp=Z,210nm,4.6s						
WHN	**Wuhan**	**24.14 258**		⇑*i* P	**P**	**17 20 28.8**	**+0.1**
WHN				pmax	pmax		
	comp=Z,50nm,1.2s						
YAK	**Yakutsk**	**24.37 346**		P	**P**	**17 20 29.5**	**-0.9**
	comp=Z,0.6nm,0.3s,baz=131,slow=19,SNR=4.0						
YAK	**Yakutsk**	**24.37 346**		*e*P	**P**	**17 20 29.4**	**-1.1**
	comp=Z,12nm,0.9s						
SEY	**Seymchan**	**24.88 11**		P	**P**	**17 20 36.2**	**+1.1**
	comp=Z,3.0nm,0.9s,baz=220,slow=4.8,SNR=9.6						
GUMO	**Guam**	**25.34 173**		LR	LR	17 36 35.9	
	comp=Z,12nm,18.2s,baz=11,slow=50						
ULN	**Ulaanbaatar**	**26.74 301**		*e*P	**P**	**17 20 54.7**	**+2.4**
	comp=Z,1.6nm,0.6s						
SONA1	**Songino Array**	**27.18 301**		*e*P	**P**	**17 20 57.2**	**+1.0**
SONM	**Songino Array**	**27.18 301**		P	**P**	**17 20 56.6**	**+0.4**
	comp=Z,1.0nm,0.7s,baz=96,slow=9.2,SNR=7.4						
SONM				LR	LR	17 31 47.9	
	comp=Z,86nm,18.4s,baz=78,slow=36						
ENH	**Enshi**	**28.00 262**		*e*P	**P**	**17 21 01.1**	**-2.6**
	comp=Z,8.7nm,0.6s						
H11N2	**WAKE ISLAND Hy 28.76 124**			T	T	17 51 36.0	
	baz=317,slow=75,SNR=1543						
H11N1	**WAKE ISLAND H

comp=Z,13nm,1.0s
AAK Ala-Archa 50.03 297 *e*P **P 17 24 05.9 -1.2**
comp=Z,3.5nm,1.2s
ZRNK Zerenda 50.51 311 *e*P **P 17 24 10.2 -0.2**
comp=Z,4.7nm,0.8s
EKS2 Erkin-Say 50.52 297 *e*P **P 17 24 10.4 -0.4**
comp=Z,16nm,2.0s
INK Inuvik 52.52 28 P **P 17 24 26.1 +1.0**
comp=Z,1.0nm,0.9s,baz=272,slow=7.6,SNR=2.3
KKAR Karatay Array 52.61 299 *e*P **P 17 24 26.0 -0.3**
ARU Arti 55.28 318 *e*P **P 17 24 45.6 +0.1**
comp=Z,11nm,0.9s
ABKAR Akbulak array 57.10 309 *e*P **P 17 24 58.0 -0.6**
SPITS Spitsbergen Ar 58.79 349 LR LR 17 51 40.0
comp=Z,23nm,18.8s,baz=315,slow=37
WRA Warramunga Arr 58.97 188 P **P 17 25 10.9 -1.0**
comp=Z,0.9nm,0.5s,baz=5.7,slow=6.9,SNR=10
YKA Yellowknife Ar 61.97 31 P **P 17 25 32.5 +0.7**
comp=Z,0.3nm,0.7s,baz=300,slow=6.2,SNR=4.4
ASAR Alice Springs 62.70 188 P **P 17 25 36.5 -0.7**
comp=Z,0.4nm,0.8s,baz=11,slow=4.9,SNR=5.0
GEYT Alibeck 63.35 298 P **P 17 25 41.4 -0.2**
comp=Z,1.6nm,0.6s,baz=76,slow=6.3,SNR=4.8
FINES FINESS Array B 67.39 332 P **P 17 26 06.8 -0.3**
comp=Z,3.4nm,0.7s,baz=57,slow=7.0,SNR=9.4
FINES pP **sP 17 26 25.3 +0.1**
comp=Z,1.8nm,0.7s,baz=43,slow=12,SNR=3.1
FINES LR LR 17 57 13.4
comp=Z,53nm,18.6s,baz=56,slow=37
KBZ Khabaz 70.05 310 P **P 17 26 24.1 +0.1**
comp=Z,3.2nm,0.7s,baz=43,slow=3.6,SNR=8.2
NOA NORSAR Array B 72.65 337 P **P 17 26 39.7 +0.2**
comp=Z,1.1nm,0.9s,baz=41,slow=5.3,SNR=3.0
NOA LR LR 18 01 25.1
comp=Z,22nm,21.8s,baz=180,slow=38
AKASG Malin Array Be 73.11 322 P **P 17 26 41.2 -1.1**
comp=Z,0.9nm,0.4s,baz=45,slow=5.8,SNR=8.6
BRTR Keskin Array B 77.96 312 P **P 17 27 10.4 -0.2**
comp=Z,0.4nm,0.4s,baz=116,slow=3.4,SNR=4.9
GERES GERESS Array B 81.37 328 P **P 17 27 28.9 0.0**
comp=Z,0.3nm,0.5s,baz=64,slow=5.6,SNR=4.5

IDC 31 17:16:01.6±2.5, 6°.40S×128°.80E, h363km±33km, mb3.3/2, mb1 3.6/6, mb1mx3.1/34, mbtmp4.4/6, Error ellipse: s-maj=56.2km s-min=16.1km az=77.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SIJI	**Sorong**	**6.02**	**24**	P	Pn	17 17 33.5	+0.3
	21nm,0.3s,baz=182,slow=3.9,SNR=3.4						
SIJI				S	S	17 18 45.4	-2.1
	12nm,0.3s,baz=90,slow=22,SNR=5.5						
FITZ	**Fitzroy Crossi**	**12.03**	**195**	P	P	17 18 41.3	-1.8
	0.7nm,0.3s,baz=24,slow=11,SNR=30						
FITZ				S	S	17 20 56.6	-0.2
	0.1nm,0.3s,baz=105,slow=20,SNR=2.0						
WRA	**Warramunga Arr**	**14.50**	**159**	P	P	17 19 10.2	-0.1
	2.5nm,0.3s,baz=340,slow=11,SNR=143						
WRA				S	S	17 21 45.5	-1.2
	0.1nm,0.3s,baz=336,slow=21,SNR=4.0						
ASAR	**Alice Springs**	**17.86**	**165**	P	P	17 19 46.7	+0.2
	2.2nm,0.3s,baz=344,slow=10,SNR=329						
ASAR				S	S	17 22 52.3	-0.7
	baz=351,slow=24,SNR=3.5						
STKA	**Stephens Creek**	**28.03**	**156**	P	P	17 21 21.1	+0.2
	1.0nm,0.5s,baz=334,slow=9.2,SNR=5.5						
MKAR	**Makanchi Array**	**67.07**	**327**	P	P	17 26 16.9	-0.1
	1.0nm,0.5s,baz=119,slow=7.3,SNR=11						

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*ISCJB **31** 17:17:58.5±0.6, 39°.12N±0°.03×29°.02E±0°.04, h1km±8km, Error ellipse: s-maj=6.1km s-min=4.2km az=150.6*
*DDA **31** 17:17:58.3, 39°.11N×29°.01E, h7km, Ml2.8*
*CSEM **31** 17:17:58.8±0.1, 39°.12N×29°.04E, h2km, ML2.8, Error ellipse: s-maj=2.9km s-min=2.2km az=132.0*
*ISK **31** 17:17:58.2, 39°.09N×29°.08E, h5km, MD2.7*
ISC 31 17:17:58.5±0.9, 39°.12N±0°.02×29°.02E±0°.02, h12km±9km, n39, σ0°.40/49, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**252**	P	**Pg**	**17 18 03.7**	**0.0**
DEMI				S	**Sg**	**17 18 07.1**	**-0.1**
DEMI	**Demirci**	**0.25**	**252**	*i* P	**Pg**	**17 18 03.7**	**0.0**
DEMI				*i* S	**Sg**	**17 18 07.1**	**-0.1**
GDZ	**Gediz**	**0.36**	**95**	P	**Pg**	**17 18 05.8**	**0.0**
GDZ				S	**Sg**	**17 18 11.2**	**+0.6**
GDZ	**Gediz**	**0.36**	**95**	*i* P	**Pg**	**17 18 05.8**	**0.0**
GDZ				*i* S	**Sg**	**17 18 11.2**	**+0.6**
TVSB	**Tavsanli**	**0.47**	**46**	*e*PG	**Pg**	**17 18 07.7**	**-0.1**
TVSB				*e*SG	**Sg**	**17 18 14.1**	**-0.1**
TVSB	**Tavsanli**	**0.47**	**46**	*e*Pg	**Pg**	**17 18 07.7**	**-0.1**
TVSB				*e*Sg	**Sg**	**17 18 14.1**	**-0.1**
KULA	**Kula-Manisa**	**0.67**	**205**	*e*PG	**Pg**	**17 18 11.6**	**+0.1**
KULA				*e*SG	**Sg**	**17 18 20.2**	**-0.1**
KULA	**Kula-Manisa**	**0.67**	**205**	*e*Pg	**Pg**	**17 18 11.6**	**+0.1**
KULA				*e*Sg	**Sg**	**17 18 20.2**	**-0.1**
KHAL	**Karahalli**	**0.84**	**154**	P	**Pb**	**17 18 14.9**	**-0.1**
KHAL				S	**Sb**	**17 18 25.6**	**-0.7**
KHAL	**Karahalli**	**0.84**	**154**	*i* P	**Pb**	**17 18 14.9**	**-0.1**
KHAL				*i* S	**Sb**	**17 18 25.6**	**-0.7**
AKHS	**Akhisar**	**0.97**	**256**	P	**Pg**	**17 18 17.2**	**0.0**
AKHS	**Akhisar**	**0.97**	**256**	*i* P	**Pg**	**17 18 17.2**	**0.0**
AKS	**Akhisar**	**0.97**	**256**	*e*PG	**Pn**	**17 18 18.2**	**+0.2**
AKS	**Akhisar**	**0.97**	**256**	*e*Pg	**Pn**	**17 18 18.2**	**+0.2**
BALB	**Balikesir**	**1.02**	**301**	*e*PG	**Pn**	**17 18 19.2**	**+0.5**
BALB	**Balikesir**	**1.02**	**301**	*e*Pg	**Pn**	**17 18 19.2**	**+0.5**
IGD	**Bursa**	**1.15**	**7**	*i* P	**Pb**	**17 18 19.1**	**-1.3**
MDNY	**Mudanya-Bursa**	**1.25**	**355**	*e*PN	**Pb**	**17 18 22.4**	**+0.4**
MDNY	**Mudanya-Bursa**	**1.25**	**355**	*e*Pn	**Pb**	**17 18 22.5**	**+0.4**
CAVI	**Cavuskoy**	**1.25**	**30**	*e*PN	**Pg**	**17 18 22.6**	**+0.1**
CAVI	**Cavuskoy**	**1.25**	**30**	*e*Pn	**Pg**	**17 18 22.7**	**+0.1**
KCTX	**Karacabey (Bur**	**1.25**	**336**	*e*PN	**Pg**	**17 18 22.9**	**+0.3**
KCTX	**Karacabey (Bur**	**1.25**	**336**	*e*Pn	**Pg**	**17 18 22.9**	**+0.3**
IZI	**Iznik**	**1.26**	**16**	*e*PN	**Pg**	**17 18 23.5**	**+0.7**
IZI	**Iznik**	**1.26**	**16**	*e*Pn	**Pg**	**17 18 23.5**	**+0.7**
BORA	**Eskisehir**	**1.34**	**55**	P	**Pb**	**17 18 23.9**	**+0.2**
BORA	**Eskisehir**	**1.34**	**55**	*i* P	**Pb**	**17 18 23.9**	**+0.2**
ARMT	**Armutlu**	**1.45**	**355**	*e*PN	**Pg**	**17 18 26.2**	**-0.1**
ARMT	**Armutlu**	**1.45**	**355**	*e*Pn	**Pg**	**17 18 26.2**	**-0.1**
EDC	**Edincik**	**1.51**	**324**	*e*PN	**Pg**	**17 18 27.8**	**+0.2**
EDC	**Edincik**	**1.51**	**324**	*e*Pn	**Pg**	**17 18 27.8**	**+0.2**
AYDN	**Tasoluk**	**1.71**	**212**	P	**Pb**	**17 18 30.3**	**+0.3**
AYDN	**Tasoluk**	**1.71**	**212**	*i* P	**Pb**	**17 18 30.3**	**+0.3**
GULT	**Gulveren**	**1.74**	**41**	*e*PN	**Pb**	**17 18 30.4**	**-0.2**
GULT	**Gulveren**	**1.74**	**41**	*e*Pn	**Pb**	**17 18 30.4**	**-0.2**
HRT	**Hereke**	**1.77**	**16**	*e*PN	**Pb**	**17 18 31.0**	**0.0**
HRT	**Hereke**	**1.77**	**16**	*e*Pn	**Pb**	**17 18 31.0**	**0.0**
SILT	**Sile**	**2.08**	**13**	*e*PN	**Pb**	**17 18 35.4**	**-0.9**
SILT	**Sile**	**2.08**	**13**	*e*Pn	**Pb**	**17 18 35.4**	**-0.9**

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*CSEM **31** 17:19:52.4, 32°.63N×46°.84E, h5km, ML3.1*
*ISN **31** 17:19:55.5±0.3, 32°.64N×46°.73E, h0km*
TEH 31 17:19:52.4, 32°.63N×46°.84E, h5km, ML3.1, Iran-Iraq border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
IKFM	**Kafar-mosalman**	**1.23**	**43**	*e*Pg	Pg	17 20 14.3	-1.7
IKFM				*e*AMB	AMB	17 20 36.1	
	comp=Z,99nm,0.2s						
IKFM	**Kafar-mosalman**	**1.23**	**43**	*e*Pg	Pg	17 20 14.3	-1.7
IKMR	**Kamar-syah**	**1.57**	**55**	*e*Pn	Pn	17 20 20.5	-0.4
IKMR				*e*Sg	Sb	17 20 41.9	-0.2
IKMR				*e*AMB	AMB	17 20 44.0	
	comp=Z,99nm,0.2s						
IKMR	**Kamar-syah**	**1.57**	**55**	*e*Pn	Pn	17 20 20.5	-0.4
IKMR				*e*Sg	Sb	17 20 41.9	-0.2
IGHG	**Ghaleghazi**	**1.71**	**353**	*e*Pn	Pn	17 20 23.2	+0.1
IGHG				*e*AMB	AMB	17 20 24.9	
	comp=Z,3μm,0.2s						
IGHG	**Ghaleghazi**	**1.71**	**353**	*e*Pn	Pn	17 20 23.2	+0.1
IVIS	**Veis**	**1.89**	**0**	*e*Pn	Pn	17 20 25.1	-0.4
IVIS				*e*Sg	Sb	17 20 50.7	-0.8
IVIS				*e*AMB	AMB	17 20 53.6	
	comp=Z,1μm,0.3s						
IVIS	**Veis**	**1.89**	**0**	*e*Pn	Pn	17 20 25.1	-0.4
IVIS				*e*Sg	Sb	17 20 50.7	-0.8
IBZA	**Bozab**	**2.02**	**25**	*e*Pn	Pn	17 20 28.1	+0.7
IBZA				*e*AMB	AMB	17 21 02.1	
	comp=Z,961nm,0.1s						
IBZA	**Bozab**	**2.02**	**25**	*e*Pn	Pn	17 20 28.1	+0.7
IDHR	**Dehrash**	**2.10**	**350**	*e*AMB	AMB	17 20 31.8	
	comp=Z,3μm,0.1s						
ILIN	**Lien**	**2.29**	**3**	*e*Pn	Pn	17 20 31.5	+0.5
ILIN				*e*AMB	AMB	17 21 10.6	
	comp=N,1μm,0.1s						
ILIN	**Lien**	**2.29**	**3**	*e*Pn	Pn	17 20 31.5	+0.5
IPIR	**Pirpir**	**3.42**	**88**	*e*Pn	Pn	17 20 46.5	-0.2
IPIR				*e*AMB	AMB	17 21 28.9	
	comp=Z,267nm,0.2s						
IPIR	**Pirpir**	**3.42**	**88**	*e*Pn	Pn	17 20 46.5	-0.2
IKLH	**Kolahrood**	**4.04**	**79**	*e*Pn	Pn	17 20 54.2	-1.0
IKLH				*e*AMB	AMB	17 21 14.3	
	comp=Z,148nm,0.1s						
IKLH	**Kolahrood**	**4.04**	**79**	*e*Pn	Pn	17 20 54.2	-1.0
IGAR	**Gharneh**	**4.40**	**92**	*e*Pn	Pn	17 20 59.0	-1.1
IGAR				*e*AMB	AMB	17 21 52.5	
	comp=N,279nm,0.1s						
IZEF	**Zefreh**	**4.63**	**85**	*e*AMB	AMB	17 21 03.9	
	comp=Z,118nm,0.1s						
IZEF				*e*Pn	Pn	17 21 03.0	-0.3
IZEF	**Zefreh**	**4.63**	**85**	*e*Pn	Pn	17 21 03.0	-0.3
IRAM	**Ramesheh**	**4.77**	**98**	*e*Pn	Pn	17 21 04.2	-1.0
IRAM				*e*AMB	AMB	17 22 09.0	
	comp=Z,66nm,0.2s						
IRAM	**Ramesheh**	**4.77**	**98**	*e*Pn	Pn	17 21 04.2	-1.0

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*DDA **31** 17:19:54.6, 39°.10N×29°.03E, h7km, Ml2.6*
*ISK **31** 17:19:54.4, 39°.10N×29°.06E, h5km, MD2.6*
*CSEM **31** 17:19:55.0±0.1, 39°.14N×29°.04E, h0km±1km, ML2.6, Error ellipse: s-maj=3.1km s-min=2.2km az=165.0*
ISC 31 17:19:55.0±1.0, 39°.10N±0°.03×29°.04E±0°.02, h9km±10km, n36, σ0°.29/46, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.26**	**258**	P	**Pg**	**17 20 00.1**	**-0.1**
DEMI				S	**Sg**	**17 20 03.7**	**0.0**
DEMI	**Demirci**	**0.26**	**258**	*i* P	**Pg**	**17 20 00.1**	**-0.1**
DEMI				*i* S	**Sg**	**17 20 03.7**	**0.0**
GDZ	**Gediz**	**0.34**	**91**	P	**Pg**	**17 20 01.9**	**+0.1**
GDZ				S	**Sg**	**17 20 06.9**	**+0.5**
GDZ	**Gediz**	**0.34**	**91**	*i* P	**Pg**	**17 20 01.9**	**+0.1**
GDZ				*i* S	**Sg**	**17 20 06.9**	**+0.5**
TVSB	**Tavsanli**	**0.48**	**43**	*e*PG	**Pg**	**17 20 04.0**	**-0.4**
TVSB				*e*SG	**Sg**	**17 20 10.2**	**-0.6**
TVSB	**Tavsanli**	**0.48**	**43**	*e*Pg	**Pg**	**17 20 04.0**	**-0.4**
TVSB				*e*Sg	**Sg**	**17 20 10.2**	**-0.6**
KULA	**Kula-Manisa**	**0.65**	**207**	*e*PG	**Pg**	**17 20 07.5**	**-0.1**
KULA	**Kula-Manisa**	**0.65**	**207**	*e*Pg	**Pg**	**17 20 07.5**	**-0.1**
KHAL	**Karahalli**	**0.81**	**154**	P	**Pb**	**17 20 11.2**	**0.0**
KHAL				S	**Sb**	**17 20 21.7**	**-0.6**
KHAL	**Karahalli**	**0.81**	**154**	*i* P	**Pb**	**17 20 11.2**	**0.0**
KHAL				*i* S	**Sb**	**17 20 21.7**	**-0.6**
AKHS	**Akhisar**	**0.98**	**258**	P	**Pg**	**17 20 13.9**	**+0.1**
AKHS				S	**Sb**	**17 20 27.0**	**-0.2**
AKHS	**Akhisar**	**0.98**	**258**	*i* P	**Pg**	**17 20 13.9**	**+0.1**
AKHS				*i* S	**Sb**	**17 20 27.0**	**-0.2**
AKS	**Akhisar**	**0.98**	**258**	*e*PG	**Pg**	**17 20 13.8**	**0.0**
AKS	**Akhisar**	**0.98**	**258**	*e*Pg	**Pg**	**17 20 13.8**	**0.0**
BALB	**Balikesir**	**1.05**	**302**	*e*PG	**Pg**	**17 20 15.3**	**+0.1**
BALB	**Balikesir**	**1.05**	**302**	*e*Pg	**Pg**	**17 20 15.3**	**+0.1**
CAVI	**Cavuskoy**	**1.27**	**29**	*e*PN	**Pg**	**17 20 19.5**	**+0.2**
CAVI	**Cavuskoy**	**1.27**	**29**	*e*Pn	**Pg**	**17 20 19.5**	**+0.2**
BALY	**Balya**	**1.27**	**301**	P	**Pn**	**17 20 19.0**	**-0.1**
BALY	**Balya**	**1.27**	**301**	*i* P	**Pn**	**17 20 19.0**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.28**	**355**	*e*PN	**Pn**	**17 20 19.0**	**0.0**
MDNY	**Mudanya-Bursa**	**1.28**	**355**	*e*Pn	**Pn**	**17 20 19.0**	**0.0**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*PN	**Pn**	**17 20 19.2**	**0.0**
KCTX	**Karacabey (Bur**	**1.28**	**336**	*e*Pn	**Pn**	**17 20 19.2**	**0.0**
IZI	**Iznik**	**1.28**	**15**	*e*PN	**Pn**	**17 20 19.2**	**0.0**
IZI	**Iznik**	**1.28**	**15**	*e*Pn	**Pn**	**17 20 19.2**	**0.0**
BORA	**Eskisehir**	**1.35**	**54**	P	**Pn**	**17 20 20.2**	**+0.1**
BORA	**Eskisehir**	**1.35**	**54**	*i* P	**Pn**	**17 20 20.2**	**+0.1**
GONE	**Gonen-Balikesi**	**1.41**	**313**	*e*PN	**Pn**	**17 20 21.1**	**+0.3**
GONE	**Gonen-Balikesi**	**1.41**	**313**	*e*Pn	**Pn**	**17 20 21.2**	**+0.3**
ARMT	**Armutlu**	**1.48**	**355**	*e*PN	**Pb**	**17 20 22.8**	**+0.2**
ARMT	**Armutlu**	**1.48**	**355**	*e*Pn	**Pb**	**17 20 22.8**	**+0.2**
AYDN	**Tasoluk**	**1.70**	**213**	P	**Pg**	**17 20 27.6**	**+0.1**
AYDN	**Tasoluk**	**1.70**	**213**	*i* P	**Pg**	**17 20 27.6**	**+0.1**
GULT	**Gulveren**	**1.75**	**40**	*e*PN	**Pn**	**17 20 26.3**	**+0.6**
GULT	**Gulveren**	**1.75**	**40**	*e*Pn	**Pn**	**17 20 26.3**	**+0.6**

IDC 31 17:23:16.8±12.0, 7°.38S×128°.29E, h121km±135km, mb2.9/2, mb1 3.2/5, mb1mx3.0/39, mbtmp3.4/5, ML3.7/3, Error ellipse: s-maj=81.8km s-min=56.4km az=25.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**10.96**	**193**	P	Pn	17 25 52.1	+1.8
	0.3nm,0.3s,baz=23,slow=11,SNR=13						
FITZ				S	Sn	17 27 47.2	-3.9
	0.3nm,0.3s,baz=87,slow=17,SNR=4.4						
WRA	**Warramunga Arr**	**13.79**	**155**	P	Pn	17 26 26.5	-0.9
	0.5nm,0.3s,baz=336,slow=12,SNR=7.9						
WRA				S	Sn	17 28 49.6	-10
	0.6nm,0.3s,baz=339,slow=22,SNR=9.0						
ASAR	**Alice Springs**	**17.06**	**162**	P	Pn	17 27 09.2	+1.1
	0.3nm,0.3s,baz=344,slow=11,SNR=26						
ASAR				S	Sn	17 30 10.2	-8.2
	0.2nm,0.3s,baz=340,slow=25,SNR=6.2						
MKAR	**Makanchi Array**	**67.63**	**328**	P	P	17 34 00.8	+0.1
	0.2nm,0.5s,baz=119,slow=6.1,SNR=4.7						
KURBB	**Kurchatov Arra**	**71.96**	**329**	P	P	17 34 26.8	-0.2
	0.1nm,0.4s,baz=131,slow=5.1,SNR=3.1						

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*ISCJB **31** 17:25:06.9±0.6, 39°.09N±0°.04×29°.03E±0°.04, h3km±9km, Error ellipse: s-maj=7.0km s-min=4.7km az=151.8*
*ISK **31** 17:25:06.3, 39°.05N×29°.09E, h6km, MD2.7*
*DDA **31** 17:25:06.9, 39°.08N×29°.03E, h7km, Ml2.4*
*CSEM **31** 17:25:07.0±0.1, 39°.10N×29°.02E, h3km±1km, ML2.4, Error ellipse: s-maj=2.5km s-min=1.8km az=141.0*
ISC 31 17:25:07.0±0.9, 39°.08N±0°.03×29°.04E±0°.03, h10km±10km, n24, σ0°.30/34, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.25**	**261**	P	**Pg**	**17 25 12.1**	**-0.1**
DEMI				S	**Sg**	**17 25 15.6**	**0.0**
DEMI	**Demirci**	**0.25**	**261**	*i* P	**Pg**	**17 25 12.1**	**-0.1**
DEMI				*i* S	**Sg**	**17 25 15.6**	**0.0**
GDZ	**Gediz**	**0.35**	**89**	P	**Pg**	**17 25 14.0**	**0.0**
GDZ				S	**Sg**	**17 25 19.1**	**+0.5**
GDZ	**Gediz**	**0.35**	**89**	*i* P	**Pg**	**17 25 14.0**	**0.0**
GDZ				*i* S	**Sg**	**17 25 19.1**	**+0.5**
TVSB	**Tavsanli**	**0.49**	**42**	*e*PG	**Pg**	**17 25 16.4**	**-0.3**
TVSB				*e*SG	**Sg**	**17 25 23.0**	**-0.2**
TVSB	**Tavsanli**	**0.49**	**42**	*e*Pg	**Pg**	**17 25 16.4**	**-0.3**
TVSB				*e*Sg	**Sg**	**17 25 23.0**	**-0.2**
KULA	**Kula-Manisa**	**0.64**	**207**	*e*PG	**Pg**	**17 25 19.1**	**-0.2**
KULA				*e*SG	**Sg**	**17 25 28.0**	**+0.2**
KULA	**Kula-Manisa**	**0.64**	**207**	*e*Pg	**Pg**	**17 25 19.1**	**-0.2**
KULA				*e*Sg	**Sg**	**17 25 28.0**	**+0.2**
KHAL	**Karahalli**	**0.80**	**153**	P	**Pb**	**17 25 22.9**	**-0.1**
KHAL				S	**Sb**	**17 25 33.4**	**-0.4**
KHAL	**Karahalli**	**0.80**	**153**	*i* P	**Pb**	**17 25 22.9**	**-0.1**
KHAL				*i* S	**Sb**	**17 25 33.4**	**-0.4**
BALB	**Balikesir**	**1.05**	**302**	*e*PN	**Pn**	**17 25 28.2**	**+0.4**
BALB	**Balikesir**	**1.05**	**302**	*e*Pn	**Pn**	**17 25 28.2**	**+0.4**
CAVI	**Cavuskoy**	**1.28**	**29**	*e*PN	**Pg**	**17 25 31.6**	**0.0**
CAVI	**Cavuskoy**	**1.28**	**29**	*e*Pn	**Pg**	**17 25 31.6**	**0.0**
KCTX	**Karacabey (Bur**	**1.29**	**336**	*e*PN	**Pg**	**17 25 32.0**	**+0.2**
KCTX	**Karacabey (Bur**	**1.29**	**336**	*e*Pn	**Pg**	**17 25 32.0**	**+0.2**
IZI	**Iznik**	**1.30**	**15**	*e*PN	**Pb**	**17 25 31.4**	**-0.1**
IZI	**Iznik**	**1.30**	**15**	*e*Pn	**Pb**	**17 25 31.4**	**-0.1**
BORA	**Eskisehir**	**1.36**	**54**	P	**Pb**	**17 25 32.7**	**+0.2**
BORA	**Eskisehir**	**1.36**	**54**	*i* P	**Pb**	**17 25 32.7**	**+0.2**
ARMT	**Armutlu**	**1.49**	**355**	*e*PN	**Pb**	**17 25 34.6**	**-0.1**
ARMT	**Armutlu**	**1.49**	**355**	*e*Pn	**Pb**	**17 25 34.6**	**-0.1**
GULT	**Gulveren**	**1.77**	**40**	*e*PN	**Pb**	**17 25 38.9**	**-0.6**
GULT	**Gulveren**	**1.77**	**40**	*e*Pn	**Pb**	**17 25 38.9**	**-0.6**

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*IDC **31** 17:54:38.9±0.9, 27°.33N×143°.07E, h0km, mb3.7/9, mb1 3.9/10, mb1mx3.7/37, mbtmp3.7/10, ML3.3/1, MS2.8/2, Ms1 2.9/2, ms1mx2.4/31, Error ellipse: s-maj=23.2km s-min=17.5km az=111.0*

*ISCJB **31** 17:54:40.8±0.8, 27°.4N±0°.1×143°.2E±0°.1, h27km, mb3.8/9, MS2.7/1, Error ellipse: s-maj=16.8km s-min=10.2km az=142.7*
ISC 31 17:54:43.1±1.0, 27°.4N±0°.1×143°.0E±0°.1, h27km, n13, σ0°.91/12, mb3.7/9, Bonin Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JCJ	**Chichijima**	**0.81**	**249**	LR	LR	17 54 57.6	
	comp=Z,140nm,19.4s,baz=349,slow=23						
JCJ				Pn	**Pb**	**17 54 58.2**	**-0.3**
	126nm,0.3s,baz=72,slow=9.6,SNR=30						
JCJ				Sn	**Sn**	**17 55 10.8**	**+1.1**
	251nm,0.3s,baz=27,slow=18,SNR=16						
MJAR	**Matsushiro Arr**	**10.01**	**337**	Pn	**Pn**	**17 57 03.7**	**-1.3**
	0.3nm,0.3s,baz=160,slow=12,SNR=4.0						
JNU	**Nakatsue**	**11.96**	**302**	LR	LR	18 01 05.3	
	comp=Z,52nm,19.2s,baz=293,slow=32						
SONM	**Songino Array**	**35.03**	**316**	P	**P**	**18 01 34.3**	**+0.7**
	0.6nm,0.6s,baz=94,slow=7.0,SNR=4.1						
CMAR	**Chiang Mai Arr**	**41.39**	**267**	LR	LR	18 19 19.1	
	comp=Z,10.0nm,20.2s,baz=155,slow=36						
WRA	**Warramunga Arr**	**47.79**	**191**	P	**P**	**18 03 17.9**	**-0.3**
	2.5nm,0.6s,baz=12,slow=8.7,SNR=15						
ZALV	**Zalesovo Beam**	**49.77**	**319**	P	**P**	**18 03 32.3**	**-0.8**
	0.4nm,0.3s,baz=101,slow=7.0,SNR=4.1						
MKAR	**Makanchi Array**	**50.87**	**309**	P	**P**	**18 03 41.3**	**-0.3**
	0.2nm,0.6s,baz=97,slow=5.6,SNR=3.4						
ASAR	**Alice Springs**	**51.51**	**191**	P	**P**	**18 03 45.2**	**-1.3**
	0.3nm,0.8s,baz=5.7,slow=6.1,SNR=6.9						
ILAR	**Eielson Array**	**57.10**	**29**	P	**P**	**18 04 27.1**	**+0.4**
	0.3nm,0.6s,baz=247,slow=4.7,SNR=4.1						
BVAR	**Borovoye Array**	**58.34**	**317**	P	**P**	**18 04 36.4**	**+0.8**
	1.9nm,0.6s,baz=101,slow=8.6,SNR=13						
YKA	**Yellowknife Ar**	**71.53**	**29**	P	**P**	**18 06 02.0**	**+0.7**
	0.3nm,0.6s,baz=302,slow=5.5,SNR=5.1						
FINES	**FINESS Array B**	**78.02**	**334**	P	**P**	**18 06 39.3**	**+0.5**
	1.7nm,0.9s,baz=46,slow=5.5,SNR=5.4						

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*ISCJB **31** 18:04:57.9±0.5, 26°.41S±0°.03×27°.25E±0°.03, h4km±5km, Error ellipse: s-maj=5.1km s-min=3.9km az=145.6*
*PRE **31** 18:04:58.1±1.1, 26°.43S×27°.26E, h2km, ML2.6*
ISC 31 18:04:57.9±1.1, 26°.48S±0°.03×27°.26E±0°.03, h5km±10km, n12, σ0°.91/24, South Africa

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WDLM	**Western Deep L**	**0.16**	**71**	*e*P	**Pg**	**18 05 01.1**	**0.0**
WDLM				*e*S	**Sg**	**18 05 03.2**	**-0.2**
WDLM				AML	AML	18 05 05.4	
	comp=Z,3μm,0.3s						
KLOF	**Kloof**	**0.34**	**69**	*e*P	**Pg**	**18 05 04.7**	**+0.1**
KLOF				*e*S	**Sg**	**18 05 09.1**	**-0.1**
KLOF				AML	AML	18 05 09.6	
	comp=Z,2μm,0.2s						
PRYS	**Parys**	**0.46**	**168**	*e*P	**Pb**	**18 05 08.3**	**-0.3**
PRYS				*e*S	**Sb**	**18 05 15.4**	**-0.4**
PRYS				AML	AML	18 05 15.4	
	comp=Z,200nm,0.3s						
BFSD	**Buffelsfontein**	**0.57**	**227**	*e*P	**Pg**	**18 05 09.1**	**+0.1**
BFSD				*e*S	**Sb**	**18 05 18.5**	**-0.6**
BFSD				AML	AML	18 05 26.0	
	comp=Z,99nm,0.6s						
KSR	**Koster**	**0.70**	**332**	*e*P	**Pg**	**18 05 10.5**	**-0.9**
KSR				*e*S	**Sg**	**18 05 20.5**	**0.0**
KSR				AML	AML	18 05 29.7	
	comp=Z,84nm,0.5s						
TLEK	**Tau Lekoa**	**0.71**	**227**	*e*P	**Pg**	**18 05 11.7**	**0.0**
TLEK				*e*S	**Sb**	**18 05 23.2**	**+0.1**
TLEK				AML	AML	18 05 32.4	
	comp=Z,89nm,0.6s						
ERPM	**east rand prop**	**0.89**	**82**	*e*P	**Pg**	**18 05 14.9**	**-0.2**
ERPM				*e*S	**Sb**	**18 05 27.7**	**-0.6**
ERPM				AML	AML	18 05 34.2	
	comp=Z,62nm,0.1s						
SWZ	**

7.0nm,0.3s,baz=75,slow=17,SNR=8.1
RPZ Rata Peaks 3.98 59 PN **Pn 18 45 03.8 +1.1**
RPZ AML AML 18 46 15.9
RPZ AML AML 18 46 29.3
OXZ Oxford 4.79 60 PN **Pn 18 45 15.0 +1.2**
INZ Inchbonnie 4.82 51 PN **Pn 18 45 16.0 +1.8**
DSZ Denniston Nort 5.71 46 PN **Pn 18 45 27.9 +1.4**
QRZ Quartz Range 6.76 44 PN Pn 18 45 44.9 +4.0
ASAR Alice Springs 34.31 299 P **P 18 50 48.4 +0.3**
0.5nm,0.9s,baz=136,slow=8.4,SNR=5.2
WRA Warramunga Arr 36.89 304 P **P 18 51 10.0 -0.3**
0.7nm,1.0s,baz=138,slow=7.9,SNR=4.6
H01W1 Cape Leeuwin H 40.59 267 T T 19 34 49.0
baz=121,slow=75,SNR=59
H01W2 Cape Leeuwin H 40.60 267 T T 19 34 45.0
baz=121,slow=75,SNR=58
H01W3 Cape Leeuwin H 40.61 267 T T 19 34 50.3
baz=121,slow=75,SNR=65
H08S2 Diego Garcia H 87.26 262 T T 20 32 55.1
baz=134
H08S1 Diego Carcia H 87.27 262 T T 20 32 53.2
baz=134
H08S3 Diego Garcia H 87.28 262 T T 20 32 56.6
baz=134
TORD Torodi Ar. Bea 144.88 207 PKPbc **PKPdf 19 03 38.6 -0.3**
1.0nm,0.8s,baz=149,slow=3.5,SNR=4.6
BRTR Keskin Array B 145.19 277 PKPbc **PKPdf 19 03 38.8 -0.2**
0.4nm,0.6s,baz=117,slow=5.0,SNR=3.4
AKASG Malin Array Be 151.38 295 PKPbc **PKPbc 19 03 54.8 +0.3**
0.2nm,0.4s,baz=80,slow=3.3,SNR=2.6

*ISCJB **31** 18:44:53.9±0.5, 39°.12N±0°.04×28°.98E±0°.04, h9km, Error ellipse: s-maj=6.2km s-min=3.7km az=157.8*
*DDA **31** 18:44:53.9, 39°.13N×29°.00E, h7km, Ml2.6*
*ISK **31** 18:44:53.3, 39°.10N×29°.04E, h10km, MD2.2*
*CSEM **31** 18:44:54.0±0.1, 39°.11N×28°.98E, h8km, ML2.6, Error ellipse: s-maj=3.3km s-min=2.6km az=154.0*
ISC 31 18:44:53.5±0.9, 39°.12N±0°.04×28°.99E±0°.03, h9km, n33, σ0§58/41, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.23**	**251**	P	**Pg**	**18 44 58.7**	**+0.5**
DEMI				S	**Sg**	**18 45 01.8**	**+0.5**
DEMI	**Demirci**	**0.23**	**251**	*i* P	**Pg**	**18 44 58.7**	**+0.5**
DEMI				*i* S	**Sg**	**18 45 01.8**	**+0.5**
GDZ	**Gediz**	**0.38**	**95**	P	**Pb**	**18 45 02.1**	**-0.4**
GDZ				S	**Sb**	**18 45 07.5**	**-1.1**
GDZ	**Gediz**	**0.38**	**95**	*i* P	**Pb**	**18 45 02.1**	**-0.4**
GDZ				*i* S	**Sb**	**18 45 07.5**	**-1.1**
TVSB	**Tavsanli**	**0.49**	**48**	*e*PG	**Pg**	**18 45 03.4**	**+0.4**
TVSB				*e*SG	**Sg**	**18 45 10.3**	**+0.8**
TVSB	**Tavsanli**	**0.49**	**48**	*e*Pg	**Pg**	**18 45 03.4**	**+0.4**
TVSB				*e*Sg	**Sg**	**18 45 10.3**	**+0.8**
KULA	**Kula-Manisa**	**0.66**	**203**	*e*PG	**Pb**	**18 45 06.7**	**-0.5**
KULA	**Kula-Manisa**	**0.66**	**203**	*e*Pg	**Pb**	**18 45 06.7**	**-0.5**
KHAL	**Karahalli**	**0.84**	**152**	P	**Pb**	**18 45 10.4**	**0.0**
KHAL	**Karahalli**	**0.84**	**152**	*i* P	**Pb**	**18 45 10.4**	**0.0**
AKS	**Akhisar**	**0.95**	**256**	*e*PG	**Pg**	**18 45 11.9**	**+0.1**
AKS	**Akhisar**	**0.95**	**256**	*e*Pg	**Pg**	**18 45 11.9**	**+0.1**
BALB	**Balikesir**	**1.01**	**301**	*e*PG	**Pn**	**18 45 13.8**	**0.0**
BALB	**Balikesir**	**1.01**	**301**	*e*Pg	**Pn**	**18 45 13.8**	**0.0**
IGD	**Bursa**	**1.15**	**8**	*i* P	**Pb**	**18 45 14.7**	**-1.0**
BALY	**Balya**	**1.23**	**301**	P	**Pg**	**18 45 17.4**	**+0.3**
BALY	**Balya**	**1.23**	**301**	*i* P	**Pg**	**18 45 17.4**	**+0.3**
KCTX	**Karacabey (Bur**	**1.25**	**337**	*e*PN	**Pg**	**18 45 18.4**	**+1.0**
KCTX	**Karacabey (Bur**	**1.25**	**337**	*e*Pn	**Pg**	**18 45 18.4**	**+1.0**
MDNY	**Mudanya-Bursa**	**1.25**	**356**	*e*PN	**Pg**	**18 45 17.6**	**+0.2**
MDNY	**Mudanya-Bursa**	**1.25**	**356**	*e*Pn	**Pg**	**18 45 17.7**	**+0.2**
CAVI	**Cavuskoy**	**1.26**	**31**	*e*PN	**Pg**	**18 45 18.2**	**+0.4**
CAVI	**Cavuskoy**	**1.26**	**31**	*e*Pn	**Pg**	**18 45 18.2**	**+0.4**
IZI	**Iznik**	**1.27**	**17**	*e*PN	**Pg**	**18 45 18.2**	**+0.3**
IZI	**Iznik**	**1.27**	**17**	*e*Pn	**Pg**	**18 45 18.2**	**+0.3**
BORA	**Eskisehir**	**1.36**	**56**	P	**Pg**	**18 45 19.5**	**-0.1**
BORA				S	**Sg**	**18 45 38.5**	**+1.2**
BORA	**Eskisehir**	**1.36**	**56**	*i* P	**Pg**	**18 45 19.5**	**-0.1**
BORA				*i* S	**Sg**	**18 45 38.5**	**+1.2**
ADVT	**Abdulvahap**	**1.43**	**23**	*e*PN	**Pn**	**18 45 19.2**	**-0.4**
ADVT	**Abdulvahap**	**1.43**	**23**	*e*Pn	**Pn**	**18 45 19.2**	**-0.4**
ARMT	**Armutlu**	**1.45**	**356**	*e*PN	**Pg**	**18 45 21.2**	**-0.1**
ARMT	**Armutlu**	**1.45**	**356**	*e*Pn	**Pg**	**18 45 21.2**	**-0.1**
GULT	**Gulveren**	**1.76**	**41**	*e*PN	**Pn**	**18 45 24.7**	**+0.5**
GULT	**Gulveren**	**1.76**	**41**	*e*Pn	**Pn**	**18 45 24.7**	**+0.5**

*IDC **31** 18:45:05.9±0.7, 24°.54N×94°.61E, h0km, mb3.9/19, mb1 4.0/20, mb1mx3.8/70, mbtmp3.9/20, ML3.2/1, MS2.9/2, Ms1 2.9/2, ms1mx2.5/36, Error ellipse: s-maj=26.6km s-min=12.8km az=56.0*
*ISCJB **31** 18:45:12.8±0.3, 24°.33N±0°.05×94°.33E±0°.03, h82km, mb4.1/36, Error ellipse: s-maj=7.2km s-min=3.6km az=19.8*
*NEIC **31** 18:45:12.9±0.7, 24°.54N×94°.55E, h54km±7km, mb4.3/17, Error ellipse: s-maj=9.3km s-min=5.0km az=59.0*
*BJI **31** 18:45:16.9, 25°.08N×94°.65E, h70km, mb4.1/15, mB4.3/6, Ms3.9/6, Ms7 3.7/6*
ISC 31 18:45:14.8±0.5, 24°.39N±0°.06×94°.40E±0°.05, h82km, n81, σ1§49/86, mb4.1/36, Myanmar-India border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
SHL	**Shillong**	**2.57**	**298**	*e*P	**Pn**	**18 45 52.4**	**-2.2**
SHL				*e*S	**Sn**	**18 46 24.1**	**-0.9**
LSA	**Lhasa**	**6.03**	**332**	P	**Pn**	**18 46 39.5**	**-2.4**
LSA				S	**Sn**	**18 47 46.0**	**-3.7**
LSA	**Lhasa**	**6.03**	**332**	*e*Pn	Pn	18 46 38.3	-3.5
CHTO	**Chiang Mai**	**6.97**	**142**	*e*Pn	**Pn**	**18 46 53.2**	**-1.2**
CM31	**Chiang Mai Arr**	**7.26**	**144**	*e*Pn	**Pn**	**18 46 57.9**	**-0.4**
CMAR	**Chiang Mai Arr**	**7.26**	**144**	Pn	Pn	18 46 55.2	-3.1
0.1nm,0.3s,baz=320,slow=14,SNR=6.7
CMAR Sn **Sn 18 48 15.7 -3.6**
baz=317,slow=22,SNR=2.4
CMAR Lg Lg 18 48 58.4
0.1nm,0.3s,baz=319,slow=31,SNR=2.9
CM01 Chiang Mai Arr 7.30 144 *e*Pn **Pn 18 46 58.9 0.0**
KMI Kunming 7.61 83 P **Pn 18 47 03.0 -0.3**
KMI pP 18 47 11.5
KMI S **Sn 18 48 27.5 -0.6**
KMI pmax pmax
comp=Z,4.0nm,1.0s
KMI LR LR
comp=N,190nm,6.8s
KMI LR LR
comp=E,640nm,11.7s
KMI LR LR
comp=Z,880nm,11.5s
BOK Bokaro 7.81 267 *e*P **Pn 18 47 04.9 -0.8**
BOK *e*S **Sn 18 48 29.1 -3.4**
GUN Gumba 8.42 296 *e*Pn **Pn 18 47 12.8 -1.6**
GUN *e*Sn **Sn 18 48 48.4 +0.3**
101nm,0.7s
KKN Kakani 8.87 294 *e*Pn **Pn 18 47 18.3 -2.1**
KKN *e*Sn **Sn 18 48 57.6 -1.3**
22nm,0.5s
DMN Daman 8.96 293 *e*Pn **Pn 18 47 19.7 -1.9**
DMN *e*Sn **Sn 18 48 59.8 -1.2**
37nm,0.7s
GKN Gorkha 9.48 294 *e*Pn **Pn 18 47 26.0 -2.7**
GKN *e*Sn **Sn 18 49 12.3 -1.3**
34nm,0.5s
KOLN Koldanda 10.28 291 *e*Pn **Pn 18 47 36.8 -2.8**
KOLN *e*Sn **Sn 18 49 29.8 -3.3**
21nm,0.6s
PYUN Piuthan 10.89 292 *e*Pn Pn 18 47 44.8 -3.1
PYUN *e*Sn **Sn 18 49 46.2 -1.9**
35nm,0.6s
BHPL Bhopal 15.58 269 *e*P **Pn 18 48 47.3 -2.6**
DDI Dehra Dun 15.67 296 *e*P **Pn 18 48 49.6 -1.4**
SMLA Simla 16.66 298 *e*P **Pn 18 49 01.2 -2.0**
SMLA IAmb IAmb 18 49 06.9
comp=Z,13nm,0.5s
DHRM DHARAMSHALA 17.74 300 *e*P **P 18 49 15.0 -1.4**
DHRM IAmb IAmb 18 49 19.1
comp=Z,56nm,1.6s
WMQ Urumqi 20.15 346 P **P 18 49 43.0 +0.6**
WMQ pP Pn 18 49 51.8 +6.8
WMQ sP sP 18 50 06.5 -2.6
WMQ S S 18 53 11.5 -13
WMQ pmax pmax
comp=Z,8.0nm,0.6s
WMQ pmax pmax
comp=Z,52nm,4.6s
PALK Pallekele 21.50 220 LR LR 19 00 36.8
comp=Z,36nm,19.3s,baz=296,slow=43
KSH Kashi 21.66 319 P **P 18 49 59.5 +0.7**
HHC Hu-ho-hao-te 21.80 37 *e*P **P 18 49 57.3 -3.0**
HHC pmax pmax
comp=Z,18nm,0.7s
HHC pmax pmax
comp=Z,120nm,3.6s
TKM2 Tokmak 2 24.12 325 *e*P **P 18 50 24.1 +0.9**
comp=Z,14nm,1.4s
KBL Kabul 24.23 301 *e*P **P 18 50 25.8 +1.6**
comp=Z,6.7nm,0.6s
MK01 Makanchi Array 24.35 340 *e*P **P 18 50 24.2 -0.7**
MK31 Makanchi Array 24.37 340 *e*P **P 18 50 25.1 0.0**
MK32 Makanchi Array 24.37 340 *e*P **P 18 50 25.5 +0.3**
MKAR Makanchi Array 24.37 340 P **P 18 50 25.5 +0.3**
comp=Z,2.3nm,0.5s,baz=152,slow=10,SNR=30
MKAR Makanchi Array 24.37 340 *e*P **P 18 50 25.4 +0.2**
MAKZ Makanchi 24.48 339 *e*P **P 18 50 24.3 -1.9**
comp=Z,4.9nm,1.0s
AAK Ala-Archa 24.52 323 P **P 18 50 28.6 +1.8**
comp=Z,0.9nm,0.3s,baz=108,slow=8.1,SNR=4.6
AAK Ala-Archa 24.52 323 *e*P **P 18 50 27.3 +0.5**
comp=Z,16nm,1.7s
EKS2 Erkin-Say 24.94 322 *e*P **P 18 50 32.7 +2.1**
comp=Z,8.9nm,0.9s
SONA0 Songino Array 25.26 19 *e*P **P 18 50 33.3 -0.1**
comp=Z,2.9nm,1.0s
SONM Songino Array 25.26 19 P **P 18 50 33.3 -0.1**
comp=Z,2.0nm,0.7s,baz=198,slow=9.2,SNR=9.1
SONA1 Songino Array 25.27 19 *e*P **P 18 50 32.5 -1.0**
ULN Ulaanbaatar 25.49 20 *e*P **P 18 50 34.7 -0.8**
comp=Z,1.9nm,0.8s
TLY Talaya 28.15 12 LR LR 19 02 30.1
comp=Z,18nm,18.1s,baz=278,slow=37
KURBB Kurchatov Arra 28.93 339 P **P 18 51 05.4 -0.7**
comp=Z,0.8nm,0.8s,baz=151,slow=8.4,SNR=9.0
KURK Kurchatov 28.98 339 *e*P **P 18 51 05.4 -1.1**
ZAA0 Zalesovo Array 30.38 349 *e*P **P 18 51 18.8 0.0**
ZALV Zalesovo Beam 30.38 349 P **P 18 51 18.9 0.0**
comp=Z,0.8nm,0.4s,baz=165,slow=7.7,SNR=7.4
ZAA1 Zalesovo Array 30.39 349 *e*P **P 18 51 18.9 0.0**
VOSK Vostochnaya 33.40 334 *e*P **P 18 51 45.6 +0.2**
comp=Z,2.6nm,0.8s
GEYT Alibeck 33.64 302 P **P 18 51 50.1 +2.4**
comp=Z,1.2nm,0.6s,baz=123,slow=11,SNR=4.2
BVAR Borovoye Array 33.86 334 P **P 18 51 49.8 +0.4**
comp=Z,2.4nm,0.4s,baz=141,slow=9.6,SNR=3.9
ZRNK Zerenda 34.38 333 *e*P **P 18 51 53.9 +0.1**
comp=Z,1.8nm,0.9s
ABKAR Abkulak array 36.60 322 *e*P **P 18 52 14.0 +1.1**
AKTO Aktyubinsk 38.27 322 P **P 18 52 27.4 +0.4**
comp=Z,0.8nm,0.4s,baz=144,slow=9.2,SNR=3.6
ARU Arti 41.23 330 *e*P **P 18 52 51.8 +0.3**
comp=Z,14nm,1.8s
TIXI Tiksi 51.12 13 P **P 18 54 08.0 -0.8**
comp=Z,1.8nm,0.3s,baz=212,slow=4.7,SNR=14
BR101 Keskin Array S 52.78 302 *e*P **P 18 54 24.1 +2.2**
BR131 Keskin Array S 52.78 302 *e*P **P 18 54 22.7 +0.9**
BRTR Keskin Array B 52.78 302 P **P 18 54 24.1 +2.2**
comp=Z,0.9nm,0.6s,baz=111,slow=6.8,SNR=8.2
CSS Mathiatis 53.38 296 *e*P **P 18 54 27.0 +0.8**
comp=Z,1.1nm,0.9s
BR231 Keskin MP Arra 53.44 302 *e*P **P 18 54 25.7 -0.9**
AKASG Malin Array Be 55.92 316 P **P 18 54 44.8 +0.6**
comp=Z,1.1nm,0.5s,baz=81,slow=6.5,SNR=6.9
KIEV Kiev 55.93 316 *e*P **P 18 54 45.0 +0.7**
comp=Z,1.8nm,0.7s
AK11 Malin Array Si 55.96 316 *e*P **P 18 54 46.0 +1.5**
MLR Muntele Rosu 58.17 310 *e*P **P 18 55 01.6 +1.2**
comp=Z,4.4nm,1.0s
KARP Karpathos 58.31 298 *e*P **P 18 55 02.9 +1.4**
comp=Z,5.8nm,0.9s
FIA0 FINESS Array S 58.54 328 *e*P **P 18 55 03.5 +1.0**
FINES FINESS Array B 58.54 328 P **P 18 55 03.5 +1.0**
comp=Z,3.1nm,0.8s,baz=96,slow=7.7,SNR=7.3
BUR08 Bucovina Ar. S 58.57 312 *e*P **P 18 55 03.7 +0.6**
WR1 Warramunga Arr 58.77 135 *e*P **P 18 55 05.3 +0.6**
comp=Z,29nm,1.8s
WRA Warramunga Arr 58.77 135 P **P 18 55 05.3 +0.6**
comp=Z,0.8nm,0.9s,baz=324,slow=7.3,SNR=10
SANT Santorini 59.55 299 *e*P **P 18 55 11.6 +1.6**
comp=Z,6.1nm,0.7s
ARA0 ARCESS Array S 60.01 338 *e*P **P 18 55 12.9 +0.4**
ARCES ARCESS Array B 60.01 338 P **P 18 55 12.9 +0.4**
comp=Z,2.0nm,1.0s,baz=90,slow=4.9,SNR=4.4
ASAR Alice Springs 61.24 138 P **P 18 55 22.9 +1.4**
comp=Z,0.4nm,0.6s,baz=315,slow=6.3,SNR=11
AGG Agios Georgios 61.57 303 *e*P **P 18 55 24.0 +0.3**
comp=Z,61nm,2.0s
NB2 NORSAR Subarra 65.71 328 P **P 18 55 51.2 +0.7**
comp=Z,1.3nm,0.6s,baz=84,slow=6.5
NB200 NORSAR Array S 65.71 328 *e*P **P 18 55 51.5 +1.0**
NOA NORSAR Array B 65.71 328 P **P 18 55 51.5 +1.0**
comp=Z,1.4nm,0.7s,baz=84,slow=6.5,SNR=7.1
NC204 NORSAR Array S 65.90 328 *e*P **P 18 55 52.4 +0.7**
GERES GERESS Array B 66.07 315 P **P 18 55 54.7 +1.5**
comp=Z,0.3nm,0.5s,baz=194,slow=5.1,SNR=3.9
GEA0 GERESS Array S 66.07 314 *e*P **P 18 55 53.9 +0.8**
INK Inuvik 81.14 16 P **P 18 57 21.9 +1.0**
comp=Z,1.0nm,0.7s,baz=280,slow=3.2,SNR=3.8
INK Inuvik 81.14 16 *e*P **P 18 57 19.9 -0.9**
comp=Z,9.9nm,1.7s
BOSA Boshof 84.85 236 P P 18 57 44.4 +3.6
comp=Z,3.7nm,0.9s,baz=100,slow=7.2,SNR=5.1

*IDC **31** 18:48:23.9±1.5, 37°.00N×140°.86E, h0km, mb3.5/4, mb1 3.6/6, mb1mx3.3/59, mbtmp3.5/6, ML3.3/2, MS3.0/2, Ms1 3.0/2, ms1mx2.4/32, Error ellipse: s-maj=39.1km s-min=22.2km az=73.0*
*ISCJB **31** 18:48:24.4±0.9, 36°.98N±0°.04×140°.91E±0°.07, h16km±6km, mb3.5/4, MS3.0/2, Error ellipse: s-maj=10.0km s-min=5.0km az=26.6*
*JMA **31** 18:48:25.8, 37°.01N×140°.72E, h8km±1km, M3.5 Broadband fault plane solution: P waves. NP1: ϕ_s=244.00000°, δ=72.00000°, λ=-94.00000°. NP2:ϕ_s=76.00000°, δ=18.00000°, λ=-78.00000°. Principal axes: T Plg27.0000°, Azm337.0000°; N Plg4.0000°, Azm245.0000°; P Plg63.0000°, Azm148.0000°;*
JMA Felt II J1.
ISC 31 18:48:25.6±1.1, 37°.01N±0°.04×140°.79E±0°.05, h10km±7km, n21, σ0§54/21, mb3.5/4, 5C-1D, Eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.10**	**7**	⇓P	**Pg**	**18 48 28.3**	**+0.1**
JFK	**Kawauchi**	**0.37**	**11**	⇑P	**Pg**	**18 48 33.1**	**+0.2**
JFK				S	**Sg**	**18 48 38.3**	**+0.5**
JHO	**Hitachi**	**0.43**	**204**	⇑P	**Pg**	**18 48 33.9**	**-0.2**
JHO				S	**Sg**	**18 48 39.5**	**-0.3**
JFT	**Otama**	**0.62**	**325**	⇑P	**Pg**	**18 48 37.4**	**-0.3**
JFT				S	**Sg**	**18 48 45.4**	**-0.5**
JSB	**Shiboa**	**0.69**	**267**	⇑P	**Pg**	**18 48 39.0**	**0.0**
JSB				S	**Sg**	**18 48 48.1**	**0.0**
JMM	**Marumori**	**0.86**	**0**	⇑P	**Pg**	**18 48 41.7**	**-0.5**
JMM				S	**Sg**	**18 48 53.2**	**-0.1**
MJAR	**Matsushiro Arr**	**2.12**	**258**	Pn	**Pn**	**18 49 01.7**	**+0.5**
7.5nm,0.3s,baz=74,slow=16,SNR=42
MJAR Sn **Sn 18 49 28.7 +1.1**
14nm,0.3s,baz=94,slow=25,SNR=14
MAT Matsushiro 2.12 258 P **Pn 18 49 02.1 +0.9**
MAT S **Sb 18 49 29.7 -0.9**
ASAJ Asahikawa 7.24 10 Pn **Pn 18 50 11.5 +0.1**
0.5nm,0.3s,baz=210,slow=15,SNR=7.7
ASAJ Sn **Sn 18 51 33.9 +0.3**
0.2nm,0.3s,baz=170,slow=17,SNR=2.0
H11N2 WAKE ISLAND Hy 28.57 120 T T 19 24 05.8
baz=312,slow=75,SNR=35
H11N1 WAKE ISLAND Hy 28.58 120 T T 19 24 06.3
baz=312,slow=75,SNR=30
H11N3 WAKE ISLAND Hy 28.59 120 T T 19 24 07.1
baz=312,slow=75,SNR=26
H11S1 WAKE ISLAND Hy 29.27 122 T T 19 25 05.7
baz=314,slow=76,SNR=36
H11S3 WAKE ISLAND Hy 29.27 122 T T 19 24 58.0
baz=314,slow=76,SNR=26
H11S2 WAKE ISLAND Hy 29.29 122 T T 19 25 03.3
baz=314,slow=76,SNR=20
JAY Jayapura 39.32 180 LR LR 19 11 55.8
comp=Z,4.8nm,18.1s,slow=36
MKAR Makanchi Array 43.71 302 P **P 18 56 31.1 +0.3**
0.2nm,0.6s,baz=85,slow=8.7,SNR=3.2
KURBB Kurchatov Arra 45.62 308 P **P 18 56 45.5 -0.5**
0.5nm,0.8s,baz=85,slow=7.9,SNR=5.7
WRA Warramunga Arr 56.97 187 P **P 18 58 10.7 -0.7**
0.8nm,0.6s,baz=3.6,slow=7.3,SNR=10
ASAR Alice Springs 60.70 187 P **P 18 58 37.2 0.0**
0.3nm,0.8s,baz=12,slow=8.7,SNR=4.0
DZM Mont Dzumac 63.55 153 LR LR 19 23 08.0
comp=Z,48nm,19.3s,baz=42,slow=33

IDC 31 18:48:53.5±2.0, 4°.64S×149°.13E, h0km, mb3.1/3, mb1 3.4/3, mb1mx3.2/40, mbtmp3.2/3, MS3.7/2, Ms1 3.7/2, ms1mx2.8/23, Error ellipse: s-maj=132.3km s-min=27.0km az=128.0, Bismarck Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**5.12**	**202**	Sn	Sn	18 51 05.7	-5.7
baz=345,slow=20
WRA Warramunga Arr 20.95 222 P P 18 53 38.1 -0.2
0.3nm,0.7s,baz=46,slow=10,SNR=3.5
ASAR Alice Springs 23.95 216 P P 18 54 09.0 -0.7
0.3nm,1.0s,baz=46,slow=8.4,SNR=4.5
FITZ Fitzroy Crossi 26.58 238 P P 18 54 34.2 +0.6
1.6nm,0.9s,baz=45,slow=10.0,SNR=3.0
NWAO Narrogin (SRO) 40.95 223 LR LR 19 14 13.4
comp=Z,107nm,21.3s,baz=316,slow=37
URZ Urewera 42.05 147 LR LR 19 13 54.3
comp=Z,75nm,18.1s,baz=72,slow=36
ILAR Eielson Array 83.41 23 P P 19 01 22.6 0.0
0.1nm,0.4s,baz=260,slow=5.4,SNR=2.5

*ISCJB **31** 19:02:55.6±0.6, 24°.86N±0°.03×122°.46E±0°.02, h6km±4km, Error ellipse: s-maj=5.6km s-min=3.2km az=13.5*
*JMA **31** 19:02:55.5±0.5, 24°.79N×122°.42E, h1km±5km, M2.9*
*TAP **31** 19:02:56.1, 24°.88N×122°.38E, h7km±1km, ML3.2, D*
ISC 31 19:02:55.3±1.1, 24°.86N±0°.04×122°.47E±0°.02, h10km±10km, n28, σ0§39/43, 1C, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWB1	**Santiao Chiao**	**0.46**	**289**	*i* P	**Pg**	**19 03 04.4**	**0.0**
baz=290
JYNG Yonagunijimaku 0.59 133 P **Pg 19 03 07.3 +0.5**
JYNG *e*S **Sb 19 03 15.6 -0.6**
TWC Suao 0.61 246 P **Pg 19 03 07.6 +0.4**
baz=240
TWC S **Sb 19 03 17.0 +0.2**
baz=240
YOJ Yonaguni jima 0.63 128 P **Pg 19 03 07.8 +0.3**
YOJ *e*S **Sb 19 03 16.7 -0.6**
NWF Wu-fen Shan 0.66 289 ⇑*i* P **Pb 19 03 08.7 -0.3**
baz=289
NWF S **Sb 19 03 17.8 -0.4**
baz=289
TWE Neicheng 0.74 260 *i* P **Pg 19 03 09.8 +0.1**
baz=256
TWE *i* S **Sg 19 03 19.6 +0.3**
baz=256
ENA Nanau 0.79 237 *i* P **Pg 19 03 10.5 0.0**
baz=232
ENA S **Sb 19 03 22.0 +0.2**
baz=232
TWA Mucha 0.81 279 *e*S **Sg 19 03 21.9 +0.3**
baz=278
ENTT Nioudou 0.85 255 *i* P **Pb 19 03 12.2 0.0**
baz=252
ENTT S **Sb 19 03 23.4 -0.2**
baz=252
PCYT Pengchaiyu 0.85 335 *e*P **Pb 19 03 12.2 +0.1**
baz=339
PCYT *e*S **Sb 19 03 23.7 +0.1**
baz=339
TWY Chenhua 0.89 298 *e*P **Pg 19 03 11.8 -0.6**
baz=299
TAP Taipei 0.89 282 S **Sg 19 03 24.3 +0.2**
baz=281
NSK Sanguang 1.03 260 P **Pb 19 03 15.2 0.0**
baz=257
NSK *e*S **Sg 19 03 27.6 -0.8**
baz=257
NNS Nan Shan 1.08 248 P **Pn 19 03 16.6 0.0**
baz=244
NNS S **Sg 19 03 29.8 -0.3**
baz=244
TWD Chiawan 1.11 226 *e*P **Pn 19 03 17.4 +0.5**
baz=221
IRIF Iriomote-Funau 1.26 114 P **Pg 19 03 19.8 +0.3**
TWT Tachien 1.32 243 P **Pb 19 03 20.4 +0.1**
baz=240
TWT S **Sg 19 03 38.0 +0.1**
baz=240
NSTT Nanjuang 1.35 261 *e*P **Pb 19 03 21.0 +0.3**
baz=258
NSTT *e*S **Sg 19 03 38.8 -0.1**
baz=258
ESL Shilin 1.40 223 *e*P **Pn 19 03 20.8 -0.1**
baz=218
HATJ Hateruma jima 1.46 123 P **Pg 19 03 23.4 +0.2**
JKRS Kuro-shima 1.53 113 P **Pg 19 03 24.8 +0.1**
JIJ Ishigaki jima 1.60 108 P **Pb 19 03 24.6 -0.3**
TWQ1 Liyutan 1.62 252 *e*P **Pb 19 03 25.8 +0.4**
baz=250
TWQ1 *e*S **Sn 19 03 45.2 +0.3**
baz=250
SMLT Sun Moon Lake 1.73 236 *e*P **Pb 19 03 27.0 -0.2**
baz=233
TYC Yuchr 1.75 237 *e*P **Pb 19 03 27.4 0.0**
baz=234
TYC *e*S **Sn 19 03 48.6 +0.6**
baz=234
TWF1 Yuli 1.84 216 *e*P **Pn 19 03 27.0 0.0**
baz=212
TWF1 *e*S **Sb 19 03 51.5 -0.6**
baz=212
CHN5 Tsauling 2.06 233 P **Pb 19 03 32.8 -0.1**
baz=230
CHN4 Tsaushan 2.28 229 *e*P **Pb 19 03 35.3 -1.2**
baz=227

*ISCJB **31** 19:08:14.6±0.3, 5°.57S±0°.03×146°.81E±0°.05, h100km, mb4.4/41, Error ellipse: s-maj=7.3km s-min=4.5km az=176.9*
*NEIC **31** 19:08:18.6±0.6, 5°.61S×146°.76E, h126km±6km, mb4.7/30, Error ellipse: s-maj=6.7km s-min=4.8km az=101.0*
NEIC Felt at Kainantu and Lae.
*IDC **31** 19:08:19.3±2.5, 5°.58S×146°.77E, h130km±23km, mb4.2/14, mb1 4.4/17, mb1mx4.2/29, mbtmp4.6/17, MS3.3/8, Ms1 3.3/8, ms1mx3.0/28, Error ellipse: s-maj=17.5km s-min=11.0km az=91.0*
ISC 31 19:08:16.5±0.3, 5°.65±0°.04×146°.76E±0°.06, h100km, n84, σ1§49/94, mb4.5/41, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
MANU	**Manus Island**	**3.63**	**10**	*e*Pn	**Pn**	**19 09 13.2**	**+2.4**
PMG	**Port Moresby**	**3.75**	**174**	P	**Pn**	**19 09 12.9**	**+0.5**
92nm,0.3s,baz=12,slow=5.3,SNR=298
PMG S **Sn 19 09 53.1 -2.6**
111nm,0.3s,baz=287,slow=6.3,SNR=7.1
PMG Port Moresby 3.75 174 *e*Pn **Pn 19 09 12.9 +0.5**
PMG *e*Sn Sn 19 09 49.0 -6.6
RABL Rabaul 5.57 75 *e*Pn **Pn 19 09 39.9 +2.8**
JAY Jayapura 6.80 297 P **Pn 19 09 56.3 +2.6**
0.5nm,0.3s,baz=94,slow=23,SNR=16
JAY S **Sn 19 11 12.7 +3.0**
baz=73,slow=19,SNR=1.9
COEN Coen 8.98 203 *e*Pn **Pn 19 10 24.8 +1.4**
COEN *e*Sn Sn 19 11 54.7 -8.2
HNR Honiara 13.60 107 P **Pn 19 11 26.8 +1.4**
1.3nm,0.3s,baz=262,slow=6.8,SNR=5.3
HNR LR LR 19 15 19.3
comp=Z,79nm,21.9s,baz=229,slow=31
HNR Honiara 13.60 107 *e*Pn **Pn 19 11 26.4 +1.0**
CTA Charters Tower 14.36 182 P **Pn 19 11 36.6 +1.4**
3.9nm,0.3s,baz=1.2,slow=14,SNR=42
CTA S **Sn 19 14 12.3 -1.2**
0.7nm,0.3s,baz=54,slow=19,SNR=3.5
CTAO Charters Tower 14.36 182 *e*Pn **Pn 19 11 38.3 +3.1**
MTN Manton Dam 16.99 244 *e*P **Pn 19 12 08.0 -0.2**
37nm,0.6s
WRAB Tennant Creek 18.64 219 *e*P **P 19 12 27.1 +0.6**

115nm,0.6s
WB2 Warramunga Arr 18.64 219 *e*P **P** **19 12 27.1 +0.5**
122nm,0.6s
WR1 Warramunga Arr 18.65 219 *e*P **P** **19 12 27.2 +0.6**
102nm,0.6s
WR1 *e*sP sP 19 13 07.0 +8.9
WR1 *e*S **S** **19 15 54.3 +0.3**
WRA Warramunga Arr 18.65 219 P **P** **19 12 27.2 +0.6**
8.7nm,0.3s,baz=44,slow=12,SNR=168
WRA sP sP 19 13 07.0 +8.8
0.9nm,0.3s,baz=42,slow=12,SNR=4.3
WRA S **S** **19 15 54.3 +0.3**
0.1nm,0.3s,baz=40,slow=21,SNR=4.6
GUMO Guam 19.20 354 P **P** **19 12 34.0 +1.3**
2.4nm,0.3s,baz=190,slow=8.1,SNR=4.2
EIDS Eidsvold 20.04 169 *e*P **P** **19 12 43.8 +2.1**
48nm,0.6s
AS01 Alice Springs 21.75 213 *e*P **P** **19 13 00.5 +0.4**
AS31 Alice Springs 21.77 213 *e*P **P** **19 13 01.1 +0.8**
29nm,0.6s
ASAR Alice Springs 21.78 213 P **P** **19 13 01.3 +0.9**
46nm,0.7s,baz=45,slow=8.0,SNR=316
ASAR S **S** **19 16 53.4 -2.1**
2.9nm,0.9s,baz=33,slow=19,SNR=5.5
ASAR LR LR 19 22 13.2
comp=Z,262nm,19.1s,baz=42,slow=38
SOEI Soe 22.66 258 *e*P **P** **19 13 10.4 +0.6**
38nm,0.9s
FITZ Fitzroy Crossi 24.05 237 P **P** **19 13 23.5 +0.9**
51nm,0.6s,baz=45,slow=7.9,SNR=121
FITZ LR LR 19 23 39.9
comp=Z,106nm,20.7s,baz=62,slow=38
FITZ Fitzroy Crossi 24.05 237 *e*P **P** **19 13 22.9 +0.2**
69nm,0.8s
MMRI Maumere 24.51 262 *e*P **P** **19 13 25.9 -0.9**
48nm,1.0s
ARMA Armidale 25.06 170 *e*P **P** **19 13 31.6 -0.1**
62nm,1.5s
DZM Mont Dzumac 25.08 133 P **P** **19 13 31.9 -0.1**
12nm,0.7s,baz=264,slow=8.2,SNR=12
DZM Mont Dzumac 25.08 133 *e*P **P** **19 13 30.5 -1.5**
44nm,1.5s
STKA Stephens Creek 26.54 190 P **P** **19 13 45.4 +0.4**
11nm,0.5s,baz=351,slow=9.0,SNR=18
STKA LR LR 19 24 17.8
comp=Z,53nm,18.6s,baz=22,slow=36
STKA Stephens Creek 26.54 190 *e*P **P** **19 13 45.7 +0.7**
2.9nm,0.6s
STKA *e*ScS ScS 19 24 17.9 -11
KAPI Kappang 26.90 270 *e*P **P** **19 13 48.6 +0.2**
9.4nm,0.9s
BBOO Buckleboo 28.81 199 *e*P **P** **19 14 06.3 +1.1**
14nm,1.0s
CAN Canberra 29.60 176 *e*P **P** **19 14 13.0 +0.7**
47nm,1.5s
MBWA Marble Bar 30.40 237 *e*P **P** **19 14 19.9 +0.4**
14nm,0.7s
KSM Kuching 37.09 280 *e*P P 19 15 14.3 -3.2
14nm,1.5s
YULB Yu-li 38.10 320 *e*P **P** **19 15 24.9 -1.0**
13nm,1.4s
TPUB Ta-pu 38.46 319 *e*P **P** **19 15 27.2 -1.8**
49nm,1.9s
SSLB Suanglung 38.60 320 *e*P **P** **19 15 29.3 -0.9**
29nm,2.0s
NWAO Narrogin (SRO) 38.63 222 P **P** **19 15 31.0 +0.7**
18nm,1.0s,baz=18,slow=16,SNR=3.6
NWAO Narrogin (SRO) 38.63 222 *e*P **P** **19 15 30.1 -0.2**
47nm,1.4s
MJAR Matsushiro Arr 42.73 350 P **P** **19 16 02.8 -1.1**
1.7nm,0.8s,baz=164,slow=7.6,SNR=4.5
QIZ Qiongzhong 43.86 305 P **P** **19 16 13.3 +0.1**
QIZ S **S** **19 22 36.0 -1.2**
QIZ LR LR
comp=Z,120nm,5.7s
KSRS Korea Array 46.34 339 pP **pP** **19 16 59.2 +3.0**
comp=Z,0.5nm,0.5s,baz=156,slow=9.3,SNR=2.6
KSRS LR LR 19 32 45.3
comp=Z,40nm,20.0s,baz=150,slow=32
GYA Guiyang 50.27 311 *e*P **P** **19 17 04.0 +0.8**
GYA pP pP 19 17 32.5 +5.4
GYA sP sP 19 17 48.5 +10
GYA PP **PP** **19 19 01.0 +1.4**
GYA S **S** **19 24 06.5 -2.0**
GYA sS sS 19 24 56.0 +6.4
GYA pmax pmax
comp=Z,10.0nm,1.0s
MDJ Mudanjiang 52.36 345 P **P** **19 17 18.8 +0.5**
MDJ pmax pmax
comp=Z,8.0nm,1.4s
MDJ pmax pmax
comp=Z,140nm,3.9s
KMI Kunming 52.60 308 P **P** **19 17 19.0 -1.6**
KMI pmax pmax
comp=Z,4.0nm,0.9s
CMAR Chiang Mai Arr 52.88 298 P **P** **19 17 24.5 +2.0**
comp=Z,0.3nm,0.6s,baz=125,slow=5.7,SNR=2.8
BJI Beijing 53.48 331 P **P** **19 17 24.5 -2.1**
BJI pmax pmax
comp=Z,6.0nm,0.7s
HHC Hu-ho-hao-te 56.41 328 *e*P **P** **19 17 49.3 +1.5**
HHC sP sP 19 18 33.5 +10
HHC S **S** **19 25 29.0 -2.1**
HHC pmax pmax
comp=Z,18nm,1.1s
HHC pmax pmax
comp=Z,69nm,6.6s
PETK Petropavlovsk- 59.26 8 P **P** **19 18 07.5 +0.1**
comp=Z,1.6nm,0.7s,baz=188,slow=8.7,SNR=3.5
PETK LR LR 19 39 29.0
comp=Z,34nm,21.9s,baz=196,slow=32
PEA1 Petropavlovsk- 59.27 8 *e*P **P** **19 18 07.5 +0.1**
GTA Gaotai 62.32 320 *e*P **P** **19 18 28.8 +0.2**
GTA pP pP 19 18 59.5 +6.1
GTA sP PcP 19 19 13.3 +5.9
GTA pmax pmax
comp=Z,2.0nm,0.8s
ULN Ulaanbaatar 63.69 331 *e*P **P** **19 18 36.6 -1.0**
comp=Z,2.5nm,0.7s
SONA0 Songino Array 63.98 331 *e*P **P** **19 18 38.7 -0.8**
comp=Z,3.6nm,1.3s
SONM Songino Array 63.98 331 P **P** **19 18 38.7 -0.8**
comp=Z,0.8nm,0.7s,baz=157,slow=8.0,SNR=6.2
SONM LR LR 19 46 49.0
comp=Z,16nm,20.0s,baz=116,slow=36
SONA1 Songino Array 63.99 331 *e*P **P** **19 18 38.9 -0.6**
VNDA Vanda 72.27 177 P **P** **19 19 31.2 +0.6**
comp=Z,1.8nm,0.7s,baz=332,slow=6.6,SNR=20
VNDA Vanda 72.27 177 *e*P **P** **19 19 31.1 +0.5**
comp=Z,2.5nm,0.8s
WMQ Urumqi 72.37 319 *e*P **P** **19 19 34.5 +2.6**
BILL Bilibino 74.80 7 *e*P **P** **19 19 44.9 -0.5**
comp=Z,9.3nm,1.6s
MK32 Makanchi Array 77.08 320 *e*P **P** **19 19 57.6 -1.3**
MKAR Makanchi Array 77.08 320 P **P** **19 19 57.6 -1.3**
comp=Z,0.3nm,0.5s,baz=97,slow=9.0,SNR=6.0
TIXI Tiksi 78.04 354 *e*P **P** **19 20 02.6 -1.1**
comp=Z,1.6nm,0.8s
ZAA0 Zalesovo Array 78.59 328 *e*P **P** **19 20 05.3 -1.7**
ZALV Zalesovo Beam 78.59 328 P **P** **19 20 04.8 -2.3**
comp=Z,1.0nm,0.6s,baz=87,slow=4.1,SNR=4.6
ZALV LR LR 19 53 35.7
comp=Z,9.5nm,21.4s,baz=70,slow=35
ZAA1 Zalesovo Array 78.59 328 *e*P **P** **19 20 04.8 -2.3**
MAW Mawson 82.48 203 P **P** **19 20 27.5 -0.1**
comp=Z,2.4nm,0.7s,baz=120,slow=8.9,SNR=7.9
MAW Mawson 82.48 203 *e*P **P** **19 20 27.6 0.0**
comp=Z,3.9nm,1.7s
MLY Manley 83.89 22 *e*P **P** **19 20 33.9 -1.0**
comp=Z,4.1nm,0.6s
RND Reindeer 83.90 24 *e*P **P** **19 20 33.3 -1.8**
comp=Z,31nm,1.9s
QSPA South Pole Qui 84.32 180 *e*P **P** **19 20 36.8 -0.4**
CCB Clear Creek Bu 84.84 23 *e*P **P** **19 20 37.6 -2.0**
comp=Z,3.9nm,0.9s
ILAR Eielson Array 85.25 23 P **P** **19 20 39.6 -2.2**
comp=Z,8.0nm,0.5s,baz=253,slow=4.4,SNR=38
ILAR pP **pP** **19 21 11.1 +3.2**
comp=Z,1.3nm,0.8s,baz=248,slow=5.3,SNR=2.6
ILB Eielson Array 85.25 23 *e*P **P** **19 20 39.4 -2.3**
NVAR Mina Array Bea 97.34 52 P **P** **19 21 39.4 +0.3**
comp=Z,0.9nm,0.7s,baz=268,slow=7.2,SNR=3.4
YKA Yellowknife Ar 98.97 28 P **P** **19 21 44.8 -0.7**
comp=Z,0.2nm,0.7s,baz=273,slow=5.5,SNR=3.5
PDAR Pinedale Array 103.86 47 Pdiff **Pdif** **19 22 06.4 -1.7**
comp=Z,0.4nm,0.7s,baz=246,slow=2.9,SNR=3.8
PLCA Paso Flores 122.54 147 PKP **PKPdf** **19 27 00.2 -0.6**
comp=Z,1.8nm,0.6s,baz=282,slow=1.8,SNR=12
PLCA Paso Flores 122.54 147 *e*PKPdf **PKPdf** **19 27 00.6 -0.3**
LPAZ La Paz 139.17 123 PKP **PKPdf** **19 27 31.6 -2.0**
comp=Z,0.9nm,0.6s,baz=191,slow=2.8,SNR=4.0
CPUP Villa Florida 140.55 145 PKP **PKPdf** **19 27 35.1 +0.1**
comp=Z,1.2nm,0.8s,baz=276,slow=4.8,SNR=4.3
CPUP Villa Florida 140.55 145 *e*PKPdf **PKPdf** **19 27 31.6 -3.4**
TORD Torodi Ar. Bea 144.77 285 PKP **PKPab** **19 27 39.9 -2.0**
comp=Z,1.0nm,0.7s,baz=91,slow=4.2,SNR=7.5
TOA1 Torodi Ar. Sit 144.78 285 *e*PKPbc **PKPab** **19 27 39.9 -2.0**
BDFB Brasilia 154.28 146 PKPbc **PKPbc** **19 28 05.1 -1.1**
comp=Z,3.6nm,0.7s,baz=188,slow=3.4,SNR=4.9

SGS 31 19:09:26.8, 25°.26N×37°.79E, h8km, Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LNY12	**LNY12**	**0.02**	**318**	S	Sg	19 09 29.5	+0.2
LNY12				P	Pg	19 09 28.7	+0.4
LNY12	**LNY12**	**0.02**	**318**	P	Pg	19 09 28.7	+0.4
LNY06	**LNY06**	**0.05**	**189**	P	Pg	19 09 30.0	+1.5
LNY11	**LNY11**	**0.06**	**349**	S	Sg	19 09 30.3	+0.3
LNY11				P	Pg	19 09 29.1	+0.5
LNY10	**LNY10**	**0.07**	**79**	S	Sg	19 09 30.6	+0.4
LNY10				P	Pg	19 09 29.3	+0.6
LNY10	**LNY10**	**0.07**	**79**	P	Pg	19 09 29.3	+0.6
LNY04	**LNY04**	**0.13**	**277**	S	Sg	19 09 32.0	+0.5
LNY04				P	Pg	19 09 30.1	+0.6
LNY02	**LNY02**	**0.14**	**150**	S	Pg	19 09 32.3	+2.6
LNY02				P	Pg	19 09 30.2	+0.5
LNY02	**LNY02**	**0.14**	**150**	P	Pg	19 09 32.4	+2.6
LNY03	**LNY03**	**0.14**	**27**	S	Sg	19 09 32.3	+0.6
LNY03				P	Pg	19 09 30.3	+0.6
LNY01	**LNY01**	**0.16**	**103**	P	Pg	19 09 33.0	+2.9
LNY09	**LNY09**	**0.18**	**322**	S	Sg	19 09 33.7	+0.6
LNY09				P	Pg	19 09 31.0	+0.5

BUC 31 19:10:19.5±0.9, 45°.79N×27°.36E, h4km, MD2.3/3, 2C-6D, Error ellipse: s-maj=11.6km s-min=2.5km az=29.0, Romania

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
VRI	**Vrincioaia**	**0.45**	**280**	⇓*i*P	Pb	19 10 29.2	-0.8
VRI	**Vrincioaia**	**0.45**	**280**	S	Sg	19 10 35.3	+1.2
VRI	**Vrincioaia**	**0.45**	**280**	⇓*i*P	Pb	19 10 29.2	-0.8
VRI				*i* S	Sg	19 10 35.3	+1.2
PLOR	**Plostina**	**0.50**	**277**	⇓*i*P	Pb	19 10 30.1	-0.8
PLOR	**Plostina**	**0.50**	**277**	⇓*i*P	Pb	19 10 30.1	-0.8
PLOR				*i* S	Sb	19 10 37.3	-1.3
CFR	**Carcaliu**	**0.82**	**138**	⇑*i*P	Pb	19 10 36.7	+0.4
CFR	**Carcaliu**	**0.82**	**138**	⇑*i*P	Pb	19 10 36.7	+0.4
CFR				*i* S	Sb	19 10 48.6	+0.9
MLR	**Muntele Rosu**	**1.04**	**254**	⇓*i*P	Pn	19 10 41.0	0.0
MLR	**Muntele Rosu**	**1.04**	**254**	⇓*i*P	Pn	19 10 41.0	0.0
MLR				*i* S	Sn	19 10 55.9	-0.1

*ISCJB **31** 19:16:40.8±0.5, 24°.84N±0°.04×122°.43E±0°.02, h2km±5km, Error ellipse: s-maj=6.4km s-min=3.1km az=16.2*
*JMA **31** 19:16:40.7±0.3, 24°.82N×122°.41E, h1km±4km, M2.4*
*TAP **31** 19:16:41.6, 24°.87N×122°.35E, h7km±1km, ML2.8, D*
ISC 31 19:16:40.7±1.1, 24°.86N±0°.04×122°.44E±0°.02, h18km±6km, n30, σ0°.33/45, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWB1	**Santiao Chiao**	**0.44**	**290**	P	**Pg**	**19 16 49.6**	**0.0**
TWB1	baz=293			*e*S	**Sg**	**19 16 55.5**	**-0.1**
TWC	**Suao**	**0.59**	**245**	*e*P	**Pb**	**19 16 52.6**	**+0.1**
TWC	baz=240			*e*S	**Sg**	**19 16 59.7**	**-0.6**
JYNG	**Yonagunijimaku**	**0.61**	**131**	P	**Pb**	**19 16 52.9**	**+0.1**
JYNG				*e*S	**Sb**	**19 17 01.3**	**+0.2**
NWF	**Wu-fen Shan**	**0.64**	**290**	*e*P	**Pb**	**19 16 53.6**	**+0.3**
NWF	baz=291			*e*S	**Sb**	**19 17 02.0**	**+0.2**
YOJ	**Yonaguni jima**	**0.65**	**127**	P	**Pg**	**19 16 53.5**	**0.0**
YOJ				*e*S	**Sg**	**19 17 02.1**	**-0.1**
TWE	**Neicheng**	**0.72**	**259**	*e*P	**Pg**	**19 16 54.7**	**0.0**
TWE	baz=256			*e*S	**Sg**	**19 17 04.6**	**+0.4**
ENA	**Nanau**	**0.77**	**236**	P	**Pg**	**19 16 55.7**	**+0.1**
ENA	baz=231			*e*S	**Sb**	**19 17 05.3**	**-0.3**
TWA	**Mucha**	**0.79**	**279**	*e*P	**Pn**	**19 16 56.7**	**-0.2**
TWA	baz=279			*e*S	**Sg**	**19 17 06.8**	**+0.2**
ENTT	**Nioudou**	**0.82**	**255**	*e*P	**Pn**	**19 16 57.3**	**-0.1**
ENTT	baz=252			*e*S	**Sn**	**19 17 08.8**	**-0.4**
PCYT	**Pengchaiyu**	**0.84**	**337**	*e*P	**Pn**	**19 16 57.4**	**-0.2**
TWY	**Chenhua**	**0.87**	**299**	*e*P	**Pn**	**19 16 57.9**	**-0.2**
TWY	baz=300			*e*S	**Sg**	**19 17 09.1**	**0.0**
TWS1	**Kuangyinshan**	**0.96**	**285**	*e*P	**Pg**	**19 16 59.2**	**-0.1**
NSK	**Sanguang**	**1.00**	**260**	*e*P	**Pn**	**19 16 59.9**	**+0.1**
NSK	baz=257			*e*S	**Sb**	**19 17 12.4**	**0.0**
NNS	**Nan Shan**	**1.06**	**247**	*e*P	**Pg**	**19 17 01.0**	**-0.2**
NNS	baz=244			*e*S	**Sg**	**19 17 14.9**	**-0.2**
TWD	**Chiawan**	**1.09**	**225**	*e*P	**Pn**	**19 17 01.3**	**+0.2**
TWD	baz=221			*e*S	**Sg**	**19 17 16.1**	**-0.1**
IRIF	**Iriomote-Funau**	**1.28**	**114**	P	**Pg**	**19 17 05.4**	**-0.1**
WHF	**Hehuan Shan**	**1.28**	**237**	*e*P	**Pg**	**19 17 05.3**	**-0.2**
TWT	**Tachien**	**1.30**	**243**	*e*P	**Pg**	**19 17 05.7**	**-0.1**
TWT	baz=240			*e*S	**Sg**	**19 17 23.0**	**+0.2**
NSTT	**Nanjuang**	**1.33**	**261**	*e*P	**Pb**	**19 17 05.6**	**+0.5**
NSTT	baz=259			*e*S	**Sg**	**19 17 24.4**	**+0.8**
ESL	**Shilin**	**1.39**	**222**	*e*P	**Pn**	**19 17 05.5**	**+0.4**
HATJ	**Hateruma jima**	**1.48**	**122**	P	**Pg**	**19 17 08.7**	**-0.4**
JKRS	**Kuro-shima**	**1.56**	**113**	P	**Pg**	**19 17 10.9**	**+0.3**
NSY	**Sanyi**	**1.59**	**254**	*e*P	**Pb**	**19 17 09.6**	**+0.1**
TWQ1	**Liyutan**	**1.60**	**252**	*e*P	**Pb**	**19 17 09.7**	**-0.1**
SMLT	**Sun Moon Lake**	**1.71**	**236**	*e*P	**Pb**	**19 17 11.8**	**+0.2**
TYC	**Yuchr**	**1.73**	**237**	*e*P	**Pb**	**19 17 11.9**	**+0.1**
TWF1	**Yuli**	**1.83**	**215**	*e*P	**Pn**	**19 17 12.2**	**+0.9**
ALS	**Alishan**	**2.01**	**228**	*e*P	**Pb**	**19 17 16.3**	**-0.5**
CHN5	**Tsauling**	**2.04**	**232**	*e*P	**Pb**	**19 17 17.2**	**-0.1**
CHN4	**Tsaushan**	**2.26**	**229**	*e*P	**Pb**	**19 17 20.2**	**-0.7**

WEL 31 19:25:04.1±0.1, 43°.59S×172°.73E, h7km, ML3.6/14, 2C-2D, Error ellipse: s-maj=1.2km s-min=0.7km az=90.0, South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CRLZ	**Canterbury Las**	**0.08**	**282**	PG	Pg	19 25 06.0	0.0
CRLZ				SG	Sg	19 25 07.4	0.0
CRLZ				AML	AML	19 25 07.5	
MQZ	**McQueen's Vall**	**0.13**	**204**	⇑PG	Pg	19 25 07.0	+0.2
MQZ				SG	Sg	19 25 09.2	+0.5
MQZ				AML	AML	19 25 09.6	
OXZ	**Oxford**	**0.57**	**298**	⇓P*	Pg	19 25 14.8	-0.2
LTZ	**Lake Taylor**	**0.87**	**337**	P*	Pg	19 25 20.5	-0.4
LTZ				AML	AML	19 25 33.2	
LTZ				AML	AML	19 25 33.3	
RPZ	**Rata Peaks**	**1.22**	**264**	⇓P*	Pb	19 25 25.8	-1.7
RPZ				AML	AML	19 25 44.9	
RPZ				AML	AML	19 25 46.4	
INZ	**Inchbonnie**	**1.28**	**312**	P*	Pn	19 25 28.2	0.0
WVZ	**Waitaha Valley**	**1.54**	**289**	PN	Pn	19 25 31.7	-0.2
WVZ				AML	AML	19 25 54.9	
DSZ	**Denniston Nort**	**1.97**	**339**	AML	AML	19 26 04.7	
DSZ				AML	AML	19 26 05.0	
LBZ	**Lake Benmore**	**2.00**	**246**	PN	Pn	19 25 37.1	-1.1
LBZ				AML	AML	19 26 14.9	
LBZ				AML	AML	19 26 15.2	
ODZ	**Otahua Downs**	**2.08**	**225**	PN	Pn	19 25 37.8	-1.6
ODZ				AML	AML	19 26 12.2	
ODZ				AML	AML	19 26 19.0	
FOZ	**Fox Glacier**	**2.12**	**271**	⇑PN	Pn	19 25 39.9	+0.1
FOZ				AML	AML	19 26 06.0	
FOZ				AML	AML	19 26 07.0	
NNZ	**Nelson**	**2.42**	**12**	PN	Pn	19 25 42.7	-1.3
TCW	**Tory Channel**	**2.64**	**26**	PN	Pn	19 25 44.5	-2.6
QRZ	**Quartz Range**	**2.77**	**357**	PN	Pn	19 25 47.1	-1.6
QRZ				AML	AML	19 26 36.2	
JCZ	**Jackson Bay**	**2.89**	**259**	PN	Pn	19 25 50.1	-0.5
DUWZ	**D'Urville Isla**	**2.92**	**18**	PN	Pn	19 25 49.5	-1.5
WKZ	**Wanaka**	**2.94**	**244**	PN	Pn	19 25 50.6	-0.6
WKZ				AML	AML	19 26 49.2	
WKZ				AML	AML	19 26 50.1	
EAZ	**Earnscleugh**	**2.95**	**235**	PN	Pn	19 25 50.0	-1.3
EAZ				AML	AML	19 26 42.4	
EAZ				AML	AML	19 26 42.4	
TUZ	**Tuapeka**	**3.23**	**222**	PN	Pn	19 25 53.9	-1.2
TUZ				AML	AML	19 26 56.8	
TUZ				AML	AML	19 26 58.8	
OGWZ	**Otaki Gorge**	**3.31**	**34**	PN	Pn	19 25 53.8	-2.5
MRZ	**Mangatainoka R**	**3.62**	**37**	PN	Pn	19 25 57.1	-3.4
MLZ	**Mavora Lakes**	**3.75**	**240**	PN	Pn	19 26 00.9	-1.3
SYZ	**Scrubby Hill**	**3.89**	**220**	PN	Pn	19 26 04.1	-0.1
SYZ				AML	AML	19 31 16.8	
HIZ	**Hauiti**	**5.32**	**18**	PN	Pn	19 26 22.2	-1.7

MAN 31 19:31:10, 13°.81N×120°.59E, h99km, mb4.2, ML3.0, MS2.8, 1C, Mindoro

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PGP	**Puerto Galera**	**0.47**	**131**	⇑*e*P	Pn	19 31 27.2	+1.7
PGP				*i* S	Sn	19 31 39.5	+2.5
SJMP	**San Jose**	**1.44**	**159**	*e*P	Pn	19 31 37.2	+1.8
SJMP				*e*S	Sn	19 31 56.8	+2.1
BUSP	**Coron**	**1.84**	**192**	*e*P	Pn	19 31 41.2	+0.7
BUSP				*e*S	Sn	19 32 04.9	+1.2
OTRP	**Odiongan**	**2.00**	**136**	*e*P	Pn	19 31 43.2	+0.7
ENPP	**El Nido**	**2.83**	**204**	*e*P	Pn	19 31 54.7	+1.2
ENPP				*e*S	Sn	19 32 27.6	+0.6
CUYO	**Cuyo Island**	**2.97**	**172**	*e*P	Pn	19 31 56.2	+0.8
CUYO				*e*S	Sn	19 32 30.4	+0.1

IDC 31 19:31:47.5±6.0, 34°.23S×55°.12E, h0km, mb3.7/3, mb1 3.9/3, mb1mx3.5/31, mbtmp3.7/3, Error ellipse: s-maj=238.2km s-min=45.3km az=49.0, Southwest Indian Ridge

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
H08S1	**Diego Carcia H**	**30.92**	**35**	T	T	20 10 53.7	
H08S2	baz=207,slow=76 **Diego Garcia H**	**30.93**	**35**	T	T	20 10 59.4	
H08S3	baz=207 **Diego Garcia H**	**30.94**	**35**	T	T	20 10 59.8	
H08N3	baz=207,slow=76 **Diego Garcia H**	**31.40**	**31**	T	T	20 11 30.5	
H08N1	baz=206,slow=76,SNR=9.5 **Diego Carcia H**	**31.41**	**31**	T	T	20 11 34.6	
H08N2	baz=206,slow=76,SNR=9.5 **Diego Garcia H**	**31.42**	**31**	T	T	20 11 36.6	
ASAR	baz=206,slow=76,SNR=11 **Alice Springs**	**68.20**	**104**	P	P	19 42 50.1	-0.1
WRA	0.5nm,0.7s,baz=231,slow=6.3,SNR=5.5 **Warramunga Arr**	**70.38**	**101**	P	P	19 43 03.8	+0.1
MKAR	1.1nm,0.8s,baz=236,slow=5.3,SNR=5.5 **Makanchi Array**	**84.29**	**18**	P	P	19 44 20.8	-0.1
ILAR	0.5nm,0.9s,baz=212,slow=6.3,SNR=3.5 **Eielson Array**	**146.63**	**17**	PKPbc	PKPbc	19 51 29.5	-0.7
	0.2nm,0.7s,baz=333,slow=3.0,SNR=2.5						

IDC 31 19:36:01.6±2.2, 0°.73N×97°.34E, h0km, mb3.3/3, mb1 3.5/5, mb1mx3.2/32, mbtmp3.3/5, ML2.8/2, Error ellipse: s-maj=59.3km s-min=24.5km az=68.0, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PSI	**Prapat**	**2.59**	**38**	Pn	Pn	19 36 44.2	-0.8
CMAR	0.3nm,0.3s,baz=243,slow=6.8,SNR=2.4 **Chiang Mai Arr**	**17.69**	**5**	P	Pn	19 40 08.9	-0.6
H08S2	0.0nm,0.3s,baz=196,slow=12,SNR=4.3 **Diego Garcia H**	**26.14**	**251**	T	T	20 08 43.4	
H08S3	baz=72,slow=75,SNR=12 **Diego Garcia H**	**26.14**	**251**	T	T	20 08 47.5	
H08S1	baz=72,slow=75,SNR=11 **Diego Carcia H**	**26.16**	**251**	T	T	20 08 42.0	
WRA	baz=72,slow=75,SNR=13 **Warramunga Arr**	**41.67**	**122**	P	P	19 43 51.8	-0.5
ASAR	0.2nm,0.5s,baz=299,slow=9.0,SNR=2.7 **Alice Springs**	**43.00**	**127**	P	P	19 44 03.4	+0.2
MKAR	0.2nm,0.6s,baz=298,slow=7.7,SNR=2.6 **Makanchi Array**	**47.73**	**346**	P	P	19 44 40.3	0.0
	0.6nm,0.8s,baz=156,slow=7.3,SNR=5.1						

*CSEM **31** 19:40:09.2, 39°.91N×23°.45E, h13km, ML1.4/5*
ATH 31 19:40:09.2, 39°.91N×23°.45E, h13km±4km, ML1.4/5, Error ellipse: s-maj=4.9km s-min=1.0km az=100.0, Aegean Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PAIG	**Paliouri**	**0.18**	**86**	P	Pg	19 40 13.5	+0.2
PAIG				S	Sg	19 40 16.2	+0.1
PAIG	**Paliouri**	**0.18**	**86**	P	Pg	19 40 13.5	+0.2
PAIG				S	Sg	19 40 16.2	+0.1
PAIG	comp=E,409μm,0.1s			AML	AML	19 40 17.2	
PAIG	comp=N,247μm,0.1s			AML	AML	19 40 17.3	
PLG	**Polygyros**	**0.46**	**360**	P	Pg	19 40 17.7	-0.6
PLG	**Polygyros**	**0.46**	**360**	P	Pg	19 40 17.7	-0.6
XOR	**Xorichti**	**0.58**	**200**	P	Pg	19 40 20.2	-0.4
XOR				S	Sg	19 40 28.3	0.0
XOR	**Xorichti**	**0.58**	**200**	P	Pg	19 40 20.2	-0.4
XOR				S	Sg	19 40 28.3	-0.1
XOR				AML	AML	19 40 30.1	
XOR	comp=N,158μm,0.6s			AML	AML	19 40 32.3	
OUR	comp=E,48μm,0.2s **Ouranopolis**	**0.58**	**44**	P	Pb	19 40 21.7	+0.4
OUR				S	Sg	19 40 27.9	-0.5
OUR	**Ouranopolis**	**0.58**	**44**	P	Pb	19 40 21.7	+0.4
OUR				S	Sg	19 40 27.9	-0.6
OUR				AML	AML	19 40 30.2	
OUR	comp=E,145μm,0.2s			AML	AML	19 40 30.4	
HORT	comp=N,277μm,0.2s **Hortiatis**	**0.73**	**339**	P	Pg	19 40 23.1	-0.4
HORT				S	Sb	19 40 33.8	0.0
HORT	**Hortiatis**	**0.73**	**339**	P	Pg	19 40 23.1	-0.4
HORT				S	Sb	19 40 33.8	0.0
HORT				AML	AML	19 40 34.1	
HORT	comp=E,93μm,0.3s			AML	AML	19 40 37.9	
LIT	comp=N,63μm,0.2s **Litokhoron**	**0.76**	**284**	P	Pb	19 40 24.2	-0.1
LIT				S	Sb	19 40 34.4	-0.1
LIT	**Litokhoron**	**0.76**	**284**	P	Pb	19 40 24.2	-0.1
LIT				S	Sb	19 40 34.4	-0.1
LIT				AML	AML	19 40 36.8	

	comp=E,36μm,0.1s						
LIT				AML	AML	19 40 37.5	
	comp=N,53μm,0.3s						
AOS	**Alonnisos**	**0.81**	**156**	P	Pg	19 40 24.9	-0.1
AOS	**Alonnisos**	**0.81**	**156**	P	Pg	19 40 24.9	-0.1
SRS	**Serrai**	**1.21**	**5**	P	Pn	19 40 31.6	-0.2
SRS	**Serrai**	**1.21**	**5**	P	Pn	19 40 31.6	-0.2

*ISK **31** 19:41:18.0, 39.°02N×29.°24E, h5km, MD1.9*
*CSEM **31** 19:41:19.6±0.1, 39.°11N×29.°11E, h2km, ML2.1, Error ellipse: s-maj=3.6km s-min=2.7km az=118.0*
DDA 31 19:41:19.4, 39.°08N×29.°11E, h7km, Ml2.1, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GDZ	**Gediz**	**0.29**	**89**	P	Pg	19 41 25.5	+0.3
GDZ				S	Sg	19 41 29.7	+0.6
GDZ	**Gediz**	**0.29**	**89**	*i* P	Pg	19 41 25.5	+0.2
GDZ				*i* S	Sg	19 41 29.7	+0.5
DEMI	**Demirci**	**0.30**	**263**	P	Pg	19 41 25.9	+0.4
DEMI				S	Sg	19 41 30.1	+0.6
DEMI	**Demirci**	**0.30**	**263**	*i* P	Pg	19 41 25.9	+0.4
DEMI				*i* S	Sg	19 41 30.1	+0.6
TVSB	**Tavsanli**	**0.46**	**37**	*e*PG	Pg	19 41 27.9	-0.5
TVSB				*e*SG	Sg	19 41 33.7	-0.7
TVSB	**Tavsanli**	**0.46**	**37**	*e*Pg	Pg	19 41 27.9	-0.5
TVSB				*e*Sg	Sg	19 41 33.7	-0.7
KULA	**Kula-Manisa**	**0.67**	**212**	*e*PG	Pg	19 41 31.2	-1.0
KULA				*e*SG	Sg	19 41 41.5	+0.6
KULA	**Kula-Manisa**	**0.67**	**212**	*e*Sg	Sg	19 41 41.5	+0.6
KHAL	**Karahalli**	**0.77**	**157**	P	Pb	19 41 35.2	-0.1
KHAL				S	Sb	19 41 45.3	-0.7
KHAL	**Karahalli**	**0.77**	**157**	*i* P	Pb	19 41 35.2	-0.1
KHAL				*i* S	Sb	19 41 45.3	-0.7
IZI	**Iznik**	**1.28**	**13**	*e*PN	Pn	19 41 43.6	-0.3
IZI	**Iznik**	**1.28**	**13**	*e*Pn	Pn	19 41 43.6	-0.3
BORA	**Eskisehir**	**1.31**	**52**	P	Pg	19 41 44.6	0.0
BORA	**Eskisehir**	**1.31**	**52**	*i* P	Pg	19 41 44.6	0.0
ARMT	**Armutlu**	**1.49**	**353**	*e*PN	Pb	19 41 47.6	+0.1
ARMT	**Armutlu**	**1.49**	**353**	*e*Pn	Pb	19 41 47.7	+0.2

*DDA **31** 19:47:20.7, 40.°01N×38.°81E, h4km, Ml3.1*
*ISK **31** 19:47:20.8, 40.°06N×38.°84E, h5km, MD2.8*
*CSEM **31** 19:47:21.2±0.2, 40.°04N×38.°82E, h2km, ML3.1, Error ellipse: s-maj=3.9km s-min=3.6km az=6.0*
ISC 31 19:47:20.9±1.1, 40.°03N±0.°02×38.°80E±0.°02, h5km±10km, n43, σ0°42/64, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KELT	**Kelkit**	**0.37**	**71**	P	**Pg**	**19 47 28.1**	**0.0**
KELT				S	**Sg**	**19 47 33.0**	**0.0**
KELT	**Kelkit**	**0.37**	**71**	*i* P	**Pg**	**19 47 28.1**	**0.0**
KELT				*i* S	**Sg**	**19 47 33.0**	**0.0**
SUSE	**Susehri**	**0.49**	**291**	P	**Pg**	**19 47 31.2**	**+0.8**
SUSE				S	**Sb**	**19 47 38.7**	**-1.0**
SUSE	**Susehri**	**0.49**	**291**	*i* P	**Pg**	**19 47 31.2**	**+0.8**
SUSE				*i* S	**Sb**	**19 47 38.7**	**-1.0**
GUMT	**Gumushane**	**0.67**	**50**	*e*PG	**Pg**	**19 47 33.9**	**0.0**
GUMT				*e*SG	**Sg**	**19 47 42.3**	**-0.3**
GUMT	**Gumushane**	**0.67**	**50**	*e*Pg	**Pg**	**19 47 33.9**	**0.0**
GUMT				*e*Sg	**Sg**	**19 47 42.3**	**-0.3**
KEMA	**Kemaliye**	**0.80**	**197**	P	**Pg**	**19 47 35.9**	**-0.3**
KEMA				S	**Sg**	**19 47 47.5**	**+0.9**
KEMA	**Kemaliye**	**0.80**	**197**	*i* P	**Pg**	**19 47 35.9**	**-0.3**
KEMA				*i* S	**Sg**	**19 47 47.5**	**+0.9**
KEMA	**Kemaliye**	**0.80**	**197**	*i* P	**Pg**	**19 47 35.9**	**-0.4**
CUZAR	**Zara_SİVAS**	**0.81**	**260**	P	**Pg**	**19 47 35.9**	**-0.5**
CUZAR				S	**Sb**	**19 47 48.3**	**-0.4**
CUZAR	**Zara_SIVAS**	**0.81**	**260**	*i* P	**Pg**	**19 47 35.9**	**-0.5**
CUZAR				*i* S	**Sb**	**19 47 48.4**	**-0.4**
ERZN	**Erzincan**	**0.84**	**122**	*e*PG	**Pg**	**19 47 37.2**	**+0.2**
GRSN	**GIRESUNGRSN**	**0.98**	**336**	P	**Pg**	**19 47 39.5**	**-0.2**
GRSN				S	**Sb**	**19 47 53.4**	**-0.2**
GRSN	**GIRESUNGRSN**	**0.98**	**336**	*i* P	**Pg**	**19 47 39.5**	**-0.2**
GRSN				*i* S	**Sb**	**19 47 53.4**	**-0.2**
TNCL	**Tunceli-Merkez**	**1.08**	**148**	P	**Pg**	**19 47 41.6**	**0.0**
TNCL				S	**Sb**	**19 47 56.2**	**-0.3**
TNCL	**Tunceli-Merkez**	**1.08**	**148**	*i* P	**Pg**	**19 47 41.6**	**0.0**
TNCL				*i* S	**Sb**	**19 47 56.2**	**-0.3**
MACK	**Trabzon**	**1.17**	**39**	P	**Pb**	**19 47 43.6**	**0.0**
MACK				S	**Sn**	**19 48 00.3**	**0.0**
MACK	**Trabzon**	**1.17**	**39**	*i* P	**Pb**	**19 47 43.6**	**0.0**
MACK				*i* S	**Sn**	**19 48 00.3**	**0.0**
RSDY	**Resadiye-TOKAT**	**1.19**	**288**	*e*PN	**Pb**	**19 47 44.1**	**+0.2**
RSDY	**Resadiye-TOKAT**	**1.19**	**288**	*e*Pn	**Pb**	**19 47 44.1**	**+0.2**
ORDU	**Ordu-Boztepe**	**1.20**	**323**	P	**Pg**	**19 47 43.8**	**-0.1**
ORDU				S	**Sg**	**19 47 59.4**	**-0.1**
ORDU	**Ordu-Boztepe**	**1.20**	**323**	*i* P	**Pg**	**19 47 43.8**	**-0.1**
ORDU				*i* S	**Sg**	**19 47 59.4**	**-0.1**
PTK	**Pertek**	**1.23**	**158**	*e*PN	**Pg**	**19 47 44.3**	**-0.1**
PTK	**Pertek**	**1.23**	**158**	*e*Pn	**Pg**	**19 47 44.3**	**-0.1**
CUKAN	**kangal_SIVAS**	**1.25**	**236**	*i* P	**Pg**	**19 47 44.1**	**-0.8**
CUKAN				*i* S	**Sn**	**19 48 03.0**	**+0.5**
KOPT	**Kop Dagi**	**1.30**	**90**	P	**Pb**	**19 47 45.8**	**-0.2**
KOPT				S	**Sn**	**19 48 04.8**	**+0.9**
KOPT	**Kop Dagi**	**1.30**	**90**	*i* P	**Pb**	**19 47 45.8**	**-0.2**
KOPT				*i* S	**Sn**	**19 48 04.8**	**+0.9**
SVSK	**Karacayir**	**1.39**	**266**	*e*PN	**Pg**	**19 47 47.9**	**+0.3**
SVSK	**Karacayir**	**1.39**	**266**	*e*Pn	**Pg**	**19 47 47.9**	**+0.3**
ERBA	**Erbaa**	**1.69**	**293**	P	**Pg**	**19 47 53.1**	**-0.3**
ERBA	**Erbaa**	**1.69**	**293**	*i* P	**Pg**	**19 47 53.1**	**-0.3**
SVRC	**Sivrice-ELAZID**	**1.70**	**166**	*e*PN	**Pn**	**19 47 51.5**	**+0.2**
SVRC	**Sivrice-ELAZID**	**1.70**	**166**	*e*Pn	**Pn**	**19 47 51.5**	**+0.2**
BINT	**Bingol**	**1.74**	**131**	*e*Pn	**Pb**	**19 47 53.5**	**0.0**
DARE	**Darende-Malaty**	**1.78**	**215**	*e*PN	**Pb**	**19 47 54.1**	**0.0**
DARE	**Darende-Malaty**	**1.78**	**215**	*e*Pn	**Pb**	**19 47 54.1**	**0.0**
BNGB	**Bing¨||**	**1.79**	**125**	*e*PN	**Pb**	**19 47 53.5**	**-0.6**
AKCD	**Akcadag**	**1.86**	**202**	P	**Pg**	**19 47 56.3**	**-0.3**
AKCD	**Akcadag**	**1.86**	**202**	*i* P	**Pg**	**19 47 56.3**	**-0.3**
CUSAR	**Sarkisla-SIVAS**	**2.06**	**254**	P	**Pb**	**19 47 58.8**	**-0.2**
CUSAR	**Sarkisla-SIVAS**	**2.06**	**254**	*i* P	**Pb**	**19 47 58.8**	**-0.2**
DBAD	**Bademkaya**	**2.42**	**65**	*i* P	**Pb**	**19 48 05.1**	**+0.3**
DAGI	**Agillar**	**2.59**	**65**	*i* P	**Pb**	**19 48 07.8**	**0.0**

DDA 31 19:49:29.8, 39.°77N×38.°95E, h9km, Md2.6, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
REFA	**Refahiye_ERZ¨**	**0.40**	**201**	*i* P	Pg	19 49 35.1	-2.5
REFA				*i* S	Sg	19 49 37.0	-5.9
KELT	**Kelkit**	**0.45**	**32**	*i* P	Pb	19 49 39.6	-0.3
KELT				*i* S	Sg	19 49 44.6	+0.2
SUSE	**Susehri**	**0.72**	**308**	*i* P	Pg	19 49 43.0	-0.7
SUSE				*i* S	Sg	19 49 50.2	-2.9

*ISCJB **31** 20:00:53.9±0.5, 24.°88N±0.°03×122.°43E±0.°02, h4km±4km, Error ellipse: s-maj=6.0km s-min=3.0km az=16.3*
*JMA **31** 20:00:54.0±0.1, 24.°84N×122.°42E, h3km, M2.6*
*TAP **31** 20:00:55.7, 24.°86N×122.°27E, h2km±1km, ML2.8, D*
ISC 31 20:00:54.1±1.1, 24.°89N±0.°04×122.°44E±0.°03, h22km±8km, n30, σ0°95/51, Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWB1	**Santiao Chiao**	**0.42**	**286**	*e*P	**Pb**	**20 01 02.8**	**-0.1**
TWB1	baz=301			*e*S	**Sb**	**20 01 08.0**	**-0.9**
TWC	**Suao**	**0.61**	**242**	*e*P	**Pb**	**20 01 06.0**	**0.0**
TWC	baz=236			*e*S	**Sb**	**20 01 13.6**	**-0.6**
NWF	**Wu-fen Shan**	**0.62**	**287**	*e*P	**Pn**	**20 01 07.1**	**-0.5**
NWF	baz=295			*e*S	**Sb**	**20 01 15.1**	**+0.3**
JYNG	**Yonagunijimaku**	**0.64**	**134**	P	**Pb**	**20 01 06.2**	**-0.4**
JYNG				S	**Sb**	**20 01 14.4**	**-0.7**
YOJ	**Yonaguni jima**	**0.68**	**129**	P	**Pb**	**20 01 06.6**	**-0.6**
YOJ				S	**Sb**	**20 01 15.6**	**-0.5**
TWE	**Neicheng**	**0.72**	**256**	*e*P	**Pn**	**20 01 08.3**	**-0.6**
TWE	baz=255			*e*S	**Sb**	**20 01 18.0**	**+0.6**
TWA	**Mucha**	**0.78**	**277**	*e*S	**Sn**	**20 01 20.1**	**-0.7**
ENA	**Nanau**	**0.79**	**234**	*e*P	**Pb**	**20 01 09.1**	**0.0**
ENA	baz=227			*e*S	**Sb**	**20 01 19.8**	**+0.5**
PCYT	**Pengchaiyu**	**0.81**	**336**	*e*P	**Pn**	**20 01 10.4**	**+0.3**
ENTT	**Nioudou**	**0.83**	**253**	*e*P	**Pn**	**20 01 10.5**	**0.0**
ENTT	baz=250			*e*S	**Sb**	**20 01 21.2**	**+0.5**
TWY	**Chenhua**	**0.85**	**297**	*e*P	**Pn**	**20 01 10.6**	**-0.1**
TWY	baz=304			*e*S	**Sn**	**20 01 22.1**	**-0.4**
TAP	**Taipei**	**0.86**	**280**	*e*S	**Sb**	**20 01 21.6**	**+0.2**
TWS1	**Kuangyinshan**	**0.95**	**283**	*e*S	**Sb**	**20 01 22.9**	**-1.0**
NSK	**Sanguang**	**1.00**	**258**	*e*P	**Pn**	**20 01 13.4**	**+0.5**
NSK	baz=257			*e*S	**Sn**	**20 01 26.1**	**-0.3**
NNS	**Nan Shan**	**1.07**	**245**	*e*P	**Pn**	**20 01 14.3**	**+0.5**
NNS	baz=242			*e*S	**Sn**	**20 01 28.1**	**0.0**
TWD	**Chiawan**	**1.11**	**224**	*e*P	**Pb**	**20 01 15.4**	**+0.7**
TWD	baz=218			*e*S	**Sn**	**20 01 29.9**	**+0.8**
IRIF	**Iriomote-Funau**	**1.30**	**115**	P	**Pb**	**20 01 18.4**	**+0.6**
TWT	**Tachien**	**1.31**	**241**	*e*P	**Pb**	**20 01 19.6**	**+1.4**
TWT	baz=239			*e*S	**Sb**	**20 01 35.4**	**+0.7**
NSTT	**Nanjuang**	**1.33**	**259**	*e*P	**Pb**	**20 01 19.4**	**+1.1**
NSTT	baz=258			*e*S	**Sn**	**20 01 33.9**	**-0.6**
ESL	**Shilin**	**1.41**	**221**	*e*P	**Pb**	**20 01 19.0**	**-0.7**
ESL	baz=216			*e*S	**Sb**	**20 01 40.6**	**+3.3**
HATJ	**Hateruma jima**	**1.50**	**123**	P	**Pb**	**20 01 22.6**	**+1.4**
JKRS	**Kuro-shima**	**1.57**	**114**	P	**Pb**	**20 01 23.0**	**+0.5**
TWQ1	**Liyutan**	**1.61**	**251**	*e*S	**Sb**	**20 01 45.2**	**+2.2**
SMLT	**Sun Moon Lake**	**1.73**	**235**	*e*P	**Pb**	**20 01 24.9**	**-0.3**
SMLT	baz=231			*e*S	**Sb**	**20 01 47.0**	**+0.6**
TYC	**Yuchr**	**1.75**	**236**	*e*P	**Pb**	**20 01 25.9**	**+0.5**
TYC	baz=233			*e*S	**Sb**	**20 01 47.9**	**+1.0**
TWF1	**Yuli**	**1.85**	**214**	*e*P	**Pb**	**20 01 26.3**	**-1.0**
ALS	**Alishan**	**2.03**	**228**	*e*P	**Pb**	**20 01 29.9**	**-0.6**
ALS	baz=224			*e*S	**Sb**	**20 01 55.1**	**-0.3**
CHN5	**Tsauling**	**2.06**	**232**	*e*P	**Pb**	**20 01 30.7**	**-0.1**
CHN5	baz=229			*e*S	**Sb**	**20 01 56.2**	**+0.1**
CHN4	**Tsaushan**	**2.28**	**228**	*e*P	**Pb**	**20 01 33.6**	**-0.9**
CHN4	baz=225			*e*S	**Sb**	**20 02 00.7**	**-1.6**
WTP	**Ta-pu**	**2.34**	**226**	*e*P	**Pb**	**20 01 33.5**	**-2.1**
WTP	baz=223			*e*S	**Sb**	**20 02 02.9**	**-1.2**

*SOME **31** 20:04:47.7, 45.°07N×81.°63E, h15km*
*NNC **31** 20:04:48.2±3.0, 45.°11N×81.°64E, h1km±21km, mb2.7, mpv2.3, Error ellipse: s-maj=46.7km s-min=5.0km az=113.0*
ISC 31 20:04:46.1±2.6, 45.°08N±0.°09×81.°7E±0.°1, h3km±19km, n8, σ0°61/16, 3C-3D, Kazakhstan-Xinjiang border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DJR	**Jarkent**	**1.55**	**242**	*e*P	**Pb**	**20 05 15.4**	**-0.2**
DJR	5.2nm,0.2s			*e*S	**Sn**	**20 05 35.1**	**-0.3**
KAPS	**Kapalarasan**	**1.67**	**278**	*e*P	**Pg**	**20 05 17.9**	**-0.1**
KAPS	18nm,0.2s			*e*S	**Sg**	**20 05 39.4**	**-0.2**
MAKZ	**Makanchi**	**1.74**	**6**	⇑P	**Pb**	**20 05 18.4**	**-0.3**
MAKZ	4.5nm,0.6s			⇓S	**Sg**	**20 05 42.2**	**+0.3**
MK31	**Makanchi Array**	**1.76**	**13**	⇓P	**Pb**	**20 05 19.0**	**-0.1**
MK31	0.8nm,0.2s,baz=193,slow=28,SNR=19			⇑S	**Sg**	**20 05 43.1**	**+0.3**
PDGK	**Podgornoye**	**2.37**	**223**	⇑P	**Pb**	**20 05 29.3**	**-0.1**
PDGK	18nm,1.0s			⇓S	**Sb**	**20 05 58.7**	**-0.2**
KPKS	**Kokpek**	**2.70**	**234**	*e*P	**Pb**	**20 05 35.4**	**+0.3**
KPKS	26nm,0.4s			*e*S	**Sb**	**20 06 09.2**	**+0.5**
UZB	**Uzynbulak**	**2.73**	**226**	*e*P	**Pb**	**20 05 34.9**	**-0.7**
UZB	216nm,0.3s			*e*S	**Sb**	**20 06 08.8**	**-0.7**
SATY	**Saty**	**3.12**	**231**	*e*P	**Pb**	**20 05 42.8**	**+0.6**
SATY	8.5nm,0.1s			*e*S	**Sb**	**20 06 22.1**	**+1.5**

IDC 31 20:08:50.1±2.1, 7.°80S×129.°54E, h0km, mb3.5/1, mb1 3.4/3, mb1mx3.2/38, mbtmp3.2/3, ML3.2/2, MS3.1/1, Ms1 3.1/1, ms1mx2.3/24, Error ellipse: s-maj=111.5km s-min=32.3km az=67.0, Banda Sea

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
WRA	**Warramunga Arr**	**12.94**	**159**	Pn	Pn	20 11 55.0	-0.5
WRA	0.1nm,0.3s,baz=338,slow=13,SNR=10.0			Sn	Sn	20 14 14.0	-6.3
ASAR	**Alice Springs**	**16.33**	**166**	Pn	Pn	20 12 41.5	+0.5
ASAR	0.1nm,0.3s,baz=341,slow=22,SNR=5.9			Sn	Sn	20 15 39.5	-3.4
JCJ	**Chichijima**	**36.79**	**19**	LR	LR	20 29 55.0	
MKAR	**Makanchi Array**	**68.64**	**327**	P	P	20 19 55.3	0.0

*IDC **31** 20:13:34.4±4.6, 0.°06N×98.°45E, h0km, mb3.8/4, mb1 3.7/6, mb1mx3.5/53, mbtmp3.7/6, ML3.7/2, Error ellipse: s-maj=141.4km s-min=42.8km az=115.0*
*ISCJB **31** 20:13:39.0±0.7, 0.°15N±0.°08×98.°50E±0.°07, h48km, mb4.4/12, Error ellipse: s-maj=11.0km s-min=9.7km az=24.6*
*NEIC **31** 20:13:40.8±1.1, 0.°19N×98.°49E, h44km±8km, mb4.6/8, Error ellipse: s-maj=14.4km s-min=7.6km az=217.0*
ISC 31 20:13:41.0±0.9, 0.°21N±0.°10×98.°44E±0.°07, h48km, n32, σ1°51/31, mb4.3/12, Northern Sumatera

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GSI	**Gunungsitoli**	**1.39**	**322**	*e*Pn	**Pn**	**20 14 05.0**	**+1.1**
GSI				*e*Sn	**Sn**	**20 14 15.7**	**-5.4**
BKNI	**Bangkinang**	**2.61**	**87**	*e*Pn	**Pn**	**20 14 18.8**	**-1.9**
PSI	**Prapat**	**2.62**	**11**	Pn	**Pn**	**20 14 18.9**	**-2.1**
PSI	10nm,0.3s,baz=263,slow=6.8,SNR=20 3.0nm,0.3s,baz=256,slow=13,SNR=3.9			Sn	**Sn**	**20 14 52.5**	**+1.0**
IPM	**Ipoh**	**4.97**	**31**	*e*Pn	**Pn**	**20 14 53.8**	**+0.7**
LHMI	**Lhok Sumawe**	**5.20**	**343**	*e*Pn	**Pn**	**20 14 55.8**	**-0.5**
KULM	**Kulim**	**5.51**	**24**	*e*Pn	**Pn**	**20 14 59.9**	**-0.6**
MYKOM	**Kota Tinggi**	**5.63**	**74**	*e*Pn	**Pn**	**20 15 03.4**	**+1.1**
CM01	**Chiang Mai Arr**	**18.10**	**2**	*e*P	**Pn**	**20 17 50.4**	**+1.3**
CMAR	**Chiang Mai Arr**	**18.14**	**2**	Pn	**Pn**	**20 17 50.0**	**+0.4**
	0.1nm,0.3s,baz=192,slow=11,SNR=4.3						
H08S2	**Diego Garcia H**	**27.02**	**253**	T	T	20 46 50.0	
	baz=74,slow=75,SNR=12						
H08S3	**Diego Garcia H**	**27.02**	**253**	T	T	20 46 50.8	
	baz=74,slow=75,SNR=13						
H08S1	**Diego Carcia H**	**27.04**	**253**	T	T	20 46 51.1	
	baz=74,slow=75,SNR=14						
TPUB	**Ta-pu**	**31.49**	**42**	*e*P	**P**	**20 19 57.1**	**-1.4**
	28nm,1.5s						
ENH	**Enshi**	**31.69**	**18**	*e*P	**P**	**20 20 00.2**	**+0.1**
	2.3nm,0.4s						
BJT	**Baijiatuau**	**42.79**	**20**	*e*P	**P**	**20 21 34.3**	**+0.3**
	6.8nm,0.4s						
KBL	**Kabul**	**43.84**	**324**	*e*P	**P**	**20 21 41.9**	**-1.0**
	2.3nm,0.6s						
SONA0	**Songino Array**	**47.94**	**7**	*e*P	**P**	**20 22 15.8**	**+1.0**
	9.3nm,2.0s						
SONM	**Songino Array**	**47.94**	**7**	P	**P**	**20 22 15.8**	**+1.0**
	0.5nm,0.7s,baz=184,slow=7.8,SNR=4.0						
SONA1	**Songino Array**	**47.95**	**7**	*e*P	**P**	**20 22 15.8**	**+0.9**
MK01	**Makanchi Array**	**48.48**	**345**	*e*P	**P**	**20 22 20.1**	**+1.2**
MK31	**Makanchi Array**	**48.50**	**345**	*e*P	**P**	**20 22 20.3**	**+1.2**
MK32	**Makanchi Array**	**48.50**	**345**	*e*P	**P**	**20 22 20.3**	**+1.2**
MKAR	**Makanchi Array**	**48.50**	**345**	P	**P**	**20 22 20.3**	**+1.2**
	0.9nm,0.5s,baz=158,slow=8.6,SNR=16						
MKAR	**Makanchi Array**	**48.50**	**345**	*e*P	**P**	**20 22 20.0**	**+1.0**
MAKZ	**Makanchi**	**48.59**	**345**	*e*P	**P**	**20 22 18.6**	**-1.2**
	6.3nm,1.7s						
PMG	**Port Moresby**	**49.43**	**103**	*e*P	**P**	**20 22 25.3**	**-1.4**
	44nm,1.1s						
KKAR	**Karatay Array**	**49.49**	**333**	*e*P	**P**	**20 22 26.5**	**-0.2**
ZALV	**Zalesovo Beam**	**54.73**	**350**	P	**P**	**20 23 06.3**	**+0.9**
	0.7nm,0.4s,baz=172,slow=6.7,SNR=5.2						
ZAA1	**Zalesovo Array**	**54.73**	**350**	*e*P	**P**	**20 23 06.3**	**+0.9**
DAMY	**Dhamar**	**55.29**	**288**	*e*P	**P**	**20 23 11.1**	**+0.6**
	21nm,1.5s						
ABKAR	**Akbulak array**	**58.96**	**332**	*e*P	**P**	**20 23 36.1**	**+0.6**
FINES	**FINESS Array B**	**81.44**	**332**	P	**P**	**20 25 53.9**	**+1.1**
	0.8nm,0.7s,baz=90,slow=2.7,SNR=5.4						

*ISK **31** 20:14:07.4, 39.°04N×29.°16E, h10km, MD2.5*
*ISCJB **31** 20:14:08.2±0.7, 39.°12N±0.°05×29.°02E±0.°05, h1km±11km, Error ellipse: s-maj=10.1km s-min=4.7km az=153.0*
*DDA **31** 20:14:08.0, 39.°11N×29.°02E, h7km, Ml2.2*
*CSEM **31** 20:14:08.3±0.1, 39.°12N×29.°02E, h2km, ML2.2, Error ellipse: s-maj=2.9km s-min=1.8km az=136.0*
ISC 31 20:14:07.7±1.1, 39.°06N±0.°04×29.°07E±0.°03, h9km±13km, n16, σ0°20/26, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.28**	**266**	P	**Pg**	**20 14 13.4**	**+0.1**
DEMI				S	**Sg**	**20 14 16.9**	**-0.1**
DEMI	**Demirci**	**0.28**	**266**	*i* P	**Pg**	**20 14 13.4**	**+0.1**
DEMI				*i* S	**Sg**	**20 14 16.9**	**-0.1**
GDZ	**Gediz**	**0.32**	**85**	P	**Pb**	**20 14 15.7**	**0.0**
GDZ				S	**Sb**	**20 14 20.9**	**-0.2**
GDZ	**Gediz**	**0.32**	**85**	*i* P	**Pb**	**20 14 15.7**	**0.0**
GDZ				*i* S	**Sb**	**20 14 20.9**	**-0.2**
TVSB	**Tavsanli**	**0.49**	**38**	*e*PG	**Pg**	**20 14 17.3**	**0.0**
TVSB				*e*SG	**Sg**	**20 14 23.6**	**-0.2**
TVSB	**Tavsanli**	**0.49**	**38**	*e*Pg	**Pg**	**20 14 17.3**	**0.0**
TVSB				*e*Sg	**Sg**	**20 14 23.7**	**-0.2**
KULA	**Kula-Manisa**	**0.63**	**211**	*e*PG	**Pb**	**20 14 20.9**	**-0.1**
KULA				*e*SG	**Sb**	**20 14 30.0**	**+0.1**
KULA	**Kula-Manisa**	**0.63**	**211**	*e*Pg	**Pb**	**20 14 20.9**	**-0.1**
KULA				*e*Sg	**Sb**	**20 14 30.0**	**+0.1**
IZI	**Iznik**	**1.31**	**14**	*e*PN	**Pg**	**20 14 33.0**	**+0.1**
IZI	**Iznik**	**1.31**	**14**	*e*Pn	**Pg**	**20 14 33.0**	**+0.1**
KCTX	**Karacabey (Bur**	**1.32**	**336**	*e*PN	**Pb**	**20 14 32.7**	**0.0**
KCTX	**Karacabey (Bur**	**1.32**	**336**	*e*Pn	**Pb**	**20 14 32.7**	**0.0**
BORA	**Eskisehir**	**1.35**	**52**	P	**Pg**	**20 14 33.4**	**-0.2**
BORA				S	**Sg**	**20 14 51.6**	**+0.5**
BORA	**Eskisehir**	**1.35**	**52**	*i* P	**Pg**	**20 14 33.4**	**-0.2**
BORA				*i* S	**Sg**	**20 14 51.6**	**+0.5**
ARMT	**Armutlu**	**1.51**	**354**	*e*PN	**Pb**	**20 14 35.9**	**-0.1**
ARMT	**Armutlu**	**1.51**	**354**	*e*Pn	**Pb**	**20 14 35.9**	**-0.1**

*IDC **31** 20:14:24.0±1.0, 19.°34S×168.°02E, h0km, mb4.3/13, mb1 4.4/14, mb1mx4.2/40, mbtmp4.3/14, ML3.9/1, MS3.4/5, Ms1 3.3/5, ms1mx3.0/23, Error ellipse: s-maj=36.4km s-min=16.5km az=145.0*
*ISCJB **31** 20:14:27.4±0.4, 19.°45S±0.°07×167.°94E±0.°08, h33km, mb4.6/31, MS3.7/4, Error ellipse: s-maj=11.9km s-min=7.2km az=40.0*
*NEIC **31** 20:14:28.9±0.4, 19.°43S×168.°03E, h35km, mb4.9/18, Error ellipse: s-maj=14.7km s-min=7.4km az=150.0*
ISC 31 20:14:28.3±0.5, 19.°59S±0.°08×168.°23E±0.°09, h35km, n97, σ1°49/98, mb4.8/30, MS3.7/3, 1C, Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.98**	**214**	Pn	**Pn**	**20 15 13.6**	**+0.4**
	16nm,0.3s,baz=304,slow=23,SNR=156						
DZM				Sn	**Sn**	**20 15 48.6**	**+0.8**
	24nm,0.3s,baz=94,slow=20,SNR=5.4						
DZM				LR	LR	20 16 20.6	
	comp=Z,453nm,18.0s,baz=331,slow=38						
DZM	**Mont Dzumac**	**2.98**	**214**	*e*Pn	**Pn**	**20 15 12.6**	**-0.6**
DZM				*e*Sn	**Sn**	**20 15 45.1**	**-2.7**
HNR	**Honiara**	**12.89**	**320**	LR	LR	20 21 11.3	
	comp=Z,57nm,19.3s,baz=192,slow=32						
AFI	**Afiamalu**	**19.96**	**77**	LR	LR	20 25 34.5	
	comp=Z,136nm,19.1s,baz=59,slow=33						
CTA	**Charters Tower**	**20.68**	**265**	P	**P**	**20 19 05.1**	**-0.3**
	5.2nm,0.8s,baz=84,slow=18,SNR=2.9						
CTAO	**Charters Tower**	**20.68**	**265**	*e*P	**P**	**20 19 05.4**	**0.0**
	17nm,0.9s						
STKA	**Stephens Creek**	**26.85**	**238**	P	**P**	**20 20 07.6**	**+1.9**
	2.5nm,0.8s,baz=78,slow=11,SNR=5.1						
STKA				LR	LR	20 29 31.9	
	comp=Z,71nm,20.4s,baz=29,slow=34						
STKA	**Stephens Creek**	**26.85**	**238**	*e*P	**P**	**20 20 07.9**	**+2.1**
	7.4nm,1.8s						
WR1	**Warramunga Arr**	**31.86**	**264**	*e*P	**P**	**20 20 48.3**	**-2.1**
	18nm,1.5s						
WRA	**Warramunga Arr**	**31.86**	**264**	P	**P**	**20 20 48.3**	**-2.1**
	0.6nm,0.5s,baz=81,slow=6.0,SNR=30						
AS01	**Alice Springs**	**32.07**	**257**	*e*P	**P**	**20 20 51.0**	**-1.2**
AS31	**Alice Springs**	**32.11**	**257**	*e*P	**P**	**20 20 51.7**	**-0.9**
	1.3nm,0.9s						

GYA				LR	LR			
	comp=Z,260nm,19.4s							
BJI	**Beijing**	**76.61**	**322**	P	**P**	**20 26 14.3**	**-1.0**	
BJI				pmax	pmax			
	comp=Z,6.0nm,1.2s							
CM01	**Chiang Mai Arr**	**77.75**	**295**	*e*P	**P**	**20 26 22.0**	**-0.2**	
CM31	**Chiang Mai Arr**	**77.78**	**295**	*e*P	**P**	**20 26 21.6**	**-0.8**	
CMAR	**Chiang Mai Arr**	**77.78**	**295**	P	**P**	**20 26 22.5**	**+0.1**	
	comp=Z,1.3nm,0.9s,baz=134,slow=3.9,SNR=7.5							
CHTO	**Chiang Mai**	**77.93**	**295**	*e*P	**P**	**20 26 23.0**	**-0.2**	
	comp=Z,1.3nm,1.5s							
HHC	**Hu-ho-hao-te**	**79.87**	**320**	*e*P	**P**	**20 26 35.5**	**+2.0**	
HHC				pmax	pmax			
	comp=Z,21nm,1.4s							
HHC				pmax	pmax			
	comp=Z,100nm,7.4s							
LZH	**Lanzhou**	**82.25**	**313**	*e*P	**P**	**20 26 45.8**	**-0.6**	
LZH				pP	PcP	20 26 52.8	+1.1	
LZH				sP	pP	20 26 55.3	-2.2	
LZH				pmax	pmax			
	comp=Z,12nm,1.0s							
SYO	**Syowa Base**	**84.33**	**196**[1]	*e*P	**P**	**20 26 55.4**	**-1.0**	
ULN	**Ulaanbaatar**	**86.58**	**324**	*e*P	**P**	**20 27 08.1**	**+0.1**	
	comp=Z,7.6nm,0.9s							
SONA0	**Songino Array**	**86.93**	**324**	*e*P	**P**	**20 27 09.8**	**0.0**	
	comp=Z,5.3nm,1.0s							
SONM	**Songino Array**	**86.93**	**324**	P	**P**	**20 27 09.8**	**0.0**	
	comp=Z,3.1nm,0.8s,baz=156,slow=4.8,SNR=20							
SONA1	**Songino Array**	**86.93**	**324**	*e*P	**P**	**20 27 09.7**	**0.0**	
YBH	**Yreka Blue Hor**	**88.22**	**44**	P	**P**	**20 27 17.6**	**+1.5**	
	comp=Z,3.7nm,0.7s,baz=180,slow=2.0,SNR=8.3							
YBH	**Yreka Blue Hor**	**88.22**	**44**	*e*P	**P**	**20 27 17.6**	**+1.5**	
	comp=Z,50nm,1.9s							
CAST	**Castle Rocks**	**88.35**	**17**	*e*P	**P**	**20 27 14.7**	**-1.4**	
	comp=Z,25nm,1.8s							
SNAA	**Sanae**	**88.77**	**183**	P	**P**	**20 27 19.5**	**+1.3**	
VNA3	**Neumayer Olymp**	**89.39**	**181**	P	**P**	**20 27 22.7**	**+1.6**	
NV01	**Mina Array Sít**	**89.75**	**49**	*e*P	**P**	**20 27 24.2**	**+0.7**	
NVAR	**Mina Array Bea**	**89.75**	**49**	P	**P**	**20 27 24.9**	**+1.4**	
	comp=Z,2.1nm,0.7s,baz=228,slow=7.6,SNR=6.5							
IL1	**Eielson Array**	**90.85**	**18**	*e*P	**P**	**20 27 26.7**	**-1.0**	
ILAR	**Eielson Array**	**90.85**	**18**	P	**P**	**20 27 26.6**	**-1.1**	
	comp=Z,1.9nm,0.8s,baz=237,slow=5.9,SNR=14							
ILB	**Eielson Array**	**90.85**	**18**	*e*P	**P**	**20 27 26.3**	**-1.4**	
WVOR	**Wild Horse Val**	**91.24**	**45**	*e*P	**P**	**20 27 31.4**	**+1.2**	
	comp=Z,3.7nm,0.8s							
COLD	**Coldfoot**	**91.86**	**15**	*e*P	**P**	**20 27 32.9**	**+0.6**	
	comp=Z,4.4nm,1.0s							
PSUT	**Pine Spring**	**92.98**	**50**	*e*P	**P**	**20 27 37.5**	**-1.0**	
	comp=Z,30nm,1.7s							
U15A	**North Rim**	**93.34**	**53**	*e*P	**P**	**20 27 41.5**	**+1.2**	
	comp=Z,3.4nm,0.7s							
319A	**Douglas**	**93.86**	**58**	*e*P	**P**	**20 27 44.7**	**+2.1**	
	comp=Z,7.1nm,0.9s							
WMQ	**Urumqi**	**96.76**	**314**	P	**P**	**20 27 58.0**	**+2.6**	
WMQ				pmax	pmax			
	comp=Z,7.0nm,1.2s							
WMQ				pmax	pmax			
	comp=Z,56nm,4.2s							
LTX	**Lajitas**	**97.77**	**62**	*e*P	Pdif	20 28 01.9	+1.4	
TXAR	**Lajitas Array**	**97.77**	**62**	P	Pdif	20 28 01.9	+1.4	
	comp=Z,0.3nm,0.7s,baz=236,slow=5.4,SNR=3.0							
MK32	**Makanchi Array**	**101.32**	**316**	*e*Pdif	**Pdif**	**20 28 14.4**	**-1.3**	
MKAR	**Makanchi Array**	**101.32**	**316**	P	**Pdif**	**20 28 14.4**	**-1.3**	
	comp=Z,0.2nm,0.7s,baz=111,slow=3.2,SNR=2.1							
YKA	**Yellowknife Ar**	**101.42**	**28**	P	**Pdif**	**20 28 15.6**	**-0.1**	
	comp=Z,0.2nm,0.6s,baz=257,slow=4.1,SNR=4.4							
YKB5	**Yellowknife Ar**	**101.42**	**28**	*e*Pdif	**Pdif**	**20 28 14.5**	**-1.2**	
DPC	**Dobruska-Polom**	**142.07**	**331**	*e*PKP	**PKPdf**	**20 33 55.4**	**-1.3**	
CONA	**Conrad Observa**	**143.94**	**328**	*i* PKPdf	**PKPdf**	**20 33 59.1**	**-1.0**	
	comp=Z,5.2nm,0.9s							
KHC	**Kasperske Hory**	**144.19**	**331**	*e*PKP	**PKPdf**	**20 33 59.6**	**-0.9**	
KHC	**Kasperske Hory**	**144.19**	**331**	*e*PKPdf	**PKPdf**	**20 33 59.5**	**-1.0**	
GEC2	**GERESS Array S**	**144.34**	**331**	*e*PKPdf	**PKPdf**	**20 33 59.7**	**-1.1**	
GERES	**GERESS Array B**	**144.34**	**331**	PKP	**PKPdf**	**20 33 59.8**	**-1.1**	
	comp=Z,1.8nm,0.7s,baz=46,slow=3.9,SNR=15							
GEA0	**GERESS Array S**	**144.34**	**331**	*e*PKPdf	PKPbc	20 33 59.5	+0.3	
ARSA	**Arzberg**	**144.56**	**327**	*i* PKPdf	**PKPdf**	**20 34 01.4**	**+0.2**	
	comp=Z,5.1nm,1.1s							
MOA	**Molln**	**144.78**	**329**	*i* PKPdf	**PKPdf**	**20 34 02.0**	**+0.5**	
	comp=Z,15nm,0.9s,SNR=9.4							
SOKA	**Soboth**	**145.19**	**327**	*i* PKPdf	**PKPdf**	**20 34 02.5**	**+0.2**	
	comp=Z,11nm,0.7s,SNR=11							
OBKA	**Obir**	**145.56**	**327**	*i* PKPab	**PKPdf**	**20 34 02.1**	**-0.9**	
	comp=Z,11nm,0.9s,SNR=6.8							
PDKS	**Podkum**	**145.62**	**326**	*i* PKPbc	**PKPab**	**20 34 03.9**	**+0.3**	
KBA	**Koelnbreinsper**	**145.76**	**329**	*i* PKPab	**PKPab**	**20 34 04.0**	**-0.3**	
	comp=Z,13nm,0.8s,SNR=9.0							
BOJS	**Bojanci**	**145.85**	**325**	*i* PKPbc	**PKPab**	**20 34 05.0**	**+0.6**	
LJU	**Ljubljana**	**145.88**	**327**	*i* PKPbc	**PKPab**	**20 34 04.9**	**+0.4**	
CWF	**Charnwood Fore**	**145.93**	**349**	*e*PKPdf	**PKPbc**	**20 34 03.6**	**-0.3**	
MYKA	**Terra Mystica**	**145.93**	**328**	*i* PKPab	**PKPdf**	**20 34 03.4**	**-0.2**	
	comp=Z,12nm,0.8s,SNR=6.8							
MEM	**Membach**	**145.99**	**340**	PKP	**PKPab**	**20 34 05.3**	**+0.5**	
BCLA	**Clavier**	**146.38**	**340**	PKP	**PKPab**	**20 34 06.2**	**-0.1**	
ABTA	**Abfaltersbach**	**146.40**	**329**	*i* PKPab	**PKPab**	**20 34 06.0**	**-0.6**	
	comp=Z,27nm,1.2s,SNR=11							
WATA	**Walderalm**	**146.41**	**331**	*i* PKPab	**PKPab**	**20 34 06.5**	**-0.3**	
	comp=Z,6.4nm,0.7s,SNR=6.8							
WTTA	**Wattenberg**	**146.44**	**331**	*i* PKPab	**PKPab**	**20 34 06.5**	**-0.4**	
	comp=Z,17nm,1.2s,SNR=5.4							
MOTA	**Moosalm**	**146.62**	**331**	*i* PKPab	**PKPab**	**20 34 07.3**	**-0.3**	
	comp=Z,6.8nm,0.6s,SNR=7.2							
RETA	**Reutte**	**146.67**	**332**	*i* PKPab	**PKPab**	**20 34 07.2**	**-0.4**	
	comp=Z,9.1nm,1.1s							
WLF	**Walferdange**	**146.74**	**339**	PKP	**PKPab**	**20 34 07.9**	**+0.2**	
WLF	**Walferdange**	**146.74**	**339**	*e*PKPbc	**PKPab**	**20 34 07.2**	**-0.5**	
DOU	**Dourbes**	**146.88**	**341**	PKP	**PKPab**	**20 34 07.7**	**-0.5**	
FETA	**Feichten**	**147.04**	**331**	*i* PKPab	**PKPbc**	**20 34 07.4**	**-0.2**	
	comp=Z,12nm,0.9s,SNR=8.1							
BFO	**Black Forest**	**147.04**	**335**	*e*PKPbc	**PKPab**	**20 34 07.9**	**-1.0**	
DAVA	**Damuels**	**147.21**	**332**	*i* PKPbc	**PKPbc**	**20 34 07.3**	**-0.8**	
	comp=Z,7.4nm,0.7s							
FUORN	**Ofenpass-Fuorn**	**147.55**	**331**	*e*PKPbc	**PKPab**	**20 34 10.3**	**-1.0**	
DAVOX	**Davos/Dischmat**	**147.60**	**332**	PKPbc	**PKPbc**	**20 34 09.3**	**0.0**	
	comp=Z,11nm,0.6s,baz=215,slow=0.8,SNR=17							
TUE	**Stuetta**	**148.07**	**332**	*e*PKPbc	**PKPbc**	**20 34 11.3**	**+0.7**	
TIP	**Timpagrande**	**148.59**	**315**	*e*PKPbc	**PKPbc**	**20 34 12.7**	**+0.7**	
AQU	**L'Aquila**	**148.89**	**322**	*e*PKPbc	**PKPbc**	**20 34 13.2**	**+0.5**	

IDC 31 20:19:25.9±6.7, 7°.05S×147°.91E, h90km±56km, mb3.6/2, mb1 3.7/4, mb1mx3.2/40, mbtmp3.8/4, ML3.5/1, MS2.8/2, Ms1 2.8/2, ms1mx2.5/30, Error ellipse: s-maj=93.2km s-min=59.2km az=140.0, Eastern New Guinea region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PMG	**Port Moresby**	**2.46**	**197**	P	Pn	20 20 04.3	+0.1
	5.3nm,0.3s,baz=9.9,slow=5.8,SNR=23						
PMG				S	Sn	20 20 41.5	+8.0
	3.0nm,0.3s,baz=246,slow=20,SNR=2.9						
PMG				LR	LR	20 21 18.0	
	comp=Z,210nm,19.0s,baz=358,slow=46						
WRA	**Warramunga Arr**	**18.37**	**224**	P	P	20 23 33.8	+0.1
	0.2nm,0.3s,baz=51,slow=10,SNR=8.4						
ASAR	**Alice Springs**	**21.30**	**218**	P	P	20 24 05.8	+0.4
	1.6nm,0.7s,baz=49,slow=8.6,SNR=13						
FITZ	**Fitzroy Crossi**	**24.32**	**241**	P	P	20 24 34.8	-0.5
	4.0nm,0.6s,baz=65,slow=8.2,SNR=23						
KAPI	**Kappang**	**28.07**	**273**	LR	LR	20 38 27.6	
	comp=Z,20nm,20.7s,baz=129,slow=41						
TORD	**Torodi Ar. Bea**	**146.21**	**283**	PKPbc	PKPdf	20 38 56.3	+0.5
	0.5nm,0.6s,baz=81,slow=3.7,SNR=6.7						

*CSEM **31** 20:21:23.7±0.2, 39°.13N×28°.98E, h10km, ML2.1, Error ellipse: s-maj=5.0km s-min=4.8km az=88.0*
*ISK **31** 20:21:23.0, 39°.11N×29°.02E, h9km, MD2.4*

DDA 31 20:21:24.0, 39°.11N×29°.00E, h7km, Ml2.1, Turkey

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.23**	**254**	P	Pg	20 21 29.2	+0.6
DEMI				S	Sg	20 21 32.4	+0.6
DEMI	**Demirci**	**0.23**	**254**	*i* P	Pg	20 21 29.2	+0.5
DEMI				*i* S	Sg	20 21 32.4	+0.7
GDZ	**Gediz**	**0.37**	**93**	P	Pg	20 21 31.8	+0.4
GDZ				S	Sg	20 21 37.0	+0.7
GDZ	**Gediz**	**0.37**	**93**	*i* P	Pg	20 21 31.8	+0.4
GDZ				*i* S	Sg	20 21 37.0	+0.6
TVSB	**Tavsanli**	**0.49**	**46**	*e*PG	Pg	20 21 33.2	-0.4
TVSB				*e*SG	Sg	20 21 40.0	-0.1
TVSB	**Tavsanli**	**0.49**	**46**	*e*Pg	Pg	20 21 33.3	-0.3
TVSB				*e*Sg	Sg	20 21 40.0	-0.1
KULA	**Kula-Manisa**	**0.65**	**204**	*e*PG	Pg	20 21 36.3	-0.2
KULA				*e*SG	Sg	20 21 45.5	+0.5
KULA	**Kula-Manisa**	**0.65**	**204**	*e*Pg	Pg	20 21 36.3	-0.2
KULA				*e*Sg	Sg	20 21 45.5	+0.5
KHAL	**Karahalli**	**0.83**	**152**	P	Pb	20 21 40.7	-0.2
KHAL	**Karahalli**	**0.83**	**152**	*i* P	Pb	20 21 40.7	-0.1
BALY	**Balya**	**1.24**	**301**	P	Pb	20 21 47.8	-0.1
BALY				S	Sg	20 22 02.9	-1.1
BALY	**Balya**	**1.24**	**301**	*i* P	Pb	20 21 47.8	0.0
BALY				*i* S	Sg	20 22 02.9	-1.1
KCTX	**Karacabey (Bur**	**1.26**	**337**	*e*PN	Pn	20 21 47.6	-0.5
KCTX	**Karacabey (Bur**	**1.26**	**337**	*e*Pn	Pn	20 21 47.6	-0.5
MDNY	**Mudanya-Bursa**	**1.26**	**356**	*e*PN	Pn	20 21 47.5	-0.6
MDNY	**Mudanya-Bursa**	**1.26**	**356**	*e*Pn	Pn	20 21 47.5	-0.6
ARMT	**Armutlu**	**1.46**	**356**	*e*PN	Pn	20 21 49.8	-1.0
ARMT	**Armutlu**	**1.46**	**356**	*e*Pn	Pn	20 21 49.8	-1.1

*CSEM **31** 20:23:55.0±0.5, 50°.19N×19°.10E, h2km, Error ellipse: s-maj=14.9km s-min=6.0km az=2.0*

PRU 31 20:23:55.6, 50°.16N×19°.11E, h0km, Poland

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
OJC	**Ojcow**	**0.45**	**82**	*e*Pg	Pg	20 24 03.2	-0.9
OJC				*e*Sg	Sg	20 24 08.9	-1.0
OJC	**Ojcow**	**0.45**	**82**	*e*Pg	Pg	20 24 03.2	-0.9
OJC				*e*Sg	Sg	20 24 08.9	-1.0
OKC	**Ostrava-Krasne**	**0.70**	**243**	*e*SG	Sb	20 24 19.6	-1.3
OKC	**Ostrava-Krasne**	**0.70**	**243**	Sg	Sb	20 24 19.6	-1.3
LANS	**Liptovska Anna**	**1.04**	**167**	*e*Pg	Pg	20 24 14.5	-0.9
LANS	**Liptovska Anna**	**1.04**	**167**	*e*PG	Pg	20 24 14.5	-0.9
LANS				*e*SG	Sg	20 24 27.5	-1.4
MORC	**Moravsky Berou**	**1.08**	**250**	*e*Pg	Pg	20 24 16.6	+0.3
MORC				*e*Sg	Sg	20 24 31.1	+0.8
STHS	**Stebnicka Huta**	**1.57**	**117**	*e*Pn	Pn	20 24 24.4	-0.3
STHS	**Stebnicka Huta**	**1.57**	**117**	*e*PN	Pn	20 24 24.4	-0.3
STHS				*e*LG	Lg	20 24 51.6	
DPC	**Dobruska-Polom**	**1.80**	**277**	*e*PG	Pn	20 24 28.4	+0.5
DPC				*e*SG	Sb	20 24 52.7	+0.1
	comp=Z,4.9nm,0.4s						
DPC	**Dobruska-Polom**	**1.80**	**277**	Pg	Pn	20 24 28.4	+0.5
DPC				Sg	Sb	20 24 52.7	+0.1
	4.9nm,0.4s						
KECS	**Kecovo**	**1.90**	**151**	*e*Pn	Pn	20 24 28.6	-0.7
KECS				*e*Sn	Sn	20 24 51.3	-2.7
KECS	**Kecovo**	**1.90**	**151**	*e*PN	Pn	20 24 28.5	-0.8
KECS				*e*SN	Sn	20 24 51.3	-2.7
KECS				*e*LG	Lg	20 24 57.6	
CRVS	**Cervenica-Dubn**	**1.98**	**129**	*e*Pn	Pb	20 24 32.4	-0.1
CRVS	**Cervenica-Dubn**	**1.98**	**129**	*e*PN	Pb	20 24 32.4	-0.1
PRU	**Pruhonice**	**2.95**	**268**	*e*SG	Sg	20 25 29.2	-1.1
PRU	**Pruhonice**	**2.95**	**268**	Sg	Sg	20 25 29.2	-1.1
KHC	**Kasperske Hory**	**3.74**	**256**	*e*SG	Sg	20 25 53.8	-1.9
KHC	**Kasperske Hory**	**3.74**	**256**	Sg	Sg	20 25 53.8	-1.9

JMA 31 20:57:03.3±0.2, 36°.91N×141°.38E, h44km±2km, M3.5, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.50**	**293**	P	Pn	20 57 14.1	-0.2
ONAJ				S	Sn	20 57 21.6	-0.5
JFK	**Kawauchi**	**0.61**	**319**	P	Pn	20 57 15.4	-0.3
JHO	**Hitachi**	**0.72**	**246**	P	Pn	20 57 16.9	-0.2
JHO				S	Sn	20 57 26.6	-0.4
JFT	**Otama**	**1.03**	**306**	P	Pn	20 57 22.7	+1.4
JFT				S	Sn	20 57 36.7	+2.1
JMM	**Marumori**	**1.06**	**334**	P	Pn	20 57 22.1	+0.3
JMM				S	Sn	20 57 35.4	0.0
JFY	**Yanaizu**	**1.43**	**291**	P	Pn	20 57 28.9	+2.1
JFY				*e*S	Sn	20 57 47.5	+3.1
JIO	**Ouri**	**1.54**	**359**	P	Pn	20 57 28.3	0.0
JIO				S	Sn	20 57 45.8	-1.3
JOU	**Okura**	**1.56**	**339**	P	Pn	20 57 30.3	+1.7
JOU				S	Sn	20 57 49.8	+2.2
JAG	**Ashikaga**	**1.62**	**253**	P	Pn	20 57 31.0	+1.6
JAG				S	Sn	20 57 50.4	+1.3
JYS	**Shirataka**	**1.67**	**322**	P	Pn	20 57 32.2	+2.1
JYS				S	Sn	20 57 53.8	+3.4
JKT	**Katashina**	**1.72**	**266**	P	Pn	20 57 33.6	+2.8
JKT				S	Sn	20 57 54.7	+3.2

*ISCJB **31** 21:00:43.6±0.4, 21°.55S±0°.06×169°.79E±0°.06, h21km, mb4.7/40, MS4.4/18, Error ellipse: s-maj=8.5km s-min=8.0km az=161.8*
*NEIC **31** 21:00:43.3±0.3, 21°.49S×169°.84E, h10km, mb4.9/21, Error ellipse: s-maj=8.5km s-min=7.8km az=146.0*
*GCMT **31** 21:00:47.3±0.4, 21°.61S×169°.74E, h31km±1km, MW5.0/54, Moment Tensor Solution. s29,c34; s54,c73; Duration: 0 Moment tensor: Scale 10^{16}Nm; M_{rr}3.14±.25; $M_{\theta\theta}$-2.49±.17; $M_{\phi\phi}$-0.65±.17; $M_{r\theta}$2.60±.27; $M_{\theta\phi}$1.12±.11; $M_{\phi r}$-1.60±.21; Best double couple: M_o4.33600×10^{16} NP1:ϕ_s120.00000°, δ67.00000°, λ93.00000°. NP2: ϕ_s291.00000°, δ23.00000°, λ82.00000°. Principal axes: T 4.4050, Plg67.0000°, Azm36.0000°; N -0.1430, Plg3.0000°, Azm298.0000°; P -4.2680, Plg22.0000°, Azm207.0000°; nsta1 refers to body waves, cutoff=40s. nsta2 refers to surface waves, cutoff=50s.*
*IDC **31** 21:00:47.1±7.3, 21°.46S×169°.74E, h33km±53km, mb4.3/15, mb1 4.5/17, mb1mx4.3/37, mbtmp4.5/17, ML4.0/2, MS4.2/15, Ms1 4.2/15, ms1mx3.9/30 Error ellipse: s-maj=27.2km s-min=18.6km az=74.0*

ISC 31 21:00:46.1±0.4, 21°.64S±0°.08×169°.69E±0°.06, h21km, n137, σ1°.89/135, mb4.7/40, MS4.4/18, 2C, Southeast of Loyalty Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**3.05**	**261**	*e*Pn	**Pn**	**21 01 32.8**	**-0.4**
	79nm,0.2s						
DZM				*e*Sn	**Sn**	**21 02 05.3**	**-3.8**
	322nm,0.3s						
DZM				*e*LR	LR	21 02 09.8	
	9μm,23.9s						
DZM	**Mont Dzumac**	**3.05**	**261**	Pn	**Pn**	**21 01 33.9**	**+0.7**
	22nm,0.3s,baz=124,slow=11,SNR=173						
DZM				Sn	**Sn**	**21 02 10.3**	**+1.2**
	72nm,0.3s,baz=178,slow=22,SNR=7.5						
DZM	**Mont Dzumac**	**3.05**	**261**	*e*Pn	**Pn**	**21 01 32.6**	**-0.5**
DZM				Sn	**Sn**	**21 02 10.3**	**+1.2**
MSVF	**Nonsavu**	**8.78**	**65**	*e*Pn	**Pn**	**21 02 55.6**	**+3.7**
EIDS	**Eidsvold**	**17.47**	**254**	*e*P	**Pn**	**21 04 49.3**	**+0.8**
	28nm,1.0s						
URZ	**Urewera**	**17.76**	**161**	P	**P**	**21 04 53.9**	**+1.1**
	0.5nm,0.3s,baz=21,slow=11,SNR=5.5						
URZ				LR	LR	21 10 25.8	
	comp=Z,352nm,21.6s,baz=348,slow=32						
URZ	**Urewera**	**17.76**	**161**	*e*Pn	**Pn**	**21 04 51.8**	**-0.2**
	47nm,1.2s						
ARMA	**Armidale**	**18.42**	**238**	*e*P	**Pn**	**21 05 01.4**	**+1.1**
	93nm,1.5s						
BKZ	**Black Stump Fm**	**18.42**	**163**	*e*P	**Pn**	**21 05 00.6**	**+0.4**
	119nm,1.6s						
AFI	**Afiamalu**	**19.24**	**70**	LR	LR	21 11 31.6	
	comp=Z,310nm,20.0s,baz=230,slow=34						
CTA	**Charters Tower**	**21.95**	**270**	P	**P**	**21 05 39.6**	**+1.0**
	21nm,1.1s,baz=85,slow=14,SNR=11						
CTA				LR	LR	21 14 26.2	
	comp=Z,2μm,18.2s,baz=84,slow=37						
CTAO	**Charters Tower**	**21.95**	**270**	*e*P	**P**	**21 05 40.0**	**+1.5**
	28nm,0.9s						
RPZ	**Rata Peaks**	**22.05**	**177**	LR	LR	21 12 57.5	
	comp=Z,1μm,20.2s,baz=1.5,slow=33						
CAN	**Canberra**	**22.67**	**229**	*e*P	**P**	**21 05 47.4**	**+1.2**
	171nm,1.7s						
PMG	**Port Moresby**	**24.84**	**296**	P	**P**	**21 06 06.5**	**-0.7**
	9.8nm,0.8s,baz=122,slow=9.4,SNR=3.8						
PMG				LR	LR	21 14 01.9	
	comp=Z,219nm,21.5s,baz=140,slow=32						
STKA	**Stephens Creek**	**27.01**	**242**	P	**P**	**21 06 27.7**	**+0.9**
	16nm,0.8s,baz=74,slow=9.2,SNR=31						
STKA				LR	LR	21 17 08.7	
	comp=Z,833nm,18.5s,baz=70,slow=36						
STKA	**Stephens Creek**	**27.01**	**242**	*e*P	**P**	**21 06 28.1**	**+1.4**
	5.1nm,0.9s						
BBOO	**Buckleboo**	**31.78**	**242**	*e*P	**P**	**21 07 09.3**	**+0.2**
	58nm,1.5s						
AS01	**Alice Springs**	**32.99**	**260**	*e*P	**P**	**21 07 18.4**	**-1.5**
AS31	**Alice Springs**	**33.03**	**260**	*e*P	**P**	**21 07 19.9**	**-0.4**
	4.4nm,0.9s						
ASAR	**Alice Springs**	**33.04**	**260**	P	**P**	**21 07 19.6**	**-0.7**
	12nm,1.0s,baz=85,slow=8.7,SNR=50						
ASAR				LR	LR	21 21 32.3	
	comp=Z,700nm,18.1s,baz=100,slow=38						
WB2	**Warramunga Arr**	**33.04**	**266**	*e*P	**P**	**21 07 19.4**	**-0.9**
	10nm,1.0s						
WRA	**Warramunga Arr**	**33.05**	**266**	P	**P**	**21 07 19.3**	**-1.1**
	6.2nm,0.9s,baz=95,slow=9.6,SNR=16						
WRA				LR	LR	21 21 07.4	
	comp=Z,1μm,18.7s,baz=105,slow=37						
TBI	**Tubuai**	**37.70**	**101**	*e*LQ	LQ	21 16 40.2	
	355nm,28.0s						
TBI				*e*LR	LR	21 18 23.4	
	332nm,26.2s						
PPT2	**Papeete2**	**38.51**	**91**	*e*LQ	LQ	21 17 11.6	
	608nm,26.2s						
PPT2				*e*LR	LR	21 18 47.7	
	450nm,25.5s,baz=268						
PPT	**Papeete**	**38.51**	**91**	LR	LR	21 20 08.6	
	comp=Z,218nm,19.1s,baz=204,slow=30						
FITZ	**Fitzroy Crossi**	**41.48**	**267**	*e*P	**P**	**21 08 32.0**	**+0.1**
	28nm,0.9s						
GUMO	**Guam**	**42.65**	**323**	LR	LR	21 26 57.9	
	comp=Z,37nm,18.4s,baz=131,slow=37						
TAOE	**Nuku Hiva Isla**	**49.83**	**83**	*e*S	S	21 16 57.8	+11
	339nm,27.3s						
TAOE				*e*LR	LR	21 23 55.9	
	512nm,24.2s						
RKT	**Rikitea**	**50.93**	**103**	*e*S	S	21 17 21.3	+19
	124nm,31.0s						
RKT				*e*LR	LR	21 24 30.5	
	178nm,27.0s						
KAPI	**Kappang**	**51.07**	**281**	*e*P	**P**	**21 09 47.9**	**+0.5**
	18nm,0.8s						
VNDA	**Vanda**	**56.06**	**182**	P	**P**	**21 10 24.2**	**+1.1**
	1.2nm,0.9s,baz=359,slow=6.9,SNR=4.7						
VNDA				LR	LR	21 32 21.5	
	comp=Z,217nm,18.2s,baz=13,slow=34						
SBA	**Scott Base**	**56.28**	**181**	*e*P	**P**	**21 10 25.0**	**+0.3**
	13nm,1.0s						
KSM	**Kuching**	**62.33**	**284**	*e*P	**P**	**21 11 07.3**	**-0.2**
	11nm,0.8s						
MJAR	**Matsushiro Arr**	**65.06**	**332**	P	**P**	**21 11 23.1**	**-1.9**
	2.9nm,0.5s,baz=164,slow=7.2,SNR=9.5						
YHNB	**Yeheng**	**65.75**	**312**	*e*P	**P**	**21 11 31.1**	**+1.3**
	17nm,1.0s						
JNU	**Nakatsue**	**65.86**	**325**	P	**P**	**21 11 28.4**	**-1.8**
	5.8nm,0.9s,baz=153,slow=4.5,SNR=3.0						
KSRS	**Korea Array**	**70.72**	**326**	P	**P**	**21 11 59.3**	**-1.2**
	1.4nm,0.9s,baz=140,slow=5.7,SNR=3.8						
KSAR	**Wonju Array Be**	**70.73**	**326**	P	**P**	**21 11 59.4**	**-1.3**
QIZ	**Qiongzhong**	**71.14**	**300**	P	**P**	**21 12 04.5**	**+1.0**
QIZ				PP	**PP**	**21 14 43.5**	**+1.9**
QIZ				S	**S**	**21 21 20.5**	**+1.0**
QIZ				pmax	pmax		
	comp=Z,10.0nm,2.4s						
QIZ				LR	LR		
	comp=Z,120nm,4.0s						
USRK	**Ussuriysk Ar.**	**74.05**	**333**	P	**P**	**21 12 18.3**	**-2.0**
	comp=Z,4.3nm,0.9s,baz=143,slow=4.8,SNR=5.3						
SKNT	**Sakolnakorn**	**74.94**	**295**	P	**P**	**21 12 27.9**	**+1.8**
	comp=Z,15nm,0.9s						
MAW	**Mawson**	**76.38**	**202**	P	**P**	**21 12 33.7**	**+0.2**
	comp=Z,4.3nm,0.8s,baz=114,slow=6.6,SNR=7.6						
MAW				LR	LR	21 42 04.6	
	comp=Z,206nm,20.5s,baz=63,slow=32						
ENH	**Enshi**	**77.52**	**310**	*e*P	**P**	**21 12 39.8**	**-0.8**
	comp=Z,12nm,1.4s						
GYA	**Guiyang**	**77.53

comp=Z,0.5nm,0.4s,baz=222,slow=1.9,SNR=1.9
MVL Millersville 121.66 56 *e*PKPdf **PKPdf 21 19 40.3 +1.9**
ARCES ARCESS Array B 127.48 345 PKP **PKPdf 21 19 46.4 -2.4**
comp=Z,2.3nm,0.6s,baz=62,slow=1.4,SNR=29
EMMW East Machias 128.09 50 *e*PKPpre PKPpre 21 19 42.9
FINES FINESS Array B 132.95 337 PKP **PKPdf 21 19 57.7 -1.6**
comp=Z,1.2nm,0.5s,baz=58,slow=1.4,SNR=18
NOA NORSAR Array B 137.86 345 PKP **PKPdf 21 20 07.6 -1.0**
comp=Z,0.3nm,0.4s,baz=29,slow=2.0,SNR=2.9
BRTR Keskin Array B 138.59 306 PKP **PKPdf 21 20 13.7 +3.0**
comp=Z,0.5nm,0.8s,baz=98,slow=2.9,SNR=3.0
DPC Dobruska-Polom 144.51 330 *e*PKP **PKPab 21 20 17.6 -1.7**
DPC *ex* x 21 20 29.2
DPC AMS AMS 22 19 00.0
comp=Z,200nm,14.0s
KARP Karpathos 144.52 301 *e*PKPdf **PKPab 21 20 19.2 -0.6**
UPC Upice 144.55 331 *e*PKP **PKPab 21 20 18.0 -1.3**
PVCC Panska Ves 145.18 332 *e*PKP **PKPbc 21 20 20.0 -1.5**
PVCC *e*pPKP **PKiKP 21 20 26.8 +1.0**
PVCC *ex* x 21 20 32.3
BRG Berggiesshubel 145.19 333 *e*PKP **PKPbc 21 20 19.6 -2.0**
comp=Z,11nm,0.8s
BRG *i* 21 20 35.4
comp=Z,25nm,1.3s
CLL Collm 145.25 334⇑ *i*P **PKPbc 21 20 19.2 -2.5**
comp=Z,22nm,1.2s
CLL *i* 21 20 31.4
CLL *i* 21 20 35.3
CLL *e* 21 23 00.0
CLL Collm 145.25 334 *e*PKPbc **PKPbc 21 20 19.9 -1.8**
GOPC GO Pecny, Ondr 145.52 331 *e*PKP **PKPdf 21 20 20.7 -1.9**
PRU Pruhonice 145.58 331 *e*PKP **PKPdf 21 20 20.8 -1.9**
PRU *ex* x 21 20 33.1
TREC Trest 145.64 330 AMS AMS 22 19 50.0
comp=Z,200nm,18.1s
SANT Santorini 145.66 303 *e*PKPdf **PKPdf 21 20 21.1 -2.1**
LAST Lasithi 145.95 301 *e*PKPdf **PKPbc 21 20 25.3 +0.7**
VAY Valandovo 146.06 313 *i* PKP **PKPdf 21 20 24.1 +0.3**
NKC Novy Kostel 146.30 333 *e*PKP **PKPdf 21 20 23.4 -0.5**
NKC *ex* x 21 20 35.3
IDI Anoyia 146.38 302 *e*PKPdf **PKPdf 21 20 25.0 +0.4**
CONA Conrad Observa 146.39 328 *i* PKPab **PKPdf 21 20 24.3 0.0**
comp=Z,5.0nm,0.9s,SNR=8.2
SKO Skopje 146.53 315 *i* PKP **PKPbc 21 20 26.2 +0.1**
KHC Kasperske Hory 146.63 331 *e*PKP **PKPdf 21 20 24.5 0.0**
KHC *ex* x 21 20 36.5
KHC Kasperske Hory 146.63 331 *e*PKPdf **PKPdf 21 20 24.4 -0.2**
GEC2 GERESS Array S 146.78 331 *e*PKPdf **PKPdf 21 20 25.1 +0.2**
GERES GERESS Array B 146.78 331 PKPbc **PKPdf 21 20 24.9 0.0**
comp=Z,15nm,1.1s,baz=35,slow=3.3,SNR=26
GEA0 GERESS Array S 146.79 331 *e*PKPdf **PKPdf 21 20 24.5 -0.4**
ARSA Arzberg 147.02 327 *i* pPKPbc **PKPab 21 20 28.6 -0.2**
comp=Z,1.7nm,0.6s
AGG Agios Georgios 147.16 309 *e*PKPdf **PKPdf 21 20 26.1 +0.4**
MOA Molln 147.23 329 *i* PKPbc **PKPdf 21 20 26.1 +0.5**
comp=Z,1.8nm,0.6s
OHR Ohrid 147.35 314 *i* PKP **PKPdf 21 20 25.3 -0.7**
SOKA Soboth 147.65 327 *i* PKPbc **PKPdf 21 20 27.4 +1.0**
comp=Z,5.1nm,1.1s,SNR=6.9
OBKA Obir 148.01 327 *i* pPKPdf **PKPdf 21 20 28.5 +1.5**
comp=Z,0.9nm,0.4s
CWF Charnwood Fore 148.19 350 *e*PKPdf **PKPdf 21 20 28.2 +1.3**
KBA Koelnbreinsper 148.22 329 *i* PKPbc **PKPdf 21 20 28.2 +0.7**
comp=Z,2.4nm,0.4s,SNR=6.6
BOJS Bojanci 148.31 325 *i* P **PKPdf 21 20 29.1 +1.8**
LJU Ljubljana 148.33 326 *i* P **PKPdf 21 20 28.7 +1.3**
MEM Membach 148.37 340 PKP **PKPdf 21 20 28.9 +1.6**
MEM APKP **pPKPdf 21 20 41.1 +6.6**
MYKA Terra Mystica 148.38 328 *i* PKPbc **PKPdf 21 20 28.7 +1.1**
comp=Z,2.5nm,0.4s
CRNS Crni Vrh 148.45 326 *i* P **PKPdf 21 20 28.8 +1.1**
CRNS *e* 21 20 40.9
ABTA Abfaltersbach 148.85 329 *i* pPKPdf **PKPdf 21 20 29.0 +0.6**
comp=Z,5.1nm,0.8s
MOTA Moosalm 149.07 331 *i* PKPbc **PKPdf 21 20 30.6 +1.9**
comp=Z,5.0nm,0.7s,SNR=11
LANF Langenberg 149.13 336 PKP **PKPbc 21 20 31.9 -0.9**
WLF Walferdange 149.14 339 PKP **PKPbc 21 20 31.6 -1.2**
WLF APKP **pPKPab 21 20 43.6 -0.5**
WLF Walferdange 149.14 339 *e*PKPdf **PKPdf 21 20 31.1 +2.5**
WLF *ep*PKPab **pPKPab 21 20 43.7 -0.5**
DOU Dourbes 149.26 341 PKP **PKPdf 21 20 31.3 +2.6**
DOU APKP **PKPab 21 20 43.4 +5.9**
BFO Black Forest 149.46 335 *e*PKPdf **PKPdf 21 20 31.7 +2.5**
FETA Feichten 149.48 331 *i* sPKPdf **PKPdf 21 20 32.2 +2.7**
comp=Z,6.1nm,0.7s,SNR=9.1
DAVA Damuels 149.65 332 *i* PKPbc **PKPbc 21 20 32.8 -1.6**
comp=Z,4.5nm,0.6s
ECH Echery 150.01 336 PKP **PKPbc 21 20 33.4 -1.6**
MOF Molkenrain 150.32 336 PKP **PKPdf 21 20 33.2 +2.5**
LOMF Lomont 150.85 336 PKP **PKPbc 21 20 34.9 -2.2**
TIP Timpagrande 151.00 313 *e*PKPdf **PKPbc 21 20 36.4 -1.3**
AQU L'Aquila 151.34 322 *e*PKPbc **PKPbc 21 20 37.5 -0.9**
SENIN Lac Senin/Sane 151.47 334 *e*PKPdf **PKPbc 21 20 37.0 -1.8**
TORD Torodi Ar. Bea 165.78 236 PKPab **PKPab 21 21 48.4 -1.1**
comp=Z,0.7nm,0.8s,baz=108,slow=4.7,SNR=2.8

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*SCB **31** 21:11:56.6±0.8, 23°.77S×72°.01W, h20km, Ml3.9/2, Error ellipse: s-maj=17.8km s-min=12.1km az=46.0*
*SJA **31** 21:12:16.3±0.4, 22°.47S×70°.46W, h383km±34km, ML4.0, MW4.2*
*ISCJB **31** 21:12:21.0±0.9, 22°.78S±0°.03×70°.44W±0°.06, h16km±7km, mb3.8/4, MS3.7/2, Error ellipse: s-maj=8.7km s-min=4.4km az=12.7*
*GUC **31** 21:12:21.2±0.3, 22°.77S×70°.39W, h33km±1km, ML4.5*
*IDC **31** 21:12:26.8±2.7, 22°.86S×70°.18W, h68km±22km, mb3.5/4, mb1 3.7/7, mb1mx3.5/25, mbtmp3.8/7, MS3.4/5, Ms1 3.4/5, ms1mx3.0/20, Error ellipse: s-maj=28.7km s-min=24.6km az=56.0*

ISC 31 21:12:20.8±1.4, **22°.75S**±0°.04×**70°.40W**±0°.05, **h14**km±10km, **n34**, σ2§47/39, **mb3.8**/4, **1C-1D, Near coast of northern Chile**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PB04	**IPOC Station P**	**0.47**	**29**	*i* P	**Pb**	**21 12 31.4**	**+0.4**
PB04				*i* S	**Sb**	**21 12 39.0**	**+1.1**
PB06	**IPOC Station P**	**0.76**	**87**	*i* P	**Pg**	**21 12 35.5**	**-0.1**
PB06				*i* S	**Sb**	**21 12 46.1**	**-0.1**
PB10	**IPOC Station P**	**0.78**	**191**	*i* P	**Pg**	**21 12 34.9**	**-1.0**
PB10				*i* S	**Sb**	**21 12 45.3**	**-1.2**
PB10				IAML		21 12 47.3	
comp=N,41μm,0.4s							
PB07	**IPOC Station P**	**1.12**	**25**	*i* P	**Pb**	**21 12 41.6**	**-0.5**
PB07				*i* S	**Sb**	**21 12 56.7**	**+0.1**
LVC	**Limon Verde**	**1.38**	**85**	P	**Pb**	**21 12 46.2**	**-0.3**
comp=N,7μm,0.3s,baz=254,slow=12,SNR=627							
LVC				S	**Sn**	**21 13 04.1**	**0.0**
comp=N,32μm,0.3s,baz=75,slow=18,SNR=54							
LVC				LR	LR	21 13 33.4	
comp=N,3μm,20.8s,baz=271,slow=56							
PB09	**IPOC Station P**	**1.43**	**49**	*i* P	**Pn**	**21 12 46.4**	**0.0**
PB09				*i* S	**Sn**	**21 13 05.5**	**+0.4**
PB09				IAML		21 13 09.3	
comp=E,13μm,0.6s							
PB01	**IPOC Station P**	**1.90**	**27**	*i* P	**Pn**	**21 12 53.6**	**+0.9**
PB01				*i* S	**Sn**	**21 13 18.1**	**+1.6**
PB08	**IPOC Station P**	**2.84**	**24**	*i* P	**Pn**	**21 13 07.7**	**+1.6**
PB08				*i* S	**Sn**	**21 13 42.5**	**+2.2**
PB11	**IPOC Station P**	**3.05**	**13**	*i* P	**Pn**	**21 13 09.9**	**+1.1**
PB11				*i* S	**Sn**	**21 13 47.3**	**+2.1**
YJA	**Yavi**	**4.55**	**84**	*e*P	Pn	21 13 35.0	+5.4
YJA				IAML		21 13 39.4	
comp=Z,18nm,0.4s							
YJA				*e*S	**Sb**	**21 14 33.4**	**-2.1**
HJA	**Humahuaca**	**4.62**	**97**	*e*P	Pb	21 13 36.5	-5.3
HJA				IAML		21 13 38.2	
comp=Z,149nm,0.6s							
MOCB	**Mochara**	**4.66**	**72**⇓	*i*Pn	Pn	21 13 36.8	+5.7
MOCB				*e*Sn	**Sg**	**21 14 51.4**	**+0.9**
comp=Z,21nm,0.7s							
SLA	**San Lorenzo**	**4.89**	**115**	*e*P	Pb	21 13 39.9	-6.5
AZAP	**Zapla**	**5.11**	**108**	*e*P	Pn	21 13 41.6	+4.5
AZAP				IAML		21 13 44.3	
comp=Z,55nm,0.6s							
FSA	**Cafayete**	**5.23**	**131**	*e*P	Pn	21 13 43.8	+5.0
FSA				IAML		21 13 48.1	
comp=Z,10nm,0.5s							
ALOL	**LOMAS DE OLMED**	**5.99**	**101**	*e*P	**Pn**	**21 13 50.8**	**+1.7**
AHML	**Horco Molle**	**6.11**	**132**	*e*P	**Pn**	**21 13 53.7**	**+3.0**
AHML				IAML		21 13 57.9	
comp=Z,23nm,0.4s							
BBOJ	**La Paz, Jacaqu**	**6.11**	**20**⇑	*i*Pn	**Pn**	**21 13 55.0**	**+3.9**
BBOD	**La Paz, Gloria**	**6.31**	**16**	*e*Pn	**Pn**	**21 13 56.6**	**+2.7**
BBOE	**La Paz, Chanca**	**6.33**	**21**	*e*Pn	**Pn**	**21 13 58.5**	**+4.3**
LPAZ	**La Paz**	**6.77**	**19**	P	**Pn**	**21 14 03.3**	**+2.9**
comp=Z,0.4nm,0.3s,baz=221,slow=12,SNR=7.0							
LPAZ				S	**Sb**	**21 15 32.7**	**-7.0**
baz=258,slow=9.8,SNR=2.0							
LPAZ	**La Paz**	**6.77**	**19**	*e*Pn	**Pn**	**21 14 03.5**	**+3.2**
LPAZ				*e*Sn	**Sb**	**21 15 35.5**	**-4.2**
BBOB	**La Paz, Bander**	**6.91**	**18**	*e*Pn	**Pn**	**21 14 05.0**	**+2.9**
BBOB				*e*Sn	**Sb**	**21 15 38.4**	**-5.2**
comp=Z,55nm,1.3s							
CYA	**Choya**	**7.02**	**145**	*e*P	**Pn**	**21 14 04.4**	**+1.2**
CYA				IAML		21 14 09.8	
comp=Z,22nm,0.5s							
SIV	**San Ignacio**	**11.07**	**54**	P	**Pn**	**21 14 59.7**	**+0.9**
comp=Z,2.2nm,0.3s,baz=252,slow=12,SNR=24							
SIV				S	**Sn**	**21 17 01.0**	**-1.5**
baz=234,slow=10.0,SNR=3.6							
SIV				LR	LR	21 20 16.9	
comp=Z,118nm,21.4s,baz=189,slow=43							
NNA	**Nana**	**12.34**	**329**	LR	LR	21 19 26.1	
comp=Z,62nm,20.9s,baz=172,slow=33							
CPUP	**Villa Florida**	**12.41**	**109**	LR	LR	21 20 32.1	
comp=Z,137nm,20.0s,baz=280,slow=40							
PLCA	**Paso Flores**	**17.93**	**180**	P	**P**	**21 16 30.3**	**0.0**
comp=Z,0.1nm,0.3s,baz=353,slow=16,SNR=2.5							
BDFB	**Brasilia**	**22.27**	**75**	LR	LR	21 27 05.8	
comp=Z,89nm,19.4s,baz=230,slow=40							
PTGA	**Pitinga**	**24.12**	**26**	P	**P**	**21 17 36.0**	**-0.4**
comp=Z,1.6nm,0.5s,baz=202,slow=8.0,SNR=4.1							
TXAR	**Lajitas Array**	**60.89**	**327**	P	**P**	**21 22 35.3**	**+2.1**
comp=Z,0.2nm,0.7s,baz=143,slow=7.9,SNR=2.3							
ULM	**Lac du Bonnet**	**76.10**	**343**	LR	LR	21 58 23.3	
comp=Z,113nm,20.3s,baz=290,slow=36							
TORD	**Torodi Ar. Bea**	**79.07**	**71**	P	**P**	**21 24 23.1**	**-2.1**
comp=Z,2.2nm,0.5s,baz=254,slow=5.1,SNR=48							
YKA	**Yellowknife Ar**	**91.91**	**341**	P	**P**	**21 25 27.4**	**-0.8**
comp=Z,0.2nm,0.6s,baz=134,slow=5.7,SNR=4.7							

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*ISCJB **31** 21:13:39.0±1.0, 78°.33N±0°.06×7°.5E±0°.3, h10km, Error ellipse: s-maj=11.2km s-min=6.9km az=41.7*
*CSEM **31** 21:13:40.3±0.5, 78°.34N×7°.60E, h10km, ML2.4, Error ellipse: s-maj=14.5km s-min=10.2km az=162.0*
*NAO **31** 21:13:43.9±1.8, 78°.27N×8°.57E, ML2.8*
*BER **31** 21:13:46.0±3.8, 78°.27N×8°.65E, h15km±23km, MD2.6, ML2.4, ML2.8(NAO)*

ISC 31 21:13:40.2±1.9, **78°.27N**±0°.07×**7°.8E**±0°.1, **h10**km, **n17**, σ1§82/27, **Svalbard region**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KBS	**Kingsbay**	**1.05**	**50**	Pg	**Pn**	**21 14 01.2**	**+0.3**
KBS				Lg	Lg	21 14 13.4	
KBS	**Kingsbay**	**1.05**	**50**	Pg	**Pn**	**21 14 01.2**	**+0.3**
KBS				*e*Sg	**Sg**	**21 14 13.2**	**-0.8**
KBS				IAML		21 14 15.8	
comp=Z,158nm,0.5s							
KBS	**Kingsbay**	**1.05**	**50**	*i* P	**Pn**	**21 14 01.2**	**+0.3**
SNR=110							
KBS				*e*S	**Sg**	**21 14 12.6**	**-1.4**
SNR=110							
KBS				*e*Sg	**Sg**	**21 14 13.2**	**-0.8**
SNR=92							
BRBA	**Barentsburg A**	**1.34**	**96**	Pg	**Pg**	**21 14 06.1**	**+0.2**
SNR=92							
BRBA				Lg	Lg	21 14 22.5	
SPA0	**Spitsbergen Ar**	**1.76**	**89**	Pn	**Pb**	**21 14 13.0**	**+0.5**
baz=271,slow=12							
SPA0				Lg	Lg	21 14 35.3	
baz=272,slow=22							
SPA0	**Spitsbergen Ar**	**1.76**	**89**	Pn	**Pb**	**21 14 13.0**	**+0.5**
baz=271,slow=12							
SPA0				Lg	Lg	21 14 35.3	
baz=272,slow=22							
SPA0	**Spitsbergen Ar**	**1.76**	**89**	Pn	**Pb**	**21 14 13.0**	**+0.5**
SNR=55							
SPA0				Lg	Lg	21 14 35.3	
SNR=90							
HSP	**Hornsund**	**2.10**	**123**	Pn	**Pn**	**21 14 16.6**	**+1.4**
HSP				Lg	Lg	21 14 41.9	
HSPB	**Hornsund (broa**	**2.10**	**124**	Pn	**Pn**	**21 14 16.6**	**+1.3**
HSPB				*e*Sg	**Sn**	**21 14 41.5**	**+0.1**
HSPB	**Hornsund (broa**	**2.10**	**124**	Pn	**Pn**	**21 14 16.6**	**+1.3**
SNR=55							
HSPB				*e*Sg	**Sn**	**21 14 41.5**	**+0.1**
SNR=91							
HOPEN	**Hopen**	**4.16**	**107**	Pn	**Pn**	**21 14 44.9**	**+1.4**
HOPEN				Sn	**Sn**	**21 15 31.5**	**-0.6**
HOPEN	**Hopen**	**4.16**	**107**	Pn	**Pn**	**21 14 44.9**	**+1.4**
HOPEN				*e*S	**Sn**	**21 15 31.1**	**-1.0**
HOPEN				IAML		21 15 33.5	
comp=Z,18nm,0.3s							
HOPEN	**Hopen**	**4.16**	**107**	Pn	**Pn**	**21 14 44.9**	**+1.4**
SNR=55							
HOPEN				*e*S	**Sn**	**21 15 31.1**	**-1.0**
SNR=53							
DAG	**Danmarks Havn**	**5.89**	**268**	*i* P	**Pn**	**21 15 06.4**	**-0.9**
DAG				*i* S	Sn	21 16 06.0	-8.7
ARA0	**ARCESS Array S**	**9.99**	**142**	Pn	**Pn**	**21 16 06.0**	**+2.5**
baz=346,slow=11							
ARA0				Sn	**Sn**	**21 17 50.8**	**-4.5**
baz=356,slow=22							
ARA0	**ARCESS Array S**	**9.99**	**142**	Pn	**Pn**	**21 16 06.0**	**+2.5**
baz=346,slow=11							
ARA0				Sn	**Sn**	**21 17 50.8**	**-4.5**
baz=356,slow=22							
ARA0	**ARCESS Array S**	**9.99**	**142**	Pn	**Pn**	**21 16 06.0**	**+2.5**
SNR=55							

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*IDC **31** 21:23:25.1±1.8, 36°.97N×141°.01E, h0km, mb3.4/3, mb1 3.4/5, mb1mx3.2/50, mbtmp3.4/5, ML3.2/2, Error ellipse: s-maj=32.8km s-min=24.3km az=102.0*
*ISCJB **31** 21:23:26.2±0.9, 37°.10N±0°.03×140°.92E±0°.06, h4km±4km, mb3.4/3, Error ellipse: s-maj=8.6km s-min=4.5km az=26.1*
*JMA **31** 21:23:27.2, 37°.12N×140°.84E, h7km±1km, M3.4*
JMA Felt III J1.

ISC 31 21:23:27.1±1.1, **37°.09N**±0°.04×**140°.84E**±0°.05, **h5**km±6km, **n13**, σ1§16/23, **mb3.5**/3, **4C-2D, Eastern Honshu**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ONAJ	**Iwakimizuishiy**	**0.04**	**284**	⇓P	**Pg**	**21 23 28.5**	**+0.1**
ONAJ				S	**Sg**	**21 23 29.5**	**+0.2**
JFK	**Kawauchi**	**0.27**	**5**	⇑P	**Pg**	**21 23 32.2**	**-0.3**
JFK				*e*S	**Sg**	**21 23 36.2**	**+0.1**
JHO	**Hitachi**	**0.53**	**205**	⇓P	**Pg**	**21 23 37.6**	**+0.3**
JHO				S	**Sg**	**21 23 45.0**	**+0.9**
JFT	**Otama**	**0.59**	**317**	⇑P	**Pg**	**21 23 38.5**	**+0.1**
JFT				S	**Sg**	**21 23 46.4**	**+0.4**
JSB	**Shiboa**	**0.75**	**261**	P	**Pb**	**21 23 42.3**	**-0.3**
JSB				S	**Sb**	**21 23 52.9**	**-0.2**
JMM	**Marumori**	**0.77**	**357**	⇑P	**Pg**	**21 23 41.2**	**-0.7**
JMM				S	**Sg**	**21 23 51.7**	**-0.3**
JFY	**Yanaizu**	**0.96**	**289**	⇑P	**Pg**	**21 23 45.4**	**-0.1**
JFY				S	**Sg**	**21 23 57.9**	**-0.1**
MJAR	**Matsushiro Arr**	**2.18**	**256**	Pn	**Pn**	**21 24 04.7**	**+0.6**
5.4nm,0.3s,baz=82,slow=16,SNR=21							
MJAR				Sn	**Sb**	**21 24 33.8**	**-0.6**
9.0nm,0.3s,baz=86,slow=29,SNR=12							
MAT	**Matsushiro**	**2.19**	**256**	P	**Pb**	**21 24 06.0**	**-1.1**
MAT				S	**Sb**	**21 24 34.8**	**+0.4**
ASAJ	**Asahikawa**	**7.14**	**10**	Pn	**Pn**	**21 25 12.5**	**+0.4**
0.4nm,0.3s,baz=217,slow=18,SNR=3.3							
ASAJ				Sn	**Sn**	**21 26 37.7**	**+4.1**
0.1nm,0.3s,baz=36,slow=18,SNR=2.2							
MKAR	**Makanchi Array**	**43.70**	**302**	P	**P**	**21 31 33.6**	**+0.7**
0.3nm,0.5s,baz=93,slow=5.8,SNR=4.2							
KURBB	**Kurchatov Arra**	**45.60**	**308**	P	**P**	**21 31 47.0**	**-1.0**
0.3nm,0.5s,baz=82,slow=8.0,SNR=5.2							
WRA	**Warrmunga Arr**	**57.06**	**187**	P	**P**	**21 33 12.4**	**-1.7**
0.3nm,0.5s,baz=3.2,slow=7.3,SNR=5.5							

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*ISCJB **31** 21:26:59.8±0.4, 39°.15N±0°.02×28°.99E±0°.02, h7km±4km, Error ellipse: s-maj=3.3km s-min=3.0km az=171.0*
*ISK **31** 21:26:59.6, 39°.14N×29°.01E, h9km, ML3.1*
*DDA **31** 21:26:59.5, 39°.14N×29°.00E, h14km, Ml3.5*
*CSEM **31** 21:27:00.1±0.1, 39°.14N×29°.00E, h8km, ML3.5, Error ellipse: s-maj=1.3km s-min=1.3km az=30.0*
*THE **31** 21:27:09.0, 39°.04N×28°.03E, h0km±5km, Error ellipse: s-maj=6.0km s-min=2.5km az=71.0*

ISC 31 21:27:00.1±0.9, **39°.14N**±0°.02×**29°.00E**±0°.02, **h9**km±10km, **n137**, σ0§43/149, **3C-2D, Turkey**

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DEMI	**Demirci**	**0.24**	**246**	P	**Pg**	**21 27 05.0**	**0.0**
DEMI				S	**Sg**	**21 27 08.3**	**0.0**
DEMI	**Demirci**	**0.24**	**246**	*i* P	**Pg**	**21 27 05.0**	**0.0**
DEMI				*i* S	**Sg**	**21 27 08.3**	**0.0**
GDZ	**Gediz**	**0.38**	**98**	P	**Pg**	**21 27 07.6**	**0.0**
GDZ				S	**Sg**	**21 27 12.9**	**+0.3**
GDZ	**Gediz**	**0.38**	**98**	*i* P	**Pg**	**21 27 07.6**	**0.0**
GDZ				*i* S	**Sg**	**21 27 12.9**	**+0.3**
TVSB	**Tavsanli**	**0.47**	**49**	*e*PG	**Pg**	**21 27 09.2**	**-0.1**
TVSB				*e*SG	**Sg**	**21 27 16.0**	**+0.4**
TVSB	**Tavsanli**	**0.47**	**49**	*e*Pg	**Pg**	**21 27 09.3**	**-0.1**
TVSB				*e*Sg	**Sg**	**21 27 16.0**	**+0.4**
KULA	**Kula-Manisa**	**0.68**	**203**	*e*PG	**Pg**	**21 27 13.0**	**-0.3**
KULA	**Kula-Manisa**	**0.68**	**203**	P	Pn	21 27 23.1	+7.0
KULA	**Kula-Manisa**	**0.68**	**203**	*e*Pg	**Pg**	**21 27 13.0**	**-0.3**
KHAL	**Karahalli**	**0.86**	**153**	P	**Pg**	**21 27 16.4**	**-0.3**
KHAL				S	**Sg**	**21 27 27.8**	**-0.1**
KHAL	**Karahalli**	**0.86**	**153**	*i* P	**Pg**	**21 27 16.4**	**-0.3**
KHAL				*i* S	**Sg**	**21 27 27.8**	**-0.1**
ORLT	**Orhaneli**	**0.91**	**355**	*e*PG	**Pg**	**21 27 17.6**	**0.0**
ORLT	**Orhaneli**	**0.91**	**355**	*e*Pg	**Pg**	**21 27 17.6**	**0.0**
KHL	**Karahalli**	**0.91**	**153**	*e*PG	**Pg**	**21 27 17.7**	**0.0**
KHL	**Karahalli**	**0.91**	**153**	*e*Pg	**Pg**	**21 27 17.7**	**0.0**
AKHS	**Akhisar**	**0.96**	**255**	P	**Pg**	**21 27 18.6**	**0.0**
AKHS				S	**Sg**	**21 27 31.3**	**+0.3**
AKHS	**Akhisar**	**0.96**	**255**	*i* P	**Pg**	**21 27 18.6**	**0.0**
AKHS				*i* S	**Sg**	**21 27 31.3**	**+0.3**
AKS	**Akhisar**	**0.96**	**255**	*e*PG	**Pg**	**21 27 18.7**	**+0.1**
AKS	**Akhisar**	**0.96**	**255**	*e*Pg	**Pg**	**21 27 18.7**	**+0.1**
BALB	**Balikesir**	**1.00**	**300**	*e*PG	**Pg**	**21 27 19.2**	**-0.2**
BALB				*e*SG	**Sb**	**21 27 33.5**	**+0.5**
BALB	**Balikesir**	**1.00**	**300**	*e*Pg	**Pg**	**21 27 19.2**	**-0.2**
BALB				*e*Sg	**Sb**	**21 27 33.5**	**+0.5**
IGD	**Bursa**	**1.13**	**8**	*i* P	**Pg**	**21 27 20.5**	**-1.4**
IGD				*i* S	**Sg**	**21 27 36.3**	**-0.3**
BALY	**Balya**	**1.23**	**300**	P	**Pb**	**21 27 23.3**	**-0.3**
BALY	**Balya**	**1.23**	**300**	*i* P	**Pb**	**21 27 23.3**	**-0.3**
KCTX	**Karacabey (Bur**	**1.23**	**336**	*e*PN	**Pb**	**21 27 23.5**	**-0.1**
KCTX	**Karacabey (Bur**	**1.23**	**336**	*e*Pn	**Pb**	**21 27 23.5**	**-0.1**
MDNY	**Mudanya-Bursa**	**1.23**	**356**	*e*PN	**Pn**	**21 27 23.3**	**-0.3**
MDNY	**Mudanya-Bursa**	**1.23**	**356**	*e*Pn	**Pn**	**21 27 23.3**	**-0.3**
CAVI	**Cavuskoy**	**1.25**	**31**	*e*PN	**Pn**	**21 27 23.7**	**-0.1**
CAVI	**Cavuskoy**	**1.25**	**31**	*e*Pn	**Pn**	**21 27 23.7**	**-0.1**
IZI	**Iznik**	**1.25**	**17**	*e*PN	**Pg**	**21 27 24.2**	**+0.1**
IZI	**Iznik**	**1.25**	**17**	*e*Pn	**Pg**	**21 27 24.2**	**+0.1**
GEMT	**Gemlik**	**1.30**	**6**	*e*PN	**Pn**	**21 27 24.5**	**-0.1**
GEMT	**Gemlik**	**1.30**	**6**	*e*Pn	**Pn**	**21 27 24.5**	**-0.1**
GONE	**Gonen-Balikesi**	**1.36**	**312**	*e*PN	**Pb**	**21 27 25.7**	**-0.1**
GONE	**Gonen-Balikesi**	**1.36**	**312**	*e*Pn	**Pb**	**21 27 25.7**	**-0.1**
DENT	**Denizli**	**1.38**	**179**	*e*PN	**Pn**	**21 27 25.8**	**+0.1**
DENT	**Denizli**	**1.38**	**179**	*e*Pn	**Pn**	**21 27 25.8**	**+0.1**
ADVT	**Abdulvahap**	**1.41**	**24**	*e*PN	**Pn**	**21 27 26.2**	**+0.1**
ADVT	**Abdulvahap**	**1.41**	**24**	*e*Pn	**Pn**	**21 27 26.2**	**+0.1**
ARMT	**Armutlu**	**1.43**	**356**	*e*PN	**Pn**	**21 27 26.4**	**+0.1**
ARMT	**Armutlu**	**1.43**	**356**	*e*Pn	**Pn**	**21 27 26.4**	**+0.1**
DNZL	**Cakiroluk**	**1.45**	**179**	P	**Pn**	**21 27 26.7**	**-0.1**
DNZL	**Cakiroluk**	**1.45**	**179**	*i* P	**Pn**	**21 27 26.7**	**-0.1**
AYDB	**Zeytinkoy-Aydi**	**1.48**	**216**	*e*PN	**Pn**	**21 27 27.2**	**+0.1**
AYDB	**Zeytinkoy-Aydi**	**1.48**	**216**	*e*Pn	**Pn**	**21 27 27.2**	**+0.1**
ESKT	**Eskisehir**	**1.48**	**75**	*e*PN	**Pn**	**21 27 27.3**	**+0.1**
ESKT	**Eskisehir**	**1.48**	**75**	*e*Pn	**Pn**	**21 27 27.3**	**+0.1**
ESKT	**Eskisehir**	**1.48**	**75**	*i* P	**Pg**	**21 27 28.8**	**+0.1**
SEYT	**Eskypehyr**	**1.48**	**75**	P	**Pg**	**21 27 28.8**	**+0.1**
EDC	**Edincik**	**1.49**	**324**	*e*PN	**Pn**	**21 27 27.4**	**+0.3**
EDC	**Edincik**	**1.49**	**324**	*e*Pn	**Pn**	**21 27 27.5**	**+0.3**
BOLV	**Bolvadin**	**1.58**	**105**	P	**Pb**	**21 27 29.2**	**-0.4**
BOLV				S	**Sg**	**21 27 51.1**	**+0.2**
BOLV	**Bolvadin**	**1.58**	**105**	*i* P	**Pb**	**21 27 29.2**	**-0.4**
BOLV				*i* S	**Sg**	**21 27 51.1**	**+0.2**
KNL	**Bal¯–kesir**	**1.60**	**315**	*i* P	**Pn**	**21 27 28.8**	**+0.1**
DKL	**Dikili**	**1.63**	**268**	*e*PN	**Pn**	**21 27 29.4**	**+0.3**
DKL	**Dikili**	**1.63**	**268**	*e*Pn	**Pn**	**21 27 29.4**	**+0.3**
BUY	**Buyukada**	**1.71**	**3**	P	**Pn**	**21 27 29.7**	**-0.5**
BUY	**Buyukada**	**1.71**	**3**	*i* P

NIED **31** *21:27:00, 39.80N×143.40E, h17km, Mw4.4 Best double couple: M0=5.11000×10^15 NP1:φ0=188.00000°, λ21.00000°, λ70.00000°; NP2:φ0=29.00000°, δ71.00000°, λ97.00000°.*
IDC **31** *21:27:32.0±0.6, 39.79N×143.35E, h0km, mb4.3/32, mb1 4.4/37, mb1mx4.4/47, mbtmp4.3/37, ML3.7/5, MS3.8/19, Ms1 3.8/19, ms1mx3.6/43, Error ellipse: s-maj=14.1km s-min=11.8km az=111.0*
JMA **31** *21:27:33.9±0.2, 39.85N×143.41E, h27km±5km, M4.5*
ISCJB **31** *21:27:33.7±0.9, 39.81N±0.03×143.38E±0.04, h21km±6km, mb4.6/86, MS4.1/29, Error ellipse: s-maj=5.2km s-min=3.9km az=37.2*
MOS **31** *21:27:35.9±1.0, 39.87N×143.28E, h34km, mb4.9/38, MS4.2/10, Error ellipse: s-maj=7.8km s-min=4.7km az=105.8*
NEIC **31** *21:27:36.3±0.6, 39.82N×143.34E, h26km±4km, mb4.7/33, Error ellipse: s-maj=5.0km s-min=3.3km az=136.0*
ISC 31 21:27:35.4±0.6, 39.87N±0.04×143.38E±0.04, h20km±2km, h19km: pP-P, n278, σ1.9 52/297, mb4.6/95, MS4.1/30, 16C-18D, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.17**	**274**	P	**Pn**	**21 27 55.0**	**-1.6**
JTH				*e*S	**Sb**	**21 28 09.9**	**-1.8**
MIYJ	**Miyakonagasawa**	**1.24**	**257**	P	**Pn**	**21 27 56.1**	**-1.5**
MIYJ				*e*S	**Sb**	**21 28 12.4**	**-1.3**
JANG	**Nango**	**1.52**	**290**	P	**Pn**	**21 28 00.1**	**-1.3**
JOM	**Ohasama**	**1.66**	**257**	P	**Pn**	**21 28 02.8**	**-0.6**
JMK	**Ichinoseki**	**1.91**	**242**	P	**Pn**	**21 28 05.6**	**-1.2**
JTM	**Tenmabayashi**	**1.99**	**298**	P	**Pn**	**21 28 07.7**	**-0.2**
JTM				*e*S	**Sn**	**21 28 32.0**	**-0.3**
JAH	**Hinai**	**2.13**	**279**	P	**Pn**	**21 28 09.8**	**-0.1**
JAH				*e*S	**Sn**	**21 28 36.5**	**+0.7**
ERM	**Erimo**	**2.15**	**356**	*e*P	**Pn**	**21 28 10.8**	**+0.7**
ERM	**Erimo**	**2.15**	**356**	*e*Pn	**Pn**	**21 28 11.2**	**+1.2**
ERM				*e*Sn	**Sn**	**21 28 32.7**	**-3.4**
JRG	**Rokugo**	**2.17**	**258**	P	**Pn**	**21 28 09.9**	**-0.5**
JOT	**Ohata**	**2.33**	**311**	P	**Pn**	**21 28 12.6**	**0.0**
JOT				*e*S	**Sn**	**21 28 41.8**	**+1.2**
JNBK	**Urakawa-nobuka**	**2.45**	**349**	P	**Pn**	**21 28 15.2**	**+0.9**
JNBK				S	**Sn**	**21 28 45.5**	**+1.8**
JYK	**Kaneyama**	**2.53**	**249**	P	**Pn**	**21 28 14.8**	**-0.5**
JCH	**Churui**	**2.74**	**360**	P	**Pn**	**21 28 18.5**	**+0.3**
JCH				S	**Sn**	**21 28 50.5**	**-0.2**
ASAJ	**Asahikawa**	**4.28**	**352**	Pn	**Pn**	**21 28 40.0**	**+0.6**
	7.4nm,0.3s,baz=209,slow=9.1,SNR=56						
ASAJ				Sn	**Sn**	**21 29 30.0**	**+1.2**
	8.8nm,0.3s,baz=311,slow=26,SNR=4.5						
MJAR	**Matsushiro Arr**	**5.26**	**232**	Pn	**Pn**	**21 28 52.7**	**-0.2**
	5.6nm,0.3s,baz=36,slow=12,SNR=85						
MJAR				LR	LR	21 31 06.0	
	comp=Z,604nm,18.9s,baz=50,slow=41						
MAJO	**Matsushiro**	**5.26**	**232**	*e*P	**Pn**	**21 28 52.9**	**0.0**
MAJO	**Matsushiro**	**5.26**	**232**	*e*Pn	**Pn**	**21 28 52.9**	**0.0**
MAJO				*e*Sn	Sn	21 29 40.4	-12
MAJO				*e*ScP	**ScP**	**21 39 35.9**	**+0.9**
MAT	**Matsushiro**	**5.26**	**232**	P	**Pn**	**21 28 52.8**	**-0.1**
MAT				*e*S	**Sn**	**21 29 58.0**	**+5.1**
MJB9	**Matsu-Tunnel**	**5.26**	**232**	*e*Pn	**Pn**	**21 28 53.0**	**+0.1**
MJB9				*e*ScP	**ScP**	**21 39 36.0**	**+0.9**
KUR	**Kuril'sk**	**6.30**	**30**	*e*P	**Pn**	**21 29 07.4**	**+0.3**
KUR				*e*S	**Sn**	**21 30 16.2**	**-2.2**
KUR				pmax	pmax		
	comp=Z,98nm,0.5s						
KUR				pmax	pmax		
	comp=E,38nm,0.2s						
KUR				smax	smax		
	comp=E,180nm,0.5s						
KUR				smax	smax		
	comp=N,89nm,0.3s						
INU	**Inuyama**	**6.78**	**230**	*e*Pn	**Pn**	**21 29 13.4**	**-0.2**
YSS	**Yuzh-Sakhalins**	**7.09**	**357**	⇑*i*P	**Pn**	**21 29 19.7**	**+1.7**
YSS				*e*S	**Sn**	**21 30 37.9**	**-0.1**
YSS				pmax	pmax		
	comp=Z,20nm,0.9s						
YSS				pmax	pmax		
	comp=Z,100nm,5.0s						
YSS				MLR	MLR		
	comp=N,600nm,14.0s						
YSS				MLR	MLR		
	comp=Z,400nm,14.0s						
YSS	**Yuzh-Sakhalins**	**7.09**	**357**	*e*Pn	**Pn**	**21 29 19.9**	**+1.9**
JHJ	**Hachijo jima 2**	**7.33**	**204**	LR	LR	21 32 25.9	
	comp=Z,426nm,20.0s,baz=126,slow=40						
VLA	**Vladivostok**	**9.22**	**294**	*b i*P	**Pn**	**21 29 49.3**	**+2.2**
VLA				*i* S	**Sn**	**21 31 33.1**	**+2.9**
VLA				pmax	pmax		
	comp=Z,75nm,1.6s						
USRK	**Ussuriysk Ar.**	**9.52**	**301**	Pn	**Pn**	**21 29 54.1**	**+2.9**
	comp=Z,2.0nm,0.3s,baz=90,slow=14,SNR=53						
USRK				LR	LR	21 33 24.2	
	comp=Z,599nm,20.0s,baz=108,slow=37						
TYV	**Tymovskoe**	**11.00**	**358**	*e*P	**Pn**	**21 30 12.0**	**+0.4**
TYV				pmax	pmax		
	comp=Z,11nm,0.8s						
TYV				MLR	MLR		
	comp=N,1μm,20.0s						
TYV				MLR	MLR		
	comp=Z,1μm,14.0s						
MDJ	**Mudanjiang**	**11.27**	**299**	P	**Pn**	**21 30 17.5**	**+2.3**
MDJ				pmax	pmax		
	comp=Z,13nm,0.8s						
MDJ				pmax	pmax		
	comp=Z,78nm,2.8s						
MDJ				pmax	pmax		
	comp=Z,78nm,2.8s						
MDJ				pmax	pmax		
	comp=Z,78nm,0.1s						
MDJ	**Mudanjiang**	**11.27**	**299**	*e*Pn	**Pn**	**21 30 17.8**	**+2.6**
JNU	**Nakatsue**	**12.10**	**240**	Pn	**Pn**	**21 30 25.6**	**-1.1**
	comp=Z,0.2nm,0.3s,baz=54,slow=13,SNR=5.3						
JNU				LR	LR	21 35 13.6	
	comp=Z,584nm,20.4s,baz=212,slow=38						
KSRS	**Korea Array**	**12.32**	**264**	Pn	**Pn**	**21 30 32.3**	**+2.6**
	comp=Z,0.6nm,0.3s,baz=87,slow=13,SNR=13						
KSRS				LR	LR	21 34 56.2	
	comp=Z,512nm,18.5s,baz=82,slow=36						
KS01	**Wonju Array Si**	**12.34**	**264**	*e*Pn	**Pn**	**21 30 29.2**	**-0.7**
KS15	**Wonju Array Si**	**12.36**	**264**	*e*Pn	**Pn**	**21 30 32.3**	**+2.1**
KSAR	**Wonju Array Be**	**12.36**	**264**	P	**Pn**	**21 30 32.3**	**+2.1**
KSAR	**Wonju Array Be**	**12.36**	**264**	Pn	**Pn**	**21 30 32.3**	**+2.1**
KLR	**Kul'dur**	**12.49**	**322**	Pn	**Pn**	**21 30 32.1**	**+0.2**
	comp=Z,0.3nm,0.3s,baz=132,slow=11,SNR=12						
KLR				LR	LR	21 35 34.0	
	comp=Z,478nm,20.5s,baz=135,slow=38						
KLR	**Kul'dur**	**12.49**	**322**	⇓*i*P	**Pn**	**21 30 31.6**	**-0.3**
PEA0	**Petropavlovsk-**	**16.46**	**32**	*e*Pn	**Pn**	**21 31 21.7**	**-3.3**
PETK	**Petropavlovsk-**	**16.46**	**32**	Pn	**Pn**	**21 31 25.9**	**+0.9**
	comp=Z,0.2nm,0.3s,baz=225,slow=14,SNR=2.9						
PEA1	**Petropavlovsk-**	**16.47**	**32**	*e*Pn	**Pn**	**21 31 25.9**	**+0.8**
PET	**Petropavlovsk**	**16.80**	**33**	*e*P	**P**	**21 31 32.9**	**+1.6**
PET				pmax	pmax		
	comp=Z,27nm,1.7s						
HIA	**Hailar**	**19.22**	**307**	*e*P	**P**	**21 31 57.6**	**-0.4**
HIA				pmax	pmax		
	comp=Z,16nm,0.7s						
HIA	**Hailar**	**19.22**	**307**	*e*P	**P**	**21 31 57.6**	**-0.4**
	comp=Z,16nm,0.7s						
MA2	**Magadan**	**20.27**	**11**	P	**P**	**21 32 10.2**	**+0.8**
	comp=Z,25nm,0.7s,baz=210,slow=9.5,SNR=14						
BJI	**Beijing**	**20.83**	**279**	P	**P**	**21 32 12.8**	**-2.9**
BJI				S	**S**	**21 36 09.8**	**+2.7**
BJI				pmax	pmax		
	comp=Z,15nm,0.8s						
BJI				pmax	pmax		
	comp=Z,49nm,5.2s						
BJI				LR	LR		
	comp=N,150nm,21.4s						
BJI				LR	LR		
	comp=E,450nm,15.5s						
TIA	**Tai'an**	**20.98**	**268**	⇓P	**P**	**21 32 15.3**	**-2.0**
TIA				S	Sn	21 36 40.5	+24
TIA				pmax	pmax		
	comp=Z,30nm,1.0s						
TIA				LR	LR		
	comp=N,240nm,11.8s						
TIA				LR	LR		
	comp=E,780nm,12.6s						
TIA				LR	LR		
	comp=Z,930nm,12.7s						
YAK	**Yakutsk**	**23.71**	**344**	P	**P**	**21 32 44.7**	**-0.9**
	comp=Z,2.3nm,0.5s,baz=168,slow=20,SNR=7.4						
YAK	**Yakutsk**	**23.71**	**344**	*e*P	**P**	**21 32 44.5**	**-1.1**
YAK				*e**PP	**sP**	**21 32 52.7**	**-1.3**
YAK				*e*PPP	PPP	21 33 21.9	
YAK				*e*		21 36 37.2	
YAK				*e*S	**S**	**21 36 50.7**	**-8.7**
YAK				*e*SSS	SSS	21 37 37.4	
YAK				pmax	pmax		
	comp=Z,27nm,0.9s						
YAK				pmax	pmax		
	comp=Z,45nm,1.7s						
YAK				pmax	pmax		
	comp=N,31nm,1.5s						
YAK				pmax	pmax		
	comp=E,27nm,1.8s						
YAK				smax	smax		
	comp=N,55nm,2.5s						
YAK				smax	smax		
	comp=E,26nm,2.2s						
YAK				MLR	MLR		
	comp=Z,203nm,15.0s						
YAK				MLR	MLR		
	comp=N,150nm,18.0s						
YAK				MLR	MLR		
	comp=E,120nm,17.0s						
YAK	**Yakutsk**	**23.71**	**344**	*e*P	**P**	**21 32 44.8**	**-0.9**
	comp=E,34nm,0.7s						
SEY	**Seymchan**	**23.72**	**10**	P	**P**	**21 32 45.9**	**+0.1**
	comp=E,20nm,1.0s,baz=181,slow=7.8,SNR=28						
SEY	**Seymchan**	**23.72**	**10**	⇑*i*P	**P**	**21 32 45.4**	**-0.4**
SSLB	**Suanglung**	**24.80**	**236**	*e*P	**P**	**21 32 53.7**	**-2.5**
	comp=E,14nm,1.0s						
YULB	**Yu-li**	**24.87**	**235**	*e*P	**P**	**21 32 58.5**	**+1.7**
	comp=E,11nm,0.9s						
BOD	**Bodaibo**	**26.07**	**323**	*e*P	**P**	**21 33 07.1**	**-0.2**
BOD				pmax	pmax		
	comp=Z,24nm,0.8s						
ULN	**Ulaanbaatar**	**27.18**	**299**	*c i*P	**P**	**21 33 17.5**	**-0.1**
ULN				pmax	pmax		
	comp=Z,16nm,1.0s						
ULN	**Ulaanbaatar**	**27.18**	**299**	*e*P	**P**	**21 33 18.0**	**+0.3**
	comp=Z,14nm,1.0s						
SONA1	**Songino Array**	**27.62**	**299**	*e*P	**P**	**21 33 21.1**	**-0.5**
SONA0	**Songino Array**	**27.62**	**299**	*e*P	**P**	**21 33 21.7**	**+0.1**
	comp=Z,9.4nm,0.8s						
SONM	**Songino Array**	**27.62**	**299**	P	**P**	**21 33 21.7**	**+0.1**
	comp=Z,8.7nm,0.8s,baz=90,slow=8.0,SNR=37						
SONM				LR	LR	21 44 58.9	
	comp=Z,432nm,18.6s,baz=97,slow=38						
XAN	**Xi'an**	**28.03**	**269**	P	**P**	**21 33 23.5**	**-1.7**
XAN				pP	sP	21 33 32.5	-1.2
XAN				sP	pP	21 33 36.8	+5.5
XAN				PP	**PP**	**21 34 28.8**	**+0.2**
XAN				S	S	21 38 29.5	+21
XAN				SS	**ScP**	**21 40 22.5**	**+3.1**
XAN				pmax	pmax		
	comp=Z,13nm,0.8s						
XAN				pmax	pmax		
	comp=Z,69nm,7.1s						
XAN				LR	LR		
	comp=E,310nm,16.0s						
XAN				LR	LR		
	comp=Z,350nm,14.6s						
H11N2	**WAKE ISLAND Hy**	**28.47**	**128**	T	T	22 04 30.7	
	baz=318,slow=75,SNR=184						
H11N1	**WAKE ISLAND Hy**	**28.48**	**128**	T	T	22 04 22.6	
	baz=318,slow=75,SNR=150						
H11N3	**WAKE ISLAND Hy**	**28.49**	**128**	T	T	22 04 33.0	
	baz=318,slow=75,SNR=161						
H11S1	**WAKE ISLAND Hy**	**29.30**	**130**	T	T	22 04 40.7	
	baz=322,slow=76,SNR=29						
H11S3	**WAKE ISLAND Hy**	**29.30**	**130**	T	T	22 04 37.0	
	baz=322,slow=76,SNR=20						
H11S2	**WAKE ISLAND Hy**	**29.31**	**130**	T	T	22 04 34.2	
	baz=322,slow=76,SNR=21						
TLY	**Talaya**	**29.76**	**307**	*e*P	**P**	**21 33 41.4**	**+1.0**
TLY				pmax	pmax		
	comp=Z,9.0nm,0.9s						
TLY				MLR	MLR		
	comp=Z,223nm,17.0s						
ZAK	**Zakamensk**	**29.84**	**304**	*e*P	**P**	**21 33 39.7**	**-1.5**
ZAK				pmax	pmax		
	comp=Z,5.0nm,1.4s						
BILL	**Bilibino**	**30.87**	**17**	⇑*i*P	**P**	**21 33 50.4**	**+0.4**
BILL				*i*		21 33 56.3	
BILL				pmax	pmax		
	comp=Z,3.0nm,1.0s						
BILL				MLR	MLR		
	comp=Z,164nm,16.0s						
LZH	**Lanzhou**	**31.22**	**276**	*e*P	**P**	**21 33 53.0**	**-0.6**
LZH				pP	sP	21 34 02.8	+0.7
LZH				sP	pP	21 34 08.0	+8.3
LZH				pmax	pmax		
	comp=Z,18nm,1.1s						
LZH				pmax	pmax		
	comp=Z,140nm,4.6s						
LZH				LR	LR		
	comp=N,170nm,12.1s						
LZH				LR	LR		
	comp=E,370nm,13.1s						
LZH				LR	LR		
	comp=Z,430nm,14.4s						
TIXI	**Tiksi**	**32.69**	**352**	P	**P**	**21 34 05.6**	**-0.3**
	comp=Z,0.8nm,0.5s,baz=166,slow=6.8,SNR=4.9						
TIXI	**Tiksi**	**32.69**	**352**	⇓*i*P	**P**	**21 34 04.9**	**-1.0**
TIXI				pmax	pmax		
	comp=Z,2.0nm,1.2s						
TIXI	**Tiksi**	**32.69**	**352**	*e*P	**P**	**21 34 05.5**	**-0.4**
	comp=Z,3.5nm,1.1s						
GTA	**Gaotai**	**33.31**	**284**	*e*P	**P**	**21 34 12.0**	**+0.1**
GTA				pP	sP	21 34 21.0	+0.6
GTA				sP	pP	21 34 25.3	+7.4
GTA				S	**S**	**21 39 32.0**	**+0.6**
GTA				sS	sS	21 39 49.0	+7.6
GTA				SS	**SnSn**	**21 41 40.3**	**+8.1**
GTA				pmax	pmax		
	comp=Z,14nm,0.9s						
GTA				pmax	pmax		
	comp=Z,99nm,6.4s						
GTA				LR	LR		
	comp=N,170nm,17.3s						
GTA				LR	LR		
	comp=E,460nm,18.5s						
GTA				LR	LR		
	comp=Z,550nm,17.1s						
KMI	**Kunming**	**36.97**	**259**	P	**P**	**21 34 42.8**	**-0.8**
KMI				pP	sP	21 34 52.5	+0.3
KMI				sP	pP	21 34 57.8	+8.1
KMI				pmax	pmax		
	comp=Z,8.0nm,1.1s						
KMI				pmax	pmax		
	comp=Z,71nm,3.7s						
KMI				LR	LR		
	comp=N,200nm,15.3s						
KMI				LR	LR		
	comp=E,260nm,18.2s						
KMI				LR	LR		
	comp=Z,250nm,15.3s						
ZAA1	**Zalesovo Array**	**41.21**	**310**	*e*P	**P**	**21 35 18.3**	**-0.2**
ZAA1				*e*PcP	**PcP**	**21 37 17.1**	**-0.1**
ZAA0	**Zalesovo Array**	**41.21**	**310**	*e*P	**P**	**21 35 18.6**	**+0.1**
ZALV	**Zalesovo Beam**	**41.21**	**310**	P	**P**	**21 35 18.3**	**-0.2**
	comp=Z,12nm,0.5s,baz=95,slow=8.1,SNR=56						
ZALV				PcP	**PcP**	**21 37 17.1**	**-0.1**
	comp=Z,3.6nm,0.7s,baz=106,slow=3.1,SNR=4.9						
ZALV				LR	LR	21 53 11.7	
	comp=Z,136nm,20.3s,baz=67,slow=37						
NRIK	**Noril'sk**	**41.38**	**334**	P	**P**	**21 35 19.9**	**+0.3**
	comp=Z,1.9nm,0.4s,baz=119,slow=11,SNR=4.4						
NRIK				LR	LR	21 54 09.8	
	comp=Z,193nm,18.7s,baz=108,slow=39						
NRIK	**Noril'sk**	**41.38**	**334**	P	**P**	**21 35 20.0**	**+0.3**
NRIK				pmax	pmax		
	comp=Z,2.0nm,0.4s						
NRIK				MLR	MLR		
	comp=Z,193nm,18.7s						
NVS	**Novosibirsk**	**42.06**	**312**	*e*P	**P**	**21 35 25.1**	**-0.3**
NVS				pmax	pmax		
	comp=N,2.0nm,0.7s						
NVS				pmax	pmax		
	comp=E,4.0nm,0.7s						
NVS				pmax	pmax		
	comp=Z,6.0nm,0.7s						
CHTO	**Chiang Mai**	**43.52**	**254**	*e*P	**P**	**21 35 37.3**	**-0.4**
CHTO				pmax	pmax		
	comp=Z,8.0nm,0.8s						
CHTO	**Chiang Mai**	**43.52**	**254**	*e*P	**P**	**21 35 37.3**	**-0.4**
	comp=Z,7.8nm,0.8s						
LSA	**Lhasa**	**43.54**	**273**	*e*P	**P**	**21 35 39.0**	**+0.6**
LSA				pmax	pmax		
	comp=Z,5.0nm,0.8s						
LSA	**Lhasa**	**43.54**	**273**	*e*P	**P**	**21 35 39.0**	**+0.6**
	comp=Z,5.0nm,0.8s						
CM31	**Chiang Mai Arr**	**43.74**	**254**	*e*P	**P**	**21 35 39.0**	**-0.5**
CMAR	**Chiang Mai Arr**	**43.74**	**254**	P	**P**	**21 35 39.0**	**-0.5**
	comp=Z,2.2nm,0.9s,baz=46,slow=6.1,SNR=16						
CMAR	**Chiang Mai Arr**	**43.74**	**254**	P	**P**	**21 35 39.0**	**-0.5**
CM01	**Chiang Mai Arr**	**43.75**	**254**	*e*P	**P**	**21 35 38.8**	**-0.8**
MK01	**Makanchi Array**	**43.98**	**300**	*e*P	**P**	**21 35 40.6**	**-0.5**
MK31	**Makanchi Array**	**43.98**	**300**	*e*P	**P**	**21 35 40.9**	**-0.3**
MK31	**Makanchi Array**	**43.98**	**300**	*e*P	**P**	**21 35 40.9**	**-0.3**
MK32	**Makanchi Array**	**43.98**	**300**	*e*P	**P**	**21 35 40.9**	**-0.3**
MKAR	**Makanchi Array**	**43.98**	**300**	P	**P**	**21 35 40.9**	**-0.3**
	comp=Z,8.2nm,0.8s,baz=82,slow=9.6,SNR=71						
MKAR				LR	LR	21 54 56.4	
	comp=Z,213nm,18.6s,baz=83,slow=37						
MAKZ	**Makanchi**	**44.19**	**300**	*e*P	**P**	**21 35 42.7**	**-0.1**
MAKZ				pmax	pmax		
	comp=Z,11nm,1.0s						
MAKZ	**Makanchi**	**44.19**	**300**	*e*P	**P**	**21 35 42.7**	**-0.1**
	comp=Z,11nm,1.0s						
KURK	**Kurchatov**	**45.45**	**306**	*e*P	**P**	**21 35 52.5**	**-0.3**
KURK				pmax	pmax		
	comp=Z,23nm,1.0s						
KURK	**Kurchatov**	**45.45**	**306**	*e*P	**P**	**21 35 52.5**	**-0.3**
	comp=Z,23nm,1.0s						
KURBB	**Kurchatov Arra**	**45.53**	**306**	P	**P**	**21 35 53.0**	**-0.3**
	comp=Z,14nm,0.8s,baz=80,slow=8.3,SNR=120						
MDM	**Murphy Dome**	**45.70**	**34**	*e*P	**P**	**21 35 56.3**	**+1.7**
	comp=Z,7.8nm,1.1s						
ILAR	**Eielson Array**	**46.28**	**34**	P	**P**	**21 35 60.0**	**+0.9**
	comp=Z,1.9nm,0.7s,baz=264,slow=6.5,SNR=26						
ILAR	**Eielson Array**	**46.28**	**34**	P	**P**	**21 36 00.0**	**+0.9**
ILB	**Eielson Array**	**46.28**	**34**	*e*P	**P**	**21 35 60.0**	**+0.9**
IL1	**Eielson Array**	**46.28**	**34**	*e*P	**P**	**21 35 59.9**	**+0.8**
GUN	**Gumba**	**48.45**	**274**	*e*P	**P**	**21 36 16.6**	**-0.4**
	comp=Z,50nm,0.6s						
KSM	**Kuching**	**48.62**	**227**	*e*P	**P**	**21 36 18.0**	**+0.1**
	comp=Z,6.4nm,1.1s						
EGAK	**Eagle**	**48.72**	**33**	*e*pP	pP	21 36 25.8	+1.5
KKN	**Kakani**	**48.97**	**274**	*e*P	**P**	**21 36 20.5**	**-0.3**
	comp=Z,49nm,0.7s						
PKIN	**Phulchoki**	**48.99**	**274**	*e*P	**P**	**21 36 21.1**	**+0.1**
	comp=Z,13nm,0.7s						
DMN	**Daman**	**49.20**	**274**	*e*P	**P**	**21 36 22.2**	**-0.4**
GKN	**Gorkha**	**49.36**	**275**	*e*P	**P**	**21 36 23.2**	**-0.5**
	comp=Z,14nm,0.7s						
TKM2	**Tokmak 2**	**49.69**	**297**	*e*P	**P**	**21 36 26.5**	**+0.4**
TKM2				pmax	pmax		
	comp=Z,24nm,0.8s						
TKM2	**Tokmak 2**	**49.69**	**297**	*e*P	**P**	**21 36 26.5**	**+0.4**
	comp=Z,24nm,0.8s						
BVAR	**Borovoye Array**	**49.85**	**311**	P	**P**	**21 36 27.0**	**+0.1**
	comp=Z,9.9nm,0.8s,baz=75,slow=8.5,SNR=41						
BVAR	**Borovoye Array**	**49.85**	**311**	P	**P**	**21 36 27.0**	**+0.1**
BRVK	**Borovoye**	**49.90**	**311**	*e*P	**P**	**21 36 27.8**	**+0.5**
BRVK				pmax	pmax		
	comp=Z,22nm,0.8s						
BRVK	**Borovoye**	**49.90**	**311**	*e*P	**P**	**21 36 27.8**	**+0.5**
	comp=Z,22nm,0.8s						
KOLN	**Koldanda**	**50.27**	**275**	*e*P	**P**	**21 36 30.3**	**-0.4**
	comp=Z,15nm,0.7s						
AAK	**Ala-Archa**	**50.55**	**297**	P	**P**	**21 36 32.4**	**-0.2**
	comp=Z,2.2nm,0.4s,baz=64,slow=5.1,SNR=8.8						
AAK				LR	LR	21 59 03.4	
	comp=Z,167nm,19.5s,baz=80,slow=37						
AAK	**Ala-Archa**	**50.55**	**297**	*i* P	**P**	**21 36 31.8**	**-0.7**
AAK				pmax	pmax		
	comp=Z,11nm,0.7s						
AAK	**Ala-Archa**	**50.55**	**297**	*e*P	**P**	**21 36 32.6**	**+0.1**
PYUN	**Piuthan**	**50.57**	**276**	*e*P	**P**	**21 36 32.7**	**-0.3**
	comp=Z,49nm,0.8s						
ZRNK	**Zerenda**	**50.67**	**311**	*e*P	**P**	**21 36 33.3**	**+0.2**
ZRNK				pmax	pmax		
	comp=Z,12nm,0.8s						
ZRNK	**Zerenda**	**50.67**	**311**	*e*P	**P**	**21 36 33.3**	**+0.2**
	comp=Z,12nm,0.8s						
KSH	**Kashi**	**50.70**	**293**	P	**P**	**21 36 37.8**	**+4.1**
KSH				*e*pP	sP	21 37 01.5	+19
KSH				*e*PP	**PP**	**21 38 36.3**	**+6.7**
KSH				PcS	**PcS**	**21 41 51.0**	**+2.7**
KSH				S	**S**	**21 43 42.3**	**-5.7**
KSH				ScS	**ScS**	**21 46 16.3**	**-7.3**
KSH				pmax	pmax		
	comp=Z,6.0nm,0.9s						
KSH				pmax	pmax		
	comp=Z,100nm,3.9s						
KSH				LR	LR		
	comp=N,290nm,10.8s						
KSH				LR	LR		
	comp=E,210nm,13.1s						
KSH				LR	LR		
	comp=Z,330nm,15.3s						
EKS2	**Erkin-Say**	**51.03**	**297**	*e*P	**P**	**21 36 36.0**	**-0.1**
EKS2				pmax	pmax		
	comp=Z,8.0nm,0.8s						
EKS2	**Erkin-Say**	**51.03**	**297**	*e*P	**P**	**21 36 36.0**	**-0.1**
	comp=Z,8.2nm,0.8s						
INK	**Inuvik**	**51.16**	**28**	P	**P**	**21 36 37.5**	**+1.0**
	comp=Z,1.7nm,0.6s,baz=287,slow=5.1,SNR=5.3						
KKAR	**Karatay Array**	**53.08**	**299**	*e*P	**P**	**21 36 50.8**	**-0.4**
KKAR	**Karatay Array**	**53.08**	**299**	*e*P	**P**	**21 36 50.8**	**-0.4**
SVE	**Sverdlovsk**	**54.07**	**318**	⇑*i*P	**P**	**21 36 59.2**	**+1.0**
SVE				pmax	pmax		
	comp=Z,14nm,0.9s						
SVE				MLR	MLR		
	comp=Z,516nm,15.0s						
ARU	**Arti**	**55.28**	**318**	P	**P**	**21 37 07.1**	**+0.1**
	comp=Z,5.9nm,0.6s,baz=72,slow=4.3,SNR=14						
ARU	**Arti**	**55.28**	**318**	*c i*P	**P**	**21 37 07.0**	**-0.1**
ARU						21 38 06.8	
ARU						21 39 09.2	
ARU				S	**S**	**21 44 50.8**	**+1.2**
ARU				SS	**SS**	**21 48 30.0**	**-3.4**
ARU				pmax	pmax		
	comp=Z,16nm,1.2s						
ARU				MLR	MLR		
	comp=Z,379nm,16.0s						
ARU	**Arti**	**55.28**	**318**	*e*P	**P**	**21 37 07.1**	**+0.1**
	comp=Z,9.8nm,0.8s						
ABKAR	**Akbulak array**	**57.32**	**309**	*e*P	**P**	**21 37 21.6**	**-0.1**
KBL	**Kabul**	**57.87**	**290**	*e*P	**P**	**21 37 25.1**	**-0.9**
KBL				pmax	pmax		
	comp=Z,15nm,0.9s						
KBL	**Kabul**	**57.87**	**290**	*e*P	**P**	**21 37 25.1**	**-0.9**
	comp=Z,15nm,0.9s						
AKTO	**Aktyubinsk**	**57.95**	**311**	P	**P**	**21 37 26.0**	**-0.1**

comp=Z,89nm,18.3s,baz=150,slow=38
VRH Novokhopyorsk 66.52 318 eP P 21 38 22.6 -0.9
VRH pmax pmax
comp=Z,10.0nm,0.8s
VRH MLR MLR
comp=Z,240nm,15.0s
OBN Obninsk 66.75 323 i P P 21 38 23.6 -1.3
OBN i 21 38 53.7
OBN i 21 40 57.4
OBN pmax pmax
comp=P,8.0nm,1.1s
OBN MLR MLR
comp=Z,199nm,15.0s
FIA0 FINESS Array S 67.02 332 eP P 21 38 26.5 -0.1
FIA0 FINESS Array S 67.02 332 eP P 21 38 26.4 -0.1
FINES FINESS Array B 67.02 332 P P 21 38 26.4 -0.1
comp=Z,5.8nm,0.7s,baz=36,slow=7.1,SNR=17
LPSR Galich'ya Gora 67.12 320 eP P 21 38 26.6 -0.7
LPSR pmax pmax
comp=Z,6.0nm,0.8s
LPSR MLR MLR
comp=Z,220nm,16.0s
VSR Storozhevoye 67.82 319 eP P 21 38 31.4 -0.3
VSR pmax pmax
comp=Z,9.0nm,1.1s
VSR MLR MLR
comp=Z,140nm,15.0s
SUMG Summit 67.84 1 i P P 21 38 33.0 +0.9
comp=Z,7.0nm,0.8s
SUMG Summit 67.84 1 eP P 21 38 33.4 +1.3
SUMG pmax pmax
comp=Z,7.0nm,0.7s
SUMG Summit 67.84 1 eP P 21 38 33.4 +1.3
comp=Z,7.1nm,0.7s
VSU Vasula 68.79 330 ceP P 21 38 37.7 0.0
VSU pmax pmax
comp=Z,42nm,1.7s
GOF Gofitskoye 69.36 312⇑ eP P 21 38 42.2 +0.7
GOF pmax pmax
comp=Z,17nm,0.7s
GUDG Gudauri 70.04 309 P P 21 38 47.2 +1.2
DGRG David-gareji 70.09 308 P P 21 38 56.7 +11
DGRG David-gareji 70.09 308 eP P 21 38 56.6 +10
ZEI Tsey 70.19 309 eP P 21 38 43.9 -3.0
ZEI pmax pmax
comp=Z,13nm,0.6s
KIV Kislovodsk 70.22 311 eP P 21 38 47.3 +0.4
KIV pmax pmax
comp=Z,34nm,1.1s
KIV MLR MLR
comp=Z,153nm,17.0s
KIV Kislovodsk 70.22 311 eP P 21 38 47.7 +0.8
comp=Z,26nm,0.9s
KBZ Khabaz 70.23 311 P P 21 38 47.3 +0.5
comp=Z,9.1nm,0.8s,baz=61,slow=3.7,SNR=23
KBZ LR LR 22 10 38.5
comp=Z,59nm,18.4s,baz=47,slow=37
TBLG Delisi 70.31 308 P P 21 38 55.9 +8.4
ONI Oni 70.58 310 P **P 21 38 50.1 +1.0**
ONI Oni 70.58 310 eP **P 21 38 50.1 +1.0**
LRM Limekiln Ridge 71.05 46 eP **P 21 38 53.8 +1.7**
BGD Bogdanovka 71.28 308 P P **21 38 54.4 +0.8**
STKA Stephens Creek 71.41 182 P P **21 38 53.7 -0.2**
comp=Z,21nm,1.0s,baz=314,slow=5.8,SNR=5.6
STKA LR LR 22 09 15.7
comp=Z,27nm,20.9s,baz=25,slow=35
STKA Stephens Creek 71.41 182 eP **P 21 38 53.7 -0.2**
STKA pmax pmax
comp=Z,5.0nm,1.6s
STKA Stephens Creek 71.41 182 eP **P 21 38 53.7 -0.2**
comp=Z,4.6nm,1.6s
BOZ Bozeman (W) 71.61 46 eP **P 21 38 57.0 +1.6**
BOZ Bozeman (W) 71.61 46 eP **P 21 38 57.0 +1.6**
NC405 NORSAR Array S 71.95 338 eP **P 21 38 57.6 +0.5**
NV01 Mina Array Sit 72.07 55 eP **P 21 38 58.5 +0.1**
NVAR Mina Array Bea 72.07 55 P **P 21 38 58.5 +0.1**
comp=Z,0.8nm,0.3s,baz=293,slow=5.6,SNR=2.8
NC204 NORSAR Array S 72.10 338 eP **P 21 38 58.4 +0.4**
NB201 NORSAR Array S 72.13 338 eP **P 21 38 58.6 +0.5**
NB2 NORSAR Subarra 72.16 338 P **P 21 38 58.3 0.0**
comp=Z,7.7nm,0.8s,baz=38,slow=6.2
NB200 NORSAR Array S 72.16 338 eP **P 21 38 58.4 0.0**
NOA NORSAR Array B 72.16 338 P **P 21 38 58.4 0.0**
comp=Z,5.7nm,0.8s,baz=38,slow=6.0,SNR=23
NOA LR LR 22 14 45.6
comp=Z,67nm,19.2s,baz=25,slow=39
NBO02 NORSAR Array S 72.26 338 eP **P 21 38 59.0 +0.1**
AKASG Malin Array Be 72.99 323 P **P 21 39 03.0 -0.3**
comp=Z,2.4nm,0.6s,baz=45,slow=6.4,SNR=12
AKASG Malin Array Be 72.99 323 i P **P 21 39 03.0 -0.3**
AKASG pmax pmax
comp=Z,1.0nm,0.4s
AKBB Malin Array Si 72.99 323 eP **P 21 39 03.1 -0.3**
AKBB pmax pmax
comp=Z,7.0nm,0.6s
AKBB Malin Array Si 72.99 323 eP **P 21 39 03.0 -0.3**
comp=Z,6.5nm,0.6s
KIEV Kiev 73.00 323⇑ eP **P 21 39 03.0 -0.4**
KIEV pmax pmax
comp=Z,6.0nm,0.9s
KIEV Kiev 73.00 323 eP **P 21 39 03.2 -0.3**
comp=Z,4.1nm,0.8s
BW06 Boulder Array 74.59 47 eP **P 21 39 13.2 0.0**
BW06 epP **pP 21 39 18.6 -1.1**
PD31 Pinedale Array 74.59 47 eP **P 21 39 13.6 +0.3**
PDAR Pinedale Array 74.59 47 P **P 21 39 13.5 +0.3**
comp=Z,0.6nm,0.6s,baz=272,slow=2.4,SNR=7.7
SHPR Sheep Range 75.22 55 eP **P 21 39 21.3 +4.4**
K22A Casper 76.35 45 eP P 21 39 28.2 +5.0
comp=Z,120nm,0.1s
SRU San Rafael Swe 76.40 50 eP **P 21 39 25.3 +1.7**
SRU pmax pmax
comp=Z,4.0nm,0.7s
SRU San Rafael Swe 76.40 50 eP **P 21 39 25.3 +1.7**
comp=Z,3.7nm,0.7s
KWP Kalwaria Pacla 76.71 325 eP **P 21 39 26.1 +1.2**
KWP Kalwaria Pacla 76.71 325 ||i P **P 21 39 26.2 +1.2**
KWP Kalwaria Pacla 76.71 325 ||P **P 21 39 26.2 +1.2**
BUR08 Bucovina Ar. S 77.02 322 eP **P 21 39 27.0 +0.1**
BURAR Bucovina Array 77.03 322 ||i P **P 21 39 27.2 +0.3**
BURAR Bucovina Array 77.03 322 ||P **P 21 39 27.2 +0.3**
U15A North Rim 77.06 53 eP **P 21 39 29.9 +2.3**
comp=Z,3.9nm,0.8s
STHS Stebnicka Huta 77.52 326 eP **P 21 39 30.2 +0.7**
STHS pmax pmax
comp=Z,3.0nm,0.9s
STHS Stebnicka Huta 77.52 326 eP **P 21 39 30.2 +0.7**
OJC Ojcow 77.53 327 eP **P 21 39 30.5 +1.0**
OJC Ojcow 77.53 327 eP **P 21 39 30.5 +1.0**
OJC pmax pmax
comp=Z,10.0nm,1.0s
OJC Ojcow 77.53 327 eP **P 21 39 30.5 +1.0**
comp=Z,9.9nm,1.0s
VRI Vrincioaia 77.55 320 ||i P **P 21 39 30.4 +0.7**
VRI Vrincioaia 77.55 320 ||P **P 21 39 30.4 +0.7**
NIE Niedzica 77.92 326 eP **P 21 39 32.9 +1.1**
NIE Niedzica 77.92 326 eP **P 21 39 32.9 +1.1**
BR101 Keskin Array S 78.11 312 eP **P 21 39 33.2 +0.1**
BR131 Keskin Array S 78.11 312 eP **P 21 39 33.6 +0.4**
BRTR Keskin Array B 78.11 312 P **P 21 39 33.2 +0.1**
comp=Z,1.3nm,0.8s,baz=73,slow=4.1,SNR=8.2
BRTR LR LR 22 19 22.3
comp=Z,44nm,18.9s,baz=72,slow=40
BRTR Keskin Array B 78.11 312 i P **P 21 39 33.2 +0.1**
BRTR pmax pmax
comp=Z,2.0nm,1.0s
DOPR Dopca 78.13 321 ||i P **P 21 39 35.0 +2.0**
BR231 Keskin MP Arra 78.53 313 eP **P 21 39 34.0 -1.4**
VOIR 78.68 321 ||i P **P 21 39 37.2 +1.1**
VOIR 78.68 321 ||P **P 21 39 37.2 +1.1**
MORC Moravsky Berou 78.81 328 ||i P **P 21 39 37.6 +0.9**
MORC Moravsky Berou 78.81 328 ||P **P 21 39 37.6 +0.9**
MORC Moravsky Berou 78.81 328 eP **P 21 39 37.6 +0.9**
comp=Z,24nm,1.0s
DPC Dobruska-Polom 78.86 329 eP **P 21 39 37.8 +0.8**
DPC Dobruska-Polom 78.86 329 eP **P 21 39 37.8 +0.8**
ARR Arges 78.93 321⇑ i P **P 21 39 39.4 +1.9**
BRG Berggiesshubel 79.38 330 eP **P 21 39 40.0 +0.3**
comp=Z,4.8nm,1.1s
BRG Berggiesshubel 79.38 330 eP **P 21 39 40.0 +0.3**
BRG pmax pmax
comp=Z,5.0nm,1.1s
CLL Collm 79.39 331 i P **P 21 39 39.7 -0.1**
comp=Z,8.0nm,1.1s
CLL e 21 39 49.0
CLL i 21 39 51.8
CLL i 21 40 12.1
CLL Collm 79.39 331 eP **P 21 39 39.7 -0.1**
CLL pmax pmax
comp=Z,7.0nm,1.0s
CLL Collm 79.39 331 eP **P 21 39 39.6 -0.1**
comp=Z,6.6nm,1.0s
PVCC Panska Ves 79.42 330 eP **P 21 39 40.7 +0.8**
PVCC Panska Ves 79.42 330 eP **P 21 39 40.7 +0.8**
VRAC Vranov 79.56 328 ||i P **P 21 39 41.1 +0.3**
VRAC Vranov 79.56 328 ||P **P 21 39 41.1 +0.3**
GZR Gura Zlata 79.81 322 ||i P **P 21 39 42.6 +0.4**
GZR Gura Zlata 79.81 322 ||P **P 21 39 42.6 +0.4**
PRU Pruhonice 79.85 329 eP **P 21 39 43.0 +0.7**
PRU Pruhonice 79.85 329 eP **P 21 39 43.0 +0.7**
BZS Buzias 80.18 323⇑ i P **P 21 39 44.3 +0.1**
BZS Buzias 80.18 323⇑ P **P 21 39 44.3 +0.1**
KHC Kasperske Hory 80.92 329 eP **P 21 39 48.7 +0.6**
KHC epP **sP 21 39 57.9 +0.9**
KHC ex x 21 40 05.3
KHC Kasperske Hory 80.92 329 eP **P 21 39 48.7 +0.6**
KHC pmax pmax
comp=Z,2.0nm,0.9s
KHC Kasperske Hory 80.92 329 eP **P 21 39 48.7 +0.6**
comp=Z,2.2nm,0.9s
CONA Conrad Observa 80.95 327 i PcP **P 21 39 49.4 +1.1**
comp=Z,5.0nm,0.9s
GERES GERESS Array B 81.10 329 P **P 21 39 49.2 +0.1**
comp=Z,1.7nm,0.7s,baz=39,slow=6.3,SNR=8.1
GEA0 GERESS Array S 81.10 329 eP **P 21 39 49.0 -0.1**
ARSA Arzberg 81.62 327 i PcP **P 21 39 52.7 +0.8**
comp=Z,3.2nm,0.8s
MOA Molln 81.67 328 i P **P 21 39 51.0 -1.1**
comp=Z,3.1nm,1.2s
SOKA Soboth 82.28 327 i PcP **P 21 39 56.1 +0.6**
comp=Z,7.9nm,0.9s
OBKA Obir 82.62 327 i P **P 21 39 57.0 -0.2**
comp=Z,3.4nm,0.7s
KBA Koelnbreinsper 82.66 328 i PcP **P 21 39 58.8 +1.3**
comp=Z,3.9nm,0.9s
MYKA Terra Mystica 82.90 328 i PcP **P 21 39 59.0 +0.4**
comp=Z,5.5nm,1.0s
VAY Valandovo 82.93 319 i P **P 21 40 03.5 +4.8**
SKO Skopje 83.00 320 i P **P 21 40 00.4 +1.2**
ABTA Abfaltersbach 83.26 328 i P **P 21 40 00.3 -0.2**
comp=Z,3.6nm,0.9s
MOTA Moosalm 83.33 330 i PcP **P 21 40 01.3 +0.4**
comp=Z,6.7nm,0.9s
RETA Reutte 83.35 330 i PcP **P 21 40 01.4 +0.5**
comp=Z,8.1nm,1.4s
PDG Podgorica 83.71 322 ||i P **P 21 40 03.0 +0.3**
FETA Feichten 83.75 330 i PcP **P 21 40 03.2 +0.1**
comp=Z,3.9nm,1.0s
DAVA Damuels 83.86 330 i PcP **P 21 40 04.7 +1.1**
comp=Z,6.8nm,0.8s
OHR Ohrid 83.97 320 i P **P 21 40 03.7 -0.5**
FUORN Ofenpass-Fuorn 84.26 330 eP **P 21 40 06.7 +0.8**
comp=Z,11nm,0.8s
FUORN esP **sP 21 40 15.1 +0.3**
PPT Papeete 84.56 118 LR LR 22 09 38.9
comp=Z,54nm,20.9s,baz=304,slow=30
RPZ Rata Peaks 86.88 160 LR LR 22 18 23.8
comp=Z,57nm,19.0s,baz=14,slow=35
TX31 Lajitas Ar. Si 87.18 54 eP **P 21 40 23.4 +2.9**
LTX Lajitas 87.18 54 eP **P 21 40 20.8 +0.3**
LTX Lajitas 87.18 54 eP **P 21 40 20.8 +0.3**
TXAR Lajitas Array 87.18 54 P **P 21 40 20.8 +0.3**
comp=Z,0.8nm,0.9s,baz=270,slow=2.5,SNR=5.5

*JMA **31** 21:38:11.9±0.3,24°.83N×122°.42E,h2km±4km,M2.6*
*ISCJB **31** 21:38:12.3±0.8,24°.89N±0°.04×122°.47E±0°.03,h11km±7km,*
Error ellipse: s-maj=7.6km s-min=3.7km az=17.6
*TAP **31** 21:38:13.2,24°.86N×122°.35E,h6km±1km,ML3.1,D*
ISC 31 21:38:12.3±1.1,24°.87N±0°.04×122°.46E±0°.03,h22km±12km,
n25,σ1§01/44,Taiwan region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
TWB1	**Santiao Chiao**	**0.45**	**289**	*i* P	**Pb**	**21 38 21.1**	**-0.4**
TWB1	baz=295			*i* S	**Sb**	**21 38 27.3**	**-0.5**
	baz=295						
JYNG	**Yonagunijimaku**	**0.61**	**133**	P	**Pb**	**21 38 24.1**	**-0.2**
JYNG				S	**Sb**	**21 38 32.6**	**+0.2**
TWC	**Suao**	**0.61**	**245**	P	**Pb**	**21 38 24.0**	**-0.3**
TWC	baz=240			*e*S	**Sb**	**21 38 32.6**	**+0.1**
	baz=240						
YOJ	**Yonaguni jima**	**0.65**	**128**	P	**Pb**	**21 38 24.6**	**-0.3**
YOJ				S	**Sb**	**21 38 33.6**	**+0.1**
NWF	**Wu-fen Shan**	**0.65**	**289**	*i* P	**Pb**	**21 38 25.4**	**+0.4**
NWF	baz=292			S	**Sb**	**21 38 33.7**	**+0.1**
	baz=292						
TWE	**Neicheng**	**0.73**	**259**	*i* P	**Pb**	**21 38 26.6**	**+0.2**
TWE	baz=257			S	**Sb**	**21 38 36.1**	**+0.1**
	baz=257						
ENA	**Nanau**	**0.78**	**236**	*i* P	**Pb**	**21 38 27.4**	**+0.1**
ENA	baz=231			S	**Sb**	**21 38 38.2**	**+0.7**
	baz=231						
TWA	**Mucha**	**0.80**	**278**	*e*S	**Sb**	**21 38 38.0**	**0.0**
PCYT	**Pengchaiyu**	**0.84**	**335**	*e*P	**Pb**	**21 38 27.5**	**-0.7**
	baz=280						
ENTT	**Nioudou**	**0.84**	**255**	P	**Pb**	**21 38 28.4**	**+0.2**
ENTT	baz=252			*e*S	**Sb**	**21 38 39.8**	**+0.6**
	baz=252						
TWY	**Chenhua**	**0.88**	**298**	P	**Pb**	**21 38 28.7**	**-0.1**
TWY	baz=301			*e*S	**Sn**	**21 38 41.0**	**-0.4**
	baz=301						
NSK	**Sanguang**	**1.02**	**260**	P	**Pn**	**21 38 31.6**	**+0.3**
NSK	baz=258			S	**Sb**	**21 38 44.2**	**0.0**
	baz=258						
NNS	**Nan Shan**	**1.07**	**247**	P	**Pn**	**21 38 32.5**	**+0.4**
NNS	baz=244			S	**Sn**	**21 38 46.2**	**-0.2**
	baz=244						
TWD	**Chiawan**	**1.11**	**225**	*e*P	**Pn**	**21 38 31.5**	**-1.0**
IRIF	**Iriomote-Funau**	**1.27**	**114**	P	**Pb**	**21 38 36.8**	**+1.2**
WHF	**Hehuan Shan**	**1.30**	**237**	P	**Pb**	**21 38 36.7**	**+0.4**
	baz=234						
TWT	**Tachien**	**1.32**	**243**	P	**Pb**	**21 38 36.9**	**+0.4**
TWT	baz=240			*e*S	**Sb**	**21 38 54.8**	**+1.8**
	baz=240						
NSTT	**Nanjuang**	**1.34**	**260**	*e*P	**Pb**	**21 38 39.5**	**+2.6**
NSTT	baz=259			*e*S	**Sb**	**21 38 55.7**	**+2.1**
	baz=259						
ESL	**Shilin**	**1.40**	**222**	*e*P	**Pn**	**21 38 37.1**	**+0.5**
ESL	baz=218			*e*S	**Sb**	**21 38 58.2**	**+3.0**
	baz=218						
SMLT	**Sun Moon Lake**	**1.72**	**236**	*e*P	**Pb**	**21 38 43.1**	**-0.2**
SMLT	baz=233			*e*S	**Sb**	**21 39 05.2**	**+0.6**
	baz=233						
TYC	**Yuchr**	**1.74**	**237**	*e*P	**Pb**	**21 38 43.8**	**+0.2**
TYC	baz=234			*e*S	**Sb**	**21 39 04.8**	**-0.3**
	baz=234						
ALS	**Alishan**	**2.02**	**229**	P	**Pb**	**21 38 48.0**	**-0.6**
ALS	baz=226			*e*S	**Sb**	**21 39 12.1**	**-1.4**
	baz=226						
CHN5	**Tsauling**	**2.06**	**233**	*e*P	**Pb**	**21 38 48.2**	**-0.8**
CHN5	baz=230			*e*S	**Sb**	**21 39 12.6**	**-1.6**
	baz=230						
CHN4	**Tsaushan**	**2.27**	**229**	*e*P	**Pb**	**21 38 51.1**	**-1.6**
CHN4	baz=226			*e*S	**Sb**	**21 39 18.8**	**-1.6**
	baz=226						
WTP	**Ta-pu**	**2.33**	**227**	*e*P	**Pb**	**21 38 53.0**	**-0.7**
	baz=224						

JMA 31 21:45:21.5±0.2,37°.74N×144°.36E,h25km,M3.5,Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.48**	**288**	P	Pn	21 46 01.3	+1.0
JIO				S	Sn	21 46 31.1	+1.4
OFUJ	**Ofunato**	**2.50**	**303**	P	Pn	21 46 02.0	+1.4
OFUJ				S	Sn	21 46 32.4	+2.1
JMK	**Ichinoseki**	**2.75**	**297**	P	Pn	21 46 05.5	+1.5
JOM	**Ohasama**	**2.96**	**307**	P	Pn	21 46 08.7	+1.8
JOM				S	Sn	21 46 44.2	+2.6
JOU	**Okura**	**2.98**	**283**	*e*S	Sn	21 46 44.9	+2.7
JFT	**Otama**	**3.20**	**267**	*e*S	Sn	21 46 49.0	+1.4
JRG	**Rokugo**	**3.36**	**301**	*e*S	Sn	21 46 54.3	+2.9
JYK	**Kaneyama**	**3.36**	**292**	P	Pn	21 46 14.5	+2.1
JYK				*e*S	Sn	21 46 54.3	+2.9
JTM	**Tenmabayashi**	**3.97**	**321**	*e*S	Sn	21 47 07.9	+1.3

*IDC **31** 21:57:28.0±1.8, 19°.21S×167°.92E,h0km,mb3.9/4,*
mb1 4.1/5,mb1mx3.7/38,mbtmp3.9/5,ML3.8/1,MS3.0/2,
Ms1 3.0/2,ms1mx2.5/41,Error ellipse: s-maj=60.8km
s-min=28.3km az=131.0
*ISCJB **31** 21:57:29.2±1.5, 19°.3S±0°.1×167°.9E±0°.3,h20km,mb3.8/4,*
MS3.0/1,Error ellipse: s-maj=40.7km s-min=11.2km
az=18.4
ISC 31 21:57:30.7±1.2,19°.4S±0°.2×168°.0E±0°.3,h20km,n19,
σ0§66/20,mb3.9/4,Vanuatu Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**3.07**	**208**	Pn	**Pn**	**21 58 18.3**	**+0.2**
	12nm,0.3s,baz=173,slow=21,SNR=75						
DZM				Sn	**Sn**	**21 58 54.1**	**-0.3**
	37nm,0.3s,baz=124,slow=22,SNR=15						
DZM				LR	LR	21 58 59.8	
	comp=Z,150nm,20.4s,baz=3.5,slow=29						
WRA	**Warramunga Arr**	**31.68**	**263**	P	**P**	**22 03 52.6**	**-0.5**
	0.3nm,0.4s,baz=90,slow=8.3,SNR=8.0						
ASAR	**Alice Springs**	**31.97**	**256**	P	**P**	**22 03 55.8**	**+0.2**
	0.9nm,0.6s,baz=83,slow=8.5,SNR=14						
ASAR				LR	LR	22 16 07.9	
	comp=Z,36nm,21.3s,baz=71,slow=35						
SONM	**Songino Array**	**86.62**	**324**	P	**P**	**22 10 12.8**	**0.0**
	0.3nm,0.3s,baz=108,slow=4.7,SNR=4.3						
ILAR	**Eielson Array**	**90.69**	**18**	P	**P**	**22 10 30.8**	**-0.7**
	0.7nm,0.8s,baz=237,slow=5.9,SNR=5.6						
GERES	**GERESS Array B**	**144.03**	**331**	PKP	**PKPdf**	**22 17 04.4**	**-0.5**
	0.7nm,0.7s,baz=42,slow=4.7,SNR=4.0						
ARSA	**Arzberg**	**144.25**	**327**	*i* PKPdf	**PKPdf**	**22 17 04.3**	**-0.9**
	3.4nm,1.1s						
MOA	**Molln**	**144.47**	**329**	*i* PKPdf	**PKPdf**	**22 17 06.1**	**+0.4**
	3.6nm,0.7s						
SOKA	**Soboth**	**144.89**	**327**	*i* PKPdf	**PKPdf**	**22 17 07.2**	**+0.7**
	5.6nm,1.1s						
OBKA	**Obir**	**145.25**	**327**	*i* PKiKP	**PKPdf**	**22 17 08.5**	**+1.4**
	5.3nm,0.9s						
KBA	**Koelnbreinsper**	**145.46**	**329**	*i* PKPdf	**PKPab**	**22 17 08.6**	**+0.8**
	5.2nm,0.9s						
MYKA	**Terra Mystica**	**145.62**	**328**	*i* PKPdf	**PKPab**	**22 17 08.2**	**-0.1**
	6.0nm,0.9s						
ABTA	**Abfaltersbach**	**146.09**	**329**	*i* PKiKP	**PKPab**	**22 17 10.7**	**+0.6**
	11nm,1.3s						
WATA	**Walderalm**	**146.11**	**331**	*i* PKiKP	**PKPab**	**22 17 10.8**	**+0.6**
	4.3nm,0.9s						
WTTA	**Wattenberg**	**146.14**	**331**	*i* PKiKP	**PKPab**	**22 17 10.8**	**+0.5**
	6.2nm,1.2s						
MOTA	**Moosalm**	**146.32**	**331**	*i* PKiKP	**PKPab**	**22 17 11.2**	**+0.2**
	2.3nm,0.6s						
FETA	**Feichten**	**146.73**	**331**	*i* PKiKP	**PKPab**	**22 17 12.3**	**-0.3**
	4.0nm,0.8s						
DAVA	**Damuels**	**146.91**	**332**	*i* PKiKP	**PKiKP**	**22 17 14.0**	**-0.5**
	8.1nm,1.1s						
DAVOX	**Davos/Dischmat**	**147.30**	**332**	PKPbc	**PKPbc**	**22 17 13.8**	**+0.7**
	4.0nm,0.6s,baz=27,slow=4.5,SNR=7.2						

WEL 31 22:01:07.2±1.1,46°.05S×165°.95E,h12km,ML3.6/9,Error ellipse: s-maj=11.5km s-min=4.1km az=90.0,Off west coast of South Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
PYZ	**Puysegur Point**	**0.53**	**104**	P*	Pg	22 01 17.2	-0.2
DCZ	**Deep Cove**	**1.02**	**56**	P*	Pb	22 01 25.8	-1.1
DCZ				S*	Sb	22 01 39.9	-0.3
DCZ				AML	AML	22 01 42.4	
WHZ	**Wether Hill Ro**	**1.40**	**84**	PN	Pn	22 01 31.3	-1.2
WHZ				SN	Sn	22 01 50.6	-0.4
WHZ				AML	AML	22 01 51.5	
APZ	**The Paps**	**1.62**	**120**	PN	Pn	22 01 32.9	-2.6
APZ				SN	Sn	22 01 52.1	-4.2
APZ				AML	AML	22 02 03.5	
MLZ	**Mavora Lakes**	**1.67**	**67**	PN	Pn	22 01 36.8	+0.6
MLZ				AML	AML	22 02 04.0	
MLZ				AML	AML	22 02 05.2	
SYZ	**Scrubby Hill**	**2.27**	**104**	PN	Pn	22 01 43.5	-0.9
SYZ				AML	AML	22 02 15.4	
SYZ				AML	AML	22 02 35.4	
WKZ	**Wanaka**	**2.48**	**62**	PN	Pb	22 01 49.6	-2.0
WKZ				AML	AML	22 02 24.6	
WKZ				AML	AML	22 02 26.8	
EAZ	**Earnscleugh**	**2.50**	**72**	PN	Pn	22 01 48.4	+0.9
EAZ				AML	AML	22 02 23.7	
EAZ				AML	AML	22 02 27.5	
TUZ	**Tuapeka**	**2.57**	**89**	PN	Pn	22 01 48.5	-0.1
TUZ				AML	AML	22 02 24.1	
TUZ				AML	AML	22 02 24.2	
JCZ	**Jackson Bay**	**2.82**	**47**	PN	Pn	22 01 53.5	+1.4
JCZ				AML	AML	22 02 42.2	
JCZ				AML	AML	22 02 48.1	

*ISCJB **31** 22:03:53.4±0.3, 12°.48N±0°.05×142°.25E±0°.06,h150km,*
mb4.3/43,Error ellipse: s-maj=8.4km s-min=6.7km
az=177.1
*IDC **31** 22:03:54.4±2.0, 12°.50N×142°.22E,h141km±19km,*
mb4.0/22,mb1 4.1/23,mb1mx3.9/52,mbtmp4.4/23,MS3.2/2,
Ms1 3.2/2,ms1mx2.6/45,Error ellipse: s-maj=16.1km
s-min=9.0km az=84.0
*NEIC **31** 22:04:01.2±0.5, 12°.43N×142°.08E,h208km±4km,mb4.4/24,*
Error ellipse: s-maj=7.8km s-min=5.1km az=74.0
ISC 31 22:03:55.0±0.4,12°.48N±0°.06×142°.29E±0°.07,h150km,n75,
σ1§32/72,mb4.4/43,South of Mariana Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
GUMO	**Guam**	**2.74**	**66**	P	**Pn**	**22 04 38.3**	**-0.9**
	18nm,0.3s,baz=318,slow=22,SNR=8.6						
GUMO				S	**Sn**	**22 05 10.3**	**-2.9**
	79nm,0.3s,baz=148,slow=18,SNR=7.7						
GUMO	**Guam**	**2.74**	**66**	*e*Pn	Pn	22 04 51.1	+12
GUMO				*e*Sn	**Sn**	**22 05 12.1**	**-1.2**
JAY	**Jayapura**	**14.98**	**186**	P	**P**	**22 07 21.0**	**-0.1**
	0.1nm,0.3s,baz=287,slow=19,SNR=5.0						
RABL	**Rabaul**	**19.25**	**149**	*e*P	**Pn**	**22 08 13.5**	**+2.9**
	80nm,0.8s						
YOJ	**Yonaguni jima**	**21.80**	**306**	*e*pP	pP	22 09 10.3	+8.2
NACB	**Ninganchiao**	**22.80**	**304**	*e*pP	pP	22 09 23.6	+11
JNU	**Nakatsue**	**23.05**	**335**	P	**P**	**22 08 47.0**	**-0.3**
	12nm,0.7s,baz=134,slow=5.2,SNR=10						
JNU	**Nakatsue**	**23.05**	**335**	*e*P	**P**	**22 08 47.0**	**-0.3**
	16nm,0.8s						
SSLB	**Suanglung**	**23.16**	**302**	*e*P	**P**	**22 08 47.8**	**-0.6**
SSLB				*e*sP	**sP**	**22 09 36.2**	**+0.7**
YHNB	**Yeheng**	**23.20**	**304**	*e*pP	pP	22 09 24.5	+7.1
MJAR	**Matsushiro Arr**	**24.24**	**352**	P	**P**	**22 08 57.7**	**-0.4**
	2.4nm,0.8s,baz=163,slow=9.1,SNR=6.8						
MAJO	**Matsushiro**	**24.24**	**352**	*e*P	P	22 09 05.2	+7.1
	16nm,0.6s						
CTA	**Charters Tower**	**32.59**	**173**	P	**P**	**22 10 13.2**	**+0.7**
	8.2nm,0.7s,baz=341,slow=8.9,SNR=12						
CTAO	**Charters Tower**	**32.59**	**173**	*e*P	**P**	**22 10 13.4**	**+1.0**
USRK	**Ussuriysk Ar.**	**32.83**	**346**	P	**P**	**22 10 14.8**	**+0.6**
	4.0nm,0.7s,baz=160,slow=9.2,SNR=7.1						
WRAB	**Tennant Creek**	**33.14**	**194**	*e*P	**P**	**22 10 16.5**	**-0.7**
	5.1nm,0.6s						
WRAB				*e*PP	**PnPn**	**22 11 25.8**	**-7.4**
WR1	**Warramunga Arr**	**33.15**	**194**	*e*P	**P**	**22 10 16.7**	**-0.6**
WRA	**Warramunga Arr**	**33.15**	**194**	P	**P**	**22 10 16.7**	**-0.6**
	4.8nm,0.6s,baz=15,slow=9.5,SNR=45						
ENH	**Enshi**	**35.13**	**305**	*e*P	**P**	**22 10 34.4**	**0.0**
	7.7nm,0.9s						
BJT	**Baijiatuau**	**35.81**	**325**	*e*P	**P**	**22 10 40.0**	**-0.1**

29nm,1.4s
AS31 Alice Springs 36.84 193 *e*P **P 22 10 48.7 -0.3**
1.8nm,0.4s
ASAR Alice Springs 36.85 193 P **P 22 10 48.7 -0.3**
2.0nm,0.4s,baz=20,slow=12,SNR=35
KLR Kul'dur 37.67 349 P **P 22 10 55.6 0.0**
5.6nm,0.6s,baz=145,slow=6.9,SNR=25
DZM Mont Dzumac 41.71 145 P **P 22 11 30.7 +1.3**
4.6nm,0.4s,baz=253,slow=7.6,SNR=7.4
DZM Mont Dzumac 41.71 145 *e*P **P 22 11 30.7 +1.3**
62nm,1.8s
CM31 Chiang Mai Arr 42.12 284 *e*P **P 22 11 32.8 -0.1**
CM31 *e*PcP **PcP 22 13 25.3 +0.6**
CMAR Chiang Mai Arr 42.12 284 P **P 22 11 32.8 -0.1**
2.3nm,0.6s,baz=85,slow=6.7,SNR=24
CMAR PcP **PcP 22 13 25.3 +0.6**
0.8nm,0.8s,baz=107,slow=0.9,SNR=5.3
PETK Petropavlovsk- 42.36 14 LR LR 22 30 33.4
comp=Z,5.2nm,18.1s,baz=167,slow=38
STKA Stephens Creek 44.11 181 P **P 22 11 48.1 -0.3**
2.8nm,0.5s,baz=10,slow=7.0,SNR=12
STKA Stephens Creek 44.11 181 *e*P **P 22 11 48.1 -0.3**
3.6nm,1.6s
ULN Ulaanbaatar 45.91 327 *e*P **P 22 12 03.1 +0.4**
3.6nm,1.0s
SONA0 Songino Array 46.24 327 *e*P **P 22 12 05.6 +0.3**
3.4nm,1.2s
SONM Songino Array 46.24 327 P **P 22 12 05.6 +0.3**
1.3nm,0.5s,baz=146,slow=7.7,SNR=5.4
SONA1 Songino Array 46.24 327 *e*P **P 22 12 05.5 +0.2**
SEY Seymchan 50.89 6 P **P 22 12 41.0 +0.6**
2.6nm,0.8s,baz=174,slow=6.5,SNR=8.3
BILL Bilibino 57.69 10 *e*P **P 22 13 29.5 0.0**
3.5nm,0.7s
MK01 Makanchi Array 60.55 317 *e*P **P 22 13 49.8 +0.1**
MK31 Makanchi Array 60.56 317 *e*P **P 22 13 49.9 +0.2**
MK32 Makanchi Array 60.56 317 *e*P **P 22 13 50.0 +0.3**
MKAR Makanchi Array 60.56 317 P **P 22 13 50.0 +0.3**
3.2nm,0.7s,baz=94,slow=8.4,SNR=31
MAKZ Makanchi 60.78 317 *e*P **P 22 13 51.5 +0.3**
5.4nm,0.8s
ZAA0 Zalesovo Array 61.08 325 *e*P **P 22 13 52.3 -0.7**
ZALV Zalesovo Beam 61.08 325 P **P 22 13 52.4 -0.6**
1.8nm,0.6s,baz=106,slow=6.6,SNR=8.2
ZAA1 Zalesovo Array 61.08 325 *e*P **P 22 13 52.4 -0.6**
KURK Kurchatov 63.83 321 *e*P **P 22 14 11.2 -0.1**
6.3nm,0.8s
KURBB Kurchatov Arra 63.86 320 P **P 22 14 11.3 -0.2**
5.4nm,0.6s,baz=106,slow=6.7,SNR=36
RAR Rarotonga 66.01 120 LR LR 22 36 47.6
comp=Z,117nm,21.9s,baz=112,slow=30
CAST Castle Rocks 68.10 *e*P **P 22 14 39.3 +0.9**
5.8nm,0.5s
BPAW Bear Paw Mtn. 68.75 *e*P **P 22 14 43.2 +0.7**
4.7nm,0.8s
VOSK Vostochnaya 68.86 322 *e*P **P 22 14 42.6 -0.7**
2.1nm,0.6s
MLY Manley 69.11 25 *e*P **P 22 14 45.8 +1.2**
6.2nm,0.5s
BRVK Borovoye 69.32 322 *e*P **P 22 14 46.1 0.0**
23nm,0.5s
COLD Coldfoot 69.93 23 *e*P **P 22 14 51.1 +1.5**
5.4nm,0.6s
ZRNK Zerenda 70.07 322 *e*P **P 22 14 50.4 -0.3**
5.7nm,0.8s
MDM Murphy Dome 70.12 25 *e*P **P 22 14 51.5 +0.6**
4.0nm,0.8s
IL1 Eielson Array 70.64 25 *e*P **P 22 14 52.4 -1.5**
ILAR Eielson Array 70.64 25 P **P 22 14 53.3 -0.7**
3.9nm,0.7s,baz=245,slow=6.0,SNR=31
ILB Eielson Array 70.64 25 *e*P **P 22 14 53.3 -0.7**
ABKAR Akbulak array 75.68 318 *e*P **P 22 15 23.3 -0.5**
INK Inuvik 76.35 22 P **P 22 15 27.6 +0.3**
1.3nm,0.5s,baz=264,slow=5.0,SNR=5.4
GEYT Alibeck 77.89 306 P **P 22 15 36.3 -0.2**
0.5nm,0.4s,baz=65,slow=8.1,SNR=3.5
DLBC Dease Lake 78.27 32 P **P 22 15 39.6 +1.4**
3.5nm,0.7s,baz=49,slow=8.9,SNR=5.1
DLBC Dease Lake 78.27 32 *e*P **P 22 15 39.6 +1.4**
30nm,1.9s
YKA Yellowknife Ar 84.99 27 *e*P **P 22 16 13.7 +0.4**
1.0nm,0.4s,baz=288,slow=5.2,SNR=12
YKB5 Yellowknife Ar 84.99 27 *e*P **P 22 16 13.7 +0.4**
ARA0 ARCESS Array S 87.36 342 *e*P **P 22 16 24.1 -0.7**
ARCES ARCESS Array B 87.36 342 P **P 22 16 24.1 -0.7**
1.2nm,0.6s,baz=73,slow=8.3,SNR=11
MSO Missoula 90.20 42 *e*P P 22 16 43.1 +4.3
WSHM Spangler Hills 90.96 53 *e*P P 22 16 47.0 +4.6
FIA0 FINESS Array S 91.09 334 *e*P **P 22 16 40.8 -1.6**
FINES FINESS Array B 91.09 334 P **P 22 16 40.8 -1.6**
1.8nm,0.4s,baz=61,slow=4.7,SNR=17
NLU North Lily Min 93.72 48 *e*P **P 22 16 58.2 +2.9**
114nm,1.1s
W13A Hualapai Mount 93.92 53 *e*P **P 22 16 53.7 -2.7**
25nm,0.6s
X16A Lo Mia Camp, P 96.05 53 *e*P **P 22 17 06.8 +0.7**
6.6nm,0.6s
LPAZ La Paz 150.30 101 PKPbc **PKPbc 22 23 31.4 +1.1**
3.5nm,0.7s,baz=257,slow=1.7,SNR=17

NIED ***31*** *22:07:00, 39.80N×143.40E, h17km, Mw3.8 Best double couple: M0=5.57000×10^14 NP1:φs=176.00000°, δ22.00000°, λ55.00000°. NP2:φs=33.00000°, δ73.00000°, λ103.00000°.*
JMA ***31*** *22:07:45.4±0.2, 39.83N×143.43E, h21km±4km, M4.1*
ISCJB ***31*** *22:07:46.7±1.2, 39.75N±0.05×143.47E±0.09, h36km±10km, mb3.9/6, MS3.2/1, Error ellipse: s-maj=12.8km s-min=7.0km az=21.8*
IDC ***31*** *22:07:48.6±3.3, 39.73N×143.61E, h43km±25km, mb3.7/6, mb1 3.7/9, mb1mx3.4/54, mbtmp3.9/9, ML3.3/3, MS3.1/2, Ms1 3.1/2, ms1mx2.5/50, Error ellipse: s-maj=43.4km s-min=17.7km az=92.0*
ISC 31 22:07:49.3±2.1, 39.76N±0.06×143.3E±0.1, h39km±19km, n23, σ1.9/20/27, mb3.9/6, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
JTH	**Tanohata**	**1.15**	**279**	P		**Pn**	**22 08 07.0**	**-1.9**
JTH				*e*S		**Sn**	**22 08 22.7**	**-0.7**
MIYJ	**Miyakonagasawa**	**1.19**	**262**	P		**Pn**	**22 08 08.1**	**-1.3**
MIYJ				*e*S		**Sn**	**22 08 24.6**	**+0.3**
JANG	**Nango**	**1.53**	**294**	P		**Pn**	**22 08 12.3**	**-1.8**
JOM	**Ohasama**	**1.61**	**260**	P		**Pn**	**22 08 14.8**	**-0.4**
JOM				*e*S		**Sn**	**22 08 36.1**	**+1.4**
JMK	**Ichinoseki**	**1.83**	**245**	P		**Pn**	**22 08 17.5**	**-0.7**
JTM	**Tenmabayashi**	**2.02**	**301**	P		**Pn**	**22 08 19.7**	**-1.1**
JTM				S		**Sn**	**22 08 45.3**	**+0.5**
JIO	**Ouri**	**2.02**	**231**	P		**Pn**	**22 08 19.7**	**-1.2**
JIO				*e*S		**Sn**	**22 08 46.1**	**+1.2**
JOT	**Ohata**	**2.38**	**314**	P		**Pn**	**22 08 24.8**	**-1.0**
JYK	**Kaneyama**	**2.46**	**251**	P		**Pn**	**22 08 27.0**	**+0.1**
JNBK	**Urakawa-nobuka**	**2.56**	**350**	P		**Pn**	**22 08 27.2**	**-1.0**
JKB	**Kayabe**	**2.75**	**321**	P		**Pn**	**22 08 31.4**	**+0.5**
ASAJ	**Asahikawa**	**4.39**	**353**	P		**Pn**	**22 08 52.8**	**-0.6**
1.7nm,0.3s,baz=198,slow=11,SNR=8.9								
ASAJ				S		**Sn**	**22 09 44.8**	**+1.6**
1.8nm,0.3s,baz=294,slow=22,SNR=4.6								
MJAR	**Matsushiro Arr**	**5.16**	**233**	P		**Pn**	**22 09 05.0**	**+0.9**
2.4nm,0.3s,baz=35,slow=12,SNR=4.9								
MAT	**Matsushiro**	**5.16**	**233**	P		**Pn**	**22 09 05.5**	**+1.4**
USRK	**Ussuriysk Ar.**	**9.54**	**301**	P		**Pn**	**22 10 06.8**	**+2.7**
0.4nm,0.3s,baz=93,slow=14,SNR=7.1								
JNU	**Nakatsue**	**12.02**	**240**	LR		LR	22 15 34.8	
comp=Z,94nm,21.8s,baz=119,slow=38								
SONM	**Songino Array**	**27.65**	**299**	P		**P**	**22 13 34.0**	**+0.7**
0.8nm,0.5s,baz=96,slow=9.1,SNR=3.8								
ZALV	**Zalesovo Beam**	**41.26**	**310**	P		**P**	**22 15 30.7**	**+0.3**
1.9nm,0.4s,baz=96,slow=8.4,SNR=9.6								
MKAR	**Makanchi Array**	**44.01**	**300**	P		**P**	**22 15 53.2**	**+0.3**
1.0nm,0.7s,baz=86,slow=7.7,SNR=5.9								
KURBB	**Kurchatov Arra**	**45.57**	**306**	P		**P**	**22 16 05.2**	**+0.1**
1.8nm,0.5s,baz=80,slow=8.4,SNR=5.2								
RES	**Resolute Bay**	**59.58**	**15**	LR		LR	22 46 09.2	
comp=Z,17nm,18.2s,baz=21,slow=39								
WRA	**Warramunga Arr**	**59.98**	**190**	P		**P**	**22 17 50.9**	**-0.9**
0.6nm,0.8s,baz=10,slow=6.9,SNR=3.7								
FINES	**FINESS Array B**	**67.11**	**332**	P		**P**	**22 18 38.1**	**-0.2**
1.0nm,0.7s,baz=20,slow=4.4,SNR=3.0								

IDC ***31*** *22:23:14.1±1.9, 19.17N×167.94E, h0km, mb4.1/5, mb1 4.3/6, mb1mx3.8/50, mbtmp4.1/6, ML3.6/1, MS3.2/5, Ms1 3.1/5, ms1mx2.8/31, Error ellipse: s-maj=57.0km s-min=27.3km az=133.0*

ISCJB ***31*** *22:23:16.7±1.5, 19.3S±0.2×167.9E±0.3, h26km, mb4.1/5, MS3.1/4, Error ellipse: s-maj=37.7km s-min=19.0km az=23.3*
ISC 31 22:23:17.9±1.4, 19.3S±0.2×168.0E±0.3, h26km, n16, σ0.68/14, mb4.2/5, MS3.1/4, Vanuatu Islands region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**3.08**	**208**	Pn		**Pn**	**22 24 05.2**	**+0.1**
6.4nm,0.3s,baz=43,slow=19,SNR=88								
DZM				LR		LR	22 24 41.8	
comp=Z,240nm,18.5s,baz=346,slow=27								
PMG	**Port Moresby**	**22.43**	**293**	LR		LR	22 34 28.3	
comp=Z,40nm,19.6s,baz=108,slow=30								
STKA	**Stephens Creek**	**26.80**	**237**	LR		LR	22 38 49.0	
comp=Z,21nm,18.2s,baz=27,slow=35								
WRA	**Warramunga Arr**	**31.66**	**263**	P		**P**	**22 29 38.7**	**-0.7**
0.8nm,0.6s,baz=89,slow=8.3,SNR=9.2								
ASAR	**Alice Springs**	**31.95**	**256**	P		**P**	**22 29 41.9**	**-0.1**
1.2nm,0.5s,baz=84,slow=8.5,SNR=16								
ASAR				LR		LR	22 41 32.9	
comp=Z,74nm,19.8s,baz=102,slow=34								
FITZ	**Fitzroy Crossi**	**40.05**	**265**	P		**P**	**22 30 51.6**	**+0.3**
3.2nm,0.7s,baz=104,slow=9.7,SNR=9.0								
FITZ				LR		LR	22 46 24.9	
comp=Z,48nm,18.1s,baz=96,slow=35								
SONM	**Songino Array**	**86.58**	**324**	P		**P**	**22 35 59.0**	**+0.1**
1.8nm,0.8s,baz=137,slow=4.0,SNR=8.3								
ILAR	**Eielson Array**	**90.67**	**18**	P		**P**	**22 36 17.4**	**-0.4**
1.0nm,0.8s,baz=228,slow=5.3,SNR=9.6								
CONA	**Conrad Observa**	**143.60**	**328**	*i* PKiKP		**PKPdf**	**22 42 50.1**	**-0.4**
4.7nm,1.2s								
GERES	**GERESS Array B**	**144.00**	**331**	PKP		**PKPdf**	**22 42 50.6**	**-0.5**
0.9nm,0.8s,baz=51,slow=3.1,SNR=5.3								
ABTA	**Abfaltersbach**	**146.06**	**329**	*i* pPKiKP		**PKPab**	**22 42 56.6**	**+0.3**
9.5nm,0.7s,SNR=7.4								
WATA	**Walderalm**	**146.08**	**331**	*i* pPKiKP		**PKPab**	**22 42 57.5**	**+1.1**
5.9nm,0.8s								
WTTA	**Wattenberg**	**146.10**	**331**	*i* pPKiKP		**PKPab**	**22 42 57.9**	**+1.4**
6.6nm,1.0s								
MOTA	**Moosalm**	**146.29**	**331**	*i* pPKiKP		**PKPab**	**22 42 57.9**	**+0.7**
7.3nm,1.0s,SNR=6.0								
FETA	**Feichten**	**146.70**	**331**	*i* pPKiKP		**PKPab**	**22 42 59.1**	**+0.3**
6.4nm,0.9s								
DAVA	**Damuels**	**146.88**	**332**	*i* pPKiKP		**PKPab**	**22 42 59.7**	**+0.3**
8.0nm,1.1s								

IDC ***31*** *22:23:44.3±1.9, 19.40S×167.87E, h0km, mb4.1/5, mb1 4.3/6, mb1mx3.8/50, mbtmp4.1/6, ML3.8/1, Error ellipse: s-maj=53.3km s-min=25.6km az=124.0*
ISCJB ***31*** *22:23:47.4±1.5, 19.4S±0.1×167.7E±0.3, h26km, mb4.1/5, Error ellipse: s-maj=37.6km s-min=11.8km az=14.6*
ISC 31 22:23:48.6±1.6, 19.4S±0.1×167.8E±0.3, h26km, n7, σ0.58/8, mb4.2/5, Vanuatu Islands region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
DZM	**Mont Dzumac**	**2.94**	**206**	Pn		**Pn**	**22 24 33.3**	**-0.5**
12nm,0.3s,baz=25,slow=19,SNR=6.2								
DZM				Sn		**Sn**	**22 25 09.0**	**+0.7**
38nm,0.3s,baz=106,slow=21,SNR=7.3								
WRA	**Warramunga Arr**	**31.51**	**263**	P		**P**	**22 30 08.2**	**-0.5**
0.5nm,0.3s,baz=91,slow=8.3,SNR=11								
ASAR	**Alice Springs**	**31.80**	**256**	P		**P**	**22 30 10.7**	**-0.5**
1.5nm,0.7s,baz=84,slow=8.9,SNR=6.1								
FITZ	**Fitzroy Crossi**	**39.90**	**265**	P		**P**	**22 31 21.2**	**+0.4**
3.0nm,0.7s,baz=96,slow=8.4,SNR=4.0								
SONM	**Songino Array**	**86.57**	**324**	P		**P**	**22 36 29.7**	**+0.1**
1.7nm,0.8s,baz=143,slow=3.6,SNR=5.0								
ILAR	**Eielson Array**	**90.80**	**18**	P		**P**	**22 36 49.0**	**-0.1**
0.9nm,0.8s,baz=233,slow=6.5,SNR=5.7								
GERES	**GERESS Array B**	**144.01**	**331**	PKP		**PKPab**	**22 43 19.8**	**+0.5**
0.9nm,0.7s,baz=48,slow=2.0,SNR=4.1								

NEIC ***31*** *22:25:26.9, 19.50N×67.70W, h55km, MD3.2(RSPR), After RSPR.*
RSPR 31 22:25:26.9, 19.50N×67.70W, h55km±19km, MD3.2/4, 12C-2D, Mona Passage

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
LSP	**Las Mesas**	**1.44**	**156**	P *e*		Pn	22 25 49.4	-1.3
LSP	**Las Mesas**	**1.44**	**156**	P *e*		Pn	22 25 49.4	-1.3
LSP				*e*S		Sn	22 26 07.7	-0.9
CRPR	**Cabo Rojo, PR**	**1.58**	**159**	P *e*		Pn	22 25 51.4	-1.2
CRPR	**Cabo Rojo, PR**	**1.58**	**159**	P *e*		Pn	22 25 51.4	-1.2
CRPR				*e*S		Sn	22 26 11.3	-0.7
GBPR	**Guanica, Bosqu**	**1.70**	**153**	P *e*		Pn	22 25 53.6	-0.7
GBPR	**Guanica, Bosqu**	**1.70**	**153**	P *e*		Pn	22 25 53.6	-0.7
GBPR				*e*S		Sn	22 26 13.9	-1.0
CELP	**Cerrillos**	**1.77**	**143**	P *e*		Pn	22 25 54.5	-0.7
CELP				*e*S		Sn	22 26 15.4	-1.2
CELP	**Cerrillos**	**1.77**	**143**	P *e*		Pn	22 25 54.5	-0.7
OBIP	**Obispado Ponce**	**1.78**	**144**	P *e*		Pn	22 25 54.7	-0.6
OBIP	**Obispado Ponce**	**1.78**	**144**	P *e*		Pn	22 25 54.7	-0.6
OBIP				*e*S		Sn	22 26 15.6	-1.2
CBYP	**Canovanas**	**2.13**	**125**	P *e*		Pn	22 25 59.2	-0.9
CBYP	**Canovanas**	**2.13**	**125**	P *e*		Pn	22 25 59.2	-0.9
MTP	**Monte Pirata**	**2.47**	**124**	P *e*		Pn	22 26 03.6	-1.1
MTP	**Monte Pirata**	**2.47**	**124**	P *e*		Pn	22 26 03.6	-1.1
MTP				*e*S		Sn	22 26 33.1	-0.5

NIED ***31*** *22:28:00, 37.70N×143.90E, h8km, Mw3.7 Best double couple: M0=4.01000×10^14 NP1:φs=70.00000°, δ60.00000°, λ-24.00000°. NP2:φs=173.00000°, δ70.00000°, λ-147.00000°.*
IDC ***31*** *22:28:36.5±1.2, 37.44N×144.32E, h0km, mb3.6/5, mb1 3.8/7, mb1mx3.5/57, mbtmp3.7/7, ML3.8/2, MS2.5/1, Ms1 2.5/1, ms1mx2.1/35, Error ellipse: s-maj=33.3km s-min=23.5km az=96.0*
ISCJB ***31*** *22:28:38.7±0.7, 37.67N±0.04×144.01E±0.05, h33km, mb3.6/5, Error ellipse: s-maj=6.0km s-min=5.0km az=30.1*
JMA ***31*** *22:28:40.9±0.2, 37.68N×143.86E, h36km, M4.1*
ISC 31 22:28:41.1±1.1, 37.65N±0.06×144.00E±0.07, h35km, n25, σ1.9/90/39, mb3.6/5, Off east coast of Honshu

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**2.24**	**292**	P		**Pn**	**22 29 15.4**	**-0.3**
JIO				S		**Sn**	**22 29 40.8**	**-1.3**
OFUJ	**Ofunato**	**2.33**	**309**	P		**Pn**	**22 29 16.5**	**-0.3**
OFUJ				S		**Sn**	**22 29 43.5**	**-0.6**
JMK	**Ichinoseki**	**2.55**	**302**	P		**Pn**	**22 29 19.8**	**0.0**
JMK				*e*S		**Sn**	**22 29 49.1**	**-0.5**
JOU	**Okura**	**2.73**	**286**	P		**Pn**	**22 29 22.4**	**0.0**
JOU				*e*S		**Sn**	**22 29 53.0**	**-1.2**
JOM	**Ohasama**	**2.80**	**311**	P		**Pn**	**22 29 23.8**	**+0.5**
JOM				S		**Sn**	**22 29 55.5**	**-0.3**
JFT	**Otama**	**2.91**	**269**	P		**Pn**	**22 29 24.7**	**-0.2**
JFT				S		**Sn**	**22 29 57.0**	**-1.7**
JYK	**Kaneyama**	**3.13**	**295**	P		**Pn**	**22 29 28.5**	**+0.6**
JYK				*e*S		**Sn**	**22 30 04.2**	**+0.1**
JRG	**Rokugo**	**3.17**	**304**	P		**Pn**	**22 29 29.0**	**+0.6**
JANG	**Nango**	**3.34**	**325**	S		**Sn**	**22 30 08.2**	**-1.0**
JTM	**Tenmabayashi**	**3.87**	**325**	*e*S		**Sn**	**22 30 21.3**	**-1.0**
JRY	**Ryogami san**	**4.40**	**250**	P		**Pn**	**22 29 44.1**	**-1.3**
JRY				S		**Sn**	**22 30 30.8**	**-4.7**
JOD2	**Odawara 2**	**4.62**	**240**	P		**Pn**	**22 29 46.8**	**-1.6**
JOD2				*e*S		**Sn**	**22 30 35.6**	**-5.2**
MJAR	**Matsushiro Arr**	**4.76**	**258**	Pn		**Pn**	**22 29 51.1**	**+0.8**
2.4nm,0.3s,baz=90,slow=15,SNR=21								
MJAR				Sn		**Sn**	**22 30 42.9**	**-1.4**
2.0nm,0.3s,baz=80,slow=28,SNR=7.7								
MAT	**Matsushiro**	**4.76**	**258**	P		**Pn**	**22 29 51.7**	**+1.4**
MAT				S		**Sn**	**22 30 44.3**	**0.0**
JKB	**Kayabe**	**4.81**	**333**	P		**Pn**	**22 29 49.9**	**-1.0**
JKB				*e*S		**Sn**	**22 30 43.9**	**-1.5**
JCH	**Churui**	**4.98**	**355**	P		**Pn**	**22 29 53.2**	**-0.1**
JCH				S		**Sn**	**22 30 46.9**	**-2.8**
NEM2	**Nemuro 2**	**5.86**	**13**	P		**Pn**	**22 30 03.6**	**-1.8**
NEM2				S		**Sn**	**22 31 06.7**	**-4.6**
JTKR	**Abashiri--Toko**	**6.32**	**359**	P		**Pn**	**22 30 11.6**	**0.0**
JTKR				*e*S		**Sn**	**22 31 18.9**	**-3.6**
ASAJ	**Asahikawa**	**6.55**	**351**	Pn		**Pn**	**22 30 15.9**	**+1.1**
2.0nm,0.3s,baz=201,slow=7.4,SNR=7.7								
ASAJ				Sn		**Sn**	**22 31 27.6**	**-0.6**
2.6nm,0.3s,baz=241,slow=19,SNR=4.3								
KSRS	**Korea Array**	**12.77**	**274**	LR		LR	22 37 02.4	
comp=Z,20nm,19.0s,baz=340,slow=39								
ZALV	**Zalesovo Beam**	**43.03**	**312**	P		**P**	**22 36 40.3**	**+3.3**
0.3nm,0.3s,baz=88,slow=8.4,SNR=2.1								
MKAR	**Makanchi Array**	**45.54**	**302**	P		**P**	**22 37 01.3**	**+4.1**
0.2nm,0.5s,baz=90,slow=8.2,SNR=3.0								
ILAR	**Eielson Array**	**47.87**	**33**	P		**P**	**22 37 16.0**	**+0.8**
0.5nm,0.7s,baz=251,slow=6.1,SNR=3.4								
WRA	**Warramunga Arr**	**58.00**	**191**	P		**P**	**22 38 29.7**	**-0.6**
0.8nm,0.8s,baz=7.4,slow=7.5,SNR=3.3								
ASAR	**Alice Springs**	**61.72**	**191**	P		**P**	**22 38 55.5**	**-0.3**
0.6nm,0.8s,baz=19,slow=8.1,SNR=4.4								

IDC 31 22:31:07.0±2.6, 6.87S×132.13E, h0km, mb3.9/1, mb1 3.7/4, mb1mx3.5/37, mbtmp3.6/4, ML3.5/3, Error ellipse: s-maj=106.5km s-min=28.2km az=81.0, Tanimbar Islands region

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
FITZ	**Fitzroy Crossi**	**12.83**	**209**	Pn		Pn	22 34 09.9	-0.9
0.3nm,0.3s,baz=30,slow=11,SNR=8.2								
FITZ				Sn		Sn	22 36 22.8	-12
0.7nm,0.3s,baz=141,slow=18,SNR=8.0								
WRA	**Warramunga Arr**	**13.17**	**171**	Pn		Pn	22 34 15.2	-0.2
0.2nm,0.3s,baz=356,slow=13,SNR=16								
WRA				Sn		Sn	22 36 38.5	-4.2
0.5nm,0.3s,baz=344,slow=23,SNR=8.3								
ASAR	**Alice Springs**	**16.79**	**174**	Pn		Pn	22 35 04.6	+1.0
0.1nm,0.3s,baz=351,slow=8.7,SNR=5.3								
ASAR				Sn		Sn	22 38 03.1	-7.7
0.1nm,0.3s,baz=358,slow=28,SNR=4.4								
MKAR	**Makanchi Array**	**69.29**	**326**	P		P	22 42 16.2	0.0
0.5nm,0.4s,baz=116,slow=7.5,SNR=18								

KRSC 31 22:44:42.3±1.9, 49.07N×154.96E, h144km±23km, ML3.9, Kuril Islands

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
SKR	**Severo-Kuril's**	**1.78**	**24**	*e*P		Pn	22 45 16.0	+1.6
SKR				*e*S		Sn	22 45 39.4	+0.3
PAU	**Pauzhetka**	**2.68**	**26**	*e*S		Sn	22 46 00.9	+2.5
ASAK	**Asacha**	**3.81**	**28**	*e*P		Pn	22 45 41.0	+1.1
RUS	**Russkaya**	**4.05**	**32**	*e*P		Pn	22 45 45.8	+2.8
RUS				*e*S		Sn	22 46 31.0	+0.9
UGLR	**Uglovaya**	**4.81**	**29**	*e*P		Pn	22 45 54.8	+1.8
AVH	**Avacha**	**4.83**	**28**	*e*P		Pn	22 45 56.2	+2.9
KRER	**Koryakskii**	**4.86**	**28**	*e*P		Pn	22 45 56.5	+2.6
SDLR	**Sedlovina**	**4.88**	**29**	*e*P		Pn	22 45 54.7	+0.6

IDC ***31*** *22:47:52.0±1.2, 36.72N×23.23E, h0km, mb3.6/9, mb1 3.7/14, mb1mx3.6/44, mbtmp3.6/14, ML3.0/4, Error ellipse: s-maj=25.8km s-min=15.8km az=36.0*
ATH ***31*** *22:47:52.7, 36.65N×22.99E, h18km, ML3.5/9, Error ellipse: s-maj=1.2km s-min=0.7km az=239.0*
THE ***31*** *22:47:53.6, 36.64N×23.00E, h2km±2km, ML3.4/6, Error ellipse: s-maj=2.4km s-min=0.8km az=225.0*
CSEM ***31*** *22:47:53.3±0.1, 36.65N×22.97E, h5km, ML3.5, Error ellipse: s-maj=4.2km s-min=2.4km az=42.0*
ISK ***31*** *22:47:53.8, 36.78N×23.09E, h5km, ML3.3*
ISCJB ***31*** *22:47:53.2±0.4, 36.64N±0.02×22.98E±0.02, h10km±3km, mb3.5/9, Error ellipse: s-maj=4.0km s-min=2.4km az=43.0*
IASPEI ***31*** *22:47:53.0±0.8, 36.64N±0.02×22.89E±0.03, h13km±5km, mb3.7/9, Error ellipse: s-maj=4.8km s-min=2.7km az=68.0, GT5 selection from ISC bulletin GT5 identified by Bond¨¡r and McLaughlin (2009) selection criteria Bond¨¡r and McLaughlin, A new ground truth data set for seismic studies, Seism. Res. Let., 80, 465-472, 2009*
ISC 31 22:47:53.5±0.7, 36.65N±0.02×22.94E±0.02, h13km±4km, n245, σ1.9/18/283, mb3.7/9, Southern Greece

Code	Station Name	Δ°	AZ°	Phase	ID Op	ISC	Time h m s	Res ISC
VLI	**Veliai**	**0.07**	**359**	P		**Pg**	**22 47 56.1**	**-0.1**
VLI				S		**Sg**	**22 47 57.4**	**-0.6**
VLI	**Veliai**	**0.07**	**359**	P		**Pg**	**22 47 56.1**	**-0.1**
VLI				S		**Sg**	**22 47 57.3**	**-0.8**
VLI	**Veliai**	**0.07**	**359**	P		**Pg**	**22 47 56.6**	**+0.5**
VLI				S		**Sg**	**22 47 57.3**	**-0.8**
VLI				AML		AML	22 47 58.7	
VLI				AML		AML	22 48 00.5	
comp=E,86004μm,0.4s								
KYTH	**Kithira**	**0.39**	**167**	P		**Pg**	**22 48 01.0**	**-0.4**
KYTH				S		**Sg**	**22 48 06.3**	**-0.4**
KYTH	**Kithira**	**0.39**	**167**	P		**Pg**	**22 48 01.0**	**-0.4**
KYTH				S		**Sg**	**22 48 06.4**	**-0.3**
KYTH	**Kithira**	**0.39**	**167**	P		**Pg**	**22 48 01.6**	**+0.2**
KRND	**KRANIDI**	**0.75**	**13**	P		**Pg**	**22 48 08.3**	**+0.2**
KRND				S		**Sg**	**22 48 18.2**	**+0.2**
KRND	**KRANIDI**	**0.75**	**13**	P		**Pg**	**22 48 07.5**	**-0.6**
KRND				S		**Sg**	**22 48 18.2**	**+0.2**
KRND	**KRANIDI**	**0.75**	**13**	P		**Pg**	**22 48 07.5**	**-0.6**
KRND				S		**Sb**	**22 48 19.0**	**+0.3**
KRND				AML		AML	22 48 23.8	
comp=N,5718μm,0.5s								
KRND				AML		AML	22 48 24.6	
comp=E,4314μm,0.4s								
ANKY	**Antikythira Is**	**0.83**	**159**	P		**Pg**	**22 48 09.0**	**-0.6**
ANKY				S		**Sg**	**22 48 20.0**	**-0.6**
ANKY	**Antikythira Is**	**0.83**	**159**	P		**Pg**	**22 48 09.8**	**+0.2**
ANKY	

VLY	Voula,Athens	1.38	29	P	Pn	22 48 18.2	-0.3
VLY	Voula,Athens	1.38	29	P	Pn	22 48 18.2	-0.3
VLY	Voula,Athens	1.38	29	P	Pn	22 48 18.5	0.0
IMMV	Iera Moni Meta	1.46	144	P	Pn	22 48 18.7	-0.8
IMMV	Iera Moni Meta	1.46	144	P	Pn	22 48 18.7	-0.8
IMMV	Iera Moni Meta	1.46	144	P	Pn	22 48 18.1	-1.4
ATH	Athens Observa	1.46	25	P	Pn	22 48 19.7	+0.1
ATH				S	Sg	22 48 40.7	+0.2
ATH	Athens Observa	1.46	25	P	Pn	22 48 19.7	+0.1
ATH				S	Sg	22 48 40.7	+0.2
KLV	Kalavryta, Ach	1.53	336	P	Pn	22 48 20.8	+0.2
KLV	Kalavryta, Ach	1.53	336	P	Pn	22 48 20.8	+0.2
KLV	Kalavryta, Ach	1.53	336	P	Pn	22 48 20.7	+0.1
PTL	Penteli	1.58	28	P	Pn	22 48 21.2	-0.1
PTL	Penteli	1.58	28	P	Pn	22 48 21.2	-0.1
PTL	Penteli	1.58	28	P	Pn	22 48 21.0	-0.3
VAM	Vamos	1.61	140	P	Pn	22 48 21.1	-0.5
VAM	Vamos	1.61	140	P	Pn	22 48 21.1	-0.5
DRO	Drossia	1.63	323	P	Pb	22 48 23.0	-0.4
DRO	Drossia	1.63	323	P	Pb	22 48 23.0	-0.4
DRO	Drossia	1.63	323	P	Pb	22 48 23.4	0.0
LAKA	Lakka	1.76	335	P	Pn	22 48 25.0	+1.2
LAKA	Lakka	1.76	335	P	Pn	22 48 25.0	+1.2
DSF	Desfina	1.79	350	P	Pn	22 48 24.8	+0.6
DSF				S	Sb	22 48 48.8	+0.2
DSF	Desfina	1.79	350	P	Pn	22 48 24.8	+0.6
DSF				S	Sb	22 48 48.8	+0.2
DSF	Desfina	1.79	350	P	Pn	22 48 24.3	+0.1
KARY	Karystos	1.82	40	P	Pn	22 48 24.5	-0.1
KARY	Karystos	1.82	40	P	Pn	22 48 24.5	-0.1
RLS	Riolos of Patr	1.83	321	P	Pb	22 48 26.4	-0.5
RLS	Riolos of Patr	1.83	321	P	Pb	22 48 26.4	-0.5
UPR	University Cam	1.87	331	P	Pg	22 48 29.4	-0.1
VTN	Vitineika	1.89	313	P	Pn	22 48 24.9	-0.5
VTN	Vitineika	1.89	313	P	Pn	22 48 24.9	-0.5
SERG	Sergoula	1.90	339	P	Pn	22 48 26.3	+0.7
SERG	Sergoula	1.90	339	P	Pn	22 48 26.3	+0.7
THR5	Thira Island,	1.95	96	*e*PN	Pn	22 48 27.3	+0.9
THR5	Thira Island,	1.95	96	P	Pn	22 48 26.6	+0.2
THR5	Thira Island,	1.95	96	P	Pn	22 48 26.6	+0.2
THR5	Thira Island,	1.95	96	*e*Pn	Pn	22 48 27.3	+0.9
EFP	Efpalio	1.96	335	P	Pb	22 48 29.9	+0.9
EFP	Efpalio	1.96	335	P	Pb	22 48 29.9	+0.9
AXS	Araxos	1.98	322	P	Pn	22 48 27.7	+0.9
AXS				S	Sb	22 48 54.8	+0.7
AXS	Araxos	1.98	322	P	Pn	22 48 27.7	+0.9
AXS				S	Sb	22 48 54.8	+0.7
AXS	Araxos	1.98	322	P	Pg	22 48 31.1	-0.5
CMBO	Columbo, Santo	1.99	94	P	Pn	22 48 27.3	+0.4
CMBO	Columbo, Santo	1.99	94	P	Pn	22 48 27.1	+0.2
CMBO	Columbo, Santo	1.99	94	P	Pn	22 48 27.1	+0.2
LKR	Lokris	2.00	1	P	Pn	22 48 27.4	+0.4
LKR	Lokris	2.00	1	P	Pn	22 48 27.4	+0.4
LKR	Lokris	2.00	1	P	Pn	22 48 27.2	+0.2
THR3	Thira Island,	2.00	96	P	Pn	22 48 26.7	-0.3
THR3	Thira Island,	2.00	96	P	Pn	22 48 26.7	-0.3
THR6	Thira Island,	2.00	98	P	Pn	22 48 27.4	+0.4
THR6	Thira Island,	2.00	98	P	Pn	22 48 27.4	+0.4
ZKS	Zakynthos	2.01	302	P	Pn	22 48 28.7	+1.5
ZKS	Zakynthos	2.01	302	P	Pn	22 48 28.7	+1.5
ZKS	Zakynthos	2.01	302	P	Pb	22 48 29.8	-0.2
THR7	Fira-Santorini	2.02	96	P	Pn	22 48 27.7	+0.4
THR7	Fira-Santorini	2.02	96	P	Pn	22 48 27.7	+0.4
THR2	Thira island,	2.02	95	P	Pn	22 48 27.5	+0.2
THR2	Thira island,	2.02	95	P	Pn	22 48 27.5	+0.2
THT1	Athinios (Pele	2.02	97	P	Pn	22 48 27.3	0.0
THT1	Athinios (Pele	2.02	97	P	Pn	22 48 27.3	0.0
GVD	Gavdhos	2.03	152	P	Pn	22 48 28.9	+1.4
GVD	Gavdhos	2.03	152	P	Pn	22 48 28.9	+1.4
GVD	Gavdhos	2.03	152	P	Pb	22 48 30.4	+0.1
SANT	Santorini	2.05	97	P	Pn	22 48 27.8	+0.1
SANT	Santorini	2.05	97	P	Pn	22 48 27.8	+0.1
SANT	Santorini	2.05	97	P	Pn	22 48 27.5	-0.2
THR1	Thera Island	2.05	97	*e*PN	Pn	22 48 27.4	-0.3
THR1				*e*SN	Sn	22 48 53.6	+0.4
THR1	Thera Island	2.05	97	*e*Pn	Pn	22 48 27.4	-0.3
THR1				*e*Sn	Sn	22 48 53.6	+0.4
IDI	Anoyia	2.09	130	Pn	Pn	22 48 27.4	-0.9
	comp=N,7.7nm,0.3s,baz=335,slow=14,SNR=88						
IDI				Sn	Sb	22 48 56.5	-0.6
	comp=N,29nm,0.3s,baz=317,slow=17,SNR=8.1						
IDI	Anoyia	2.09	130	P	Pn	22 48 27.2	-1.1
IDI	Anoyia	2.09	130	P	Pn	22 48 27.2	-1.1
IDI	Anoyia	2.09	130	P	Pn	22 48 26.4	-1.9
ANX	Ano Chora	2.10	338	P	Pn	22 48 29.4	+0.9
ANX				S	Sb	22 48 56.9	-0.7
ANX	Ano Chora	2.10	338	P	Pn	22 48 29.4	+0.9
ANX				S	Sb	22 48 56.9	-0.7
APE	Apeiranthos	2.12	78	*e*PN	Pn	22 48 28.7	0.0
APE	Apeiranthos	2.12	78	P	Pn	22 48 28.4	-0.3
APE	Apeiranthos	2.12	78	P	Pn	22 48 28.4	-0.3
APE	Apeiranthos	2.12	78	*e*Pn	Pn	22 48 28.7	0.0
APE				S	Sn	22 48 53.9	-1.1
APE	Apeiranthos	2.12	78	P	Pn	22 48 28.0	-0.8
APE				S	Sn	22 48 53.9	-1.1
APE				AML	AML	22 48 57.0	
	comp=E,278µm,0.5s						
APE				AML	AML	22 49 05.6	
	comp=N,580µm,0.3s						
SIVA	Sivas	2.23	136	P	Pn	22 48 30.7	+0.6
SIVA	Sivas	2.23	136	P	Pn	22 48 30.7	+0.6
SIVA	Sivas	2.23	136	P	Pn	22 48 31.9	+1.8
SMIA	Simia	2.24	5	P	Pn	22 48 30.3	0.0
SMIA	Simia	2.24	5	P	Pn	22 48 30.3	0.0
KFL	Anninata	2.25	311	P	Pn	22 48 31.8	+1.3
KFL	Anninata	2.25	311	P	Pn	22 48 31.8	+1.3
KFL	Anninata	2.25	311	P	Pn	22 48 32.5	+2.0
PVO	Paravola	2.26	331	P	Pb	22 48 34.4	+0.2
PVO	Paravola	2.26	331	P	Pn	22 48 32.5	+1.9
PVO	Paravola	2.26	331	P	Pn	22 48 32.5	+1.9
PDO	Prodromos	2.39	325	P	Pb	22 48 35.3	-1.2
PDO	Prodromos	2.39	325	P	Pn	22 48 32.2	-0.2
PDO	Prodromos	2.39	325	P	Pn	22 48 32.2	-0.2
VLS	Valsamata	2.41	310	P	Pn	22 48 35.2	+2.3
VLS	Valsamata	2.41	310	P	Pn	22 48 35.0	+2.3
AGG	Agios Georgios	2.42	349	P	Pn	22 48 33.1	+0.3
AGG	Agios Georgios	2.42	349	P	Pn	22 48 33.1	+0.3
EVR	Evrytania	2.43	339	P	Pn	22 48 34.4	+1.3
EVR	Evrytania	2.43	339	P	Pn	22 48 34.4	+1.3
EVR	Evrytania	2.43	339	P	Pb	22 48 35.5	-1.8
LAST	Lasithi	2.54	125	P	Pn	22 48 34.3	-0.3
LAST	Lasithi	2.54	125	P	Pn	22 48 34.3	-0.3
LAST	Lasithi	2.54	125	P	Pn	22 48 34.3	-0.3
NPS	Neapolis	2.57	122	P	Pn	22 48 34.7	-0.2
NPS	Neapolis	2.57	122	P	Pn	22 48 34.7	-0.2
NPS	Neapolis	2.57	122	P	Pn	22 48 34.3	-0.6
AOS	Alonnisos	2.62	16	*e*PN	Pn	22 48 35.8	+0.2
AOS	Alonnisos	2.62	16	P	Pn	22 48 35.3	-0.3
AOS	Alonnisos	2.62	16	P	Pn	22 48 35.3	-0.3
AOS	Alonnisos	2.62	16	*e*Pn	Pn	22 48 35.8	+0.2
AOS	Alonnisos	2.62	16	P	Pn	22 48 34.7	-0.9
NEO	Neokhori	2.66	5	P	Pn	22 48 36.5	+0.3
NEO	Neokhori	2.66	5	P	Pn	22 48 36.5	+0.3
NEO	Neokhori	2.66	5	P	Pn	22 48 36.0	-0.1
XOR	Xorichti	2.72	4	P	Pn	22 48 36.6	-0.3
XOR	Xorichti	2.72	4	P	Pn	22 48 36.8	-0.2
XOR	Xorichti	2.72	4	P	Pn	22 48 36.8	-0.2
LKD2	Lefkada island	2.80	320	P	Pb	22 48 41.5	-1.9
LKD2	Lefkada island	2.80	320	P	Pb	22 48 41.5	-1.9
LKD2	Lefkada island	2.80	320	P	Pb	22 48 43.6	+0.2
DSL	Palaion Diasel	2.88	330	P	Pb	22 48 43.4	-1.3
DSL	Palaion Diasel	2.88	330	P	Pb	22 48 43.4	-1.3
THL	Klokotos Trika	3.00	346	P	Pn	22 48 41.3	+0.5
THL	Klokotos Trika	3.00	346	P	Pn	22 48 41.4	+0.6
CHOS	Chios island	3.02	54	*e*PN	Pn	22 48 41.1	-0.1
CHOS	Chios island	3.02	54	P	Pn	22 48 41.3	+0.1
CHOS	Chios island	3.02	54	P	Pn	22 48 41.3	+0.1
CHOS	Chios island	3.02	54	P	Pn	22 48 40.8	-0.4
ZKR	Zakros	3.07	119	P	Pn	22 48 41.7	-0.1
ZKR	Zakros	3.07	119	P	Pn	22 48 42.0	+0.2
ZKR	Zakros	3.07	119	P	Pn	22 48 42.0	+0.2
SMG	Samos	3.29	70	P	Pn	22 48 44.0	-0.8
SMG	Samos	3.29	70	P	Pn	22 48 44.0	-0.8
PAIG	Paliouri	3.32	10	P	Pn	22 48 44.6	-0.6
PAIG	Paliouri	3.32	10	P	Pn	22 48 44.6	-0.6
NIS1	Nisyros Isl.	3.41	90	*e*PN	Pn	22 48 47.2	+0.8
NIS1	Nisyros Isl.	3.41	90	*e*Pn	Pn	22 48 47.2	+0.8
NIS1	Nisyros Isl.	3.41	90	P	Pn	22 48 48.4	+1.9
NIS1	Nisyros Isl.	3.41	90	P	Pn	22 48 48.4	+1.9
SIGR	SIGRI	3.44	41	*e*PN	Pn	22 48 46.7	-0.1
SIGR	SIGRI	3.44	41	P	Pn	22 48 46.8	-0.1
SIGR	SIGRI	3.44	41	P	Pn	22 48 46.8	-0.1
SIGR	SIGRI	3.44	41	P	Pn	22 48 45.5	-1.3
LIT	Litokhoron	3.46	354	P	Pn	22 48 48.4	+1.2
LIT	Litokhoron	3.46	354	P	Pn	22 48 48.4	+1.2
KPRO	Kipourio	3.52	340	P	Pn	22 48 50.3	+2.2
KPRO	Kipourio	3.52	340	P	Pn	22 48 50.3	+2.2
BODT	Bodrum	3.53	82	PN	Pn	22 48 48.9	+0.8
BODT	Bodrum	3.53	82	*i* Pn	Pn	22 48 48.9	+0.8
KARP	Karpathos	3.59	107	*e*PN	Pn	22 48 49.9	+0.9
KARP	Karpathos	3.59	107	P	Pn	22 48 49.6	+0.7
KARP	Karpathos	3.59	107	P	Pn	22 48 49.6	+0.7
KARP	Karpathos	3.59	107	*e*Pn	Pn	22 48 49.9	+0.9
KARP	Karpathos	3.59	107	P	Pn	22 48 49.7	+0.8
SGD	Sagiada	3.65	325	P	Pn	22 48 51.2	+1.6
SGD	Sagiada	3.65	325	P	Pn	22 48 51.2	+1.6
SGD	Sagiada	3.65	325	P	Pn	22 48 53.6	+4.0
LIA	Limnos Island	3.69	28	P	Pn	22 48 49.9	-0.4
PRK	Paraskevi	3.70	44	P	Pn	22 48 50.5	+0.2
PRK	Paraskevi	3.70	44	P	Pn	22 48 50.5	+0.2
OUR	Ouranopolis	3.77	12	*e*PN	Pn	22 48 52.4	+1.1
OUR	Ouranopolis	3.77	12	P	Pn	22 48 51.4	+0.1
OUR	Ouranopolis	3.77	12	P	Pn	22 48 51.4	+0.1
OUR	Ouranopolis	3.77	12	*e*Pn	Pn	22 48 52.4	+1.1
NEST	Nestorio	4.04	339	P	Pn	22 48 58.2	+3.0
NEST	Nestorio	4.04	339	P	Pn	22 48 58.2	+3.0
AYDB	Zeytinkoy-Aydi	4.16	70	*e*PN	Pn	22 48 58.2	+1.4
AYDB	Zeytinkoy-Aydi	4.16	70	*e*Pn	Pn	22 48 58.2	+1.4
SOH	Sokhos	4.18	4	P	Pn	22 48 57.5	+0.5
SOH	Sokhos	4.18	4	P	Pn	22 48 57.5	+0.5
ARG	Arkhangelos	4.21	94	P	Pn	22 48 58.9	+1.6
ARG	Arkhangelos	4.21	94	P	Pn	22 48 58.9	+1.6
YER	Yerkesik	4.31	82	*e*PN	Pn	22 49 00.3	+1.5
YER	Yerkesik	4.31	82	*e*Pn	Pn	22 49 00.3	+1.5
DALY	Dalyan (Mu¨la	4.59	86	*e*PN	Pn	22 49 04.9	+2.2
DALY	Dalyan (Mu¨la	4.59	86	*e*Pn	Pn	22 49 04.9	+2.2
GELI	Tayfur-Gelibol	4.66	35	*e*PN	Pn	22 49 04.2	+0.7
GELI	Tayfur-Gelibol	4.66	35	*e*Pn	Pn	22 49 04.2	+0.7
VAY	Valandovo	4.67	357	*i* Pn	Pn	22 49 06.8	+3.1
VAY	Valandovo	4.67	357	*i* Pn	Pn	22 49 06.8	+3.1
ENEZ	Enez	4.79	31	*e*PN	Pn	22 49 06.1	+0.7
ENEZ	Enez	4.79	31	*e*Pn	Pn	22 49 06.1	+0.7
ERIK	Erikli-Kesan	4.89	34	*e*PN	Pn	22 49 07.0	+0.2
ERIK	Erikli-Kesan	4.89	34	*e*Pn	Pn	22 49 07.0	+0.2
FETY	Fethiye	4.94	88	*e*PN	Pn	22 49 09.8	+2.3
FETY	Fethiye	4.94	88	*e*Pn	Pn	22 49 09.8	+2.3
MMB	Musomiste	4.97	7	*i* P	Pn	22 49 10.9	+3.0
KKB	Krupnik	5.21	1	P	Pn	22 49 12.6	+1.4
RZN	Rozhen	5.22	15	P	Pn	22 49 12.4	+1.0
GLHS	Glhisar (BURDU	5.28	83	*e*PN	Pn	22 49 14.4	+2.2
GLHS	Glhisar (BURDU	5.28	83	*e*Pn	Pn	22 49 14.5	+2.2
ELL	Elmali	5.60	87	*e*PN	Pn	22 49 19.0	+2.3
ELL	Elmali	5.60	87	*e*Pn	Pn	22 49 19.0	+2.3
VAE	Valguarnera	6.87	279	Pn	Pn	22 49 38.0	+4.0
	comp=N,0.7nm,0.3s,baz=151,slow=13,SNR=2.8						
VAE				Sn	Sn	22 50 53.3	+1.3
	comp=N,2.0nm,0.3s,baz=90,slow=20,SNR=4.9						
BRTR	Keskin Array B	8.97	67	Pn	Pn	22 50 05.9	+3.0
	comp=N,0.1nm,0.3s,baz=250,slow=14,SNR=6.2						
MLR	Muntele Rosu	9.12	13	Pn	Pn	22 50 04.1	-0.8
	comp=N,0.0nm,0.3s,baz=135,slow=14,SNR=2.0						
UDBI	Udbina	9.57	328	*i* Pn	Pn	22 50 12.3	+1.2
UDBI				Sn	Sn	22 51 56.3	-2.2
NVLJ	Novalja	10.00	325	*e*Pn	Pn	22 50 17.2	+0.4
NVLJ				Sn	Sn	22 52 03.6	-5.3
MMAI	Mount Meron Ar	10.87	106	Pn	Pn	22 50 26.2	-2.6
	comp=N,1.2nm,0.3s,baz=298,slow=12,SNR=6.3						
EIL	Elat	12.23	121	Pn	Pn	22 50 44.8	-2.6
	comp=N,0.4nm,0.3s,baz=298,slow=12,SNR=4.0						
GERES	GERESS Array B	13.94	334	Pn	Pn	22 51 13.0	+2.3
	baz=145,slow=14,SNR=2.1						
KBZ	Khabaz	16.79	59	Pn	P	22 51 51.5	+1.1
	comp=N,0.1nm,0.3s,baz=271,slow=12,SNR=4.5						
ESDC	Sonseca Array	21.34	286	P	P	22 52 42.6	+2.2
	comp=N,0.9nm,0.7s,baz=78,slow=9.8,SNR=7.2						
HFS	Hagfors	24.24	349	P	P	22 53 09.5	-0.5
	comp=N,1.5nm,0.6s,baz=161,slow=9.4,SNR=10						
FINES	FINESS Array B	24.89	4	P	P	22 53 15.9	+0.1
	comp=N,1.0nm,0.8s,baz=210,slow=8.0,SNR=2.8						
NOA	NORSAR Array B	25.52	347	P	P	22 53 22.2	+0.6
	comp=N,0.2nm,0.4s,baz=153,slow=9.7,SNR=5.0						
EKA	Eskdalemuir Ar	25.79	325	P	P	22 53 25.5	+1.5
	comp=N,3.1nm,0.5s,baz=120,slow=8.9,SNR=22						
ARCES	ARCESS Array B	32.97	2	P	P	22 54 28.3	+0.6
	comp=N,1.0nm,0.9s,baz=181,slow=8.7,SNR=3.5						
MKAR	Makanchi Array	44.48	58	P	P	22 56 02.8	-1.7
	comp=N,0.6nm,0.5s,baz=271,slow=7.9,SNR=9.0						
ZALV	Zalesovo Beam	45.30	47	P	P	22 56 09.1	-1.7
	comp=N,0.4nm,0.4s,baz=251,slow=9.0,SNR=2.8						
YKA	Yellowknife Ar	75.47	341	P	P	22 59 36.7	-0.3
	comp=N,0.1nm,0.4s,baz=30,slow=5.4,SNR=3.0						

NNC 31 22:48:22.8±1.6, 36°88N×70°58E, h202km±30km, mb2.6, mpv3.7, 4C-5D, Error ellipse: s-maj=29.6km s-min=11.6km az=122.0, Hindu Kush region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
DZET	Dzherino	2.37	325	⇓P	Pn	22 49 05.6	+0.2
	17nm,0.3s						
DZET				⇓S	S	22 49 39.2	+1.0
	289nm,0.5s						
MNAS	Manas	5.79	14	⇑P	Pn	22 49 48.1	+0.6
	2.4nm,0.4s						
MNAS				⇓S	S	22 50 54.9	+0.8
	13nm,0.4s						
KK31	Karatay Array	6.21	360	⇑P	Pn	22 49 53.5	+0.7
	4.5nm,0.5s,baz=182,slow=12,SNR=69						
KK31				⇑S	S	22 51 04.3	+0.5
	2.6nm,0.3s,baz=186,slow=22,SNR=13						
AAK	Ala-Archa	6.49	26	⇓P	Pn	22 49 55.0	-1.4
	1.2nm,0.3s						
AAK				⇑S	S	22 51 12.1	+1.6
	9.3nm,0.7s						
TKM2	Tokmak 2	7.16	31	⇓P	Pn	22 50 04.8	-0.5
	2.8nm,0.5s						

NIED ***31*** *23:03:00, 35°60N×141°10E, h44km, Mw3.9 Best double couple: M0 8.63000×10^14 NP1:φ=235.00000°, δ=47.00000°, λ=176.00000°. NP2:φ=327.00000°, δ=87.00000°, λ=43.00000°.*
IDC ***31*** *23:03:35.7±1.1, 35°47N×141°33E, h0km, mb3.7/8, mb1 3.8/11, mb1mx3.6/36, mbtmp3.7/11, ML3.7/3, MS2.7/3, Ms1 2.7/3, ms1mx2.3/52, Error ellipse: s-maj=30.1km s-min=17.4km az=89.0*
ISCJB ***31*** *23:03:38.6±0.6, 35°57N±0°04×141°26E±0°07, h33km, mb3.6/8, MS3.4/2, Error ellipse: s-maj=8.4km s-min=5.5km az=5.7*
JMA ***31*** *23:03:40.6±0.1, 35°56N×141°03E, h36km±1km, M3.6*
JMA Felt I J1.

ISC 31 23:03:40.9±0.9, 35°54N±0°06×141°13E±0°09, h33km, n28, σ1§02/23, mb3.6/8, 2C, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
CHOJ	Chosi	0.27	305	⇑P	Pb	23 03 47.4	-0.9
CHOJ				S	Sb	23 03 52.1	-1.2
JCN	Nagara	0.77	261	P	Pn	23 03 55.0	-0.4
KTR	Katsuura	0.78	240	P	Pn	23 03 54.4	-1.1
BSO4	Boso 4	0.85	230	P	Pn	23 03 55.5	-1.0
BSO1	Boso 1	0.90	188	P	Pn	23 03 56.0	-0.7
BSO3	Boso 3	0.90	215	⇑P	Pn	23 03 56.0	-1.0
BSO3				X		23 04 08.7	
JYT	Yasato	1.02	312	P	Pn	23 03 57.4	-1.5
MJAR	Matsushiro Arr	2.57	294	Pn	Pn	23 04 20.7	+0.5
	7.3nm,0.3s,baz=106,slow=6.8,SNR=30						
MJAR				LR	LR	23 05 27.1	
	comp=Z,108nm,20.1s,baz=150,slow=41						
MAT	Matsushiro	2.57	294	P	Pn	23 04 20.9	+0.7
MAT				*e*S	Sn	23 04 50.7	+0.3
JHJ	Hachijo jima 2	2.66	205	Pn	Pn	23 04 20.5	-1.0
	46nm,0.3s,baz=45,slow=20,SNR=4.7						
JHJ				Sn	Sn	23 04 52.7	0.0
	89nm,0.3s,baz=236,slow=21,SNR=4.5						
ASAJ	Asahikawa	8.63	7	Pn	Pn	23 05 41.9	-1.6
	0.9nm,0.3s,baz=172,slow=14,SNR=3.5						
ASAJ				Sn	Sn	23 07 19.3	-0.4
	0.5nm,0.3s,baz=126,slow=33,SNR=2.8						
KSRS	Korea Array	10.80	284	LR	LR	23 10 33.4	
	comp=Z,39nm,18.7s,baz=90,slow=38						
MA2	Magadan	24.86	12	LR	LR	23 18 21.8	
	comp=Z,23nm,21.2s,baz=200,slow=36						
H11N2	WAKE ISLAND Hy 27.62	118		T	T	23 38 26.4	
	baz=310,slow=75,SNR=63						
H11N1	WAKE ISLAND Hy 27.62	118		T	T	23 38 28.1	
	baz=310,slow=75,SNR=26						
H11N3	WAKE ISLAND Hy 27.63	118		T	T	23 38 37.2	
	baz=310,slow=75,SNR=64						
H11S1	WAKE ISLAND Hy 28.27	120		T	T	23 39 19.6	
	baz=312,slow=76,SNR=200						
H11S3	WAKE ISLAND Hy 28.27	120		T	T	23 39 11.6	
	baz=312,slow=76,SNR=164						
H11S2	WAKE ISLAND Hy 28.29	120		T	T	23 39 18.4	
	baz=312,slow=76,SNR=21						
SONM	Songino Array	28.46	306	P	P	23 09 35.2	+2.4
	1.1nm,0.6s,baz=111,slow=7.9,SNR=3.0						
ZALV	Zalesovo Beam	42.76	314	P	P	23 11 35.6	+0.7
	0.5nm,0.3s,baz=72,slow=9.3,SNR=2.2						
MKAR	Makanchi Array	44.73	303	P	P	23 11 51.4	+0.5
	0.4nm,0.4s,baz=86,slow=7.7,SNR=6.0						
ILAR	Eielson Array	50.88	32	P	P	23 12 38.7	+0.5
	0.2nm,0.6s,baz=254,slow=6.5,SNR=3.0						
WRA	Warramunga Arr	55.56	188	P	P	23 13 12.1	-1.0
	1.1nm,0.7s,baz=3.0,slow=7.7,SNR=9.2						
ASAR	Alice Springs	59.28	188	P	P	23 13 38.9	-0.4
	0.4nm,0.8s,baz=19,slow=11,SNR=2.8						
FINES	FINESS Array B	70.03	332	P	P	23 14 49.0	+0.1
	1.0nm,0.7s,baz=53,slow=7.4,SNR=5.0						
RAO	Raoul Island	75.11	144	LR	LR	23 45 44.6	
	comp=Z,124nm,19.3s,baz=121,slow=34						
NOA	NORSAR Array B	75.47	337	P	P	23 15 21.7	+0.3
	0.5nm,0.7s,baz=56,slow=8.0,SNR=3.3						

ISCJB ***31*** *23:13:55.9±0.3, 42°92N±0°02×18°56E±0°02, h21km±3km, Error ellipse: s-maj=3.1km s-min=2.8km az=10.1*
BEO ***31*** *23:13:55.4±0.3, 42°92N×18°58E, h12km±2km, M2.6/1*
PDG ***31*** *23:13:55.3±0.3, 42°90N×18°61E, h24km, MD3.0/8, ML3.0/10, Error ellipse: s-maj=0.4km s-min=1.0km az=0.0*
CSEM ***31*** *23:13:56.5±0.1, 42°88N×18°63E, h20km, ML3.0, Error ellipse: s-maj=3.2km s-min=2.7km az=63.0*

ISC 31 23:13:56.1±0.8, 42°91N±0°01×18°60E±0°02, h20km±3km, n99, σ1§19/164, 29C-19D, Northwestern Balkan Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
BRY	Bratogost	0.04	260	⇑*i*Pg	Pg	23 13 59.6	-0.2
BRY				*e*Sg	Sg	23 14 02.8	+0.5
BRY	Bratogost	0.04	260	⇑*i*Pg	Pg	23 13 59.6	-0.2
BRY				*e*Sg	Sg	23 14 02.8	+0.5
TREB	Trebinje	0.26	223	⇓*i*Pg	Pg	23 14 01.5	-0.7
TREB				*e*Sg	Sb	23 14 06.2	0.0
TREB	Trebinje	0.26	223	⇓*i*Pg	Pg	23 14 01.5	-0.7
TREB				*e*Sg	Sb	23 14 06.1	-0.1
NKME	Niksic	0.30	118	⇑*i*Pg	Pg	23 14 02.0	-0.8
NKME				*e*Sg	Sb	23 14 07.5	+0.2
NKME	Niksic	0.30	118	⇑*i*Pg	Pg	23 14 02.0	-0.8
NKME				*e*Sg	Sb	23 14 07.5	+0.2
NKY	Niksic	0.31	108	⇑*i*Pg	Pg	23 14 02.4	-0.6
NKY				*e*Sg	Sb	23 14 07.7	+0.1
NKY	Niksic	0.31	108	⇑*i*Pg	Pg	23 14 02.4	-0.6

KUBS	**Kucevo**	**2.69**	**55**	*e*Pn	**Pn**	**23 14 37.2**	**-1.1**
KUBS				*e*Sn	**Sn**	**23 15 09.6**	**-0.7**
KUBS	**Kucevo**	**2.69**	**55**	*e*Pn	**Pn**	**23 14 37.2**	**-1.1**
KUBS				*e*Sn	**Sn**	**23 15 09.6**	**-0.7**
ZAPS	**Zavoj**	**2.98**	**82**	⇑*i*Pn	**Pn**	**23 14 44.1**	**+1.9**
ZAPS				*e*Sn	**Sn**	**23 15 19.0**	**+1.6**
ZAPS	**Zavoj**	**2.98**	**82**	⇑*i*Pn	**Pn**	**23 14 44.1**	**+1.9**
ZAPS				*e*Sn	**Sn**	**23 15 19.0**	**+1.6**
SISC	**Sisak**	**3.02**	**329**	*e*Pn	**Pb**	**23 14 46.7**	**-2.4**
SISC	**Sisak**	**3.02**	**329**	*e*Pn	**Pb**	**23 14 46.7**	**-2.4**
NVLJ	**Novalja**	**3.17**	**303**	*e*Pn	**Pn**	**23 14 46.0**	**+1.3**
NVLJ				Sn	**Sn**	**23 15 25.1**	**+3.1**
NVLJ	**Novalja**	**3.17**	**303**	*e*Pn	**Pn**	**23 14 46.0**	**+1.3**
NVLJ				Sn	**Sn**	**23 15 25.0**	**+3.1**
BZS	**Buzias**	**3.47**	**38**	⇑*i*P	**Pn**	**23 14 48.8**	**-0.1**
BZS	**Buzias**	**3.47**	**38**	S	**Sn**	**23 15 27.3**	**-2.1**
BZS	**Buzias**	**3.47**	**38**	*e*Pn	**Pn**	**23 14 48.9**	**0.0**
BZS				*e*Sn	**Sn**	**23 15 28.1**	**-1.3**
BZS	**Buzias**	**3.47**	**38**	*e*Pn	**Pn**	**23 14 48.9**	**0.0**
BZS				*e*Sn	**Sn**	**23 15 28.1**	**-1.3**
CRES	**Cresnjev**	**3.68**	**323**	*e*Pn	**Pn**	**23 14 53.1**	**+1.2**
CRES				*e*Sn	**Sn**	**23 15 35.5**	**+0.8**
BEHE	**Becsehely**	**3.79**	**341**	*e*Pn	**Pn**	**23 14 53.9**	**+0.6**
BEHE				*e*Sn	**Sn**	**23 15 37.6**	**+0.3**
AQU	**L'Aquila**	**3.87**	**264**	*e*Pn	**Pn**	**23 14 54.8**	**+0.3**
AQU				*e*Sn	**Sn**	**23 15 39.1**	**-0.3**
GZR	**Gura Zlata**	**3.90**	**49**	⇑*i*P	**Pn**	**23 14 54.2**	**-0.7**
GZR	**Gura Zlata**	**3.90**	**49**	S	**Sn**	**23 15 38.9**	**-1.3**
TIP	**Timpagrande**	**3.98**	**201**	⇑*i*P	**Pn**	**23 14 54.9**	**-1.1**
SIRR	**Siria**	**4.01**	**32**	⇓*i*P	**Pn**	**23 14 56.3**	**-0.1**
SIRR	**Siria**	**4.01**	**32**	S	**Sn**	**23 15 41.0**	**-1.7**
CEY	**Cerknica**	**4.12**	**315**	*e*Pn	**Pn**	**23 14 58.3**	**+0.4**
CEY				*e*Sn	**Sn**	**23 15 44.9**	**-0.5**
CSKK	**Cs^ţkako**	**4.46**	**357**	*e*Sn	**Sn**	**23 15 55.7**	**+1.9**
SOKA	**Soboth**	**4.54**	**327**	*i* Pn	**Pn**	**23 15 05.9**	**+2.1**
	2.1nm,0.2s						
SOKA				*i* Sn	**Sn**	**23 15 56.3**	**+0.3**
	0.2nm,0.1s						
SOKA	**Soboth**	**4.54**	**327**	Pn	**Pn**	**23 15 05.9**	**+2.1**
	2.1nm,0.2s						
SOKA				Sn	**Sn**	**23 15 56.3**	**+0.3**
	0.2nm,0.1s						
ARSA	**Arzberg**	**4.86**	**334**	*i* Pn	**Pn**	**23 15 09.9**	**+1.9**
	5.1nm,0.4s						
ARSA	**Arzberg**	**4.86**	**334**	Pn	**Pn**	**23 15 09.9**	**+1.9**
	5.1nm,0.4s						
DRGR		**4.86**	**36**	⇓*i*P	**Pn**	**23 15 08.1**	**0.0**
DRGR		**4.86**	**36**	S	**Sn**	**23 16 01.5**	**-2.3**
SOP	**Sopron**	**4.99**	**344**	*e*Sn	**Sn**	**23 16 08.0**	**+1.2**
PSZ	**Piszkesteto**	**5.09**	**10**	S	**Sn**	**23 16 07.9**	**-1.6**
PSZ	**Piszkesteto**	**5.09**	**10**	*e*Pn	**Pn**	**23 15 12.2**	**+0.9**
PSZ				*e*Sn	**Sn**	**23 16 07.5**	**-2.0**
ABTA	**Abfaltersbach**	**5.78**	**314**	*i* Pn	**Pn**	**23 15 22.8**	**+2.0**
	0.2nm,0.1s						
ABTA				*e*Sn	**Sn**	**23 16 29.0**	**+2.4**
	0.3nm,0.2s						
ABTA	**Abfaltersbach**	**5.78**	**314**	Pn	**Pn**	**23 15 22.8**	**+2.0**
	0.2nm,0.1s						
ABTA				Sn	**Sn**	**23 16 29.0**	**+2.4**
	0.3nm,0.2s						

NIED ***31*** *23:19:00,36°.70N×140°.60E, h5km, Mw3.9 Best double couple: M0:6.83000×10^14 NP1:φs350.00000°, δ40.00000°, λ-97.00000°. NP2:φs180.00000°, δ50.00000°, λ-84.00000°.*
IDC ***31*** *23:19:57.2±0.7,36°.72N×140°.64E, h0km, mb3.9/13, mb1 4.1/13,mb1mx3.9/49,mbtmp3.9/13,MS2.8/2, Ms1 2.8/2,ms1mx2.4/39,Error ellipse: s-maj=18.9km s-min=16.3km az=115.0*
ISCJB ***31*** *23:19:58.0±0.7,36°.67N±0°.03×140°.72E±0°.05,h18km±4km, mb3.9/15,Error ellipse: s-maj=7.6km s-min=4.6km az=35.3*
JMA ***31*** *23:19:59.3,36°.73N×140°.59E,h8km±1km,M3.8 Broadband fault plane solution: P waves. NP1: φs165.00000°,δ46.00000°,λ-97.00000°. NP2: φs355.00000°,δ44.00000°,λ-83.00000°. Principal axes: T Plg1.0000°, Azm260.0000°; N Plg5.0000°, Azm170.0000°; P Plg85.0000°, Azm1.0000°;*
JMA Felt III J1.
NEIC ***31*** *23:20:03.1±1.6,36°.73N×140°.51E,h41km±14km,mb4.3/2 Error ellipse: s-maj=13.0km s-min=9.1km az=86.0*
NEIC Recorded [3 JMA] in Ibaraki.

ISC 31 23:19:58.6±1.1,36°.74N±0°.06×140°.63E±0°.05,h9km±7km, n36,σ0°63/37,mb4.0/15,4C-2D,Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JHO	**Hitachi**	**0.14**	**201**	⇓P	**Pg**	**23 20 01.9**	**+0.2**
JHO				S	**Sg**	**23 20 03.7**	**-0.2**
ONAJ	**Iwakimizuishiy**	**0.38**	**20**	⇑P	**Pb**	**23 20 07.3**	**-0.3**
ONAJ				S	**Sb**	**23 20 13.1**	**-0.5**
JSB	**Shiboa**	**0.61**	**292**	⇑P	**Pb**	**23 20 11.4**	**-0.1**
JSB				S	**Sb**	**23 20 19.8**	**-0.4**
JYT	**Yasato**	**0.62**	**215**	⇑P	**Pg**	**23 20 10.5**	**-0.1**
JYT				S	**Sg**	**23 20 18.5**	**-0.3**
JFK	**Kawauchi**	**0.65**	**17**	⇑P	**Pb**	**23 20 11.9**	**-0.3**
JFK				S	**Sb**	**23 20 21.2**	**-0.2**
JFT	**Otama**	**0.81**	**343**	⇓P	**Pb**	**23 20 14.9**	**+0.1**
JFT				S	**Sb**	**23 20 25.8**	**-0.1**
MJAR	**Matsushiro Arr**	**1.96**	**265**	Pn	**Pn**	**23 20 32.5**	**+0.6**
	35nm,0.3s,baz=84,slow=11,SNR=240						
MJAR				Sn	**Sn**	**23 20 57.7**	**+1.0**
	66nm,0.3s,baz=92,slow=28,SNR=25						
MJAR				LR	LR	23 21 33.5	
	comp=Z,241nm,20.2s,baz=120,slow=50						
MAJO	**Matsushiro**	**1.96**	**265**	*e*Pn	**Pn**	**23 20 32.4**	**+0.4**
MAJO				*e*Sn	**Sn**	**23 20 56.4**	**-0.3**
MAT	**Matsushiro**	**1.96**	**265**	P	**Pn**	**23 20 33.0**	**+1.0**
MAT				S	**Sb**	**23 20 58.6**	**-0.4**
JNU	**Nakatsue**	**8.79**	**249**	LR	LR	23 25 25.8	
	comp=Z,48nm,19.1s,baz=102,slow=37						
KSRS	**Korea Array**	**10.18**	**278**	Pn	Pn	23 22 31.4	+6.7
	0.1nm,0.3s,baz=90,slow=13,SNR=7.8						
KSRS				LR	LR	23 26 04.0	
	comp=Z,62nm,18.3s,baz=74,slow=36						
KSAR	**Wonju Array Be**	**10.21**	**278**	Pn	Pn	23 22 31.4	+6.2
ULN	**Ulaanbaatar**	**27.00**	**305**	P	**P**	**23 25 40.9**	**0.0**
SEY	**Seymchan**	**27.20**	**12**	P	**P**	**23 25 43.2**	**+1.0**
	0.6nm,0.3s,baz=209,slow=13,SNR=2.8						
SONM	**Songino Array**	**27.43**	**305**	P	**P**	**23 25 44.8**	**+0.1**
	2.1nm,0.8s,baz=99,slow=9.2,SNR=4.0						
H11N2	**WAKE ISLAND Hy 28.55**	**119**		T	T	23 55 38.9	
	baz=313,slow=75,SNR=404						
H11N1	**WAKE ISLAND Hy 28.55**	**119**		T	T	23 55 39.5	
	baz=313,slow=75,SNR=461						
H11N3	**WAKE ISLAND Hy 28.56**	**119**		T	T	23 55 40.3	
	baz=313,slow=75,SNR=381						
H11S1	**WAKE ISLAND Hy 29.24**	**121**		T	T	23 56 30.1	
	baz=314,slow=76,SNR=962						
H11S3	**WAKE ISLAND Hy 29.24**	**121**		T	T	23 56 28.2	
	baz=314,slow=76,SNR=676						
H11S2	**WAKE ISLAND Hy 29.25**	**121**		T	T	23 56 32.6	
	baz=314,slow=76,SNR=599						
ZALV	**Zalesovo Beam**	**41.65**	**313**	P	**P**	**23 27 46.7**	**-0.2**
	2.1nm,0.6s,baz=90,slow=7.3,SNR=8.0						
ZALV				PcP	**PcP**	**23 29 43.6**	**-0.1**
	0.3nm,0.2s,baz=72,slow=4.7,SNR=3.1						
MKAR	**Makanchi Array**	**43.74**	**302**	P	**P**	**23 28 04.2**	**0.0**
	0.4nm,0.7s,baz=88,slow=9.1,SNR=4.7						
KURK	**Kurchatov**	**45.62**	**308**	*e*P	**P**	**23 28 17.3**	**-1.7**
	4.8nm,0.8s						
ILAR	**Eielson Array**	**50.07**	**32**	P	**P**	**23 28 53.8**	**+0.5**
	0.8nm,0.9s,baz=267,slow=6.0,SNR=5.6						
FITZ	**Fitzroy Crossi**	**56.36**	**197**	P	**P**	**23 29 41.5**	**+1.4**
	5.1nm,1.2s,baz=342,slow=9.6,SNR=2.5						
WRAB	**Tennant Creek**	**56.68**	**187**	P	**P**	**23 29 42.2**	**-0.1**
WRA	**Warramunga Arr**	**56.69**	**187**	P	**P**	**23 29 41.6**	**-0.8**
	2.5nm,0.9s,baz=4.7,slow=7.4,SNR=12						
ABKAR	**Akbulak array**	**57.65**	**310**	*e*P	**P**	**23 29 48.7**	**-0.3**
	1.1nm,0.7s						
ASAR	**Alice Springs**	**60.42**	**187**	P	**P**	**23 30 07.1**	**-1.3**
	1.3nm,0.8s,baz=15,slow=5.3,SNR=8.8						
YKA	**Yellowknife Ar**	**64.37**	**30**	P	**P**	**23 30 34.8**	**+0.4**
	0.2nm,0.6s,baz=302,slow=6.6,SNR=5.0						
FINES	**FINESS Array B**	**68.78**	**332**	P	**P**	**23 31 02.4**	**-0.2**
	2.7nm,1.0s,baz=87,slow=7.1,SNR=4.7						
AKASG	**Malin Array Be**	**74.14**	**322**	P	**P**	**23 31 34.4**	**-0.7**
	1.0nm,0.5s,baz=45,slow=7.0,SNR=4.8						
PDAR	**Pinedale Array**	**78.31**	**45**	P	**P**	**23 31 59.4**	**0.0**
	0.6nm,0.7s,baz=262,slow=2.7,SNR=6.6						
TXAR	**Lajitas Array**	**90.79**	**52**	P	**P**	**23 33 03.2**	**+0.7**
	0.4nm,0.8s,baz=329,slow=3.2,SNR=3.1						
LPAZ	**La Paz**	**147.38**	**59**	PKPbc	**PKPbc**	**23 39 43.7**	**-0.3**
	1.1nm,0.8s,baz=338,slow=4.5,SNR=5.1						

TIF ***31*** *23:22:14.2,41°.87N×42°.11E,h11km±4km*
CSEM ***31*** *23:22:15.8±0.2,41°.82N×42°.11E,h10km,MD2.5,Error ellipse: s-maj=5.0km s-min=2.6km az=105.0*
ISCJB ***31*** *23:22:16.5±0.7,41°.82N±0°.03×42°.1E±0°.1,h29km±12km, Error ellipse: s-maj=14.5km s-min=5.7km az=2.5*
DDA ***31*** *23:22:16.6,41°.80N×41°.98E,h7km,Md2.5*

ISC 31 23:22:15.5±1.2,41°.83N±0°.03×42°.11E±0°.05,h18km±5km, n12,σ0°28/24,Turkey-Georgia-Armenia border region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
ARTV	**Artvin**	**0.66**	**192**	P	**Pb**	**23 22 28.6**	**0.0**
ARTV				S	**Sb**	**23 22 38.0**	**+0.6**
ARTV	**Artvin**	**0.66**	**192**	*i* P	**Pb**	**23 22 28.6**	**0.0**
ARTV				*i* S	**Sb**	**23 22 38.0**	**+0.6**
DAGI	**Agillar**	**0.76**	**191**	*i* P	**Pg**	**23 22 30.8**	**+0.2**
DAGI				*i* S	**Sb**	**23 22 40.2**	**-0.2**
DBAD	**Bademkaya**	**0.87**	**201**	P	**Pb**	**23 22 32.0**	**-0.1**
DBAD				S	**Sg**	**23 22 43.8**	**-0.2**
DBAD	**Bademkaya**	**0.87**	**201**	*i* P	**Pb**	**23 22 32.0**	**-0.1**
DBAD				*i* S	**Sg**	**23 22 43.8**	**-0.2**
CHVG	**Ch'k'valeri**	**0.89**	**359**	P	**Pg**	**23 22 33.0**	**+0.1**
CHVG				S	**Sn**	**23 22 45.9**	**+0.3**
CHVG	**Ch'k'valeri**	**0.89**	**359**	P	**Pg**	**23 22 33.0**	**+0.1**
CHVG				S	**Sn**	**23 22 45.9**	**+0.3**
DDEM	**Demirkent**	**0.97**	**196**	P	**Pg**	**23 22 34.7**	**-0.2**
DDEM				S	**Sn**	**23 22 47.6**	**-0.2**
DDEM	**Demirkent**	**0.97**	**196**	*i* P	**Pg**	**23 22 34.7**	**-0.2**
DDEM				*i* S	**Sn**	**23 22 47.6**	**-0.2**
AKH	**Akhalkalaki**	**1.12**	**111**	P	**Pb**	**23 22 36.3**	**-0.2**
AKH				S	**Sg**	**23 22 52.1**	**+0.2**
BGD	**Bogdanovka**	**1.25**	**116**	P	**Pb**	**23 22 38.6**	**-0.1**
BGD				S	**Sg**	**23 22 56.2**	**0.0**
ONI	**Oni**	**1.25**	**52**	P	**Pn**	**23 22 37.8**	**-0.4**
ONI				S	**Sn**	**23 22 55.0**	**+0.3**

IDC ***31*** *23:23:36.0±0.9, 11°.10N×126°.49E, h0km, mb4.0/10, mb1 4.1/10,mb1mx3.8/49,mbtmp4.0/10,MS2.9/4, Ms1 2.9/4,ms1mx2.5/37,Error ellipse: s-maj=44.7km s-min=16.9km az=64.0*
ISCJB ***31*** *23:23:39.4±0.7, 11°.1N±0°.1×126°.5E±0°.1,h37km,mb3.9/10, MS2.7/3,Error ellipse: s-maj=23.5km s-min=13.0km az=142.9*

ISC 31 23:23:41.4±0.9,11°.1N±0°.2×126°.5E±0°.2,h37km,n14, σ0°62/11,mb4.0/10,MS2.5/3,1D,Philippine Islands region

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RCP	**Roxas**	**3.75**	**277**	⇓*e*P	**Pn**	**23 24 37.2**	**+0.5**
KAPI	**Kappang**	**17.38**	**203**	LR	LR	23 35 30.9	
	comp=Z,50nm,18.7s,baz=36,slow=41						
KSRS	**Korea Array**	**26.26**	**2**	LR	LR	23 39 51.7	
	comp=Z,14nm,20.8s,baz=174,slow=37						
MJAR	**Matsushiro Arr**	**27.43**	**21**	LR	LR	23 40 46.8	
	comp=Z,42nm,18.5s,baz=190,slow=38						
CMAR	**Chiang Mai Arr**	**27.64**	**289**	P	**P**	**23 29 24.6**	**-1.2**
	0.6nm,0.3s,baz=88,slow=7.7,SNR=5.5						
CMAR				LR	LR	23 42 31.3	
	comp=Z,12nm,18.2s,baz=95,slow=41						
WRA	**Warramunga Arr**	**31.80**	**166**	P	**P**	**23 30 02.6**	**0.0**
	2.2nm,0.9s,baz=344,slow=10,SNR=6.2						
ASAR	**Alice Springs**	**35.30**	**168**	P	**P**	**23 30 33.0**	**-0.2**
	2.0nm,0.8s,baz=349,slow=7.1,SNR=9.7						
STKA	**Stephens Creek**	**45.11**	**162**	P	**P**	**23 31 54.4**	**+0.2**
	2.1nm,0.7s,baz=333,slow=11,SNR=2.9						
MKAR	**Makanchi Array**	**51.53**	**322**	P	**P**	**23 32 43.9**	**+0.3**
	2.2nm,0.6s,baz=109,slow=7.7,SNR=26						
ZALV	**Zalesovo Beam**	**54.02**	**331**	P	**P**	**23 33 01.9**	**+0.1**
	1.2nm,0.6s,baz=133,slow=6.3,SNR=5.4						
BVAR	**Borovoye Array**	**61.13**	**325**	P	**P**	**23 33 52.4**	**+0.5**
	2.3nm,0.7s,baz=120,slow=6.0,SNR=14						
GEYT	**Alibeck**	**66.26**	**307**	P	**P**	**23 34 26.6**	**+0.5**
	1.0nm,0.8s,baz=54,slow=2.6,SNR=5.3						
ILAR	**Eielson Array**	**78.57**	**26**	P	**P**	**23 35 39.0**	**+0.1**
	0.3nm,0.7s,baz=246,slow=6.5,SNR=4.1						
BRTR	**Keskin Array B**	**85.21**	**309**	P	**P**	**23 36 13.6**	**-0.9**
	0.4nm,0.7s,baz=98,slow=3.7,SNR=3.7						

CSEM ***31*** *23:30:54.4±0.3,67°.81N×20°.11E,h2km,ML0.4,Error ellipse: s-maj=7.5km s-min=6.2km az=152.0,Mining explosion.*
UPP ***31*** *23:30:54.1,67°.83N×20°.21E,h0km,ML0.4,Mining explosion.*

HEL 31 23:30:54.3,67°.79N×19°.97E,h0km,ML1.3,Explosion, Sweden

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
KUA	**Kurravaara**	**0.22**	**40**	*i* P	Pg	23 30 57.0	-1.4
KUA				*i* S	Sg	23 30 59.0	-2.2
KUA	**Kurravaara**	**0.22**	**40**	P	Pg	23 31 00.5	+2.1
KUA				S	Sg	23 31 02.5	+1.3
KUA	**Kurravaara**	**0.22**	**40**	P	Pg	23 30 57.0	-1.4
KUA				S	Sg	23 30 59.0	-2.2
NIKU	**Nikkaluokta**	**0.36**	**283**	*i* P	Pb	23 31 02.6	-1.0
NIKU	**Nikkaluokta**	**0.36**	**283**	P	Pn	23 31 06.2	-0.6
NIKU	**Nikkaluokta**	**0.36**	**283**	P	Pb	23 31 02.6	-1.0
SALU	**Saltoluokta**	**0.69**	**234**	*i* P	Pb	23 31 09.1	-0.2
SALU	**Saltoluokta**	**0.69**	**234**	P	Pn	23 31 12.6	+1.2
SALU	**Saltoluokta**	**0.69**	**234**	P	Pb	23 31 09.1	-0.2
LANU	**Lannavaara**	**0.81**	**70**	*e*P	Pg	23 31 07.3	-2.4
LANU				*e*S	Sg	23 31 17.4	-2.8
LANU	**Lannavaara**	**0.81**	**70**	P	Pb	23 31 11.0	-0.2
LANU	**Lannavaara**	**0.81**	**70**	P	Pg	23 31 07.4	-2.3
LANU				S	Sg	23 31 17.4	-2.8
KIF	**Kilpisjarvi**	**1.26**	**14**	*e*P	Pg	23 31 17.3	-1.1
KIF				*e*S	Sb	23 31 35.7	+0.2
KIF				MSG		23 31 41.5	
	comp=Z,3.0nm,0.2s						
KIF	**Kilpisjarvi**	**1.26**	**14**	P	Pg	23 31 17.3	-1.1
KIF				S	Sb	23 31 35.7	+0.2
ERTU	**Ertsjaerv**	**1.52**	**144**	*e*P	Pn	23 31 21.2	-1.4
ERTU	**Ertsjaerv**	**1.52**	**144**	P	Pn	23 31 21.2	-1.4
HEF	**Hetta**	**1.52**	**64**	*e*P	Pn	23 31 20.0	-2.6
HEF				*e*S	Sg	23 31 41.9	-1.1
HEF	**Hetta**	**1.52**	**64**	P	Pn	23 31 20.0	-2.7
HEF				S	Sg	23 31 41.8	-1.2
TOF	**Tornio**	**2.43**	**133**	*e*P	Pn	23 31 34.9	-0.2
TOF				*e*S	Sn	23 32 06.3	+0.8
TOF	**Tornio**	**2.43**	**133**	P	Pn	23 31 34.9	-0.2
TOF				S	Sn	23 32 06.3	+0.8
SGF	**Sodankyl**	**2.54**	**95**	*e*P	Pn	23 31 37.2	+0.5
SGF				*e*S	Sn	23 32 08.8	+0.6
SGF	**Sodankyl**	**2.54**	**95**	P	Pn	23 31 37.1	+0.5
SGF				S	Sn	23 32 08.7	+0.5
RNF	**Rovaniemi**	**2.64**	**114**	*e*P	Pn	23 31 37.4	-0.6
RNF				*e*S	Sn	23 32 11.3	+0.7
RNF	**Rovaniemi**	**2.64**	**114**	P	Pn	23 31 37.4	-0.6
RNF				S	Sn	23 32 11.3	+0.6
ARE0	**ARCESS Array S**	**2.68**	**47**	*e*P	Pn	23 31 38.4	-0.2
ARE0				*e*S	Sn	23 32 10.6	-1.1
ARE0	**ARCESS Array S**	**2.68**	**47**	P	Pn	23 31 38.4	-0.2
ARE0				S	Sn	23 32 10.5	-1.2
KEV	**Kevo**	**3.23**	**49**	*e*P	Pn	23 31 47.2	+1.0
KEV				*e*S	Sn	23 32 25.7	+0.3
KEV	**Kevo**	**3.23**	**49**	P	Pn	23 31 47.2	+1.0
KEV				S	Sn	23 32 25.6	+0.3

SGS 31 23:32:57.1,25°.25N×37°.78E,h9km,Western Arabian Peninsula

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
LNY12	**LNY12**	**0.02**	**333**	P	Pg	23 32 58.9	+0.1
LNY12	**LNY12**	**0.02**	**333**	P	Pg	23 32 58.9	+0.1
LNY06	**LNY06**	**0.04**	**186**	S	Sg	23 33 00.4	+0.2
LNY06				P	Pg	23 32 59.3	+0.3
LNY06	**LNY06**	**0.04**	**186**	P	Pg	23 32 59.3	+0.3
LNY11	**LNY11**	**0.07**	**352**	P	Pg	23 32 59.4	+0.1
LNY11	**LNY11**	**0.07**	**352**	P	Pg	23 32 59.3	+0.1
LNY10	**LNY10**	**0.07**	**75**	P	Pg	23 32 59.5	+0.2
LNY10	**LNY10**	**0.07**	**75**	P	Pg	23 32 59.5	+0.2
LNY04	**LNY04**	**0.13**	**279**	P	Pg	23 33 00.3	+0.3
LNY04	**LNY04**	**0.13**	**279**	P	Pg	23 33 00.3	+0.3
LNY02	**LNY02**	**0.13**	**148**	P	Pg	23 33 00.5	+0.3
LNY02	**LNY02**	**0.13**	**148**	P	Pg	23 33 00.5	+0.4
LNY02				P	Pg	23 33 02.5	+2.4
LNY03	**LNY03**	**0.14**	**27**	P	Pg	23 33 00.6	+0.3
LNY03	**LNY03**	**0.14**	**27**	P	Pg	23 33 02.5	+2.2
LNY01	**LNY01**	**0.16**	**101**	P	Pg	23 33 01.0	+0.3
LNY01	**LNY01**	**0.16**	**101**	P	Pg	23 33 03.3	+2.7
LNY09	**LNY09**	**0.19**	**324**	P	Pg	23 33 03.8	+2.8
LNY07	**LNY07**	**0.23**	**238**	P	Pg	23 33 02.1	+0.4
LNY07	**LNY07**	**0.23**	**238**	P	Pg	23 33 02.1	+0.4

ISCJB ***31*** *23:45:13.5±0.7,37°.96S±0°.03×177°.79E±0°.06,h110km±5km, mb4.0/2,Error ellipse: s-maj=7.7km s-min=4.5km az=164.8*
IDC ***31*** *23:45:17.1±1.4,37°.82S×176°.56E,h0km,mb4.1/2, mb1 4.4/3,mb1mx3.9/31,mbtmp4.1/3,ML4.0/1,Error ellipse: s-maj=47.2km s-min=8.9km az=39.0*
WEL ***31*** *23:45:18.4±0.2,37°.91S×177°.57E,h50km±2km,ML4.4/20, Error ellipse: s-maj=1.2km s-min=1.1km az=0.0*
WEL Felt from Bay of Plenty to Gisborne, maximum reported intensity MM 4.
NEIC ***31*** *23:45:18.4,37°.91S×177°.57E,h50km,ML4.4(WEL),After WEL.*
NEIC Felt at Opotiki.

ISC 31 23:45:15.7±1.5,37°.99S±0°.04×177°.62E±0°.05,h87km±9km, n162,σ1°48/160,8C-25D,Off east coast of North Island

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
HAZ	**Te Kaha**	**0.26**	**29**	⇓PN	**Pn**	**23 45 26.3**	**-2.2**
HAZ				SN	Sn	23 45 32.5	-5.5
TWGZ	**Tauwhareparae**	**0.34**	**124**	⇑PN	**Pn**	**23 45 29.3**	**+0.3**
TWGZ				SN	**Sn**	**23 45 38.7**	**-0.2**
MWZ	**Matawai**	**0.36**	**192**	PN	**Pn**	**23 45 28.3**	**-0.8**
MWZ				AML	AML	23 45 38.5	
MWZ				AML	AML	23 45 39.7	
MWZ	**Matawai**	**0.36**	**192**	*e*Pn	**Pn**	**23 45 28.3**	**-0.8**
MWZ				*e*Sn	**Sn**	**23 45 39.8**	**+0.7**
PKGZ	**Pakihiroa**	**0.37**	**75**	⇓PN	**Pn**	**23 45 28.5**	**-0.7**
TKGZ	**Te Karaka**	**0.49**	**159**	PN	**Pn**	**23 45 30.6**	**+0.6**
URZ	**Urewera**	**0.49**	**236**	Pg	**Pn**	**23 45 29.1**	**-0.8**
	416nm,0.3s,baz=254,slow=4.5,SNR=2962						
URZ				LR	LR	23 45 33.9	
	comp=Z,94nm,21.1s,baz=28,slow=27						
URZ				Lg	Lg	23 45 37.7	
	954nm,0.3s,baz=246,slow=20,SNR=99						
URZ	**Urewera**	**0.49**	**236**	⇓PN	**Pn**	**23 45 29.2**	**-0.8**
URZ				AML	AML	23 45 37.8	
URZ				AML	AML	23 45 38.5	
PUZ	**Puketiti**	**0.51**	**100**	PN	**Pn**	**23 45 30.3**	**+0.1**
PUZ				SN	**Sn**	**23 45 40.1**	**-0.8**
PUZ				AML	AML	23 45 41.9	
RAGZ	**Rawiri**	**0.54**	**198**	⇓PN	**Pn**	**23 45 30.9**	**+0.4**
WIZ	**White Island**	**0.57**	**323**	PN	**Pn**	**23 45 28.7**	**-2.0**
WMGZ	**Waiomatatini S**	**0.65**	**75**	⇑PN	**Pn**	**23 45 32.0**	**+0.7**
CNGZ	**Carnagh Statio**	**0.68**	**137**	PN	**Pn**	**23 45 32.9**	**+1.2**
MXZ	**Matakaoa Point**	**0.69**	**52**	⇑PN	**Pn**	**23 45 32.3**	**+0.6**
MXZ				AML	AML	23 45 46.0	
MXZ				AML	AML	23 45 46.5	
MXZ	**Matakaoa Point**	**0.69**	**52**	*e*Pn	**Pn**	**23 45 32.4**	**+0.6**
MXZ				*e*Sn	**Sn**	**23 45 46.0**	**+2.4**
EDRZ	**Edgecumbe**	**0.71**	**260**	⇓PN	**Pn**	**23 45 31.9**	**-0.2**
RIGZ	**Rimuhau**	**0.73**	**171**	⇓PN	**Pn**	**23 45 33.2**	**+1.0**
MARZ	**Manawahe**	**0.75**	**270**	⇓PN	**Pn**	**23 45 31.8**	**-0.6**
RTZ	**Ruatahuna**	**0.81**	**219**	⇓PN	**Pn**	**23 45 33.5**	**+0.4**
SNGZ	**Shannon Statio**	**0.83**	**196**	⇓PN	**Pn**	**23 45 34.9**	**+1.6**
MUGZ	**Murupara**	**0.83**	**234**	⇓PN	**Pn**	**23 45 33.6**	**+0.3**
OPRZ	**Ohinepanea**	**0.86**	**279**	PN	**Pn**	**23 45 32.9**	**-0.6**
TARZ	**Mount Tarawera**	**0.92**	**254**	PN	**Pn**	**23 45 34.9**	**+0.6**
RRRZ	**Republican Roa**	**0.94**	**248**	PN	**Pn**	**23 45 35.0**	**+0.5**
PRGZ	**Paritu Road**	**0.96**	**168**	PN	**Pn**	**23 45 35.8**	**+1.1**
**LIR

GRZ	**Great Barrier**	**2.45 314**	⇓PN	**Pn**	**23 45 54.3**	**+0.6**
VRZ	**Vera Road**	**2.52 242**	PN	Pn	23 45 58.0	+3.4
AWAZ	**Awhitu Peninsu**	**2.54 290**	PN	**Pn**	**23 45 56.7**	**+1.7**
DVHZ	**Dannevirke**	**2.57 206**	PN	**Pn**	**23 45 55.4**	**0.0**
ANWZ	**Angora Road**	**2.63 200**	PN	**Pn**	**23 45 56.5**	**+0.5**
WTAZ	**Waiatarua**	**2.65 292**	PN	**Pn**	**23 45 58.0**	**+1.7**
WAZ	**Wanganui**	**2.71 229**	PN	Pn	23 46 00.4	+3.1
POWZ	**Post Office Ro**	**2.80 210**	PN	**Pn**	**23 45 59.3**	**+0.9**
OHWZ	**Ohakea**	**2.85 218**	PN	**Pn**	**23 46 01.1**	**+2.0**
PRWZ	**Pori Road**	**2.87 206**	PN	**Pn**	**23 45 59.7**	**+0.3**
BFZ	**Birch Farm**	**2.90 201**	PN	**Pn**	**23 46 00.4**	**+0.7**
BFZ			AML	AML	23 46 34.6	
BFZ			AML	AML	23 46 35.7	
BFZ	**Birch Farm**	**2.90 201**	*e*Pn	**Pn**	**23 46 00.8**	**+1.1**
BFZ			*e*Sn	**Sn**	**23 46 35.7**	**+2.1**
LREZ	**Lake Rotokare**	**2.92 239**	PN	Pn	23 46 03.8	+3.9
NEZ	**North Egmont**	**3.05 244**	PN	Pn	23 46 06.6	+4.8
PKE	**Pukeiti**	**3.10 246**	PN	Pn	23 46 06.6	+4.2
PKE	**Pukeiti**	**3.10 246**	*e*Pn	Pn	23 46 06.6	+4.2
TIWZ	**Tintock**	**3.10 205**	PN	**Pn**	**23 46 02.4**	**-0.1**
TIWZ			AML	AML	23 46 41.1	
TIWZ			AML	AML	23 46 42.4	
MRZ	**Mangatainoka R**	**3.11 210**	PN	**Pn**	**23 46 02.2**	**-0.4**
MRZ	**Mangatainoka R**	**3.11 210**	*e*Pn	**Pn**	**23 46 02.2**	**-0.4**
CPWZ	**Castlepoint**	**3.12 200**	PN	**Pn**	**23 46 03.1**	**+0.4**
WCZ	**Waipu Caves**	**3.33 307**	PN	**Pn**	**23 46 07.0**	**+1.5**
HOWZ	**Holdsworth Sta**	**3.33 209**	PN	**Pn**	**23 46 04.9**	**-0.7**
TMWZ	**Te Maipa**	**3.39 203**	PN	**Pn**	**23 46 05.8**	**-0.7**
OGWZ	**Otaki Gorge**	**3.41 213**	PN	**Pn**	**23 46 06.2**	**-0.4**
KIW	**Kapiti Island**	**3.56 215**	PN	**Pn**	**23 46 08.4**	**-0.3**
KIW			AML	AML	23 46 49.7	
KIW			AML	AML	23 47 10.1	
KIW	**Kapiti Island**	**3.56 215**	*e*Pn	**Pn**	**23 46 08.4**	**-0.3**
MTW	**Mount Morrison**	**3.57 207**	PN	**Pn**	**23 46 08.0**	**-0.8**
MTW			AML	AML	23 46 50.1	
MTW			AML	AML	23 46 54.7	
MTW	**Mount Morrison**	**3.57 207**	*e*Pn	**Pn**	**23 46 08.0**	**-0.8**
MTW			*e*Sn	**Sn**	**23 46 50.1**	**+0.2**
CAW	**Cannon Point**	**3.69 212**	PN	**Pn**	**23 46 09.4**	**-1.1**
CAW			AML	AML	23 46 52.3	
CAW			AML	AML	23 46 52.8	
CAW	**Cannon Point**	**3.69 212**	*e*Pn	**Pn**	**23 46 09.4**	**-1.1**
TRWZ	**Traveller**	**3.72 203**	PN	**Pn**	**23 46 10.1**	**-0.8**
TRWZ			AML	AML	23 46 54.4	
TRWZ			AML	AML	23 46 55.6	
TRWZ	**Traveller**	**3.72 203**	*e*Pn	**Pn**	**23 46 10.1**	**-0.8**
TRWZ			*e*Sn	**Sn**	**23 46 54.4**	**+0.8**
PAWZ	**Paruwai Farm**	**3.79 206**	PN	**Pn**	**23 46 11.0**	**-0.9**
PAWZ			AML	AML	23 46 57.6	
PAWZ			AML	AML	23 47 23.7	
PAWZ	**Paruwai Farm**	**3.79 206**	*e*Pn	**Pn**	**23 46 11.0**	**-0.9**
PAWZ			*e*Sn	**Sn**	**23 46 57.6**	**+2.2**
MSWZ	**Moikau Station**	**3.88 207**	PN	**Pn**	**23 46 11.8**	**-1.3**
MSWZ			AML	AML	23 46 59.0	
MSWZ			AML	AML	23 46 59.6	
SNZO	**South Karori**	**4.01 213**	*e*Pn	**Pn**	**23 46 13.9**	**-0.9**
SNZO			Sn	**Sn**	**23 46 57.2**	**-3.4**
DUWZ	**D'Urville Isla**	**4.02 224**	PN	**Pn**	**23 46 15.1**	**+0.2**
DUWZ	**D'Urville Isla**	**4.02 224**	*e*Pn	**Pn**	**23 46 15.1**	**+0.2**
PLWZ	**Palliser**	**4.02 206**	PN	**Pn**	**23 46 13.3**	**-1.6**
BHW	**Baring Head**	**4.02 211**	PN	**Pn**	**23 46 13.0**	**-1.9**
BHW			AML	AML	23 47 30.8	
BHW			AML	AML	23 47 32.1	
BHW	**Baring Head**	**4.02 211**	*e*Pn	**Pn**	**23 46 13.1**	**-1.9**
TCW	**Tory Channel**	**4.13 218**	PN	**Pn**	**23 46 15.5**	**-0.8**
TCW			AML	AML	23 47 23.1	
TCW			AML	AML	23 47 24.5	
TCW	**Tory Channel**	**4.13 218**	*e*Pn	**Pn**	**23 46 15.5**	**-0.8**
TUWZ	**Tuamarina**	**4.46 218**	PN	**Pn**	**23 46 20.2**	**-0.7**
TUWZ			AML	AML	23 47 30.9	
TUWZ			AML	AML	23 47 34.3	
TUWZ	**Tuamarina**	**4.46 218**	*e*Pn	**Pn**	**23 46 20.2**	**-0.7**
NNZ	**Nelson**	**4.60 224**	PN	**Pn**	**23 46 23.0**	**+0.2**
BSWZ	**Blackbirch Sta**	**4.71 217**	PN	**Pn**	**23 46 23.1**	**-1.2**
BSWZ			AML	AML	23 47 36.4	
BSWZ			AML	AML	23 47 45.1	
QRZ	**Quartz Range**	**4.86 233**	PN	**Pn**	**23 46 26.7**	**+0.4**
QRZ	**Quartz Range**	**4.86 233**	*e*Pn	**Pn**	**23 46 26.8**	**+0.4**
THZ	**Tophouse**	**5.24 222**	PN	**Pn**	**23 46 30.5**	**-1.0**
KHZ	**Kahutara**	**5.42 214**	PN	**Pn**	**23 46 32.2**	**-1.6**
KHZ	**Kahutara**	**5.42 214**	*e*Pn	**Pn**	**23 46 32.3**	**-1.6**
KHZ			Sn	**Sn**	**23 47 30.1**	**-4.8**
DSZ	**Denniston Nort**	**5.84 228**	PN	**Pn**	**23 46 40.6**	**+0.8**
DSZ	**Denniston Nort**	**5.84 228**	*e*Pn	**Pn**	**23 46 40.6**	**+0.8**
LTZ	**Lake Taylor**	**6.30 219**	PN	Pn	23 46 42.1	-3.8
OXZ	**Oxford**	**6.82 217**	PN	**Pn**	**23 46 50.3**	**-2.6**
MQZ	**McQueen's Vall**	**6.84 212**	PN	**Pn**	**23 46 50.2**	**-3.1**
CTZ	**Chatham Island**	**7.21 145**	PN	Pn	23 47 01.4	+3.1
RPZ	**Rata Peaks**	**7.58 219**	Pn	**Pn**	**23 47 03.1**	**-0.3**
	2.4nm,0.3s,baz=276,slow=1.8,SNR=7.3					
RPZ			Sn	Sn	23 48 21.0	-6.7
	5.1nm,0.3s,baz=139,slow=23,SNR=11					
LBZ	**Lake Benmore**	**8.50 219**	PN	**Pn**	**23 47 14.4**	**-1.5**
ODZ	**Otahua Downs**	**8.78 214**	PN	**Pn**	**23 47 17.4**	**-2.3**
JCZ	**Jackson Bay**	**9.03 225**	PN	**Pn**	**23 47 22.0**	**-1.2**
TUZ	**Tuapeka**	**9.94 214**	PN	**Pn**	**23 47 33.8**	**-1.6**
ASAR	**Alice Springs**	**39.80 278**	P	P	23 52 45.1	+4.6
	1.4nm,0.6s,baz=124,slow=8.3,SNR=18					
WRA	**Warramunga Arr**	**41.50 283**	P	P	23 52 59.0	+4.5
	3.0nm,0.8s,baz=122,slow=7.8,SNR=18					
FINES	**FINESS Array B**	**150.61 332**	PKPbc	PKPab	00 05 08.4	+4.7
	1.1nm,0.4s,baz=29,slow=3.2,SNR=7.0					

MAN 31 23:45:26, 18.˚53N×120.˚98E, h4km, mb4.5, ML3.3, MS3.2, Luzon

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
APYP	**Conner**	**0.71**	**159**	*e*P	Pg	23 45 40.1	+0.5
APYP				*e*S	Sg	23 45 48.9	+0.1
ABRA	**Dolores**	**0.91**	**196**	*e*P	Pg	23 45 42.7	-0.7
ABRA				*e*S	Sg	23 45 55.3	+0.1
SGCP	**Mt. Cagua**	**1.05**	**105**	*e*P	Pn	23 45 47.3	-0.2
SGCP				*e*S	Sb	23 46 00.9	-0.1
CVP	**Callao Caves**	**1.15**	**135**	*e*P	Pb	23 45 48.5	+0.1
CVP				*e*S	Sg	23 46 01.6	-1.4
CAUP	**Cauayan**	**1.77**	**153**	*e*P	Pb	23 45 59.4	+0.3
CAUP				*e*S	Sg	23 46 22.6	-0.3
BOLP	**Bolinao**	**2.36**	**206**	*e*P	Pn	23 46 06.9	+1.3
BOLP				*e*S	Sb	23 46 39.4	+0.7
BALP	**Baler**	**2.83**	**168**	*e*P	Pn	23 46 13.0	+1.0
BALP				*e*S	Sb	23 46 49.7	-2.4

*ISCJB **31** 23:50:22.6±1.2, 30.˚99S±0.˚05×177.˚8W±0.˚2, h46km, mb4.5/12, MS3.5/3, Error ellipse: s-maj=24.3km s-min=7.0km az=5.3*
*NEIC **31** 23:50:23.6±1.8, 30.˚80S×177.˚69W, h41km±13km, mb4.5/9, Error ellipse: s-maj=26.5km s-min=14.5km az=105.0*
*IDC **31** 23:50:25.7±3.9, 30.˚61S×177.˚94W, h47km±31km, mb4.3/4, mb1 4.4/4, mb1mx3.9/35, mbtmp4.5/4, MS3.4/4, Ms1 3.4/4, ms1mx3.0/21, Error ellipse: s-maj=42.1km s-min=20.6km az=126.0*

ISC 31 23:50:24.3±1.0, 30.˚82S±0.˚07×177.˚9W±0.˚2, h46km, n40, σ2.˚72/44, mb4.6/12, MS3.6/3, 1C, Kermadec Islands

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
RAO	**Raoul Island**	**1.56**	**1**	P	**Pn**	**23 50 48.2**	**-1.5**
	357nm,0.3s,baz=258,slow=22,SNR=10						
RAO				S	**Sn**	**23 51 05.0**	**-3.7**
	472nm,0.3s,baz=260,slow=20,SNR=12						
RAO	**Raoul Island**	**1.56**	**1**	*e*Pn	**Pn**	**23 50 48.5**	**-1.2**
RAO				*e*Sn	**Sn**	**23 51 05.8**	**-2.9**
MXZ	**Matakaoa Point**	**7.41**	**204**	PN	**Pn**	**23 52 07.9**	**-1.9**
MXZ				SN	**Sn**	**23 53 31.5**	**-1.0**
WMGZ	**Waiomatatini S**	**7.60**	**202**	PN	**Pn**	**23 52 13.0**	**+0.5**
HAZ	**Te Kaha**	**7.77**	**206**	PN	**Pn**	**23 52 13.7**	**-1.1**
HAZ				SN	**Sn**	**23 53 44.9**	**+3.5**
PKGZ	**Pakihiroa**	**7.78**	**204**	PN	**Pn**	**23 52 13.0**	**-2.0**
CNGZ	**Carnagh Statio**	**8.28**	**201**	PN	**Pn**	**23 52 19.7**	**-2.0**
OUZ	**Omahuta**	**8.35**	**236**	*e*Pn	Pn	23 52 29.4	+6.6
URZ	**Urewera**	**8.47**	**207**	P	**Pn**	**23 52 22.2**	**-2.2**
	0.5nm,0.3s,baz=335,slow=17,SNR=12						
URZ				S	**Sn**	**23 53 58.1**	**-0.4**
	4.7nm,0.3s,baz=208,slow=18,SNR=15						
URZ	**Urewera**	**8.47**	**207**	*e*Pn	**Pn**	**23 52 22.2**	**-2.2**
URZ				*e*Sn	**Sn**	**23 53 58.1**	**-0.4**
URZ				*e*Sn	Sn	23 53 59.4	+0.8
URZ	**Urewera**	**8.47**	**207**	PN	**Pn**	**23 52 22.3**	**-2.2**
URZ				SN	**Sn**	**23 53 57.8**	**-0.8**
PRWZ	**Pori Road**	**10.90**	**205**	SN	**Sn**	**23 54 52.7**	**-5.4**
MRZ	**Mangatainoka R**	**11.14**	**206**	SN	**Sn**	**23 54 56.1**	**-7.9**
KIW	**Kapiti Island**	**11.57**	**208**	SN	**Sn**	**23 55 07.5**	**-7.1**
TCW	**Tory Channel**	**12.13**	**209**	SN	**Sn**	**23 55 20.6**	**-7.5**
THZ	**Tophouse**	**13.17**	**211**	*e*Pn	**Pn**	**23 53 29.1**	**+0.3**
DZM	**Mont Dzumac**	**16.46**	**298**	LR	LR	23 58 57.1	
	comp=Z,117nm,21.2s,baz=24,slow=31						
STKA	**Stephens Creek**	**34.43**	**258**	P	**P**	**23 57 09.9**	**+2.4**
	17nm,0.8s,baz=94,slow=9.9,SNR=32						
STKA				LR	LR	00 09 16.7	
	comp=Z,36nm,21.1s,baz=42,slow=33						
STKA	**Stephens Creek**	**34.43**	**258**	*e*P	**P**	**23 57 09.9**	**+2.4**
	3.5nm,0.8s						
BBOO	**Buckleboo**	**38.90**	**255**	*e*P	**P**	**23 57 47.0**	**+1.4**
	33nm,1.4s						
COEN	**Coen**	**39.43**	**286**	*e*P	**P**	**23 57 52.3**	**+2.1**
	46nm,1.4s						
AS01	**Alice Springs**	**43.10**	**267**	*e*P	**P**	**23 58 22.0**	**+1.7**
AS31	**Alice Springs**	**43.14**	**267**	*e*P	**P**	**23 58 21.4**	**+0.8**
	1.6nm,1.0s						
ASAR	**Alice Springs**	**43.14**	**267**	P	**P**	**23 58 21.4**	**+0.8**
	2.7nm,0.6s,baz=109,slow=7.9,SNR=22						
ASAR				LR	LR	00 15 19.5	
	comp=Z,64nm,18.2s,baz=98,slow=35						
WB2	**Warramunga Arr**	**44.15**	**273**	*e*P	**P**	**23 58 29.7**	**+1.0**
	7.3nm,0.9s						
WRAB	**Tennant Creek**	**44.16**	**273**	*e*P	**P**	**23 58 29.9**	**+1.1**
	5.4nm,0.7s						
WR1	**Warramunga Arr**	**44.16**	**273**	*e*P	**P**	**23 58 29.4**	**+0.6**
	17nm,1.4s						
WRA	**Warramunga Arr**	**44.16**	**273**	P	**P**	**23 58 29.4**	**+0.6**
	3.5nm,0.4s,baz=111,slow=8.1,SNR=62						
FITZ	**Fitzroy Crossi**	**52.41**	**270**	*e*P	**P**	**23 59 31.9**	**-0.5**
	36nm,1.8s						
CASY	**Casey**	**54.79**	**208**	*e*P	**P**	**23 59 50.2**	**+1.1**
	7.4nm,0.8s						
MAW	**Mawson**	**71.93**	**201**	P	**P**	**00 01 44.5**	**+2.0**
	2.5nm,0.9s,baz=99,slow=4.1,SNR=4.7						
MAW	**Mawson**	**71.93**	**201**	*e*P	**P**	**00 01 44.5**	**+2.0**
	1.3nm,1.2s						
SYO	**Syowa Base**	**76.72**	**193**	⇑*e*P	**P**	**00 02 11.0**	**+0.8**
PDAR	**Pinedale Array**	**96.40**	**44**	LR	LR	00 43 34.8	
	comp=Z,25nm,18.9s,baz=239,slow=33						
MKAR	**Makanchi Array**	**118.08**	**310**	PKP	**PKPdf**	**00 09 05.8**	**-0.1**
	0.2nm,0.5s,baz=108,slow=3.2,SNR=4.0						
FINES	**FINESS Array B**	**145.55**	**340**	PKPbc	**PKPab**	**00 09 57.2**	**0.0**
	5.1nm,0.5s,baz=56,slow=3.8,SNR=52						
NB2	**NORSAR Subarra**	**149.17**	**351**	PKP	**PKPbc**	**00 10 07.9**	**+0.8**
	comp=Z,0.8nm,0.6s,baz=17,slow=2.6						
NOA	**NORSAR Array B**	**149.17**	**351**	PKPbc	**PKPbc**	**00 10 07.7**	**+0.6**
	comp=Z,1.7nm,0.8s,baz=16,slow=4.2,SNR=6.4						
AKASG	**Malin Array Be**	**151.66**	**322**	PKPbc	**PKPbc**	**00 10 13.8**	**+0.6**
	comp=Z,1.0nm,0.4s,baz=50,slow=2.9,SNR=6.8						
BRTR	**Keskin Array B**	**152.84**	**298**	PKPbc	**PKPbc**	**00 10 17.1**	**+0.7**
	comp=Z,0.6nm,0.4s,baz=144,slow=3.6,SNR=4.0						

*NIED **31** 23:53:00, 38.˚60N×141.˚90E, h50km, Mw4.3 Best double couple: M0=3.00000×10^15 NP1:φ=178.00000°, δ=20.00000°, λ=62.00000°. NP2:φ=27.00000°, δ=72.00000°, λ=100.00000°.*
*ISCJB **31** 23:53:56.1±0.3, 38.˚61N±0.˚03×142.˚12E±0.˚04, h41km, mb4.3/52, MS3.5/15, Error ellipse: s-maj=5.1km s-min=3.4km az=42.4*
*JMA **31** 23:53:59.0±0.1, 38.˚64N×141.˚91E, h49km±1km, M4.2*
JMA Felt II J1.
*MOS **31** 23:53:59.0±1.0, 38.˚71N×141.˚90E, h61km, mb4.8/15, Error ellipse: s-maj=9.8km s-min=6.4km az=105.8*
*NEIC **31** 23:54:00.1±0.6, 38.˚63N×142.˚00E, h61km±5km, mb4.7/21, Error ellipse: s-maj=6.9km s-min=5.0km az=128.0*
NEIC Recorded [2 JMA] in Iwate and Miyagi.
*IDC **31** 23:54:01.1±2.1, 38.˚63N×141.˚87E, h68km±18km, mb3.8/21, mb1 4.0/26, mb1mx3.9/48, mbtmp4.1/26, MS3.2/19, Ms1 3.3/19, ms1mx3.1/38, Error ellipse: s-maj=16.2km s-min=13.7km az=117.0*

ISC 31 23:53:57.7±0.5, 38.˚59N±0.˚05×142.˚04E±0.˚05, h41km, n145, σ1.˚28/149, mb4.4/56, MS3.4/15, 7C-6D, Near east coast of eastern Honshu

Code	Station Name	Δ°	AZ°	Phase ID Op	ISC	Time h m s	Res ISC
JIO	**Ouri**	**0.56**	**256**	P	**Pn**	**23 54 09.9**	**+0.6**
JIO				S	**Sn**	**23 54 17.2**	**-0.3**
OFUJ	**Ofunato**	**0.57**	**329**	P	**Pn**	**23 54 10.0**	**+0.6**
OFUJ				S	**Sn**	**23 54 17.6**	**-0.1**
JMK	**Ichinoseki**	**0.74**	**300**	P	**Pn**	**23 54 11.9**	**+0.2**
JMK				S	**Sn**	**23 54 21.2**	**-0.5**
JOM	**Ohasama**	**1.06**	**327**	P	**Pn**	**23 54 16.4**	**+0.3**
JOU	**Okura**	**1.10**	**259**	P	**Pn**	**23 54 16.9**	**+0.2**
JMM	**Marumori**	**1.22**	**234**	P	**Pn**	**23 54 18.6**	**+0.3**
JMM				S	**Sn**	**23 54 33.2**	**-0.4**
JYK	**Kaneyama**	**1.35**	**284**	P	**Pn**	**23 54 20.2**	**+0.1**
JRG	**Rokugo**	**1.36**	**307**	P	**Pn**	**23 54 20.2**	**0.0**
ERM	**Erimo**	**3.53**	**14**	*ce*P	**Pn**	**23 54 52.0**	**+2.1**
ERM				pmax	pmax		
	comp=Z,48nm,1.2s						
ERM	**Erimo**	**3.53**	**14**	*e*Pn	**Pn**	**23 54 51.4**	**+1.4**
ERM				*e*Sn	**Sn**	**23 55 31.0**	**+0.7**
MAJO	**Matsushiro**	**3.67**	**237**	*e*P	**Pn**	**23 54 54.4**	**+2.4**
MAJO	**Matsushiro**	**3.67**	**237**	*e*Pn	**Pn**	**23 54 54.7**	**+2.7**
MAT	**Matsushiro**	**3.67**	**237**	P	**Pn**	**23 54 54.7**	**+2.7**
MAT				*e*S	**Sn**	**23 55 37.8**	**+3.8**
MJAR	**Matsushiro Arr**	**3.67**	**237**	P	**Pn**	**23 54 54.4**	**+2.4**
	comp=Z,4.9nm,0.3s,baz=42,slow=12,SNR=48						
MJAR				LR	LR	23 56 40.2	
	comp=Z,269nm,19.1s,baz=30,slow=45						
MJB9	**Matsu-Tunnel**	**3.67**	**237**	*e*Pn	**Pn**	**23 54 52.8**	**+0.9**
INU	**Inuyama**	**5.16**	**233**	*e*Pn	**Pn**	**23 55 16.0**	**+3.6**
INU				*e*Sn	**Sn**	**23 56 11.2**	**+0.5**
ASAJ	**Asahikawa**	**5.54**	**4**	P	**Pn**	**23 55 18.8**	**+1.2**
	comp=Z,5.2nm,0.3s,baz=222,slow=14,SNR=14						
ASAJ				S	**Sn**	**23 56 20.6**	**+0.7**
	comp=Z,5.3nm,0.3s,baz=229,slow=20,SNR=4.2						
ASAJ				LR	LR	23 57 51.8	
	comp=Z,140nm,19.0s,baz=160,slow=42						
YSS	**Yuzh-Sakhalins**	**8.38**	**3**	*e*P	**Pn**	**23 55 56.9**	**+0.4**
YSS				pmax	pmax		
	comp=Z,19nm,0.7s						
VLA	**Vladivostok**	**8.92**	**304**	⇓*i*P	**Pn**	**23 56 06.6**	**+2.6**
VLA				*e*S	**Sn**	**23 57 45.4**	**+2.2**
VLA				pmax	pmax		
	comp=Z,61nm,0.7s						
USRK	**Ussuriysk Ar.**	**9.40**	**310**	P	**Pn**	**23 56 11.1**	**+0.5**
	comp=Z,1.0nm,0.3s,baz=119,slow=14,SNR=8.1						
USRK				LR	LR	23 59 38.1	
	comp=Z,133nm,20.4s,baz=142,slow=36						
JNU	**Nakatsue**	**10.57**	**242**	P	**Pn**	**23 56 29.4**	**+2.8**
	comp=Z,0.2nm,0.3s,baz=75,slow=10,SNR=5.5						
JNU				LR	LR	00 00 51.3	
	comp=Z,190nm,21.0s,baz=98,slow=39						
KSRS	**Korea Array**	**11.20**	**269**	P	**Pn**	**23 56 38.5**	**+3.4**
	comp=Z,0.4nm,0.3s,baz=80,slow=14,SNR=7.3						
KSRS				LR	LR	00 00 31.9	
	comp=Z,132nm,19.9s,baz=87,slow=35						
KS15	**Wonju Array Si**	**11.23**	**269**	*e*Pn	**Pn**	**23 56 38.5**	**+2.9**
KSAR	**Wonju Array Be**	**11.23**	**269**	P	**Pn**	**23 56 38.5**	**+2.9**
KSAR	**Wonju Array Be**	**11.23**	**269**	P	**Pn**	**23 56 38.5**	**+2.9**
KLR	**Kul'dur**	**12.95**	**329**	P	**Pn**	**23 56 58.2**	**-0.8**
	comp=Z,0.2nm,0.3s,baz=120,slow=13,SNR=3.9						
KLR				LR	LR	00 02 02.2	
	comp=Z,163nm,18.2s,baz=124,slow=37						
KLR	**Kul'dur**	**12.95**	**329**	*i*P	**Pn**	**23 56 58.4**	**-0.7**
PETK	**Petropavlovsk-**	**18.10**	**32**	LR	LR	00 04 57.8	
	comp=Z,33nm,18.4s,baz=215,slow=36						
BJI	**Beijing**	**20.05**	**282**	P	**Pn**	**23 58 30.5**	**+1.3**
BJI				pmax	pmax		
	comp=Z,10.0nm,0.5s						
BJI				pmax	pmax		
	comp=Z,41nm,4.0s						
BJI				LR	LR		
	comp=N,86nm,13.8s						
BJI				LR	LR		
	comp=E,130nm,13.2s						
MA2	**Magadan**	**21.73**	**12**	LR	LR	00 06 52.3	
	comp=E,28nm,19.3s,baz=152,slow=36						
HHC	**Hu-ho-hao-te**	**23.50**	**285**	*e*P	**P**	**23 59 04.0**	**+0.1**
HHC				pmax	pmax		
	comp=Z,17nm,0.8s						
HHC				pmax	pmax		
	comp=Z,210nm,4.0s						
HHC				LR	LR		
	comp=N,720nm,12.8s						
HHC				LR	LR		
	comp=E,840nm,11.7s						
HHC				LR	LR		
	comp=Z,830nm,12.1s						
YAK	**Yakutsk**	**24.67**	**346**	LR	LR	00 09 14.7	
	comp=Z,29nm,20.2s,baz=160,slow=37						
YAK	**Yakutsk**	**24.67**	**346**	*e*P	**P**	**23 59 14.1**	**-0.3**
YAK				pmax	pmax		
	comp=Z,16nm,0.6s						
SEY	**Seymchan**	**25.17**	**11**	P	**P**	**23 59 20.2**	**+1.3**
	comp=Z,9.9nm,0.9s,baz=206,slow=6.6,SNR=31						
SEY	**Seymchan**	**25.17**	**11**	*ce*P	**P**	**23 59 19.6**	**+0.7**
BOD	**Bodaibo**	**26.50**	**326**	*e*P	**P**	**23 59 29.7**	**-1.3**
BOD				pmax	pmax		
	comp=Z,5.0nm,1.2s						
ULN	**Ulaanbaatar**	**26.93**	**302**	*ce*P	**P**	**23 59 33.9**	**-1.3**
ULN				pmax	pmax		
	comp=Z,4.0nm,1.2s						
ULN	**Ulaanbaatar**	**26.93**	**302**	*e*P	**P**	**23 59 35.0**	**-0.1**
	comp=Z,3.0nm,0.9s						
XAN	**Xi'an**	**26.98**	**271**	P	**P**	**23 59 31.0**	**-4.7**
XAN	**Xi'an**	**26.98**	**271**	sP	P	23 59 41.3	+5.6
XAN				pmax	pmax		
	comp=Z,17nm,0.7s						
XAN				pmax	pmax		
	comp=Z,300nm,14.5s						
XAN				LR	LR		
	comp=N,1μm,16.6s						
XAN				LR	LR		
	comp=E,3μm,16.4s						
XAN				LR	LR		
	comp=Z,2μm,16.1s						
SONA0	**Songino Array**	**27.36**	**301**	*e*P	**P**	**23 59 39.0**	**0.0**
	comp=Z,2.2nm,0.9s						
SONM	**Songino Array**	**27.36**	**301**	P	**P**	**23 59 39.0**	**0.0**
	comp=Z,1.1nm,0.6s,baz=98,slow=10,SNR=4.1						
SONM				LR	LR	00 10 34.4	
	comp=Z,51nm,21.8s,baz=180,slow=36						
ENH	**Enshi**	**27.99**	**263**	*e*P	**P**	**23 59 44.4**	**-0.3**
	comp=Z,12nm,0.7s						
H11S1	**WAKE ISLAND Hy**	**29.33**	**126**	T	T	00 31 18.1	
	baz=319,slow=76,SNR=612						
H11S3	**WAKE ISLAND Hy**	**29.33**	**126**	T	T	00 31 17.4	
	baz=319,slow=76,SNR=720						
H11S2	**WAKE ISLAND Hy**	**29.35**	**126**	T	T	00 31 18.5	
	baz=319,slow=76,SNR=833						
TLY	**Talaya**	**29.72**	**309**	P	**P**	**23 59 59.5**	**-0.3**
	comp=Z,4.6nm,0.6s,baz=100,slow=6.1,SNR=4.6						
TLY				LR	LR	00 12 32.5	
	comp=Z,52nm,19.1s,baz=130,slow=38						
ZAK	**Zakamensk**	**29.72**	**306**	*e*P	**P**	**23 59 58.8**	**-1.2**
ZAK				pmax	pmax		
	comp=Z,4.0nm,0.9s						
TIXI	**Tiksi**	**33.81**	**353**	*e*P	**P**	**00 00 34.9**	**-0.5**
TIXI				pmax	pmax		
	comp=Z,4.0nm,0.9s						
TIXI	**Tiksi**	**33.81**	**353**	*e*P	**P**	**00 00 34.9**	**-0.5**
	comp=Z,3.6nm,0.9s						
ZAA0	**Zalesovo Array**	**41.25**	**311**	*e*P	**P**	**00 01 38.3**	**-0.2**
ZAA1	**Zalesovo Array**	**41.25**	**311**	*e*P	**P**	**00 01 38.0**	**-0.6**
ZAA1				*e*PcP	**PcP**	**00 03 36.4**	**-0.3**
ZALV	**Zalesovo Beam**	**41.25**	**311**	P	**P**	**00 01 38.0**	**-0.6**
	comp=Z,5.4nm,0.6s,baz=88,slow=7.4,SNR=25						
ZALV				PcP	**PcP**	**00 03 36.4**	**-0.3**
	comp=Z,1.1nm,0.3s,baz=117,slow=2.4,SNR=4.4						
ZALV				LR	LR	00 18 56.1	
	comp=Z,34nm,19.0s,baz=70,slow=36						
ZALV	**Zalesovo Beam**	**41.25**	**311**	P	**P**	**00 01 38.0**	**-0.6**
NRIK	**Noril'sk**	**42.07**	**334**	P	**P**	**00 01 44.6**	**-0.4**
	comp=Z,1.5nm,0.3s,baz=123,slow=8.1,SNR=8.1						
NRIK				LR	LR	00 20 08.4	
	comp=Z,78nm,19.2s,baz=87,slow=37						
MK01	**Makanchi Array**	**43.73**	**301**	*e*P	**P**	**00 01 58.2**	**-0.6**
MK31	**Makanchi Array**	**43.73**	**301**	*e*P	**P**	**00 01 58.9**	**0.0**
MK31	**Makanchi Array**	**43.73**	**301**	*e*P	**P**	**00 01 58.9**	**0.0**
MK32	**Makanchi Array**	**43.73**	**301**	*e*P	**P**	**00 01 58.6**	**-0.3**
**MKA

comp=Z,2.8nm,0.8s,baz=39,slow=6.2
NB200 NORSAR Array S 72.94 337 *e*P **P 00 05 22.3 -0.2**
NOA NORSAR Array B 72.94 337 P **P 00 05 22.3 -0.2**
comp=Z,2.1nm,0.7s,baz=40,slow=5.9,SNR=10
NOA LR LR 00 40 00.7
comp=Z,28nm,21.3s,baz=130,slow=38
AKASG Malin Array Be 73.37 322 P **P 00 05 24.5 -0.6**
comp=Z,1.5nm,0.5s,baz=46,slow=6.4,SNR=8.6
AKBB Malin Array Si 73.37 322 *e*P **P 00 05 24.5 -0.6**
AKBB pmax pmax
comp=Z,6.0nm,0.6s
AKBB Malin Array Si 73.37 322 *e*P **P 00 05 24.5 -0.6**
comp=Z,5.5nm,0.6s
SORM Soroca 75.50 321 ||*i*P **P 00 05 36.9 -0.6**
RCWM Renegade Canyo 75.57 56 *e*P **P 00 05 34.7 -3.6**
PD31 Pinedale Array 76.23 46 *e*P **P 00 05 43.1 +1.0**
PDAR Pinedale Array 76.23 46 P **P 00 05 43.1 +1.0**
comp=Z,0.9nm,0.6s,baz=270,slow=1.3,SNR=8.9
PSUT Pine Spring 76.37 52 *e*P **P 00 05 40.3 -2.7**
comp=Z,6.5nm,0.8s
KWP Kalwaria Pacla 77.16 324 ||*i*P **P 00 05 47.8 +0.9**
BUR08 Bucovina Ar. S 77.39 322 *e*P **P 00 05 48.8 +0.4**
BURAR Bucovina Array 77.40 322 ⇑*i*P **P 00 05 48.7 +0.3**
TESR Tescani 77.46 320 ⇑*i*P **P 00 05 48.8 +0.1**
VRI Vrincioaia 77.86 320 ⇑*i*P **P 00 05 52.6 +1.6**
BR101 Keskin Array S 78.19 312 *e*P **P 00 05 53.0 -0.1**
BRTR Keskin Array B 78.19 312 P **P 00 05 52.9 -0.1**
comp=Z,0.6nm,0.4s,baz=126,slow=3.4,SNR=9.4
BRTR LR LR 00 43 25.3
comp=Z,8.8nm,18.1s,baz=356,slow=38
BR231 Keskin MP Arra 78.62 312 *e*P **P 00 05 53.6 -1.7**
ARR Arges 79.26 320 ||*i*P **P 00 05 58.1 -0.7**
MORC Moravsky Berou 79.33 327 ||*i*P **P 00 05 59.4 +0.4**
MORC Moravsky Berou 79.33 327 *e*P **P 00 05 59.6 +0.6**
MORC pmax pmax
comp=Z,14nm,1.0s
MORC Moravsky Berou 79.33 327 *e*P **P 00 05 59.6 +0.6**
comp=Z,14nm,1.0s
BRG Berggiesshubel 79.97 330 *e*P **P 00 06 02.3 -0.1**
comp=Z,2.3nm,0.7s
CLL Collm 79.99 330 *e*P **P 00 06 02.0 -0.5**
comp=Z,4.0nm,0.8s
CLL *e* 00 06 08.0
GZR Gura Zlata 80.16 321 ||*i*P **P 00 06 03.7 +0.1**
CONA Conrad Observa 81.45 327 *i* P **P 00 06 11.5 +0.9**
comp=Z,1.9nm,0.7s
GERES GERESS Array B 81.65 328 P **P 00 06 11.0 -0.5**
comp=Z,0.7nm,0.5s,baz=38,slow=5.0,SNR=8.0
GERES LR LR 00 45 06.1
comp=Z,36nm,18.8s,baz=12,slow=38
GERES GERESS Array B 81.65 328 P **P 00 06 11.0 -0.5**
MYKA Terra Mystica 83.41 327 *i* P **P 00 06 20.3 -0.4**
comp=Z,3.0nm,0.8s
WATA Walderalm 83.72 329 *i* PcP **P 00 06 24.0 +1.6**
comp=Z,2.3nm,0.5s
WTTA Wattenberg 83.75 329 *i* PcP **P 00 06 24.0 +1.4**
ABTA Abfaltersbach 83.80 328 *i* P **P 00 06 22.2 -0.5**
comp=Z,4.2nm,1.2s
MOTA Moosalm 83.90 329 *i* PcP **P 00 06 23.4 +0.1**
comp=Z,2.6nm,0.9s
RETA Reutte 83.92 329 *i* PcP **P 00 06 23.9 +0.6**
comp=Z,3.8nm,0.8s
COWI Conover 84.01 33 *e*P **P 00 06 26.8 +3.1**
BFO Black Forest 84.19 331 *i* P **P 00 06 25.4 +0.8**
FETA Feichten 84.31 329 *i* P **P 00 06 23.2 -2.2**
comp=Z,2.3nm,0.9s
DAVA Damuels 84.44 330 *i* PcP **P 00 06 26.3 +0.2**
comp=Z,8.6nm,0.9s
FUORN Ofenpass-Fuorn 84.83 329 *e*P **P 00 06 28.4 +0.2**
comp=Z,8.6nm,0.8s
LTX Lajitas 88.78 53 *e*P **P 00 06 48.2 +0.7**
LTX Lajitas 88.78 53 *e*P **P 00 06 48.2 +0.7**
TXAR Lajitas Array 88.78 53 P **P 00 06 48.2 +0.6**
comp=Z,0.3nm,0.7s,baz=338,slow=6.8,SNR=3.0
LPAZ La Paz 145.47 58 PKPbc **PKPbc 00 13 33.0 +0.5**
comp=Z,1.0nm,0.7s,baz=16,slow=4.0,SNR=5.6

ISC Computed Locations for May 2011

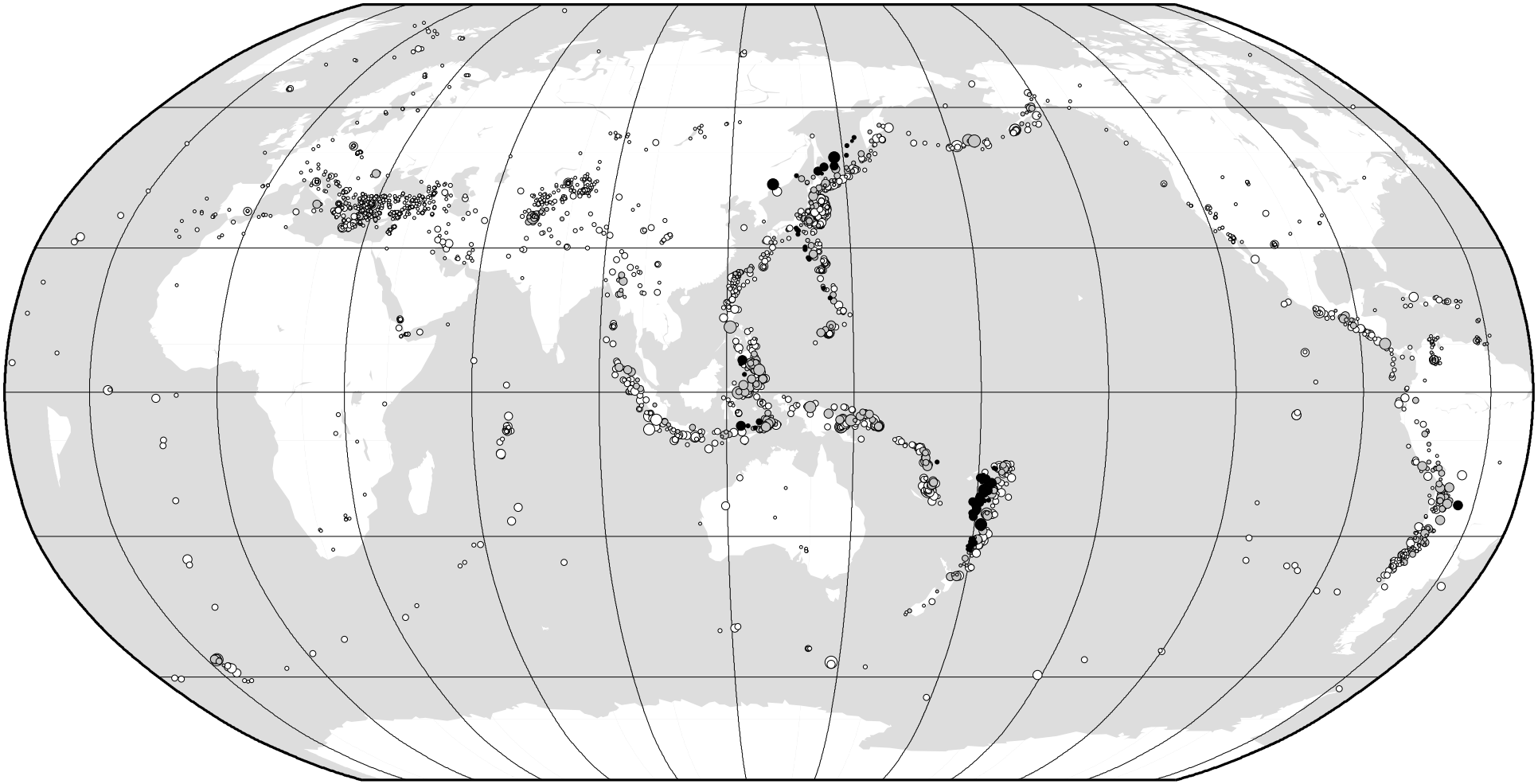

Depth (km)	0-70	70-300	>300
M=8	○	●	●
M=6.5	○	●	●
M=4	○	●	●

Robinson Projection, centred on 0˚N,130˚E

5052 Events